



## Bravo/Brava

**Click here to  
choose chapter**

Summary

Intro & TechData







Engine

Electrical Equipment

Back

## TECHNICAL SERVICE MANUAL COMPOSITION

As of January 2001, the **Bravo-Brava 4th volume** manual is composed of the following sections

| Print N°                       | Sections | Page No(s)   | Notes  |
|--------------------------------|----------|--|--|
| <b>506.670/18</b><br>(II/1999) | 10       | 1 - 35   | Engine  16V 1998 range - Removing-refitting               |
|                                | 55       | 1 - 249  | Electrical equipment wiring diagrams for 98 range versions (*)   |
| <b>506.670/19</b><br>(XI/1999) | 55       | 1 - 38   | Electrical equipment: Air Bag new features - Side  |
| <b>506.670/20</b><br>(V/1999)  | 00       | 1 - 9  | Technical data  16V 1999 update                          |
|                                | 10       | 1 - 54   | Fuel system  16V 1999 update                             |
|                                | 55       | 25 - 26<br>249   | Update to wiring diagrams - 1998 range   |
|                                | 55       | 1 - 41   | Electrical equipment wiring diagrams  16V 1999 update |
| <b>506.670/21</b><br>(X/1999)  | 10       | 33 - 34  | Removal-refitting update  16V 1998 range              |
|                                |          | 1 - 2  | Fuel System update  16V 1999 update                   |
|                                | 55       | 1 - 8  | Updated Air Bag with new features (98 range)   |
|                                |          | 23 - 25<br>83 - 86<br>177 - 178<br>201 - 204<br>229 - 230<br>249 | 98 range wiring diagrams update  |

(\*) (\*) These wiring diagrams replace the diagrams in the 3rd volume manual update - print no. 506.670/16 which should therefore be disposed of



| Print N°                      | Sections  | Page No(s) | Notes                              |
|-------------------------------|-----------|------------|------------------------------------|
| <b>506.670/22</b><br>(I/2001) | <b>00</b> | 1 - 38     | 2000 range technical data          |
|                               | <b>10</b> | 1 - 8      | 1242 8 valvole Euro 3 fuel system  |
|                               |           | 1 - 8      | 1596 16 valvole Euro 3 fuel system |
|                               |           | 1 - 36     | 1910 JTD Euro 3 fuel system        |
|                               | <b>55</b> | 1 - 28     | Radio System                       |
|                               |           | 1 - 115    | 2000 range Euro 3 wiring diagrams  |

**TECHNICAL SERVICE MANUAL COMPOSITION**

At present, October 1999, the **Bravo-Brava 4th volume** manual is composed of the following booklets:

| Print N°                       | Sections  | Page No(s)   | Notes  |
|--------------------------------|-----------|--|--|
| <b>506.670/18</b><br>(II/1999) | <b>10</b> | 1 - 35   | Engine (1747) 16V 98 range – Removing-refitting                |
|                                | <b>55</b> | 1 - 249  | Electrical equipment wiring diagrams for 98 range versions (*) |
| <b>506.670/19</b><br>(XI/1999) | <b>55</b> | 1 - 38   | Electrical equipment: Air Bag new features - Side Bag          |
| <b>506.670/20</b><br>(V/1999)  | <b>00</b> | 1 - 9  | Technical data (1747) 16V 1999 update                          |
|                                | <b>10</b> | 1 - 54   | Fuel system (1747) 16V 1999 update                             |
|                                | <b>55</b> | 25 - 26<br>249   | Update to wiring diagrams - 1998 range                         |
|                                | <b>55</b> | 1 - 41   | Electrical equipment wiring diagrams (1747) 16V 1999 update    |
| <b>506.670/21</b><br>(X/1999)  | <b>10</b> | 33 - 34  | Removing-refitting update (1242) 16V 98 range                  |
|                                |           | 1 - 2  | Fuel system update (1747) 16V (99 update)                      |
|                                | <b>55</b> | 1 - 8  | Update for Air Bag new features 98 range                       |
|                                |           | 23 - 25<br>83 - 86<br>177 - 178<br>201 - 204<br>229 - 230<br>249 | 98 range wiring diagrams update                                |
|                                |           | 17 - 29  | Update for instrument panels 98 range                          |

(\*) These wiring diagrams replace those which are part of the 3rd volume manual update - print no. 506.670/16 which should therefore be disposed of

**TECHNICAL SERVICE MANUAL COMPOSITION**

As of May 1999, the **Bravo-Brava volume 4** manual is composed of the following parts

|  |           |                |  |
|--|-----------|----------------|--|
| <b>506.670/18</b><br><small>(II/1999)</small>  | <b>10</b> | 1 - 35         | Engine <b>1242</b> , <b>16V</b> 98 range - Removing-refitting                |
|  |           | 27 - 44        | Fuel system <b>1910</b> <i>JTD</i> 98 range - Removing-refitting components. |
|  | <b>55</b> | 1 - 249        | Electrical equipment wiring diagrams for 98 range versions (*)               |
| <b>506.670/19</b><br><small>(III/1998)</small> | <b>55</b> | 1 - 38         | Electrical equipment: Air Bag new features - Side Bag                        |
| <b>506.670/20</b><br><small>(V/1999)</small>   | <b>00</b> | 1 - 9          | Technical data <b>1747</b> , <b>16V</b> 1999 update                          |
|  | <b>10</b> | 1 - 54         | Fuel system <b>1747</b> , <b>16V</b> 1999 update                             |
|  | <b>55</b> | 25 - 26<br>249 | Update to wiring diagrams - 1998 range                                       |
|  | <b>55</b> | 1 - 41         | Electrical equipment wiring diagrams <b>1747</b> , <b>16V</b> 1999 update    |

(\*)These wiring diagrams replace diagrams in the volume 3 manual update - print no. 506.670/16 which should therefore be disposed of

## SERVICE MANUAL COMPOSITION

At present, March 1999, the **Bravo-Brava 4<sup>th</sup> volume** manual is composed of the following booklets

|  |           |         |   |
|--|-----------|---------|---|
| <b>506.670/18</b><br><small>(II/1999)</small>  | <b>10</b> | 1 - 35  | Engine <b>1242</b> 16V 98 range - Removing-refitting                  |
|  |           | 27 - 44 | Fuel system <b>1910</b> JTD 98 range - Removing-refitting components. |
|  | <b>55</b> | 1 - 249 | Electrical equipment wiring diagrams for 98 range versions (*)        |
| <b>506.670/19</b><br><small>(III/1998)</small> | <b>55</b> | 1 - 38  | Electrical equipment: Air Bag new features - Side Bag                 |

(\*)These wiring diagrams replace those which are part of the 3rd volume manual update - print no. 506.670/16 which should therefore be disposed of

Intro & Techdata 99

Intro & Techdata 2000

page

#### INTRODUCTION

- Identification data - Weights 1
- Dimensions 2
- Capacities 4
- Performance - Fuel consumption 5

#### TECHNICAL DATA

##### ENGINE 16V

- Cylinder head and valve gear components 6
- Fuel system 7

##### ELECTRICAL EQUIPMENT

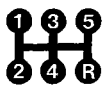

- Electronic injection/ignition 8

##### SPECIAL TOOLS 9



*This section contains the specific technical data relating to the 1747 16v version with a returnless fuel system, for anything not dealt with, refer to the Bravo-Brava 1st volume manual.*







**00.0**

|   | CHASSIS     | ENGINE     | VERSION            | 3 Door | 5 Door | GEARBOX   |
|---|-------------|------------|--------------------|--------|--------|---|
|   |             |            |                    |        |        |  |
|  16V | ZFA 182 000 | 182 A2 000 | 182 AC 1AA 03      | ☆      |        | ☆   |
|   |             |            | 182 BC 1AA 13      |        | ☆      |   |
|   |             |            | 182 BC 1AA 13B (●) |        | ☆      |   |

(●) Versions for specific markets (Germany)

|             |   |
|-------------|---|
| ENGINE TYPE |  16V |
|-------------|---|

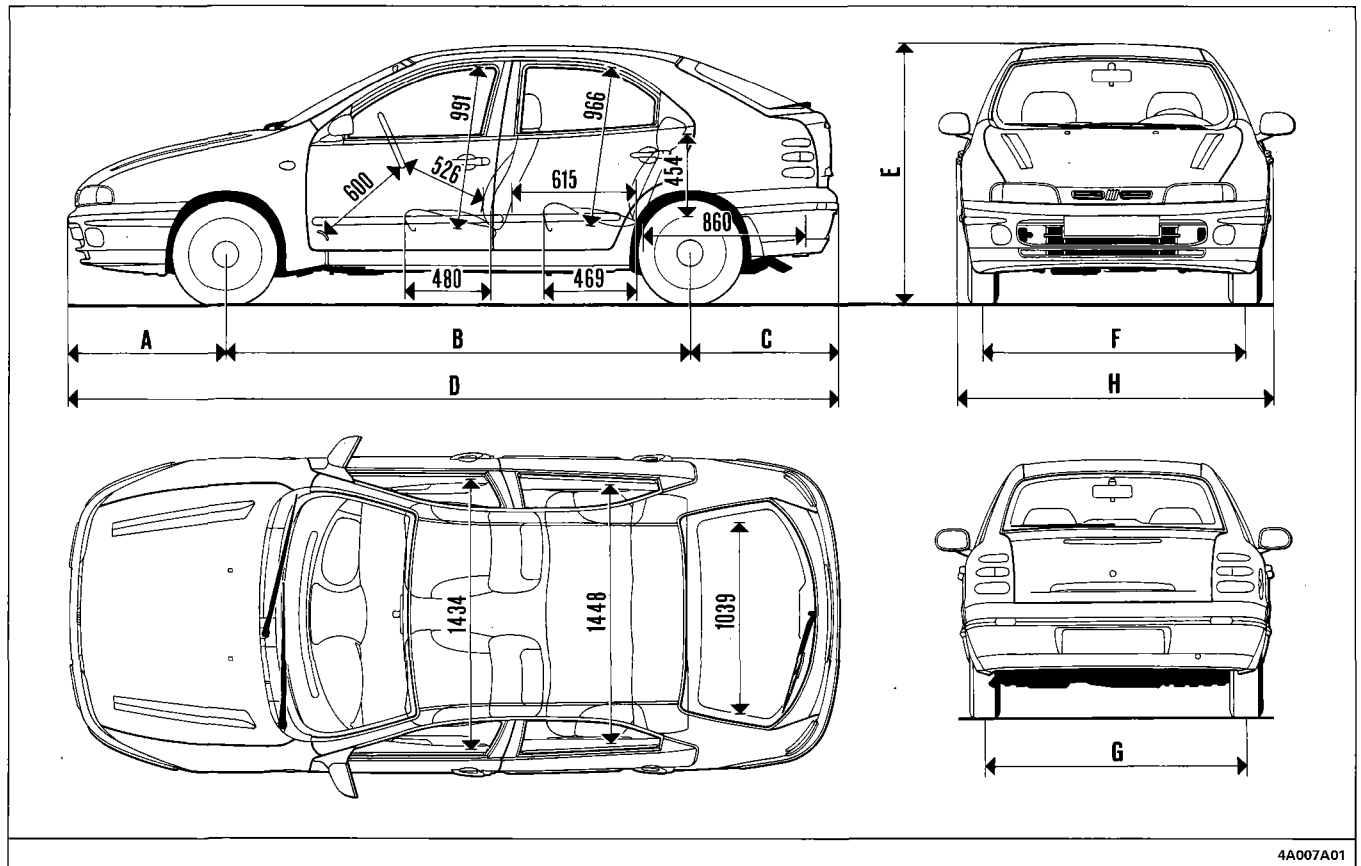
**WEIGHTS (in kg)**

|   |  |      |
|---|--|------|
|  | 3 door   | 1100 |
|   | 5 door   | 1130 |
|  | 500 =   3 door | 1600 |
|   | 550 =   5 door | 1680 |


**NOTE FOR VERSIONS WITH ACCESSORIES:** In the presence of special equipment (non standard air conditioning, sun roof, trailer towing device, etc.), the empty weight increases and therefore the carrying capacity may decrease in relation to the maximum permissible loads.

### 00.

#### 5-DOOR VERSION

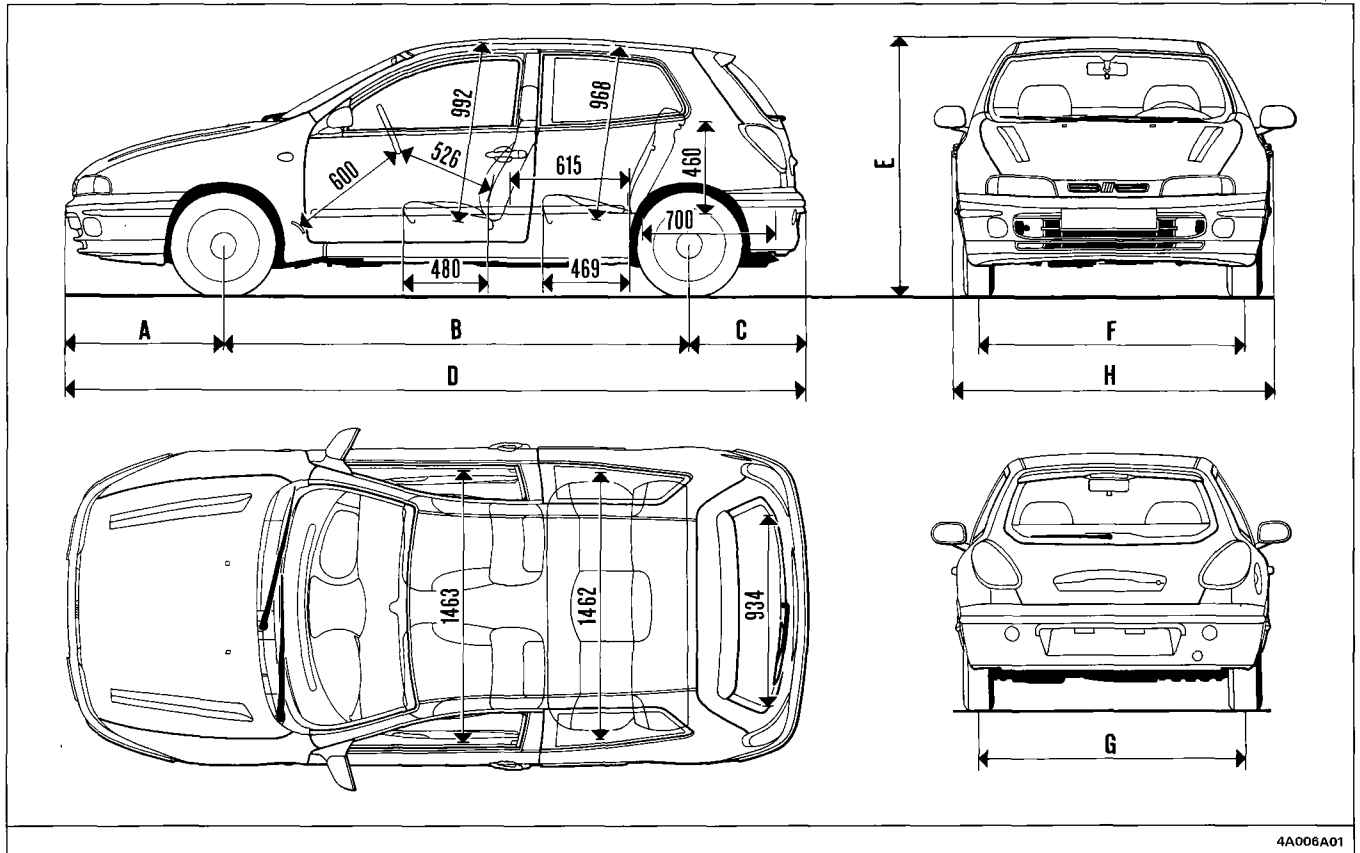



4A007A01

| Engine version  | Wheel rim      | DIMENSIONS (mm) |      |     |      |      |      |      |      |
|---|----------------|-----------------|------|-----|------|------|------|------|------|
|   |                | A               | B    | C   | D    | E    | F    | G    | H    |
|  16V | 5½Jx14»"3<br>7 | 858             | 2540 | 789 | 4187 | 1412 | 1451 | 1453 | 1741 |
|   | 6Jx14"»43      |                 |      |     |      |      | 1439 | 1441 |      |



**3 DOOR VERSION**



| Engine type   | Wheel rim | DIMENSIONS (mm) |      |     |      |      |      |      |      |
|---|-----------|-----------------|------|-----|------|------|------|------|------|
|   |           | A               | B    | C   | D    | E    | F    | G    | H    |
|  16V | 6Jx14"43  | 858             | 2540 | 627 | 4025 | 1415 | 1439 | 1441 | 1755 |
|   | 6Jx15"40  |                 |      |     |      |      | 1445 | 1447 |      |
















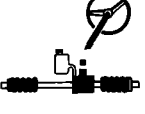
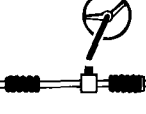

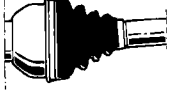



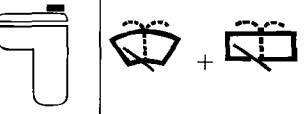


# Technical data

## Capacities



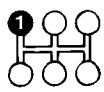
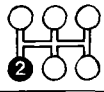
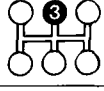
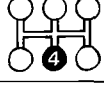
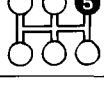
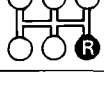


99 update

### 00.0

3 DOOR VERSION

| Description  | Unit  | Quantity   |   |                |     |
|--|---|--|---|----------------|-----|
|  |   | dm <sup>3</sup> (l)  | (kg)  |                |     |
|  Petrol ≥ O.R. 95<br>Unleaded   |    | 60   | -   |                |     |
|  50%<br>+<br> (▲)<br> | <br>Total capacity<br>of cooling system   | 7.4  | -   |                |     |
|  |   |                 | 7.3   | -              |     |
|  <p><b>Petrol engines</b></p> SELENIA 20K<br>(SAE 10 W/40)   | Total capacity <br>Partial capacity<br>(periodic replacement)  | 5.5  | 4.7   |                |     |
|  |   |                | 4.8<br>(4,5 ●)                                      | 4.3<br>(4,0 ●) |     |
|  <p>a = TUTELA<br/>ZF 75 Synth</p>   |    | 1.98   | 1.8   |                |     |
|  <p>a = TUTELA<br/>GI/A</p>   | <p>a</p>   | <p>b</p>     | a   | -              | 1,0 |
|  |   |  | <p>b = K 854</p>                                    | b              | -   |
|  <p>b = TUTELA<br/>MRM2</p>   | <p>c</p>   | c  | -   | 0,003          |     |
|  <p>TUTELA<br/>TOP 4</p>  | <br>Total capacity   | without<br>ABS   | 0.40  | -              |     |
|  |   | with<br>ABS  | 0.54  | -              |     |
|  + E<br>AREXONS   |   |  3%           | 2.5-5<br>(6.4<br>with<br>headlam<br>p wash-<br>ers) | -              |     |
|  |   |  ~ - 10°C 50% |   |                |     |
|  |   | ~ - 20°C 100%  |   |                |     |

- (▲) Distilled water
- (●) Engine sump only

| ENGINE TYPE   |   |  16V |        |
|---|---|---|--------|
|   |   | 3 door  | 5 door |
| Speed km/h<br>(average load)<br><br>   |    | 50  |        |
|   |    | 87  |        |
|   |    | 128   |        |
|   |    | 169   |        |
|   |   | 193   | 190    |
|   |  | 50  |        |
| Fuel consumption figures<br>in accordance with standard<br>93/116/CE (litres/100 km)<br><br>  | Urban   | 11.3  | 11.5   |
|   | Extra-urban   | 6.5   | 6.6    |
|   | Combined  | 8.3   | 8.4    |
| CO <sub>2</sub> exhaust emissions (g/km)  |   | 197   | 193    |

The consumption and emission figures in the table are measured in accordance with the new directive 93/116/CE in force since January 1996.

This directive involves a realistic determination of fuel consumption aimed at the daily use of the vehicle. The following procedures are followed to measure the fuel consumption:

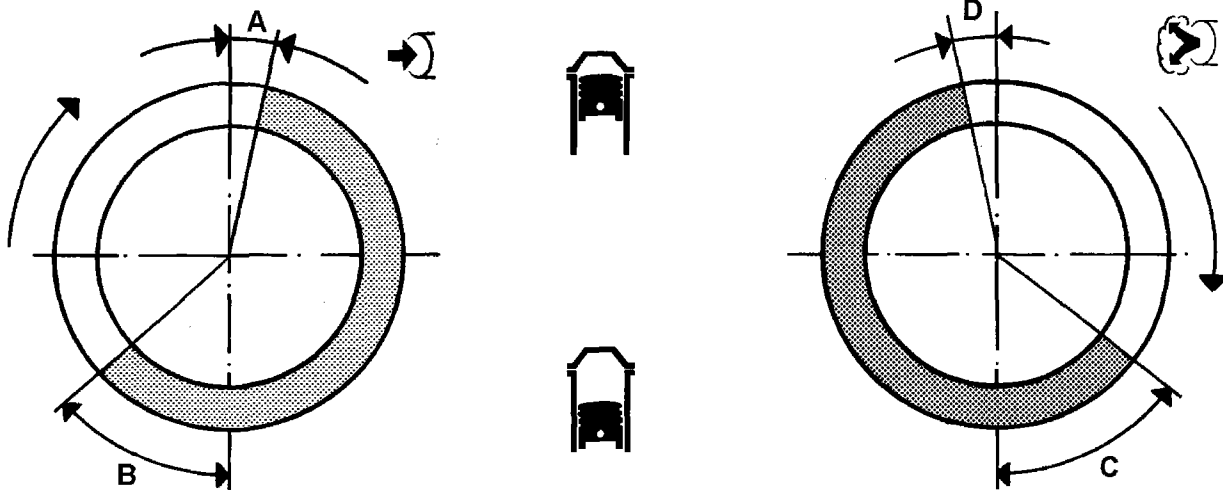
- urban cycle: begins with a cold start then the normal urban usage is simulated;
- extra-urban cycle: the driving includes frequent acceleration in all gears corresponding to the normal usage of the vehicle; the driving speed varies between 0 and 120 km/h;
- average combined consumption: this is calculated by including about 37% of the urban cycle and 63% of the extra-urban cycle.

The type of route, traffic conditions, driving style, weather conditions, trim level/equipment/accessories, presence of special equipment and the state of the vehicle in general can lead to different fuel consumption figures from those established using the above mentioned procedures.

The CO<sub>2</sub> exhaust emissions (in g/km) are measured during the average combined cycle.

## 00.10



### TIMING DIAGRAMS



P3N07DA01

### TIMING ANGLES



|          |         |   |                  |     |
|----------|---------|---|------------------|-----|
| <b>A</b> | Inlet   |  | opens before TDC | 0°  |
| <b>B</b> |         |   | closes after BDC | 27° |
| <b>C</b> | Exhaust |  | opens before BDC | 29° |
| <b>D</b> |         |   | closes after TDC | 2°  |

**INTEGRATED ELECTRONIC  
INJECTION/IGNITION SYSTEM COMPONENTS**



|   |  |
|---|--|
| Electronic control unit                                     | HITACHI MFI – 155<br>HITACHI MFI – 160 (*) |
| Injector  | Marelli IWP 006                            |
| Fuel pressure regulator (incorporated in the electric pump) | Marelli RPM 84                             |
| Coolant temperature sensor                                  | Jaeger 40218301<br>Eth 2690350             |
| Electric fuel pump  | Marwall ESS 276                            |
| Lambda sensor   | NTK OZA 341-A1                             |
| Idle actuator   | HITACHI GL 108771                          |
| Butterfly valve position sensor (potentiometer)             | HITACHI GL212875                           |
| Fuel vapour solenoid valve                                  | Marelli EC1                                |
| Top Dead Centre and rpm sensor                              | HITACHI RS – 314                           |
| Knock sensor  | NGK KNE 03-A                               |
| Timing sensor   | Bosch B.232.101.037                        |
| Butterfly casing  | HITACHI M646 WA                            |

(\*) Specific version for German market


# Technical data

**Bravo-Brava**  16V

**Electrical equipment: electronic injection-ignition**

**1999 update**

## 00.10

|  |   |
|--|---|
| <b>INTEGRATED ELECTRONIC INJECTION-IGNITION SYSTEM</b> |  |
| Make   | HITACHI MFI-1   |
| Firing order   | 1 - 3 - 4 - 2   |

### IGNITION COIL (1 PER SPARK PLUG)

|   |                  |
|---|------------------|
| Make  | HITACHI GL212875 |
| Type  | Ge 215492        |
| Ohmic resistance of primary winding at 20°C   | Ω 0.66           |
| Ohmic resistance of secondary winding at 20°C | Ω -              |

### TOP DEAD CENTRE AND RPM SENSOR

|   |                             |
|---|-----------------------------|
| Make and type   | HITACHI GE 110492<br>RS-314 |
| Sensor winding resistance at 20°C                         | Ω 513 - 627                 |
| Distance (gap) between sensor and crankshaft pulley tooth | mm 0.4 - 1.2                |

### KNOCK SENSOR

|               |              |
|---------------|--------------|
| Make and type | NTK KNE 03-A |
|---------------|--------------|

### TIMING SENSORS AND CYLINDER IDENTIFICATION


|               |                     |
|---------------|---------------------|
| Make and type | Bosch B 232.101.037 |
|---------------|---------------------|

### ADVANCE ON ENGINE

|                                   |         |
|-----------------------------------|---------|
| With engine idling (850 ± 50/min) | 9° ± 1° |
|-----------------------------------|---------|

### SPARK PLUGS

|               |                                   |
|---------------|-----------------------------------|
| Make and type | NGK BKR6EKC<br>Champion - RC8 BYC |
| Thread        | M14 x 1.25                        |
| Electrode gap | mm 0.8                            |

| Tool number | NAME OF TOOL | ENGINE TYPE   |
|-------------|--------------|---|
|             |              |  |

**ENGINE**

|            |                                    |   |
|------------|------------------------------------|---|
| 1860955000 | Fuel consumption test equipment    | ● |
| 1870684000 | Petrol pressure drainage connector | ● |
| 1860875000 | Tool for timing camshafts          | ● |





**INTRODUCTION**

|                                  |   |
|----------------------------------|---|
| - Identification data            | 1 |
| - Weights                        | 3 |
| - Performance – Fuel consumption | 4 |
| - Capacities                     | 5 |
| - Product specifications         | 6 |

**TECHNICAL DATA**

**ENGINE**  16v  16v

|  |    |
|--|----|
| - Specifications   | 7  |
| - Cylinder block/crankcase, crankshaft and associated components | 8  |
| - Auxiliary drive shaft  | 12 |
| - Cylinder head and valve gear timing components                 | 13 |
| - Timing diagrams  | 16 |
| - Lubrication  | 17 |
| - Cooling system – Fuel system                                   | 18 |

**ENGINE**  JTD

|                        |    |
|------------------------|----|
| - Specifications       | 20 |
| - Cylinder head gasket | 21 |
| - Timing diagrams      | 21 |
| - Supercharging        | 22 |
| - Fuel feed system     | 22 |

|               |    |
|---------------|----|
| <b>CLUTCH</b> | 23 |
|---------------|----|

|                                 |    |
|---------------------------------|----|
| <b>GEARBOX AND DIFFERENTIAL</b> | 24 |
|---------------------------------|----|

|                       |    |
|-----------------------|----|
| <b>BRAKING SYSTEM</b> | 26 |
|-----------------------|----|

|                 |    |
|-----------------|----|
| <b>STEERING</b> | 27 |
|-----------------|----|

|               |    |
|---------------|----|
| <b>WHEELS</b> | 28 |
|---------------|----|

|                         |    |
|-------------------------|----|
| <b>FRONT SUSPENSION</b> | 30 |
|-------------------------|----|

|                        |    |
|------------------------|----|
| <b>REAR SUSPENSION</b> | 31 |
|------------------------|----|

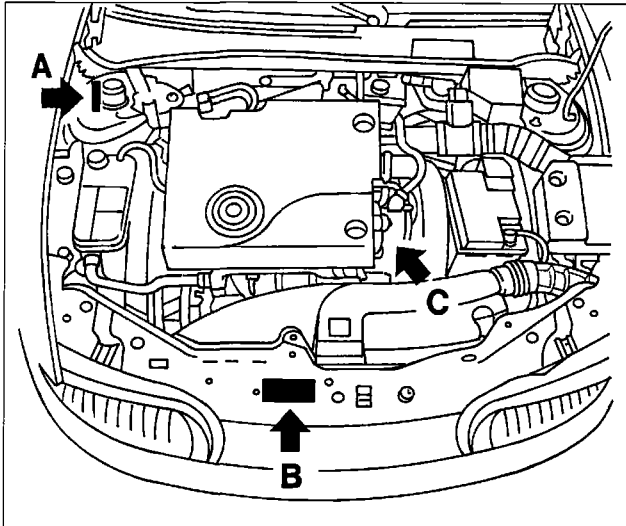
|                             |    |
|-----------------------------|----|
| <b>ELECTRICAL EQUIPMENT</b> | 32 |
|-----------------------------|----|

|                                 |    |
|---------------------------------|----|
| - Starting                      | 34 |
| - Recharging                    | 35 |
| - Electronic injection/ignition | 36 |

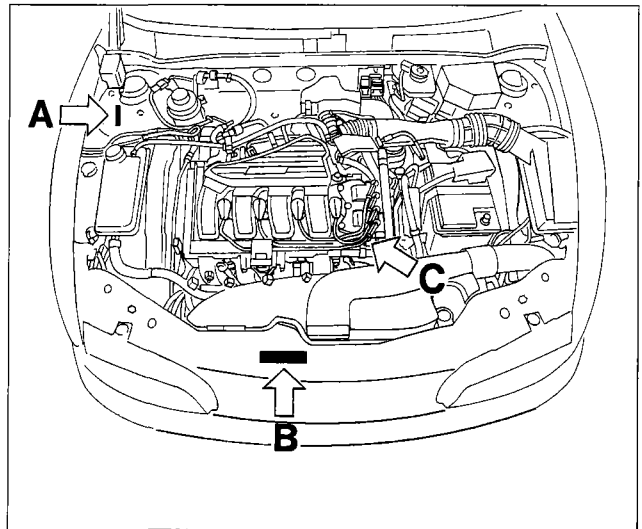
|  | CHASSIS   | ENGINE   | VERSION     | 3<br>Door | 5<br>Door | GEARBOX |
|--|-----------|----------|-------------|-----------|-----------|---------|
|  |           |          |             |           |           |         |
|  | ZFA182000 | 188A5000 | 182AT1AA 25 | ●         |           | ●       |
|  |           |          | 182BT1AA 26 |           | ●         | ●       |
|  |           | 182B6000 | 182AU1AA 27 | ●         |           | ●       |
|  |           |          | 182BU1AA 28 |           | ●         | ●       |
|  |           | 182B9000 | 182AV1AA 29 | ●         |           | ●       |
|  |           |          | 182BV1AA 30 |           | ●         | ●       |

**NOTE** *This section only deals with the 2000 range CEE F3 versions.  
For subjects not dealt with, refer to the Bravo-Brava Manual print n° 506.670 and subsequent updates.*

### 00.0



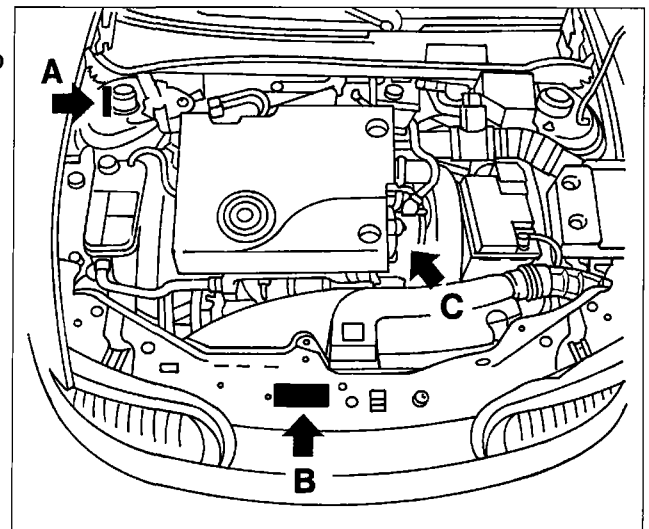
4A02HA03



4F002PA01

**A** Vehicle type identification code and chassis number

**C** Engine type and number.



4A02HA02

**B** V.I.N. Plate  
(EEC regulations)





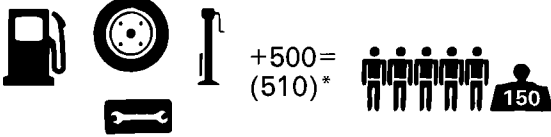



|             |                                   |                   |
|-------------|-----------------------------------|-------------------|
| <b>FIAT</b> | A                                 |                   |
|             | B                                 |                   |
|             | C                                 | D                 |
|             | E                                 | kg                |
|             | F                                 | kg                |
|             | 1- G                              | kg                |
|             | 2- H                              | kg                |
|             | N                                 | MOTORE - ENGINE I |
|             | VERSIONE - VERSION L              |                   |
|             | N° PER RICAMBI<br>N° FOR SPARES M |                   |

40002A02

- A. Manufacturer's name
- B. Type approval number
- C. Vehicle type identification code
- D. Chassis manufacture number
- E. Maximum authorized weight of the vehicle fully laden
- F. Maximum authorized weight of vehicle fully laden plus trailer
- G. Maximum authorized weight on first axle (front)
- H. Maximum authorized weight on second axle (rear)
- I. Engine type
- L. Bodywork version code
- M. Spares number
- N. Correct value of smoke absorption coefficient (for Diesel engines only)

### WEIGHTS

(values expressed in kg)













|  |   | ENGINE TYPE            |  16v |  16v |  JTD |
|--|---|------------------------|--|---|---|
|                   | 3 door  |                        | 1010   | 1050  | 1170  |
|  | 5 door  |                        | 1040   | 1090  | 1195  |
| <br>+500 = (510)* | 3 door  |                        | 1510   | 1550  | 1680  |
|  | 5 door  |                        | 1570   | 1630  | 1735  |
| Maximum permitted loads on the axles (■)   |    | 3 door                 | 850  | 850   | 920   |
|  |   | 5 door                 | 850  | 850   | 920   |
|  |    | 3 door                 | 850  | 850   | 920   |
|  |   | 5 door                 | 850  | 850   | 920   |
| Maximum permissible load on the roof   |   |                        | 80   | 80  | 80  |
| Load on the tow hook ball (trailer with braking system)  | Idle  |                        | –  | –   | –   |
|  | Maximum   |                        | 70   | 70  | 70  |
| Towable loads  |  | Without braking system | 400  | 400   | 400   |
|  |   | With braking system    | 1000   | 1100  | 1300  |

(<) Loads which should never be exceeded

(\*) For 5 door version (Brava)

**NOTE FOR VERSIONS WITH ACCESSORIES:** If special equipment is fitted (non standard air conditioning, trailer towing device, etc.), the weight when empty will increase and therefore the payload may decrease in relation to the maximum permitted loads.

### 00.0

| ENGINE TYPE  |   |  16v |  16v |  JTD |
|--|---|--|---|---|
| Speed km/h (average load)<br>   |  | 42   | 52  | 36  |
|  |  | 76   | 90  | 63  |
|  |  | 121<br>(110)*  | 132   | 97  |
|  |  | 167<br>(145)*  | 175   | 136   |
|  |  | 170  | 184<br>(180)*   | 184<br>(182)*   |
|  |  | 43   | 53  | 36  |
|  Maximum climable gradient fully laden<br>%                                | 37  |  |   |   |
| Fuel consumption<br>in accordance with 1999/100/CE<br>(litres/100 km)<br> | Urban cycle   | 9.4<br>9.5*  | 10.3<br>10.4*   | 7.2<br>7.3*   |
|  | Non urban cycle   | 5.3<br>5.4*  | 5.8<br>5.9*   | 4.4<br>4.5*   |
|  | Combined cycle  | 6.8<br>6.9*  | 7.5<br>7.6*   | 5.4<br>5.5*   |
| CO <sub>2</sub> exhaust emissions (g/km)   |   | 162<br>164*  | 177<br>179*   | 143<br>146*   |





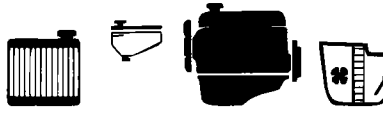







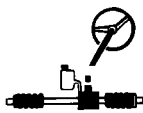
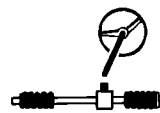

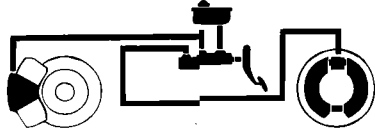


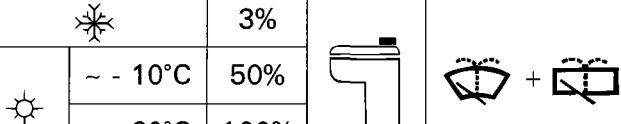


The fuel consumption figures in accordance with directive 1999/100/CE have been defined during the course of homologation tests which include:

- an urban cycle which includes a cold start followed by a simulated urban cycle.
- a non urban cycle which includes frequent acceleration in all gears simulating normal out of town usage of the vehicle, the speed should vary between 0 and 120 km/h.
- the average combined consumption includes 37% of the urban cycle and 63% of the non-urban cycle.

The type of route, traffic conditions, driving style, weather conditions, trim level/equipment/accessories, presence of special equipment and the state of the vehicle in general can lead to different fuel consumption figures from those established using the above mentioned procedures.

The CO<sub>2</sub> exhaust emissions (in g/km) are measured during the average combined cycle.

(\*) 5 Door version (Brava)

| Description   | Parts  | Quantity   |  |                    |
|---|--|--|--|--------------------|
|   |  | dm <sup>3</sup> (l)  | (kg)                                   |                    |
|  Petrol ≥ O.N. 95<br>Unleaded<br><br>Diesel  |   | 1242 16v   | 58                                     | –                  |
|   |  | 1596 16v   | 58                                     | –                  |
|   |  | 1910 JTD   | 60                                     | –                  |
|  50%<br>+<br>(▲)<br><br>  |  Total capacity of<br>of cooling system  | 1242 16v   | 6.0<br>(5.6) (■)                       | –                  |
|   |  | 1596 16v   | 7.0<br>(6.7) (■)                       | –                  |
|   |  | 1910 JTD   | 6.3<br>(6.5) (■)                       | –                  |
| <b>Petrol engines:</b><br><br>SELENIA 20K<br>(SAE 10 W/40) (*)<br><br> <b>Diesel Engines</b><br><br>SELENIA<br>Turbo Diesel<br>(SAE 10 W/40) (**) | Total capacity    | 1242 16v   | 3.1                                    | 2.75               |
|   |  | 1596 16v   | 4                                      | 3.5                |
|   |  | 1910 JTD   | 4.8                                    | 4.23               |
|  TUTELA CAR<br>ZC 75<br>SYNTH                                 |    | 1242 16v   | 2.8<br>(2.5) (●)                       | 2.5<br>(2.25) (●)  |
|   |  | 1596 16v   | 3.5<br>(3.4) (●)                       | 3.1<br>(3.0) (●)   |
|   |  | 1910 JTD   | 4.3<br>(4) (●)                         | 3.75<br>(3.55) (●) |
|  a = TUTELA<br>GI/A<br><br> b = K 854                         | a  b  | a  | –                                      | 1.2                |
|   |  | b  | –                                      | 0.8                |
|   |  |  |  |                    |
|  TUTELA TOP 4  |  Total capacity   | without ABS  | 0.40                                   | –                  |
|   |  | with ABS   | 0.45                                   | –                  |
|  +    |    |  3%                     | 5<br>(6.4 with<br>headlamp<br>washers) | –                  |
|   |  |  ~ - 10°C           50% |  |                    |
|   |  | ~ - 20°C           100%  |  |                    |

(\*) For temperatures below -20°C the use of SELENIA PERFORMER SAE 5W-30 is recommended

(\*\*) For temperatures below -15°C the use of SELENIA WR DIESEL SAE 5W-40 is recommended

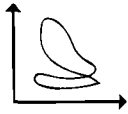

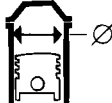
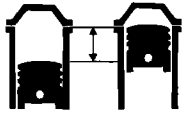
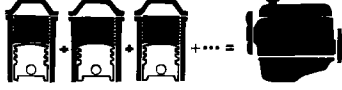
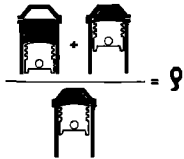

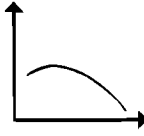
(■) For versions with air conditioning

(●) Engine sump only

(▲) Distilled water

**00.0**

|                               |  |   |
|-------------------------------|--|---|
| <b>SELENIA 20K</b>            | SAE 10W-40 synthetic multigrade engine oil.<br>Exceeds specifications ACEA A3-96/CCMC G5 and API SJ. |   |
| <b>SELENIA PERFORMER</b>      | SAE 5W-30 synthetic multigrade engine oil.<br>Exceeds specifications ACEA A1 and API SJ.             | Temperatures below - 20°C                                     |
| <b>SELENIA TURBO DIESEL</b>   | SAE 10W-40 synthetic multigrade engine oil.<br>Exceeds specifications ACEA B3 and API CD.            |   |
| <b>SELENIA WR DIESEL</b>      | SAE 5W-40 synthetic multigrade engine oil.<br>Exceeds specifications ACEA B3 and API CF.             | Temperatures below - 15°C                                     |
| <b>TUTELA CAR ZC 75 SYNTH</b> | SAE 75W-80EP oil. Satisfies standards MIL-L-2105 D LEV and API GL5.                                  | Manual gearboxes and differentials.                           |
| <b>TUTELA GI/A</b>            | ATF DEXRON II D LEV type oil, SAE 10W for hydraulic power assisted steering.                         | Hydraulic power assisted steering                             |
| <b>TUTELA MRM2</b>            | Water repellent, lithium soap based grease containing molybdenum disulphide, consistency NLGI = 2    | Constant velocity joints                                      |
| <b>TUTELA TOP 4</b>           | Synthetic fluid, NHTSA n° 116 DOT 4 ISO 4925, SAE J-1703 and CUNA NC 956-01.                         | Hydraulic brakes and hydraulically operated clutches          |
| <b>DP1</b>                    | Mixture of alcohol, water and surface active agents CUNA NC 956-11                                   | To be used undiluted or diluted in wind-screen washer systems |
| <b>Paraflu<sup>11</sup></b>   | Anti-freeze for cooling systems with mono-ethylene glycol base CUNA NC 956-16                        | Cooling circuits. Percentage to be used 50% up to -35°C       |
| <b>DIESEL MIX</b>             | Additive for diesel fuel with protective action for Diesel engines                                   | To be mixed with diesel fuel (25 cc per 10 litres)            |

| SPECIFICATIONS  |                       | 1242 16v                                 |             | 1596 16v    |               |
|---|-----------------------|--|-------------|-------------|---------------|
|   |                       | OTTO 4 stroke                            |             |             |               |
|    | Cycle                 | OTTO 4 stroke                            |             |             |               |
|   | Timing                | twin overhead camshafts                  |             |             |               |
|   | Type of fuel system   | Integrated electronic injection/ignition |             |             |               |
|   |                       | BOSCH ME 7.3H4                           |             |             | Weber-Marelli |
|    | No. of cylinders      | 4  |             | 4           |               |
|    | Cylinder liner (bore) | mm                                       | 70.80       | 80.50       |               |
|   | Stroke                | mm                                       | 78.86       | 78.40       |               |
|  | Capacity              | cm <sup>3</sup>                          | 1242        | 1596        |               |
|  | Compression ratio     |  | 10.6±0.2    | 10.5±0.15   |               |
|  | Max torque CEE        | kW (bhp)                                 | 59 (80)     | 76 (103)    |               |
|   |                       | rpm                                      | 5000        | 5750        |               |
|  | Max torque CEE        | daNm (kgm)                               | 11.4 (11.6) | 14.5 (14.8) |               |
|   |                       | rpm                                      | 4000        | 4000        |               |



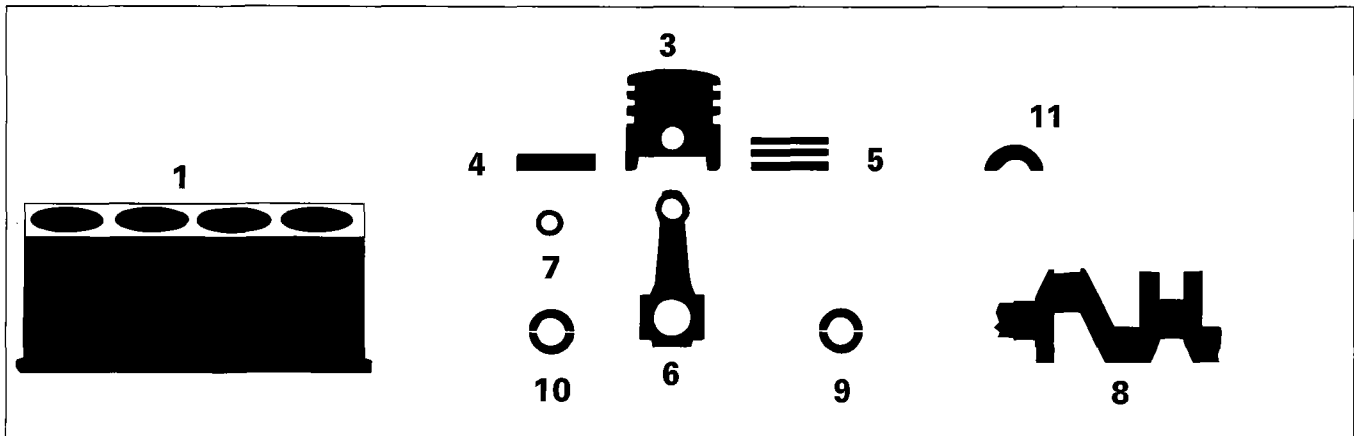
# Technical Data

**Bravo-Brava**

Engine: cylinder block/crankcase, crankshaft and associated

2000 range


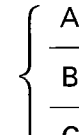
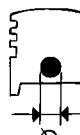
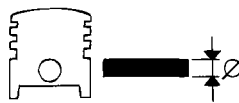



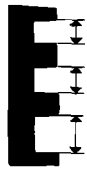
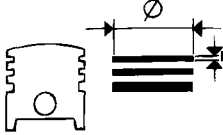
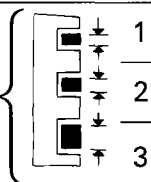


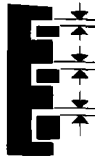



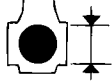
**00.10**



**DESCRIPTION**

Values in mm

|   |   |               |               |               |               |               |               |               |               |               |  |  |
|---|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--|--|
| <p>Main journals</p>                        | L   | 19.140-19.200 | -             |               |               |               |               |               |               |               |  |  |
|   | L <sub>1</sub>  | -             | 22.140-22.200 |               |               |               |               |               |               |               |  |  |
|   | $\varnothing$ { <table border="1"> <tr> <td>1</td> <td>51.705-51.709</td> <td rowspan="3">54.507-54.520</td> </tr> <tr> <td>2</td> <td>51.709-51.713</td> </tr> <tr> <td>3</td> <td>51.713-51.717</td> </tr> </table>                                   | 1             | 51.705-51.709 | 54.507-54.520 | 2             | 51.709-51.713 | 3             | 51.713-51.717 |               |               |  |  |
|   |   | 1             | 51.705-51.709 |               | 54.507-54.520 |               |               |               |               |               |  |  |
| 2   |   | 51.709-51.713 |               |               |               |               |               |               |               |               |  |  |
| 3   | 51.713-51.717   |               |               |               |               |               |               |               |               |               |  |  |
|   |   |               |               |               |               |               |               |               |               |               |  |  |
| <p>Auxiliary shaft bush housings</p>        | $\varnothing_1$   | -             | 38.700-38.730 |               |               |               |               |               |               |               |  |  |
|   | $\varnothing_2$   | -             | 35.036-35.066 |               |               |               |               |               |               |               |  |  |
| <p>Cylinder liner/bore</p>                  | A   | 70.800-70.810 | 80.500-80.510 |               |               |               |               |               |               |               |  |  |
|   | B   | 70.810-70.820 | 80.510-80.520 |               |               |               |               |               |               |               |  |  |
|   | C   | 70.820-70.830 | 80.520-80.530 |               |               |               |               |               |               |               |  |  |
| <p>Piston</p>                               | X   | 6             | 9.7           |               |               |               |               |               |               |               |  |  |
|   | $\varnothing$ { <table border="1"> <tr> <td>A</td> <td>70.760-70.770</td> <td>80.452-80.462</td> </tr> <tr> <td>B</td> <td>70.770-70.780</td> <td>80.459-80.471</td> </tr> <tr> <td>C</td> <td>70.780-70.790</td> <td>80.468-80.478</td> </tr> </table> | A             | 70.760-70.770 | 80.452-80.462 | B             | 70.770-70.780 | 80.459-80.471 | C             | 70.780-70.790 | 80.468-80.478 |  |  |
|   |   | A             | 70.760-70.770 | 80.452-80.462 |               |               |               |               |               |               |  |  |
|   |   | B             | 70.770-70.780 | 80.459-80.471 |               |               |               |               |               |               |  |  |
| C   | 70.780-70.790   | 80.468-80.478 |               |               |               |               |               |               |               |               |  |  |
|   |   |               |               |               |               |               |               |               |               |               |  |  |
|   | $\varnothing$ <b>FLAT</b> >   |               | 0.4           |               |               |               |               |               |               |               |  |  |
| <p>Difference in weight between pistons</p> |   |               | ± 5 g         |               |               |               |               |               |               |               |  |  |

|             |   | 1242 16v  |               | 1596 16v      |             |
|-------------|---|---|---------------|---------------|-------------|
| DESCRIPTION |   | Values in mm  |               |               |             |
| 3-1         |  Piston<br>Cylinder liner                              | $\varnothing$    | 0.030-0.050   | A             | 0.038-0.058 |
|             |   |   |               | B             | 0.039-0.061 |
|             |   |   |               | C             | 0.042-0.062 |
| 3           |  Gudgeon pin housing                                   | $\varnothing$   | 17.982-17.986 | 20.997-21.001 |             |
| 4           |  Gudgeon pin   | $\varnothing$   | 17.970-17.974 | 20.990-20.995 |             |
|             |   | $\varnothing$    | 0.2           |               |             |
| 4-3         |  Gudgeon pin – Housing                                |   | 0.008-0.016   | 0.002-0.011   |             |
| 3           |  Piston ring grooves                                 |                | 1             | 1.190-1.230   | 1.225-1.245 |
|             |   |   | 2             | 1.190-1.230   | 1.210-1.230 |
|             |   |   | 3             | 2.490-2.530   | 2.010-2.030 |
| 5           |  Piston rings  | $L$            | 1             | 1.170-1.190   | 1.175-1.190 |
|             |   |   | 2             | 1.175-1.190   | 1.175-1.190 |
|             |   |   | 3             | 2.475-2.490   | 1.975-1.990 |
|             |   | $\varnothing$  | 0.2-0.4-0.6   |               |             |
| 5-3         |  Piston rings<br>Piston ring grooves                 |                | 1             | 0-0.06        | 0.035-0.070 |
|             |   |   | 2             | 0-0.055       | 0.020-0.055 |
|             |   |   | 3             | 0-0.055       | 0.020-0.055 |
| 5-1         |  Opening at end of grooves<br>in cylinder liner      |                | 1             | 0.200-0.400   | 0.150-0.350 |
|             |   |   | 2             | 0.250-0.450   | 0.200-0.400 |
|             |   |   | 3             | 0.200-0.450   | 0.200-0.450 |
| 6           |  $\varnothing_1$<br>Small end bush or<br>pin housing | $\varnothing_1$   | 17.939-17.956 | 23.939-23.972 |             |
|             |  $\varnothing_2$<br>Big end bearing<br>pins          | $\varnothing_2$   | 45.128-45.138 | 48.630-48.642 |             |

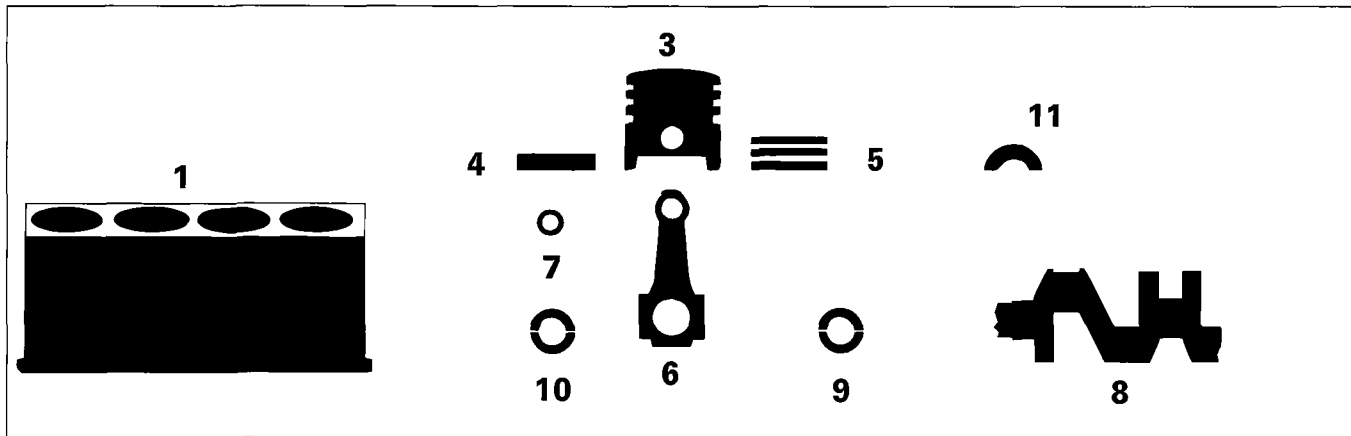
# Technical Data



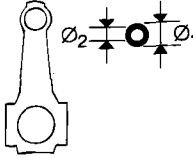


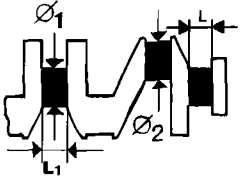
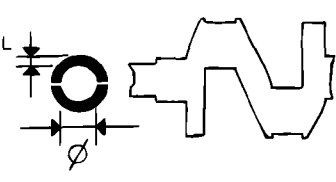

**Bravo-Brava**

Engine: cylinder block/crankcase, crankshaft and associated

2000 range

00.10



|                |  |   |   |               |               |
|----------------|--|---|---|---------------|---------------|
| DESCRIPTION    |  | Values in mm  |   |               |               |
| 7              | <br>Small end bush                   | $\varnothing_1$   | -   | 24.016-24.041 |               |
|                |  | $\varnothing_2$   | -   | 21.004-21.009 |               |
| 4-7            | <br>Gudgeon pin – Small end bush    |   | -   | 0.009-0.019   |               |
| 7-6            | <br>Small end bush Bush housing     |   | -   | 0.044-0.102   |               |
| 8              | <br>Main journals<br><br>Crank pins | $\varnothing_1$   | 1   | 47.982-47.988 | 50.794-50.800 |
|                |  |   | 2   | 47.988-47.994 | 50.787-50.793 |
|                |  |   | 3   | 47.994-48.000 | 50.780-50.786 |
|                |  | $\varnothing_2$   | A   | 41.990-42.008 | 45.518-45.523 |
|                |  |   | B   | -             | 45.510-45.517 |
|                |  |   | C   | -             | 45.503-45.509 |
|                |  |   | L   | -             | 26.975-27.025 |
| L <sub>1</sub> | 23.975 - 24.025  | -   |   |               |               |
| 9              | <br>Crankshaft bearings             | L   | 1   | 1.836-1.840   | 1.840-1.844   |
|                |  |   | 2   | 1.843-1.847   | 1.844-1.848   |
|                |  |   | 3   | 1.848-1.852   | 1.850-1.854   |
|                |  |   |  |               | 0.254-0.508   |


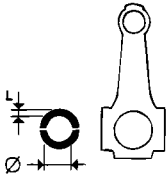


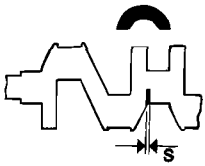


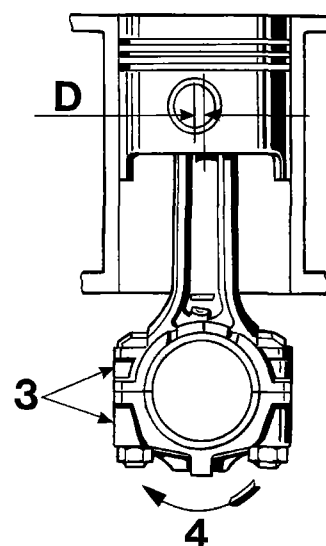
|             |   | 1242 8v   | 1596 16v    |
|-------------|---|---|-------------|
| DESCRIPTION |   | Values in mm  |             |
| 9-8         |  Crankshaft bearings - Main journals | 0.025-0.040   | 0.019-0.046 |
| 10          | Big end bearings<br>                 | L<br>1.544-1.548  | 1.537-1.541 |
|             |   |   | 1.540-1.544 |
|             |   |   | 1.544-1.549 |
|             |                                      | 0.254 - 0.508   |             |
| 10-8        |  Crankshaft bearings - Main journals | A   | 0.024-0.060 |
|             |   | B   | -           |
|             |   | C   | -           |
| 11          |  Thrust washers                    | S   | 2.310-2.360 |
|             |   |  | 0.127       |
| 11-8        |  Crankshaft endfloat               | 0.055-0.265   | 0.055-0.265 |

Diagram showing fitting of connecting rod-piston assembly and direction of rotation in engine

- Area where number of cylinder liner/bore to which connecting rod belongs is stamped
- Direction of rotation of engine  
(The arrow shows the direction of rotation of the engine as seen from the timing side)

Value (in mm) of offset between connecting rod axis and piston axis

$$D=0.85-1.15 \text{ (for 1242 16v)}$$



4A13HA01

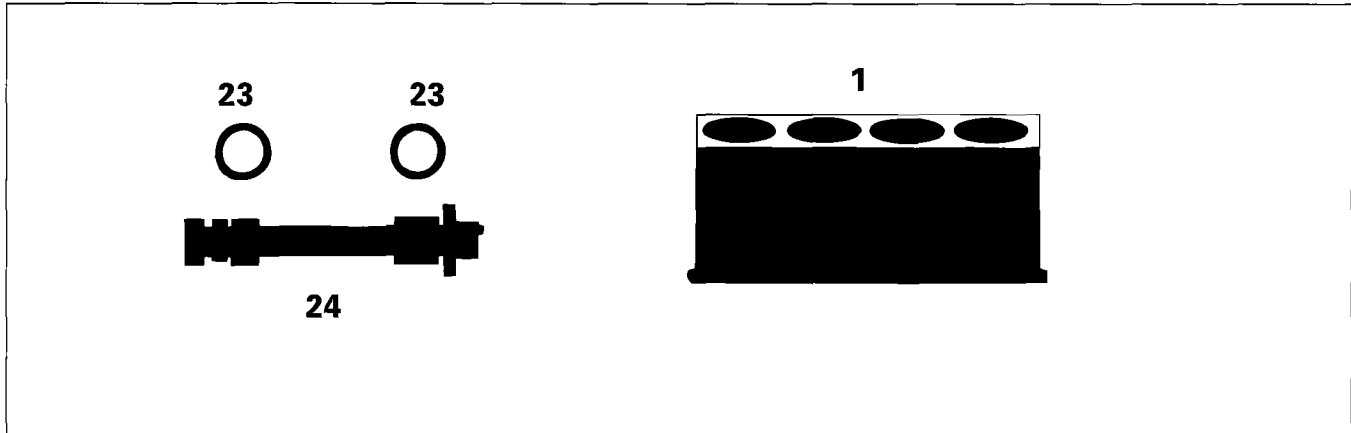
# Technical Data

Engine: auxiliary shaft

**Bravo-Brava**

2000 range

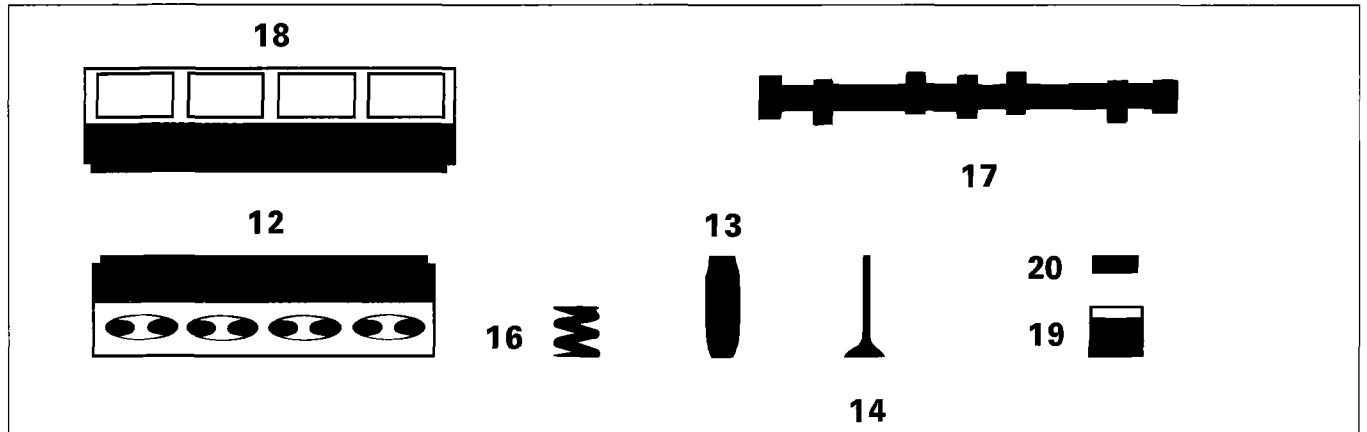
00.10



**DESCRIPTION**

Values in mm

|   |                 |                               |
|---|-----------------|-------------------------------|
| <b>23</b><br><br>Bushes for auxiliary shaft | $\varnothing_1$ | 35.664-35.684                 |
|   | $\varnothing_2$ | 32.000-32.020                 |
| <b>24</b><br><br>Auxiliary shaft bearings   | $\varnothing_1$ | 35.593-35.618                 |
|   | $\varnothing_2$ | 31.940-31.960                 |
| <b>23-1</b> Shaft bushes<br>Crankcase seats |                 | should always be interference |
| <b>24-23</b> Shaft bearings<br>Bushes       | $\varnothing_1$ | 0.046-0.091                   |
|   | $\varnothing_2$ | 0.040-0.080                   |



|         |          |
|---------|----------|
| 1242 8v | 1596 16v |
|---------|----------|

**DESCRIPTION**

Values in mm

|               |   |               |             |                    |                   |
|---------------|---|---------------|-------------|--------------------|-------------------|
|               | Valve guide bore in cylinder head             | $\emptyset$   | 9.959-9.989 | 12.950-12.977      |                   |
| <b>12</b><br> | Valve seat                                    | $\alpha$      |             | $45^\circ \pm 20'$ | $45^\circ \pm 5'$ |
|               |   |               |             | $45^\circ \pm 20'$ | $45^\circ \pm 5'$ |
|               | Valve seat                                    | $L$           |             | 1,5                | about 2           |
|               |   |               |             | 1,5                | about 2           |
|               | Volume of combustion chamber in cylinder head | $\text{cm}^3$ | 12.28       | 33.3 (●)           |                   |
| <b>13</b><br> | Valve guide                                   | $\emptyset_1$ |             | 6.022-6.040        | 7.022-7.040       |
|               |   | $\emptyset_2$ |             | 10.010-10.030      | 13.010-13.030     |
|               |   |               |             | 10.010-10.030      | 13.010-13.030     |
| $\emptyset_2$ |   | -             | -           | 0.05-0.10-0.25     |                   |
| <b>13-12</b>  | Valve guide Seat in cylinder head             | <br>          | 0.049-0.051 | 0.033-0.080        |                   |

(●) Indicative value

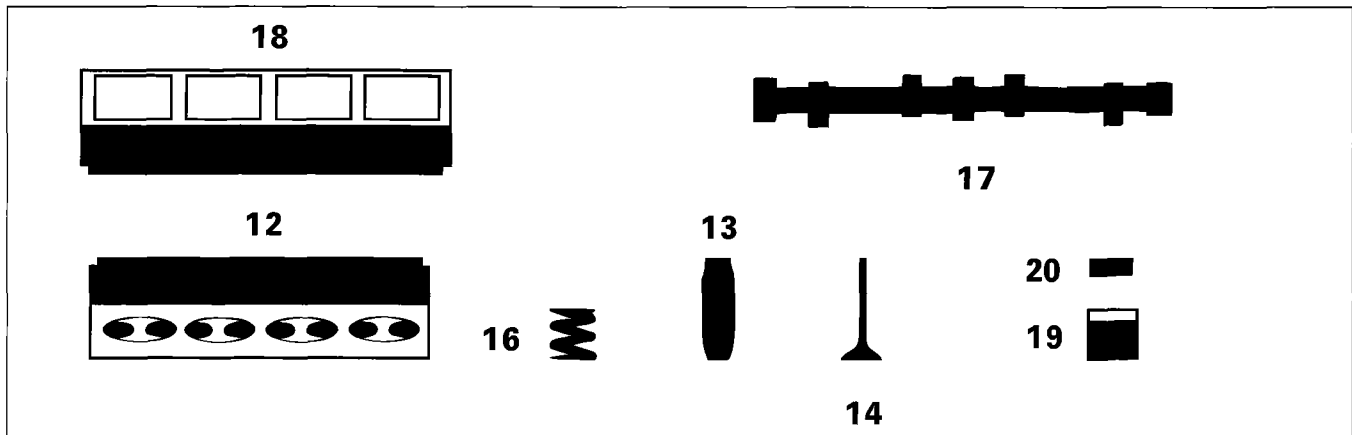
# Technical Data

**Bravo-Brava**

Engine: cylinder head and valve gear timing components

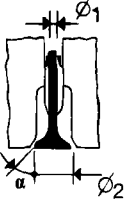





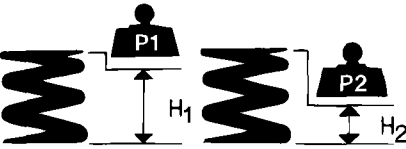
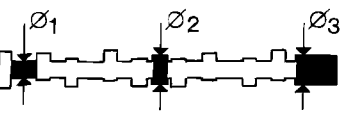



2000 range







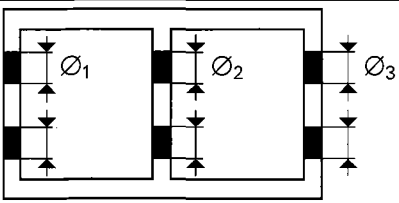
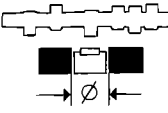

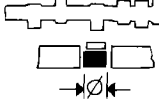

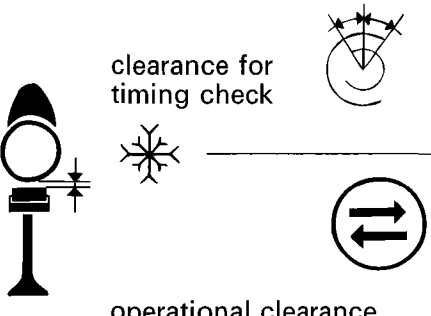

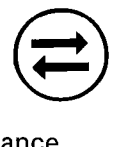
00.10



|   |   |
|---|---|
|  |  |
|---|---|

**DESCRIPTION**

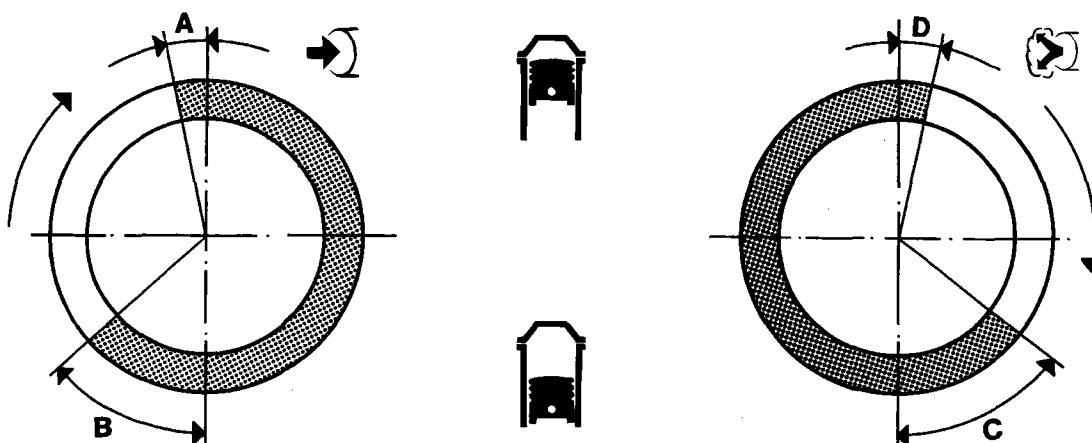
|   |  | Values in mm |                 |               |
|---|--|--------------|-----------------|---------------|
| <b>14</b><br><br>Valves                   |    | $\phi_1$     | 5.974-5.992     | 6.982-7.000   |
|   |  | $\phi_2$     | 22.250-22.550   | 30.200-30.500 |
|   |  | $\alpha$     | -               | 45° 30' ± 5'  |
|   |   | $\phi_1$     | 5.974-5.992     | 6.974-6.992   |
|   |  | $\phi_2$     | 22.250-22.550   | 29.750-30.050 |
|   |  | $\alpha$     | -               | 45° 30' ± 5'  |
| <b>14-13</b><br><br>Valve<br>Valve guide | <br> |              | 0.030-0.066     | 0.022-0.058   |
|   |  |              |                 | 0.030-0.066   |
| <b>16</b><br><br>Valve spring            | P <sub>1</sub>   | 22.5 daN     | 25.00-28.00 daN |               |
|   | H <sub>1</sub>   | 31           | 34.6            |               |
|   | P <sub>2</sub>   | 42.3 daN     | 59.2-65.0 daN   |               |
|   | H <sub>2</sub>   | 23           | 26              |               |
| <b>17a</b><br>                           |   | $\phi_1$     | 35.000-35.015   | 29.944-29.960 |
|   |  | $\phi_2$     | 48.000-48.015   | 52.400-52.415 |
|   |  | $\phi_3$     | 49.000 - 49.015 | 52.800-52.815 |
| <b>17b</b><br><br>Camshaft bearings      |   | $\phi_4$     | -               | 53.200-53.215 |
|   |  | $\phi_5$     | -               | 53.600-53.615 |

|             |  |  8v |  16v |               |
|-------------|--|---|---|---------------|
| DESCRIPTION |  | Values in mm  |   |               |
| 17          |  Cam lift   |      | 7.5   | 8.5           |
|             |  |      | 7.5   | 8             |
| 12<br>17a   |  Camshaft bearings<br>Cylinder head supports                      | Ø <sub>1</sub>  | 0.030-0.070   | -             |
|             |  | Ø <sub>2</sub>  | 0.030-0.070   |               |
|             |  | Ø <sub>3</sub>  | 0.030-0.070   |               |
| 18          |   | Ø <sub>1</sub>  | 35.045-35.070   | 29.989-30.014 |
|             |  | Ø <sub>2</sub>  | 48.045-48.070   | 52.445-52.470 |
|             |  | Ø <sub>3</sub>  | 49.045-49.070   | 52.845-52.870 |
|             |  | Ø <sub>4</sub>  | -   | 53.245-53.270 |
|             |  | Ø <sub>5</sub>  | -   | 53.645-53.670 |
|             |  Tappet housings  | Ø   | 28.400-28.421   | 33.000-33.025 |
| 17-18       |  Camshaft bearings<br>Camshaft housing supports                 |   | -   | 0.030-0.070   |
| 19          |  Tappet   | Ø   | 28.354-28.370   | 32.959-32.975 |
| 19-18       |  Tappet - Housing in<br>camshaft housing                        |   | 0.046-0.051   | 0.025-0.066   |
| 17-20       |  <p>clearance for timing check</p> <p>operational clearance</p> |    | 0.45  |               |
|             |  |    |   |               |



### 00.10




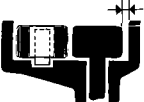
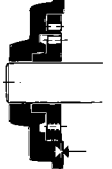





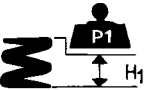
#### TIMING DIAGRAMS



4A023A01

#### TIMING ANGLES

|          |         |  | 16v              | 16v |
|----------|---------|--|------------------|-----|
| <b>A</b> | Inlet   |  | opens before TDC | 0°  |
| <b>B</b> |         |  | closes after BDC | 32° |
| <b>C</b> | Exhaust |  | opens before BDC | 32° |
| <b>D</b> |         |  | closes after TDC | 0°  |

|   |                |  16v |  16v |
|---|----------------|--|---|
| <b>LUBRICATION</b>  |                | Values in mm   |   |
| Engine lubrication circuit  |                | forced circulation, via lobe geared pump with cartridge filter in series               | forced circulation, via geared pump with cartridge oil filter in series                 |
| Oil pump  |                | lobe gears   | geared, located in the crankshaft front cover   |
| Pump operation  |                | by crankshaft  | by chain driven by crankshaft   |
| Oil pressure relief valve   |                | incorporated in crankshaft front cover   |   |
| Full flow filter  |                | –  | cartridge   |
| Insufficient oil pressure sender unit   |                | –  | electrical  |
|  between pump casing housing and driven gear  |                | 0.100 - 0.210  | –   |
|  between edge of gears and pump casing   |                | –  | 0.110 - 0.180   |
|  between the upper edge of the gears and the pump cover  |                | 0.025-0.070  | –   |
|  between upper edge of gears and pump casing   |                | –  | 0.040 - 0.106   |
| Full flow filter  |                | cartridge  |   |
| Insufficient oil pressure sender unit   |                | electrical   |   |
|  Between drive gear and driven gear  |                | 0.030  |   |
|    when idling |                | >0.7 bar   | >1 bar  |
| Operating pressure at a temperature of 100°C  | at 4000 rpm    | >4 bar   | >4.5 bar  |
|  P <sub>1</sub>  |                | 11.73 - 12.51 daN  | 9.0-9.8 daN   |
| Oil pressure relief valve spring  | H <sub>1</sub> | 35   | 31  |






# Technical Data

Engine: cooling system – fuel system

**Bravo-Brava**

2000 range


**00.10**

| COOLING SYSTEM  |   |  16v |  16v |
|---|---|--|---|
| Cooling circuit   | coolant circulation via centrifugal pump, radiator, expansion tank and fan operated by control unit |  |   |
| Water pump operated                                       | by belt   |  |   |
| Engagement of fan controlled by control unit              |                    | 1st stage  | 90° + 94°C  |
|   |   | 2nd stage  | 95° + 99°C (●)  |
|   |                    | 1st stage  | 85° + 89°C  |
|   |   | 2nd stage  | 90° + 94°C (●)  |
| Engine coolant thermostat                                 | opens   | 81° + 85°C   |   |
|   | max opening   | 103°C  | 99°-103°C   |
|   | valve travel  | 9.5 mm   |   |
| Fitting clearance between impeller vanes and pump casing  |                  | –  | 0.3-1.1 mm  |
| Pressure for checking system water tightness              | 0.98 bar  |  |   |
| Pressure for checking exhaust valve on expansion tank cap | 0.98 bar  |  |   |

(●) For versions with air conditioning

## FUEL SYSTEM

|                                 |  |   |
|---------------------------------|--|---|
| Make                            | Integrated electronic injection/ignition<br>MPI-BOSCH ME 7.3H4 | Integrated electronic injection/ignition<br>MPI IAW Weber-Marelli |
| Electric                        | electrical immersed in the tank                                |   |
| Output                          | ≥ 110 l/h  | ≥ 120 l/h   |
| Fuel pressure regulator setting | 3 bar  |   |

| ELECTRONIC INJECTION SYSTEM COMPONENTS                           |  16v |  16v |
|--|--|---|
|  | Injection/ignition system electronic control unit                                      | Bosch ME7.3H4   |
| Throttle case  | –  | M. Marelli 46 SXF2  |
| Idle adjustment actuator   | DV-E5  | M. Marelli IB 02  |
| Absolute pressure sensor   | Bosch 0.261.230.030  | M. Marelli TPRT 05  |
| Injector   | Bosch 0.280.155.816  | M. Marelli IWP 109  |
| Fuel pump  | MSS 071  | Marwall ESS 291   |
| Fuel pressure regulator  | RPM 40   | Marwall RPM 84  |
| Engine coolant temperature sensor                                | SYLEA 402.386.01   | SYLEA 402.386.01  |
| Lambda sensor  | Bosch LSF 4.2 (*) (●)  | NTK OZA 534 (*)   |
|  |  | NTK OZA 532 (●)   |
| Fuel vapour solenoid valve                                       | –  | M. Marelli EC2  |
| Detonation sensor  | –  | NGK KNE 11  |
| Timing sensor  | Bosch PG 3.5   | SYLEA SFA 200   |
| Top Dead Centre and rpm sensor                                   | Bosch DG6  | M. Marelli CVM 02   |
| Throttle valve position sensor                                   | –  | M. Marelli IPF 2C   |
| Fuel filter  | FI 03  | Marwall FA 5325 IN  |
| Ignition coil  | Bosch 0.221.503.407  | Champion BAE 920A   |
| Dual relay for electric pump and injection-ignition control unit | NDRS 240103  | –   |

(\*) Upstream of the catalyzer

(●) Downstream of the catalyzer

# Technical Data

# Bravo-Brava

## Engine

## 2000 range

### 00.10



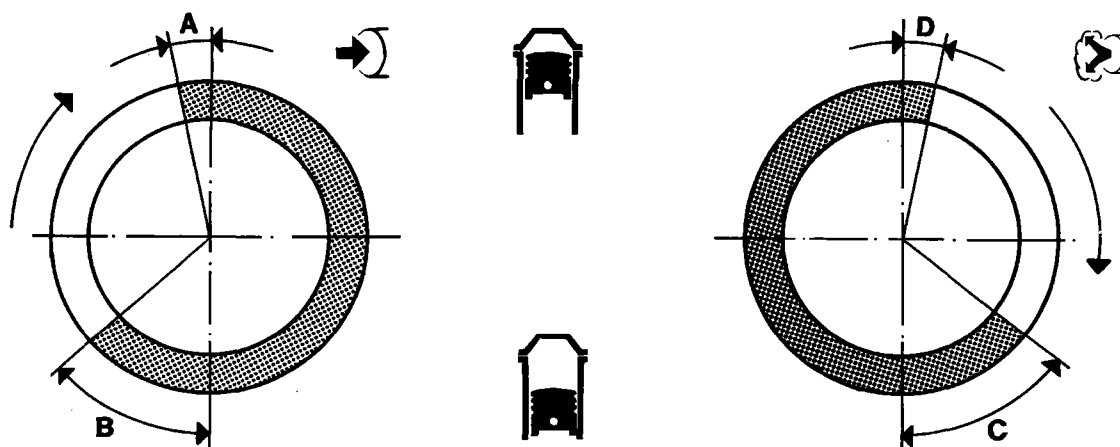
#### SPECIFICATIONS

|  |                                 |                     |   |
|--|---------------------------------|---------------------|---|
|  |                                 | Cycle               | DIESEL 4 stroke                               |
|  |                                 | Timing              | Single overhead camshaft                      |
|  |                                 | Type of fuel system | Direct injection – Turbocharger + intercooler |
|  | No. of cylinders                |                     | 4   |
|  | Cylinder liner (bore)           | mm                  | 82  |
|  | Stroke                          | mm                  | 90.4  |
|  | Capacity                        | cm <sup>3</sup>     | 1910  |
|  | Compression ratio               |                     | 18.45±0.45                                    |
|  | Total combustion chamber volume | cm <sup>3</sup>     | 27.35   |
|  | Max torque CEE                  | kW (bhp)            | 74 (100)                                      |
|  |                                 | rpm                 | 4000  |
|  | Max torque CEE                  | daNm (kgm)          | 20.0 (20.4)                                   |
|  |                                 | rpm                 | 1500  |

CYLINDER HEAD GASKET 



| Average-maximum piston projection (mm) | Cylinder head gasket size (mm) | N° of cylinder head gasket references |
|--|--------------------------------|---------------------------------------|
| 0.014-0.104                            | 0.770-0.870                    | 0                                     |
| 0.105-0.205                            | 0.870-0.970                    | 1                                     |
| 0.206-0.294                            | 0.970-1.070                    | 2                                     |

### TIMING DIAGRAMS



4A023A01



|          |         |   |                     |     |
|----------|---------|---|---------------------|-----|
| <b>A</b> | Inlet   |  | opens before T.D.C. | 0°  |
| <b>B</b> |         |   | closes after B.D.C. | 32° |
| <b>C</b> | Exhaust |  | opens before B.D.C. | 40° |
| <b>D</b> |         |   | closes after T.D.C. | -2° |

# Technical Data


Engine: supercharging - fuel system


**Bravo-Brava**







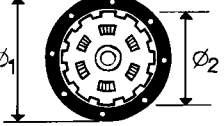
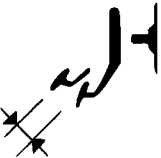
2000 range

## 00.10

**SUPERCHARGING** Turbocharger operated by exhaust gases with waste-gate pressure valve and air/air heat exchanger (intercooler)

| COOLING SYSTEM                 |  |
|--------------------------------|---|
| Turbocharger: type             | Garret GT 14  |
| Maximum supercharging pressure | 1 bar   |

| BOSCH COMMON RAIL ELECTRONIC FUEL SYSTEM COMPONENTS |  |
|---|---|
| Control unit  | Bosch 0.281.010.341   |
| Flow meter  | Bosch 0.281.002.309   |
| Engine coolant temperature sensor                   | SYLEA 402.386.01  |
| Diesel temperature sensor                           | Bosch 0.281.002.209   |
| Rpm sensor  | Bosch 0.281.002.214<br>or<br>Bosch 0.281.002.474                                    |
| Timing sensor                                       | Bosch 0.281.002.213   |
| Turbocharger pressure sensor                        | Bosch 0.281.002.215   |
| Fuel pressure sensor                                | Bosch 0.281.002.405   |
| Injector  | Bosch 0.445.110.068   |
| Pre-heating control unit                            | Bosch 0.281.003.018   |
| Heater plugs  | Bosch 0.250.202.036   |
| E.G.R. solenoid valve                               | Pierburg 7.22946.04   |
| Intake throttle solenoid valve                      | Pierburg 7.28286.00   |
| Waste gate solenoid valve                           | Pierburg 7.28148.00   |
| Fuel pressure regulator                             | Bosch 0.281.002.488   |

|  |   |                                    |  |  |
|--|---|--|---|---|
|  |   | Values in mm   |   |   |
| Make   |   | <br>dry, single plate with bearing |   |   |
| Operating mechanism  |  | <br>Spring                        |   |   |
| Spring loading   | daN   | 400  | 450   | 500   |
| <br>Driven disc   | $\varnothing_1$   | 190  | 200   | 230   |
|  | $\varnothing_2$   | 134  | 137   | 155   |
|  Distance between pedal in end of travel position and rest position |   | 144.5  | 170±10  | 144.5   |
| Clutch release   |   | hydraulic  | mechanical  | hydraulic   |




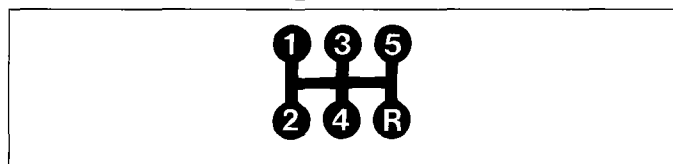
# Technical Data

## Gearbox and differential

**Bravo- Brava**  
2000 range

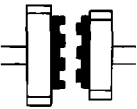


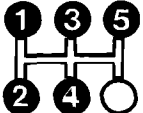




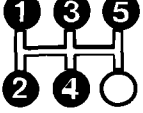







**00.21-27**





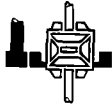







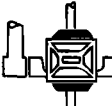





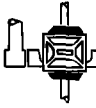
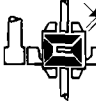



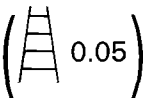
|   |   |   |
|---|---|---|
|  16v |  16v |  JTD |
|---|---|---|



| Make | C.514.5.13 | C.513.5.13 | C.510.5.17 |
|------|------------|------------|------------|
|------|------------|------------|------------|

**GEARBOX**

|  |  |   |       |       |
|--|--|---|-------|-------|
| <br>Synchronizers | spring ring (Porsche type)  | -   |       |       |
|  | baulk ring                  |    |       |       |
| <br>Gears       | straight toothed           |   |       |       |
|  | helical toothed           |  |       |       |
| <br>Gear ratios |                           | 3.909   | 3.909 | 3.909 |
|  |                           | 2.158   | 2.238 | 2.238 |
|  |                           | 1.345   | 1.444 | 1.444 |
|  |                           | 0.974   | 1.029 | 1.029 |
|  |                           | 0.829   | 0.816 | 0.767 |
|  |                           | 3.818   | 3.909 | 3.909 |

| DIFFERENTIAL   |  |  16v |  16v        |  JTD |
|--|--|--|--|---|
|   |  Ratio crown wheel and pinion reduction | 3.867<br>(15/58)   | 3.353<br>(17/57)   | 3.053<br>(19/58)  |
|  Ratio at the wheels                                      |   | 15.116   | 13.107   | 11.934  |
|  |   | 8.345  | 7.504  | 6.833   |
|  |   | 5.201  | 4.842  | 4.408   |
|  |   | 3.766  | 3.450  | 3.141   |
|  |   | 3.206  | 2.736  | 2.342   |
|  |   | 14.764   | 13.107   | 11.934  |
|  Differential internal housing bearing                   |  conical roller bearings             |  |  |   |
|  Adjustment of bearing pre-loading                      |  by shims                             |  |  |   |
|  Thickness of shims                                     |  mm                                   | 0.05   | -  | 1.70 - 2.60   |
|  |  | 0.10   | 2.00 - 3.00  | -   |
|  Interference to obtain exact bearing pre-loading       | mm   | bearings not loaded = 0.12<br>bearings loaded (350 daN) = 0.08                         |  |   |
|  Clearance planet/satellite gears                       | mm   | ≤ 0.10   |  |   |
|  adjustment of clearance between planet/satellite gears |  | No adjustment is carried out   |  by shims |   |
|  Thickness of shims                                     |  mm                                   | -  | 0.80-1.25  |   |




# Technical Data

## Braking system

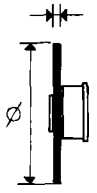


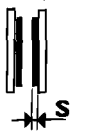



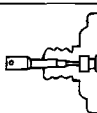
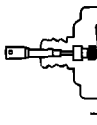
# Bravo-Brava

## 2000 range






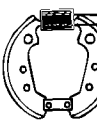

### 00.33

|   |   |   |
|---|---|---|
|  16v |  16v |  JTD |
|---|---|---|




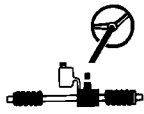
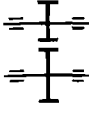


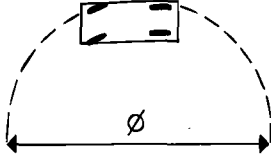
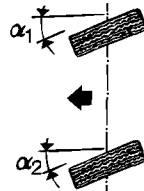
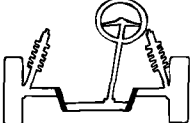

#### FRONT BRAKES

|   |  |  |   | Values in mm                                |               |
|---|--|--|---|---|---------------|
|    | Disc   | S  | Ø   | 257   | 257           |
|   |  | <br> |   | 11.80-12.10                                 | 19.80-20.10   |
|   |  |  |   | 11.10                                       | 18.55         |
|   |  |  |   | 10.20                                       | 18.20         |
|    | Brake pads   | S  |  | 1,5   |               |
|    | Caliper  |  | Ø   | 54  |               |
|    | Master cylinder (pump)   |  | Ø   | 22.225 (7/8")                               | 22.225 (7/8") |
|   | Brake servo  |  |   | Iso-Vac 8" vacuum acting on all four wheels |               |
|  | Distance of hydraulic piston push rod from master cylinder support plate |  | L   | 22.45-22.65                                 |               |

#### REAR BRAKES

|   |                          |   |  |                                    |               |               |
|---|--------------------------|---|--|------------------------------------|---------------|---------------|
|  | Drum                     | Ø | <br> | 203.10-203.40<br>180.00-180.25 (*) | 203.10-203.40 | 203.10-203.40 |
|   |                          |   |  | 180.95                             | 204.10        | 204.10        |
|   |                          |   |  | 181.35                             | 204.70        | 204.70        |
|  | Shoes                    | S |   | 1,5                                |               |               |
|  | Cylinders                |   | Ø  | 22.00                              |               |               |
|  | Load proportioning valve |   |  | acting on the rear wheels          |               |               |
|   | Ratio (reduction)        |   |  | 0.36                               |               |               |

(\*) Version without ABS

|  |  |  16v                                |  16v |  JTD |
|--|--|---|---|---|
| Make   |  | <br>rack and pinion power assisted |   |   |
| <br>Ratio                   | <br>no. of turns lock to lock   | 3   |   |   |
|  | <br>rack travel                 | 142±1.5 mm  |   |   |
| <br>Minimum turning circle | 10.4 m   |   |   |   |
| <br>Steering angle        | outer wheel $\alpha_1$   | 31°30' ±30'   |   |   |
|  | inner wheel $\alpha_2$   | 38°15' ±30'   |   |   |
| <br>Steering column       | <br>with 2 universal joints |   |   |   |







# Technical Data

# Bravo-Brava

## Wheels

## 2000 range

### 00.44

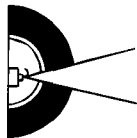
| ENGINE TYPE  | <br>Wheel rim type | <br>Tubeless, radial type tyre | <br>Pressure tyres in bar |            |              |            |     |
|--|---|---|---|------------|--------------|------------|-----|
|  |   |   | Front   |            | Rear         |            |     |
|  |   |   | average load  | heavy load | average load | heavy load |     |
|  1242 16v   | Bravo   | 5½Jx14 H2-37  | 175/65 R14-82T  | 2.2        | 2.3          | 2.2        | 2.5 |
|  |   | 6Jx15 H2-40   | 185/55 R15-81H  | 2.2        | 2.3          | 2.3        | 2.5 |
|  |   |   | 175/65 R14-82Q (M+S)(●)   | 2.2        | 2.3          | 2.2        | 2.5 |
|  |   |   | 185/55 R15-81H (M+S)(●)   | 2.2        | 2.3          | 2.3        | 2.5 |
|  | Brava   | 5½Jx14 H2-37  | 175/65 R14-82T  | 2.2        | 2.3          | 2.2        | 2.5 |
|  |   | 6Jx15 H2-40   | 185/55 R15-81H  | 2.2        | 2.3          | 2.3        | 2.5 |
|  |   | 6Jx14 H2-43   | 175/65 R14-82Q (M+S)(●)   | 2.2        | 2.3          | 2.2        | 2.5 |
|  |   |   | 185/55 R15-81H (M+S)(●)   | 2.2        | 2.3          | 2.3        | 2.5 |
|  1596 16v | Bravo   | 5½Jx14 H2-37  | 185/60 R14-82H  | 2.2        | 2.3          | 2.2        | 2.5 |
|  |   | 6Jx14 H2-43   | 185/55 R15-81H  | 2.2        | 2.3          | 2.3        | 2.5 |
|  |   | 6Jx15 H2-40   | 185/60 R14-82T (M+S)(●)   | 2.2        | 2.3          | 2.2        | 2.5 |
|  |   |   | 185/55 R15-81H (M+S)(●)   | 2.2        | 2.3          | 2.3        | 2.5 |
|  | Brava   | 5½Jx14 H2-37  | 175/65 R14-82T  | 2.2        | 2.3          | 2.2        | 2.5 |
|  |   | 6Jx14 H2-43   | 185/55 R15-81H  | 2.2        | 2.3          | 2.3        | 2.5 |
|  |   | 6Jx15 H2-40   | 175/65 R14-82Q (M+S)(●)   | 2.2        | 2.3          | 2.2        | 2.5 |
|  |   |   | 185/55 R15-81H (M+S)(●)   | 2.2        | 2.3          | 2.3        | 2.5 |
|  1910 JTD | Bravo   | 5½Jx14 H2-37  | 185/60 R14-82H  | 2.3        | 2.3          | 2.3        | 2.5 |
|  |   | 6Jx14 H2-43   | 185/55 R15-81H  | 2.3        | 2.3          | 2.3        | 2.5 |
|  |   | 6Jx15 H2-40   | 185/60 R14-82T (M+S)(●)   | 2.3        | 2.3          | 2.3        | 2.5 |
|  |   |   | 185/55 R15-81H (M+S)(●)   | 2.3        | 2.3          | 2.3        | 2.5 |
|  | Brava   | 5½Jx14 H2-37  | 185/60 R14-82H  | 2.3        | 2.3          | 2.3        | 2.5 |
|  |   | 6Jx14 H2-43   | 185/55 R15-81H  | 2.3        | 2.3          | 2.3        | 2.5 |
|  |   | 6Jx15 H2-40   | 185/60 R14-82T (M+S)(●)   | 2.3        | 2.3          | 2.3        | 2.5 |
|  |   |   | 185/55 R15-81H (M+S)(●)   | 2.3        | 2.3          | 2.3        | 2.5 |
| SPARE WHEEL (*)  | 4.00Bx14 H-43   | 105/70 R14-84M  | 4.2   |            |              |            |     |
|  |   | 135/80 R14-80P  | 2.8   |            |              |            |     |
|  | 4.00Bx15 H-35   | 115/70 R15-90M(▲)   | 4.2   |            |              |            |     |

(\*) Speed limit: 80 km/h

(●) Winter tyres

(▲) For versions with optional 15" alloy wheels

### WHEEL GEOMETRY



unladen vehicle (■)

|                         |                              |  |                         |
|-------------------------|------------------------------|--|-------------------------|
| <p>Front suspension</p> | camber (**)                  |  | $-7' \pm 30'$           |
|                         | caster (**)                  |  | $2^{\circ}50' \pm 30'$  |
|                         | toe in                       |  | $-1 \div 1 \text{ mm}$  |
|                         | Offset front wheels (▲)      |  | $0^{\circ}$             |
| <p>Front suspension</p> | camber (**)                  |  | $-0^{\circ}46' \pm 30'$ |
|                         | toe in (**)                  |  | 0-4                     |
|                         | Thrust angle rear wheels (▲) |  | $0^{\circ}$             |

(\*\*) Angles cannot be adjusted

(■) With the tyres inflated to the correct pressure and the vehicle in running order with 5 litres of fuel

(▲) Angular values, which cannot be adjusted, used for the correct alignment of the vehicle

# Technical Data




# Bravo-Brava

## Front suspension

## 2000 range

### 00.44

Front suspension independent, Mac Pherson type with forged steel track control arms secured to an auxiliary crossmember. Offset coil springs and double acting, telescopic, hydraulic dampers. Anti-roll torsion bar.

| Coil springs   |                                | ENGINE TYPE           |  8v |  16v |  JTD |
|--|--------------------------------|-----------------------|---|---|---|
| Diameter of wire   | mm                             |                       | 12.3±0.05   | 12.3±0.05   | 12.7±0.05<br>(12.9±0.05)*   |
| Number of coils  |                                |                       | 3.75  |   |   |
| Direction of coil  |                                |                       | clockwise   |   |   |
| Height of spring released  | mm                             |                       | 437.4 (449)*  | 449 (461)*  | 474 (449)*  |
| Height of spring under a load of:                                    | 289-319 daN<br>(306-332 daN) * | mm                    | 192   | –   | –   |
|  | 306-332 daN<br>(320-346 daN) * | mm                    | –   | 192   | –   |
|  | 352±382 daN<br>(366±396 daN) * | mm                    | –   | –   | 192   |
| The springs are divided into two categories, identifiable by a mark: |                                |                       |   |   |   |
| yellow (1) for those under a load of:                                | 304 daN<br>(319 daN) *         | having a height of mm | >192  | –   | –   |
|  | 319 daN<br>(333.5 daN) *       | having a height of mm | –   | >192  | –   |
|  | 367 daN<br>(381 daN) *         | having a height of mm | –   | –   | >192  |
| green (1) for those under a load of:                                 | 304 daN<br>(319 daN) *         | having a height of mm | ≤192  | –   | –   |
|  | 319 daN<br>(333.5 daN) *       | having a height of mm | –   | ≤192  | –   |
|  | 367 daN<br>(381 daN) *         | having a height of mm | –   | –   | ≤192  |

(1) Springs of the same type must be fitted.

(\*) For vehicles with air conditioning







### Shock absorbers

|                                |    |                  |
|--------------------------------|----|------------------|
| Type:                          |    | low pressure gas |
| Open (start of damping action) | mm | 518 ±2.5         |
| Closed (metal against metal)   | mm | 361 ±2.5         |
| Stroke                         | mm | 157              |

### Anti-roll bar

|                        |    |    |    |    |
|------------------------|----|----|----|----|
| Anti-roll bar diameter | mm | 22 | 22 | 23 |
|------------------------|----|----|----|----|

**Rear suspension** independent with spheroid cast iron track control arms. Coil springs and shock absorbers with vulcanized bushes. Anti-roll torsion bar. Rigid H-shaped auxiliary frame consisting of a transverse tubular element and two pressed side members connected to each other.

| VERSIONS   | BRAVO   |  |   | BRAVA   |   |   |
|--|---|--|---|---|---|---|
|  |              |  |  |  |  |  |
| <b>Coil springs</b>  |   |  |   |   |   |   |
| Diameter of wire   | mm  |  |   | 11.15±0.05<br>(11.35±0.05)*   |   | 11.35±0.05  |
| Number of coils  |   |  |   | 4.25  |   | 4.25  |
| Direction of coil  |   |  |   | clockwise   |   |   |
| Height of spring released  | mm  |  |   | 311 (310)*  |   | 310   |
| Height of spring under a load of:                                    | $\left\{ \begin{array}{l} 273-295 \text{ daN} \\ (289-313 \text{ daN})^* \end{array} \right.$ | mm   | 194   |   | -   |   |
|  |   | mm   | -   |   | 194   |   |
| The springs are divided into two categories, identifiable by a mark: |   |  |   |   |   |   |
| yellow (1) for those under a load of:                                | $\left\{ \begin{array}{l} 284 \text{ daN} \\ (301 \text{ daN})^* \end{array} \right.$         | having a height of mm  | >194  |   | -   |   |
|  |   | having a height of mm  | -   |   | >194  |   |
| green (1) for those under a load of:                                 | $\left\{ \begin{array}{l} 284 \text{ daN} \\ (301 \text{ daN})^* \end{array} \right.$         | having a height of mm  | ≤194  |   | -   |   |
|  |   | having a height of mm  | -   |   | ≤194  |   |

(1) Springs of the same category must be fitted.

(\*) For 1910 JTD vehicles with air conditioning.

### Shock absorbers

| Type: double acting, telescopic | low pressure gas |          |          |
|---------------------------------|------------------|----------|----------|
| Open (start of damping action)  | mm               | 322.5 ±2 | 322.5 ±2 |
| Closed (metal against metal)    | mm               | 223 ±2   | 223 ±2   |
| Travel                          | mm               | 99.5     | 99.5     |

### Anti-roll bar

|                        |    |     |
|------------------------|----|-----|
| Anti-roll bar diameter | mm | 17S |
|------------------------|----|-----|





# Technical Data

## Electrical system

# Bravo- Brava

## 2000 range

### 00.55

|                          |  16v |  16v |
|--------------------------|---|---|
| <b>STARTER MOTOR</b>     | M. Marelli E80F-12V-0,9 kW  | Bosch DW-12V-1.1 kW<br>Valeo DGRA-12V-1.3 kW(▲)   |
| <b>ALTERNATOR</b>        | M. Marelli<br>A115I-14V-38/65A<br>M. Marelli A115I-14V-85A(●)                         | Bosch KCB1-14V-45/80A<br>Bosch KCB2-14V-50/90A(●)                                       |
| <b>VOLTAGE REGULATOR</b> | Built in electronic   |   |
| <b>BATTERY</b>           | 12V – 40Ah – 200A<br>12V – 50Ah – 250A(*)   | 12V-50Ah-250A   |
| <b>IGNITION SYSTEM</b>   | M.P.I integrated electronic injection/ignition<br>Bosch ME7.3H4                       | I.A.W. 4EF.B1 integrated electronic injection/ignition                                  |
| <b>IGNITION COIL</b>     | Bosch 0.221.503.407   | Champion<br>BAE 920 A   |
| <b>SPARK PLUGS</b>       | NGK DCPR8E-N  | NGK BKR5EZ<br>Champion RC10YCC  |

(\*) For vehicles equipped with alarm system

(●) For vehicles with air conditioning

(▲) Supplied as an alternative



|   |  |
|---|--|
| <b>STARTER MOTOR</b>                                  | BOSCH DIAM 78.5-12V-2,0kW  |
| <b>ALTERNATOR</b>                                     | M. Marelli A115IM – 14V – 55/105A<br>M. Marelli A127IM – 14V – 70/120A (●) |
| <b>VOLTAGE REGULATOR</b>                              | Built in electronic  |
| <b>BATTERY</b>  | 12V-60Ah-380A  |
| <b>HEATER PLUGS<br/>ELECTRONIC CONTROL UNIT</b>       | BOSCH 0.281.003.018  |
| <b>ELECTRONIC CONTROL UNIT<br/>ENGINE FUEL SYSTEM</b> | BOSCH 0.281.010.341  |
| <b>HEATER<br/>PLUGS</b>                               | BOSCH 0.250.202.036  |




(●) For vehicles with air conditioning

# Technical Data

## Electrical equipment: starting




**Bravo-Brava**  
2000 range

### 00.55

| STARTER MOTOR                                |                           |  |  |  |
|--|---------------------------|---|---|---|
| Make   |                           | M. Marelli<br>E80F-12V-<br>0.9 kW   | Bosch<br>DW-12V-1.1 kW  | BOSCH DIAM<br>78.5-2.0 kW<br>(with reduction<br>unit)                               |
| Voltage                                      | V                         | 12  |   |   |
| Rated power                                  | kW                        | 0.9   | 1.1   | 2.0   |
| Rotation, pinion side                        |                           | clockwise   |   |   |
| No. of pole                                  |                           | 4   | 6   | 6   |
| Energizing                                   |                           | series  |   | permanent<br>magnets  |
| Engagement                                   |                           | free wheel  |   |   |
| Operation                                    |                           | solenoid  |   |   |
| Endfloat of armature shaft                   | mm                        | 0.1-0.5   |   |   |
| <b>Data for bench test</b>                   |                           |   |   |   |
| Operating test (*):                          |                           |   |   |   |
| current                                      | A                         | 180 (200)   | —   | 500   |
| speed  | rpm                       | 1720 (2200)   | —   | 1950  |
| voltage                                      | V                         | 9.5 (9.8÷10)  | —   | 7.30  |
| torque developed                             | daNm                      | 0.37 (0.38)   | —   | 1.30  |
| Engagement test (*):                         |                           |   |   |   |
| current                                      | A                         | 324 (440)   | —   | 1200  |
| voltage                                      | V                         | 7.1 (7.6)   | —   | 5.5   |
| torque developed                             | daNm                      | ≥0.97 (≥1.25)   | —   | 3.0   |
| Free running test (*):                       |                           |   |   |   |
| current                                      | A                         | 40 (44-48)  | —   | 70-80   |
| voltage                                      | V                         | 11.4 (11.4-11.5)  | —   | 11.5  |
| speed  | rpm                       | 8500-9000<br>(11400-12300)  | —   | 5450-5750   |
| Relay  | Winding<br>resistance (*) | pull in Ω   | 0.30-0.32 (0.32)  | —   |
|  |                           | hold in Ω   | 1.2-1.3 (1.09)  | —   |
| Lubrication                                  |                           | VS <sup>+</sup> SAE 10W   |   |   |
| Internal engagement splines and shaft bushes |                           | TUTELA MR3  |   |   |
| Engagement sleeve and intermediate disc      |                           | TUTELA MR3  |   |   |

(\*) Data obtained at a temperature of 20°C.

**NOTE** When overhauling it is not necessary to undercut the insulator between the commutator bars.

| ALTERNATOR                                     |                                 |  8v |  16v |  D |
|--|---------------------------------|--|---|---|
|  |                                 | Make   | M. Marelli<br>A115I – 14V –<br>38/65A   | Bosch<br>KCB1 – 14V –<br>45/80A   |
|  | M. Marelli<br>A115I – 14V – 85A | Bosch<br>KCB2 – 14V –<br>50/90A(●)   | M. Marelli<br>A127IM – 14V –<br>70/120A   |   |
| System rated voltage                           | V                               | 14   | 14  | 14  |
| Max current                                    | A                               | 65 (85)(●)   | 80 (90)(●)  | 105 (120)(●)  |
| Rated current at 1800 rpm                      | A                               | 38   | 45 (50)(●)  | 55 (70)(●)  |
| Rated current at 6000 rpm                      | A                               | 65 (85)(●)   | 80 (90)(●)  | 100 (120)(●)  |
| Winding resistance between the slip rings (*)  | Ω                               | 2.4  | 2.66-2.94<br>(2.47-2.73)(●)   | 2.6   |
| Direction of rotation (seen from control side) |                                 | clockwise  |   |   |
| Power diode rectifiers                         |                                 | pre-constructed bridge   |   |   |

(\*) Data obtained at an ambient temperature of 20°C

(●) For vehicles with air conditioning

| VOLTAGE REGULATOR             |     | Built in electronic |      |           |
|-------------------------------|-----|---------------------|------|-----------|
|                               |     | RTM 151 A           | BR 1 | RTM 151 B |
| Make                          |     | RTM 151 A           | BR 1 | RTM 151 B |
| Alternator speed for test     | rpm | 7000                |      |           |
| Thermal stabilization current | A   | –                   |      |           |
| Test current                  | A   | –                   |      |           |
| Regulation voltage (*)        | V   | 14.05-14.35         |      |           |

(\*) Data obtained at an ambient temperature of 23°C

# Technical Data

Electrical equipment: electronic injection/ignition

**Bravo-Brava**

2000 range

**00.55**

## INTEGRATED ELECTRONIC INJECTION/IGNITION INJECTION/IGNITION SYSTEM



|              |               |
|--------------|---------------|
| Make         | Bosch ME7.3H4 |
| Firing order | 1 - 3 - 4 - 2 |

## IGNITION COIL WITH 4 HIGH TENSION INTAKES

|   |                      |
|---|----------------------|
| Make  | Bosch                |
| Type  | 0.221.503.407        |
| Ohmic resistance of primary winding at 20°C   | $\Omega$ 0.45-0.55   |
| Ohmic resistance of secondary winding at 20°C | $\Omega$ 12000-14600 |

## TOP DEAD CENTRE AND RPM SENSOR

|   |                  |
|---|------------------|
| Make and type   | Bosch DG6        |
| Sensor winding resistance at 20°C                         | $\Omega$ 486÷594 |
| Distance (gap) between sensor and crankshaft pulley tooth | mm 0.8÷1.5       |

## ENGINE ADVANCE

|                                |       |
|--------------------------------|-------|
| With engine idling (820±50rpm) | 9°±4° |
|--------------------------------|-------|

## SPARK PLUGS

|               |              |
|---------------|--------------|
| Make and type | NGK DCPR8E-N |
| Thread        | M14×1.25     |
| Electrode gap | mm 0.8       |

**ELECTRONIC INTEGRATED  
INJECTION/IGNITION SYSTEM**

|              |                                    |
|--------------|------------------------------------|
| Make         | I.A.W. M.P.I. Weber Marelli 4EF.B1 |
| Firing order | 1 – 3 – 4 – 2                      |

**IGNITION COIL WITH 4 HIGH TENSION INTAKES**

|   |           |
|---|-----------|
| Make  | Champion  |
| Type  | BAE 920 A |
| Ohmic resistance of primary winding at 20°C   | Ω 0.580   |
| Ohmic resistance of secondary winding at 20°C | Ω 9100    |

**TOP DEAD CENTRE AND RPM SENSOR**

|   |                   |
|---|-------------------|
| Make and type   | M. Marelli CVM 02 |
| Sensor winding resistance at 20°C                         | Ω 575+750         |
| Distance (gap) between sensor and crankshaft pulley tooth | mm 0.5+1.5        |

**DETONATION SENSOR**

|      |        |
|------|--------|
| Make | NGK    |
| Type | KNE 11 |

**SPARK PLUGS**

|               |                                |
|---------------|--------------------------------|
| Make and type | NGK BKR5EZ<br>Champion RC10YCC |
| Thread        | M14×1.25                       |
| Electrode gap | mm 0.8                         |

# Technical Data

**Bravo-Brava**

**Electrical equipment: electronic injection**

**2000 range**

**00.55**

## BOSCH COMMON RAIL ELECTRONIC FUEL SYSTEM



|                          |                     |
|--------------------------|---------------------|
| Make                     | Bosch 0.281.010.341 |
| Spontaneous firing order | 1 - 3 - 4 - 2       |

## PRE-HEATING CONTROL UNIT

|      |               |
|------|---------------|
| Make | Bosch         |
| Type | 0.281.003.018 |

## TOP DEAD CENTRE AND RPM SENSOR

|   |  |
|---|--|
| Make and type   | Bosch 0.281.002.214<br>or<br>Bosch 0.281.002.474 |
| Sensor winding resistance at 20°C                         | $\Omega$ 774 - 946                               |
| Distance (gap) between sensor and crankshaft pulley tooth | mm 0.8 - 1.5                                     |

## TIMING SENSOR

|      |               |
|------|---------------|
| Make | Bosch         |
| Type | 0.281.002.213 |

## HEATER PLUGS

|                        |                     |
|------------------------|---------------------|
| Make and type          | Bosch 0.250.202.036 |
| Thread                 | M12x1.25            |
| Electrical gap at 20°C | m $\Omega$ 700      |

Engine 2000 1242 16v

Engine 2000 1596 16v

Engine 2000 1910 JTD

Engine 99 1747 16v

## **Removing-Refitting**

Engine 98 1242 16v Removing-Refitting

Engine 98 1910 JTD Removing-Refitting



**FUEL SYSTEM**

|   |   |
|---|---|
| - Engine management system  | 1 |
| - Location of components in engine compartment                      | 1 |
| - Engine management control unit                                    | 2 |
| - Throttle casing   | 2 |
| - Procedure for learning motorized throttle valve angular positions | 3 |
| - Timing sensor   | 3 |
| - Exhaust manifold with catalytic converter                         | 4 |
| - Exhaust manifold heat shield                                      | 5 |
| - Front Lambda sensor   | 5 |
| - Rear Lambda sensor  | 6 |
| - Accelerator pedal potentiometer                                   | 7 |
| - Accelerometer on timing side engine support                       | 7 |

## ENGINE MANAGEMENT SYSTEM

### Foreword

The Bravo-Brava 1242 16v vehicle is equipped with a 4 cylinder in line, 16 valve, 1242 cc engine with a twin overhead camshaft and Marelli IAW 4EF integrated electronic injection/ignition system.

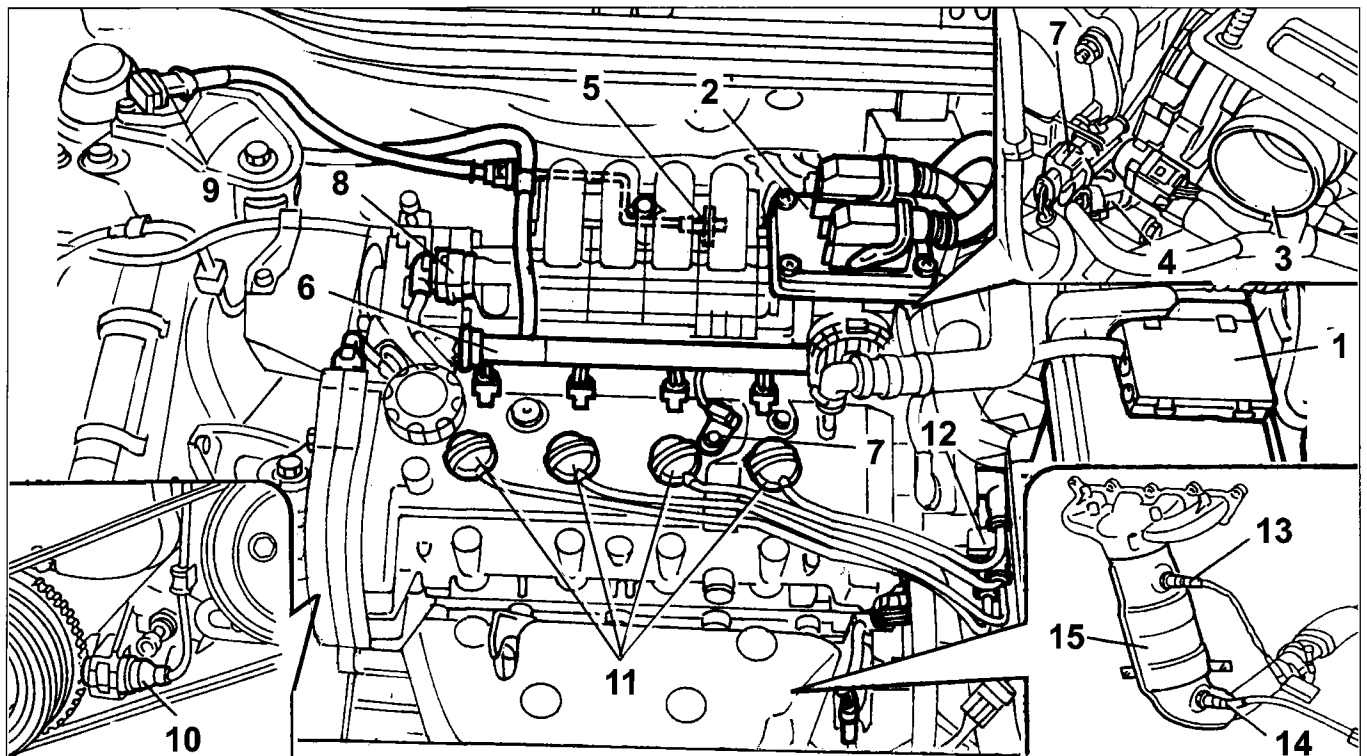
The fuel system differs from the one described for the 1242 16v "99 range" version through the inclusion of several variants designed to make it compatible with the EEC Stage 3 EOBD regulations.

The main modifications to the system can be summarized as follows:

- New engine management control unit with ME7.3H4 code.
- Motorized throttle casing with potentiometer on accelerator pedal.
- Adoption of accelerometer on right front shock absorber attachment turret.
- Catalytic converter near the exhaust manifold to take maximum advantage of the heat of the gases.
- Two Lambda sensors, one upstream (front) and one downstream (rear) which check the quality of the exhaust gases and the operation of the catalyzer.
- Adoption of timing sensor on inlet side timing pulley.
- Adoption of rapid connectors for anti-evaporation system pipes.
- Cap on fuel filler with attachment cable.

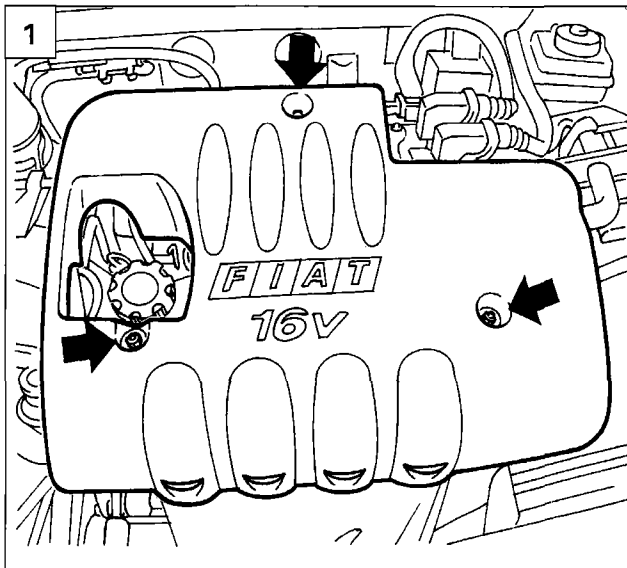
For further information on the fuel system, refer to publication print no. 507137.

### LOCATION OF COMPONENTS IN ENGINE COMPARTMENT



- |   |                              |
|---|------------------------------|
| 1. Voltage and fuse box (battery link)          | 11. Spark plugs              |
| 2. Engine management control unit               | 12. Ignition coil            |
| 3. Motorized throttle casing (MDS)              | 13. Upstream Lambda sensor   |
| 4. Engine coolant temperature sensor            | 14. Downstream Lambda sensor |
| 5. Charcoal filter solenoid valve               | 15. Catalytic silencer       |
| 6. Fuel manifold complete with injectors        |                              |
| 7. Engine timing sensor                         |                              |
| 8. Air temperature and absolute pressure sensor |                              |
| 9. Bodyshell acceleration sensor                |                              |
| 10. Engine speed and TDC sensor                 |                              |

**10.**



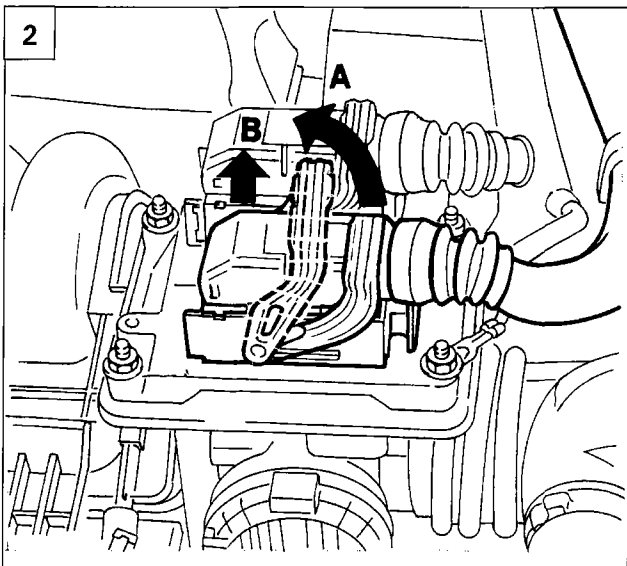
**ENGINE MANAGEMENT CONTROL UNIT**

**Removing-refitting**

- Disconnect the negative battery terminal.
- 1. Detach the engine sound insulation
- 2. Disconnect the control unit electrical connections, proceeding in two stages:
  - A) Turn the metal hook up to release the connection;
  - B) Move the connector away vertically in relation to the control unit.
- 3. Undo the bolts fixing the control unit and remove it.

Proceed as follows to refit the connector:

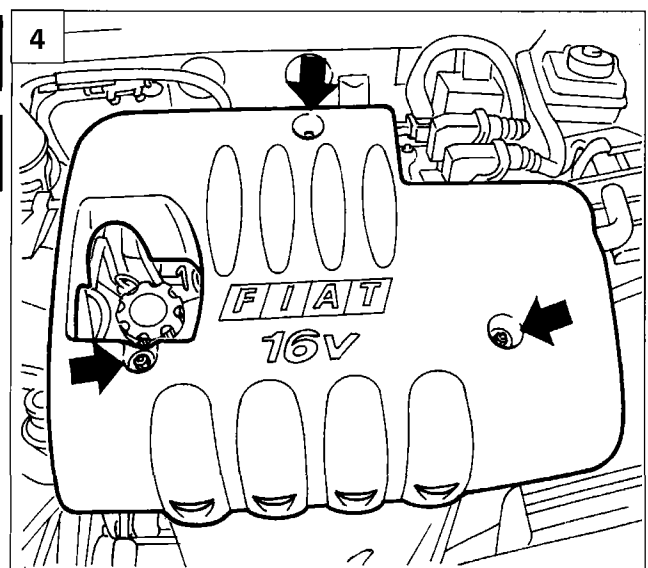
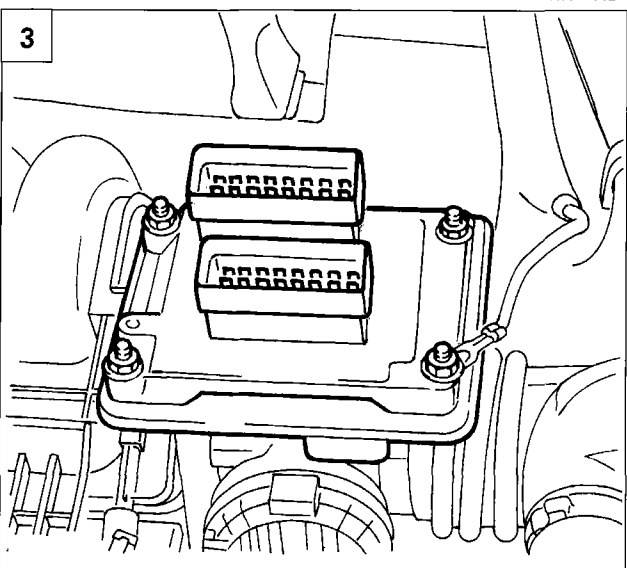
- move the connector into contact with the control unit;
- turn the metal hook until completely closed;
- at the end of the refitting, carry out the throttle valve angular position learning procedure as described in the appropriate paragraph.

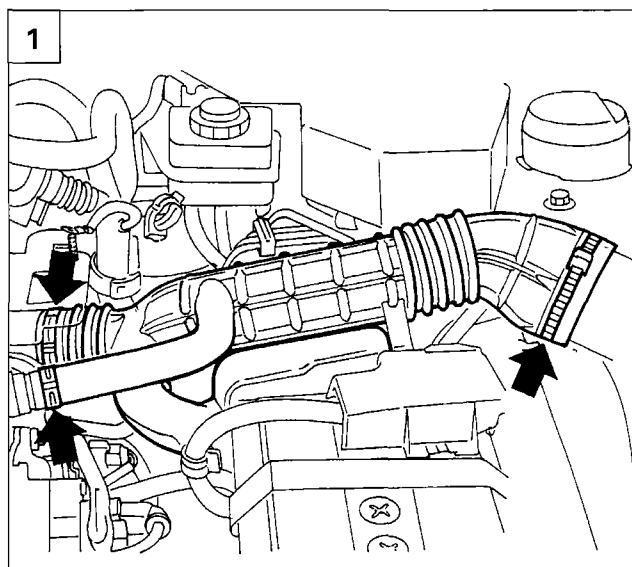


**THROTTLE CASING**

**Removing-refitting**

- Disconnect the negative battery terminal.
- 4. Detach the engine sound insulation.
- Disconnect the engine management control unit as described in the appropriate paragraph.



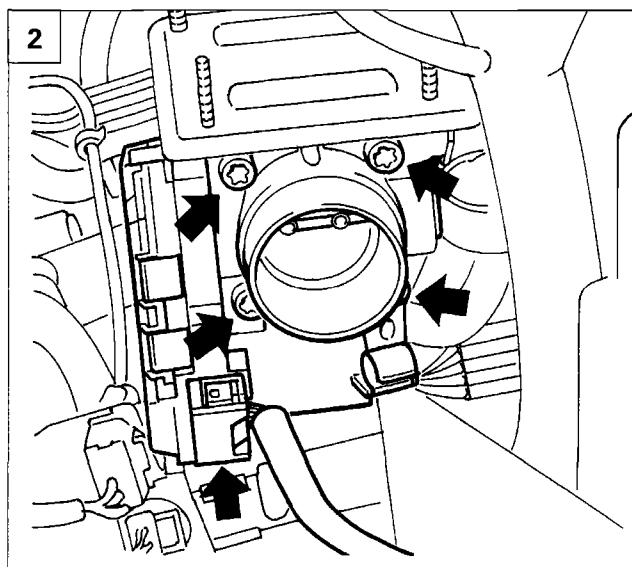


1. Disconnect the air pipe from the filter casing to the throttle casing, complete with resonator, after having loosened the bands.

2. Disconnect the electrical connection for the throttle actuator, undo the fixing bolts and detach the throttle casing.

- at the end of the refitting operation, carry out the throttle valve angular position learning procedure as described in the appropriate paragraph.

4A003PJ01

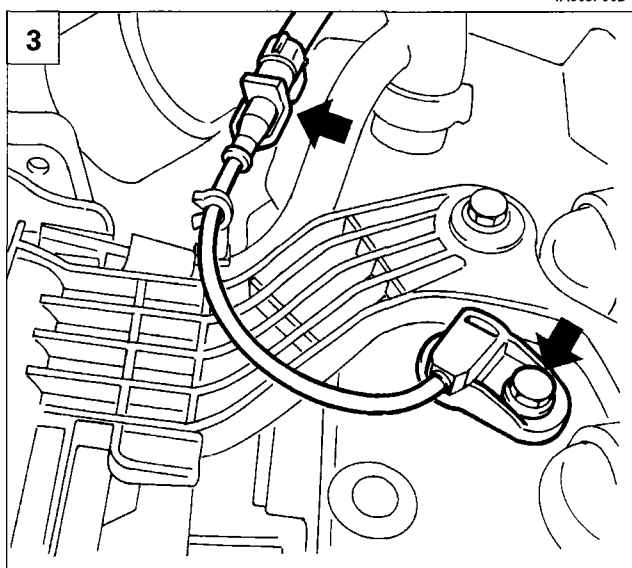


**MOTORIZED THROTTLE VALVE ANGULAR POSITION LEARNING PROCEDURE.**

**Procedure with diagnostic equipment**

- Connect the diagnostic equipment (Examiner or Examiner Plus) to the standardized socket and turn the ignition switch to the ON position (engine off).
- Wait during the throttle casing check until the diagnostic equipment confirms the positive result of the learning procedure.
- Turn the ignition switch OFF and check that the diagnostic equipment signals the end of the procedure.

4A003PJ02



**Manual procedure**

- Turn the ignition switch to the ON position (engine off).
- Wait for 45 seconds (the time whilst the control unit carries out the learning procedure).
- Turn the ignition key to the OFF position.

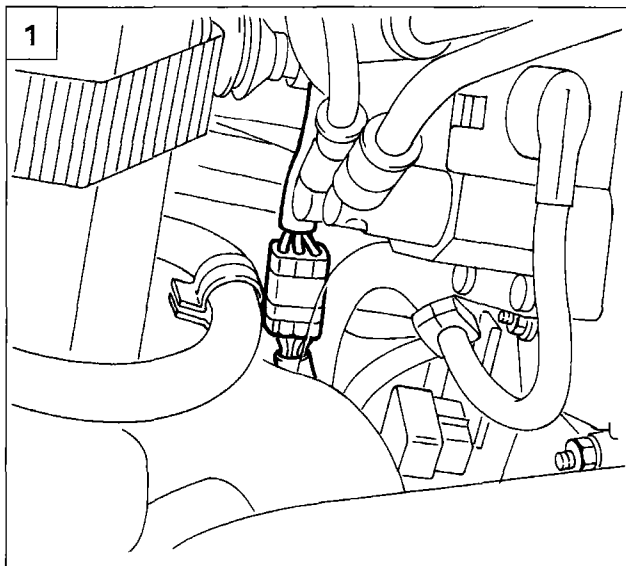
**TIMING SENSOR**

**Removing-refitting**

- Disconnect the negative battery terminal.
  - Detach the engine sound insulation
3. Disconnect the electrical connection, undo the fixing bolt and detach the timing sensor.

4A003PJ03

**10.**

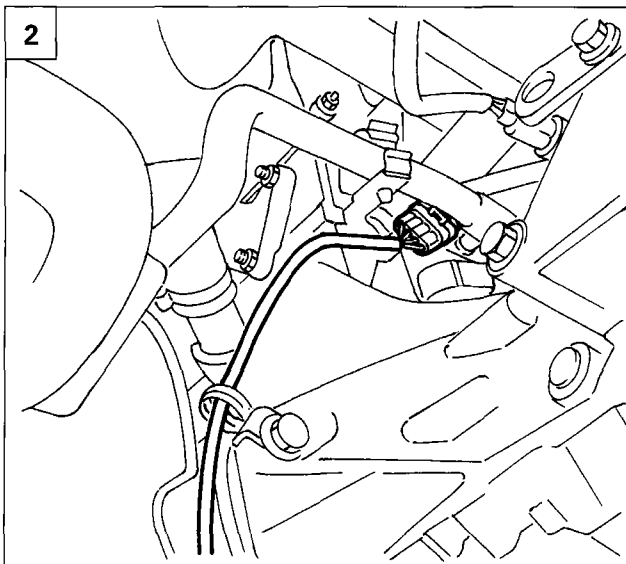


**EXHAUST MANIFOLD WITH CATALYTIC CONVERTER**

**Removing-refitting**

- Position the vehicle on a lift.
  - Disconnect the negative battery terminal.
  - Detach the exhaust manifold heat shield as described in the appropriate paragraph.
1. Disconnect the electrical connection for the front Lambda sensor and release the wiring from the bands.

4A004PJ01

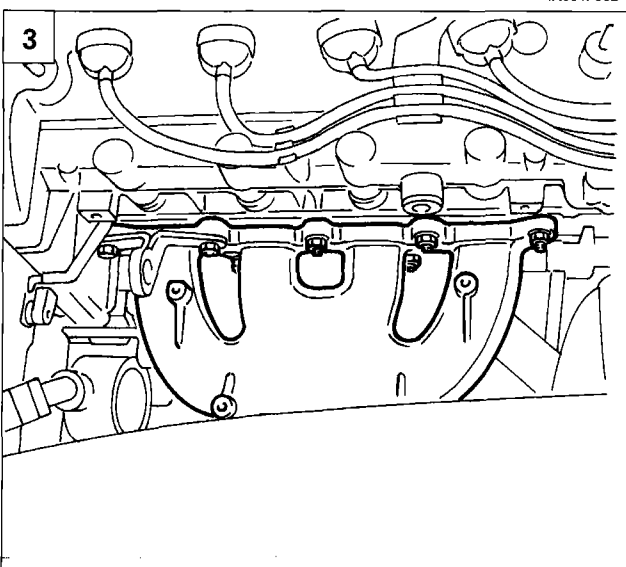


2. Disconnect the electrical connection for the rear Lambda sensor and release the wiring from the retaining bands.

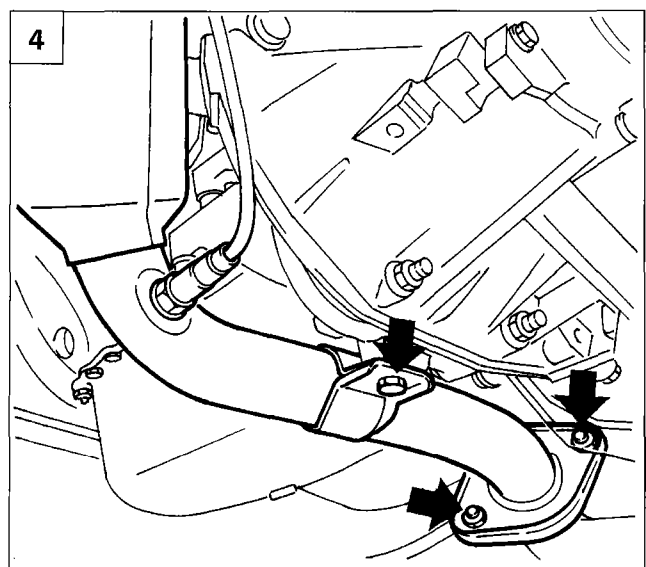
3. Undo the nuts fixing the manifold to the cylinder head.

4. Undo the nuts fixing the catalytic converter to the rear section of the exhaust manifold, undo the bolt for the mounting bracket and detach the exhaust manifold with the catalytic converter.

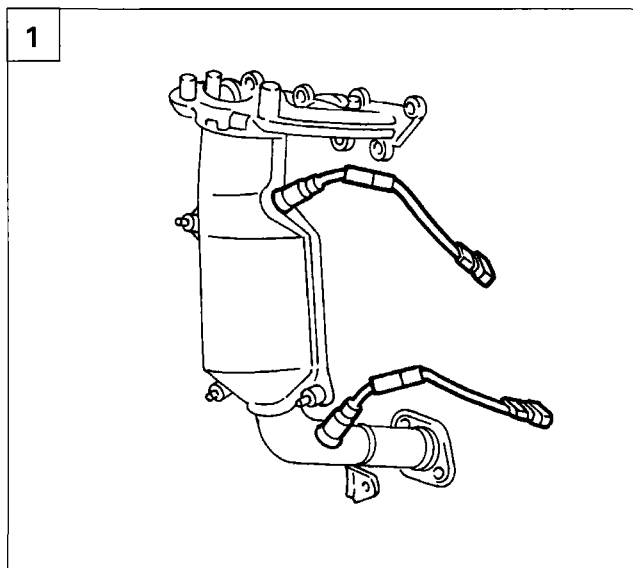
4A004PJ02



4A004PJ03



4A004PJ04

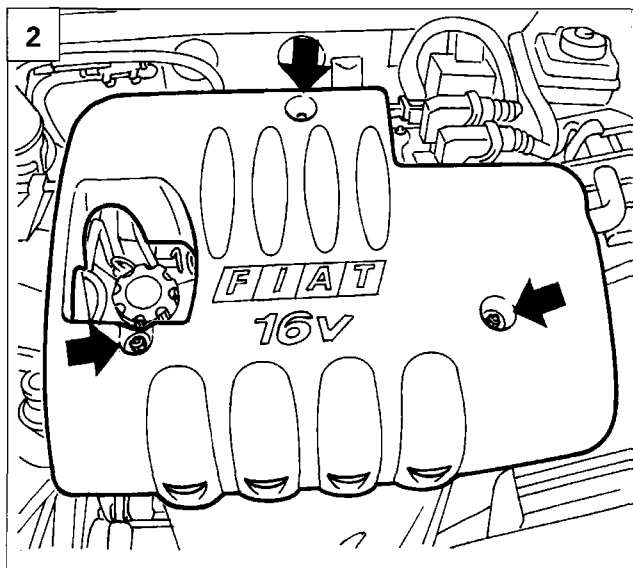


1. At the bench, separate the two Lambda sensors (front and rear) from the exhaust manifold and catalytic converter.
- When refitting, position the sensors and tighten them to torque avoiding exerting force on the components in order not to damage them irreparably.



*Apply graphite grease to the sensor thread (e.g. Bosch 5 964080112).*

4A005PJ01



**EXHAUST MANIFOLD HEAT SHIELD**

**Removing-refitting**

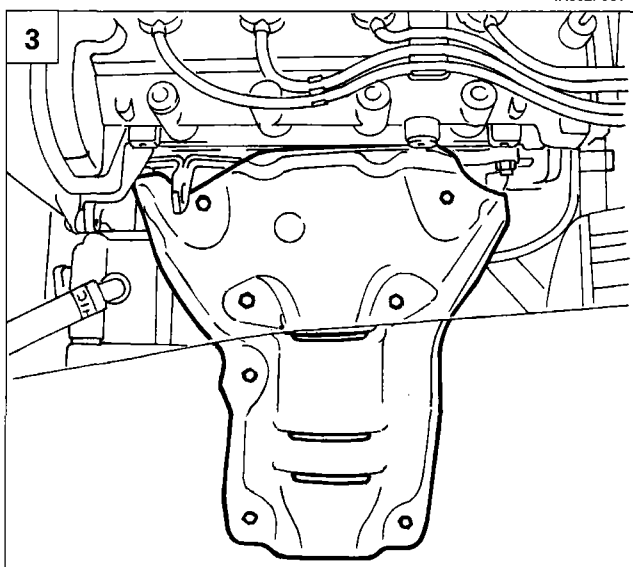
2. Detach the engine sound insulation
3. Remove the fixing bolts and detach the heat shield.

**FRONT LAMBDA SENSOR**

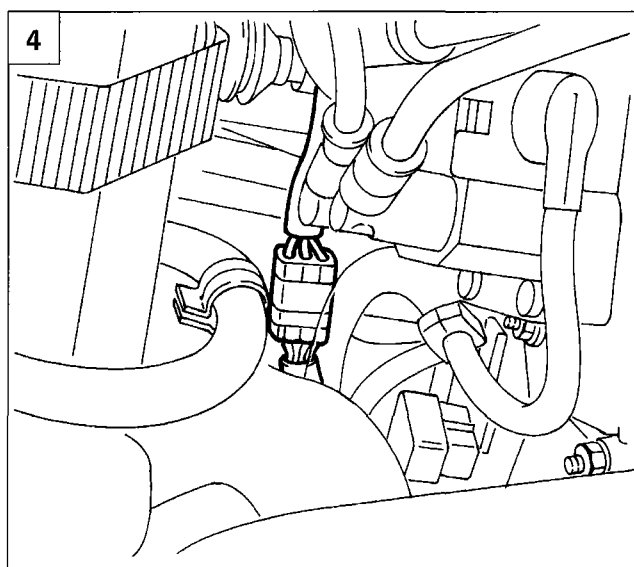
**Removal.**

- Disconnect the negative battery terminal.
  - Detach the engine sound insulation.
4. Disconnect the electrical connection for the front Lambda sensor, release the wiring from the securing bands.

4A002PJ01

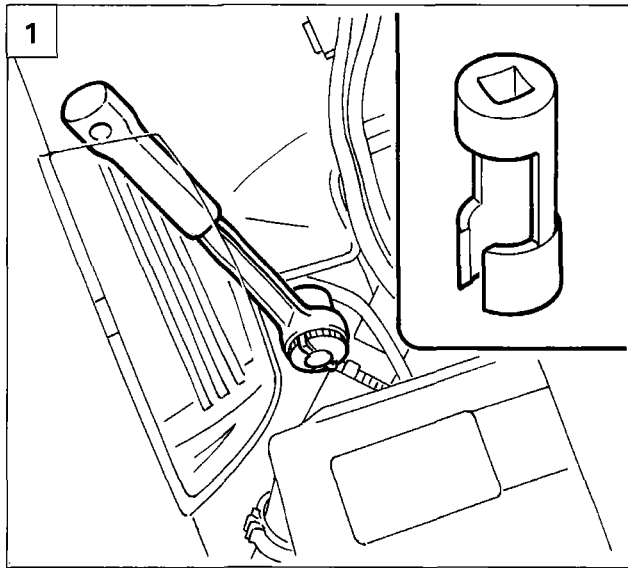


4A005PJ03



4A004PJ01

# 10.



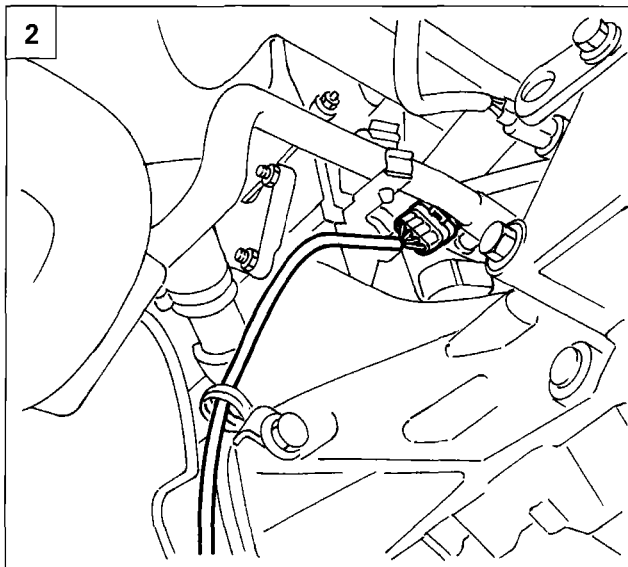
4A006PJ02



1. Using a USAG 875 type spanner or similar tool, detach the Lambda sensor.

## REFITTING

- Position the sensor and tighten it to torque avoiding exerting force on the component in order not to damage it irreparably. Apply graphite grease to the sensor thread (e.g. Bosch 5 964080112).
- Connect the connector and restore the fastenings for the Lambda sensor cable.



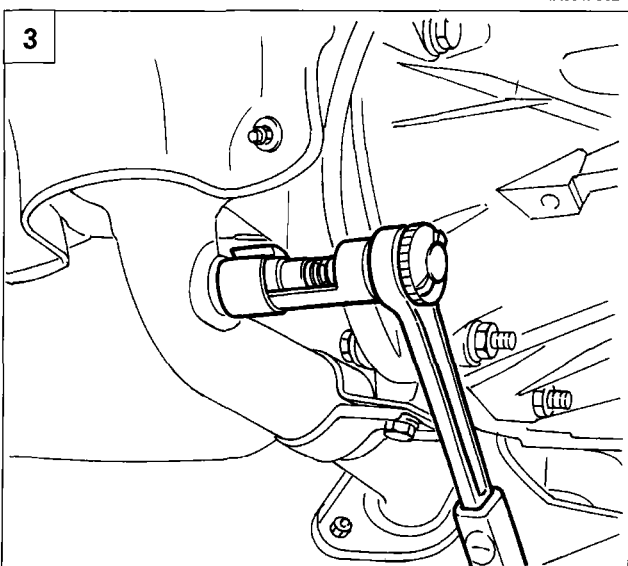
4A004PJ02



## REAR LAMBDA SENSOR

### Removal.

- Position the vehicle on a lift.
  - Disconnect the negative battery terminal.
2. Disconnect the electrical connection for the rear Lambda sensor and release the wiring from the retaining bands.

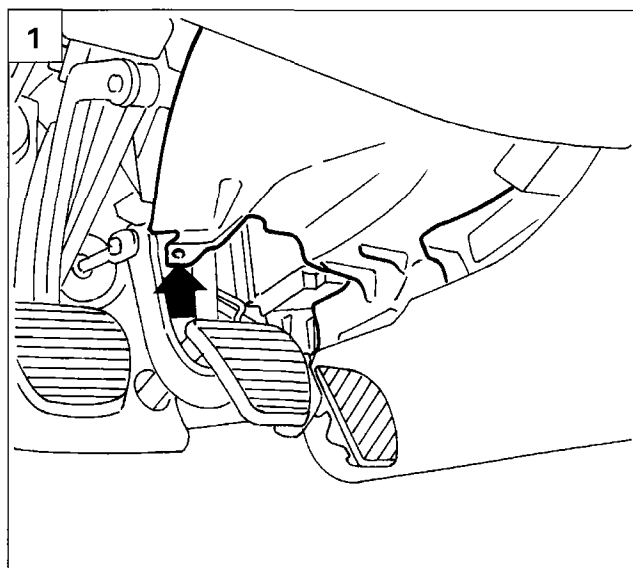


4A006PJ04

3. Raise the vehicle and detach the Lambda sensor.

## REFITTING

- Position the sensor and tighten it to torque avoiding exerting force on the component in order not to damage it irreparably. Apply graphite grease to the sensor thread (e.g. Bosch 5 964080112).
- Connect the connector and restore the fastenings for the Lambda sensor cable.



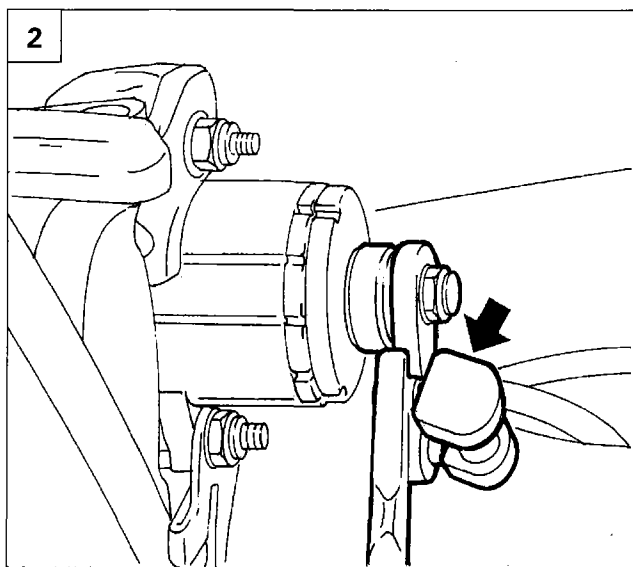
4A007PJ01



**ACCELERATOR PEDAL POTENTIOMETER**

**Removing-refitting**

- Disconnect the negative battery terminal.
- 1. Remove the shield under the dashboard located by the pedals.
- 2. Remove the potentiometer idler rod from the accelerator pedal.
- 3. Undo the nuts fixing the potentiometer to the mounting bracket and detach the potentiometer after having disconnected the connector.



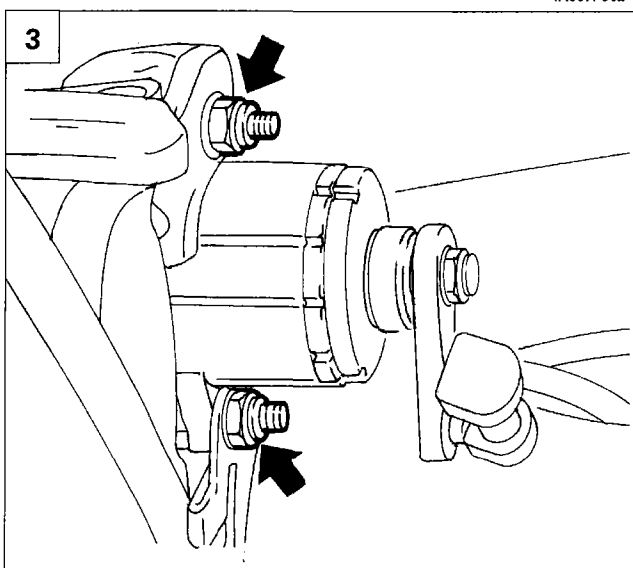
4A007PJ02



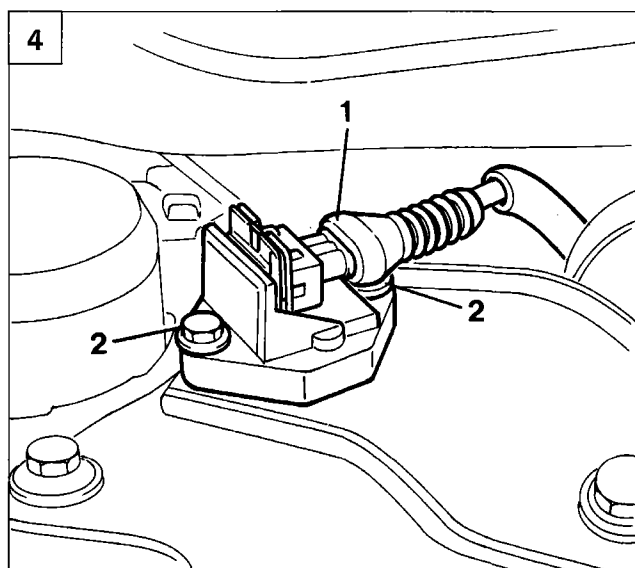
**ACCELEROMETER ON TIMING SIDE ENGINE SUPPORT**

**Removing-refitting**

- Disconnect the negative battery terminal.
- 4. Disconnect the electrical connection (1), then undo the fixing bolts (2a) and detach the accelerometer.



4A007PJ03



4A007PJ04





**FUEL SYSTEM**

|  |   |
|--|---|
| - Engine management system   | 1 |
| - Diagram showing engine exhaust system                                      | 1 |
| - Fuel anti-evaporation system   | 2 |
| - Location of diagnostic socket  | 2 |
| - Location of injection/ignition system components in the engine compartment | 3 |
| - Flywheel self-learning   | 3 |
| - Front Lambda sensor  | 4 |
| - Rear Lambda sensor   | 4 |
| - Catalytic converter heat shield  | 5 |
| - Catalytic converter  | 5 |
| - Exhaust manifold   | 6 |
| - Electric fuel pump with level sender unit                                  | 8 |
| - Fuel tank cap  | 8 |

**ENGINE MANAGEMENT SYSTEM**

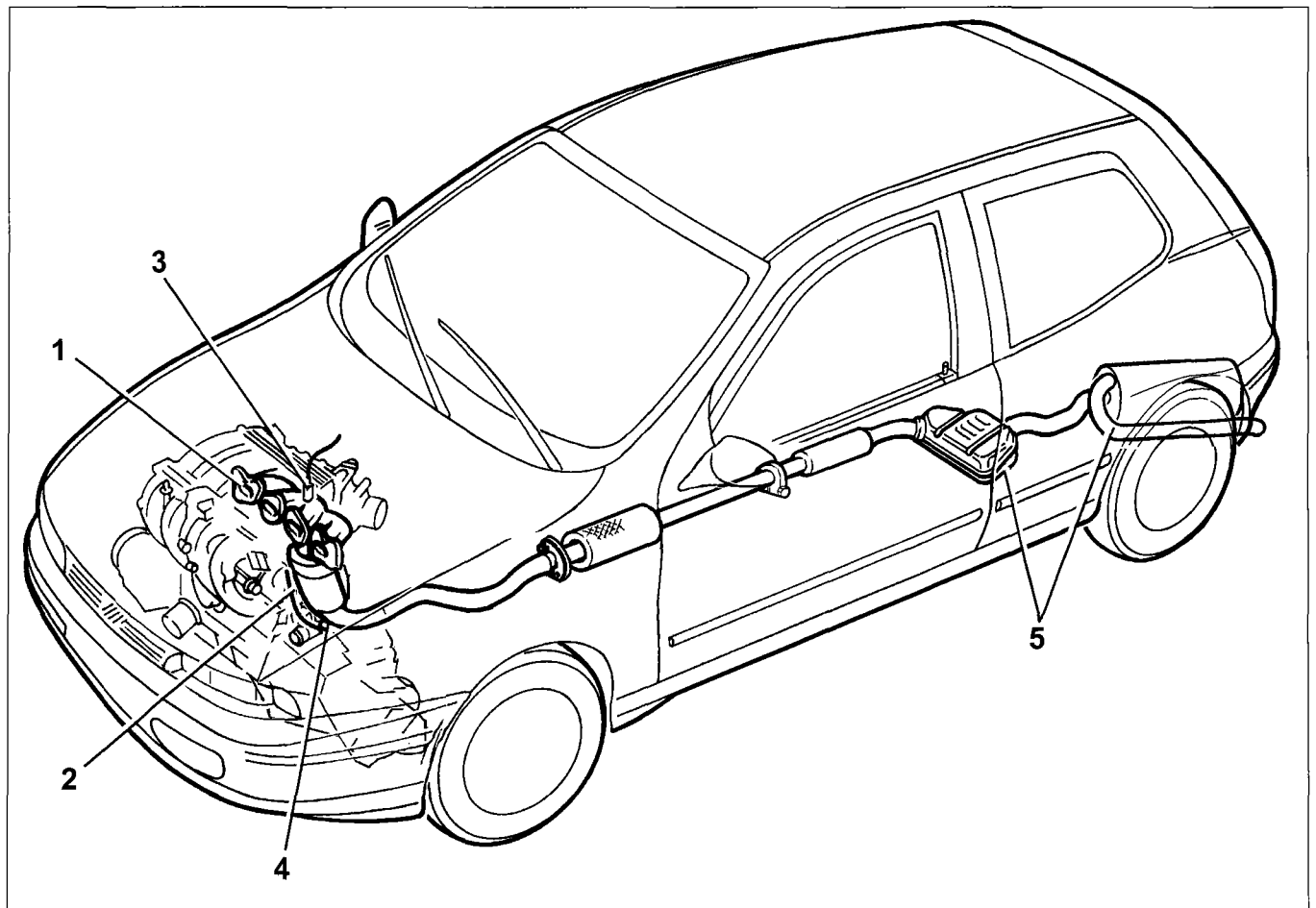
**Foreword**

The Bravo-Brava 1596 16v versions are equipped with a 4 cylinder in line, 16 valve, 1596 cc engine with a twin overhead camshaft and Marelli IAW 4EF integrated electronic injection/ignition system. The fuel system differs from the one described for the 1581 16v "99 range" version through the inclusion of several variants designed to make it compatible with the EEC Stage 3 EOBD regulations.

The main modifications to the system can be summarized as follows:

- Engine management control unit with IAW 4EF code
- Catalytic converter near the exhaust manifold to take maximum advantage of the heat of the gases.
- Two Lambda sensors, one upstream (front) and one downstream (rear) which check the quality of the exhaust gases and the operation of the catalyzer.
- Adoption of timing sensor on inlet side timing pulley.

**DIAGRAM SHOWING ENGINE EXHAUST SYSTEM**



4A0010J01

**Key**

1. Exhaust manifold
2. Catalytic converter
3. Front Lambda sensor
4. Rear Lambda sensor
5. Silencers

### 10.

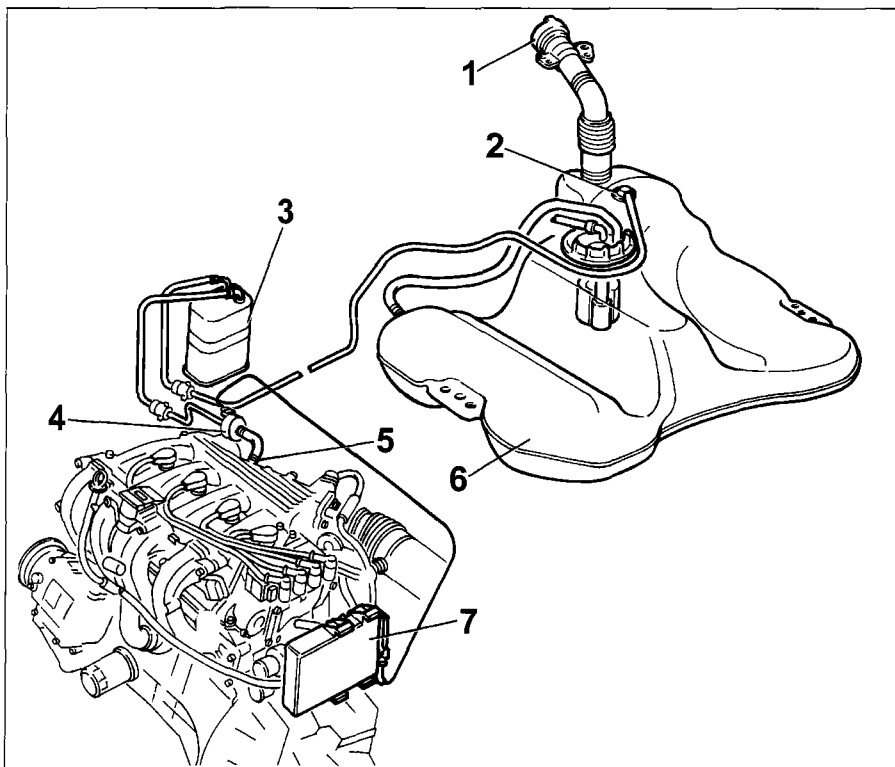
#### FUEL ANTI-EVAPORATION SYSTEM

Compared with previous versions, the fuel anti-evaporation system has several improvements aimed at fuel vapours.

In particular, the following measures have been adopted:

- Multi-purpose valve fitted to the tank to prevent spillage.
- New anti-evaporation solenoid valve and adoption of rapid type connectors for anti-evaporation system pipes.
- Cap on fuel filter with attachment cable.

For further information on the fuel system, refer to publication: 507.135.



#### Key

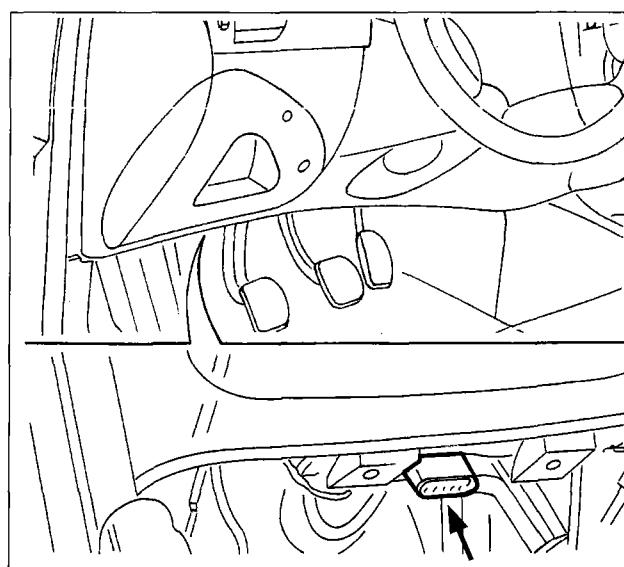
1. Filler
2. Multi-purpose valve
3. Active charcoal filter
4. Anti-evaporation solenoid valve
5. Fuel vapour intake on inlet manifold
6. Fuel tank
7. Engine management control unit

4A0020J01

#### LOCATION OF DIAGNOSTIC SOCKET

The diagnostic socket for the analysis of the engine management system is located under the junction unit in the dashboard. This socket also carries out the function of connecting the diagnostic equipment (Examiner or other instruments) for other electronic control units present on the vehicle.

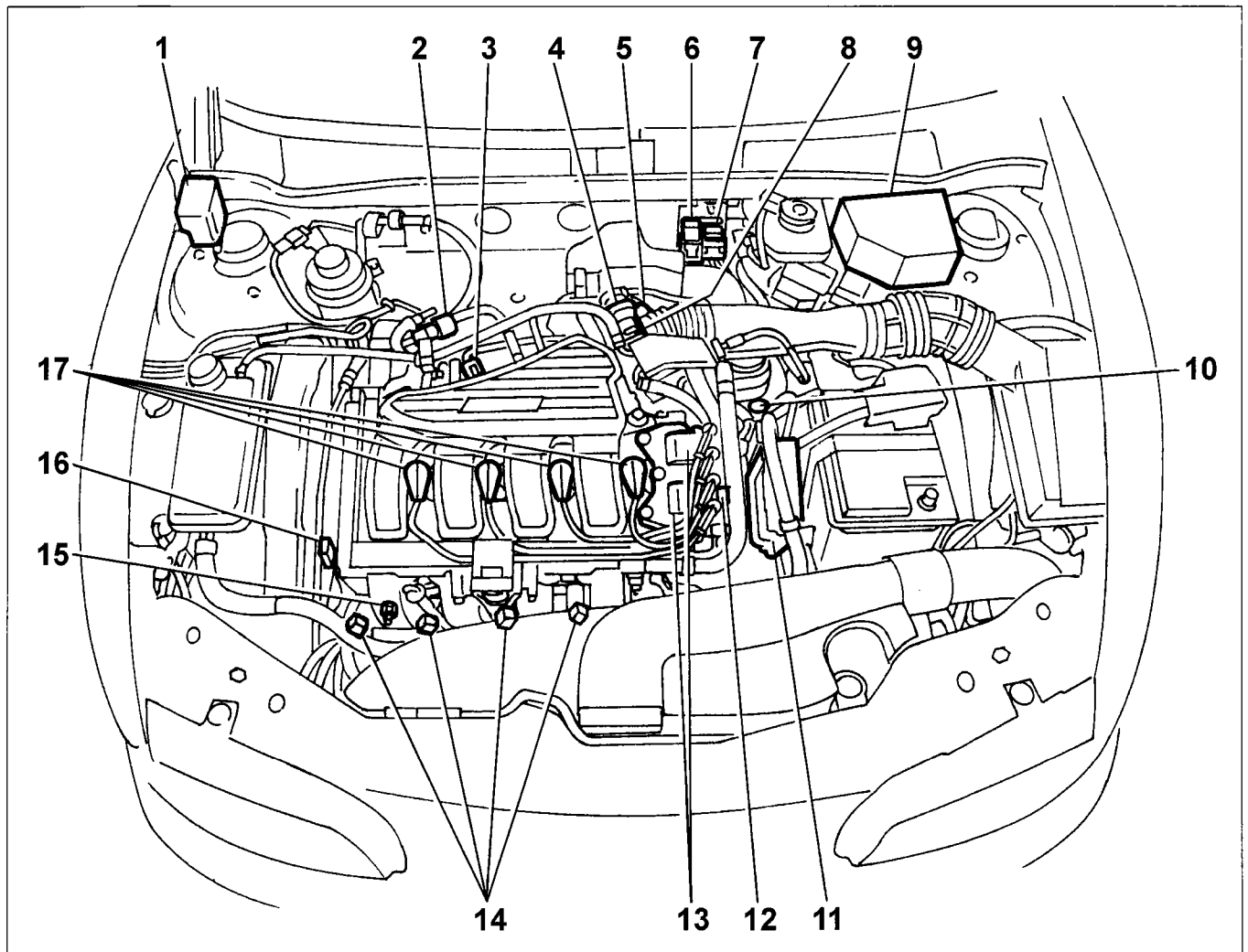
It is a 16-way "standardized" diagnostic socket which can be connected to the diagnostic equipment using an "MPX97" adaptor.



4A0020J02

**10.**

**LOCATION OF INJECTION/IGNITION SYSTEM COMPONENTS IN THE ENGINE COMPARTMENT**



4A0030J01

**Key**

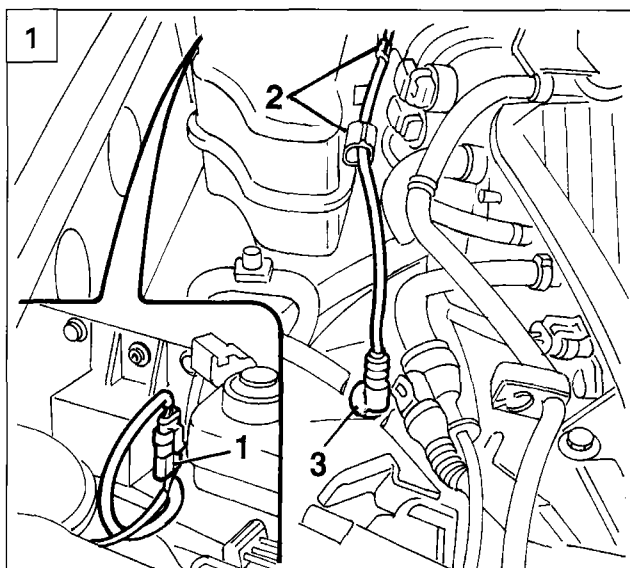
- |   |   |
|---|---|
| 1. Active charcoal filter                                   | 9. I.E. system protective maxi-fuse (EFI) |
| 2. Anti-evaporation solenoid valve                          | 10. Speedometer sensor                    |
| 3. Intake air temperature and pressure sensor               | 11. Engine management control unit        |
| 4. Engine idle adjustment stepping motor on throttle casing | 12. Coolant temperature sensor            |
| 5. Throttle valve position sensor on throttle casing        | 13. Ignition coil                         |
| 6. System relay feed  | 14. Injectors                             |
| 7. Protective fuse  | 15. Rpm and TDC sensor                    |
| 8. Throttle case  | 16. Timing sensor                         |
|   | 17. Spark plugs                           |

**FLYWHEEL SELF-LEARNING**

Each time the battery is disconnected the flywheel self-learning procedure must be carried out as described below:

- Connect the diagnostic equipment (Examiner or Examiner Plus) and carry out the active diagnosis "Zeroing flywheel self-learning".
- Let the engine warm up (temperature above 80 °C) from idling. Accelerate up to 5000 rpm. (constant) for about 2-3 seconds and release. Carry out this operation 3 times in succession.

## 10.



4A0040J01



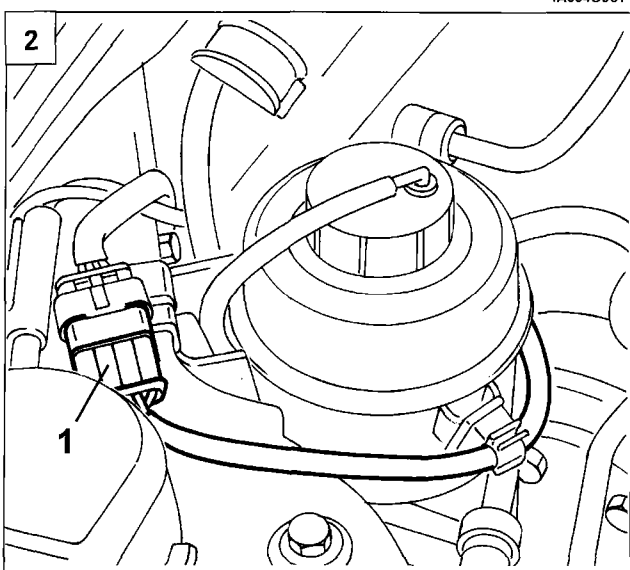
### FRONT LAMBDA SENSOR

#### Removal.

- Disconnect the negative battery terminal.
- 1. Disconnect the electrical connection (1a), release the wiring from the retaining band (2) and detach the Lambda sensor (3).

#### Refitting

- Position the sensor and tighten it to torque avoiding exerting force on the component in order not to damage it irreparably. Apply graphite grease to the sensor thread (e.g. Bosch 5 964080112).



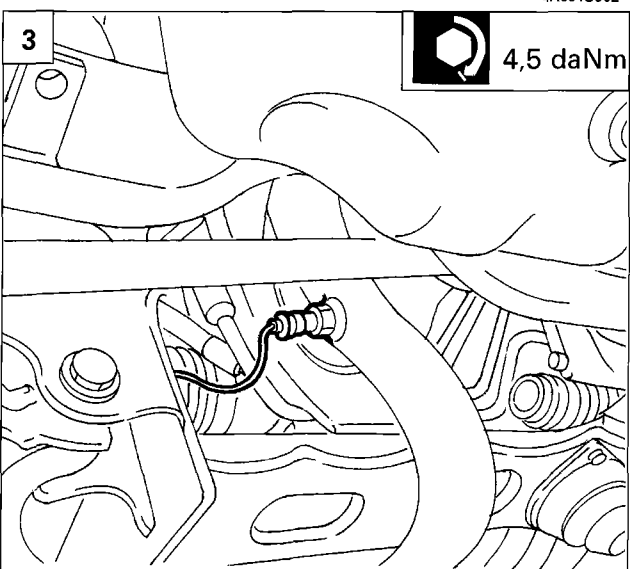
4A0040J02



### REAR LAMBDA SENSOR

#### Removal.

- Position the vehicle on a lift
- Disconnect the negative battery terminal
- 2. Disconnect the electrical connection (1) and release the wiring from the retaining bands.



4A0040J03

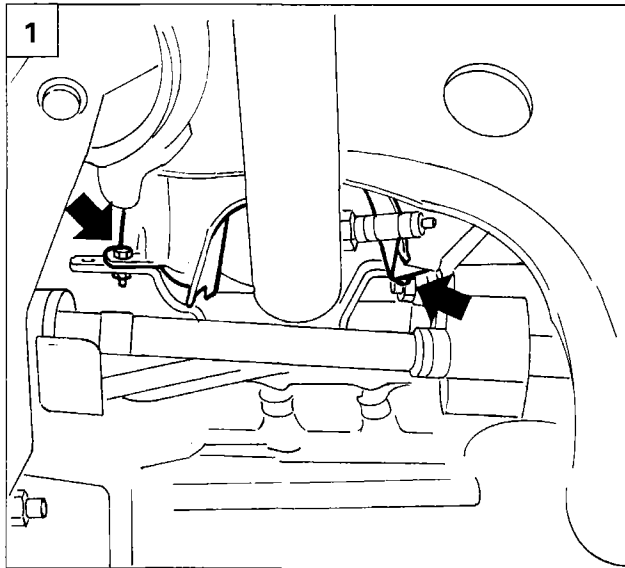
- 3. Raise the vehicle and detach the rear Lambda sensor.

#### Refitting

- Position the sensor and tighten it to torque avoiding exerting force on the component in order not to damage it irreparably. Apply graphite grease to the sensor thread (e.g. Bosch 5 964080112).
- Connect the connector and renew the fastenings for the Lambda sensor cable.

**10.**

**CATALYTIC CONVERTER HEAT SHIELD**

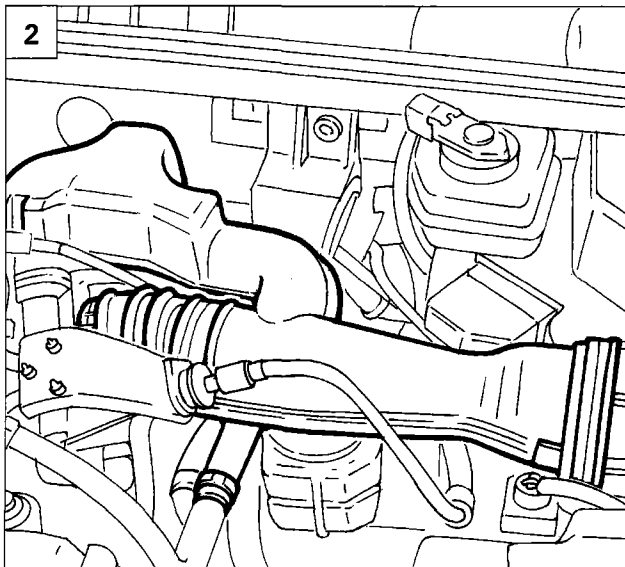


4A0050J01

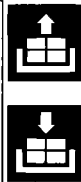


**Removing-refitting**

- Position the vehicle on a lift and disconnect the negative battery terminal.
- 1. Raise the vehicle and undo the bolts shown in the diagram which secure the heat shield at the bottom.
- Lower the vehicle and detach the front Lambda sensor as described in the appropriate paragraph.
- 2. Loosen the bands shown and detach the air hose from the filter to the throttle casing, complete with resonator.
- 3. Undo the upper nuts fixing the heat shield and detach the latter.



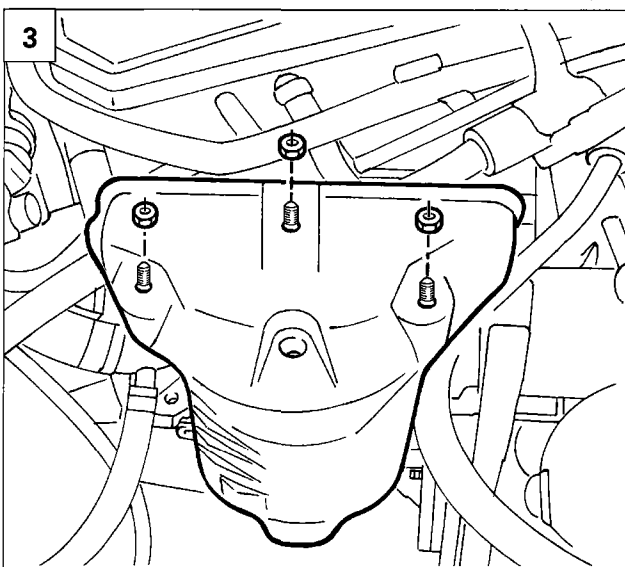
4A0050J02



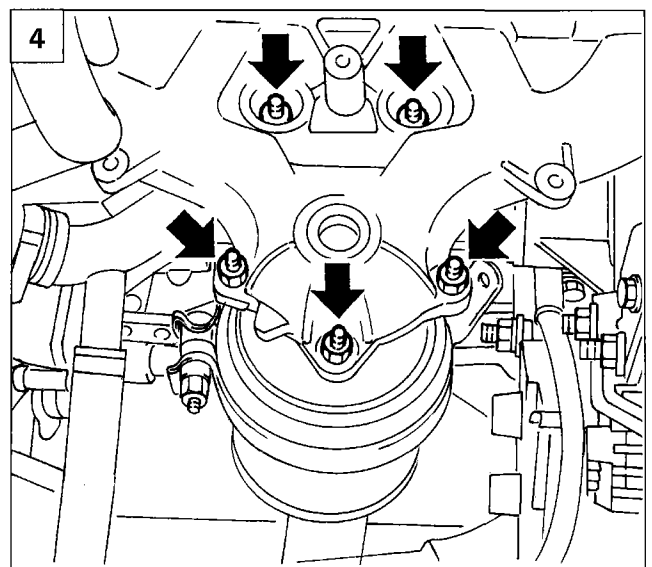
**CATALYTIC CONVERTER**

**Removing-refitting**

- Position the vehicle on a lift and disconnect the negative battery terminal.
- Detach the front Lambda sensor as described in the appropriate paragraph.
- Detach the catalytic converter heat shield as described in the relevant paragraph.
- 4. Undo the nuts fixing the catalytic converter to the exhaust manifold.

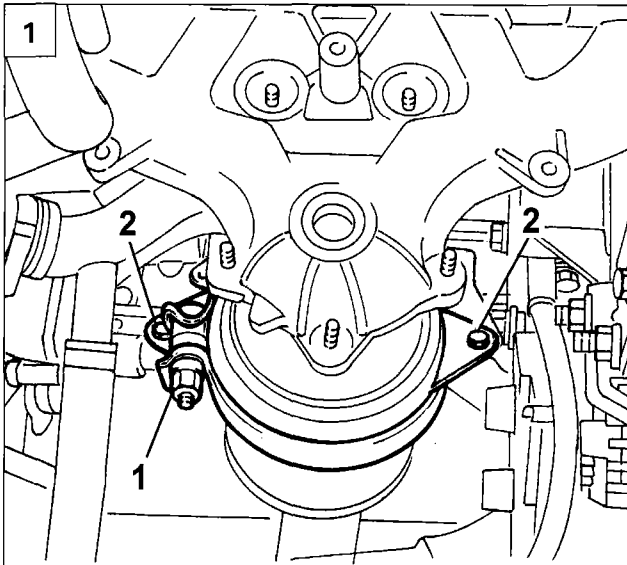


4A0050J03

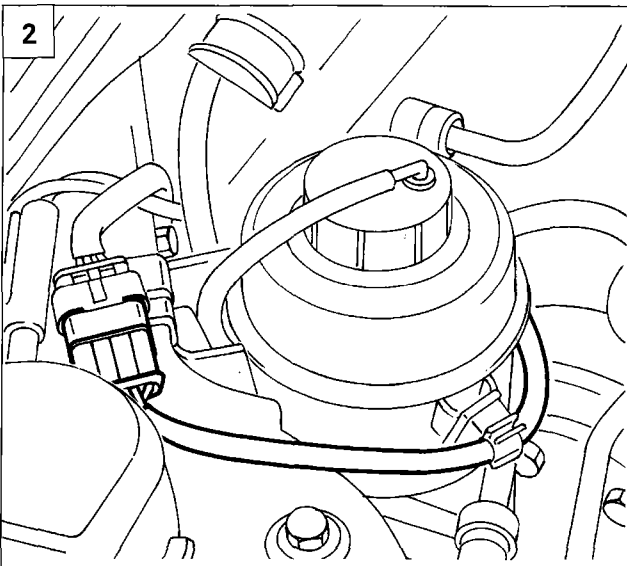


4A0050J04

**10.**



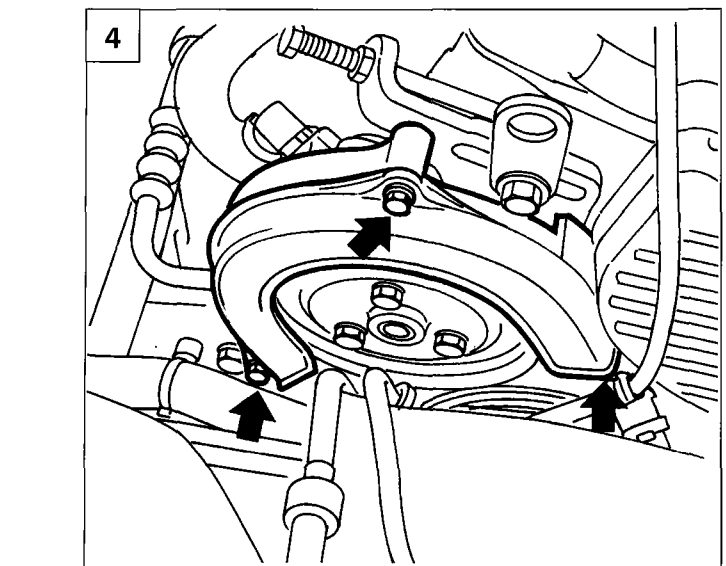
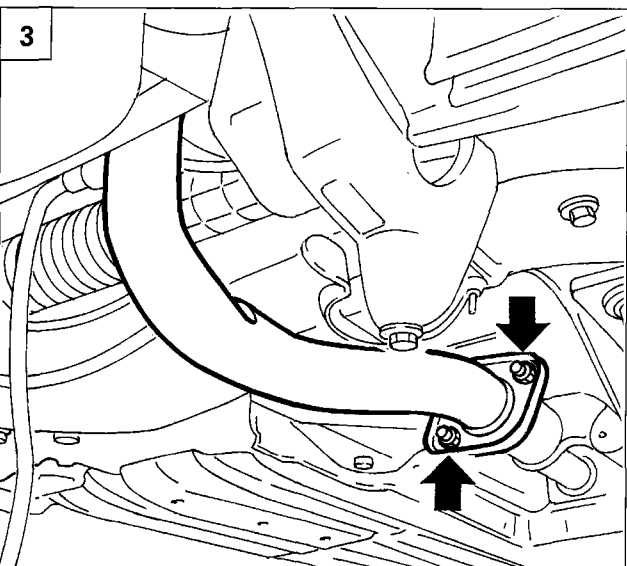
1. Loosen the band securing the catalyzer by adjusting the bolt (1) and undo the bolts (2) fixing the band to the bracket.
2. Disconnect the connector for the rear Lambda sensor and release the cable from the securing bands along the routing.
3. Raise the vehicle, undo the bolts fixing the catalytic converter to the rear exhaust pipe and detach the converter, complete with rear Lambda sensor.



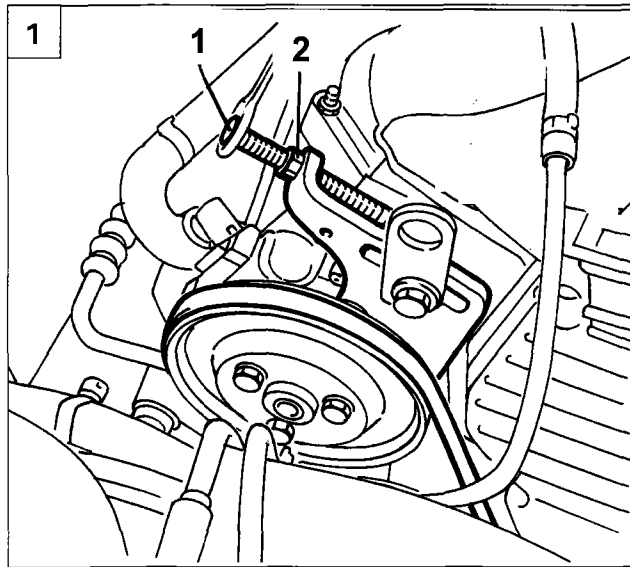
**EXHAUST MANIFOLD**

**Removing-Refitting**

- Position the vehicle on a lift, disconnect the negative battery terminal and detach the following components, as described in the relevant paragraphs:
  - Front Lambda sensor
  - Catalytic converter heat shield
  - Catalytic converter.
4. Remove the protection for the power assisted steering pump drive belt.

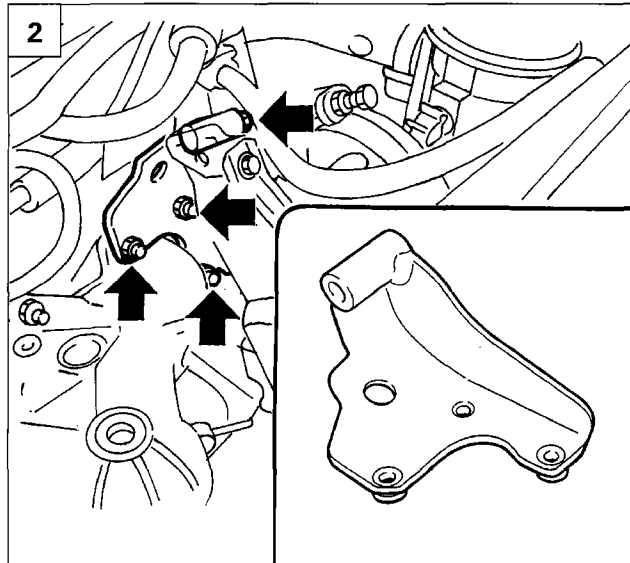






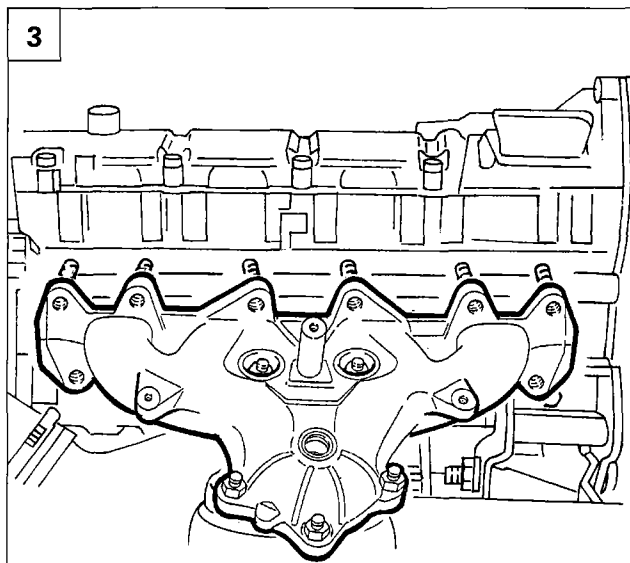
1. Loosen the belt tension by adjusting the lock nut (2) and the adjustment screw (1); then release the belt from the pulley.

4A0070J01



2. Undo the bolts fixing the bracket for the power assisted steering pump mounting and detach the pump.

4A0070J02



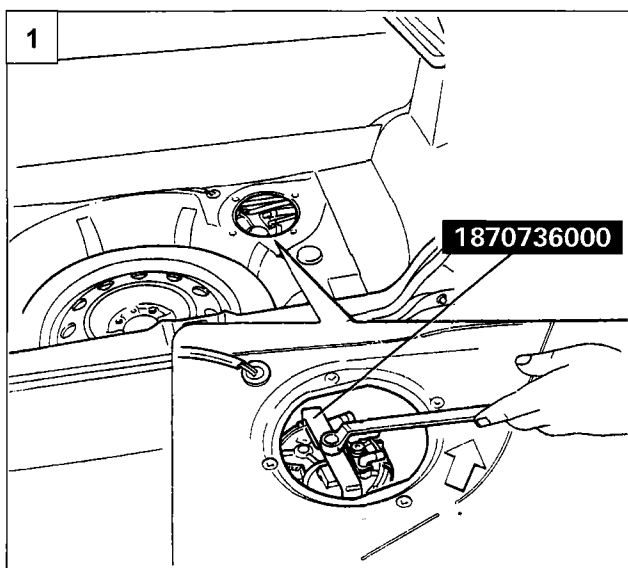
3. Undo the nuts fixing it to the cylinder head and detach the exhaust manifold.

4A0070J03

### Refitting

To refit, reverse the order of the operations carried out for the removal; tension the power assisted steering pump drive belt acting on the adjustment screw; using tool 189576200, check that the tension is between 32 and 45 daN.

### 10.



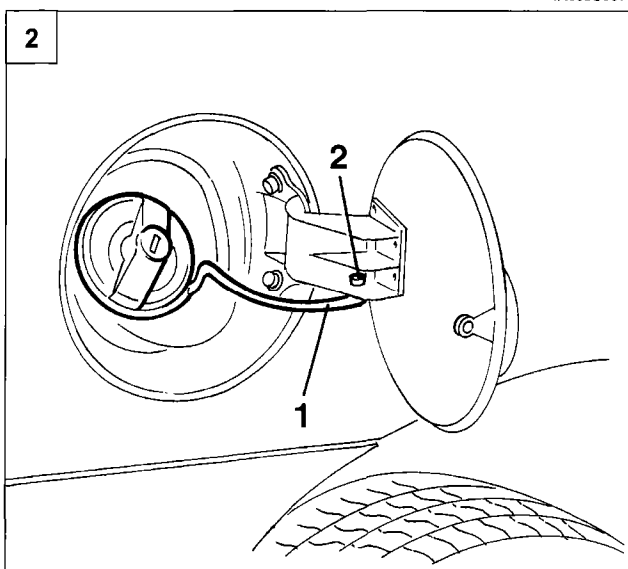
#### ELECTRIC FUEL PUMP WITH LEVEL SENDER UNIT

##### Removing-refitting

- Disconnect the negative battery terminal.
- Lift up the luggage compartment lining and remove the fuel pump protective cover.
- Disconnect the electrical connection for the electric pump assembly and the fuel supply and breather pipes.

1. Undo the ring nut fixing the electric fuel pump to the tank using tool 1870736000. The gasket on the tank housing should be replaced each time the pump drip tray is removed-refitted.

**NOTE** *The position of the fuel pump is fixed and is established by a notch in the tank housing which should correspond to the projection on the pump drip tray.*



#### FUEL TANK CAP

2. The fuel tank cap is secured to the bodyshell by means of a cord. If it is replaced, undo the cap and release the cord seal (1) from the pin (2).

|  | Page |  | Page |
|--|------|--|------|
| <b>FUEL SYSTEM</b>   | 1    | <b>MOTOR</b>   |      |
| - Algemeen   | 1    | - Removing-refitting   | 31   |
| - System management strategies   | 1    | <b>HEAT EXCHANGER FOR EGR VALVE</b>                              | 31   |
| - Fuel system operating diagram  | 2    | - Removing-refitting   | 31   |
| - Diagram showing information flows between the control unit and sensors/actuators | 7    | <b>SOLENOID ON VACUUM TANK FOR THROTTLE BODY PNEUMATIC VALVE</b> | 33   |
| <b>INJECTION SYSTEM WIRING DIAGRAM</b>   | 8    | - Removing-refitting   | 33   |
| - Injection electronic control unit  | 10   | <b>VACUUM TANK</b>   | 33   |
| - Rpm sensor   | 12   | - Removing-refitting   | 33   |
| - Timing sensor  | 13   | <b>TURBO PRESSURE CONTROL SOLENOID</b>                           | 34   |
| - Air flow meter   | 13   | - Removing-refitting   | 34   |
| - Injectors  | 14   | <b>FUEL FILTER</b>   | 34   |
| - Engine coolant temperature sensor  | 15   | - Removing-refitting   | 34   |
| - Fuel temperature sensor  | 15   | <b>PRESSURE REGULATOR</b>  | 35   |
| - Fuel pressure sensor   | 15   | - Removing-refitting   | 35   |
| - Glow plug preheating control unit  | 16   |  |      |
| - Potentiometer on accelerator pedal   | 16   |  |      |
| - Brake pedal switch   | 17   |  |      |
| - Clutch pedal switch  | 17   |  |      |
| - Pressure relief sensor   | 17   |  |      |
| - Atmospheric pressure sensor  | 17   |  |      |
| <b>FUEL SUPPLY CIRCUIT</b>   | 18   |  |      |
| - Submerged fuel pump (auxiliary) and level gauge control                          | 19   |  |      |
| - Fuel filter  | 19   |  |      |
| - Pressure pump  | 20   |  |      |
| - Fuel pressure regulator  | 20   |  |      |
| - Multifunction valve  | 21   |  |      |
| - Delivery manifold (rail)   | 21   |  |      |
| - Inertia safety switch  | 22   |  |      |
| <b>AIR INTAKE CIRCUIT</b>  | 23   |  |      |
| - Throttle case  | 24   |  |      |
| - Turbocharger   | 25   |  |      |
| <b>EMISSION CONTROL DEVICE</b>   | 25   |  |      |
| - Oxidising catalytic converter  | 26   |  |      |
| - Burnt gas recirculation circuit (EGR)  | 26   |  |      |
| - Blow-by vapour recirculation circuit   | 27   |  |      |
| <b>THROTTLE CASING</b>   | 29   |  |      |
| Removing-refitting   | 29   |  |      |
| <b>ELECTRIC EGR VALVE</b>  | 30   |  |      |
| - Removing-refitting   | 30   |  |      |
| <b>EGR VALVE SELF-ADJUSTMENT</b>   | 31   |  |      |

## FUEL SYSTEM

### INTRODUCTION

Bravo and Brava 1.9 JTD cars are equipped with a 4 cylinder in line, 1910 cc turbodiesel engine with two valves per cylinder, an overhead camshaft, turbocharger and intercooler and electronic injection.

The fuel system ensures correct engine operation and can be divided into the following subsystems:

- Fuel feed circuit with common rail injection;
- air feed circuit;
- exhaust circuit;
- blow by vapour recirculation circuit;
- Exhaust Gas Recirculation (EGR) circuit

Operation of the various circuits making up the fuel system is optimised by an electronic control system managed by a special control unit.

The main feature of the fuel system is common rail fuel injection. Common rail is a higher pressure electronic injection system for fast direct injection diesel engines.

The main features of the common rail system are as follows:

- availability of high injection pressures (up to 1350 bars);
- possibility of modulating these pressures (from a minimum of 150 bars to a maximum of 1350 bars) independently of engine speed (rpm) and engine load;
- ability to operate at high engine speeds (up to 6000 rpm);
- precise injection control (injection advance and duration);
- reduced fuel consumption;
- reduced emissions.

### FUEL SYSTEM MANAGEMENT STRATEGIES

The management program (software) is stored inside the control unit memory and consists of a series of strategies, each of which manages a precise system control function.

Through the use of information provided by the various sensors (input), each strategy processes a set of parameters based on data stored in special control unit memory areas. It then controls system actuators (output), i.e. the devices that allow the engine to operate.

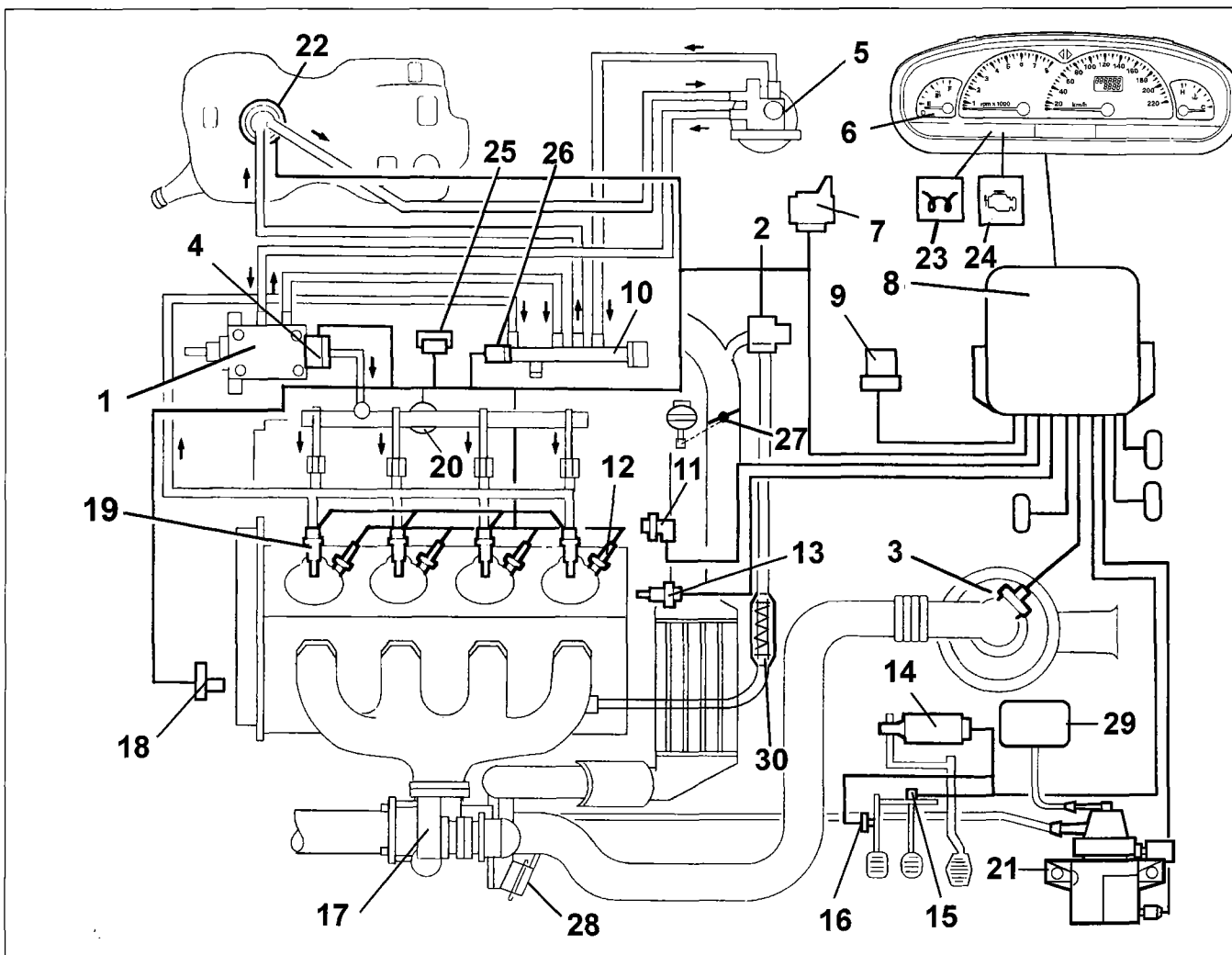
The main purpose of these management strategies is to determine the exact amount of fuel to be injected into the cylinders with timing (injection advance) and pressure designed to achieve the best possible engine performance in terms of power, fuel consumption, fumes, emissions and handling.

The main system management strategies are essentially as follows:

- control of injected fuel quantity;
- control of injection advance;
- control of injection pressure;
- control of auxiliary fuel pump;
- control of injection during over-run (cut-off);
- control of idle speed;
- control of maximum speed limitation;
- control of maximum torque limitation;
- control of fuel temperature;
- control of engine coolant temperature;
- control of air turbocharging pressure;
- control of glow plugs;
- control of exhaust fumes;
- control of exhaust gas recirculation (EGR);
- control of climate control system activation;
- control of engine immobiliser operation (Fiat CODE);
- self-diagnosis

**10.**

**FUEL SYSTEM OPERATING DIAGRAM**



4A002QJ01

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>1. Pressure pump</li> <li>2. Electrically-controlled EGR valve</li> <li>3. Flow meter</li> <li>4. Pressure regulator</li> <li>5. Fuel filter</li> <li>6. Instrument panel</li> <li>7. Glow plug preheating control unit</li> <li>8. Electronic control unit</li> <li>9. Injection system relay</li> <li>10. Return manifold (low pressure)</li> <li>11. Rpm sensor</li> <li>12. Glow plugs</li> <li>13. Engine coolant temperature sensor</li> <li>14. Potentiometer on accelerator pedal</li> <li>15. Brake pedal switch</li> <li>16. Clutch pedal switch</li> <li>17. Turbocharger</li> <li>18. Timing sensor</li> <li>19. Injectors</li> <li>20. Fuel pressure sensor</li> <li>21. Variable geometry turbocharger control solenoid</li> </ul> | <ul style="list-style-type: none"> <li>22. Auxiliary fuel pump</li> <li>23. Glow plug preheating warning light</li> <li>24. System failure warning light</li> <li>25. Pressure relief sensor</li> <li>26. Fuel temperature sensor</li> <li>27. Throttle valve</li> <li>28. Wastegate actuator</li> <li>29. Vacuum tank</li> <li>30. Exhaust gas heat exchanger</li> </ul> |
|---|---|

### **Control of injected fuel quantity**

The control unit controls the fuel pressure regulator and injectors on the basis of output signals from the accelerator pedal potentiometer, flow meter and rpm sensor.

The timing and thus the injection sequence are determined when the engine is started up using signals from the rpm and timing sensor (synchronisation stage); injection timing is then implemented using the rpm sensor signal alone and considering a injection sequence of 1-3-4-2.

The control unit inhibits injection in the following cases:

- fuel pressure level greater than 1500 bars;
- fuel pressure level lower than 120 bars;
- engine speed higher than 6000 rpm.

When the engine has warmed up, maximum injection duration (injector opening time) is 1500 ns, but it can reach 3000 ns during the start-up stage.

### **Control of injection advance**

The electronic control unit determines injection advance mainly on the basis of the quantity of fuel to be injected.

The injection advance is then corrected on the basis of coolant temperature and speed in order to compensate for ignition delays due to low temperatures in the combustion chamber during warm-up.

The optimum injection point is also processed to ensure driving comfort and emission limits laid down by Euro 3 legislation.

### **Control of injection pressure**

This control is of particular importance because injection pressure influences the following parameters:

- amount of fuel taken into the cylinders for the same injection time duration;
- injected fuel nebulation;
- spray penetration;
- lag between electrical control to injection and actual injection start and end times.

The above parameters engine behaviour significantly, particularly in terms of power output, exhaust emissions, noise levels and handling.

The injection control unit controls the pressure governor on the basis of engine load to obtain an optimal line pressure at all times.

When the engine is cold, injection pressure is corrected on the basis of engine speed and engine coolant temperature to meet engine needs at different operating temperatures.

### **Control of auxiliary fuel pump**

The auxiliary fuel pump submerged in the tank is supplied by the injection control unit by means of a relay when the ignition key is turned on.

Fuel supply to the pump is inhibited when one of the following condition occurs:

- when the ignition has been turned on for a certain length of time without the engine running;
- if the inertia switch cuts in.

### **Control of injection during over-run (cut-off)**

The fuel cut-off strategy is implemented when the injection control unit receives information that the accelerator pedal has been released from the potentiometer.

Under these conditions, the control unit cuts off the fuel supply to the injectors and restores it before idle speed is reached.

# 10.

## Control of idle speed

On the basis of signals from the rpm sensor and engine coolant temperature sensor, the injection control unit controls the pressure governor and alters the injector control times to maintain idle speed stable at all times.

Under certain conditions, the idle speed control unit also considers battery voltage.

## Control of maximum speed limitation

According to rpm level, the injection control unit limits maximum speed by means of two types of intervention:

- as maximum speed approaches, it reduces the amount of fuel injected to reduce line pressure;
- when maximum speed is exceeded, it inhibits operation of the auxiliary pump and injectors.

## Control of maximum torque limitation

On the basis of rpm level, the injection control unit computes limit torque and maximum permitted fume index parameters on the basis of predefined, stored maps.

It then corrects the above parameters using engine coolant temperature and car speed data. The resulting values are then used to modulate the amount of fuel to be injected by adjusting the pressure regulator and injectors.

## Control of fuel temperature

The injection control unit is kept constantly informed of fuel temperature by a sensor on the return manifold.

If fuel temperature exceeds a set value (about 110 °C), the control unit reduces line pressure by adjusting the pressure governor, leaving injection times unaltered.

## Control of coolant temperature

The injection control unit is constantly informed of coolant temperature by a sensor on the thermostat.

If engine coolant temperature or air conditioning fluid pressure exceeds certain levels, the control unit performs the following actions:

- It reduces the amount of fuel injected by adjusting the pressure governor and injectors (power reduction);
- it controls the engine radiator cooling fan.

## Control of glow plugs

The injection control unit controls operation of the glow plug preheating control unit to bring the temperature in the combustion chambers up to levels that promote fuel self-ignition and thus make start-up easier.

The control unit controls the operation of the glow plug control unit for a certain time both before (preheating) and after (postheating) engine start-up and also controls activation of the warning light on the control panel.

Preheating, postheating and glow plug warning light activation times vary according to engine coolant temperature.

### **Control of exhaust fumes**

The injection control unit uses this function to limit any exhaust fumes that could arise during fast speed changes.

To satisfy this requirement, the control unit processes signals from the accelerator pedal potentiometer, rpm sensor and intake air quantity sensor (debimeter) and controls the fuel pressure regulator and injectors to modulate the amount of fuel to be injected.

### **Control of exhaust gas recirculation**

On the basis of signals supplied by the rpm, intake air quantity, coolant temperature and accelerator pedal position sensors, the injection control unit computes the time taken to control the electric EGR valve to obtain partial recirculation of exhaust gas under certain engine operating conditions and thus meet Euro3 emission control requirements.

### **Control of air conditioning system activation**

The injection control unit controls the air conditioning system compressor electromagnetic coupling in accordance with a strategy designed to avoid operating conditions that would impair engine performance.

- When the compressor is activated, the injection control unit increases the amount of fuel at idle speed to adjust the engine to the higher power demand and temporarily cut off the power supply to the compressor under conditions of high engine power demand (fast acceleration).

### **Control of engine immobiliser**

The system is fitted with an engine immobiliser. This function depends on the presence of a special (FIAT CODE) control unit, capable of dialogue with the engine management control unit and an electronic key, equipped with a special transmitter for sending a recognition code.

Each time the key is turned to the OFF position, the FIAT CODE system completely deactivates the engine management control unit.

When the key is turned to the ON position, the following operations take place, in order:

1. the engine management control unit (whose memory contains a secret code) sends the FIAT CODE control unit a request to send the secret code to deactivate the immobilizer function;
2. the FIAT CODE control unit responds by only sending the secret code after having, in turn, received the recognition code transmitted by the ignition key;
3. the recognition of the secret code allows the immobilizing function imposed on the engine management control unit to be deactivated and normal operation resumed.

### **Self-diagnosis**

Full electronic diagnosis of the injection system is achieved by connecting a tester (EXAMINER or EXAMINER PLUS) to the standard tester input (EOBD).

The system is equipped with a self-diagnostics function that recognises, memorises and indicates any faults.

If a fault is detected in the sensors or actuators, signal reconstruction strategies are immediately implemented (recovery) to ensure the engine operates at an acceptable level without affecting operation. The car can then be driven to a service outlet for repair.



### 10.

The control unit self-diagnostic system checks signals from the sensors and compares them with permitted limit values:

- fault indication upon start-up
  - warning light on for 4 seconds indicates test stage
  - warning light off after 4 seconds indicates no faults in components that could alter values required by emission control regulations
  - warning light on after 4 seconds indicates fault.
- fault indication during operation
  - warning light on indicates fault
  - warning light off indicates no fault in components that could alter values required by emission control regulations.
- recovery
  - the control unit defines recovery type on each occasion according to the faulty component type
  - recovery parameters are controlled by non-faulty components.

#### Control of cylinder balance when idling

On the basis of signals from sensors, the injection control unit controls the evenness of torque at idle speed by altering injector control times.

#### Control of judder

On the basis of signals from the sensors, the injection control unit corrects the amount of fuel to be injected with the aim of improving handling by reducing jerkiness during driving.

The correction is achieved by adjusting the fuel pressure regulator and altering injector control times.

#### Control of electric balance

On the basis of battery voltage, the injection control unit alters idle speed to ensure sufficient current delivery by the alternator under conditions of high power uptake by appliances.

Idle speed is altered by adjusting fuel pressure and altering injector control times.

#### Control of turbocharger wastegate

At various engine service speeds, the injection control unit processes the signal from the turbo sensor and determines the amount of fuel to be injected by adjusting the fuel pressure governor and injector control times.

The control unit also controls the opening of the wastegate on the turbocharger via the control solenoid in order to optimise performance under all service conditions.

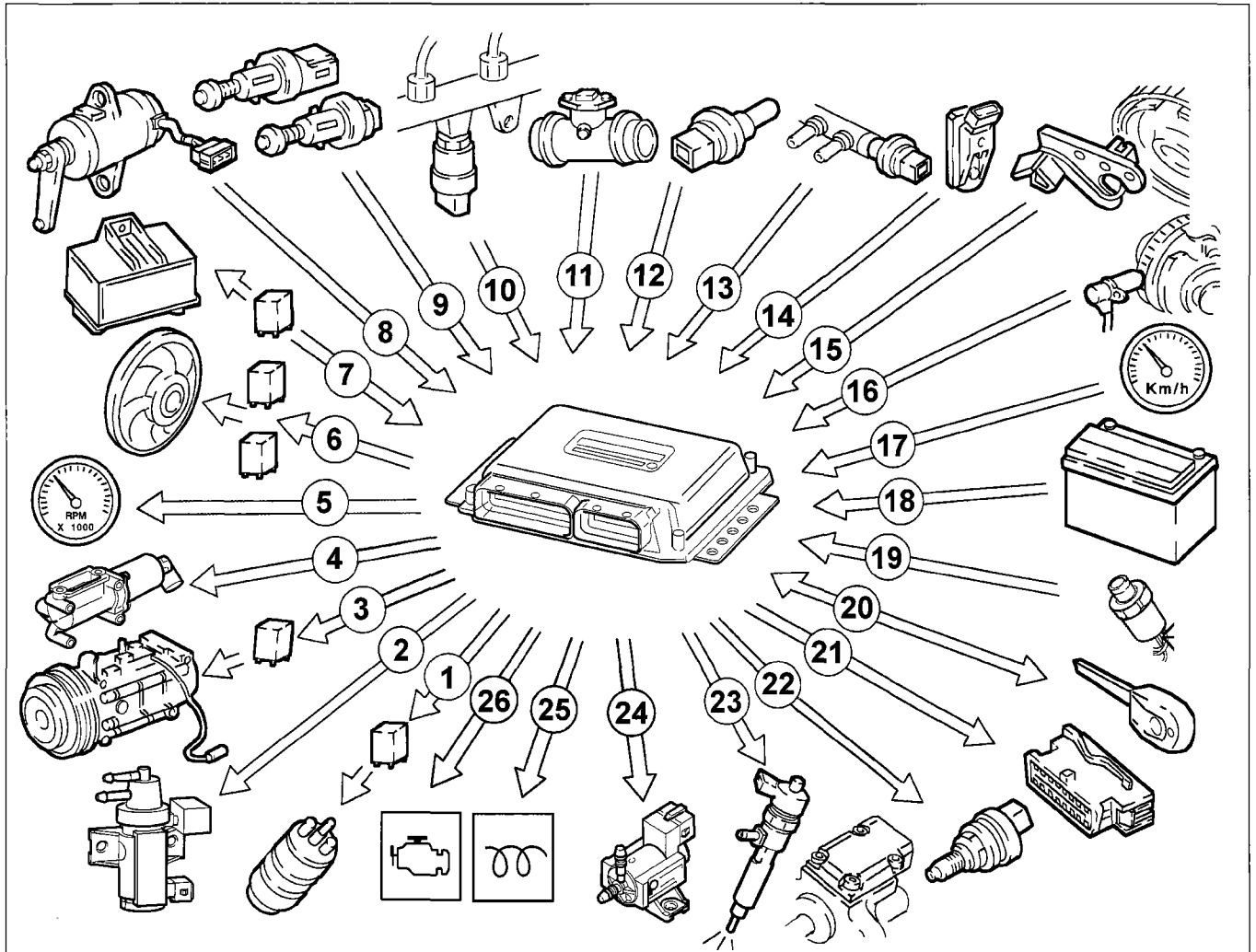
#### Control of throttle closure upon engine power-off

When the engine is turned off (ignition turned to OFF), the injection control unit control closure of the throttle valve on the air intake port by means of a solenoid.

This action limits annoying engine shake as the engine is turned off

**10.**

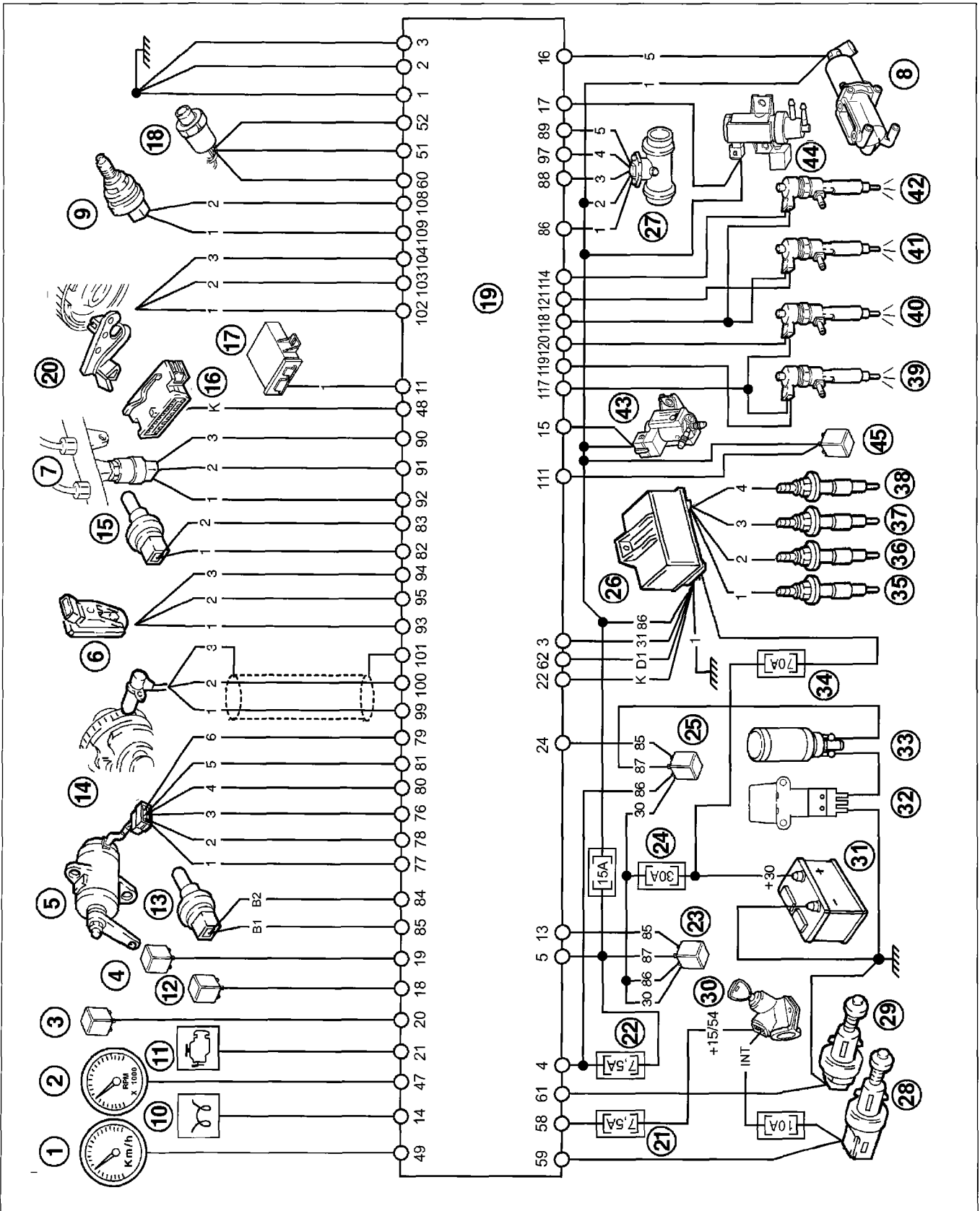
**DIAGRAM SHOWING INFORMATION FLOW BETWEEN THE INJECTION CONTROL UNIT AND SENSORS/ACTUATORS**



4A007QJ01

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Auxiliary fuel pump</li> <li>2. Turbocharger wastegate control solenoid</li> <li>3. Climate control compressor</li> <li>4. Electric EGR valve</li> <li>5. Rev counter</li> <li>6. Engine radiator fan</li> <li>7. Glow plug preheating control unit</li> <li>8. Potentiometer on accelerator pedal</li> <li>9. Brake and clutch pedal switches</li> <li>10. Fuel pressure sensor</li> <li>11. Intake air flow and temperature sensor (debimeter)</li> <li>12. Coolant temperature sensor</li> <li>13. Fuel temperature sensor</li> <li>14. Pressure relief sensor</li> <li>15. Timing sensor</li> <li>16. Rpm sensor</li> <li>17. Vehicle speed signal</li> <li>18. Battery</li> <li>19. Four stage pressure switch</li> </ol> | <ol style="list-style-type: none"> <li>20. Fiat CODE control unit</li> <li>21. Tester input</li> <li>22. Fuel pressure regulator</li> <li>23. Injectors</li> <li>24. Throttle valve control solenoid</li> <li>25. Glow plug preheating warning light</li> <li>26. Injection system failure warning light</li> </ol> |
|--|---|

**10.**  
**INJECTION SYSTEM WIRING DIAGRAM**



4A008QJ01

**Compents of injection system wiring diagram**

1. Vehicle speed
2. Rev counter
3. Engine radiator fan low speed relay
4. Radiator fan high speed activation relay
5. Potentiometer on accelerator pedal
6. Timing sensor
7. Fuel pressure sensor
8. EGR system modulator solenoid
9. Fuel pressure regulator
10. Glow plug preheating warning light on control panel
11. Injection system failure warning light
12. Air conditioning system relay
13. Coolant temperature sensor
14. Rpm sensor
15. Fuel temperature sensor
16. Diagnostic socket
17. Fiat CODE control unit
18. Four stage pressure switch
19. Injection electronic control unit
20. Pressure relief sensor
21. 7.5A fuse protecting electronic injection system (+15 power supply from ignition switch)
22. 7.5A fuse protecting electronic injection system (+30 power supply from ignition switch)
23. Main injection system relay
24. 30A fuse protecting injection system
25. Auxiliary fuel pump relay
26. Glow plug preheating control unit
27. Intake air flow and temperature sensor (debimeter)
28. Brake pedal switch
29. Clutch pedal switch
30. Ignition switch
31. Battery
32. Inertia switch
33. Auxiliary fuel pump (submerged in tank)
34. 60A fuse protecting glow plug control unit
35. Cylinder no. 1 glow plug
36. Cylinder no. 2 glow plug
37. Cylinder no. 3 glow plug
38. Cylinder no. 4 glow plug
39. Cylinder no. 1 injector
40. Cylinder no. 2 injector
41. Cylinder no. 3 injector
42. Cylinder no. 4 injector
43. Throttle valve control solenoid
44. Turbocharger wastegate control solenoid
45. Diesel filter heater relay

**10.**

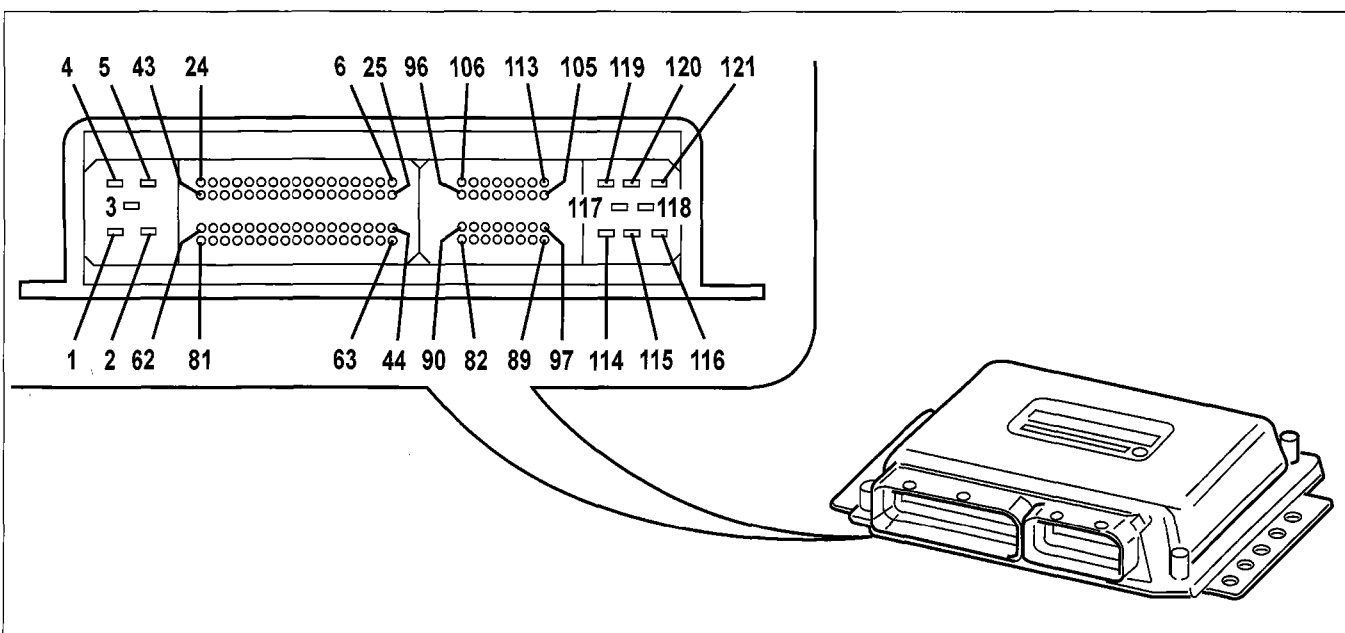
**ELECTRONIC INJECTION CONTROL UNIT**

The control unit processes signals from the various sensors by applying software algorithms and controls the actuators accordingly (particularly the injectors and pressure regulator) to achieve the best possible engine service conditions.

The control unit is "flash E.P.R.O.M." type, i.e. it can be reprogrammed from outside without any need to adjust the hardware.

The injection control unit contains a built-in absolute pressure sensor and is connected to the wiring by means of a 121 pin connector.

**Control unit connection identification (PIN-out)**

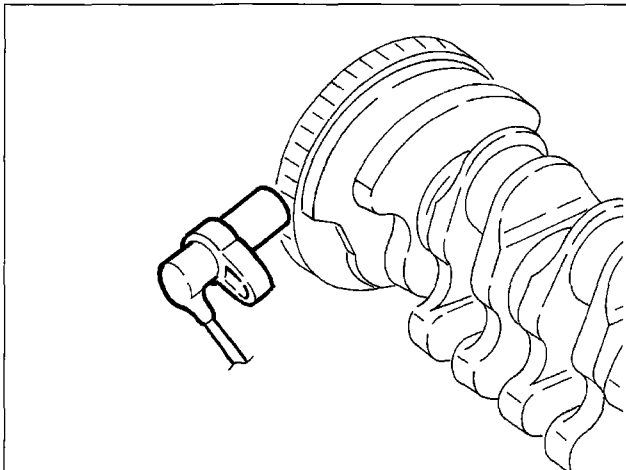


4A010QJ01

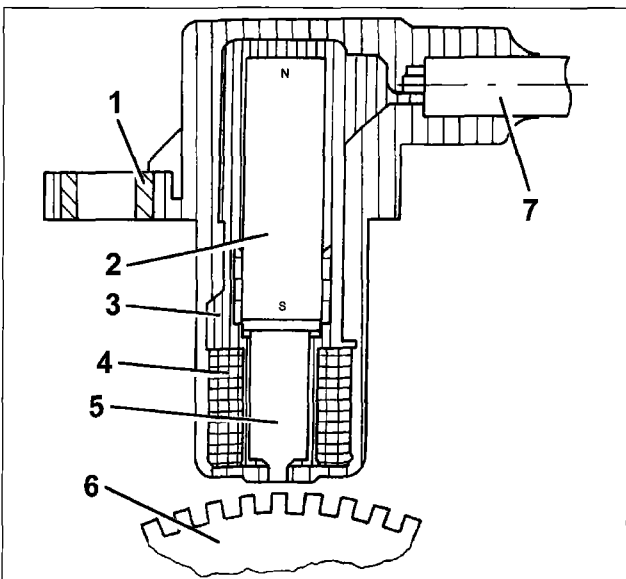
- |                                     |                              |
|-------------------------------------|------------------------------|
| 1 Permissible                       | 24 Auxiliary fuel pump relay |
| 2 Permissible                       | 25 Not connected             |
| 3 Permissible                       | 26 Not connected             |
| 4 Actuator power supply             | 27 Not connected             |
| 5 Injector/ECU power supply         | 28 Not connected             |
| 6 Not connected                     | 29 Not connected             |
| 7 Not connected                     | 30 Not connected             |
| 8 Not connected                     | 31 Not connected             |
| 9 Not connected                     | 32 Not connected             |
| 10 Not connected                    | 33 Not connected             |
| 11 Fiat CODE                        | 34 Not connected             |
| 12 Not connected                    | 35 Not connected             |
| 13 Injection relay                  | 36 Not connected             |
| 14 Glow plug control                |                              |
| 15 Throttle body solenoid           |                              |
| 16 EGR valve                        |                              |
| 17 Waste gate solenoid valve        |                              |
| S                                   |                              |
| 18 Air conditioner relay            |                              |
| 19 Radiator fan high speed relay    |                              |
| 20 Radiator fan low speed relay     |                              |
| 21 Diagnostic warning light control |                              |
| 22 Glow plug activation control     |                              |
| 23 Not connected                    |                              |

- |   |  |
|---|--|
| 37 Not connected                                  | 91 Fuel pressure sensor (pin 2)            |
| 38 Not connected                                  | 92 Fuel pressure sensor (pin 1)            |
| 39 Not connected                                  | 93 Turbo pressure sensor (pin 1)           |
| 40 Not connected                                  | 94 Turbo pressure sensor (pin 3)           |
| 41 Not connected                                  | 95 Turbo pressure sensor (pin 2)           |
| 42 Not connected                                  | 96 Not connected                           |
| 43 Not connected                                  | 97 Air flow meter (pin 4)                  |
| 44 Not connected                                  | 98 Not connected                           |
| 45 Not connected                                  | 99 RPM sensor (pin 1)                      |
| 46 Not connected                                  | 100 RPM sensor (pin 2)                     |
| 47 Engine rpm signal output                       | 101 RPM sensor (pin 3)                     |
| 48 Diagnostic line k                              | 102 RPM sensor (pin 1)                     |
| 49 Vehicle speed signal input                     | 103 Timing sensor (pin 2)                  |
| 50 Not connected                                  | 104 Timing sensor (pin 3)                  |
| 51 Activation signal from 4-stage pressure switch | 105 Not connected                          |
| 52 Activation signal from 3-stage pressure switch | 106 Not connected                          |
| 53 Not connected                                  | 107 Not connected                          |
| 54 Not connected                                  | 108 Fuel pressure regulator                |
| 55 Not connected                                  | 109 Fuel pressure regulator                |
| 56 Not connected                                  | 110 Not connected                          |
| 57 Not connected                                  | 111 Heater relay control Fuel filter       |
| 58 Key ON signal                                  | 112 Not connected                          |
| 59 Brake switch                                   | 113 Not connected                          |
| 60 Air conditioner activation request             | 114 Cylinder 4 injector control            |
| 61 Clutch switch                                  | 115 Not connected                          |
| 62 Glow plug diagnosis                            | 116 Not connected                          |
| 63 Not connected                                  | 117 Cylinder 1 and 2 injector power supply |
| 64 Not connected                                  | 118 Cylinder 3 and 4 injector power supply |
| 65 Not connected                                  | 119 Cylinder 1 injector control            |
| 66 Not connected                                  | 120 Cylinder 2 injector control            |
| 67 Not connected                                  | 121 Cylinder 3 injector control            |
| 68 Not connected                                  |  |
| 69 Not connected                                  |  |
| 70 Not connected                                  |  |
| 71 Not connected                                  |  |
| 72 Not connected                                  |  |
| 73 Not connected                                  |  |
| 74 Not connected                                  |  |
| 75 Not connected                                  |  |
| 76 Accelerator pedal 1 earth                      |  |
| 77 Accelerator pedal 1 signal                     |  |
| 78 Accelerator pedal 1 power supply               |  |
| 79 Accelerator pedal 2 earth                      |  |
| 80 Accelerator pedal 2 signal                     |  |
| 81 Accelerator pedal 2 power supply               |  |
| 82 Diesel temperature sensor (pin 1)              |  |
| 83 Diesel temperature sensor (pin 2)              |  |
| 84 Coolant temperature sensor (pin 1)             |  |
| 85 Coolant temperature sensor (pin 2)             |  |
| 86 Air flow meter (pin 1)                         |  |
| 87 Not connected                                  |  |
| 88 Air flow meter (pin 3)                         |  |
| 89 Air flow meter (pin 5)                         |  |
| 90 Fuel pressure sensor (pin 3)                   |  |

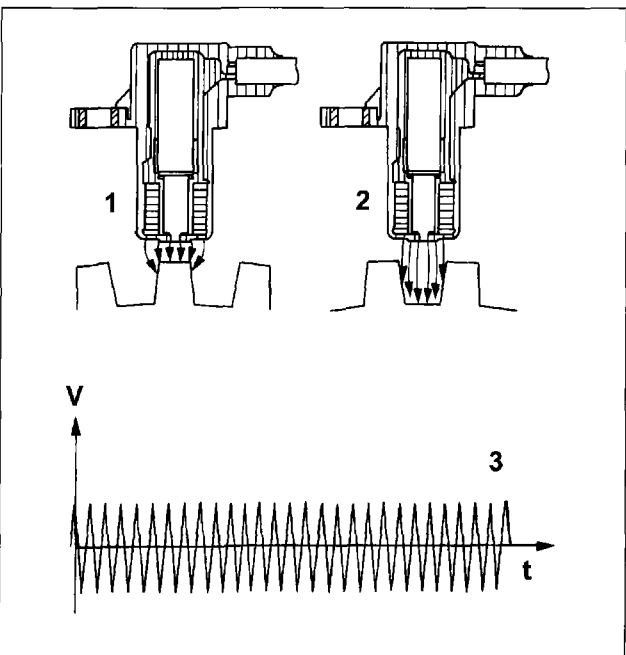
**10.**



4A012QJ01



4A012QJ02



4A012QJ03

**RPM SENSOR**

The rpm sensor is fitted to the engine crankcase and faces the phonic wheel on the crankshaft.

The sensor is inductive type, i.e. it works by varying a magnetic field generated when the phonic wheel teeth (60-2 teeth) pass in front of the sensor element.

The injection control unit uses the rpm sensor signal to determine crankshaft speed and angular position.

**Operation**

The changeover from full to empty due to the presence or absence of teeth sets up a magnetic flux change sufficient to generate an induced alternating voltage proportional to the number of teeth on the phonic wheel.

The peak sensor output voltage value, all things being equal, depends on the distance between the sensor and the tooth (gap).

1. Steel bush
2. Permanent magnet
3. Sensor case
4. Winding
5. Core
6. Phonic wheel
7. Electrical connection

To obtain the correct signal, the specified gap between phonic wheel and sensor should be between 0.8 and 1.5 mm

This distance is not adjustable. When the gap is not as specified, check the condition of the sensor and phonic wheel.

**Winding resistance 860 Ohm  $\pm 10\%$  at 20 °C**

1. Maximum magnetic flux
2. Minimum magnetic flux
3. Induced alternate voltage

### TIMING SENSOR

The Hall effect sensor is fitted to the cylinder head and faces the camshaft pulley.

An opening on the pulley allows the timing sensor to detect the engine timing position and indicate it to the injection control unit.

The injection control unit uses the timing sensor signal to detect TDC at the end of compression.

### Operation

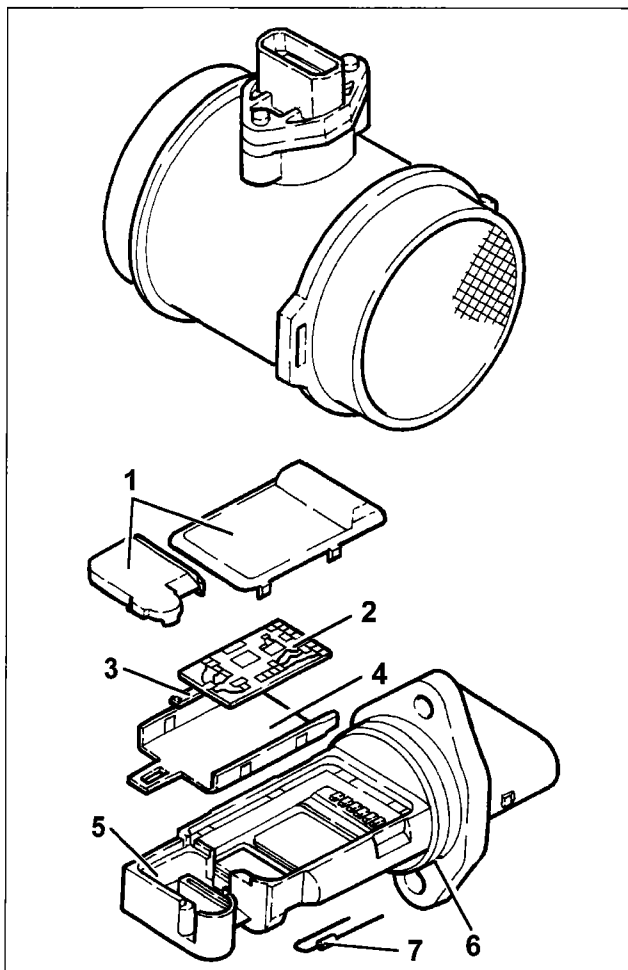
A semi-conductor layer, through which a current passes, immersed in a magnetic field (lines of force perpendicular to the direction of the current), produces a difference in power, known as Hall voltage.

If the intensity of the current remains constant, the voltage produced only depends on the intensity of the magnetic field. The intensity of the field can simply be altered periodically to produce a modulated electrical signal. Signal frequency is proportional to the speed with which the magnetic field changes.

To achieve this change, the sensor is crossed by a metal ring (inner part of the pulley) with an opening.

When it moves, the metal part of the ring covers the sensor to magnetic field and the output signal is therefore low; Conversely, the sensor generates a high signal at the opening when the magnetic field is present.

This signal, together with the rpm and TDC signals, allows the injection control unit to identify piston position and determine injection point.



### AIR FLOW METER (DEBITMETER)

The debimeter is located on the air intake sleeve and is hot film type.

The debimeter contains an intake air temperature sensor.

### Operation

The principle of operation is based on a heated membrane fitted into a measurement channel through which engine intake air flows.

The hot film membrane is maintained at a constant temperature (about 120 °C higher than incoming air) by the heater coil.

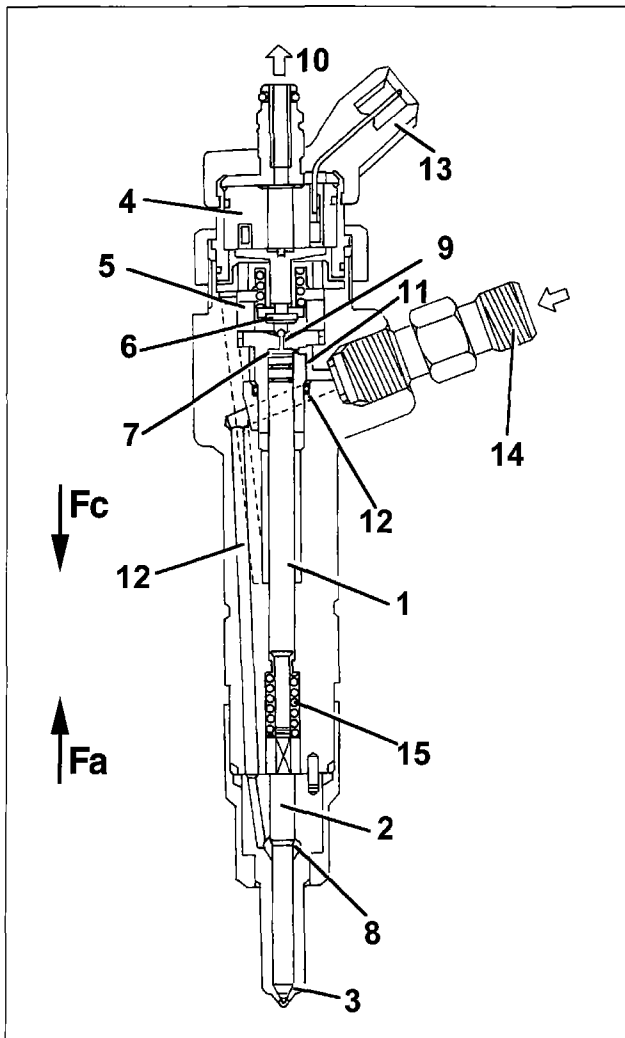
The mass of air flowing through the measurement channel tends to take heat from the membrane. To keep the membrane at constant temperature, a certain current level must flow through the resistance.

Because this current is proportional to the mass of air that flows to the engine, it can be measured with a Wheatstone bridge and the resulting signal is sent to the injection control unit.

1. Covers
2. Electronic card
3. Sensor
4. Mounting plate
5. Mount
6. O-ring
7. Temperature sensor



**10.**



4A014QJ01

1. Pressure rod
2. Pin
3. Nozzle
4. Coil
5. Pilot valve
6. Ball plunger
7. Control area
8. Supply volume
9. Control volume
10. Fuel outlet connector (low pressure)
11. Control port
12. Supply port
13. Electrical connection
14. Fuel input connector (high pressure)
15. Spring

**INJECTORS**

The injectors are fitted to the cylinder head and are electromagnetic in type. They are controlled directly by the injection control unit.

The injectors come with a high-pressure supply port and a recirculation pipe at environmental pressure; The supply port is connected to a delivery manifold (rail) with pipes designed to withstand the high service pressures.

The injector can be divided into two parts:

- Actuator/spray made up of a pressure rod (1), pin (2) and nozzle (3);
- control solenoid made up of coil (4) and pilot valve (5).

**Operation**

Injector operation may be divided into three stages:

*1. rest position*

Coil (4) is deactivated and plunger (6) is in closed position to prevent fuel entering the cylinder:  $F_c > F_a$  where  $F_c$  is the force generated by pressure acting on the control area (7) of pressure rod (1) and  $F_a$  is the force due to the pressure acting on supply volume (8).

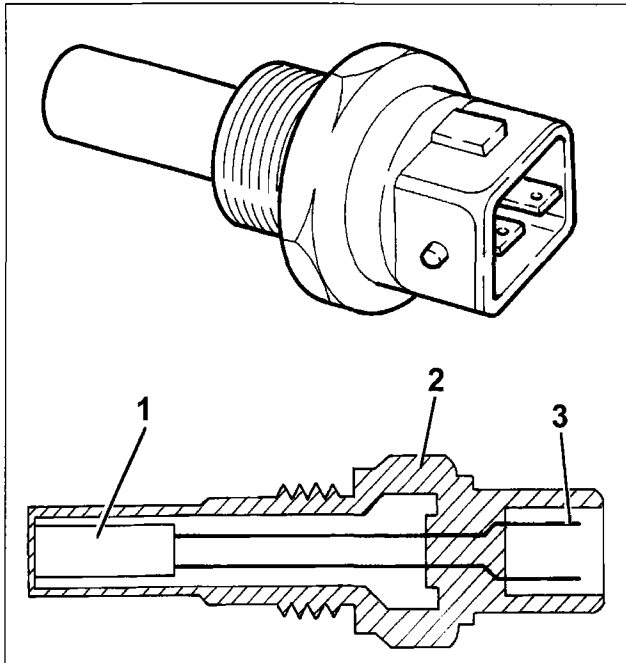
*2. Start of injection*

Coil (4) is excited and causes plunger (6) to rise. Fuel flows from control volume (9) to the return manifold to bring about a pressure drop in control area (7). Simultaneously, line pressure through supply port (12) exerts a force  $F_a > F_c$  on supply volume (8) to cause pin (2) to rise and thus allow fuel into the cylinders.

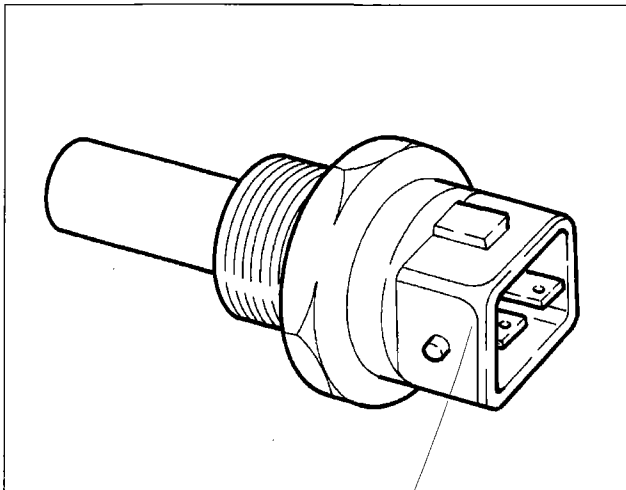
*3. end of injection*

Coil (4) is deactivated and causes plunger (6) to return to closed position. The resulting balance of forces makes pin (2) return to rest position and injection therefore ends.

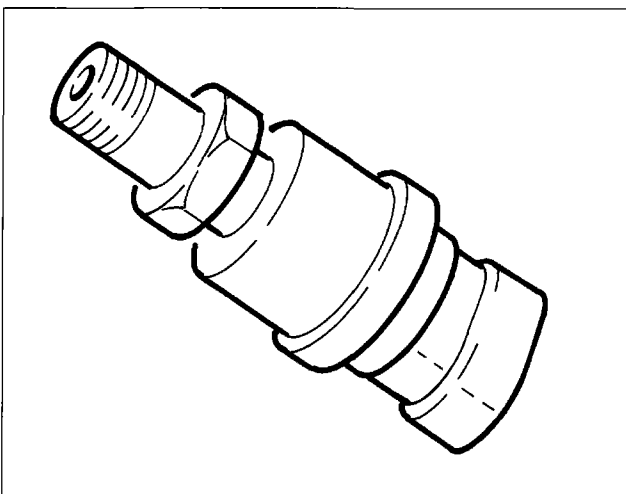
# 10.



4A015QJ01



4A015QJ02



4A015QJ03

## ENGINE COOLANT TEMPERATURE SENSOR

The sensor is fitted to the thermostat and measures the temperature of the engine coolant by means of an NTC thermistor with a negative resistance coefficient.

Because the sensor is made using semiconductor technology, the resistance falls if sensor element temperature rises with increasing coolant temperature.

Because resistance does not change in linear manner, it is higher at low temperatures than at high temperatures for the same temperature increase.

1. NTC resistance
2. Sensor case
3. Electrical connector

## FUEL TEMPERATURE SENSOR

The sensor is fitted on the return manifold and measures fuel temperature by means of an NTC thermistor with a negative resistance coefficient.

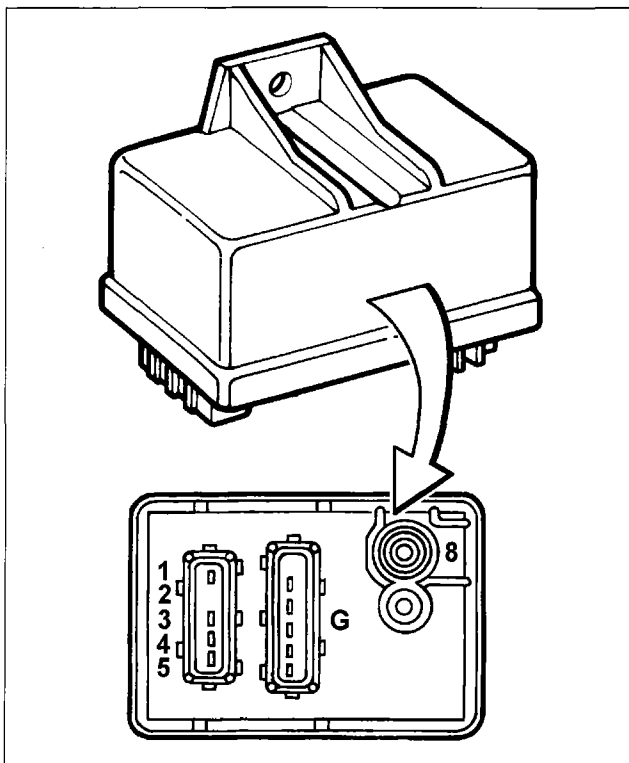
Refer to the previous description of the coolant temperature sensor for sensor operation.

## FUEL PRESSURE SENSOR

The sensor is fitted in the middle of the fuel delivery manifold (rail) and is responsible for providing a return signal (feedback) to the control unit in order to:

- adjust injection pressure;
- regulator injection duration.

**10.**



4A016QJ01

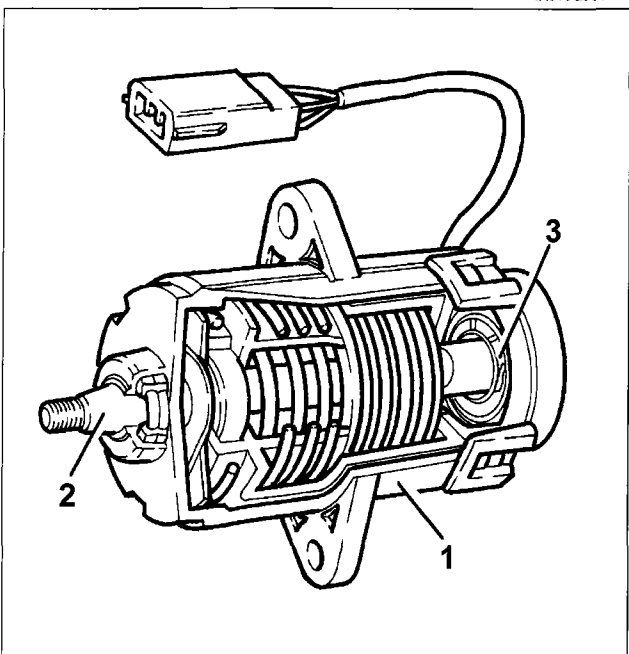
**GLOW PLUG PREHEATING CONTROL UNIT**

The glow plugs are controlled by means of a preheating control unit under the direct control of the injection control unit.

The preheating control unit contains a smart relay that sends a return response (feedback) to the injection control unit, which is thus informed of faults in the preheating control unit or glow plug short-circuits to earth.

The figure shows the connectors on the base of the preheating control unit and the pin-out

- 1. Permissible
- 2. Injection control unit (pin 22)
- 3. Power supply from main injection relay
- 4. Not connected
- 5. Injection control unit (pin 62)
- 8. Positive from battery (+30)
- G. Glow plugs (only four outputs are used)



4A016QJ02

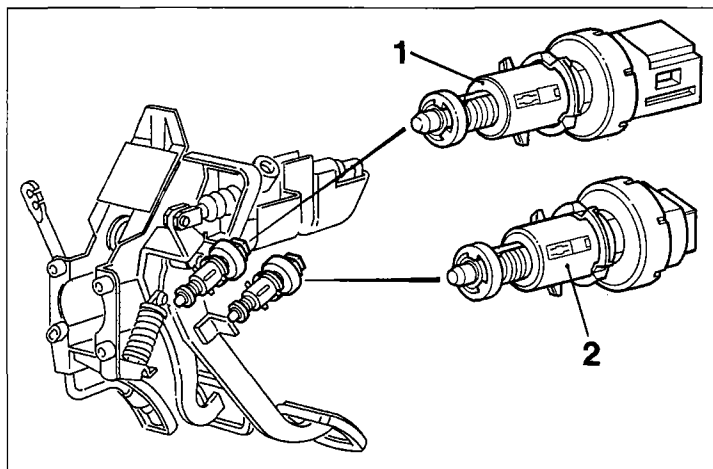
**ACCELERATOR PEDAL POTENTIOMETER**

Accelerator pedal position is converted to an electrical voltage signal and send to the injection control unit by a potentiometer connected to the accelerator pedal.

Accelerator pedal position is processed together with rpm information to provide injection times and pressure.

The sensor consists of a case (1) secured to the pedal by a flange, which contains an axially-positioned shaft (2) connected to two potentiometers (3): main and safety potentiometers.

A coil spring on the shaft ensures the correct resistance to pressure while a second spring ensures return upon release.



4A017QJ01

**TEST**

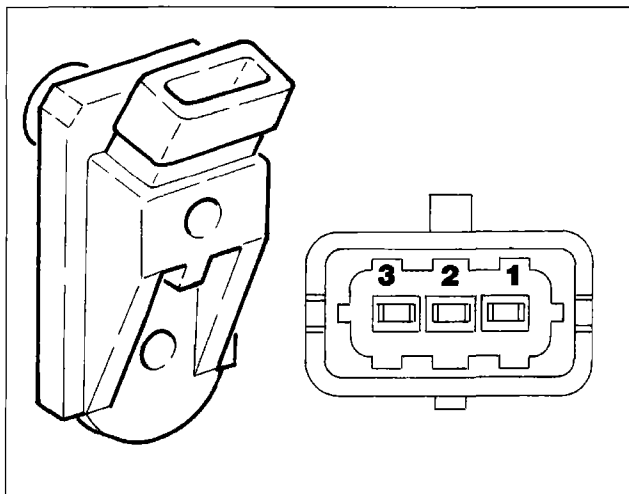
A switch (1) on the brake pedal controls the car brake lights; the same switch sends a signal to pin 59 of the injection control unit

The control unit uses the "brake pedal depressed" signal to:

- detect a situation of over-run;
- check the plausibility of the signal from the accelerator potentiometer

**CLUTCH PEDAL SWITCH**

A switch (2) on the clutch pedal is connected to pin 61 of the injection control unit. The injection control unit uses the "brake pedal operated" signal to distinguish gear engaged and gear shift conditions.



4A017QJ02

**PRESSURE RELIEF SENSOR**

The sensor is fitted to the intake manifold and the signal sent to the injection control unit is used to:

- adjust injection pressure;
- adjust injection duration.

The figure alongside shows the sensor and electrical connector with the following pin-out:

1. pressure signal
2. Permissible
3. Fuel feed system

**ATMOSPHERIC PRESSURE SENSOR**

The atmospheric pressure signal is built into the injection control unit. It is responsible for measuring atmospheric pressure in order to correct measured air flow and reference air flow values to control the EGR function.

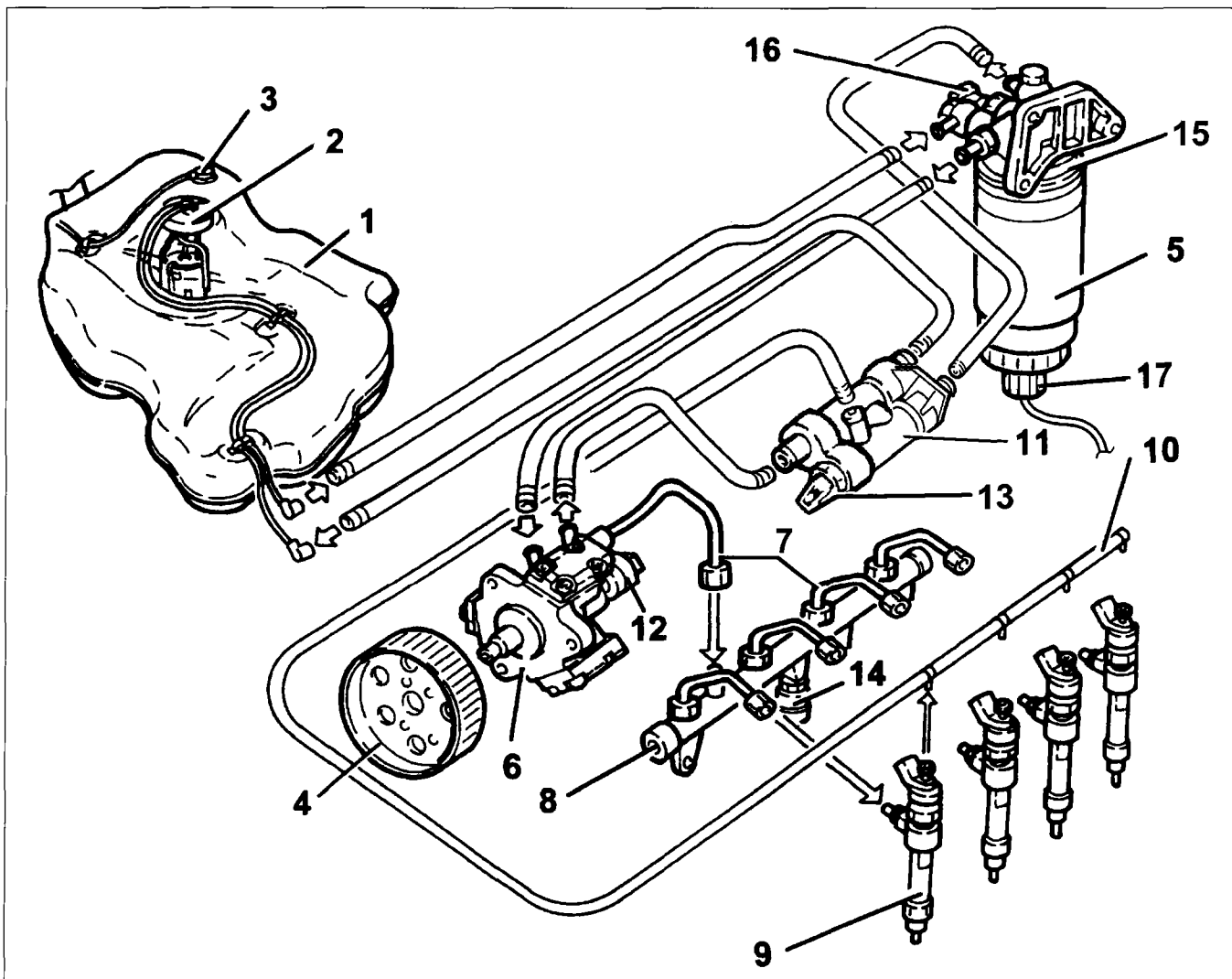
# 10.

## FUEL SUPPLY CIRCUIT

Operationally-speaking, the fuel supply circuit is divided into a low pressure circuit and a high pressure circuit.

The low pressure circuit consists of a tank, multifunction valve, auxiliary fuel pump submerged in the tank and a return manifold.

The high pressure circuit consists of a radialjet pressure pump, delivery manifold and injectors.



4A018QJ01

- |  |  |
|--|--|
| 1. Fuel tank   | 14. Fuel pressure sensor                               |
| 2. Submerged fuel pump (auxiliary) with fuel level gauge control | 15. Diesel heater                                      |
| 3. Multifunction valve   | 16. Fuel temperature sensor                            |
| 4. Pressure pump control pulley                                  | 17. Sensor indicating presence of water in fuel filter |
| 5. Diesel filter cartridge                                       |  |
| 6. Pressure pump   |  |
| 7. High pressure pipe  |  |
| 8. Delivery manifold (rail)                                      |  |
| 9. Injectors   |  |
| 10. Fuel recirculation pipe (injector return)                    |  |
| 11. Return manifold  |  |
| 12. Pressure regulator   |  |
| 13. Fuel temperature sensor                                      |  |

**10.**

**SUBMERGED FUEL PUMP ASSEMBLY (AUXILIARY) AND LEVEL GAUGE CONTROL**

The assembly consists mainly of:

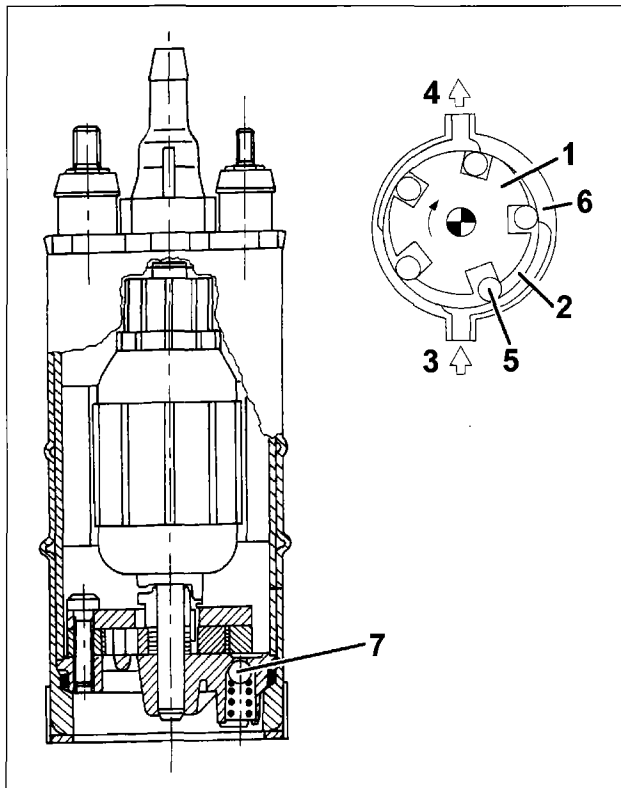
- a roller-type fuel pump;
- a fuel level gauge;
- a fuel filter

The submerged fuel pump is volumetric type with rollers and a motor with brushes and permanent magnet excitation.

Impeller (1) is driven by the electric motor to turn and create volumes (2) that move from intake port (3) to outlet port (4).

These volumes are delimited by rollers (5) that adhere to outer race (6) as the motor turns.

The pump is fitted with two valves: a check valve to prevent the fuel circuit emptying (with the pump off); a second pressure relief valve (7) that short-circuits the outlet to the inlet when pressures exceed 5 bars.



4A019QJ01

1. Impeller
2. Volumes
3. Intake port
4. Outlet port
5. Rollers
6. Outer race
7. Pressure relief valve

**FUEL FILTER**

The fuel filter is located in the engine bay.

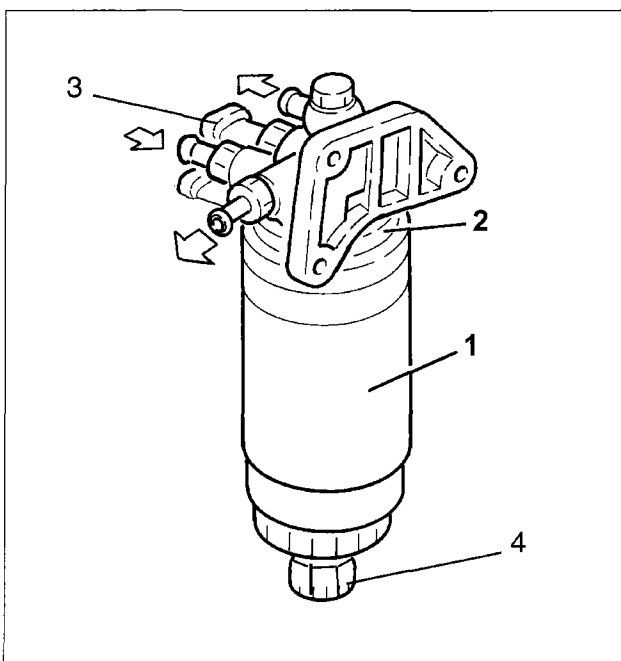
The filter is cartridge type with a filter element (1) made up of a pack of paper discs with a filtering area of some 5300 cm<sup>2</sup> and a filter gauge of 4 - 5 microns.

The filter is equipped with a fuel preheating device (2) controlled by the engine control unit via a relay.

The control unit activates or deactivates the diesel filter on the basis of a diesel temperature signal sent by sensor (3) on the filter.

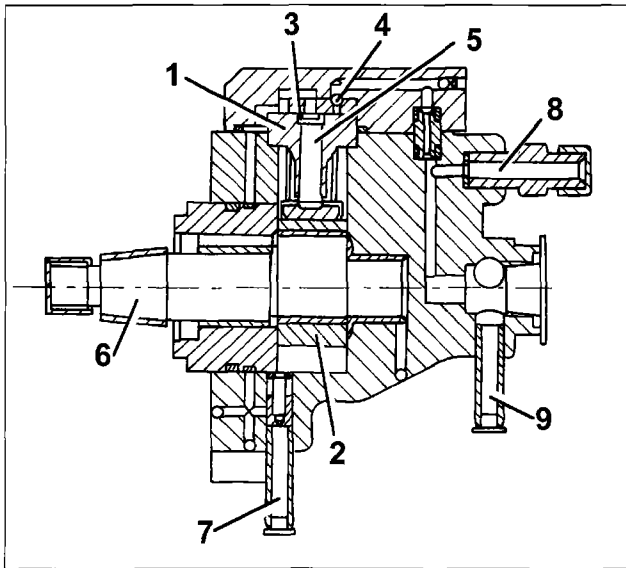
A plug (4) screwed to the base of the fuel filter cartridge is used to drain off the water. The plug incorporates a sensor for the detection of water in the diesel filter connected to a warning light on the instrument panel.

1. Filter cartridge
2. Diesel preheating device
3. Diesel temperature sensor
4. Water drain plug with sensor to detect presence of water in diesel filter

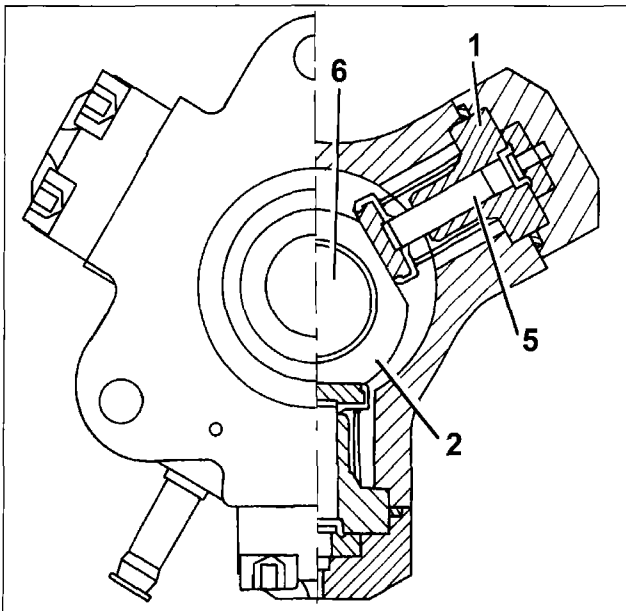


4A019QJ02

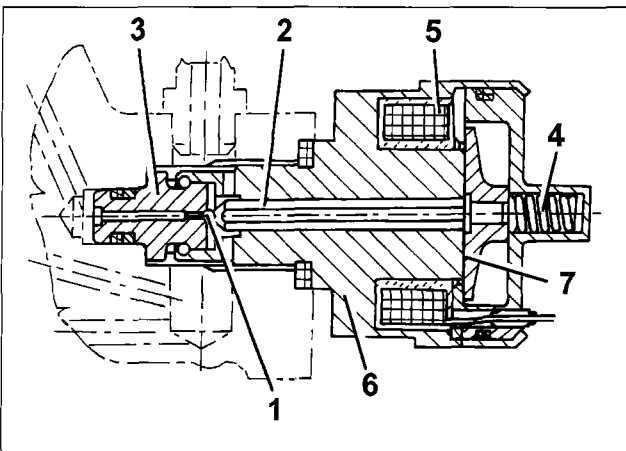
**10.**



4A020QJ01



4A020QJ02



4A020QJ03

**PRESSURE PUMP**

The pressure pump is radialjet type with three radial pistons (total capacity 0.657 cc). It is controlled by a timing belt with or without timing requirements.

Each pump unit consists of:

- a piston (5) operated by a cam (2) integral with the pump shaft (6);
- a plate-type intake valve (3);
- a delivery ball valve (4).

The pressure pump must be supplied at a pressure of at least 0.5 bars; and for this reason the fuel system is equipped with an auxiliary pump submerged in the tank.

The pressure pump is lubricated and cooled by the diesel fuel via channels and is able to deliver a maximum pressure of 1350 bars.

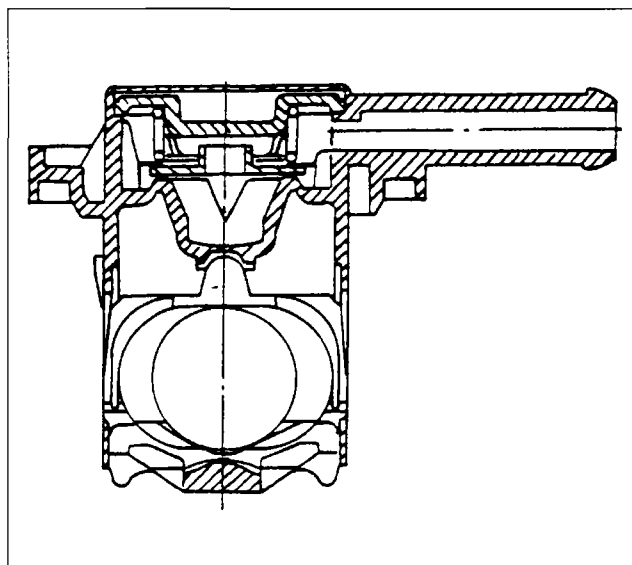
1. Cylinder
2. Cam
3. Plate-type intake valve
4. Ball-type delivery valve
5. Piston
6. Pump shaft
7. Diesel intake connection - low pressure - from fuel filter
8. Diesel delivery connection - high pressure - to manifold (rail)
9. Diesel delivery connection - low pressure - recirculation

**PRESSURE REGULATOR SENSOR**

The fuel pressure regulator is fitted to the pressure pump and controlled directly by the injection control unit. It regulates fuel feed pressure to the injectors.

The pressure regulator consists mainly of the following parts:

1. Ball plunger
2. Pin
3. Valve
4. Preload spring
5. Coil
6. Body
7. Anchor



4A021 QJ01

### MULTIFUNCTION VALVE

The multifunction valve is located on the fuel tank and performs the following functions:

- tank pressurisation
- ventilation
- seal if the car rolls over

#### Tank pressurisation

Tank pressurisation is maintained at a level between 55 and 75 mbars by means of a valve mounted on a sealing rim.

The valve is supported by a steel plate and held in place by a spring.

When tank pressure exceeds a specified level, it overcomes spring resistance and allows the valve to rise so that vapours can flow out.

When the pressure returns to within specified limits, the valve closes again

#### Ventilation

Under certain car service conditions, a vacuum may build up in the tank due to the effect of:

- heat changes;
- fuel consumption

in this case, the valve's function is to make up pressure inside the tank by letting air into the tank.

If this function is not performed correctly, the car may judder or stall due to difficulties in supplying the pump.

#### Seal if the car rolls over

The roll-over function prevents fuel emerging from the tank if the car rolls over or tilts to a great extent. During normal car operation (bends, acceleration, braking etc.), the fuel slops about and may emerge. The highly-sensitive roll-over valve prevents this happening.

#### DELIVERY MANIFOLD (RAIL)

The delivery manifold (rail) is fitted to the cylinder head on the intake side.

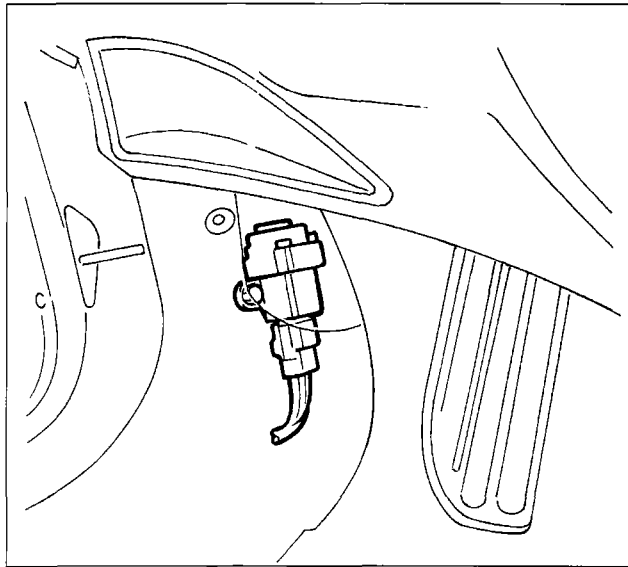
Its volume damps fuel pressure fluctuations due mainly to:

- operation of the pressure pump;
- injector opening.

A fuel pressure sensor is fitted in the middle of the delivery manifold. Hydraulic connections (high pressure) are via special steel pipes.



**10.**



4A022QJ01

**INERTIA SAFETY SWITCH**

To increase car occupant safety in the case of impact, the car is fitted with an inertia switch located inside the passenger compartment secured to the inside of the left panel.

This sensor reduces the possibility of fire (due to emerging fuel) by deactivating the auxiliary fuel pump that supplies the injection circuit.

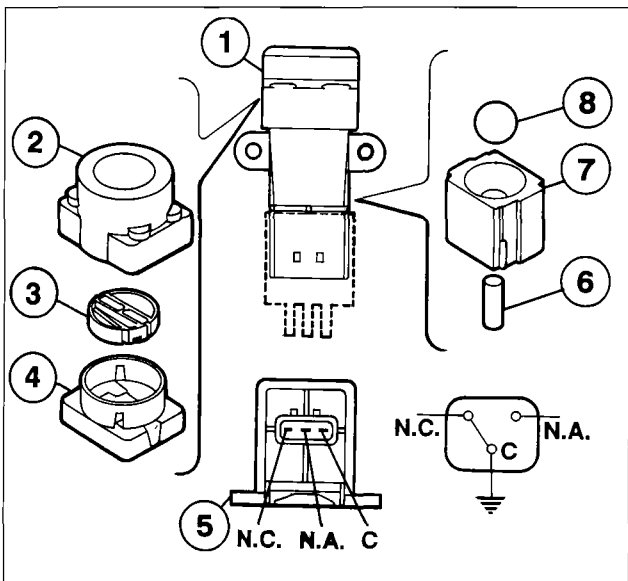
The switch consists of a steel ball, fitted in a tapered housing, kept in place by the attraction force of a permanent magnet.

In the case of violent impact, the ball is released from the magnetic detent and opens the normally closed (NC) electrical circuit to cut off the auxiliary fuel pump connection to earth, and as a consequence the supply to the injection system.

To restore the auxiliary pump earth connection, move back the seat and press the switch until a click is heard.



*Even after an apparently slight impact, if there is a smell of fuel or there are leaks from the fuel system, do not turn the switch back on, but search for the fault and remedy it to prevent the risk of fire.*



4A022QJ02

**Inertia switch components**

1. Inertia switch assembly
2. Sheath
3. Button
4. Upper side
5. Engagement side
6. Permanent magnet
7. Permanent magnet seat
8. Steel ball

- C. Shared terminal  
 N.C. Normally closed contact  
 N.A. Normally open contact

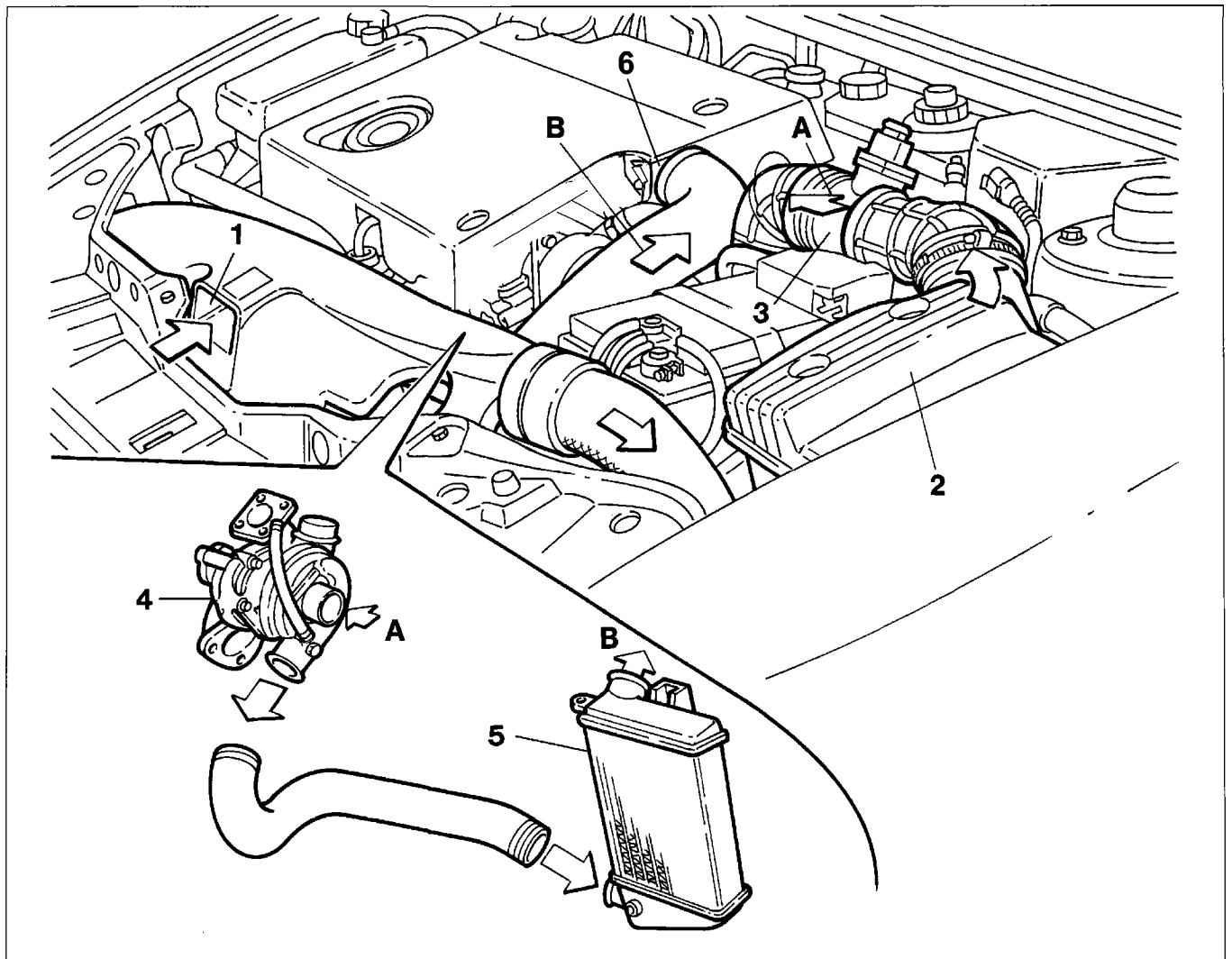
**AIR INTAKE CIRCUIT**

The air intake circuit is turbocharged by means of a turbocharger with wastegate controlled by the engine management unit and an intercooler.

The turbocharger is low inertia type. Its design is based on a new principle of turbocharging whereby the turbocharger aims to increase torque within the range of most frequent use (e.g. at low speeds).

After passing through the filter (1), intake air is compressed by the exhaust gas-drive turbocharger (4), cooled by intercooler (5) and sent to throttle body (6) and the intake manifold from where it is distributed to the cylinders.

**Air intake circuit diagram**



4A023QJ01

- 1. Intake vent
- 2. Air filter
- 3. Intake air flow meter (debimeter)
- 4. Turbocharger
- 5. Air-air intercooler
  - A. To turbocharger
  - B. To intake manifold
- 6. Throttle body

## 10.

### THROTTLE CASING

To reduce engine noise during shut-down, a throttle has been added to the intake port with the aim of closing off the air flow to the cylinders.

Throttle valve opening or closure is controlled by an engine control unit (5) that manages a control actuator (3) on throttle body (4) via solenoid (2).

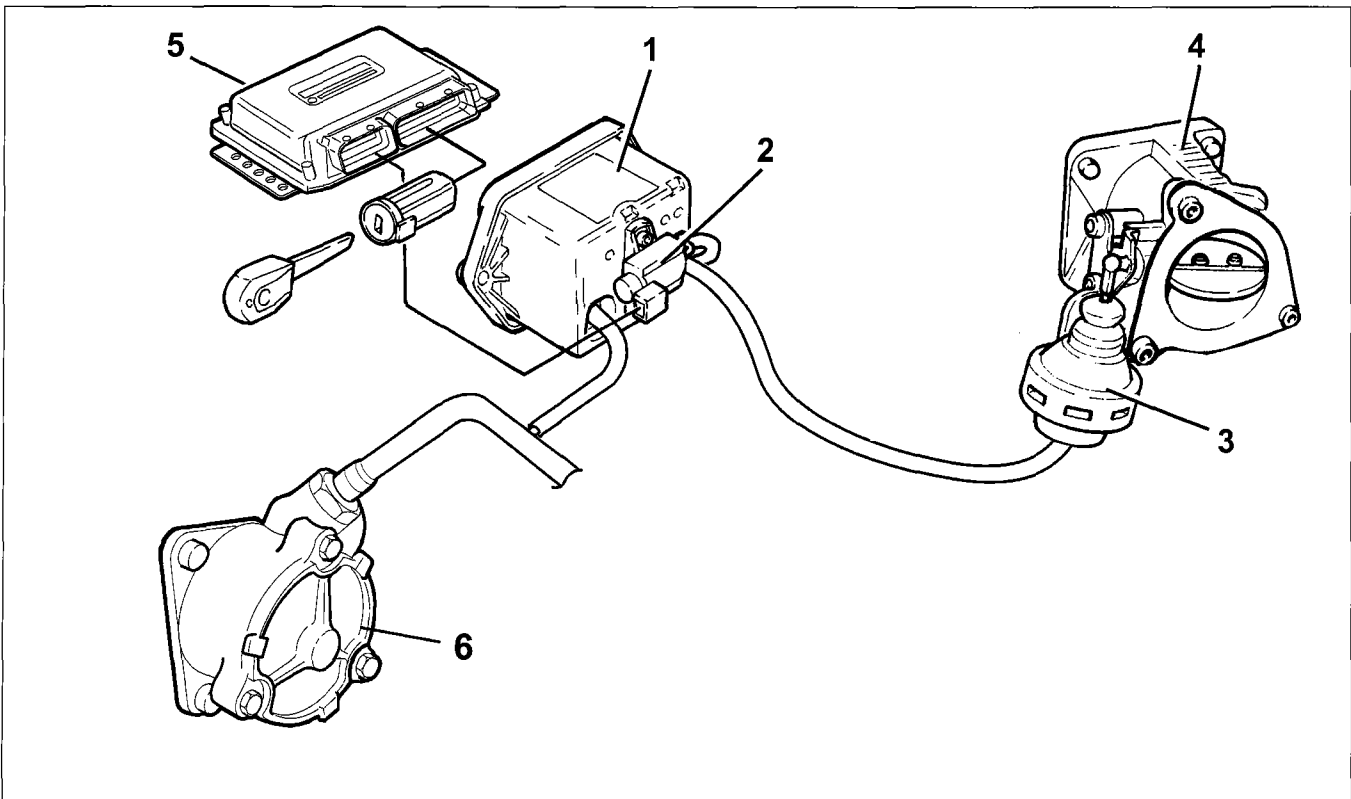
#### Operation

When the engine is off, the throttle is open because no vacuum is present.

When the engine is running, the throttle is open because the Pierburg solenoid is not activated and prevents the vacuum reaching the pneumatic actuator.

A vacuum builds up in the tank during engine operation.

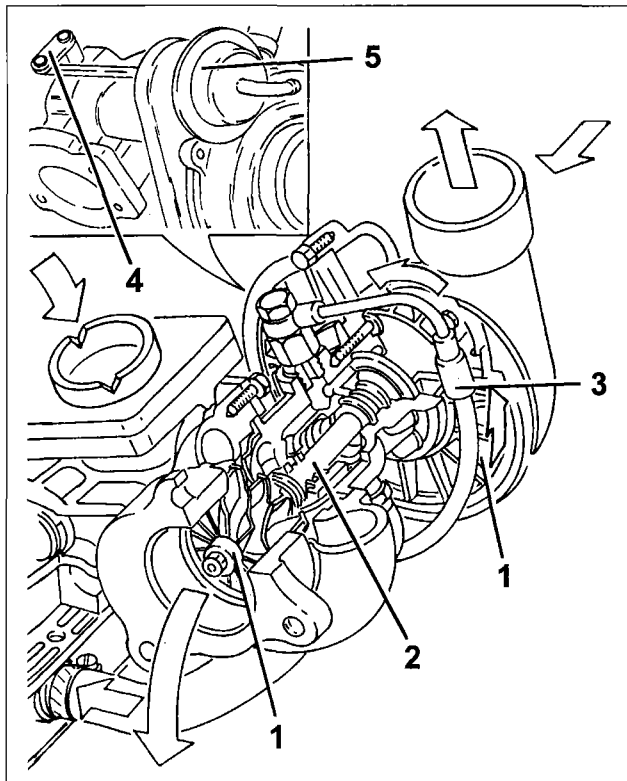
During engine shut-down (when the ignition key is turned OFF), the control unit keeps the actuator supply relay activated for a further 4 or 5 seconds and simultaneously earths the Pierburg valve. The Pierburg valve opens to send the vacuum that has built up in the vacuum tank to the pneumatic actuator, which closes the throttle to cut off the flow of air to the cylinders.



4A0240J01

1. Vacuum tank;
2. Pierburg solenoid controlling throttle body actuator;
3. Pneumatic actuator on throttle body
4. Throttle case
5. Engine control unit
6. Vacuum pump

**10.**



4A025QJ01

**TURBOCHARGER**

This consists essentially of two impellers (1) fitted to the same shaft (2), which rotates on floating bearings lubricate via a branch (3) of the engine lubrication system.

The oil used dissipates a proportion of the great quantity of heat given up by the exhaust gas to the turbine.

The turbocharger is fitted with a wastegate (4) controlled by a pneumatic actuator (5), which partially restricts the passage of exhaust gases to the turbine according to engine power/torque requirements.

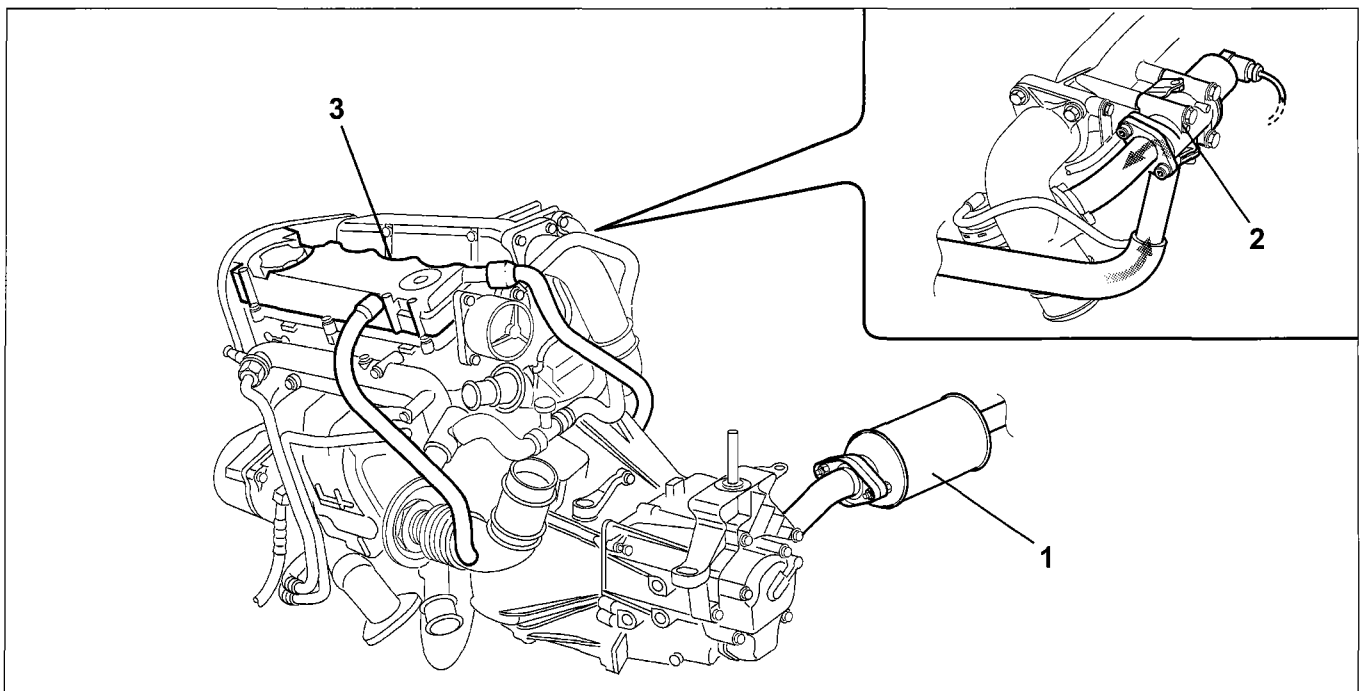
The pneumatic actuators is controlled by the engine control unit via a solenoid.

- 1. Impellers
- 2. Shaft
- 3. Lubrication
- 4. Wastegate
- 5. Actuator

**EMISSION CONTROL DEVICES**

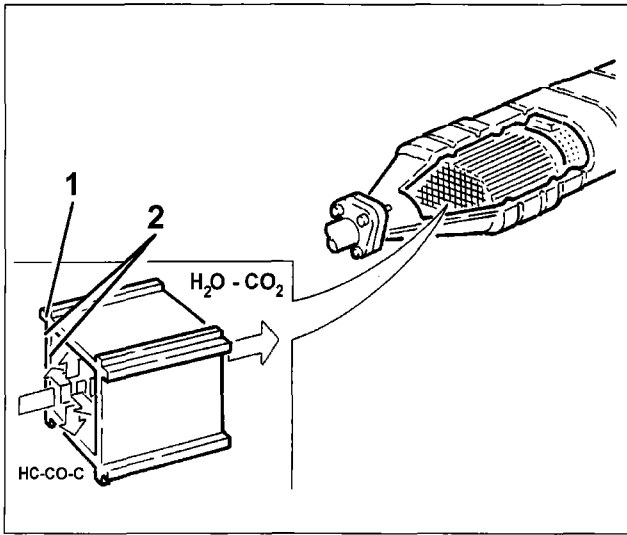
The car is equipped with devices designed to reduce polluting emissions in accordance with Euro 3 requirements:

- Oxidising catalytic converter (1)
- Exhaust gas recirculation circuit (EGR) (2)
- Crankcase blow-by vapour recirculation circuit (3).



4A025QJ02

**10.**



**OXIDISING CATALYTIC CONVERTER**

The oxidising catalytic converter is a post-treatment device used to oxidise CO, HC and particulate and convert them to carbon dioxide (CO<sub>2</sub>) and water vapour (H<sub>2</sub>O).

The catalytic converter consists of a ceramic honeycomb case (1) with its chambers impregnated with platinum, a substance that catalyses oxidation reactions.

Exhaust gases flow through the chambers and heat the catalytic converter where they trigger the conversion of pollutants to inert compounds.

The chemical reaction involved in oxidising the CO, HC and particulate is effective at temperatures between 200 °C and 350 °C.

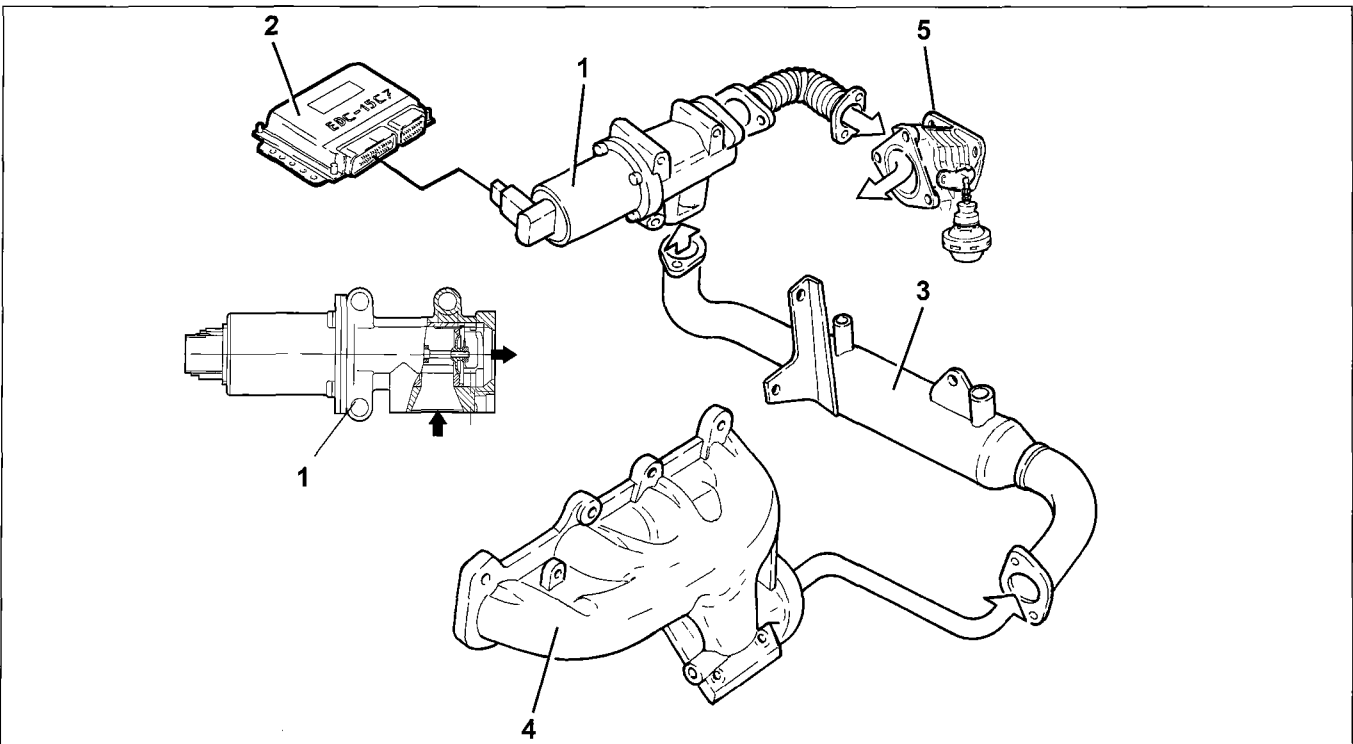
Above 350 °C, the sulphur in the diesel begins to oxidise to produce sulphur dioxide and sulphuric acid.

**EXHAUST GAS RECIRCULATION CIRCUIT (EGR)**

This system sends a proportion of exhaust gases to the intake under certain engine service conditions. This dilutes the fuel mixture with inert gases to lower peak temperature in the combustion chamber; This helps limit the formation of nitrogen oxides (NO<sub>x</sub>) and reduces exhaust levels by 30-50%.

The EGR valve consists of:

- a Pierburg EGR solenoid (1) operated by engine management unit (2)
- a pipe from the exhaust manifold (4) (from which the exhaust gases flow)
- an air-water heat exchanger (3) (that lowers exhaust gas temperature)
- a pipe connected to throttle body (5) to which exhaust gases are admitted



**Operation**

With coolant temperature > 20°C and engine speeds between 800 and 3000 rpm, the engine management unit controls the EGR solenoid by means of a square wave signal.

Changes in this signal allow the EGR coil to move a plunger and thus modulate the flow of exhaust gas from the exhaust manifold to the intake manifold; this achieves two results:

- less air is taken in
- combustion temperature is lowered (due to the presence of inert gases), thus reducing the formation of NOx (nitrogen oxides).

The engine management control unit is constantly informed of recirculation gas quantity via data from the debimeter. If the intake of a given quantity of air (Qam) is required for a given rpm and the level sent by the debimeter (Qar) is lower, the difference (Qgr) is the amount of gas recirculated.

$$Q_{am} - Q_{ar} = Q_{gr}$$

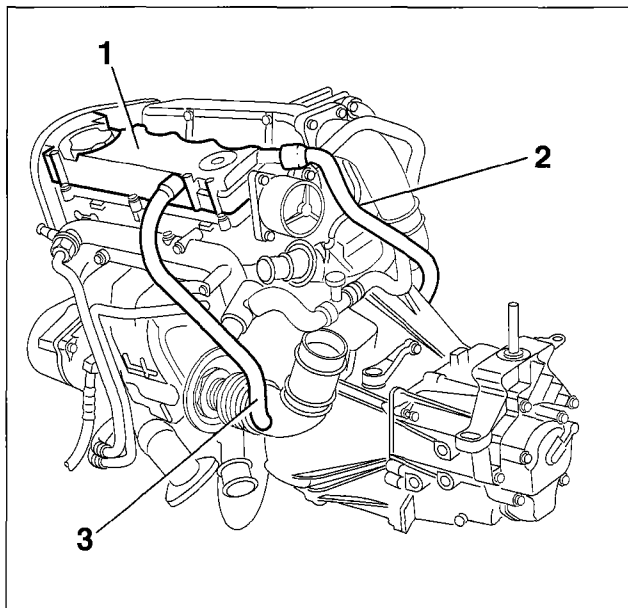
Qam = stored theoretical air quantity

Qar = actual air quantity

Qgr = recirculated gas quantity

An atmospheric pressure signal is used in controlling the EGR valve to detect when the car is being driven at altitude. The recirculation gas quantity can then be reduced to prevent engine fumes.

**CRANKCASE VAPOUR RECIRCULATION SYSTEM (BLOW-BY)**



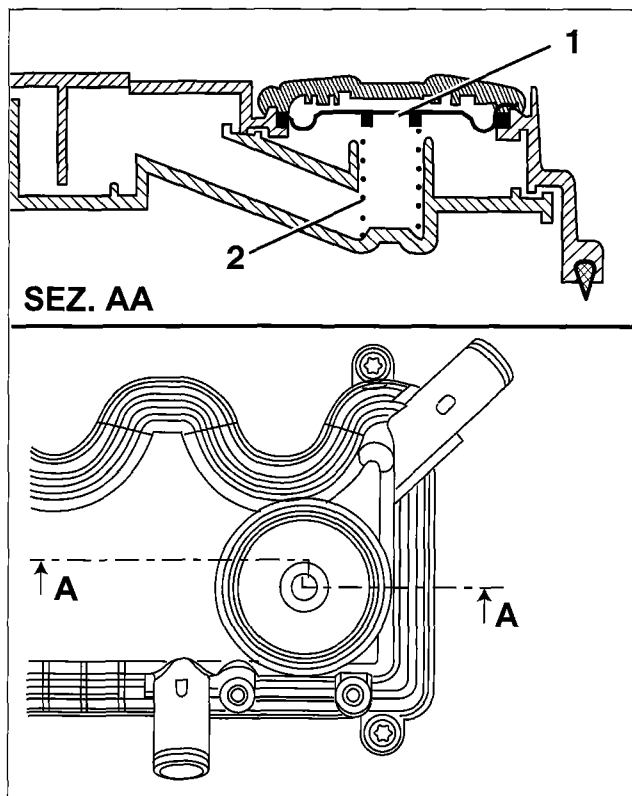
4A027QJ01

Oil vapour emission control is carried out by a separator (1) (function performed by the cam cover), which collects vapours released from the crankcase in pipe (2).

The temperature difference between the separator and oil vapours brings about partial condensation.

The condensed vapours are sent through pipe (3) to the turbocharger air intake sleeve.

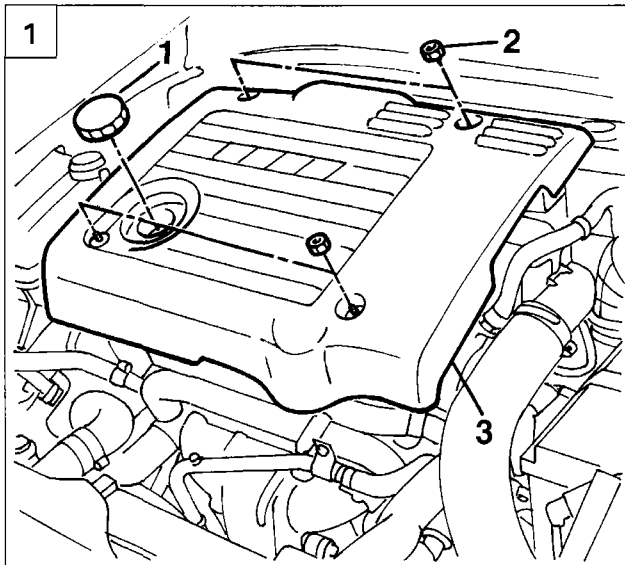
**10.**



4A028QJ01

A regulation valve made up of a spring (1) and membrane (2) on the cam cover prevents anomalous intake effects.

When the vacuum level inside the cam cover exceeds a specified limit, the membrane moves down to block the port from the crank-case.



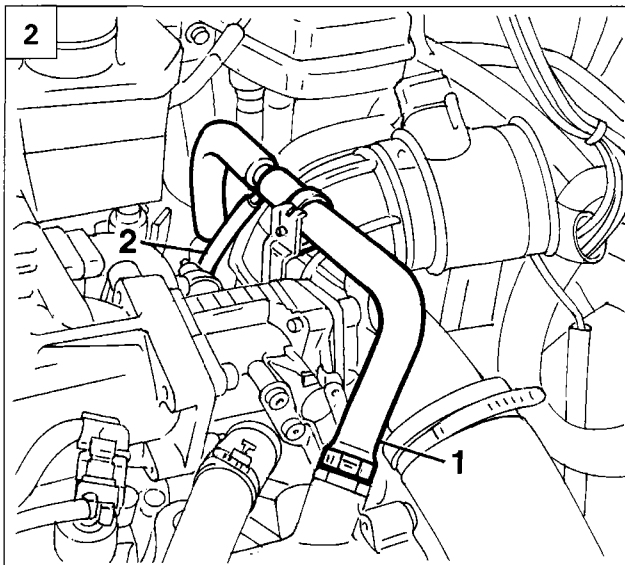
**THROTTLE CASING**

**Removing-refitting**

- Remove the battery from the engine bay, then proceed as follows:

1. Remove the engine oil filler cap (1), then unscrew retaining bolts (2) and remove the soundproofing cover (3).

4A029QJ01

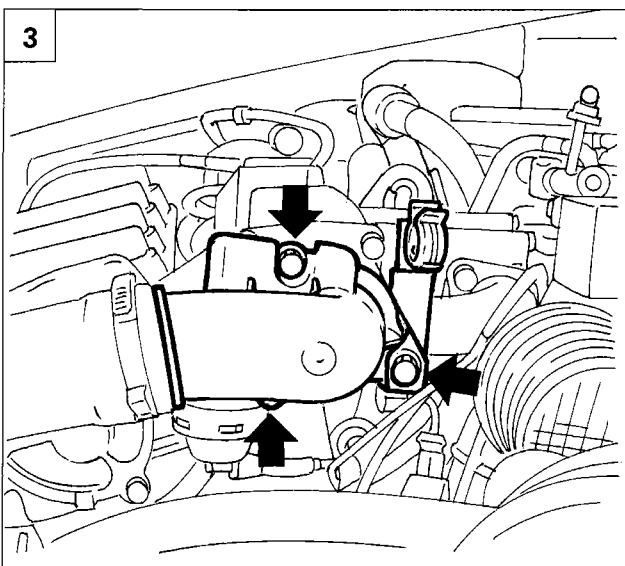


2. Disconnect vacuum intake pipe (1) from the vacuum pump by undoing the retaining band. then disconnect pipe (2) connected to the vacuum tank.

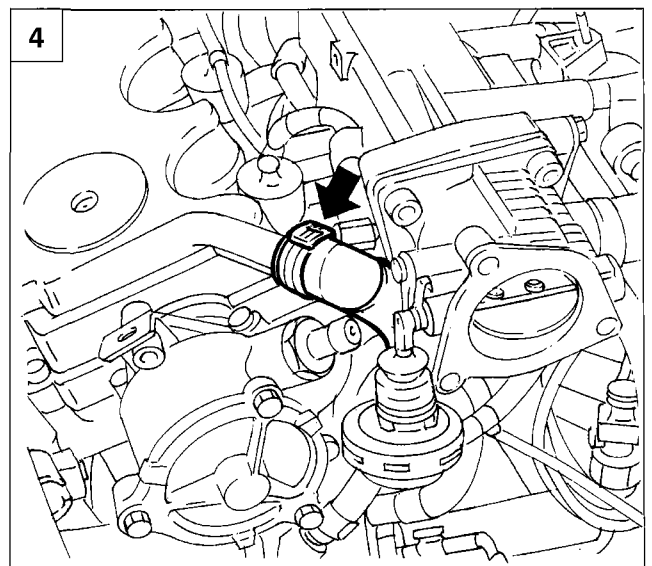
3. Unscrew the bolts securing the pipe connecting the throttle body and intercooler connection sleeve.

4. Disconnect the oil vapour recovery pipe from the cam cover by undoing the retaining band.

4A029QJ02



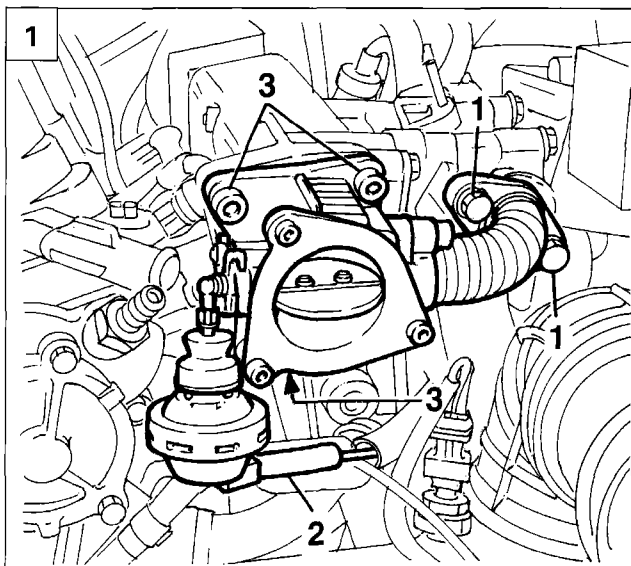
4A029QJ03



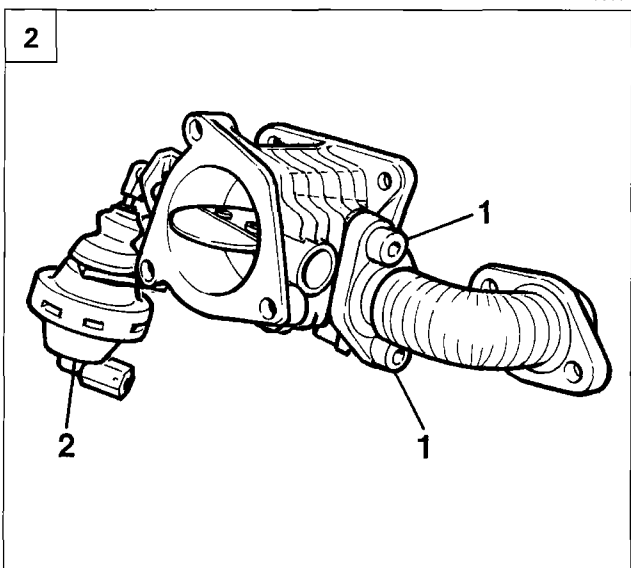
4A029QJ04



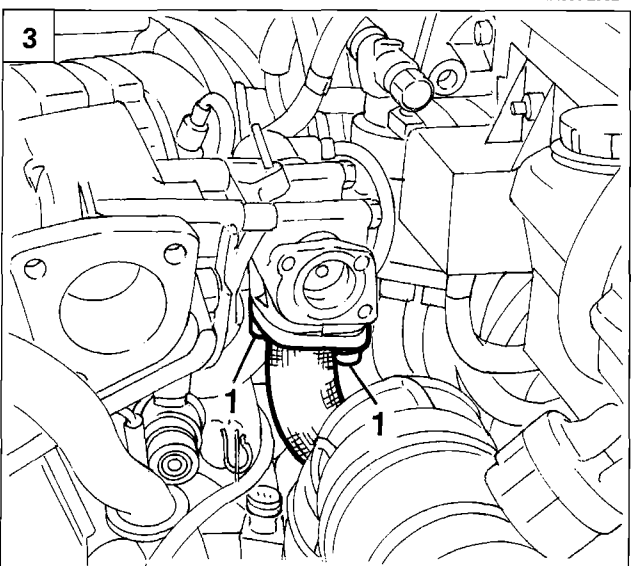
**10.**



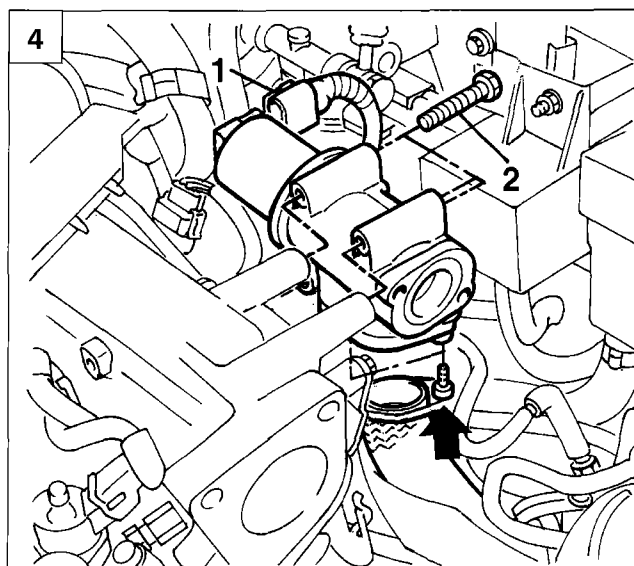
4A030QJ01



4A030QJ02



4A030QJ03



4A030QJ04

1. Unscrew bolts (1) securing the expansion coupling to the EGR valve, disconnect pipe (2) connecting the pneumatic valve to the solenoid, then unscrew bolts (3) and remove the throttle body.
2. Working at the bench, unscrew bolts (1) and separate the expansion coupling from the throttle body. Pneumatic valve (2) is secured to the throttle body.

**ELECTRIC EGR VALVE**

**Removing-refitting**

- Remove the throttle body as described in the previous paragraph.
3. Loosen the bolts(1) securing the EGR connection pipe to the heat exchanger.
  4. Disconnect the EGR valve self-regulation motor electrical connection; Unscrew bolts (2) securing the EGR valve to the intake manifold, then lift the valve and remove the bolts securing the connection pipe to the heat exchanger (loosened previously).

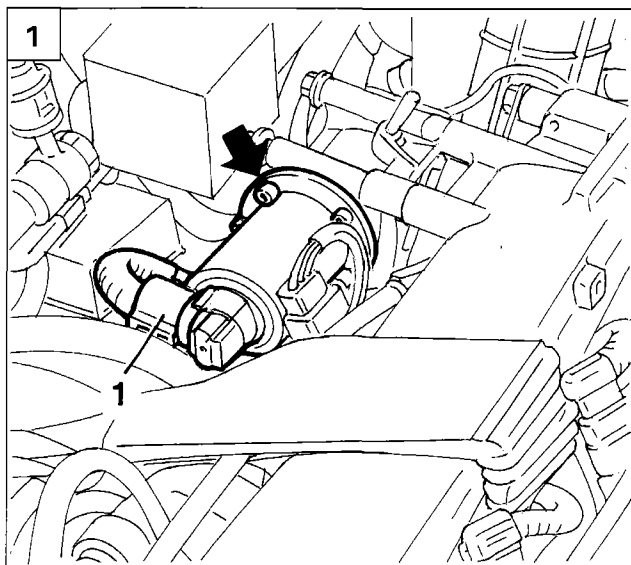
**10.**

**EGR VALVE SELF-ADJUSTMENT MOTOR**

**Removing-refitting**

- disconnect the negative battery lead, then remove the soundproofing cover proceed as described in the previous paragraphs:

1. Disconnect the electrical connection (1), then undo the bolts securing the EGR valve self-adjustment motor and remove.



4A031QJ01

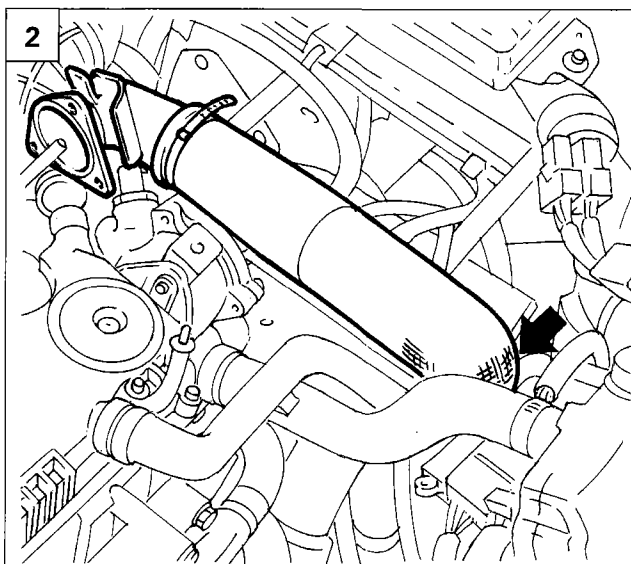


**EGR VALVE HEAT EXCHANGER**

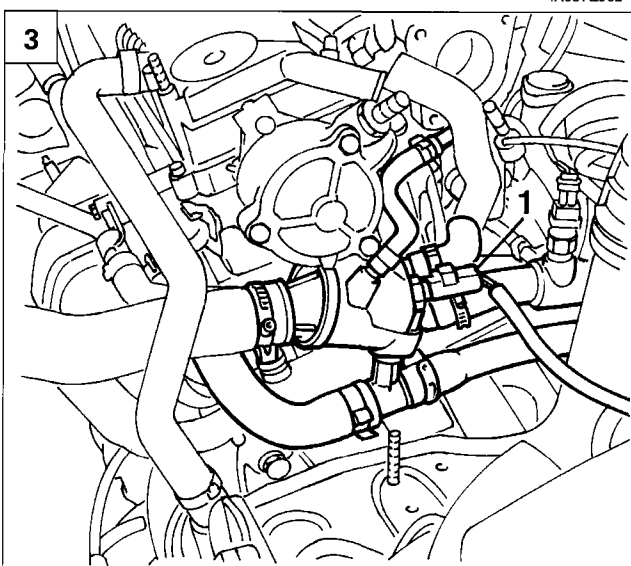
**Removing-refitting**

- Remove the throttle body and electric EGR valve as described in the previous paragraphs.

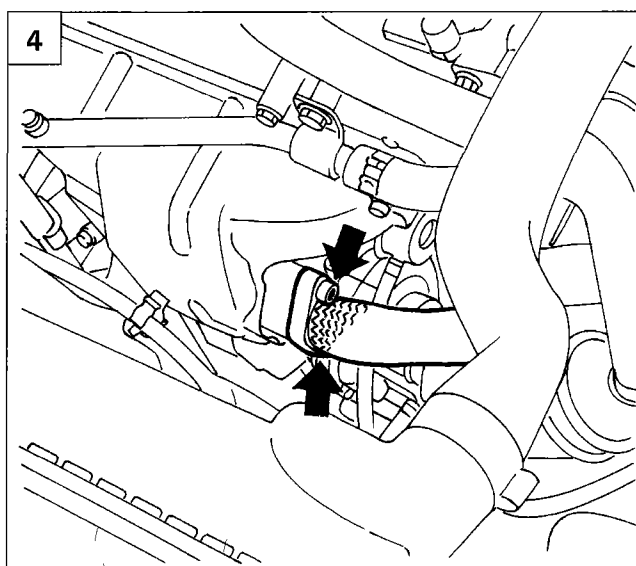
2. Remove the sleeve connecting the throttle body to the intercooler.
- drain the engine coolant.
3. Disconnect the pipes shown in the figure from the thermostat by undoing the retaining bands, then disconnect the coolant temperature sensor electrical connection (1).
4. Undo the bolts securing the heat exchanger pipe to the exhaust manifold.



4A031QJ02

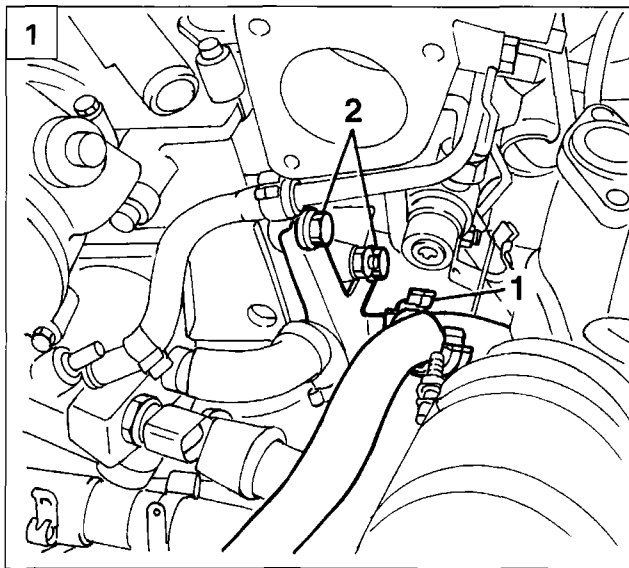


4A031QJ03

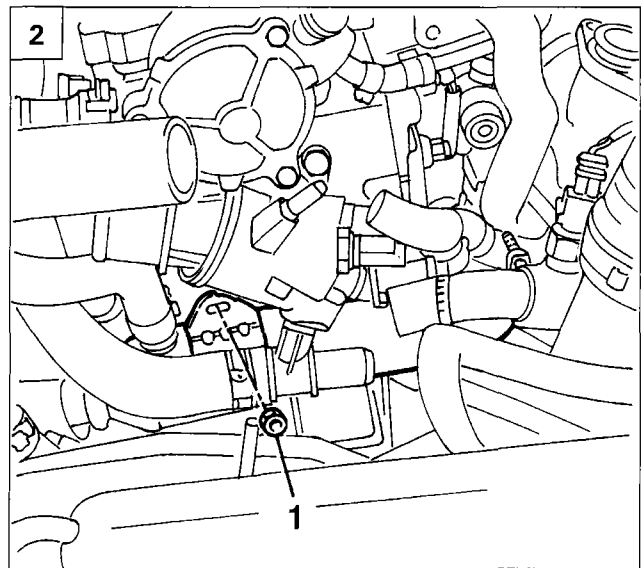


4A031QJ04

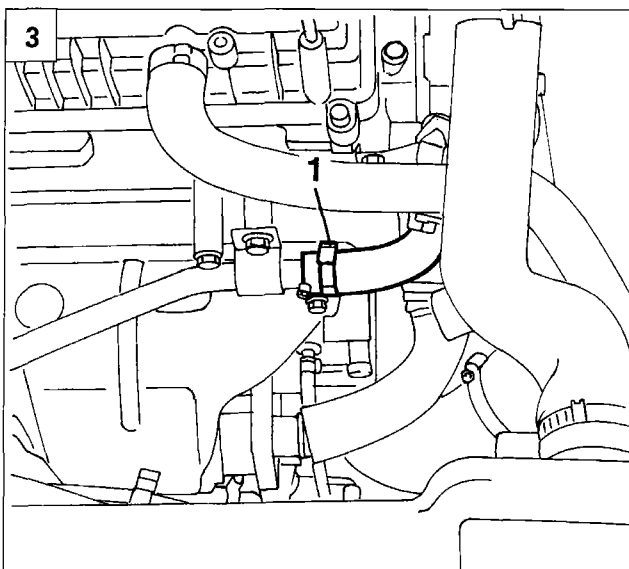
**10.**



4A032QJ01



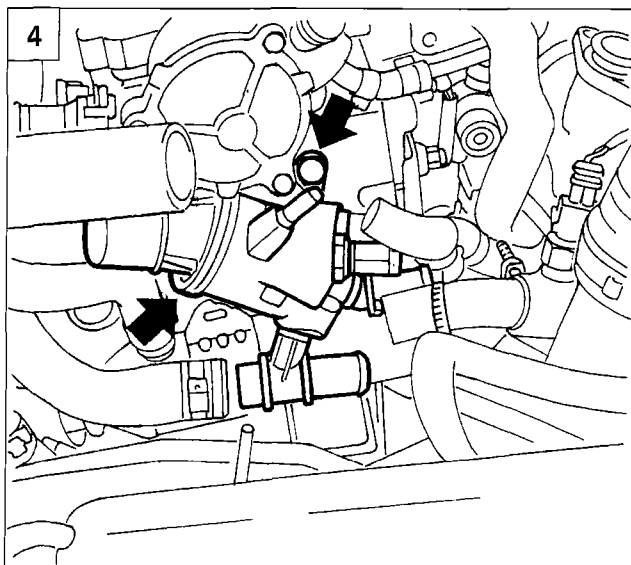
4A032QJ02



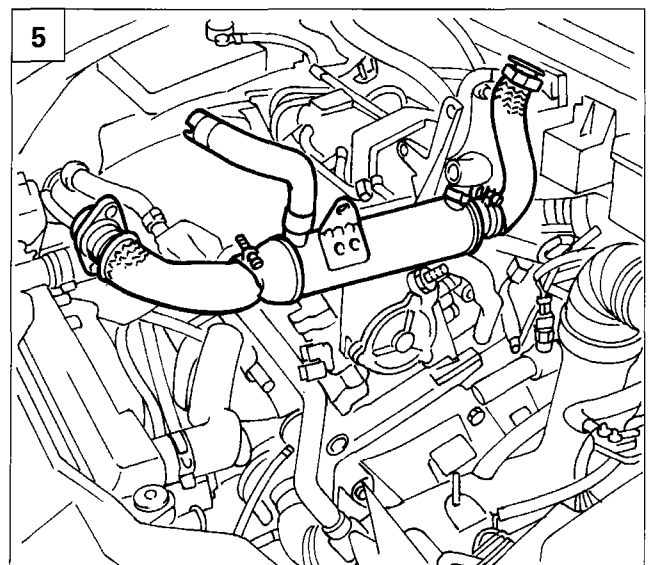
4A032QJ03



1. Open band (1) securing the oil vapour recovery pipe, then unscrew bolts (20 securing the EGR valve heat exchanger bracket.
2. Unscrew nut (1) located beneath the thermostat, which secures the heat exchanger.
3. Disconnect band (1) securing the heat exchanger coolant pipe.
4. Unscrew the bolts shown in the figure and remove the thermostat to allow the heat exchanger to be removed.
5. Remove the heat exchanger from the engine bay.



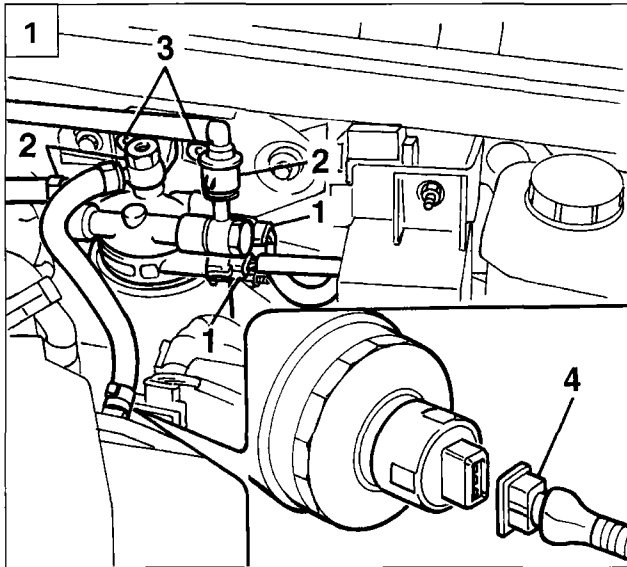
4A032QJ04



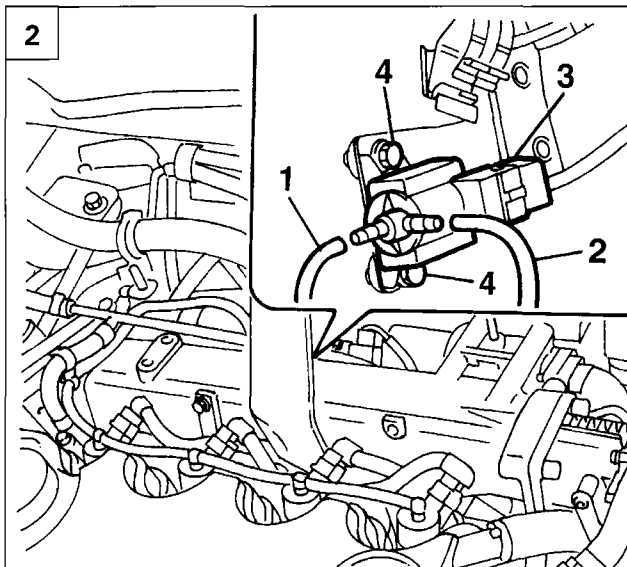
4A032QJ05

**10.**

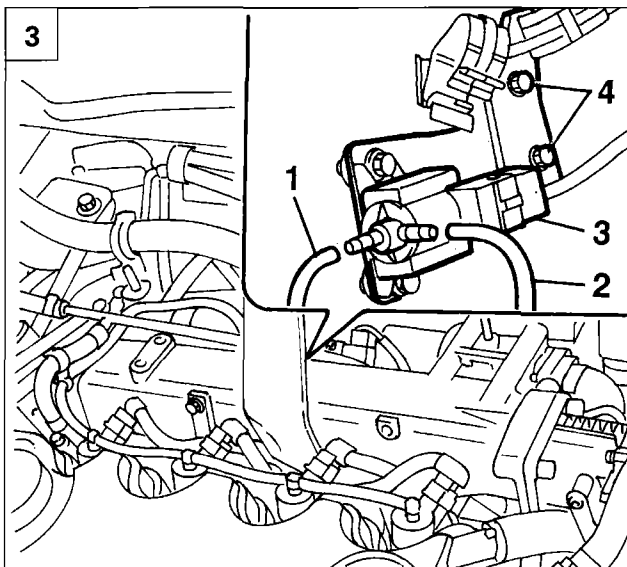
**SOLENOID ON VACUUM TANK FOR THROTTLE BODY PNEUMATIC VALVE**



4A033QJ01



4A033QJ02



4A033QJ03

**Removing-refitting**

- Disconnect the negative battery lead, then remove the soundproofing cover as described in the previous paragraphs.

1. Disconnect electrical connections (1) and inlet and outlet pipes to the tank and delivery pipe to the pump on the fuel filter, then unscrew nuts (3) securing the fuel filter mount. Lift the filter and disconnect the electrical connection for the sensor for detecting the presence of water in diesel.

- Release the pipe delivering power steering fluid from tank to pump from the retaining band.

2. Disconnect pipe (1) connected to the vacuum tank and pipe (2) connected to the vacuum intake pipe on the solenoid. Disconnect the electrical connection (3), then undo retaining bolts (4) and remove the solenoid.

**VACUUM TANK**

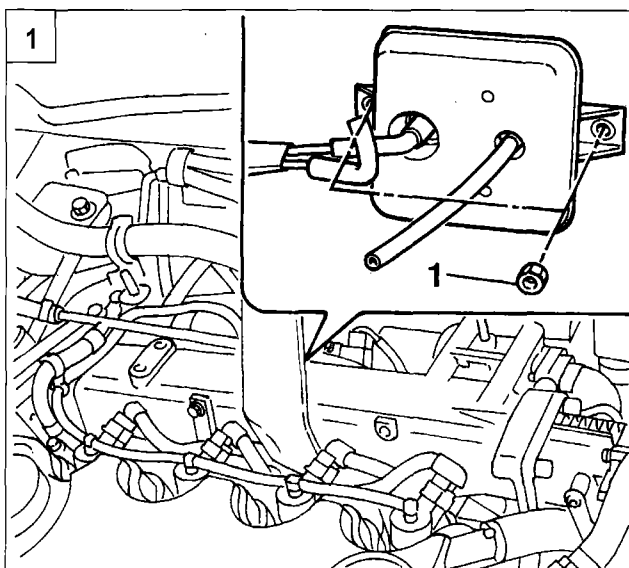
**Removing-refitting**

- Disconnect the negative battery lead, then remove the soundproofing cover and fuel filter as described in the previous paragraphs.

- Disconnect the pipe carrying power steering fluid from tank to pump from the retaining band.

3. Disconnect pipe (1) connected to the vacuum tank and pipe (2) connected to the vacuum intake pipe on the solenoid. Disconnect the electrical connector (3), then unscrew retaining bolts (4) and remove the bracket together with the throttle body pneumatic valve solenoid.

**10.**

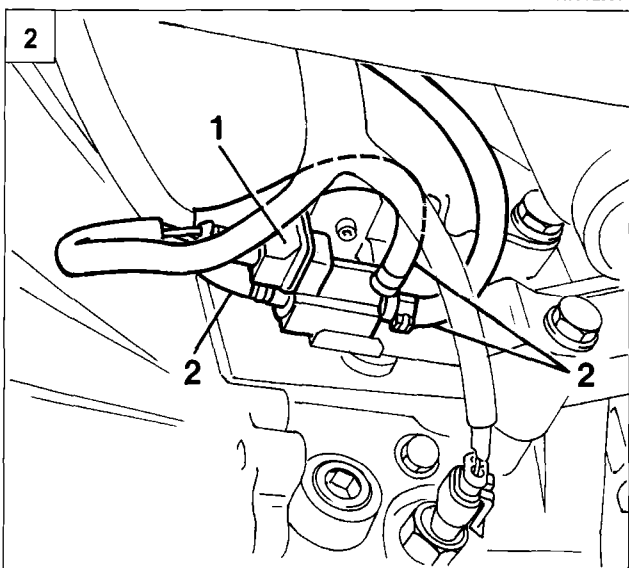


4A034QJ01

1. Unscrew retaining nuts (1) and remove the vacuum tank.

**TURBO PRESSURE CONTROL SOLENOID**  
**Removing-refitting**

- Position the vehicle on a lift and disconnect the negative battery lead. .
2. Working from below the car, disconnect electrical connector (1) and pipes (2).
  3. Press the retaining tab on the rear of the bracket and withdraw the solenoid.

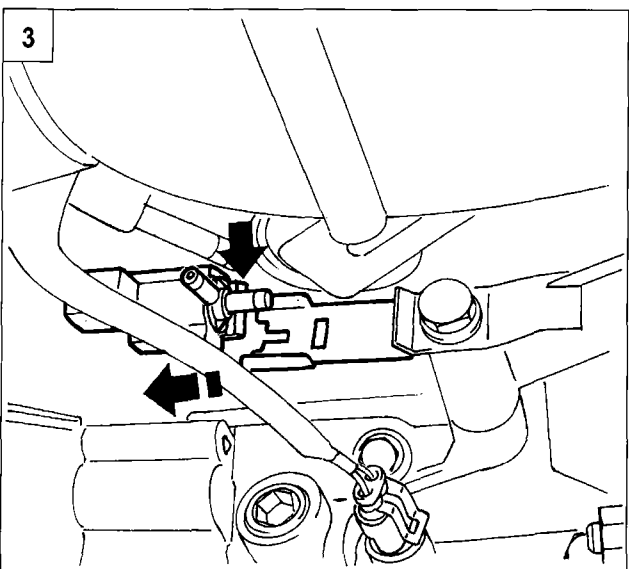


4A034QJ02

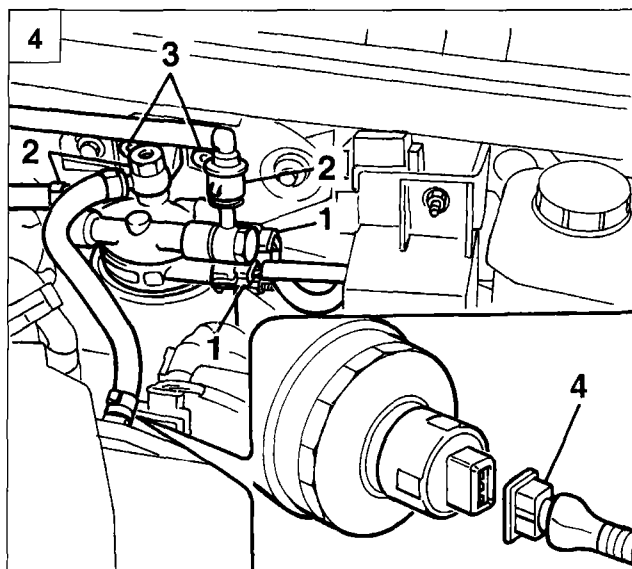
**FUEL FILTER**

**Removing-refitting**

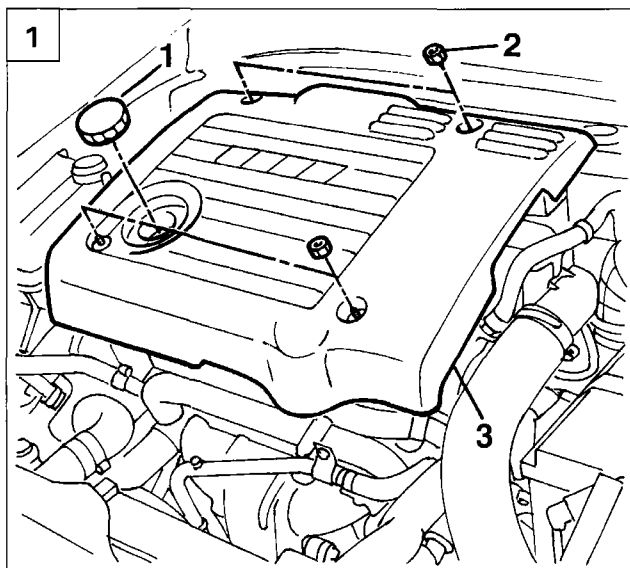
4. Disconnect electrical connections (1) and tank inlet and outlet and pump delivery pipes (2) on the fuel filter, then undo nuts (3) securing the fuel filter mount. Lift the filter and disconnect electrical connection (4) to the sensor for detecting the presence of water in diesel.



4A034QJ03



4A033QJ01



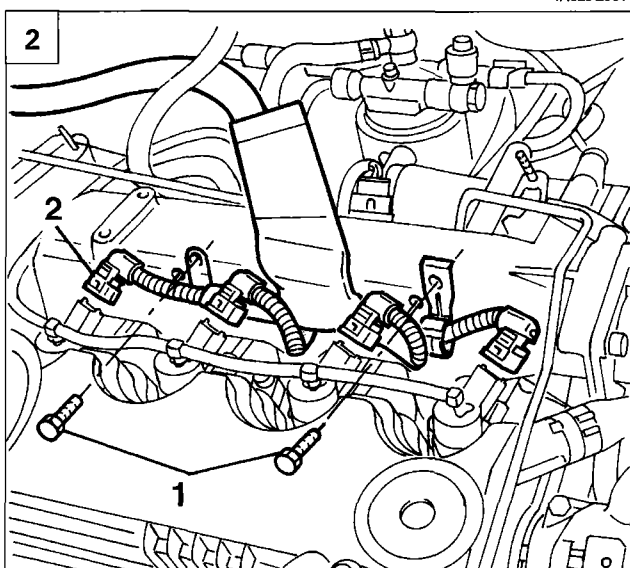
**PRESSURE REGULATOR**

**NOTE** *Keep everything scrupulously clean when removing-refitting the pressure regulator.*

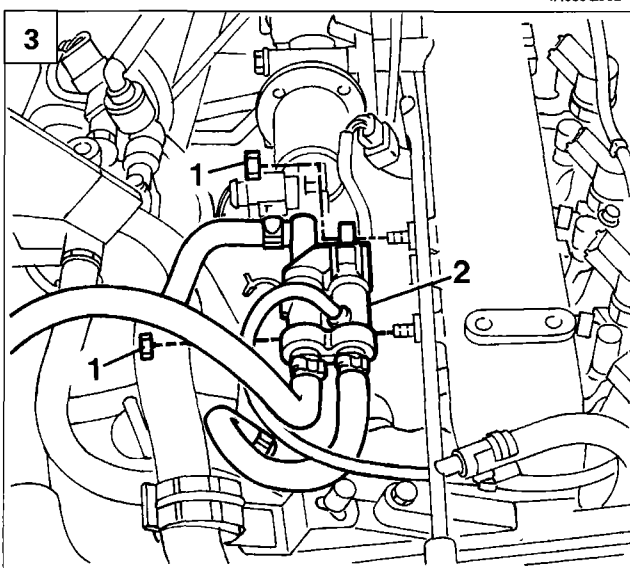
**Removal.**

- Remove the guard under the engine if the vehicle is fitted with one.
- 1. Remove the engine oil filler cap (1), then unscrew retaining nuts (2) and remove soundproofing cover (3).
- 2. Undo bolts (1) securing the injector wiring retaining bands. Disconnect the injector electrical connectors (2) and place the wiring to one side.
- Release the injection wiring harness from the retaining bands.
- 3. Undo nuts (1) securing the fuel return manifold pipe (2) to the intake manifold. Place the fuel return manifold pipe to one side.
- 4. Disconnect the pressure regulator electrical connector (1), then unscrew bolts (1) securing the regulator to the pump.

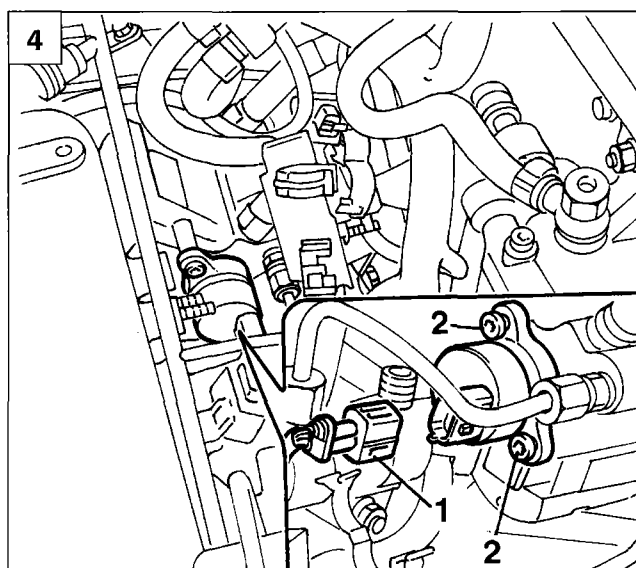
4A029QJ01



4A035QJ02

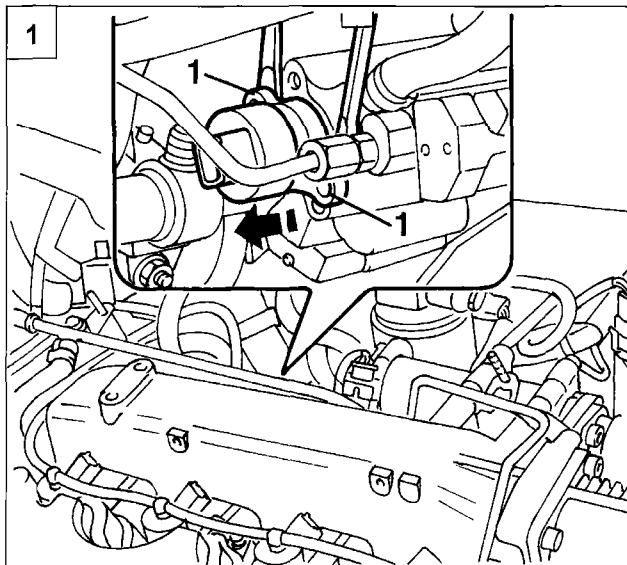


4A035QJ03

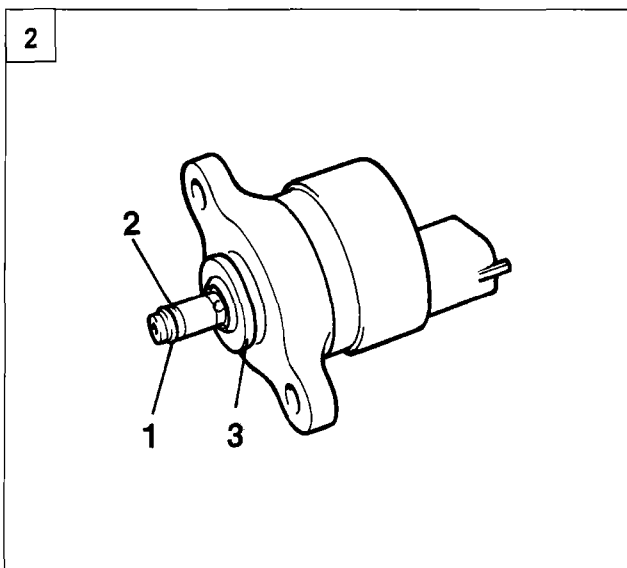


4A035QJ04

## 10.



4A036QJ01



4A036QJ02

1. Grasp the outer regulator case, pull out partly and simultaneously turn so that tabs (1), which contain holes for the retaining bolts, are positioned horizontally.

**NOTE** Do not hold the pressure regulator by its electrical connector.

Insert the blades of 2 screwdrivers at the point of tabs (1) and carefully prise up to remove the pressure regulator.

**NOTE** Do not use screwdrivers or other tools on the seals between regulator and pressure pump.

2. Pressure regulator

1. High pressure sealing ring (black or green)
2. Antiextrusion sealing ring (white)
3. Low pressure sealing ring (black)

**NOTE** If the high pressure sealing ring should get left inside the pump case by accident, turn the ignition key ON (engine off); this will operate the pump spindle and a small amount of fuel will emerge together with the sealing ring.

**NOTE** Never use any tool to remove the high pressure sealing because the pump inner surface could become damaged.

### Refitting

- Draw off any impurities in the pump case.
- Check the condition of the three sealing rings before installation and ensure they are correctly positioned.
- Slightly moisten the outer surface of the three sealing rings using vaseline. Never lubricate any other surfaces of the pressure regulator.
- Insert the pressure regulator in its seat on the pump by pressing lightly and simultaneously turning the regulator until it comes into contact with the pump surface.

**NOTE** Never use a hammer or other tools to fit the pressure regulator in its seat.

- Insert both bolts securing the pressure regulator to the pump case and tighten to a torque of  $0.9 \pm 0.1$  daNm.
- Reconnect the electrical connector and finish refitting the remaining parts by reversing the removal instructions.

|   | page |   | page |
|---|------|---|------|
| <b>HITACHI INTEGRATED INJECTION/IGNITION SYSTEM</b>   | 1    | <b>INTAKE CIRCUIT</b>   | 33   |
| - Introduction  | 1    | - Throttle body   | 33   |
| - HITACHI injection/ignition system functional diagram  | 2    | - Engine idle speed adjustment actuator   | 34   |
| - Diagram showing information entering/leaving the HITACHI injection/ignition system control unit and sensors/actuators | 3    | <b>FUEL CIRCUIT DIAGRAM</b>   | 35   |
| - Location of HITACHI injection/ignition system components in the engine compartment                                    | 4    | <b>FUEL SUPPLY CIRCUIT</b>  | 35   |
| <b>SYSTEM MANAGEMENT STRATEGIES</b>   | 5    | - Fuel drip tray assembly   | 36   |
| - Management of the signal  | 5    | - Fuel manifold   | 38   |
| - Management of the injection   | 6    | - Injectors   | 39   |
| - Management of the FIAT-CODE anti-theft function   | 10   | - Inertia safety switch   | 40   |
| - Management of the ignition  | 11   | <b>EMISSION CONTROL DEVICES</b>   | 41   |
| - Management of the engine idle control   | 14   | - Catalytic silencer  | 41   |
| - Management of the charcoal filter   | 14   | - Fuel anti-evaporation system  | 42   |
| - Management of the modular manifold  | 14   | - Recirculation system for gases coming from the cylinder block/crankcase (blow-by) | 44   |
| - Management of the climate control system  | 15   | <b>CHECKS, ADJUSTMENTS AND REPAIR OPERATIONS ON THE HITACHI MPI SYSTEM</b>          | 45   |
| - Management of the radiator fans   | 16   | - Checking emission concentration   | 45   |
| <b>DIAGNOSTICS</b>  | 18   | - Checking engine idle speed  | 46   |
| <b>ELECTRICAL/ELECTRONIC CIRCUIT</b>  | 19   | - Ignition advance check  | 46   |
| - HITACHI system wiring diagram   | 20   | - Fuel supply circuit checks  | 47   |
| - System relays   | 21   | - Fuel manifold and injectors   | 52   |
| - HITACHI system control unit pin-out   | 22   | - Throttle body   | 53   |
| - HITACHI system control unit pin-out   | 23   | - Adjustment of accelerator cable   | 54   |
| - Engine rpm sensor   | 24   |   |      |
| - Engine timing sensor  | 25   |   |      |
| - Air flow meter  | 26   |   |      |
| - Lambda sensor   | 27   |   |      |
| - Butterfly position sensor   | 28   |   |      |
| - Coolant temperature sensor  | 29   |   |      |
| - Vehicle speed sensor  | 30   |   |      |
| - Detonation sensor   | 30   |   |      |
| - Ignition coil   | 31   |   |      |
| <b>AIR INTAKE CIRCUIT DIAGRAM</b>   | 32   |   |      |



## HITACHI INTEGRATED INJECTION/IGNITION SYSTEM

### INTRODUCTION

The Hitachi system fitted on Bravo-Bravamodels with a 1747 i.e. 16v engine belongs to the category of static advance, digital electronic ignition systems integrated with phased, multiple, intermittent type electronic fuel injection systems

The integrated system can be divided into the following subsystems:

ELECTRICAL/ELECTRONIC CIRCUIT  
AIR INTAKE CIRCUIT  
FUEL SUPPLY CIRCUIT  
EMISSION CONTROL DEVICES

The system is capable of detecting the following parameters by means of appropriate sensors:

1. the engine rotation speed;
2. the position of each pair of pistons in relation to TDC for cylinder 1;
3. the air flow rate drawn in by the engine;
4. the accelerator butterfly position and speed variation;
5. the temperature of the engine coolant;
6. the effective mixture strength (through the Lambda sensor signal);
7. the possible presence of detonation;
8. car speed;
9. battery voltage;
10. air conditioner compressor on or off.

This information, usually in analogue format, is converted into digital signals by analogue/digital (A/D) converters in order to be able to be used by the control unit.

In particular, any engine operating point is identified, moment by moment, from two parameters:

- the engine rotation speed, measured in revs per minute (rpm);
- the engine load, which consists of the quantity of air drawn in by each cylinder.
- This quantity is calculated on the basis of the flow rate of the intake air and is represented by the parameter TP, measured in milliseconds (ms).

The management programme (software) is stored inside the control unit memory and consists of a series of strategies, each of which manages a precise system control function.

Using the information (input) listed previously, each strategy processes a series of parameters, based on maps of data stored in special areas of the control unit memory and then controls the system actuators (output) which are the devices which allow the engine to operate, namely:

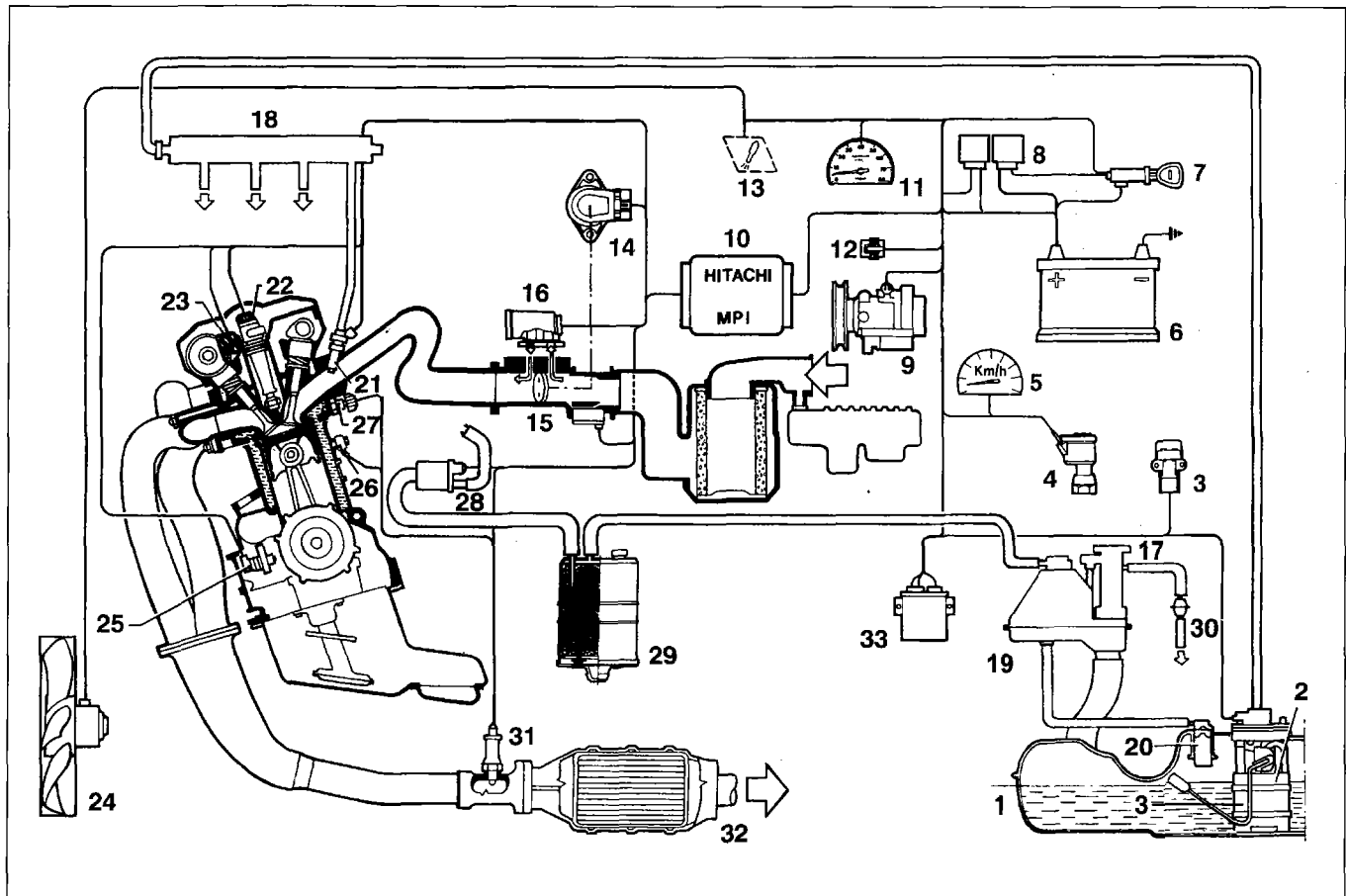
1. injectors;
2. ignition coil;
3. various type solenoid valves;
4. fuel pump
5. control relays.

**NOTE** *The HITACHI injection/ignition system does not require any type of adjustment as it is the self-regulating and self-adjusting type.*

**NOTE** *The numbers in the drawings and diagrams indicate the corresponding HITACHI engine control unit pins (the number followed by A indicates connector A, the number followed by B indicates connector B).*

**10.**

**INJECTION/IGNITION SYSTEM OPERATING DIAGRAM**

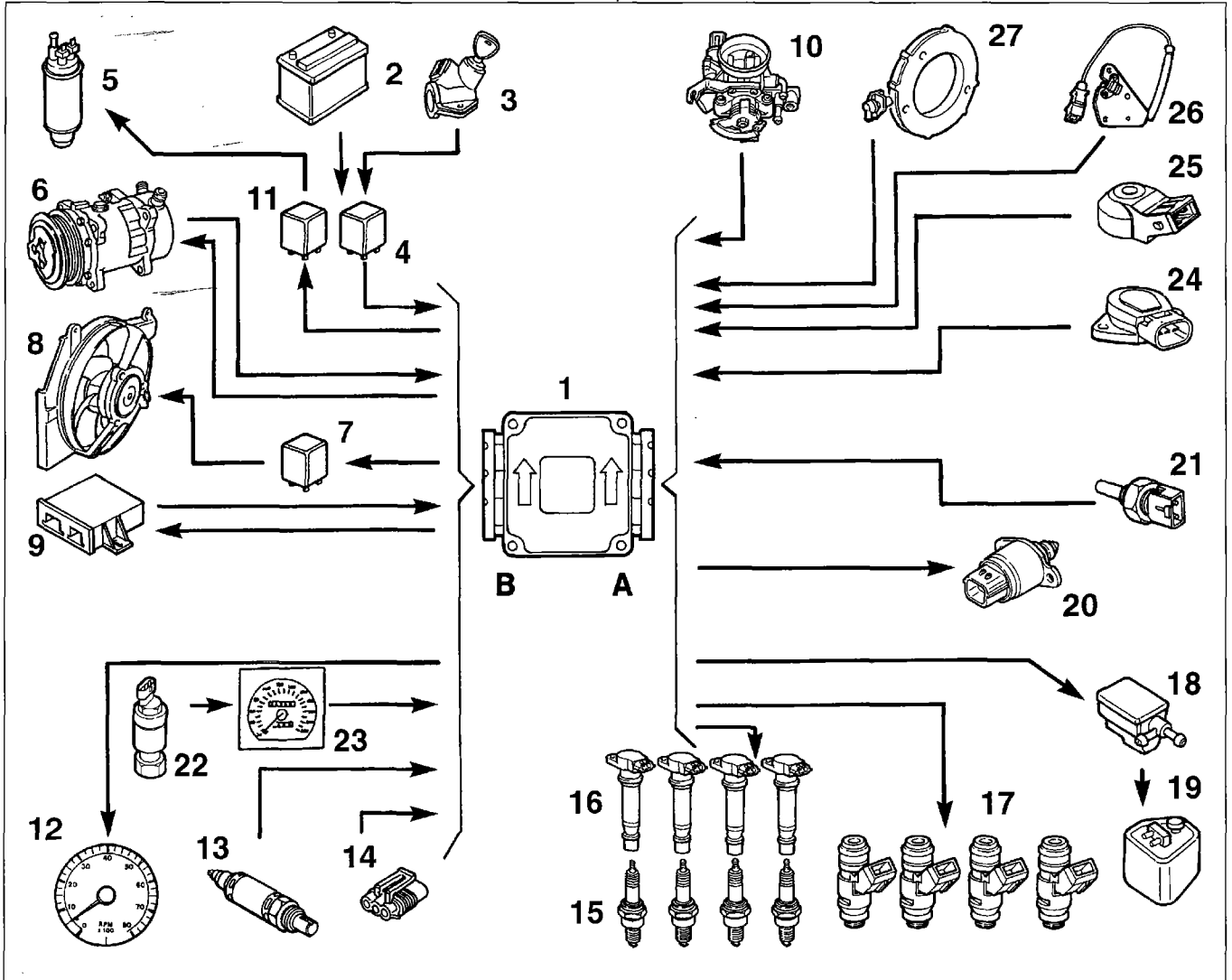


4F0020J01

- |  |                                    |
|--|------------------------------------|
| 1. Fuel tank   | 22. Coil                           |
| 2. Drip tray including: electric fuel pump, pressure regulator, filter, fuel gauge | 23. Engine timing sensor           |
| 3. Inertia switch  | 24. Radiator fan                   |
| 4. Vehicle speed sensor  | 25. Engine rpm sensor              |
| 5. Speedometer   | 26. Knock sensor                   |
| 6. Battery   | 27. Coolant temperature sensor     |
| 7. Ignition key  | 28. Charcoal filter solenoid valve |
| 8. I.E. system relays  | 29. Carbon filter                  |
| 9. Climate control compressor  | 30. Safety and ventilation valve   |
| 10. HITACHI engine control unit  | 31. Lambda sensor                  |
| 11. Rev counter  | 32. Catalytic silencer             |
| 12. Diagnostic equipment connector   | 33. FIAT CODE control unit         |
| 13. System failure warning light   |                                    |
| 14. Butterfly position sensor  |                                    |
| 15. Butterfly casing with air flow meter integrated                                |                                    |
| 16. Engine idle adjustment actuator  |                                    |
| 17. Filler cap with safety valve   |                                    |
| 18. Fuel manifold  |                                    |
| 19. Fuel vapour separator  |                                    |
| 20. Rollover valve   |                                    |
| 21. Injector   |                                    |

**10.**

**DIAGRAM SHOWING INFORMATION ENTERING/LEAVING THE HITACHI INJECTION/ IGNITION SYSTEM CONTROL UNIT AND SENSORS/ACTUATORS**



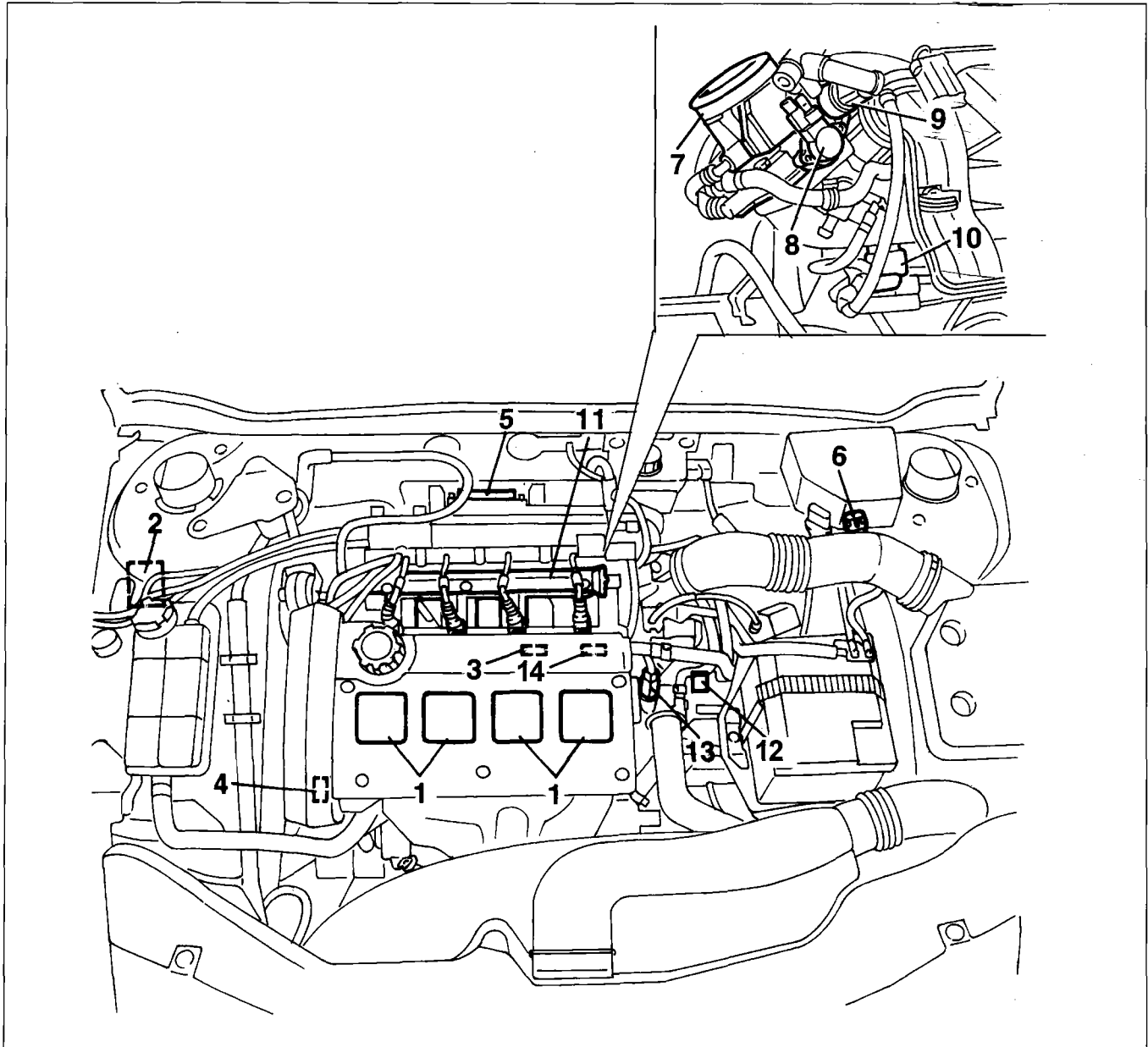
4F0030J01

- 1. HITACHI engine control unit
- 2. Battery
- 3. Ignition switch
- 4. Fuel system relay
- 5. Electric fuel pump
- 6. Climate control system
- 7. Radiator fan relay
- 8. Radiator fan
- 9. FIAT-CODE control unit
- 10. Air flow meter
- 11. Electric fuel pump relay
- 12. Rev counter
- 13. Lambda sensor
- 14. Diagnostic equipment connector

- 15. Spark plugs
- 16. Coils
- 17. Injectors
- 18. Charcoal filter solenoid valve
- 19. Charcoal filter
- 20. Idle speed adjustment stepping motor
- 21. Coolant temperature sensor
- 22. Vehicle speed sensor
- 23. Speedometer
- 24. Butterfly position sensor
- 25. Detonation sensor
- 26. Engine timing sensor
- 27. Engine rpm sensor

**10.**

**LOCATION OF HITACHI INJECTION/IGNITION SYSTEM COMPONENTS IN THE ENGINE COMPARTMENT**



P3N04GJ01

- |   |                                    |
|---|------------------------------------|
| 1. Ignition coils                       | 8. Butterfly valve position sensor |
| 2. Charcoal filter                      | 9. Idle speed adjustment actuator  |
| 3. Detonation sensor                    | 10. Charcoal filter solenoid valve |
| 4. Engine timing sensor                 | 11. Fuel manifold with injectors   |
| 5. Hitachi engine control unit          | 12. Vehicle speed sensor           |
| 6. Diagnostic socket                    | 13. Coolant temperature sensor     |
| 7. Butterfly casing with air flow meter | 14. Engine rpm sensor              |

**SYSTEM MANGEMENT STRATEGIES**

**MANAGEMENT OF THE SIGNALS**

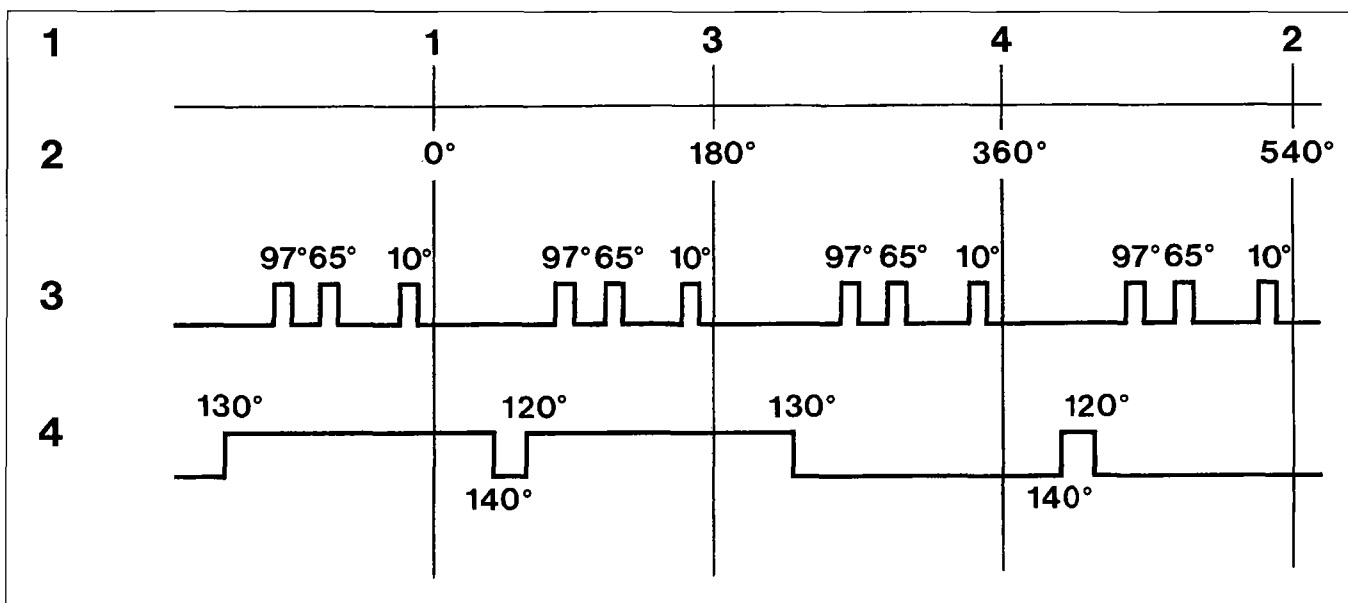
During starting, the control unit recognizes the injection and ignition timing which are fundamental for the subsequent operation of all strategies.

This recognition is implemented on the basis of the interpretation of the signals coming from the flywheel sensor on the crankshaft and the engine timing sensor on the camshaft.

**NOTE** *The term signals refers to the collection of signals coming from the sensor on the crankshaft and the one on the camshaft which, having a precise reciprocal position, provide the control unit with a synchronized sequence of signals which the control unit is capable of recognizing.*

In particular, the signals are made up as follows:

- flywheel on the crankshaft: it is equipped with two symmetrical sets of teeth, arranged 10°, 65° and 97° in advance of each TDC;
- wheel on the camshaft: it is fitted with two long inspections windows and one short one, whose width and position are such as to provide the signal as illustrated in the diagram.



4F0040J01

1. Cylinder TDC
2. Crankshaft angles
3. Crankshaft flywheel signal (engine rpm sensor)
4. Camshaft wheel signal (engine timing sensor)

**NOTE** *The numerical values for the signals indicate the crankshaft advance angles in relation to the next TDC.*

# 10.

## MANAGEMENT OF THE INJECTION

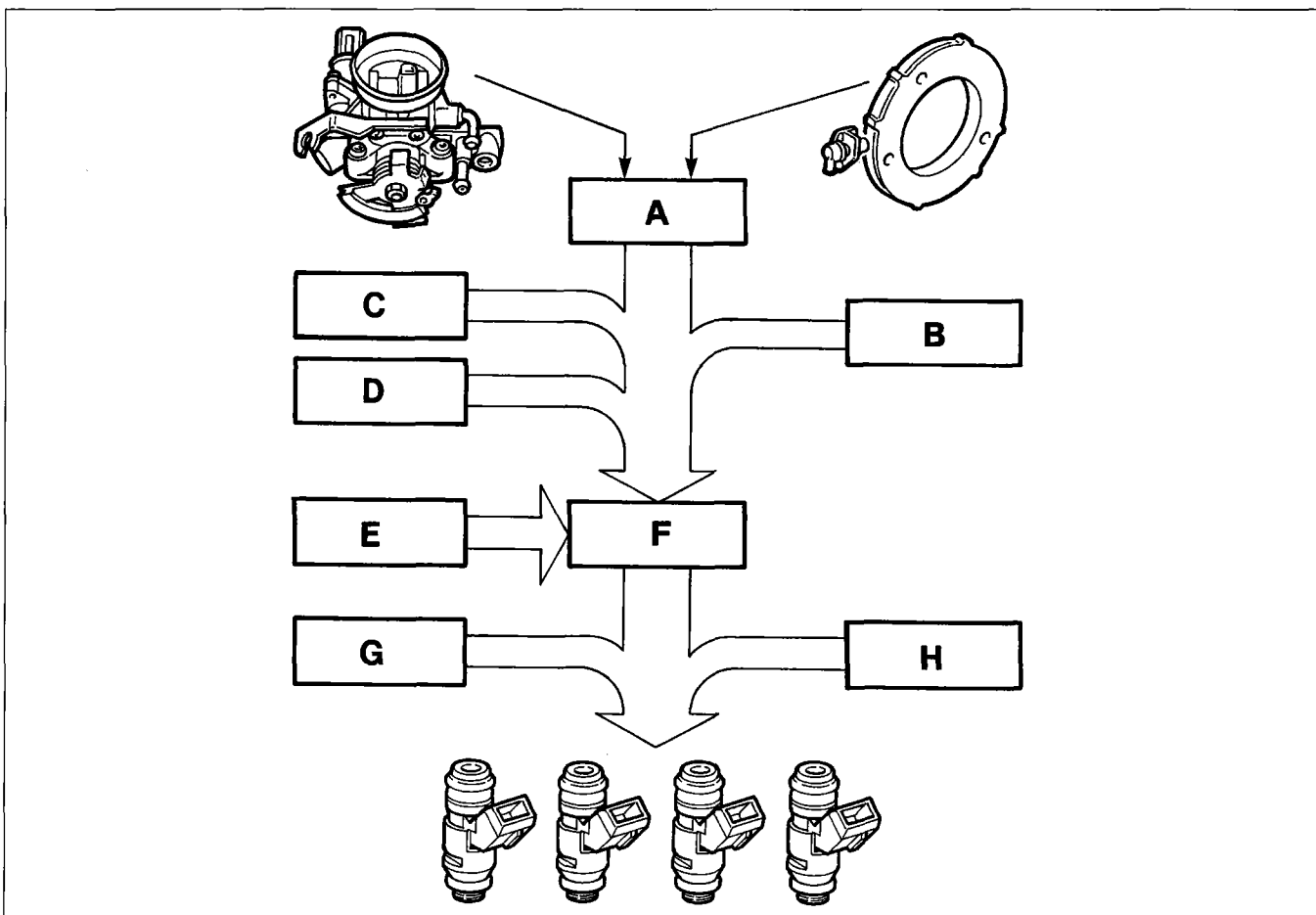
The injection management strategies are designed to provide the engine with the correct quantity of fuel at the desired time according to the engine operating conditions.

**NOTE** *The presence of the flow meter allows the direct measurement of the mass of air drawn in, making the presence of the intake air temperature sensor superfluous.*

The management of the injection basically consists of calculating the injection time, determining the injection phase and the subsequent implementation via the operation of the injector.

The "basic" injection time depends on the specifications of the injector and corresponds to the quantity of fuel to be injected into each cylinder. The latter is, in turn, determined by multiplying the quantity of air drawn in by each cylinder (calculated on the basis of the quantity of intake air and the engine rotation speed) for the desired mixture strength in relation to the engine operating point.

The final injection time is determined by means of a calculation algorithm in which the "basic" time is corrected by a series of coefficients which take into account the different engine operating conditions which are highlighted by the various sensors present in the system.



4F005QJ01

A: "basic" injection time  
B: correction coefficient:  
low engine temperature  
high engine temperature  
starting and post-starting  
butterfly fully open  
deceleration  
acceleration

C: feed-back mixture control  
D: self-adjustment  
E: cut-off  
F: intermediate injection time  
G: extra-pulse  
H: non phased injection management

**Control of the mixture strength (feed-back control)**

**NOTE** *This is defined as the mixture strength and the following ratio is denoted by the Greek letter  $\alpha$  (alfa):*

$$\frac{\text{quantity of air drawn in by the engine}}{\text{quantity of fuel injected}}$$

*This is defined as the stoichiometric mixture and the ratio is defined by  $\alpha$  st:*

$$\frac{\text{theoretical quantity of air required to burn all the fuel injected}}{\text{quantity of fuel injected}}$$

*This is defined as the mixture strength and the ratio is defined by the Greek letter  $\lambda$  (lambda):*

$$\frac{\text{quantity of air drawn in by the engine}}{\text{theoretical quantity of air required to burn all the fuel injected}}$$

It is easy to deduce that  $\alpha / \alpha \text{ st} = \lambda$ .

The stoichiometric ratio depends on the type of fuel: for current unleaded petrol (lead-free) it is around 14.7 - 14.8, which corresponds to a Lambda of 1.

A mixture is known as *rich* ( ) when the quantity of air is below the stoichiometric level and in this case the Lambda is  $< 1$ :

a mixture is known as *poor* (or *weak*) when the quantity of air is higher than the stoichiometric level and in this case the Lambda is  $> 1$ .

The strategy is designed to correct the "basic" injection times so that the mixture strength constantly fluctuates at high frequency between 0.98 and 1.02.

The fluctuation frequency varies according to the engine load and speed: it is in the order of tens of Hertz.

**NOTE** *1 Hz = 1 fluctuation per second*

In the following conditions:

- cut-off,
- butterfly opening of more than 70° and high engine load,
- engine temperature below 25°C,
- the strategy is disabled.

**Self-adjustment**

The control unit is equipped with a self-adjustment function which has the task of memorizing any differences between the basic map and the corrections imposed by the Lambda sensor which may persistently occur during operation. These differences (due to the ageing of the system and engine components) are permanently memorized, allowing the adaptation of the system operation to the gradual alterations in the engine and the components compared with when they were new.

The strategy is disabled whilst the charcoal filter solenoid valve is open.

If the control unit is replaced, the vehicle must be road tested allowing the engine to reach operating temperature and the control unit to intervene in the self-adjustment mode (especially during idling stops).

## 10.

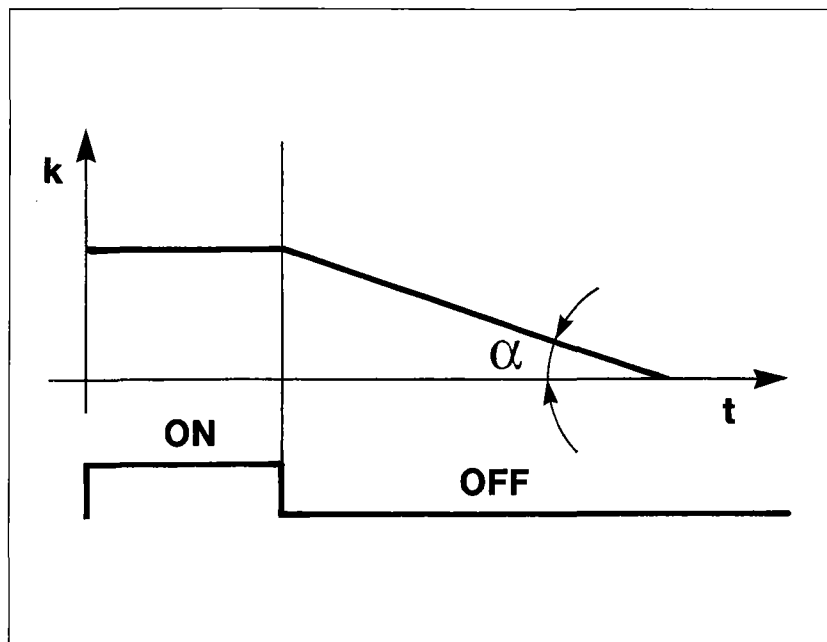
### Starting and post-starting

During starting, it is not possible to recognize the engine timing and consequently it is not possible to implement the phased injection.

During the initial revolutions of the engine, an initial full-group injection is carried out (also because the considerable fluctuations in the rotation speed do not allow the injection phase to be calculated correctly) and then the injection becomes the phased type.

The "basic" injection time is increased by a multiplication coefficient for the entire time the engine is driven by the starter motor.

When the engine has been started up, the coefficient is gradually reduced until it disappears after a certain time; the lower the engine temperature, the longer this period.



4F0070J01

K: time enrichment coefficient  
t: engine temperature function decrease  
α: engine driven (crank)  
ON: engine started (run)  
OFF:

### Operation when cold

Under these circumstances there is a natural weakening of the mixture as a result of the reduced evaporation and the strong condensation of the fuel on the internal walls of the intake manifold: in addition, the increased viscosity of the lubrication oil causes an increase in the passive resistance of the engine.

The "basic" injection time is corrected by a multiplication coefficient which depends on the engine temperature and speed.

### Operation in full load conditions

This strategy is enabled when the butterfly opening exceeds 70°.

The "basic" injection time is multiplied by a coefficient (depending on the engine speed) equal to around 1.1.

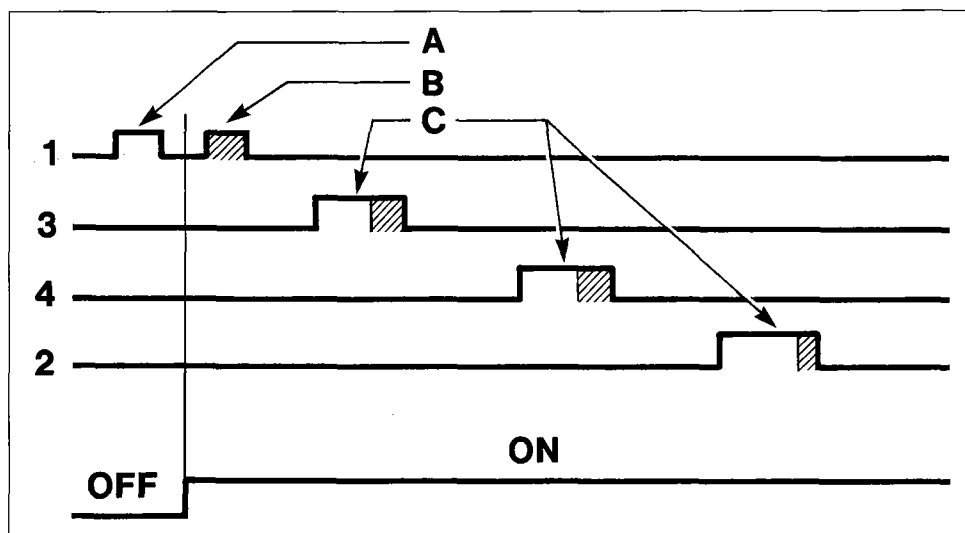


### Operation in acceleration conditions

During this stage, the control unit increases the quantity of fuel supplied.

The "basic" injection time is multiplied by a coefficient which depends on the temperature of the engine and the opening speed of the accelerator butterfly (average value 1.2).

If the sharp variation in the injection time is calculated when the injector is already closed, the control unit reopens the injector (extra pulse) in order to compensate the mixture strength as quickly as possible: the subsequent injections are, on the other hand, already increased on the basis of the coefficients mentioned previously.



4F0080J01

- A: normal injection time
- B: injector reopening (extra-pulse)
- C: injection time including enrichment
- OFF: engine at stationary speed
- ON: engine in transition

### Operation in deceleration conditions

During this stage a negative transition strategy is implemented to decrease the quantity of fuel supplied: the "basic" injection time is multiplied by a coefficient which depends on the temperature of the engine and the engine speed and load conditions in the moment immediately preceding the start of deceleration.

### Operation in cut-off conditions

The cut-off strategy is implemented when the control unit recognizes that the butterfly is in the idle position (signal from the butterfly potentiometer) and the engine speed is above 1600 rpm (with the engine warm).

The supply to the engine is re-enabled when the butterfly is in a not closed position or when the engine speed goes below 1200 rpm (with the engine warm).

# 10.

## Rotation speed restricter

This strategy restricts the maximum speed which can be reached by the engine, gradually enabling the cut-off, as illustrated in the table.  
Maximum speed: 7150 rpm

| mode \ Cylinders | 1          | 2 | 3 | 4 |
|------------------|------------|---|---|---|
|                  | 1 cylinder | 0 |   |   |
| 2 cylinders      | 0          |   |   | 0 |
| 3 cylinders      | 0          |   | 0 | 0 |
| 4 cylinders      | 0          | 0 | 0 | 0 |

## Electric fuel pump operation

The electric fuel pump is operated by the engine management control unit via a relay.

The pump cuts out:

- if the engine speed goes below 50 rpm;
- after a certain period (around 5 seconds) with the ignition switch in the ON position if the engine is not started up (timed go ahead);
- if the inertia switch is activated.

## Operation of injectors

The operation of the injectors is the sequential, phased type. However, during starting, the injectors are operated once, in parallel.

The timing of the injectors can be varied according to the engine speed.

## MANAGEMENT OF THE FIAT CODE ANTI-THEFT FUNCTION

The system is fitted with an anti-theft function. This function depends on the presence of a special (FIAT CODE) control unit, capable of dialogue with the engine management control unit and an electronic key, equipped with a special transmitter for sending a recognition code.

Each time the key is turned to the OFF position, the FIAT CODE system completely deactivates the engine management control unit.

When the key is turned to the ON position, the following operations take place, in order:

1. the engine management control unit (whose memory contains a secret code) sends the FIAT CODE control unit a request to send the secret code to deactivate the immobilizer function;
2. the FIAT CODE control unit responds by only sending the secret code after having, in turn, received the recognition code transmitted by the ignition key;
3. the recognition of the secret code allows the immobilizing function imposed on the engine management control unit to be deactivated and normal operation resumed.

**NOTE** *The presence of the FIAT CODE anti-theft system means that it is not advisable, during the fault diagnosis, to carry out tests using another engine management control unit. In such a case, the FIAT CODE control unit would transfer the (unrecognized) recognition code to the test control unit which could then no longer be used on any other vehicles.*

**MANAGEMENT OF THE IGNITION**

The ignition management strategies are designed to strike the spark with the desired advance according to the engine operating conditions.

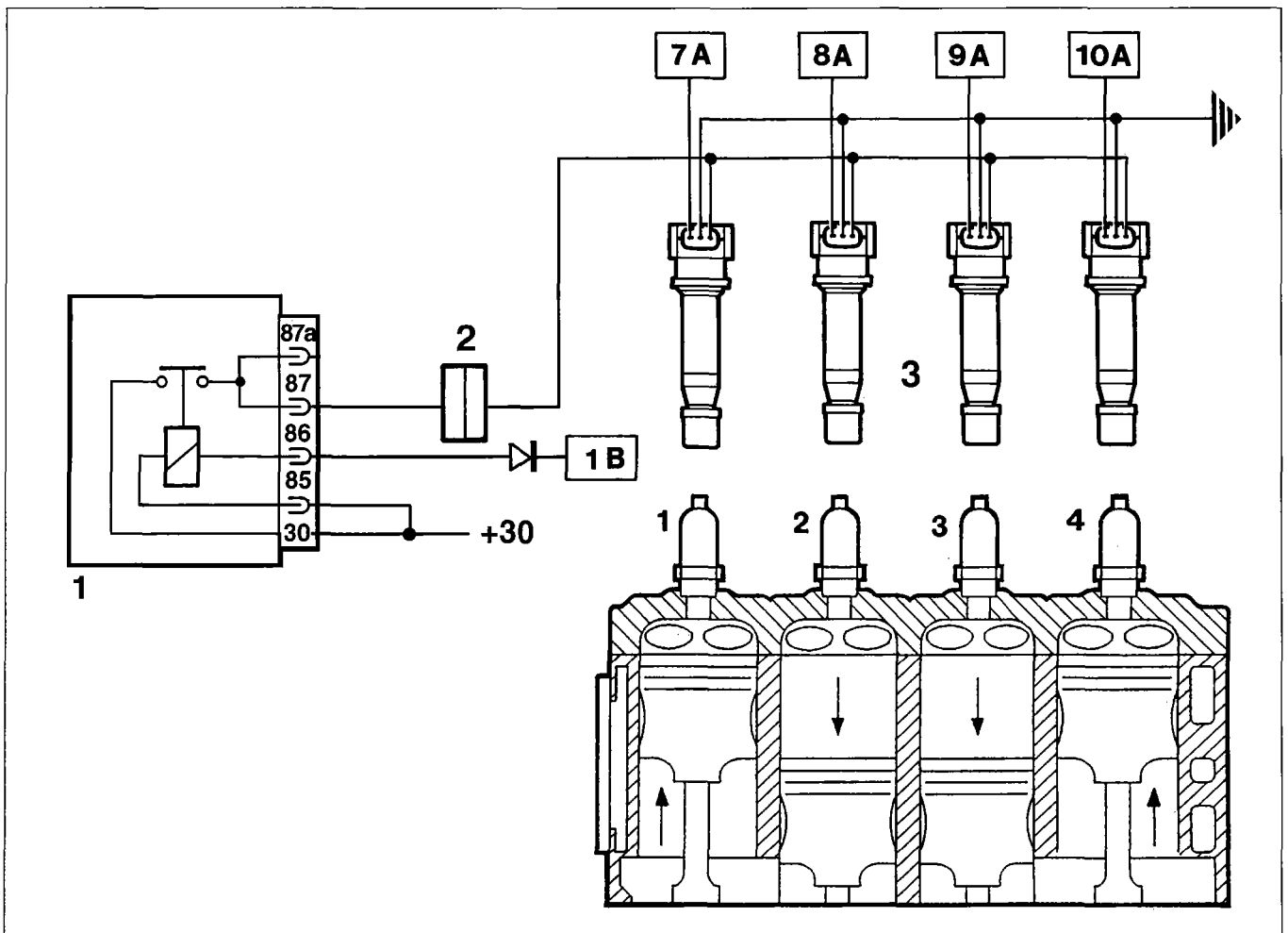
The management of the ignition basically consists of determining the ignition advance and implementing it through the operation of the power transistor incorporated in each coil.

The "basic" advance value, calculated according to the intake air flow rate and the engine speed, is then corrected according to the different engine operating conditions.

The control unit determines the start of the conduction of the current in the primary coil winding according to the engine rotation speed.

This angle of this moment, obviously, varies in relation to TDC of the explosion stroke for each cylinder and the greater the engine rotation speed, the greater the advance, since the (dwell) time required to saturate the current in the coil primary winding is more or less constant.

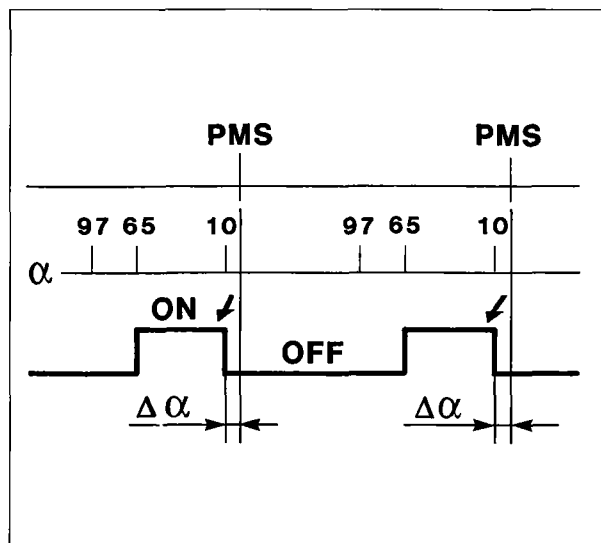
The moment of the start of conduction is corrected according to the battery voltage.



4F0100J01

- 1. Fuel system relay
- 2. Interface connector
- 3. Single ignition coil (pencil-coil)

**10.**

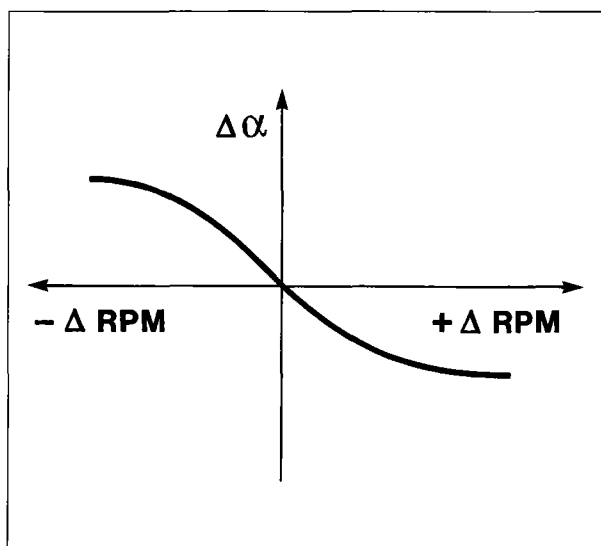


4F0110J01

- $\alpha$ : crankshaft flywheel square signals
- $\Delta\alpha$ : fixed ignition advance ( $10^\circ$  engine)
- ON: coil conduction activated
- OFF: coil conduction deactivated

**Operation in cut-off conditions**

The ignition advance is increased on entry into cut-off conditions: from the moment the fuel supply is re-enabled, the advance is gradually returned to the "basic" value.



4F0110J02

- $\Delta\alpha$ : ignition advance correction whilst idling
- $+\Delta$  RPM: the idle speed exceeds the nominal value
- $-\Delta$  RPM: the idle speed is below the nominal value

**Starting**

During starting, it is not possible to carry out the normal management of the advance because the considerable fluctuations in the rotation speed do not allow the dwell and advance to be calculated correctly.

The advance is therefore managed taking the following as a reference:

- for the start of conduction, the tooth at  $65^\circ$ ;
- for the ignition advance, the tooth at  $10^\circ$ .

Consequently, there is a fixed advance of  $10^\circ$  for the entire time the engine is driven by the starter motor.

**Operation when cold**

Whilst the engine is running when cold, an additional advance correction is implemented: the increase in the advance compared with the map value is inversely proportional to the temperature of the engine.

**Operation with engine idling**

When the engine is idling, the management of the advance is implemented independently of the "basic" advance.

The advance value whilst idling, which varies according to the temperature of the coolant ( $10^\circ$  with the engine warm), is corrected according to the variation in the speed in relation to the pre-set speed, which also depends on the temperature.

In particular, the advance is increased if the speed decreases and is reduced if the speed increases in order to guarantee the stability of the actual speed.

### Control of detonation

This strategy has the task of detecting the presence of detonation by processing the signal coming from the appropriate sensor. The strategy continuously compares the signal coming from the sensor with a threshold value which is, in turn, constantly updated to take into account background noise and the ageing of the engine.

If the system recognizes the presence of detonation, the strategy reduces the ignition advance, in steps of 2°, up to a maximum of 7°, until the phenomenon disappears. Later, the advance is gradually restored to the basic value or until the onset of the phenomenon. In particular, the increases in the advance are implemented gradually, whilst the decreases are implemented immediately.

In acceleration conditions, the strategy uses a higher threshold to take into account the increased engine noise under these circumstances.

The strategy is also equipped with a self-adaptation function which temporarily memorizes the reductions in the advance which are continuously repeated in order to adjust the advance to the different conditions in which the engine finds itself (for example, the use of a low octane rating fuel). The strategy is capable of restoring the advance to the map value if the conditions which caused the reduction no longer exist.

## **10.**

### **MANAGEMENT OF THE ENGINE IDLE CONTROL**

The general aim of this strategy is to keep the engine speed around the programmed value (engine warm: 850 rpm): the position assumed by the actuator depends on the engine speed and vehicle speed conditions.

#### **Starting stage**

When the key is inserted, the position assumed by the actuator depends on the engine temperature and the battery voltage (open-loop position).

#### **Engine started with accelerator pedal released**

The engine speed varies according to the temperature of the engine and is constantly kept close to this value by altering the position of the shutter to compensate for any fluctuations in the speed.

This takes place especially when external loads are applied (power assisted steering, heated rear wind-screen, etc.).

If the fans and the air conditioning, both managed by the control unit, are switched on, the strategy manages the actuator in advance of the actual engagement.

#### **Normal driving**

In these conditions the actuator is in the open-loop position.

#### **Deceleration**

In deceleration conditions outside of idling, the control unit controls the position of the actuator by means of a special flow rate (dash-pot) curve, in other words it slows down the return of the shutter towards its housing, thereby reducing the braking effect of the engine.

### **MANAGEMENT OF THE CHARCOAL FILTER SCAVENGING**

This strategy controls the position of the charcoal filter solenoid valve in the following way:

- during starting, the solenoid valve remains closed preventing the fuel vapours from enriching the mixture; this condition persists until the engine coolant temperature reaches 25°C;
- with the engine at operating temperature, the control unit operates the solenoid valve in duty-cycle to control the quantity of fuel vapours sent to the inlet according to the engine speed and load conditions.

In the following operating conditions:

- butterfly in closed position,
- engine speed below 1250 rpm,
- engine load below a pre-set level,
- the operation of the solenoid valve is disabled, keeping it in a closed position.

**MANAGEMENT OF THE CLIMATE CONTROL SYSTEM**

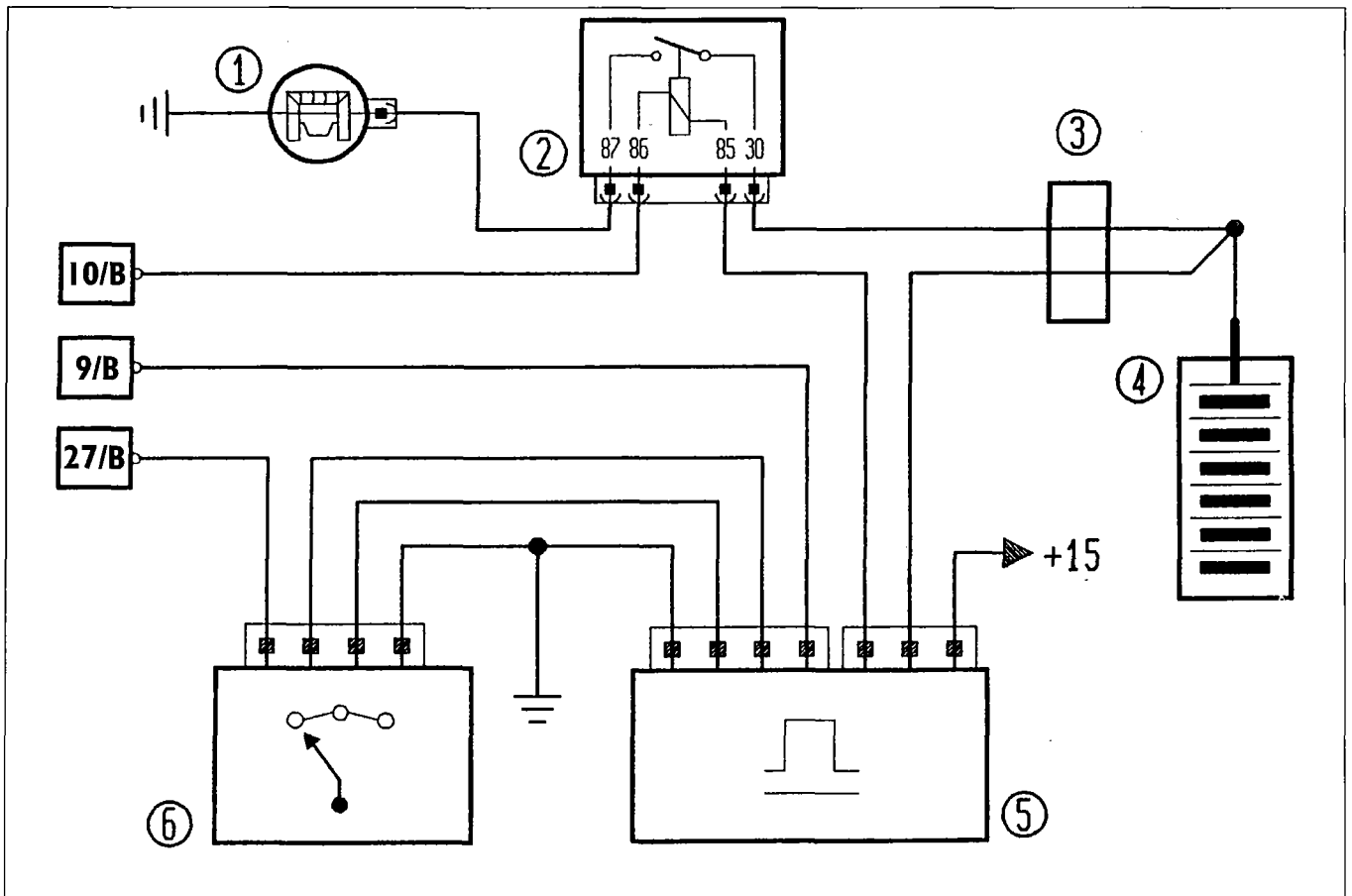
The Hitachi engine management control unit is functionally connected to the climate control system, namely:

1. it receives the request to switch on the compressor, via pin 9/B and operates the appropriate interventions (additional air);
2. it gives the go ahead to switch on the compressor, via pin 10/B, when the strategy conditions are verified;
3. it receives information concerning the state of the three stage pressure switch, from pin 27/B, and operates the appropriate interventions (radiator fan operation).

As far as point 1 is concerned, if the engine is idling, the control unit increases the air flow rate going from the idle actuator in advance of the engagement of the compressor and, viceversa, returns the actuator to its normal position after the compressor has been switched off.

As far, on the other hand, as point 2 is concerned, the control unit automatically switches off the compressor:

- for 6 secs (timed disengagement):
  - when the butterfly opening exceeds 70°,
  - during vehicle take-off;
- as long as the following critical conditions persist:
  - at engine coolant temperatures above 114°C,
  - at engine speeds below 750 rpm.



4F0140J01

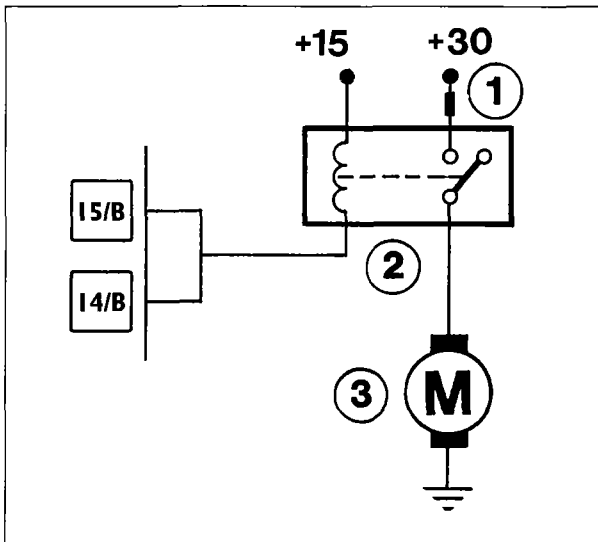
- |                          |                                |
|--------------------------|--------------------------------|
| 1. Compressor            | 4. Battery                     |
| 2. Compressor relay feed | 5. Climate control unit        |
| 3. Fuse box              | 6. Three stage pressure switch |

# 10.

## MANAGEMENT OF THE RADIATOR FANS

The control unit controls the operation of the radiator fans directly depending on the temperature of the engine coolant and whether or not a climate control system is fitted.

**NOTE** *Since the temperature of the engine is measured by the appropriate sensor, the thermal contact on the radiator is no longer present.*

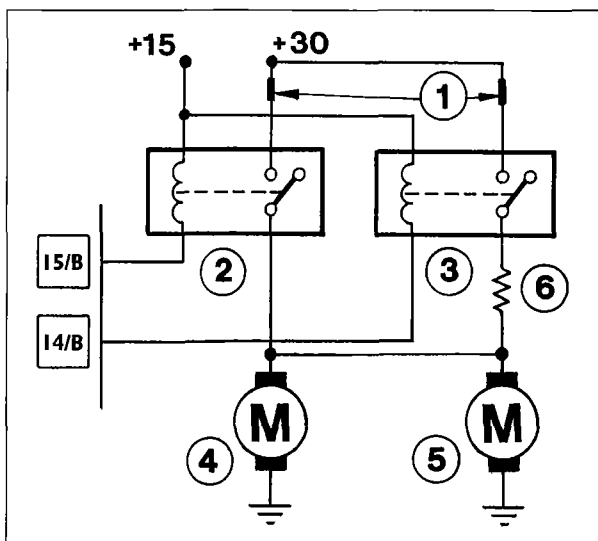


4F0150J01

### Version without climate control

There is only one fan which comes on when the temperature of the coolant exceeds 95°C. It is switched off with a hysteresis of 2°C in relation to the temperature level.

1. Fuse
2. Fan relay
3. Fan



4F0150J02

### Version with climate control

There are two fans: one low speed fan and one high speed fan.

**NOTE** *When the high speed fan comes on, the low speed fan comes on at the same time.*

1. Fuse
2. High speed fan relay
3. Low speed fan relay
4. High speed fan
5. Low speed fan
6. Load resistance



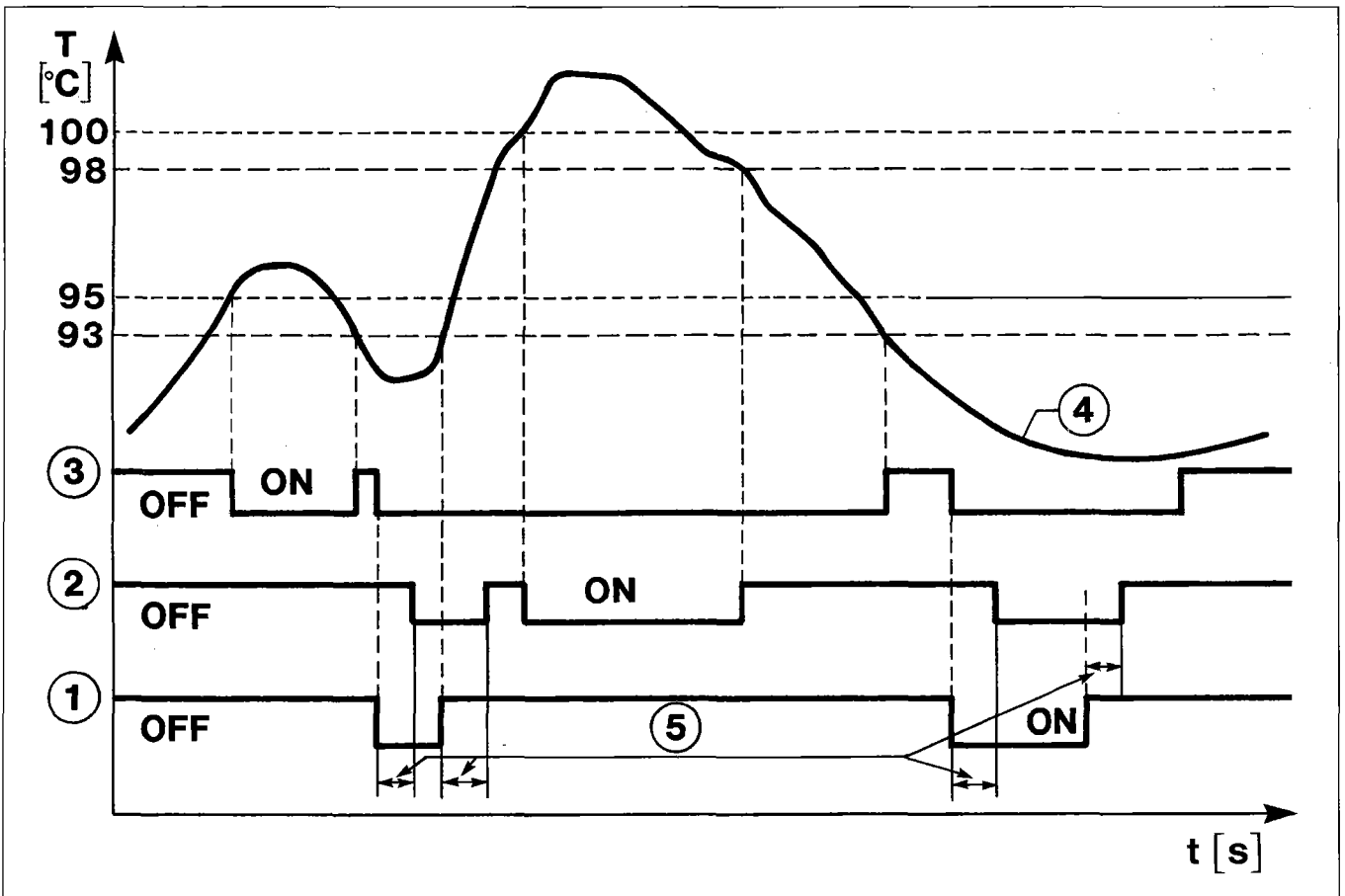
**10.**

**Functional diagram showing engagement of fans for version with air conditioning**

Low speed fan: it switches on when the temperature of the coolant reaches 95°C.

High speed fan: it switches on when the temperature of the coolant reaches 100°C: the first fan is only switched off after the second one.

The engagement of the fans also depends on the state of the three stage pressure switch in the climate control system which causes the engagement of the first fan and, with a certain delay, that of the second and the subsequent disengagement.



4F0160J01

1. Condition of three stage pressure switch
2. Condition of high speed fan
3. Condition of low speed fan
4. Progress of engine coolant temperature
5. Delay in three stage pressure switch engagement/disengagement

ON: fan/pressure switch activated  
OFF: fan/pressure switch deactivated

# 10.

## DIAGNOSTICS

The system is equipped with an autodiagnostic function which is designed to check for any irregularities in the following components:

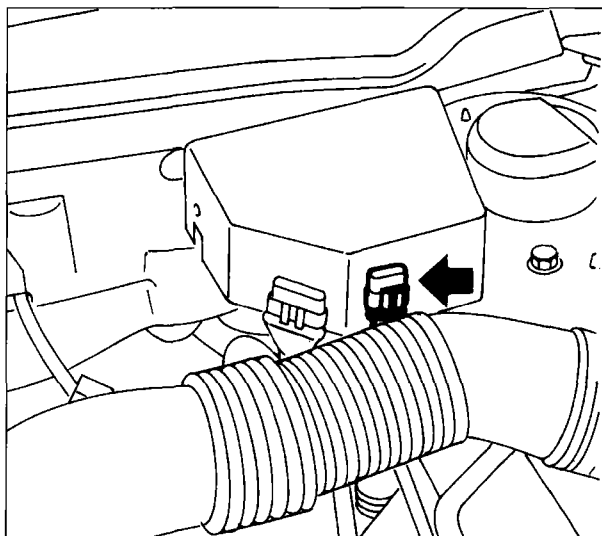
### Actuators

injectors  
coils  
charcoal filter solenoid valve  
stepping motor for adjusting engine idle  
electric fuel pump relay  
climate control compressor relay

### Sensors

engine rpm sensor  
engine timing sensor  
air flow meter  
Lambda sensor  
coolant temperature sensor  
detonation sensor  
butterfly position sensor  
vehicle speed sensor

### Location of diagnostic connector



P3N18GJ01

The detection and confirmation of a fault, involves it being permanently memorized as well as the appropriate sensor being excluded from the system until correct operation is restored. The detection of a confirmed fault usually involves: the warning light in the dashboard coming on: the warning light goes out when the fault conditions no longer exist.

**NOTE** During starting, the light is:

- on for 1 second
- off for 0.1 seconds
- on for 0.5 seconds
- kept on/off definitively according to whether "permanent" errors are present/not present.

Using the diagnostic equipment it is possible to carry out a complete fault diagnosis of the system, which consists of three stages:

display of a series of functional parameters (with the engine switched off or running);

display of the errors and their cancelling;

activation of some actuators (active diagnosis).

### Recovery strategy

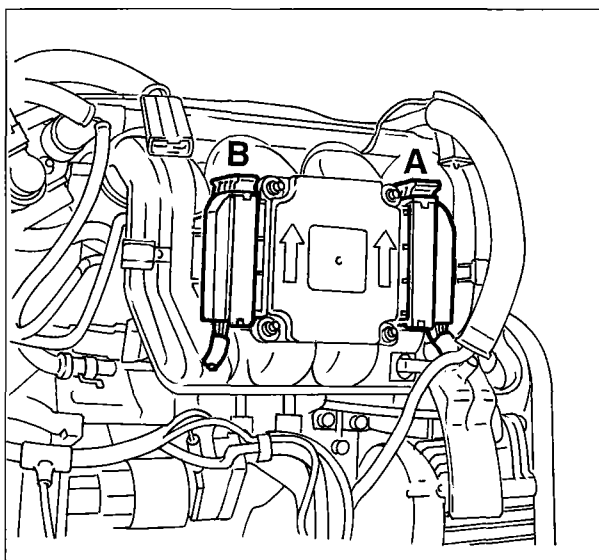
If a fault is detected in the sensors/actuators, the control unit, where possible, replaces the missing data, reconstructing it using software (recovery) to allow the operation of the engine.

**ELECTRICAL/ELECTRONIC CIRCUIT**

**Wiring**

The system has two distinct sets of wiring. The engine side wiring (A) connects the components fitted on the engine to the engine management control unit, whilst the vehicle side wiring (B), on the other hand, connects the other components to the control unit and acts as an interface with the other vehicle wiring systems.

**NOTE** *The two connectors are the same, therefore if the control unit is being dismantled the fitting position (arrow) must be observed to prevent them being mixed up.*



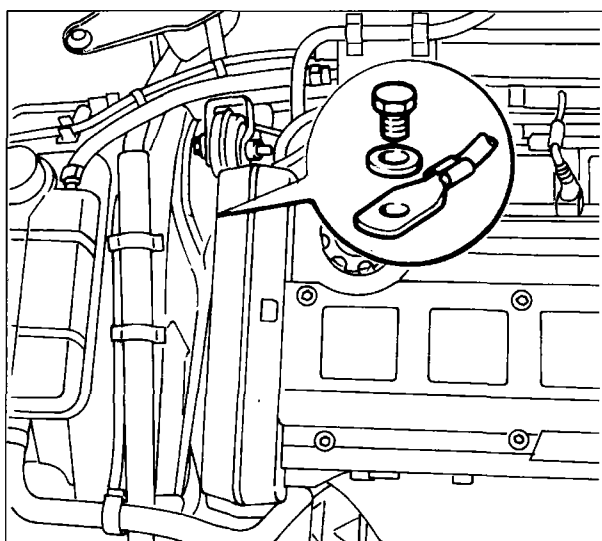
4F0180J01

*engine side wiring (A)*

butterfly position sensor  
coolant temperature sensor  
air flow meter  
engine rpm sensor  
engine timing sensor  
vehicle speed sensor  
detonation sensor  
injectors  
coils  
idle speed stepping motor  
charcoal filter solenoid valve

*vehicle side wiring (B)*

electric fuel pump  
twin relay  
radiator fan relay  
climate control compressor relay (if fitted)  
fuses  
Lambda sensor  
diagnostic equipment  
FIAT CODE control unit  
instrument panel connection  
supply from battery  
supply from ignition switch



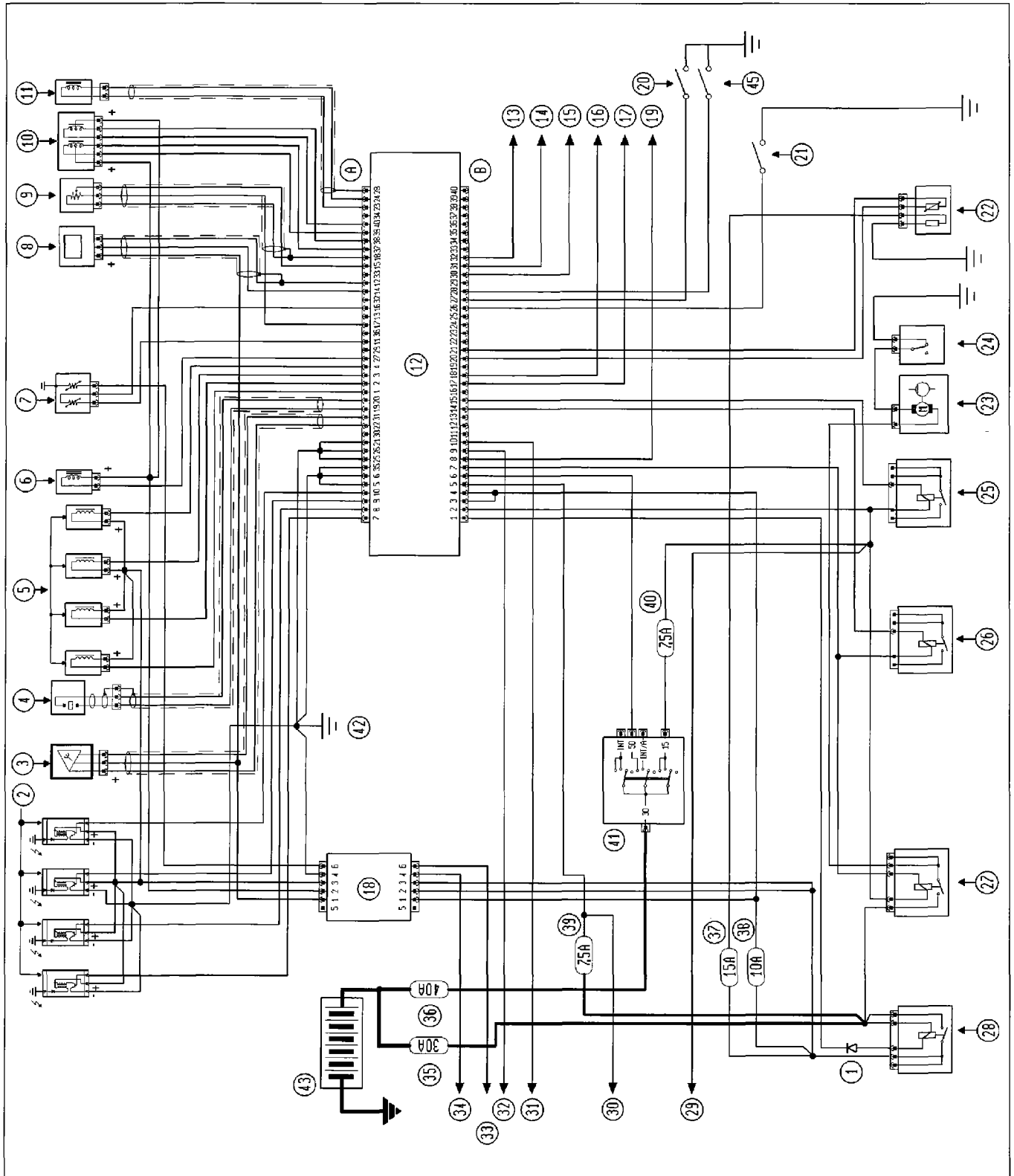
P3N19GJ02

**Location of system earth points**

In order to increase electro-magnetic compatibility and functional reliability, special care has been taken over the number and the location of the earth points, as illustrated in the diagram below:

main earth directly on the battery negative;  
engine control system earth on the timing side power unit support.

**10.**  
**HITACHI SYSTEM WIRING DIAGRAM**



3N21GJ01

**Hitachi system wiring diagram key**

- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>1. Anti-inversion diode</li><li>2. Pencil coils</li><li>3. Engine timing sensor</li><li>4. Detonation sensor</li><li>5. Injectors</li><li>6. Charcoal filter solenoid valve</li><li>7. Engine coolant temperature sensor</li><li>8. Air flow meter</li><li>9. Butterfly position sensor</li><li>10. Idle speed adjustment actuator</li><li>11. Engine rpm sensor</li><li>12. Engine management control unit</li><li>13. Line K</li><li>14. Memory reprogramming</li><li>15. FIAT CODE control unit connection</li><li>16. Vehicle speed input</li><li>17. Rev counter operation</li><li>18. Interface connector</li><li>19. System failure light operation</li><li>20. Input from climate control three stage thermostat (if fitted)</li><li>21. Trim level selection (connected to earth only for versions without climate control)</li><li>22. Lambda probe</li><li>23. Electric fuel pump</li><li>24. Inertia switch</li></ul> | <ul style="list-style-type: none"><li>25. High speed fan relay operation (if fitted)</li><li>26. Low speed fan relay operation</li><li>27. Electric fuel pump relay</li><li>28. I.E. fuel system relay</li><li>29. Supply (+15) for FIAT CODE</li><li>30. Supply (+30) for FIAT CODE</li><li>31. Climate control compressore relay operation (if fitted)</li><li>32. Climate control compressor engagement request input (if fitted)</li><li>33. Engine coolant temperature gauge signal</li><li>34. Engine earth for FIAT CODE</li><li>35. Fuse A (30 A)</li><li>36. Fuse B (50 A)</li><li>37. Fuse C (15 A)</li><li>38. Fuse D (10 A)</li><li>39. Fuse E (7.5 A)</li><li>40. Fuse F (7.5 A)</li><li>41. Ignition switch</li><li>42. Engine earth</li><li>43. Battery</li><li>44. Input from climate control 4 stage thermostat (if fitted)</li></ul> |
|---|--|

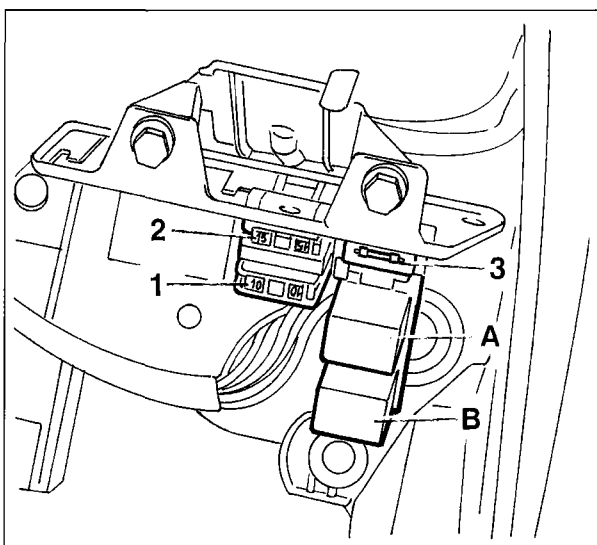
**SYSTEM RELAYS**

With the ignition key in the ON position (+15), the energizing coils for both relays are supplied, closing the power contacts.

Relay (A) supplies the electric fuel pump, receiving its voltage directly from the battery.

Relay (B) ensures the multiple supply of the control unit and the various system sensors and actuators, both directly and via the connector blocks.

**NOTE** *The layout of the relays (A) and (B) and the fuses (1) and (2) can vary according to production requirements. The recognition should be made according to the electrical connections.*

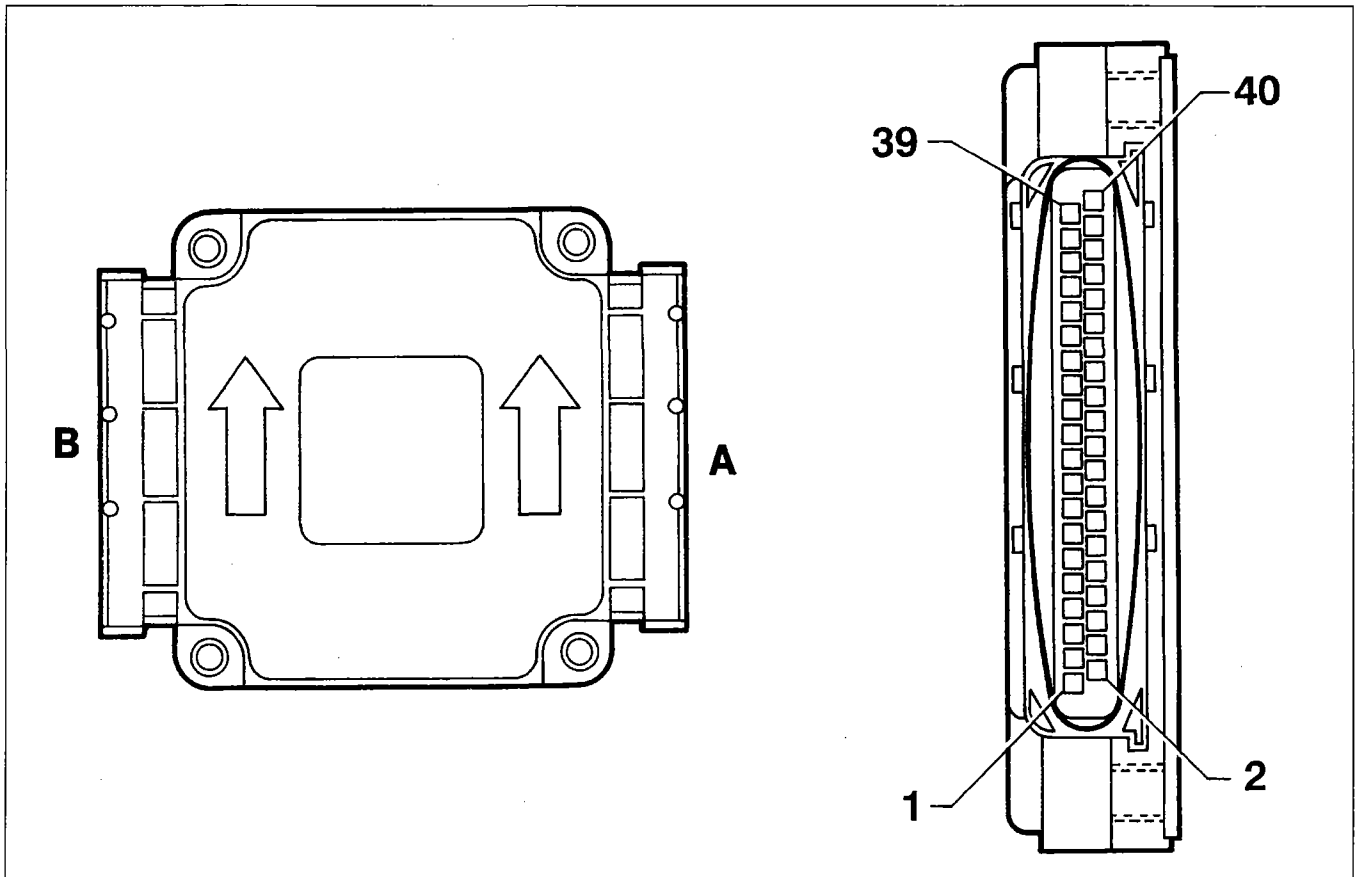


4F0210J02

- A. Electric fuel pump relay
- B. System supply relay
- 1. 10A fuse
- 2. 15A fuse
- 3. Anti-inversion diode

# 10.

## HITACHI SYSTEM CONTROL UNIT PIN-OUT

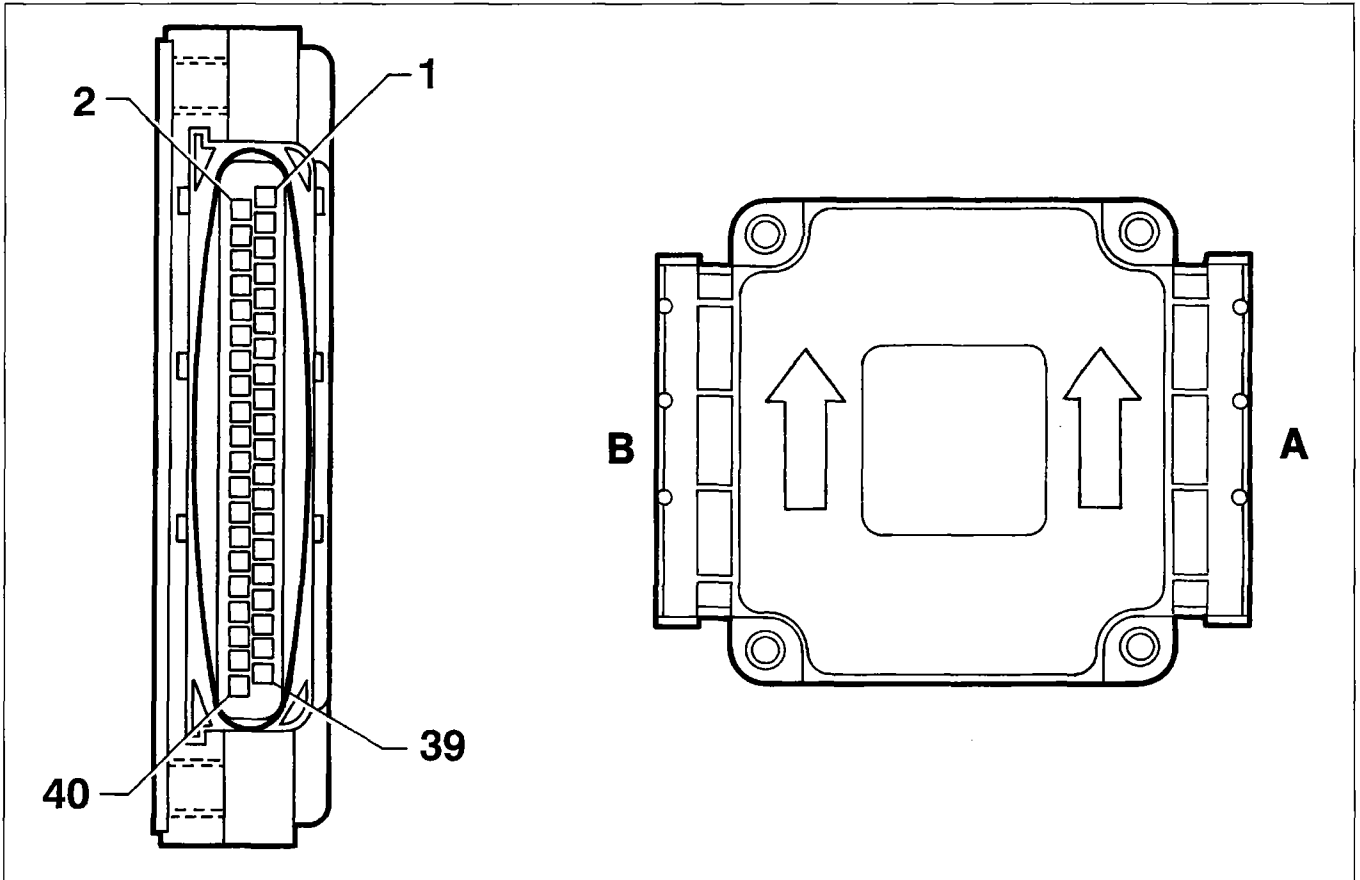


4F0200J01

### Connector A

- |                                       |  |
|---------------------------------------|--|
| 1. Cylinder 1 injector operation      | 21. Container earth                          |
| 2. Cylinder 2 injector operation      | 22. Engine timing sensor signal              |
| 3. Cylinder 3 injector operation      | 23. Engine rpm sensor positive               |
| 4. Cylinder 4 injector operation      | 24. Engine rpm sensor negative               |
| 5. Ignition earth                     | 25. A/D converter earth                      |
| 6. Power earth (1)                    | 26. Coil earth                               |
| 7. Cylinder 1 coil operation          | 27. Charcoal filter solenoid valve operation |
| 8. Cylinder 2 coil operation          | 28. Engine rpm sensor screening              |
| 9. Cylinder 3 coil operation          | 29. N.C.                                     |
| 10. Cylinder 4 coil operation         | 30. N.C.                                     |
| 11. Coolant temperature earth         | 31. Engine timing sensor earth               |
| 12. Air flow meter earth              | 32. N.C.                                     |
| 13. N.C.                              | 33. N.C.                                     |
| 14. Air flow meter signal             | 34. N.C.                                     |
| 15. Butterfly position sensor signal  | 35. Power earth (2)                          |
| 16. Coolant temperature sensor signal | 36. N.C.                                     |
| 17. Butterfly position sensor supply  | 37. Idle speed actuator operation phase 1    |
| 18. Butterfly position signal earth   | 38. Idle speed actuator operation phase 2    |
| 19. Detonation sensor signal          | 39. Idle speed actuator operation phase 3    |
| 20. Detonation sensor earth           | 40. Idle speed actuator operation phase 4    |

**HITACHI SYSTEM CONTROL UNIT PIN-OUT**

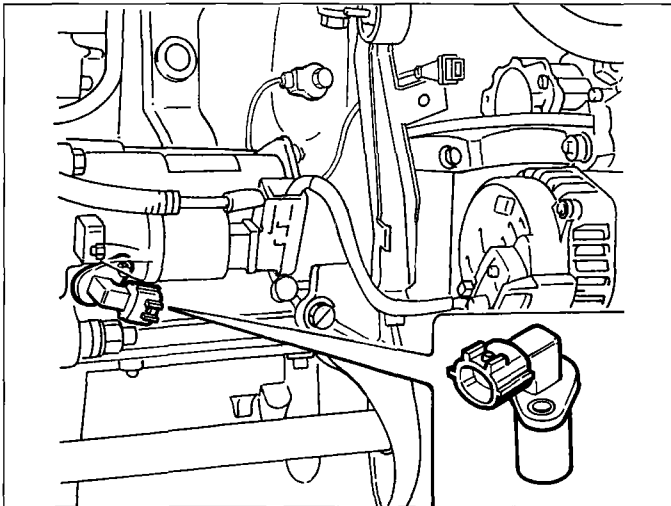


4F0210J01

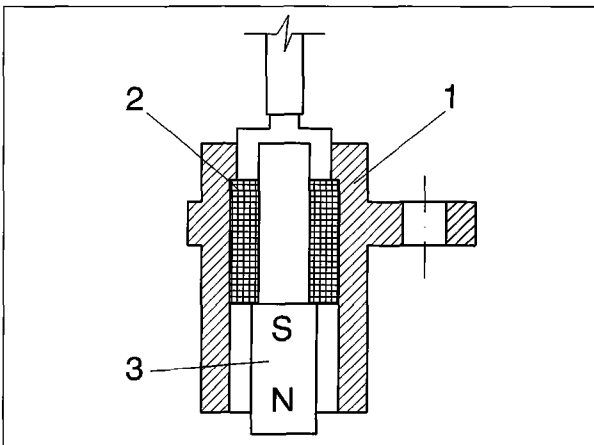
**Connector B**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>1. System relay feed operation</li> <li>2. Control unit supply (+15)</li> <li>3. Power supply 1</li> <li>4. Power supply 2</li> <li>5. Control unit supply (+30)</li> <li>6. Engine started signal from ignition key +50</li> <li>7. Fuel pump relay feed</li> <li>8. System failure light operation</li> <li>9. Air conditioning compressor engagement signal (if fitted)</li> <li>10. Air conditioning compressor relay feed (if fitted)</li> <li>11. N.C.</li> <li>12. N.C.</li> <li>13. N.C.</li> <li>14. Low speed fan relay feed</li> <li>15. High speed fan relay feed</li> <li>16. N.C.</li> <li>17. Rev counter operation</li> <li>18. Vehicle speed sensor signal</li> <li>19. N.C.</li> </ul> | <ul style="list-style-type: none"> <li>20. Lambda probe signal</li> <li>21. Lambda sensor negative</li> <li>22. N.C.</li> <li>23. N.C.</li> <li>24. N.C.</li> <li>25. N.C.</li> <li>26. Trim level selection (to earth only for versions without climate control)</li> <li>27. Three stage thermostat signal (only for versions with climate control)</li> <li>28. N.C.</li> <li>29. N.C.</li> <li>30. Connection with FIAT CODE</li> <li>31. Reprogramming</li> <li>32. Line K</li> <li>33. N.C.</li> <li>34. N.C.</li> <li>35. N.C.</li> <li>36. N.C.</li> <li>37. N.C.</li> <li>38. N.C.</li> <li>39. N.C.</li> <li>40. N.C.</li> </ul> |
|---|--|

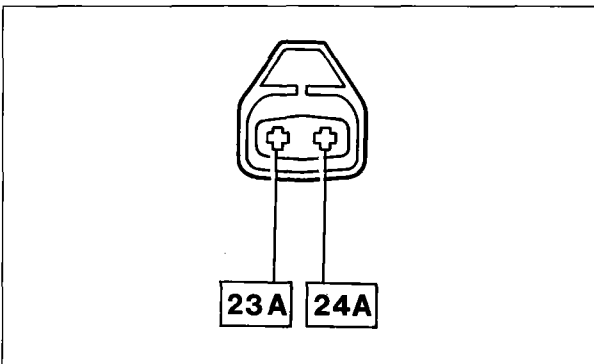
**10.**



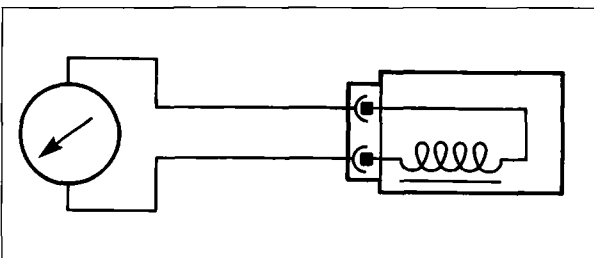
3N26GJ01



3N26GJ02



3N26GJ03



3N26GJ04

**ENGINE RPM SENSOR**

This sensor is secured to the crankcase: the flywheel is in one piece with a crankshaft crank.

**Operating principle**

The sensor consists of a tubular casing (1) which contains a permanent magnet (3) and an electrical winding (2):

As a result of the flywheel teeth passing, the magnetic flow created by the magnet (3) undergoes fluctuations produced by the variation in the gap.

These fluctuations produce an electro-motive force in the winding (2) where an alternately positive (tooth opposite the sensor) and negative (gap opposite the sensor) voltage is produced: see paragraph on "signal management". The peak sensor output voltage value, all things being equal, depends on the distance between the sensor and the tooth (gap).

**Wiring connector**

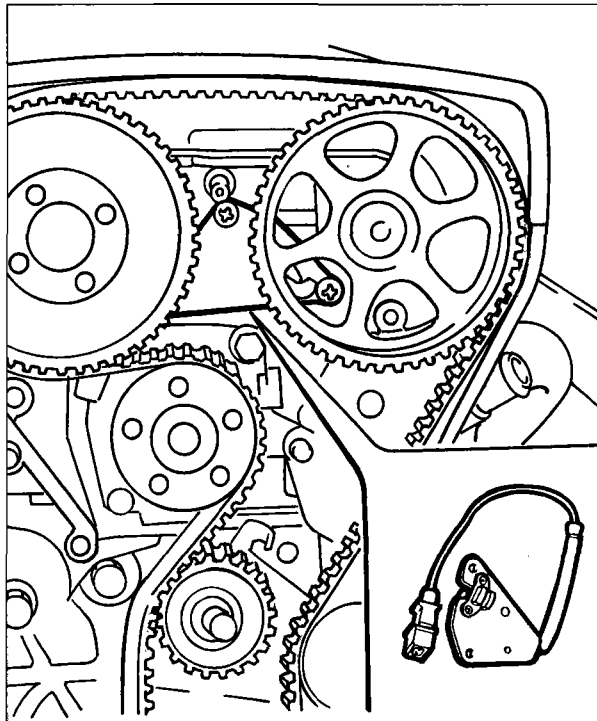
The sensor winding resistance can be measured by disconnecting the connector and connecting an ohmmeter to the sensor terminals

**Resistance: 570±57 ohm at 20°C**



**10.**

**ENGINE TIMING SENSOR**

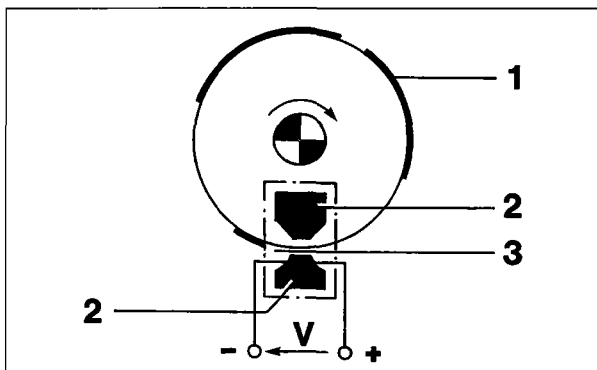


3N27GJ01

The engine timing signal, together with the engine rpm and TDC signal, allows the control unit to recognize the order of the cylinders to implement phased injection.

This signal is produced by a Hall effect sensor, fitted by the exhaust camshaft drive pulley.

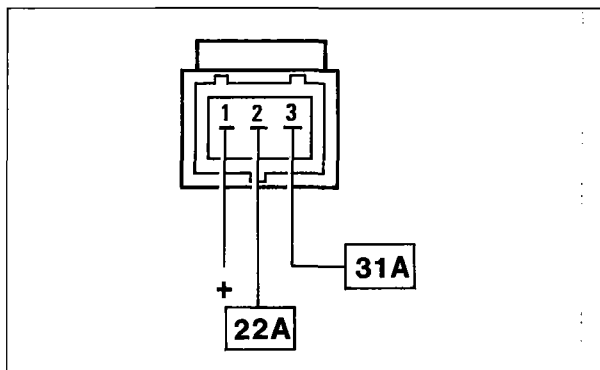
**NOTE** *The angular position of the sensor cannot be adjusted in any way.*



3N27GJ02

- 1. Deflector
- 2. Magnetic material
- 3. Gap

**Wiring connector**



3N27GJ03

**Operating principle**

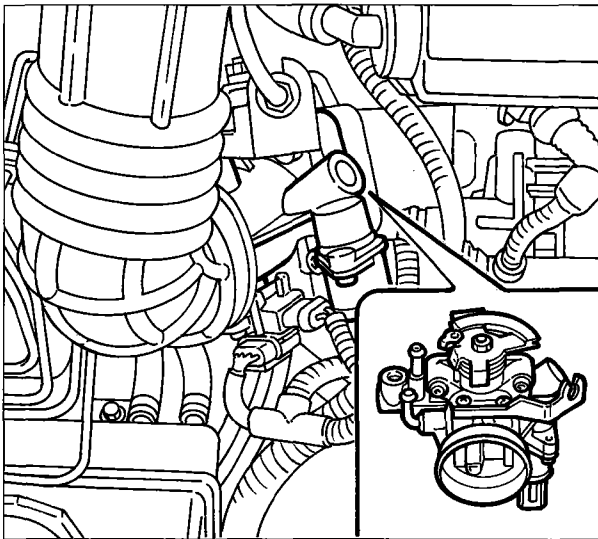
A semi-conductor layer, through which a current passes, immersed in a magnetic field (lines of force perpendicular to the direction of the current), produces a difference in power, known as Hall voltage.

If the intensity of the current remains constant, the voltage produced only depends on the intensity of the magnetic field. The intensity of the field can simply be altered periodically to produce a modulated electrical signal.

In practice, to achieve this change, the sensor is passed through a metal ring (in one piece with the inner part of the timing pulley) which has a series of openings: as it moves, when the ring covers the sensor, it stops the magnetic field and the signal remains low, whilst when there is an opening, the field is enclosed and the signal becomes high.

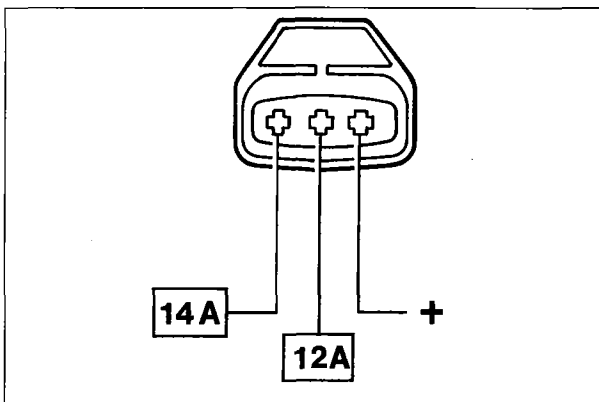
The alternating of the signals depends therefore on the succession of the openings (see chapter on "signal management").

**10.**



3N28GJ01

**Wiring connector**



3N28GJ02

**AIR FLOW METER**

The air flow meter is the hot film type, incorporated in the butterfly casing.

The top part has a duct, parallel to the main flow, which contains the heated filament.

Part of the flow of intake air is introduced into the duct and, after passing through it, comes out the opposite side, returning to the main flow.

As a result, only part of the mass of air which passes through the flow meter is measured: this quantity is, however, proportional to the overall mass which passes through the flow meter.

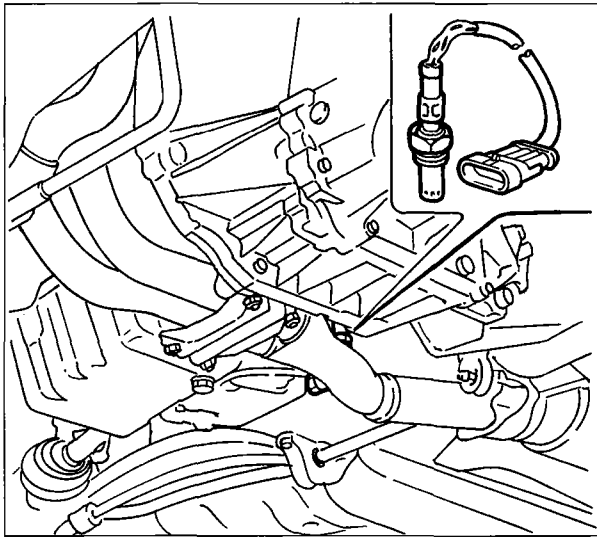
The flow meter output electrical voltage is therefore representative of the total flow rate.

This type of flow meter has two advantages compared with the full flow type:

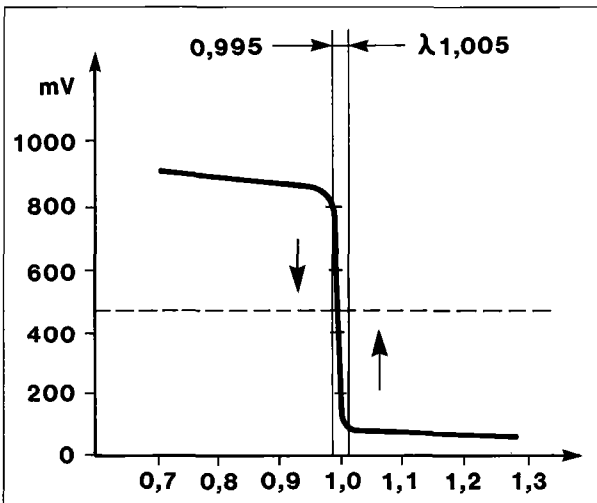
- considerable insensitivity to the pulsation of the columns of air, especially present at low speeds and heavy loads;
- less fouling of the filament, thanks to the reduced mass of air which comes into contact with it; as a result, the control unit has no wire cleaning strategy (burn-in).

**10.**

**LAMBDA SENSOR**



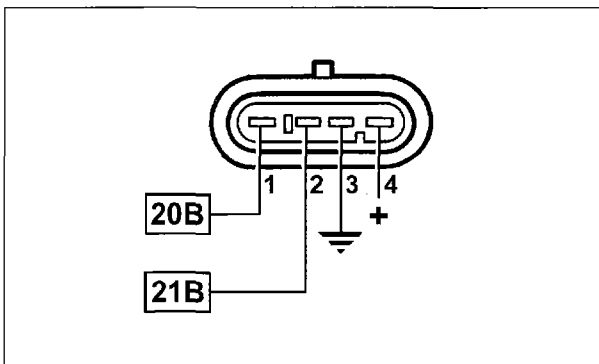
3N29GJ01



3N29GJ02

$\lambda = 1$  Ideal mixture (stoichiometric)  
 $\lambda > 1$  Lean mixture  
 Excess air, the CO values tend to be low  
 $\lambda < 1$  Rich mixture  
 Lack of air; the CO values tend to be high

**Wiring connector**



3N29GJ04

The Lambda sensor measures the oxygen content in the exhaust gases: it is fitted on the exhaust pipe, upstream of the catalytic silencer. The sensor output signal is sent to the control unit for a feed-back correction of the mixture strength.

When the sensor supplies a low signal (voltage below 200 mV) the control unit recognizes a weak mixture and increases the injection time; later on, when the sensor signal is high (voltage above 800 mV), the control unit recognizes a rich mixture and decreases the injection time.

This sequence is repeated at a frequency in the order of tens of Hertz so that the engine operates with a mixture strength constantly fluctuating around the stoichiometric ratio.

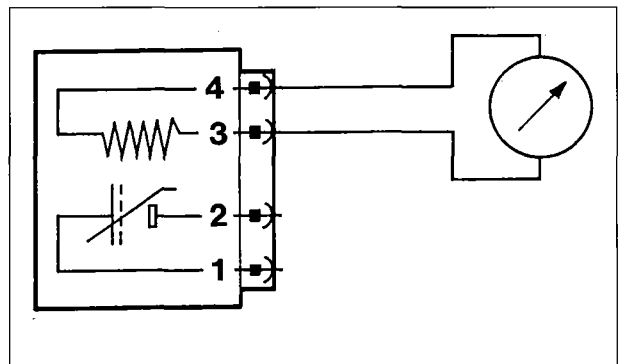
At temperatures below 300°C the ceramic material is not activated, therefore the sensor does not send reliable signals: to ensure rapid heating during starting and maintain the temperature whilst idling, the sensor is equipped with a heater with an electrical resistance which is always on.



*The sensor can be rapidly put out of action by the presence of even slight amounts of lead in the petrol.*

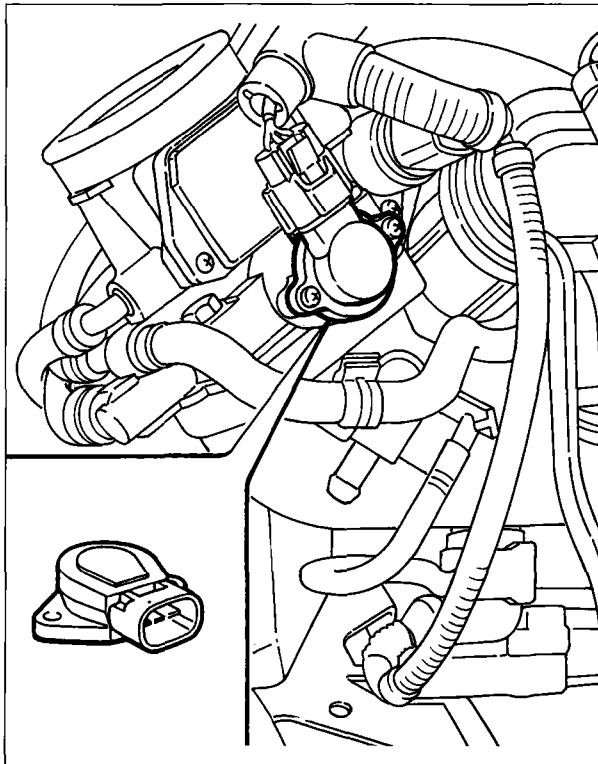
The sensor heater resistance can be measured by disconnecting the connector and connecting an ohmmeter as illustrated in the diagram.

**Resistance: 4.5 ± 0.5 ohm at 20°C**



3N29GJ03

**10.**

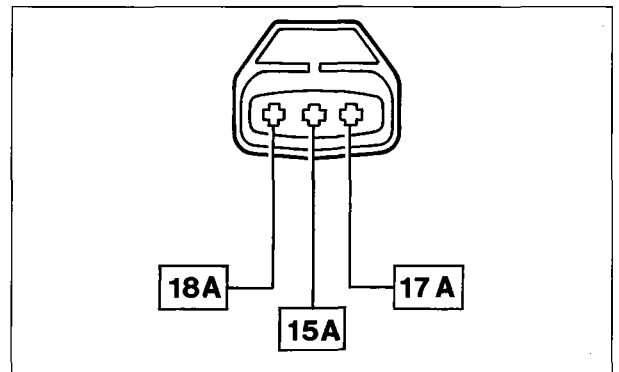


3N30GJ01

**BUTTERFLY POSITION SENSOR**

This consists of a single track potentiometer with the moving part rotated by the accelerator butterfly shaft.

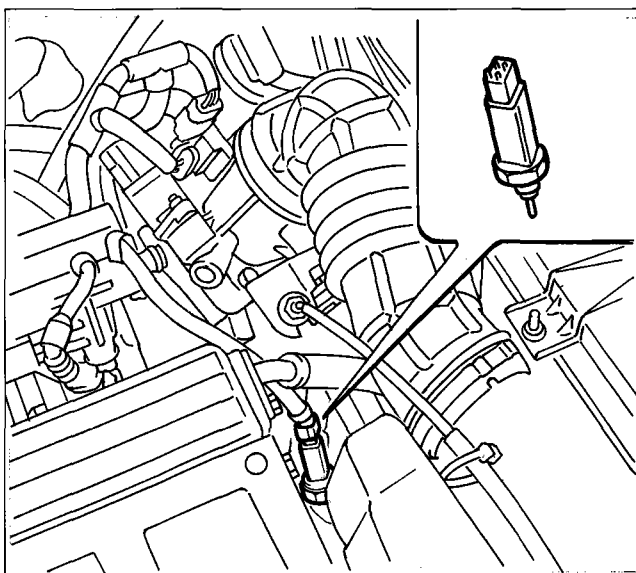
**Wiring connector**



3N30GJ02

**10.**

**ENGINE COOLANT TEMPERATURE SENSOR**



3N32GJ01

**INJECTION NTC**

| °C  | Ω     | °C  | Ω    |
|-----|-------|-----|------|
| -20 | 15971 | 40  | 1152 |
| -10 | 9620  | 50  | 807  |
| 0   | 5975  | 60  | 576  |
| 10  | 3816  | 70  | 418  |
| 20  | 2502  | 80  | 309  |
| 25  | 2044  | 90  | 231  |
| 30  | 1679  | 100 | 176  |

**INSTRUMENT NTC**

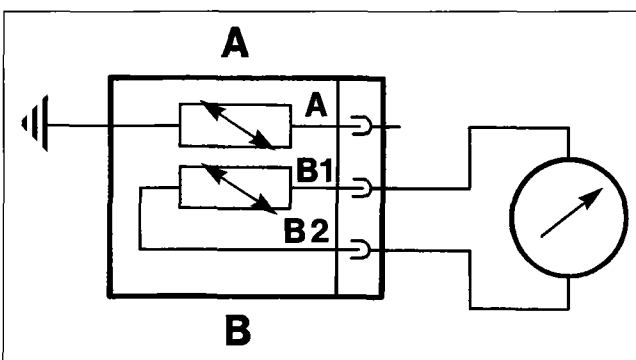
| °C  | Ω       |
|-----|---------|
| 60  | 512-602 |
| 90  | 184-208 |
| 120 | 76-88   |

This sensor is fitted on the thermostat. It consists of a brass casing which affords protection for the actual resistive elements, comprising two NTC type thermistors (Negative Temperature Coefficient, where the electrical resistance decreases as the temperature increases).

The two thermistors are distinctive and provide information concerning the temperature to the instrument panel (A) and the engine management control unit (B), respectively.

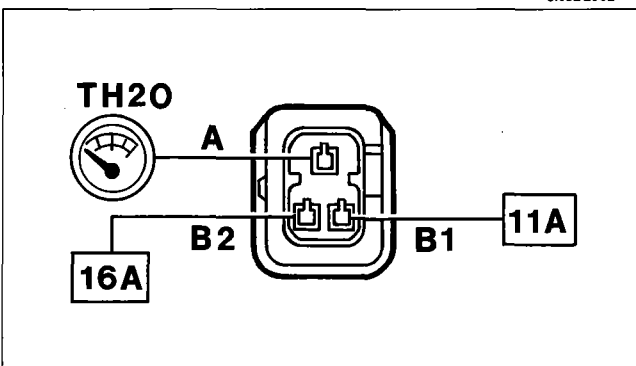
The reference voltage for the latter is 5 Volt: since the control unit intake circuit is designed as a voltage divider, the reference voltage is shared between a resistance in the control unit and the actual sensor.

As a result, the control unit is capable of evaluating the variations in the sensor resistance through the changes in voltage, thereby obtaining information concerning the temperature.



3N32GJ02

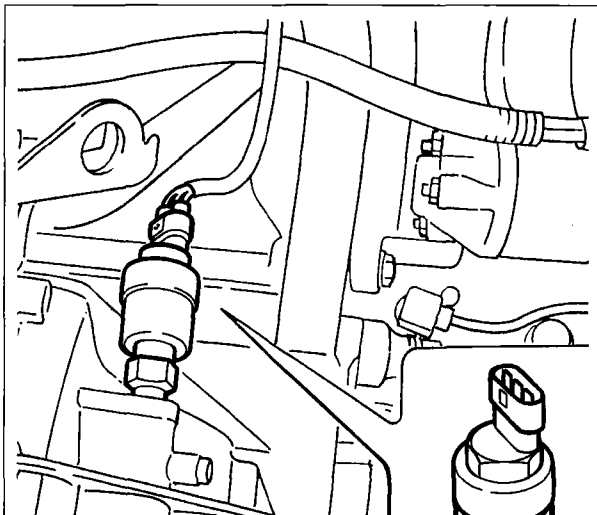
The table shows the progress of the sensor, which can be measured by disconnecting the connector and connecting an ohmmeter as illustrated in the diagram.



3N32GJ03

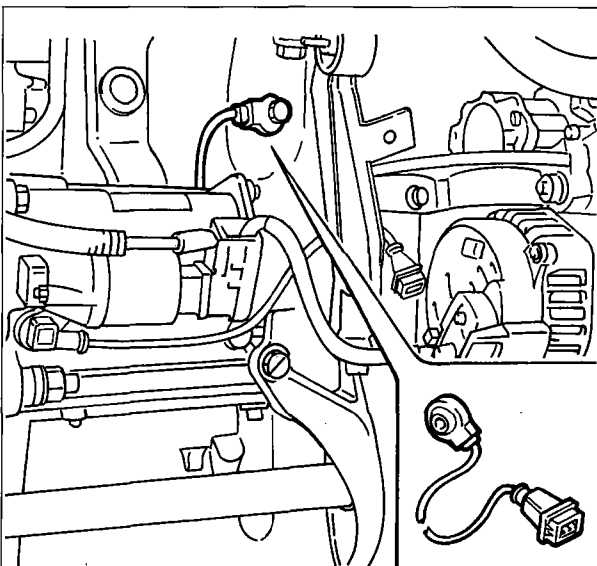
**Wiring connector**

**10.**



3N33GJ05

**Connector wiring**

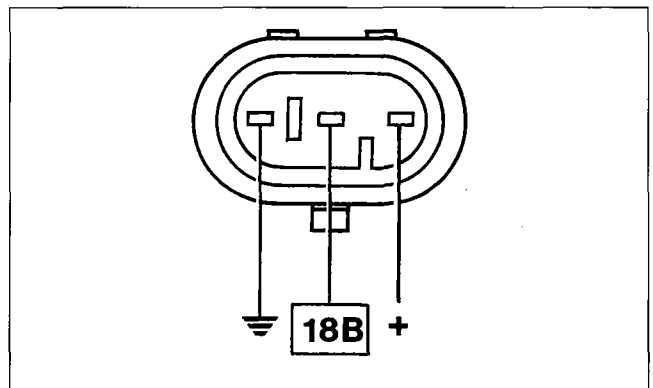


3N33GJ04

**Wiring connector**

**VEHICLE SPEED SENSOR**

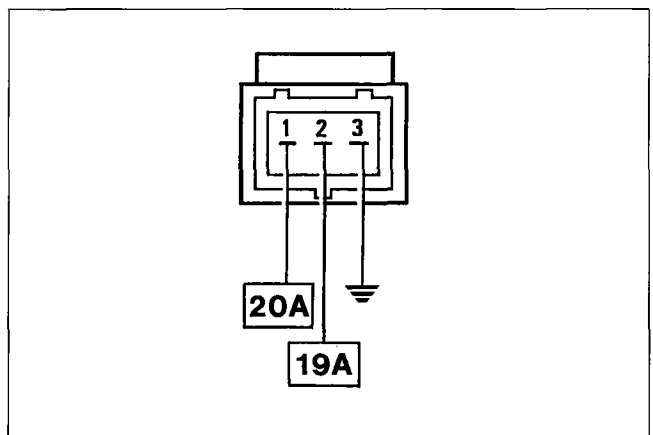
This sensor is positioned at the differential output, by the left driveshaft coupling, and transmits information concerning the vehicle speed to the control unit: the signal is also used for the operation of the speedometer. The sensor is the Hall effect type (see paragraph on "engine timing sensor") and is calibrated so that a distance of one metre corresponds to each impulse: it is therefore possible to deduce the speed of the vehicle from the frequency of the impulses.



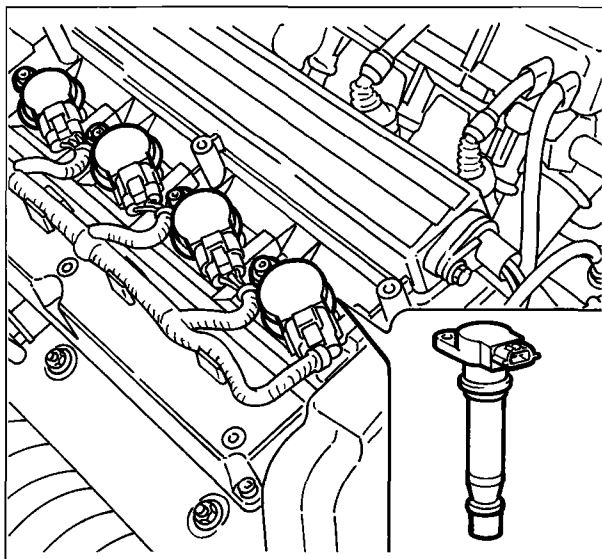
3N33GJ01

**DETONATION SENSOR**

This sensor is the piezoelectric type and is fitted on the cylinder block/crankcase in a position which is symmetrical in relation to the pairs of cylinders 1-2 and 3-4. This position is determined by the need to detect the onset of detonation in the same way for all cylinders. When there is engine "knock", vibrations of a particular frequency are produced which are transformed by the sensor into a voltage signal, proportional to their intensity.



3N33GJ02



3N34GJ01

**IGNITION COILS**

The ignition circuit is the inductive discharge, static advance type, where the high tension is supplied by four coils fitted directly on the spark plugs (pencil-coils).

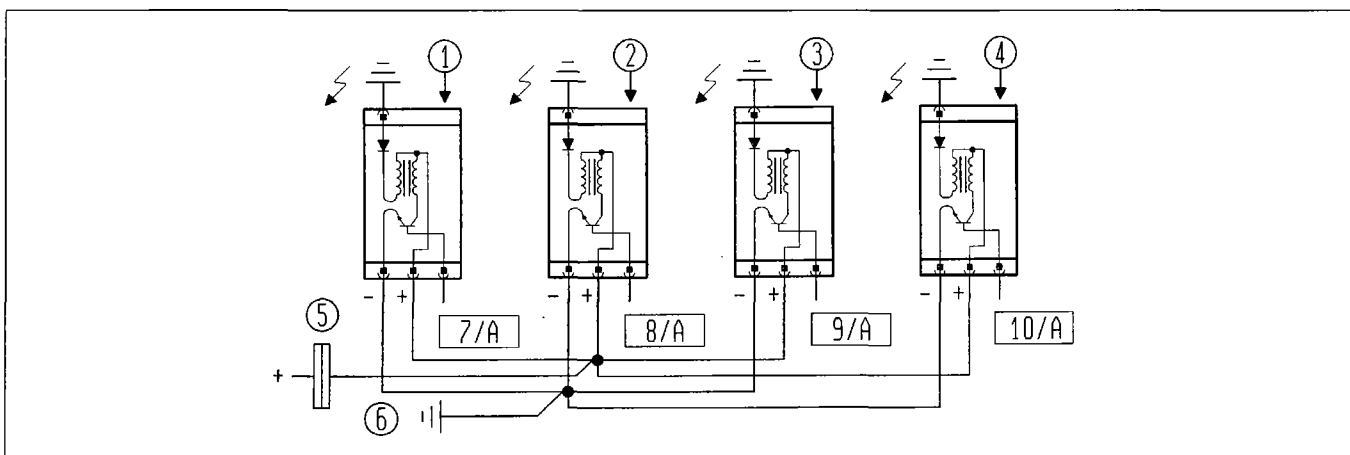
The coil used is the closed magnetic circuit type, with the windings in a plastic container, immersed in epoxide resin. The coil is connected directly to the spark plug by means of an extension made from silicon which has good dielectric properties.

The coil incorporates a power transistor for interrupting the primary winding.

The primary winding in each coil is supplied by the battery voltage (+30) via the twin relay and is connected to earth through the built in power transistor with the base connected to the appropriate control unit pin.

Interrupting the current to the base of the transistor interrupts the connection to earth of the primary winding and, as a result, causes a high tension discharge at the secondary winding.

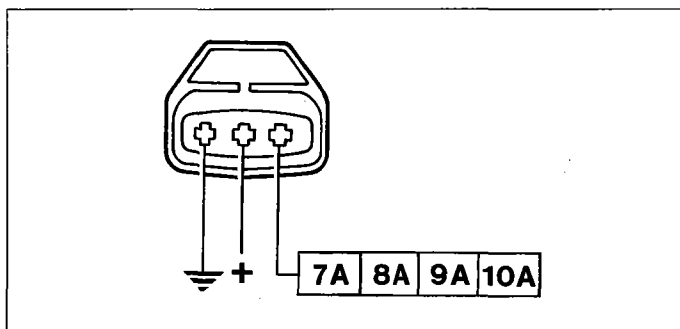
The optimum ignition advance is calculated by the control unit according to the engine speed and load conditions and is implemented in the form of time between the TDC for the explosion stroke and the moment the supply for the coil primary circuit is interrupted.



3N34GJ02

**Wiring connector**

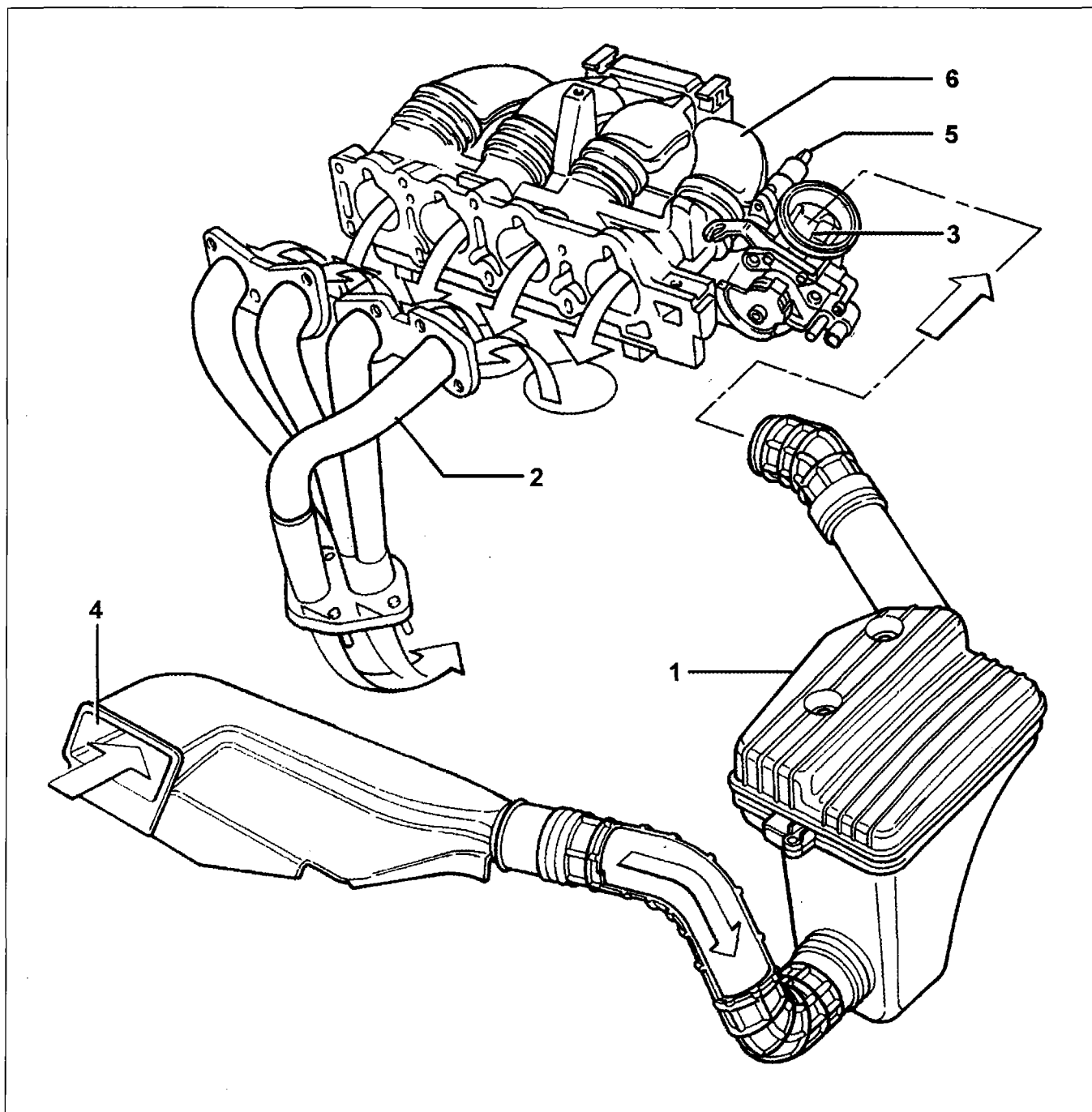
- 1. Cylinder 1 coil
- 2. Cylinder 2 coil
- 3. Cylinder 3 coil
- 4. Cylinder 4 coil
- 5. Interface connector
- 6. Engine earth



3N34GJ03

# 10.

## AIR INTAKE CIRCUIT DIAGRAM



4F0320J01

- 1. Air filter
- 2. Exhaust manifold
- 3. Butterfly casing with air flow meter
- 4. Intake vent
- 5. Engine idle adjustment actuator
- 6. Intake manifold



### INTAKE CIRCUIT

The intake circuit consists of the following components:

- air filter and hoses;
- acoustic resonators fitted in parallel to the intake hose (two upstream and one downstream of the filter);
- intake manifold on which the fuel manifold, complete with injectors, the engine management control unit and the charcoal filter solenoid valve are fitted
- butterfly casing, incorporated with the air flow meter, on which the butterfly position sensor, the PCV valve for the oil vapour recirculation circuit and the engine idle adjustment actuator are fitted.

### BUTTERFLY CASING

The butterfly casing has the task of metering the quantity of air drawn in by the engine (and consequently the power developed) according to the driver's request via the accelerator and it is incorporated with the air flow meter.

The butterfly casing is secured to the intake manifold by four bolts: the butterfly is opened by means of linkage where small butterfly opening angles correspond to the pedal being slightly pressed and large angles correspond to it being greatly depressed.

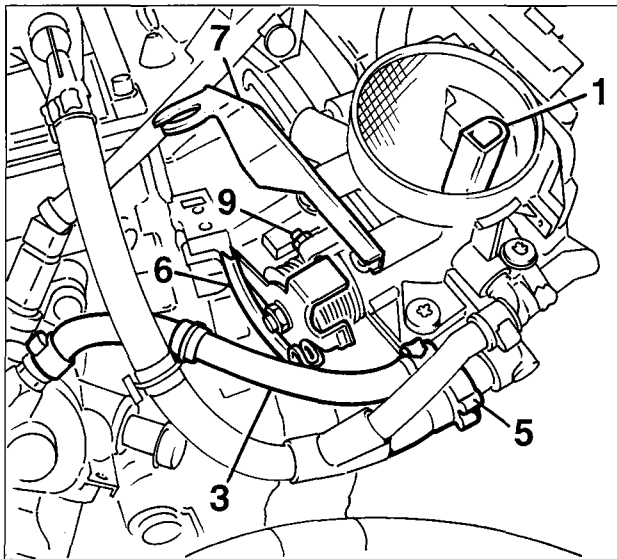
With the pedal completely released (engine decelerating or idling) the necessary additional air is supplied by the engine idle adjustment actuator: under these circumstances, the butterfly opening lever is in the end of travel position against an anti-tamper screw which prevents the butterfly from getting stuck in a closed position.

To prevent the formation of ice near the butterfly and the opening connected to the PCV valve, the butterfly casing is heated by a small amount of water coming from the engine thermostat circulating in a chamber inside the actual casing.

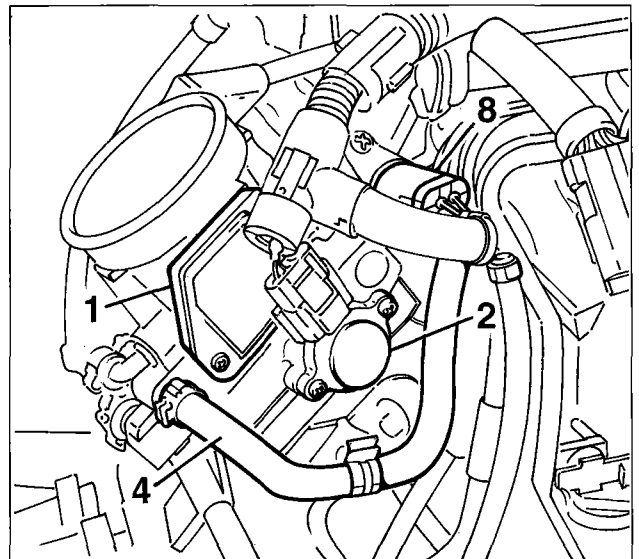
The PCV valve for the oil vapour recirculation system and the butterfly position sensor are also fitted on the butterfly casing.



*The anti-tamper screw is adjusted during the fluxing operation in the factor and should never be tampered with.*



3N36GJ01

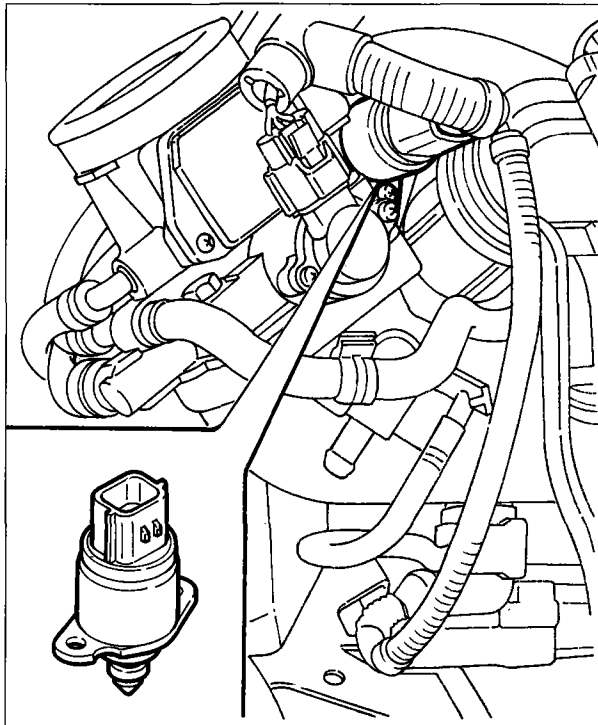


3N36GJ02

1. Air flow meter
2. Butterfly position sensor
3. Engine coolant inlet

4. Engine coolant outlet
5. PCV valve

# 10.



3N37GJ01

## ENGINE IDLE SPEED ADJUSTMENT ACTUATOR

The actuator, fitted on the butterfly casing, intercepts a flow of air which, drawn in upstream of the butterfly, is returned downstream: it has the task of providing the engine with additional air when the butterfly is closed in all conditions when this is deemed necessary (idling, deceleration).

A stepping motor is used to achieve this; it is fixed to the butterfly casing and operated by a circuit inside the engine management control unit.

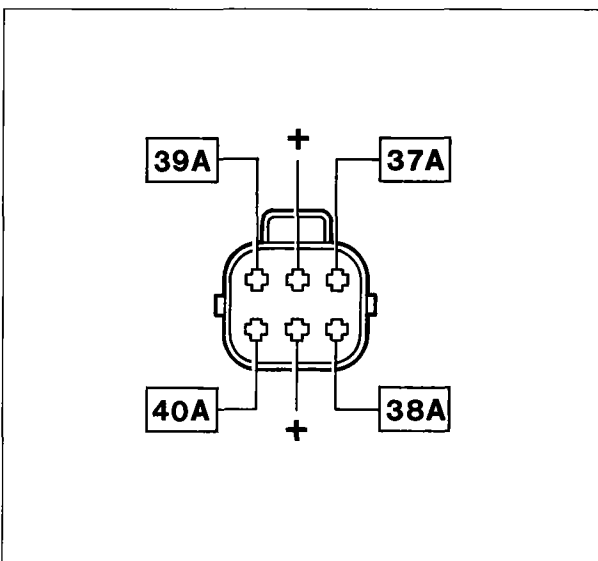
### Operating principle

The actuator consists of:

- an electric stepping motor with two windings in the stator and a rotor which includes a certain number of pairs of permanent magnetic poles;
- a screw-female screw type reduction gear which transforms the rotary motion into rectilinear motion.

The stepping motor is operated by the engine management control unit which, combining the offset and the direction in which the current flows through the windings, causes the rotation of the rotor, in both directions, through a certain number of steps.

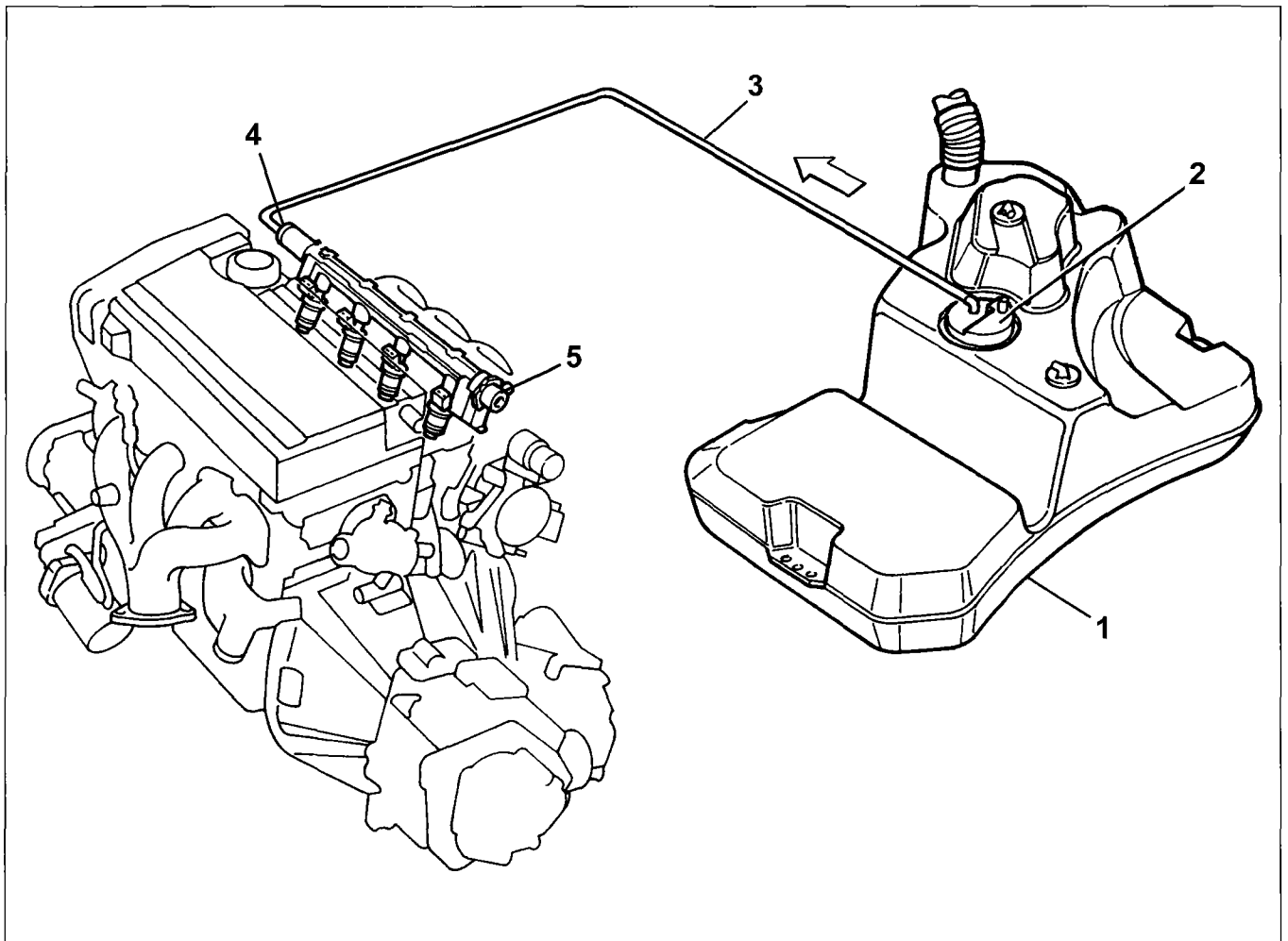
The screw-female screw coupling causes the movement of a stem fitted with a tapered shutter which alters the section of the by-pass duct and, as a result, the quantity of air drawn in by the engine to obtain the desired speed even when outside loads are applied (air conditioning, fans, power assisted steering, etc.).



3N37GJ02

### Wiring connector

**FUEL CIRCUIT DIAGARM**



4F0350J01

1. Fuel tank
2. Drip tray complete with pump, filter, pressure regulator and gauge float
3. Supply pipe
4. Returnless type fuel manifold
5. Air bleed connector

**FUEL SUPPLY CIRCUIT**

This circuit consists of the following components:

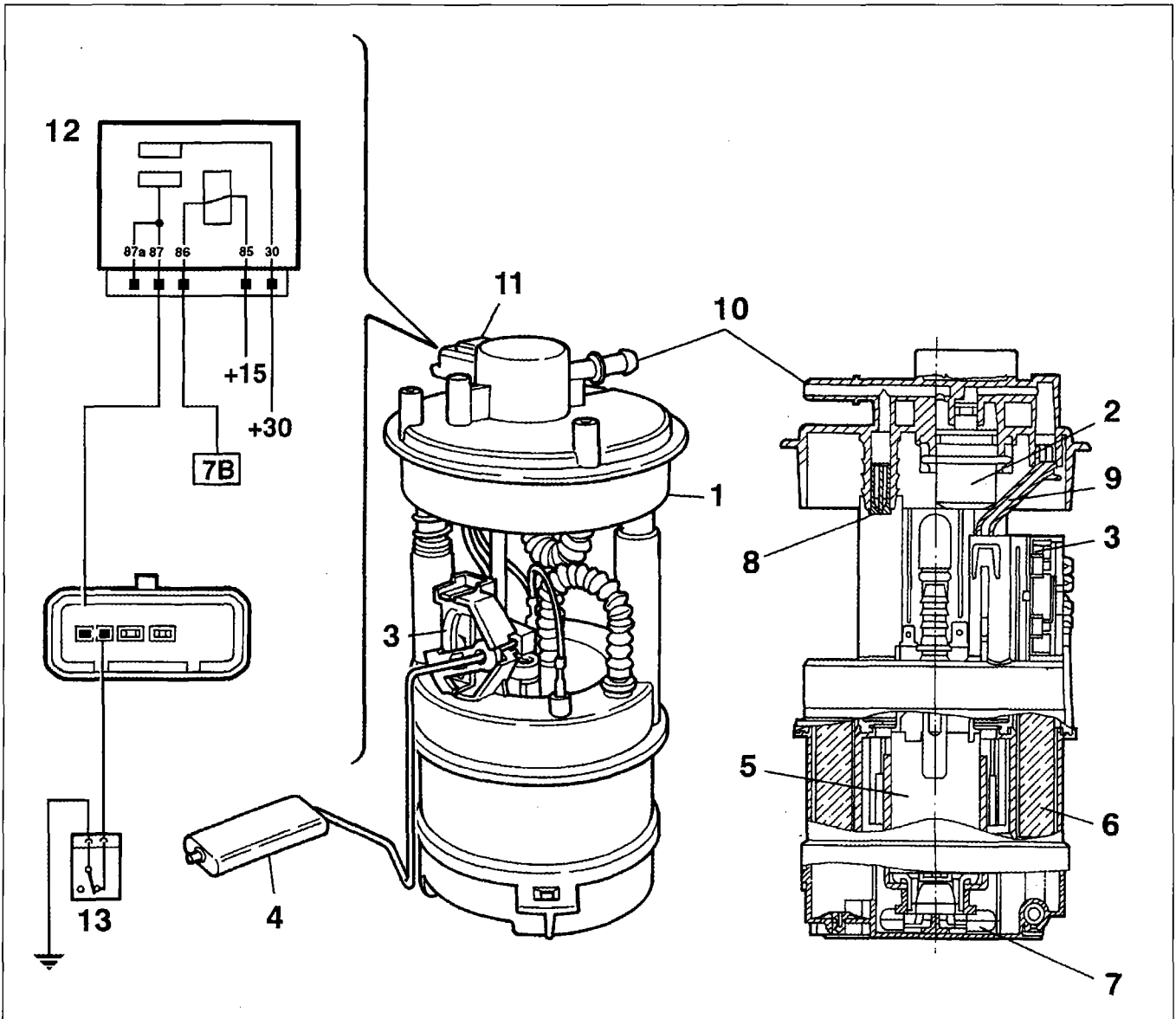
- Fuel tank
- Drip tray complete with pump, filter, pressure regulator and gauge float
- Supply pipe
- Returnless type fuel manifold complete with injectors

**10.**

**FUEL DRIP TRAY ASSEMBLY**

**Electric fuel pump**

The pump is housed inside the fuel tank, on a special drip tray, which also supports the gauge and is equipped with a gauze filter at the pump inlet. The pressure regulator is also fitted on the pump supply.



3N40GJ01

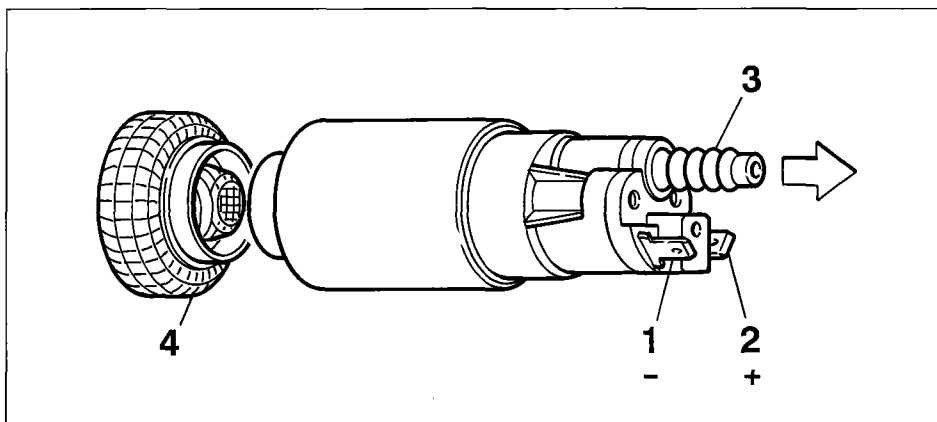
- 1. Complete drip tray
- 2. Pressure regulator
- 3. Gauge
- 4. Float
- 5. Electric pump
- 6. Fuel filter
- 7. Pre-filter

- 8. One-way valve
- 9. Internal fuel return
- 10. Fuel supply
- 11. Electrical connector
- 12. Relay
- 13. Inertia switch

## 10.

The pump is the volumetric type and is designed to run on unleaded fuel. The rotor is driven by a d.c. electric motor receiving the battery voltage directly from the twin relay on the command of the control unit in order to ensure that:

- the pump cuts out if the engine speed goes below a minimum level (about 450 rpm);
- the timed operation (around 15 seconds) each time the ignition key is turned to the ON position without the engine being started up;
- operation when the engine is started up.



1. Negative
2. Fuel system
3. Supply
4. Pre-filter

3N41GJ01

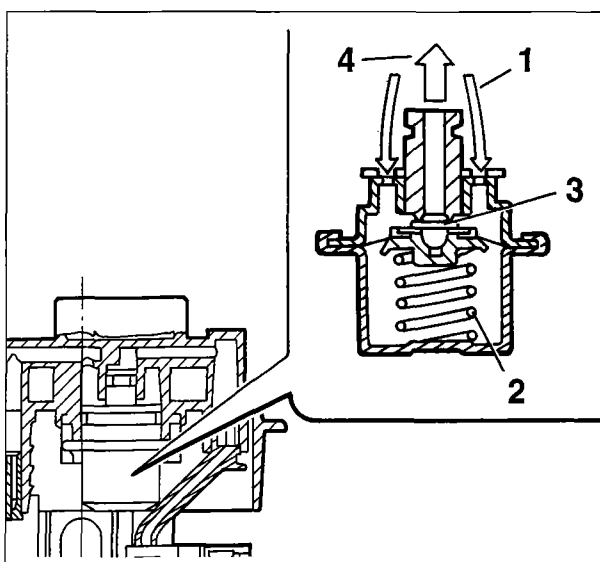
The pump is equipped with an excess pressure valve which short circuits the supply with the inlet if the pressure in the supply circuit exceeds 5 bar to prevent the electric motor from overheating.

In addition, a one-way valve, fitted in the supply, prevents the entire fuel circuit from draining when the pump is not working.

The pump nominal flow rate varies according to the speed of the rotor and therefore the supply voltage.

### Fuel filter

The fuel filter is housed in the casing which surrounds the pump and does not require periodic replacement.



3N41GJ02

### Fuel pressure regulator

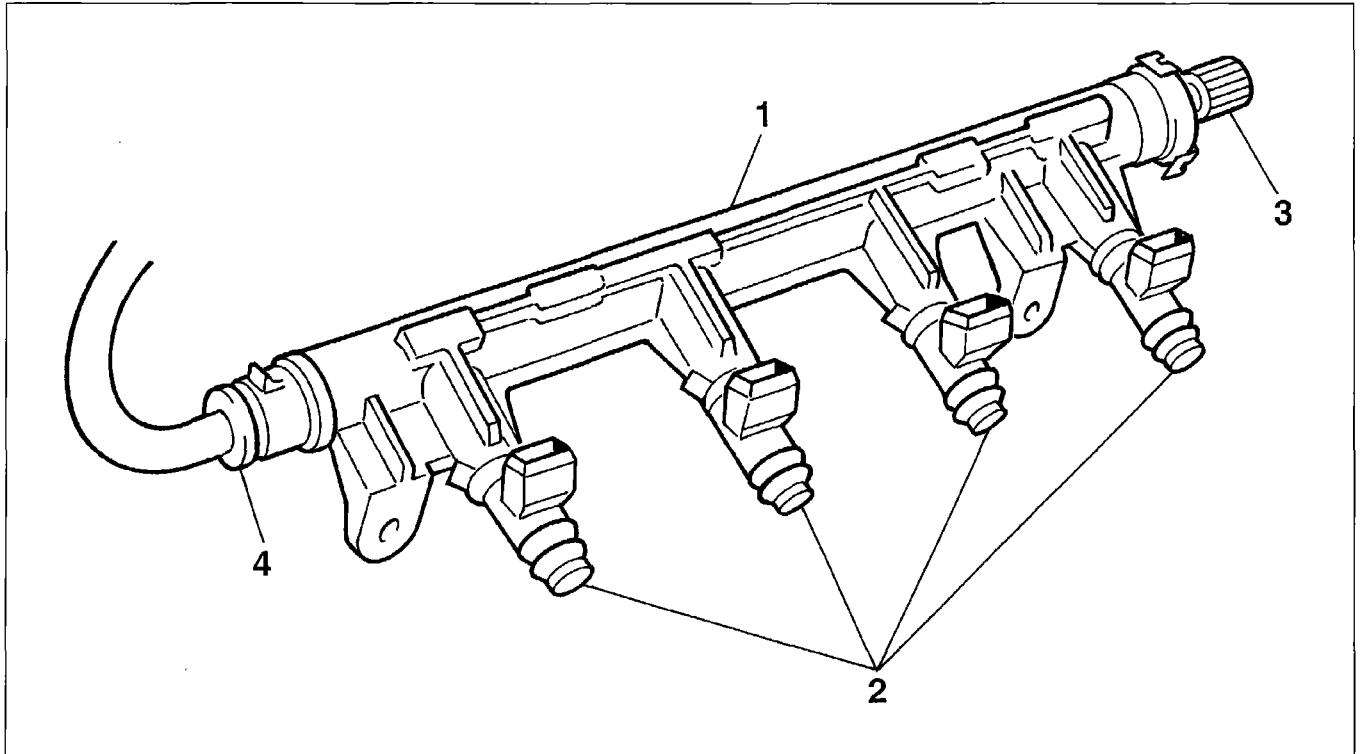
This is a differential diaphragm device, regulated at the factory to a pressure of  $3.50 \pm 0.05$  bar and located in the top part of the drip tray.

The pressurized fuel (1), coming from the pump, exerts a force on the valve (3) opposed by a calibrated spring (2). When the calibration pressure is exceeded, the valve opens and the excess fuel (4) returns to the tank, thereby stabilizing the pressure in the circuit.

# 10.

## FUEL MANIFOLD

The fuel manifold, which is designed to distribute the fuel to the injectors, is produced by aluminium die-casting and incorporates the seats for the injectors and the bleed valve. The fuel inlet is secured by a tapered, sealed bolt. Since the system is the returnless type, there is no recirculation pipe.



3N42GJ02

- 1. Fuel manifold
- 2. Injectors
- 3. Bleed valve
- 4. Fuel supply connector

**10.**

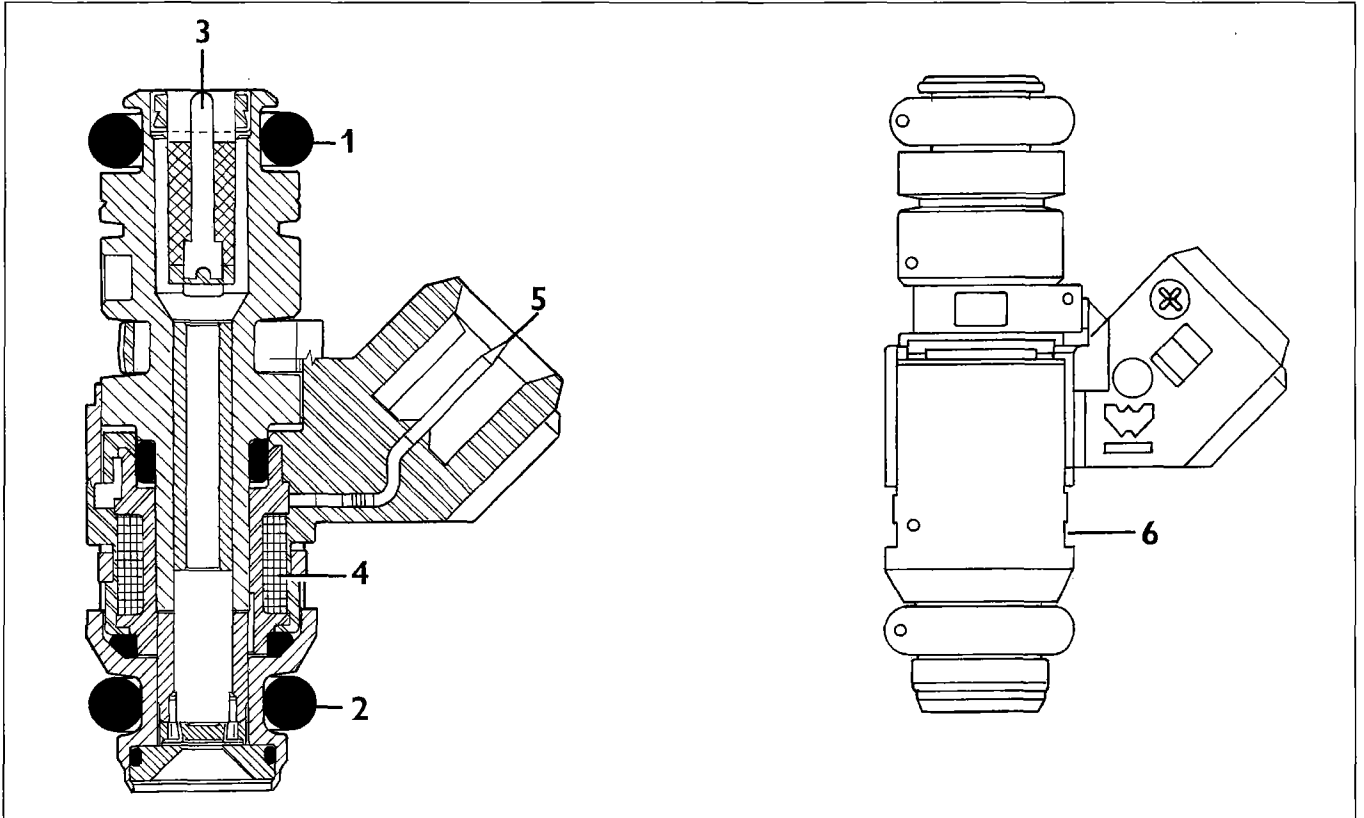
**INJECTORS**

The injector has the task of supplying the quantity of fuel needed for the operation of the engine: the fuel is injected into the intake manifold, immediately upstream of the inlet valves.

The injector is the twin jet, top-feed type, with the supply (3) of fuel at the top where the electrical winding (4) connected to the connector terminals (5) is also housed.

When the current passes through the winding, the magnetic field which is produced attracts the shutter causing the opening of the injector and the flow of fuel.

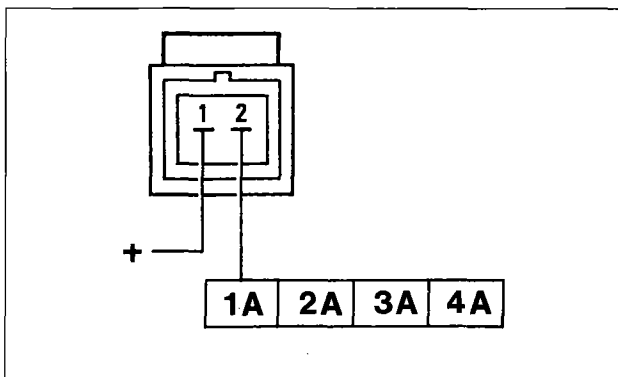
Two seals guarantee the seal on the fuel manifold side (1) and the intake manifold side (2). A reference (6) determines the angular position of the injector in relation to the inlet duct to ensure the correct direction of the jets in relation to the inlet valves.



3N43GJ01

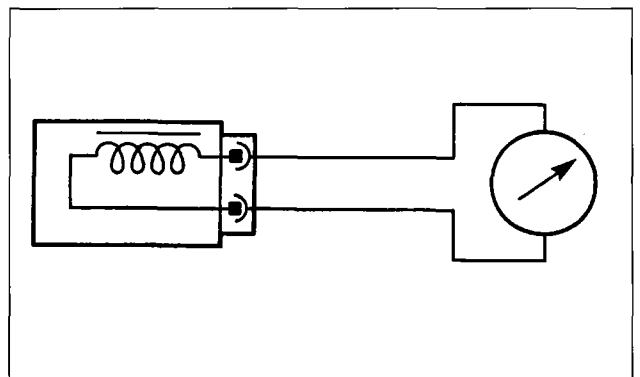
The injector resistance can be measured by disconnecting the connector and connecting an ohmmeter as illustrated in the diagram.

**Wiring connector**



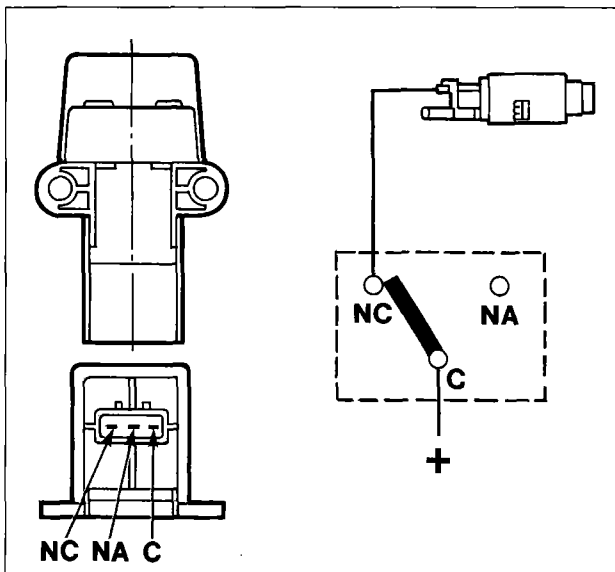
3N43GJ02

**Resistance value: 14.5 ± 5% ohm**

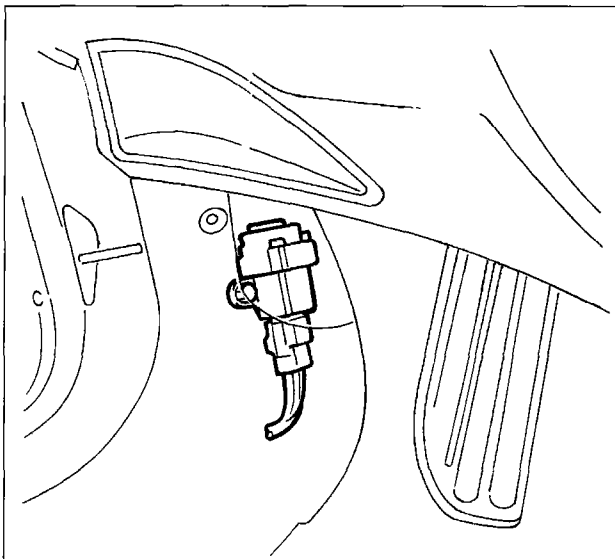


3N43GJ03

## 10.



3N44GJ01



4A34JJ02

1. Inertia sensor
2. Button for restoring operation of fuel pump

### INERTIA SAFETY SWITCH

In order to improve safety for the occupants of the vehicle in the case of an impact, the vehicle is fitted with an inertia switch located under the dashboard on the driver's side, secured to the left panel near the bonnet release.

The inertia switch has the task of interrupting the electrical supply to the electric fuel pump if the vehicle undergoes violent deceleration (impact) to prevent fuel from escaping and creating a fire hazard in case the fuel manifold or the supply pipe are damaged.

The switch consists of a steel ball, fitted in a conical shaped housed, kept in place by the attraction force of a permanent magnet.

As a result of the acceleration due to the inertia forces, the ball can be released from the magnetic clip and gradually come out of its conical housing with an upwards movement which depends on the angle of the cone.

There is a rapid release mechanism located above the ball which forms a normally closed (NC) circuit. When the mechanism is struck by the ball it changes position to a normally open (NA) circuit, thereby interrupting the electric supply to the pump and causing it to cut out.

The calibration of the switch causes it to operate at accelerations of above 1.2 g (about 11.7 m/s<sup>2</sup>, corresponding to an impact at a speed of about 25 Km/h).

The switch can be reset by pressing the top button protected by a flexible cover.



*After even an apparently slight impact, if there is a smell of fuel or there are leaks from the fuel system, do not turn the switch back on, but search for the fault and remedy it to prevent the risk of fire.*

*If this is not the case, if there are no leaks and the vehicle can be driven again, press the button to reactivate the fuel pump.*



## EMISSION CONTROL DEVICES

The devices used for this purpose have two aims:

- to keep down the levels of pollutant substances in the exhaust via the catalytic silencer;
- to eliminate the dispersion of unburnt hydrocarbons into the atmosphere, by means of the (fuel) anti-evaporation system and the (lubricant) oil vapour recirculation system.

### CATALYTIC SILENCER

The catalytic silencer is a device which makes it possible to simultaneously reduce the levels of the three main pollutant compounds present at the exhaust: unburnt hydrocarbons (HC), carbon monoxide (CO) and nitrogen oxides (NO<sub>x</sub>).

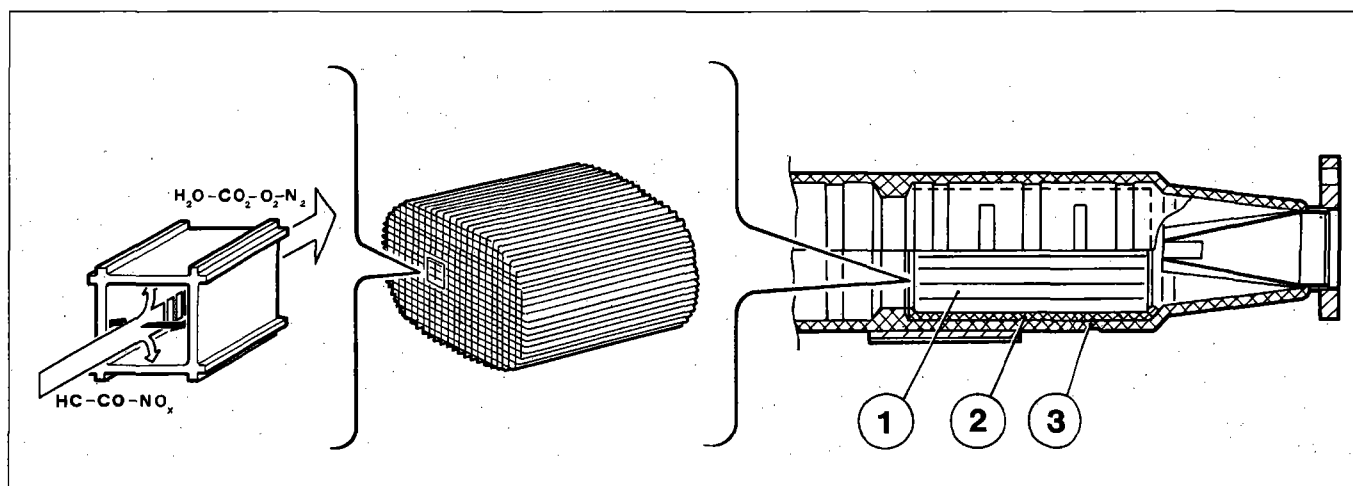
Two types of chemical reaction take place inside the catalyzer:

- oxidation of the CO and HC, converted into carbon dioxide (CO<sub>2</sub>) and water (H<sub>2</sub>O);
- reduction of the NO<sub>x</sub>, converted into nitrogen (N<sub>2</sub>O).

These reactions take place extremely quickly thanks to the presence, inside the catalyzer structure (ceramic support) of a layer of active substances (platinum and rhodium) which greatly accelerate the conversion speed of the harmful substances.

The efficiency of this conversion process is affected by the fact that the mixture strength on which the engine runs is continuously fluctuating around the stoichiometric value which is achieved through the feedback control carried out by the control unit using the Lambda sensor signals.

Lastly, the conversion processes are activated at temperatures in excess of 300 - 350°C: it is therefore vital for the catalyzer to reach this temperature as quickly as possible in order to be able to work properly.



3N45GJ01

1. Ceramic structure
2. Metal support
3. Outer steel casing



*When operations have to be carried out in the vicinity of the catalytic silencer, the vehicle must be left to rest for a while since the operating temperature inside the catalyzer is between 500 and 850°C.*



*There are basically two things which can destroy the inside of the catalyzer, namely:*

- *the presence of lead in the fuel which lowers the degree of conversion to practically zero ("lead poisoning") and irreparably damages the Lambda sensor as well;*
- *the presence of completely unburnt fuel in the exhaust gases, due to failed ignition, which causes an increase in temperature which leads to the ceramic support melting. As a result, the connector for the coils should not be disconnected, for any reason, with the engine running: in the case of tests, the silencer must be replaced, as a precaution, with a suitable length of pipe.*

# 10.

## FUEL ANTI-EVAPORATION SYSTEM

The anti-evaporation system is designed to prevent fuel vapours, comprising the lightest particles of hydrocarbons, which basically form in the tank, from being discharged into the atmosphere. The system consists of the tank, the vapour separator, two float valves, a two-way ventilation valve, the charcoal filter and a charcoal filter solenoid valve, operated by the control unit. The cap contains a two-way safety valve.

### Operating principle

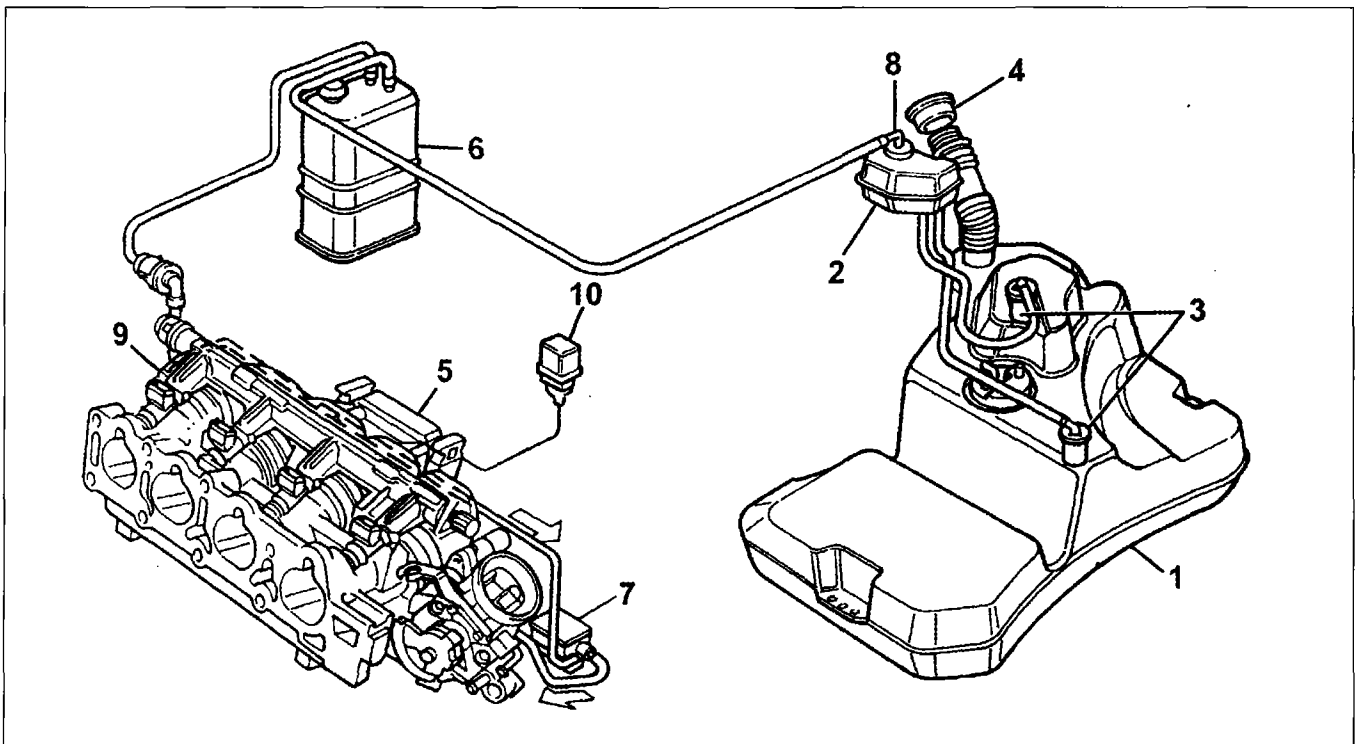
The system operates, especially at high outside temperatures, when the temperature of the fuel increases and, as a result, the tendency to evaporation increases: in this situation, the pressure inside the tank increases.

In particular, even with the tank (1) full, the two float valves (3) remain open as they are positioned higher than the breather pipe and therefore always allow the fuel vapours to reach the separator (2), thereby preventing fuel from escaping.

The fuel vapours reach the charcoal filter (6) when the pressure inside the tank causes the opening of the ventilation valve (8). This valve also allows an intake of air into the tank via the charcoal filter if it proves necessary when the level of the fuel decreases.

When the engine is running, the control unit operates the charcoal filter solenoid valve which allows the intake of vapours by the engine and the consequent scavenging of the charcoal filter.

If, as a result of the malfunction of one of the components, the pressure inside the tank increases to dangerous levels, the safety valve, located in the cap (4), allows the pressure to be discharged outwards. If necessary, this valve can open in the opposite direction to ventilate the tank and prevent the vacuum from becoming too great.



4F0420J01

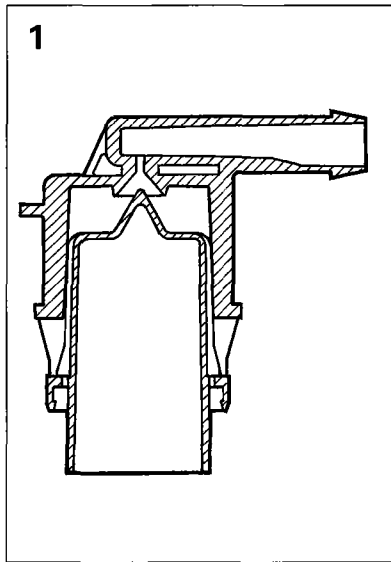
- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| 1. Fuel tank                      | 6. Charcoal filter                |
| 2. Vapour separator               | 7. Charcoal filter solenoid valve |
| 3. Float valve                    | 8. Safety and ventilation valve   |
| 4. Plug with safety valve         | 9. Intake manifold                |
| 5. Engine management control unit | 10. System relay feed             |

**Float valve**

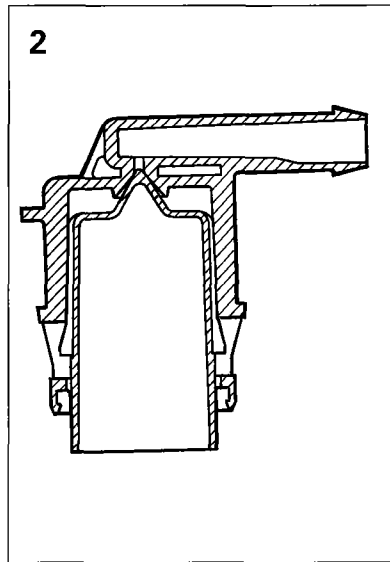
The float valve is designed to allow the flow of vapours towards the separator, without, however, allowing the escape of liquid fuel.

The valve contains a float, one end of which, being suitably shaped, closes the actual valve outlet port, in the following conditions:

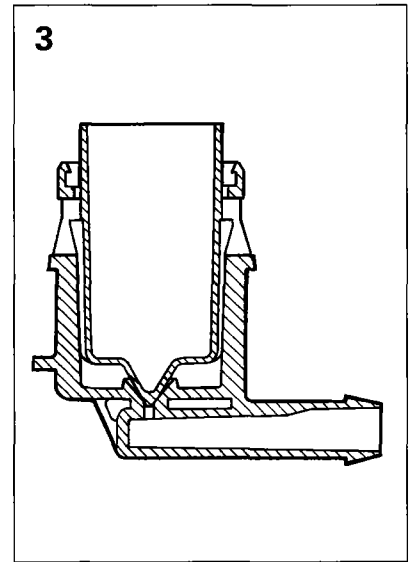
- strong lateral acceleration (vehicle taking a bend) or longitudinal acceleration (vehicle braking) with the movement of the mass of fuel as a result of the inertia forces;
- vehicle overturned.



3N48GJ01

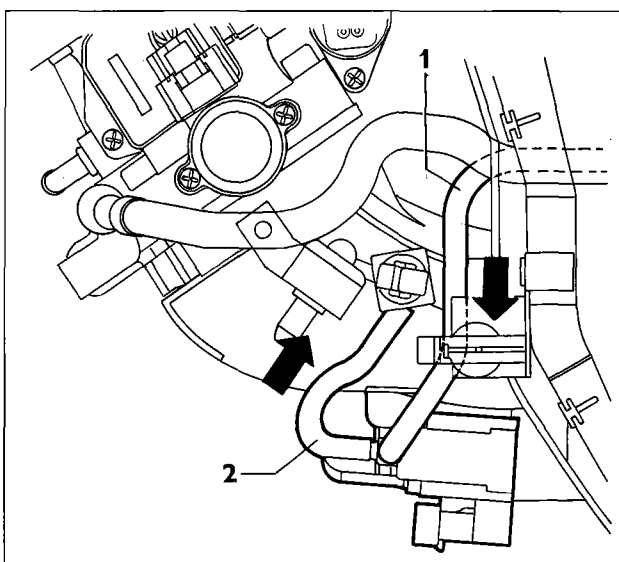


3N48GJ02



3N48GJ03

1. Normal operating conditions: valve open
2. The fuel pushes the float upwards as a result of strong acceleration: valve closed;
3. Vehicle overturned: valve closed



3N49GJ03

**Charcoal filter solenoid valve**

This valve, the normally closed type, controls the flow of vapours reaching the inlet manifold and is operated by the control unit in a duty-cycle.

1. From the charcoal filter
2. To the intake manifold

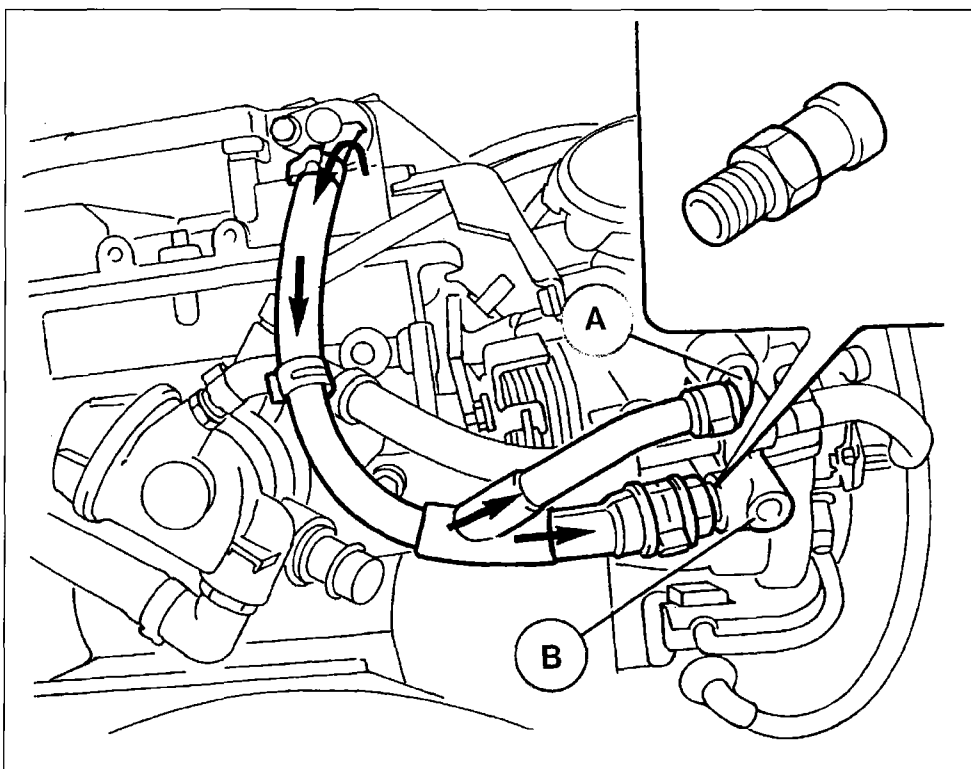
# 10.

## EXHAUST GAS RECIRCULATION SYSTEM (BLOW-BY)

This system controls the emission from the crankcase of breather gases, consisting of mixtures of air, fuel vapours and unburnt gases which escape from the piston seals and lubricant oil vapours, recirculating them to be burnt by the engine.

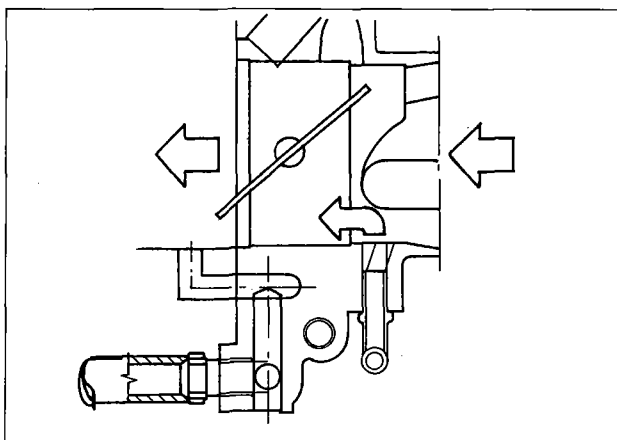
The breather gases coming from the crankcase reach the cylinder head and are directed to two different intakes:

- at medium-high accelerator butterfly openings, the gases are drawn in by the duct immediately downstream of the air flow meter (detail A);
- at small butterfly openings (and, in particular, with the engine idling or decelerating), the gases are drawn in through the PCV (Positive Crank Ventilation) valve fitted on the butterfly casing, downstream of the actual butterfly (detail B).



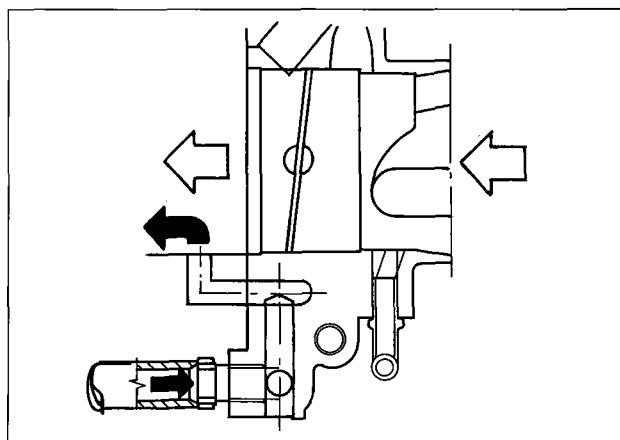
3N50GJ01

**Detail A**



3N50GJ02

**Detail B**



3N50GJ03

**CHECKS, ADJUSTMENTS AND REPAIR OPERATIONS ON THE HITACHI MPI SYSTEM**



*When working on a vehicle equipped with a Hitachi MPI system, the following precautions must be observed:*

- do not start up the engine with the battery leads not properly connected or slack at the battery terminals;*
- do not use a rapid battery charger to start the engine;*
- never disconnect the battery from the electrical system with the engine running;*
- the battery must be disconnected from the electrical system before recharging it;*
- if the vehicle has to go in a drying oven after painting at temperatures in excess of 80°C, the engine management control unit must be removed first;*
- never connect/disconnect the control unit multiple connector with the ignition switch in the ON position;*
- always disconnect the negative battery lead before carrying out electrical welding on the vehicle.*



*The system contains a memory, supplied directly by the battery, even with the ignition switched off, where the values acquired during the self-adaptation are memorized. Disconnecting the battery means that this data is lost and can only be acquired again after a certain length of time: this operation should therefore be carried out as infrequently as possible.*

**NOTE** *If the Hitachi MPI system components are being replaced:*

- Butterfly casing and flow meter*
- Engine idle speed actuator*
- Butterfly position sensor*
- Engine management control unit*
- Lambda probe*

*The negative battery terminal must be disconnected to reset the self-adaptation memory which could, with new components, involve the failure of the engine to start or irregular behaviour when it is first started up.*

**CHECKING EMISSION CONCENTRATIONS**

This system manages the advance, the carbon monoxide (CO) content and the idle air flow rate and cannot be adjusted manually in any way.

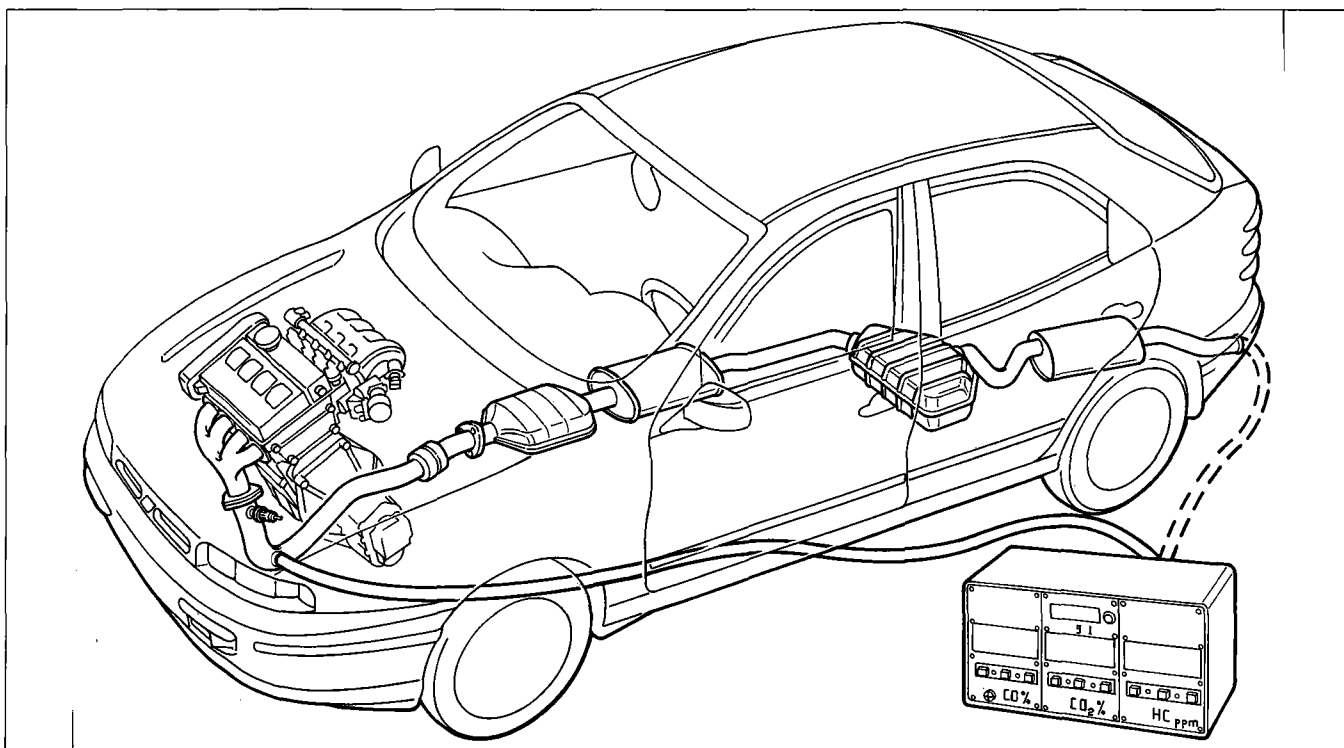
However, a check on the content of the exhaust gases, upstream and downstream of the catalyzer, can provide useful information on the operating conditions of the injection/ignition system, the engine parameters and the catalyzer.

**Checking idle CO and HC concentration upstream of the catalytic silencer**

To check the concentration of carbon monoxide (CO) and unburnt hydrocarbons (HC) upstream of the catalyzer, proceed as follows:

1. Undo the cap on the exhaust pipe, upstream of the catalyzer, and tighten the tool in its place.
2. Connect a suitably calibrated CO-tester probe to the tool.
3. Start up the engine and let it reach operating temperature.
4. Check that the revs correspond to the recommended figure.
5. Check that the CO idle concentration is within the recommended limits (see table); if this is not the case, it is necessary to check:
  - that the Lambda sensor is working properly, using the diagnostic equipment;
  - for the presence of air penetration in the area surrounding the Lambda sensor housing;
  - the injection and ignition system (**in particular, the state of wear of the spark plugs**).
6. In the same conditions, check that the HC concentration is below 500 p.p.m.
7. If the figures measured do not correspond, tune the engine, checking the following, in particular:
  - the valve gear timing;
  - the engine compression.

**10.**



4A058BJ01

**Table summarizing pollutant emission tolerance figures**

|                             | CO (%) | HC (p.p.m.) | CO <sub>2</sub> (%) |
|-----------------------------|--------|-------------|---------------------|
| Upstream of the catalyzer   | 04 - 1 | < 500       | > 12                |
| Downstream of the catalyzer | < 0.35 | < 90        | > 13                |

**Checking exhaust concentration of CO and HC**

The concentration of carbon monoxide (CO) and unburnt hydrocarbons (HC) at the exhaust is measured by inserting a suitably calibrated tester at least 30 cm into the end of the exhaust pipe.

1. Check that the idle CO and HC concentrations correspond to the recommended figures (see table).
2. If the HC figures are outside of the recommended limits, whilst those measured previously, upstream of the catalyzer were okay, then the engine parameters are correct and the cause of the problem should therefore be sought in the decreased efficiency of the catalyzer.

**CHECKING ENGINE IDLE SPEED**

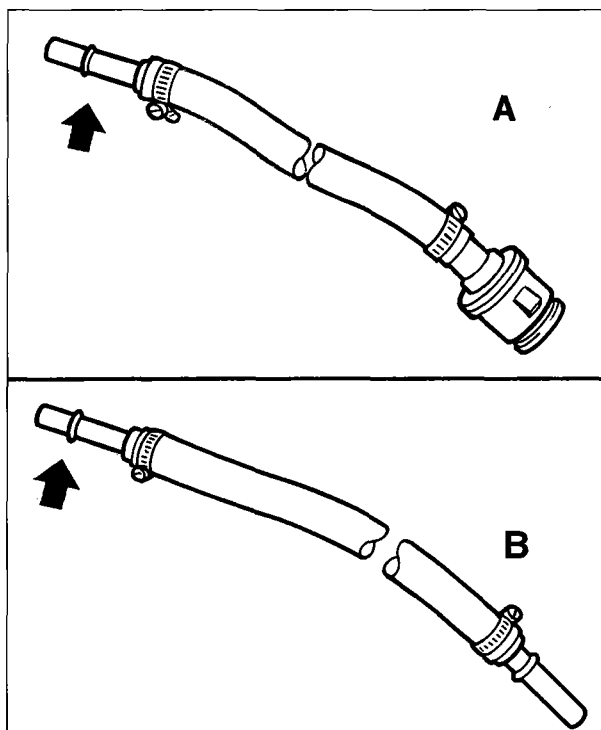
If the engine idle speed does not correspond to the recommended figure and the system is the self-adjusting type, then no adjustments can be carried out: it is therefore necessary to check that the accelerator linkage is correctly adjusted and the cause of the problem should be sought by carrying out a complete fault diagnosis using the diagnostic equipment.

**CHECKING IGNITION ADVANCE**

The diagnostic equipment must be used to check the ignition advance angles at different speeds.

## 10.

### CHECKS ON FUEL SUPPLY CIRCUIT



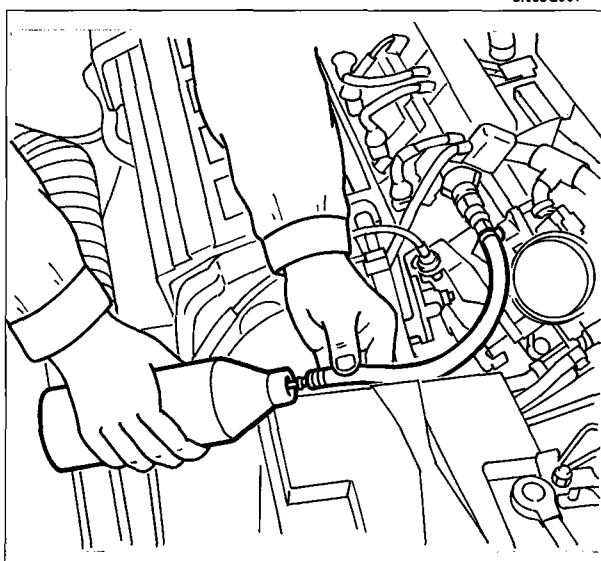
*These operations should be carried out with a suitable vapour purification and extraction system present.*

#### Checking fuel supply circuit pressure

Check the supply pressure and the seal of the fuel system following the instructions given below using equipment 18609055000, fitted with two adaptors which can be made in the following way:

- adaptor (A) use a new type rapid attachment female terminal and a length of pipe contained in Kit no. 1860955003 and an old type rapid attachment male terminal contained in Kit no. 186095501;
- adaptor (B) use a new type rapid attachment male terminal and a length of pipe contained in Kit no. 1860955003 and an old type rapid attachment male terminal contained in Kit no. 186095501;

Configure the adaptors as illustrated in the diagram.



*The arrow indicates the side to fit the test equipment 1860955000 (pressure gauge).*

#### Draining fuel pressure in the supply circuit

The fuel supply circuit is kept at a constant pressure of around 3.2 bar even with the engine switched off; therefore, before carrying out any operations on the supply pipe, the pressure must be drained from the system, using adaptor no. 1870684000 and a suitable container for collecting the excess fuel.

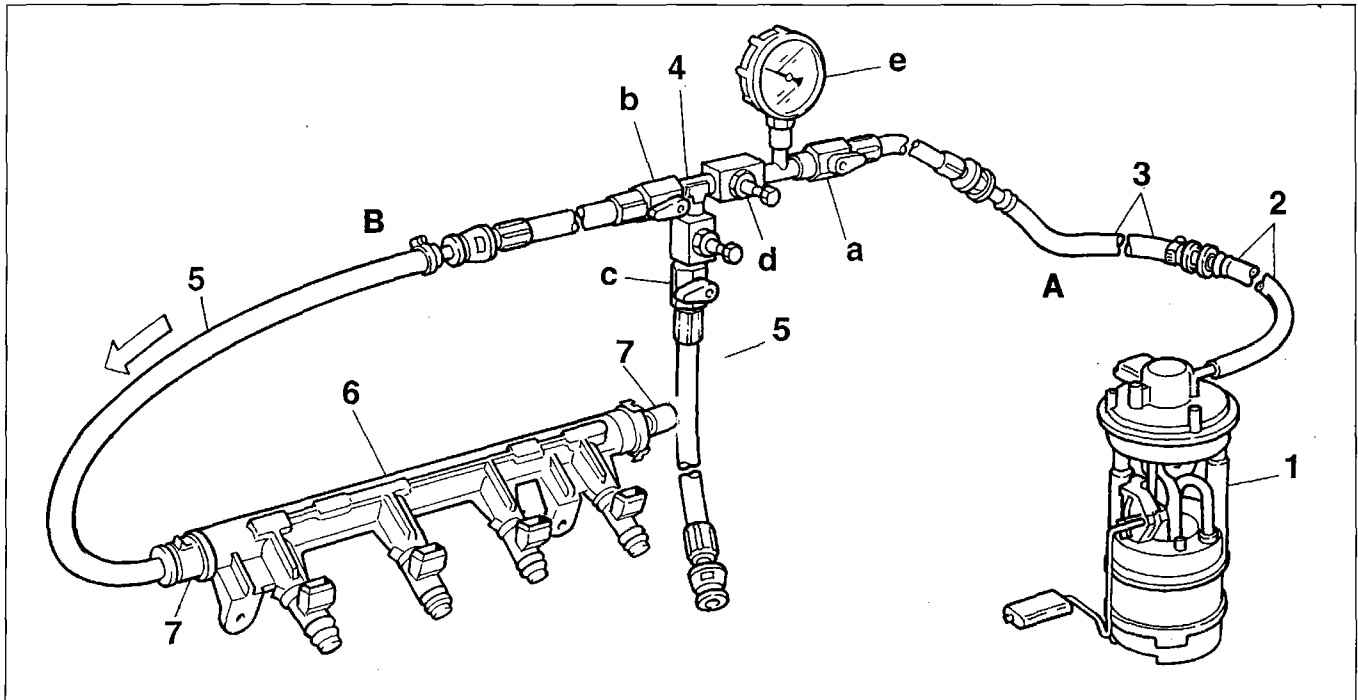
Proceed as described below:

- Remove the inlet hose from the butterfly casing;
- Remove the protective cover from the attachment on the fuel manifold;
- introduce the male end of the adaptor inside the container and fit the rapid connector to the attachment on the fuel manifold, as illustrated in the diagram; in this way, the small amount of excess fuel, which produces pressure, will be drained into the container and it will therefore be possible to carry out the test procedures on the fuel supply system;
- disconnect the adaptor from the attachment and refit the protective cover.

## 10.

### Checking fuel supply circuit pressure

Conform the test equipment 1860955000, using the adaptors constructed previously and fitted as illustrated in the diagram below, placing ball valves (a), (b) and (d) in the fully open position and valve (c) in the closed position.



3N54GJ01

- |                                  |   |
|----------------------------------|---|
| 1. Complete electric pump        | 5. Adaptor (B)                            |
| 2. Fuel supply pipe              | 6. Fuel manifold                          |
| 3. Adaptor (A)                   | 7. Rapid attachment connector on manifold |
| 4. Test equipment no. 1860955000 |   |

After having discharged the pressure, detach the end of the fuel supply pipe (2) from the rapid connector (7) on the manifold, following the instructions given on the previous pages, connect it to the adaptor (A) female connector, connect the new male terminal of the adaptor (B) to the rapid connector on the fuel manifold (7) and check that the connectors are correctly fitted.

Turn the ignition key to the ON position and check the pressure gauge (e) to see whether the pressure, after having increased to around 3.5 bar, then settles down at around 3.2 bar (the fall in pressure is due to the fact that if the engine is not started up after the pump has been working for several seconds, it is then deactivated).

If there is a decrease in pressure beyond the above mentioned values, check the seal in the section of the system upstream of the fuel manifold and check the seal of the injectors following the instructions given below.

### Checking seal of fuel supply pipe

Keep the test equipment as described in the previous paragraph, close valve (b), keeping valve (c) closed and valve (a) in the fully open position.

Turn the ignition key to the ON position and check on the pressure gauge (e) that the pressure, after having increased to a value of around 3.5 bar, then settles down at around 3.2 bar (the decrease in pressure is due to the fact that if the engine is not started up after the pump has been running for several seconds it is then deactivated).

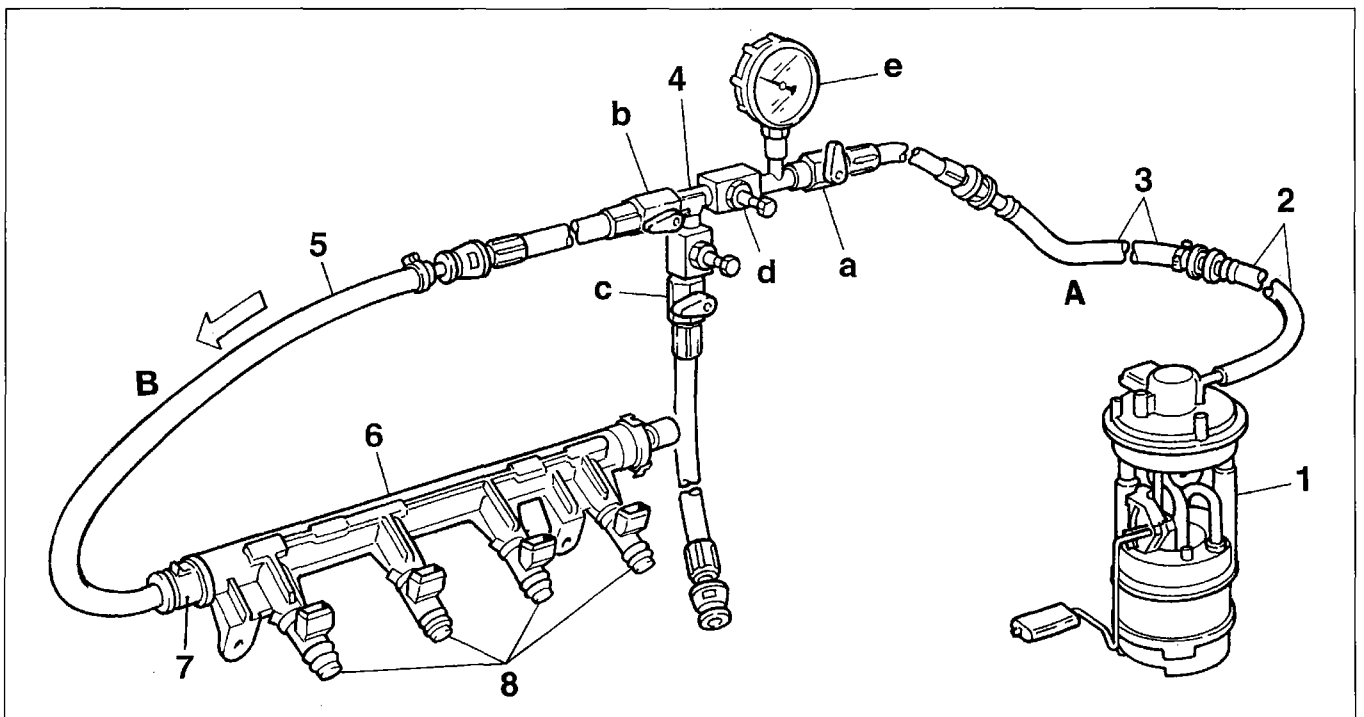


**Checking injector seal**

If there is a fall in pressure beyond the above mentioned values, check the seal of the section of the system upstream of the manifold and, if there are no leaks or damage to the fuel supply pipe, replace the electric fuel pump assembly because, as described in the paragraph dealing with the electric pump, the pressure regulator is housed in the actual assembly and CANNOT be replaced.

If the pressure, after having repeated the check, exceeds the recommended figure and is considerably higher, replace the fuel pump because there are problems with the operation of the pressure regulator which it houses.

**Checking injector seal**



3N55GJ01

- |                                  |                                    |
|----------------------------------|------------------------------------|
| 1. Complete electric pump        | 5. Adaptor (B)                     |
| 2. Fuel supply pipe              | 6. Fuel manifold                   |
| 3. Adaptor (A)                   | 7. Rapid connector on the manifold |
| 4. Test equipment no. 1860955000 | 8. Injectors                       |

Keep the test equipment as described in the previous paragraph, place valve (b) in the fully open position, keeping valve (c) closed and valve (a) in the fully open position.

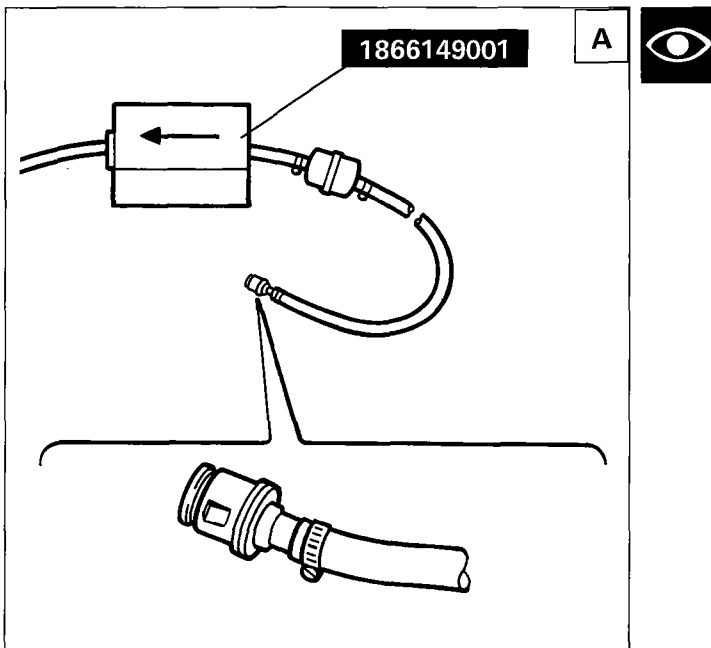
Turn the ignition key to the ON position and check on the pressure gauge (e) that the pressure, after having increased to around 3.5 bar, then settles down at about 3.2 bar, then close valve (a) and check that the pressure remains constant for at least a minute; if this is not the case, one or more of the injectors is leaking.

# 10.

## Removing test equipment

Remove the test equipment 186955000 with the ignition switched OFF, following the instructions given below:

- place the end of the pipe connected to the valve (c) in a suitable container;
- open the valve (c) and drain the excess fuel into the container;
- keep the pipe in the container and disconnect the end of the supply pipe from the female connector of the adaptor (A) keeping the attachment upwards;
- let the fuel in the pipes flow into the container;
- disconnect the end of the adaptor (B) from the connector on the fuel manifold and let the remaining fuel flow out of the pipes into the container;
- reconnect the fuel supply pipe to the fuel manifold.



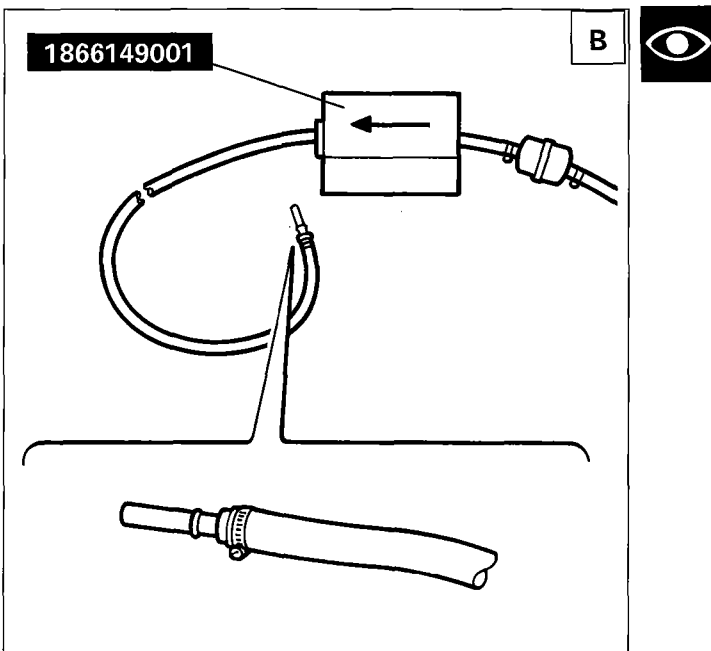
### Checking fuel consumption using FLOWTRONIC equipment 1866149001

In order to carry out the check, the equipment should be configured with the connectors shown in the diagrams:

- A. supply pipe side
- B. fuel manifold side

If this is not the case, carry out the adjustment, proceeding as described below:

- cut the end of the FLOWTRONIC equipment inlet pipe and replace it with a female rapid connector (1) contained in Kit no. 1860955003, as illustrated in figure A;



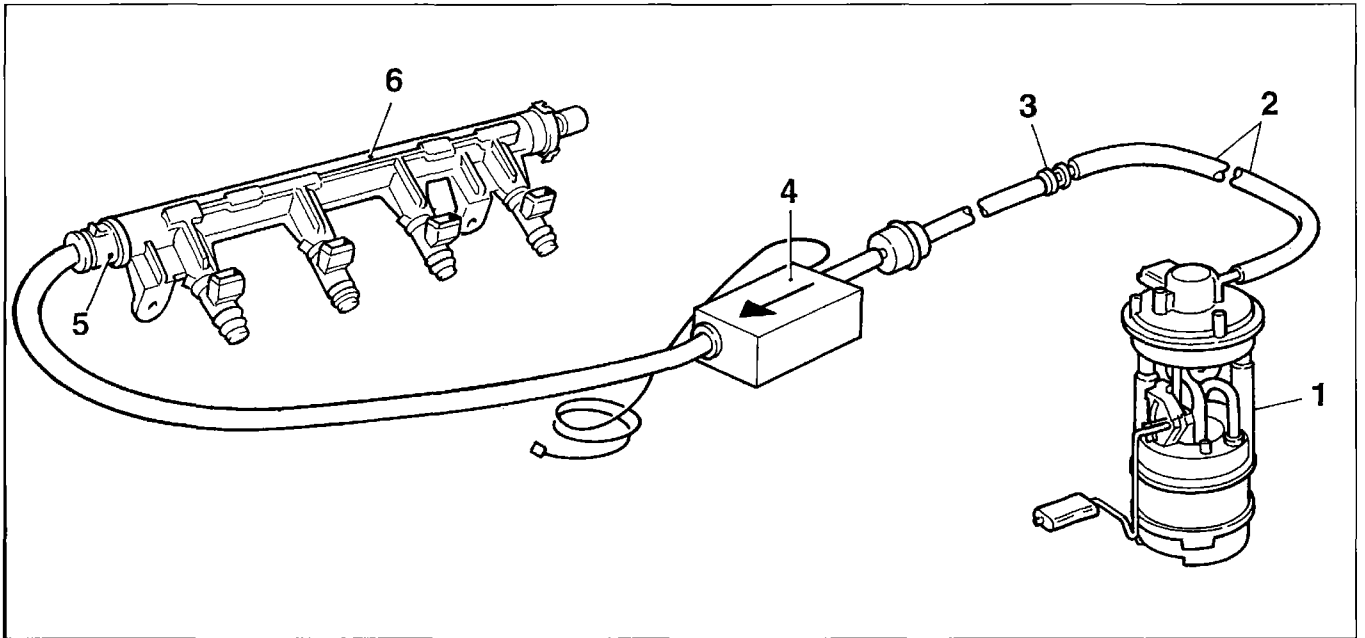
- cut the end of the FLOWTRONIC equipment outlet pipe and replace it with a male connector (2), contained in Kit no. 1860955003, as illustrated in figure B.



*The connectors removed should be recovered and kept for any subsequent connections*

**10.**

- discharge the fuel pressure inside the supply pipe and disconnect the pipe from the fuel manifold, following the instructions given in the previous paragraphs;
- engage the end of the supply pipe with the FLOWTRONIC equipment female rapid connector and the male attachment with the rapid connector on the fuel manifold;
- position the equipment in the engine compartment, place the connecting electrical cable inside the vehicle and connect the actual equipment as described in the instructions which come with the equipment.
- check the consumption figures, in accordance with standards 93/116 CE and check that the figures correspond with those in section 00 - Technical Data.



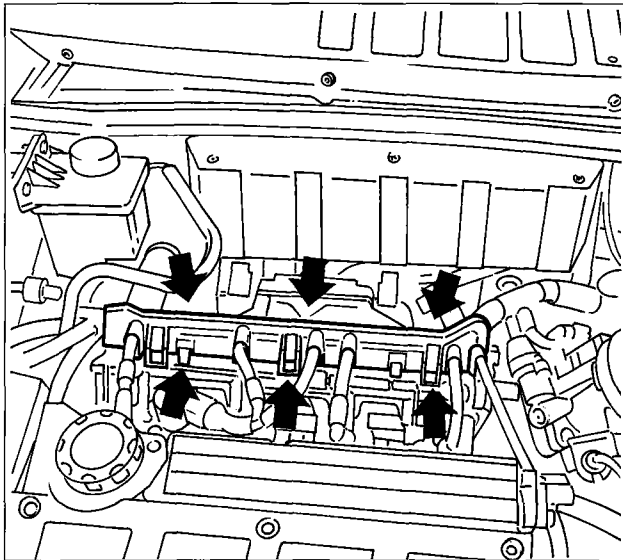
3N57GJ01

- |                           |                         |
|---------------------------|-------------------------|
| 1. Complete electric pump | 4. FLOWTRONIC equipment |
| 2. Fuel supply pipe       | 5. Male terminal        |
| 3. Female rapid connector | 6. Fuel manifold        |

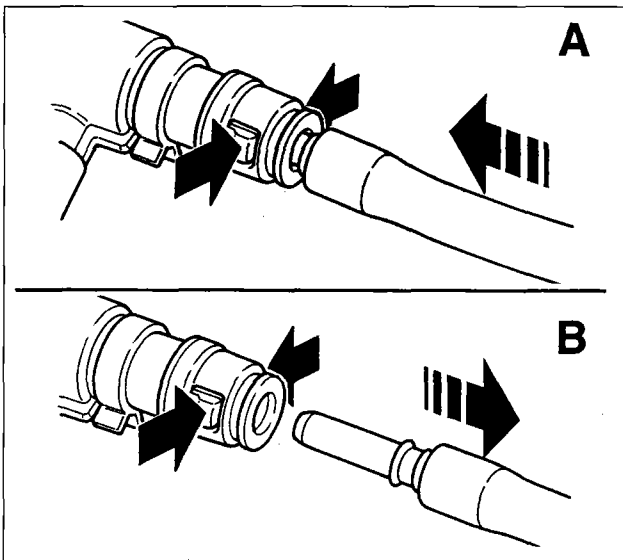
- carry out the consumption road test in accordance with directive 93/116 CE (litres per 100 km):
- URBAN CYCLE - this includes a cold start, followed by a simulated urban cycle;
- EXTRA-URBAN CYCLE - this includes frequent acceleration, in all gears, simulating normal out of town usage of the vehicle; the speed should vary between 0 and 120 km/h;
- AVERAGE COMBINED CONSUMPTION - this includes 33% of the urban cycle and 67% of the extra-urban cycle;
- check that the figures measured correspond to those in the "Introduction and Technical Data" section.

**NOTE** *The type of route, traffic conditions, driving style, weather conditions, trim level/equipment/ accessories, whether or not a roof rack is fitted, the presence of special equipment and the state of the vehicle in general can lead to different fuel consumption figures from those obtained using the above mentioned procedures.*

10.



3N61GJ01



3N61GJ02

FUEL MANIFOLD AND INJECTORS



*Before removing the manifold, drain the pressure inside it as described at the beginning of this chapter.*

Remove the manifold, proceeding as follows:

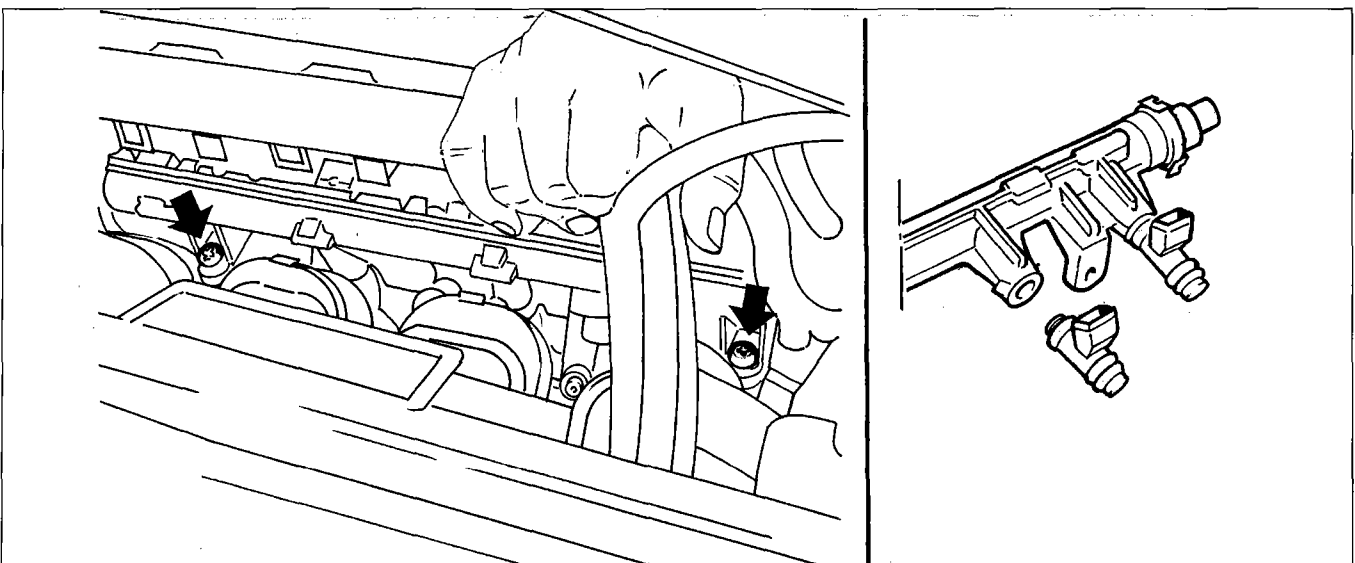
- release the front and rear springs (arrow) attaching the cable holder duct to the manifold;
- disconnect the electrical connectors from the injectors and the phase transformer and move the duct released previously aside;
- disconnect the fuel supply pipe (1) from the manifold, working in two stages:

A. press the retaining springs, at the same time pushing the end of the pipe, in the direction shown, to release the housing;

B. keep the springs pressed and extract the end from the manifold;

- undo the two bolts (arrow) fixing the manifold and remove it.

The injectors do not have clips: to remove them, simply release them from their housing (see detail).



3N61GJ03

# 10.

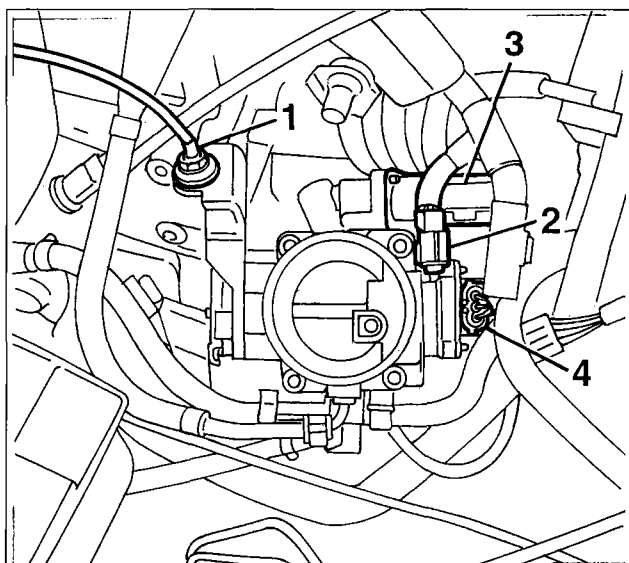
## BUTTERFLY CASING

**NOTE** *The butterfly casing and the air flow meter form a single assembly.*

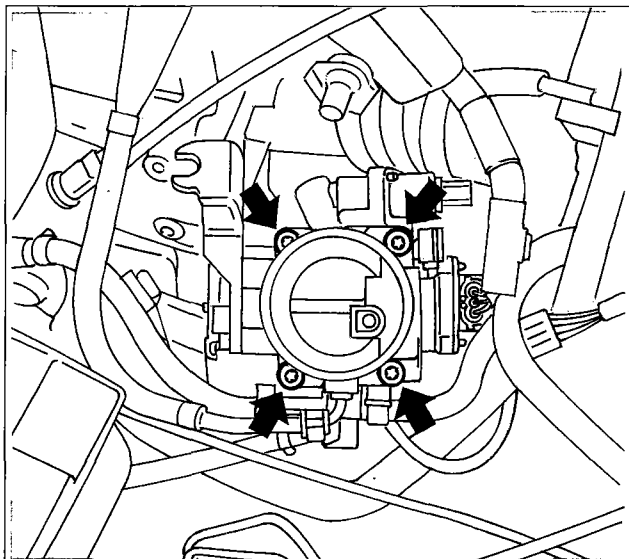
### Removing-refitting

Proceed with the removal of the butterfly casing as follows:

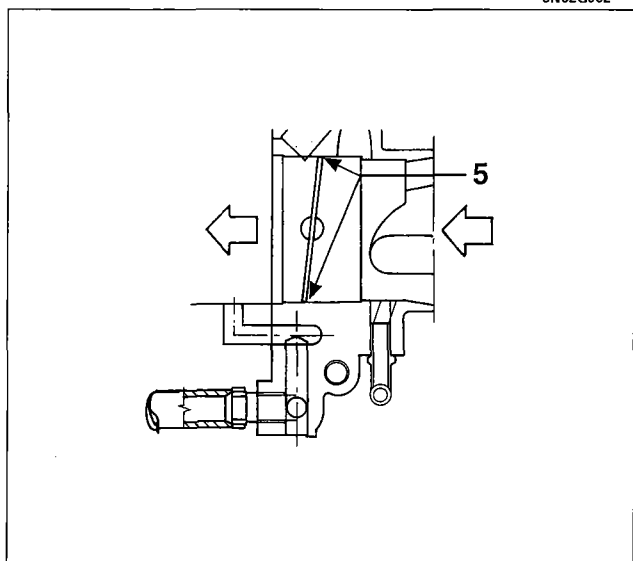
- remove the inlet hose from the butterfly casing, loosening the retaining bands;
- remove the accelerator cable (1), completely undoing the connector on the adjustment bracket and releasing the cable from the lever on the butterfly casing;
- disconnect the electrical connectors from the butterfly position sensor (2), the idle speed adjustment solenoid valve (3) and the air flow meter (4);
- remove both connecting pipes from the PCV valve;
- undo the four bolts (arrow) fixing the butterfly casing to the inlet manifold;
- remove the coolant connecting pipes from the inlet and outlet pipes, sealing them appropriately.



3N62GJ01



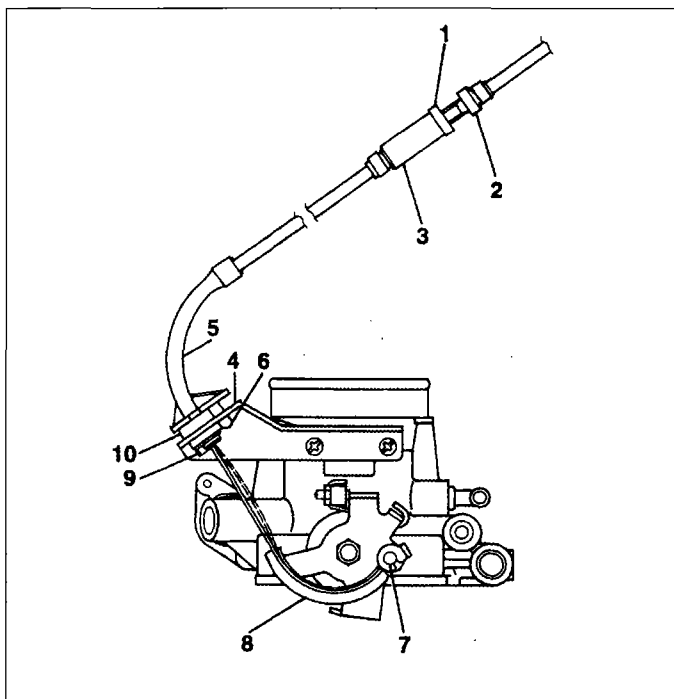
3N62GJ02



3N62GJ04

**NOTE** *Do not remove the layer (5) of molybdenum disulphide applied to the edge of the butterfly.*

## 10.



### ACCELERATOR CABLE

#### Removing

- Working from inside the vehicle, disconnect the accelerator cable from the fastening on the pedal.
- Loosen the accelerator cable, acting on the adjustment screw (2), then release the end of the cable (7) from the pulley (8).
- Remove the clip (9) and remove the cable from the mounting bracket, then remove the accelerator cable.

#### Refitting

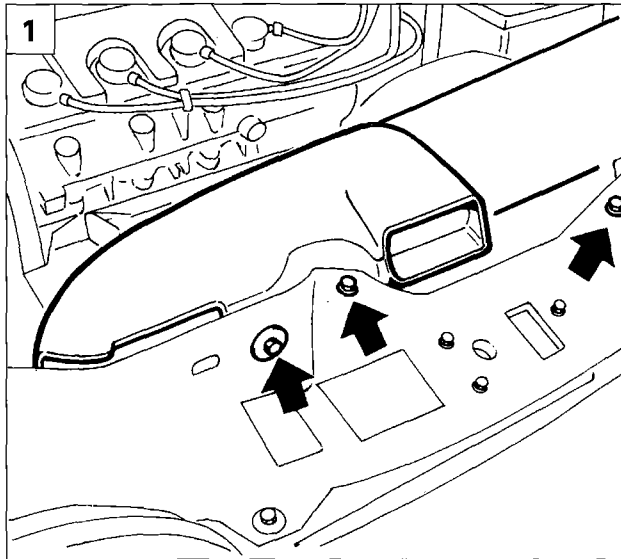
- Fit the rubber mounting (10) in the special housing in the bracket (4).
- Fit the flexible cable (5) in the rubber mounting (10), positioning it so that the reference pin (6) on the cable fits in the special opening in the bracket (4).
- Wind the accelerator cable around the pulley (8) and fit the end (7) in the special housing.
- Fit the clip (9) in the groove at the end of the flexible cable (5).
- Reconnect the accelerator cable to the fastening on the pedal.

#### Adjustment

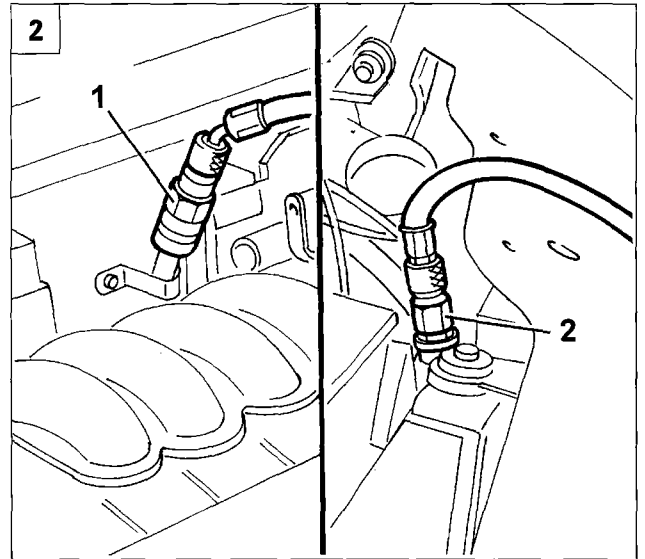
- Acting on the adjustment nut (2), adjust the accelerator cable clearance so that, with the pedal released, the butterfly closes completely (pulley in end of travel position at the adjustment screw) and the clearance (4) at the cable is about 5 mm. At the end of the adjustment, tighten the ring nut (1) against the dust cover (3), by hand.
- If the accelerator cable is being replaced, connect the diagnostic equipment to the special socket and check, with the pedal fully depressed, that the butterfly opening angle is between 80° and 84° (98-99%). If the measurement does not correspond to the figures given, use the accelerator pedal adjustment screw to regulate the travel.

**10.**

|   | page |
|---|------|
| <b>REMOVING-REFITTING</b>   |      |
| - Removing-refitting power unit   | 1    |
| - Separating the gearbox-differential assembly                                    | 10   |
| <b>REPLACING THE AUXILIARY DRIVE BELT</b>   |      |
| - Removing-refitting the auxiliary drive belts                                    | 12   |
| - Checking valve gear timing  | 15   |
| <b>REPLACING THE TIMING BELT</b>  |      |
| - Removing-refitting timing drive belt  | 17   |
| <b>REMOVING-REFITTING CYLINDER HEAD</b>   |      |
| - Removing-refitting cylinder head  | 23   |
| <b>REMOVING-REFITTING EXHAUST MANIFOLD</b>  |      |
| - Removing-refitting exhaust manifold   | 27   |
| <b>REMOVING-REFITTING INLET MANIFOLD</b>  |      |
| - Removing-refitting inlet manifold   | 28   |
| <b>REPLACING WATER PUMP</b>   |      |
| - Removing-refitting water pump   | 30   |
| <b>REMOVING-REFITTING RADIATOR</b>  |      |
| - Removing-refitting radiator   | 30   |
| - Procedure for filling engine cooling circuit for versions with heater           | 32   |
| - Procedure for filling engine cooling circuit for versions with air conditioning | 34   |



P4A01HX01



P4A01HX02

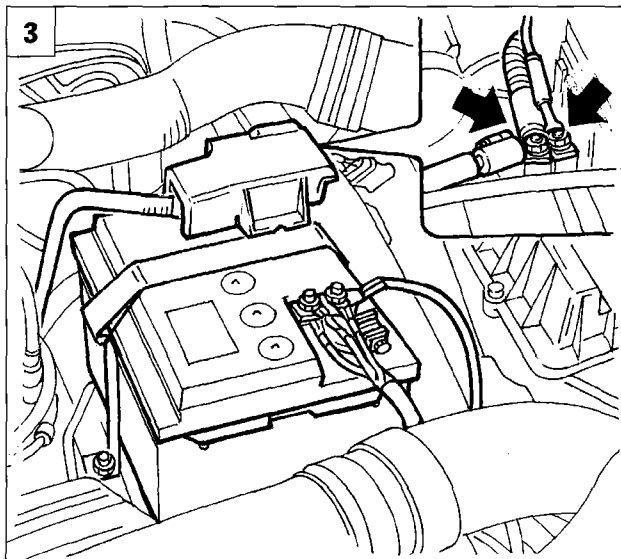
**REMOVING-REFITTING POWER UNIT**



Position the vehicle on a lift, remove the front wheels then proceed as described below:



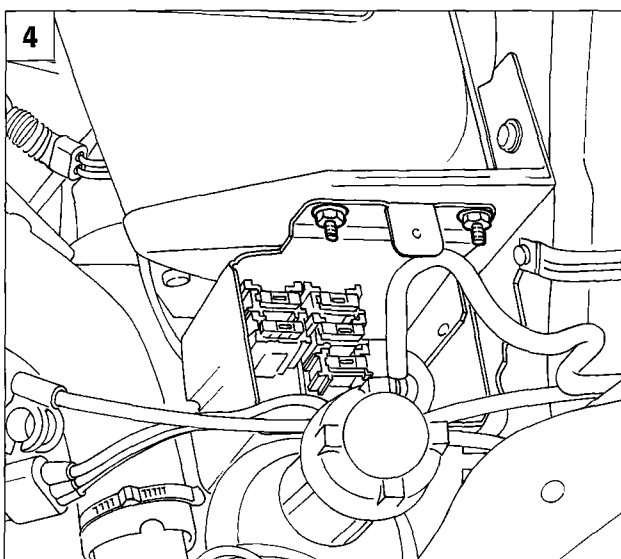
1. Undo the three fixing bolts and remove the air intake disconnecting first from the air filter.
2. Drain the air conditioning system using the special equipment, connecting the pipe marked with the light blue connector (1) to the low pressure circuit needle valve and the pipe marked with the red connector (2) to the high pressure circuit needle valve.



P4A01HX03



*Protective gloves and goggles should be worn whilst draining the system as protection against contact with R134A. To facilitate the draining of the refrigerant from the vehicle air conditioning system, the system should be left running first for 10 - 15 minutes.*

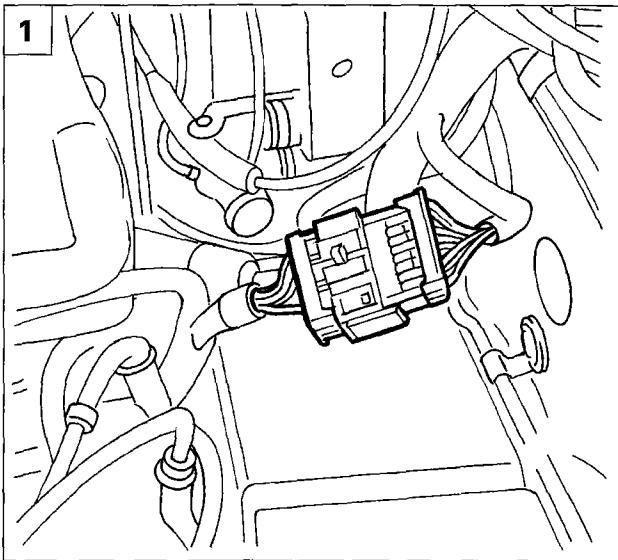


P4A001B03

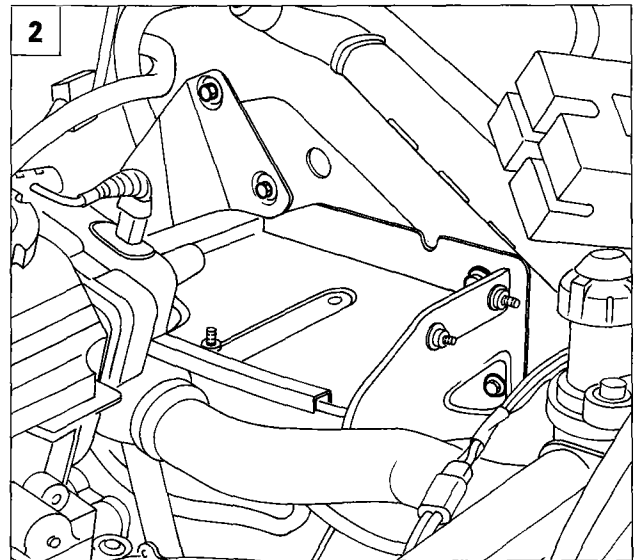
3. Disconnect the negative battery lead, remove the protective cover for the positive pole, disconnect the terminal and separate the starter motor supply cables from the terminal; undo the nut securing the battery to the drip tray, then remove the latter from the engine compartment.
4. Undo the bolt securing the relay casing cover and remove it, then undo the nuts fixing the casing to the battery drip tray and position the casing to the side.



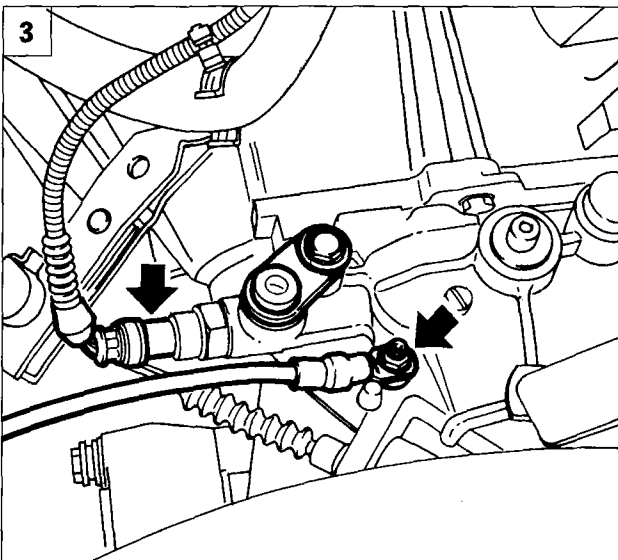
**10.**



P4A02HX01



P4A001B04



P4A02HX02



1. Disconnect the injection cable coupling shown in the diagram.

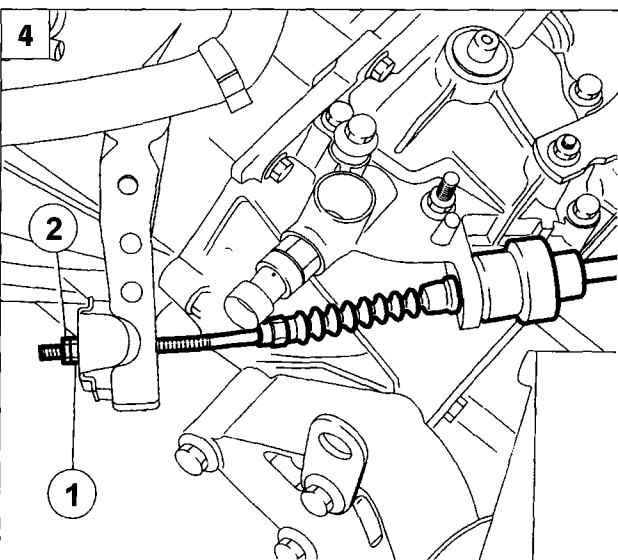


2. Remove the battery drip tray under the bolts fixing it to the bodyshell.

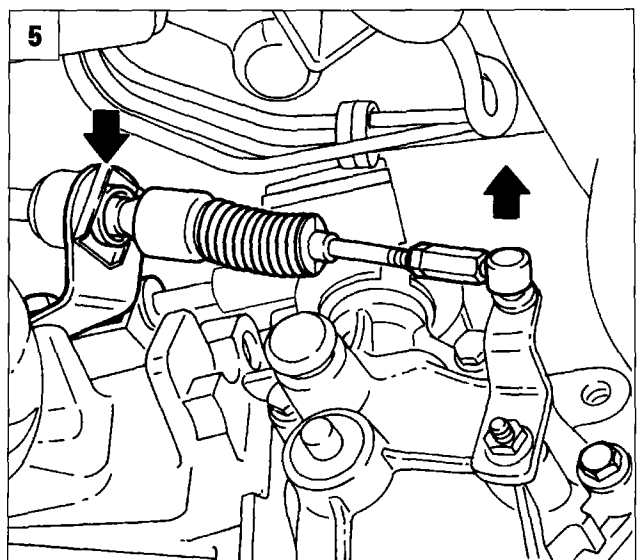
3. Disconnect the connector for the reversing lights switch and the earth cable.

4. Acting on the nut (1) and the lock nut (2), disconnect the clutch cable from the control lever.

5. Disconnect the end of the gear engagement cable, lift up the retaining fork shown in the diagram, then remove the cable from the mounting bracket.

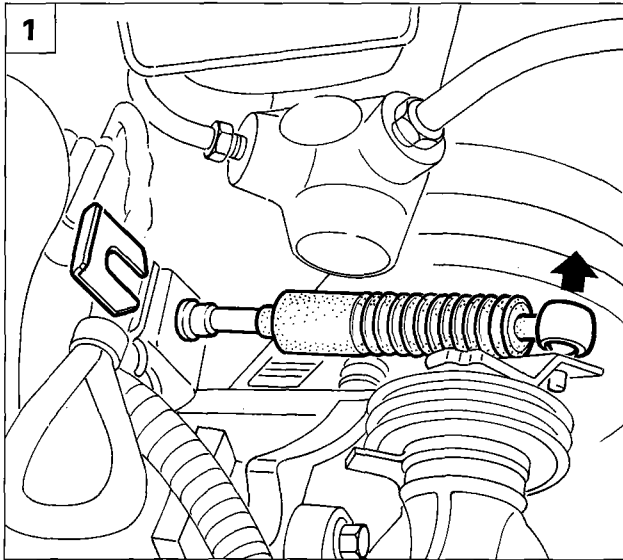


P4A02HX03

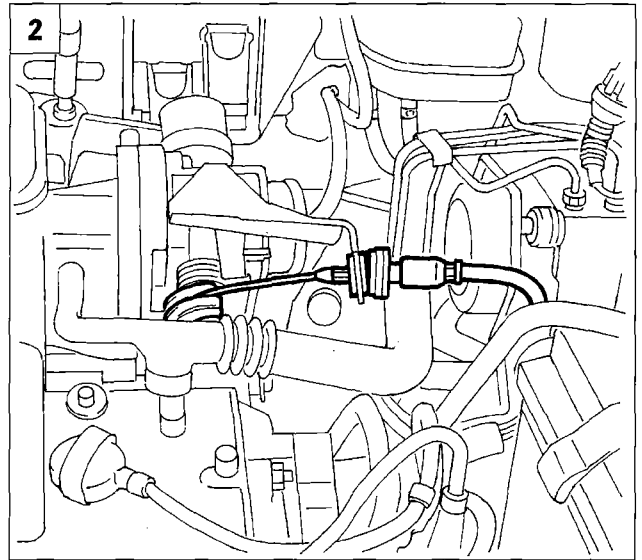


P4A02HX04

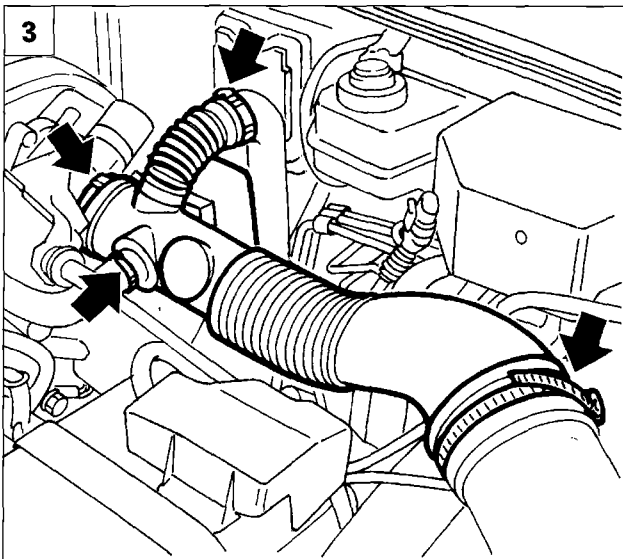
**10.**



P4A002B02



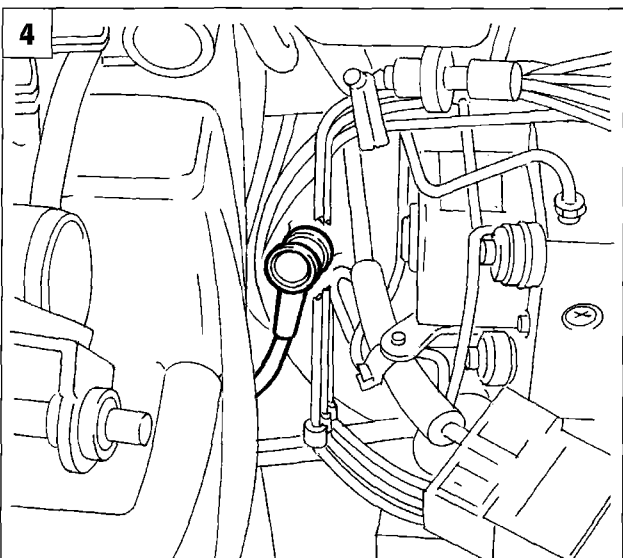
P4A18HX02



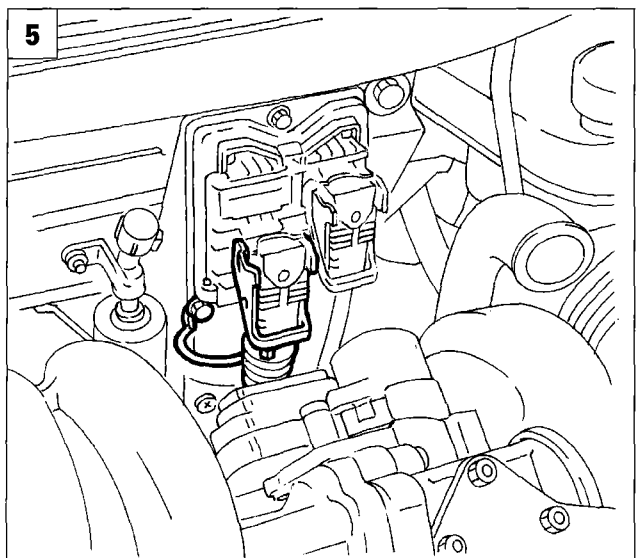
P4A03HX01



1. Disconnect the end of the gear selector cable, lift up the retaining fork shown in the diagram, then position the assembly to the side in the engine compartment.
2. Disconnect the accelerator cable.
3. Disconnect the bands illustrated in the diagram, then remove the air inlet hose.
4. Disconnect the vacuum pipe from the brake servo.
5. Disconnect the connector shown in the diagram from the injection/ignition control unit and remove the earth lead from the control unit support.

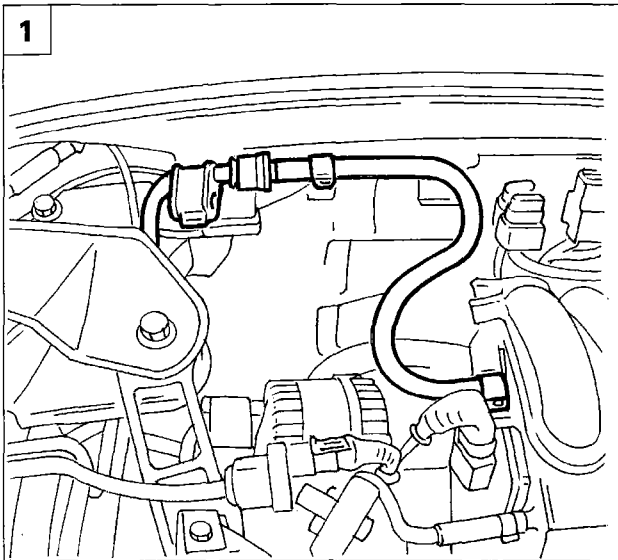


P4A03HX02

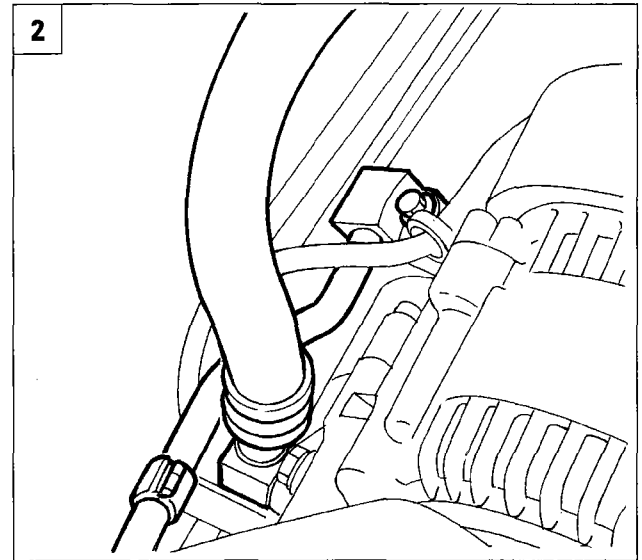


P4A03HX03

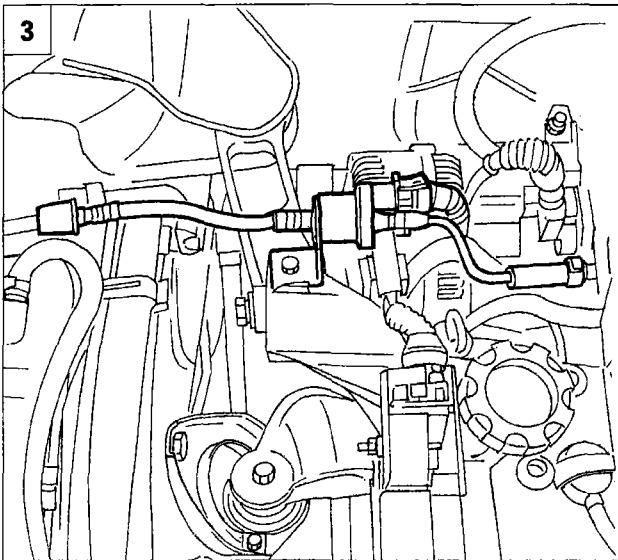
### 10.



P4A04HX01



P4A04HX02



P4A04HX03



1. Disconnect the fuel supply pipe, working on the rapid attachment.

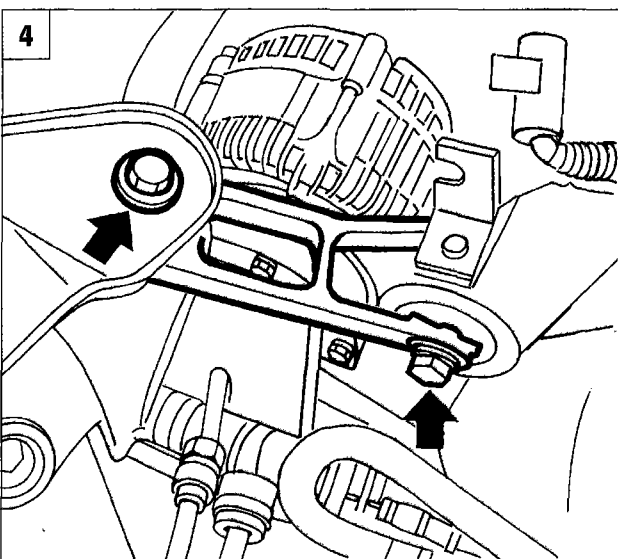


2. Disconnect the air conditioning compressor supply and inlet pipes.

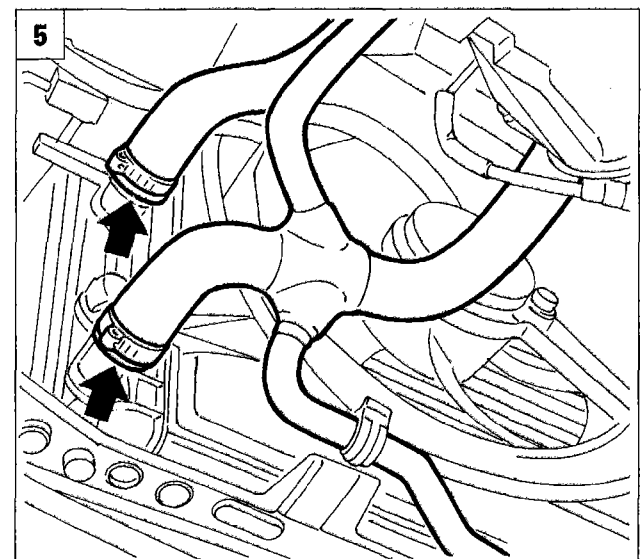
3. Disconnect the fuel vapour recovery pipe acting on the rapid attachment, remove the canister solenoid valve opening electrical connection, then remove the entire pipe from the mounting bracket disconnecting the band fixing it to the inlet manifold.

4. Undo the bolts fixing the reaction rod, then remove it.

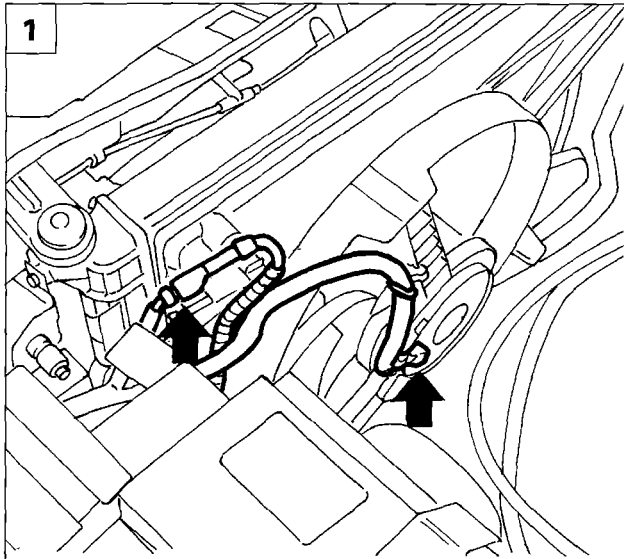
5. Drain the coolant, disconnecting the pipes shown in the diagram.



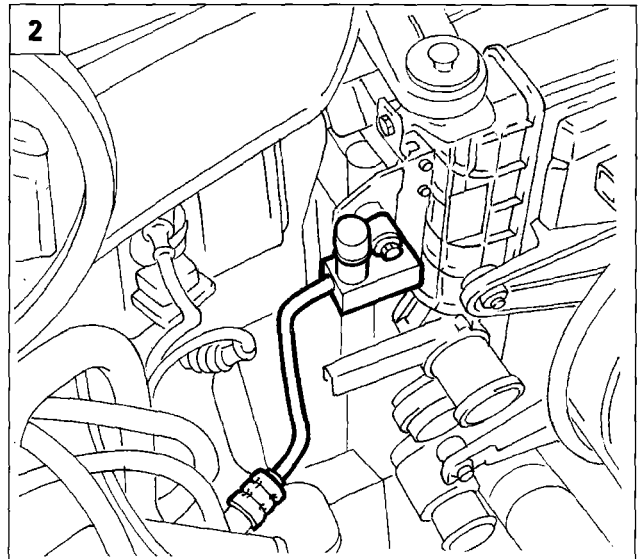
P4A04HX04



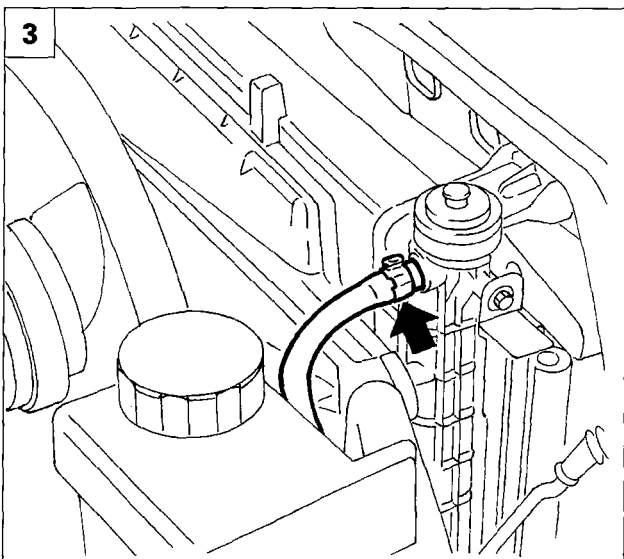
P4A30HX03



P4A31HX01



P4A05HX01



P4A31HX03



1. Disconnect the engine cooling fan supply electrical connections.

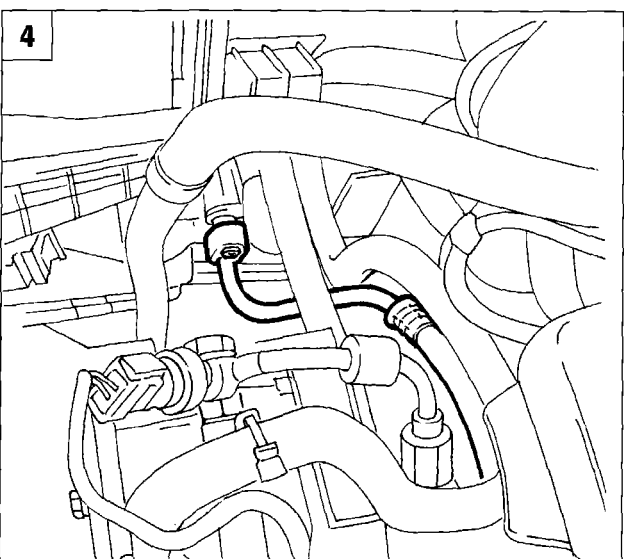


2. Disconnect the high pressure air conditioning circuit needle valve undoing the bolt fixing it to the condenser.

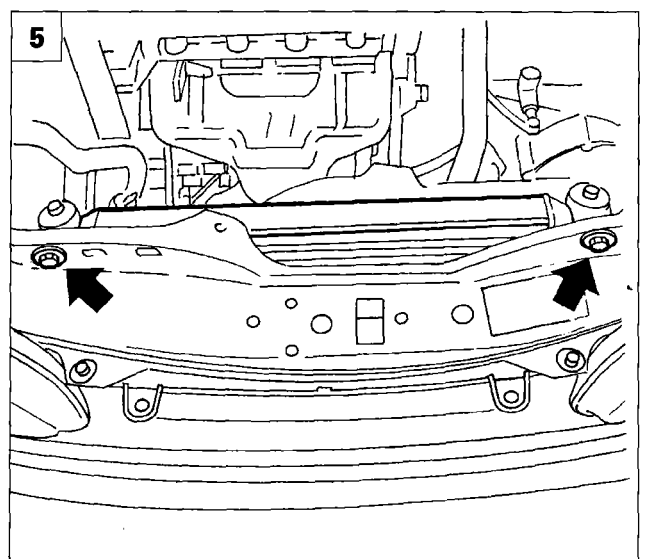
3. Open the band and disconnect the pipe between the radiator and the tank.

4. Disconnect the air conditioning circuit condenser rigid inlet pipe.

5. Remove the radiator complete with electric fan, undoing the two bolts fixing it to the bodyshell.

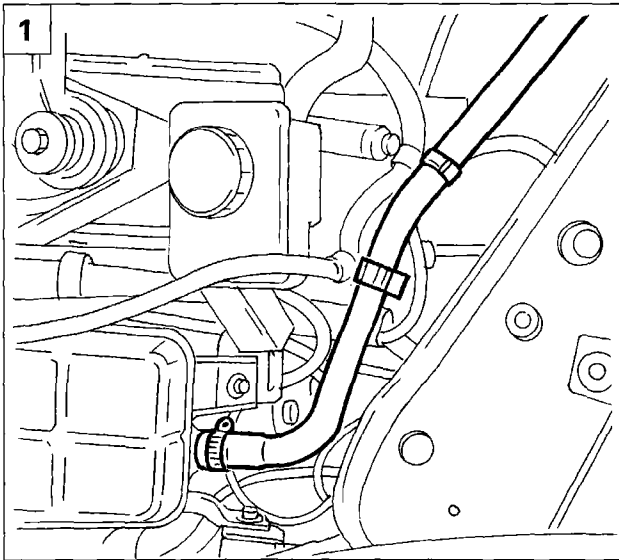


P4A05HX02

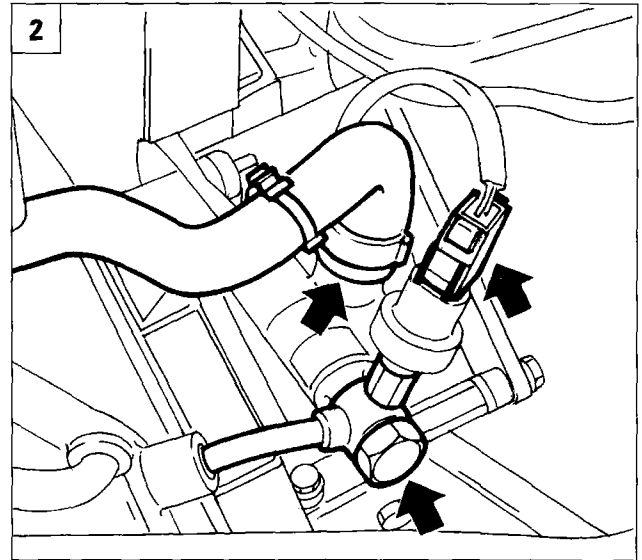


P4A05HX03

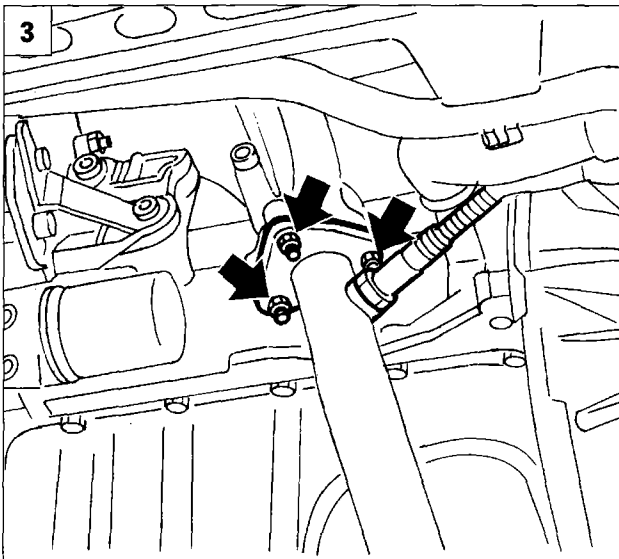
**10.**



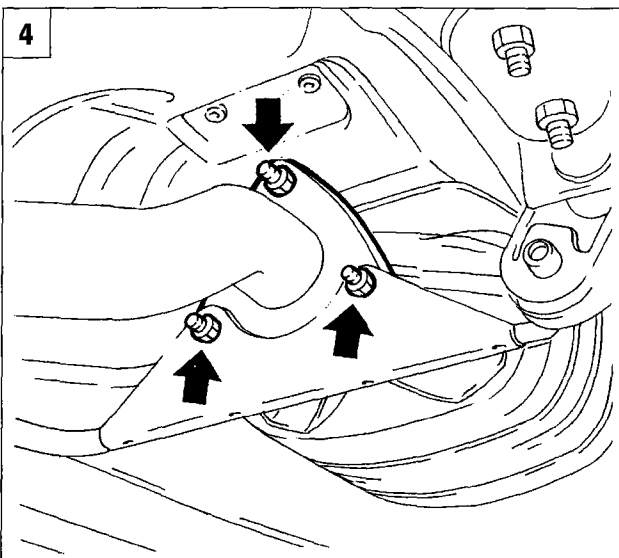
P4A06HX01



P4A06HX02



P4A06HX03



P4A06HX04



1. Disconnect the coolant pipe from the expansion tank, remove it from the retaining springs and place it at the side.

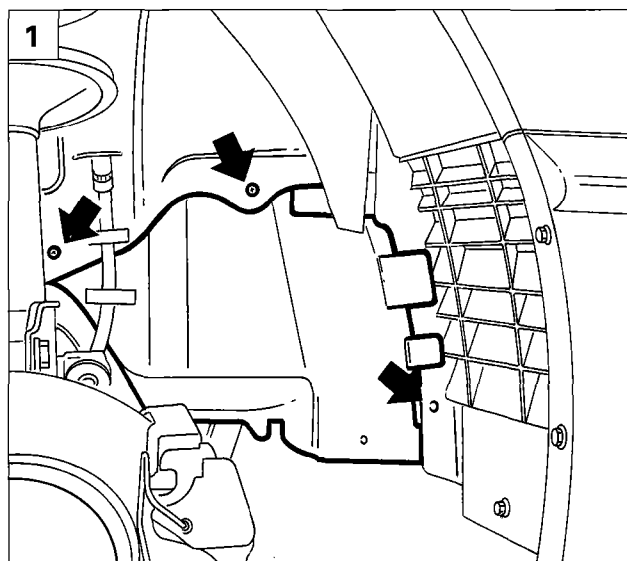
- Draw off the power assisted steering fluid from the reservoir.

2. Disconnect the electrical connection for the pressure sensor on the power assisted steering pump, undo the union for the rigid supply pipe, open the band for the flexible inlet pipe, then position the pipes at the side.

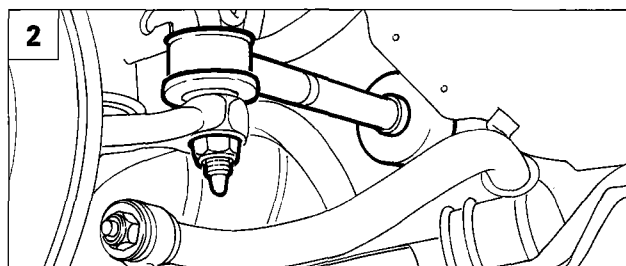
3. Disconnect the Lambda sensor connector and undo the nuts fixing the first section of the exhaust pipe to the manifold.

4. Undo the nuts fixing the first section of the exhaust pipe to the catalytic converter, then remove the pipe.

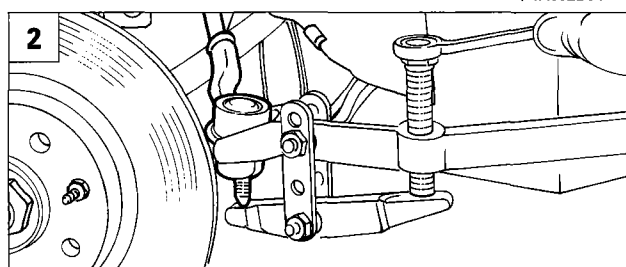
**10.**



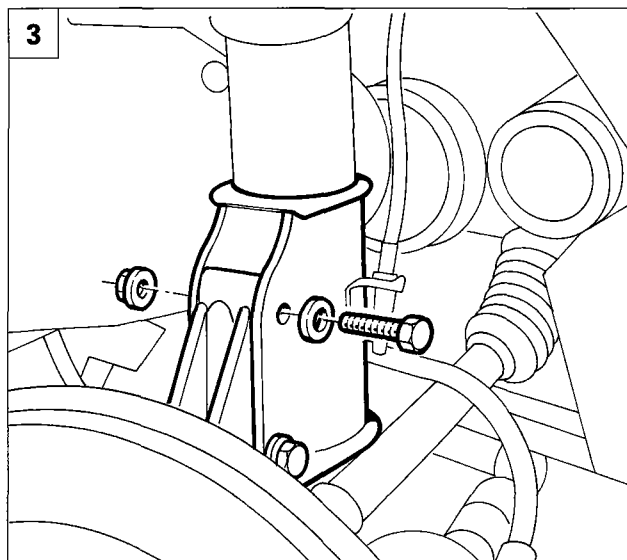
P4A07BX04



P4A002B04



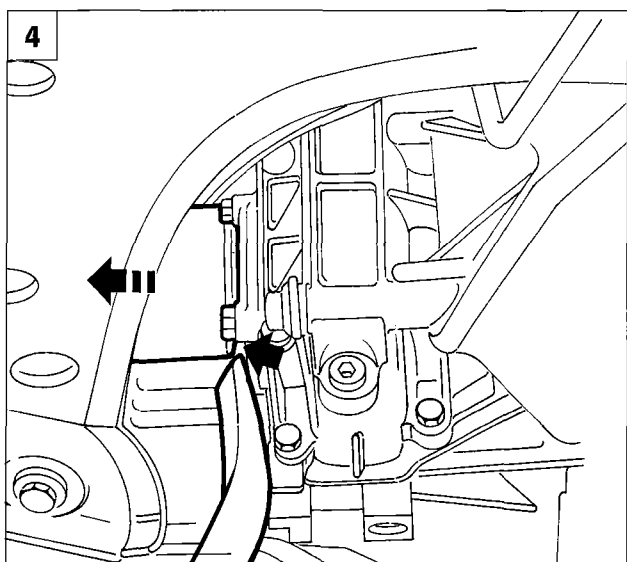
P4A002B05



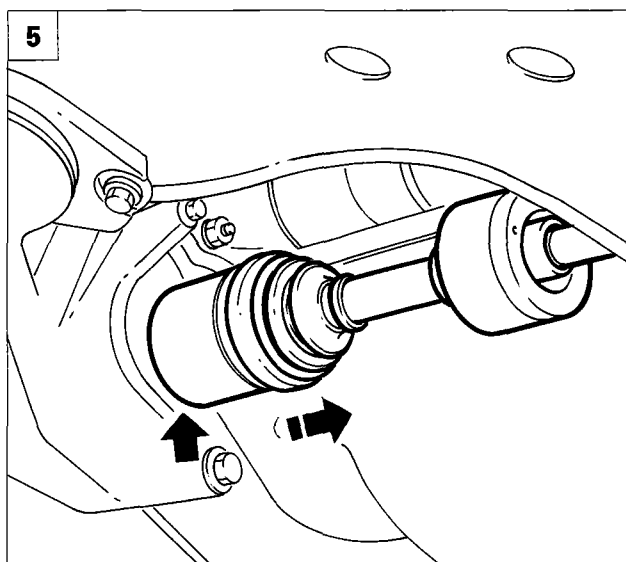
P4A003B05



1. Remove the plastic liner from the right wheel arch, acting on the fixing bolts and button.
2. Remove the nut fixing the end of the steering rod to the steering knuckle (gear-box side), then extract the track rod end using tool 1847038000.
3. Remove the bolts fixing the shock absorber to the steering knuckle (gearbox side), then rotate the actual steering knuckle forwards, releasing the brake pipe from the housing in the shock absorber.
4. Disconnect the gearbox side drive shaft from the differential using leverage at the engagement point; place it at the side and secure it.
5. Disconnect the timing side drive shaft using leverage at the engagement point; place it at the side and secure it.

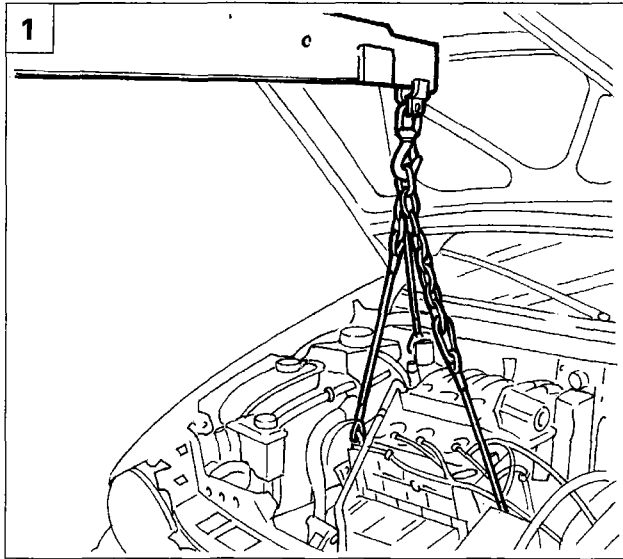


P4A004B01



P4A07AX02

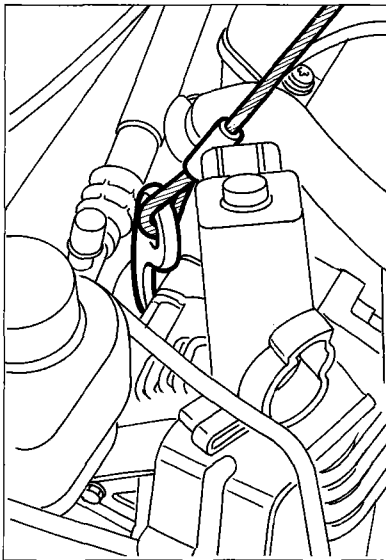
10.



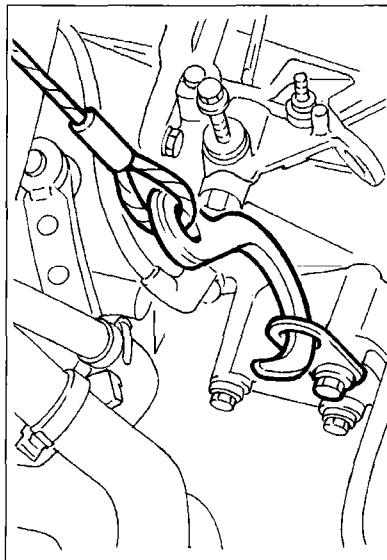
P4A08HX01

1. Position the universal hook 1860592000, fitted to a hoist, in the special power unit mounting brackets. Working on the hoist, tension the power unit supporting cables.

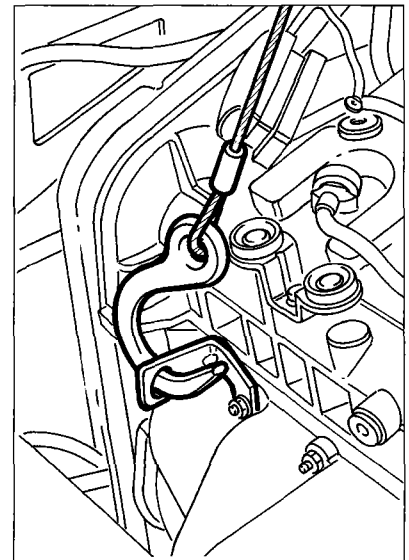
**NOTE** The diagrams below illustrate the positioning of the hooks in the power unit mounting brackets.



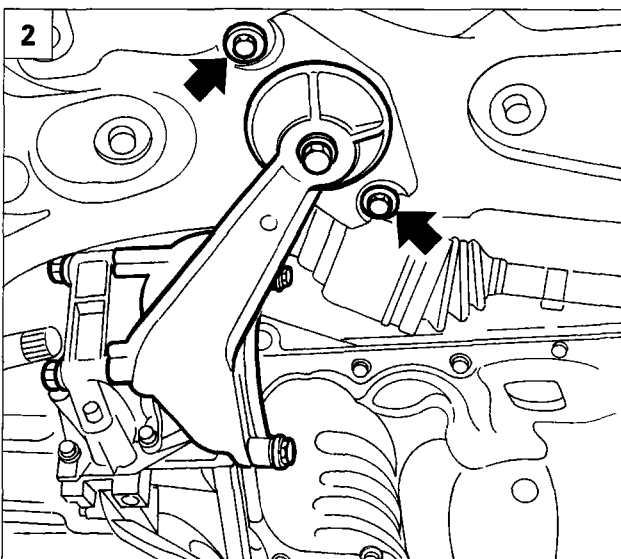
P4A08HX02



P4A08HX03



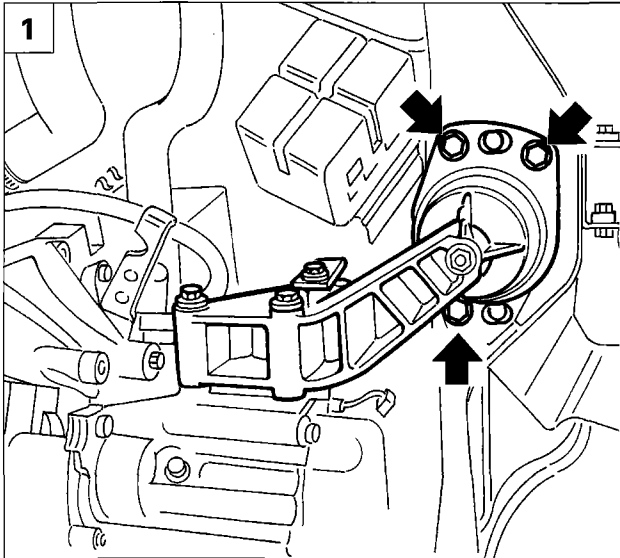
P4A08HX04



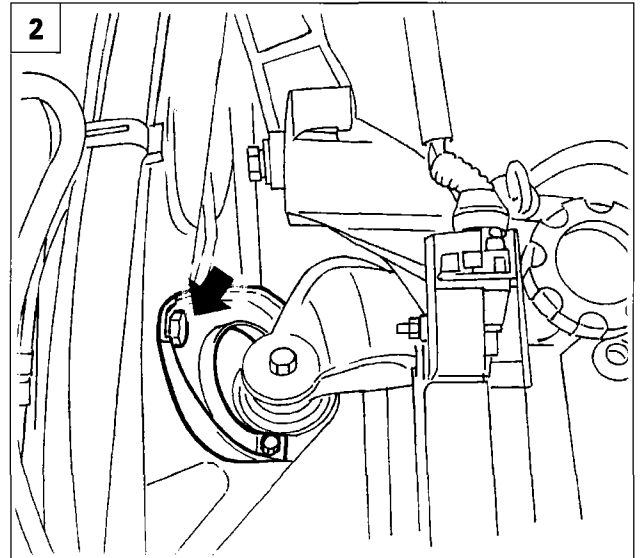
P4A08HX05



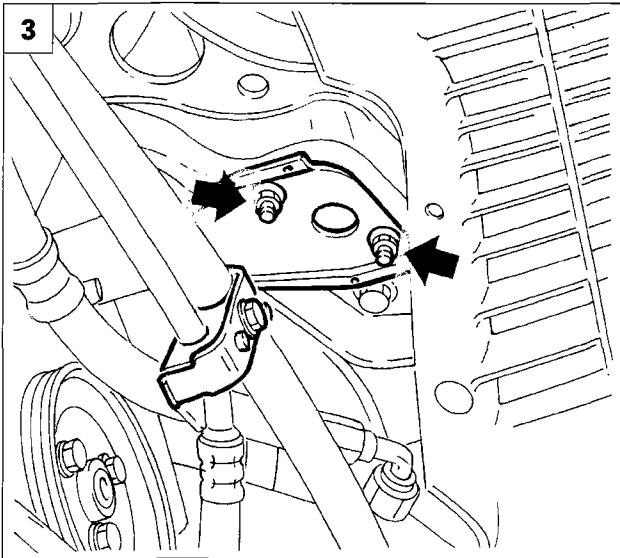
2. Undo the bolts fixing the power unit centre support to the bodyshell.



P4A09HX01



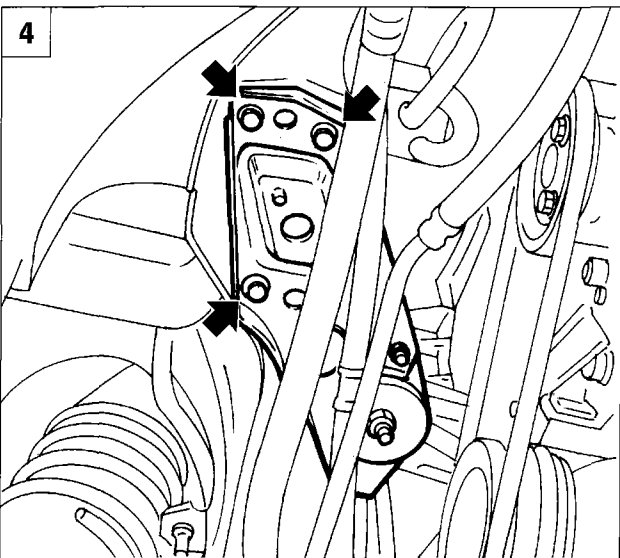
P4A09HX02



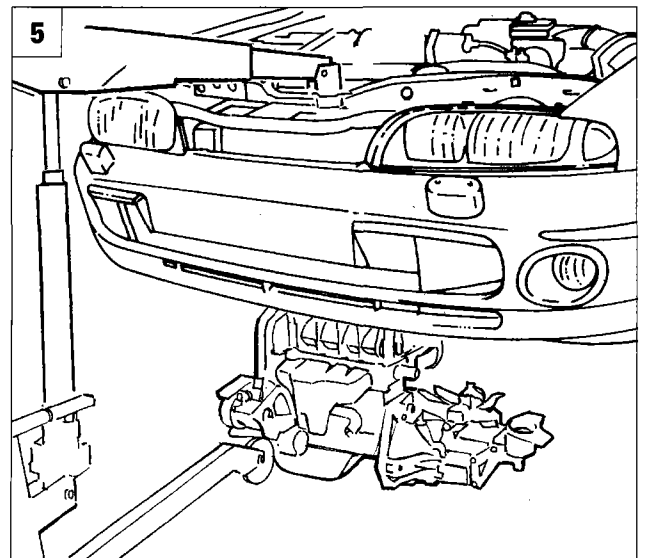
P4A09HX03



1. Undo the bolts fixing the power unit mounting, gear box side.
2. Undo the bolt fixing the timing side power unit mounting bracket to the bodyshell.
3. Undo the fixing nuts and place the bracket illustrated at the side.
4. Undo the bolts fixing the timing side power unit mounting bracket to the bodyshell.
5. Extract the power unit from the underneath of the engine compartment, suitably manoeuvring the hoist and the lift. With the help of a second operator, rest the power unit on a support, positioning it securely.



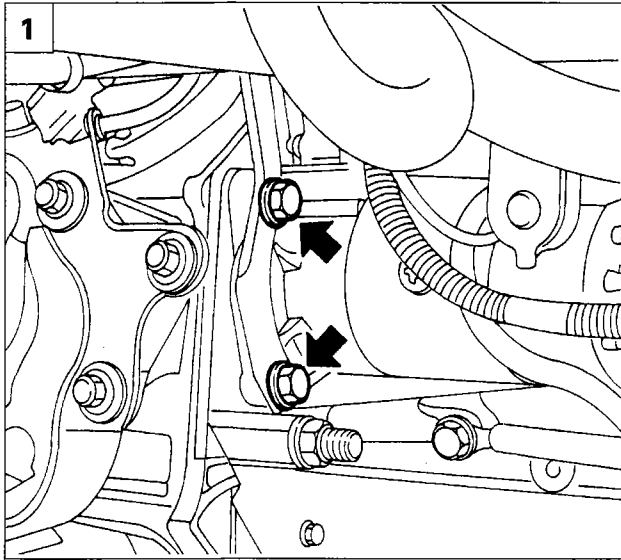
P4A09HX04



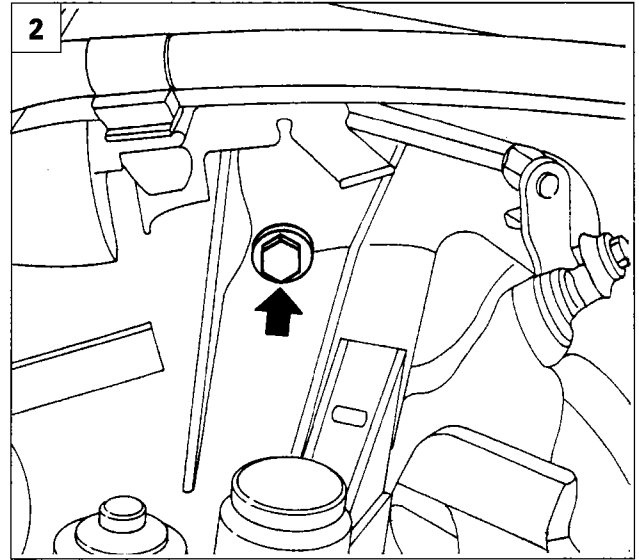
P4A09HX05



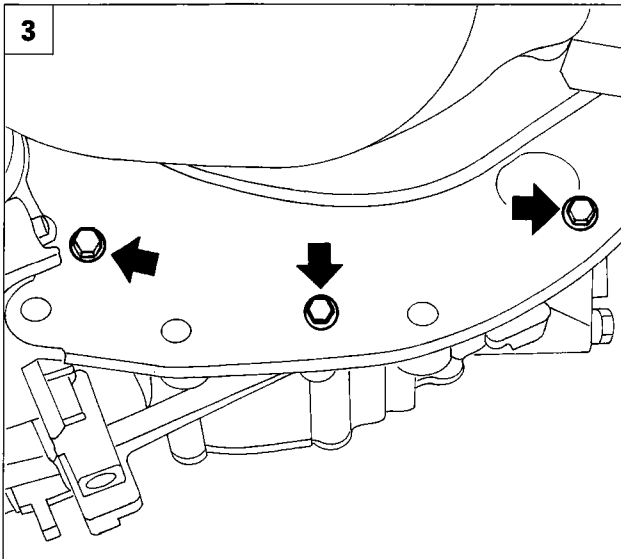
### 10.



P4A10HX01



P4A10HX02



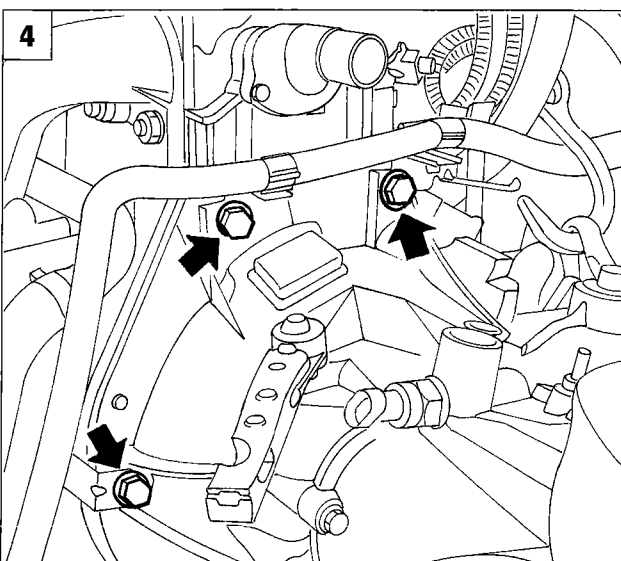
P4A10HX03



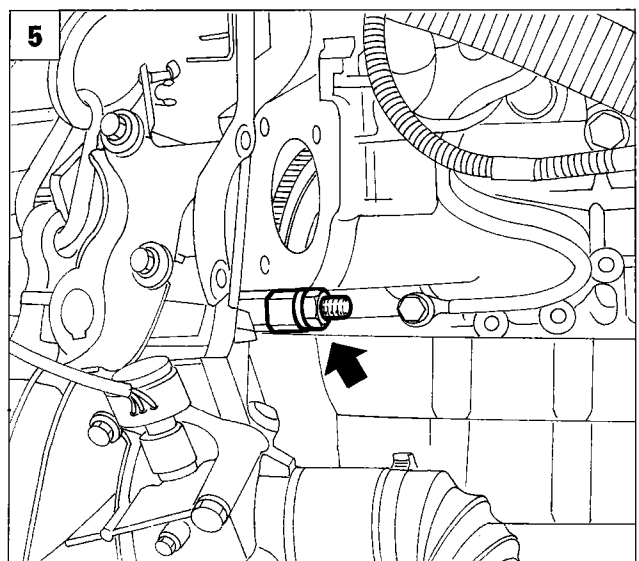
### SEPARATING THE GEARBOX-DIFFERENTIAL ASSEMBLY



1. Disconnect the electrical connections and undo the bolts fixing the starter motor to the gearbox.
2. Undo the bolt shown in the diagram, then remove the starter motor.
3. Undo the bolts fixing the engine flywheel protection.
4. Undo the bolts fixing the gearbox-differential assembly to the engine.
5. Undo the nut between the gearbox and the engine; then separate the gearbox-differential assembly from the engine.



P4A10HX04



P4A10HX05

**NOTE** *To refit the gearbox-differential assembly to the engine, suitably reverse the order of the operations described for the removal.*

*In order to refit the power unit, simply reverse the order of the operations described for the removal.*

- *Prepare the engine compartment for the fitting of the power unit, taking care to connect all the electrical cables, pipes, etc. so that there are no problems when fitting;*
- *take care when fitting the power unit to avoid damaging the individual components;*
- *when refitting the engine coolant pipes, the reference on the flexible (rubber) pipe has to coincide with the projection on the rigid coupling hose. To refill the engine cooling circuit, refer to the instructions in the "Removing-refitting radiator" chapter.*

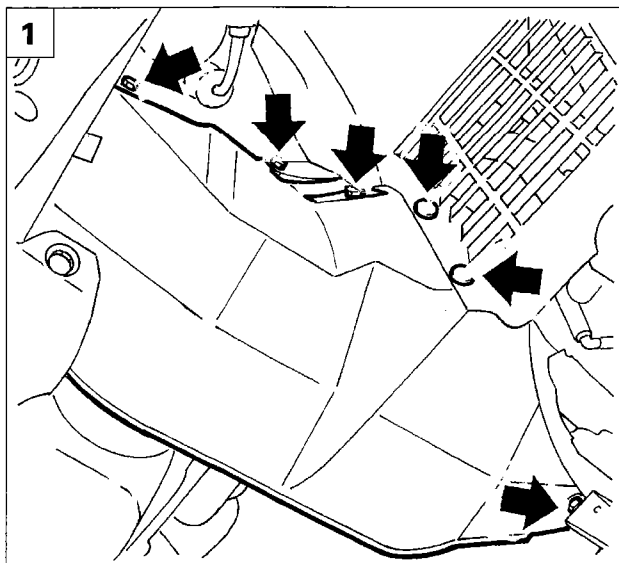


*Once the power unit has been positioned, check that the bolts fixing the power unit mounting to the bodyshell are correctly tightened.*



*Clutch pedal height.*

### 10.



P4A12HX01



#### REMOVING-REFITTING AUXILIARY DRIVE BELTS

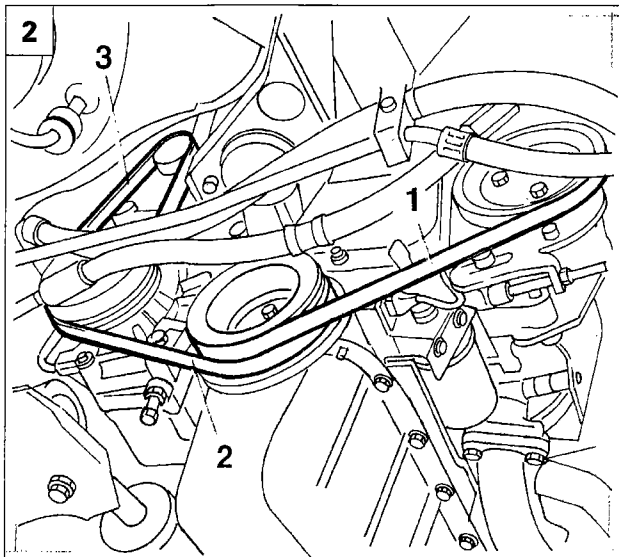


Position the vehicle on a lift, disconnect the negative battery lead, remove the right front wheel, then proceed as described below:

1. Remove the shield for the auxiliary shaft drive belts.



*Check the condition and the tension of the auxiliary shaft drive belts and, in particular, that there are no cracks, cuts, surface wear of the material (which would look shiny and smooth), or dry or hard sections with a consequent loss of grip. If one of the defects mentioned above is found, the belts in question must be replaced.*



P4A12HX02

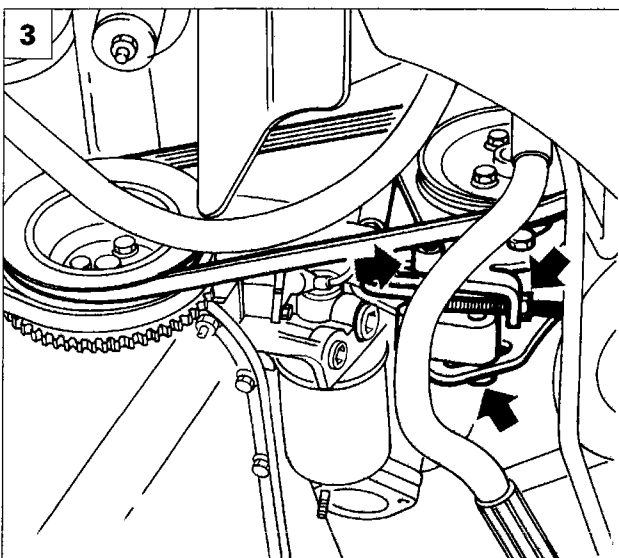


2. View of the auxiliary shaft drive belts fitted on vehicle:

1. Power assisted steering pump drive belt.
2. Air conditioning compressor drive belt.
3. Alternator drive belt.



*Avoid the belts coming into contact with oil or solvents which could adversely affect the elasticity of the rubber resulting in a loss of grip.*

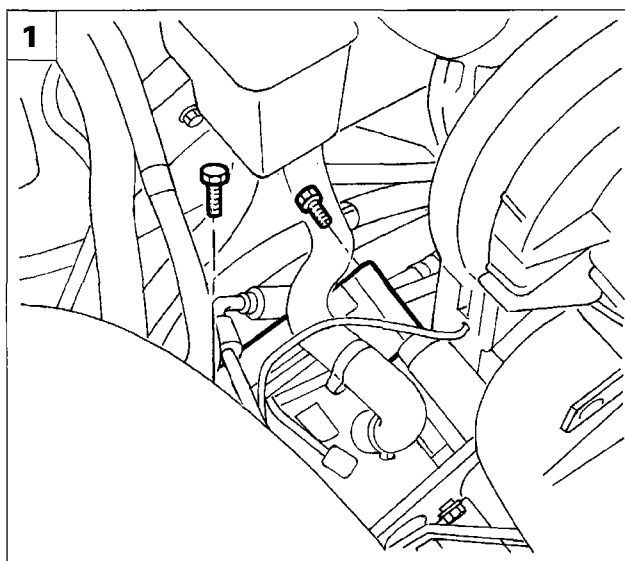


P4A12HX03

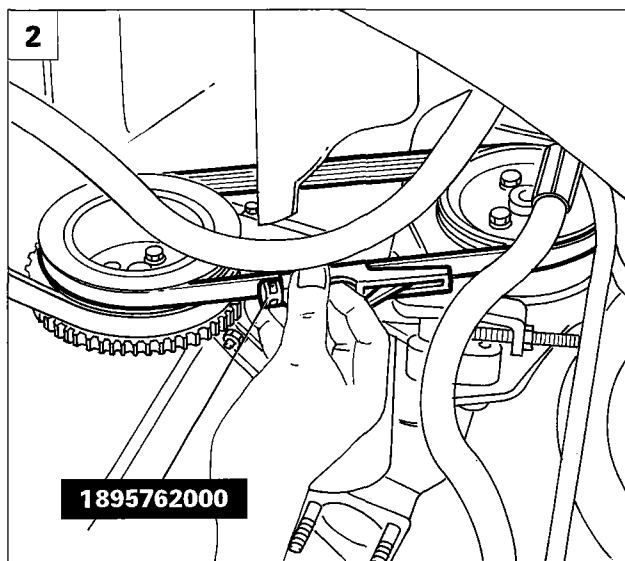


#### Power assisted steering pump drive belt

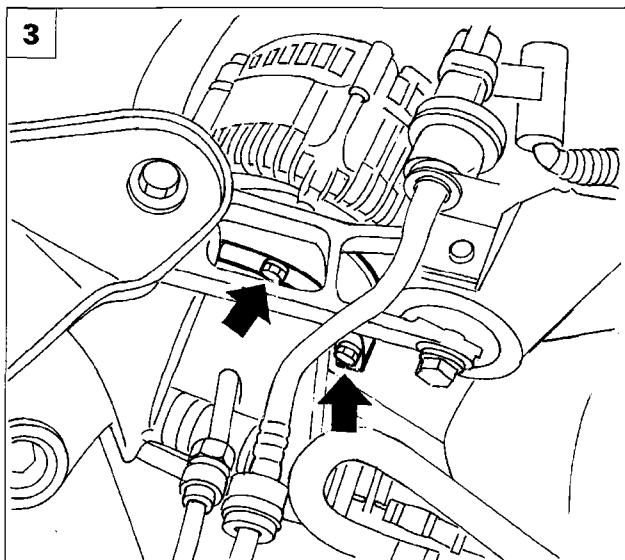
3. Loosen the tension of the power assisted steering pump drive belt acting on the bolts shown in the diagram.



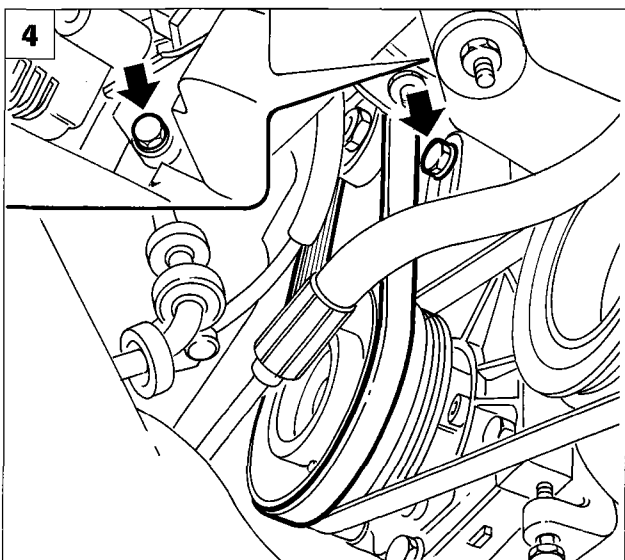
P4A13HX01



P4A13HX02



P4A13HX03



P4A13HX04



1. Remove the shield for the power steering pump pulley, then remove the drive belt.



**Refitting**

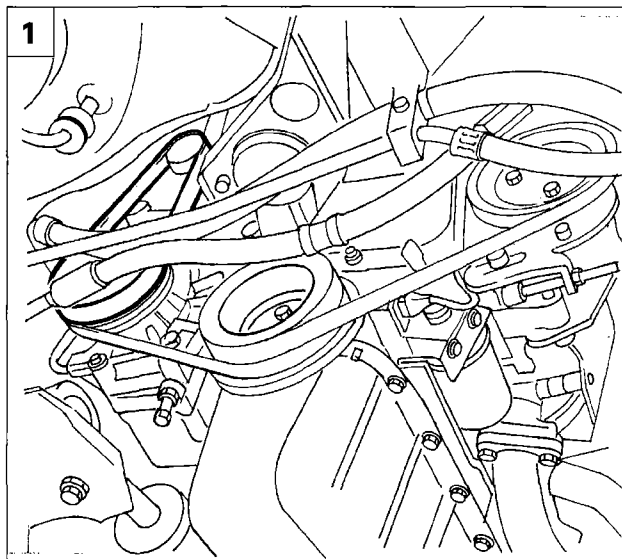
2. Tension the power assisted steering drive belt acting on the bolts securing the pump mounting bracket. Using tool 1895762000, check that the tension of the new belt is between 36 and 45 daN. If the same belt is refitted, the tension should be between 23 and 30 daN.



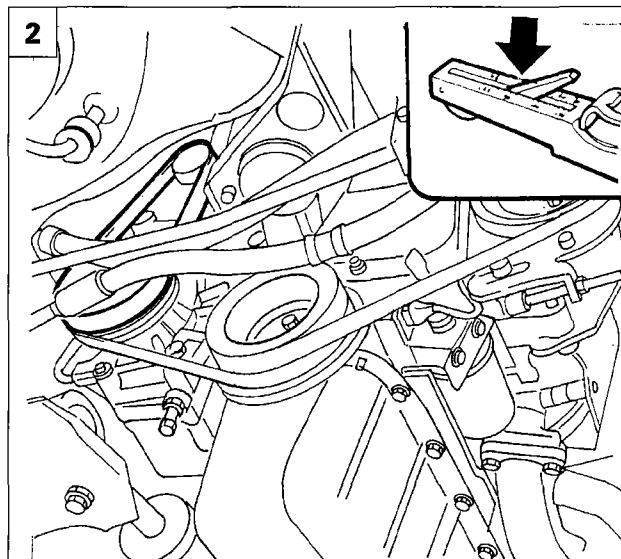
**Alternator drive belt**

3. After having removed the shield for the auxiliary drive belts, remove the protective cover for the alternator pulley.
4. Loosen the tension of the alternator drive belt acting on the bolts shown in the diagram and the rear bolt fixing it to the alternator bracket.

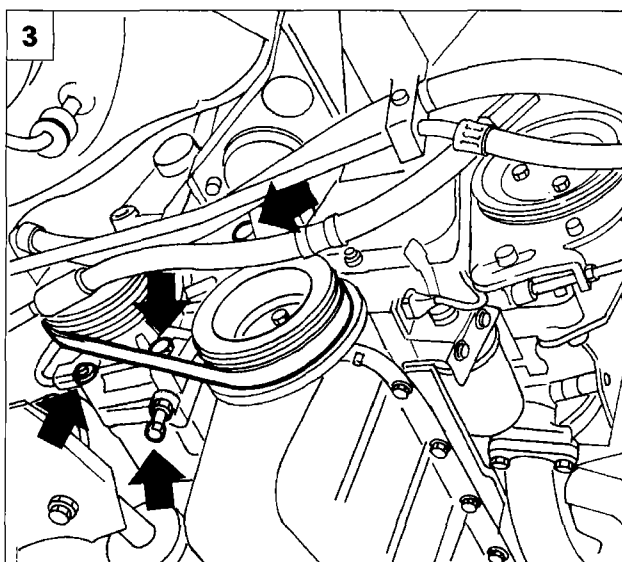
### 10.



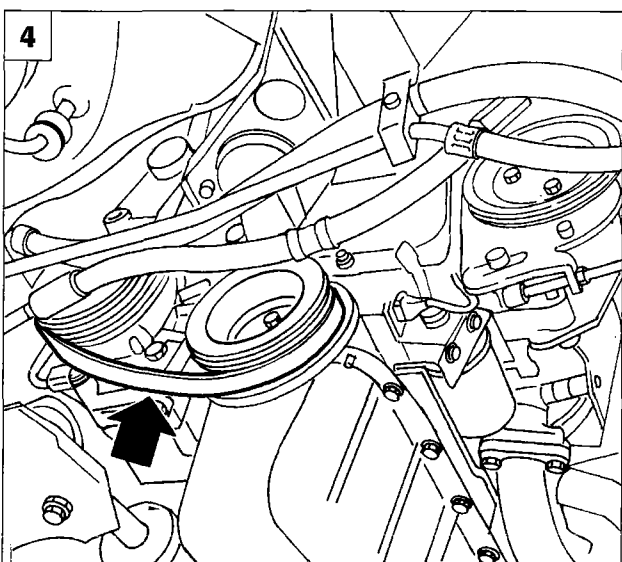
P4A14HX01



P4A14HX02



P4A14HX03



P4A14HX04



1. Remove the alternator drive belt from the drive pulleys.



#### Refitting

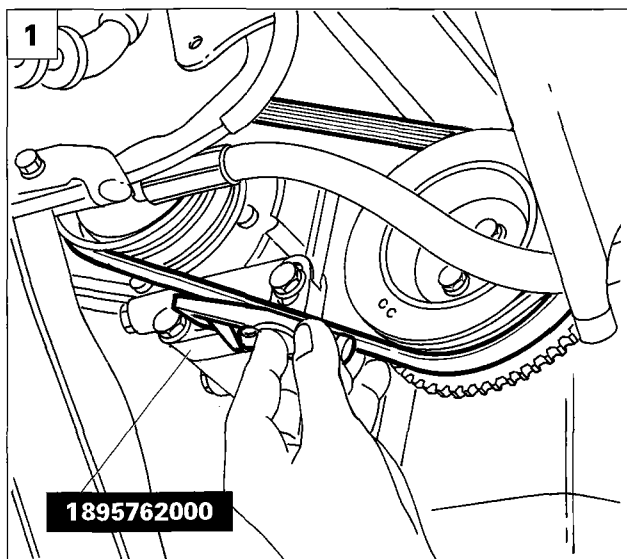
2. Position the alternator drive belt and tension it acting on the alternator fixing bolts. Using tool 1895762000, check that the tension of the new belt is between 48 and 60 daN; if the same belt is refitted, check that the tension is between 30 and 41 daN. Then refit the components removed previously.



#### Air conditioning compressor drive belt

After having removed the shield for the auxiliary drive belts, remove the power assisted steering and alternator drive belts as described previously, then proceed as follows:

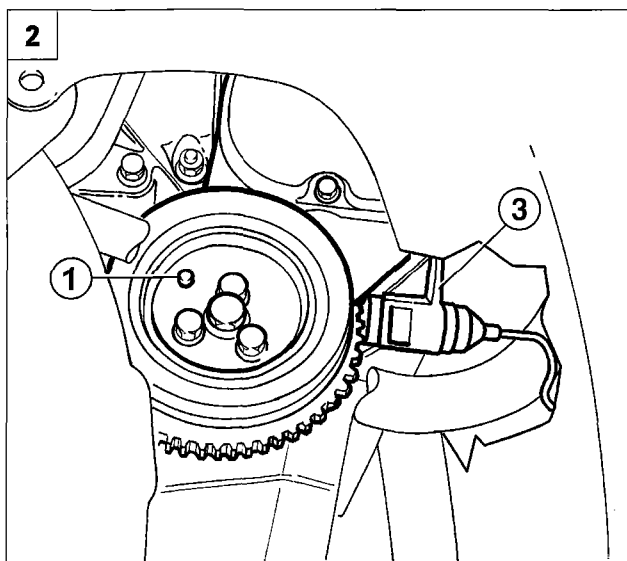
3. Loosen the tension of the air conditioning compressor drive belt, acting on the bolts shown in the diagram.
4. Remove the compressor drive belt from the pulleys.



P4A15HX01

**Refitting**

1. Position the compressor drive belt on the drive pullies and tension it acting on the bolts fixing the compressor mounting bracket. Using tool 1895762000, check that the tension of the new belt is between 48 and 60 daN; if the same belt is refitted, the tension should be between 30 and 41 daN. Then refit the components removed previously and the alternator and power assisted steering drive belts.

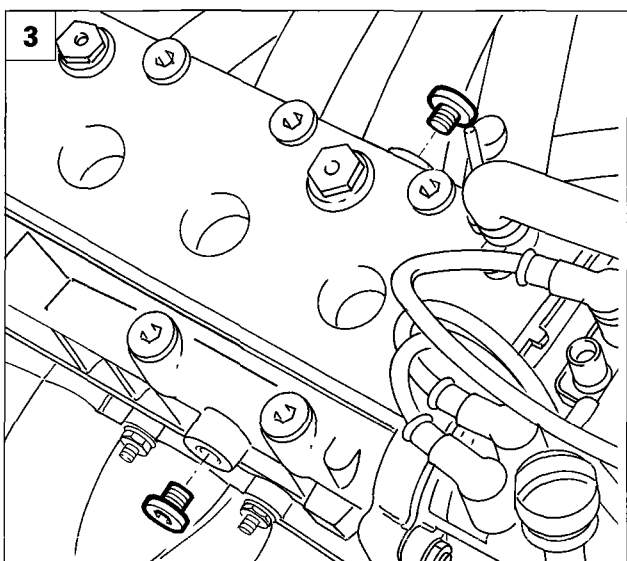


P4A15HX02

**CHECKING VALVE GEAR TIMING**



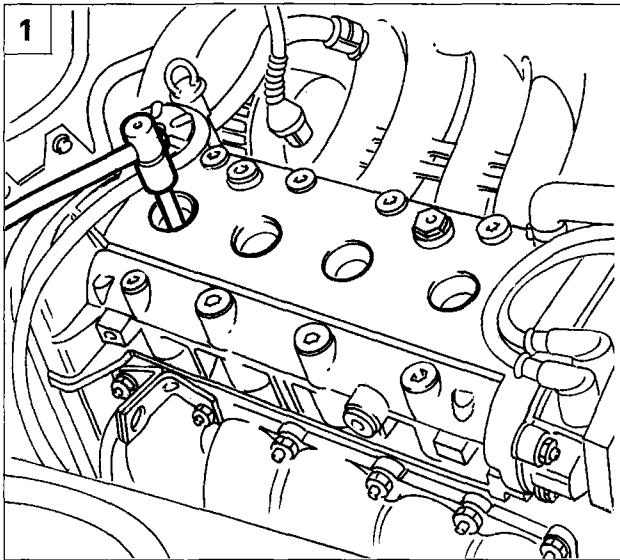
*Before checking the valve gear timing, it is necessary to remove: the auxiliary drive belts, following the instructions given previously, the upper section of the inlet manifold, complete with fuel manifold and the timing belt shield, following the instructions given in the "Removing - refitting timing belt" paragraph which follows.*



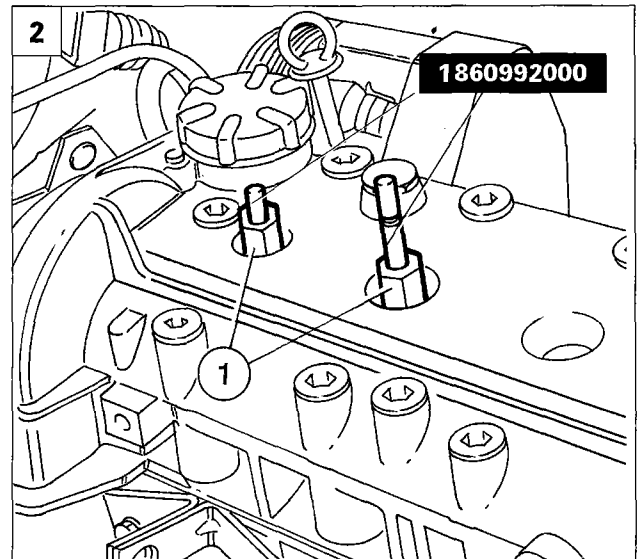
P4A15HX03

2. Rotate the auxiliary shaft drive pulley in its normal direction of rotation until the reference (1) is on the opposite side to the rpm and TDC sensor (3). This operation is carried out to bring the pistons approximately in line with one another.
3. Remove the sealing plugs illustrated in the diagram from the camshaft housing.

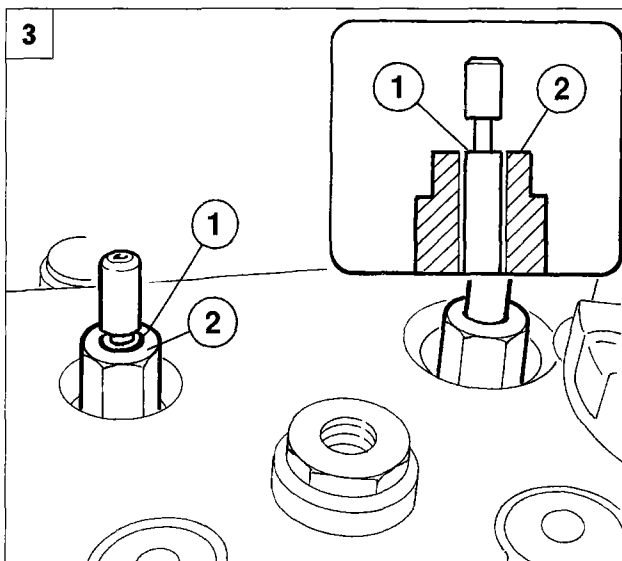
### 10.



P4A16HX01



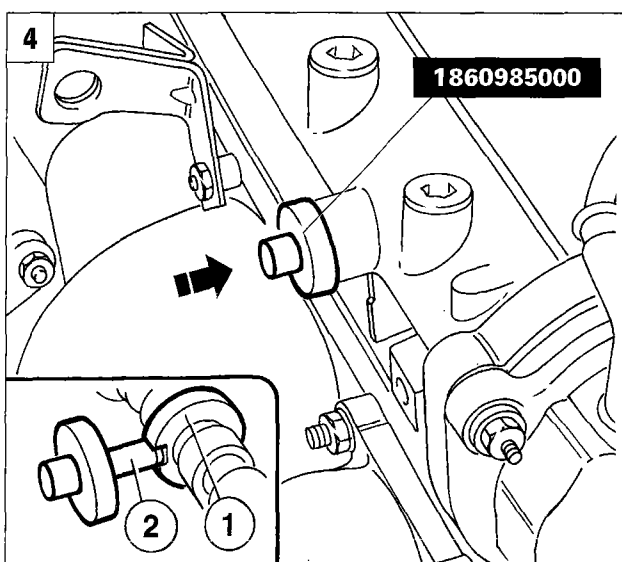
P4A16HX02



P4A16HX03



1. Disconnect the H.T. leads from the spark plugs and, using a USAG 279 MG spanner or a similar tool, remove the spark plugs.
2. Position tools 1860992000 in the housings for the spark plugs for cylinders 1 and 2, tightening the tool components (1) by hand to a maximum torque of 0.5 daNm.
3. The timing is checked with the four pistons in line, therefore the crankshaft must be rotated, using small movements, in its normal direction of rotation, until the surface (1) on the tool moving element is in line with the reference (2) on the component fixed in the spark plug housing.

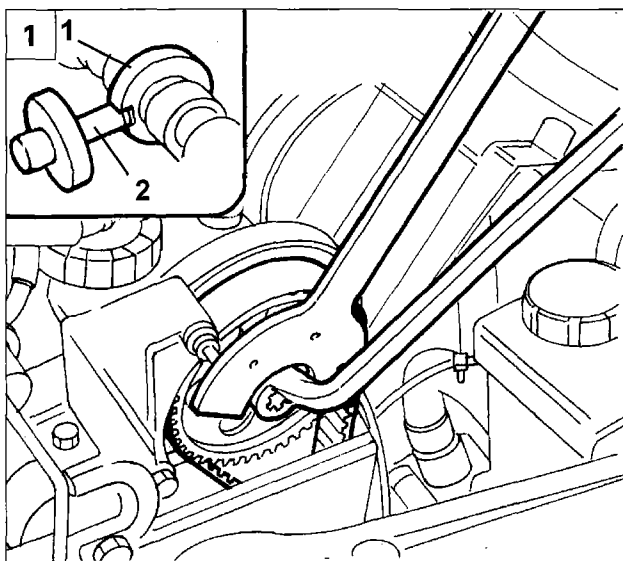


P4A16HX04

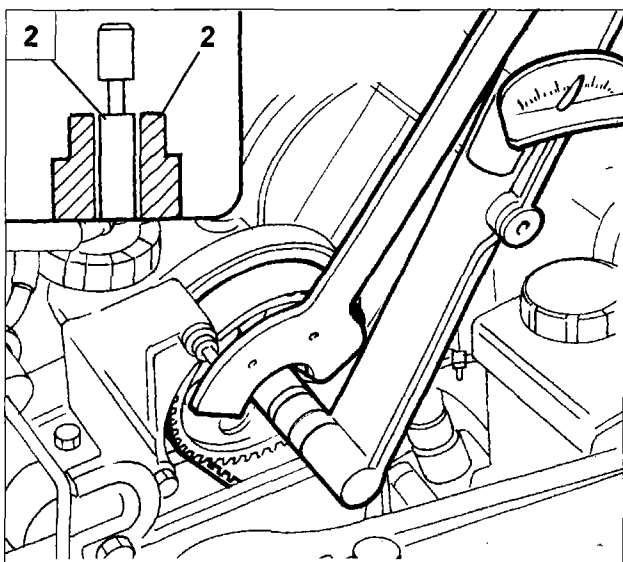
When both tools positioned in the spark plug housings reach this condition, the pistons will be in line with one another with the 1st piston in the inlet stroke.

4. Visually inspect that the splining (1) on the camshafts is near the seats; if not, rotate the crankshaft through 360°, restore the precise alignment of the pistons, using tools 1860992000, then position tools 1860985000 in the plug housings; insert the pin (2) for the tool in the splining (1) on the camshafts. The engine is timed under these circumstances.

**10.**



P4A17HX01

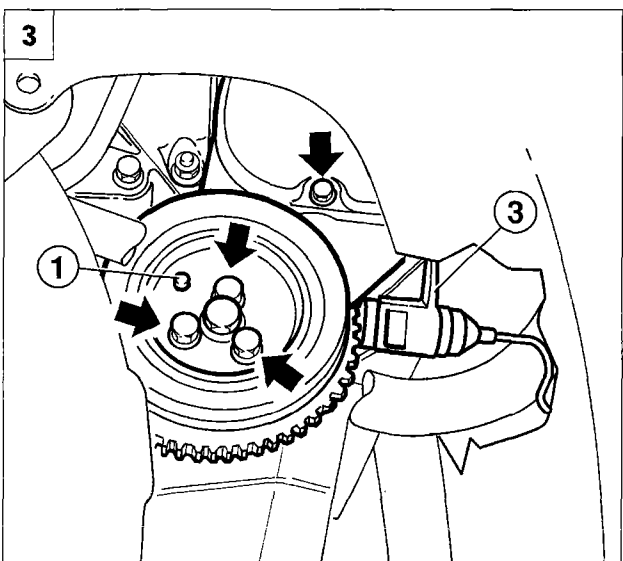


P4A17HX02



1. If the tools 1860985000 do not engage in the housings in the camshafts, the engine is not correctly timed; therefore the crankshaft should be rotated, using small movements, until the tools (2) are perfectly matched with the shaft splining (1), then, using spanner 1860831000, loosen the bolt fixing the camshaft pulley.

2. Rotate the crankshaft once again until the tools 1860992000 indicate that the pistons are aligned, i.e. with the surface (1) perfectly in line with the surface (2). In this configuration, the engine is correctly timed. Tighten the camshaft pulley to the recommended torque and then refit the components previously removed.



P4A17HX03

**REMOVING - REFITTING TIMING BELT**

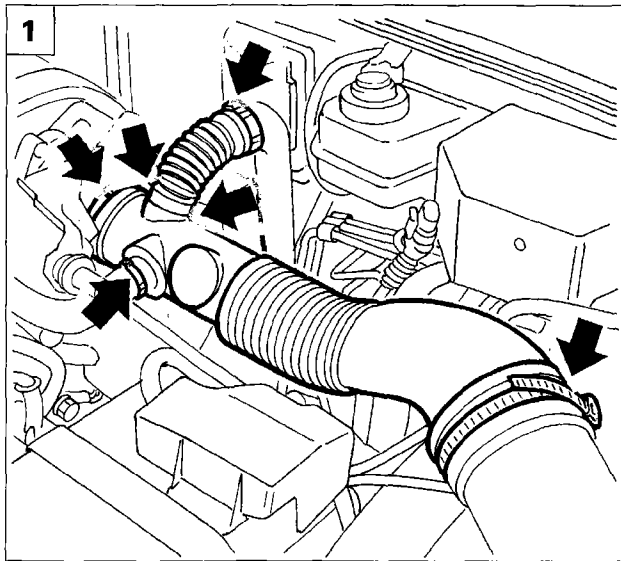


*Remove the auxiliary drive belts following the instructions given in the appropriate paragraphs.*

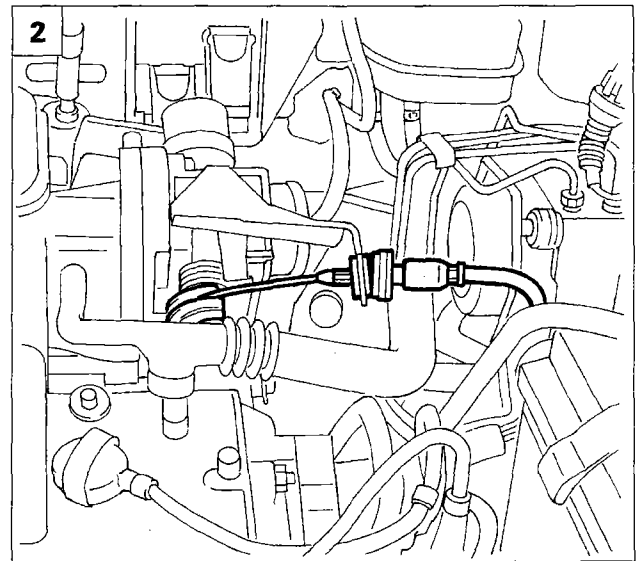
3. Rotate the auxiliary shaft drive pulley in its normal direction of rotation until the reference (1) is opposite the rpm and TDC sensor (3), then undo the fixing bolts and remove it. Also undo the bolts fixing the timing belt lower shield.



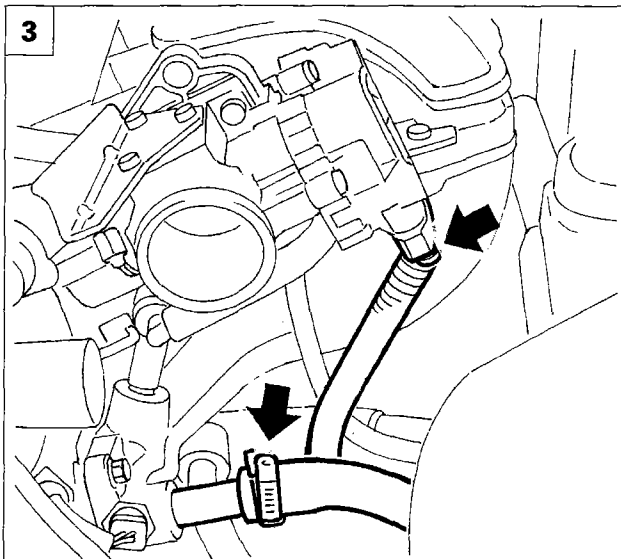
### 10.



P4A18HX01



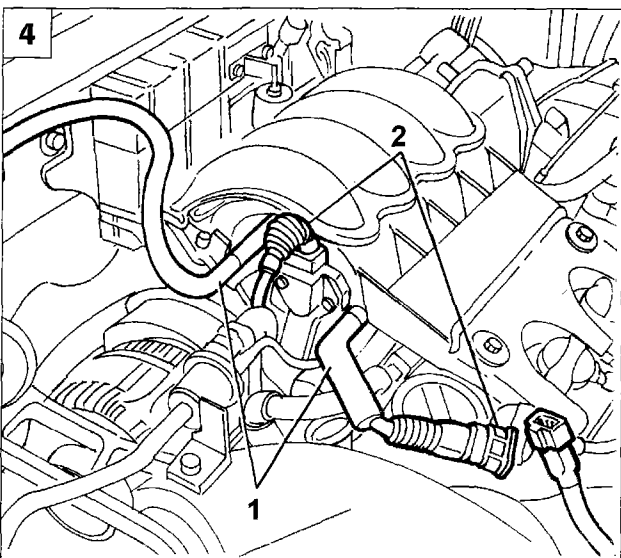
P4A18HX02



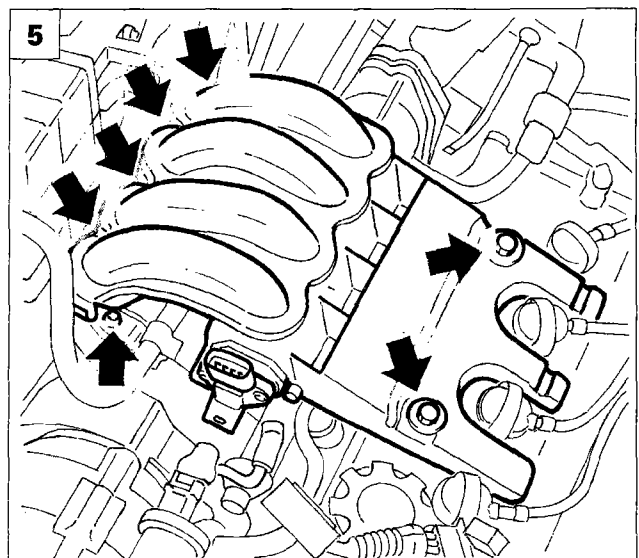
P4A18HX03



1. Disconnect the bands illustrated and undo the bolts fixing the resonator, then disconnect the oil vapour pipe band and remove the resonator complete with hose.
2. Disconnect the accelerator cable.
3. Disconnect the connection shown and the brake servo vacuum pipe from the butterfly casing.
4. Disconnect the pipes (1) and the connections (2) from the upper part of the inlet manifold.
5. Remove the bolts fixing the top section of the inlet manifold using a USAG TX 27 spanner or similar tool and remove the manifold from the vehicle complete with butterfly casing.

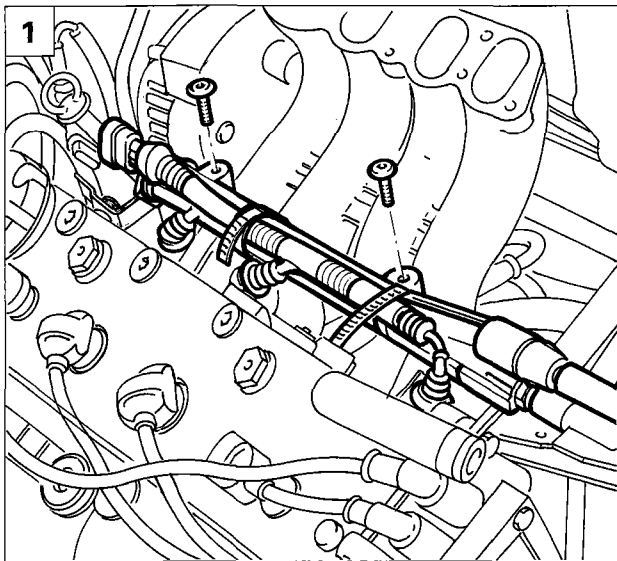


P4A18HX04

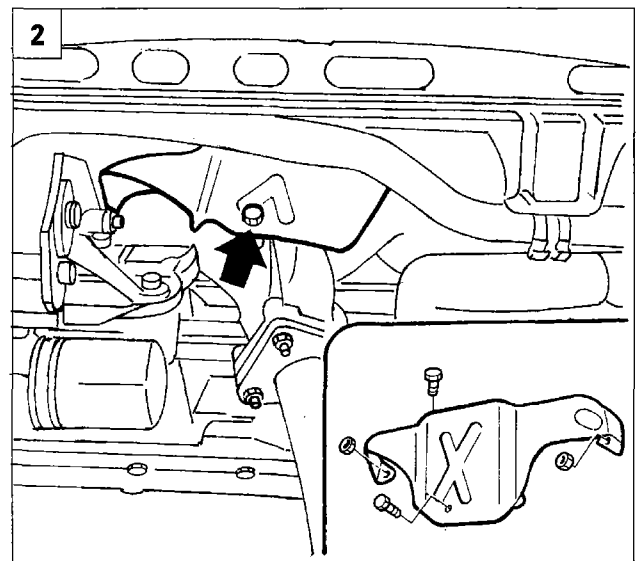


P4A18HX05

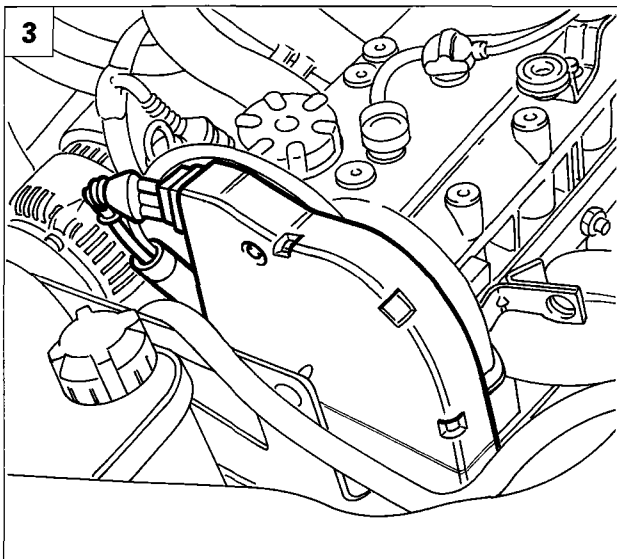
**10.**



P4A19HX01



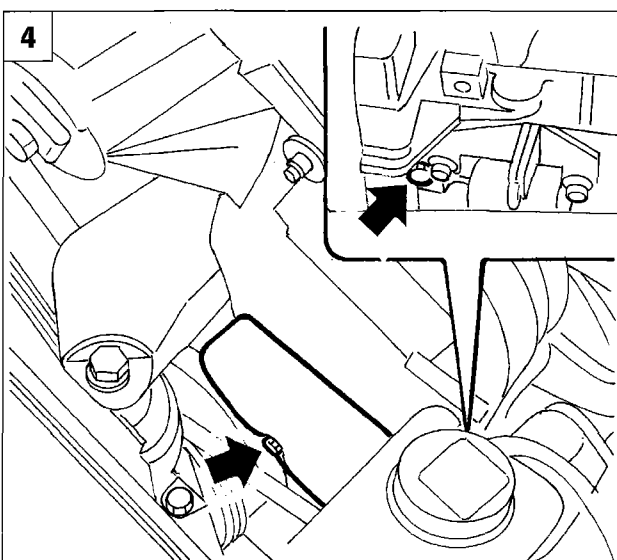
P4A19HX02



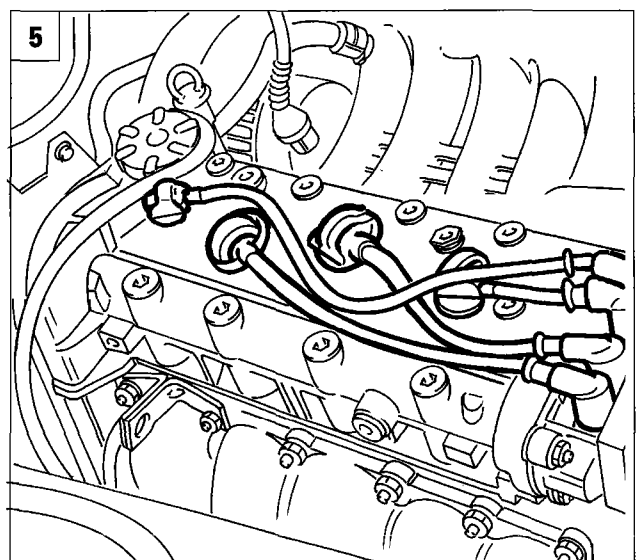
P4A19HX03



1. Undo the bolts fixing the fuel manifold, remove it complete with injectors and position it at the side, away from the work area.
2. Remove the heat shield undoing the fixing nuts and bolts.
3. Undo the bolts fixing the timing belt upper shield; disconnect the connector for the Rpm and T.D.C. sensor, then remove the upper shield.
4. Undo the fixing bolts and remove the lower shield for the timing drive belt.
5. Disconnect the H.T. leads from the spark plugs.

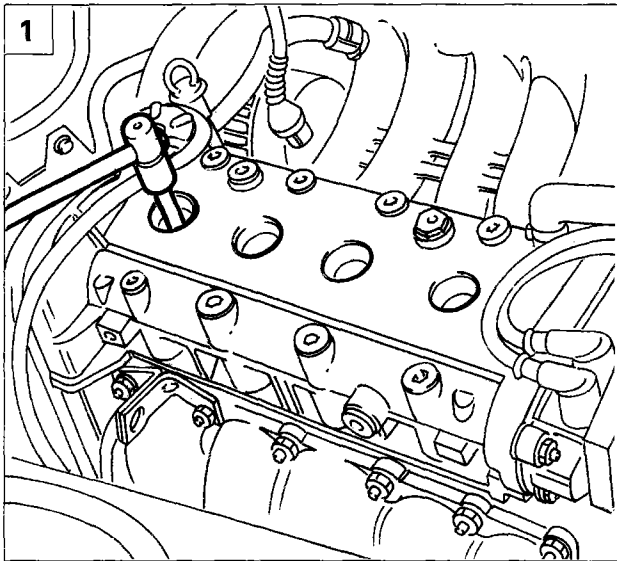


P4A19HX04

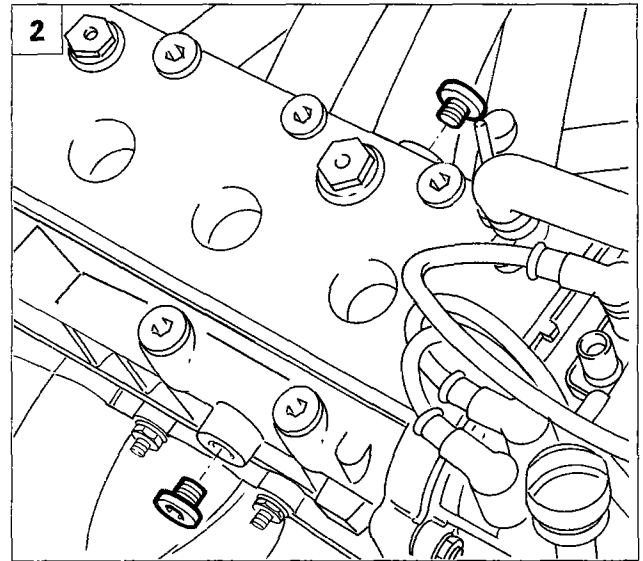


P4A19HX05

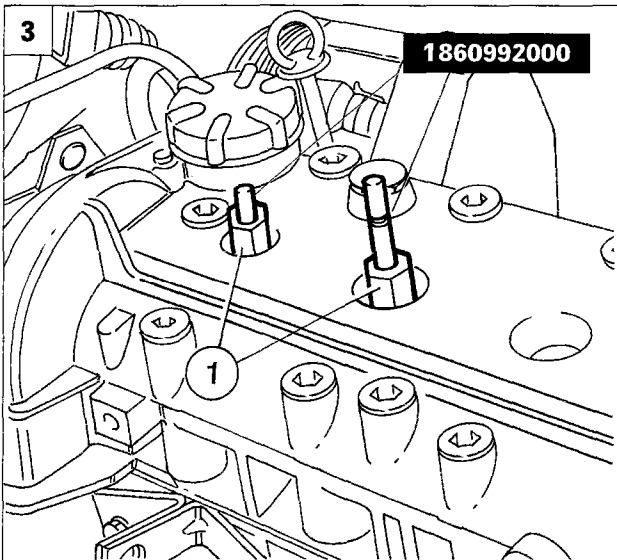
### 10.



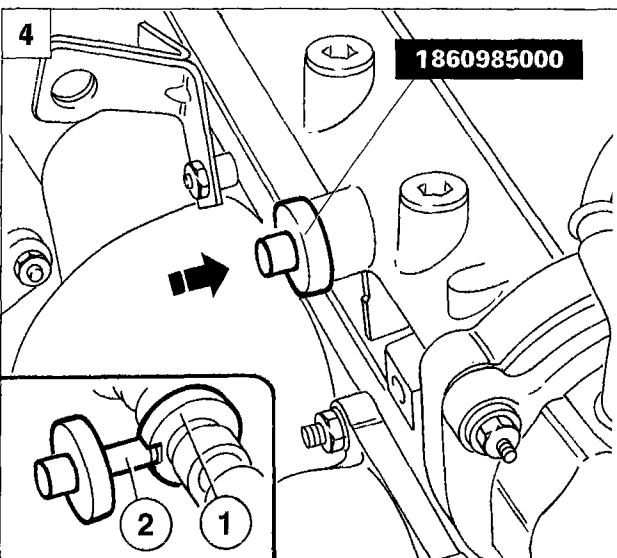
P4A16HX01



P4A15HX03



P4A16HX02



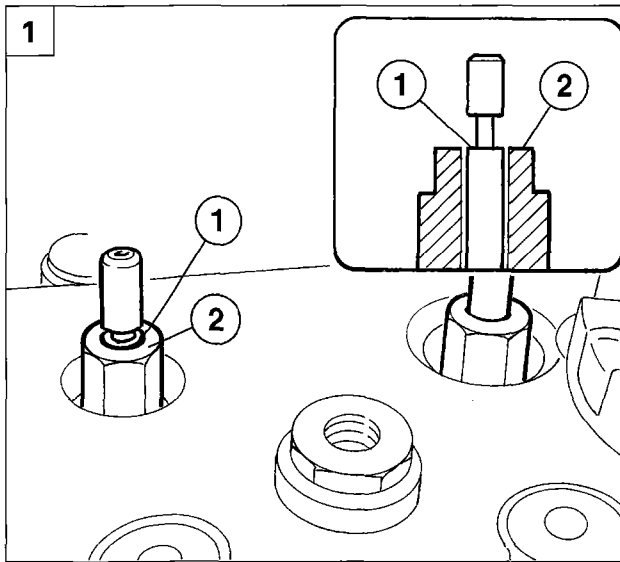
P4A16HX04



1. Remove the spark plugs using a USAG 279 MG spanner or a similar one.
2. Remove the two sealing plugs illustrated in the diagram from the camshaft housing.
3. Position tools 1860992000 in the housings for the spark plugs for cylinders no. 1 and 2, tightening the tool elements (1), by hand, to a maximum torque of 0.5 daNm.
4. Visually inspect that the splining (1) on the camshafts is near the plug housings, if not, rotate the crankshaft through 360°, restore the precise alignment of the pistons, using tools 1860992000, then position tools 1860985000 in the housings of the actual plugs; insert the pin (2) for the tool in the splining (1) in the camshafts. The engine is correctly timed under these circumstances.



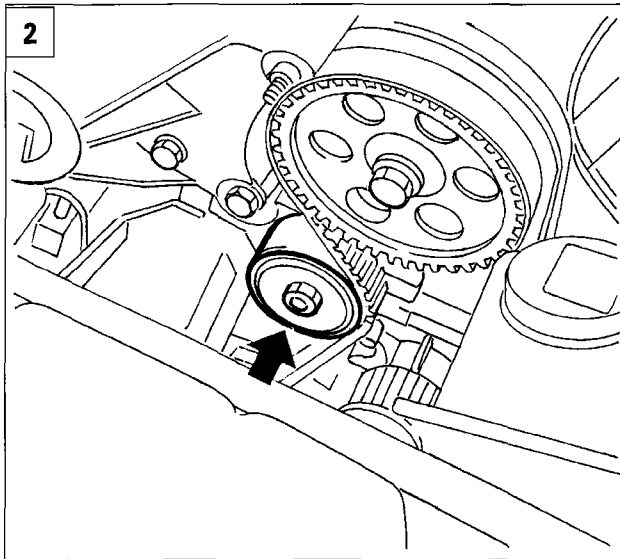
*Tools 1860985000 can be used as reaction tools to loosen the bolts fixing the rear gears for the camshafts (if they require intervention)*



P4A16HX03

1. The timing is checked with the four pistons in line, therefore the crankshaft must be rotated until the reference (1) on the moving element of the tool is in line with the reference (2) on the fixed element in the spark plug housing.

When both tools positioned in the spark plug housings are in this condition, the engine pistons will be in line with one another and the 1st piston will be in the inlet stroke.

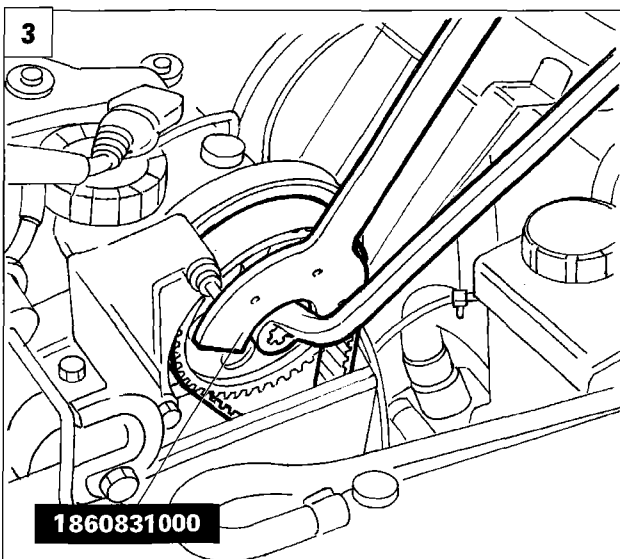


P4A21HX02



**NOTE** *The alignment of the pistons is also achieved 180° from the correct position. Once the pistons are in line, check that the pin on the crankshaft gear is approximately opposite the rpm and TDC sensor.*

2. Loosen the nut fixing the timing drive belt tensioning device, then remove the actual belt.



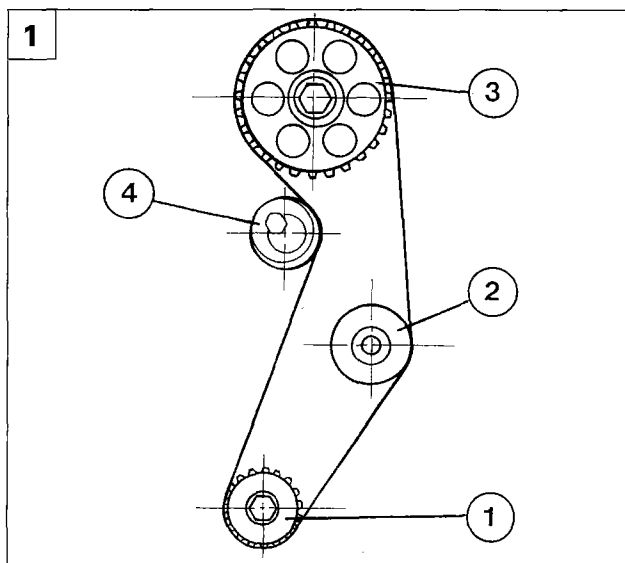
**1860831000**

P4A21HX03

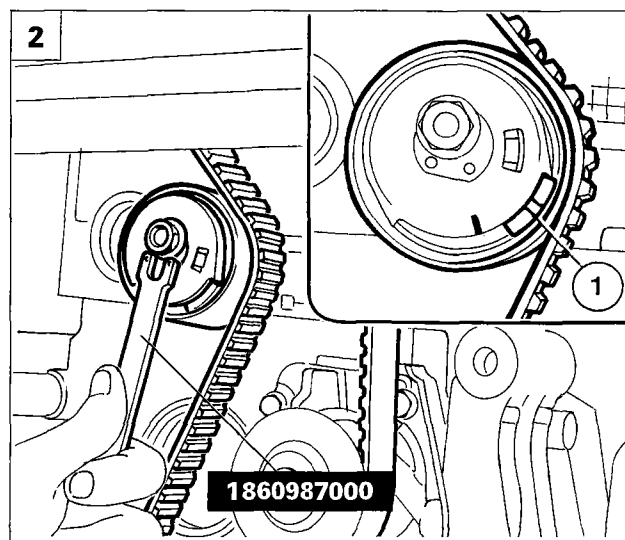
**Fitting and tensioning timing drive belt**

3. The camshaft drive pulley is slotted; to facilitate the correct matching of the pulley teeth and the timing belt, loosen the bolt fixing the actual pulley using tool 1860831000.

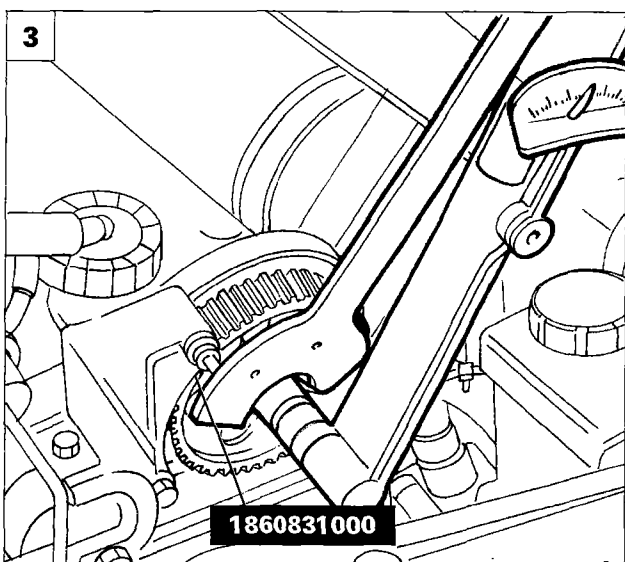
### 10.



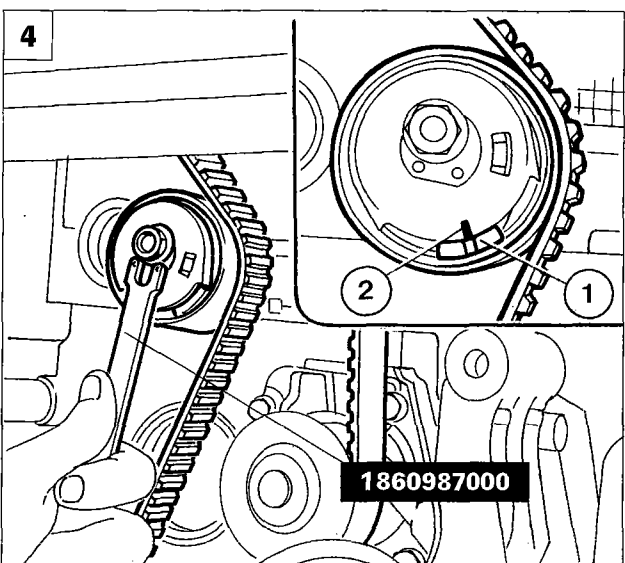
P4A22HX01



P4A22HX02



P4A22HX03

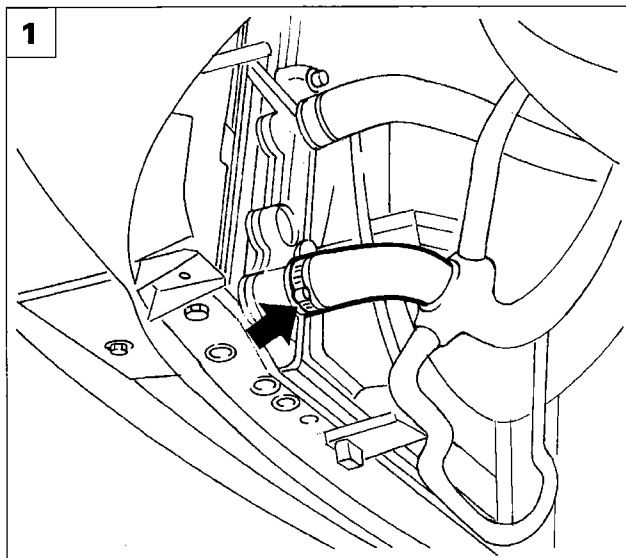


P4A22HX04

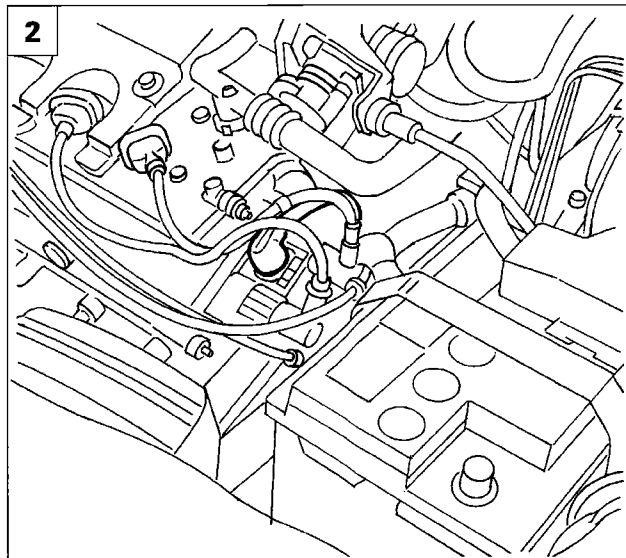
1. Before refitting the timing belt, make sure that the camshafts are timed and secured using tools 1860985000 and that the pistons are aligned, check in the position of the pins for tools 1860992000 as described previously. Then fit the timing drive belt following the order given below:
  1. Crankshaft drive gear
  2. Water pump gear
  3. Timing pulley
  4. Belt tensioner pulley
2. Position tool 1860987000 and, working on it, place the automatic tensioner in the maximum tension position, i.e. with the moving reference (1) as illustrated in the diagram, then lock the nut fixing the tensioner to the support.
3. Using spanner 1860831000, tighten the timing pulley on the inlet side to the recommended torque. Remove the tools positioned previously for timing and locking the camshafts and rotate the crankshaft, in its normal direction of rotation, through two revolutions.
4. Loosen the nut fixing the tensioner and ensure that the moving reference (1) on the tensioner coincides with the fixed reference (2), then tighten the nut fixing the tensioner to the recommended torque. Rotate the crankshaft, in its normal direction of rotation, through a further two revolutions, then reposition the tools for timing the engine illustrated previously and check that the engine is correctly timed.



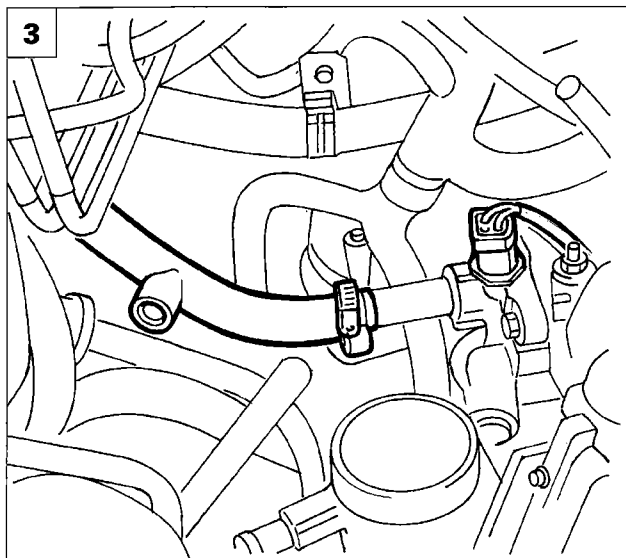
*Fit the remaining components, suitably reversing the order of the operations carried out for the removal.*



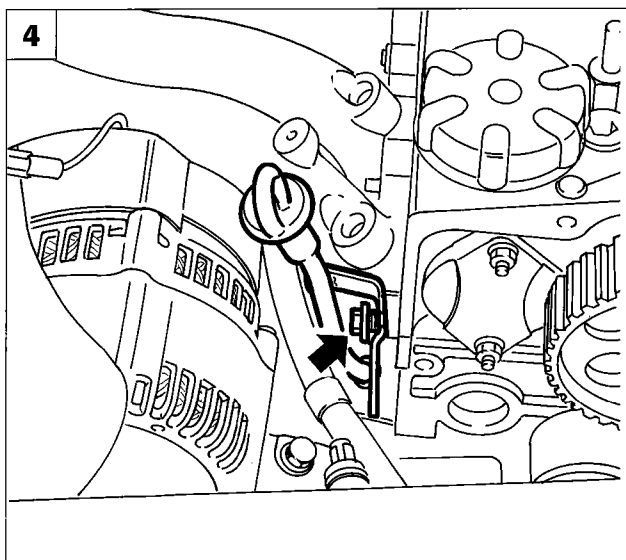
P4A23HX01



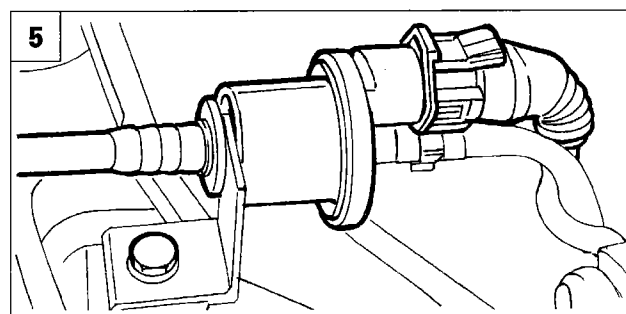
P4A23HX02



P4A23HX03



P4A23HX04



P4A23HX05



**REMOVING-REFITTING CYLINDER HEAD**

Position the vehicle on a lift, disconnect the negative battery lead, then proceed as described below:

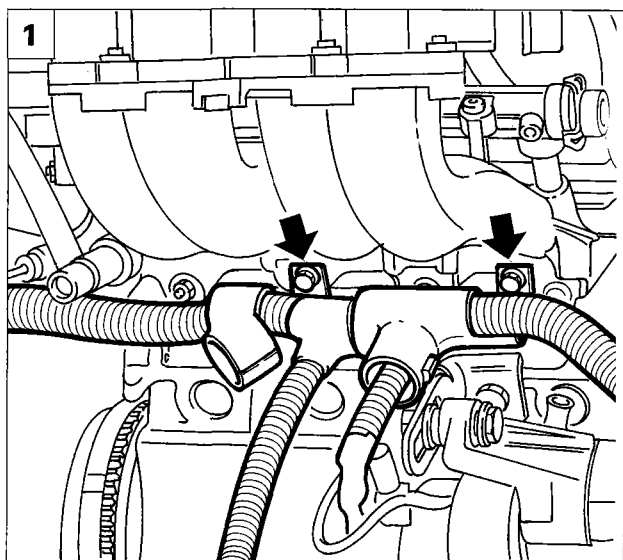
1. Drain the coolant disconnecting the hose shown in the diagram from the lower part of the vehicle



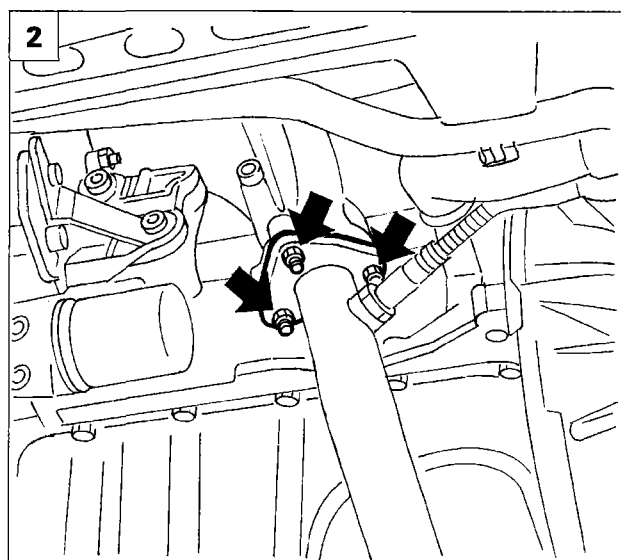
*Remove the timing drive belt following the instructions in the previous paragraph.*

2. Disconnect the connections (1), then remove the ignition coils acting on the fixing nuts and the engine cooling system pipe underneath.
3. Disconnect the heater outlet pipe and the water temperature sensor connection (1).
4. Undo the bolt fixing the oil dipstick mounting bracket to the cylinder head.
5. Disconnect the fuel vapour solenoid valve connection and undo the mounting bracket fixing bolt.

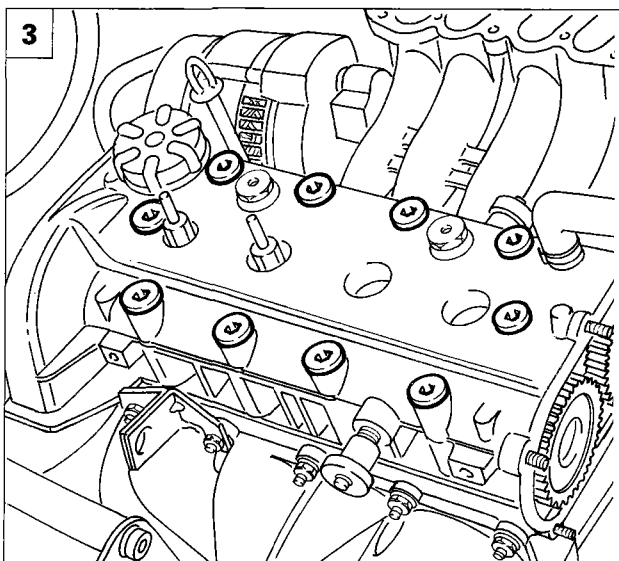
### 10.



P4A24HX01



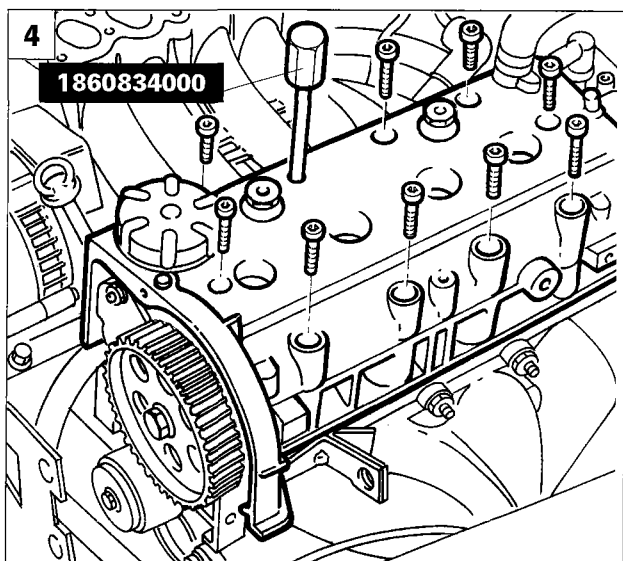
P4A24HX02



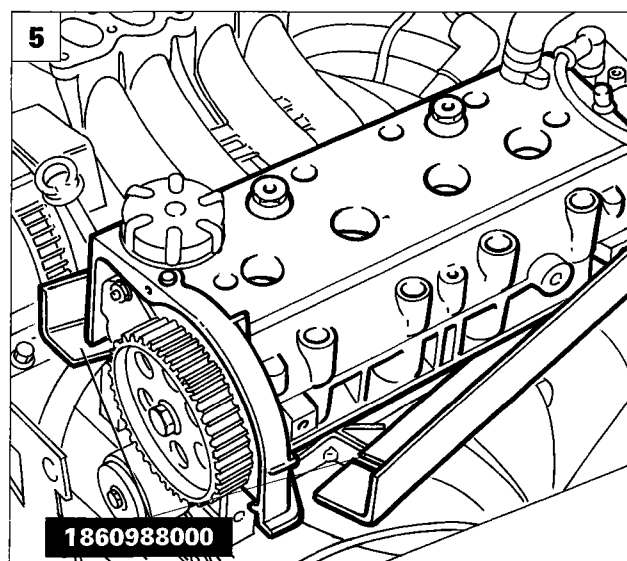
P4A24HX03



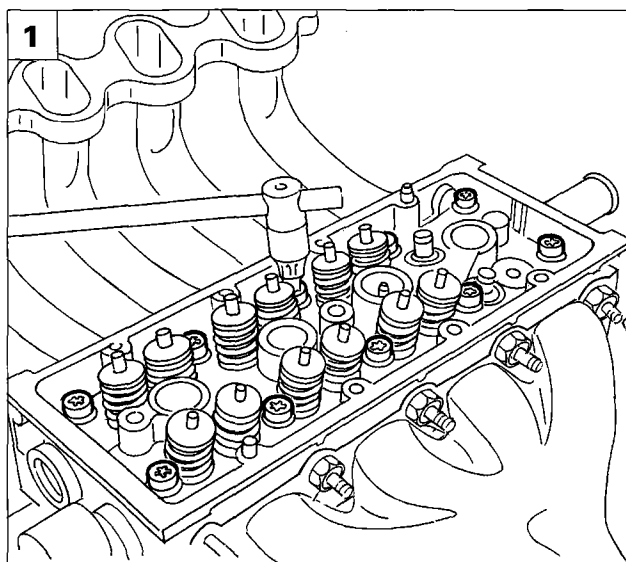
1. Release the injection cables from the lower part of the inlet manifold, undo the bolts fixing the mounting brackets.
2. Undo the nuts fixing the first section of the exhaust pipe to the manifold.
3. Undo the protective plugs for the bolts fixing the camshaft housing to the cylinder head. Also remove the element (1).
4. Using spanner 1860834000, undo the bolts fixing the camshaft housing to the cylinder head.
5. Lift the head, as much as necessary, and position the pair of tools 1860988000 for retaining the tappets, then remove the camshaft housing from the cylinder head, tools 1860992000 and the camshaft housing gasket.



P4A24HX04



P4A24HX05



P4A25HX01

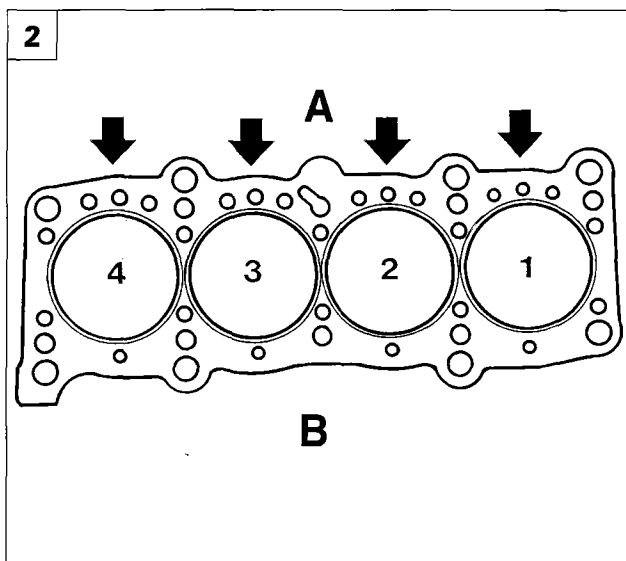
1. Using spanner USAG dia. 10 233 1/2 S or a similar tool, undo the bolts fixing the cylinder head to the cylinder block/crankcase; then remove the cylinder head and the gasket underneath.

**Fitting cylinder head**

2. Fit the gasket on the cylinder block with the word "ALTO" facing the operator, taking care not to get the gasket or the cylinder block plane dirty or covered in lubricant. The openings shown by the arrows have increasing diameters from the 1st to the 4th cylinder so that the engine coolant is distributed evenly throughout the cylinder block/crankcase.

A = exhaust side

B = inlet side



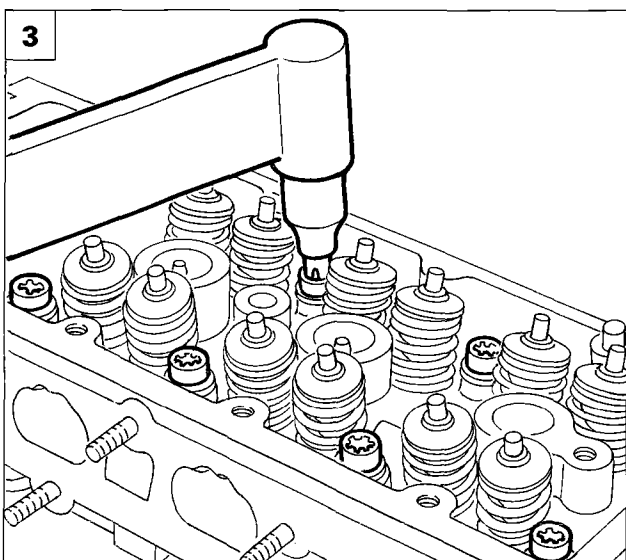
P4A25HX02



*ASTADUR type cylinder head gaskets are used. These gaskets, on account of the special material from which they are made, undergo a polymerization process during the operation of the engine, so that they harden considerably during usage.*

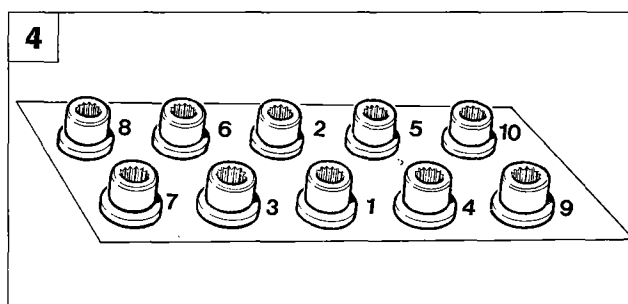
*In order for the polymerization of the cylinder head gaskets to take place it is necessary to:*

- keep the gasket in its sealed nylon container;
- to only take it out of its container shortly before fitting;
- not to lubricate or get oil on the gasket, taking care that the surfaces of the cylinder head and crankcase are clean.



P4A25HX03

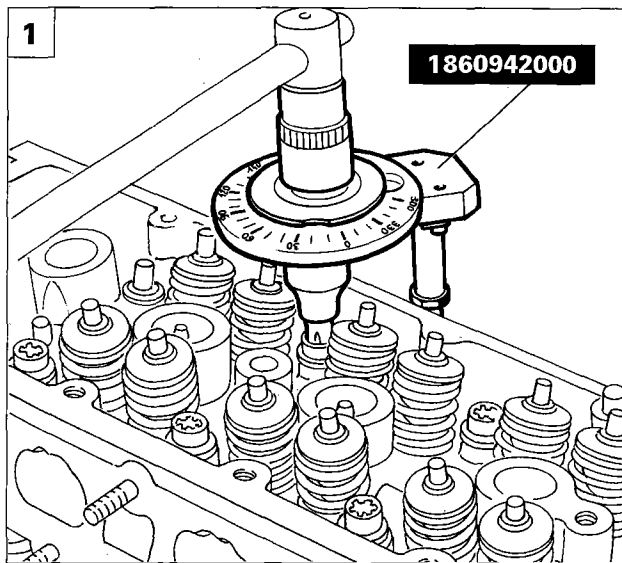
- 3-4. Position the cylinder head and tighten the bolts to a torque of 2 daNm following the tightening order illustrated in the diagram.



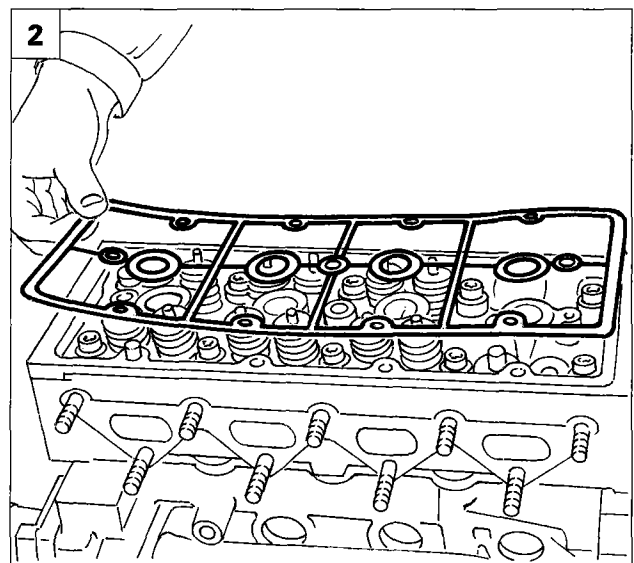
P4A25HX04



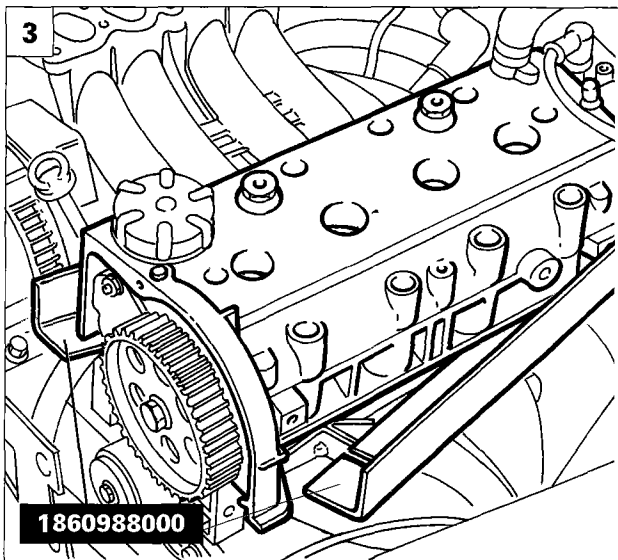
### 10.



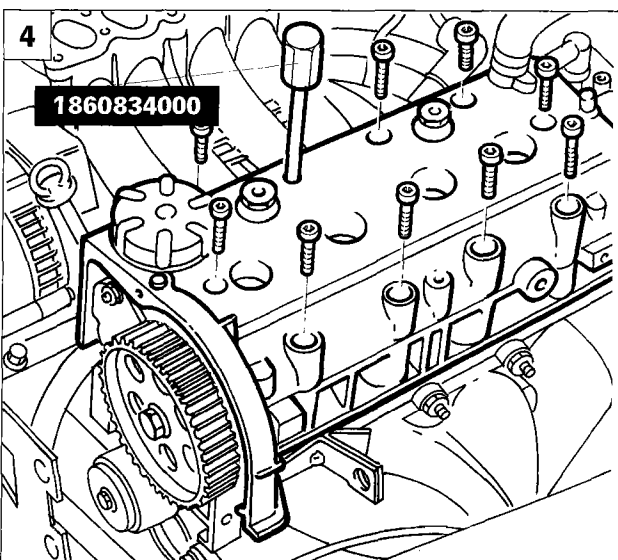
P4A26HX01



P4A26HX02



P4A24HX05



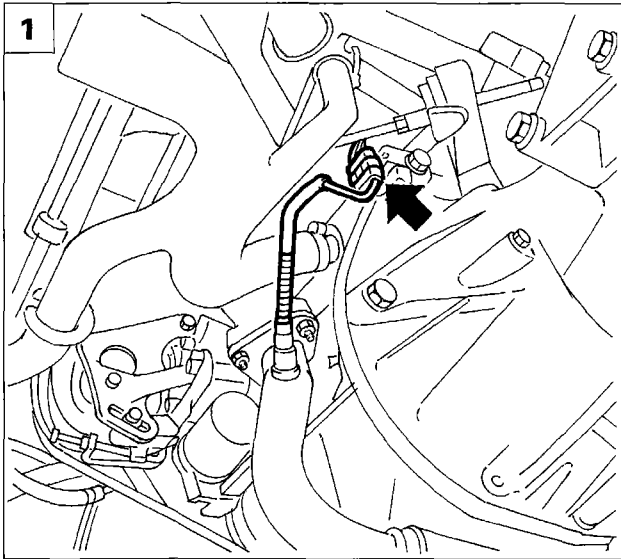
P4A24HX04



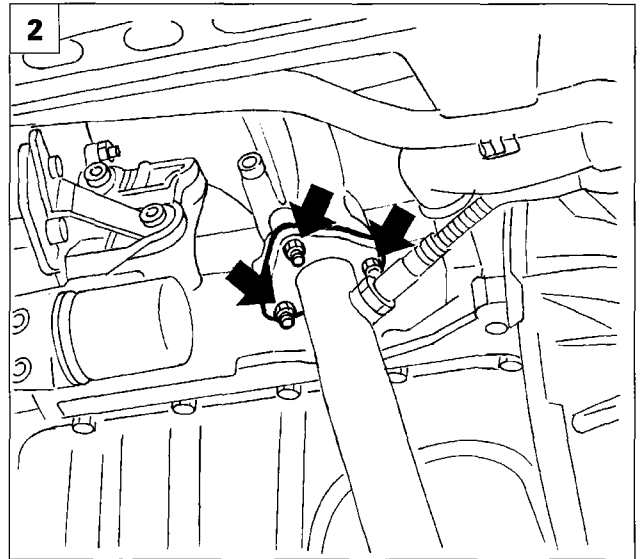
1. Tightening the bolts fixing the cylinder head to the cylinder block/crankcase:  
1st STAGE: Tighten the bolts to a torque of 3 daNm, following the order illustrated previously.  
2nd STAGE: Tighten the bolts through 90° using tool 1860942000.  
3rd STAGE: Further tighten all the bolts through 90°.
2. Position the gasket for the camshaft housing on the cylinder head support surface.
3. Position the camshaft housing in cylinder head, then remove the tappet retaining tools 1860988000.
4. Using spanner 1860834000, tighten the bolts fixing the camshaft housing to the cylinder head to the recommended torque; then position the protective plugs for the actual bolts.



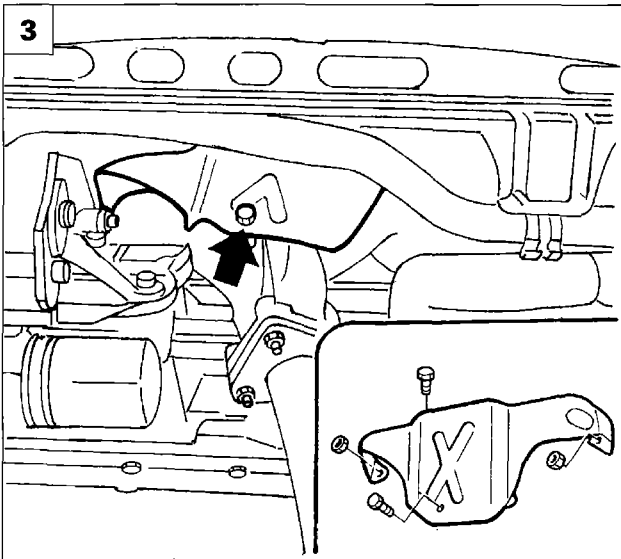
*Proceed with refitting the remaining components, reversing the order described for the removal. To refit the timing belt, refer to the previous paragraph.*



P4A27HX01



P4A24HX02

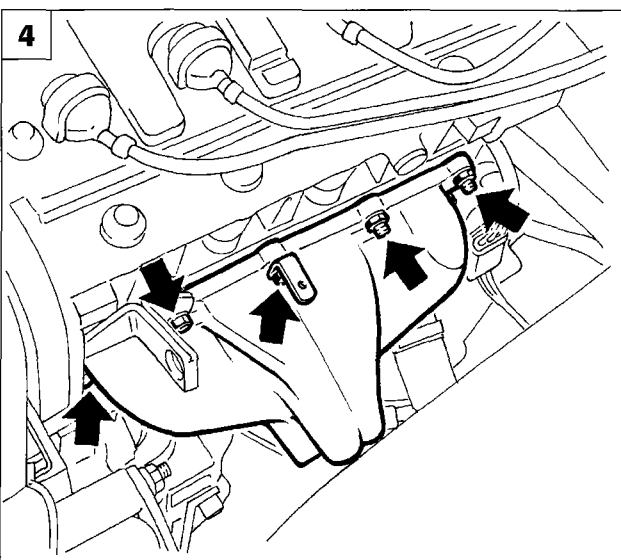


P4A19HX02



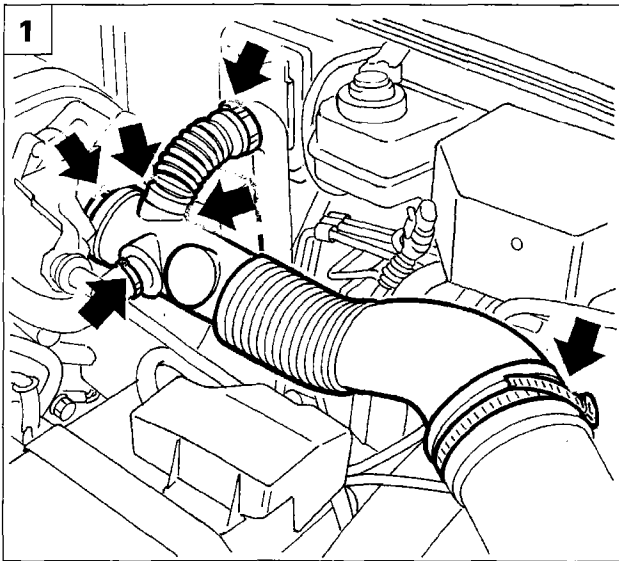
**REMOVING-REFITTING EXHAUST MAN-IFOLD**

1. Disconnect the Lambda sensor connector.
2. Undo the nuts fixing the first section of the exhaust pipe to the manifold.
3. Undo the heat shield fixings and remove it.
4. Undo the nuts fixing the exhaust manifold and remove it complete with the gasket underneath.

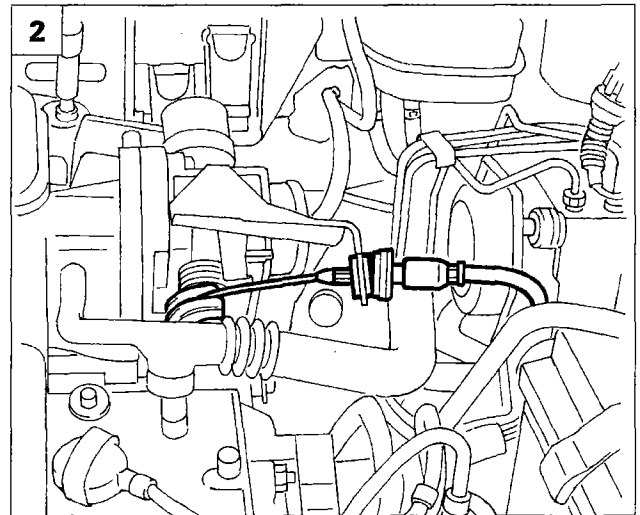


P4A27HX02

**10.**



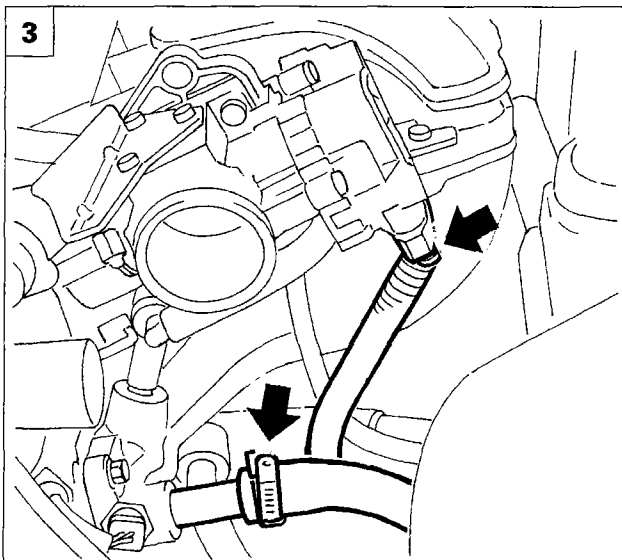
P4A18HX01



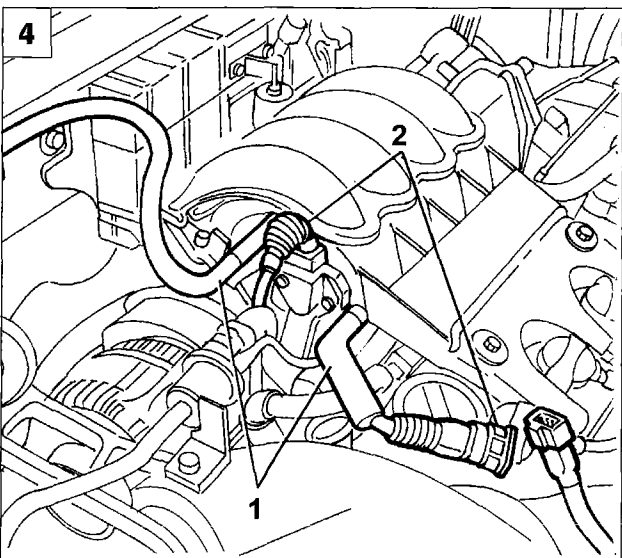
P4A18HX02

**REMOVING-REFITTING INLET MANIFOLD**

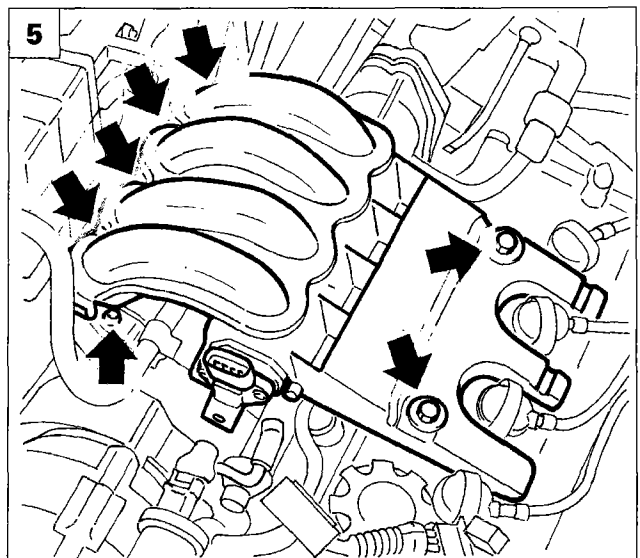
1. Remove the resonator complete with air inlet hose disconnecting the bands shown and undoing the fixing bolts. Also disconnect the oil vapour recovery pipe from the lower part of the resonator.
2. Disconnect the accelerator cable
3. Disconnect the connections shown and the brake servo vacuum pipe from the butterfly casing.
4. Disconnect the pipes (1) and the connections (2) from the top part of the inlet manifold.
5. Remove the fixing bolts for the top part of the inlet manifold using a USAG TX 27 spanner or similar tool, disconnect the oil vapour recovery pipe (1) and remove the manifold from the vehicle complete with butterfly casing.



P4A18HX03

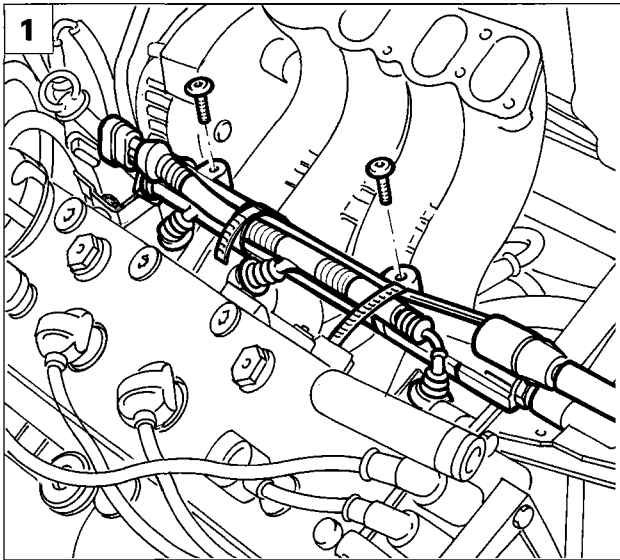


P4A18HX04

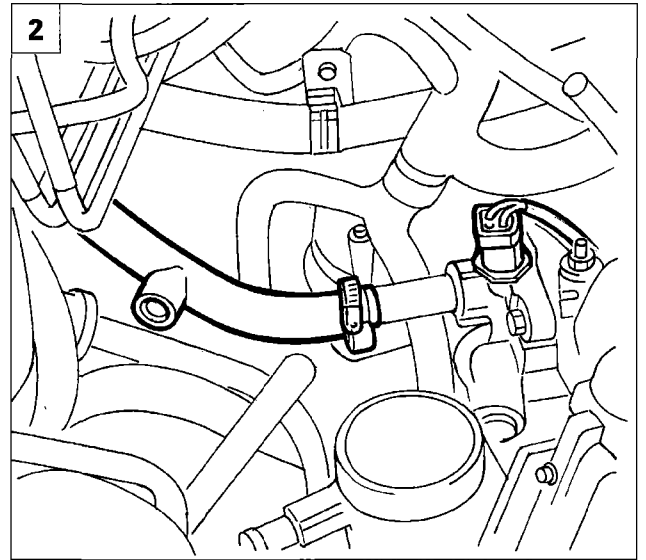


P4A18HX05

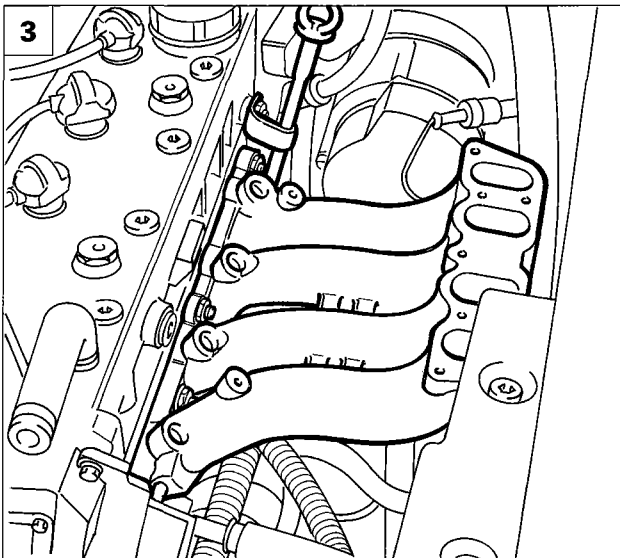
**10.**



P4A19HX01



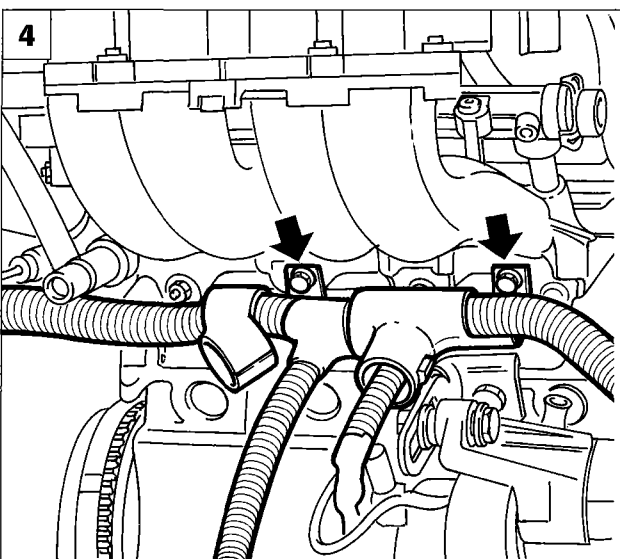
P4A23HX03



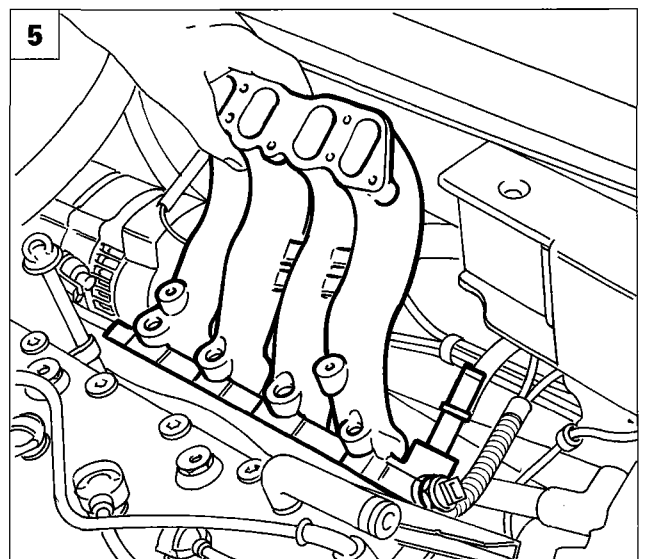
P4A29HX03



1. Undo the bolts fixing the fuel manifold, remove it complete with injectors and position it at the side of the work area.
2. Disconnect the heater outlet pipe and the connection (1).
3. Undo the nuts fixing the inlet manifold and release the engine oil dipstick from the mounting bracket.
4. Gently extract the inlet manifold and release the injection cables from the rear part, acting on the bolts fixing the mounting brackets.
5. Then extract the lower part of the inlet manifold.

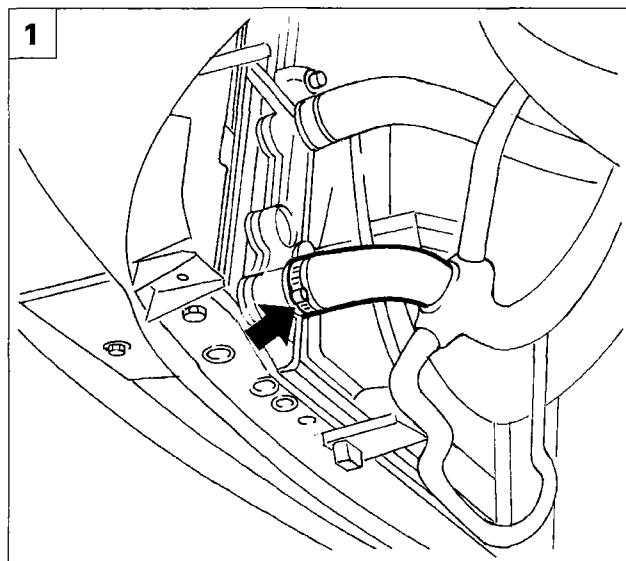


P4A24HX01



P4A29HX05

### 10.



P4A23HX01

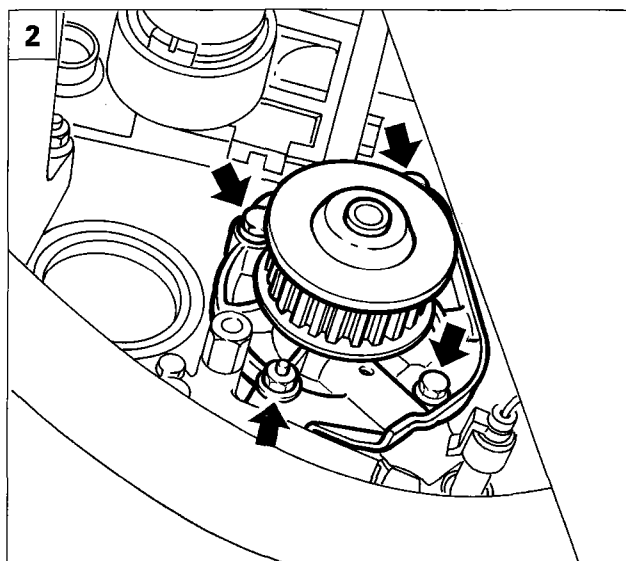


#### REMOVING-REFITTING WATER PUMP

1. Position the vehicle on a lift, disconnect the negative battery lead, then drain the coolant disconnecting the hose shown from the lower part of the radiator.



*Remove the timing drive belt as described in the previous paragraphs.*

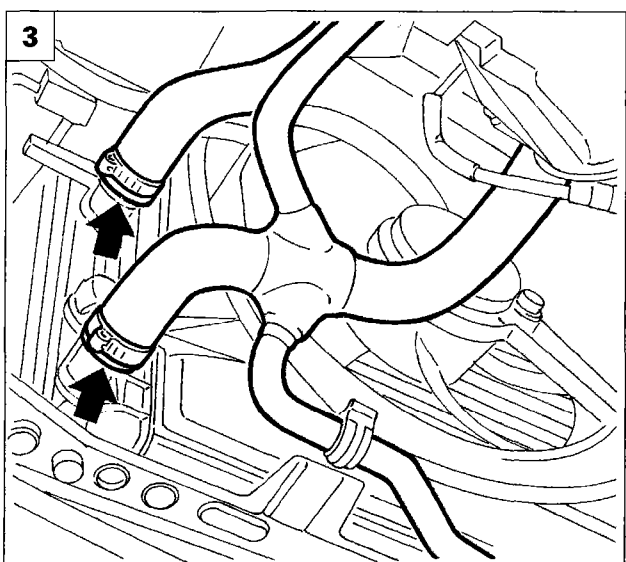


P4A30HX02

2. Remove the water pump acting on the fixings shown in the diagram.



*Refit the components removed previously and tension the timing belt as described in the previous paragraphs.*



P4A30HX03

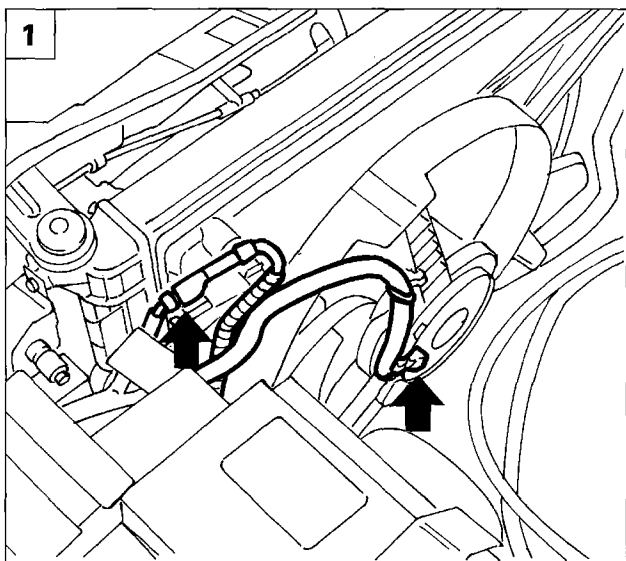


#### REMOVING-REFITTING RADIATOR

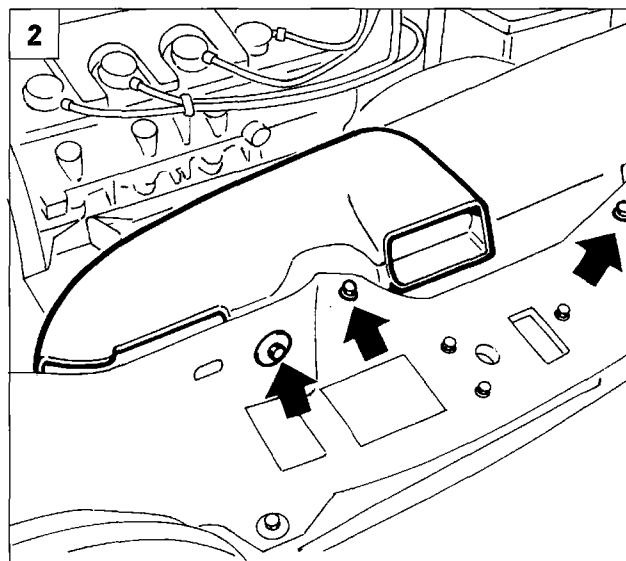
Position the vehicle on a lift, disconnect the negative battery lead, then proceed as described below:

3. Drain the coolant, disconnecting the pipes shown in the diagram.

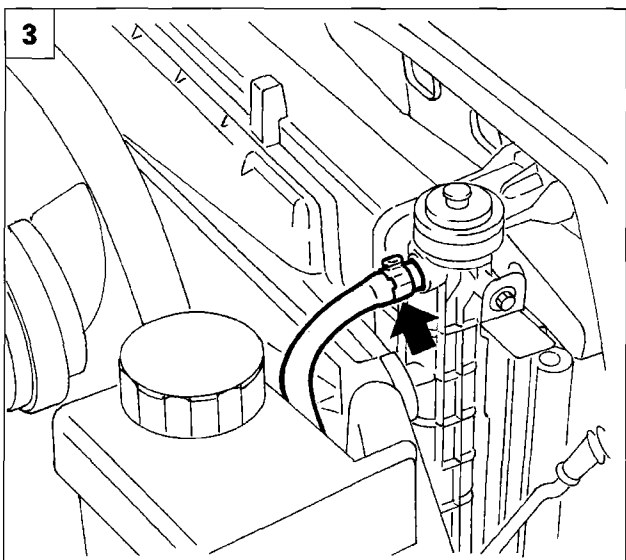
**10.**



P4A31HX01



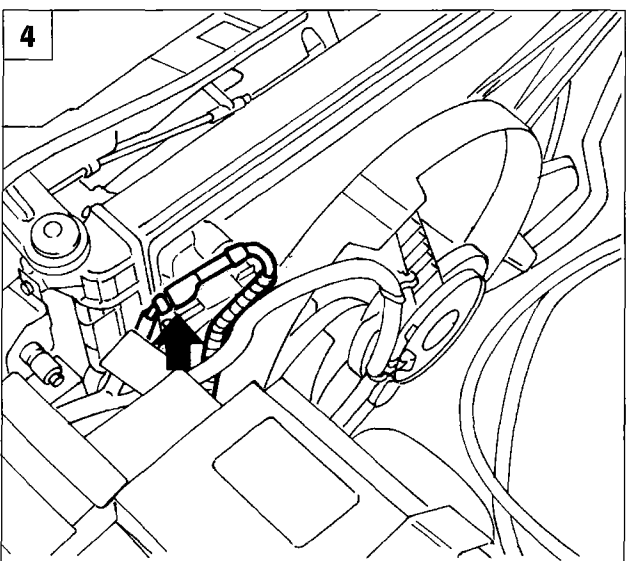
P4A31HX02



P4A31HX03



1. Disconnect the fan supply connections.
2. Undo the three bolts and remove the air intake disconnecting it from the air filter hose.
3. Open the band and disconnect the pipe between the radiator and the tank.
4. Remove the engine cooling fan, undoing the fixing bolts, then undo the bolts fixing the radiator to the condenser and to the bodyshell and extract the radiator upwards.



P4A31HX04

# 10.

## PROCEDURE FOR REFILLING THE ENGINE COOLING SYSTEM (version with heater)

System total capacity: 4.67 litres

### Instructions for draining the circuit

If necessary, the system should be drained as follows:

1. Remove the expansion tank cap (3) and open the bleed valve (5) on the radiator, the bleed valve (6) on the heater inlet hose and the bleed valve (7) on the heater outlet hose.
2. Disconnect the coolant return pipe from the radiator (12) and recover the engine coolant which comes out in a special container. When the operation is completed, restore the pipe connection (12) with the radiator, using a new band.

### Instructions for refilling the circuit

1. Check that the bleed valve (5) on the radiator, the bleed valve (6) on the heater inlet hose and the bleed valve (7) on the heater outlet hose are open.
2. Fill the system slowly introducing coolant (a mixture of 50% water and paraflu), until coolant comes out of the bleed valve (5) on the radiator, then close it.  
Continue filling until coolant comes out of the bleed valve (6) on the heater inlet hose (at this point coolant will not come out of the bleed valve (7) on the heater outlet hose and the level in the expansion tank should exceed the MAX mark). Then close the bleed valves (6) and (7) and the plug on the expansion tank (3).
3. Working from inside the vehicle, set the heating at maximum, turning the air temperature adjustment knob to the maximum (red) setting and the fan speed adjustment knob to the maximum ventilation position.
4. Start up the engine and keep it idling for about 2-3 minutes. Partly open (2 - 3 threads) the bleed screw (7) on the heater outlet hose in order to bleed the heater completely, slowly increase the engine speed until coolant comes out of this bleed screw, then close it.
5. Then carry out gradual, periodic accelerations (about every 30 seconds) to 3/4 of the maximum power. During this operation, check the engine coolant temperature gauge and check that hot air is coming out of the air vents; if this is not the case, loosen the bleed screw (7) and repeat the procedure described in point 4.

This operation should be carried out until the engine cooling fan comes on for the first time.

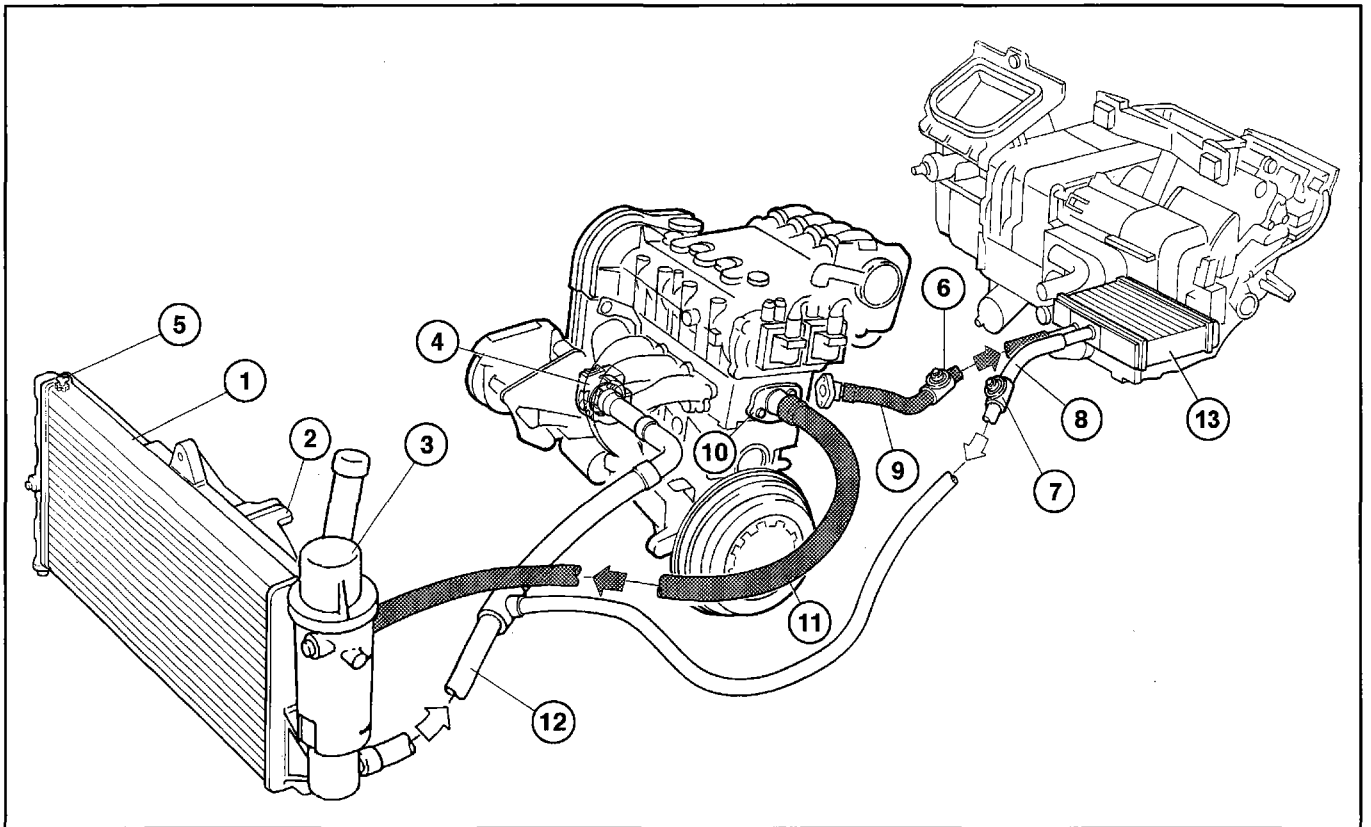
Let the engine idle again, undo the bleed screw (5) on the radiator carefully, on account of the high temperature of the coolant, to allow the escape of any residual air.

Slowly increase the engine speed until coolant comes out of the bleed screw (5); retighten the bleed screw (5) and let the engine idle once again. Keep the engine idling for at least 5 minutes. Switch off the engine and wait until it cools down. The coolant level, when cold, should settle down to between the two MIN and MAX reference marks on the expansion tank.

When the operation is completed, check that the quantity of fluid introduced is at least the same as or more than that recovered when draining the system.

**NOTE** *If the coolant should boil during the operations described in point 5, the procedure should be halted and repeated starting from the operation described in point 4.*

Engine cooling system components (version with heater)



4A33HX01

1. Engine cooling radiator
2. Engine cooling fan
3. Coolant expansion tank
4. Engine cooling system pump
5. Bleed cock on radiator
6. Bleed plug on heater inlet pipe
7. Bleed plug on heater outlet pipe
8. Coolant return pipe from car interior heater radiator to engine cooling radiator
9. Coolant supply pipe to car interior heater radiator
10. Coolant by-pass thermostat
11. Coolant supply pipe from thermostat to engine cooling radiator
12. Coolant return pipe from radiator to pump
13. Car interior heater radiator



### 10.

#### PROCEDURE FOR REFILLING ENGINE COOLING SYSTEM (version with air conditioning)

Total capacity of system: 4.45 litres

##### Method for draining the circuit

The system can, if necessary, be drained as follows:

1. Remove the cap from the expansion tank (3) and open the bleed screw (5) on the heater inlet hose and the bleed screw (6) on the heater outlet hose.
2. Disconnect the coolant return pipe (11) from the radiator and recover the engine coolant which comes out in a suitable container. When this operation is completed, restore the connection for the pipe (11) with the radiator, using a new band.

##### Method for refilling the circuit

1. Check that the bleed screw (5) on the heater inlet hose and the bleed screw (6) on the heater outlet hose are open.
2. Refill the system by slowly introducing coolant (a mixture of 50% water and paraflu) until coolant comes out of the bleed screw (5) on the heater inlet hose and the bleed screw (6) on the coolant outlet hose. Then close bleed fittings (5) and (6).

Complete the refilling until the MAX reference on the expansion tank (3) is reached. Then refit the cap on the tank (3).

3. Working from inside the vehicle, set the maximum heating condition, turning the air temperature adjustment knob to the maximum temperature position (red sector) and the fan speed adjustment knob to the maximum ventilation position and switch the air conditioning OFF.
4. Start up the engine and let it idle for about 2-3 minutes. Partly (2-3 threads) open the bleed screw (6) on the heater return hose in order to completely bleed the heater, slowly increase the engine speed until coolant comes out of the above mentioned bleed screw, then close it again.
5. Then carry out gradual, periodic accelerations (about every 30 seconds) until 3/4 of the maximum power speed is reached, at the same time introducing engine coolant into the expansion tank, but not beyond the MAX level. During this operation, check the engine coolant temperature gauge and make sure that hot air is coming out of the vents; if this is not the case, repeat the operations described in point 4.

This operation should be carried out until the engine cooling fan comes on for the first time.

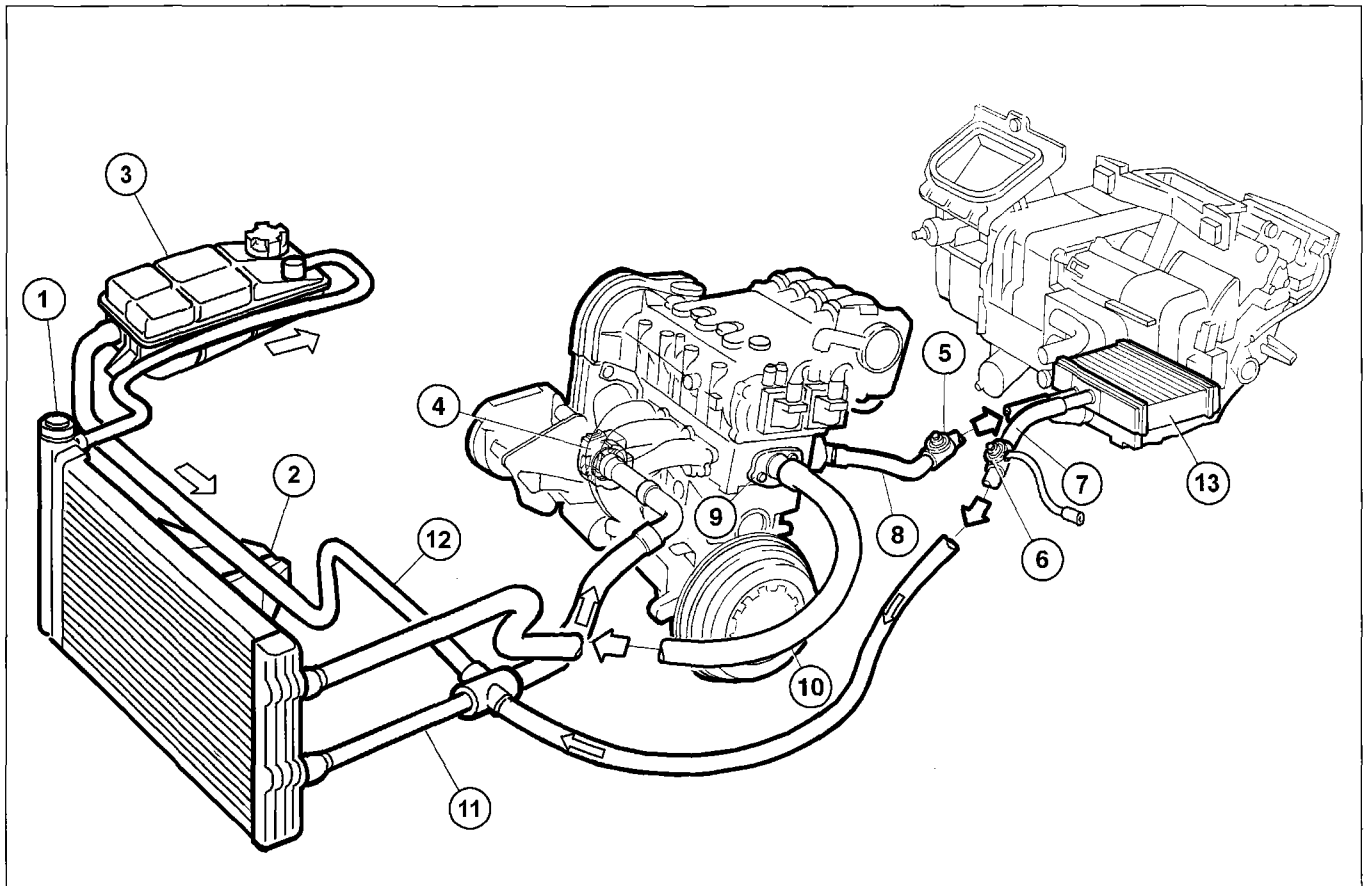
Let the engine idle for at least 5 minutes, then switch it off.

If necessary, top up until the level is between the MIN and MAX marks on the expansion tank. This operation should be carried out after having left the engine too cool down so that the temperature of the coolant is not above 25°C.

When the operation is completed, check that the quantity of fluid introduced is at least equal to that recovered when the system was drained.

**NOTE** *If, during the operations described in point 5, the coolant should boil, the procedure should be interrupted and repeated starting from the operation described in point 4.*

**Engine cooling system components (version with air conditioning)**



P4A35HX01

1. Engine cooling radiator
2. Engine cooling fan
3. Expansion tank
4. Water pump
5. Bleed plug on heater inlet hose
6. Bleed plug on heater outlet hose
7. Coolant return pipe from car interior heater radiator to cooling radiator
8. Coolant supply pipe to car interior heater radiator
9. Coolant by-pass thermostats
10. Coolant supply pipe from thermostat to engine cooling radiator
11. Coolant return pipe from radiator to pump
12. Connecting pipes from radiator to expansion tank
13. Car interior heater radiator



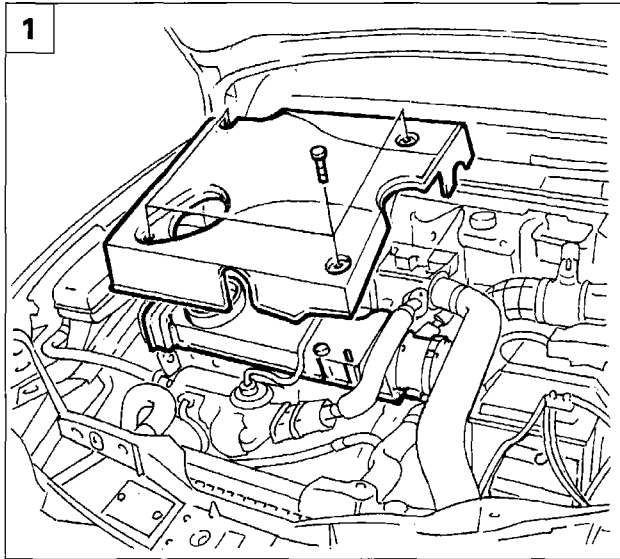
|  | page      |  | page      |
|--|-----------|--|-----------|
| <b>FUEL SYSTEM</b>   | 1         | - Recirculation circuit for vapours coming from the cylinder block/crankcase (blow-by) | 26        |
| - Introduction   | 1         |  |           |
| - System management strategies   | 1         |  |           |
| - Fuel system functional diagram   | 2         |  |           |
| <br>   |           | <b>REMOVING-REFITTING INJECTORS</b>  | <b>27</b> |
| <b>INJECTION SYSTEM WIRING DIAGRAM</b>   | <b>6</b>  | <b>REMOVING-REFITTING DISTRIBUTION MANIFOLD</b>  | <b>30</b> |
| - Injection electronic control unit  | 8         | <b>REMOVING-REFITTING HEATER PLUGS</b>   | <b>34</b> |
| - Diagram showing information arriving at/leaving the injection control unit and sensors/actuators | 10        | <b>REMOVING-REFITTING PRESSURE PUMP</b>  | <b>36</b> |
| - Rpm sensor   | 11        | <b>REMOVING-REFITTING ACCELERATOR PEDAL POTENTIOMETER</b>                              | <b>44</b> |
| - Timing sensor  | 12        |  |           |
| - Air flow meter   | 12        |  |           |
| - Injectors  | 13        |  |           |
| - Engine coolant temperature sensor  | 14        |  |           |
| - Fuel temperature sensor  | 14        |  |           |
| - Fuel pressure sensor   | 14        |  |           |
| - Heater plugs control unit  | 15        |  |           |
| - Accelerator pedal potentiometer  | 15        |  |           |
| - Brake pedal switch   | 16        |  |           |
| - Clutch pedal switch  | 16        |  |           |
| - Excess pressure sensor   | 16        |  |           |
| - Atmospheric pressure sensor  | 16        |  |           |
| <br>   |           |  |           |
| <b>FUEL SUPPLY CIRCUIT</b>   | <b>17</b> |  |           |
| - Immersed (auxiliary) electric pump assembly and fuel gauge                                       | 18        |  |           |
| - Fuel filter  | 18        |  |           |
| - Pressure pump  | 19        |  |           |
| - Fuel pressure regulator  | 19        |  |           |
| - Multi-purpose valve  | 20        |  |           |
| - Supply manifold (rail)   | 20        |  |           |
| - Inertia safety switch  | 21        |  |           |
| <br>   |           |  |           |
| <b>AIR SUPPLY CIRCUIT</b>  | <b>22</b> |  |           |
| - Turbocharger   | 23        |  |           |
| - Exhaust gas circuit  | 23        |  |           |
| <br>   |           |  |           |
| <b>EMISSION CONTROL DEVICE</b>   | <b>23</b> |  |           |
| - Catalytic converter  | 23        |  |           |
| - Exhaust gas recirculation circuit (EGR)  | 24        |  |           |
| - EGR modulating valve   | 25        |  |           |

**10.**

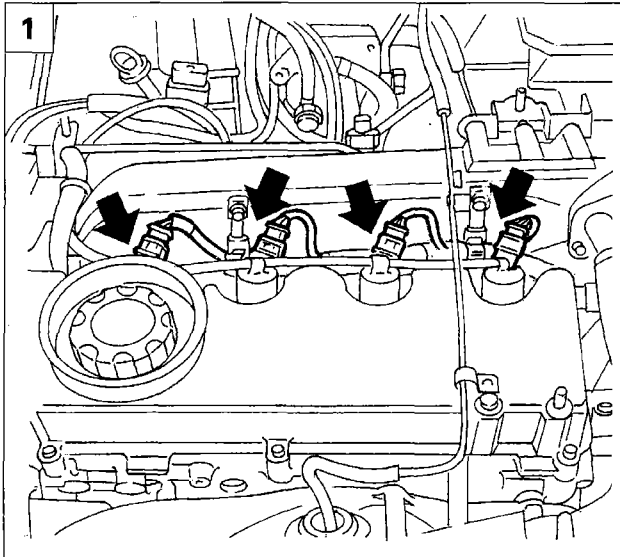
**REMOVING - REFITTING INJECTORS**

Disable the alarm (if fitted) via the switch under the junction unit cover and disconnect the negative battery lead.

1. Undo the bolts and remove the upper engine protective cover.



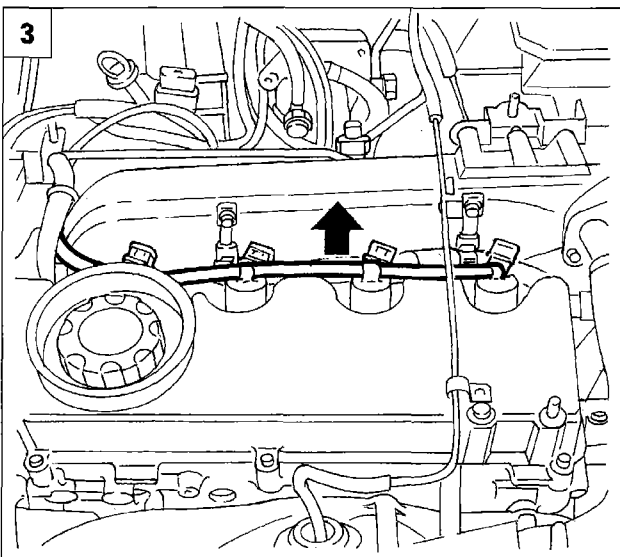
P4A27KJ01



P4A27KJ02



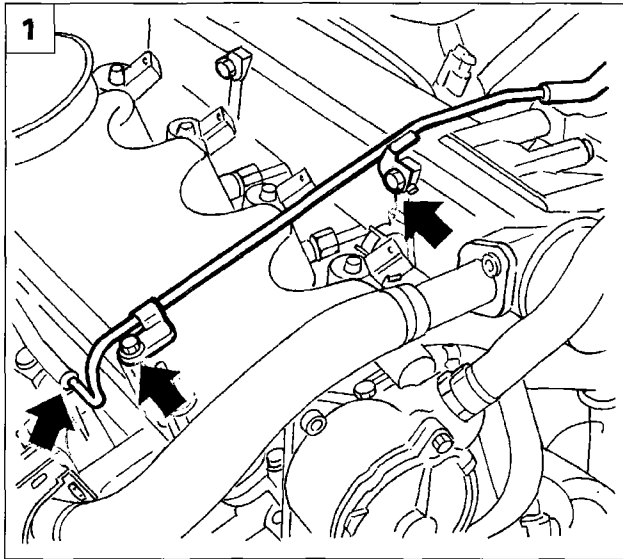
2. Disconnect the electrical connections from the injectors



P4A27KJ03

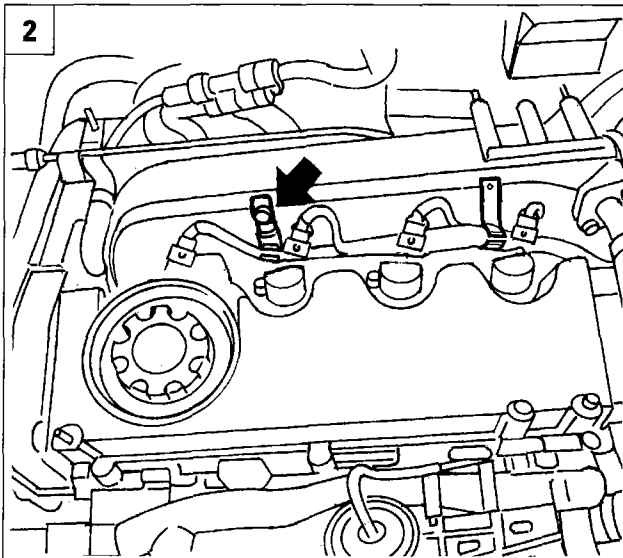
3. Disconnect the fuel return pipe from the injectors.

**10.**



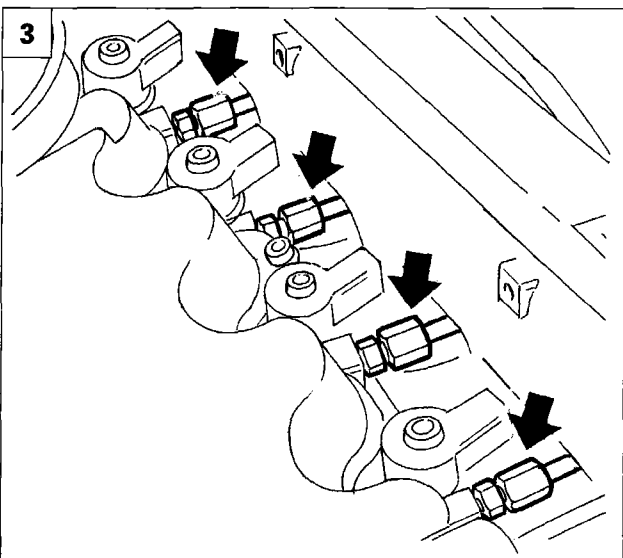
P4A28KJ02

1. Remove the rigid pipe between the E.G.R. valve and the solenoid valve acting on the fixing nuts and releasing the ends of the connector pipes.



P4A28KJ03

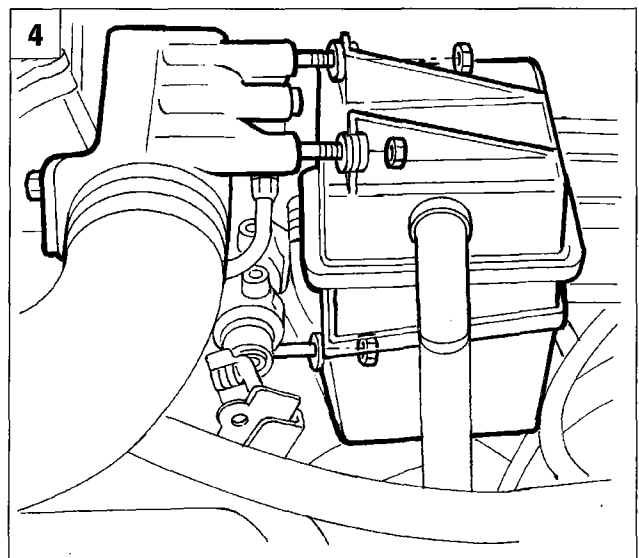
2. Remove the two injector cable loom retaining springs undoing the fixing nut shown in the diagram and place the wiring at the side.



P4A28KJ04

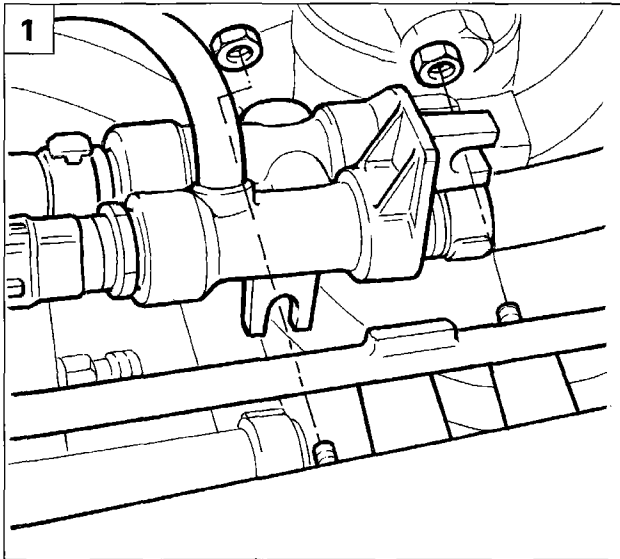
3. Loosen the injector side connectors for the pipes between the injectors and the distribution manifold.

4. Move the oil vapour separator aside, undoing the three fixing nuts.



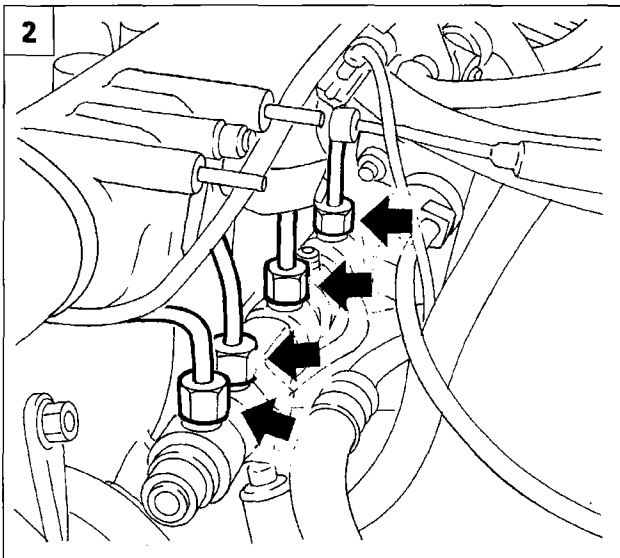
P4A28KJ05

10.



P4A29KJ01

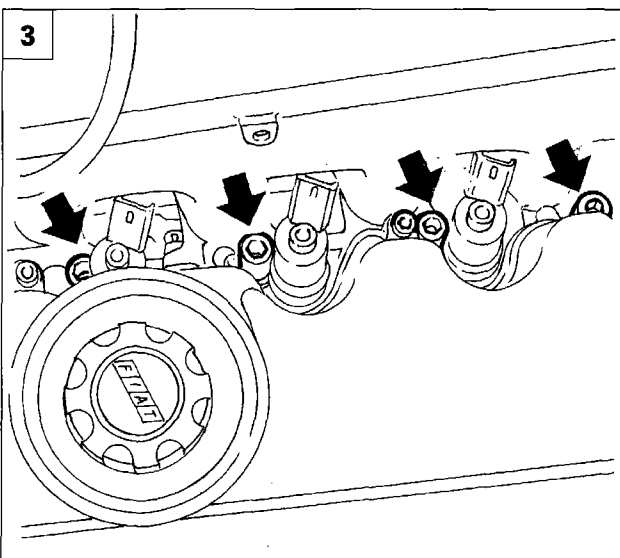
1. Remove the return manifold loosening the two fixing nuts.



P4A29KJ02

2 daNm

2. Undo the manifold side connectors for the pipes from the distribution manifold to the injectors and remove them.

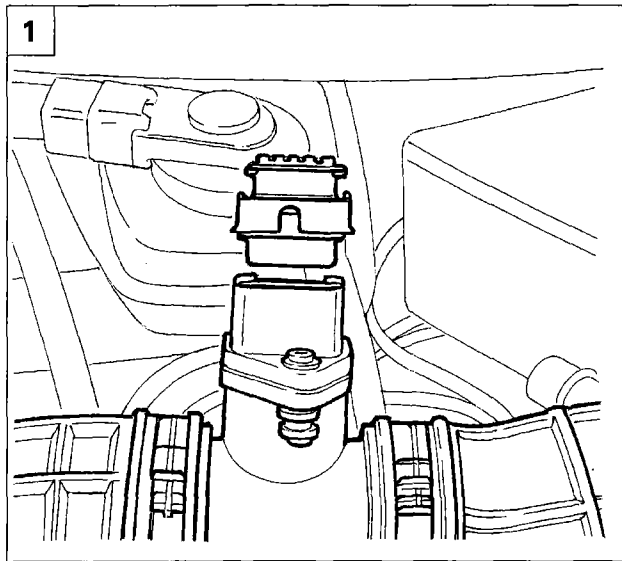


P4A29KJ03

3. Undo the fixing nuts and remove firstly the bracket and then the injectors.

**NOTE** When refitting, reverse the order of the operations described above, tightening the connectors between the return manifold and the injectors to the recommended torque of 20 daNm

# 10.

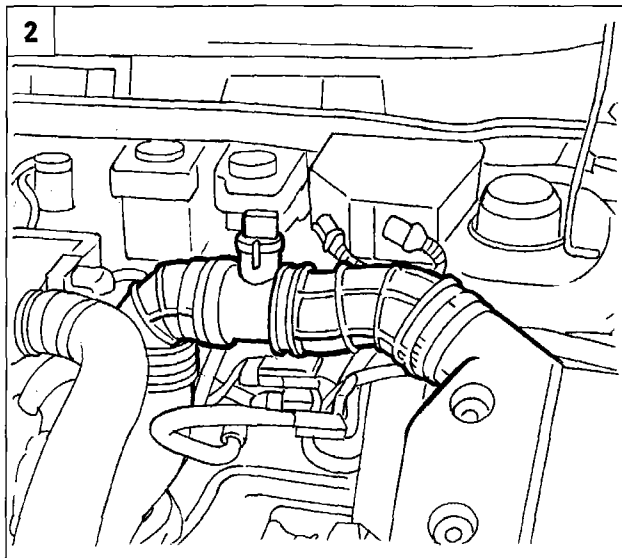


P4A30KJ03

## REMOVING-REFITTING DISTRIBUTION MANIFOLD

- Disable the alarm (if fitted) via the switch under the junction unit cover.
- Disconnect the terminals and remove the battery.

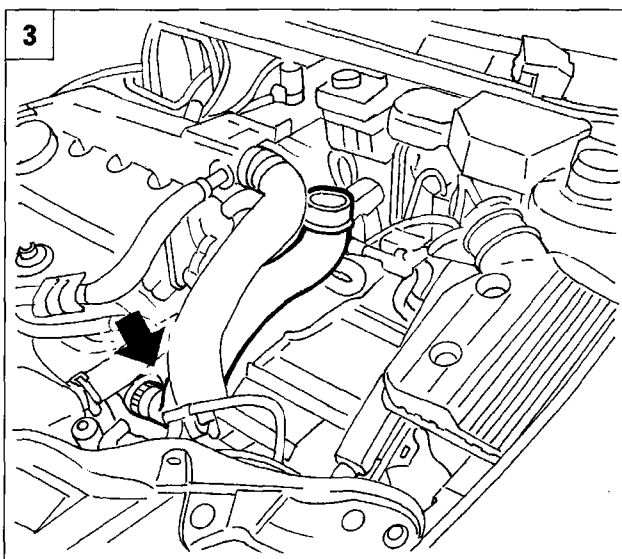
1. Disconnect the electrical connection for the flow meter.



P4A30KJ04



2. Loosen the bands and remove the first section of the pipe between the air filter casing and the turbocharger.

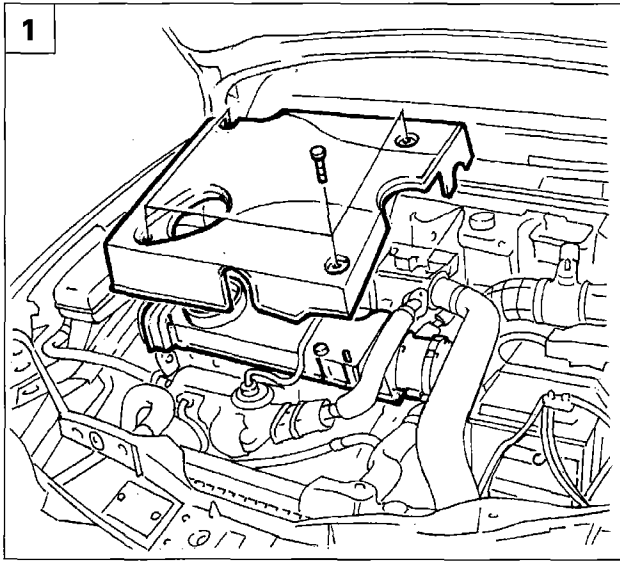


P4A30KJ05

3. Loosen the bands and remove the second section of the pipe between the air filter casing and the turbocharger.

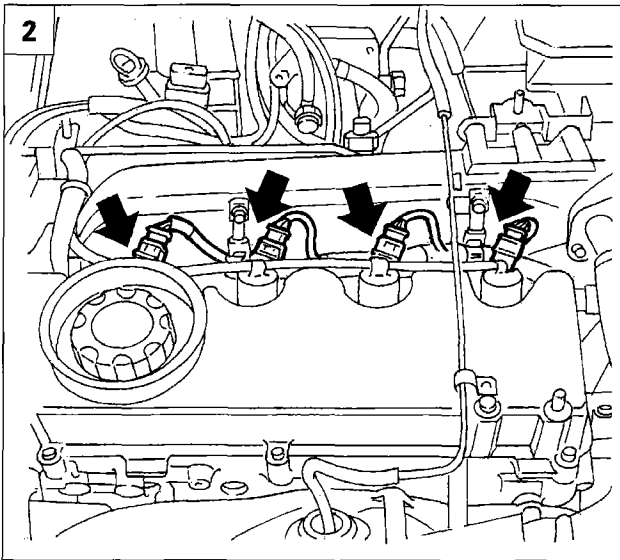


**10.**



P4A27KJ01

1. Undo the bolts and remove the upper engine protective cover.



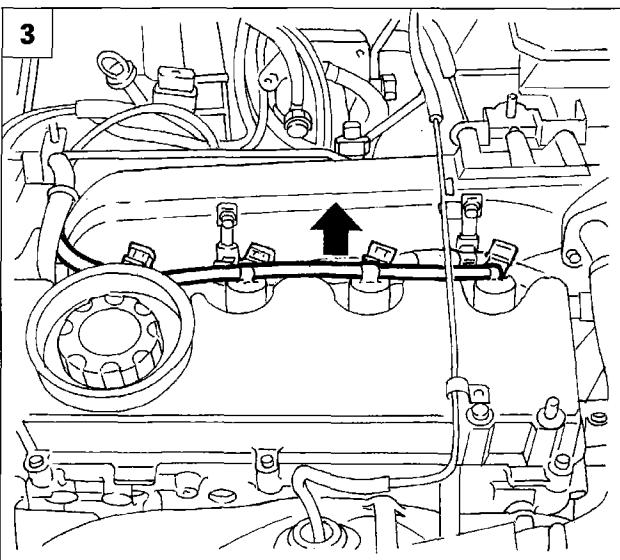
P4A27KJ02



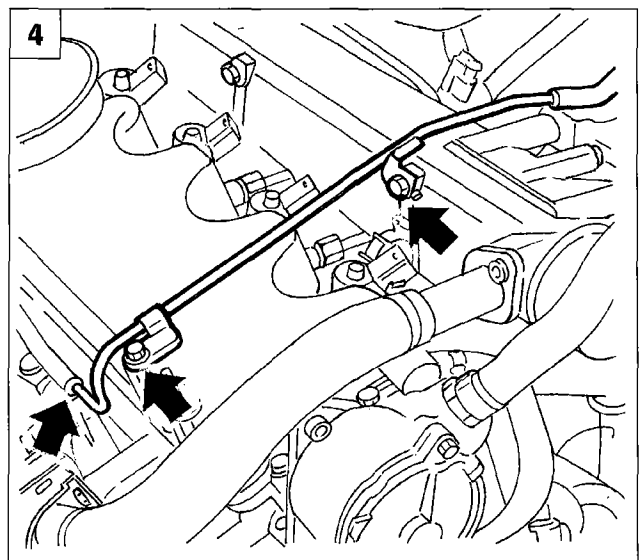
2. Disconnect the electrical connections from the injectors.

3. Disconnect the fuel return pipe from the injectors.

4. Remove the rigid pipe between the E.G.R. valve and the solenoid valve acting on the fixing nuts and releasing the ends from the connector pipes.

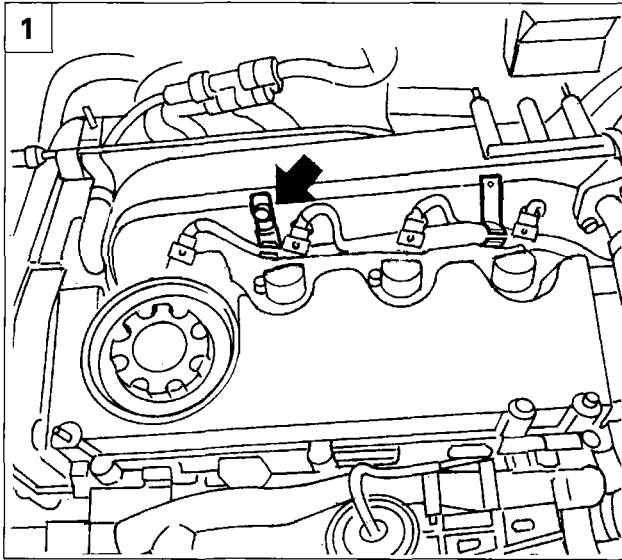


P4A27KJ03

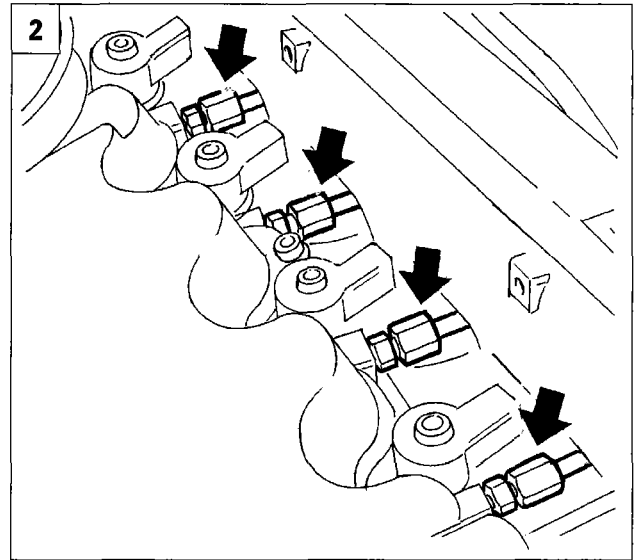


P4A28KJ02

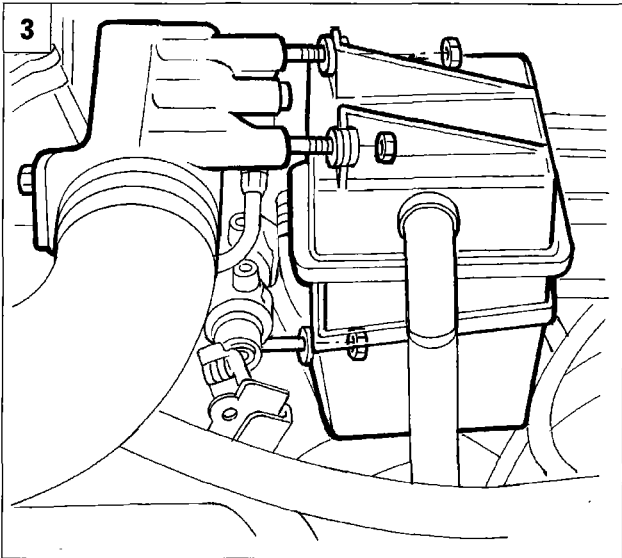
**10.**



P4A28KJ03



P4A28KJ04



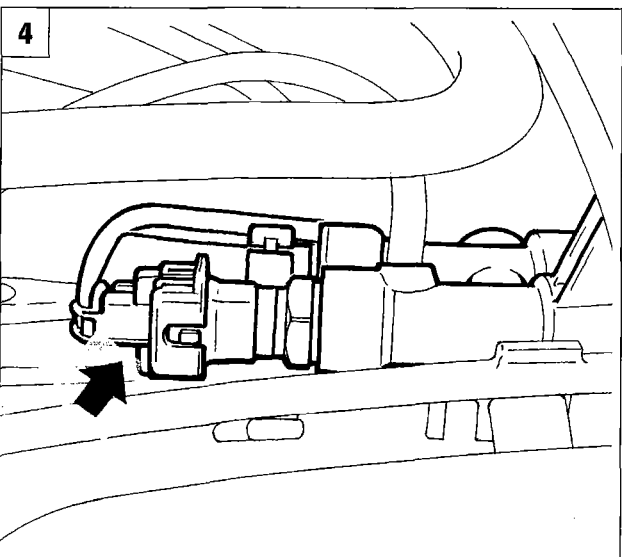
P4A28KJ05



1. Remove the two injector cable loom retaining springs undoing the remaining fixing nut shown in the diagram and then move the wiring aside.

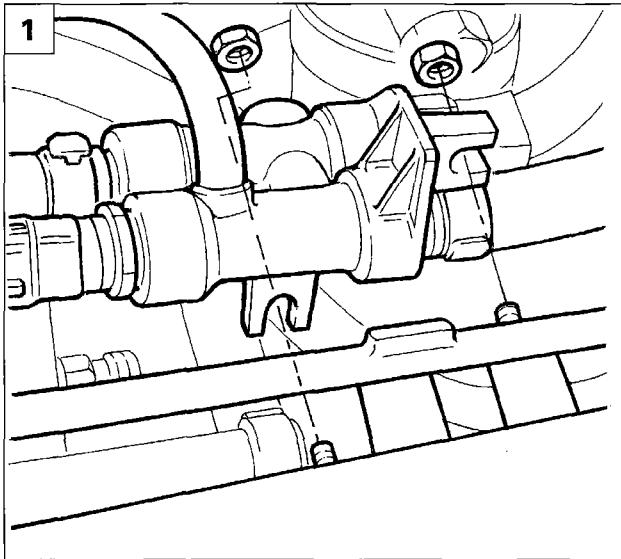
2. Loosen the connectors for the pipes between the injectors and the distributor manifold, injector side.

3. Remove the oil vapour separator undoing the fixing nuts shown in the diagram.

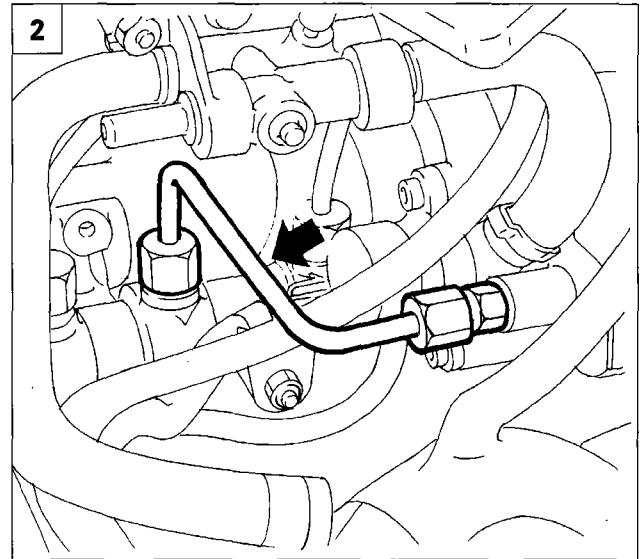


P4A32KJ04

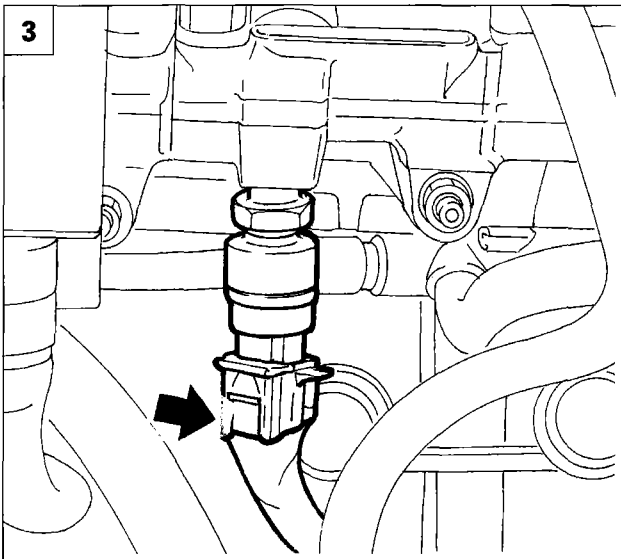
4. Disconnect the electrical connection from the fuel temperature sensor.



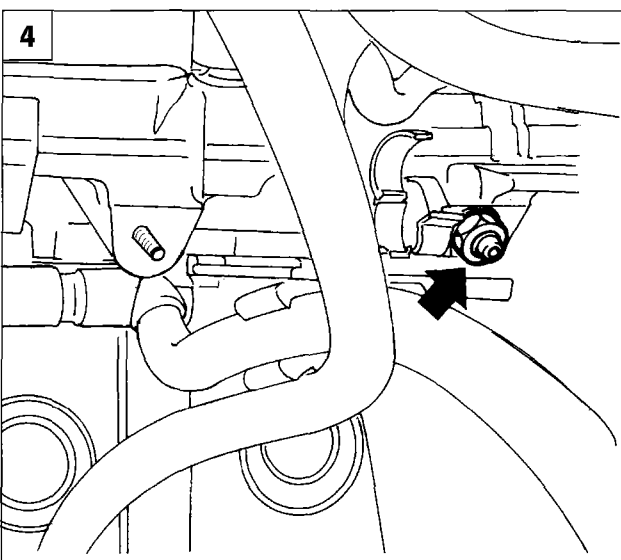
P4A29KJ01



P4A33KJ02



P4A33KJ03

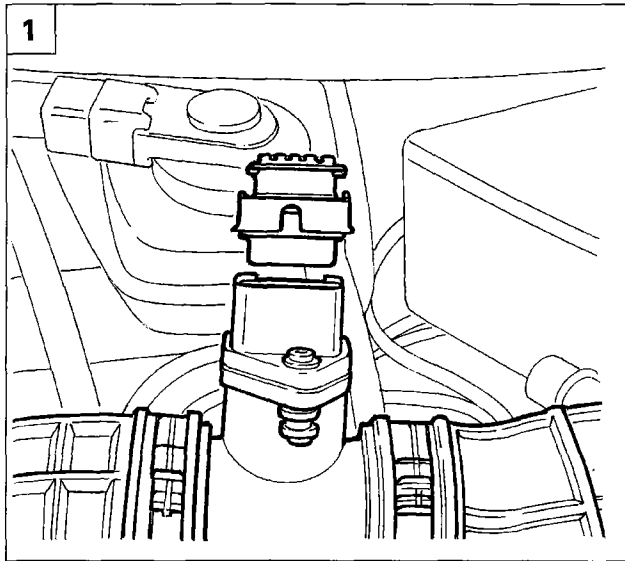


P4A33KJ04

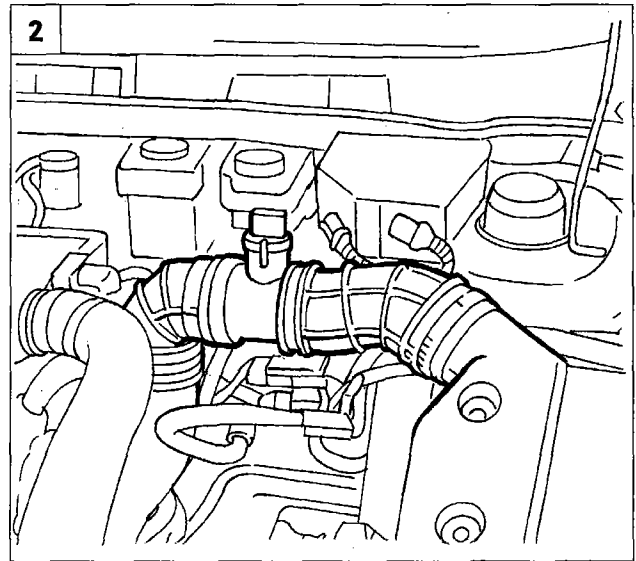
1. Remove the return manifold loosening the two fixing nuts.
2. Remove the fuel supply pipe from the pressure pump to the distribution manifold.
3. Disconnect the electrical connection from the fuel pressure sensor.
4. Undo the remaining nut fixing the distribution manifold and remove it.

**NOTE** To refit, carry out the operations reversing the order described, tightening the connectors for the pipes between the return manifold and the injectors and the fuel supply pipe from the pressure pump to the recommended torque of 20 daNm

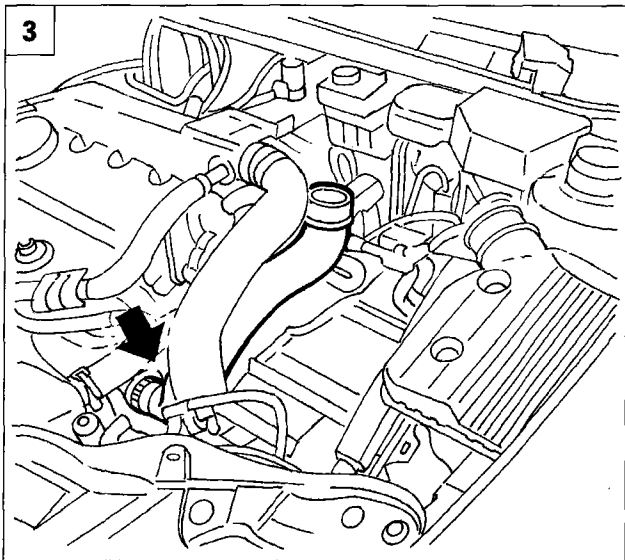
# 10.



P4A30KJ03



P4A30KJ04



P4A30KJ05



## REMOVING - REFITTING HEATER PLUGS

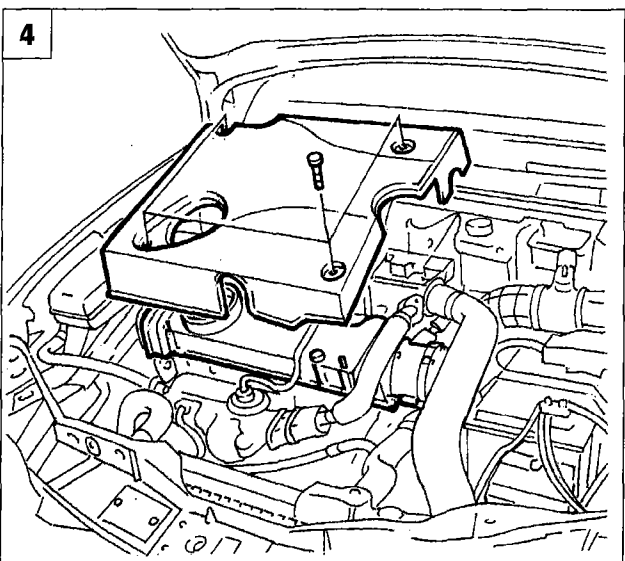
- Disable the alarm (if fitted) via the switch under the junction unit cover.
- Disconnect the terminals and remove the battery.

1. Disconnect the electrical connection for the flow meter.

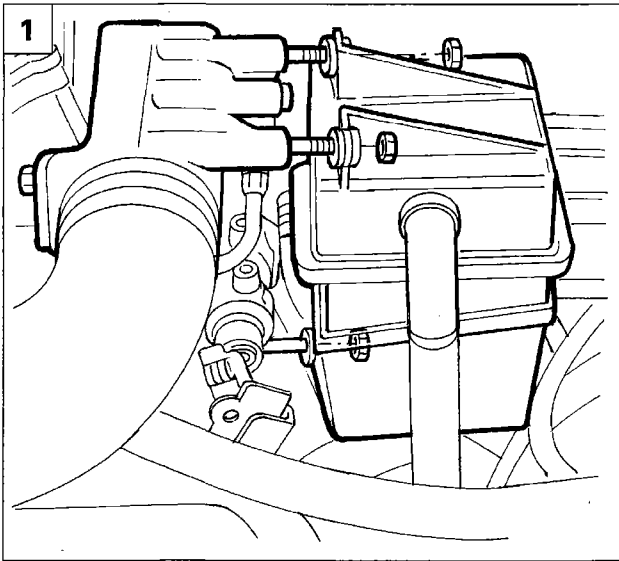
2. Loosen the bands and remove the first section of the pipe between the air filter casing and the turbocharger.

3. Remove the second section of the pipe between the air filter casing and the turbocharger.

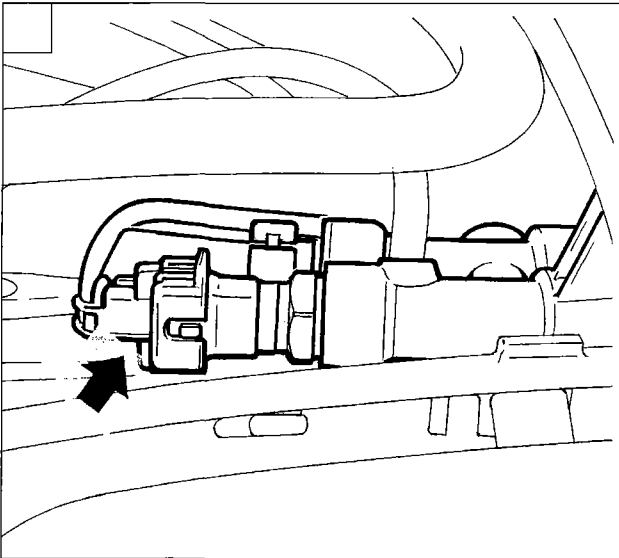
4. Undo the fixing bolts and remove the upper engine protective cover.



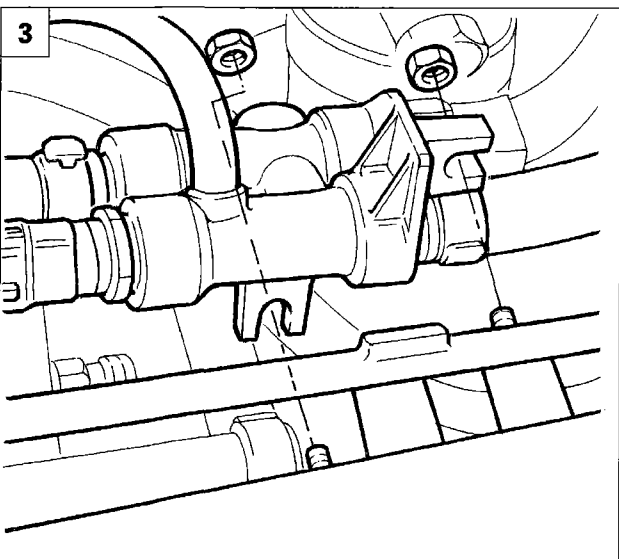
P4A27KJ01



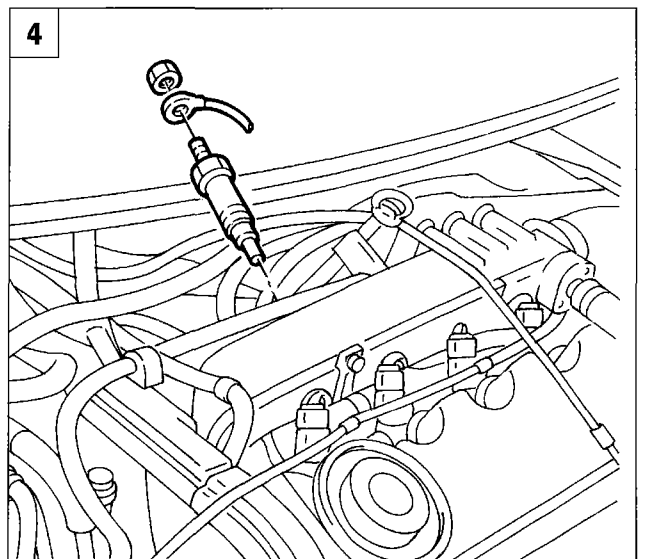
P4A28KJ05



P4A32KJ04



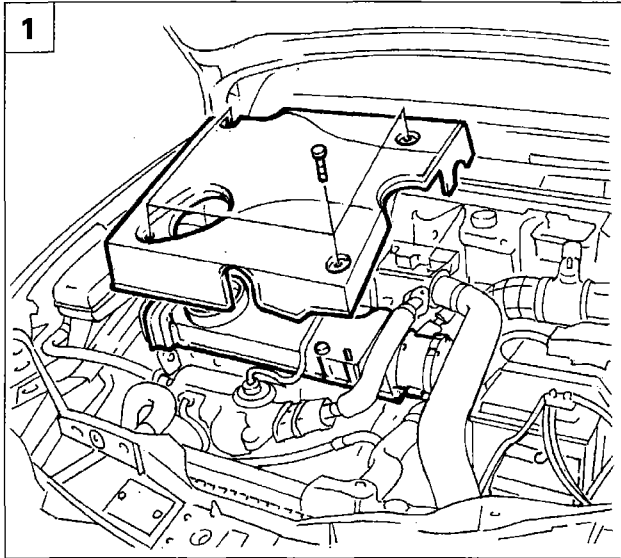
P4A29KJ01



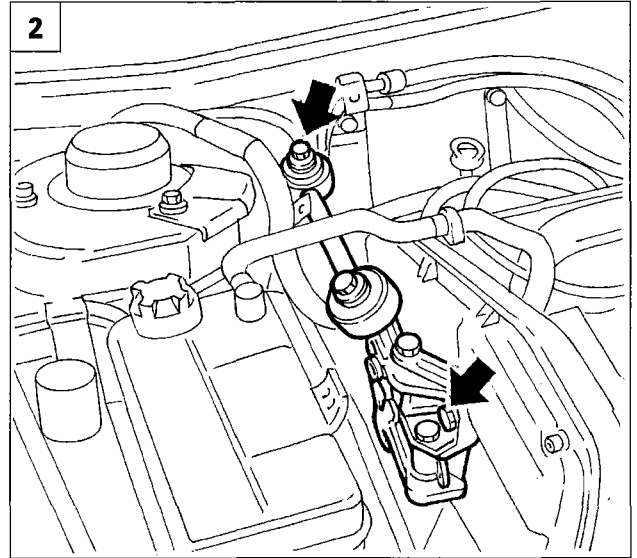
P4A35KJ05

1. Remove the oil vapour separator undoing the three fixing nuts shown in the diagram.
2. Disconnect the electrical connection from the fuel temperature sensor.
3. Remove the return manifold loosening the two fixing nuts.
4. Disconnect the electrical connection undoing the fixing nut and remove the heater plugs using a suitable spanner.

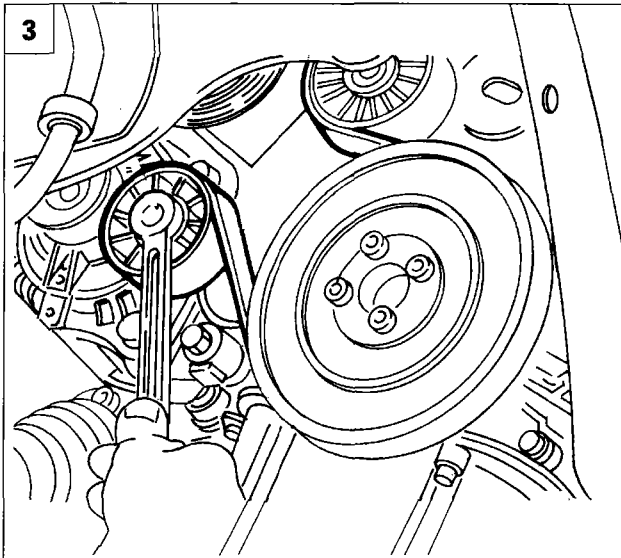
**10.**



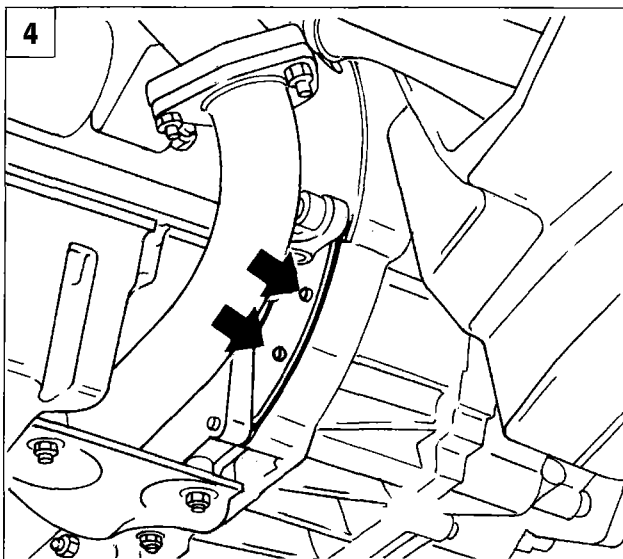
P4A27KJ01



P4A36KJ02



P4A36KJ03



P4A36KJ04



**REMOVING - REFITTING PRESSURE PUMP**



Position the vehicle on a lift.

- Disable the alarm (if fitted) via the switch under the junction unit cover and disconnect the negative battery lead.

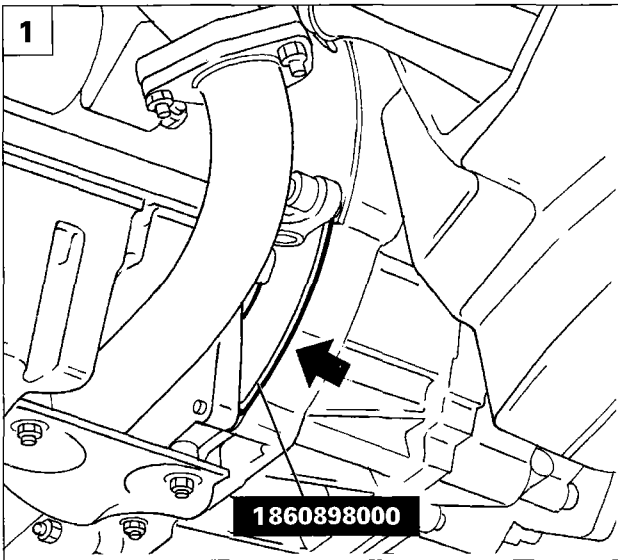
1. Remove the upper engine protective cover.

2. Remove the bracket assembly on the engine and reaction rod undoing the bolts shown in the diagram.

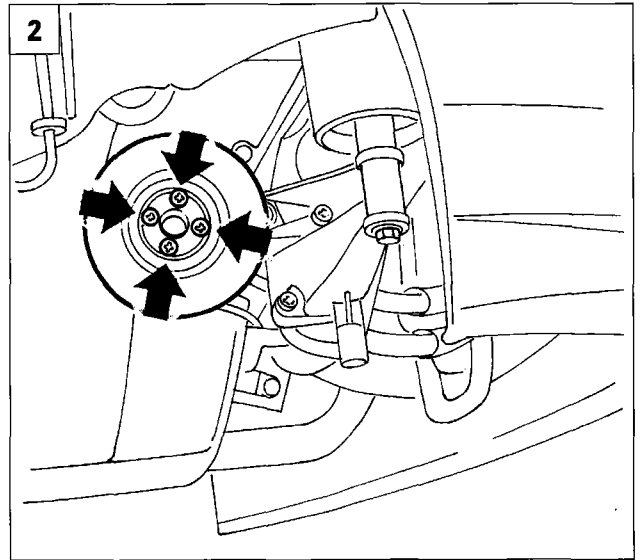
- Remove the right front wheel and the wheel arch liner.

3. Act on the moving tensioner to loosen the tension for the auxiliary drive belt and remove the belt.

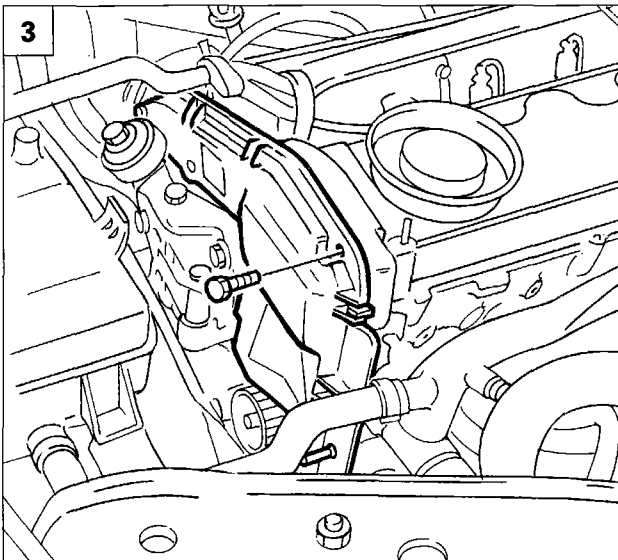
4. Undo the bolts shown in the diagram and remove the flywheel protection.



P4A37KJ01



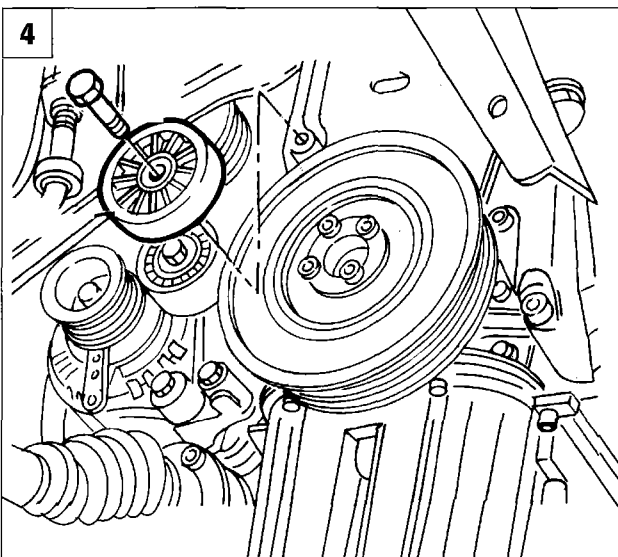
P4A37KJ02



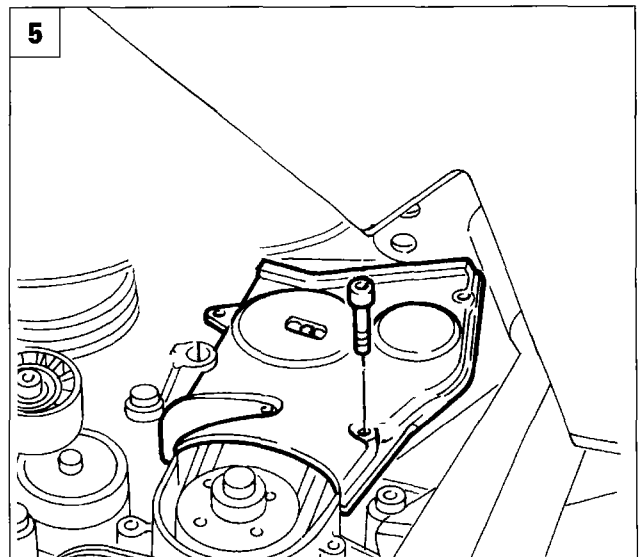
P4A37KJ03



1. Fit the flywheel lock 1860898000.
2. Undo the bolts and remove the damper flywheel  
 - Remove the flywheel lock and lower the lift.
3. Remove the upper timing belt shield undoing the fixing nuts.  
 - Raise the lift.
4. Undo the fixing bolt and remove the single belt fixed tensioner.
5. Undo the fixing bolts and remove the lower timing drive belt shield.

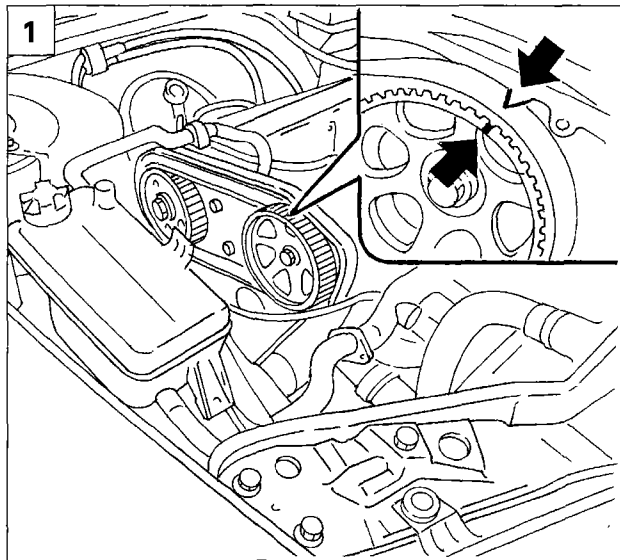


P4A37KJ04

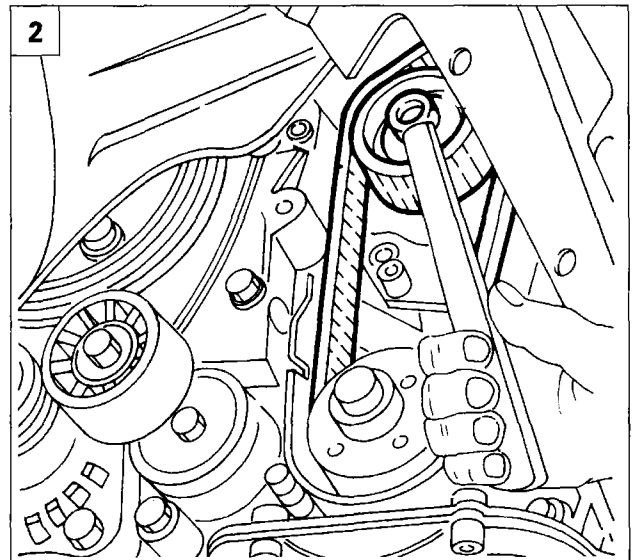


P4A37KJ05

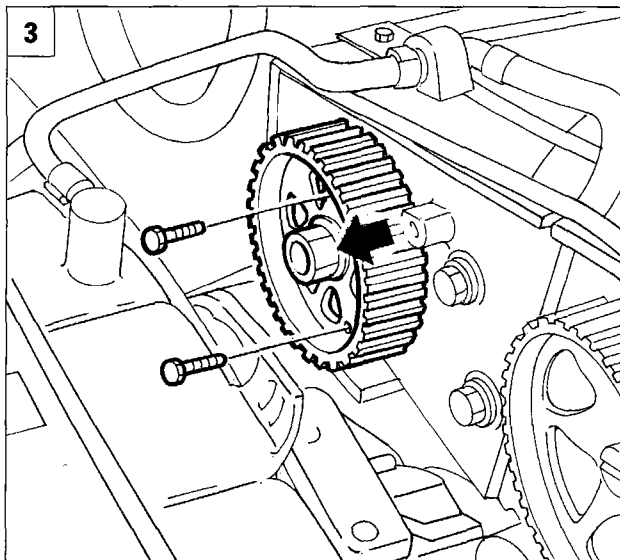
10.



P4A38KJ01



P4A38KJ02



P4A38KJ03

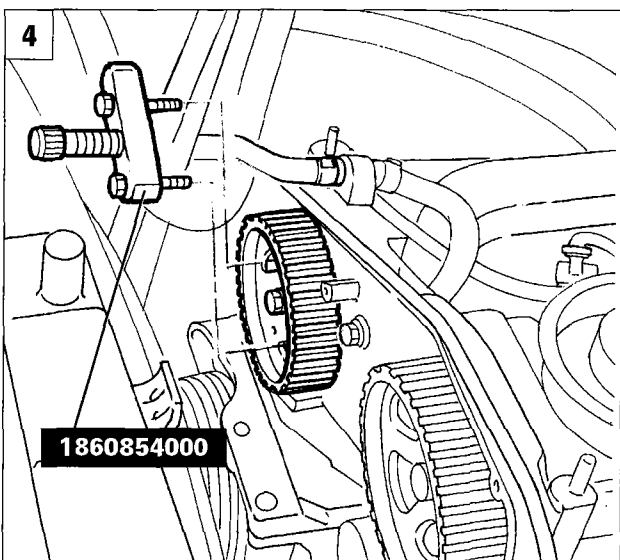


1. Rotate the crankshaft in its normal direction of rotation and position the reference on the toothed pulley in line with the reference for timing cylinder no. 1 at T.D.C.

2. Loosen the nut for the timing drive belt moving tensioner and remove the timing drive belt.

Lower the lift.

3. Tighten the two bolts in the special housings to lock the pressure pump drive pulley and undo the fixing nut.



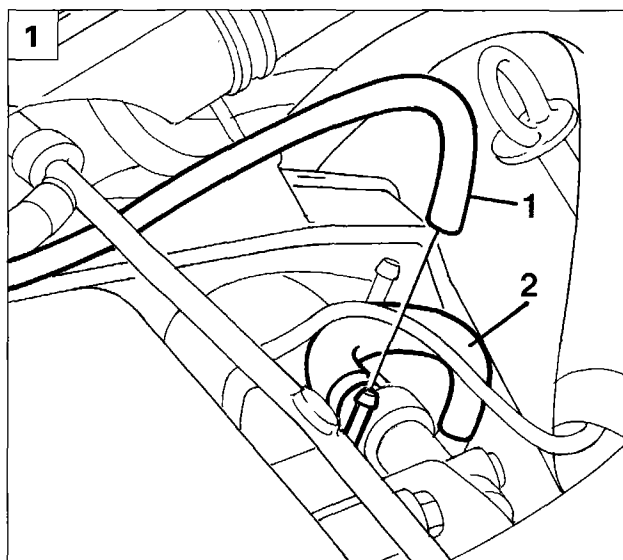
1860854000

P4A38KJ04

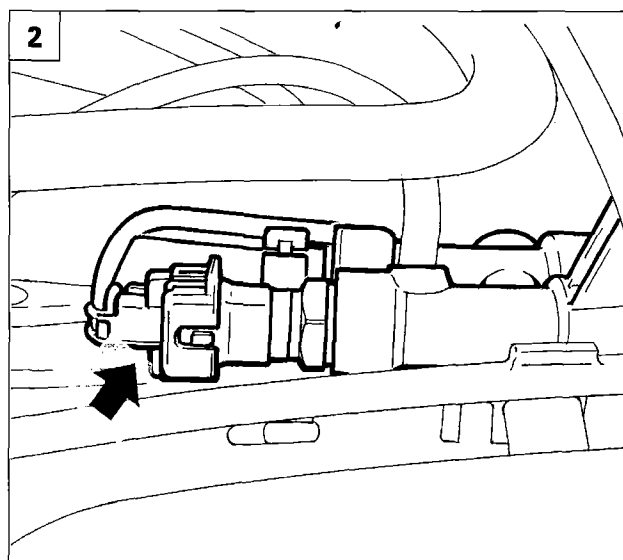
4. Using tool 1860854000, shown in the diagram, remove the pulley.



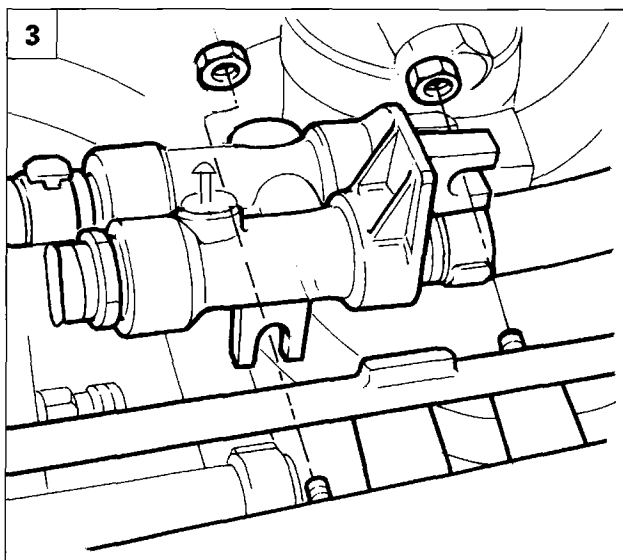
10.



P4A39KJ01



P4A32KJ04



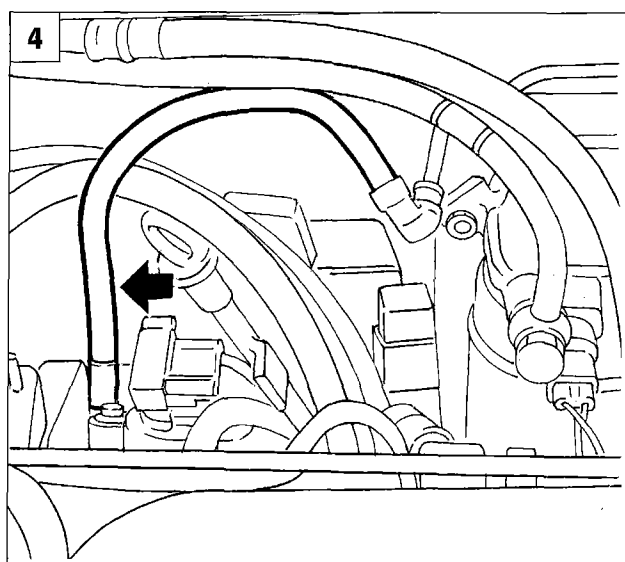
P4A39KJ03



1. Disconnect the fuel return pipe from the injectors (1) from the return manifold and the fuel return pipe from the pressure pump (2).

2. Disconnect the electrical connection from the fuel temperature sensor.

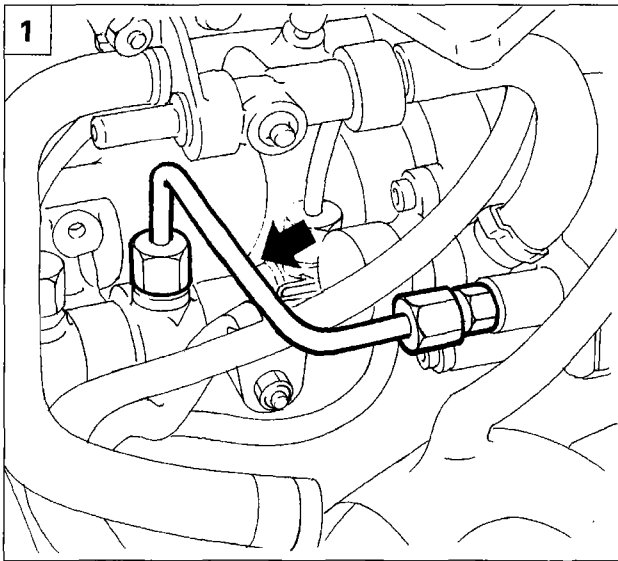
3. Acting on the fixing nuts, move the return manifold aside.



P4A39KJ04

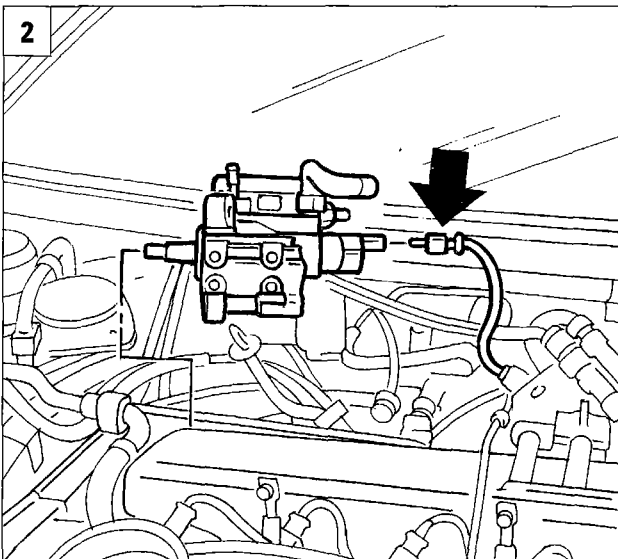
4. Loosen the fixing band and disconnect the fuel inlet pipe.

**10.**



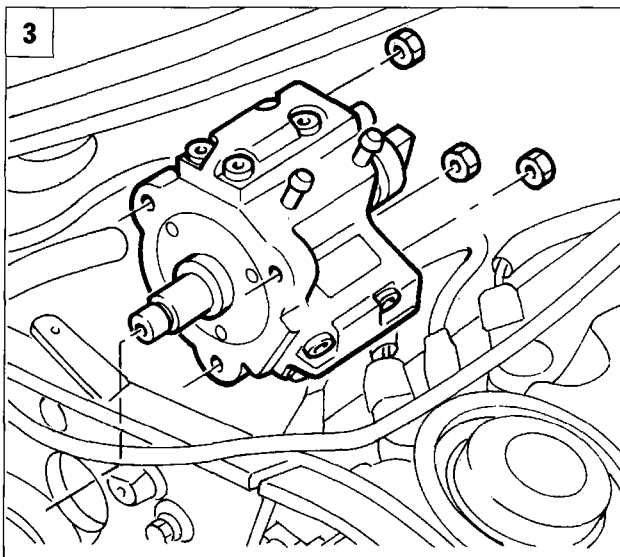
P4A33KJ02

1. Remove the fuel supply pipe from the pressure pump to the distribution manifold.



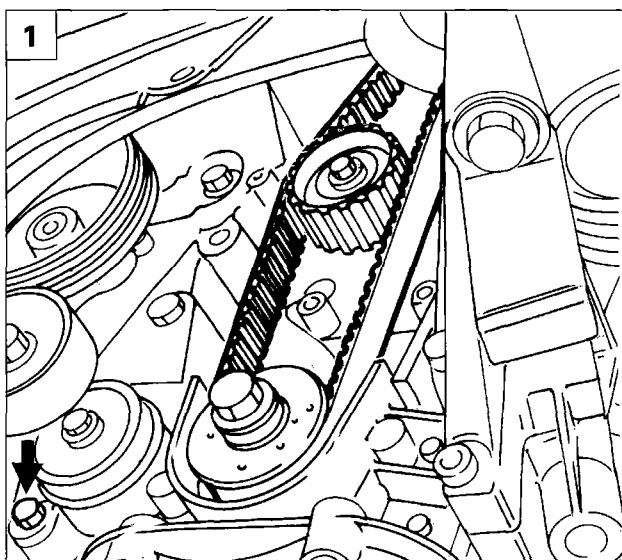
P4A40KJ02

2. Disconnect the electrical connection from the pressure regulator at the pressure pump.



P4A40KJ03

3. Undo the fixing nuts and remove the pressure pump.



P4A41KJ01

**Refitting**

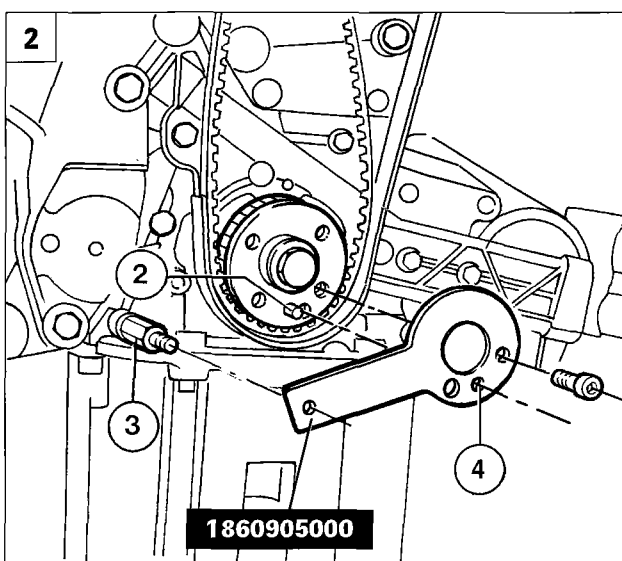
Reverse the order of the operations described for the removal until the refitting of the pressure pump pulley. Then proceed with refitting and tensioning the timing belt and the auxiliary drive belt.



*Check that the timing belt and the auxiliary drive belt are not cracked or worn so that they do not adversely affect the operation.*



*Tighten the connectors for the fuel supply pipe from the pressure pump to the distribution manifold to a torque of 20 daNm*



P4A41KJ02

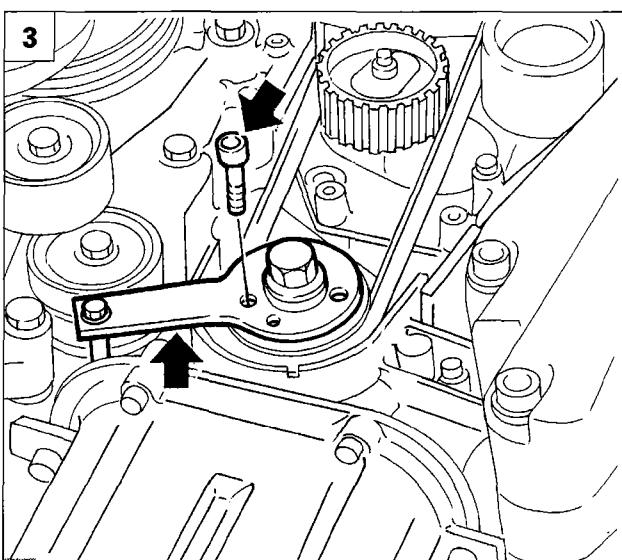


**Refitting and tensioning timing belt**

1. Temporarily fit the timing belt on the crankshaft gear and remove the oil pump bolt shown.

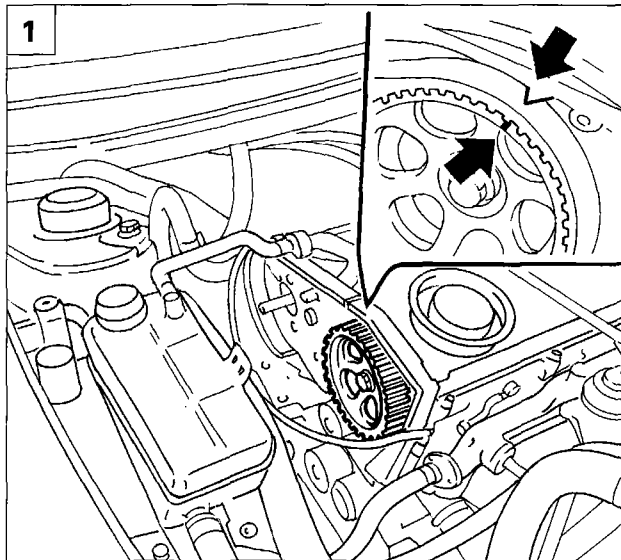
2. Position tool 1860905000 on the crankshaft drive gear and on the pin (3); rotate the crankshaft, with small movements, until the centering dowel (2) is matched with the opening (4) in the tool. In this position cylinder no. 1 is exactly aligned at T.D.C.

3. Fix the tool to the crankshaft drive gear using the bolt shown.



P4A41KJ03

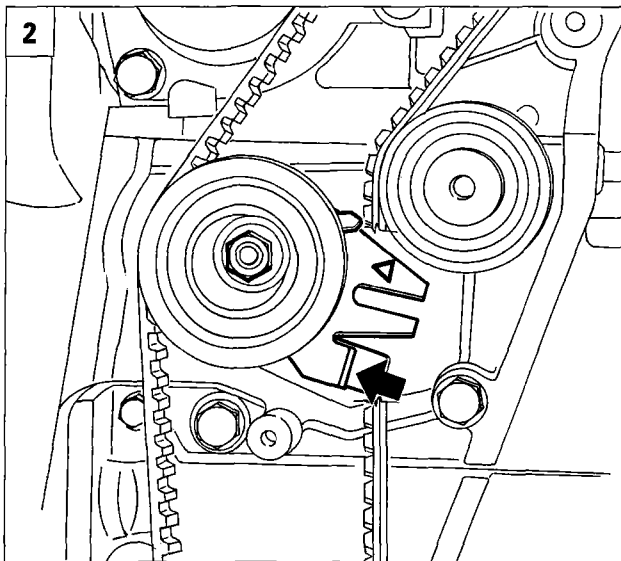
# 10.



P4A42KJ01

Lower the lift.

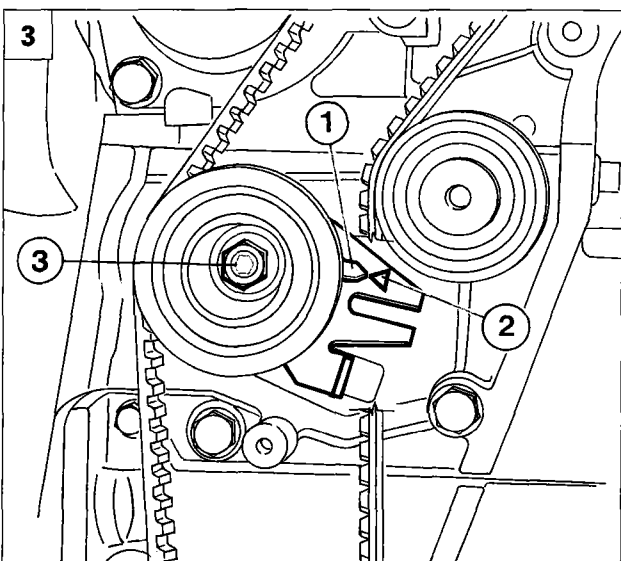
1. Rotate the driven toothed pulley until the timing references coincide.



P4A42KJ02

Raise the lift and complete the fitting of the timing belt, checking the timing.

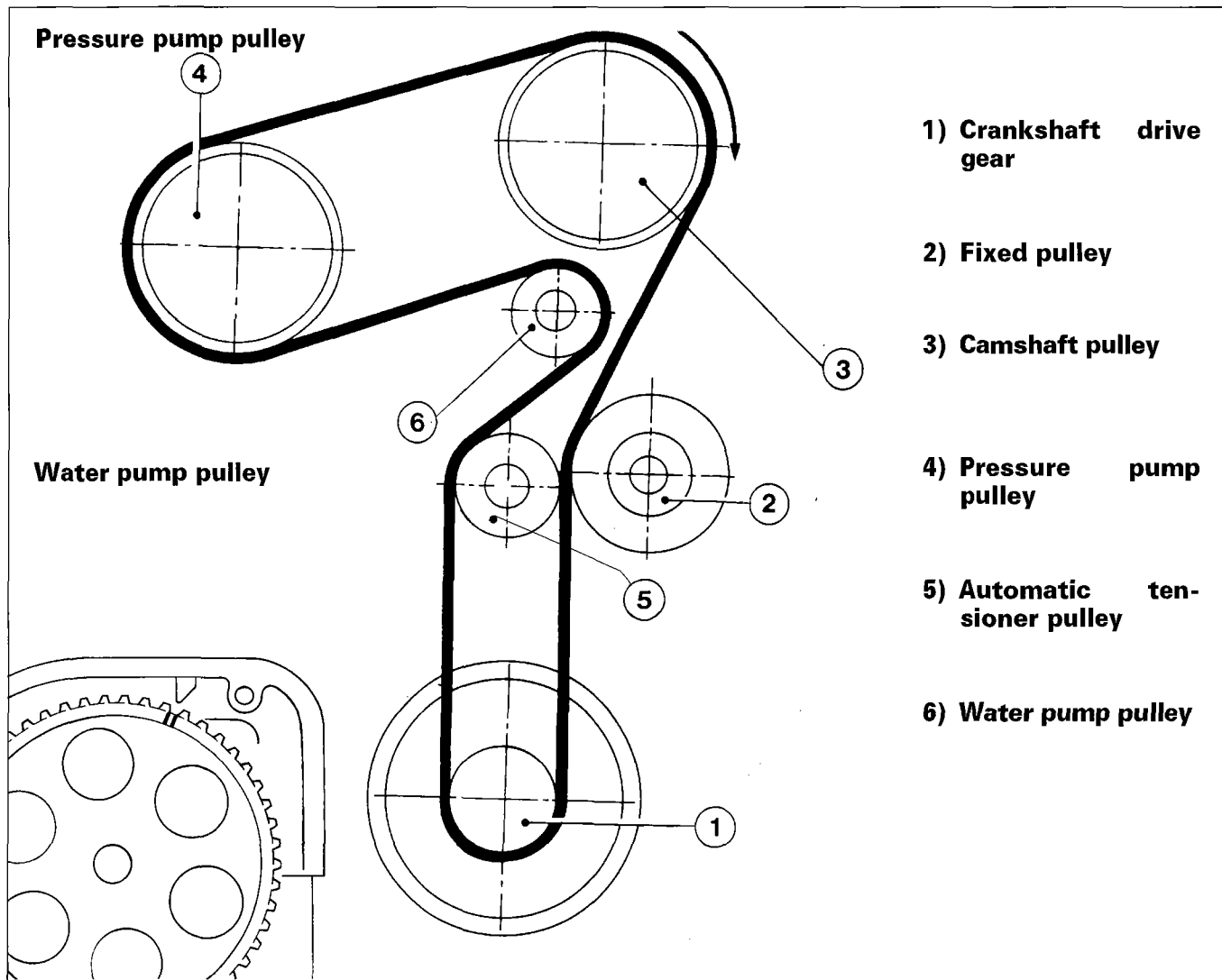
2. Using a screwdriver, apply force to the automatic tensioner so that the tensioner is in the maximum tension position, then tighten the nuts fixing the tensioner to the support. Remove the tool 1860905000 and rotate the engine through two revolutions in its normal direction of rotation.



P4A42KJ03

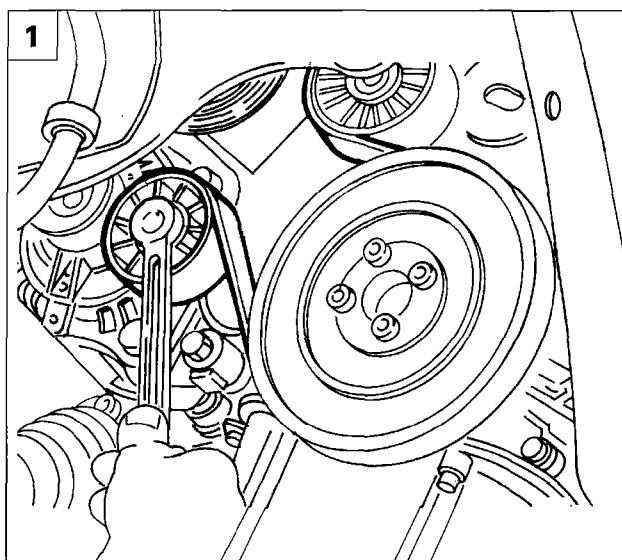
3. Loosen the nut fixing the tensioner (3) and, using a screwdriver for leverage in order not to completely loosen the tensioner, make sure that the moving reference (1) on the tensioner coincides with the fixed reference (2), then tighten the tensioner (3) fixing nut to the recommended torque.

**Timing belt fitting order**



P4A43KJ01

P4A43KJ02



P4A36KJ03

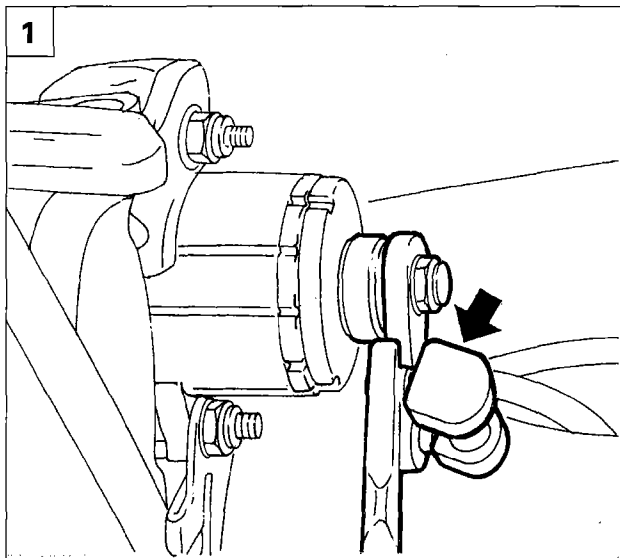


**Refitting and tensioning the auxiliary shaft belt**

1. Acting on the belt tensioning device, fit the single drive belt.

The tensioning device is automatic and, thanks to a pre-loaded spring, the correct belt tension is set.

# 10.

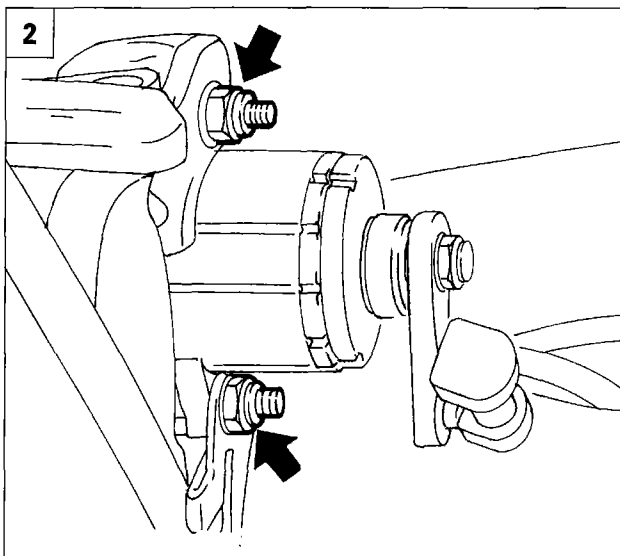


4A44KJ02

## REMOVING - REFITTING ACCELERATOR PEDAL POTENTIOMETER

- Disable the alarm (if fitted) via the switch under the cover for the junction unit and disconnect the negative battery lead.

- Remove the shield under the pedals.

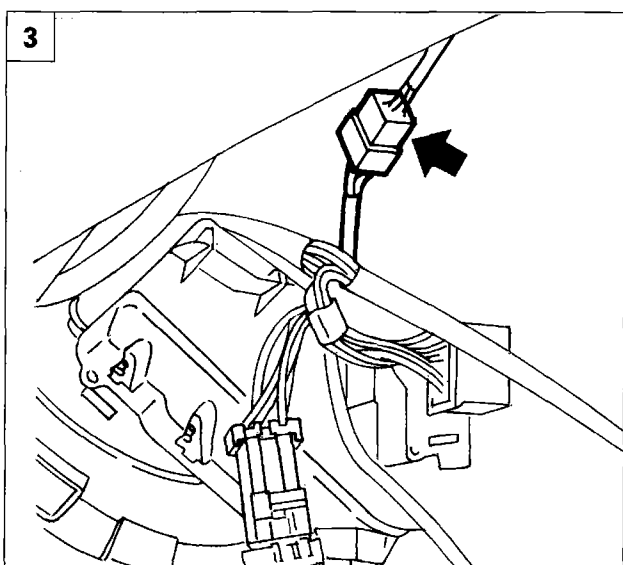


P4A44KJ03



1. Remove the idler rod for the potentiometer from the accelerator pedal.

2. Undo the nuts fixing the potentiometer to the steering column bracket and remove the potentiometer moving the wiring as close as possible to the plastic casing retaining it, taking care not to damage the nearby cables.



P4A44KJ04

3. From the passenger side, remove the shield under the dashboard and the oddments pocket and disconnect the electrical connector for the potentiometer moving the wiring as close as possible to the plastic casing retaining it, taking care not to damage the nearby cables.

**NOTE** To refit, position the new potentiometer and prepare the new bridge, fastening it under the tunnel so that the movement of the climate control unit is not impeded and it does not produce noise/vibrations whilst the vehicle is moving.

Airbag

Connector Block

Radio

Wiring Diagrams 98

Wiring Diagrams 99

Electrical Equipment 2000

page

**AIR BAG NEW FEATURES**

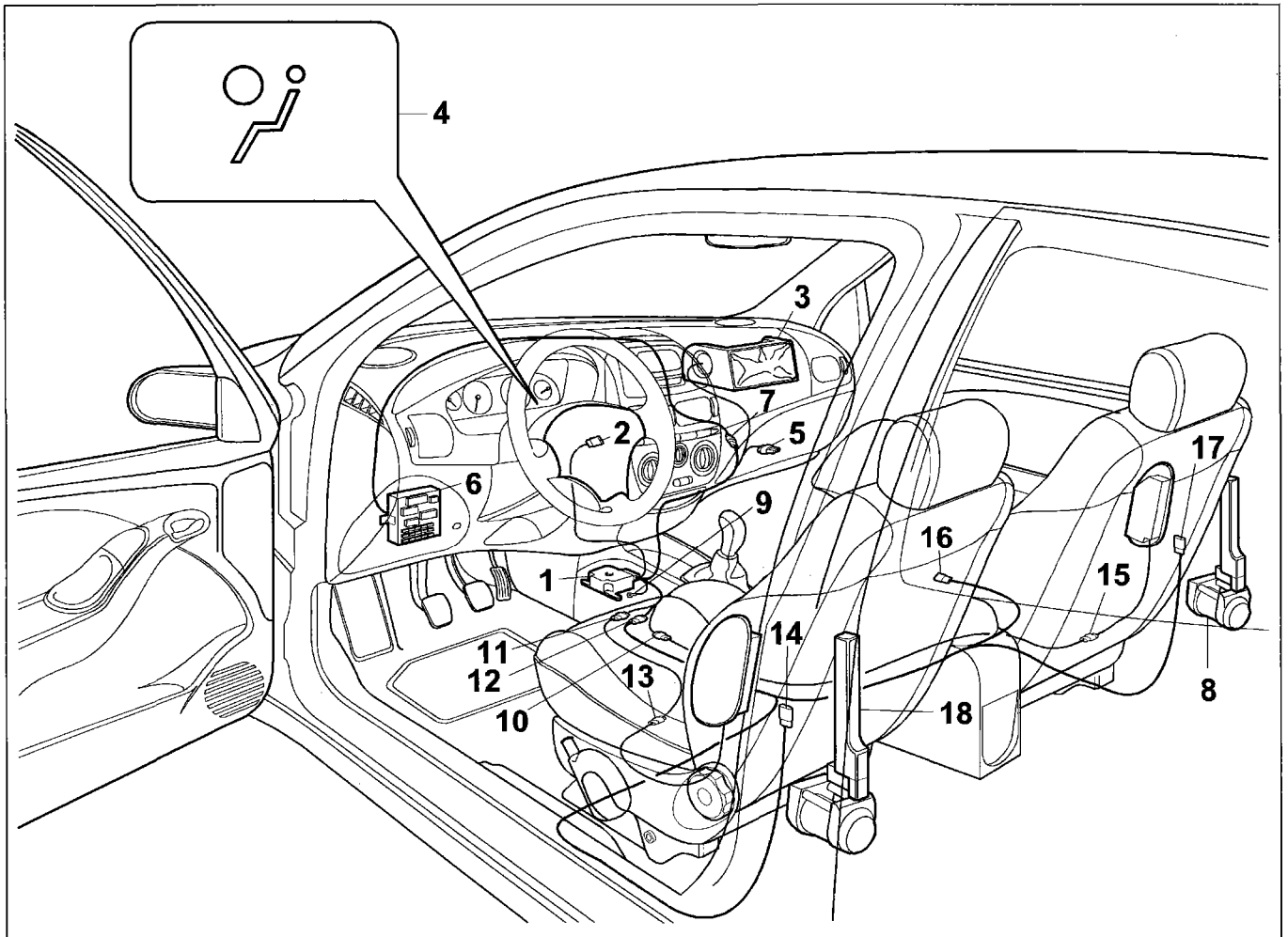
|   |    |
|---|----|
| - Introduction  | 1  |
| - Passenger presence sensor "PPD"   | 2  |
| - Air Bag system and passenger presence sensor (PPD) control unit                                       | 3  |
| - System with Side Bag  | 5  |
| - Air Bag system, Side Bag and passenger presence sensor control unit                                   | 5  |
| - Side Bag modules  | 7  |
| - General warnings  | 8  |
| - Deceleration "satellite" sensors  | 9  |
| - Safety instructions to be followed for operations on vehicles equipped with Air Bag - Side Bag system | 10 |
| - Removing-refitting deceleration "satellite" sensor  | 11 |
| - Removing-refitting front seat with passenger presence sensor and Side Bag                             | 13 |
| - Diagrammatic view of Side Bag module  | 16 |
| - Removing-refitting Side Bag module  | 17 |
| - Dismantling-reassembling front seat   | 20 |
| - Seat heater pad   | 25 |
| - Removing-refitting passenger presence sensor  | 27 |
| - Removing-refitting Side Bag supply cable  | 29 |
| - Removing-refitting lumbar adjustment device   | 32 |
| - Dismantling head restraint  | 34 |
| - Location of driver's seat components  | 37 |
| - Location of passenger seat components   | 38 |



**INTRODUCTION**

The 1998 Fiat Bravo-Brava range is fitted with a new Air Bag system. This differs from the current system in the addition of a passenger presence sensor PPD on the front seat. This allows the passenger side air bag and pretensioner to go off only if the seat is occupied.

The standard system may also optionally be fitted with a side impact prevention system known as a side bag.

**Location of air bag and side bag system components on the car.**

4A01JL01

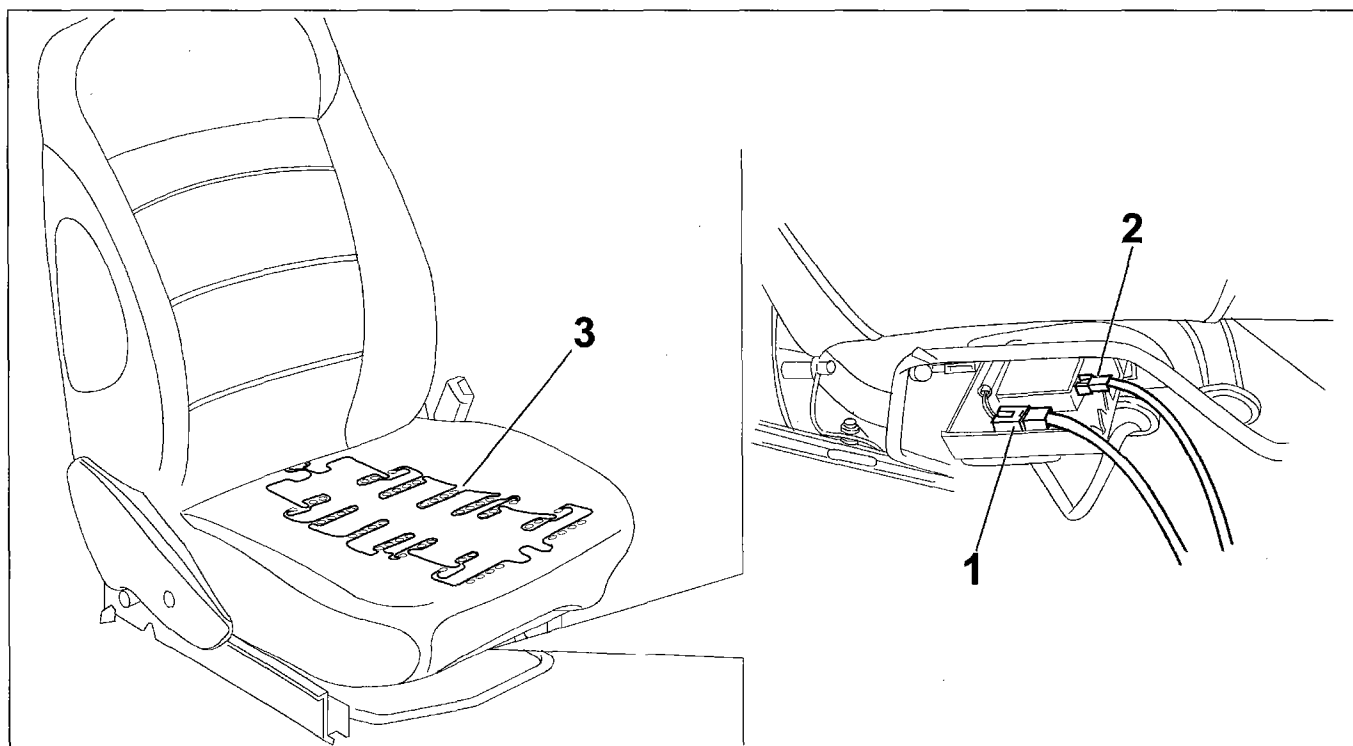
- |  |   |
|--|---|
| 1. Air bag control unit  | 11. Euro Bag - Side Bag control unit junction – Driver side |
| 2. Passenger side Euro Bag clock spring contact                | 12. Euro Bag - PPD sensor control unit junction             |
| 3. Driver's Euro Bag module                                    | 13. Driver's Side Bag module                                |
| 4. Euro Bag system failure warning light                       | 14. Driver's satellite sensor (side impact recognition)     |
| 5. Tester connection   | 15. Passenger side bag module                               |
| 6. Junction unit   | 16. Passenger presence sensor (PPD)                         |
| 7. Euro Bag control unit supply junction                       | 17. Passenger satellite sensor (side impact recognition)    |
| 8. Passenger side mechanical pretensioner                      | 18. Driver side mechanical pretensioner                     |
| 9. Earth for Euro Bag  |   |
| 10. Euro Bag - Side Bag control unit junction – Passenger side |   |

### 55.

#### PASSENGER PRESENCE SENSOR PPD

The 1998 range air bag system now comes with a passenger presence sensor that prevents the front passenger air bag and passenger side bag (where fitted) going off if a passenger is not present.

#### Passenger side seat with passenger presence sensor (PPD)



4A02JL01

1. Side bag control connector
2. Passenger presence sensor connector
3. Passenger presence sensor PPD

The Passenger Presence Sensor identifies the presence of a weight on the seat cushion and transmits this information to the electronic control unit that manages the air bag system. The ECU, which also controls the pretensioner, is connected electrically to the system via a cable (with a yellow sheath). The cable connector is located in the lower part of the seat anchored to the bottom on the right side.

If no passenger is present, the control unit disables the front and side bags (where fitted) on the passenger side.

This solution allows a significant reduction in repair costs in the case of accidents where it is not necessary to activate the restraint and protection systems on the passenger side because no occupant is present.

The sensor consists of a fine, flexible plastic plate that is adhesive on the side in contact with the seat padding and contains an electrical circuit that controls its operation. The plate covers the entire seat cushion area except the two sides. It fits between the padding and trim without altering the functional, aesthetic and ergonomic properties of the seat.

A passenger's presence on the seat is therefore detected even if the passenger sits incorrectly and regardless of whether the seat belt is worn or not.

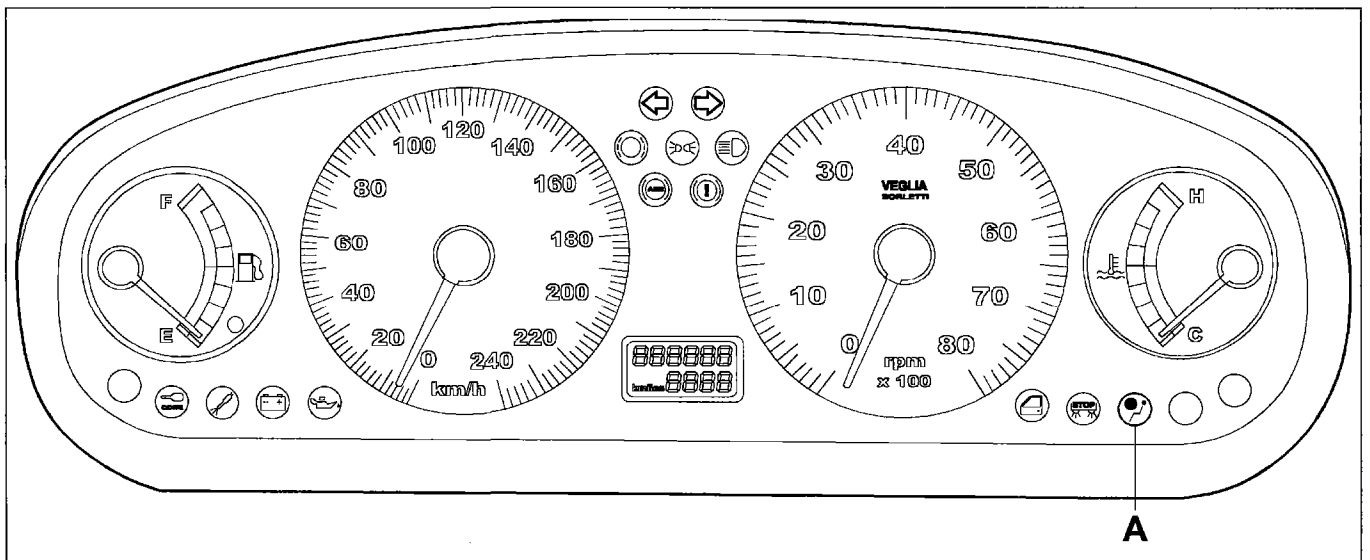
The sensor is also designed to be compatible with a seat heater (available as an option). If a heater is present, the sensor is located underneath it.

The system is adjusted to detect a weight of at least 12 kg under all service conditions (from -35 to +70°C). For lower weights, the response depends on service conditions (temperature, shape and position of the weight, trim type, presence or absence of a heater).

The passenger presence sensor and its branch of wiring are monitored continually during car use. The diagnostic function checks for short-circuits or open circuits.

In the case of sensor malfunction, sensor readings are ignored and the system behaves in the same way as a conventional system, maintaining the passenger front and side bags active. The red failure warning light stays on.

### Instrument panel



4A03JL01

A. Air bag system failure warning light

### ELECTRONIC CONTROL UNIT FOR AIR BAG SYSTEM AND PASSENGER PRESENCE SENSOR (PPD)

The air bag system fitted to the 1999 Fiat Bravo-Brava range comes with a new electronic control that differs from the previous system in the addition of a connection to the passenger presence sensor and the integration of control functions.



**SYSTEM WITH SIDE BAG**

The side impact protection system, or side bag, fitted as an option on the car, extends the system already present on the car and offers maximum protection to front seat passengers by protecting critical body areas, i.e. ribs, abdomen and pelvis.

The side bag system is controlled integrally with the two front air bags by a control unit that reads and processes deceleration and impact data from two satellite sensors located in the car's side pillars.

The system consists of:

- 50 pin control unit;
- side bag modules within the front seat squabs, on the side facing the outside of the car;
- side satellite deceleration sensors.

**CONTROL UNIT FOR AIR BAG, SIDE BAG AND PASSENGER PRESENCE SENSOR (PPD) SYSTEM**

The control unit for the system with side bag differs from the unit used with the system made up of driver air bag, passenger air bag, pretensioners and passenger presence sensor because it is able to process data sent by satellite side sensors and features a different pin out: the control unit is connected to the system via a 50-pin connection.

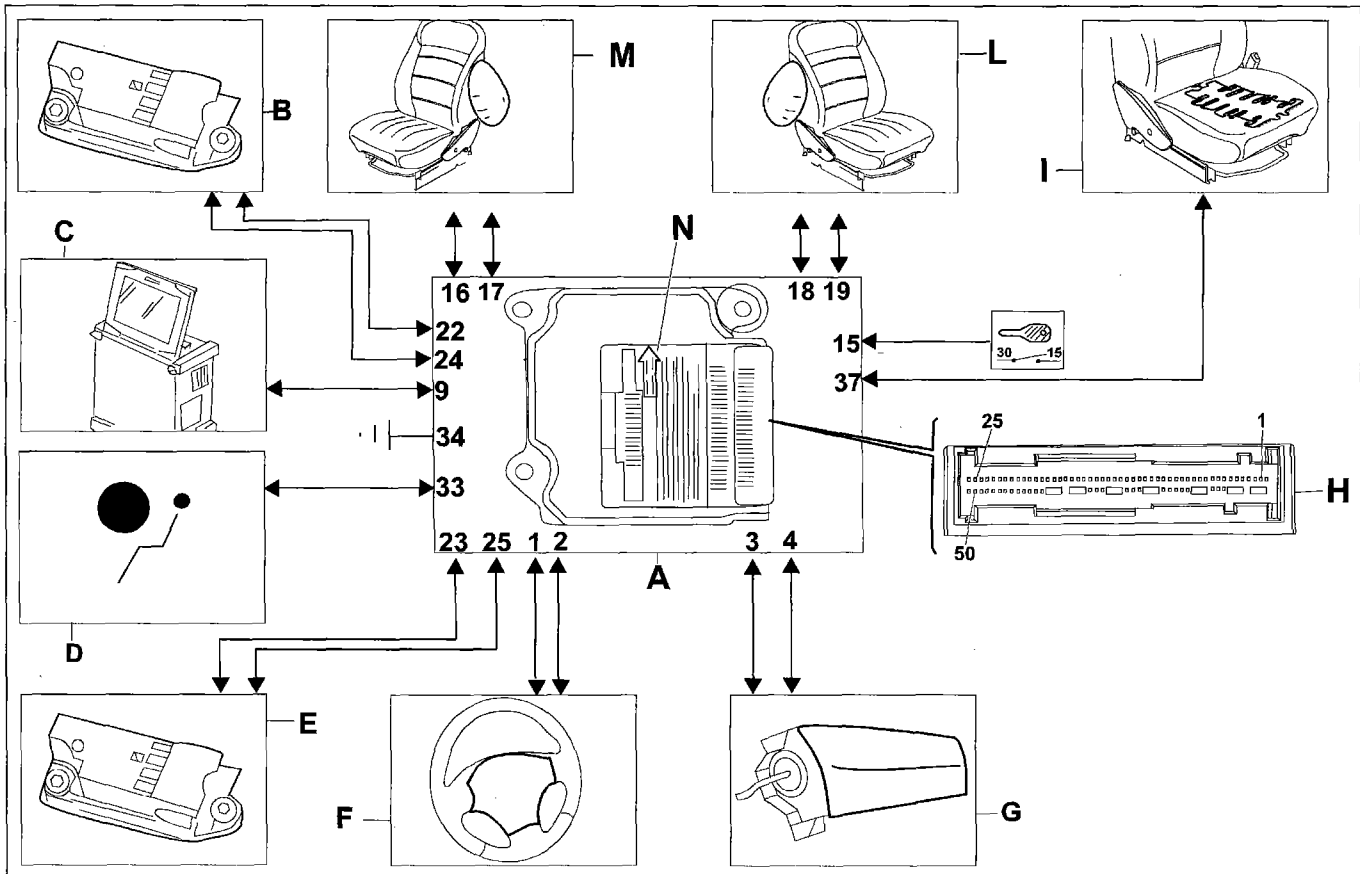
The control unit is calibrated in accordance with specific activation thresholds that ensure the unit operates only in the case of impacts where the occupant requires additional protection. It is able to differentiate between these impacts and other events where operation is not necessary (low-energy side impact, blows against the side not caused by other vehicles, etc.).

The control unit is programmed to deactivate the front air bag, the side bag module on the passenger side and the associated pretensioner if the presence sensor detects the continual absence of a passenger for at least 30 seconds, and to reactivate them immediately as soon as a passenger presence is detected.

In the case of an air bag system with side bag, the wiring branch is monitored continuously by the control unit while the car is in use. If an anomaly is detected, the red failure warning light is activated and the system operates in conventional manner to keep the driver and passenger side air bags operational at all times.

### 55.

Diagram showing connections between control unit and components



4A06JL01

### Control unit pin out

- |  |  |
|--|--|
| 1. Driver air bag                          | 26. Short circuit                        |
| 2. Driver air bag                          | 27. Short circuit                        |
| 3. Passenger air bag                       | 28. Short circuit                        |
| 4. Passenger air bag                       | 29. Short circuit                        |
| 5. Available                               | 30. Not connected                        |
| 6. Not connected                           | 31. Short circuit                        |
| 7. Not connected                           | 32. Short circuit                        |
| 8. Available                               | 33. Air bag system failure warning light |
| 9. Serial interface (K) for tester         | 34. Earth                                |
| 10. Not connected                          | 35. Short circuit                        |
| 11. Not connected                          | 36. Short circuit                        |
| 12. Available                              | 37. Passenger presence sensor            |
| 13. Not connected                          | 38. Short circuit                        |
| 14. Not connected                          | 39. Short circuit                        |
| 15. (+15) ignition-operated power supply   | 40. Electrical wiring recognition input  |
| 16. Driver side bag                        | 41. Short circuit                        |
| 17. Driver side bag                        | 42. Short circuit                        |
| 18. Passenger side bag                     | 43. Short circuit                        |
| 19. Passenger side bag                     | 44. Short circuit                        |
| 20. Available                              | 45. Not connected                        |
| 21. Not connected                          | 46. Not connected                        |
| 22. Driver side bag sensor power supply    | 47. Not connected                        |
| 23. Passenger side bag sensor power supply | 48. Not connected                        |
| 24. Driver's side bag sensor earth         | 49. Not connected                        |
| 25. Passenger side bag sensor earth        | 50. Not connected                        |

- A. Electronic control unit
- B. Driver's side satellite sensor
- C. Tester
- D. Air bag system failure warning light bulb
- E. Passenger side satellite sensor
- F. Driver air bag module
- G. Passenger air bag module
- H. 50-pin connector (see pin out)
- I. Passenger presence sensor
- L. Passenger side bag module
- M. Driver's side bag module
- N. Arrows indicating control unit installation direction

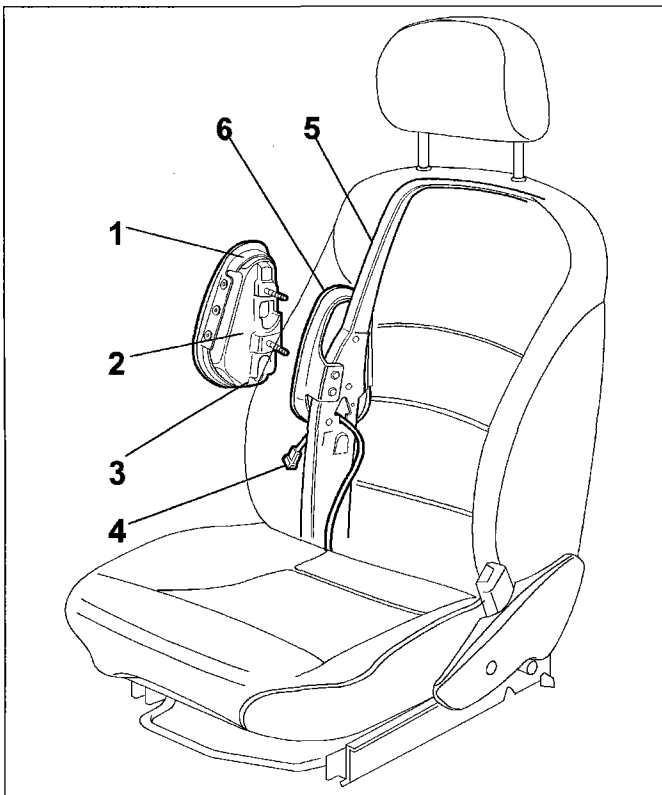
### SIDE BAG MODULES

The side bag modules fitted to the Fiat Bravo-Brava are fitted by a bracket to the inside of the squab on the side facing the outside of the structure. This solution is an improvement on the door-mounted version because the bag is always in optimal position in relation to the occupant regardless of seat position or occupant size.

The side bag modules consist mainly of:

- a bag measuring about 12 litres in volume and made out of permeable cloth that is able to protect the outer area of the chest and abdomen;
- a metal case containing a pyrotechnic charge that, when activated by an electric signal, causes gas to emerge and inflate the bag.
- an extremely light, plastic containment cover for the bag that maintains squab size and appearance while ensuring the bag emerges easily;
- bracket securing the module to the seat structure.

### Side bag module



4A07JL01

- 1. Plastic cover
- 2. Metal case
- 3. Side bag module connector
- 4. Electrical activation lead
- 5. Squab structure
- 6. Side bag module compartment

Side bag modules are fitted in the squab trim and do not significantly alter original seat style and size. A plastic cover in the seat trim over the module opens to allow the bag to inflate.

### 55.

#### GENERAL WARNINGS



*IT IS ABSOLUTELY FORBIDDEN to use any type of seat cover that is not specifically designed for this type of seat. When replacing, take the greatest care to install in the correct position: the wording SIDE BAG must be on the same side of the squab as the side bag module.*



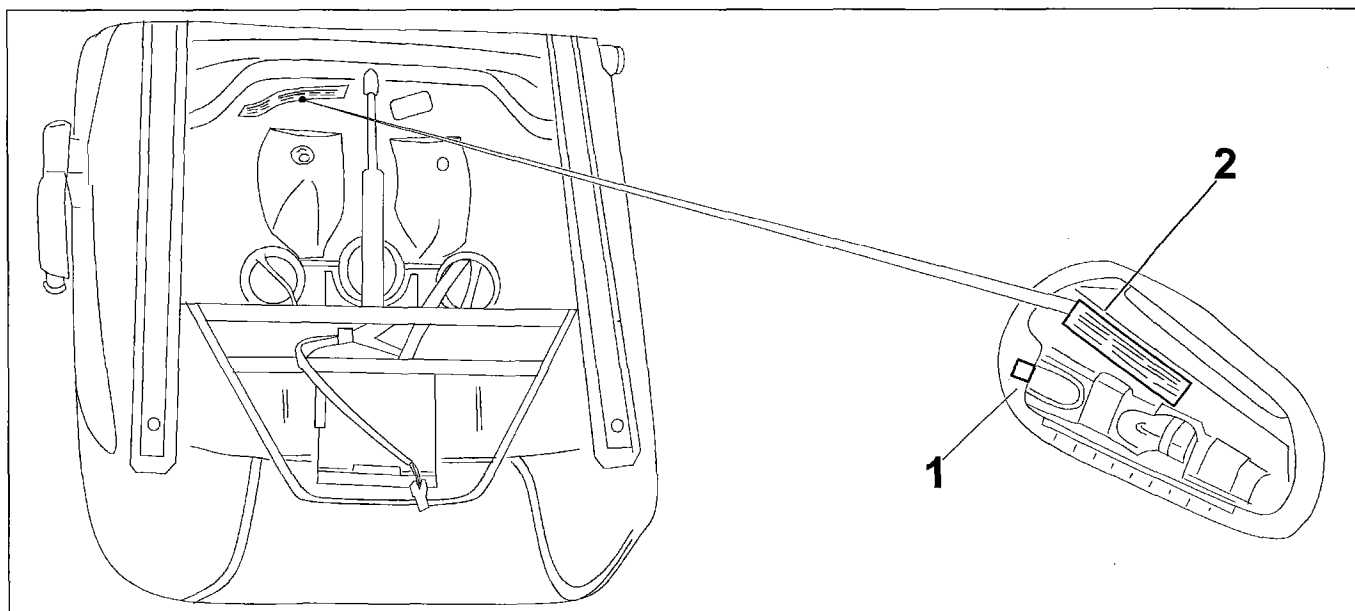
*Before disconnecting the seat connections to the air bag system (leads with yellow sheath), disconnect both battery terminals, take them out carefully and **WAIT AT LEAST 10 MINUTES**. Whenever working on the air bag system, it is **OBLIGATORY** to check system function using special test equipment at the end of the procedure.*



*It is **STRICTLY NECESSARY** to observe the contents of Identification and warning plates on the side bag module whenever the module is handled.*

*When replacing the module, take off the removable label (1) on the cover of the new module and apply it to the front part of the seat structure at more or less the point indicated in the following figure so that it is legible with the seat fitted. Also record the serial number in the special log so the unit can be traced.*

*If the seat structure is to be replaced and the side bag module transferred, the above label must be transferred from the old to the new structure.*



4A08JL01

1. New side bag module
2. Removable self-adhesive plate

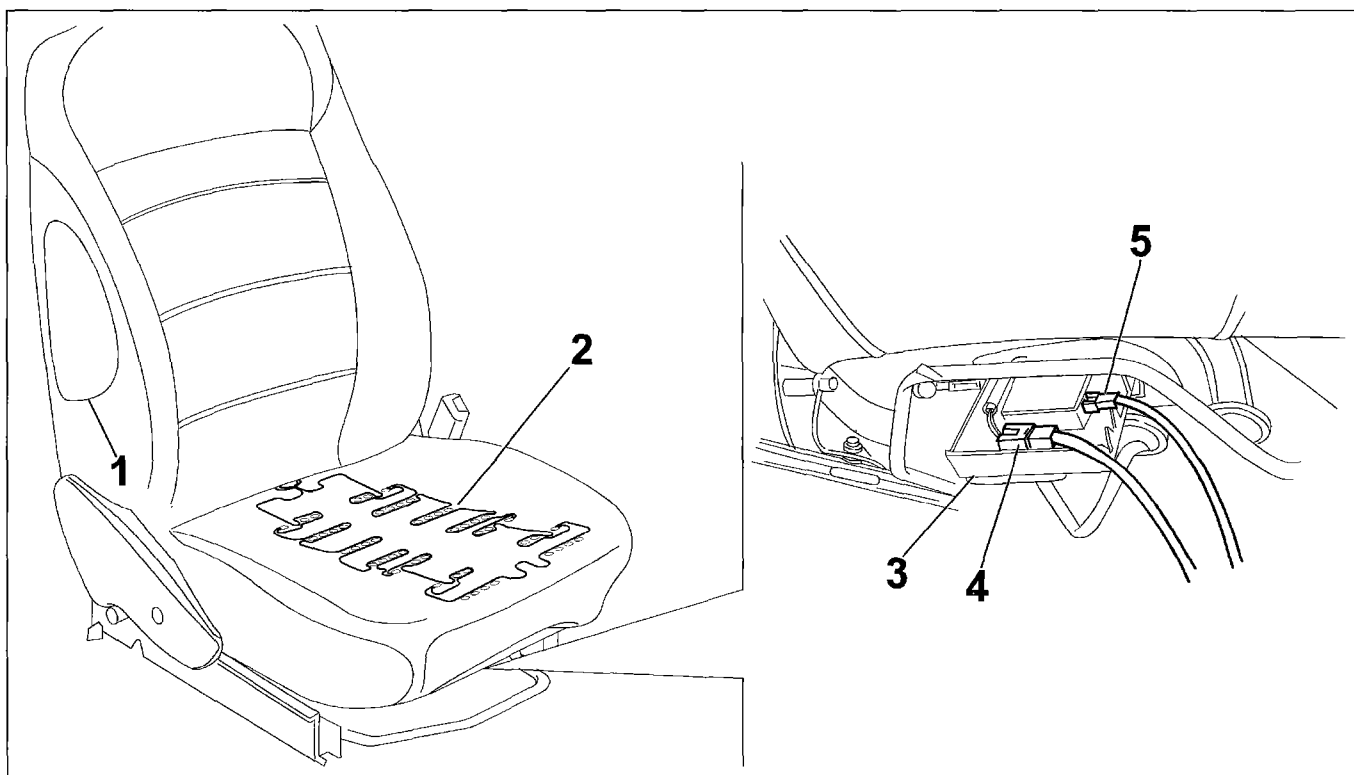


The points for connecting the Side Bag module to the Air Bag system and the passenger presence sensor (cables with yellow outer casing) are located at the bottom of the seat in the front section inside a protective casing.

The connection for the Side Bag module and the passenger presence sensor are secured in the casing fixed under the passenger seat.

If checks have to be carried out on the system or the seat has to be removed, in order to gain access to the connections located inside the casing, the cover must be opened by removing the casing safety cap acting on the retaining springs.

#### **Seat with Side Bag and passenger presence sensor (PPD)**



P3U33GB01

1. Side Bag module
2. Passenger presence sensor (PPD)
3. Connections protective casing
4. Side Bag module connection
5. Passenger presence sensor (PPD) connection

#### **"SATELLITE" DECELERATION SENSORS**

The "satellite" deceleration sensors are fitted on the vehicle centre pillars and contain an accelerometer capable of detecting acceleration which occurs during a side impact.

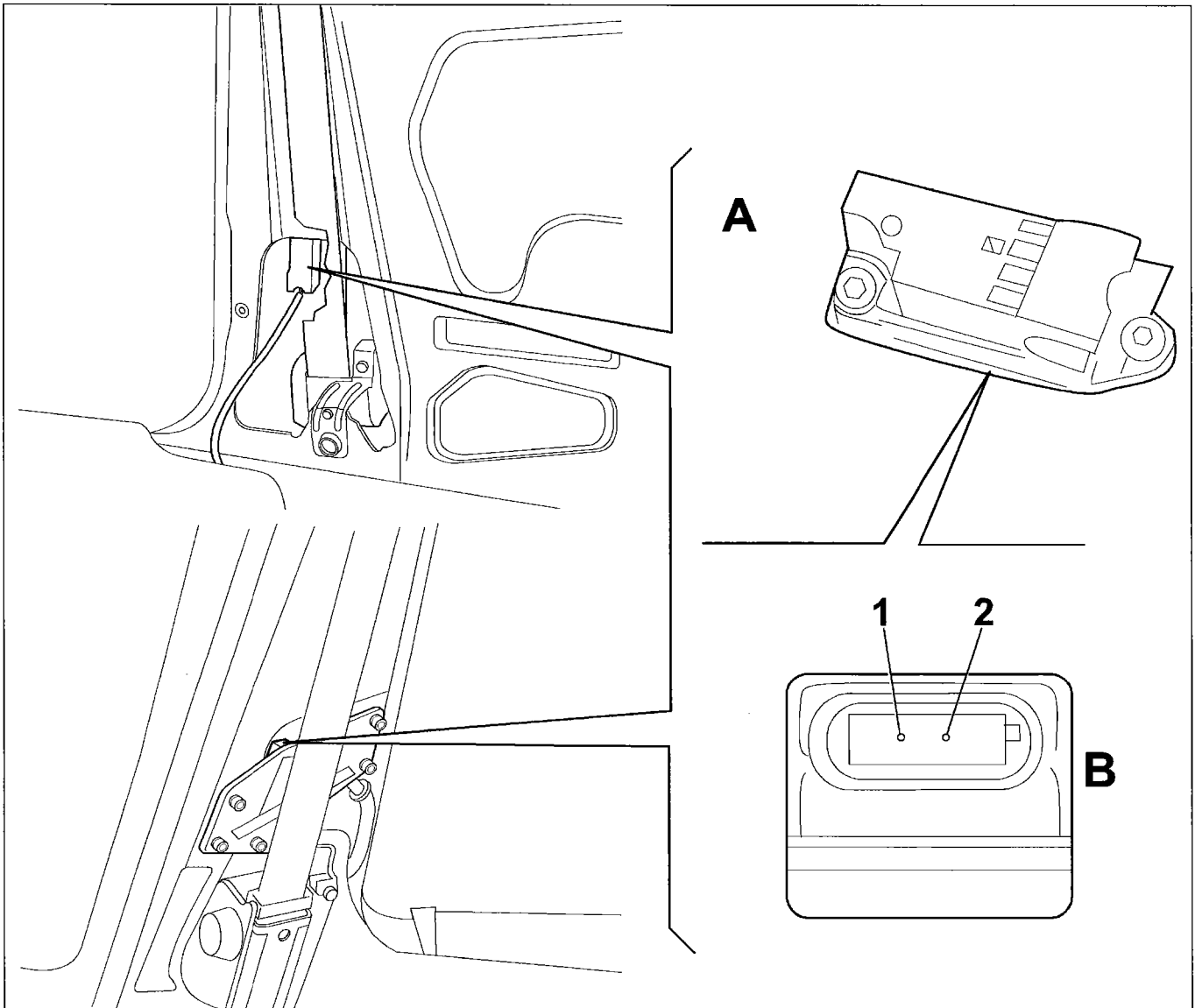
If the impact exceeds a certain degree of severity, the information is transferred by the sensor concerned to the Air Bag system main control unit which compares the information with that received from a second accelerometer which it contains guaranteeing a safety function (safing).

If the acceleration information detected by the "satellite" sensor and the control unit concurs, the main control unit activates the Side Bag module for the side affected by the impact.

If the impact is on the passenger side, the main control unit compares the signal coming from the "satellite" sensor with the one coming from the passenger presence sensor to either activate or not activate the Side Bag module.

### 55.

#### Location of deceleration "satellite" sensors



P4A10JL01

- A. Deceleration "satellite" sensor  
B. Pin out            1. Side Bag sensor supply  
                             2. Side Bag sensor earth

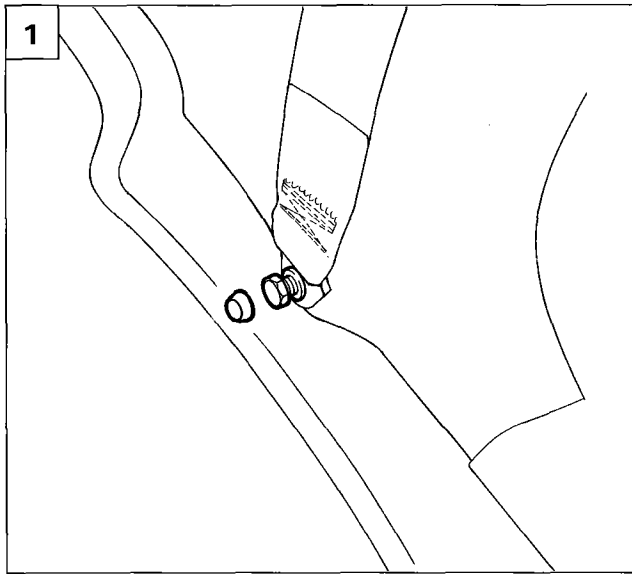
#### **SAFETY INSTRUCTIONS TO BE FOLLOWED FOR OPERATIONS ON VEHICLES EQUIPPED WITH AIR BAG-SIDE BAG SYSTEM**



*The following rules MUST, UNDER ALL CIRCUMSTANCES, BE FOLLOWED during any operations involving vehicles equipped with Air Bag/Side Bag systems.*

The system components **MUST ONLY** be fitted and removed by skilled and authorized technical staff, bearing in mind that the components are devices which must be handled with care.

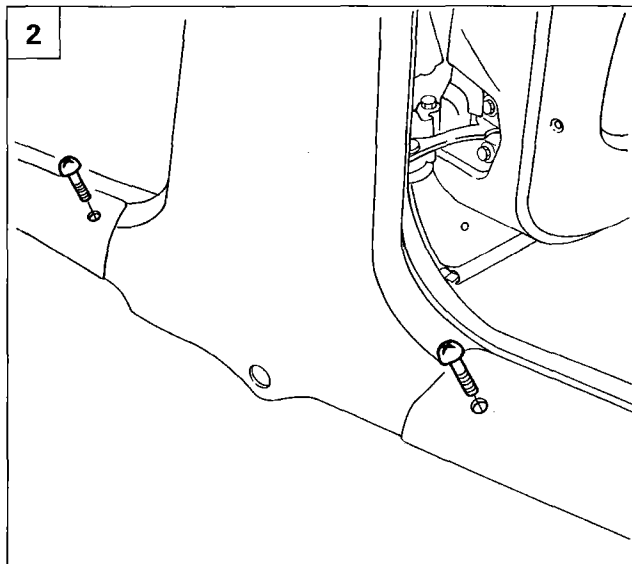
The transportation and storage of these components is governed by the handling procedures described in Section 55 - Electrical Equipment - "FIAT Bravo-Brava" Service Manual (2nd volume).



REMOVING-REFITTING  
"SATELLITE" SENSOR

DECELERATION

P4A11JL01



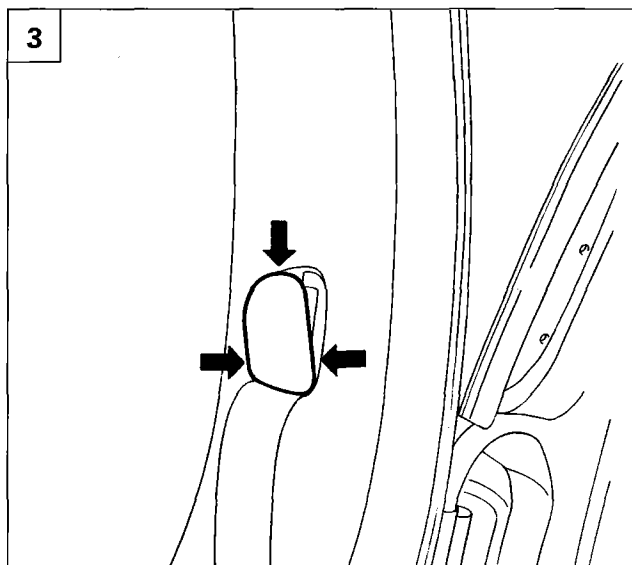
**NOTE** *The procedure described below is for the Fiat Brava; proceed in the same way for the Fiat Bravo.*



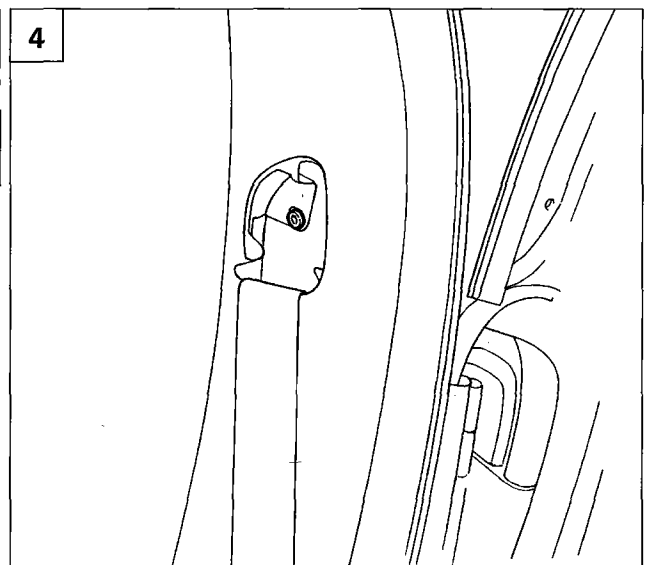
*Place the ignition key in the OFF position and remove it; then disconnect the battery.*

1. Remove the cover and undo the bolt fixing the front seat belt.
2. Undo the bolts fixing the running boards shown in the diagram.
3. Act on the retaining tabs and remove the pillar cover trim.
4. Undo the bolt fixing the pillar cover.

P4A11JL02

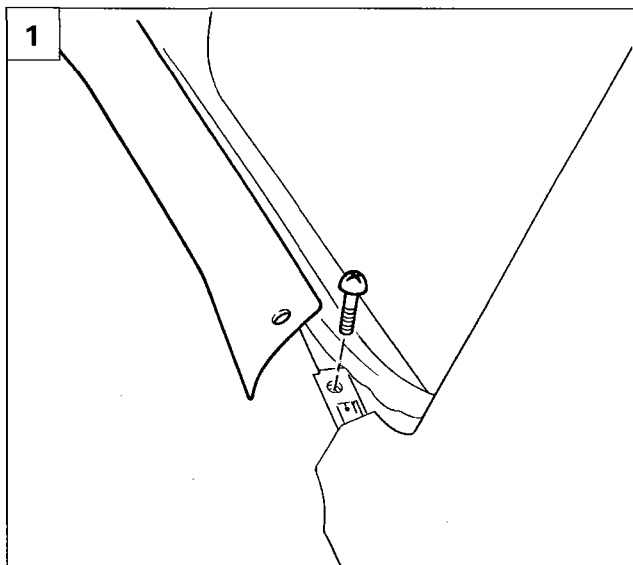


P4A11JL03

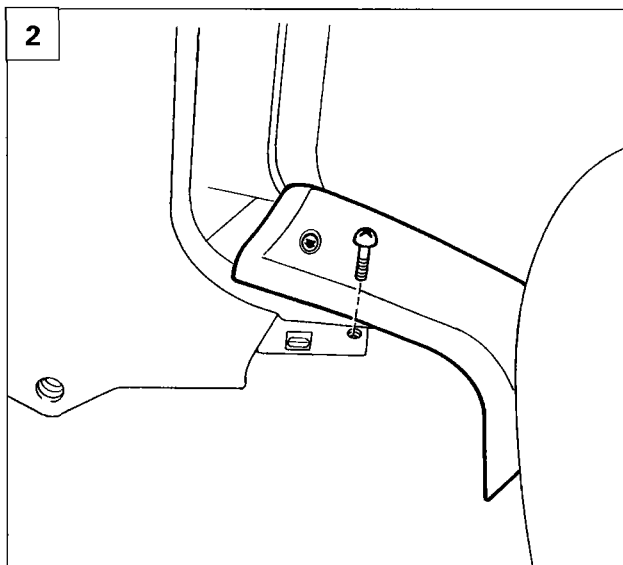


P4A11JL04

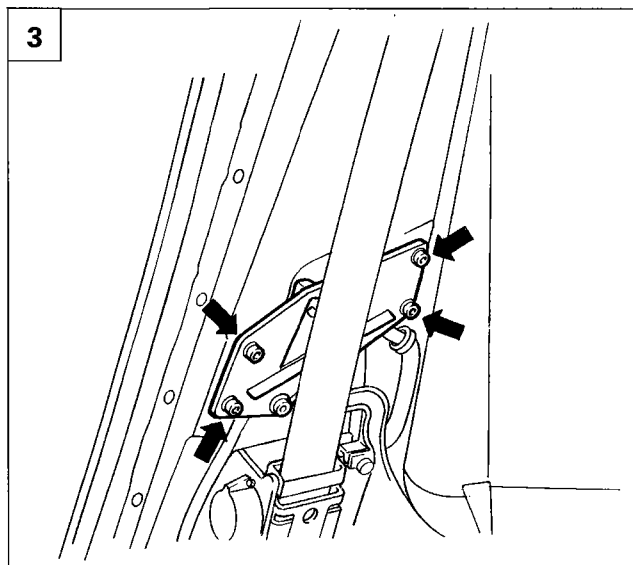
### 55.



P4A12JL01



P4A12JL02

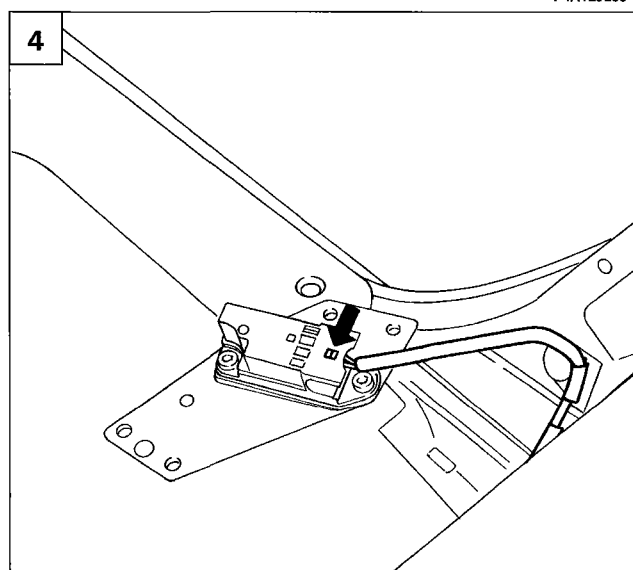


P4A12JL03

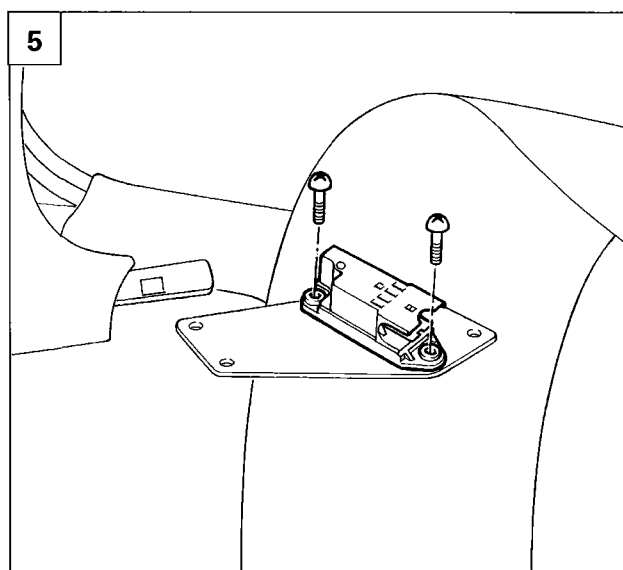


1. Lift up the rear running board, then undo the bolt underneath fixing the pillar cover.
2. Lift up the front running board, then undo the bolt underneath fixing the pillar cover.
3. Lift up the pillar cover, then undo the bolts fixing the Side Bag deceleration "satellite" sensor mounting bracket.
4. Disconnect the electrical connection shown in the diagram.
5. Undo the bolts shown in the diagram, then remove the deceleration "satellite" sensor from the bracket.

**NOTE** *To refit, suitably reverse the order of the operations carried out for the removal.*



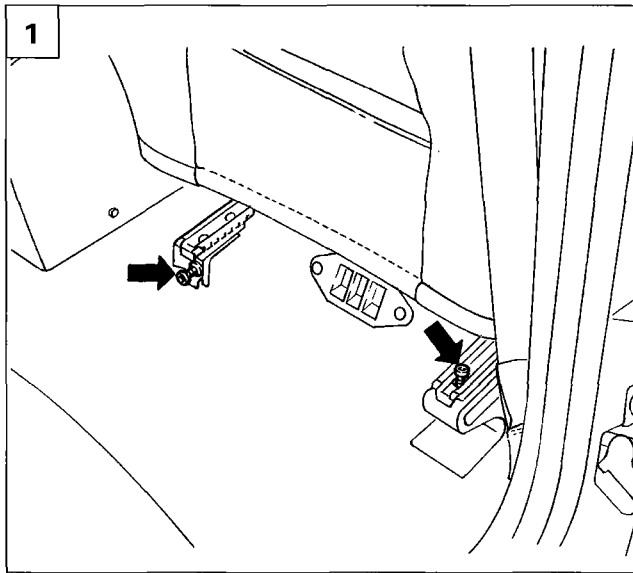
P4A12JL04



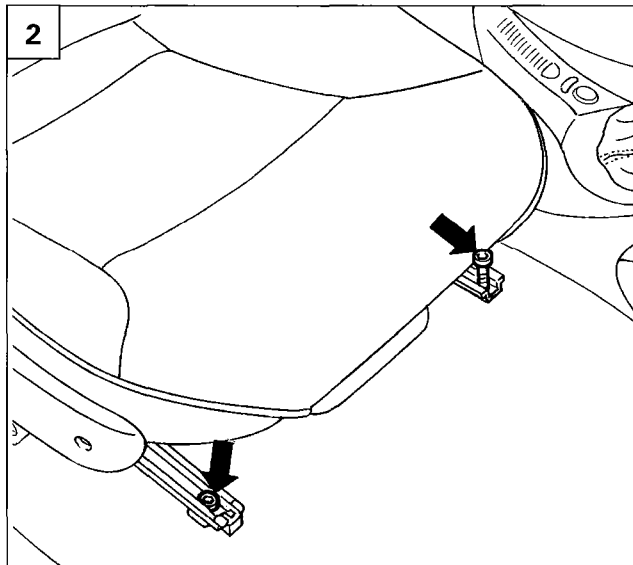
P4A12JL05

**55.**

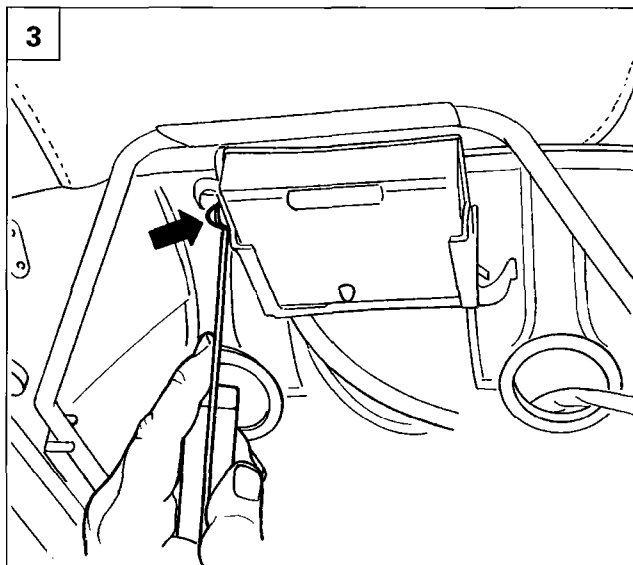
**REMOVING-REFITTING FRONT SEAT WITH PASSENGER PRESENCE SENSOR AND SIDE BAG**



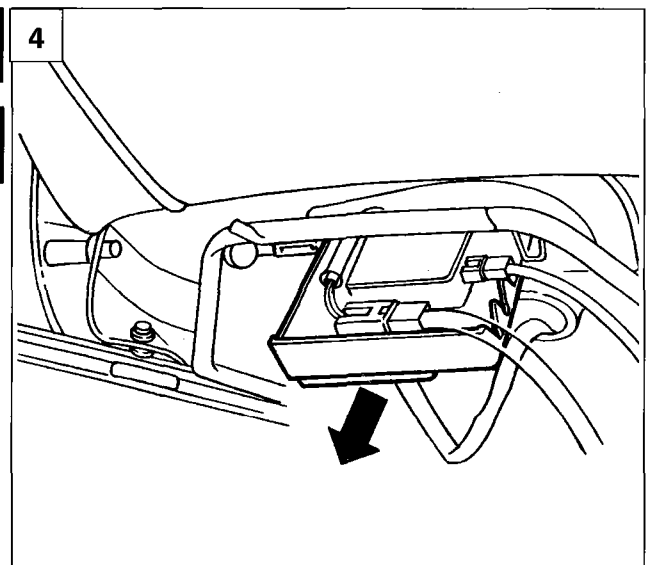
P4A13JL01



P4A13JL02



P4AJL1303



P4A13JL04

**Removing**

1. Move the seat forwards, into the end of travel position, and undo the bolts fixing the guides to the floor.
2. Move the seat backwards, into the end of travel position, and undo the bolts fixing the guides to the floor.

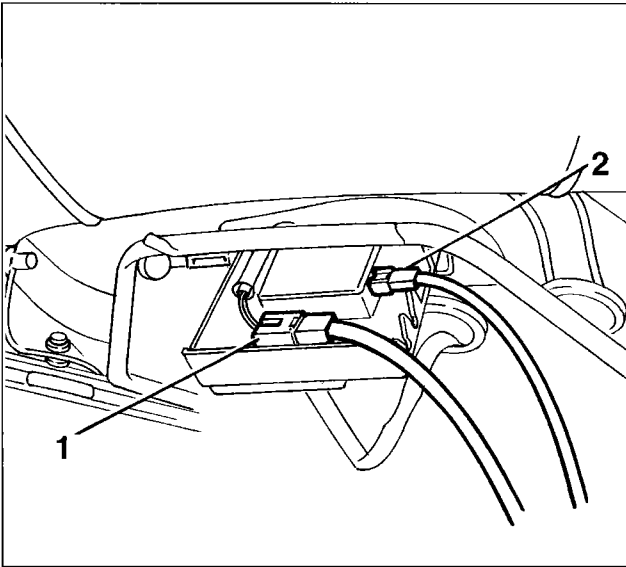


*Before proceeding with the removal of the seat:*

- disconnect the battery terminals;
- wait at least 10 minutes before disconnecting the connections for the passenger presence sensor, then proceed as described below.

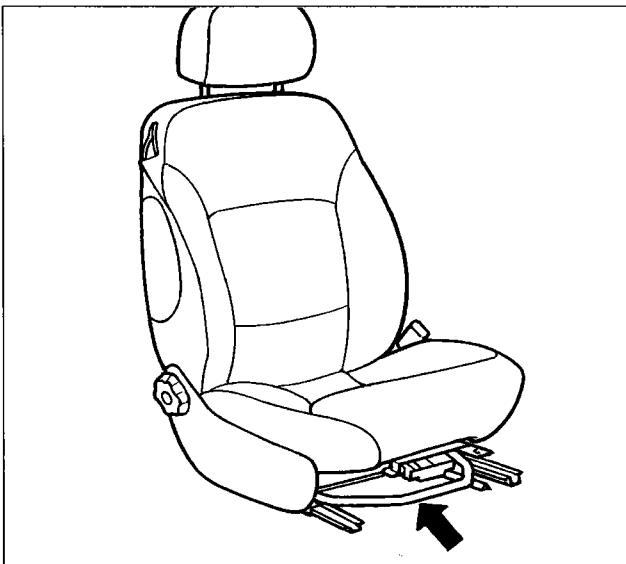
3. Fold the seat backwards to gain access to the connections, then disconnect the connector for the lumbar adjuster, heater pad and seat belt, if fitted, and remove the connector box safety cap.
4. Extract the connector box flap.

### 55.



**NOTE** *There are two connections on the passenger side (Side Bag and passenger presence sensor) whilst there is only one connection for the Side Bag on the driver's seat.*

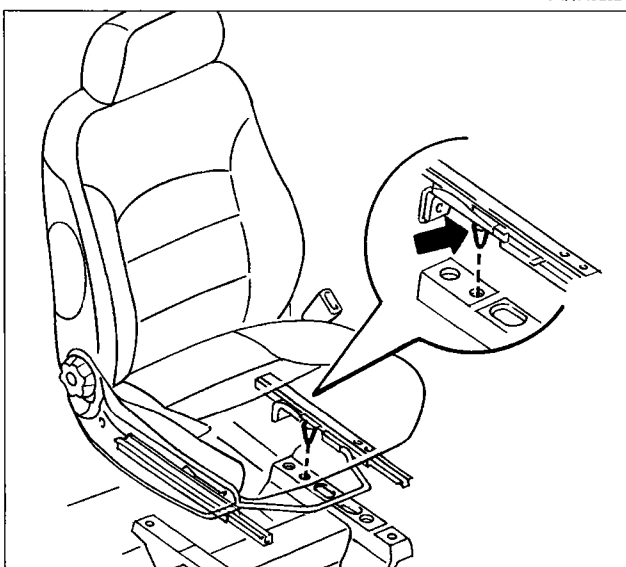
- Disconnect the connector (1) for the Side Bag and the connector (2) for the Passenger Presence;



- remove the seat from the vehicle.



*Do not extract the seat from its housing, using the seat drive lever shown by the arrow in the diagram, in order not to alter the alignment of the guides.*

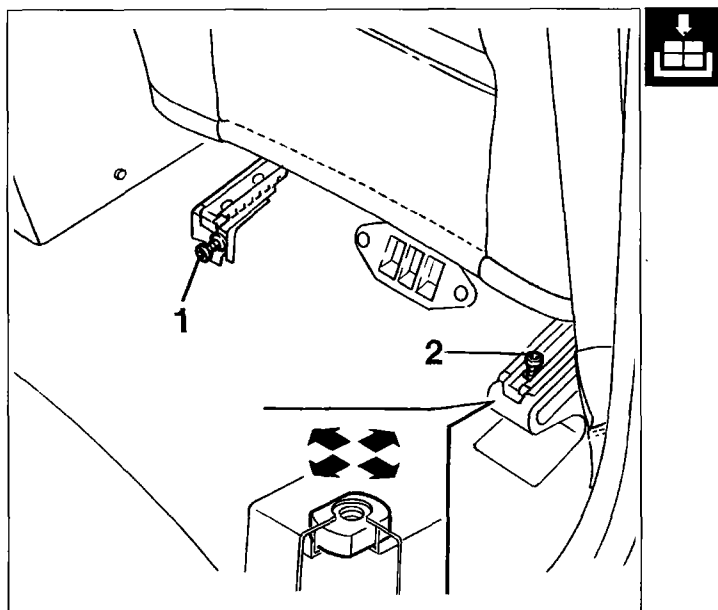


### Refitting

- Position the seat in the vehicle;
- connect the electrical connectors coming from the vehicle floor;
- make sure that the centering pin on the seat guide is in the correct position;



*Check that the carpet does not interfere in the seat guide support areas.*



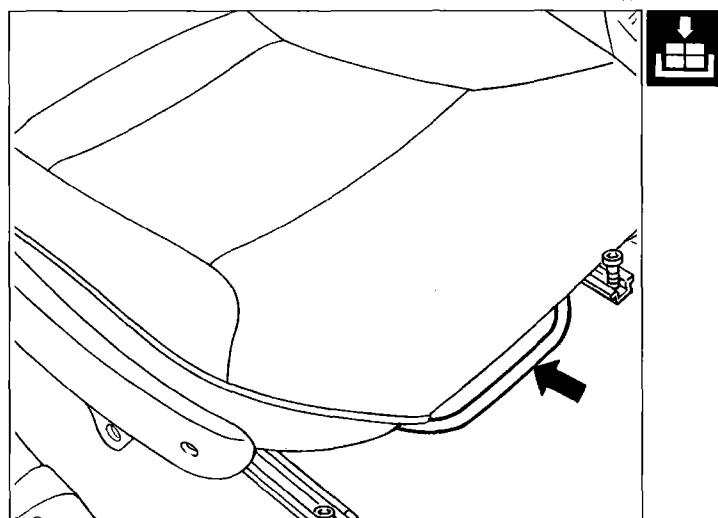
P4A15JL01

- fit and tighten the rear fixing bolts, starting from the inside (1) and continuing towards the outside (2), to a torque of 2.4 daNm;



*The seat should be fixed to the floor without the guides being distorted; if necessary act on the nuts, shown in the inset, making sure that they are free.*

**NOTE** *During this stage, do not lift the seat to fit the fixing bolts.*



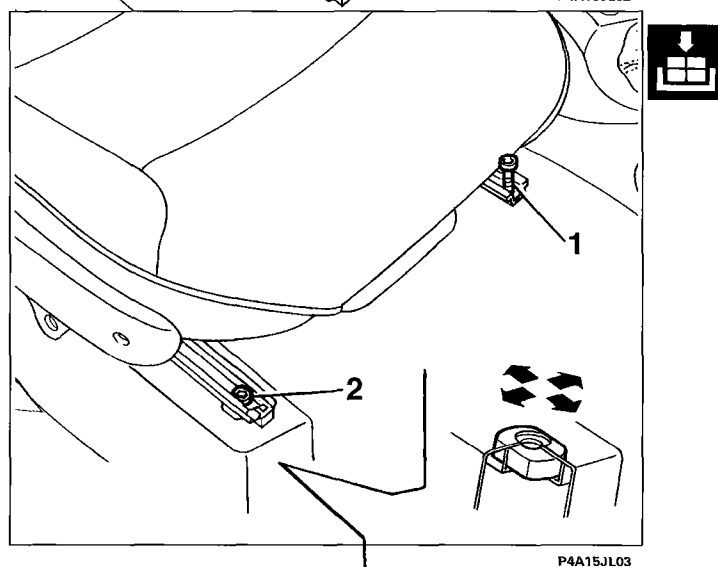
P4A15JL02

- place the seat in the "FULLY RETRACTED" position using the guide control lever;



*Make sure that the guide control lever is correctly attached.*

**NOTE** *For the BRAVO avoid lowering the backrest to slide the seat in order not to loosen the guides which would result in them not being aligned.*



P4A15JL03

- fit and tighten the front fixing bolts, starting from the inside (1) and working towards the outside (2), to a torque of 2.4 daNm.



*The seat should be fixed to the floor without the guides being distorted; if necessary act on the nuts, shown in the inset, making sure that they are free.*

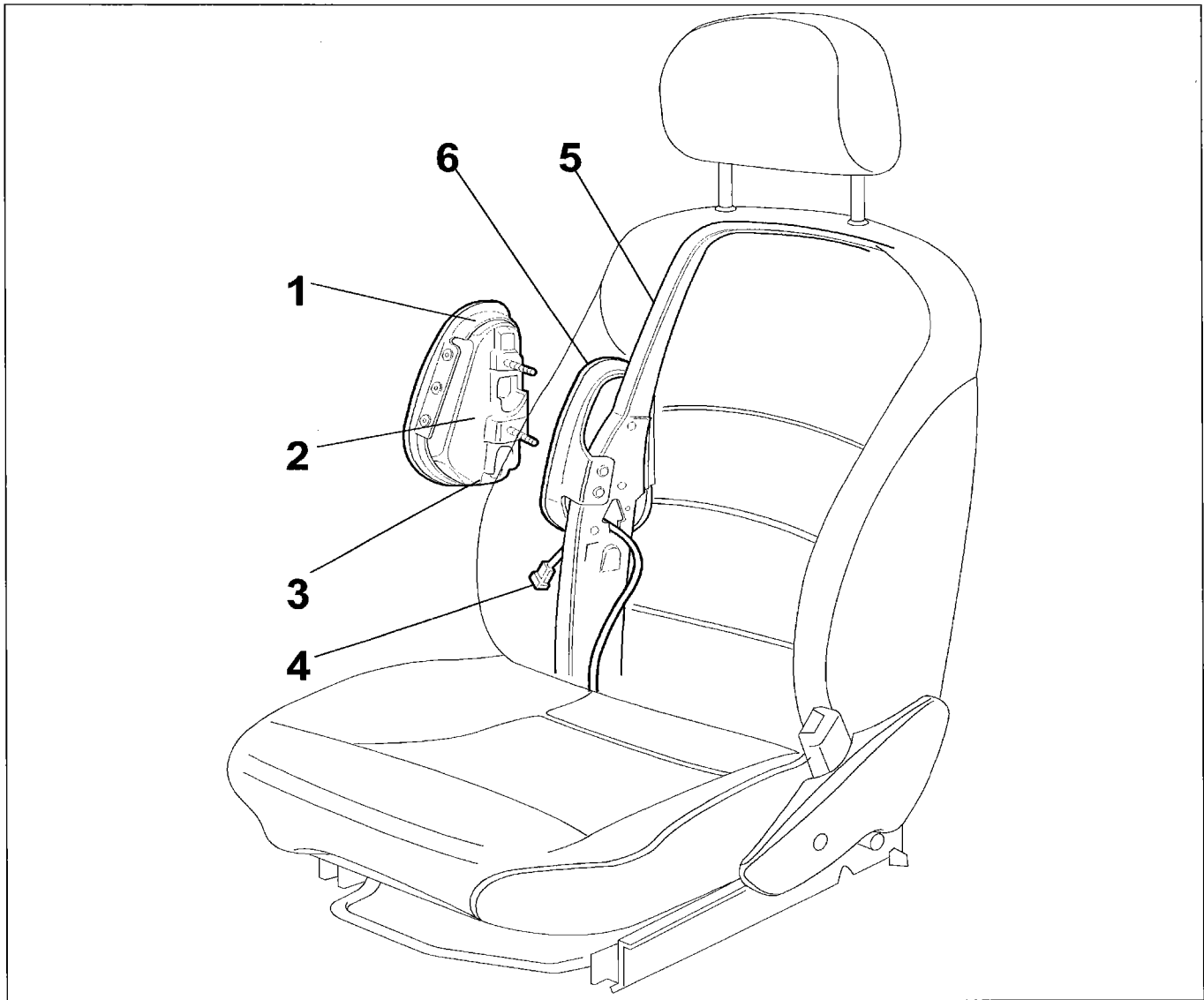
**NOTE** *Each time operations are carried out on the Air Bag system the operation of the system MUST, UNDER ALL CIRCUMSTANCES, be checked using the diagnostic equipment.*

### 55.

#### DIAGRAMMATIC VIEW OF SIDE BAG MODULE

#### Dismantling Side Bag

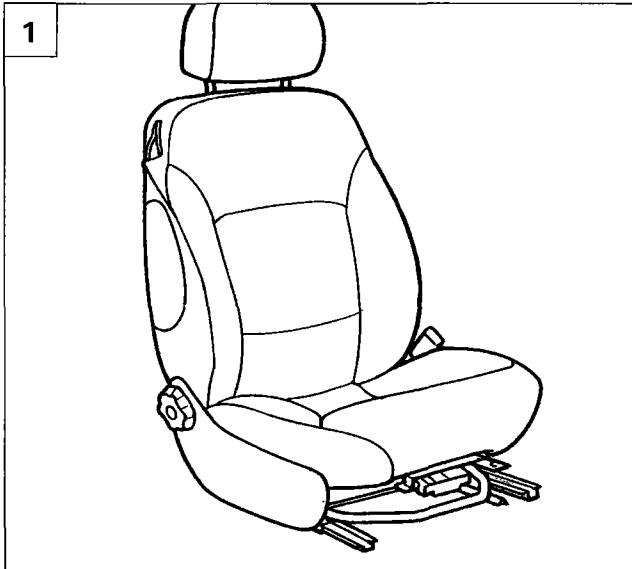
The Side Bag modules are fitted under the backrest cover and do not significantly alter the style or dimensions of the seat.



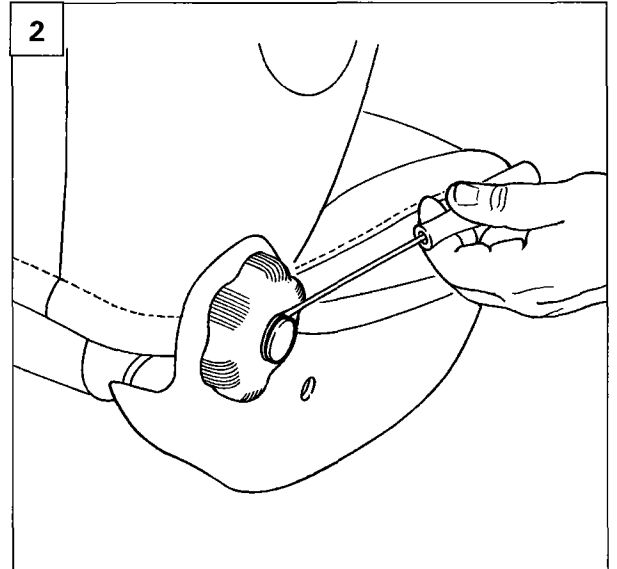
P4A16JL01

1. Plastic cover
2. Metal casing
3. Side Bag module connector
4. Electrical activation cable
5. Backrest structure
6. Side Bag module housing

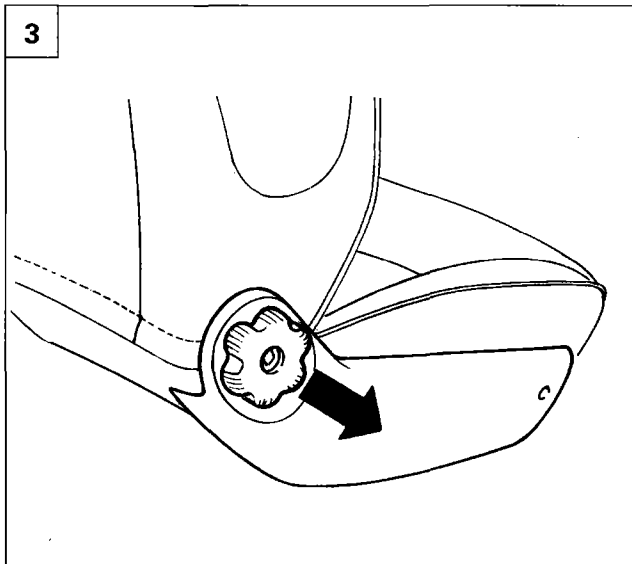




P4A17JL01



P4A17JL02

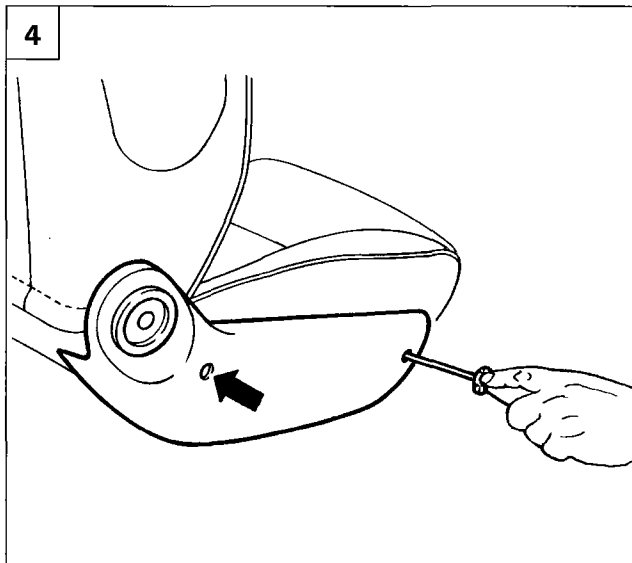


P4A17JL03

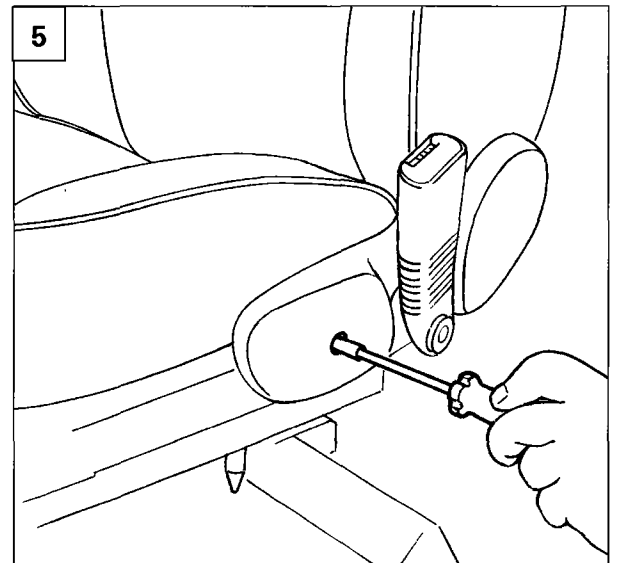
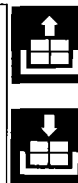


**REMOVING-REFITTING SIDE BAG MODULE**

1. Remove the front seat as described in the paragraph "FRONT SEAT WITH PASSENGER PRESENCE SENSOR AND SIDE BAG".
2. Remove the cap fixing the seat angle adjustment knob.
3. Extract the seat angle adjustment knob.
4. Undo the fixing bolts shown in the diagram and remove the outer seat cover.
5. Undo the bolt fixing the inner seat cover.

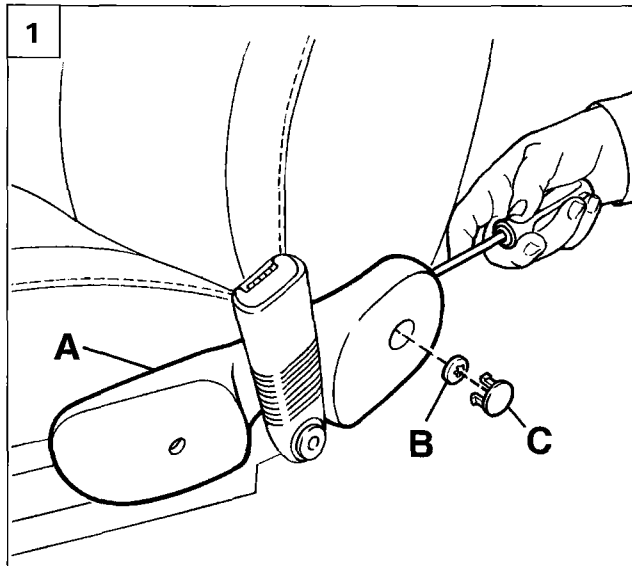


P4A17JL04

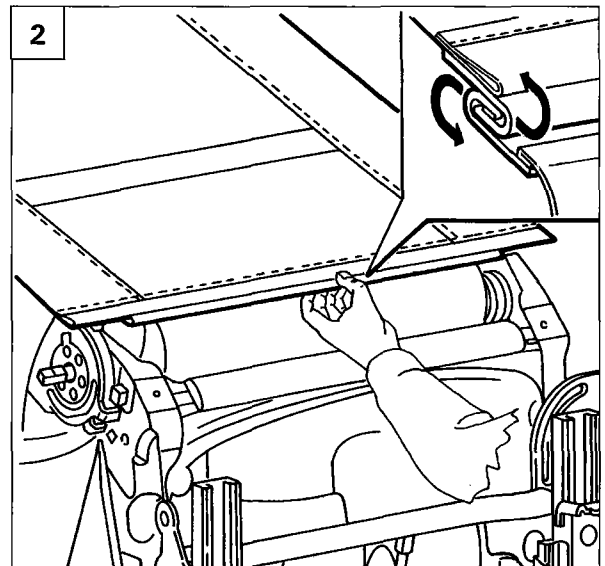


P4A17JL05

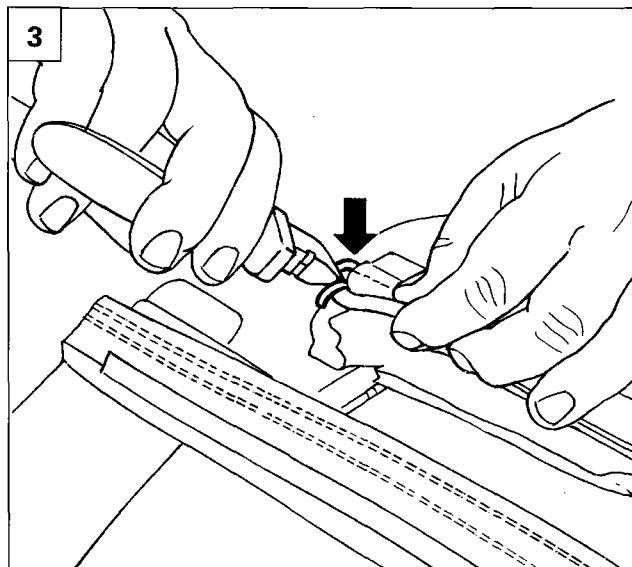
### 55.



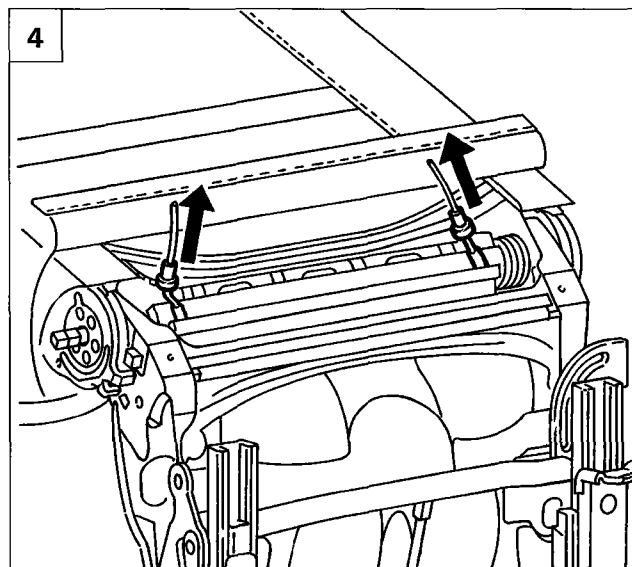
P4A18JL01



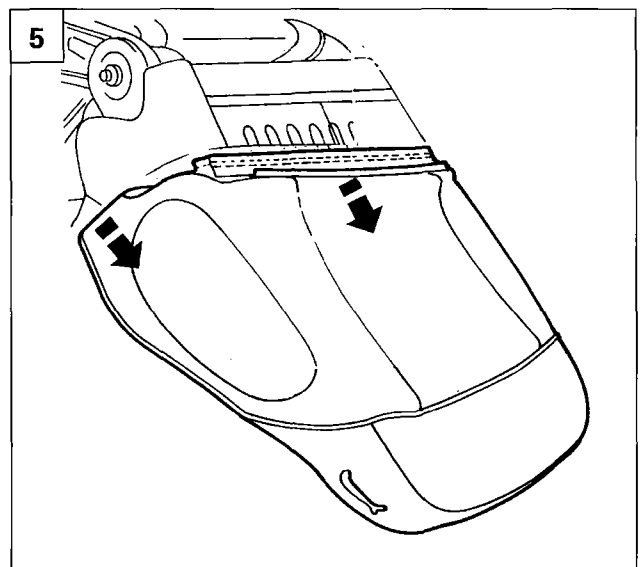
P4A022M08



P4A18JL03

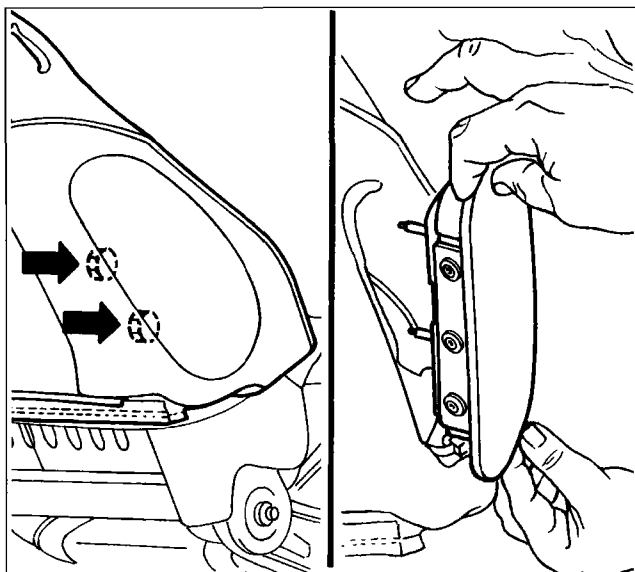


P4A022M09

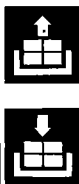


P4A18JL05

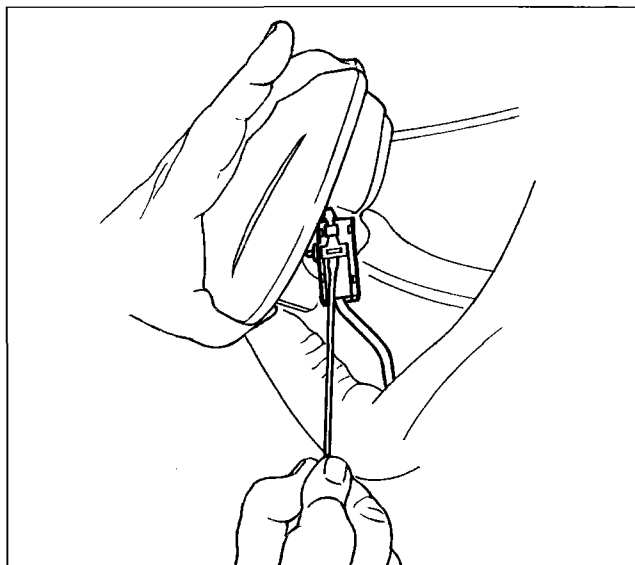
1. Extract cover A manoeuvring it to release washer B, taking care to avoid breakages. Push cap C from the inside after removing the trim. Recover washer B.
2. Release the plastic profile for the backrest from the attachment system.
3. Remove the hooks (two per side) fixing the upholstery using clippers."
4. Disconnect the tensioning rods.
5. Partly remove the upholstery to gain access to the Side Bag module fixing nuts.



P4A19JL01



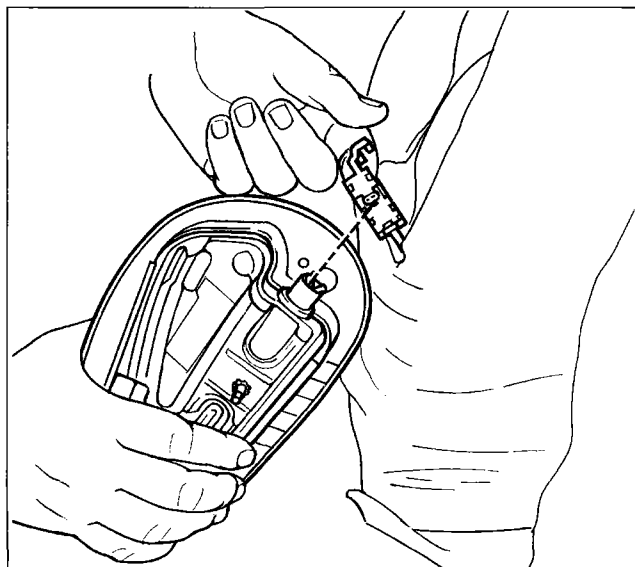
- Undo the nuts (M6) fixing the Side Bag module to the seat frame using a 10 mm spanner;



P4A19JL02



- extract the Side Bag module from its housing, disconnect the safety connection;



P4A19JL03



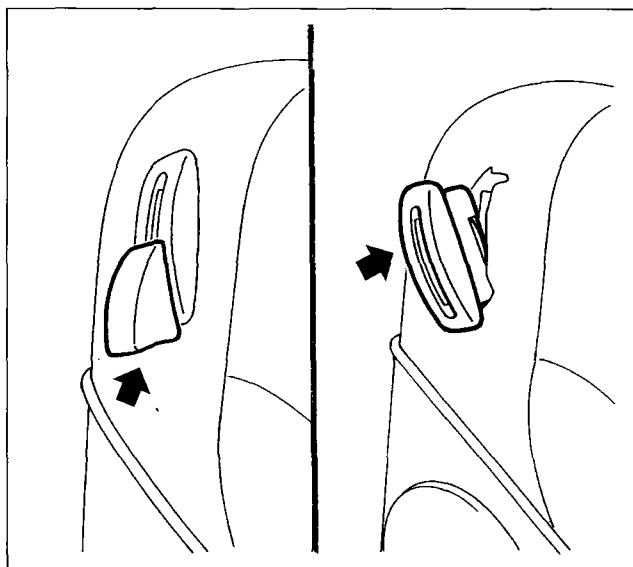
- remove the Side Bag module from the supply cable.



*Carefully follow the instructions in the "General Warnings" chapter when handling Side Bag modules.*

**NOTE** *When refitting, suitably reverse the order of the operations carried out for the removal, making sure that the Side Bag module safety connector is always re-connected; if this is not the case, the fault will be shown by the warning light in the instrument panel.*

### 55.



P4A20JL01



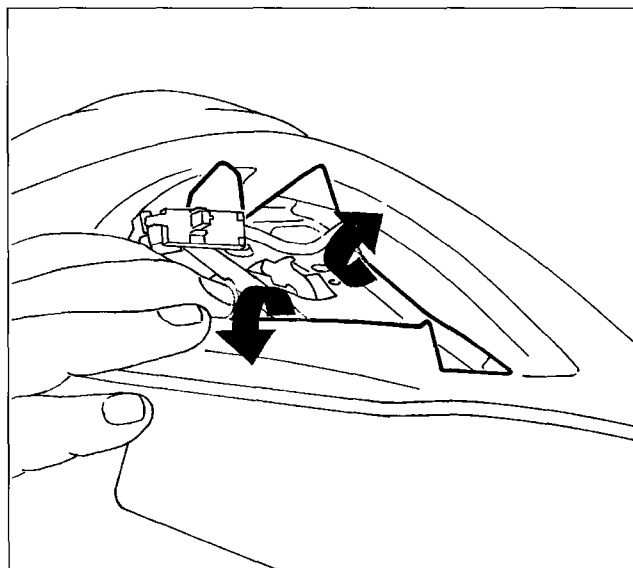
#### DISMANTLING-REASSEMBLING FRONT SEAT



#### Removing-refitting front seat backrest cover

Remove the Side Bag module as described in the "SIDE BAG MODULE" paragraph

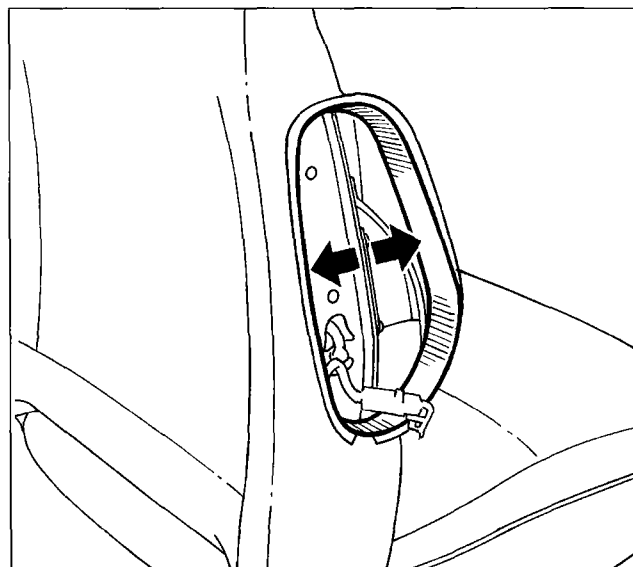
- extract the backrest folding lever and remove the trim, acting on the retaining tabs (Bravo only);



P4A20JL02



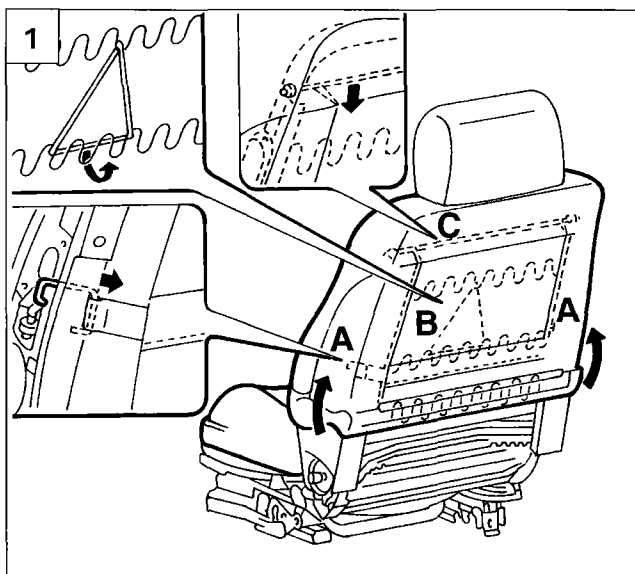
- remove the cover along the perimeter of the Side Bag housing from the velcro;



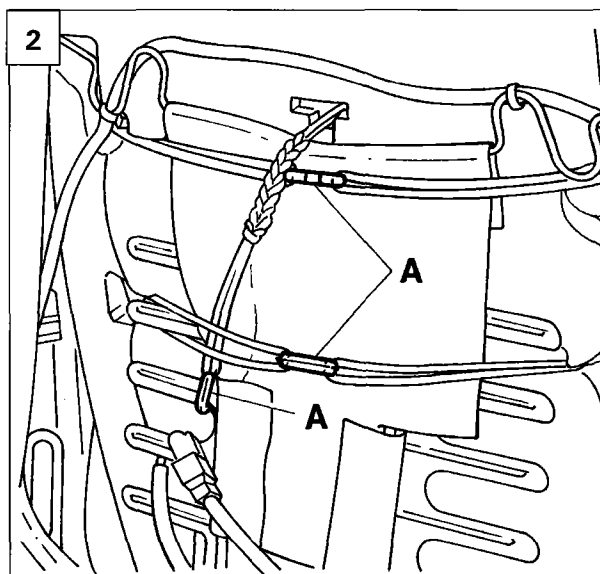
P4A20JL03



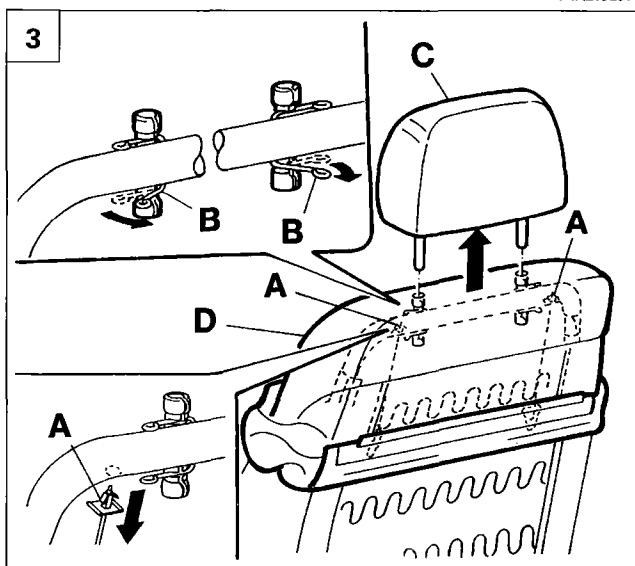
- Stick the seat backrest cover to the velcro, around the perimeter of the Side Bag housing, as illustrated in the diagram (during refitting only).



P4A21JL01



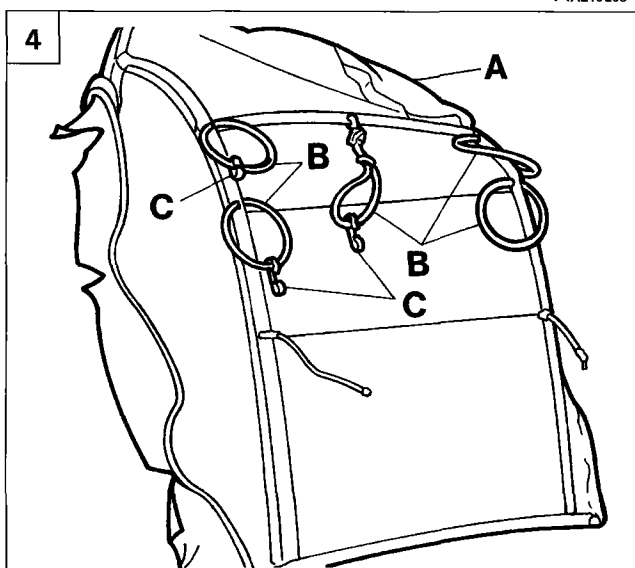
P4A21JL02



P4A21JL03



1. Remove the cover, then remove the fixing hooks A: release the circlip B and then the upper retaining rod C; (operation valid for the passenger seat).
2. Release the attachments (A) for the tensioning circlips (operation valid for the driver's seat).
3. Release the two rods A from the pipe as illustrated in the inset, rotate the spring B, extract the head restraint C and then remove the cover D.



P4A21JL04



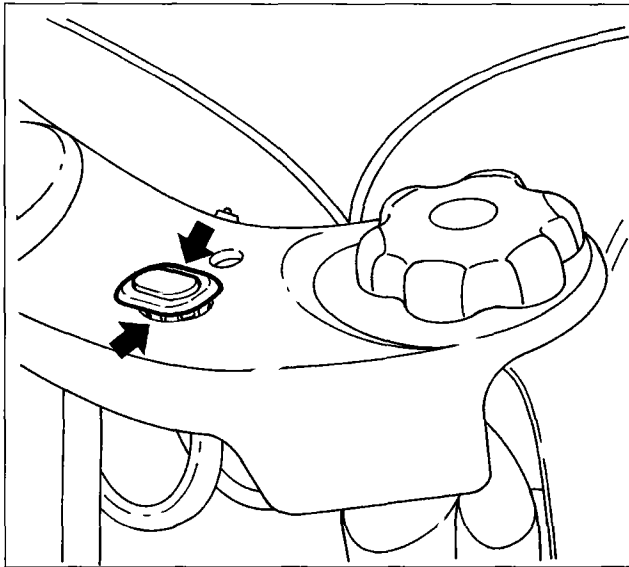
4. View of inner cover
  - A. Cover
  - B. Circlips
  - C. C. Attachments

**NOTE** To refit, suitably reverse the order of the operations carried out for the removal. Fix the backrest cover hooks using tool 1878077000, taking care to ensure that the rods are correctly positioned.

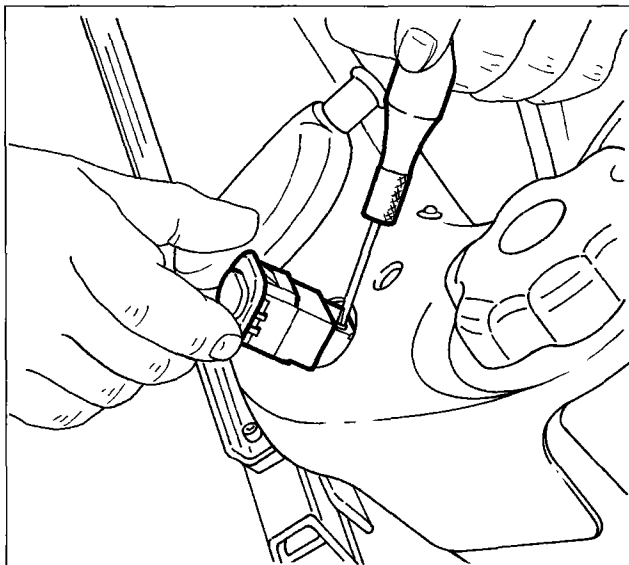


Use new hooks.

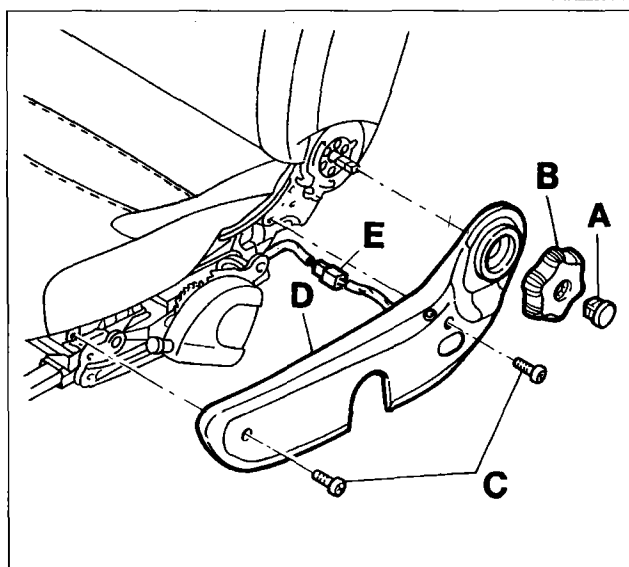
### 55.



P4A22JL01



P4A22JL02

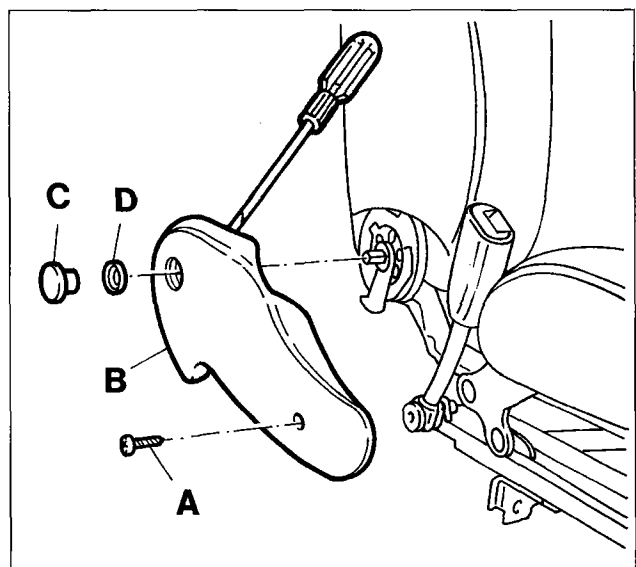


P4A22JL03

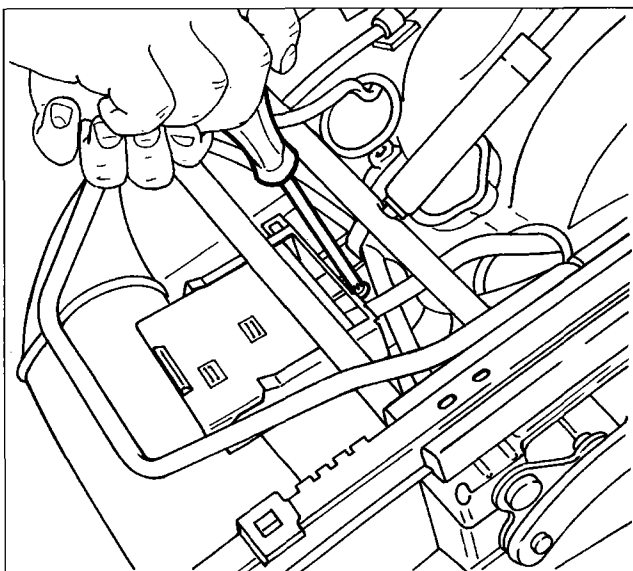
### Removing-refitting front seat cushion cover

Remove the front seat as described in the paragraph "REMOVING-REFITTING FRONT SEAT WITH PASSENGER PRESENCE SENSOR AND SIDE BAG".

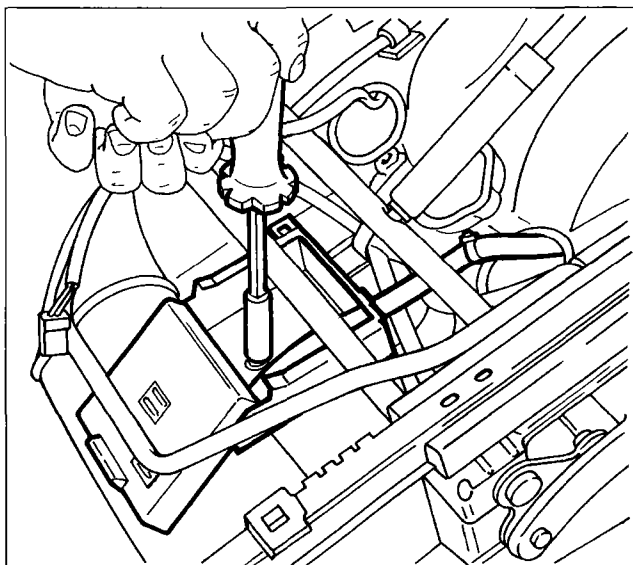
1. Act on the retaining tabs, remove the lumbar adjustment control switch, if fitted.
2. Disconnect the connector and remove the lumbar adjustment control switch.
3. Remove the cap A and the backrest adjustment knob B. Undo the bolts C fixing the outer trim D, then remove it, after having disconnect the connection E for the heater pad LED E (if fitted).
4. Undo the bolt A fixing the trim B to release the washer D, taking care to avoid break-ages. Push the cap C from the inside, after extracting the trim, recovering the washer D.



P4A22JL04



P4A23JL01



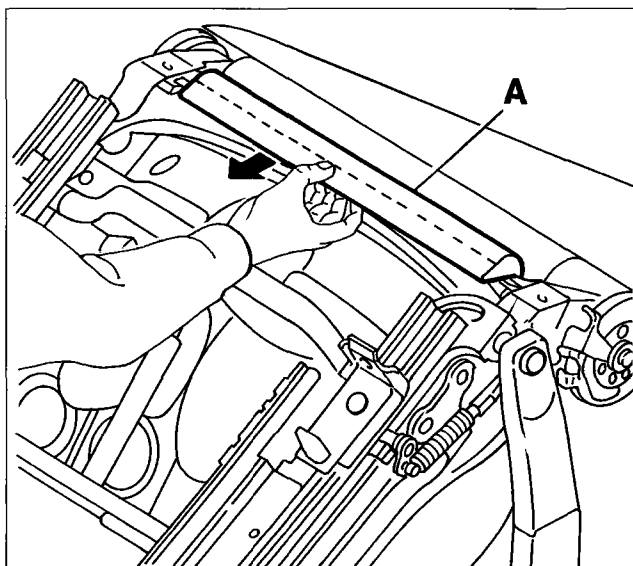
P4A23JL02



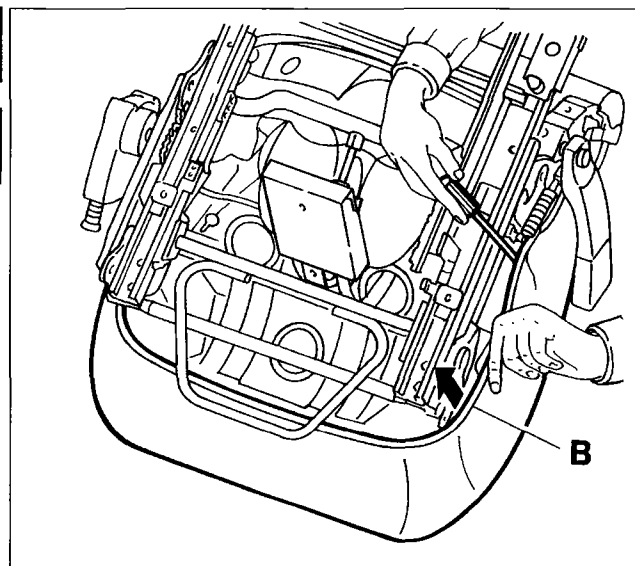
1. Undo the bolt fixing the connector box.
2. Extract the box flap, undo the bolt underneath and place the connector box to the side.
3. Release the plastic profile (A) at the rear, working as illustrated in the diagram.
4. Proceed to extract the plastic profile B, starting from the rear side section, releasing it with the help of a screwdriver, then remove the cushion.



*Remove the cushion, complete with cover, from its housing, taking care over the electrical wiring and, in particular, the passenger presence sensor and heater pad.*

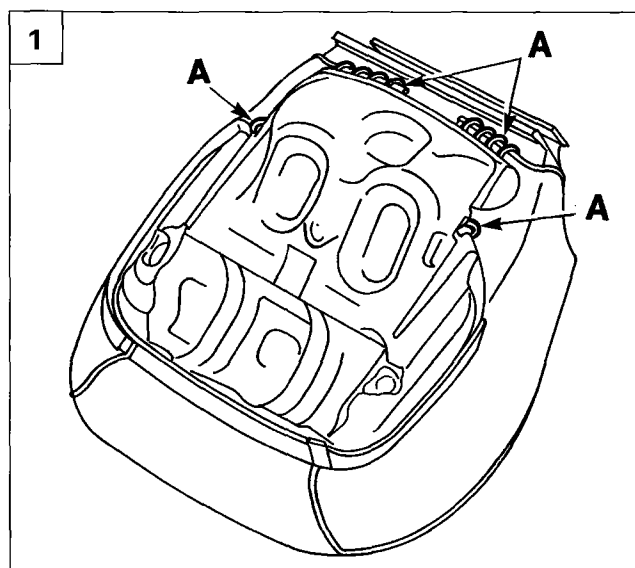


P4A021M08

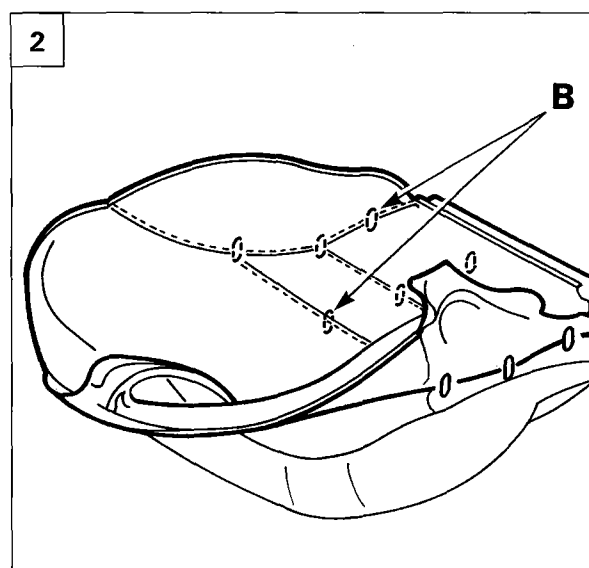


P4A23JL04

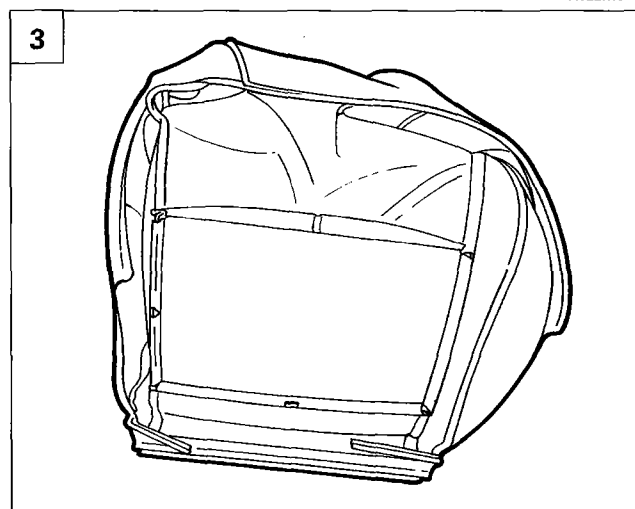
### 55.



P4A022M06



P4A022M07



P4A24JL03



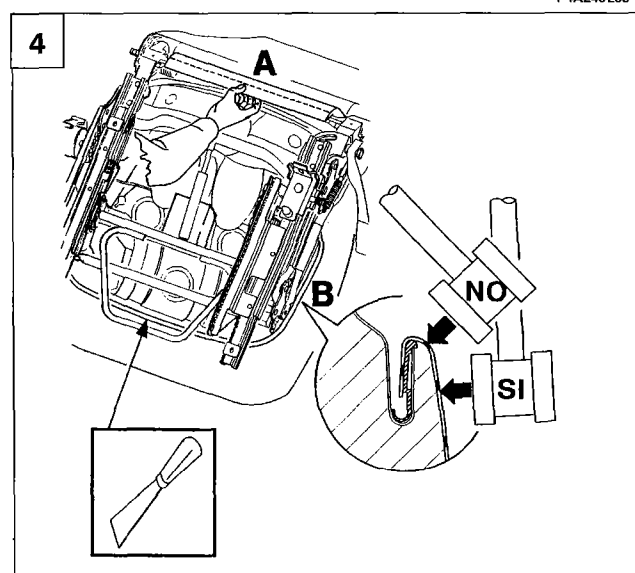
1. Proceed with dismantling the hooks A fixing the cover to the upholstery using the clip-pers;
2. turn the cover over and dismantle the fixing hooks B by the edges of the seat;



*Remove any remaining hooks connected to the upholstery to prevent damage to the new cover.*

3. remove the seat cushion cover from its housing.

**NOTE** *To refit, simply reverse the order of the operations carried out for the removal. Fix the cushion cover hooks using tool 1878077000.*



P4A24JL04



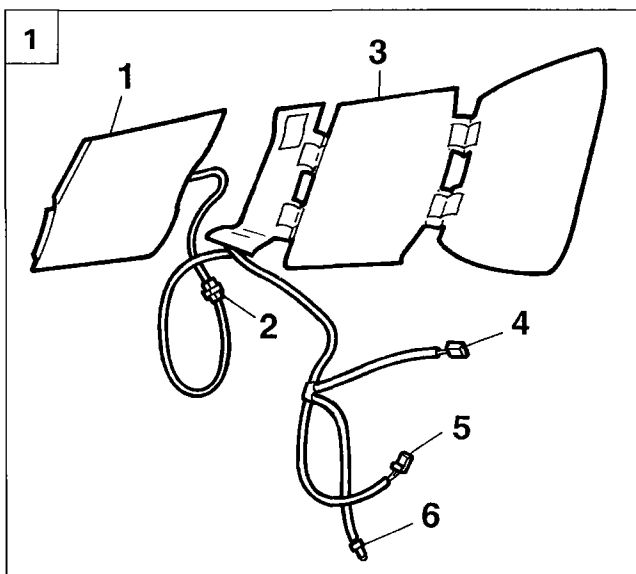
### Refitting

4. Refit the cushion module to the seat frame; attach plastic profile (A) and attach plastic profile (B) using a spatula, starting from the centre front area. Strike the rain gutter using a rubber hammer (the diagram shows how to use a rubber hammer correctly)



*Using other tools could damage the cover.*





P4A25JL01



**SEAT HEATER PAD**

**Key**

1. Backrest heater pad
2. Backrest/cushion heater pad connector
3. Cushion heater pad
4. Heater pad switch connector
5. Supply connector
6. Seat heater pad on warning light connector

**Removing-refitting backrest heater pad**

Remove the front seat backrest cover as described in the paragraph "Removing-refitting front seat backrest cover" with the exception of the head restraint, freeing only the part which covers the heater pad.

**NOTE** Remove the backrest lowering lever and frame (Fiat Bravo only)

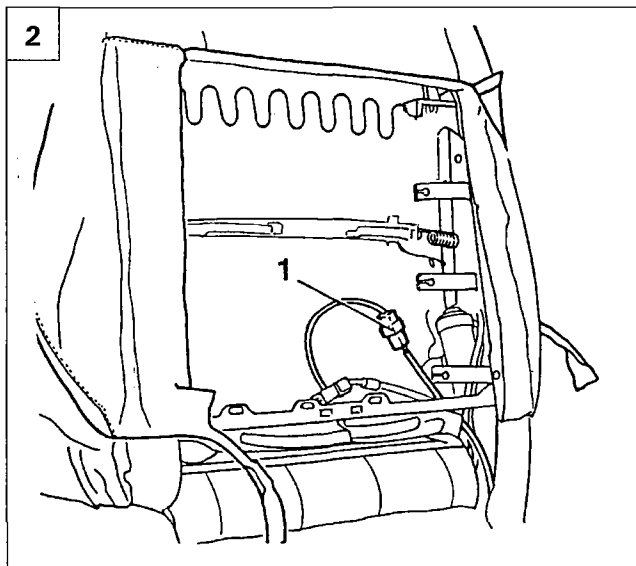
2. Disconnect the electrical supply connection (1) and remove the cable passing it in front of the backrest upholstery.
3. Remove the heater pad from the seat backrest upholstery.



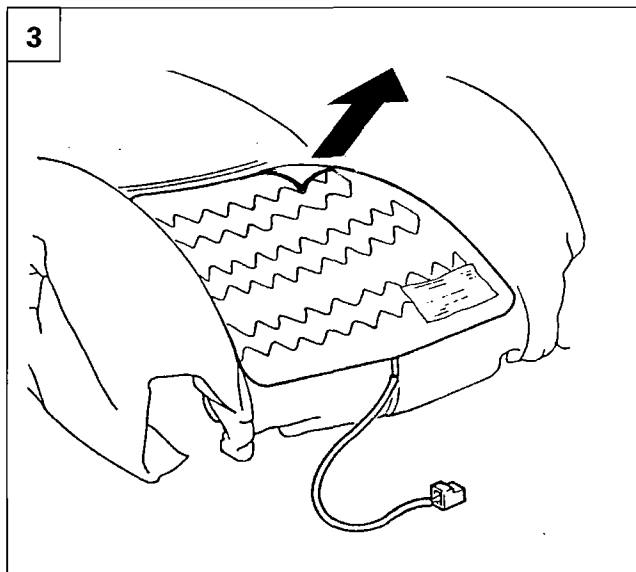
**Refitting**

4. To refit, position the heater pad on the backrest, as illustrated in the diagram, pass the cable behind the upholstery through the slit shown at the base of the backrest, re-connect the electrical connection and refit the backrest cover as described.

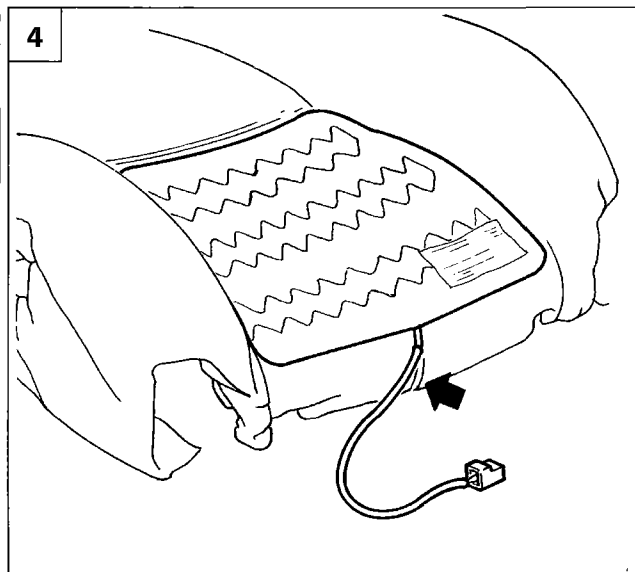
Refit the front seat backrest cover as described in the paragraph "Removing-refitting front seat backrest cover".



P4A25JL02

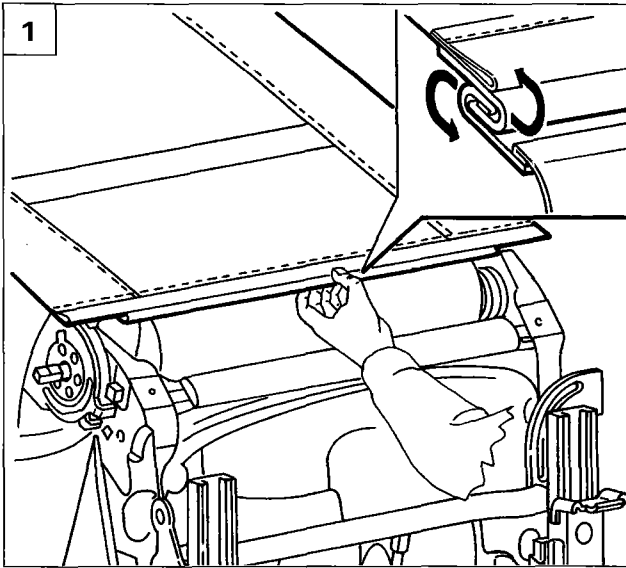


P4A25JL03

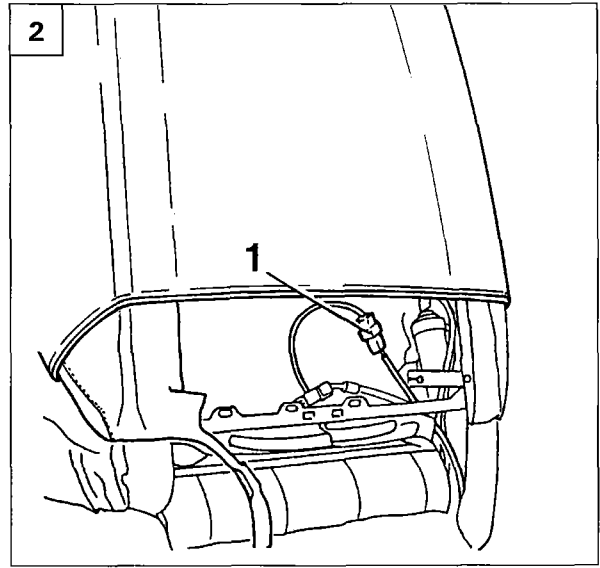


P3U92NL05

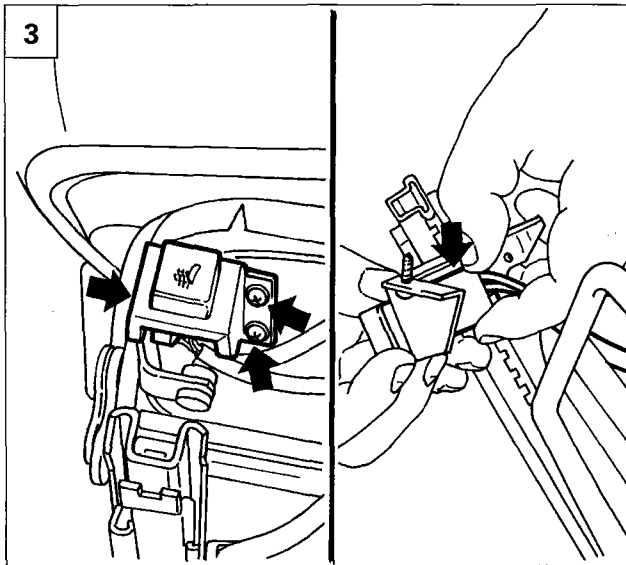
### 55.



P4A022M08



P4A26JL05



P4A26JL03

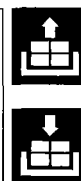
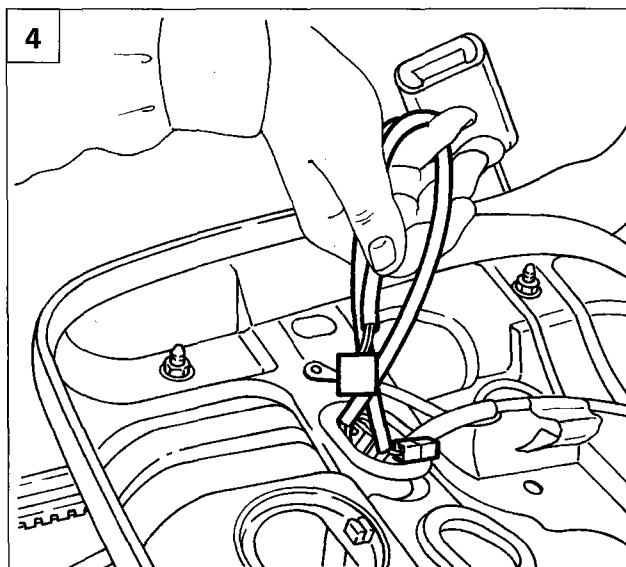
#### Removing-refitting cushion heater pad

1. Release the backrest plastic profile from the attachment system.
2. Partly remove the seat backrest cover to disconnect the electrical supply connection (1) and remove the wiring.

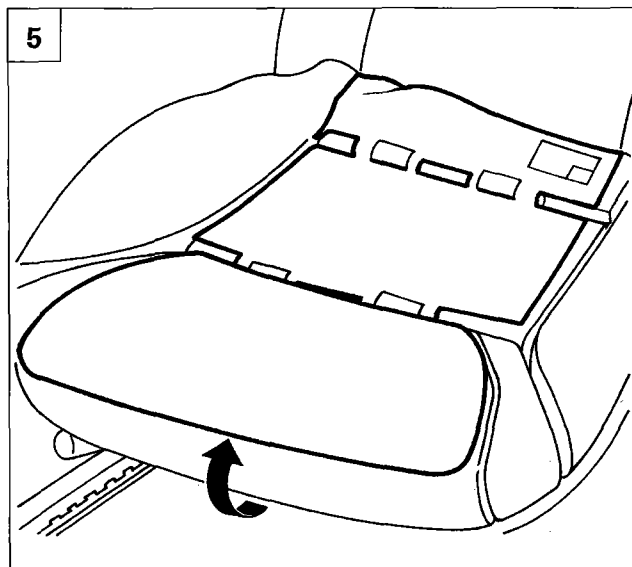
Remove the cushion cover as described in the paragraph "Removing-refitting front seat cushion cover".

3. Undo the bolts fixing the heater pad switch and disconnect the heater pad electrical supply connection.
4. Lift up the seat cushion upholstery and release the electrical wiring from the retaining springs.
5. Remove the heater pad without damaging the PPD sensor.

**NOTE** To refit, simply reverse the order of the operations carried out for the removal.

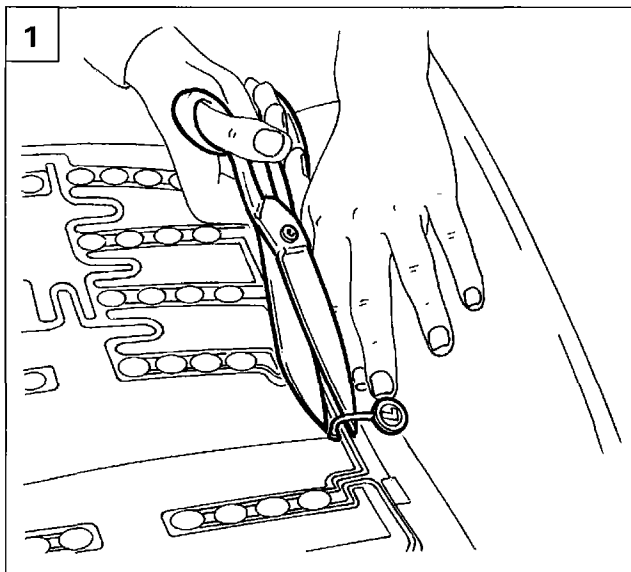


P4A26JL04

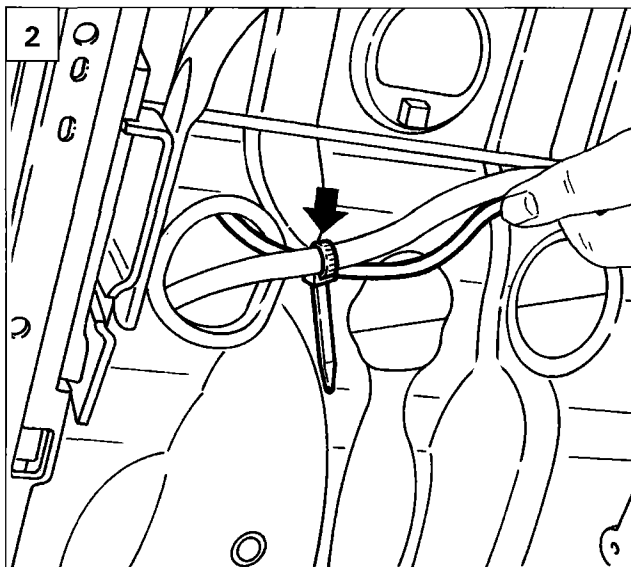


P4A26JL05

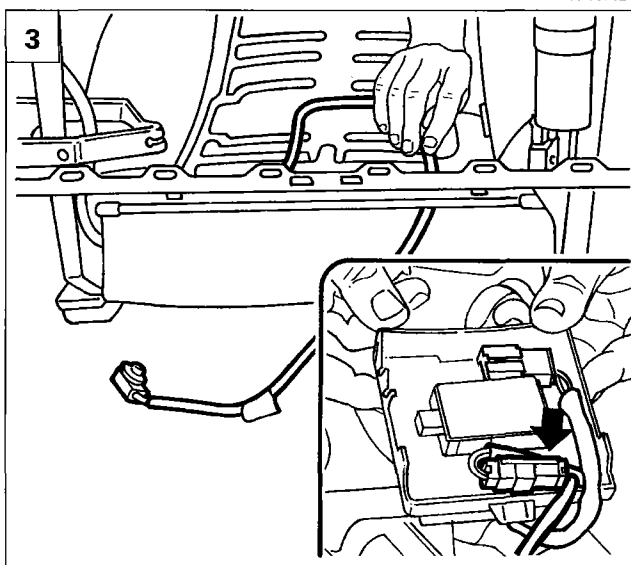
#### REMOVING-REFITTING PASSENGER PRESENCE SENSOR (PPD)



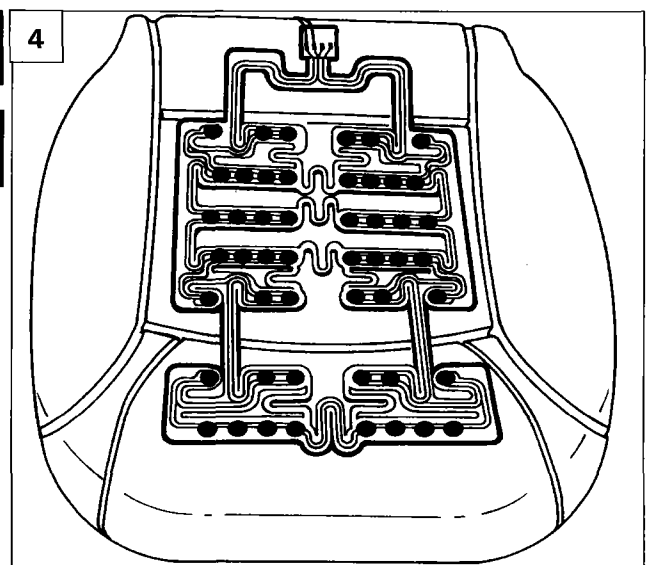
P3U90NL01



P4A27JL02



P4A27JL03



P4A27JL04

#### Removing-refitting

Remove the front seat cushion cover as described in the paragraph "Removing-refitting front seat cushion cover" and the cushion heater pad (if fitted).

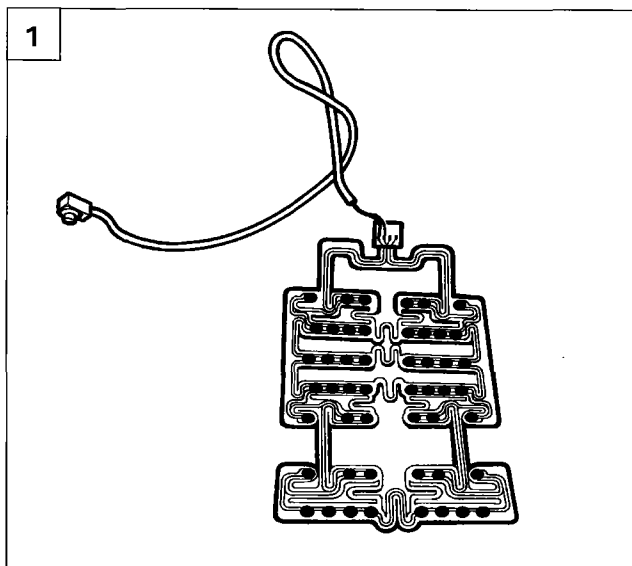
1. Cut the sealant, taking great care not to damage the sensor.



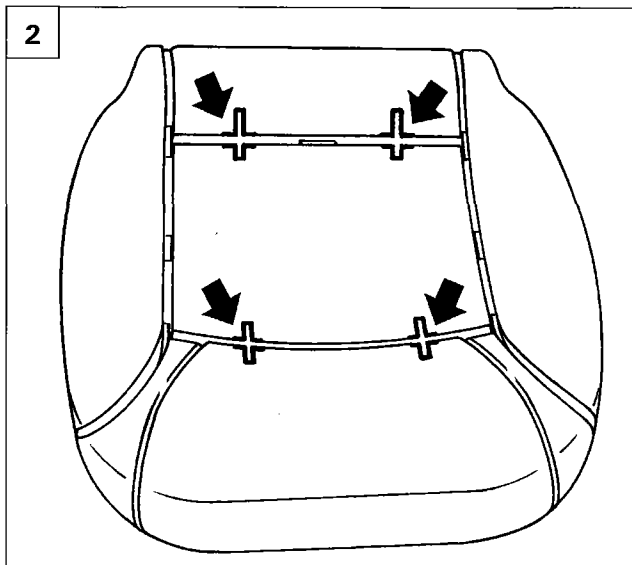
*The sealant is designed to ensure the correct operation of the PPD sensor. The moment the sealant is removed, for any reason, the manufacturer's guarantee is no longer valid. When re-fitting, renew the guarantee sealant with genuine Fiat sealant.*

2. Release the passenger presence sensor supply wiring from the retaining band.
3. Remove the PPD sensor from the cushion upholstery working carefully to avoid damaging it.
4. Disconnect the connector in the connector box (shown in the inset), then remove the passenger presence sensor supply wiring from the bottom of the seat.

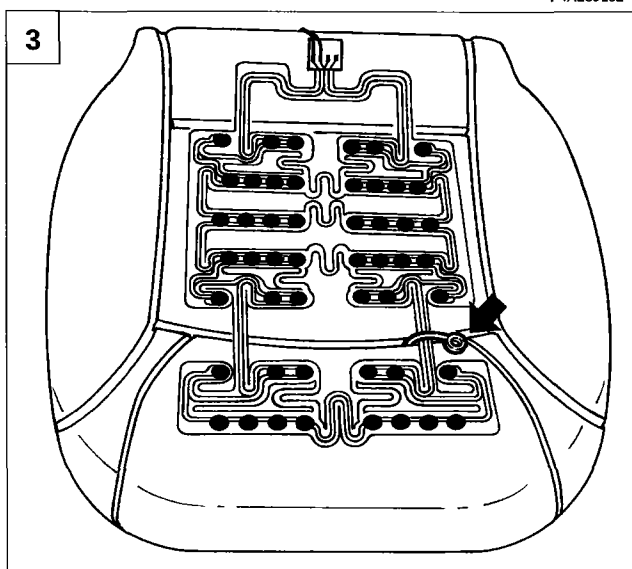
### 55.



P4A28JL01



P4A28JL02



P4A28JL03

#### Refitting

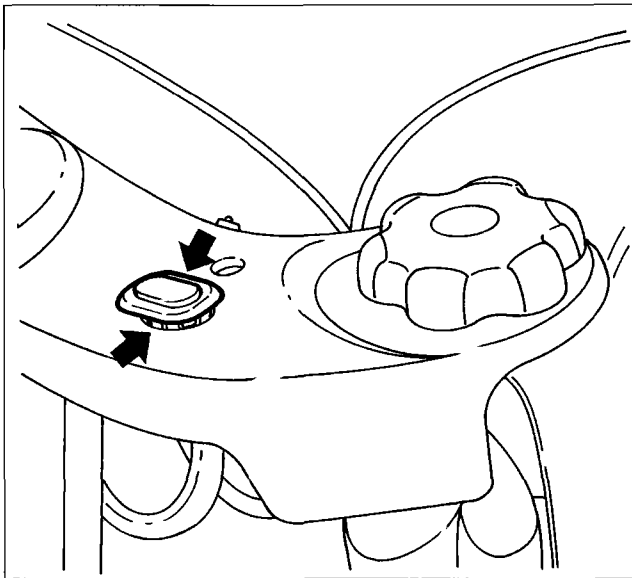
- To refit, position the PPD sensor with the adhesive section facing the upholstery;

- Fit the PPD sensor in the special notches in the cushion upholstery shown in the diagram;

- reposition the electrical wiring for the PPD sensor and restore the guarantee seal.

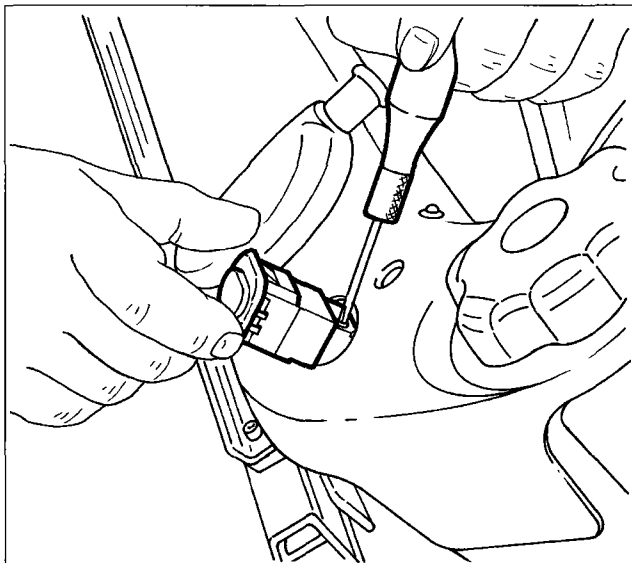


*Each time operations are carried out on the Air Bag system, at the end of the procedure, its operation **MUST**, **UNDER ALL CIRCUMSTANCES**, be checked using the appropriate diagnostic equipment.*



### REMOVING-REFITTING SIDE BAG SUPPLY CABLE

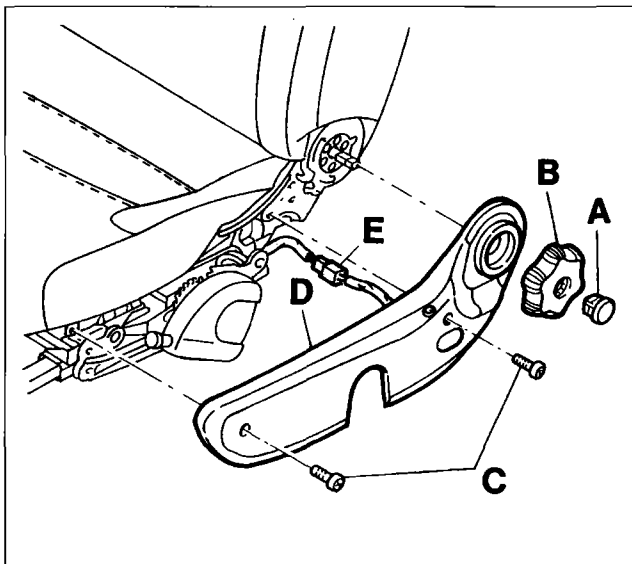
P4A22JL01



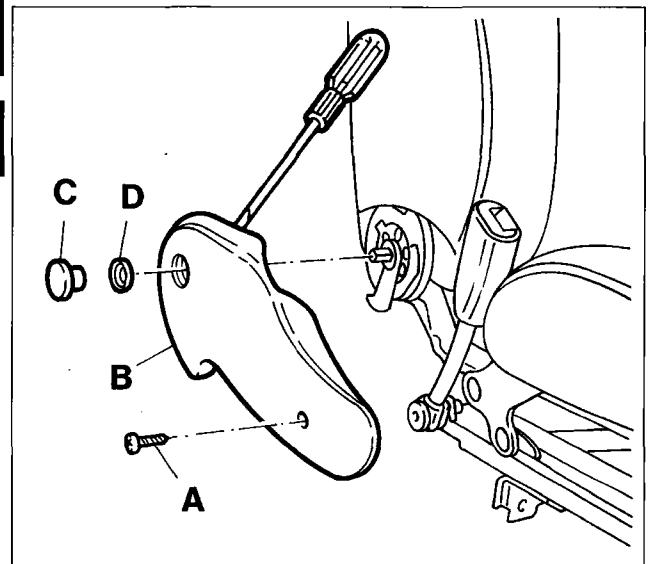
Remove the Side Bag module as described in the paragraph "REMOVING-REFITTING SIDE BAG MODULE" on the previous pages.

1. Act on the retaining tabs to remove the lumbar adjustment switch, if fitted.
2. Disconnect the connector and remove the lumbar adjustment control switch.
3. Remove the cap A and the backrest adjustment knob B. Undo the bolts C fixing the outer trim D, then remove it, after having disconnect the connection E for the heater pad LED (if fitted).
4. Undo the bolt A fixing the trim B to release the washer D, taking care to avoid breakages. Push the cap C from the inside after extracting the trim. Recover the washer D.

P4A22JL02

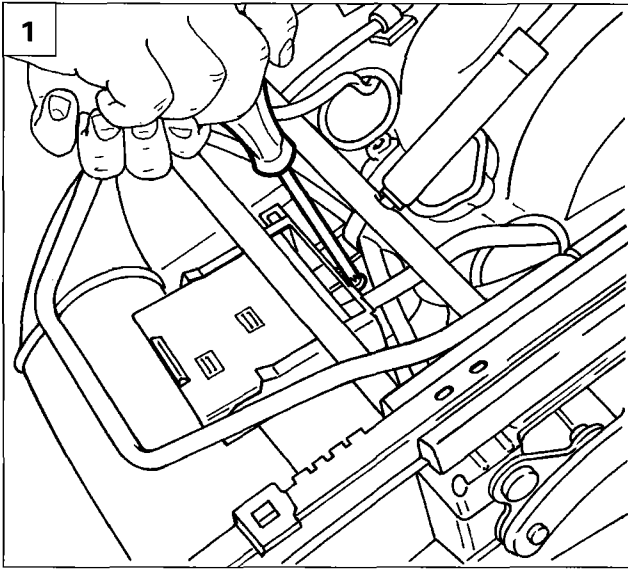


P4A22JL03

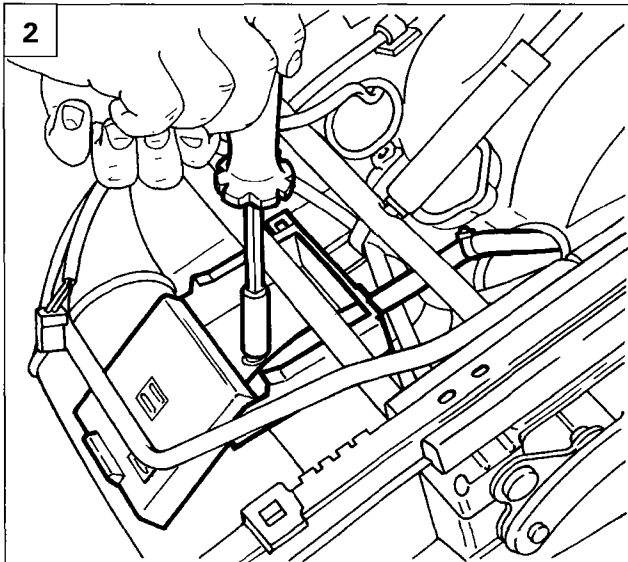


P4A22JL04

### 55.



P4A23JL01



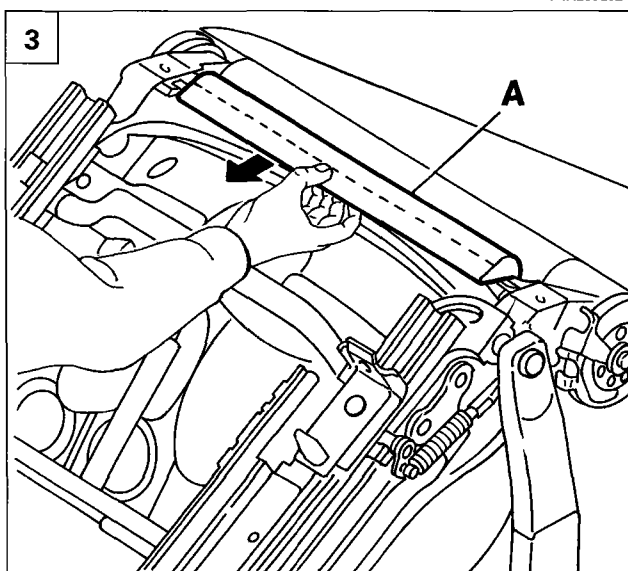
P4A23JL02



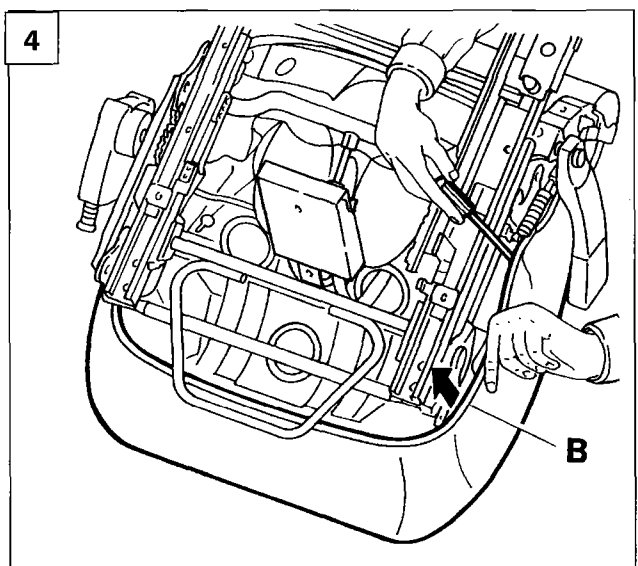
1. Undo the bolt fixing the connector box.
2. Extract the connector box flap, undo the bolt underneath and place the connector box to the side.
3. Release the plastic profile (A) at the rear, following the illustration.
4. Proceed with removing the plastic profile (B), starting from the rear side section, releasing it with the help of a screwdriver, then remove the cushion.



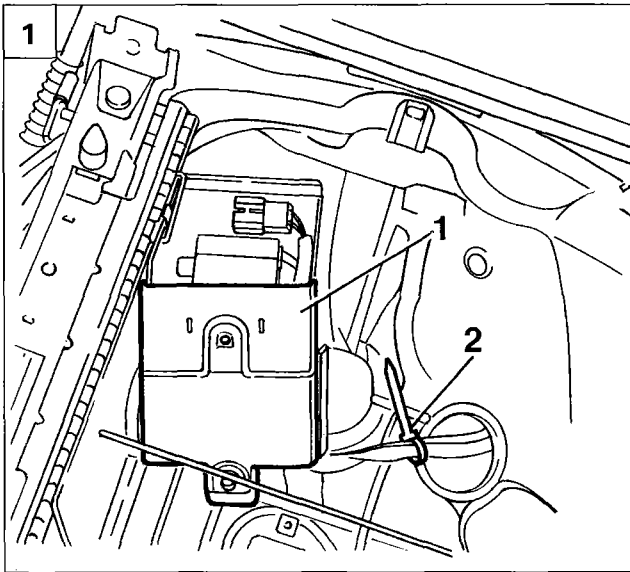
*Remove the cushion, complete with cover, from its housing, taking care over the electric wires, in particular the passenger presence sensor and the heater pad.*



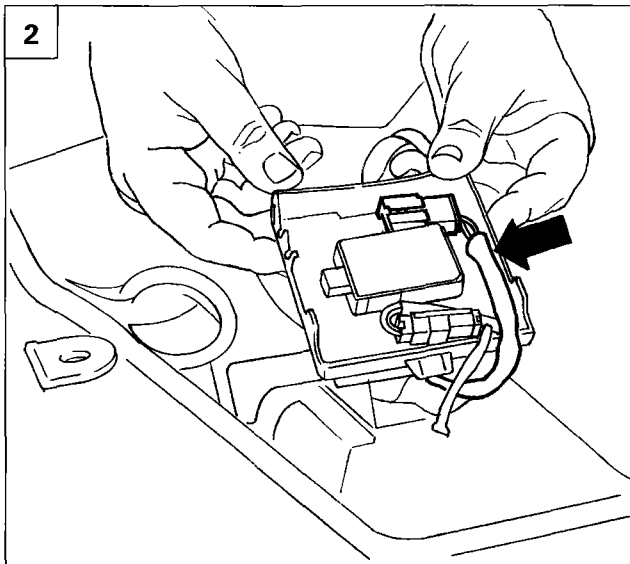
P4A21M08



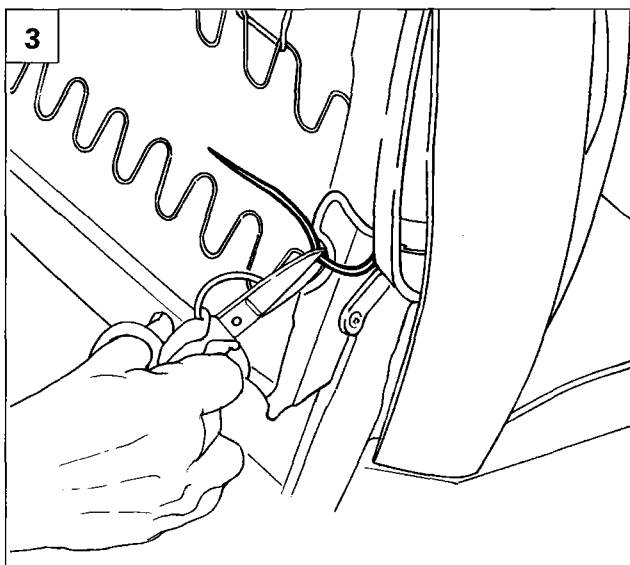
P4A23JL04



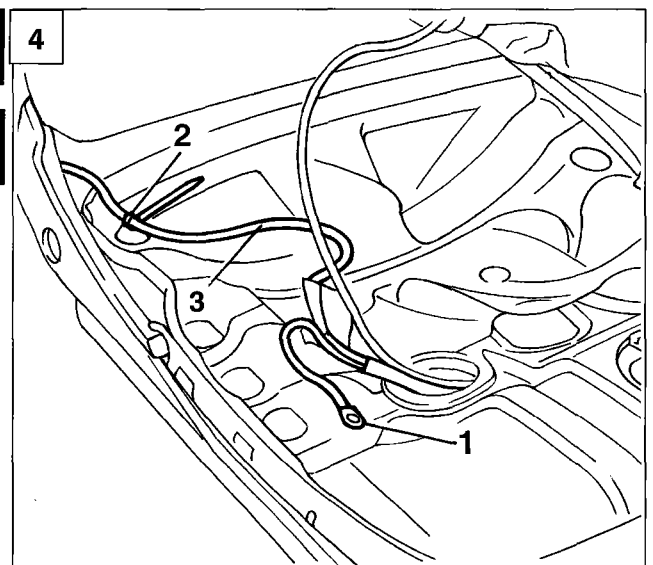
P4A31JL01



P4A31JL02



P4A31JL03

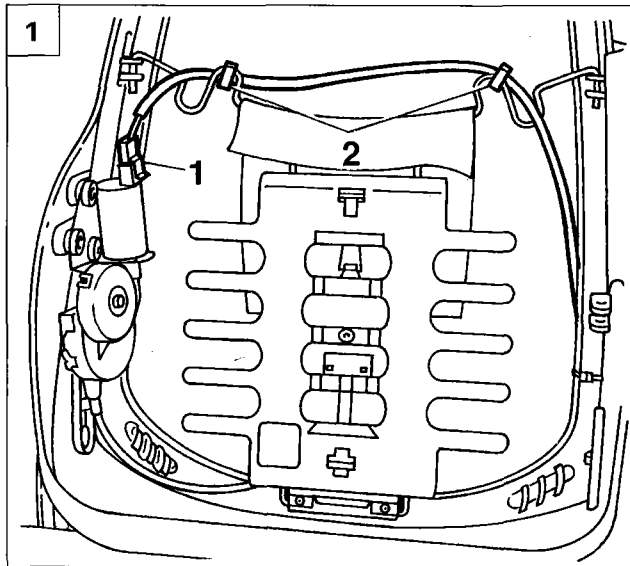


P4A31JL04

1. Remove the connector box flap (1) and release the supply cables opening the retaining band (2) fixed to the bottom of the seat.
2. Remove the Side Bag supply cable from the connector box, shown in the diagram.
3. Remove the rivet (1) fixing the earth lead, widen the retaining band (2) and remove the Side Bag supply cable (3) from the seat.
4. Cut the band fixing the supply cable to the seat backrest frame.

**NOTE** *To refit, simply reverse the order of the operations carried out for the removal.*

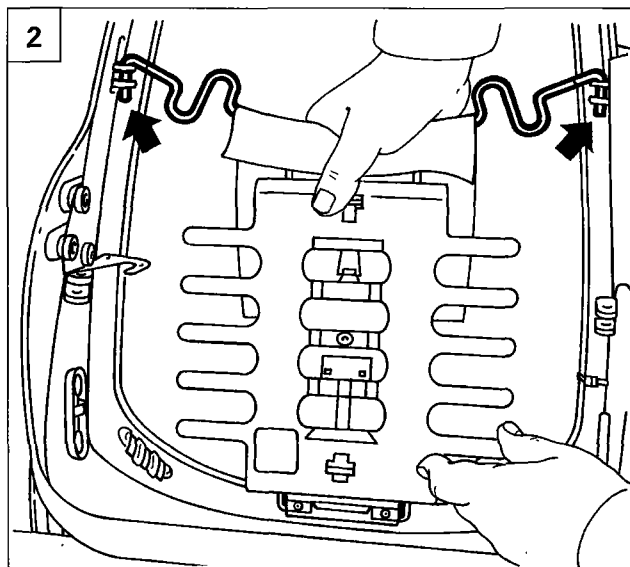
### 55.



P4A32JL01



### REMOVING-REFITTING LUMBAR ADJUSTMENT DEVICE



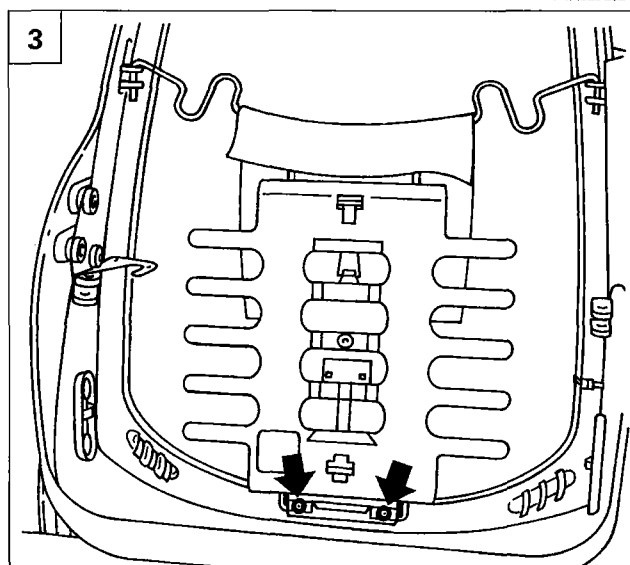
P4A32JL02



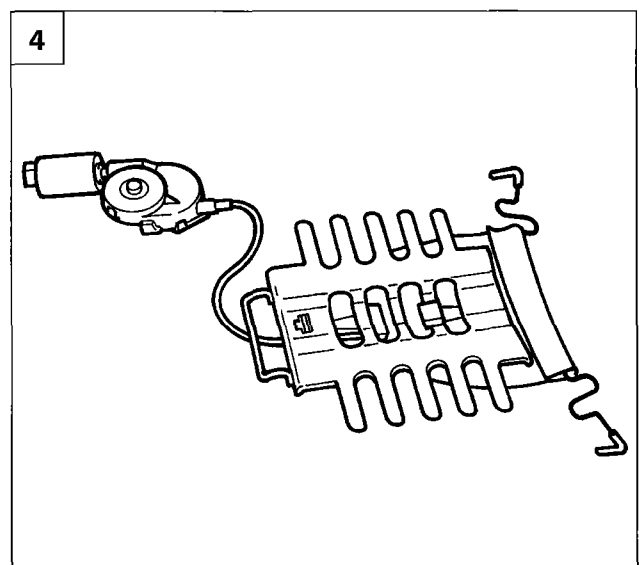
Lift up the front seat backrest cover as described in the paragraph "Removing-refitting front seat backrest cover".

1. Disconnect the electrical connection (1) for the lumbar adjustment motor, then remove the bands (2) retaining the supply cable.
2. Release the hooks fixing the lumbar adjustment device to the backrest frame.
3. Undo the bolts fixing the lumbar adjustment device shown in the diagram.
4. Remove the lumbar adjustment device from the seat backrest.

**NOTE** To refit, simply reverse the order of the operations carried out for the removal.

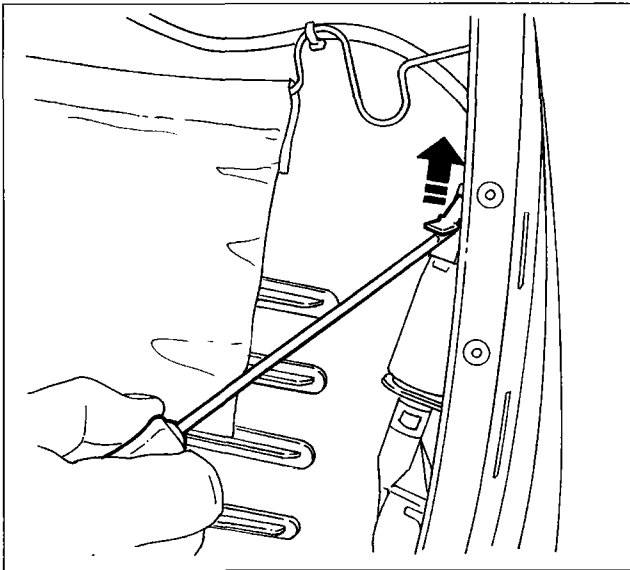


P4A32JL03



P4A32JL04





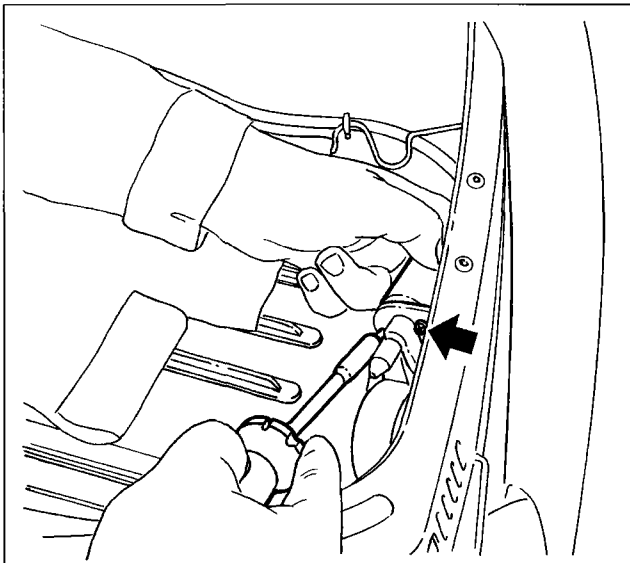
P4A33JL01



**Removing-refitting lumbar adjustment device motor**

Remove the front seat backrest cover as described in the paragraph "Removing-refitting front seat backrest cover" with the exception of the head restraint.

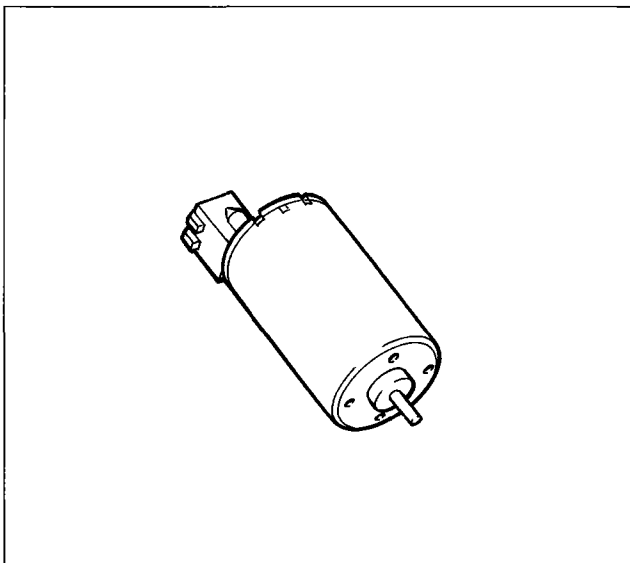
- Disconnect the electrical supply connection for the lumbar adjustment motor.



P4A33JL02



- undo the bolts fixing the motor shown in the diagram;



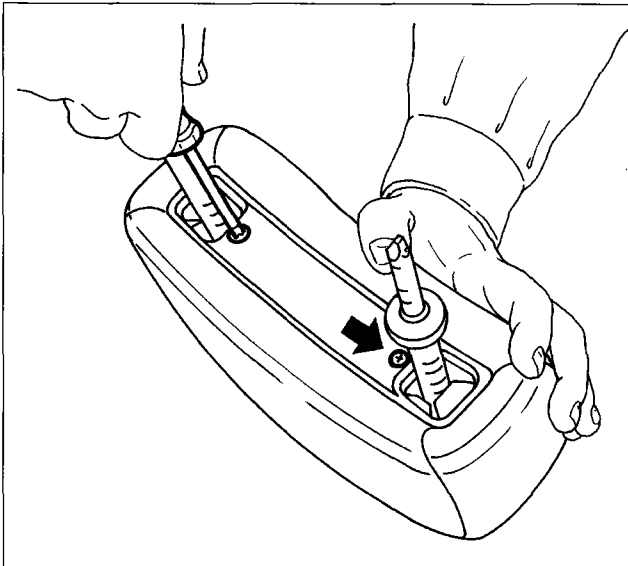
P4A33JL03



- remove the lumbar adjustment motor from its housing.

**NOTE** To refit, simply reverse the order of the operations carried out for the removal.

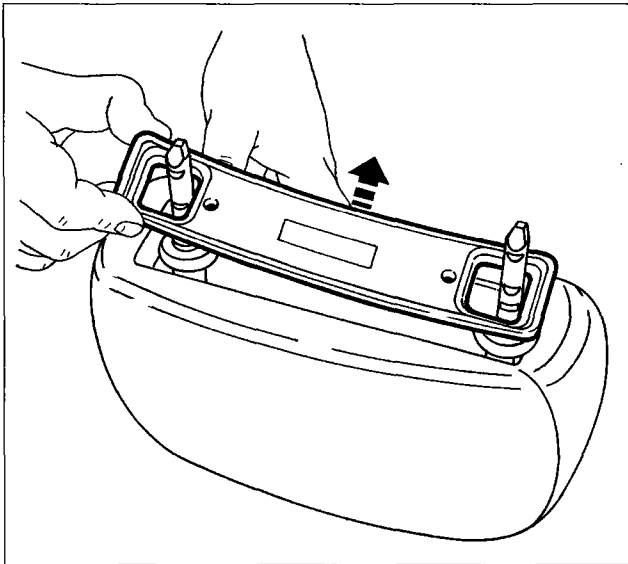
### 55.



P4A34JL01



### DISMANTLING HEAD RESTRAINT

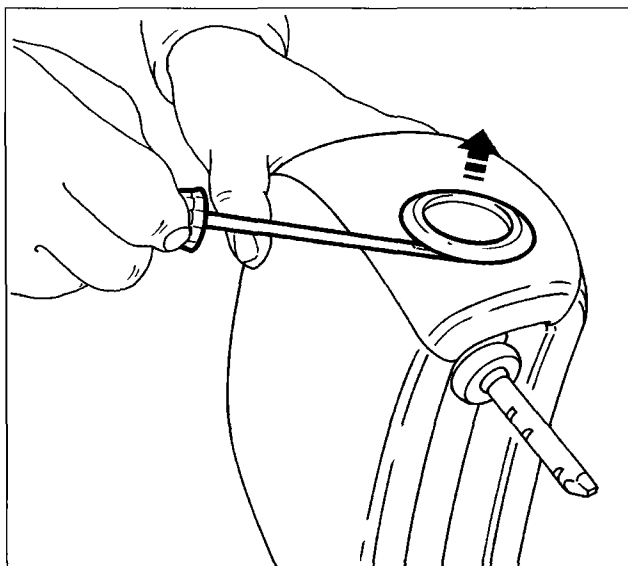


P4A34JL02

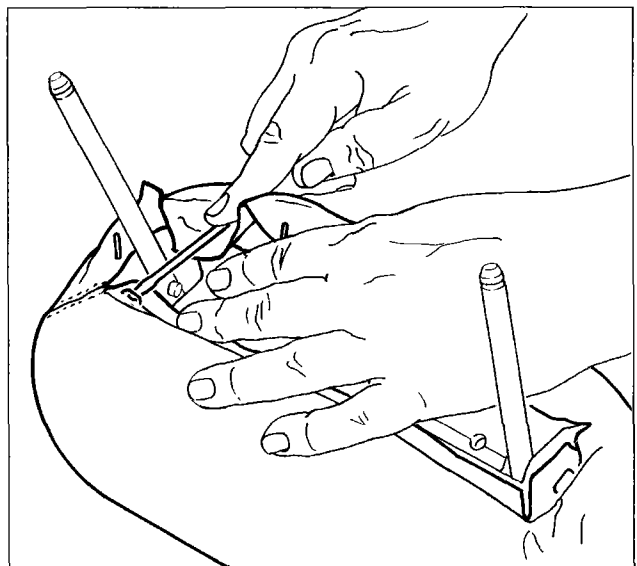


Remove the head restraint as described in the paragraph "Removing-refitting front seat back-rest cover".

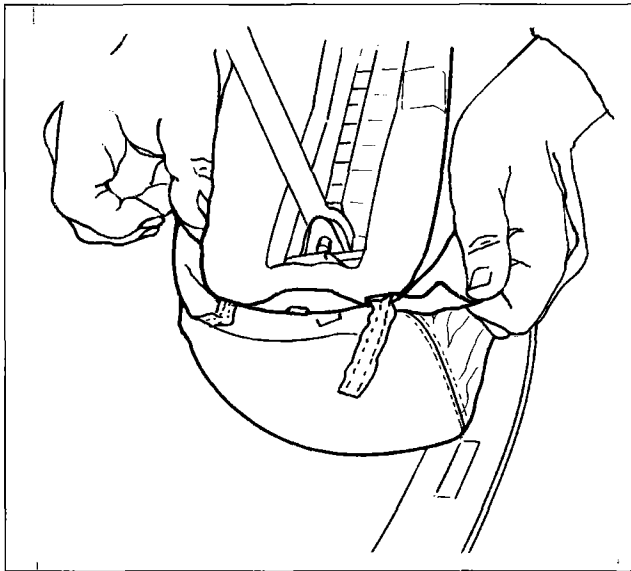
1. Undo the bolts fixing the cover retaining trim.
2. Lift up the trim and remove it from the head restraint.
3. Remove the head restraint height adjustment control button and surround.
4. Lift up and remove the securing clips from the head restraint cover.



P4A34JL03



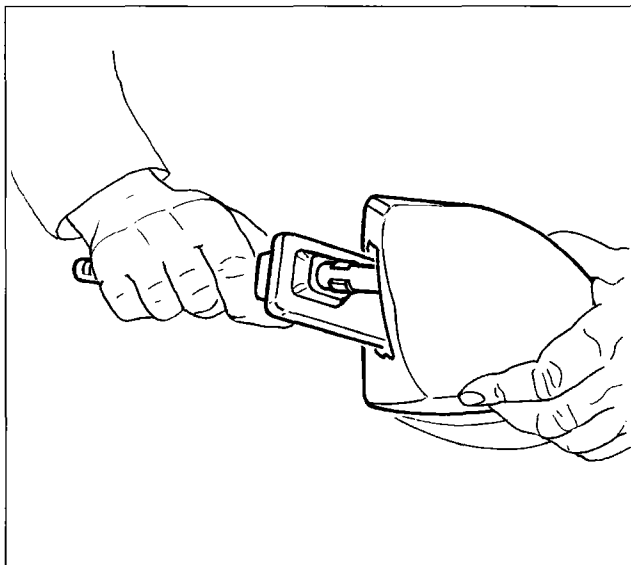
P3U84NL07



P3U84NL08



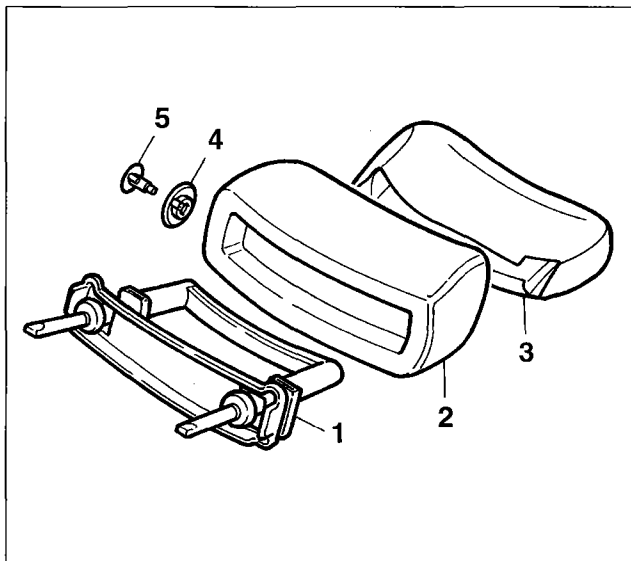
- Remove the cover from the head restraint upholstery;



P3U85NL05



- separate the upholstery from the head restraint structure;

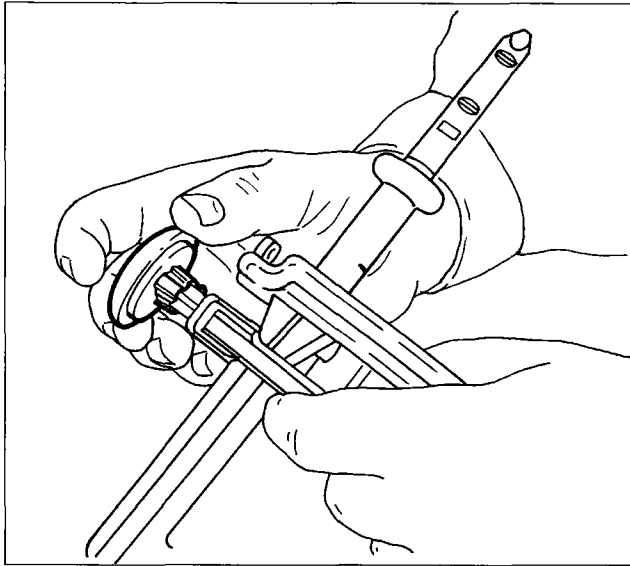


P4A35JL03



- structure (1), upholstery (2), " cover (3), surround (4), button (5);

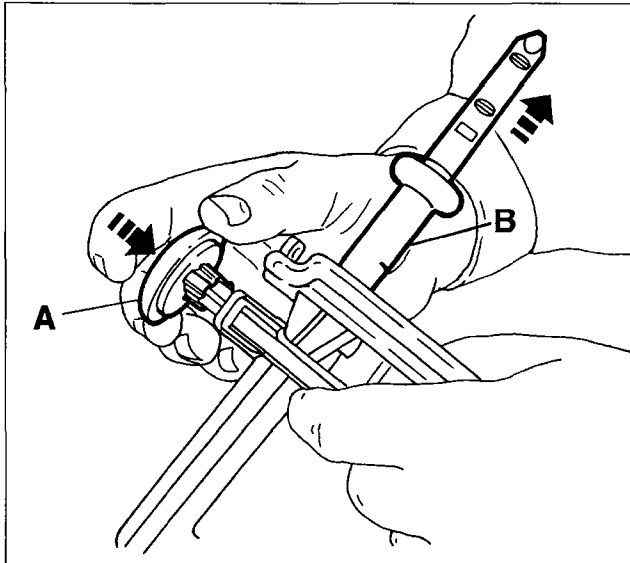
### 55.



P4A36JL01



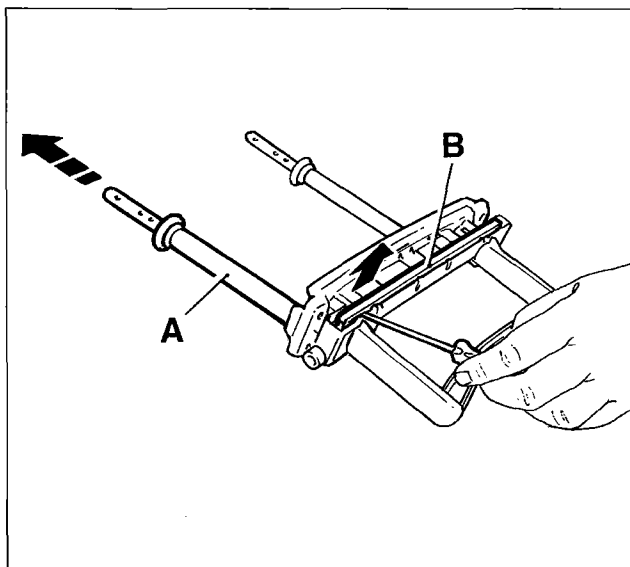
- place the head restraint height adjustment control button in position;



P4A36JL02



- press the button (A) and place the head restraint rod (B) in the end of travel position;
- remove the button fitted previously;



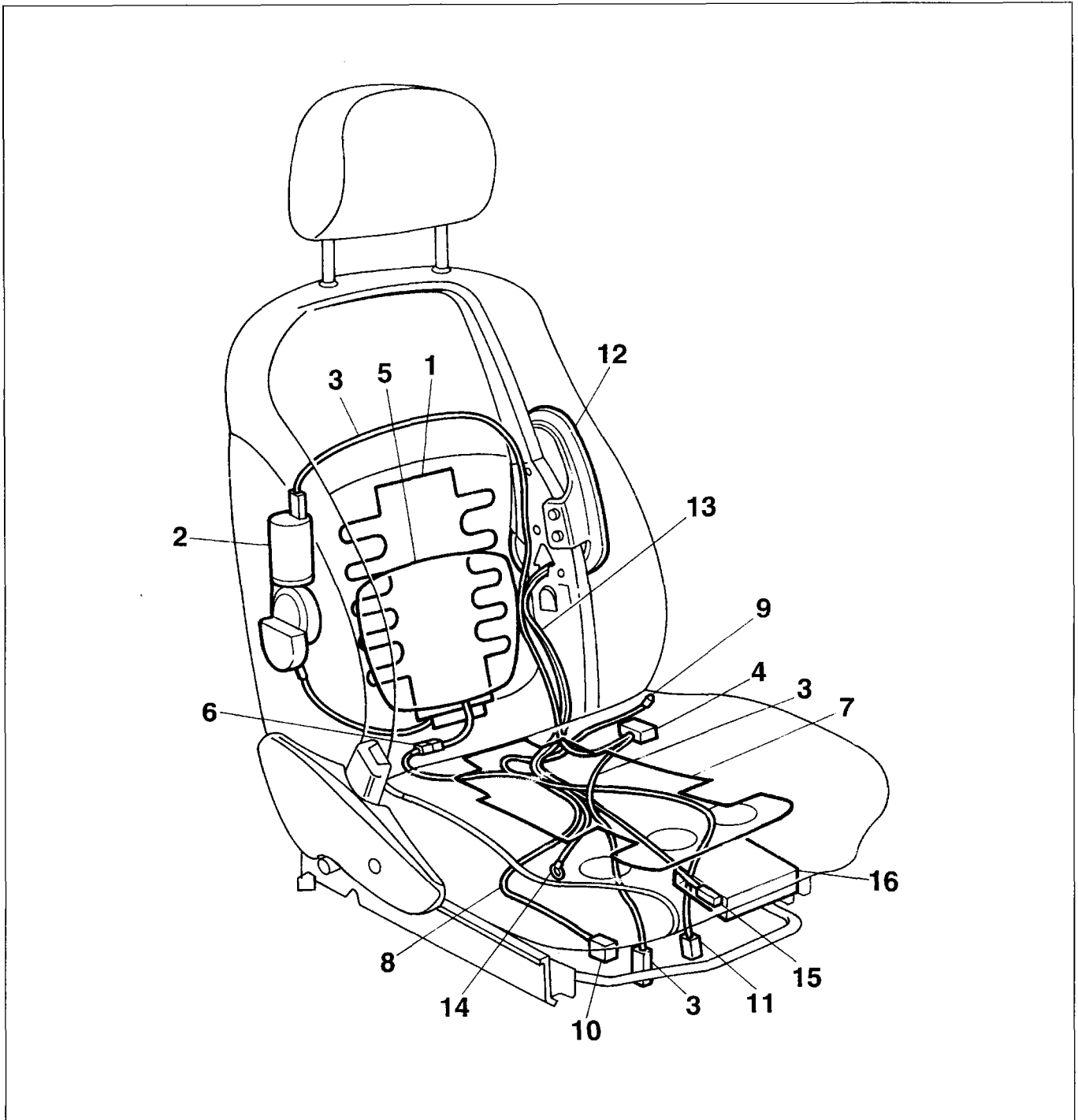
P4A36JL03



- work carefully on the insert (A) to prevent the retaining springs from coming out, then extract the head restraint rod (B).

**NOTE** To refit, reverse the order of the operations carried out for the removal.

**LOCATION OF DRIVER'S SEAT COMPONENTS**

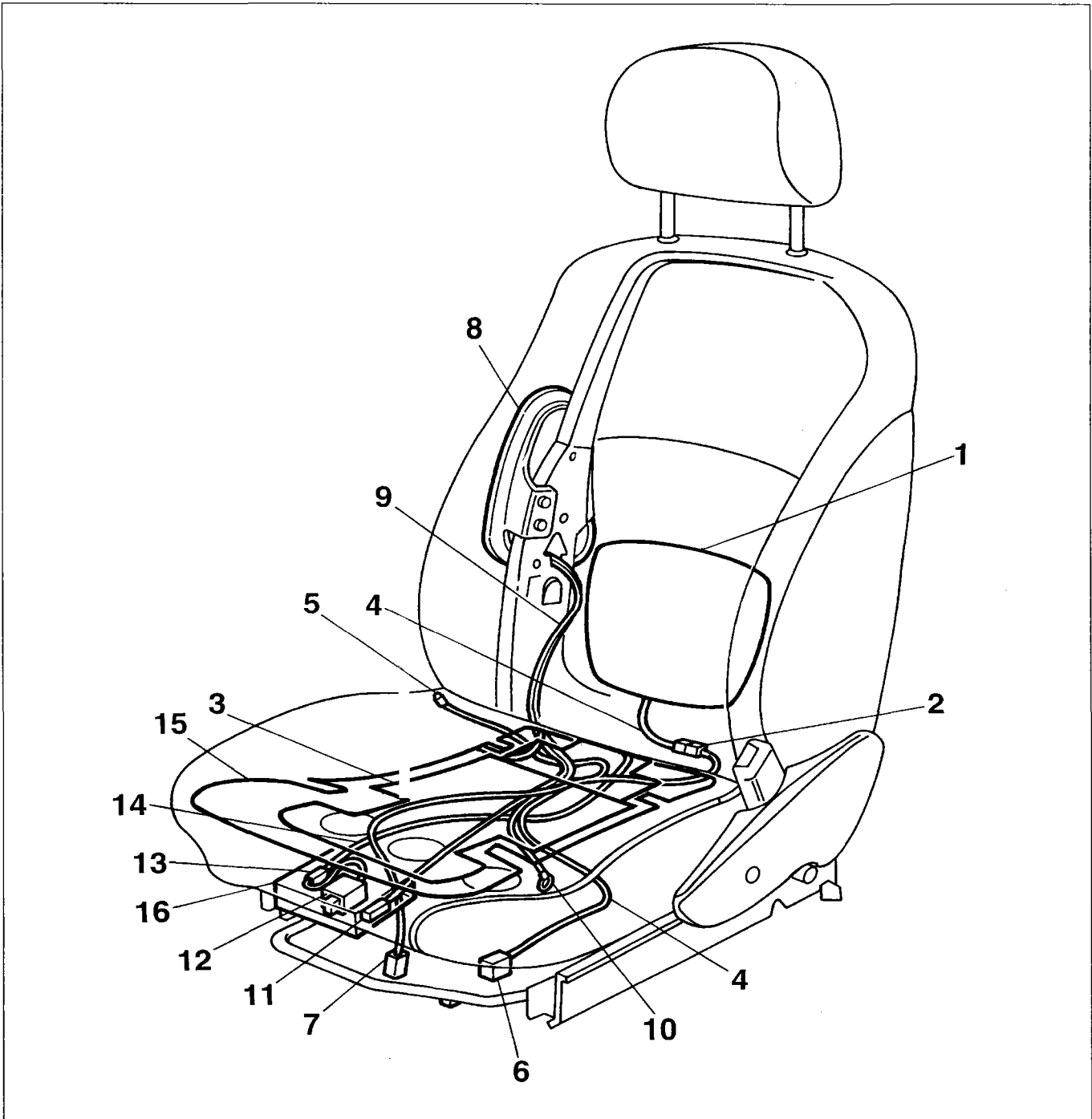


P4A37JL01

- |  |                           |
|--|---------------------------|
| 1. Lumbar adjustment device                  | 10. Heater pad switch     |
| 2. Lumbar adjustment motor                   | 11. Heater pad supply     |
| 3. Lumbar supply cable                       | 12. Side Bag              |
| 4. Lumbar adjustment switch                  | 13. Side Bag supply cable |
| 5. Backrest heater pad                       | 14. Side Bag earth        |
| 6. Backrest and cushion heater pad connector | 15. Side Bag supply       |
| 7. Cushion heater pad                        | 16. Connector box         |
| 8. Heater pad supply cable                   |                           |
| 9. Heater pad warning light                  |                           |

### 55.

#### LOCATION OF PASSENGER SEAT COMPONENTS



P4A38JL01

- |  |   |
|--|---|
| 1. Backrest heater pad                       | 10. Side Bag earth  |
| 2. Backrest and cushion heater pad connector | 11. Side Bag supply   |
| 3. Cushion heater pad                        | 12. Passenger presence sensor PPD interface control unit                  |
| 4. Heater pad supply cable                   | 13. Passenger presence sensor (PPD) with interface control unit connector |
| 5. Heater pad warning light                  | 14. Passenger presence sensor (PPD) supply cable                          |
| 6. Heater pad switch                         | 15. Passenger presence sensor   |
| 7. Heater pad supply                         | 16. Connector box   |
| 8. Side Bag                                  |   |
| 9. Side Bag supply cable                     |   |

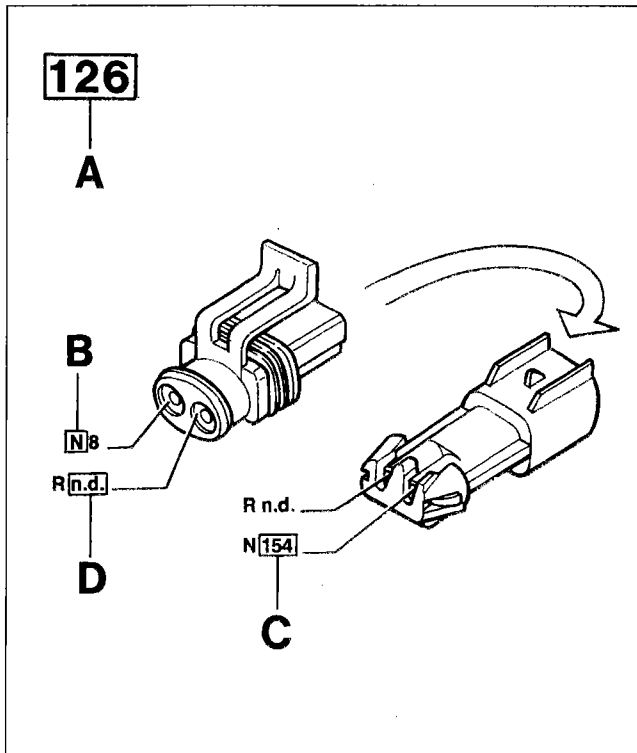
page

**CONNECTOR BLOCKS**

|   |     |
|---|-----|
| INTRODUCTION  | 172 |
| - Interpretation of the codes at the connector blocks | 172 |
| - Cable colour code                                   | 172 |
| - Connector blocks                                    | 173 |

#### INTRODUCTION

#### Interpretation of the codes at the connector blocks



P4A202N01

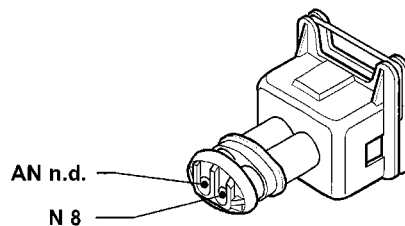
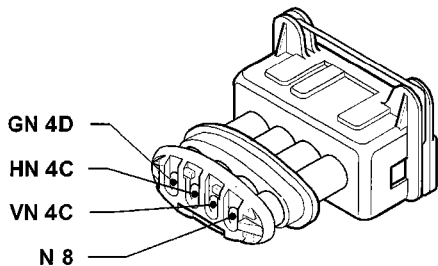
- A** Identification N° of the connector block with reference to the wiring diagrams
- B** Cable colour identification code (see table at the foot of the page)
- C** Identification N° of destination block of cable marked with the relevant code
- D** The code n.d. identifies ultrasound welding taped in the cable loom

#### Cable colour code

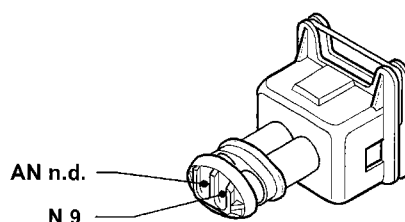
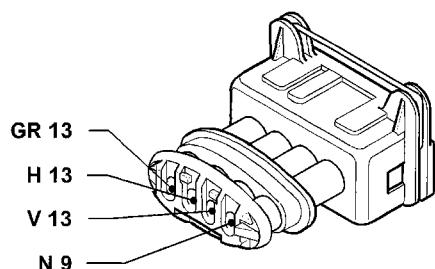
|           |                   |           |                   |           |              |
|-----------|-------------------|-----------|-------------------|-----------|--------------|
| <b>A</b>  | Light blue        | <b>BG</b> | White-Yellow      | <b>LB</b> | Blue-White   |
| <b>B</b>  | White             | <b>BL</b> | White-Blue        | <b>LG</b> | Blue-Yellow  |
| <b>C</b>  | Orange            | <b>BN</b> | White-Black       | <b>LN</b> | Blue-Black   |
| <b>G</b>  | Yellow            | <b>BR</b> | White-Red         | <b>LR</b> | Blue-Red     |
| <b>H</b>  | Grey              | <b>BV</b> | White-Green       | <b>LV</b> | Blue-Green   |
| <b>L</b>  | Blue              | <b>BZ</b> | White-Violet      | <b>MB</b> | Brown-White  |
| <b>M</b>  | Brown             | <b>CA</b> | Orange-Light blue | <b>MN</b> | Brown-Black  |
| <b>N</b>  | Black             | <b>CB</b> | Orange-White      | <b>NZ</b> | Black-Violet |
| <b>R</b>  | Red               | <b>CN</b> | Orange-Black      | <b>RB</b> | Red-White    |
| <b>S</b>  | Pink              | <b>GN</b> | Yellow-Black      | <b>RG</b> | Red-Yellow   |
| <b>V</b>  | Green             | <b>GL</b> | Yellow-Blue       | <b>RN</b> | Red-Black    |
| <b>Z</b>  | Violet            | <b>GR</b> | Yellow-Red        | <b>RV</b> | Red-Green    |
| <b>AB</b> | Light blue-White  | <b>GV</b> | Yellow-Green      | <b>SN</b> | Pink-Black   |
| <b>AG</b> | Light blue-Yellow | <b>HG</b> | Grey-Yellow       | <b>VB</b> | Green-White  |
| <b>AN</b> | Light blue-Black  | <b>HN</b> | Grey-Black        | <b>VN</b> | Green-Black  |
| <b>AR</b> | Light blue-Red    | <b>HR</b> | Grey-Red          | <b>VR</b> | Green-Red    |
| <b>AV</b> | Light blue-Green  | <b>HV</b> | Grey-Green        | <b>ZB</b> | Violet-White |



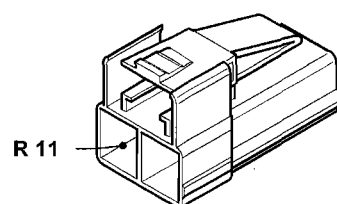
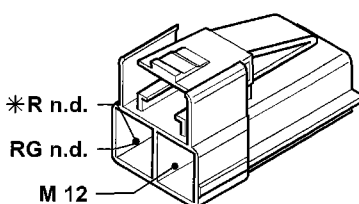
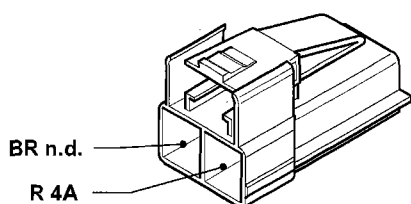
**1** Left front light cluster



**2** Right front light cluster

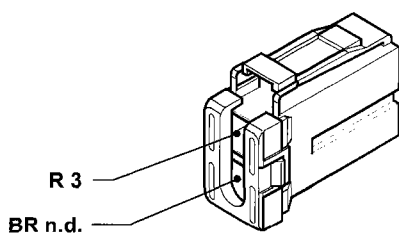


**3** Power fuse box

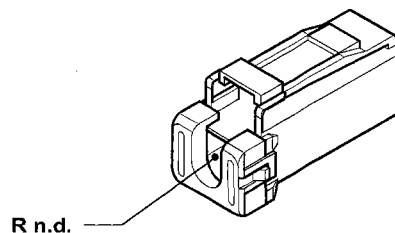


\* Variant for the JTD version

**4A** Junction unit

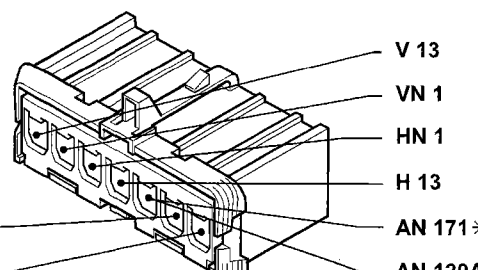
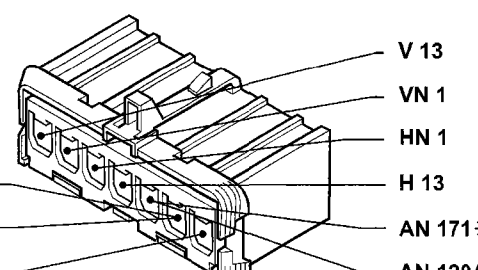
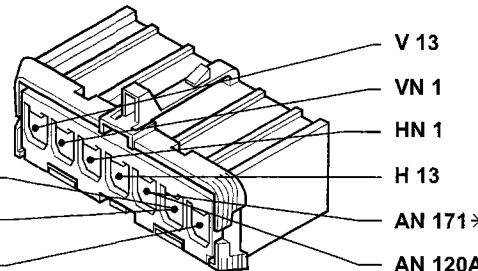
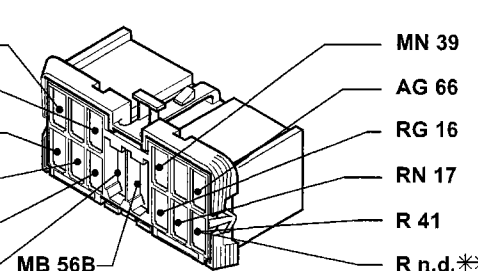
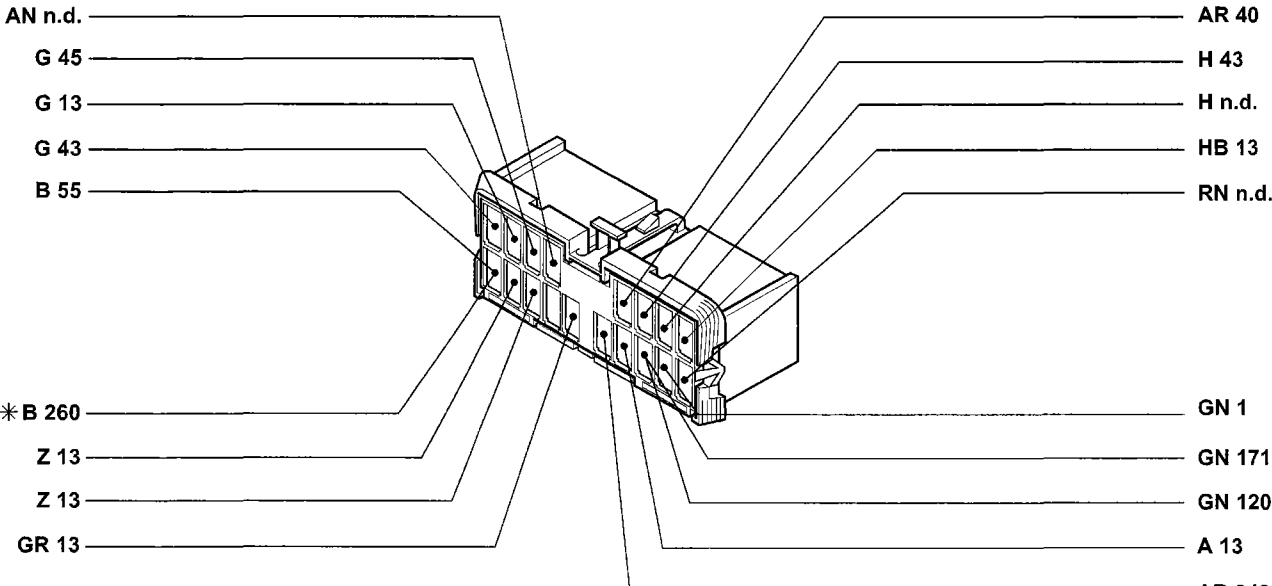


**4B** Junction unit

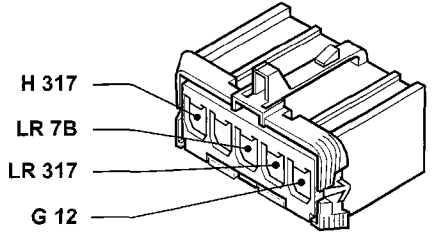
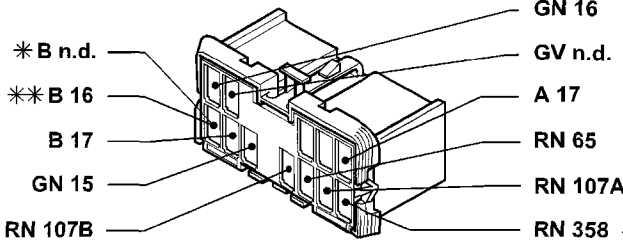
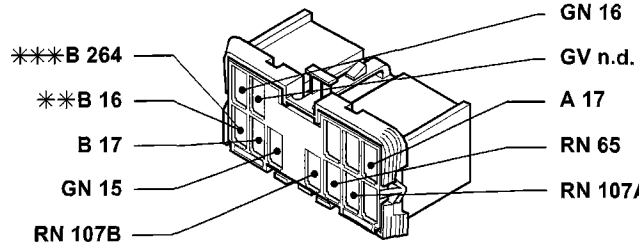
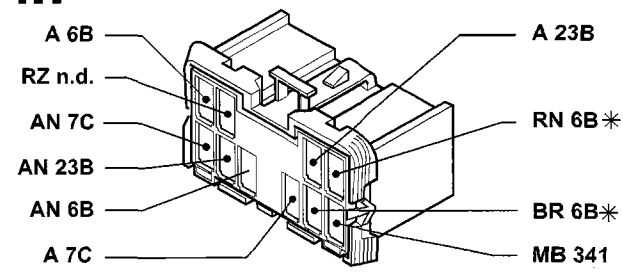
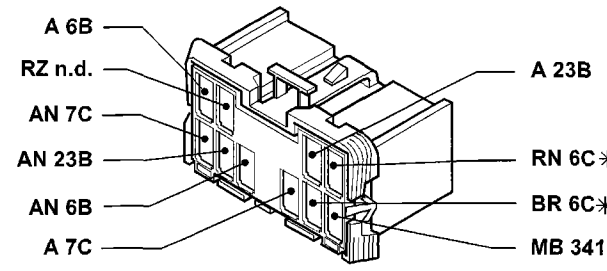
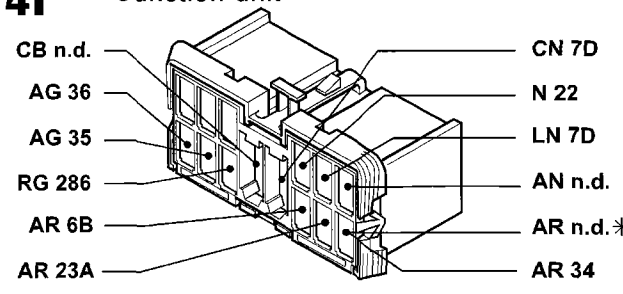
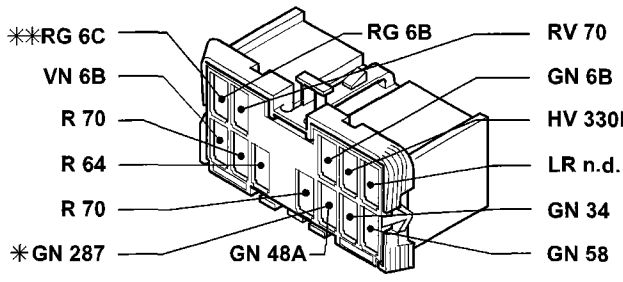
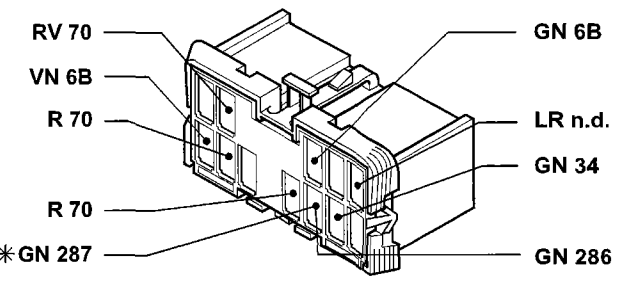


P4A319I01

### 55.

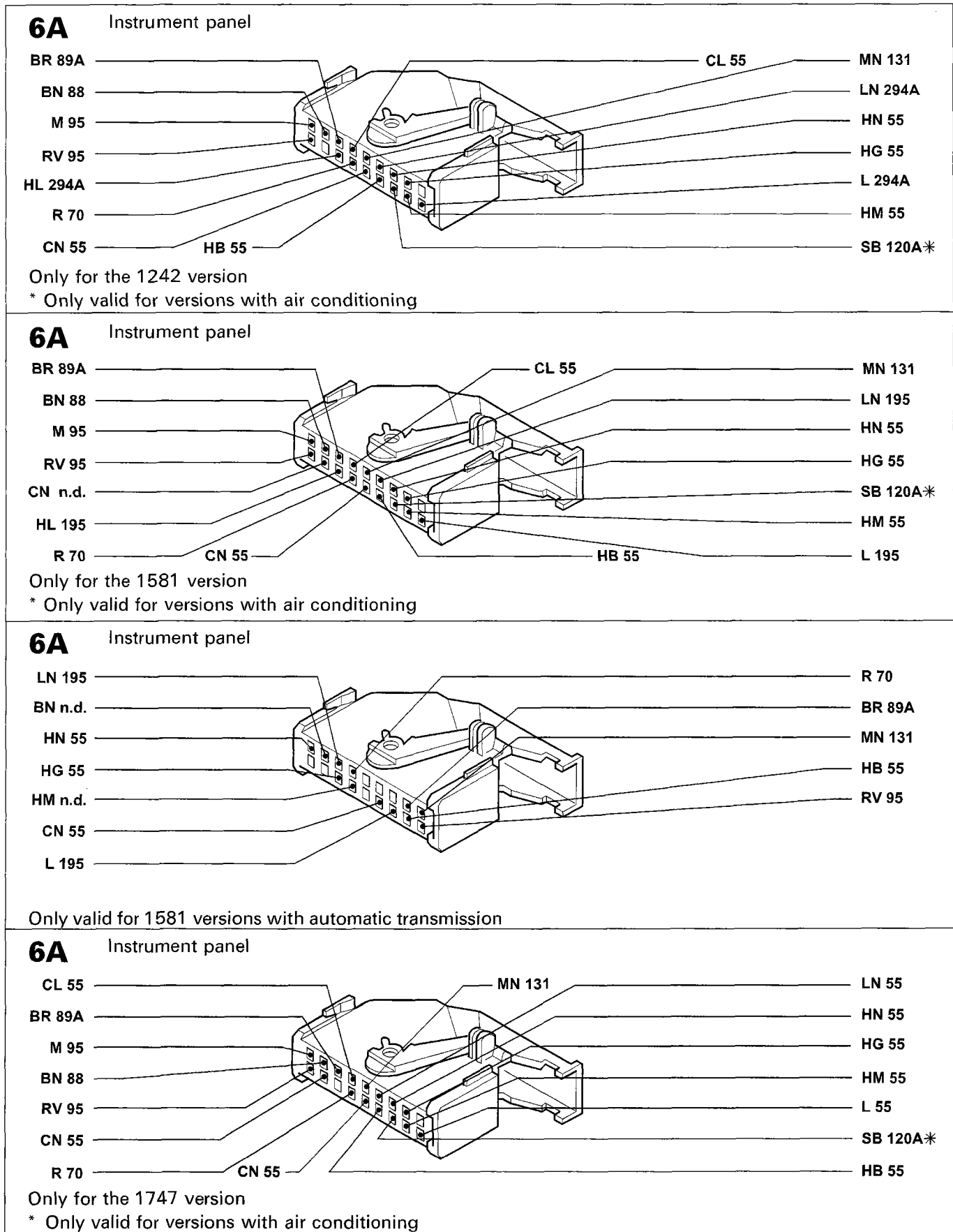
|  |  |
|--|--|
| <p><b>4C</b> Junction unit</p>  <p>* Only valid for versions with heaters</p>   | <p><b>4C</b> Junction unit</p>  <p>* Only valid for versions with heaters<br/>** Variant for the 1998 version</p>  |
| <p><b>4C</b> Junction unit</p>  <p>* Only valid for versions with heaters<br/>** Variant for the JTD version<br/>Only for the 1910 JTD version</p>                                 | <p><b>4E</b> Junction unit</p>  <p>* Non existent for the SX - GT trim levels<br/>** Variant for the version with automatic transmission<br/>*** Only for the BRAVA</p> |
| <p><b>4D</b> Junction unit</p>  <p>* Only valid for versions with heaters<br/>** Exists only for the JTD version<br/>*** Variant for the version with automatic transmission</p> |  |

P4A320I01

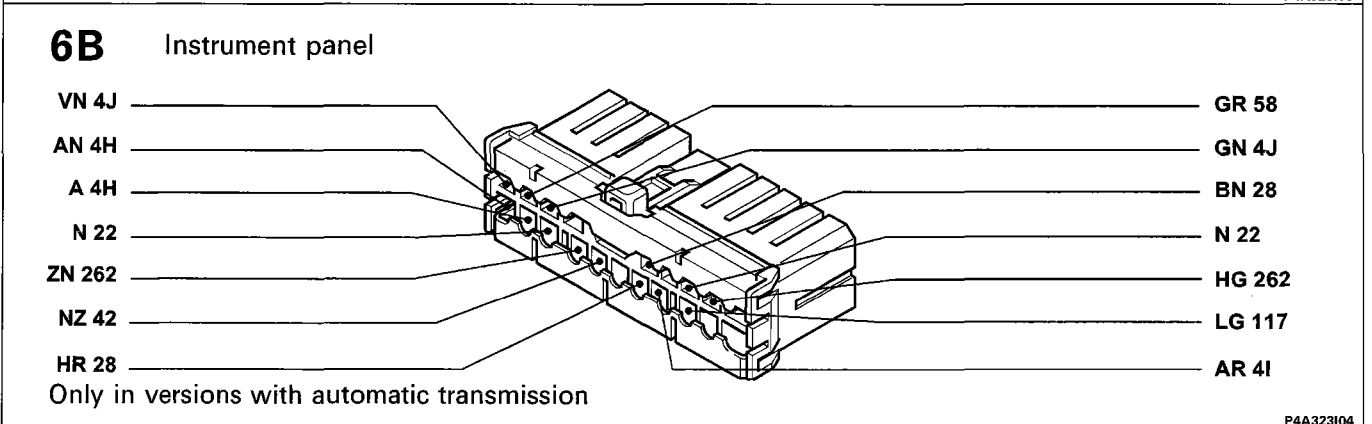
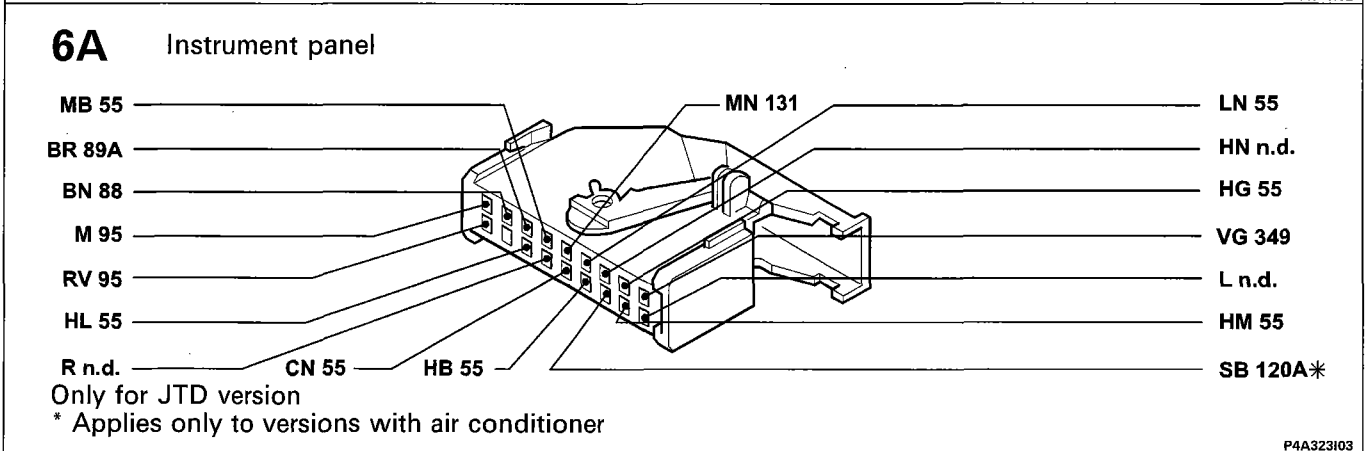
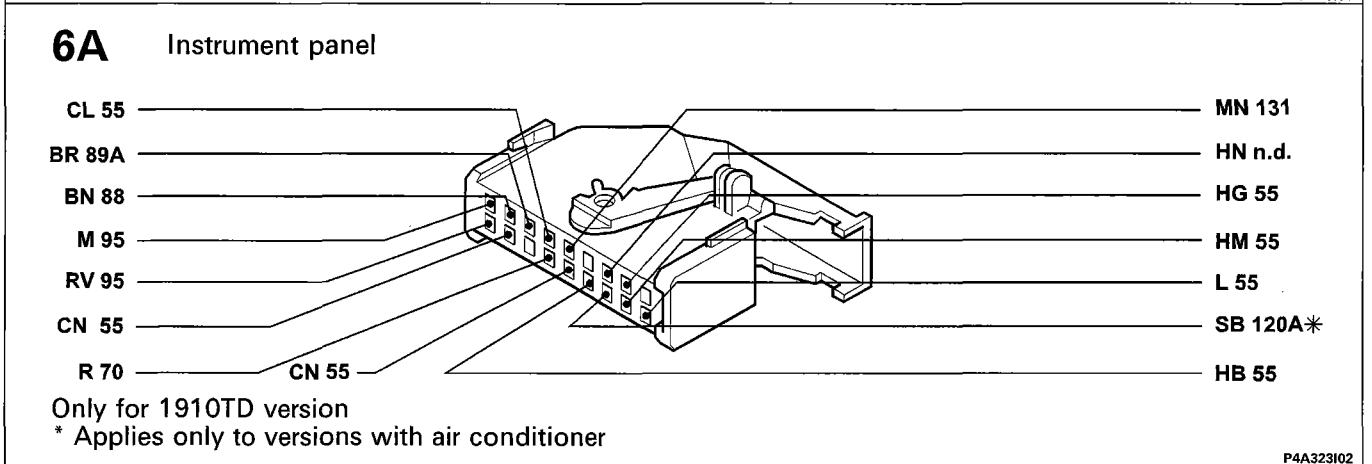
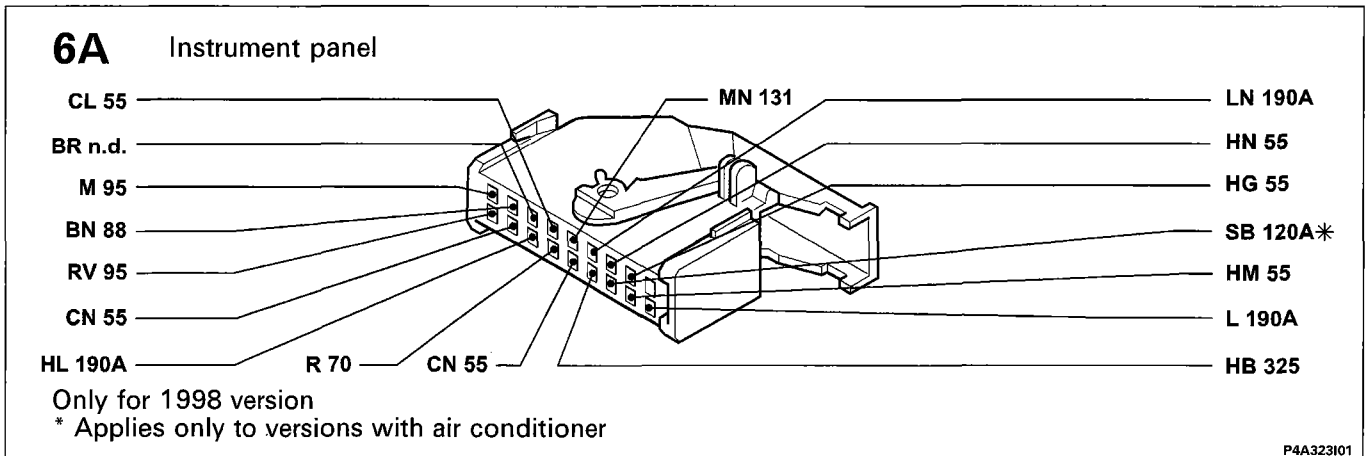
|  |   |
|--|---|
| <p><b>4F</b> Junction unit</p>  <p>H 317<br/>LR 7B<br/>LR 317<br/>G 12</p>  | <p><b>4G</b> Junction unit</p>  <p>* B n.d.<br/>** B 16<br/>B 17<br/>GN 15<br/>RN 107B</p> <p>GN 16<br/>GV n.d.<br/>A 17<br/>RN 65<br/>RN 107A<br/>RN 358</p> <p>* Variant for the version with automatic transmission<br/>** Only for Brava<br/>Exists only for the ELX trim level</p> |
| <p><b>4G</b> Junction unit</p>  <p>*** B 264<br/>** B 16<br/>B 17<br/>GN 15<br/>RN 107B</p> <p>GN 16<br/>GV n.d.<br/>A 17<br/>RN 65<br/>RN 107A*</p> <p>* Only valid for versions with alarms<br/>** Only for Brava<br/>*** Variant for the version with automatic transmission<br/>Exists only for the SX trim level</p>      | <p><b>4H</b> Junction unit</p>  <p>A 6B<br/>RZ n.d.<br/>AN 7C<br/>AN 23B<br/>AN 6B<br/>A 7C</p> <p>A 23B<br/>RN 6B*<br/>BR 6B*<br/>MB 341</p> <p>* Non existent for the SX trim level<br/>Exists in all versions</p>   |
| <p><b>4H</b> Junction unit</p>  <p>A 6B<br/>RZ n.d.<br/>AN 7C<br/>AN 23B<br/>AN 6B<br/>A 7C</p> <p>A 23B<br/>RN 6C*<br/>BR 6C*<br/>MB 341</p> <p>* Variant for the ELX trim level<br/>Exists only for the version with automatic transmission</p>   | <p><b>4I</b> Junction unit</p>  <p>CB n.d.<br/>AG 36<br/>AG 35<br/>RG 286<br/>AR 6B<br/>AR 23A</p> <p>CN 7D<br/>N 22<br/>LN 7D<br/>AN n.d.<br/>AR n.d.*<br/>AR 34</p> <p>* Variant for the ELX trim level with automatic transmission</p>   |
| <p><b>4J</b> Junction unit</p>  <p>** RG 6C<br/>VN 6B<br/>R 70<br/>R 64<br/>R 70<br/>* GN 287</p> <p>RG 6B<br/>RV 70<br/>GN 6B<br/>HV 330B<br/>LR n.d.<br/>GN 34<br/>GN 58</p> <p>* Variant for versions with radio phones<br/>** Variant for versions with automatic transmission<br/>Exists only for the ELX trim level</p> | <p><b>4J</b> Junction unit</p>  <p>RV 70<br/>VN 6B<br/>R 70<br/>R 70<br/>* GN 287</p> <p>GN 6B<br/>LR n.d.<br/>GN 34<br/>GN 286</p> <p>* Variant for versions with radio phones<br/>Exists only for the SX trim level</p>   |

P4A321101

### 55.

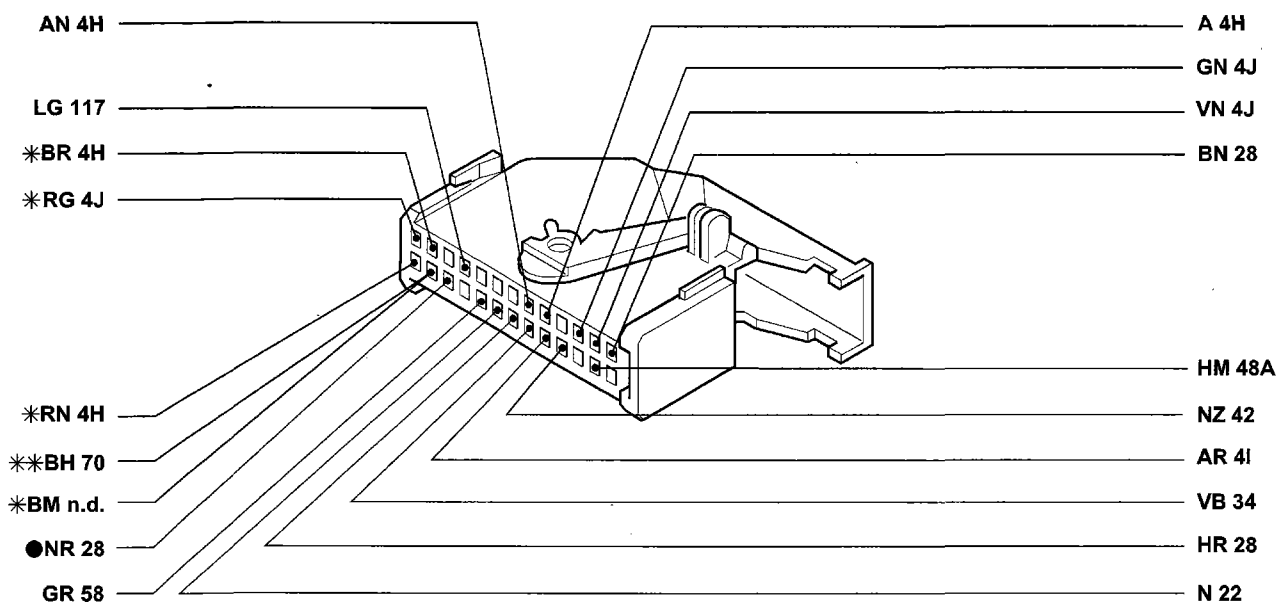


P4A322101



### 55.

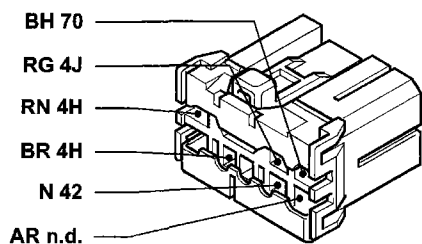
#### 6B Instrument panel



- \* Not present for outfits SX - GT
- \*\* Variant for versions with alarm
- Applies only for HGT outfit

P4A324101

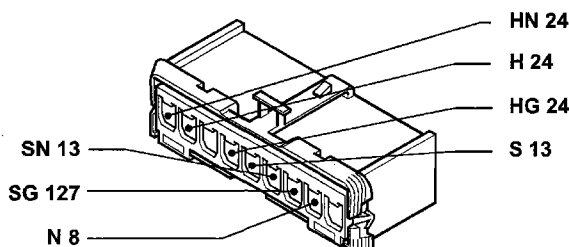
#### 6C Instrument panel



Applies only to ELX outfit with automatic transmission

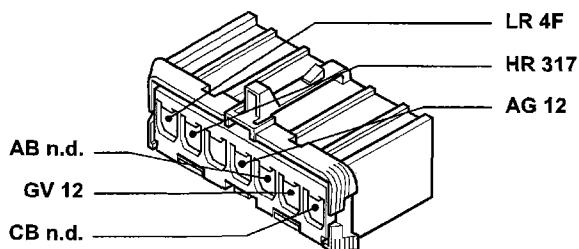
P4A324102

#### 7A Steering column switch unit



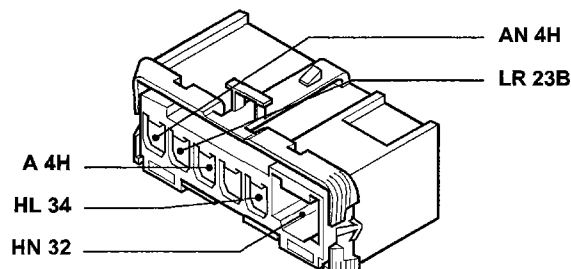
P4A324103

#### 7B Steering column switch unit



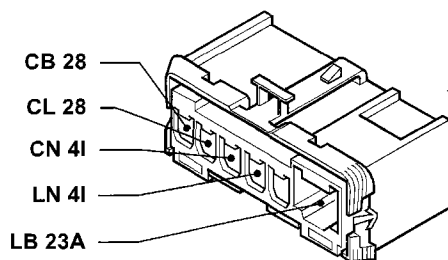
P4A324104

#### 7C Steering column switch unit

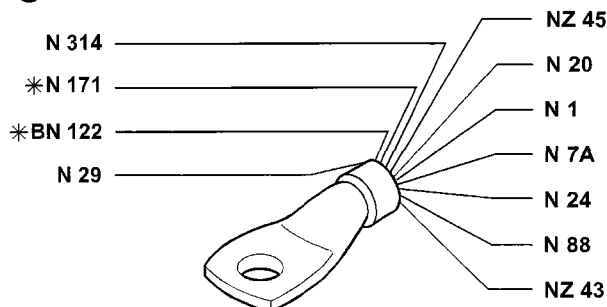


P4A324105

**7D** Steering column switch unit

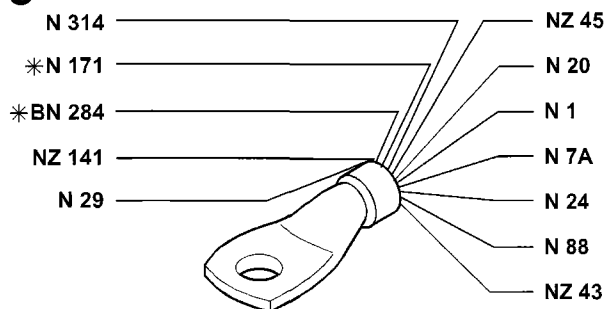


**8** Left front earth



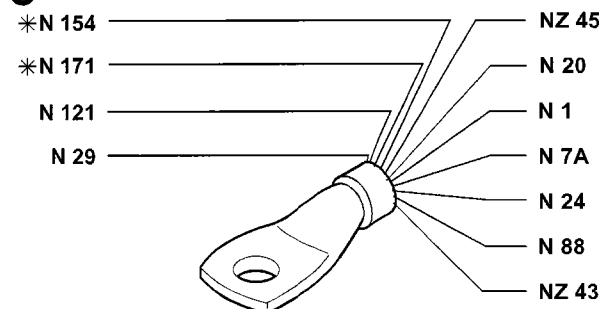
Only for the 1242 version  
\* Only valid for versions with heaters

**8** Left front earth



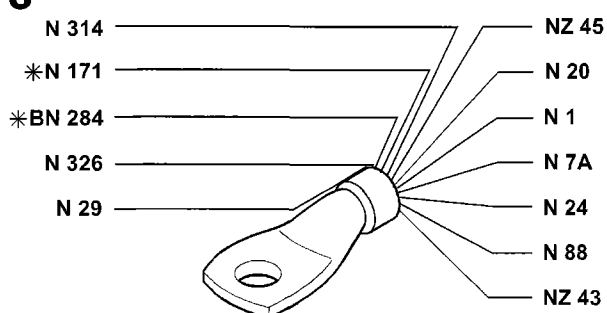
Only for the 1581 version  
\* Only valid for versions with heaters

**8** Left front earth



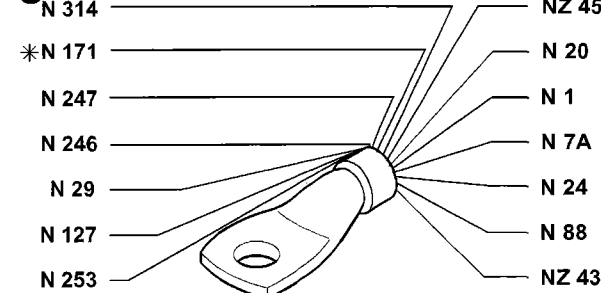
Only for the 1747 version  
\* Only valid for versions with heaters

**8** Left front earth



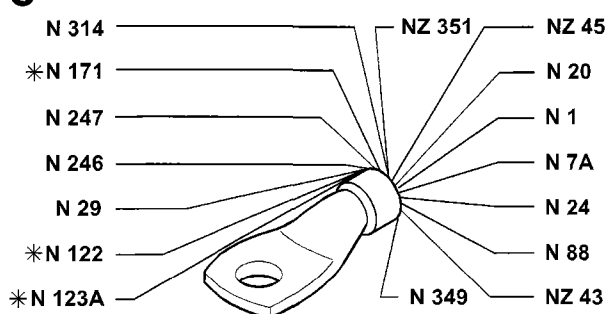
Only for the 1998 version  
\* Only valid for versions with heaters

**8** Left front earth



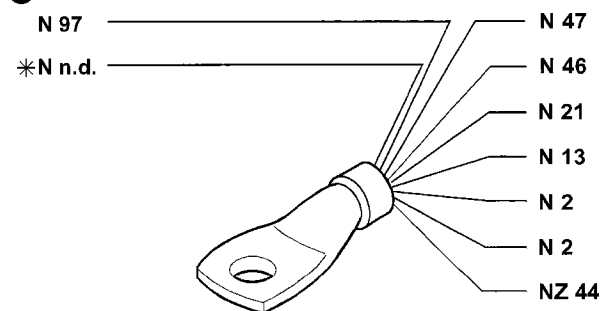
Only for the 1910 TD version  
\* Only valid for versions with heaters

**8** Left front earth



\* Only valid for versions with heaters  
Only exists on the JTD version

**8** Left front earth

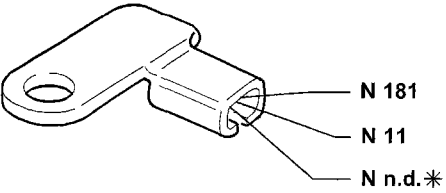


\* Only valid for the 1910 TD version

P4A325I01

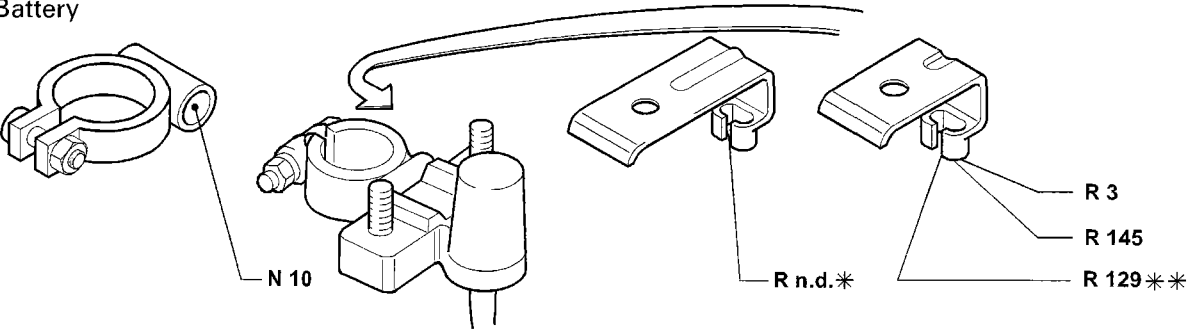
### 55.

**10** Earth for battery on bodyshell




\* Only valid for versions with heaters

**11** Battery



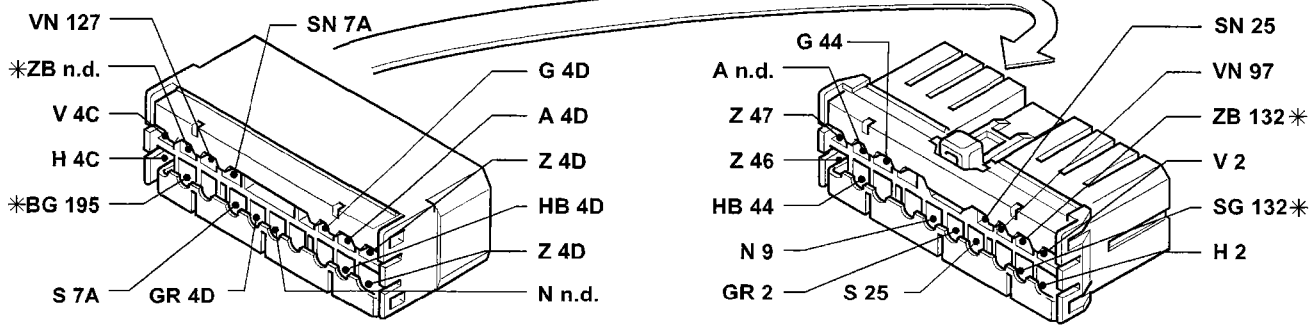
\* Variant for 1910 TD and JTD versionsD  
\*\* Non existent for 1910 TD and JTD versions

**12** Ignition switch



\* Variant for the 1547 version with automatic transmission

**13** Connection between left/right front cables

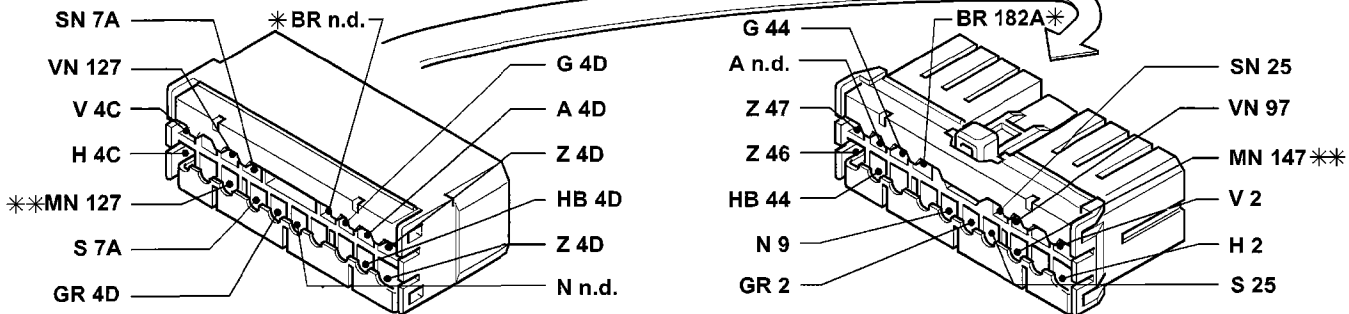


\* Variant for the 1581 version  
Only for the 1242 and 1581 versions

P4A326I01



### 13 Front right/left cables connection

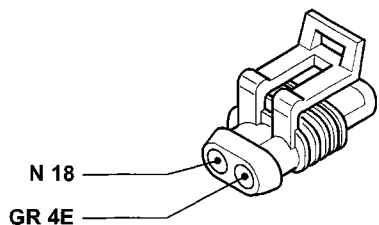


\* Only valid for the 1998 version

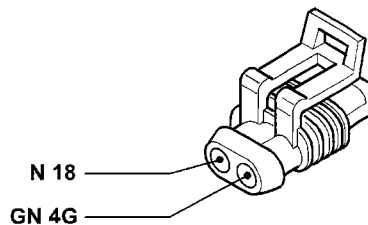
\*\* Only valid for the JTD version

Exists on all versions

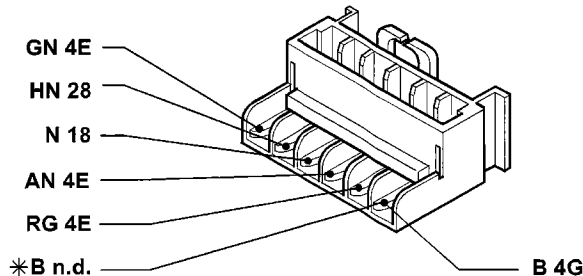
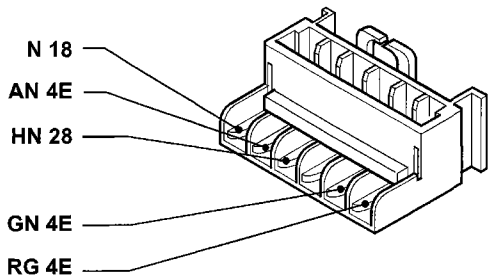
### 14 Left no. plate light



### 15 Right no. plate light

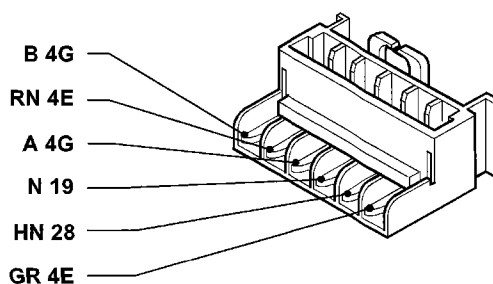
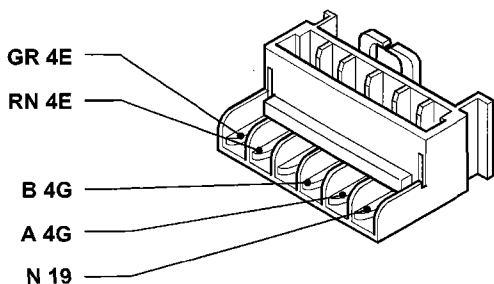


### 16 Left rear light cluster



\* Variant for the version with automatic transmission

### 17 Right rear light cluster

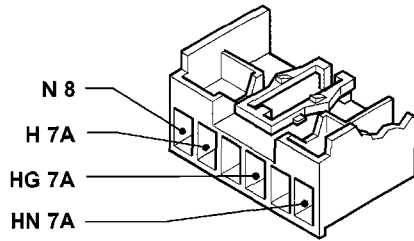


### 55.

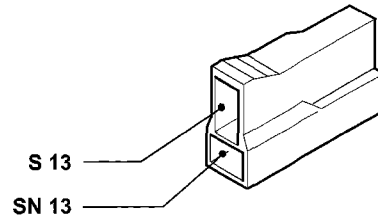
|   |  |
|---|--|
| <p><b>18</b> Left rear earth</p> <p>N 346 — N 16<br/> **N 86 — N 14<br/> **N 87 — N 15<br/> *N 358 — N 27<br/> N 39 — N 41<br/> N 134<br/> N 135</p> <p>* Variant for the ELX trim level<br/> ** Only exists for the SX trim level with alarm<br/> Only for the Brava</p> | <p><b>18</b> Left rear earth</p> <p>N 346 — N 16<br/> N 39 — N 14<br/> *N 358 — N 15<br/> N 26 — N 27<br/> N 41<br/> N 134<br/> N 135</p> <p>* Variant for the ELX trim level<br/> Only for the Bravo</p>  |
| <p><b>19</b> Right rear earth</p> <p>N 345<br/> N 17<br/> N 92A<br/> NZ 57<br/> N 66<br/> N 107A<br/> N 107B</p>  | <p><b>20</b> Left front side direction indicator</p> <p>AN n.d.<br/> N 8</p>   |
| <p><b>21</b> Right front side direction indicator</p> <p>A n.d.<br/> N 9</p>  | <p><b>22</b> Left dashboard earth</p> <p>**N 35 — N 23A<br/> *N 6B — N 34<br/> *N 6B — N 35<br/> *N 261 — N 69<br/> *N 263 — N 317<br/> N 6B<br/> N 4I</p> <p>* Variant for the version with automatic transmission<br/> ** Only exists for the ELX trim level</p> |
| <p><b>23A</b> Hazard warning lights warning light</p> <p>AN 4H<br/> RG 286<br/> LB 7D<br/> AR 4I</p>  | <p><b>23B</b> Hazard warning lights control switch</p> <p>LR 7C<br/> AN 4H<br/> A 4H</p>   |

P4A328101

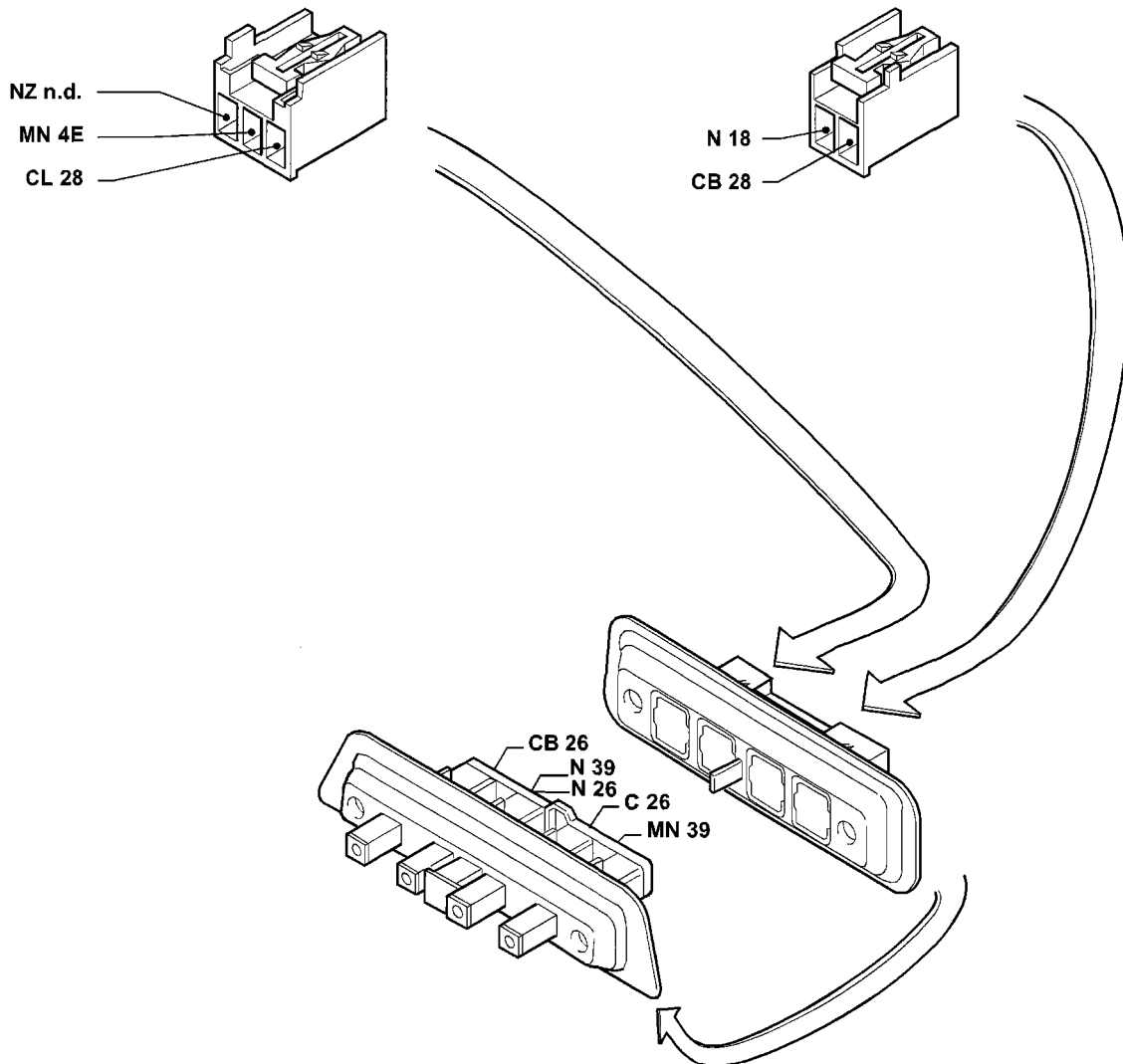
**24** Windscreen wiper motor



**25** Elec. windscreen/rearscreen washer pump



**27** Contact board for rear connections with luggage compartment light switch incorporated

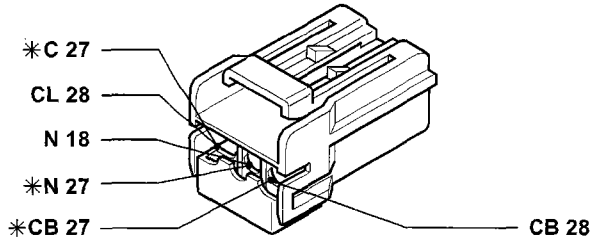


Only for the Brava

P4A329I01

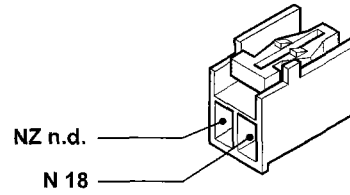
### 55.

#### 26 Rearscreen wiper motor



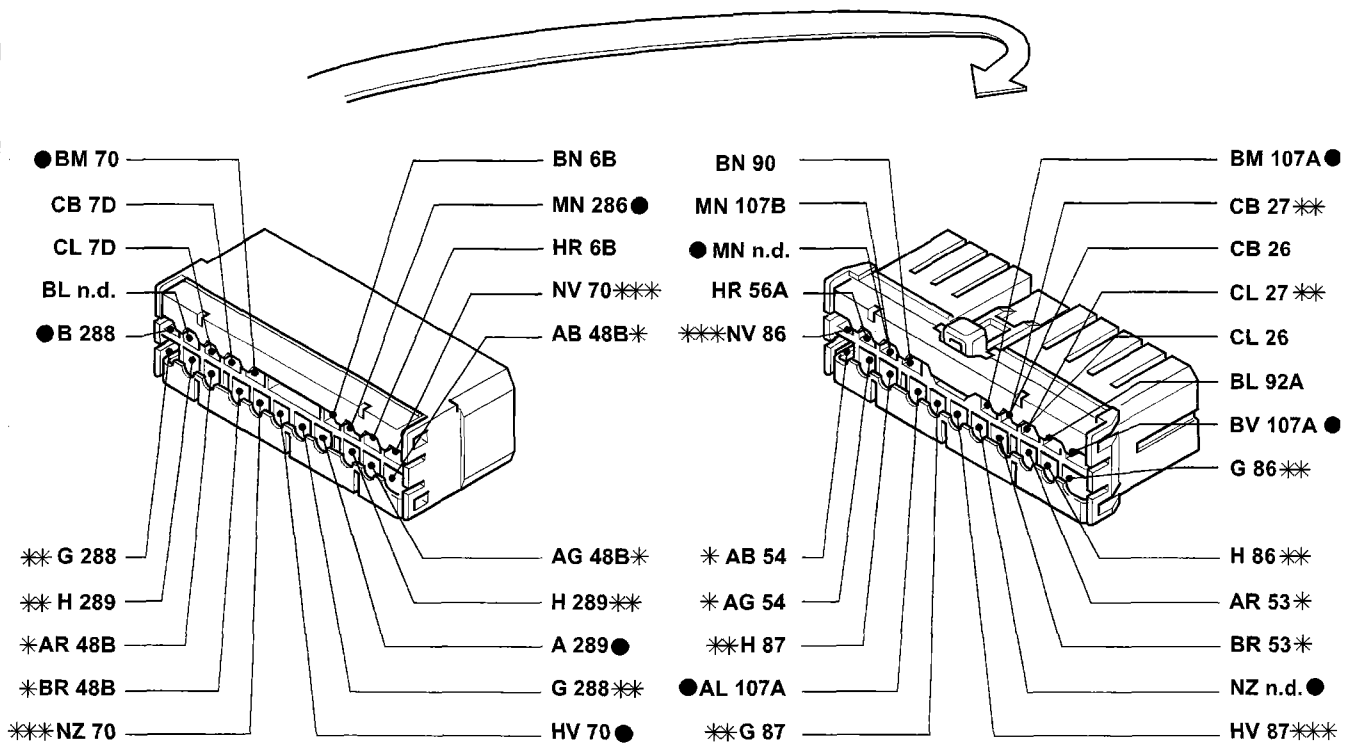
\* Variant for the Brava

#### 27A Button for luggage compartment light, switching on alarm and signalling boot lid open



Only for the Bravo

#### 28 Connection for longitudinal dashboard cables (only on the SX trim level)



\* Only valid for versions with top of the range radio

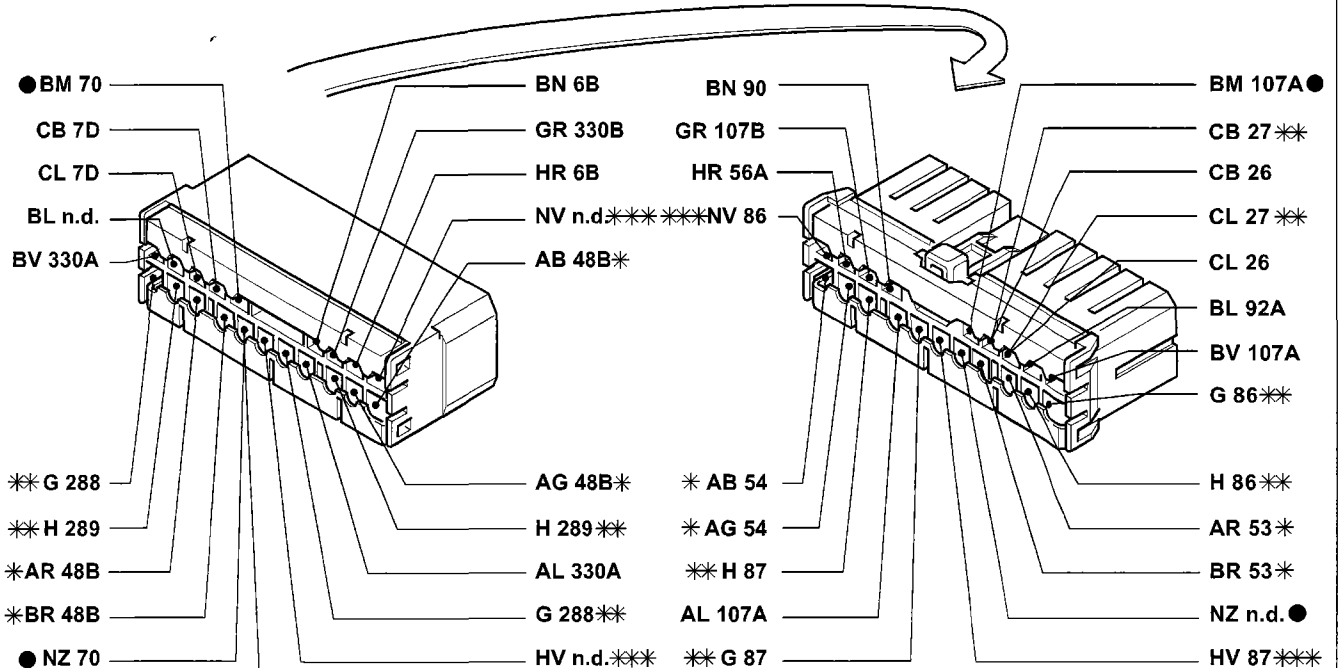
\*\* Only for the Brava

\*\*\* Only valid for the Brava version with alarm

● Exists only for versions with alarm

P4A330101

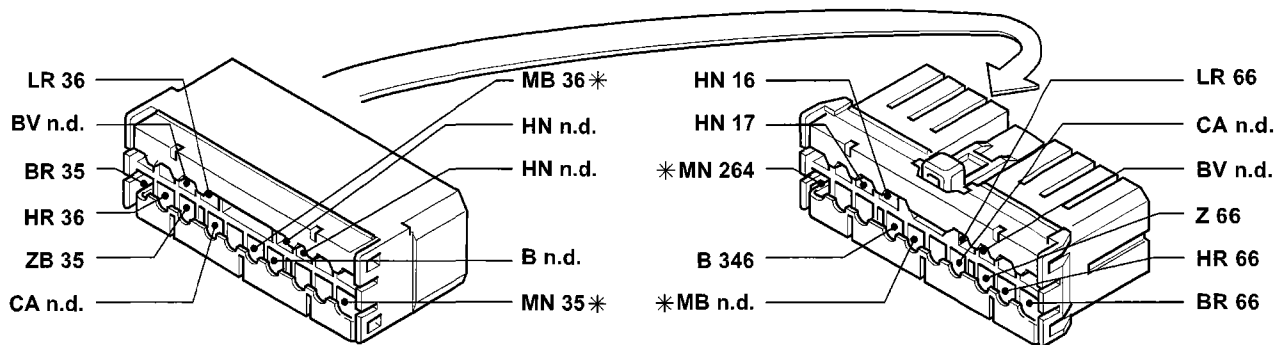
**28** Connection for longitudinal dashboard cables (only for the ELX trim level)



\* Only valid on versions with top of the range radio  
\*\* Only valid for the Brava

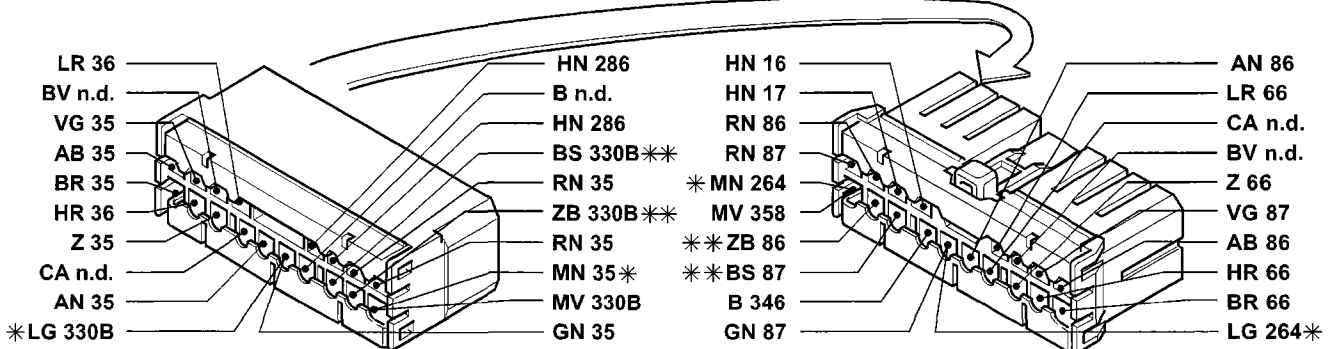
\*\*\* Only valid for the Brava version with alarm  
● Only exists on the version with alarm

**28A** Connection for longitudinal dashboard cables (only for the SX trim level)



\* Only valid for versions with automatic transmission

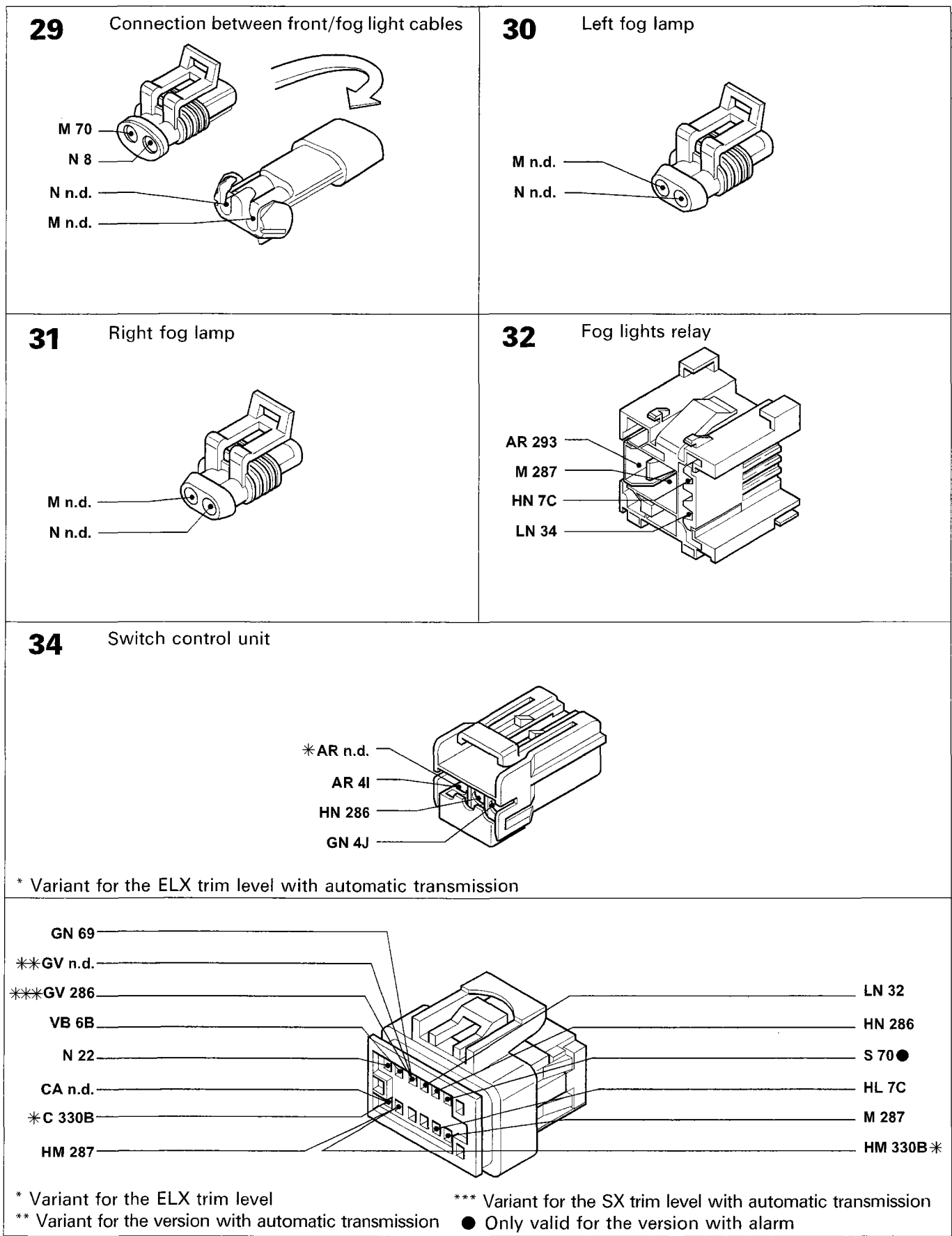
**28A** Connection for longitudinal dashboard cables (only for the ELX trim level)



\* Only valid for the version with automatic transmission\*\* Only valid for the Brava

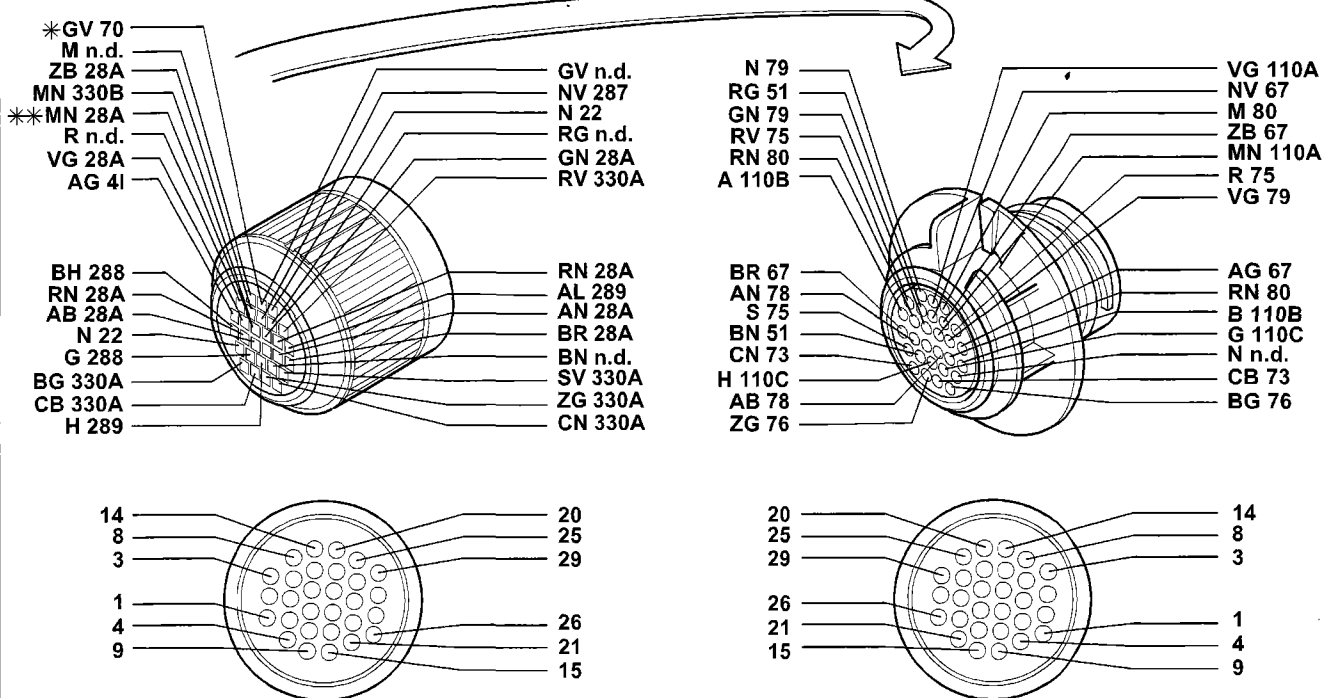
P4A331101

### 55.



P4A332101

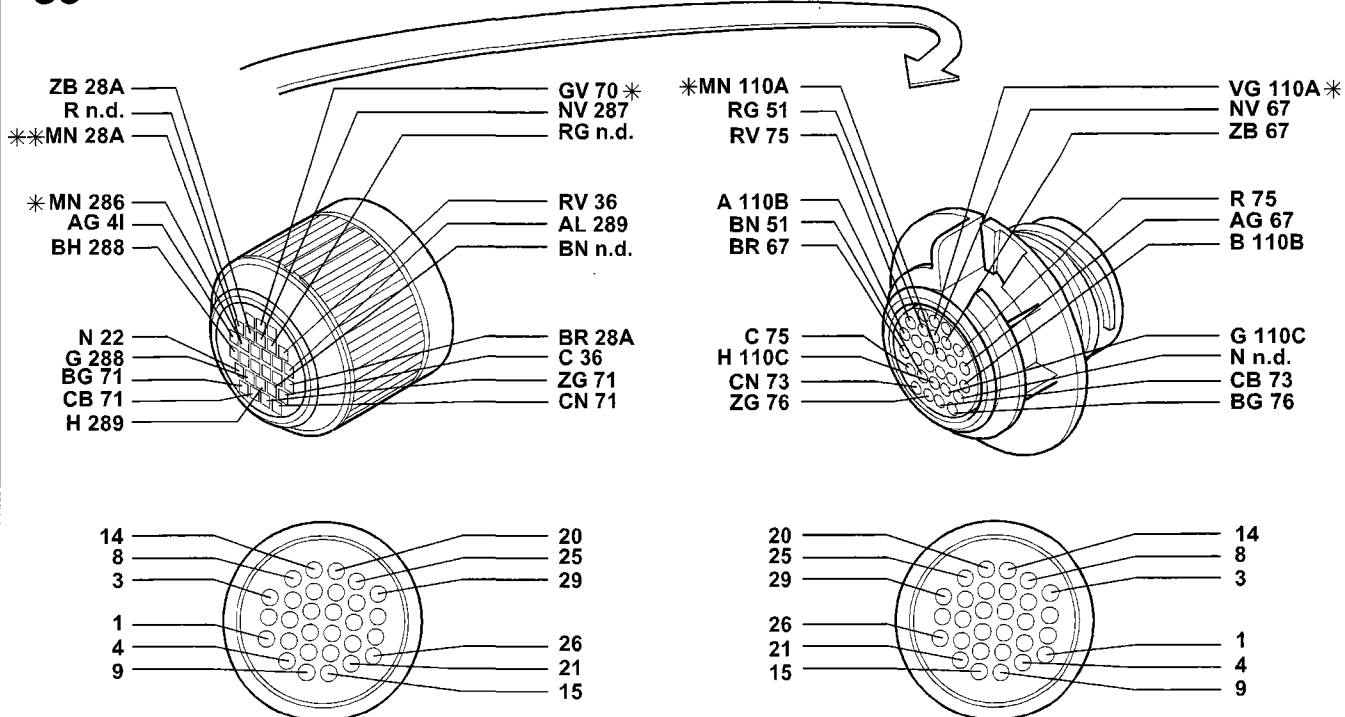
### 35 Dashboard/left front door cables connection (only for the ELX)



\* Only valid for version with alarm

\*\* Only valid for the version with automatic transmission

### 35 Dashboard/left front door cables connection



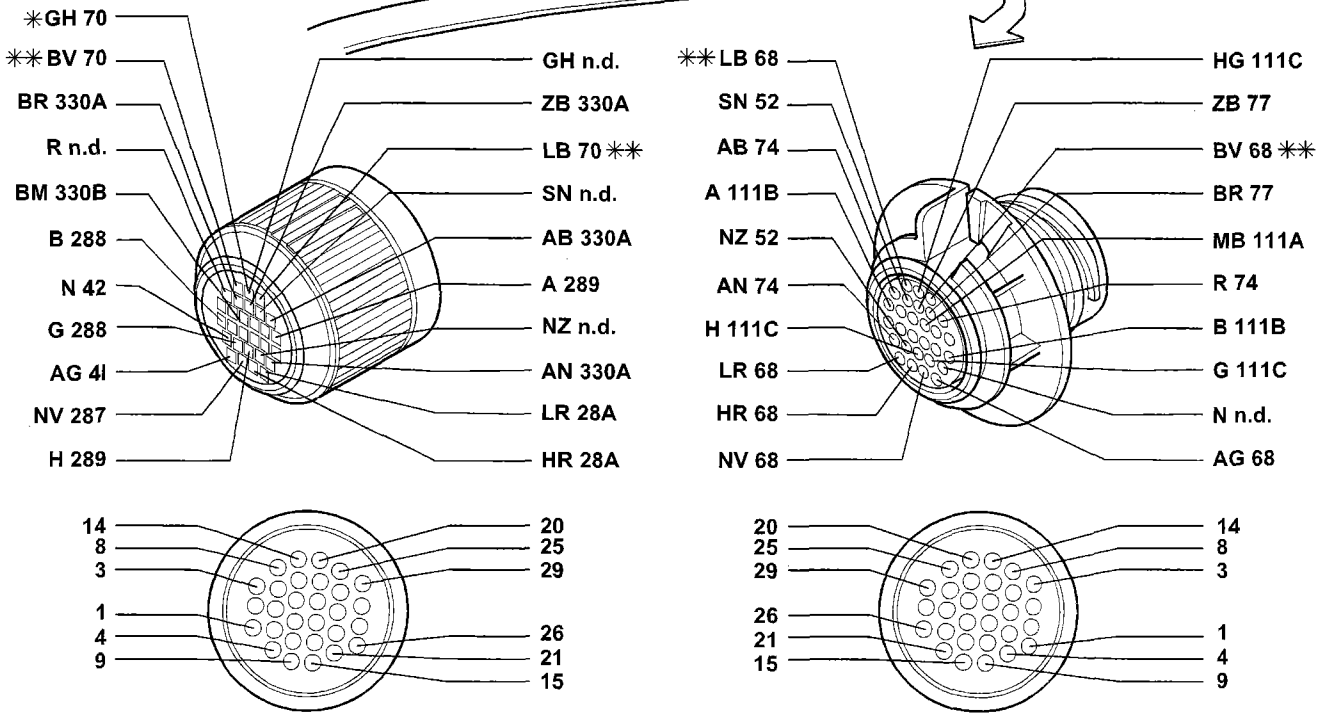
\* Only valid for version with alarm

\*\* Only valid for the version with automatic transmission

P4A333101

### 55.

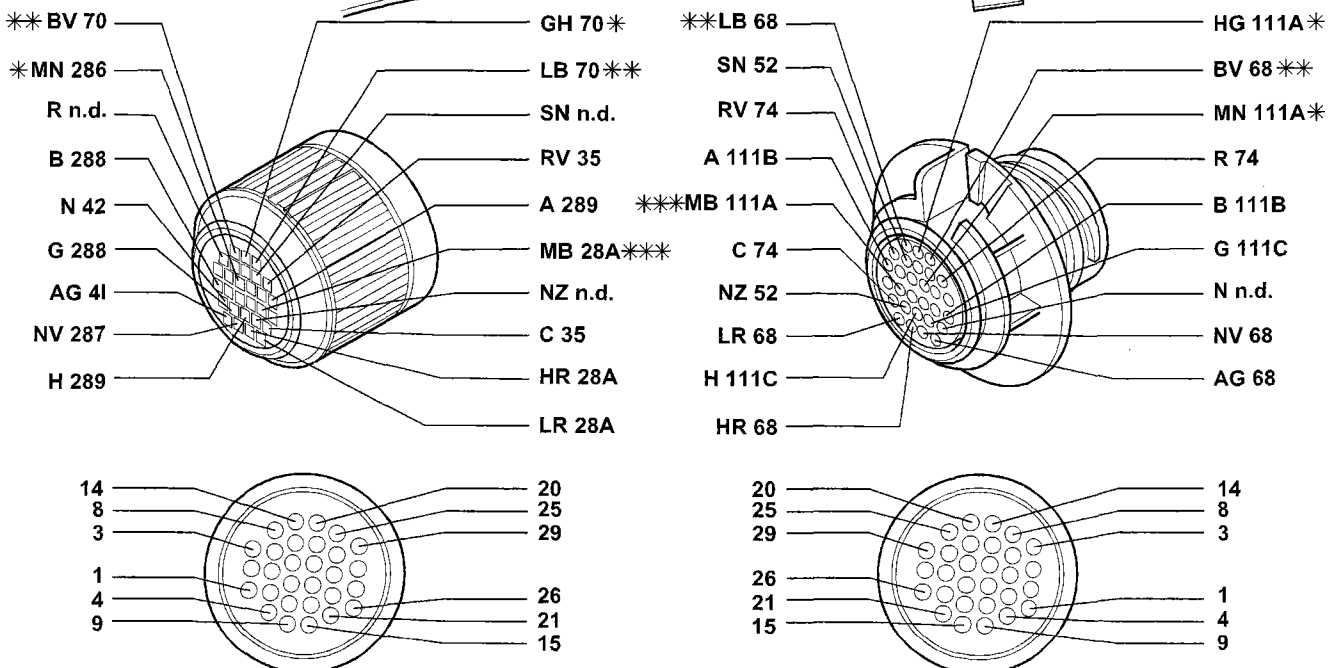
#### 36 Dashboard/right front door cables connection (only for the ELX trim level)



\* Only valid for versions with alarm

\*\* Only valid for the version with air conditioning

#### 36 Dashboard/right front door cables connection (only for the SX trim level)



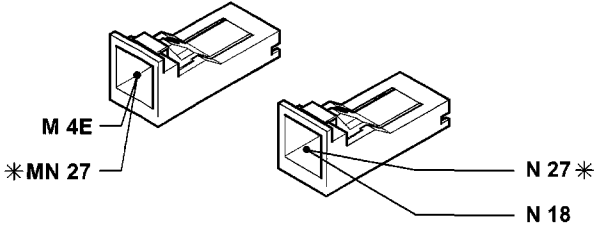
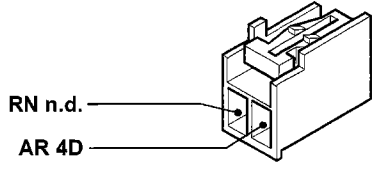
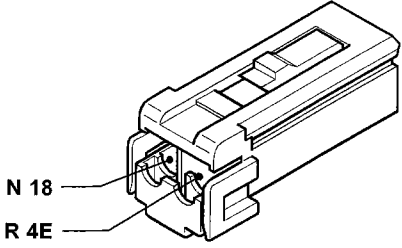
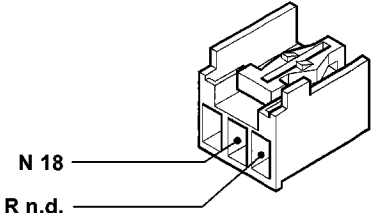
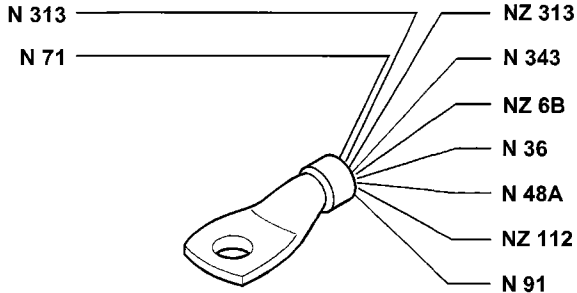
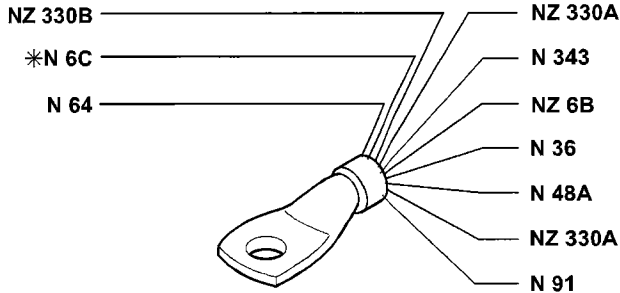
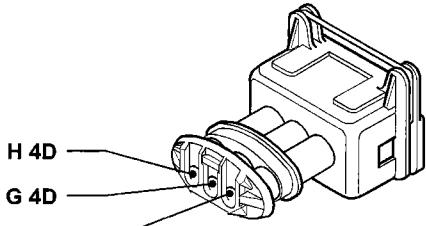
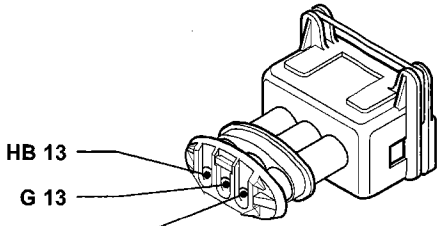
\* Only valid for version with alarm

\*\* Only valid for the version with air conditioning

\*\*\* Only valid for the version with automatic transmission

P4A334I01

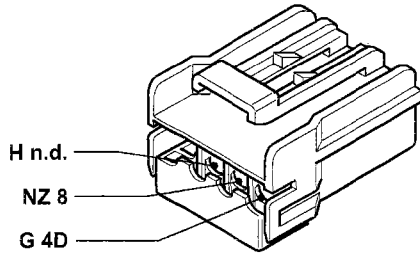


|   |  |
|---|--|
| <p><b>39</b> Heated rear windscreen</p>  <p>M 4E<br/>*MN 27<br/>N 27*<br/>N 18</p> <p>* Only exists on the Brava</p>   | <p><b>40</b> Brake lights control switch</p>  <p>RN n.d.<br/>AR 4D</p>   |
| <p><b>41</b> Additional brake light</p>  <p>N 18<br/>R 4E</p>   | <p><b>41</b> Additional brake light</p>  <p>N 18<br/>R n.d.</p>   |
| <p><b>42</b> Right dashboard earth (only for the SX trim level)</p>  <p>N 313<br/>N 71<br/>NZ 313<br/>N 343<br/>NZ 6B<br/>N 36<br/>N 48A<br/>NZ 112<br/>N 91</p> | <p><b>42</b> Right dashboard earth</p>  <p>NZ 330B<br/>*N 6C<br/>N 64<br/>NZ 330A<br/>N 343<br/>NZ 6B<br/>N 36<br/>N 48A<br/>NZ 330A<br/>N 91</p> <p>* Only valid for versions with automatic transmission</p> |
| <p><b>43</b> Left headlamp alignment correction motor</p>  <p>H 4D<br/>G 4D<br/>NZ 8</p>   | <p><b>44</b> Right headlamp alignment correction motor</p>  <p>HB 13<br/>G 13<br/>NZ 9</p>   |

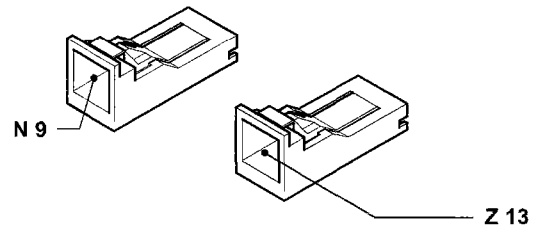
P4A335I01

### 55.

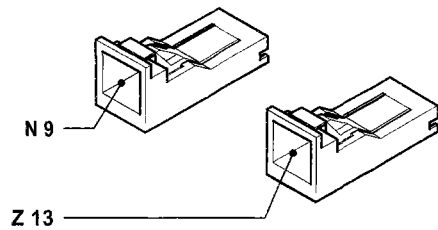
#### 45 Headlamp alignment control unit



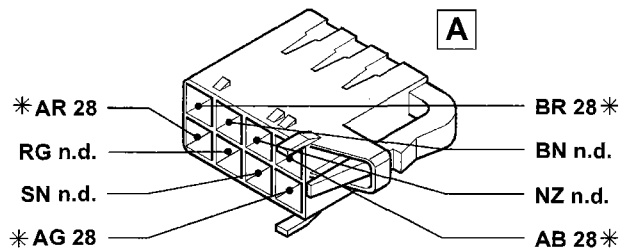
#### 46 Left electric horn



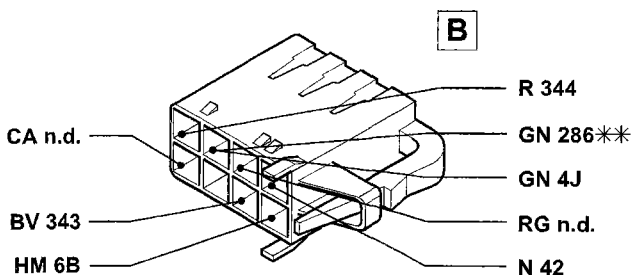
#### 47 Right electric horn



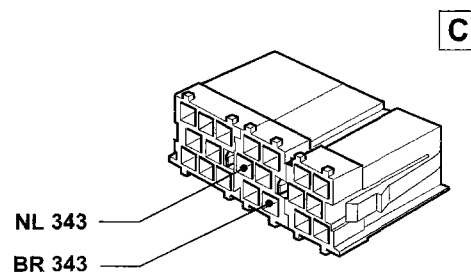
#### 48 Radio receiver with clock



\* Only valid for version with top of the range radio

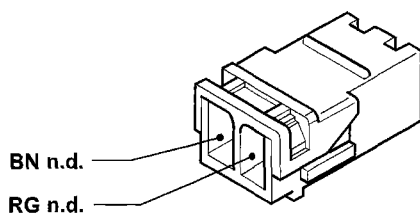


\*\* Only valid for version with radio phone

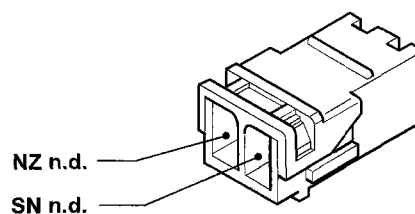


Exists only for version with top of the range radio

#### 49 Left front speaker (tweeter)

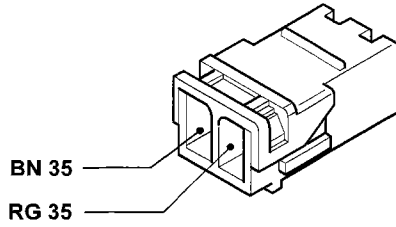


#### 50 Right front speaker (tweeter)

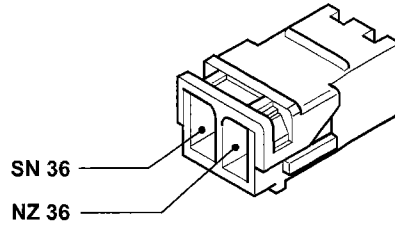


P4A336I01

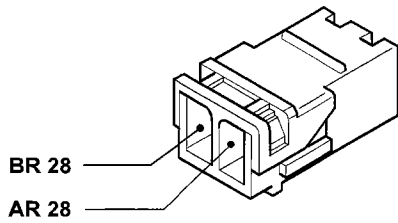
**51** Speaker in left front door



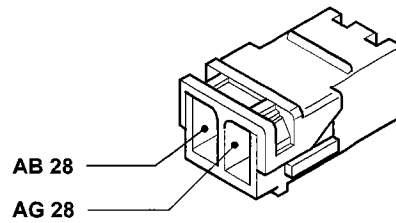
**52** Speaker in right front door



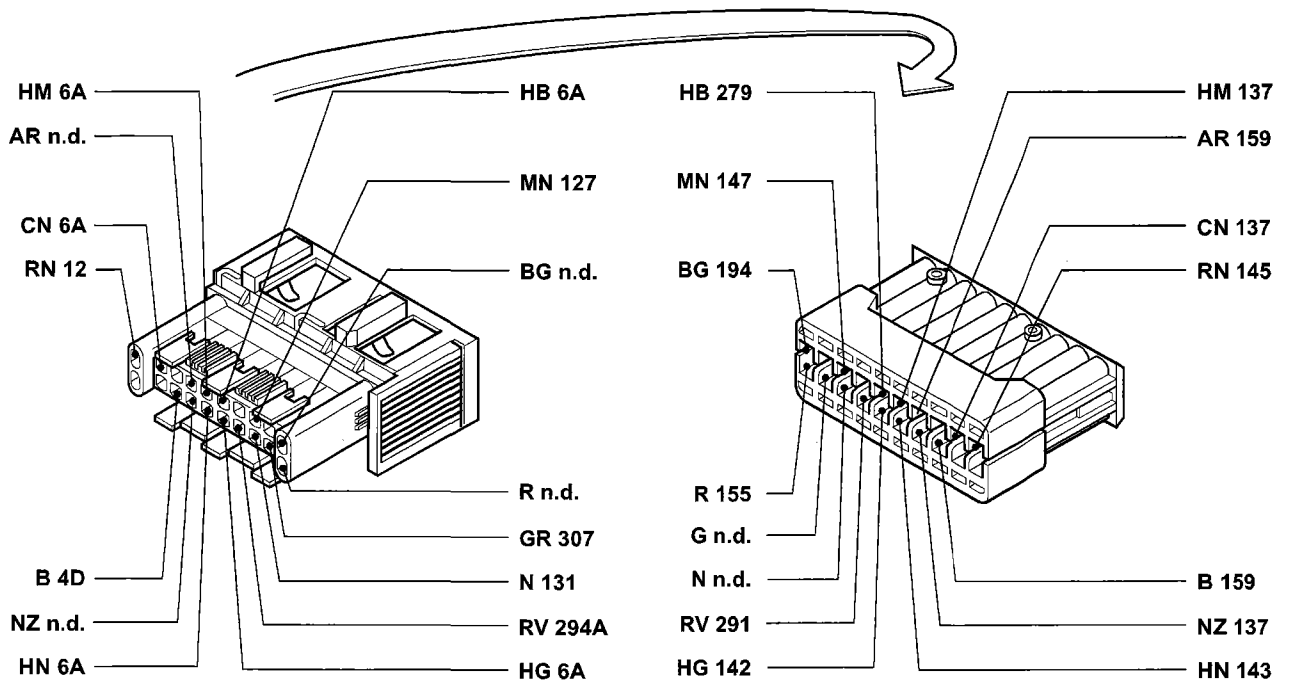
**53** Left rear speaker



**54** Right rear speaker



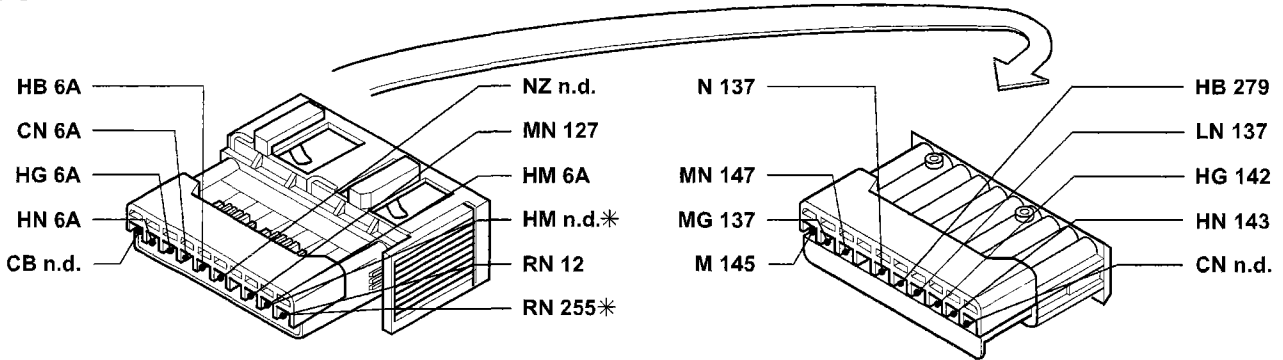
**55** Connection between front cables/engine pre-wiring (1242)



P4A337I01

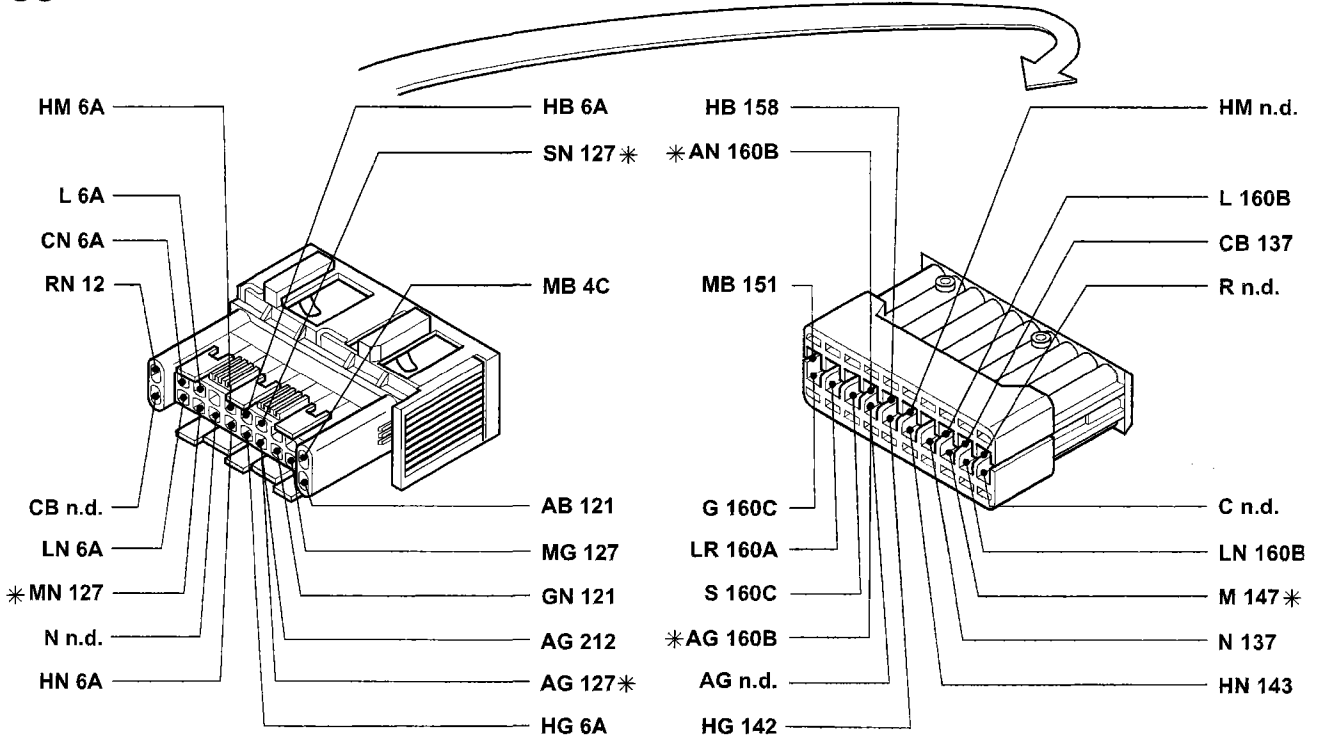
### 55.

#### 55 Connection between front/engine pre-wiring cables (1581)



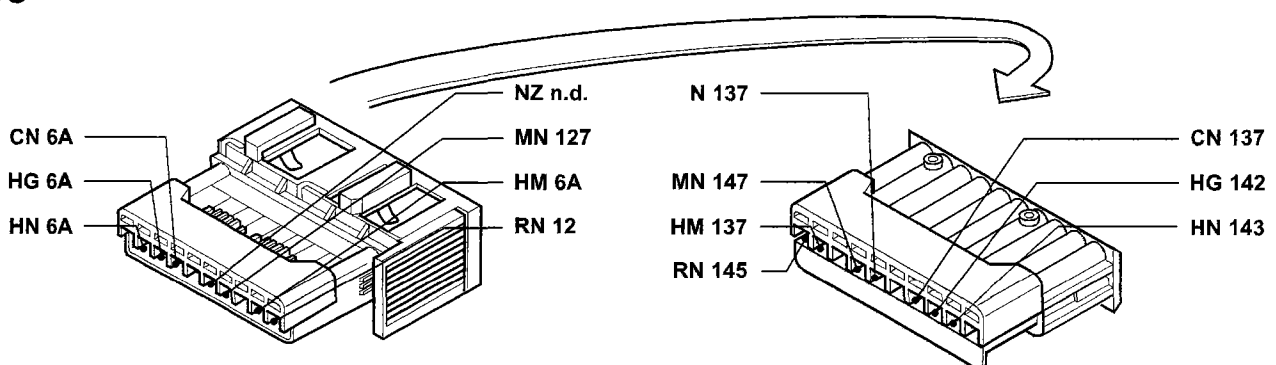
\* Only valid for version with automatic transmission

#### 55 Connection between front/engine pre-wiring cables (1747)



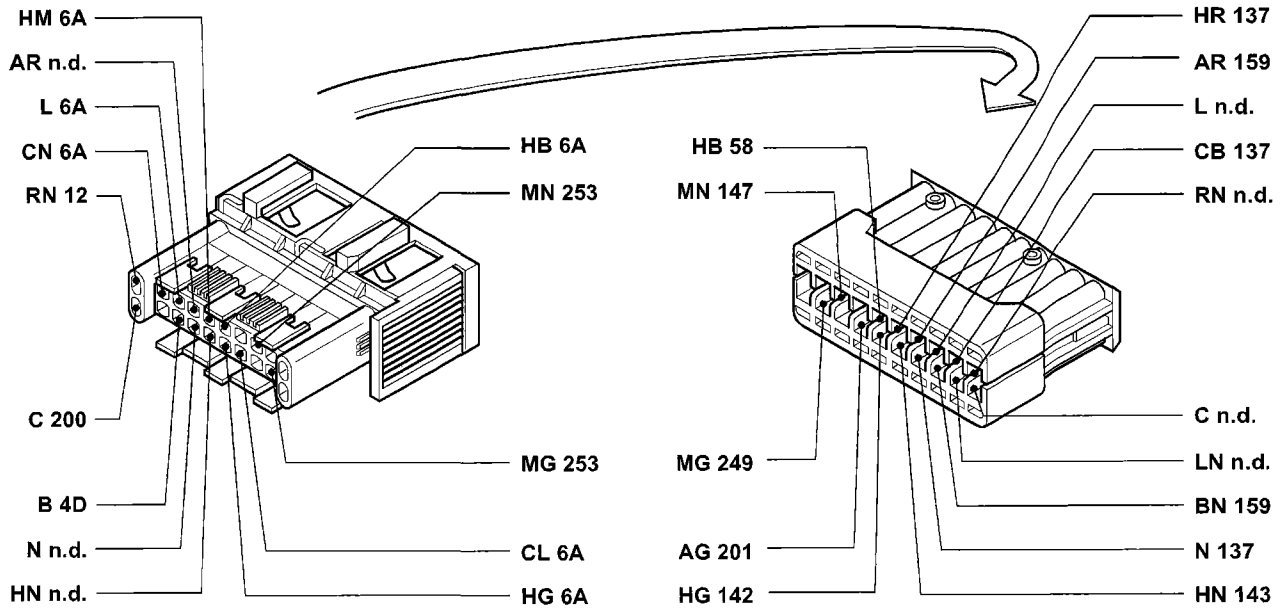
\* Only valid for version without air conditioning

#### 55 Connection between front/engine pre-wiring cables (1998)

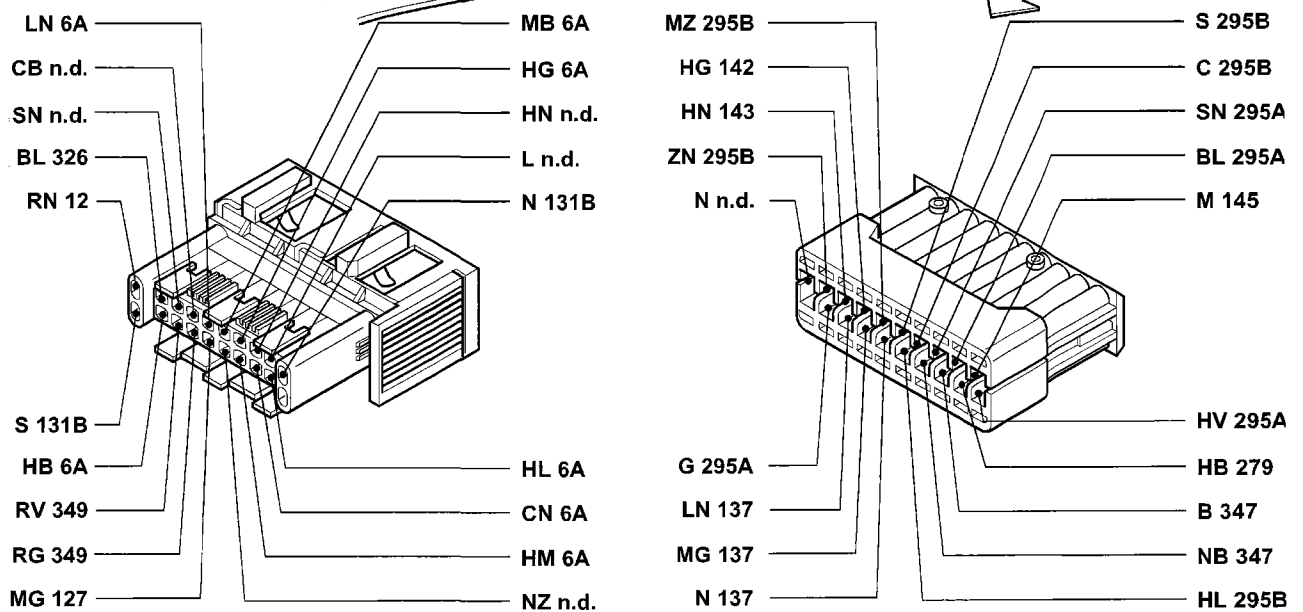


P4A338101

**55** Connection between front/engine pre-wiring cables (1910 TD)



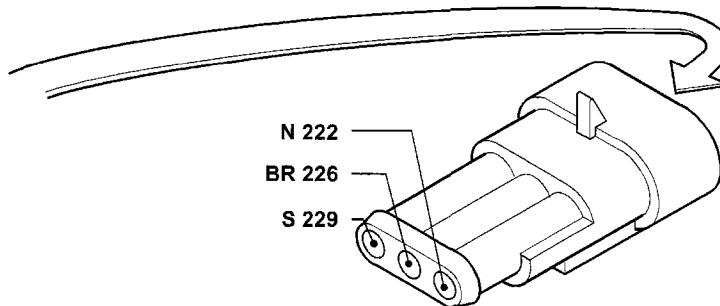
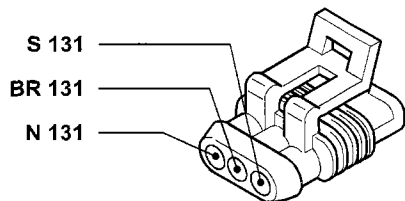
**55** Connection between front/engine pre-wiring cables (1910 JTD)



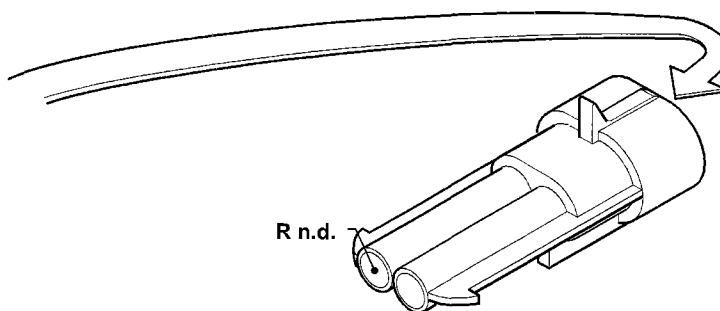
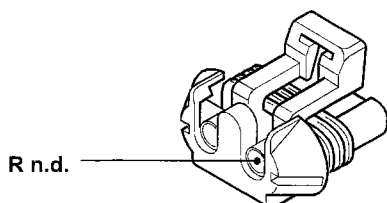
P4A339I01

### 55.

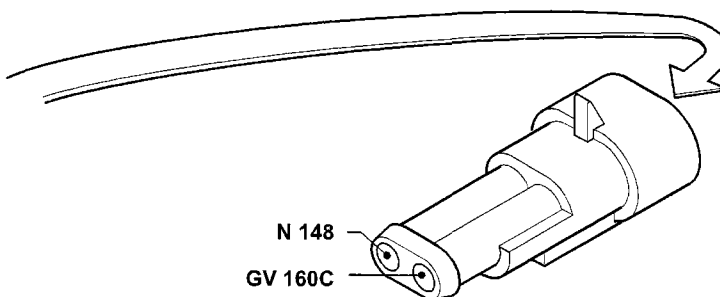
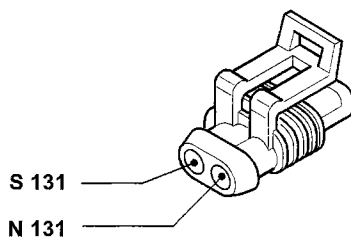
#### 55A Connection between front/engine pre-wiring cables (1910 TD)



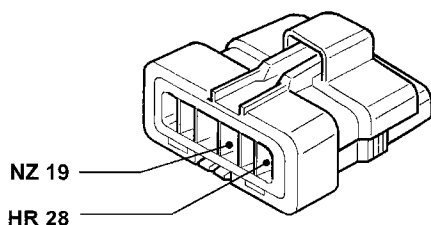
#### 55B Connection between front/engine pre-wiring cables (1747)



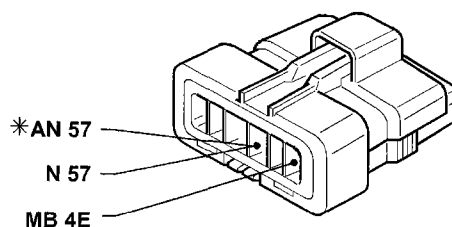
#### 55C Connection between front/engine pre-wiring cables (1747)



#### 56A Fuel level sensor

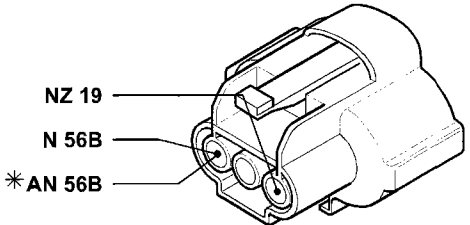
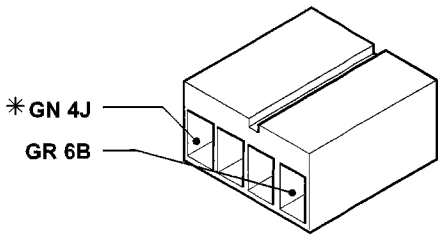
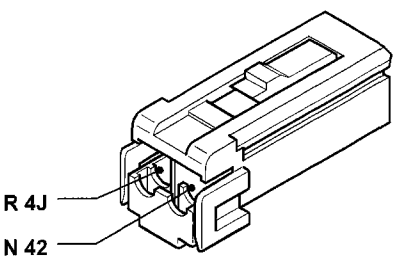
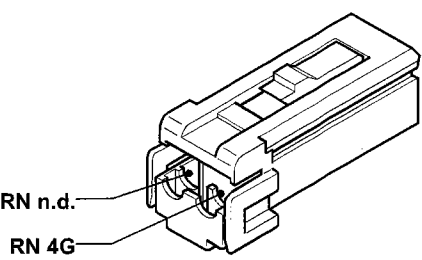
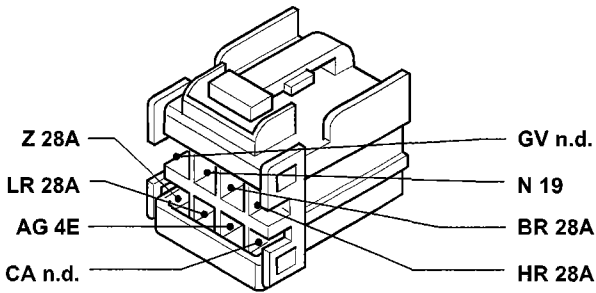
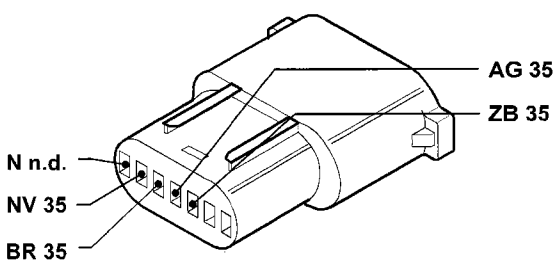
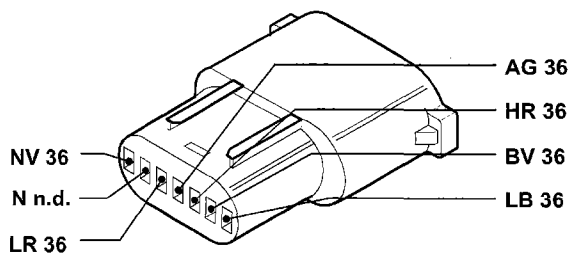
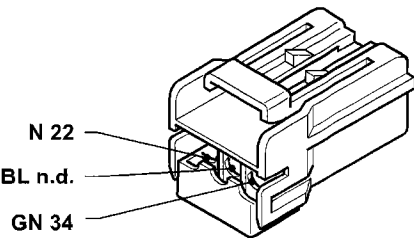


#### 56B Electric fuel pump



\* Variant for 1998 and JTD versions

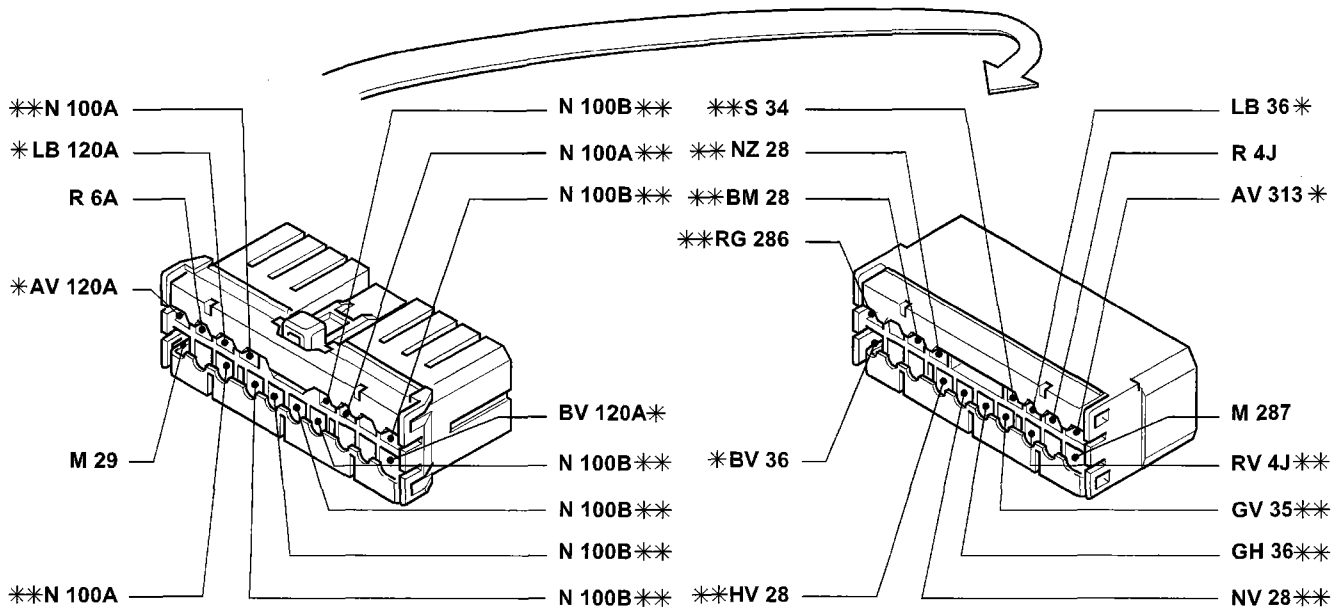
P4A340101

|  |  |
|--|--|
| <p><b>57</b> Inertia switch</p>  <p>NZ 19<br/>N 56B<br/>*AN 56B</p> <p>* Variant on 1998 and JTD versions</p>   | <p><b>58</b> Light dimmer</p>  <p>*GN 4J<br/>GR 6B</p>   |
| <p><b>64</b> Glove compartment light bulb with switch incorporated</p>  <p>R 4J<br/>N 42</p>   | <p><b>65</b> Luggage compartment light/anti-theft device on</p>  <p>RN n.d.<br/>RN 4G</p>                                     |
| <p><b>66</b> Electrically adjusted external rear view mirrors control panel</p>  <p>Z 28A<br/>LR 28A<br/>AG 4E<br/>CA n.d.<br/>GV n.d.<br/>N 19<br/>BR 28A<br/>HR 28A</p> | <p><b>67</b> Left electrically adjusted external rear view mirror</p>  <p>AG 35<br/>ZB 35<br/>N n.d.<br/>NV 35<br/>BR 35</p> |
| <p><b>68</b> Right electrically adjusted external rear view mirror</p>  <p>NV 36<br/>N n.d.<br/>LR 36<br/>AG 36<br/>HR 36<br/>BV 36<br/>LB 36</p>                         | <p><b>69</b> Cigar lighter</p>  <p>N 22<br/>BL n.d.<br/>GN 34</p>  |

P4A341101

### 55.

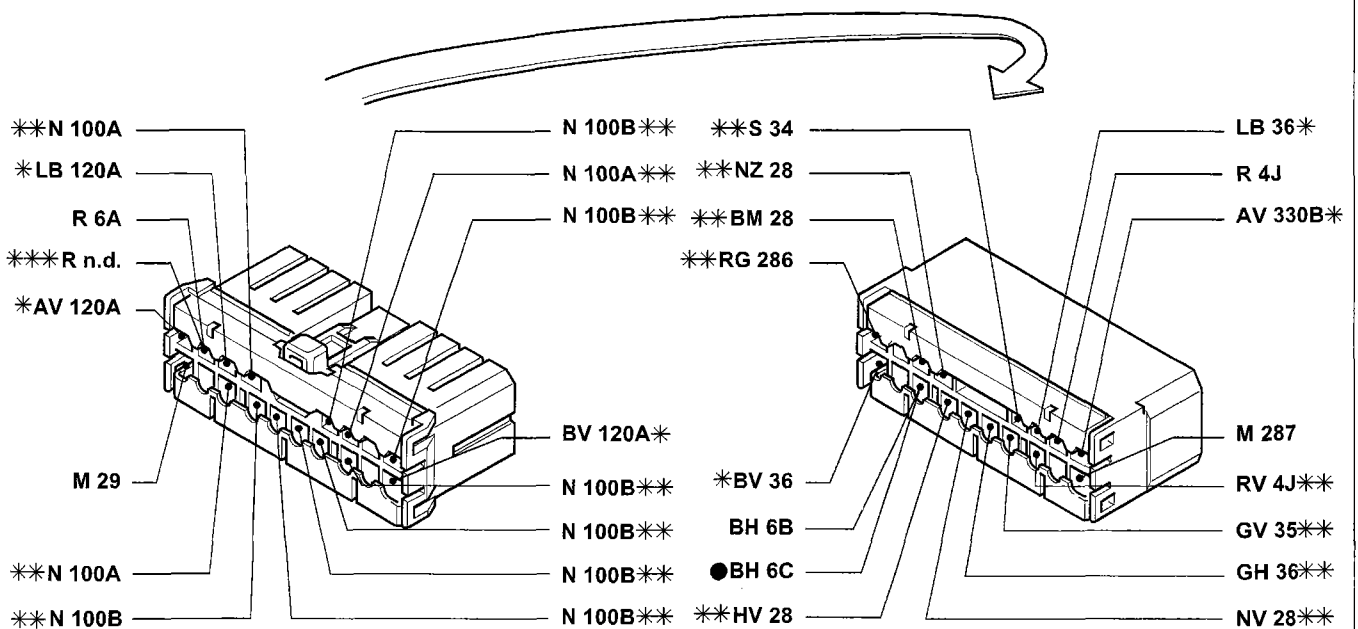
#### 70 Dashboard/front cables connection (SX)



\* Only valid for version with air conditioning

\*\* Only valid for version with alarm

#### 70 Dashboard/front cables connection (ELX)



\* Only valid for versions with air conditioning

\*\* Only valid for versions with alarm

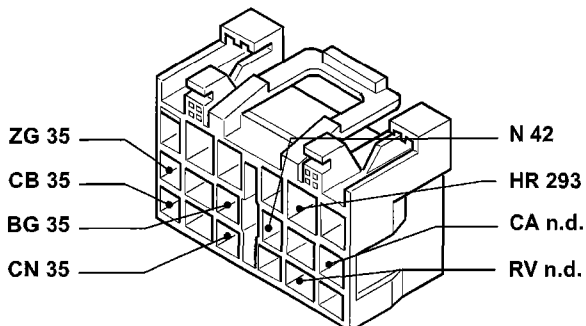
\*\*\* Variant for JTD version

● Only exists for the ELX trim level with automatic transmission

P4A342101

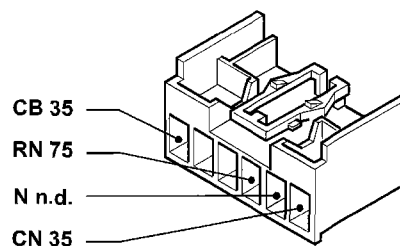


**71** Electric front windows control unit

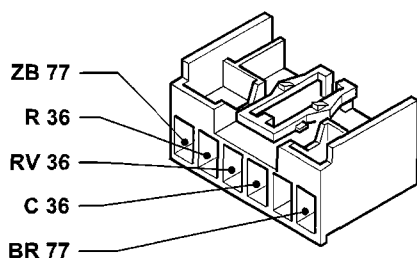


Only exists on the SX trim level

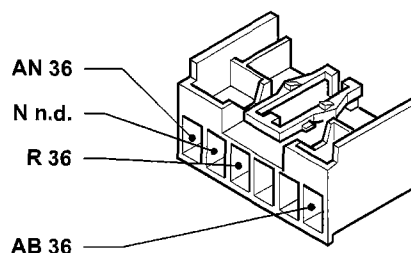
**73** Left front electric window control panel



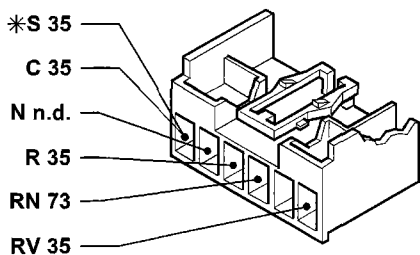
**74** Right electric front window control panel



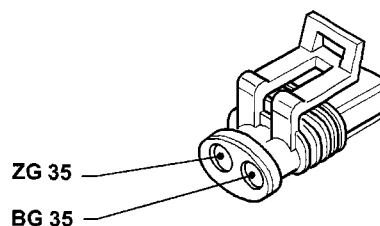
**74** Right electric front window control panel



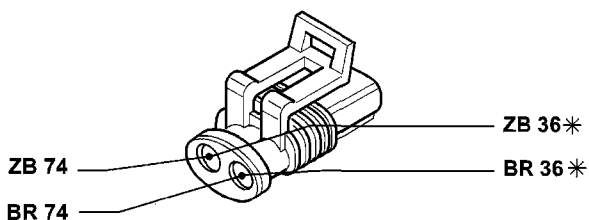
**75** Right front electric window control panel on left front door



**76** Left front electric window motor

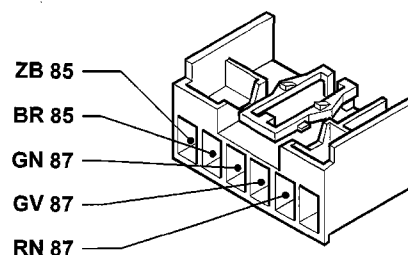


**77** Right front electric window motor



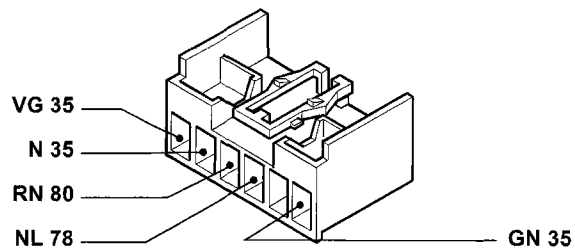
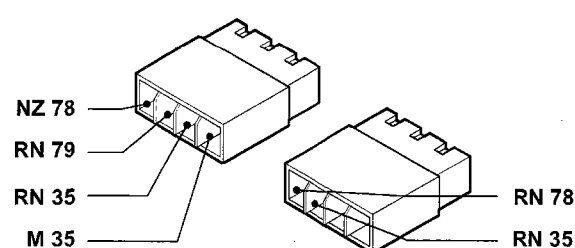
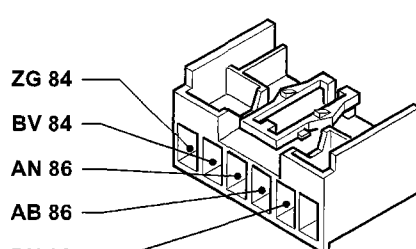
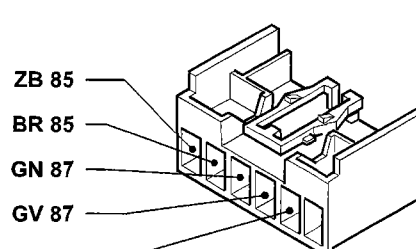
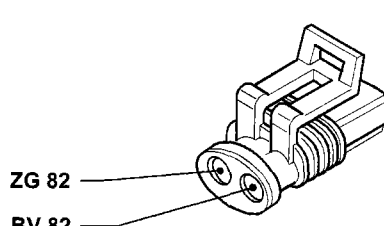
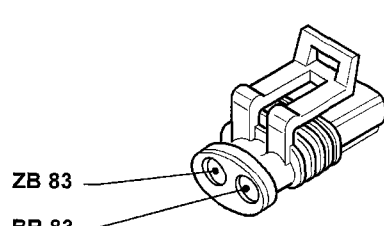
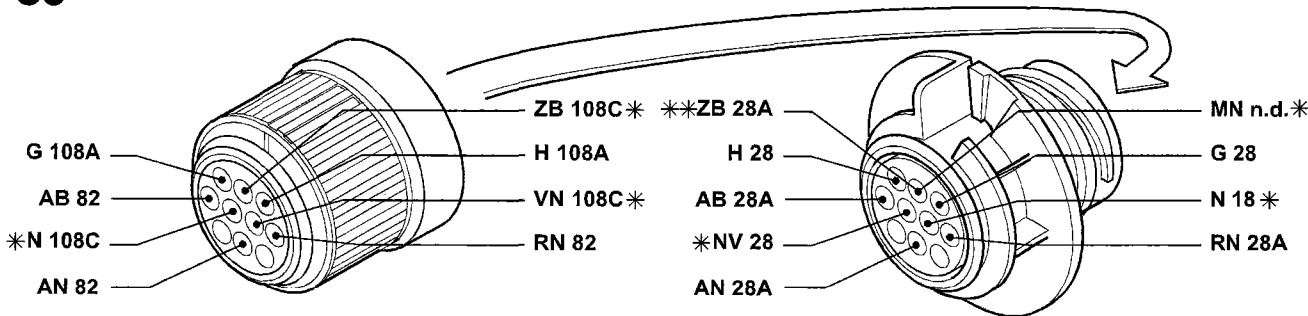
\* Variant for the ELX trim level

**78** Left rear electric window control panel on left rear door



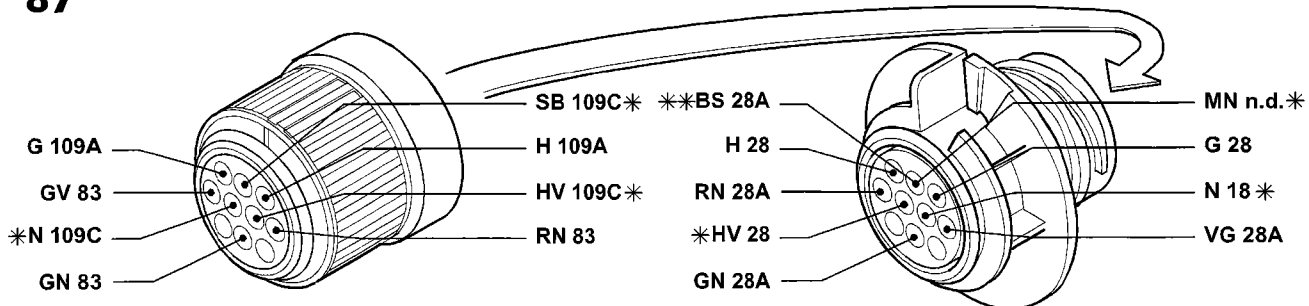
P4A343101

### 55.

|  |   |
|--|---|
| <p><b>79</b> Right rear electric window control panel on right rear door</p>  <p>VG 35<br/>N 35<br/>RN 80<br/>NL 78<br/>GN 35</p>   | <p><b>80</b> Electric rear windows inhibitor switch</p>  <p>NZ 78<br/>RN 79<br/>RN 35<br/>M 35<br/>RN 78<br/>RN 35</p>              |
| <p><b>82</b> Left rear electric window control panel on left rear door</p>  <p>ZG 84<br/>BV 84<br/>AN 86<br/>AB 86<br/>RN 86</p>   | <p><b>83</b> Right rear electric window control panel on right rear door</p>  <p>ZB 85<br/>BR 85<br/>GN 87<br/>GV 87<br/>RN 87</p> |
| <p><b>84</b> Left rear electric window motor</p>  <p>ZG 82<br/>BV 82</p>  | <p><b>85</b> Right rear electric window motor</p>  <p>ZB 83<br/>BR 83</p>   |
| <p><b>86</b> Longitudinal/left rear door cables connection</p>  <p>G 108A<br/>AB 82<br/>*N 108C<br/>AN 82<br/>ZB 108C*<br/>H 108A<br/>VN 108C*<br/>RN 82<br/>**ZB 28A<br/>H 28<br/>AB 28A<br/>*NV 28<br/>AN 28A<br/>MN n.d.*<br/>G 28<br/>N 18*<br/>RN 28A</p> <p>* Only valid for version with alarm<br/>** Only valid for the ELX trim level</p> |   |

P4A344I01

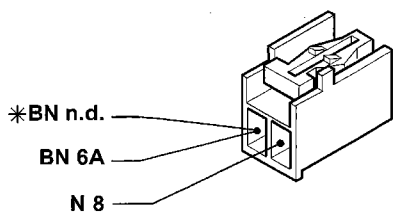
**87** Longitudinal/right rear door cables connection



\* Only valid for version with alarm

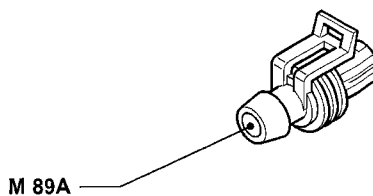
\*\* Only valid for the ELX trim level

**88** Insufficient brake fluid level sensor

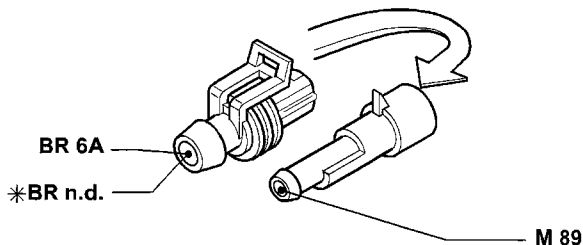


\* Only valid for version with automatic transmission

**89** Left brake pad wear sensor

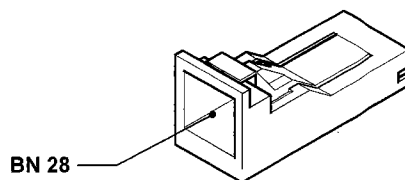


**89A** Left brake pad wear sensor cables connection

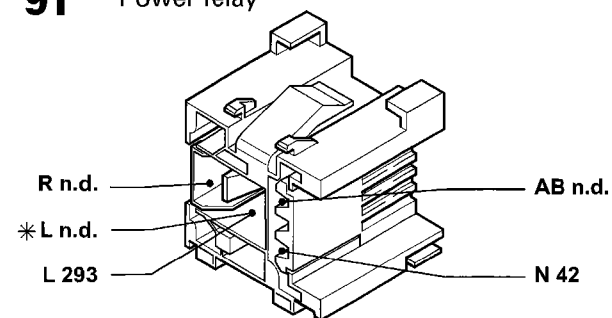


\* Only valid for the HGT trim level

**90** Switch signalling handbrake applied

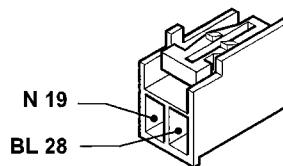


**91** Power relay



\* Only valid for the ELX trim level

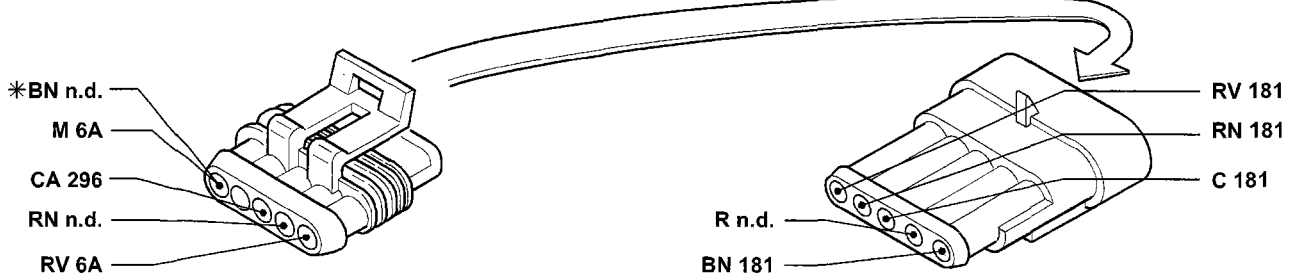
**92A** Electric sun roof cables connection



P4A345I01

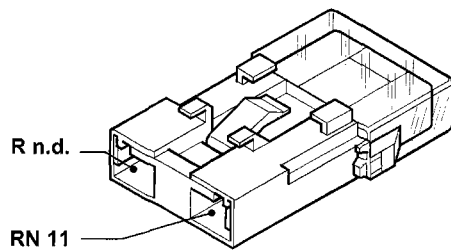
### 55.

#### 95 Front/anti-lock brakes cables connection (A.B.S.)

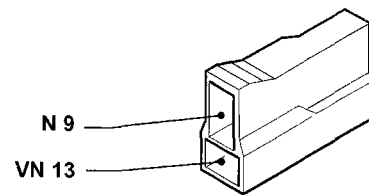


\* Only valid for version with automatic transmission

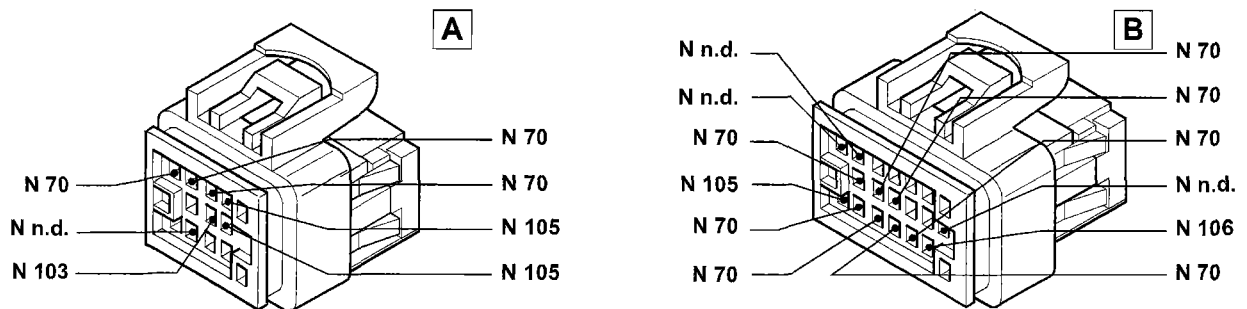
#### 96 60A protective power fuse for electrical equipment



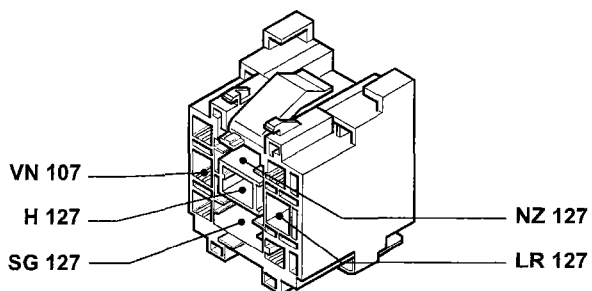
#### 97 Electric headlamp washer pump



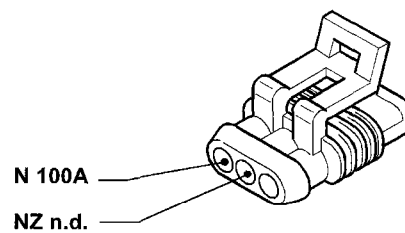
#### 100 Alarm device electronic control unit



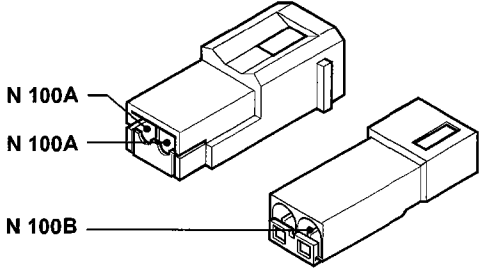
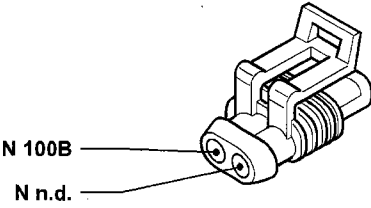
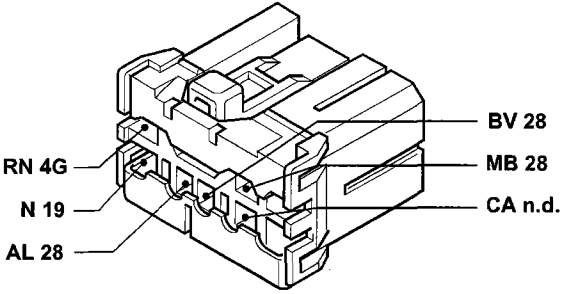
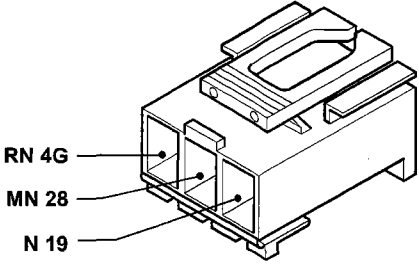
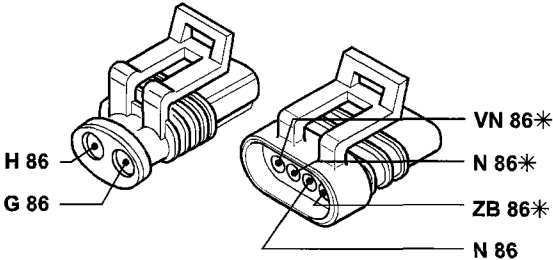
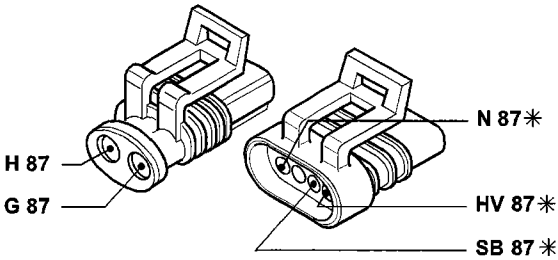
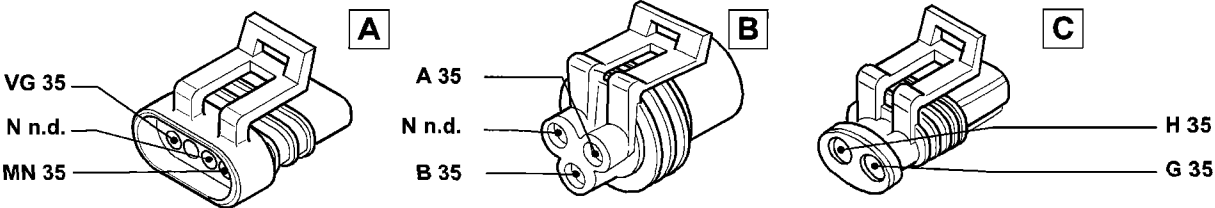
#### 98 Headlamp washer intermittent device



#### 103 Diagnostic socket for alarm

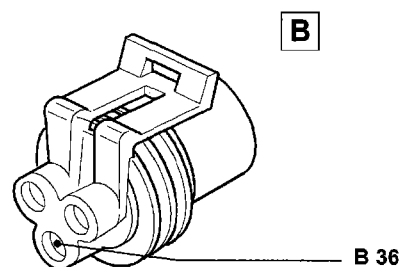
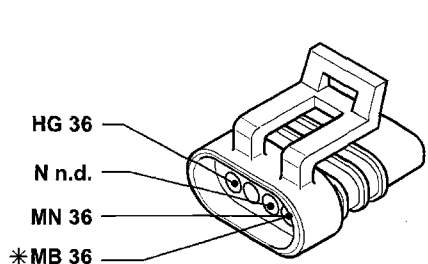


P4A346101

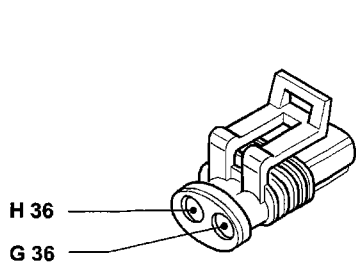
|  |   |
|--|---|
| <p><b>105</b> Alarm deactivation switch</p>  <p>N 100A<br/>N 100A<br/>N 100B</p> <p>P4A347101</p>   | <p><b>106</b> Alarm activation switch</p>  <p>N 100B<br/>N n.d.</p> <p>P4A347102</p>  |
| <p><b>107A</b> Door remote control receiver</p>  <p>RN 4G<br/>N 19<br/>AL 28<br/>BV 28<br/>MB 28<br/>CA n.d.</p> <p>P4A347103</p>  | <p><b>107B</b> Car interior courtesy light</p>  <p>RN 4G<br/>MN 28<br/>N 19</p> <p>P4A347104</p>   |
| <p><b>108</b> Left rear central locking/alarm on switch</p>  <p>H 86<br/>G 86<br/>VN 86*<br/>N 86*<br/>ZB 86*<br/>N 86</p> <p>*Applies only for version with alarm</p> <p>P4A347105</p> | <p><b>109</b> Right rear central locking/alarm on switch</p>  <p>H 87<br/>G 87<br/>N 87*<br/>HV 87*<br/>SB 87*</p> <p>*Applies only for version with alarm</p> <p>P4A347106</p> |
| <p><b>110</b> Left front central locking/alarm on switch</p>  <p>VG 35<br/>N n.d.<br/>MN 35<br/>A 35<br/>N n.d.<br/>B 35<br/>H 35<br/>G 35</p> <p>P4A347107</p>                        |   |

### 55.

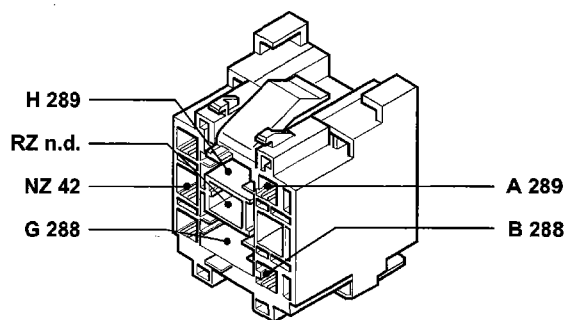
#### 111 Right front central locking/alarm on switch



\*Applies only for ELX outfit with automatic transmission



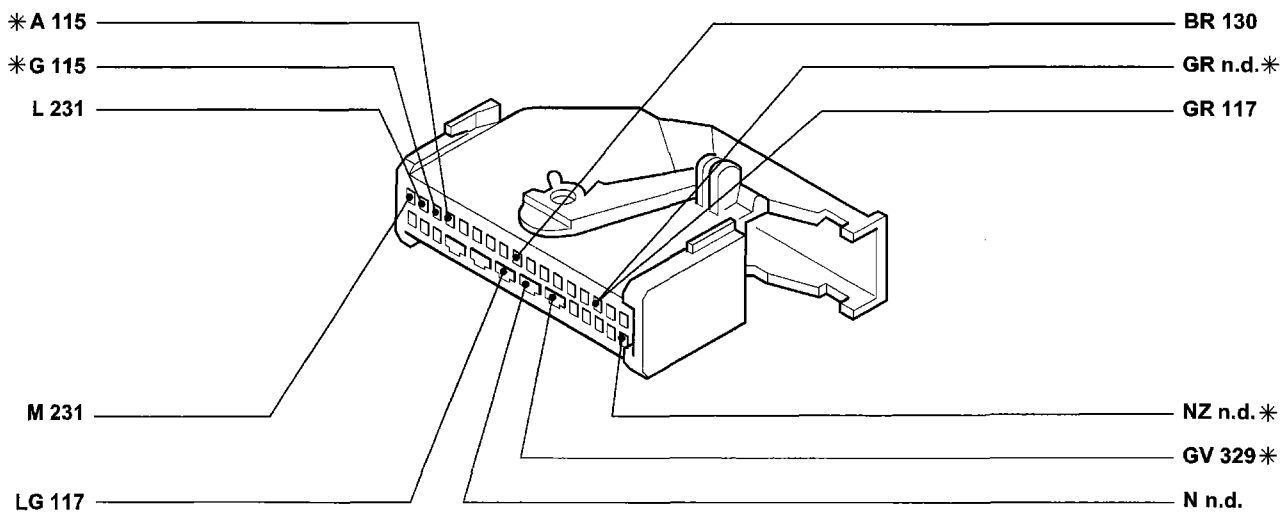
#### 112 Door lock system electronic control unit



P4A348I01

P4A348I02

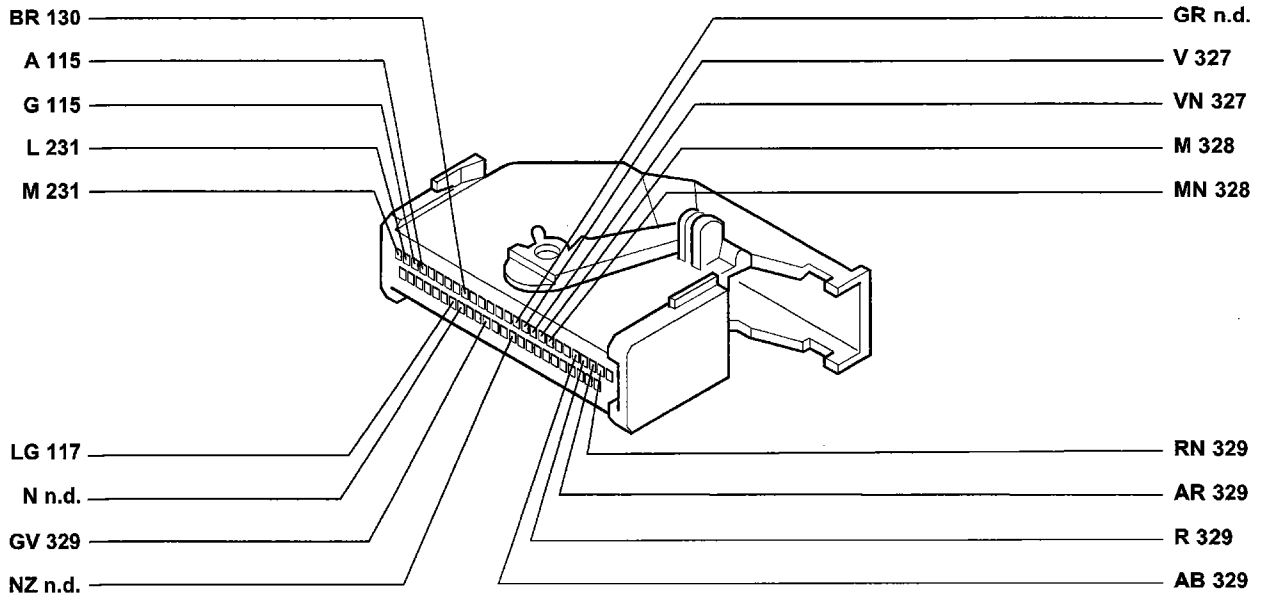
#### 114 EURO-BAG electronic control unit



\*Applies only for version with driver and passenger side EURO-BAG

P4A348I03

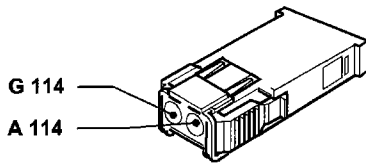
**114** EURO-BAG electronic control unit



Only in version with SIDE-BAG

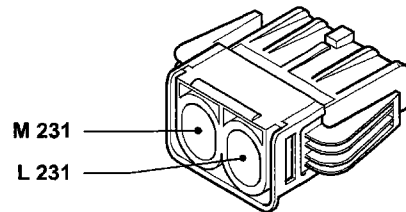
P4A349I01

**115** Passenger EURO BAG



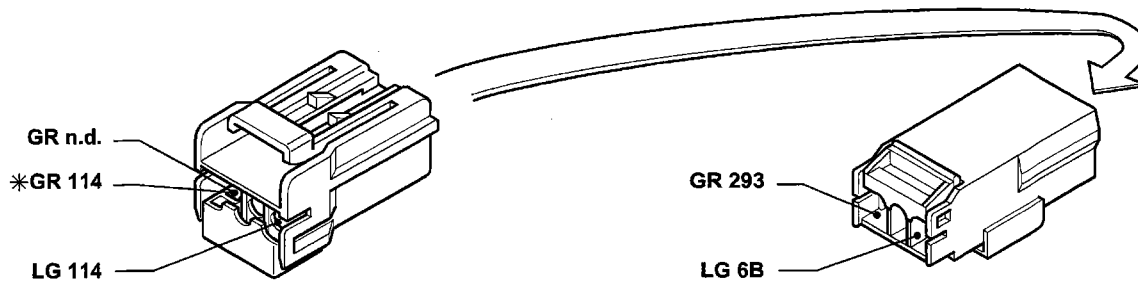
P4A349I02

**116** Driver's EURO BAG



P4A349I03

**117** EURO-BAG/facia cable connection

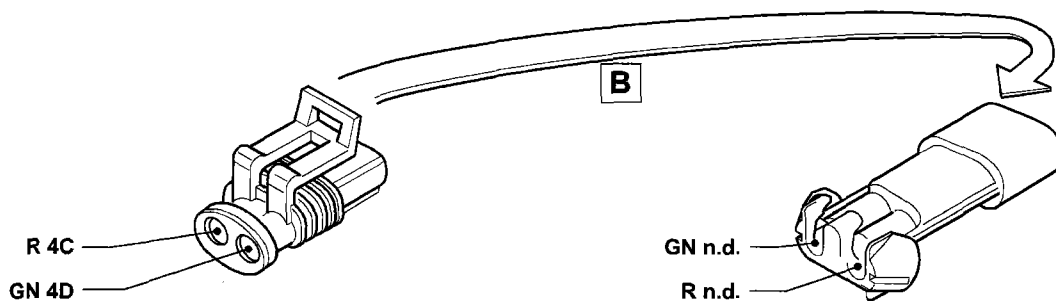
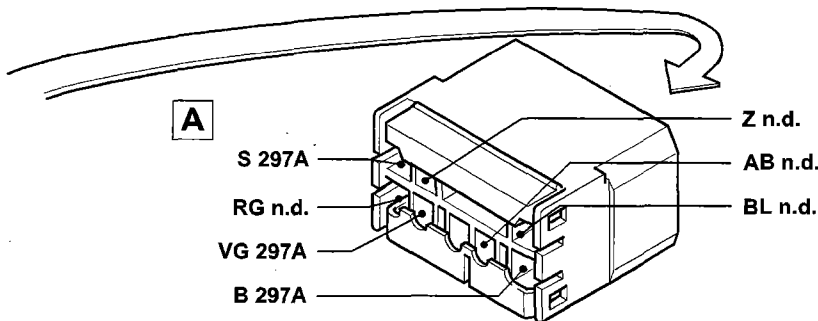
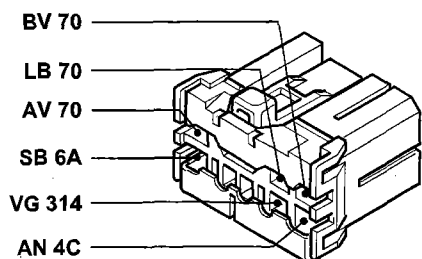


\*Variant for version with driver's side EURO-BAG

P4A349I04

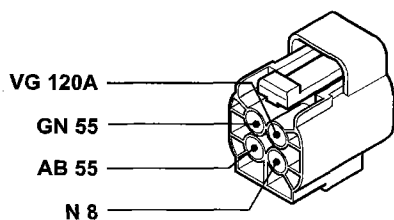
### 55.

#### 120 Connection for air conditioning unit cables



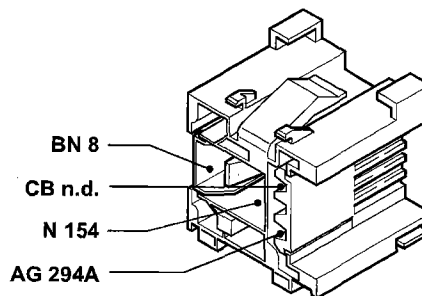
P4A350101

#### 121 Three stage pressure switch



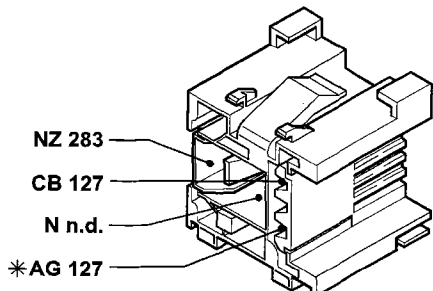
P4A350102

#### 122 Engine cooling fan low speed relay feed (1242 without air conditioner)



P4A350103

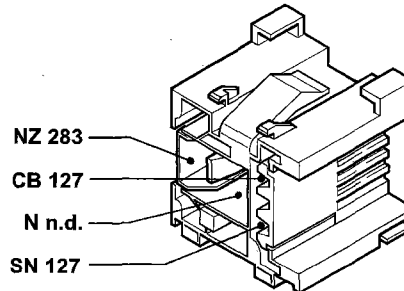
#### 122 Engine cooling fan low speed relay feed (1242 and 1581 with air conditioner)



\* Not in version with automatic transmission

P4A350104

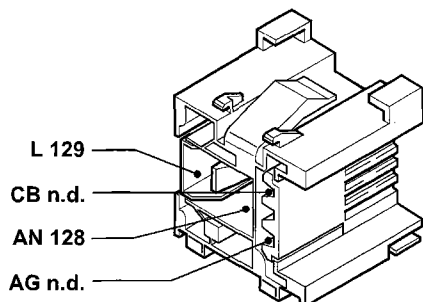
#### 122 Engine cooling fan low speed relay feed (1747 and 1998 with air conditioner)



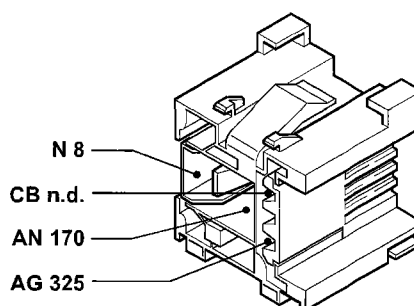
P4A350105



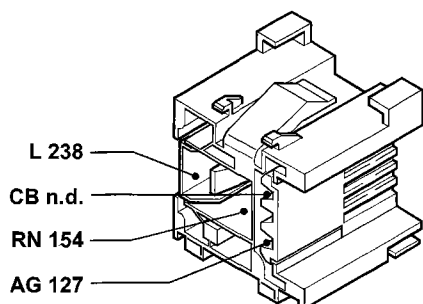
**122** Engine cooling fan low speed relay feed (1910 TD)



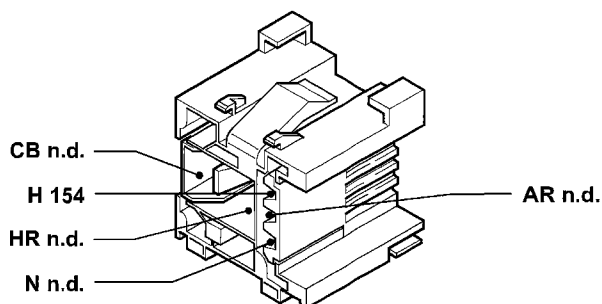
**122** Engine cooling fan low speed relay feed (1910 JTD without air conditioning)



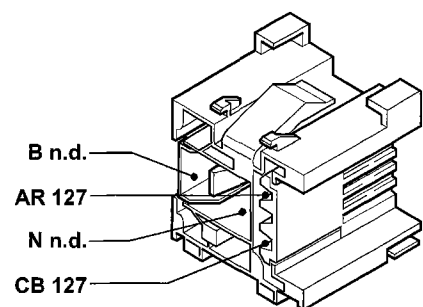
**122** Engine cooling fan low speed relay feed (1910 JTD with air conditioning)



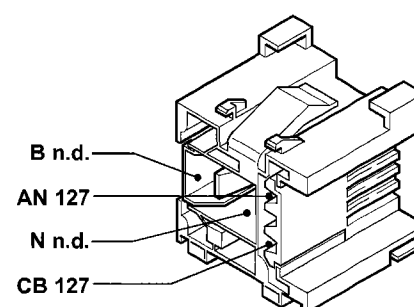
**123** Engine cooling fan high speed timer (1910 JTD with air conditioning)



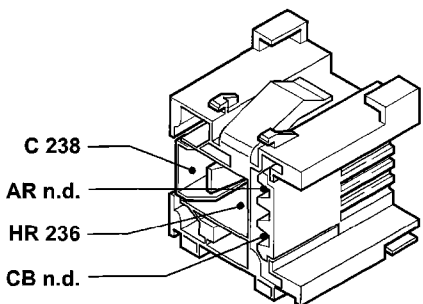
**123A** Engine cooling fan high speed relay feed (1242 and 1581 with air conditioning)



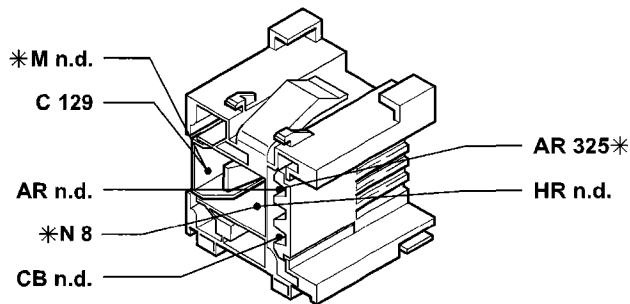
**123A** Engine cooling fan high speed relay feed (1747 and 1998 with air conditioning)



**123A** Engine cooling fan high speed relay feed (1910 TD)



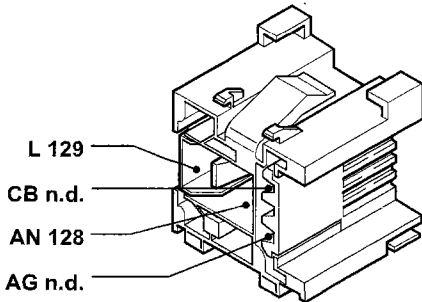
**123A** Engine cooling fan high speed relay feed (1910 JTD)



\* Variant on versions without air conditioning

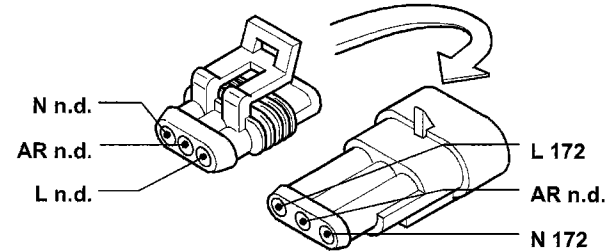
### 55.

#### 124 Air conditioning compressor relay (1910 TD)



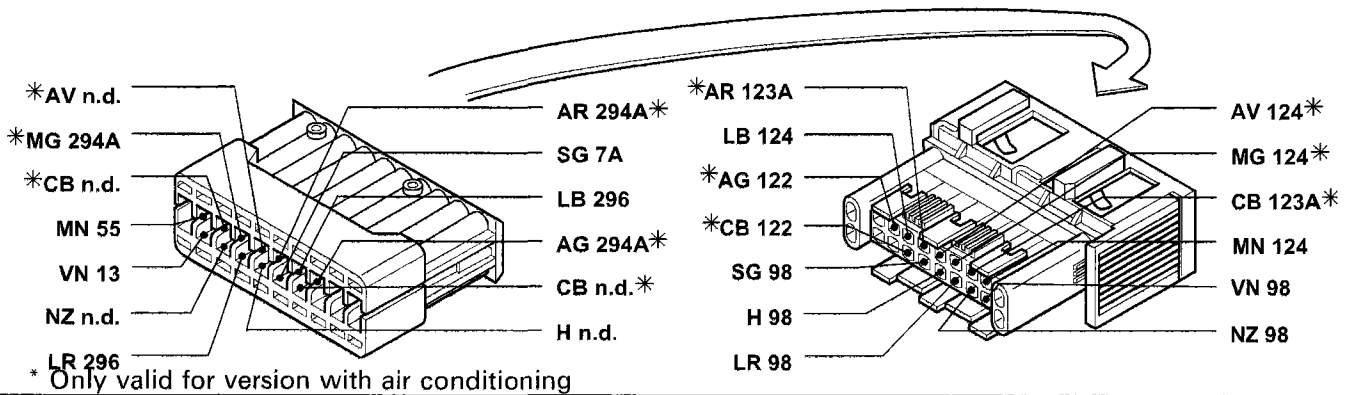
L 129  
CB n.d.  
AN 128  
AG n.d.

#### 126 Front/air conditioning cables connection (1910 TD)



N n.d.  
AR n.d.  
L n.d.  
L 172  
AR n.d.  
N 172

#### 127 Connection between left front cable/cable on relay holder bracket (1242)

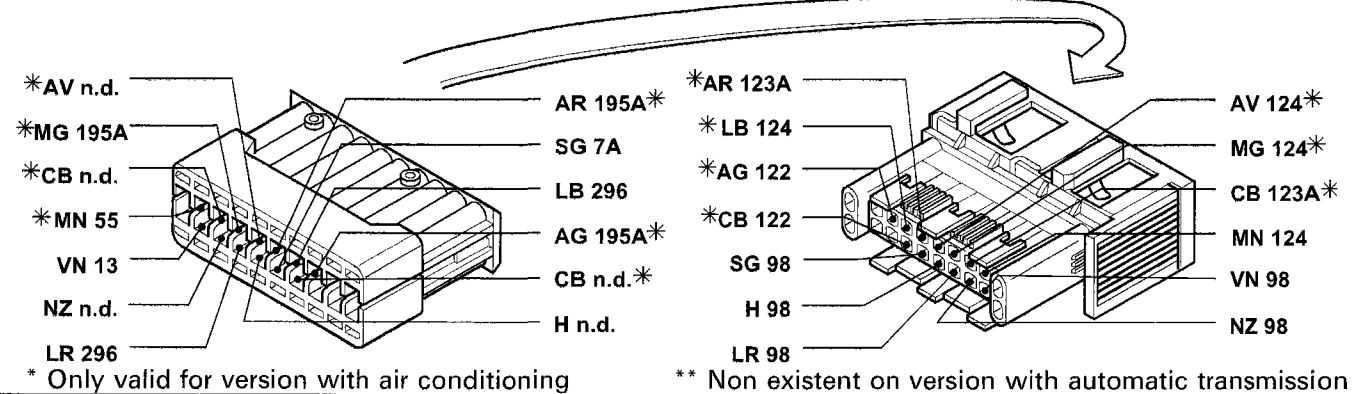


\*AV n.d.  
\*MG 294A  
\*CB n.d.  
MN 55  
VN 13  
NZ n.d.  
LR 296  
AR 294A\*  
SG 7A  
LB 296  
AG 294A\*  
CB n.d.\*  
H n.d.

\*AR 123A  
LB 124  
\*AG 122  
\*CB 122  
SG 98  
H 98  
LR 98  
AV 124\*  
MG 124\*  
CB 123A\*  
MN 124  
VN 98  
NZ 98

\* Only valid for version with air conditioning

#### 127 Connection between left front cable/cable on relay holder bracket (1581)



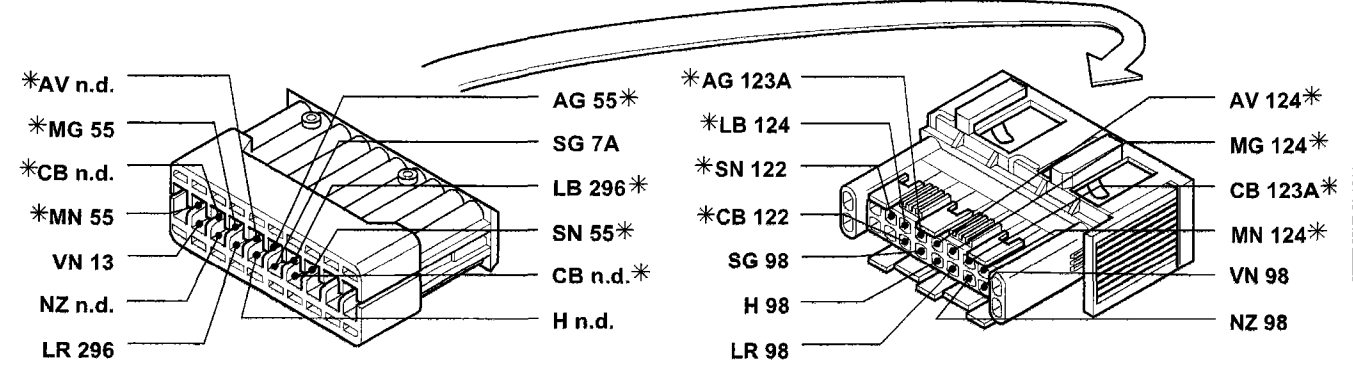
\*AV n.d.  
\*MG 195A  
\*CB n.d.  
\*MN 55  
VN 13  
NZ n.d.  
LR 296  
AR 195A\*  
SG 7A  
LB 296  
AG 195A\*  
CB n.d.\*  
H n.d.

\*AR 123A  
\*LB 124  
\*AG 122  
\*CB 122  
SG 98  
H 98  
LR 98  
AV 124\*  
MG 124\*  
CB 123A\*  
MN 124  
VN 98  
NZ 98

\* Only valid for version with air conditioning

\*\* Non existent on version with automatic transmission

#### 127 Connection between left front cable/cable on relay holder bracket (1747)

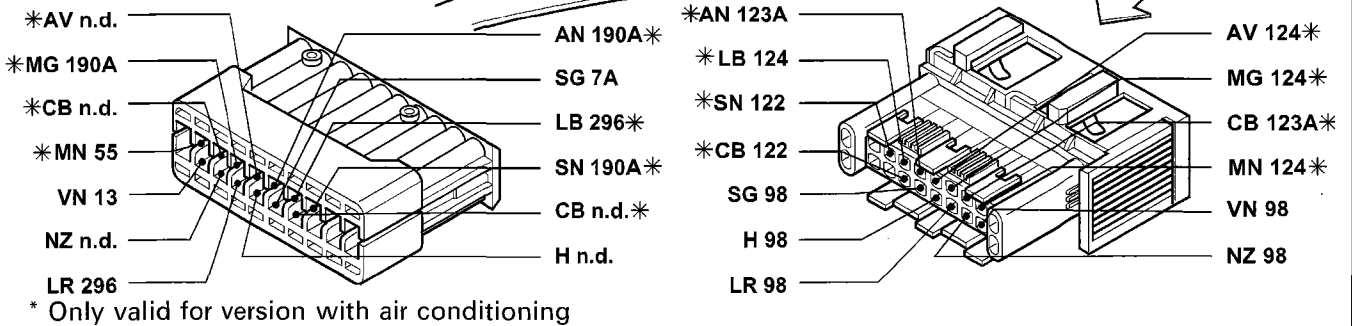


\*AV n.d.  
\*MG 55  
\*CB n.d.  
\*MN 55  
VN 13  
NZ n.d.  
LR 296  
AG 55\*  
SG 7A  
LB 296\*  
SN 55\*  
CB n.d.\*  
H n.d.

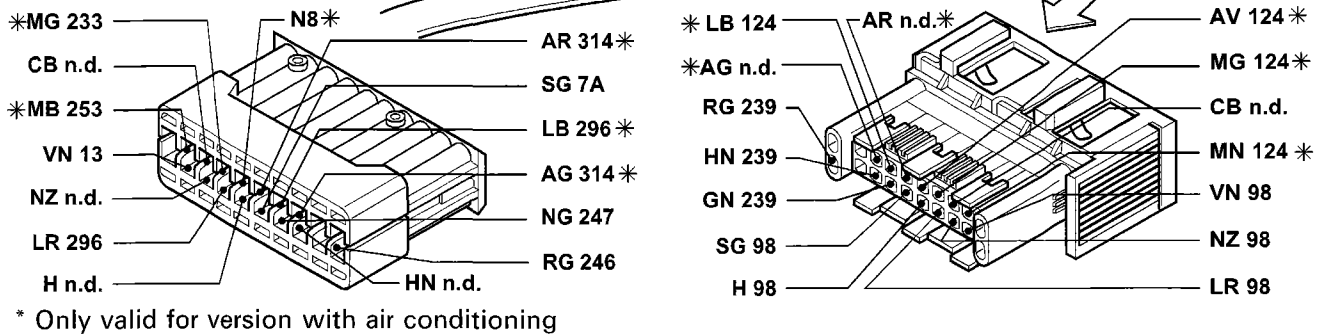
\*AG 123A  
\*LB 124  
\*SN 122  
\*CB 122  
SG 98  
H 98  
LR 98  
AV 124\*  
MG 124\*  
CB 123A\*  
MN 124\*  
VN 98  
NZ 98

\* Only valid for version with air conditioning

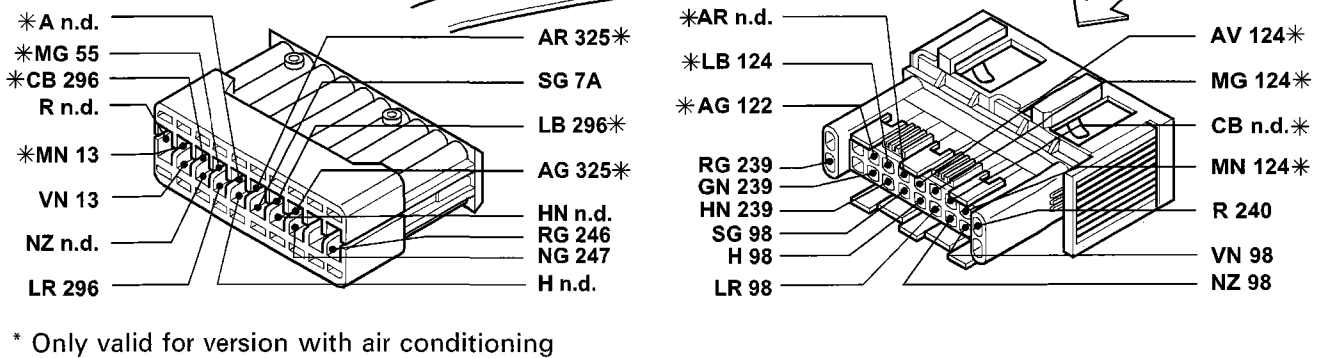
**127** Connection between left front cable/cable on relay holder bracket (1998)



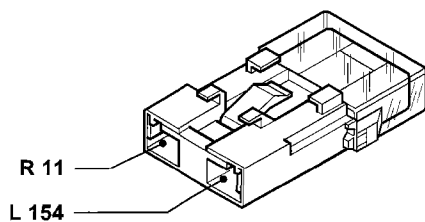
**127** Connection between left front cable/cable on relay holder bracket (1910 TD)



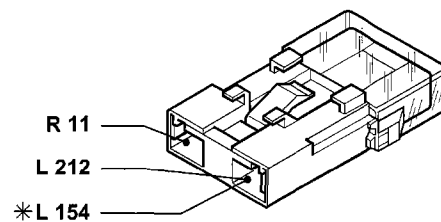
**127** Connection between left front cable/cable on relay holder bracket (1910 JTD)



**129** Power fuse protecting engine cooling fan (1242, 1581, 1998)



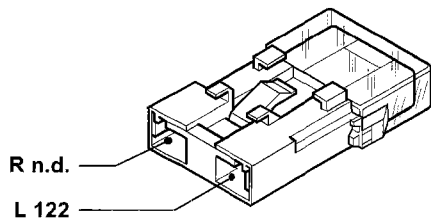
**129** Power fuse protecting engine cooling fan (1747)



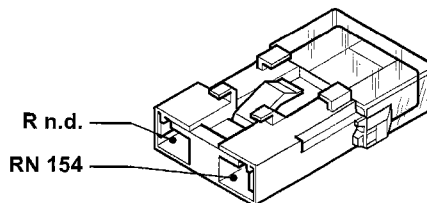
\* Variant on version with air conditioning

### 55.

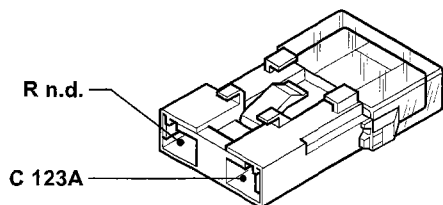
**129** Power fuse protecting engine cooling fan (1910 TD)



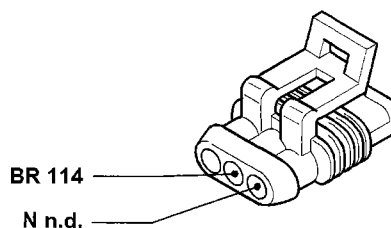
**129** Power fuse protecting engine cooling fan (1910 JTD without air conditioning)



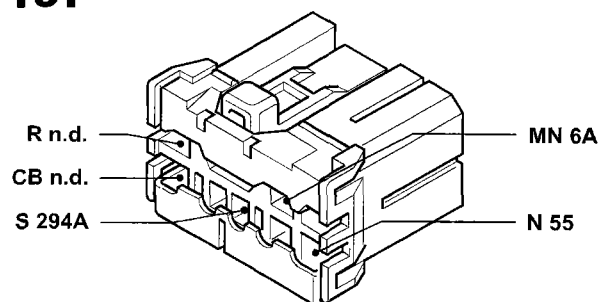
**129** Power fuse protecting engine cooling fan (1910 JTD with air conditioning)



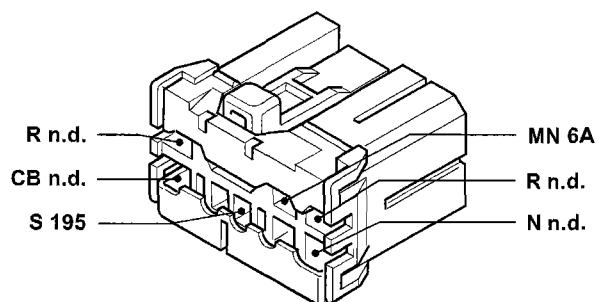
**130** Diagnostic socket for EURO-BAG



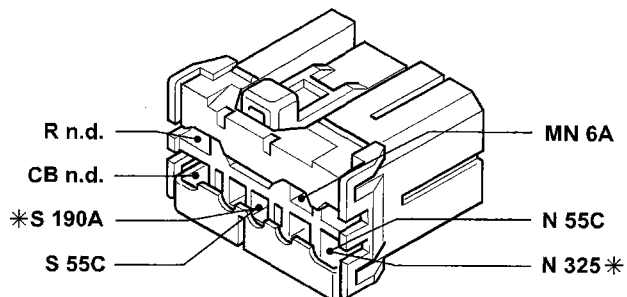
**131** Fiat-CODE electronic control unit



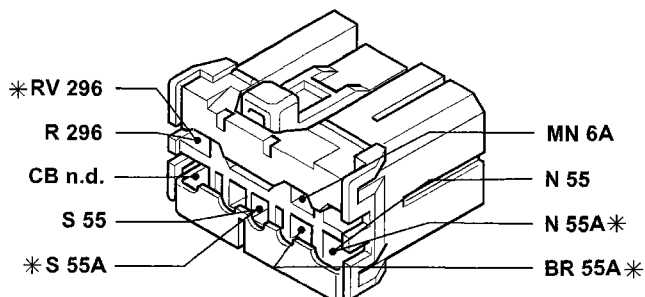
Only exists on the 1242 version



Only exists on the 1581 version



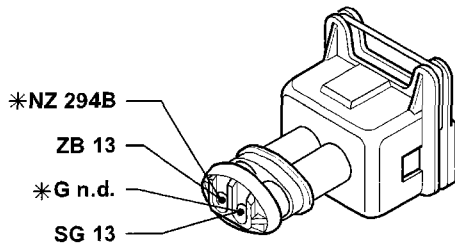
\* Variant on the 1998 version  
Only exists on the 1747 and 1998 versions



\* Variant for the 1910 JTD version  
Only exists on the 1910 TD and 1910 JTD versions

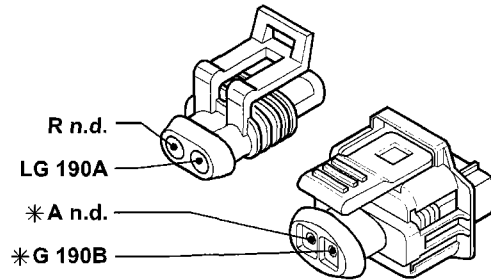
P4A354101

**132** Petrol vapour cut out solenoid valve (canister) (1242 and 1581)



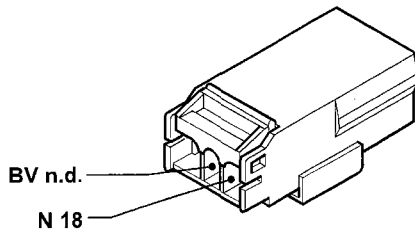
\* Only valid on the 1242 version

**132** Petrol vapour cut out solenoid valve (canister) (1747 and 1998)

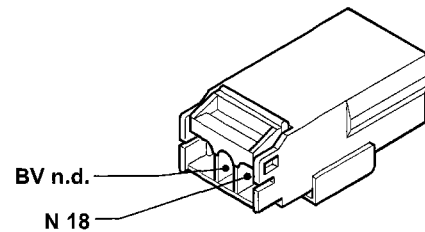


\* Only valid on the 1998 version

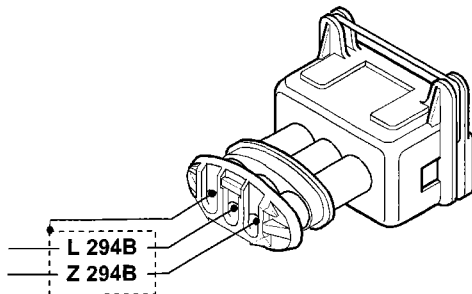
**134** Rear/heated driver's seat cables connection



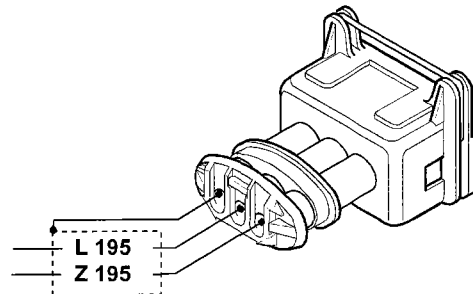
**135** Rear/heated passenger seat cables connection



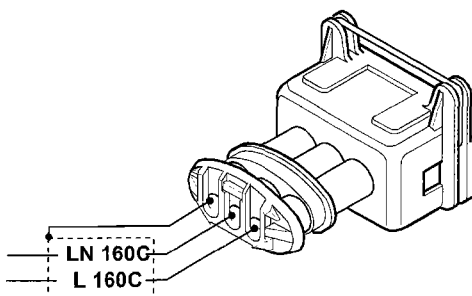
**136** Detonation sensor (1242)



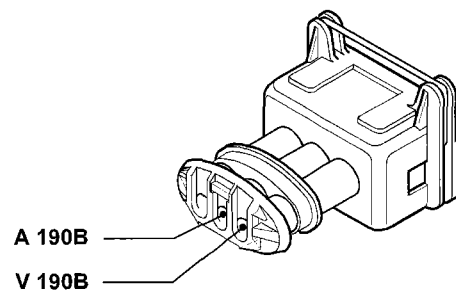
**136** Detonation sensor (1581)



**136** Detonation sensor (1747)

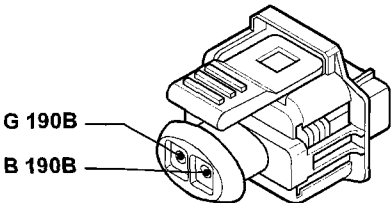
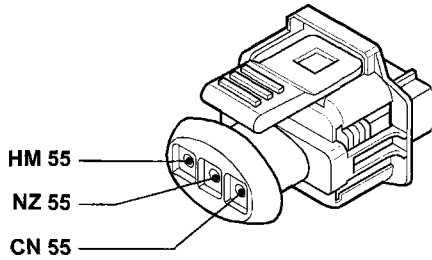
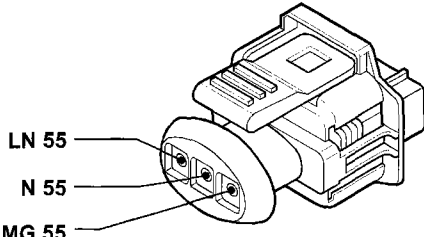
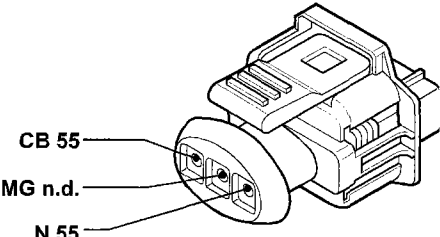
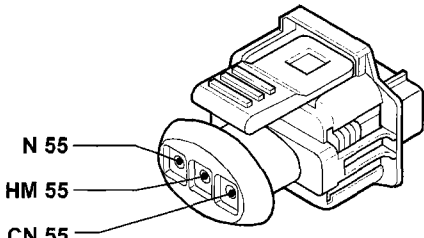
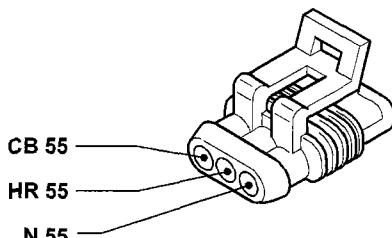
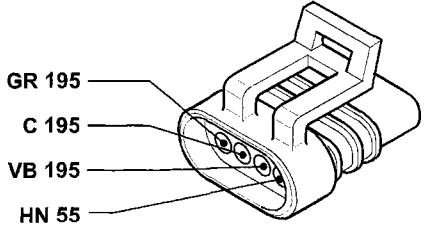
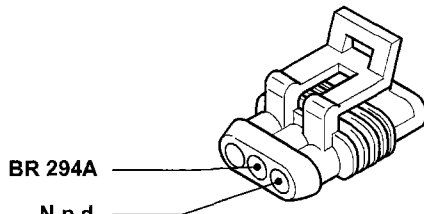


**136** Detonation sensor (1998)



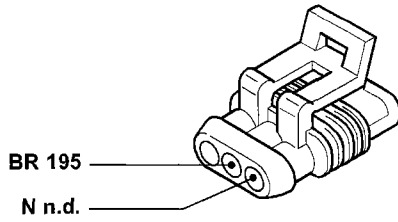
P4A355101

### 55.

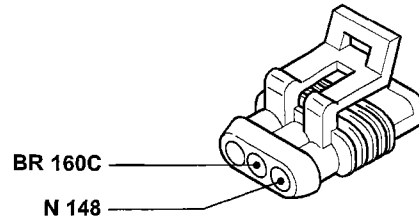
|  |  |
|--|--|
| <p><b>136A</b> Detonation sensor (1998)</p>  <p>G 190B<br/>B 190B</p>                                   | <p><b>137</b> Vehicle speed sensor (1242)</p>  <p>HM 55<br/>NZ 55<br/>CN 55</p>              |
| <p><b>137</b> Vehicle speed sensor (1581)</p>  <p>LN 55<br/>N 55<br/>MG 55</p>                         | <p><b>137</b> Vehicle speed sensor (1747)</p>  <p>CB 55<br/>MG n.d.<br/>N 55</p>            |
| <p><b>137</b> Vehicle speed sensor (1998)</p>  <p>N 55<br/>HM 55<br/>CN 55</p>                        | <p><b>137</b> Vehicle speed sensor (1910 TD)</p>  <p>CB 55<br/>HR 55<br/>N 55</p>          |
| <p><b>138</b> Idle adjustment actuator motor (1581)</p>  <p>GR 195<br/>C 195<br/>VB 195<br/>HN 55</p> | <p><b>139</b> Diagnostic socket for injection system (1242)</p>  <p>BR 294A<br/>N n.d.</p> |

P4A356101

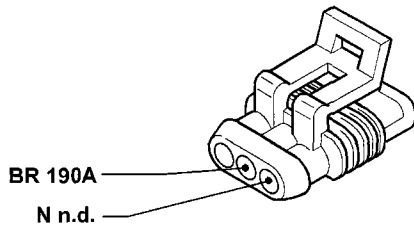
**139** Diagnostic socket for injection system (1581)



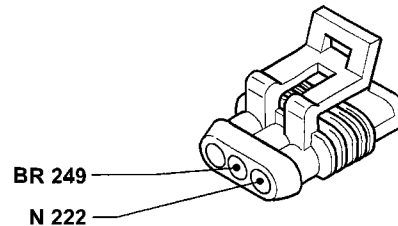
**139** Diagnostic socket for injection system (1747)



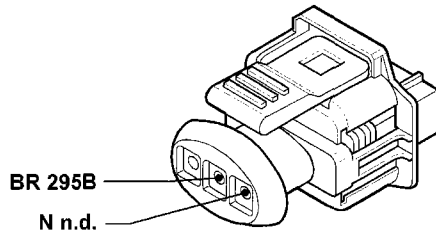
**139** Diagnostic socket for injection system (1998)



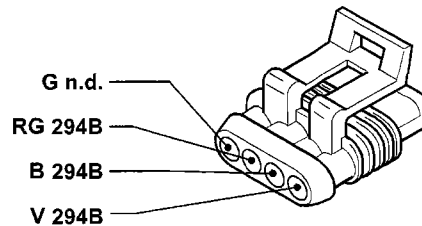
**139** Diagnostic socket for injection system (1910 TD)



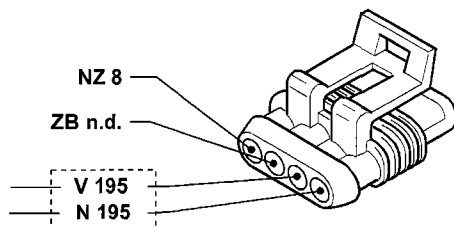
**139** Diagnostic socket for injection system (1910 JTD)



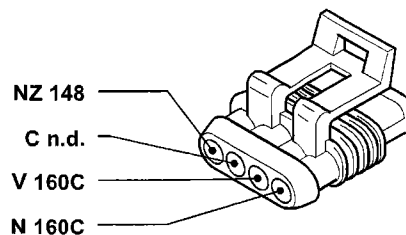
**141** Heated Lambda sensor (1242)



**141** Heated Lambda sensor (1581)



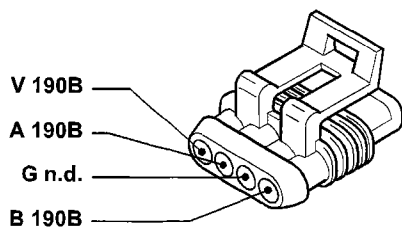
**141** Heated Lambda sensor (1747)



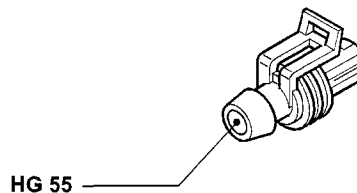
P4A357I01

### 55.

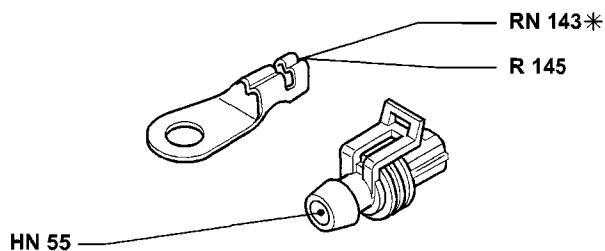
**141** Heated Lambda sensor (1998)



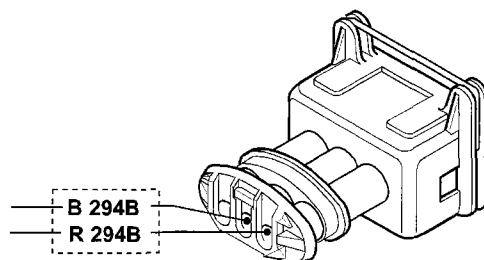
**142** Switch signalling insufficient engine oil pressure



**143** Alternator

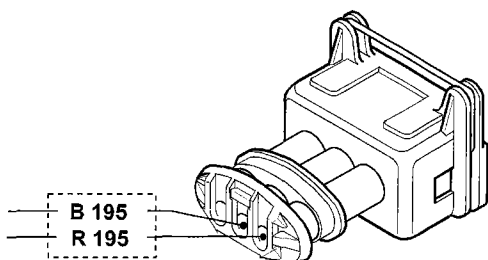


**144** Rpm and T.D.C. sensor (1242)

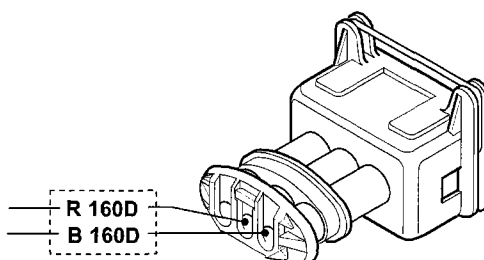


\* Only valid for the 1242 version

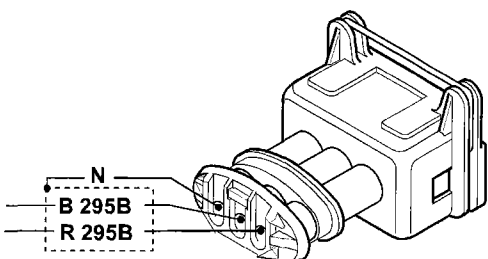
**144** Rpm and T.D.C. sensor (1581)



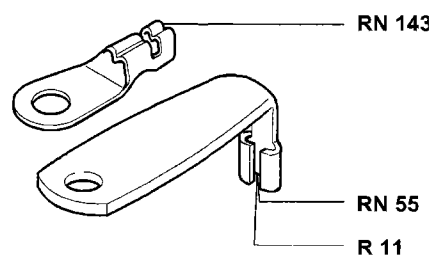
**144** Rpm and T.D.C. sensor (1747)



**144** Rpm and T.D.C. sensor (1910 JTD)



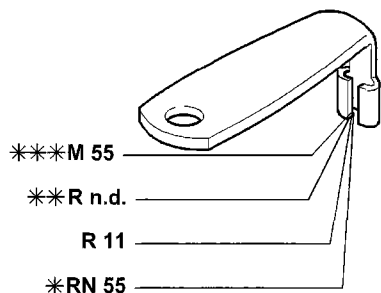
**145** Starter motor (1242)



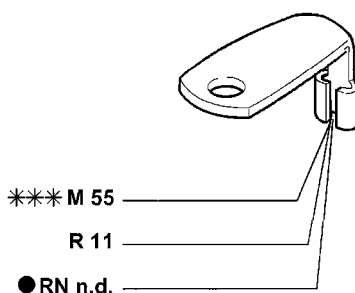
P4A358101



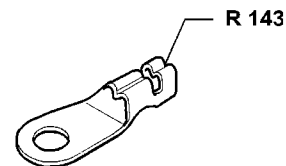
**145** Starter motor



Petrol versions



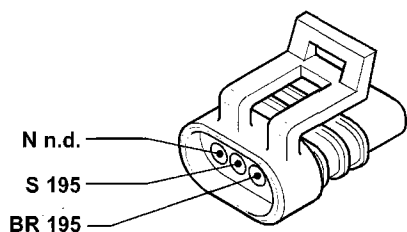
Diesel versions



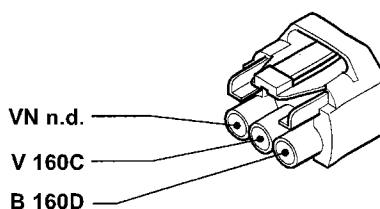
\* Only valid for the 1998 version and automatic transmission  
\*\* Only valid for the 1747 version

\*\*\* Only valid for 1581 and JTD versions  
● Only exists on the 1910 TD version

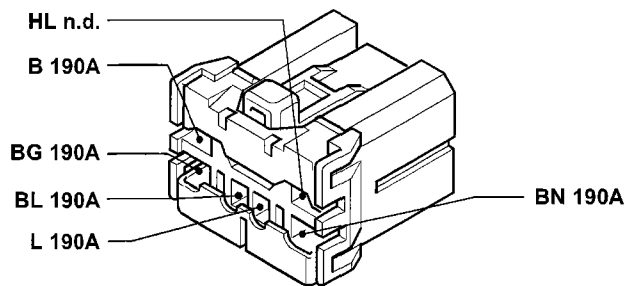
**146** Potentiometer on butterfly valve (1581)



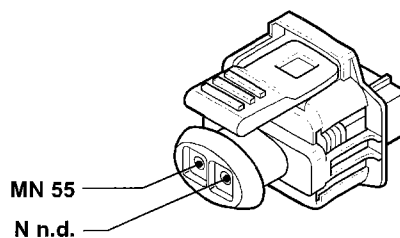
**146** Potentiometer on butterfly valve (1747)



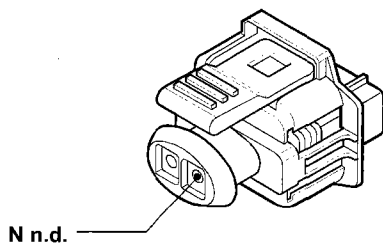
**146** Potentiometer on butterfly valve (1998)



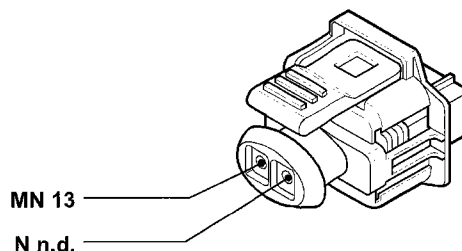
**147** Compressor for air conditioning



Only exists on the 1242, 1581, 1910TD and 1998 versions



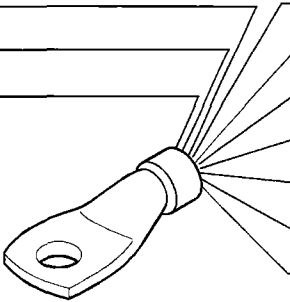
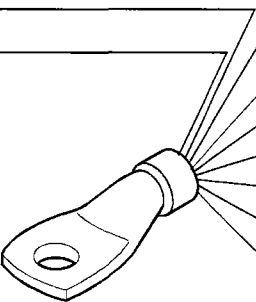
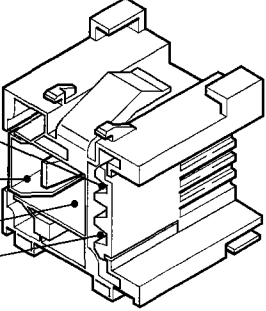
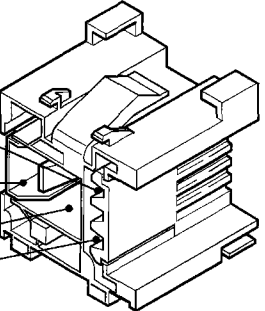
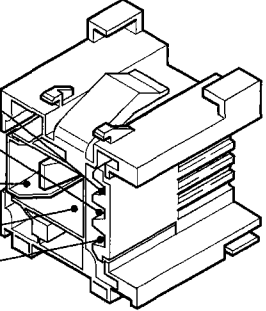
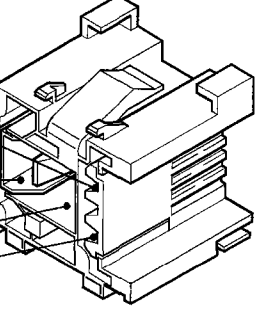
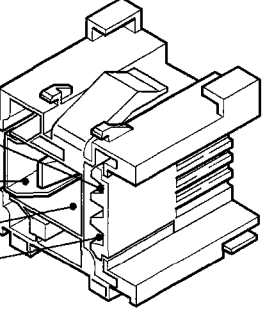
Only exists on the 1747 version



Only exists on the JTD version

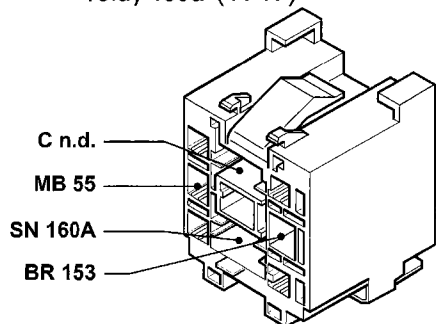
P4A359I01

### 55.

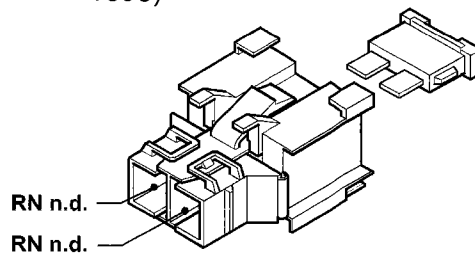
|   |  |
|---|--|
| <p><b>148</b> Earth for electronic injection (1747)</p> <p>N 160A<br/>N 161<br/>N n.d.</p>  |  <p>N 139<br/>N 55C<br/>N 55A<br/>NZ 141<br/>N 150<br/>N 160A<br/>N 160A</p>  |
| <p><b>148</b> Earth for electronic injection (1998)</p> <p>A 184<br/>A 183</p>  | <p><b>150</b> Injection system relay feed (1242)</p>  <p>V 187<br/>M 55<br/>A 185<br/>N 139<br/>M 332<br/>M 325<br/>A 186</p>  <p>AN n.d.<br/>N 294A<br/>R n.d.<br/>RG n.d.</p> |
| <p><b>150</b> Injection system relay feed (1581)</p>  <p>MB n.d.<br/>SB 195<br/>CB n.d.<br/>RG n.d.</p>  | <p><b>150</b> Injection system relay feed (1747)</p>  <p>RN n.d.<br/>RV n.d.<br/>R n.d.<br/>C n.d.<br/>N 148</p>   |
| <p><b>150</b> Injection system relay feed (1998)</p>  <p>CN n.d.<br/>SB 190A<br/>CB n.d.<br/>RG n.d.</p> | <p><b>150</b> Injection system relay feed (1910 JTD)</p>  <p>BN n.d.<br/>RB n.d.<br/>S 295B<br/>R n.d.</p>   |

P4A360I01

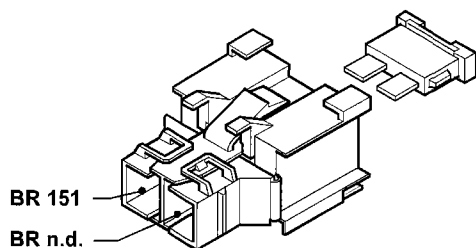
**151** Lambda sensor, electric fuel pump, injector relay feed (1747)



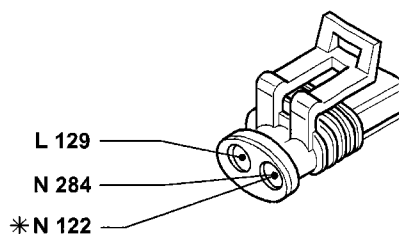
**152** 10A protective fuse for injection system (25A for 1581, 30A for 1747, 7.5A for 1998)



**153** 10A protective fuse for electric fuel pump, Lambda sensor (15A for 1747)

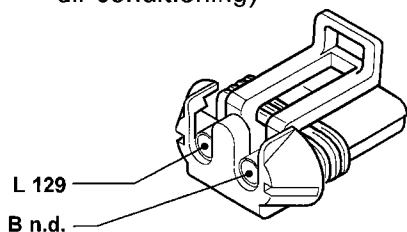


**154** Engine cooling fan (1242 and 1581 without air conditioning)

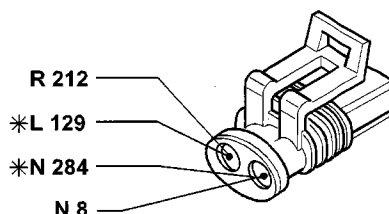


\* Only valid for the 1242 version

**154** Engine cooling fan (1242 and 1581 with air conditioning)

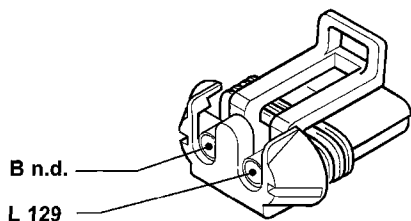


**154** Engine cooling fan (1747 and 1998 without air conditioning)

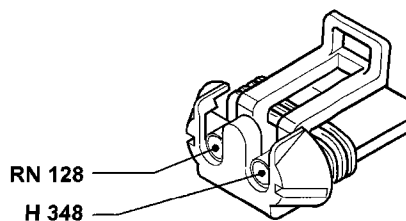


\* Only valid for the 1998 version

**154** Engine cooling fan (1747 and 1998 with air conditioning)

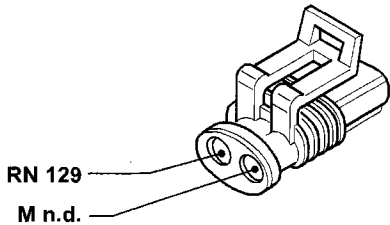
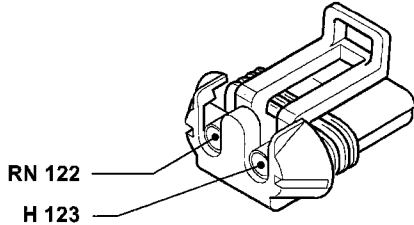
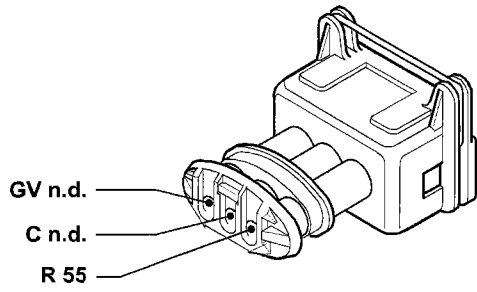
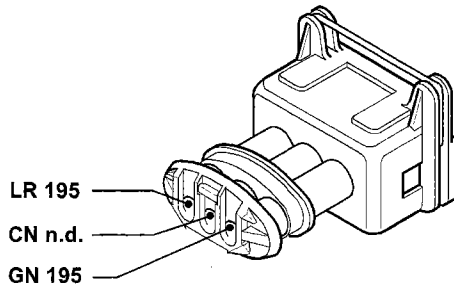
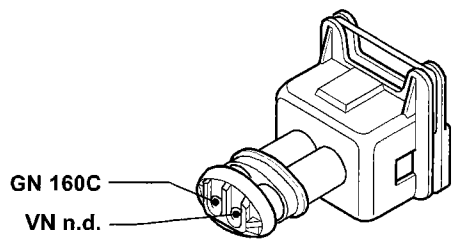
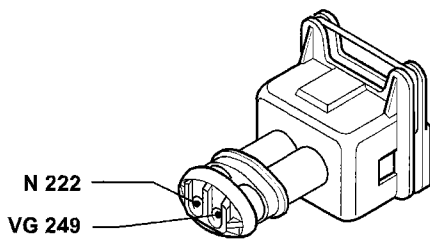
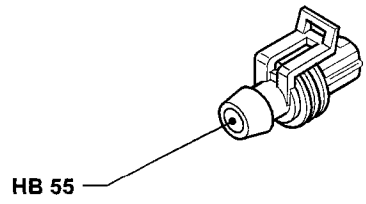
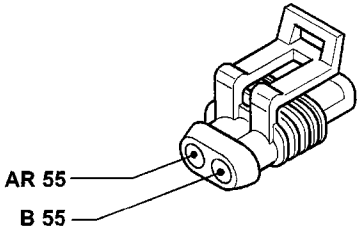


**154** Engine cooling fan (1910 TD)



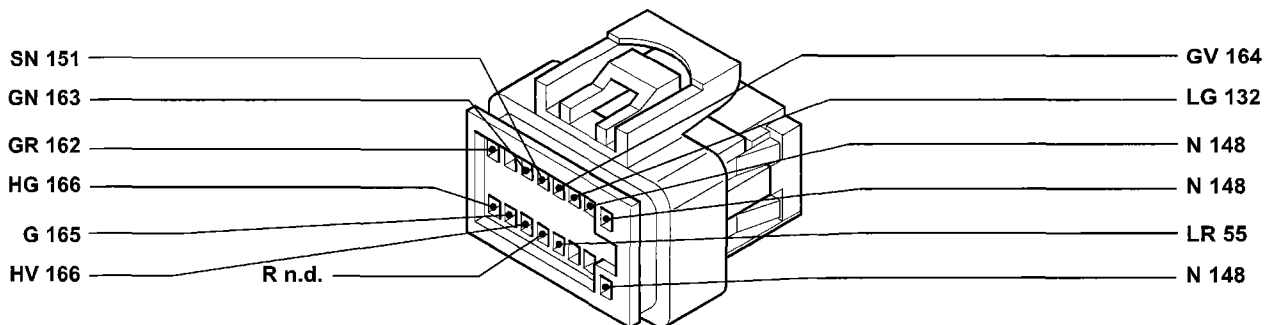
P4A361101

**55.**

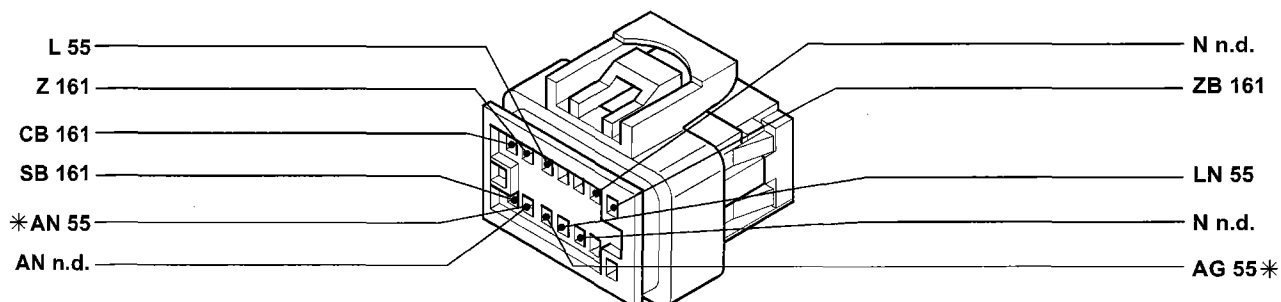
|   |  |
|---|--|
| <p><b>154</b> Engine cooling fan (1910 JTD without air conditioning)</p>  <p>RN 129<br/>M n.d.</p>   | <p><b>154</b> Engine cooling fan (1910 JTD with air conditioning)</p>  <p>RN 122<br/>H 123</p>       |
| <p><b>155</b> Ignition coils (1242)</p>  <p>GV n.d.<br/>C n.d.<br/>R 55</p>                         | <p><b>155</b> Ignition coils (1581)</p>  <p>LR 195<br/>CN n.d.<br/>GN 195</p>                       |
| <p><b>157</b> Water temperature sensor for injection system (1747)</p>  <p>GN 160C<br/>VN n.d.</p> | <p><b>157</b> Water temperature sensor for injection system (1910 TD)</p>  <p>N 222<br/>VG 249</p> |
| <p><b>158</b> Water temperature sensor for instrument (1747 and 1910 TD)</p>  <p>HB 55</p>         | <p><b>159</b> Reversing lights control switch (1242)</p>  <p>AR 55<br/>B 55</p>                    |

P4A362I01

**160A** Injection/ignition electronic control unit (1747)

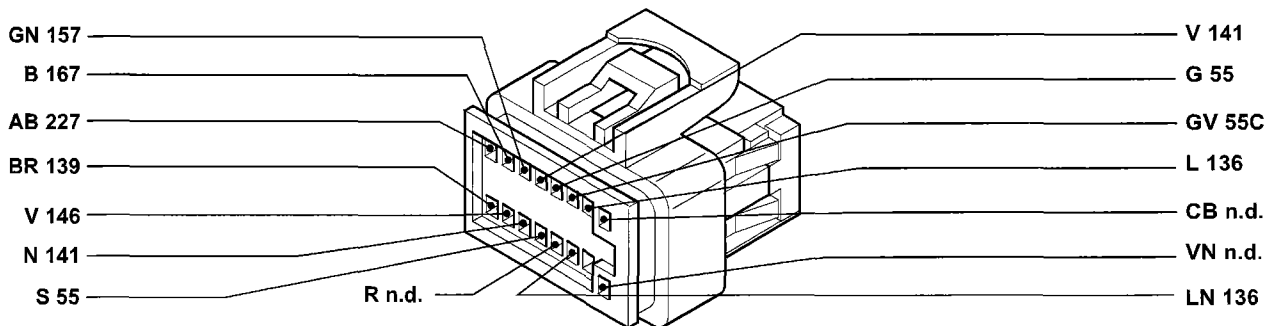


**160B** Injection/ignition electronic control unit (1747)

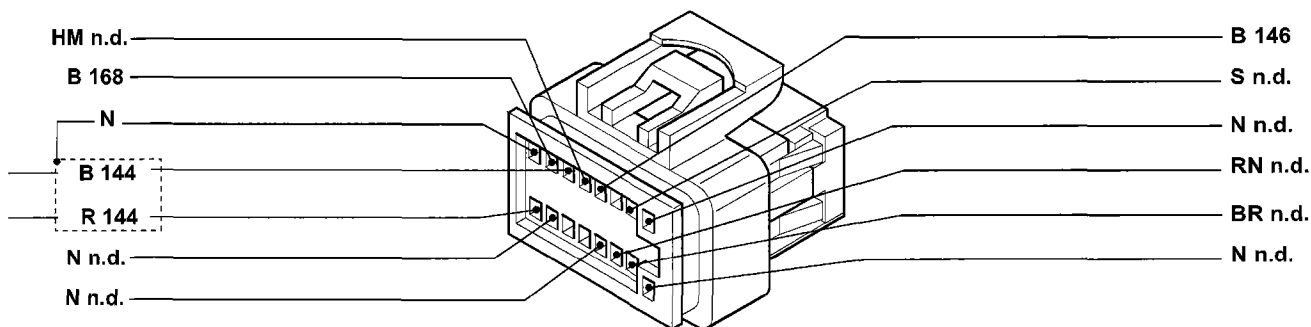


\* Only valid for version with air conditioning

**160C** Injection/ignition electronic control unit (1747)

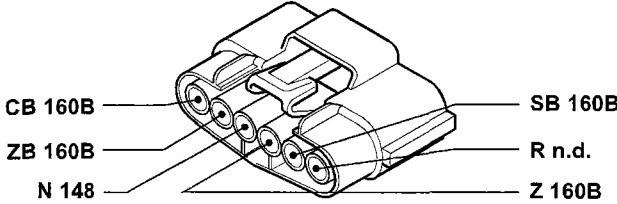
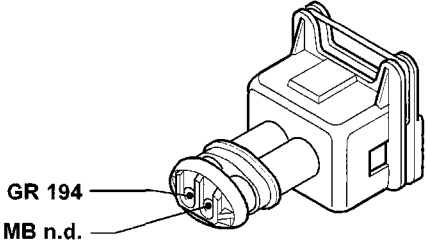
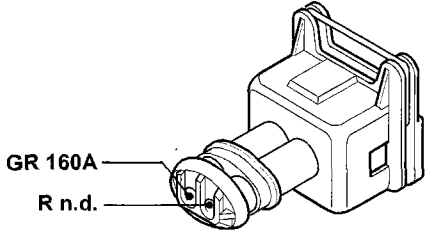
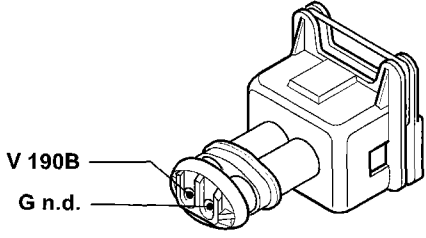
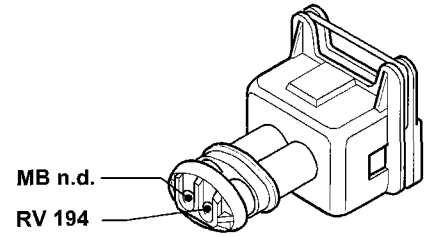
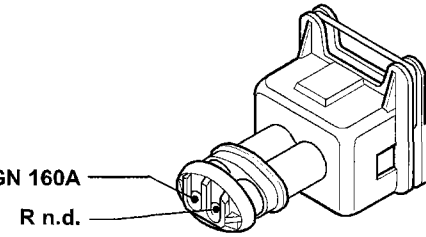
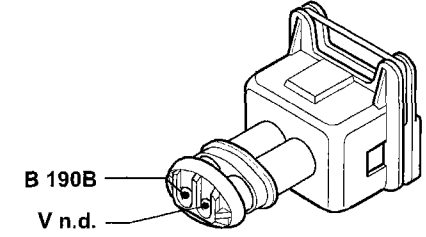
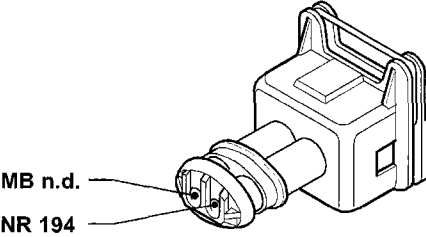


**160D** Injection/ignition electronic control unit (1747)

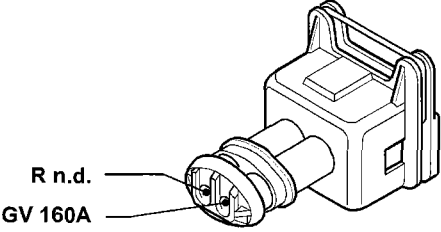
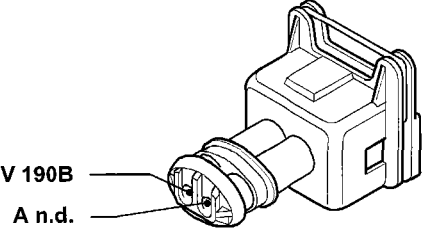
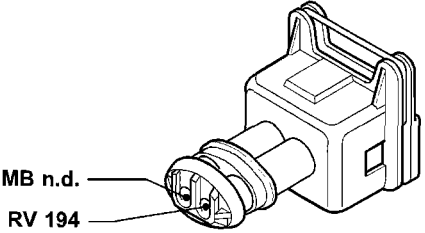
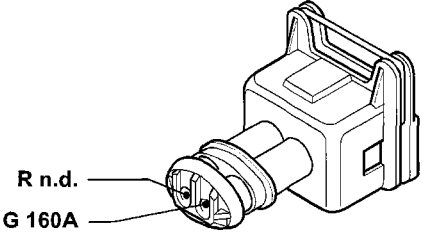
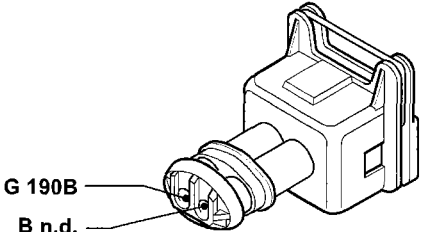
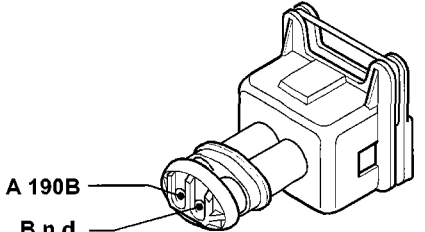
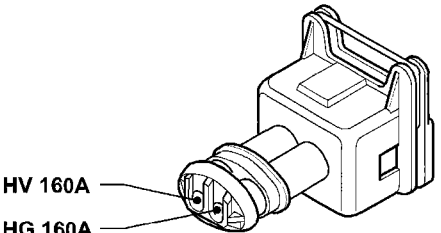
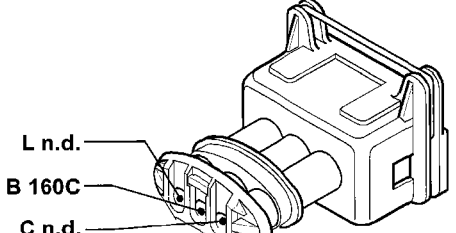


P4A363101

**55.**

|   |   |
|---|---|
| <p><b>161</b> Ignition power module (1747)</p>  <p>Diagram of connector block 161, Ignition power module (1747). The diagram shows a multi-pin connector with six pins. Labels on the left side point to pins CB 160B, ZB 160B, and N 148. Labels on the right side point to pins SB 160B, R n.d., and Z 160B.</p> | <p><b>162</b> Injector (1°) (1581)</p>  <p>Diagram of connector block 162, Injector (1°) (1581). The diagram shows a two-pin connector. Labels on the left side point to pins GR 194 and MB n.d.</p>              |
| <p><b>162</b> Injector (1°) (1747)</p>  <p>Diagram of connector block 162, Injector (1°) (1747). The diagram shows a two-pin connector. Labels on the left side point to pins GR 160A and R n.d.</p>  | <p><b>162</b> Injector (1°) (1998)</p>  <p>Diagram of connector block 162, Injector (1°) (1998). The diagram shows a two-pin connector. Labels on the left side point to pins V 190B and G n.d.</p>              |
| <p><b>163</b> Injector (2°) (1242-1581)</p>  <p>Diagram of connector block 163, Injector (2°) (1242-1581). The diagram shows a two-pin connector. Labels on the left side point to pins MB n.d. and RV 194.</p>  | <p><b>163</b> Injector (2°) (1747)</p>  <p>Diagram of connector block 163, Injector (2°) (1747). The diagram shows a two-pin connector. Labels on the left side point to pins GN 160A and R n.d.</p>            |
| <p><b>163</b> Injector (2°) (1998)</p>  <p>Diagram of connector block 163, Injector (2°) (1998). The diagram shows a two-pin connector. Labels on the left side point to pins B 190B and V n.d.</p>  | <p><b>164</b> Injector (3°) (1242-1581)</p>  <p>Diagram of connector block 164, Injector (3°) (1242-1581). The diagram shows a two-pin connector. Labels on the left side point to pins MB n.d. and NR 194.</p> |

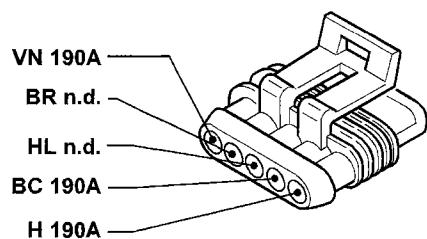
P4A364I01

|  |  |
|--|--|
| <p><b>164</b> Injector (3°) (1747)</p>  <p>R n.d.<br/>GV 160A</p>               | <p><b>164</b> Injector (3°) (1998)</p>  <p>V 190B<br/>A n.d.</p>               |
| <p><b>165</b> Injector (4°) (1242-1581)</p>  <p>MB n.d.<br/>RV 194</p>         | <p><b>165</b> Injector (4°) (1747)</p>  <p>R n.d.<br/>G 160A</p>              |
| <p><b>165</b> Injector (4°) (1998)</p>  <p>G 190B<br/>B n.d.</p>              | <p><b>165A</b> Injector (5°) (1998)</p>  <p>A 190B<br/>B n.d.</p>            |
| <p><b>166</b> Idle adjustment actuator (1747)</p>  <p>HV 160A<br/>HG 160A</p> | <p><b>167</b> Air flow meter (1747)</p>  <p>L n.d.<br/>B 160C<br/>C n.d.</p> |

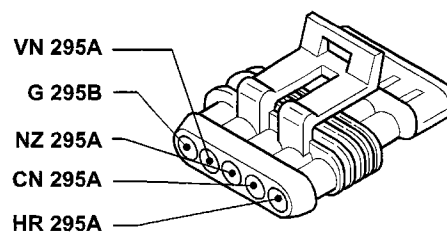
P4A365101

### 55.

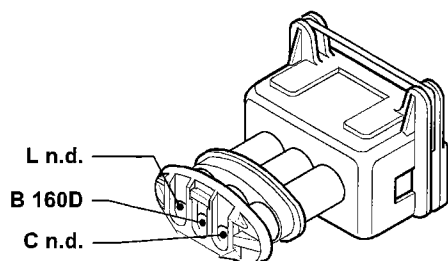
**167** Air flow meter (1998)



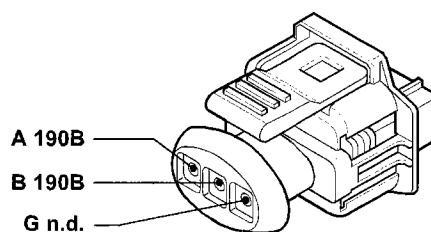
**167** Air flow meter (1910 JTD)



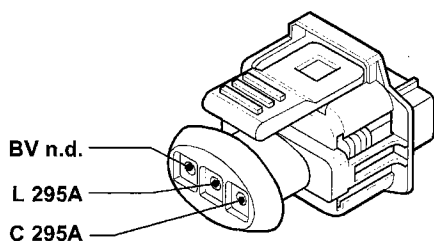
**168** Timing sensor (1747)



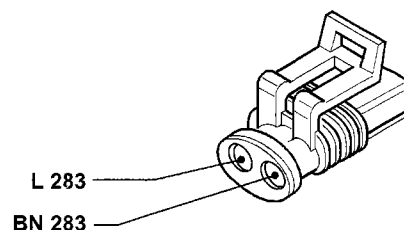
**168** Timing sensor (1998)



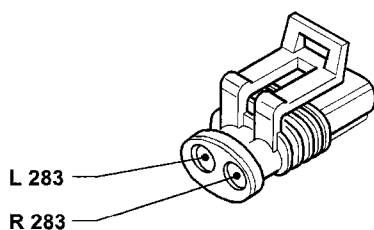
**168** Timing sensor (1910 JTD)



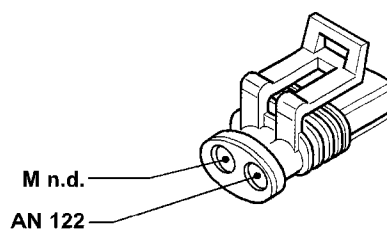
**170** Engine cooling fan limiting resistance (1242 and 1581 with air conditioning)



**170** Engine cooling fan limiting resistance (1747 and 1998 with air conditioning)

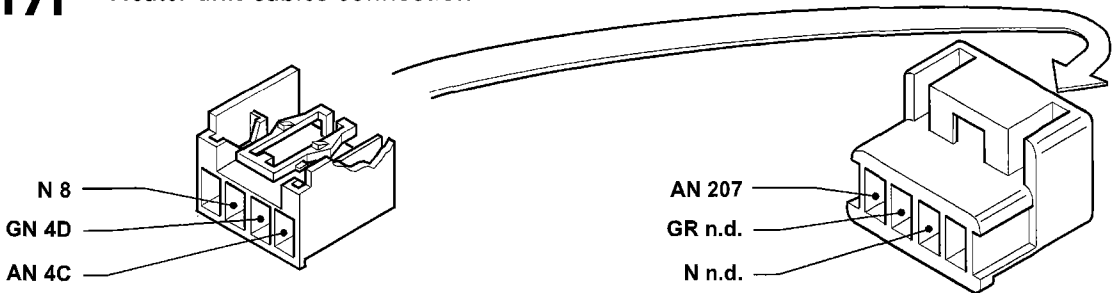
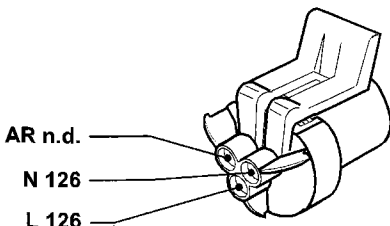
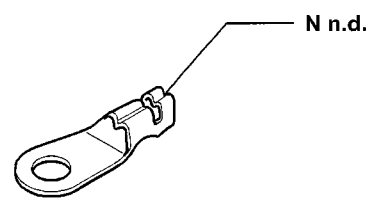
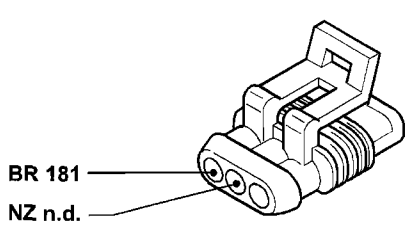
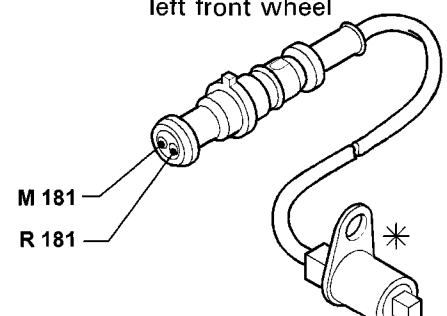
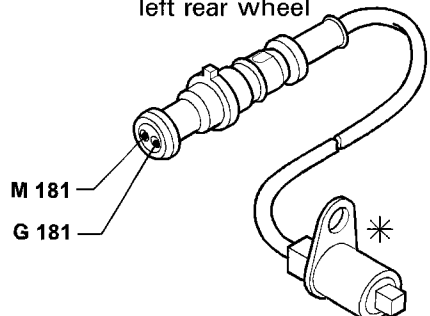
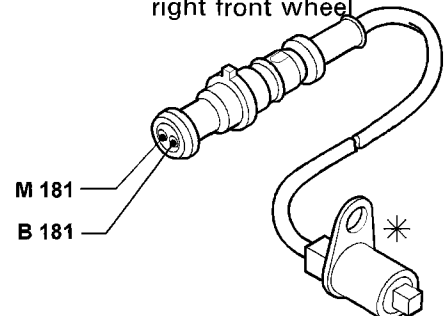


**170** Engine cooling fan limiting resistance (1910 JTD with air conditioning)



P4A366101



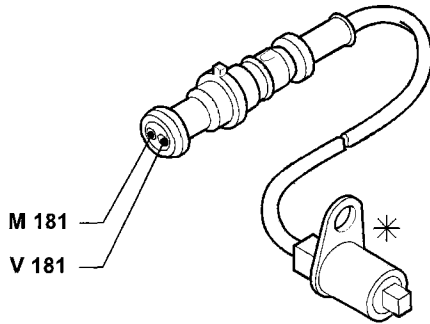
|  |  |
|--|--|
| <p><b>171</b> Heater unit cables connection</p>  <p>N 8<br/>GN 4D<br/>AN 4C</p> <p>AN 207<br/>GR n.d.<br/>N n.d.</p>                                     |  |
| <p><b>172</b> Two level thermal switch (1910 TD)</p>  <p>AR n.d.<br/>N 126<br/>L 126</p>   | <p><b>174</b> Power earth for anti-lock brakes (A.B.S.)</p>  <p>N n.d.</p>  |
| <p><b>176</b> Diagnostic socket for anti-lock braking system (A.B.S.)</p>  <p>BR 181<br/>NZ n.d.</p>  | <p><b>177(*)</b> Sensor on left front wheel (A.B.S.)</p> <p><b>177A</b> Connection for A.B.S. sensor cable on left front wheel</p>  <p>M 181<br/>R 181</p>   |
| <p><b>178(*)</b> Sensor on left rear wheel (A.B.S.)</p> <p><b>17A</b> Connection for A.B.S. sensor cable on left rear wheel</p>  <p>M 181<br/>G 181</p> | <p><b>179(*)</b> Sensor on right front wheel (A.B.S.)</p> <p><b>179A</b> Connection for A.B.S. sensor cable on right front wheel</p>  <p>M 181<br/>B 181</p> |

P4A367101

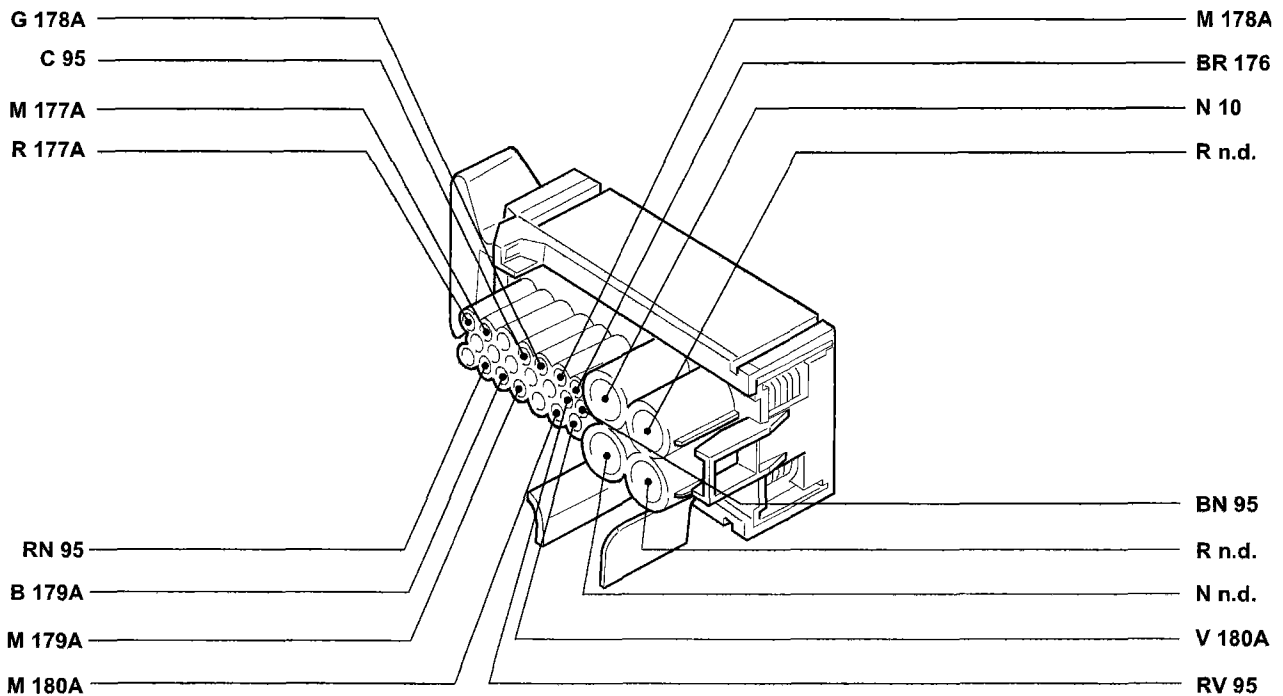
### 55.

**180(\*)** Sensor on right rear wheel (A.B.S.)

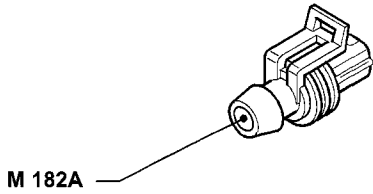
**180A** Connection for A.B.S. sensor cable on right rear wheel



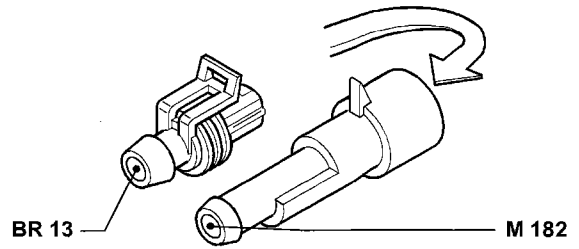
**181** Electro-hydraulic control unit for anti-lock brakes (A.B.S.)



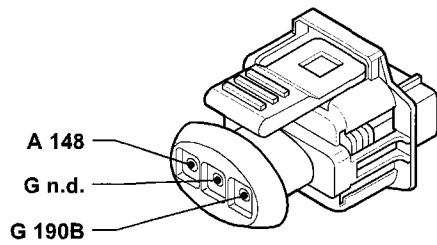
**182** Right brake pad wear sensor (1998)



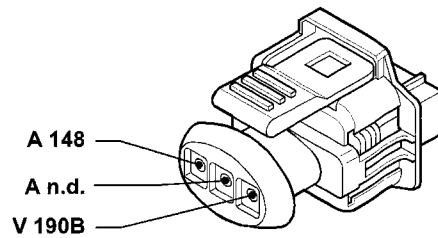
**182A** Right brake pad wear sensor cables connection (1998)



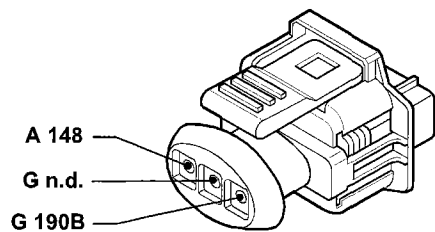
**183** Ignition coil (1°) (1998)



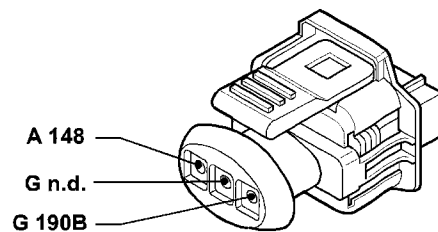
**184** Ignition coil (2°) (1998)



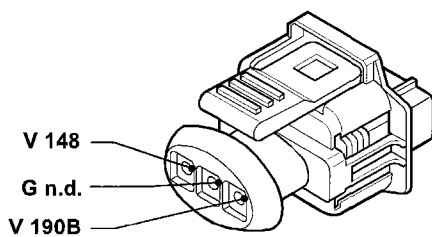
**185** Ignition coil (3°) (1998)



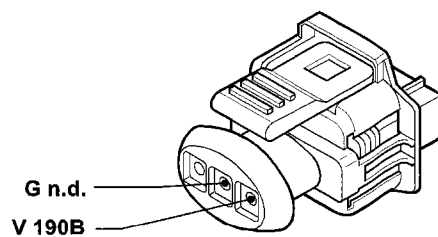
**186** Ignition coil (4°) (1998)



**187** Ignition coil (5°) (1998)

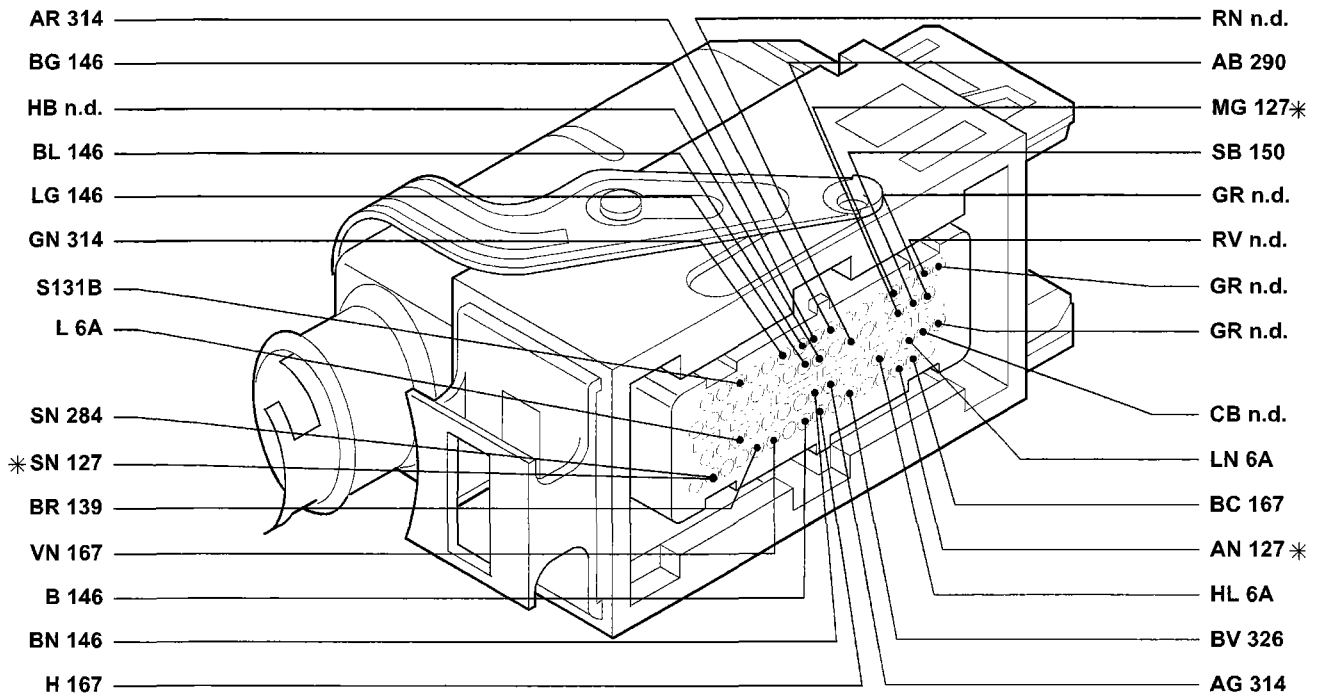


**189** Phase transformer (1998)



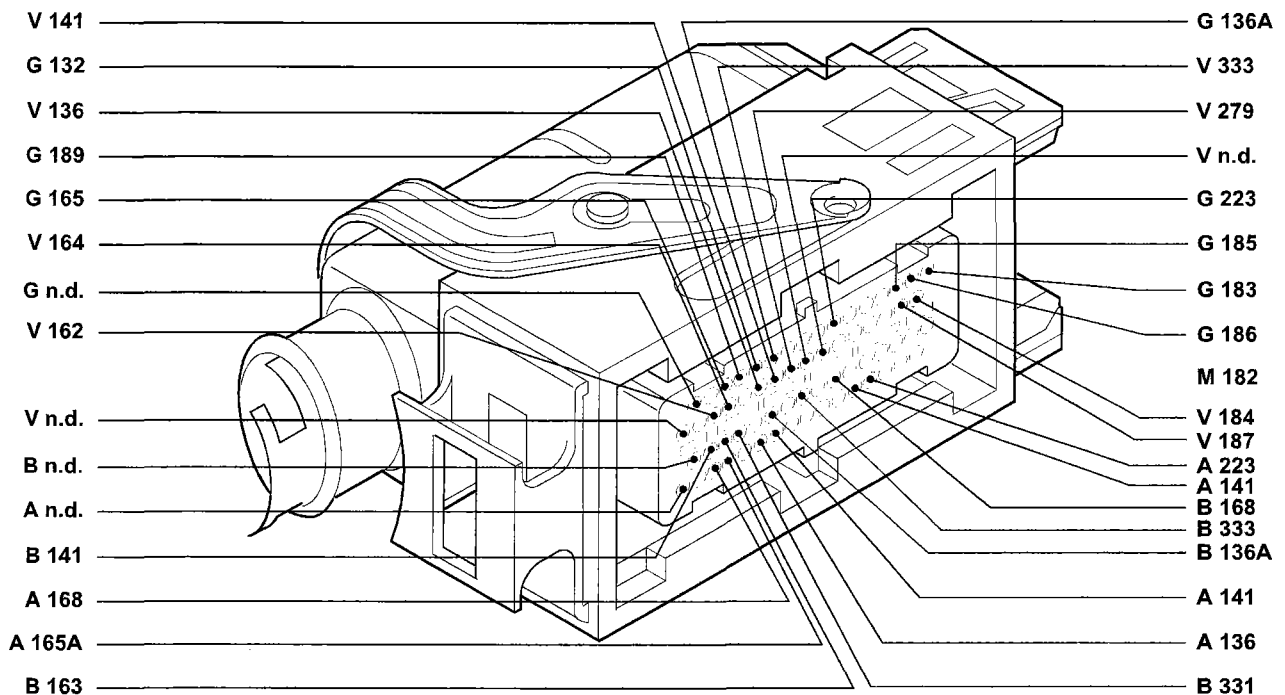
### 55.

#### 190A Injection/ignition electronic control unit (1998)

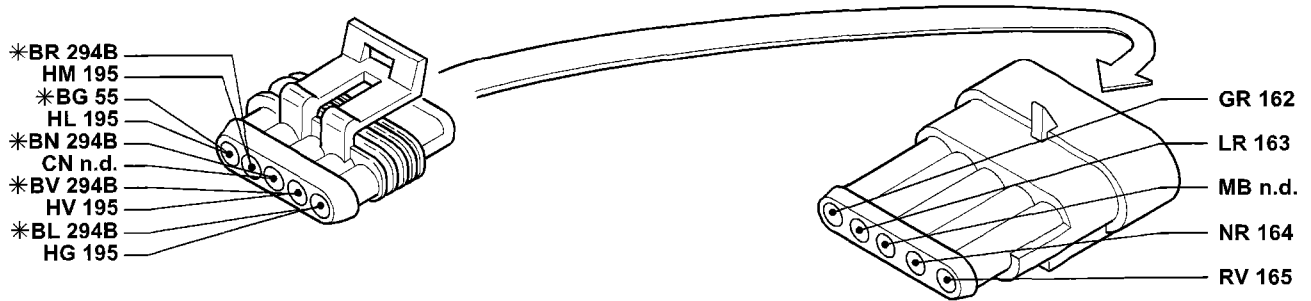


\* Variant for version with air conditioning

#### 190B Injection/ignition electronic control unit (1998)

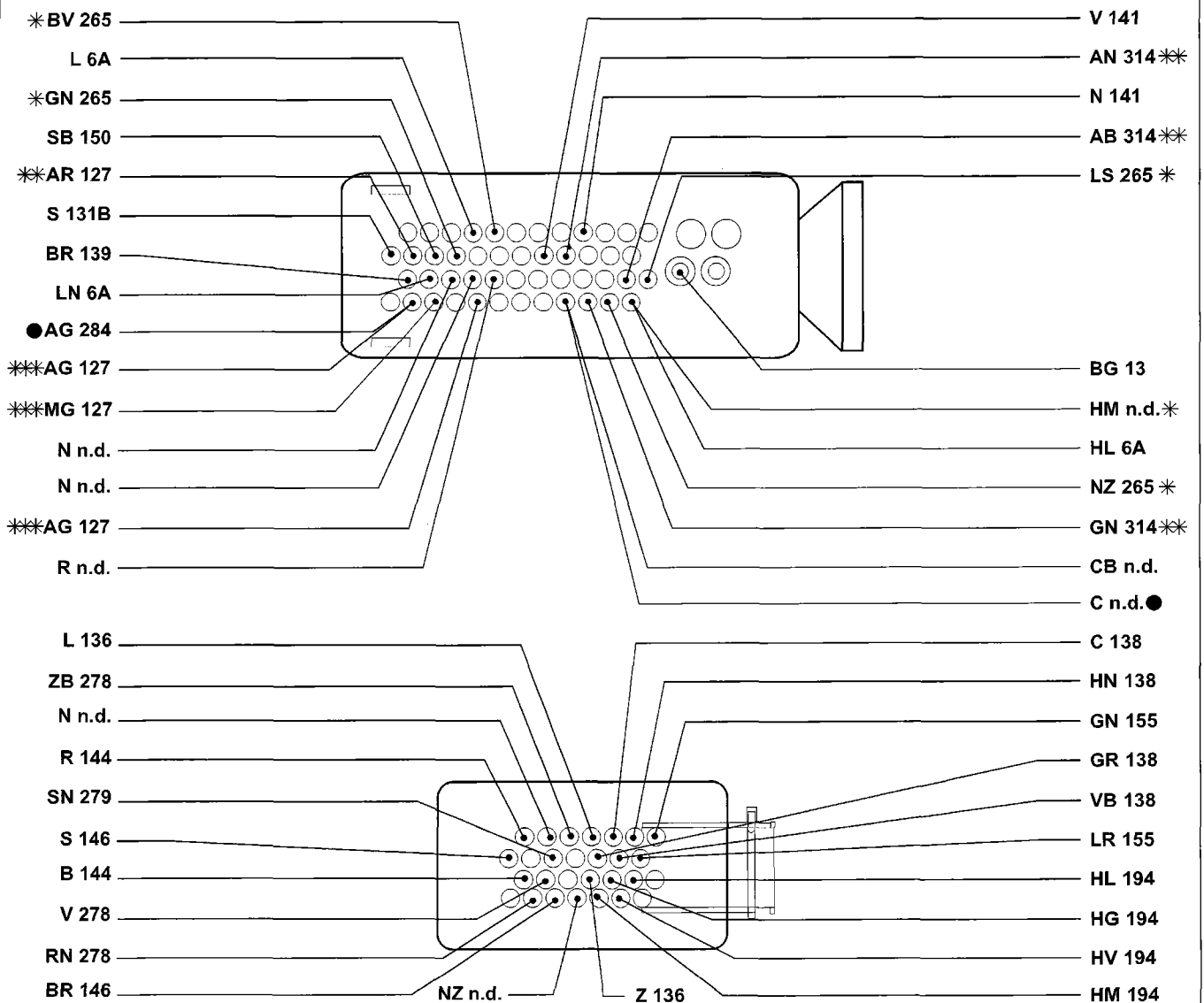


**194** Injection cables/injector band connection (1242-1581)



\* Variant for the 1242 version

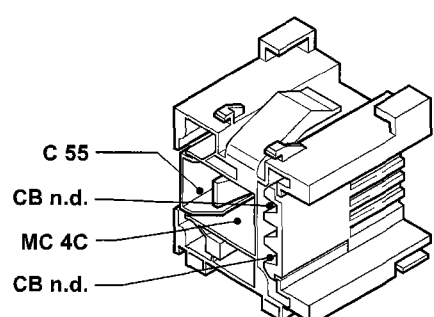
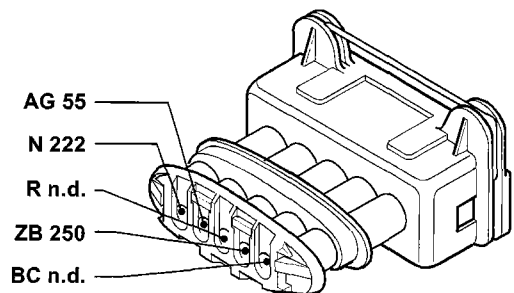
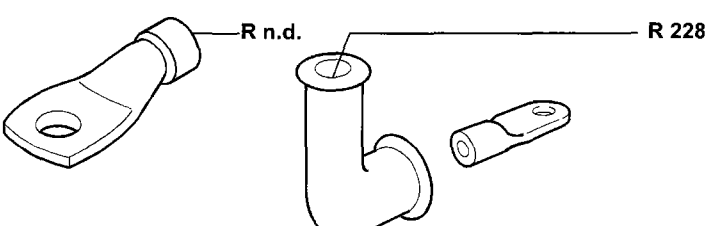
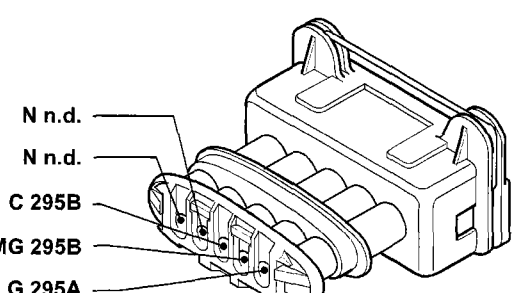
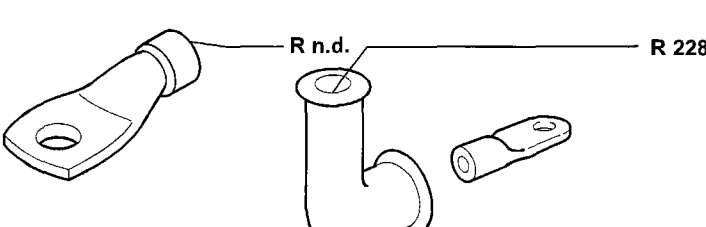
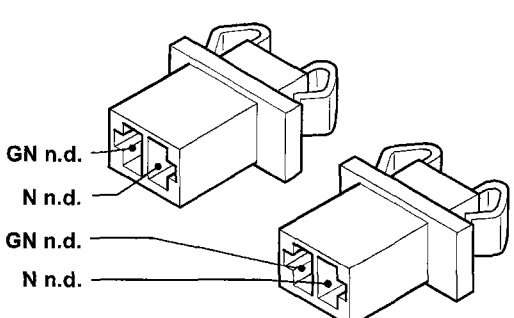
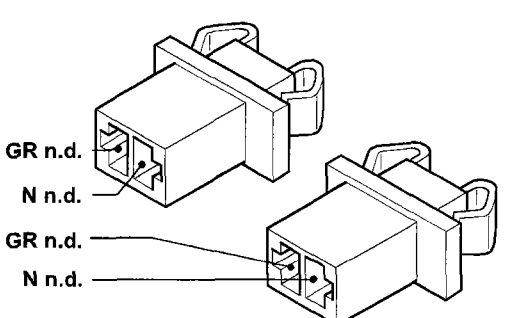
**195** Injection/ignition electronic control unit (1581)

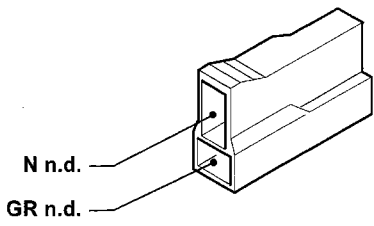
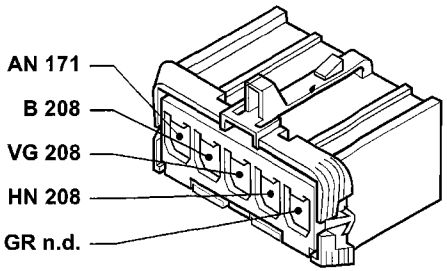
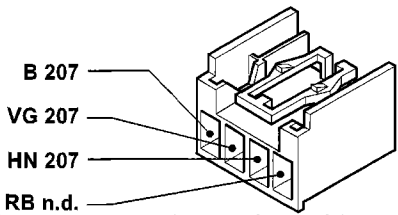
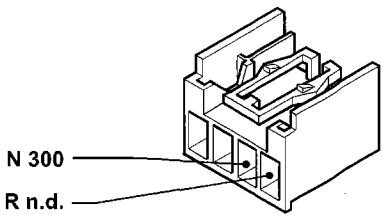
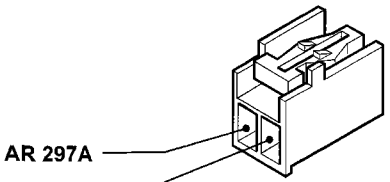
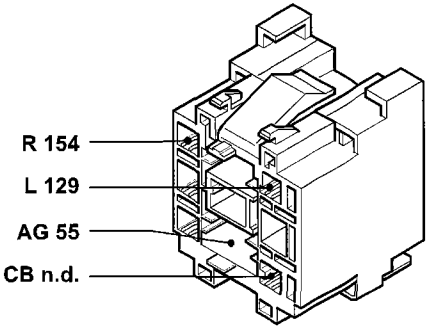
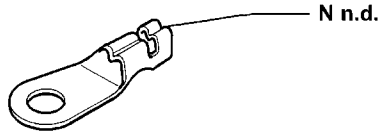
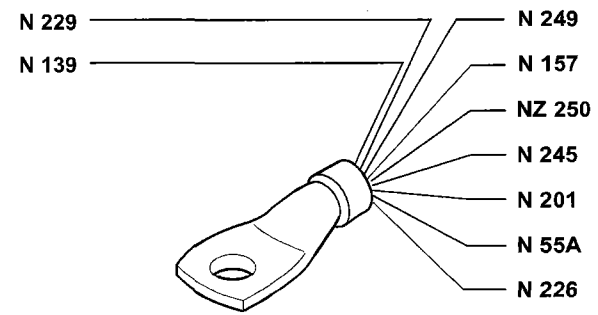


\* Only valid for version with automatic transmission  
\*\* Only valid for version with air conditioning

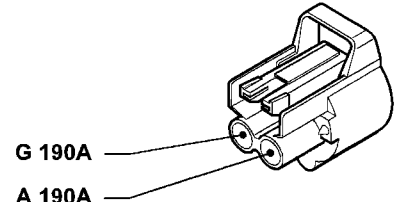
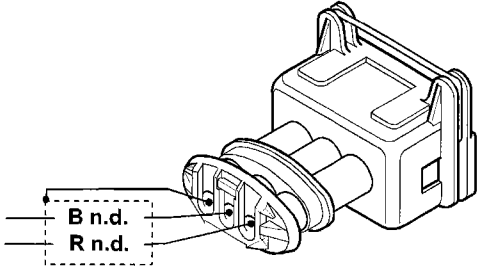
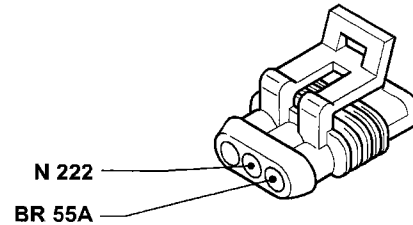
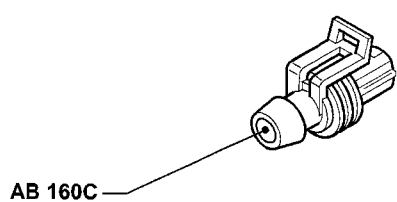
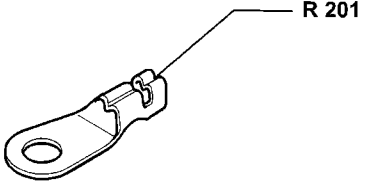
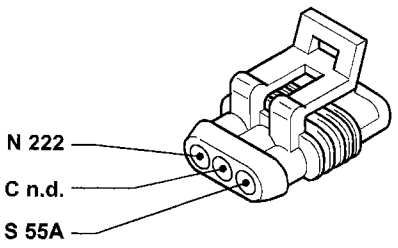
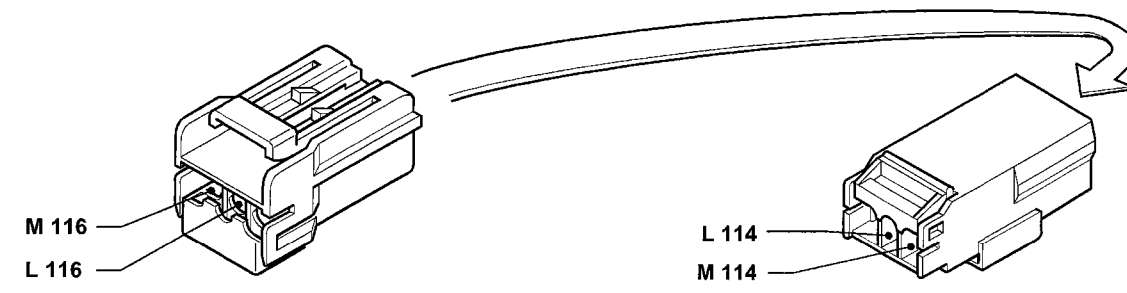
\*\*\* Non existent for versions with automatic transmission  
● Only exists on version without air conditioning

**55.**

|  |   |
|--|---|
| <p><b>200</b> Inertia switch relay feed (1910 TD)</p>  <p>C 55<br/>         CB n.d.<br/>         MC 4C<br/>         CB n.d.</p>   |   |
| <p><b>201</b> Heater plugs control unit (1910 TD)</p>  <p>AG 55<br/>         N 222<br/>         R n.d.<br/>         ZB 250<br/>         BC n.d.</p>  <p>R n.d. R 228</p>      |   |
| <p><b>201</b> Heater plugs control unit (1910 JTD)</p>  <p>N n.d.<br/>         N n.d.<br/>         C 295B<br/>         MG 295B<br/>         G 295A</p>  <p>R n.d. R 228</p> |   |
| <p><b>202</b> Heater/air conditioning lights</p>  <p>GN n.d.<br/>         N n.d.<br/>         GN n.d.<br/>         N n.d.</p> <p>Only exists on versions with air conditioning</p>  | <p><b>202</b> Heater/air conditioning lights</p>  <p>GR n.d.<br/>         N n.d.<br/>         GR n.d.<br/>         N n.d.</p> <p>Only exists on versions without air conditioning</p> |

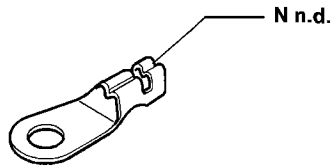
|   |  |
|---|--|
| <p><b>206</b> Heater/air conditioning fan</p>  <p>N n.d.<br/>GR n.d.</p> <p>Only exists on the version without air conditioning</p>  | <p><b>207</b> Heating/air conditioning system speed control switch</p>  <p>AN 171<br/>B 208<br/>VG 208<br/>HN 208<br/>GR n.d.</p> <p>Only exists on the version without air conditioning</p> |
| <p><b>208</b> Heating/air conditioning system limiter resistance</p>  <p>B 207<br/>VG 207<br/>HN 207<br/>RB n.d.</p> <p>Only exists on the version without air conditioning</p> | <p><b>208</b> Heating/air conditioning system limiter resistance</p>  <p>N 300<br/>R n.d.</p> <p>Only exists on the version with air conditioning</p>                                       |
| <p><b>209</b> Outside/recirculation air flap control actuator</p>  <p>AR 297A<br/>M 297A</p> <p>Only exists on the version with air conditioning</p>                           | <p><b>212</b> Engine cooling fan relay feed</p>  <p>R 154<br/>L 129<br/>AG 55<br/>CB n.d.</p> <p>Only exists on the 1747 version without air conditioning</p>                              |
| <p><b>213</b> Earth for EURO-BAG</p>  <p>N n.d.</p>  | <p><b>222</b> Earth for fuel system (1910 TD)</p>  <p>N 229<br/>N 139<br/>N 249<br/>N 157<br/>NZ 250<br/>N 245<br/>N 201<br/>N 55A<br/>N 226</p>   |

### 55.

|   |   |
|---|---|
| <p><b>223</b> Rpm sensor (1998)</p>  <p>G 190A<br/>A 190A</p>                                | <p><b>223</b> Rpm sensor (1910 TD)</p>  <p>B n.d.<br/>R n.d.</p>                                      |
| <p><b>226</b> Diagnostic socket for Fiat code system (1910 TD)</p>  <p>N 222<br/>BR 55A</p> | <p><b>227</b> Diagnostic socket for injection system (1747)</p>  <p>AB 160C</p>                      |
| <p><b>228</b> eater plugs (1910 TD-1910 JTD)</p>  <p>R 201</p>                             | <p><b>229</b> Engine cut out electro-stop (1910 TD-1910 JTD)</p>  <p>N 222<br/>C n.d.<br/>S 55A</p> |
| <p><b>231</b> Clock spring connection</p>  <p>M 116<br/>L 116<br/>L 114<br/>M 114</p>     |   |

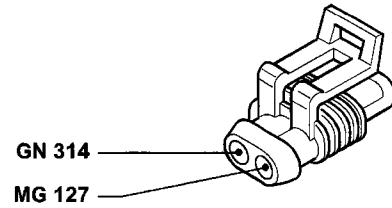


**232** Compressor earth (1910JTD)



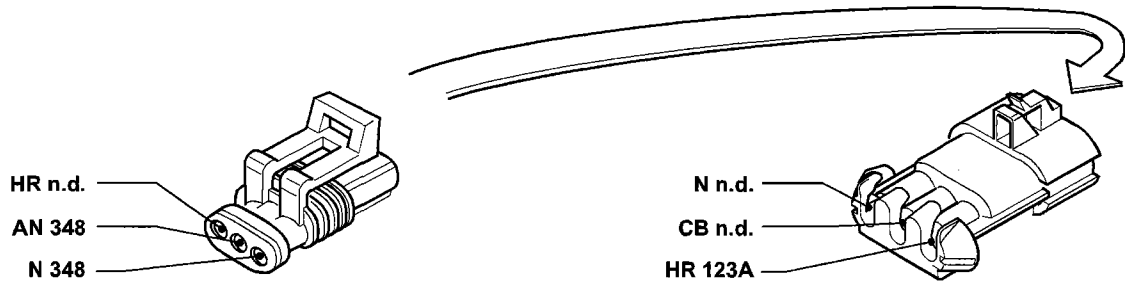
P4A375I01

**233** Thermal relay on engine coolant pump (1910 TD)



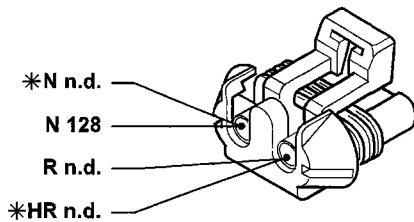
P4A375I02

**236** Connection between front leads/air conditioner (1910 TD)



P4A375I03

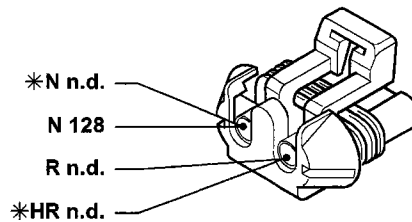
**237** Supplementary engine cooling fan (1910 TD-1910 JTD)



\* Variant for JTD version with air conditioner

P4A375I04

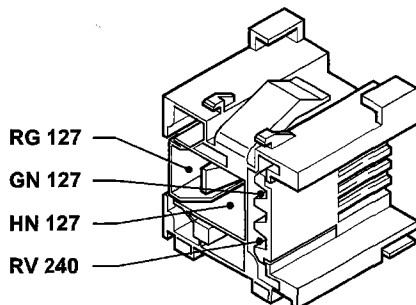
**238** 40A fuse protecting engine cooling fan (1910 TD-1910 JTD)



\* Only applies to JTD version with air conditioner

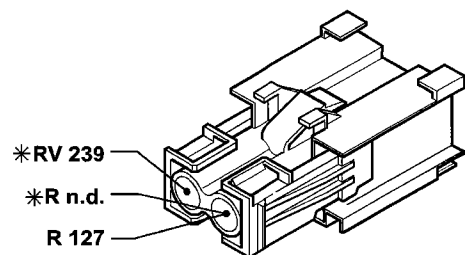
P4A375I05

**239** Heated diesel filter relay



P4A375I06

**240** 15A fuse protecting heated diesel filter relay

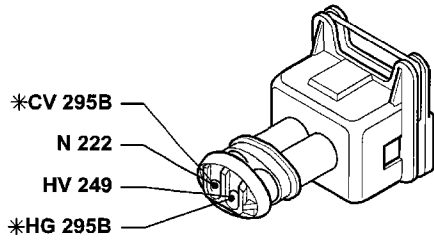


\* Variant for JTD version

P4A375I07

### 55.

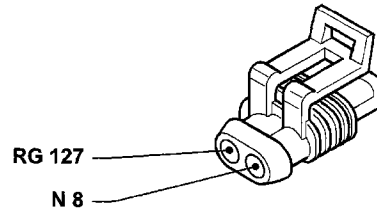
**245** E.G.R. solenoid (1910 TD-1910 JTD)



\* Variant only in JTD version

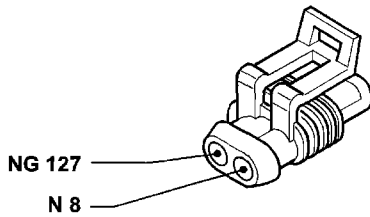
P4A376101

**246** Heated fuel filter (1747-1910 JTD)



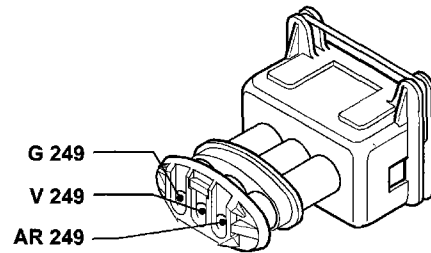
P4A376102

**247** Heated fuel filter thermal contact (1747-1910 JTD)



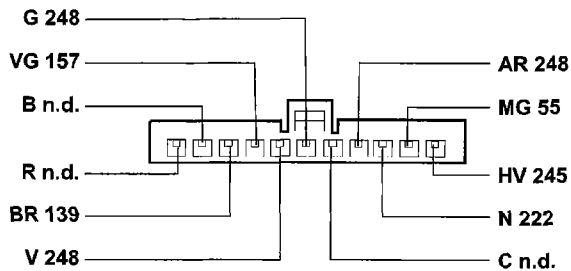
P4A376103

**248** Potentiometer on fuel pump (1910 TD)



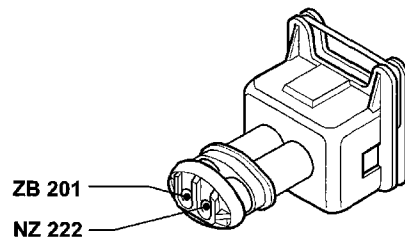
P4A376104

**249** E.G.R. electronic control unit (1910 TD)



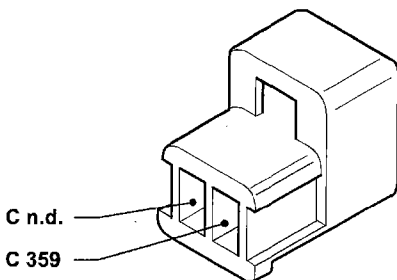
P4A376105

**250** Preheating control unit coolant temperature sensor (1910 TD)



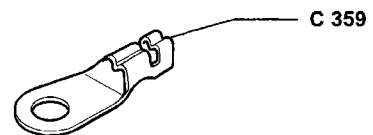
P4A376106

**251** Thermal switch for KSB (1910 TD)



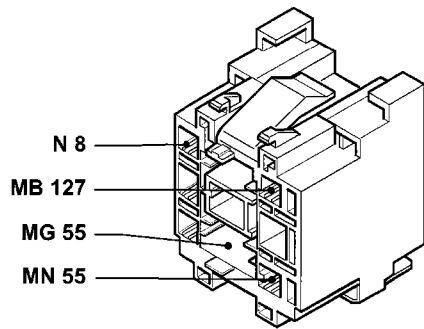
P4A376107

**252** Earth for KSB device (1910 TD)

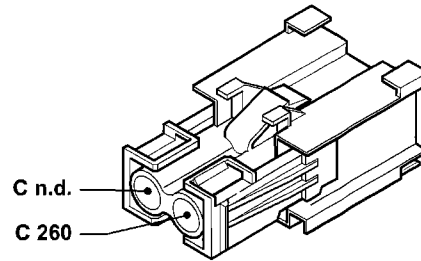


P4A376108

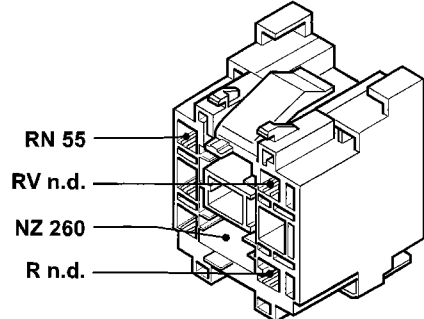
**253** Relay for disengaging compressor (1910 TD)



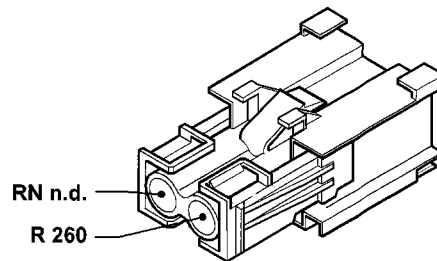
**254** 10A fuse protecting automatic transmission (1581)



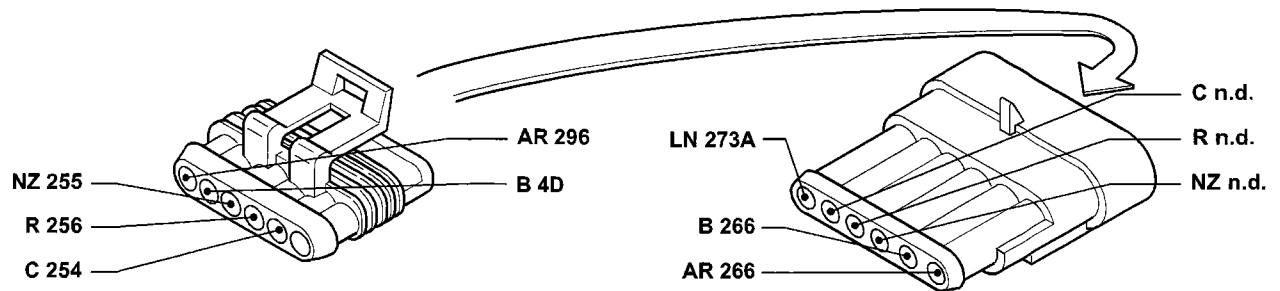
**255** Starter go ahead relay for automatic transmission (1581)



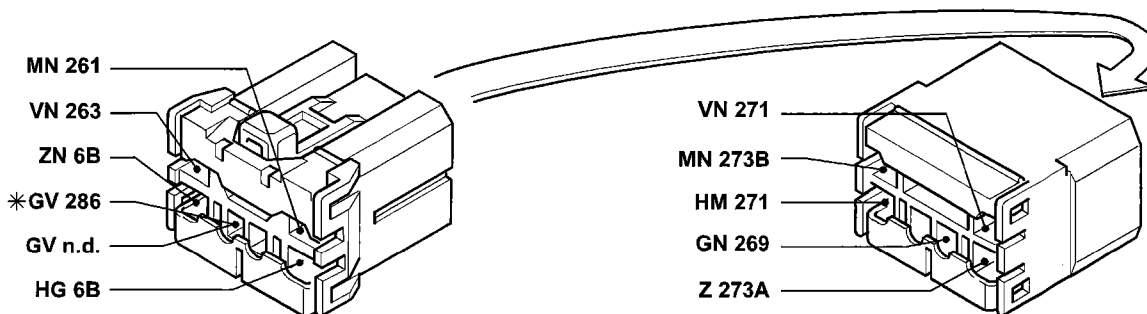
**256** 5A fuse protecting automatic transmission (1581)



**260** Connection between front/automatic transmission cables (1581)

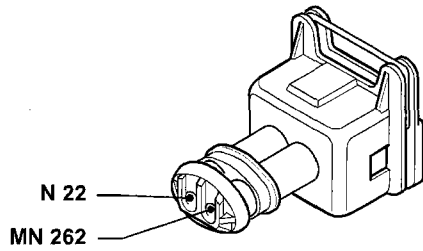


**262** Connection between dashboard/automatic transmission cables (1581)

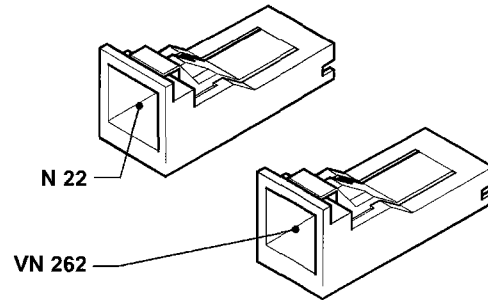


**55.**

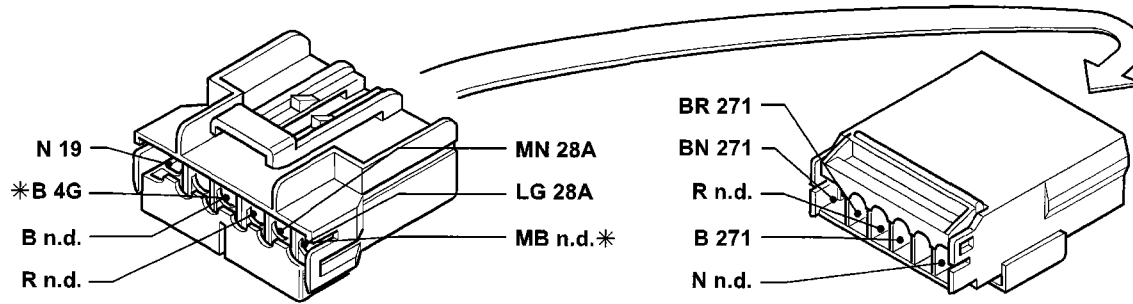
**261** Kick-Down switch (1581 auto. trans.)



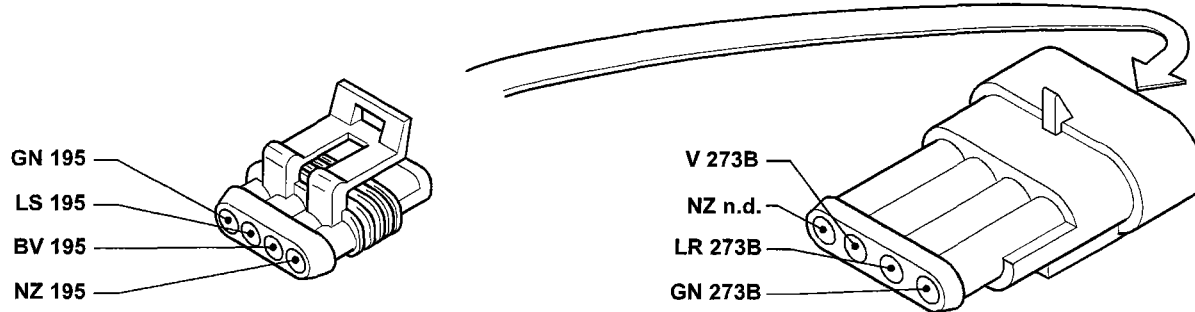
**263** Solenoid valve on ignition switch (1581 auto. trans.)



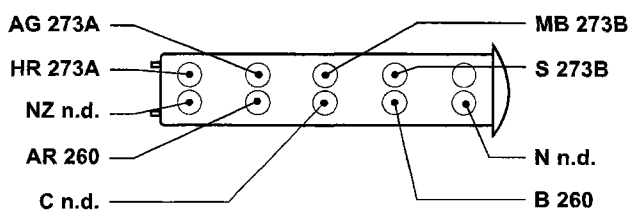
**264** Connection between rear/automatic transmission cables (1581)



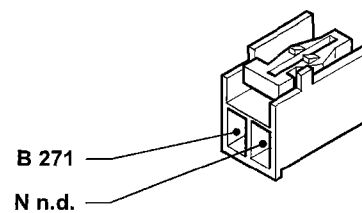
**265** Connection between automatic transmission/injection cables (1581)



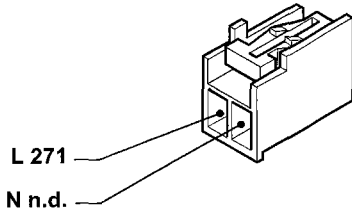
**266** Multi-purpose switch on automatic transmission (1581)



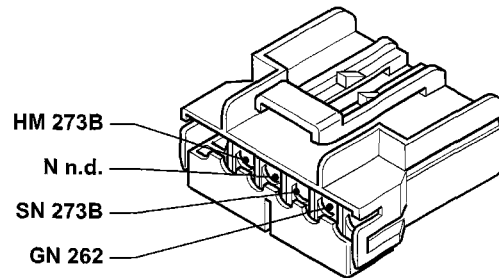
**267** Additional parking switch (1581)



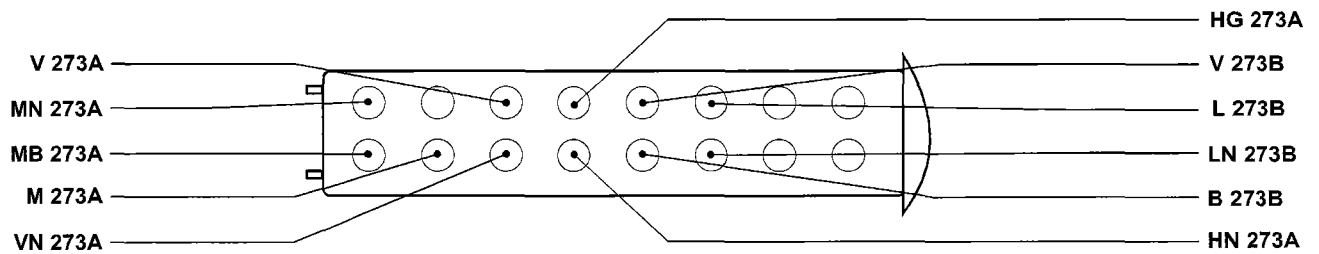
**268** Shift-Lock solenoid valve (1581 automatic transmission)



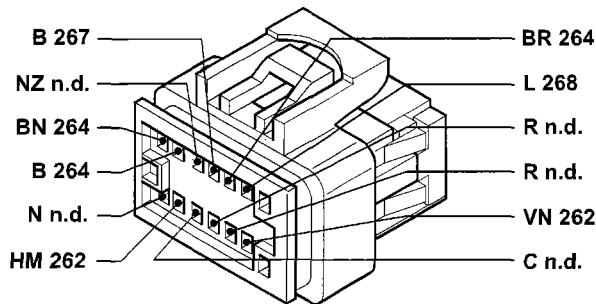
**269** Normal / Sport / Ice selector switch (1581 automatic transmission)



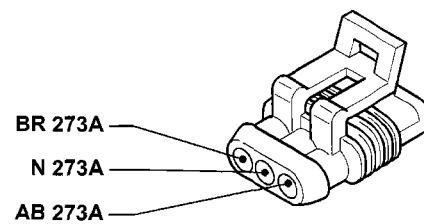
**270** Connection for cables on gearbox (1581)



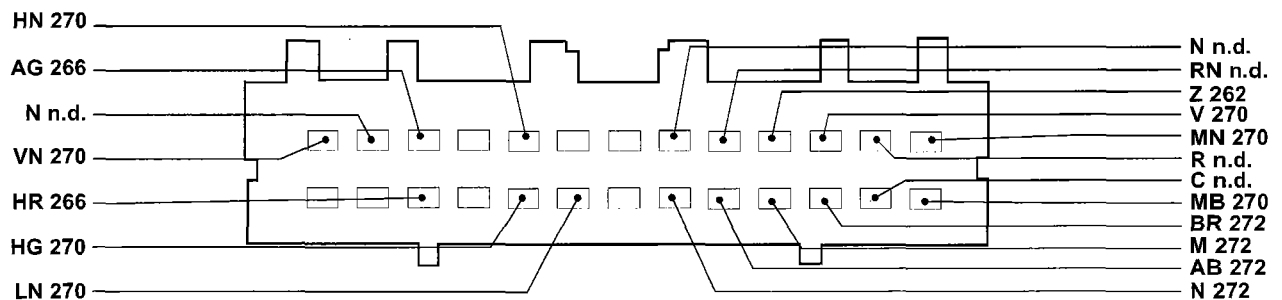
**271** Electronic safety control unit for automatic transmission (1581)



**272** Diagnostic socket for automatic transmission control unit (1581)

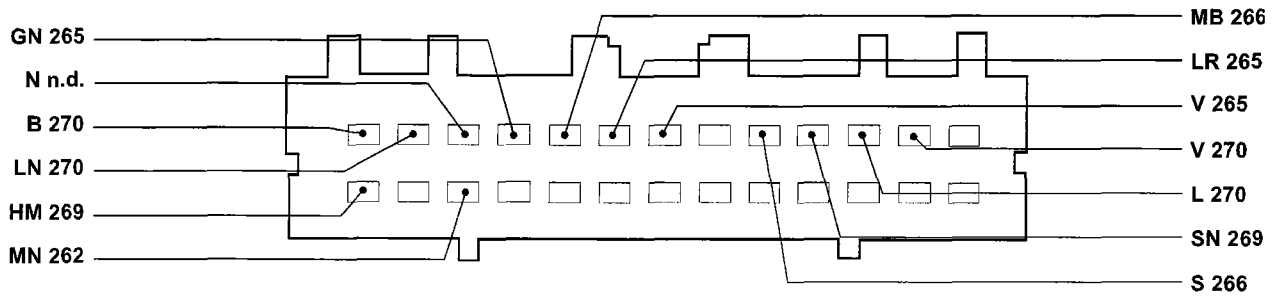


**273A** Automatic transmission electronic control unit (1581)

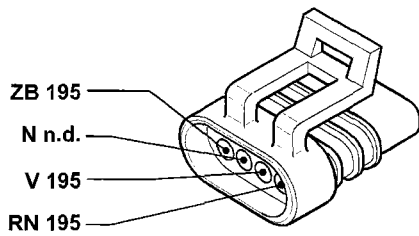


**55.**

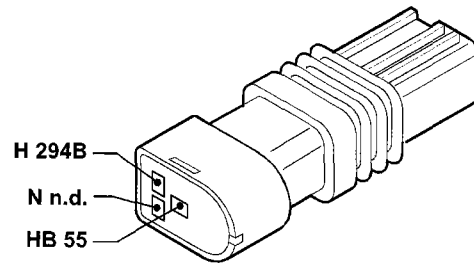
**273B** Automatic transmission electronic control unit (1581)



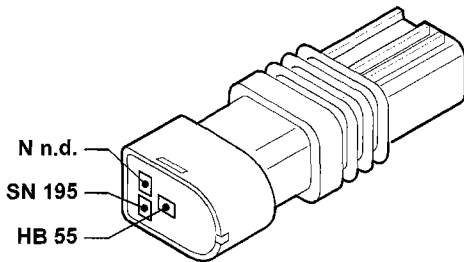
**278** Integrated air temperature/pressure sender unit (1581)



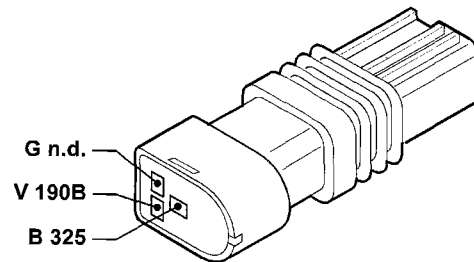
**279** Twin engine coolant temperature sender unit (1242)



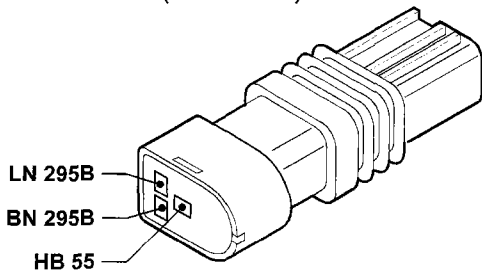
**279** Twin engine coolant temperature sender unit (1581)



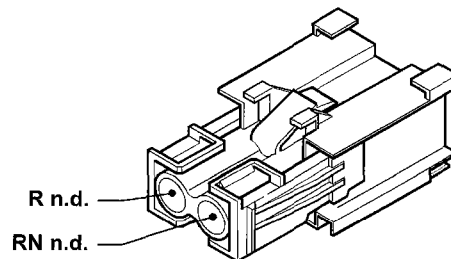
**279** Twin engine coolant temperature sender unit (1998)



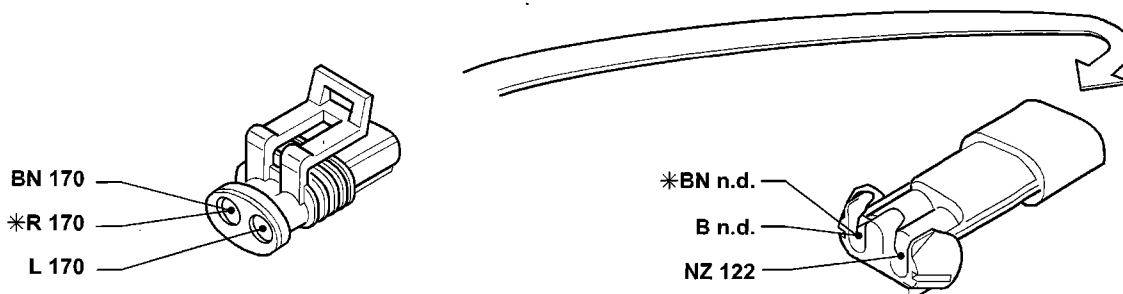
**279** Twin engine coolant temperature sender unit (1910 JTD)



**282** 7.5A fuse protecting Fiat-CODE/electronic injection (60 for UNIJET)



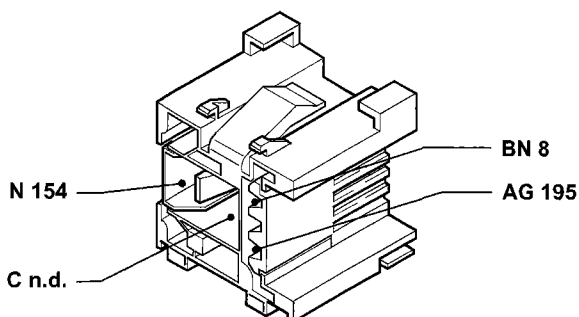
**283** Connection between front cable/resistor (petrol versions)



\* Variant for 1747 version

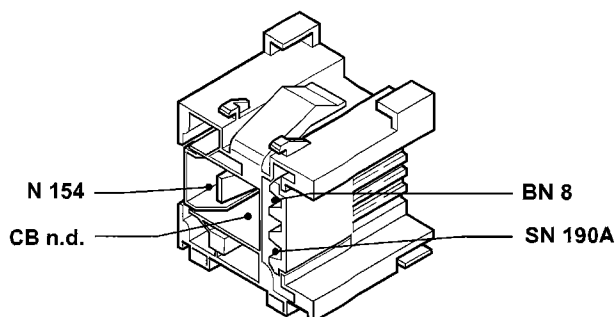
\* Variant for 1581 version

**284** Engine cooling fan relay feed

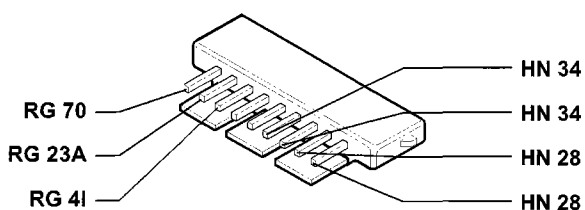


Only exists on the 1581 version without air conditioning

**284** Engine cooling fan relay feed

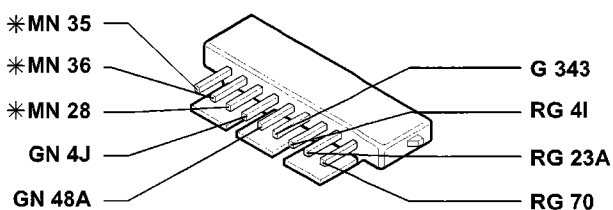


**286** Short circuit connection



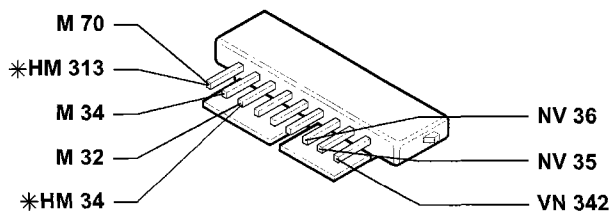
Only exists on version with preparation for radio phone

**286** Short circuit connection



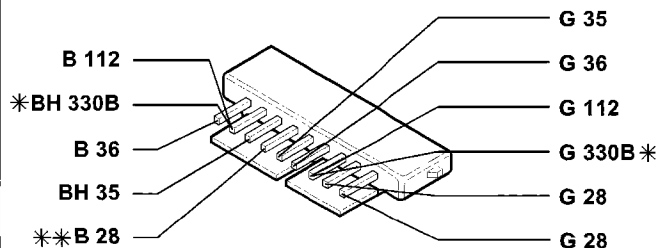
Only exists on version with preparation for radio phone and telepass

**287** Short circuit connection



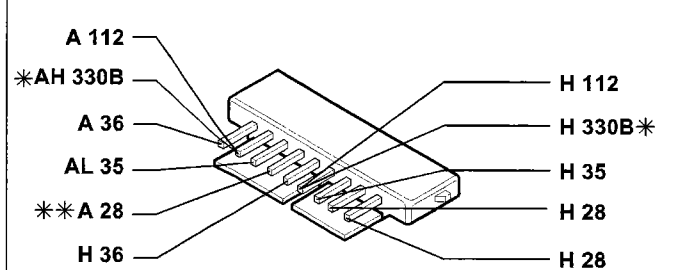
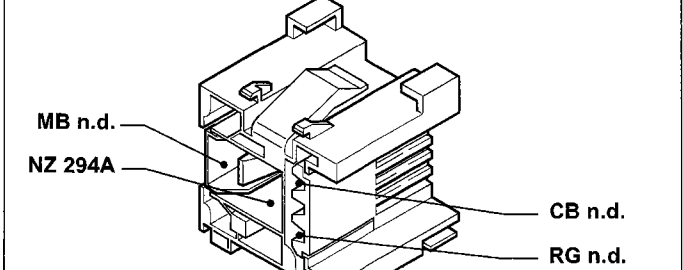
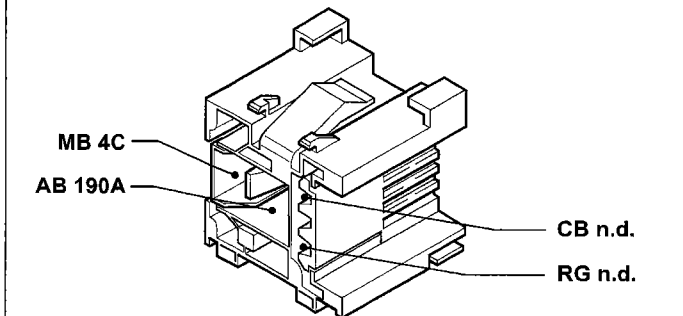
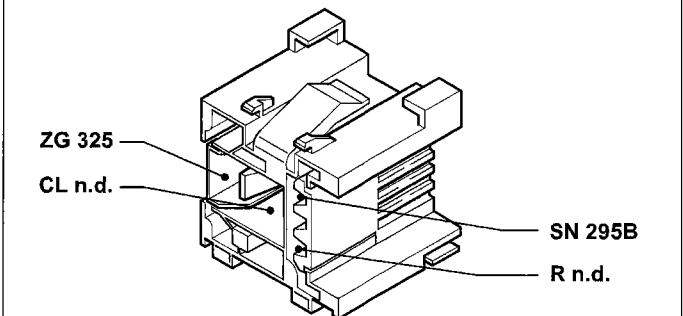
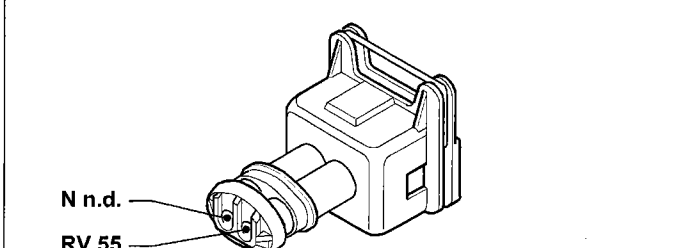
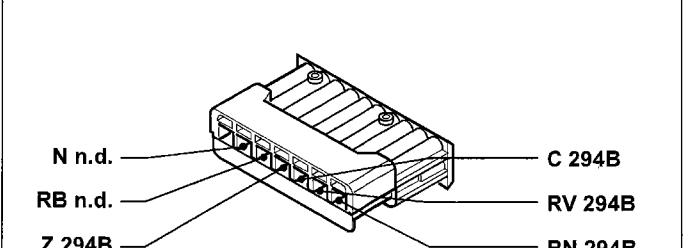
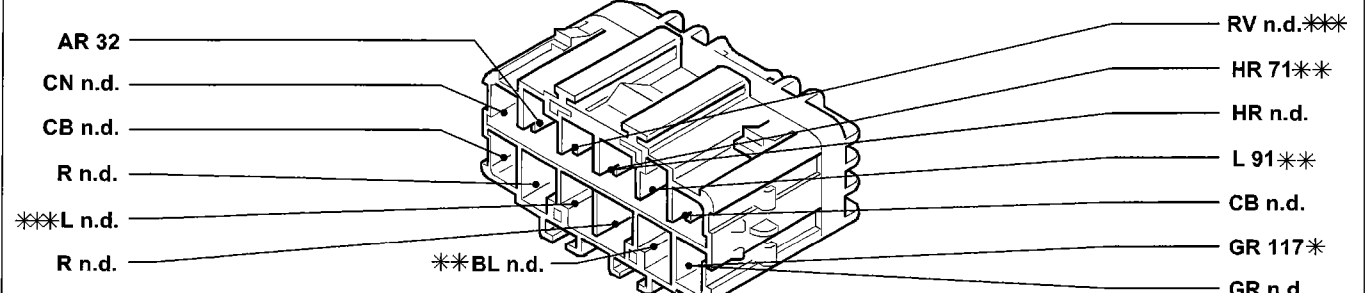
\* Variant for version without A.B.I.

**288** Short circuit connection



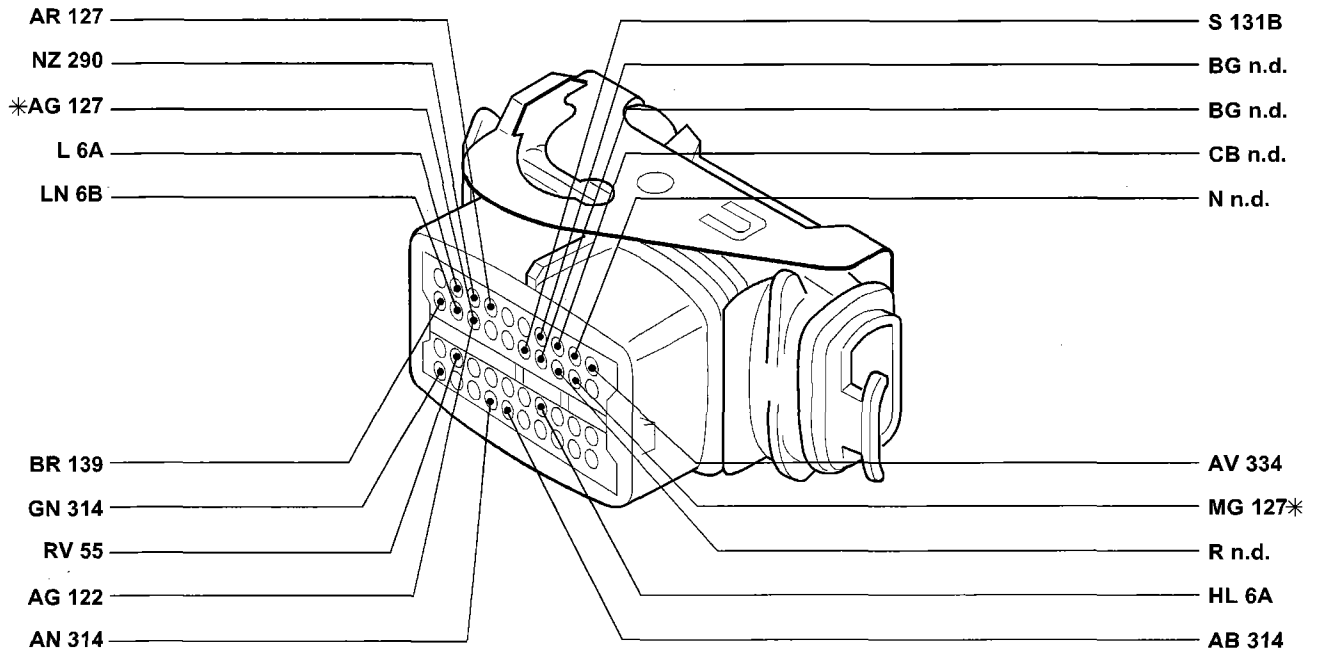
\* Variant for version with A.B.I.  
\*\* Only valid for SX trim level with alarm

### 55.

|  |  |
|--|--|
| <p><b>289</b> Short circuit connection</p>  <p>* Variant for version with A.B.I.<br/>** Only valid for SX trim level with alarm</p>  | <p><b>290</b> Electric fuel pump relay feed (1242)</p>       |
| <p><b>290</b> Electric fuel pump relay feed (1998)</p>    | <p><b>290</b> Electric fuel pump relay feed (1910 JTD)</p>  |
| <p><b>291</b> Sensor for power assisted steering pump (1242)</p>   | <p><b>292</b> Modular actuator (1242)</p>                  |
| <p><b>293</b> Fuse carrier base on dashboard cable</p>  <p>* Variant for version with EURO-BAG and SIDE-BAG<br/>** Only valid for SX trim level<br/>*** Only valid for ELX trim level</p> |  |

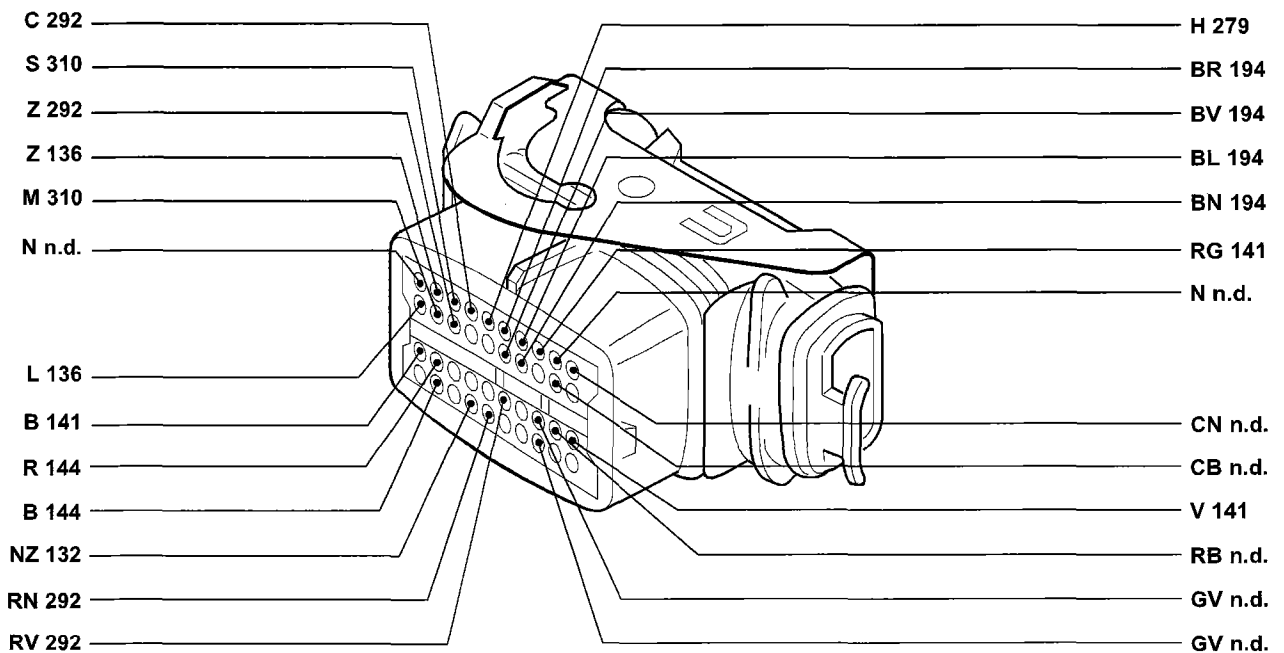


**294A** Injection/ignition electronic control unit (1242)



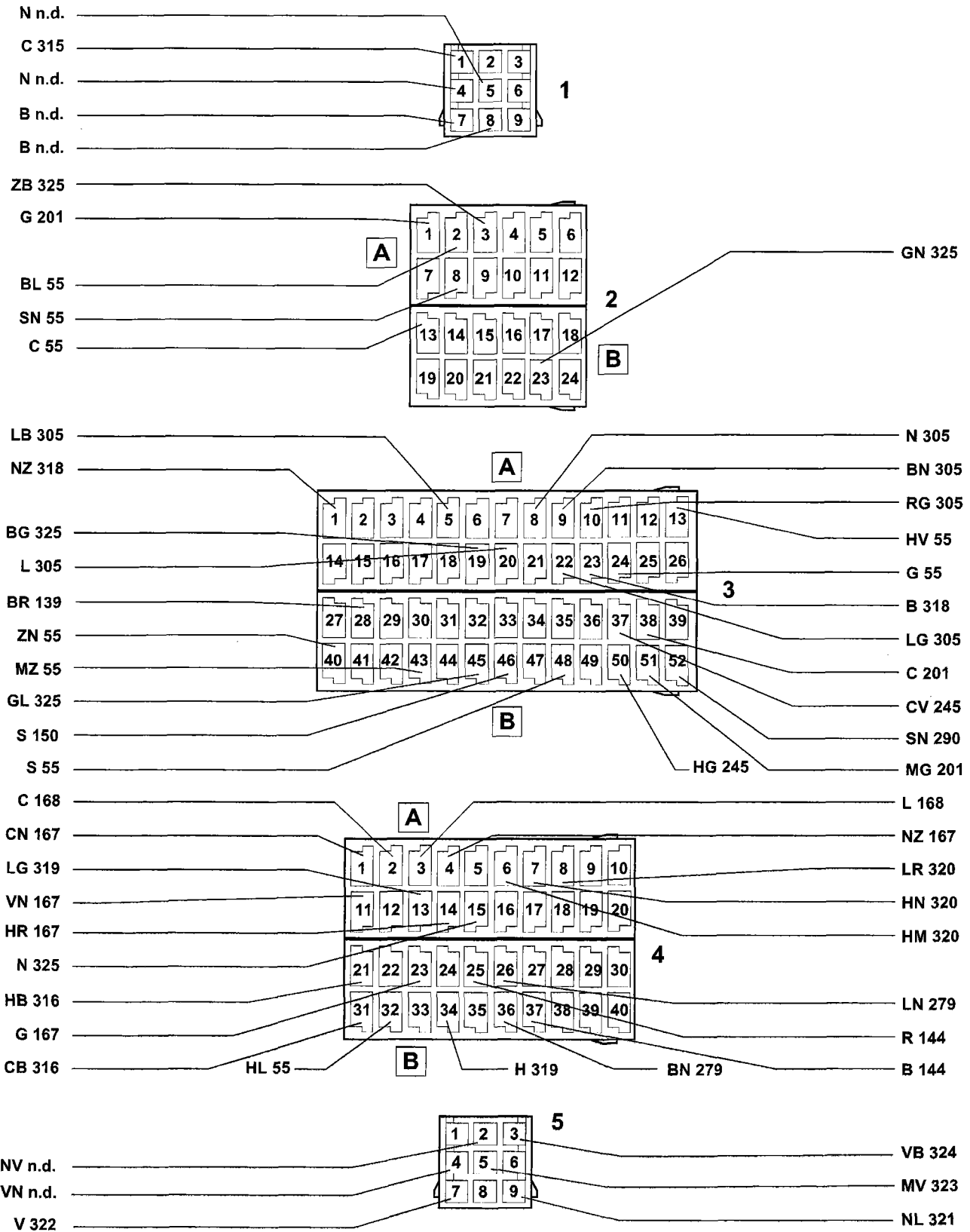
\* Only valid for version with air conditioning

**294B** Injection/ignition electronic control unit (1242)

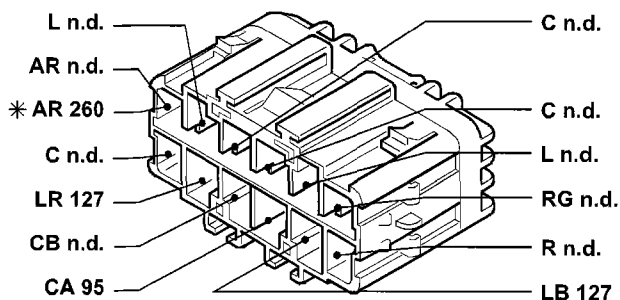


### 55.

#### 295 Injection/ignition electronic control unit (1910 JTD)

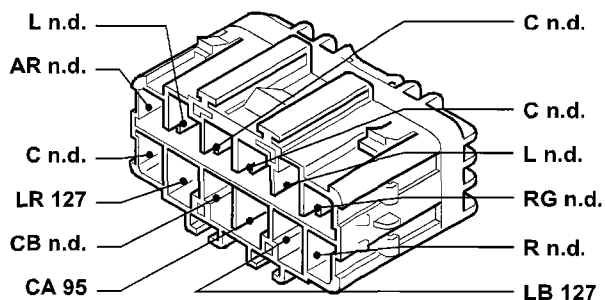


**296** Fuse carrier base on front cable (1242-1581)

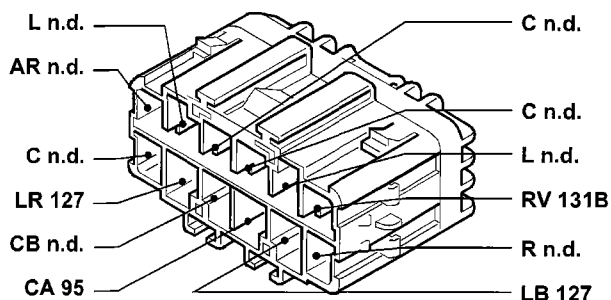


\* Variant on version with automatic transmission

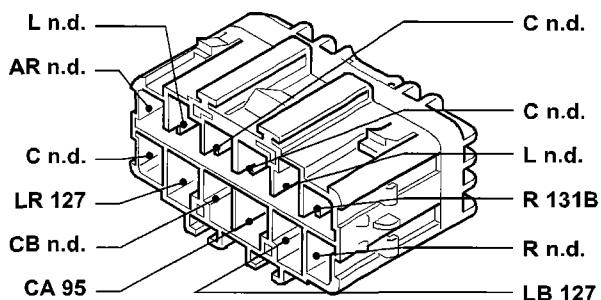
**296** Fuse carrier base on front cable (1747-1998)



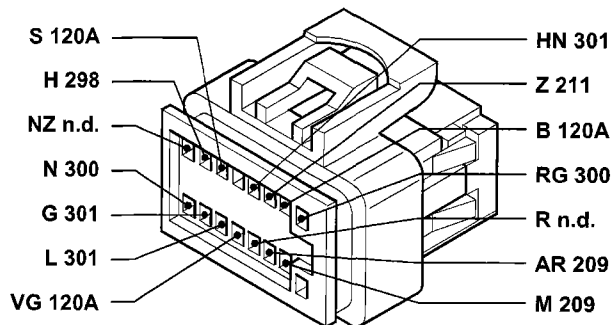
**296** Fuse carrier base on front cable (1910 TD)



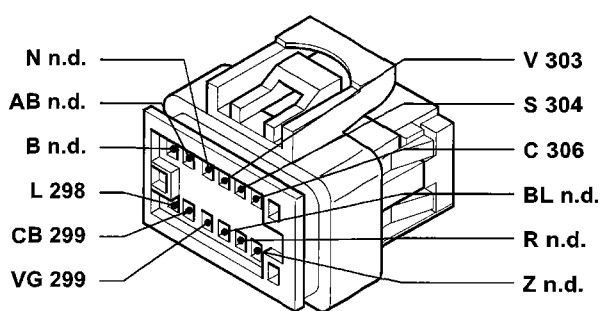
**296** Fuse carrier base on front cable (1910 JTD)



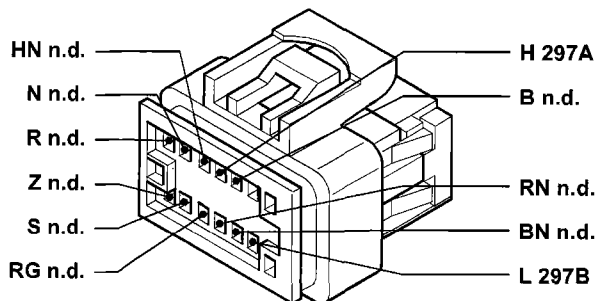
**297A** Air conditioning control unit



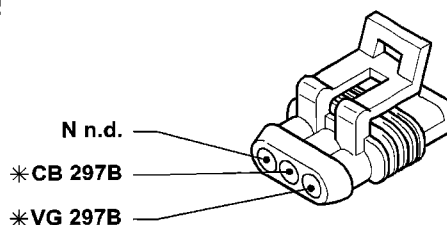
**297B** Air conditioning control unit



**298** Recirculation control for heater/air conditioning

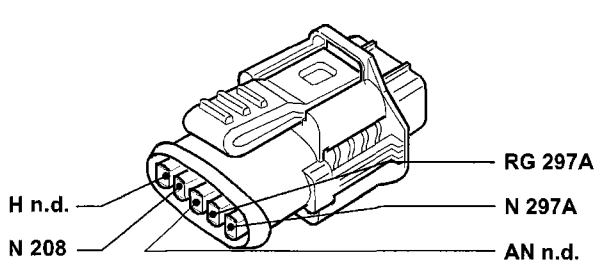
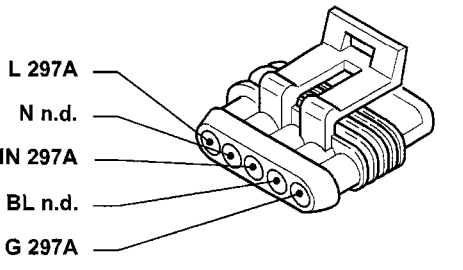
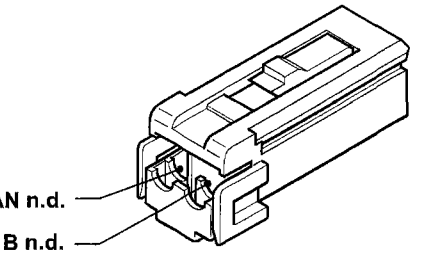
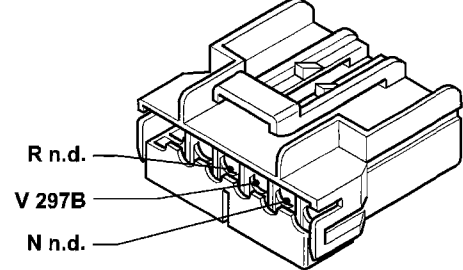
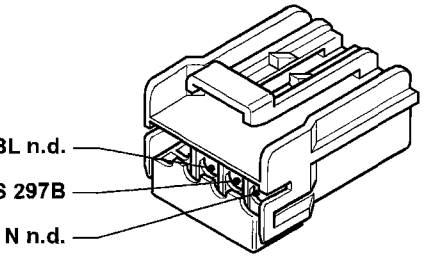
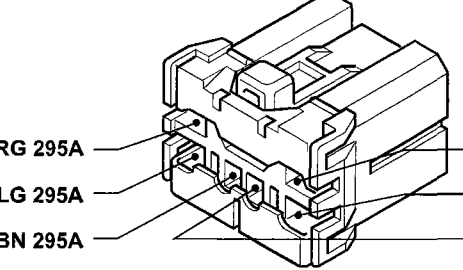
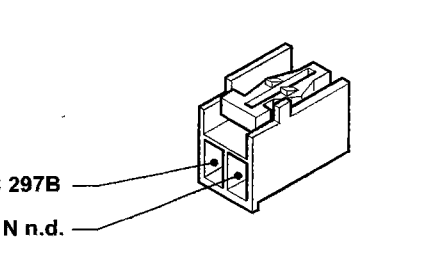
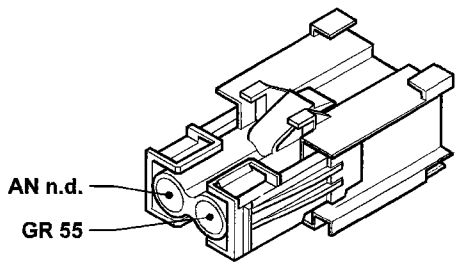


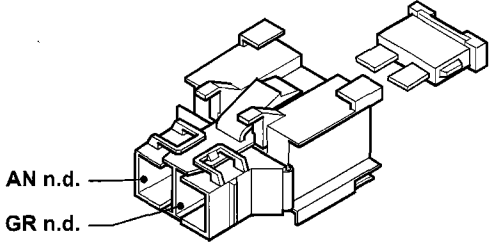
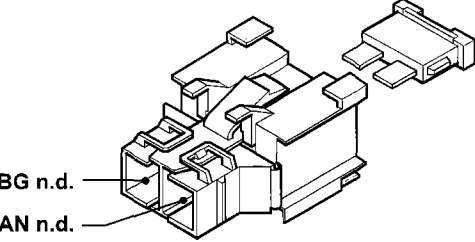
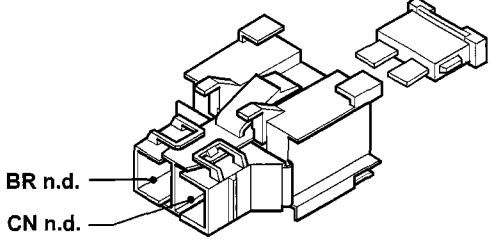
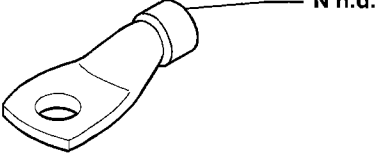
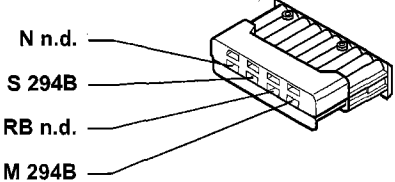
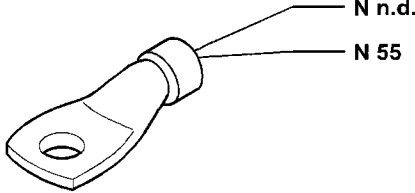
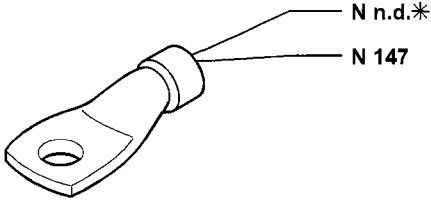
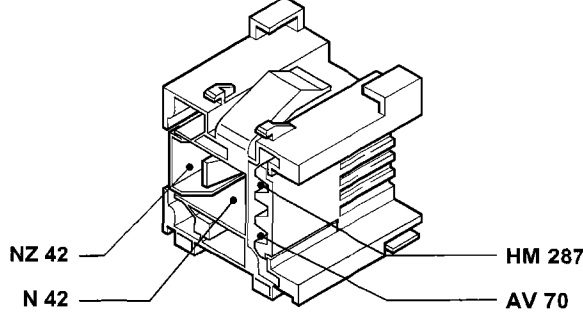
**299** Diagnostic socket for heater/air conditioning



\* Only valid on version with air conditioning

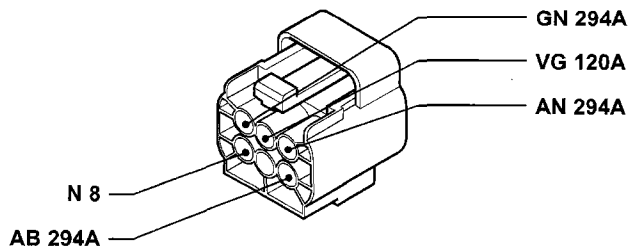
### 55.

|  |  |
|--|--|
| <p><b>300</b> Car interior fan electronic transformer</p>  <p>H n.d.      RG 297A<br/>N 208      N 297A<br/>            AN n.d.</p> <p>Only exists on version with air conditioning</p> | <p><b>301</b> Car interior mixture control actuator</p>  <p>L 297A<br/>N n.d.<br/>HN 297A<br/>BL n.d.<br/>G 297A</p> <p>Only exists on version with air conditioning</p> |
| <p><b>302</b> Maximum demisting control switch</p>  <p>AN n.d.<br/>B n.d.</p>  | <p><b>303</b> Internal ventilation potentiometer</p>  <p>R n.d.<br/>V 297B<br/>N n.d.</p> <p>Only exists on version with air conditioning</p>                           |
| <p><b>304</b> Potentiometer for car interior temperature</p>  <p>BL n.d.<br/>S 297B<br/>N n.d.</p> <p>Only exists on version with air conditioning</p>                                | <p><b>305</b> Potentiometer on accelerator pedal (1910 JTD)</p>  <p>RG 295A      LB 295A<br/>LG 295A      N 295A<br/>BN 295A      L 295A</p>                           |
| <p><b>306</b> Treated air sensor</p>  <p>C 297B<br/>N n.d.</p> <p>Only exists on version with air conditioning</p>  | <p><b>307</b> 15A fuse protecting injection system (1242)</p>  <p>AN n.d.<br/>GR 55</p>  |

|   |  |
|---|--|
| <p><b>307</b> 15A fuse protecting injection system (1998)</p>  <p>AN n.d.<br/>GR n.d.</p>  | <p><b>308</b> 15A fuse protecting canister solenoid valve (1242)</p>  <p>BG n.d.<br/>AN n.d.</p>   |
| <p><b>308</b> 15A fuse protecting canister solenoid valve (1998)</p>  <p>BR n.d.<br/>CN n.d.</p>  | <p><b>309</b> Earth for air conditioning unit</p>  <p>N n.d.</p> <p>Only exists on version with A.B.I.</p>  |
| <p><b>310</b> Absolute pressure and air temperature sensor (1242)</p>  <p>N n.d.<br/>S 294B<br/>RB n.d.<br/>M 294B</p>                     | <p><b>311</b> Earth for electronic injection control unit (1242)</p>  <p>N n.d.<br/>N 55</p>  |
| <p><b>312</b> Power earth for electronic injection control unit (1910 JTD)</p>  <p>N n.d.*<br/>N 147</p> <p>* Variant for 1242 version</p> | <p><b>313</b> Relay for reversing air conditioning signal</p>  <p>NZ 42<br/>N 42<br/>HM 287<br/>AV 70</p> <p>Only exists on version without A.B.I.</p> |

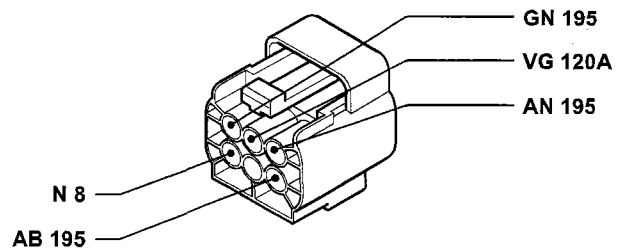
### 55.

**314** Four stage pressure switch



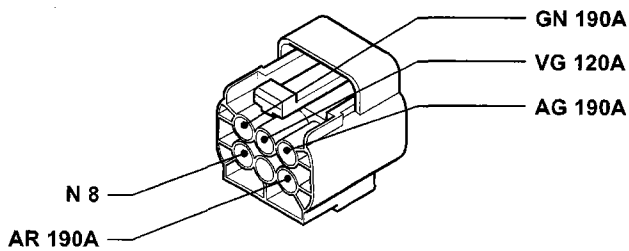
Only exists on 1242 version with air conditioning

**314** Fuel pressure regulator for injection system (1910 JTD)



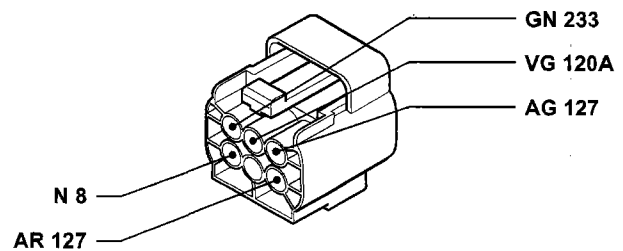
Only exists on 1581 version with air conditioning

**314** Four stage pressure switch



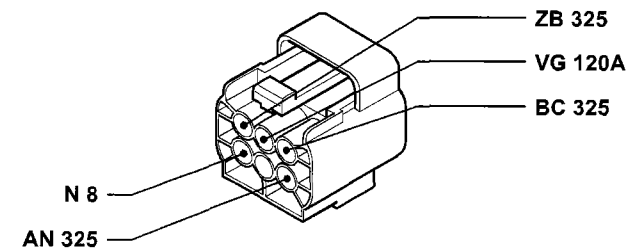
Only exists on 1998 version with air conditioning

**314** Four stage pressure switch



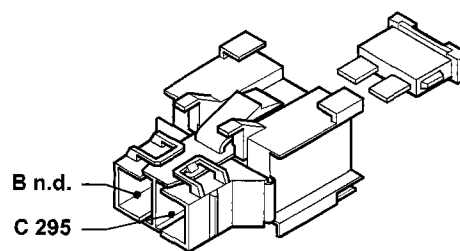
Only exists on 1910TD version with air conditioning

**314** Four stage pressure switch

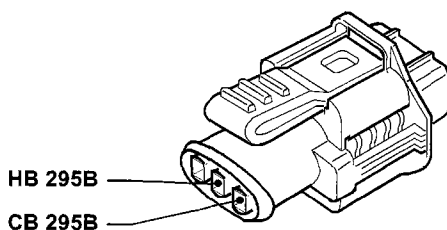


Only exists on JTD version with air conditioning

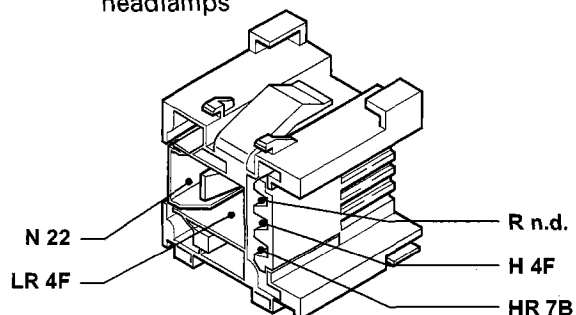
**315** 7.5A fuse protecting electronic injection control unit (1910 JTD)



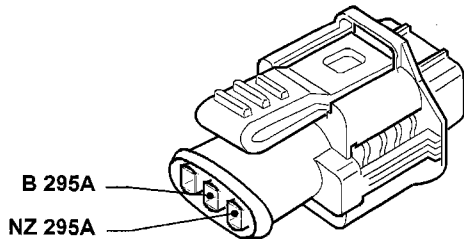
**316** Fuel pressure regulator for injection system 1910 JTD



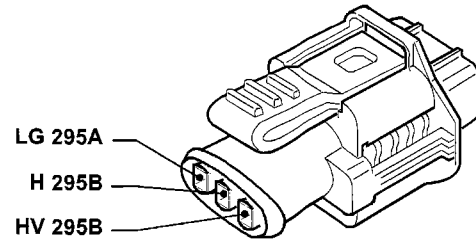
**317** Remote control switch for main beam headlamps



**318** Fuel temperature sensor (1910 JTD)

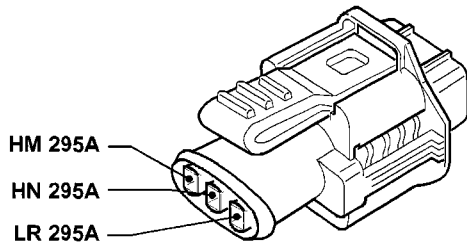


**319** Fuel pressure sensor

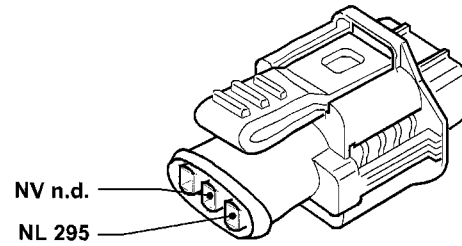


Only exists on the JTD version

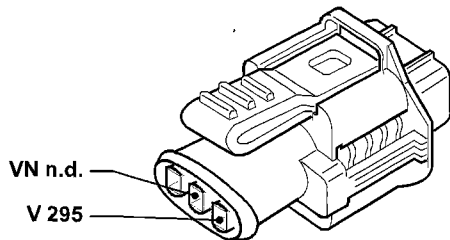
**320** Turbo pressure regulator (1910 JTD)



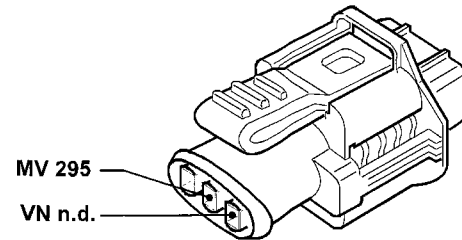
**321** Injector 1° for injection (1910 JTD)



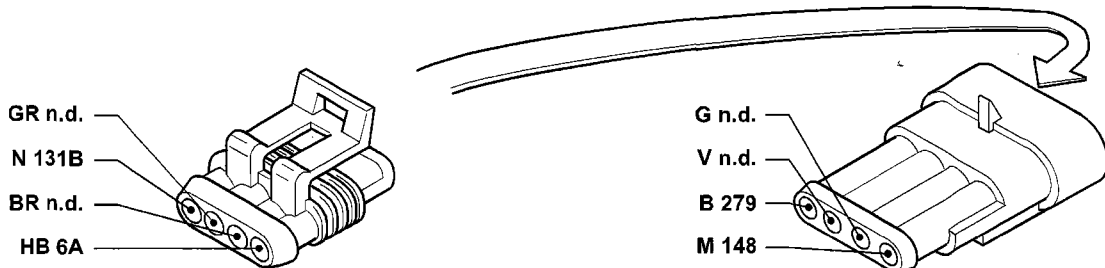
**322** Injector 2° for injection (1910 JTD)



**323** Injector 3° for injection (1910 JTD)

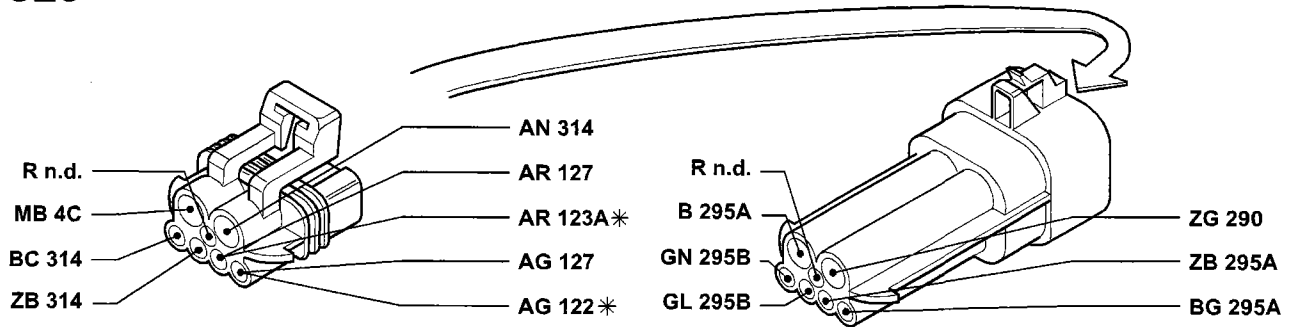


**325** Connection bewteen injection/left front cables (1998)



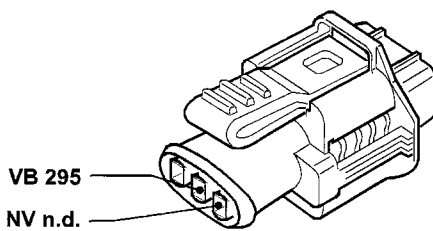
### 55.

#### 325 Connection between injection/left front cables (1910 JTD)

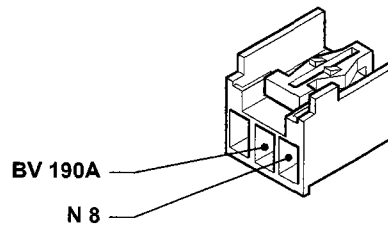


\* Variant on version without air conditioning

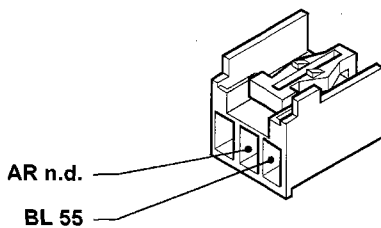
#### 324 Injector 4° for injection (1910 JTD)



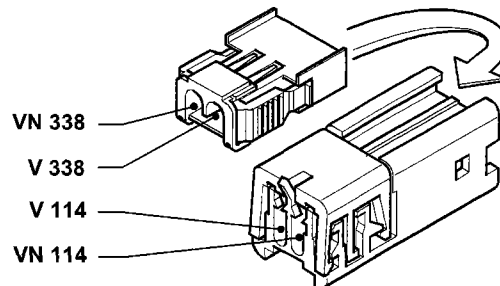
#### 326 Switch on clutch (1998)



#### 326 Switch on clutch (1910 JTD)

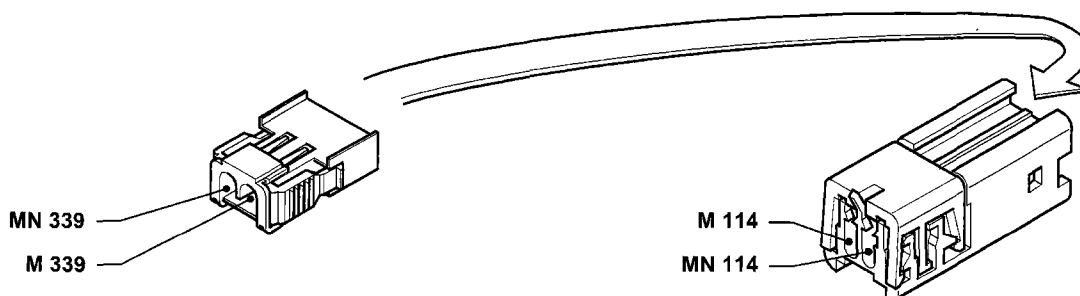


#### 327 Connection with bridge on floor for left EURO-BAG



Only exists on version with SIDE-BAG

#### 328 Connection with bridge on floor for right EURO-BAG

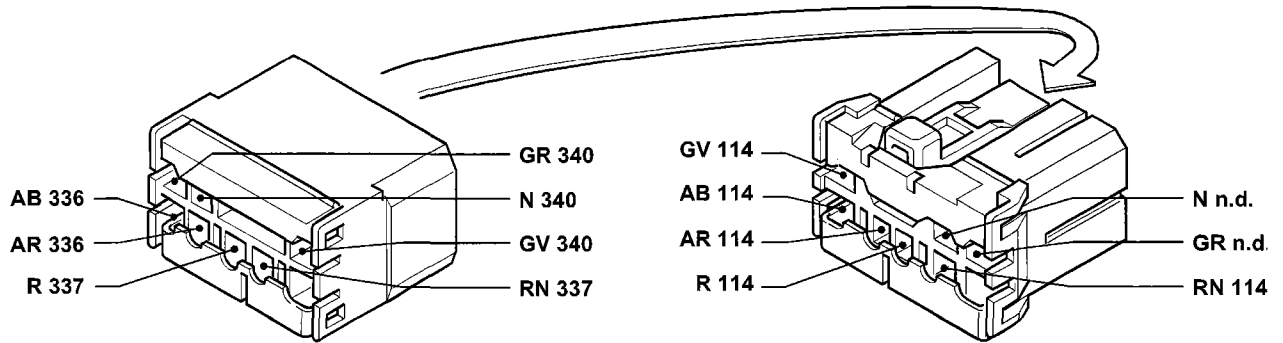


Only exists on version with SIDE-BAG

P4A390101

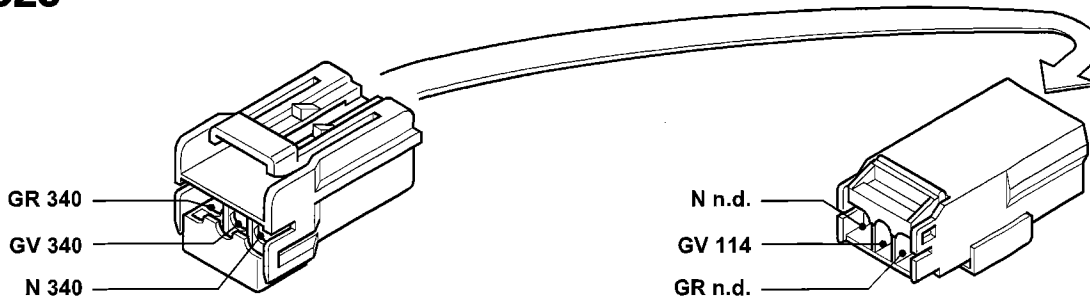


**329** Connection with bridge on floor



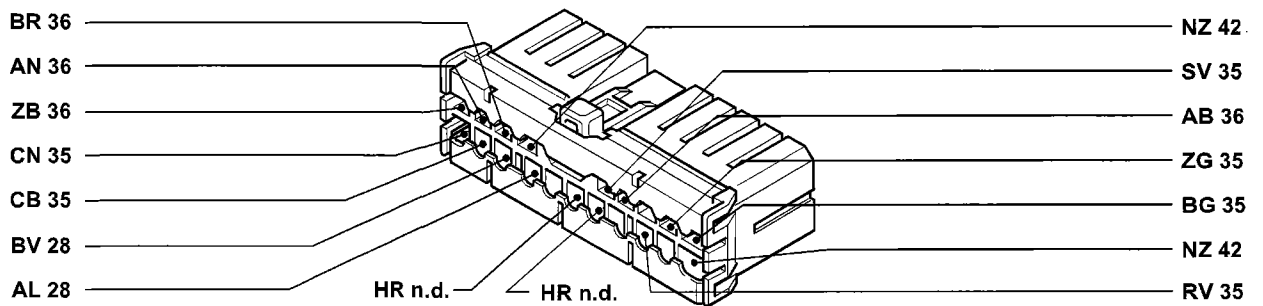
Only exists on version with EURO-BAG and SIDE-BAG

**329** Connection with bridge on floor

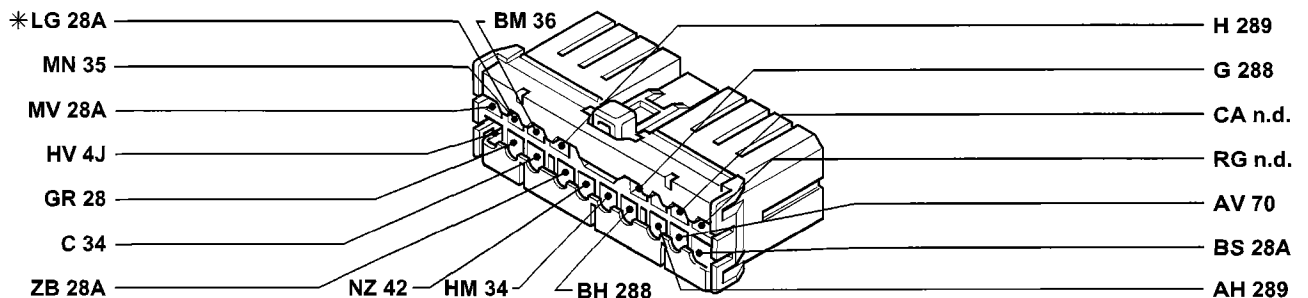


Only exists on version with driver's and passenger EURO-BAG

**330A** A.B.I. control unit

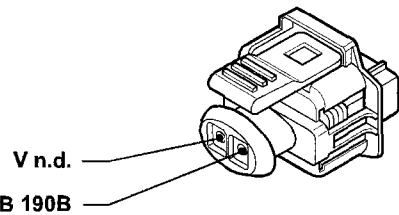
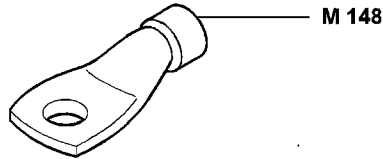
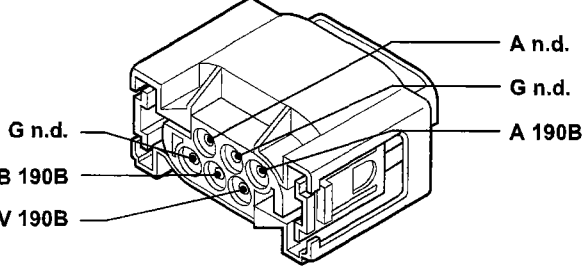
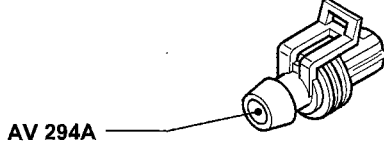
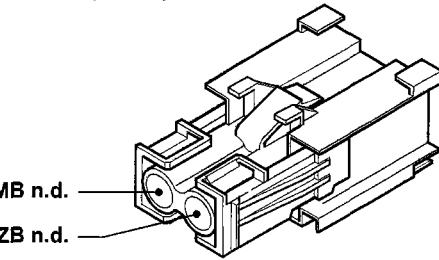
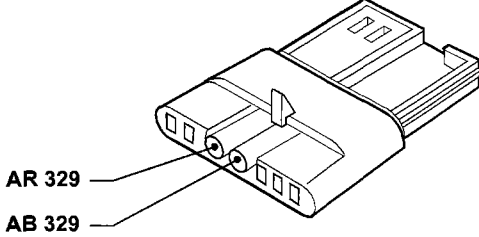
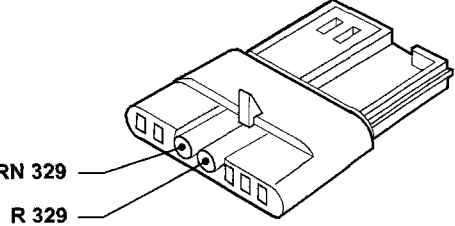
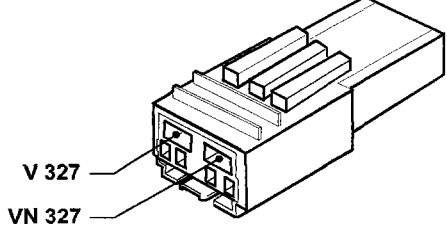


**330B** A.B.I. control unit

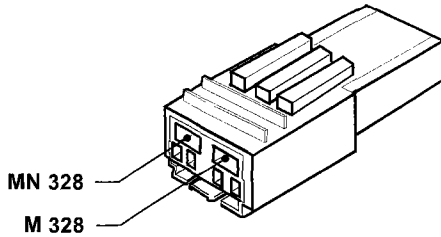


\* Variant for version with automatic transmission

**55.**

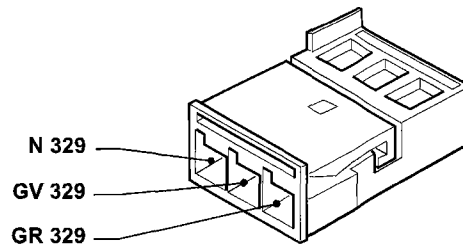
|   |  |
|---|--|
| <p><b>331</b> Phase transformer injector (1998)</p>  <p>V n.d.<br/>B 190B</p>  | <p><b>332</b> Earth on electronic control unit (1998)</p>  <p>M 148</p>   |
| <p><b>333</b> Motorized butterfly casing</p>  <p>A n.d.<br/>G n.d.<br/>A 190B<br/>G n.d.<br/>B 190B<br/>V 190B</p> <p>Only exists on the 1998 version</p> | <p><b>334</b> Connection for diagnostic cable (1242)</p>  <p>AV 294A</p>   |
| <p><b>335</b> 15A fuse protecting Lambda sensor (1581)</p>  <p>MB n.d.<br/>ZB n.d.</p>   | <p><b>336</b> Driver's sensor for EURO-BAG</p>  <p>AR 329<br/>AB 329</p> <p>Only exists on version with SIDE-BAG</p> |
| <p><b>337</b> Passenger side sensor for EURO-BAG</p>  <p>RN 329<br/>R 329</p> <p>Only exists on version with SIDE-BAG</p>                                | <p><b>338</b> Driver's SIDE BAG</p>  <p>V 327<br/>VN 327</p> <p>Only exists on version with EURO-BAG</p>             |

**339** Passenger SIDE BAG



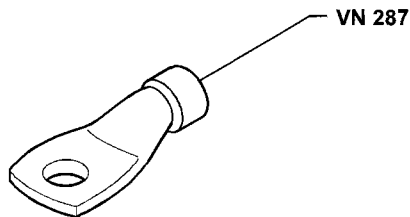
Only exists on version with EURO-BAG

**340** Passenger presence sensor

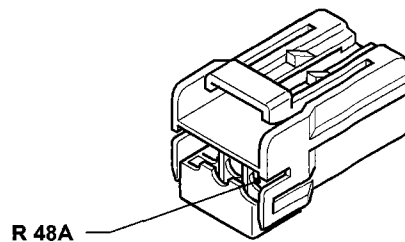


Only exists on version with EURO-BAG and SIDE-BAG

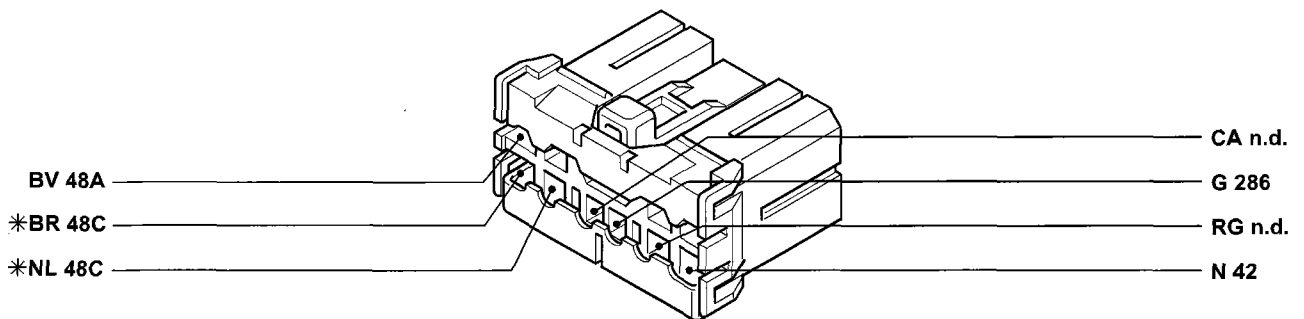
**342** Power earth for electronic injection



**344** Connection for cable for preparation for electric aerial

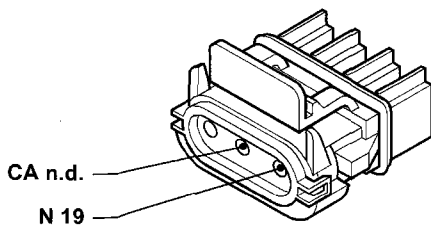


**343** Connection for preparation for radio phone

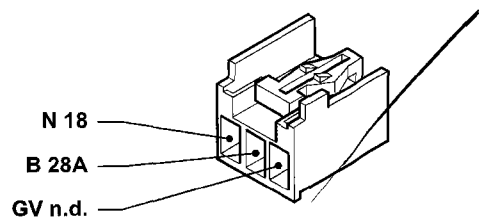


\*Non existent on version with bottom of the range radio

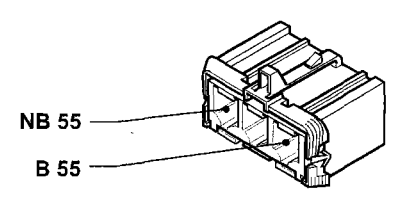
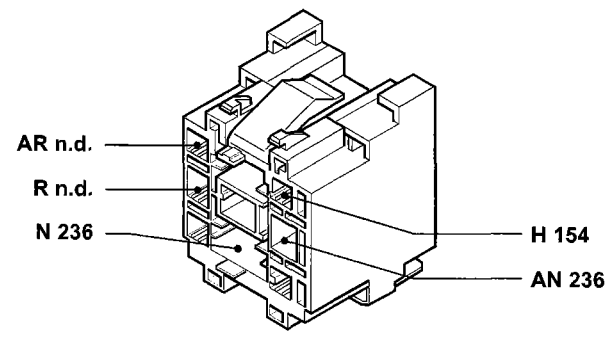
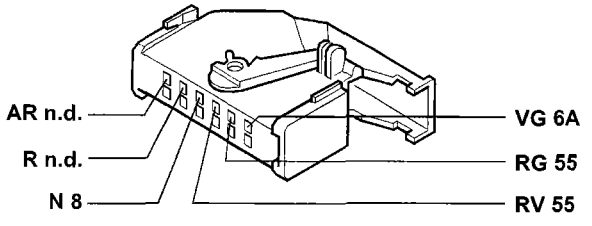
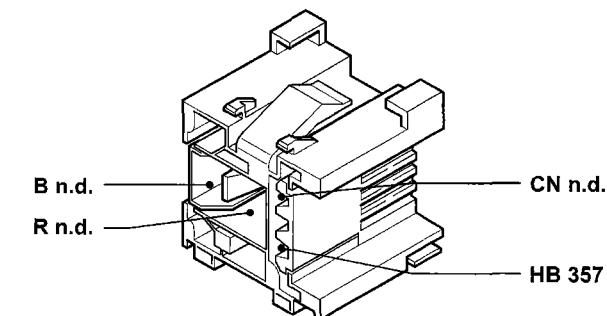
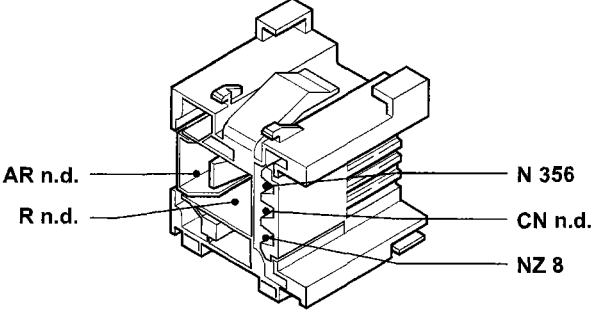
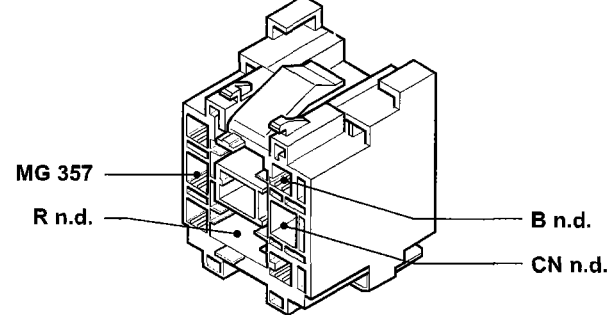
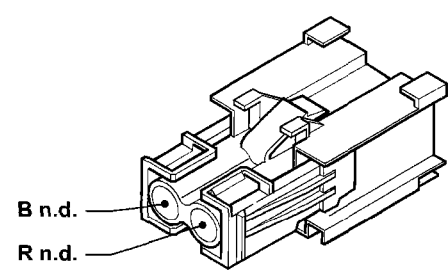
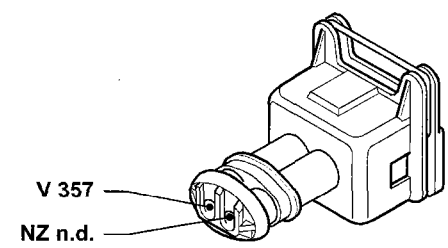
**345** Connection for preparation for telepass



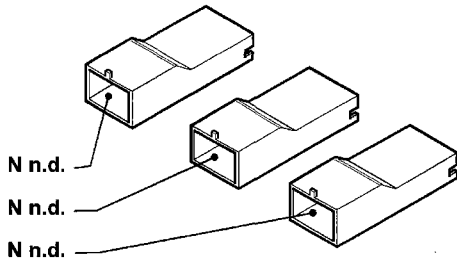
**346** Current socket



**55.**

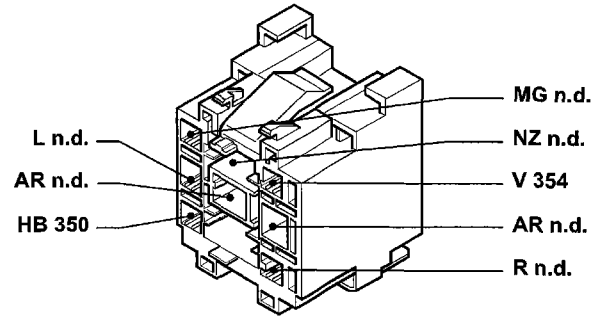
|  |   |
|--|---|
| <p><b>347</b> Engine oil level sensor (1910 JTD)</p>  <p>NB 55<br/>B 55</p>   | <p><b>348</b> Remote control switch for engine cooling fan (1910 JTD)</p>  <p>AR n.d.<br/>R n.d.<br/>N 236<br/>H 154<br/>AN 236</p> |
| <p><b>349</b> Engine oil level control unit (1910 JTD)</p>  <p>AR n.d.<br/>R n.d.<br/>N 8<br/>VG 6A<br/>RG 55<br/>RV 55</p>                  | <p><b>350</b> 30A relay for heating passenger compartment water (1910 JTD)</p>  <p>B n.d.<br/>R n.d.<br/>CN n.d.<br/>HB 357</p>    |
| <p><b>351</b> Safety relay for heating passenger compartment water (1910 JTD)</p>  <p>AR n.d.<br/>R n.d.<br/>N 356<br/>CN n.d.<br/>NZ 8</p> | <p><b>352</b> 50A relay for heating passenger compartment water (1910 JTD)</p>  <p>MG 357<br/>R n.d.<br/>B n.d.<br/>CN n.d.</p>   |
| <p><b>353</b> 70A fuse protecting passenger compartment water heater plugs (1910 JTD)</p>  <p>B n.d.<br/>R n.d.</p>                         | <p><b>354</b> N.T.C. sensor on heating supply pipe (1910 JTD)</p>  <p>V 357<br/>NZ n.d.</p>                                       |

**355** Passenger compartment coolant heating plugs (1910JTD)



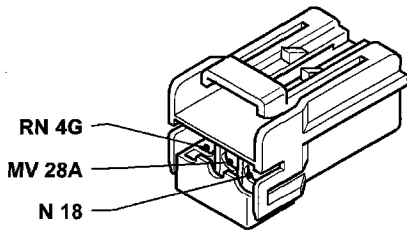
P4A395I01

**357** Passenger compartment interior heater plugs control unit (1910 JTD)



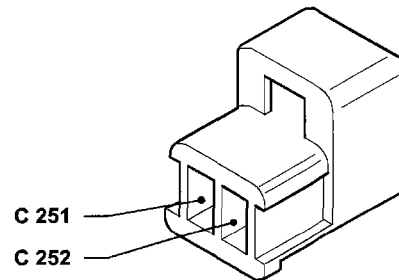
P4A395I02

**258** Rear courtesy light



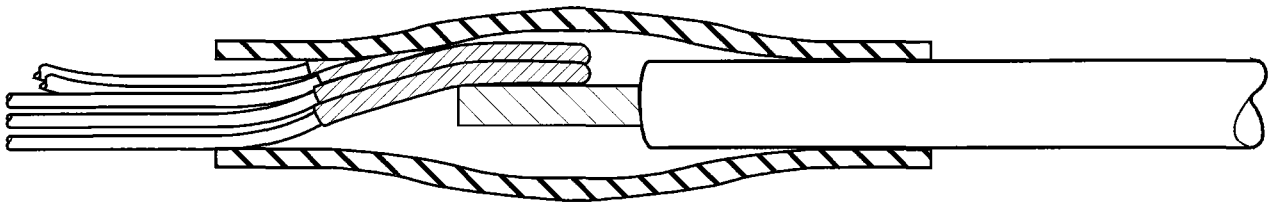
P4A395I03

**359** K.S.B. device (1910 TD)



P4A395I04

**N.D.** Ultrasound welding taped in cable loom



P4A395I07



**RADIO SYSTEM**

|                                |    |
|--------------------------------|----|
| - General description          | 1  |
| - Warnings                     | 5  |
| - Description of controls      | 6  |
| - Operation                    | 15 |
| - EXPERT control level         | 22 |
| - Coding                       | 26 |
| - Compact Disc Player          | 28 |
| - Cassette Player              | 29 |
| - Multiple Compact Disc player | 31 |
| - Advice and precautions       | 33 |

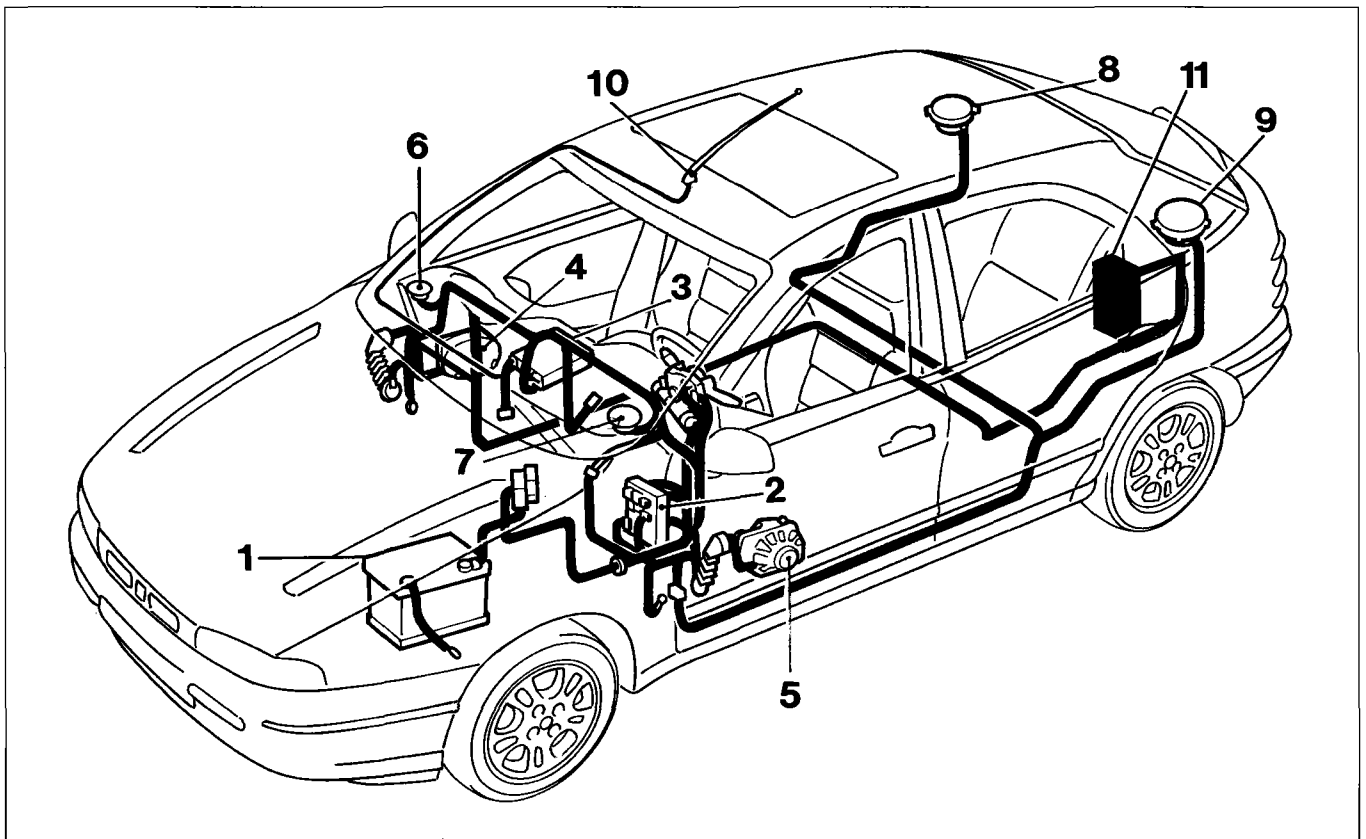
**GENERAL DESCRIPTION**

The car radio reception and playing system has been developed with the acoustic properties of the passenger compartment in mind to offer outstanding sound reproduction at all times.

The system is installed on the car directly during production, without subsequent interventions. All wires are integral with the car wiring.

The system includes:

- radio
- front speakers (with separate tweeters)
- rear speakers
- radio supply leads
- radio and speaker connection leads
- radio controls on steering wheel
- coaxial aerial connection lead
- stylus aerial on roof
- connection lead for CD changer, located in boot.

**LOCATION OF SYSTEM COMPONENTS**

4A054L06

**Component key**

- |                       |                      |
|-----------------------|----------------------|
| 1 Battery             | 8 Right rear speaker |
| 2 Junction unit       | 9 Left rear speaker  |
| 3 Radio               | 10 Aerial            |
| 4 Right front speaker | 11 CD player/changer |
| 5 Left front speaker  |                      |
| 6 Right front tweeter |                      |
| 7 Left front tweeter  |                      |



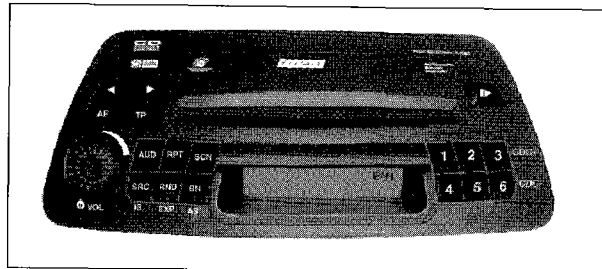
### 55.

#### CAR RADIO

The radio is customised to fit in with the instrument facia styling. It is fixed because it cannot be adapted to any other car.

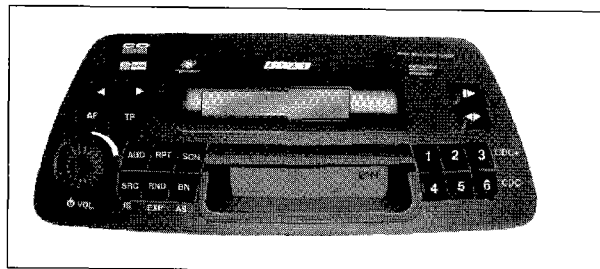
It comes in three versions:

**RADIO H4** : with CD player, theft protection, predisposition for handsfree mobile phone use, connection lead for CD changer, possibility of steering wheel controls.



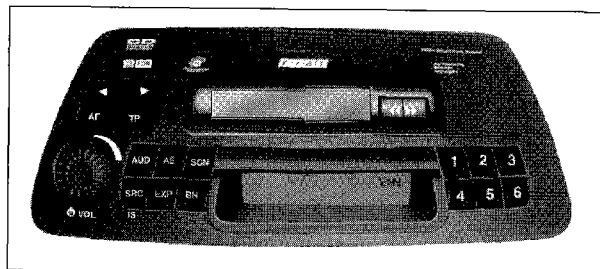
4A002ML01

**RADIO H3** : with cassette player, theft protection, predisposition for handsfree mobile phone use, connection lead for CD changer, possibility of steering wheel controls.



4A002ML02

**RADIO M2** : with cassette player, predisposition for handsfree mobile phone use



4A002ML03

#### AERIAL

The car is fitted with an aerial on the roof.

#### Electrically-controlled aerial

The car radio is fitted with the wiring for controlling an automatic electric aerial (that rises when the car radio is switched on and lowers when the radio is switched off).

#### SPEAKERS

The special sound system comprises:

- 2 elliptical mid-woofer speakers 130 x 180 mm with a power output of 30W max each;
- 2 diffusori fluid iron tweeter dome speakers with a max power output of 40W max;
- 2 full-range Ø 130 mm speakers with a power output of 30W max each (only for H4 and H3)

### TECHNICAL DATA

#### Radio power (*H4 and H3 versions*)

- 4 x 15W (with standard sound system made up of mid-woofer + tweeter and full range speakers).

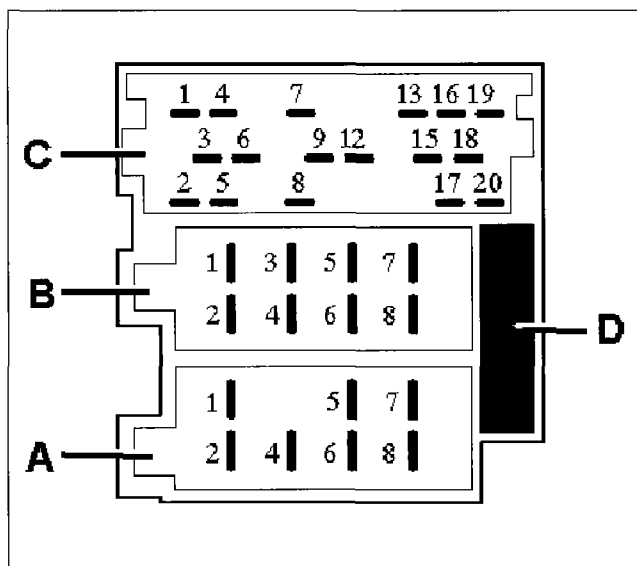
#### Radio power (*version M2*)

- 2 x 15W (with standard sound system made up of mid-woofer + tweeter speakers).
- 4 x 5W (with optional 4-channel speaker system that can be installed by After Market).

**WARNING** *The standard system is 2 x 15W. If a 2 x 15W system is fitted, an adaptor is fitted between radio and wiring.*

### Fuse

The radio is fitted with a 10A fuse (D). (*5A for the M2 version*)



4A003ML01

### CONNECTIONS

#### Connector A

- A1 SCV signal (+) for adjusting volume according to speed
- A2 Phone Mute signal for mobile phone
- A4 +12V ignition-operated voltage supply
- A5 aerial supply output +12V (max. 0.5A)
- A6 +12V display lighting output voltage
- A7 +12V direct supply voltage
- A8 Earth

#### Connector B

- B1 rear speaker (right +)
- B2 rear speaker (right -)
- B3 front speaker (right +)
- B4 front speaker (right -)
- B5 front speaker (left +)
- B6 front speaker (left -)
- B7 rear speaker (left +)
- B8 rear speaker (left -)

### 55.

#### Supplementary connections

##### Connector C

**Line output:** possibility of connection for power amplifier (Booster) or active speaker

- C1 Rear speaker (left +)
- C2 Rear speaker (right +)
- C3 Earth (-)
- C4 Front speaker (left +)
- C5 Front speaker (right +)
- C6 Switch signal for power amplifier: on/off (max. 0.3A).

##### Phone input

Possibility of mobile phone handsfree connection

- C7 NF phone
- C12 NF phone earth

##### Remote control from steering wheel (*H4 and H3 versions*)

- C8 Earth
- C9 Remote control

##### Cd changer connection (*H4 and H3 versions*)

- C13 CD bus control line
- C15 CD bus earth
- C16 +12V supply voltage for cd changer
- C17 Switching voltage for cd changer
- C18 NF CD earth
- C19 left NF CD
- C20 right NF CD

**WARNINGS****Anti-theft protection**

The radio comes with a theft protection system comprising of a secret 4 digit code.

The protection system makes the radio inoperable if it is removed from the fascia as a result of a theft. See the following pages to activate the antitheft device

**CODE card**

The radio identity document shows the model, serial number and secret code.

The serial number is the same as the number stamped on the set frame

If the set is lost, the CODE card facilitates search investigations and speeds up claim settlement by insurers due to the ownership document.



4A005ML01



**ATTENTION:** *If the antitheft protection is active and the radio is disconnected from the car battery, the radio is still protected electronically. It may only be operated again by entering a special code.*

**Display**

If the set is disconnected from the voltage supply, the display figures flash when it is reconnected. The flashing figures are a reminder that the clock must be reset as described below.

**Extended function field (EXP key)**

The EXPERT control level allows the user to use a range of functions beginning with the base control yet without losing an overall view.

**Operation with mobile phone (PHONE)**

The radio is designed for connection to a mobile phone handsfree system (using the PHONE IN input).

The radio sound is deactivated while the mobile phone is in operation.

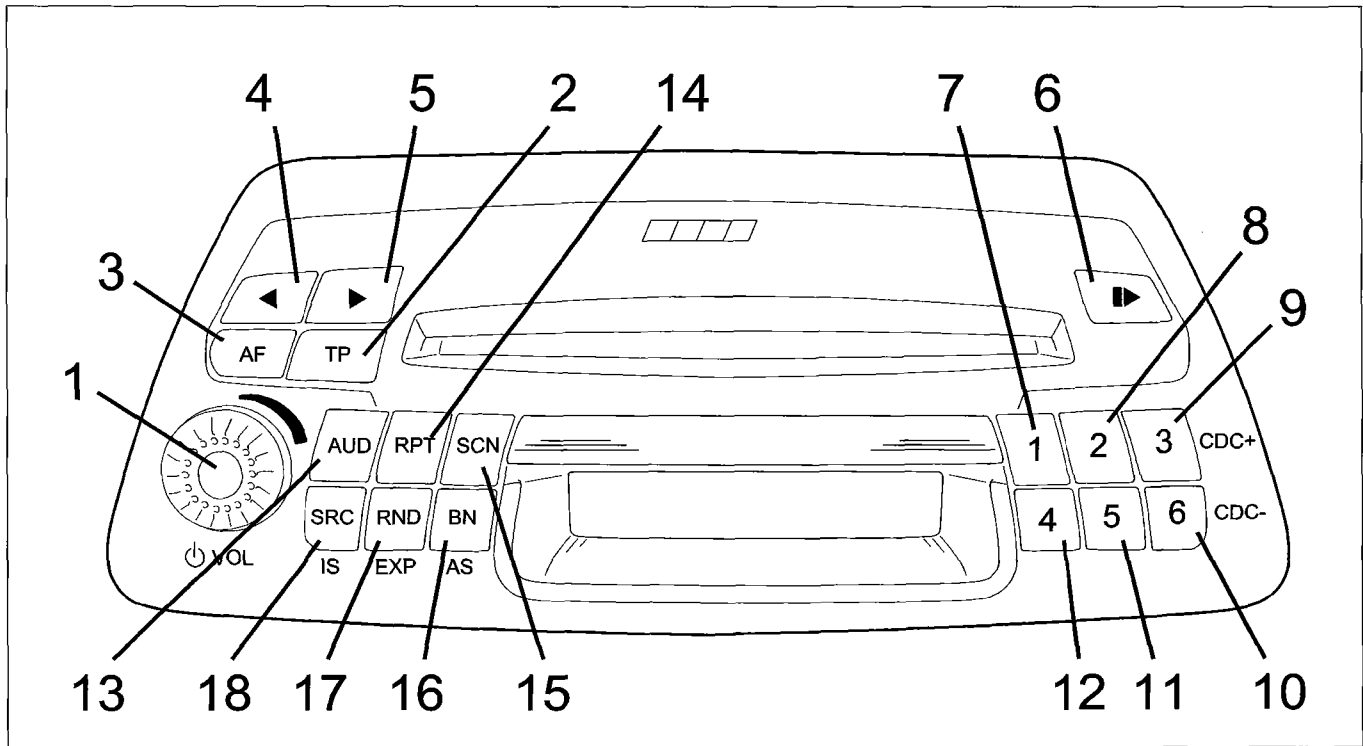
PHONE appears on the display.

### 55.

#### CONTROL DESCRIPTION

#### RADIO H4

This comes with a CD player, antitheft protection, predisposition for mobile phone handsfree operation, connection lead for CD changer, possibility of steering wheel controls.



4A006ML01

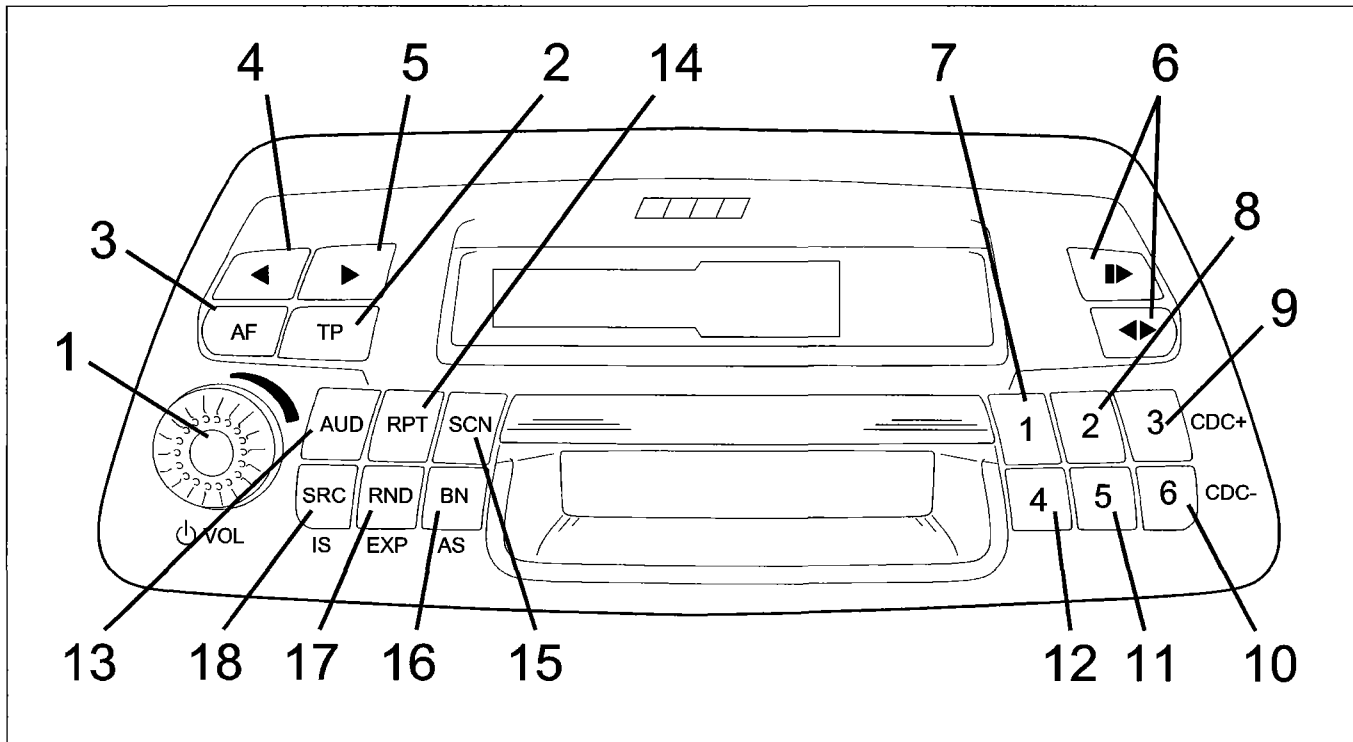
The tables on the following pages details key functions according to operating mode (RADIO, CD, CD CHANGER, PHONE).

| Key | Function                                | Status EXPERT | RADIO mode  |  | CD mode   |                                | CD-CHANGER mode   |                                | PHONE mode  |
|-----|---|---------------|---|--|---|--------------------------------|---|--------------------------------|---|
|     |   |               | short press   | press > 2 secs   | short press   | press > 2 secs                 | short press   | press > 2 secs                 | short press   |
| 1   | Radio on/off<br>VOL/AUD ad-<br>justment | -             | On/<br>off: press VOL/AUD ad-<br>justment: Turn left:<br>down, Turn right: up |  | On/<br>off: press VOL/AUD<br>adjustment: Turn left:<br>down, Turn right: up |                                | On/<br>off: press VOL/AUD<br>adjustment: Turn left:<br>down, Turn right: up |                                | On/<br>off: press VOL/AUD<br>adjustment: Turn left:<br>down, Turn right: up |
| 2   | TP<br>Traffic<br>programme              | -             | TP ON/OFF   | PTY  | TP ON/OFF   | -                              | TP ON/OFF   | -                              | -   |
| 3   | AF:<br>Alternate<br>frequency           | -             | AF ON/OFF   | RDF ON/OFF   | -   | -                              | -   | -                              | -   |
| 4   | Previous<br>(left)                      | IS=OFF        | FM: Search -<br>AM: Search -<br>PTY: Select next<br>programme                 | FM:MAN -<br>AM:MAN -<br>PTY: Automatic<br>search (within pro-<br>gramme) | Track -N  | Fast rewind<br>(continuous)    | Track -N  | Fast rewind<br>(continuous)    | -   |
|     |   | IS=ON         | FM: Store next IS<br>AM: Search -<br>PTY: Select next<br>programme            | FM:MAN -<br>AM:MAN -<br>PTY: Automatic<br>search (within pro-<br>gramme) | Track -N  | Fast rewind<br>(continuous)    | Track -N  | Fast rewind<br>(continuous)    | -   |
| 5   | Previous<br>(destra)                    | IS=OFF        | FM: search +<br>AM: search +<br>PTY: Select next<br>programme                 | FM:MAN +<br>AM:MAN +<br>PTY: Automatic<br>search (within pro-<br>gramme) | Track +N  | fast forward (continu-<br>ous) | Track +N  | fast forward (continu-<br>ous) | -   |
|     |   | IS=ON         | FM: Store next IS<br>AM: search +<br>PTY: Select next<br>programme            | FM:MAN +<br>AM:MAN +<br>PTY: Automatic<br>search (within pro-<br>gramme) | Track +N  | fast forward (continu-<br>ous) | Track +N  | fast forward (continu-<br>ous) | -   |
| 6   | Eject                                   | -             | Eject (CD)  | -  | Eject (CD)  | -                              | Eject (CD)  | -                              | Eject (CD)  |
| 7   | Preset<br>station 1                     | -             | FM/AM: recall<br>preset station 1   | FM/AM: store prese-<br>lected station 1 PTY:<br>store programme          | -   | -                              | -   | -                              | -   |
| 8   | Preset<br>station 2                     | -             | FM/AM: recall<br>preset station 1   | FM/AM: store prese-<br>lected station 2 PTY:<br>store programme          | -   | -                              | -   | -                              | -   |

|     |                           |        |   |  |   |   |   |   |   |
|-----|---------------------------|--------|---|--|---|---|---|---|---|
| 9   | Preset station 3          | -      | FM/AM: recall preset station 3                              | FM/AM: store pre-selected station 3 PTY: store programme               | -   | -   | CDC +   | -   | -   |
| 10  | Preset station 6          | -      | FM/AM: recall preset station 6                              | FM/AM: store pre-selected station 6 PTY: store programme               | -   | -   | CDC -   | -   | -   |
| 11  | Preset station 5          | -      | FM/AM: recall preset station 5                              | FM/AM: store pre-selected station 5 PTY: store programme               | -   | -   | -   | -   | -   |
| 12  | Preset station 4          | -      | FM/AM: recall preset station 4                              | FM/AM: store pre-selected station 4 PTY: store programme               | -   | -   | -   | -   | -   |
| 13  | AUD: Audio settings       | -      | Bass (B), Treble (T), Balance (B), Fader (F), Loudness (LD) | RESET return to original B/T/B/F/-AUD settings (CENTER)                | Bass (B), Treble (T), Balance (B), Fader (F), Loudness (LD) | RESET return to original B/T/B/F/-AUD settings (CENTER) | Bass (B), Treble (T), Balance (B), Fader (F), Loudness (LD) | RESET return to original B/T/B/F/-AUD settings (CENTER) | Bass (B), Treble (T), Balance (B), Fader (F), Loudness (LD) |
| 14  | RPT: Random               | -      | -   | -  | On/off repeat track   | -   | On/off repeat track   | On/off repeat CD  | -   |
| 15  | SCN: Automatic store      | IS=OFF | Automatic scan of all preset stations on band in use        | Automatic store of all stations tunable on band in use (Search)        | Autoamtic selection of CD tracks                            | -   | Autoamtic selection of CD tracks                            | -   | -   |
|     |                           | IS=ON  | Automatic scan of all preset stations on band in use        | Automatic scan of all stations on intelligent search system IS (Store) | Automatic scan of CD tracks                                 | -   | Automatic scan of CD tracks                                 | -   | -   |
| 16  | BN: Select frequency band | -      | FM1, FM2, FM3, MW, LW                                       | Automatically store preset station groups                              | -   | -   | -   | -   | -   |
| 17S | RND: Random repeat        | -      | -   | EXPERT on/off  | Random tracks   | EXPERT on/off   | Random tracks (on selected CD)                              | EXPERT on/off   | -   |
| 18  | SRC: Select source        | IS=OFF | CD, RADIO, CDC (if connected)                               | -  | CD, RADIO, CDC (if connected)                               | -   | CD, RADIO, CDC  | -   | -   |
|     |                           | IS=ON  | CD, RADIO, CDC (if connected)                               | Update intelligent search and store IS                                 | CD, RADIO, CDC (if connected)                               | -   | CD, RADIO, CDC  | -   | -   |

**RADIO H3**

This comes with a cassette player, antitheft protection, predisposition for mobile phone handsfree operation, connection lead for CD changer, possibility of steering wheel controls.



4A007ML01

The tables on the following pages details key functions according to operating mode (RADIO, CASSETTE, CD CHANGER, PHONE).



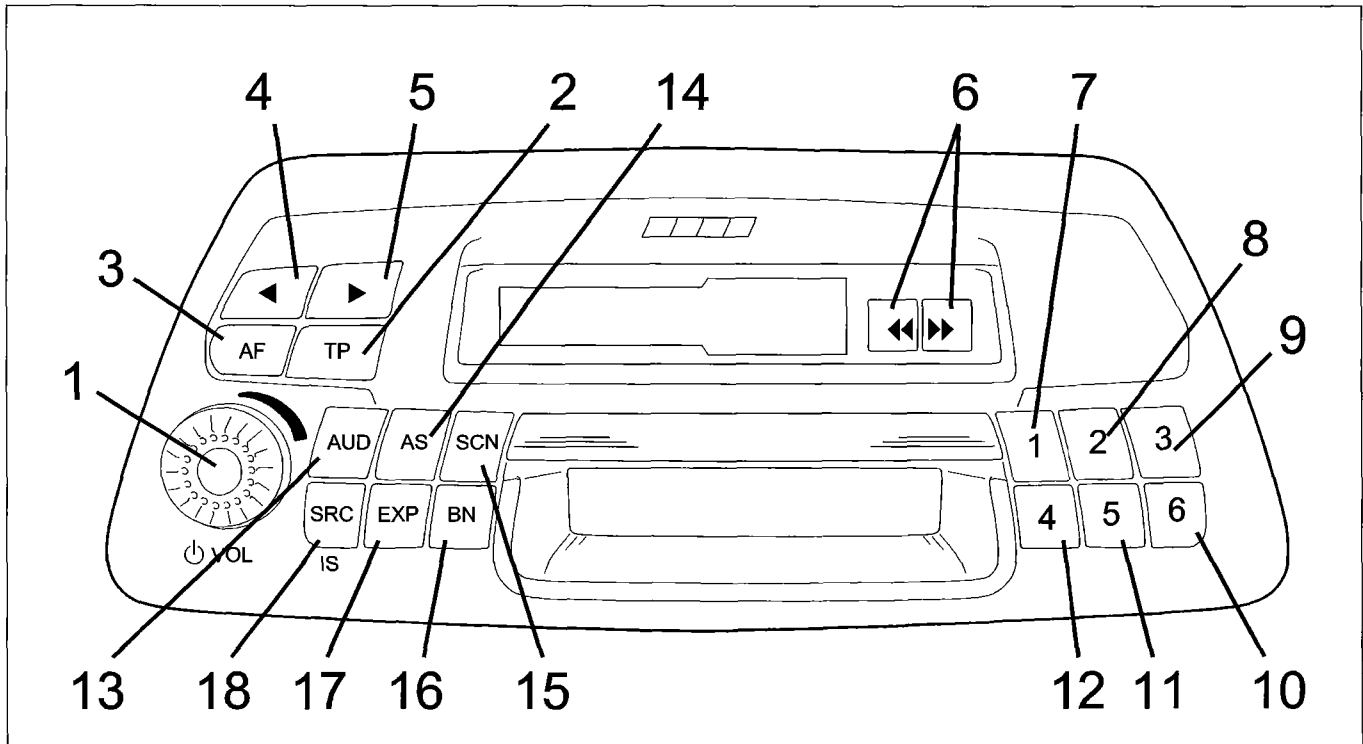
| Key | Function                                | Status EXPERT | RADIO mode   |  | CASSETTE mode   |                | CD-CHANGER mode   |                                | PHONE mode  |
|-----|---|---------------|--|--|---|----------------|---|--------------------------------|---|
|     |   |               | short press  | press > 2 secs   | short press   | press > 2 secs | short press   | press > 2 secs                 | short press   |
| 1   | Radio on/off<br>VOL/AUD ad-<br>justment | -             | On/off: press<br>VOL/AUD adjustment:<br>Turn left: down, Turn right:<br>up | -  | On/<br>off: press VOL/AUD<br>adjustment: Turn left:<br>down, Turn right: up | -              | On/<br>off: press VOL/AUD<br>adjustment: Turn left:<br>down, Turn right: up | -                              | On/<br>off: press VOL/AUD<br>adjustment: Turn left:<br>down, Turn right: up |
| 2   | TP<br>Traffic<br>programme              | -             | TP ON/OFF  | PTY  | TP ON/OFF   | -              | TP ON/OFF   | -                              | -   |
| 3   | AF:<br>Alternate<br>frequency           | -             | AF ON/OFF  | RDF ON/OFF   | -   | -              | -   | -                              | -   |
| 4   | Previous<br>(left)                      | IS=OFF        | FM: Search -<br>AM: Search -<br>PTY: Select next<br>programme              | FM:MAN -<br>AM:MAN -<br>PTY: Automatic<br>search (within pro-<br>gramme) |   |                |   |                                |   |
|     |   | IS=ON         | FM: Store next IS<br>AM: Search -<br>PTY: Select next<br>programme         | FM:MAN -<br>AM:MAN -<br>PTY: Automatic<br>search (within pro-<br>gramme) |   |                |   |                                |   |
|     |   | MSS=OFF       |  |  | Fast return (to begin-<br>ning of tape)                                     |                | Track - N   | Fast rewind<br>(continuous)    |   |
|     |   | MSS=ON        |  |  | Track -N max. 9)  |                | Track - N   | Fast rewind<br>(continuous)    | -   |
| 5   | programme<br>(destra)                   | IS=OFF        | FM: search +<br>AM: search +<br>PTY: Select next<br>programme              | FM:MAN +<br>AM:MAN +<br>PTY: Automatic<br>search (within pro-<br>gramme) |   |                |   |                                |   |
|     |   | IS=ON         | FM: Store next IS<br>AM: search +<br>PTY: Select next<br>programme         | FM:MAN +<br>AM:MAN +<br>PTY: Automatic<br>search (within pro-<br>gramme) |   |                |   |                                |   |
|     |   | MSS=OFF       |  |  | fast forward (to end of<br>tape)  |                | Track +N  | fast forward (continu-<br>ous) |   |
|     |   | MSS=ON        |  |  | Track +N max.9)   |                | Track +N  | fast forward (continu-<br>ous) | -   |
| 6   | Eject                                   |               | Eject Tape   |  | Eject Tape  |                | Eject Tape  |                                | Eject Tape  |
|     | Reverse                                 | -             |  | -  | Reverse/Normal  | -              |   | -                              | )   |

|     |                           |        |   |  |   |   |   |   |   |
|-----|---------------------------|--------|---|--|---|---|---|---|---|
| 7   | Preset station 1          | -      | FM/AM: recall preset station 1                              | FM/AM: store preselected station 1 PTY: store programme                | -   | -   | -   | -   | -   |
| 8   | Preset station 2          | -      | FM/AM: recall preset station 1                              | FM/AM: store preselected station 2 PTY: store programme                | -   | -   | -   | -   | -   |
| 9   | Preset station 3          | -      | FM/AM: recall preset station 3                              | FM/AM: store preselected station 3 PTY: store programme                | -   | -   | CDC+  | -   | -   |
| 10  | Preset station 6          | -      | FM/AM: recall preset station 6                              | FM/AM: store preselected station 6 PTY: store programme                | -   | -   | CDC+  | -   | -   |
| 11  | Preset station 5          | -      | FM/AM: recall preset station 5                              | FM/AM: store preselected station 5 PTY: store programme                | -   | -   | -   | -   | -   |
| 12  | Preset station 4          | -      | FM/AM: recall preset station 4                              | FM/AM: store preselected station 4 PTY: store programme                | -   | -   | -   | -   | -   |
| 13  | AUD:<br>Audio settings    | -      | Bass (B), Treble (T), Balance (B), Fader (F), Loudness (LD) | RESET return to original B/T/B/F/-AUD settings (CENTER)                | Bass (B), Treble (T), Balance (B), Fader (F), Loudness (LD) | RESET return to original B/T/B/F/-AUD settings (CENTER) | Bass (B), Treble (T), Balance (B), Fader (F), Loudness (LD) | RESET return to original B/T/B/F/-AUD settings (CENTER) | Bass (B), Treble (T), Balance (B), Fader (F), Loudness (LD) |
| 14  | RPT:<br>Random            | -      | -   | -  | On/<br>off<br>repeat track                                  | -   | On/<br>off<br>repeat track                                  | On/<br>off<br>repeat CD                                 | -   |
| 15  | SCN:<br>Automatic store   | IS=OFF | Automatic scan of all preset stations on band in use        | Automatic store of all stations tunable on band in use (Search)        | -   | -   | Automatic scan of CD tracks                                 | -   | -   |
|     |                           | IS=ON  | Automatic scan of all preset stations on band in use        | Automatic scan of all stations on intelligent search system IS (Store) | -   | -   | Automatic scan of CD tracks                                 | -   | -   |
| 16  | BN: Select frequency band | -      | FM1, FM2, FM3, MW, LW                                       | Automatically store preset station groups                              | -   | -   | -   | -   | -   |
| 17S | RND:<br>Random repeat     | -      | -   | EXPERT on/<br>off  | -   | EXPERT on/<br>off                                       | Random tracks (on selected CD)                              | EXPERT on/<br>off                                       | -   |
| 18  | SRC:<br>Select source     | IS=OFF | CD, RADIO, CDC (if connected)                               | -  | CD, RADIO, CDC (if connected)                               | -   | CD, RADIO, CDC  | -   | -   |
|     |                           | IS=ON  | CD, RADIO, CDC (if connected)                               | Update intelligent search and store IS                                 | CD, RADIO, CDC (if connected)                               | -   | CD, RADIO, CDC  | -   | -   |

### 55.

#### RADIO M2

This comes with a cassette player and predisposition for mobile phone handsfree operation



4A008ML01

The tables on the following pages details key functions according to operating mode (RADIO, CASSETTE, PHONE).

| Key | Function                                       | Status<br>EXPERT | RADIO mode   |   | CASSETTE mode  |                | PHONE mode   |
|-----|--|------------------|--|---|--|----------------|--|
|     |  |                  | short press  | press > 2 secs  | short press  | press > 2 secs | short press  |
| 1   | radio on/off<br>VOL/AUD adjustment             | -                | On/off:<br>press VOL/AUD adjustment:<br>Turn left: down,<br>Turn right: up | -   | On/off: press VOL/AUD adjust-<br>ment:<br>Turn left: down,<br>Turn right: up | -              | On/off: press VOL/AUD adjust-<br>ment:<br>Turn left: down,<br>Turn right: up |
| 2   | TPTraffic<br>programme                         | -                | TP ON/OFF  | PTY ON  | TP ON/OFF  | -              | -  |
| 3   | AF: Alternate<br>frequency                     | -                | AF ON/OFF  | RDF ON/OFF  | -  | -              | -  |
| 4   | Previous<br>(left)                             | IS=OFF           | FM: Search -<br>AM: Search -<br>PTY: Select next<br>programme              | FM:MAN -<br>AM:MAN -<br>PTY: Automatic<br>search (within programme) |  |                | -  |
|     |  | IS=ON            | FM: Store next IS<br>AM: Search -<br>PTY: Select next<br>programme         | FM:MAN -<br>AM:MAN -<br>PTY: Automatic<br>search (within programme) |  |                |  |
| 5   | programme<br>(destra)                          | IS=OFF           | FM: search +<br>AM: search +<br>PTY: Select next<br>programme              | FM:MAN +<br>AM:MAN +<br>PTY: Automatic<br>search (within programme) |  |                |  |
|     |  | IS=ON            | FM: Store next IS<br>AM: search +<br>PTY: Select next<br>programme         | FM:MAN +<br>AM:MAN +<br>PTY: Automatic<br>search (within programme) |  |                |  |
| 6   | Fast rewind                                    |                  |  |   | Fast rewind  |                |  |
|     | Fast forward                                   |                  |  |   | Fast forward   |                |  |
|     | Reverse or Eject<br>(IF PRESSED TO-<br>GETHER) | -                |  | -   | Reverse/Normal (IF PRESSED<br>HALF WAY) Eject Tape (IF<br>FULLY DEPRESSED)   | -              |  |
| 7   | Preset station1                                | -                | FM/AM/PTY: recall preset sta-<br>tion1                                     | FM/AM: store preset<br>station 1 PTY:<br>store programme            | -  | -              | -  |
| 8   | Preset station2                                | -                | FM/AM/PTY: recall preset sta-<br>tion2                                     | FM/AM: store preset<br>station 2 PTY:<br>store programme            | -  | -              | -  |
| 9   | Preset station3                                | -                | FM/AM/PTY: recall preset sta-<br>tion3                                     | FM/AM: store preset<br>station 3 PTY:<br>store programme            | -  | -              | -  |

|       |                           |                    |   |   |   |   |   |
|-------|---------------------------|--------------------|---|---|---|---|---|
| 10    | Preset station 6          | -                  | FM/AM: recall preset station 6                              | FM/AM: store preset station 6 PTY: store programme                      | -   | -   | -   |
| 11    | Preset station 5          | -                  | FM/AM: recall preset station 5                              | FM/AM: store preset station 6 PTY: store programme                      | -   | -   | -   |
| 12    | Preset station 4          | -                  | FM/AM: recall preset station 4                              | FM/AM: store preset station 4 PTY: store programme                      | -   | -   | -   |
| 13    | AUD: audio settings       | -                  | Bass (B), Treble (T), Balance (B), Fader (F), Loudness (LD) | RESET return to original B/T/B/F/-AUD settings (CENTER)                 | Bass (B), Treble (T), Balance (B), Fader (F), Loudness (LD) | RESET return to original B/T/B/F/-AUD settings (CENTER) | Bass (B), Treble (T), Balance (B), Fader (F), Loudness (LD) |
| 14    | AS: Automatic store       | -                  | Automatic store in preset station group                     | -   | -   | -   | -   |
| 15    | SCN: Automatic scan       | IS=OFF             | Automatic store of all preset stations on band in use       | Automatic store of all stations tunable on band in use (Search)         | -   | -   | -   |
|       |                           | IS=ON              | Automatic store of all preset stations on band in use       | Automatic store of all stations in intelligent search system IS (Store) | -   | -   | -   |
| 16    | BN: Select frequency band | -                  | FM1, FM2, FM3, MW, LW                                       | -   | -   | -   | -   |
| 17S   | EXP: Expert               | -                  | -   | EXPERT on/off   | -   | EXPERT on/off   | -   |
|       | 18                        | SRC: Select source | IS=OFF  | TAPE, RADIO   | -   | TAPE, RADIO   | -   |
| IS=ON |                           |                    | TAPE, RADIO   | Update intelligent search and storage IS                                | TAPE, RADIO   | -   | -   |

### OPERATION

#### ON/OFF

The set can be turned on and off in two ways.

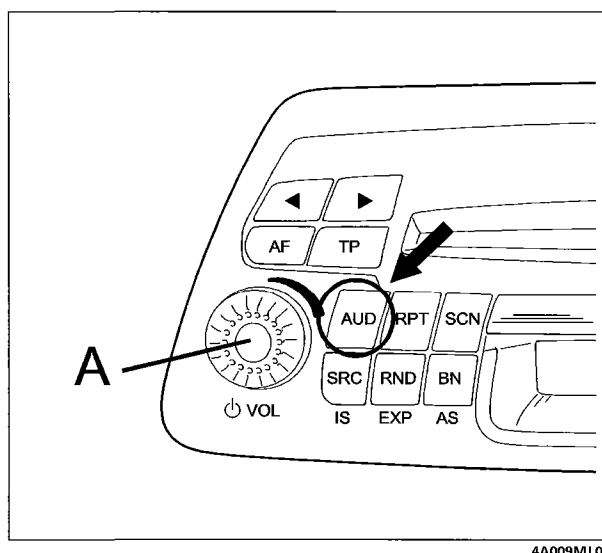
1. Press knob A (VOL).
2. Turn on/off by means of car ignition switch. This function may be set in the EXPERT control level. Manual activation and deactivation are possible at all times in this case.

**NOTE:** *if the EXPERT "IGN" function is not active, the radio goes off automatically 20 minutes after the engine is turned off.*

### ADJUSTING VOLUME AND SOUND

#### Volume

Adjust to required volume by means of knob A (VOL).  
the display shows: «VOL 00» □ «VOL 31».



#### Adjusting sound

For each of the settings BASS, TREBLE, FADER, BALANCE, LOUDNESS:

1. Select functions by pressing the AUD key once or more.
2. Select the required sound setting by means of key A or select the basic setting: press the AUD key for longer than 2 seconds until the display shows «CENTER» Or «- -«.
3. Finish adjustment: press the AUD key several times until the display shows «VOL ...».

**NOTE:** *the radio comes with a sound reproduction condition memory specific to each source type. This makes it possible to set different sound geometries (FADER, BALANCE) and frequency responses (BASS, TREBLE, LOUDNESS) for radio, cassette and phone sources (Automatic Sound Memory function)..After about 5 seconds, the control level with the current settings is automatically abandoned.*

## 55.

### Example 1: bass setting.

Repeatedly press the **AUD** key until the display shows: «BASS 00».

Use the **A** key to adjust the bass tones.

To restore all sound settings to neutral (all set to zero), keep the AUD key depressed for longer than 2 seconds until the display shows "00"

**NOTE:** *this reset function only applies to the source in current use; the existing settings remain valid for the others. The LOUDNESS FUNCTION IS NOT INCLUDED IN THIS RESET FUNCTION MUST ALWAYS BE DEACTIVATED MANUALLY.*

### Example 2: LOUDNESS setting

Repeatedly press the **AUD** until the display shows»LOUD».

To activate(LOUD ON), turn the volume key anticlockwise; to deactivate (LOUD OFF) turn it clockwise. When the Loudness function is active, the display shows the symbol «LD».

### Volume distribution FAD (FADER)

The FADER is used to distribute volume between the front speaker group «F» (Front) and rear group «R» (Rear). Use knob **A**. to adjust the function.

The display shows «FAD F -- -- R».

**Only for version M2:** *the function must be activated (see EXPERT settings) in the case of changes to the speaker system (4 x 5W speakers).*

*With the standard system (2 x 15W speakers) the function is not usable*

### Volume ratio BAL (balance)

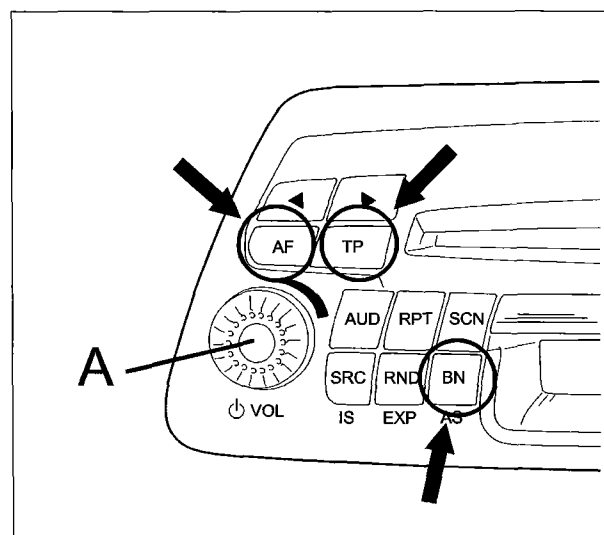
Balance is the volume ratio between the left and right hand speakers Use knob **A**. to adjust the function

The display shows«BAL L -- -- R».

### Manual switching to MONO

See EXPERT settings This function is recommended when the radio is tuned to a station with a lot of interference, to reduce the background noise.

### RADIO (Tuner)



4A010ML01

**Range selection**

FM range: press the **BN** key repeatedly until the display shows the required range «FM 1», «FM 2» or «FM 3».

AM Range: press the **BN** key repeatedly until the display shows «MW» (medium wave) or «LW» (long wave).

**Last station memory**

Once the selection has been made, the last programme tuned on this range can be played (Last Station Memory) While in Last Station Memory mode, the set stores the settings present before it is turned off: selected station, CD or TAPE, and plays them when the set is turned on again.

**Stereo reception - FM**

When a stereo station is received, the display shows the corresponding symbol.

**Traffic information reception (TP)**

TP (Traffic Program): RDS station able to transmit traffic broadcasts.

TP function activation

Give the **TP** key a short press. This enables the traffic broadcast reception function: the display shows the message "TP"

When traffic information is received with the TP function active and another sound source is playing (e.g. CD or tape), the source is interrupted to listen to the radio information and the display shows the message "TA INFO" for 10 seconds.

At the end of the traffic information, the source is automatically switched to the source selected originally.

**NOTE:** *if the station tuned in is not an RDS station able to broadcast traffic information, a search is automatically started for an RDS station when the TP function is selected.*

**Interrupting traffic information**

Give the **TP** key a short press. The function still remains active to receive future traffic information.

**RDS-EON**

Because the radio offers the EON service, another station belonging to the same network may tune in while listening to a radio station to provide traffic information (only with TP function enabled); it will return to the original station automatically at the end of the news.

**NOTE:** *traffic information is provided at minimum volume.* This volume may be adjusted by means of the EXPERT control menu.

*If only traffic information is to be played, activate the function by means of the TP key and set the volume to zero using knob A*

**Alternative frequency (AF)**

During reception of an RDS programme that is broadcast by several stations at different frequencies, the radio will automatically switch to the frequency with the best local reception.

**NOTE:** *in a very poor reception area, the user may become aware of attempts to switch between sound frequencies due to frequent pauses.* In this case, it is advisable to deactivate the AF function temporarily.



### 55.

#### Deactivating AF function

**NOTE:** *this function can be deactivated only when receiving stations with alternative frequencies.  
To deactivate the AF, simply give the AF key a short press. When a short message »AF OFF«  
will appear on the display.  
Do the same to reactivate.*

**NOTE:** *the AF OFF reception condition should be considered a local, temporary solution because it involves manual compensation of a broadcasting service.*

For this reason, tuning will automatically be switched to AF ON upon each manual or automatic tuning control or selection of another stored station.

The AF OFF condition can be stored, together with the station, when it is activated before storage.

If an attempt is made to deactivate AF for a station that is not broadcasting using an RDS protocol, the message "NO AF" will appear on the display.

#### RDS OFF

With some stations (e.g. MF103.3-ISORADIO in Italy), it is advisable to store the station in RDS OFF mode to receive optimum reception.

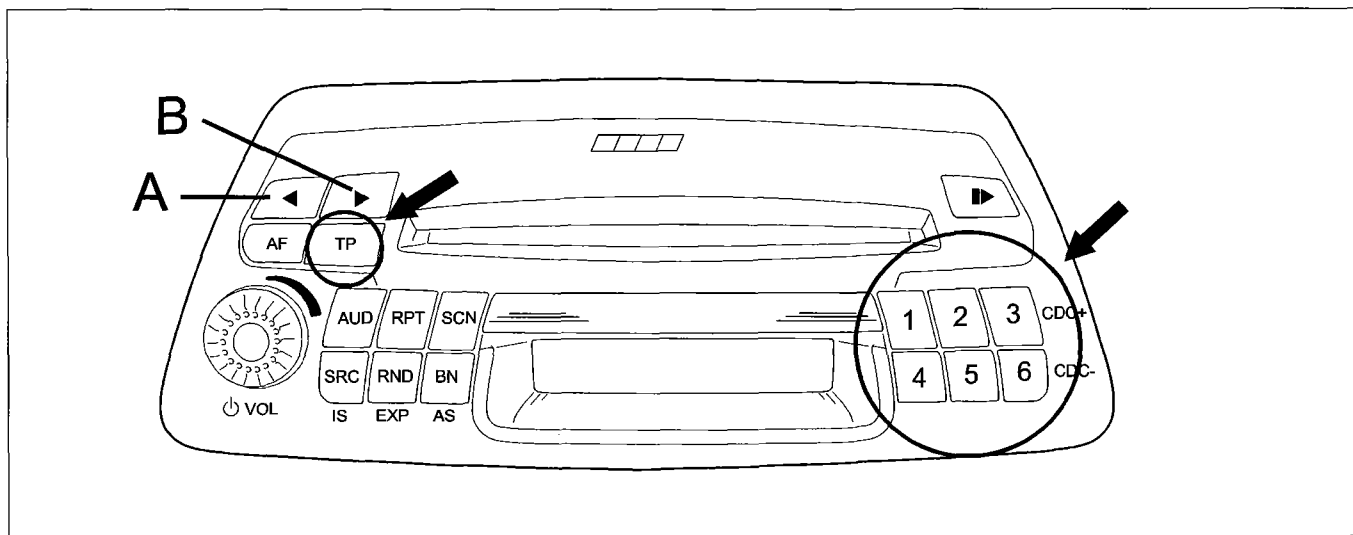
To activate RDS OFF mode, simply press the **AF** key for more than 2 seconds.

RDS OFF mode, as with AF OFF mode, is absolutely temporary. The RDS OFF condition can be stored, together with the station, whenever it is activated before storage.

#### Storing RDS stations/programmes

Press the **selection key for stations 1 to 6** for more than 2 seconds until the station can be heard again.

**NOTE:** *the AF ON/OFF and RDS ON/OFF modes are stored together with the station.*



4A012ML01

**TUNING****Tuning RDS stations/programmes with automatic search for stations**

1. Use key **BN** to select the range:: FM1, FM2, FM3, MW or LW.  
The automatic search within FM ranges operates with two degrees of sensitivity. During the first search through the reception range, the search is carried out for stations with high field intensity (local stations). The second search seeks stations with low field intensity (distant reception). The message "DX" appears on the display during the search.  
The DX function may be deactivated (see chapter on EXPERT control level)
2. An automatic search in the required direction may be started by giving a short press to one of the keys **A** or **B**. The display shows the relevant frequency: when a station with an identification code is found, this is shown on the display. Otherwise the frequency indication remains.  
If the RDS station/programme tunes within the selected range, it is stored on a selection key for stations **1 to 6**. The relevant number appears on the display, e.g. "3" for memory position 3.
3. If the tuned station is to be stored on a selection key, proceed as described in the paragraph on station selection keys.

**Recalling stored RDS station/programme**

Use the **BN** key to select the range: FM1, FM2, FM3, MW or LW.

Give a short press to the selection key for stations 1 to 6.

Even if the radio power supply is disconnected, the memory contents of the station selection keys are maintained.

**Manual frequency tuning**

1. Use key **BN** to select the range:: FM1, FM2, FM3, MW or LW.
2. Press one of the keys **A** or **B** for 2 seconds until "MAN" appears on the display and the frequency tuning is not visible. Continual switching takes place during fast forward when one of the keys is held down.
3. Use keys **A** or **B** to tune in the required direction: the frequency will be increased or reduced by 50 Hz while in FM or 1 kHz in AM.
4. If the tuned station is to be stored on one of the station selection keys, proceed as described in the paragraph on "Station selection keys".
5. Conclusion of manual frequency tuning: give a short press to one of the station selection keys from 1 to 6.

**NOTE:** *If no key is pressed for 60 seconds, manual frequency tuning is automatically concluded.*

**Automatic station storage: AUTOSTORE**

Automatically store the most powerful stations in the selected local reception range on station keys **1 to 6**.

Range selection: FM 1, FM 2, FM 3, MW or LW.

Press the **BN** key for more than 2 seconds until the message "AS" appears on the display and the frequency indication changes.

The station with the best reception can be heard at the end of the search.

### 55.

#### Tuning RDS programmes (IS LEARN) function (see EXP)

The IS LEARN function (which can be run only after activating the EXPERT function) can be used to store up to 30 programmes in the IS memory (virtual memory area that does not correspond to storage keys).

Stored programmes can be called up one by one as described in the EXP section.

The IS memory is useful when the station selection keys are restored or when the tuning stops on a new reception field and you do not wish to deleted stored stations from preset keys.

#### Starting the automatic IS LEARN function

Use the **BN** key to select the range «FM 1», «FM 2» or «FM 3».

Press the **SRC** key for longer than 2 seconds. «IS ...» will appear on the display. the receiver starts the search.

If an attempt is made to start the IS LEARN search without the IS mode being active (see EXPERT), the display will show the message "EXPERT".

**NOTE:** *Always wait for the end of the automatic intelligent search (IS).*

If no reception is possible, the automatic intelligent research may stay on, e.g. in an underground garage or if the aerial is defective. In this case, the automatic search can be interrupted by pressing one of the station selection keys from 1 to 6.

The automatic intelligent search IS ensures up to 30 stations can be stored with optimum reception.

During automatic intelligent search IS, RDS programmes are stored first ordered by programme code, followed by FM stations.

#### Calling up the contents of the IS memory

Stations can be called up from the memory in the required direction by giving a short press to one of the keys **A** or **B**. «IS-SCAN» appears on the display during station selection.

#### Programme types (PTY)

Many radio programmes offer the programme type service (PTY) in the FM range (FM1, FM 2, FM3) The message «NEWS» is displayed during a news programme, for example.

The PTY function activates a search filter that allows the radio to tune only to stations that broadcast programmes with a preset PTY code.

#### Programme types

The types of programme offered by a radio station vary according to the type of programme transmitted.

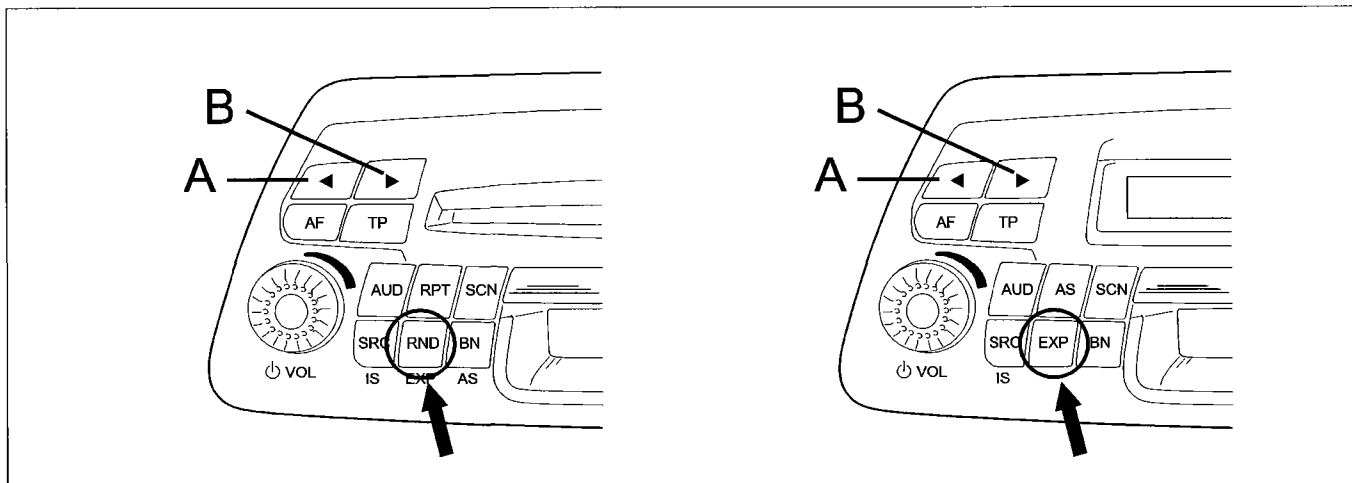
|          |                                  |
|----------|----------------------------------|
| NEWS     | News and topical matters         |
| AFFAIRS  | Politics and events              |
| INFO     | Special information programmes   |
| SPORT    | Sports broadcasts                |
| EDUCATE  | Education and training           |
| DRAMA    | Radio plays and readings         |
| CULTURE  | Culture, church and religion     |
| SCIENCE  | Science                          |
| VARIED   | Various                          |
| POP      | Pop music (hits and chart music) |
| ROCK M   | Rock music                       |
| EASY M   | Easy listening                   |
| LIGHT M  | Light classical music            |
| CLASSICS | Classical music                  |
| OTHER M  | Unclassified music programmes    |

|          |  |
|----------|--|
| WEATHER  | Weather forecasts                      |
| FINANCE  | Financial news                         |
| CHILDREN | Children's programmes                  |
| SOCIAL A | Social information                     |
| RELIGION | Religious and philosophical broadcasts |
| PHONE IN | Listeners' phone-ins (*)               |
| TRAVEL   | Tourist information                    |
| LEISURE  | Leisure, hobbies and pastimes          |
| JAZZ     | Jazz music                             |
| COUNTRY  | Country music                          |
| NATIONAL | National broadcasts                    |
| OLDIES   | Golden Oldies                          |
| FOLK M   | Folk music                             |
| DOCU     | Special documentaries                  |
| NO PTY   | No identification code                 |

(\*) differs from phone-in function, activated only with the handsfree connection for mobile phone

### Automatic PTY search

When selecting a programme type, an automatic search may be activated in two ways.



4A015ML01

1. Six programme types are allocated to the 6 programme keys (**station selection keys**). The preset allocation may be altered as required.
2. A programme type may be selected from the stored list and an automatic search may then be started.

The procedure is described below:

#### 1. Reactivate PTY function

Press the TP for longer than 2 seconds until the message «PTY ON» appears on the display. Then the last type of programme selected will appear on the display (e.g. «POP»).

#### 2. setting programme type

Give a short press to a key from 1 to 6. An automatic PTY search is started for the next station offering the selected programme type and the programme type is briefly displayed (e.g. "POP"), followed by the station code and the message "PTY".

Alternatively, press one of the keys A or B repeatedly until the required programme type appears on the display.

Press one of the keys A or B for more than 2 seconds until the automatic PTY search starts. La ricerca automatica PTY si arresta automaticamente sull'emittente successiva che offre il tipo di programma pre-selezionato, e mostra il tipo di programma (es. «POP») e la scritta «PTY».

**NOTE:** *If no station offers the selected programme type, the last station tuned is played and the PTY function is abandoned.*

#### 3. deactivating the PTY function

This occurs automatically after about 10 seconds.

### Storing PTY programme keys: station selection keys

The standard setting is defined in the table:

| 1    | 2     | 3   | 4      | 5        | 6       |
|------|-------|-----|--------|----------|---------|
| NEWS | SPORT | POP | ROCK M | CLASSICS | EDUCATE |

Each station selection key may be occupied by any programme type as required:

#### 1. Activating the PTY function:

Press the TP key for longer than 2 seconds until the display shows »PTY ON« and select the set programme type (e.g. «NEWS»).

2. Press one of the keys A or B repeatedly until the required programme type appears on the display.
3. Press one of the station selection keys for longer than 2 seconds.

## 55.

### Scanning stored stations (SCAN)

The SCAN function allows automatic scanning of stored stations.

With IS LEARN OFF (EXP):

- short press: scan of all preset stations (**keys 1-6**) for all FM bands, or the 6 MW stations, or the 6 LW stations
- press for more than 2 seconds: scan of all stations receivable on the FM band.

With IS LEARN ON (EXP):

- short press: scan of all preset stations (**keys 1-6**) for all FM bands
- press for longer than 2 seconds: scan IS LEARN

### EXPERT CONTROL LEVEL

To make daily radio control as easy as possible, the supplementary control level (EXPERT) contains several settings that may be required once only or only occasionally.

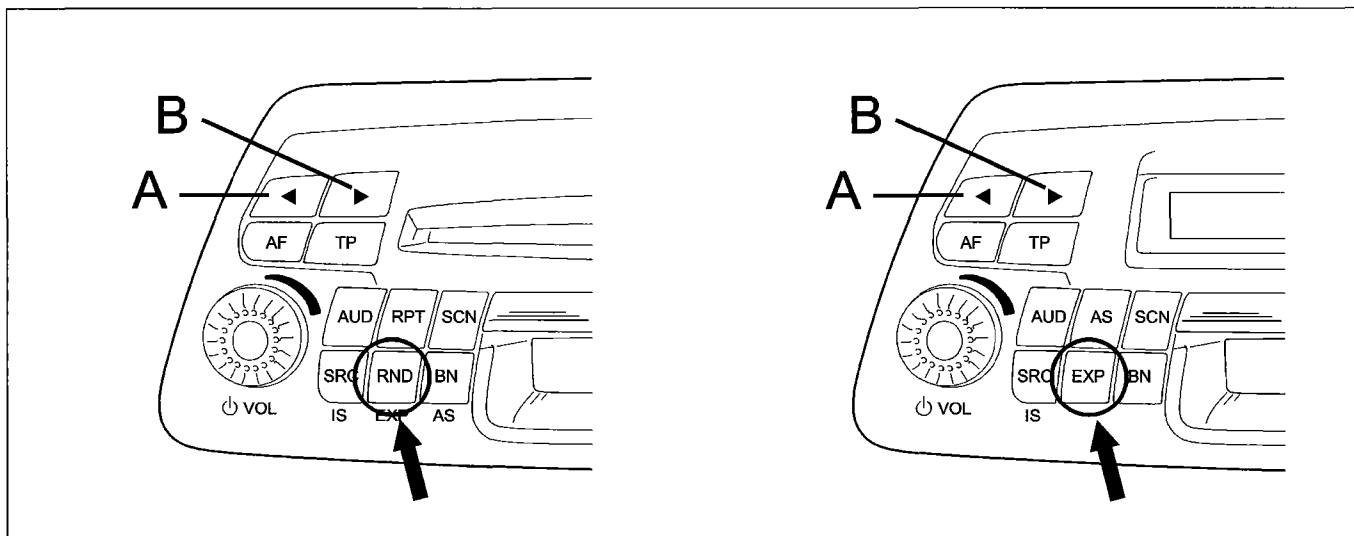
### LIST OF POSSIBLE EXPERT SETTINGS

|    |   |
|----|---|
| 1  | Hour setting (TM)   |
| 2  | Activation/deactivation of time synchronisation with time sent by some RDS stations (SYNC)        |
| 3  | Setting of maximum volume upon start-up (ON VOL)  |
| 4  | Setting of minimum volume for traffic information (TA VOL)  |
| 5  | Activation deactivation by means of car ignition switch (IGN)                                     |
| 6  | IS LEARN activation/deactivation (IS)   |
| 7  | LRN activation/deactivation (LRN)   |
| 8  | Automatic program change (REG) activation/deactivation  |
| 9  | Delayed booster activation (BDLY)   |
| 10 | Suppression of sound in case of incoming/outgoing phone call with handsfree set connected (PHONE) |
| 11 | Setting phone input sensitivity (PHONE)   |
| 12 | Activation of security code (CODE)  |
| 13 | Control of volume according to speed (SC VOL)   |
| 14 | Sound confirmation of functions (BEEP)  |
| 15 | Choice of MONO/STEREO radio broadcasting (MONO)   |
| 16 | LOC activation/deactivation (LOC)   |

### ALTERING EXPERT SETTINGS

#### Turning on EXPERT

Depress the **EXP** key for 2 seconds until «EXPERT» appears on the display.



4A017ML01

#### Choosing options

Select the settings to be checked or altered using keys **A** or **B**.

**Example:** Setting maximum volume upon start-up. (N.3): use keys **A** or **B** to select the required option (e.g. ONVOL 13), the display shows «ONVOL 13». The selected station is played at the set speed.

#### Altering the setting

Turn the volume knob to set the required volume, the display shows "ONVOL 20", for example. Turn the knob clockwise: increase the value; turn the knob anticlockwise: reduce the value.

#### Concluding the setting

Set the next function using keys **A** or **B**

Alternatively, press the **EXP** for 2 seconds until "EXIT" appears on the display. EXPERT mode is closed (except for the code and clock).

### POSSIBLE SETTINGS

#### 1 - set time

«TM 2:13» appears, for example.

Turn the volume knob to set hours and minutes:

- turn fast to adjust hours
- turn slow to adjust minutes

Give a short press to the **EXP** key to start the clock.

#### 2 - activate/deactivate synchronisation of the clock with the time sent by some RDS stations

- turn volume knob clockwise: «SYNC ON»: the built-in clock goes forward (synchronisation) toward RDS information.
- turn the knob anticlockwise: »SYNC OFF».

Synchronisation may be deactivated in places where no RDS TIMER signal is received.

**NOTE:** *The signal sent by the stations may often be incorrect.*

### 55.

#### 3 - setting maximum volume upon start-up

«ONVOL 20» appears for example, where 20 is the setting in a range that extends up to 31

- turn volume knob clockwise: VOL +
- turn volume knob anticlockwise: VOL -

Volume is limited only when volume is higher than the set value when the radio is turned off.

#### 4 - setting minimum volume for traffic information

«TA VOL 16» appears for example (limit values from 4 to 31)

- turn volume knob clockwise = VOL +
- turn volume knob anticlockwise = VOL -

During adjustment, the volume is as selected for traffic news.

#### 5 - automatic deactivation by means of car ignition switch

- turn volume knob clockwise: «IGN ON» appears : in this way, the radio can be turned on/off using the car ignition switch.
- turn volume knob anticlockwise: "IGN OFF": activation/deactivation takes place only via the VOL knob.

#### 6 - IS LEARN activation/deactivation

- turn volume knob clockwise: «IS ON» appears
- turn volume knob anticlockwise: «ISN OFF».

#### 7 - LRN activation/deactivation

With «LRN OFF» (standard mode) the radio remains on the selected station until the incoming signal is practically illegible.

In «LRN ON» mode, the radio turns to another station as soon as the incoming signal quality falls.

When in an area where the reception of RDS programmes with traffic news is uncertain, the station search may be blocked in the radio function.

- turn volume knob clockwise: «LRN ON» appears: automatic search of traffic news broadcasts is activated automatically,
- turn volume knob anticlockwise: «LRN OFF»: automatic search of traffic news broadcasts is not activated.

#### 8 - activation/deactivation of automatic regional programme change

When the same RDS programme is transmitted from various regional stations, the radio may switch between stations due to the reception field.

- turn volume knob clockwise: "REG ON" appears: regional programme may be changed automatically in this mode.
- turn volume knob anticlockwise: «REG OFF»: regional programme cannot be changed automatically.

#### 9 - delayed activation/deactivation for connected booster (BDLY)

**NOTE:** remember that the Booster switch signal is connected to pin C6 of the radio.

This mode eliminates the abrupt on/off manoeuvre:

- turn volume knob clockwise: »BDLY ON» appears
- turn volume knob anticlockwise: «BDLY OFF»: is disabled.

**10 - suppression of sound in case of incoming/outgoing phone call**

- turn volume knob clockwise: «PHONE OFF» no use of phone connection
- turn volume knob clockwise: «PHONE ON»: the radio sound is automatically deactivated in the case of a phone call

The «PHONE ON" function required the mobile phone mount base to be connected.

The «PHONE IN» function allows a conversation via the car speakers in the case of a phone call.

The «PHONE IN» function requires the mobile phone to be connected in handsfree mode

If the radio is off, a phone call (IN or OUT) is still possible. In this case the radio

- comes on automatically;
- allows listening under sound conditions identical to the last phone call (BASS, TREBLE, FADER, BALANCE);
- goes off automatically at the end of the phone call

**11 - setting mobile phone input sensitivity**

Allows adaptation to the signal broadcast level for the type of handsfree system installed.

- turn volume knob anticlockwise: «PHONE 00» : low input sensitivity
- turn volume knob clockwise: «PHONE 03»: high input sensitivity

**12 - security code activation**

The code is not activated if «CODE» appears on the display.

If «SAFE» appears on the display, the code is activated.

**NOTE:** See next section for more detailed instructions.

**13 - Controlling volume according to vehicle speed (SCV)**

Standard value: «SCVOL 19»

Function off: «SCVOL - -«

Function at maximum efficiency: «SCVOL 34»

**Setting:**

1. Vehicle still, engine on: set required volume using the relevant knob.  
Depress the EXP key for more than 2 seconds until «EXPERT» appears on the display.
2. Use keys A or B to select the «SCVOL» setting.
3. Set the required value using the volume knob:
  - turn volume knob clockwise: VOL +
  - turn volume knob anticlockwise: VOL -

**14 - audible function confirmation (BEEP)**

The BEEP function is active in the system

This function gives an audible confirmation (BEEP) of the functions. Function activation requires continuous pressing of the key for a time greater than or equal to 2 seconds.

**15 - select MONO/STEREO radio reproduction**

- turn volume knob clockwise: «MONO ON».
- turn volume knob anticlockwise: «MONO OFF».

**16 - activate/deactivate LOC**

The automatic search in the FM range may be used at two sensitivity levels. When in search of stations, the set may be tuned with high field intensity (local stations) or low field intensity (distant reception).

- turn volume knob clockwise: «LOC ON».
- turn volume knob anticlockwise: «LOC OFF».



### 55.

#### CODING

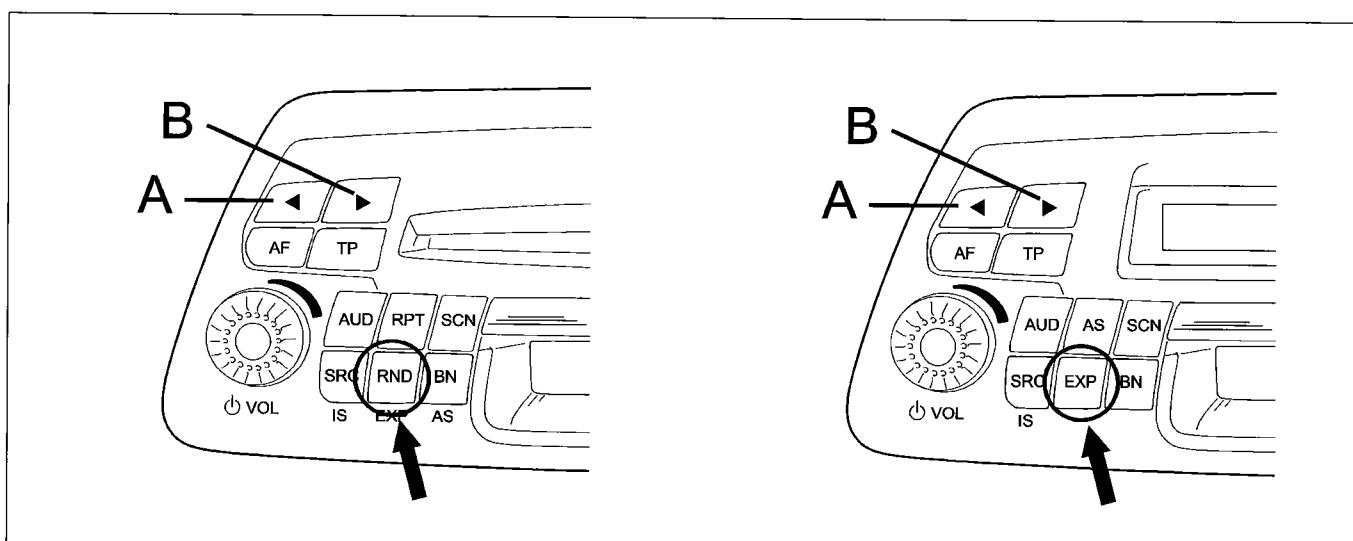
When coding is activated, the radio is protected electronically as soon as the radio is disconnected from the car power supply. It can be made to work again only by entering the code. The radio code is on the CODE CARD



4A020ML01



**ATTENTION:** coding is not activated initially by the Manufacturer



4A017ML01

#### ACTIVATING THE CODE

1. Select the EXPERT code level and press keys **A** or **B**, until «CODE» appears on the display.
2. Enter the first figure of the code by turning the volume knob and confirm by pressing the **RND/EXP** key.

Example: **1 7 0 3**

- turn the volume knob to display the figure«1---«  
press the **RND/EXP** key briefly to confirm
- turn the volume knob to display the figure«17«  
press the **RND/EXP** key briefly to confirm
- turn the volume knob to display the figure«170-«  
press the **RND/EXP** key briefly to confirm
- turn the volume knob to display the figure«1703»»  
press the **RND/EXP** key briefly to confirm

3. To confirm the code: press the EXP key, «SAFE» appears on the display : **the code is activated.**
4. To deactivate EXPERT mode: press the EXP key until «EXIT» appears on the display.

**Checking code activation**

Select the EXPERT control level and press keys **A** or **B** until «SAFE» or «CODE» appears on the display:

- If «SAFE» appears: the code is activated
- If « CODE» appears: the code is not activated

**DEACTIVATING THE CODE**

1. Activate EXPERT mode: «SAFE» appears on the display.
2. Set the code, as described previously.
3. To confirm the code: briefly press the **EXP** key until «CODE» appears on the display: the coding is no longer active.

**NOTE:** *If an incorrect code is entered, the message «SAFE» remains on the display and the procedure must be repeated in full. Respect the **waiting times** between one attempt and the next, as indicated below.*

**RESTORING TO OPERATION**

If the radio is disconnected from the car power supply (e.g. when servicing), it is protected electronically with the code active.

1. Turn on the radio: the message «SAFE» appears on the display, «1 - - - -» appears after more than 3 seconds. The «1» marks the number of input attempts.
2. Set the code, as described in CODE ACTIVATION.
3. Confirm the code by pressing the EXP key briefly. The message "SAFE" appears on the display. The radio switches on after about 3 seconds.

**NOTE:** *If an incorrect code is entered, the message «SAFE» remains on the display, the radio does not come on and the procedure must be repeated completely. Respect the **waiting times** between one attempt and the next, as indicated below.*



**WARNING: waiting times**

To make it impossible to restore the radio to operation and deactivate the code by repeated, successive attempts, specific waiting times must be left between attempts.

The radio must not be switched on during the standby time.

It must still be connected to the power supply

As long as the message "SAFE" is on the display, the waiting time is not over.

The waiting time is up when the number of the next attempt can be seen on the display (e.g. "2- - - -").

The following table shows the waiting times between attempts:

| Unsuccessful attempts<br>(number shown on display) | Approximate waiting time |
|--|--------------------------|
| 1  | 21 seconds               |
| 2  | 1.5 seconds              |
| 3  | 5.5 seconds              |
| 4  | 22 seconds               |
| 5  | 1.5 seconds              |
| 6  | 6 seconds                |
| 7  | 24 seconds               |

### 55.

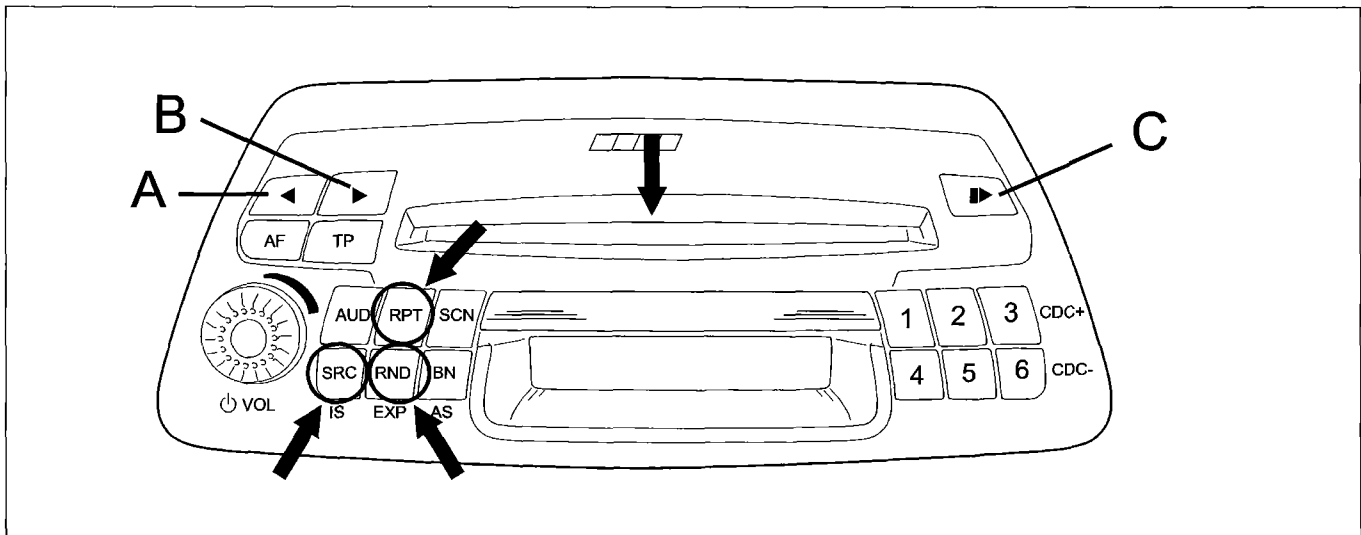
#### COMPACT DISC PLAYER – only for H4 version

##### Activating CD operation

Place a CD in the slot and press slightly, the player will draw in the CD automatically.

If a CD is already present in the slot, press the SRC key until the message «DISC» appears on the display; the CD begins to play automatically.

SRC = Source; the sources are: RADIO, DISC, CDC (CD Changer)



4A022ML01

##### Choosing a track

Keep tapping key **A** to choose a track in increasing order; similarly, keep tapping key **B** to choose a track in decreasing order.

##### Fast forward to a track

Hold keys **A** or **B** down continuously to fast forward or return to the track being played.

##### Repeating a track

Press the **RPT** key to repeat the track being played currently; the wording «RPT ON» appears on the display for a few seconds.

The current track will be repeated until the function is deactivated by pressing the **RPT** key again; the wording «RPT OFF» appears on the display for a few seconds.

##### RANDOM track selection

Tracks to be played are selected automatically after pressing the **RND** key; the message «RND ON» appears on the display for a few seconds.

The function is interrupted by pressing **RND** again; the message «RND OFF» appears on the display for a few seconds.

##### Automatic track scan

Press the **SCN** key to play all tracks on the CD for about 10 seconds each. The message «SCN ON» appears on the display for a few seconds.

The function is suspended by pressing **SCN** again; the message «SCNOFF» appears on the display for a few seconds.

##### Concluding operation and removing the CD

Simply press the **C** EJECT key to remove the CD from the player.

The wording «EJECT» appears for a few seconds on the display.

Alternatively press the **SRC** key, the source changes from DISC to CDC (if CD Changer present) or RADIO. Source selection is sequential: RADIO, DISC, CDC.

**NOTE:** Status of **RPT**, **RND**, **SCN** functions are not stored when the radio set is turned off.

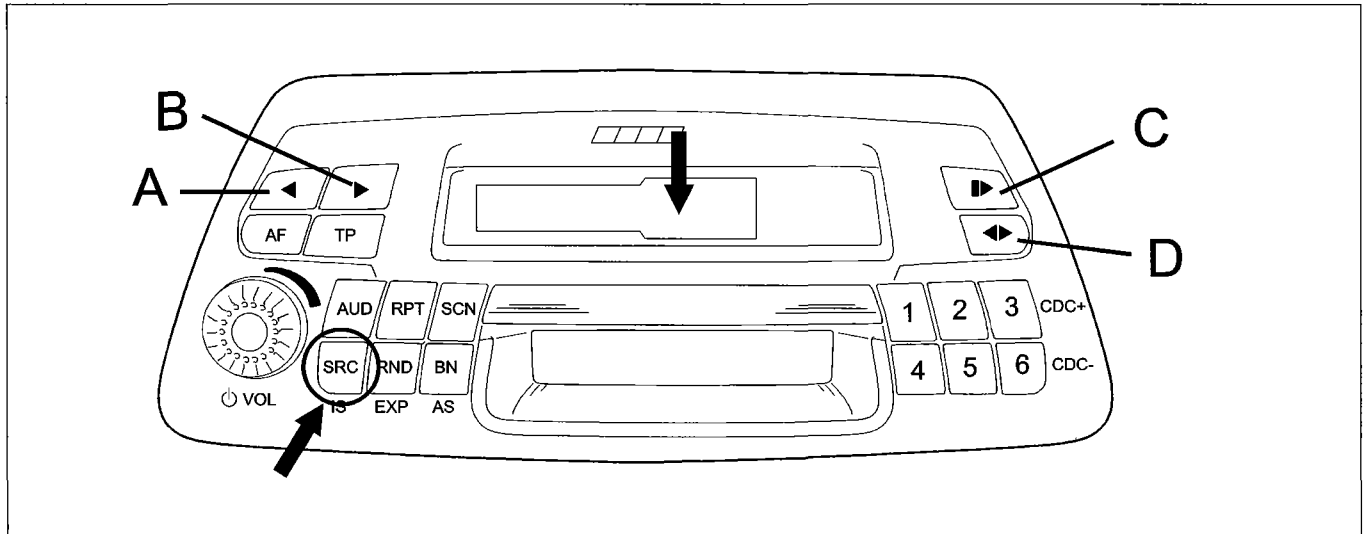
**TAPE PLAYER - version H3**

**Activating tape operation**

Place a tape in the slot. «TAPE A» or «TAPE B» appears on the display.

If the slot already contains a tape, press the SRC repeatedly until «TAPE» appears on the display.

SRC = Source; the sources are: RADIO, TAPE, CDC.



4A023ML01

**Changing the tape side**

Press the **D** REVERSE key briefly.

When the end of the tape is reached the side changes automatically.

The meanings of the symbols on the display are as follows:

"TAPE A" : top side of tape

"TAPE B" : bottom side of tape.

**MSS function**

MSS = Music-Search-System

This function can be used to forward/rewind to the beginning of the track to obtain the "skip track" or "repeat track" function.

Pauses of at least 3 seconds are left between tracks for the MSS function (without an announcement text). Musical pieces with very low passages (e.g. classical music) are not suitable because these are treated as pauses.

**Activating MSS**

The MSS function can be turned on or off from the EXPERT menu; the standard condition is MSS ON

In this configuration, press key **B** to make the radio skip a number of tracks corresponding to the number of presses on the key; «+ --« appears on the display.

Example: 3 short presses on the key: skip three tracks;; «+3» appears on the display.

When keys **A** or **B** are pressed for longer than 2 seconds, the CD player is made to forward/rewind fully to the end of the tape.

If the MSS function is deactivated ( from EXPERT) a short press on key **A** or **B** allows fast forward or fast rewind of the tape.

### 55.

#### Finish MSS before time

Press key **A** or **B** until «0» appears on the display. The player stops in its current forward/rewind position and starts to play the track from that point.

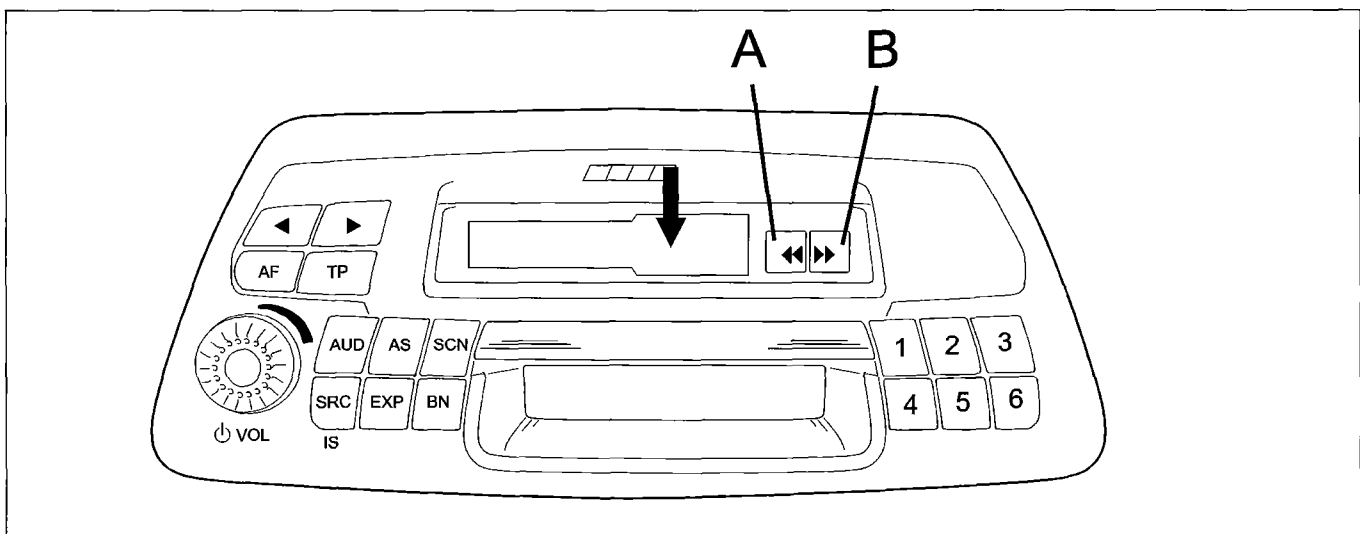
#### Concluding tape operation

Press the **C** EJECT key: the tape is ejected. «EJECT» appears briefly on the display

Alternatively press the key **SRC**, the source changes from TAPE to MCD (if CD CHANGER is present) or RADIO. source selection is sequential: RADIO, TAPE, MCD.

**NOTE:** *The source is switched immediately if the fast rewind or fast forward function is active but the tape player completes its current function.*

#### TAPE PLAYER - version M2



4A024ML01

#### Changing the tape side

Press keys **A** and **B** half way down.

When the end of the tape is reached the side changes automatically.

The meanings of the symbols on the display are as follows:

"TAPE A" : top side of tape

"TAPE B" : bottom side of tape.

#### Fast forward/rewind

Fully depress keys **A** and **B**

#### Suspending operation

To suspend operation, briefly press the key opposite to the active key.

The tape begins to play automatically

#### Concluding tape operation

Fully depress the fast forward and rewind keys simultaneously. The tape will be ejected.

### MULTIPLE COMPACT DISC PLAYER (CD changer)

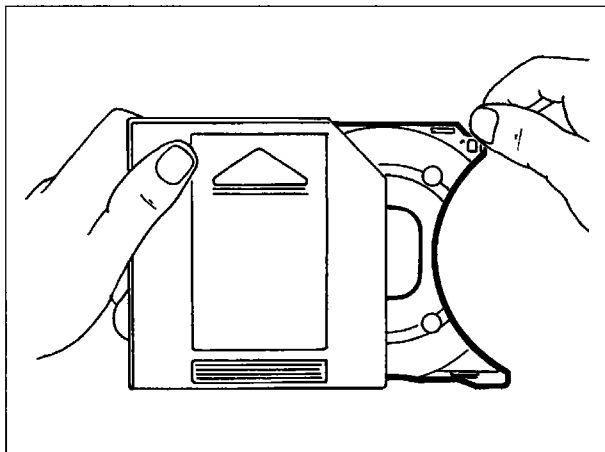
The radio set (*in H4 and H3 versions*) is designed to work with compatible compact disc players available from the Fiat Accessory range.

The Fiat Accessory range player comes with a loader that can hold up to 6 CDs.

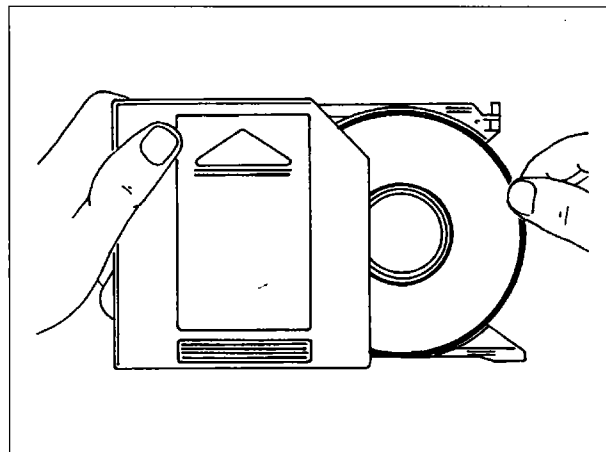
#### Filling the loader

The holder contains 6 holders that can each contain one compact disc.

Take a holder from the loader for each CD to be played and insert the CD



4A025ML01



4A025ML02

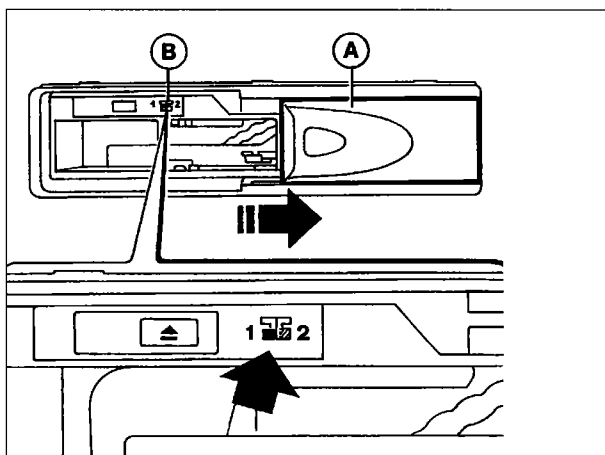
Ensure the CD label is facing the correct way, i.e. toward the holder. Otherwise the player will not work

**NOTE** *The CD player is not designed for playing 8 cm CDs, which require adaptors available from Hi-Fi stores.*

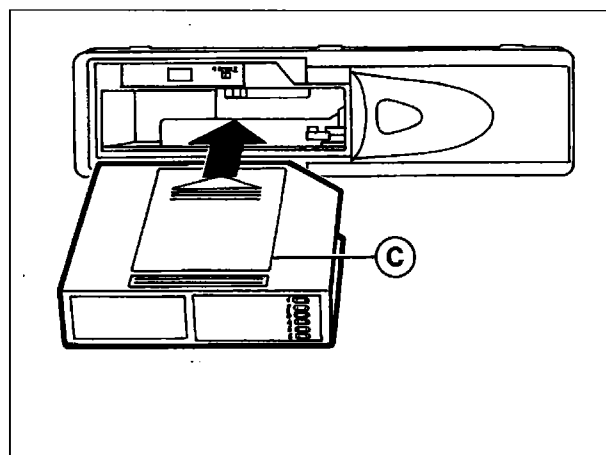
#### Inserting the loader into the CD player.

Proceed as follows:

- move sliding flap **A** fully to the right until it locks
- check that switch **B** is in position "1"



4A025ML03



4A025ML04

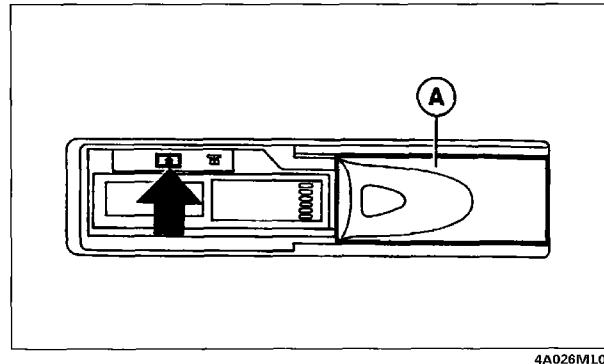
- insert loader **C**- into the CD player with the labelled side (see arrow) facing up.
- close sliding flap **A** after inserting the loader in order to prevent foreign bodies or dust entering the CD player.

### 55.

#### Removing the loader from the CD player.

Proceed as follows:

- slide flap **A**- to the right until it is no longer locked
- press the eject button on the CD player, .



#### Removing the CDs from the loader

Remove the CDs in order after removing the holders from the loader.

#### CD PLAYER OPERATION

##### Selecting CD changer programme source

Press the SRC briefly and repeatedly until the message «MCD» appears on the display.

##### Choosing a CD

Keep tapping station selection key 3 or 6 until the number of the required CD appears on the display.

3: previous CD

6: next CD

##### Selecting or repeating a track

Keep tapping the «RIGHT» or «LEFT» keys until the required track number appears on the display.

«RIGHT»: next track

«LEFT»: the track currently playing or the previous track is repeated.

##### Play a track on the selected CD for 10 seconds (SCAN)

Press the SCAN key briefly.

«SCAN ON» appears briefly on the display.

To stop this function briefly press SCAN key.

«SCAN OFF» appears briefly on the display.

##### Fast forward and return (TRACK FAST)

To listen to the track at reduced volume during track fast:

Forward: press "RIGHT" and hold down.

Return: press "LEFT" and hold down.

##### Repeat track (TRACK REPEAT)

To repeat the current track continually: press the RPT key, "TRK ON" appears on the display.

A different track may be selected.

Press RPT key again to suspend the function: «TRK OFF» appears on the display.

**Repetition of a CD (REPEAT)**

To repeat the current CD continuously: press the RPT key for longer than 2 seconds: "RPT CD" appears on the display.

A different CD may be selected. To suspend the function, press the RPT key again for longer than 2 seconds: «RPT MAG» appears on the display.

**Selecting tracks in a random sequence (TRACK RANDOM)**

To start the random track search:

press the RND key: "RND ON" appears on the display. The selected CD tracks are played in a random sequence.

Press the RND key again to end the random track search: "RND OFF" appears on the display.

**NOTE:** *The TRACK RANDOM function cannot be combined with the TRACK REPEAT and CD REPEAT functions.*

**Concluding CD operation****Press the EJECT key**

Alternatively, press the SRC to listen to the radio again

**ADVICE AND PRECAUTIONS****RECEPTION CONDITIONS**

The reception conditions will vary greatly while driving.

Reception can be affected by mountains, buildings or bridges especially when far away from the transmitter of the station you are listening to.

**NOTE:** *When listening to traffic information (TA), the volume may rise considerably compared to normal levels.*

**MAINTENANCE**

The radio is built for long-term use without any special maintenance requirements.

If necessary, clean the panel with a soft, antistatic cloth. Cleaning and polishing products could damage the surface.

**TAPES**

For optimum playing conditions:

- do not use poor quality tapes, with deformations or peeling labels;
- do not leave the tape inside the radio when not in use;
- do not introduce any objects into the cassette slot;
- do not expose the tapes to sunlight, excessive temperature or high moisture levels;
- replace the tapes in their cases after use;
- dirt on the playing heads caused by tapes could eventually lead to a reduction in high tones during playing. It is therefore advisable to clean the playing heads at intervals using a special non-abrasive head cleaning tape;
- it is preferable to C60 tapes or in the worst case C90 tapes to ensure optimum playing quality at all times. The very fine tape contained in very long cassettes could also break very easily;
- avoid inserting cassettes with loose tapes, particularly if C90, because the tape could emerge and block the mechanism. If the radio detects a loose tape or similar problems, the cassette is in any case automatically ejected;
- do not lubricate the tape mechanism;
- do not touch the playing heads with magnetic or hard items.



### 55.

#### COMPACT DISC

When using the Compact Disc player, remember that dirt or marks on the CD could cause the track to jump or lead to poor sound quality.

The same thing happens if CDs are inadvertently bent.

For optimum playing conditions:

- carefully clean each CD to remove fingerprints and dust using a soft cloth;
- hold the CDs at the edges and clean from the middle outward;
- never use chemical products to clean (e.g. sprays, antistatic products or thinners) because they could damage the CD surfaces;
- replace the CDs in their containers after use to avoid creating marks or scratches that could cause the tracks to jump;
- do not expose the CDs to direct sunlight, high temperatures or moisture for long periods. Avoid bending;
- do not stick labels onto or write on the recorded surfaces of CDs;
- to remove a CD from its case, press in the centre and lift the disc out by holding carefully around the edges;
- always hold CDs by the edges. Never touch the surface;
- new CDs may be rough around the edges. When these discs are used, the radio may not play correctly.
- do not use CDs that are scratched, cracked or deformed etc. The use of such discs could lead to malfunction or damage.

page

- Wiring diagrams 1
- Key 169

| DESCRIPTION   | Bravo       |             |              |             |             |             |             | Brava       |             |              |             |             |             |             |             |             |             |             |
|---|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|   | SX          |             |              | GT          |             |             | HGT         | SX          |             |              | ELX         |             |             |             | HSX         |             |             |             |
|   | 1242<br>16V | 1581<br>16V | 1910<br>75CV | 1581<br>16V | 1747<br>16V | 1910<br>JTD | 1998<br>20V | 1242<br>16V | 1581<br>16V | 1910<br>75CV | 1242<br>16V | 1581<br>16V | 1747<br>16V | 1910<br>JTD | 1242<br>16V | 1581<br>16V | 1747<br>16V | 1910<br>JTD |
| Side lights and warning light - Dipped beam headlamps - Main beam headlamps and warning light - Parking lights - Number plate lights  | 5           | 5           | 5            | 5           | 5           | 5           | 5           | 5           | 5           | 5            | 5           | 5           | 5           | 5           | 5           | 5           | 5           | 5           |
| Fog lights and warning light - Rear fog lamps and warning light   | 7           | 7           | 7            | 7           | 7           | 7           | 7           | 7           | 7           | 7            | 7           | 7           | 7           | 7           | 7           | 7           | 7           | 7           |
| Fiat-CODE and failure warning light   | 9           | 11          | 17           | 11          | 13          | 19          | 15          | 9           | 11          | 17           | 9           | 11          | 13          | 19          | 9           | 11          | 13          | 19          |
| Driver's EURO-BAG and failure warning light   | 21          | 21          | 21           | 21          | 21          | 21          | 21          | 21          | 21          | 21           | 21          | 21          | 21          | 21          | 21          | 21          | 21          | 21          |
| Twin EURO-BAGS (driver and passenger) and failure warning light   | 23          | 23          | 23           | 23          | 23          | 23          | 23          | 23          | 23          | 23           | 23          | 23          | 23          | 23          | 23          | 23          | 23          | 23          |
| Twin EURO-BAGS (driver and passenger), SIDE-BAG and failure warning light   | 25          | 25          | 25           | 25          | 25          | 25          | 25          | 25          | 25          | 25           | 25          | 25          | 25          | 25          | 25          | 25          | 25          | 25          |
| Anti-lock brakes and failure warning light (A.B.S.)   | 27          | 27          | 27           | 27          | 27          | 27          | 27          | 27          | 27          | 27           | 27          | 27          | 27          | 27          | 27          | 27          | 27          | 27          |
| Electrically adjustable, heated external rear view mirrors  | 29          | 29          | 29           | 29          | 29          | 29          | 29          | 29          | 29          | 29           | 29          | 29          | 29          | 29          | 29          | 29          | 29          | 29          |
| Headlamp alignment correction device  | 31          | 31          | 31           | 31          | 31          | 31          | 31          | 31          | 31          | 31           | 31          | 31          | 31          | 31          | 31          | 31          | 31          | 31          |
| Electric sun roof   | 33          | 33          | 33           | 33          | 33          | 33          | 33          | 33          | 33          | 33           | 33          | 33          | 33          | 33          | 33          | 33          | 33          | 33          |
| Heated front seats  | 35          | 35          | 35           | 35          | 35          | 35          | 35          | 35          | 35          | 35           | 35          | 35          | 35          | 35          | 35          | 35          | 35          | 35          |
| Preparation for radio phone - Preparation for Telepass  | 37          | 37          | 37           | 37          | 37          | 37          | 37          | 37          | 37          | 37           | 37          | 37          | 37          | 37          | 37          | 37          | 37          | 37          |
| Preparation for bottom of the range radio - Cigar lighter   | 39          | 39          | 39           | 39          | 39          | 39          | 39          | 39          | 39          | 39           | 39          | 39          | 39          | 39          | 39          | 39          | 39          | 39          |
| Preparation for top of the range radio - Cigar lighter  | 41          | 41          | 41           | 41          | 41          | 41          | 41          | 41          | 41          | 41           | 41          | 41          | 41          | 41          | 41          | 41          | 41          | 41          |
| Electric front windows  | 43          | 43          | 43           | 43          | 43          | 43          | 45          | 43          | 43          | 43           | 45          | 45          | 45          | 45          | 45          | 45          | 45          | 45          |
| Electric rear windows   |             |             |              |             |             |             |             |             |             |              | 47          | 47          | 47          | 47          | 47          | 47          | 47          | 47          |
| Automatic heater JTD  |             |             |              |             |             | 49          |             |             |             |              |             |             |             | 49          |             |             |             | 49          |
| Version without alarm<br>Central locking  | 51          | 51          | 51           | 51          | 51          | 51          | 97          | 51          | 51          | 51           | 97          | 97          | 97          | 97          | 97          | 97          | 97          | 97          |
| Version: with automatic air conditioning<br>Engine cooling - Water temperature gauge  | 53          | 55          | 61           | 55          | 57          | 63          | 59          | 53          | 55          | 61           | 53          | 55          | 57          | 63          | 53          | 55          | 57          | 63          |
| Diagnostic socket connections   | 65          | 65          | 67           | 65          | 67          | 71          | 67          | 65          | 65          | 67           | 65          | 65          | 67          | 71          | 65          | 65          | 67          | 71          |
| Starting - Electronic injection and ignition - Recharging and warning light - Insufficient engine oil pressure warning light - Injection system failure warning light - Rev counter - Speedometer | 73          | 75          |              | 75          | 79          |             | 81          | 73          | 75          |              | 73          | 75          | 79          |             | 73          | 75          | 79          |             |

# Electrical equipment

## Wiring diagrams





































**Bravo-Brava**

98 range

### 55.

| DESCRIPTION   | Bravo       |             |              |             |             |             |             | Brava       |             |              |             |             |             |             |             |             |             |             |
|---|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|   | SX          |             |              | GT          |             |             | HGT         | SX          |             |              | ELX         |             |             |             | HSX         |             |             |             |
|   | 1242<br>16V | 1581<br>16V | 1910<br>75CV | 1581<br>16V | 1747<br>16V | 1910<br>JTD | 1998<br>20V | 1242<br>16V | 1581<br>16V | 1910<br>75CV | 1242<br>16V | 1581<br>16V | 1747<br>16V | 1910<br>JTD | 1242<br>16V | 1581<br>16V | 1747<br>16V | 1910<br>JTD |
| Version with automatic transmission<br>Starting - Electronic injection and ignition - Recharging and warning light - Insufficient engine oil pressure warning light - Signalling of injection system failure - Rev counter - Speedometer  |             | 77          |              | 77          |             |             |             |             |             |              |             | 77          |             |             |             |             | 77          |             |
| Starting - Recharging and warning light - Insufficient engine oil pressure warning light - Heater plugs warning light   |             |             | 83           |             |             |             | 85          |             |             | 83           |             |             |             | 85          |             |             |             | 85          |
| Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing lights  | 87          | 87          | 87           | 87          | 87          | 87          | 89          | 87          | 87          | 87           | 89          | 89          | 89          | 89          | 89          | 89          | 89          | 89          |
| Version without A.B.I.<br>Windscreen wash/wipe - Rearscreen wash/wipe - Electric horns - Heated rear windscreen and warning light - Headlamp washer   | 91          | 91          | 91           |             |             |             |             | 91          | 91          | 91           |             |             |             |             |             |             |             |             |
| Version with A.B.I.<br>Windscreen wash/wipe - Rearscreen wash/wipe - Electric horns - Heated rear windscreen and warning light - Headlamp washer  |             |             |              | 93          | 93          | 93          | 93          |             |             |              | 93          | 93          | 93          | 93          | 93          | 93          | 93          | 93          |
| Version with alarm<br>Central locking   | 95          | 95          | 95           | 95          | 95          | 95          | 99          | 95          | 95          | 95           | 99          | 99          | 99          | 99          | 99          | 99          | 99          | 99          |
| Vehicle interior lights - Ideogram lights   | 101         | 101         | 101          | 101         | 101         | 101         | 103         | 101         | 101         | 101          | 103         | 103         | 103         | 103         | 103         | 103         | 103         | 103         |
| Fuel level gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Milometer/trip meter display and zeroing button - Water temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light | 105         | 105         | 105          | 105         | 105         | 111         | 109         | 105         | 105         | 105          | 107         | 107         | 107         | 111         | 107         | 107         | 107         | 111         |
| Version without automatic air conditioning<br>Engine cooling - Water temperature gauge - Car interior ventilation   | 113         | 115         | 121          | 115         | 117         | 123         | 119         | 113         | 115         | 121          | 113         | 115         | 117         | 123         | 113         | 115         | 117         | 123         |
| Automatic air conditioning without A.B.I.   | 125         | 127         | 129          |             |             |             |             | 125         | 127         | 129          |             |             |             |             |             |             |             |             |
| Automatic air conditioning with A.B.I.  |             |             |              | 133         | 135         | 139         | 137         |             |             |              |             | 133         | 135         | 139         | 131         | 133         | 135         | 139         |
| Alarm device - Alarm on warning light   | 141         | 141         | 141          | 141         | 141         | 141         | 143         | 141         | 141         | 141          | 143         | 143         | 143         | 143         | 143         | 143         | 143         | 143         |
| A.B.I. control unit connection  |             |             |              | 145         | 145         | 145         | 145         |             |             |              |             | 145         | 145         | 145         | 145         | 145         | 145         | 145         |
| Automatic transmission - Failure warning light  |             | 147         |              | 147         |             |             |             |             | 147         |              |             | 147         |             |             |             | 147         |             |             |
| Instrument panel connections  | 149         | 149         | 149          | 149         | 149         | 149         | 153         | 149         | 149         | 149          | 151         | 151         | 151         | 151         | 151         | 151         | 151         | 151         |
| Version with automatic transmission<br>Instrument panel connections   |             | 155         |              | 155         |             |             |             |             | 155         |              |             | 157         |             |             |             | 157         |             |             |
| Junction unit   | 159         | 159         | 159          | 159         | 159         | 159         | 159         | 159         | 159         | 159          | 159         | 159         | 159         | 159         | 159         | 159         | 159         | 159         |
| Diagrammatic view of location of cable looms and components   | 161         | 162         | 165          | 162         | 163         | 166         | 164         | 161         | 162         | 165          | 161         | 162         | 163         | 166         | 161         | 162         | 163         | 166         |
| Diagrammatic view of location of cable looms and components   |             |             |              | 167         | 167         | 167         | 167         | 168         | 168         | 168          |             |             |             |             |             |             |             |             |





































**Electrical symbols**

|   |  |   |                                   |   |  |
|---|--|---|-----------------------------------|---|--|
|    | Positions  |    | Choke                             |    | Switch discharge                                       |
|    | Main beam headlamps                                  |    | Water in fuel filter              |    | Dipped headlamps                                       |
|    | Heated seat  |    | Heater plugs                      |    | Signalling of direction indicators for central locking |
|    | Seat belts   |    | Turbocharging pressure            |    | Electric horns   |
|    | Heated rear wind-screen                              |    | Rear fog lamp                     |    | Left direction indicator                               |
|  | Handbrake applied and insufficient brake fluid level |  | Fog light                         |  | Right direction indicator                              |
|  | A.B.S.   |  | Brake pad wear                    |  | Engine cooling   |
|  | Hazard warning lights                                |  | Turbocharging pressure            |  | Windscreen wiper                                       |
|  | Direction indicators                                 |  | Automatic gearbox oil temperature |  | Electrically operated sun roof                         |
|  | Handbrake and insufficient brake fluid level         |  | Speed limits                      |  | Catalytic silencer temperature                         |
|  | Recharging   |  | Fuel level                        |  | Resistance   |
|  | Engine oil pressure                                  |  | Engine coolant temperature        |  | Diode  |

P4A001101

### 55.

#### Electrical symbols

|   |                                 |   |  |   |                                   |
|---|---------------------------------|---|--|---|-----------------------------------|
|    | Warning light                   |    | Trip computer                                |    | Differential lock                 |
|    | Bulb                            |    | Electronic injection                         |    | Automatic gearbox oil temperature |
|    | Fuse                            |    | Engine oil level                             |    | Temperature                       |
|    | Switch open                     |    | Brake fluid level<br>(Japanese version)      |    | Anti-theft device                 |
|    | Selector switch                 |    | Doors open                                   |    | Electric windows                  |
|  | Button open                     |  | Central locking                              |  | Earth                             |
|  | Switch operated by coil (Relay) |  | Controlled damping suspension Sport Function |  | Number plate lights               |
|  | Motor                           |  | Transistor                                   |  | Impulse generator (Timer)         |
|  | Rearscreen wiper                |  | Air-Bag                                      |  | Analogue clock                    |
|  | Headlamp washer                 |  | A.B.S. (Japanese Version)                    |  | Digital clock                     |
|  | Windscreen wash/wipe            |  | Brake lights failure                         |  | Speedometer                       |
|  | Rearscreen wash/wipe            |  | Windscreen wiper                             |  | Rev counter                       |

P4A002101

**Electrical symbols**



Digital speedometer



Digital rev counter



Digital fuel level gauge



Analogue fuel level gauge



Analogue engine temperature gauge



Econometer



Digital engine temperature gauge



Engine oil temperature



Engine oil pressure gauge

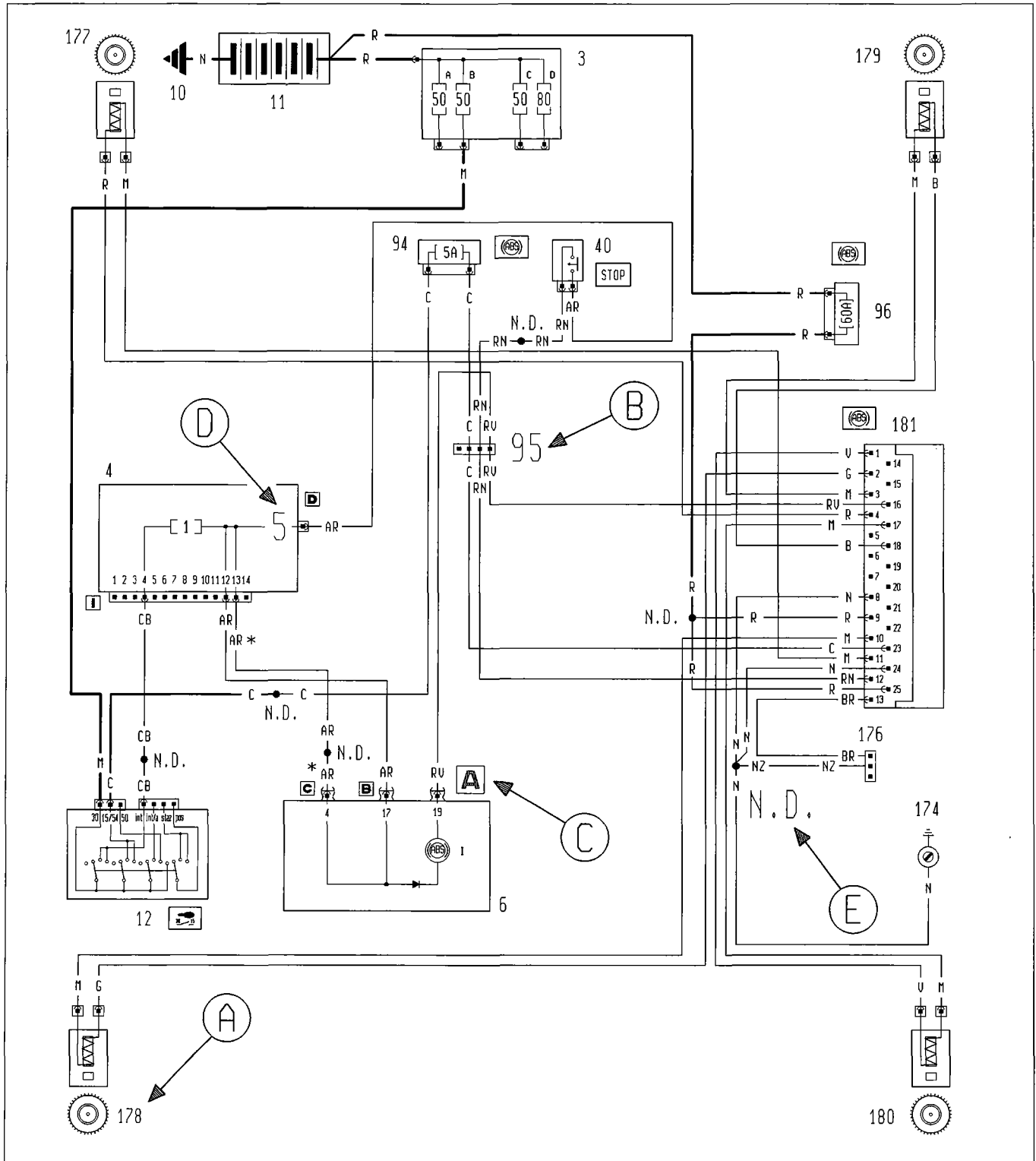


Voltmeter

P4A003101

### 55.

#### Explanation of how to read wiring diagrams



P4A004101

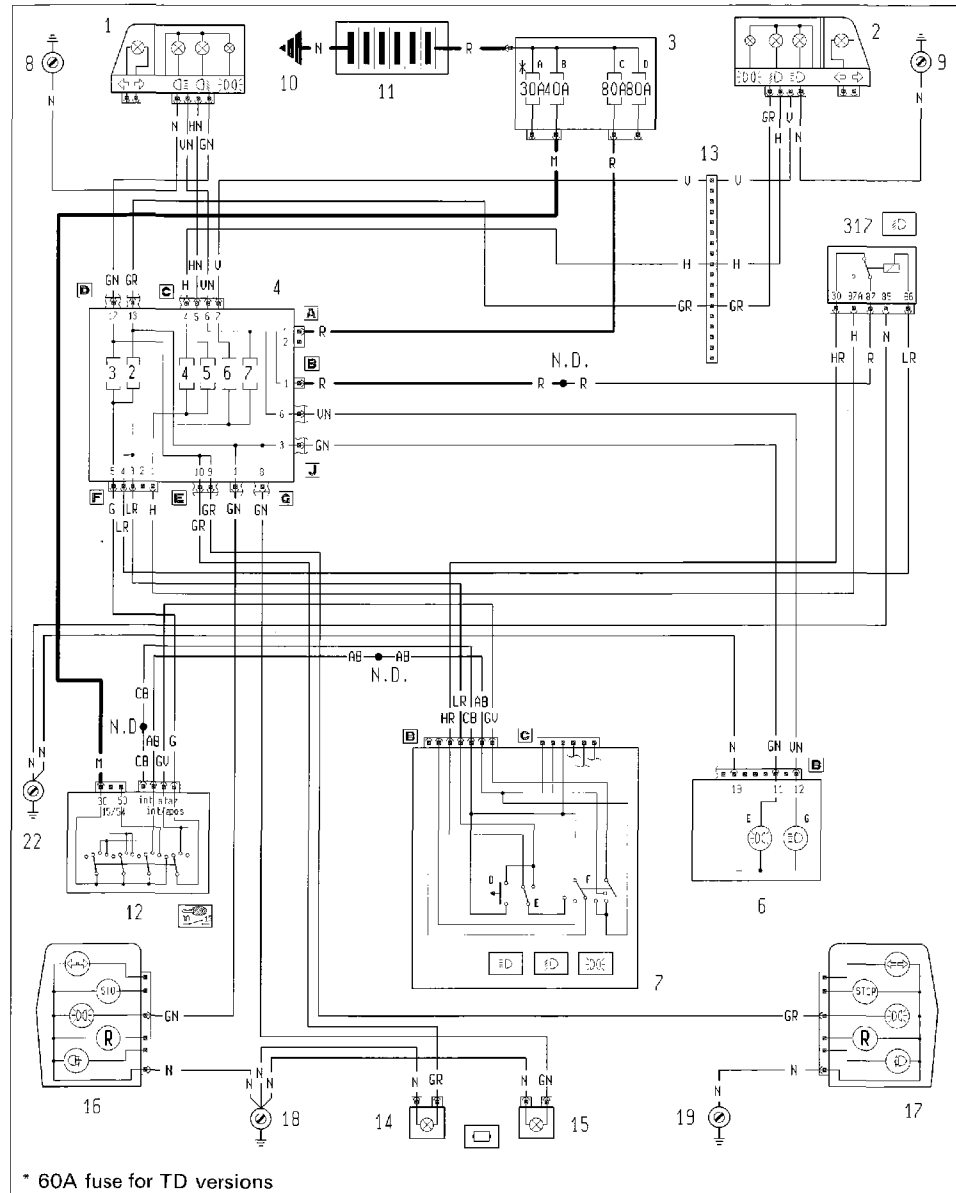
#### Reference key

- A Component number
- B Connection number
- C Identification of connector at component
- D Connecting pin number
- E Ultrasound welding taped in cable loom

4A0041



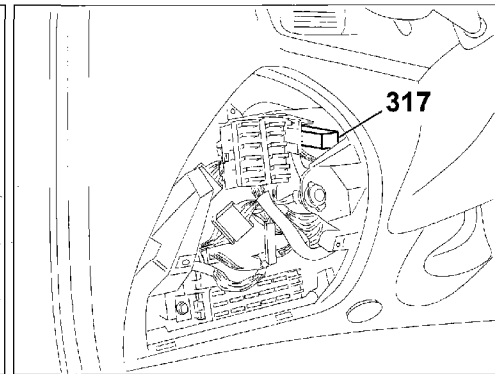
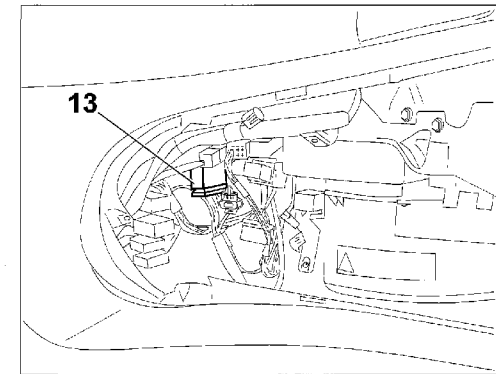
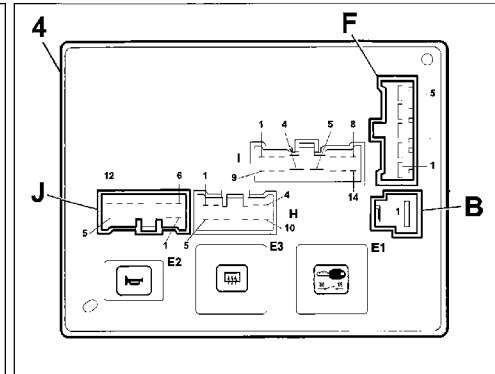
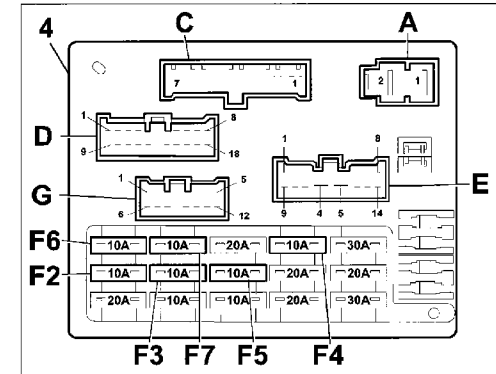
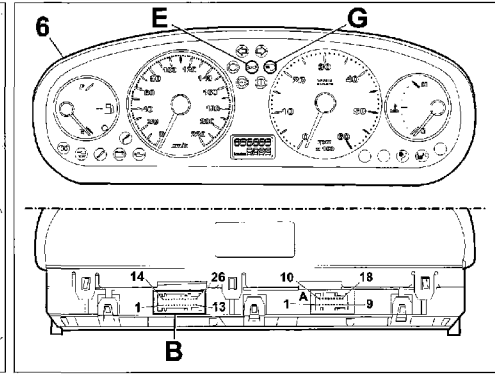
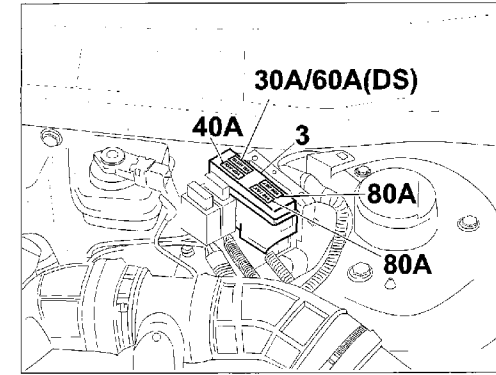
Side lights and warning light - Dipped beam headlamps - Main beam headlamps and warning light - Parking lights - Number plate lights - (See key at end of wiring diagrams)



\* 60A fuse for TD versions

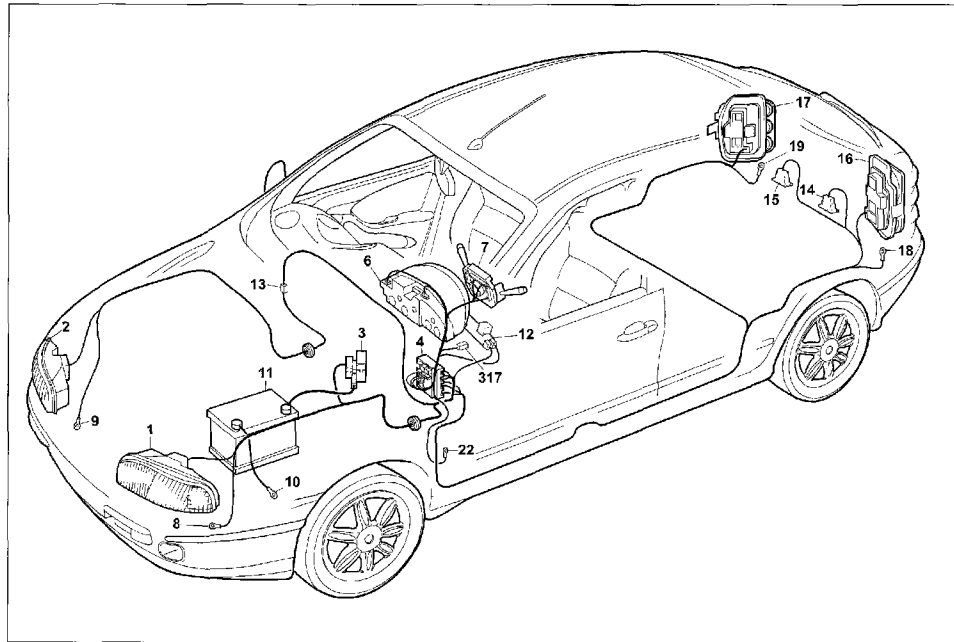
P4A006101

**Location of components**



P4A006101

55.



P4A007101

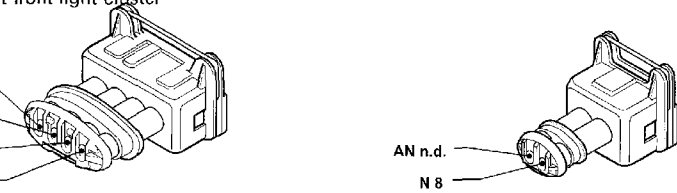
Side lights and warning light - Dipped beam headlamps - Main beam headlamps and warning light - Parking lights - Number plate lights

Components key

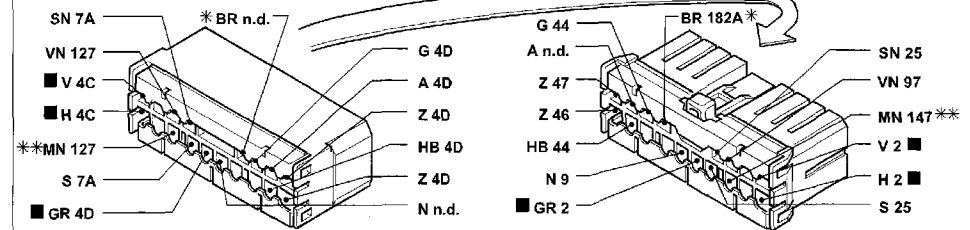
- |  |   |
|--|---|
| <p>1 Left front light cluster<br/>2 Right front light cluster<br/>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit<br/>4 Junction unit<br/>6 Instrument panel:<br/>E Side lights warning light<br/>G Main beam headlamps warning light<br/>7 Steering column switch unit:<br/>D Flasher control<br/>E Switch for dipped/main beam headlamps<br/>F Switch for side lights<br/>8 Left front earth<br/>9 Right front earth<br/>10 Earth for battery on bodyshell<br/>11 Battery<br/>12 Ignition switch</p> | <p>13 Front right/left cables connection<br/>14 Left no. plate light<br/>15 Right no. plate light<br/>16 Left rear light cluster<br/>17 Right rear light cluster<br/>18 Left rear earth<br/>19 Right rear earth<br/>22 Left dashboard earth<br/>317 Main beam headlamps remote control switch<br/>N.D. Ultrasound welding taped in cable loom</p> |
|--|---|

1 Left front light cluster

- GN 4D
- HN 4C
- VN 4C
- N 8

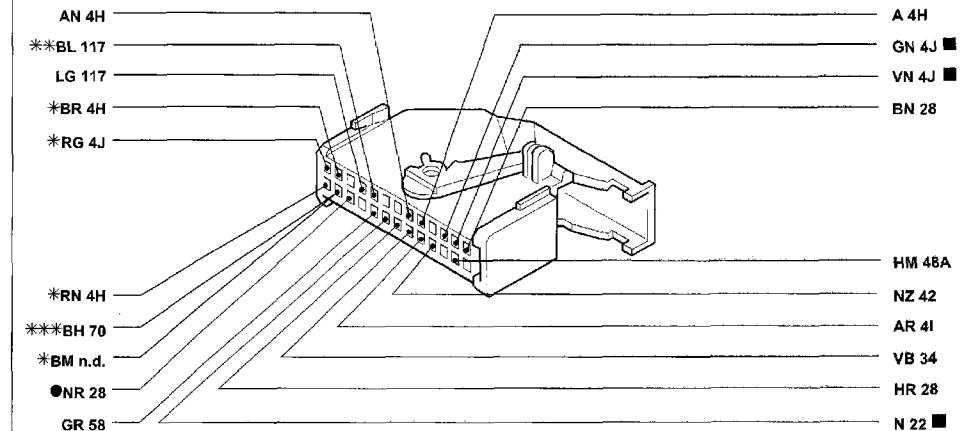


13 Front right/left cables connection



- \* Variant connection for 1998 20v versions
- \*\* Variant connection for 1910 JTD versions

6B Instrument panel

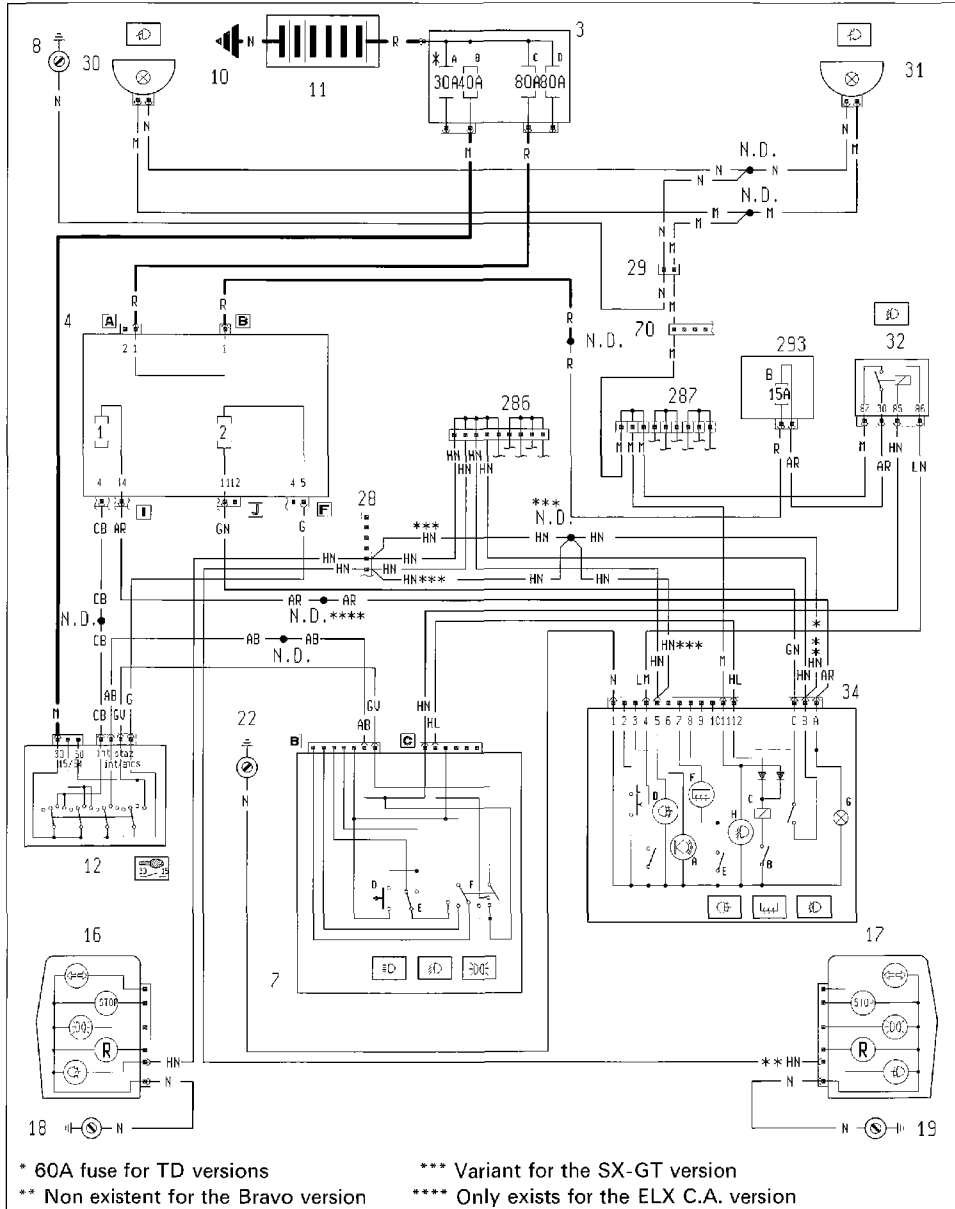


- \* Non existent for trim levels SX - GT
- \*\* Variant connection for versions with passenger AIR BAG
- \*\*\* Variant connection for trim levels SX - GT with alarm
- Variant connection for trim level HGT

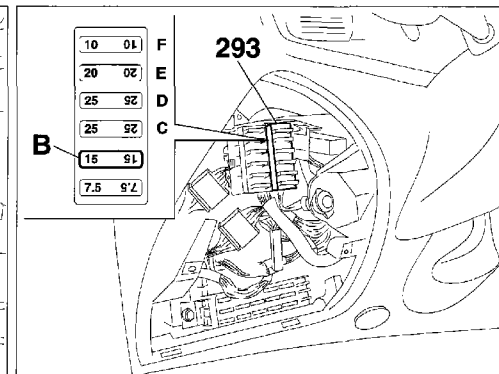
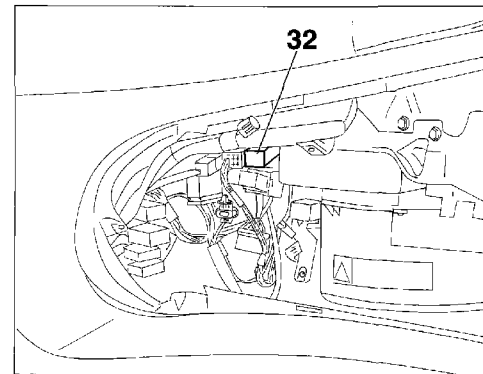
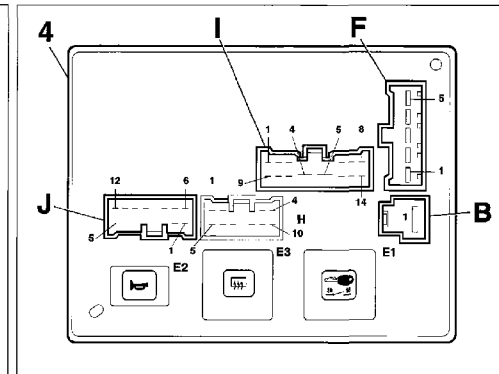
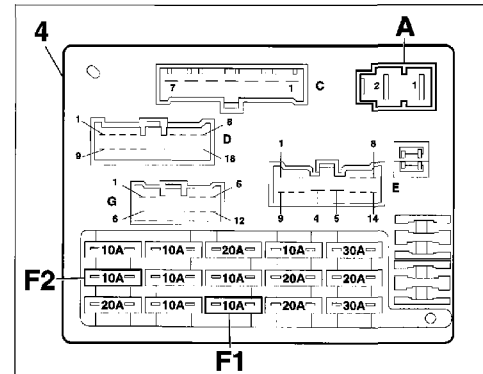
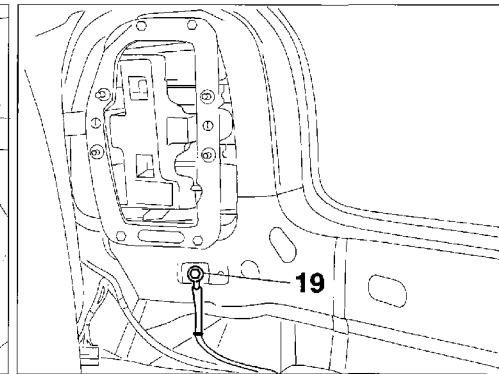
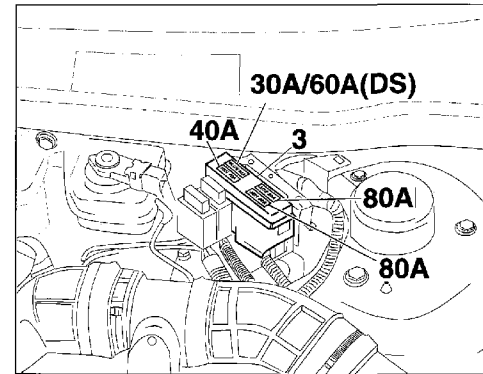
The cables in the wiring diagram are marked

P4A008101

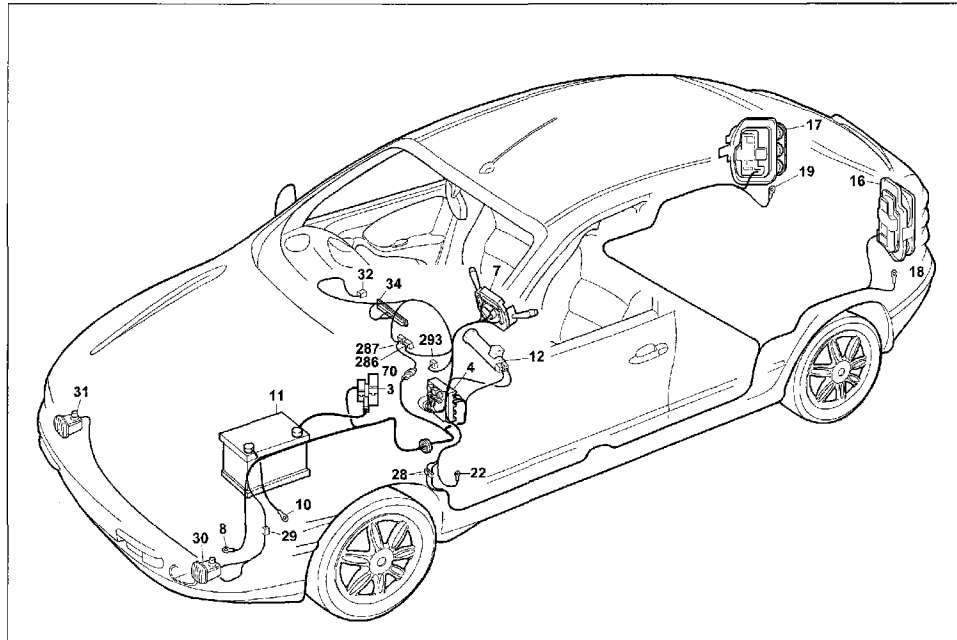
**Fog lights and warning light - Rear fog lamps and warning light - (See key at end of wiring diagrams)**



**Location of components**



## 55.



P4A01101

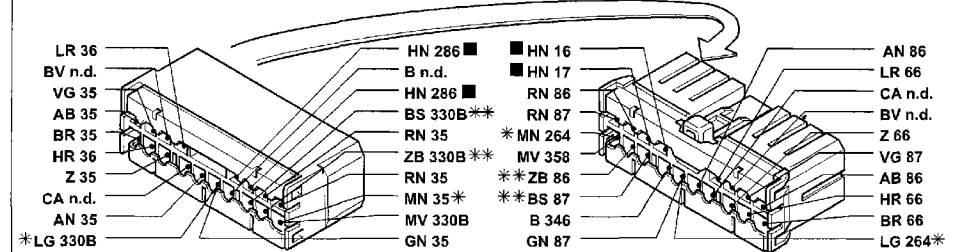
### Fog lights and warning light - Rear fog lamps and warning light

#### Components key

- |  |  |
|--|--|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (80A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit</p> <p>7 Steering column switch unit:<br/>D Flasher control<br/>E Remote control switch for dipped/main beam headlamps<br/>F Switch for side lights</p> <p>8 Left front earth</p> <p>10 Earth for battery on bodyshell</p> <p>11 Battery</p> <p>12 Ignition switch</p> <p>16 Left rear light cluster</p> <p>17 Right rear light cluster</p> <p>18 Left rear earth</p> <p>19 Right rear earth</p> <p>22 Left dashboard earth</p> <p>28 Dashboard/longitudinal cables connection</p> | <p>29 Connection between front/fog light cables</p> <p>30 Left fog lamp</p> <p>31 Right fog lamp</p> <p>32 Fog lights relay</p> <p>34 Switch control unit:<br/>A Anti-theft warning light on<br/>B Rear fog lamps switch<br/>C Rear fog lamps relay feed<br/>D Rear fog lamps warning light<br/>E Heated rear windscreen control switch<br/>F Heated rear windscreen warning light<br/>G Ideogram light for switch control panel<br/>H Fog lights warning light<br/>L Outside temperature control switch</p> <p>70 Dashboard/front cables connection</p> <p>286 Short circuit connection</p> <p>287 Short circuit connection</p> <p>293 Fuse carrier base on dashboard cable<br/>B 15A fuse protecting fog lamps relay</p> |
|--|--|

N.D. Ultrasound welding taped in cable loom

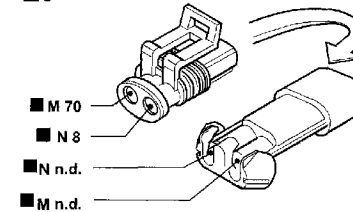
#### 28A Dashboard/longitudinal cables connection Only: ELX - HSX - HGT



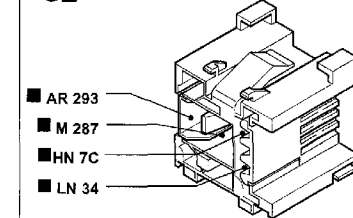
\* Variant connection for version with automatic transmission

\*\* Variant connection for Brava versions

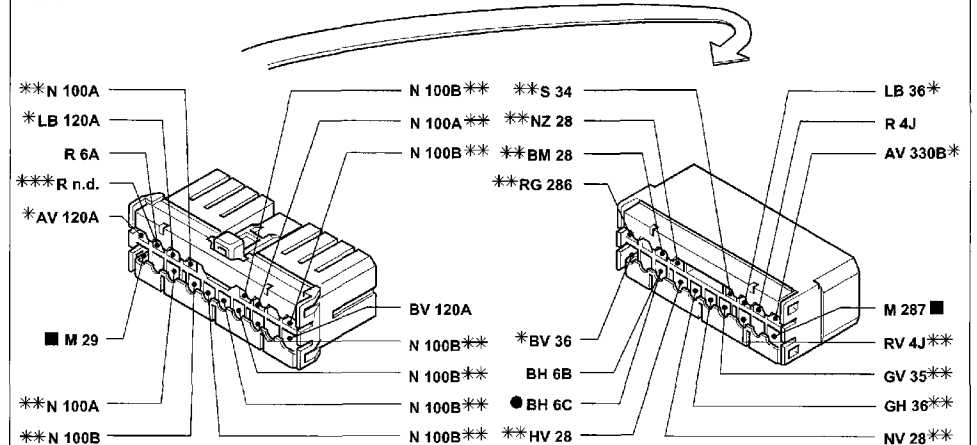
#### 29 Connection between front/fog light cables



#### 32 Fog lights relay



#### 70 Dashboard/front cables connection Only: ELX - HSX - HGT



\* Variant connection for versions with air conditioning

\*\* Variant connection for versions with alarm

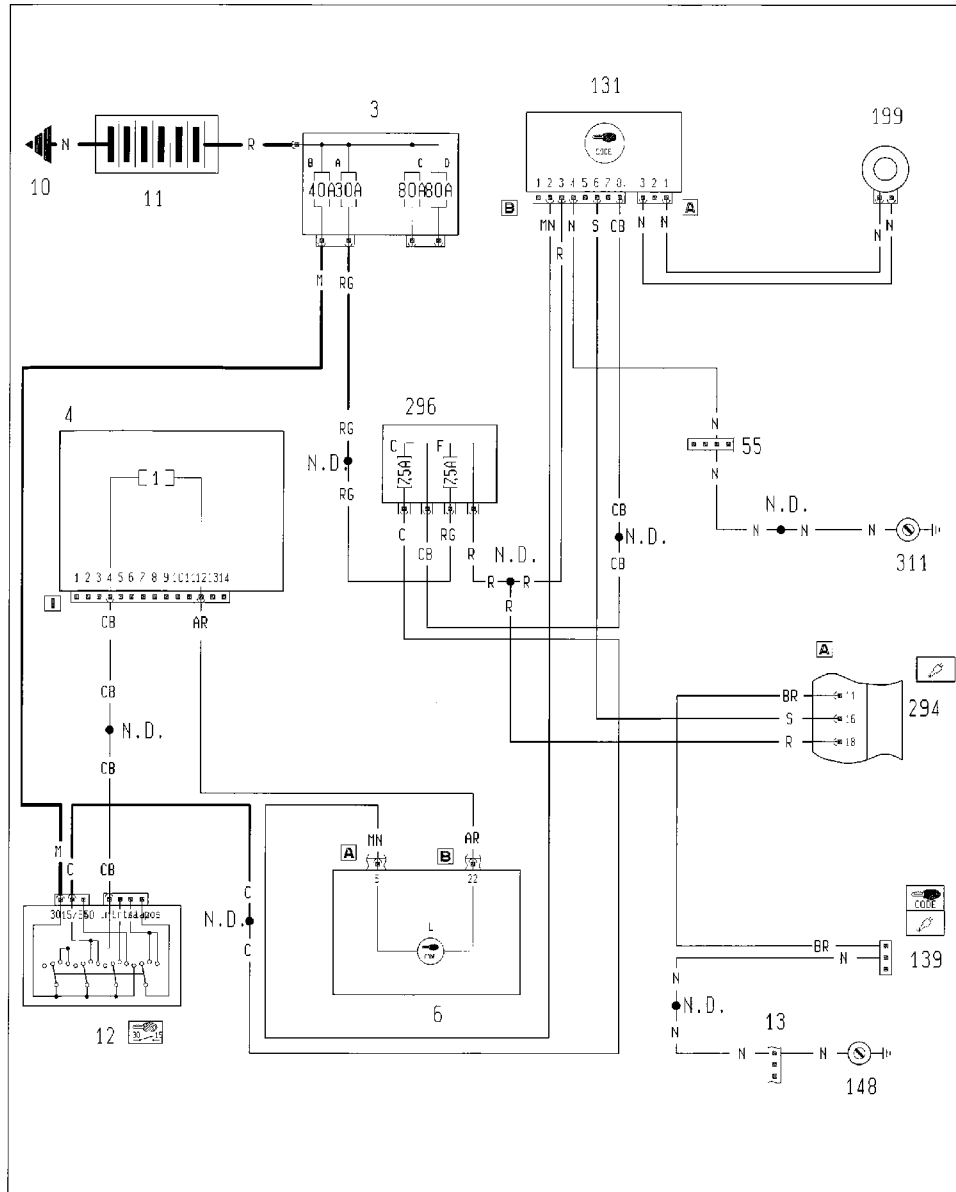
\*\*\* Variant connection for 1910 JTD versions

● Variant connection for ELX trim level with automatic transmission

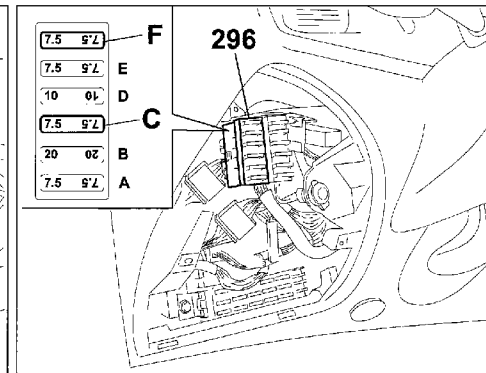
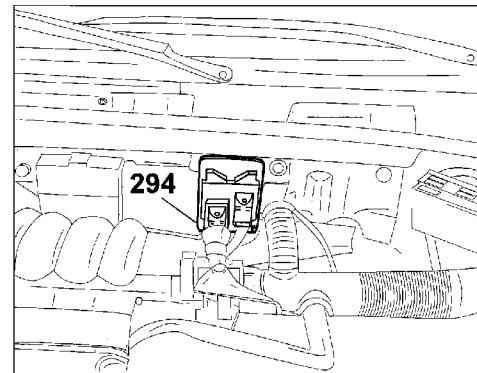
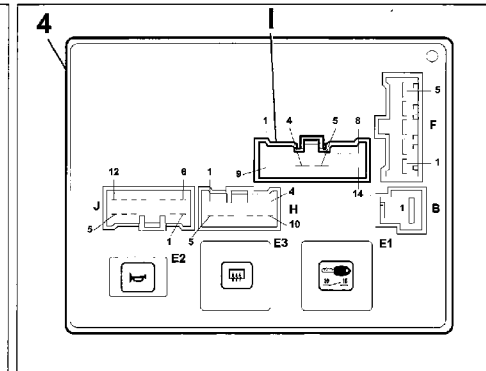
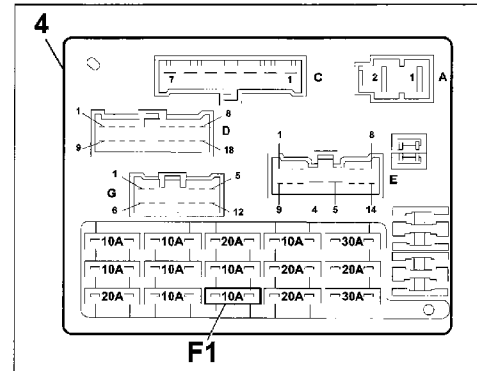
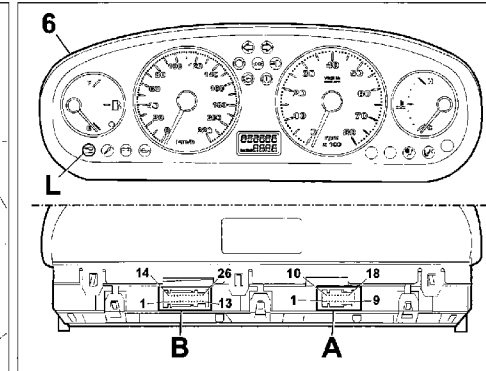
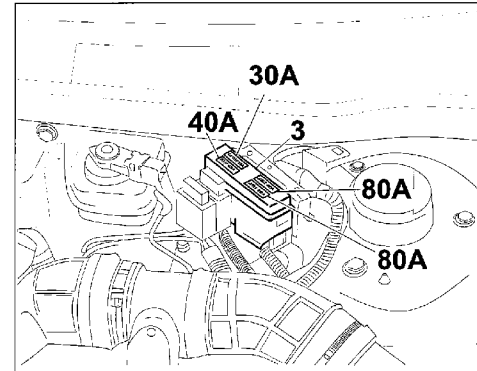
The cables in the wiring diagram are marked

P4A012101

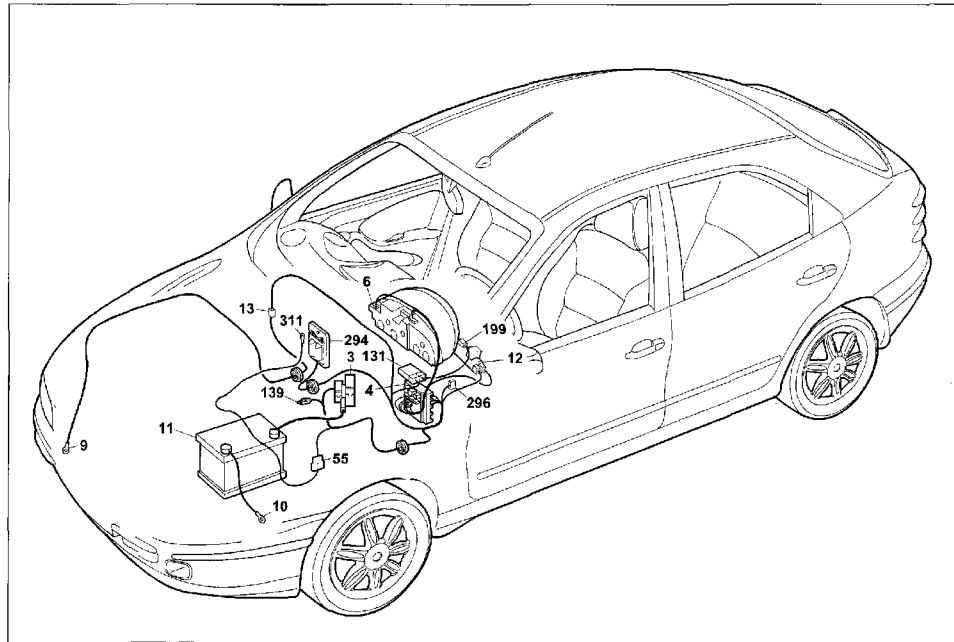
Fiat-CODE and failure warning light - (See key at end of wiring diagrams)



**Location of components**



**55.**



P4A015I01

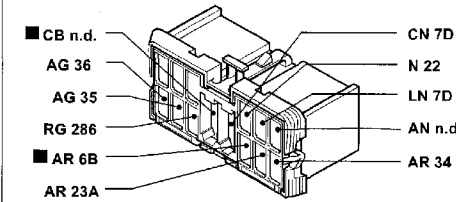
**Fiat-CODE and failure warning light**

**Components key**

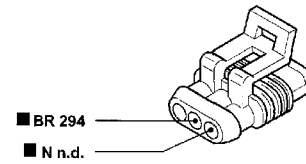
- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit
- 6 Instrument panel:
  - L Fiat CODE device failure warning light
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 13 Connection between front right/left cables
- 55 Connection between front/engine pre-wiring cables
- 131 Fiat-CODE electronic control unit
- 139 Diagnostic socket for injection system
- 148 Earth for electronic injection
- 199 Aerial for Fiat-CODE
- 294 Injection/ignition electronic control unit 1242
- 296 Fuse carrier base on front cable:
  - C 7.5A fuse protecting Fiat-CODE cooling system /electronic injection
  - F 7.5A fuse protecting electronic injection system/ Fiat-Code

311 Earth for electronic injection control unit  
N.D. Ultrasound welding taped in cable loom

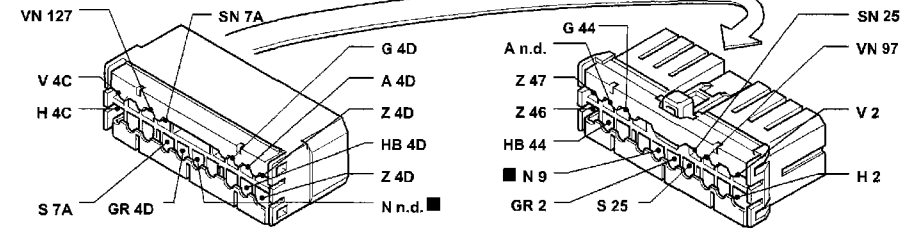
**41 Junction unit**



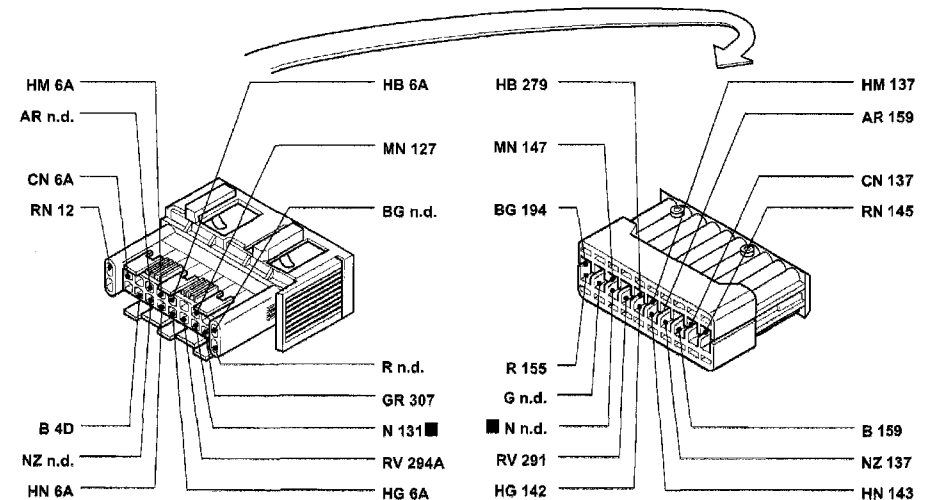
**139 Diagnostic socket for injection system**



**13 Front right/left cables connection**



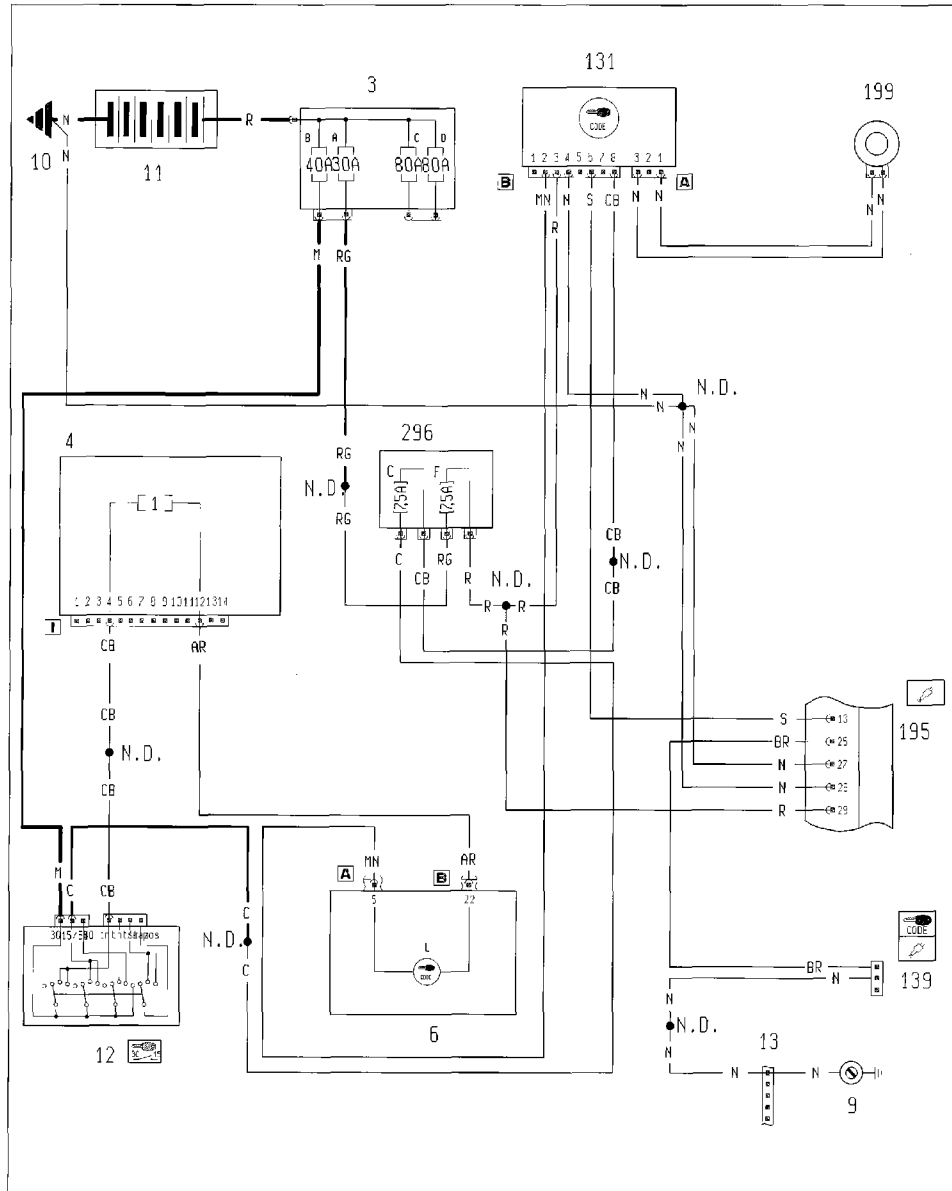
**55 Connection between front/engine pre-wiring cables**



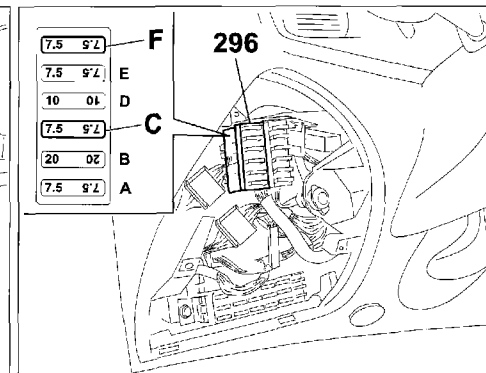
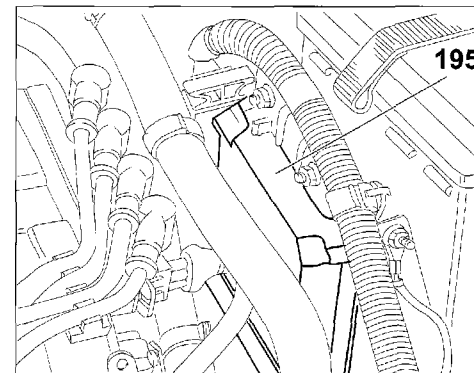
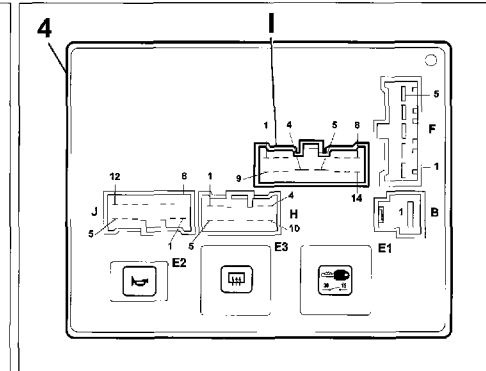
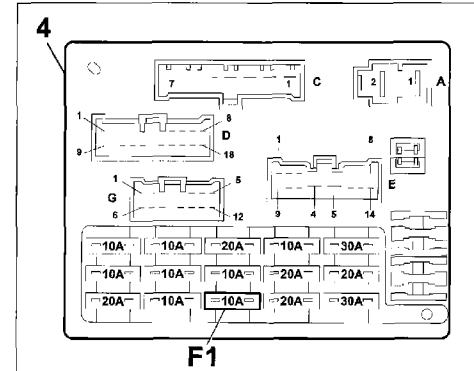
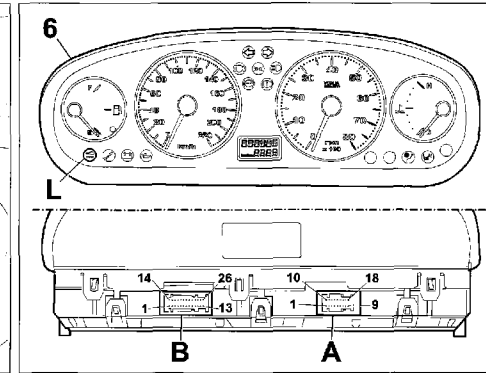
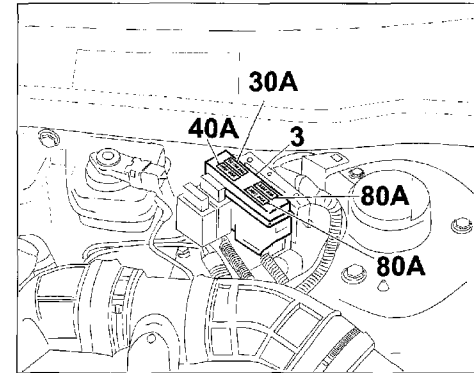
The cables in the wiring diagram are marked

P4A015I01

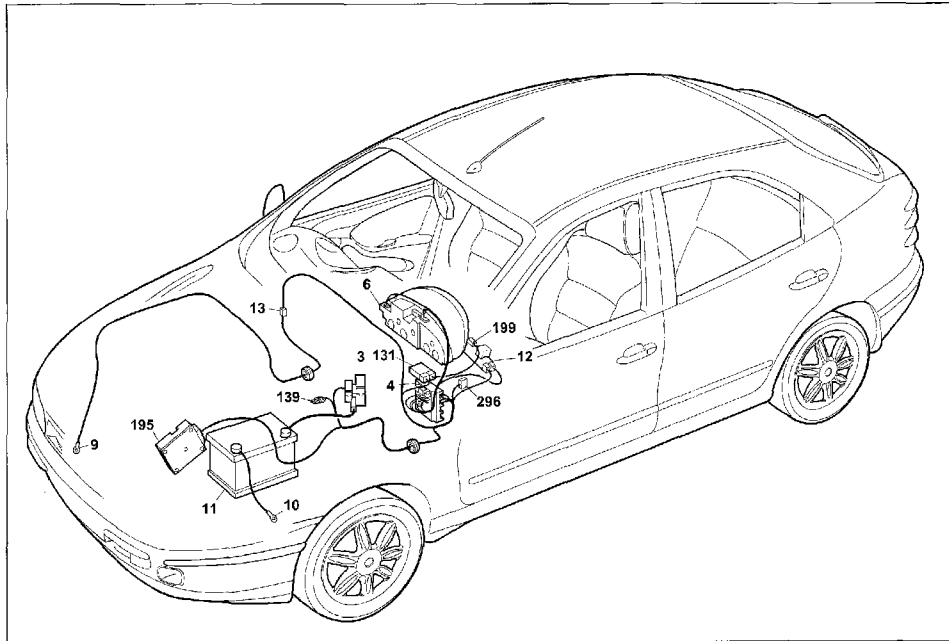
Fiat-CODE and failure warning light - (See key at end of wiring diagrams)



Location of components



55.



P4A019101

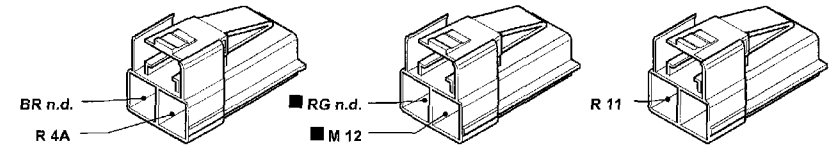
Fiat-CODE and failure warning light

Components key

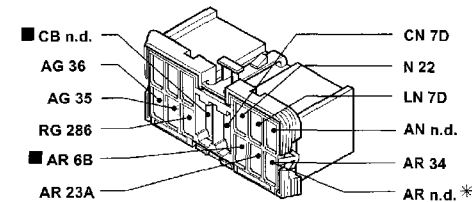
- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit
- 6 Instrument panel:
  - L Fiat CODE device failure warning light
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 13 Front right/left cables connection
- 131 Fiat-CODE electronic control unit
- 139 Diagnostic socket for injection system
- 148 Earth for electronic injection
- 195 Injection/ignition electronic control unit (1581)
- 199 Aerial for Fiat-CODE
- 296 Fuse carrier base on front cable
  - C 7.5A fuse protecting Fiat-CODE cooling system /electronic injection
  - F 7.5A fuse protecting electronic injection system/ Fiat-CODE
- N.D. Ultrasound welding taped in cable loom

4A0191

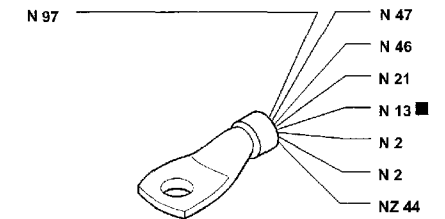
3 Power fuse box



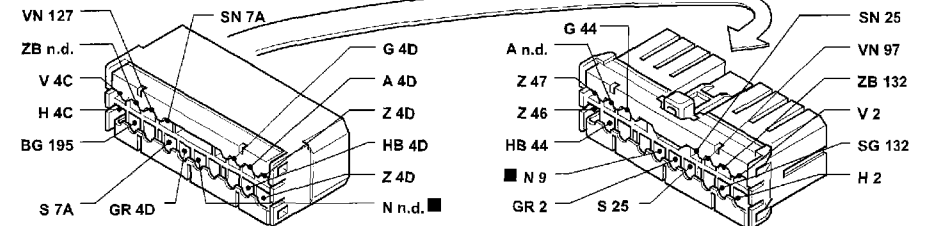
41 Junction unit



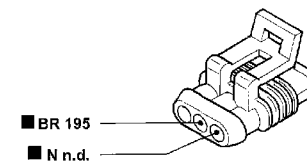
9 Right front earth



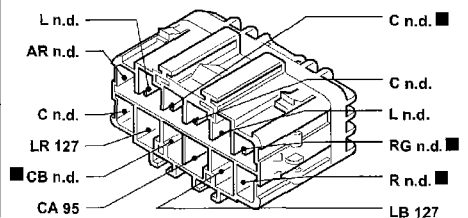
13 Front right/left cables connection



139 Injection system diagnostic socket



296 Fuse carrier base on front cable



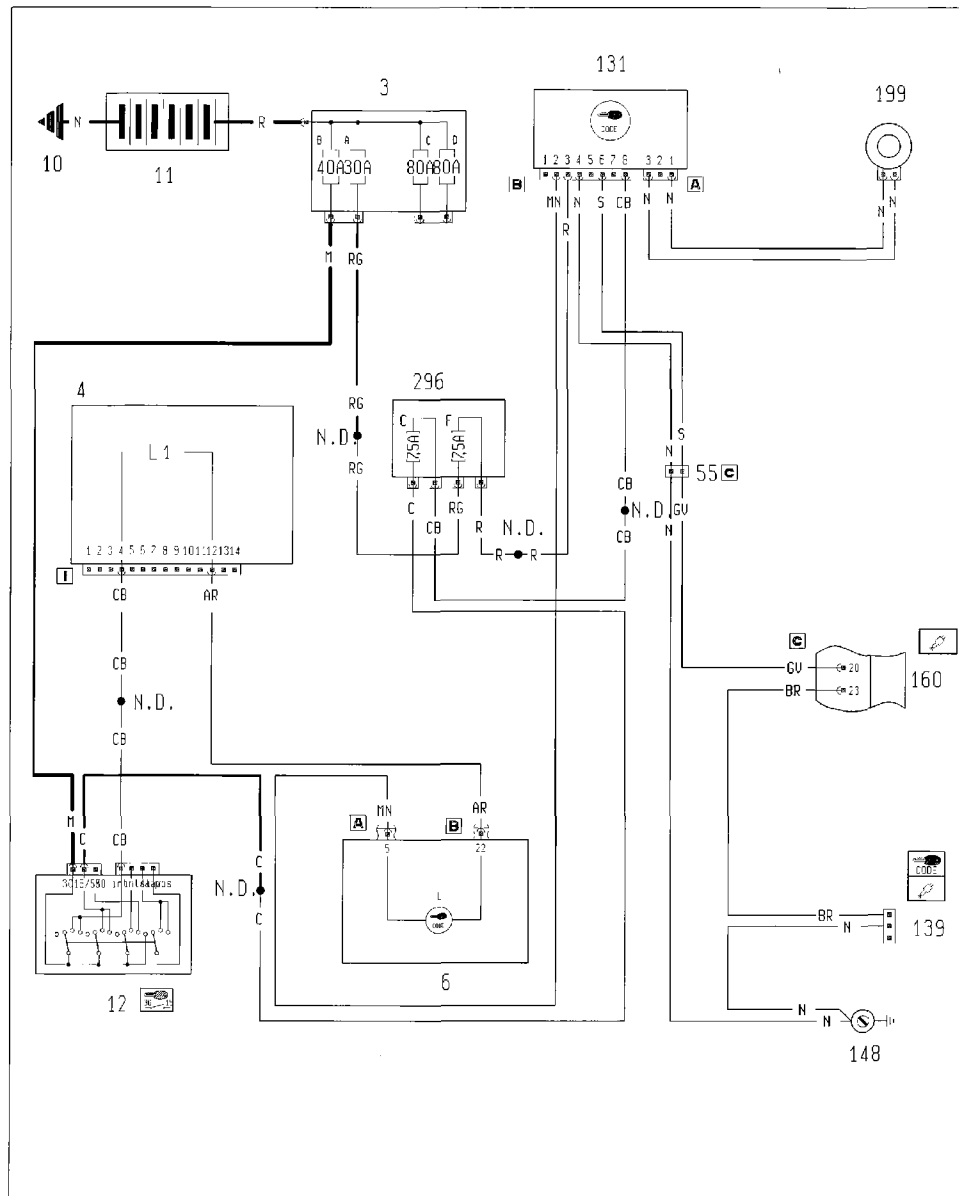
The cables in the wiring diagram are marked

P4A02001

4A0201

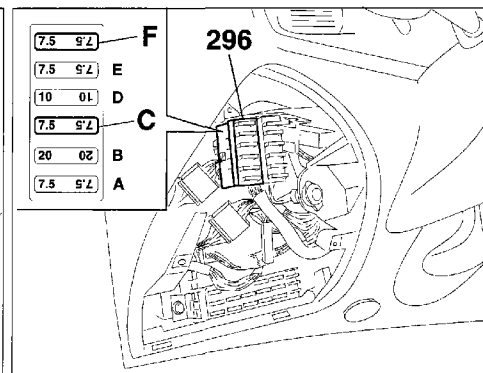
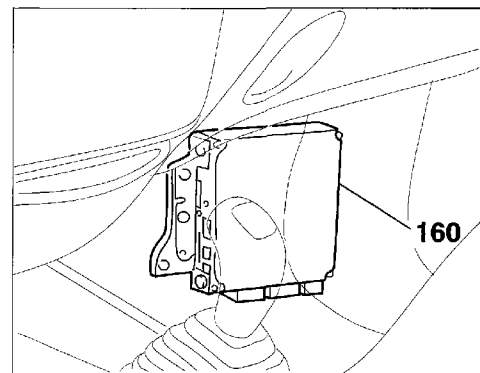
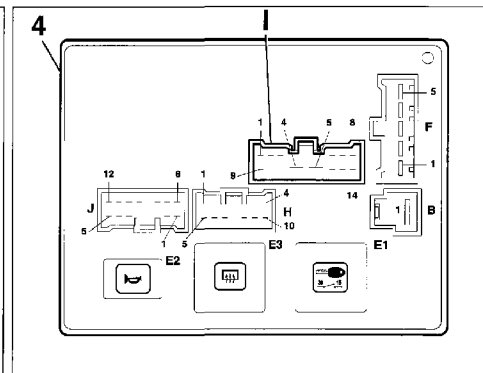
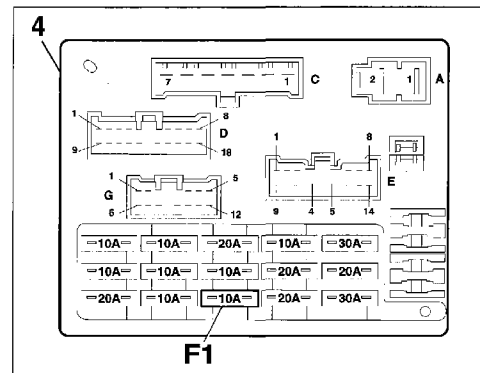
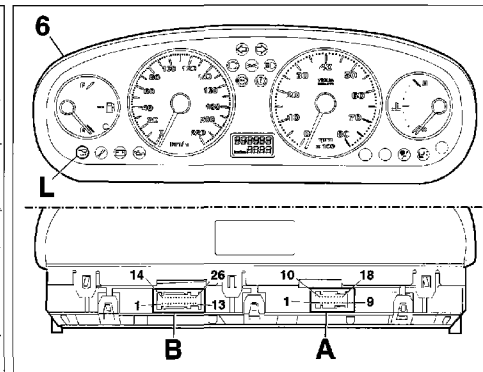
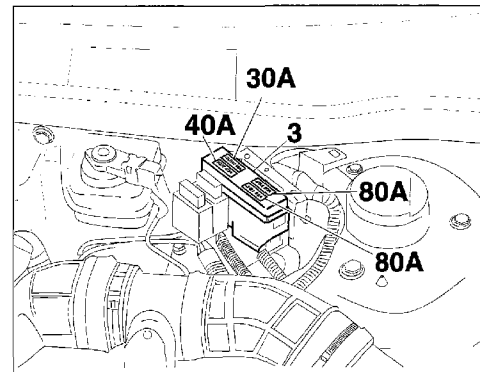


Fiat-CODE and failure warning light - (See key at end of wiring diagrams)



P4A021101

Location of components

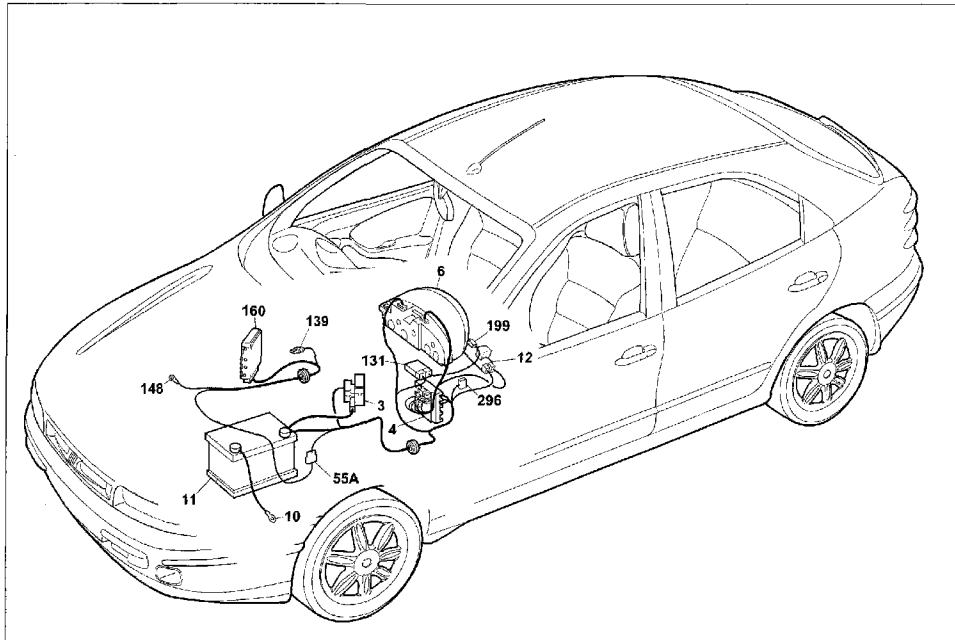


4A0221

P4A022101

4A0211

### 55.



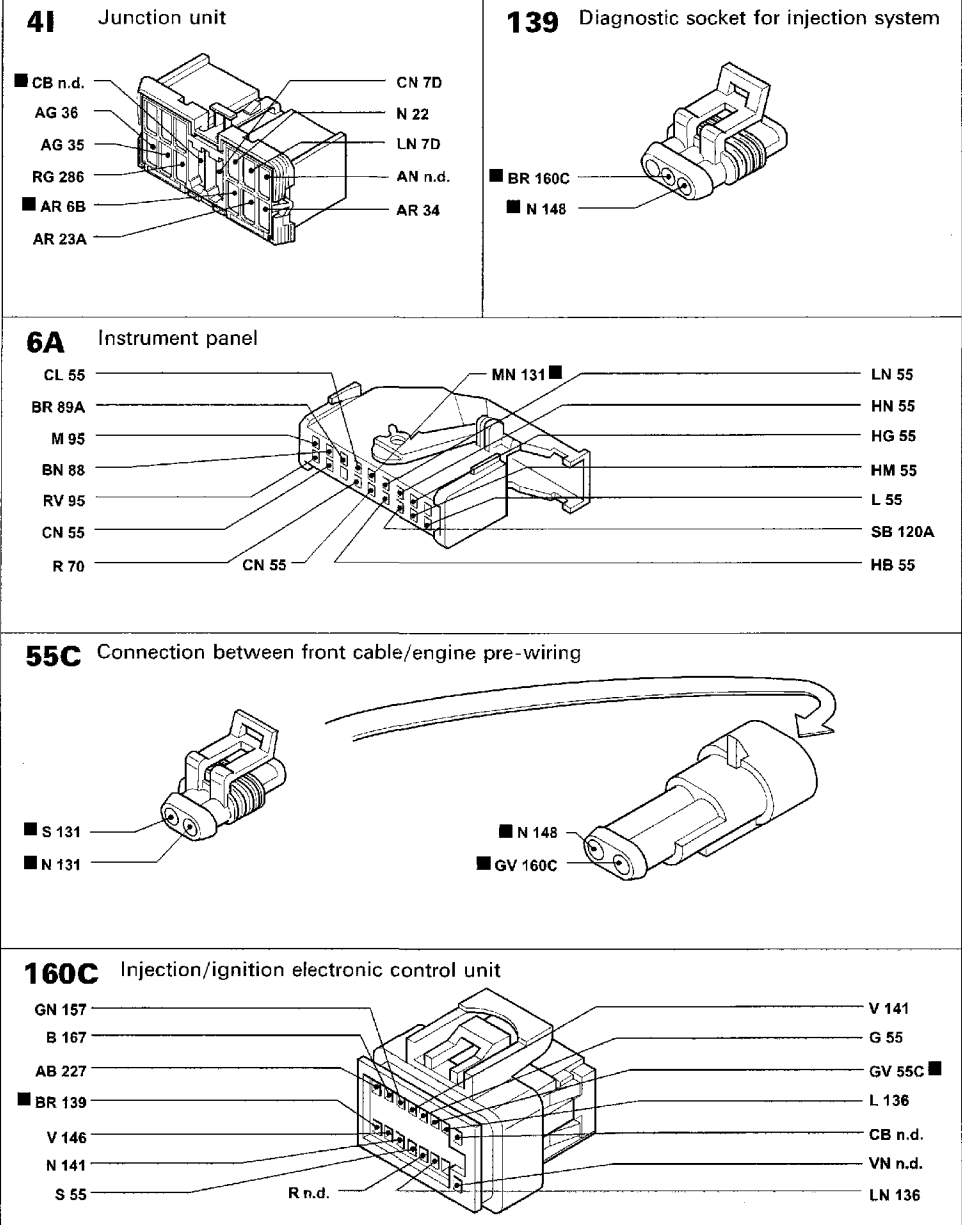
P4A023101

#### Fiat-CODE and failure warning light

#### Components key

- 3 Power fuse box:
    - A 30A protective fuse for injection system (60A for TD versions)
    - B 40A protective fuse for ignition system
    - C 80A fuse protecting additional options
    - D 80A protective fuse for junction unit
  - 4 Junction unit
  - 6 Instrument panel:
    - L Fiat CODE device failure warning light
  - 10 Earth for battery on bodyshell
  - 11 Battery
  - 12 Ignition switch
  - 55B Connection between front/engine pre-wiring cables
  - 131 Fiat-CODE electronic control unit
  - 139 Diagnostic socket for injection system
  - 148 Earth for electronic injection
  - 160 Injection/ignition electronic control unit (1747)
  - 199 Aerial for Fiat-CODE
  - 296 Fuse carrier base on front cable
    - C 7.5A fuse protecting Fiat-CODE cooling system /electronic injection
    - F 7.5A fuse protecting electronic injection system/ Fiat-CODE
- N.D. Ultrasound welding taped in cable loom

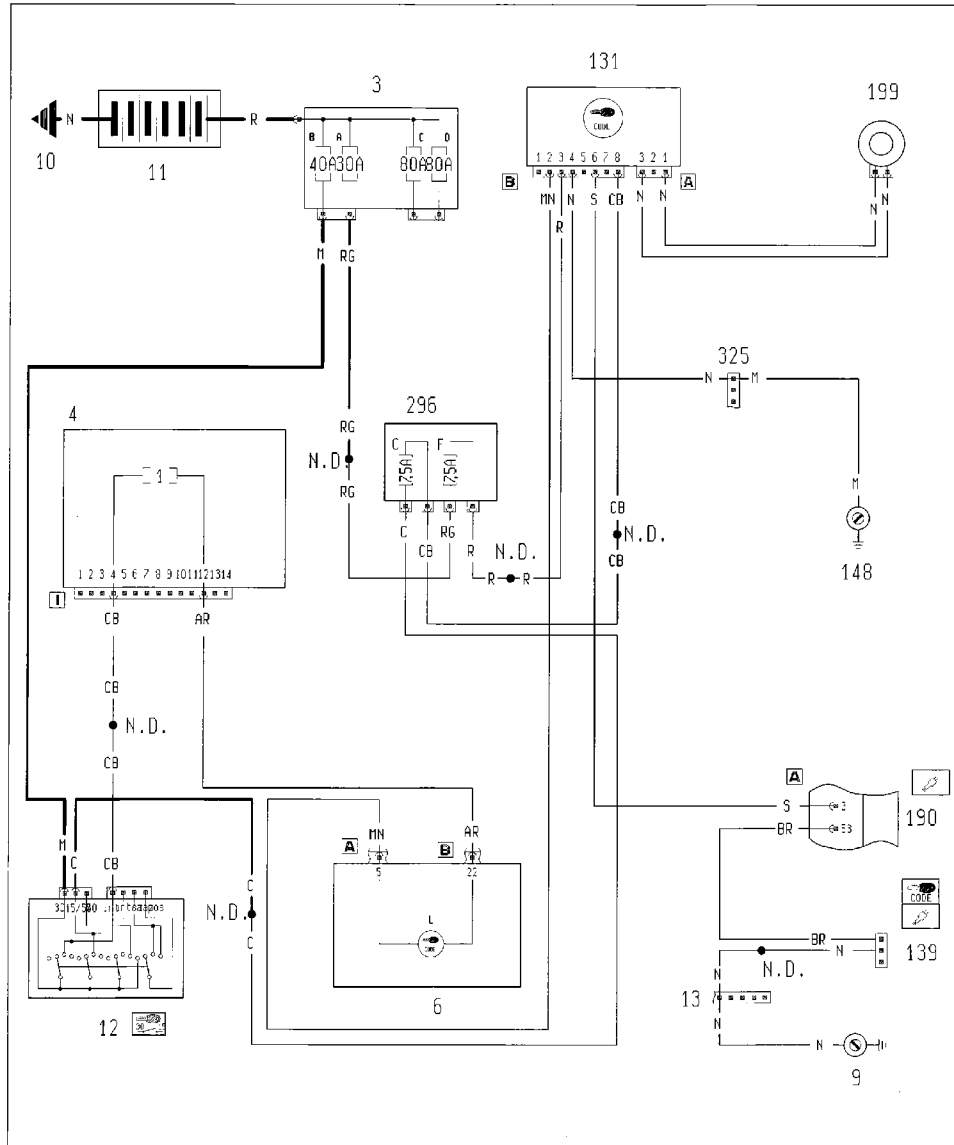
4A0231



The cables in the wiring diagram are marked

P4A024101

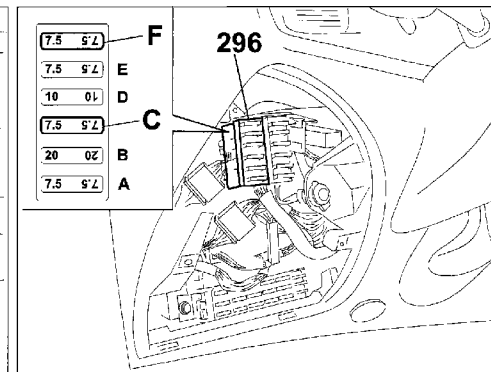
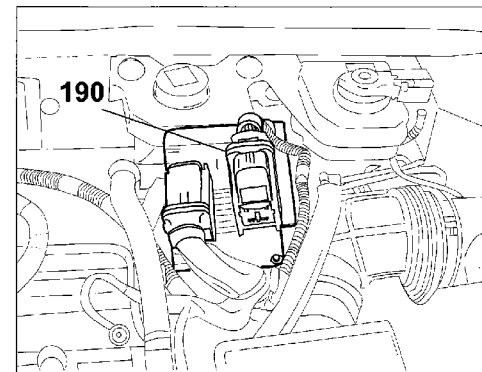
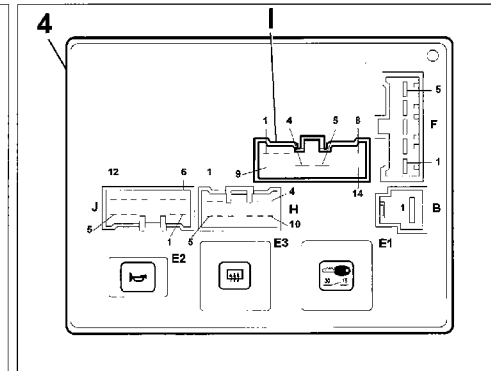
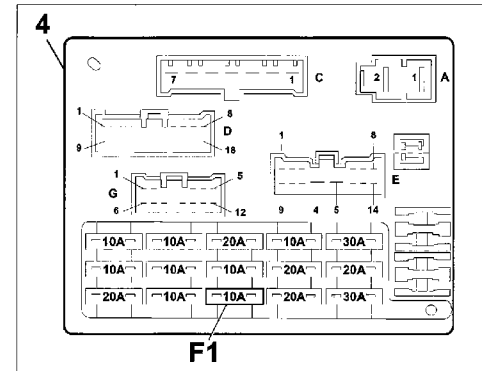
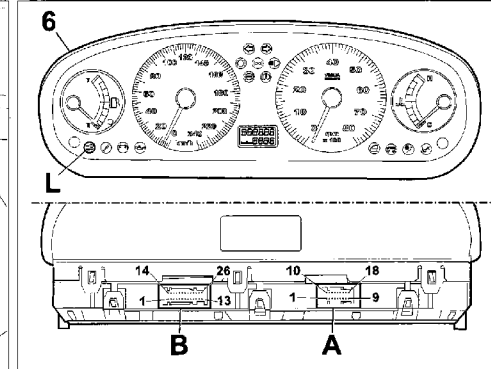
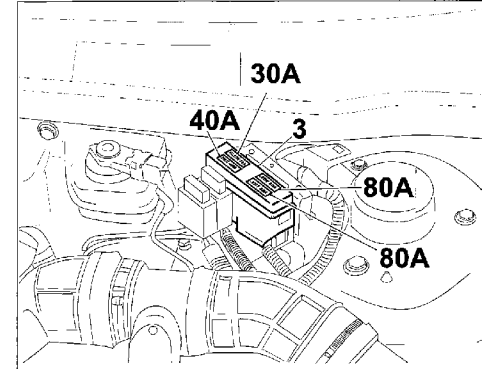
Fiat-CODE and failure warning light - (See key at end of wiring diagrams)



4A0251

P4A025101

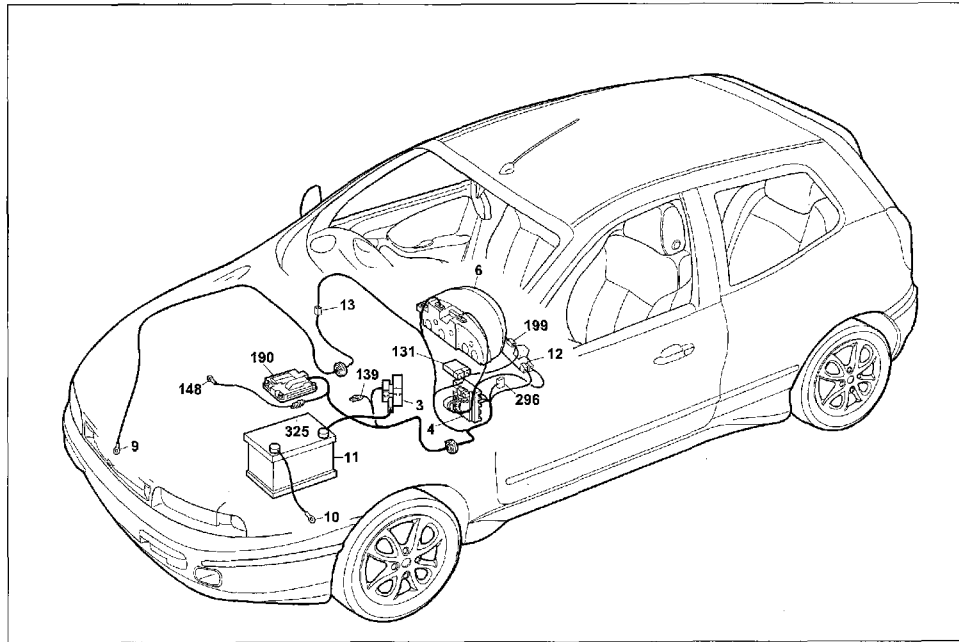
Location of components



4A0261

P4A026101

**55.**



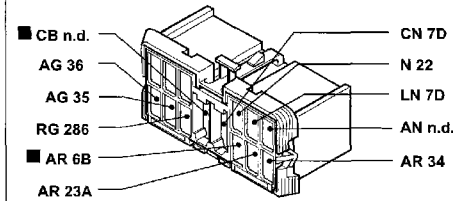
P4A027101

**Fiat-CODE and failure warning light**

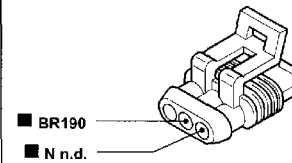
**Components key**

- |   |  |
|---|--|
| 3 Power fuse box:<br>A 30A protective fuse for injection system (60A for TD versions)<br>B 40A protective fuse for ignition system<br>C 80A fuse protecting additional options<br>D 80A protective fuse for junction unit | 296 Fuse carrier base on front cable<br>C 7.5A fuse protecting Fiat-CODE cooling system /electronic injection<br>F 7.5A fuse protecting electronic injection system/ Fiat-CODE |
| 4 Junction unit   | 325 Connection between injection/front left cables   |
| 6 Instrument panel:<br>L Fiat CODE device failure warning light   | N.D. Ultrasound welding taped in cable loom  |
| 10 Earth for battery on bodyshell   |  |
| 11 Battery  |  |
| 12 Ignition switch  |  |
| 131 Fiat-CODE electronic control unit   |  |
| 139 Diagnostic socket for injection system  |  |
| 148 Earth for electronic injection  |  |
| 190 Injection/ignition electronic control unit (1998)   |  |
| 199 Aerial for Fiat-CODE  |  |

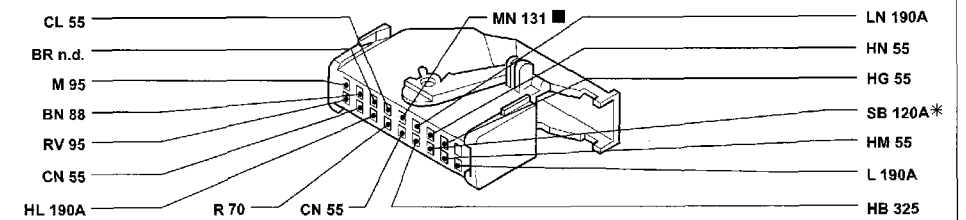
**4I Junction unit**



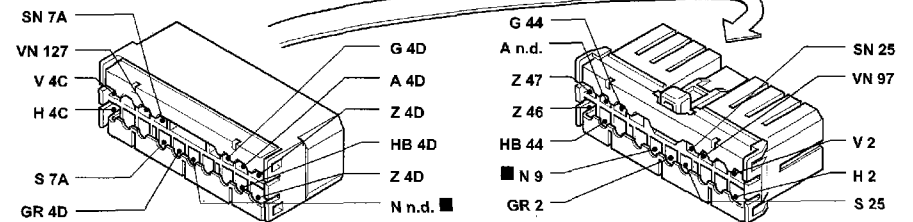
**139 Diagnostic socket for injection system**



**6A Instrument panel**



**13 Front right/left cables connection**



\* Variant connection for versions with air conditioning

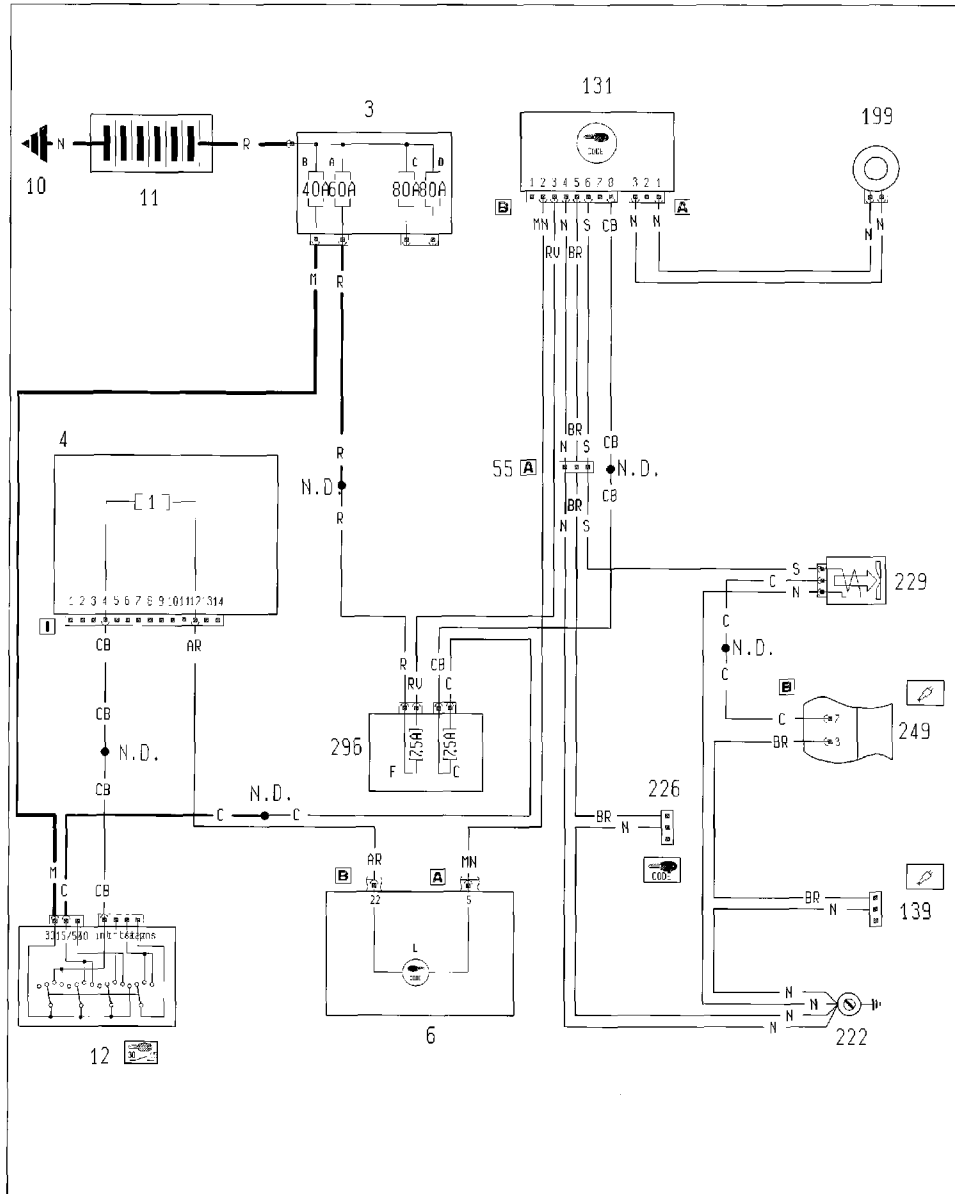
**325 Connection between injection/front left cables**



The cables in the wiring diagram are marked

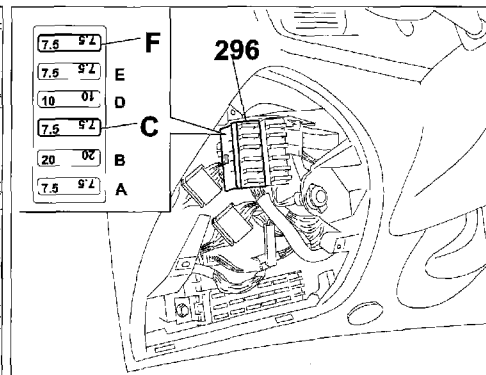
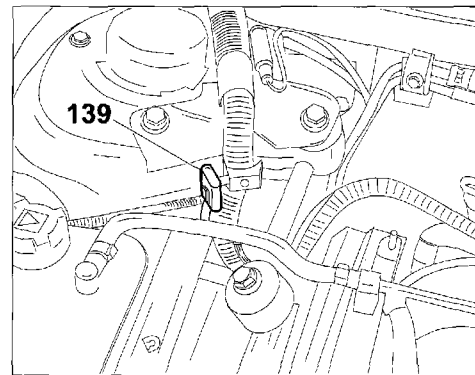
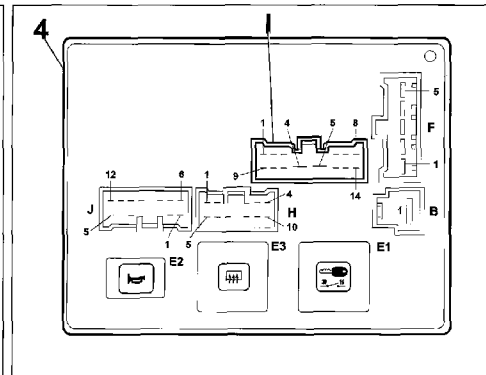
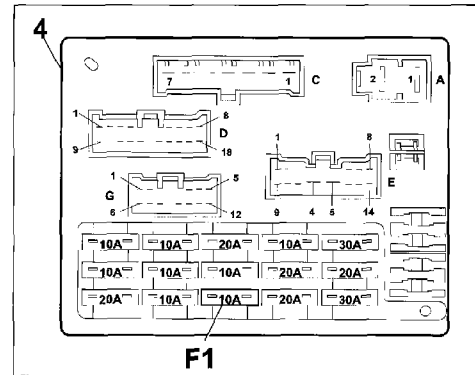
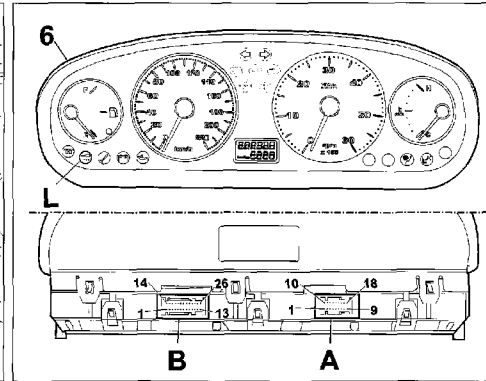
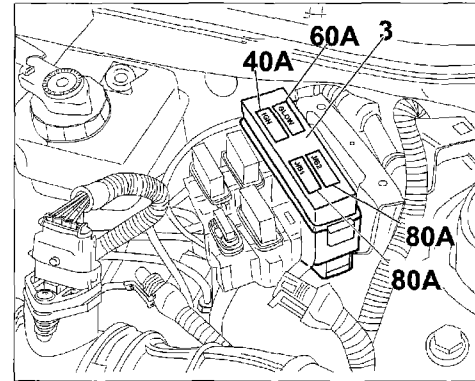
P4A028101

Fiat-CODE and failure warning light - (See key at end of wiring diagrams)



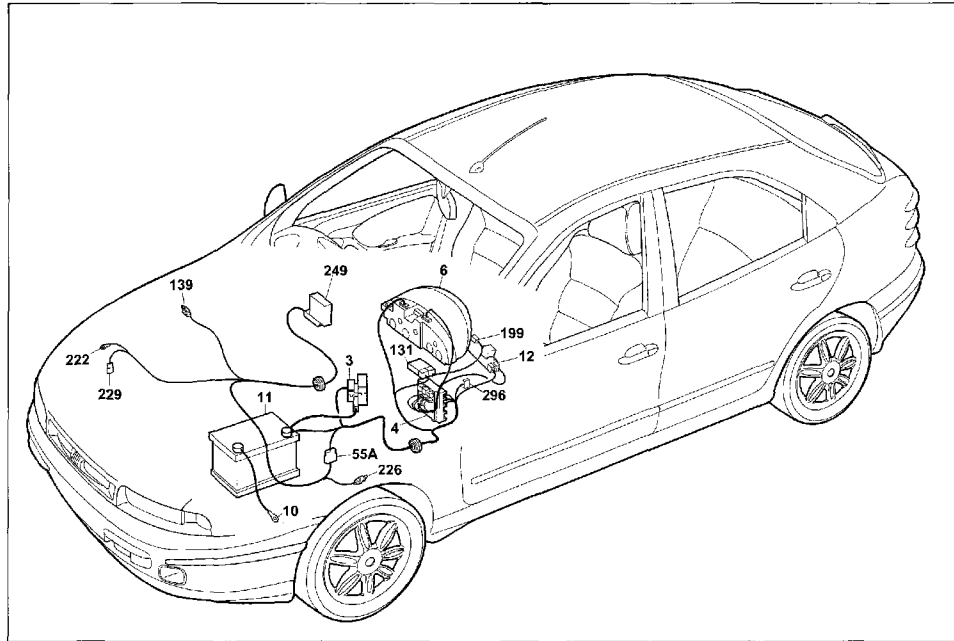
P4A029101

Location of components



P4A030101

## 55.



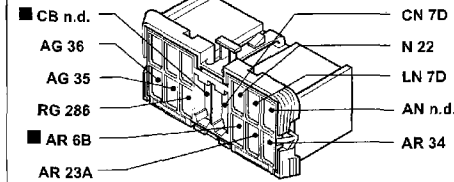
P4A032101

### Fiat-CODE and failure warning light

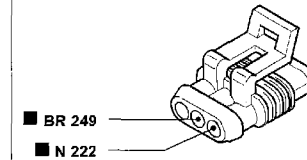
#### Components key

- |   |   |
|---|---|
| 3 Power fuse box:<br>A 30A protective fuse for injection system (60A for TD versions)<br>B 40A protective fuse for ignition system<br>C 80A fuse protecting additional options<br>D 80A protective fuse for junction unit | 249 E.G.R. electronic control unit<br>296 Fuse carrier base on front cable<br>C 7.5A fuse protecting Fiat-CODE cooling system /electronic injection<br>F 7.5A fuse protecting electronic injection system/ Fiat-CODE<br>N.D. Ultrasound welding taped in cable loom |
| 4 Junction unit   |   |
| 6 Instrument panel:<br>L Fiat CODE device failure warning light   |   |
| 10 Earth for battery on bodyshell   |   |
| 11 Battery  |   |
| 12 Ignition switch  |   |
| 19 Right rear earth   |   |
| 55A Connection between front/engine pre-wiring cables   |   |
| 131 Fiat CODE electronic control unit   |   |
| 139 Diagnostic socket for injection system  |   |
| 199 Aerial for Fiat CODE  |   |
| 222 Earth for fuel system   |   |
| 226 Diagnostic socket for Fiat code system  |   |
| 229 Engine cut out electro-stop   |   |

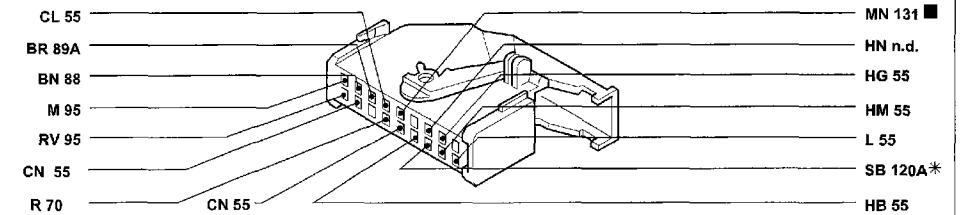
#### 41 Junction unit



#### 139 Diagnostic socket for injection system

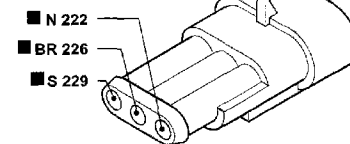
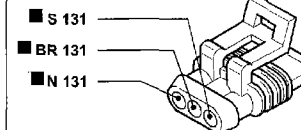


#### 6A Instrument panel

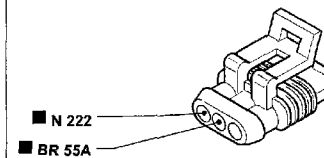


\* Variant connection for versions with air conditioning

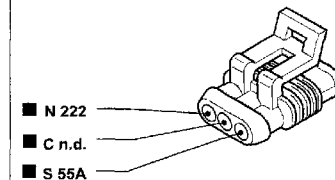
#### 55A Connection between front cable/engine pre-wiring



#### 226 Diagnostic socket for Fiat code system



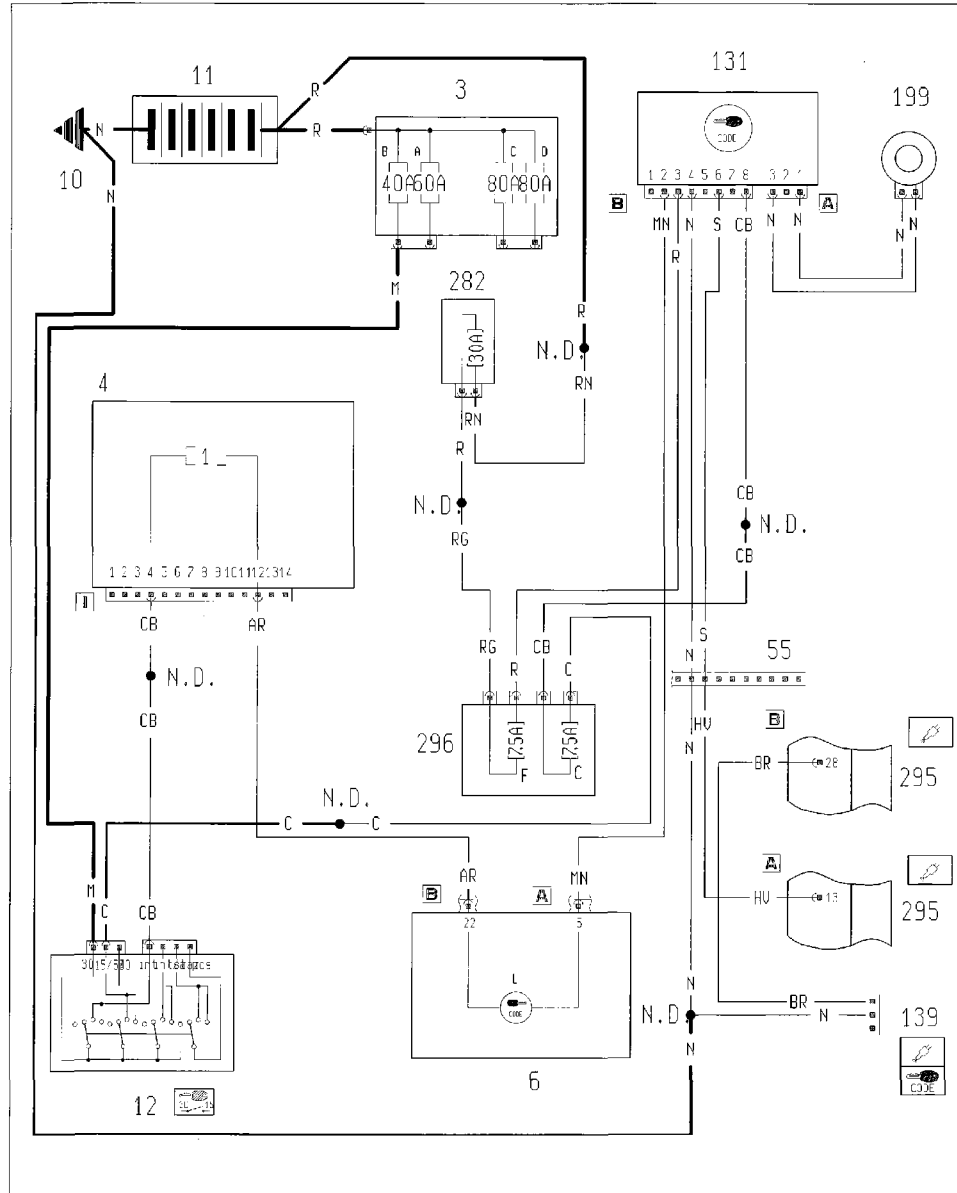
#### 229 Engine cut out electro-stop



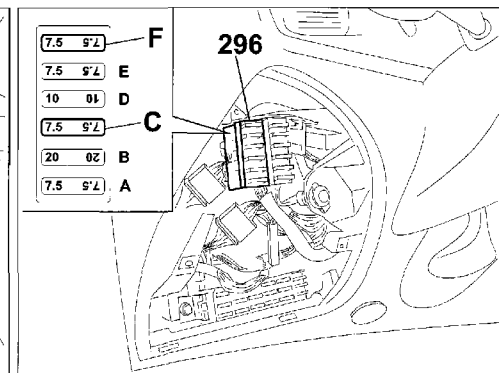
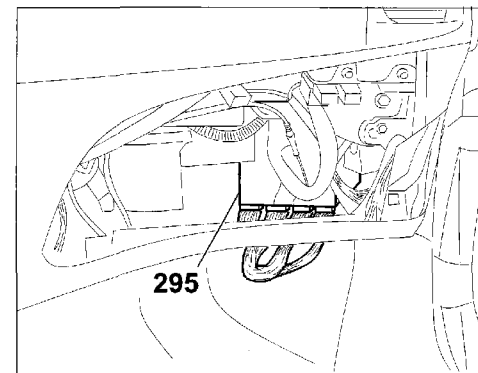
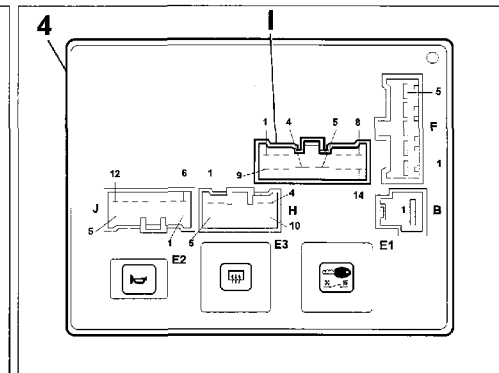
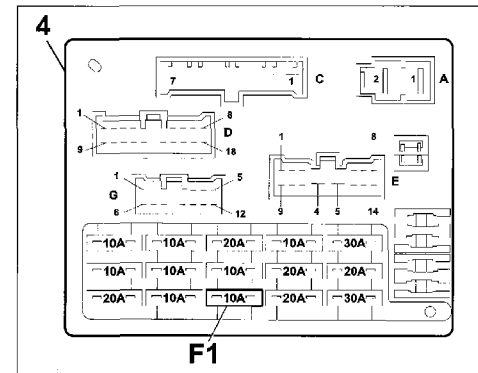
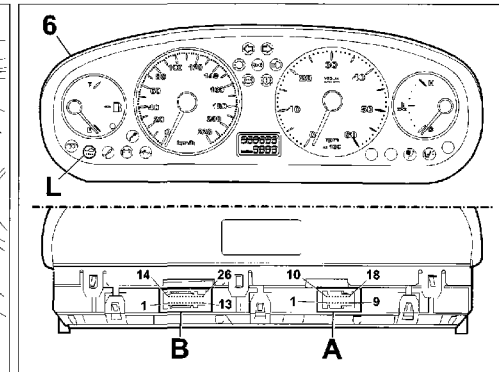
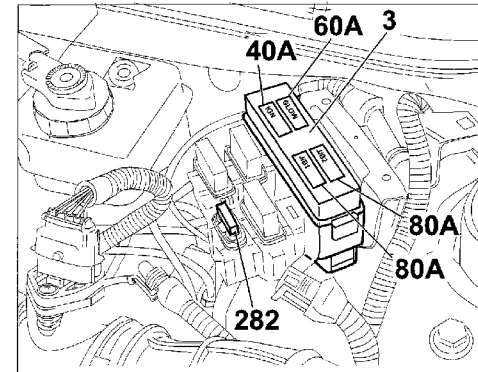
The cables in the wiring diagram are marked

P4A032101

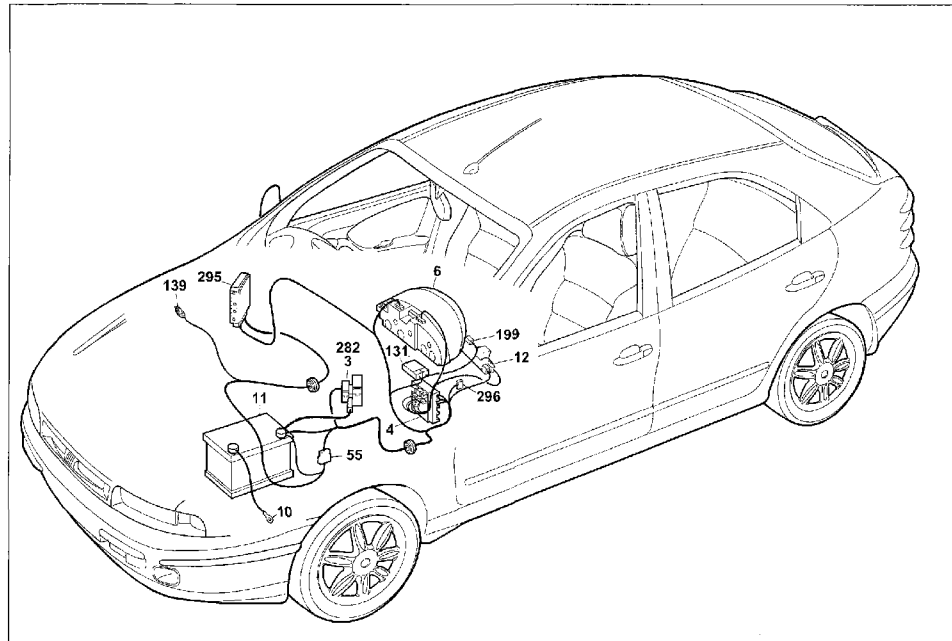
Fiat-CODE and failure warning light - (See key at end of wiring diagrams)



Location of components



## 55.



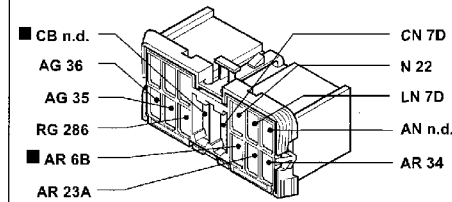
P4A035101

### Fiat-CODE and failure warning light

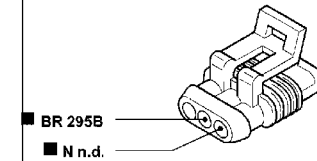
#### Components key

- |   |   |
|---|---|
| 3 Power fuse box:<br>A 30A protective fuse for injection system (60A for TD versions)<br>B 40A protective fuse for ignition system<br>C 80A fuse protecting additional options<br>D 80A protective fuse for junction unit                         | 282 7.5A fuse protecting Fiat-CODE/electronic injection (60 for UNIJET)<br>295 Injection/ignition electronic control unit 1910 TD UNIJET<br>296 Fuse carrier base on front cable<br>C 7.5A fuse protecting Fiat-CODE cooling system /electronic injection<br>F 7.5A fuse protecting electronic injection system/ Fiat- CODE |
| 4 Junction unit<br>6 Instrument panel:<br>L Fiat CODE device failure warning light  | N.D. Ultrasound welding taped in cable loom   |
| 10 Earth for battery on bodyshell<br>11 Battery<br>12 Ignition switch<br>55 Connection between front/engine pre-wiring cables<br>131 Fiat CODE electronic control unit<br>139 Diagnostic socket for injection system<br>199 Aerial for Fiat- CODE |   |

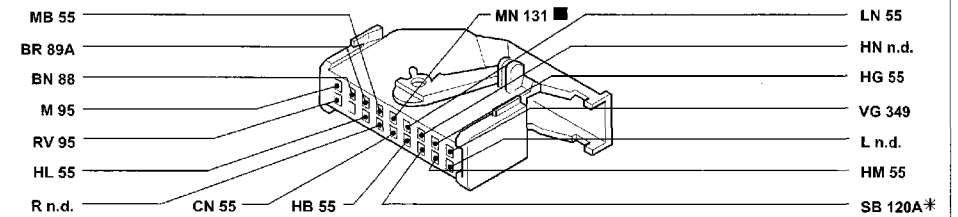
#### 41 Junction unit



#### 139 Diagnostic socket for injection system

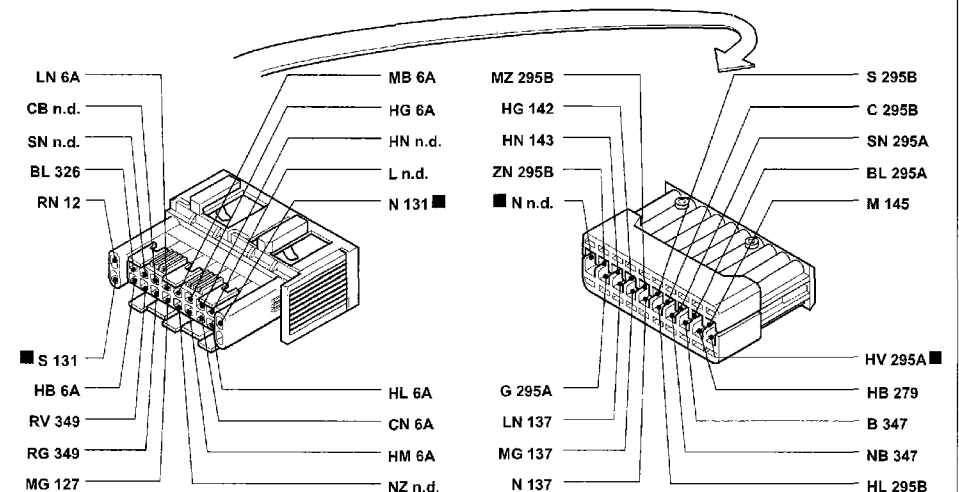


#### 6A Instrument panel



\* Variant connection for versions with air conditioning

#### 55 Connection for front cable/engine pre-wiring

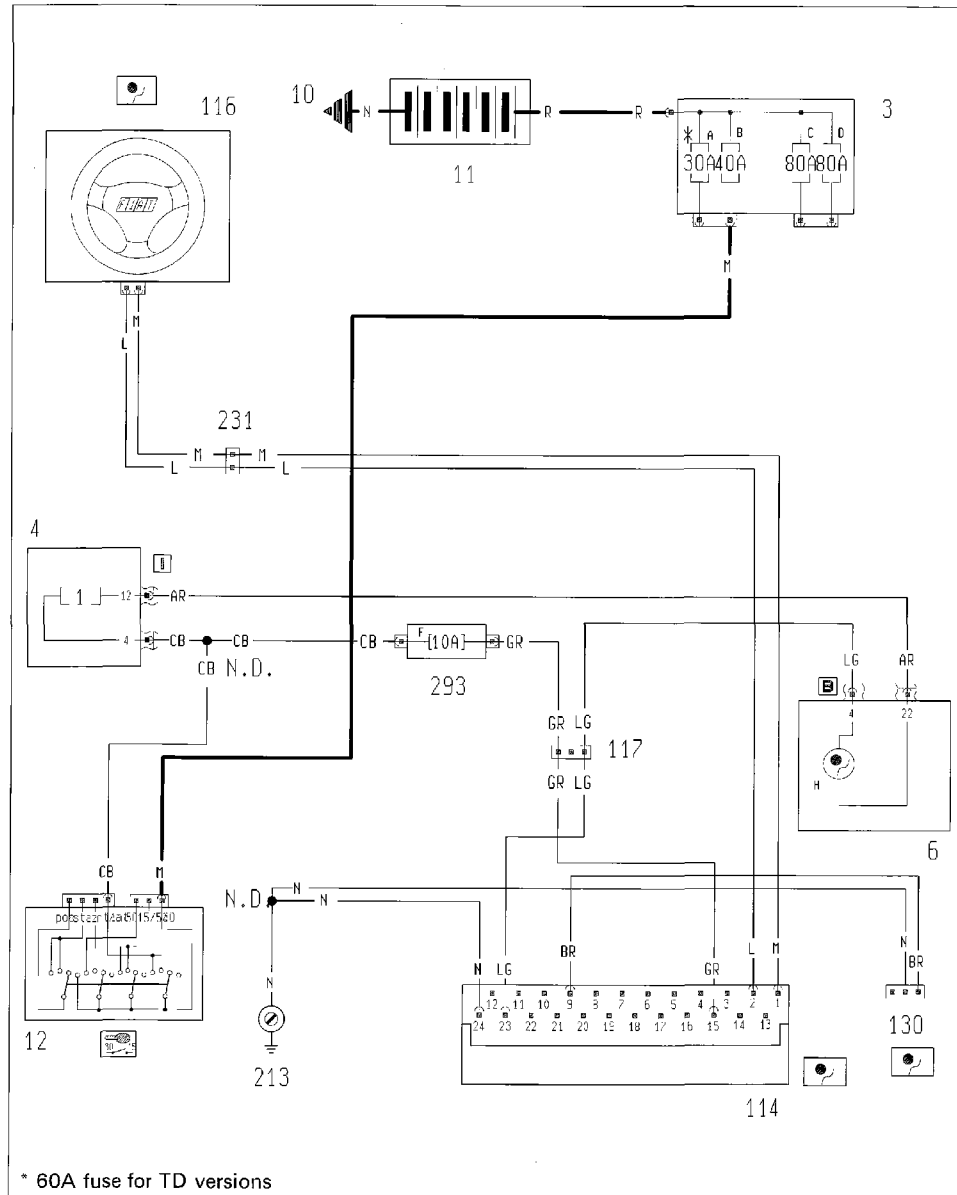


The cables in the wiring diagram are marked

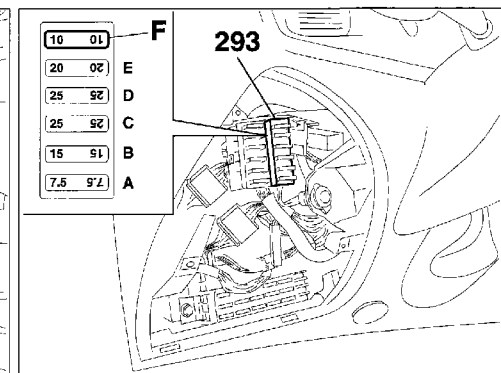
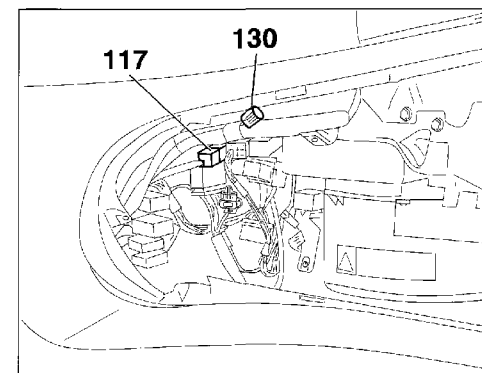
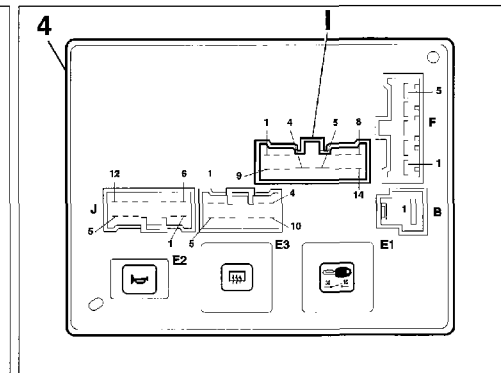
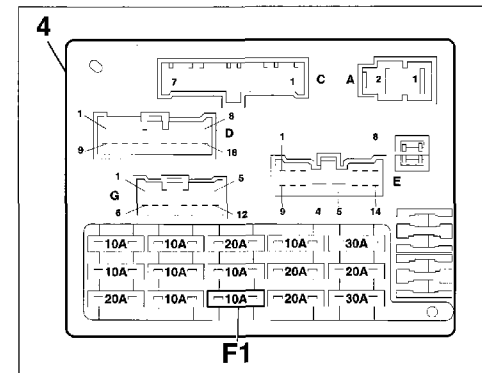
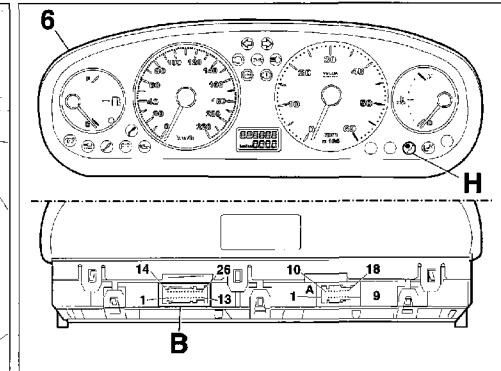
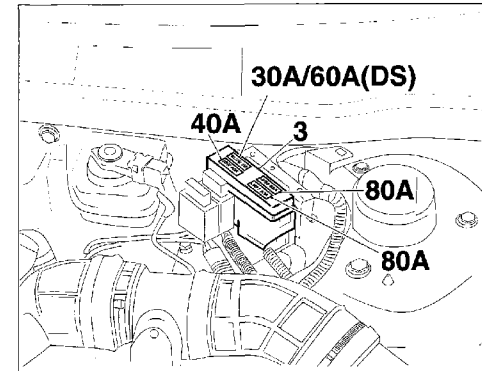
P4A036101



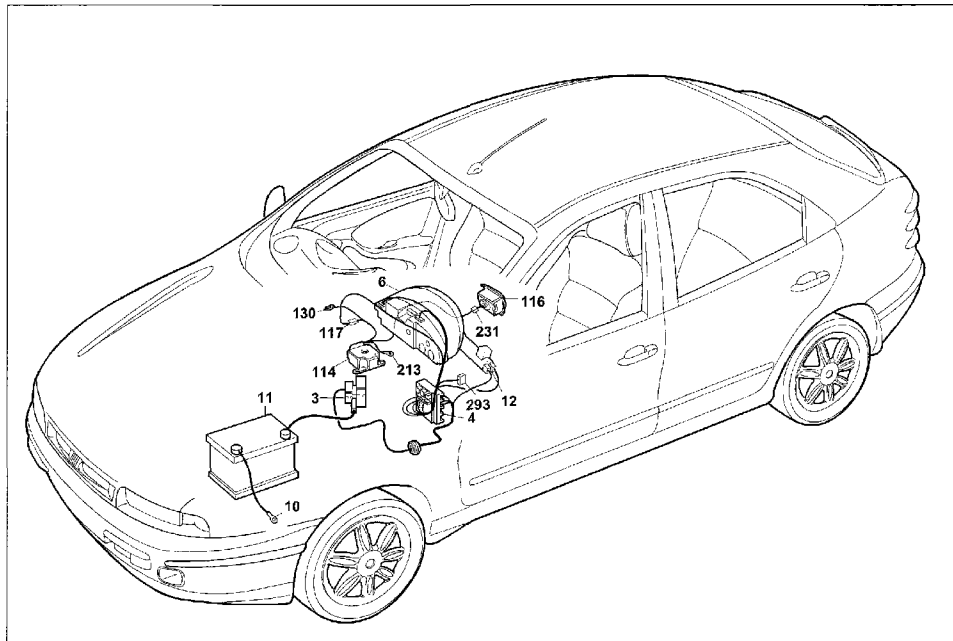
Driver's EURO-BAG and failure warning light - (See key at end of wiring diagrams)



**Location of components**



55.



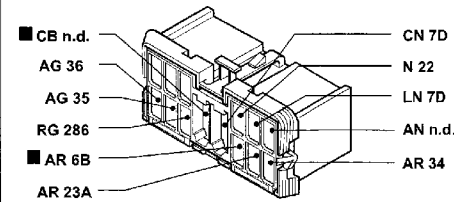
P4A039101

Driver's EURO-BAG and failure warning light

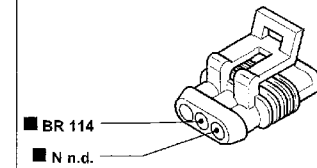
Components key

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit
- 6 Instrument panel:
  - H EURO-BAG system failure warning light
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 114 EURO-BAG electronic control unit
- 116 Driver's EURO-BAG
- 117 Connection between EURO-BAG/dashboard cables
- 130 Diagnostic socket for EURO-BAG
- 213 Earth for EURO-BAG
- 231 Clock spring connection
- 293 Fuse carrier base on dashboard cable
  - F 10A fuse protecting EURO-BAG
- N.D. Ultrasound welding taped in cable loom

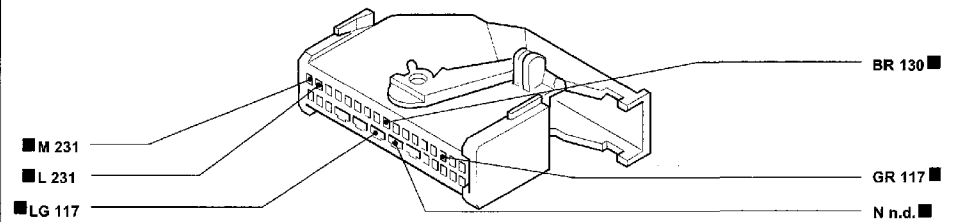
41 Junction unit



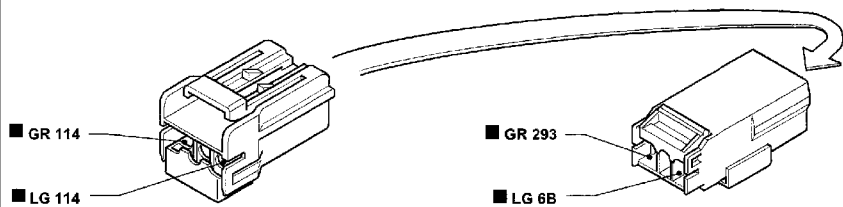
130 Diagnostic socket for EURO-BAG



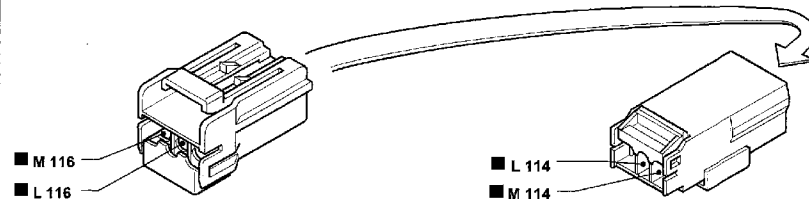
114 EURO-BAG electronic control unit



117 Connection between EURO-BAG/dashboard cables



231 Clock spring connection

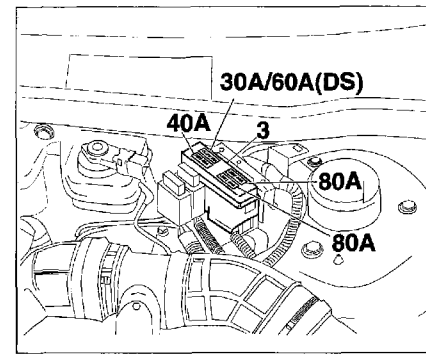
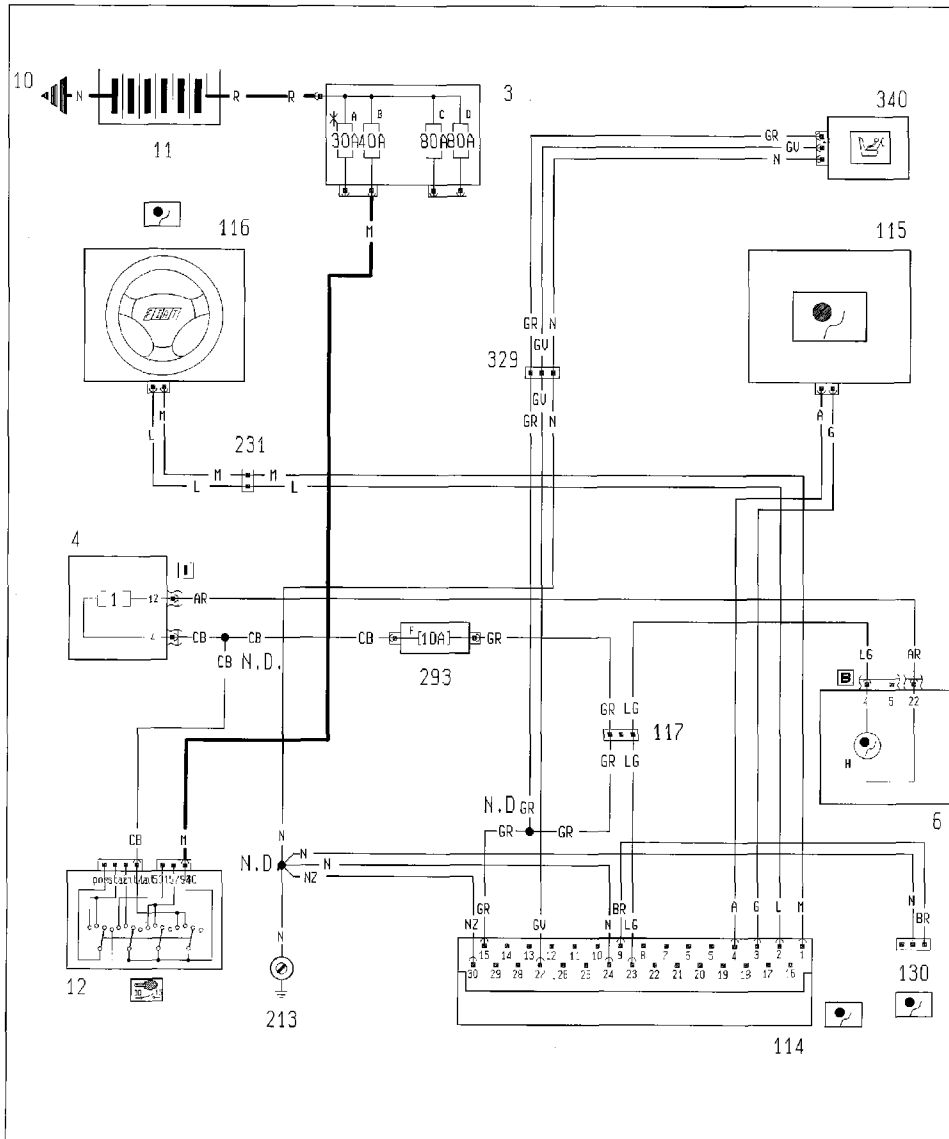


The cables in the wiring diagram are marked

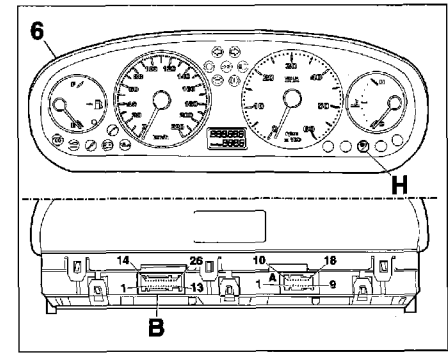
P4A040101

Driver's side, passenger side EURO-BAG and failure warning light - (See key at end of wiring diagrams)

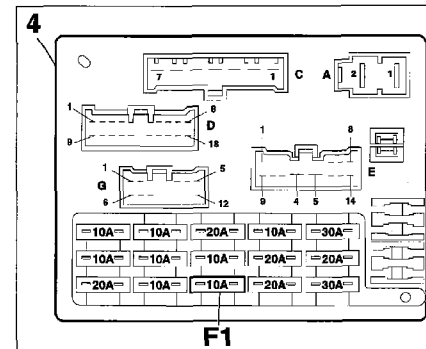
Component location



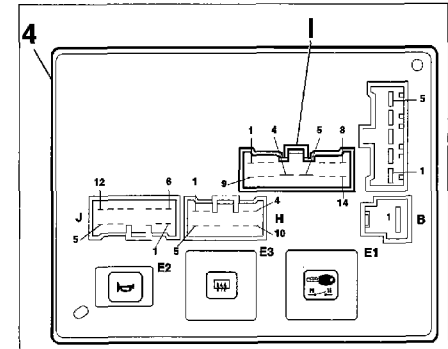
4A042101



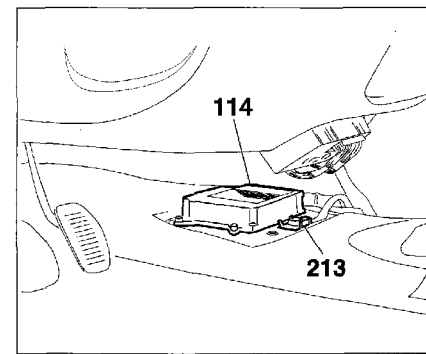
4A042102



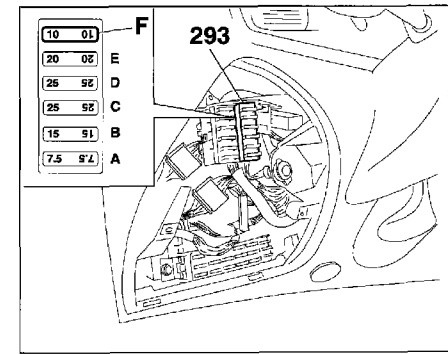
4A042103



4A042104



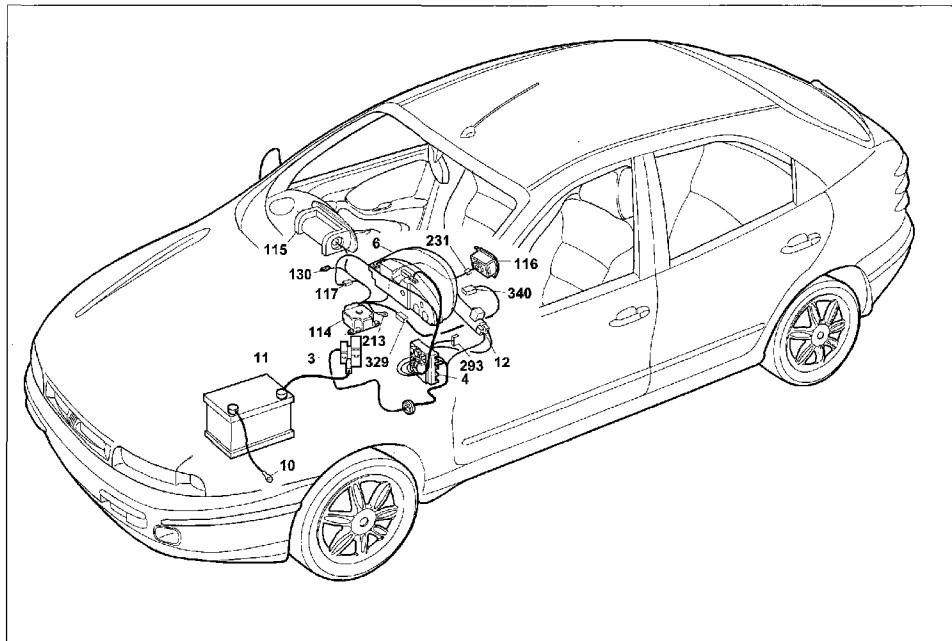
4A042105



4A042106

\* 60A fuse for TD versions

55.



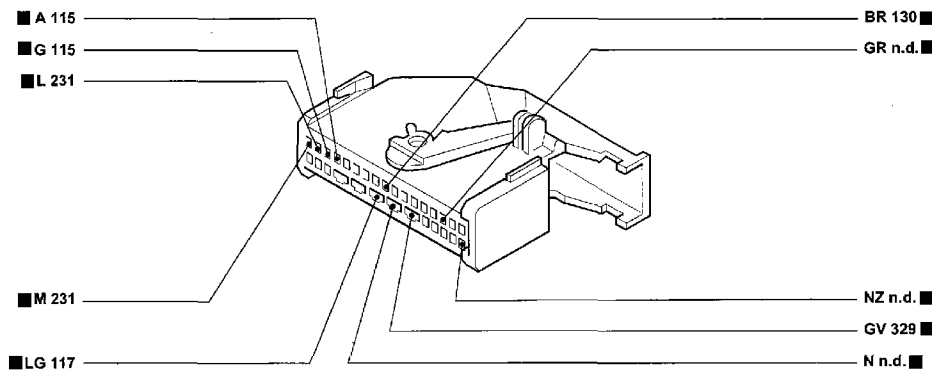
4A043101

Driver's side, passenger side EURO-BAG and failure warning light

Key to components

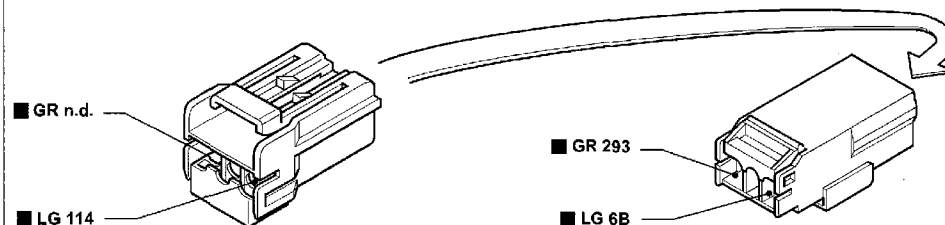
- |   |  |
|---|--|
| 3 Power fusebox:<br>A 30A fuse protecting injection system<br>(60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting additional options<br>D 80A fuse protecting junction unit   | 231 Clock spring connector<br>293 Fuse holder base on facia lead<br>F 10A fuse protecting EURO BAG<br>329 Connection with braid on floorpan<br>340 Passenger presence sensor |
| 4 Junction unit:<br>6 Instrument panel<br>H EURO-BAG system failure warning light   | N.D. Ultrasound welding taped in cable loom  |
| 10 Earth for battery on body<br>11 Battery<br>12 Ignition switch<br>114 EURO-BAG electronic control unit<br>115 Passenger side EURO-BAG<br>116 Driver's EURO BAG<br>117 EURO-BAG/facia lead connections<br>130 Tester connection for EURO-BAG<br>213 Earth for EURO-BAG |  |

114 EURO-BAG electronic control unit



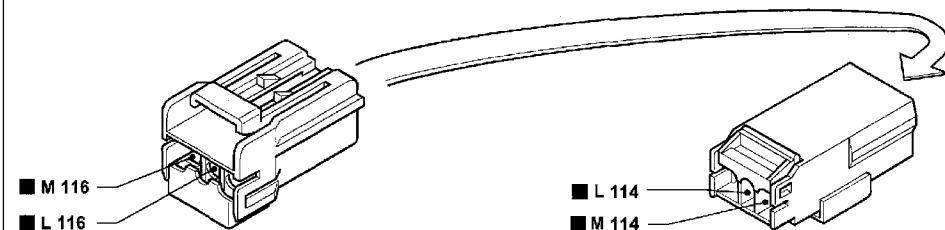
4A044101

117 EURO-BAG/facia wiring connection



4A044102

231 Clock spring connector



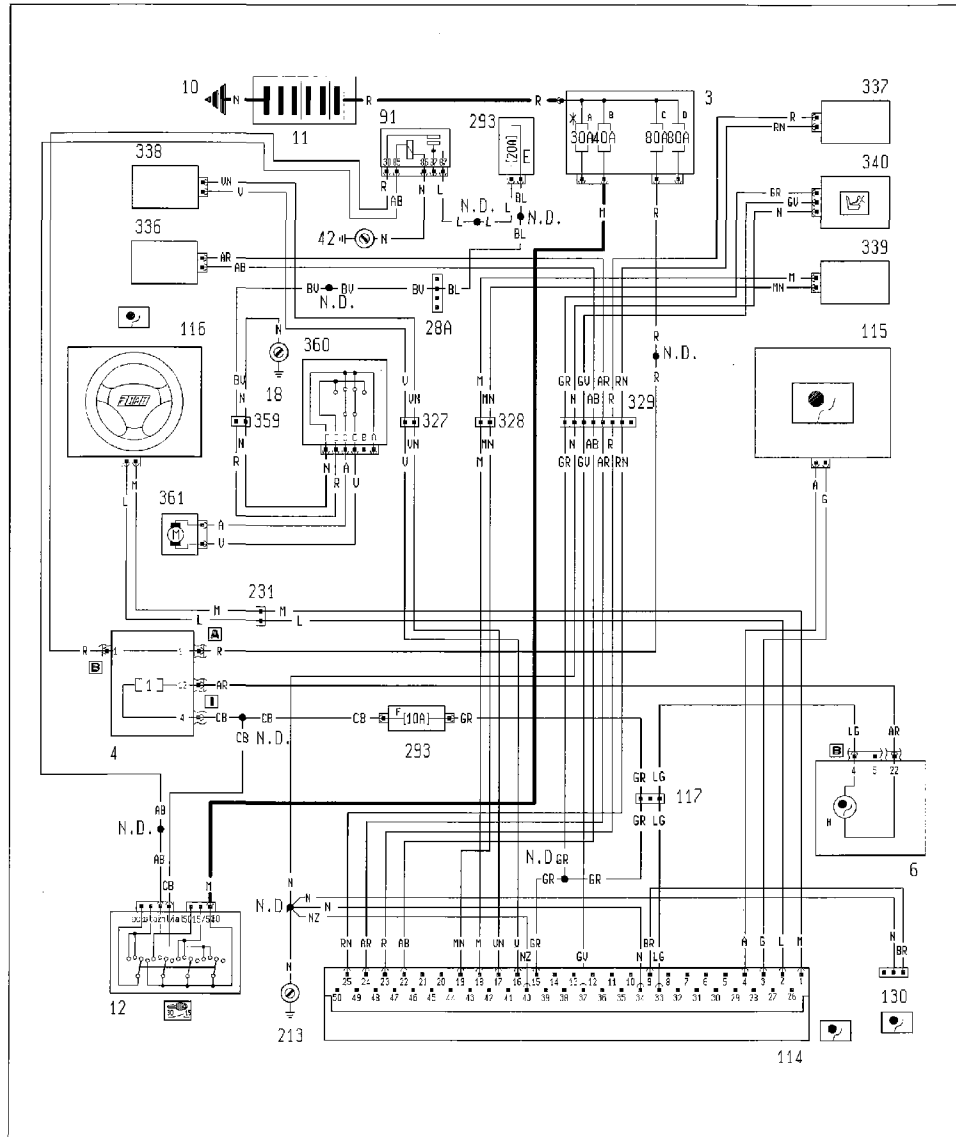
4A044103

The wires marked in the wiring diagram are marked by the square

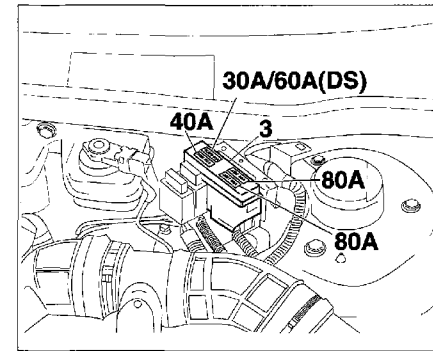
**55.**

Driver's, passenger side EURO BAG, SIDE BAG and failure warning light - Lumbar adjustment - (See key at end of wiring diagrams)

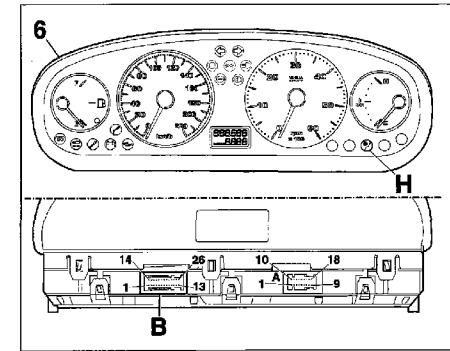
Component location



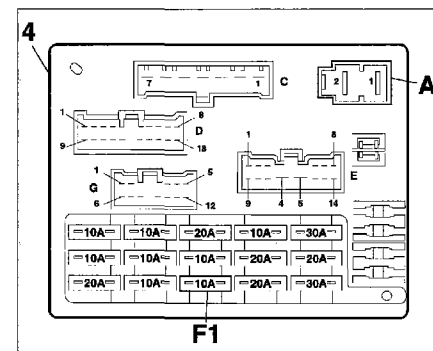
4A046101



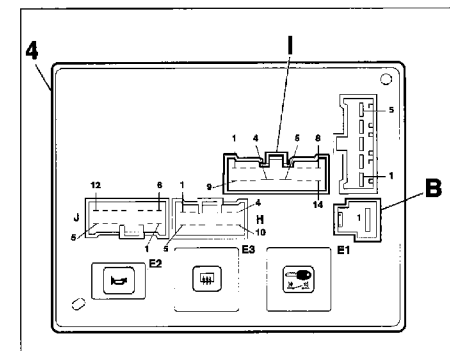
4A046101



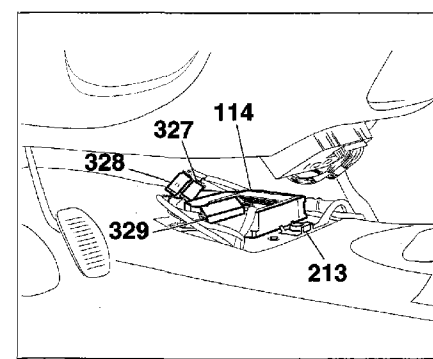
4A046102



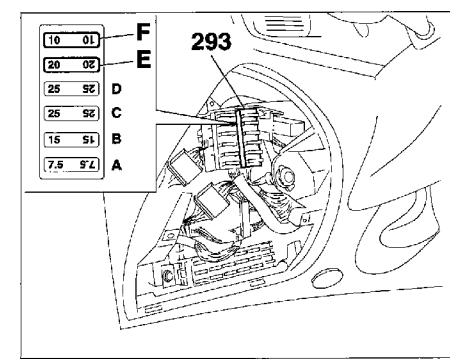
4A046103



4A046104



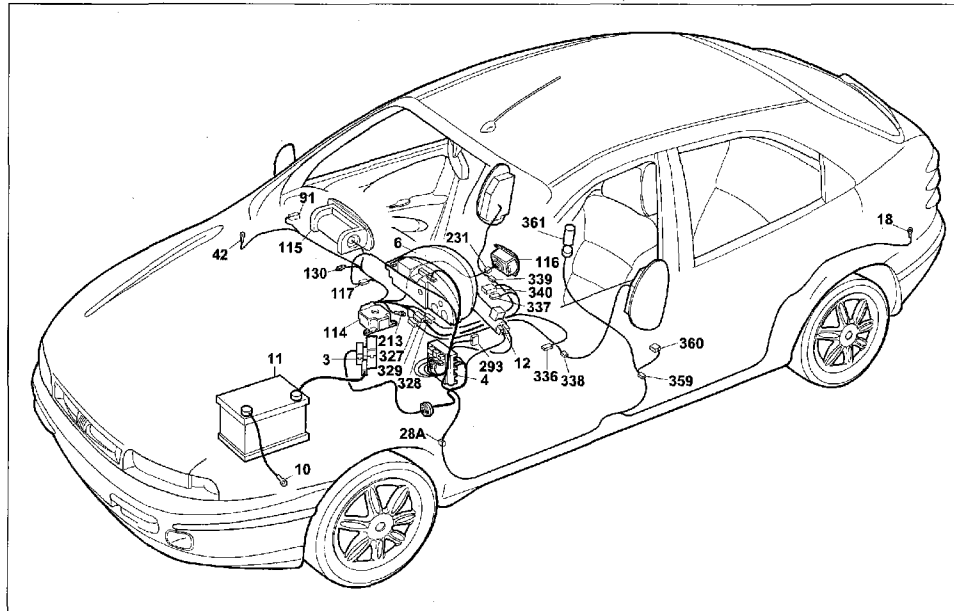
4A046105



4A046106

\* 60A fuse for TD versions

**55.**



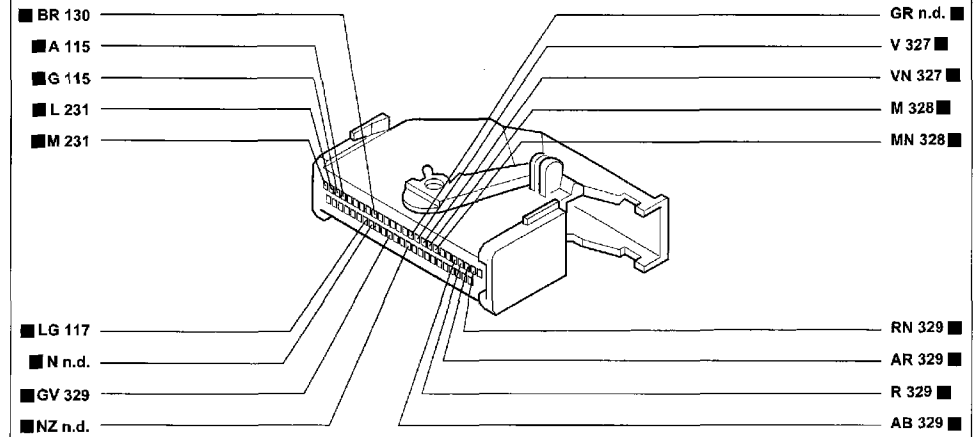
4A047101

**Driver's, passenger side EURO BAG, passenger SIDE BAG and failure warning light - Lumbar adjustment**

**Key to components**

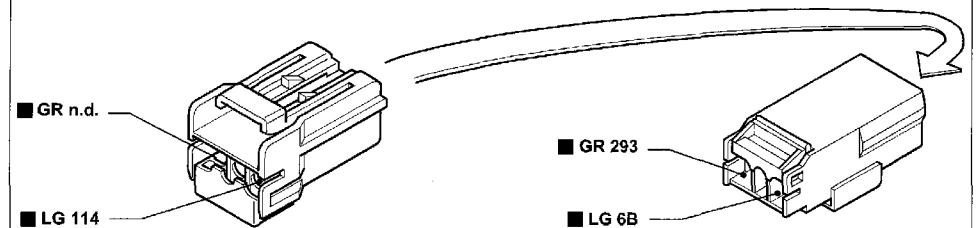
- |  |   |
|--|---|
| 3 power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting additional options<br>D 80A fuse protecting junction unit | 293 Fuse holder base on dashboard cable<br>F10A fuse protecting EURO BAG                            |
| 4 Junction unit  | 327 Connection with braid on floor for left EURO BAG  |
| 6 Instrument panel:<br>H EURO-BAG system failure warning light   | 328 Connection with braid on floor for right EURO BAG   |
| 9.1 Power relay  | 329 Connection with braid on floor  |
| 10 Battery earth on body   | 336 Driver's sensor for EURO BAG  |
| 11 Battery   | 337 Passenger side sensor for EURO BAG  |
| 12 Ignition switch   | 338 Driver's SIDE BAG   |
| 18 Left rear earth   | 339 Passenger SIDE BAG  |
| 42 Right facia earth   | 340 Passenger presence sensor   |
| 28A Connection between dashboard/longitudinal cables   | 359 Connection between longitudinal cables and cables for lumbar adjustment device on driver's seat |
| 114 EURO-BAG electronic control unit   | 360 Lumbar adjustment device control switch on driver's seat  |
| 115 Passenger EURO BAG   | 361 Lumbar adjustment motor   |
| 116 Driver's EURO BAG  | N.D. Ultrasound welding taped in cable loom   |
| 117 EURO-BAG/facia connection  |   |
| 130 Tester connection for EURO-BAG   |   |
| 213 Earth for EURO-BAG   |   |
| 231 Clock spring connector   |   |

**114** EURO-BAG electronic control unit



4A048101

**117** EURO-BAG/facia wiring connection



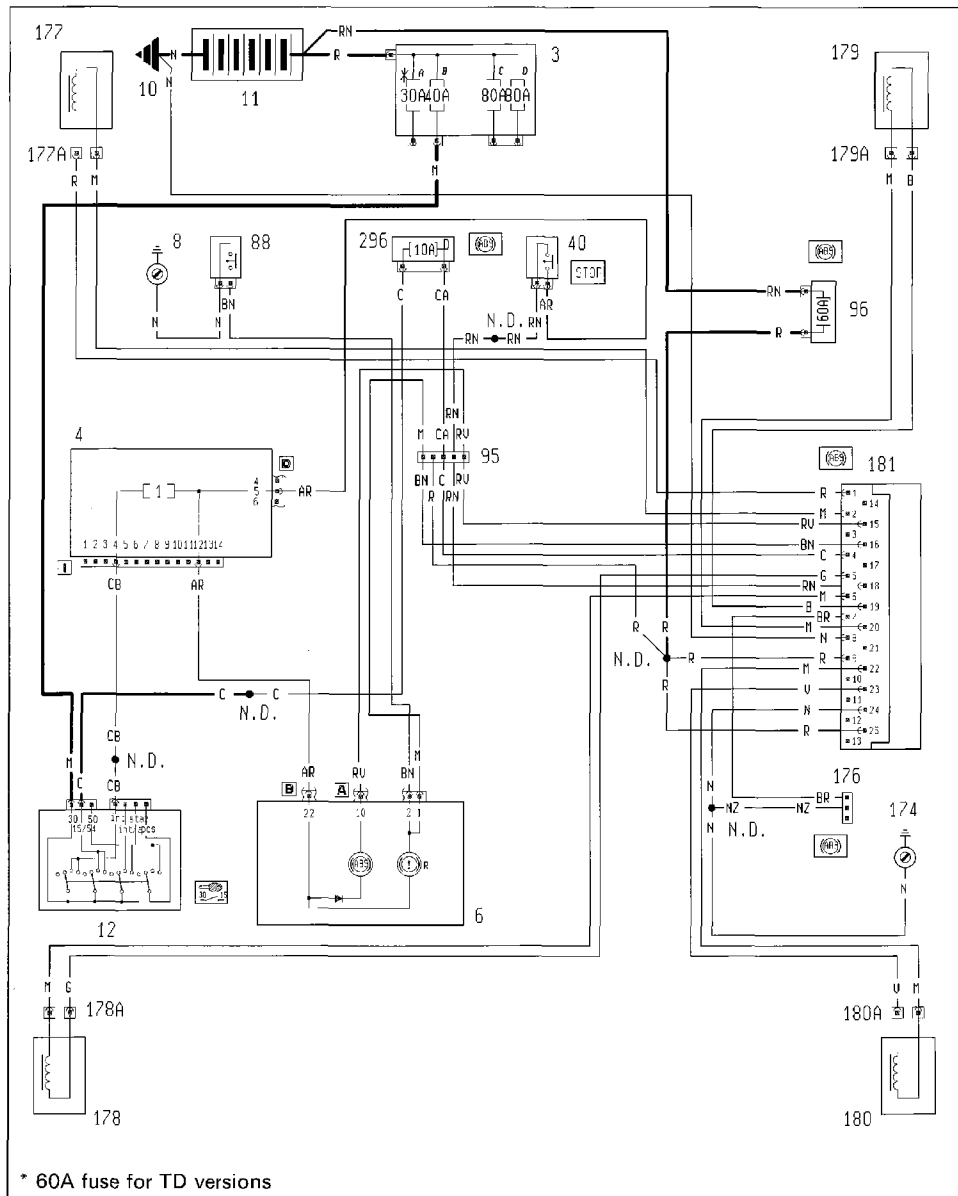
4A048102

**231** Clock spring connector



4A048103

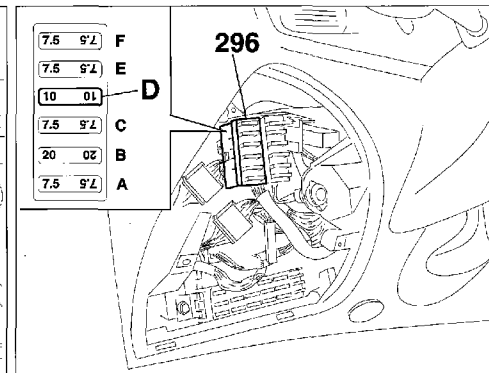
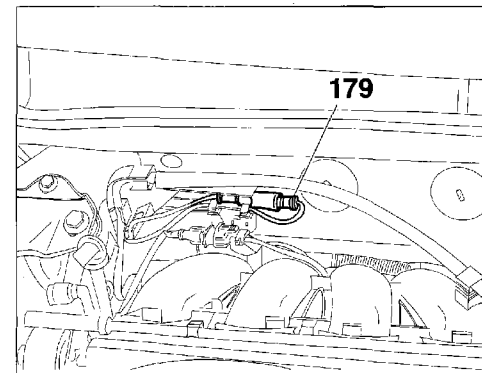
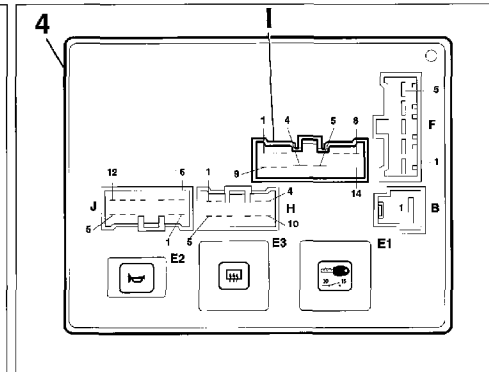
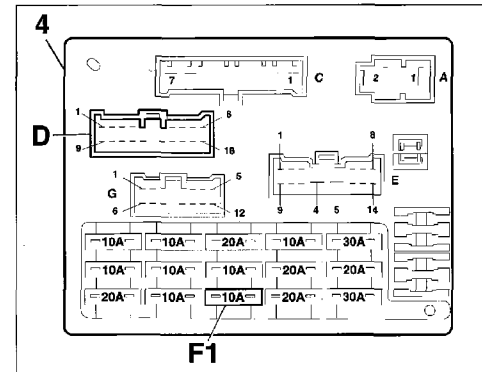
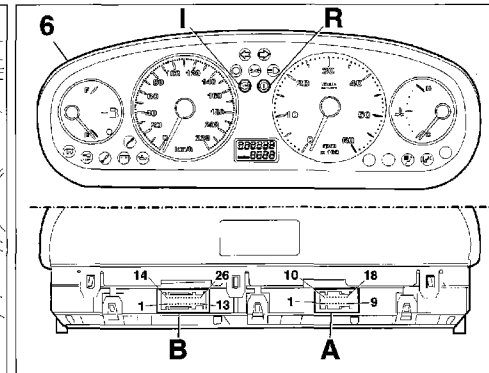
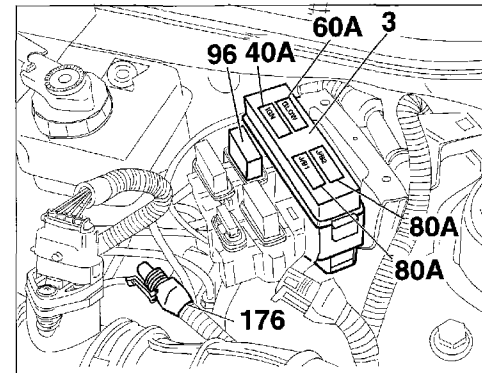
**Anti-lock brakes (A.B.S.) and failure warning light - (See key at end of wiring diagrams)**



4A0481

P4A049101

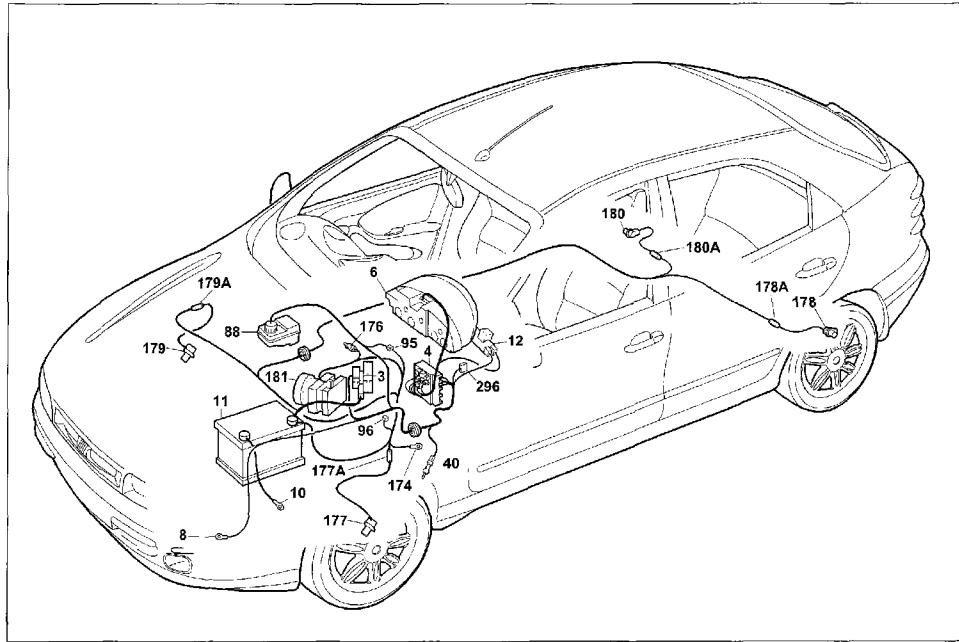
**Location of components**



4A0501

P4A050101

**55.**



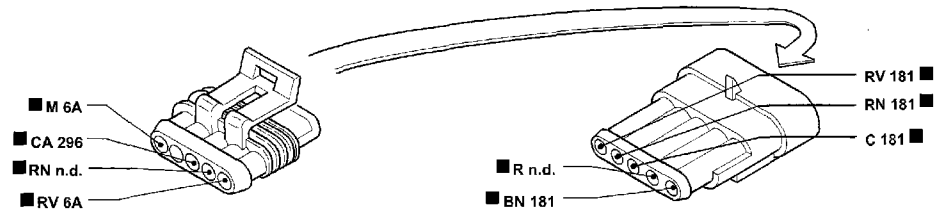
**Anti-lock brakes and failure warning light (A.B.S.)**

**Components key**

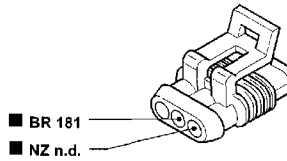
- |  |  |
|--|--|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit</p> <p>6 Instrument panel:<br/>R Handbrake/insufficient brake fluid level warning light</p> <p>8 Left front earth</p> <p>10 Earth for battery on bodyshell</p> <p>11 Battery</p> <p>12 Ignition switch</p> <p>40 Vehicle brake lights switch</p> <p>88 Insufficient brake fluid level sensor</p> <p>95 Connection between front/anti-lock brake cables (A.B.S.)</p> <p>96 60A protective power fuse for electrical equipment</p> <p>174 Power earth for anti-lock brakes (A.B.S.)</p> <p>176 Diagnostic socket for anti-lock braking system (A.B.S.)</p> <p>177 Sensor on left front wheel for anti-lock brakes (A.B.S.)</p> <p>177A Connection for cable on left front wheel sensor</p> | <p>178 Sensor on left rear wheel for anti-lock brakes (A.B.S.)</p> <p>178A Connection for cable on left rear wheel sensor</p> <p>179 Sensor on right front wheel for anti-lock brakes (A.B.S.)</p> <p>180 Sensor on right rear wheel for anti-lock brakes (A.B.S.)</p> <p>179A Connection for cable on right front wheel sensor</p> <p>180A Connection for cable on right rear wheel sensor</p> <p>181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)</p> <p>296 Fuse carrier base on front cable<br/>D 10A fuse protecting A.B.S.<br/>N.D. Ultrasound welding taped in cable loom</p> |
|--|--|

P4A051101

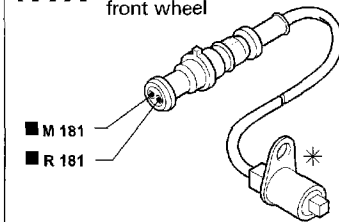
**95 Front/anti-lock brakes cables connection (A.B.S.)**



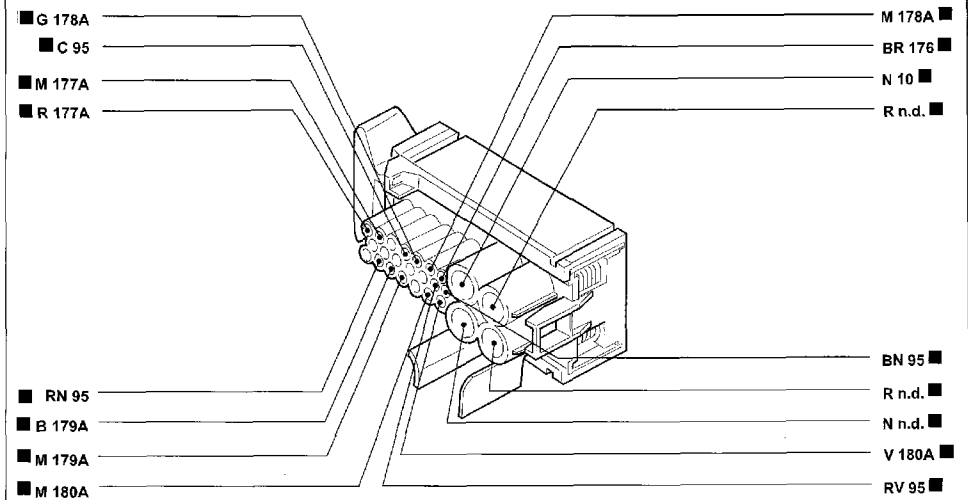
**176 Diagnostic socket for A.B.S.**



**177(\*) Sensor on left front wheel (A.B.S.)**  
**177A Connection for A.B.S. sensor cable on left front wheel**



**181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)**

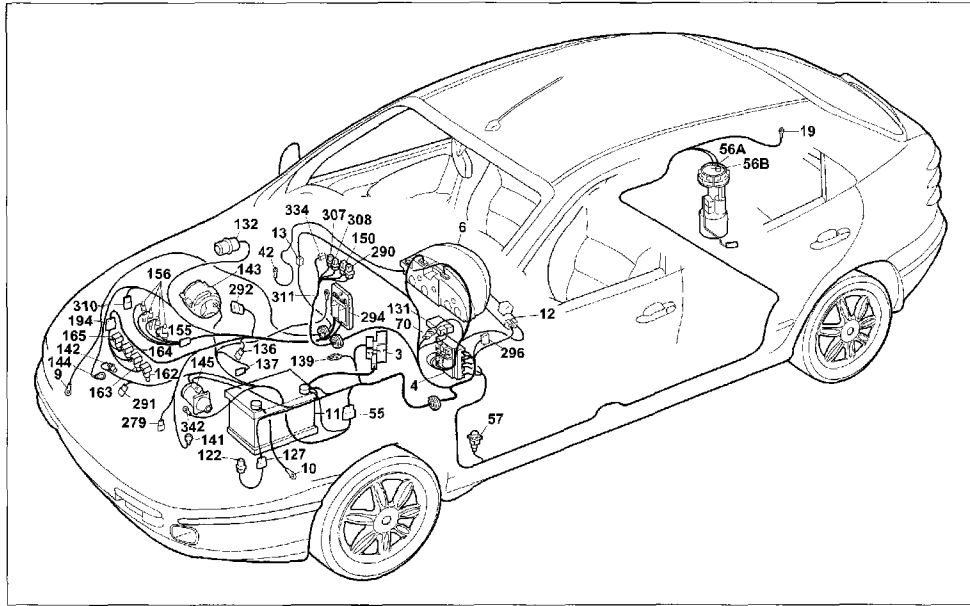


The cables in the wiring diagram are marked

P4A052101



### 55.



P4A14301

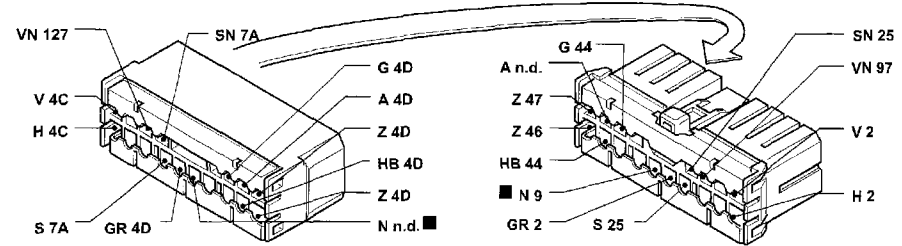
**Starting - BOSCH M1.5 Electronic injection and ignition - Recharging and warning light - Warning light signalling injection system failure - Insufficient engine oil pressure warning light - Fiat-CODE and injection system failure warning light - Rev counter - Speedometer**

#### Components key

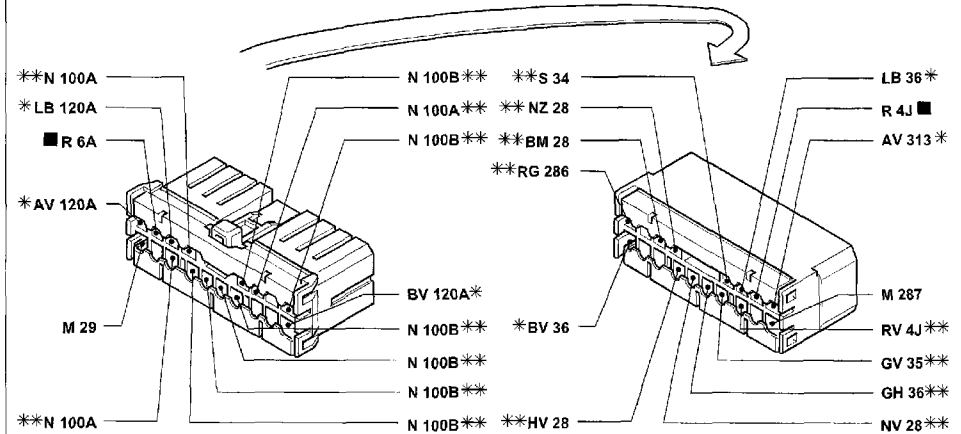
- |  |  |
|--|--|
| 3 Power fuse box   | 139 Diagnostic socket for injection system                           |
| A 30A protective fuse for injection system (60A for TD versions) | 141 Heated Lambda sensor   |
| B 40A protective fuse for ignition system                        | 142 Switch signalling insufficient engine oil pressure               |
| C 80A fuse protecting additional options                         | 143 Alternator   |
| D 80A protective fuse for junction unit                          | 144 Rpm and T.D.C. sensor  |
| 4 Junction unit  | 145 Starter motor  |
| 6 Instrument panel:  | 150 Injection system relay feed                                      |
| A Battery recharging warning light                               | 155 Ignition coils   |
| B Insufficient engine oil pressure warning light                 | 156 Spark plugs  |
| M Injection system failure warning light petrol/ds               | 162 Injector (1*)  |
| V Speedometer control module                                     | 163 Injector (2*)  |
| 9 Right front earth  | 164 Injector (3*)  |
| 10 Right front earth   | 165 Injector (4*)  |
| 11 Battery   | 194 Injection cables/injector band connection                        |
| 12 Ignition switch   | 279 Twin engine coolant temperature sender unit                      |
| 13 Front right/left cables connection                            | 290 Electric fuel pump relay feed                                    |
| 19 Right rear earth  | 291 Sensor for power assisted steering pump                          |
| 42 Right dashboard earth   | 292 Modular actuator   |
| 55 Connection between front/engine pre-wiring cables             | 294 Injection/ignition electronic control unit 1242                  |
| 56 Fuel level gauge  | 296 Fuse carrier base on front cable                                 |
| A Fuel level sensor  | C 7.5A fuse protecting Fiat-CODE cooling system/electronic injection |
| B Electric fuel pump   | F 7.5A fuse protecting electronic injection system/ Fiat-CODE        |
| 57 Inertia switch  | 307 15A fuse protecting injection system                             |
| 70 Dashboard/front cables connection                             | 308 15A fuse protecting canister solenoid valve                      |
| 122 Engine cooling fan low speed relay feed                      | 310 Absolute pressure and air temperature sensor                     |
| 127 Front left cables/cable on relay holder bracket connection   | 311 Earth for electronic injection sensor                            |
| Fiat-CODE electronic control unit                                | 334 Diagnostic connecting cable for 1242                             |
| 131 Fiat-CODE electronic control unit                            | 342 Power earth for electronic injection                             |
| 132 Petrol vapour out out solenoid valve (canister)              |  |
| 136 Detonation sensor  |  |
| 137 Vehicle speed sensor   |  |

N.D. Ultrasound welding taped in cable loom

#### 13 Front right/left cables connection



#### 70 Dashboard/front cables connection Trim level: SX - GT



\* Variant connection for versions with air conditioning  
\*\* Variant connection for versions with alarm

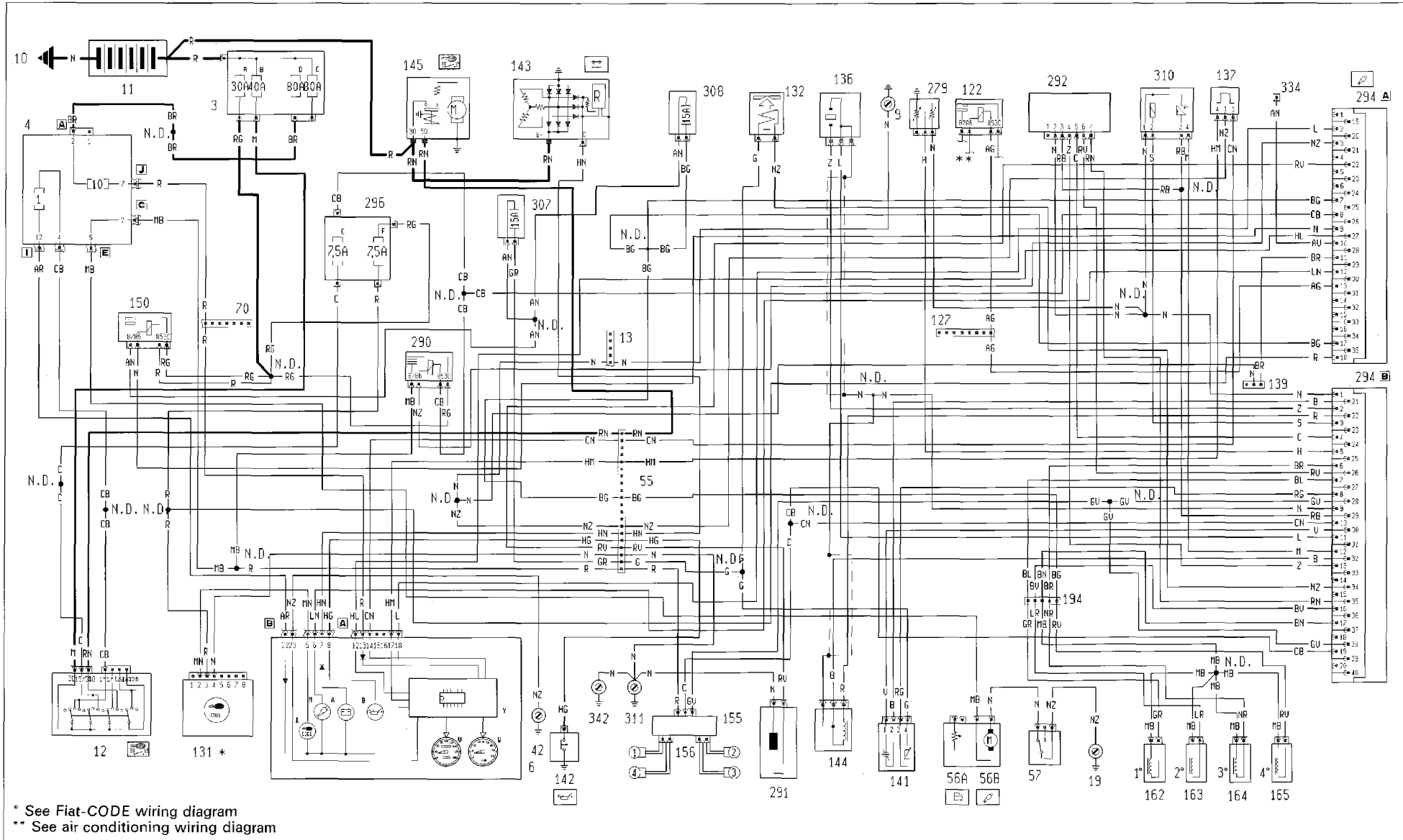
#### 194 Injection cables/injector band connection

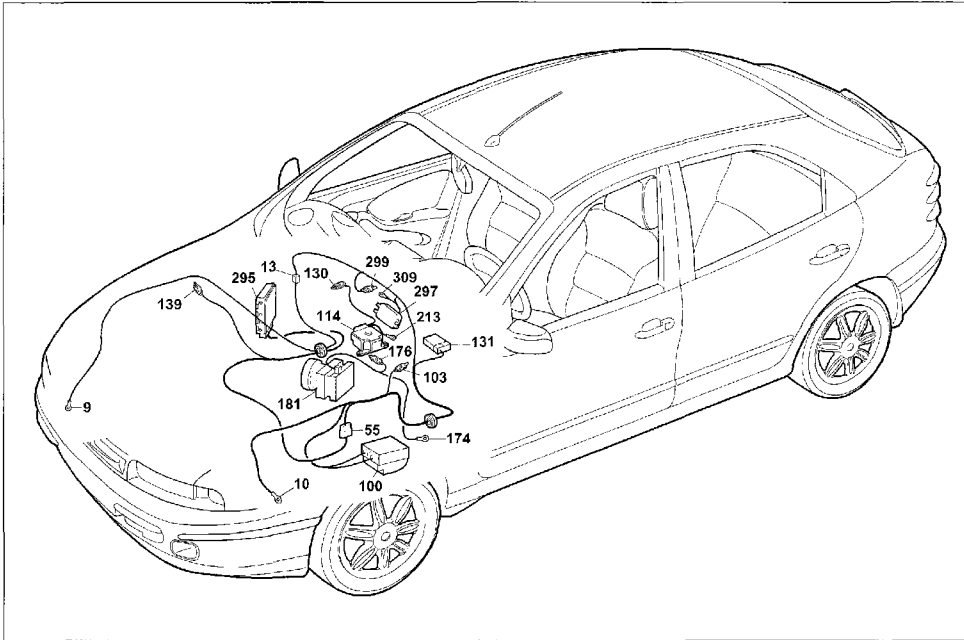


P4A14401

The cables in the wiring diagram are marked

**Starting - BOSCH M1.5.5 Electronic injection and ignition - Recharging and warning light - Warning light signalling injection system failure - Insufficient engine oil pressure warning light - Fiat-CODE and warning light - Rev counter - Speedometer - (See key at end of wiring diagrams)**





P4A138101

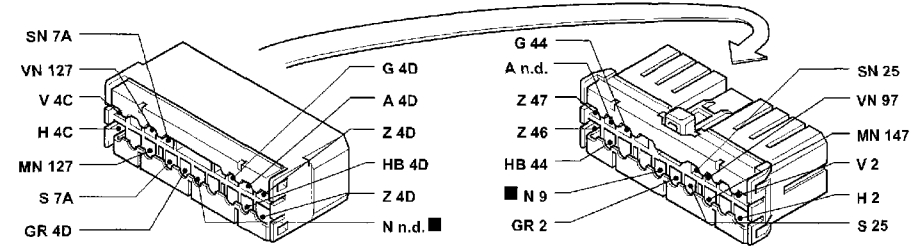
**Diagnostic socket connections**

**Components key**

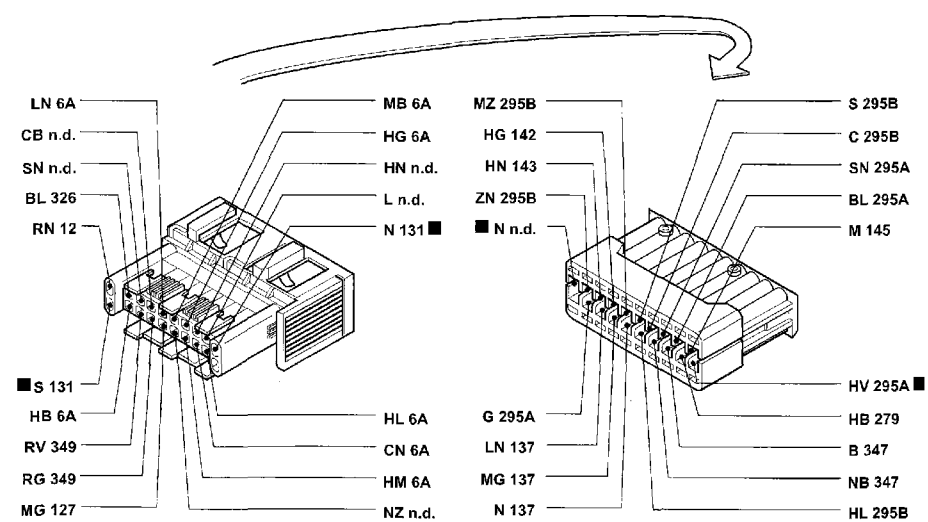
- 9 Right front earth
- 10 Earth for battery on bodyshell
- 13 Front right/left cables connection
- 55 Connection between front/engine pre-wiring cables
- 100 Alarm device electronic control unit
- 103 Diagnostic socket for alarm
- 114 EURO-BAG electronic control unit
- 130 Diagnostic socket for EURO-BAG
- 131 Fiat-CODE electronic control unit
- 139 Diagnostic socket for injection system
- 174 Power earth for anti-lock brakes (A.B.S.)
- 176 Diagnostic socket for anti-lock braking system (A.B.S.)
- 181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)
- 213 Earth for EURO-BAG
- 295 Climate control electronic control unit
- 297 Climate control unit
- 299 Diagnostic socket for heater/climate control
- 309 Earth for climate control unit

N.D. Ultrasound welding taped in cable loom

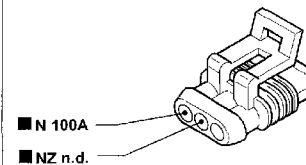
**13** Front right/left cables connection



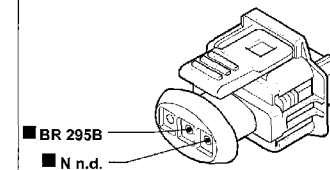
**55** Connection between front/engine pre-wiring cables



**103** Diagnostic socket for alarm



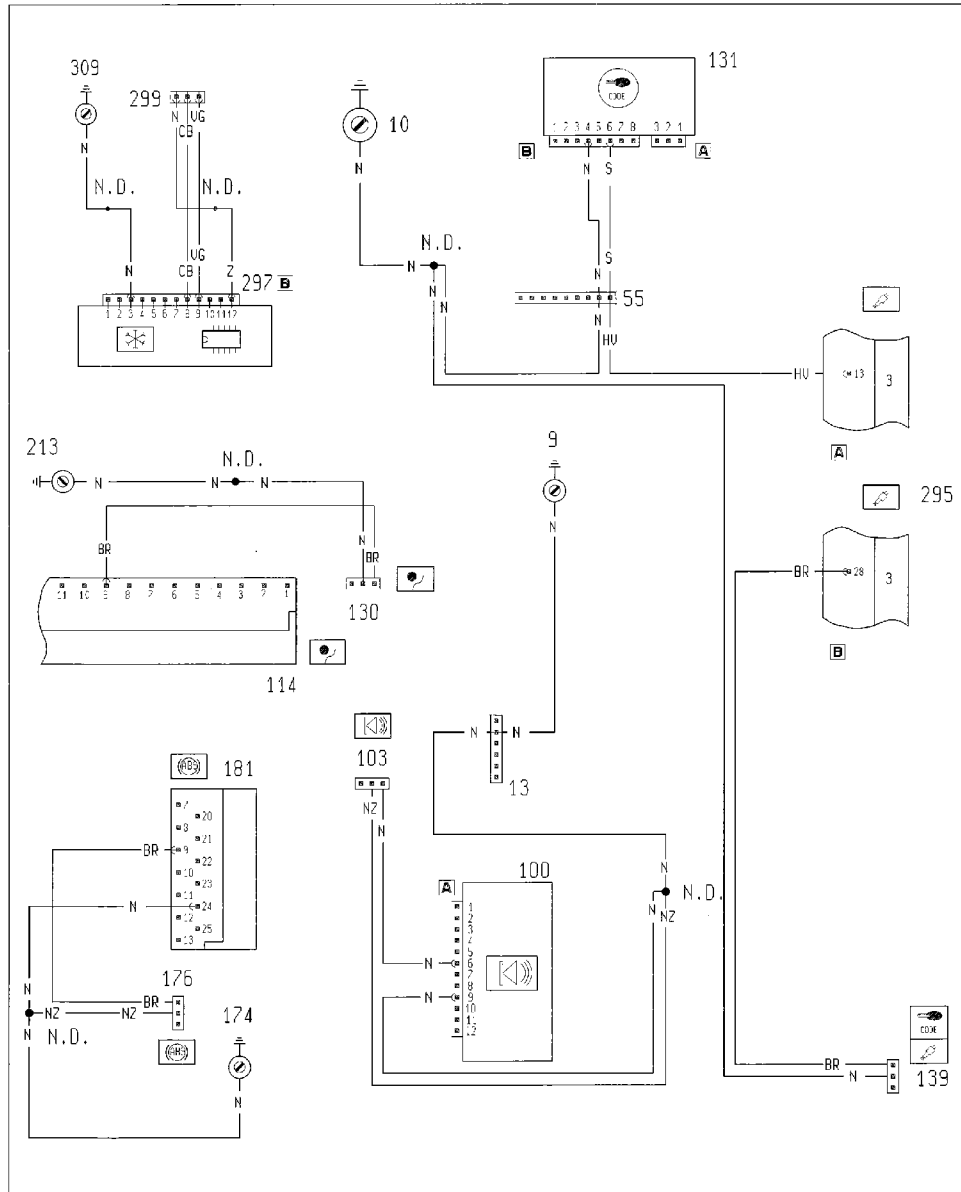
**139** Diagnostic socket for injection system



The cables in the wiring diagram are marked

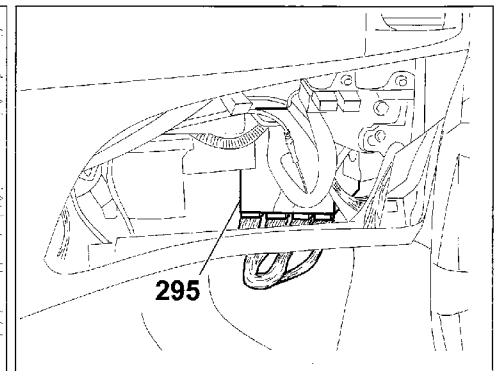
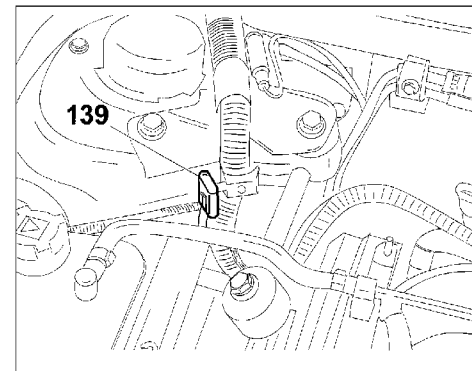
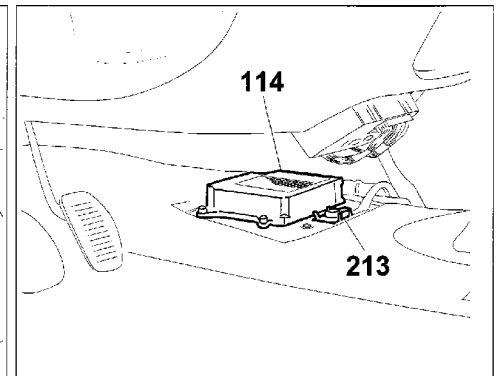
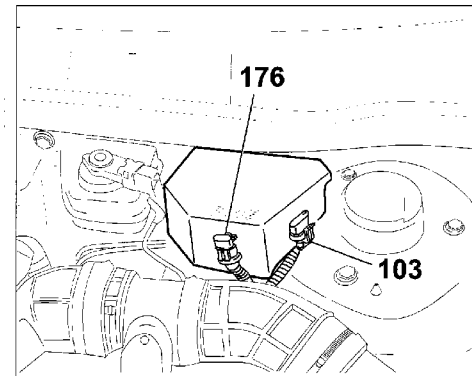
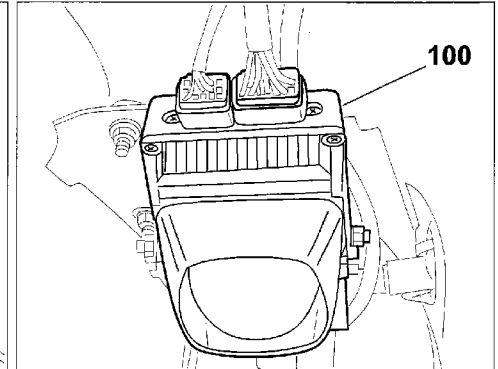
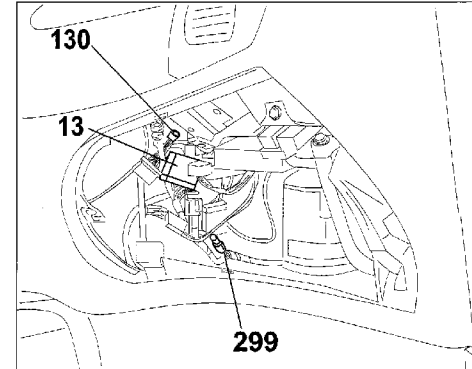
P4A140101

**Diagnostic sockets connection - (See key at end of wiring diagrams)**



P4A13701

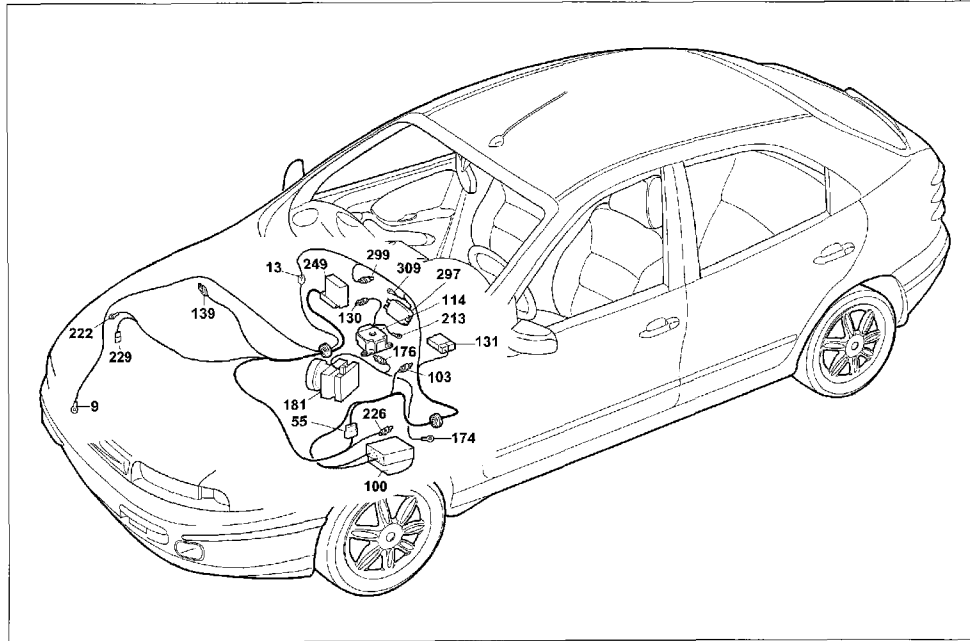
**Location of components**



4A1381

P4A138101

55.



P4A136101

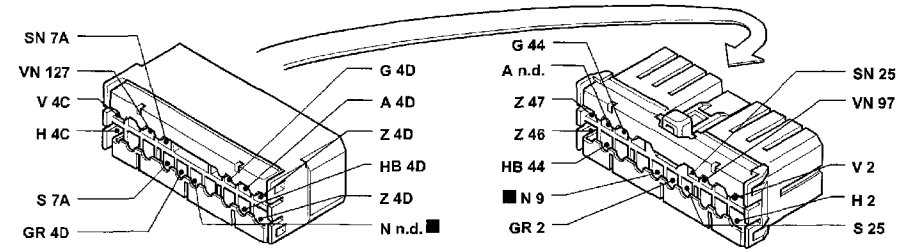
Diagnostic socket connections

Components key

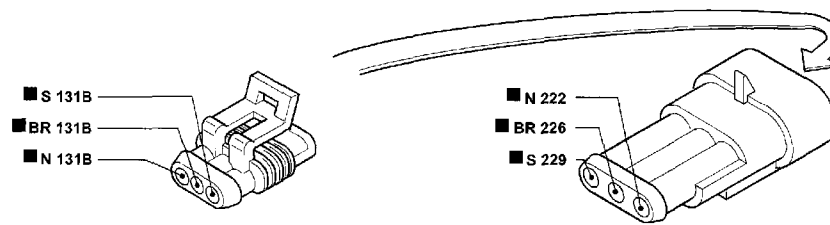
- 9 Right front earth
- 13 Front right/left cables connection
- 55A Connection between front/engine pre-wiring cables
- 100 Alarm device electronic control unit
- 103 Diagnostic socket for alarm
- 114 EURO-BAG electronic control unit
- 130 Diagnostic socket for EURO-BAG
- 131 Fiat-CODE electronic control unit
- 139 Diagnostic socket for injection system
- 174 Power earth for anti-lock brakes (A.B.S.)
- 176 Diagnostic socket for anti-lock braking system (A.B.S.)
- 181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)
- 213 Earth for EURO-BAG
- 222 Earth for fuel system
- 226 Diagnostic socket for Fiat code system (1910 TD)
- 229 Engine cut out electro-stop
- 249 E.G.R. electronic control unit
- 297 Air conditioning control unit
- 299 Diagnostic socket for heater/air conditioning
- 309 Earth for air conditioning unit

N.D. Ultrasound welding taped in cable loom

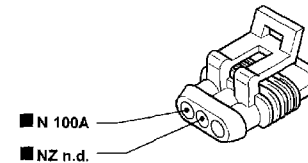
13 Front right/left cables connection



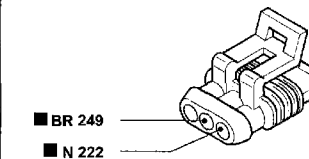
55A Connection between front/engine pre-wiring cables



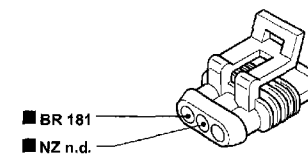
103 Diagnostic socket for alarm



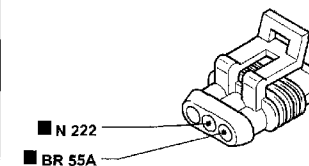
139 Injection system diagnostic socket



176 Diagnostic socket for A.B.S.



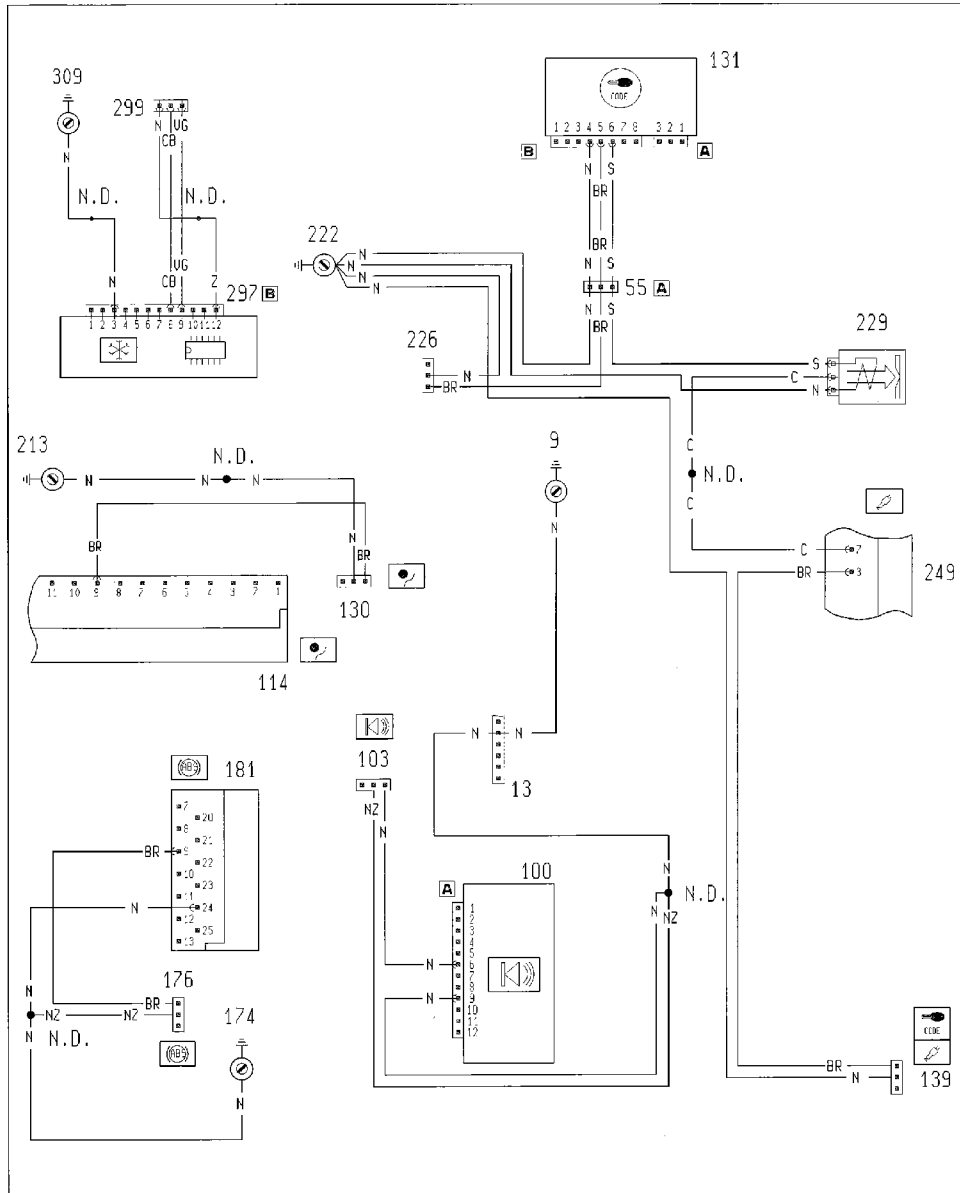
226 Fiat CODE diagnostic socket (1910 TD)



The cables in the wiring diagram are marked

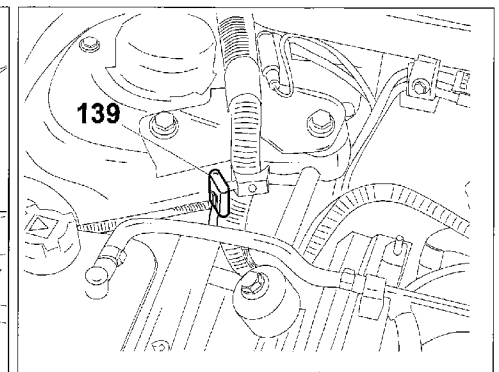
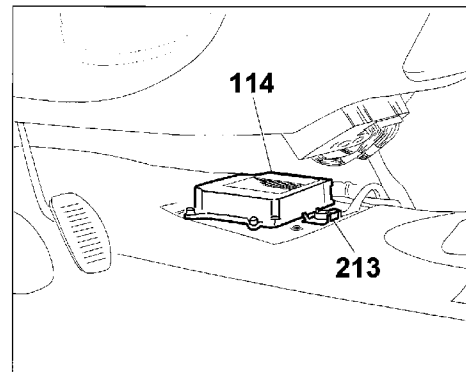
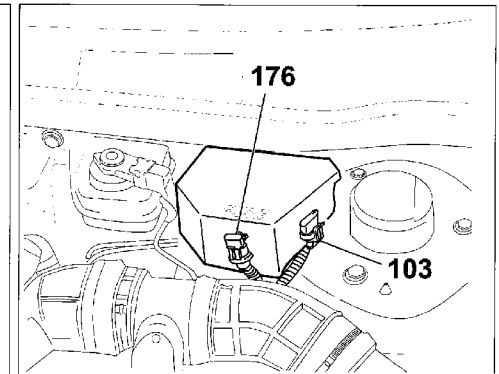
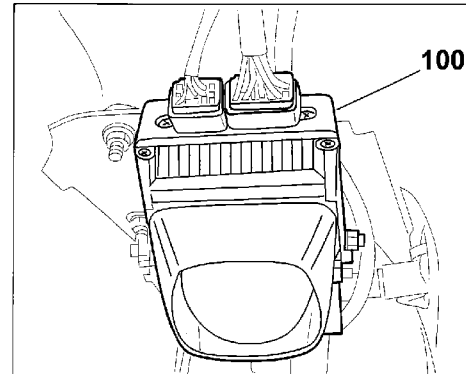
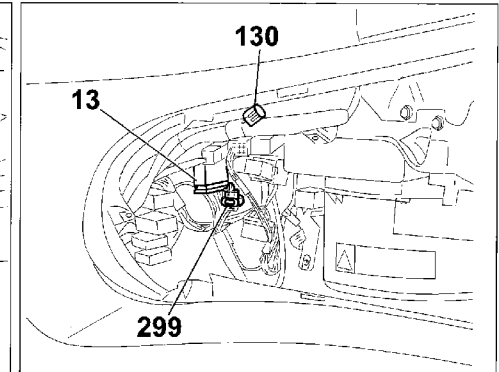
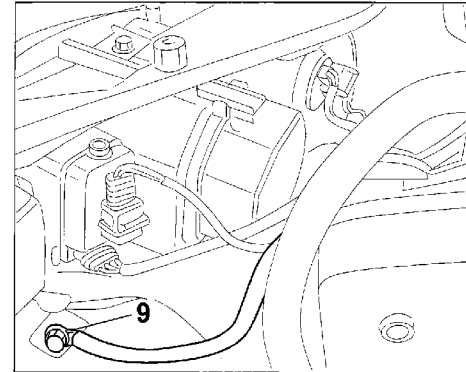
P4A136101

Diagnostic socket connections - (See key at end of wiring diagrams)



P4A133101

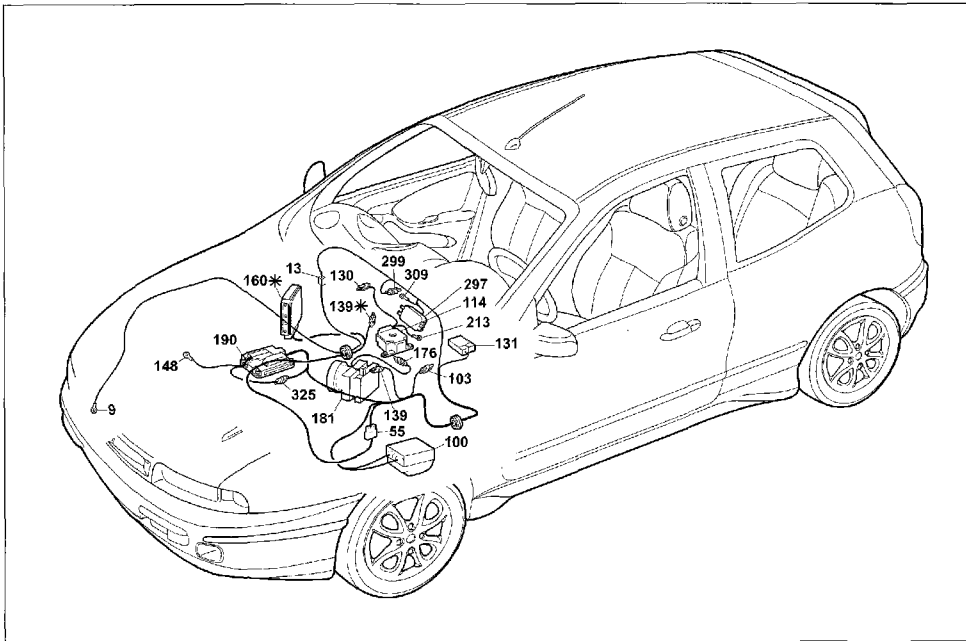
Location of components



4A1341

P4A134101

55.



P4A13101

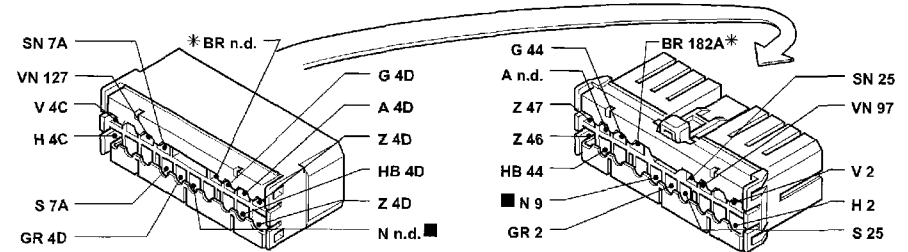
Diagnostic socket connections

Components key

- 9 Right front earth
- 13 Front right/left cables connection
- 55C Connection between front/engine pre-wiring cables
- 100 Alarm device electronic control unit
- 103 Diagnostic socket for alarm
- 114 EURO-BAG electronic control unit
- 130 Diagnostic socket for EURO-BAG
- 131 Fiat-CODE electronic control unit
- 139 Diagnostic socket for injection system
- 148 Earth for electronic injection
- 160 Injection/ignition electronic control unit (1747)
- 174 Power earth for anti-lock brakes (A.B.S.)
- 176 Diagnostic socket for anti-lock braking system (A.B.S.)
- 181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)
- 190 Injection/ignition electronic control unit (1998)
- 213 Earth for EURO-BAG
- 297 Air conditioning control unit
- 299 Diagnostic socket for heater/air conditioning
- 309 Earth for air conditioning unit
- 325 Connection between injection/left front cables

N.D. Ultrasound welding taped in cable loom

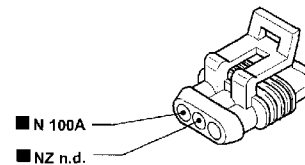
13 Front right/left cables connection



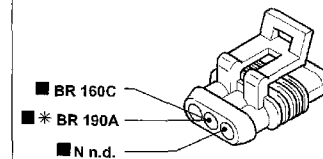
55C Connection between front/engine pre-wiring cables



103 Diagnostic socket for alarm

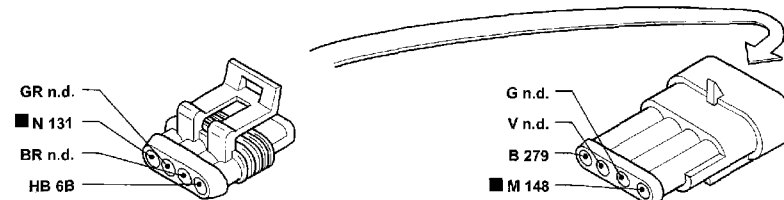


139 Diagnostic socket for injection system



\* Variant connection for 1998 20v versions

325 Connection between injection/left front cables



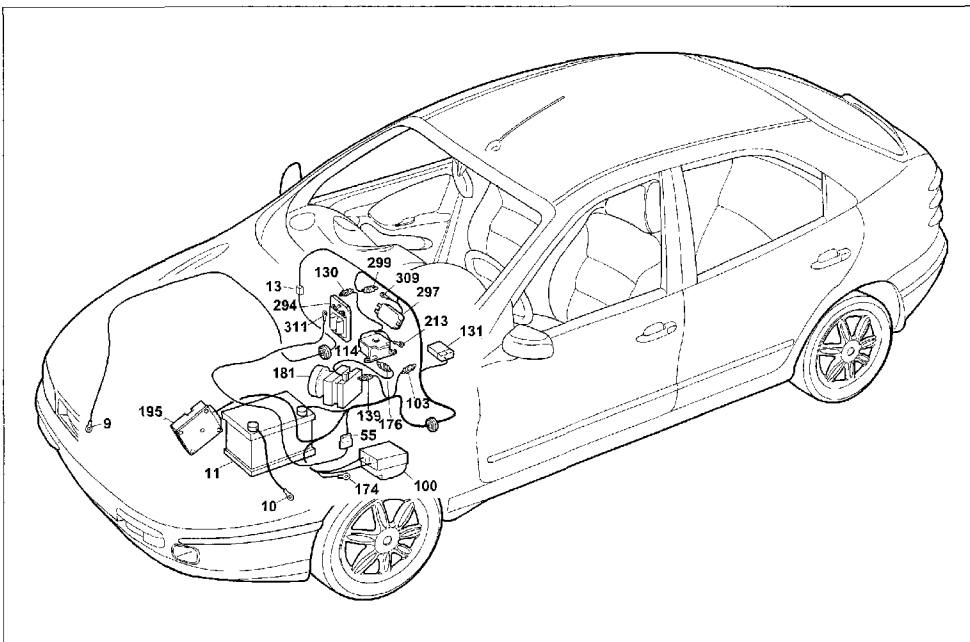
The cables in the wiring diagram are marked

P4A13201





55.



P4A12701

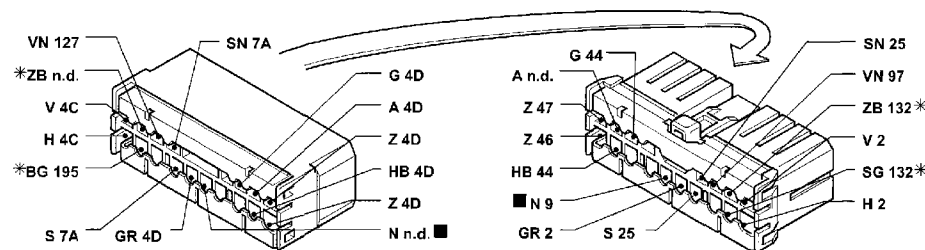
Diagnostic socket connections

Components key

- 9 Right front earth
- 13 Front right/left cables connection
- 55 Connection between front/engine pre-wiring cables
- 100 Alarm device electronic control unit
- 103 Diagnostic socket for alarm
- 114 EURO-BAG electronic control unit
- 130 Diagnostic socket for EURO-BAG
- 131 Fiat-CODE electronic control unit
- 139 Diagnostic socket for injection system
- 174 Power earth for anti-lock brakes (A.B.S.)
- 176 Diagnostic socket for anti-lock braking system (A.B.S.)
- 181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)
- 195 Injection/ignition electronic control unit (1581)
- 213 Earth for EURO-BAG
- 294 Injection/ignition electronic control unit 1242
- 297 Air conditioning control unit
- 299 Diagnostic socket for heater/air conditioning
- 309 Earth for air conditioning unit
- 311 Earth for electronic injection control unit

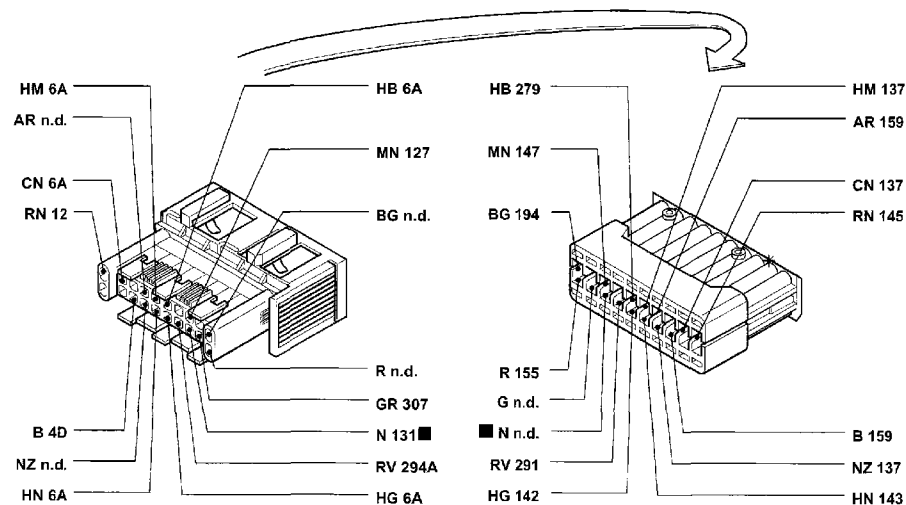
N.D. Ultrasound welding taped in cable loom

13 Front right/left cables connection

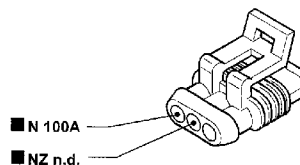


\* Variant connection for 1581 16v versions

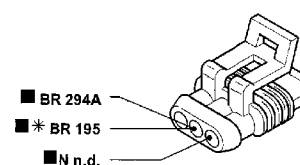
55 Connection between front/engine pre-wiring cables



103 Diagnostic socket for alarm



139 Diagnostic socket for injection system

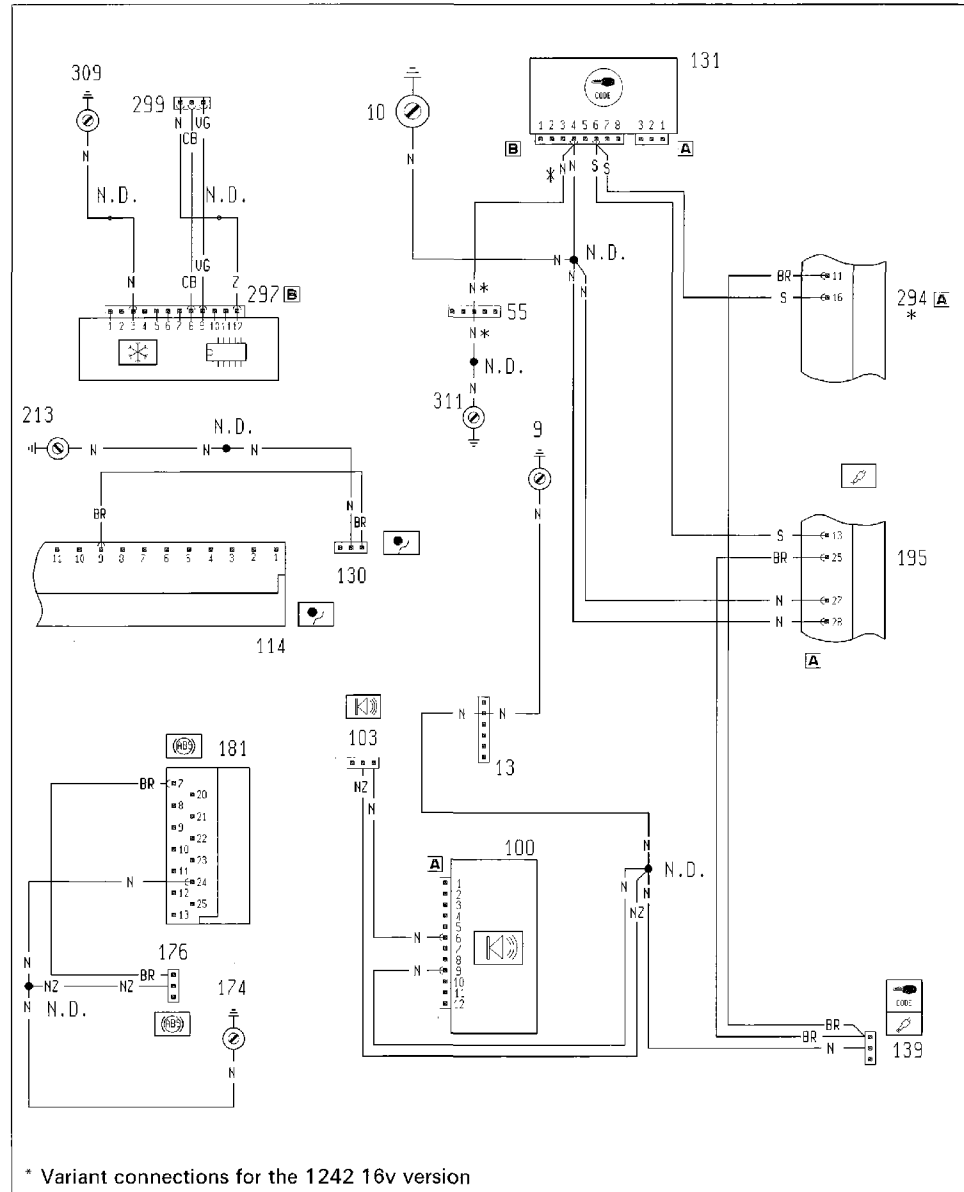


\* Variant connection for 1581 16v versions

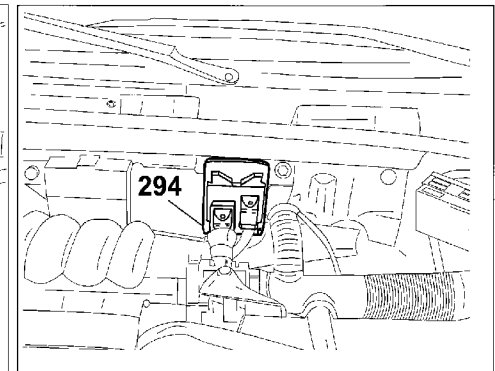
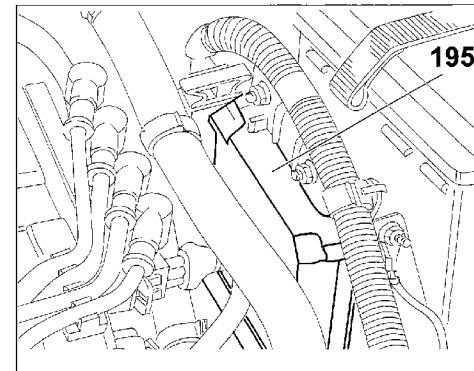
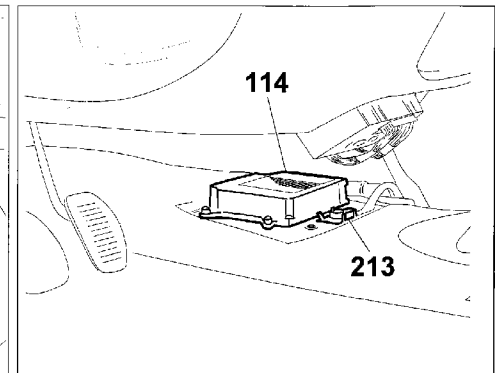
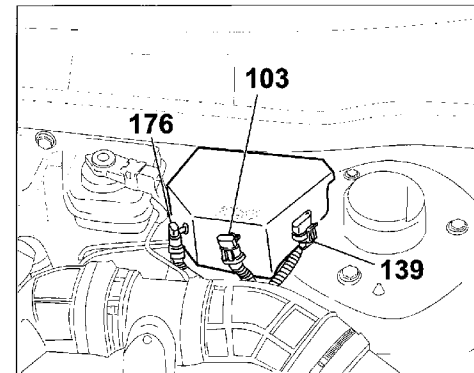
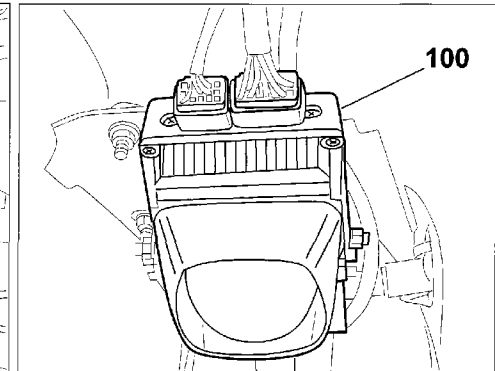
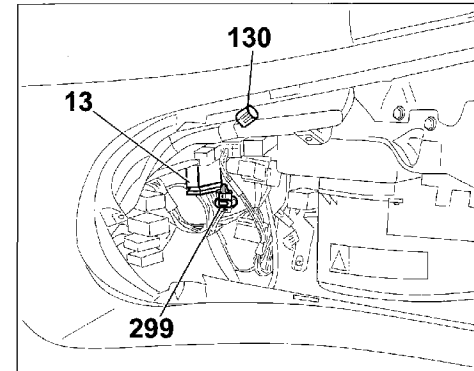
The cables in the wiring diagram are marked

P4A128101

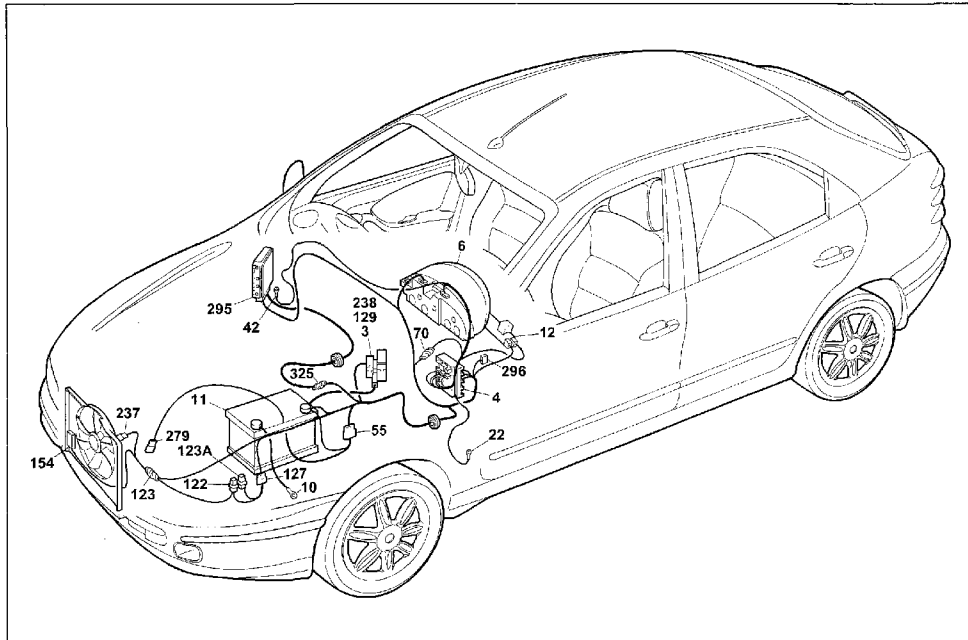
Diagnostic socket connections - (See key at end of wiring diagrams)



Location of components



## 55.



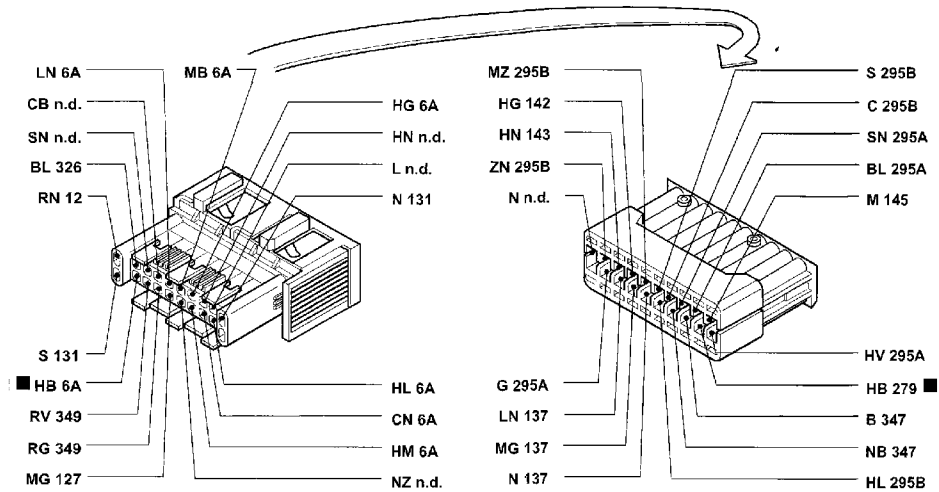
P4A123101

**Version with automatic air conditioning  
Engine cooling - Water temperature gauge**

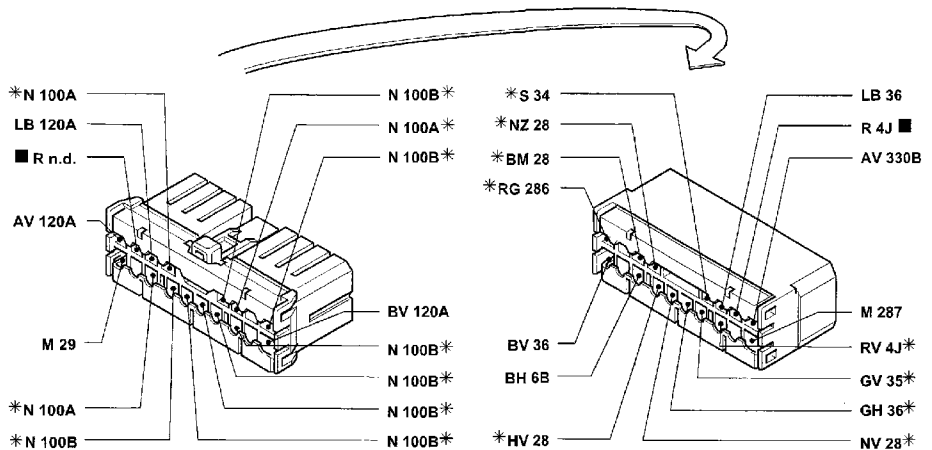
### Components key

- |   |   |
|---|---|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit:<br/>E1 Ignition discharge relay</p> <p>6 Instrument panel:<br/>X Water temperature gauge<br/>Y Electronic module</p> <p>10 Earth for battery on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>22 Left dashboard earth<br/>42 Right dashboard earth<br/>55 Connection between front/engine pre-wiring cables<br/>70 Connection for front dashboard cables<br/>122 Engine cooling fan low speed relay feed<br/>123 Engine cooling fan high speed timer<br/>123A Engine cooling fan high speed relay feed</p> | <p>127 Connection between left front cable/cable on relay holder bracket<br/>129 40A power fuse protecting engine cooling fan<br/>154 Engine cooling fan<br/>237 Additional engine cooling fan<br/>238 40A fuse protecting engine cooling fan<br/>279 Twin engine coolant temperature sender unit<br/>295 Injection/ignition electronic control unit 1910 TD UNIJET<br/>296 Fuse carrier base on front cable<br/>C 7.5A fuse protecting Fiat-CODE cooling system/electronic injection<br/>325 Connection between injection/left front cables</p> <p>N.D. Ultrasound welding taped in cable loom</p> |
|---|---|

### 55 Connection between front/engine pre-wiring cables



### 70 Dashboard/front cables connection. Trim level: SX - GT

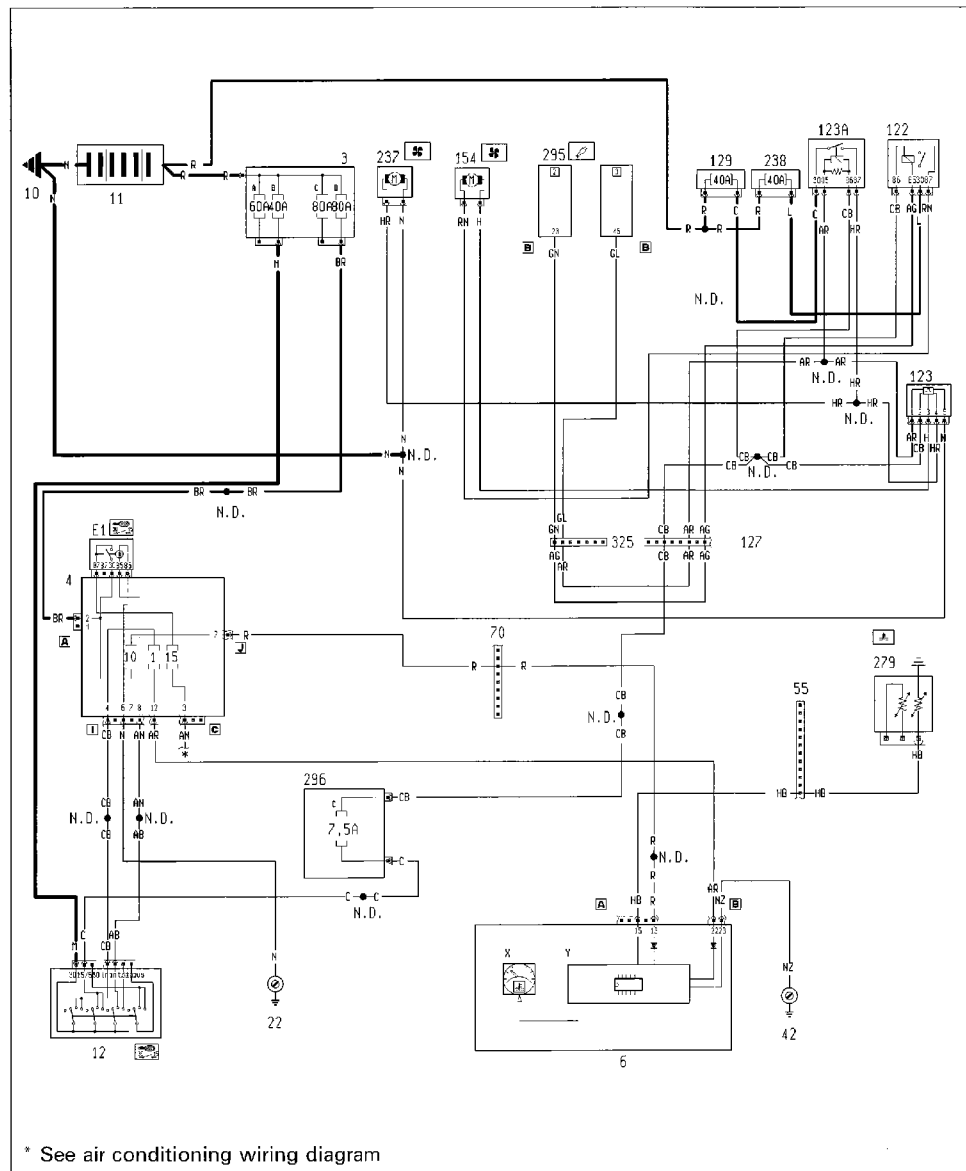


\* Variant connection for versions with alarm

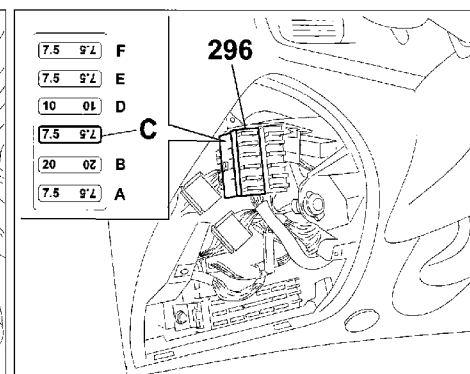
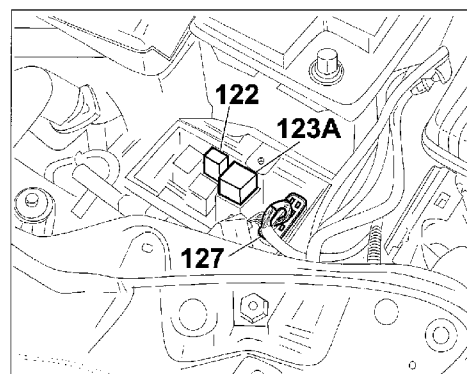
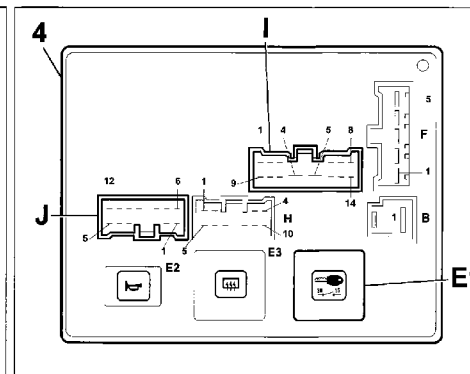
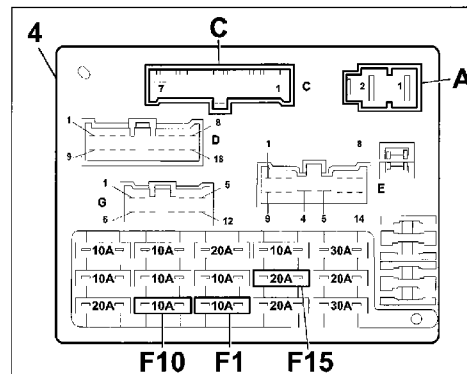
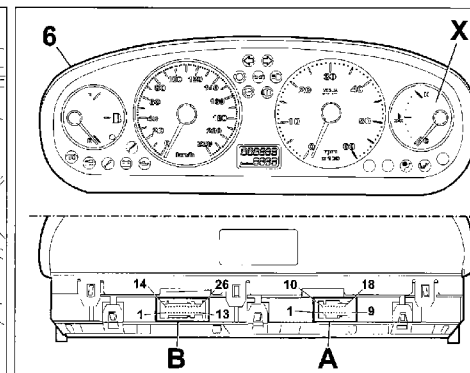
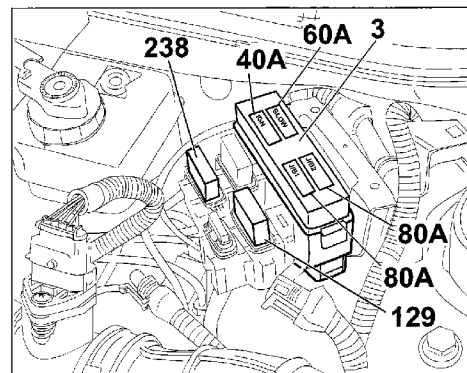
The cables in the wiring diagram are marked

P4A124101

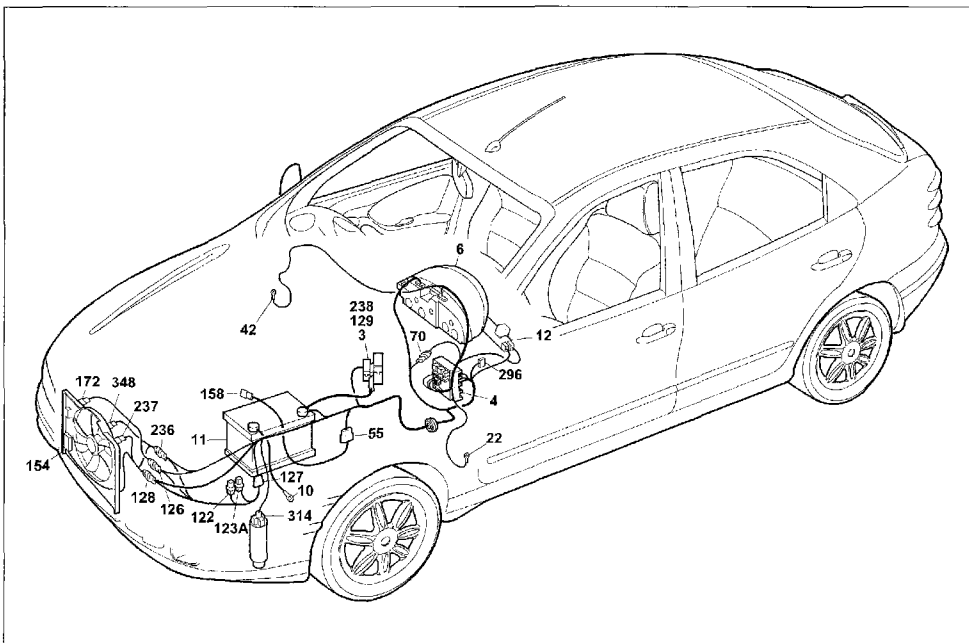
Version with automatic air conditioning  
Engine cooling - Water temperature gauge - (See key at end of wiring diagrams)



Location of components



55.



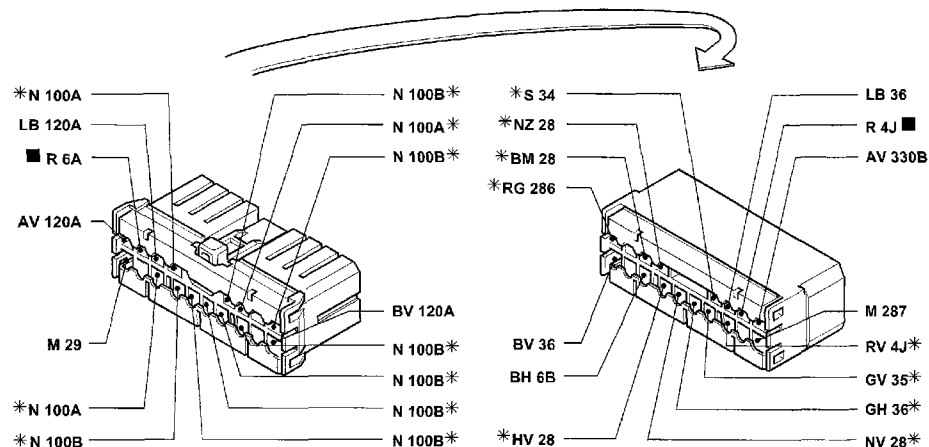
Version with automatic air conditioning  
Engine cooling - Water temperature gauge

P4A119101

Components key

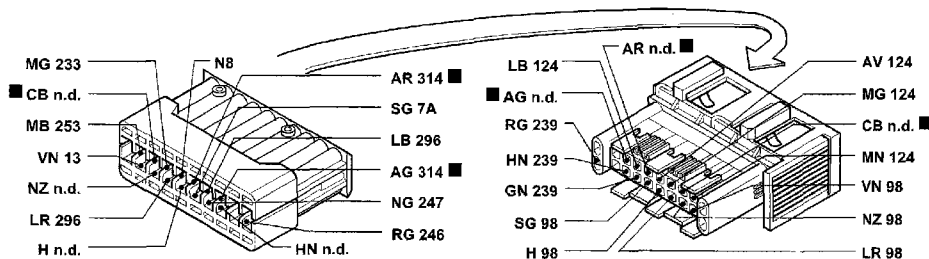
- |  |  |
|--|--|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit:<br/>E1 Ignition discharge relay</p> <p>6 Instrument panel:<br/>X Water temperature gauge<br/>Y Electronic module</p> <p>10 Earth for battery on bodyshell</p> <p>11 Battery</p> <p>12 Ignition switch</p> <p>22 Left dashboard earth</p> <p>42 Right dashboard earth</p> <p>55 Connection between front/engine pre-wiring cables</p> <p>58 Dimmer control</p> <p>70 Dashboard/front cables connection</p> <p>122 Engine cooling fan low speed relay feed</p> <p>123A Engine cooling fan high speed relay feed</p> <p>126 Front/air conditioning cables connection</p> <p>127 Front left cables/cable on relay holder bracket connection</p> | <p>128 Front/air conditioning cables connection</p> <p>129 50A protective power fuse for engine cooling fan</p> <p>154 Engine cooling fan</p> <p>172 Two level thermal switch</p> <p>236 Connection for front air conditioning cables</p> <p>237 Additional engine cooling fan</p> <p>238 40A fuse protecting engine cooling fan</p> <p>296 Fuse carrier base on front cable<br/>C 7.5A fuse protecting Fiat-CODE cooling system/electronic injection</p> <p>314 Four stage pressure switch</p> <p>348 Remote control switch for engine cooling fan</p> <p>N.D. Ultrasound welding taped in cable loom</p> |
|--|--|

70 Dashboard/front cables connection. Trim level: SX - GT

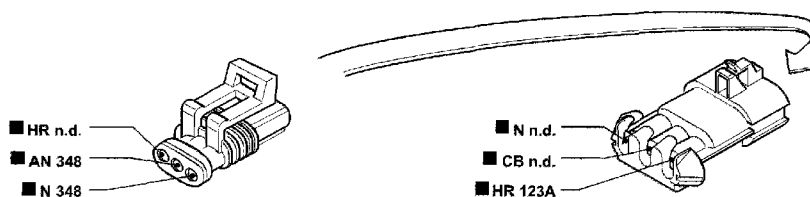


\* Variant connection for versions with alarm

127 Connection between left front cable/cable on relay holder bracket



236 Front/air conditioning cables connection

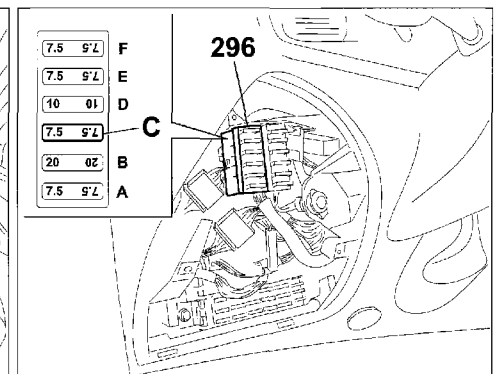
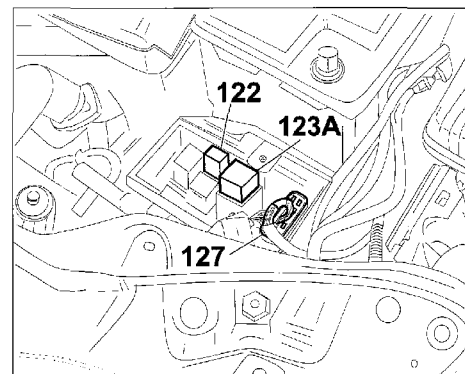
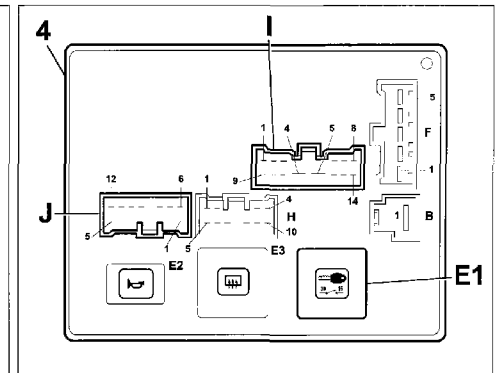
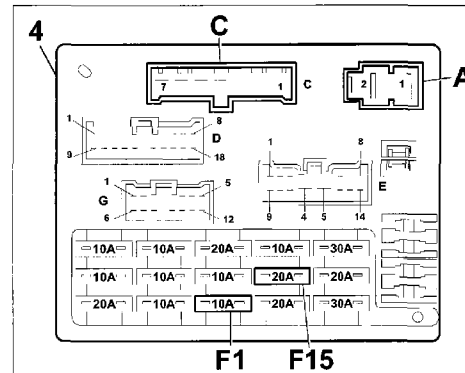
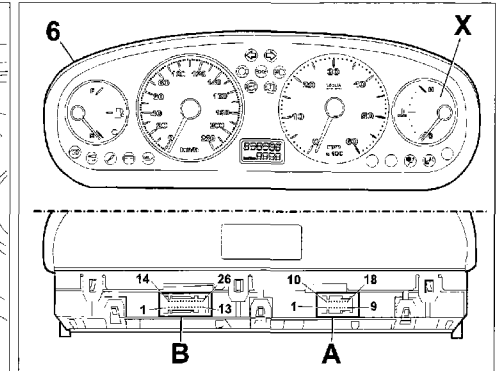
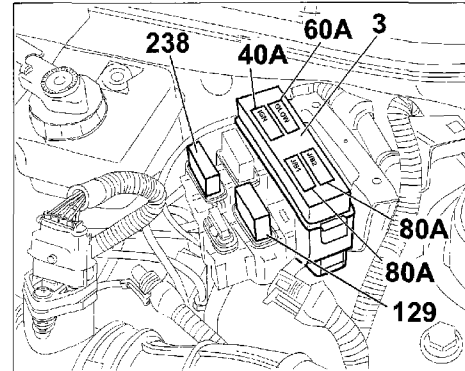
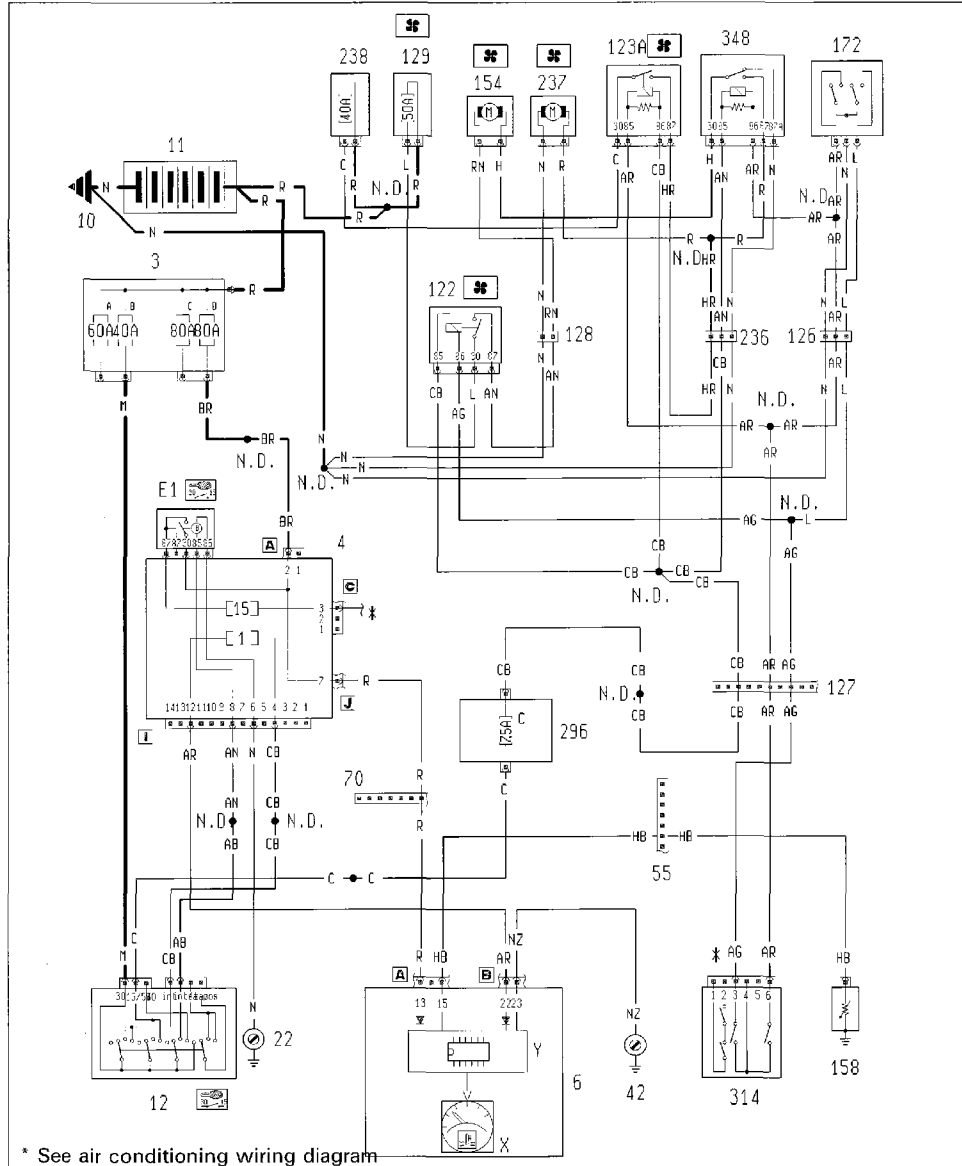


The cables in the wiring diagram are marked

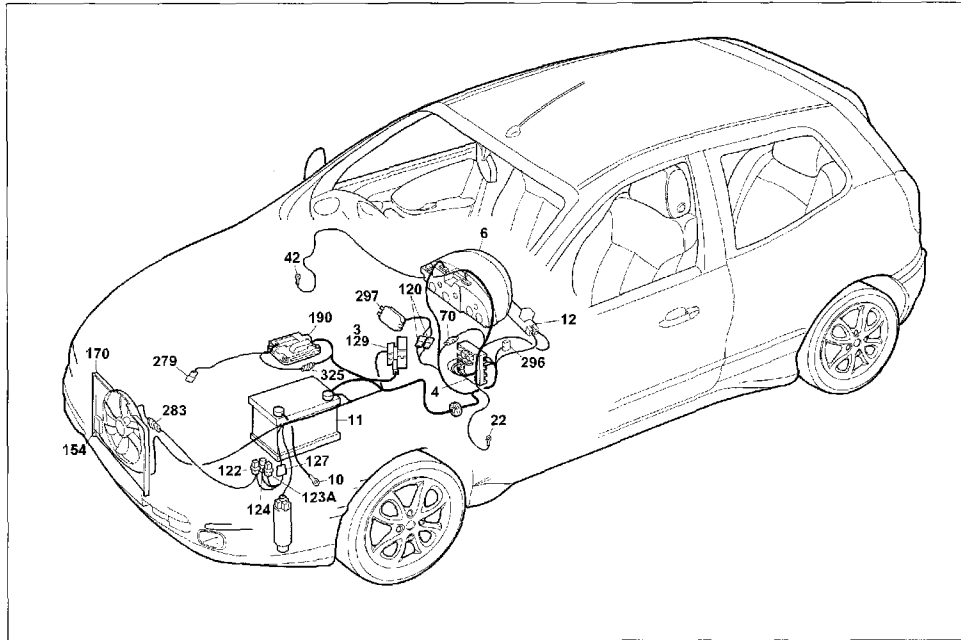
P4A120101

Version with automatic air conditioning  
Engine cooling - Water temperature gauge - (See key at end of wiring diagrams)

Location of components



55.



P4A11801

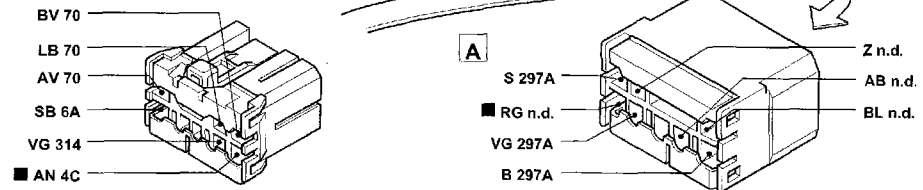
Version with automatic air conditioning  
Engine cooling - Water temperature gauge

Components key

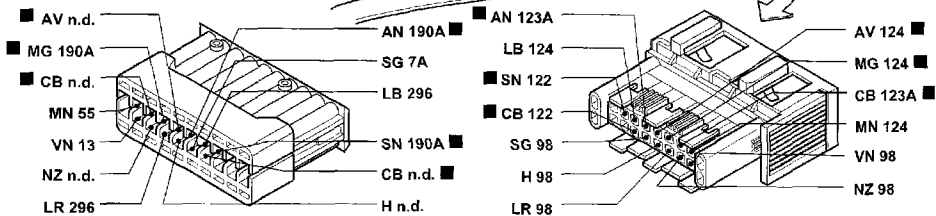
- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit:
  - E1 Ignition discharge relay
- 6 Instrument panel:
  - X Water temperature gauge
  - Y Electronic module
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 22 Left dashboard earth
- 42 Right dashboard earth
- 70 Dashboard/front cables connection
- 120 Air conditioning unit
- 122 Engine cooling fan low speed relay feed
- 123A Engine cooling fan high speed relay feed
- 127 Front left cables/cable on relay holder bracket connection
- 129 50A protective power fuse for engine cooling fan

- 154 Engine cooling fan
  - 170 Engine cooling fan limiting resistance
  - 190 Injection/ignition electronic control unit (1998)
  - 279 Twin engine coolant temperature sender unit
  - 283 Connection between front cable/resistor
  - 296 Fuse carrier base on front cable
    - A 7.5A fuse protecting cooling system/ electronic injection; C.A. system; Alarm
    - C 7.5A fuse protecting Fiat-CODE cooling system/electronic injection
  - 297 Air conditioning control unit
  - 325 Connection on injection cable/left front
- N.D. Ultrasound welding taped in cable loom

120 Air conditioning unit cables connection



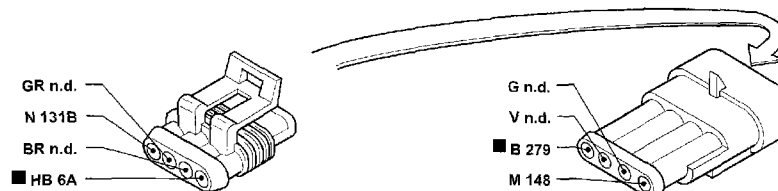
127 Connection between left front cable/cable on relay holder bracket



283 Connection between front cable/resistor



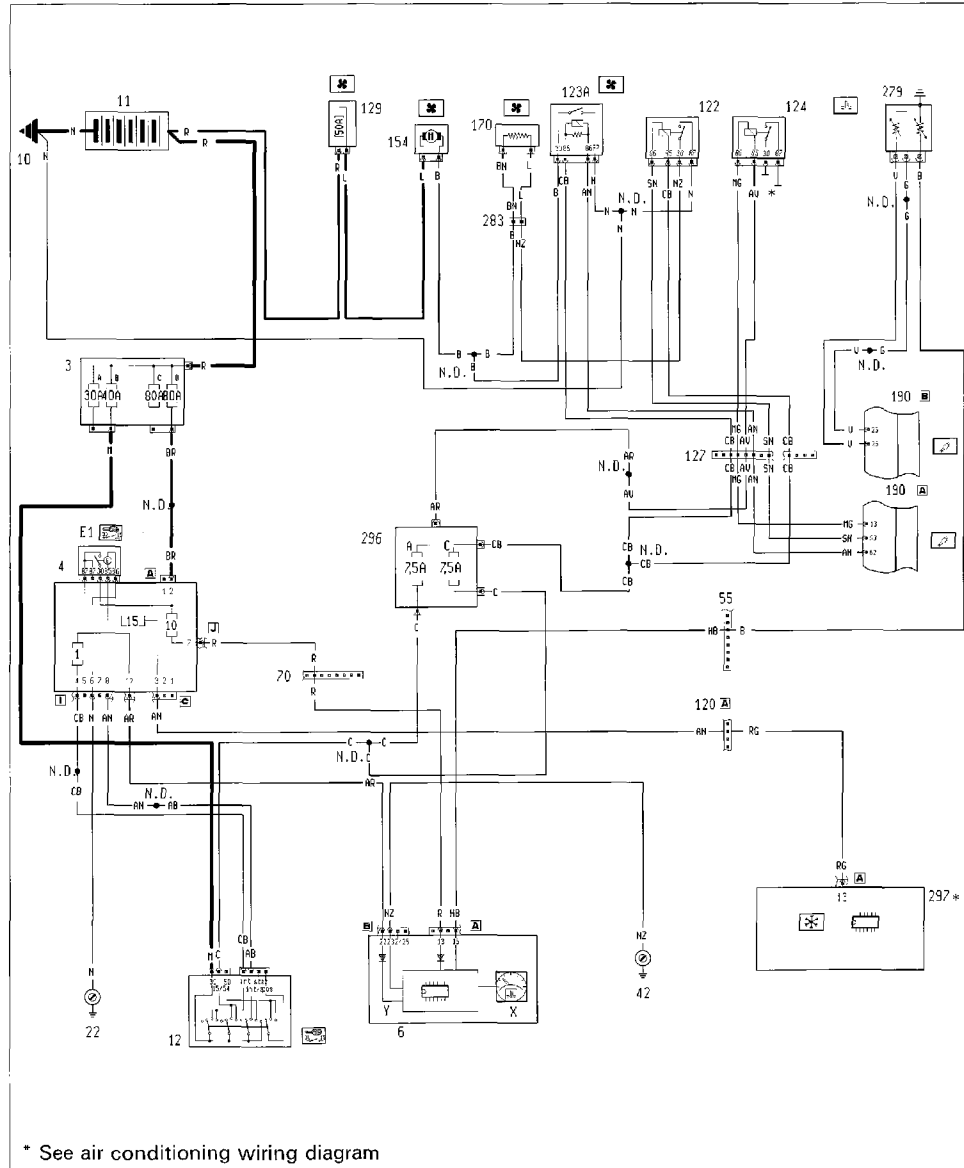
325 Connection between injection/left front cables



The cables in the wiring diagram are marked

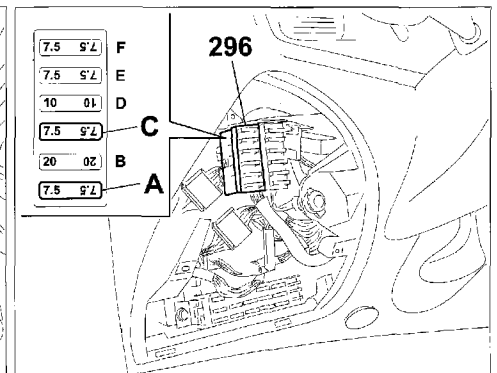
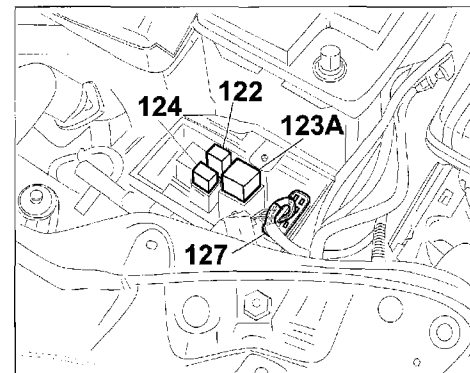
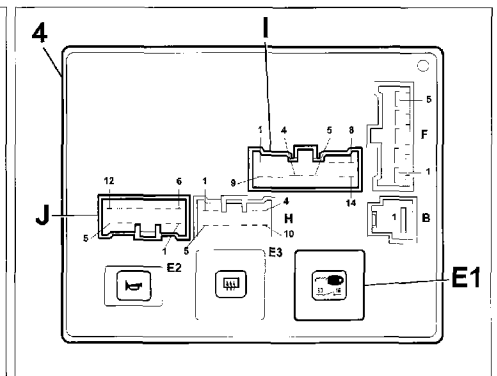
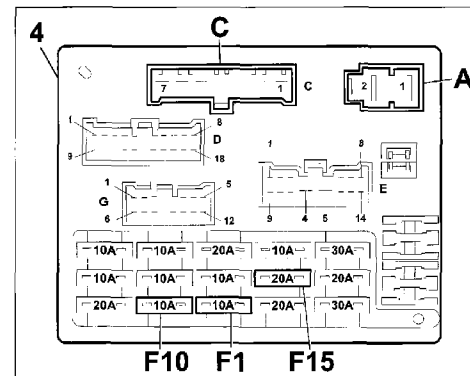
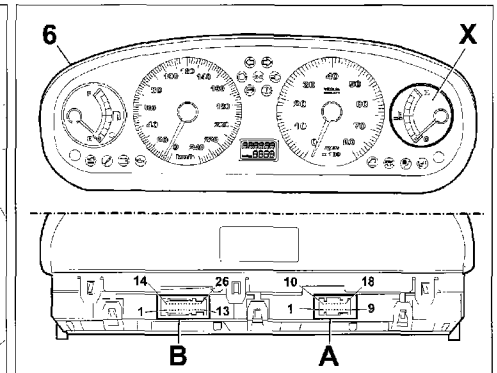
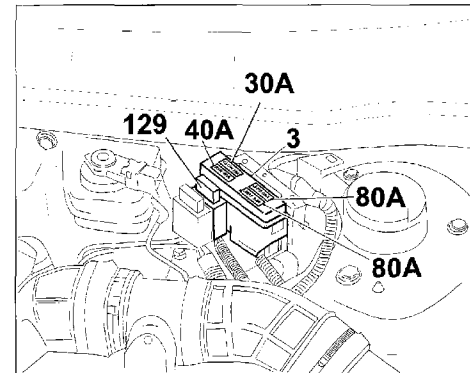
P4A11801

Version with automatic air conditioning  
Engine cooling - Water temperature gauge - (See key at end of wiring diagrams)



P4A113101

Location of components

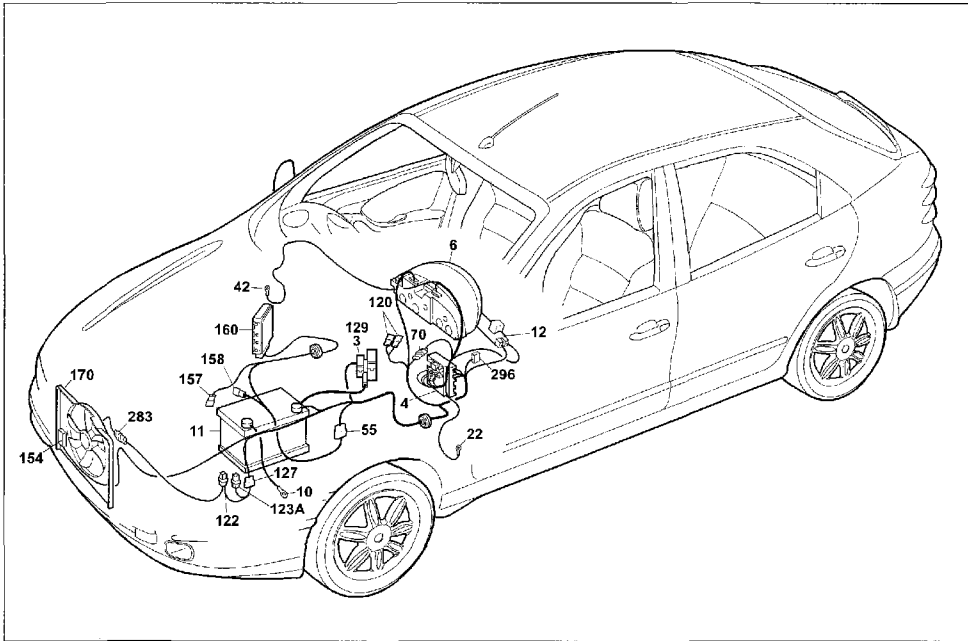


4A1141

P4A11401



**55.**



**Version with automatic air conditioning  
Engine cooling - Water temperature gauge**

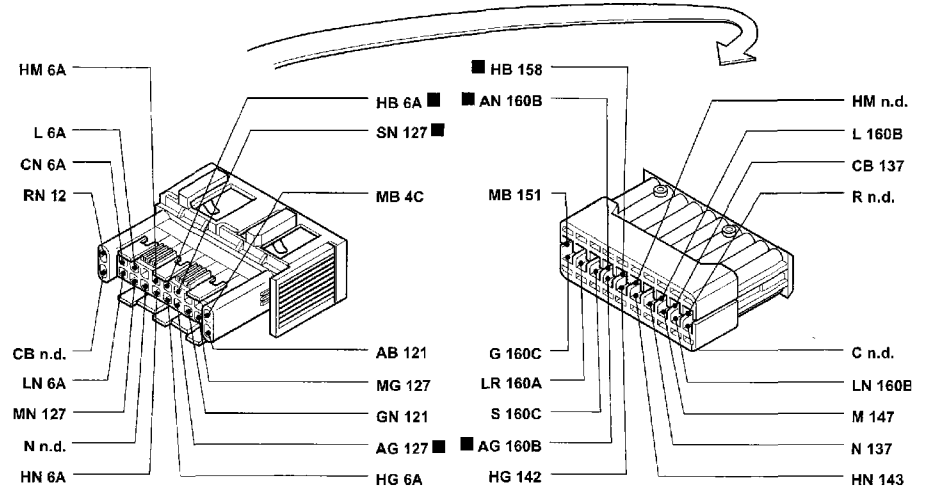
P4A11101

**Components key**

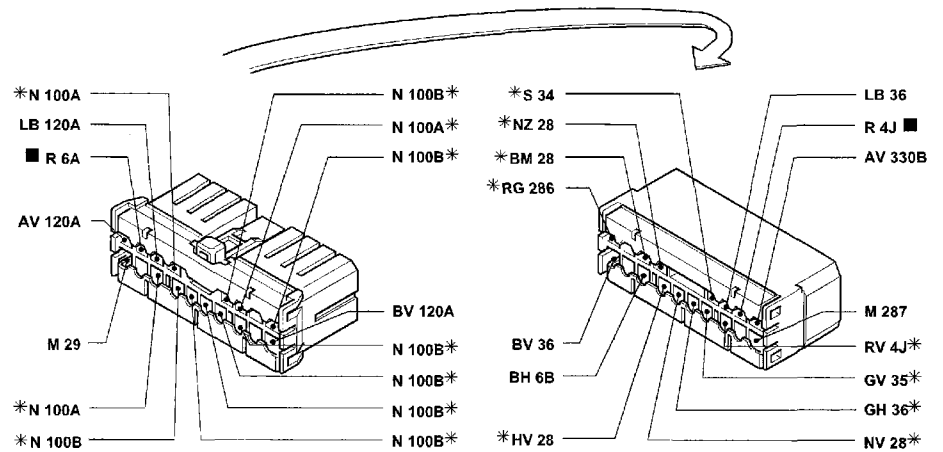
- 3 Power fuse box:
  - A 30A protective fuse for injection system (80A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit:
  - E1 Ignition discharge relay
- 6 Instrument panel:
  - X Water temperature gauge
  - Y Electronic module
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 22 Left dashboard earth
- 42 Right dashboard earth
- 55 Connection for engine pre-wiring front cables
- 70 Dashboard/front cables connection
- 120A Air conditioning unit cables connection
- 122 Engine cooling fan low speed relay feed
- 123A Engine cooling fan high speed relay feed
- 127 Connection between left front cable/cable on relay holder bracket
- 129 50A protective power fuse for engine cooling fan
- 154 Engine cooling fan
- 157 Coolant temperature sensor for injection system
- 158 Coolant temperature sensor for instrument
- 160 Injection/ignition electronic control unit (1747)
- 170 Engine cooling fan limiting resistance
- 283 Connection between front cable/resistor
- 296 Fuse carrier base on front cable
  - C 7.5A fuse protecting Fiat-CODE cooling system/electronic injection

N.D. Ultrasound welding taped in cable loom

**55** Connection between front/engine pre-wiring cables



**70** Dashboard/front cables connection. Trim level: SX - GT



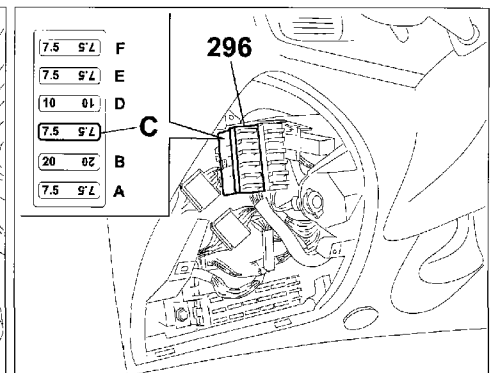
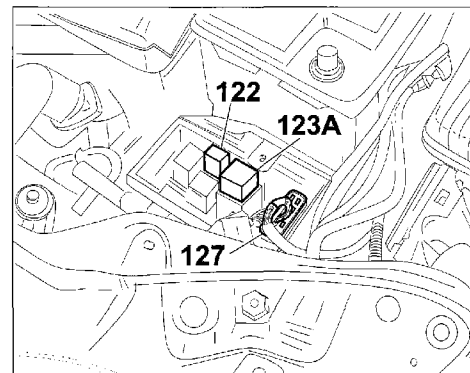
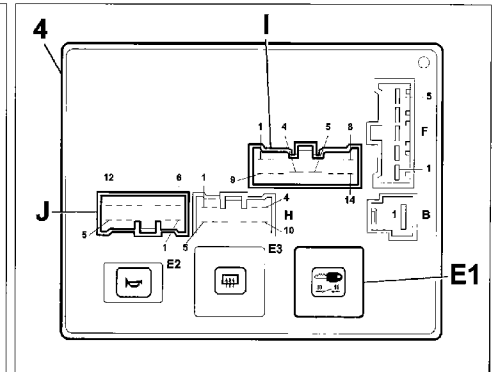
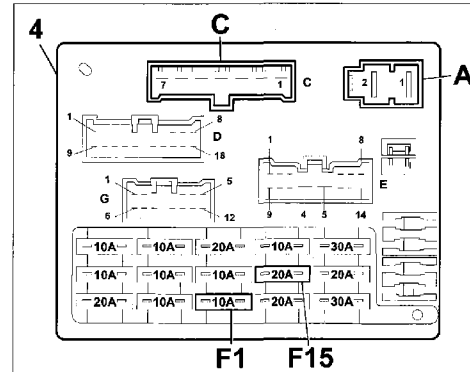
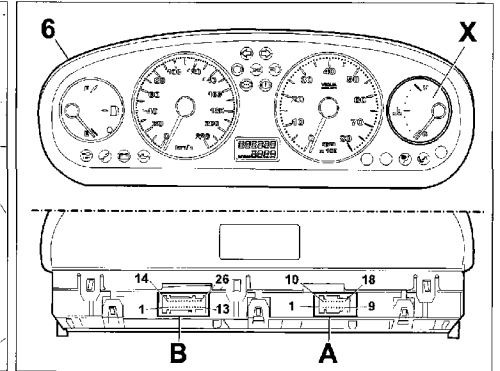
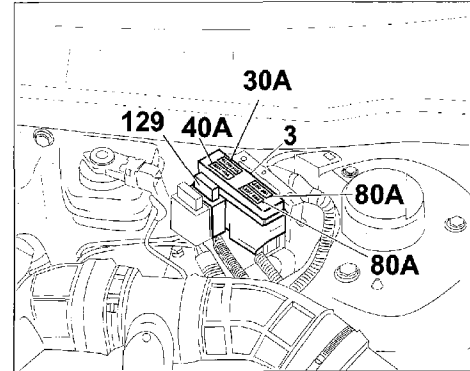
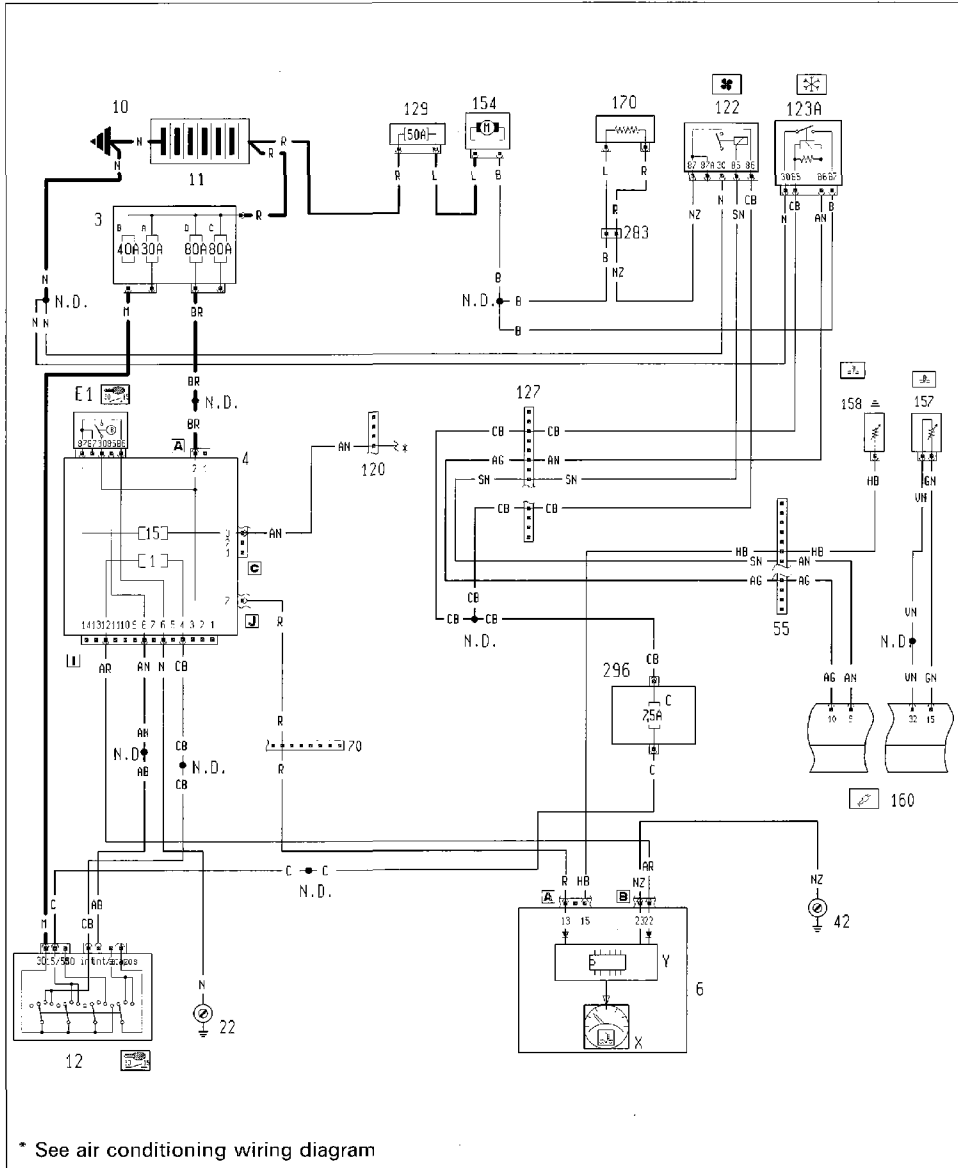
\* Variant connection for versions with alarm

The cables in the wiring diagram are marked

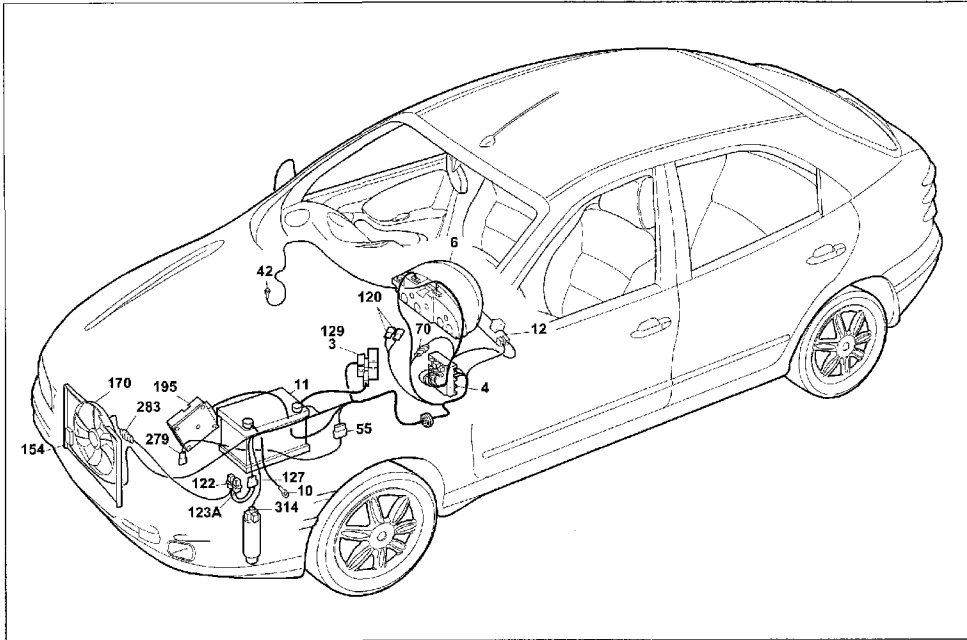
P4A11201

Version with automatic air conditioning  
Engine cooling - Water temperature gauge - (See key at end of wiring diagrams)

Location of components



55.



P4A107101

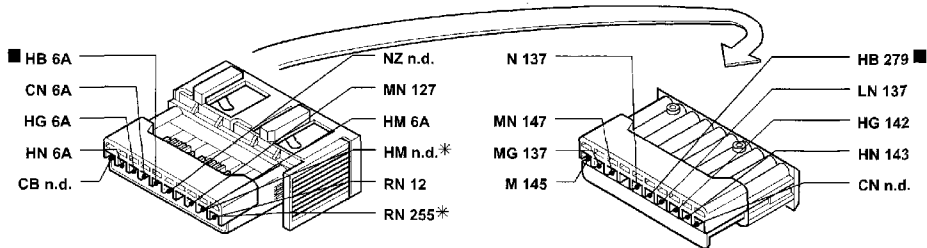
Version with automatic air conditioning

Engine cooling - Water temperature gauge

Components key

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit:
  - E1 Ignition discharge relay
- 6 Instrument panel:
  - X Water temperature gauge
  - Y Electronic module
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 22 Left dashboard earth
- 42 Right dashboard earth
- 55 Connection between front cables/engine pre-wiring
- 70 Dashboard/front cables connection
- 120A Air conditioning unit cables connection
- 122 Engine cooling fan low speed relay feed
- 123A Engine cooling fan high speed relay feed
- 127 Connection between front left cables/cable on relay holder bracket
- 129 40A power fuse protecting engine cooling fan
- 154 Engine cooling fan
- 170 Engine cooling fan limiting resistance
- 195 Injection/ignition electronic control unit (1581)
- 279 Twin engine coolant temperature sender unit
- 283 Connection between front cable/resistor
- 296 Fuse carrier base on front cable
  - C 7.5A fuse protecting Fiat-CODE cooling system /electronic injection
- 314 Four stage pressure switch
- N.D. Ultrasound welding taped in cable loom

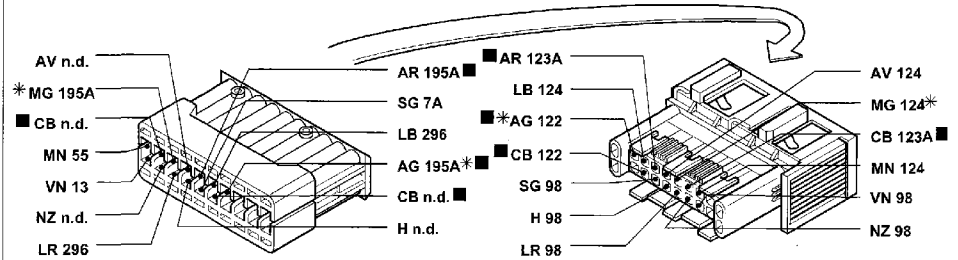
55 Connection between front/engine pre-wiring cables



120 Air conditioning unit cables connection

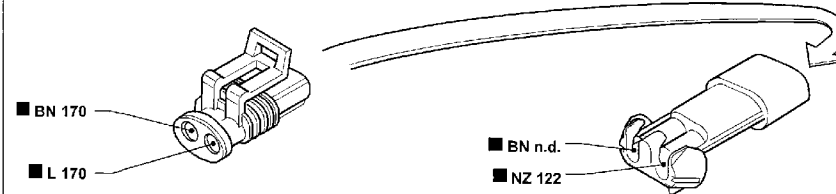


127 Connection between left front cable/cable on relay holder bracket



\* Not present on versions with automatic transmission

283 Connection between front cable/resistor

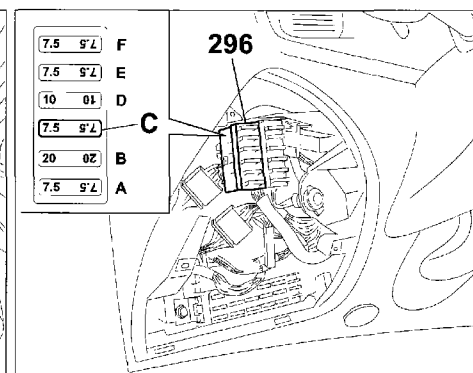
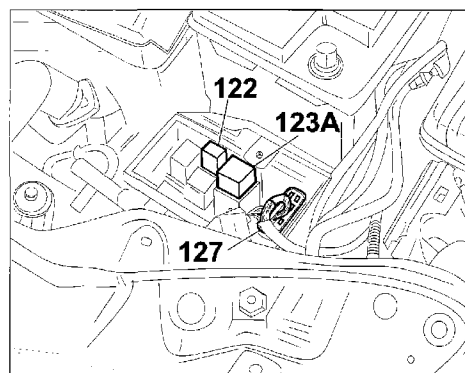
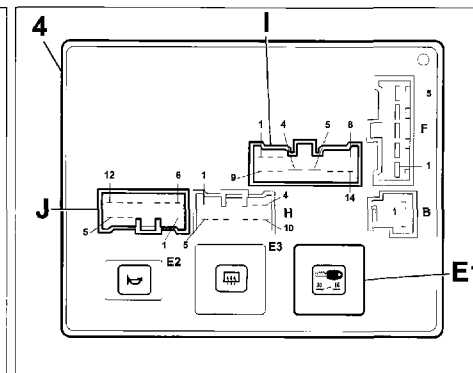
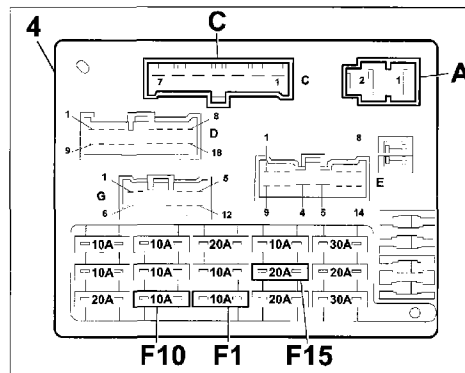
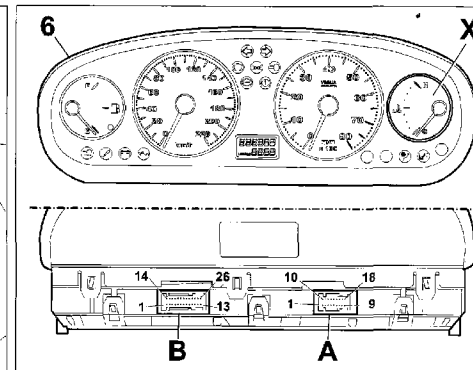
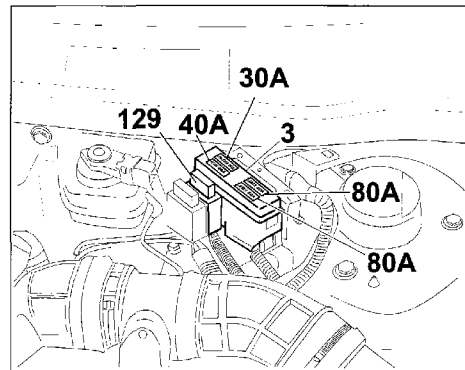
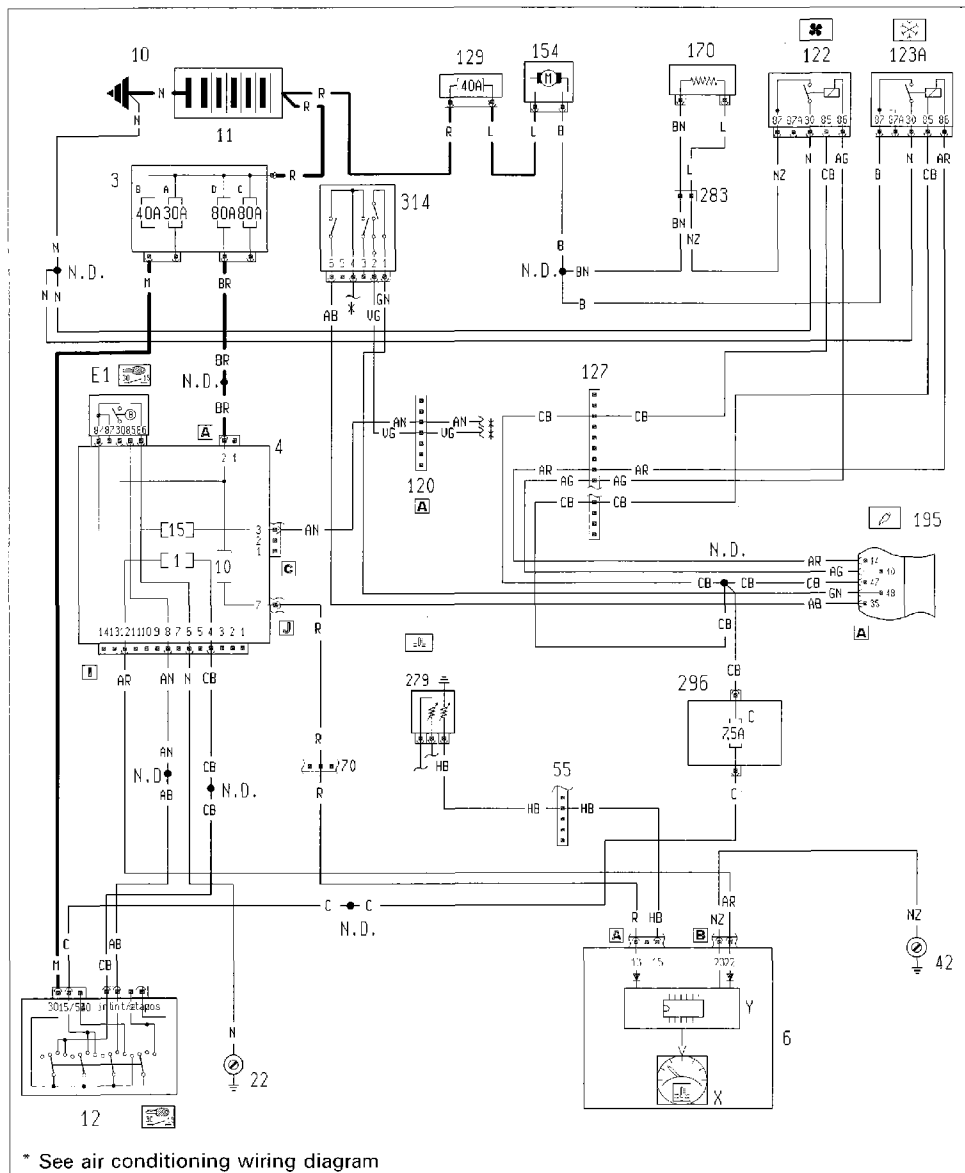


The cables in the wiring diagram are marked

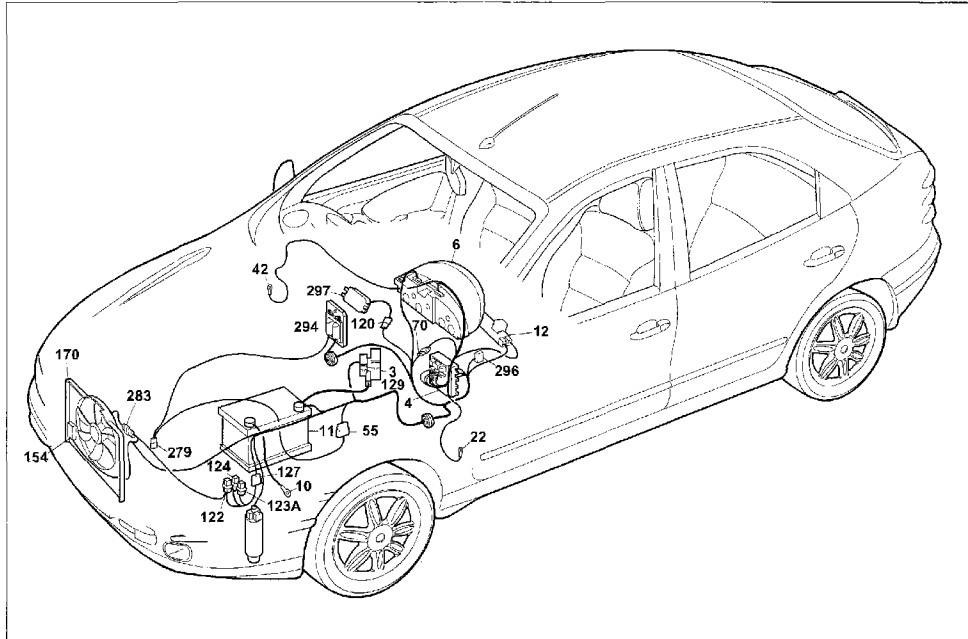
P4A108101

Version with automatic air conditioning  
Engine cooling - Water temperature gauge - (See key at end of wiring diagrams)

Location of components



55.



Version with automatic air conditioning  
Engine cooling - Water temperature gauge  
Components key

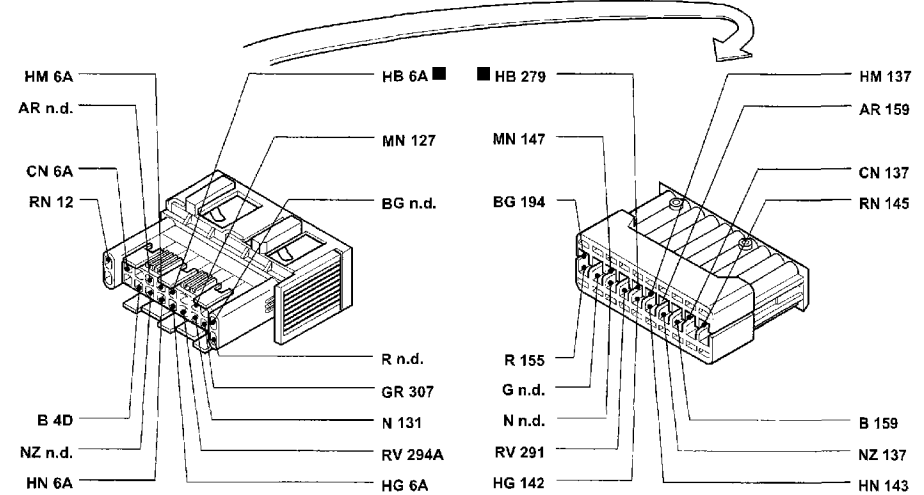
- 3 Power fuse box:  
A 30A protective fuse for injection system (60A for TD versions)  
B 40A protective fuse for ignition system  
C 80A fuse protecting additional options  
D 80A protective fuse for junction unit
- 4 Junction unit  
E1 Ignition discharge relay  
6 Instrument panel  
X Water temperature gauge  
Y Electrical module  
10 Earth for battery on bodyshell  
11 Battery  
12 Ignition switch  
22 Left dashboard earth  
42 Right dashboard earth  
70 Dashboard/front cables connection  
120A Air conditioning unit cables connection  
122 Engine cooling fan low speed relay feed  
123A Engine cooling fan high speed relay feed  
124 Air conditioning compressor relay  
127 Connection between front left cable/cable on relay holder bracket

- 129 40A power fuse protecting engine cooling fan  
154 Engine cooling fan  
170 Engine cooling fan limiting resistance  
279 Twin engine coolant temperature sender unit  
283 Connection between front cable/resistor  
294 Injection/ignition electronic control unit 1242  
297 Climate control unit  
296 Fuse carrier base on front cable  
A 7.5A fuse protecting cooling system/ electronic injection; C.A. system; Alarm  
C 7.5A fuse protecting Fiat-CODE cooling system/electronic injection

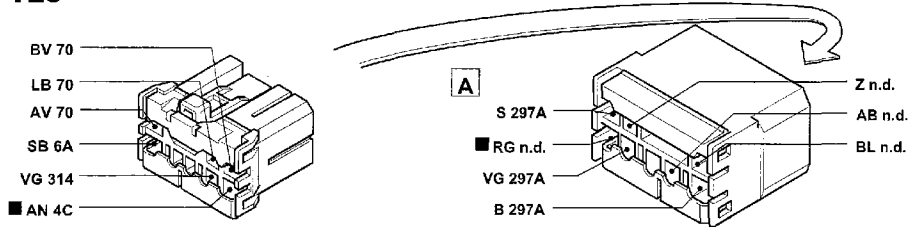
N.D. Ultrasound welding taped in cable loom

P4A10301

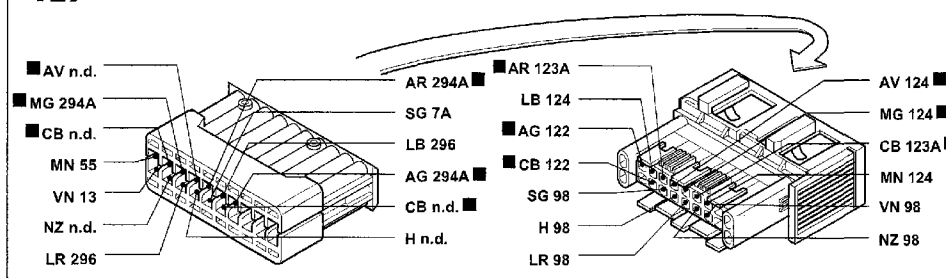
55 Connection between front/engine pre-wiring cables



120 Air conditioning unit cables connection



127 Connection between front left cable/cable on relay holder bracket

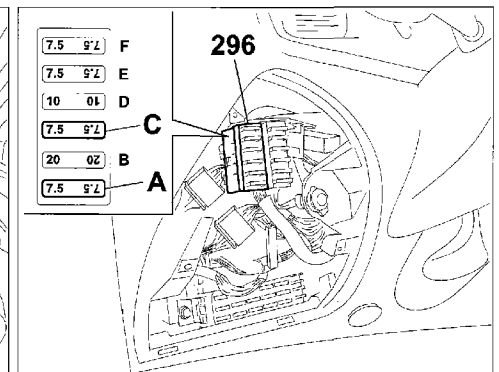
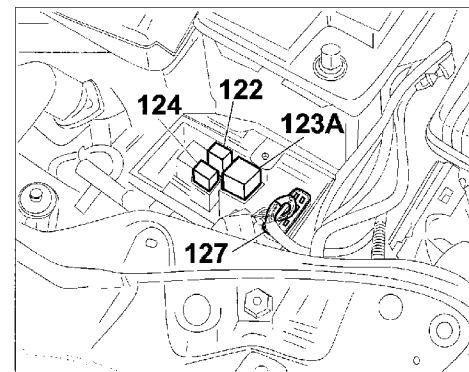
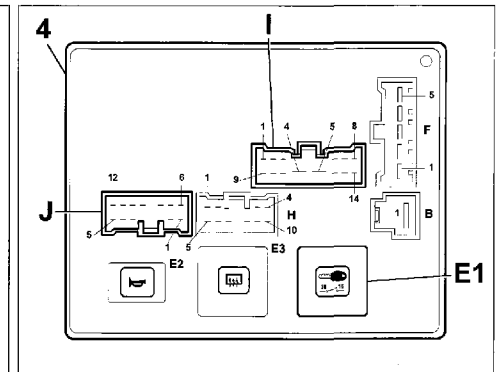
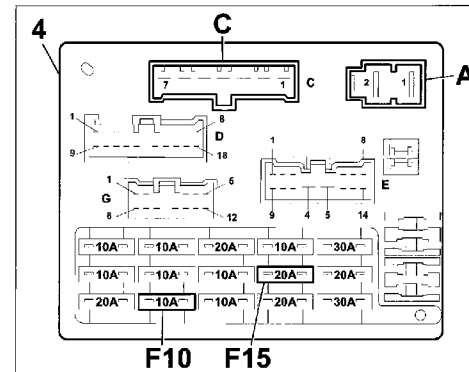
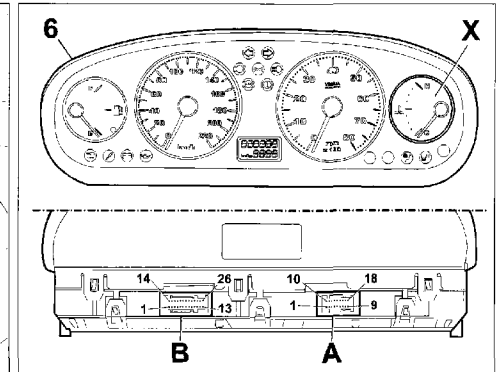
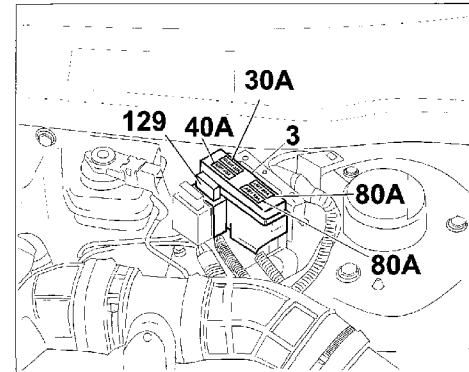
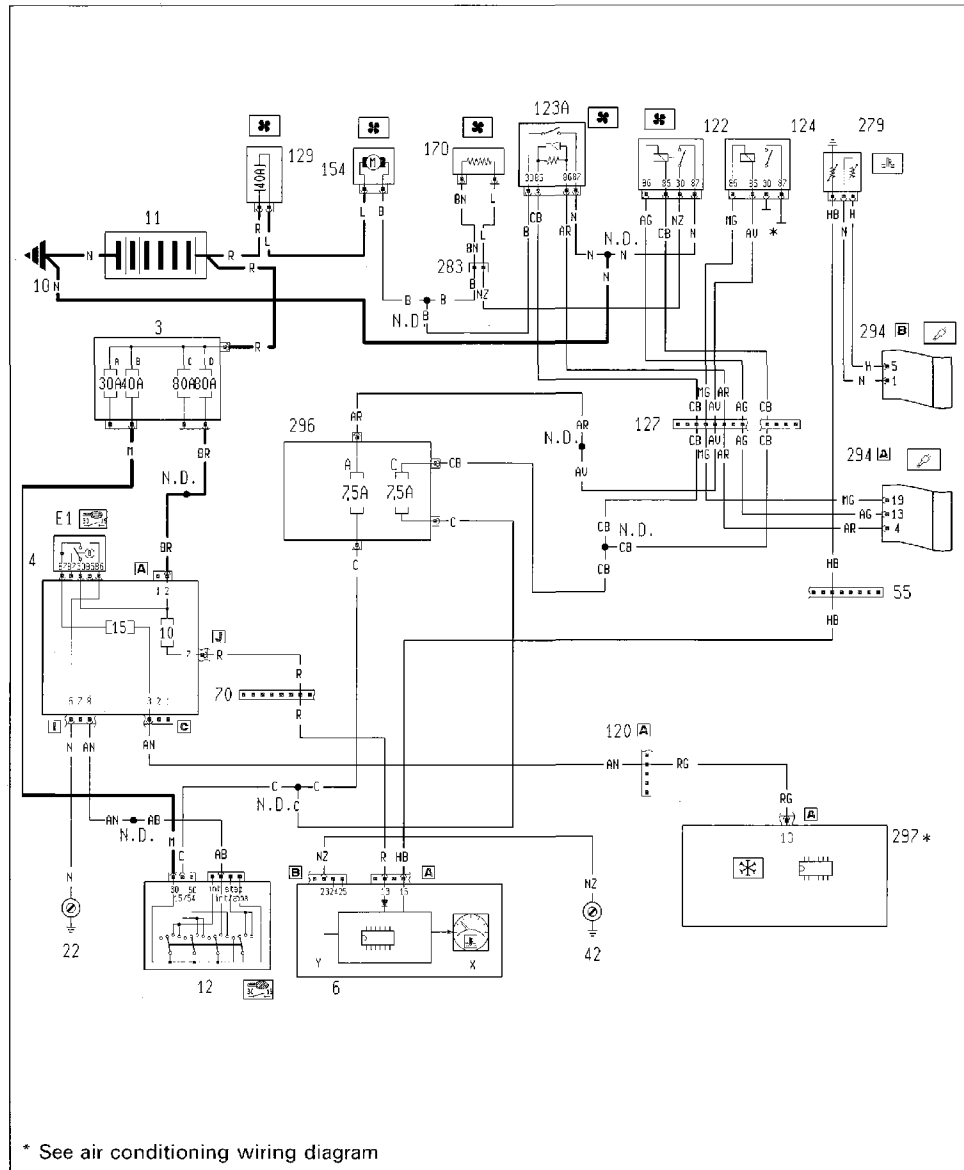


The cables in the wiring diagram are marked

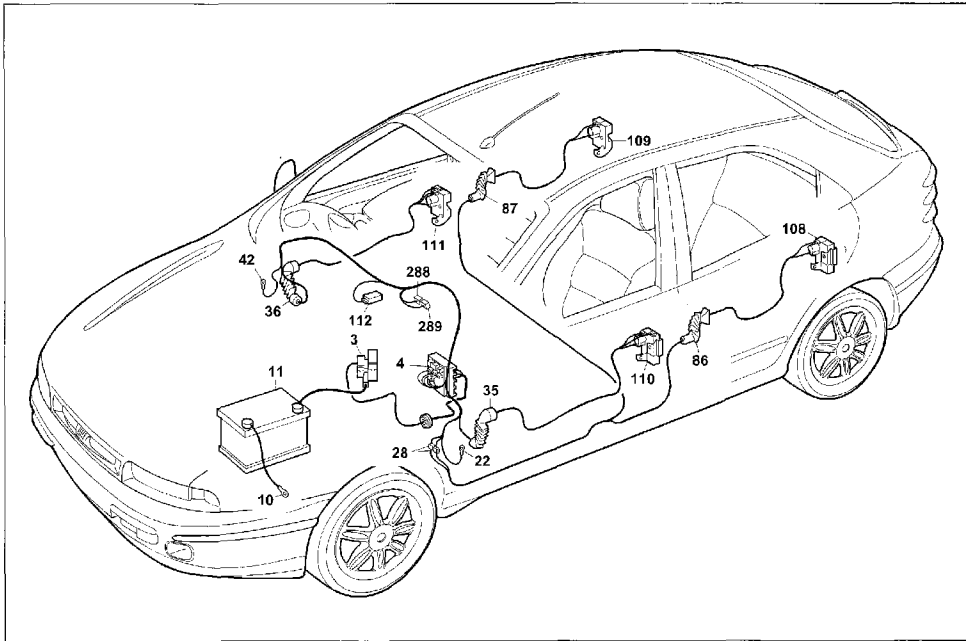
P4A10401

Version with automatic air conditioning  
Engine cooling - Water temperature gauge - (See key at end of wiring diagrams)

Location of components



## 55.



P4A099101

Version without alarm: SX - GT

### Central locking

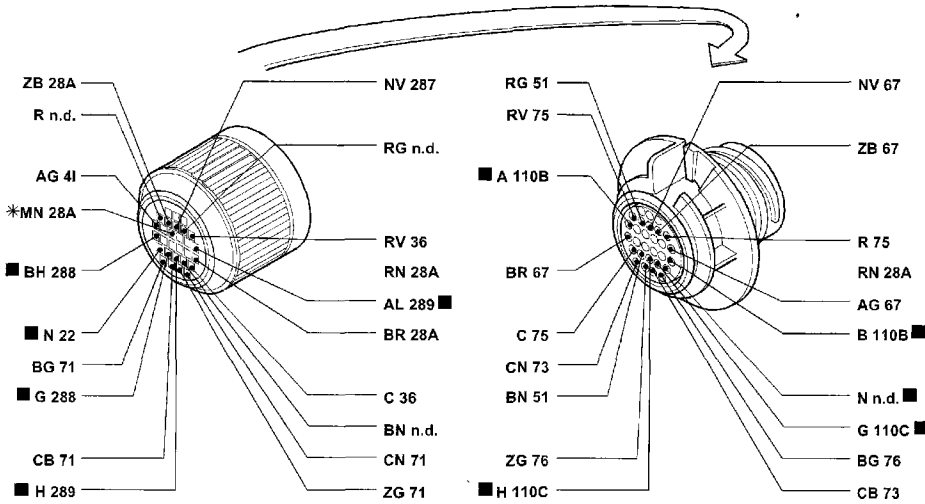
#### Components key

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit
- 10 Earth for battery on bodyshell
- 11 Battery
- 22 Left dashboard earth
- 28 Dashboard/longitudinal cables connection
- 35 Dashboard/left front door cables connection
- 36 Dashboard/right front door cables connection
- 42 Right dashboard earth
- 86 Longitudinal/left rear door cables connection
- 87 Longitudinal/right rear door cables connection
- 108 Left rear central locking/alarm switch
- 109 Right rear central locking/switch for engaging alarm
- 110 Left front central locking/alarm on switch
- 111 Right front central locking/switch for engaging alarm
- 112 Central door locking control unit

- 288 Short circuit connection
- 289 Short circuit connection

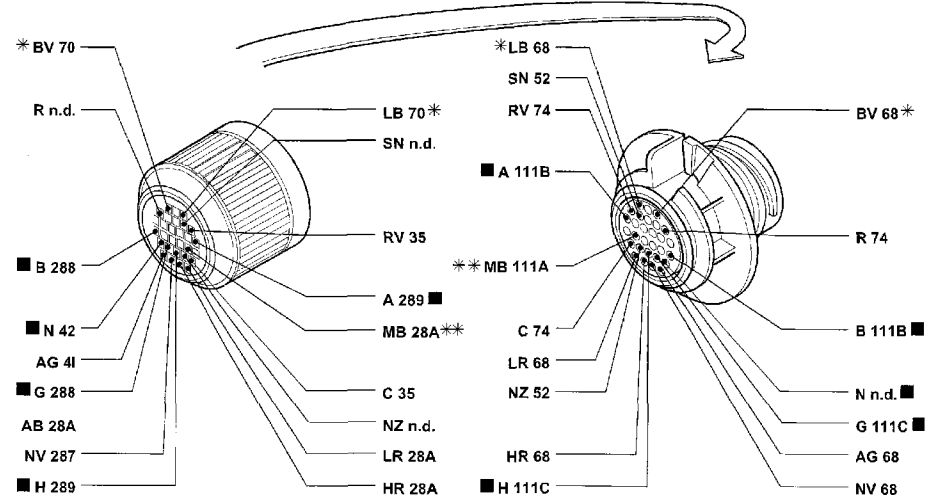
N.D. Ultrasound welding taped in cable loom

### 35 Dashboard/left front door cables connection. Trim level: SX - GT



\* Variant connection for version with automatic transmission

### 36 Dashboard/right front door cables connection. Trim level: SX - GT



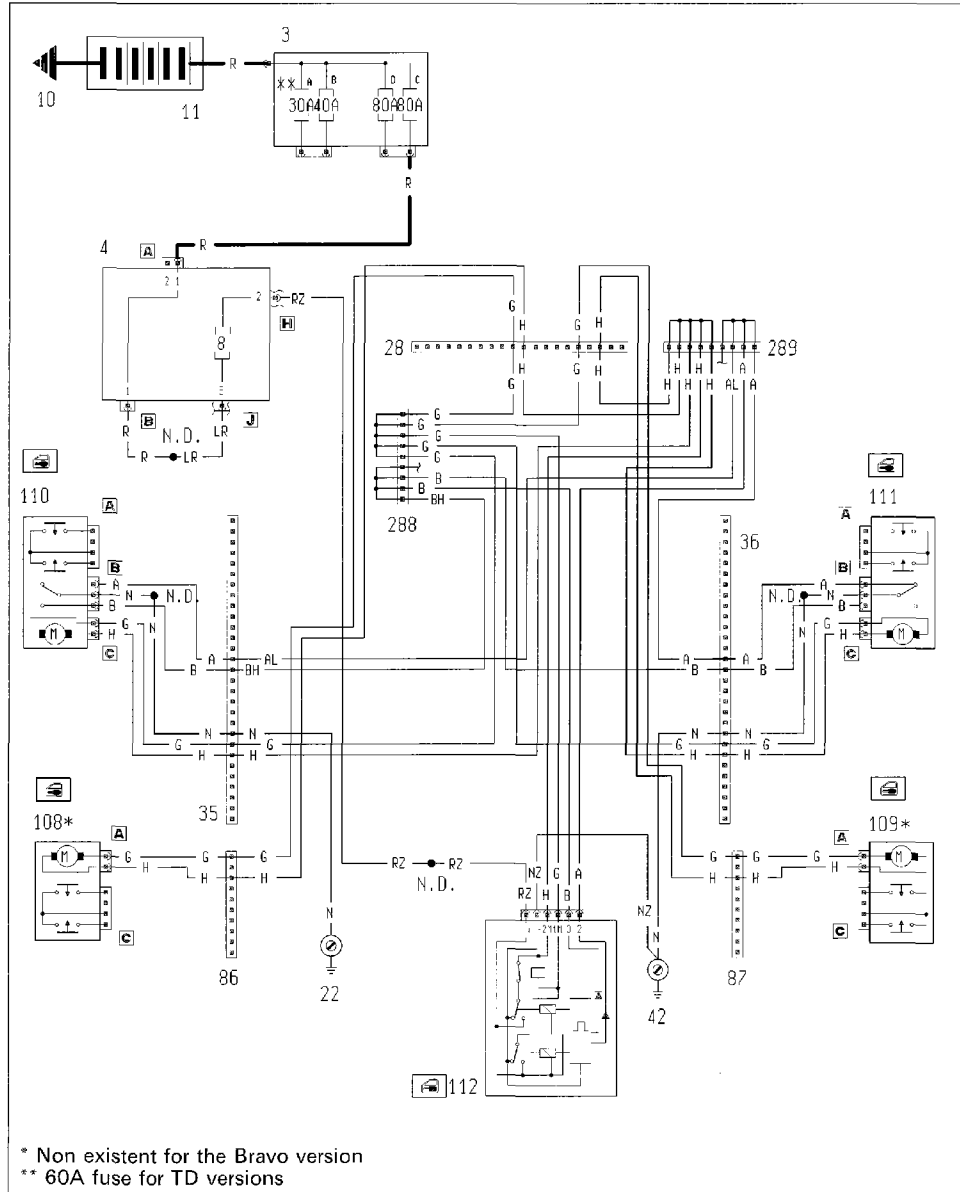
\* Variant connection for versions with air conditioning

\*\* Variant connection for version with automatic transmission

The cables in the wiring diagram are marked

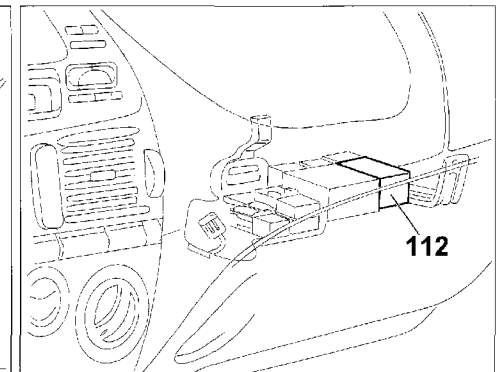
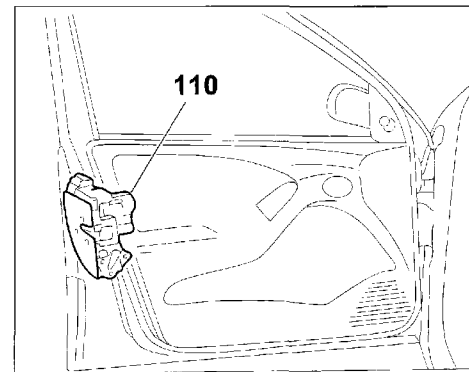
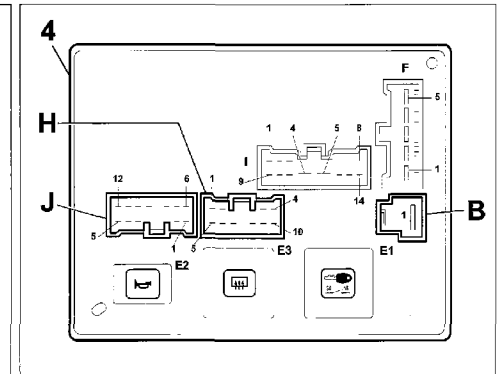
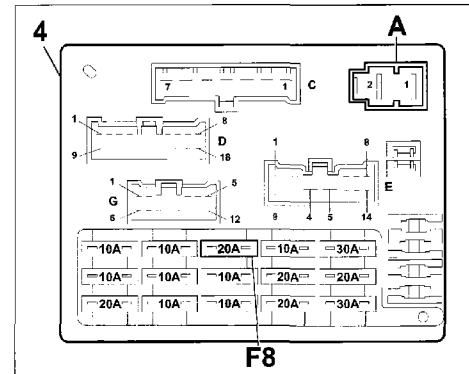
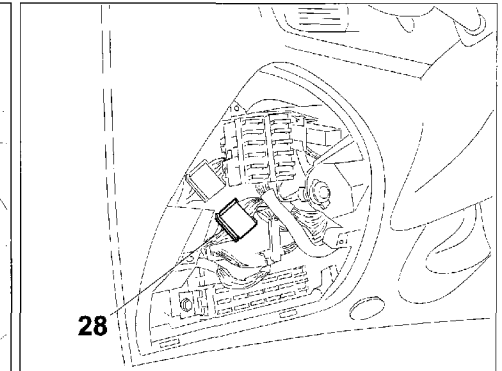
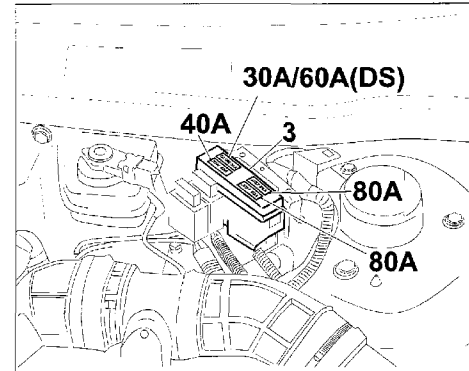
P4A100101

Version without alarm: SX - GT  
Central locking - (See key at end of wiring diagrams)



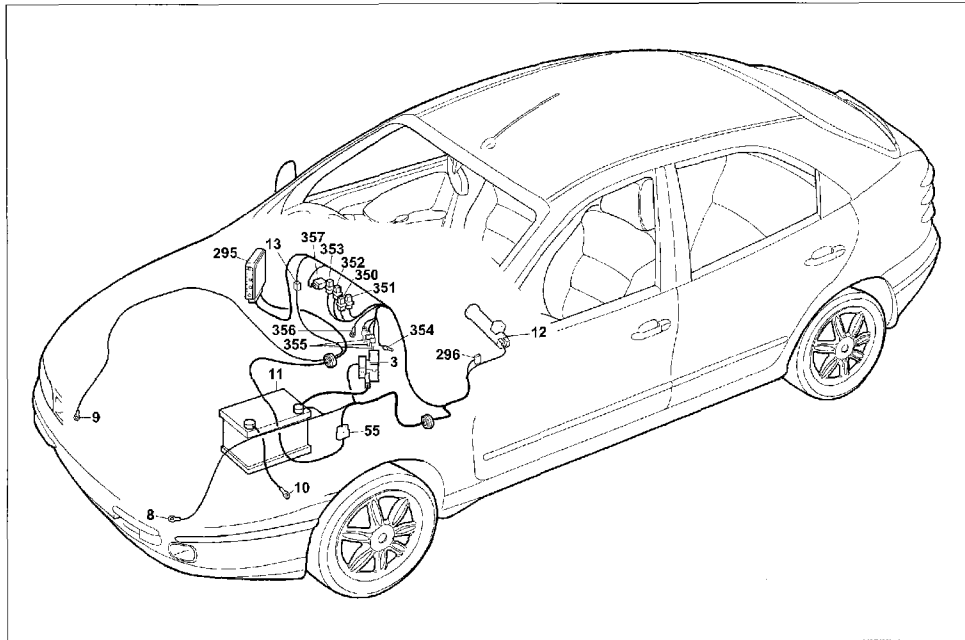
\* Non existent for the Bravo version  
\*\* 60A fuse for TD versions

**Location of components**





## 55.



P4A096101

### Automatic heater

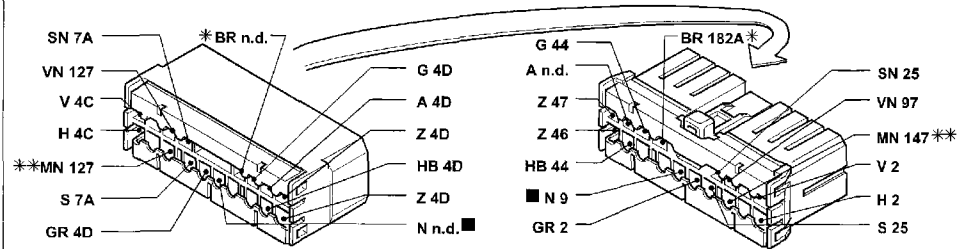
### Components key

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 8 Left front earth
- 9 Right front earth
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 13 Front right/left cables connection
- 40 Brake lights control switch
- 55 Connection between front/engine pre-wiring cables
- 295 Injection/ignition electronic control unit 1910 TD UNIJET
- 296 Fuse carrier base on front cable
  - A 7.5A fuse protecting cooling system/ electronic injection; C.A. system; Alarm
- 350 Passenger compartment water heating 30A relay
- 351 Passenger compartment water heating safety relay
- 352 Passenger compartment water heating 50A relay
- 353 70A fuse protecting passenger compartment water heating heater plugs
- 354 N.T.C. sensor on heating supply pipe
- 355 Passenger compartment water heater plugs

- 356 Heater plugs relay earth
- 357 Passenger compartment heater plugs control unit

N.D. Ultrasound welding taped in cable loom

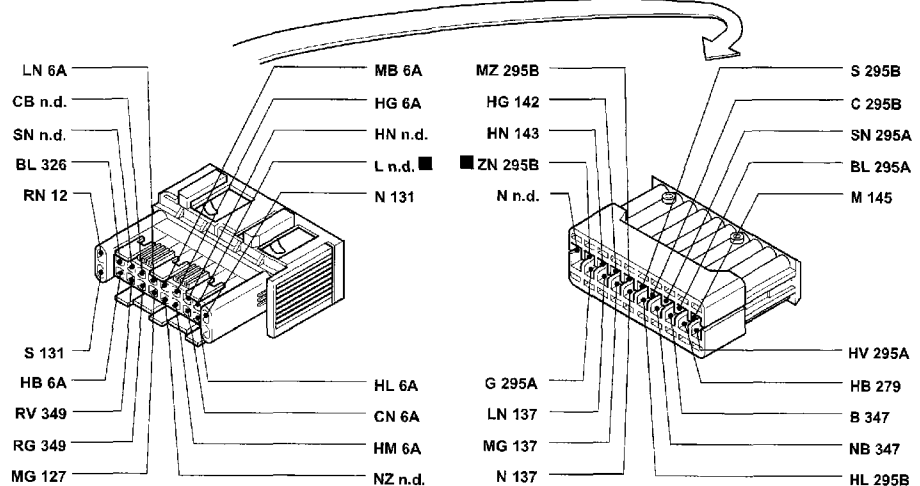
### 13 Front right/left cables connection



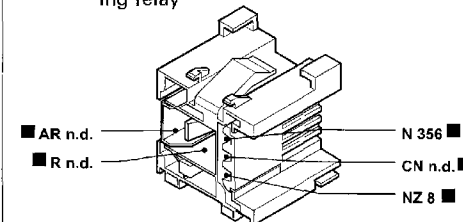
\* Variant connection for 1998 20v versions

\*\* Variant connection for 1910 JTD versions

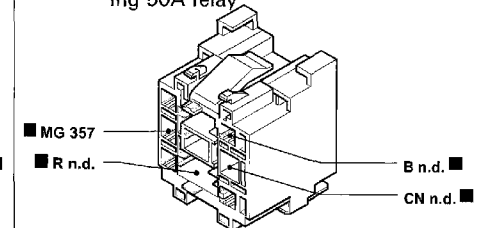
### 55 Connection between front/engine pre-wiring cables



### 351 Passenger compartment water heating relay



### 352 Passenger compartment water heating 50A relay

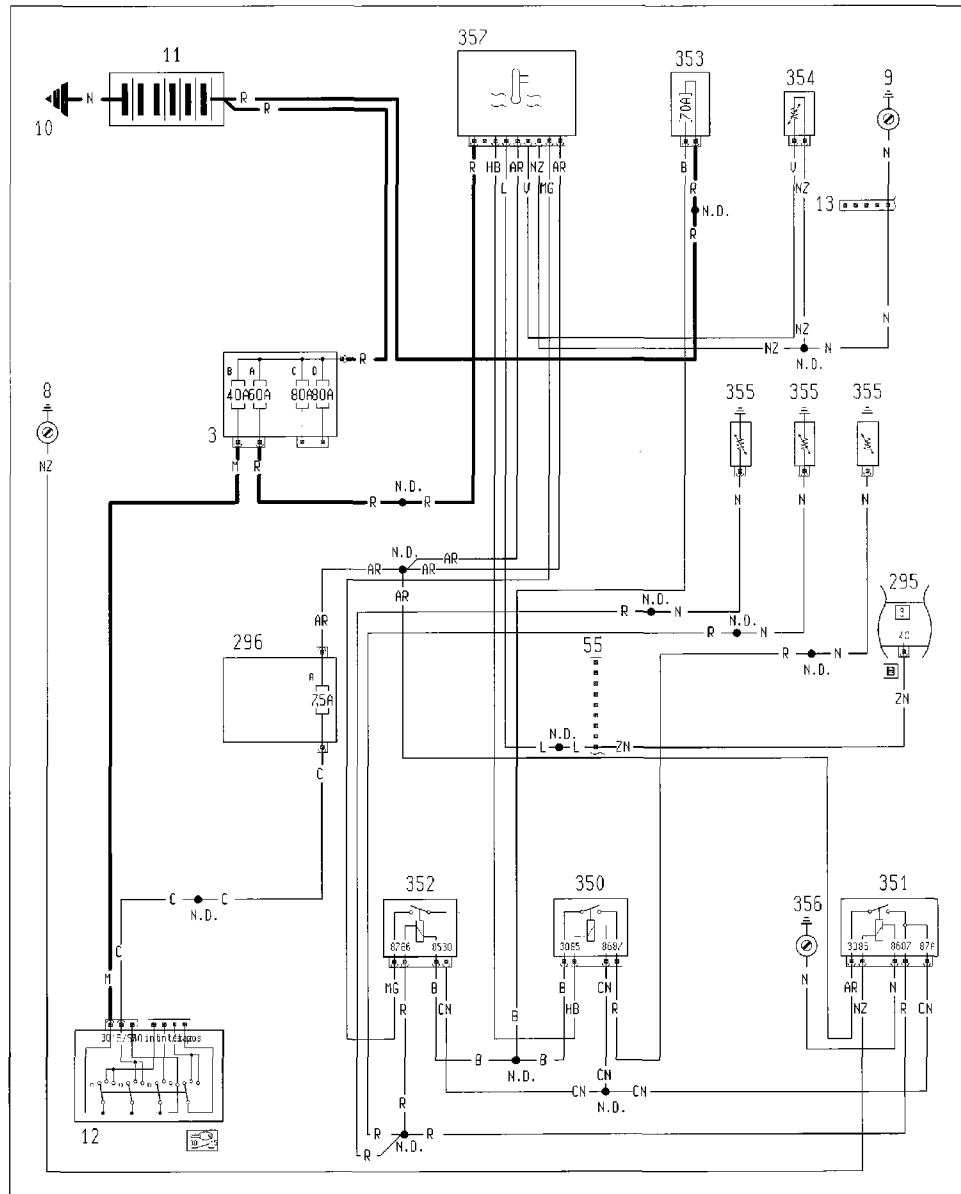


The cables in the wiring diagram are marked

P4A096101

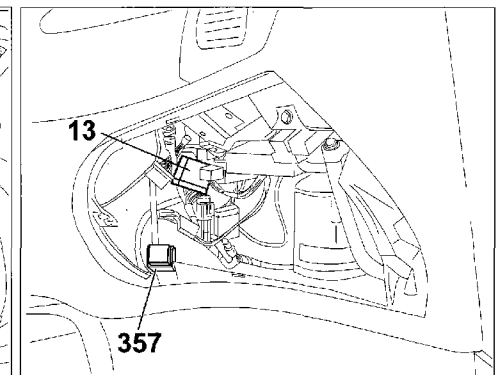
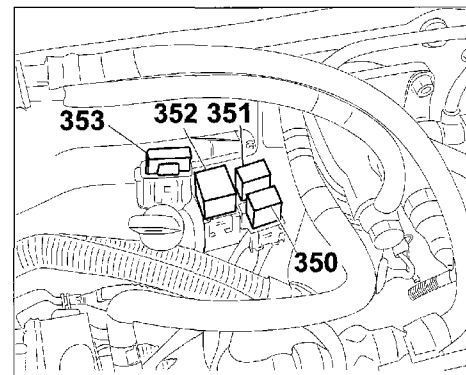
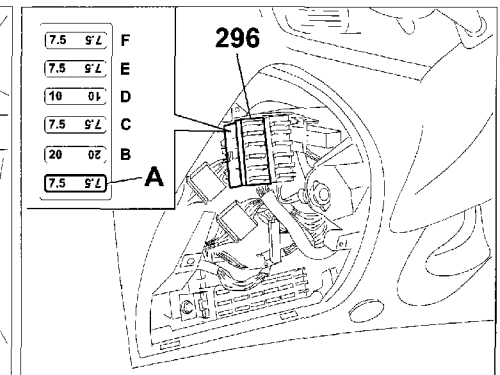
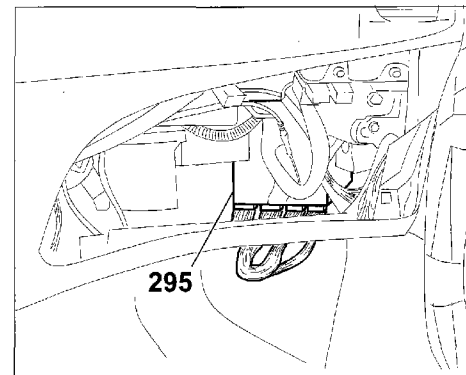
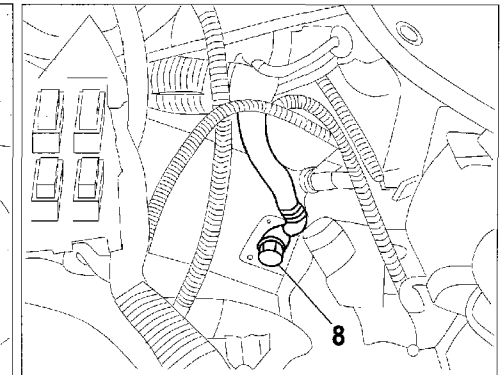
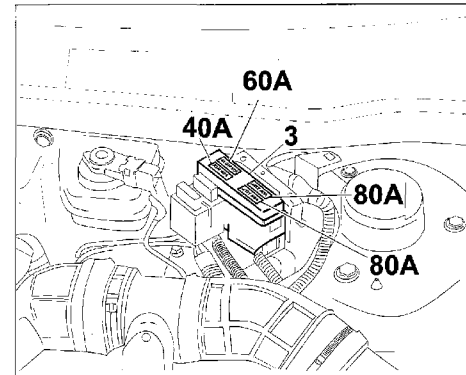
4A0961

Automatic heater - (See key at end of wiring diagrams)



P4A093101

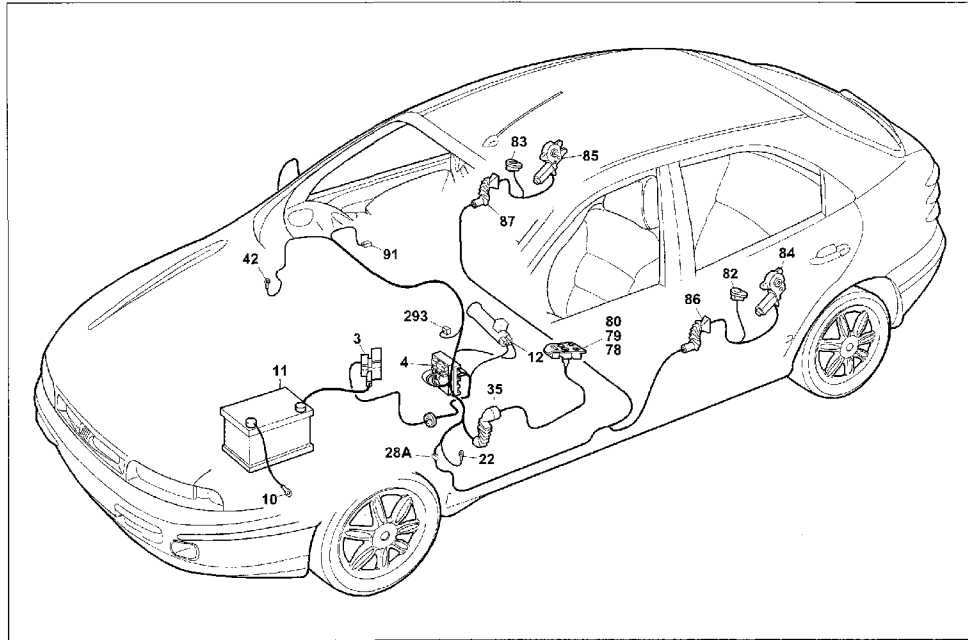
**Location of components**



4A084I

P4A084I01

## 55.



P4A0911U1

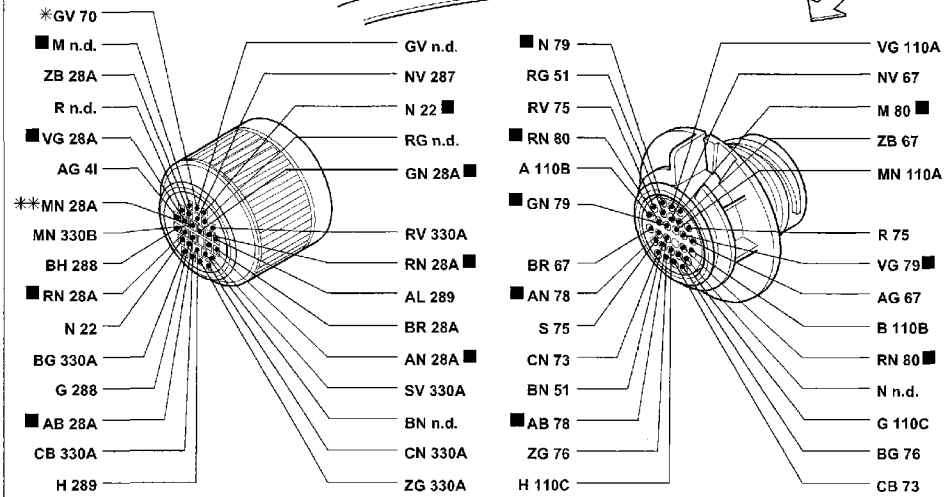
Trim level: ELX - HSX - HGT  
Electric rear windows

### Components key

- 3 Power fuse box:  
 A 30A protective fuse for injection system (60A for TD versions)  
 B 40A protective fuse for ignition system  
 C 80A fuse protecting additional options  
 D 80A protective fuse for junction unit
- 4 Junction unit  
 E1 Ignition discharge relay
- 10 Earth for battery on bodyshell  
 11 Battery  
 12 Ignition switch  
 22 Left dashboard earth
- 28A Dashboard/longitudinal cables connection  
 35 Dashboard/left front door cables connection  
 42 Right dashboard earth  
 78 Left rear electric window control panel in left front door  
 79 Right rear electric window control panel in left front door  
 80 Electric rear windows inhibitor switch  
 82 Left rear electric window control panel on left rear door  
 83 Right rear electric window control panel on right rear door

- 84 Left rear electric window motor  
 85 Right rear electric window motor  
 86 Longitudinal/left rear door cables connection  
 87 Longitudinal/right rear door cables connection  
 91 Power relay  
 293 Fuse carrier base on dashboard cable  
 C 25A fuse protecting electric rear windows (non existent for SX versions)  
 N.D. Ultrasound welding taped in cable loom

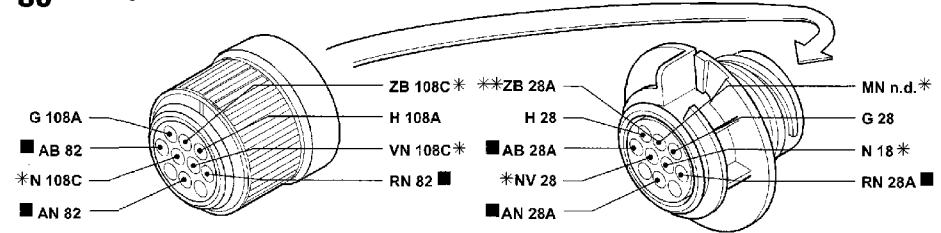
### 35 Dashboard/left front door cables connection. Trim level: ELX - HSX - HGT



\* Variant connection for versions with alarm

\*\* Variant connection for version with automatic transmission

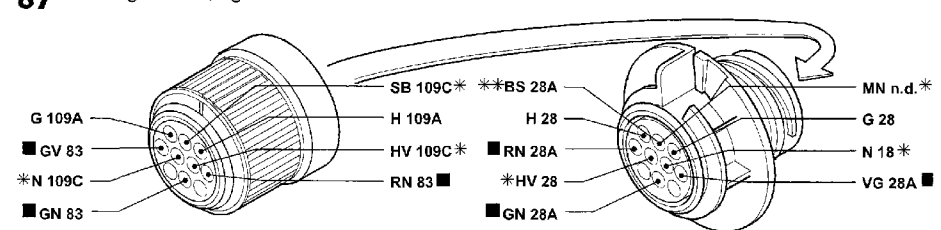
### 86 Longitudinal/left rear door cables connection



\* Variant connection for versions with alarm

\*\* Variant connection for ELX trim levels

### 87 Longitudinal/right rear door cables connection



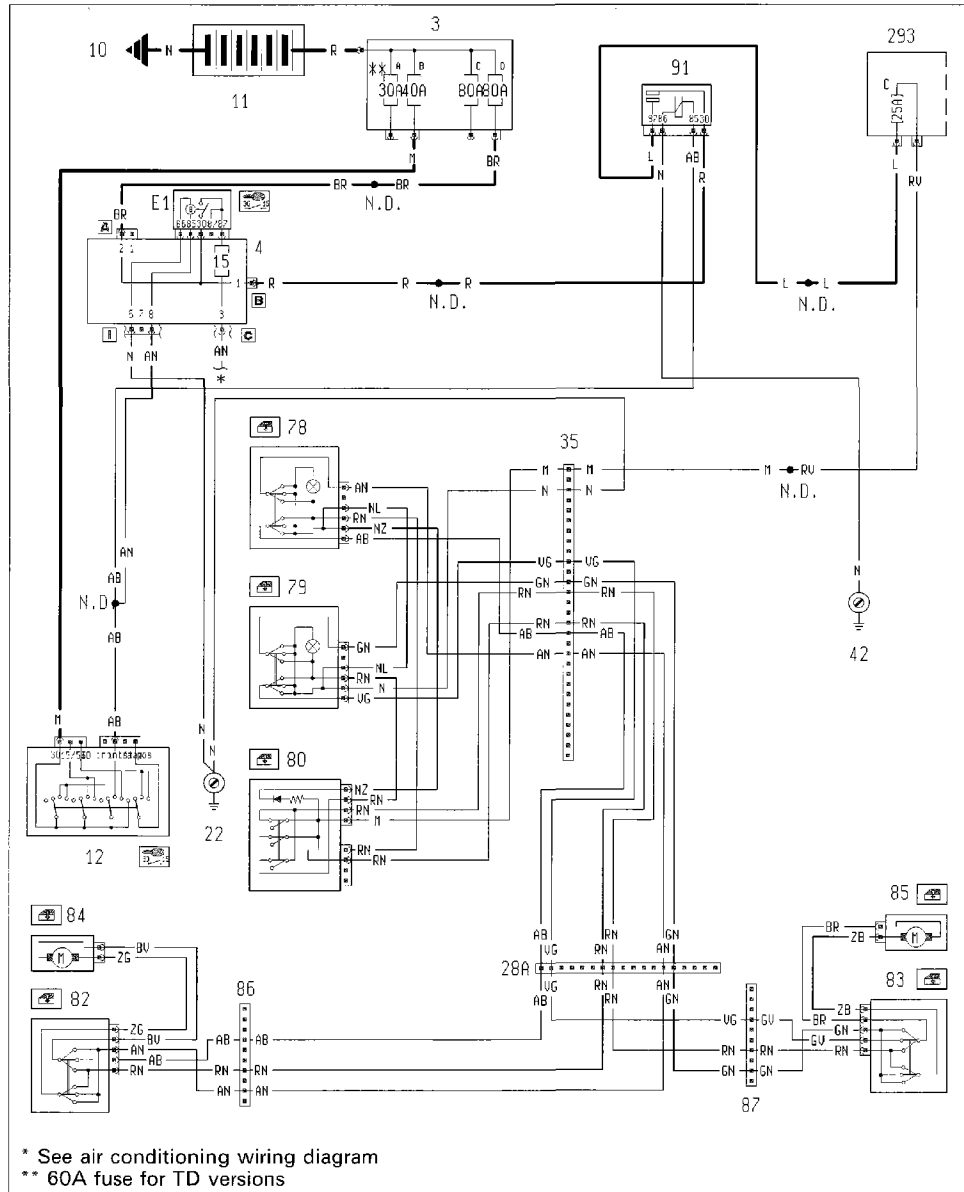
\* Variant connection for versions with alarm

\*\* Variant connection for ELX trim levels

The cables in the wiring diagram are marked

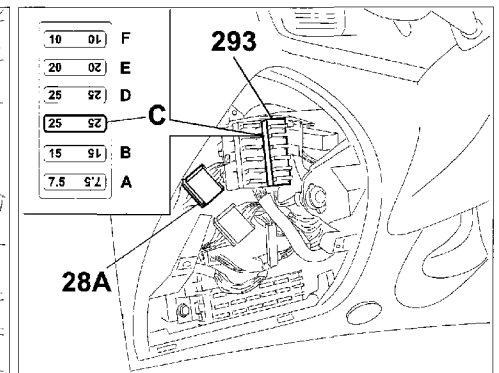
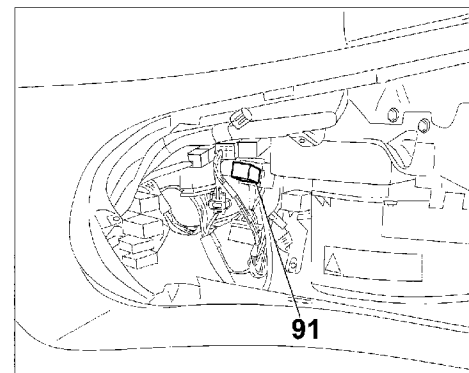
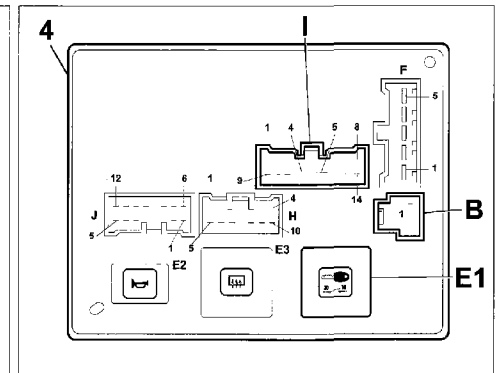
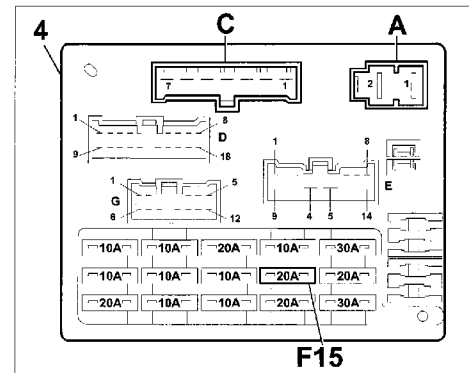
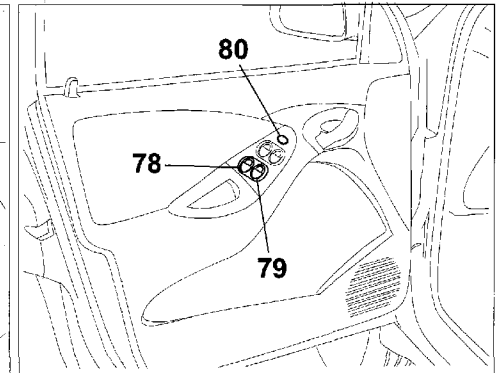
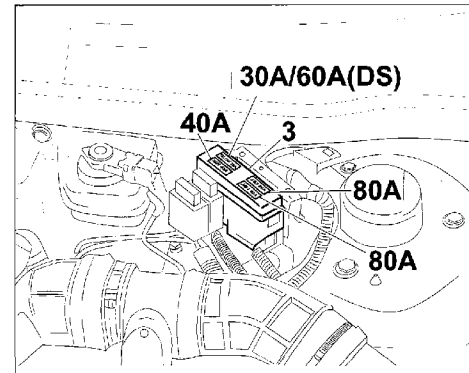
P4A0921U1

Trim level: ELX - HSX - HGT  
Electric rear windows - (See key at end of wiring diagrams)



P4A089101

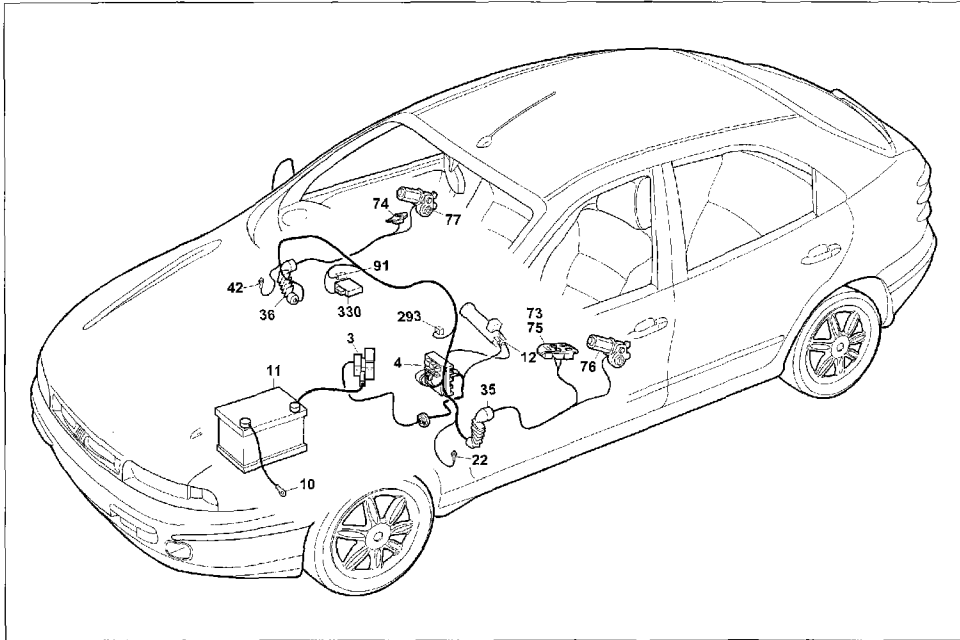
**Location of components**



4A0891

P4A089101

## 55.



P4A067101

Trim level: ELX - HSX - HGT

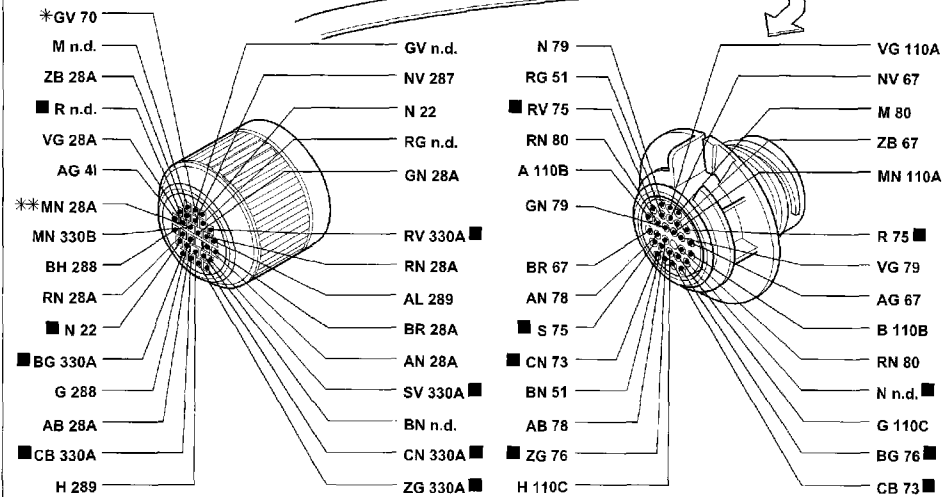
Electric front windows

### Components key

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 22 Left dashboard earth
- 35 Dashboard/left front door cables connection
- 36 Dashboard/right front door cables connection
- 42 Right dashboard earth
- 73 Left front electric window control panel
- 74 Right electric front window control panel
- 75 Right electric front window control panel in left front door
- 76 Left front electric window motor
- 77 Right front electric window motor

- 91 Power relay
- 293 Fuse carrier base on dashboard cable
- C 25A fuse protecting Electric rear windows (non existent for the SX versions)
- D 25A fuse protecting A.B.I. control unit; Central locking control unit
- 330 A.B.I. control unit
- N.D. Ultrasound welding taped in cable loom

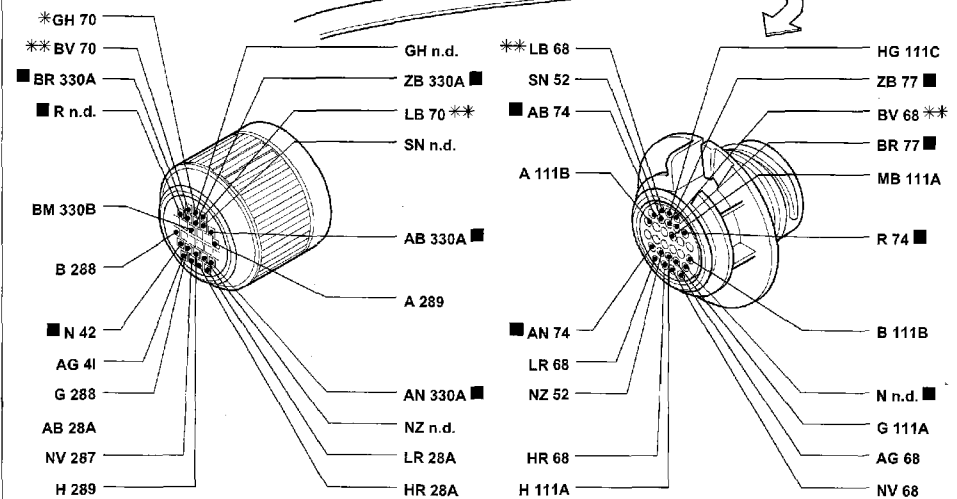
### 35 Dashboard/left front door cables connection. Trim level: ELX - HSX - HGT



\* Variant connection for versions with alarm

\*\* Variant connection for versions with automatic transmission

### 36 Dashboard/right front door cables connection. Trim level: ELX - HSX - HGT



\* Variant connection for versions with alarm

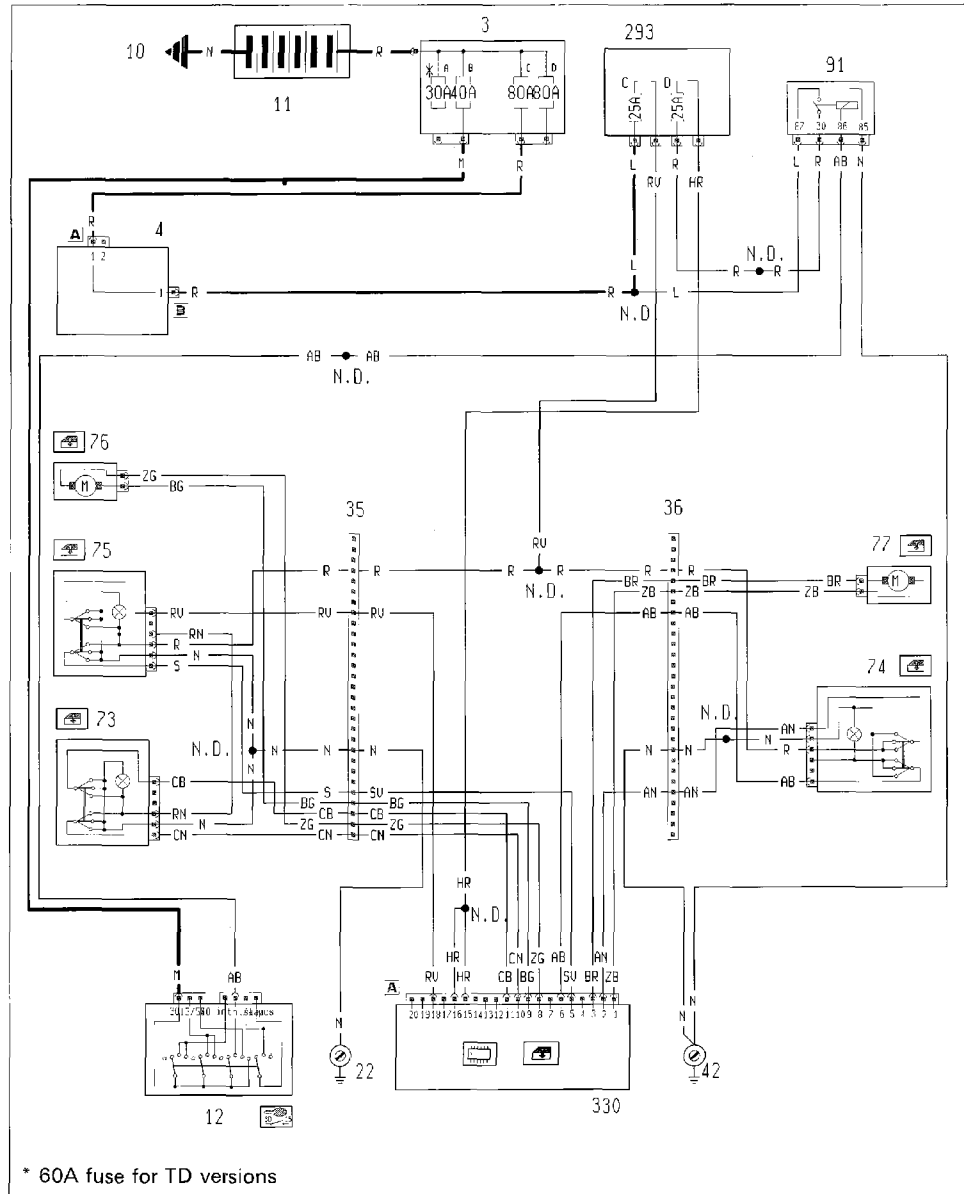
\*\* Variant connection for versions with air conditioning

The cables in the wiring diagram are marked

P4A068101

Trim level: ELX - HSX - HGT

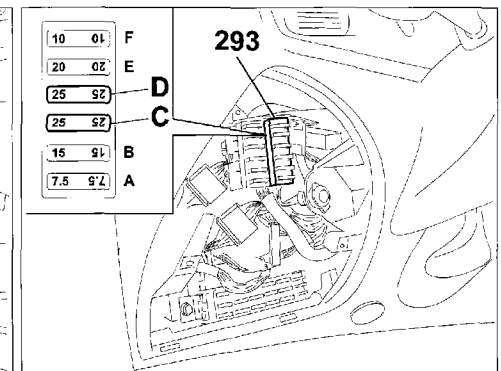
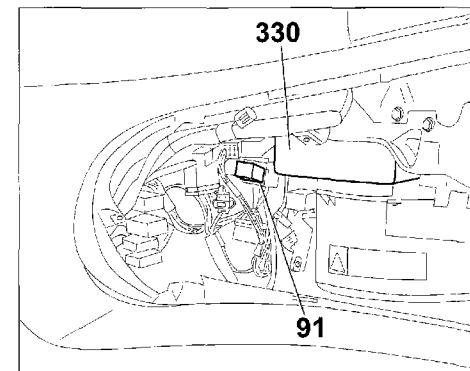
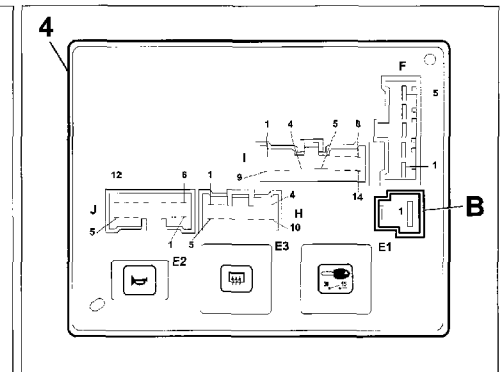
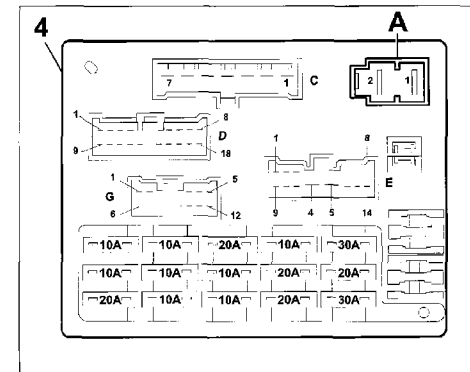
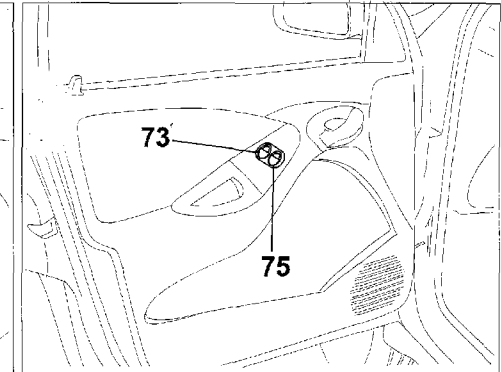
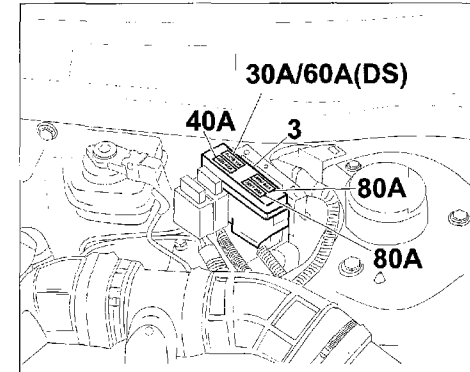
Electric front windows - (See key at end of wiring diagrams)



4A0851

P4A085101

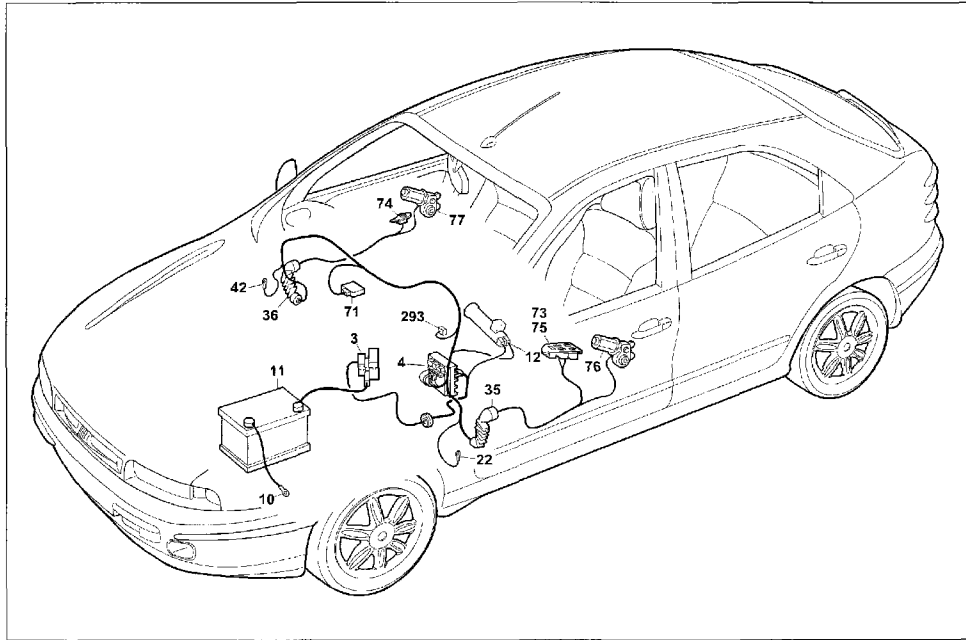
Location of components



4A0881

P4A088101

## 55.



P4A083101

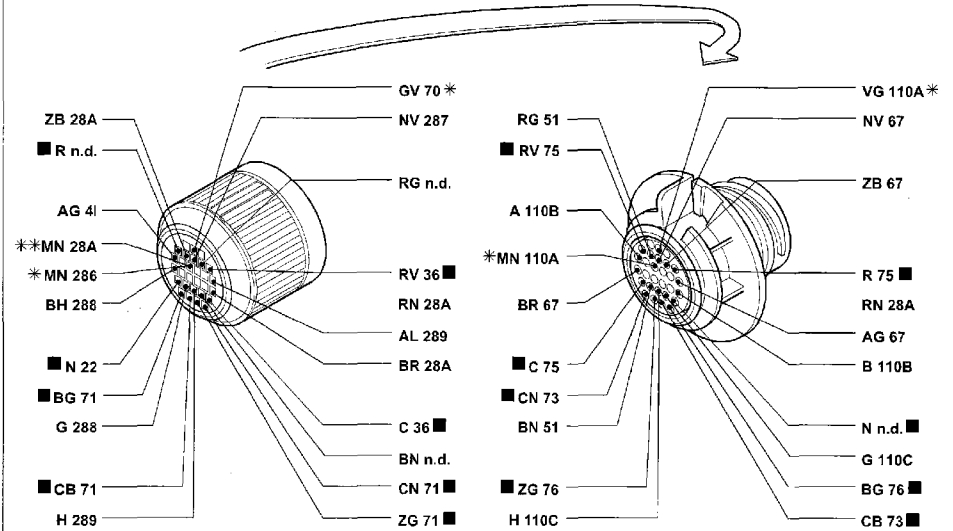
**Trim level: SX - GT**  
**Electric front windows**

### Components key

- 3 Power fuse box:  
 A 30A protective fuse for injection system (60A for TD versions)  
 B 40A protective fuse for ignition system  
 C 80A fuse protecting additional options  
 D 80A protective fuse for junction unit
- 4 Junction unit  
 E1 Ignition discharge relay
- 10 Earth for battery on bodyshell  
 11 Battery  
 12 Ignition switch  
 22 Left dashboard earth  
 35 Dashboard/left front door cables connection  
 36 Dashboard/right front door cables connection  
 42 Right dashboard earth  
 71 Electric front windows control unit  
 73 Left front electric window control panel  
 74 Right electric front window control panel  
 75 Right electric front window control panel in left front door  
 76 Left front electric window motor  
 77 Right front electric window motor

- 293 Fuse carrier base on dashboard cable  
 A 7.5A fuse protecting switch panel light; Radio phone; Radio; Electric mirrors  
 D 25A fuse protecting A.B.I. control unit; Central locking control unit  
 N.D. Ultrasound welding taped in cable loom

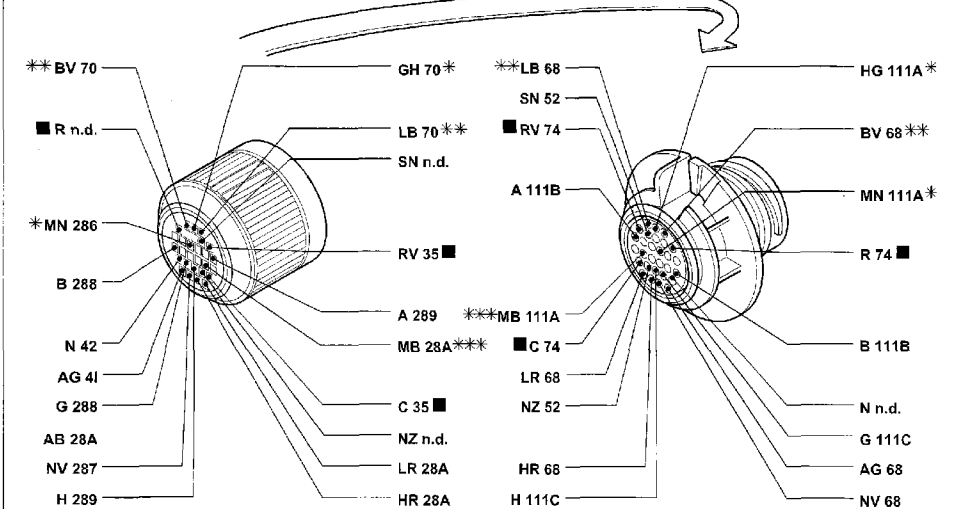
### 35 Dashboard/left front door cables connection. Trim level: SX - GT



\* Variant connection for versions with alarm

\*\* Variant connection for version with automatic transmission

### 36 Dashboard/right front door cables connection. Trim level: SX - GT



\* Variant connection for versions with alarm

\*\* Variant connection for versions with air conditioning

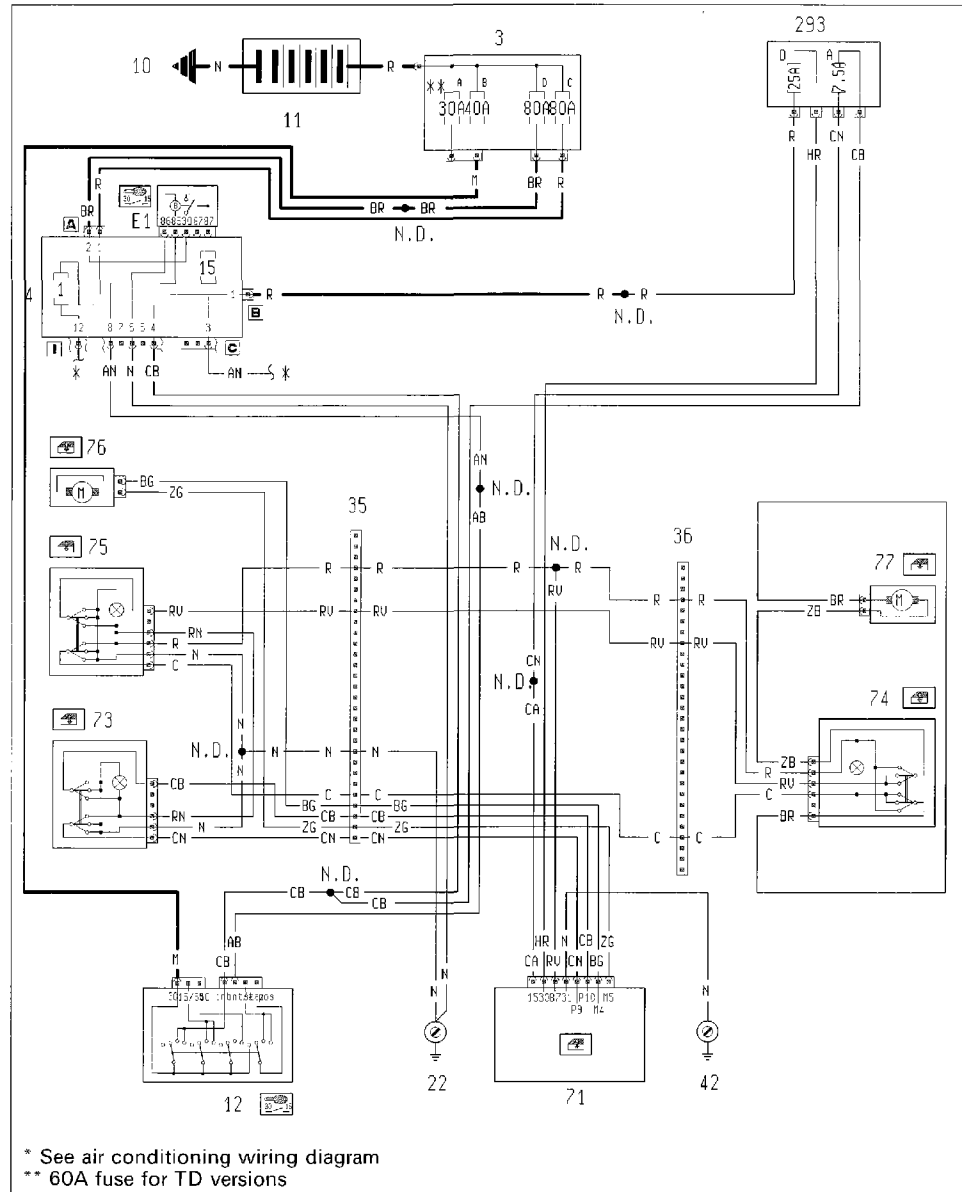
\*\*\* Variant connection for version with automatic transmission

The cables in the wiring diagram are marked

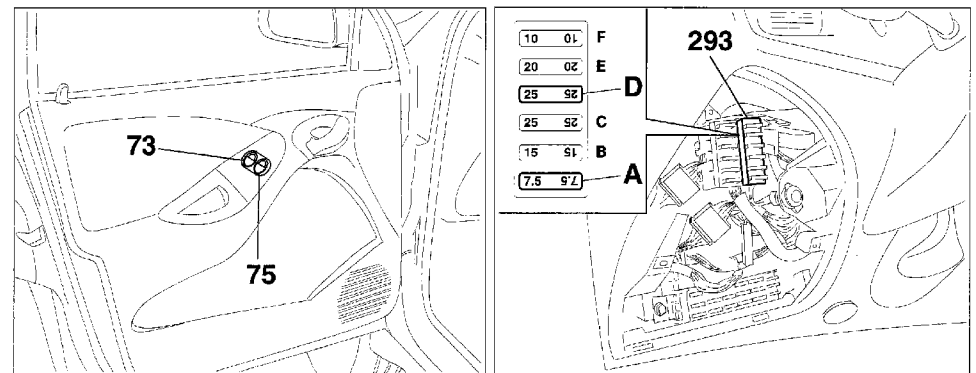
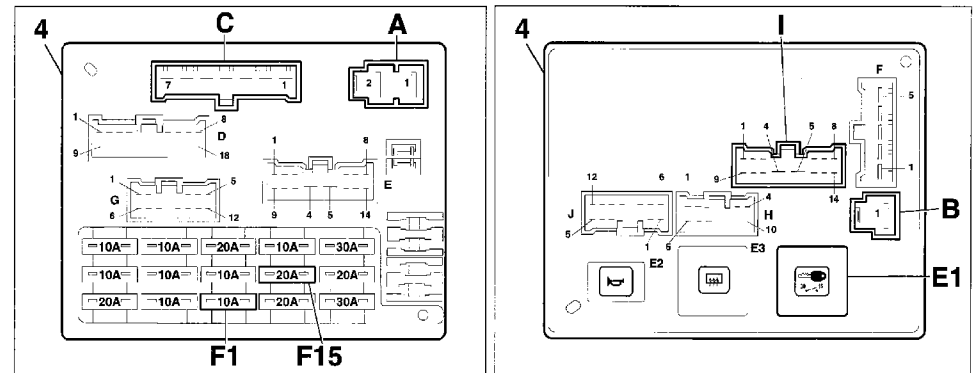
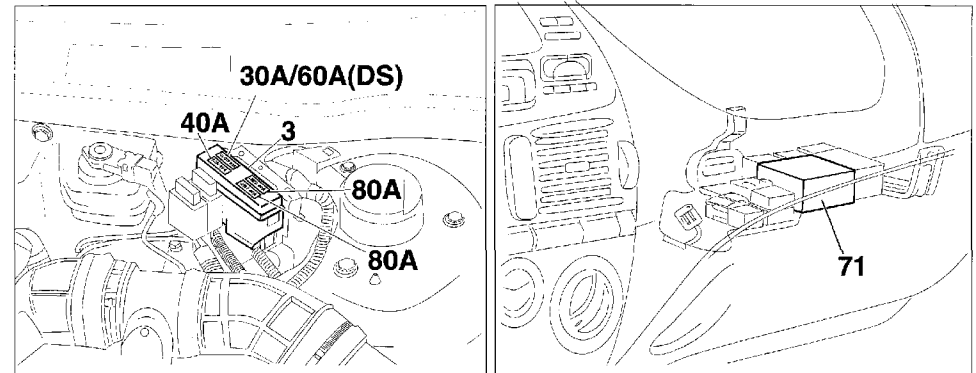
P4A084101

Trim level: **SX - GT**

Electric front windows - (See key at end of wiring diagrams)

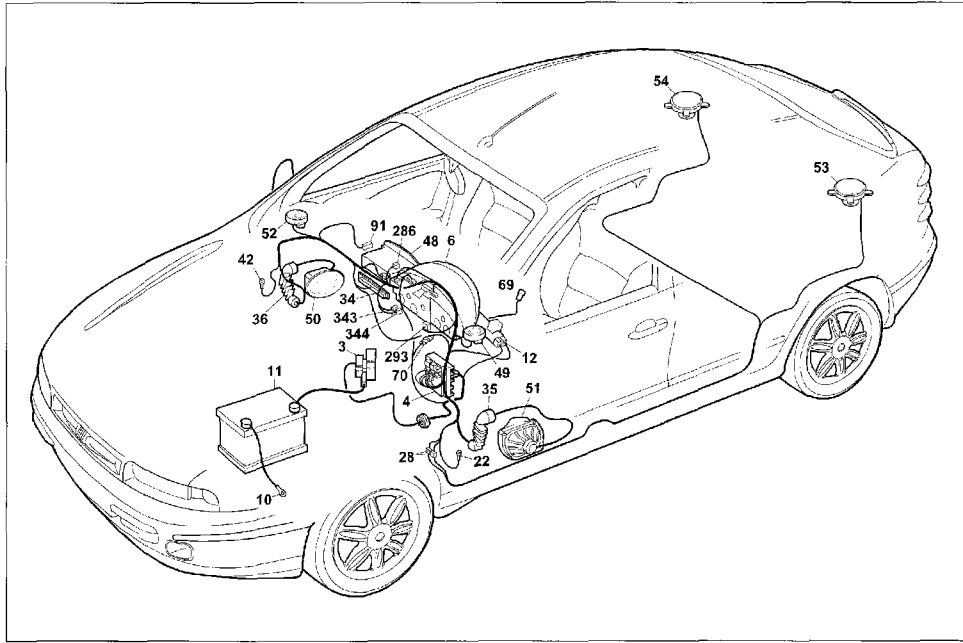


**Location of components**





## 55.



P4A079101

### Preparation for top of the range radio - Cigar lighter

#### Components key

##### 3 Power fuse box:

- A 30A protective fuse for injection system (60A for TD versions)
- B 40A protective fuse for ignition system
- C 80A fuse protecting additional options
- D 80A protective fuse for junction unit

##### 4 Junction unit:

- E1 Ignition discharge relay
- Y Electronic module

##### 6 Instrument panel:

- Y Electronic module

##### 10 Earth for battery on bodyshell

- 11 Battery
- 12 Ignition switch
- 22 Left dashboard earth
- 28 Dashboard/longitudinal cables connection
- 34 Switch control unit

- A Anti-theft warning light on
- B Rear fog lamps switch
- C Rear fog lamp relay feed

##### 35 Dashboard/left front door cables connection

- 36 Dashboard/right front door cables connection
- 42 Right dashboard earth
- 48 Radio receiver with clock
- 49 Left front speaker (tweeter)
- 50 Right front speaker (tweeter)
- 51 Speaker in left front door
- 52 Speaker in right front door

53 Left rear speaker

54 Right rear speaker

69 Cigar lighter

91 Power relay

286 Short circuit connection

293 Fuse carrier base on dashboard cable

A 7.5A fuse protecting switch panel light; Radio phone; Radio; Electric mirrors

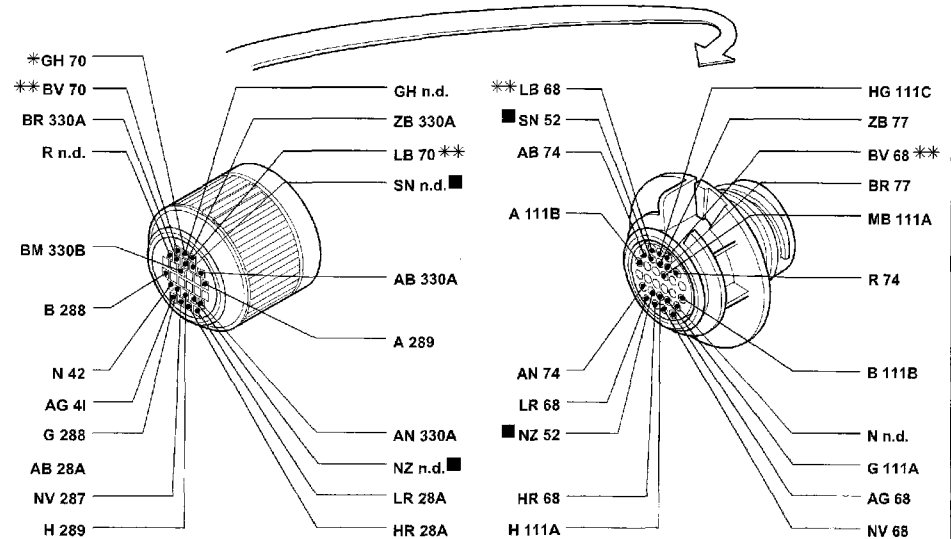
E 20A protective fuse for current socket; Cigar lighter; Electric seats; Electric roof

343 Connection for preparation for radio phone

344 Electric aerial preparation cable connection

N.D. Ultrasound welding taped in cable loom

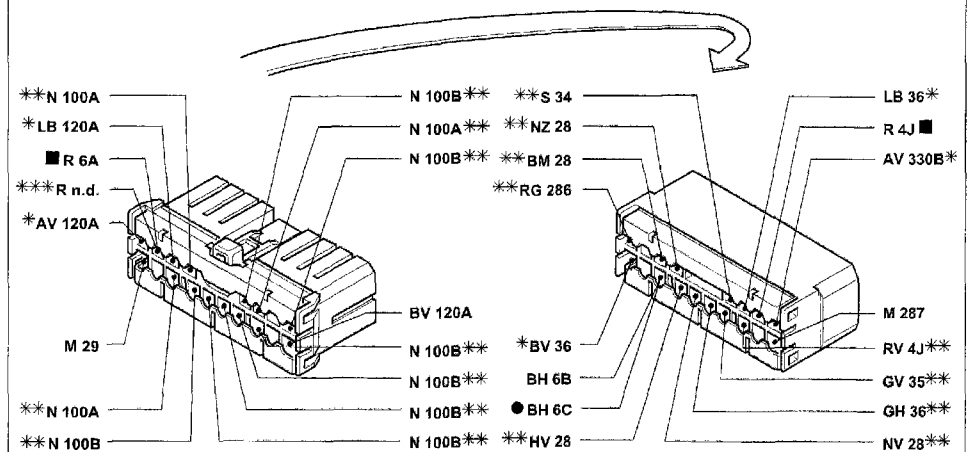
### 36 Dashboard/right front door cables connection Trim level: ELX - HSX - HGT



\* Variant connection for versions with alarm

\*\* Variant connection for versions with air conditioning

### 70 Dashboard/front cables connection. Trim level: ELX - HSX - HGT



\* Variant connection for versions with air conditioning

\*\* Variant connection for versions with alarm

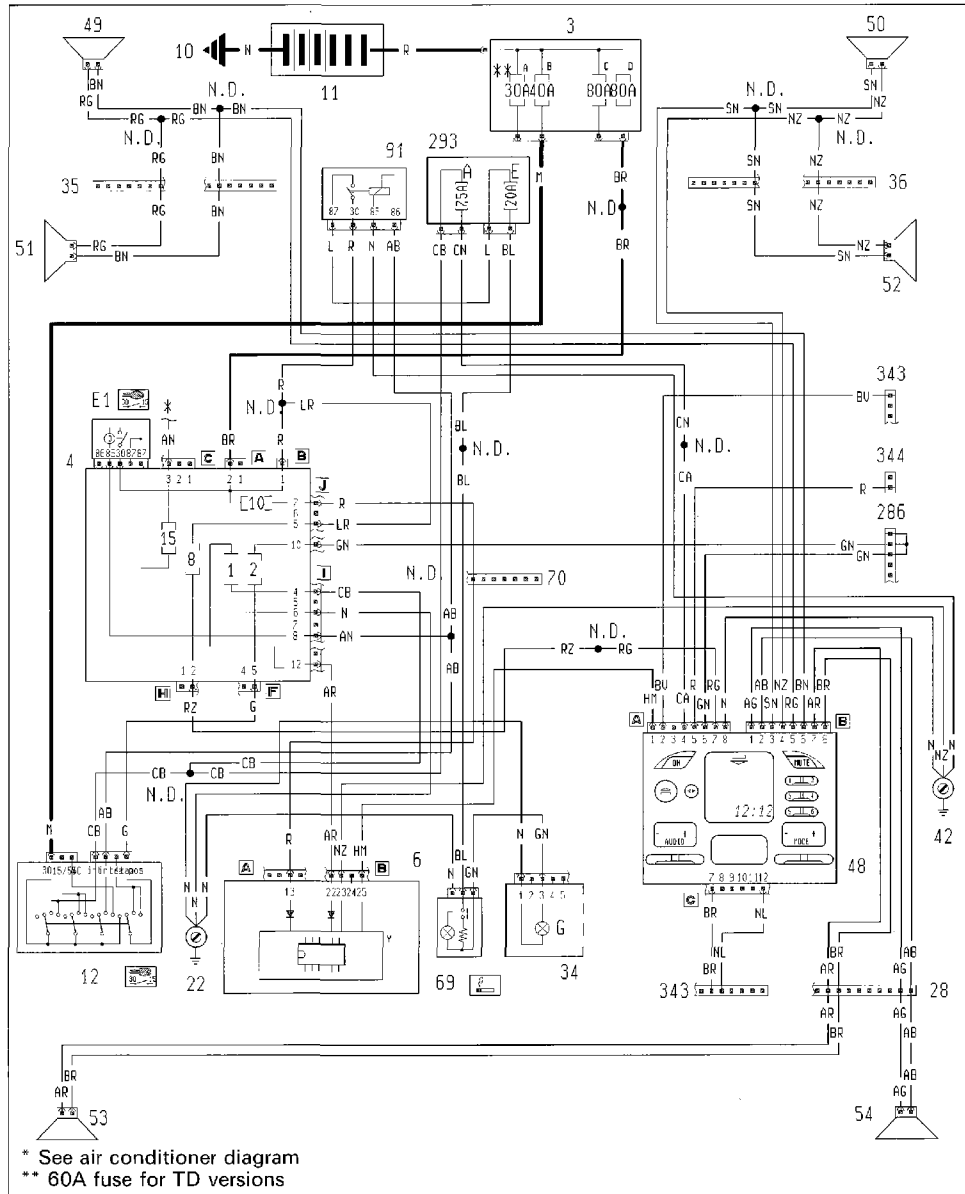
\*\*\* Variant connection for 1910 JTD versions

● Variant connection for ELX trim level with automatic transmission

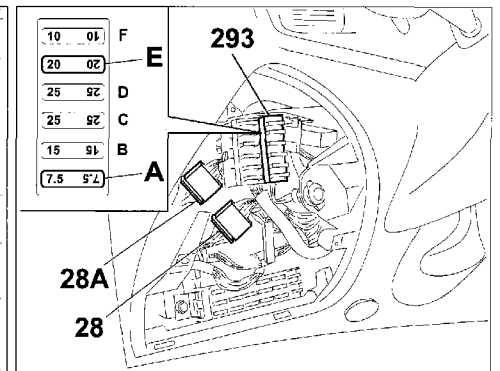
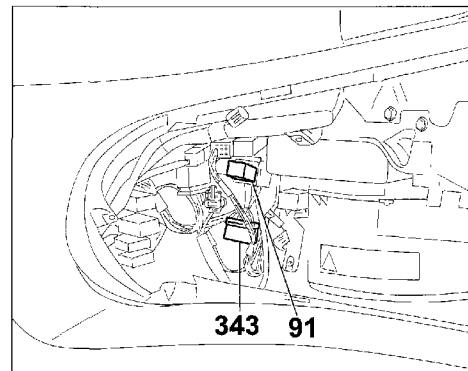
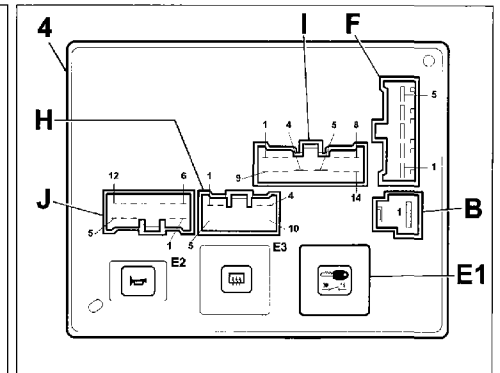
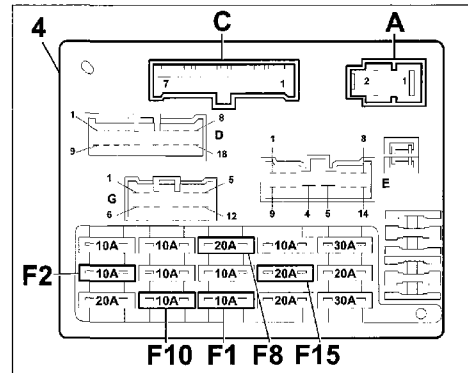
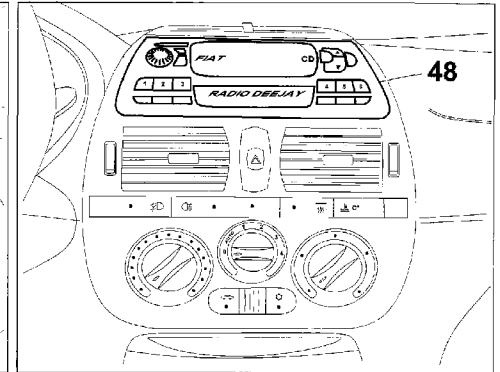
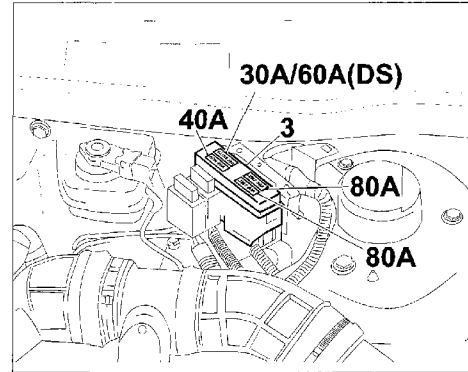
The cables in the wiring diagram are marked

P4A08101

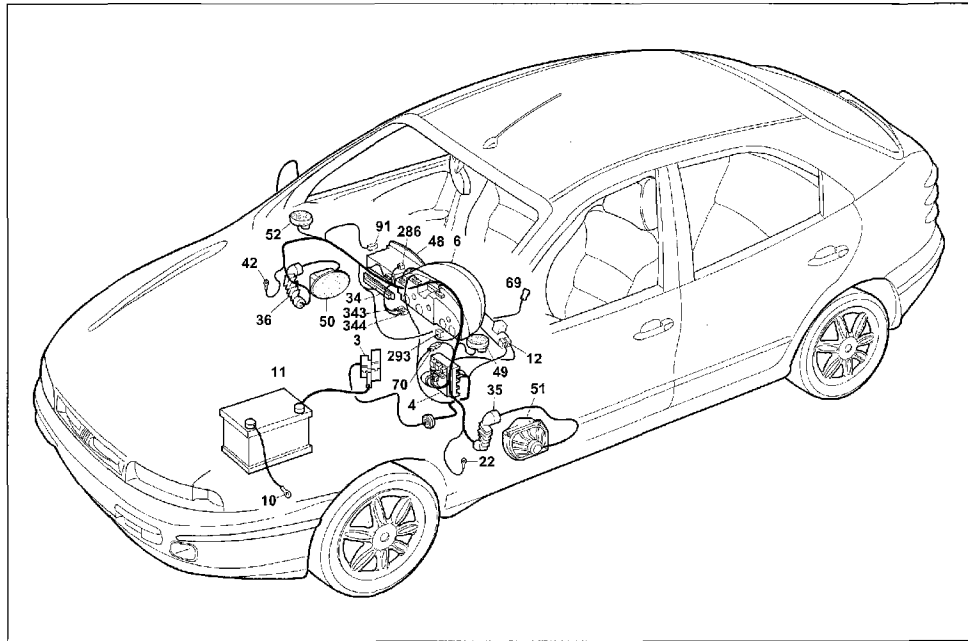
**Preparation for top of the range radio - Cigar lighter - (See key at end of wiring diagrams)**



**Location of components**



## 55.



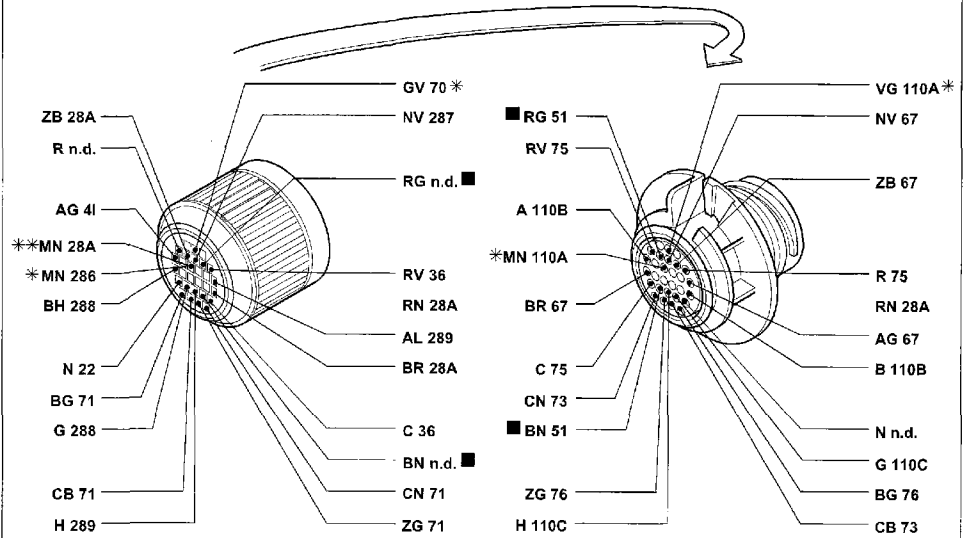
P4A075101

### Preparation for bottom of the range radio - Cigar lighter

#### Components key

- |   |  |
|---|--|
| 3 Power fuse box:<br>A 30A protective fuse for injection system (60A for TD versions)<br>B 40A protective fuse for ignition system<br>C 80A fuse protecting additional options<br>D 80A protective fuse for junction unit   | 69 Cigar lighter<br>70 Dashboard/front cables connection<br>91 Power relay<br>286 Short circuit connection<br>293 Fuse carrier base on dashboard cable<br>A 7.5A fuse protecting switch panel light; Radio phone; Radio; Electric mirrors<br>E 20A protective fuse for current socket; Cigar lighter; Electric seats; Electric roof<br>343 Connection for preparation for radio phone<br>344 Electric aerial preparation cable connection<br>N.D. Ultrasound welding taped in cable loom |
| 4 Junction unit:<br>E1 Ignition discharge relay   |  |
| 6 Instrument panel<br>Y Electronic module   |  |
| 10 Earth for battery on bodysell<br>11 Battery  |  |
| 12 Ignition switch<br>22 Left dashboard earth   |  |
| 34 Switch control unit:<br>A Anti-theft warning light on<br>B Rear fog lamps switch<br>C Rear fog lamp relay feed   |  |
| 35 Dashboard/left front door cables connection<br>36 Dashboard/right front door cables connection<br>42 Right dashboard earth<br>48 Radio receiver with clock<br>49 Left front speaker (tweeter)<br>50 Right front speaker (tweeter)<br>51 Speaker in left front door<br>52 Speaker in right front door |  |

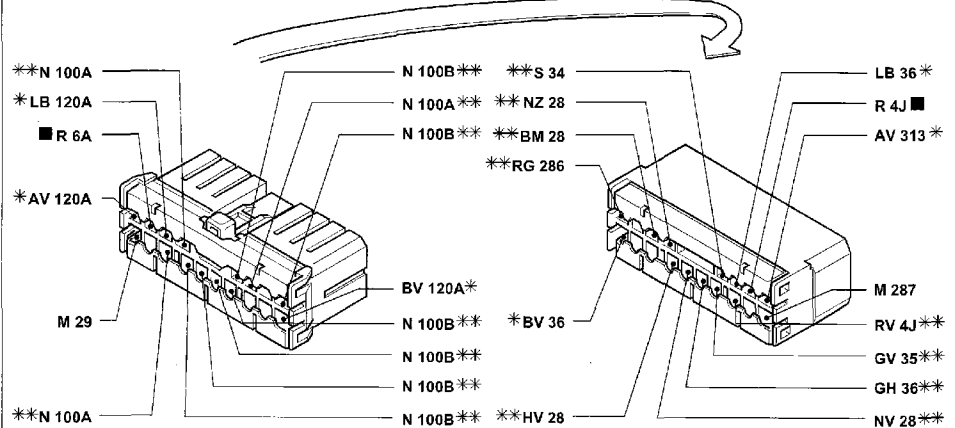
### 35 Dashboard/left front door cables connection. Trim level: SX - GT



\* Variant connection for versions with alarm

\*\* Variant connection for version with automatic transmission

### 70 Dashboard/front cables connection. Trim level: SX - GT



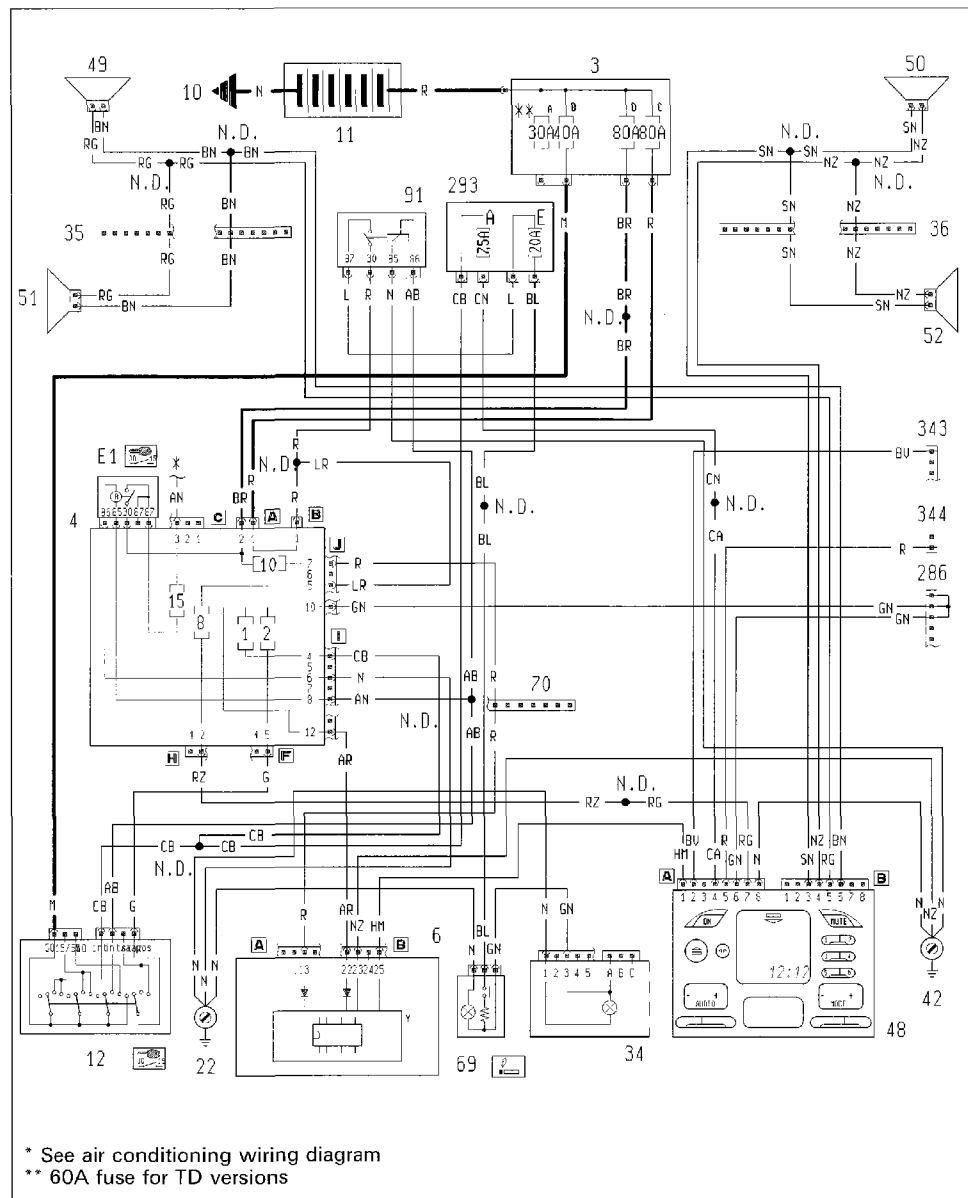
\* Variant connection for versions with air conditioning

\*\* Variant connection for versions with alarm

The cables in the wiring diagram are marked

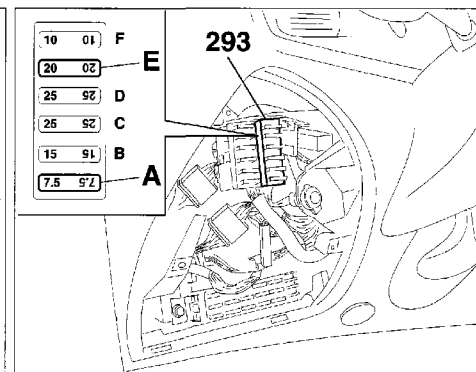
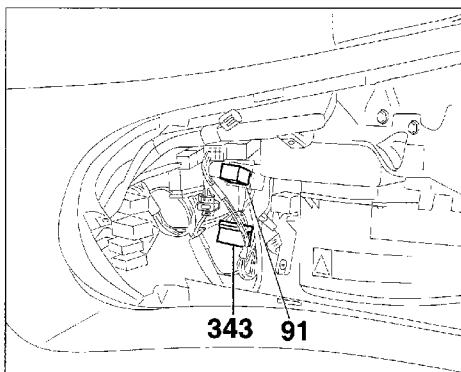
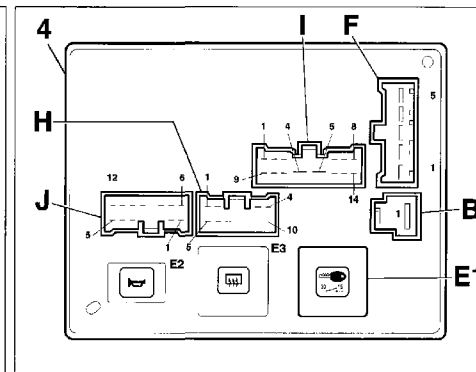
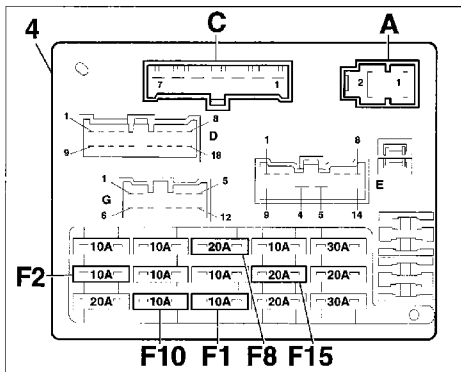
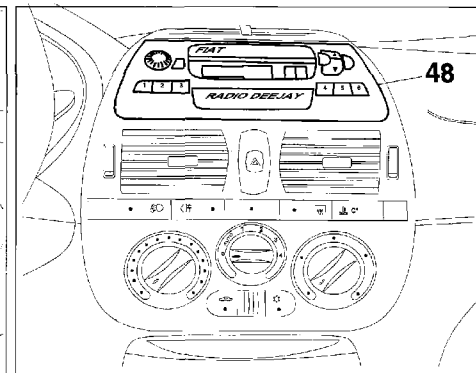
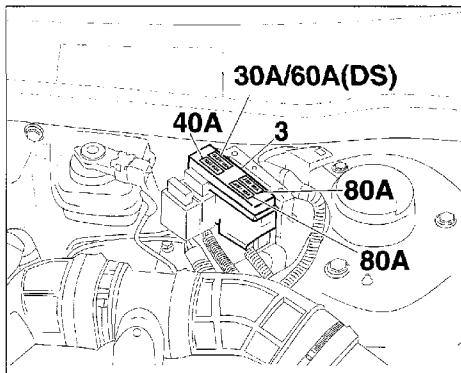
P4A076101

**Preparation for bottom of the range radio - Cigar lighter - (See key at end of wiring diagrams)**



P4A073101

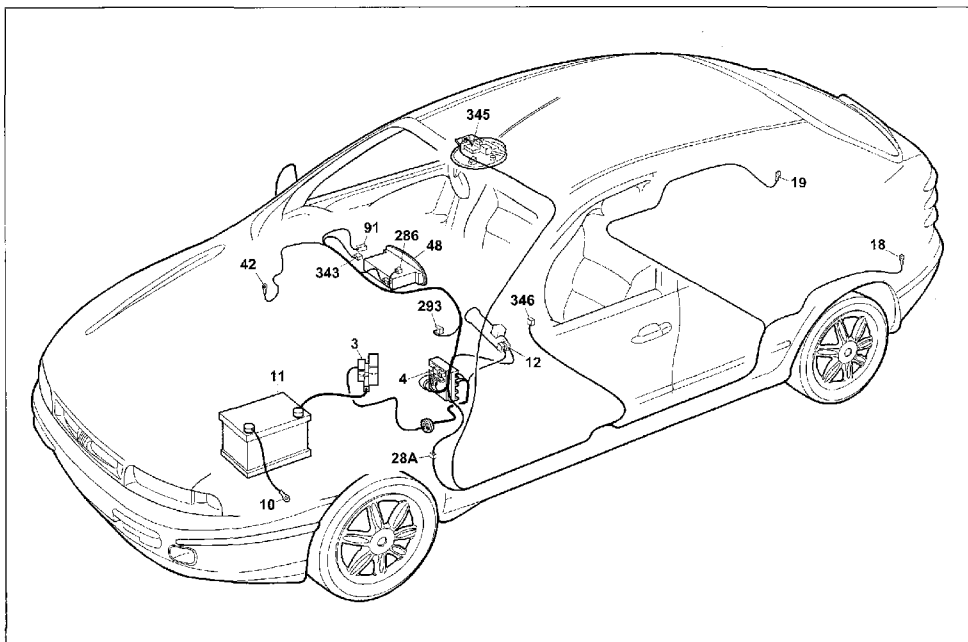
**Location of components**



4A0741

P4A07401

55.



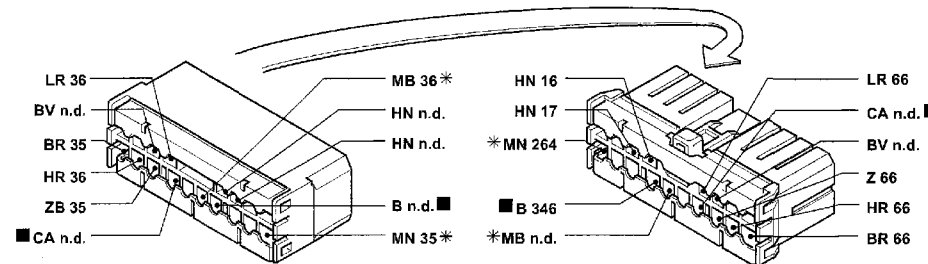
P4A071101

Preparation for radio phone- Preparation for Telepass

Components key

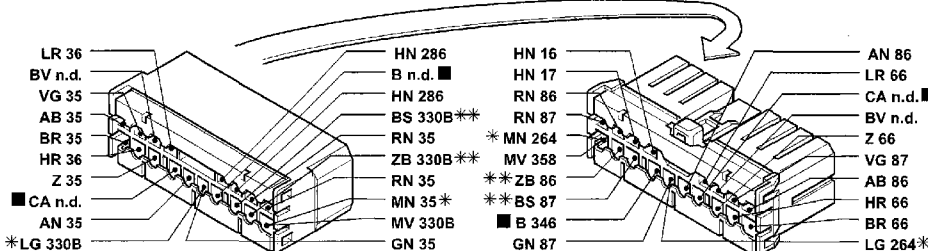
- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 18 Left rear earth
- 19 Right rear earth
- 28A Dashboard/longitudinal cables connection
- 42 Right dashboard earth
- 48 Radio receiver with clock
- 91 Power relay
- 286 Short circuit connection
- 293 Fuse carrier base on dashboard cable
  - A 7.5A fuse protecting switch panel light Radio phone; Radio; Electric mirrors
  - E 20A protective fuse for current socket; Cigar lighter; Electric seats; Electric roof
- 343 Connection for preparation for radio phone
- 345 Connection for preparation for telepass
- 346 Current socket
- N.D. Ultrasound welding taped in cable loom

28A Dashboard/longitudinal cables connection.



\* Variant connection for version with automatic transmission

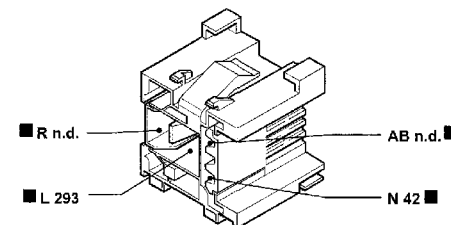
28A Dashboard/longitudinal cables connection.



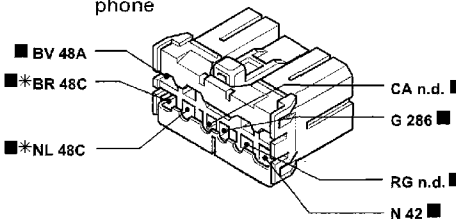
\* Variant connection for version with automatic transmission

\*\* Variant connection for Brava versions

91 Power relay

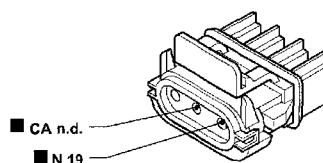


343 Connection for preparation for radio phone

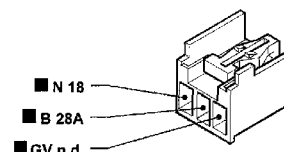


\* Non existent for versions with bottom of the range radio

345 Connection for preparation for telepass



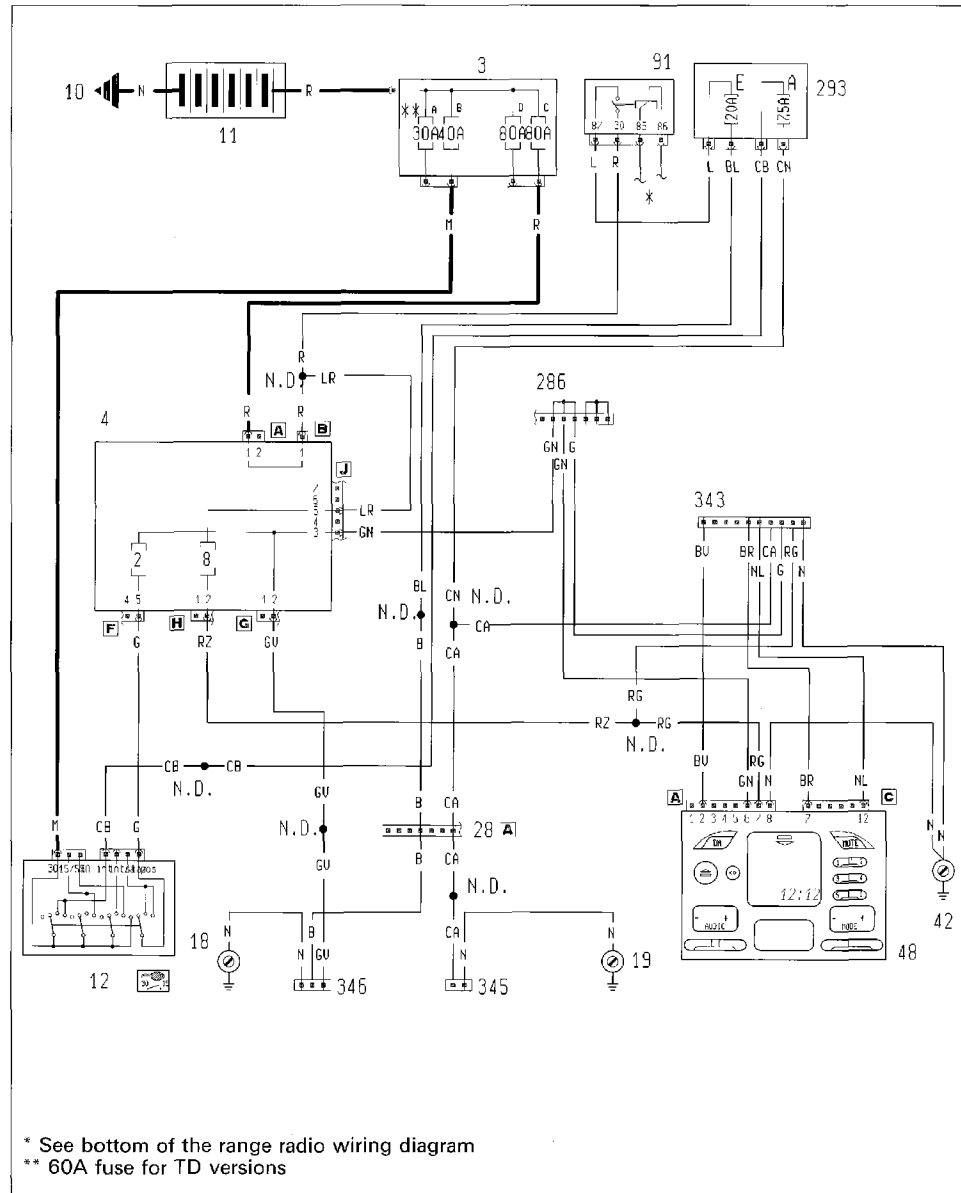
346 Current socket



The cables in the wiring diagram are marked

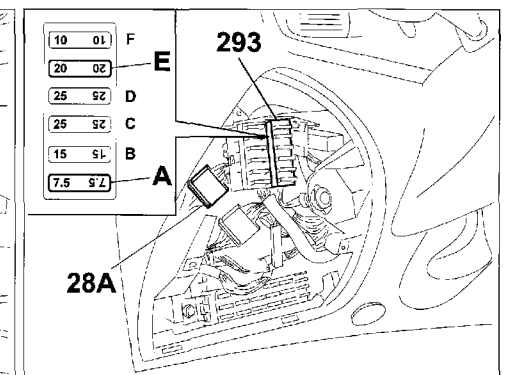
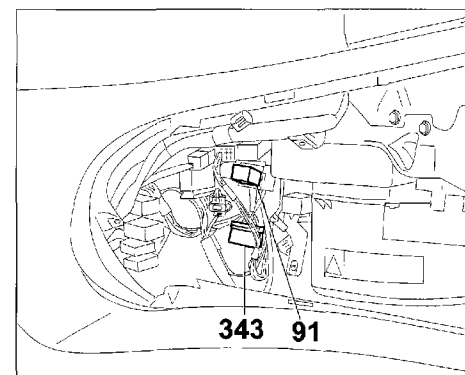
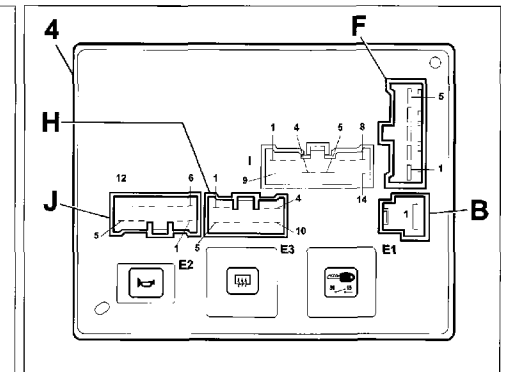
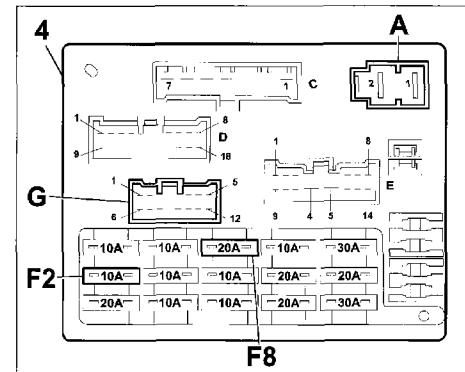
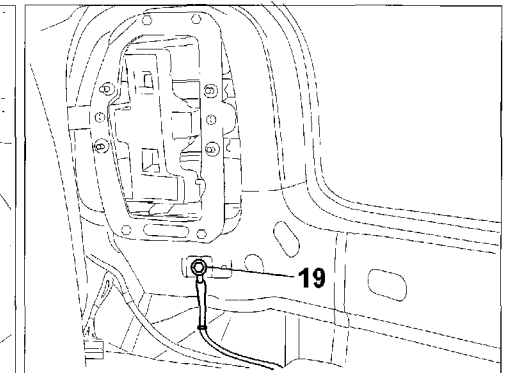
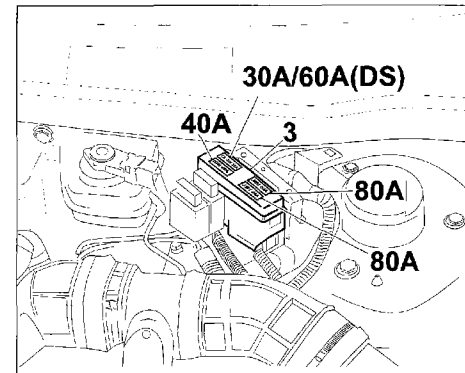
P4A072101

Preparation for radio phone - Preparation for telepass - (See key at end of wiring diagrams)

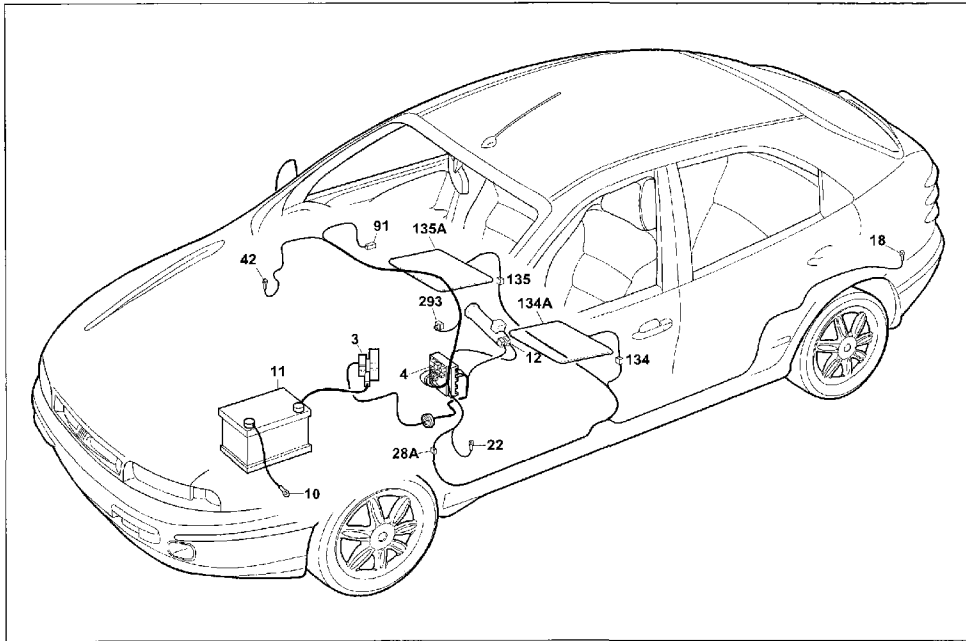


\* See bottom of the range radio wiring diagram  
\*\* 60A fuse for TD versions

Location of components



## 55.



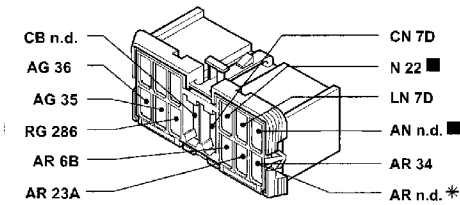
P4A067101

### Heated front seats

#### Components key

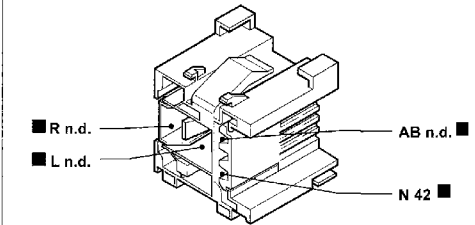
- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit
  - E1 Ignition discharge relay
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 18 Left rear earth
- 22 Left dashboard earth
- 28A Dashboard/longitudinal cables connection
- 42 Right dashboard earth
- 91 Power relay
- 134 Rear/heated driver's seat cables connection
- 134A Heated driver's seat heater pad
- 135 Connection between rear/heated passenger seat cables
- 135A Heated passenger seat heater pad
- 293 Fuse carrier base on dashboard cable
  - E 20A protective fuse for current socket; Cigar lighter; Electric seats; Electric roof
- N.D. Ultrasound welding taped in cable loom

### 41 Additional brake light

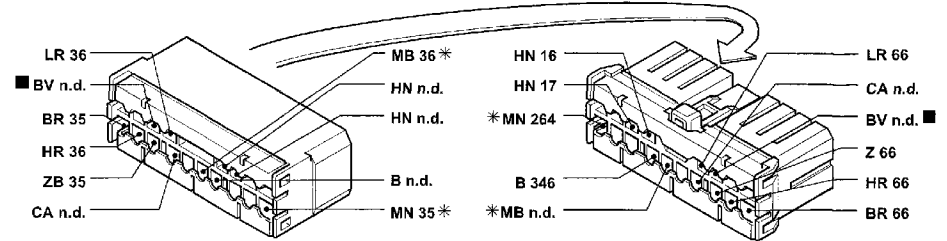


\* Variant connection for ELX trim levels with automatic transmission

### 91 Power relay

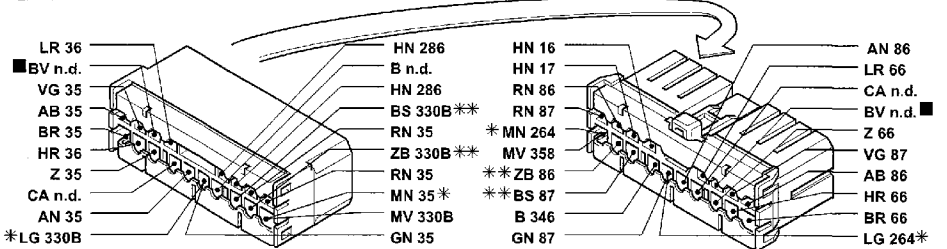


### 28A Dashboard/longitudinal cables connection. Trim level: SX - GT



\* Variant connection for version with automatic transmission

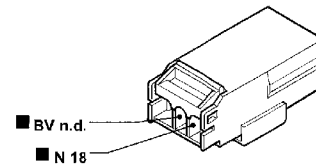
### 28A Dashboard/longitudinal cables connection. Trim level: ELX - HSX - HGT



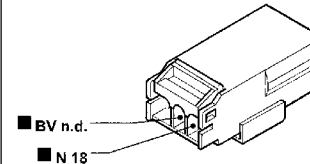
\* Variant connection for version with automatic transmission

\*\* Variant connection for Brava versions

### 134 Rear/heated driver's seat cables connection



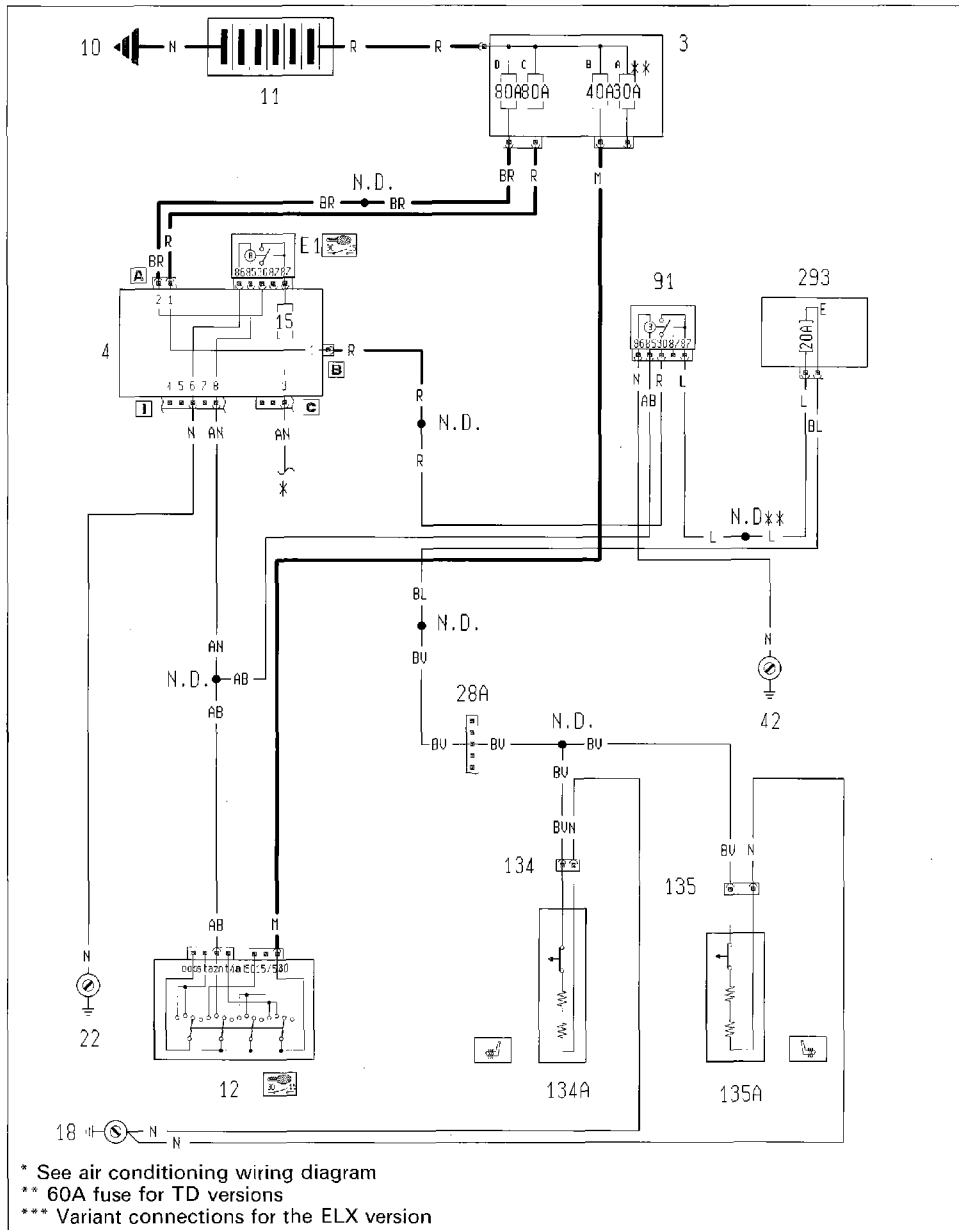
### 135 Rear/heated passenger seat cables connection



The cables in the wiring diagram are marked

P4A068101

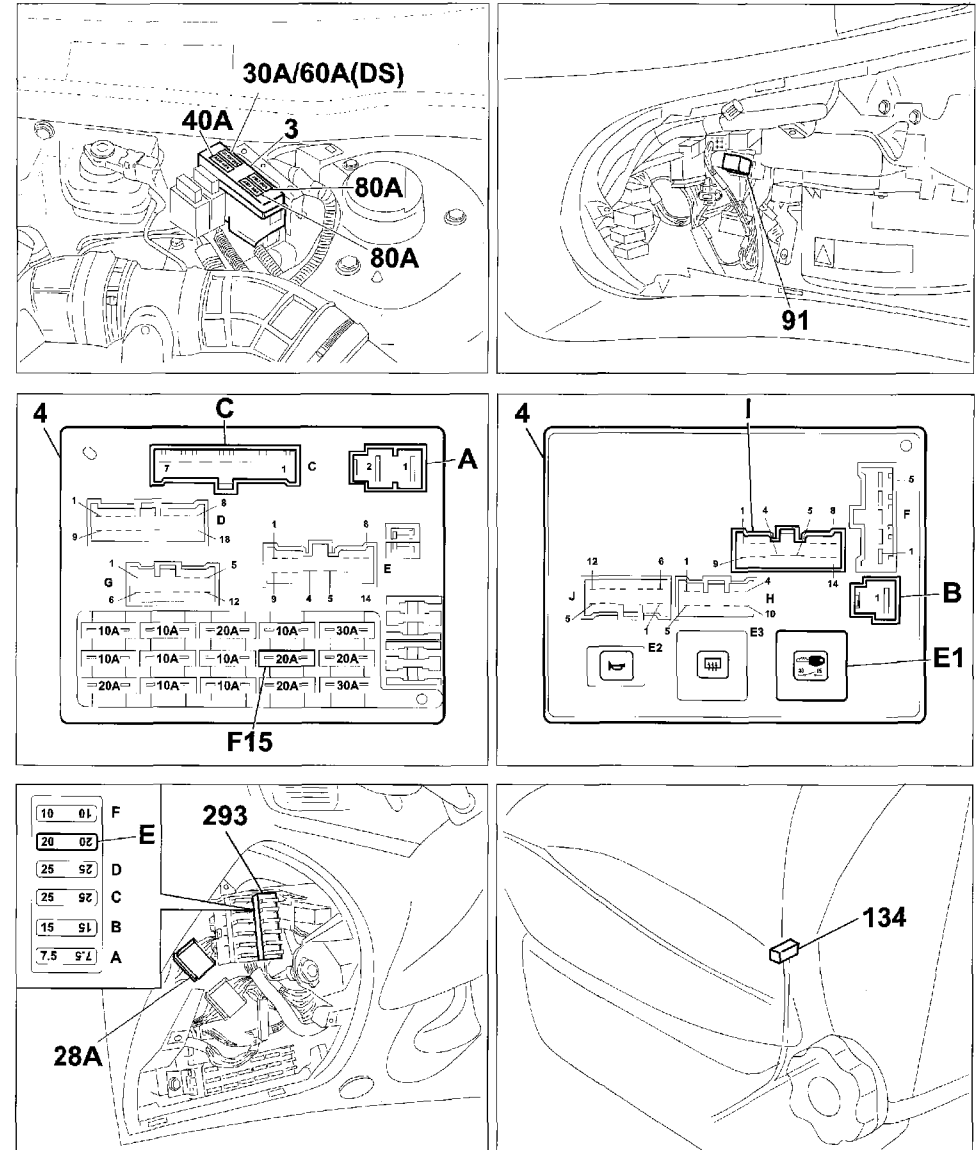
**Heated front seats - (See key at end of wiring diagrams)**



4A0661

P4A066101

**Location of components**

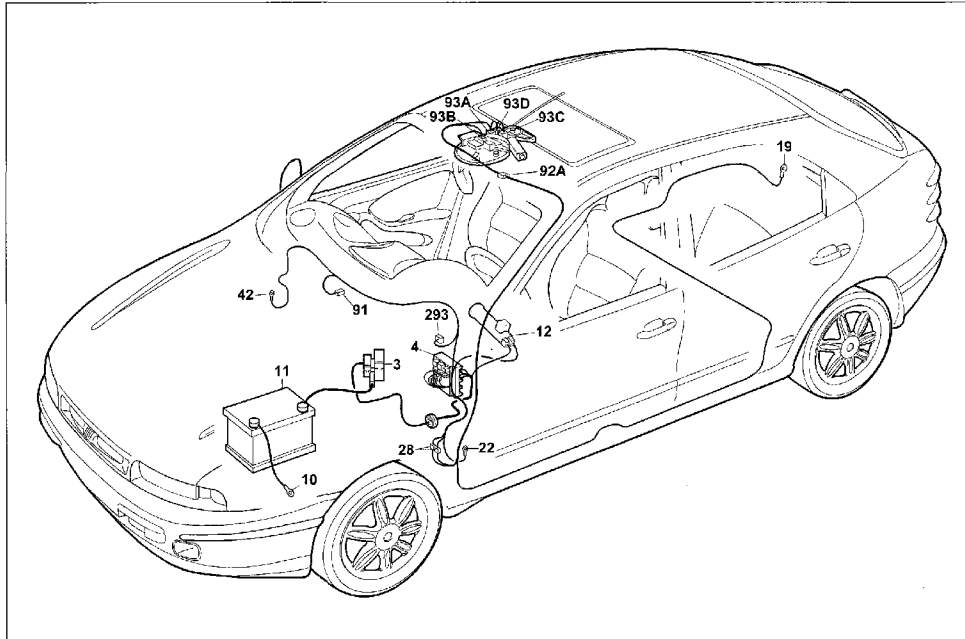


4A0661

P4A066101



## 55.



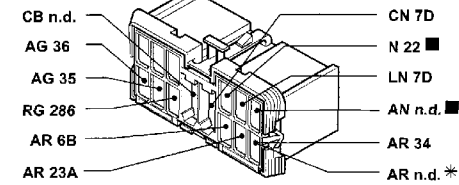
P4A063101

### Electric sun roof

#### Components key

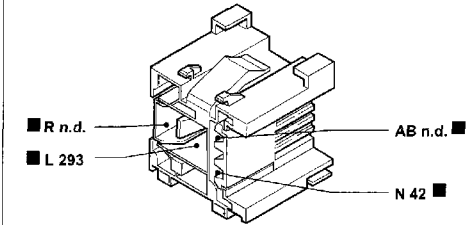
- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit
- E1 Ignition discharge relay
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 19 Right rear earth
- 22 Left dashboard earth
- 28 Dashboard/longitudinal cables connection
- 42 Right dashboard earth
- 91 Power relay
- 92A Electric sun roof cables connection
- 93A Electrically operated sun roof control unit
- 93B Electrically operated sun roof control button
- 93C Electrically operated sun roof motor
- 93D Electrically operated sun roof end of travel switch
- 293 Fuse carrier base on dashboard cable
  - E 20A protective fuse for current socket; Cigar lighter; Electric seats; Electric roof
- N.D. Ultrasound welding taped in cable looms

### 41 Junction unit

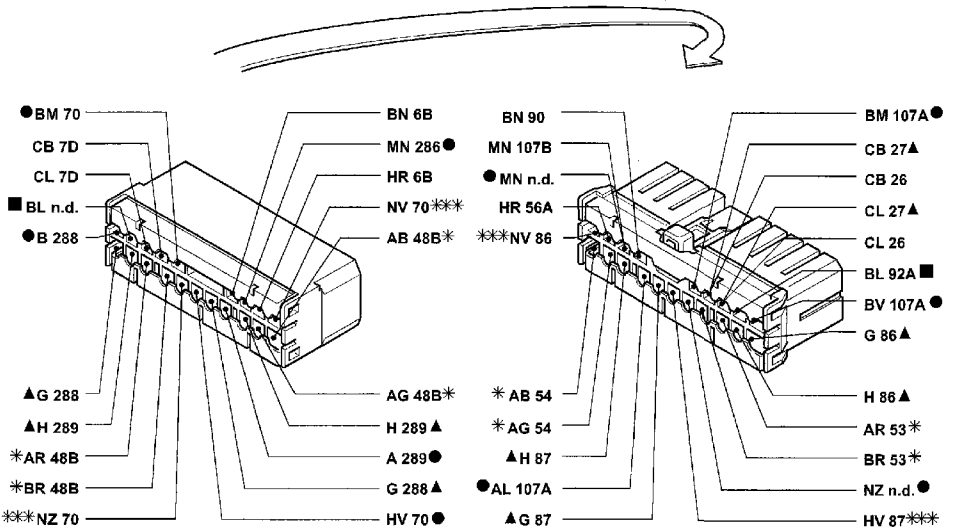


\* Variant connection for ELX trim levels with automatic transmission

### 91 Power relay

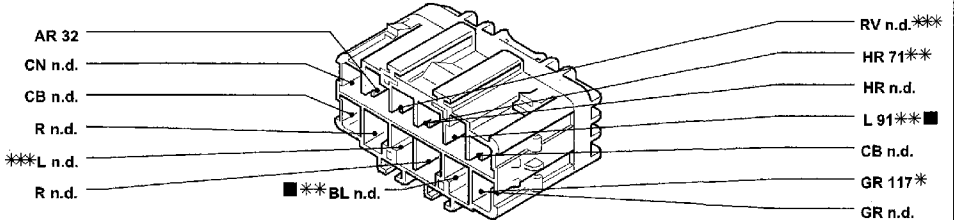


### 28 Dashboard/longitudinal cables connection



\* Variant connection for versions with top of the range radio  
 \*\*\* Variant connection for Brava versions with alarm  
 ● Variant connection for versions with air conditioning  
 ▲ Variant connection for Brava versions

### 293 Fuse carrier base on dashboard cable

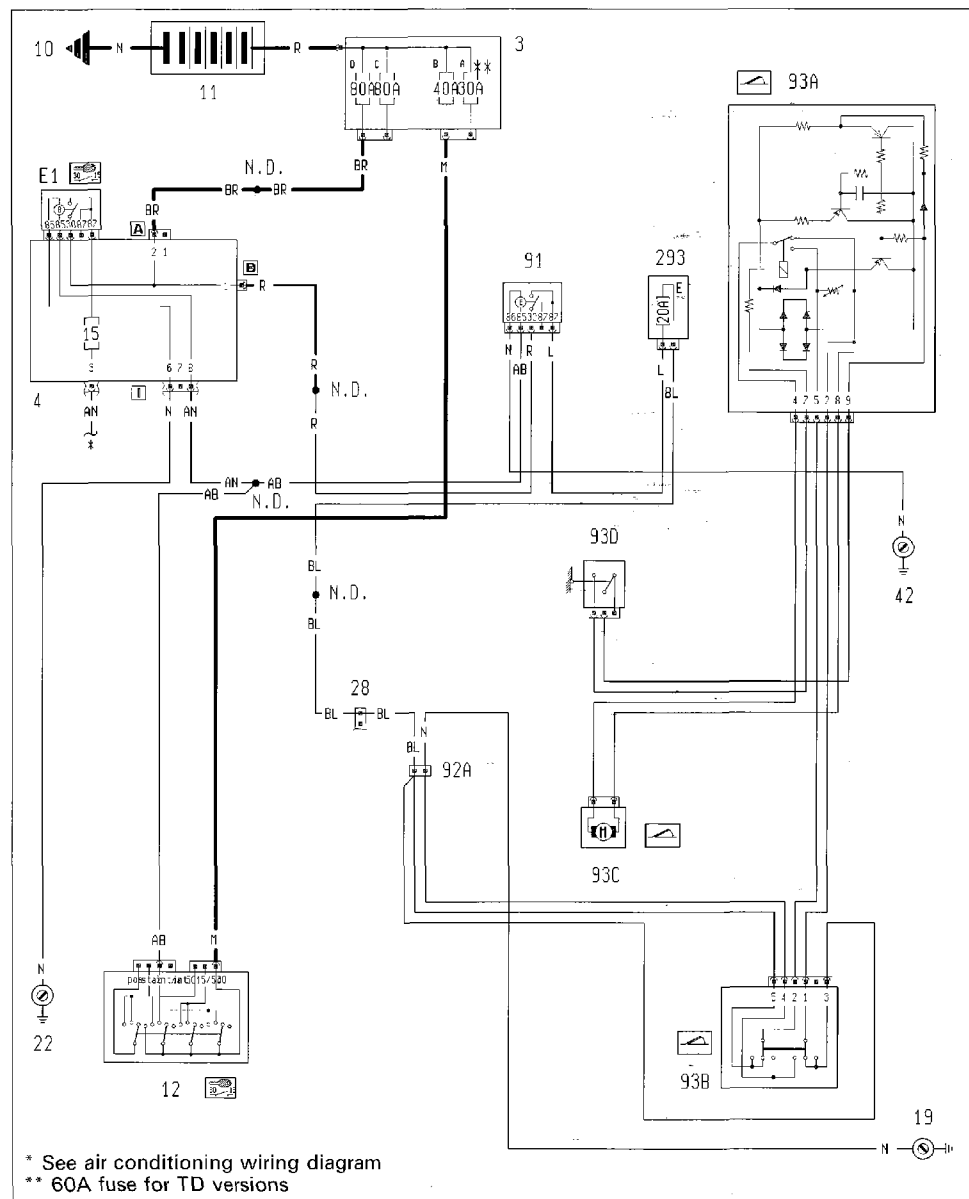


\* Variant connection for versions with passenger AIR-BAG and SIDE-BAG  
 \*\* Variant connection for trim level SX - GT  
 \*\*\* Variant connection for trim level ELX - HSX - HGT

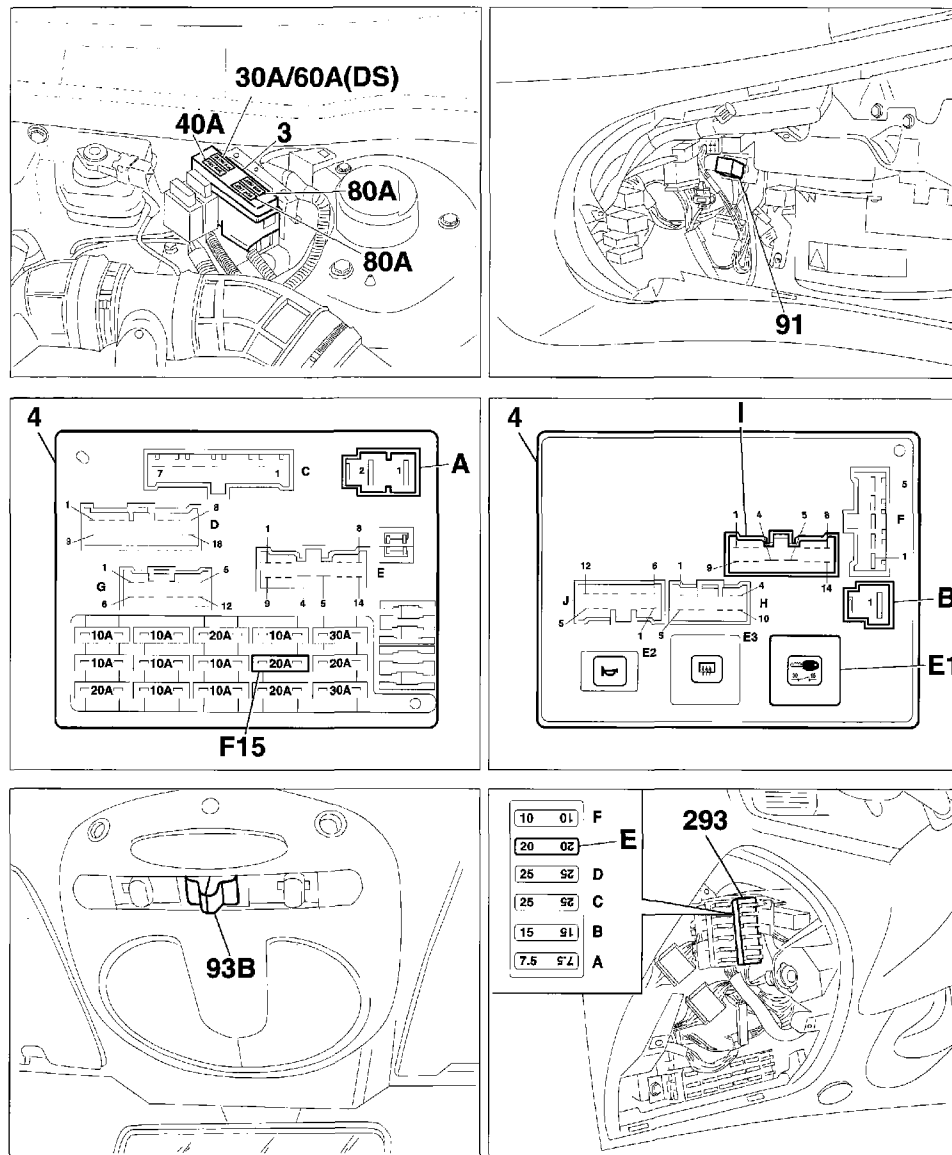
The cables in the wiring diagram are marked

P4A064101

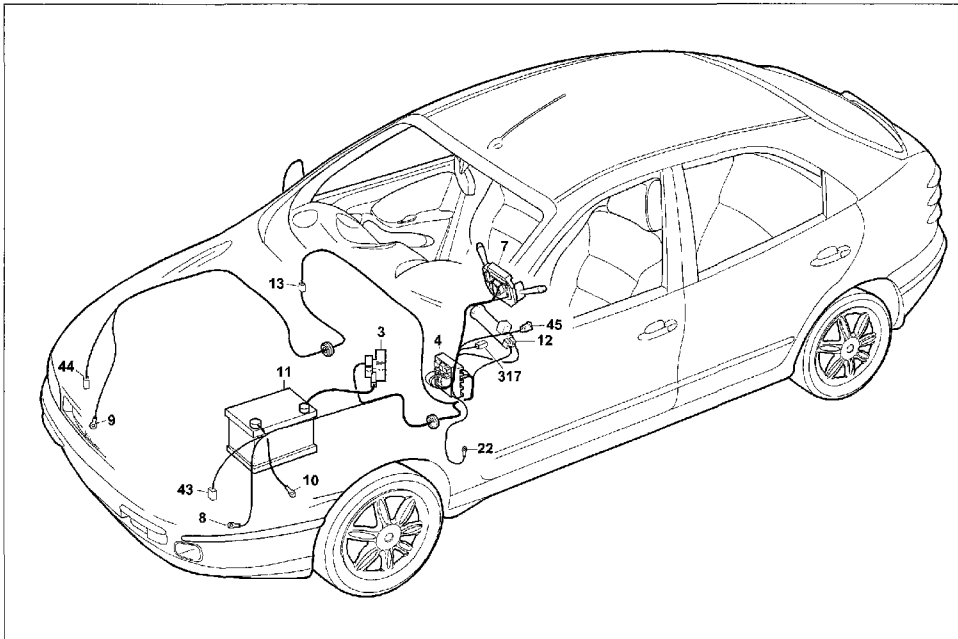
**Electric sun roof - (See key at end of wiring diagrams)**



**Location of components**



### 55.



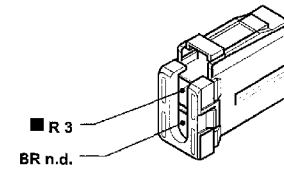
P4A059101

### Headlamp alignment correction device

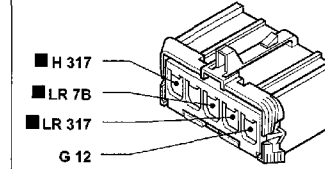
#### Components key

- 3 Power fuse box:  
 A 30A protective fuse for injection system (60A for TD versions)  
 B 40A protective fuse for ignition system  
 C 80A fuse protecting additional options  
 D 80A protective fuse for junction unit
- 4 Junction unit
- 7 Steering column switch unit:  
 D Flasher control  
 E Switch for dipped/main beam headlamps  
 F Switch for side lights
- 8 Left front earth  
 9 Right front earth  
 10 Earth for battery on bodyshell  
 11 Battery  
 12 Ignition switch  
 13 Front right/left cables connection  
 22 Left dashboard earth
- 43 Left headlamp alignment correction motor  
 44 Right headlamp alignment correction motor  
 45 Headlamp alignment control unit  
 317 Remote control switch for main beam headlamps  
 N.D. Ultrasound welding taped in cable loom

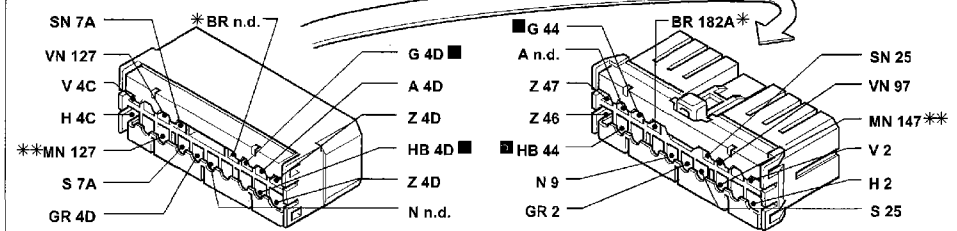
#### 4A Junction unit



#### 4F Junction unit

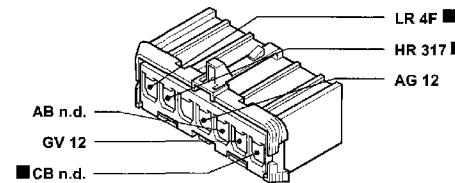


#### 13 Front right/left cables connection

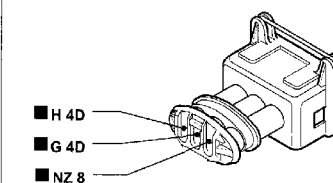


\* Variant connection for 1998 20v versions  
 \*\* Variant connection for 1910 JTD versions

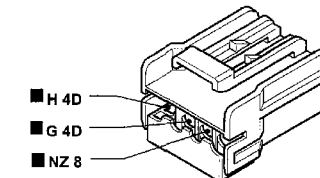
#### 7B Steering column switch unit



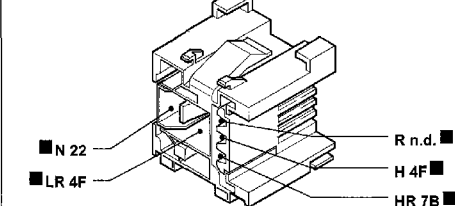
#### 43 Left headlamp alignment correction motor



#### 45 Headlamp alignment unit



#### 317 Main beam headlamps remote control switch

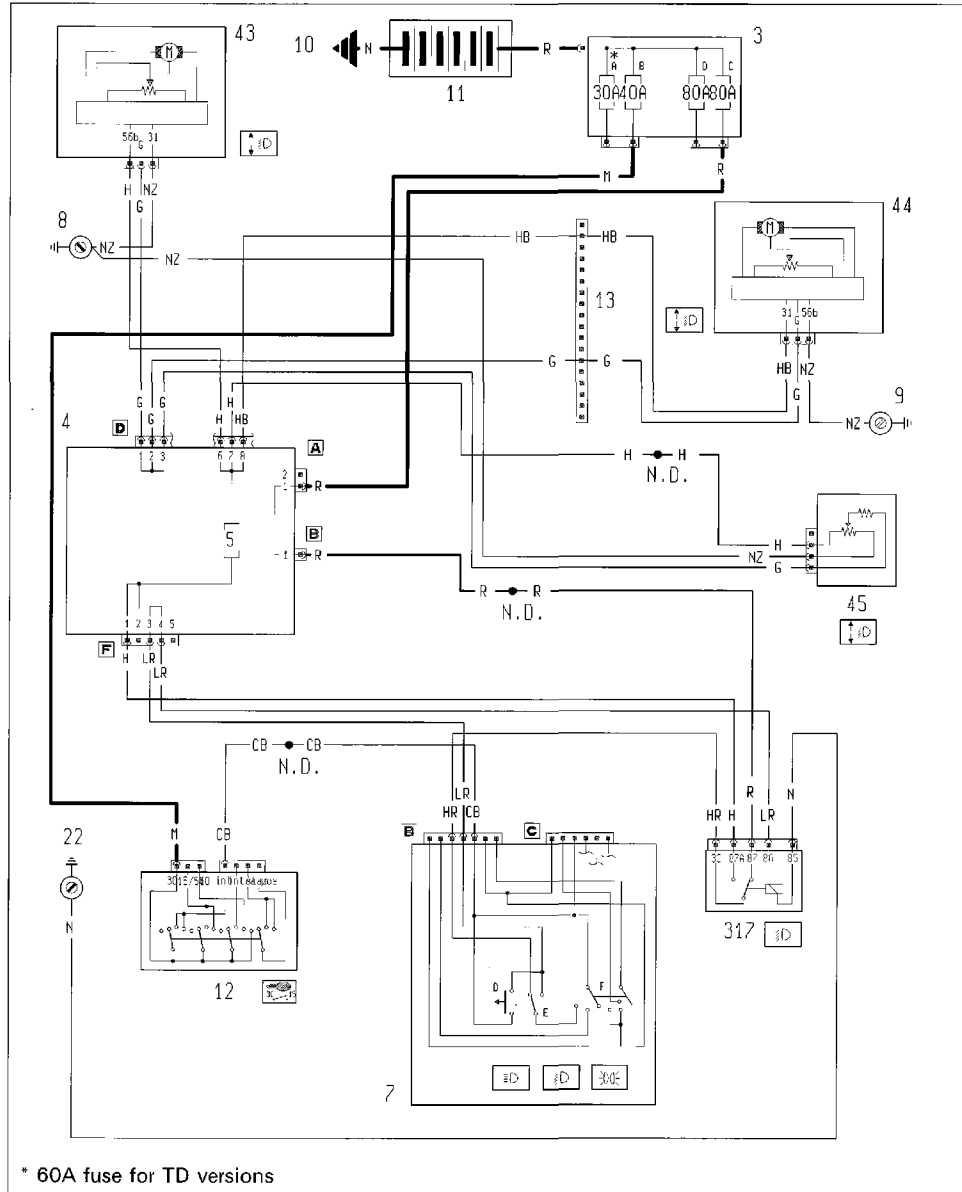


The cables in the wiring diagram are marked

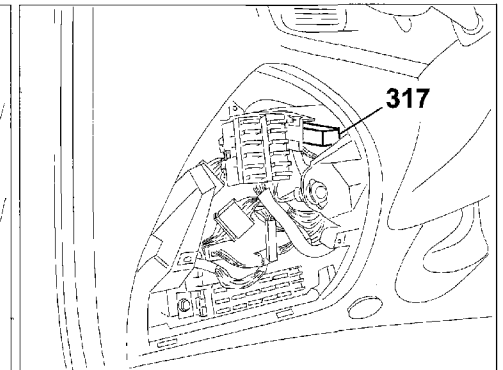
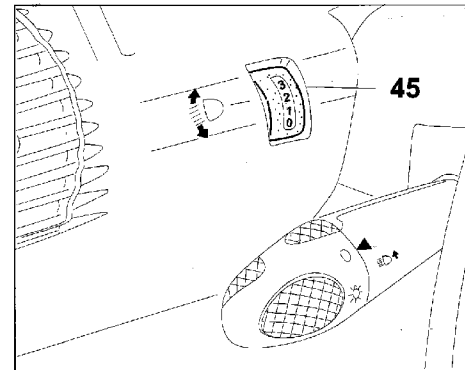
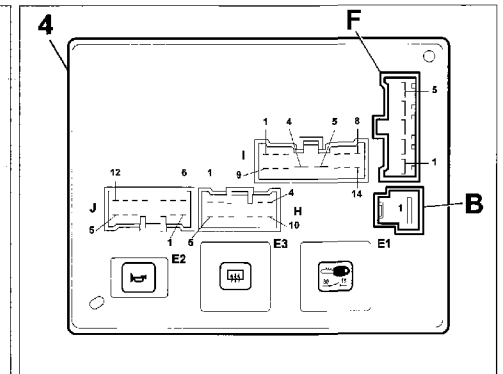
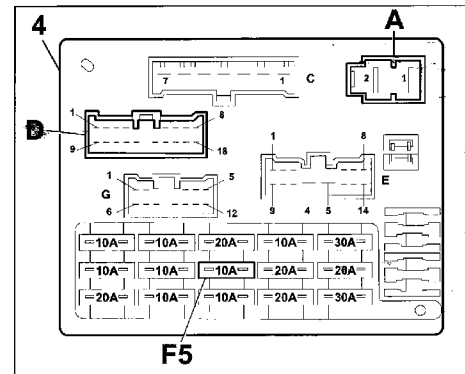
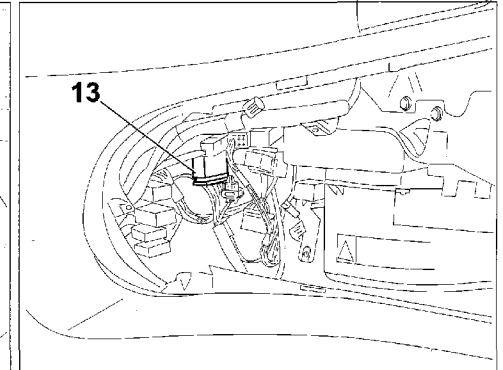
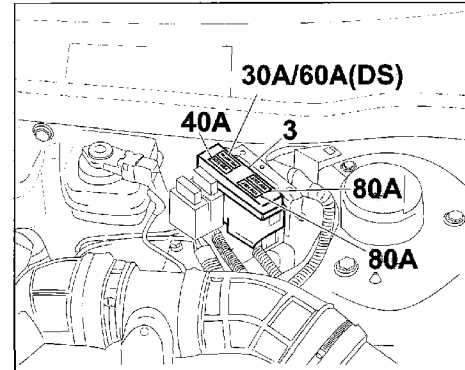
P4A060101

4A0601

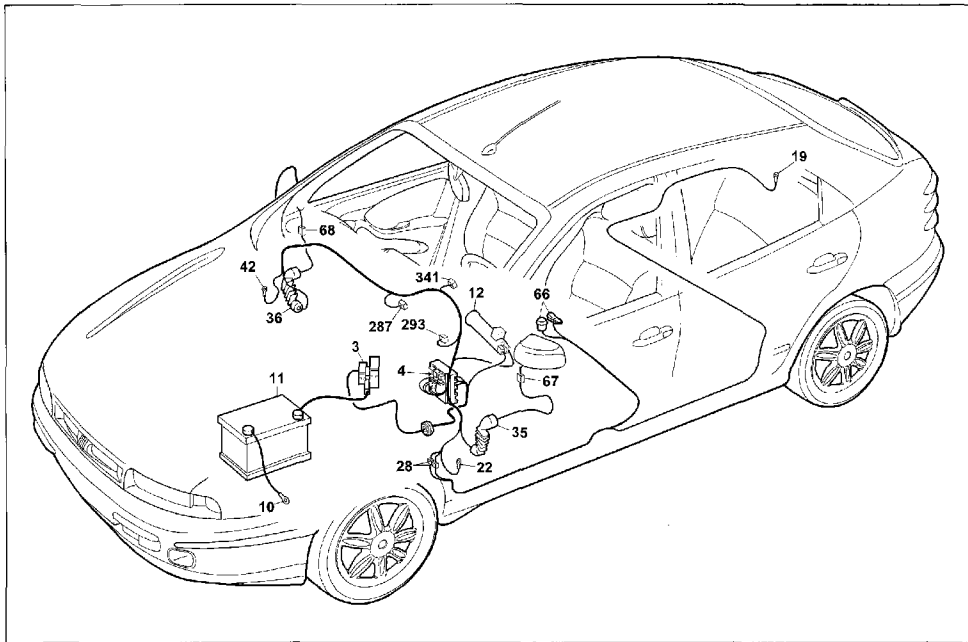
**Headlamp alignment correction device - (See key at end of wiring diagrams)**



**Location of components**



**55.**



P4A056101

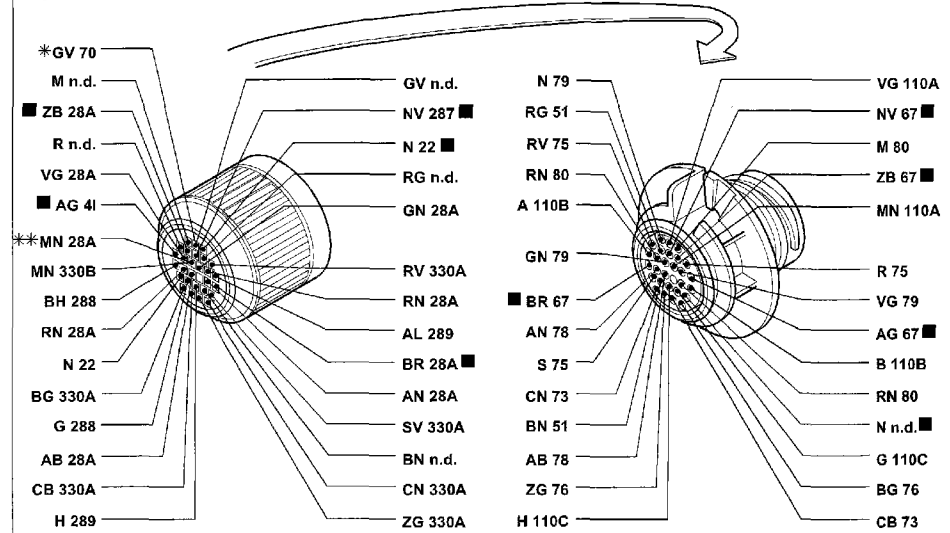
**Electrically adjustable, heated external rear view mirrors**

**Components key**

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit:
  - E3 Heated rear windscreen relay feed
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 19 Right rear earth
- 22 Left dashboard earth
- 28A Dashboard/longitudinal cables connection
- 35 Dashboard/left front door cables connection
- 36 Dashboard/right front door cables connection
- 42 Right dashboard earth
- 66 External electrically adjusted rear view mirror control panel
- 67 Left electrically adjusted external rear view mirror
- 68 Right electrically adjusted external rear view mirror

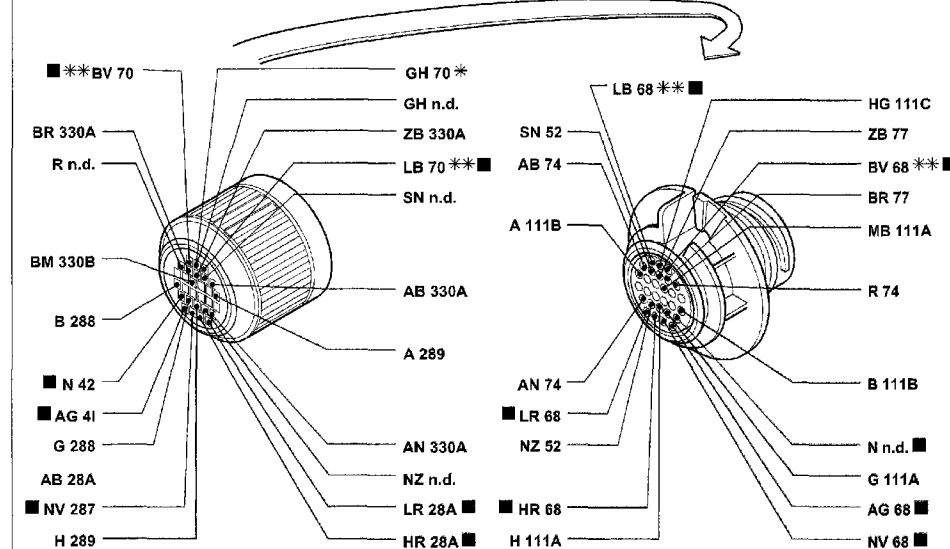
- 287 Short circuit connection
- 293 Fuse carrier base on dashboard cable
  - A 7.5A fuse protecting switch panel light; Radio phone; Radio; Electric mirrors
- 341 Multi-purpose switch for electric mirrors
- 342 Power earth for electronic injection
- N.D. Ultrasound welding taped in cable loom

**35** Dashboard/left front door cables connection



\* Variant connection for versions with alarm  
\*\* Variant connection for version with automatic transmission

**36** Connection between dashboard/right side door cables

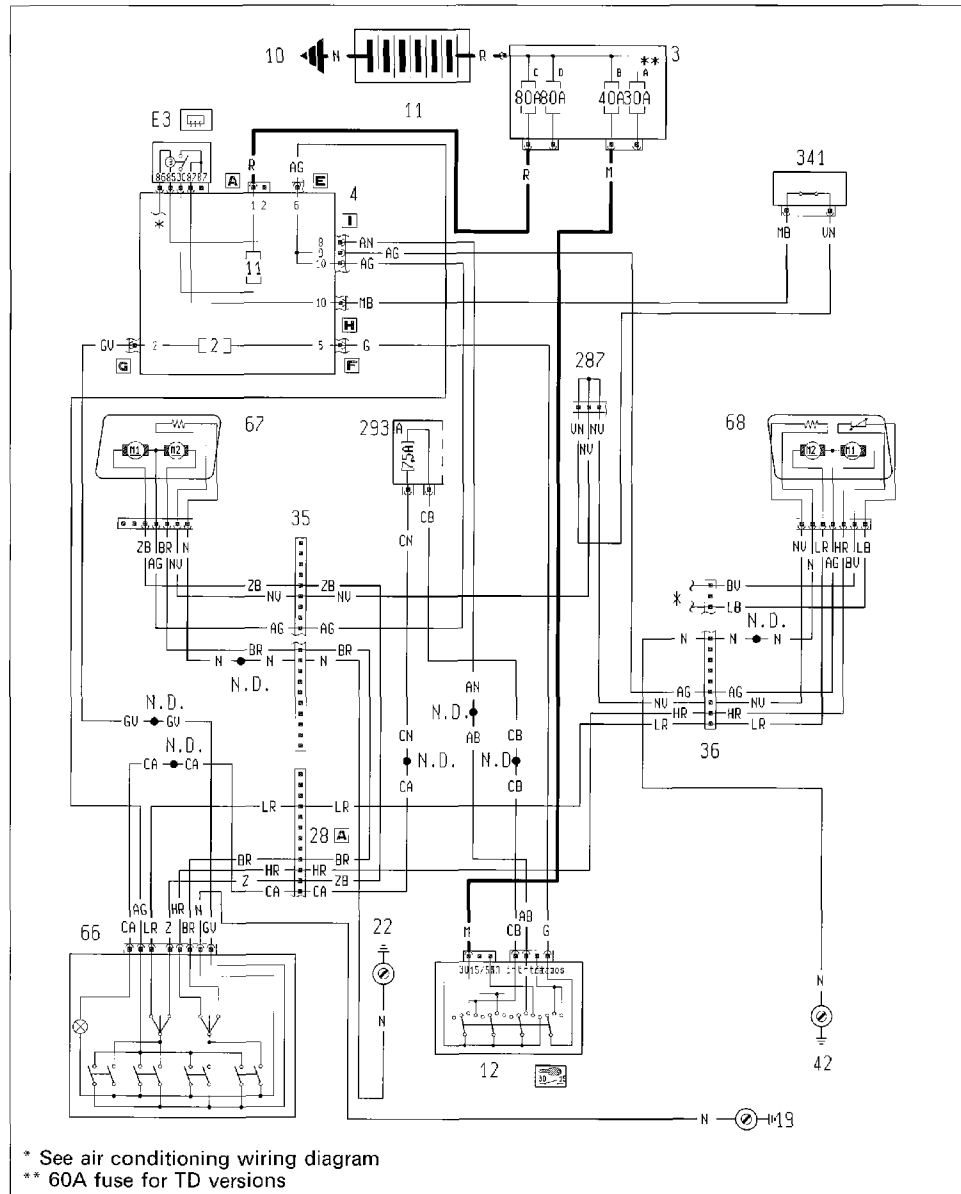


\* Variant connection for versions with alarm  
\*\* Variant connection for versions with air conditioning

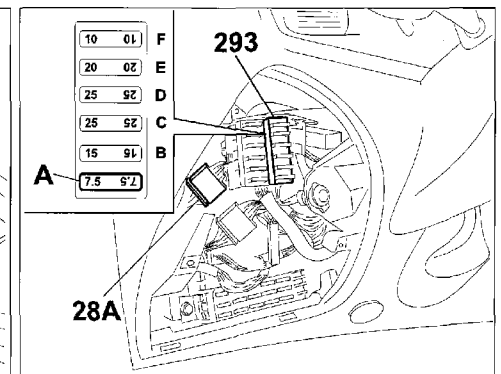
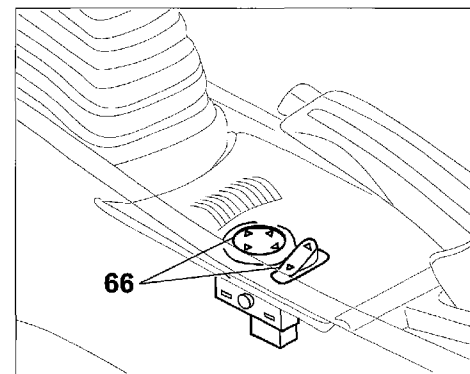
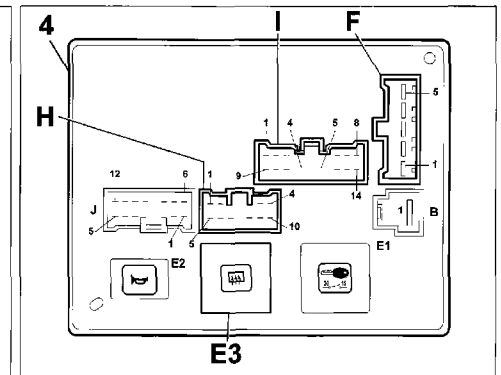
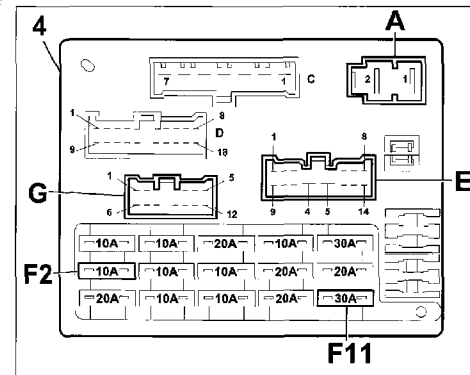
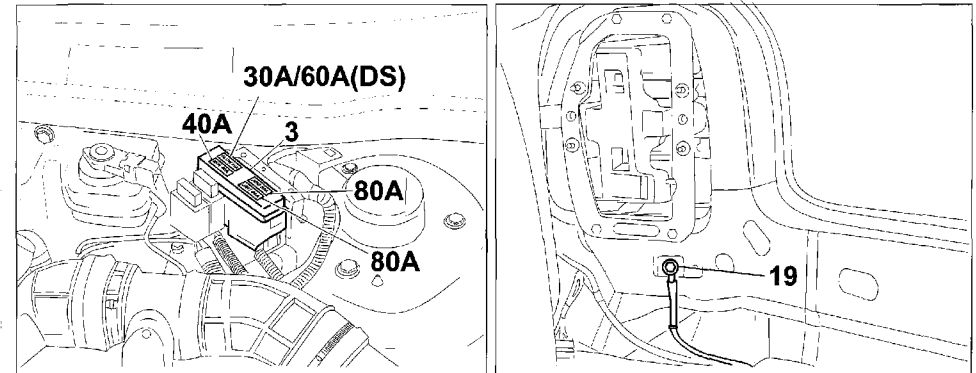
The cables in the wiring diagram are marked

P4A056101

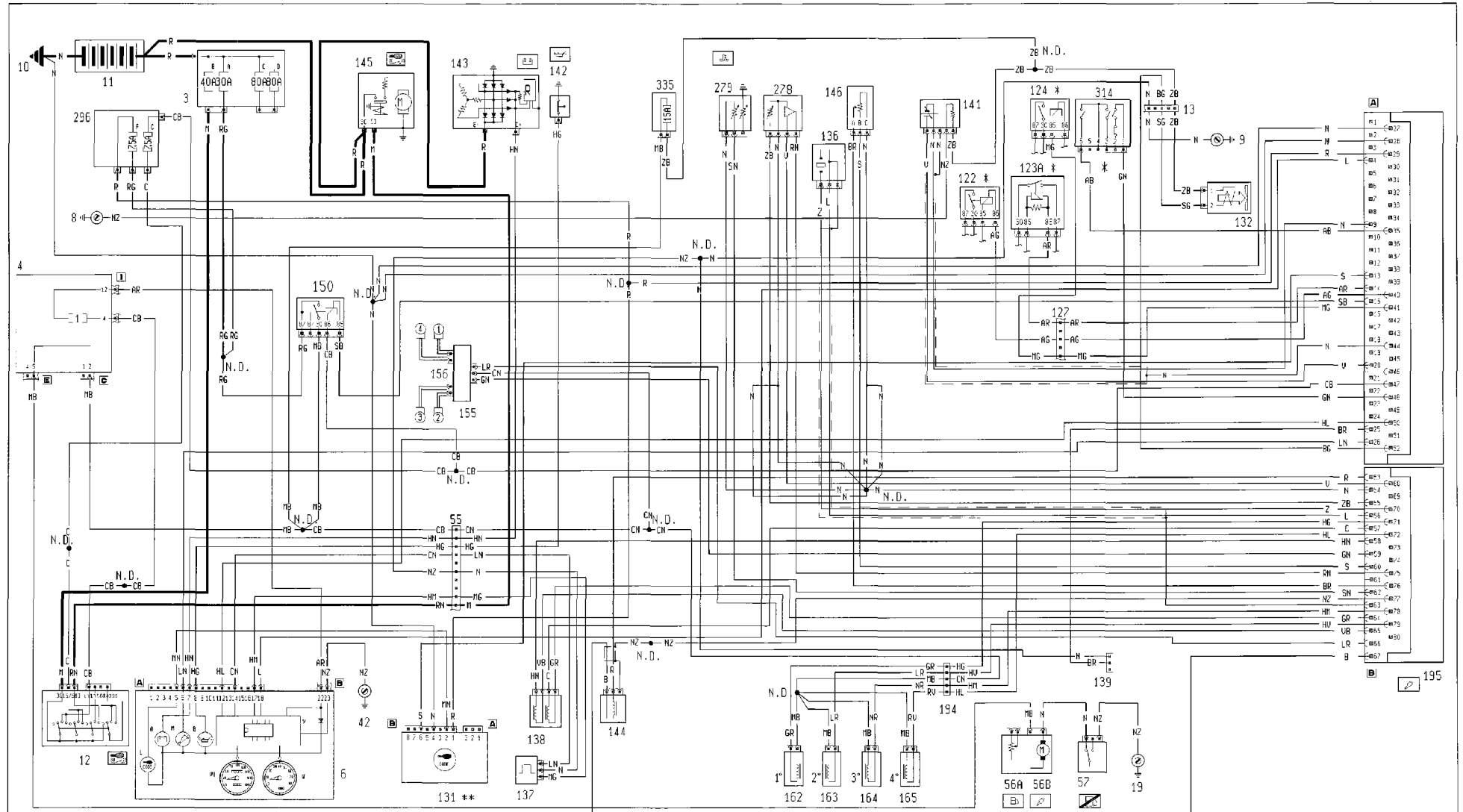
Electrically adjustable, heated external rear view mirrors - (See key at end of wiring diagrams)



Location of components

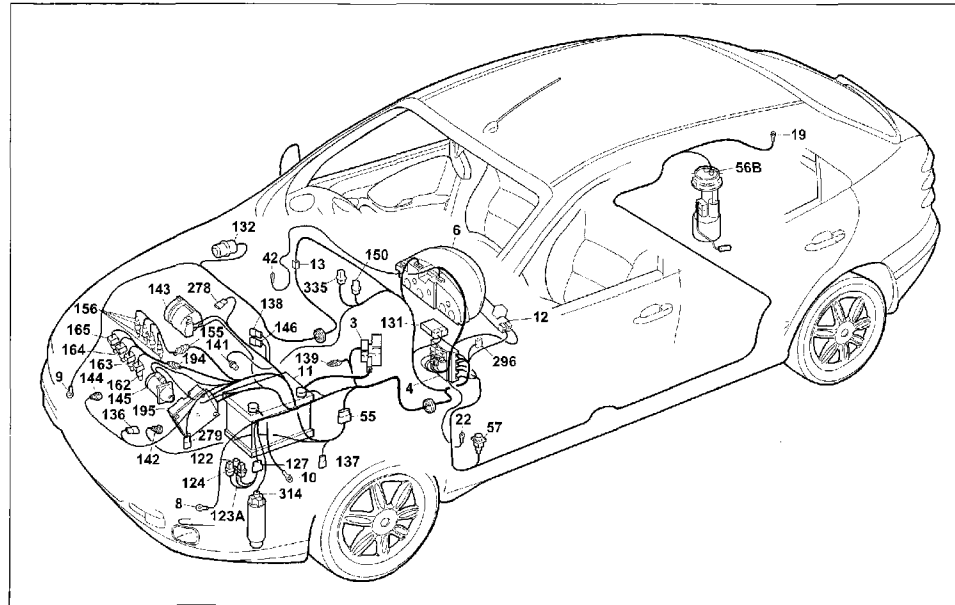


**Starting - IAW 49F Electronic injection and ignition - Recharging and warning light - Warning light signalling injection system failure - Insufficient engine oil pressure warning light - Fiat-CODE and warning light - Rev counter - Speedometer - (See key at end of wiring diagrams)**



\* See air conditioning wiring diagram  
\*\* See Fiat-CODE wiring diagram

55.



PSA147/01

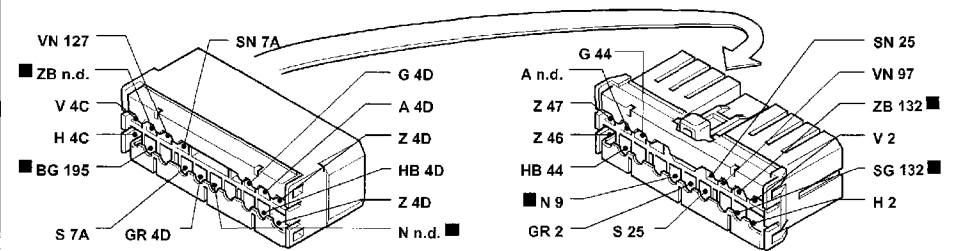
Starting - IAW 49F Electronic injection and ignition - Recharging and warning light - Warning light signalling injection system failure - Insufficient engine oil pressure warning light - Fiat-CODE and injection system failure warning light - Rev counter - Speedometer

Components key

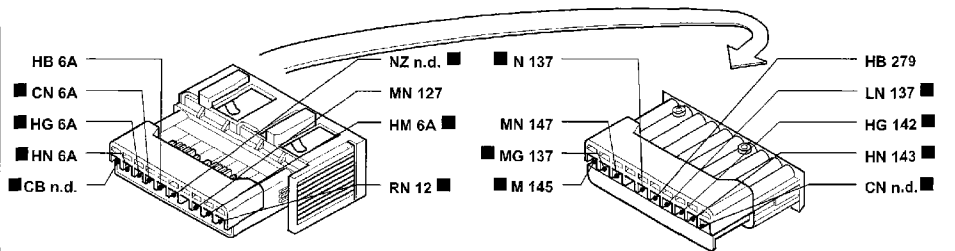
- |  |  |
|--|--|
| 3 Power fuse box:<br>A 30A protective fuse for injection system (80A for TD versions)<br>B 40A protective fuse for ignition system<br>C 80A fuse protecting additional options<br>D 80A protective fuse for junction unit<br>4 Junction unit<br>8 Instrument panel:<br>A Battery recharging warning light<br>B Insufficient engine oil pressure warning light<br>M Injection system failure warning light Petrol/DS<br>W Rev counter<br>Y Electronic module<br>Y1 Speed control module<br>8 Left front earth<br>9 Right front earth<br>10 Earth for battery on bodyshell<br>11 Battery<br>12 Ignition switch<br>13 Front right/left cables connection<br>19 Right rear earth<br>42 Right dashboard earth<br>55 Connection between front/engine pre-wiring cables<br>58 Fuel level gauge<br>A Fuel level sensor<br>B Electric fuel pump<br>57 Inertia switch<br>121 Three stage pressure switch<br>122 Engine cooling fan low speed relay feed<br>123A Engine cooling fan high speed relay feed | 124 Engine cooling fan high speed relay feed<br>127 Connection between left front cable/cable on relay holder bracket<br>131 Fiat-CODE electronic control unit<br>132 Petrol vapour cut out solenoid valve (canister)<br>136 Detonation sensor<br>137 Vehicle speed sensor<br>138 Idle adjustment actuator motor<br>139 Diagnostic socket for injection system<br>141 Heated Lambda sensor<br>142 Switch signalling insufficient engine oil pressure<br>143 Alternator<br>144 Rpm and T.D.C. sensor<br>145 Starter motor<br>146 Potentiometer on butterfly valve<br>150 Injection system relay feed<br>155 Ignition coils<br>156 Spark plugs<br>162 Injector (1 )<br>163 Injector (2 )<br>164 Injector (3 )<br>165 Injector (4 )<br>194 Injection cables/injector band connection<br>195 Injection/ignition electronic control unit (1581)<br>278 Integrated air temperature/pressure sender unit<br>279 Twin engine coolant temperature sender unit<br>296 Fuse carrier base on front cable<br>C 7.5A fuse protecting Fiat-CODE cooling system/electronic injection<br>F 7.5A fuse protecting electronic injection system/ Fiat - CODE<br>335 15A fuse protecting Lambda sensor |
|--|--|

N.D. Ultrasound welding taped in cable loom

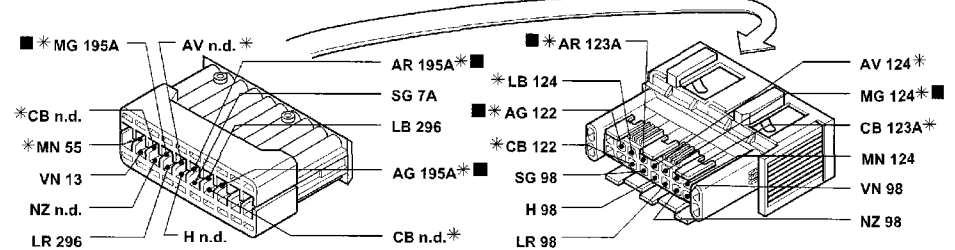
13 Front right/left cables connection



55 Connection between front/engine pre-wiring cables

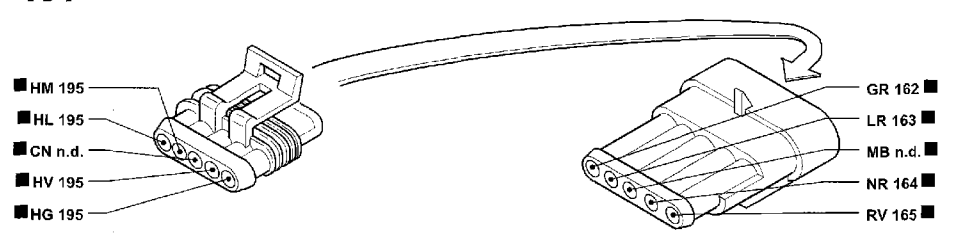


127 Connection between left front cable/cable on relay holder bracket



\* Variant connection for versions with air conditioning

194 Injection cables/injector band connection

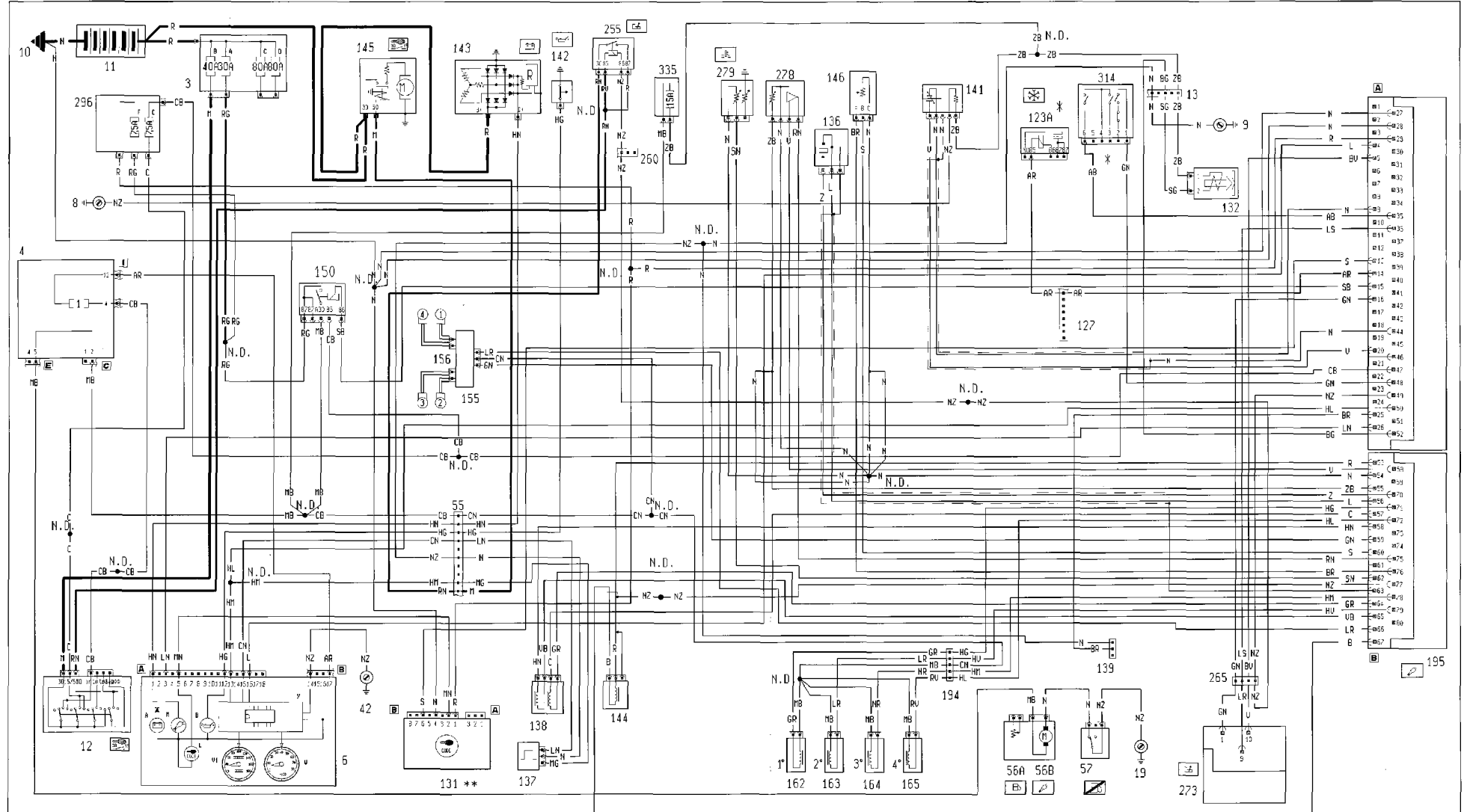


The cables in the wiring diagram are marked

PSA148/01

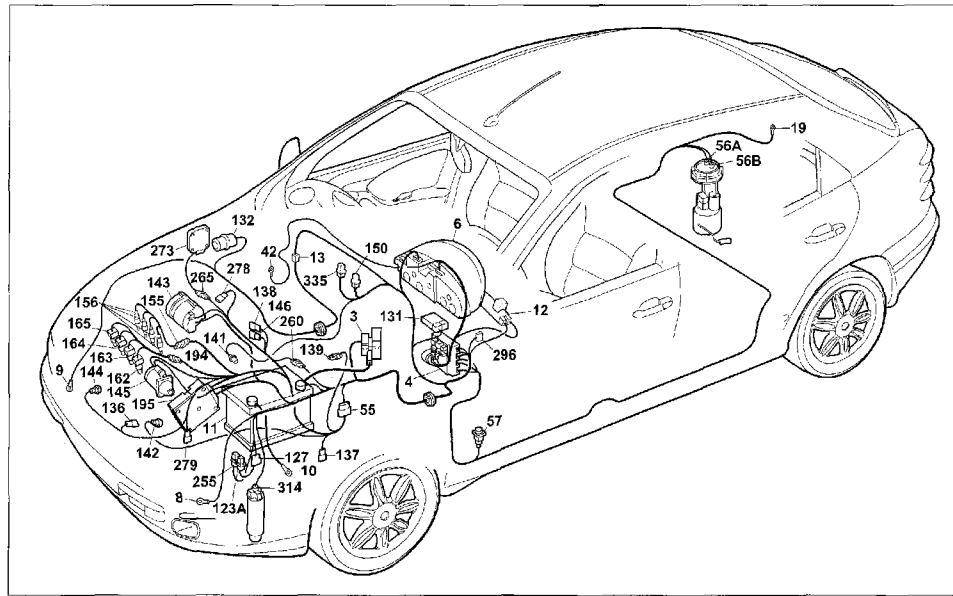


**Version with automatic transmission**  
**Starting - Electronic injection and ignition - Recharging and warning light - Warning light signalling**  
**injection system failure - Insufficient engine oil pressure warning light - Fiat-CODE and warning**  
**light - Rev counter - Speedometer - (See key at end of wiring diagrams)**



\* See air conditioning wiring diagram  
 \*\* See Fiat-CODE wiring diagram

55.



P4A15101

Version with automatic transmission

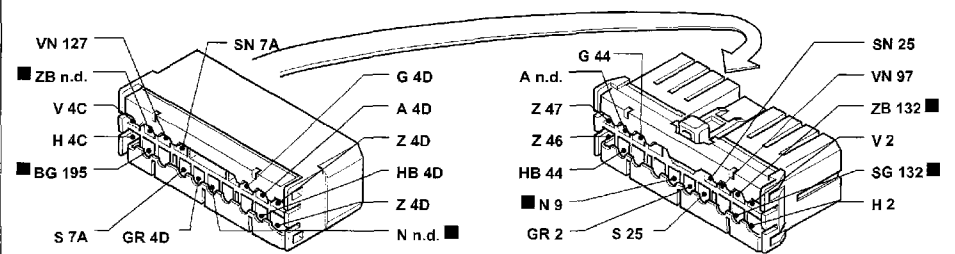
Starting - Electronic injection and ignition - Recharging and warning light - Warning light signalling system failure - Insufficient engine oil pressure warning light - Fiat-CODE and injection system failure warning light - Rev counter - Speedometer

Components key

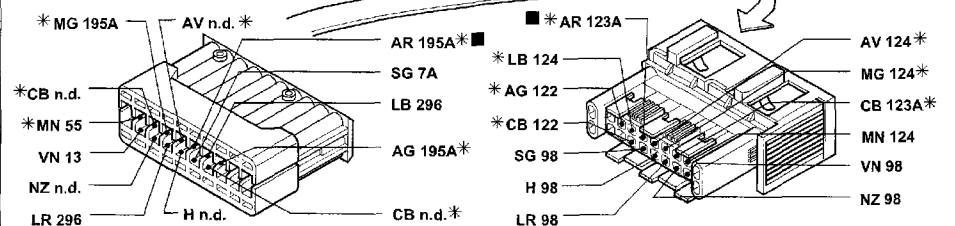
- |  |   |
|--|---|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit</p> <p>6 Instrument panel:<br/>A Battery recharging warning light<br/>B Insufficient engine oil pressure warning light<br/>M Injection system failure warning light Petrol/DS<br/>W Rev counter<br/>Y Electronic module<br/>V1 Speedometer</p> <p>8 Left front earth<br/>9 Right front earth<br/>10 Earth for battery on bodyshell<br/>11 Battery</p> <p>12 Ignition switch</p> <p>13 Front right/left cables connection<br/>19 Right rear earth<br/>42 Right dashboard earth</p> <p>55 Connection between front/engine pre-wiring cables</p> <p>56 Fuel level gauge<br/>A Fuel level sensor<br/>B Electric fuel pump</p> <p>57 Inertia switch</p> <p>123A Engine cooling fan high speed relay feed</p> <p>127 Connection between left front cables/cable on relay holder bracket</p> <p>131 Fiat-CODE electronic control unit</p> <p>132 Petrol vapour cut out solenoid valve (canister)</p> <p>136 Detonation sensor</p> | <p>137 Vehicle speed sensor</p> <p>138 Idle adjustment actuator motor</p> <p>139 Diagnostic socket for injection system</p> <p>141 Heated Lambda sensor</p> <p>142 Switch signalling insufficient engine oil pressure</p> <p>143 Alternator</p> <p>144 Rpm and T.D.C. sensor</p> <p>145 Starter motor</p> <p>146 Potentiometer on butterfly valve</p> <p>150 Injection system relay feed</p> <p>155 Ignition coils</p> <p>156 Spark plugs</p> <p>162 Injector (1 )</p> <p>163 Injector (2 )</p> <p>164 Injector (3 )</p> <p>165 Injector (4 )</p> <p>194 Injection cables/injector band connection</p> <p>195 Injection/ignition electronic control unit (1581)</p> <p>255 Starting go ahead relay for automatic transmission</p> <p>260 Connection between front/automatic transmission cables</p> <p>265 Connection between automatic transmission/injection cables</p> <p>273 Automatic transmission electronic control unit</p> <p>278 Integrated air temperature/pressure sender unit</p> <p>279 Twin engine coolant temperature sender unit</p> <p>296 Fuse carrier base on front cable<br/>C 7.5A fuse protecting Fiat-CODE cooling system/electronic injection<br/>F 7.5A fuse protecting electronic injection system/ Fiat-CODE</p> <p>314 Four stage pressure switch</p> <p>335 15A fuse protecting Lambda sensor</p> |
|--|---|

N.D. Ultrasound welding taped in cable loom

13 Front right/left cables connection

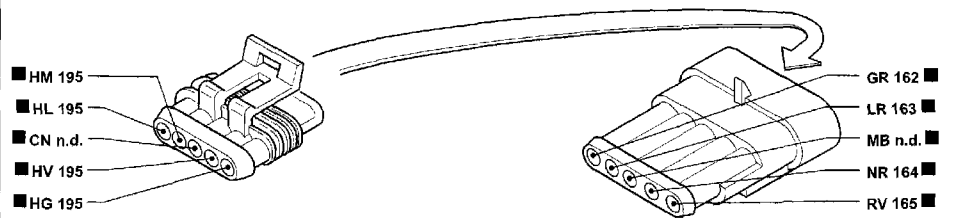


127 Connection between left front cable/cable on relay holder bracket

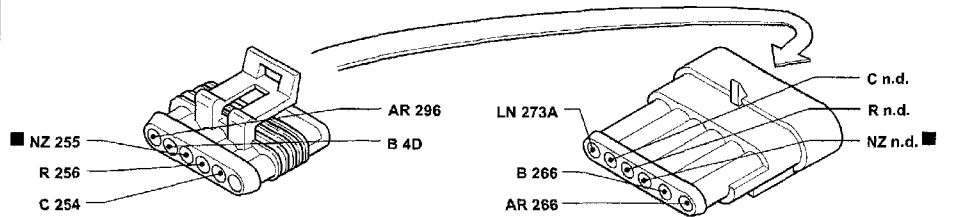


\* Variant connection for versions with air conditioning

194 Injection cables/injector band connection



260 Connection between front/automatic transmission cables

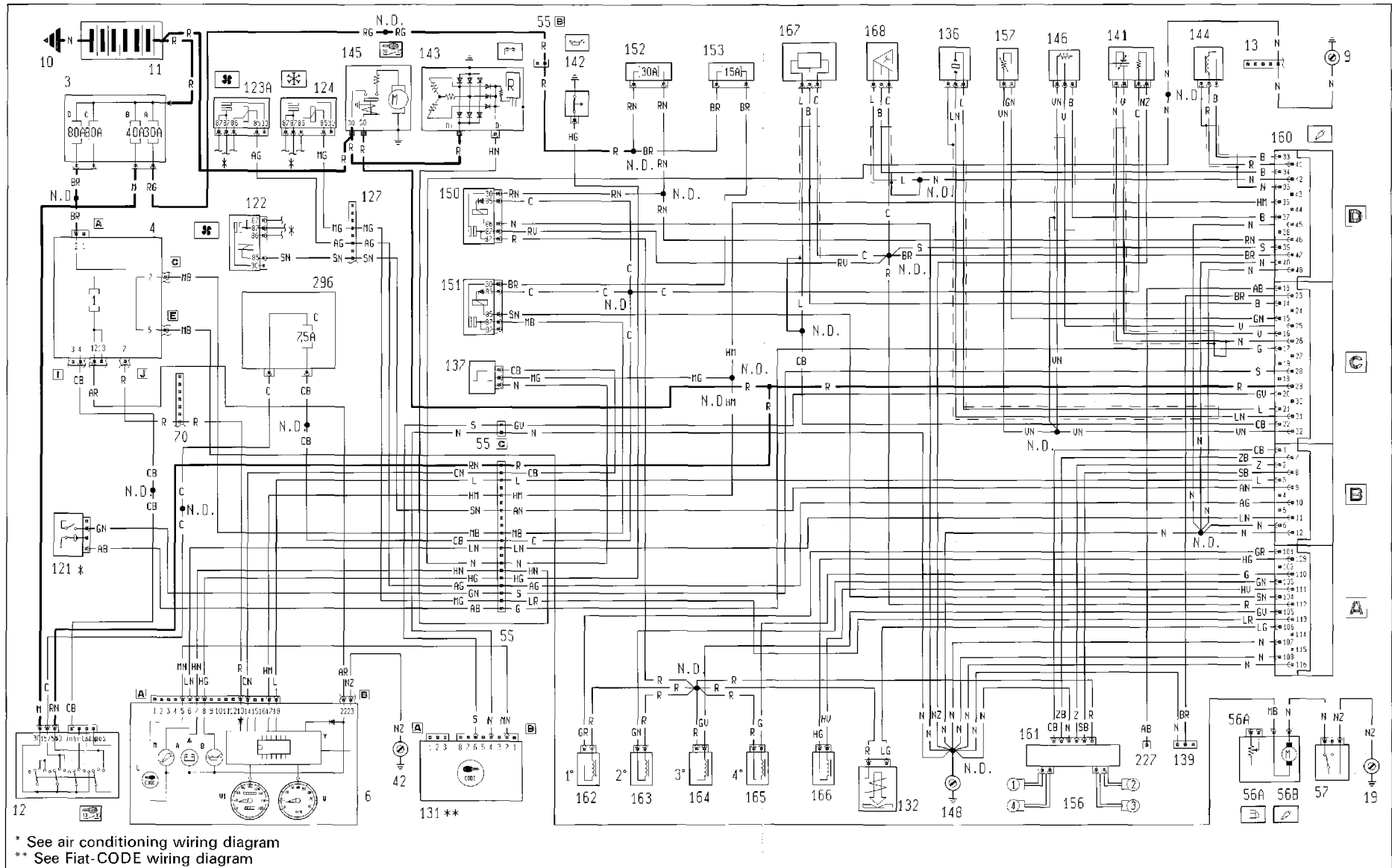


The cables in the wiring diagram are marked

P4A152101

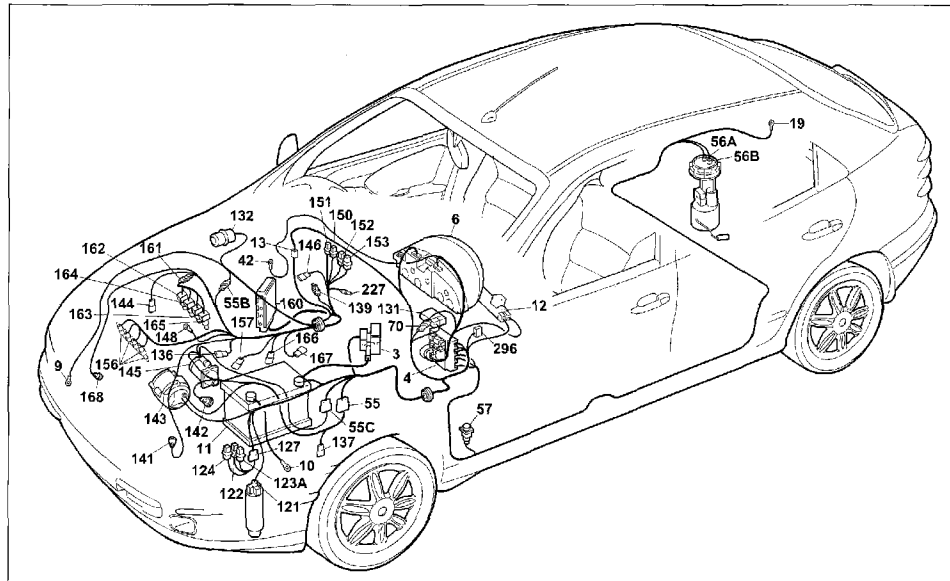
55.

Starting - Hitachi MFI-003 Electronic injection and ignition - Recharging and warning light - Warning light signalling injection system failure - Insufficient engine oil pressure warning light - Fiat-CODE and warning light - Rev counter - Speedometer - (See key at end of wiring diagrams)



P4A163101

## 55.



P4A156101

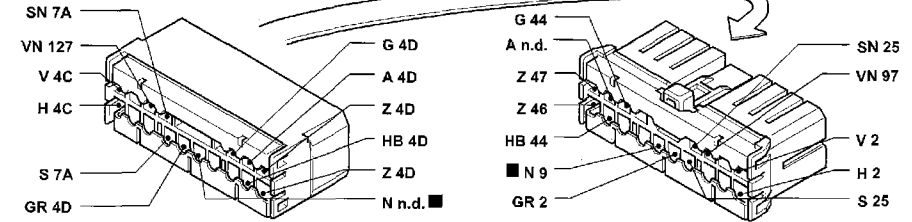
**Starting - Hitachi MFI-003 Electronic injection and ignition - Recharging and warning light - Warning light signalling injection system failure - Insufficient engine oil pressure warning light - Fiat-CODE and injection system failure warning light - Rev counter - Speedometer**

### Components key

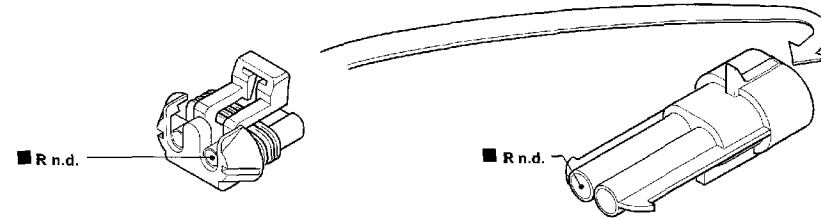
- |  |   |
|--|---|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)</p> <p>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit</p> <p>6 Instrument panel:<br/>A Battery recharging warning light<br/>B Insufficient engine oil pressure warning light<br/>M Injection system failure warning light Petrol/DS<br/>V1 Speedometer<br/>W Rev counter<br/>Y Electronic module</p> <p>9 Right front earth<br/>10 Earth for battery on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>13 Front right/left cables connection<br/>19 Right rear earth<br/>42 Right dashboard earth</p> <p>55 Connection between front/engine pre-wiring cables<br/>55A Connection between front/engine pre-wiring cables<br/>55B Connection between front/engine pre-wiring cables</p> <p>56 Fuel level gauge<br/>A Fuel level sensor<br/>B Electric fuel pump</p> <p>57 Inertia switch<br/>70 Dashboard/front cables connection<br/>121 Three stage pressure switch<br/>122 Engine cooling fan low speed relay feed<br/>123A Engine cooling fan high speed relay feed</p> <p>124 Air conditioning compressor relay<br/>127 Connection between left front cable/cable on relay holder bracket</p> | <p>131 Fiat-CODE electronic control unit<br/>132 Petrol vapour cut out solenoid valve (canister)<br/>136 Detonation sensor<br/>137 Vehicle speed sensor<br/>139 Diagnostic socket for injection system<br/>141 Heated Lambda sensor<br/>142 Switch signalling insufficient engine oil pressure<br/>143 Alternator<br/>144 Rpm and T.D.C. sensor<br/>145 Starter motor<br/>148 Potentiometer on butterfly valve<br/>148 Earth for electronic injection<br/>150 Injection system relay feed<br/>151 Relay feed for Lambda sensor, electric fuel pump, injector</p> <p>152 10A protective fuse for injection system (25A for 1581;<br/>30A for 1747, 7.5A for 1998)<br/>153 10A protective fuse for electric fuel pump, Lambda sensor (15A for 1747)</p> <p>156 Spark plugs<br/>157 Coolant temperature sensor for injection system<br/>160 Injection/ignition electronic control unit (1747)<br/>161 Ignition power module<br/>162 Injector (1)<br/>163 Injector (2)<br/>164 Injector (3)<br/>165 Injector (4)<br/>166 Idle adjustment actuator<br/>167 Air flow meter<br/>168 Timing sensor<br/>227 Diagnostic socket for injection system (1747)<br/>296 Fuse carrier base on front cable<br/>C 7.5A fuse protecting Fiat-CODE cooling system/<br/>electronic injection</p> |
|--|---|

N.D. Ultrasound welding taped in cable loom

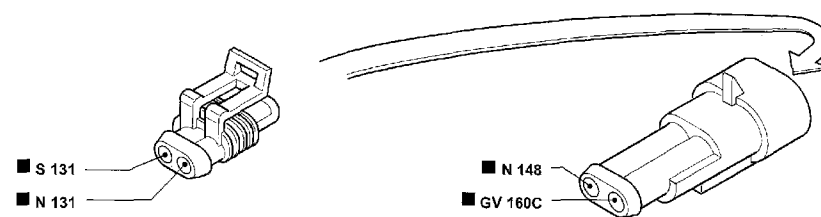
### 13 Front right/left cables connection



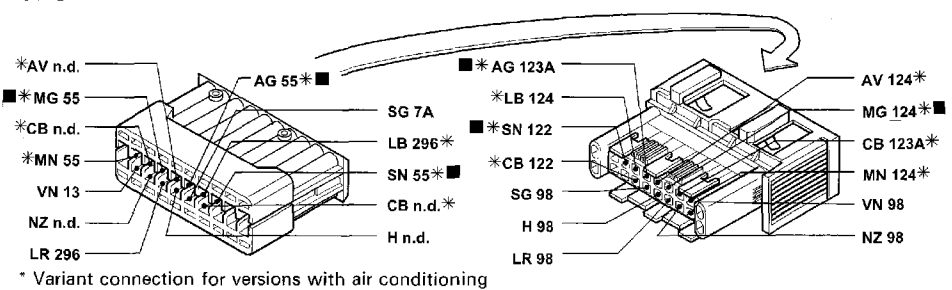
### 55B Connection between front/engine pre-wiring cables



### 55C Connection between front/engine pre-wiring cables



### 127 Connection between left front cable/cable on relay holder bracket



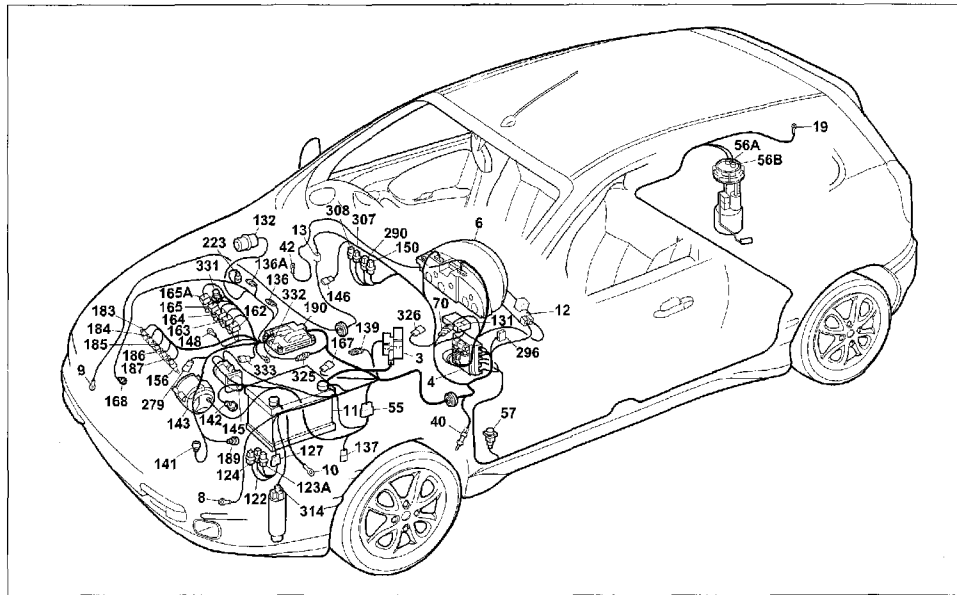
\* Variant connection for versions with air conditioning

The cables in the wiring diagram are marked

P4A156101



55.



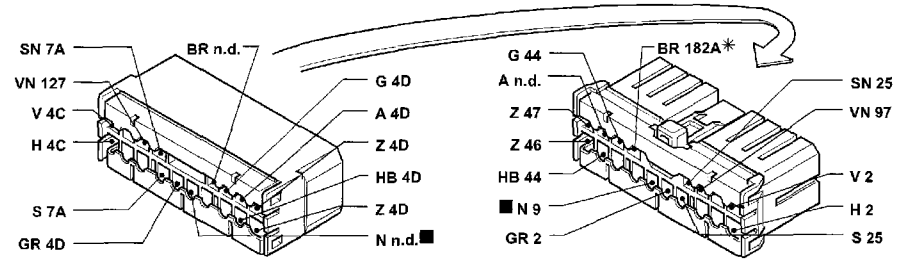
Starting - Bosch Motronic ME 3.1 Electronic injection and ignition - Recharging and warning light - Warning light signalling injection system failure - Insufficient engine oil pressure warning light - Fiat-CODE and warning light - Rev counter

Components key

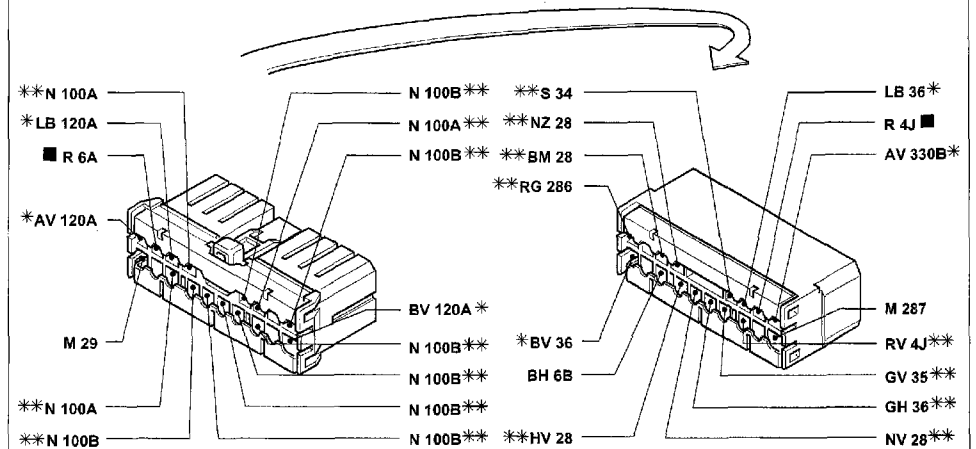
- |   |  |
|---|--|
| 3 Power fuse box:<br>A 30A protective fuse for injection system (60A for TD versions)<br>B 40A protective fuse for ignition system<br>C 80A fuse protecting additional options<br>D 80A protective fuse for junction unit   | 141 Heated Lambda sensor<br>142 Switch signalling insufficient engine oil pressure<br>143 Alternator<br>145 Starter motor<br>146 Potentiometer on butterfly valve<br>148 Earth for electronic injection<br>150 Injection system relay feed<br>156 Spark plugs<br>162 Injector (1)<br>163 Injector (2)<br>164 Injector (3)<br>165 Injector (4)<br>165A Injector (5)   |
| 4 Junction unit<br>6 Instrument panel:<br>A Battery recharging warning light<br>B Insufficient engine oil pressure warning light<br>M Injection system failure warning light Petrol/DS<br>W Rev counter   | 167 Air flow meter<br>169 Timing sensor<br>183 Ignition coil (1)<br>184 Ignition coil (2)<br>185 Ignition coil (3)<br>186 Ignition coil (4)<br>187 Ignition coil (5)<br>189 Phase transformer<br>190 Injection/ignition electronic control unit (1998)<br>223 Rpm sensor<br>279 Twin engine coolant temperature sender unit<br>290 Electric fuel pump relay feed<br>296 Fuse carrier base on front cables<br>C 7.5A fuse protecting Fiat-CODE cooling system /electronic injection<br>F 7.5A fuse protecting electronic injection system/Fiat - CODE |
| 8 Left front earth<br>9 Right front earth<br>10 Earth for battery on bodyshell<br>11 Battery<br>12 Ignition switch<br>13 Front right/left cables connection<br>19 Right rear earth<br>40 Brake lights control switch<br>42 Right dashboard earth<br>55 Connection between front/engine pre-wiring cables  | 307 15A fuse protecting injection system<br>308 15A fuse protecting canister solenoid valve<br>314 Four stage pressure switch<br>325 Connection between injection/left front cables<br>326 Switch on clutch<br>331 Phase transformer injector<br>332 Earth on electronic control unit<br>333 Motorized butterfly casing  |
| 56 Fuel level gauge<br>A Fuel level sensor<br>B Electric fuel pump<br>57 Inertia switch<br>70 Dashboard/front cables connection<br>122 Engine cooling fan low speed relay feed<br>123A Engine cooling fan high speed relay feed<br>124 Air conditioning compressor relay<br>127 Front left cables/cable on relay holder bracket connection<br>131 Fiat CODE electronic control unit<br>132 Petrol vapour cut out solenoid valve (canister)<br>136 Detonation sensor<br>136A Detonation sensor<br>137 Vehicle speed sensor<br>139 Diagnostic socket for injection system |  |

N.D. Ultrasound welding taped in cable loom

13 Front right/left cables connection



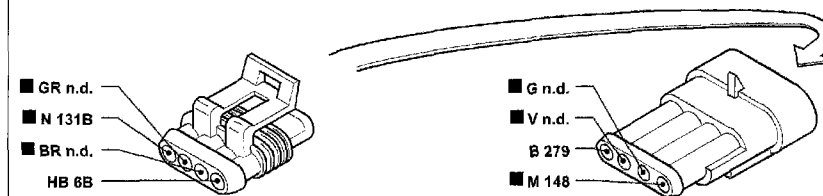
70 Dashboard/front cables connection Trim level: SX - GT



\* Variant connection for versions with air conditioning

\*\* Variant connection for versions with alarm

325 Connection between injection/left front cables

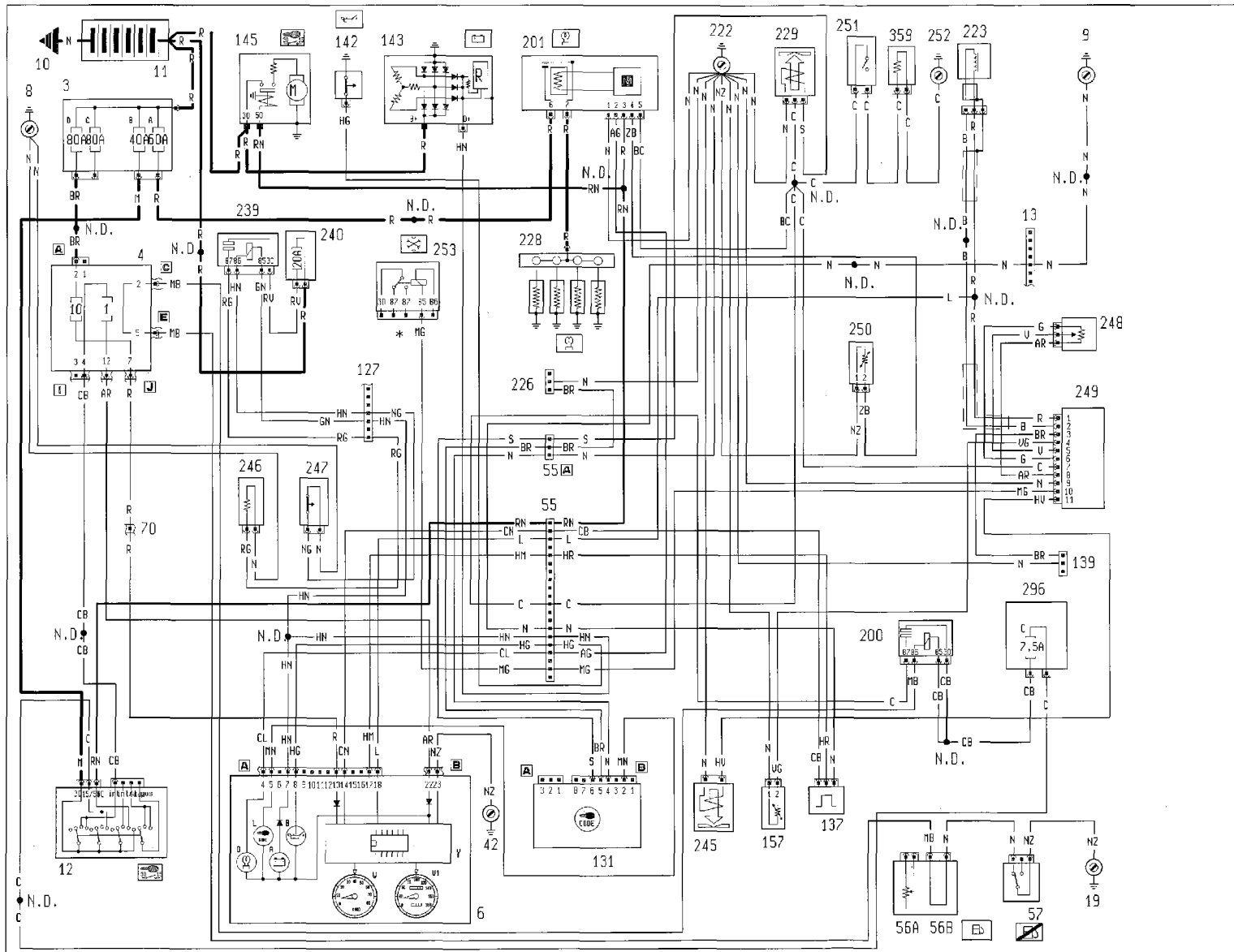


The cables in the wiring diagram are marked

P4A16001

**55.**

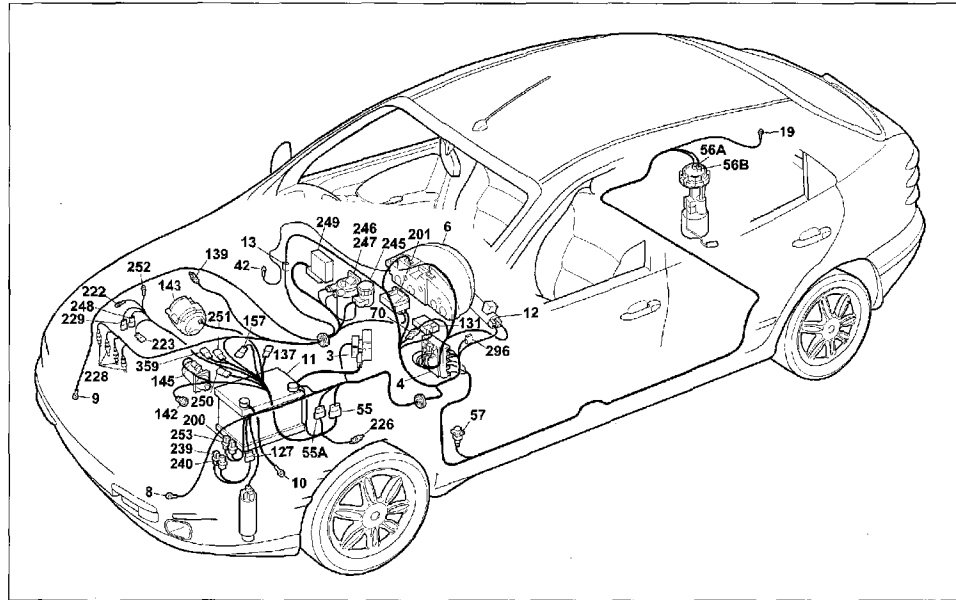
Starting - Recharging and warning light - Low engine oil pressure warning light - Glow plug preheating warning light - Fiat-CODE and warning light - Rev counter - Speedometer - (See key at end of diagrams)



\* See air conditioning wiring diagram

4A161101

55.

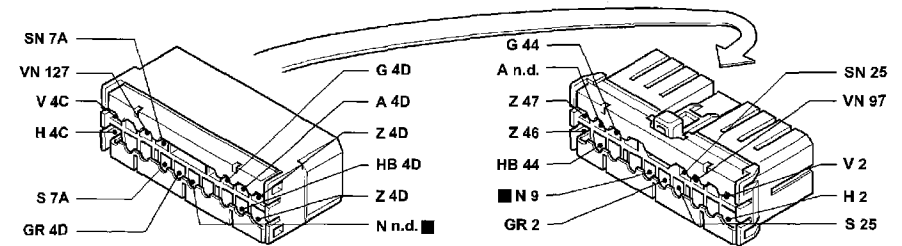


Starting - Recharging and warning light - Low engine oil pressure warning light - Glow plug preheating warning light - Fiat-CODE and warning light - Rev counter - Speedometer

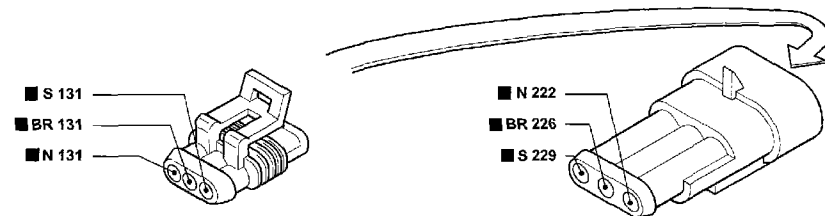
Key to components

- |  |   |
|--|---|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (80A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting additional options<br>D 80A fuse protecting junction unit   | 157 Coolant temperature sensor for injection system<br>200 Inertia switch control relay<br>201 Glow plug preheating control unit<br>222 Earth for fuel system<br>223 Rpm sensors<br>226 Tester connection for Fiat-CODE<br>228 Glow plugs<br>229 Electric engine stop device<br>239 Heated diesel filter relay<br>240 15A fuse protecting heated diesel filter relay<br>245 E.G.R. solenoid valve<br>246 Heated fuel filter device<br>247 Heated fuel filter thermal contact<br>248 Potentiometer on fuel pump<br>249 EGR electronic control unit<br>250 Coolant temperature sensor for preheating control unit<br>251 Thermal switch for K.S.B.<br>252 Earth for K.S.B.<br>253 Compressor deactivation relay<br>359 K.S.B. |
| 4 Junction unit<br>6 Instrument panel:<br>A Battery recharging warning light<br>B Low engine oil pressure warning light<br>L Fiat-CODE failure warning light<br>O Glow plug warning light<br>V1 Speedometer<br>Y Electronic module<br>W Rev counter<br>8 Left front earth<br>9 Right front earth<br>10 Earth for battery on body<br>11 Battery<br>12 Ignition switch<br>13 Connection between right/left front cables<br>19 Right rear earth<br>42 Right fascia earth<br>55 Connection between front cables/engine pre-wiring<br>55C Connection between front cables/pre-wiring#<br>56A Fuel gauge unit<br>56B Fuel pump<br>57 Inertia switch<br>70 Connection between dashboard/front cables<br>127 Connection between front left cable/cable on relay holder bracket<br>131 Fiat-CODE electronic control unit<br>137 Vehicle speed sensor<br>139 Tester socket for injection system<br>142 Switch signalling insufficient engine oil pressure<br>143 Alternator<br>145 Starter motor | N.D. Ultrasound welding taped in cable loom   |

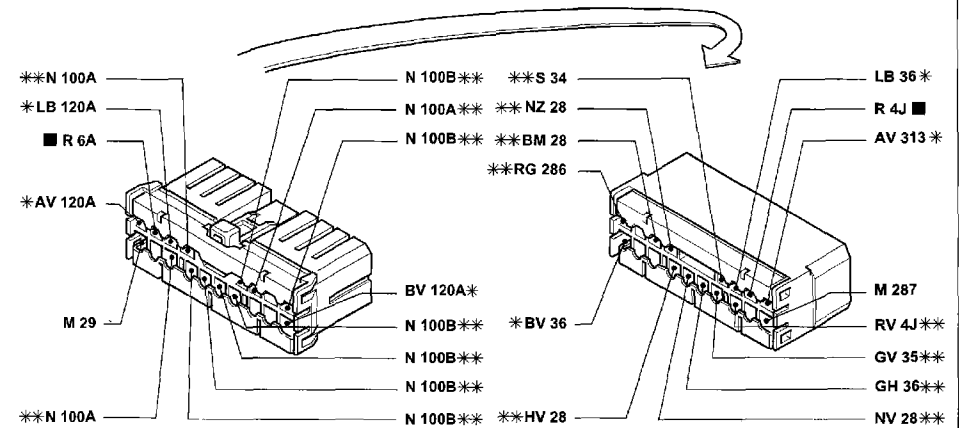
13 Connection between right/left front cables



55A Connection between front cables/engine pre-wiring



70 Connection between dashboard/front cables Outfit: SX - GT



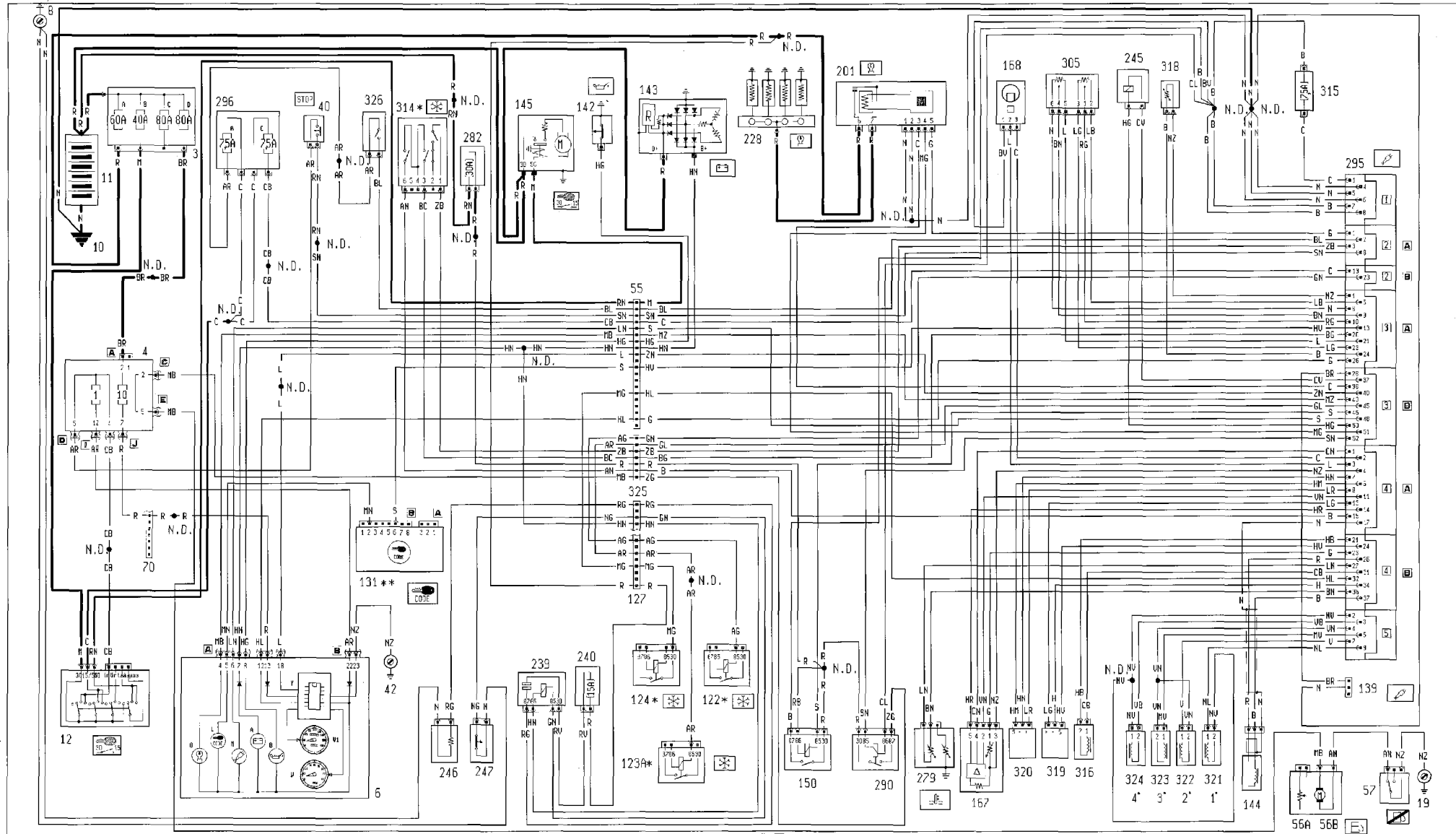
\* Variant connection for versions with air conditioning  
\*\* Variant connection for versions with alarm

Wires marked in the wiring diagram are marked with a box



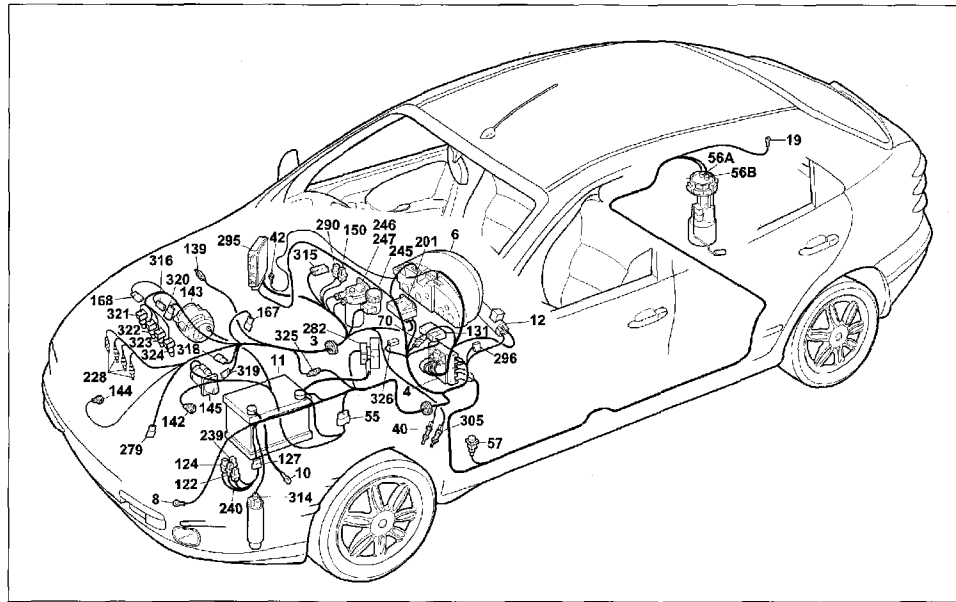
**55.**

Starting - Bosch EDC 15C-5.7 unijet electronic injection - Recharging and warning light - Low engine oil pressure warning light - Glow plug preheating warning light - Fiat-CODE and warning light - Rev counter - Speedometer -  
(See key at end of diagrams)



\* See air conditioning wiring diagram  
\*\* See Fiat CODE wiring diagram

55.



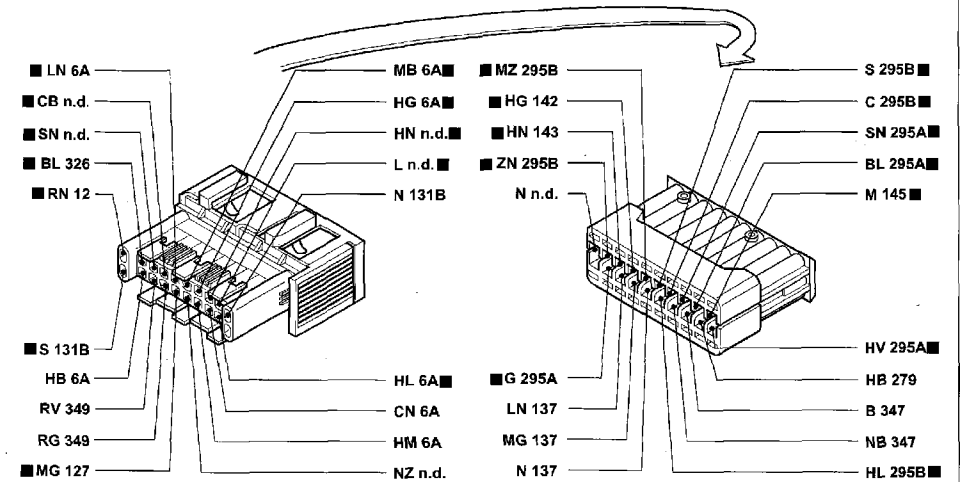
4A167101

Starting - Bosch EDC 15C-5.7 unijet electronic injection - Recharging and warning light - Low engine oil pressure warning light - Glow plug preheating warning light - Fiat-CODE and warning light - Rev counter - Speedometer

Key to components

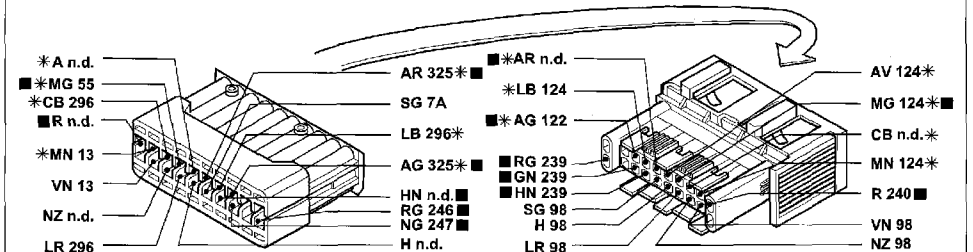
- |   |  |
|---|--|
| 3 Power fusebox<br>A 30A fuse protecting injection system (80A for TD versions)<br>B 40A fuse protecting ignition system<br>C 30A fuse protecting additional options<br>D 80A fuse protecting junction unit   | 145 Starter motor<br>150 Injection system relay feed<br>167 Air flow meter (debimeter)<br>168 Timing sensor<br>201 Glow plug preheating control unit<br>228 Glow plugs<br>239 Heated diesel filter relay<br>240 15A fuse protecting heated diesel filter relay<br>245 E.G.R. solenoid valve<br>246 Heated fuel filter device<br>247 Heated fuel filter thermal contact<br>279 Engine coolant temperature twin sender unit<br>282 7.5A fuse protecting Fiat-CODE/electronic injection (60 for UNIJET)   |
| 4 Junction unit<br>6 Instrument panel:<br>A Battery recharging warning light<br>B Low engine oil pressure warning light<br>L Fiat-CODE failure warning light<br>M Injection system failure warning light<br>O Glow plug warning light<br>V1 Speedometer<br>Y Electronic module<br>W Rev counter   | 290 Fuel pump control relay<br>295 Injection/ignition electronic control unit 1910 TD UNIJET<br>296 Fuse holder base on front cable<br>A7.5A fuse protecting switch panel light: Radio telephone; Radio; Electric mirrors<br>C7.5A fuse protecting Fiat-CODE cooling system electronic injection   |
| 8 Left front earth<br>10 Earth for battery only body<br>11 Battery<br>12 Ignition switch<br>19 Left facia earth<br>40 Brake lights control switch<br>42 Right facia earth<br>56 Connection between front cables/engine pre-wiring<br>55A Connection between front cables/engine pre-wiring<br>56B Fuel gauge unit<br>57 Inertia switch<br>70 Connection between dashboard/front cables<br>122 Engine cooling fan low speed relay feed<br>123A Engine cooling fan high speed relay feed<br>124 Air conditioning compressor control relay<br>127 Connection between front left cable/cable on relay holder bracket<br>131 Fiat-CODE electronic control unit<br>139 Tester socket for injection system<br>142 Switch signalling insufficient engine oil pressure<br>143 Alternator<br>144 Rpm and TDC sensor | 305 Potentiometer on accelerator pedal<br>314 Four stage pressure switch<br>315 7.5A fuse protecting electronic injection control unit 1910 TD UNIJET<br>316 Fuel pressure regulator for injection system 1910 TD UNIJET<br>318 Fuel temperature sensor<br>319 Fuel pressure sensor<br>320 Turbo pressure regulator<br>321 1st injector for 1910 TD UNIJET injection system<br>322 2nd injector for 1910 TD UNIJET injection system<br>323 3rd injector for 1910 TD UNIJET injection system<br>324 4th injector for 1910 TD UNIJET injection system<br>325 Connection between injection/left front cables<br>326 Switch on clutches<br>N.D. Ultrasound welding taped in cable loom |

55 Connection between front cables/engine pre-wiring



4A168101

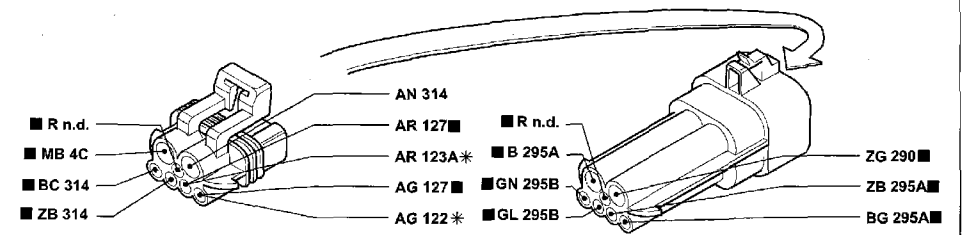
127 Connection between front left cable/cable on relay holder bracket



\* Connection variant for versions with air conditioner

4A168102

70 Connection between injection/left front cables



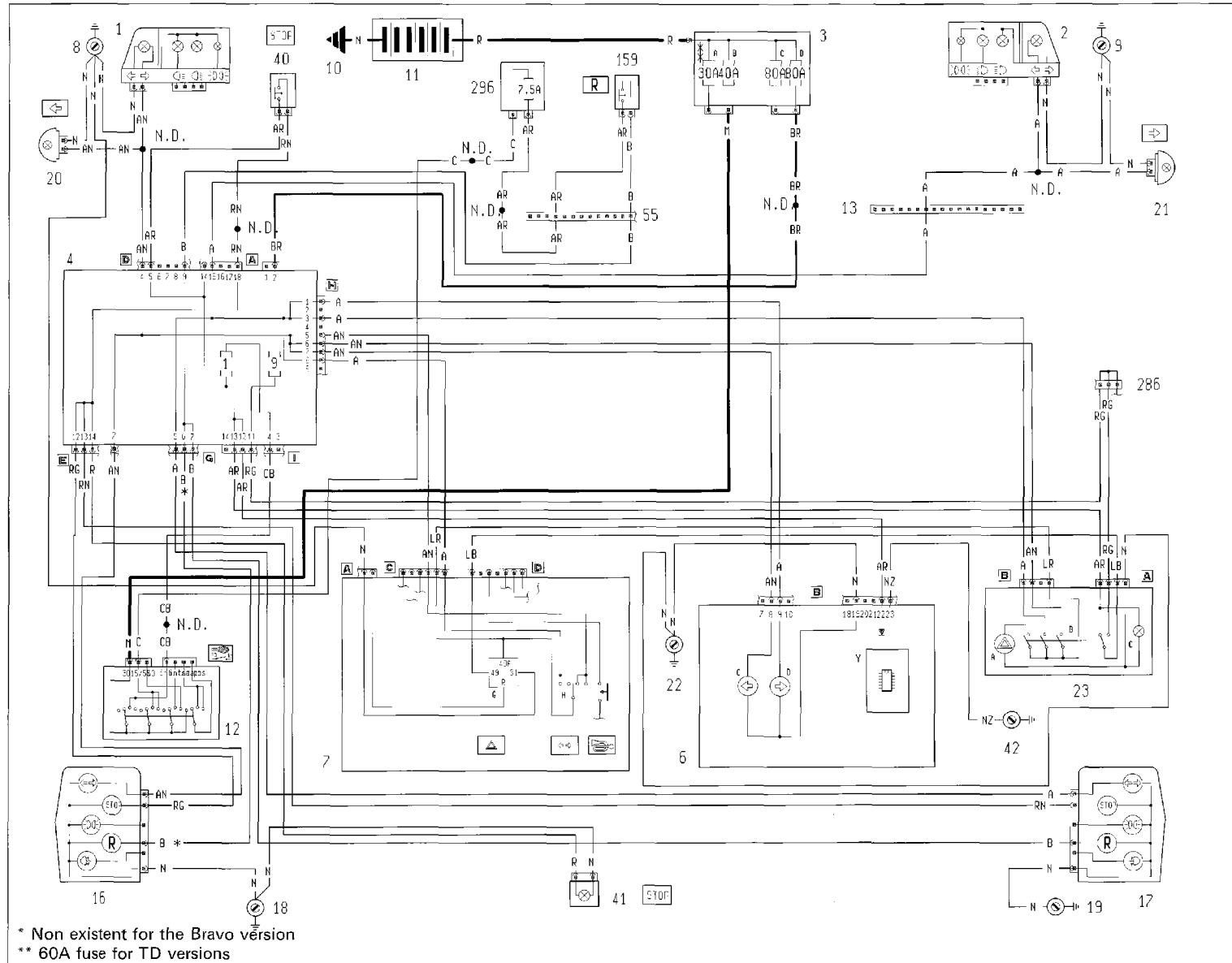
\* Connection variant for versions without air conditioner

4A168103

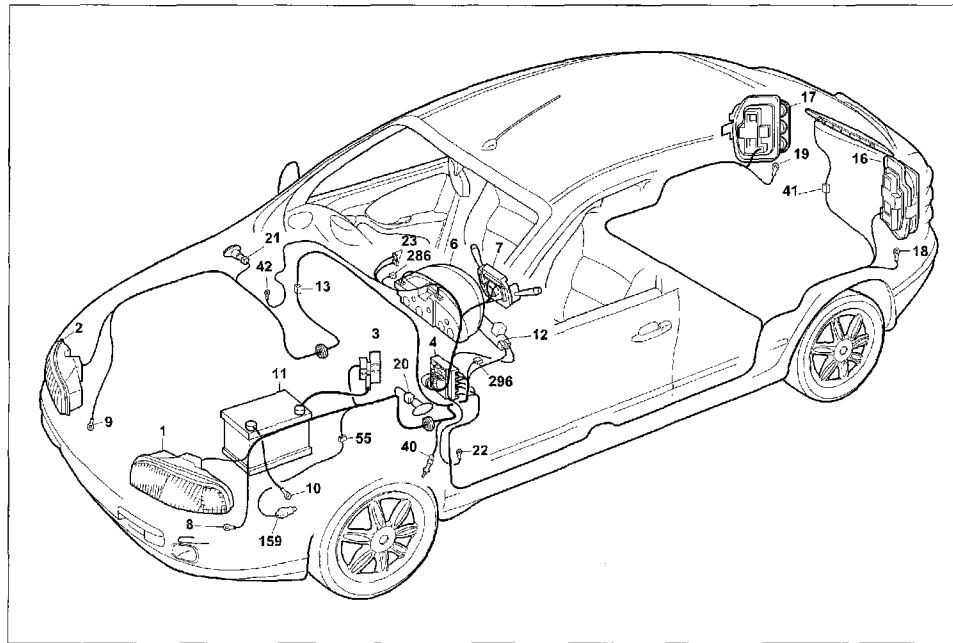
The wires marked in the wiring diagram are marked by a box

Trim level: SX - GT

Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing lights - (See key at end of wiring diagrams)



**55.**



P4A171101

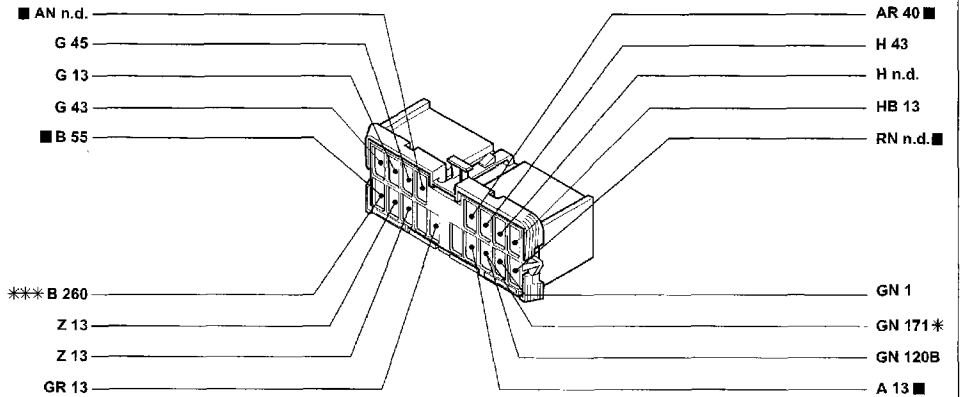
**Trim level: SX - GT**

**Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing lights**

**Components key**

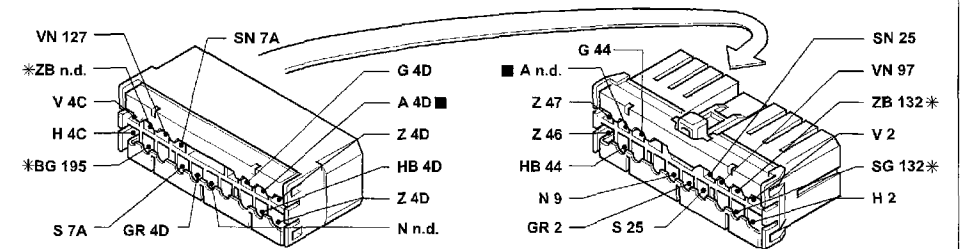
- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>1 Left front light cluster</li> <li>2 Right front light cluster</li> <li>3 Power fuse box:             <ul style="list-style-type: none"> <li>A 30A protective fuse for injection system (60A for TD versions)</li> <li>B 40A protective fuse for ignition system</li> <li>C 80A fuse protecting additional options</li> <li>D 80A protective fuse for junction unit</li> </ul> </li> <li>4 Junction unit</li> <li>6 Instrument panel:             <ul style="list-style-type: none"> <li>C Left direction indicator warning light</li> <li>D Right direction indicator warning light</li> <li>Y Electronic module</li> </ul> </li> <li>7 Steering column switch unit:             <ul style="list-style-type: none"> <li>H Switch for direction indicators</li> <li>G Direction indicators/hazard warning lights switch</li> </ul> </li> <li>8 Left front earth</li> <li>9 Right front earth</li> <li>10 Earth for battery on bodyshell</li> <li>11 Battery</li> <li>12 Ignition switch</li> <li>13 Front right/left cables connection</li> </ul> | <ul style="list-style-type: none"> <li>16 Left rear light cluster</li> <li>17 Right rear light cluster</li> <li>18 Left rear earth</li> <li>19 Right rear earth</li> <li>20 Left front side direction indicator</li> <li>21 Right front side direction indicator</li> <li>22 Left dashboard earth</li> <li>23 Hazard warning lights switch unit             <ul style="list-style-type: none"> <li>A Hazard warning lights warning light</li> <li>B Hazard warning lights switch</li> <li>C Hazard warning lights ideogram light</li> </ul> </li> <li>40 Brake lights control switch</li> <li>41 Additional brake light</li> <li>42 Right dashboard earth</li> <li>55 Connection between front/engine pre-wiring cables</li> <li>159 Reversing lights control switch</li> <li>286 Short circuit connection</li> <li>296 Fuse carrier base on front cable             <ul style="list-style-type: none"> <li>A 7.5A fuse protecting cooling system/electronic injection; C.A. system; Alarm</li> </ul> </li> <li>N.D. Ultrasound welding taped in cable loom</li> </ul> |
|---|--|

**4D Junction unit**



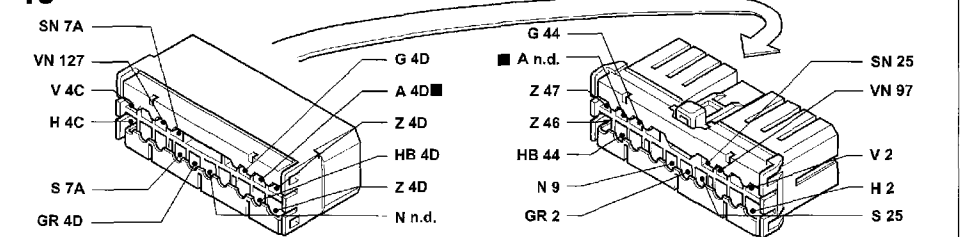
\* Variant connection for versions without air conditioning  
\*\* Variant connection for version with automatic transmission

**13 Front right/left cables connection. Versions: 1242 16v - 1581 16v**



\* Variant connection for 1581 16v version

**13 Front right/left cables connection**

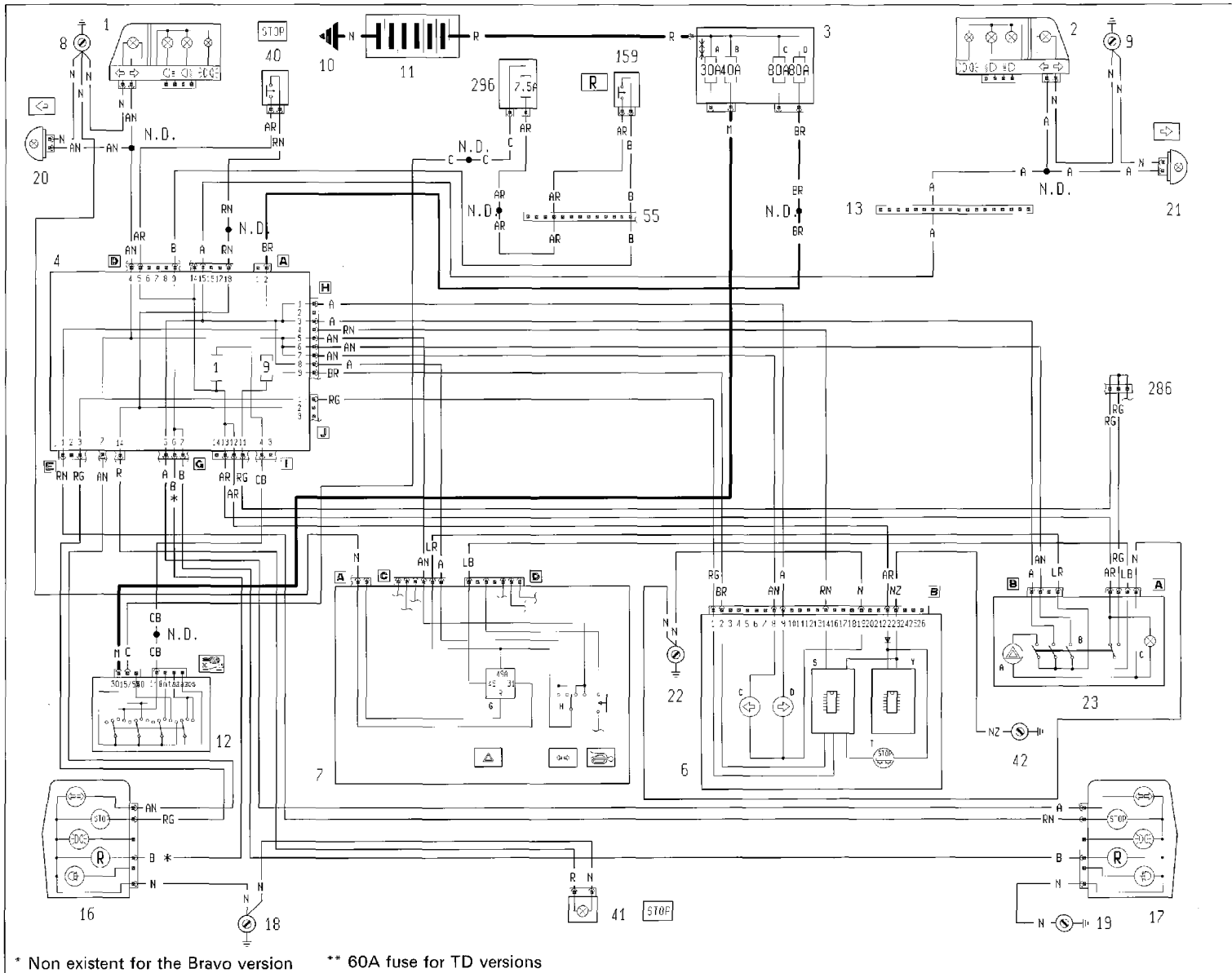


The cables in the wiring diagram are marked

P4A172101

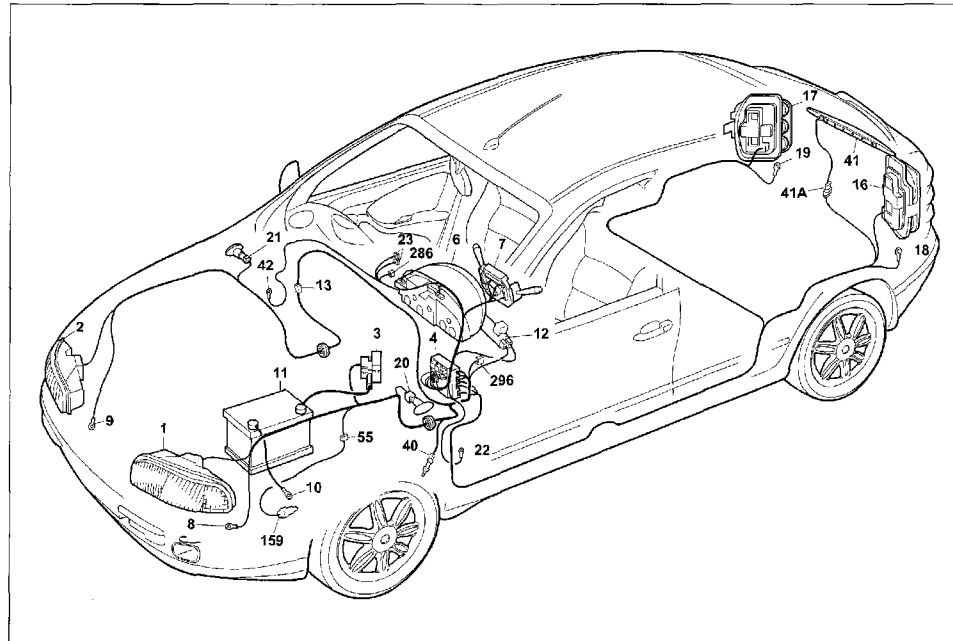
Trim level: ELX - HSX - HGT

Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing lights - (See key at end of wiring diagrams)



\* Non existent for the Bravo version    \*\* 60A fuse for TD versions

## 55.



P4A17501

Trim level: **HSX - ELX - HGT**

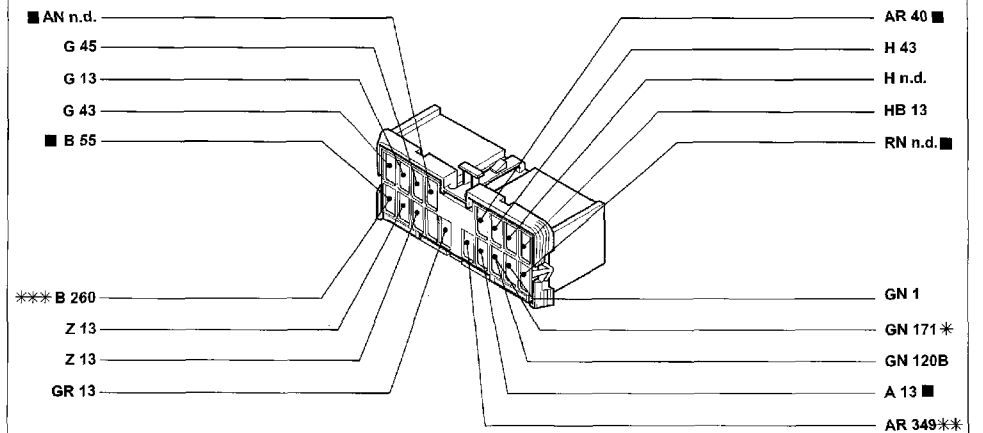
**Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing lights**

### Components key

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>1 Left front light cluster</li> <li>2 Right front light cluster</li> <li>3 Power fuse box:             <ul style="list-style-type: none"> <li>A 30A protective fuse for injection system (60A for TD versions)</li> <li>B 40A protective fuse for ignition system</li> <li>C 80A fuse protecting additional options</li> <li>D 80A protective fuse for junction unit</li> </ul> </li> <li>4 Junction unit</li> <li>6 Instrument panel:             <ul style="list-style-type: none"> <li>C Left direction indicator warning light</li> <li>D Right direction indicator warning light</li> <li>S Electronic module for signalling brake lights failure</li> <li>T Warning light signalling brake lights failure</li> <li>Y Electronic module</li> </ul> </li> <li>8 Left front earth</li> <li>7 Steering column switch unit             <ul style="list-style-type: none"> <li>H Switch for direction indicators</li> <li>G Direction indicators/hazard warning lights switch</li> </ul> </li> <li>8 Left front earth</li> <li>9 Right front earth</li> <li>10 Earth for battery on bodyshell</li> <li>11 Battery</li> <li>12 Ignition switch</li> <li>13 Front right/left cables connection</li> </ul> | <ul style="list-style-type: none"> <li>16 Left rear light cluster</li> <li>17 Right rear light cluster</li> <li>18 Left rear earth</li> <li>19 Right rear earth</li> <li>20 Left front side direction indicator</li> <li>21 Right front side direction indicator</li> <li>22 Left dashboard earth</li> <li>23 Hazard warning lights switch unit             <ul style="list-style-type: none"> <li>A Hazard warning lights warning light</li> <li>B Hazard warning lights switch</li> <li>C Hazard warning lights ideogram light</li> </ul> </li> <li>40 Brake lights control switch</li> <li>41 Additional brake light</li> <li>42 Right dashboard earth</li> <li>55 Connection between front/engine pre-wiring cables</li> <li>286 Reversing lights control switch</li> <li>296 Short circuit connection             <ul style="list-style-type: none"> <li>A 7.5A fuse protecting cooling system/electronic injection; C.A. system; Alarm</li> </ul> </li> </ul> |
|--|---|

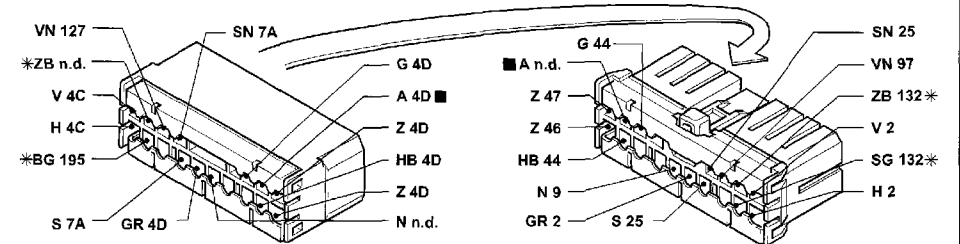
N.D. Ultrasound welding taped in cable loom

### 4D Junction unit



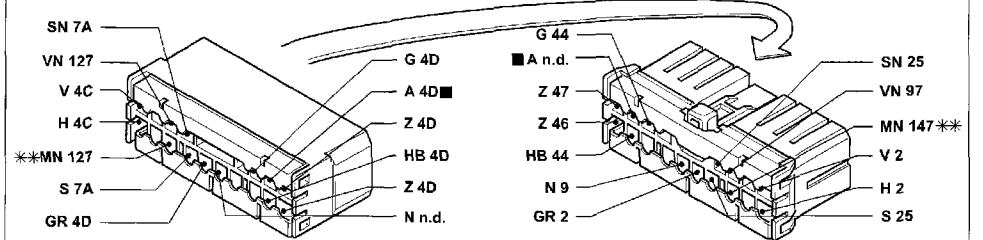
- \* Variant connection for versions without air conditioning
- \*\* Variant connection for JTD versions
- \*\*\* Variant connection for version with automatic transmission

### 13 Front right/left cables connection. Versions: 1242 16v - 1581 16v



\* Variant connection for 1581 16v versions

### 13 Front right/left cables connection

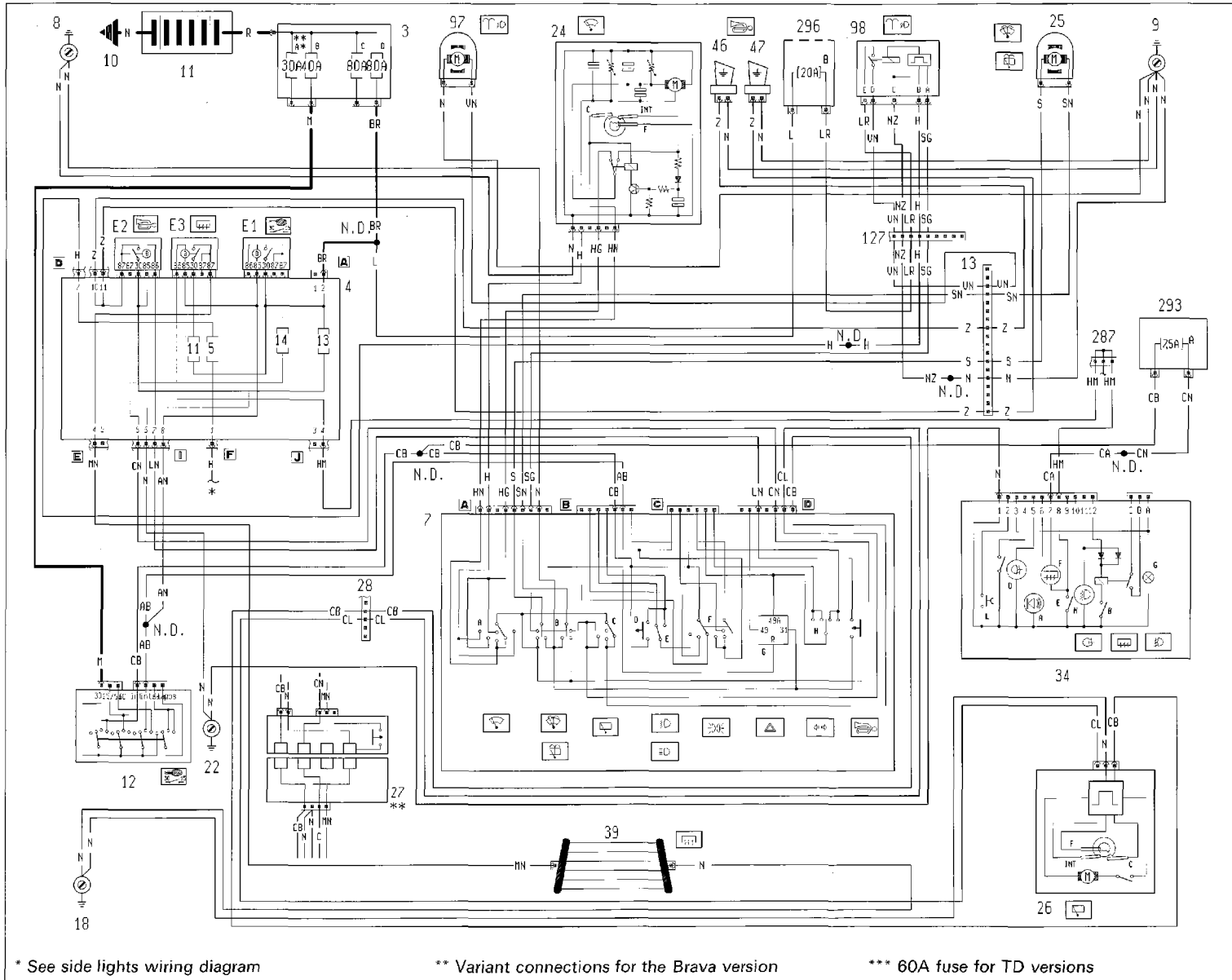


\* Variant connection for JTD versions

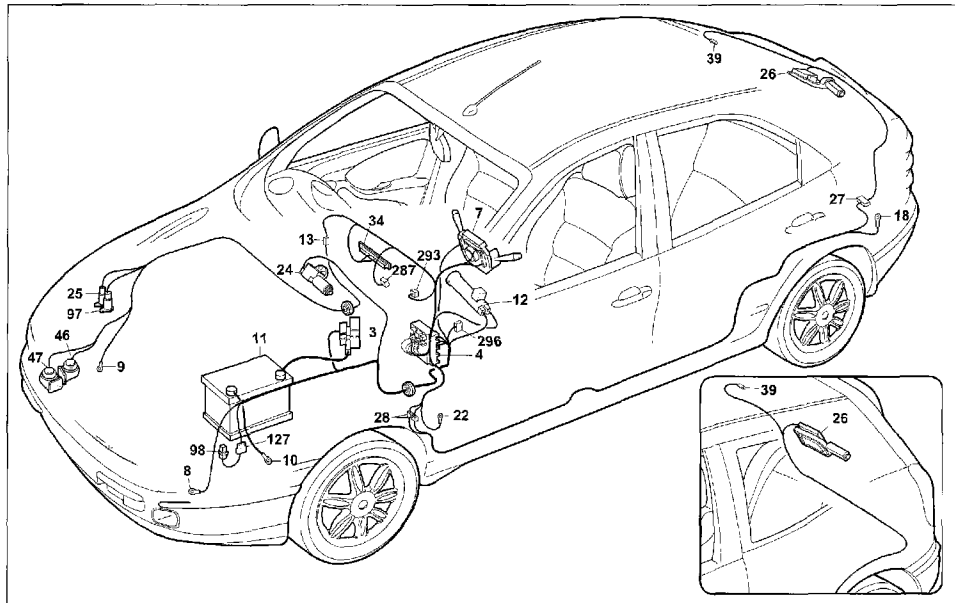
The cables in the wiring diagram are marked

P4A176101

Version without A.B.I.  
Windscreen wash/wipe - Rearscreen wash/wipe - Electric horns - Heated rear windscreen and warning light - Headlamp washer - (See key at end of wiring diagrams)



55.



P4A179101

Version without A.B.I.

Windscreen wash/wipe - Rearscreen wash/wipe - Electric horns - Heated rear windscreen and warning light - Headlamp washer

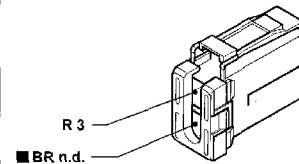
Components key

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit:
  - E1 Ignition discharge relay
  - E2 Horn relay feed
  - E3 Heated rear windscreen relay feed
- 7 Steering column switch unit:
  - A Windscreen wiper speed control switch
  - B Windscreen washer/headlamp washer/rearscreen washer control switch
  - C Rearscreen wiper control switch
  - D Flasher control
  - E Switch for dipped/main beam headlamps
  - F Switch for side lights
  - G Direction indicators/hazard warning lights intermittent device
  - H Switch for direction indicators
  - I Horn control
- 8 Left front earth
- 9 Right front earth
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 13 Front right/left cables connection
- 18 Left rear earth
- 22 Left dashboard earth
- 24 Windscreen wiper motor
- 25 Windscreen/rearscreen electric washer pump
- 26 Rearscreen wiper motor
- 27 Contact board for rear connections with luggage compartment light switch incorporated
- 28 Dash./longitudinal cables connection
- 34 Switch unit:
  - A Alarm on warning light
  - B Rear fog lamps switch
  - D Rear fog lamps warning light
  - E Heated rear windscreen switch
  - F Heated rear windscreen warning light
  - G Switch control unit ideogram light
  - H Fog lights warning light
  - I Fog lights switch
  - L Outside temperature control switch
- 39 Heated rear windscreen
- 46 Left electric horn
- 47 Right electric horn
- 97 Electric headlamp washer pump
- 98 Headlamp washer intermittent device
- 127 Connection between left front cable/cable on relay holder bracket
- 287 Short circuit connection
- 293 Fuse carrier base on dashboard cable
  - A 7.5A fuse protecting switch panel light; Radio phone; Radio; Electric mirrors
- 296 Fuse carrier base on front cable
  - B 20A protective fuse windscreen wiper with A.B.I. or without A.B.I.

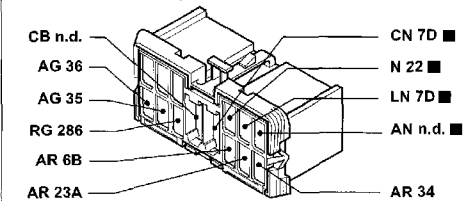
N.D. Ultrasound welding taped in cable loom

4A1791

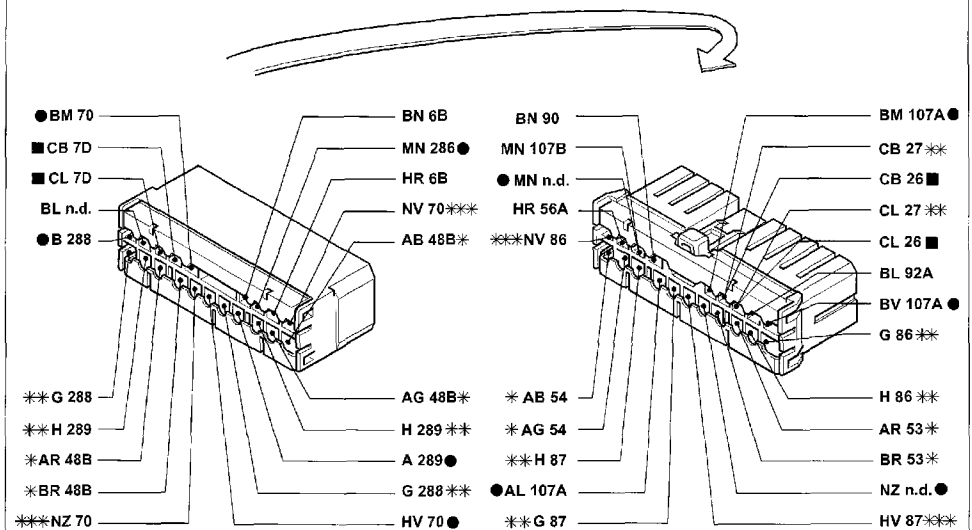
4A Junction unit



4I Junction unit



28 Dashboard/longitudinal cables connection. Versions without A.B.I. control unit.



- Variant connection for versions with alarm
- \* Variant connection for versions with top of the range radio
- \*\* Variant connection for Brava versions
- \*\*\* Variant connection for Brava versions with alarm

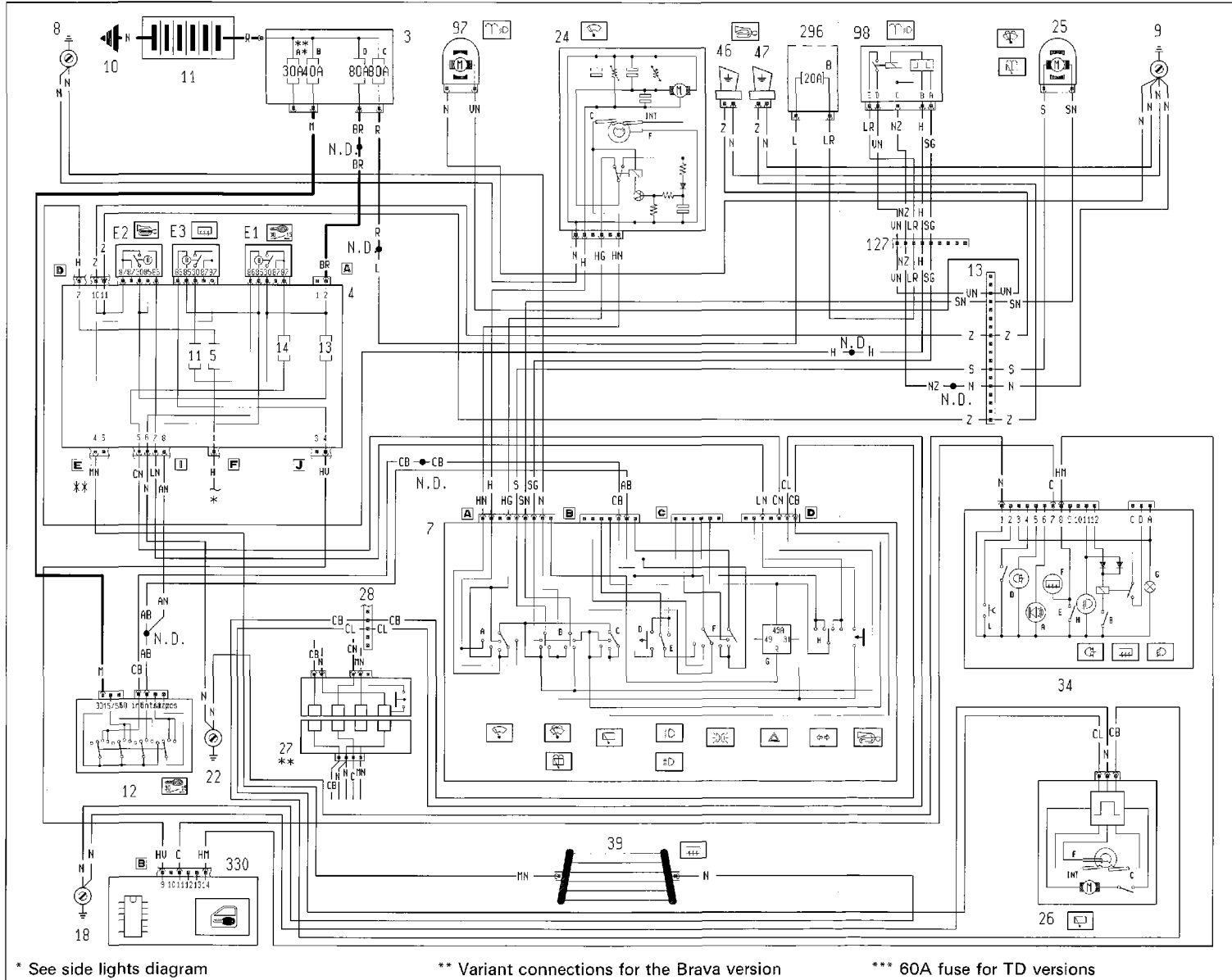
The cables in the wiring diagram are marked

P4A180101

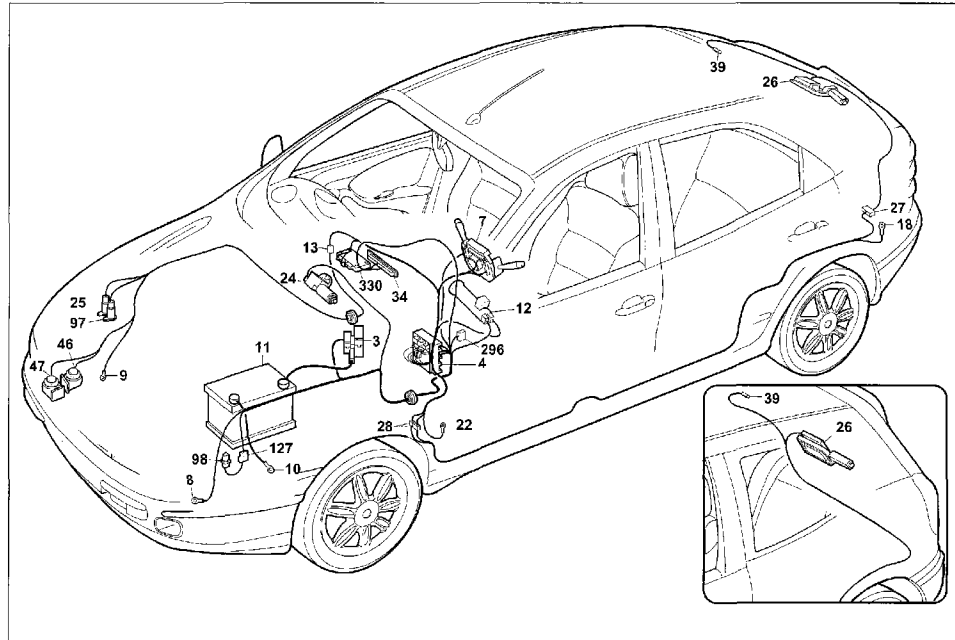
4A1801



**Version with A.B.I.**  
Windscreen wash/wipe - Rearscreen wash/wipe - Electric horns - Heated rear windscreen and warning light - Headlamp washer - (See key at end of wiring diagrams)



### 55.



P4A183101

#### Version with A.B.I.

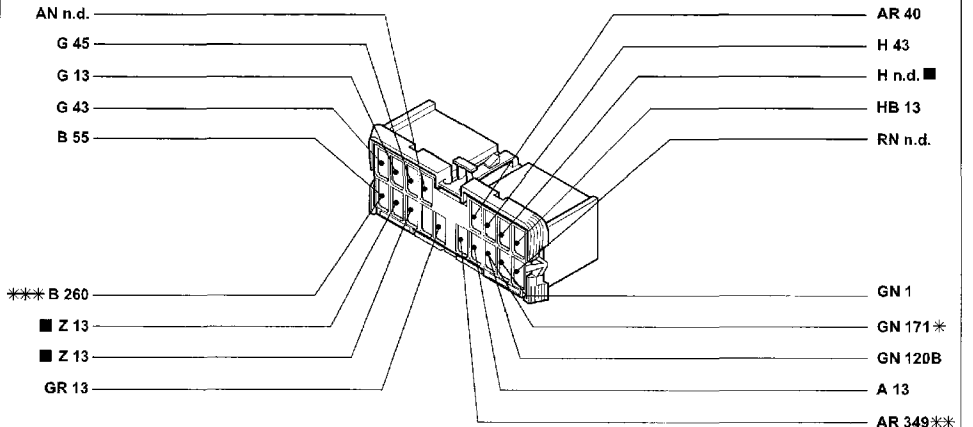
**Windscreen wash/wipe - Rearscreen wash/wipe - Electric horns - Heated rear windscreen and warning light - Headlamp washer**

#### Components key

- 3 Power fuse box:  
 A 30A protective fuse for injection system (60A for TD versions)  
 B 40A protective fuse for ignition system  
 C 80A fuse protecting additional options  
 D 80A protective fuse for junction unit
- 4 Junction unit:  
 E1 Ignition discharge relay  
 E2 Horn relay feed  
 E3 Heated rear windscreen relay feed
- 7 Steering column switch unit:  
 A Windscreen wiper speed control switch  
 B Windscreen/headlamp/reatscreen washer control switch  
 C Rearscreen wiper control switch  
 D Flasher control  
 E Switch for dipped/main beam headlamps  
 F Switch for side lights  
 G Direction indicators/hazard w/lights intermittent device  
 H Switch for direction indicators  
 I Horn control
- 8 Left front earth  
 9 Right front earth  
 10 Earth for battery on bodysell  
 11 Battery  
 12 Ignition switch  
 13 Front right/left cables connection  
 18 Left rear earth  
 22 Left dashboard earth
- 24 Windscreen wiper motor  
 25 Electric windscreen/rearscreen washer pump  
 26 Rearscreen wiper motor  
 27 Contact board for rear connections with luggage compartment light switch incorporated  
 28 Dashboard/longitudinal cables connection  
 34 Switch unit:  
 A Alarm on warning light  
 B Rear fog lamps switch  
 C Rear fog lamps relay feed  
 D Rear fog lamps warning light  
 E Heated rear windscreen switch  
 F Heated rear windscreen warning light  
 G Ideogram light from switch unit  
 H Fog lights warning light  
 I Fog lights switch  
 L Outside temperature control switch
- 39 Heated rear windscreen  
 46 Left electric horn  
 47 Right electric horn  
 97 Electric headlamp washer pump  
 98 Headlamp washer intermittent device  
 127 Connection between left front cable/cable on relay holder bracket  
 296 Fuse carrier base on front cable  
 B 20A protective fuse for windscreen wiper with A.B.I. or without A.B.I.  
 330 A.B.I. control unit  
 N.D. Ultrasound welding taped in cable loom

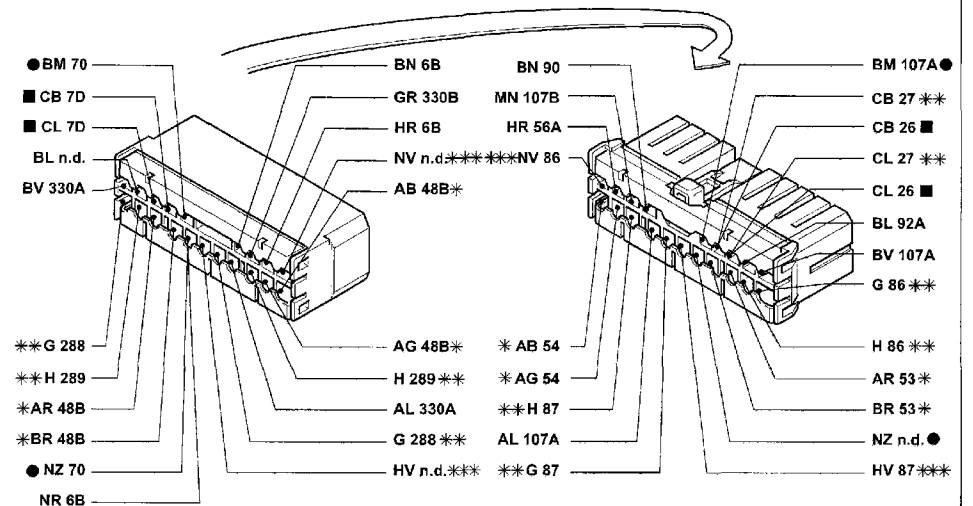
4A1831

#### 4D Junction unit



- \* Variant connection for versions without air conditioning  
 \*\* Variant connection for JTD versions  
 \*\*\* Variant connection for version with automatic transmission

#### 28 Connection between dashboard/longitudinal cables. Versions with A.B.I. control unit



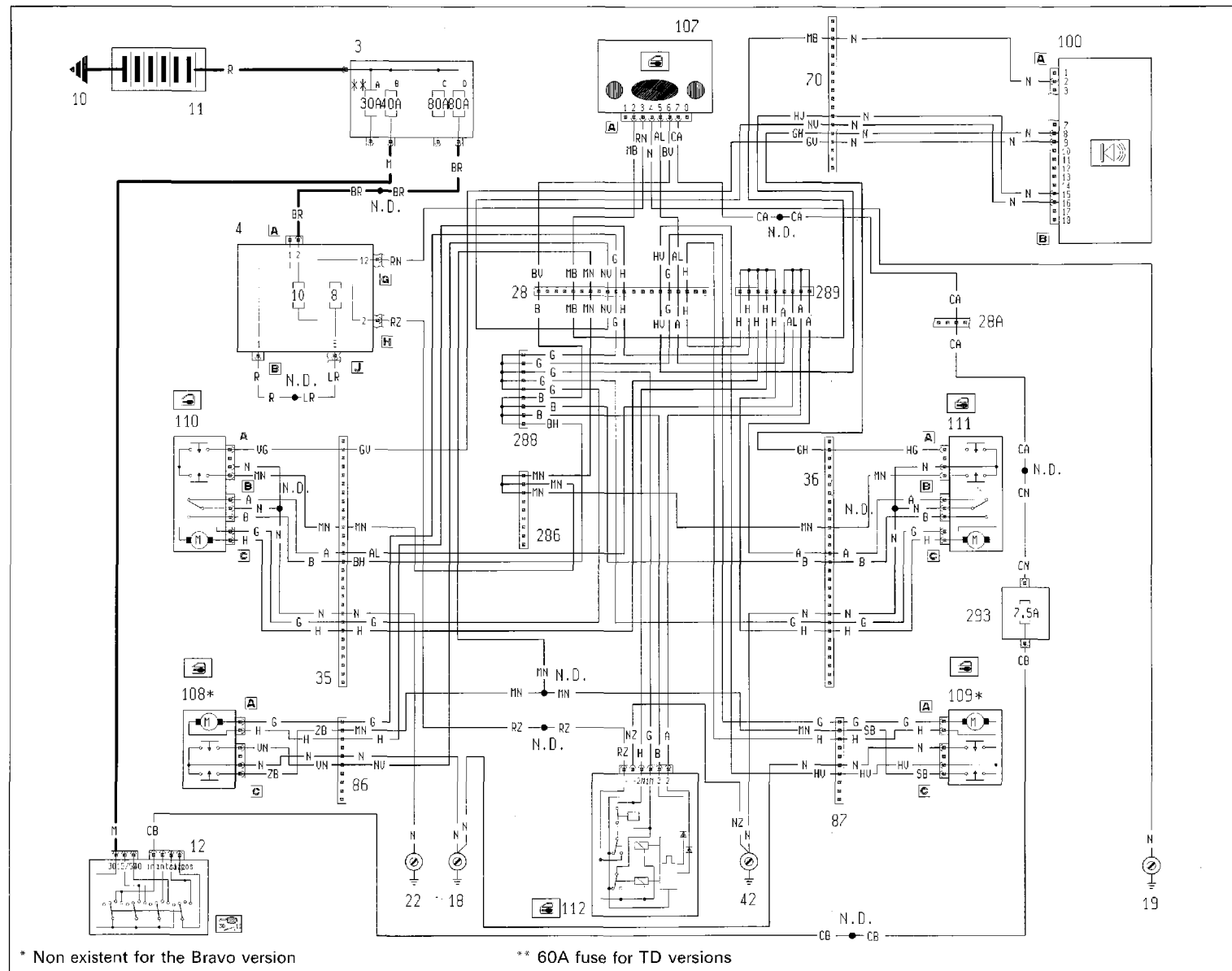
- Variant connection for versions with alarm  
 \* Variant connection for versions with top of the range radio  
 \*\* Variant connection for Brava versions  
 \*\*\* Variant connection for Brava versions with alarm

The cables in the wiring diagram are marked

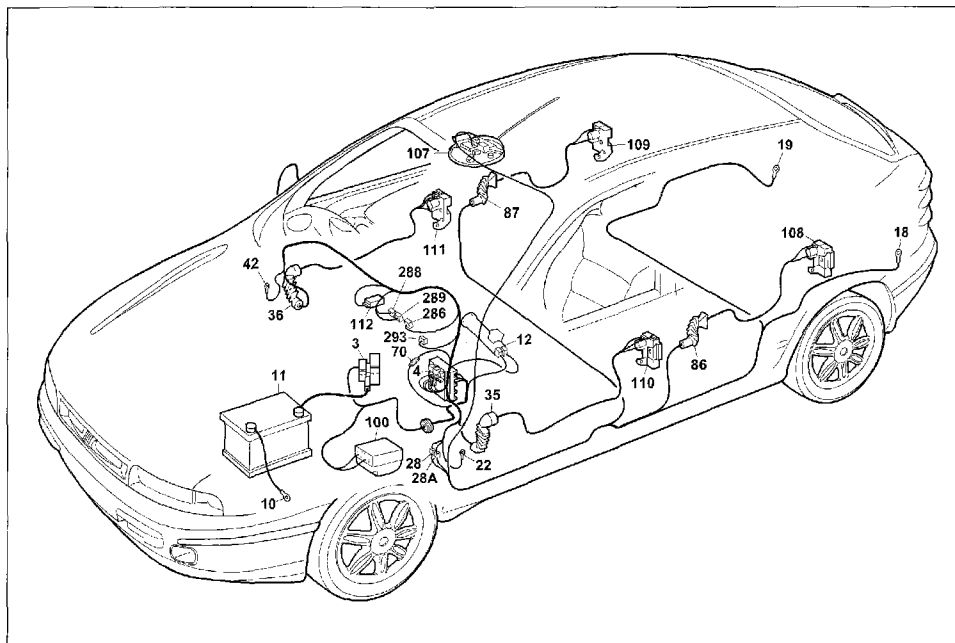
P4A184101

4A1841

Version with alarm: SX - GT  
Central locking - (See key at end of wiring diagrams)



55.



P4A18701

Version with alarm: SX - GT

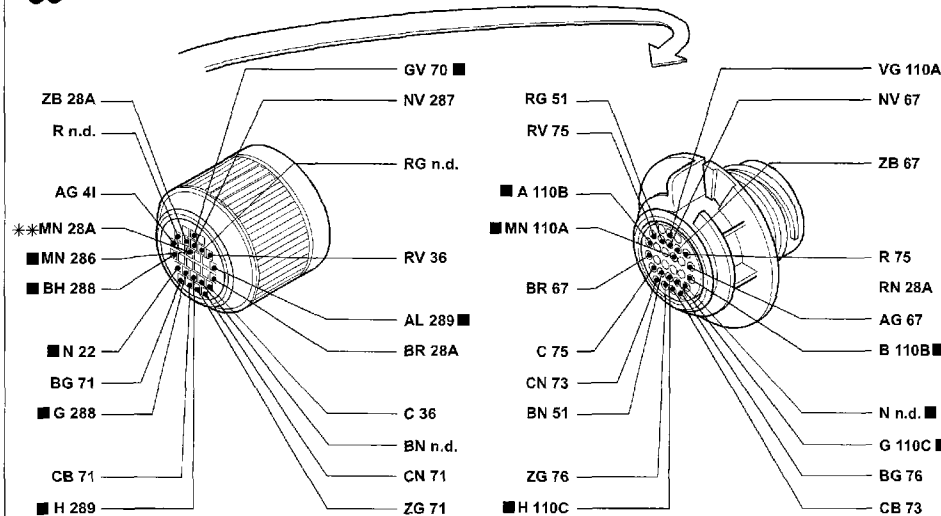
Central locking

Components key

- |   |                 |                                   |            |                    |                    |                     |                         |   |  |   |                          |                                      |  |   |  |  |  |  |  |   |                                       |                              |                              |                              |  |  |
|---|-----------------|-----------------------------------|------------|--------------------|--------------------|---------------------|-------------------------|---|--|---|--------------------------|--------------------------------------|--|---|--|--|--|--|--|---|---------------------------------------|------------------------------|------------------------------|------------------------------|--|--|
| 3 Power fuse box:<br>A 30A protective fuse for injection system (60A for TD versions)<br>B 40A protective fuse for ignition system<br>C 80A fuse protecting additional options<br>D 80A protective fuse for junction unit | 4 Junction unit | 10 Earth for battery on bodyshell | 11 Battery | 12 Ignition switch | 18 Left rear earth | 19 Right rear earth | 22 Left dashboard earth | 28 Dashboard/longitudinal cables connection | 35 Dashboard/left front door cables connection | 36 Dashboard/right front door cables connection | 42 Right dashboard earth | 70 Dashboard/front cables connection | 86 Longitudinal/left rear door cables connection | 87 Longitudinal/right rear door cables connection | 100 Alarm device electronic control unit | 107A Central locking remote control receiver | 108 Left rear central locking/alarm switch | 109 Right rear central locking/alarm on switch | 110 Left front central locking/alarm on switch | 111 Right front central locking/alarm on switch | 112 Central door locking control unit | 286 Short circuit connection | 288 Short circuit connection | 289 Short circuit connection | 293 Fuse carrier base on dashboard cable | A 7.5A fuse protecting switch panel light Radio phone; Radio; Electric mirrors |
|---|-----------------|-----------------------------------|------------|--------------------|--------------------|---------------------|-------------------------|---|--|---|--------------------------|--------------------------------------|--|---|--|--|--|--|--|---|---------------------------------------|------------------------------|------------------------------|------------------------------|--|--|

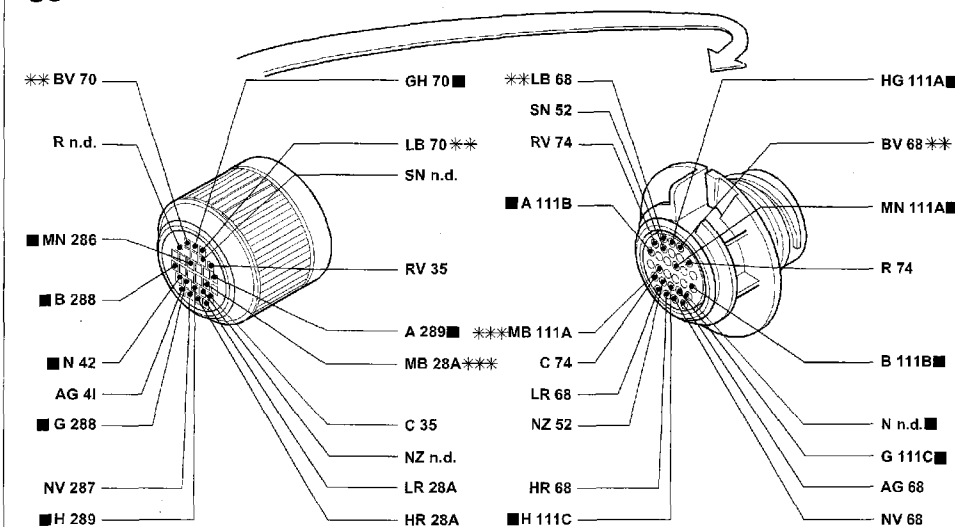
N.D. Ultrasound welding taped in cable loom

35 Dashboard/left front door cables connection



\*\* Variant connection for version with automatic transmission

36 Connection for dashboard cables/right side door



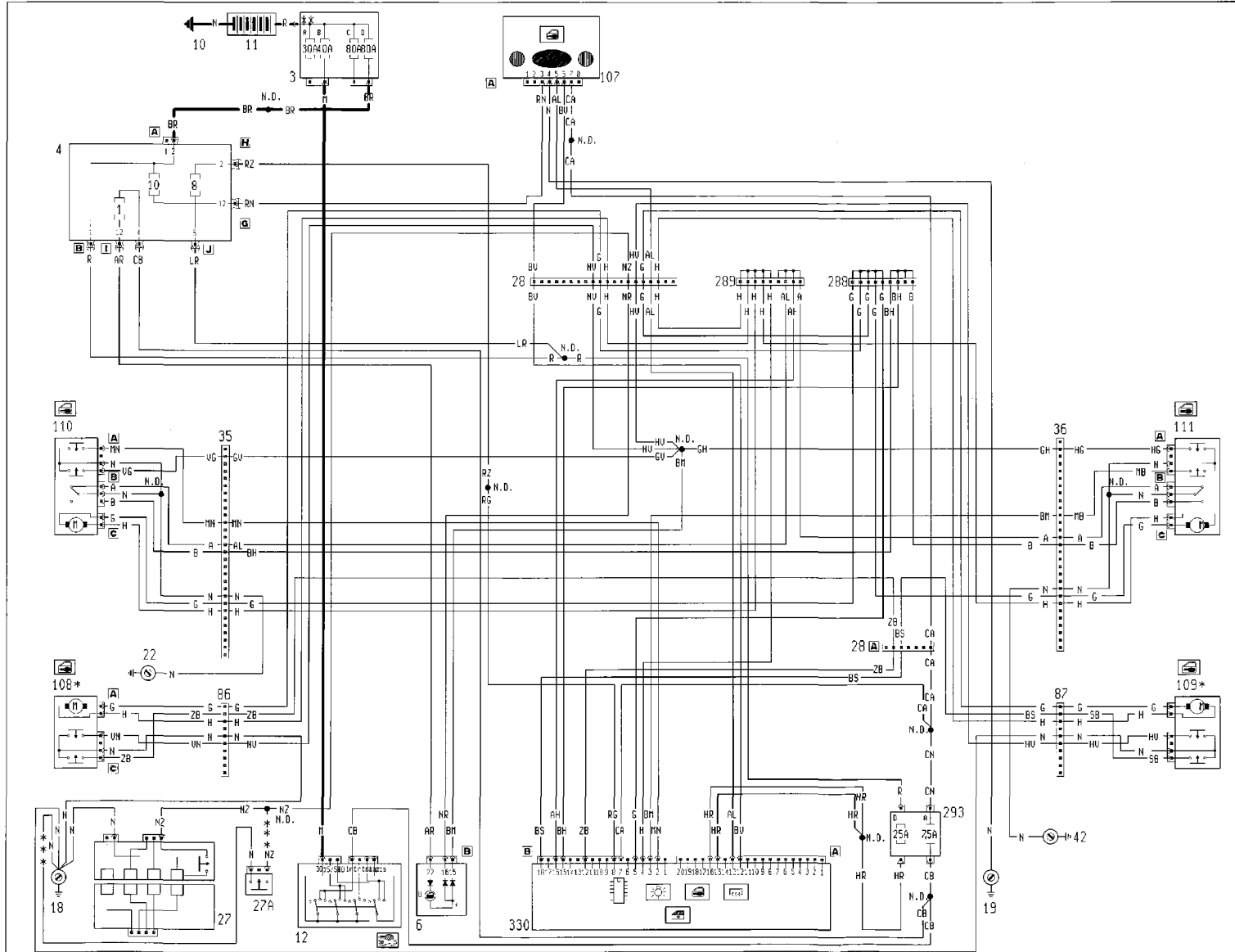
\*\* Variant connection for versions with air conditioning  
\*\*\* Variant connection for version with automatic transmission

The cables in the wiring diagram are marked

P4A18801

Version without alarm: ELX - HSX - HGT

Central door locking and car doors not shut warning system - (See key at end of wiring diagrams)

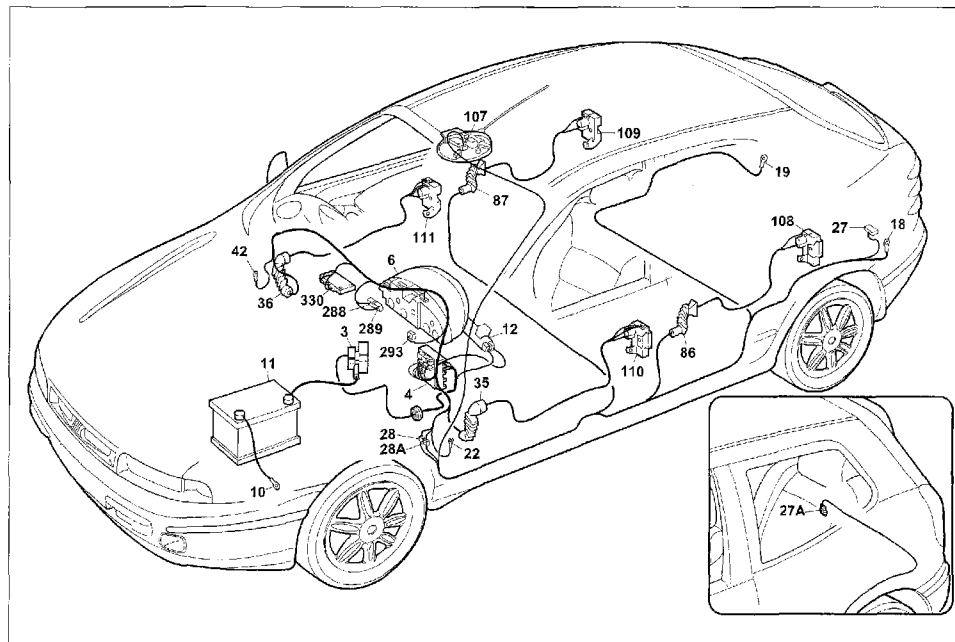


\* Non existent for the Bravo version

\*\* 60A fuse for TD versions

\*\*\* Variant connections for the Bravo version

55.



P4A19101

Version without alarm: ELX - HSX - HGT

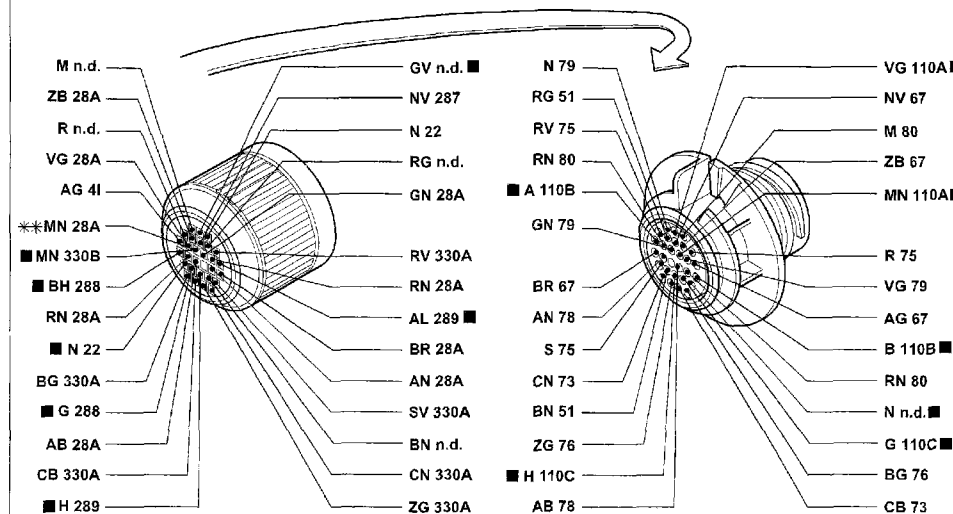
Central door locking and car doors not shut warning system

Components key

- |  |   |
|--|---|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit<br/>6 Instrument panel:<br/>U Doors ajar warning light<br/>10 Earth for battery on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>18 Left rear earth<br/>19 Right rear earth<br/>22 Left dashboard earth<br/>27 Contact board for rear connections with luggage compartment light switch<br/>27A Button for luggage compartment light, switching on alarm and signalling boot lid open<br/>28 Dashboard/longitudinal cables connection<br/>28A Dashboard/longitudinal cables connection<br/>35 Dashboard/left front door cables connection<br/>36 Dashboard/right front door cables connection<br/>42 Right dashboard earth<br/>86 Longitudinal/left rear door cables connection<br/>87 Longitudinal/right rear door cables connection<br/>107A Central locking remote control receiver</p> | <p>108 Left rear central locking/alarm switch<br/>109 Right rear central locking/alarm on switch<br/>110 Left front central locking/alarm on switch<br/>111 Right front central locking/alarm on switch<br/>288 Short circuit connection<br/>289 Short circuit connection<br/>293 Fuse carrier base on dashboard cable<br/>A 7.5A fuse protecting switch panel light; Radio phone; Radio; Electric mirrors<br/>D 25A fuse protecting A.B.I. control unit; Central locking control unit<br/>330 A.B.I. control unit</p> <p>N.D. Ultrasound welding taped in cable loom</p> |
|--|---|

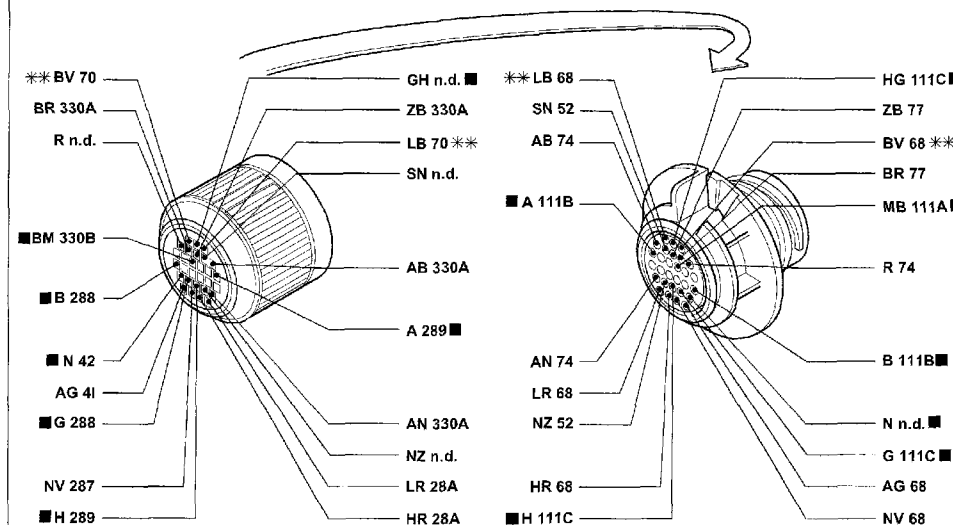
4A1911

35 Dashboard/left front door cables connection



\*\* Variant connection for version with automatic transmission

36 Connection for dashboard cables/right side door



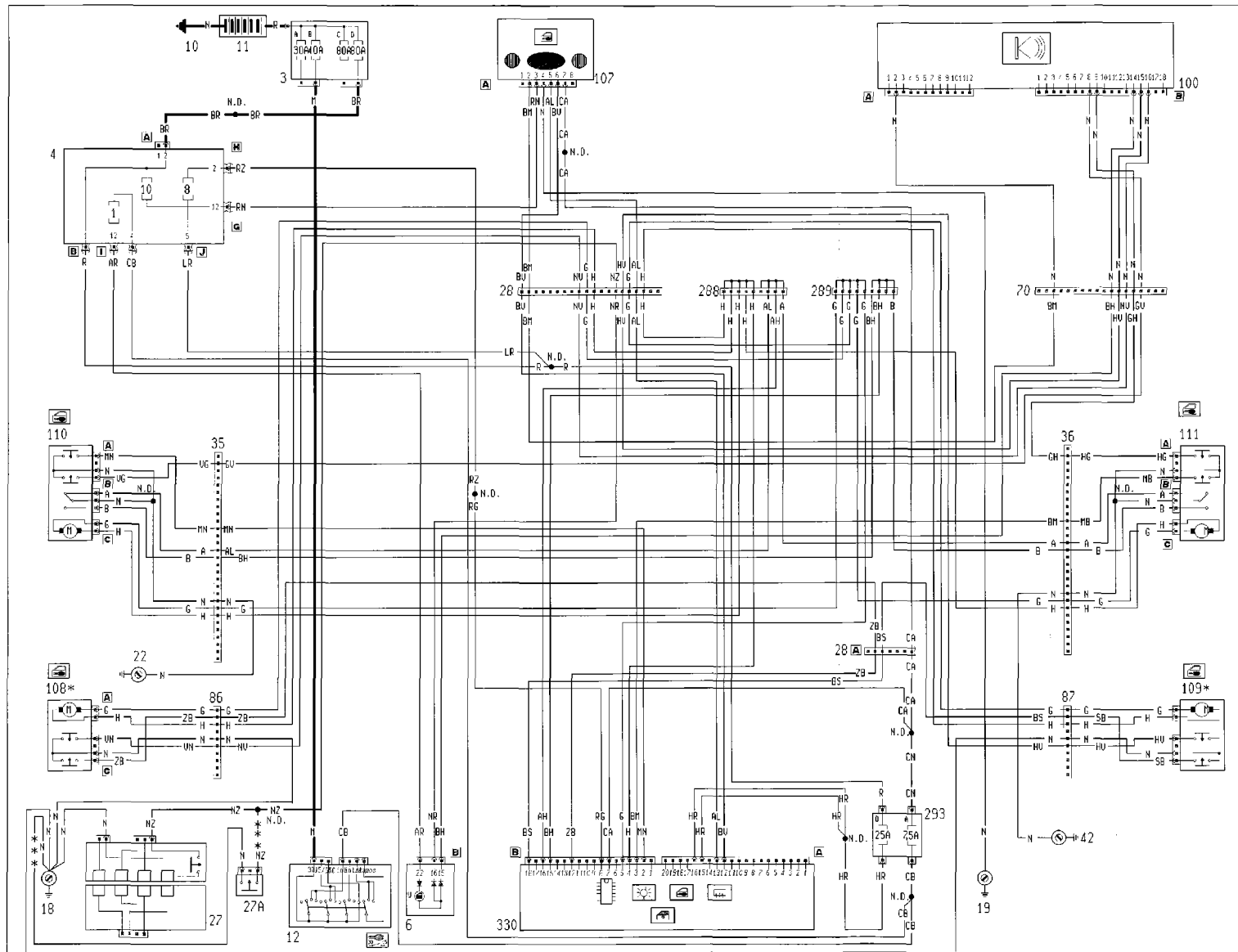
\*\* Variant connection for versions with air conditioning

The cables in the wiring diagram are marked

P4A19201

4A1921

Version with alarm: ELX - HSX - HGT  
Central door locking and car doors not shut warning system - (See key at end of wiring diagrams)

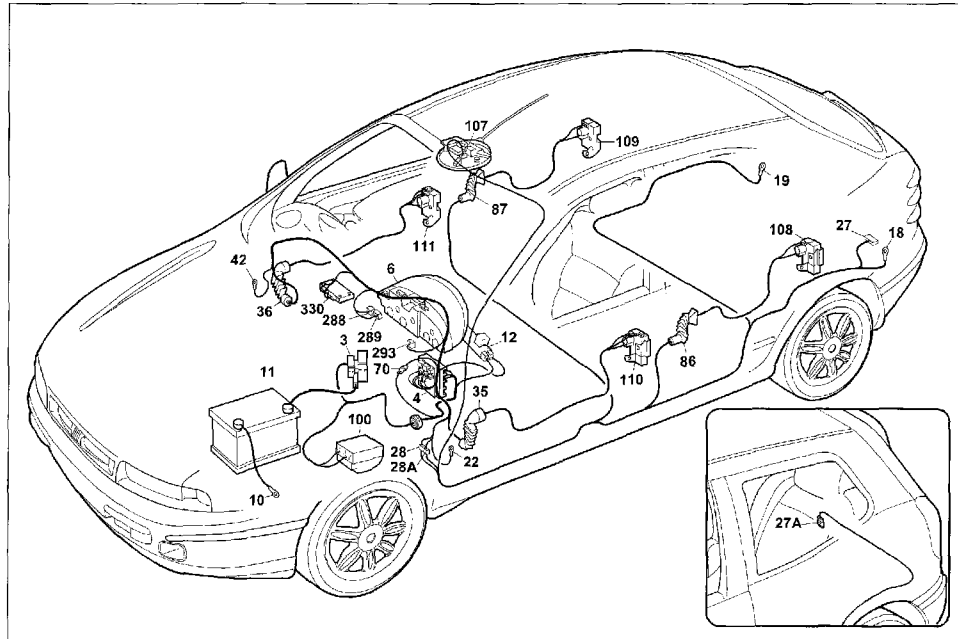


\* Non existent for the Bravo version

\*\* 60A fuse for TD versions

\*\*\* Variant connections for the Bravo version

55.



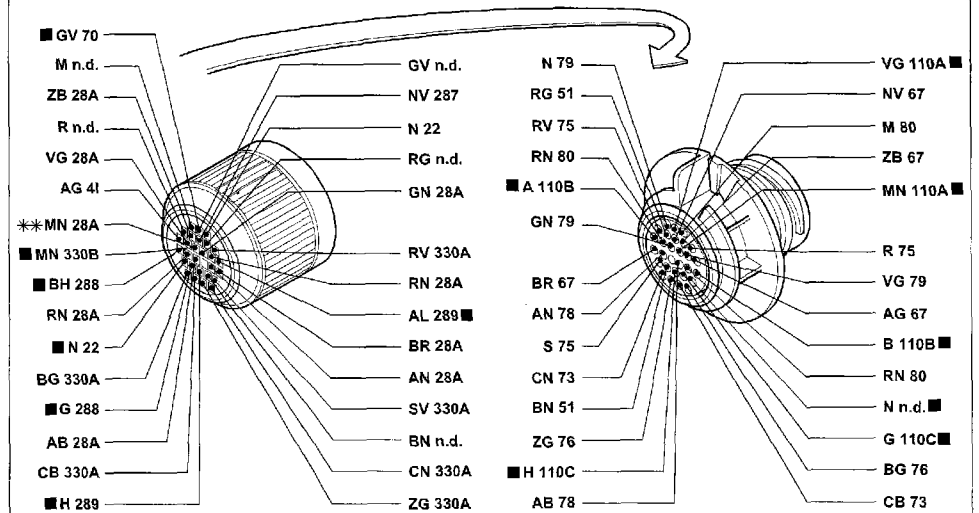
P4A196I01

**Version with alarm: ELX - HSX - HGT**  
**Central locking and signalling doors open**  
**Components key**

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit
- 6 Instrument panel:
  - U Doors ajar warning light
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 18 Left rear earth
- 19 Right rear earth
- 22 Left dashboard earth
- 27 Contact board for rear connections with luggage compartment light switch
- 27A Button for luggage compartment light, switching on alarm and signalling boot lid open
- 28 Dashboard/longitudinal cables connection
- 28A Connection for longitudinal dashboard cables
- 35 Dashboard/left front door cables connection
- 36 Dashboard/right front door cables connection
- 42 Right dashboard earth
- 70 Dashboard/front cables connection
- 86 Longitudinal/left rear door cables connection
- 87 Longitudinal/right rear door cables connection
- 100 Alarm device electronic control unit
- 107A Central locking remote control receiver
- 108 Left rear central locking/alarm switch
- 109 Right rear central locking/alarm on switch
- 110 Left front central locking/alarm on switch
- 111 Right front central locking/alarm on switch
- 288 Short circuit connection
- 289 Short circuit connection
- 293 Fuse carrier base on dashboard cable
  - A 7.5A fuse protecting switch panel light; Radio phone; Radio; Electric mirrors
  - D 25A fuse protecting A.B.I. control unit; Central locking control unit
- 330 A.B.I. control unit
- N.D. Ultrasound welding taped in cable loom

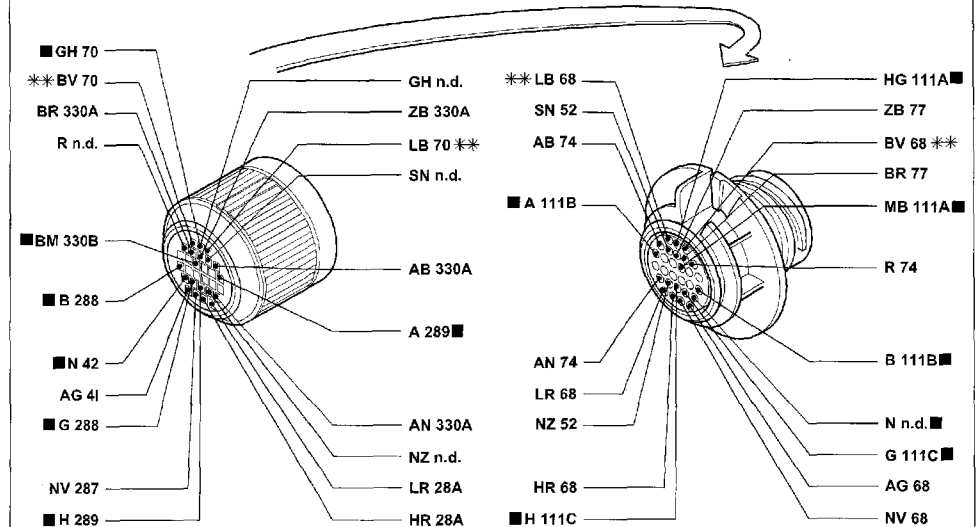
4A195I

**35** Dashboard/left front door cables connection



\*\* Variant connection for version with automatic transmission

**36** Connection for dashboard cables/right side door



\*\* Variant connection for version with automatic transmission

The cables in the wiring diagram are marked

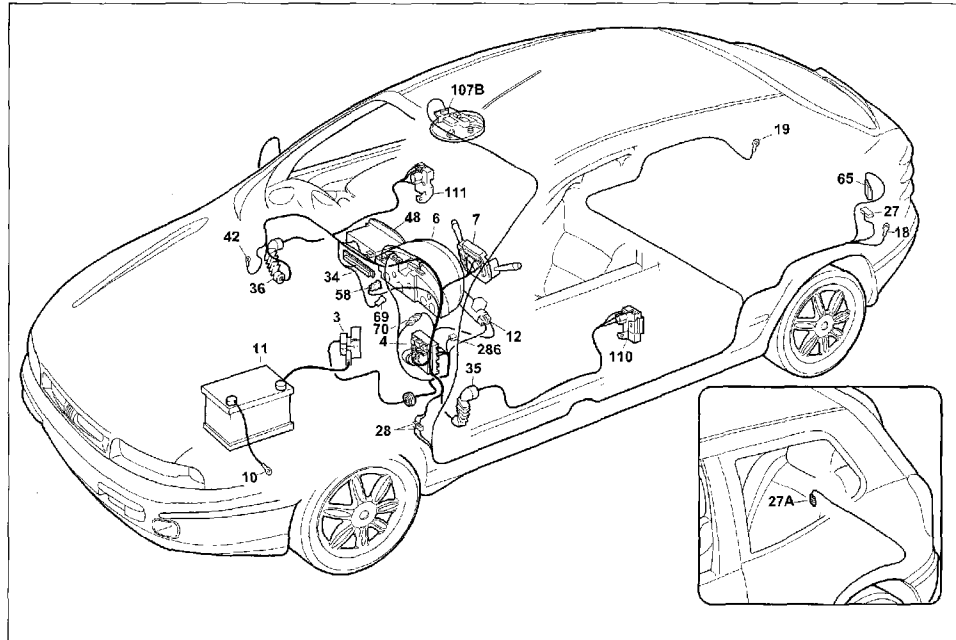
P4A196I01

4A195I





55.



Trim level: SX - GT

Vehicle interior lights - Ideogram lights

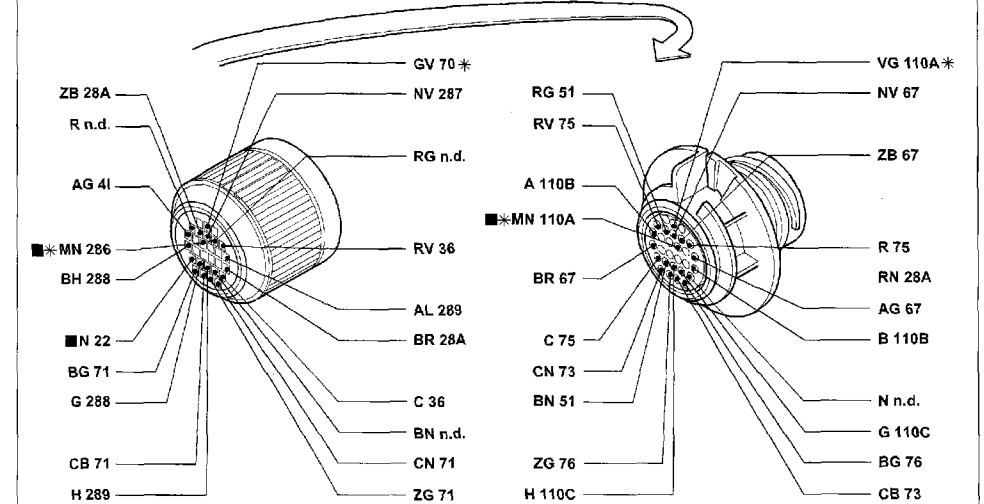
Components key

- |  |  |
|--|--|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit</p> <p>6 Instrument panel:<br/>F Instrument panel ideogram lights<br/>Y Electronic module</p> <p>7 Steering column switch unit:<br/>D Flasher control<br/>E Switch for dipped/main beam headlamps<br/>F Switch for side lights</p> <p>10 Earth for battery on bodyshell</p> <p>11 Battery</p> <p>12 Ignition switch</p> <p>18 Left rear earth</p> <p>27 Contact board for rear connections with luggage compartment light switch incorporated</p> <p>27A Button for luggage compartment light, switching on alarm and signalling boot lid open</p> <p>28 Connection between dashboard/longitudinal cables</p> <p>34 Switch control panel:<br/>A Anti-theft warning light on<br/>B Rear fog lamps switch<br/>D Rear fog lamps warning light<br/>E Heated rear windscreen switch</p> | <p>F Heated rear windscreen warning light<br/>G Ideogram light for switch control panel<br/>H Fog lights warning light<br/>I Fog lights switch<br/>L Outside temperature control switch</p> <p>35 Dashboard/left front door cables connection<br/>36 Dashboard/right front door cables connection<br/>42 Right dashboard earth<br/>48 Radio receiver with clock<br/>58 Light dimmer<br/>65 Luggage compartment light bulb/anti-theft device on<br/>69 Cigar lighter<br/>70 Dashboard/front cables connection<br/>107B Courtesy lights<br/>110 Left front central locking/alarm on switch<br/>111 Right front central locking/alarm on switch<br/>286 Short circuit connection</p> <p>N.D. Ultrasound welding taped in cable loom</p> |
|--|--|

P4A199101

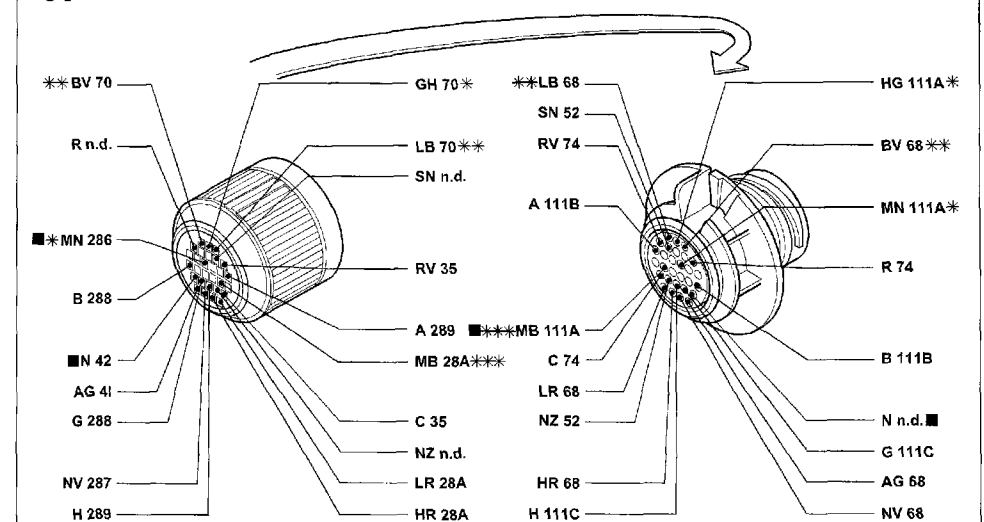
4A1991

35 Dashboard/left front door cables connection



\* Variant connection for versions with alarm

36 Connection for dashboard cables/right side door



\* Variant connection for versions with alarm  
\*\* Variant connection for versions with air conditioning  
\*\*\* Variant connection for version with automatic transmission

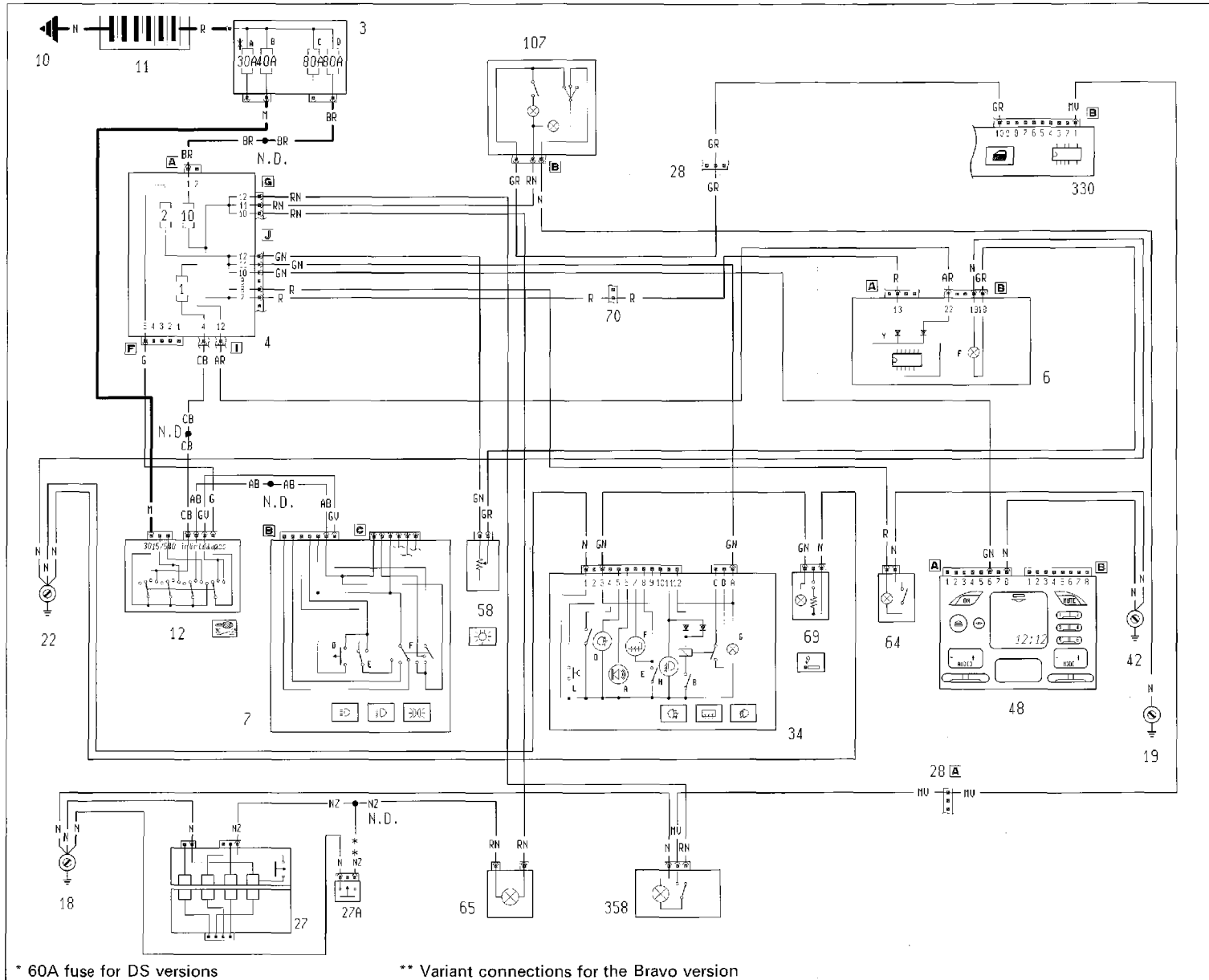
P4A200101

The cables in the wiring diagram are marked

4A2001

Trim level: ELX - HSX - HGT

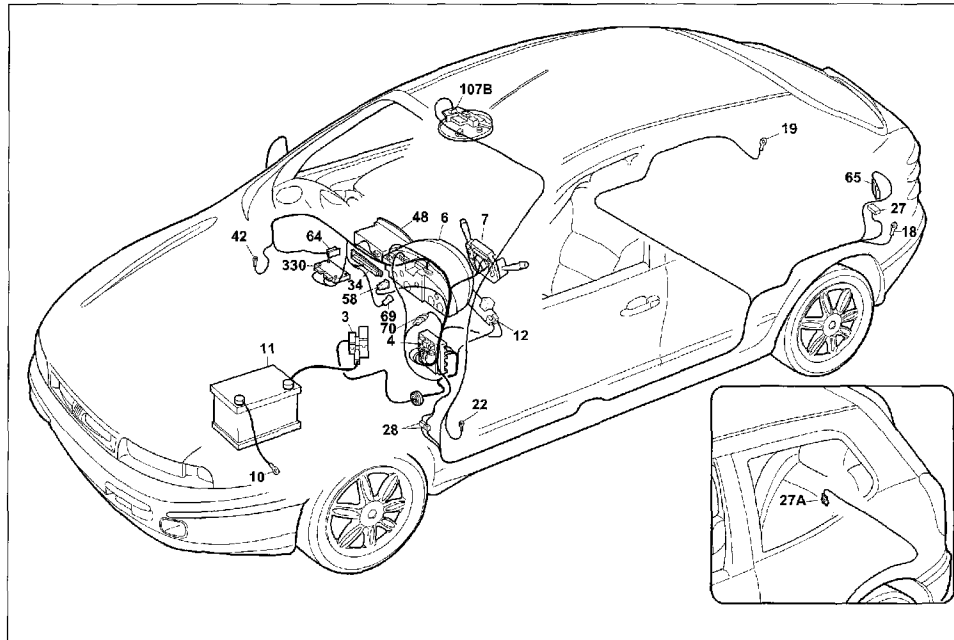
Vehicle interior lights - Ideogram lights - (See key at end of wiring diagrams)



\* 60A fuse for DS versions

\*\* Variant connections for the Bravo version

55.



P4A203101

Trim level: ELX - HSX - HGT

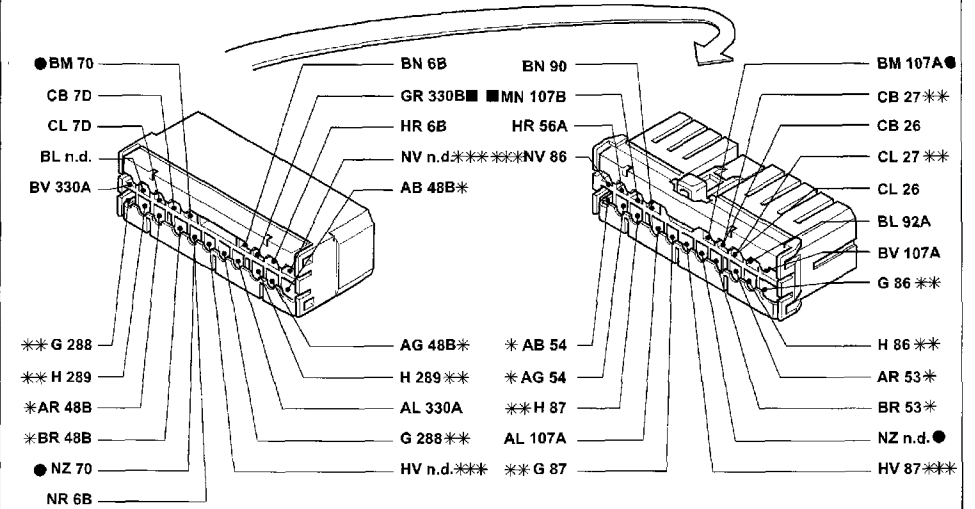
Vehicle interior lights - Ideogram lights

Components key

- |  |  |
|--|--|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit</p> <p>6 Instrument panel:<br/>F Instrument panel ideogram lights<br/>Y Electronic module</p> <p>7 Steering column switch unit:<br/>D Flasher control<br/>E Switch for dipped/main beam headlamps<br/>F Switch for side lights</p> <p>10 Earth for battery on bodyshell</p> <p>11 Battery</p> <p>12 Ignition switch</p> <p>18 Left rear earth</p> <p>19 Right rear earth</p> <p>22 Left dashboard earth</p> <p>27 Contact board for rear connections with luggage compartment light incorporated</p> <p>27A Button for luggage compartment light, switching on alarm and signalling boot lid open</p> <p>28 Dashboard/longitudinal cables connection</p> <p>28A Dashboard/longitudinal cables connection</p> | <p>34 Switch control panel:<br/>A Anti-theft warning light on<br/>B Rear fog lamps switch<br/>D Rear fog lamps warning light<br/>E Heated rear windscreen switch<br/>F Heated rear windscreen warning light<br/>G Switch control unit ideogram light<br/>H Fog lights warning light<br/>I Fog lights switch<br/>L Outside temperature control switch</p> <p>42 Right dashboard earth</p> <p>48 Radio receiver with clock</p> <p>58 Light dimmer</p> <p>64 Glove compartment light bulb with switch incorporated</p> <p>65 Luggage compartment light bulb/anti-theft device on</p> <p>69 Cigar lighter</p> <p>70 Dashboard/longitudinal cables connection</p> <p>107B Courtesy lights</p> <p>330 A.B.I. control unit</p> <p>35B Rear courtesy light</p> |
|--|--|

N.D. Ultrasound welding taped in cable loom

28 Connection between dashboard/longitudinal cables



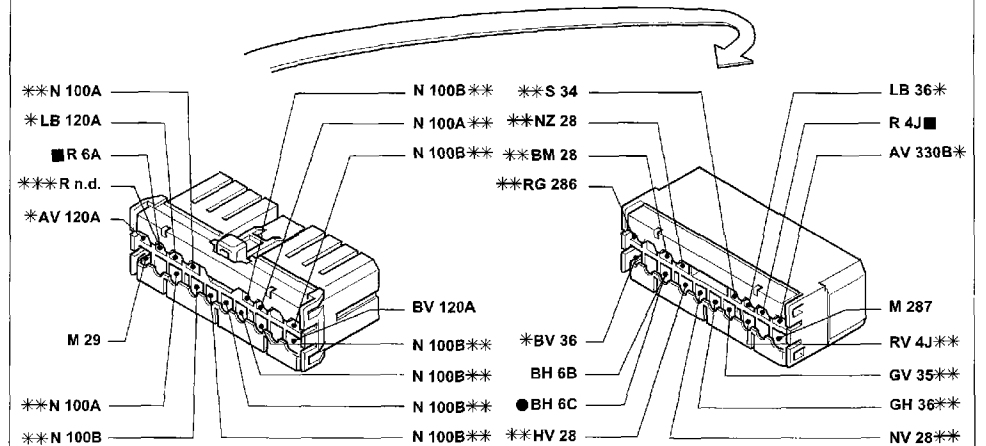
\* Variant connection for versions with top of the range radio

\*\* Variant connection for Brava versions

\*\*\* Variant connection for Brava versions with alarm

● Variant connection for versions with alarm

70 Dashboard/front cables connection



\* Variant connection for versions with air conditioning

\*\* Variant connection for versions with alarm

\*\*\* Variant connection for 1910 JTD version

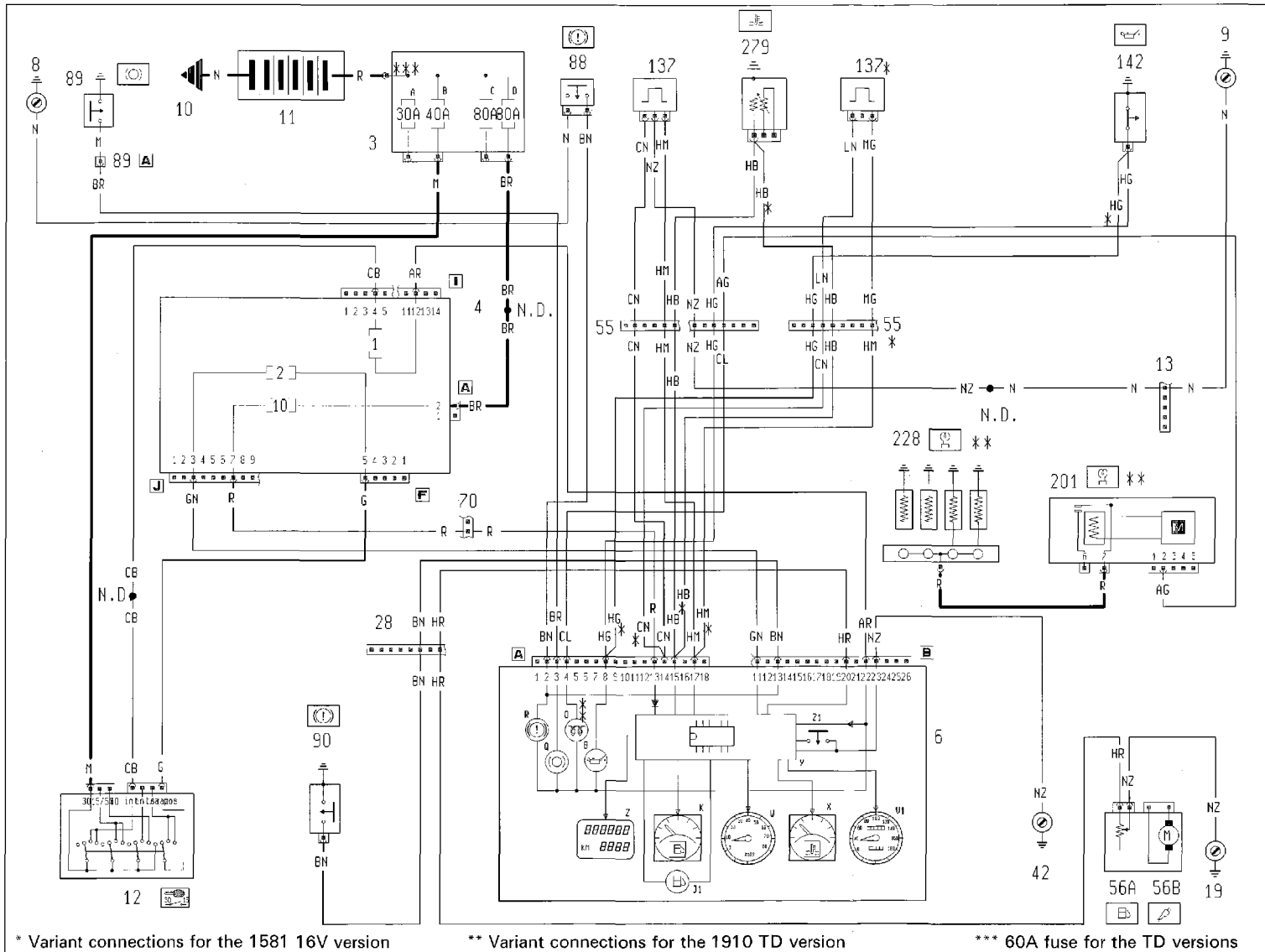
● Variant connection for version with automatic transmission

The cables in the wiring diagram are marked

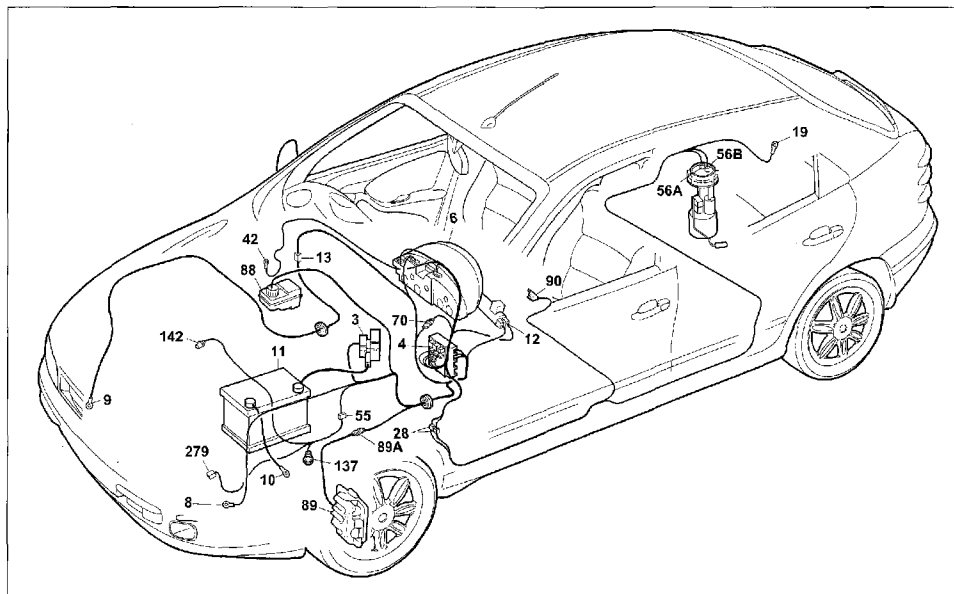
P4A204101

Trim level: SX - GT

Fuel level gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Milometer/trip meter display and zeroing button - Water temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light - (See key at end of wiring diagrams)



55.



P4A20701

Trim level: SX - GT

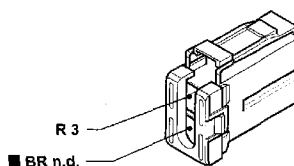
Fuel level gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Milometer/trip meter display and zeroing button - Water temperature gauge- Insufficient engine oil pressure warning light - Front brake pad wear warning light

Components key

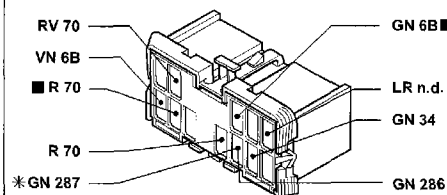
- |   |   |
|---|---|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit</p> <p>6 Instrument panel:<br/>B Insufficient engine oil pressure warning light<br/>J1 Warning light signalling fuel reserve<br/>K Fuel level gauge<br/>O Heater plugs warning light<br/>Q Front brake pad wear warning light<br/>R Handbrake/insufficient brake fluid level warning light<br/>V1 Speedometer<br/>X Engine coolant temperature gauge<br/>W Rev counter<br/>Y Electronic module</p> <p>Z Milometer/trip meter<br/>Z1 Trip meter zeroing button</p> <p>8 Left front earth<br/>9 Right front earth<br/>10 Earth for battery on bodyshell<br/>11 Battery<br/>12 Ignition switch</p> | <p>13 Front right/left cables connection<br/>19 Right rear earth<br/>28 Dashboard/longitudinal cables connection<br/>42 Right dashboard earth<br/>55 Connection between front/engine pre-wiring cables<br/>56 Fuel level gauge<br/>A Fuel level sensor<br/>B Electric fuel pump<br/>70 Dashboard/front cables connection<br/>88 Insufficient brake fluid level sensor<br/>89 Left brake pad wear sensor<br/>89A Left brake pad wear sensor cables connection<br/>90 Switch signalling handbrake applied<br/>137 Vehicle speed sensor<br/>142 Switch signalling insufficient engine oil pressure<br/>201 Heater plugs control unit<br/>228 Heater plugs<br/>279 Twin engine coolant temperature sender unit</p> <p>N.D. Ultrasound welding taped in cable loom</p> |
|---|---|

4A2071

4A Junction unit

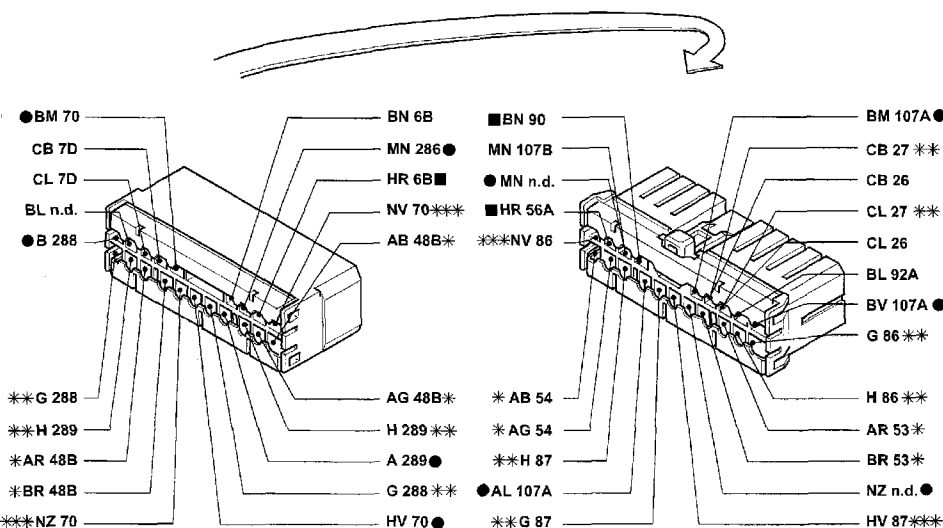


4J Junction unit



\* Variant connection for versions with radio phone

28 Dashboard/longitudinal cables connection. Versions without A.B.I. control unit.



- Variant connection for versions with alarm
- \* Variant connection for versions with top of the range radio
- \*\* Variant connection for Brava versions
- \*\*\* Variant connection for Brava versions with alarm

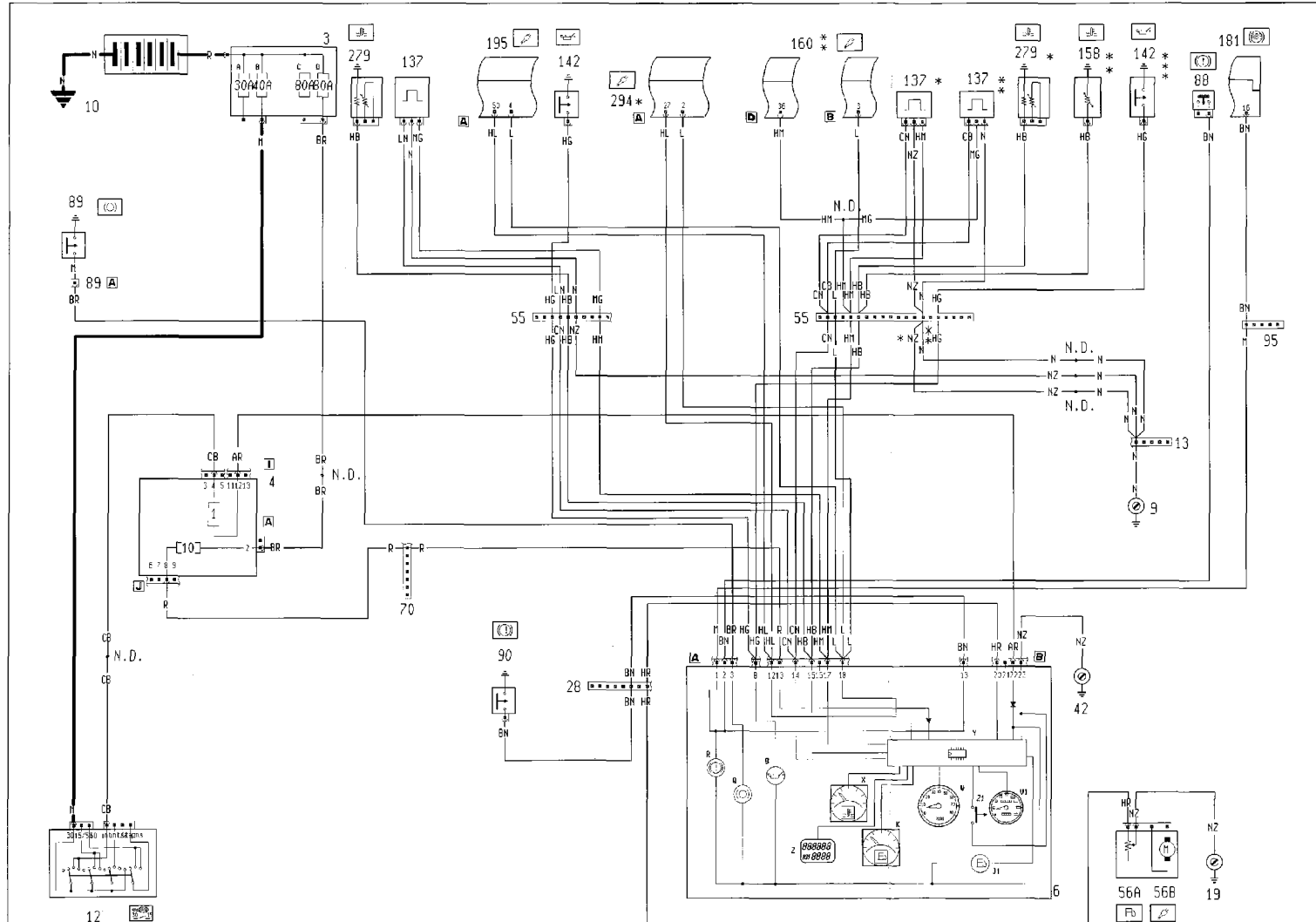
The cables in the wiring diagram are marked

P4A208101

4A2081

Trim level: ELX - HSX

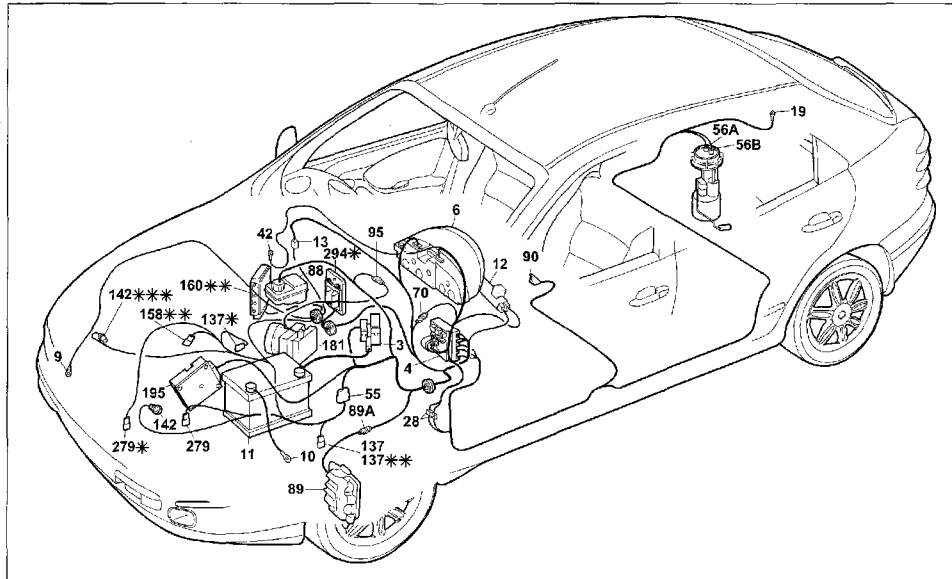
Fuel level gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Milometer/trip meter display and zeroing button - Water temperature gauge- Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter - (See key at end of wiring diagrams)



\* Variant connections for the 1242 16V version  
\*\* Variant connections for the 1747 16V version

\*\*\* Only exits for the 1242 16v and 1747 16v versions  
\*\*\*\* 60A fuse for TD versions

## 55.



P4A21101

Trim level: ELX - HSX

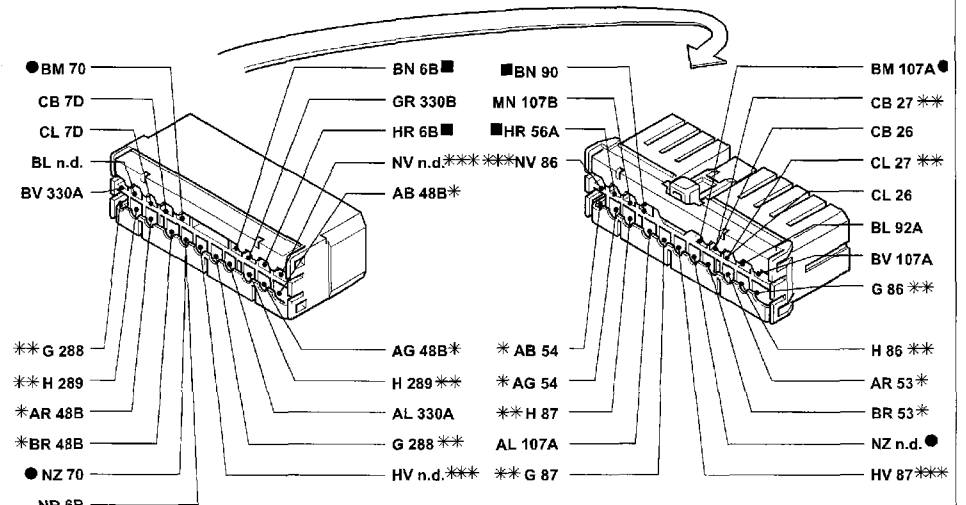
Fuel level gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Milometer/trip meter display and zeroing button - Water temperature gauge- Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter

### Components key

- |   |  |
|---|--|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit</p> <p>6 Instrument panel:<br/>B Insufficient engine oil pressure warning light<br/>J1 Warning light signalling fuel reserve<br/>K Fuel level gauge<br/>Q Front brake pad wear warning light<br/>R Handbrake/insufficient brake fluid level warning light<br/>V1 Speedometer<br/>W Rev counter<br/>X Engine coolant temperature gauge<br/>Y Electronic module<br/>Z Milometer/trip meter<br/>Z1 Trip meter zeroing button</p> <p>9 Right front earth<br/>10 Earth for battery on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>13 Front right/left cables connection<br/>19 Right rear earth<br/>28 Dashboard/longitudinal cables connection<br/>42 Right dashboard earth</p> | <p>55 Connection between front/engine pre-wiring cables<br/>56 Fuel level gauge<br/>A Fuel level sensor<br/>B Electric fuel pump</p> <p>70 Dashboard/front cables connection<br/>88 Insufficient brake fluid level sensor<br/>89 Left brake pad wear sensor<br/>89A Left brake pad wear sensor cables connection<br/>90 Switch signalling handbrake applied<br/>95 Front/anti-lock brakes cables connection A.B.S.<br/>137 Vehicle speed sensor<br/>142 Switch signalling insufficient engine oil pressure<br/>158 Coolant temperature sensor for instrument<br/>160 Injection/ignition electronic control unit (1747)<br/>181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)<br/>195 Injection/ignition electronic control unit (1581)<br/>279 Twin engine coolant temperature sender unit<br/>294 Injection/ignition electronic control unit 1242</p> <p>N.D. Ultrasound welding taped in cable loom</p> |
|---|--|

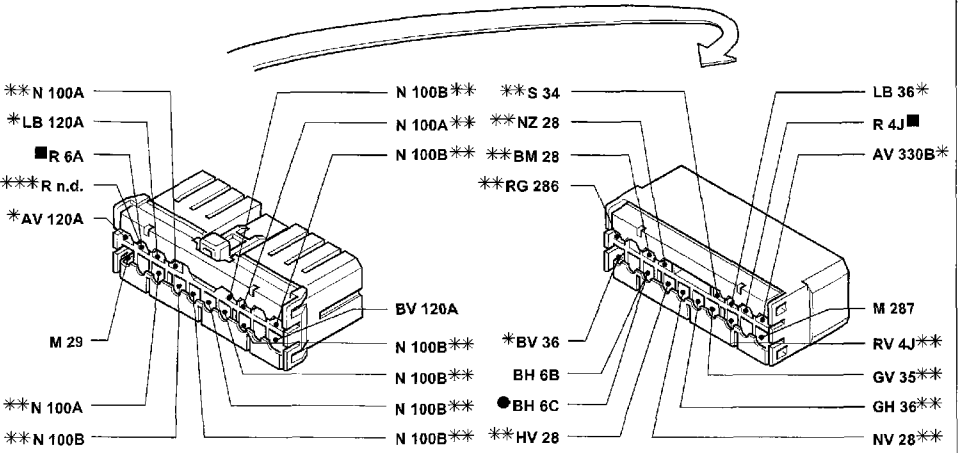
4A2111

### 28 Connection between dashboard/longitudinal cables.



- \* Variant connection for versions with top of the range radio
- \*\* Variant connection for Brava versions
- \*\*\* Variant connection for Brava versions with alarm
- Variant connection for versions with alarm

### 70 Dashboard/front cables connection



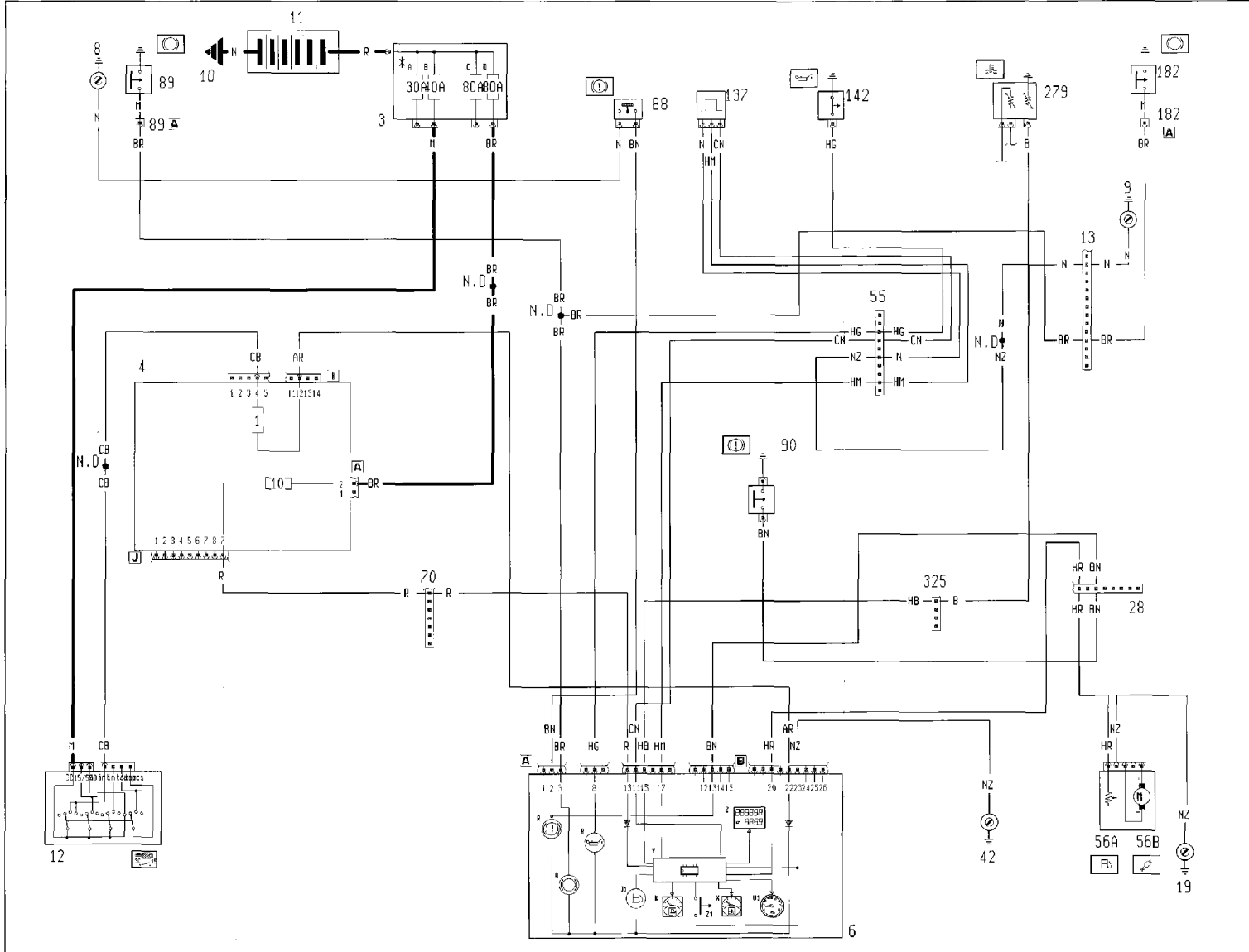
- \* Variant connection for versions with air conditioning
- \*\* Variant connection for versions with alarm
- \*\*\* Variant connection for 1910 JTD versions
- Variant connection for version with automatic transmission

The cables in the wiring diagram are marked

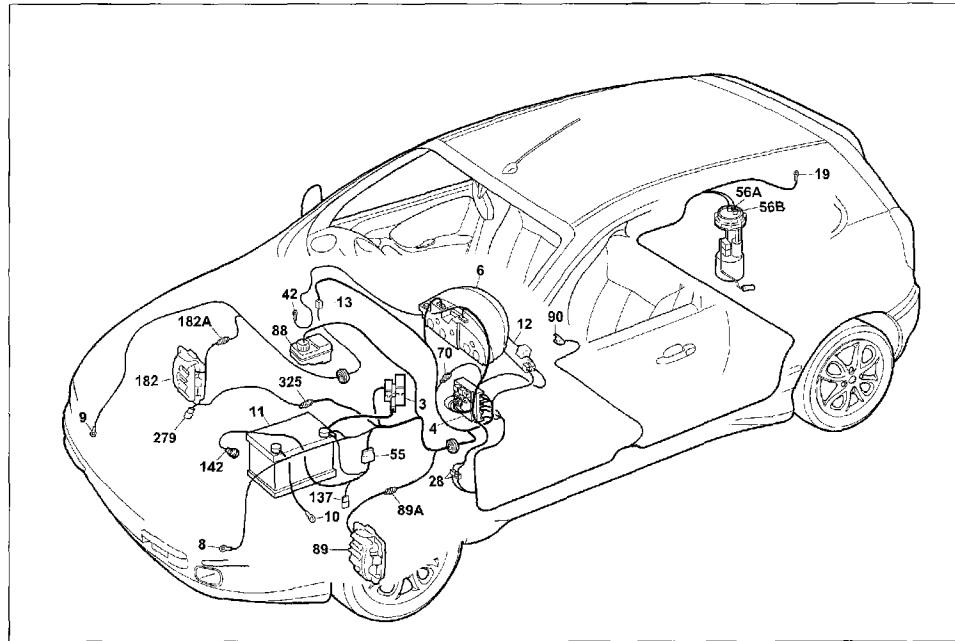
P4A21201



Trim level: HGT  
Fuel level gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Water temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter - (See key at end of wiring diagrams)



55.



P4A21801

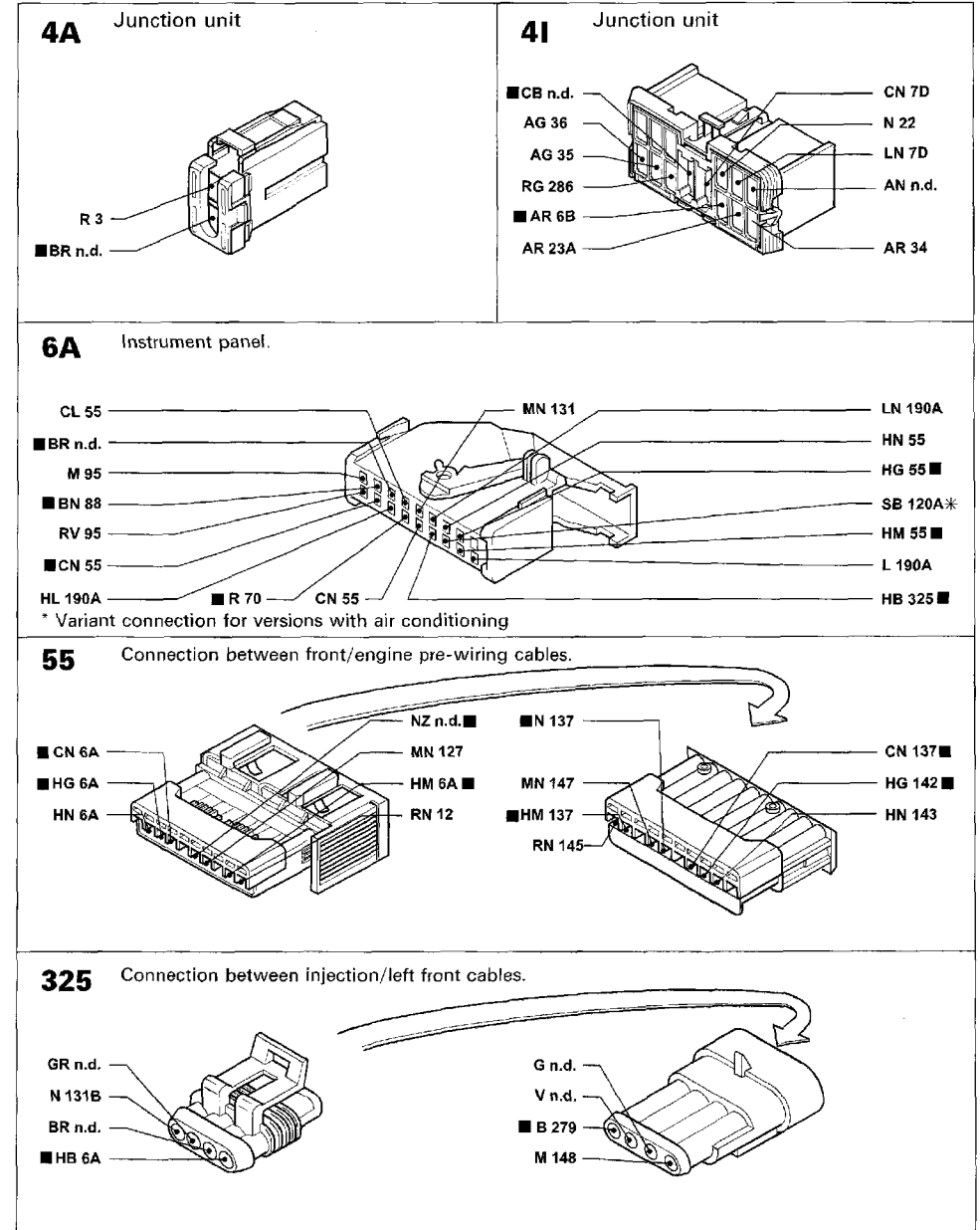
Trim level: HGT

Fuel level gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Water temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter

Components key

- |  |  |
|--|--|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit</p> <p>6 Instrument panel:<br/>B Insufficient engine oil pressure warning light<br/>J1 Warning light signalling fuel reserve<br/>K Fuel level gauge<br/>Q Front brake pad wear warning light<br/>R Handbrake/insufficient brake fluid level warning light</p> <p>V1 Speedometer<br/>X Engine coolant temperature gauge<br/>Y Electronic module<br/>Z Milometer/trip meter display<br/>Z1 Trip meter zeroing button</p> <p>8 Left front earth<br/>9 Right front earth<br/>10 Earth for battery on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>13 Front right/left cables connection</p> | <p>19 Right rear earth<br/>28 Dashboard/longitudinal cables connection<br/>42 Right dashboard earth<br/>55 Connection between front/engine pre-wiring cables<br/>56 Fuel level gauge<br/>A Fuel level sensor<br/>B Electric fuel pump<br/>70 Dashboard/front cables connection<br/>88 Insufficient brake fluid level sensor<br/>89 Left brake pad wear sensor<br/>89A Left brake pad wear sensor cables connection<br/>90 Switch signalling handbrake applied<br/>137 Vehicle speed sensor<br/>142 Switch signalling insufficient engine oil pressure</p> <p>182 Right brake pad wear sensor<br/>182A Right brake pad wear sensor cables connection</p> <p>279 Twin engine coolant temperature sender unit</p> <p>325 Connection between injection/left front cables<br/>N.D. Ultrasound welding taped in cable loom</p> |
|--|--|

4A2151



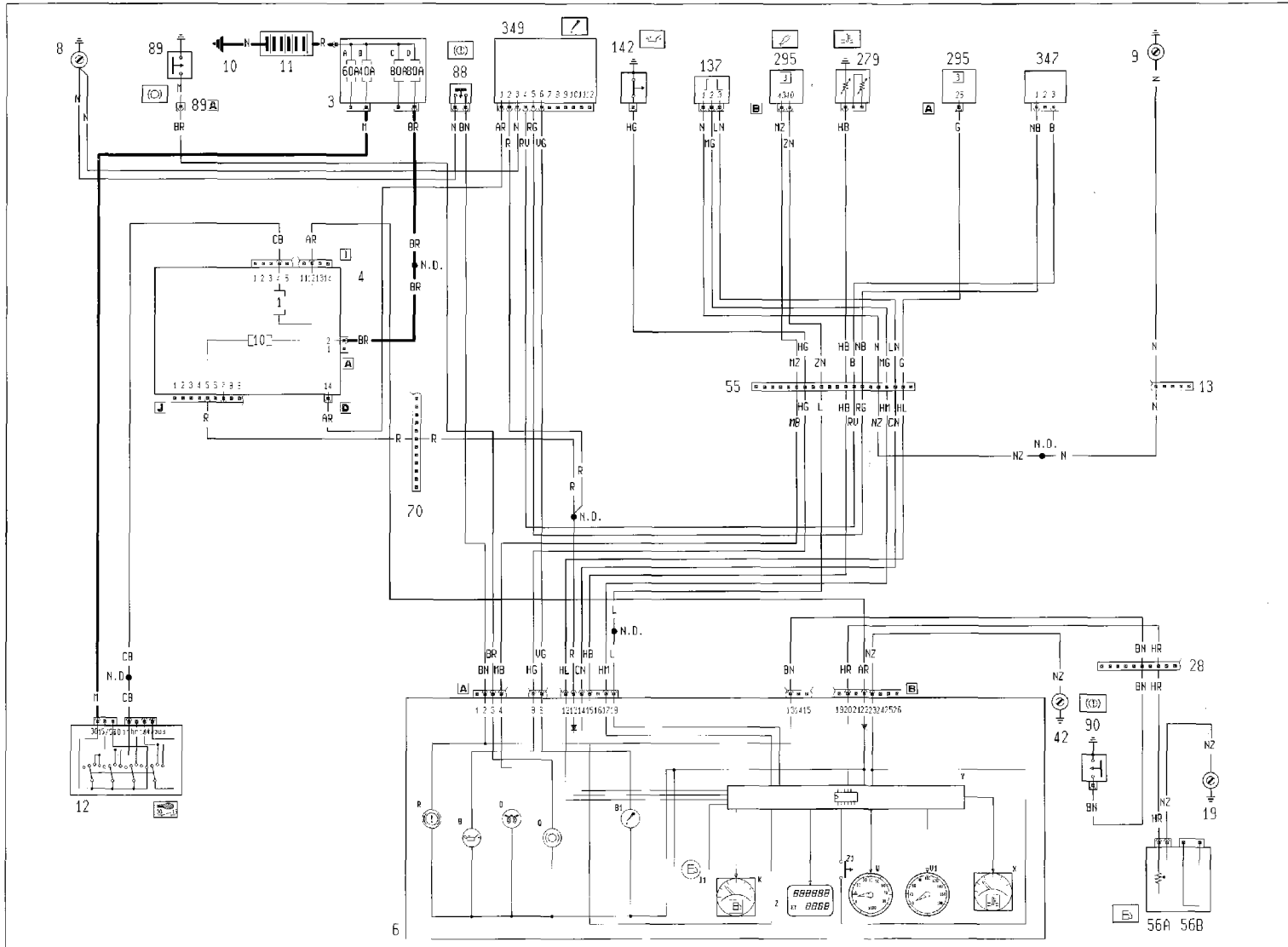
The cables in the wiring diagram are marked

P4A21801

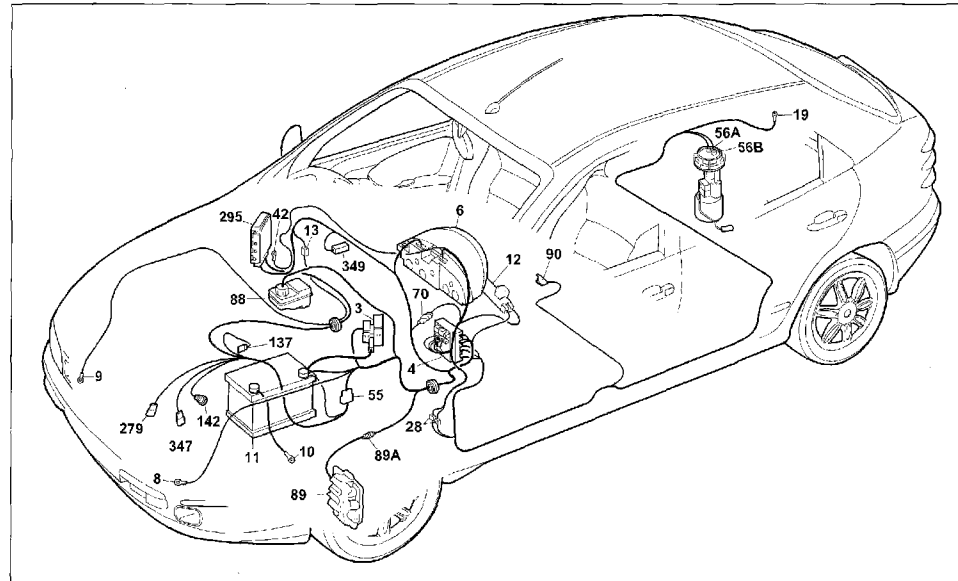
4A2161

Version: 1910 JTD

Fuel level gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Milometer/trip meter display and zeroing button - Water temperature gauge - Insufficient engine oil pressure warning light - Insufficient engine oil level warning light - Heater plugs warning light - Front brake pad wear warning light - Rev counter - (See key at end of wiring diagrams)



55.



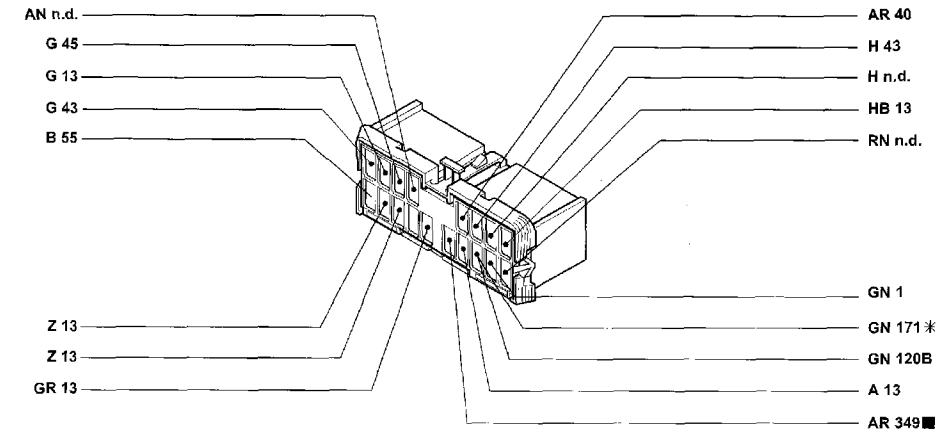
P4A219101

Fuel level gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Water temperature gauge- Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter

Components key

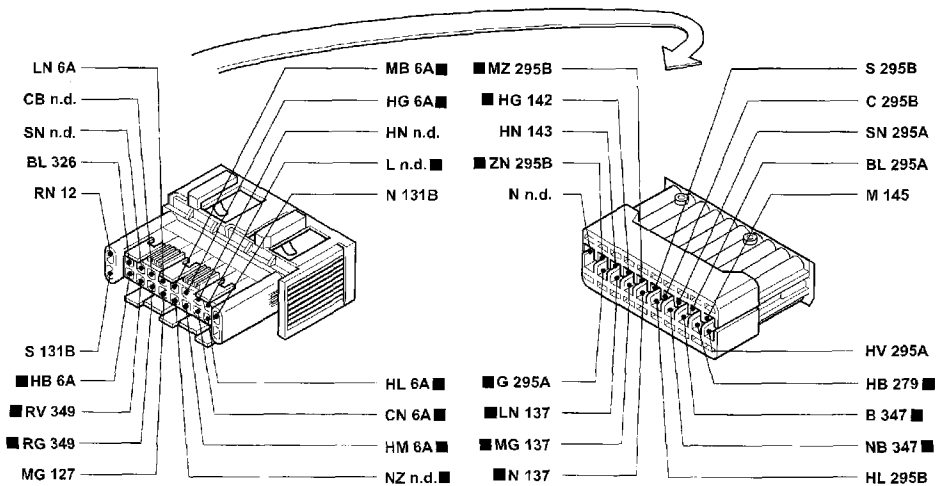
- |  |  |
|--|--|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit:</p> <p>6 Instrument panel:<br/>B Insufficient engine oil pressure warning light<br/>B1 Insufficient engine oil level warning light<br/>J1 Warning light signalling fuel reserve<br/>K Fuel level gauge<br/>O Heater plugs warning light<br/>Q Front brake pad wear warning light<br/>R Handbrake/insufficient brake fluid level warning light<br/>V1 Speedometer<br/>W Rev counter<br/>X Engine coolant temperature gauge<br/>Y Electronic module<br/>Z Milometer/trip meter display<br/>Z1 Trip meter zeroing button</p> <p>8 Left front earth<br/>9 Right front earth<br/>10 Earth for battery on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>13 Front right/left cables connection</p> | <p>19 Right rear earth<br/>28 Dashboard/longitudinal cables connection<br/>42 Right dashboard earth<br/>55 Connection between front/engine pre-wiring cables<br/>56 Fuel level gauge<br/>A Fuel level sensor<br/>B Electric fuel pump<br/>70 Dashboard/front cables connection<br/>88 Insufficient brake fluid level sensor<br/>89 Left brake pad wear sensor<br/>89A Left brake pad wear sensor cables connection<br/>90 Switch signalling handbrake applied<br/>137 Vehicle speed sensor<br/>142 Switch signalling insufficient engine oil pressure<br/>279 Twin engine coolant temperature sender unit<br/>295 Injection/ignition electronic control unit 1242<br/>347 Engine oil level sensor<br/>349 Engine oil level control unit</p> <p>N.D. Ultrasound welding taped in cable loom</p> |
|--|--|

4D Junction unit



\* Variant connection for versions with air conditioning

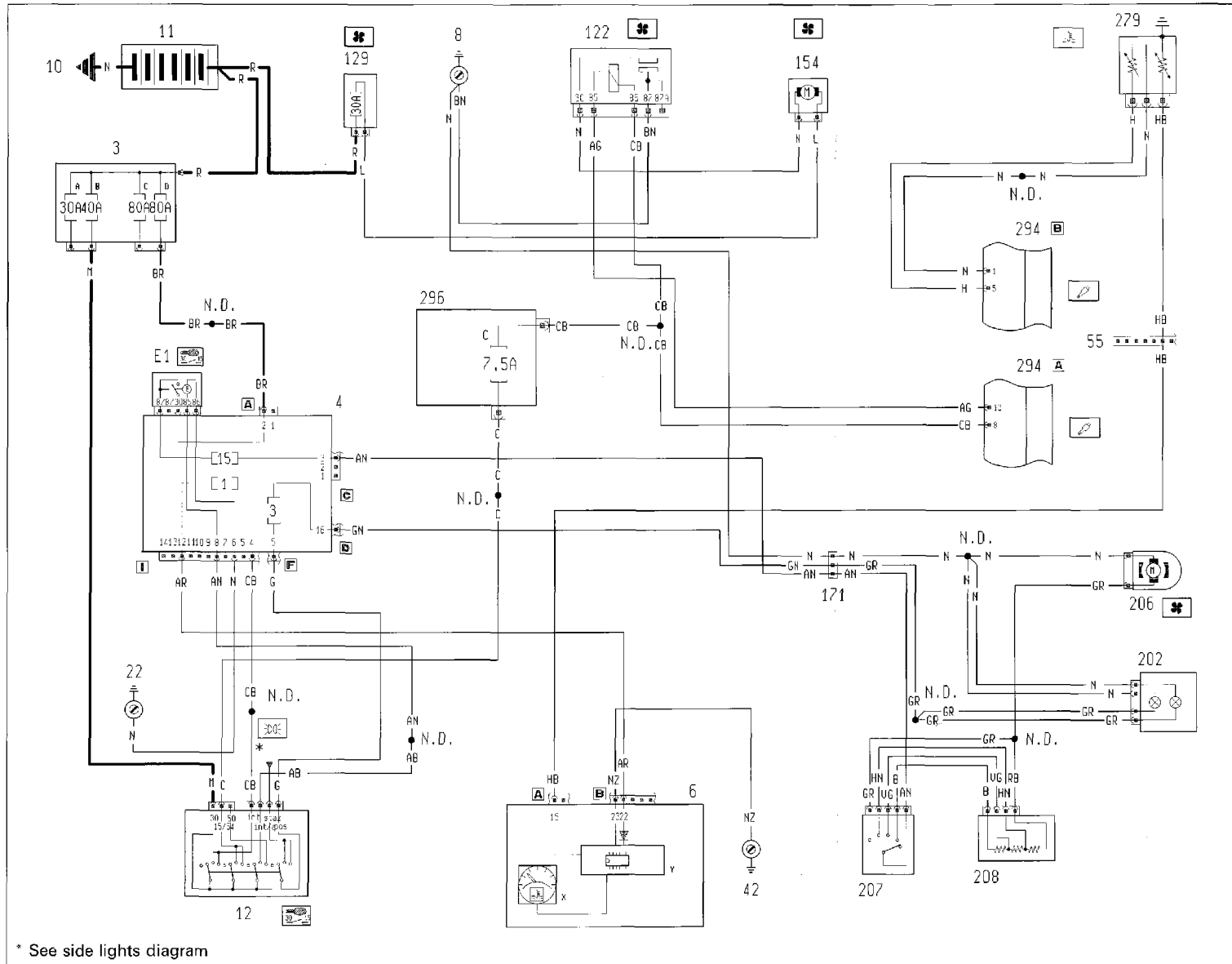
55 Connection between front/engine pre-wiring cables.



The cables in the wiring diagram are marked

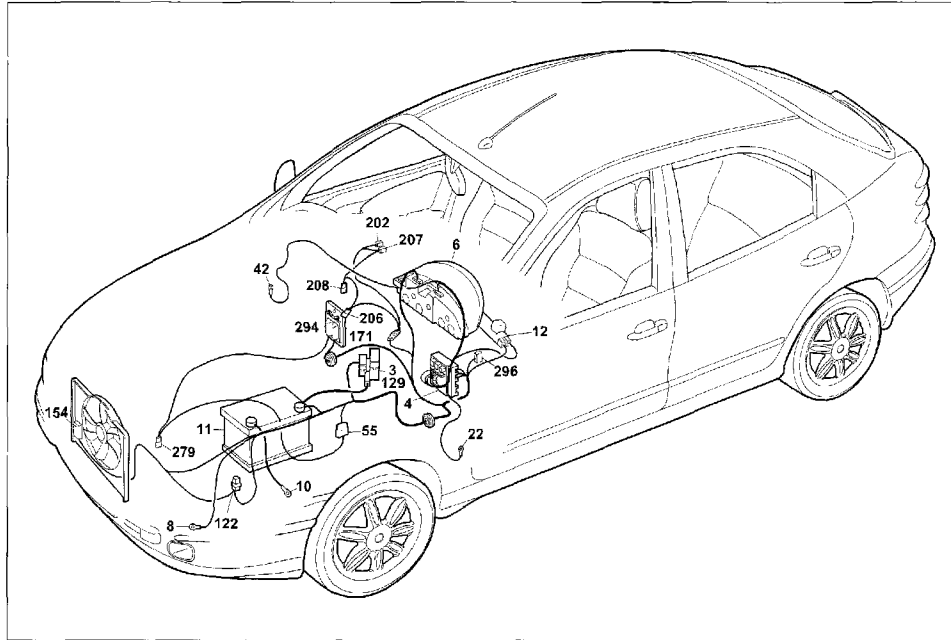
P4A220101

**Version without automatic air conditioning**  
**Engine cooling - Water temperature gauge - Car interior ventilation - (See key at end of wiring diagrams)**



\* See side lights diagram

55.



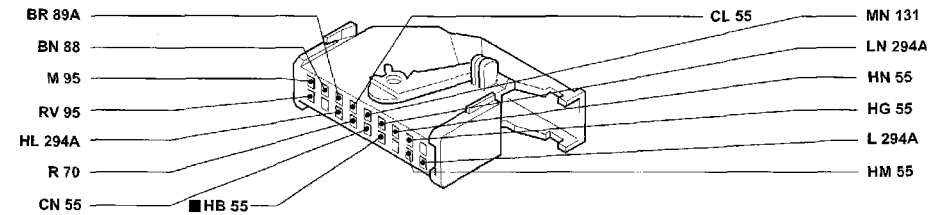
P4A22301

Version : without automatic air conditioning  
Engine cooling - Water temperature gauge - Car interior ventilation

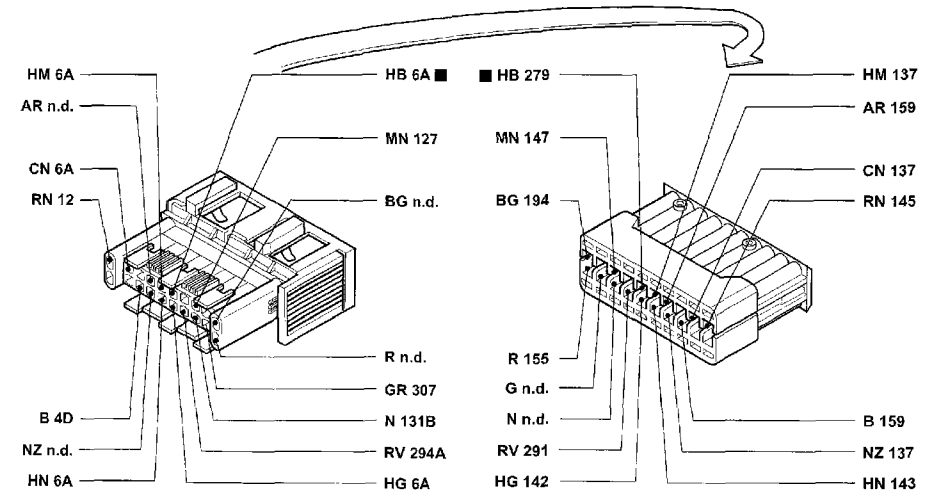
Components key

- |  |   |
|--|---|
| 3 Power fuse box:<br>A 30A protective fuse for injection system<br>(60A for TD versions)<br>B 40A protective fuse for ignition system<br>C 80A fuse protecting additional options<br>D 80A protective fuse for junction unit | 154 Engine cooling fan<br>171 Heater unit<br>202 Heater unit/air conditioning light bulbs<br>206 Heater/air conditioning fan<br>207 Heating/air conditioning system speed control switch<br>208 Limiting resistance for heating/air conditioning system<br>279 Twin engine coolant temperature sender unit<br>294 Injection/ignition electronic control unit 1242<br>296 Fuse carrier base on front cable |
| 4 Junction unit<br>E1 Ignition discharge relay   | C 7.5A fuse protecting Fiat-CODE cooling system /electronic injection   |
| 6 Instrument panel:<br>X Engine coolant temperature gauge<br>Y Electronic module   |   |
| 7 Steering column switch unit<br>8 Left front earth<br>10 Earth for battery on bodyshell<br>11 Battery<br>12 Ignition switch<br>22 Left dashboard earth<br>42 Right dashboard earth  | N.D. Ultrasound welding taped in cable loom   |
| 55 Connection between front/engine pre-wiring cables<br>122 Engine cooling fan low speed relay feed<br>129 30A power fuse protecting engine cooling fan  |   |

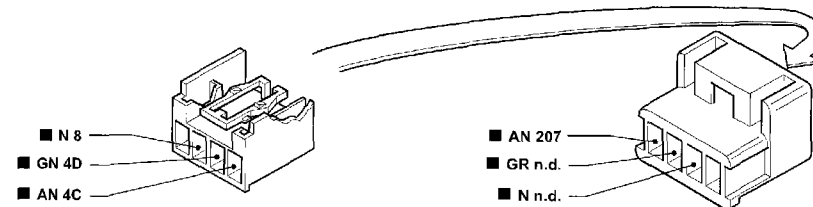
6A Instrument panel.



55 Connection between front/engine pre-wiring cables.



171 Heater unit cables connection

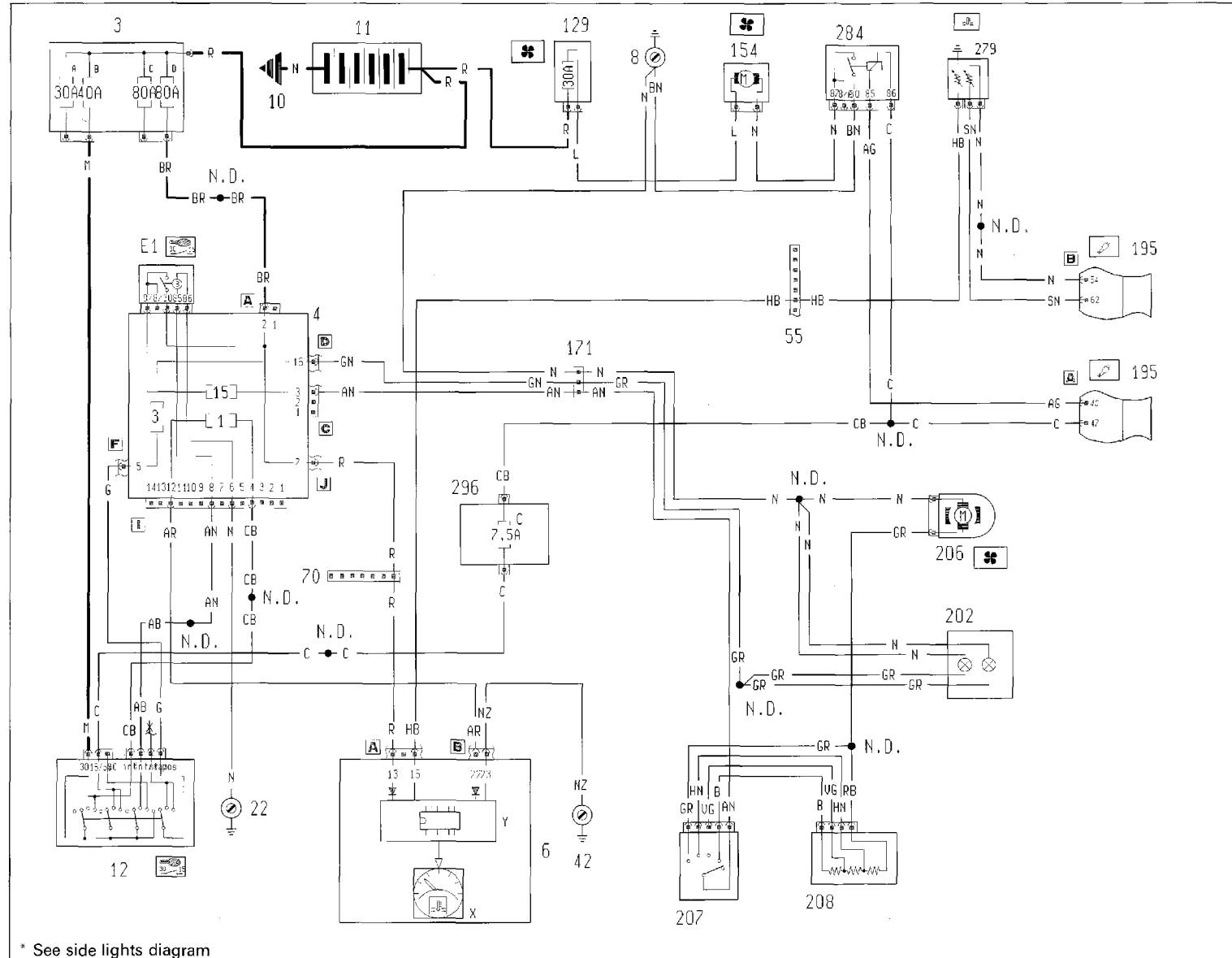


The cables in the wiring diagram are marked

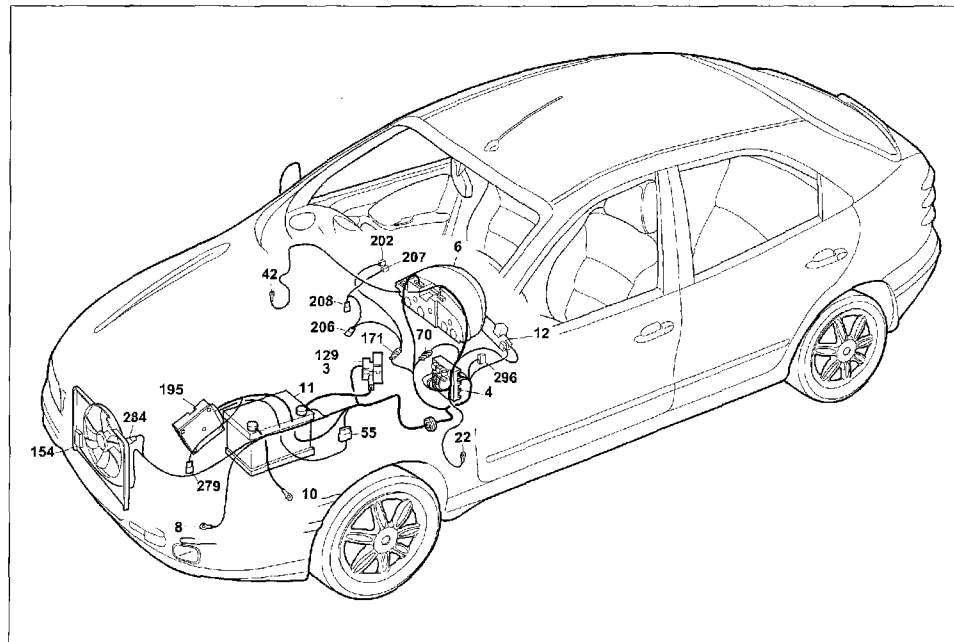
P4A224101

Version without automatic air conditioning

Engine cooling - Water temperature gauge - Car interior ventilation - (See key at end of wiring diagrams)



**55.**



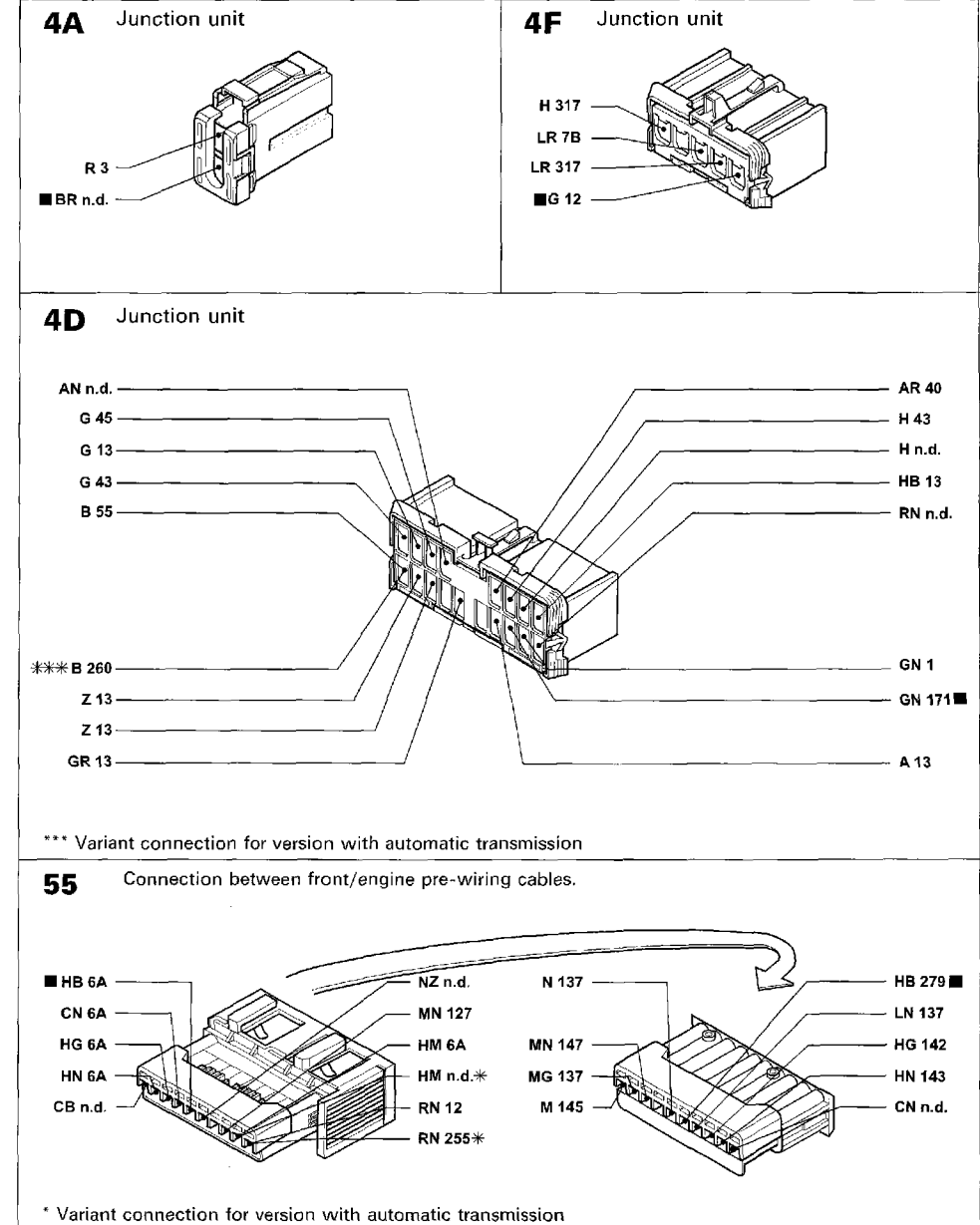
P4A227101

**Version: without automatic air conditioning**  
**Engine cooling - Water temperature gauge - Car interior ventilation**

**Components key**

- |   |  |
|---|--|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit<br/>E1 Ignition discharge relay</p> <p>6 Instrument panel:<br/>X Engine coolant temperature gauge<br/>Y Electronic module</p> <p>8 Left front earth<br/>10 Earth for battery on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>22 Left dashboard earth<br/>42 Right dashboard earth<br/>55 Connection between front/engine pre-wiring cables<br/>70 Dashboard/front cables connection<br/>129 30A power fuse protecting engine cooling fan</p> | <p>154 Engine cooling fan<br/>171 Heater unit cables connection<br/>195 Injection/ignition electronic control unit (1581)<br/>202 Heater unit/air conditioning light bulbs<br/>206 Heater/air conditioning fan<br/>207 Heating/air conditioning system speed control switch<br/>208 Limiting resistance for heating/air conditioning system<br/>279 Twin engine coolant temperature sender unit<br/>284 Engine cooling fan relay feed<br/>296 Fuse carrier base on front cable<br/>C 7.5A fuse protecting Fiat-CODE cooling system/electronic injection</p> <p>N.D. Ultrasound welding taped in cable loom</p> |
|---|--|

4A2271



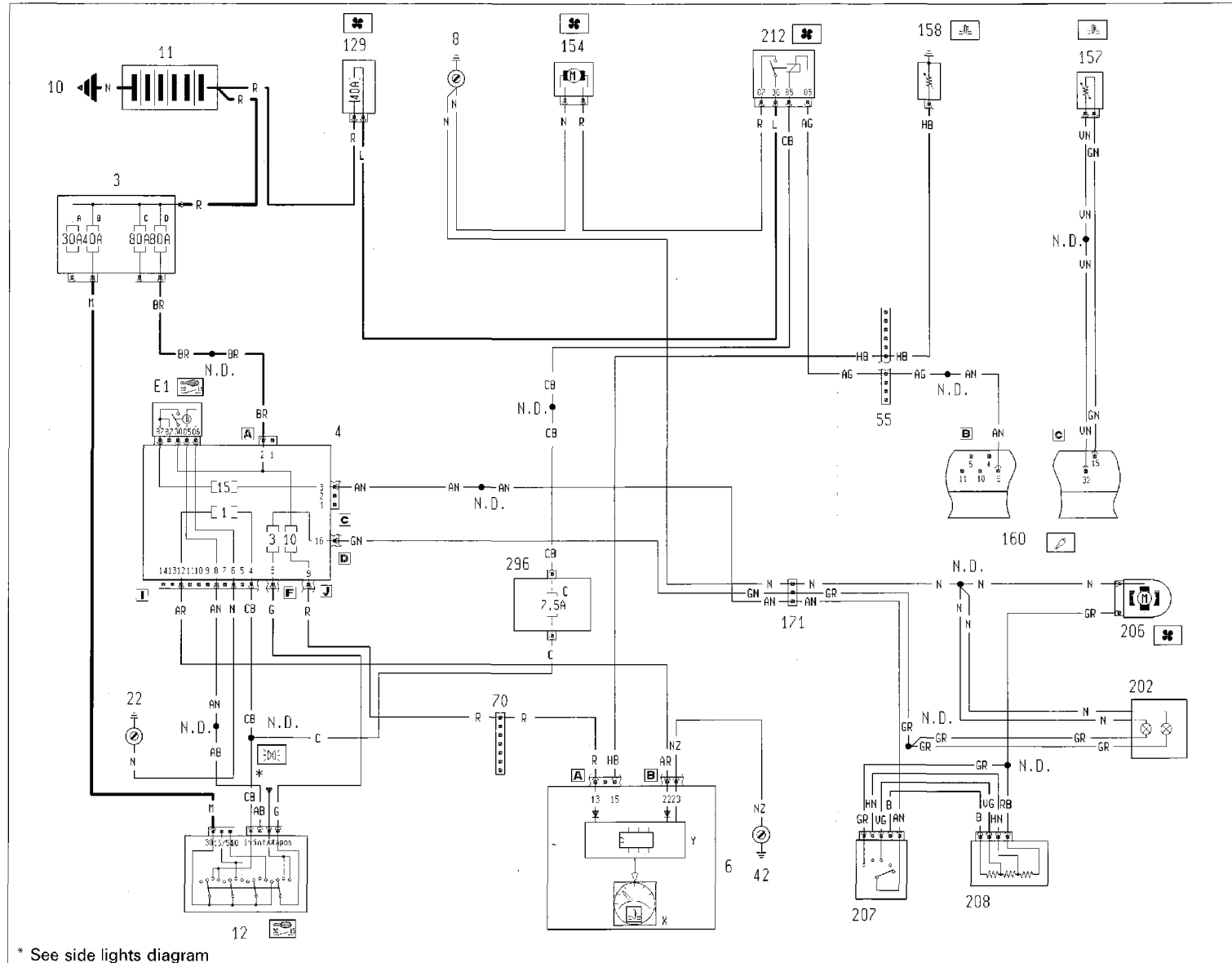
The cables in the wiring diagram are marked

P4A228101

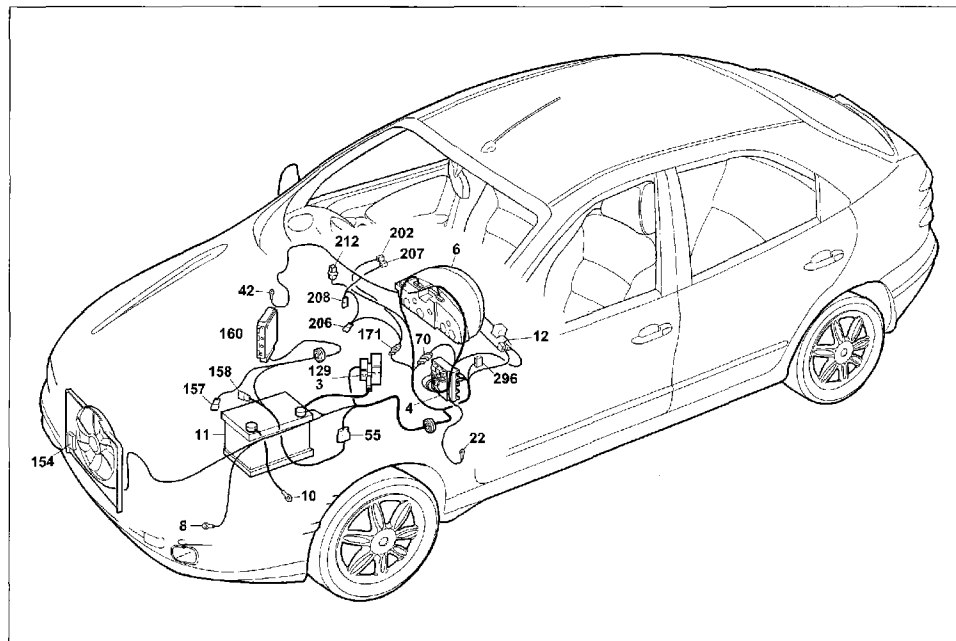
4A2281



Version without automatic air conditioning  
Engine cooling - Water temperature gauge - Car interior ventilation - (See key at end of wiring diagrams)



55.



P4A23101

Version without automatic air conditioning

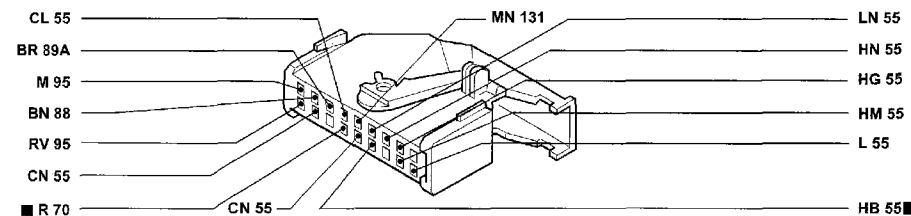
Engine cooling - Water temperature gauge - Car interior ventilation

Components key

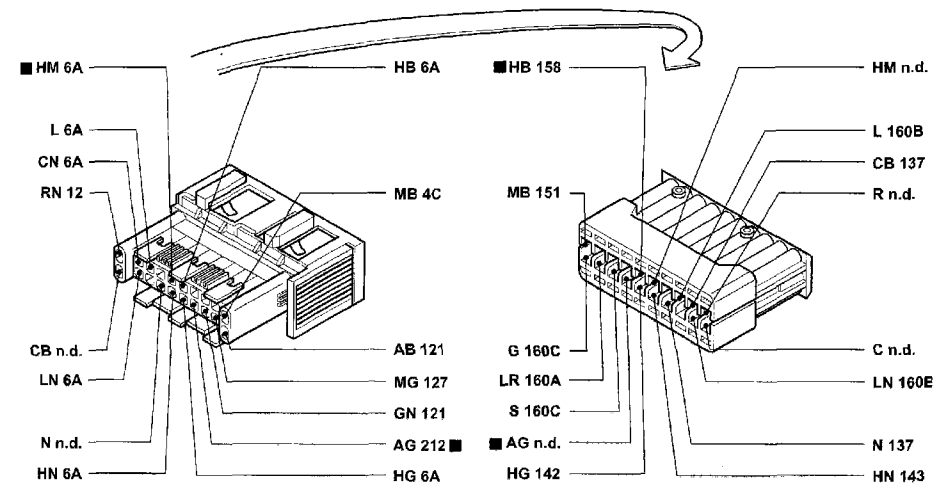
- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit
  - E1 Ignition discharge relay
- 6 Instrument panel:
  - X Engine coolant temperature gauge
  - Y Electronic module
- 8 Left front earth
- 10 Earth for battery on bodysell
- 11 Battery
- 12 Ignition switch
- 22 Left dashboard earth
- 42 Right dashboard earth
- 55 Connection between front/engine pre-wiring cables
- 70 Dashboard/front cables connection
- 129 40A power fuse protecting engine cooling fan
- 154 Engine cooling fan
- 157 Coolant temperature sensor
- 158 Instrument coolant temperature sensor
- 160 Injection/ignition electronic control unit (1747)
- 171 Heater unit cables connection
- 202 Heater unit/air conditioning light bulbs
- 206 Heater/air conditioning fan
- 207 Heating/air conditioning system speed control switch
- 208 Limiting resistance for heating/air conditioning system
- 212 Engine cooling fan relay feed
- 296 Fuse carrier base on front cable
  - C 7.5A fuse protecting Fiat - CODE cooling system/electronic injection

N.D. Ultrasound welding taped in cable loom

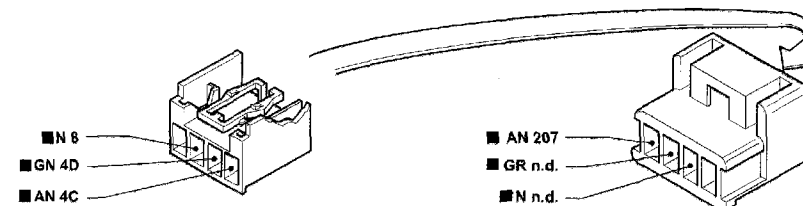
6A Instrument panel.



55 Connection between front/engine pre-wiring cables.



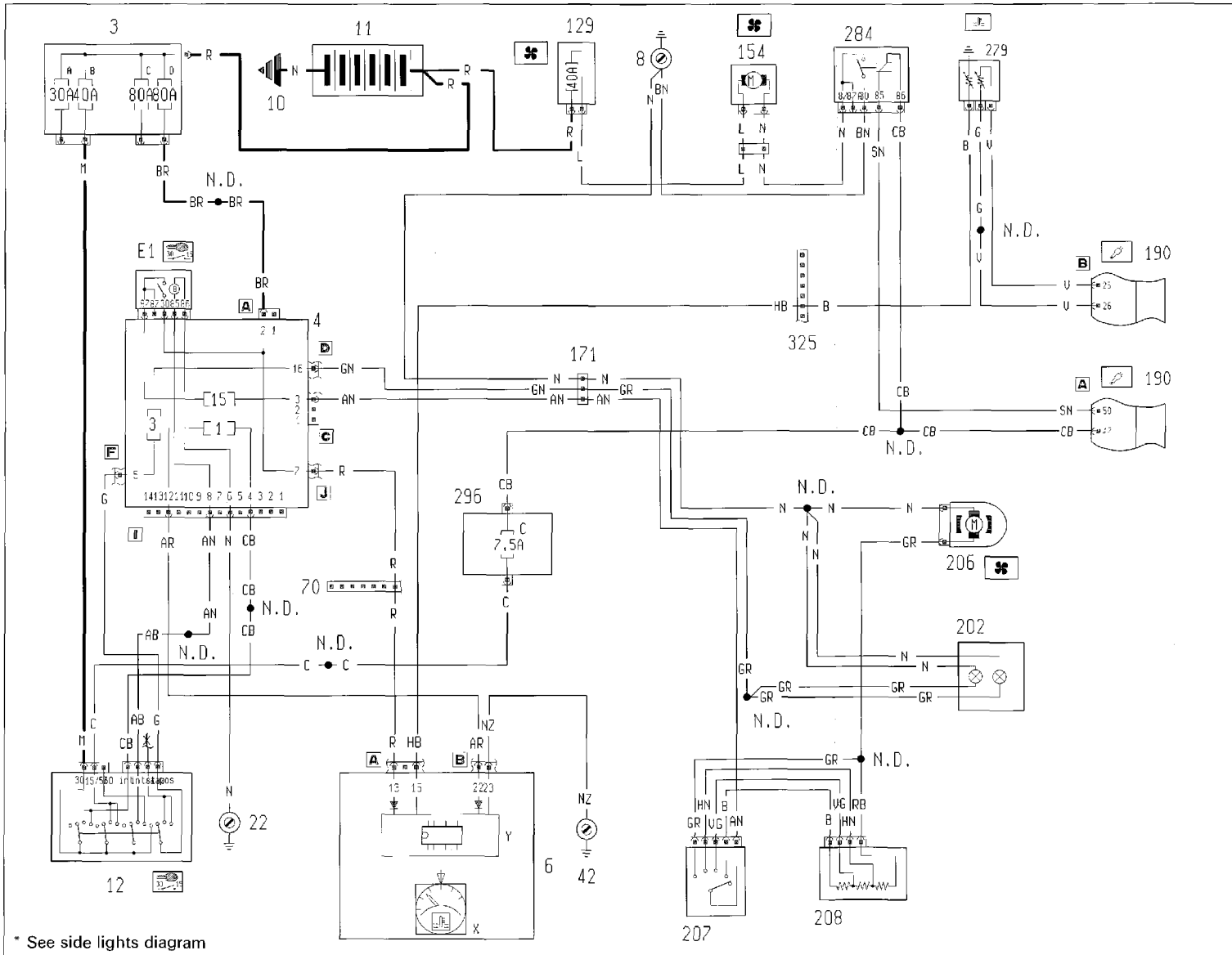
171 Heater unit cables connection



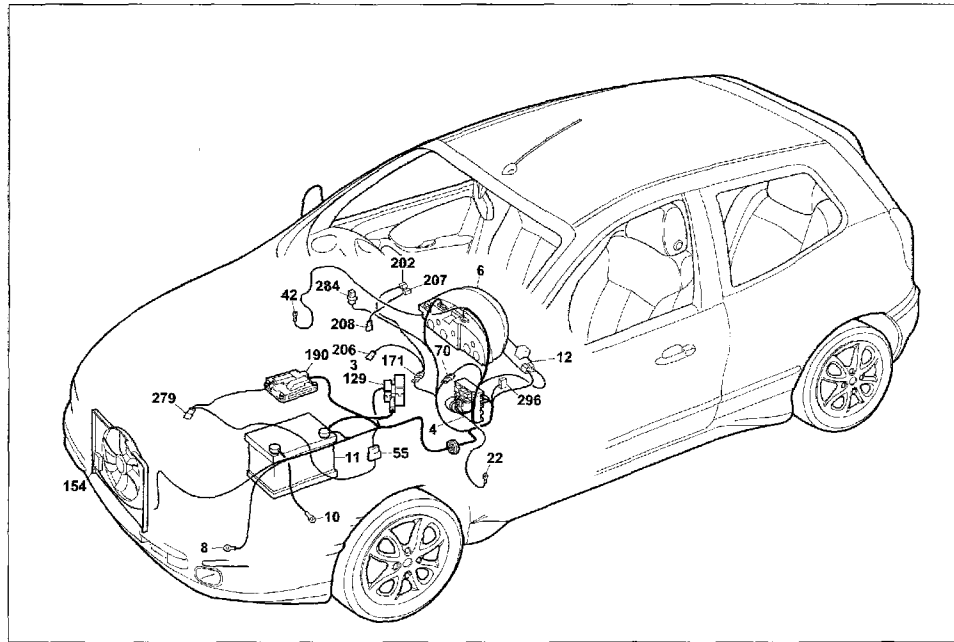
The cables in the wiring diagram are marked

P4A23201

Version without automatic air conditioning  
Engine cooling - Water temperature gauge - Car interior ventilation - (See key at end of wiring diagrams)



55.



P4A236/01

Version without automatic air conditioning

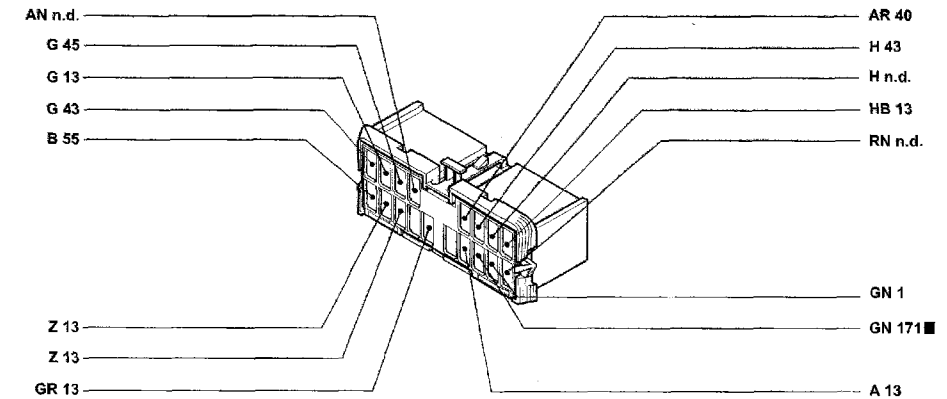
Engine cooling - Water temperature gauge - Car interior ventilation

Components key

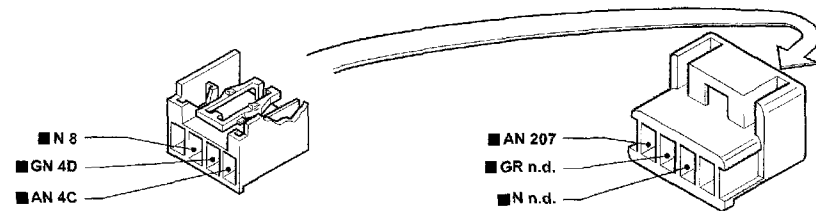
- |   |   |
|---|---|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit<br/>E1 Ignition discharge relay</p> <p>6 Instrument panel:<br/>X Engine coolant temperature gauge<br/>Y Electronic module</p> <p>8 Left front earth<br/>10 Earth for battery on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>22 Left dashboard earth<br/>42 Right dashboard earth<br/>55 Connection between front/engine pre-wiring cables<br/>70 Dashboard/front cables connection<br/>129 40A power fuse protecting engine cooling fan</p> | <p>154 Engine cooling fan<br/>171 Connection for heater unit cables<br/>190 Injection/ignition electronic control unit (1998)<br/>202 Heater unit/air conditioning light bulbs<br/>206 Heater/air conditioning fan<br/>207 Heating/air conditioning system speed control switch<br/>208 Limiting resistance for heating/air conditioning system<br/>279 Twin engine coolant temperature sender unit<br/>284 Engine cooling fan relay feed<br/>296 Fuse carrier base on front cable<br/>C 7.5A fuse protecting Fiat - CODE cooling system/electronic injection</p> |
|---|---|

N.D. Ultrasound welding taped in cable loom

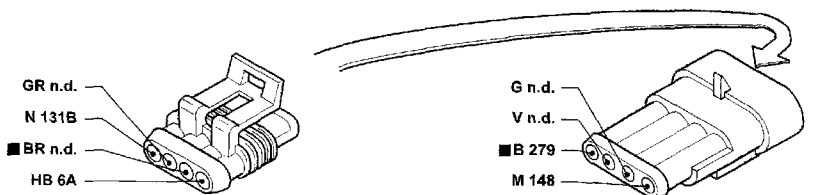
4D Junction unit



171 Heater unit cables connection



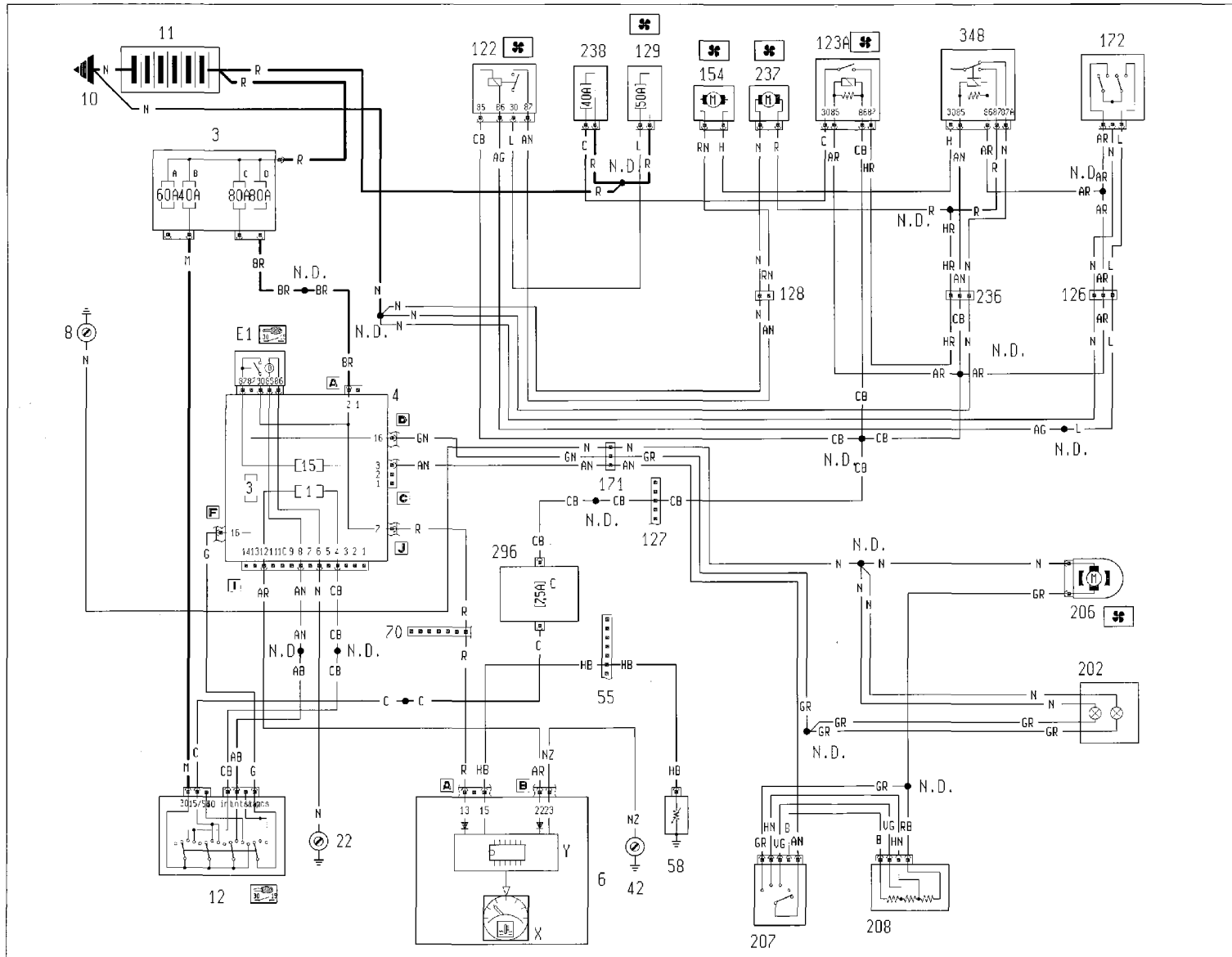
325 Connection between injection/left front cables



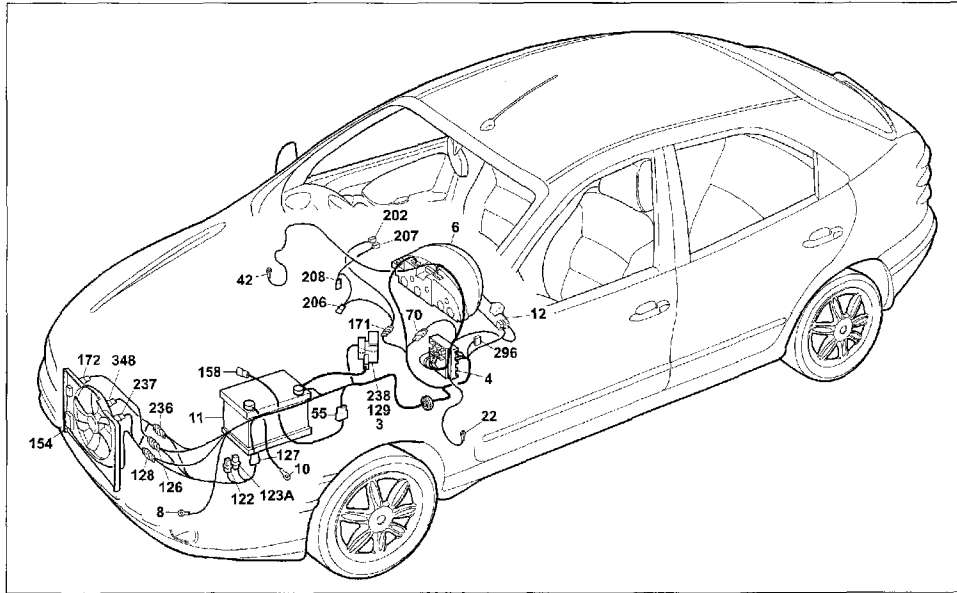
The cables in the wiring diagram are marked

P4A236/01

Version without automatic air conditioning  
Engine cooling - Water temperature gauge - Car interior ventilation - (See key at end of wiring diagrams)



55.



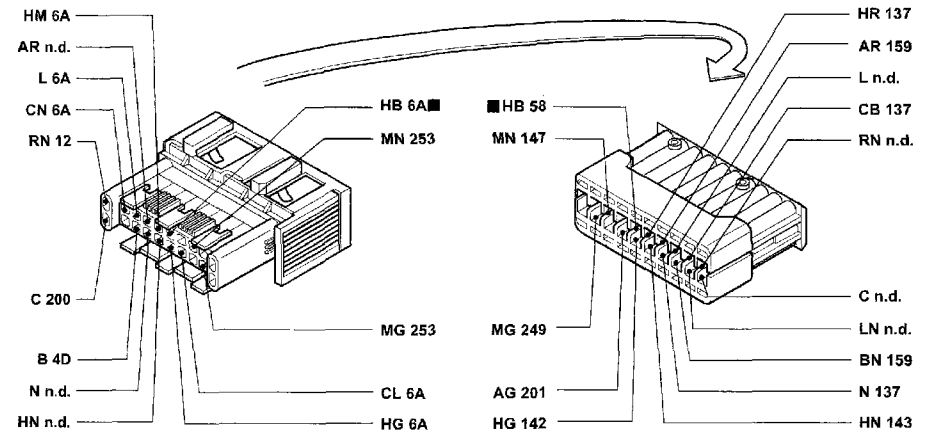
P4A239I01

Version without automatic air conditioning  
Engine cooling - Water temperature gauge - Car interior ventilation

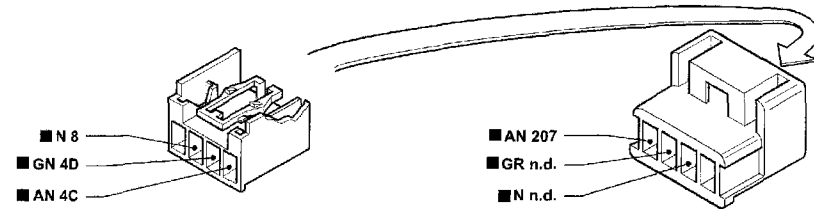
Components key

- |   |  |
|---|--|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit<br/>E1 Ignition discharge relay</p> <p>6 Instrument panel:<br/>X Engine coolant temperature gauge<br/>Y Electronic module</p> <p>8 Left front earth<br/>10 Earth for battery on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>22 Left dashboard earth<br/>42 Right dashboard earth</p> <p>55 Connection between front/engine pre-wiring cables<br/>58 Light dimmer<br/>70 Dashboard/front cables connection<br/>122 Engine cooling fan low speed relay feed<br/>123A Engine cooling fan high speed relay<br/>126 Front/air conditioning cables connection<br/>127 Connection between left front cable/cable on relay holder bracket<br/>128 Front/air conditioning cables connection<br/>129 50A protective power fuse for engine cooling fan</p> | <p>154 Engine cooling fan<br/>171 Heater unit<br/>172 Two level thermal switch<br/>202 Heater unit/air conditioning light bulbs<br/>206 Heater/air conditioning fan<br/>207 Heating/air conditioning system speed control switch<br/>208 Limiting resistance for heating/air conditioning system<br/>236 Front/air conditioning cables connection<br/>237 Additional engine cooling fan<br/>238 40A fuse protecting engine cooling fan<br/>296 Fuse carrier base on front cable<br/>C 7.5A fuse protecting Fiat-CODE cooling system/electronic injection</p> <p>348 Remote control switch for engine cooling solenoid valve</p> <p>N.D. Ultrasound welding taped in cable loom</p> |
|---|--|

55 Connection between front/engine pre-wiring cables.



171 Heater unit cables connection



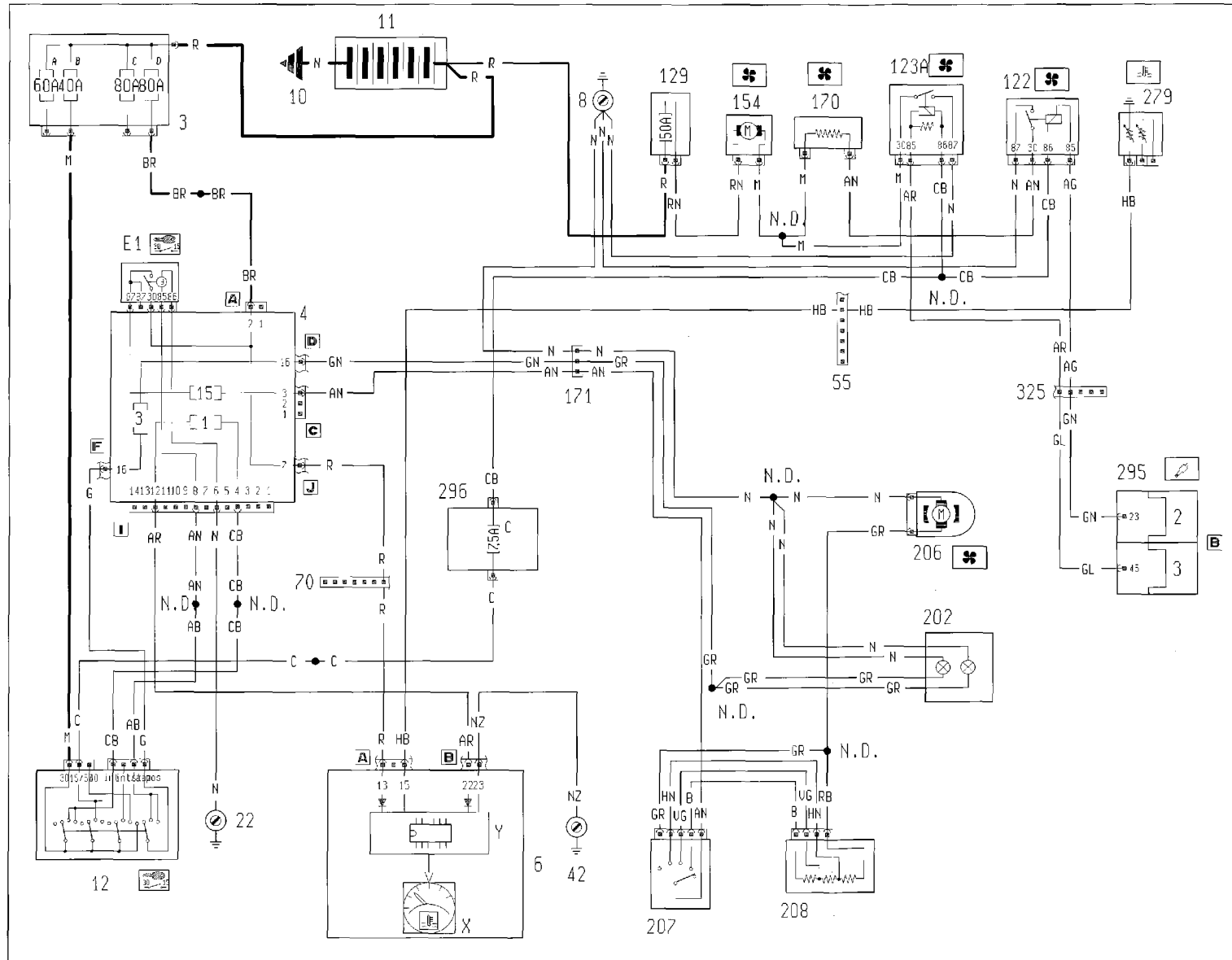
236 Front/air conditioning cables connection.



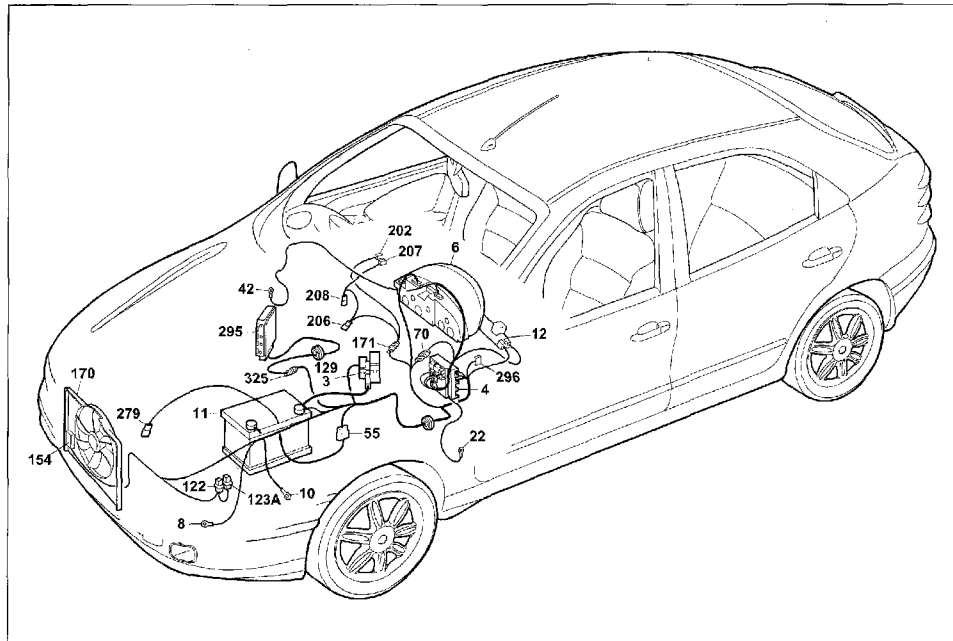
The cables in the wiring diagram are marked

P4A240I01

Version without automatic air conditioning  
Engine cooling - Water temperature gauge - Car interior ventilation - (See key at end of wiring diagrams)



55.



P4A243101

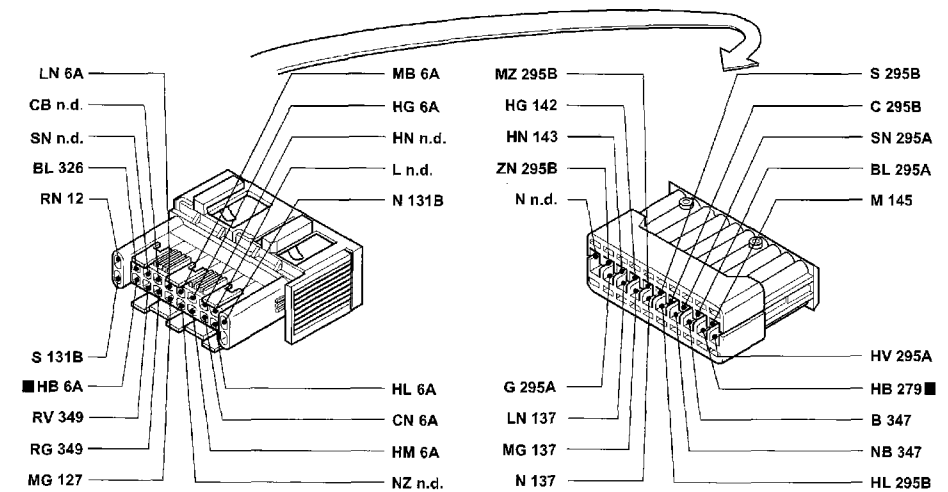
Version without automatic air conditioning  
Engine cooling - Water temperature gauge - Car interior ventilation

Components key

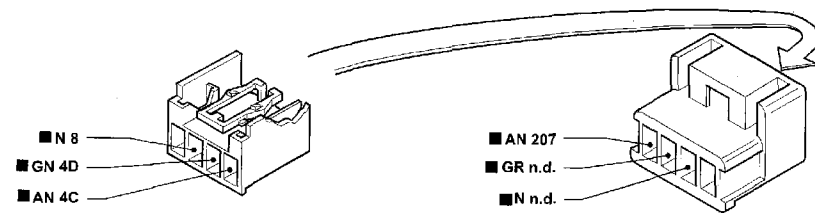
- |   |   |
|---|---|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (60A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit<br/>E1 Ignition discharge relay</p> <p>6 Instrument panel:<br/>X Engine coolant temperature gauge<br/>Y Electronic module</p> <p>8 Left front earth<br/>10 Earth for battery on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>22 Left dashboard earth<br/>42 Right dashboard earth<br/>55 Connection between front cables/engine pre-wiring<br/>55A Connection between engine pre-wiring front cables<br/>70 Dashboard/front cables connection<br/>122 Engine cooling fan low speed relay feed<br/>123A Engine cooling fan high speed relay feed<br/>129 50A protective power fuse for engine cooling fan</p> | <p>154 Engine cooling fan<br/>170 Engine cooling fan limiting resistance<br/>171 Heater unit<br/>202 Heater/air conditioning light bulbs<br/>206 Heater/air conditioning fan<br/>207 Heater/air conditioning system speed control switch<br/>208 Heater/air conditioning system limiter resistance<br/>279 Twin engine coolant temperature sender unit<br/>293 Fuse carrier base on dashboard cable<br/>C 7.5A fuse protecting cooling system/electronic injection Fi-at-CODE<br/>295 Electronic control unit for 1910 TD UNIJET ignition/injection</p> |
|---|---|

N.D. Ultrasound welding taped in cable loom

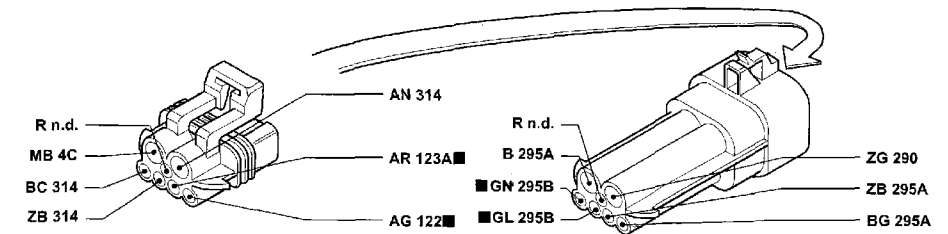
55 Connection between front/engine pre-wiring cables.



171 Heater unit cables connection



325 Connection between injection/left front cables.

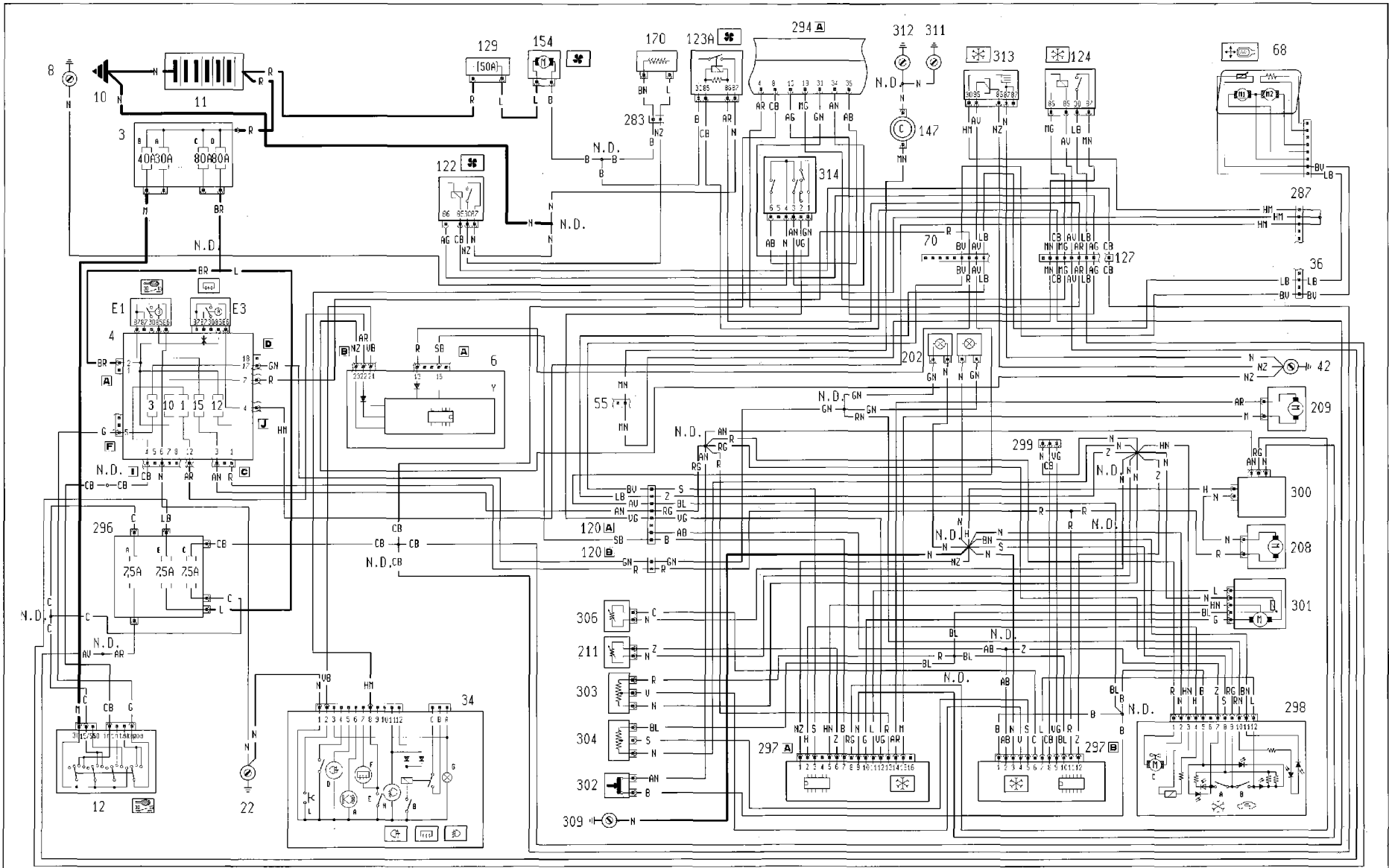


The cables in the wiring diagram are marked

P4A244101

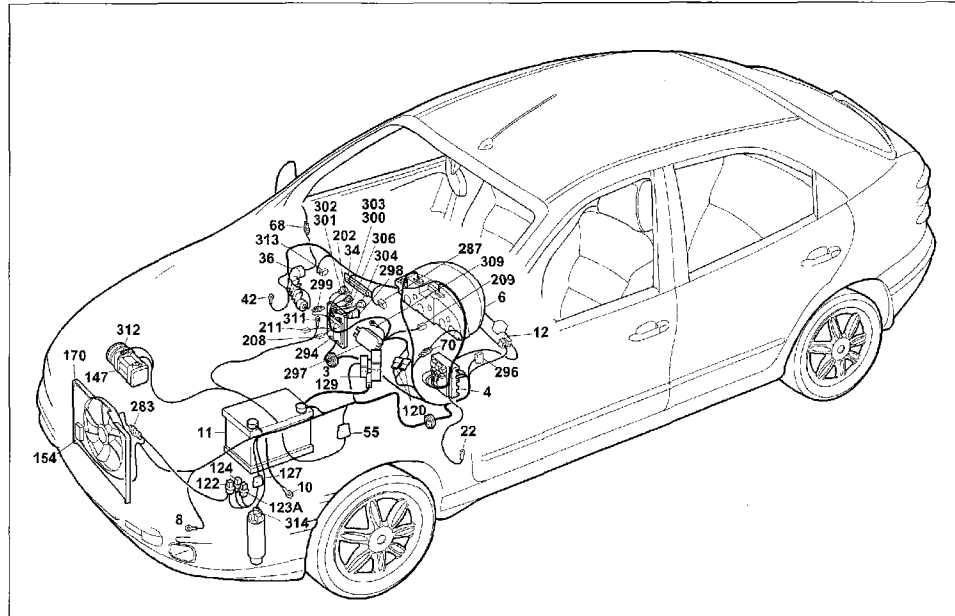


Version without A.B.I.  
Automatic air conditioning - (See key at end of wiring diagrams)



\* See heated rear windscreen diagram

55.



P4A24701

Version without A.B.I.

Automatic air conditioning

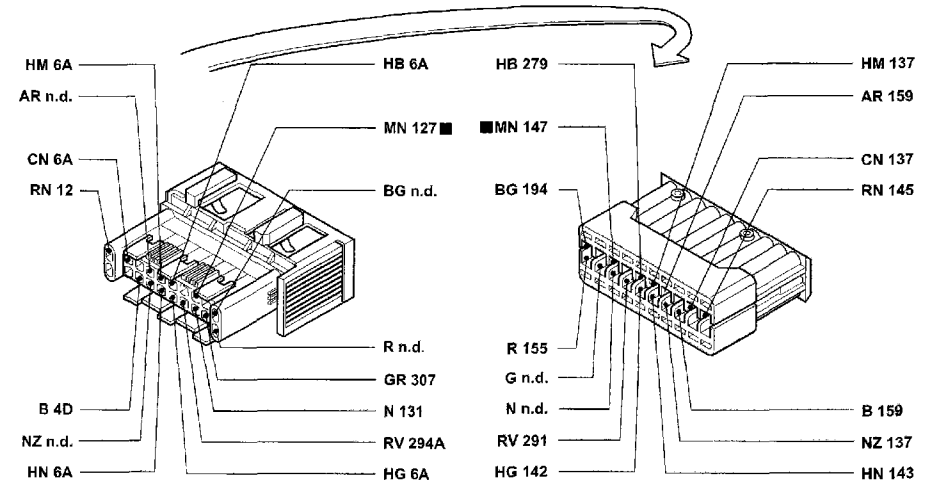
Components key

- 3 Power fuse box:
  - A 30A protective fuse for injection system (80A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit:
  - E1 Ignition discharge relay
  - E3 Heated rear windscreen relay feed
- 6 Instrument panel:
  - Y Electronic module
- 7 Steering column switch unit
- 8 Left front earth
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 22 Left dashboard earth
- 34 Switch control unit
  - A Anti-theft warning light on
  - B Rear fog lamps switch
  - D Rear fog lamps warning light
  - E Heated rear windscreen control switch
  - F Heated rear windscreen warning light
  - G Switch control unit ideogram light
  - H Fog lamps warning light
  - L Outside temperature control switch
- 36 Dashboard/left front door cables connection
- 42 Right dashboard earth
- 55 Connection between front/engine pre-wiring cables
- 68 Right electrically adjusted external rear view mirror
- 70 Dashboard/front cables connection
- 120A Air conditioning unit cables connection
- 120B Air conditioning unit cables connection
- 122 Engine cooling fan low speed relay feed
- 123A Engine cooling fan high speed relay feed

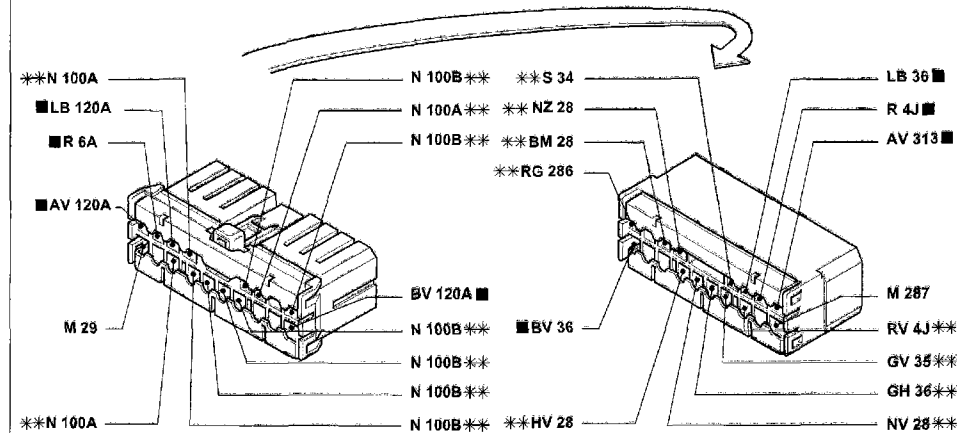
- 124 Air conditioning compressor relay
- 127 Front left cables/cable on relay holder bracket connection
- 129 50A power fuse protecting engine cooling fan
- 147 Compressor for air conditioning
- 154 Engine cooling fan
- 170 Engine cooling fan limiter resistance
- 202 Heater/air conditioning light bulbs
- 208 Limiter resistance for heater/air conditioning
- 209 Outtake/recirculation air flap control actuator
- 211 Electronic thermostat (N.T.C.)
- 253 Connection between front/resistance cables
- 287 Short circuit connection
- 284 Injection/ignition electronic control unit 1242
- 286 Fuse carrier base on front cable
  - A 7.5A fuse protecting cooling system/ electronic injection: C.A. system; Alarm
  - C 7.5A fuse protecting Fiat-CODE cooling system/electronic injection
  - E 7.5A fuse protecting climate control system
- 297 Air conditioning control unit
- 298 Heater/air conditioning recirculation control
- 299 Diagnostic socket for heater/air conditioning
- 300 Car interior fan electronic transformer
- 301 Car interior mixture control actuator
- 302 Maximum demisting control switch
- 303 Interior ventilation actuator
- 304 Potentiometer for car interior temperature
- 306 Treated air sensor
- 309 Earth for air conditioning unit
- 311 Earth for electronic injection control unit
- 312 Power earth for electronic injection control unit
- 313 Relay for inverting signal for air conditioning
- 314 Four stage pressure switch

N.D. Ultrasound welding taped in cable loom

55 Connection between front/engine pre-wiring cables.



70 Dashboard/front cables connection.



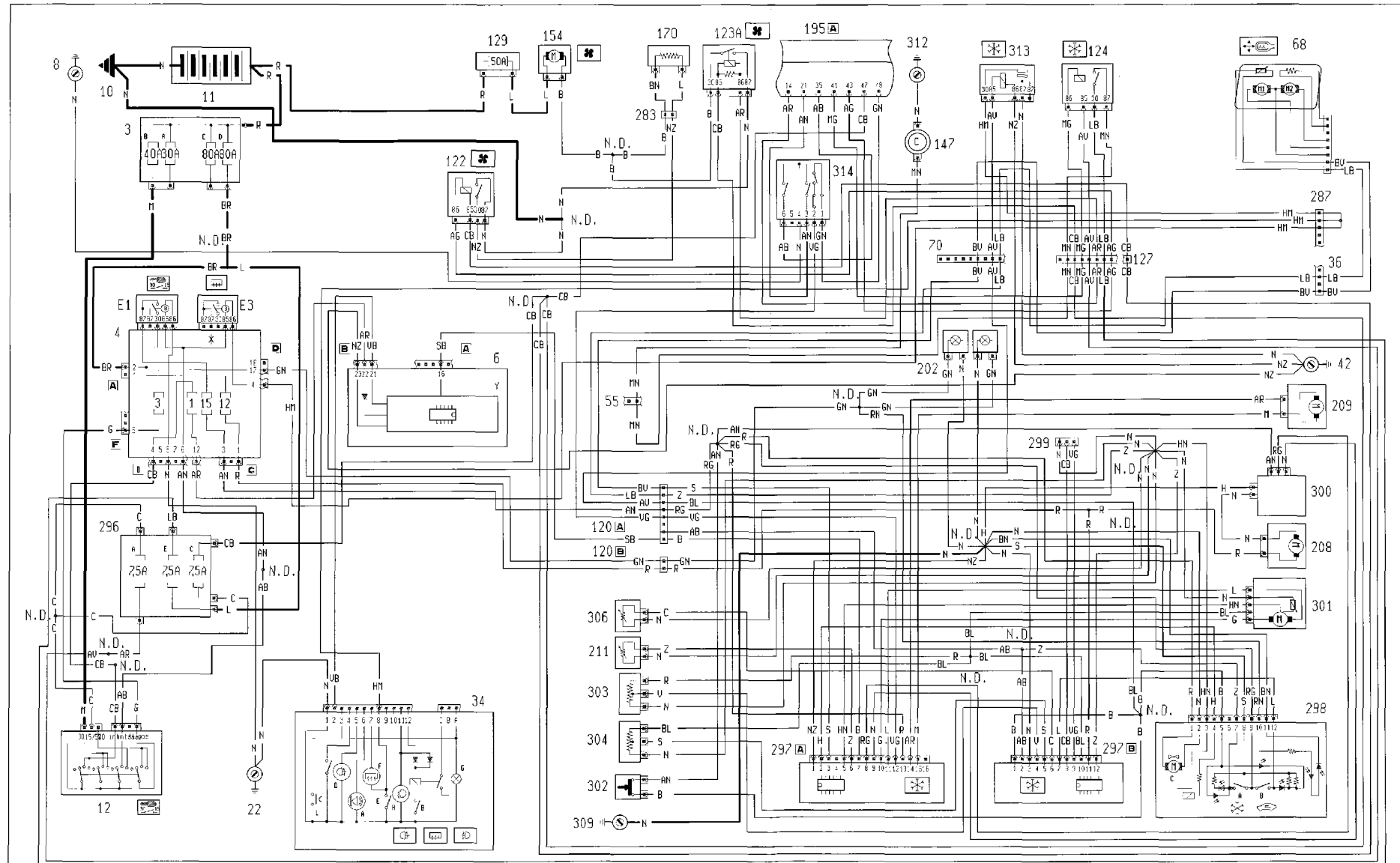
\* Variant connection for versions with air conditioning  
\*\* Variant connection for versions with alarm

The cables in the wiring diagram are marked

P4A248101

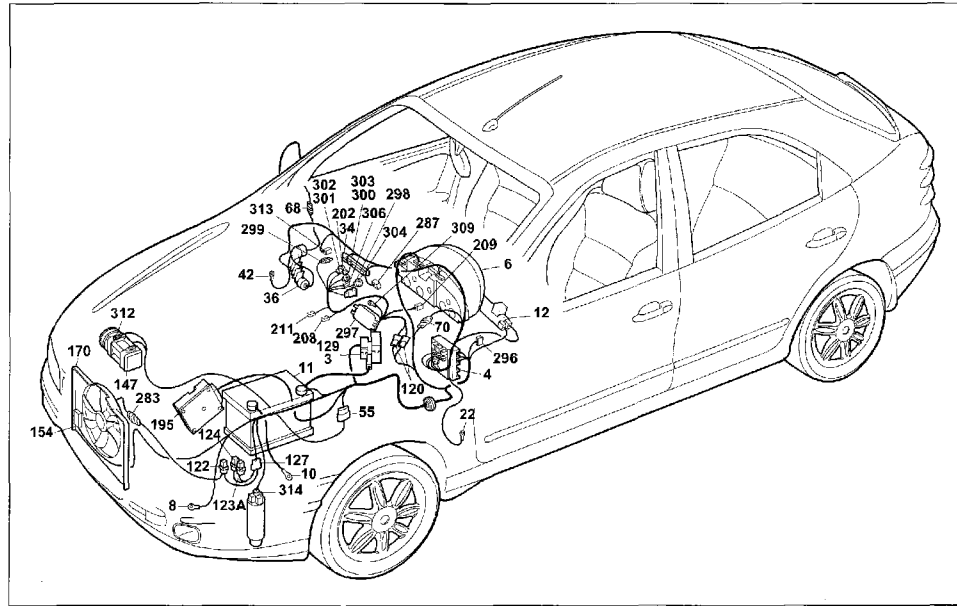
Version without A.B.I.

Automatic air conditioning - (See key at end of wiring diagrams)



\* See heated rear windscreen diagram

**55.**



Version without A.B.I.

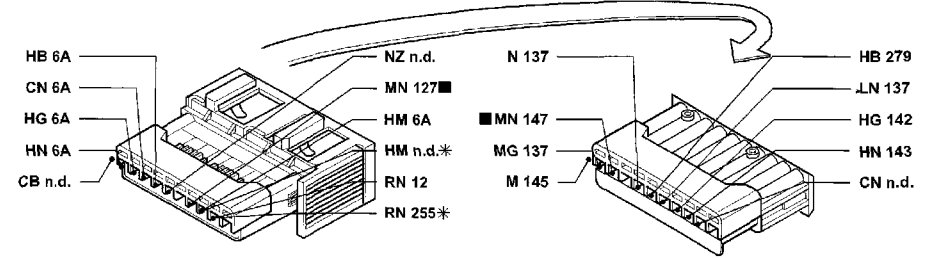
**Automatic air conditioning**  
**Components key**

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit:
  - E1 Ignition discharge relay
- 6 Instrument panel
  - Y Electric module
- 7 Steering column switch unit
- 8 Left front earth
- 10 Earth for battery on bodysell
- 11 Battery
- 12 Ignition switch
- 22 Left dashboard earth
- 34 Switch control unit
  - A Anti-theft warning light on
  - B Rear fog lamps switch
  - D Rear fog lamps warning light
  - E Heated rear windscreen switch
  - F Heated rear windscreen warning light
  - G Switch control unit ideogram light
  - H Fog lights warning light
  - I Outside temperature control switch
  - L Outside temperature control switch
- 36 Dashboard/left front door cables connection
- 42 Right dashboard earth
- 55 Connection between front/engine pre-wiring cables
- 68 Right electrically adjusted external rear view mirror
- 70 Dashboard/front cables connection
- 120 Air conditioning unit cables connection
- 122 Engine cooling fan low speed relay feed
- 123A Engine cooling fan high speed relay feed
- 124 Air conditioning compressor relay
- 127 Connection between left front cable/cable on relay holder bracket

- 129 50A power fuse protecting engine cooling fan
- 147 Compressor for air conditioning
- 154 Engine cooling fan
- 170 Engine cooling fan limiting resistance
- 195 Injection/ignition electronic control unit (1581)
- 202 Heater/air conditioning light bulbs
  - A Air conditioning on switch
  - B Air conditioning recirculation switch
- 208 Limiter resistance for heater/air conditioning
- 209 Outside/recirculation air flap control actuator
- 211 Electronic thermostat (N.T.C.)
- 283 Connection between front cable/resistance
- 287 Short circuit connection
- 296 Fuse carrier base on front cable
  - A 7.5A fuse protecting cooling system/electronic injection; C.A. system; Alarm
  - C 7.5A fuse protecting Fiat-CODE cooling system/electronic injection
  - E 7.5A fuse protecting electronic injection system/ Fiat-CODE
- 297 Control unit for heater/air conditioning
- 299 Diagnostic socket for heater/air conditioning
- 298 Recirculation for heater/air conditioning
  - A Recirculation control switch
  - B Recirculation control switch
  - C Ventilation sensor
- 300 Vehicle interior fan electronic transformer
- 301 Car interior mixture control actuator
- 302 Maximum demisting control switch
- 303 Internal ventilation potentiometer
- 304 Potentiometer for car interior temperature
- 306 Treated air sensor
- 309 Earth for air conditioning unit
- 312 Power earth for electronic injection control unit
- 313 Relay for inverting signal for air conditioning
- 314 Four stage pressure switch

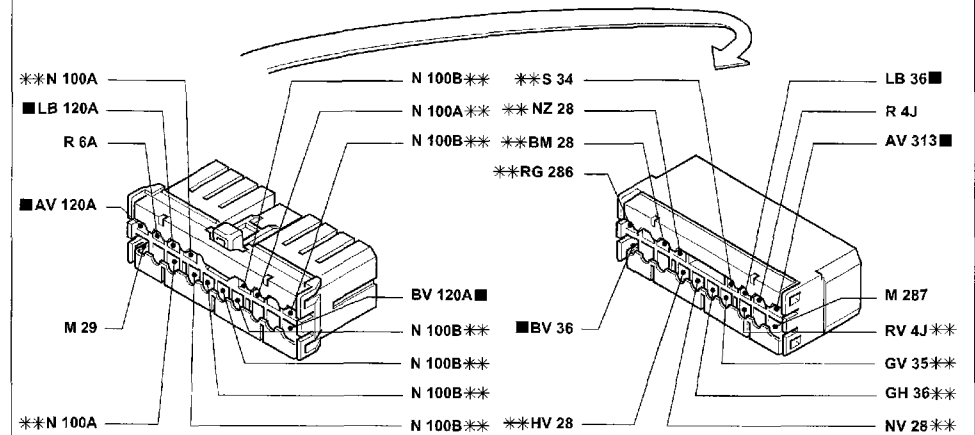
N.D. Ultrasound welding taped in cable loom

**55** Connection between front/engine pre-wiring cables.



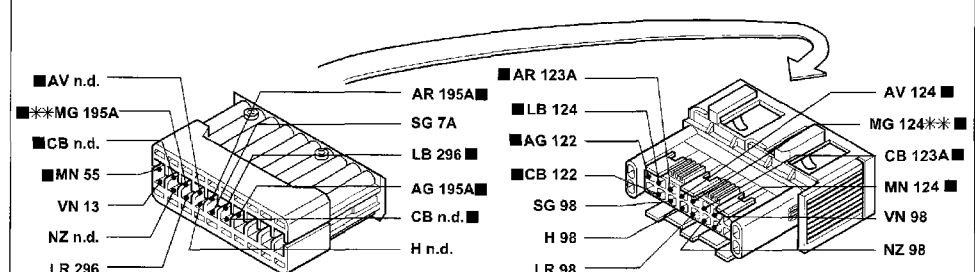
\* Variant connection for version with automatic transmission

**70** Dashboard/front cables connection.



\*\* Variant connection for versions with alarm

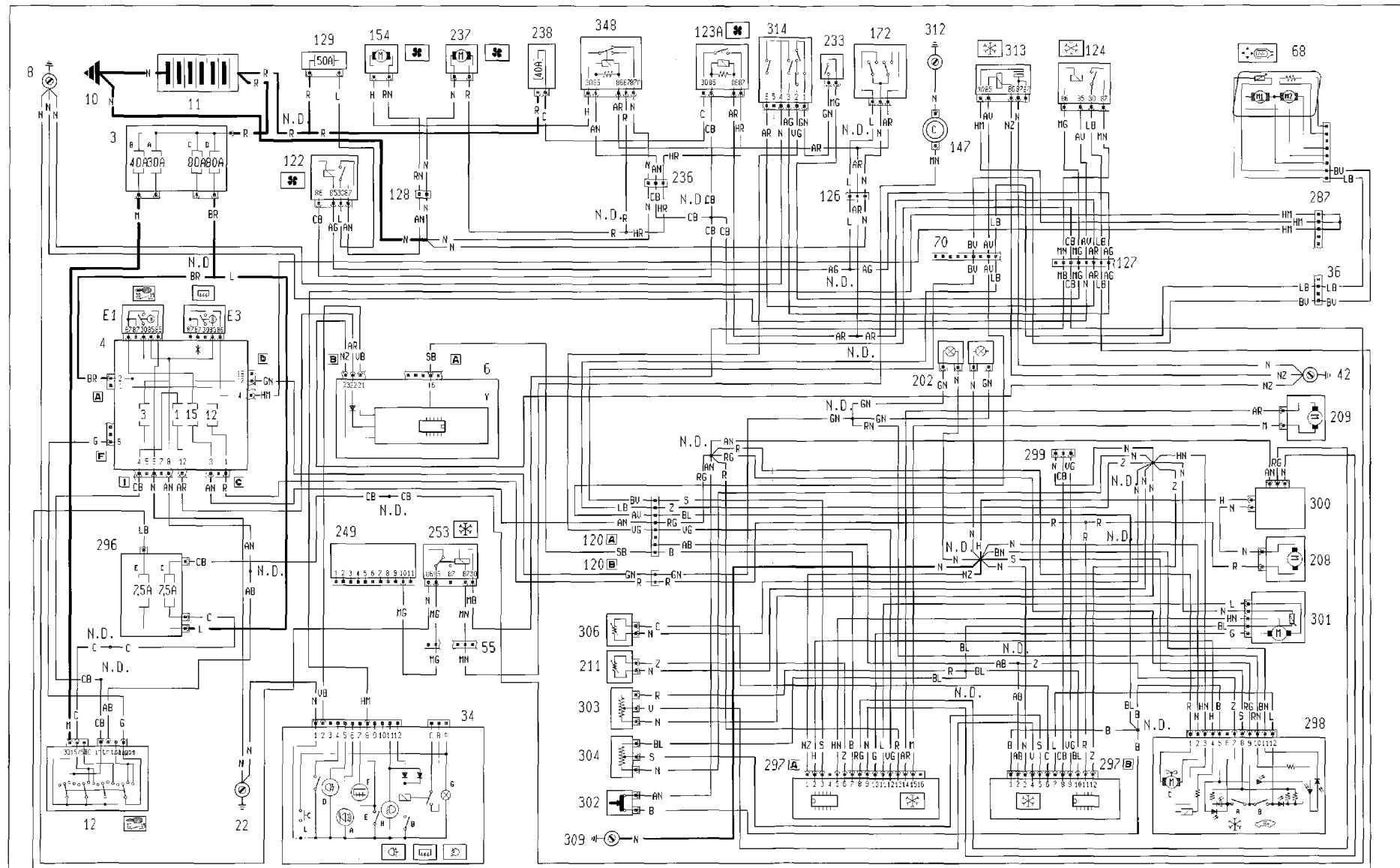
**127** Connection between left front cable/cable on relay holder bracket.



\*\* Variant connection for version with automatic transmission

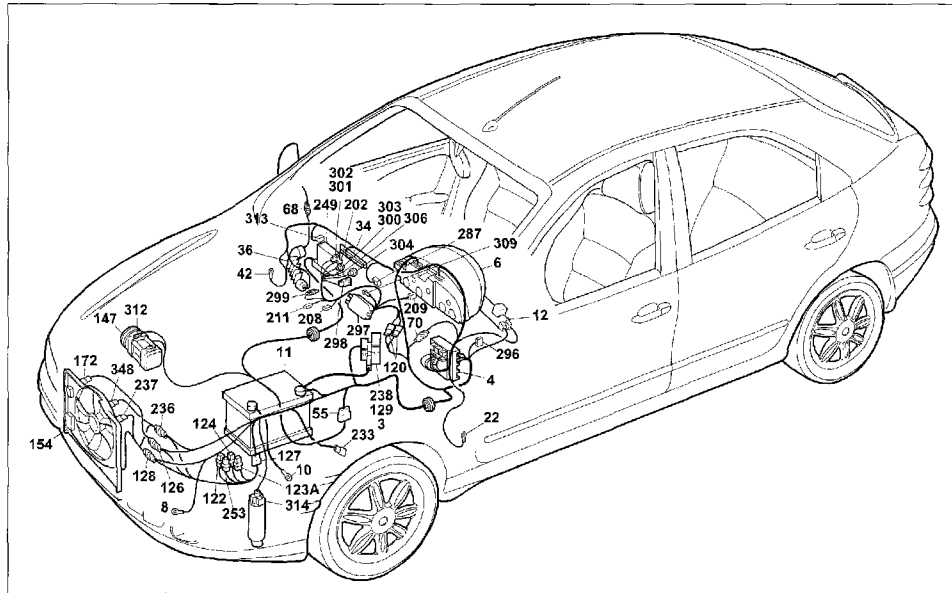
The cables in the wiring diagram are marked

Version without A.B.I.  
Automatic air conditioning - (See key at end of wiring diagrams)



\* See heated rear windscreen diagram

55.



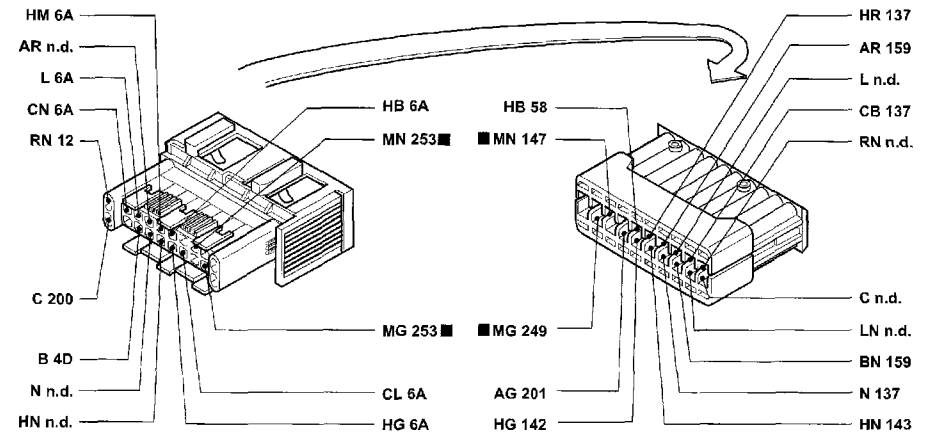
P4A256101

Version without A.B.I.  
Automatic air conditioning without A.B.I.  
Components key

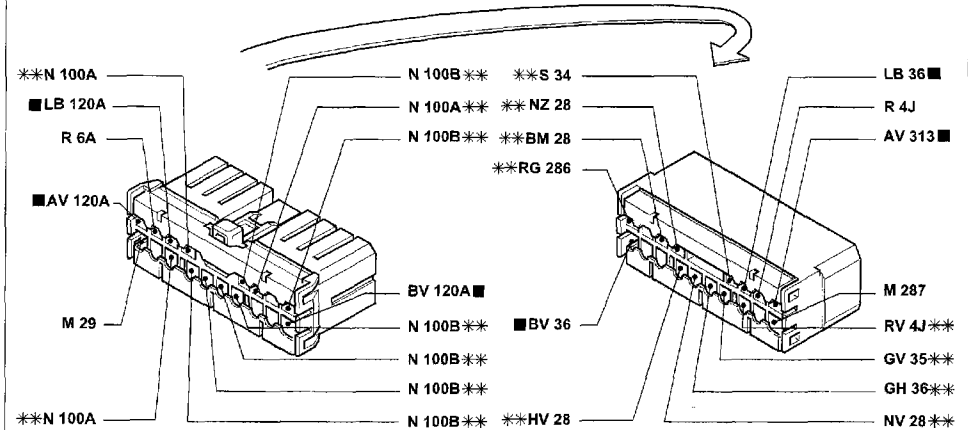
- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
- B 40A protective fuse for ignition system
- C 80A fuse protecting additional options
- D 80A protective fuse for junction unit
- 4 Junction unit:
  - E1 Ignition discharge relay
- 6 Instrument panel
  - Y Electronic module
- 8 Left front earth
- 7 Steering column switch unit
- 10 Earth for battery on bodysHELL
- 11 Battery
- 12 Ignition switch
- 22 Left dashboard earth
- 34 Switch unit:
  - A Anti-theft warning light on
  - B Rear fog lamps switch
  - D Rear fog lamps warning light
  - E Heated rear windscreen switch
  - F Heated rear windscreen warning light
  - G Switch control unit ideogram light
  - H Fog lights warning light
  - I Fog lights switch
  - L Outside temperature control switch
- 36 Dashboard/right front door cables connection
- 42 Right dashboard earth
- 55 Connection between front/engine pre-wiring cables
- 68 Right electrically adjusted external rear view mirror
- 70 Dashboard/front cables connection
- 120 Air conditioning unit cables connection
- 122 Engine cooling fan low speed relay feed
- 123A Engine cooling fan high speed relay feed
- 124 Air conditioning compressor relay
- 126 Front/air conditioning cables connection
- 127 Front left cables/cable on relay holder bracket connection
- 128 Front/air conditioning cables connection
- 129 50A protective power fuse for engine cooling fan
- 147 Compressor for air conditioning
- 154 Engine cooling fan
- 172 Two level thermal switch
- 202 Heater/air conditioning light bulbs
- 208 Limiter resistance for heater/air conditioning
- 209 Outside/recirculation air flap control actuator
- 211 Electronic thermostat (N.T.C.)
- 233 Thermostatic switch on water pump
- 236 Front/air conditioning cables connection
- 237 Additional engine cooling fan
- 238 40A fuse protecting engine cooling fan
- 249 E.G.R. electronic control unit
- 253 Relay for disengaging compressor
- 287 Short circuit connection
- 297 Air conditioning control unit
- 298 Recirculation for heater/air conditioning
  - A Air conditioning on switch
  - B Recirculation control switch
  - C Ventilation sensor
- 298 Fuse carrier base on front cable
  - C 7.5A fuse protecting Fiat - CODE cooling system/ electronic in injection
  - E 7.5A fuse protecting climate control system
- 299 Diagnostic socket for heater/air conditioning
- 300 Car interior fan electronic transformer
- 301 Car interior mixture control actuator
- 302 Maximum demisting control switch
- 303 Internal ventilation potentiometer
- 304 Potentiometer for car interior temperature
- 306 Treated air sensor
- 309 Earth for air conditioning unit
- 312 Power earth for electronic injection control unit
- 313 Relay for inverting signal for air conditioning
- 314 Four stage pressure switch
- 348 Remote control switch for engine cooling fan

N.D. Welding taped in cable loom

55 Connection between front/engine pre-wiring cables.



70 Dashboard/front cables connection.

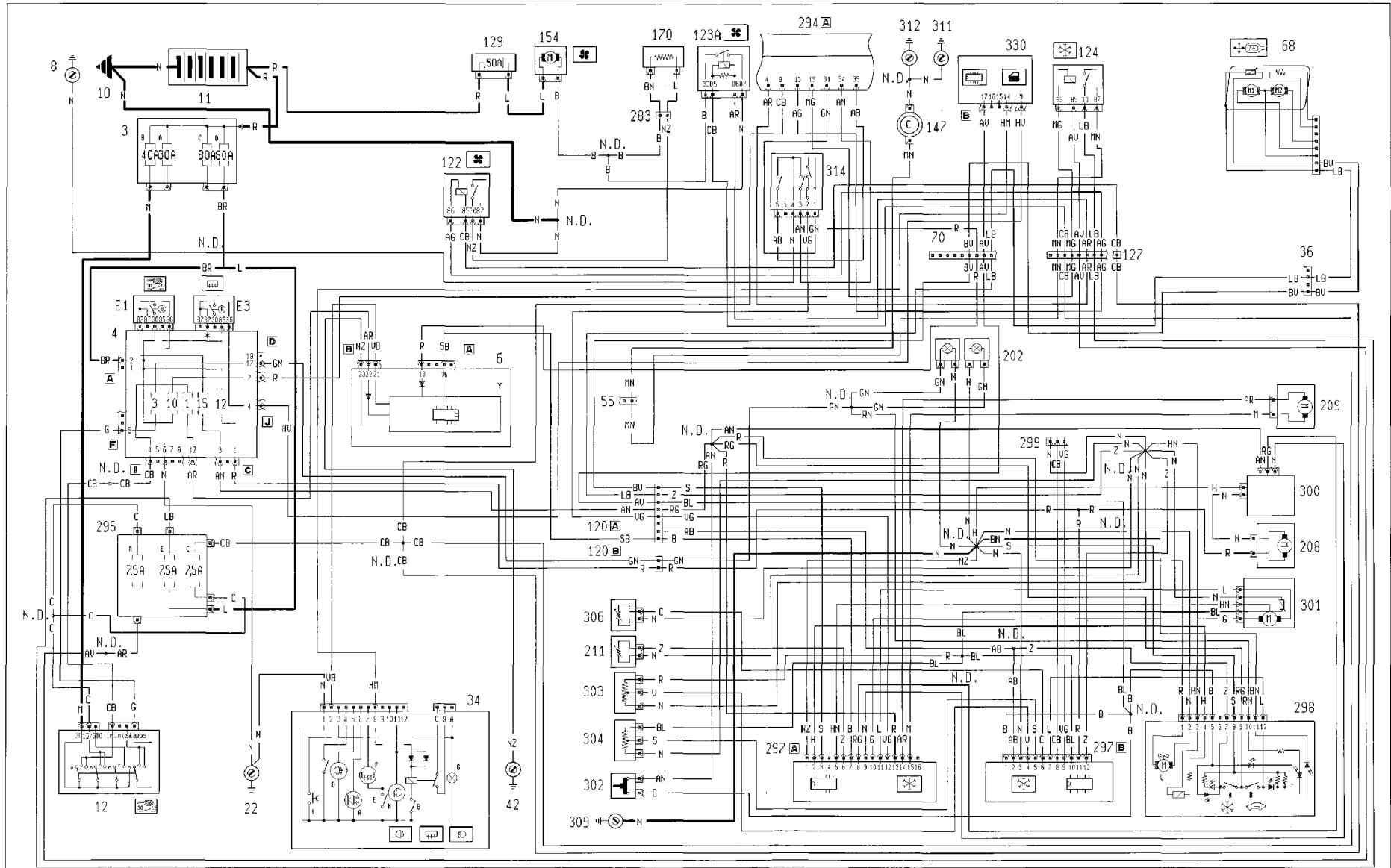


\*\* Variant connection for versions with alarm

The cables in the wiring diagram are marked

P4A256101

Version with A.B.I.  
Automatic air conditioning - (See key at end of wiring diagrams)



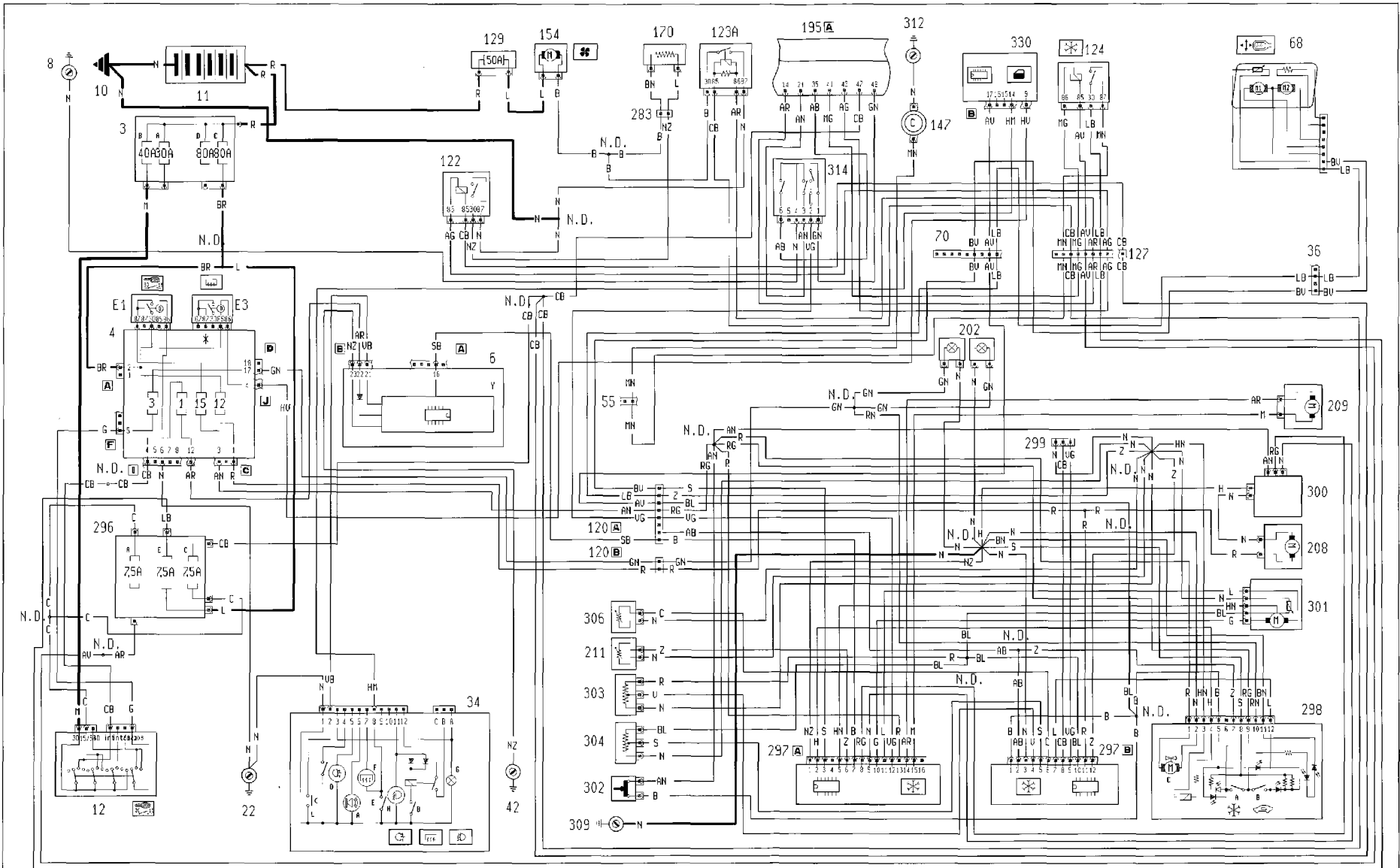
\* See heated rear windscreen diagram





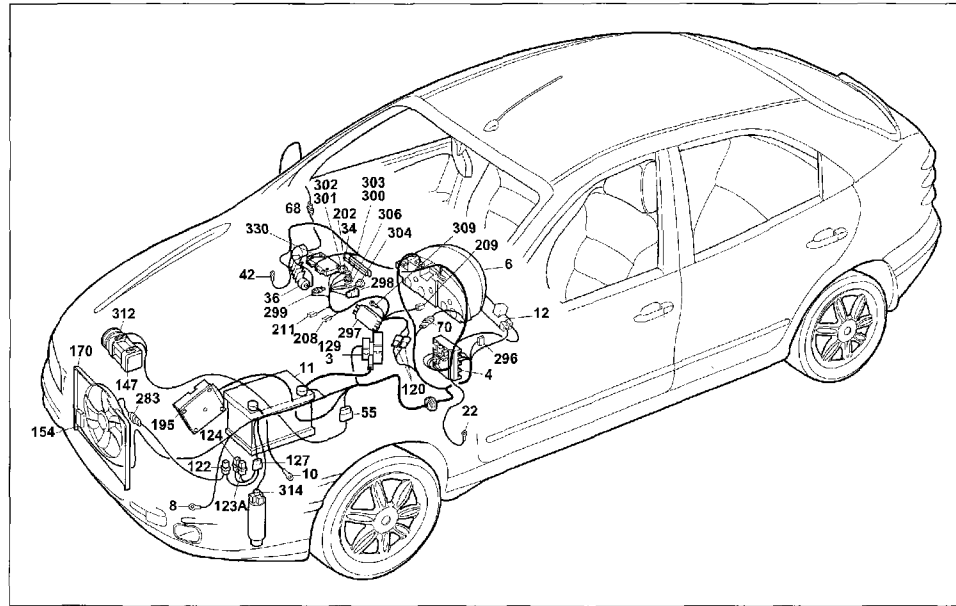
Version with A.B.I.

Automatic air conditioning - (See key at end of wiring diagrams)



\* See heated rear windscreen diagram

55.



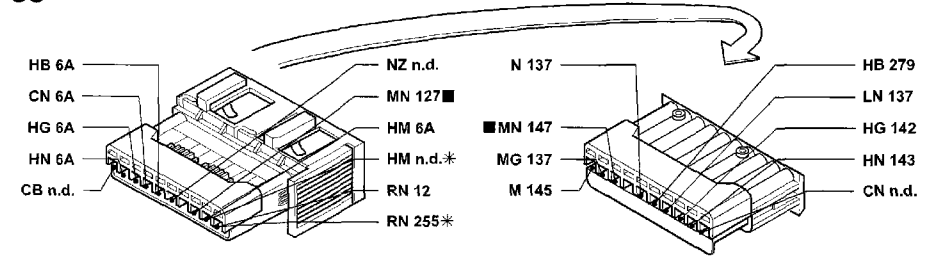
P4A263101

**Version with A.B.I.**  
**Automatic air conditioning**  
**Components key**

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit:
  - E1 Ignition discharge relay
  - E3 Heated rear windscreen relay feed
- 6 Instrument panel:
  - Y Electronic module
- 8 Left front earth
  - 10 Earth for battery on bodysell
  - 11 Battery
  - 12 Ignition switch
  - 22 Left dashboard earth
- 34 Switch unit:
  - A Anti-theft warning light on
  - B Rear fog lamps switch
  - D Rear fog lamps warning light
  - E Heated rear windscreen switch
  - F Heated rear windscreen warning light
  - G Switch unit ideogram light
  - H Fog lights warning light
  - I Fog lights switch
  - L Outside temperature control switch
- 36 Dashboard/right front door cables connection
- 55 Connection between front/engine pre-wiring cables
- 68 Right electrically adjusted external rear view mirror
- 70 Dashboard/front cables connection
- 120A Air conditioning unit cables connection
- 120B Air conditioning unit cables connection
- 122 Engine cooling fan low speed relay feed
- 123A Engine cooling fan high speed relay feed
- 124 Air conditioning compressor relay
- 127 Front left cables/cable on relay holder bracket connection
- 129 50A power fuse protecting engine cooling fan
- 147 Compressor for air conditioning
- 154 Engine cooling fan
- 170 Engine cooling fan limiting resistance
- 195 Injection/ignition electronic control unit (1581)
- 202 Heater/air conditioning light bulbs
- 208 Limiter resistance for heater/air conditioning
- 209 Outside/recirculation air flap control actuator
- 211 Electronic thermostat (N.T.C.)
- 232 Earth for compressor
- 283 Connection between front cable/resistance
- 296 Fuse carrier base on front cable
  - A 7.5A fuse protecting cooling system/electronic injection; C.A. system; Alarm
  - C 7.5A fuse protecting Fiat - CODE cooling system/electronic injection
  - E 7.5A fuse protecting climate control system
- 297 Air conditioning control unit
- 298 Recirculation control for heater/air conditioning
  - A Air conditioning on switch
  - B Recirculation control switch
  - C Ventilation sensor
- 299 Diagnostic socket for heater/air conditioning
- 300 Car interior fan electronic transformer
- 301 Car interior mixture control actuator
- 302 Maximum demisting control switch
- 303 Internal ventilation potentiometer
- 304 Potentiometer for car interior temperature
- 306 Treated air sensor
- 309 Earth for air conditioning unit
- 312 Power earth for electronic injection control unit
- 314 Four stage pressure switch
- 330 A.B.I. control unit

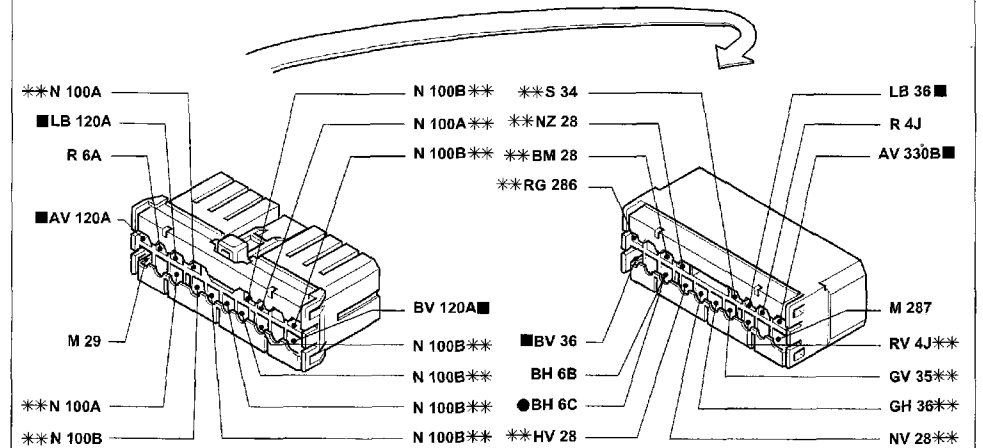
N.D. Welding taped in cable loom

**55** Connection between front/engine pre-wiring cables.



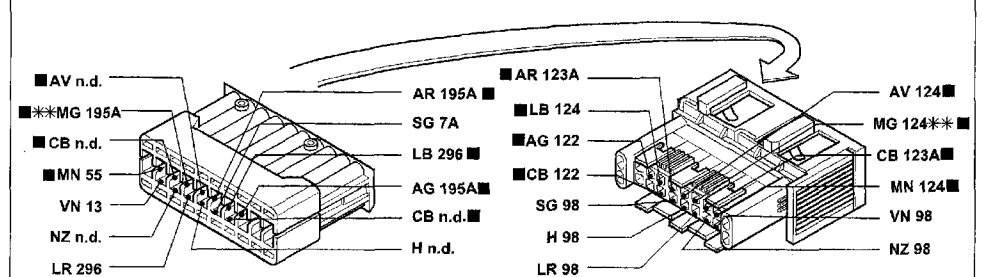
\* Variant connection for version with automatic transmission

**70** Dashboard/front cables connection.



\*\* Variant connection for versions with alarm

**127** Connection between left front cable/cable on relay holder bracket.



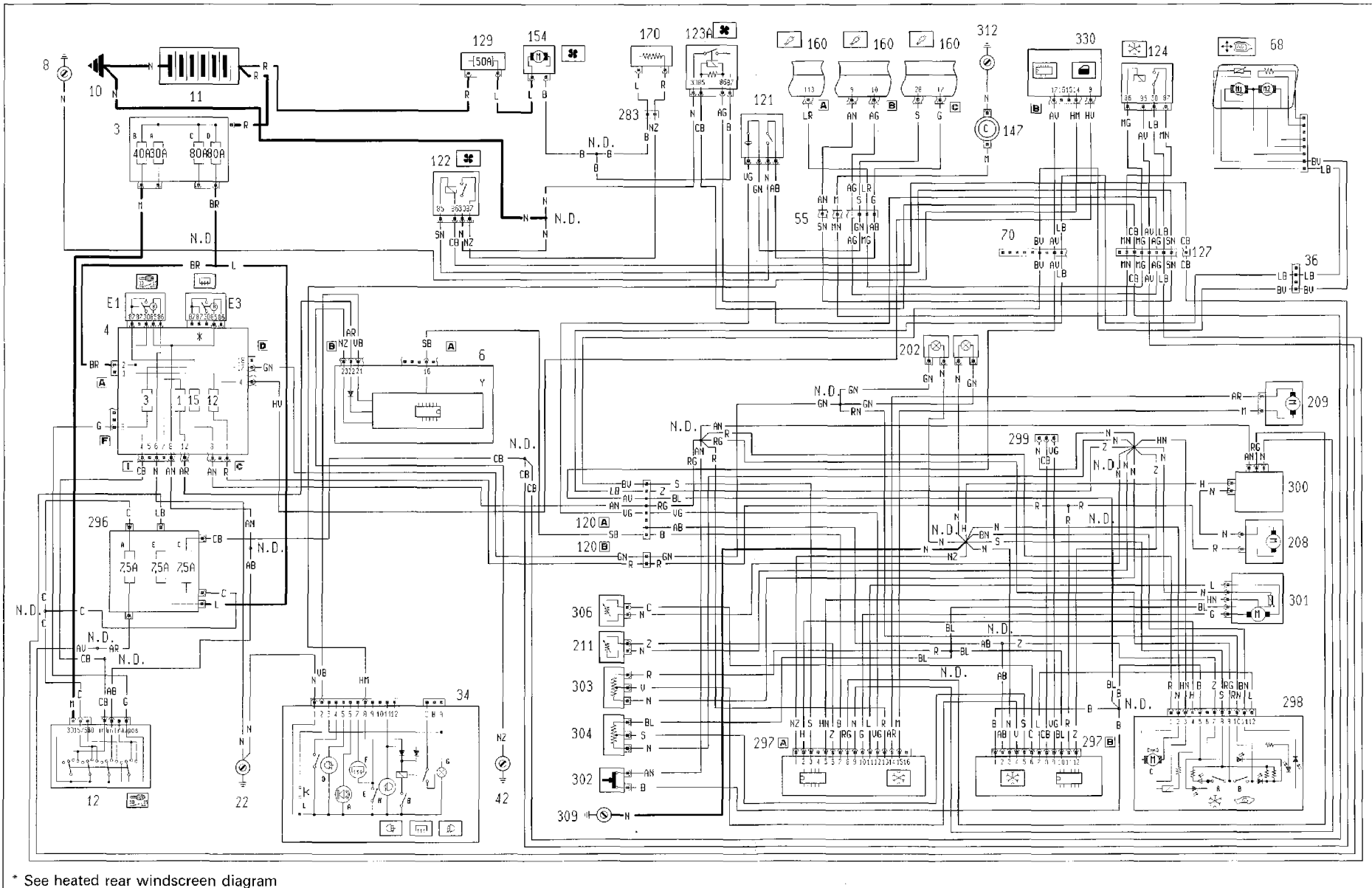
\*\* Variant connection for version with automatic transmission

The cables in the wiring diagram are marked

P4A264101

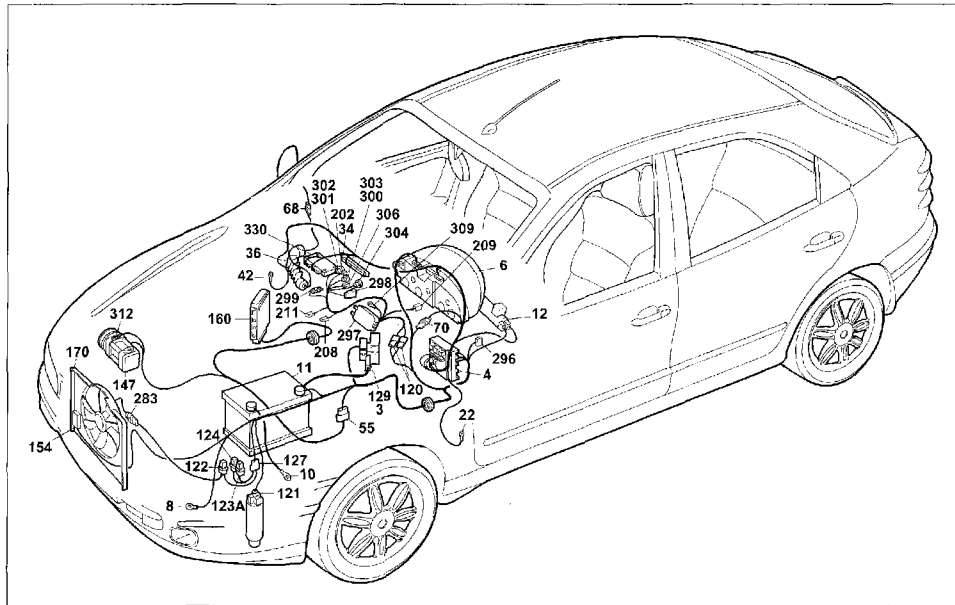
Version with A.B.I.

Automatic air conditioning - (See key at end of wiring diagrams)



\* See heated rear windscreen diagram

55.



P4A26701

Version with A.B.I.

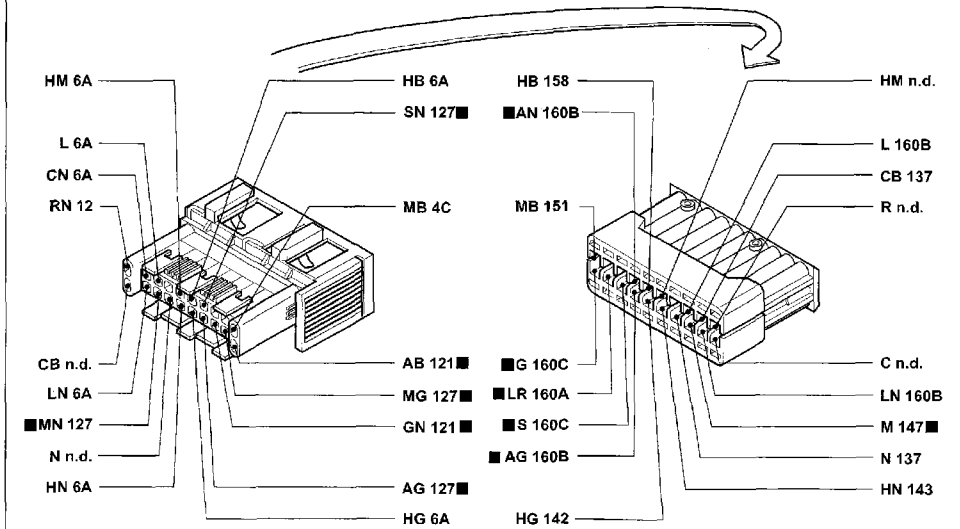
Automatic air conditioning  
Components key

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit:
  - E1 Ignition discharge relay
- 6 Instrument panel:
  - Y Electronic module
- 7 Steering column switch unit
- 8 Left front earth
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 22 Left dashboard earth
- 34 Switch unit:
  - A Anti-theft warning light on
  - B Rear fog lamps switch
  - D Rear fog lamps warning light
  - E Heated rear windscreen switch
  - F Heated rear windscreen warning light
  - G Switch control unit ideogram light
  - H Fog lights warning light
  - I Fog lights switch
  - L Outside temperature control switch
- 36 Dashboard/right front door cables connection
- 42 Right dashboard earth
- 56 Connection between front/engine pre-wiring cables
- 68 Right electrically adjusted external rear view mirror
- 70 Dashboard/front cables connection
- 120A Air conditioning unit cables connection
- 120B Air conditioning unit cables connection
- 121 Three stage pressure switch
- 122 Engine cooling fan low speed relay feed

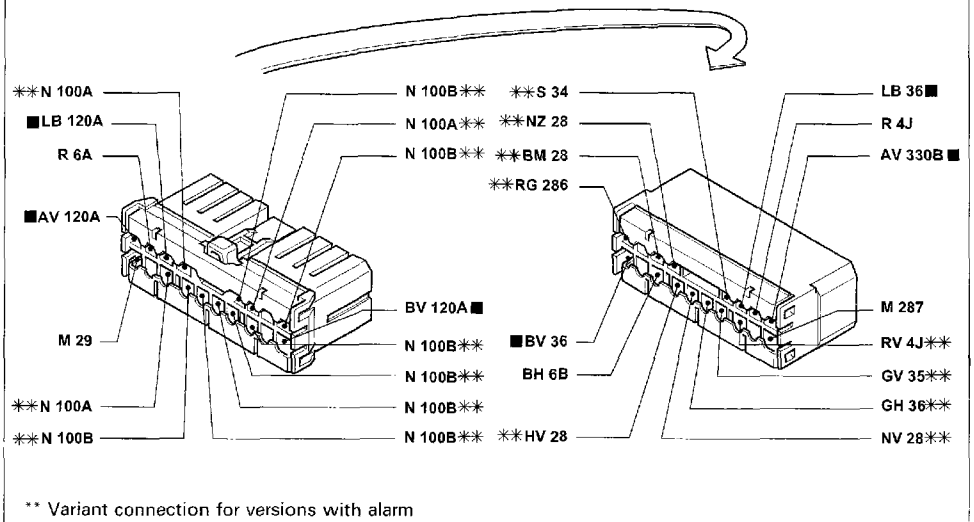
- 123A Engine cooling fan high speed relay feed
- 124 Air conditioning compressor relay
- 127 Connections btwn left front cable/cable on relay holder bracket
- 129 50A power fuse protecting engine cooling fan
- 147 Compressor for air conditioning
- 154 Engine cooling fan
- 160 Injection/ignition electronic control unit (1747)
- 170 Limiter resistance for engine cooling fan
- 202 Heater/air conditioning light bulbs
- 208 Limiter resistance for heater/air conditioning
- 209 Outside/recirculation air flap control actuator
- 211 Electronic thermostat (N.T.C.)
- 283 Connection between front cable/resistance
- 296 Fuse carrier base on front cable
  - A 7.5A fuse protecting cooling system/electronic injection; C.A. system; Alarm
  - C 7.5A fuse protecting Fiat - CODE cooling system/electronic injection
  - E 7.5A fuse protecting climate control system
- 297 Air conditioning control unit
- 298 Recirculation control for heater/air conditioning
  - A Air conditioning on switch
  - B Recirculation control switch
  - C Ventilation sensor
- 299 Diagnostic socket for heater/air conditioning
- 300 Car interior fan electronic transformer
- 301 Car interior mixture control actuator
- 302 Maximum demisting control switch
- 303 Internal ventilation potentiometer
- 304 Potentiometer for car interior temperature
- 306 Treated air sensor
- 309 Earth for air conditioning unit
- 312 Power earth for electronic injection control unit
- 330 A.B.I. control unit

N.D. Ultrasound welding taped in cable loom

55 Connection between front/engine pre-wiring cables.



70 Dashboard/front cables connection.



\*\* Variant connection for versions with alarm

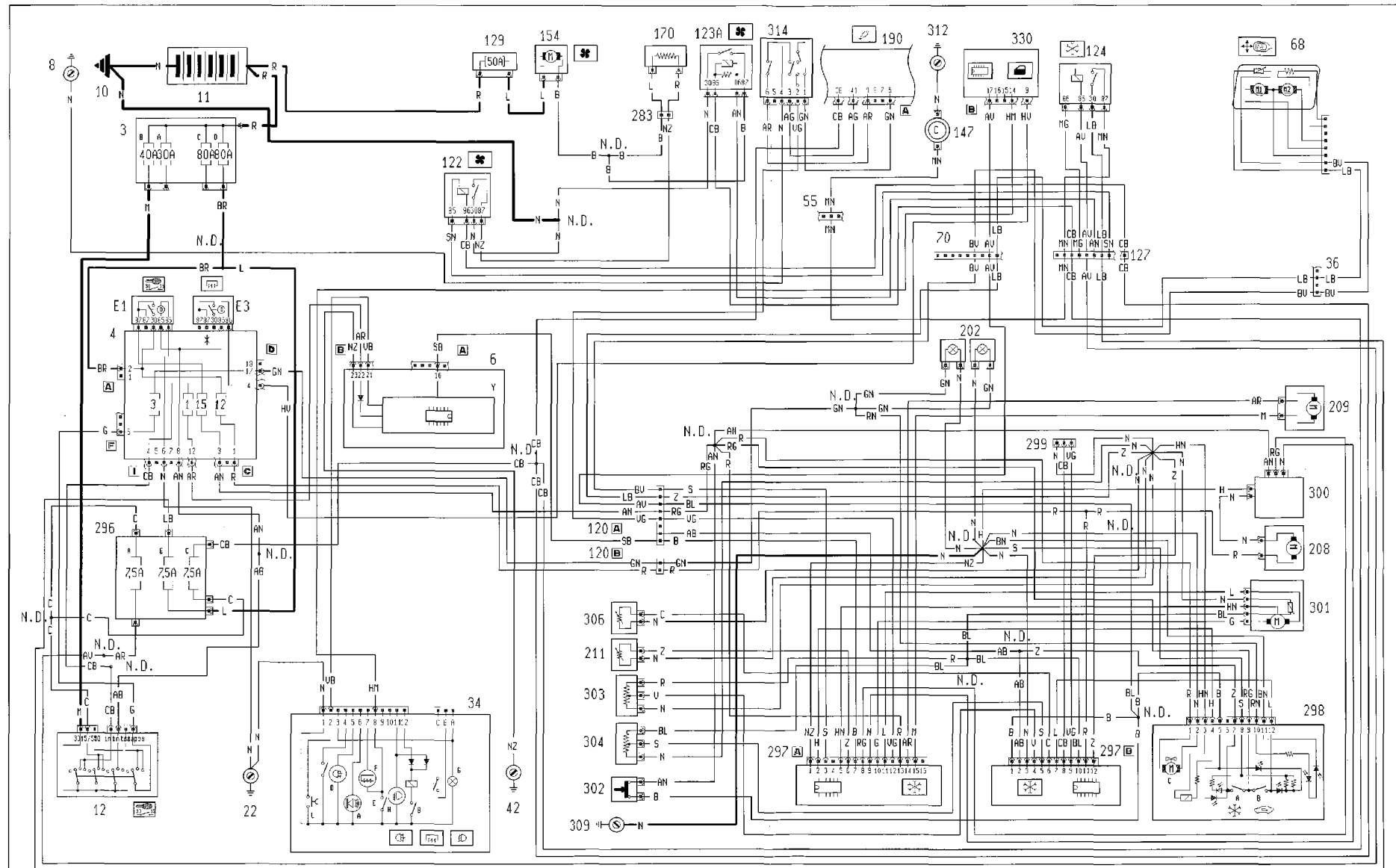
P4A268101

The cables in the wiring diagram are marked

4A2681

4A2671

Version with A.B.I.  
Automatic air conditioning - (See key at end of wiring diagrams)

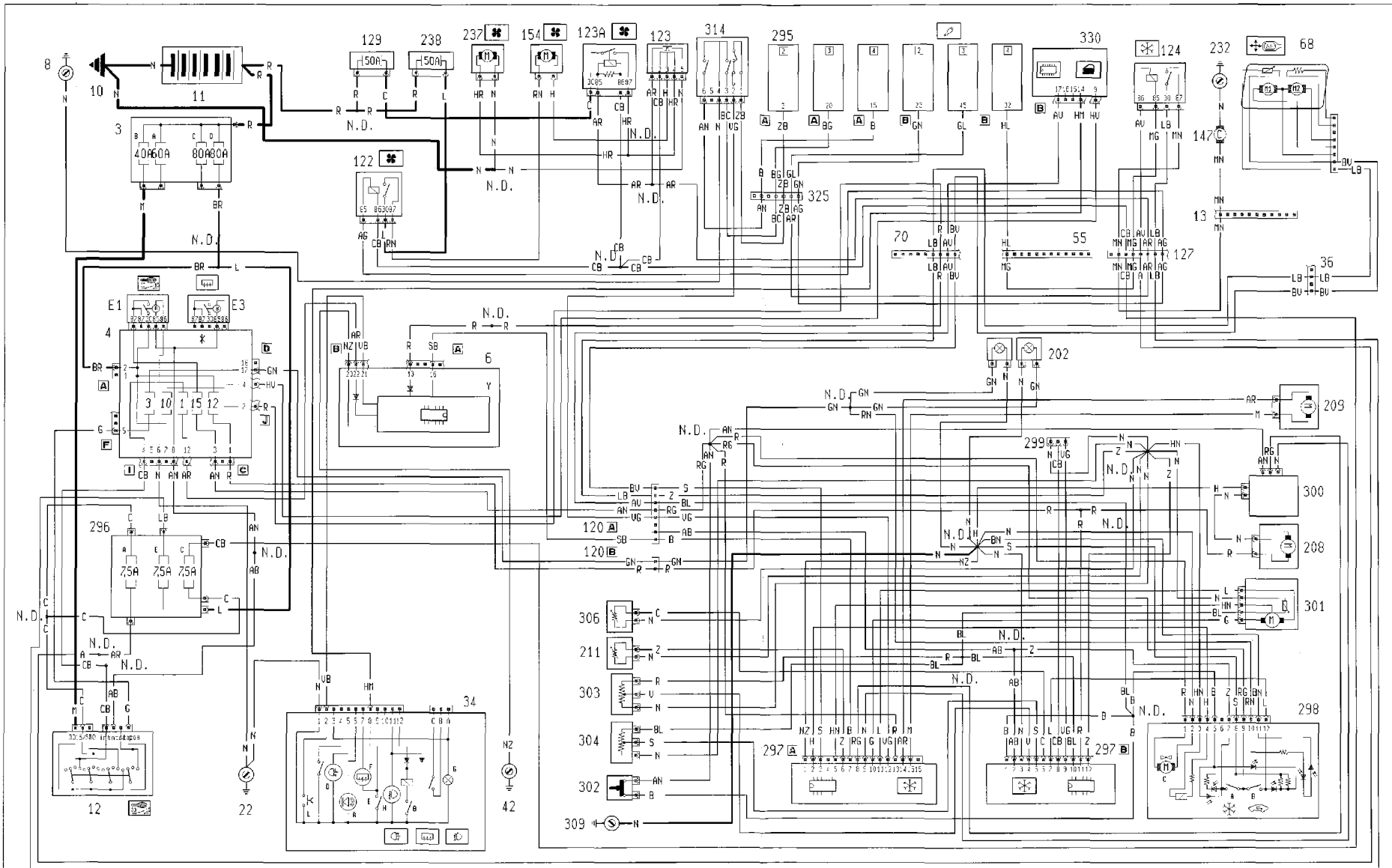


\* See heated rear windscreen diagram



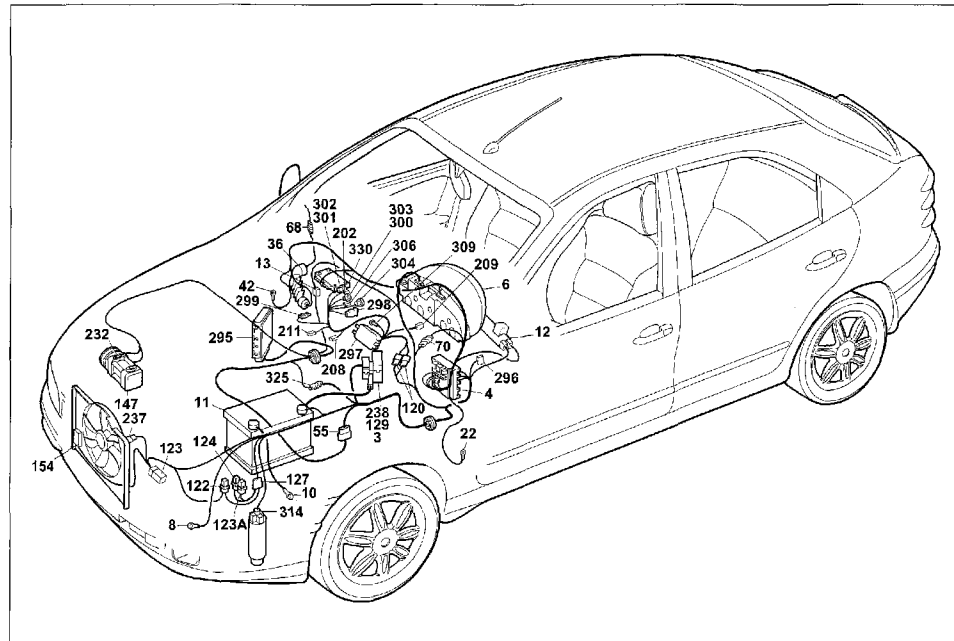
Version with A.B.I.

Automatic air conditioning - (See key at end of wiring diagrams)



\* See heated rear windscreen diagram

## 55.



P4A278101

### Version with A.B.I.

### Automatic air conditioning

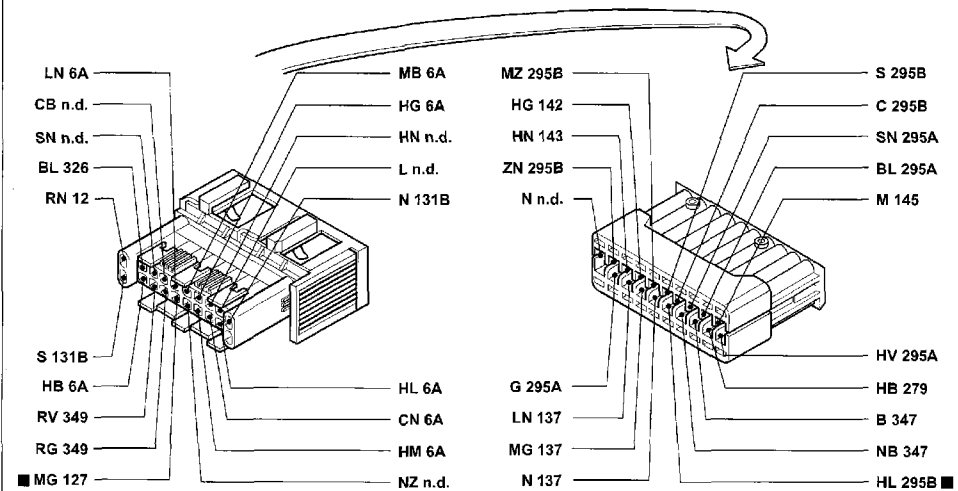
#### Components key

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit:
  - E1 Ignition discharge relay
- 8 Left front earth
- 6 Instrument panel:
  - Y Electronic module
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 13 Front right/left cables connection
- 22 Left dashboard earth
- 36 Dashboard/right front door cables connection
- 42 Right dashboard earth
- 55 Connection between front/engine pre-wiring cables
- 68 Right electrically adjusted external rear view mirror
- 70 Dashboard/front cables connection
- 120 Air conditioning unit cables connection
- 120B Air conditioning unit cables connection
- 122 Engine cooling fan low speed relay feed
- 123 Engine cooling fan high speed timer
- 123A Engine cooling fan high speed relay feed
- 124 Air conditioning compressor relay
- 127 Front left cables/cabin on relay holder bracket connection
- 129 Power fuse protecting engine cooling fan
- 147 Compressor for air conditioning

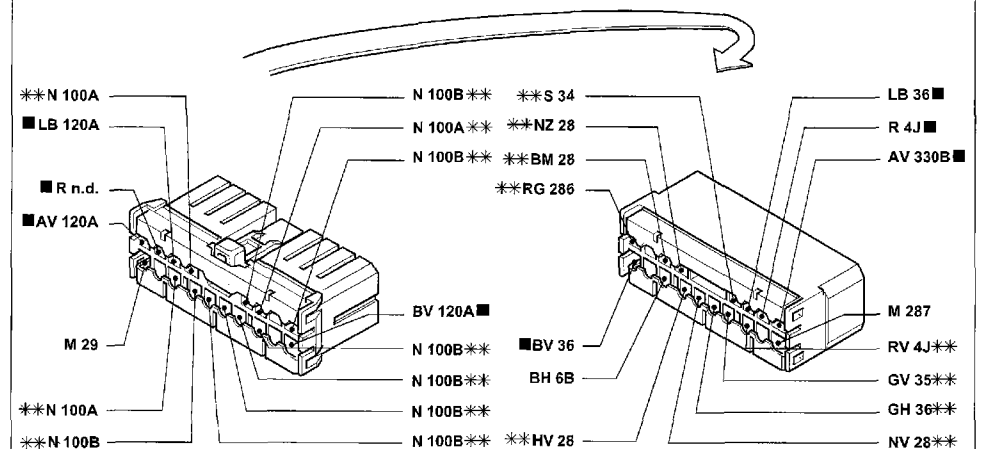
- 154 Engine cooling fan
- 202 Heater/air conditioning light bulbs
- 208 Limiter resistance for heater/air conditioning
- 209 Outside/recirculation air flap control actuator
- 211 Electronic thermostat (N.T.C.)
- 232 Earth for compressor
- 233 Thermostatic switch on water pump
- 237 Additional engine cooling fan
- 238 40A fuse protecting engine cooling fan
- 295 Injection/ignition electronic control unit 1910 TD UNIJET
- 296 Fuse carrier base on front cable
  - A 7.5A fuse protecting cooling system/ electronic injection: C.A. system, Alarm
  - C 7.5A fuse protecting Fiat - CODE cooling system/electronic injection
  - E 7.5A fuse protecting climate control system
- 297 Air conditioning control unit
- 298 Recirculation control for heater/air conditioning
  - A Air conditioning on switch
  - B Recirculation control switch
  - C Ventilation sensor
- 299 Diagnostic socket for heater/air conditioning
- 300 Car interior fan electronic transformer
- 301 Car interior mixture control actuator
- 303 Internal ventilation potentiometer
- 304 Potentiometer for car interior temperature
- 306 Treated air sensor
- 309 Earth for air conditioning unit
- 314 Four stage pressure switch
- 325 Connection between injection/left front cables
- 330 A.B.I. control unit

N.D. Ultrasound welding taped in cable loom

### 55 Connection between front/engine pre-wiring cables.



### 70 Dashboard/front cables connection.



\*\* Variant connection for versions with alarm

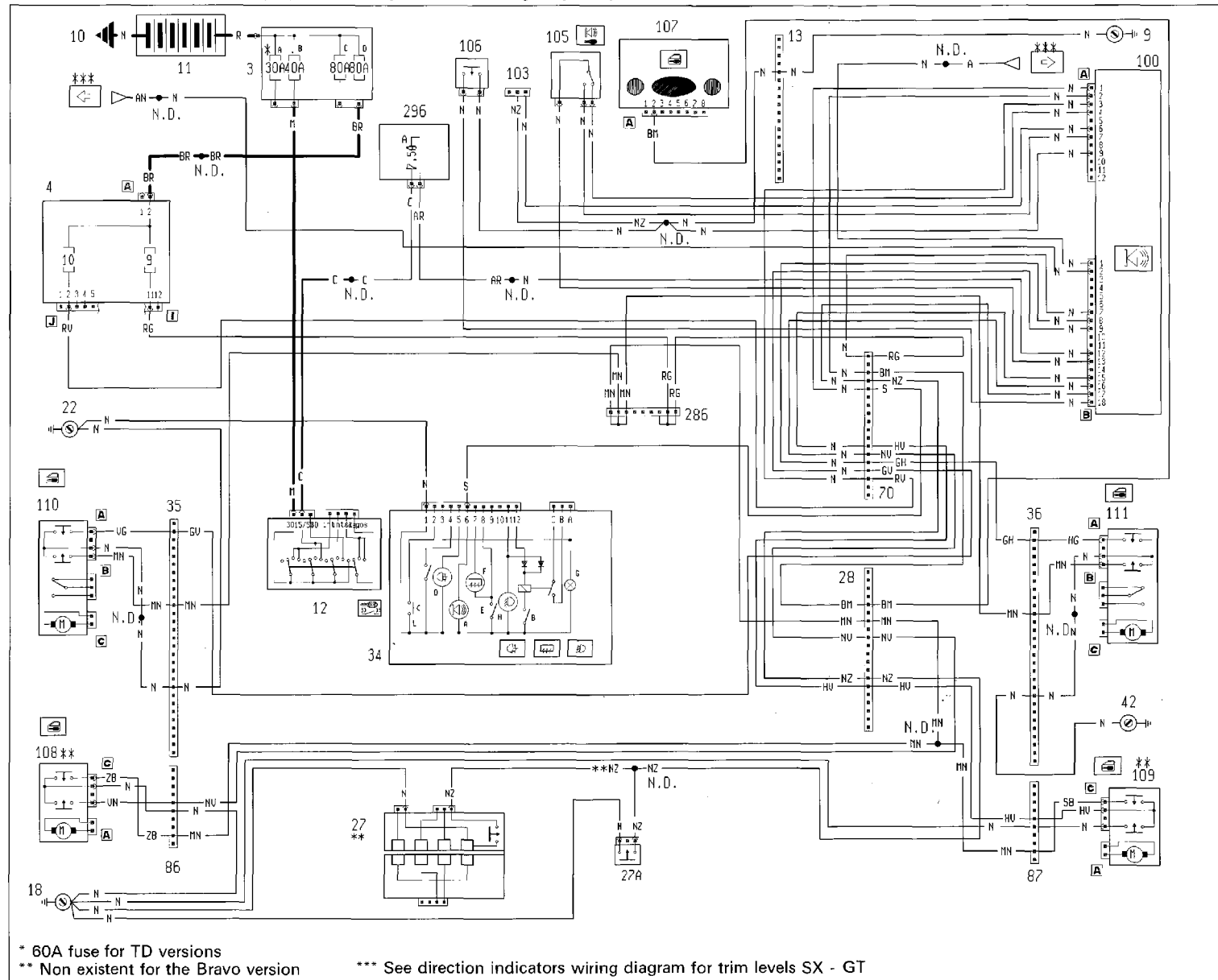
P4A278101

The cables in the wiring diagram are marked



Trim level: SX - GT

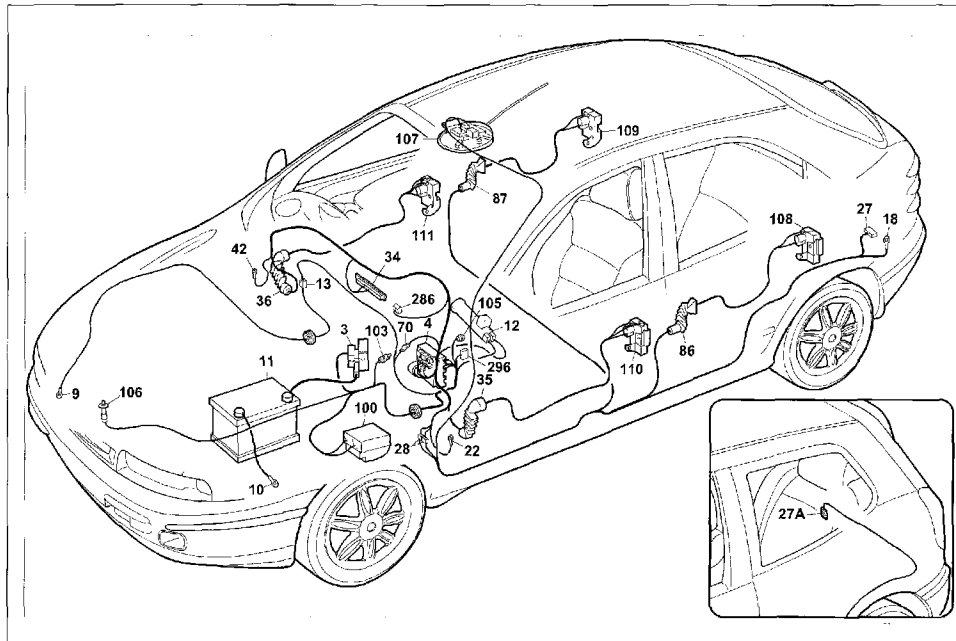
Alarm device - Alarm on warning light - (See key at end of wiring diagrams)



\* 60A fuse for TD versions  
\*\* Non existent for the Bravo version

\*\*\* See direction indicators wiring diagram for trim levels SX - GT

55.



SX - GT Trim level

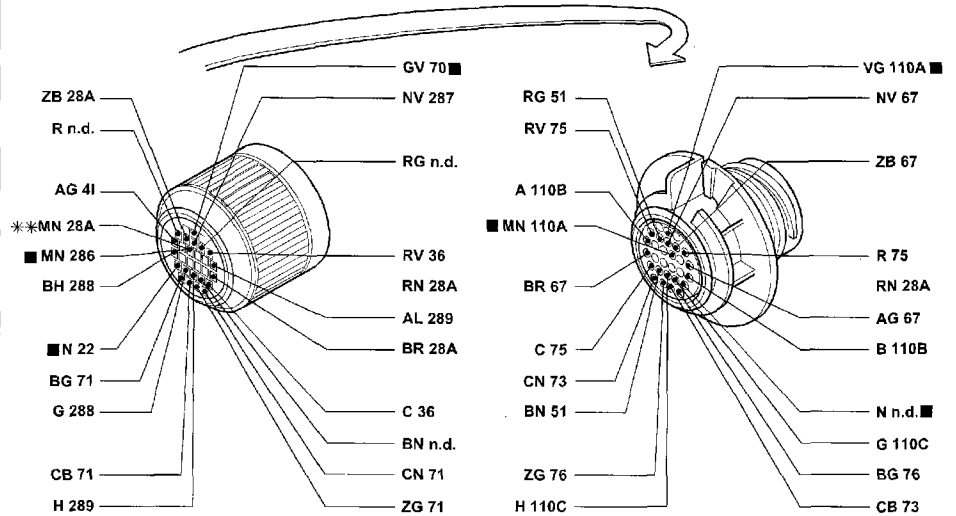
Alarm device - Alarm on warning light

Components key

- |  |   |
|--|---|
| <p>3 Power fuse box:<br/>A 30A protective fuse for injection system (80A for TD versions)<br/>B 40A protective fuse for ignition system<br/>C 80A fuse protecting additional options<br/>D 80A protective fuse for junction unit</p> <p>4 Junction unit</p> <p>9 Right front earth</p> <p>10 Earth for battery on bodyshell</p> <p>11 Battery</p> <p>12 Ignition switch</p> <p>13 Front right/left cables connection</p> <p>18 Left rear earth</p> <p>22 Left dashboard earth</p> <p>27 Contact board for rear connections with luggage compartment light incorporated</p> <p>27A Push button for luggage compartment light, engaging alarm and signalling tailgate open</p> <p>28 Dashboard/longitudinal cables connection</p> <p>34 Switch control unit:<br/>A Alarm on warning light<br/>B Rear fog lamps switch<br/>D Rear fog lamps warning light<br/>E Heated rear windscreen switch<br/>F Heated rear windscreen warning light<br/>G Switch control unit ideogram light<br/>H Fog lights warning light<br/>I Fog lights switch<br/>L Outside temperature control switch</p> | <p>35 Dashboard/left front door cables connection</p> <p>36 Dashboard/right front door cables connection</p> <p>42 Right dashboard earth</p> <p>70 Dashboard/front cables connection</p> <p>86 Longitudinal/left rear door cables connection</p> <p>87 Longitudinal/right rear door cables connection</p> <p>100 Alarm device electronic control unit</p> <p>103 Diagnostic socket for alarm</p> <p>105 Alarm device off switch</p> <p>106 Alarm on switch</p> <p>107A Central locking remote control receiver</p> <p>108 Left rear central locking/alarm switch</p> <p>109 Right rear central locking/alarm on switch</p> <p>110 Left front central locking/alarm on switch</p> <p>111 Right front central locking/alarm on switch</p> <p>286 Short circuit connection</p> <p>296 Fuse carrier base on front cable<br/>A 7.5A fuse protecting cooling system/ electronic injection; C.A. system; Alarm</p> |
|--|---|

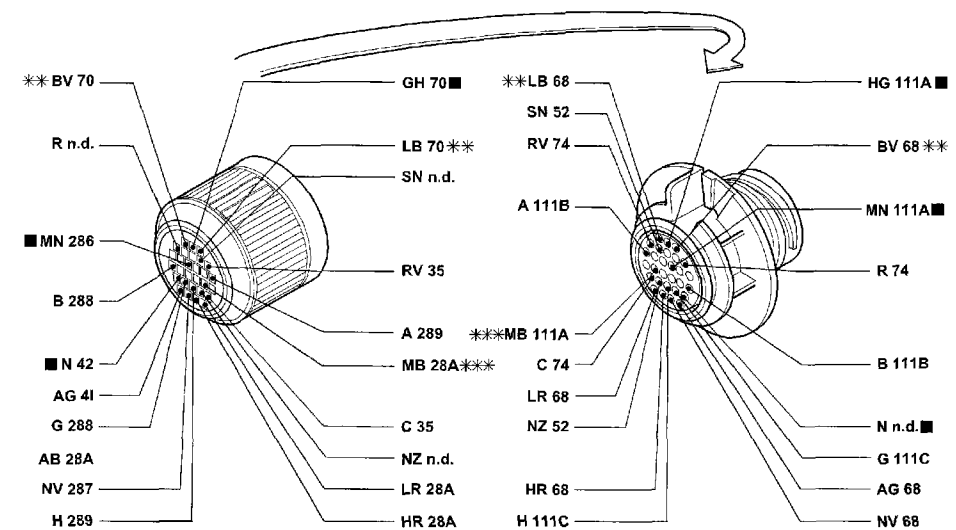
N.D. Ultrasound welding taped in cable loom

35 Dashboard/left front door cables connection.



\*\* Variant connection for version with automatic transmission

36 Dashboard/right front door cables connection.

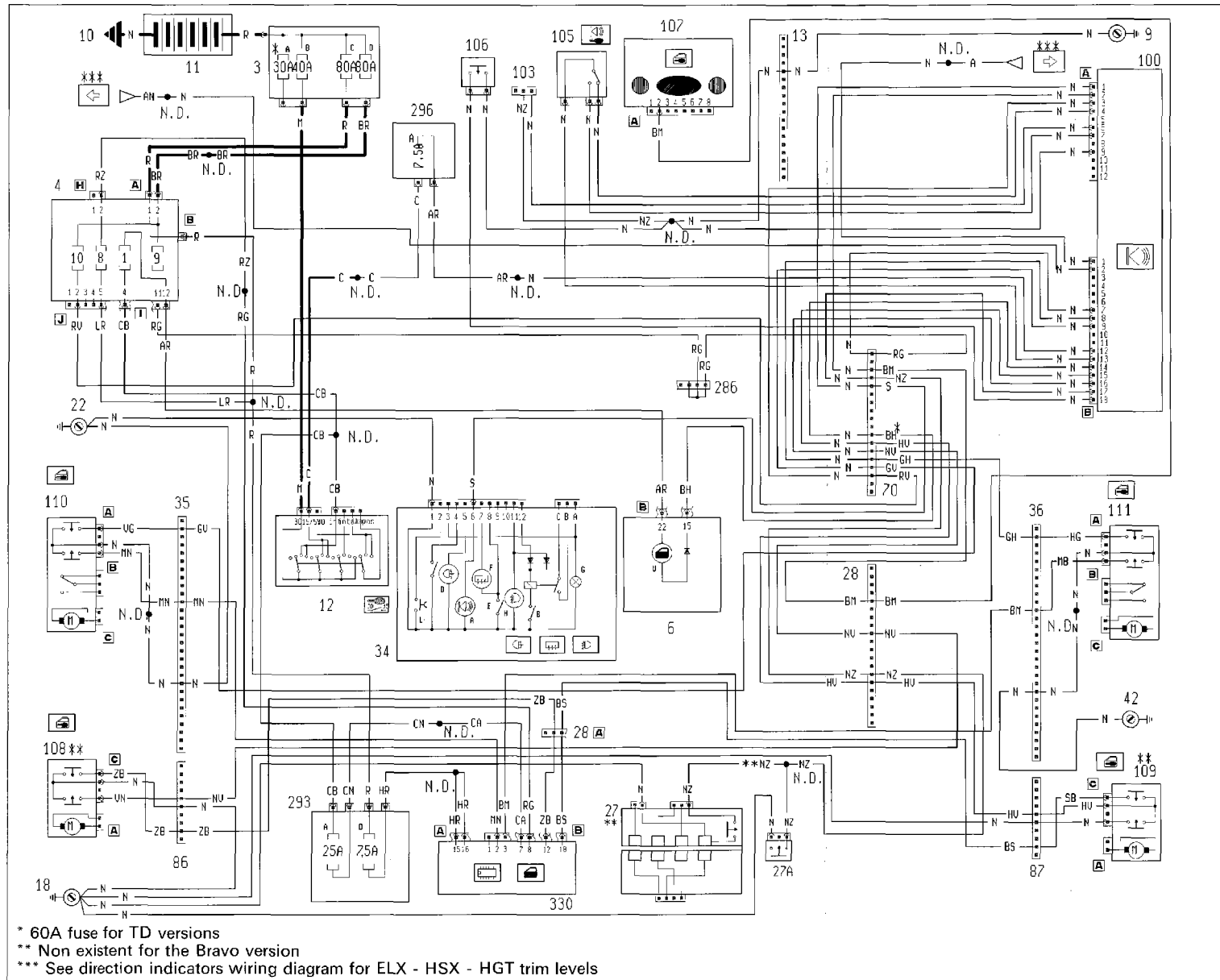


\*\* Variant connection for version with automatic transmission

The cables in the wiring diagram are marked

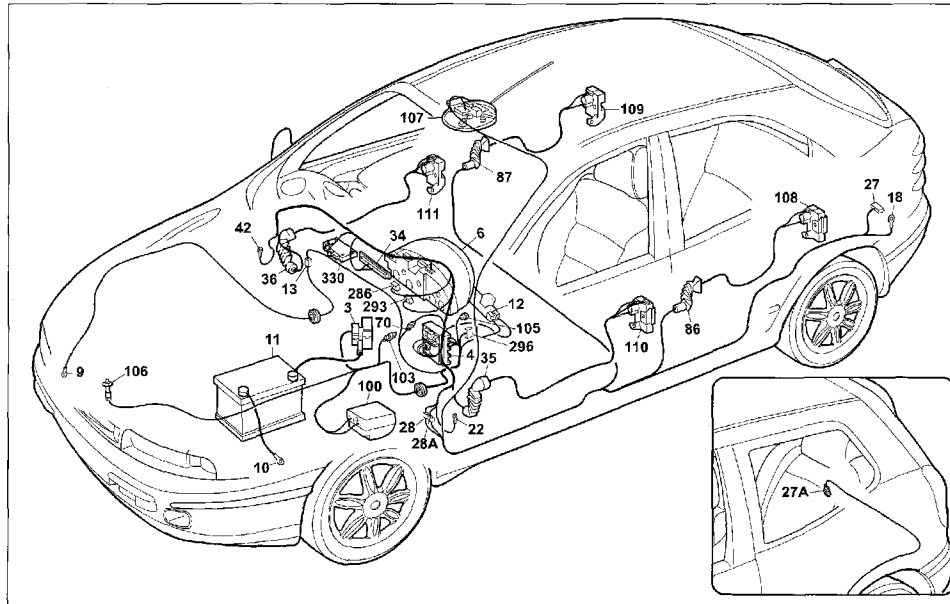
Trim level: ELX - HSX - HGT

Alarm device - Alarm on warning light - (See key at end of wiring diagrams)



\* 60A fuse for TD versions  
 \*\* Non existent for the Bravo version  
 \*\*\* See direction indicators wiring diagram for ELX - HSX - HGT trim levels

**55.**



P4A28301

Trim level: ELX - HSX - HGT

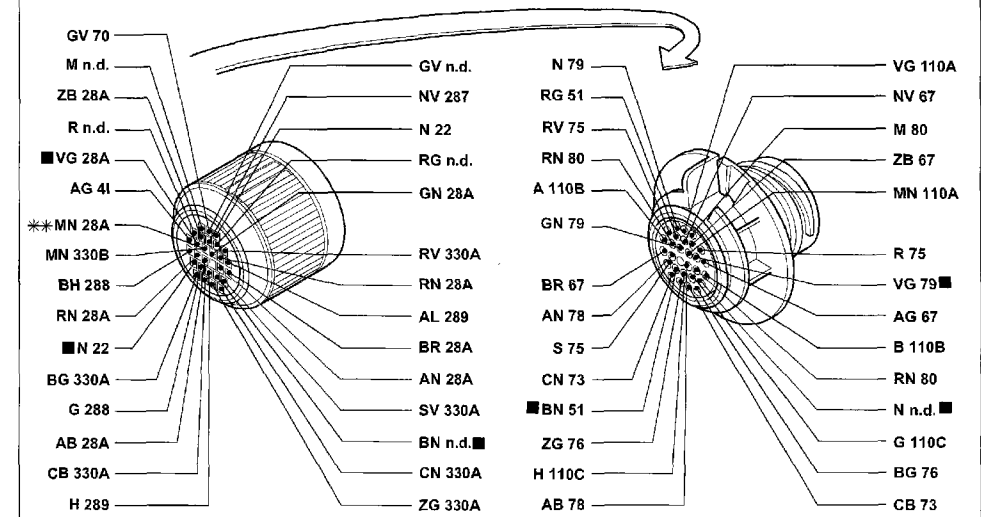
**Alarm device - Alarm on warning light**

**Components key**

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit
- 6 Instrument panel:
  - U Doors ajar warning light
- 9 Right front earth
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 13 Front right/left cables connection
- 18 Left rear earth
- 22 Left dashboard earth
- 27 Contact board for rear connections with luggage compartment light switch incorporated
- 27A Button for luggage compartment light, switching on alarm and signalling boot lid open
- 28 Dashboard/longitudinal cables connection
- 34 Switch control panel:
  - A Alarm on warning light
  - B Rear fog lamps switch
  - D Rear fog lamps warning light
  - E Heated rear windscreen switch
  - F Heated rear windscreen warning light
- G Switch control unit ideogram light
- H Fog lights warning light
  - I Fog lights switch
  - L Outside temperature control switch
- 35 Dashboard/left front door cables connection
- 36 Dashboard/right front door cables connection
- 42 Right dashboard earth
- 70 Dashboard/front cables connection
- 86 Longitudinal/left rear door cables connection
- 87 Longitudinal/right rear door cables connection
- 100 Alarm device electronic control unit
- 103 Diagnostic socket for alarm
- 105 Alarm device off switch
- 106 Alarm on switch
- 107A Central locking remote control receiver
- 108 Left rear central locking/alarm switch
- 109 Right rear central locking/alarm on switch
- 110 Left front central locking/alarm on switch
- 111 Right front central locking/alarm on switch
- 286 Short circuit connection
- 293 Fuse carrier base on dashboard cable
  - A 7.5A fuse protecting switch panel light; Radio phone; Radio; Electric mirrors
  - D 25A fuse protecting ABS control unit; Central locking control unit
- 296 Fuse carrier base on front cable
  - A 7.5A fuse protecting cooling system/electronic injection; C.A. system; Alarm
- 330 A.B.I. control unit

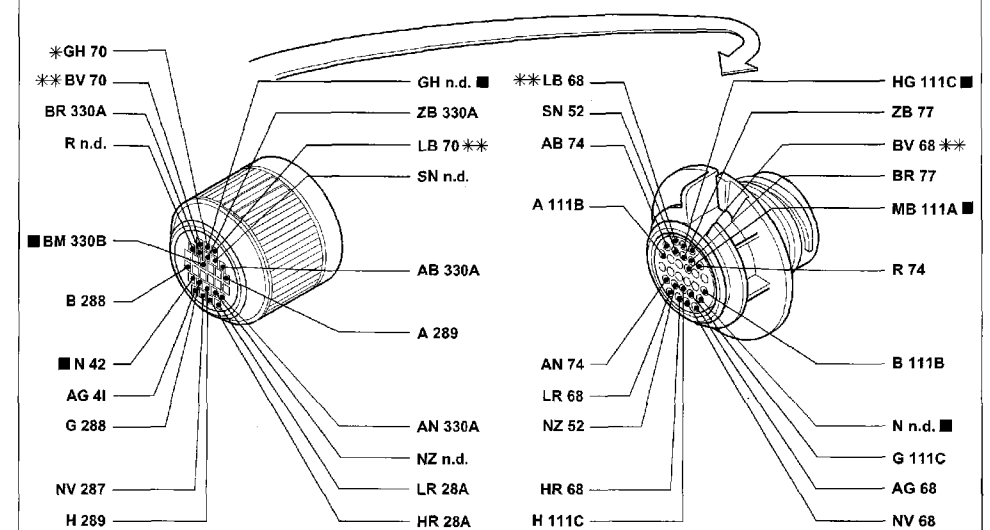
N.D. Ultrasound welding taped in cable loom

**35** Dashboard/left front door cables connection.



\*\* Variant connection for version with automatic transmission

**36** Dashboard/right front door cables connection.

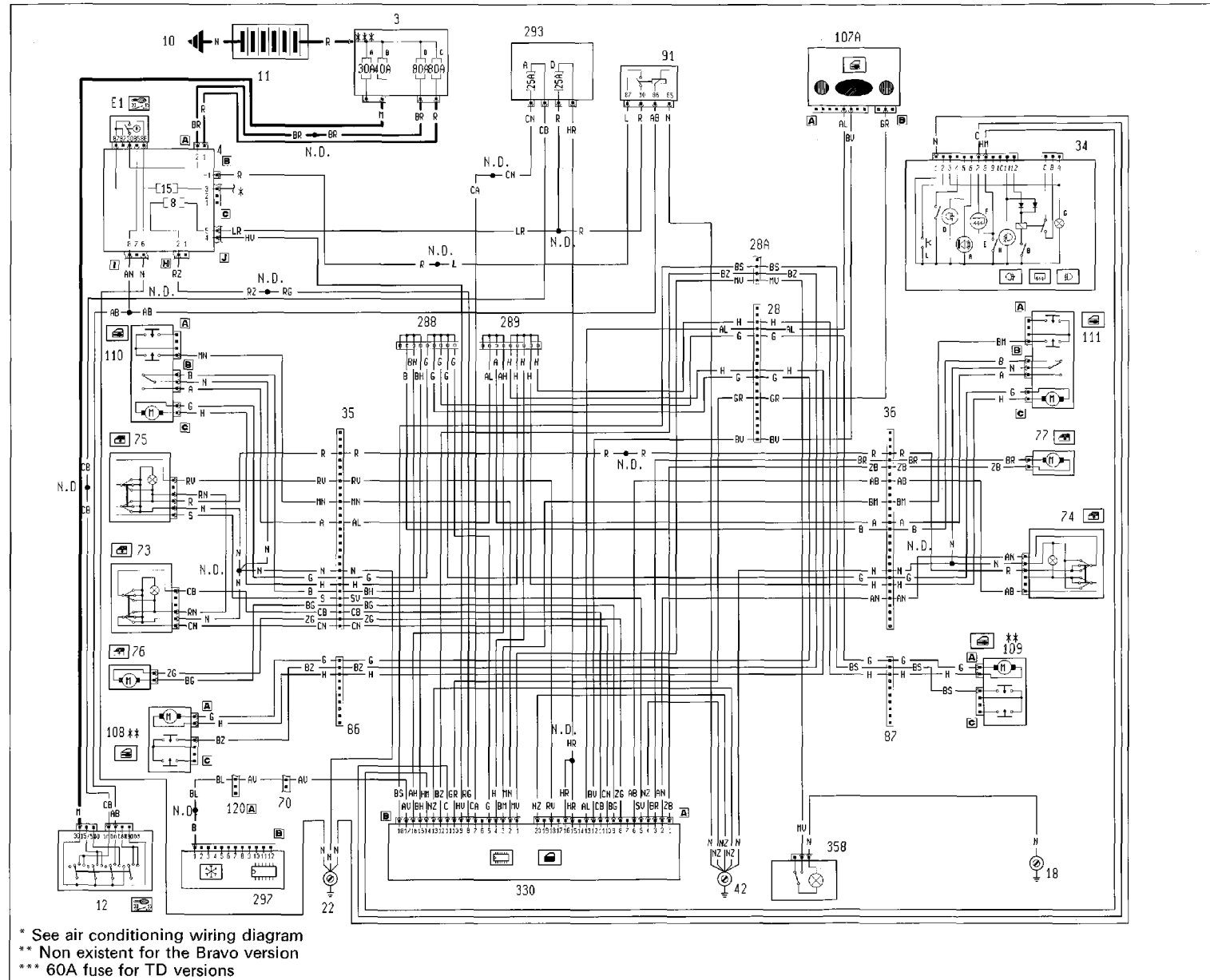


\*\* Variant connection for version with automatic transmission

The cables in the wiring diagram are marked

P4A28401

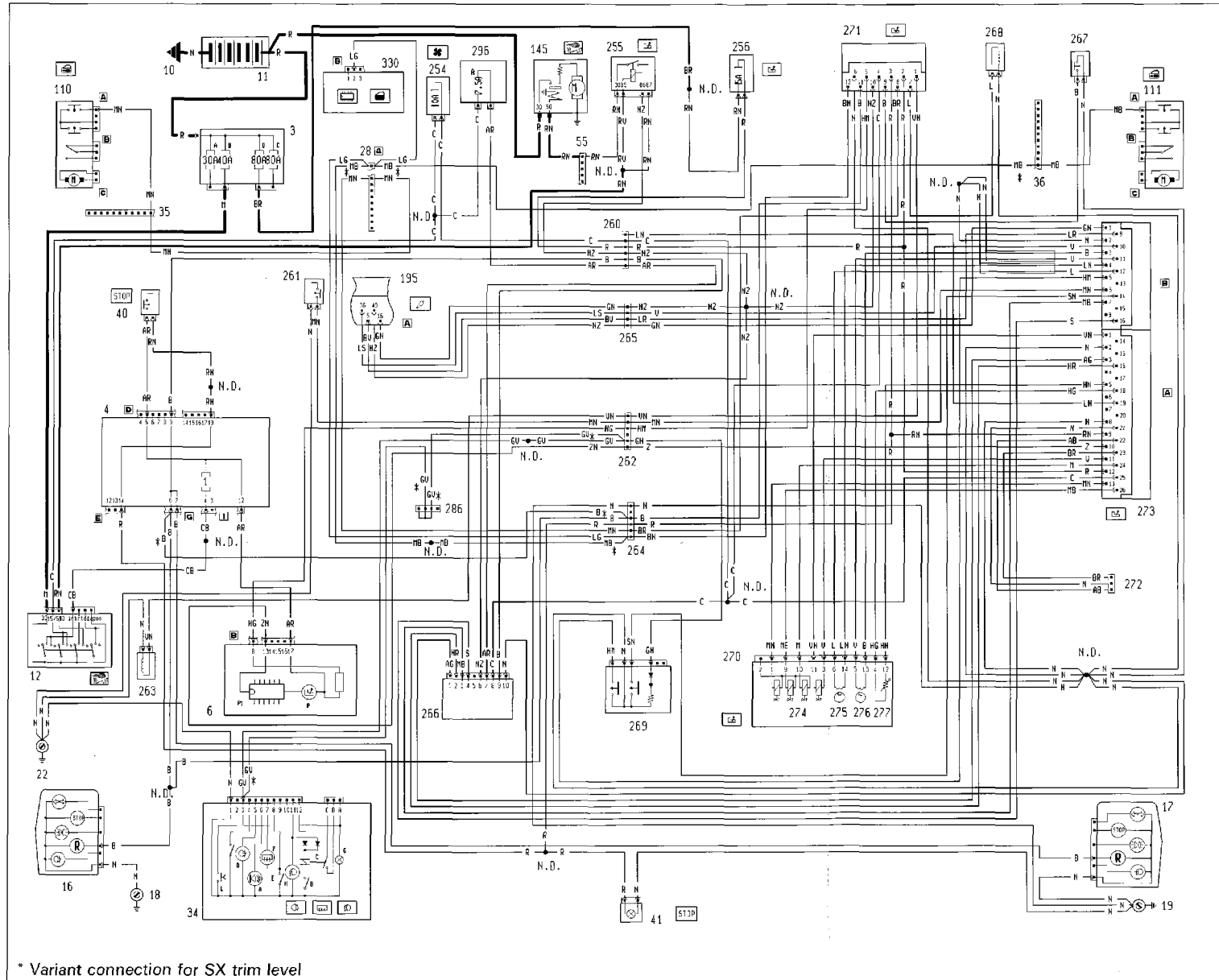
**A.B.I. control unit connection (See key at end of wiring diagrams)**



\* See air conditioning wiring diagram  
\*\* Non existent for the Bravo version  
\*\*\* 60A fuse for TD versions

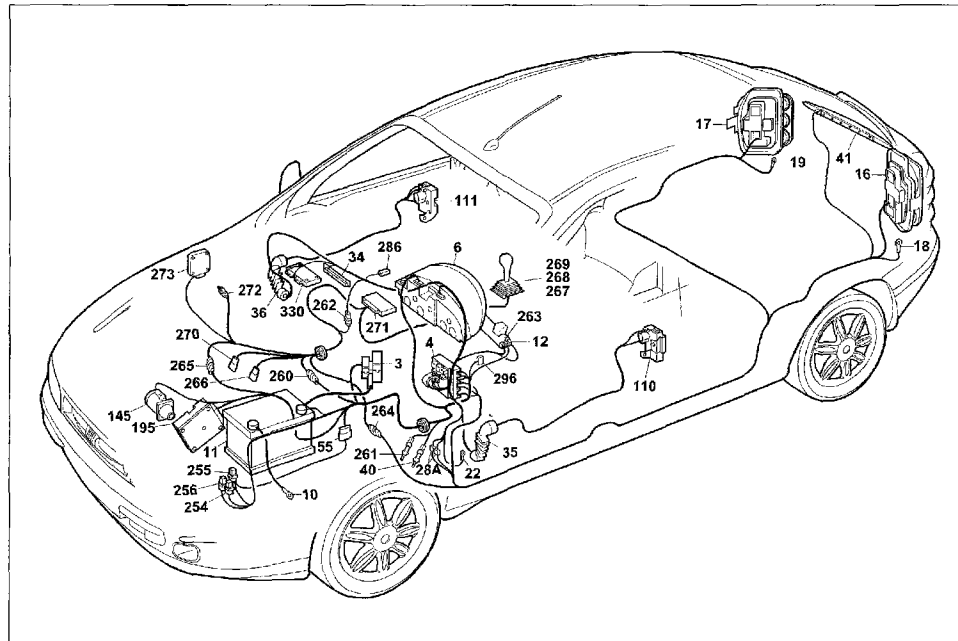


Automatic transmission - (See key at end of wiring diagrams)



\* Variant connection for SX trim level

55.



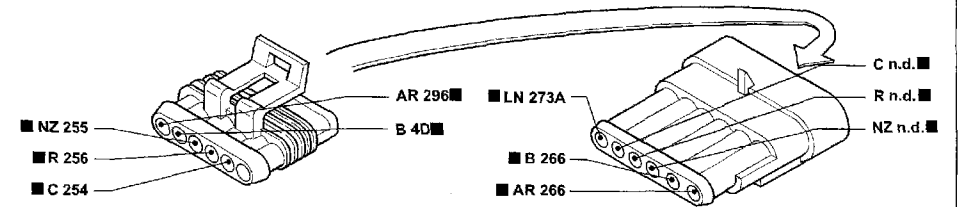
P4A291101

Automatic transmission

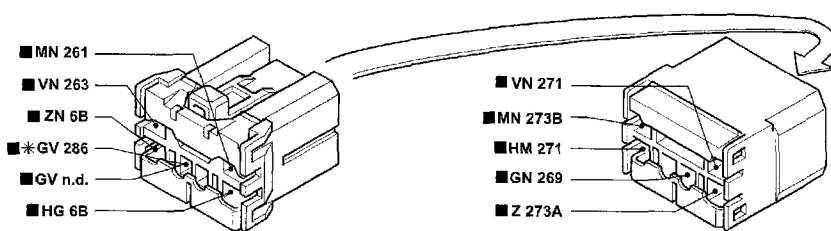
Components key

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit:
- 6 Instrument panel:
  - P Automatic transmission failure warning light
  - P1 Automatic transmission circuit control module
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 16 Left rear light cluster
- 17 Right rear light cluster
- 18 Left rear earth
- 19 Right rear earth
- 22 Left dashboard earth
- 28A Dashboard/longitudinal cables connection
- 34 Switch control panel:
  - A Alarm on warning light
  - B Rear fog lamps switch
  - D Rear fog lamps warning light
  - E Heated rear windscreen switch
  - F Heated rear windscreen warning light
  - G Switch control unit ideogram light
  - H Fog lights warning light
  - I Fog lights switch
  - L Outside temperature control switch
- 35 Dashboard/left front door cables connection
- 36 Dashboard/right front door cables connection
- 40 Brake lights control switch
- 41 Additional brake light
- 41A Additional rear brake light cables connection
- 55 Connection between front/engine pre-wiring cables
- 110 Left front central locking/alarm on switch
- 111 Right front central locking/alarm on switch
- 145 Starter motor
- 195 Injection/ignition electronic control unit (1581)
- 254 10A fuse protecting automatic transmission
- 255 Automatic transmission starting go ahead relay
- 256 5A fuse protecting automatic transmission
- 260 Connection between front/automatic transmission cables
- 281 Kick-Down switch
- 282 Connection between dashboard/automatic transmission cables
- 283 Solenoid valve on ignition switch
- 284 Connection between rear/automatic transmission cables
- 285 Connection between automatic transmission/injection cables
- 286 Multi-purpose switch on automatic transmission
- 287 Additional parking switch
- 288 Shift-Lock solenoid valve
- 289 Normal / Sport / Ice selector switch
- 270 Connection for cables on gearbox
- 271 Electronic safety control unit for automatic transmission
- 272 Diagnostic socket for automatic transmission control unit
- 273 Automatic transmission electronic control unit
- 274 Modulating solenoid valves
- 275 Vehicle speed electro-magnetic sensor
- 276 Gearbox input revs electro-magnetic sensor
- 277 Automatic transmission oil temperature sensor
- 286 Short circuit connection
- 296 Fuse carrier base on front cable
  - A 7.5A fuse protecting cooling system/electronic injection; C.A. system; Alarm
- 330 A.B.I. control unit
- N.D. Ultrasound welding taped in cable loom

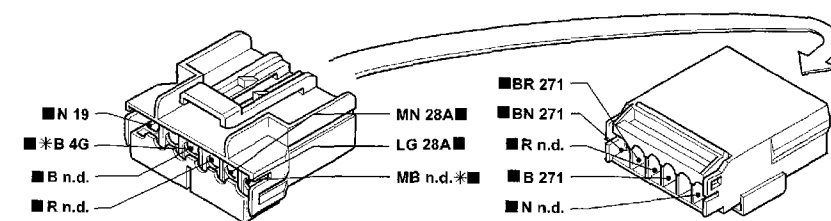
260 Connection between front/automatic transmission cables.



262 Connection between dashboard/automatic transmission cables.



264 Connection between rear/automatic transmission cables.



265 Connection between automatic transmission/injection cables.



P4A292101

The cables in the wiring diagram are marked

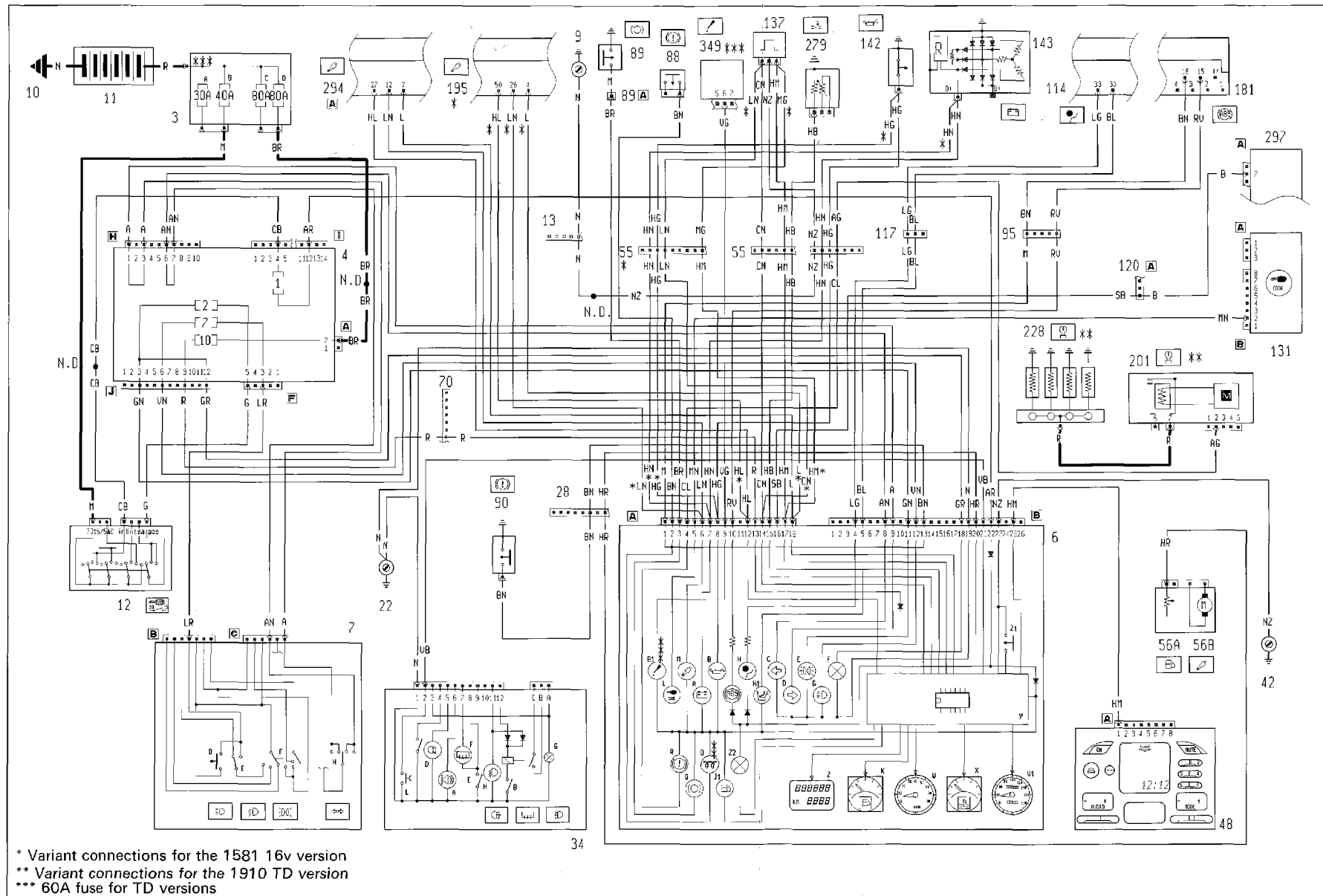
4A2921

4A2911

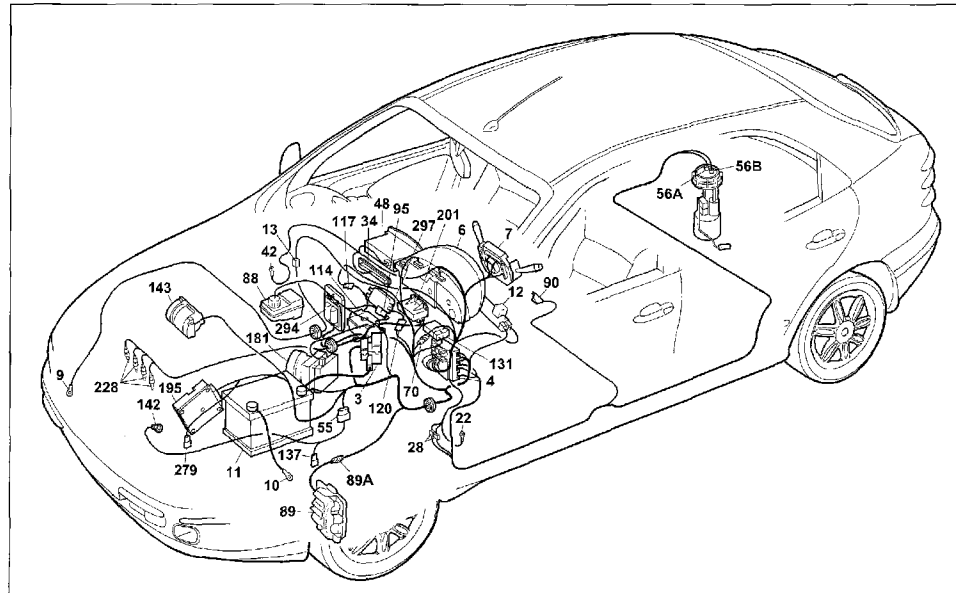


Trim level: SX - GT

Instrument panel connections - (See key at end of wiring diagrams)



## 55.



P4A296101

Trim level: **SX - GT**

### Instrument panel connections

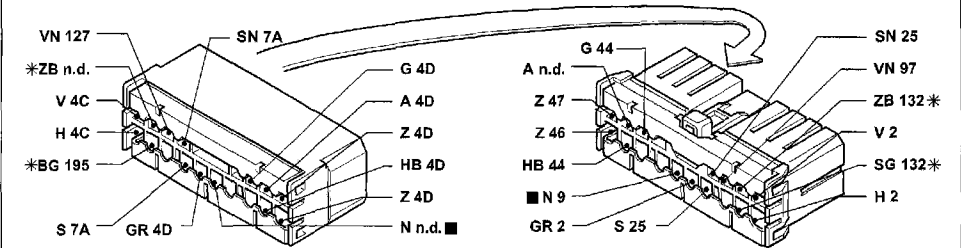
#### Components key

- 3 Power fuse box:
  - A 30A protective fuse for injection system (80A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit
- 6 Instrument panel:
  - A Battery recharging warning light
  - B Insufficient engine oil pressure warning light
  - C Left direction indicator warning light
  - D Right direction indicator warning light
  - E Side lights warning light
  - F Instrument panel ideogram lights
  - G Main beam headlamps warning light
  - H EURO-BAG system failure warning light
  - H1 Passenger EURO-BAG off warning light
- I Anti-lock braking system failure warning light
- J1 Warning light signalling fuel reserve
- K Fuel level gauge
- L Fiat CODE device failure warning light
- M Injection system failure warning light Petrol/DS
- O Heater plugs warning light
- Q Front brake pad wear warning light
- R Handbrake/insufficient brake fluid level warning light
- V1 Speedometer
- W Rev counter
- X Engine coolant temperature gauge
- Y Electronic module
- Z Milometer/trip meter
- Z1 Trip meter zeroing button
- Z2 Milometer/trip meter light
- 7 Steering column switch unit:
  - D Flasher control
  - E Switch for dipped/main beam headlamps
  - F Switch for side lights
  - H Switch for direction indicators
- 9 Right front earth
- 10 Earth for battery on bodysell

- 11 Battery
- 12 Ignition switch
- 13 Front right/left cables connection
- 22 Left dashboard earth
- 28 Dashboard/longitudinal cables connection
- 34 Switch control panel:
  - A Anti-theft warning light on
  - B Rear fog lamps switch
  - C Rear fog lamps relay feed
  - D Rear fog lamps warning light
  - E Heated rear windscreen switch
  - F Heated rear windscreen warning light
  - G Switch control unit ideogram light
  - H Fog lights warning light
  - I Fog lights switch
  - L Outside temperature control switch
- 42 Right dashboard earth
- 46 Radio receiver with clock
- 55 Connection between front/engine pre-wiring cables
- 56 Fuel level gauge
  - A Fuel level sensor
  - B Electric fuel pump
- 70 Dashboard/front cables connection
- 88 Insufficient brake fluid level sensor
- 89 Left brake pad wear sensor
- 89A Left brake pad wear sensor cables connection
- 90 Switch signalling handbrake applied
- 95 Front/anti-lock brakes cables connection (A.B.S.)
- 114 EURO-BAG electronic control unit
- 117 Connection between EURO-BAG/dashboard cables
- 120A Air conditioning unit cables connection
- 131 Fiat CODE electronic control unit
- 137 Vehicle speed sensor
- 142 Switch signalling insufficient engine oil pressure
- 143 Alternator
- 181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)
- 201 Heater plugs control unit
- 228 Heater plugs
- 279 Twin engine coolant temperature sender unit
- 294 Injection/ignition electronic control unit 1242
- 297 Air conditioning control unit
- N.D. Ultrasound welding taped in cable loom

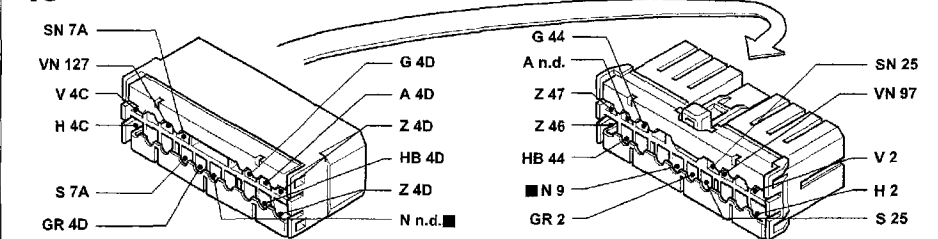
4A2961

### 13 Front right/left cables connection. Versions: 1242 16v - 1581 16v

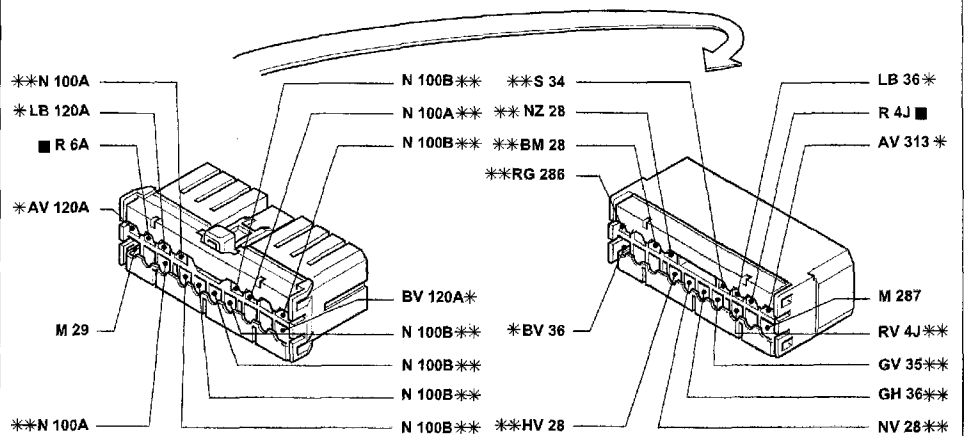


\* Variant connection for 1581 16v versions

### 13 Front right/left cables connection



### 70 Dashboard/front cables connection.



\* Variant connection for versions with air conditioning  
\*\* Variant connection for versions with alarm

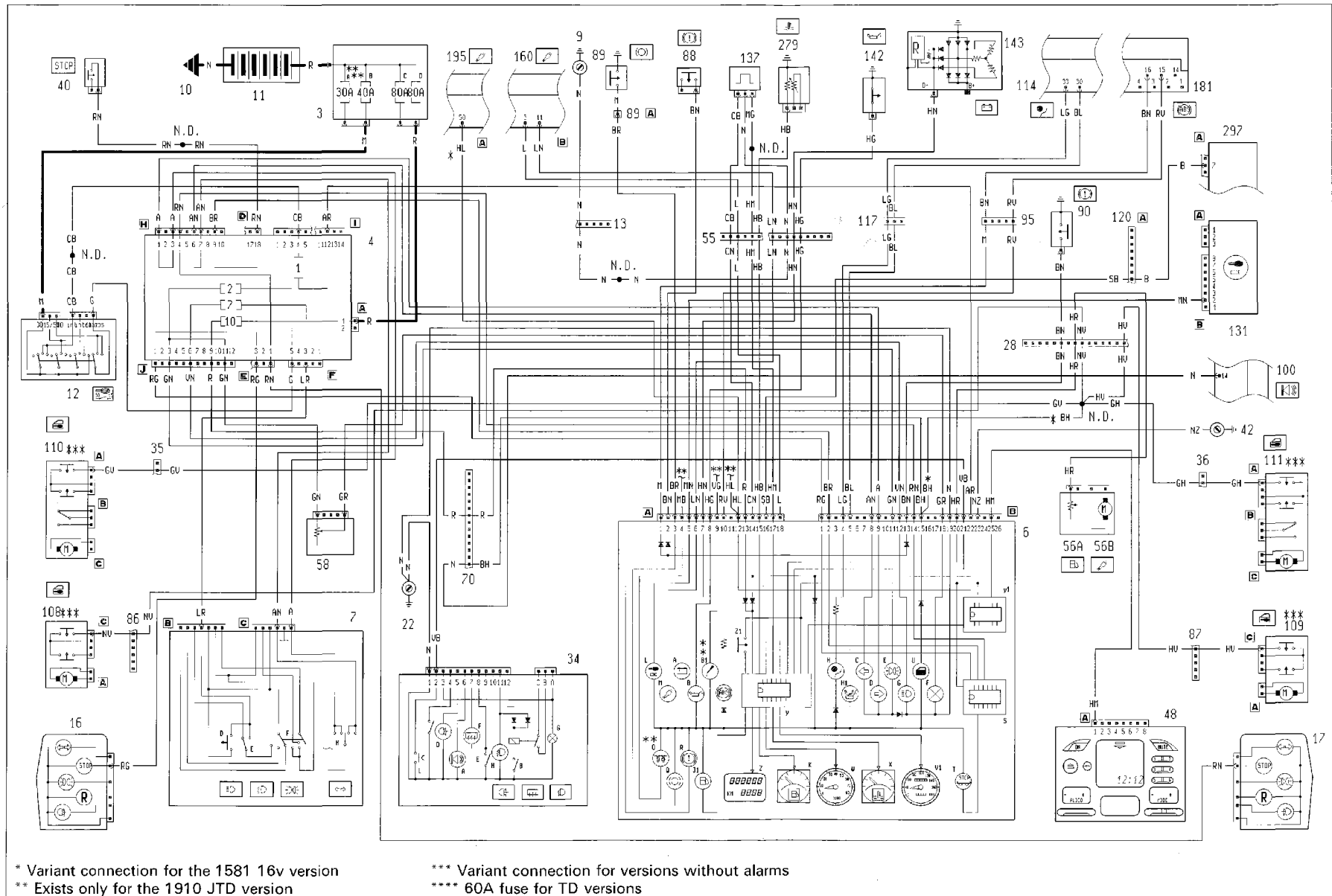
P4A296101

The cables in the wiring diagram are marked

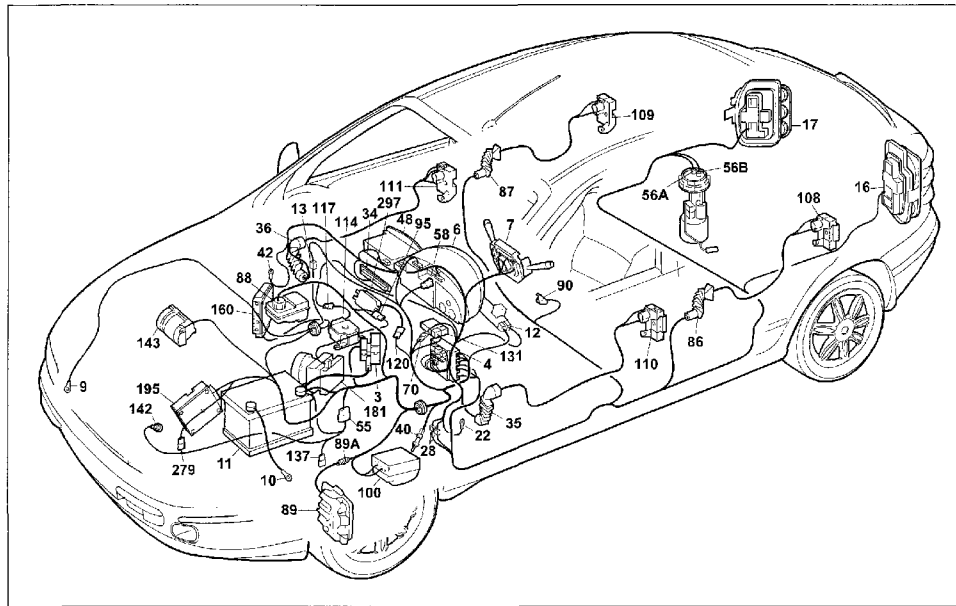
4A2961

Trim level: ELX - HSX

Instrument panel connections - (See key at end of wiring diagrams)



## 55.



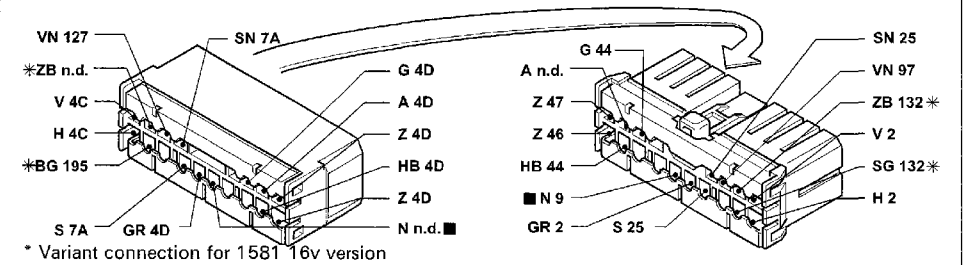
P4A299101

### Trim level: ELX - HSX Instrument panel connections Components key

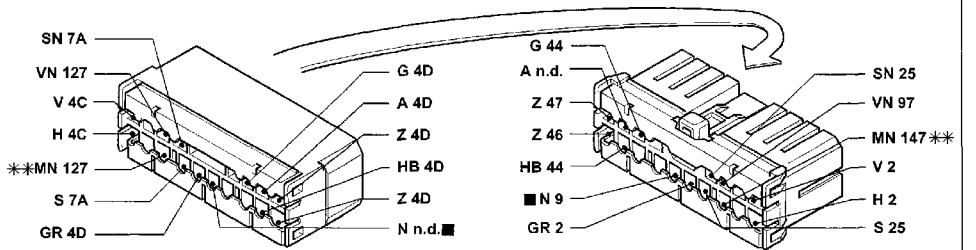
- 3 Power fuse box:  
A 30A protective fuse for injection system (80A for TD versions)  
B 40A protective fuse for ignition system  
C 80A fuse protecting additional options  
D 80A protective fuse for junction unit
- 4 Junction unit
- 6 Instrument panel:  
A Battery recharging warning light  
B Insufficient engine oil pressure warning light  
C Left direction indicator warning light  
D Right direction indicator warning light  
E Side lights warning light  
F Instrument panel ideogram lights  
G Main beam headlamps warning light  
H EURO-BAG system failure warning  
H1 Passenger EURO-BAG failure warning light  
I Anti-lock braking system failure warning light  
J1 Warning light signalling fuel reserve  
K Fuel level gauge  
L Fiat CODE device failure warning light  
M Injection system failure warning light (Petrol/DS)  
N Maximum turbocharging pressure warning light  
O Heater plugs warning light  
Q Front brake pad wear warning light  
R Handbrake/insufficient brake fluid level warning light  
S Brake lights failure signal electronic module  
T Warning light signalling brake lights failure  
U Doors ajar warning light  
V1 Speedometer  
W Rev counter  
X Water temperature gauge  
Y Electronic module  
Y1 Speed control module  
Z Mileometer/trip meter  
Z1 Trip meter zeroing button
- 7 Steering column switch unit:  
D Right-hand control  
E Switch for dipped/main beam headlamps  
F Switch for side lights  
H Switch for direction indicators
- 9 Right foot earth  
10 Earth for battery on bodysell  
11 Battery  
12 Ignition switch  
13 Front right/left cables connection
- 16 Left rear light cluster  
17 Right rear light cluster  
22 Left dashboard earth  
28 Dashboard/longitudinal cables connection  
34 Switch control panel:  
A Anti-theft warning light on  
B Rear fog lamps switch  
D Rear fog lamps warning light  
E Heated rear windscreen switch  
F Heated rear windscreen warning light  
G Switch control unit ideogram light  
H Fog lights warning light  
I Fog lights switch  
L Outside temperature control switch  
35 Dashboard/left front door cables connection  
36 Dashboard/right front door cables connection  
40 Vehicle brake lights switch  
42 Right dashboard earth  
48 Radio receiver with clock  
55 Connection between front/engine pre-wiring cables  
56 Fuel level gauge  
A Fuel level sensor  
B Electric fuel pump  
58 Light dimmer  
70 Dashboard/front cables connection  
88 Longitudinal/left rear door cables connection  
87 Longitudinal/right rear door cables connection  
89 Insufficient brake fluid level sensor  
89 Left brake pad wear sensor  
89A Left brake pad wear sensor cables connection  
90 Switch signalling handbrake applied  
95 Front/anti-lock brakes cables connection (A.B.S.)  
100 Alarm device electronic control unit  
105 Left rear central locking/alarm switch  
109 Right rear central locking/alarm switch  
110 Left front central locking/alarm switch  
111 Right front central locking/alarm switch  
114 EURO-BAG electronic control unit  
117 Connection between EURO-BAG/dashboard cables  
120A Air conditioning unit cables connection  
131 Fiat CODE electronic control unit  
137 Vehicle speed sensor  
142 Switch signalling insufficient engine oil pressure  
143 Alternator  
160 Injection/ignition electronic control unit (1747)  
181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)  
195 Injection/ignition electronic control unit (1581)  
279 Twin engine coolant temperature sender unit  
287 Air conditioning control unit  
N.D. Ultrasound welding taped in cable loom

4A2991

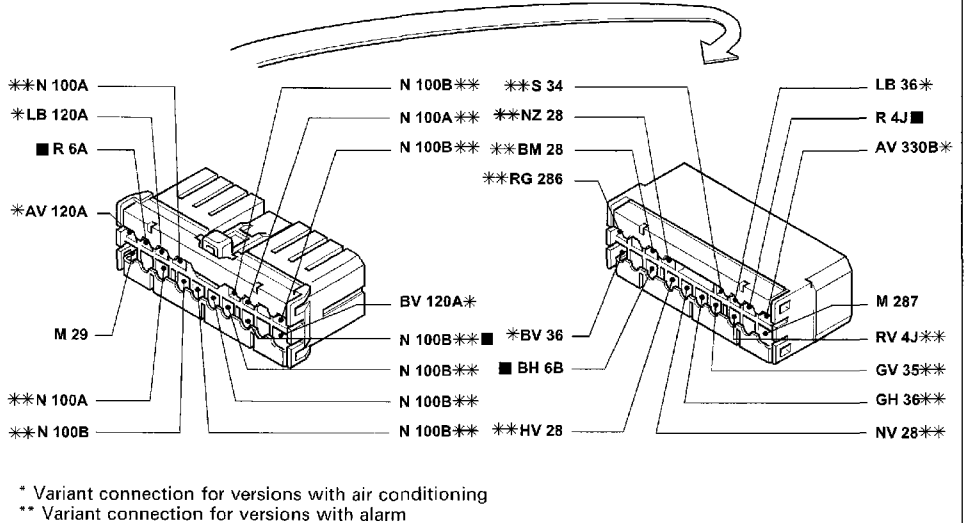
### 13 Front right/left cables connection. Versions: 1242 16v - 1581 16v



### 13 Front right/left cables connection



### 70 Dashboard/front cables connection.



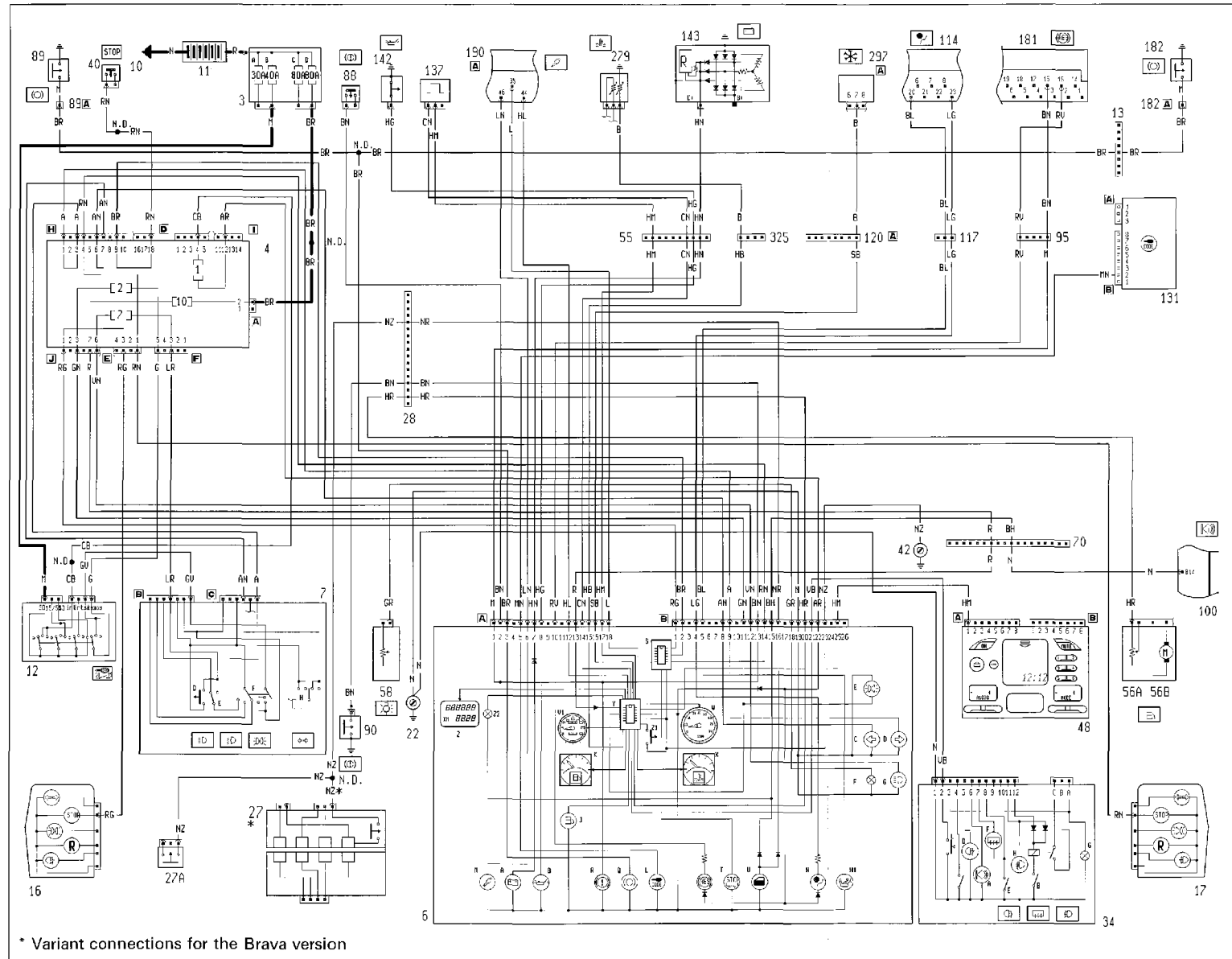
P4A300101

The cables in the wiring diagram are marked

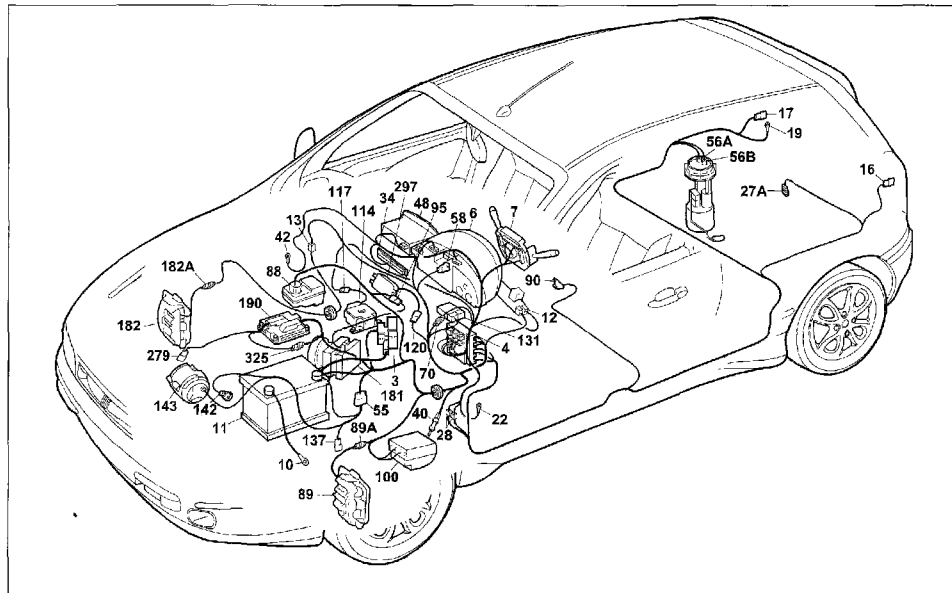
4A3001

Trim level: HGT

Instrument panel connections - (See key at end of wiring diagrams)



55.



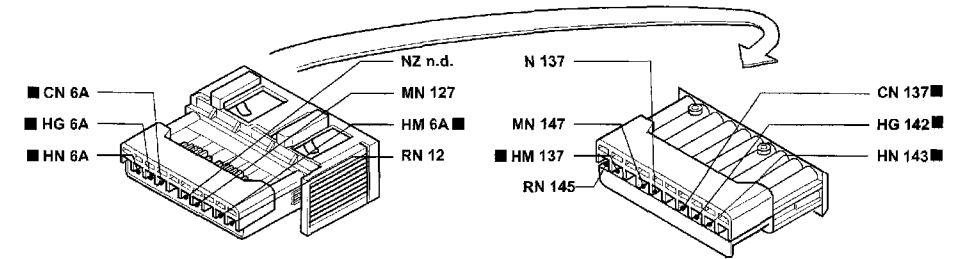
P4A30301

Trim level: HGT  
Instrument panel connections  
Components key

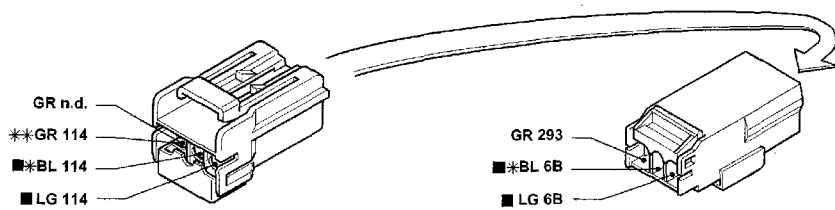
- 3 Power fuse box:  
A 30A protective fuse for injection system (60A for TD versions)  
B 40A protective fuse for ignition system  
C 80A fuse protecting additional options  
D 80A protective fuse for junction unit
- 4 Junction unit
- 6 Instrument panel:  
A Battery recharging warning light  
B Insufficient engine oil pressure warning light  
C Left direction indicator warning light  
D Right direction indicator warning light  
E Side lights warning light  
F Instrument panel ideogram lights  
G Main beam headlights warning light  
H EURO-BAG system failure warning light  
H1 Passenger EURO-BAG failure warning light  
I Anti-lock braking system failure warning light  
J Fuel reserve circuit control module  
K Fuel level gauge  
L Fiat CODE device failure warning light  
M Injection system failure warning light petrol/DS  
Q Front brake pad wear warning light  
R Handbrake/insufficient brake fluid level warning light  
S Brake lights failure signalling electronic module  
T Warning light signalling brake lights failure  
U Doors ajar warning light  
V1 Speedometer  
W Rev counter  
X Engine coolant temperature gauge  
Y Electronic module  
Z Milemeter/trip meter  
Z1 Trip meter zeroing button
- 7 Steering column switch unit:  
D Flasher control  
E Switch for dipped/main beam headlights  
F Switch for side lights  
H Switch for direction indicators
- 10 Earth for battery on bodyshell  
11 Battery  
12 Ignition switch
- 13 Front right/left cables connection  
16 Left rear light cluster  
17 Right rear light cluster  
22 Left dashboard earth  
27A Button for luggage compartment light, switching on alarm and signalling boot lid open
- 28 Dashboard/longitudinal cables connection  
34 Switch control panel:  
A Anti-theft warning light on  
B Rear fog lamps switch  
C Rear fog lamps relay feed  
D Rear fog lamps warning light  
E Heated rear windscreen switch  
F Heated rear windscreen warning light  
G Switch control unit ideogram light  
H Fog lights warning light  
I Fog lights switch  
L Outside temperature control switch
- 40 Vehicle brake lights switch  
42 Right dashboard earth  
48 Radio receiver with clock  
56 Connection between front cables/engine pre-wiring  
58 Fuel level gauge  
A Fuel level sensor  
B Electric fuel pump  
58 Light dimmer  
70 Dashboard/front cables connection  
88 Insufficient brake fluid level sensor  
89 Left brake pad wear sensor  
89A Left brake pad wear sensor cables connection  
90 Switch signalling handbrake applied  
96 Front/anti-lock brakes cables connection (A.B.S.)  
100 Anti-theft device electronic control unit  
114 EURO-BAG electronic control unit  
117 Connection between EURO-BAG/dashboard cables  
120A Air conditioning unit cables connection  
131 Fiat-CODE electronic control unit  
137 Vehicle speed sensor  
142 Switch signalling insufficient engine oil pressure  
143 Alternator  
181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)  
182 Right brake pad wear sensor  
182A Right brake pad wear sensor cables connection  
190 Injection/ignition electronic control unit (1998)  
279 Twin engine coolant temperature sender unit  
297 Air conditioning control unit  
325 Connection between injection/left front cables  
N.G. Ultrasound welding taped in cable loom

4A3031

55 Connection between front/engine pre-wiring cables.

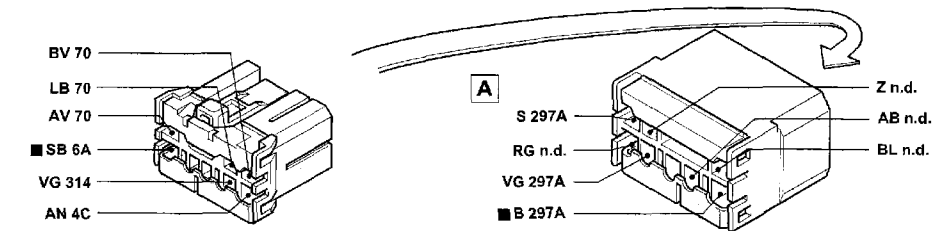


177 Connection between EURO-BAG/dashboard cables

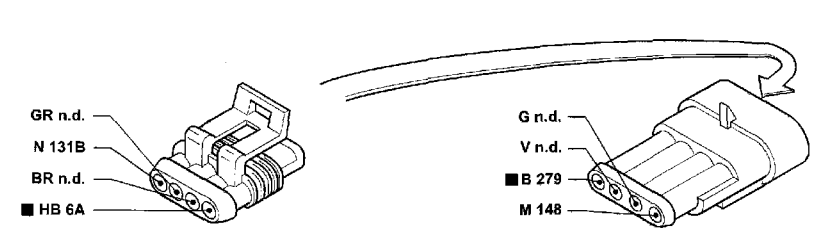


\* Variant connection for versions with passenger EURO-BAG and SIDE BAG  
\*\* Variant connection for versions with driver's EURO-BAG

120 Air conditioning unit cables connection



325 Connection between injection/left front cables.

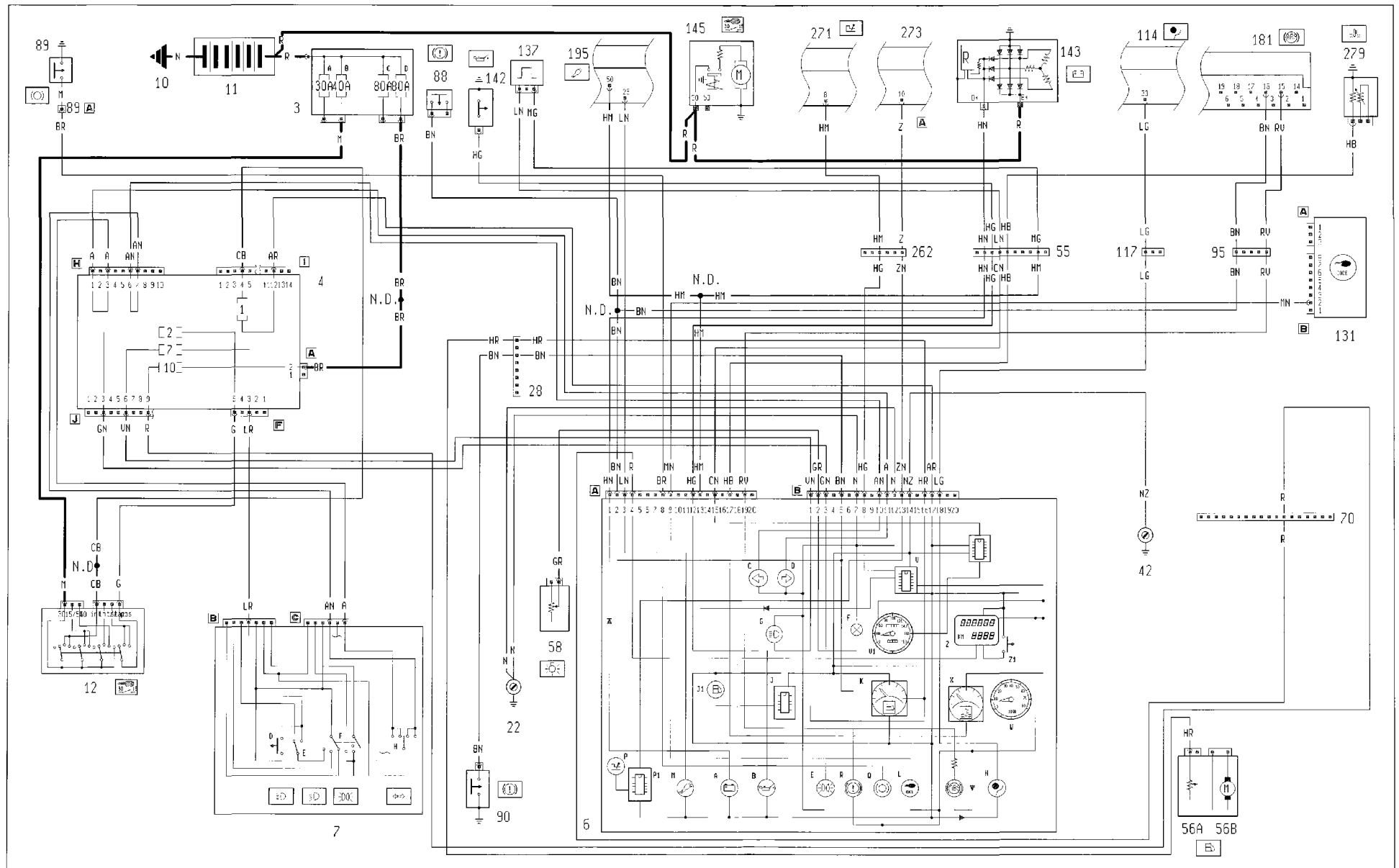


P4A30401

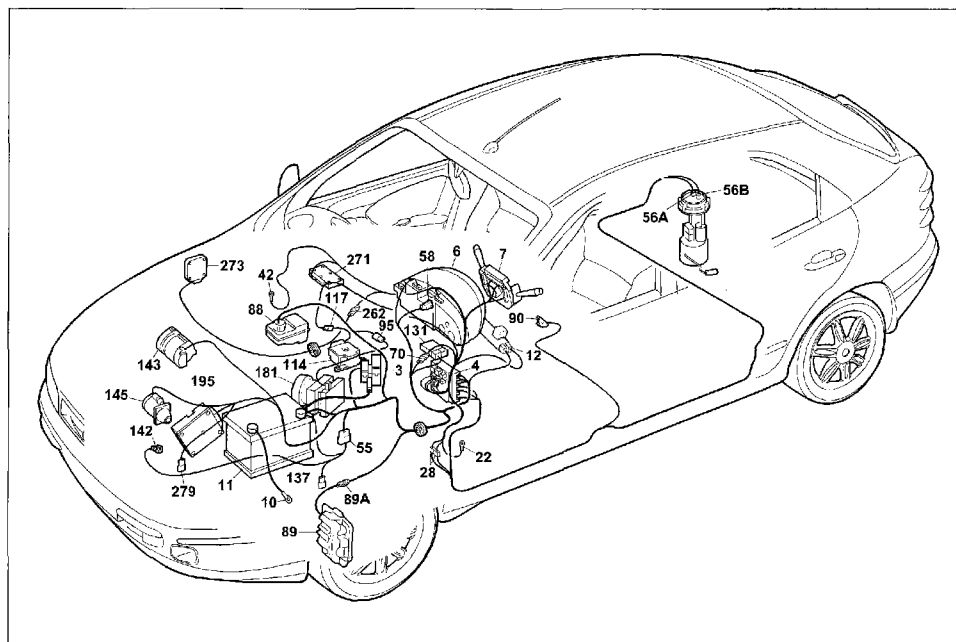
The cables in the wiring diagram are marked

4A3041

Trim level: **SX - GT with automatic transmission**  
Instrument panel connections - (See key at end of wiring diagrams)



## 55.



P4A30701

Trim level: **SX - GT with automatic transmission**

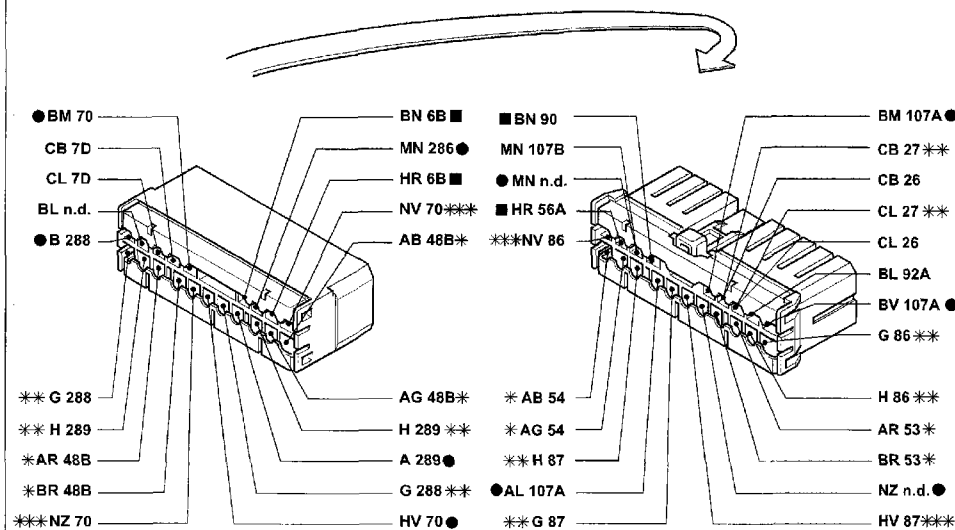
### Instrument panel connections

#### Components key

- 3 Power fuse box:  
 A 30A protective fuse for injection system (80A for TD versions)  
 B 40A protective fuse for ignition system  
 C 80A fuse protecting additional options  
 D 80A protective fuse for junction unit
- 4 Junction unit
- 6 Instrument panel:  
 A Battery recharging warning light  
 B Insufficient engine oil pressure warning light  
 C Left direction indicator warning light  
 D Right direction indicator warning light  
 E Side lights warning light  
 F Instrument panel ideogram lights  
 G Main beam headlamps warning light  
 H EURO-BAG system failure warning light  
 I Anti-lock braking system failure warning light  
 J Fuel reserve circuit control module  
 J1 Warning light signalling fuel reserve  
 K Fuel level gauge  
 L Fiat CODE device failure warning light  
 M Ignition system failure warning light: Petrol/DS  
 Q Front brake pad wear warning light  
 R Handbrake/insufficient brake fluid level warning light  
 S Brake lights failure signalling electronic module  
 T Warning light signalling brake lights failure  
 U Doors ajar warning light  
 V Speedometer control module  
 V1 Speedometer  
 X Engine coolant temperature gauge  
 Z Milometer/trip meter  
 Z1 Trip meter zeroing button
- 7 Steering column switch unit  
 D Flasher control  
 E Switch for dipped/main beam headlamps

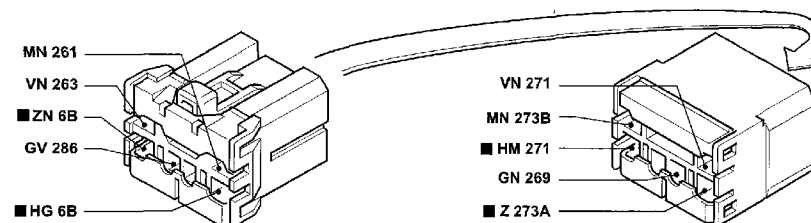
- F Switch for side lights  
 H Switch for direction indicators
- 10 Earth for battery on bodyshell  
 11 Battery  
 12 Ignition switch  
 16 Left rear light cluster  
 17 Right rear light cluster  
 22 Left dashboard earth  
 28 Dashboard/longitudinal cables connection  
 40 Vehicle brake lights switch  
 42 Right dashboard earth  
 55 Connection between front/engine pig-wiring cables  
 56 Fuel level gauge  
 A Fuel level sensor  
 B Electric fuel pump  
 58 Light dimmer  
 70 Dashboard/front cables connection  
 88 Insufficient brake fluid level sensor  
 89 Left brake pad wear sensor  
 89A Left brake pad wear sensor cables connection  
 90 Switch signalling handbrake applied  
 95 Front/anti-lock brakes cables connection (A.B.S.)  
 100 Alarm device electronic control unit  
 114 EURO-BAG electronic control unit  
 117 Connection between EURO-BAG/dashboard cables  
 131 Fiat CODE electronic control unit  
 137 Vehicle speed sensor  
 142 Switch signalling insufficient engine oil pressure  
 143 Alternator  
 145 Starter motor  
 191 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)  
 195 Injection/ignition electronic control unit (I581)  
 262 Connection between dashboard/automatic transmission cables  
 271 Electronic safety control unit for automatic transmission  
 273 Automatic transmission electronic control unit  
 279 Twin engine coolant temperature sender unit  
 N.D. Ultrasound welding taped in cable looms

## 28 Dashboard/longitudinal cables connection.



- Variant connection for versions with alarm
- \* Variant connection for versions with top of the range radio
- \*\* Variant connection for Brava versions
- \*\*\* Variant connection for Brava versions with alarm

## 262 Connection between dashboard/automatic transmission cables



The cables in the wiring diagram are marked

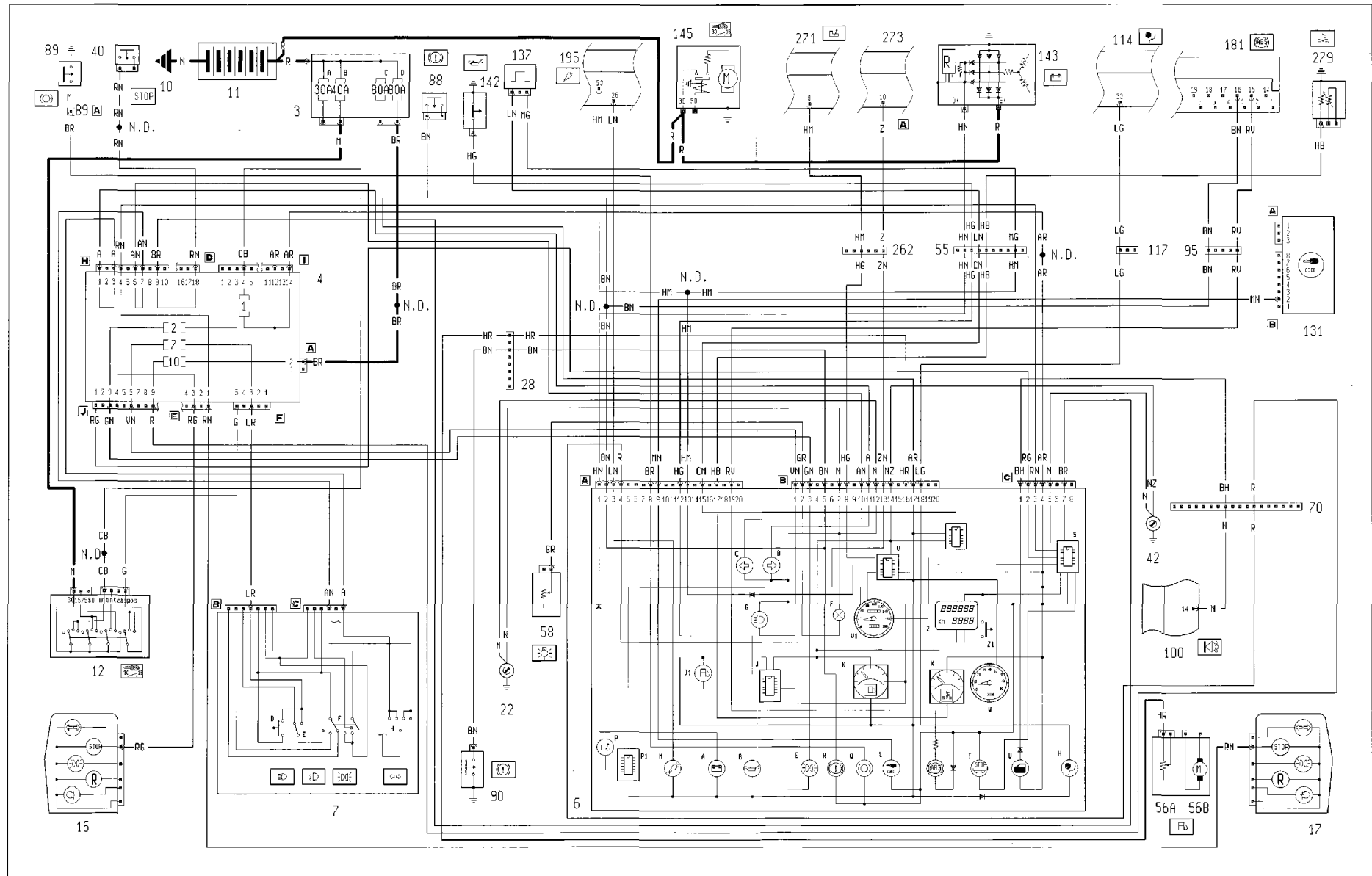
P4A30801

4A3071

4A3081

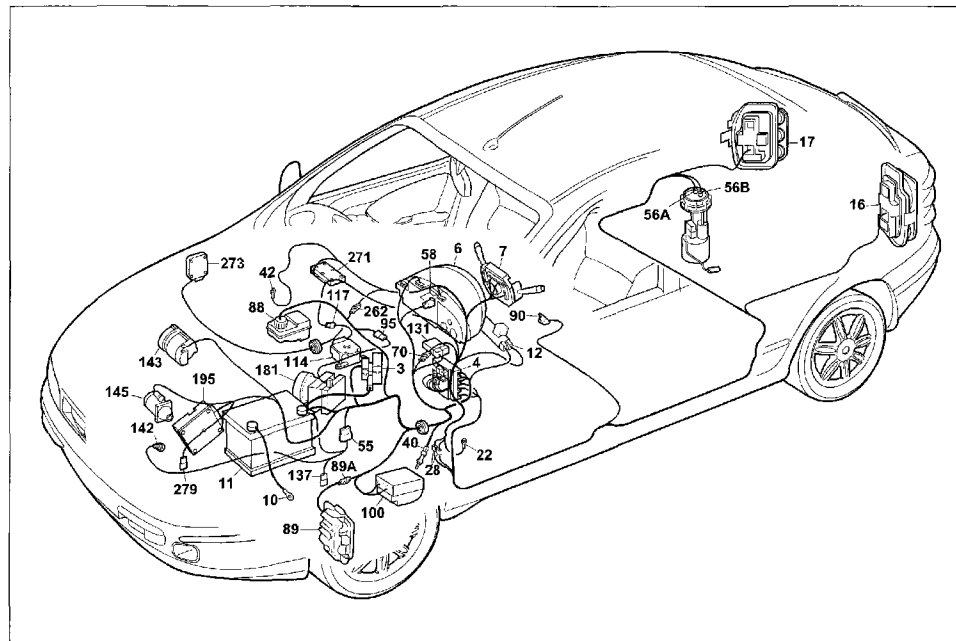


Trim level: ELX - HSX with automatic transmission  
Instrument panel connections - (See key at end of wiring diagrams)



P4A308101

## 55.



P4A31101

Trim level: ELX - HSX with automatic transmission

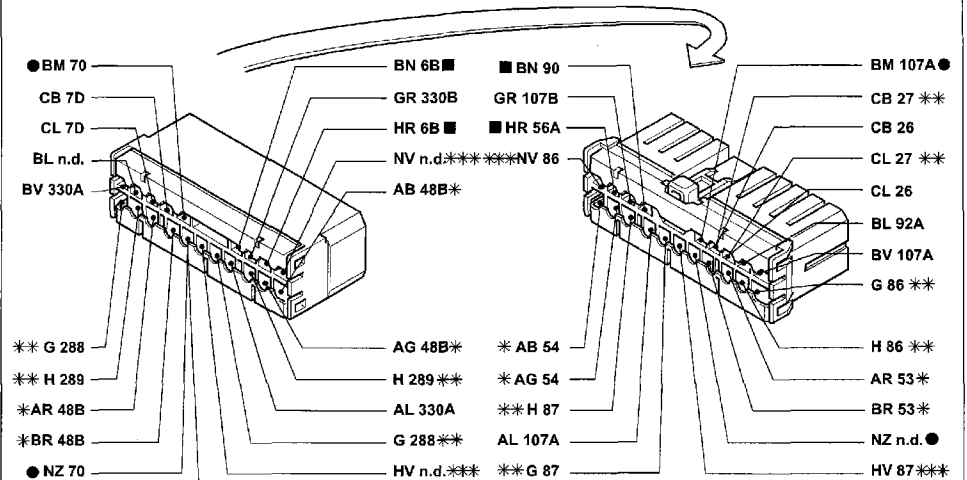
### Instrument panel connections

#### Components key

- 3 Power fuse box:
  - A 30A protective fuse for injection system (60A for TD versions)
  - B 40A protective fuse for ignition system
  - C 80A fuse protecting additional options
  - D 80A protective fuse for junction unit
- 4 Junction unit
- 6 Instrument panel:
  - A Battery recharging warning light
  - B Insufficient engine oil pressure warning light
  - C Left direction indicator warning light
  - D Right direction indicator warning light
  - E Side lights warning light
  - F Instrument panel ideogram lights
  - G Main beam headlamps warning light
  - H EURO-BAG system failure warning light
  - I Anti-lock braking system failure warning light
  - J Fuel reserve circuit control module
  - J1 Warning light signalling fuel reserve
  - K Fuel level gauge
  - L Fiat CODE device failure warning light
  - M Injection system failure warning light Petrol/DS
  - Q Front brake pad wear warning light
  - R Handbrake applied/insufficient brake fluid level warning light
  - V Speedometer control module
  - V1 Speedometer
  - W Rev counter
  - X Water temperature gauge
  - Z Kilometer/trip meter
  - Z1 Trip meter zeroing button
- 7 Steering column switch unit:
  - D Flasher control
  - E Switch for dipped/main beam headlamps

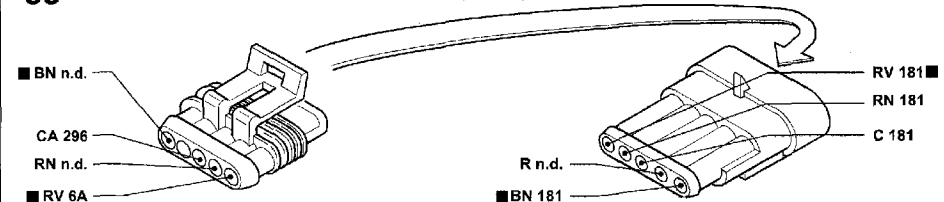
- F Switch for side lights
- H Switch for direction indicators
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 22 Left dashboard earth
- 28 Dashboard/longitudinal cables connection
- 42 Right dashboard earth
- 55 Connection between front cables/engine pre-wiring
- 56 Fuel level gauge
  - A Fuel level sensor
  - B Electric fuel pump
- 58 Light dimmer
- 70 Dashboard/front cables connection
- 88 Insufficient brake fluid level sensor
- 89 Left brake pad wear sensor
- 89A Left brake pad wear sensor cables connection
- 90 Switch signalling handbrake applied
- 95 Front/anti-lock brakes cables connection (A.B.S.)
- 114 EURO-BAG electronic control unit
- 117 Connection between EURO-BAG/dashboard cables
- 131 Fiat-CODE electronic control unit
- 137 Vehicle speed sensor
- 142 Switch signalling insufficient engine oil pressure
- 143 Alternator
- 145 Starter motor
- 181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)
- 195 Injection/ignition electronic control unit (1581)
- 262 Connection between dashboard/automatic transmission cables
- 271 Electronic safety control unit for automatic transmission
- 273 Automatic transmission electronic control unit
- 279 Twin engine coolant temperature sender unit
- N.D. Ultrasound welding taped in cable loom

### 28 Dashboard/longitudinal cables connection.

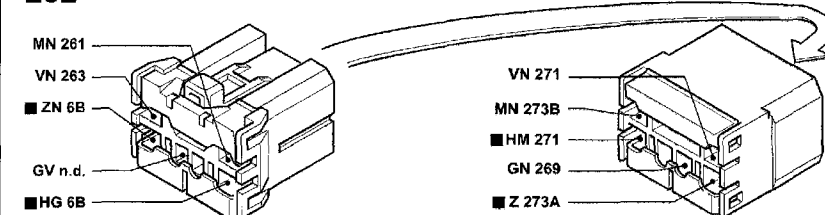


- \* Variant connection for versions with top of the range radio
- \*\* Variant connection for Brava versions
- \*\*\* Variant connection for Brava versions with alarm
- Variant connection for versions with alarm

### 95 Front/anti-lock brakes cables connection (A.B.S.)



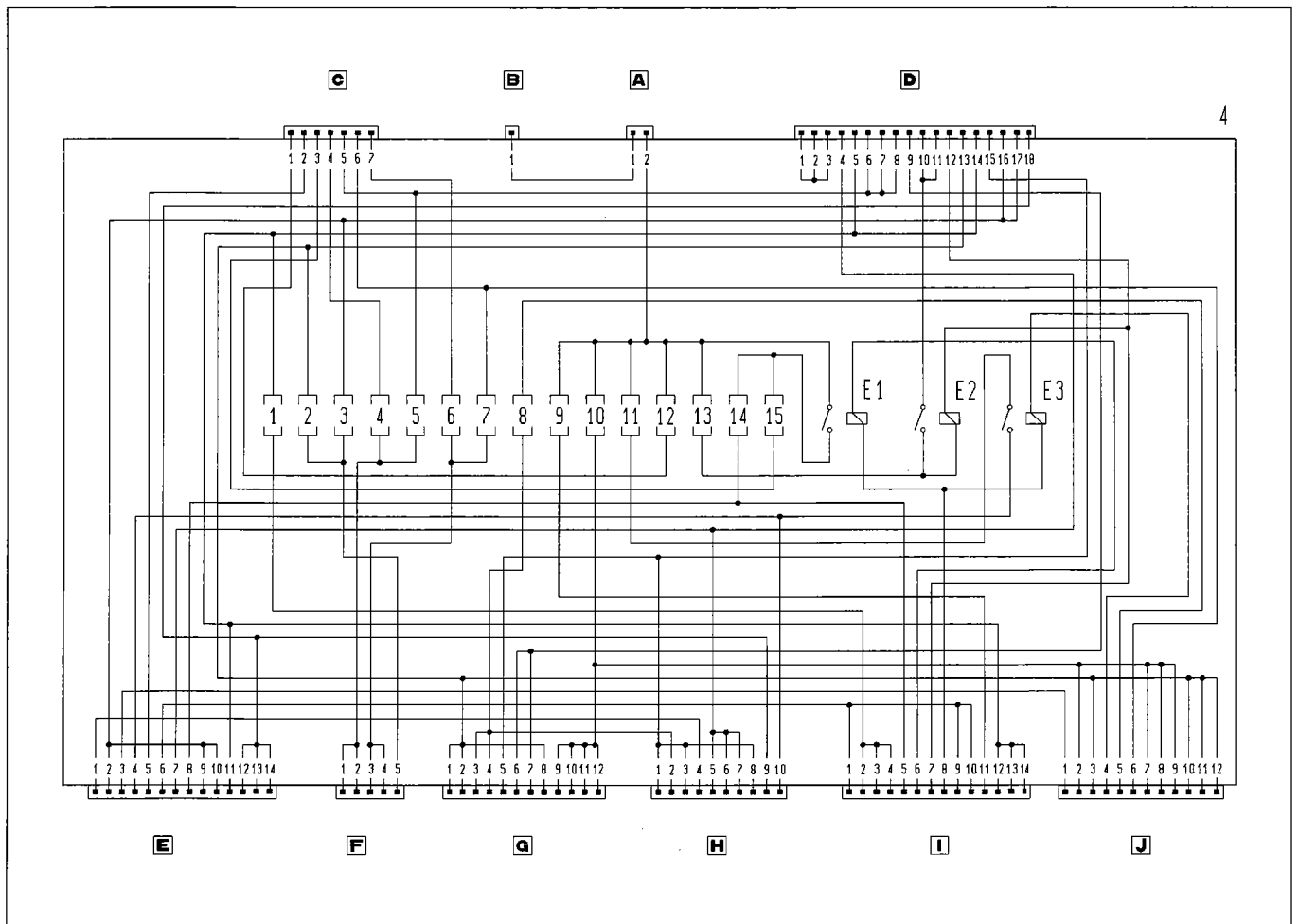
### 262 Connection between dashboard/automatic transmission cables



The cables in the wiring diagram are marked

P4A31201

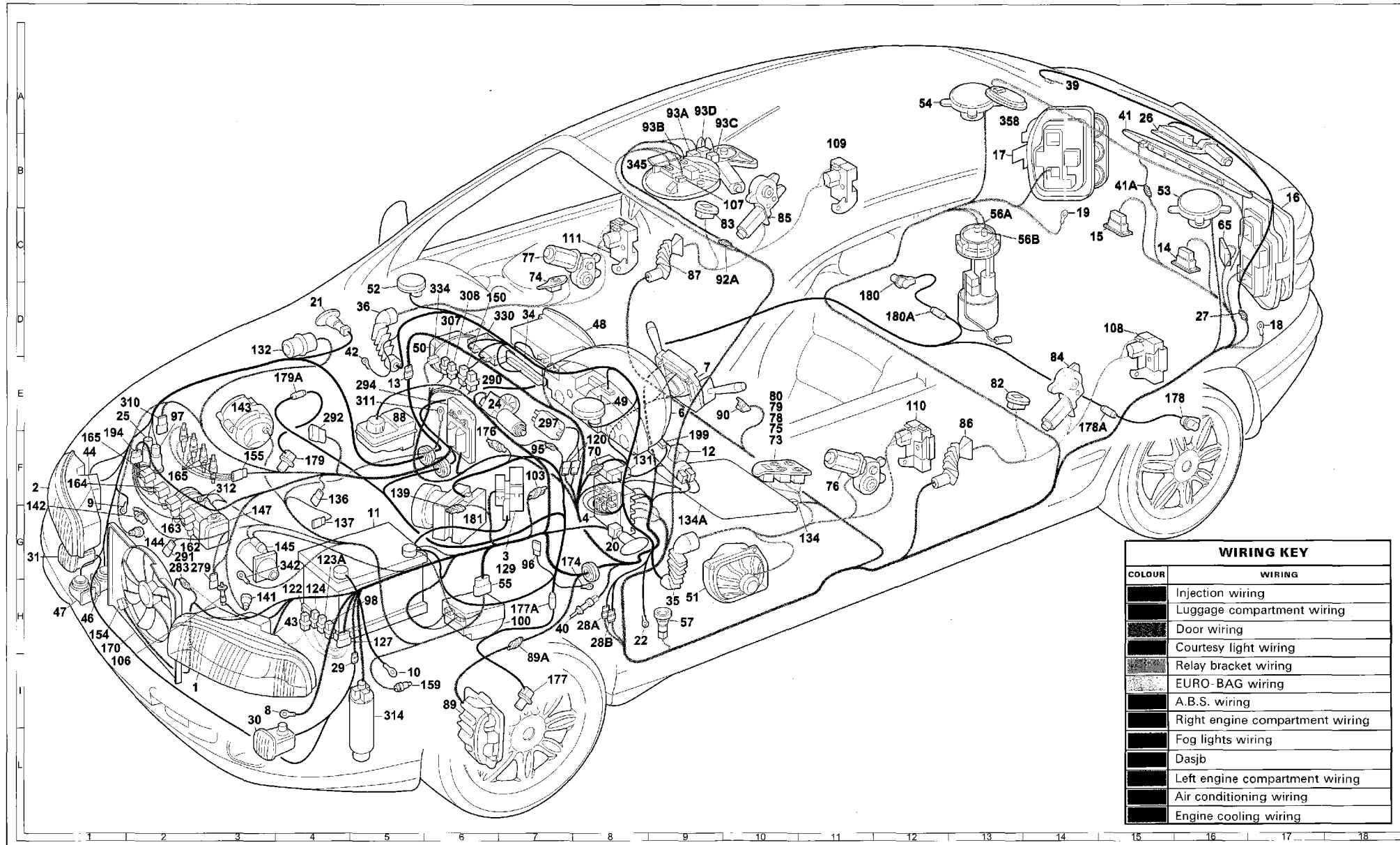
Junction unit - (See key at end of wiring diagrams)



P4A31301

- E1** Ignition discharge relay
- E2** Horn relay feed
- E3** Heated rear windscreen relay feed

Diagrammatic view of location of cable looms and components (See key at end of wiring diagrams with the co-ordinates referring to the components)



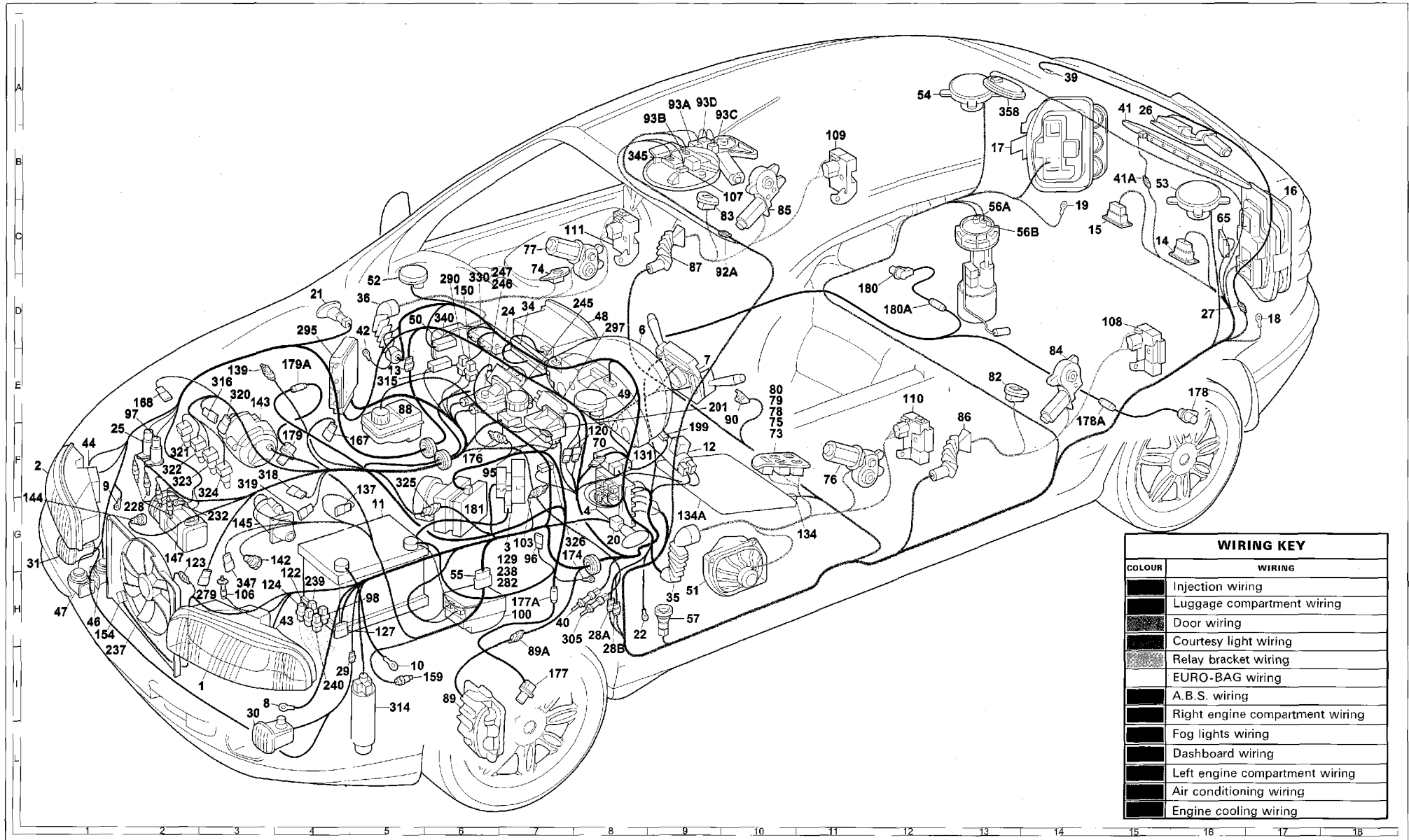
| WIRING KEY |                                 |
|------------|---------------------------------|
| COLOUR     | WIRING                          |
| [Pattern]  | Injection wiring                |
| [Pattern]  | Luggage compartment wiring      |
| [Pattern]  | Door wiring                     |
| [Pattern]  | Courtesy light wiring           |
| [Pattern]  | Relay bracket wiring            |
| [Pattern]  | EURO-BAG wiring                 |
| [Pattern]  | A.B.S. wiring                   |
| [Pattern]  | Right engine compartment wiring |
| [Pattern]  | Fog lights wiring               |
| [Pattern]  | Dasjb                           |
| [Pattern]  | Left engine compartment wiring  |
| [Pattern]  | Air conditioning wiring         |
| [Pattern]  | Engine cooling wiring           |

# Electrical equipment

## Diagrammatic views

### 55.

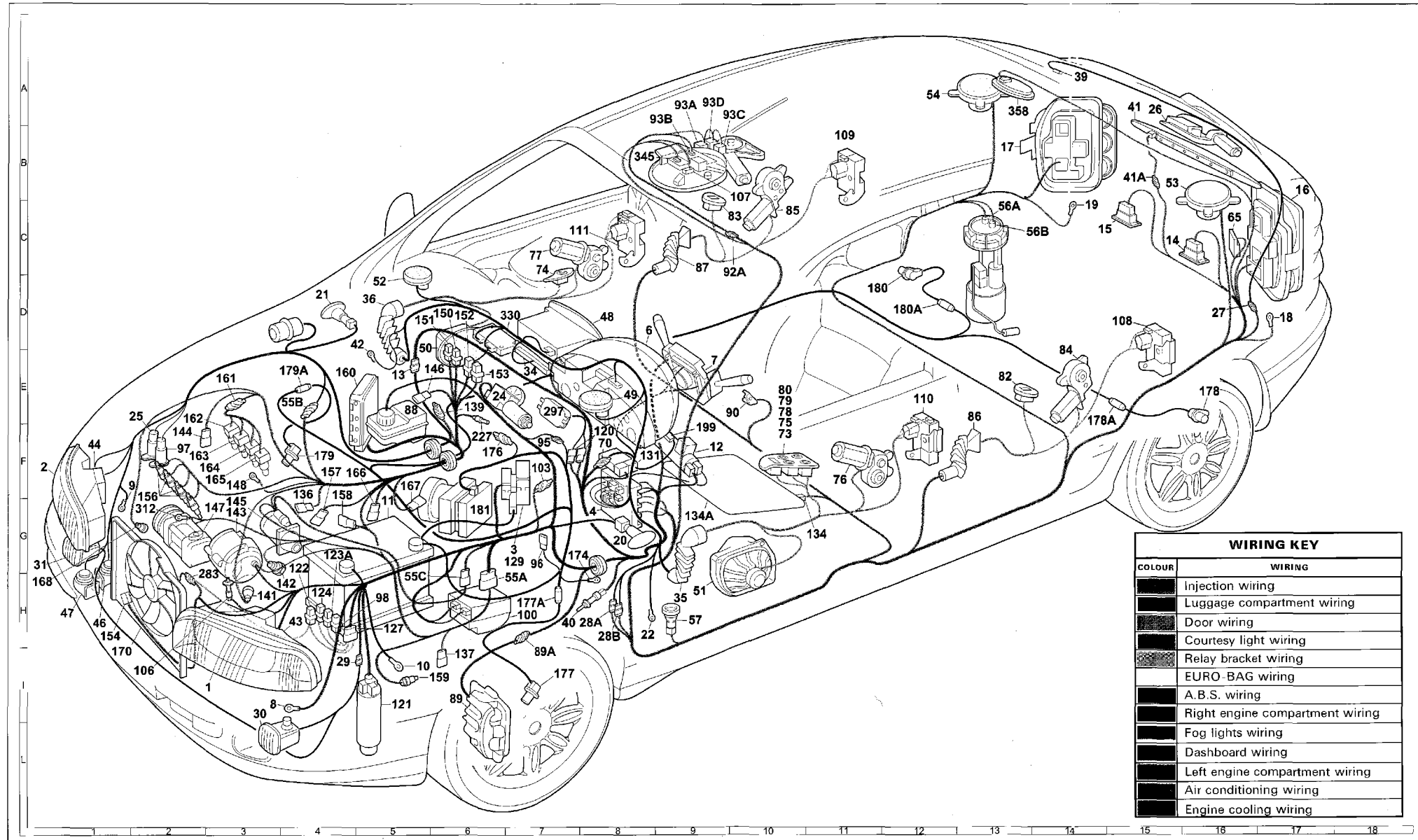
Diagrammatic view of location of cable looms and components (See key at end of wiring diagrams with the co-ordinates referring to the components)



| WIRING KEY         |                                 |
|--------------------|---------------------------------|
| COLOUR             | WIRING                          |
| [Solid Black]      | Injection wiring                |
| [Diagonal Lines /] | Luggage compartment wiring      |
| [Diagonal Lines \] | Door wiring                     |
| [Horizontal Lines] | Courtesy light wiring           |
| [Vertical Lines]   | Relay bracket wiring            |
| [Dotted]           | EURO-BAG wiring                 |
| [White]            | A.B.S. wiring                   |
| [Dark Grey]        | Right engine compartment wiring |
| [Medium Grey]      | Fog lights wiring               |
| [Light Grey]       | Dashboard wiring                |
| [White]            | Left engine compartment wiring  |
| [Dark Grey]        | Air conditioning wiring         |
| [Light Grey]       | Engine cooling wiring           |

55.

Diagrammatic view of location of cable looms and components (See key at end of wiring diagrams with the co-ordinates referring to the components)



| WIRING KEY         |                                 |
|--------------------|---------------------------------|
| COLOUR             | WIRING                          |
| [Solid Black]      | Injection wiring                |
| [Diagonal Lines /] | Luggage compartment wiring      |
| [Diagonal Lines \] | Door wiring                     |
| [Horizontal Lines] | Courtesy light wiring           |
| [Vertical Lines]   | Relay bracket wiring            |
| [Dotted]           | EURO-BAG wiring                 |
| [Stippled]         | A.B.S. wiring                   |
| [Dark Grey]        | Right engine compartment wiring |
| [Medium Grey]      | Fog lights wiring               |
| [Light Grey]       | Dashboard wiring                |
| [White]            | Left engine compartment wiring  |
| [Dark Grey]        | Air conditioning wiring         |
| [Medium Grey]      | Engine cooling wiring           |

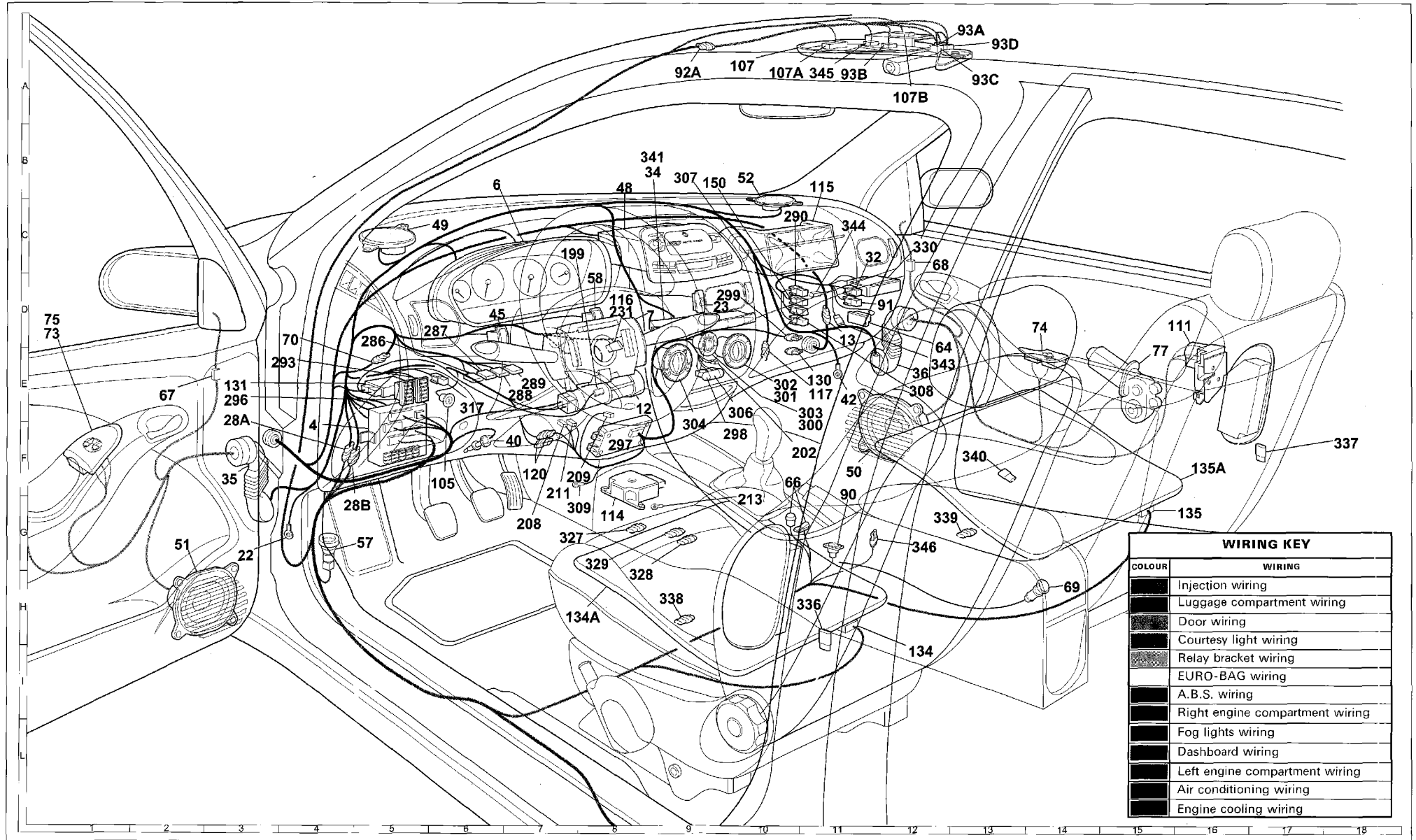
# Electrical equipment

## Diagrammatic views

**Bravo**  
98 range

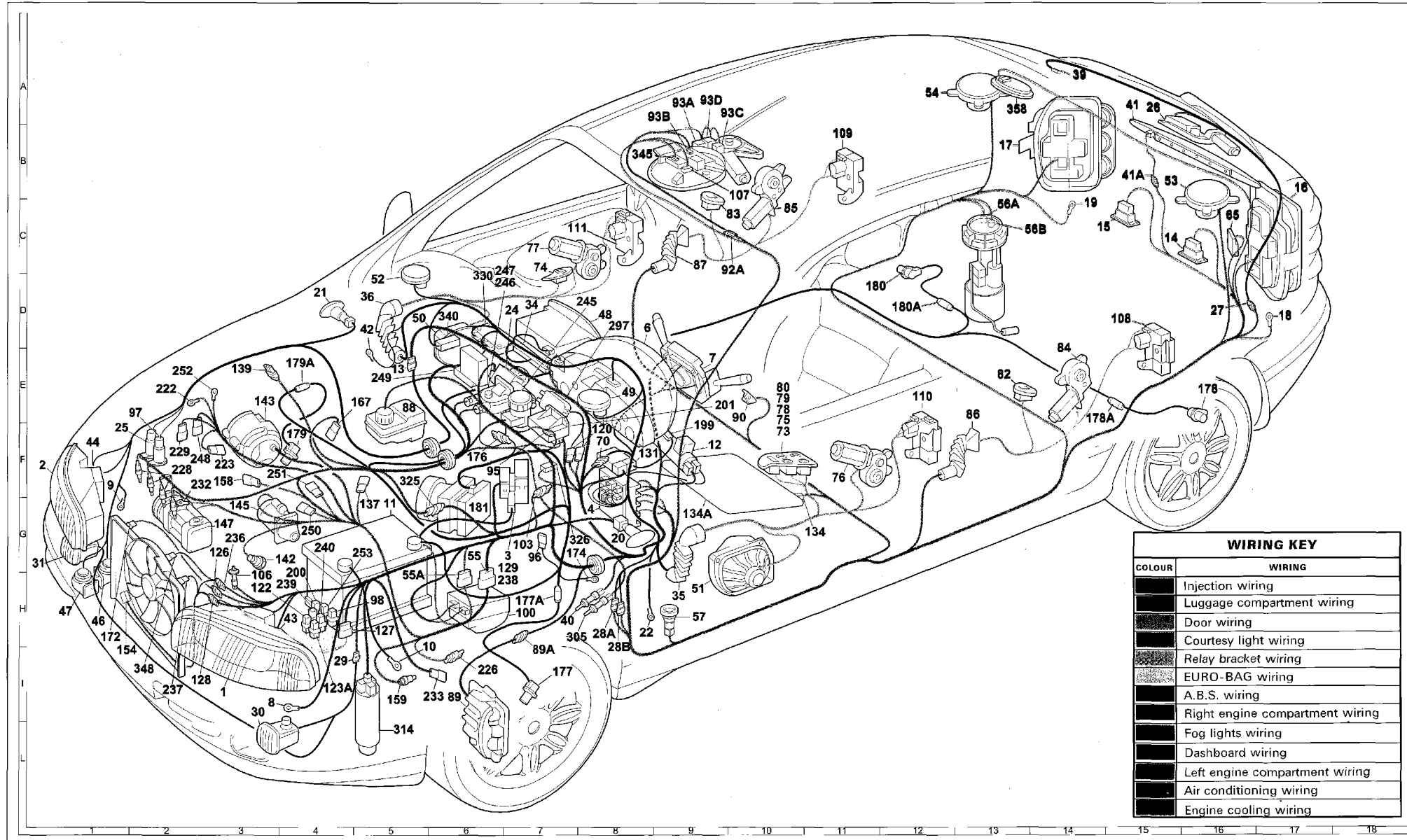
### 55.

Diagrammatic view of location of cable looms and components with A.B.I. (See key at end of wiring diagrams with the co-ordinates referring to the components)



| WIRING KEY    |                                 |
|---------------|---------------------------------|
| COLOUR        | WIRING                          |
| [Solid Black] | Injection wiring                |
| [Dark Grey]   | Luggage compartment wiring      |
| [Medium Grey] | Door wiring                     |
| [Light Grey]  | Courtesy light wiring           |
| [White]       | Relay bracket wiring            |
| [Dark Grey]   | EURO-BAG wiring                 |
| [Medium Grey] | A.B.S. wiring                   |
| [Light Grey]  | Right engine compartment wiring |
| [White]       | Fog lights wiring               |
| [Dark Grey]   | Dashboard wiring                |
| [Medium Grey] | Left engine compartment wiring  |
| [Light Grey]  | Air conditioning wiring         |
| [White]       | Engine cooling wiring           |

Diagrammatic view of location of cable looms and components (See key at end of wiring diagrams with the co-ordinates referring to the components)



| WIRING KEY         |                                 |
|--------------------|---------------------------------|
| COLOUR             | WIRING                          |
| [Solid Black]      | Injection wiring                |
| [Diagonal Lines /] | Luggage compartment wiring      |
| [Diagonal Lines \] | Door wiring                     |
| [Horizontal Lines] | Courtesy light wiring           |
| [Vertical Lines]   | Relay bracket wiring            |
| [Dotted]           | EURO-BAG wiring                 |
| [Cross-hatch]      | A.B.S. wiring                   |
| [Stippled]         | Right engine compartment wiring |
| [Dark Grey]        | Fog lights wiring               |
| [Medium Grey]      | Dashboard wiring                |
| [Light Grey]       | Left engine compartment wiring  |
| [White]            | Air conditioning wiring         |
| [Dark Grey]        | Engine cooling wiring           |

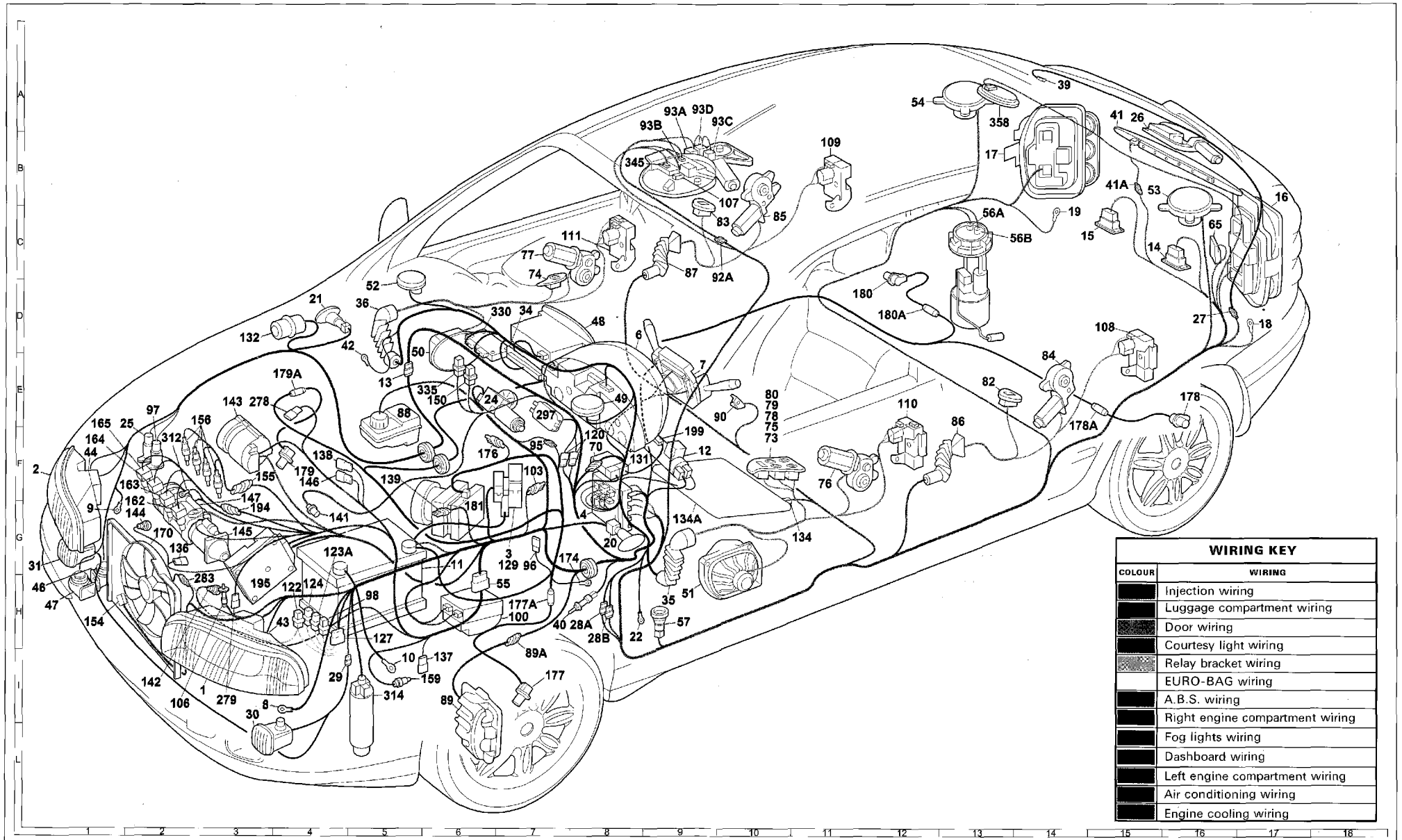


# Electrical equipment

Diagrammatic views

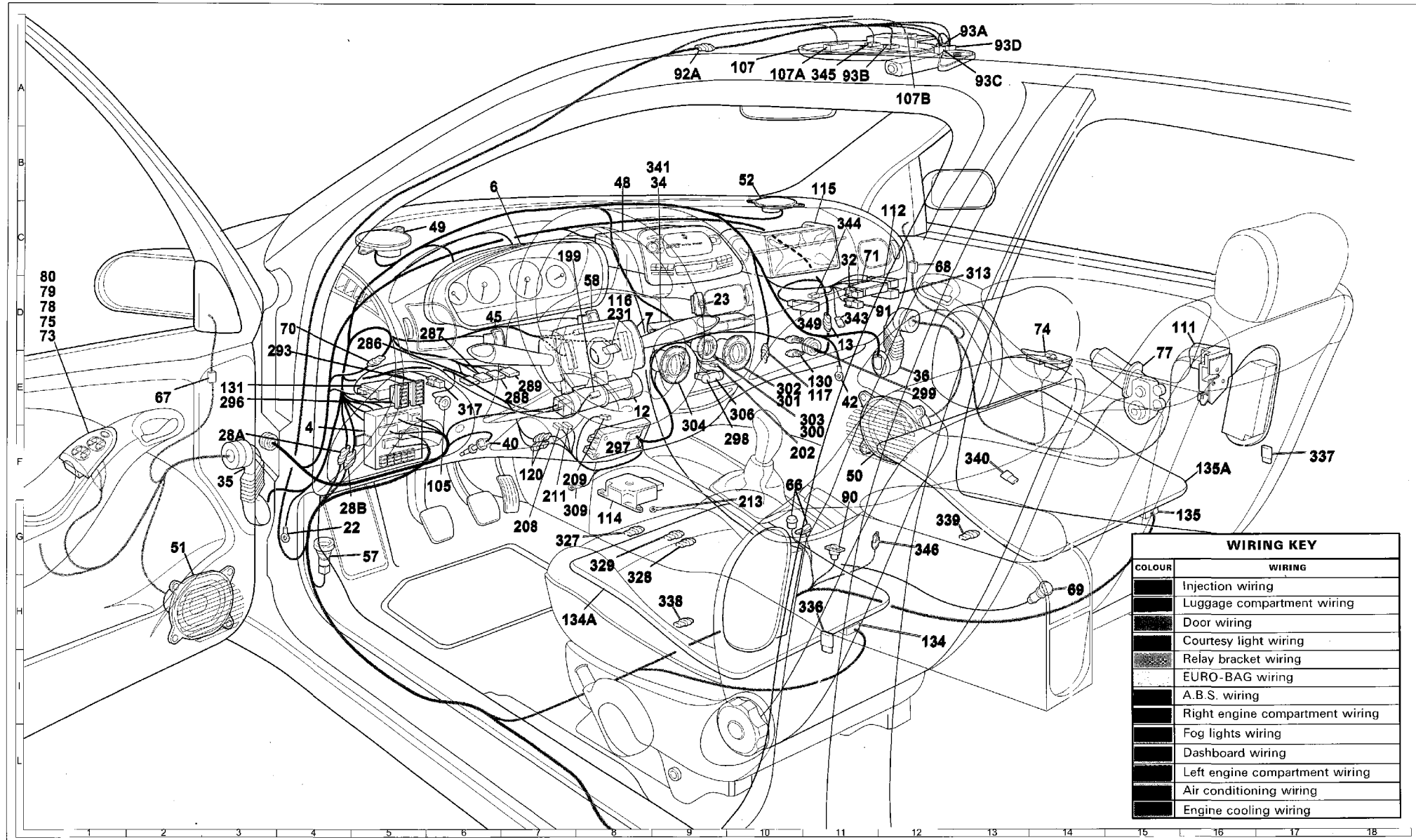
## 55.

Diagrammatic view of location of cable looms and components (See key at end of wiring diagrams with the co-ordinates referring to the components)



| WIRING KEY         |                                 |
|--------------------|---------------------------------|
| COLOUR             | WIRING                          |
| [Solid Black]      | Injection wiring                |
| [Diagonal Lines /] | Luggage compartment wiring      |
| [Diagonal Lines \] | Door wiring                     |
| [Horizontal Lines] | Courtesy light wiring           |
| [Vertical Lines]   | Relay bracket wiring            |
| [Dotted]           | EURO-BAG wiring                 |
| [White]            | A.B.S. wiring                   |
| [Dark Grey]        | Right engine compartment wiring |
| [Medium Grey]      | Fog lights wiring               |
| [Light Grey]       | Dashboard wiring                |
| [White]            | Left engine compartment wiring  |
| [Dark Grey]        | Air conditioning wiring         |
| [Light Grey]       | Engine cooling wiring           |

Diagrammatic view of location of cable looms and components without A.B.I. (See key at end of wiring diagrams with the co-ordinates referring to the components)



| WIRING KEY |                                 |
|------------|---------------------------------|
| COLOUR     | WIRING                          |
|            | Injection wiring                |
|            | Luggage compartment wiring      |
|            | Door wiring                     |
|            | Courtesy light wiring           |
|            | Relay bracket wiring            |
|            | EURO-BAG wiring                 |
|            | A.B.S. wiring                   |
|            | Right engine compartment wiring |
|            | Fog lights wiring               |
|            | Dashboard wiring                |
|            | Left engine compartment wiring  |
|            | Air conditioning wiring         |
|            | Engine cooling wiring           |

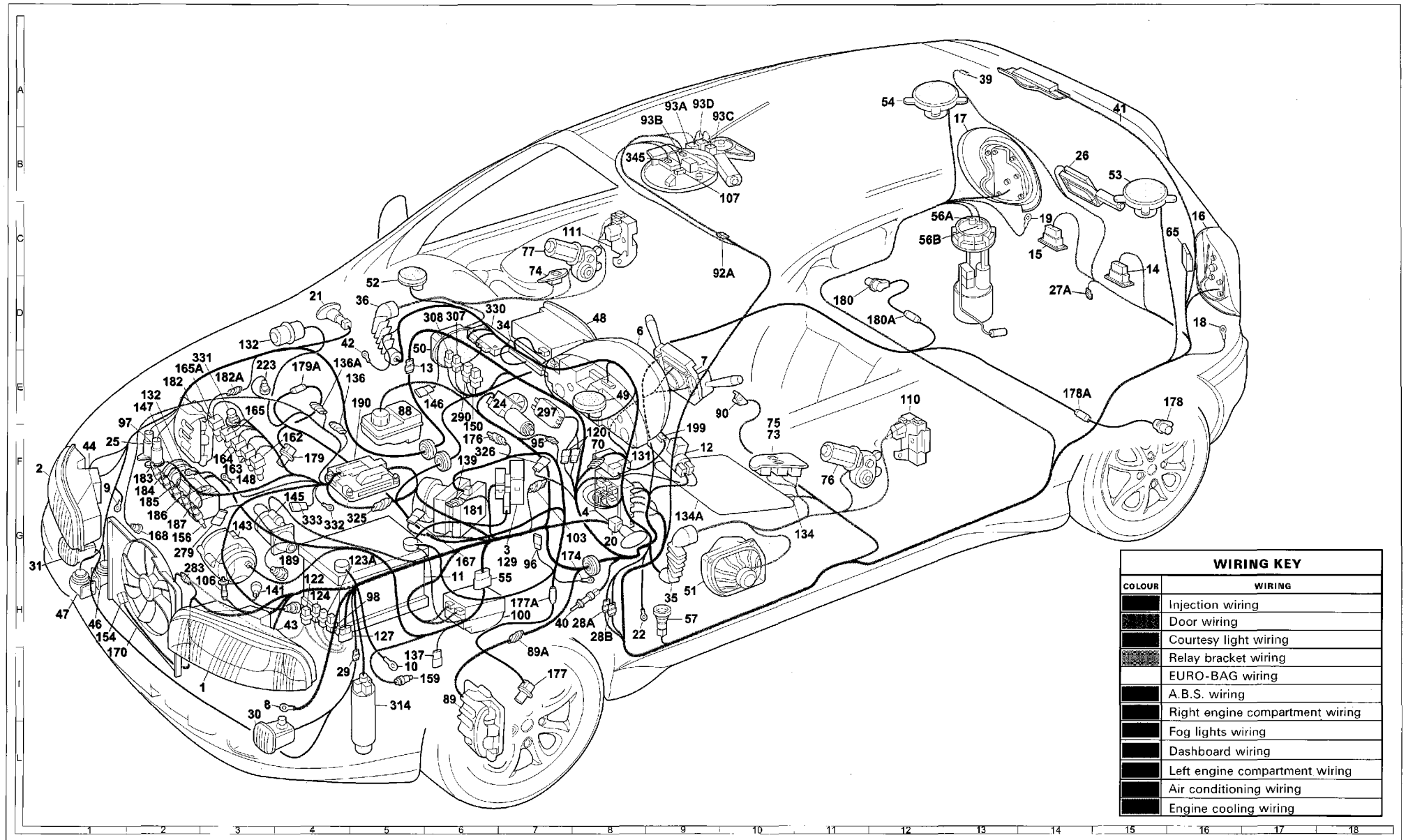
# Electrical equipment

## Diagrammatic views

Bravo 1990 20v  
98 range

### 55.


Diagrammatic view of location of cable looms and components (See key at end of wiring diagrams with the co-ordinates referring to the components)



| WIRING KEY          |                                 |
|---------------------|---------------------------------|
| COLOUR              | WIRING                          |
| [Solid Black]       | Injection wiring                |
| [Diagonal Lines /]  | Door wiring                     |
| [Diagonal Lines \]  | Courtesy light wiring           |
| [Cross-hatch]       | Relay bracket wiring            |
| [White]             | EURO-BAG wiring                 |
| [Horizontal Lines]  | A.B.S. wiring                   |
| [Vertical Lines]    | Right engine compartment wiring |
| [Stippled]          | Fog lights wiring               |
| [Dotted]            | Dashboard wiring                |
| [Horizontal Dashed] | Left engine compartment wiring  |
| [Vertical Dashed]   | Air conditioning wiring         |
| [Diagonal Dashed /] | Engine cooling wiring           |







































|                   |    |
|-------------------|----|
| - Wiring diagrams | 1  |
| - Key             | 41 |

| DESCRIPTION  | Bravo- Brava  16V |    |     |     |
|--|--|----|-----|-----|
|  | SX   | GT | ELX | HSX |
| Fiat- CODE device and warning light  | 5  | 5  | 5   | 5   |
| Version: with automatic air conditioning<br>Engine cooling - Engine coolant temperature gauge  | 7  | 7  | 7   | 7   |
| Diagnostic socket connections  | 9  | 9  | 9   | 9   |
| Version without automatic air conditioning<br>Engine cooling - Engine coolant temperature gauge - Car interior fan   | 11   | 11 | 11  | 11  |
| Automatic air conditioning with A.B.I.   |  | 13 | 13  | 13  |
| Starting - Electronic injection and ignition - Recharging and warning light - Insufficient engine oil pressure warning light - Injection system failure - Rev counter - Speedometer  | 15   | 15 | 15  | 15  |
| Fuel gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Milometer/trip meter display and zeroing button - Engine coolant temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter | 17   | 17 | 18  | 18  |
| Instrument panel connections   | 21   | 21 | 23  | 23  |
| Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing lights   | 25   | 25 | 27  | 27  |
| Version without A.B.I.<br>Windscreen wash/wipe - Rearscreen wash/wipe - Horns - Heated rear windscreen and warning light - Headlamp washer   | 29   | 29 | 29  | 29  |
| Version with A.B.I.<br>Windscreen wash/wipe - Rearscreen wash/wipe - Horns - Heated rear windscreen and warning light - Headlamp washer  |  | 31 | 31  | 31  |







































**Electrical symbols**

|   |  |   |  |   |   |
|---|--|---|--|---|---|
|    | Position   |    | Choke                                    |    | Switch discharge                            |
|    | Main beam headlamps                                  |    | Water in fuel filter                     |    | Dipped headlamps                            |
|    | Heated seat  |    | Heater plugs                             |    | Central locking direction indicators signal |
|    | Seat belts   |    | Turbocharging pressure                   |    | Electric horns                              |
|   | Heated rear windscreen                               |   | Rear fog lamp                            |   | Left direction indicator                    |
|  | Handbrake applied and insufficient brake fluid       |  | Fog light                                |  | Right direction indicator                   |
|  | A.B.S.   |  | Brake pad wear                           |  | Engine cooling                              |
|  | Hazard warning                                       |  | Turbocharger pressure                    |  | Windscreen wiper                            |
|  | Direction indicator                                  |  | Automatic transmission fluid temperature |  | Electronically operated sun roof            |
|  | Handbrake applied and insufficient brake fluid level |  | Speed limit                              |  | Catalytic silencer temperature              |
|  | Recharging   |  | Fuel gauge                               |  | Resistance                                  |
|  | Engine oil pressure                                  |  | Engine coolant temperature               |  | Diode                                       |













### 55.

#### Electrical symbols

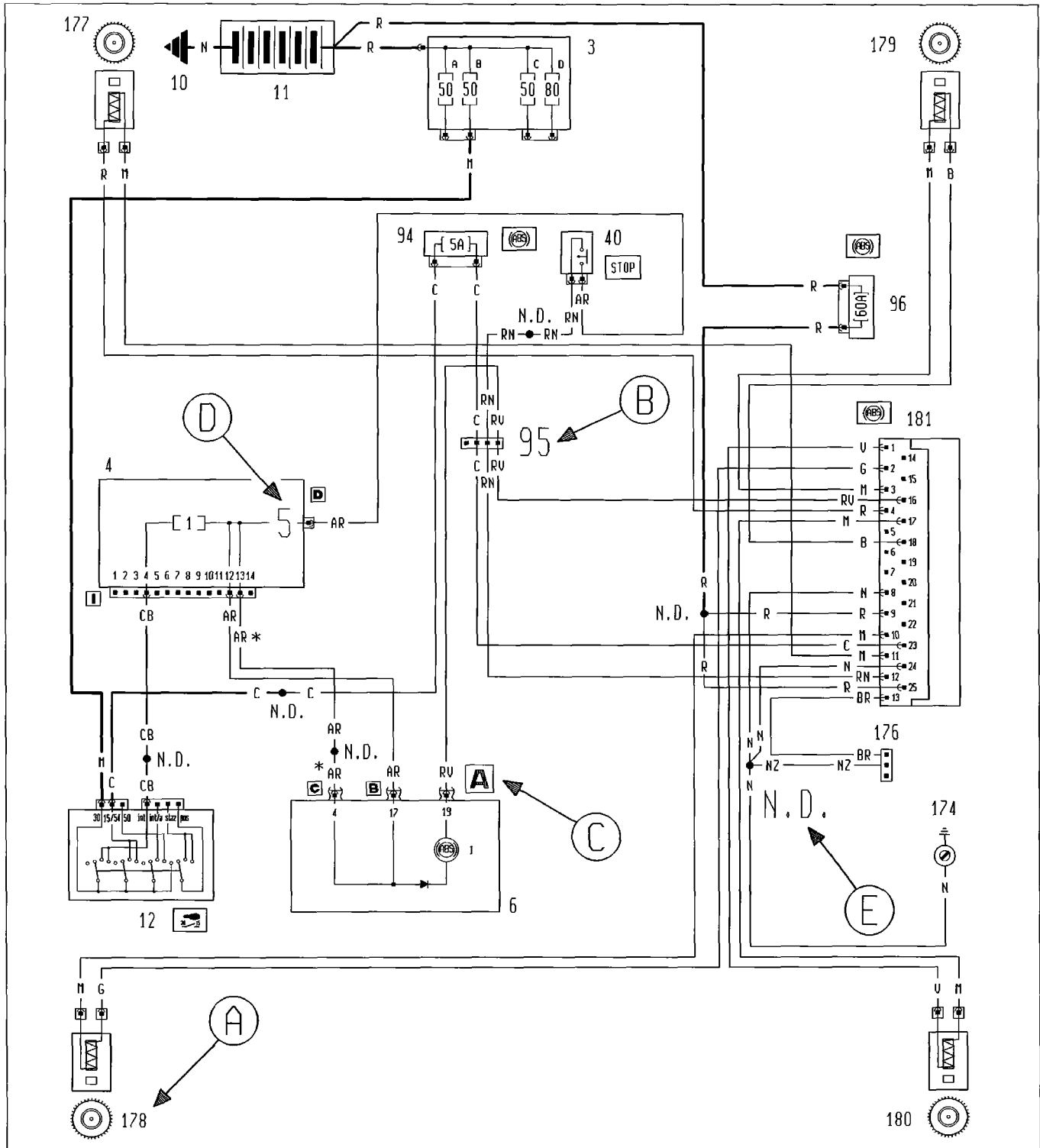
|   |                                   |   |  |   |  |
|---|-----------------------------------|---|--|---|--|
|    | Warning light                     |    | Trip computer control                        |    | Differential lock                        |
|    | Bulb                              |    | Electronic injection                         |    | Automatic transmission fluid temperature |
|    | Fuse                              |    | Engine oil level                             |    | Temperature                              |
|    | Switch open                       |    | Brake fluid level (Japanese Version)         |    | Anti-theft                               |
|   | Selector switch                   |   | Doors open                                   |   | Electric windows                         |
|  | Switch controlled by coil (relay) |  | Central locking                              |  | Earth                                    |
|  | Engine                            |  | Controlled damping suspension Sport Function |  | No. plate lights                         |
|  | Rearscreen wiper                  |  | Transistor                                   |  | Impulse generator (timer)                |
|  | Headlamp washer                   |  | Air-bag                                      |  | Analogue clock                           |
|  | Windscreen wash/wipe              |  | A.B.S. (Japanese Version)                    |  | Digital clock                            |
|  | Rearscreen wash/wipe              |  | Brake failure                                |  | Speedometer                              |
|  | Engine oil pressure               |  | Windscreen wiper                             |  | Rev counter                              |

**Electrical symbols**

|   |   |
|---|---|
|    | Digital speedometer                       |
|    | Digital rev counter                       |
|    | Digital fuel gauge                        |
|    | Analogue fuel gauge                       |
|    | Analogue engine coolant temperature gauge |
|  | Econometer                                |
|  | Digital engine coolant temperature gauge  |
|  | Engine oil temperature                    |
|  | Engine oil pressure gauge                 |
|  | Voltmeter                                 |

### 55.

Explanation for reading wiring diagram



4A004N01

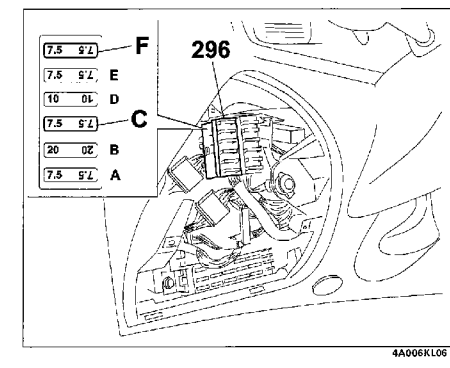
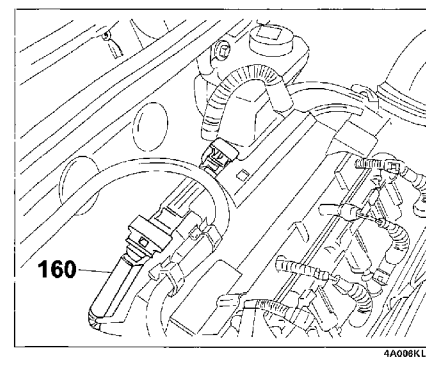
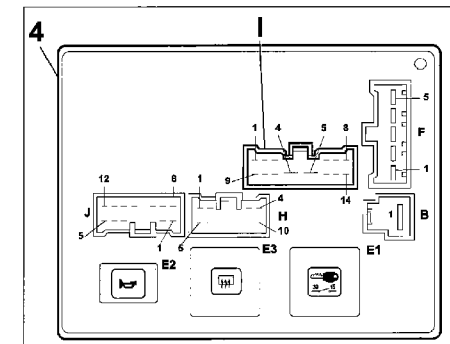
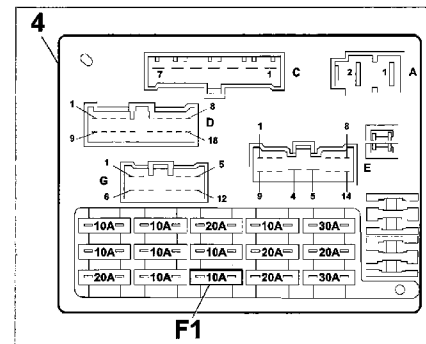
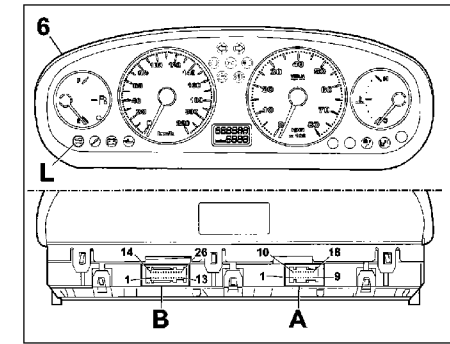
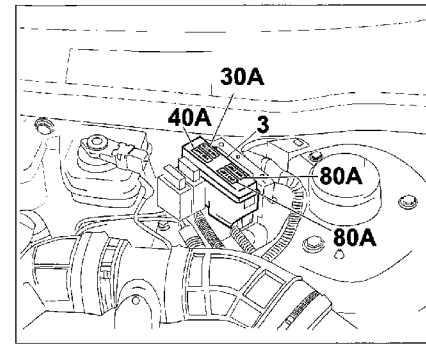
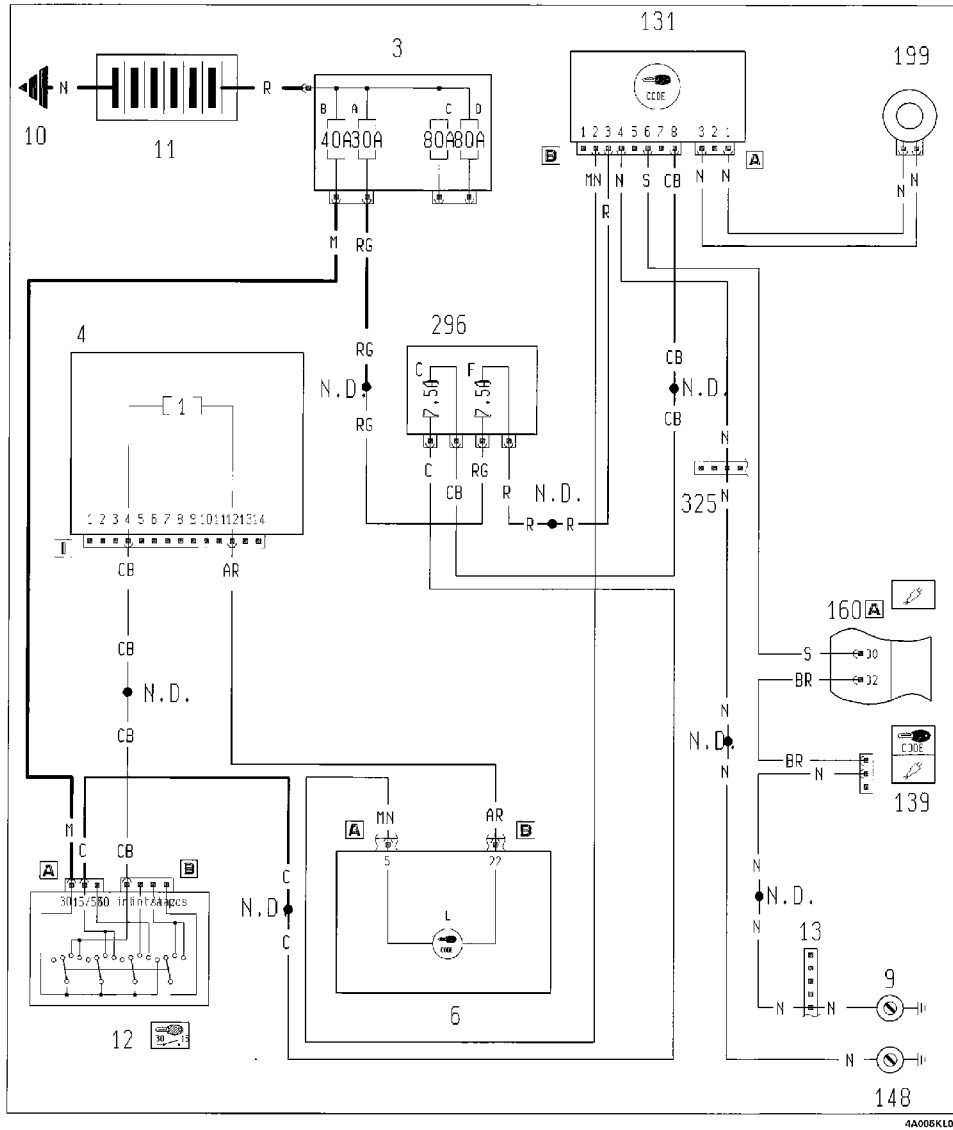
#### Reference key

- A Component no.
- B Connector no.
- C Connector identification at component

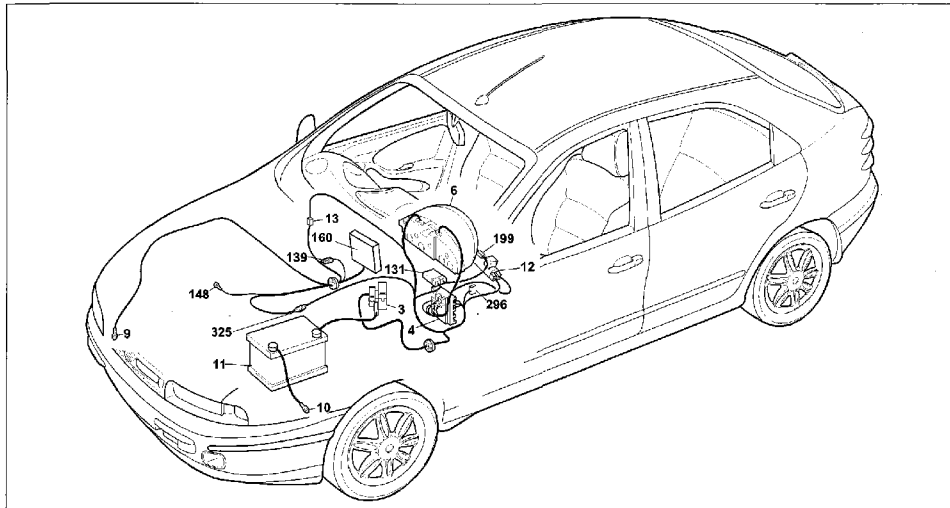
- D Connecting pin no.
- E Ultrasound welding

Fiat-CODE device and warning light - (See key at end of wiring diagrams)

Component location



### 55.



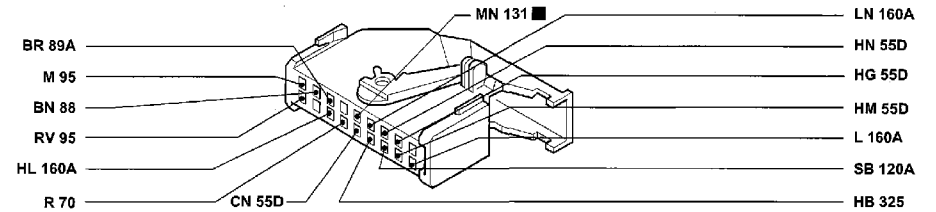
**Fiat-CODE device and warning light**

4A007KL01

#### Key to components

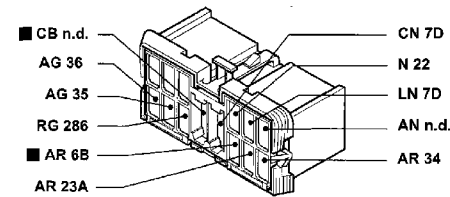
- |   |  |
|---|--|
| 3 Power fuse box:                             | 131 Fiat-CODE electronic control unit                                |
| A 30A fuse protecting injection system        | 139 Diagnostic socket for injection system                           |
| B 40A fuse protecting ignition system         | 148 Earth for electronic injection                                   |
| C 80A fuse protecting additional extras       | 160 Injection/ignition electronic control unit (1747)                |
| D 80A fuse protecting junction unit           | 199 Aerial for Fiat-CODE   |
| 4 Junction unit                               | 296 Fuse holder base on front cable                                  |
| 6 Instrument panel:                           | C 7.5A fuse protecting electronic injection/cooling system Fiat-CODE |
| L Fiat-CODE failure warning light             | F 7.5A fuse protecting electronic injection system/Fiat-CODE         |
| 9 Right front earth                           | 325 Connection between injection/left front cables                   |
| 10 Earth for battery on bodyshell             | N.D Ultrasound welding taped in cable loom                           |
| 11 Battery                                    |  |
| 12 Ignition switch                            |  |
| 13 Connection between right/left front cables |  |

#### 6A Instrument panel



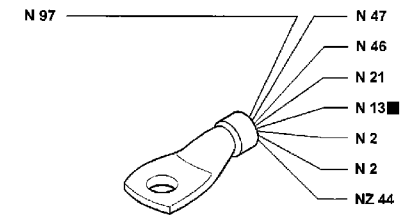
4A008KL01

#### 4I Junction unit



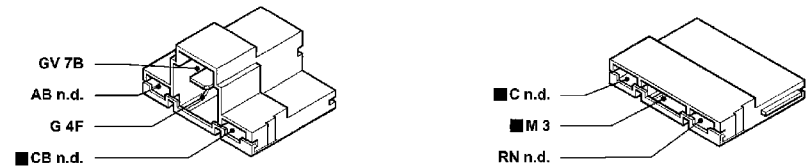
4A008KL02

#### 9 Right front earth



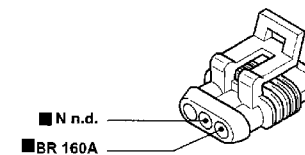
4A008KL03

#### 12 Ignition switch



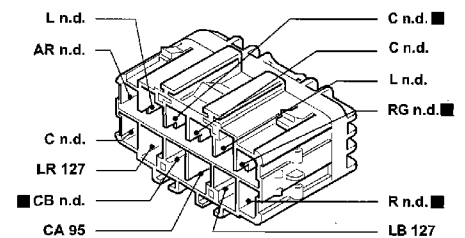
4A008KL04

#### 139 Diagnostic socket for injection system



4A008KL05

#### 296 Fuse holder base on front cable

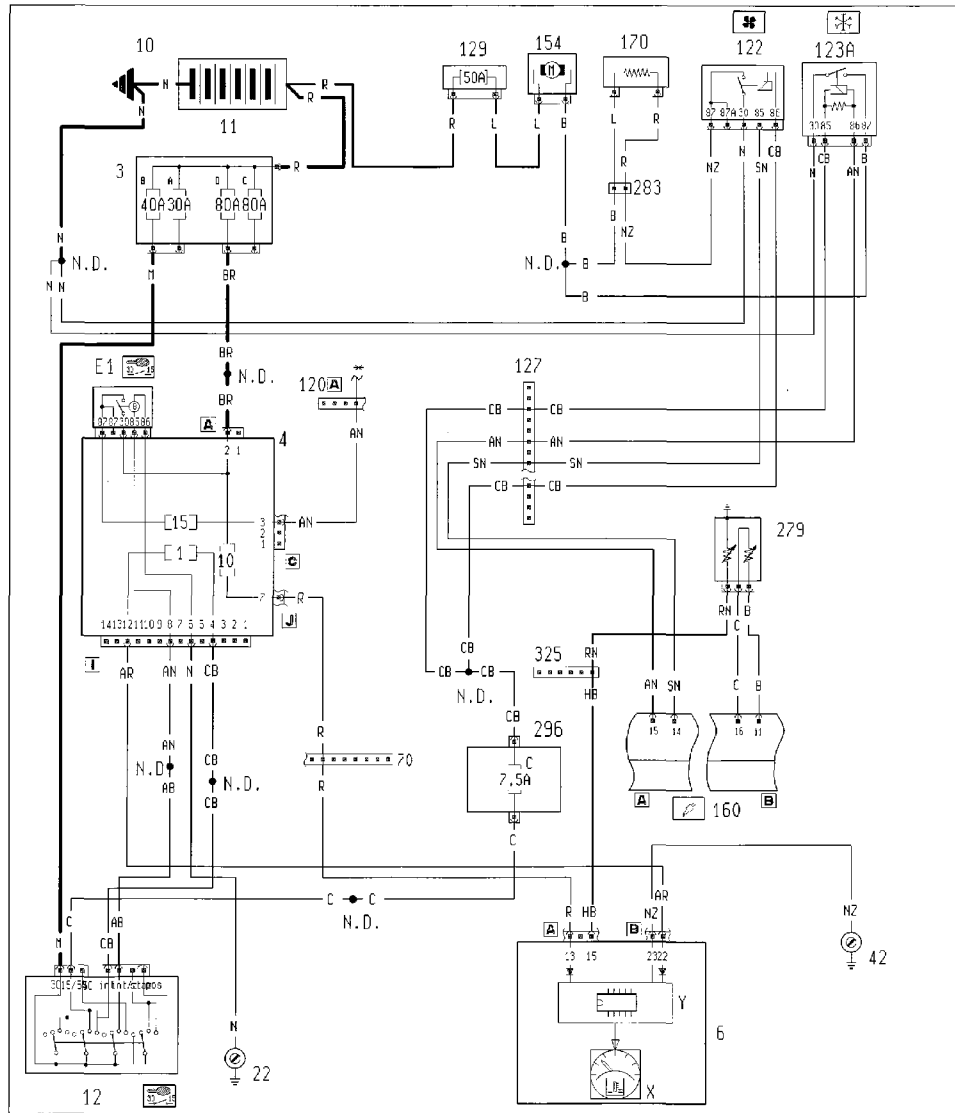


4A008KL06

Leads involved in the wiring diagram are marked by a square

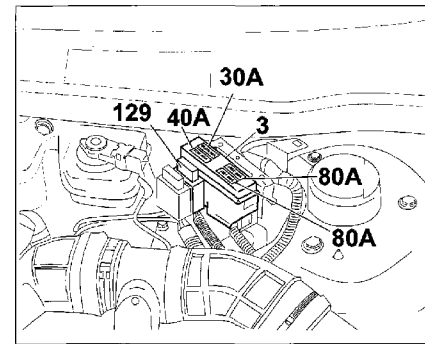
Version: with automatic air conditioning  
Engine cooling - Engine coolant temperature gauge - (See key at end of wiring diagrams)

**Component location**

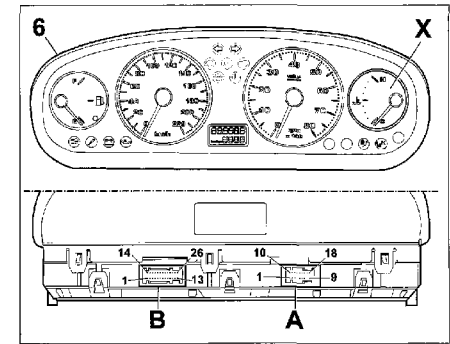


4A009K101

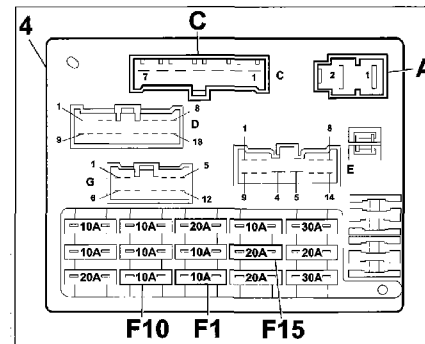
\* See air conditioning wiring diagram



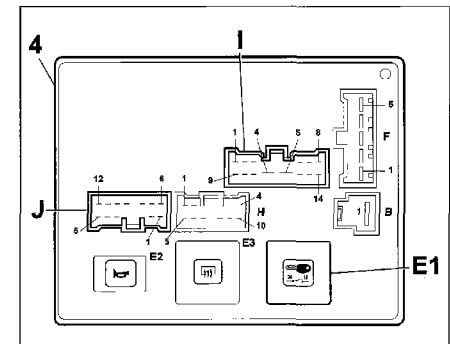
4A010K101



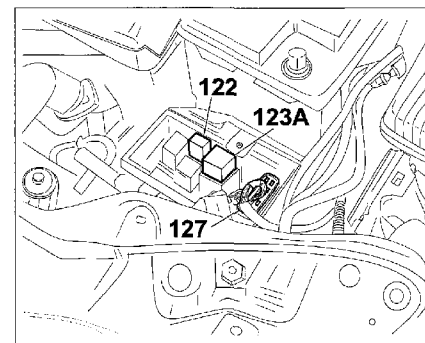
4A010K102



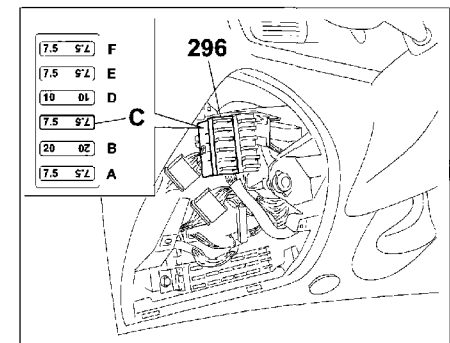
4A010K103



4A010K104

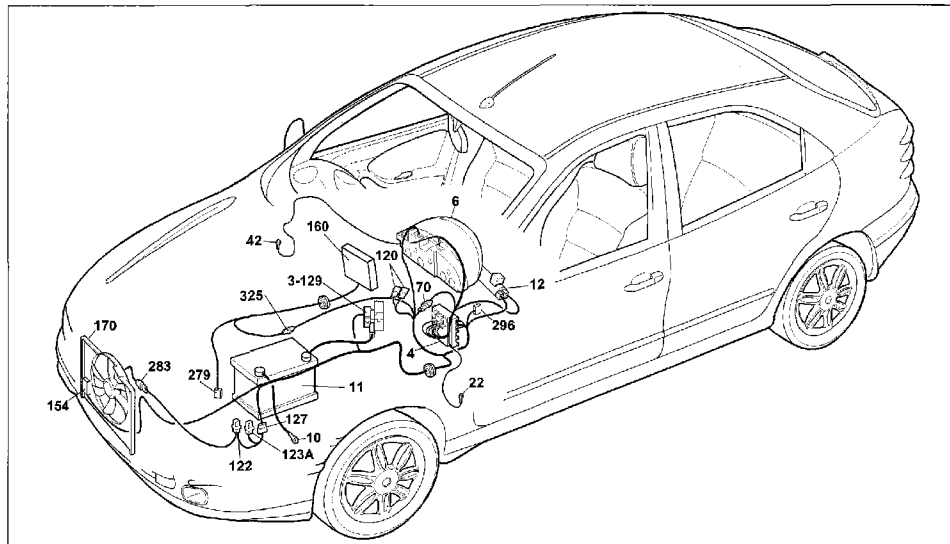


4A010K105



4A010K106

### 55.



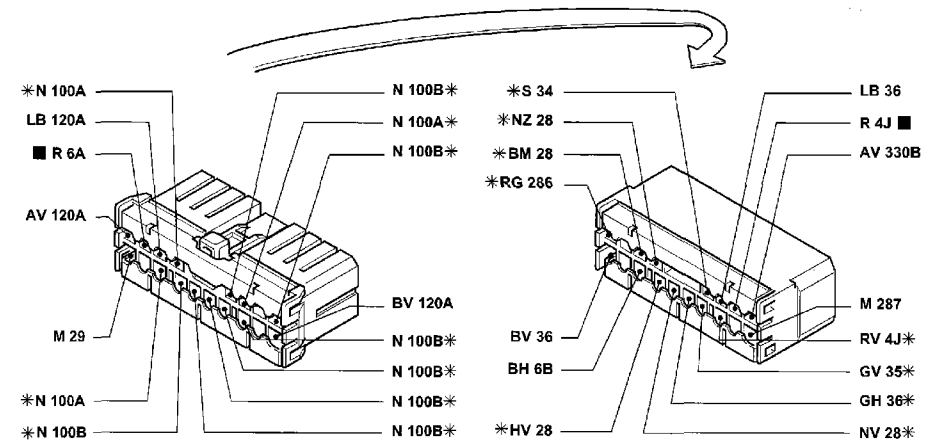
4A011KL01

Version with automatic air conditioning  
Engine cooling - Engine coolant temperature gauge

#### Key to components

- |  |  |
|--|--|
| 3 Power fuse box:<br>30A fuse protecting injection system<br>40A fuse protecting ignition system<br>80A fuse protecting additional extras<br>80A fuse protecting junction unit | 123A Engine cooling fan high speed relay feed                      |
| 4 Junction unit<br>E1 Switch discharge relay   | 127 Connection between front/left cables on relay holder bracket   |
| 6 Instrument panel:<br>Engine coolant temperature gauge  | 129 50A power fuse protecting engine cooling fan                   |
| 10 Earth for battery on bodyshell  | 154 Engine cooling fan   |
| 11 Battery   | 160 Injection/ignition electronic control unit (1747)              |
| 12 Ignition switch   | 170 Engine cooling fan limit resistor                              |
| 22 Left dashboard earth  | 279 Engine coolant temperature twin sender unit                    |
| 42 Right dashboard earth   | 283 Connection between front/resistor cables                       |
| 70 Connection between dashboard/front cables   | 296 Fuse holder base on electronic injection front cable           |
| 120A Connection for air conditioning unit cables   | 7.5A fuse protecting electronic injection/cooling system Fiat-CODE |
| 122 Engine cooling fan low speed relay feed  | 325 Connection between injection/front left cables                 |
|  | N.D. Ultrasound welding taped in cable loom                        |

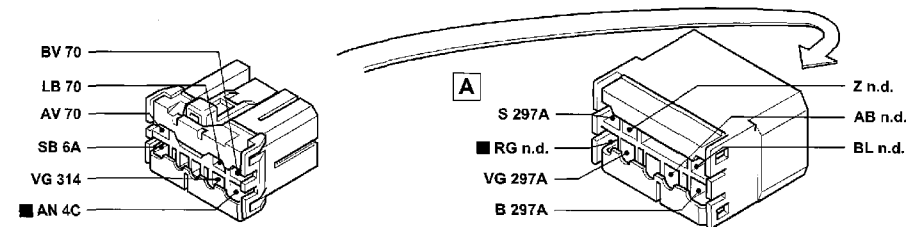
#### 70 Connection between dashboard/front cables



\* Variant connection for versions with alarm

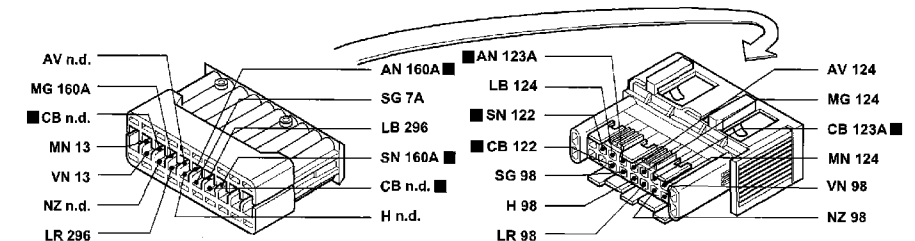
4A012KL02

#### 120 Connection for air conditioning unit cables



4A012KL02

#### 127 Connection between front left cable/cable on relay holder bracket

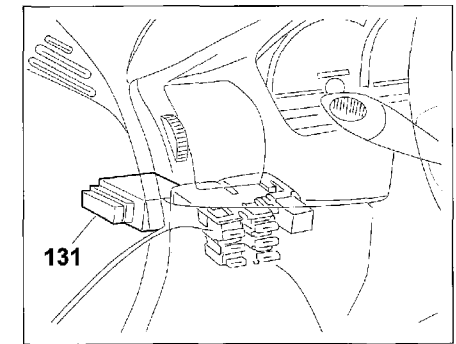
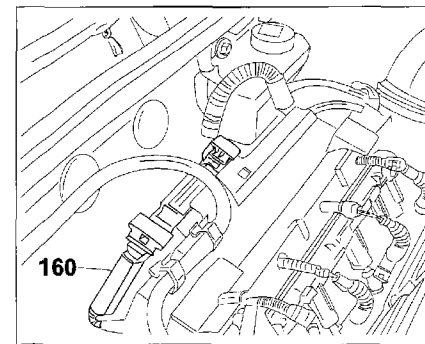
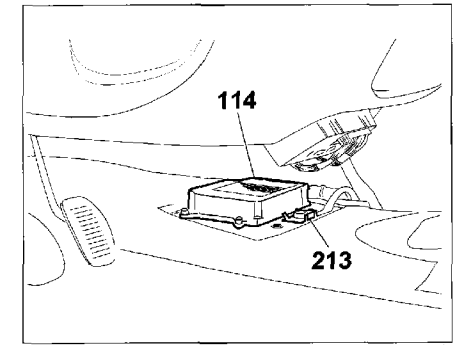
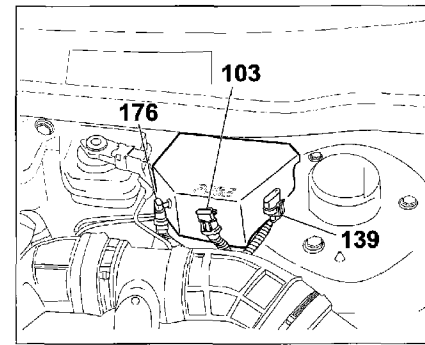
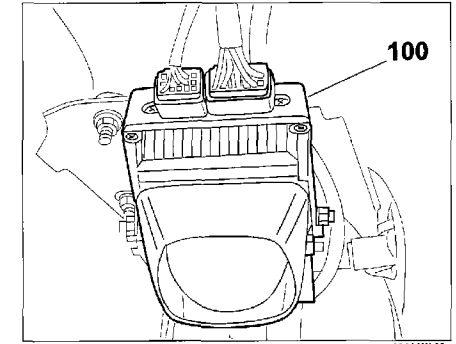
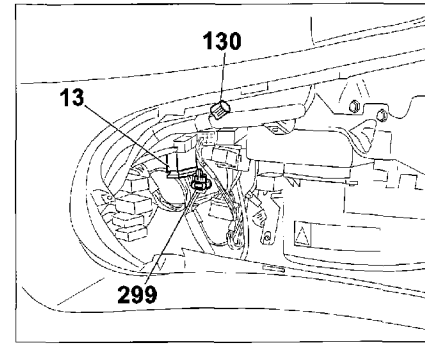
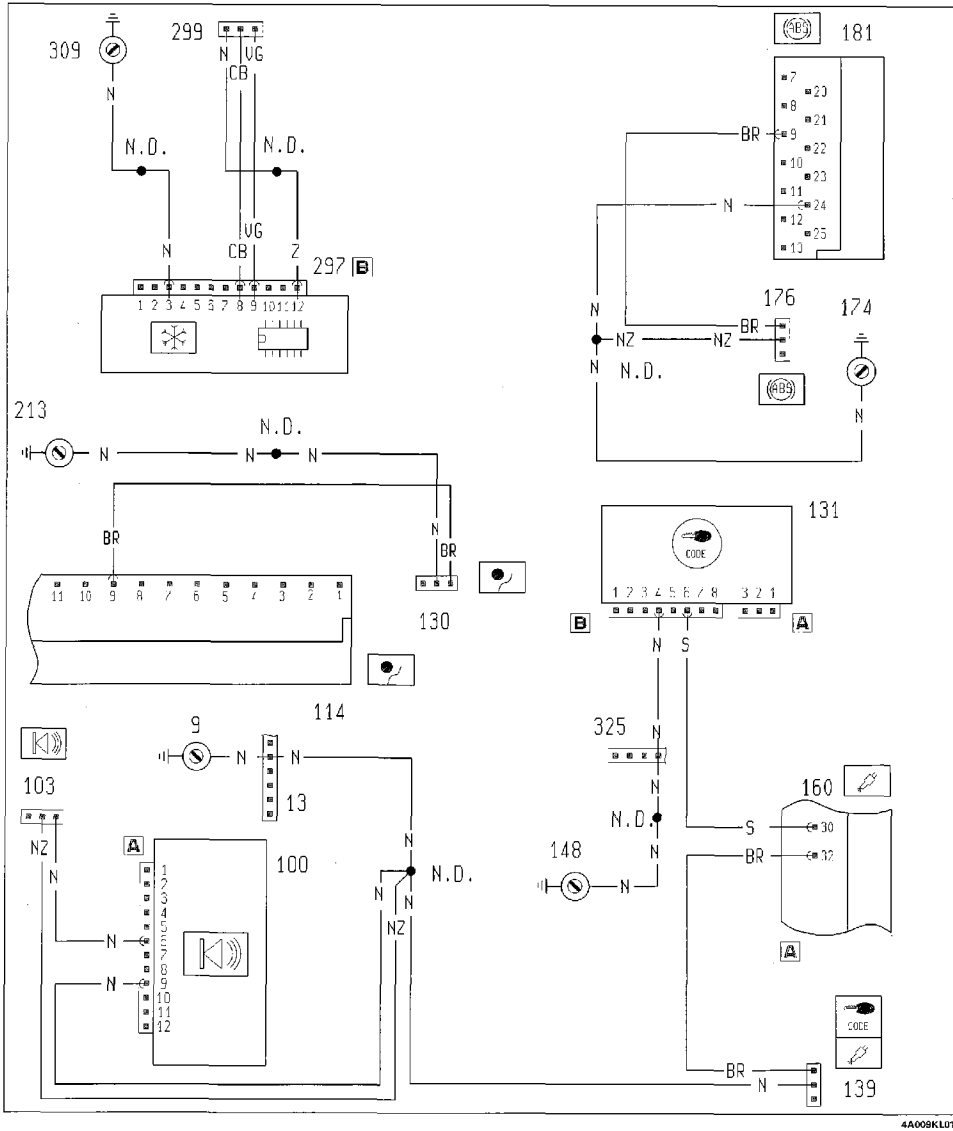


4A012KL03

Leads involved in the wiring diagram are marked by a square

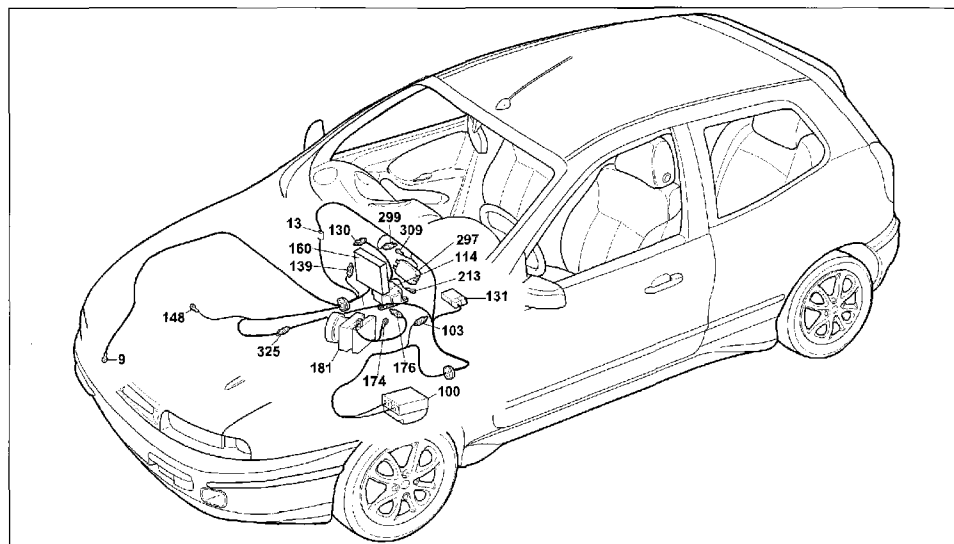
Diagnostic socket connections - (See key at end of wiring diagrams)

Component location





### 55.

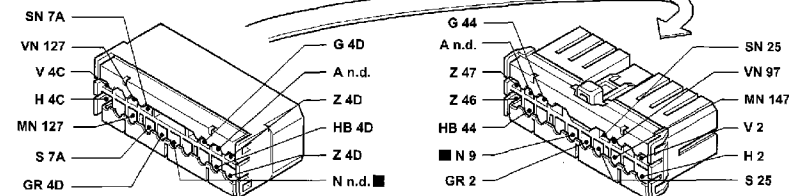


Diagnostic socket connections

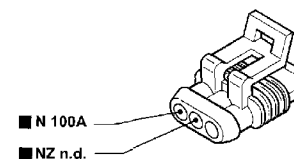
#### Key to components

- |   |  |
|---|--|
| 9 Right front earth                                   | 176 Diagnostic socket for anti-lock brakes (A.B.S.)              |
| 13 Connection between right/left front cables         | 181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.) |
| 100 Alarm electronic control unit                     | 213 Earth for EURO-BAG   |
| 103 Diagnostic socket for alarm                       | 297 Air conditioning control unit                                |
| 114 Alarm electronic control unit                     | 299 Diagnostic socket for heater/air conditioning                |
| 130 EURO-BAG diagnostic socket                        | 309 Earth for air conditioning unit                              |
| 131 Fiat-CODE electronic control unit                 | 325 Connection between injection/left front cables               |
| 139 Presa diagnostica per impianto iniezione          | N.D. Ultrasound welding taped in cable loom                      |
| 148 Earth for electronic injection                    |  |
| 160 Injection/ignition electronic control unit (1747) |  |
| 174 Power earth for anti-lock brakes (A.B.S.)         |  |

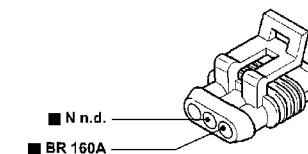
#### 13 Connection between right/left front cables



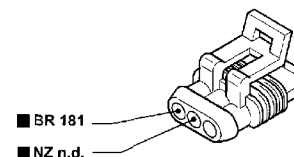
#### 103 Diagnostic socket for alarm



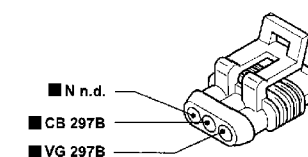
#### 139 Diagnostic socket for injection system



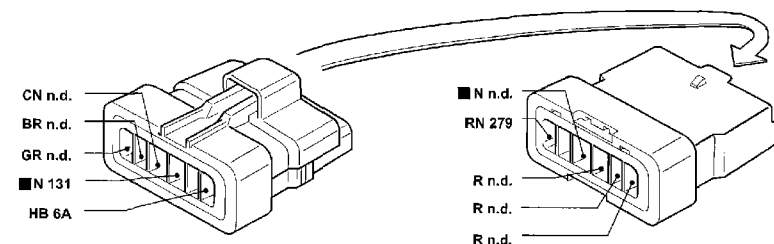
#### 176 Diagnostic socket for anti-lock brakes (A.B.S.)



#### 299 Diagnostic socket for heater/air conditioning

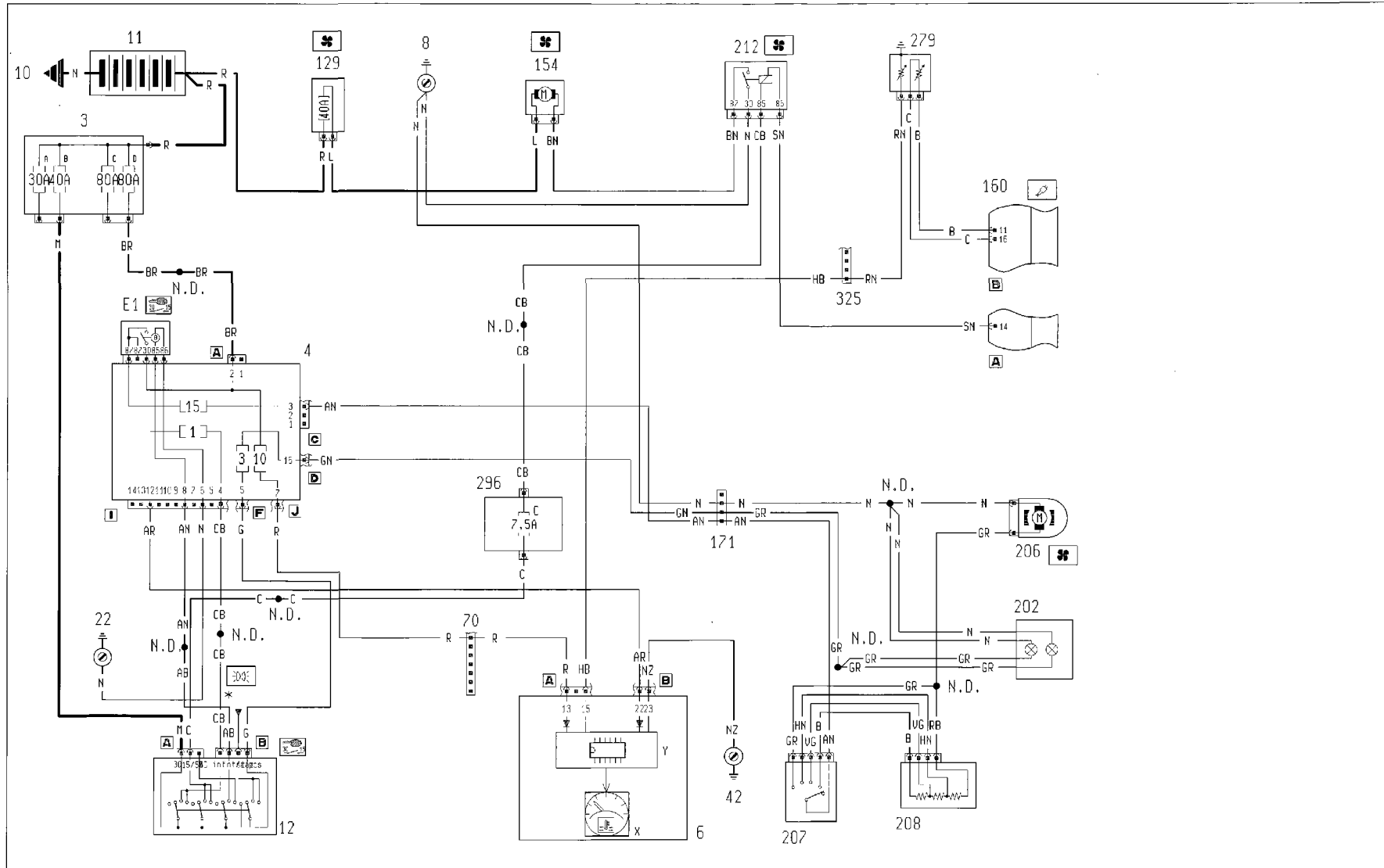


#### 325 Connection between injection/left front cables



Leads involved in the wiring diagram are marked by a square

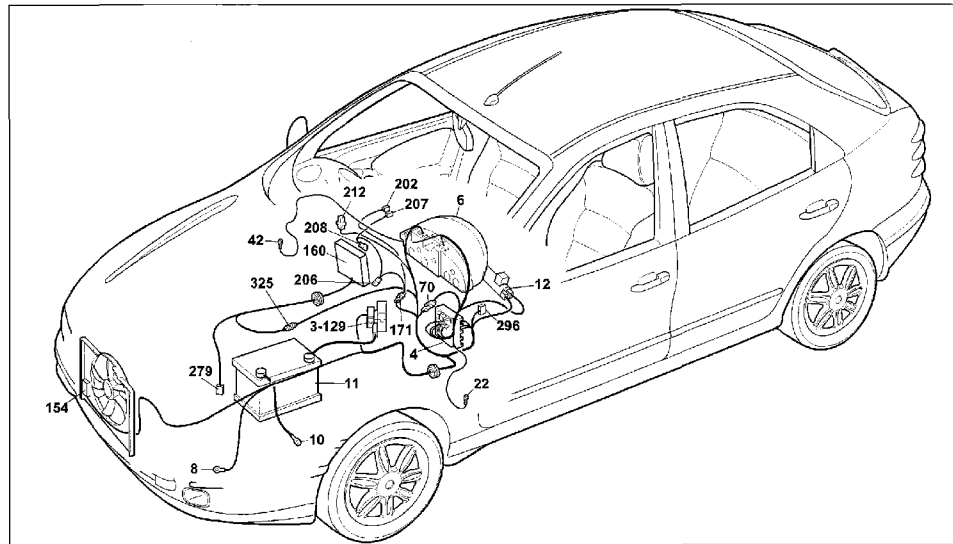
Version without automatic air conditioning  
Engine cooling - Engine coolant temperature gauge - Car interior ventilation - (See key at end of wiring diagrams)



\* See side lights wiring diagram

4A017KLO1

### 55.



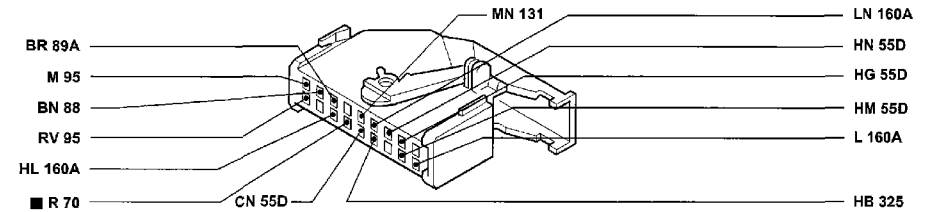
4A019K101

Version without automatic air conditioning  
 Engine cooling - Engine coolant temperature gauge - Car interior ventilation

#### Key to components

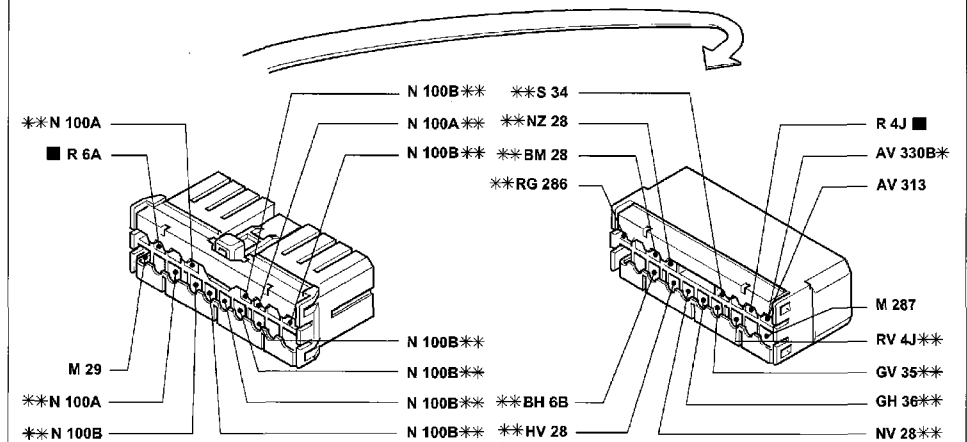
- |  |   |
|--|---|
| 3 Power fuse box:<br>30A fuse protecting injection system<br>40A fuse protecting ignition system<br>80A fuse protecting additional extras<br>80A fuse protecting junction unit | 154 Engine cooling fan  |
| 4 Junction unit<br>E1 Switch discharge relay   | 160 Injection/ignition electronic control unit (1747)   |
| 6 Instrument panel:<br>X Engine coolant temperature gauge<br>Y Electronic module   | 171 Connection for heater unit cables   |
| 8 Left front earth   | 202 Bulbs for heater unit/air conditioning  |
| 10 Earth for battery on bodyshell  | 206 Heater/air conditioning fan   |
| 11 Battery   | 207 Heater/air conditioning system speed control switch   |
| 12 Ignition switch   | 208 Heater/air conditioning system limit resistor<br>Engine cooling fan relay feed                          |
| 22 Left dashboard earth  | 212 Engine cooling fan relay feed   |
| 42 Right dashboard earth   | 279 Engine coolant temperature twin sender unit   |
| 70 Connection between dashboard/front cables   | 296 Fuse holder base on front cable<br>C 7.5A fuse protecting electronic injection/cooling system Fiat-CODE |
| 129 40A power fuse protecting engine cooling fan   | 325 Connection between injection/left front cables  |
- N.D. Ultrasound welding taped into wiring

#### 6A Instrument panel



4A020K101

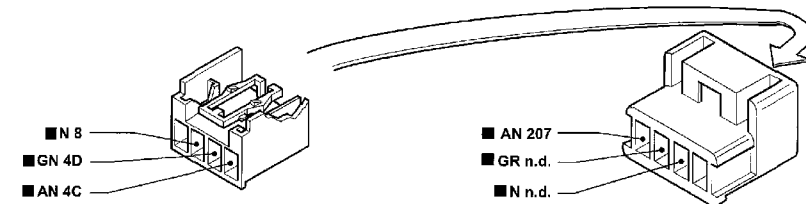
#### 70 Connection between dashboard/front cables



\* Variant connection for ELX trim level  
 \*\* Variant connection for versions with alarm

4A020K102

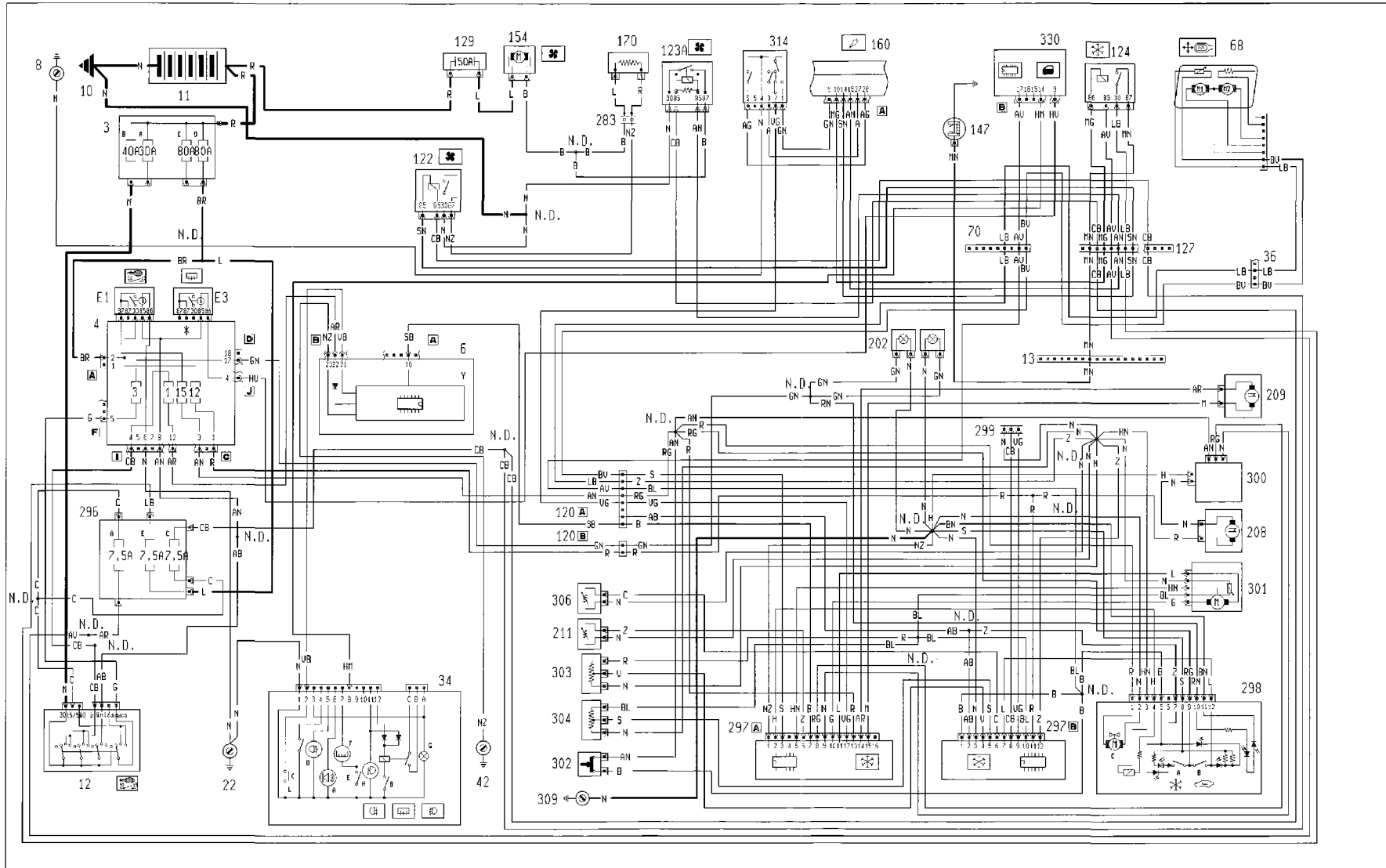
#### 171 Connection for heater unit cables



4A020K103

Leads involved in the wiring diagram are marked by a square

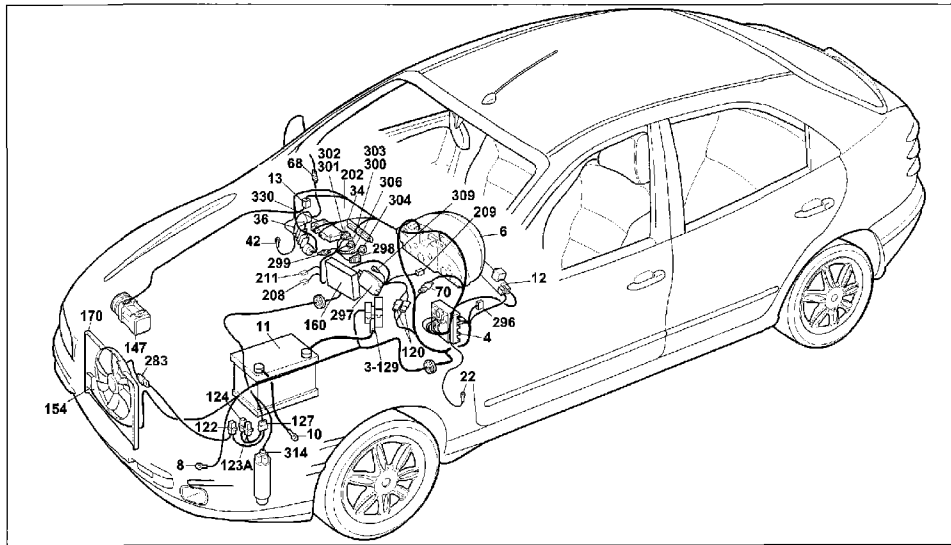
Automatic air conditioning with A.B.I. - (See key at end of wiring diagrams)



\* See heated rear windscreen wiring diagram

4A021KLO1

### 55.



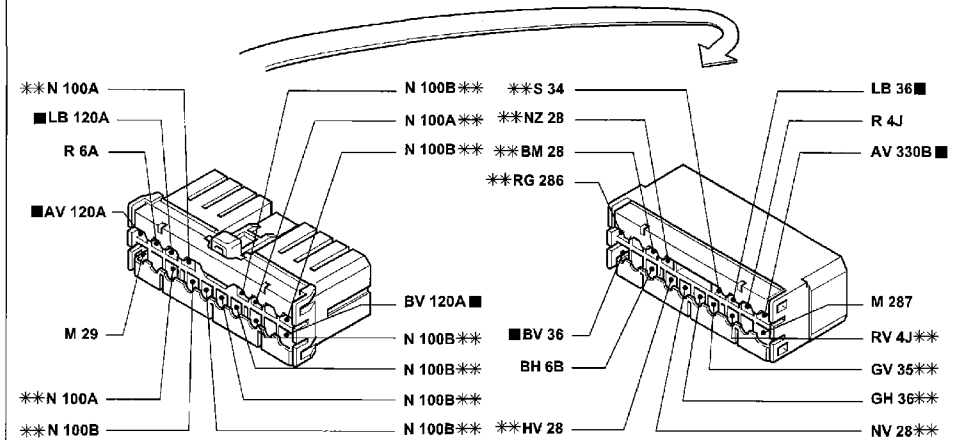
4A023KL01

Version with A.B.I.  
Automatic air conditioning

#### Key to components

- |   |  |
|---|--|
| <p>3 Power fuse box:<br/>A 30A fuse protecting injection system<br/>B 40A fuse protecting ignition system<br/>C 80A fuse protecting additional extras<br/>D 80A fuse protecting junction unit</p> <p>4 Junction unit:<br/>E1 Switch discharge relay<br/>E3 Switch discharge relay</p> <p>6 Instrument panel<br/>Y Electronic module</p> <p>8 Left front earth</p> <p>10 Earth for battery on bodyshell</p> <p>11 Battery</p> <p>12 Ignition switch</p> <p>13 Connection between right/left front cables</p> <p>22 Left dashboard earth</p> <p>34 Switch control panel:<br/>A Anti-theft device on warning light<br/>B Rear fog lamps switch<br/>D Rear fog lamps warning light<br/>E Heated rear windscreen control switch<br/>F Heated rear windscreen warning light<br/>i Switch control panel ideogramme light<br/>H Fog lights warning light<br/>I Fog lights control switch<br/>L Outside temperature control switch</p> <p>36 Connection between dashboard/right front door cables</p> <p>42 Right dashboard earth</p> <p>68 Right electrically adjustable exterior rear view mirror</p> <p>70 Connection between dashboard/front cables</p> <p>120A Connection for air conditioning unit cables</p> <p>120B Connection for air conditioning unit cables</p> <p>122 Engine cooling fan low speed relay feed</p> <p>23A Engine cooling fan high speed relay feed</p> <p>124 Air conditioning compressor relay feed</p> | <p>127 Connection between left front cable/cable on relay holder bracket</p> <p>129 50A power fuse protecting engine cooling fan</p> <p>147 Compressor for air conditioning</p> <p>154 Engine cooling fan</p> <p>160 Injection/ignition electronic control unit (1747)</p> <p>170 Engine cooling fan limit resistor</p> <p>202 Heater/air conditioning bulbs</p> <p>208 Heater/air conditioning system limit resistor</p> <p>209 Outside/recirculation air flap control actuator</p> <p>211 Electronic thermostat (N.T.C.)</p> <p>283 Connection between front/resistor cables</p> <p>296 Fuse holder base on front cable<br/>A 7.5A fuse protecting electronic injection/cooling system; A.C. system, Alarm<br/>C 7.5A fuse protecting electronic injection/cooling system Fiat-CODE<br/>E 7.5A fuse protecting climate control system</p> <p>297 Air conditioning control unit</p> <p>298 Recirculation control for heater/air conditioning<br/>A Air conditioning control switch<br/>B Recirculation control switch<br/>C Fan sensor</p> <p>299 Diagnostic socket for heater/air conditioning</p> <p>300 Heater fan electronic transformer</p> <p>301 Vehicle interior mixture control actuator</p> <p>302 Maximum demisting control switch</p> <p>303 Interior ventilation potentiometer</p> <p>304 Vehicle interior temperature potentiometer</p> <p>306 Treated air sensor</p> <p>309 Earth for air conditioning unit</p> <p>314 4 stage pressure switch</p> <p>330 A.B.I. control unit</p> <p>N.D. Ultrasound welding taped in cable loom</p> |
|---|--|

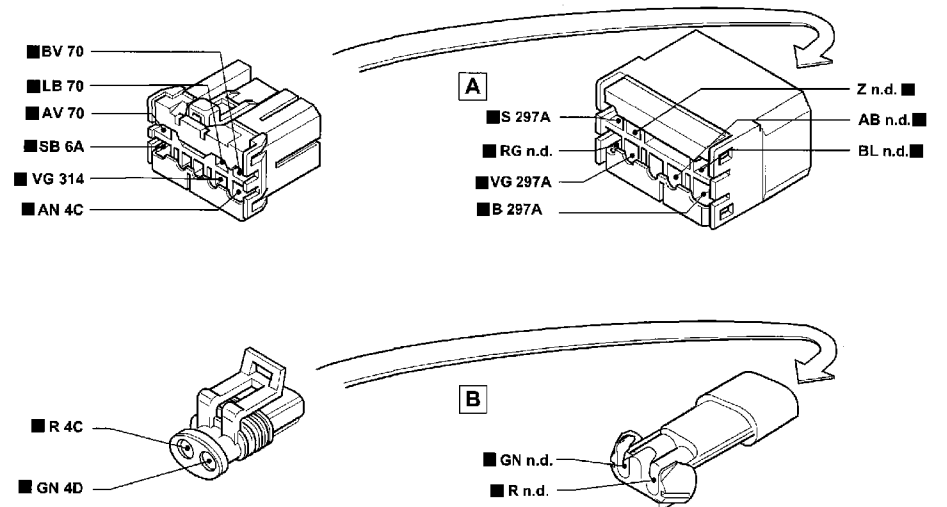
#### 70 Connection between dashboard/front cables



\*\* Variant connections for versions with alarm

4A024KL01

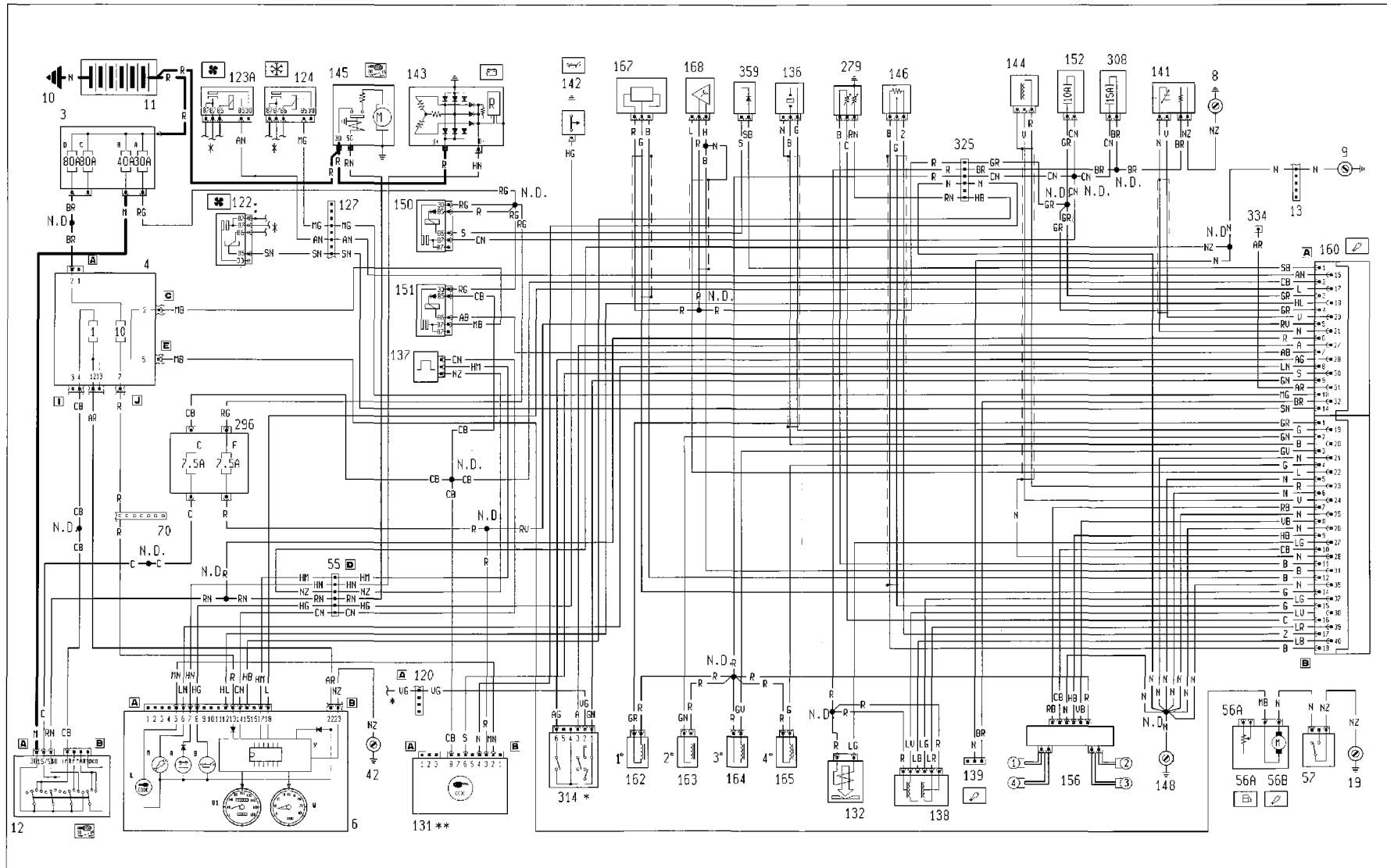
#### 120 Connection for air conditioning unit cables



4A024KL02

Leads involved in the wiring diagram are marked by a square

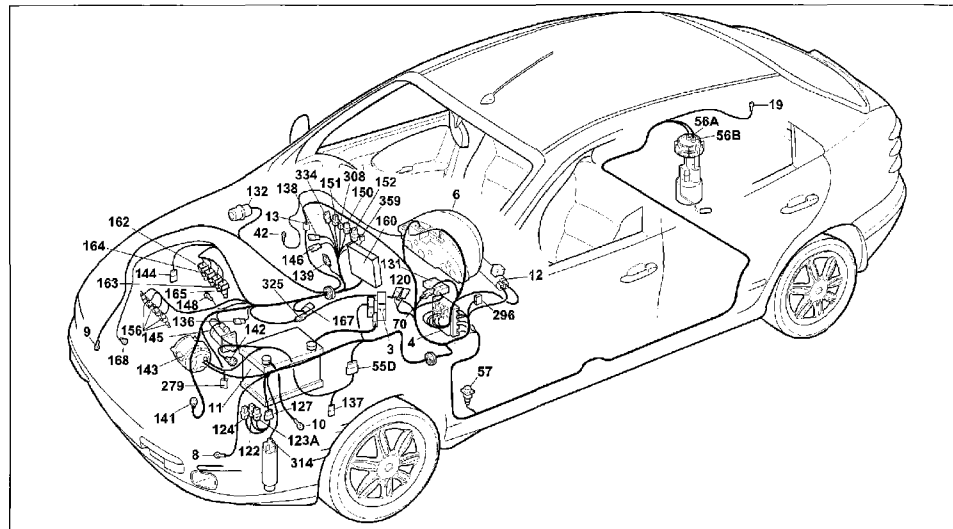
Starting - Electronic ignition and injection - Recharging and warning light - Low engine oil pressure warning light - Injection system failure warning light - Rev counter - Speedometer - (See key at end of wiring diagrams)



\* See air conditioning wiring diagram \*\* See Fiat-CODE wiring diagram

4A028K101

### 55.



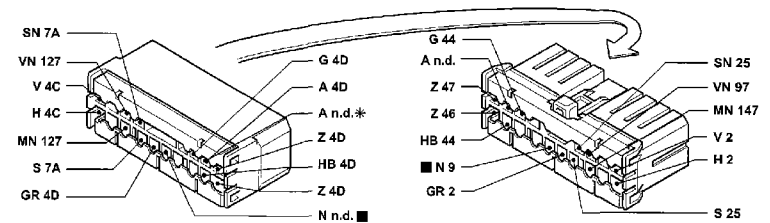
4A027KL01

Starting - Electronic ignition and injection - Recharging and warning light - Low engine oil pressure warning light - Injection system failure warning light - Rev counter - Speedometer

#### Key to components

- |  |   |
|--|---|
| 3 Power fuse box:<br>A 30A fuse protecting injection system<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting additional extras<br>D 80A fuse protecting junction unit   | 136 Knock sensor<br>137 Vehicle speed sensor<br>138 Idle adjustment actuator<br>139 Presa diagnostica per impianto iniezione<br>141 Hot lambda probe<br>142 Switch signalling insufficient engine oil pressure<br>143 Alternator<br>144 RPM and TDC sensor<br>145 Starter motor<br>146 Potentiometer on butterfly valve<br>148 Earth for electronic injection<br>150 Injection system relay feed<br>151 Relay feed for Lambda sensor, electric fuel pump, injectors               |
| 4 Junction unit:<br>6 Instrument panel<br>A Battery recharging warning light<br>B Low engine oil pressure warning light<br>L Fiat-CODE failure warning light<br>M Injection system failure warning light<br>V1 Speedometer<br>W Rev counter<br>Y Electronic module   | 152 10A fuse protecting injection system<br>156 Spark plugs<br>160 Injection/ignition electronic control unit (1747)<br>162 Injector (1)<br>163 Injector (2)<br>164 Injector (3)<br>165 Injector (4)<br>167 Air flow meter<br>168 Timing sensor<br>279 Engine coolant temperature twin sender unit<br>296 Fuse holder base on front cable<br>C 7.5A fuse protecting electronic injection/cooling system Fiat-CODE<br>F 7.5A fuse protecting electronic injection system/Fiat-CODE |
| 8 Left front earth<br>9 Right front earth<br>10 Earth for battery on bodyshell<br>11 Battery<br>12 Ignition switch<br>13 Connection between right/left front cables<br>19 Right rear earth<br>42 Right dashboard earth<br>55 D Coupling between left front cable and services pre-wiring<br>56 Fuel gauge assembly<br>A Fuel level sensor<br>B Electric fuel pump  | 308 15A fuse protecting canister solenoid valve<br>314 4 stage pressure sw/itch<br>325 Connection between injection/left front cables<br>334 Connection for diagnostic cable (1747)<br>359 Signal inversion relay diode (1747)  |
| 57 Inertia switch<br>70 Connection between dashboard/front cables<br>120 Connection for air conditioning unit cables<br>122 Engine cooling fan low speed relay feed<br>123A Engine cooling fan high speed relay feed<br>124 Air conditioning compressor relay feed<br>127 Connection between left front cable/cable on relay racket holder<br>131 Fiat-CODE electronic control unit<br>132 Petrol vapour cut out solenoid (Canister) | N.D. Ultrasound welding taped in cable loom   |

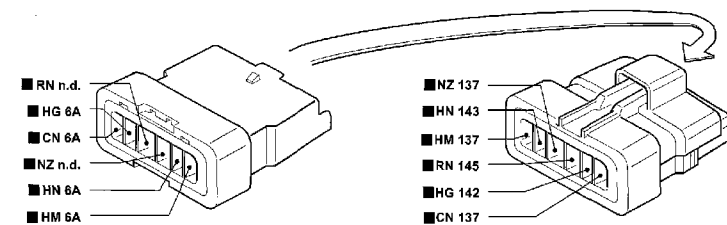
#### 13 Connection between right/left front cables



\* Variant connection for versions with alarm

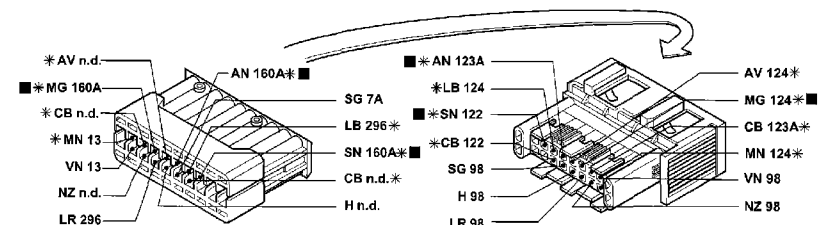
4A028KL01

#### 55D Connection between front cables/pre-wiring



4A028KL02

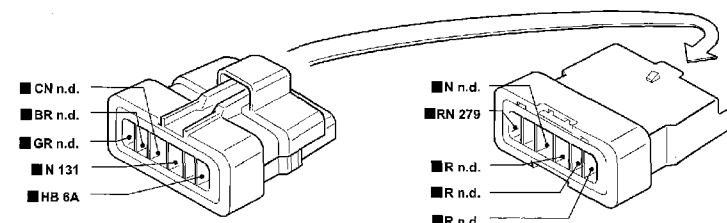
#### 127 Connection between left front cable/cable on relay holder bracket



\* Variant connection for versions with alarm

4A028KL03

#### 325 Connection between front/injection cables

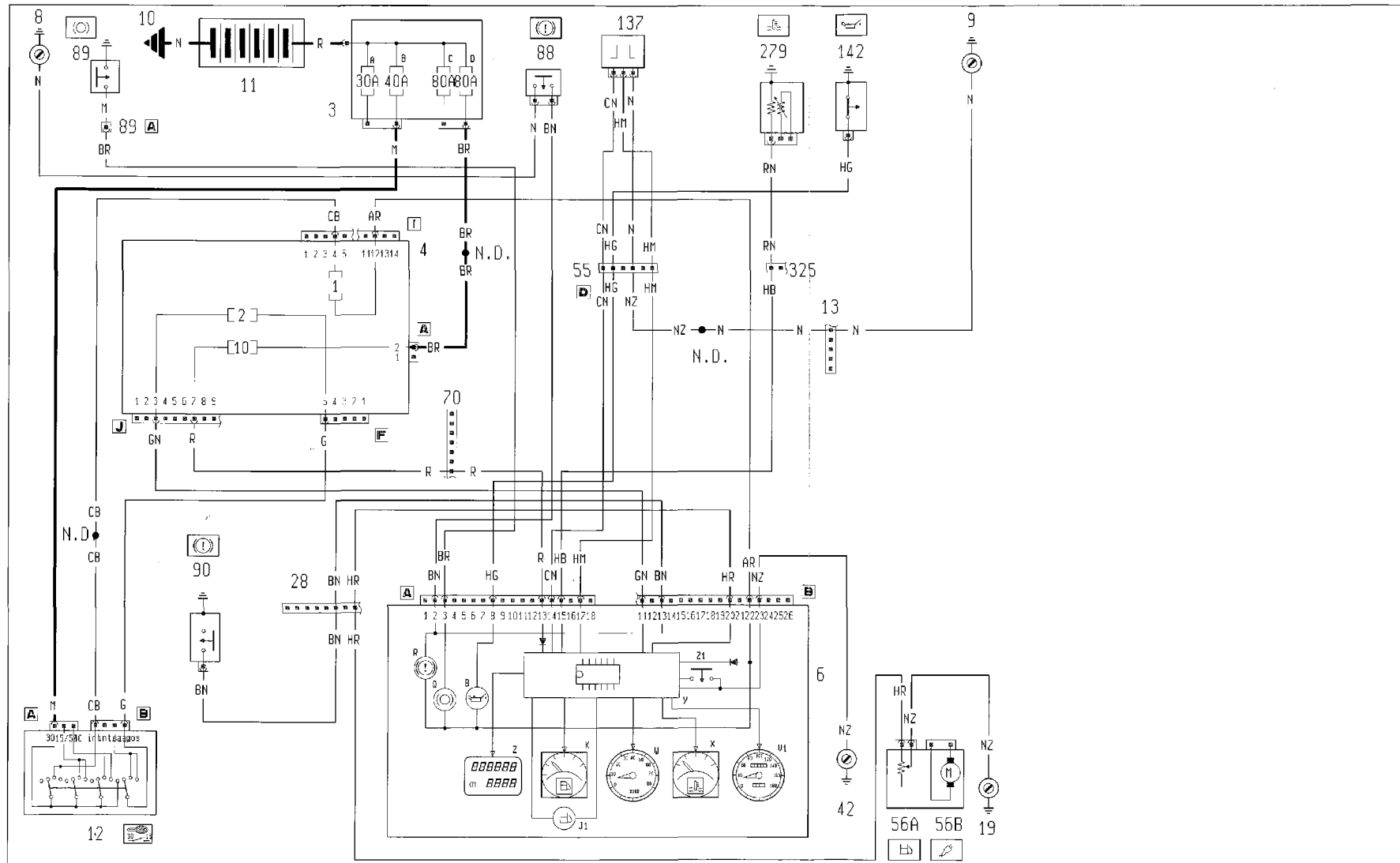


4A028KL04

Leads involved in the wiring diagram are marked by a square

Trim level: SX □ GT

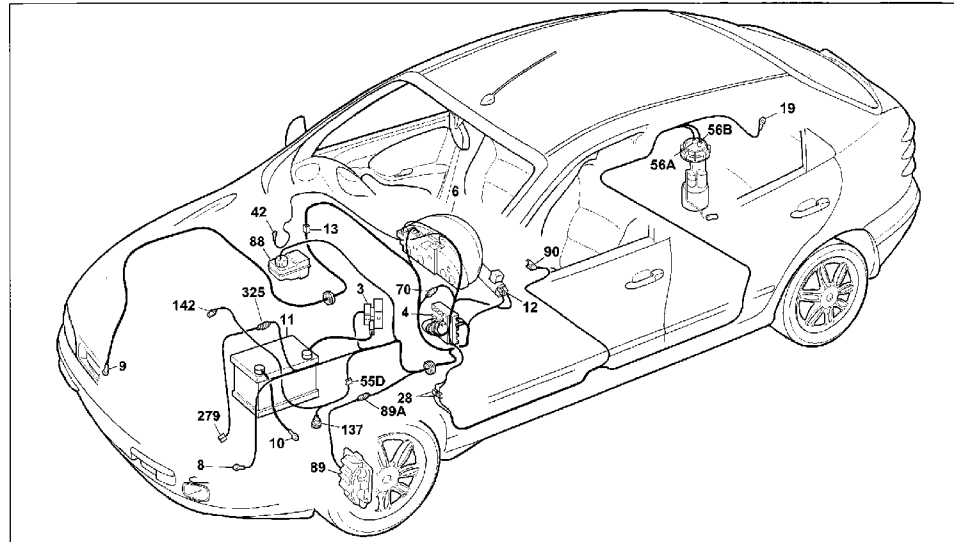
Fuel gauge and reserve warning light - Handbrake applied/insufficient brake fluid level - Speedometer - Milometer/trip meter display and zeroing button - Engine coolant temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter (See key at end of wiring diagrams)



4A029K101



### 55.



4A031K101

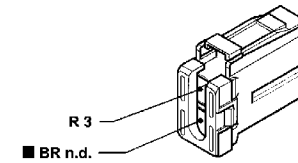
Trim level: SX - GT

Fuel gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Milometer/trip meter display and zeroing button - Engine coolant temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter

#### Key to components

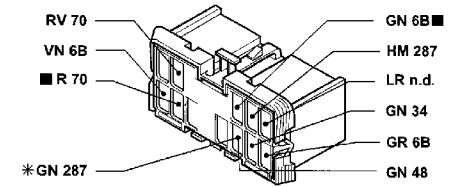
- |  |  |
|--|--|
| 3 Power fuse box:  | 10 Earth for battery on bodyshell                            |
| A 30A fuse protecting injection system                           | 11 Battery   |
| B 40A fuse protecting ignition system                            | 12 Ignition switch   |
| C 80A fuse protecting additional extras                          | 13 Connection between right/left front cables                |
| D 80A fuse protecting junction unit                              | 19 Right rear earth  |
| 4 Junction unit  | 28 Connection between dashboard/longitudinal cables          |
| 6 Instrument panel:  | 42 Right dashboard earth                                     |
| B Low engine oil pressure warning light                          | 55 D Connection between left front cable/services pre-wiring |
| J1 Fuel reserve warning light                                    | 56 Fuel gauge assembly                                       |
| K Fuel gauge   | A Fuel level sensor  |
| Q Front brake pad wear warning light                             | B Electric fuel pump   |
| R Handbrake applied/insufficient brake fluid level warning light | 70 Connection between dashboard/front cables                 |
| V1 Speedometer   | 88 Insufficient brake fluid level sensor                     |
| X Engine coolant temperature gauge                               | 89 Left front brake pad wear sensor                          |
| W Rev counter  | 89A Connection for left brake pad wear sensor cables         |
| Y Electronic module  | 90 Switch signalling handbrake applied                       |
| 8 Z Milometer/trip meter display                                 | 137 Vehicle speed sensor                                     |
| 9 Z1 Trip meter zeroing button                                   | 142 Switch signalling insufficient engine oil pressure       |
| Left front earth   | 279 Engine coolant temperature twin sender unit              |
| Right front earth  | 325 Connection between injection/left front cables           |
|  | N.D. Ultrasound welding taped in cable loom                  |

#### 4A Junction unit



4A032K101

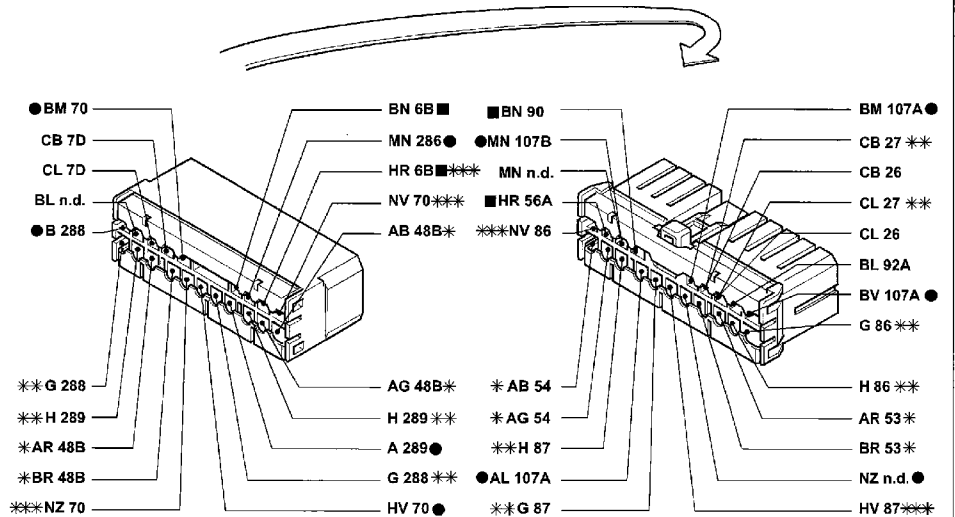
#### 4J Junction unit



\* Variant connection for versions with radio phone

4A032K102

#### 28 Connection between dashboard/longitudinal cables Versions without A.B.I. control unit



- Variant connections for versions with alarm
- \* Variant connection for versions with top of the range radio
- \*\* Variant connection for Brava versions
- \*\*\* Variant connection for Brava versions with alarm

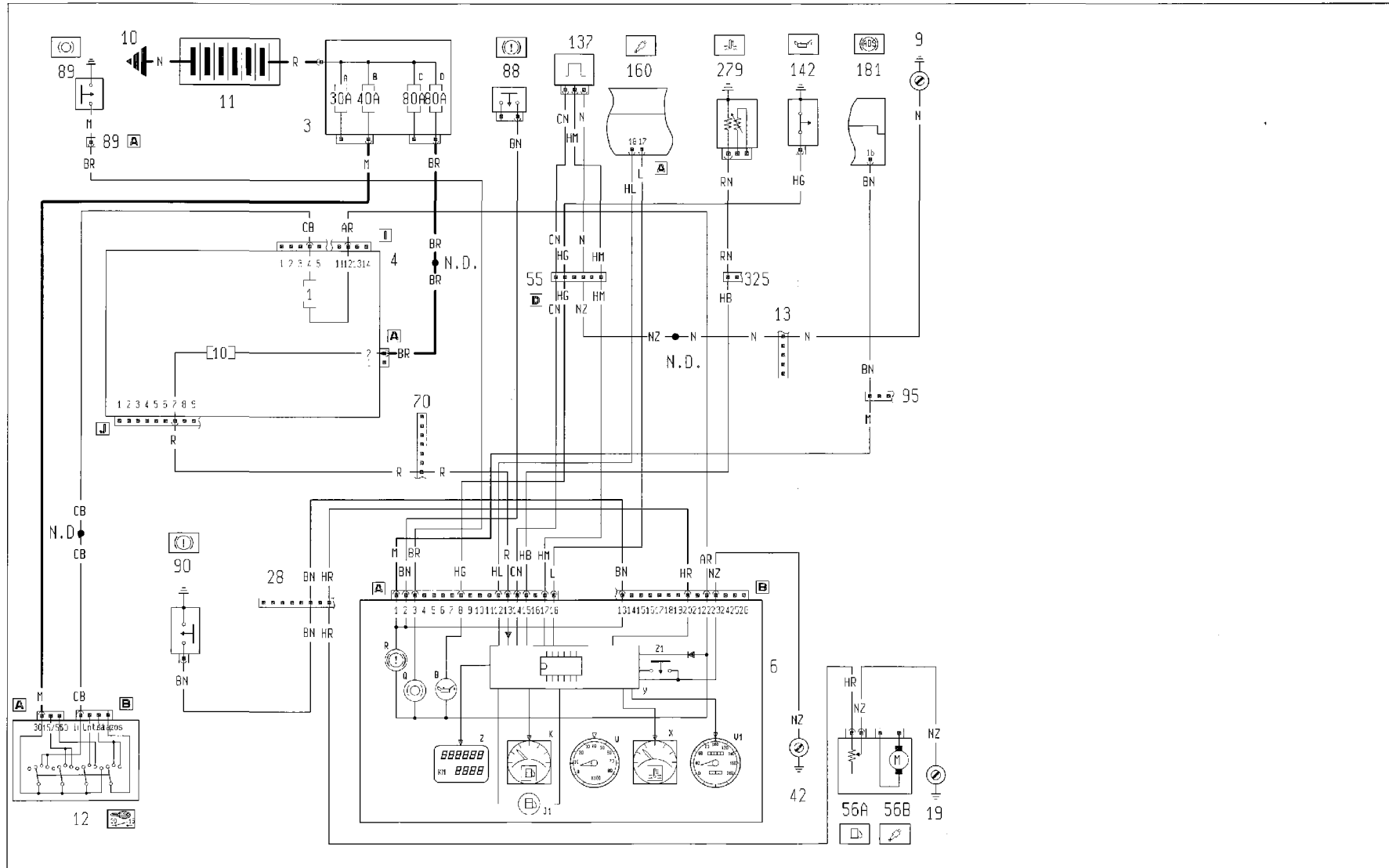
4A032K103

Leads involved in the wiring diagram are marked by a square

**55.**

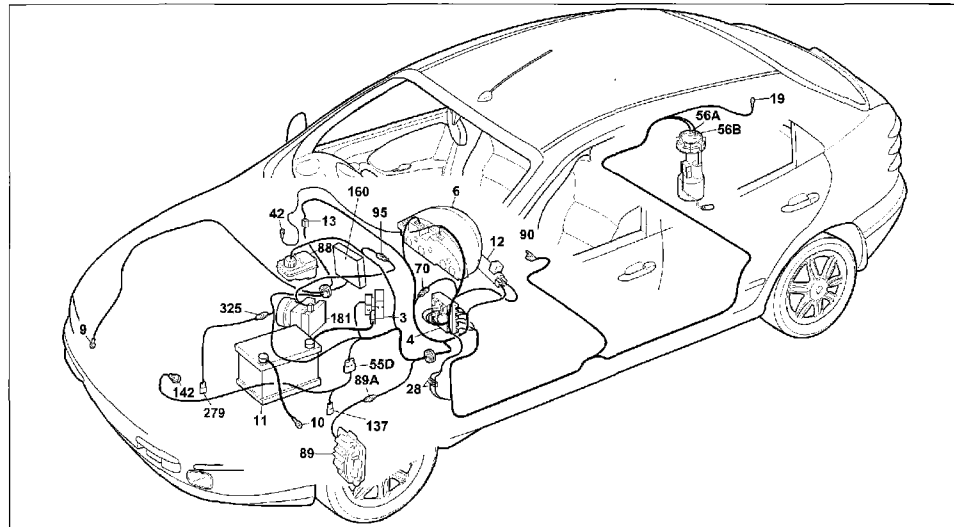
Trim level: ELX □ HSX

Fuel gauge and reserve warning light - Handbrake applied and insufficient brake fluid warning light - Speedometer - Milometer/trip meter display and zeroing button - Engine coolant temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter - (See key at end of wiring diagrams)



4A033KL01

### 55.



4A035KL01

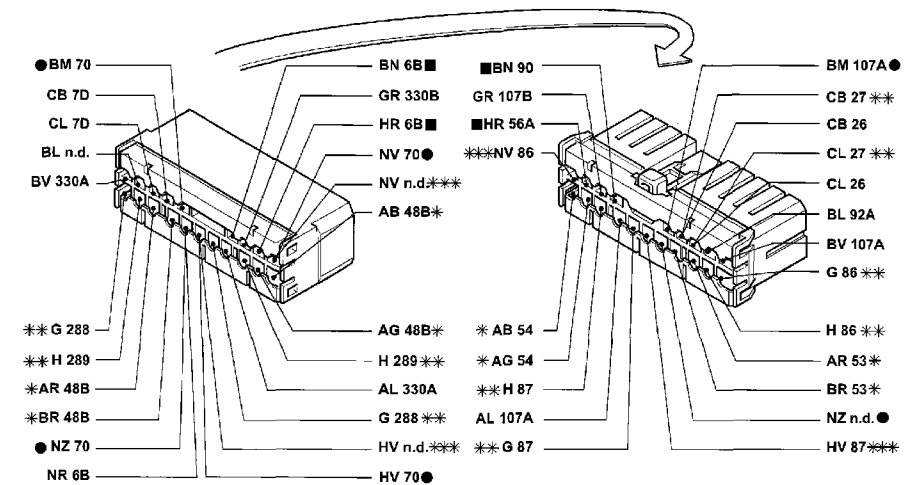
#### Trim level: ELX - HSX

Fuel gauge and reserve warning light - Handbrake applied and insufficient brake fluid level warning light - Speedometer - Milometer/trip meter display and zeroing button - Engine coolant temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter

#### Key to components

- |  |   |
|--|---|
| 3 Power fuse box:<br>A 30A fuse protecting injection system<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting additional extras<br>D 80A fuse protecting junction unit   | 19 Right rear earth   |
| 4 Junction unit  | 28 Connection between dashboard/longitudinal cables               |
| 6 Instrument panel:<br>B Low engine oil pressure warning light<br>J1 Fuel reserve warning light<br>K Fuel gauge<br>Q Front brake pad wear warning light<br>R Handbrake applied/insufficient brake fluid level warning light<br>V1 Speedometer<br>W Rev counter | 42 Right dashboard earth  |
| X Engine coolant temperature gauge<br>Y Electronic module<br>Z Milometer/trip meter display<br>Z1 Trip meter zeroing button  | 55 D Connection between left front cable/services pre-wiring      |
| 9 Right front earth  | 56 Fuel gauge unit<br>A Fuel level sensor<br>B Electric fuel pump |
| 10 Earth for battery on bodyshell  | 70 Connection between dashboard/front cables                      |
| 11 Battery   | 88 Insufficient brake fluid level sensor                          |
| 12 Ignition switch   | 89 Left front brake pad wear sensor                               |
| 13 Connection between right/left front cables  | 89A Connection for left brake pad wear sensor cables              |
|  | 90 Switch signalling handbrake applied                            |
|  | 95 Connection between front cables/anti-lock brakes A.B.S.        |
|  | 137 Vehicle speed sensor  |
|  | 142 Switch signalling insufficient engine oil pressure            |
|  | 160 Injection/ignition electronic control unit (1747)             |
|  | 181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)  |
|  | 279 Engine coolant temperature twin sender unit                   |
|  | 325 Connection between injection/left front cables                |
|  | N.D Ultrasound welding taped in cable loom                        |

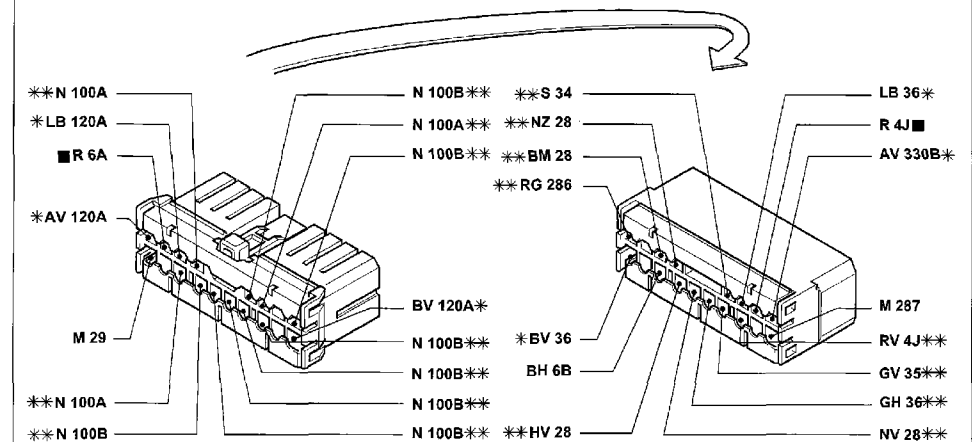
#### 28 Connection between dashboard/longitudinal cables



- Variant connection for versions with alarm
- \* Variant connection for versions with top of the range radio
- \*\* Variant connection for Brava versions
- \*\*\* Variant connection for Brava versions with alarm

4A036KL01

#### 70 Connection between dashboard/front cables



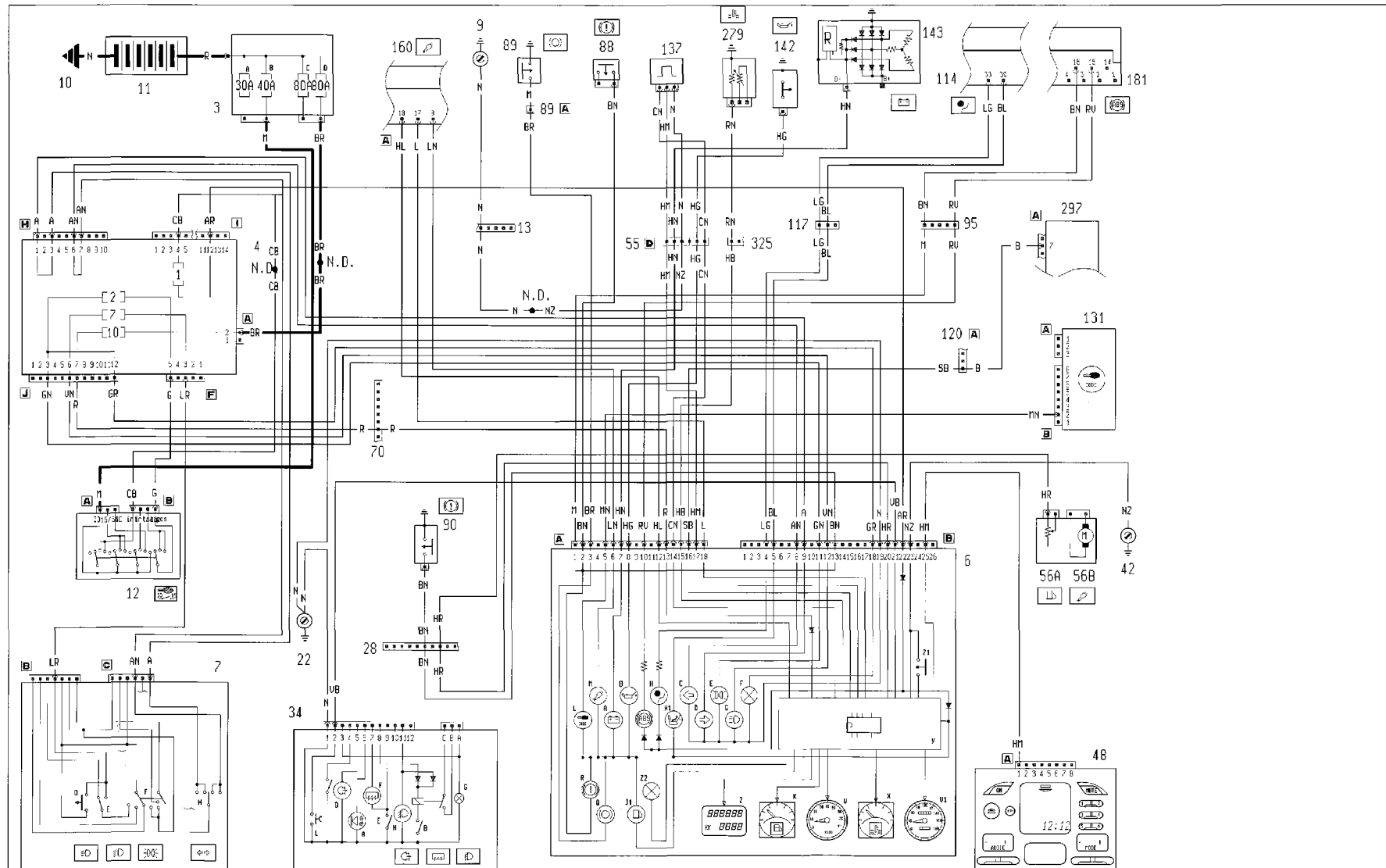
- \* Variant connection for versions with air conditioning
- \*\* Variant connection for versions with alarm

4A036KL02

Leads involved in the wiring diagram are marked by a square

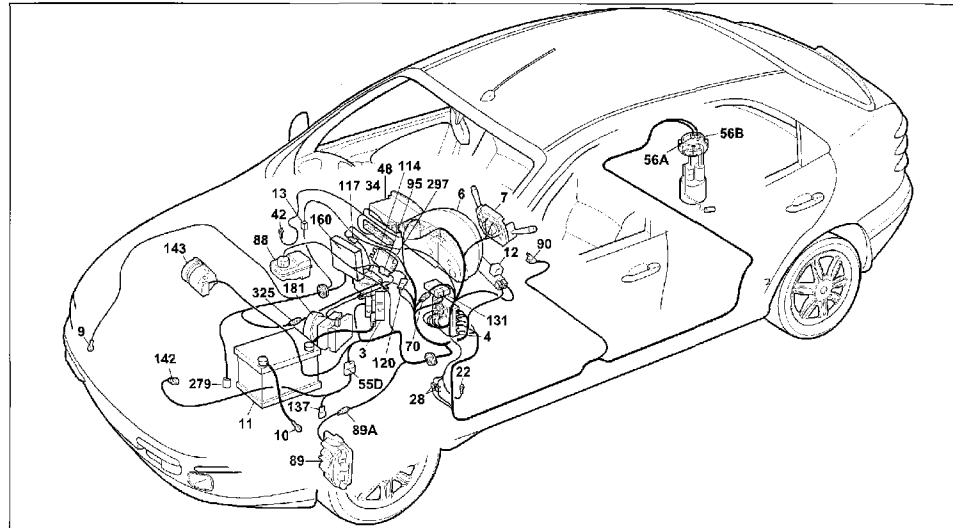
Trim level: SX - GT

Instrument panel connections - (See key at end of wiring diagrams)



4A037KL01

### 55.



4A039KL01

#### Trim level: SX - GT Instrument panel connections

#### Key to components

##### 3 Power fuse box:

- A 30A fuse protecting injection system
- B 40A fuse protecting ignition system
- C 80A fuses protecting additional extras
- D 80A fuse protecting junction unit

##### 4 Junction unit:

##### 6 Instrument panel

- A Battery recharging warning light
- B Insufficient engine oil pressure warning light
- C Left direction indicator warning light
- D Right direction indicator warning light
- E Side lights warning light
- F Instrument panel ideogram light
- G Main beam headlamps warning light
- H EURO-BAG system failure warning light
- H1 Passenger EURO-BAG disabled warning light
- I Anti-lock brakes failure warning light
- J1 Fuel reserve warning light
- K Fuel gauge
- L Fiat-CODE failure warning light
- M Petrol/DS injection system failure warning light
- O Front brake pad wear warning light
- R Handbrake applied/insufficient brake fluid level warning light

##### V1 Speedometer

##### W Rev counter

##### X Engine coolant temperature gauge

##### Y Electronic module

##### Z Milometer/trip meter display

##### Z1 Trip meter zeroing button

##### Z2 Trip meter light

##### 7 Steering column switch unit

##### D Flasher button

##### E Dipped/main beam headlamps control switch

##### F Side lights control switch

##### H Direction indicators control switch

##### 9 Right front earth

##### 10 Earth for battery on bodyshell

##### 11 Battery

##### 12 Ignition switch

##### 13 Connection between right/left front cables

##### 22 Right dashboard earth

##### 28 Connection between dashboard/longitudinal cables

##### 34 Switch control panel:

- A Anti-theft device on warning light
- B Rear fog lamps control switch
- C Rear fog lamps relay feed
- D Rear fog lamps warning light
- E Heated rear windscreen control switch
- F Heated rear windscreen warning light
- G Switch control panel ideogram light
- H Fog lights warning light
- I Fog lights control switch
- L Outside temperature control switch

##### 42 Right dashboard earth

##### 48 Radio receiver with clock

##### 55 D Connection between front/services cables

##### 56 Fuel gauge assembly

##### A Fuel level sensor

##### B Electric fuel pump

##### 70 Connection between dashboard/front cables

##### 88 Insufficient brake fluid level sensor

##### 89 Left front brake pad wear

##### 89A Connection for left brake pad wear sensor cables

##### 90 Switch signalling handbrake applied

##### 95 Connection between front cables/anti-lock brakes (A.B.S.)

##### 114 EURO-BAG electronic control unit

##### 117 Connection between EURO-BAG/dashboard cables

##### 120A Connection for air conditioning unit cables

##### 131 Fiat-CODE electronic control unit

##### 137 Vehicle speed sensor

##### 142 Switch signalling insufficient engine oil pressure

##### 143 Alternator

##### 160 Injection/ignition electronic control unit

##### 181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)

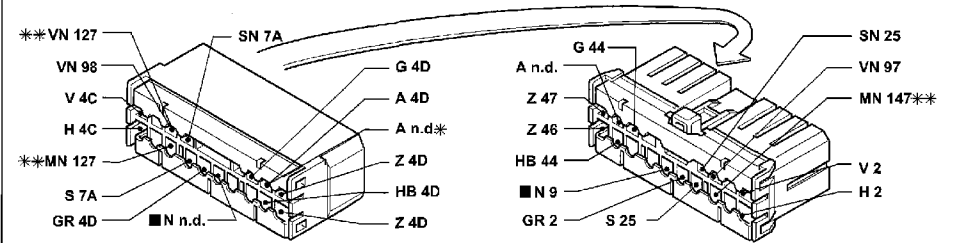
##### 279 Engine coolant temperature twin sender unit

##### 297 Air conditioning control unit

##### 325 Connection between front/injection cables

##### N.D. Ultrasound welding taped in cable loom

#### 13 Connection between right/left front cables

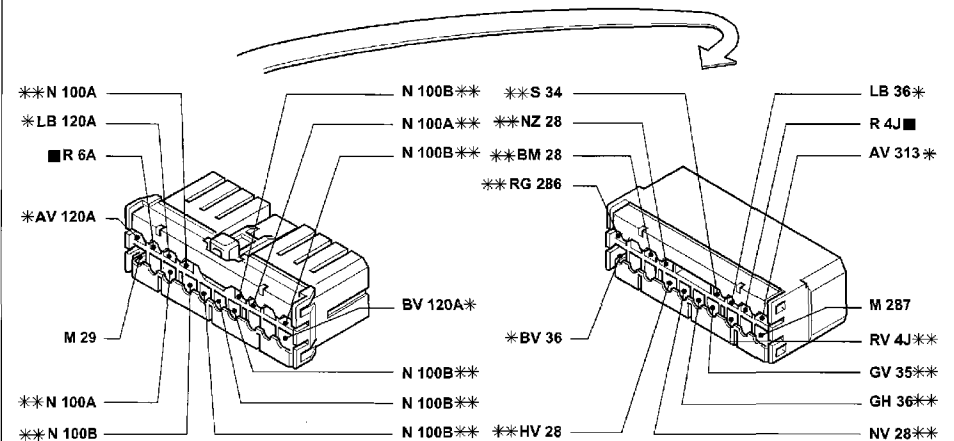


\* Variant connection for versions with alarm

\*\* Variant connection for versions with air conditioning

4A040KL01

#### 70 Connection between dashboard/front cables

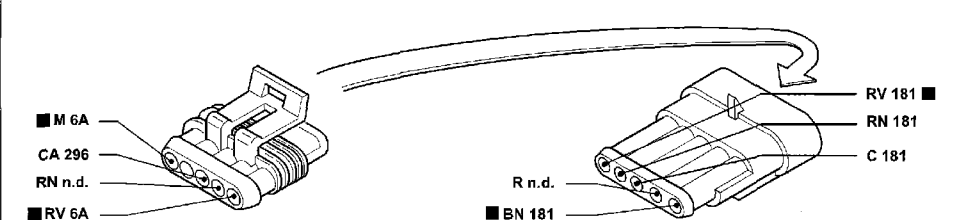


\* Variant connections for versions with air conditioning

\*\* Variant connection for versions with alarm

4A040KL02

#### 95 Connection between left front/antiskid (A.B.S.) cables

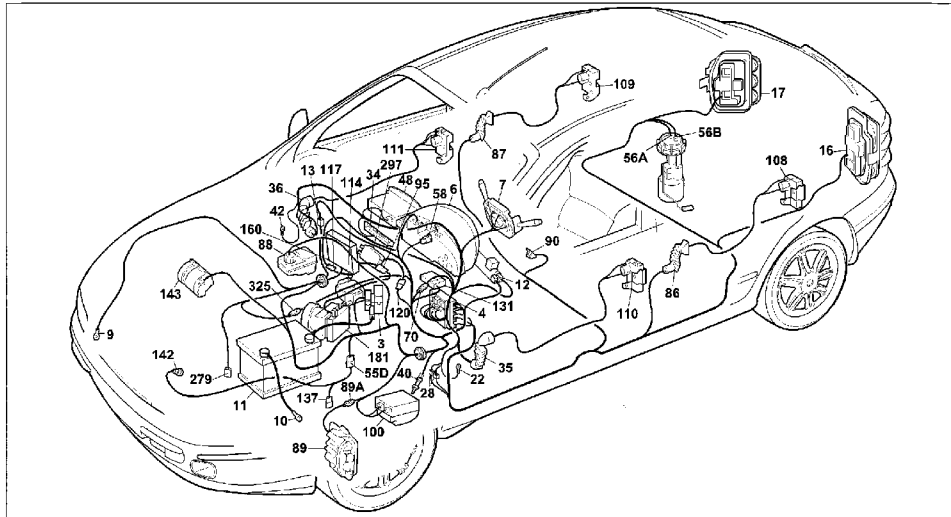


4A040KL03

Leads involved in the wiring diagram are marked by a square



### 55.



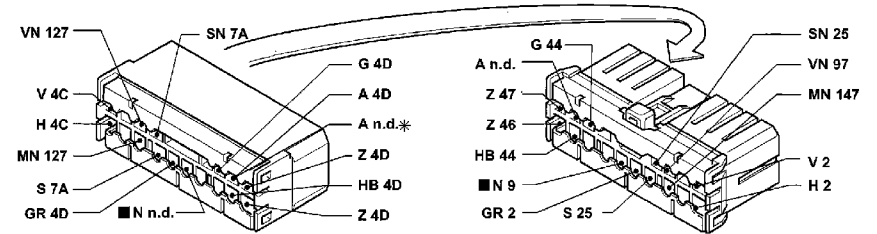
**Trim level: ELX - HSX**  
**Instrument panel connections**  
**Key to components**

- 3 Power fuse box:
  - A 30A fuse protecting injection system
  - B 40A fuse protecting ignition system
  - C 80A fuse protecting additional extras
  - D 80A fuse protecting junction unit
- 4 Junction unit:
- 6 Instrument panel
  - A Battery recharging warning light
  - B Insufficient engine oil pressure warning light
  - C Left direction indicator warning light
  - D Right direction indicator warning light
  - E Side lights warning light
  - F Instrument panel ideograms light
  - G Main beam headlamps warning light
  - H EURO-BAG system failure warning light
  - H1 Passenger EURO-BAG disabled warning light
  - I Anti-lock brakes failure warning light
  - J1 Fuel reserve warning light
  - K Fuel gauge
  - L Fiat-CODE failure warning light
  - M Petrol/DS injection system failure warning light
  - Q Front brake pad wear warning light
  - R Handbrake applied/insufficient brake fluid level warning light
  - S Brake lights failure electronic module
  - T Brake lights failure warning light
  - U Doors open warning light
  - V1 Speedometer
  - W Rev counter
  - X Engine coolant temperature gauge
  - Y Electronic module
  - Y1 Speed control module
  - Z Milometer/trip meter display
  - Z1 Trip meter zeroing button
- 7 Steering column switch unit
  - D Flasher button
  - D Dipped/main beam headlamps control switch
  - F Side lights control switch
  - H Direction indicators control switch
- 9 Right front earth
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 13 Connection between right/left front cables
- 16 Left rear light cluster
- 17 Right rear light cluster
- 22 Left dashboard earth

- 28 Connection between dashboard/longitudinal cables
- 34 Switch control panel:
  - A Anti-theft device on warning light
  - B Rear fog lamps control switch
  - C Rear fog lamps warning light
  - E Heated rear windscreen control switch
  - F Heated rear windscreen warning light
  - G Switch control panel ideogram light
  - H Fog lights warning light
  - I Fog lights control switch
  - L Outside temperature control switch
- 35 Connection between dashboard/left front door cables
- 36 Connection between dashboard/right front door cables
- 40 Brake lights control switch
- 42 Right dashboard earth
- 48 Radio receiver with clock
- 55 D Connection between front/services cables
- 56 Fuel gauge assembly
  - A Fuel level sensor
  - B Electric fuel pump
- 58 Light dimmer
- 70 Connection between dashboard/front cables
- 86 Connection between longitudinal/left rear door cables
- 87 Connection between longitudinal/right rear door cables
- 88 Insufficient brake fluid level sensor
- 89 Left brake pad wear sensor
- 89A Left brake pad wear sensor cables
- 90 Switch signalling handbrake applied
- 95 Connection between front cables/anti-lock brakes (A.B.S.)
- 100 Alarm electronic control unit
- 108 Left rear central locking/alarm on switch
- 109 Right rear central locking/alarm on switch
- 110 Left front central locking/alarm on switch
- 111 Right front central locking/alarm on switch
- 114 EURO-BAG electronic control unit
- 117 EURO-BAG/dashboard cables connection
- 120A Connection for air conditioning unit cables
- 131 Fiat-CODE electronic control unit
- 132 Vehicle speed sensor
- 142 Switch signalling insufficient engine oil pressure
- 143 Alternator
- 160 Injection/ignition electronic control unit
- 181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)
- 279 Engine coolant temperature twin sender unit
- 325 Air conditioning control unit

N.D. Ultrasound welding taped in cable loom

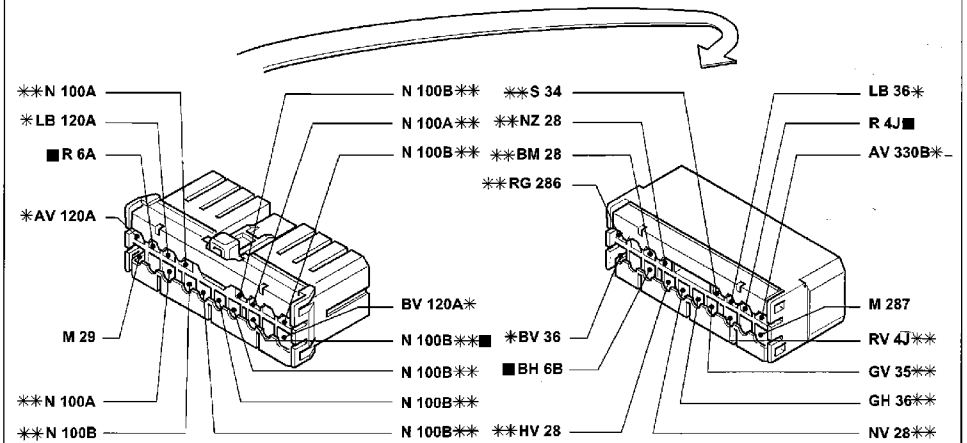
### 13 Connection between right/left front cables



\* Variant connection for versions with alarm

4A044KL01

### 70 Connection between dashboard/front cables

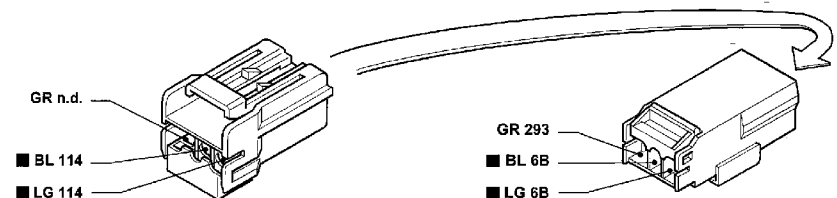


\* Variant connection for versions with air conditioning

\*\* Variant connection for versions with alarm

4A044KL02

### 117 Connection between EURO-BAG/dashboard cables

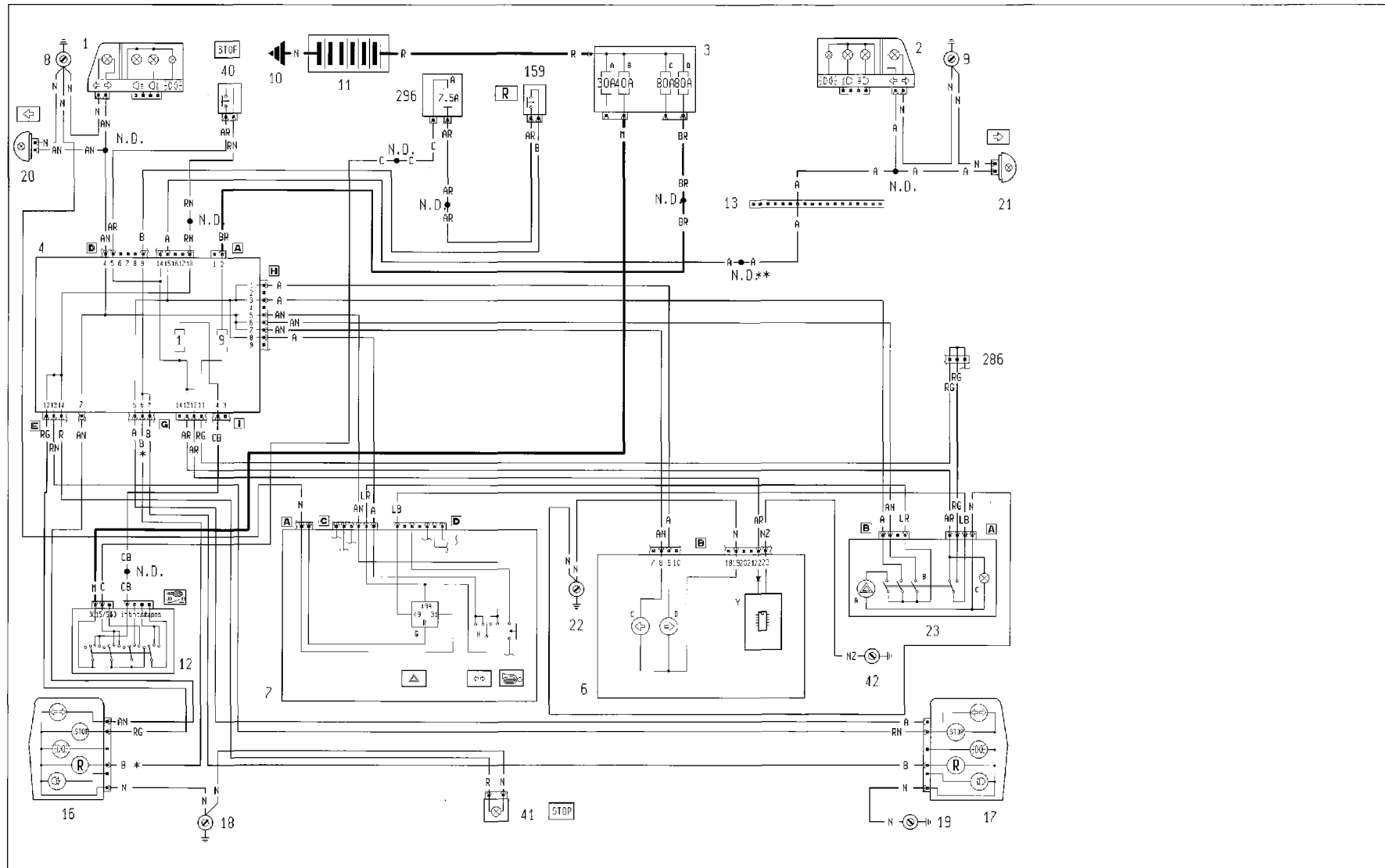


4A044KL03

Leads involved in the wiring diagram are marked by a square

Trim level: SX □ GT

Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing lights - (See key at end of wiring diagrams)

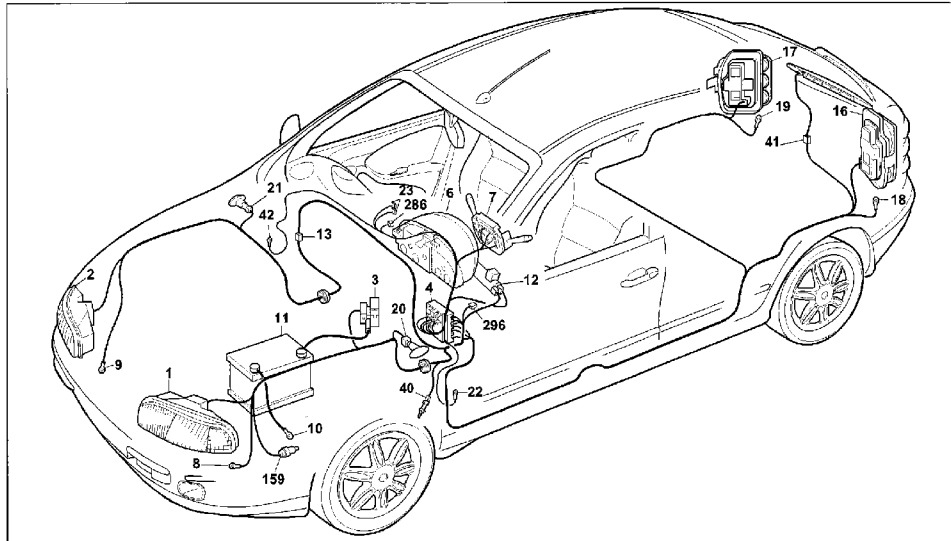


\* Non existent for the BRAVO version \*\* Variant connection for the version with alarm

4A048K101



### 55.



4K047KL01

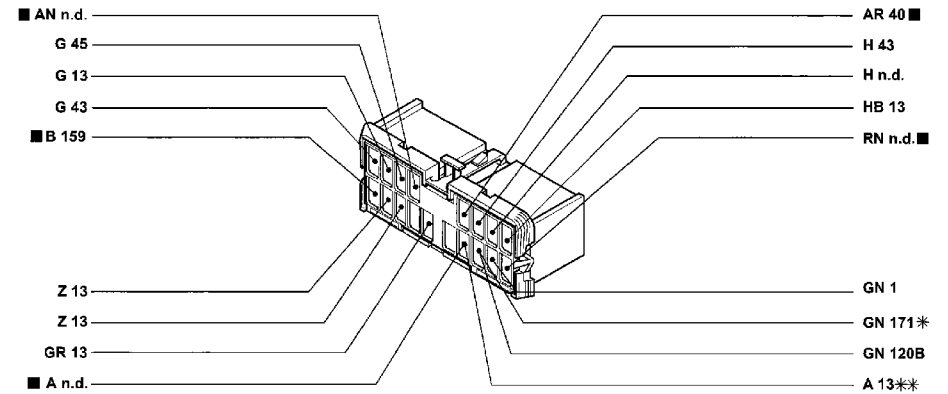
Trim level: SX □ GT

Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing light

#### Key to components

- |   |  |
|---|--|
| 1 Left front light cluster                          | 16 Left rear light cluster   |
| 2 Right front light cluster                         | 17 Right rear light cluster  |
| 3 Power fuse box:                                   | 18 Left rear earth   |
| A 30A fuse protecting injection system              | 19 Right rear earth  |
| B 40A fuse protecting ignition system               | 20 Left front direction indicator  |
| C 80A fuse protecting additional extras             | 21 Right front direction indicator   |
| D 80A fuse protecting junction unit                 | 22 Left dashboard earth  |
| 4 Junction unit                                     | 23 Hazard warning lights switch unit   |
| 6 Instrument panel:                                 | A Hazard warning lights warning light  |
| C Left direction indicator warning light            | B Hazard warning lights control switch   |
| D Right direction indicator warning light           | C Hazard warning lights ideogram light   |
| Y Electronic module                                 | 40 Brake lights control switch   |
| 7 Steering column switch unit                       | 41 Additional brake light  |
| H Hazard warning lights control switch              | 42 Right dashboard earth   |
| G Direction indicators/hazard warning lights switch | 159 Reversing lights control switch  |
| 8 Left front earth                                  | 286 Short circuit connection   |
| 9 Right front earth                                 | 296 Fuse holder base on front cable  |
| 10 Earth for battery on bodyshell                   | A 7.5A fuse protecting cooling system/electronic injection; A.C. system; Alarm |
| 11 Battery  |  |
| 12 Ignition switch                                  |  |
| 13 Connection between right/left front cables       |  |
- N.D. Ultrasound welding taped in cable loom

#### 4D Junction unit

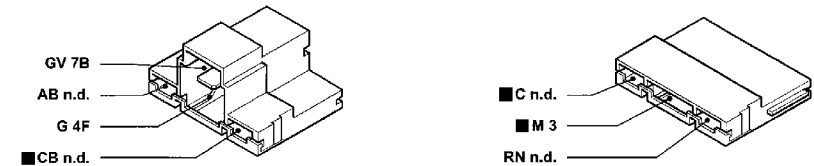


\* Variant connection for versions without air conditioning

\*\* Variant connection for versions without alarm

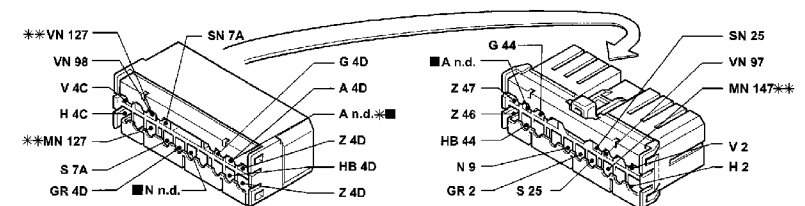
4A048KL01

#### 12 Ignition switch



4A048KL02

#### 13 Connection between right/left front cables



\* Variant connection for versions with alarm

\*\* Variant connection for versions with air conditioning

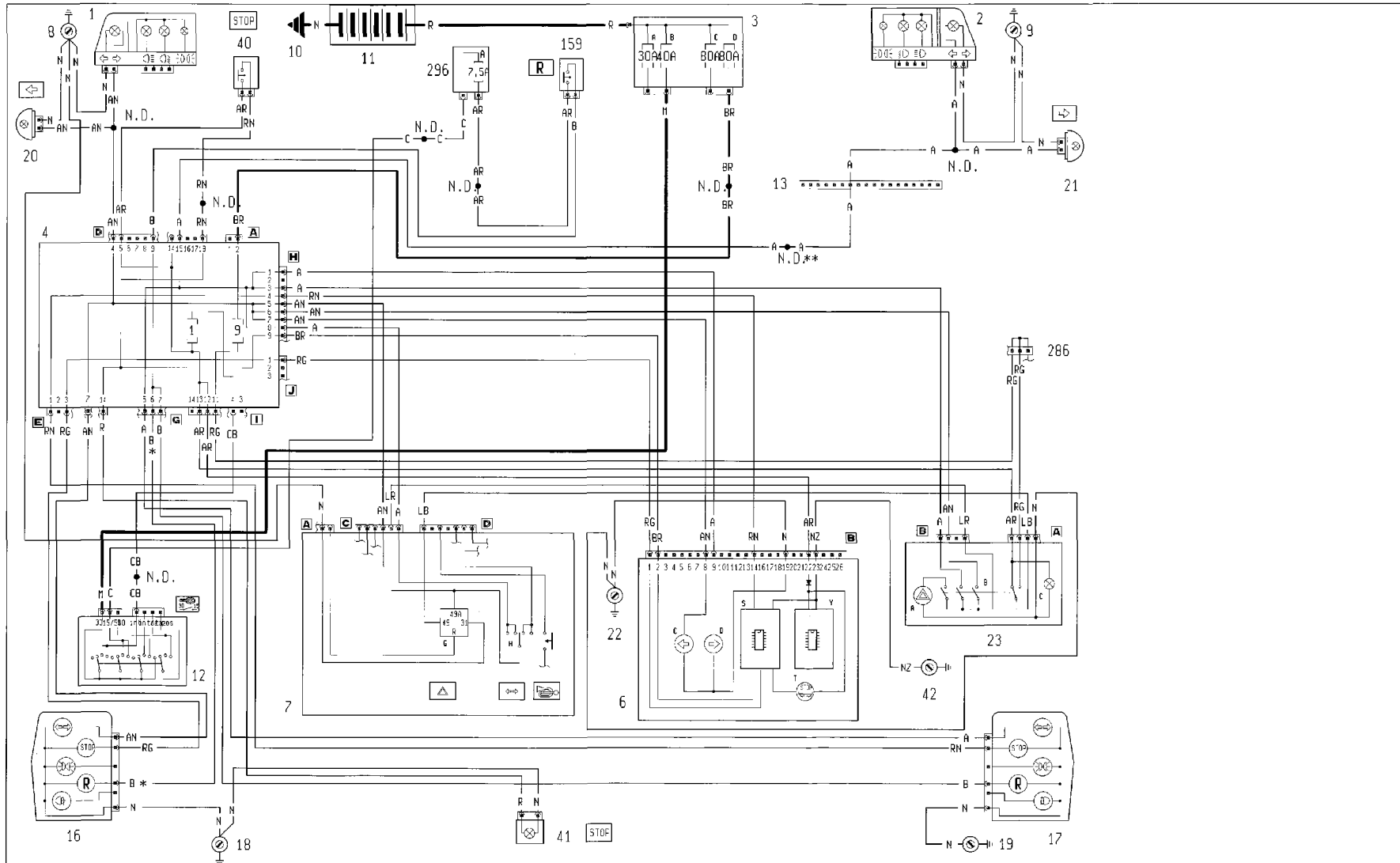
4A048KL03

Leads involved in the wiring diagram are marked by a square

**55.**

Trim level: ELX - HSX

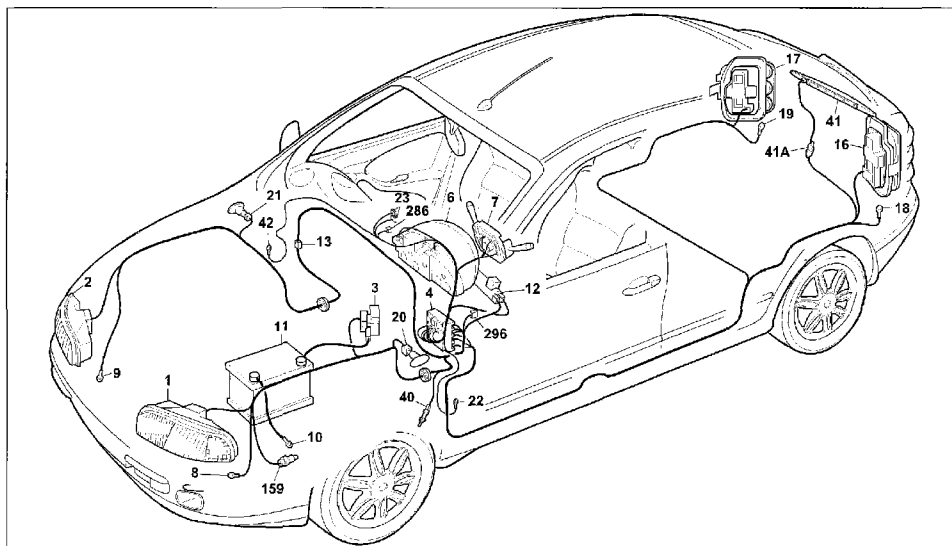
Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing lights - (See key at end of wiring diagrams)



\* Non existent for BRAVO version \*\* Variant connection for version with alarm

4A049KL01

### 55.



4A051KL01

Trim level: ELX - HSX

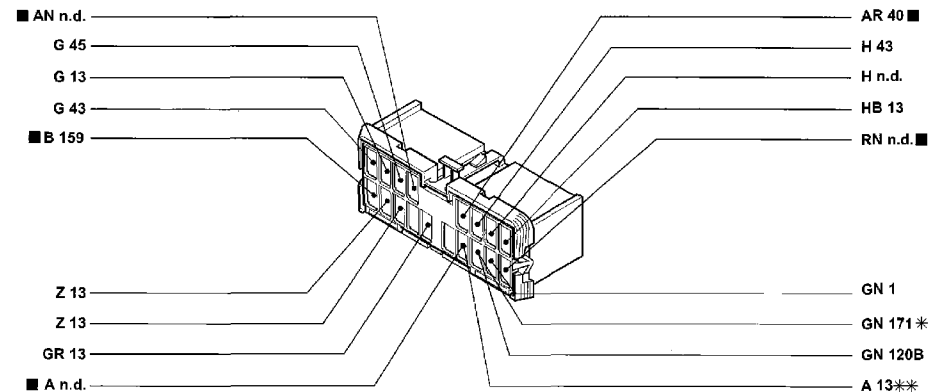
Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing light

#### Key to components

- |  |  |
|--|--|
| <p>1 Left front light cluster<br/>                 2 Right front light cluster<br/>                 3 Power fuse box:<br/>                 A 30A fuse protecting injection system<br/>                 B 40A fuse protecting ignition system<br/>                 C 80A fuse protecting additional extras<br/>                 D 80A fuse protecting junction unit<br/>                 4 Junction unit<br/>                 6 Instrument panel:<br/>                 C Left direction indicator warning light<br/>                 D Right direction indicator warning light<br/>                 S Brake lights failure electronic module<br/>                 T Brake lights failure warning light<br/>                 Y Electronic module<br/>                 7 Steering column switch unit<br/>                 H Hazard warning lights control switch<br/>                 G Direction indicators/hazard warning lights switch<br/>                 8 Left front earth<br/>                 9 Right front earth<br/>                 10 Earth for battery on bodyshell<br/>                 11 Battery</p> | <p>12 Ignition switch<br/>                 13 Connection between right/left front cables<br/>                 16 Left rear light cluster<br/>                 17 Right rear light cluster<br/>                 18 Left rear earth<br/>                 19 Right rear earth<br/>                 20 Left front side direction indicator<br/>                 21 Right front side direction indicator<br/>                 22 Left dashboard earth<br/>                 23 Hazard warning lights switch unit<br/>                 A Hazard warning lights warning light<br/>                 B Hazard warning lights control switch<br/>                 C Hazard warning lights ideogram light<br/>                 Brake lights control switch<br/>                 40 Additional brake light<br/>                 41 Right dashboard earth<br/>                 42 Reversing lights control switch<br/>                 159 Short circuit connection<br/>                 286 Fuse holder base on front cable<br/>                 296 A 7.5A fuse protecting cooling system/electronic injection; A.C. system; Alarm</p> |
|--|--|

N.D. Ultrasound welding taped in cable loom

#### 4D Junction unit

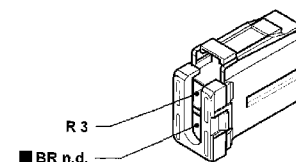


\* Variant connection for versions without air conditioning

\*\* Variant connection for versions without alarm

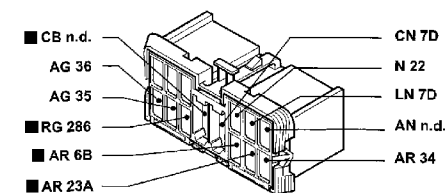
4A052KL01

#### 4A Junction unit



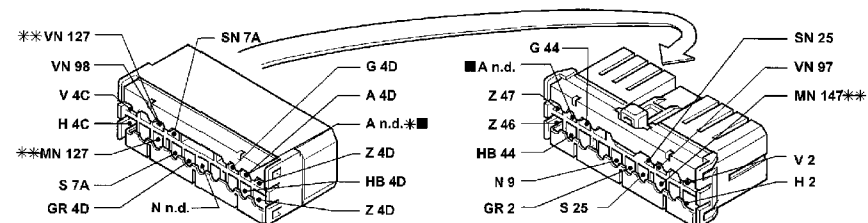
4A052KL02

#### 4J Junction unit



4A052KL03

#### 13 Connection between right/left front cables



\* Variant connection for versions with alarm

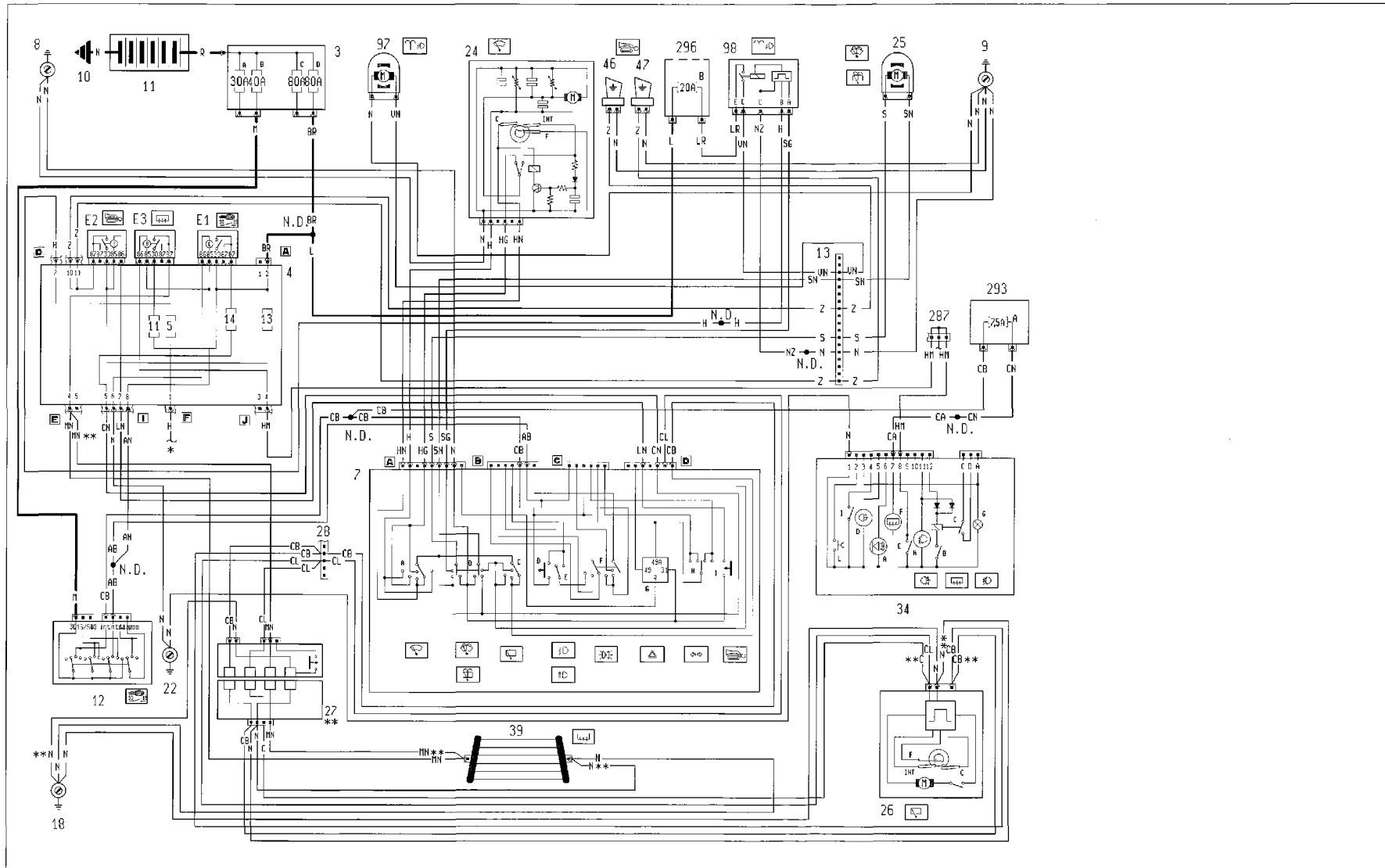
\*\* Variant connection for versions with air conditioning

4A052KL04

Leads involved in the wiring diagram are marked by a square

Version with A.B.I.

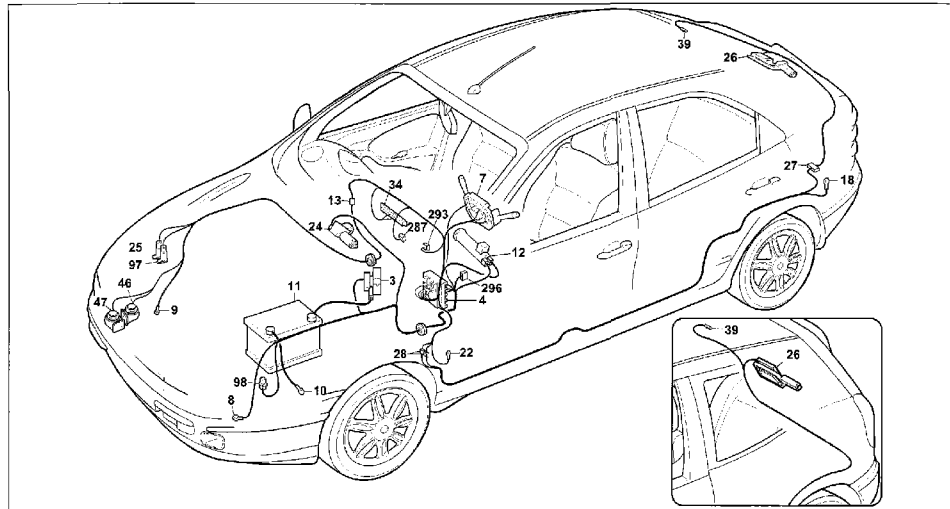
Windscreen wash/wipe - Rearscreen wash/wipe - Electric horns - Heated rear windscreen and warning light - Headlamp washer - (See key at end of wiring diagrams)



\* See side lights wiring diagram \*\* Variant connection for the BRAVA version

4A083 KLOT

**55.**



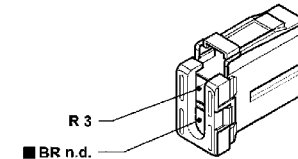
Version without A.B.I.  
Windscreen wash/wipe - Rearscreen wash/wipe - Electric horns - Heated rear windscreen and warning light - Headlamp washer

**Key to components**

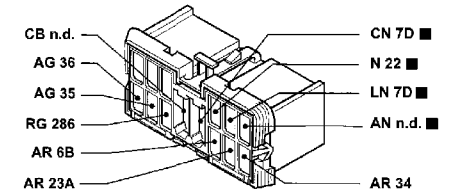
- 3 Power fuse box:
  - A 30A fuse protecting injection system
  - B 40A fuse protecting ignition system
  - C 80A fuse protecting additional extras
  - D 80A fuse protecting junction unit
- 4 Junction unit
  - E1 Switch discharge relay
  - E2 Electric horn relay feed
  - E3 Heated rear windscreen relay feed
- 7 Steering column switch unit:
  - A Windscreen wiper speed control switch
  - B Windscreen washer/headlamp washer/rearscreen washer control switch
  - C Rearscreen wiper control switch
  - D Headlamp flasher button
  - E Dipped/main beam headlamps control switch
  - F Side lights control switch
  - G Direction indicators/hazard warning lights intermittent device
  - H Direction indicators control switch
  - I Electric horn control button
- 8 Left front earth
- 9 Right front earth
- 10 Earth for battery on bodysell
- 11 Battery
- 12 Ignition switch
- 13 Connection between right/left front cables
- 18 Left rear earth
- 22 Left dashboard earth
- 24 Windscreen wiper motor
- 25 Electric windscreen/rearscreen washer pump
- 26 Rearscreen wiper motor
- 27 Contact board between bodysell and tail-gate (Brava)
- 28 Connection between dashboard/longitudinal cables
- 34 Switch control panel:
  - A Alarm on warning light
  - B Rear fog lamps control switch
  - D Rear fog lamps warning light
  - E Heated rear windscreen control switch
  - F Heated rear windscreen warning light
  - G Switch control panel ideogram light
  - H Fog lights warning light
  - I Fog lights control switch
  - L Outside temperature control switch
- 39 Heated rear windscreen
- 46 Left horn
- 47 Right horn
- 97 Electric headlamp washer pump
- 98 Headlamp washer intermittent device
- 287 Short circuit connection
- 293 Fuse holder base on dashboard cable
  - A 7.5A fuse protecting switch panel light; Radio telephone; Radio; Electric mirrors
- 296 Fuse holder base on front cable
  - B 20A fuse protecting windscreen wiper with A.B.I. or without A.B.I.

N.D. Ultrasound welding taped in cable loom

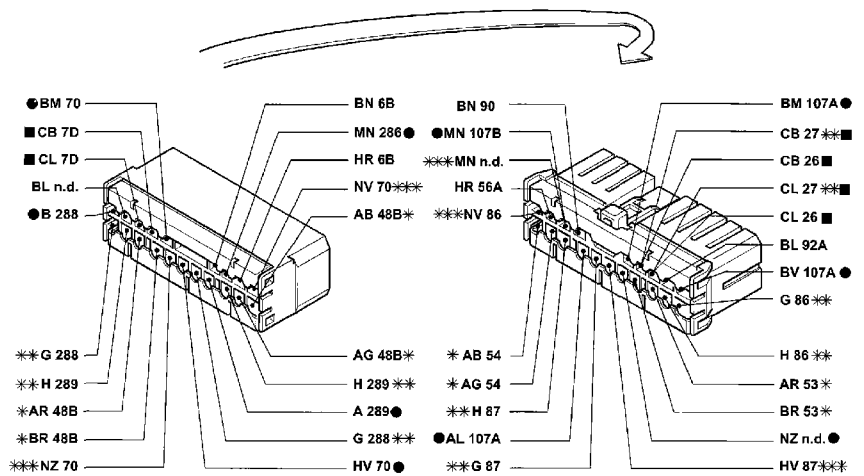
**4A** Junction unit



**4I** Junction unit



**28** Connection between dashboard/longitudinal cables Versions without A.B.I. control unit

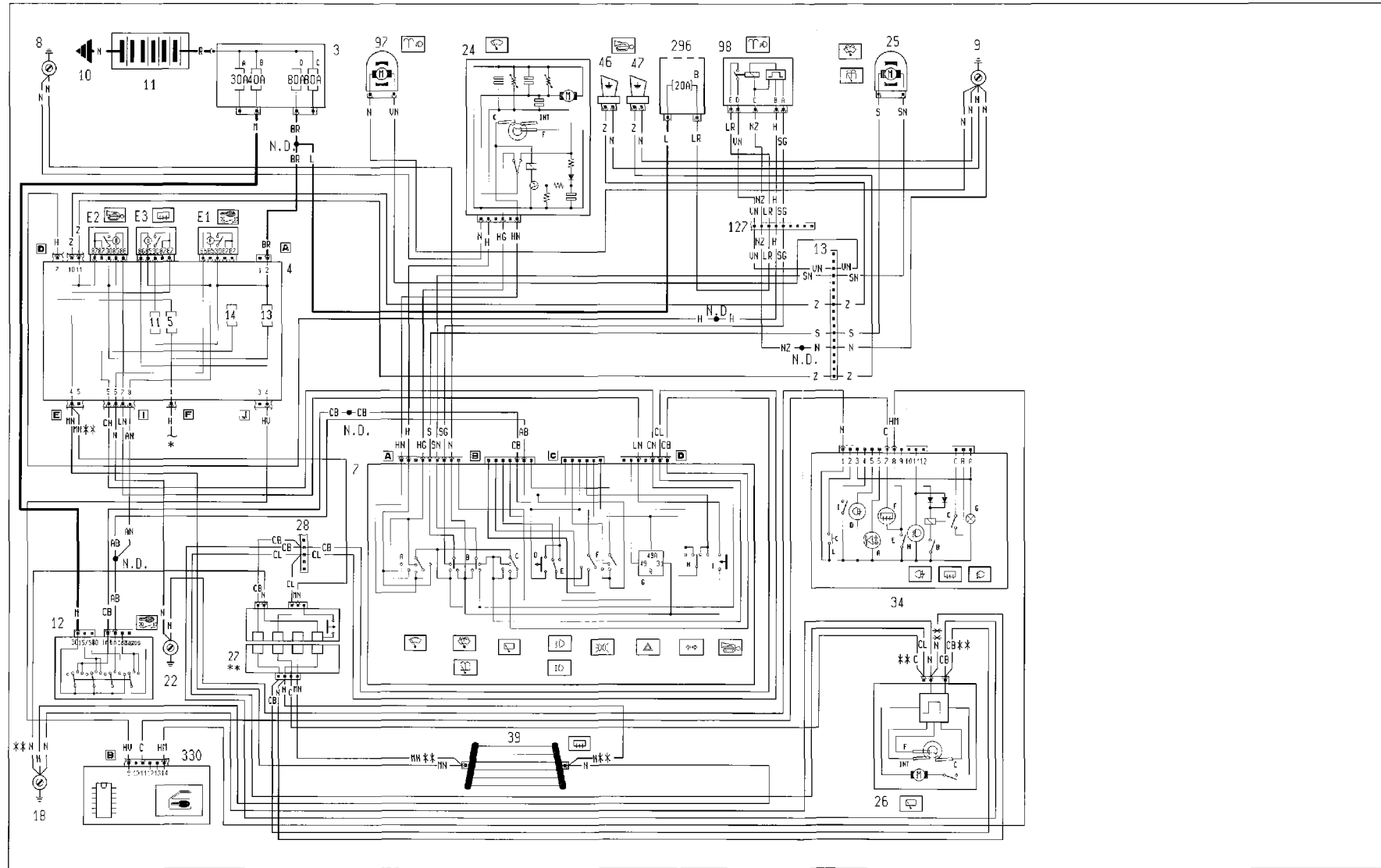


- Variant connection for versions with alarm
- \* Variant connection for versions with top of the range radio
- \*\* Variant connection for Brava versions
- \*\*\* Variant connection for Brava versions with alarm

Leads involved in the wiring diagram are marked by a square

Version with A.B.I.

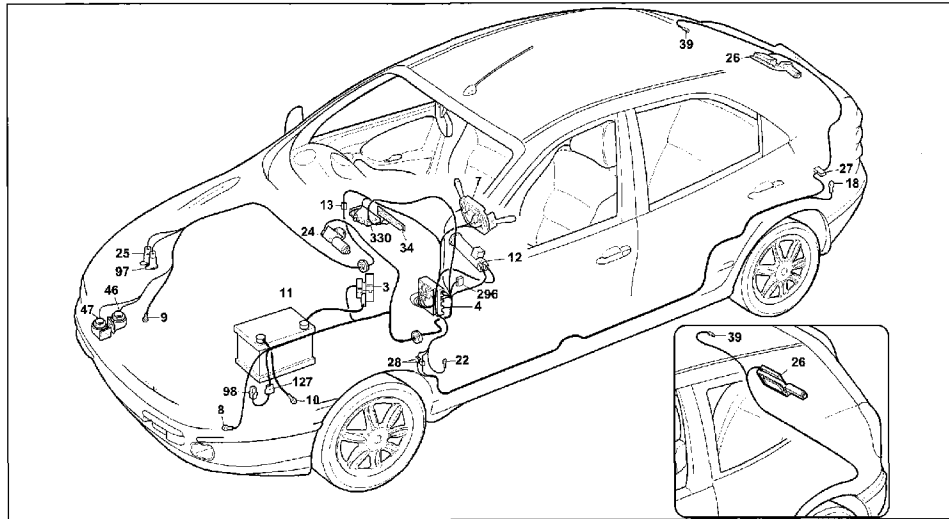
Windscreen wash/wipe - Rearscreen wash/wipe - Electric horns - Heated rear windscreen and warning light - Headlamp washer (See key at end of wiring diagrams)



\* See side lights wiring diagram \*\* Variant connection for the BRAVA version

4A057KL01

### 55.



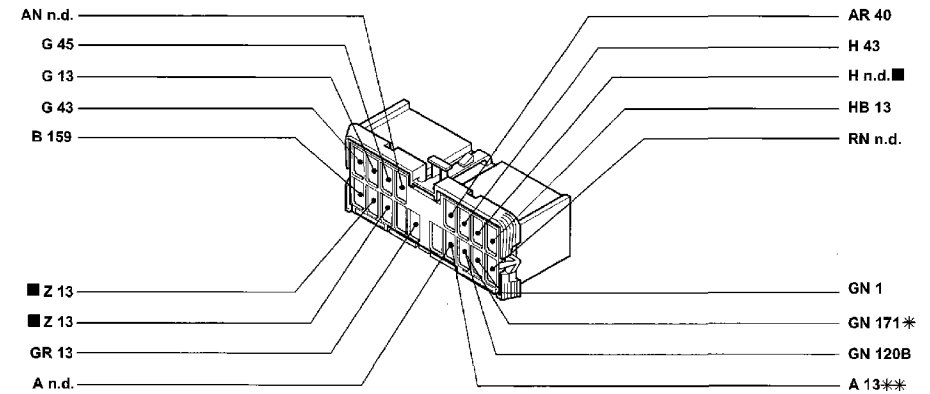
4A059KL01

Version with A.B.I.  
 Windscreen wash/wipe - Rearscreen wash/wipe - Electric horns - Heated rear windscreen and warning light - Headlamp washer

#### Key to components

- |   |   |
|---|---|
| 3 Power fuse box:<br>A 30A fuse protecting injection system<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting additional extras<br>D 80A fuse protecting junction unit  | 22 Left dashboard earth<br>24 Windscreen wiper motor<br>25 Electric windscreen/rearscreen washer pump<br>26 Windscreen wiper motor<br>27 Contact board between bodysell and tail-gate (Brava)<br>28 Connection between dashboard/longitudinal cables  |
| 4 Junction unit<br>E1 Switch discharge relay<br>E2 Horn relay feed<br>E3 Heated rear windscreen relay feed  | 34 Switch control panel:<br>A Alarm on warning light<br>B Rear fog lamps control switch<br>C Rear fog lamps relay feed<br>D Rear fog lamps warning light<br>E Heated rear windscreen control switch<br>F Heated rear windscreen warning light<br>G Switch control panel ideogram light<br>H Fog lights warning light<br>I Fog lights control switch<br>L Outside temperature control switch |
| 7 Steering column switch unit:<br>A Windscreen wiper speed control switch<br>B Windscreen/headlamp/rearscreen washer control switch<br>C Rearscreen wiper control switch<br>D Headlamp flasher button<br>E Dipped/main beam headlamp control switch<br>F Side lights control switch<br>G Direction indicators/hazard warning lights intermittent device<br>H Direction indicators control switch<br>I Horn control button | 39 Heated rear windscreen<br>46 Left horn<br>47 Right horn<br>97 Electric headlamp washer pump<br>98 Headlamp washer intermittent device<br>127 Connection between left front cable/cable on relay holder bracket   |
| 8 Left front earth<br>9 Right front earth<br>10 Earth for battery on bodysell<br>11 Battery<br>12 Ignition switch<br>13 Connection between right/left front cables<br>18 Left rear earth  | 296 Fuse holder base on front cable<br>B 20A fuse protecting windscreen wiper with A.B.I. or without A.B.I.<br>330 A.B.I. control unit<br>N.D. Ultrasound welding taped in cable loom   |

#### 4D Junction uni

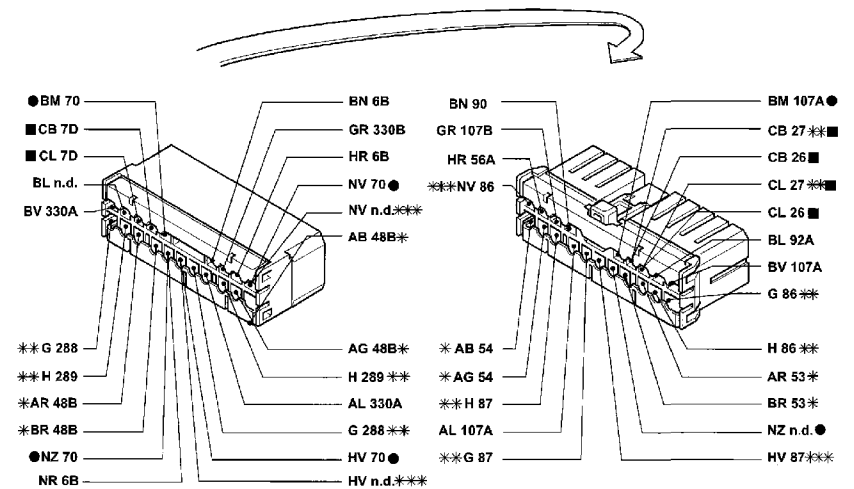


\* Variant connection for versions without air conditioning

\*\* Variant connection for versions without alarm

4A059KL01

#### 28 Connection between dashboard/longitudinal cables Versions with A.B.I. control unit



• Variant connection for versions with alarm

\* Variant connection for versions with top of the range radio

\*\* Variant connection for Brava versions

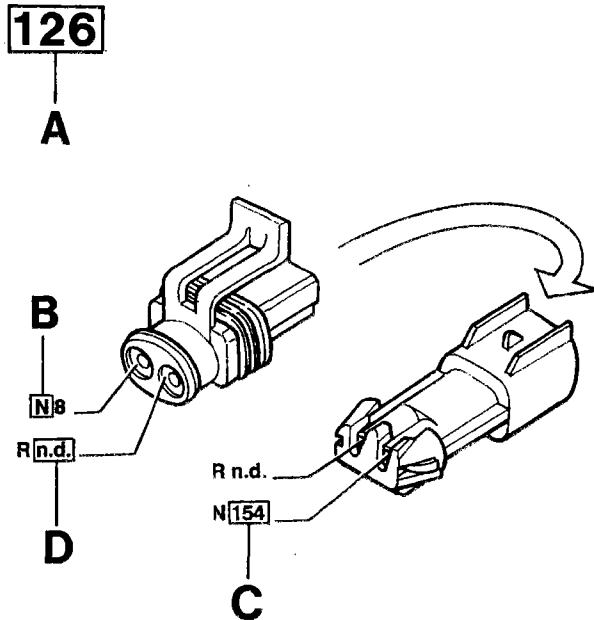
\*\*\* Variant connection for Brava versions with alarm

4A059KL02

Leads involved in the wiring diagram are marked by a square

### INTRODUCTION

#### Meaning of codes on connector blocks



**A** Connector block identification number used in wiring diagrams

**B** Wiring colour identification code (see table at bottom of page)

**C** Identification N° of connector block for cable marked with appropriate code

The letters n.d. identify ultrasound welding  
**D** taped in the cable loom

4A202N01

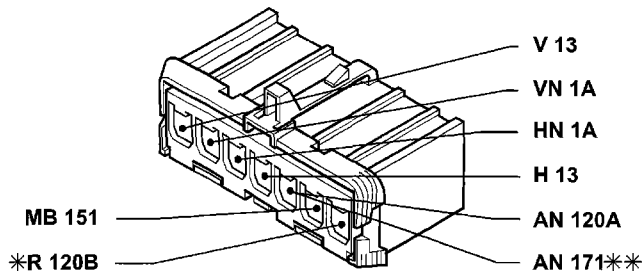
#### Cable colour codes

|           |                   |           |                   |           |                  |
|-----------|-------------------|-----------|-------------------|-----------|------------------|
| <b>A</b>  | Light blue        | <b>BG</b> | White-Yellow      | <b>LB</b> | Dark blue-White  |
| <b>B</b>  | White             | <b>BL</b> | White-Dark blue   | <b>LG</b> | Dark blue-Yellow |
| <b>C</b>  | Orange            | <b>BN</b> | White-Black       | <b>LN</b> | Dark blue-Black  |
| <b>G</b>  | Yellow            | <b>BR</b> | White-Red         | <b>LR</b> | Dark blue-Red    |
| <b>H</b>  | Grey              | <b>BV</b> | White-Green       | <b>LV</b> | Dark blue-Green  |
| <b>L</b>  | Dark blue         | <b>BZ</b> | White-Purple      | <b>MB</b> | Brown-White      |
| <b>M</b>  | Brown             | <b>CA</b> | Orange-Light blue | <b>MN</b> | Brown-Black      |
| <b>N</b>  | Black             | <b>CB</b> | Orange-White      | <b>NZ</b> | Black-Purple     |
| <b>R</b>  | Red               | <b>CN</b> | Orange-Black      | <b>RB</b> | Red-White        |
| <b>S</b>  | Pink              | <b>GN</b> | Yellow-Black      | <b>RG</b> | Red-Yellow       |
| <b>V</b>  | Green             | <b>GL</b> | Yellow-Dark blue  | <b>RN</b> | Red-Black        |
| <b>Z</b>  | Purple            | <b>GR</b> | Yellow-Red        | <b>RV</b> | Red-Green        |
| <b>AB</b> | Light blue-White  | <b>GV</b> | Yellow-Green      | <b>SN</b> | Pink-Black       |
| <b>AG</b> | Light blue-Yellow | <b>HG</b> | Grey-Yellow       | <b>VB</b> | Green-White      |
| <b>AN</b> | Light blue-Black  | <b>HN</b> | Grey-Black        | <b>VN</b> | Green-Black      |
| <b>AR</b> | Light blue-Red    | <b>HR</b> | Grey-Red          | <b>VR</b> | Green-Red        |
| <b>AV</b> | Light blue-Green  | <b>HV</b> | Grey-Green        | <b>ZB</b> | Purple-White     |



### 55.

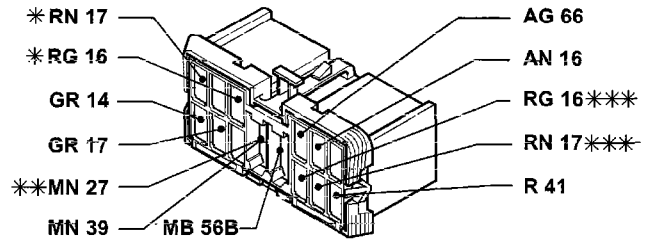
#### 4C Junction unit



- \* Non existent for versions without air conditioning
- \*\* Variant connections for versions without air conditioning

4A062KL01

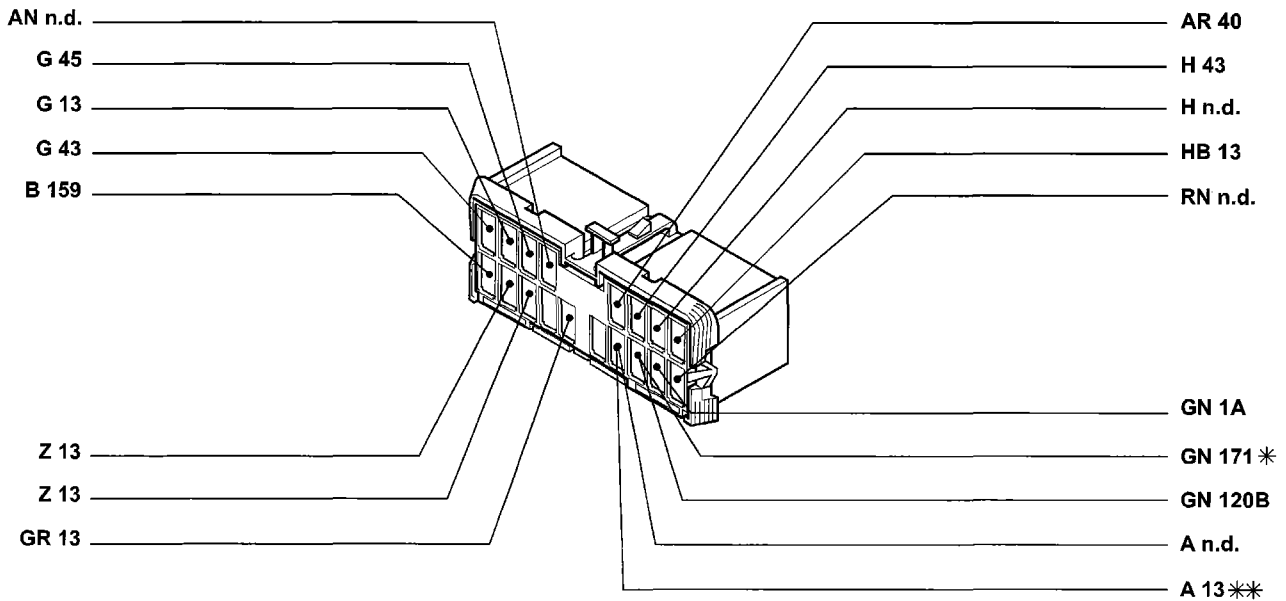
#### 4E Junction unit



- \* Only valid for ELX trim level
- \*\* Variant connection for the BRAVA
- \*\*\* Only valid for SX - GT trim level

4A062KL02

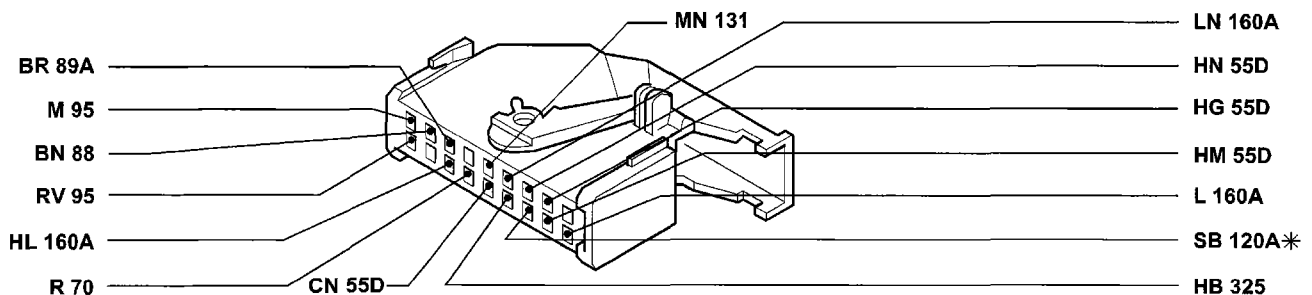
#### 4D Junction unit



- \* Variant connection for versions without air conditioning
- \*\* Variant connection for versions without alarm

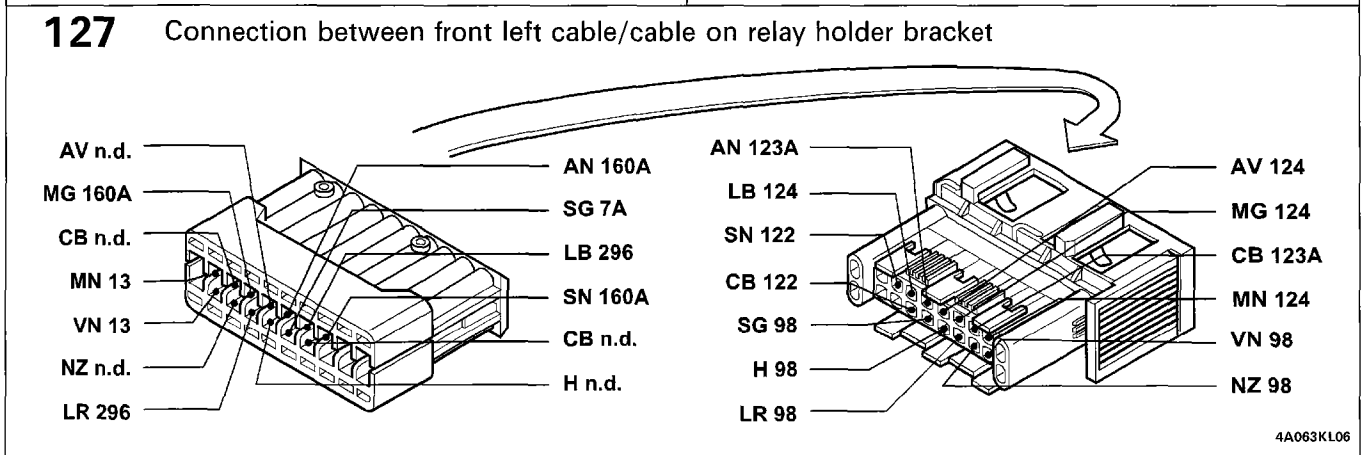
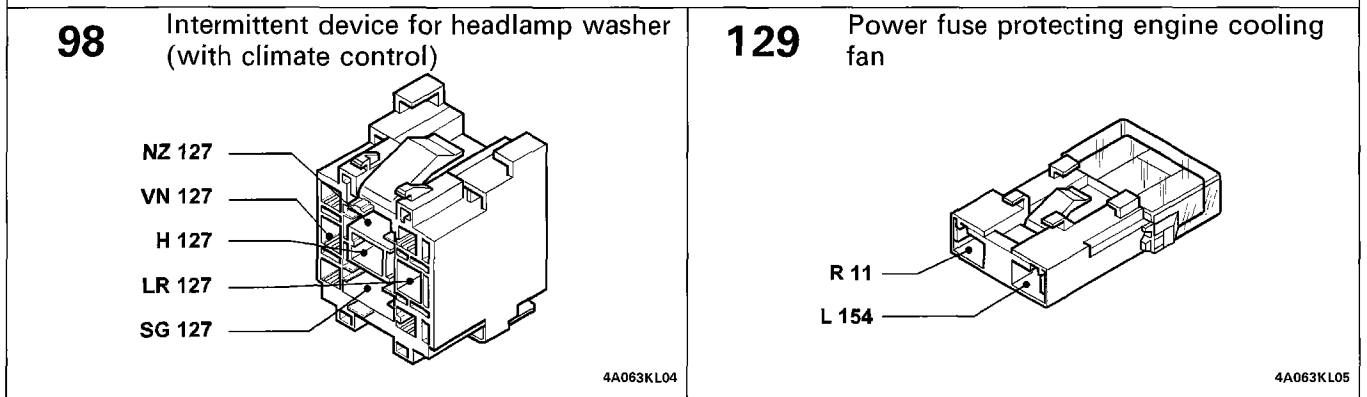
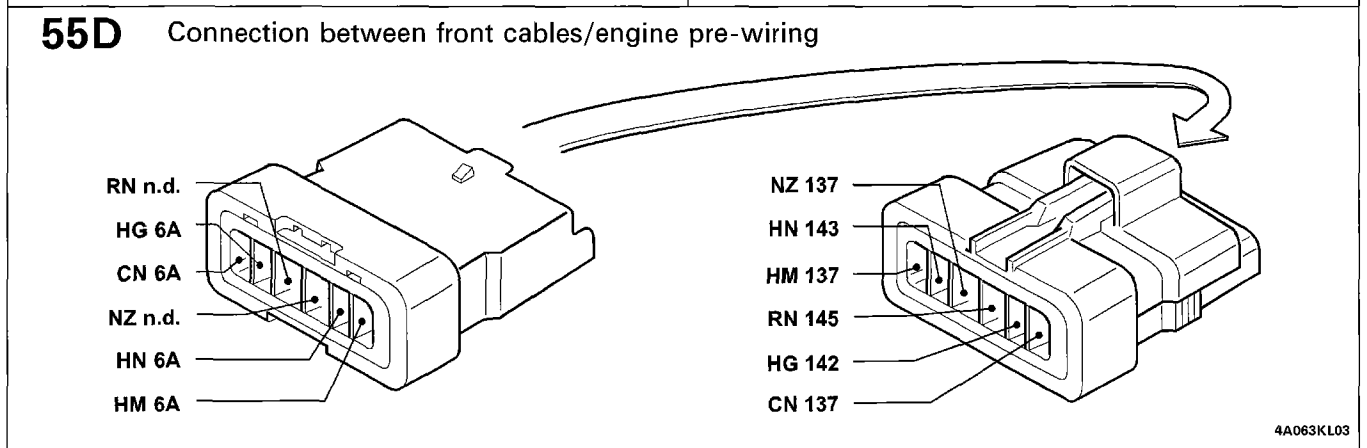
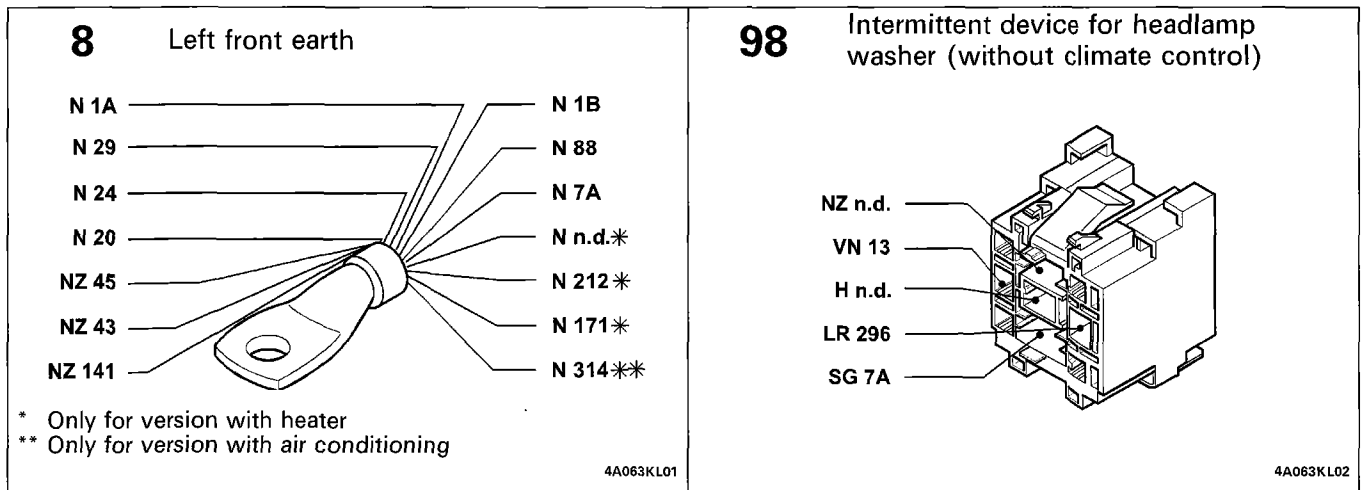
4A062KL03

#### 6A Instrument panel



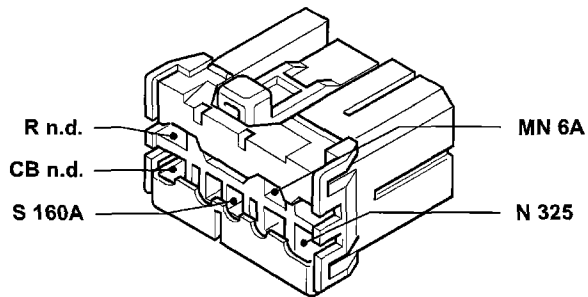
- \* Non existent for versions without air conditioning

4A062KL04



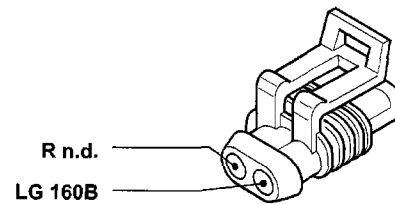
### 55.

**131** Fiat-CODE electronic control unit



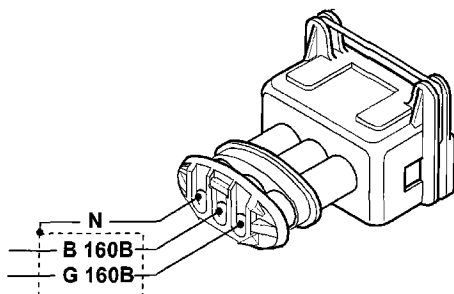
4A064KL07

**132** Petrol vapour cut out solenoid valve (canister)



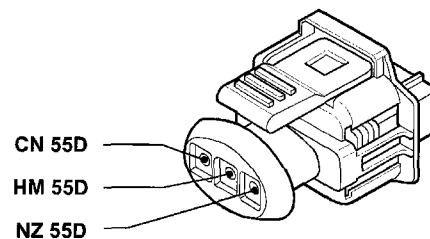
4A064KL02

**136** Knock sensor



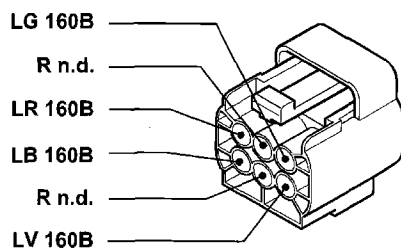
4A064KL03

**137** Vehicle speed sensor



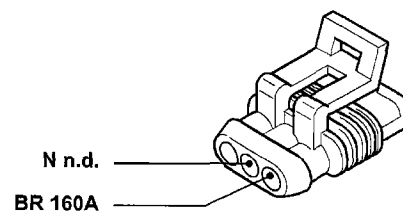
4A064KL04

**138** Idle adjustment actuator



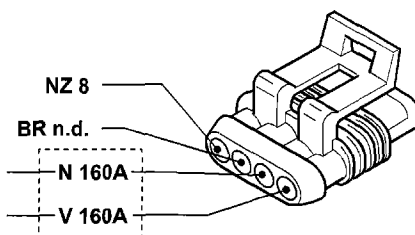
4A064KL05

**139** Diagnostic socket for injection system



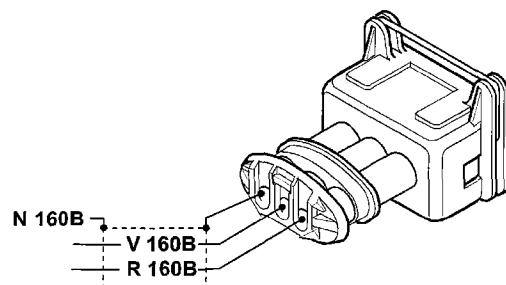
4A064KL06

**141** Hot lambda probe



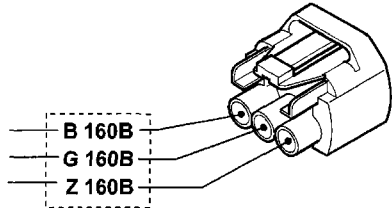
4A064KL07

**144** RPM and TDC sensor



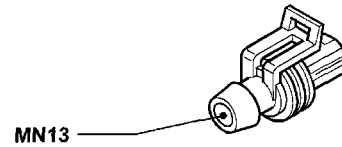
4A064KL08

**146** Throttle valve potentiometer



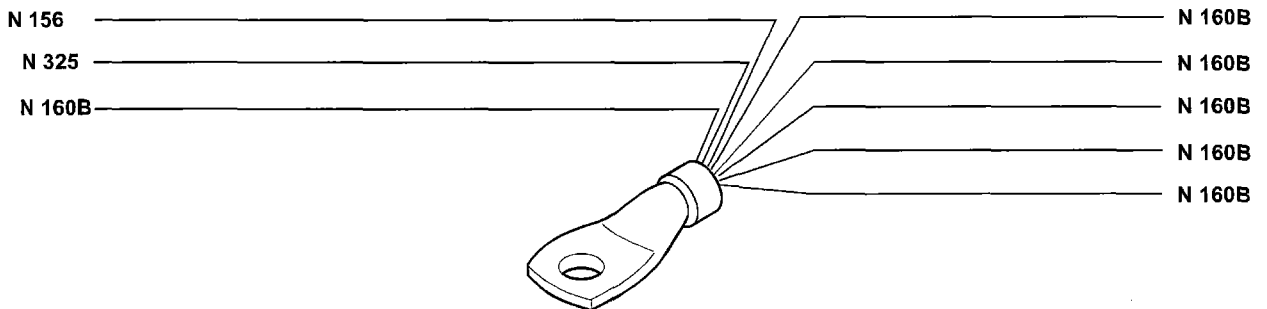
4A065KL01

**147** Compressor for air conditioning



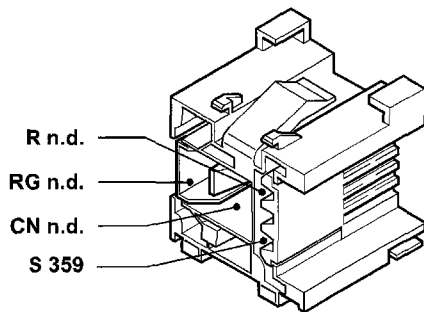
4A065KL02

**148** Earth for electronic injection



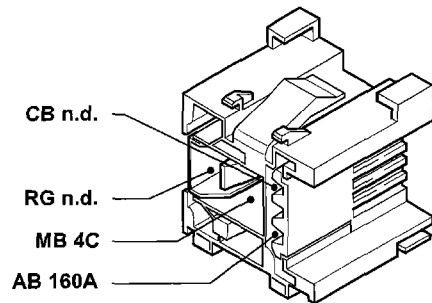
4A065KL03

**150** Injection system relay feed



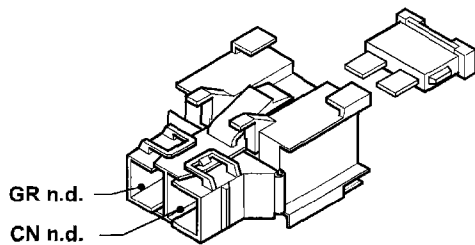
4A065KL04

**151** Relay feed for Lambda sensor, electric fuel pump, injector



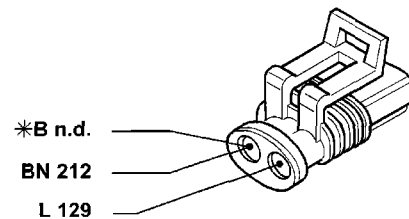
4A065KL05

**152** 10A fuse protecting injection system



4A065KL06

**154** Engine cooling fan

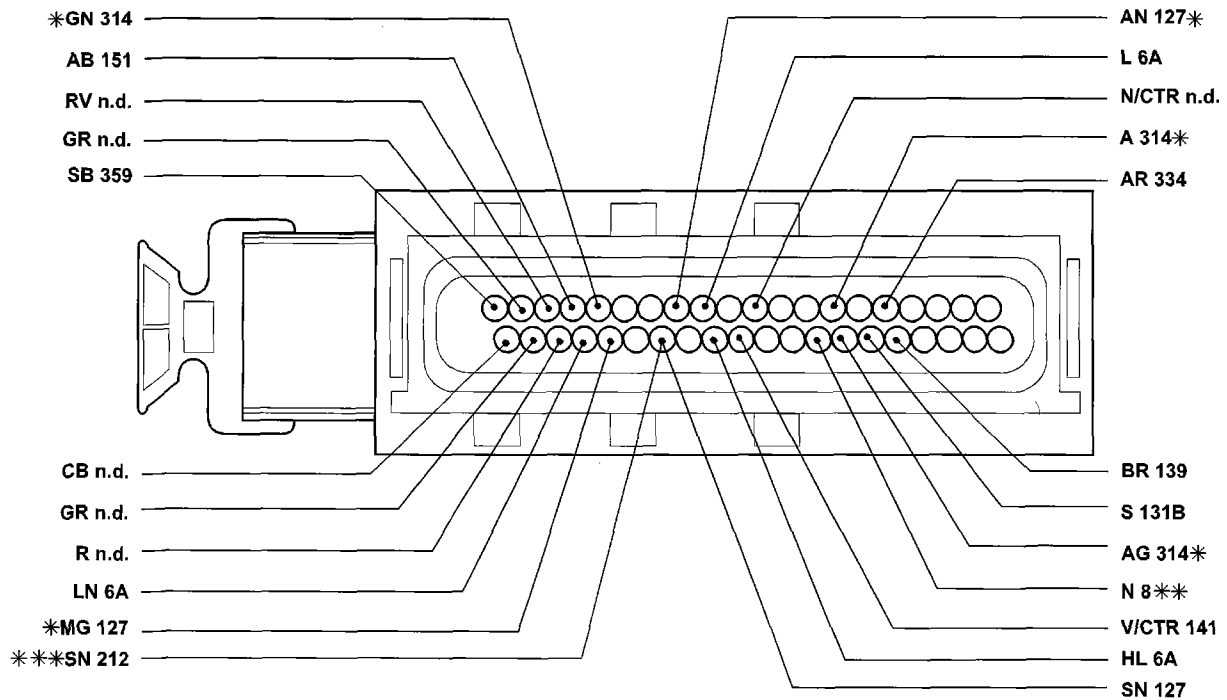


\* Variant connection with climate control

4A065KL07

### 55.

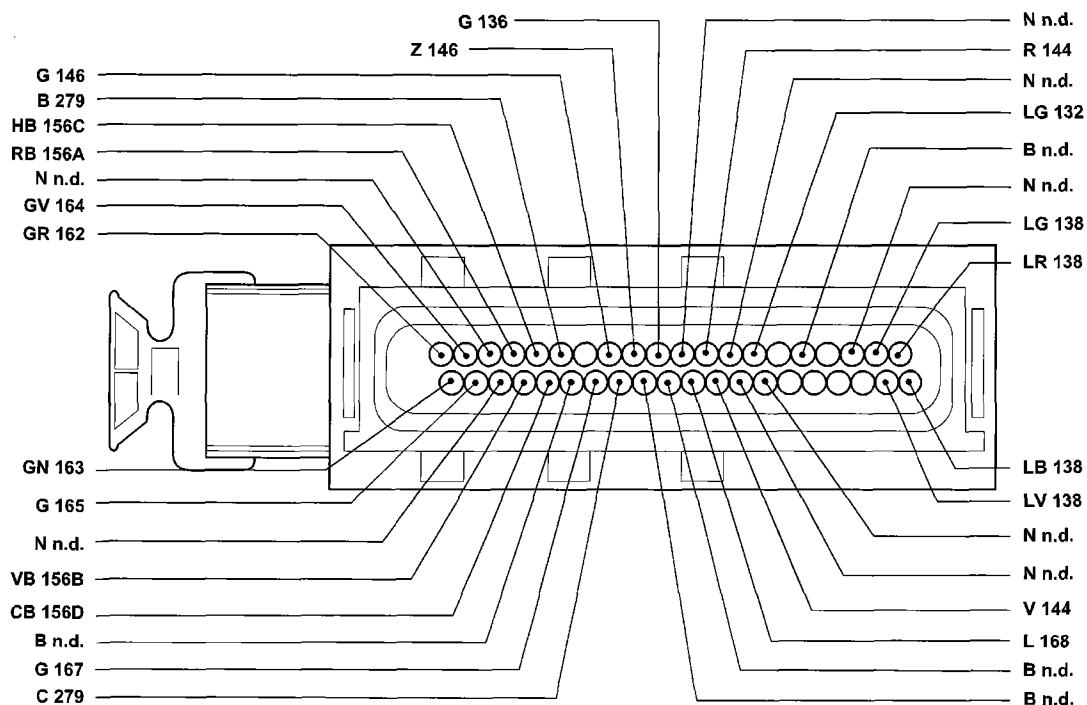
#### 160A Injection/ignition electronic control unit (1747)



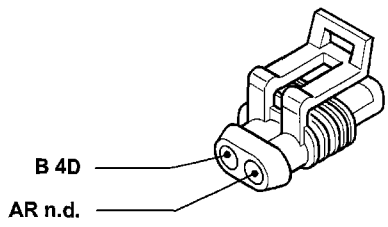
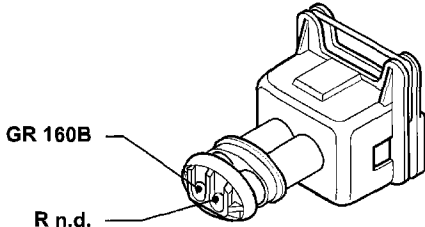
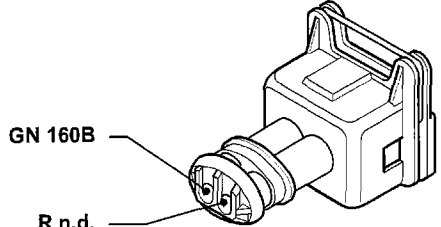
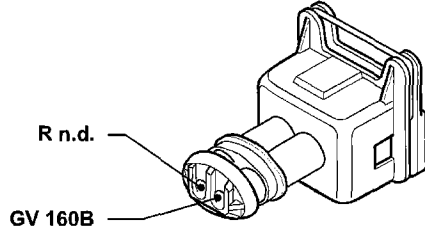
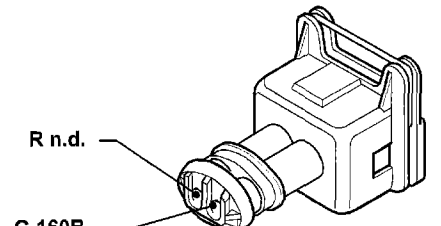
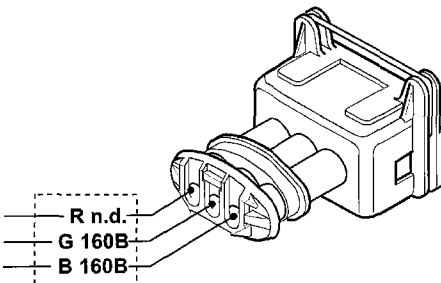
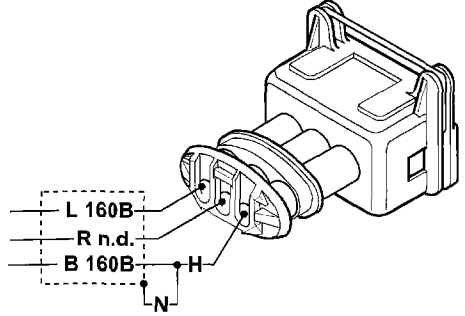
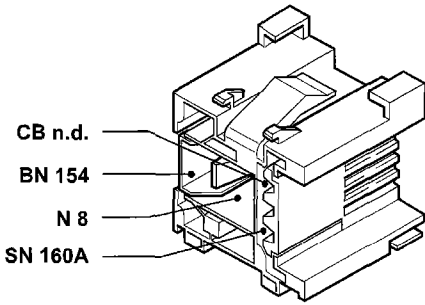
- \* Non existent for versions without air conditioning
- \*\* Non existent for versions with air conditioning
- \*\*\* Variant connection for versions without air conditioning

4A066KL01

#### 160B Injection/ignition electronic control unit (1747)

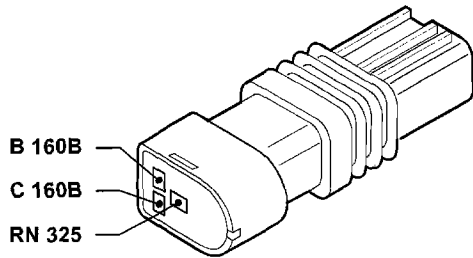


4A066KL02

|   |   |
|---|---|
| <p><b>159</b> Reversing lights control switch</p>  <p>B 4D<br/>AR n.d.</p> <p style="text-align: right;">4A067KL01</p>         | <p><b>162</b> Injector (1)</p>  <p>GR 160B<br/>R n.d.</p> <p style="text-align: right;">4A067KL02</p>                                 |
| <p><b>163</b> Injector (2)</p>  <p>GN 160B<br/>R n.d.</p> <p style="text-align: right;">4A067KL03</p>                         | <p><b>164</b> Injector (3)</p>  <p>R n.d.<br/>GV 160B</p> <p style="text-align: right;">4A067KL04</p>                                |
| <p><b>165</b> Injector (4)</p>  <p>R n.d.<br/>G 160B</p> <p style="text-align: right;">4A067KL05</p>                         | <p><b>167</b> Air flow meter</p>  <p>R n.d.<br/>G 160B<br/>B 160B</p> <p style="text-align: right;">4A067KL06</p>                   |
| <p><b>168</b> Timing sensor</p>  <p>L 160B<br/>R n.d.<br/>B 160B<br/>H<br/>N</p> <p style="text-align: right;">4A067KL07</p> | <p><b>212</b> Relay for radiator fan</p>  <p>CB n.d.<br/>BN 154<br/>N 8<br/>SN 160A</p> <p style="text-align: right;">4A067KL08</p> |

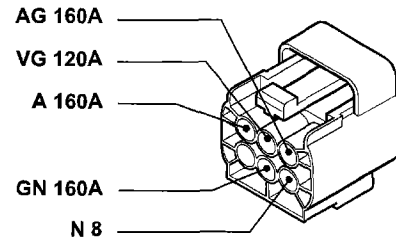
### 55.

**279** Engine coolant temperature twin sender unit



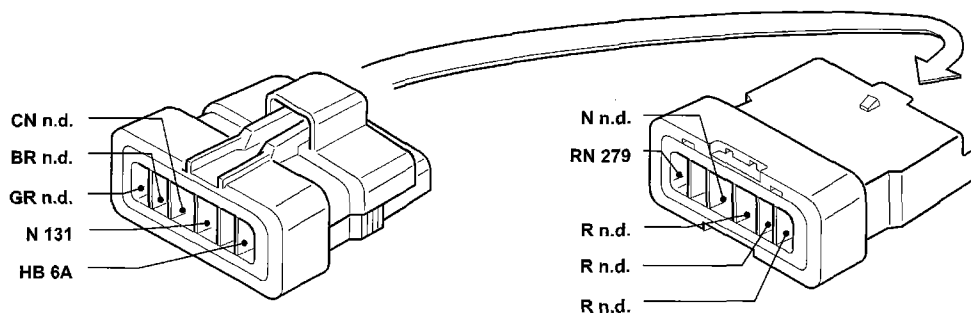
4A068KL01

**314** Four stage pressure switch



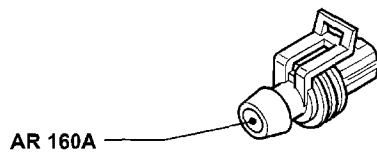
4A068KL02

**325** Connection between injection/left front cables



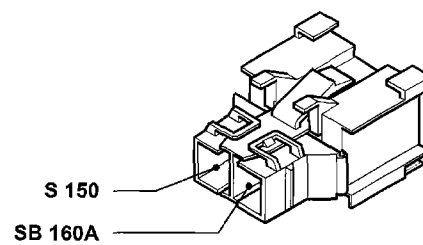
4A068KL03

**334** Diagnostic cable connection for 1747



4A068KL04

**359** Signal inversion relay diode (1747)



4A068KL05

**Electrical equipment**

**Key**

**55.**

**Key to components**

- 1 Left front light cluster
- 2 Right front light cluster
- 3 Power fuse box:
  - A 30A fuse protecting injection system
  - B 40A fuse protecting ignition system
  - C 80A fuse protecting additional extras
  - D 80A fuse protecting junction unit
- 4 Junction unit
  - E1 Switch discharge relay
  - E2 Horn relay feed
  - E3 Heated rear windscreen relay feed
- 6 Instrument panel
  - A Battery recharging warning light
  - B Insufficient engine oil pressure warning light
  - C Left direction indicator warning light
  - D Right direction indicator warning light
  - E Side lights warning light
  - F Instrument panel ideogram light
  - G Main beam headlamps warning light
- H Passenger EURO-BAG disabled
  - 1 warning light
- I Anti-lock brakes failure warning light
- J1 Fuel reserve warning light
- K Fuel gauge
- L Fiat-CODE failure warning light
- M Petrol/DS injection system failure warning light
- Q Front brake pad wear warning light
- R Handbrake applied/insufficient brake fluid level warning light
- S Brake lights failure electronic module
- T Brake lights failure warning light
- U Doors open warning light
- V1 Speedometer
- W Rev. counter
- X Engine coolant temperature gauge
- Y Electronic module
- Z Milometer/trip meter display
- Z1 Trip meter zeroing button
- 7 Steering column switch unit
  - A Windscreen wiper speed control switch
  - B Windscreen/headlamp/rearscreen washer control switch

- C Rearscreen wiper control switch
- D Headlamp flasher button
- E Dipped/main beam headlamps control switch
- F Side lights control switch
- G Direction indicators/hazard warning lights switch
- H Direction indicators control switch
- I Horn control button
- 8 Left front earth
- 9 Right front earth
- 10 Earth for battery on bodyshell
- 11 Battery
- 12 Ignition switch
- 17 Left rear light cluster
- 18 Left rear earth
- 19 Right rear earth
- 20 Left front side direction indicator
- 21 Right front side direction indicator
- 22 Left dashboard earth
- 23 Hazard warning lights switch unit
  - A Hazard warning lights warning light
  - B Hazard warning lights control switch
  - C Hazard warning lights ideogram light
- 24 Windscreen wiper motor
- 25 Electric windscreen/rearscreen washer pump
- 26 Rearscreen wiper motor
- 27 Contact board for rear connections with luggage compartment light switch incorporated
- 28 Connection between dashboard/longitudinal cables
- 34 Switch control panel:
  - A Rear fog lamps control switch
  - B Rear fog lamps control switch
  - C Rear fog lamps relay feed
  - D Rear fog lamps warning light
  - E Heated rear windscreen control switch
  - F Heated rear windscreen warning light
  - G Switch panel ideogram light
  - H Fog lights warning light
  - I Fog lights control switch
  - L Outside temperature control switch
- 35 Connection between dashboard/left front door cables
- 36 Connection between dashboard/right front door cables
- 39 Heated rear windscreen
- 40 Brake lights control switch

- 41 Additional brake light
- 42 Right dashboard earth
- 46 Left horn
- 47 Right horn
- 48 Radio receiver with clock
- 55D Connection between front left cables/services pre-wiring
- 56 Fuel gauge assembly
  - A Fuel level sensor
  - B Fuel pump
- 57 Inertia switch
- 58 Light dimmer
- 68 Right electrically adjustable external rear view mirror
  - Connection between dashboard/front cables
- 70 cables
- 86 Connection between longitudinal/left rear door cables
- 87 Connection between longitudinal/right rear door cables
- 88 Insufficient brake fluid level sensor
- 89 Left brake pad wear sensor
- 89A Connection for left brake pad wear sensor cables
- 90 Switch signalling handbrake applied
- 95 Connection between front cable/anti-lock brakes (A.B.S.)
- 97 Electric headlamp washer pump
- 98 Intermittent device for headlamp washer
- 100 Alarm electronic control unit
- 103 Diagnostic socket for alarm
- 108 Left rear central locking/alarm on switch
- 109 Right rear central locking/alarm on switch
- 110 Left front central locking/alarm on switch
- 111 Right front central locking/alarm on switch
- 114 EURO-BAG electronic control unit
- 117 EURO-BAG/dashboard cables connection
- 120 Connection for air conditioning unit cables
- 122 Engine cooling fan low speed relay feed
- 123A Engine cooling fan high speed relay feed
- 124 Air conditioning compressor relay feed
- 127 Connection between left front cable/cable on relay holder bracket
- 129 Power fuse (50A) protecting engine cooling fan
- 130 Diagnostic socket for EURO-BAG
- 131 Fiat-CODE electronic control unit

- 132 Petrol vapour cut out solenoid valve (canister)
- 137 Vehicle speed sensor
- 138 Idle adjustment actuator
- 139 Diagnostic socket for injection system
- 141 Hot lambda probe
- 142 Switch signalling insufficient engine oil pressure
- 143 Alternator
- 144 RPM and TDC sensor
- 145 Starter motor
- 146 Throttle valve potentiometer
- 147 Compressor for air conditioning
- 148 Earth for electronic injection
- 150 Injection system relay feed
- 151 Relay feed for Lambda sensor, electric fuel pump, injector
- 152 10A fuse protecting injection system
- 154 Engine cooling fan
- 156 Spark plugs
- 159 Reversing lights control switch
- 160 Ignition electronic control unit
- 162 Injector (1)
- 163 Injector (2)
- 164 Injector (3)
- 165 Injector (4)
- 167 Air flow meter
- 168 Timing sensor
- 170 Engine cooling fan limit resistor
- 171 Heater unit cables connection
- 174 Power earth for anti-lock brakes
- 176 Diagnostic socket for anti-lock brakes
- 181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)
- 199 Aerial for Fiat-CODE
- 202 Heater/air conditioning bulbs
- 207 Heater/air conditioning system speed control switch
- 208 Heater/air conditioning system limit resistor
- 209 Outside/recirculation air flap control actuator (N.T.C.)
- 211 Electronic thermostat
- 213 Earth for EURO-BAG
- 279 Engine coolant temperature twin sender unit
- 283 Connection between front cable/resistor
- 286 Short circuit connection
- 287 Short circuit connection
- 293 Fuse holder base on dashboard cable
  - A 7.5A fuse protecting switch panel light; Radio telephone; Radio; Electric mirrors
- 296 Fuse holder base on front cable

- A 7.5A fuse protecting cooling system/electronic injection; A.C. system; Alarm
- B 20A fuse protecting windscreen wiper with A.B.I. or without A.B.I.
- C 7.5A fuse protecting electronic injection/cooling system Fiat-CODE
- F 7.5A fuse protecting electronic injection system/Fiat-CODE
- 297 Air conditioning control unit
- 298 Heater/air conditioning recirculation control
  - A Air conditioning control switch
  - B Recirculation control switch
  - C Fan sensor
- 299 Diagnostic socket for heater/air conditioning
  - 300 Car interior fan electronic transformer
  - 301 Car interior mixture control actuator
  - 302 Maximum demisting control switch
  - 303 Interior fan potentiometer
  - 304 Car interior temperature potentiometer
  - 306 Treated air sensor
  - 308 15A fuse protecting canister solenoid valve
  - 314 Four stage pressure switch
  - 325 Connection between injection/left front cables
  - 330 A.B.I. control unit
  - 334 Diagnostic cable connection (1747)
  - 359 Signal inversion relay diode (1747)

**Cable colour code**





































- A Light blue
- B White
- G Yellow
- H Grey
- L Dark blue
- M Brown
- N Black
- R Red
- S Pink
- Z Purple
- AB Light blue-White
- AG Light blue-Yellow
- AN Light blue-Black
- GN Yellow-Black
- GL Yellow-Dark blue
- GR Yellow-Red
- GV Yellow-Green
- HG Grey-Yellow
- HN Grey-Yellow
- HR Grey-Black
- HV Grey-Red
- LB Grey-Green
- LG Dark blue-White
- LN Dark blue-Yellow
- LR Dark blue-Black
- AG Light blue-Yellow
- AN Light blue-Black
- AR Light blue-Red
- AV Light blue-Purple
- BG White-Yellow
- BL White-Dark blue
- BN White-Black
- BR White-Red
- BV White-Green
- BZ White-Purple
- CA Orange-Light blue
- CB Orange-White
- CN Orange-Black
- LV Dark blue-Green
- MB Brown-White
- MN Brown-Black
- NZ Black-Purple
- RB Red-White
- RG Red-Yellow
- RN Red-Black
- RV Red-Green
- SN Pink-Black
- VB Green-White
- VN Green-Black
- VR Green-Red
- ZB Purple-White



page

|                      |    |
|----------------------|----|
| - Electrical symbols | 1  |
| - Wiring diagrams    | 5  |
| - Key                | 81 |

Electrical symbols

|   |  |   |  |   |   |
|---|--|---|--|---|---|
|    | Position   |    | Choke                                    |    | Switch discharge                            |
|    | Main beam headlamps                                  |    | Water in fuel filter                     |    | Dipped headlamps                            |
|    | Heated seat  |    | Heater plugs                             |    | Central locking direction indicators signal |
|    | Seat belts   |    | Turbocharger pressure                    |    | Electric horns                              |
|   | Heated rear windscreen                               |   | Rear fog lamp                            |   | Left direction indicator                    |
|  | Handbrake applied and insufficient brake fluid       |  | Fog light                                |  | Right direction indicator                   |
|  | A.B.S.   |  | Brake pad wear                           |  | Engine cooling                              |
|  | Hazard warning                                       |  | Turbocharger pressure                    |  | Windscreen wiper                            |
|  | Direction indicator                                  |  | Automatic transmission fluid temperature |  | Electronically operated sun roof            |
|  | Handbrake applied and insufficient brake fluid level |  | Speed limit                              |  | Catalytic silencer temperature              |
|  | Recharging   |  | Fuel level                               |  | Resistance                                  |
|  | Engine oil pressure                                  |  | Engine coolant temperature               |  | Diode                                       |

# Electrical equipment





































## Electrical symbols

**Bravo-Brava**











2000 update

### 55.

#### Electrical symbols

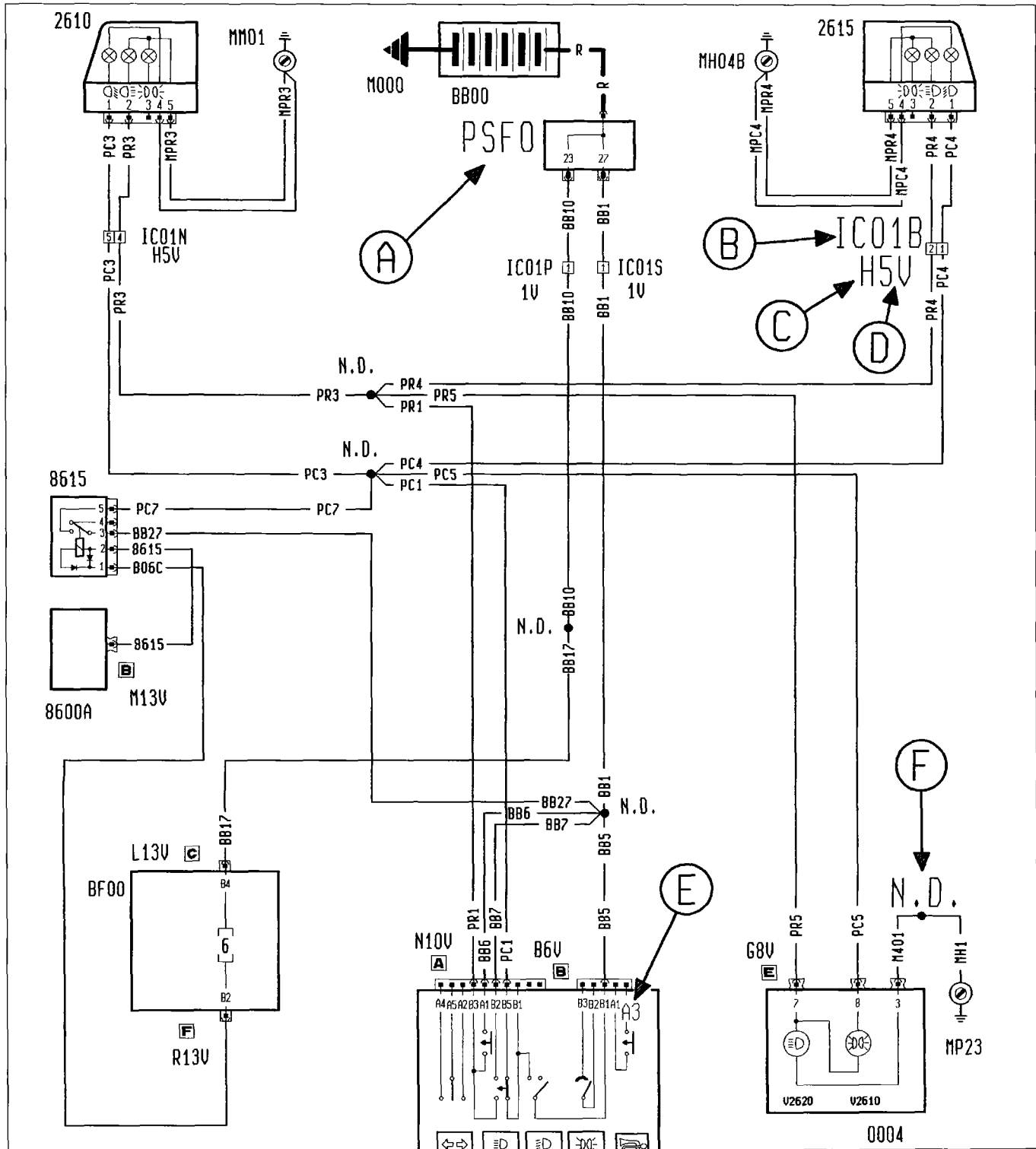
|   |                                   |   |  |   |  |
|---|-----------------------------------|---|--|---|--|
|    | Waring light                      |    | Trip computer control                        |    | Differential lock                        |
|    | Bulb                              |    | Electronic injection                         |    | Automatic transmission fluid temperature |
|    | Fuse                              |    | Engine oil level                             |    | Temperature                              |
|    | Switch open                       |    | Brake fluid level (Japanese Version)         |    | Anti-theft                               |
|   | Selector switch                   |   | Doors open                                   |   | Electrically operated windows            |
|  | Switch controlled by coil (relay) |  | Central locking                              |  | Permissible                              |
|  | Engine                            |  | Controlled damping suspension Sport Function |  | No. plate lights                         |
|  | Rearscreen wiper                  |  | Transistor                                   |  | Impulse generator (timer)                |
|  | Headlamp washer                   |  | Air-bag                                      |  | Analogue clock                           |
|  | Windscreen wash/wipe              |  | A.B.S. (Japanese Version)                    |  | Digital clock                            |
|  | Rearscreen wash/wipe              |  | Brake failure                                |  | Speedometer                              |
|  | Engine oil pressure               |  | Windscreen wiper                             |  | Rev counter                              |

**Electrical symbols**

|   |   |
|---|---|
|    | Digital speedometer                       |
|    | Digital rev counter                       |
|    | Digital fuel gauge                        |
|    | Analogue fuel gauge                       |
|    | Analogue engine coolant temperature gauge |
|  | Econometer                                |
|  | Digital engine coolant temperature gauge  |
|  | Engine oil temperature                    |
|  | Engine oil pressure gauge                 |
|  | Voltmeter                                 |

### 55.

Explanation for reading wiring diagram



4A004N01

#### Reference key











- A Component code
- B Connection code
- C Colour code
- D Connection no. of ways
- E Connection number of ways
- F Ultrasound welding taped in cable loom

**55.**

| DESCRIPTION  | BRAVO    |          |          |          |          | BRAVA    |          |          |          |          |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|  | SX       |          |          | GT       |          | SX       |          |          | ELX      |          |
|  | 1242 16v | 1581 16v | 1910 JTD | 1581 16v | 1910 JTD | 1242 16v | 1581 16v | 1910 JTD | 1581 16v | 1910 JTD |
| Side lights and warning light - Dipped headlamps - Main beam headlamps and warning light - Parking lights - Number plate lights  | 5        | 5        | 5        | 5        | 5        | 5        | 5        | 5        | 5        | 5        |
| Fog lights and warning light - Rear fog lamp and warning light   | 7        | 7        | 7        | 7        | 7        | 7        | 7        | 7        | 7        | 7        |
| Fiat-CODE and failure warning light  | 9        | 11       | 13       | 11       | 13       | 9        | 11       | 13       | 11       | 13       |
| Driver's side EURO-BAG and failure warning light   | 15       | 15       | 15       | 15       | 15       | 15       | 15       | 15       | 15       | 15       |
| Driver's side, passenger side EURO-BAG and failure warning light   | 17       | 17       | 17       | 17       | 17       | 17       | 17       | 17       | 17       | 17       |
| Driver's, passenger side EURO BAG, passenger SIDE BAG and failure warning light - Lumbar adjustment  | 19       | 19       | 19       | 19       | 19       | 19       | 19       | 19       | 19       | 19       |
| Anti-lock braking system and failure warning light (ABS)   | 21       | 21       | 21       | 21       | 21       | 21       | 21       | 21       | 21       | 21       |
| Headlamp alignment corrector   | 23       | 23       | 23       | 23       | 23       | 23       | 23       | 23       | 23       | 23       |
| Electric sun-roof  | 25       | 25       | 25       | 25       | 25       | 25       | 25       | 25       | 25       | 25       |
| Additional heater  |          |          | 27       |          | 27       |          |          | 27       |          | 27       |
| Diagnostic socket connections  | 29       | 29       | 29       | 29       | 29       | 29       | 29       | 29       | 29       | 29       |
| Starting - Injection and ignition - Recharging and warning light - Insufficient engine oil pressure warning light - Injection system failure - Rev counter - Speedometer - Engine coolant temperature gauge - Fiat CODE failure warning light                | 31       | 33       |          | 33       |          | 31       | 33       |          | 33       |          |
| Starting - Electronically operated diesel pump - Recharging and warning light - Insufficient engine oil pressure warning light - Heater plugs warning light - Rev counter - Speedometer - Engine coolant temperature gauge - Fiat CODE failure warning light |          |          | 35       |          | 35       |          |          | 35       |          | 35       |

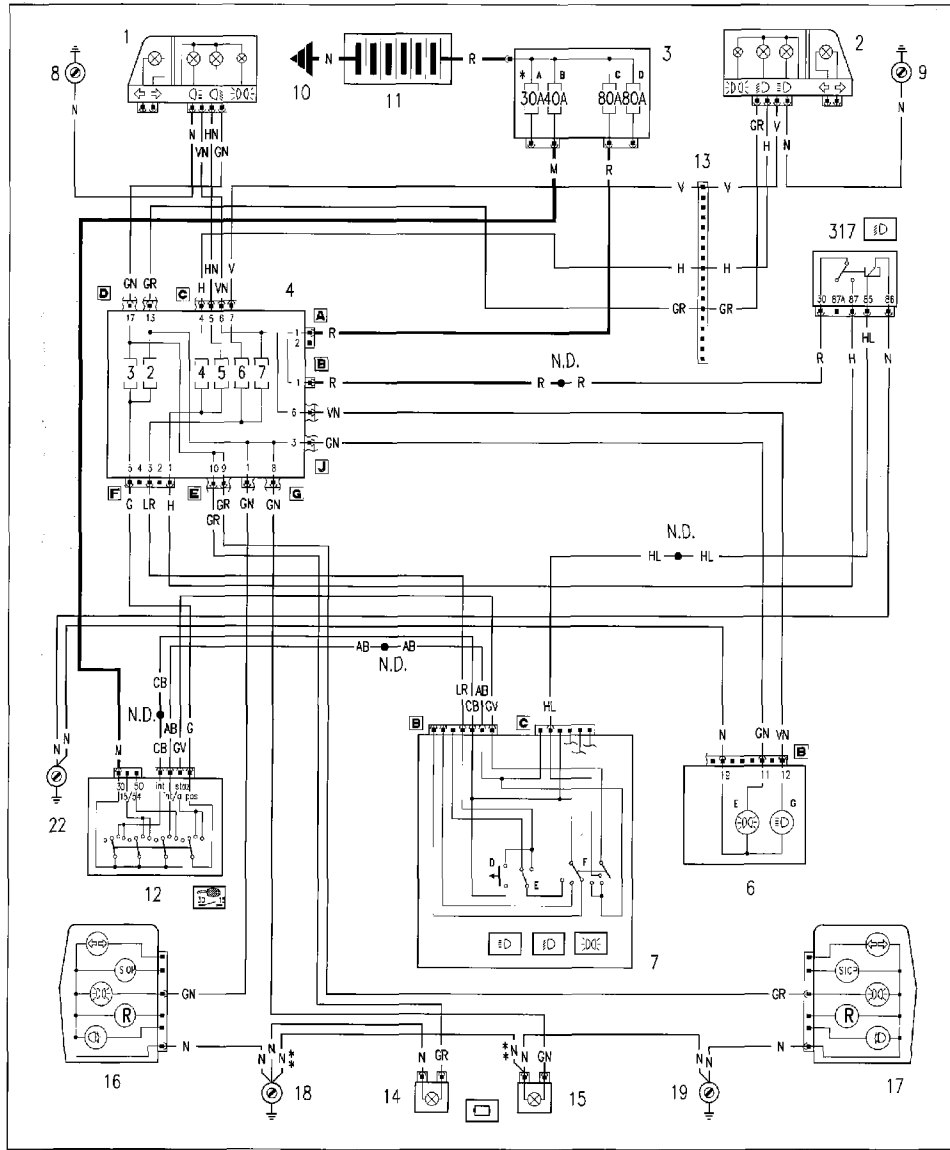
NOTE The numbers in the table correspond to the page numbers in the electrical equipment manual

**55.**

| DESCRIPTION  | BRAVO   |   |   |   |   | BRAVA   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|---|
|  | SX  |   |   | GT  |   | SX  |   |   | ELX   |   |
|  |  |  |  |  |  |  |  |  |  |  |
| Version without automatic air conditioning:<br>Engine cooling with one fan - Engine coolant temperature gauge - Vehicle interior ventilation - Heater/air conditioning unit light  | 37  | 39  | 41  | 39  | 41  | 37  | 39  | 41  | 39  | 41  |
| Version with automatic air conditioning:<br>Engine cooling with one fan - Engine coolant temperature gauge   | 43  | 45  |   | 45  |   | 43  | 45  |   | 45  |   |
| Version with automatic air conditioning:<br>Engine cooling with two fans - Engine coolant temperature gauge - Water in fuel filter sensor  |   |   | 47  |   | 47  |   |   | 47  |   | 47  |
| Trim level: SX □ GT:<br>Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing light  | 49  | 49  | 49  | 49  | 49  | 49  | 49  | 49  | 51  | 51  |
| Fuel gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Milometer/trip meter display and zeroing button - Engine coolant temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter   | 53  | 53  |   | 53  |   | 53  | 53  |   | 53  |   |
| Fuel gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Engine coolant temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter - Milometer/trip meter display and zeroing button/engine oil level gauge - Heater plugs warning light |   |   | 55  |   | 55  |   |   | 55  |   | 55  |
| Version without ABI:<br>Automatic air conditioning   | 57  | 59  | 61  |   | 57  | 59  | 61  |   |   |   |
| Version with ABI:<br>Automatic air conditioning  |   |   |   | 63  | 65  |   |   |   | 63  | 65  |
| Alarm - Alarm on warning light   | 67  | 67  | 67  | 69  | 69  | 67  | 67  | 67  | 69  | 69  |
| ABI control unit connections   |   |   |   | 71  | 71  |   |   |   | 71  | 71  |
| Instrument panel connections   | 73  | 73  | 75  | 73  | 75  | 73  | 73  | 75  | 77  | 79  |
| Comprehensive perspective view showing location of cable loom and components   | 111   | 112   | 113   | 112   | 113   | 111   | 112   | 113   | 112   | 113   |
| Perspective view of dashboard showing location of cable loom and components  | 114   | 114   | 114   | 115   | 115   | 114   | 114   | 114   | 115   | 115   |

NOTE The numbers in the table correspond to the page numbers in the electrical equipment manual

Side lights and warning light - Dipped headlamps - Main beam headlamps and warning light - Parking lights - Number plate lights

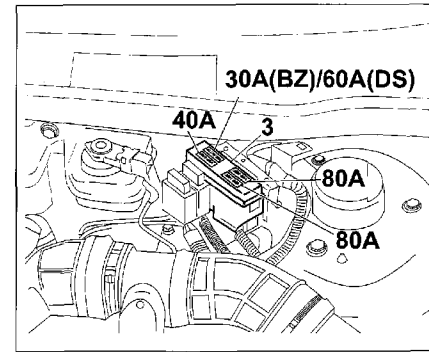


4A006NL01

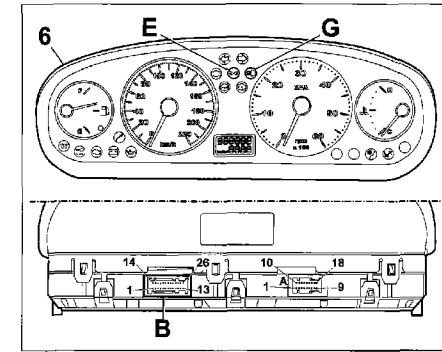
\* 60A fuse for JTD versions

\*\* Variant connection for Brava version

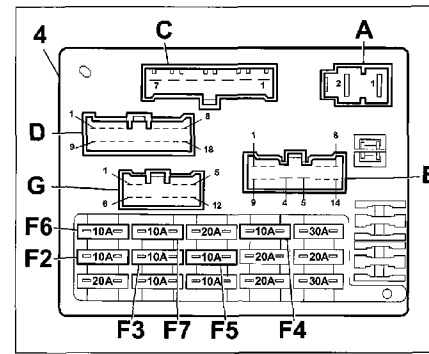
Component location



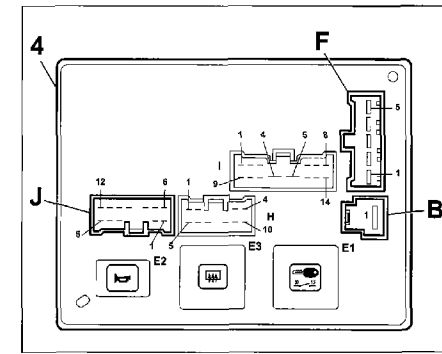
4A006NL02



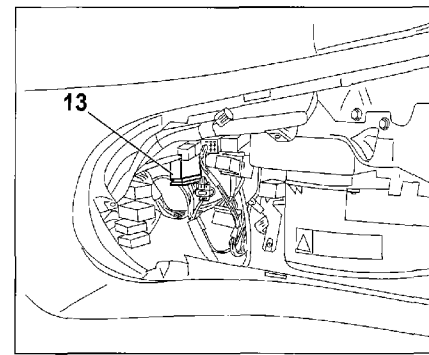
4A006NL03



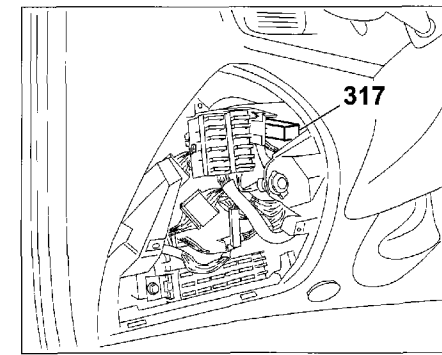
4A006NL04



4A006NL05



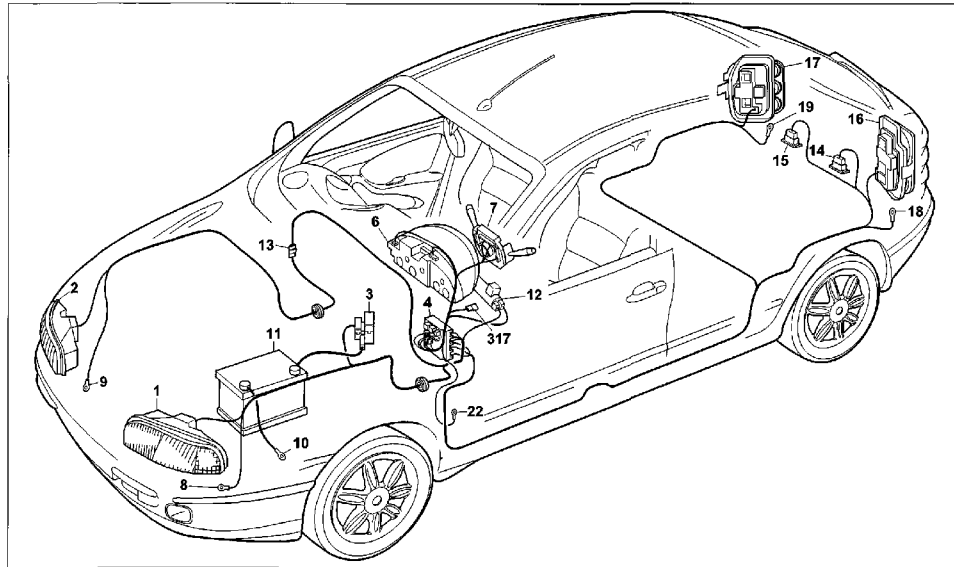
4A006NL06



4A006NL07



**55.**



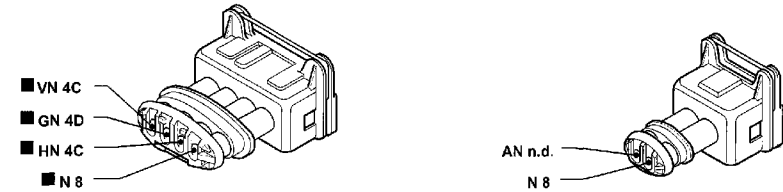
Side lights and warning light - Dipped headlamps - Main beam headlamps and warning light - Parking lights - Number plate lights

**Component key**

- |  |  |
|--|--|
| 1 Left front light cluster                                   | 13 Connection between right/left front cables            |
| 2 Right front light cluster                                  | 14 Left no. plate light                                  |
| 3 Power fusebox  | 15 Right no. plate light                                 |
| A 30A fuse protecting injection system (60A for TD versions) | 16 Left tail light cluster                               |
| B 40A fuse protecting ignition system                        | 17 Right tail light cluster                              |
| C 80A fuse protecting optional equipment                     | 18 Left rear earth                                       |
| D 80A fuse protecting junction unit                          | 19 Right rear earth                                      |
| 4 Junction unit  | 22 Left fascia earth                                     |
| 6 Instrument panel:  | 317 Main beam headlamp maintenance remote control switch |
| E Side lights warning light                                  |  |
| G Main beam headlamps warning light                          |  |
| 7 Stalk unit   |  |
| D Headlamp flasher button                                    |  |
| E Dipped/main beam headlamps control switch                  |  |
| F Side lights control switch                                 |  |
| 8 Left front earth   |  |
| 9 Right front earth  |  |
| 10 Earth for battery on bodyshell                            |  |
| 11 Battery   |  |
| 12 Ignition switch   |  |

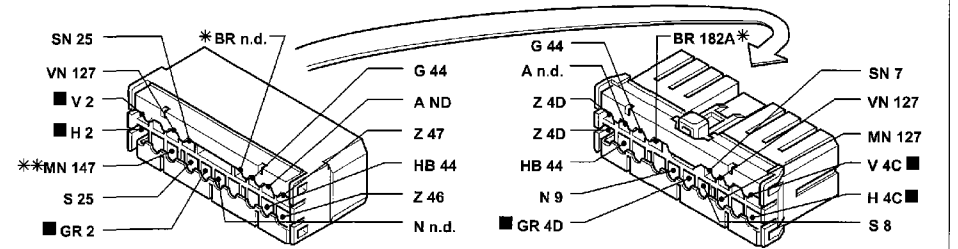
N.D. Ultrasound welding taped in cable loom

**1** Left front light cluster



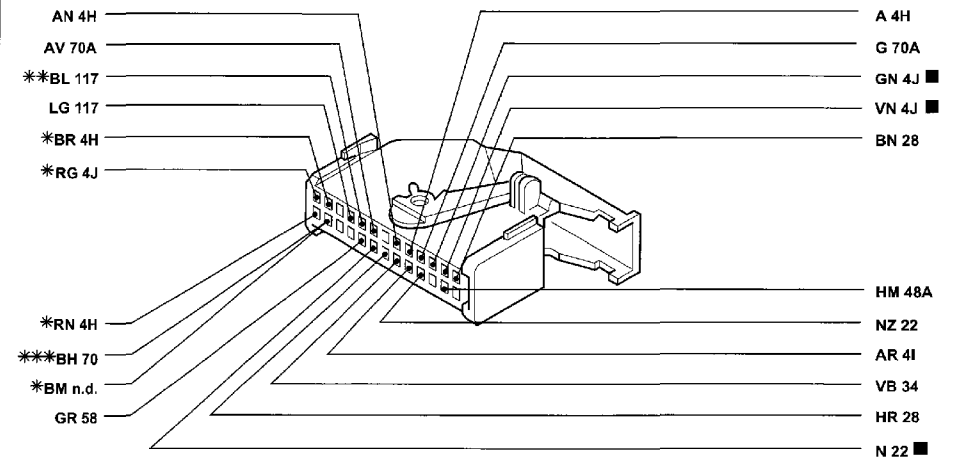
4A006NL02

**13** Connection between right/left front cables



4A006NL03

**6B** Instrument panel

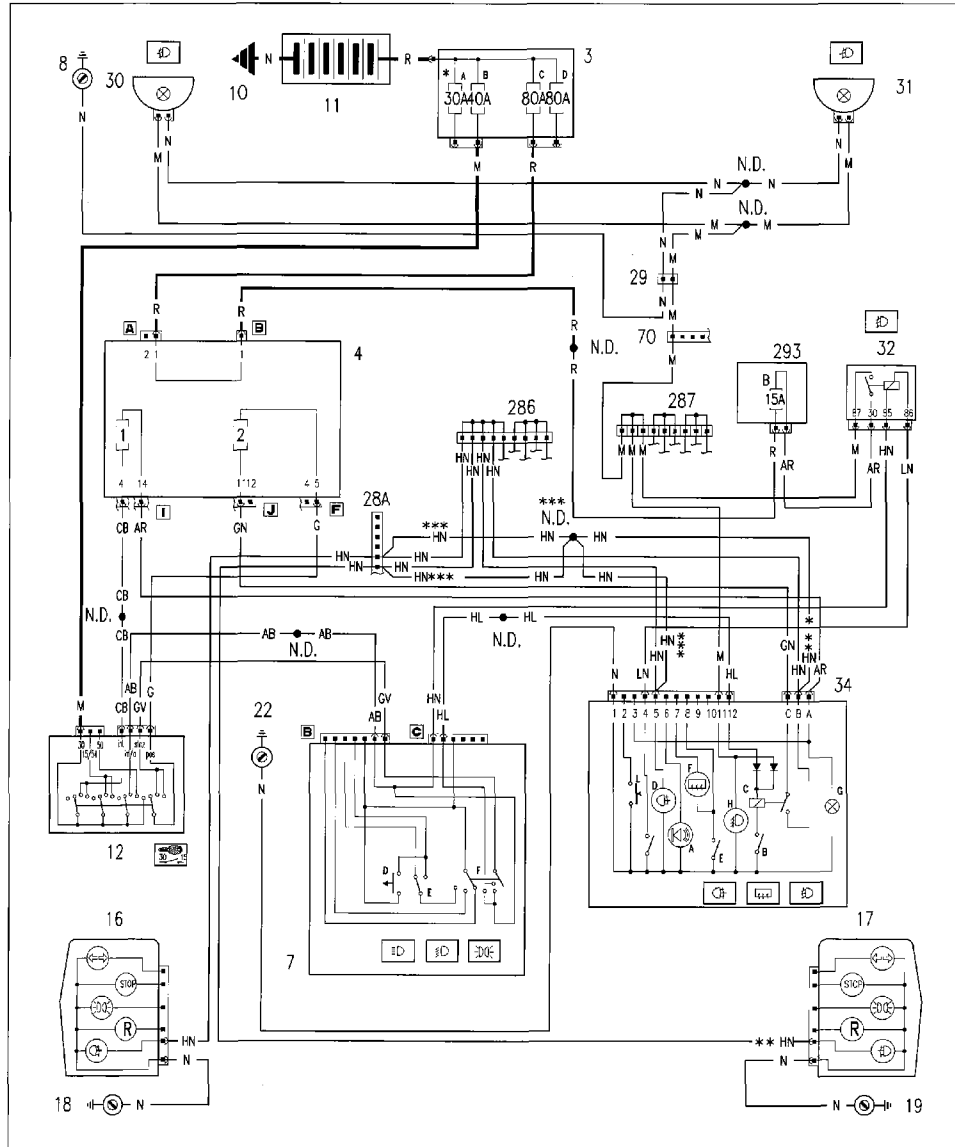


- Non existent for SX-GT trim levels
- \*\* Variant connection for versions with passenger AIR BAG
- \*\*\* Variant connection for SX-GT trim levels with alarm

4A006NL04

The cables concerned are marked in the wiring diagram with a square

**Fog lights and warning light - Rear fog lamps and warning light**

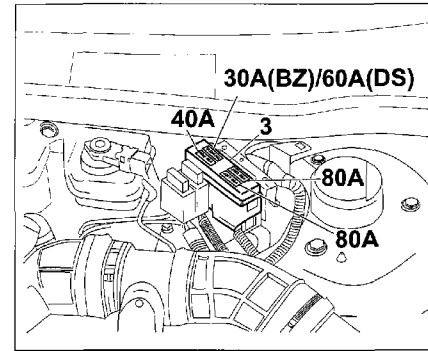


4A007NL01

\* 60A fuse for JTD versions  
\*\*\* Variant connection for the SX-GT version

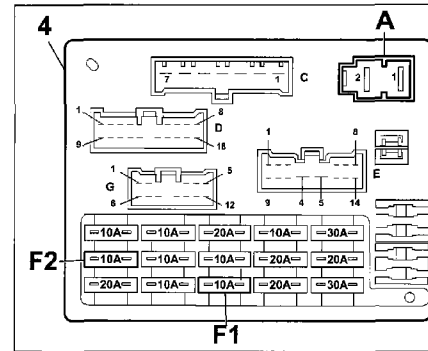
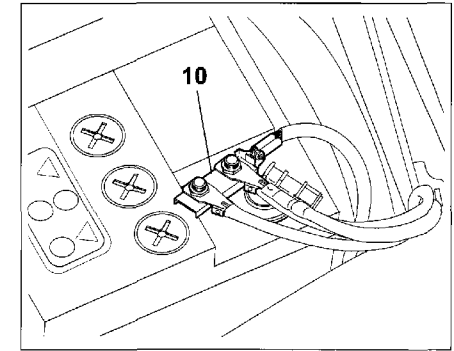
\*\* Non existent for Bravo version

**Component location**

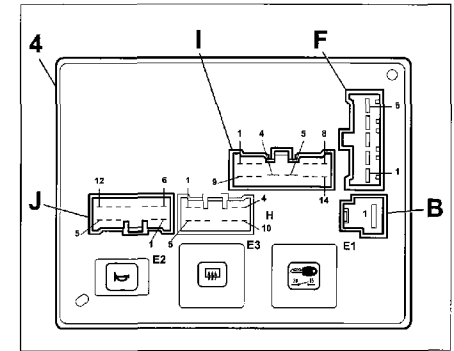


4A005NL02

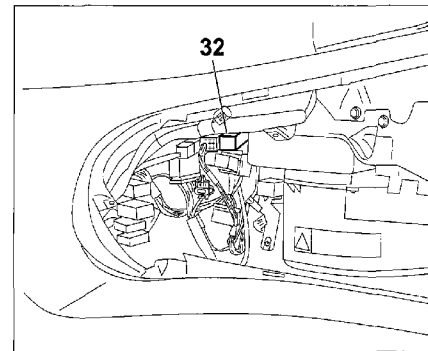
4A007NL03



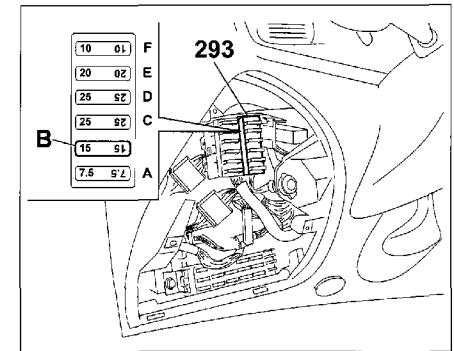
4A007NL04



4A007NL05

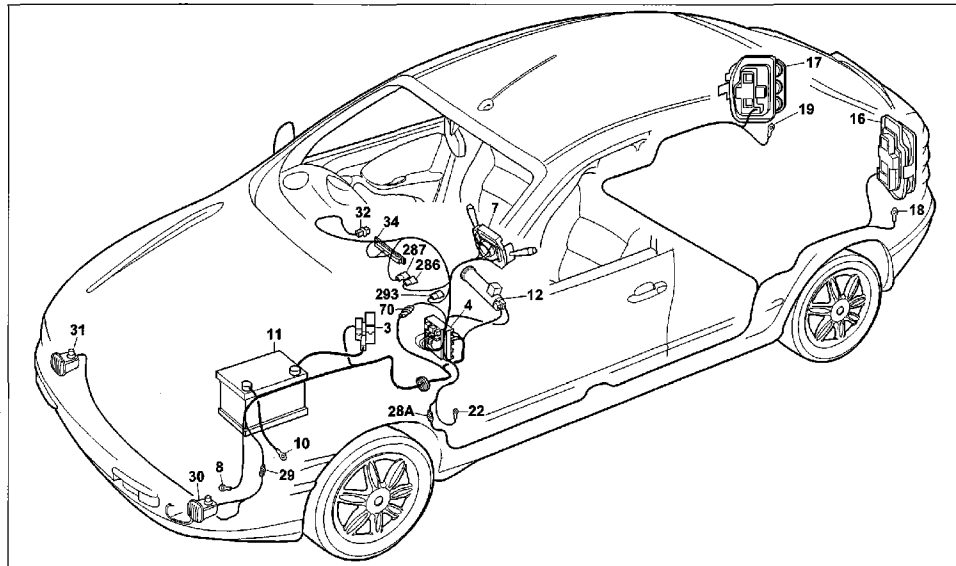


4A007NL06



4A007NL07

**55.**



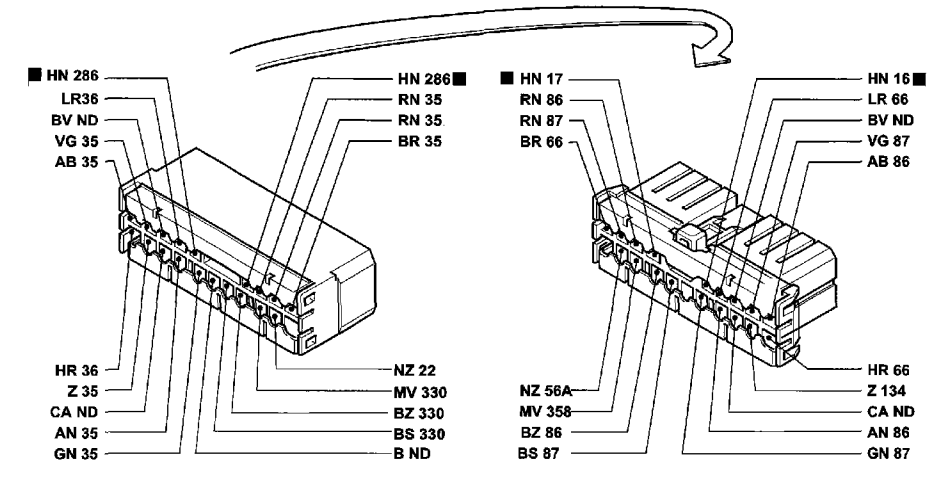
Fog lights and warning light - Rear fog lamps and warning light

**Component key**

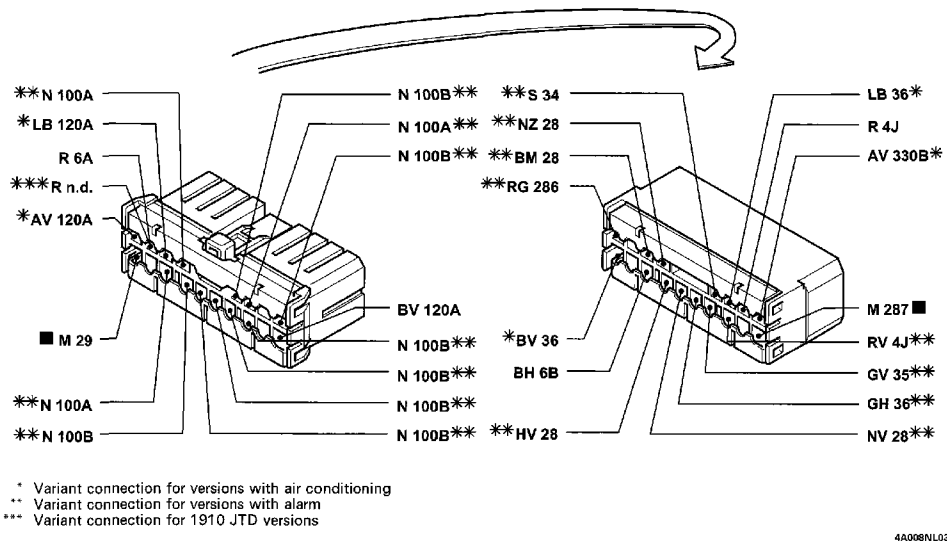
- |  |  |
|--|--|
| 3 Power fusebox:   | 32 Fog light relay feed                            |
| A 30A fuse protecting injection system (60A for TD versions) | 34 Switch control unit:                            |
| B 40A fuse protecting ignition system                        | A Anti-theft device on warning light               |
| C 80A fuse protecting optional equipment                     | B Rear fog lamps control switch                    |
| D 80A fuse protecting junction unit                          | C Rear fog lamps relay feed                        |
| 4 Junction unit  | D Rear fog lamps warning light                     |
| 7 Stalk unit   | E Heated rear windscreen control switch            |
| D Headlamp flasher button                                    | F Heated rear windscreen warning light             |
| E Dipped/main beam headlamps control switch                  | G Switch control panel ideogram light              |
| F Side lights control switch                                 | H Fog lights warning light                         |
| 8 Left front earth   | L Outside temperature control switch               |
| 10 Earth for battery on bodyshell                            | 70 Connection between facia/front leads            |
| 11 Battery   | 286 Short circuit connection                       |
| 12 Ignition switch   | 287 Short circuit connection                       |
| 16 Left tail light cluster                                   | 293 Fuse holder base on dashboard cable            |
| 17 Right tail light cluster                                  | B 15A fuse protecting fog lights maintenance relay |
| 18 Left rear earth   |  |
| 19 Right rear earth  |  |
| 22 Left facia earth  |  |
| 28A Connection between dashboard/longitudinal cables         |  |
| 29 Connection between front/fog light cables                 |  |
| 30 Left fog light  |  |
| 31 Right fog light   |  |

N.D. Ultrasound welding taped in cable loom

**28A** Connection between dashboard/longitudinal cables (ELX trim level only)



**70** Connection between dashboard/front cables

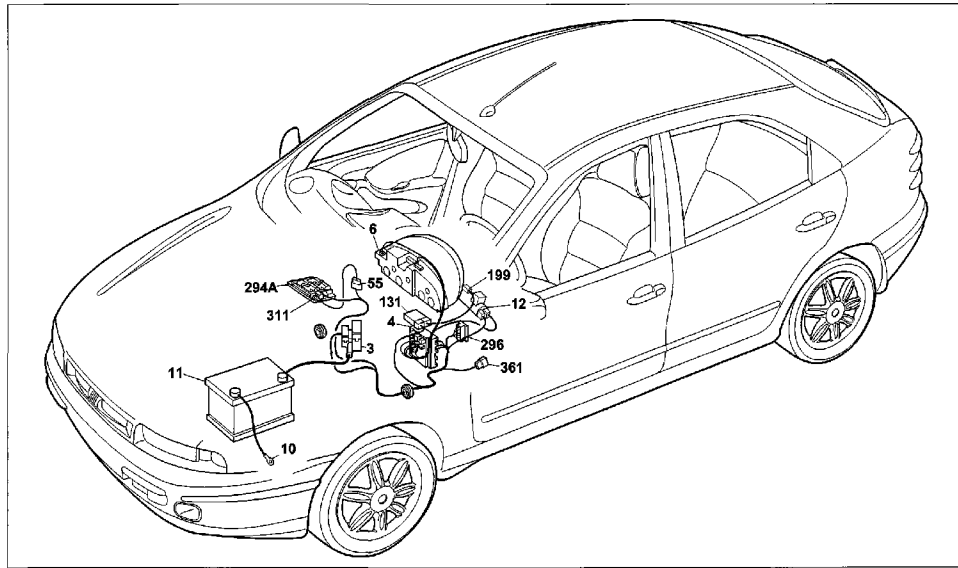


\* Variant connection for versions with air conditioning  
 \*\* Variant connection for versions with alarm  
 \*\*\* Variant connection for 1910 JTD versions

The cables concerned are marked in the wiring diagram with a square



**55.**



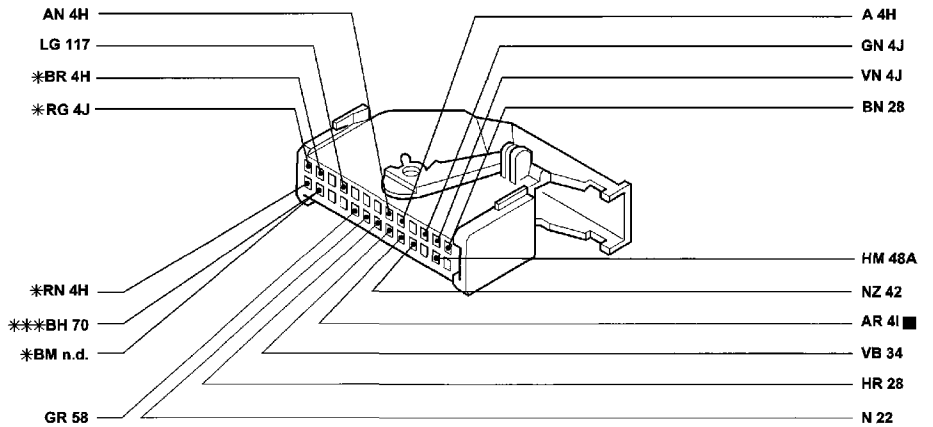
4A010N101

**Fiat-CODE and failure warning light**

**Component key**

- |  |  |
|--|--|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit | 296 Fuse holder base on front cable:<br>C 7.5A fuse protecting Fiat CODE cooling system/electronic injection<br>F 7.5A fuse protecting Fiat CODE electronic injection system |
| 4 Junction unit<br>6 Instrument panel<br>L Fiat-CODE failure warning light   | 311 1242 16V engine pre-wiring earth<br>361 Diagnostic socket  |
| 10 Battery earth on bodyshell<br>11 Battery<br>12 Ignition switch  | N.D. Ultrasound welding taped in cable loom  |
| 55 Connection between front cables/engine pre-wiring   |  |
| 131 Fiat CODE electronic control unit<br>199 Aerial for Fiat CODE<br>294 Injection/ignition electronic control unit<br>1242  |  |

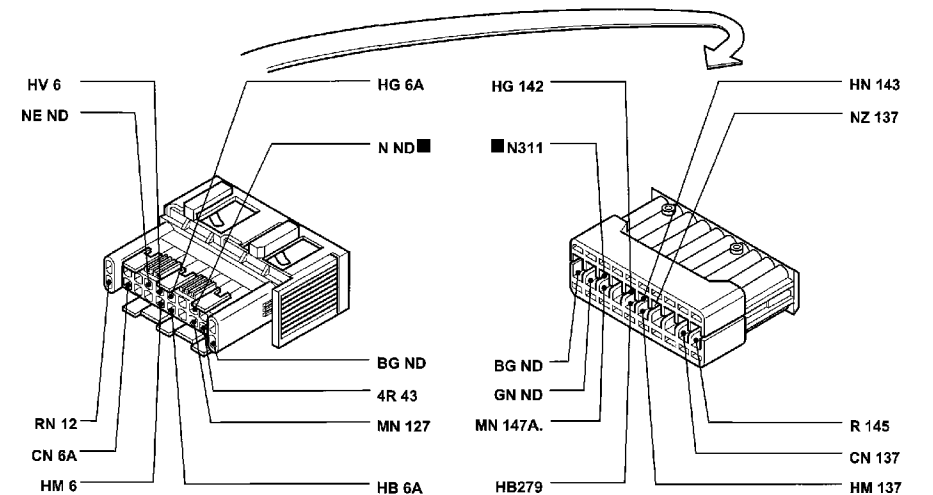
**6B** Instrument panel



- \* Non existent for SX-GT trim levels
- \*\* Variant connection for versions with passenger AIR BAG
- \*\*\* Variant connection for SX-GT trim levels with alarm

4A010N102

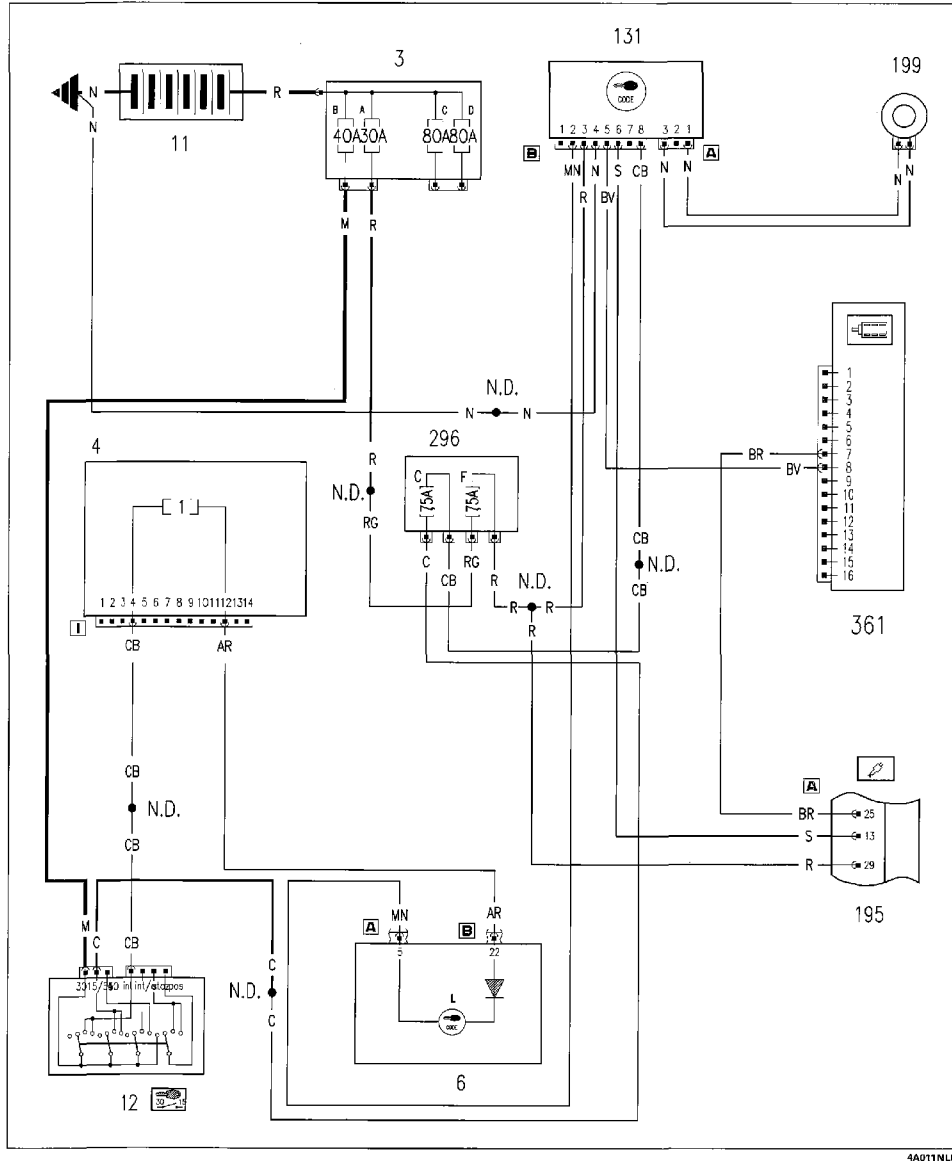
**55** Connection between front cables/engine pre-wiring



4A010N103

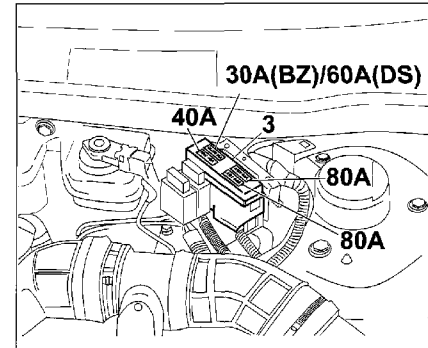
The cables concerned are marked in the wiring diagram with a square

Fiat-CODE and failure warning light

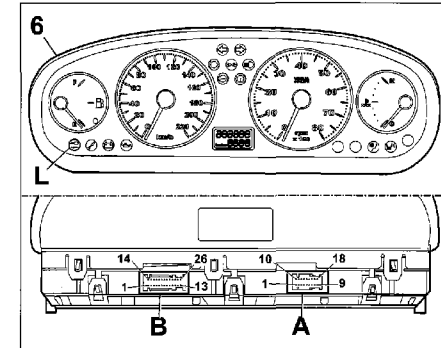


4A011NL01

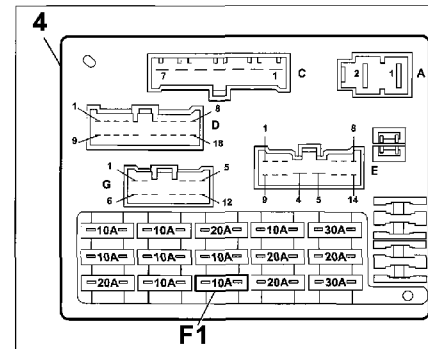
Component location



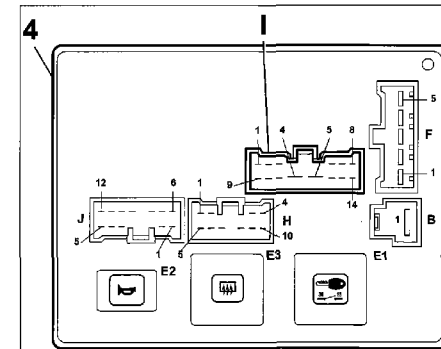
4A006NL02



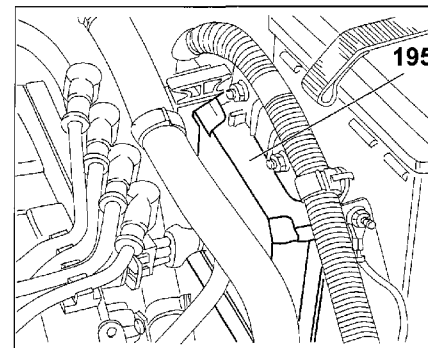
4A009NL03



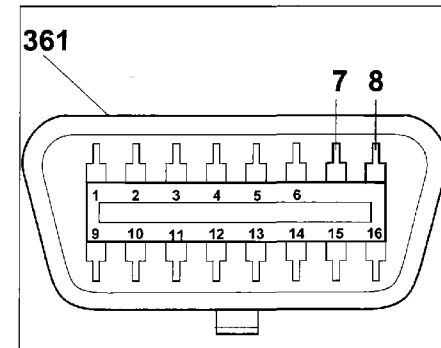
4A011NL04



4A011NL05

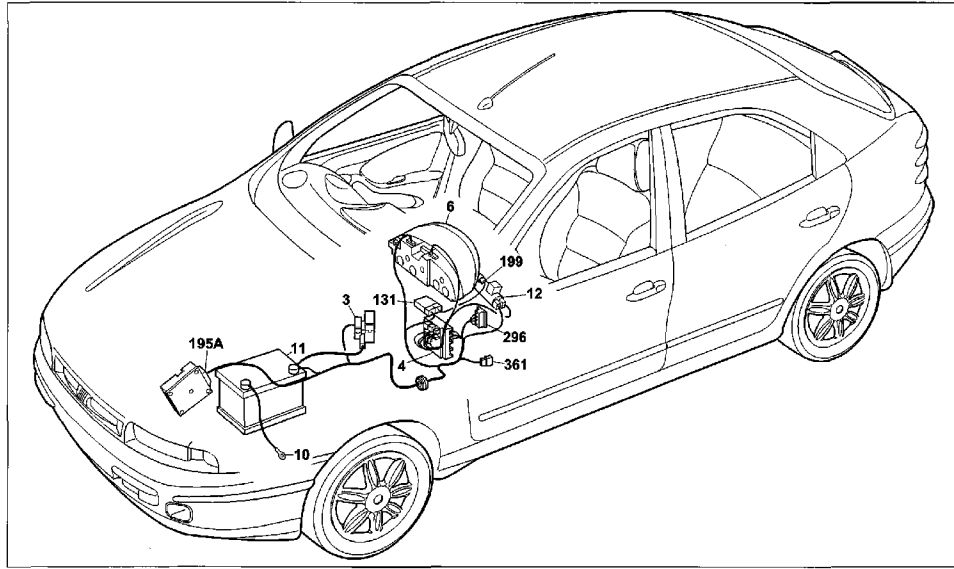


4A011NL06



4A011NL07

**55.**

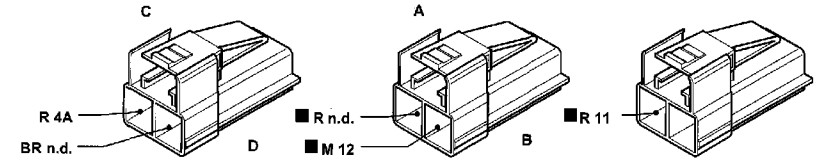


**Fiat-CODE and failure warning light**

**Component key**

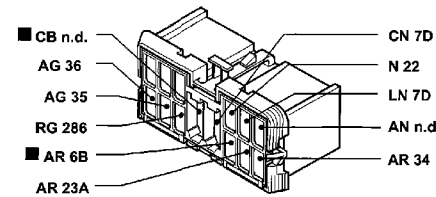
- |  |  |
|--|--|
| 3 Power fusebox:   | 296 Fuse holder base on front cable:                                 |
| A 30A fuse protecting injection system (60A for TD versions) | C 7.5A fuse protecting Fiat CODE cooling system/electronic injection |
| B 40A fuse protecting ignition system                        | F 7.5A fuse protecting Fiat CODE electronic injection system         |
| C 80A fuse protecting optional equipment                     | 361 Diagnostic socket  |
| D 80A fuse protecting junction unit                          | N.D. Ultrasound welding taped in cable loom                          |
| 4 Junction unit  |  |
| 6 Instrument panel:  |  |
| L Fiat-CODE failure warning light                            |  |
| 10 Battery earth on bodyshell                                |  |
| 11 Battery   |  |
| 12 Ignition switch   |  |
| 131 Fiat CODE electronic control unit                        |  |
| 195 Injection/ignition electronic control unit (1581)        |  |
| 199 Fiat CODE aerial   |  |

**3 Power fusebox**



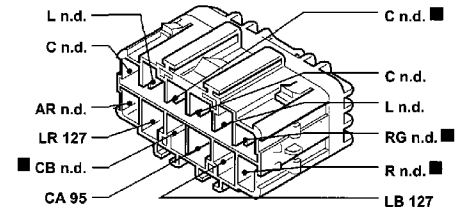
4A012NL02

**4I Junction unit**



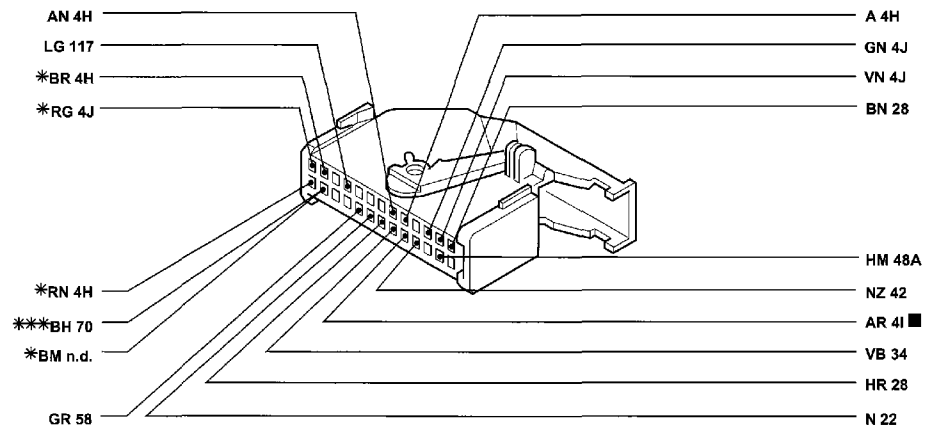
4A012NL03

**296 Fuse holder base on front cable**



4A012NL04

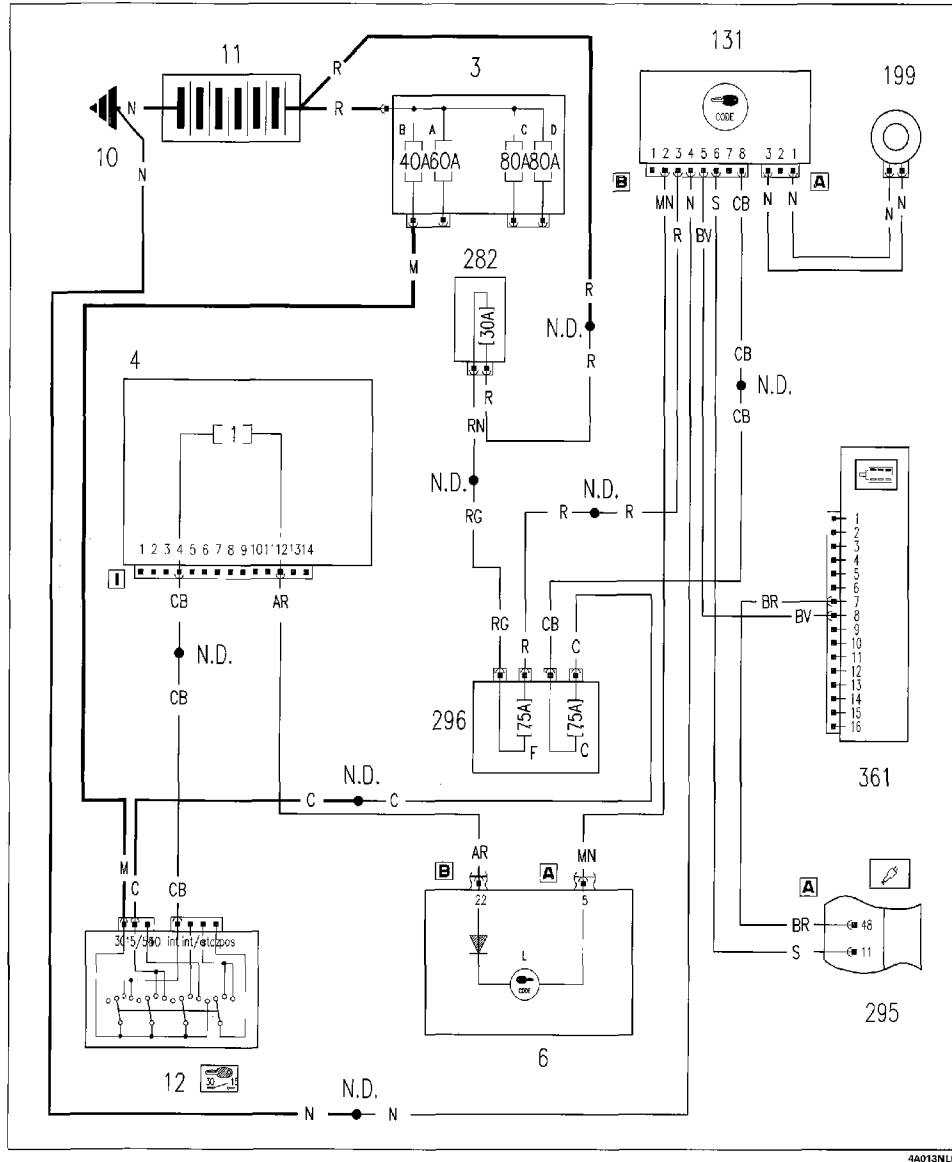
**6B Instrument panel**



4A012NL06

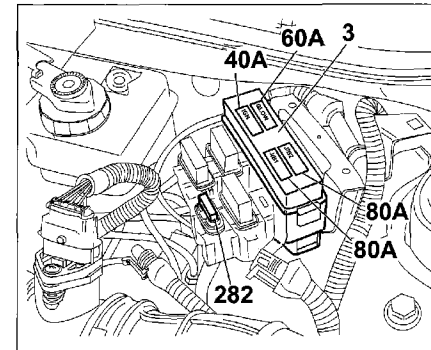
The cables concerned are marked in the wiring diagram with a square

Fiat-CODE and failure warning light

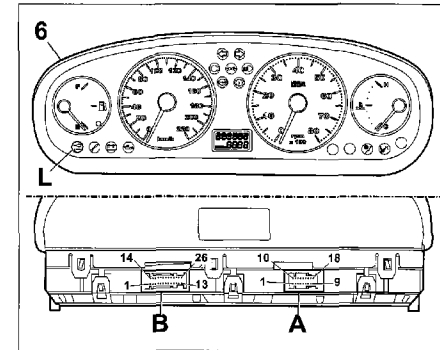


4A013NL01

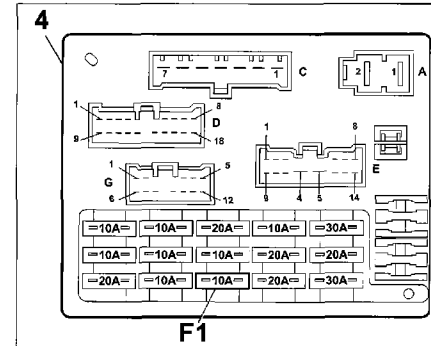
Component location



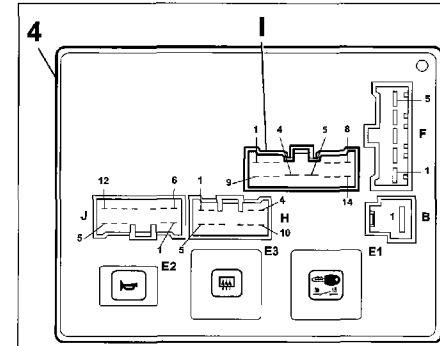
4A013NL02



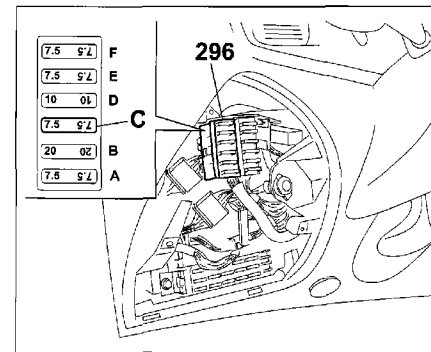
4A009NL03



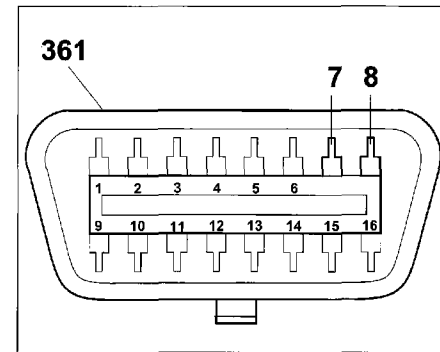
4A011NL04



4A011NL05



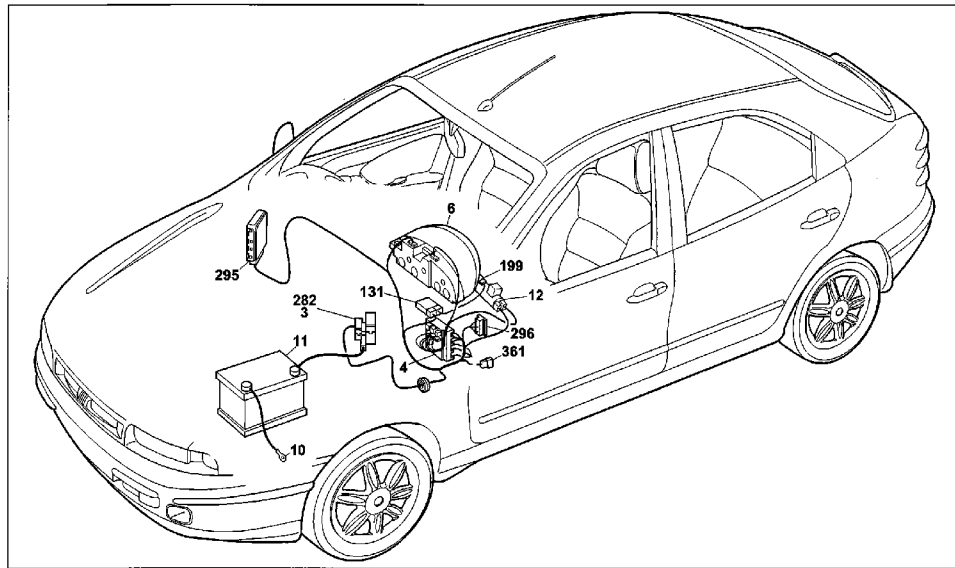
4A013NL06



4A013NL07



**55.**

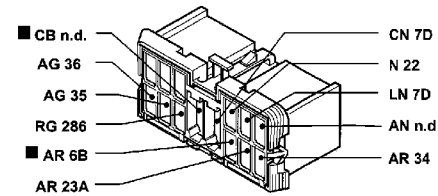


**Fiat-CODE and failure warning light**

**Component key**

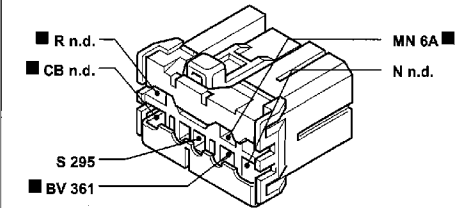
- |   |  |
|---|--|
| 3 Power fusebox:<br>A 30A fuse protecting injection system<br>(60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit | 296 Fuse holder base on front cable:<br>C 7.5A fuse protecting Fiat CODE cooling system/electronic injection<br>F 7.5A fuse protecting Fiat CODE electronic injection system |
| 4 Junction box  | 361 Diagnostic socket  |
| 6 Instrument panel:<br>L Fiat-CODE failure warning light  | N.D. Ultrasound welding taped in cable loom  |
| 10 Battery earth on bodyshell   |  |
| 11 Battery  |  |
| 12 Ignition switch  |  |
| 131 Fiat CODE electronic control unit   |  |
| 199 Aerial for Fiat CODE  |  |
| 282 30A fuse protecting Fiat CODE/electronic injection (60 for UNIJET)  |  |
| 295 Electronic injection/ignition electronic control unit 1910 UNIJET   |  |

**4I** Junction unit



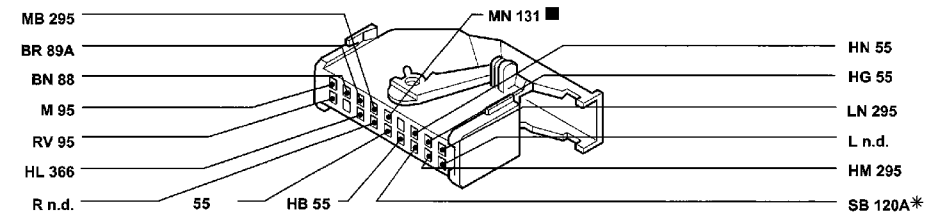
4A014NL02

**131B** Fiat CODE electronic control unit connection



4A014NL03

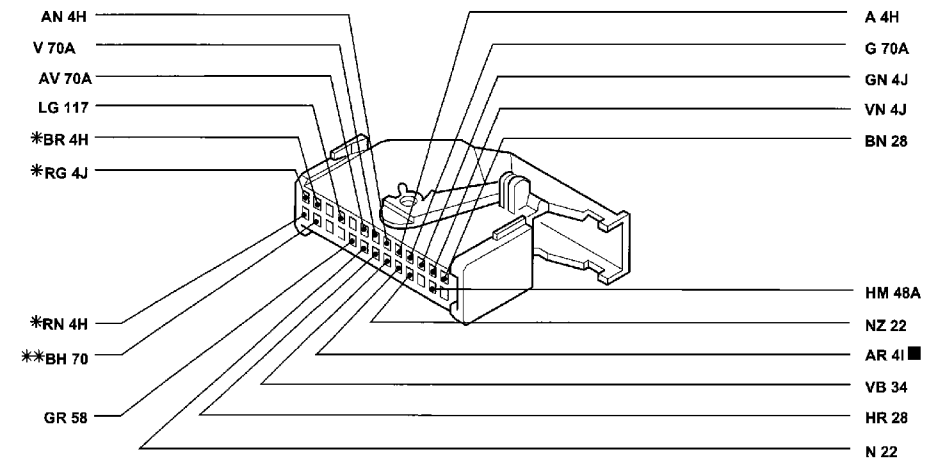
**6A** Instrument panel



\* Variant connection for versions with air conditioning

4A014NL04

**6B** Instrument panel



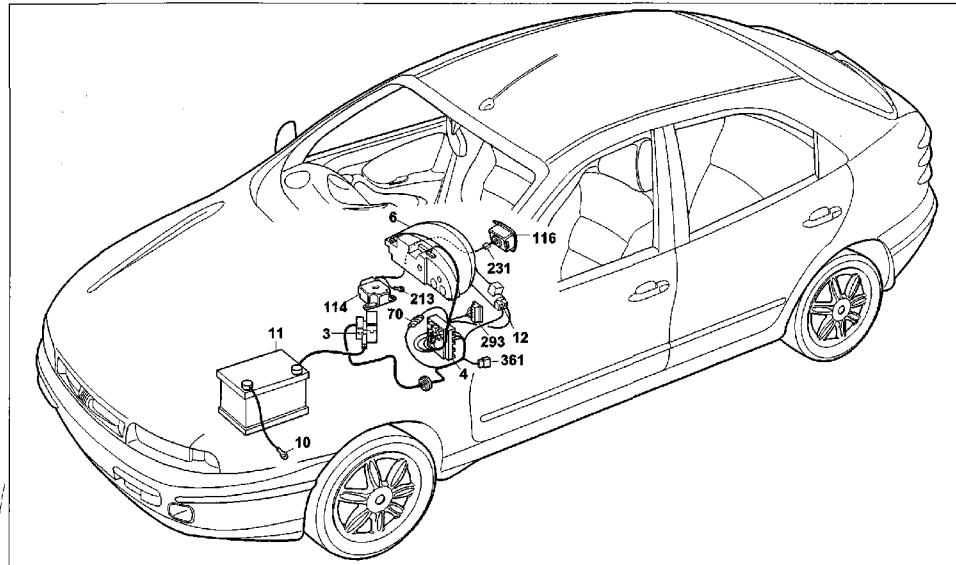
\* Non existent for SX-GT trim levels  
\*\* Variant for versions with alarm

4A014NL06

The cables concerned are marked in the wiring diagram with a square



**55.**



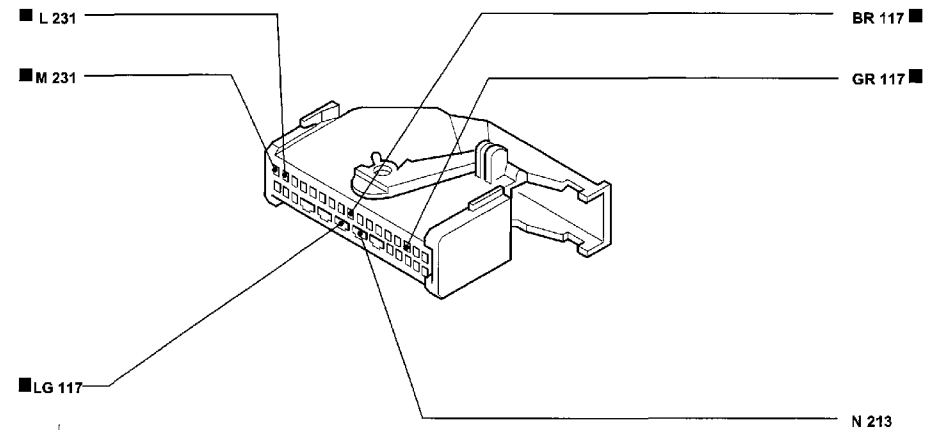
4A016NL01

**Driver's EURO BAG and failure warning light**

**Component key**

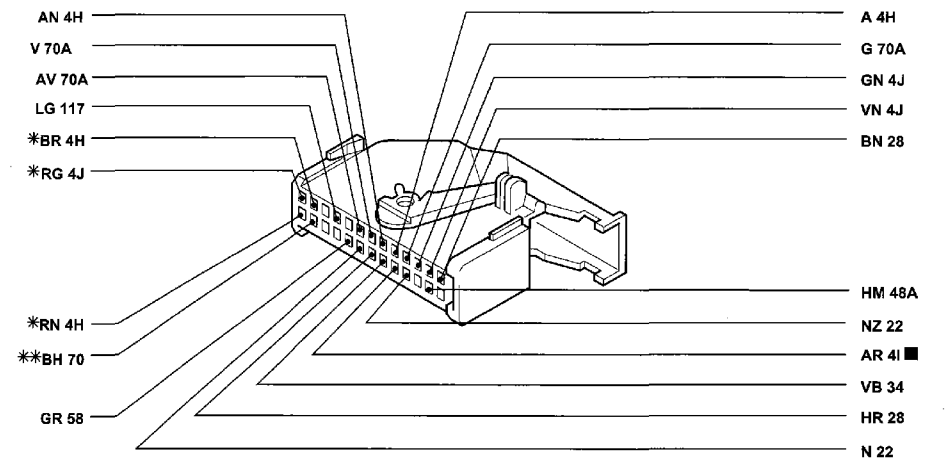
- |   |  |
|---|--|
| 3 Power fusebox:<br>A 30A fuse protecting injection system<br>(60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit | 361 Diagnostic socket<br>N.D. Ultrasound welding taped in cable loom |
| 4 Junction unit   |  |
| 6 Instrument panel:<br>H EURO-BAG system failure warning light  |  |
| 10 Battery earth on bodyshell   |  |
| 11 Battery  |  |
| 12 Ignition switch  |  |
| 70 Front dashboard connection   |  |
| 114 EURO BAG electronic control unit  |  |
| 116 Driver's EURO BAG   |  |
| 117 Connection between EURO BAG/dashboard<br>cables   |  |
| 213 Earth for EURO BAG  |  |
| 231 Clock spring connection   |  |
| 293 Fuse holder base on dashboard cable<br>F 10A fuse protecting EURO BAG   |  |

**114** EURO-BAG electronic control unit



4A016NL02

**6B** Instrument panel

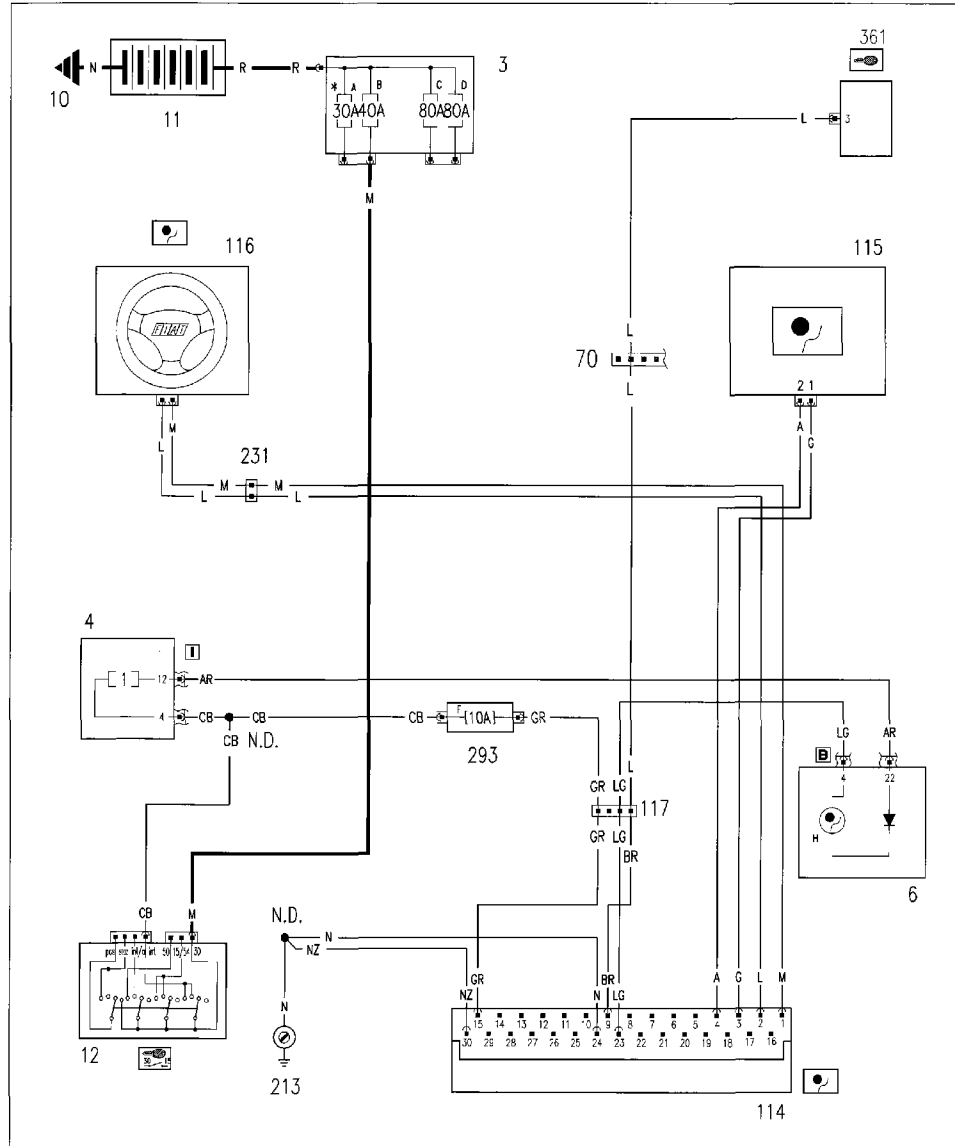


\* Non existent for SX-GT trim levels  
\*\* Variant for versions with alarm]

4A016NL03

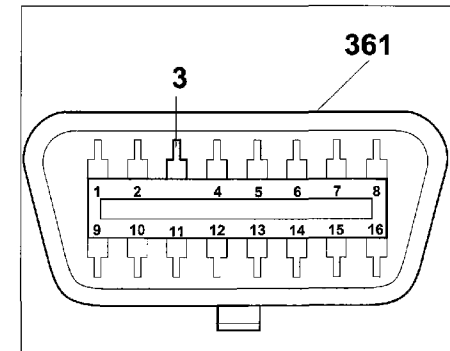
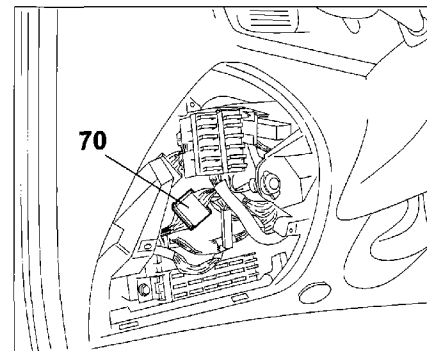
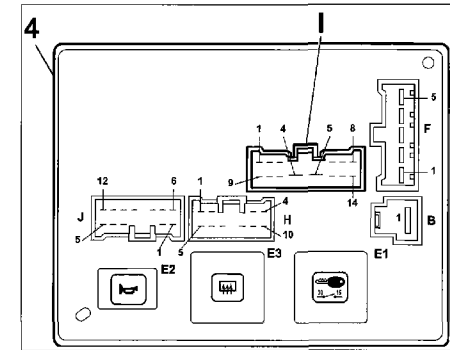
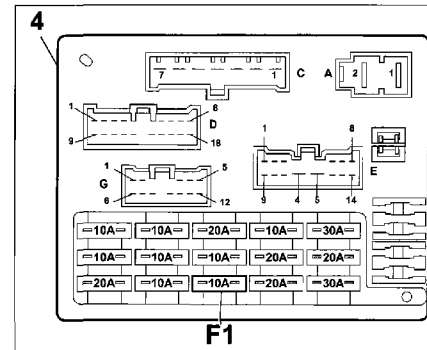
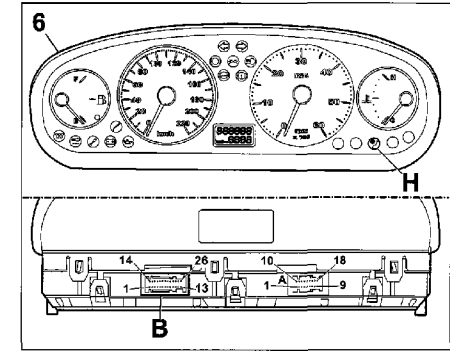
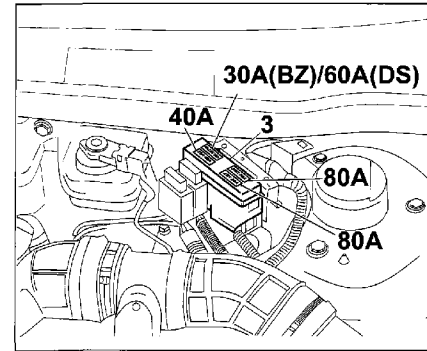
The cables concerned are marked in the wiring diagram with a square

**Dual EURO BAGS (driver and passenger) and failure warning light**

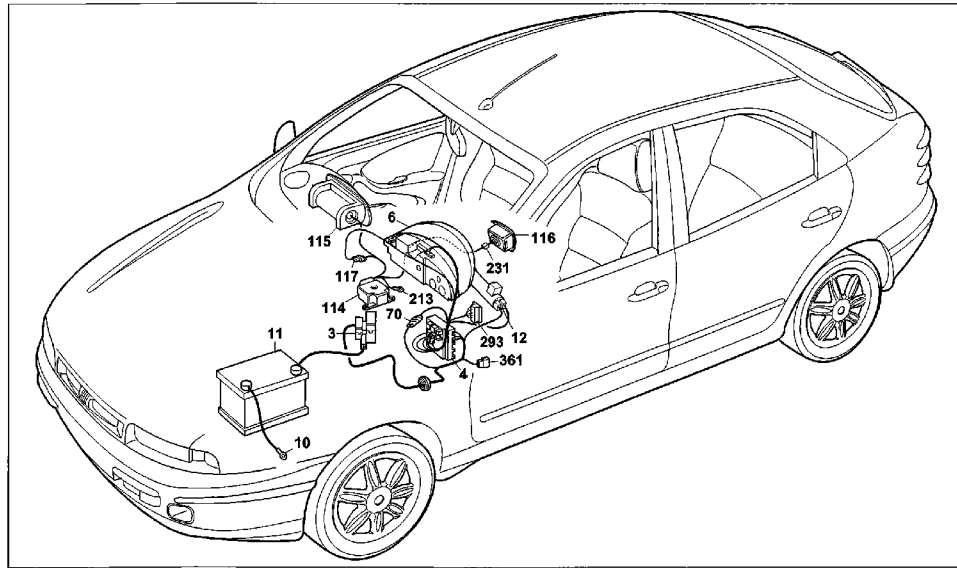


\* 60A protective fuse for JTD versions

**Component location**



**55.**



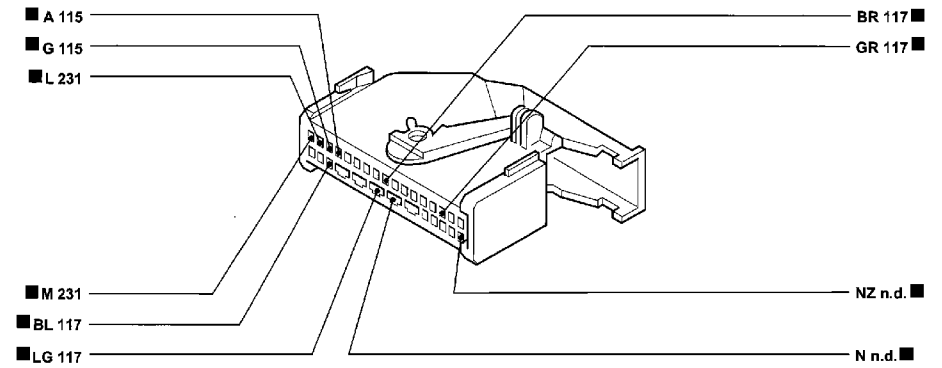
4A018NLO1

**Dual EURO BAGS (driver and passenger) and failure warning light**

**Component key**

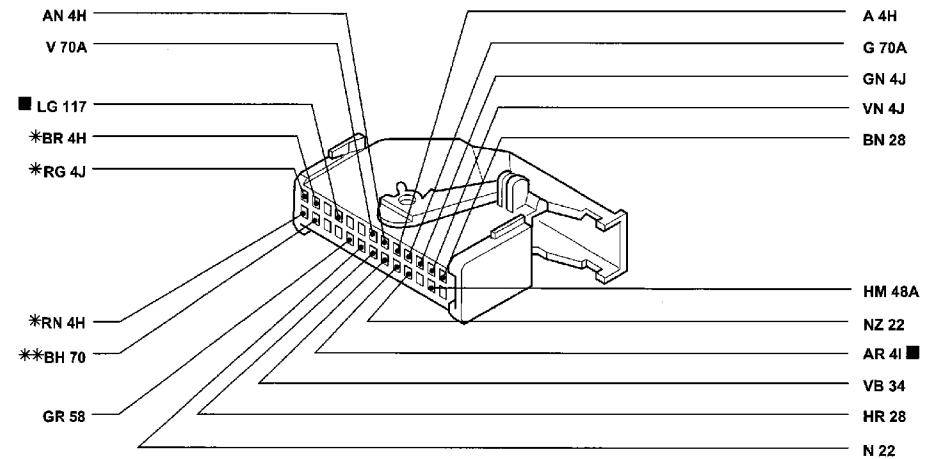
- |  |   |
|--|---|
| 3 Power fusebox:   | 361 Diagnostic socket                       |
| A 30A fuse protecting injection system (60A for TD versions) | N.D. Ultrasound welding taped in cable loom |
| B 40A fuse protecting ignition system                        |   |
| C 80A fuse protecting optional equipment                     |   |
| D 80A fuse protecting junction unit                          |   |
| 4 Junction unit  |   |
| 6 Instrument panel:  |   |
| H EURO-BAG system failure warning light                      |   |
| 10 Battery earth on bodyshell                                |   |
| 11 Battery   |   |
| 12 Ignition switch   |   |
| 70 Front dashboard connection                                |   |
| 114 EURO BAG electronic control unit                         |   |
| 115 Passenger EURO BAG                                       |   |
| 116 Driver's EURO BAG  |   |
| 117 Connection between EURO BAG/dashboard cables             |   |
| 213 Earth for EURO BAG                                       |   |
| 231 Clock spring connection                                  |   |
| 293 Fuse holder base on dashboard cable                      |   |
| F 10A fuse protecting EURO BAG                               |   |

**114** EURO-BAG electronic control unit



4A018NLO2

**6B** Instrument panel



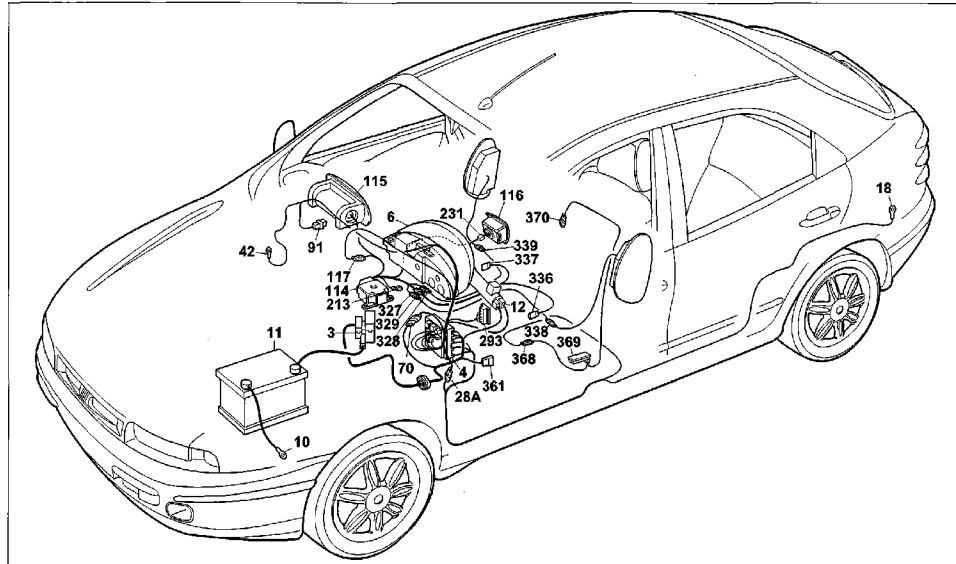
\* Non existent for SX-GT trim levels  
\*\* Variant for versions with alarm

4A018NLO3

The cables concerned are marked in the wiring diagram with a square



55.



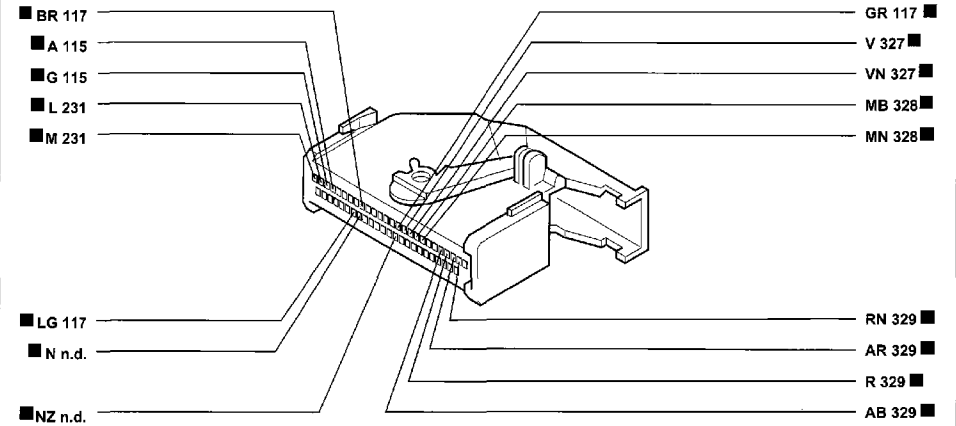
4A020NL01

Driver's, passenger side EURO BAG, passenger SIDE BAG and failure warning light - Lumbar adjustment

Component key

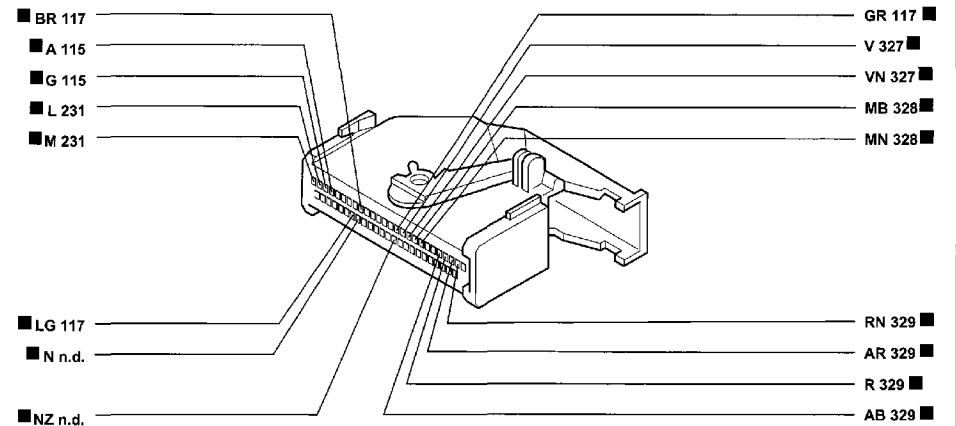
- |  |   |
|--|---|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit | 213 Earth for EURO BAG<br>231 Clock spring connection<br>293 Fuse holder base on dashboard cable<br>E 20A fuse protecting EURO BAG<br>F 10A fuse protecting EURO BAG      |
| 4 Junction unit  | 327 Connection with bridge on floor for left EURO BAG<br>328 Connection with bridge on floor for right EURO BAG   |
| 6 Instrument panel:<br>H EURO-BAG system failure warning light   | 329 Connection with bridge on floor<br>336 Driver's side sensor for EURO BAG<br>337 Passenger side sensor for EURO BAG<br>338 Driver's SIDE BAG<br>399 Passenger SIDE BAG |
| 10 Battery earth on bodyshell<br>11 Battery<br>12 Ignition switch<br>18 Left rear earth<br>42 Right dashbord earth   | 361 Diagnostic socket<br>366 Lumbar adjustment motor<br>368 Connection between rear and lumbar adjustment cables<br>369 Lumbar adjuster                                   |
| 28A Connection between dashboard/longitudinal cables<br>70 Front dashboard connection<br>91 Power relay  | N.D. Ultrasound welding taped in cable loom   |
| 114 EURO BAG electronic control unit<br>115 Passenger EURO BAG<br>116 Driver's EURO BAG<br>117 Connection between EURO BAG/dashboard cables  |   |

114 EURO-BAG electronic control unit



4A020NL02

6B Instrument panel

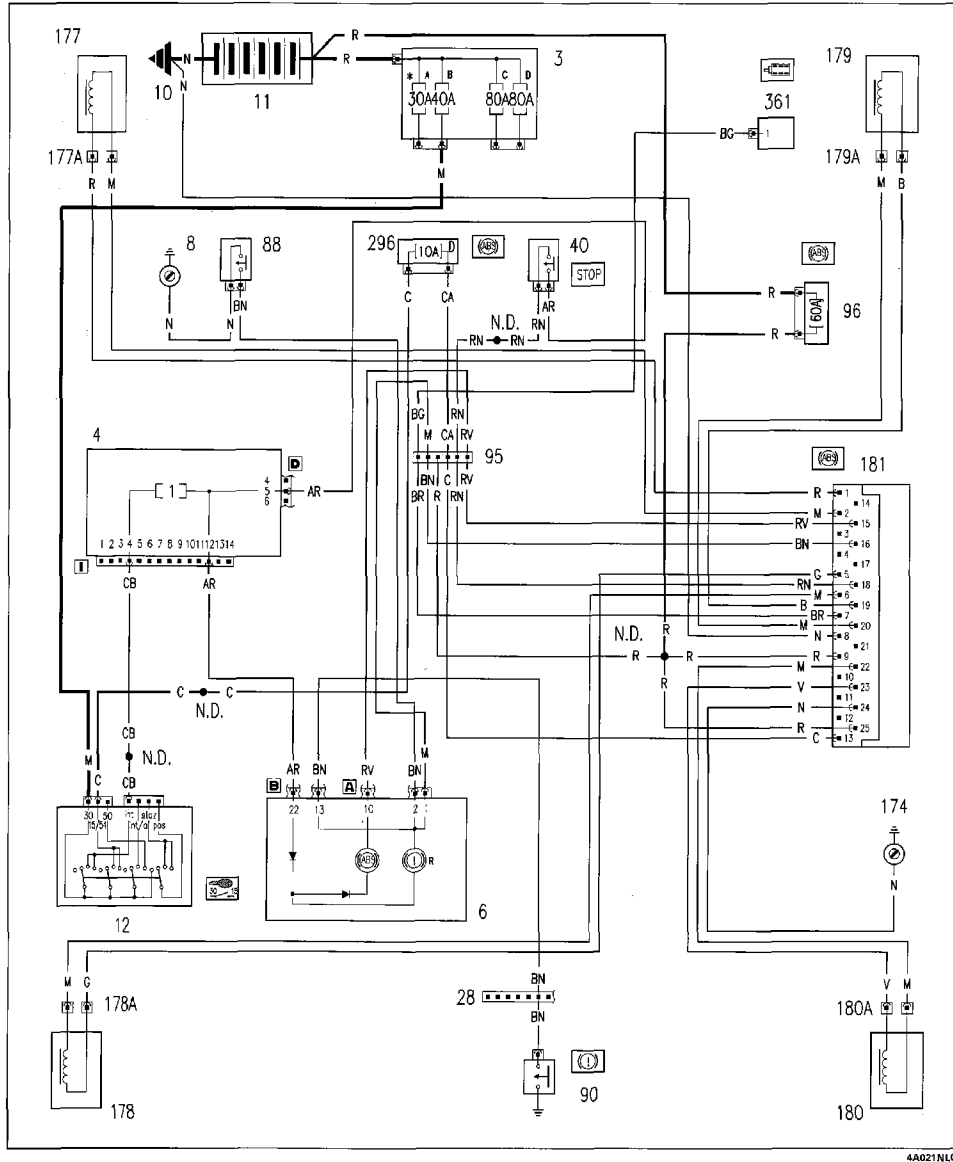


\* Non existent for SX-GT trim levels  
\*\* Variant for versions with alarm

4A020NL03

The cables concerned are marked in the wiring diagram with a square

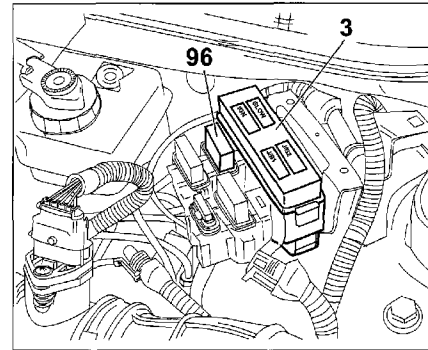
**Anti-lock braking system and failure warning light (ABS)**



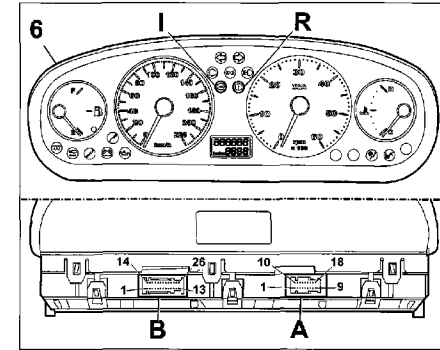
4A021NL01

\* 60A fuse for JTD versions

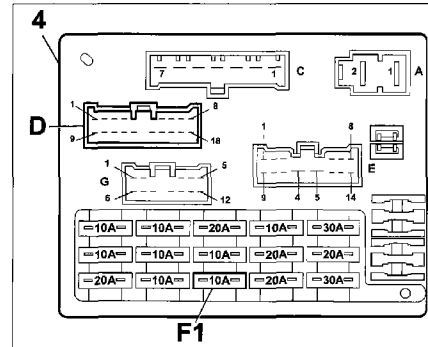
**Component location**



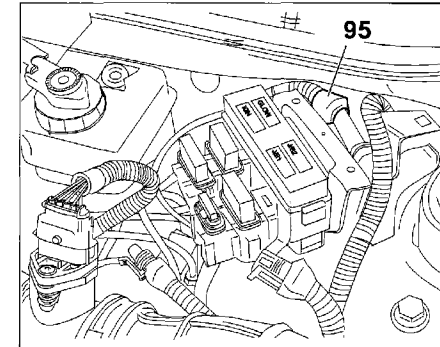
4A021NL02



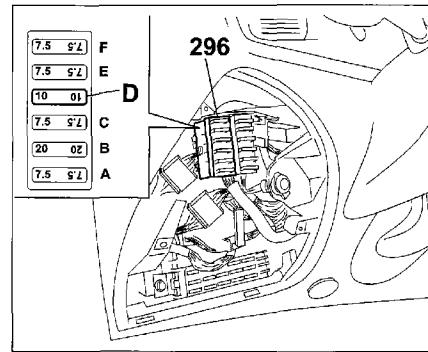
4A021NL03



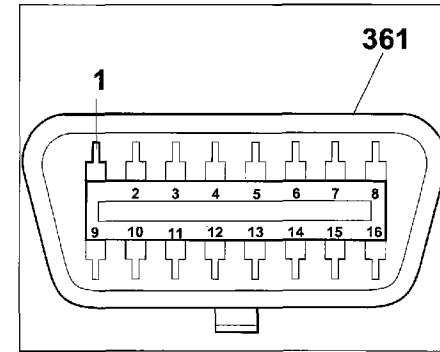
4A021NL04



4A021NL05



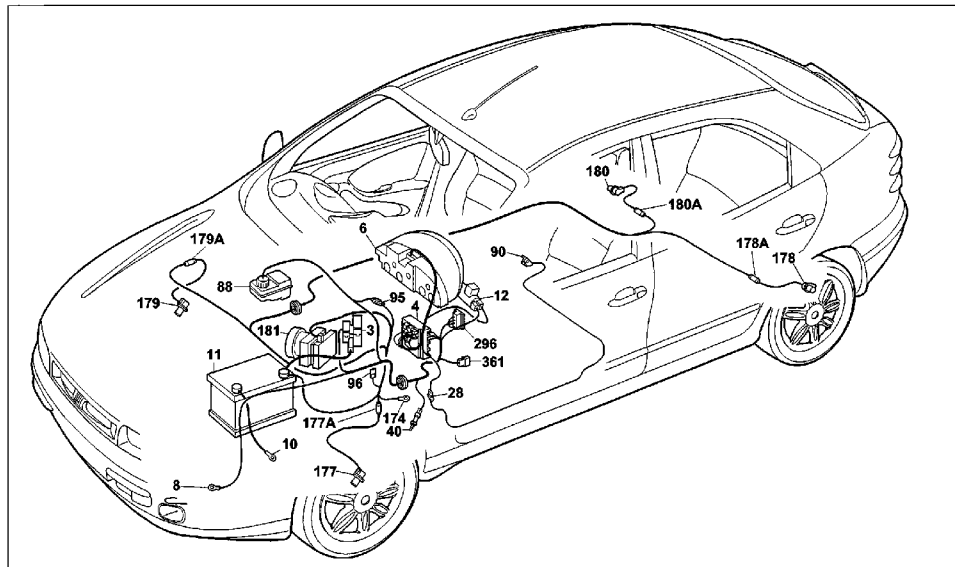
4A021NL06



4A021NL07



**55.**

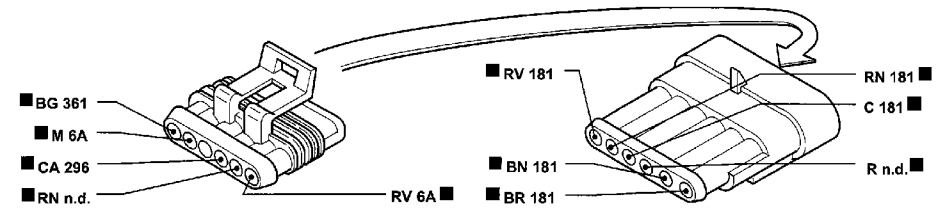


Anti-lock braking system and failure warning light (ABS)

**Component key**

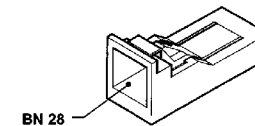
- |  |  |
|--|--|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit | 177 Sensor on left front wheel for anti-lock brakes (ABS)                        |
| 4 Junction unit  | 177A Connection between cable/left front wheel sensor for anti-lock brakes (ABS) |
| 6 Instrument panel:<br>R Handbrake applied/insufficient brake fluid level warning light  | 178 Sensor on left rear wheel for anti-lock brakes (ABS)                         |
| 10 Battery earth on bodyshell  | 178A Connection for cable on left rear wheel sensor                              |
| 11 Battery   | 179 Sensor on right front wheel for anti-lock brakes (ABS)                       |
| 12 Ignition switch   | 179A Connection for cable on right front wheel sensor                            |
| 28 Dashboard/longitudinal connection   | 180 Sensor on right rear wheel for anti-lock brakes (ABS)                        |
| 40 Brake light control switch  | 180A Connection for cable on right rear wheel sensor                             |
| 88 Insufficient brake fluid level sensor   | 181 Electro-hydraulic control unit for anti-lock brakes (ABS)                    |
| 90 Switch indicating handbrake applied   | 296 Fuse holder base on front cable<br>D10A fuse protecting A.B.S.               |
| 95 Connection between front/anti-lock braking system (ABS) cables  | 361 Diagnostic socket  |
| 96 60A fuse protecting electrical equipment  | N.D. Ultrasound welding taped in cable loom                                      |
| 174 Power earth for anti-lock brakes (ABS)   |  |

**95** Connection between front cables/anti-lock brakes (A.B.S.)



4A022NL02

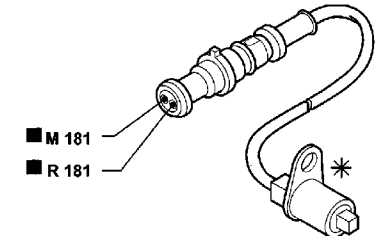
**90** Switch signalling handbrake applied



4A022NL03

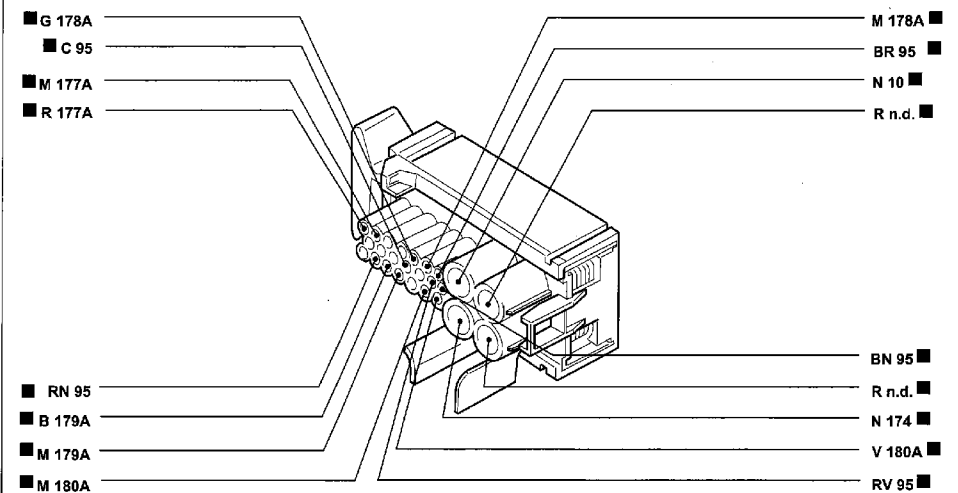
**177 (\*)** Sensor on left front wheel for anti-lock brakes (ABS)

**177A** Connection for ABS sensor cable on left front wheel



4A022NL04

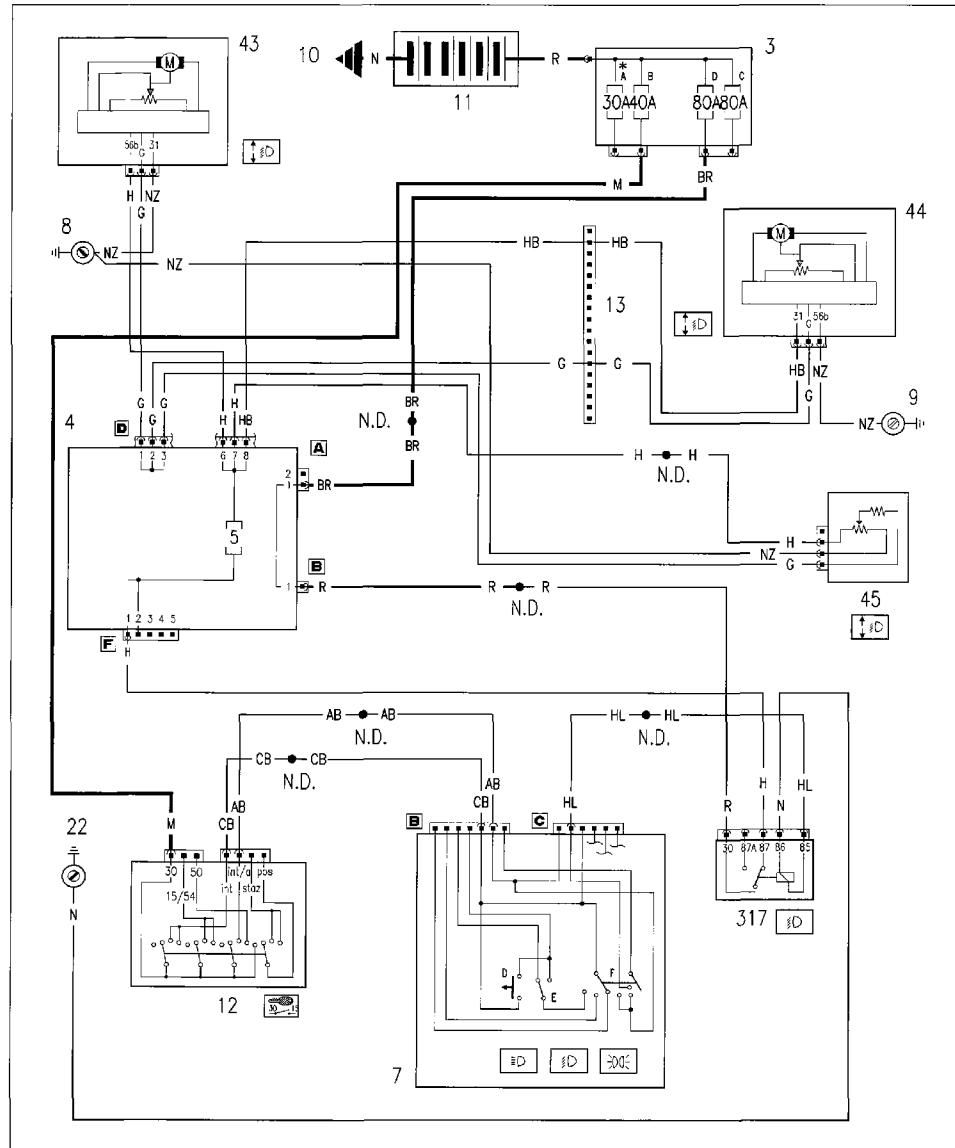
**181** Electro-hydraulic control unit for anti-lock brakes (A.B.S.)



4A022NL05

The cables concerned are marked in the wiring diagram with a square

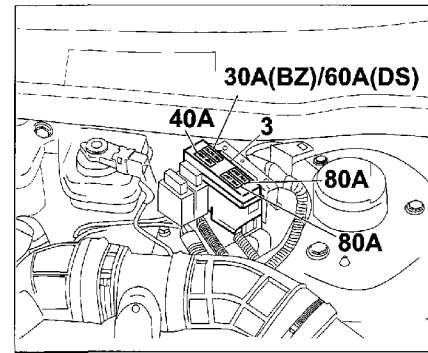
**Headlamp alignment corrector**



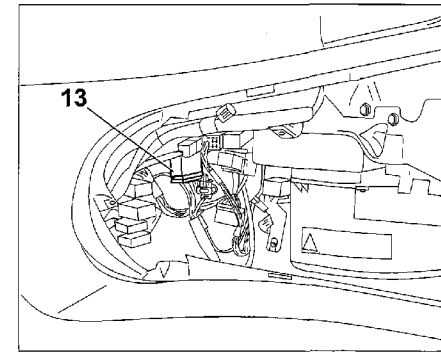
4A023N1.01

\* 60A fuse for JTD versions

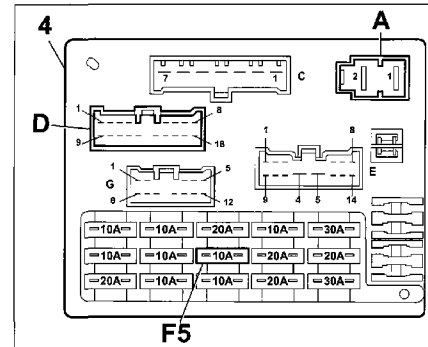
**Component location**



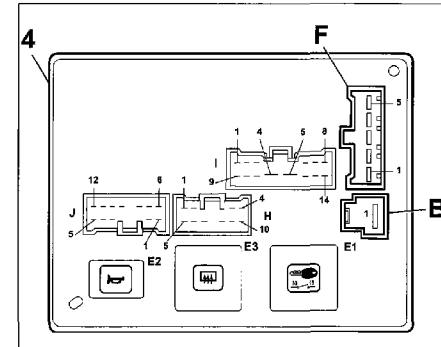
4A005N1.02



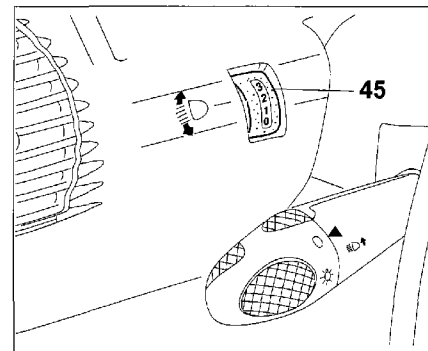
4A023N1.03



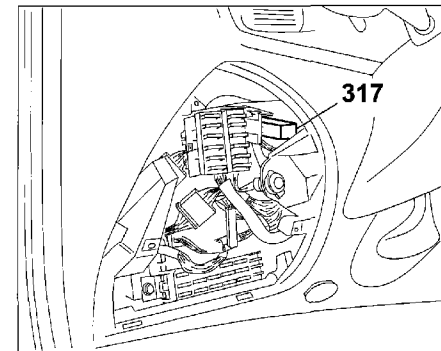
4A023N1.04



4A023N1.05

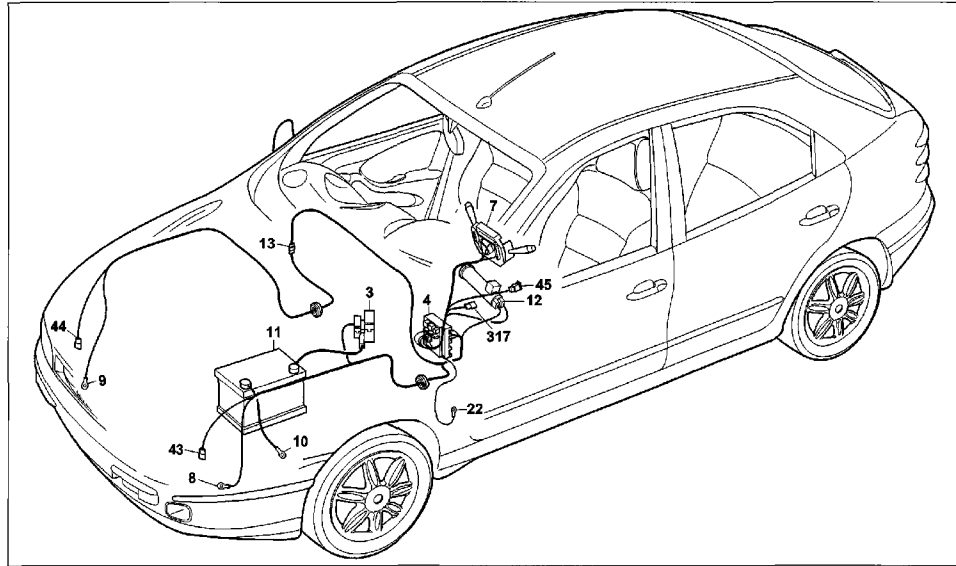


4A023N1.06



4A023N1.07

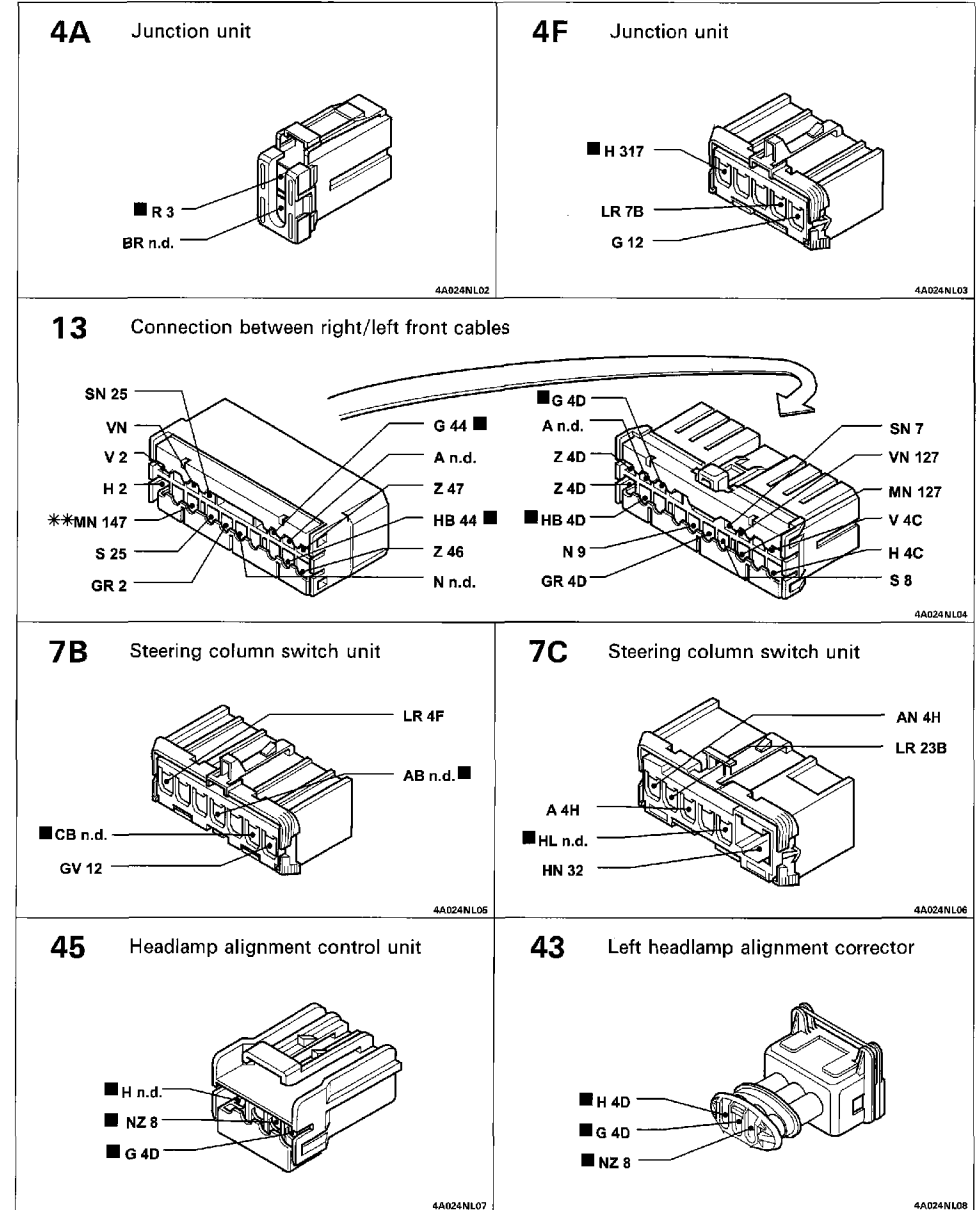
**55.**



Headlamp alignment corrector

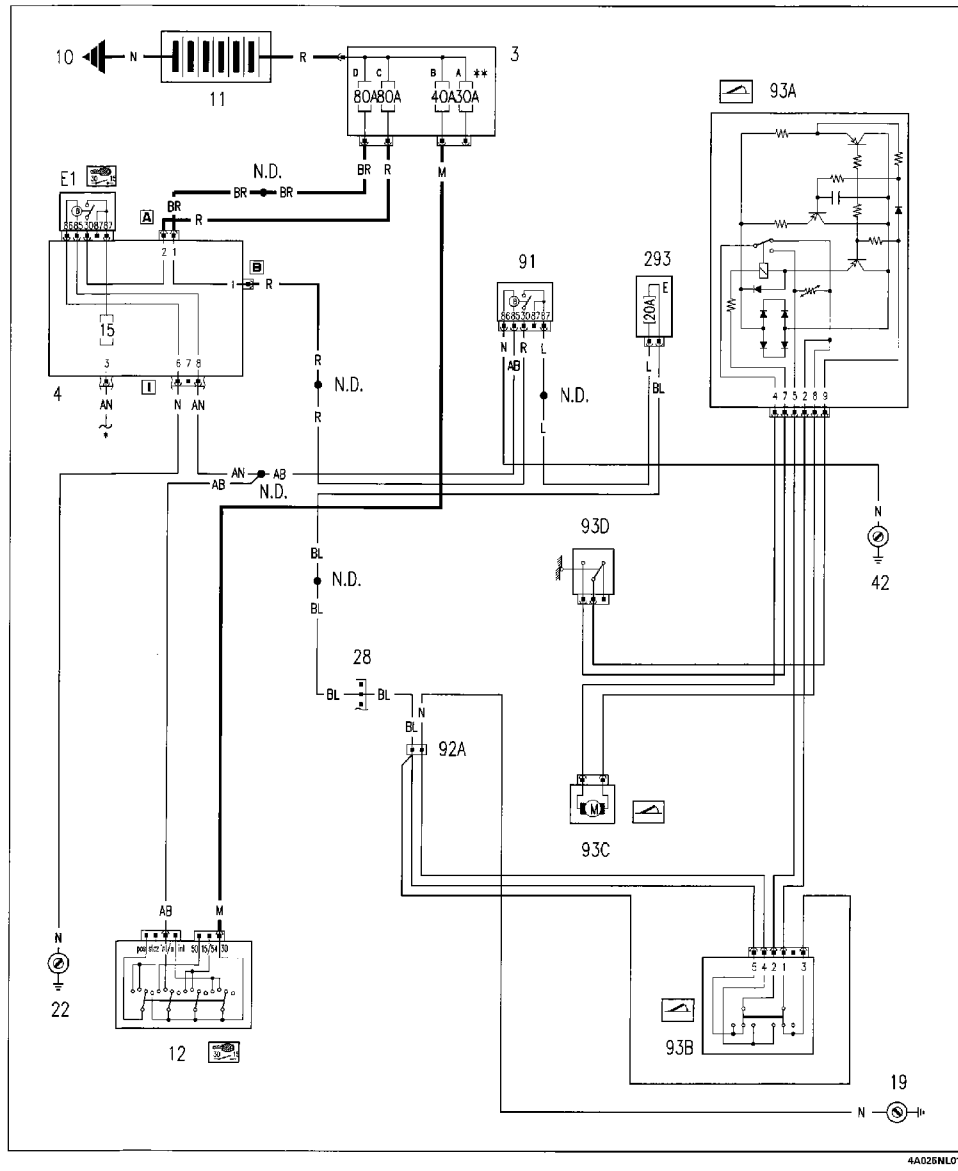
**Component key**

- |  |  |
|--|--|
| 3 Power fusebox:   | 43 Left headlamp alignment correction motor              |
| A 30A fuse protecting injection system (60A for TD versions) | 44 Right headlamp alignment correction motor             |
| B 40A fuse protecting ignition system                        | 45 Headlamp alignment control unit                       |
| C 80A fuse protecting optional equipment                     | 317 Main beam headlamp maintenance remote control switch |
| D 80A fuse protecting junction unit                          | N.D. Ultrasound welding taped in cable loom              |
| 4 Junction unit  |  |
| 7 Stalk unit:  |  |
| D Headlamp flasher button                                    |  |
| E Dipped/main beam headlamp control switch                   |  |
| F Side lights control switch                                 |  |
| 8 Left front earth   |  |
| 9 Right front earth  |  |
| 10 Battery earth on bodyshell                                |  |
| 11 Battery   |  |
| 12 Ignition switch   |  |
| 13 Connection between right/left front cables                |  |
| 22 Left facia earth  |  |



The cables concerned are marked in the wiring diagram with a square

**Electric sun-roof**

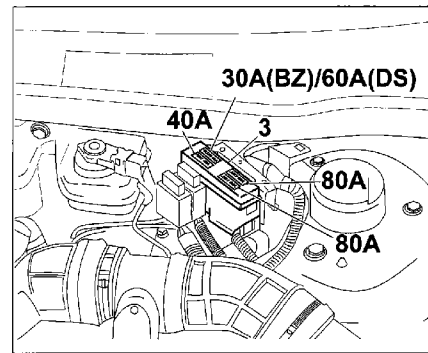


4A025NL01

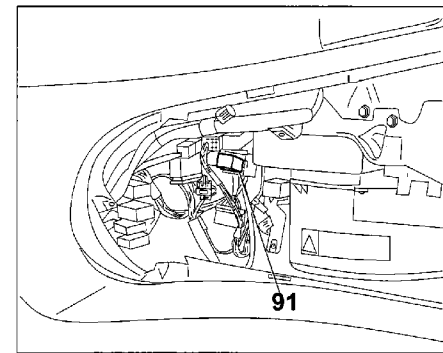
\* See air conditioning wiring diagram

\*\* 60A fuse for JTD versions

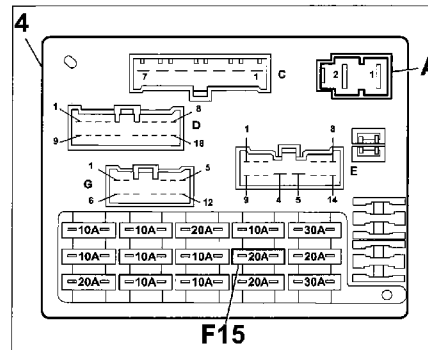
**Component location**



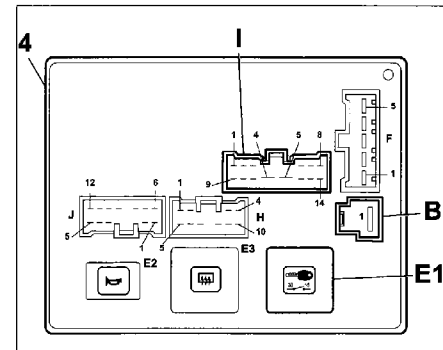
4A005NL02



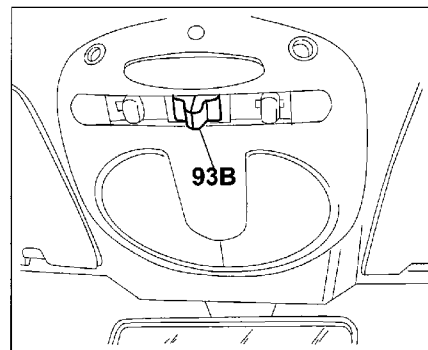
4A025NL03



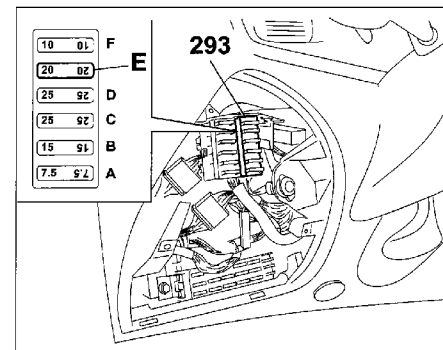
4A025NL04



4A025NL06

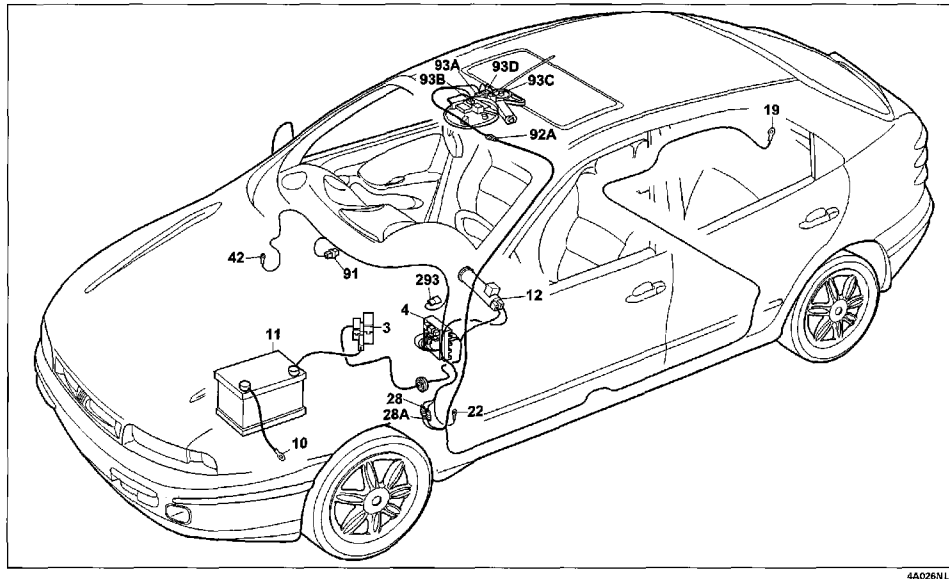


4A025NL05



4A025NL07

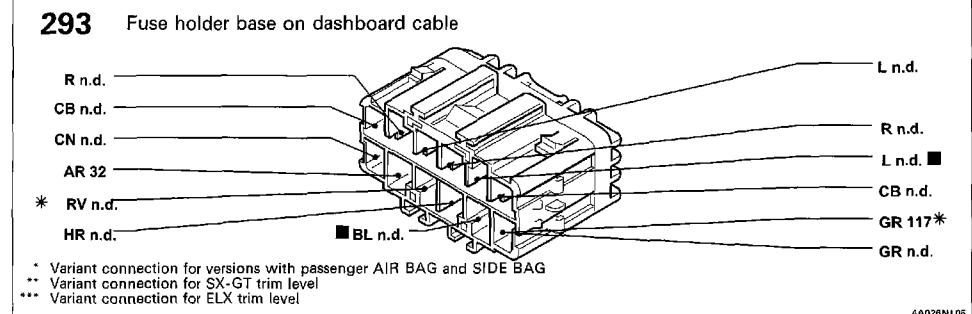
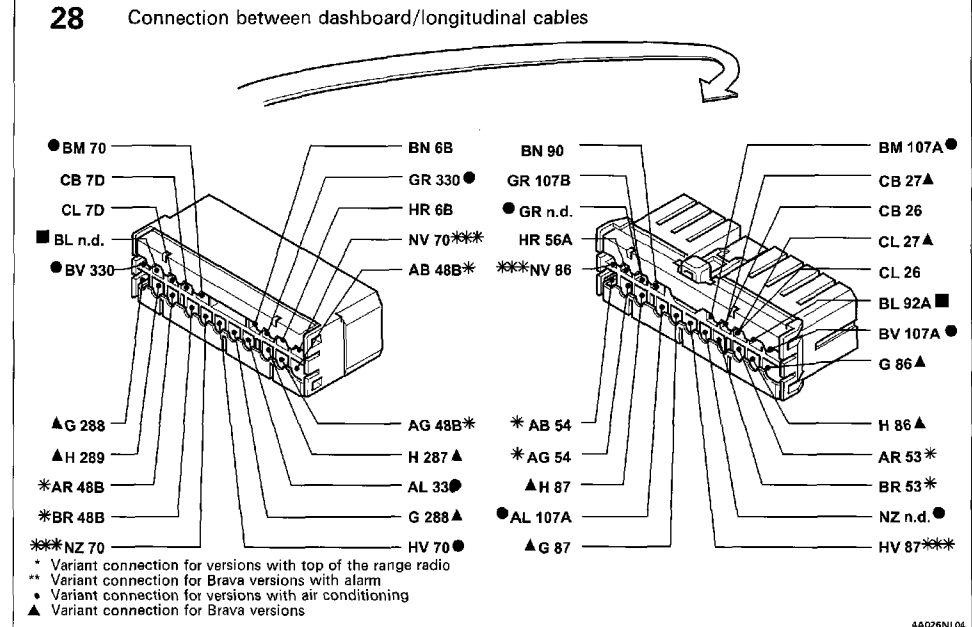
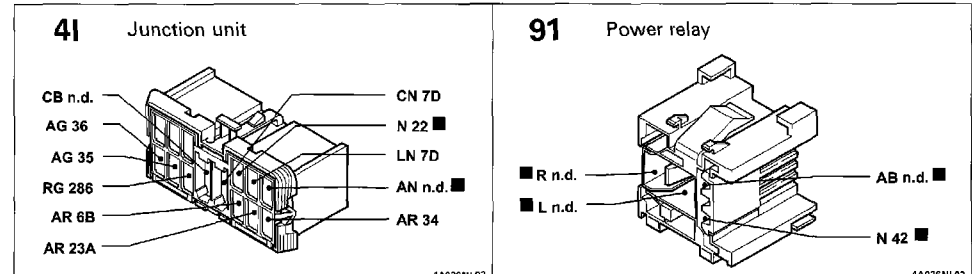
**55.**



**Electric sun-roof**

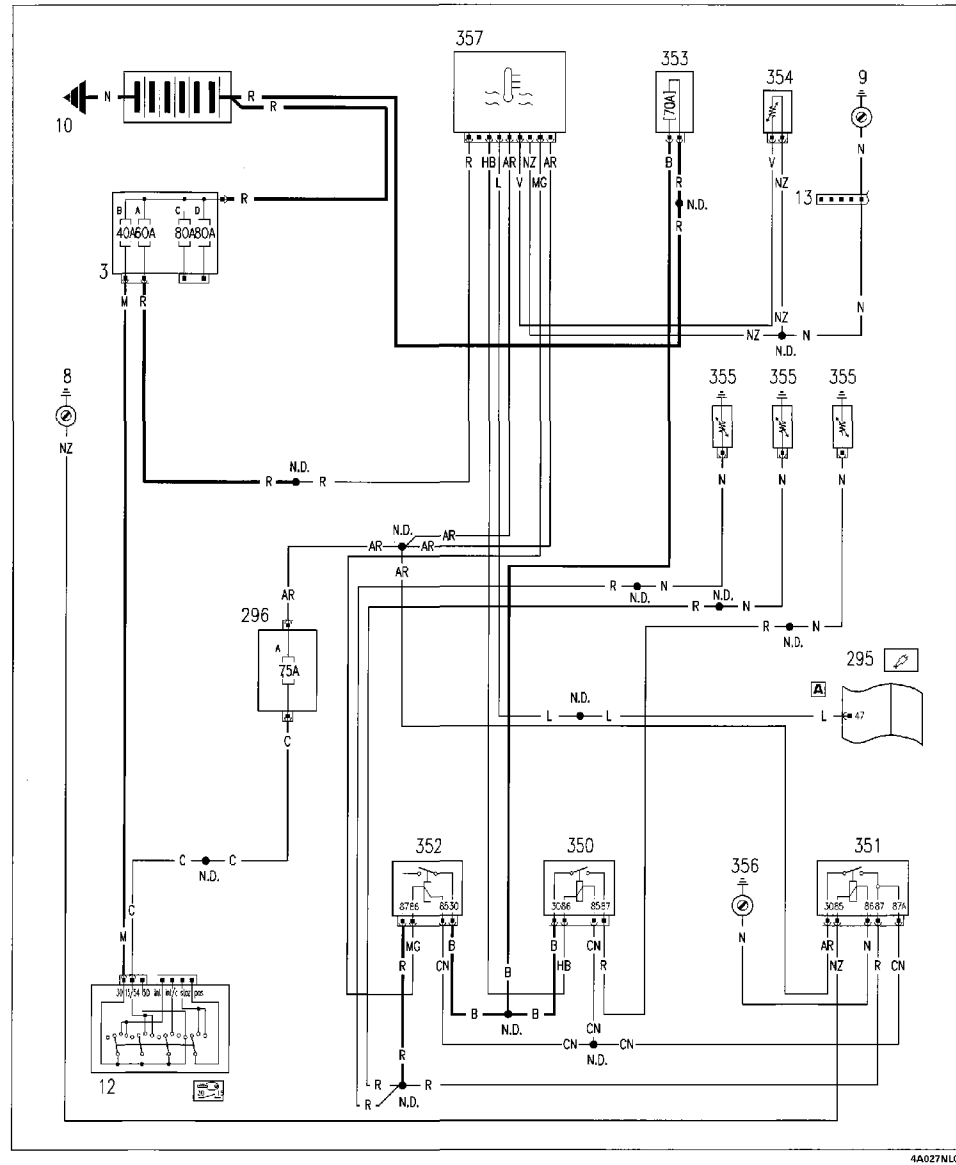
**Component key**

- 3 Power fusebox:
  - A 30A fuse protecting injection system (60A for TD versions)
  - B 40A fuse protecting ignition system
  - C 80A fuse protecting optional equipment
  - D 80A fuse protecting junction unit
- 4 Junction unit
  - E1 Switch discharge relay
- 10 Battery earth on bodyshell
- 11 Battery
- 12 Ignition switch
- 19 Right rear earth
- 22 Left facia earth
- 28 Connection between facia/longitudinal cables
- 42 Right dashboard earth
- 91 Power relay
- 92A Connection between cables and electric sun roof
- 93A Electric sun roof control unit
- 93B Electric sun roof control button
- 93C Electric sun roof motor
- 93D Electric sun roof end of travel switch
- 293 Fuse holder base on dashboard cable
  - E 20A fuse protecting current socket; Cigar lighter; Electric seats; Electric sun-roof
- N.D. Ultrasound welding taped in cable loom

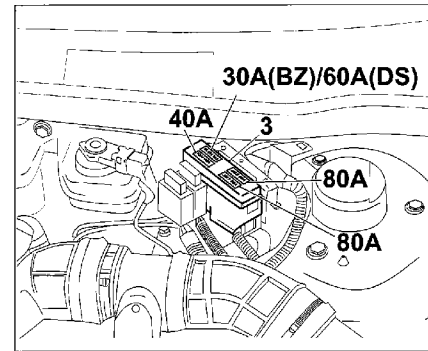


The cables concerned are marked in the wiring diagram with a square

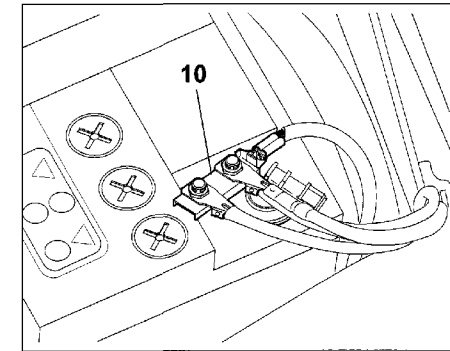
Additional heater



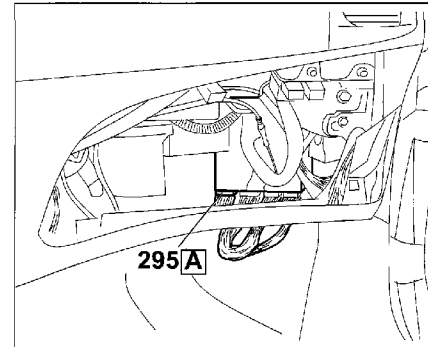
Component location



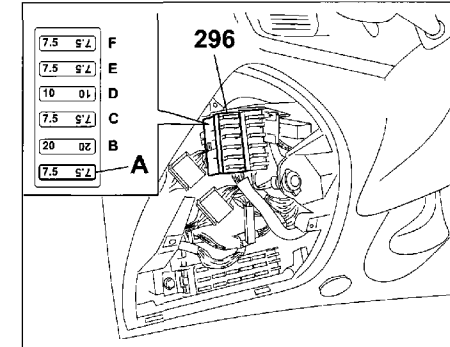
4A005NL02



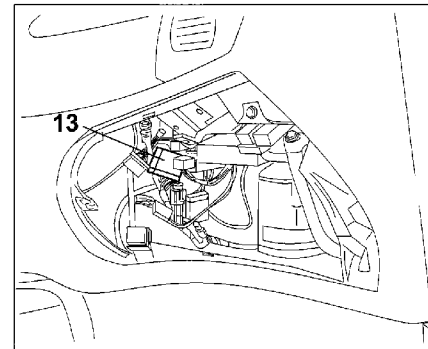
4A007NL03



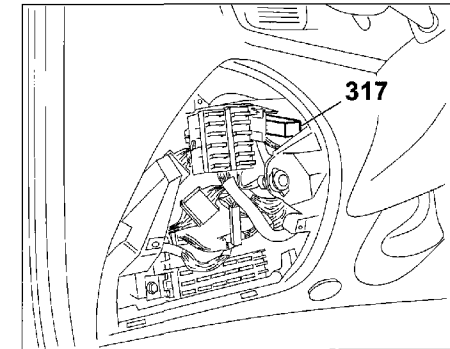
4A027NL04



4A027NL05

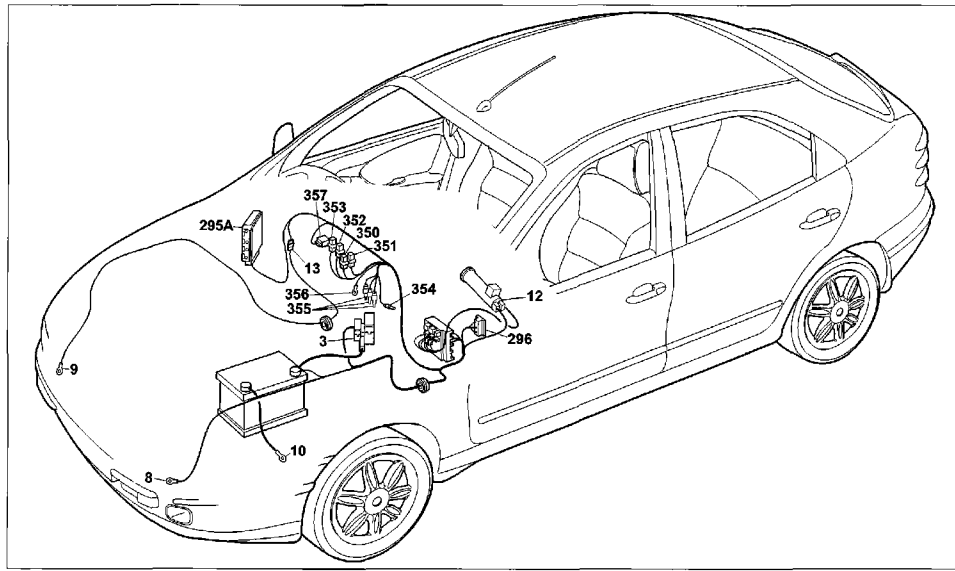


4A027NL06



4A005NL07

**55.**



4A028N101

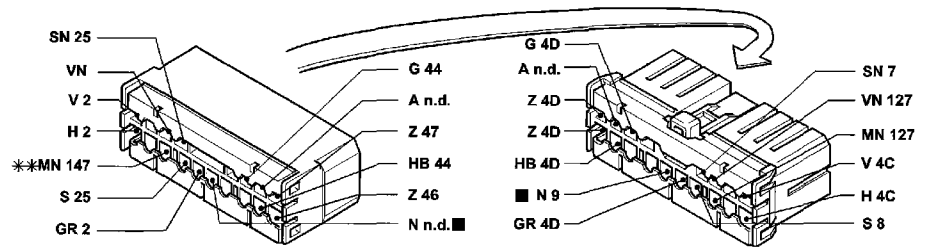
**Automatic heater**

**Component key**

- 3 Power fusebox:
  - A 30A fuse protecting injection system (60A for TD versions)
  - B 40A fuse protecting ignition system
  - C 80A fuse protecting optional equipment
  - D 80A fuse protecting junction unit
- 4 Junction unit
- E1 Switch discharge relay
- 8 Left front earth
- 9 Right front earth
- 10 Battery earth on bodyshell
- 11 Battery
- 12 Ignition switch
- 13 Connection between right/left front cables
- 295 Injection/ignition electronic control unit 1910 TD UNIJET
- 296 Fuse holder base on front cable
  - A 7.5A fuse protecting cooling system/injection; A.C. system; Alarm
- 350 Passenger compartment interior heater 30A relay
- 351 Passenger compartment interior heater safety relay

- 352 Passenger compartment interior heater 50A relay
- 353 70A fuse protecting passenger compartment interior heater plugs
- 354 N.T.C. sensor on heater supply pipe
- 355 Passenger compartment interior heater plugs
- 356 Heater plugs relay earth
- 357 Passenger compartment interior heater plugs control unit
- N.D. Ultrasound welding taped in cable loom

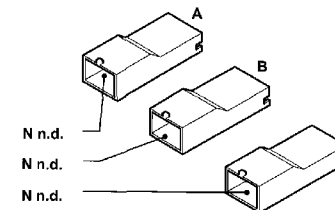
**13** Connections between right/left front cables



\*\* Variant connection for 1910 JTD versions

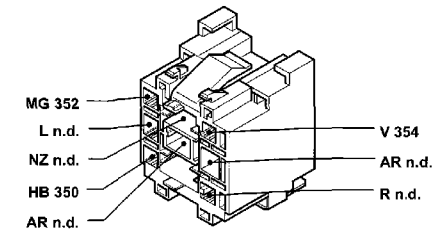
4A028N102

**355** Passenger compartment interior heater plugs (1910 JTD)



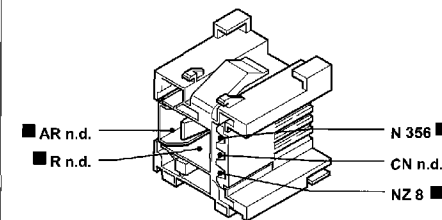
4A028N103

**357** Passenger compartment interior heater plugs control unit (1910 JTD)



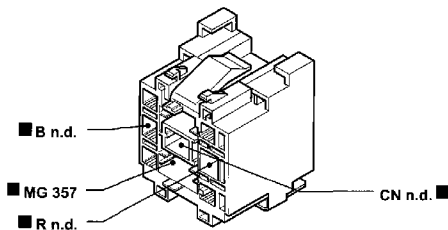
4A028N104

**351** Passenger compartment water heater relay



4A028N105

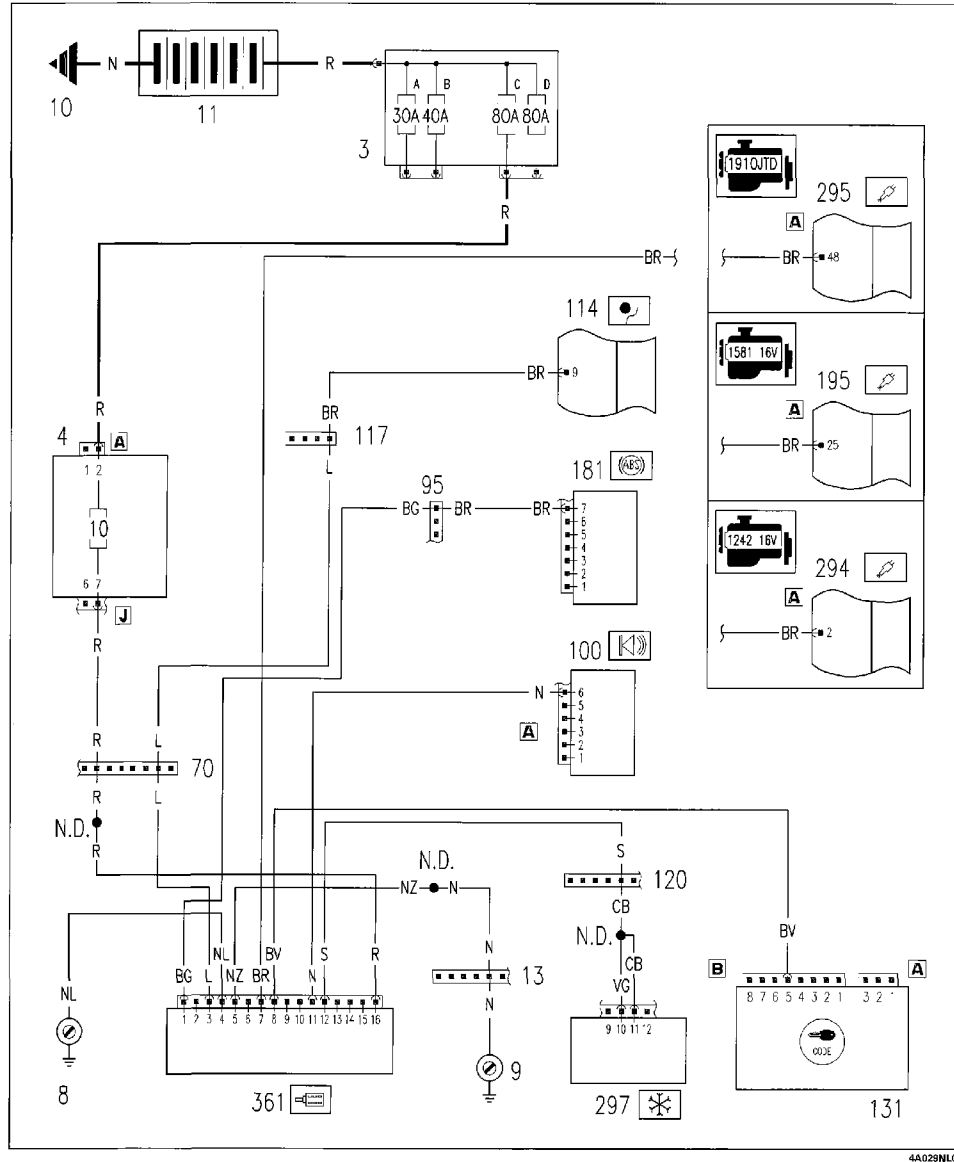
**352** Passenger compartment water heater 50A relay



4A028N106

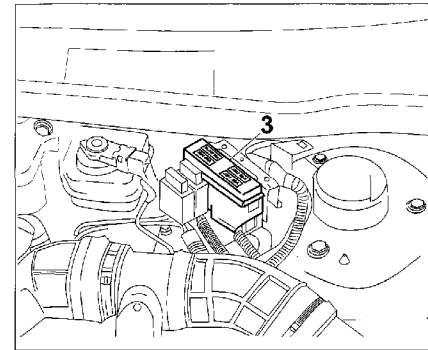
The cables concerned are marked in the wiring diagram with a square

**Diagnostic socket connections**

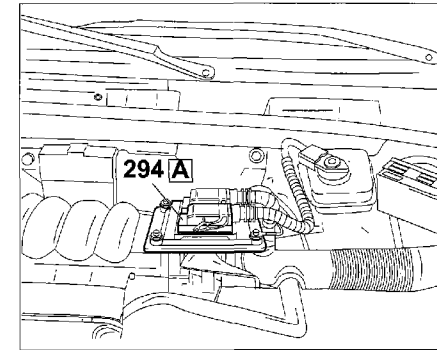


4A029NL01

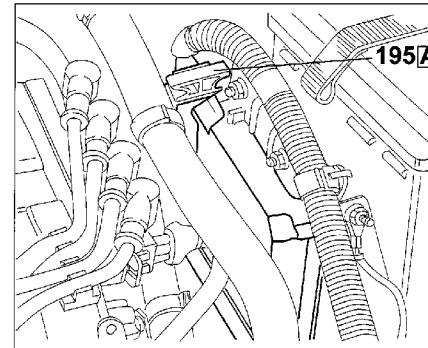
**Component location**



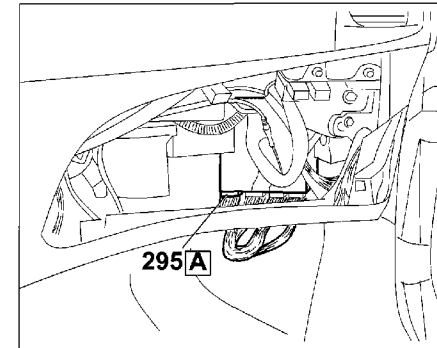
4A029NL02



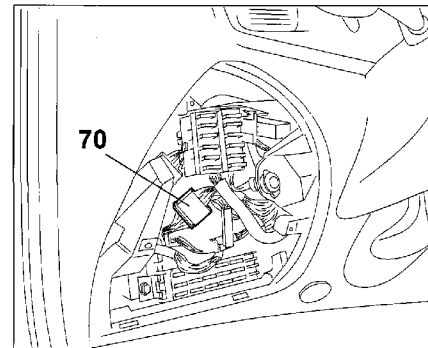
4A029NL03



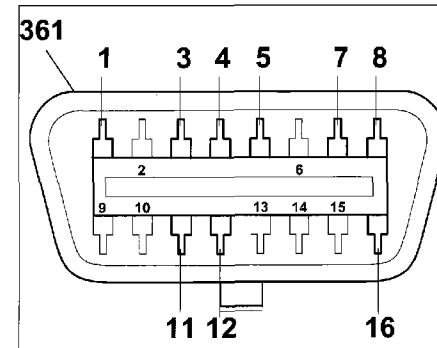
4A029NL04



4A029NL05



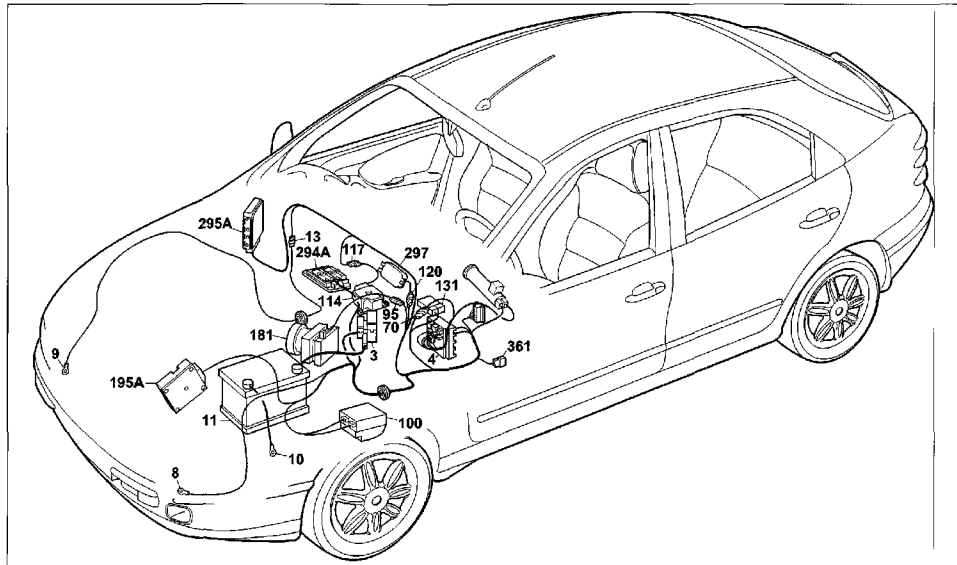
4A029NL06



4A029NL07



**55.**

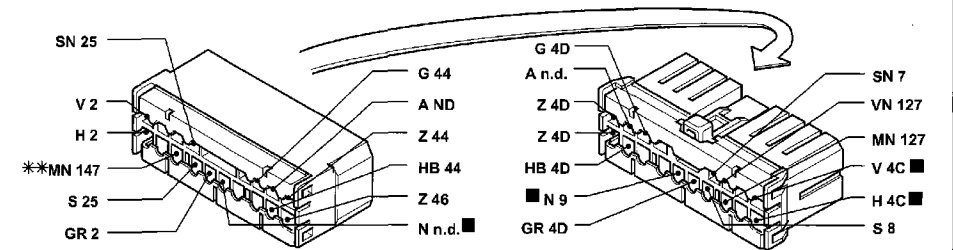


Diagnostic socket connections

**Component key**

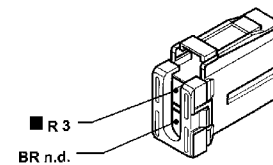
- |   |   |
|---|---|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit  | 195 Injection/ignition electronic control unit (1581)<br>294 Injection/ignition electronic control unit (1242)<br>295 Injection/ignition electronic control unit 1910 TD UNIJET<br>297 Air conditioning control unit<br>361 Diagnostic socket |
| 4 Junction unit<br>8 Left front earth<br>9 Right front earth<br>10 Battery earth on bodyshell<br>11 Battery   | N.D. Ultrasound welding taped in cable loom   |
| 13 Connection between right/left front cables<br>70 Connection between facia/front leads<br>95 Connection between front cables/anti-lock brakes (A.B.S.)<br>100 Anti-theft electronic control unit<br>114 EURO BAG electronic control unit<br>117 Connection between EURO BAG/dashboard cables<br>131 Fiat CODE electronic control unit<br>181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.) |   |

**13** Connection between right/left front cables



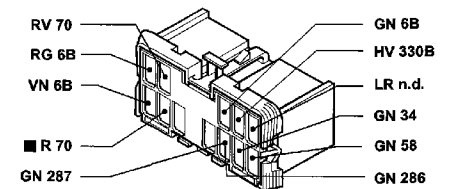
4A030NLO2

**4A** Junction unit



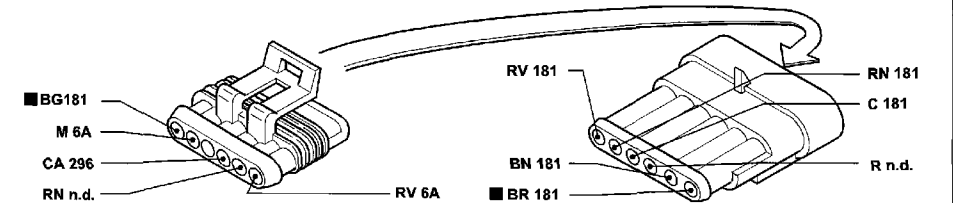
4A030NLO3

**4J** Junction unit



4A030NLO4

**95** Cable connection

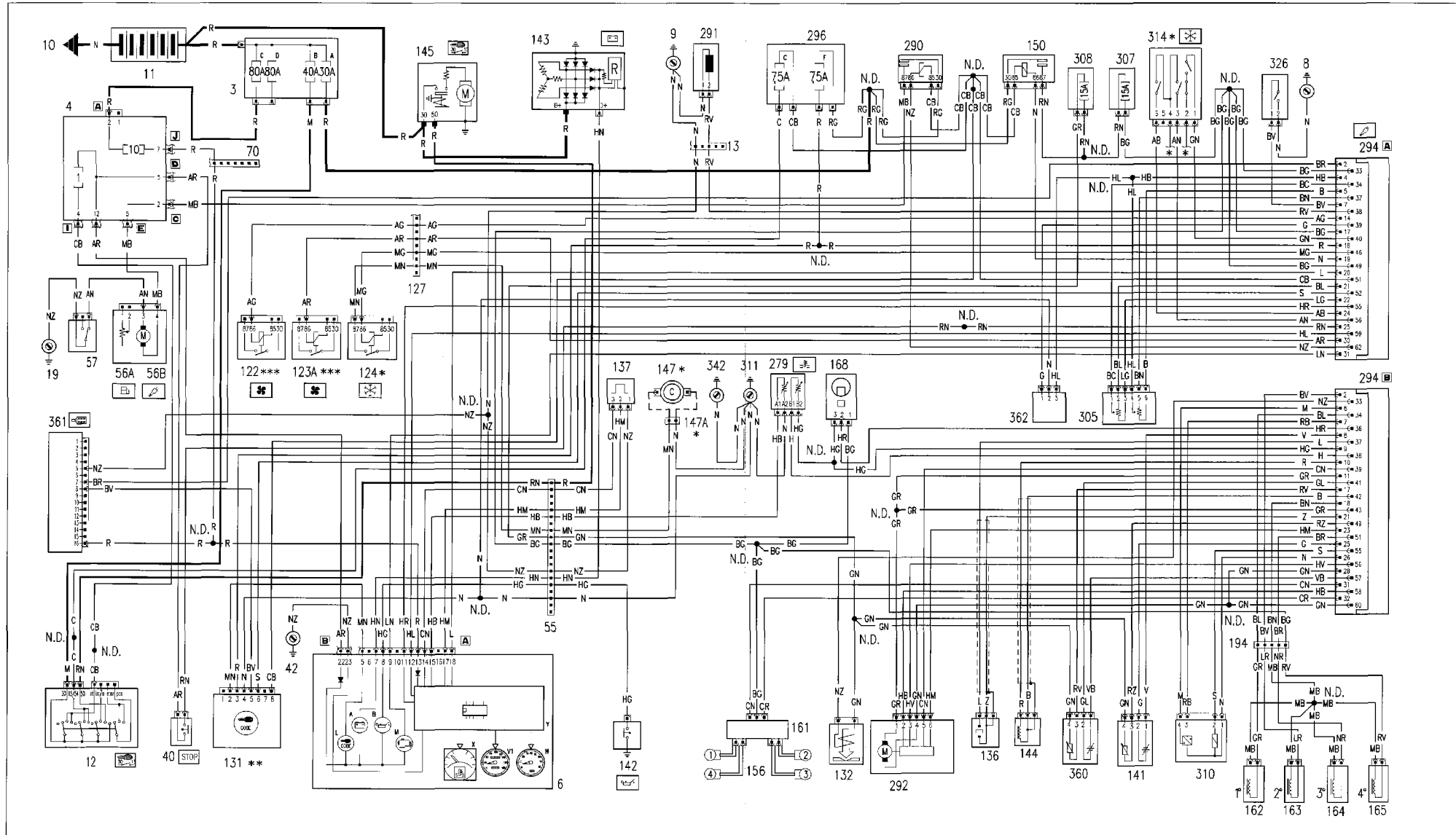


4A030NLO5

The cables concerned are marked in the wiring diagram with a square

55.

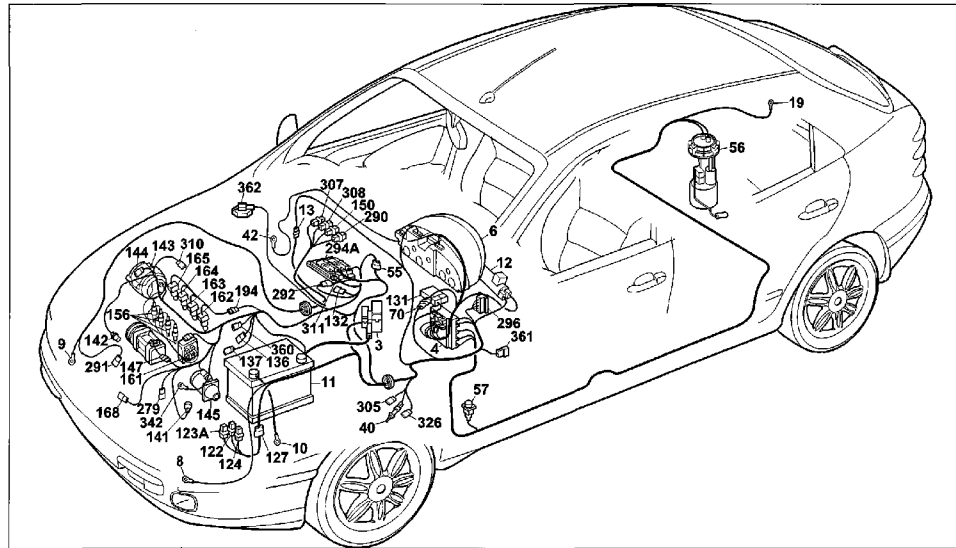
Starting - Injection and ignition - Recharging and warning light - Insufficient engine oil pressure warning light - Injection system failure - Rev counter - Speedometer - Engine coolant temperature gauge - Fiat CODE warning light



\* See air conditioning wiring diagram

\*\* See Fiat CODE wiring diagram

\*\*\* See engine cooling wiring diagram



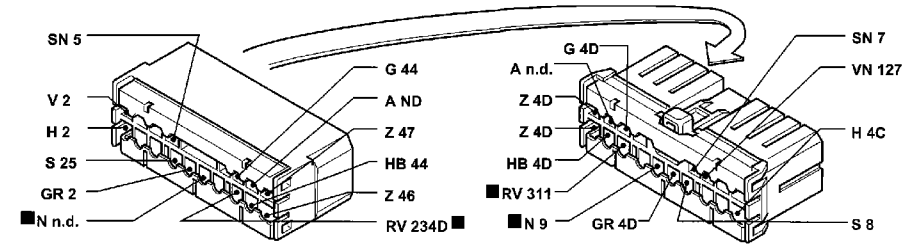
Starting - Injection and ignition - Recharging and warning light - Insufficient engine oil pressure warning light - Injection system failure - Rev counter - Speedometer - Engine coolant temperature gauge - Fiat CODE failure warning light

Component key

- |   |   |
|---|---|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit  | 131 Fiat-CODE electronic control unit<br>132 Petrol vapour cut out solenoid valve (canister)<br>136 Detonation sensor<br>137 Vehicle speed sensor<br>141 Heated Lambda sensor<br>142 Switch indicating insufficient engine oil pressure<br>143 Alternator<br>144 Rpm and T.D.C. sensor<br>145 Starter motor<br>147 Compressor for air conditioning<br>147A Coupling for air conditioning compressor<br>150 Injection system relay feed<br>156 Spark plugs<br>161 Ignition power module<br>162 Injector (1°)<br>163 Injector (2°)<br>164 Injector (3°)<br>165 Injector (4°)<br>168 Timing sensor<br>194 Connection between injection cables/injector bridge<br>279 Engine coolant temperature twin sender unit<br>290 Electric fuel pump relay feed<br>291 Sensor for power assisted steering pump<br>292 Modular actuator<br>294 Injection/ignition control unit 1242 16V<br>296 Fuse holder base on front cable (C and F)<br>305 Potentiometer on accelerator pedal<br>307 ISA fuse protecting injection system<br>308 ISA fuse protecting canister valves<br>310 Absolute pressure and temperature sensor<br>311 Engine pre-wiring earth<br>314 4 stage pressure switch<br>326 Switch on clutch<br>342 Power earth for electronic injection<br>360 Rear Lambda sensor<br>361 Diagnostic socket<br>362 Accelerometer |
| 4 Junction box<br>6 Instrument panel<br>A Battery recharging warning light<br>B Low engine oil pressure warning light<br>L Fiat-CODE failure warning light<br>M Injection system failure warning light petrol/diesel<br>X Engine coolant temperature gauge<br>Y Electronic module<br>V1 Speedometer<br>W Rev counter  | 311 Engine pre-wiring earth<br>314 4 stage pressure switch<br>326 Switch on clutch<br>342 Power earth for electronic injection<br>360 Rear Lambda sensor<br>361 Diagnostic socket<br>362 Accelerometer  |
| 8 Left front earth<br>9 Right front earth<br>10 Battery earth on bodyshell<br>11 Battery<br>12 Ignition switch<br>13 Connection between right/left front cables<br>19 Right rear earth<br>40 Brake light control switch<br>42 Right dashboard earth<br>55 Connection between front cables/fuel gauge<br>56 Fuel level gauge control unit<br>A Fuel level sensor<br>B Electric fuel pump | 311 Engine pre-wiring earth<br>314 4 stage pressure switch<br>326 Switch on clutch<br>342 Power earth for electronic injection<br>360 Rear Lambda sensor<br>361 Diagnostic socket<br>362 Accelerometer  |
| 57 Inertia switch<br>70 Connection between facia/front leads<br>122 Engine cooling fan low speed relay feed<br>123A Engine cooling fan high speed relay feed<br>124 Air conditioning compressor relay feed<br>127 Connection between front left cable/cable on relay holder bracket   | 311 Engine pre-wiring earth<br>314 4 stage pressure switch<br>326 Switch on clutch<br>342 Power earth for electronic injection<br>360 Rear Lambda sensor<br>361 Diagnostic socket<br>362 Accelerometer  |

55.

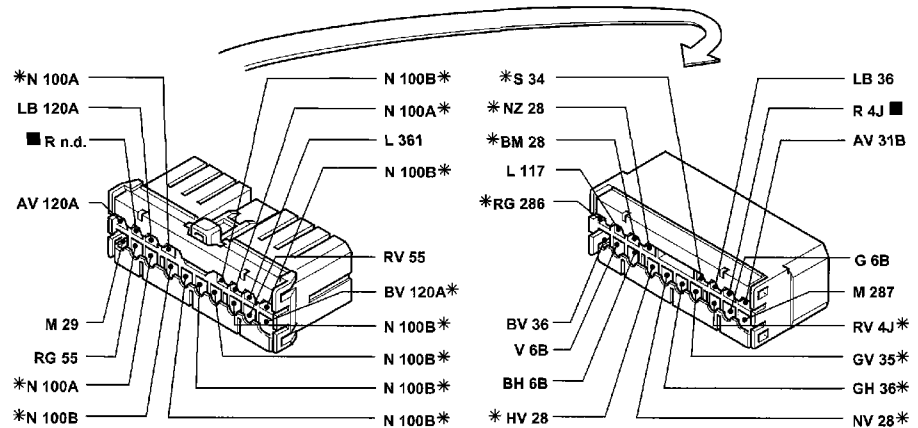
13 Connection between right/left front cables



\*\* Variant connection for 1910 JTD versions

4A032NL02

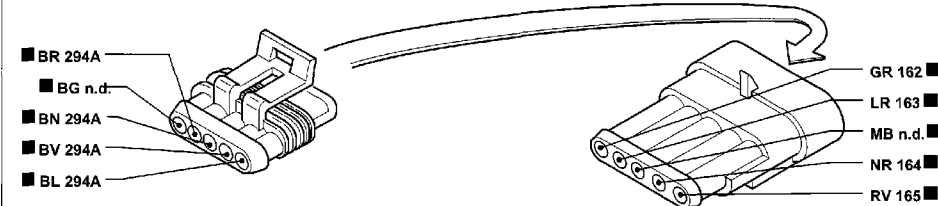
70 Connection between dashboard/front cables Trim level: SX-GT



\* Variant connection for versions with alarm

4A032NL03

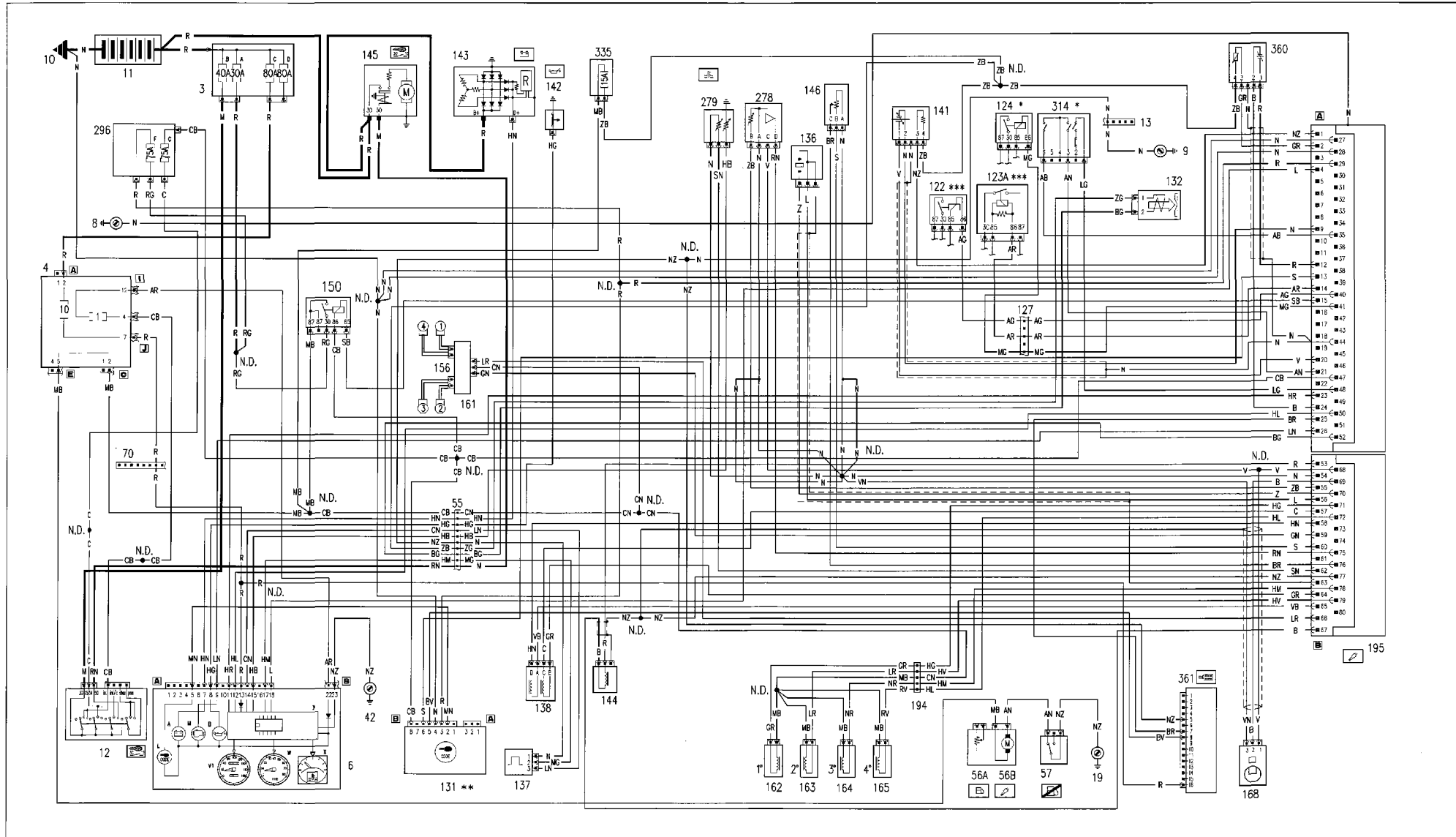
194 Connection for heater unit cables



4A032NL04

The cables concerned are marked in the wiring diagram with a square

Starting - Electronic injection and ignition - Recharging and warning light - Insufficient engine oil pressure warning light - Injection system failure - Rev counter - Speedometer - Engine coolant temperature gauge - Fiat CODE failure warning light

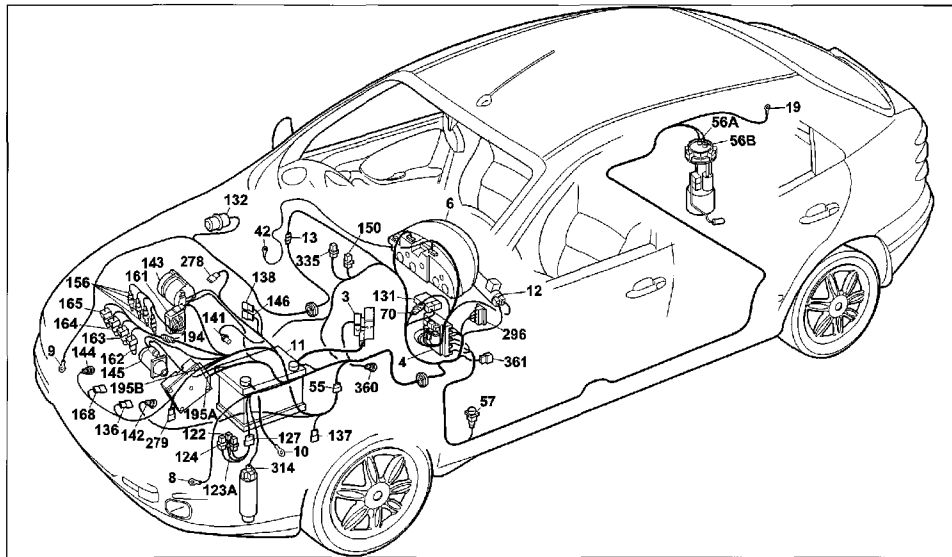


\* See air conditioning wiring diagram

\*\* See Fiat CODE wiring diagram

\*\*\* See engine cooling wiring diagram

**55.**



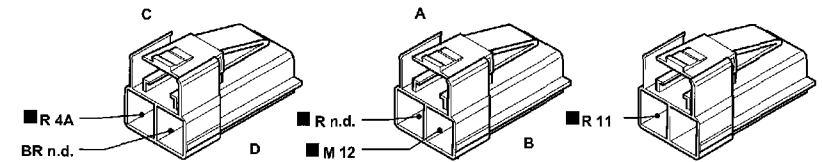
4A034NL01

Starting - Ignition and IAW 49F injection - Recharging and warning light - Insufficient engine oil pressure warning light - Injection system failure - Rev counter - Speedometer - Engine coolant temperature gauge - Fiat CODE failure warning light

**Component key**

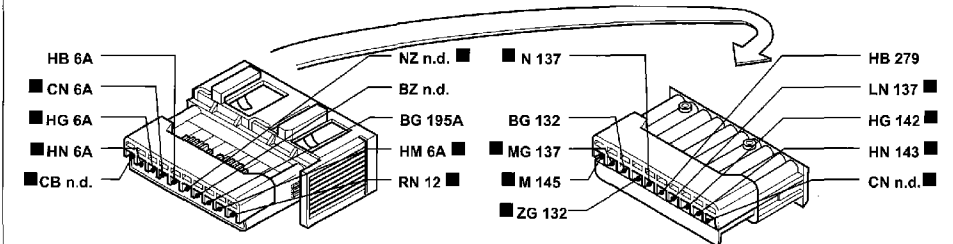
- |  |   |
|--|---|
| <p>3 Power fusebox:<br/>A 30A fuse protecting injection system (60A for TD versions)<br/>B 40A fuse protecting ignition system<br/>C 80A fuse protecting optional equipment<br/>D 80A fuse protecting junction unit</p> <p>4 Junction unit</p> <p>6 Instrument panel<br/>A Battery recharging warning light<br/>B Low engine oil pressure warning light<br/>L Fiat-CODE failure warning light<br/>N Injection system failure warning light<br/>Y Electronic module<br/>V1 Speedometer<br/>W Rev counter</p> <p>8 Left front earth<br/>9 Right front earth<br/>10 Battery earth on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>13 Connection between right/left front cables<br/>19 Right rear earth<br/>42 Right dashboard earth<br/>55 Connection between front cables/fuel gauge<br/>56 Fuel level gauge control unit<br/>A Fuel level sensor<br/>B Electric fuel pump</p> <p>57 Inertia switch<br/>70 Connection between facia/front leads<br/>122 Engine cooling fan low speed relay feed<br/>123A Engine cooling fan high speed relay feed<br/>124 Air conditioning compressor relay feed<br/>127 Connection between front left cable/cable on relay holder bracket</p> | <p>131 Fiat-CODE electronic control unit<br/>132 Petrol vapour cut out solenoid valve (canister)<br/>136 Detonation sensor<br/>137 Vehicle speed sensor<br/>138 Idle adjustment actuator<br/>141 Heated Lambda sensor<br/>142 Switch indicating insufficient engine oil pressure<br/>143 Alternator<br/>144 Rpm and T.D.C. sensor<br/>145 Starter motor<br/>146 Potentiometer on throttle valve<br/>150 Injection system relay feed<br/>156 Spark plugs<br/>161 Ignition power module<br/>162 Injector (1")<br/>163 Injector (2")<br/>164 Injector (3")<br/>165 Injector (4")<br/>168 Timing sensor<br/>194 Connection between injection cables/injector bridge<br/>195 Injection/ignition electronic control unit (1581)<br/>278 Integrated air temperature/pressure sender unit<br/>279 Engine coolant temperature twin sender unit<br/>296 Fuse holder base on front cable (C and F)<br/>C 7.5A fuse protecting Fiat CODE cooling system/electronic injection<br/>F 7.5A fuse protecting injection system/Fiat CODE</p> <p>314 4 stage pressure switch<br/>360 Rear Lambda sensor<br/>361 Diagnostic socket</p> <p>N.D. Ultrasound welding taped in cable loom</p> |
|--|---|

**3 Power fusebox**



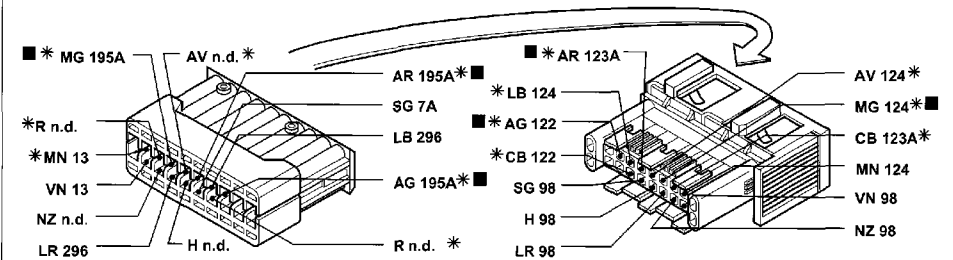
4A034NL02

**55 Connection between front cables/fuel level gauge**



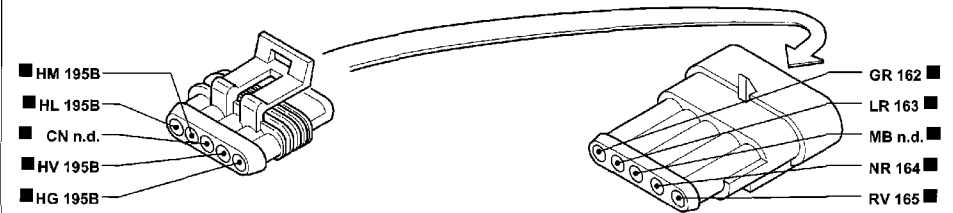
4A034NL03

**127 Connection between front left cables/cable on relay holder bracket**



4A034NL04

**194 Connection between injection cables/injector bridge**

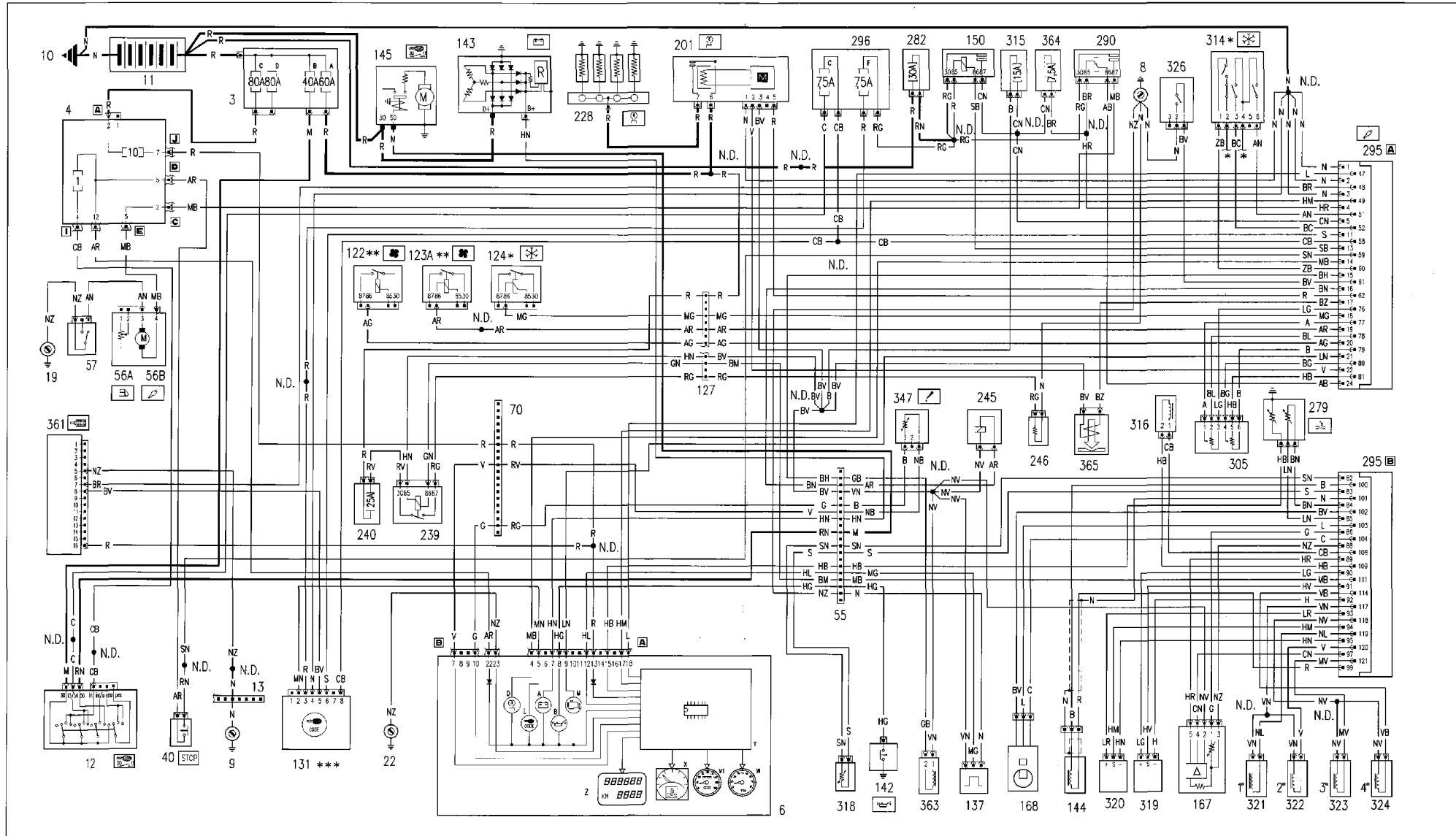


4A034NL05

The cables concerned are marked in the wiring diagram with a square

**55.**

Starting - Electronically operated diesel pump - Recharging and warning light - Insufficient engine oil pressure warning light - Heater plugs warning light - Rev counter - Speedometer - Engine coolant temperature gauge - Fiat CODE failure warning light



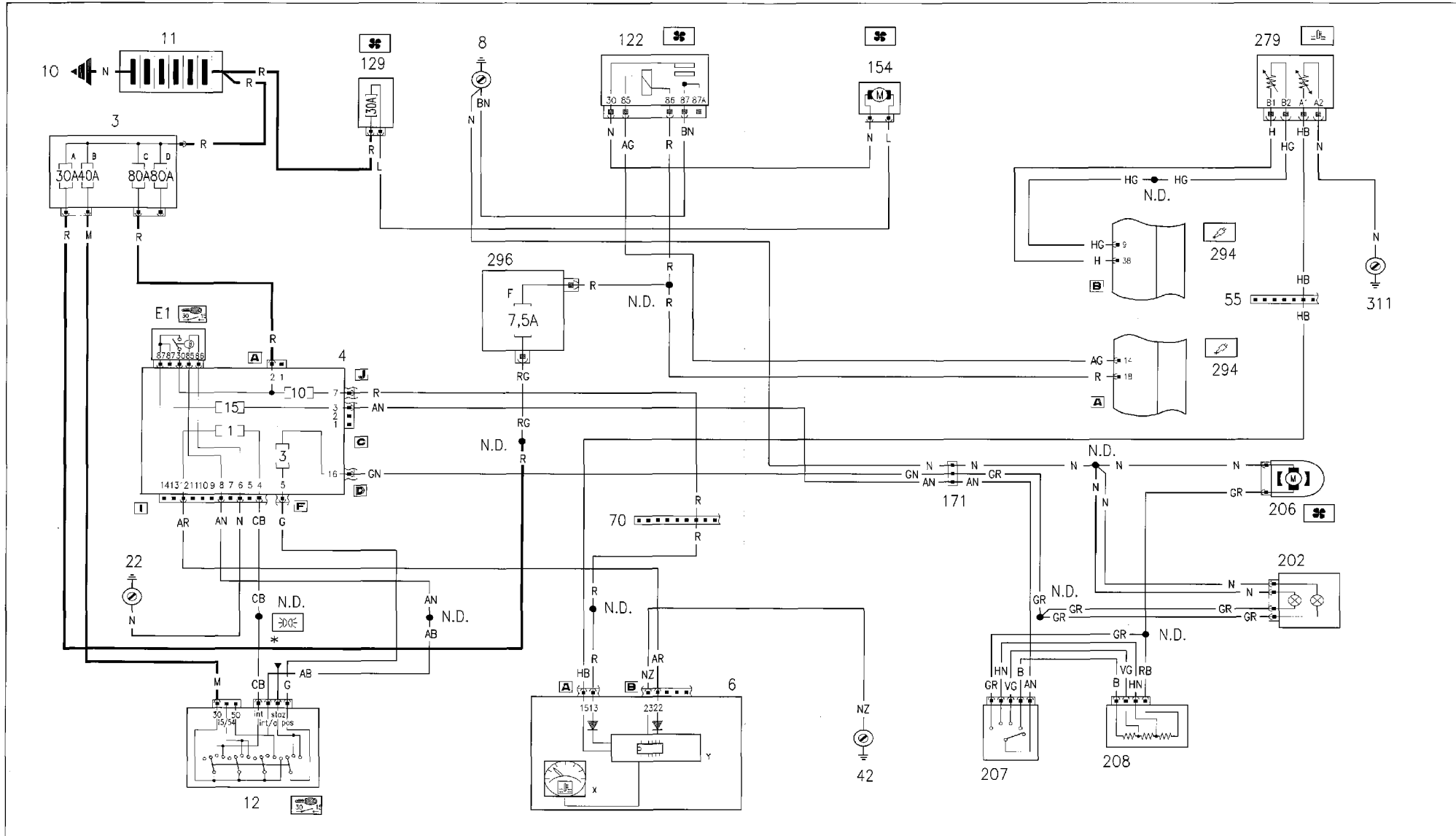
\* See air conditioning wiring diagram

\*\* See engine cooling wiring diagram

\*\*\* See Fiat CODE wiring diagram

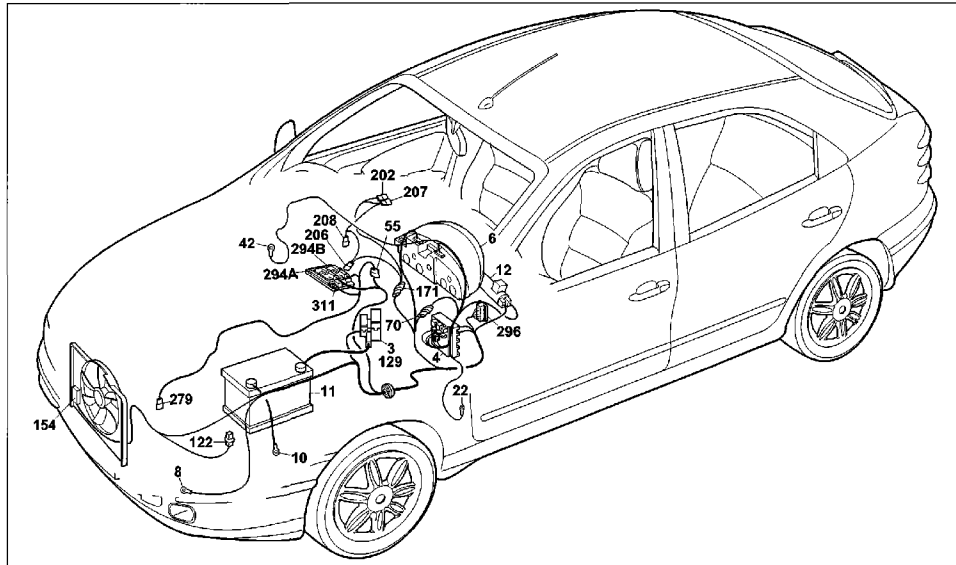


Version without automatic air conditioning:  
Engine cooling with one fan - Engine coolant temperature gauge - Vehicle interior ventilation - Heater/air conditioning lighting



\* See side lights wiring diagram





4A03BNL01

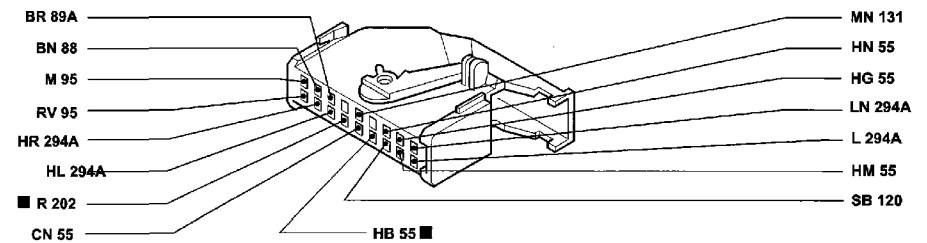
Version without automatic air conditioning:  
Engine cooling with one fan - Engine coolant temperature gauge - Vehicle interior ventilation - Heater/air conditioning lighting

Component key

- |   |   |
|---|---|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting additional extras<br>D 80A fuse protecting junction unit | 122 Engine cooling fan low speed relay feed<br>129 30A power fuse protecting engine cooling fan                                 |
| 4 Junction unit<br>E1 Switch discharge relay  | 154 Engine cooling fan<br>171 Heater unit   |
| 6 Instrument panel:<br>X Engine coolant temperature gauge<br>Y Electronic module  | 202 Heater/air conditioning bulbs<br>206 Heater/air conditioning fan<br>207 Heater/air conditioning system speed control switch |
| 8 Left front earth  | 208 Heater/air conditioning system limit resistor   |
| 10 Battery earth on bodyshell   | 279 Engine coolant temperature twin sender unit   |
| 11 Battery  | 294 Injection/ignition electronic control unit (1242)   |
| 12 Ignition switch  | 296 Fuse holder base on front cable<br>F 7.5A fuse protecting electronic injection system/Fiat-CODE                             |
| 22 Left facia earth   | 311 Engine pre-wiring earth 1242 16V  |
| 42 Right dashboard earth  |   |
| 55 Connection between front cables/fuel level gauge   |   |
| 70 Connection between facia/front leads   |   |
- N.D. Ultrasound welding taped in cable loom

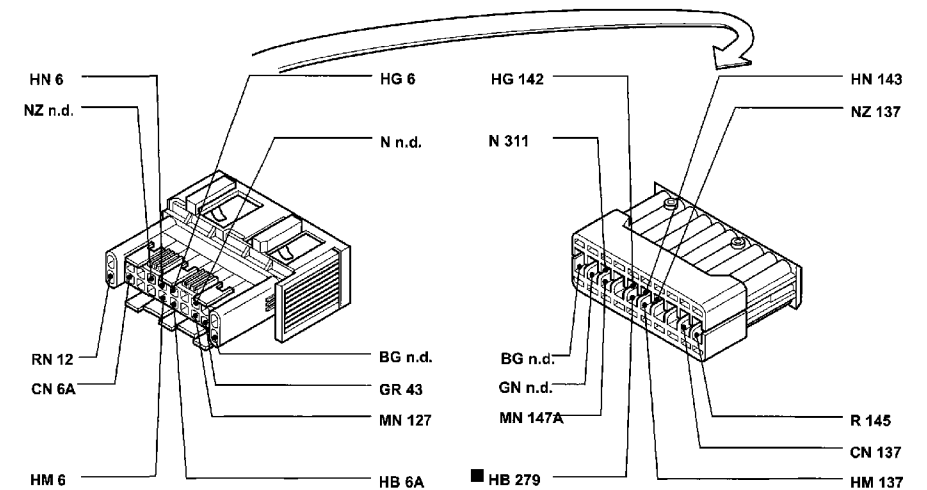
55.

6A Instrument panel



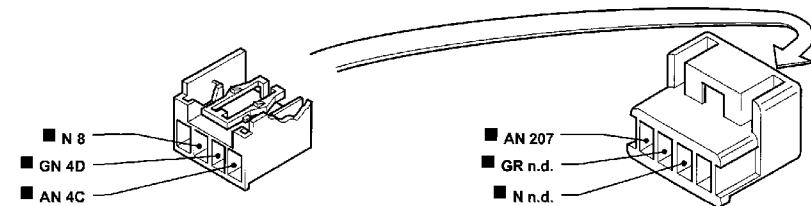
4A03BNL02

55 Connection between right front cables/engine pre-wiring



4A03BNL03

171 Connection for heater unit cables



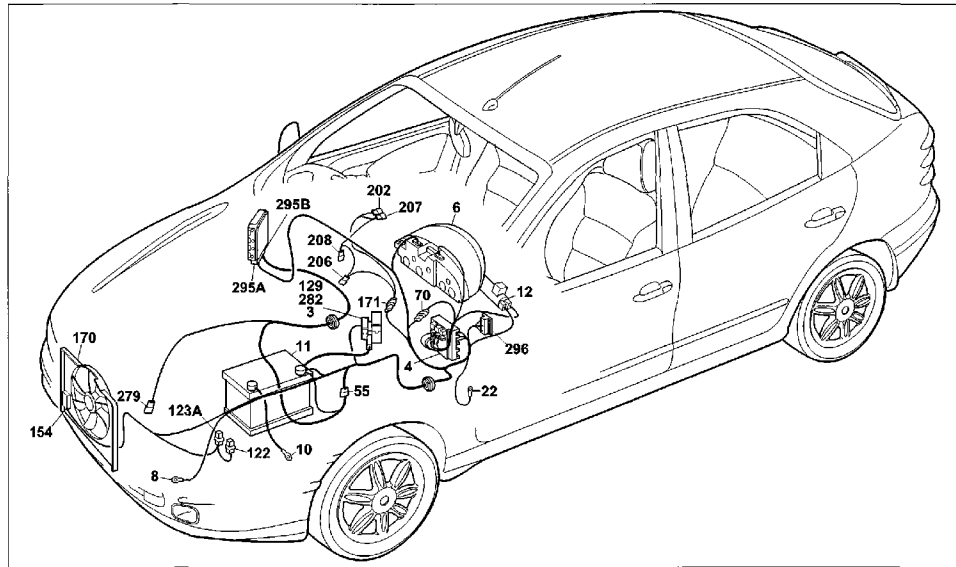
4A03BNL04

The cables concerned are marked in the wiring diagram with a square









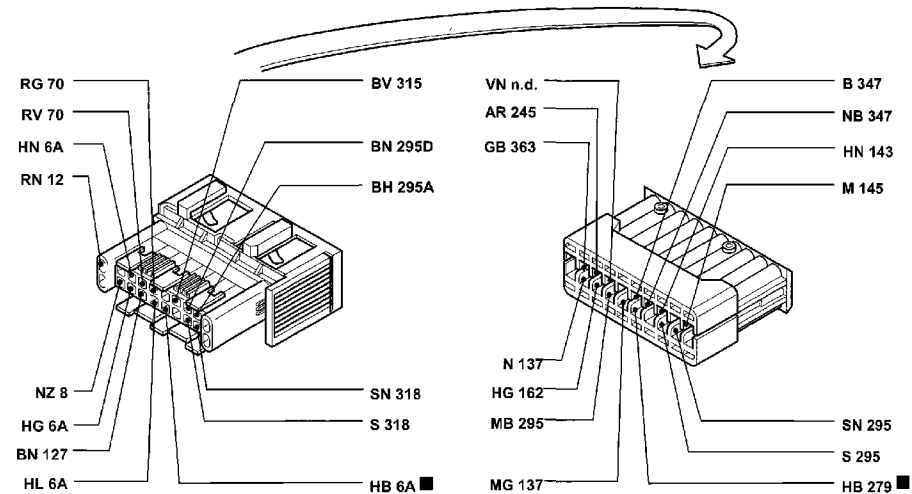
Engine cooling with one fan - Engine coolant temperature gauge - Vehicle interior ventilation - Heater/air conditioning lighting

**Component key**

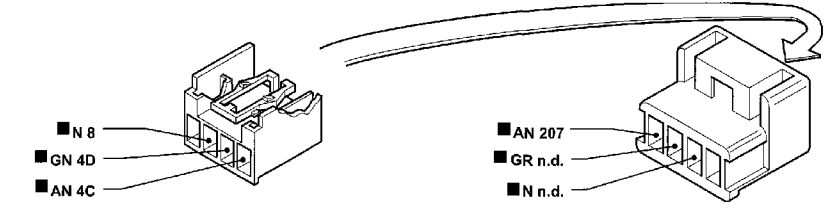
- |  |   |
|--|---|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit | 129 50A power fuse protecting engine cooling fan                        |
| 4 Junction unit<br>E1 Switch discharge relay   | 154 Engine cooling fan  |
| 6 Instrument panel:<br>X Engine coolant temperature gauge<br>Y Electronic module   | 170 Engine cooling fan limit resistor                                   |
| 8 Left front earth   | 171 Connection for heater unit cables                                   |
| 10 Battery earth on bodyshell  | 202 Heater/air conditioning bulbs                                       |
| 11 Battery   | 202 Heater/air conditioning fan   |
| 12 Ignition switch   | 208 Heater/air conditioning system limit resistor                       |
| 22 Left facia earth  | 279 Engine coolant temperature twin sender unit                         |
| 55 Connection between front cables/fuel level gauge  | 282 7.5A fuse protecting Fiat CODE/electronic injection (60 for UNIJET) |
| 70 Connection between facia/front leads  | 295 Injection/ignition electronic control unit 1910 TD UNIJET           |
| 122 Engine cooling fan low speed relay feed  | 296 Fuse holder base on front cable                                     |
| 123A Engine cooling fan high speed relay feed  | F 7.5A fuse protecting electronic injection system/Fiat-CODE            |
|  | N.D. Ultrasound welding taped in cable loom                             |

**55.**

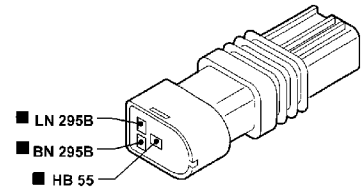
**55** Connection between front cables/engine pre-wiring



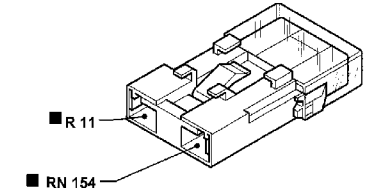
**171** Connection for heater unit cables



**279** Engine coolant temperature twin sender unit (1910 JTD)

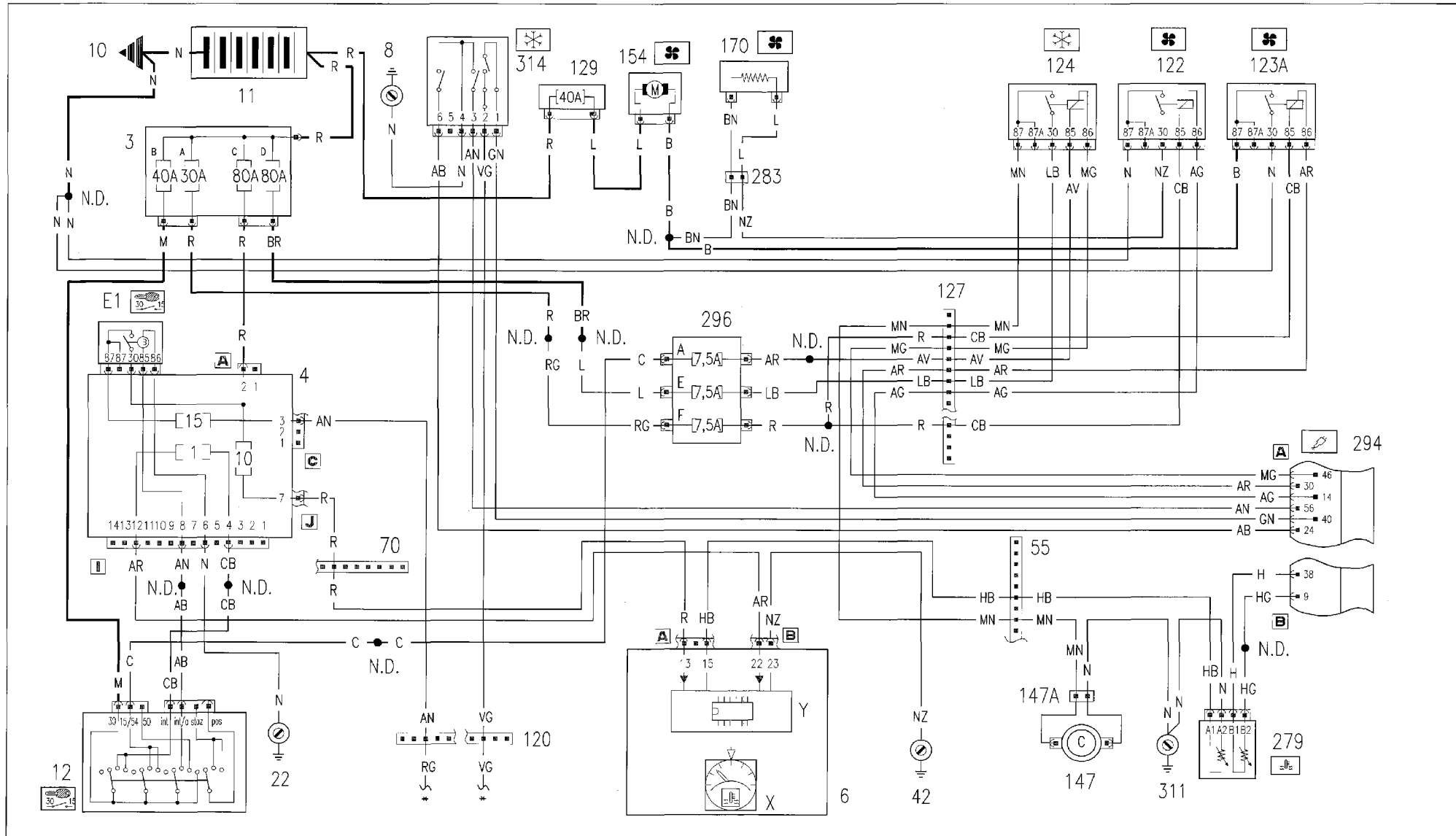


**129** Power fuse protecting engine cooling fan (1910 JTD without air conditioning)

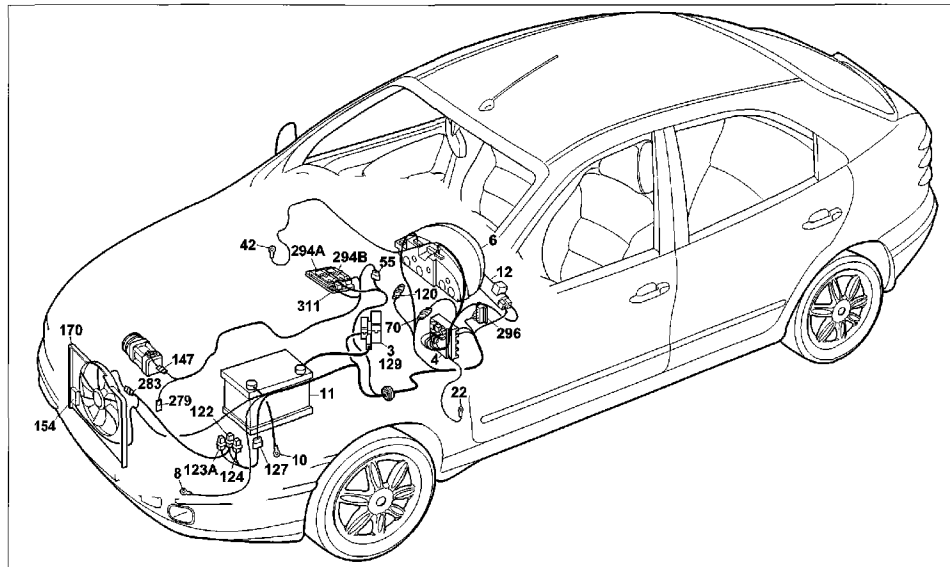


The cables concerned are marked in the wiring diagram with a square

Version with automatic air conditioning:  
Engine cooling with one fan - Engine coolant temperature gauge



\* See air conditioning wiring diagram



4A044N1.01

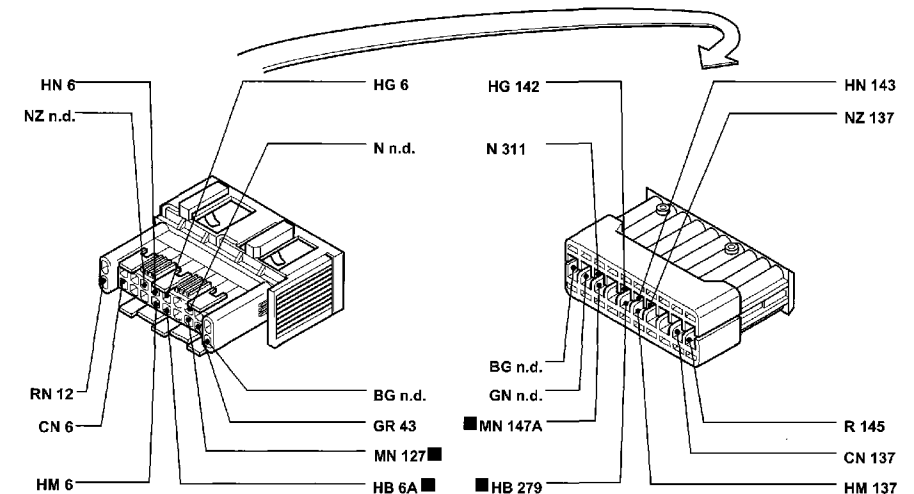
Version with automatic air conditioning:  
Engine cooling with one fan - Engine coolant temperature gauge

Component key

- |   |   |
|---|---|
| 3 Power fusebox:<br>A 30A fuse protecting injection system<br>(60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit | 127 Connection between front left cable/cable<br>on relay holder bracket              |
| 4 Junction unit<br>E1 Switch discharge relay  | 129 50A power fuse protecting engine cooling<br>fan                                   |
| 6 Instrument panel:<br>X Engine coolant temperature gauge<br>Y Electronic module  | 147 Compressor for air conditioning   |
| 8 Left front earth  | 154 Engine cooling fan  |
| 10 Battery earth on bodyshell   | 170 Engine cooling fan limit resistor   |
| 11 Battery  | 279 Engine coolant temperature twin sender<br>unit                                    |
| 12 Ignition switch  | 283 Cable connection on mounting<br>bracket/resistor                                  |
| 22 Left facia earth   | 294 Injection/ignition electronic control unit<br>1242                                |
| 42 Right dashboard earth  | 296 Fuse holder base on front cable   |
| 55 Connection between front cables/fuel level<br>gauge  | A 7.5A fuse protecting cooling system/<br>electronic injection; A.C. system;<br>Alarm |
| 70 Connection between facia/front leads   | F 7.5A fuse protecting electronic injection<br>system/Fiat-CODE                       |
| 120 Connection for air conditioning unit cables   | 297 Air conditioning control unit   |
| 122 Engine cooling fan low speed relay feed   | 311 Engine pre-wiring earth 1242 16V  |
| 123A Engine cooling fan high speed relay feed   | N.D. Ultrasound welding taped in cable loom   |

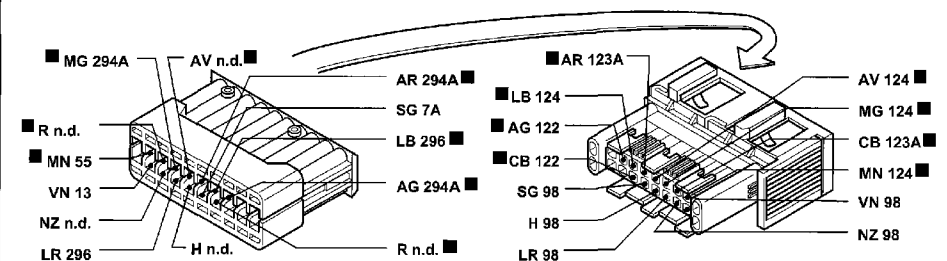
55.

55 Connection between front cables/engine pre-wiring



4A044N1.02

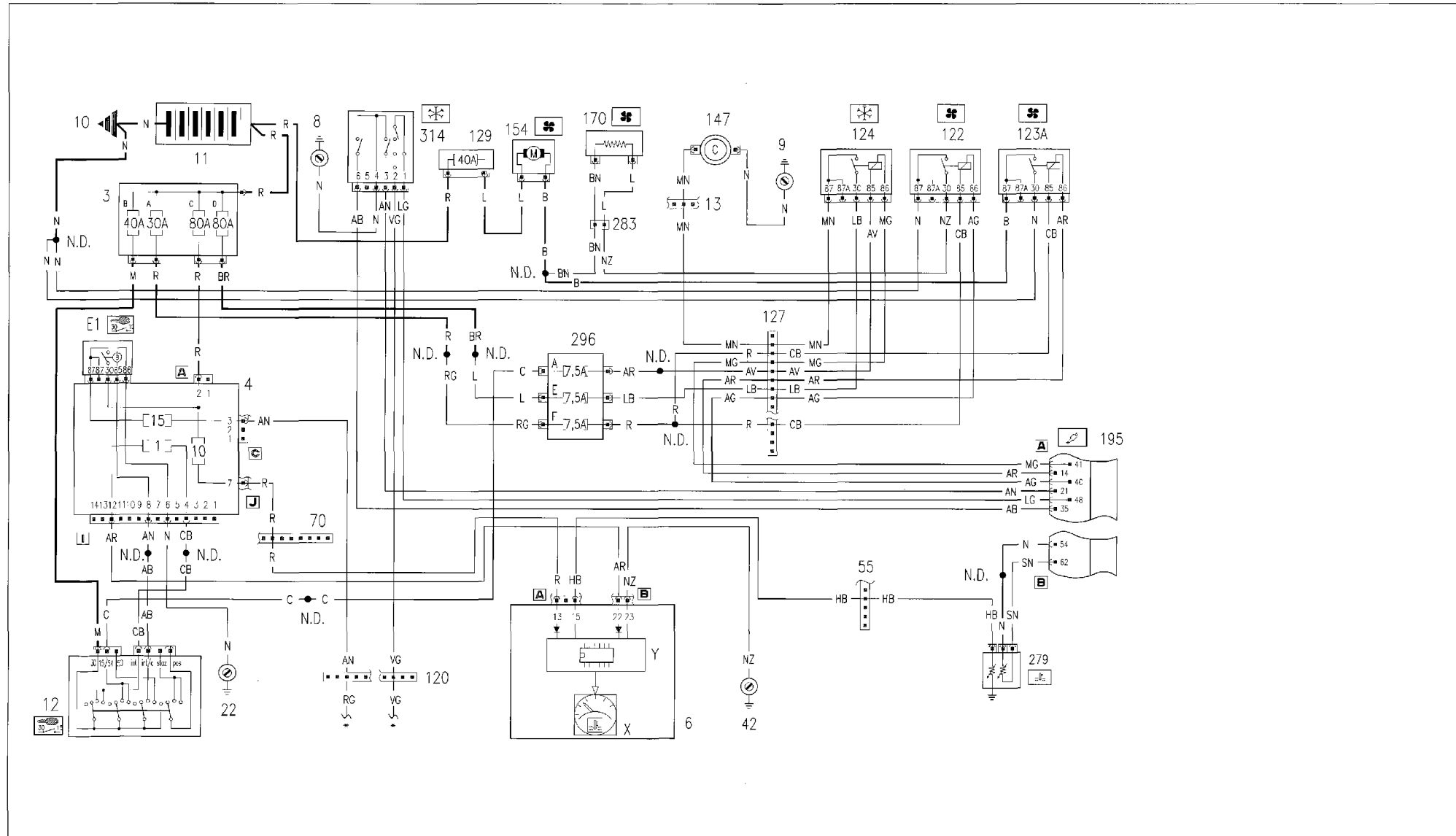
127 Connection between front left cables/cable on relay holder bracket



4A044N1.03

The cables concerned are marked in the wiring diagram with a square

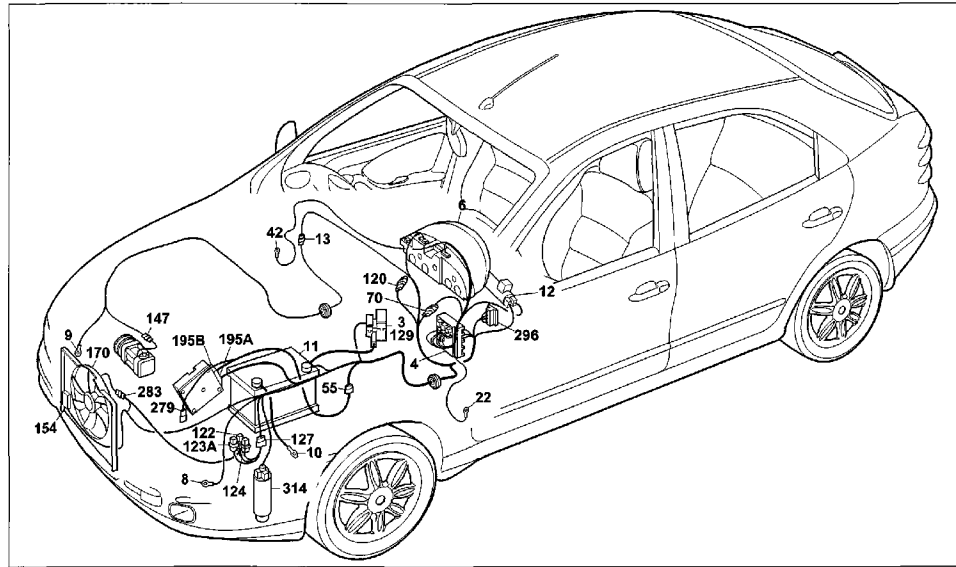
Version with automatic air conditioning:  
Engine cooling with one fan - Engine coolant temperature gauge



\* See air conditioning wiring diagram



55.

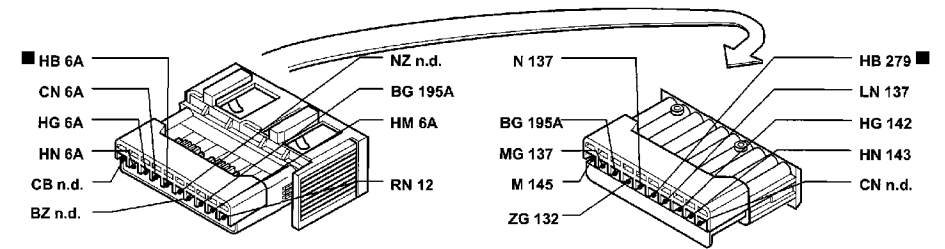


Version with automatic air conditioning:  
Engine cooling with one fan - Engine coolant temperature gauge

Component key

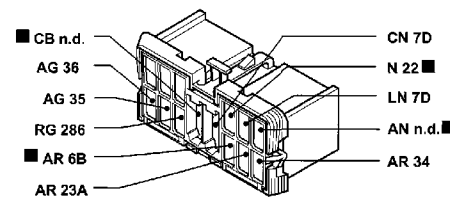
- |  |   |
|--|---|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit | 123A Engine cooling fan high speed relay feed   |
| 4 Junction unit<br>E1 Switch discharge relay   | 124 Air conditioning compressor relay feed  |
| 6 Instrument panel:<br>X Engine coolant temperature gauge<br>Y Electronic module   | 127 Connection between front left cable/cable on relay holder bracket                               |
| 8 Left front earth   | 129 50A power fuse protecting engine cooling fan  |
| 9 Right front earth  | 147 Compressor for air conditioning   |
| 10 Battery earth on bodyshell  | 154 Engine cooling fan  |
| 11 Battery   | 170 Engine cooling fan limit resistor   |
| 12 Ignition switch   | 195 Injection/ignition electronic control unit (1581)   |
| 13 Connection between right/left front cables  | 279 Engine coolant temperature twin sender unit   |
| 22 Left facia earth  | 283 Cable connection on mounting bracket/resistor   |
| 42 Right dashboard earth   | 296 Fuse holder base on front cable<br>F 7.5A fuse protecting electronic injection system/Fiat-CODE |
| 55 Connection between front cables/fuel level gauge  | 314 Four stage pressure switch  |
| 70 Connection between facia/front leads  | N.D. Ultrasound welding taped in cable loom   |
| 120 Connection for air conditioning unit cables  |   |
| 122 Engine cooling fan low speed relay feed  |   |

55 Connection between front cables/engine pre-wiring



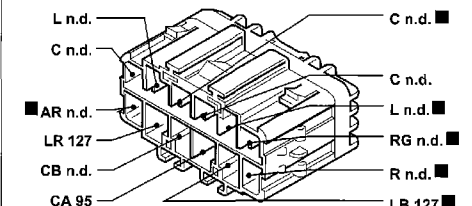
4A046NL02

41 Junction unit



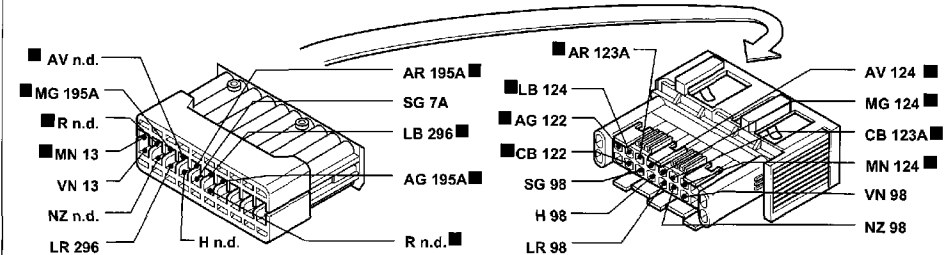
4A046NL03

296 Fuse holder base on front cable



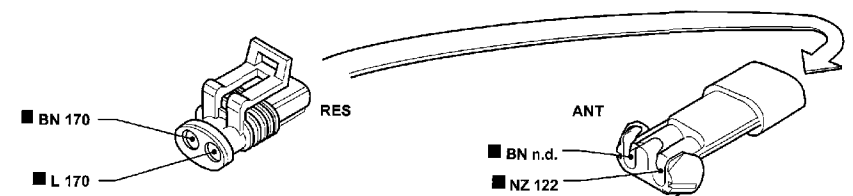
4A046NL04

127 Connection between front left cables/cable on relay holder bracket



4A046NL05

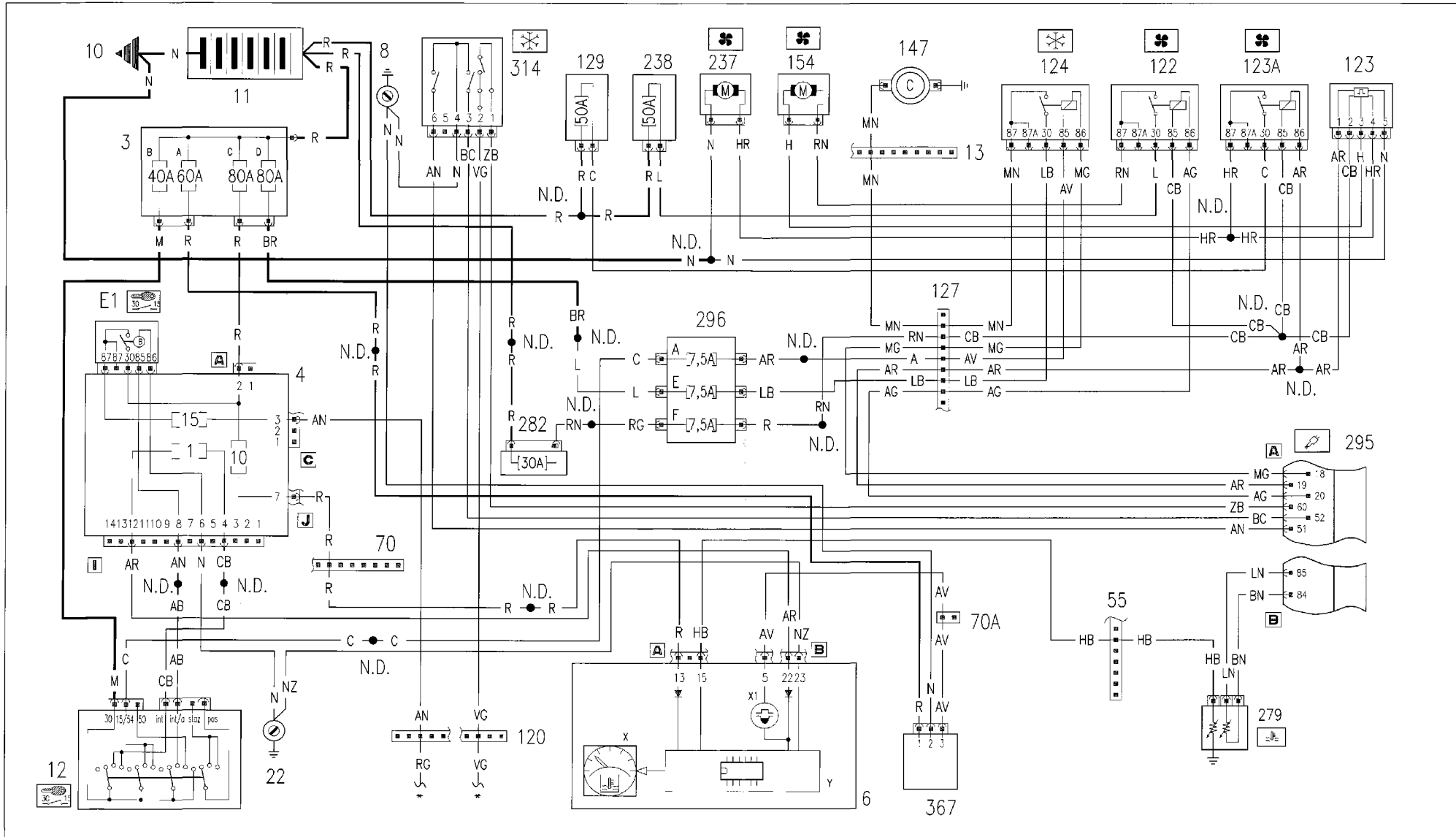
283 Connection between front/resistor cables



4A046NL06

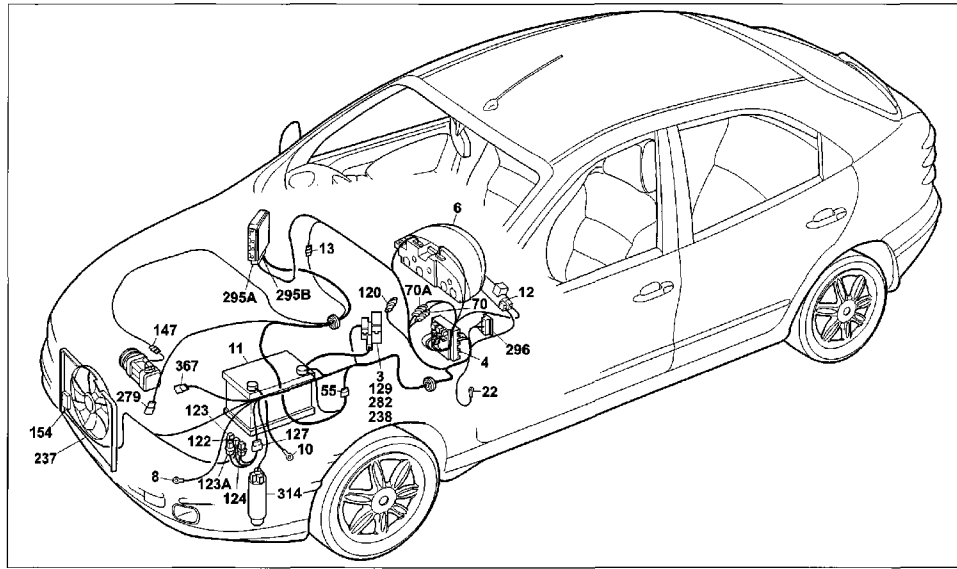
The cables concerned are marked in the wiring diagram with a square

Version with automatic air conditioning:  
Engine cooling with two fans - Engine coolant temperature gauge - Water in fuel filter sensor



\* See air conditioning wiring diagram

**55.**

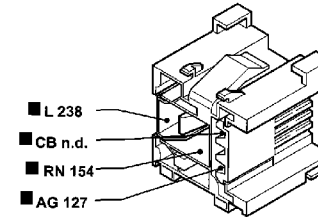


Version with automatic air conditioning:  
Engine cooling with two fans - Engine coolant temperature gauge - Water in fuel filter sensor

**Component key**

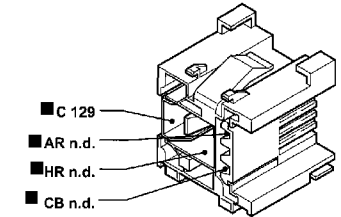
- |  |   |
|--|---|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit | 124 Air conditioning compressor relay feed  |
| 4 Junction unit<br>E1 Switch discharge relay   | 127 Connection between front left cable/cable on relay holder bracket                               |
| 6 Instrument panel:<br>X Engine coolant temperature gauge<br>X1 Water in fuel filter sensor<br>Y Electronic module   | 129 50A power fuse protecting engine cooling fan  |
| 8 Left front earth   | 147 Compressor for air conditioning   |
| 10 Battery earth on bodyshell  | 154 Engine cooling fan  |
| 11 Battery   | 237 Additional engine cooling fan   |
| 12 Ignition switch   | 238 60A fuse protecting engine cooling fan  |
| 13 Connection between right/left front cables  | 279 Engine coolant temperature twin sender unit   |
| 22 Left facia earth  | 282 30A fuse protecting Fiat CODE/electronic injection (60 for UNIJET)                              |
| 55 Connection between front cables/fuel level gauge  | 295 Injection/ignition electronic control unit 1910 TD UNIJET                                       |
| 70 Connection between facia/front leads  | 296 Fuse holder base on front cable<br>F 7.5A fuse protecting electronic injection system/Fiat-CODE |
| 120 Connection for air conditioning unit cables  | 314 Four stage pressure switch  |
| 122 Engine cooling fan low speed relay feed  | 367 Water in fuel filter sensor (JTD)   |
| 123A Engine cooling fan high speed relay feed  | N.D. Ultrasound welding taped in cable loom   |

**122** Engine cooling fan low speed relay feed (1910 JTD with air conditioning)



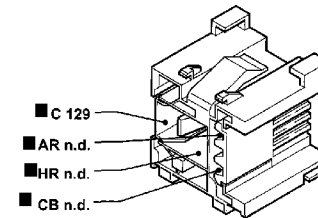
4A048NL02

**123A** Engine cooling fan high speed relay feed (1910 TD)



4A048NL03

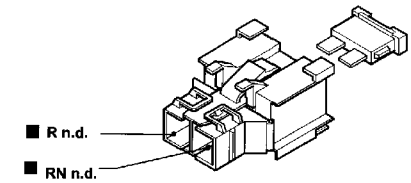
**314** 4 stage pressure switch



Only for JTD version with air conditioning

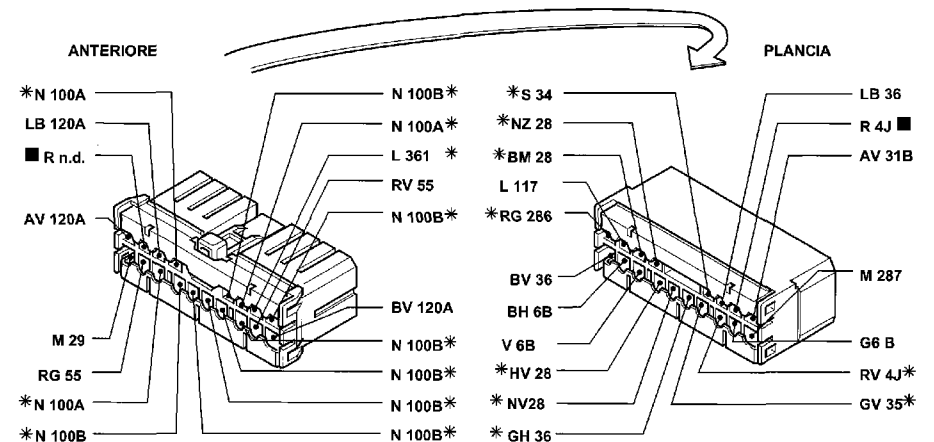
4A048NL03

**282** 30A fuse protecting Fiat CODE/electronic injection (60 for UNIJET)



4A048NL04

**70** Connection between dashboard/front cables



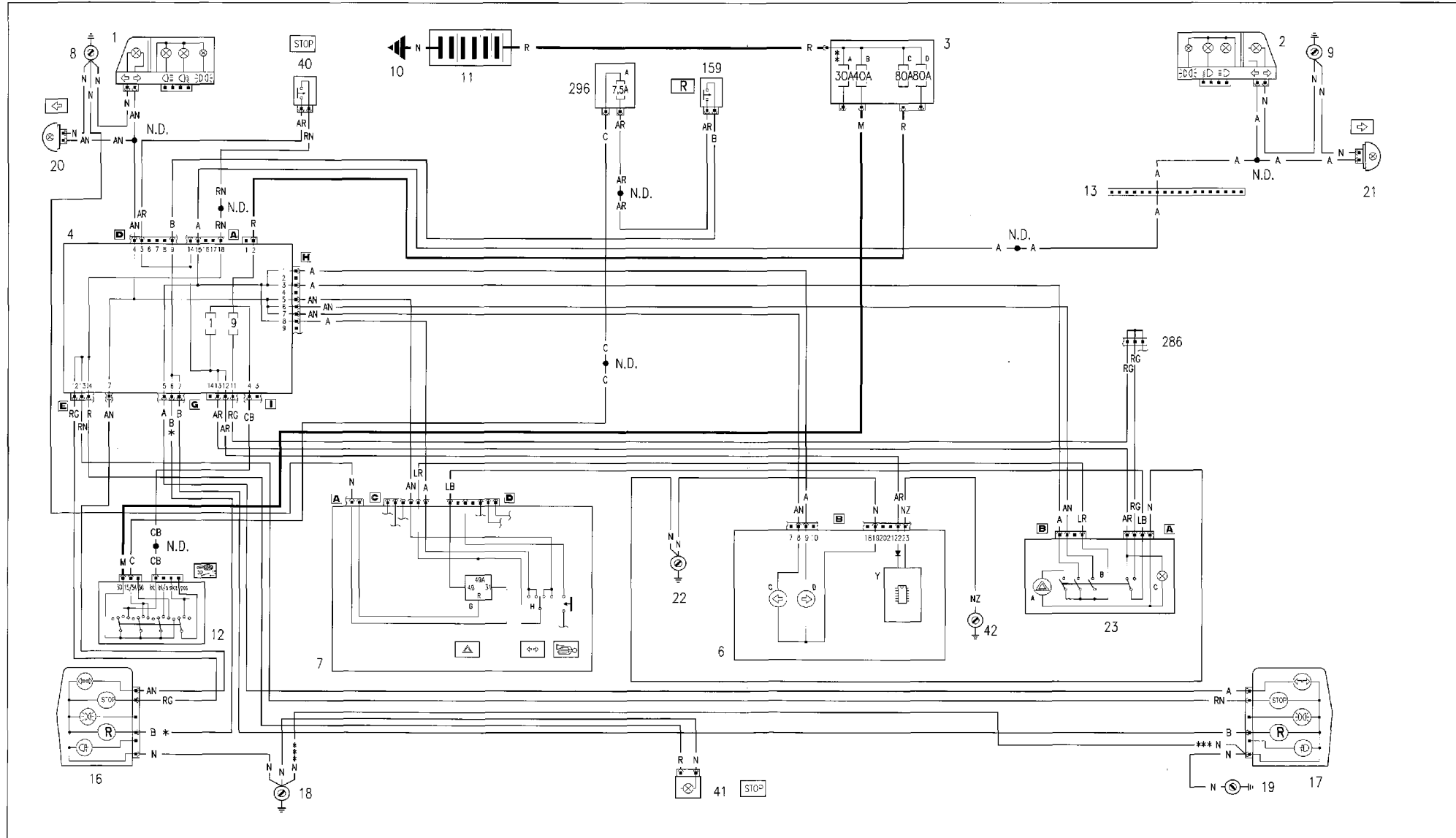
\* Variant connection for versions with alarm

4A048NL06

The cables concerned are marked in the wiring diagram with a square

Trim level: SX - GT:

Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing lights - Brake lights failure warning light

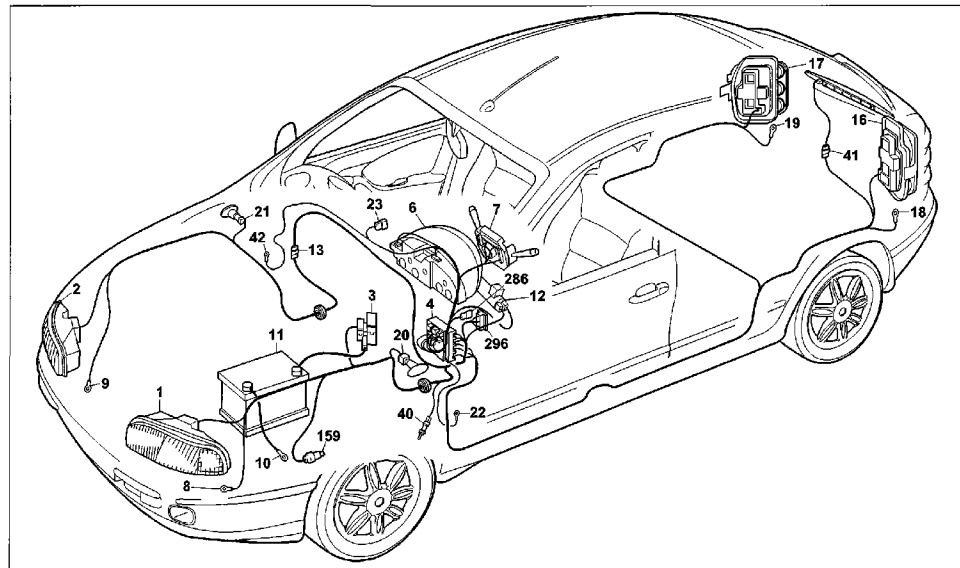


\* Non existent for the Bravo version

\*\* 60A fuse for the JTD version

\*\*\* Variant connection for the Brava version

**55.**



4A060NLO1

Trim level SX – GT:

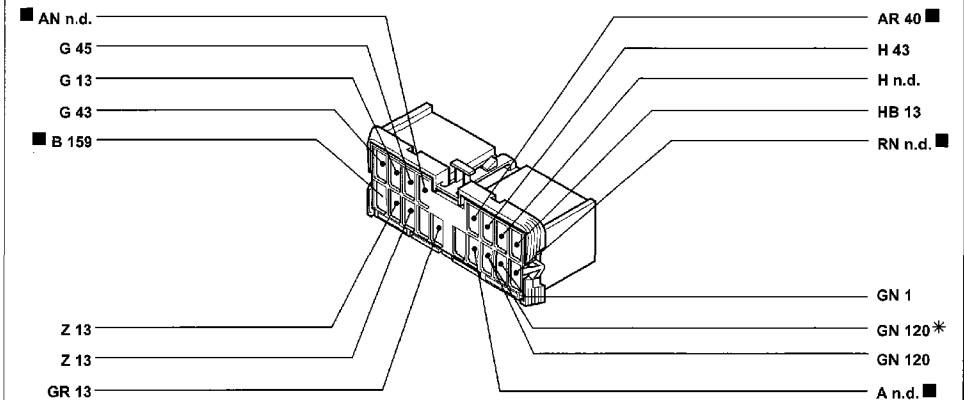
Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing lights - Brake lights failure warning light

**Component key**

- |  |  |
|--|--|
| 1 Left front light cluster                                   | 16 Left tail light cluster   |
| 2 Right front light cluster                                  | 17 Right tail light cluster  |
| 3 Power fusebox:   | 18 Left rear earth   |
| A 30A fuse protecting injection system (60A for TD versions) | 19 Right rear earth  |
| B 40A fuse protecting ignition system                        | 20 Left front side direction indicator   |
| C 80A fuse protecting optional equipment                     | 21 Right front side direction indicator  |
| D 80A fuse protecting junction unit                          | 22 Left facia earth  |
| 4 Junction unit  | 23 Hazard warning lights switch unit   |
| 6 Instrument panel:  | A Hazard warning lights warning light  |
| C Left direction indicator warning light                     | B Hazard warning lights control switch   |
| D Right direction indicator warning light                    | C Hazard warning lights ideogram light   |
| Y Electronic module  | 40 Brake light control switch  |
| 7 Stalk unit:  | 41 Additional brake light  |
| H Direction indicators control switch                        | 42 Right dashboard earth   |
| G Direction indicators/hazard warning lights switch          | 159 Reversing lights control switch  |
| 8 Left front earth   | 286 Circuit connection   |
| 9 Right front earth  | 296 Fuse holder base on front cable  |
| 10 Battery earth on bodyshell                                | A 7.5A fuse protecting cooling system/electronic injection; A.C. system; Alarm |
| 11 Battery   |  |
| 12 Ignition switch   |  |
| 13 Connection between right/left front cables                |  |

N.D. Ultrasound welding taped in cable loom

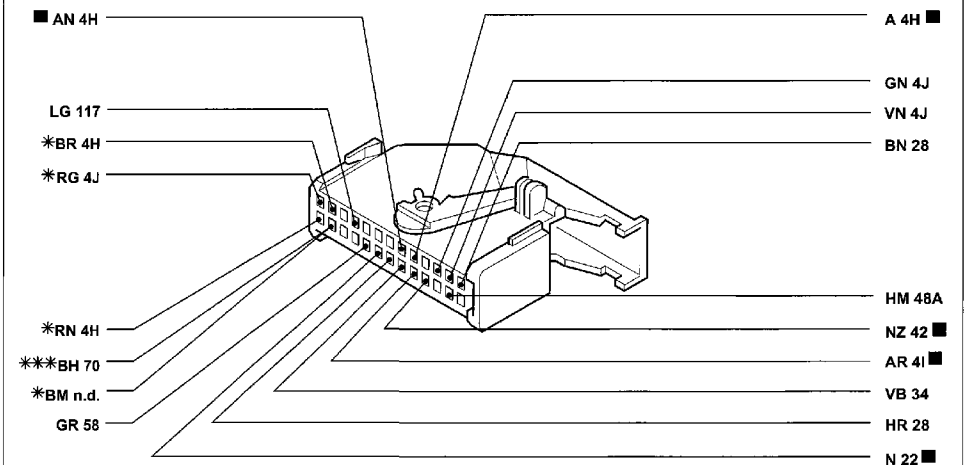
**4D** Junction unit



- \* Variant connection for versions without air conditioning
- \*\* Variant connection for versions with automatic transmission

4A060NLO2

**6B** Instrument panel



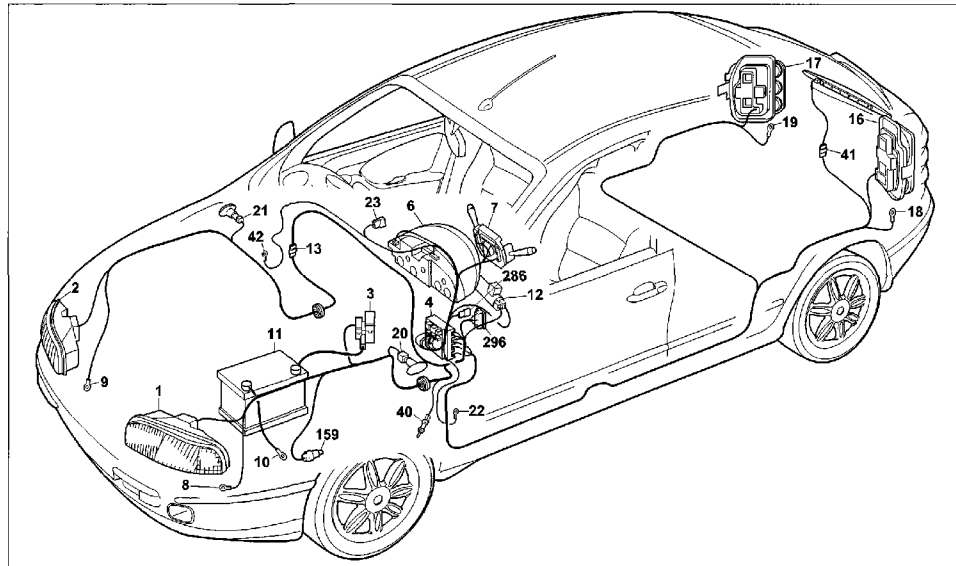
- \* Non existent for SX-GT trim levels
- \*\* Variant connection for versions with passenger AIR BAG
- \*\*\* Variant connection for SX-GT trim levels with alarm

4A060NLO3

The cables concerned are marked in the wiring diagram with a square



**55.**



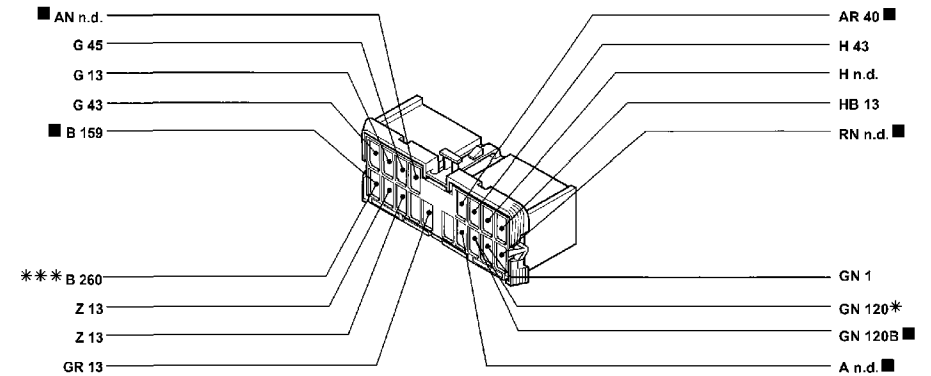
4A062NL01

**ELX trim level:**  
Direction indicators and warning light - Hazard warning lights and warning light - Brake lights - Reversing lights - Vehicle brake lights failure warning light

**Component key**

- |  |   |
|--|---|
| <p>1 Left front light cluster<br/>2 Right front light cluster<br/>3 Power fusebox:<br/>A 30A fuse protecting injection system (60A for TD versions)<br/>B 40A fuse protecting ignition system<br/>C 80A fuse protecting optional equipment<br/>D 80A fuse protecting junction unit<br/>4 Junction unit<br/>6 Instrument panel:<br/>C Left direction indicator warning light<br/>D Right direction indicator warning light<br/>S Brake lights failure electronic module<br/>T Brake lights failure warning light<br/>Y Electronic module<br/>7 Stalk unit:<br/>H Direction indicators control switch<br/>G Direction indicators/hazard warning lights switch<br/>8 Left front earth<br/>9 Right front earth<br/>10 Battery earth on bodyshell<br/>11 Battery<br/>12 Ignition switch</p> | <p>13 Connection between right/left front cables<br/>16 Left tail light cluster<br/>17 Right tail light cluster<br/>18 Left rear earth<br/>19 Right rear earth<br/>20 Left front side direction indicator<br/>21 Right front side direction indicator<br/>22 Left fascia earth<br/>23 Hazard warning lights switch unit<br/>A Hazard warning lights warning light<br/>B Hazard warning lights control switch<br/>C Hazard warning lights ideogram light<br/>40 Brake light control switch<br/>41 Additional brake light<br/>42 Right dashboard earth<br/>159 Reversing lights control switch<br/>286 Circuit connection<br/>296 Fuse holder base on front cable<br/>A 7.5A fuse protecting cooling system/electronic injection; A.C. system; Alarm; Direction indicators and warning light; Hazard warning lights and warning light; Brake lights; Reversing lights<br/>N.D. Ultrasound welding taped in cable loom</p> |
|--|---|

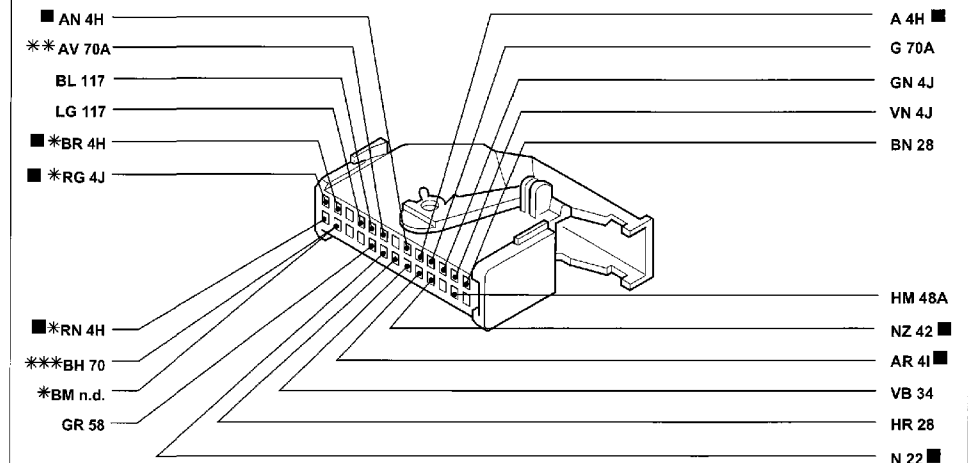
**4D** Junction unit



- \* Variant connection for versions without air conditioning
- \*\* Variant connection for JTD versions
- \*\*\* Variant connection for versions with automatic transmission

4A062NL02

**6B** Instrument panel



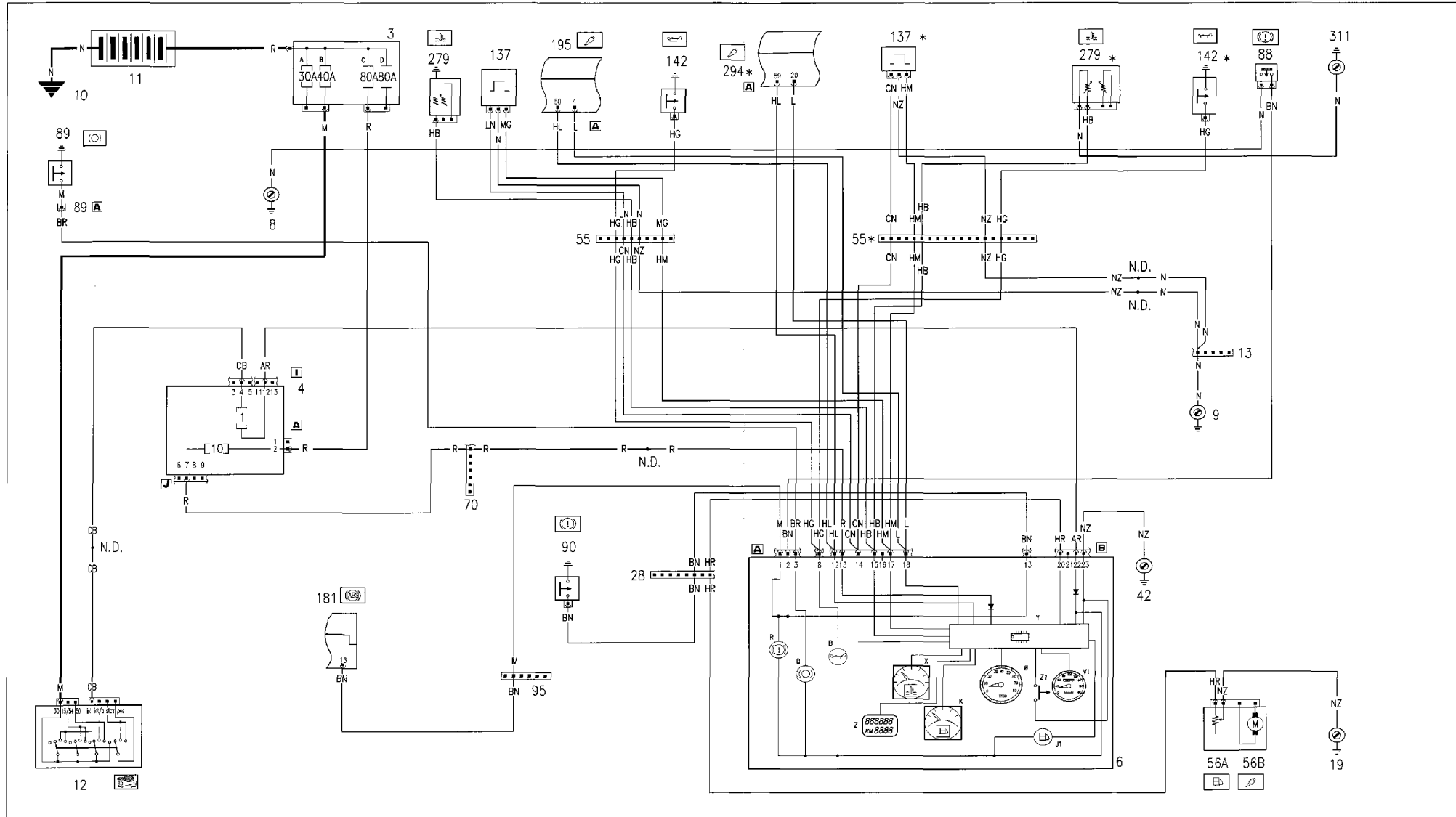
- \* Non existent for SX-GT trim levels
- \*\* Variant connection for versions with passenger AIR BAG
- \*\*\* Variant connection for SX-GT trim levels with alarm

4A052NL03

The cables concerned are marked in the wiring diagram with a square

**55.**

Fuel gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Milometer/trip meter display and zeroing button - Engine coolant temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter



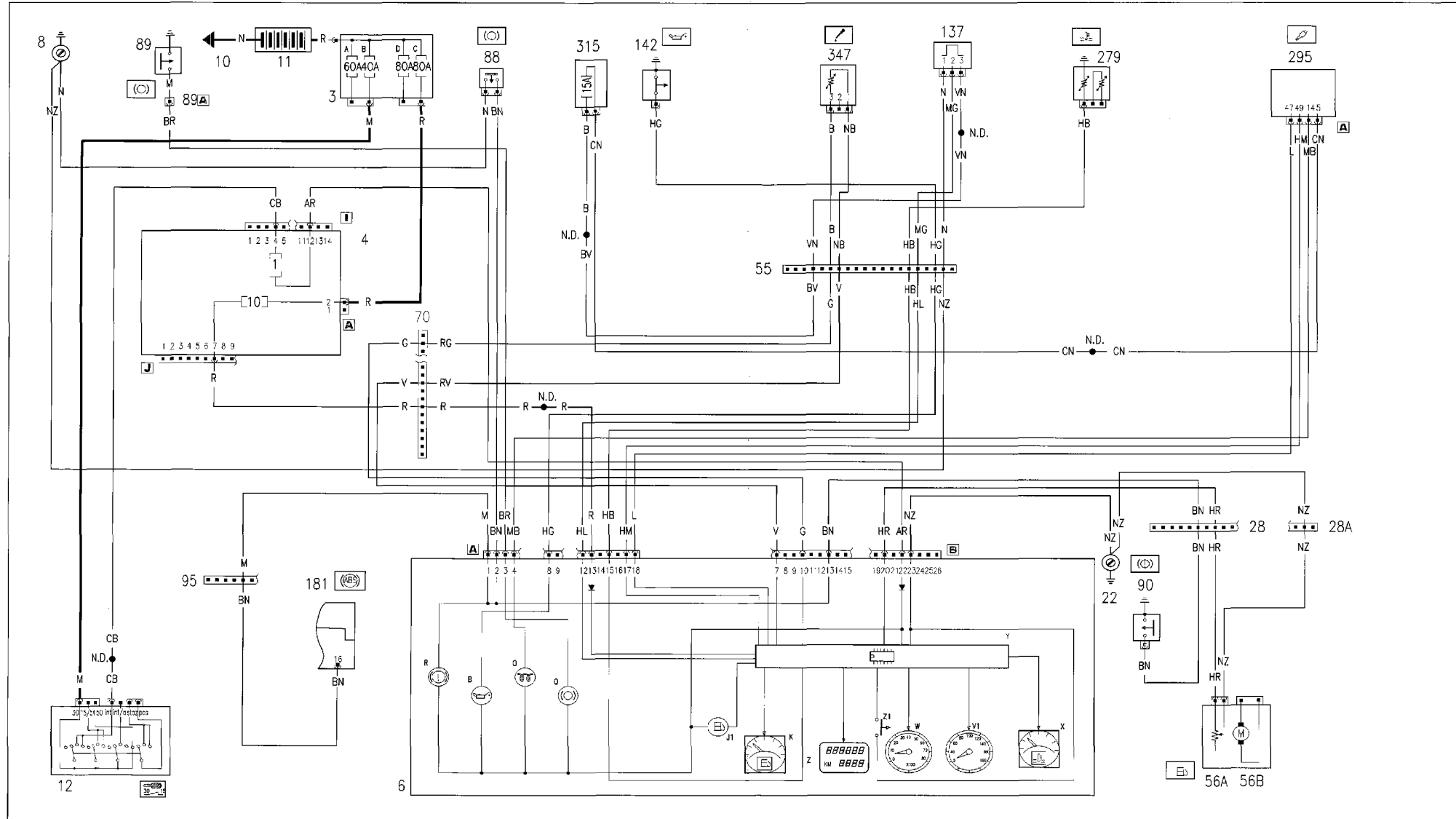
\* Variant connection for the 1242 16V version

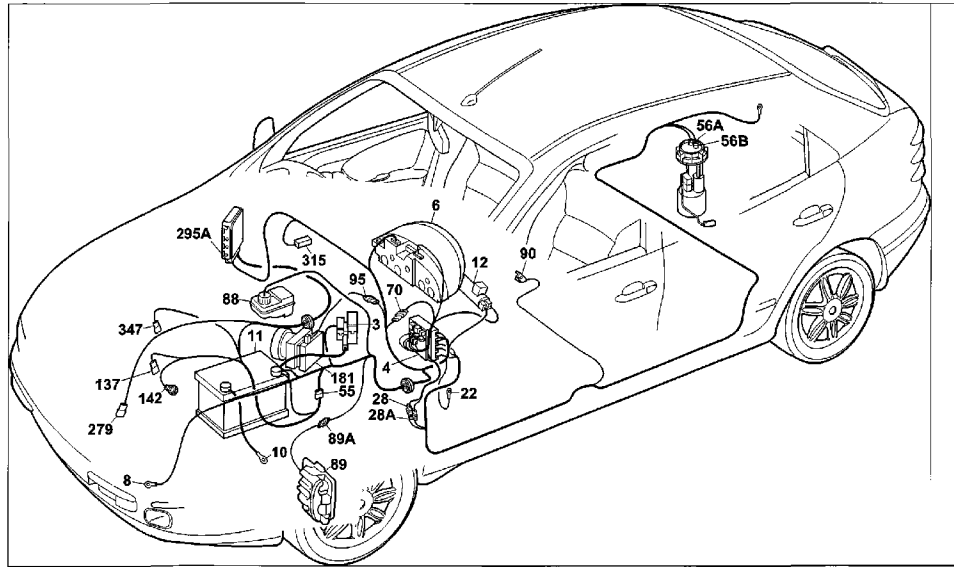




55.

Fuel gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Engine coolant temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter - Milometer/trip meter display and zeroing button/engine oil level warning light - Heater plugs warning light





4A056N101

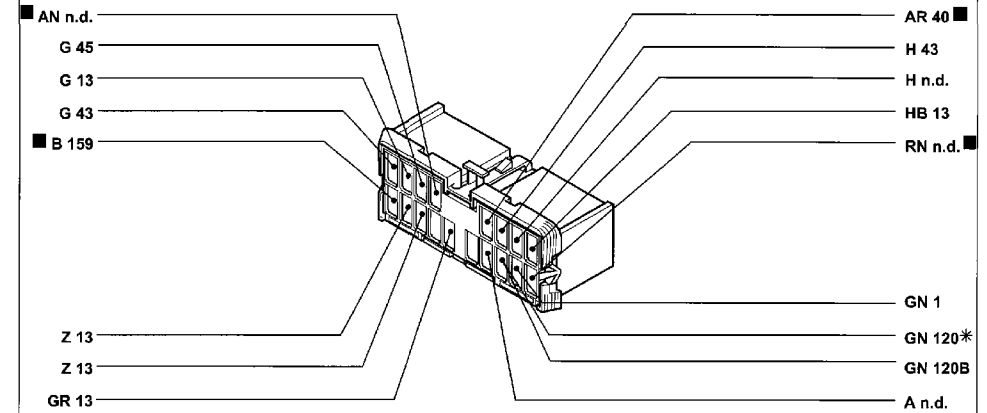
Fuel gauge and reserve warning light - Handbrake applied/insufficient brake fluid level warning light - Speedometer - Engine coolant temperature gauge - Insufficient engine oil pressure warning light - Front brake pad wear warning light - Rev counter - Milometer/trip meter display and zeroing button/engine oil level warning light - Heater plugs warning light

Component key

- |  |   |
|--|---|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit   | 11 Battery<br>12 Ignition switch<br>22 Left fascia earth<br>28 Connection between dashboard/longitudinal cables<br>28A Connection between dashboard/longitudinal cables   |
| 4 Junction unit<br>6 Instrument panel:<br>B Low engine oil pressure warning light<br>J1 Fuel reserve warning light<br>K Fuel gauge<br>O Heater plugs warning light<br>Q Front brake pad wear warning light<br>R Handbrake applied/insufficient brake fluid level warning light | 55 Connection between front/fuel gauge cables<br>56 Fuel level gauge control unit<br>A Fuel level sensor<br>B Electric fuel pump<br>70 Connection between facia/front leads<br>88 Insufficient brake fluid level sensor<br>89 Left brake pad wear sensor<br>89A Left brake pad wear sensor cables<br>90 Switch indicating handbrake applied<br>95 Connection between front cables/anti-lock brakes A.B.S.     |
| V1 Speedometer<br>W Rev counter<br>X Engine coolant temperature gauge<br>X1 Water in fuel filter sensor<br>Y Electronic module<br>Z Milometer/trip meter display; engine oil level gauge<br>Z1 Trip meter zeroing button   | 137 Vehicle speed sensor<br>142 Switch indicating insufficient engine oil pressure<br>181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)<br>279 Engine coolant temperature twin sender unit<br>295 Injection/ignition electronic control unit (1242)<br>315 15A fuse protecting electronic injection control unit<br>347 Engine oil level sensor<br>N.D. Ultrasound welding taped in cable loom |

55.

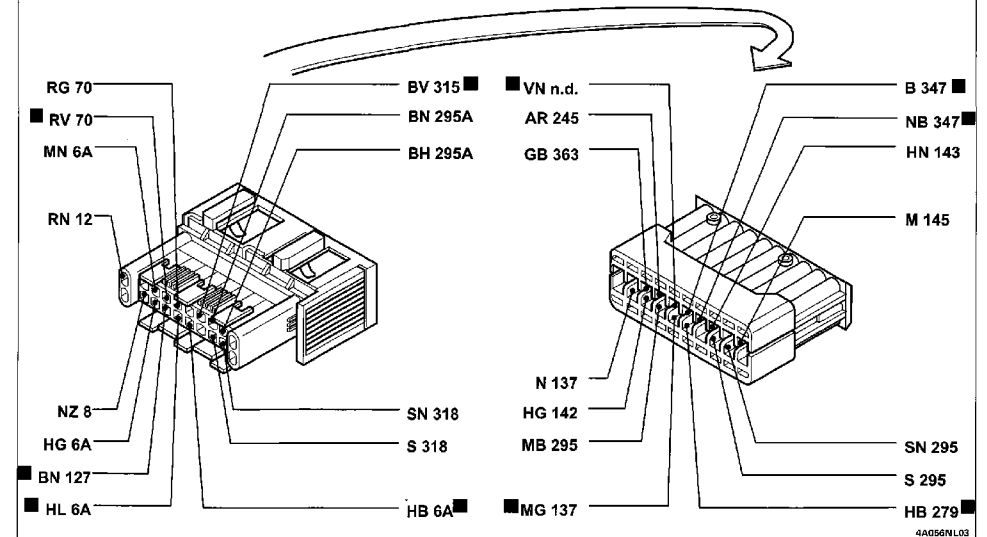
4D Junction unit



\* Variant connection for versions with air conditioning

4A056N102

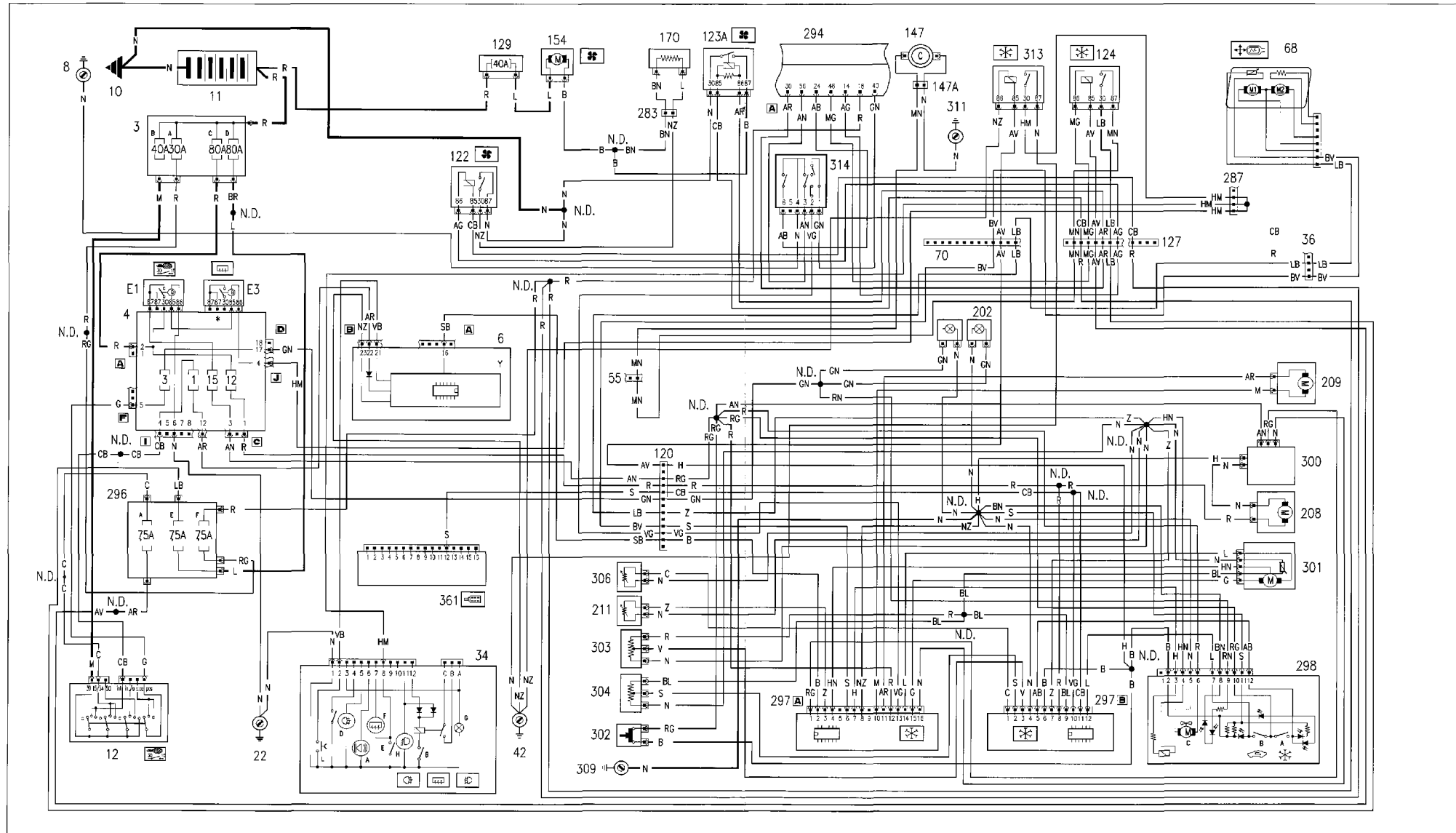
55 Connection between front cables/engine pre-wiring



4A056N103

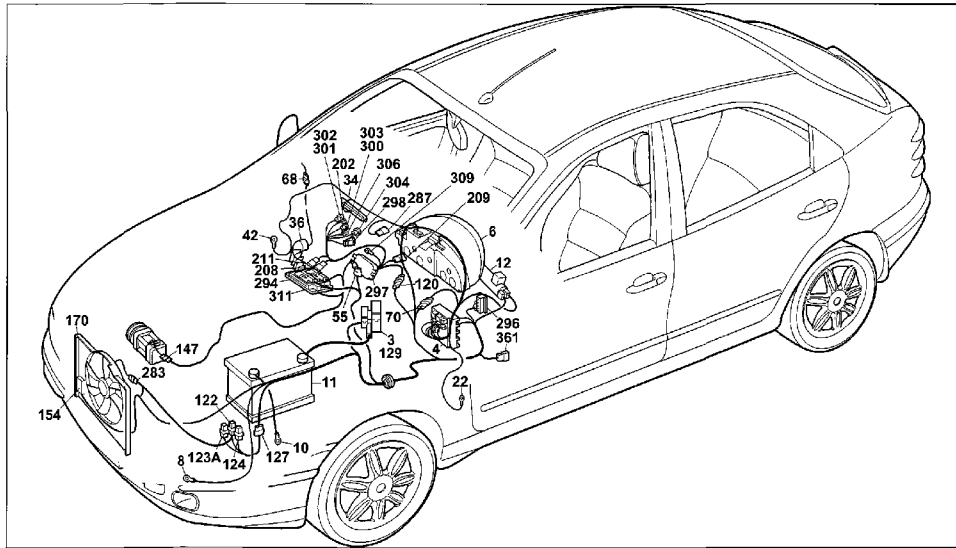
The cables concerned are marked in the wiring diagram with a square

Version without ABI:  
Automatic air conditioning



\* See heated rear windscreen wiring diagram

**55.**



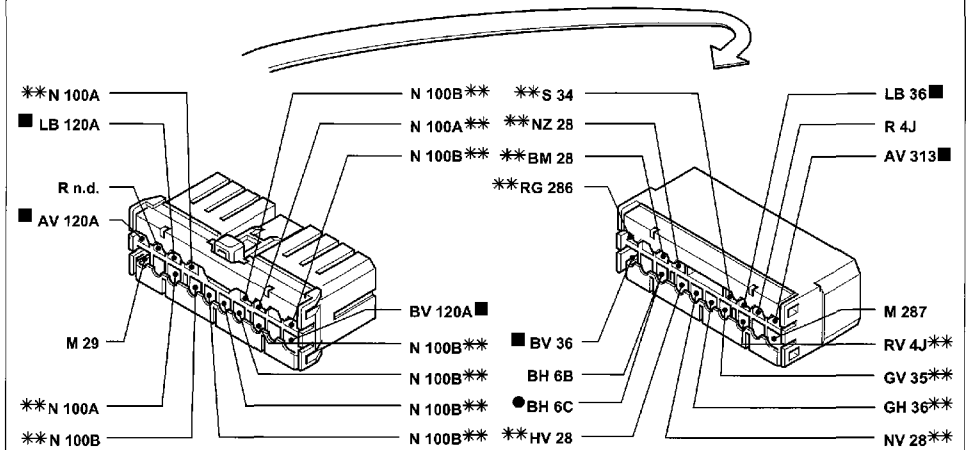
Version without ABL:  
Automatic air conditioning

**Component key**

- |   |  |
|---|--|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit  | 129 50A power fuse protecting engine cooling fan<br>147 Compressor for air conditioning<br>147A Compressor for air conditioning  |
| 4 Junction unit   | 154 Engine cooling fan   |
| 6 Instrument panel:<br>Y Electronic module  | 170 Engine cooling fan limit resistor  |
| 8 Left front earth  | 202 Heater/air conditioning bulbs  |
| 10 Battery earth on bodyshell   | 208 Air conditioning unit fan  |
| 11 Battery  | 209 Outside/recirculation air flap control actuator  |
| 12 Ignition switch  | 211 Electronic thermostat (N.T.C.)   |
| 22 Left facia earth   | 283 Connection between front cable   |
| 34 Switch control unit:<br>A Anti-theft device on warning light<br>B Rear fog lamps control switch<br>C Rear fog lamps warning light<br>E Heated rear windscreen control switch<br>F Heated rear windscreen warning light<br>G Switch control panel ideogram light<br>H Fog lights warning light<br>I Fog lights control switch<br>L Outside temperature control switch | 287 Short circuit connection<br>294A Injection/ignition electronic control unit (1242)<br>296 Fuse holder base on front cable<br>A 7.5A fuse protecting cooling system/electronic injection; A.C. system; alarm<br>F 7.5A fuse protecting electronic injection system/Fiat CODE<br>E 7.5A fuse protecting climate control system |
| 36 Connection between dashboard/right front door cables   | 297 Air conditioning control unit  |
| 42 Right dashboard earth  | 298 Recirculation control for heater/air conditioning<br>A Air conditioning control switch<br>B Recirculation control switch<br>C Fan sensor   |
| 55 Connection between front/fuel gauge cables   | 300 Heater fan electronic transformer  |
| 68 Right electrically adjustable exterior rear view mirror  | 301 Vehicle interior mixture control actuator  |
| 70 Connection between facia/front leads   | 302 Maximum demisting control switch   |
| 120 Connection for air conditioning unit cables   | 303 Interior ventilation potentiometer   |
| 122 Engine cooling fan low speed relay feed   | 304 Vehicle interior temperature potentiometer   |
| 123A Engine cooling fan high speed relay feed   | 306 Treated air sensor   |
| 124 Air conditioning compressor control relay   | 309 Earth for air conditioning unit  |
| 127 Connection between front left cable/cable on relay holder bracket   | 311 Engine pre-wiring earth (1242 16V)<br>312 Power earth for electronic injection control unit<br>313 Air conditioning signal reversal relay<br>314 4 stage pressure switch<br>361 Diagnostic socket  |

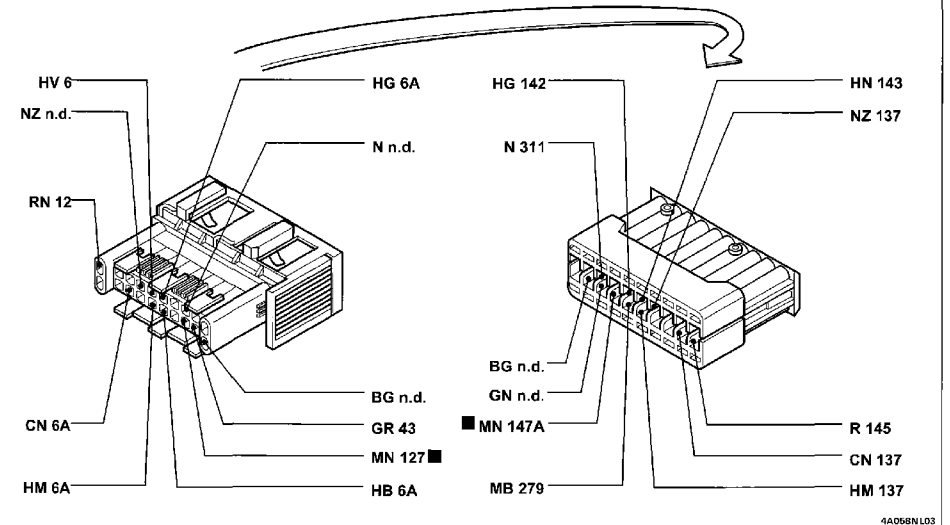
N.D. Ultrasound welding taped in cable loom

**70** Connection between dashboard/front cables



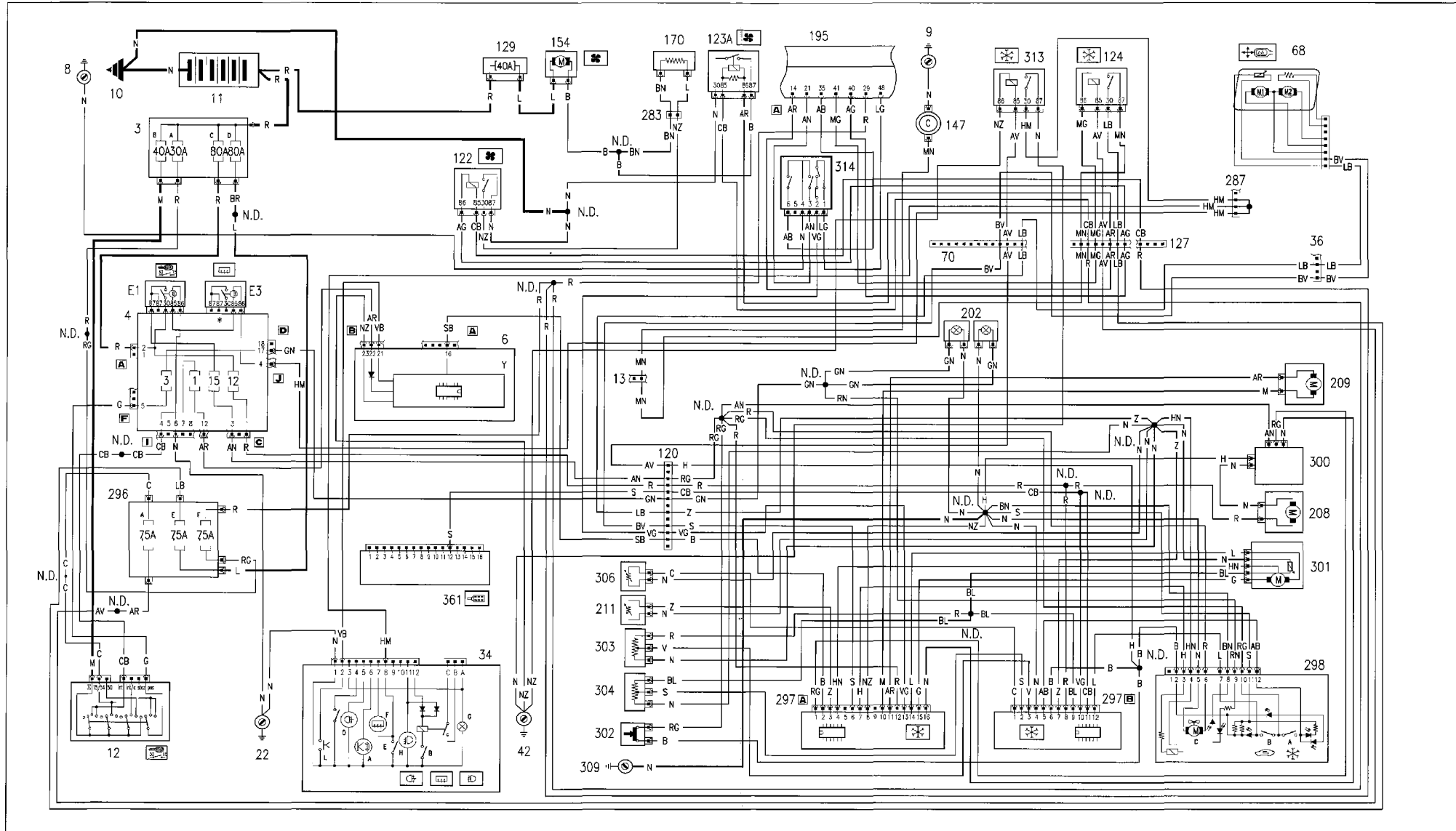
\*\* Variant connections for versions with alarm

**55** Connection between front cables/engine pre-wiring



The cables concerned are marked in the wiring diagram with a square

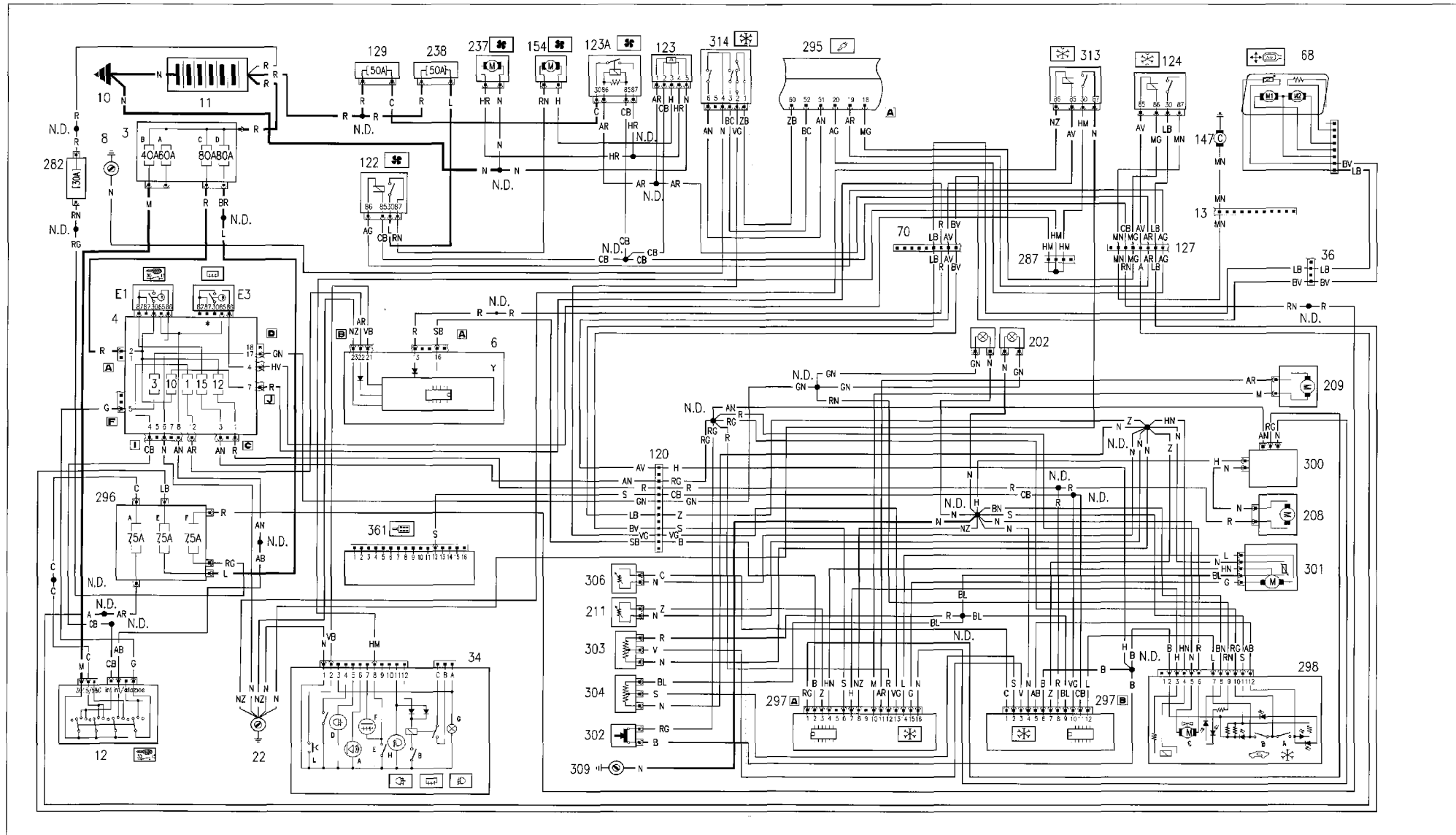
Version without ABI:  
Automatic air conditioning



\* See heated rear windscreen wiring diagram



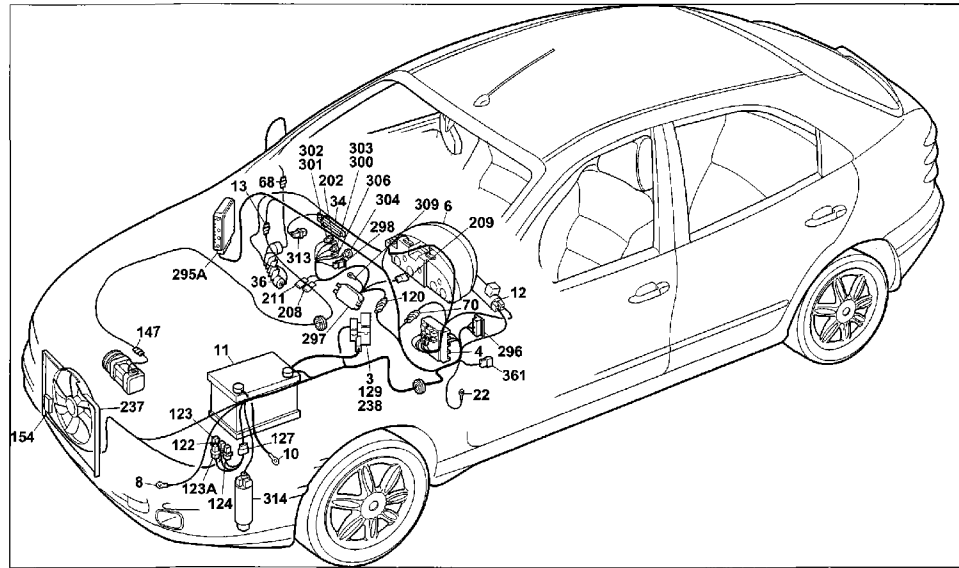
Version without ABI:  
Automatic air conditioning



\* See heated rear windscreen wiring diagram



55.



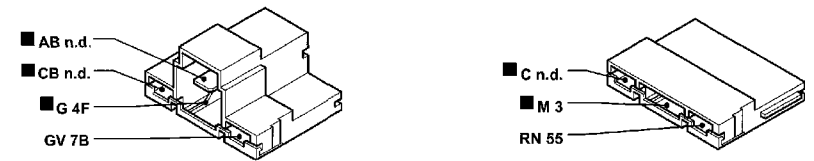
Version without ABI:  
Automatic air conditioning

Component key

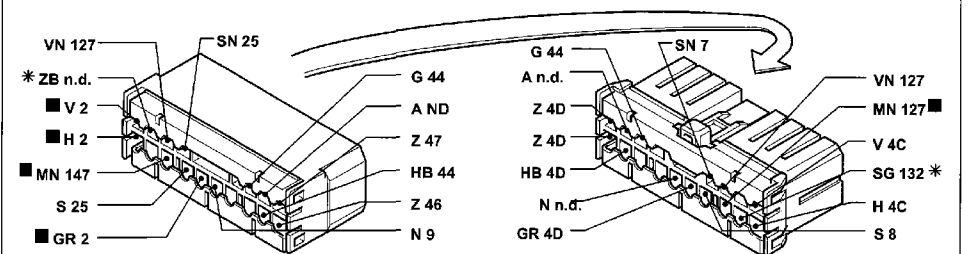
- |  |   |
|--|---|
| <p>3 Power fusebox:<br/>A 30A fuse protecting injection system (60A for TD versions)<br/>B 40A fuse protecting ignition system<br/>C 80A fuse protecting optional equipment<br/>D 80A fuse protecting junction unit</p> <p>4 Junction unit<br/>E1 Switch discharge relay</p> <p>6 Instrument panel:<br/>Y Electronic module</p> <p>8 Left front earth<br/>9 Right front earth<br/>10 Battery earth on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>13 Connection between right/left front cables<br/>22 Left facia earth<br/>36 Connection between dashboard/right front door cables<br/>68 Right electrically adjustable exterior rear view mirror<br/>70 Connection between facia/front leads<br/>120 Connection for air conditioning unit cables<br/>122 Engine cooling fan low speed relay feed<br/>123 Engine cooling fan high speed timer<br/>123A Engine cooling fan high speed relay feed<br/>124 Air conditioning compressor control relay<br/>127 Connection between front left cable/cable on relay holder bracket<br/>129 50A power fuse protecting engine cooling fan<br/>147 Compressor for air conditioning<br/>154 Engine cooling fan</p> | <p>202 Bulbs for heater/air conditioning unit<br/>208 Air conditioning unit fan<br/>209 Outside/recirculation air flap control actuator<br/>211 Electronic thermostat (N.T.C.)<br/>237 Additional engine cooling fan<br/>238 40A fuse protecting engine cooling fan<br/>282 30A fuse for Fiat CODE/electronic injection<br/>287 Short circuit connection<br/>295 Electronic injection/ignition electronic control unit 1910 TD UNIJET</p> <p>296 Fuse holder base on front cable<br/>A 7.5A fuse protecting cooling system/electronic injection; A.C. system; Alarm<br/>F 7.5A fuse protecting electronic injection system/Fiat CODE<br/>E 7.5A fuse protecting climate control system</p> <p>297 Air conditioning control unit<br/>298 Recirculation control for heater/air conditioning<br/>A Air conditioning control switch<br/>B Recirculation control switch<br/>C Fan sensor</p> <p>300 Heater fan electronic transformer<br/>301 Vehicle interior mixture control actuator<br/>302 Maximum demisting control switch<br/>303 Interior ventilation potentiometer<br/>304 Vehicle interior temperature potentiometer<br/>306 Treated air sensor<br/>309 Earth for air conditioning unit<br/>313 Air conditioning signal reversal relay<br/>314 4 stage pressure switch<br/>361 Diagnostic socket</p> |
|--|---|

N.D. Ultrasound welding taped in cable loom

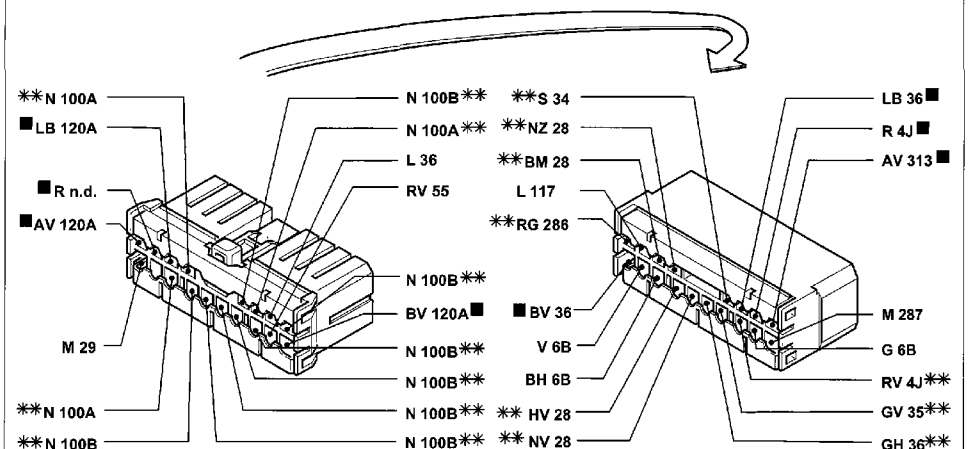
12 Ignition switch



13 Connection between right/left front cables

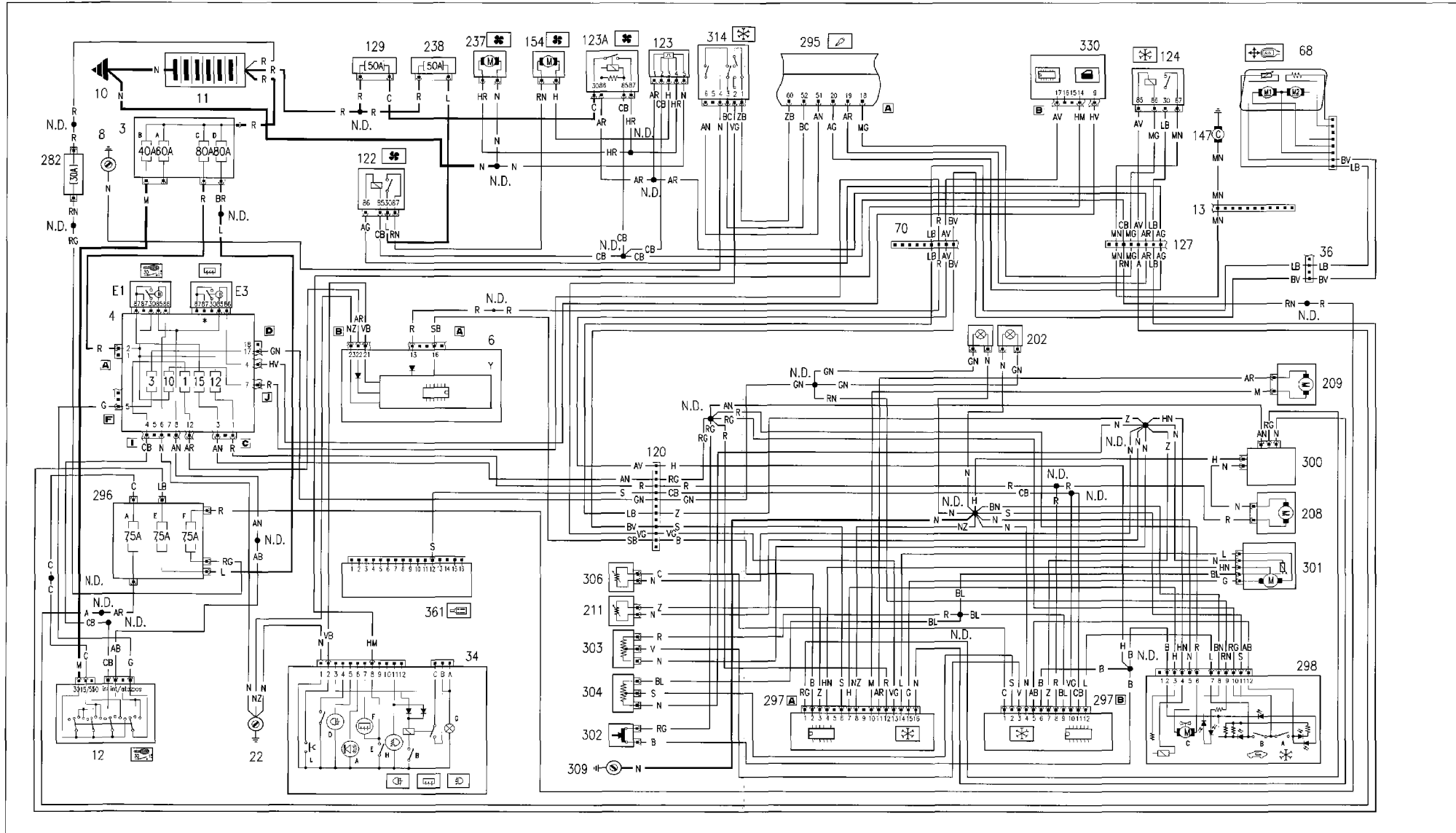


70 Connection between dashboard/front cables

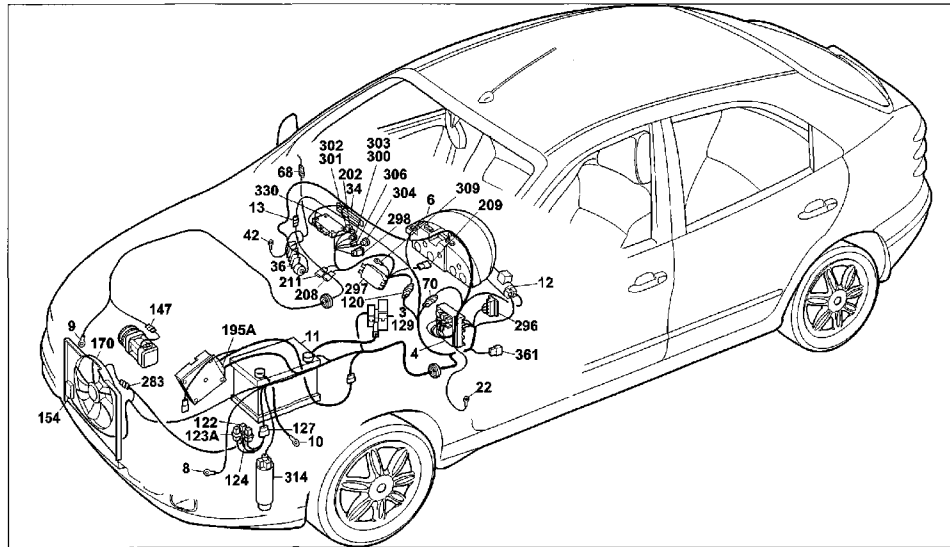


The cables concerned are marked in the wiring diagram with a square

Version with ABI:  
Automatic air conditioning



\* See heated rear windscreen wiring diagram



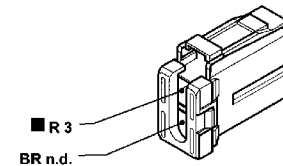
Version with ABI:  
Automatic air conditioning

Component key

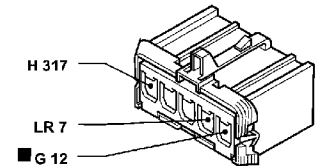
- |  |   |
|--|---|
| <p>3 Power fusebox:<br/>A 30A fuse protecting injection system (60A for TD versions)<br/>B 40A fuse protecting ignition system<br/>C 80A fuse protecting optional equipment<br/>D 80A fuse protecting junction unit</p> <p>4 Junction unit<br/>E1 Switch discharge relay<br/>E3 Heated rear windscreen relay feed</p> <p>6 Instrument panel:<br/>Y Electronic module</p> <p>8 Left front earth<br/>9 Right front earth<br/>10 Battery earth on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>13 Connection between right/left front cables<br/>22 Left fascia earth<br/>34 Switch control unit:<br/>A Anti-theft device on warning light<br/>B Rear fog lamps control switch<br/>D Rear fog lamps warning light<br/>E Heated rear windscreen control switch<br/>F Heated rear windscreen warning light<br/>G Switch control panel ideogram light<br/>H Fog lights warning light<br/>I Fog lights control switch<br/>L Outside temperature control switch</p> <p>36 Connection between dashboard/right front door cables<br/>42 Right dashboard earth<br/>68 Right electrically adjustable exterior rear view mirror<br/>70 Connection between fascia/front leads<br/>120 Connection for air conditioning unit cables<br/>122 Engine cooling fan low speed relay feed<br/>123A Engine cooling fan high speed relay feed<br/>124 Air conditioning compressor control relay</p> | <p>127 Connection between front left cable/cable on relay holder bracket<br/>129 50A power fuse protecting engine cooling fan<br/>147 Compressor for air conditioning<br/>154 Engine cooling fan<br/>170 Engine cooling fan limit resistor<br/>195 Injection/ignition control unit. (1581)<br/>202 Bulbs for heater/air conditioning unit: air conditioning unit fan<br/>208 Air conditioning unit fan<br/>209 Outside/recirculation air flap control actuator<br/>211 Electronic thermostat (N.T.C.)<br/>283 Connection for front cable<br/>296 Fuse holder base on front cable<br/>A 7.5A fuse protecting cooling system/electronic injection; A.C. system; Alarm<br/>F 7.5A fuse protecting cooling system/electronic injection;<br/>E 7.5A fuse protecting climate control system<br/>297 Air conditioning control unit<br/>298 Recirculation control for heater/air conditioning<br/>A Air conditioning control switch<br/>B Recirculation control switch<br/>C Fan sensor<br/>300 Heater fan electronic transformer<br/>301 Vehicle interior mixture control actuator<br/>302 Maximum demisting control switch<br/>303 Interior ventilation potentiometer<br/>304 Vehicle interior temperature potentiometer<br/>306 Treated air sensor<br/>309 Earth for air conditioning unit<br/>312 Power earth for electronic injection control unit<br/>314 4 stage pressure switch<br/>330 A.B.I. control unit<br/>361 Diagnostic socket<br/>N.D. Ultrasound welding taped in cable loom</p> |
|--|---|

55.

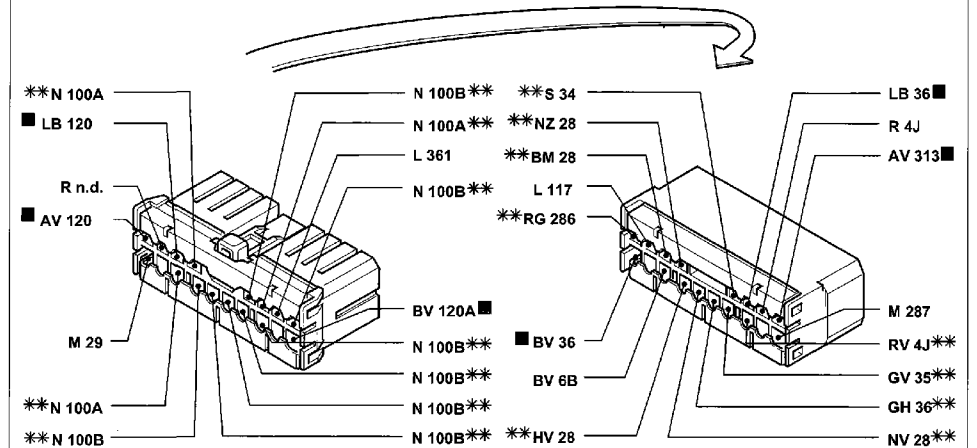
4A Junction unit



4F Junction unit

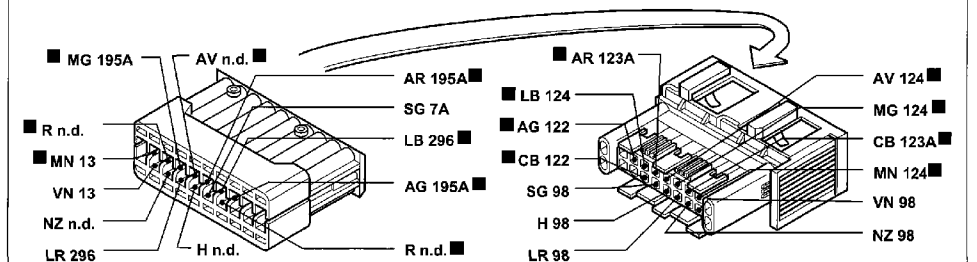


70 Connection between dashboard/front cables



\*\* Variant connection for versions with alarm

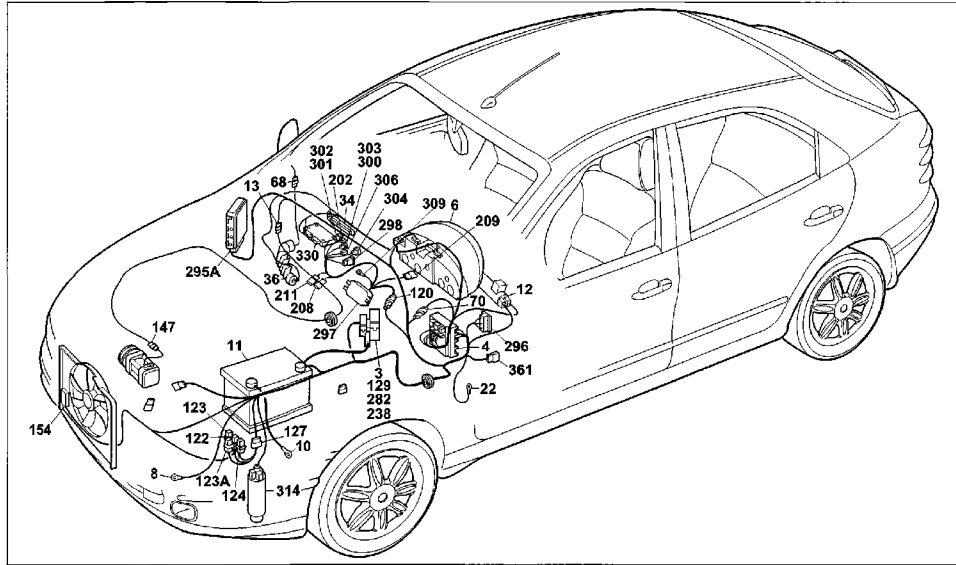
127 Connection between front left cables/cable on relay holder bracket



The cables concerned are marked in the wiring diagram with a square



55.



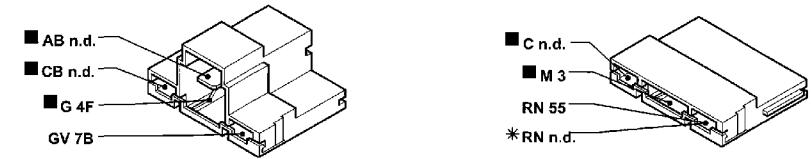
Version with ABI:  
Automatic air conditioning

Component key

- 3 Power fusebox:
  - A 30A fuse protecting injection system (60A for TD versions)
  - B 40A fuse protecting ignition system
  - C 80A fuse protecting optional equipment
  - D 80A fuse protecting junction unit
- 4 Junction unit
  - E1 Switch discharge relay
- 6 Instrument panel:
  - Y Electronic module
- 8 Left front earth
- 10 Battery earth on bodyshell
- 11 Battery
- 12 Ignition switch
- 13 Connection between right/left front cables
- 22 Left fascia earth
- 34 Switch control unit
- 36 Connection between dashboard/right front door cables
- 55 Connection between front/fuel level gauge cables
- 68 Right electrically adjustable exterior rear view mirror
- 70 Connection between fascia/front leads
- 120 Connection for air conditioning unit cables
- 122 Engine cooling fan low speed relay feed
- 123 Engine cooling fan high speed timer
- 123A Engine cooling fan high speed relay feed
- 124 Air conditioning compressor control relay
- 127 Connection between front left cable/cable on relay holder bracket
- 129 50A power fuse protecting engine cooling fan
- 147 Compressor for air conditioning
- 154 Engine cooling fan
- 202 Bulbs for heater/air conditioning unit;
- 208 Air conditioning unit fan
- 209 Outside/recirculation air flap control actuator
- 211 Electronic thermostat (N.T.C.)
- 237 Additional engine cooling fan
- 238 50A fuse protecting engine cooling fan
- 282 30A fuse for Fiat CODE/electronic injection
- 295 Injection/ignition electronic control unit 1910 TD UNI-JET
- 296 Fuse holder base on front cable
  - A 7.5A fuse protecting cooling system/electronic injection; A.C. system; Alarm
  - F 7.5A fuse protecting cooling system/electronic injection;
  - E 7.5A fuse protecting climate control system
- 297 Air conditioning control unit
- 298 Recirculation control for heater/air conditioning
  - A Air conditioning control switch
  - B Recirculation control switch
  - C Fan sensor
- 300 Heater fan electronic transformer
- 301 Vehicle interior mixture control actuator
- 303 Interior ventilation potentiometer
- 304 Vehicle interior temperature potentiometer
- 306 Treated air sensor
- 309 Earth for air conditioning unit
- 314 4 stage pressure switch
- 330 A.B.I. control unit
- 361 Diagnostic socket

N.D. Ultrasound welding taped in cable loom

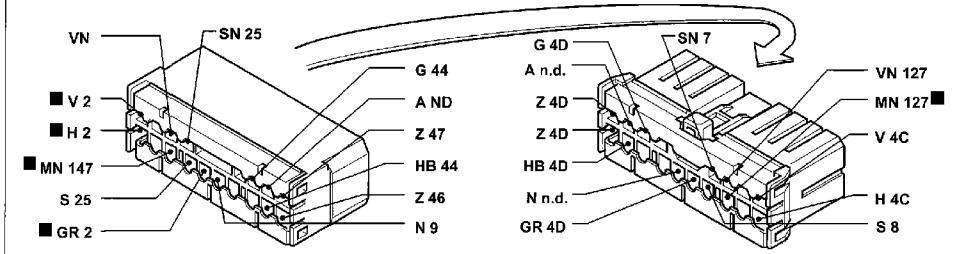
12 Ignition switch



\* Variant for the 1547 version with automatic transmission

4A066N102

13 Connection between right/left front cables

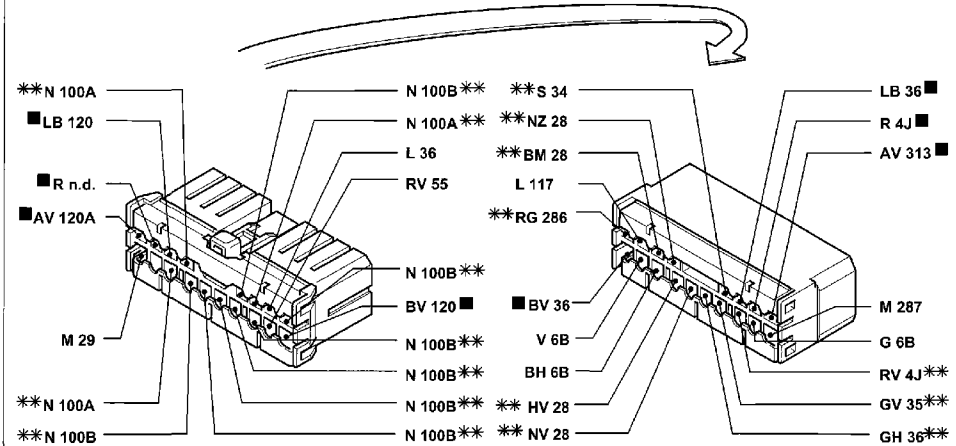


\* Variant for the 1581 version only

Only for 1242 and 1581 versions

4A066N103

70 Connection between dashboard/front cables

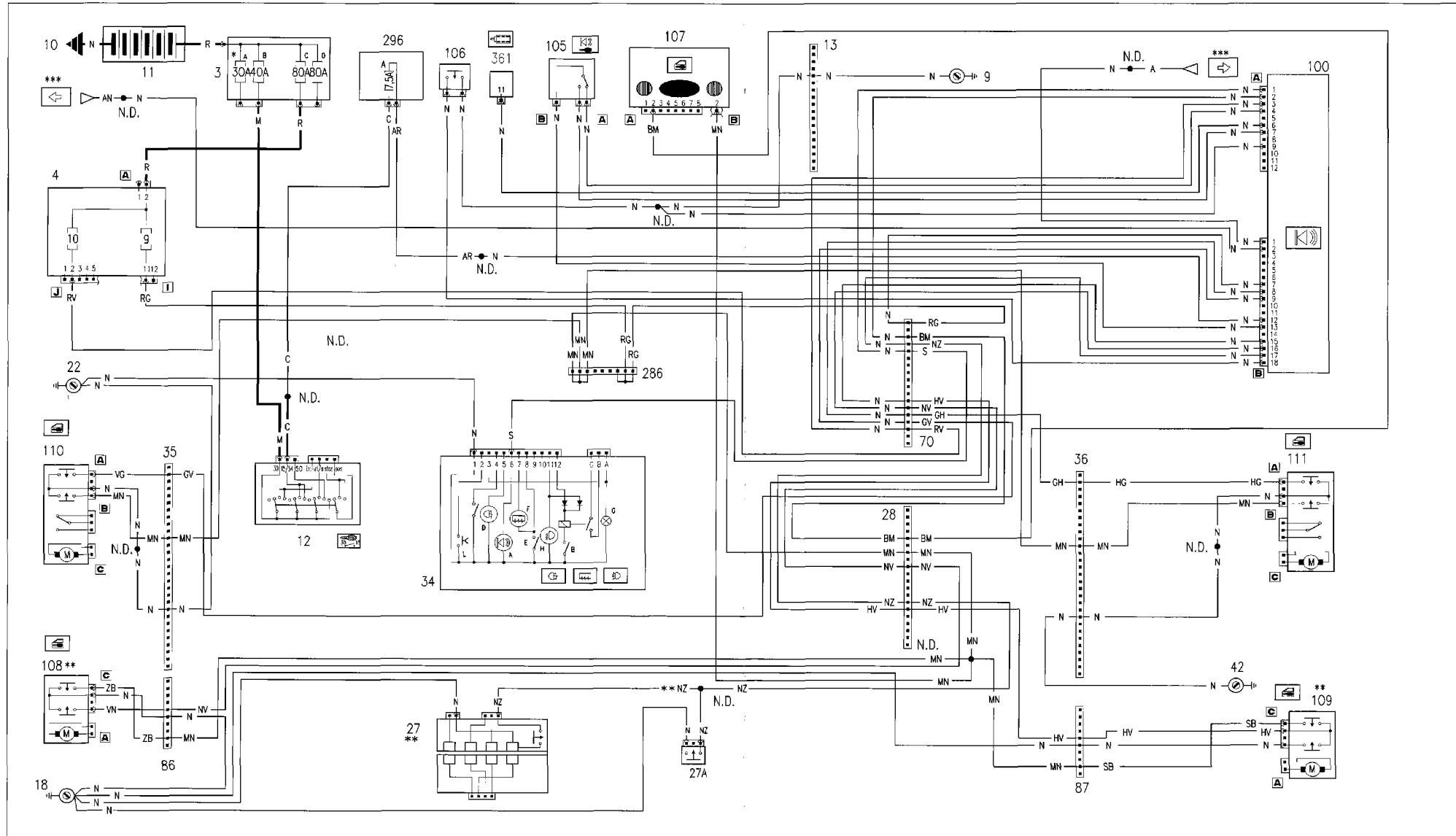


\*\* Variant connection for versions with alarm

4A066N104

The cables concerned are marked in the wiring diagram with a square

SX-GT trim level  
Version without ABI:  
Alarm - Alarm on warning light

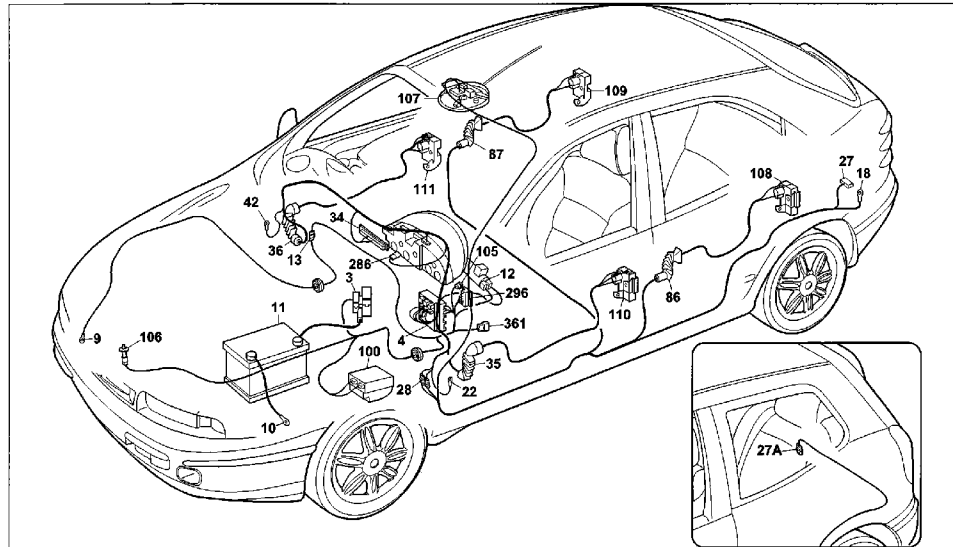


\* 60A fuse for TD versions

\*\* Non existent for the Bravo version

\*\*\* See SX-GT direction indicators wiring diagram

**55.**

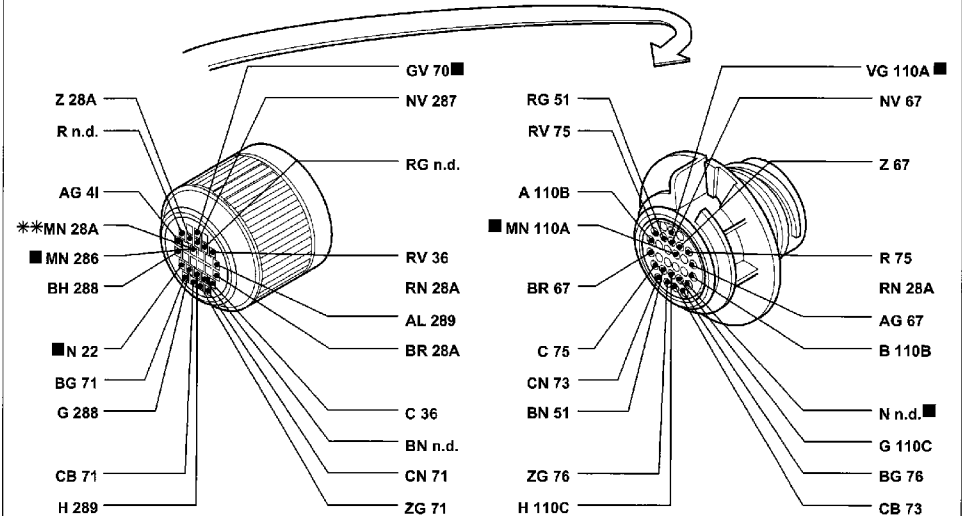


**SX-GT trim level**  
Version without ABI:  
Alarm - Alarm on warning light

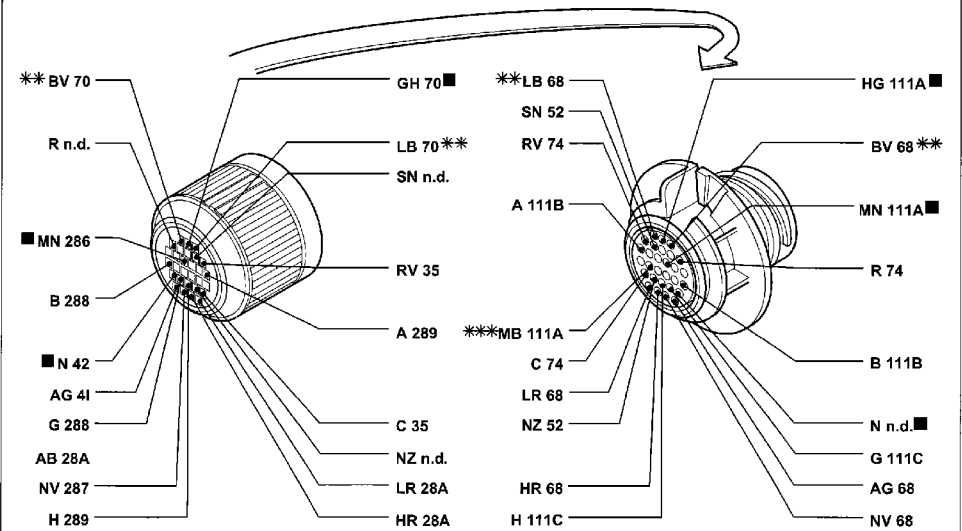
**Component key**

- 3 Power fusebox:
  - A 30A fuse protecting injection system (60A for TD versions)
  - B 40A fuse protecting ignition system
  - C 80A fuse protecting optional equipment
  - D 80A fuse protecting junction unit
- 4 Junction unit
- 9 Right front earth
- 10 Battery earth on bodyshell
- 11 Battery
- 12 Ignition switch
- 13 Connection between right/left front cables
- 18 Left rear earth
- 22 Left facia earth
- 27 Contact board for rear connections with luggage compartment light switch incorporated
- 27A Button for luggage compartment light, switching on alarm and signalling tailgate open
- 28 Connection between dashboard/longitudinal cables
- 34 Switch control unit:
  - A Anti-theft device on warning light
  - B Rear fog lamps control switch
  - C Rear fog lamps warning light
  - E Heated rear windscreen control switch
  - F Heated rear windscreen warning light
  - G Switch control panel ideogram light
  - H Fog lights warning light
- I Fog lights control switch
- L Outside temperature control switch
- 35 Connection between dashboard/left front door cables
- 36 Connection between dashboard/right front door cables
- 42 Right dashboard earth
- 70 Connection between facia/front leads
- 86 Connection between longitudinal/left rear door cables
- 87 Connection between longitudinal/right rear door cables
- 100 Anti-theft electronic control unit
- 105 Anti-theft deactivation switch
- 106 Anti-theft engagement switch
- 107A Central locking remote control receiver
- 108 Left rear door lock/anti-theft engagement switch
- 109 Right rear door lock/anti-theft engagement switch
- 110 Left front door lock/anti-theft engagement switch
- 111 Right front door lock/anti-theft engagement switch
- 286 Short circuit connection
- 296 Fuse holder base on front cable
  - A 7.5A fuse protecting cooling system/electronic injection; C.A. system; Allarm
- 361 Diagnostic socket
- N.D. Ultrasound welding taped in cable loom

**35** Connection between dashboard/left front door cables

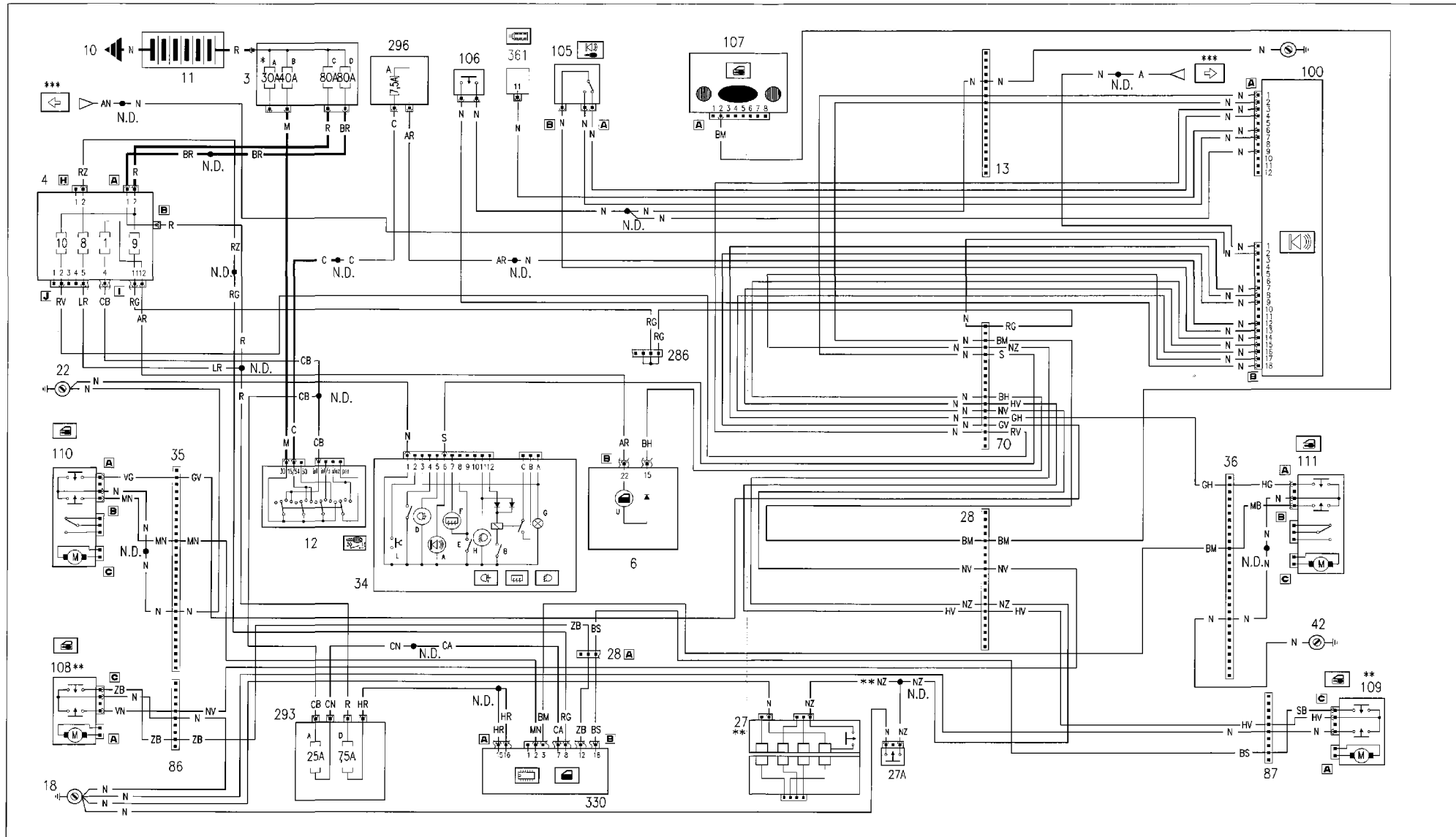


**36** Connection between dashboard/right front door cables



The cables concerned are marked in the wiring diagram with a square

ELX trim level  
Version with ABI:  
Alarm - Alarm on warning light



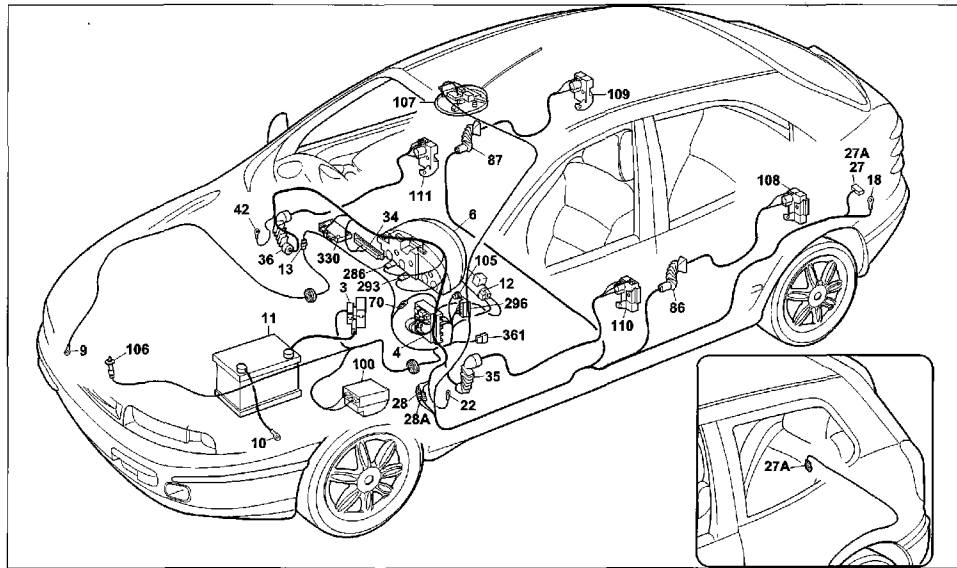
\* 60A fuse for TD versions

\*\* Non existent for the Bravo version

\*\*\* See direction indicators wiring diagram



**55.**

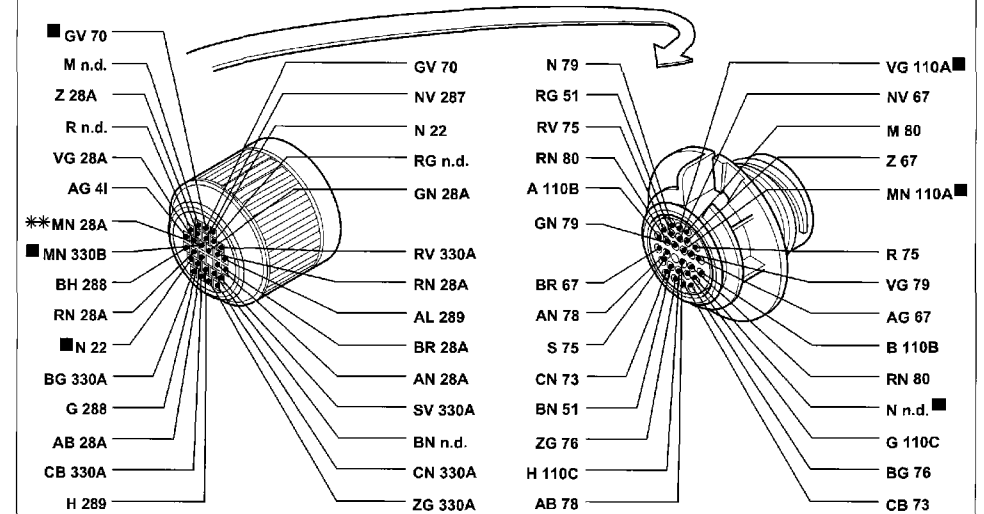


ELX trim level  
Version with ABI  
Alarm - Alarm on warning light

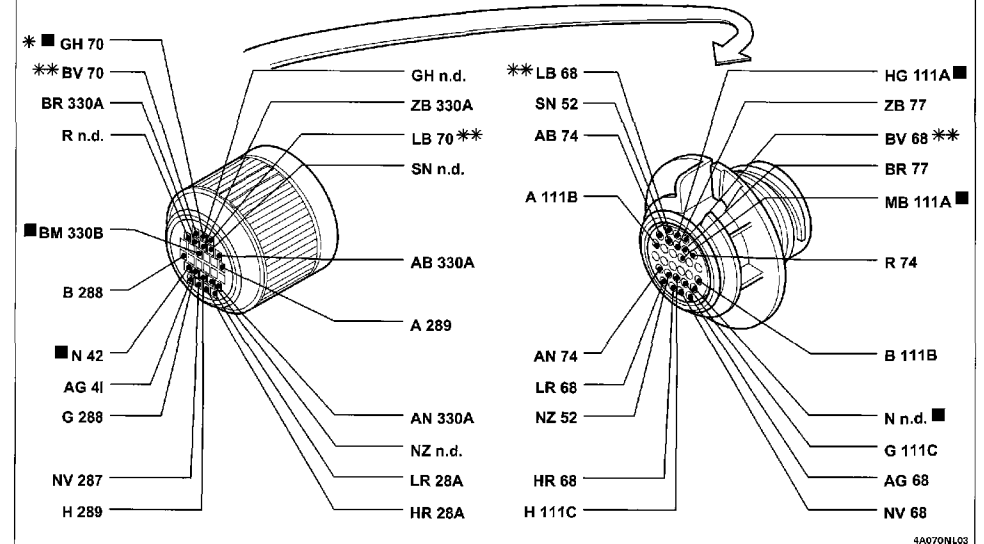
**Component key**

- 3 Power fusebox:
  - A 30A fuse protecting injection system (60A for TD versions)
  - B 40A fuse protecting ignition system
  - C 80A fuse protecting optional equipment
  - D 80A fuse protecting junction unit
- 4 Junction unit
- 6 Instrument panel:
  - U Doors open warning light
- 9 Right front earth
- 10 Battery earth on bodyshell
- 11 Battery
- 12 Ignition switch
- 13 Connection between right/left front cables
- 18 Left rear earth
- 22 Left facia earth
- 27 Contact board for rear connections with luggage compartment light switch incorporated
- 27A Button for luggage compartment light, switching on alarm and signalling tailgate open
- 28 Connection between dashboard/longitudinal cables
- 34 Switch control unit:
  - A Anti-theft device on warning light
  - B Rear fog lamps control switch
  - C Rear fog lamps warning light
  - E Heated rear windscreen control switch
  - F Heated rear windscreen warning light
  - G Switch control panel ideogram light
  - H Fog lights warning light
  - I Fog lights control switch
  - L Outside temperature control switch
- 35 Connection between dashboard/left front door cables
- 36 Connection between dashboard/right front door cables
- 42 Right dashboard earth
- 70 Connection between facia/front leads
- 86 Connection between longitudinal/left rear door cables
- 87 Connection between longitudinal/right rear door cables
- 100 Anti-theft electronic control unit
- 105 Anti-theft deactivation switch
- 106 Anti-theft engagement switch
- 107A Central locking remote control receiver
- 108 Left rear door lock/anti-theft engagement switch
- 109 Right rear door lock/anti-theft engagement switch
- 110 Left front door lock/anti-theft engagement switch
- 111 Right front door lock/anti-theft engagement switch
- 286 Short circuit connection
- 293 Fuse holder base on front cable
  - A 7.5A fuse protecting switch panel light; Radio phone; Radio; Electric mirrors
  - D 25A fuse protecting ABI control unit; Central locking control unit
- 296 Fuse holder base on front cable
  - A 7.5A fuse protecting cooling system/electronic injection; A.C. system; Alarm
- 330 ABI control unit
- 361 Diagnostic socket
- N.D. Ultrasound welding taped in cable loom

**35** Connection between dashboard/left front door cables

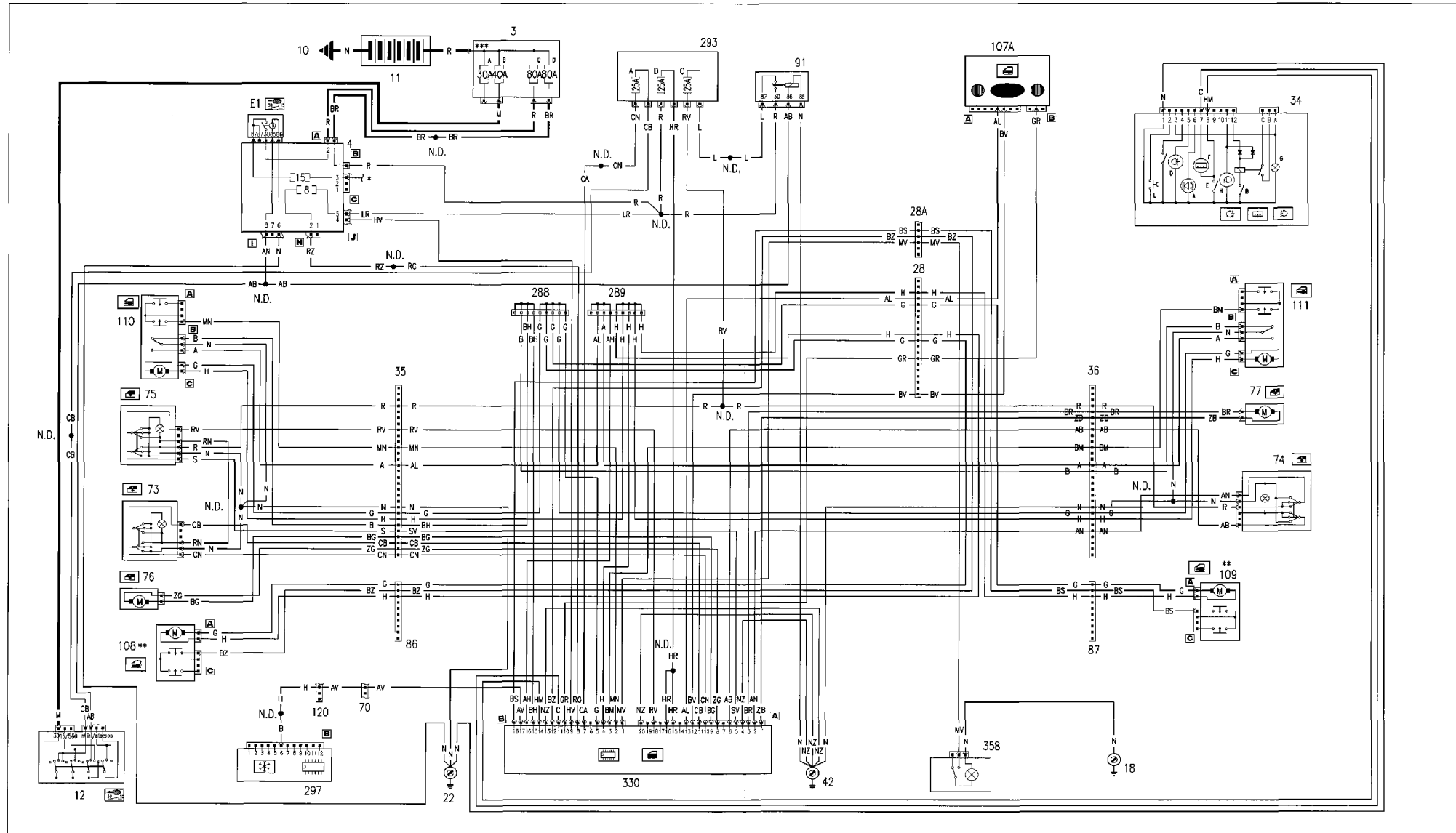


**36** Connection between dashboard/right front door cables



The cables concerned are marked in the wiring diagram with a square

ELX GT trim level  
ABI control unit connections

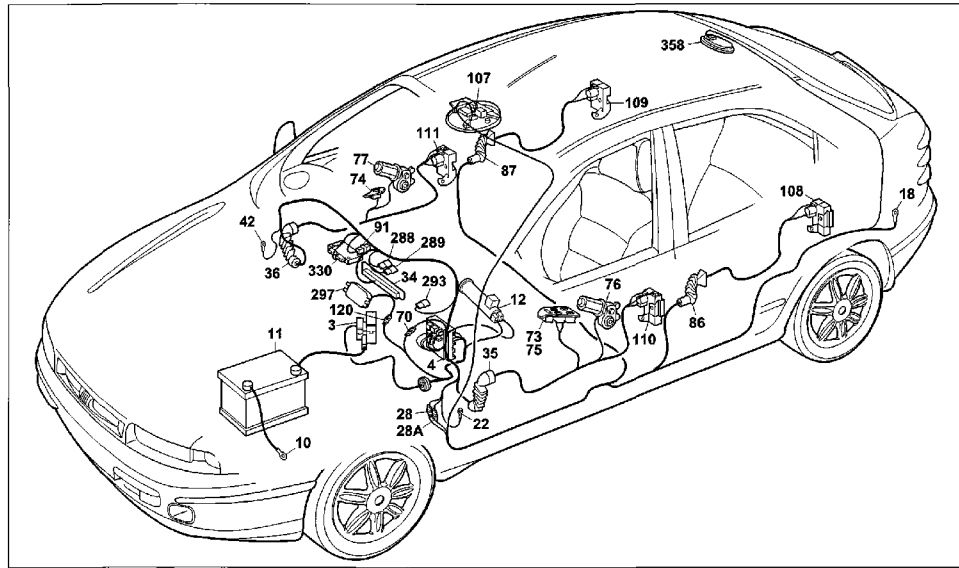


\* 60A fuse for TD versions

\*\* Non existent for the Bravo version

\*\*\* See direction indicators wiring diagram

**55.**



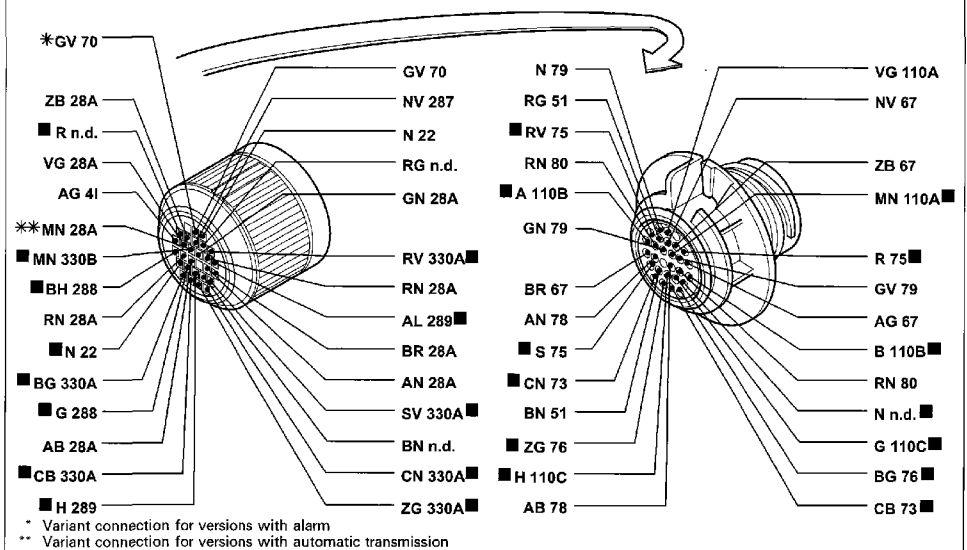
4A072N.L01

ELX GT trim level  
ABI control unit connections

**Component key**

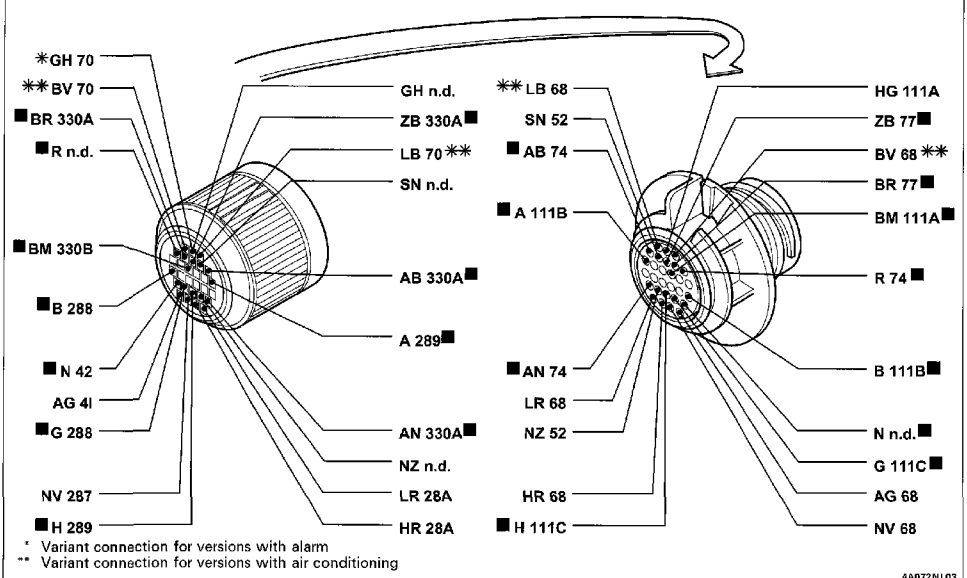
- |   |   |
|---|---|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit  | 74 Right front electric window control panel<br>75 Right front electric window control panel on left front door<br>76 Left front window motor<br>77 Right front window motor<br>86 Connection between longitudinal/left rear door cables<br>87 Connection between longitudinal/right rear door cables<br>91 Power relay |
| 4 Junction unit<br>E1 Switch discharge relay  | 107A Central locking remote control receiver  |
| 10 Battery earth on bodyshell<br>12 Ignition switch<br>18 Left rear earth<br>22 Left facia earth  | 108 Left rear door lock/anti-theft engagement switch<br>109 Right rear door lock/anti-theft engagement switch<br>110 Left front door lock/anti-theft engagement switch<br>111 Right front door lock/anti-theft engagement switch  |
| 28 Connection between dashboard/longitudinal cables   | 120 Connection for air conditioning unit cables   |
| 28A Connection between dashboard/longitudinal cables  | 288 Short circuit connection<br>289 Short circuit connection  |
| 34 Switch control unit:<br>A Anti-theft device on warning light<br>B Rear fog lamps control switch<br>C Rear fog lamp relay feed<br>D Rear fog lamps warning light<br>E Heated rear windscreen control switch<br>F Heated rear windscreen warning light<br>G Switch control panel ideogram light<br>H Fog lights warning light<br>I Fog lights control switch<br>L Outside temperature control switch | 293 Fuse holder base on dashboard cable<br>A 7.5A fuse protecting switch panel light; Radio telephone; Radio; Electric mirrors<br>D 25A fuse protecting ABI control unit; Central locking control unit  |
| 35 Connection between dashboard/left front door cables  | 297 Air conditioning control unit<br>330 ABI control unit<br>358 Rear courtesy light  |
| 36 Connection between dashboard/right front door cables   | N.D. Ultrasound welding taped in cable loom   |

**35** Connection between dashboard/left front door cables



4A072N.L02

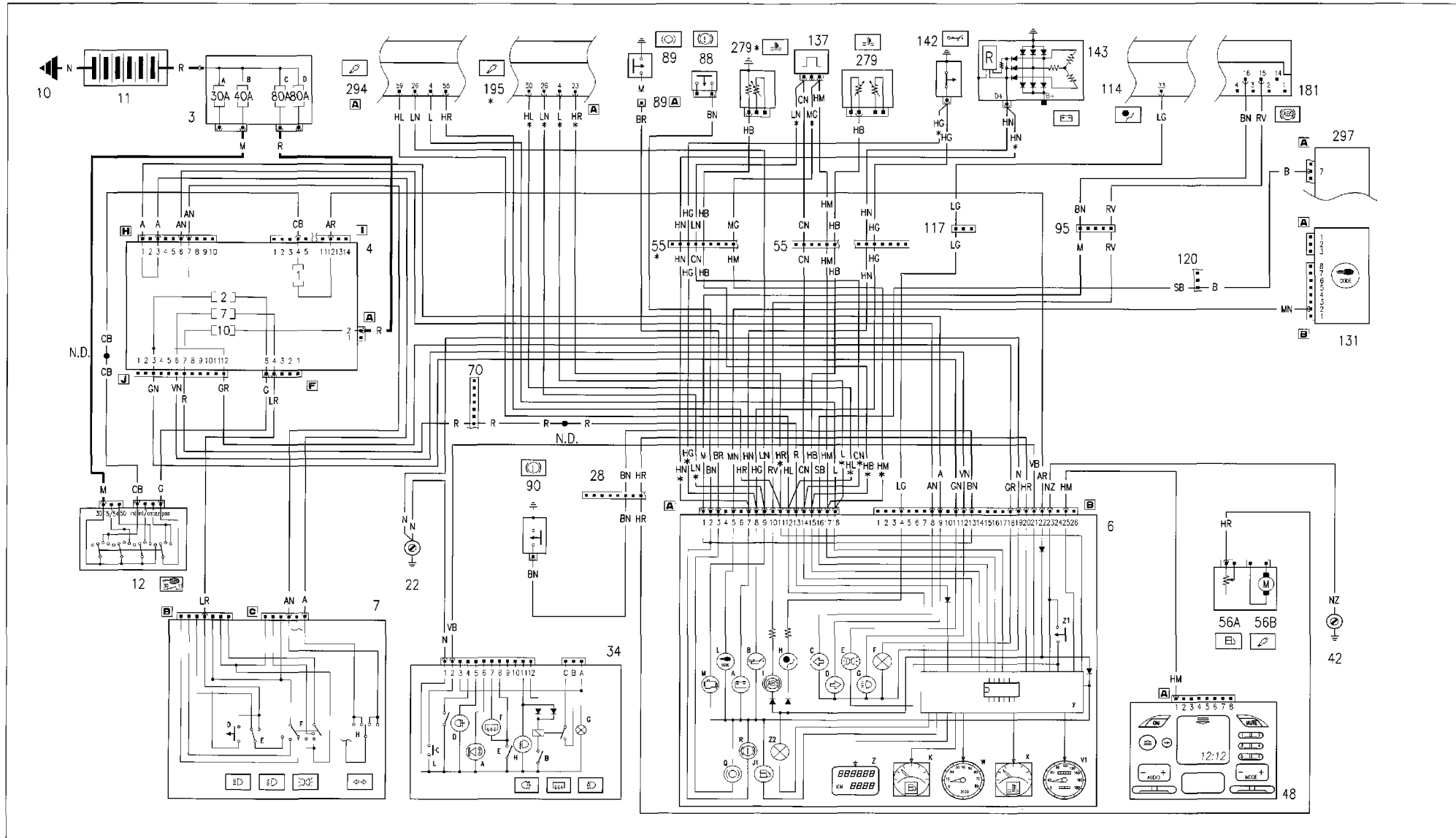
**36** Connection between dashboard/right front door cables



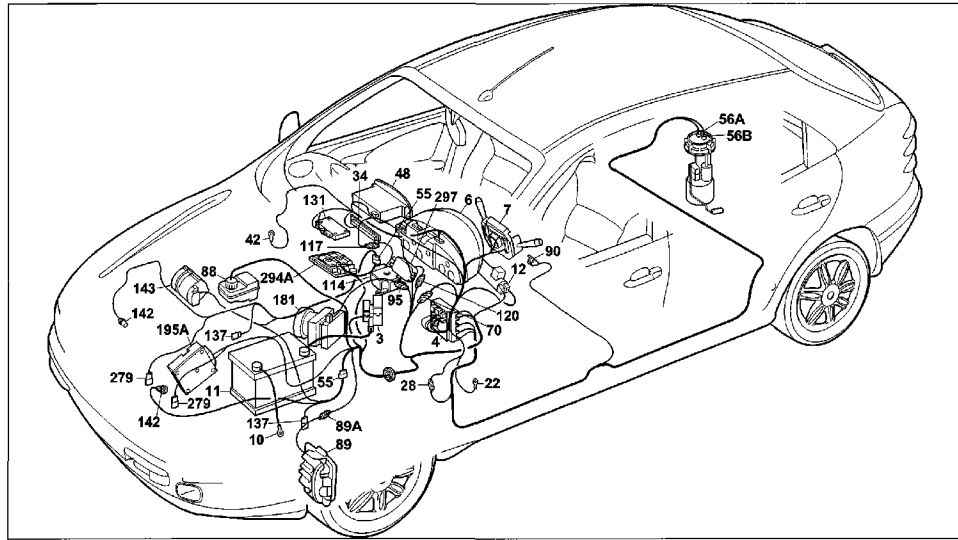
4A072N.L03

The cables concerned are marked in the wiring diagram with a square

SX-GT trim level  
Instrument panel connections



\* Variant connection for the 1581 16V version



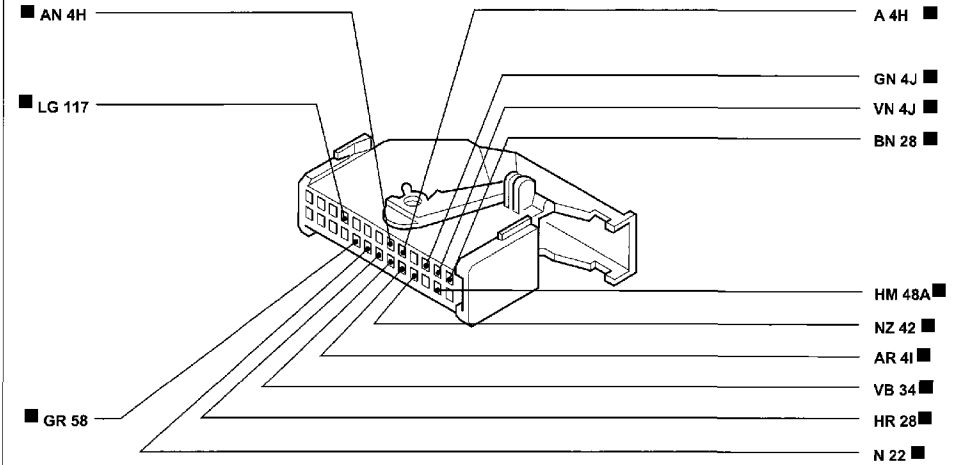
SX-GT trim level  
Instrument panel connections

Component key

- |  |   |
|--|---|
| <p>3 Power fusebox:<br/>A 30A fuse protecting injection system (60A for TD versions)<br/>B 40A fuse protecting ignition system<br/>C 80A fuse protecting optional equipment<br/>D 80A fuse protecting junction unit</p> <p>4 Junction unit<br/>E1 Switch discharge relay</p> <p>6 Instrument panel:<br/>A Battery recharging warning light<br/>B Low engine oil pressure warning light<br/>C Left direction indicator warning light<br/>D Right direction indicator warning light<br/>E Side lights warning light<br/>F Instrument panel ideograms light<br/>G Main beam headlamps warning light<br/>H AIR BAG system failure warning light<br/>I Anti-lock brakes failure warning light<br/>J1 Fuel reserve warning light<br/>K Fuel gauge<br/>L Fiat-CODE failure warning light<br/>M Injection system failure warning light petrol/diesel<br/>N Maximum turbocharging pressure warning light<br/>Q Front brake pad wear warning light<br/>R Handbrake applied/insufficient brake fluid level warning light<br/>V1 Speedometer<br/>W Rev counter<br/>X Engine coolant temperature gauge<br/>Y Electronic module<br/>Z Milometer/trip meter display<br/>Z1 Trip meter zeroing button<br/>Z2 Trip meter light</p> <p>7 Stalk unit:<br/>D Headlamp flasher button<br/>E Dipped/main beam headlamps control switch<br/>F Side lights control switch<br/>H Direction indicators control switch</p> <p>9 Right front earth<br/>10 Battery earth on bodyshell<br/>11 Battery<br/>12 Ignition switch<br/>13 Connection between right/left front cables</p> | <p>22 Left fascia earth<br/>28 Connection between dashboard/longitudinal cables<br/>34 Switch control unit:<br/>A Anti-theft device on warning light<br/>B Rear fog lamps control switch<br/>C Rear fog lamps relay feed<br/>D Rear fog lamps warning light<br/>E Heated rear windscreen control switch<br/>F Heated rear windscreen warning light<br/>G Switch control panel ideogram light<br/>H Fog lights warning light<br/>I Fog lights control switch<br/>L Outside temperature control switch</p> <p>42 Right dashboard earth<br/>48 Radio receiver with clock<br/>55 Connection between front/fuel gauge cables<br/>56 Fuel gauge:<br/>A Fuel level sensor<br/>B Electric fuel pump</p> <p>70 Connection for front dashboard cables<br/>88 Insufficient brake fluid level sensor<br/>89 Left brake pad wear sensor<br/>89A Left brake pad wear sensor cables<br/>90 Switch indicating handbrake applied<br/>95 Connection between front cables/anti-lock brakes (A.B.S.)<br/>114 Air Bag electronic control unit<br/>117 Connection for EURO BAG/dashboard cables<br/>120 Connection for air conditioning unit cables<br/>131 Fiat CODE electronic control unit<br/>137 Vehicle speed sensor<br/>142 Switch indicating insufficient engine oil pressure<br/>143 Alternator<br/>181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)<br/>195 Injection/ignition electronic control unit (1581)<br/>279 Engine coolant temperature twin sender unit<br/>294 Injector/ignition electronic control unit (1242)<br/>297 Injection control unit<br/>N.D. Ultrasound welding taped in cable loom</p> |
|--|---|

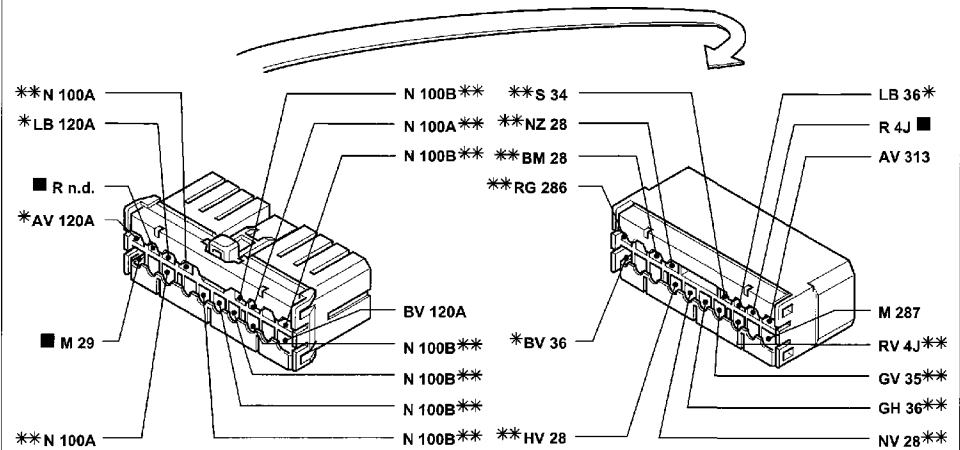
55.

6B Instrument panel



\* Non existent for SX-GT trim levels  
\*\* Variant for versions with alarm

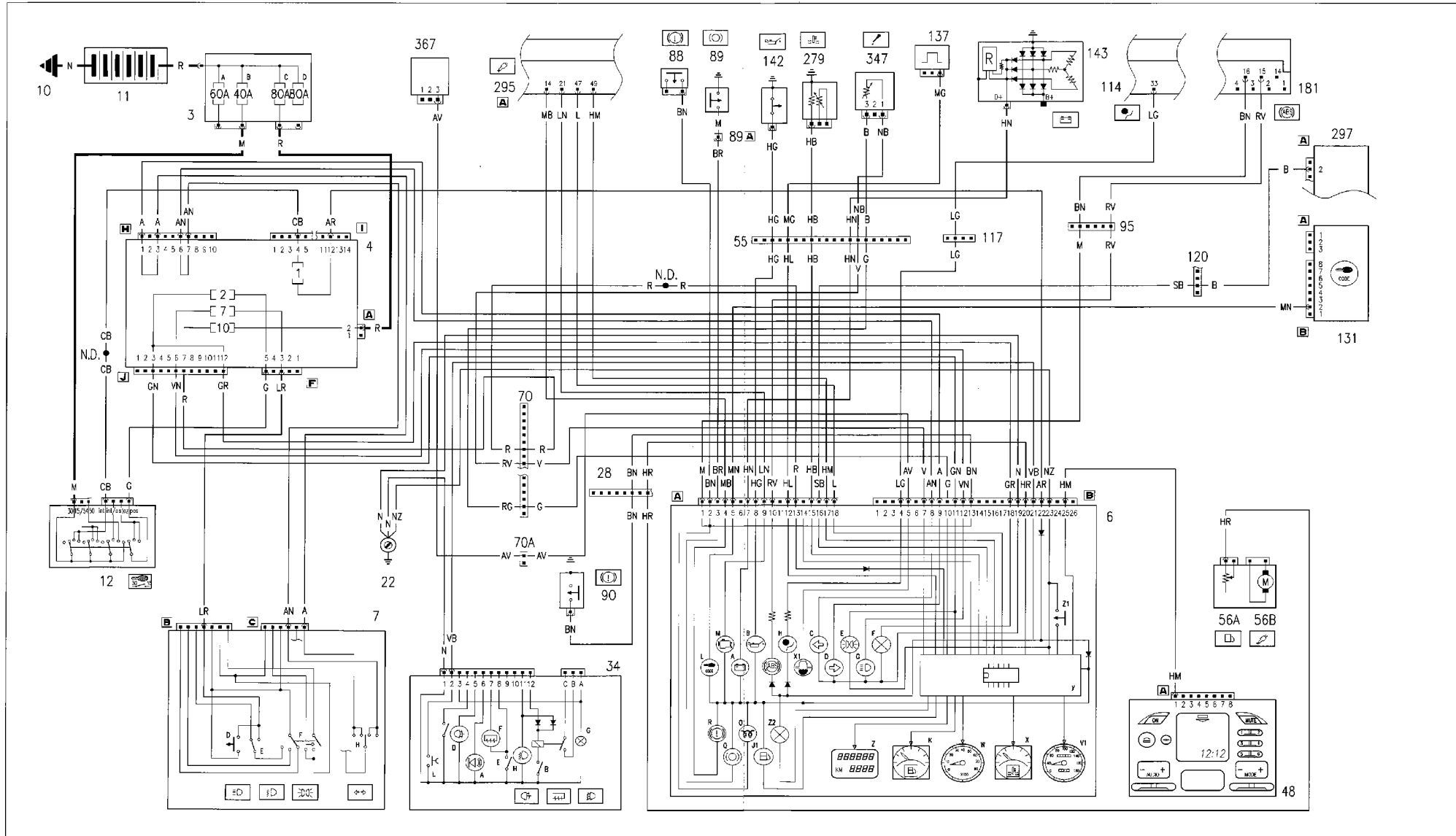
70 Connection between dashboard/front cables

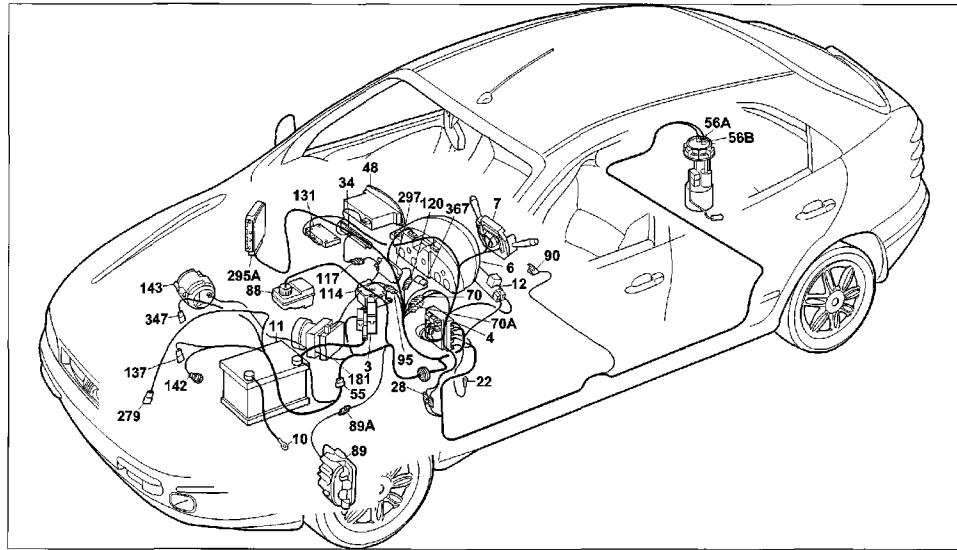


\* Variant connection for versions with air conditioning  
\*\* Variant connection for versions with alarm

The cables concerned are marked in the wiring diagram with a square

**SX-GT trim level**  
Instrument panel connections





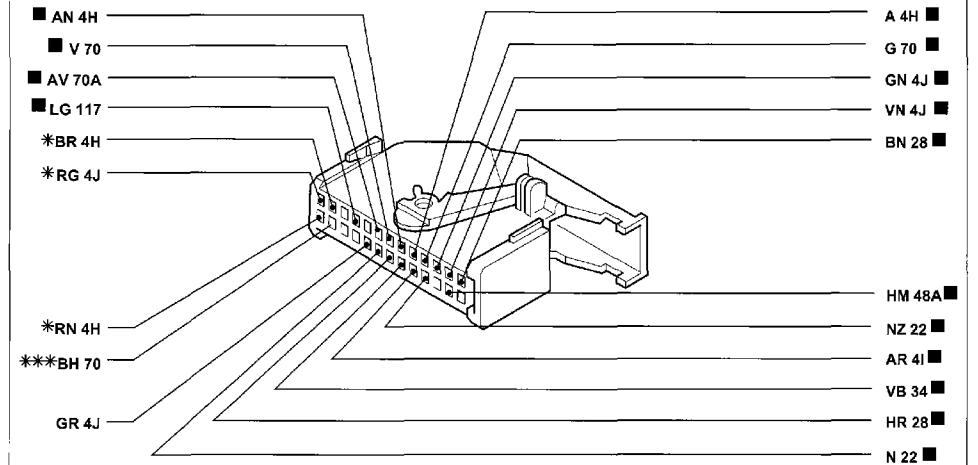
**SX-GT trim level**  
Instrument panel connections

**Component key**

- |   |   |
|---|---|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit  | 13 Connection between right/left front cables<br>22 Left fascia earth<br>28 Connection between dashboard/longitudinal cables<br>34 Switch control unit<br>A Anti-theft device on warning light<br>B Rear fog lamps control switch<br>C Rear fog lamps relay feed<br>D Rear fog lamps warning light<br>E Heated rear windscreen control switch<br>F Heated rear windscreen warning light<br>G Switch control panel ideogram light<br>H Fog light warning light<br>I Fog lights control switch<br>L Outside temperature control switch  |
| 4 Junction unit<br>6 Instrument panel:<br>A Battery recharging warning light<br>B Low engine oil pressure warning light<br>C Left direction indicator warning light<br>D Right direction indicator warning light<br>E Side lights warning light<br>F Instrument panel ideograms light<br>G Main beam headlamps warning light<br>H AIR BAG system failure warning light<br>I Anti-lock brakes failure warning light<br>J Fuel reserve warning light<br>K Fuel gauge<br>L Fiat-CODE failure warning light<br>M Injection system failure warning light petrol/diesel<br>O Heater plugs warning light<br>Q Front brake pad wear warning light<br>R Handbrake applied/insufficient brake fluid level warning light<br>V1 Speedometer<br>W Rev counter<br>X Engine coolant temperature gauge<br>X1 Water in fuel filter sensor<br>Y Electronic module<br>Z Milometer/trip meter display engine oil level gauge<br>Z1 Trip meter zeroing button<br>Z2 Trip meter light | 48 Radio receiver with clock<br>55 Connection between front/fuel gauge cables<br>56 Fuel gauge<br>A Fuel level sensor<br>B Electric fuel pump<br>70 Connection for front dashboard cables +70A<br>88 Insufficient brake fluid level sensor<br>89 Left brake pad wear sensor<br>89A Left brake pad wear sensor cables<br>90 Switch indicating handbrake applied<br>95 Connection between front cables/anti-lock brakes (A.B.S.)<br>114 Air Bag electronic control unit<br>117 Connection for EURO BAG/dashboard cables<br>120 Connection for air conditioning unit cables<br>131 Fiat CODE electronic control unit<br>137 Vehicle speed sensor<br>142 Switch indicating insufficient engine oil pressure<br>143 Alternator<br>181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)<br>279 Engine coolant temperature twin sender unit<br>295 Injection/ignition electronic control unit 1910 JTD<br>297 Injection control unit<br>347 Engine oil level sensor<br>367 Water in fuel filter sensor |
- 10 Battery earth on bodyshell  
11 Battery  
12 Ignition switch
- N.D. Ultrasound welding taped in cable loom

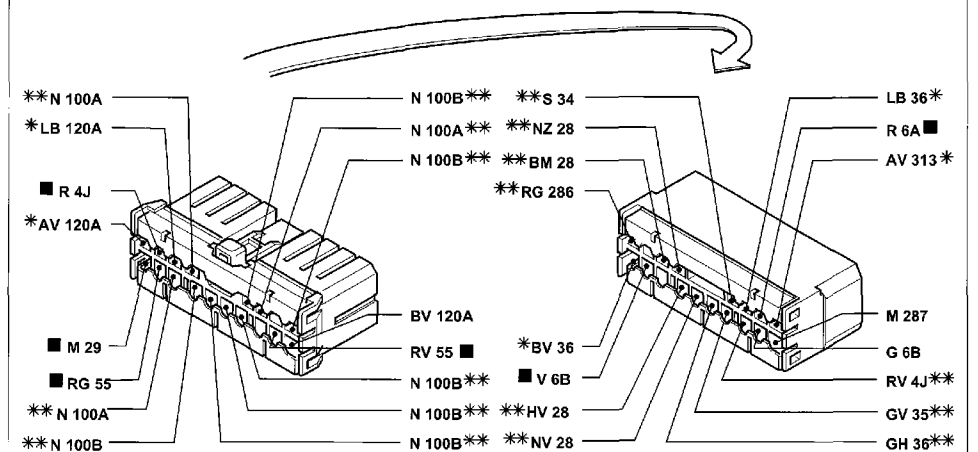
**55.**

**6B** Instrument panel



\* Non existent for SX-GT trim levels  
\*\* Variant for versions with alarm

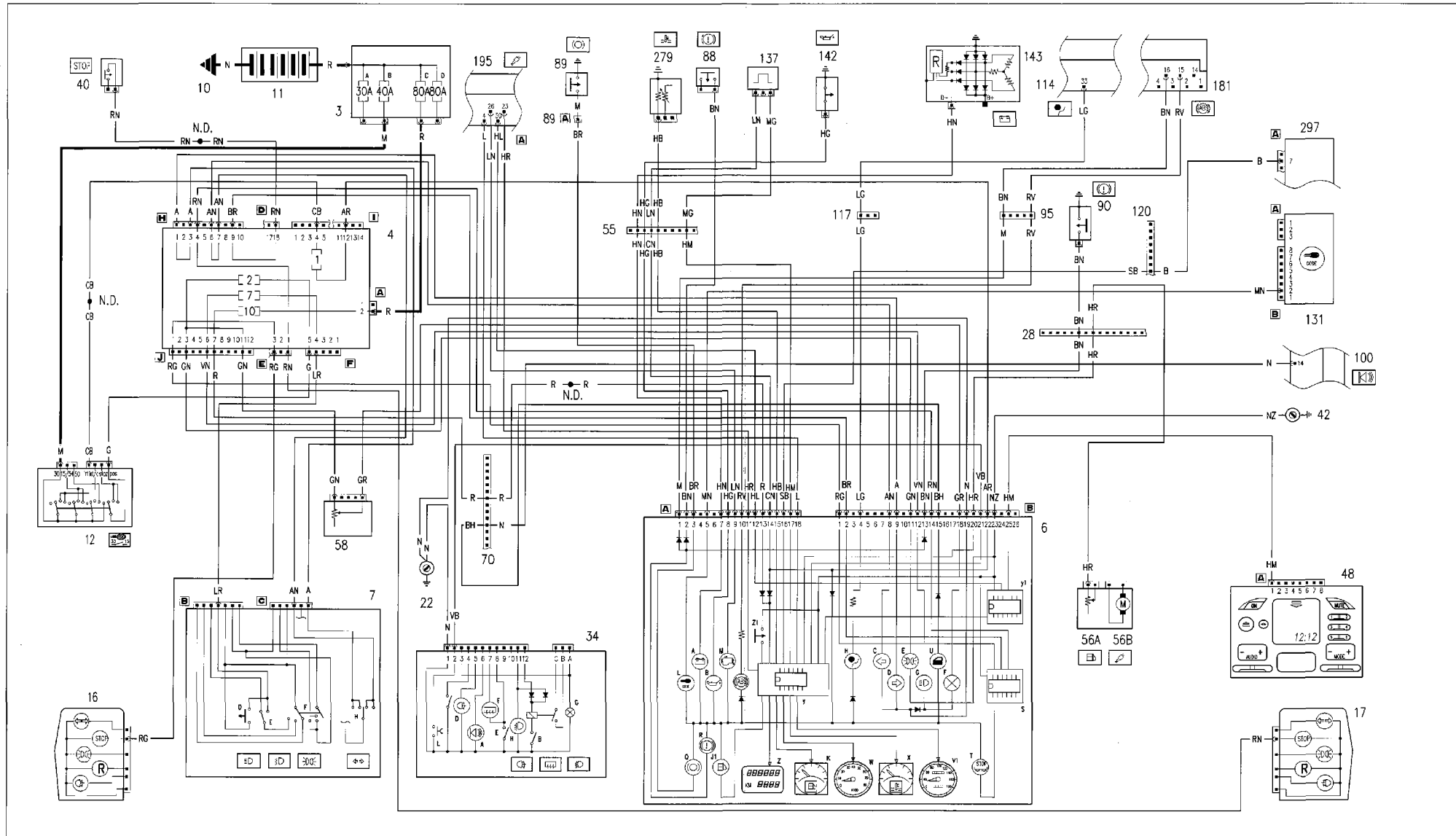
**70** Connection between dashboard/front cables



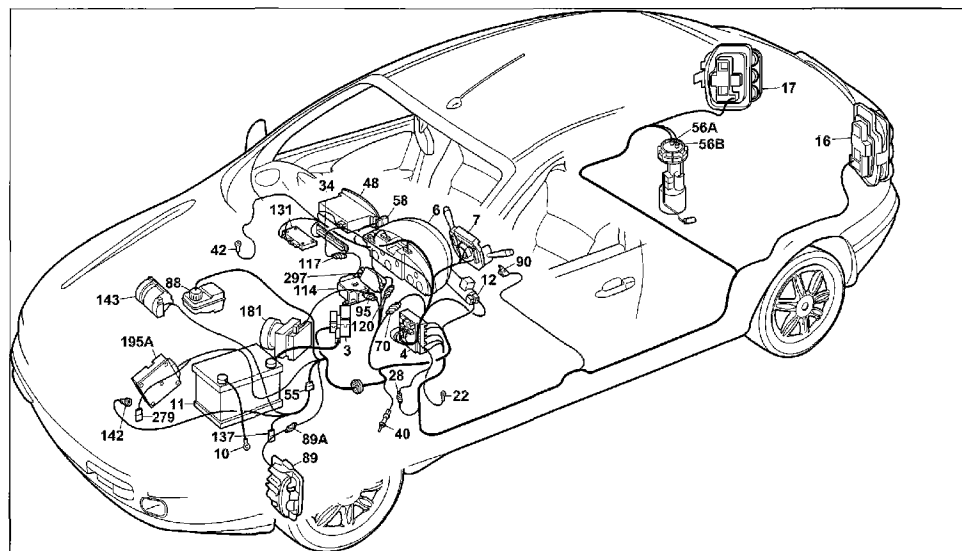
\* Variant connection for versions with air conditioning  
\*\* Variant connection for versions with alarm

The cables concerned are marked in the wiring diagram with a square

ELX trim level  
Instrument panel connections







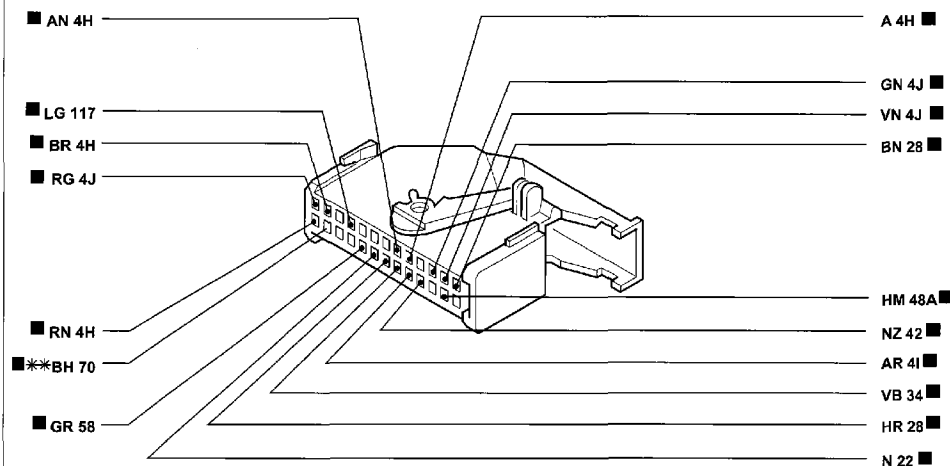
ELX trim level  
Instrument panel connections

**Component key**

- |  |   |
|--|---|
| 3 Power fusebox:<br>A 30A fuse protecting injection system (60A for TD versions)<br>B 40A fuse protecting ignition system<br>C 80A fuse protecting optional equipment<br>D 80A fuse protecting junction unit   | 17 Right tail light cluster<br>22 Left facia earth<br>28 Connection between dashboard/longitudinal cables<br>34 Switch control unit:<br>A Anti-theft device on warning light<br>B Rear fog lamps control switch<br>C Rear fog lamps relay feed<br>D Rear fog lamps warning light<br>E Heated rear windscreen control switch<br>F Heated rear windscreen warning light<br>G Switch control panel ideogram light<br>H Fog lights warning light<br>I Fog lights control switch<br>L Outside temperature control switch   |
| 4 Junction unit  | 40 Brake light control switch<br>42 Right dashboard earth<br>48 Radio receiver with clock<br>55 Connection between front/fuel gauge cables<br>56 Fuel gauge<br>A Fuel level sensor<br>B Electric fuel pump  |
| 6 Instrument panel:<br>A Battery recharging warning light<br>B Low engine oil pressure warning light<br>C Left direction indicator warning light<br>D Right direction indicator warning light<br>E Side lights warning light<br>F Instrument panel ideograms light<br>G Main beam headlamps warning light<br>H AIR BAG system failure warning light<br>I Anti-lock brakes failure warning light<br>J Fuel reserve warning light<br>K Fuel gauge<br>L Fiat CODE failure warning light<br>M Injection system failure warning light petrol/diesel<br>O Heater plugs warning light<br>Q Front brake pad wear warning light<br>R Handbrake applied/insufficient brake fluid level warning light<br>S Brake lights failure electronic module<br>T Brake lights failure warning light<br>U Doors open warning light<br>V1 Speedometer<br>W Rev counter<br>X Engine coolant temperature gauge<br>Y Electronic module<br>Y1 Speed control module<br>Z Milometer/trip meter display engine oil level gauge<br>Z1 Trip meter zeroing button | 70 Connection for front dashboard cables +70A<br>88 Insufficient brake fluid level sensor<br>89 Left brake pad wear sensor<br>89A Left brake pad wear sensor cables<br>90 Switch indicating handbrake applied<br>95 Connection between front cables/anti-lock brakes (A.B.S.)<br>100 Anti-theft electronic control unit<br>114 Air Bag electronic control unit<br>117 Connection for EURO BAG/dashboard<br>120 Connection for air conditioning unit cables<br>131 Fiat CODE electronic control unit<br>137 Vehicle speed sensor<br>142 Switch indicating insufficient engine oil pressure<br>143 Alternator<br>181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)<br>195 Injection/ignition electronic control unit (1581)<br>279 Engine coolant temperature twin sender unit<br>295 Injection/ignition electronic control unit 1910 JTD<br>297 Injection control unit<br>N.D. Ultrasound welding taped in cable loom |

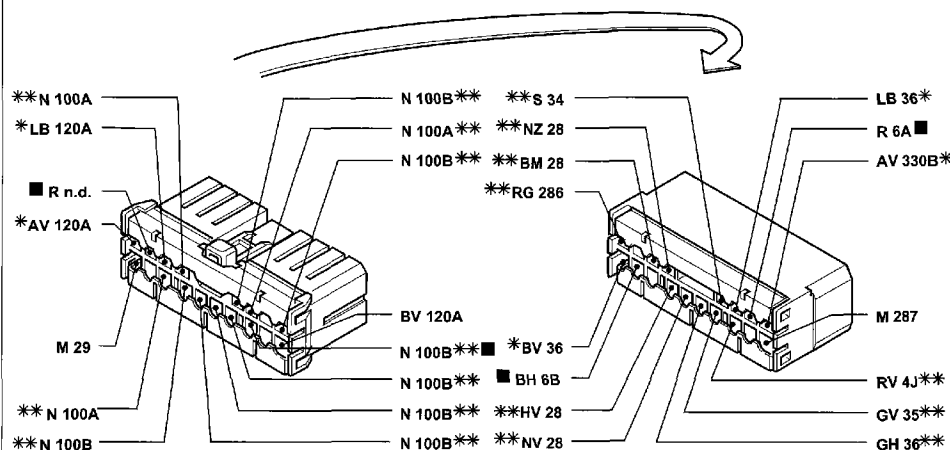
### 55.

#### 6B Instrument panel



\* Non existent for SX-GT trim levels  
\*\* Variant for versions with alarm

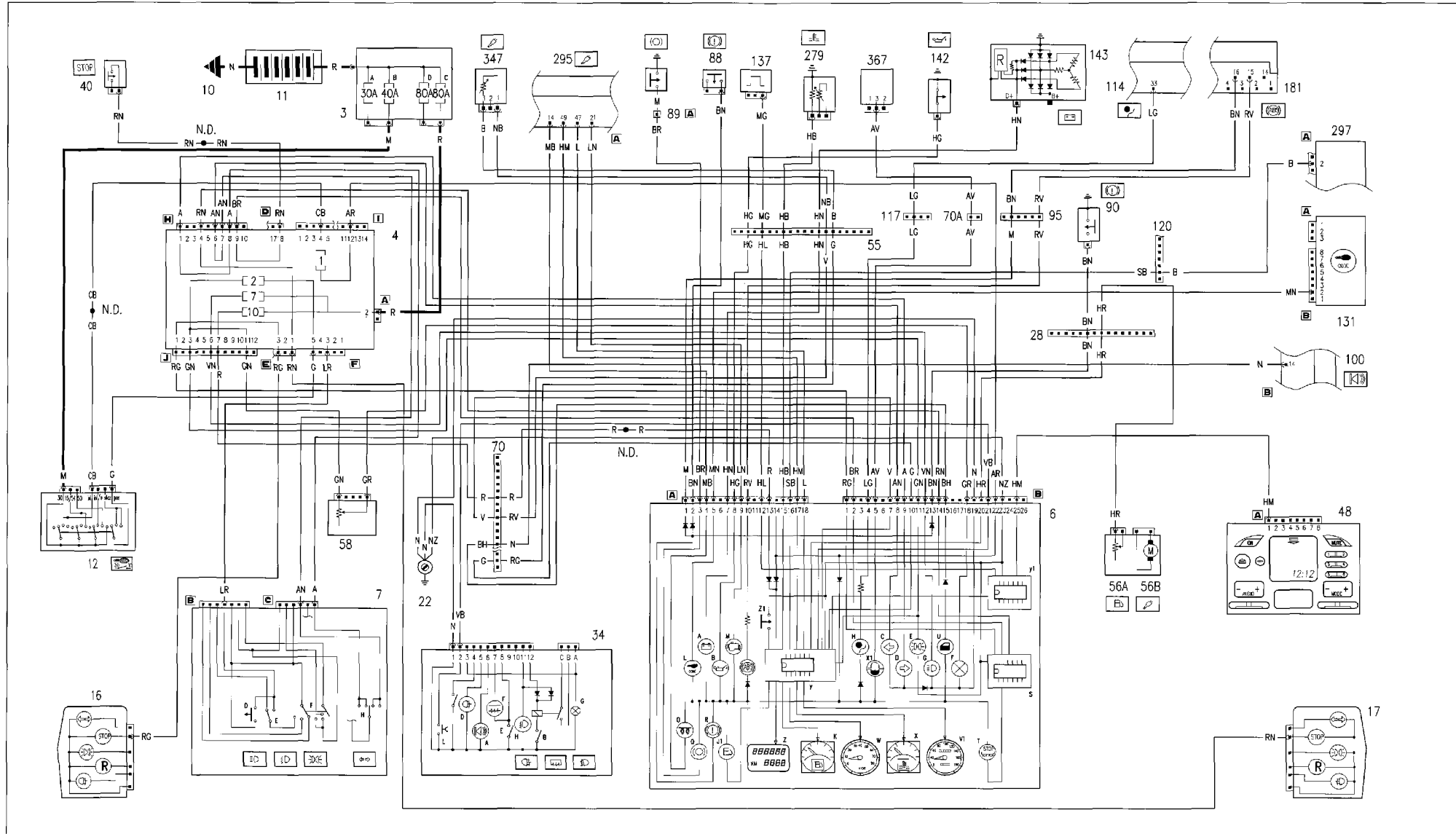
#### 70 Connection between dashboard/front cables

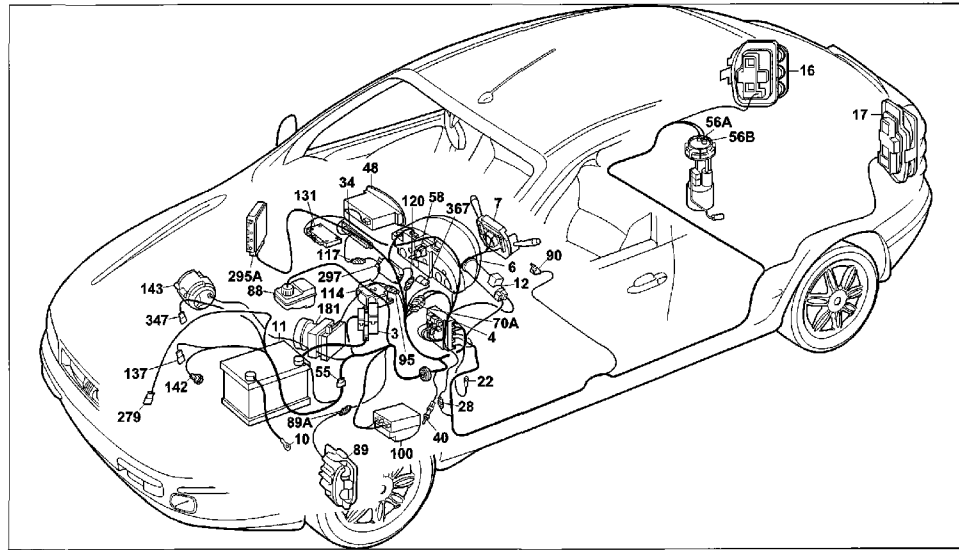


\* Variant connection for versions with air conditioning  
\*\* Variant connection for versions with alarm

The cables concerned are marked in the wiring diagram with a square

ELX trim level  
Instrument panel connections





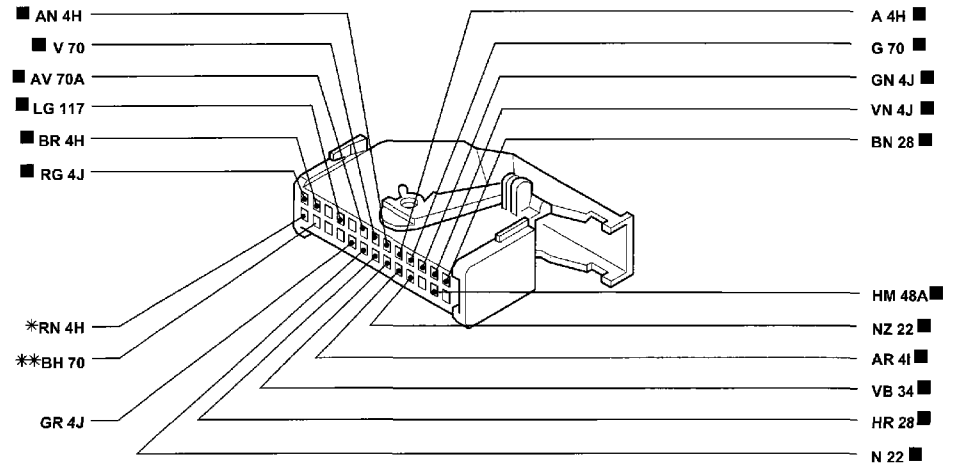
**ELX trim level**  
**Instrument panel connections**

**Component key**

- 3 Power fusebox:
    - A 30A fuse protecting injection system (60A for TD versions)
    - B 40A fuse protecting ignition system
    - C 80A fuse protecting optional equipment
    - D 80A fuse protecting junction unit
  - 4 Junction unit
  - 6 Instrument panel:
    - A Battery recharging warning light
    - B Low engine oil pressure warning light
    - C Left direction indicator warning light
    - D Right direction indicator warning light
    - E Side lights warning light
    - F Instrument panel ideograms light
    - G Main beam headlamps warning light
    - H AIR BAG system failure warning light
    - I Anti-lock brakes failure warning light
    - J1 Fuel reserve warning light
    - K Fuel gauge
    - L Fiat-CODE failure warning light
    - M Injection system failure warning light petrol/diesel
    - O Heater plugs warning light
    - Q Front brake pad wear warning light
    - R Handbrake applied/insufficient brake fluid level warning light
    - S Brake lights failure electronic module
    - T Brake lights failure warning light
    - U Doors open warning light
    - V1 Speedometer
    - W Rev counter
    - X Engine coolant temperature gauge
    - Y Electronic module
    - Y1 Speed control module
    - Z Milometer/trip meter display; engine oil level gauge
    - Z1 Trip meter zeroing button
  - 7 Stalk unit:
    - D Headlamp flasher button
    - E Dipped/main beam headlamps control switch
    - F Side lights control switch
    - H Direction indicators control switch
  - 10 Battery earth on bodyshell
  - 11 Battery
  - 12 Ignition switch
  - 16 Left tail light cluster
  - 17 Right tail light cluster
  - 22 Left fascia earth
  - 28 Connection between dashboard/longitudinal cables
  - 34 Switch control unit:
    - A Anti-theft device on warning light
    - B Rear fog lamps control switch
    - C Rear fog lamps relay feed
    - D Rear fog lamps warning light
    - E Heated rear windscreen control switch
    - F Heated rear windscreen warning light
    - G Switch control panel ideogram light
    - H Fog light warning light
    - I Fog lights control switch
    - L Outside temperature control switch
  - 40 Brake light control switch
  - 48 Radio receiver with clock
  - 55 Connection between front/fuel gauge cables
  - 56 Fuel gauge
    - A Fuel level sensor
    - B Electric fuel pump
  - 70A Connection for front dashboard cables +70A
  - 88 Insufficient brake fluid level sensor
  - 89 Left brake pad wear sensor
  - 89A Left brake pad wear sensor cables
  - 90 Switch indicating handbrake applied
  - 95 Connection between front cables/anti-lock brakes (A.B.S.)
  - 100B Anti-theft electronic control unit
  - 114 Air Bag electronic control unit
  - 117 Connection for EURO BAG/dashboard
  - 120 Connection for air conditioning unit cables
  - 131 Fiat CODE electronic control unit
  - 137 Vehicle speed sensor
  - 142 Switch indicating insufficient engine oil pressure
  - 143 Alternator
  - 181 Electro-hydraulic control unit for anti-lock brakes (A.B.S.)
  - 279 Engine coolant temperature twin sender unit
  - 295 Injection/ignition electronic control unit 1910 JTD
  - 297 Injection control unit
  - 347 Engine oil level sensor
  - 367 Water in fuel filter sensor
- N.D. Ultrasound welding taped in cable loom

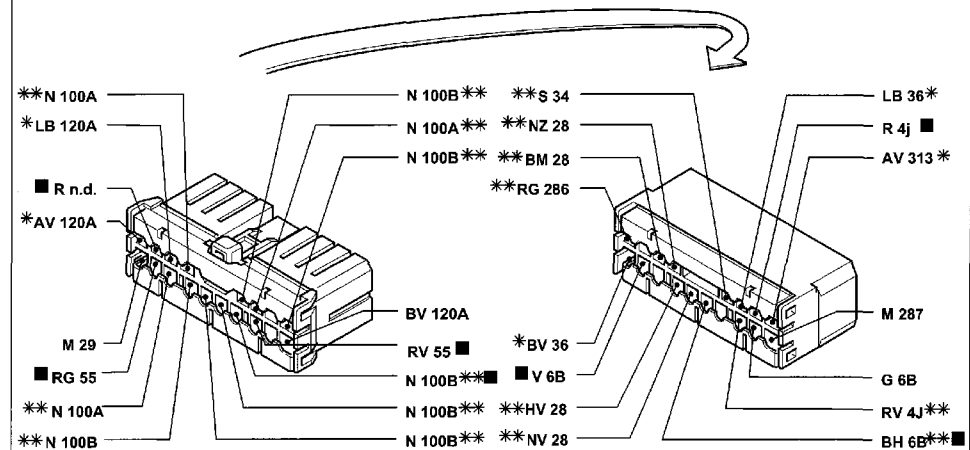
### 55.

#### 6B Instrument panel



\* Non existent for SX-GT trim levels  
\*\* Variant for versions with alarm

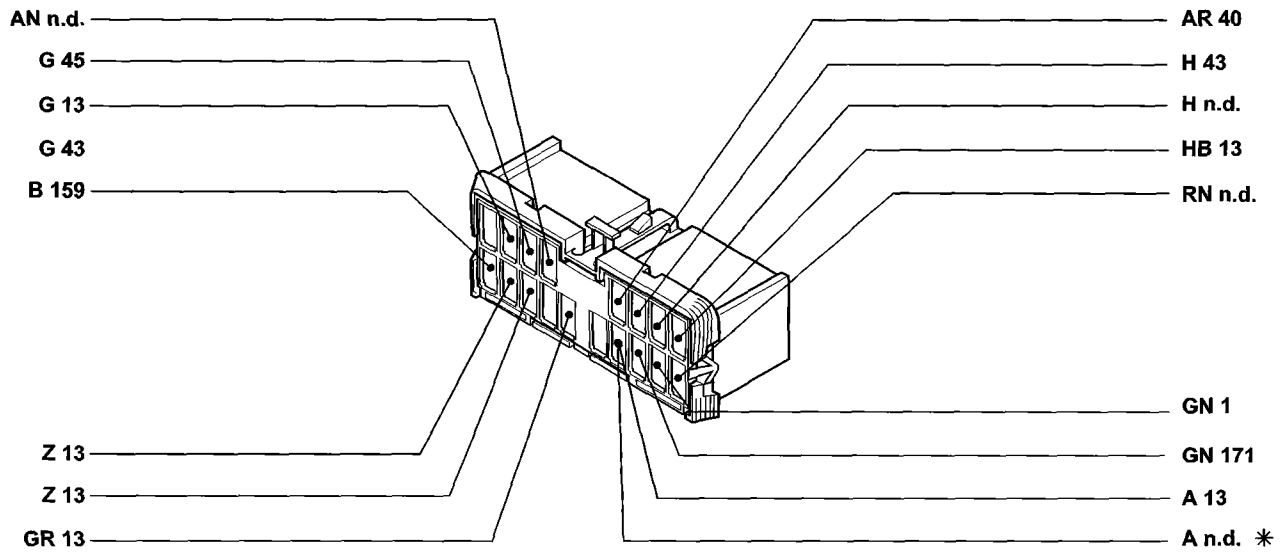
#### 70 Connection between dashboard/front cables



\* Variant connection for versions with air conditioning  
\*\* Variant connection for versions with alarm

The cables concerned are marked in the wiring diagram with a square

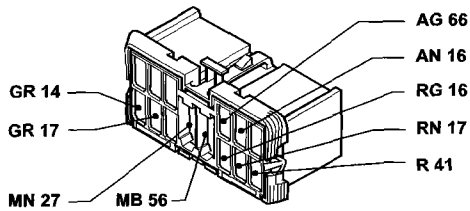
**4D** Junction unit



\* Only for versions with air conditioning

4A083NL01

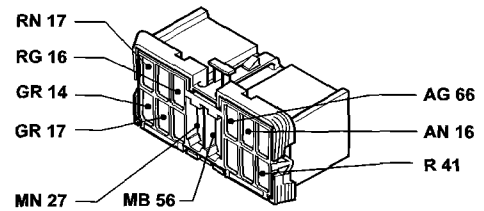
**4E** Junction unit



Only for BRAVA SX

4A083NL02

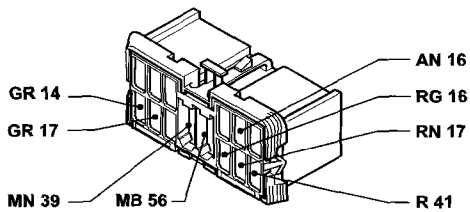
**4E** Junction unit



Only for BRAVA ELX

4A083NL03

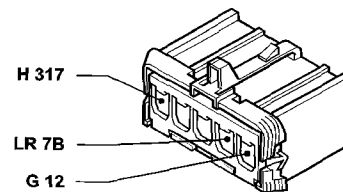
**4E** Junction unit



Only for BRAVO SX-GT

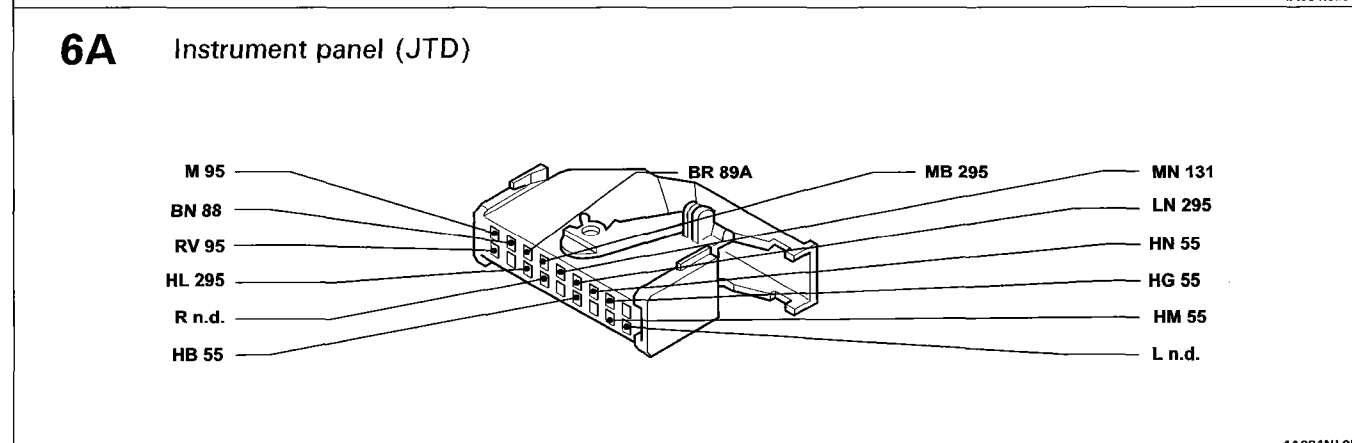
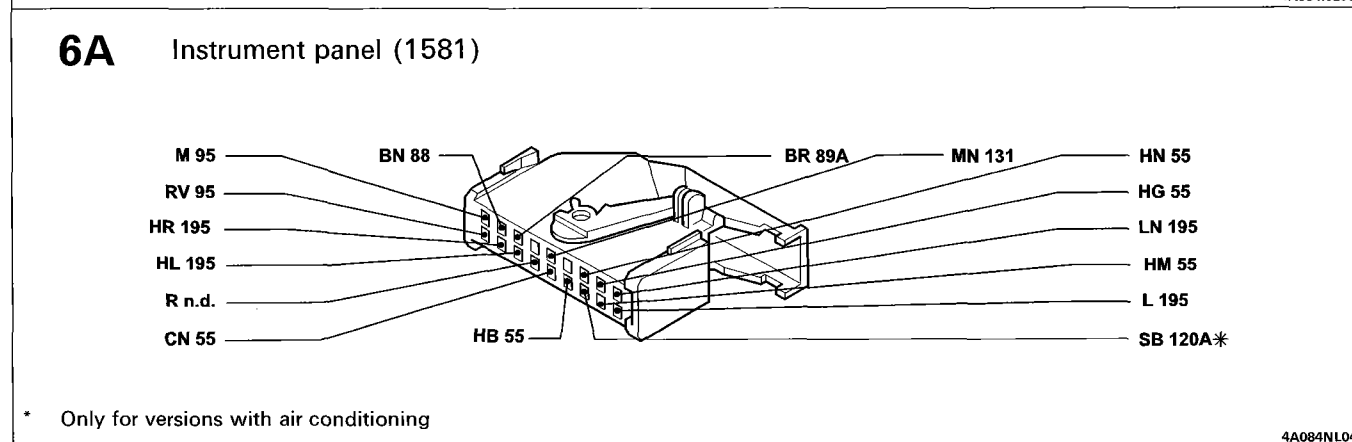
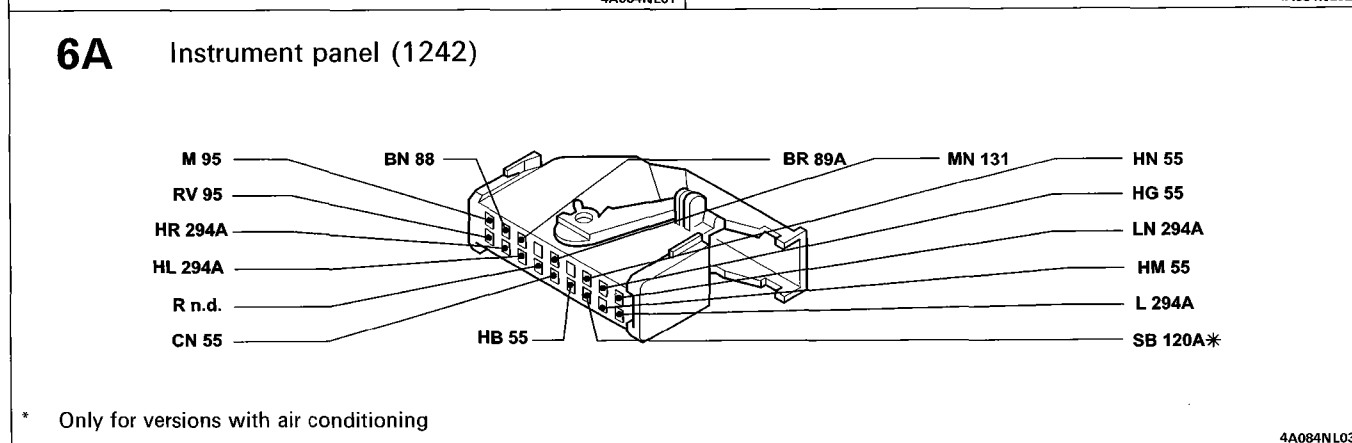
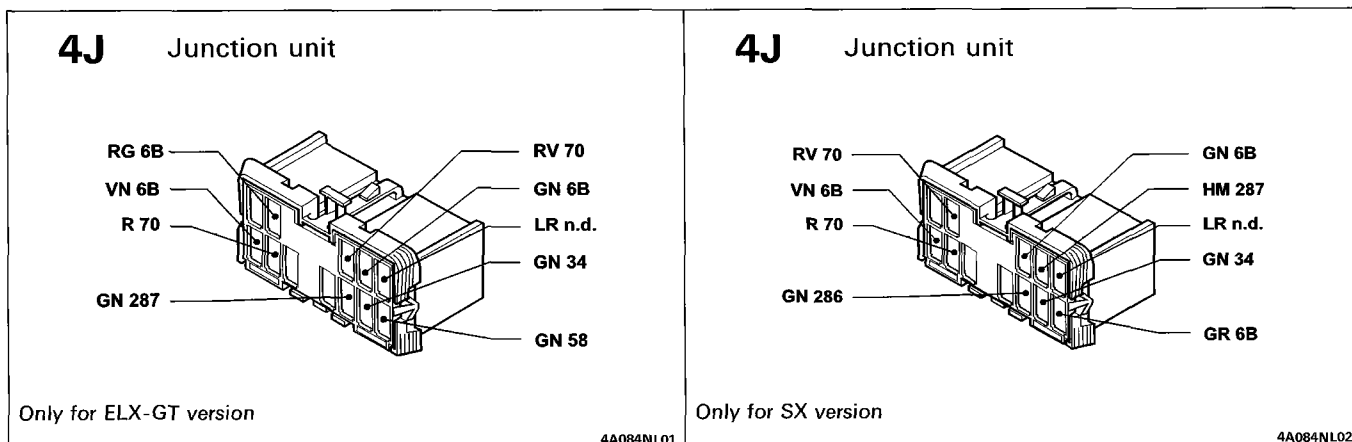
4A083NL04

**4F** Junction unit

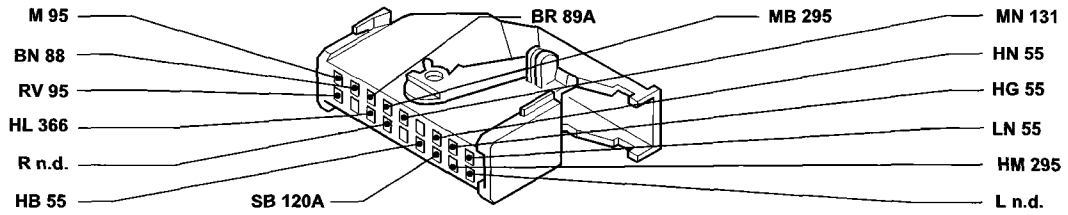


4A083NL05

### 55.



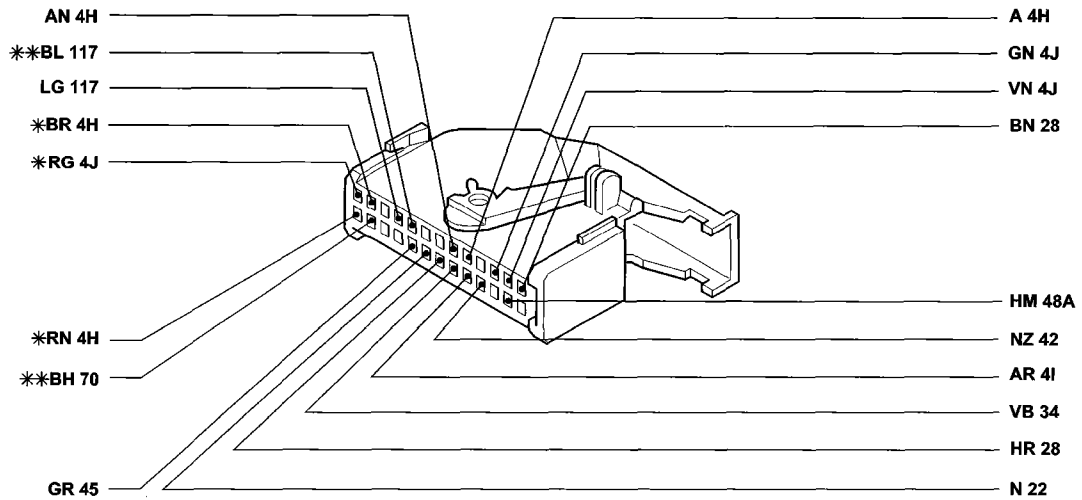
**6A** Instrument panel (JTD)



Only for versions with air conditioning

4A085NL01

**6B** Instrument panel (1242) (1581)



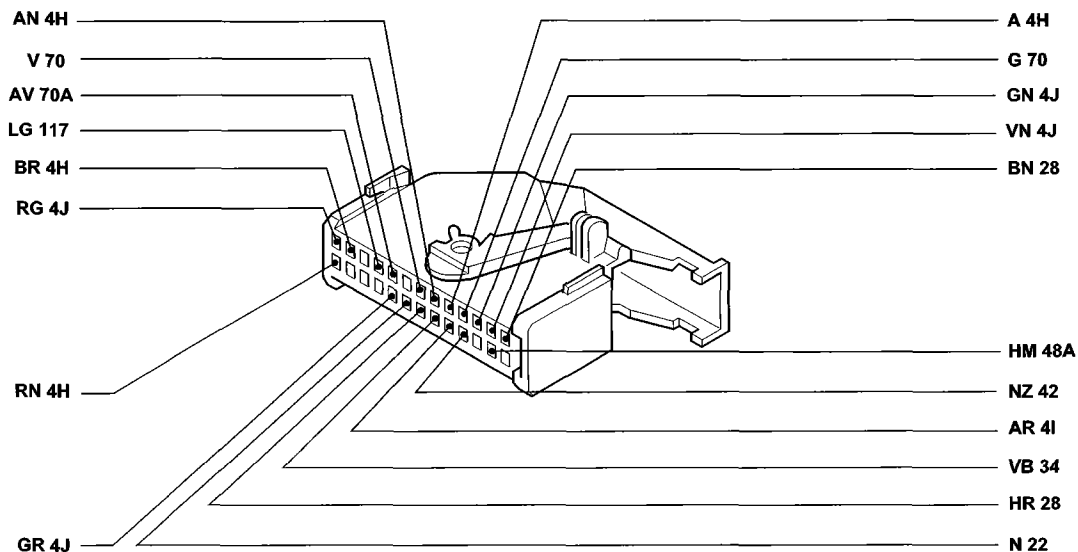
\* Only for GT version

\*\* Only for ELX version

4A085NL02

### 55.

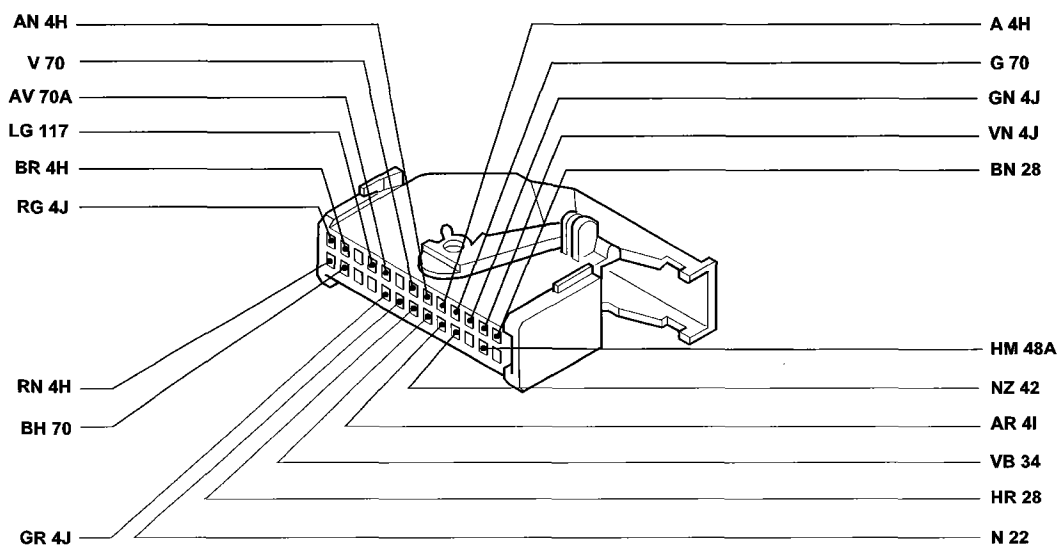
#### 6B Instrument panel (SX/GT JTD)



\* Only for GT version

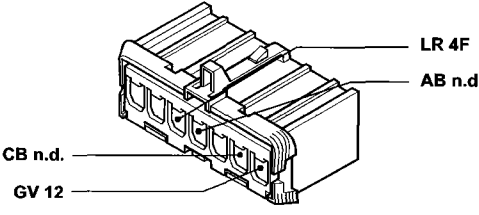
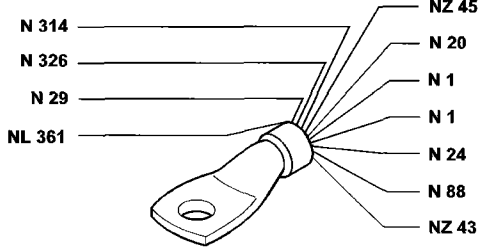
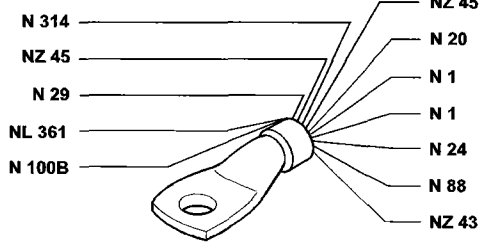
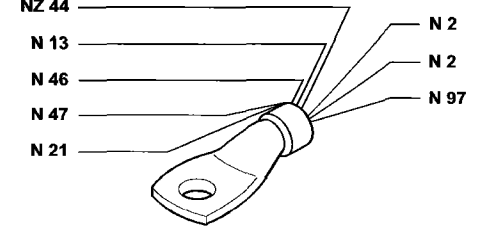
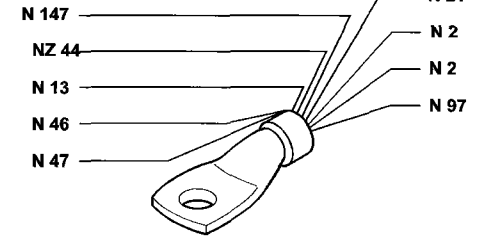
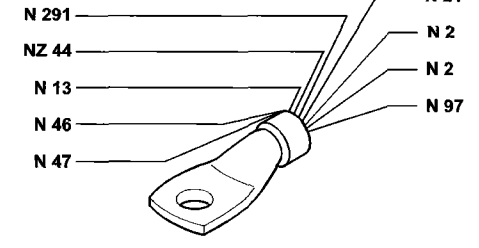
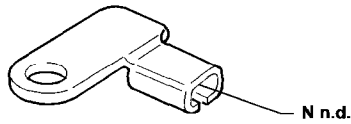
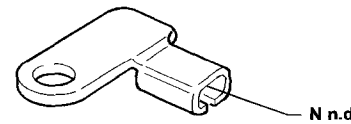
4A086NL01

#### 6B Instrument panel (JTD)



Only for ELX version

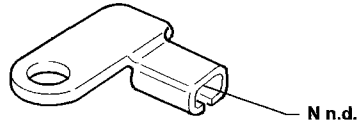
4A086NL02

|   |  |
|---|--|
| <p><b>7B</b> Steering column switch unit (JTD)</p>  <p>LR 4F<br/>AB n.d.<br/>CB n.d.<br/>GV 12</p> <p style="text-align: right;">4A087NL01</p>   | <p><b>8</b> Left front earth (1242)</p>  <p>N 314<br/>N 326<br/>N 29<br/>NL 361<br/>NZ 45<br/>N 20<br/>N 1<br/>N 1<br/>N 24<br/>N 88<br/>NZ 43</p> <p>Only for ELX version</p> <p style="text-align: right;">4A087NL02</p> |
| <p><b>8</b> Left front earth (1581)</p>  <p>N 314<br/>NZ 45<br/>N 29<br/>NL 361<br/>N 100B<br/>NZ 45<br/>N 20<br/>N 1<br/>N 1<br/>N 24<br/>N 88<br/>NZ 43</p> <p>Only for ELX version</p> <p style="text-align: right;">4A087NL03</p> | <p><b>9</b> Right front earth (JTD)</p>  <p>NZ 44<br/>N 13<br/>N 46<br/>N 47<br/>N 21<br/>N 2<br/>N 2<br/>N 97</p> <p style="text-align: right;">4A087NL04</p>  |
| <p><b>9</b> Right front earth (1581)</p>  <p>N 147<br/>NZ 44<br/>N 13<br/>N 46<br/>N 47<br/>N 21<br/>N 2<br/>N 2<br/>N 97</p> <p>Only for SX version</p> <p style="text-align: right;">4A087NL05</p>                                 | <p><b>9</b> Right front earth (1242)</p>  <p>N 291<br/>NZ 44<br/>N 13<br/>N 46<br/>N 47<br/>N 21<br/>N 2<br/>N 2<br/>N 97</p> <p>Only for SX version</p> <p style="text-align: right;">4A087NL06</p>                     |
| <p><b>10</b> Earth for battery on bodyshell (1242)</p>  <p>N n.d.</p> <p style="text-align: right;">4A087NL07</p>  | <p><b>10</b> Earth for battery on bodyshell (1581)</p>  <p>N n.d.</p> <p style="text-align: right;">4A087NL08</p>  |



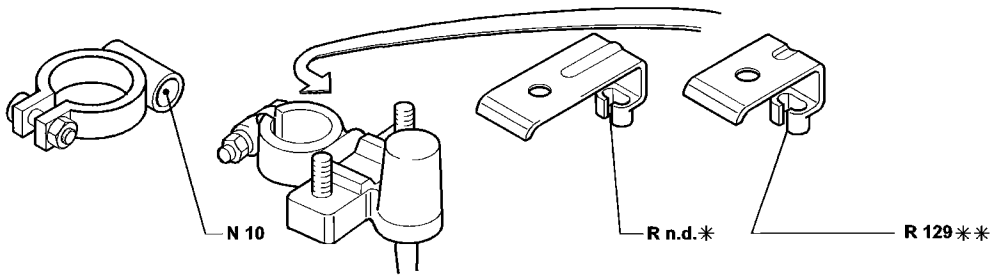
**55.**

**10** Earth for battery on bodyshell (JTD)



4A088NL01

**11** Battery



\* Variant for JTD

\*\* For 1242 - 1581 versions

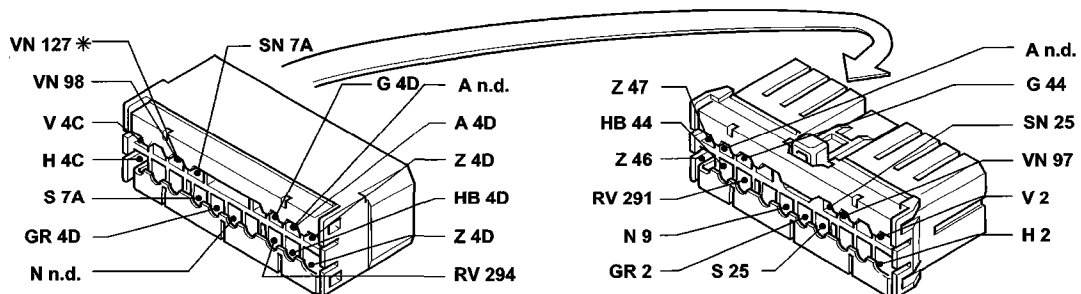
4A088NL02

**12** Ignition switch



4A088NL03

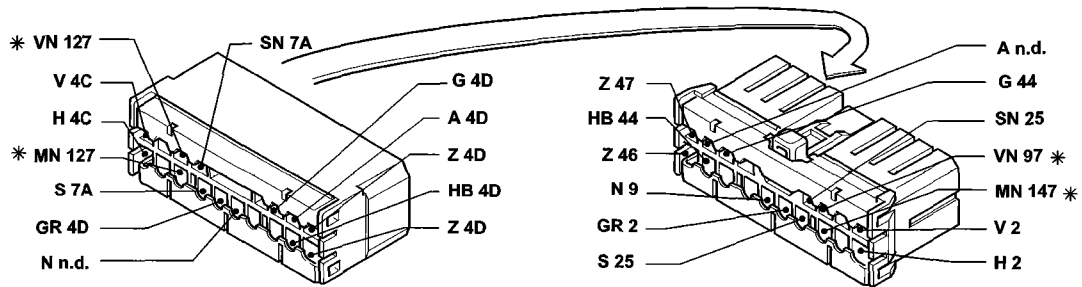
**13** Connection between right/left front cables (1242)



\* Only for ELX version

4A088NL04

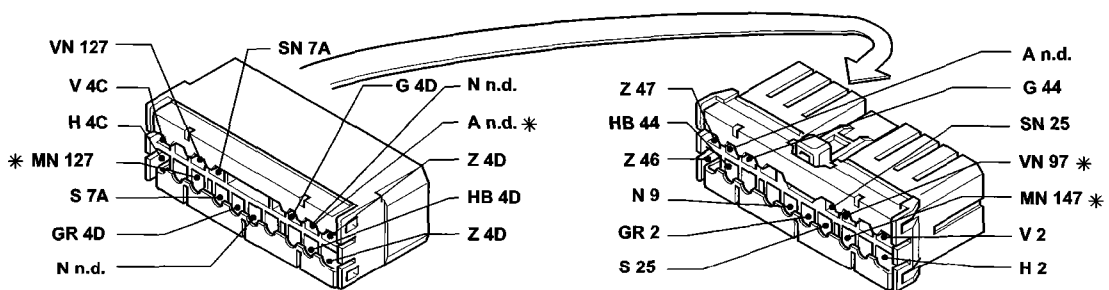
**13** Connection between right/left front cables (1581)



\* Only for versions with air conditioning

4A089NL01

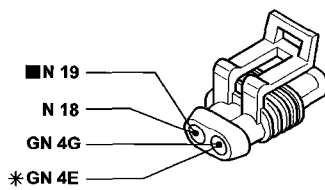
**13** Connection between right/left front cables (JTD)



\* Only for versions with air conditioning

4A089NL02

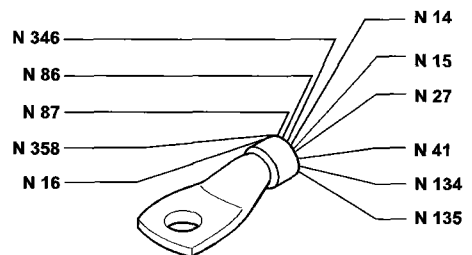
**15** Right number plate light



\* Only for BRAVO with alarm SX-GT  
 ■ Only for BRAVO SX-GT version

4A089NL3

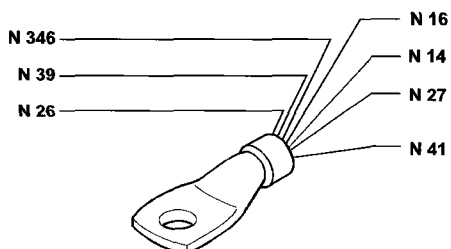
**18** Left rear earth



\* Only for BRAVA SX version

4A089NL4

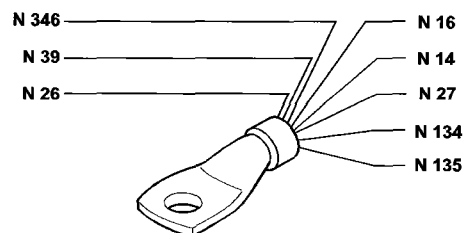
**18** Left rear earth



Only for BRAVO SX-GT version

4A089NL5

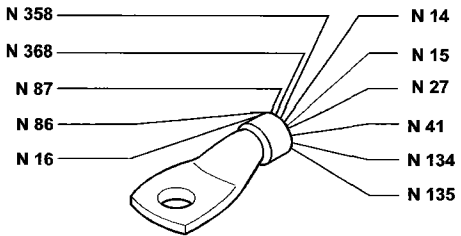
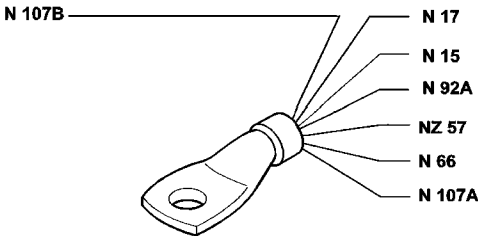
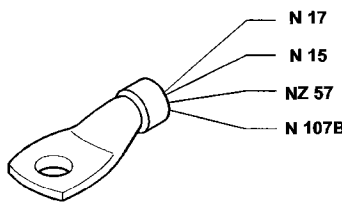
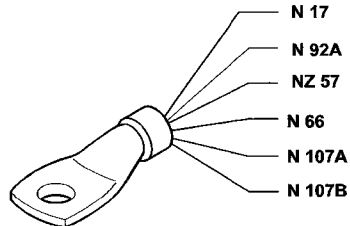
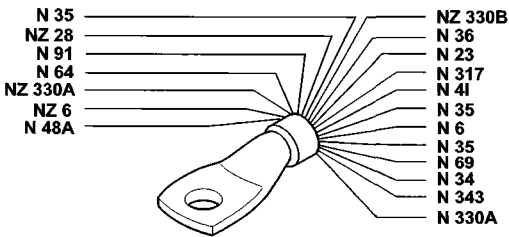
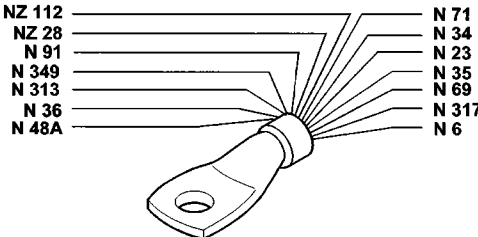
**18** Left rear earth



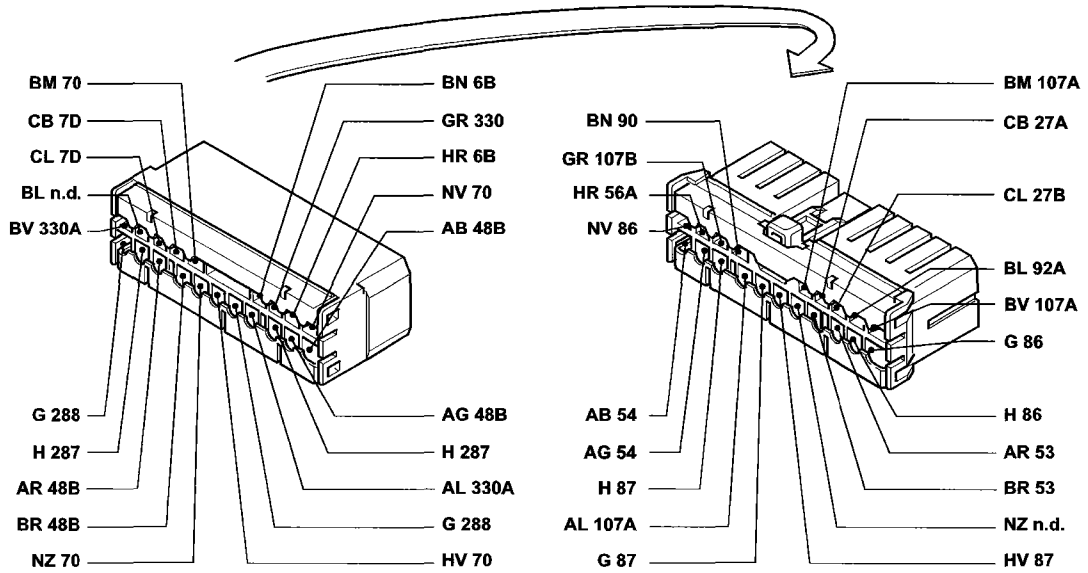
Only for BRAVO version with alarm SX-GT

4A089NL6

### 55.

|  |   |
|--|---|
| <p><b>18</b> Left rear earth</p>  <p>Only for BRAVA ELX version</p> <p style="text-align: right;">4A090NL01</p>             | <p><b>19</b> Right rear earth</p>  <p>Only for BRAVO SX-GT version with alarm</p> <p style="text-align: right;">4A090NL02</p> |
| <p><b>19</b> Right rear earth</p>  <p>Only for BRAVO SX-GT version</p> <p style="text-align: right;">4A090NL03</p>         | <p><b>19</b> Right rear earth</p>  <p>Only for BRAVA SX-ELX version</p> <p style="text-align: right;">4A090NL04</p>          |
| <p><b>22</b> Left dashboard earth (GT/ELX)</p>  <p>* Only for ELX version</p> <p style="text-align: right;">4A090NL05</p> | <p><b>22</b> Left dashboard earth (JTD)</p>  <p>Only for SX version</p> <p style="text-align: right;">4A090NL06</p>         |

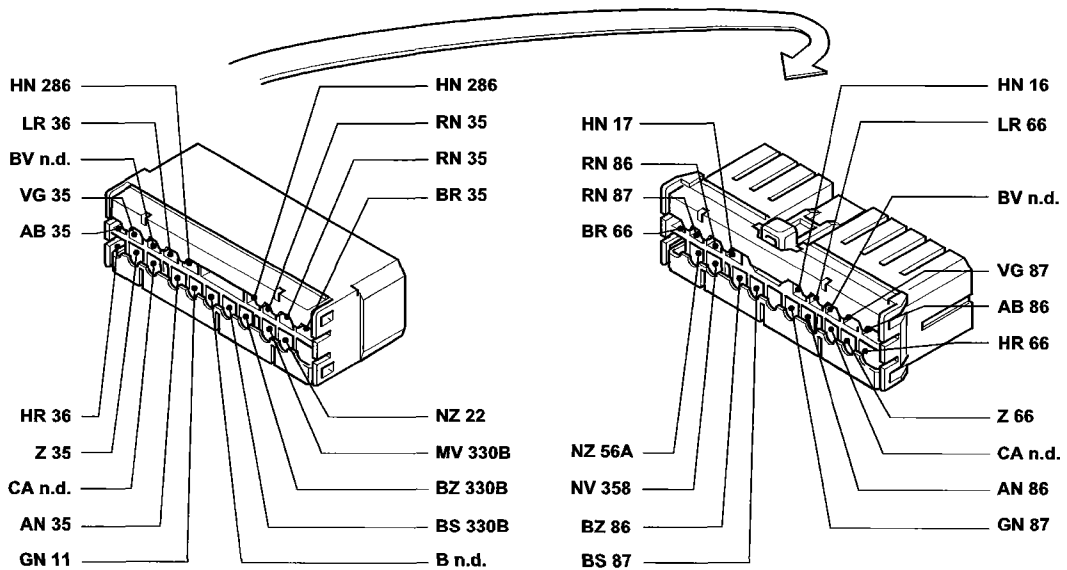
**28** Connection between dashboard/longitudinal cables



Only for ELX version

4A091NL01

**28A** Connection between dashboard/longitudinal cables

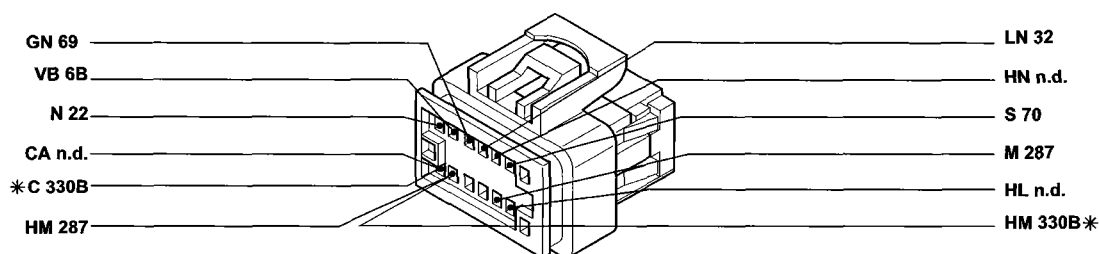
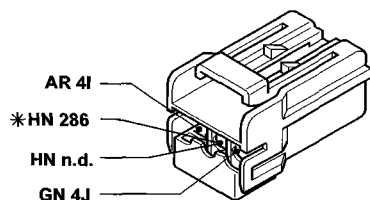


Only for ELX version

4A091NL02

### 55.

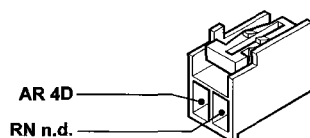
#### 34 Switch control unit



\* Only for GT-ELX versions (1242-1581)

4A092NL01

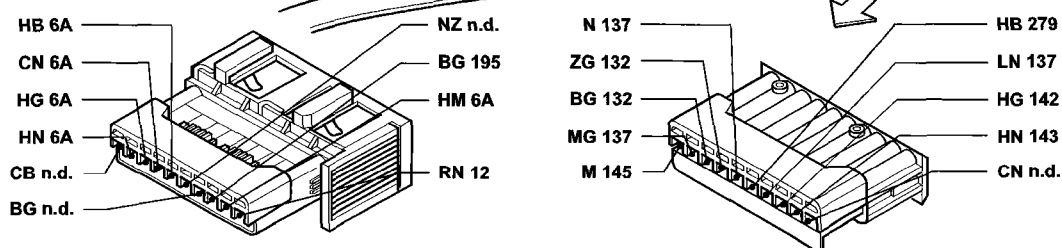
#### 40 Brake lights control switch



Only for SX-ELX version

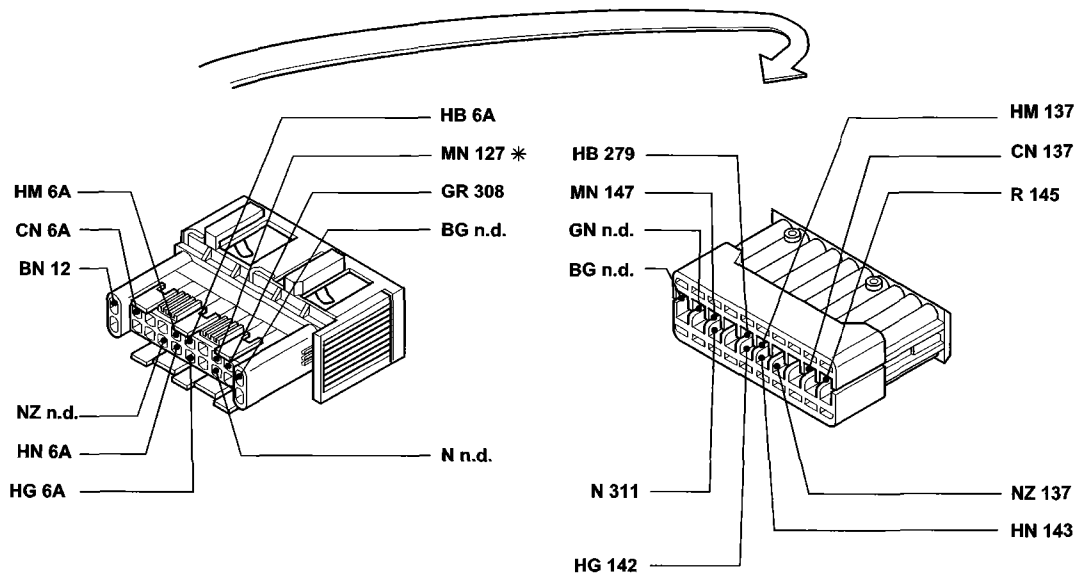
4A092NL02

#### 55 Connection between front cables/engine pre-wiring (1581)



4A092NL03

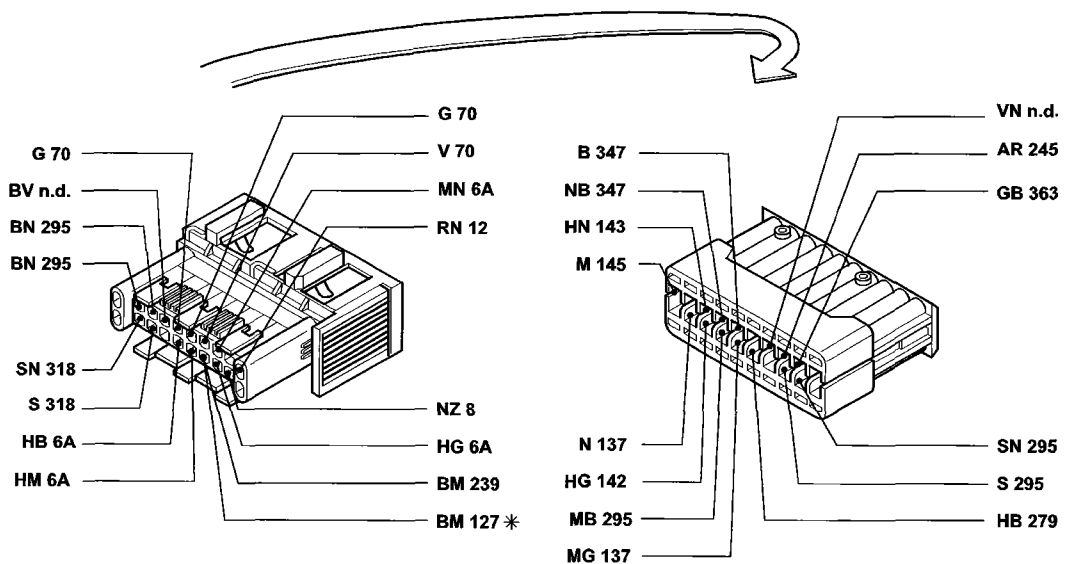
**55** Connection between front left cables/engine pre-wiring (1242)



\* Only for versions with air conditioning

4A093NL01

**55** Connection between front left cables/engine pre-wiring (JTD)

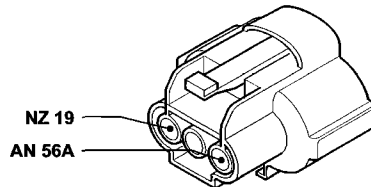


\*Only for versions with air conditioning

4A093NL02

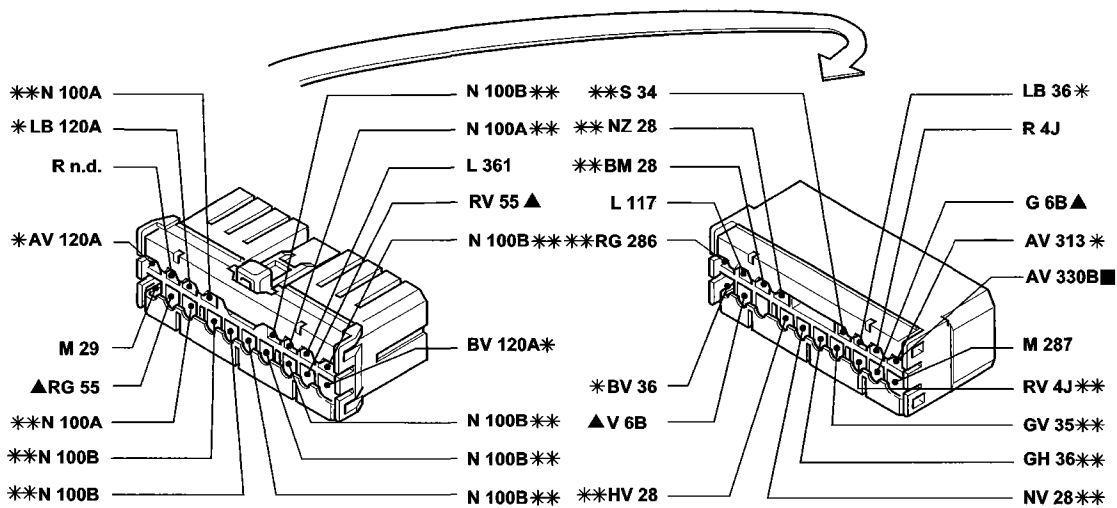
### 55.

#### 57 Inertia switch



4A094NL01

#### 70 Connection between dashboard/front cables



Only for SX versions

\* Only for versions with air conditioning

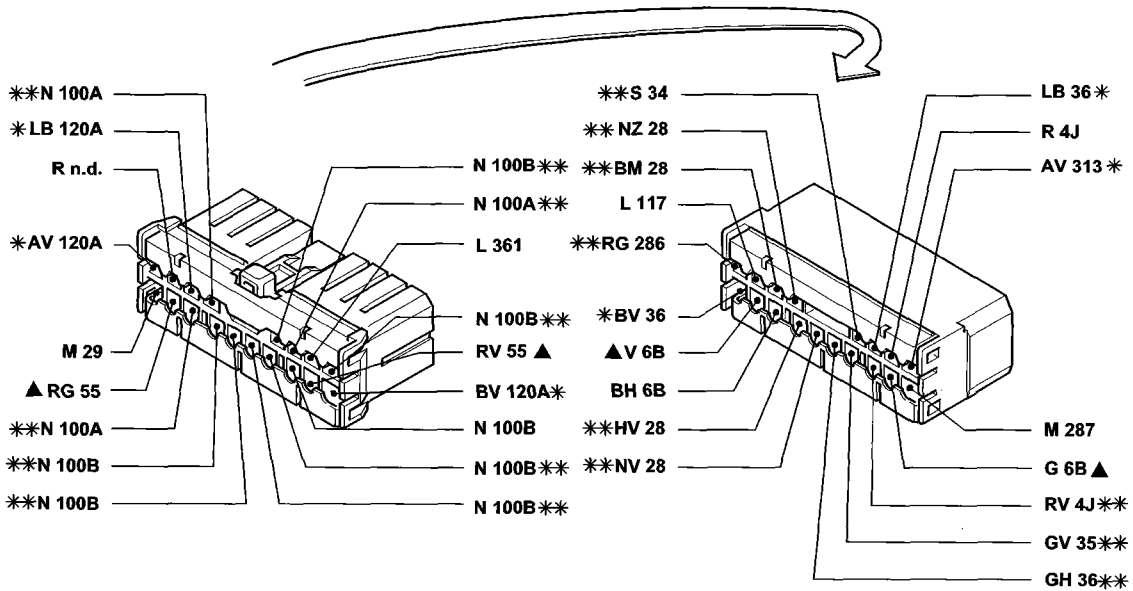
\*\* Only for versions with alarm

■ Only for versions with ABI

▲ Only for JTD versions

4A094NL02

**70** Connection between dashboard/front cables



Only for ELX versions

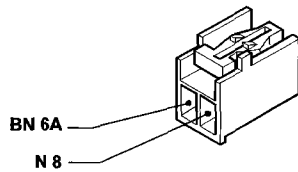
\* Only for versions with air conditioning

\*\* Only for versions with alarm

▲ Only for JTD versions

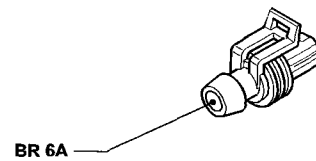
4A095NL01

**88** Insufficient brake fluid level sensor



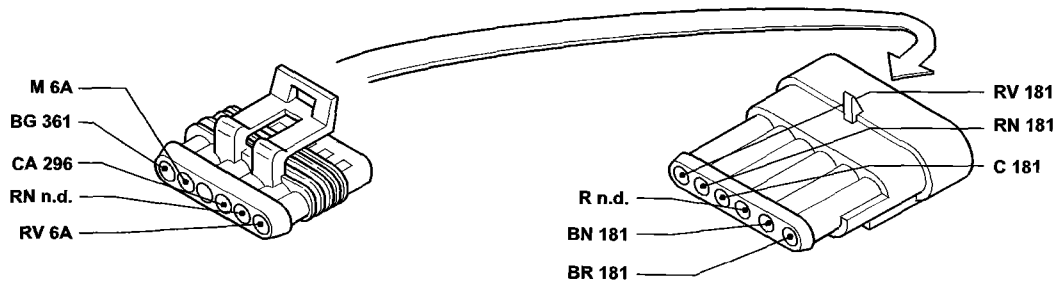
4A095NL02

**89** Left brake pad wear sensor



4A095NL03

**95** Connection between front cables/anti-lock brakes

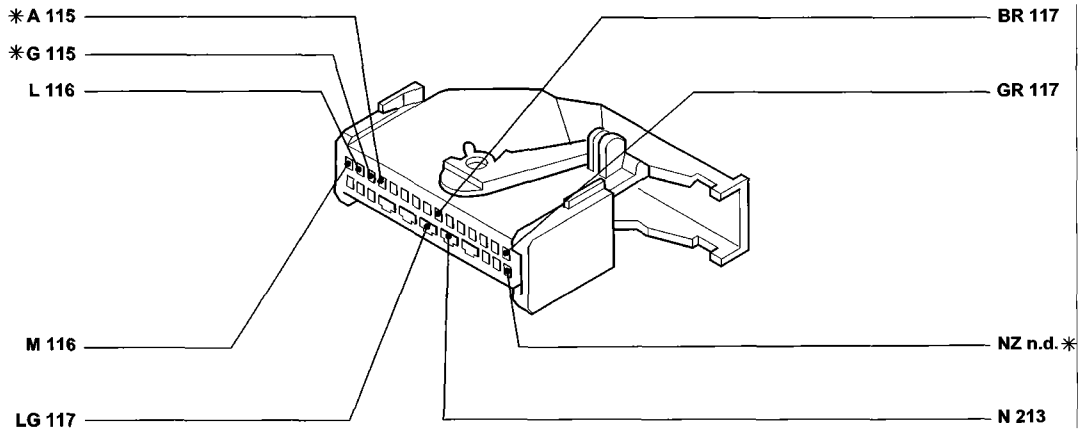


4A095NL04



**55.**

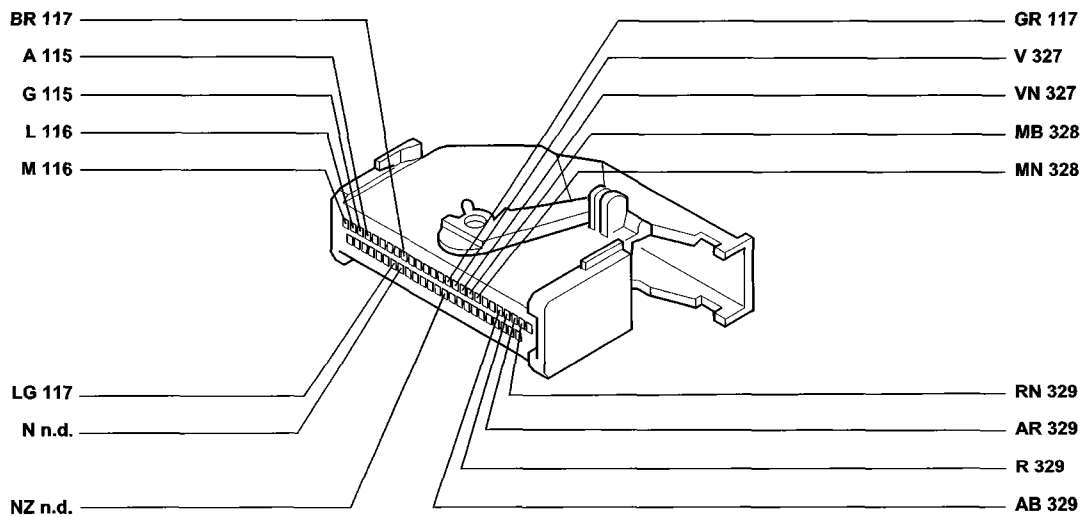
**114** EURO-BAG electronic control unit



\* Only for versions with driver's and passenger EURO BAGs

4A096NL01

**114** EURO-BAG electronic control unit



Only for versions with SIDE BAG

4A096NL02

**120** Connection for air conditioning unit cables

LB 70  
AV 70  
AN 4C  
R 4C  
S 361  
BV 70  
VG 314  
SB 6A  
GN 4D

4A097NL01

**123** Engine cooling fan high speed timer (JTD)

N n.d.  
AR n.d.  
HR n.d.  
CB n.d.  
H 154

4A097NL02

**123A** Engine cooling fan high speed timer (1242/1581)

AR 127  
N n.d.  
B n.d.  
CB 127

4A097NL03

**123A** Engine cooling fan high speed timer (JTD)

AR n.d.  
C 129  
HR n.d.  
CB n.d.

4A097NL04

**124** Air conditioning compressor relay feed (JTD)

MG 127  
LB 127  
MN 127  
AV 127

4A097NL05

**127** Connection between front left cable/cable on relay holder bracket (1242/1581)

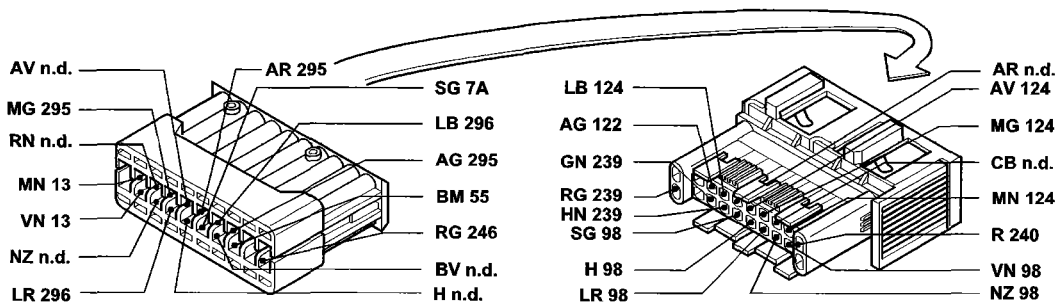
AV n.d.  
MG 195  
R n.d.  
MN 13  
VN 13  
NZ n.d.  
LR 296  
AN 195  
SG 7A  
LB 296  
AG 195  
R n.d.  
H n.d.  
AR 123A  
LB 124  
AG 122  
CB 122  
SG 98  
H 98  
LR 98  
AV 124  
MG 124  
CB 123A  
MN 124  
VN 98  
NZ 98

Only for versions with air conditioning

4A097NL06

### 55.

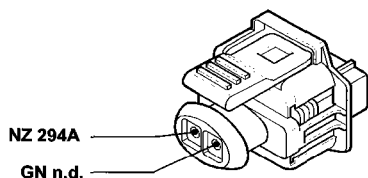
#### 127 Connection between front left cable/cable on relay holder bracket (JTD)



Only for versions with air conditioning

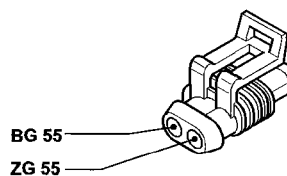
4A098NL01

#### 132 Petrol vapour cut out solenoid valve (canister) (1242)



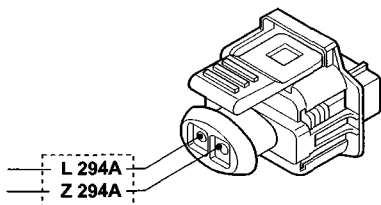
4A098NL02

#### 132 Petrol vapour cut out solenoid valve (canister) (1581)



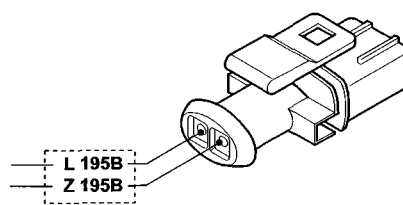
4A098NL03

#### 136 Detonation sensor (1242)



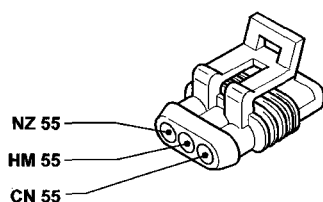
4A098NL04

#### 136 Detonation sensor (1581)



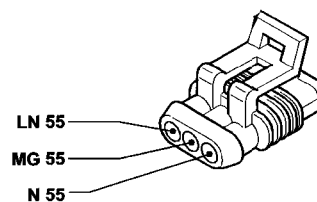
4A098NL05

#### 137 Vehicle speed sensor (1242)

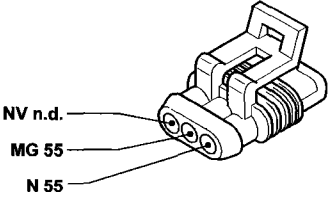
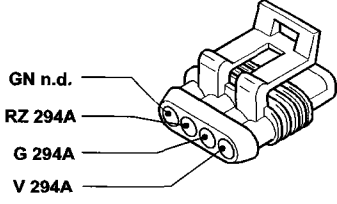
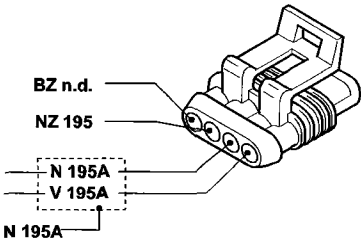
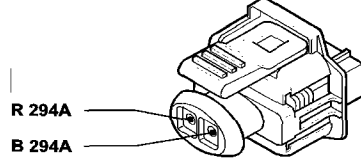
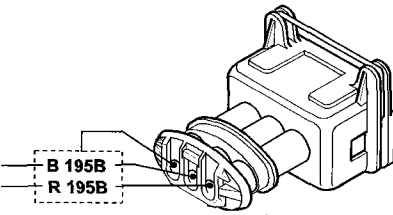
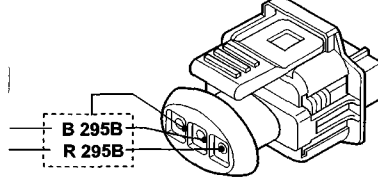
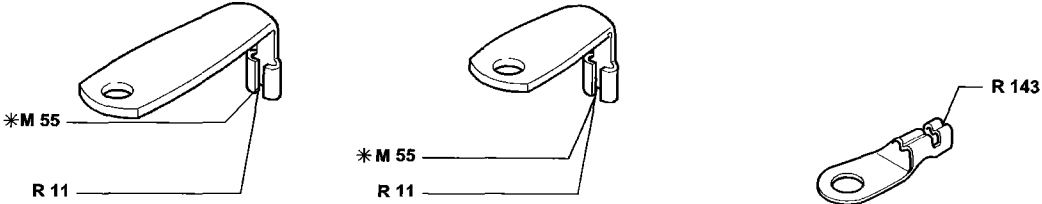


4A098NL06

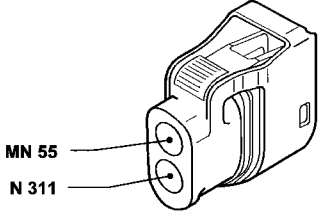
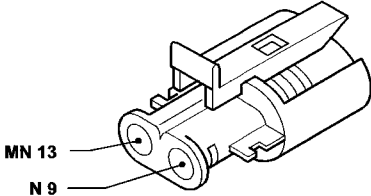
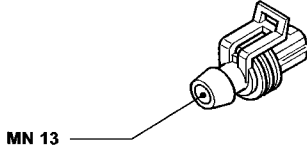
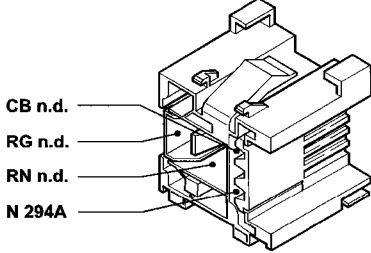
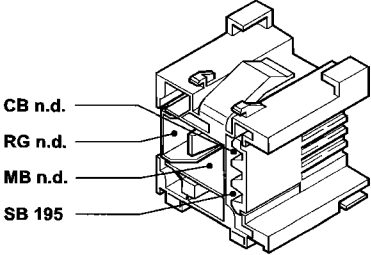
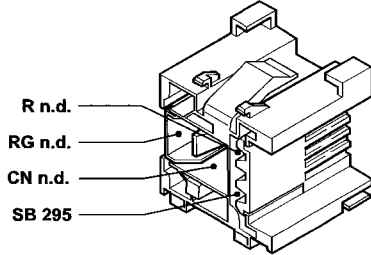
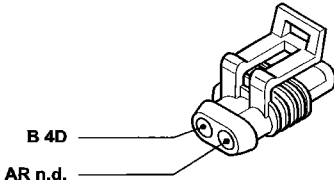
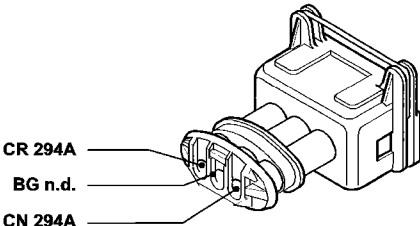
#### 137 Vehicle speed sensor (1581)



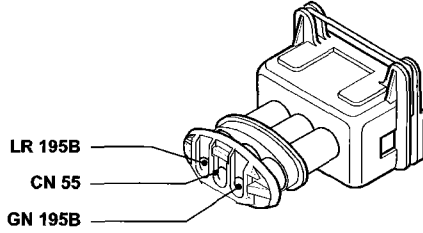
4A098NL07

|   |  |
|---|--|
| <p><b>137</b> Vehicle speed sensor (JTD)</p>  <p>NV n.d.<br/>MG 55<br/>N 55</p> <p style="text-align: right;">4A099NL01</p>  | <p><b>141</b> Heated lambda sensor (1242)</p>  <p>GN n.d.<br/>RZ 294A<br/>G 294A<br/>V 294A</p> <p style="text-align: right;">4A099NL02</p> |
| <p><b>141</b> Heated lambda sensor (1581)</p>  <p>BZ n.d.<br/>NZ 195<br/>N 195A<br/>V 195A<br/>N 195A</p> <p style="text-align: right;">4A099NL03</p>             | <p><b>144</b> Rpm and T.D.C. sensor (1242)</p>  <p>R 294A<br/>B 294A</p> <p style="text-align: right;">4A099NL04</p>                        |
| <p><b>144</b> Rpm and T.D.C. sensor (1581)</p>  <p>B 195B<br/>R 195B</p> <p style="text-align: right;">4A099NL05</p>   | <p><b>144</b> Rpm and T.D.C. sensor (JTD)</p>  <p>B 295B<br/>R 295B</p> <p style="text-align: right;">4A099NL06</p>                        |
| <p><b>145</b> Starter motor</p>  <p>*M 55<br/>R 11<br/>*M 55<br/>R 11<br/>R 143</p> <p>* Valid for 1581 and JTD</p> <p style="text-align: right;">4A099NL07</p> |  |

### 55.

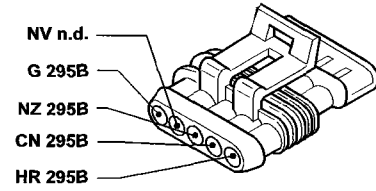
|  |  |
|--|--|
| <p><b>147A</b> Coupling for air conditioning compressor (1242)</p>  <p>MN 55<br/>N 311</p> <p style="text-align: right;">4A100NL01</p>                | <p><b>147A</b> Coupling for air conditioning compressor (1581)</p>  <p>MN 13<br/>N 9</p> <p style="text-align: right;">4A100NL02</p>                 |
| <p><b>147A</b> Coupling for air conditioning compressor (JTD)</p>  <p>MN 13</p> <p style="text-align: right;">4A100NL03</p>                          | <p><b>150</b> Injection system relay feed (1242)</p>  <p>CB n.d.<br/>RG n.d.<br/>RN n.d.<br/>N 294A</p> <p style="text-align: right;">4A100NL04</p> |
| <p><b>150</b> Injection system relay feed (1581)</p>  <p>CB n.d.<br/>RG n.d.<br/>MB n.d.<br/>SB 195</p> <p style="text-align: right;">4A100NL05</p> | <p><b>150</b> Injection system relay feed (JTD)</p>  <p>R n.d.<br/>RG n.d.<br/>CN n.d.<br/>SB 295</p> <p style="text-align: right;">4A100NL06</p>  |
| <p><b>159</b> Reversing lights control switch</p>  <p>B 4D<br/>AR n.d.</p> <p style="text-align: right;">4A100NL07</p>                              | <p><b>161</b> Ignition power module (1242)</p>  <p>CR 294A<br/>BG n.d.<br/>CN 294A</p> <p style="text-align: right;">4A100NL08</p>                 |

**161** Ignition power module (1581)



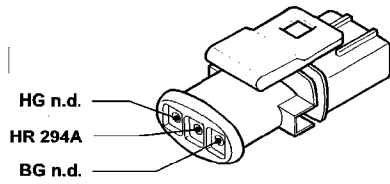
4A101NL01

**167** Air flow meter (JTD)



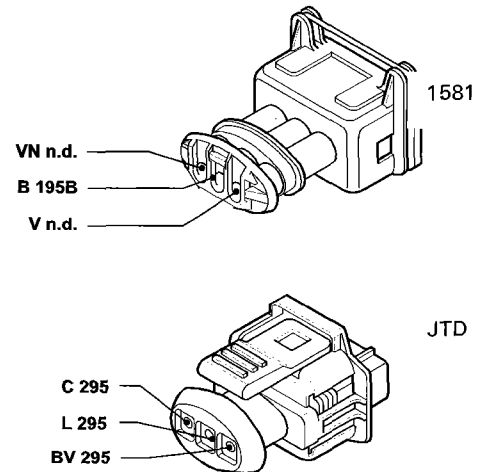
4A101NL02

**168** Timing sensor 91242)



4A101NL03

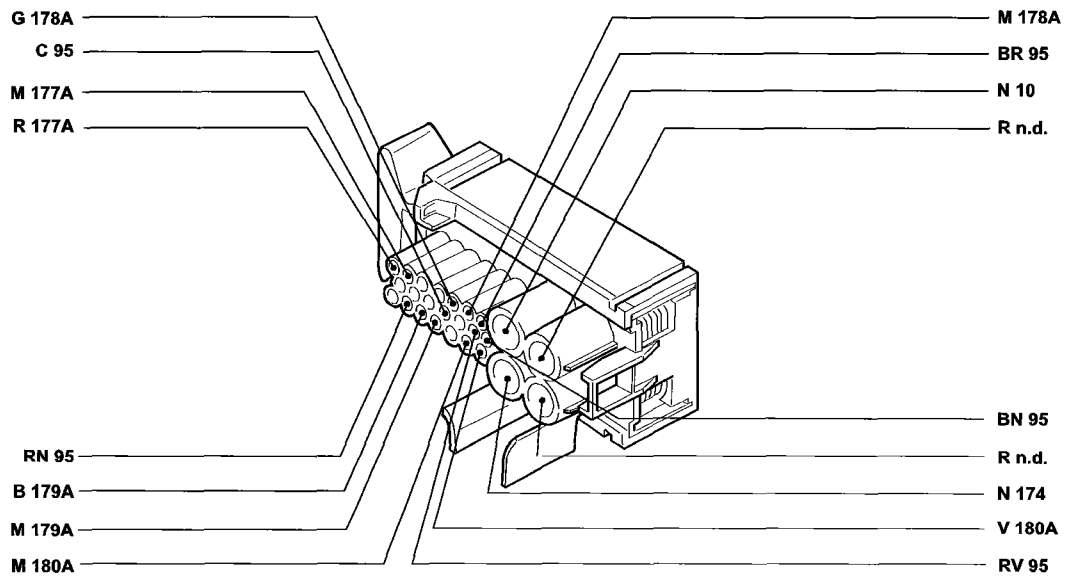
**168** Timing sensor



4A101NL04

4A101NL05

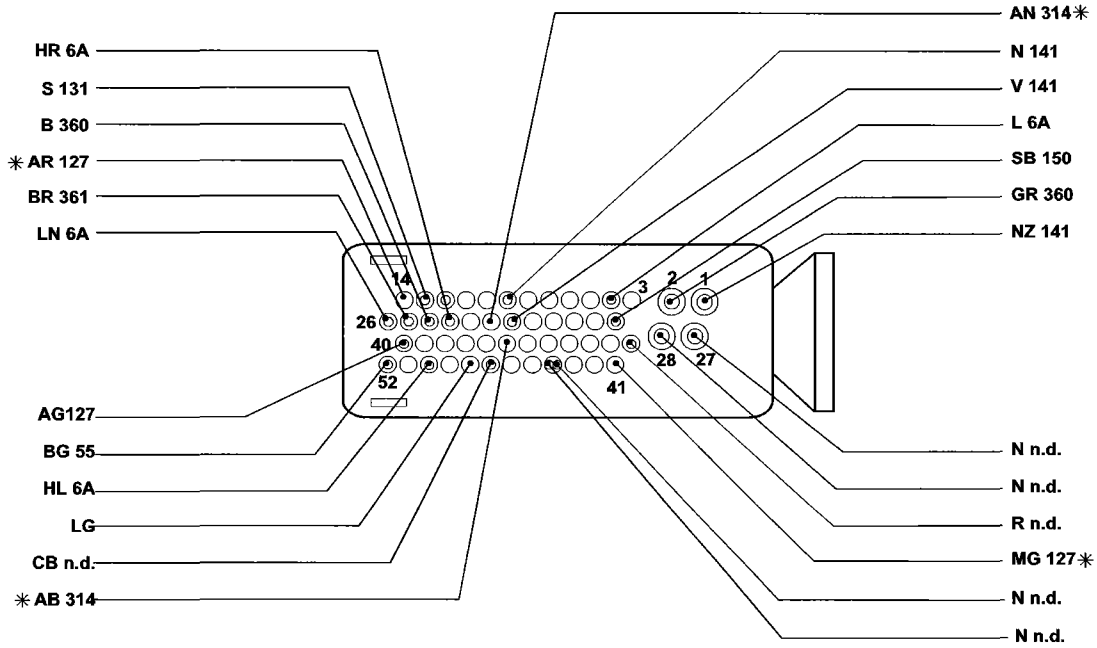
**181** Electro-hydraulic control unit for anti-lock brakes (A.B.S.)



4A101NL06

### 55.

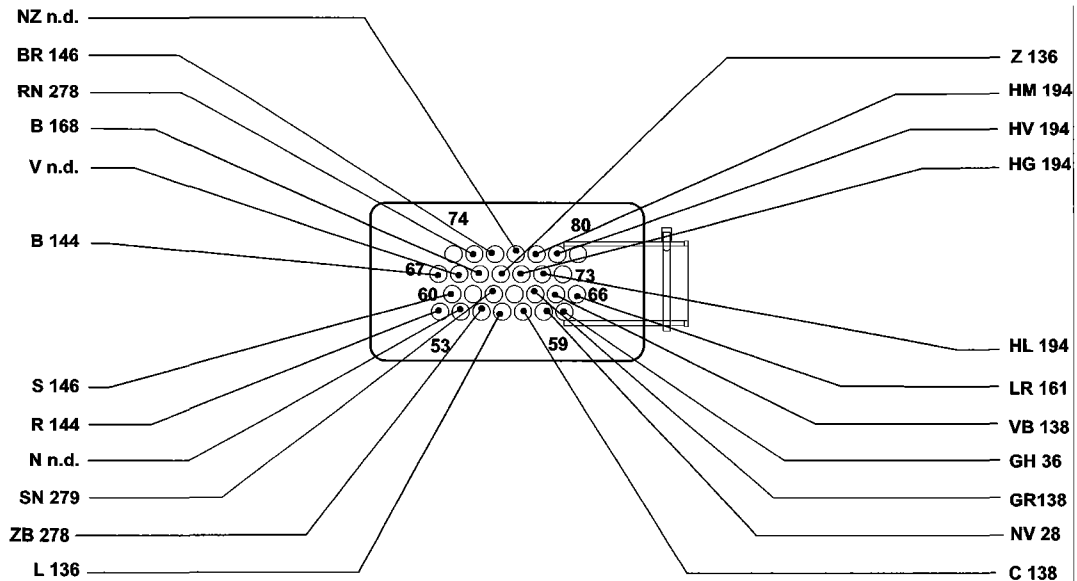
#### 195A Ignition / injection electronic control unit (1581)



\* Only for versions with air conditioning

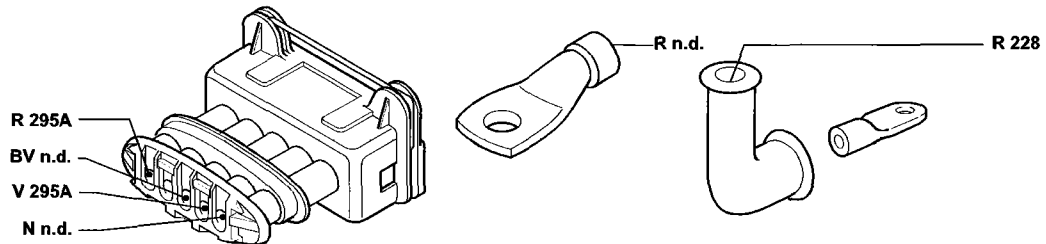
4A102NL01

#### 195B Ignition / injection electronic control unit (1581)



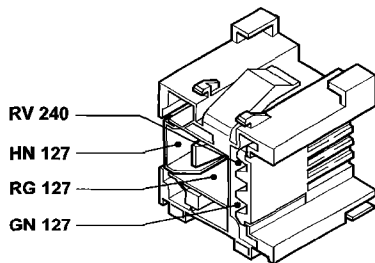
4A102NL02

**201** Heater plugs control unit



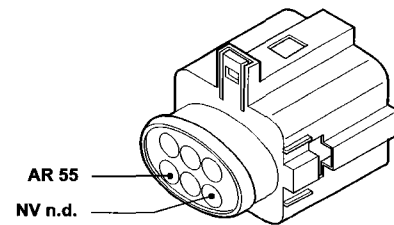
4A103NL01

**239** Heated diesel filter relay



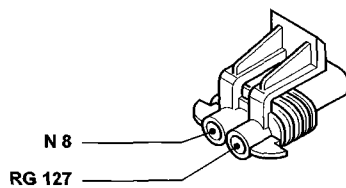
4A103NL02

**245** EGR solenoid valve



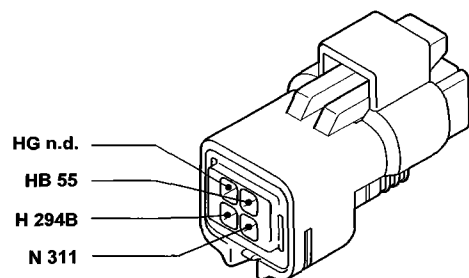
4A103NL03

**246** Heated fuel filter



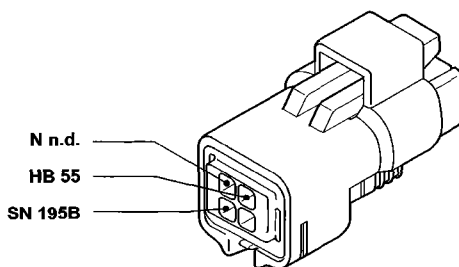
4A103NL04

**279** Engine coolant temperature twin sender unit (1242)



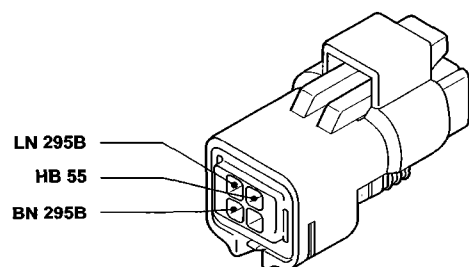
4A103NL05

**279** Engine coolant temperature twin sender unit (1581)



4A103NL06

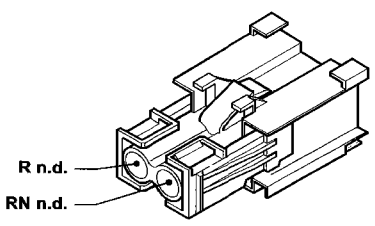
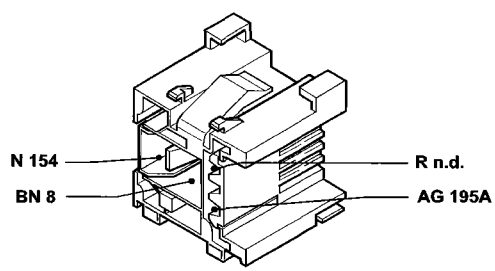
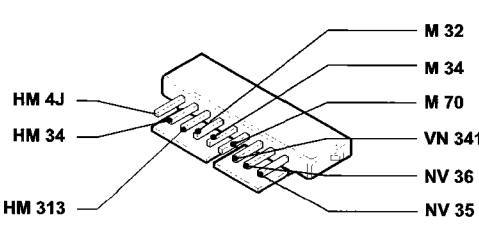
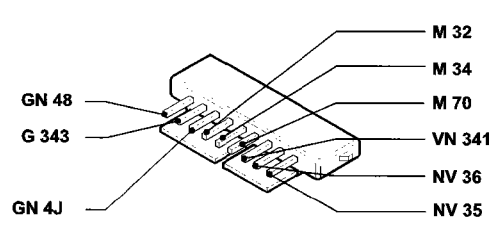
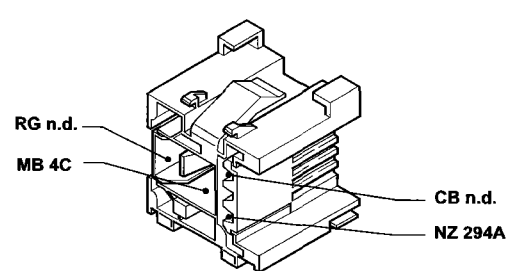
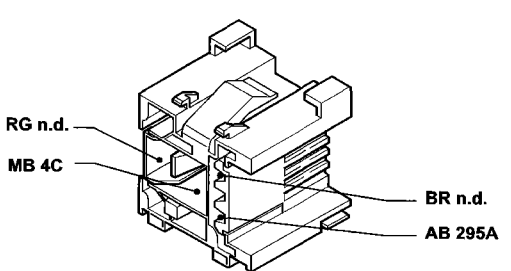
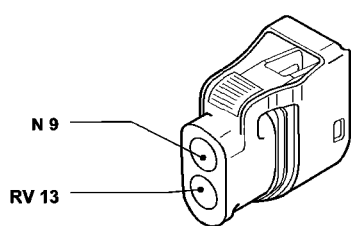
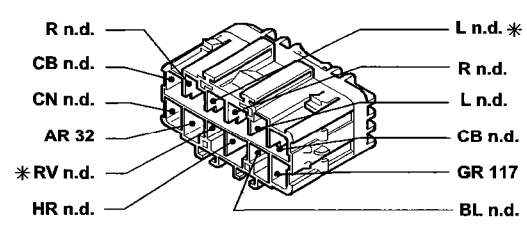
**279** Engine coolant temperature twin sender unit (JTD)



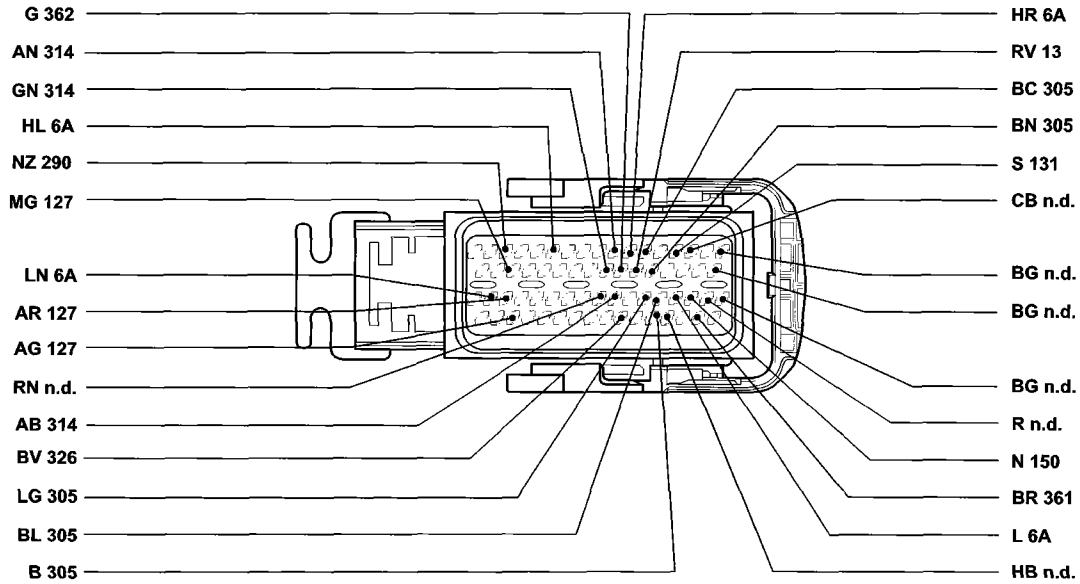
4A103NL07



### 55.

|  |   |
|--|---|
| <p><b>282</b> 30A fuse protecting Fiat CODE/electronic injection (JTD)</p>  <p>R n.d.<br/>RN n.d.</p> <p style="text-align: right;">4A104NL01</p>   | <p><b>284</b> Engine cooling fan relay feed (1581 with heater)</p>  <p>N 154<br/>BN 8<br/>R n.d.<br/>AG 195A</p> <p style="text-align: right;">4A104NL02</p>  |
| <p><b>287</b> Short circuit connection (SX)</p>  <p>HM 4J<br/>HM 34<br/>HM 313<br/>M 32<br/>M 34<br/>M 70<br/>VN 341<br/>NV 36<br/>NV 35</p> <p style="text-align: right;">4A104NL03</p> | <p><b>287</b> Short circuit connection (GT-ELX)</p>  <p>GN 48<br/>G 343<br/>GN 4J<br/>M 32<br/>M 34<br/>M 70<br/>VN 341<br/>NV 36<br/>NV 35</p> <p style="text-align: right;">4A104NL04</p>  |
| <p><b>290</b> Fuel pump relay feed (1242)</p>  <p>RG n.d.<br/>MB 4C<br/>CB n.d.<br/>NZ 294A</p> <p style="text-align: right;">4A104NL05</p>   | <p><b>290</b> Fuel pump relay feed (JTD)</p>  <p>RG n.d.<br/>MB 4C<br/>BR n.d.<br/>AB 295A</p> <p style="text-align: right;">4A104NL06</p>  |
| <p><b>291</b> Sensor for power assisted steering pump (1242)</p>  <p>N 9<br/>RV 13</p> <p style="text-align: right;">4A104NL07</p>  | <p><b>293</b> Fuse holder base on dashboard cable</p>  <p>R n.d.<br/>L n.d.*<br/>CB n.d.<br/>R n.d.<br/>CN n.d.<br/>L n.d.<br/>AR 32<br/>CB n.d.<br/>*RV n.d.<br/>GR 117<br/>HR n.d.<br/>BL n.d.</p> <p>* Non existent for SX version</p> <p style="text-align: right;">4A104NL08</p> |

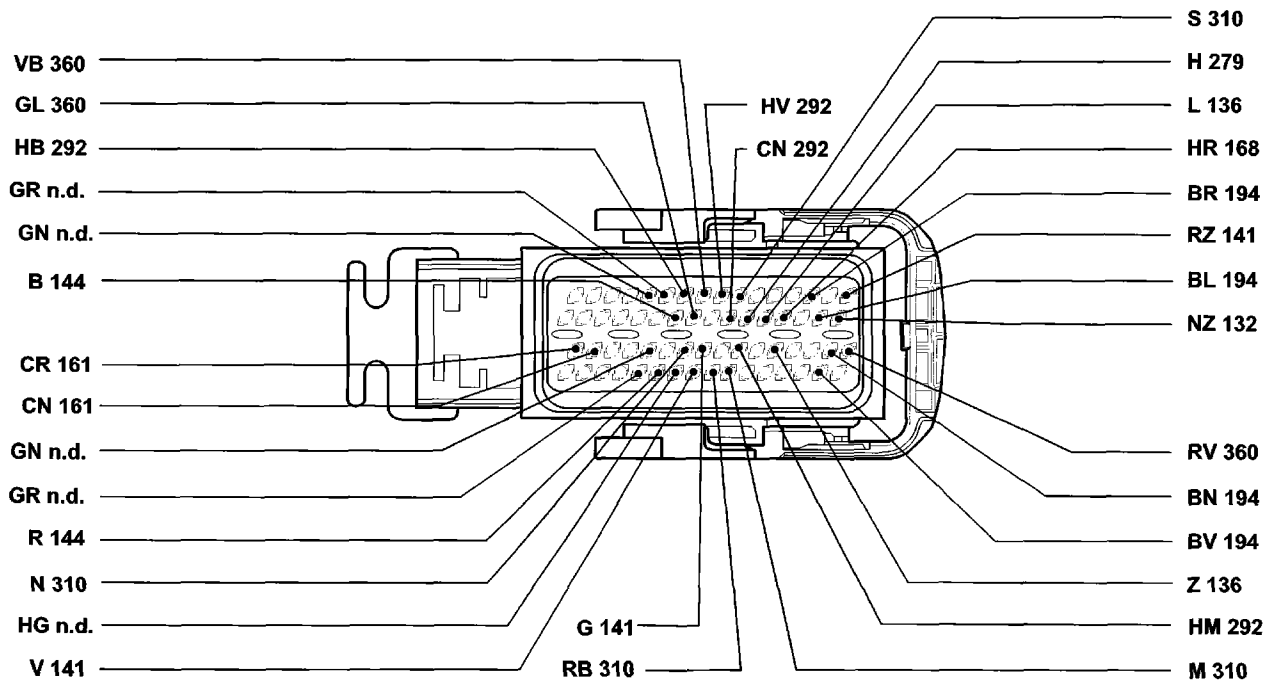
**294A** Injection/ignition electronic control unit (1242)



\* Only for versions with air conditioning

4A105NL01

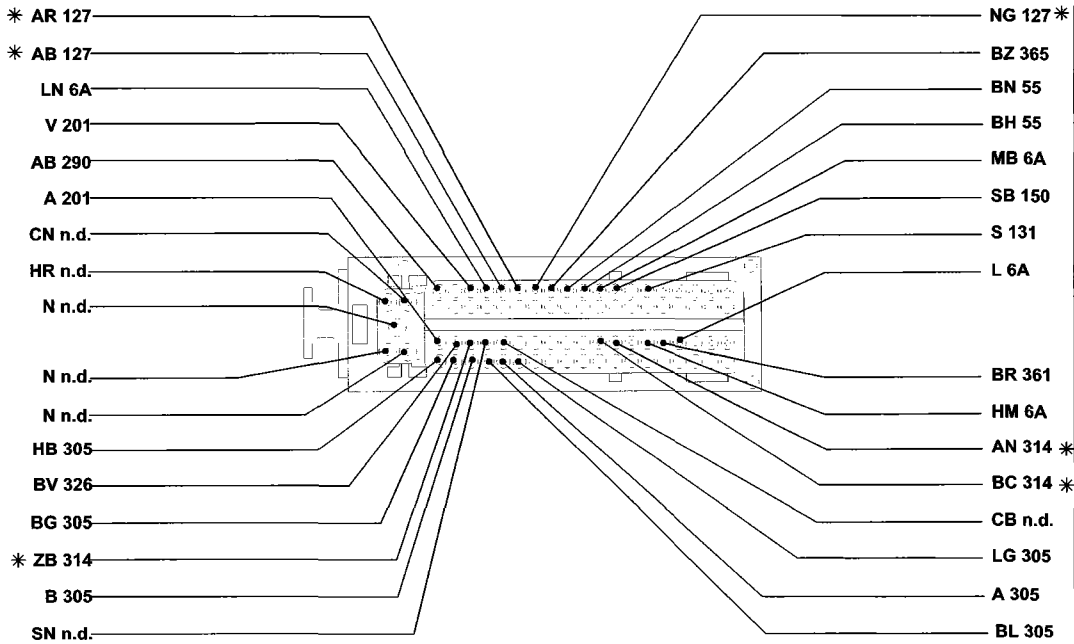
**294B** Injection/ignition electronic control unit (1242)



4A105NL02

**55.**

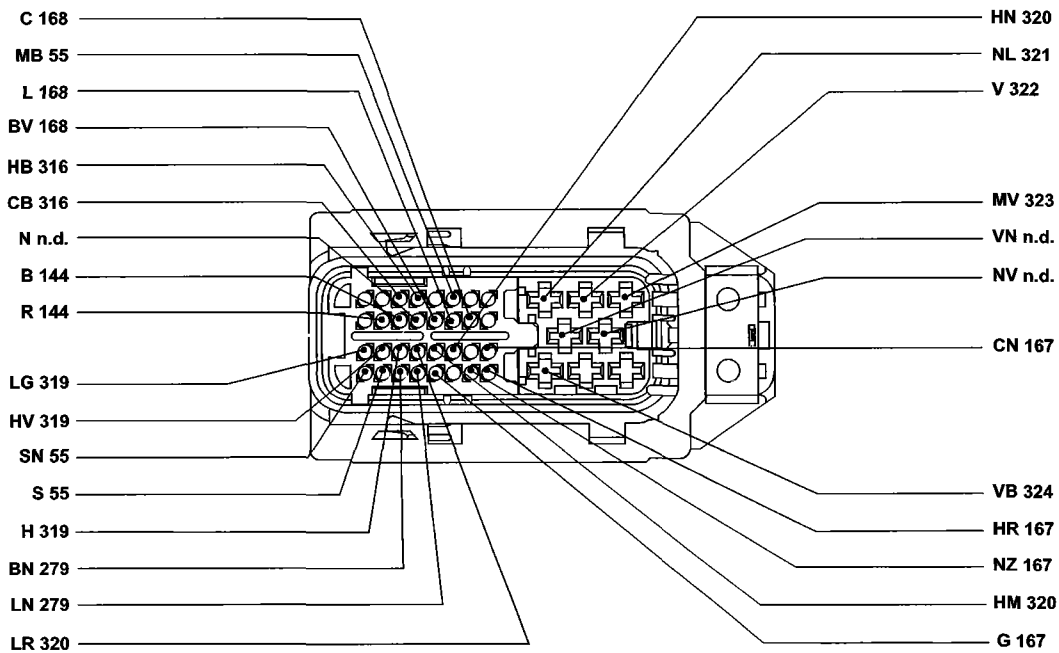
**295A** Injection/ignition electronic control unit (JTD)



\* Only for versions with air conditioning

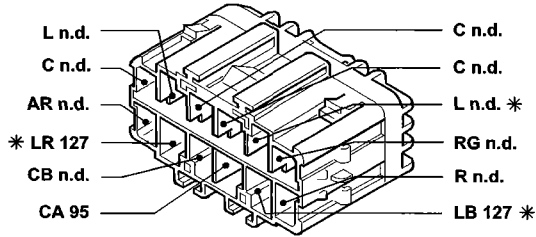
4A106NL01

**295B** Injection/ignition electronic control unit (JTD)



4A106NL02

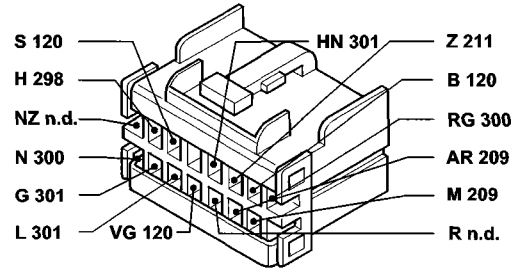
**296** Fuse holder base on front cable



\* Only for versions with air conditioning

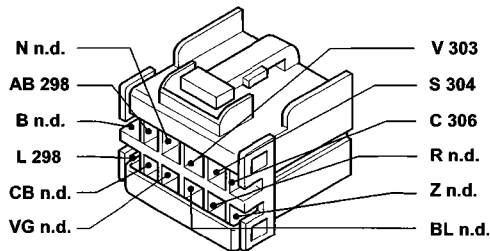
4A107NL01

**297A** Air conditioning control unit



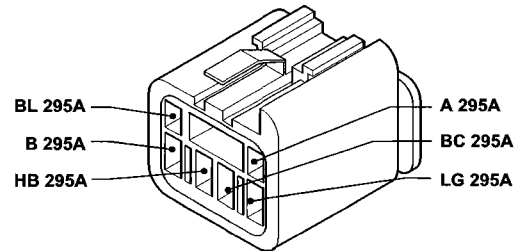
4A107NL02

**297B** Air conditioning control unit



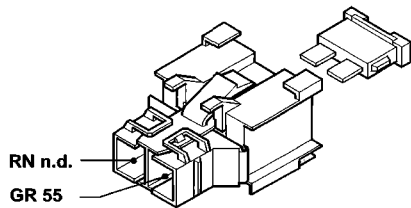
4A107NL03

**305** Potentiometer on accelerator pedal (JTD)



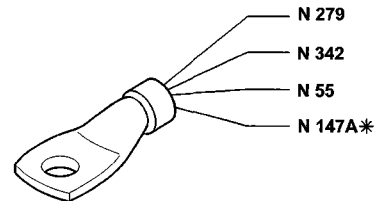
4A107NL04

**308** 15A fuse protecting canister solenoid valve (1242)



4A107NL05

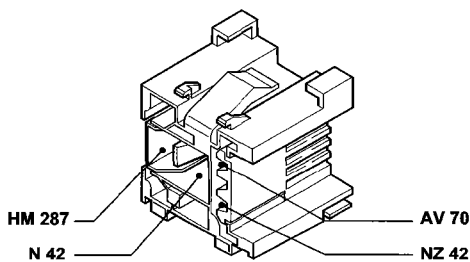
**311** Engine pre-wiring earth (1242)



\* Only for versions with air conditioning

4A107NL06

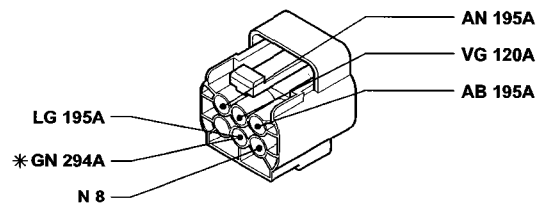
**313** Air conditioning signal reversal relay



Only for versions with ABI

4A107NL07

**314** Four stage pressure switch (1242-1581)

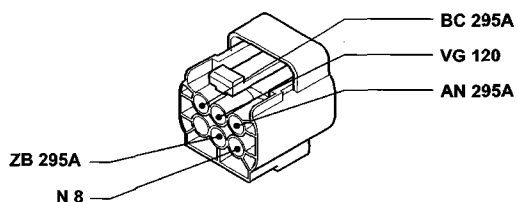


\* Only for versions with air conditioning

4A107NL08

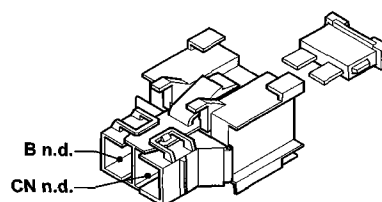
### 55.

**314** Four stage pressure switch (JTD with air conditioning)



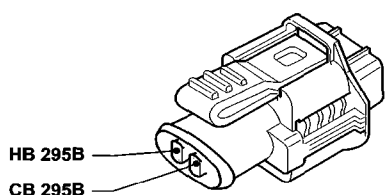
4A108NL01

**315** 15A fuse protecting electronic injection control unit (JTD)



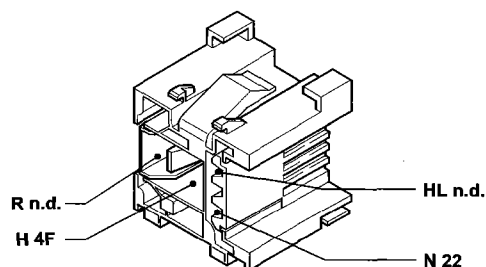
4A108NL02

**316** Fuel pressure regulator for injection system (JTD)



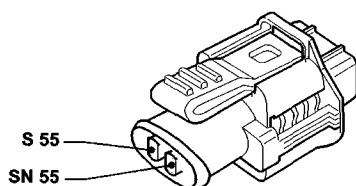
4A108NL03

**317** Main beam headlamp maintenance switch



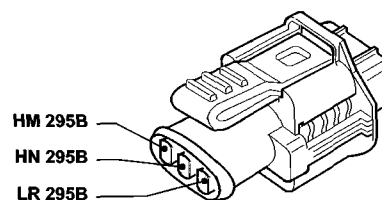
4A108NL04

**318** Fuel temperature sensor (JTD)



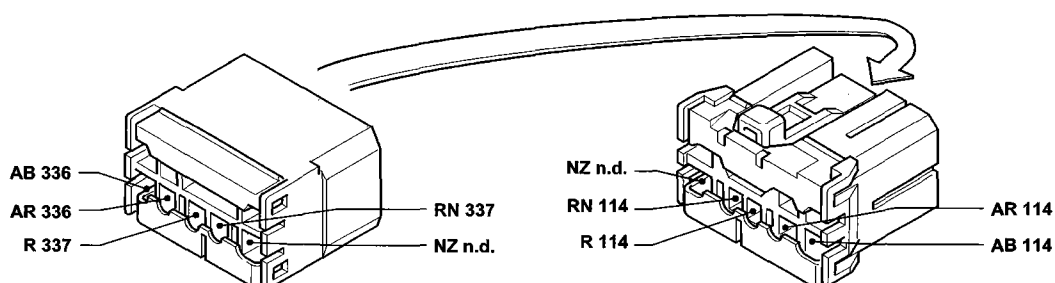
4A108NL05

**320** Fuel pressure regulator (JTD)



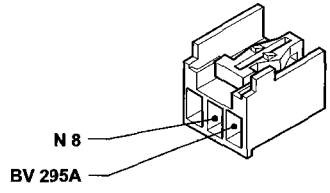
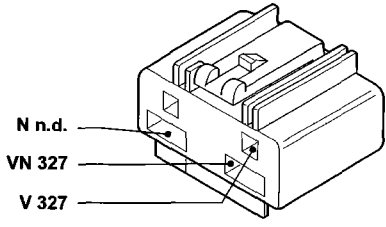
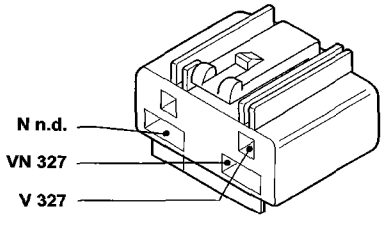
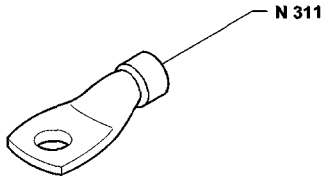
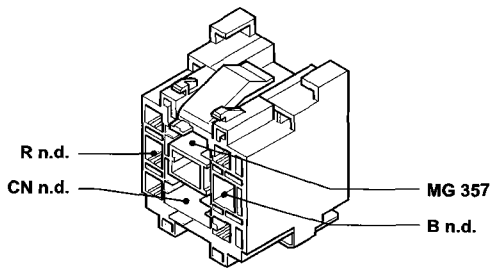
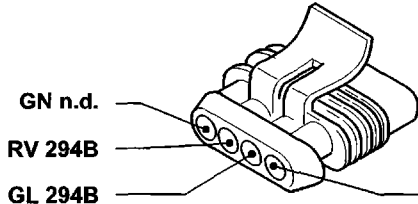
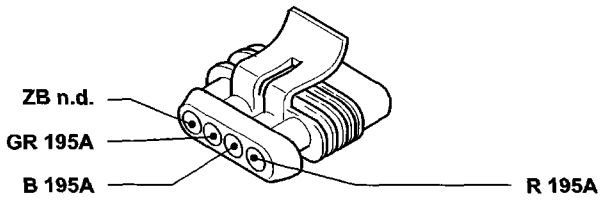
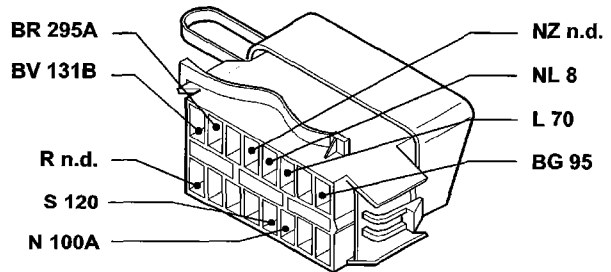
4A108NL06

**329** EURO BAG connection with bridge on floor



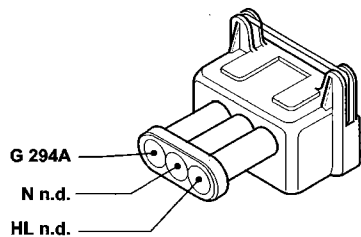
Only for versions with Euro Bag and Side Bag

4A108NL07

|   |  |
|---|--|
| <p><b>326</b> Switch on clutch (JTD)</p>  <p>N 8<br/>BV 295A</p> <p style="text-align: right;">4A109NL01</p>   | <p><b>338</b> Driver's SIDE BAG</p>  <p>N n.d.<br/>VN 327<br/>V 327</p> <p>Only for versions with Euro Bag</p> <p style="text-align: right;">4A109NL02</p>                                 |
| <p><b>339</b> Passenger SIDE BA</p>  <p>N n.d.<br/>VN 327<br/>V 327</p> <p style="text-align: right;">4A109NL03</p>   | <p><b>342</b> Power earth for electronic injection (1242)</p>  <p>N 311</p> <p style="text-align: right;">4A109NL04</p>  |
| <p><b>352</b> 50A relay for passenger compartment heating (JTD)</p>  <p>R n.d.<br/>CN n.d.<br/>MG 357<br/>B n.d.</p> <p style="text-align: right;">4A109NL05</p> | <p><b>360</b> Rear lambda sensor (1242)</p>  <p>GN n.d.<br/>RV 294B<br/>GL 294B<br/>VB 294B</p> <p style="text-align: right;">4A109NL06</p>  |
| <p><b>360</b> Rear lambda sensor (1581)</p>  <p>ZB n.d.<br/>GR 195A<br/>B 195A<br/>R 195A</p> <p style="text-align: right;">4A109NL07</p>                        | <p><b>361</b> EOBD diagnostic socket</p>  <p>BR 295A<br/>BV 131B<br/>R n.d.<br/>S 120<br/>N 100A<br/>NZ n.d.<br/>NL 8<br/>L 70<br/>BG 95</p> <p style="text-align: right;">4A109NL08</p> |

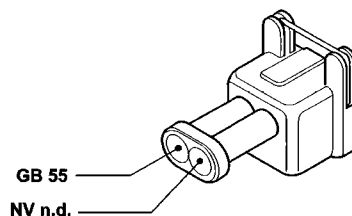
**55.**

**362** Accelerometer (1242)



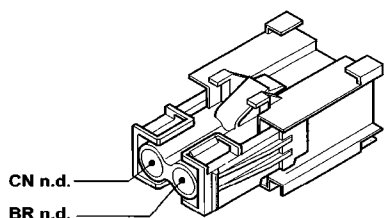
4A110NL01

**363** Throttle valve (JTD)



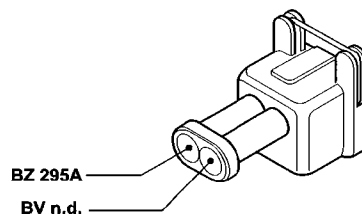
4A110NL02

**364** 7.5A fuse protecting electronic injection control unit/Fiat CODE (JTD)



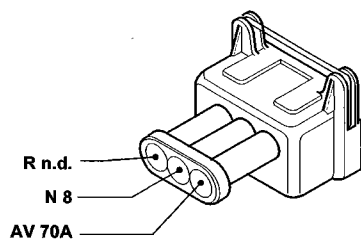
4A110NL03

**365** Waste gate valve (JTD)



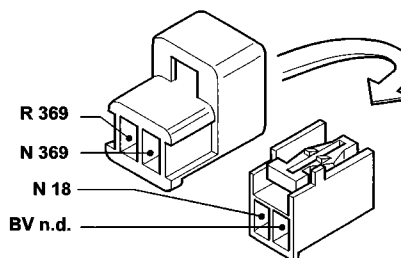
4A110NL04

**367** Water in fuel filter sensor



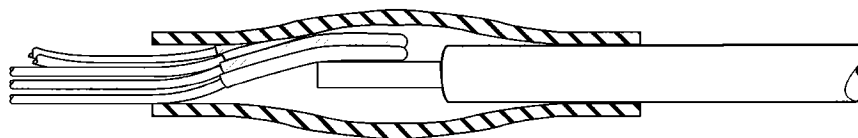
4A110NL05

**368** Connection between rear/lumbar adjustment cables



4A110NL06

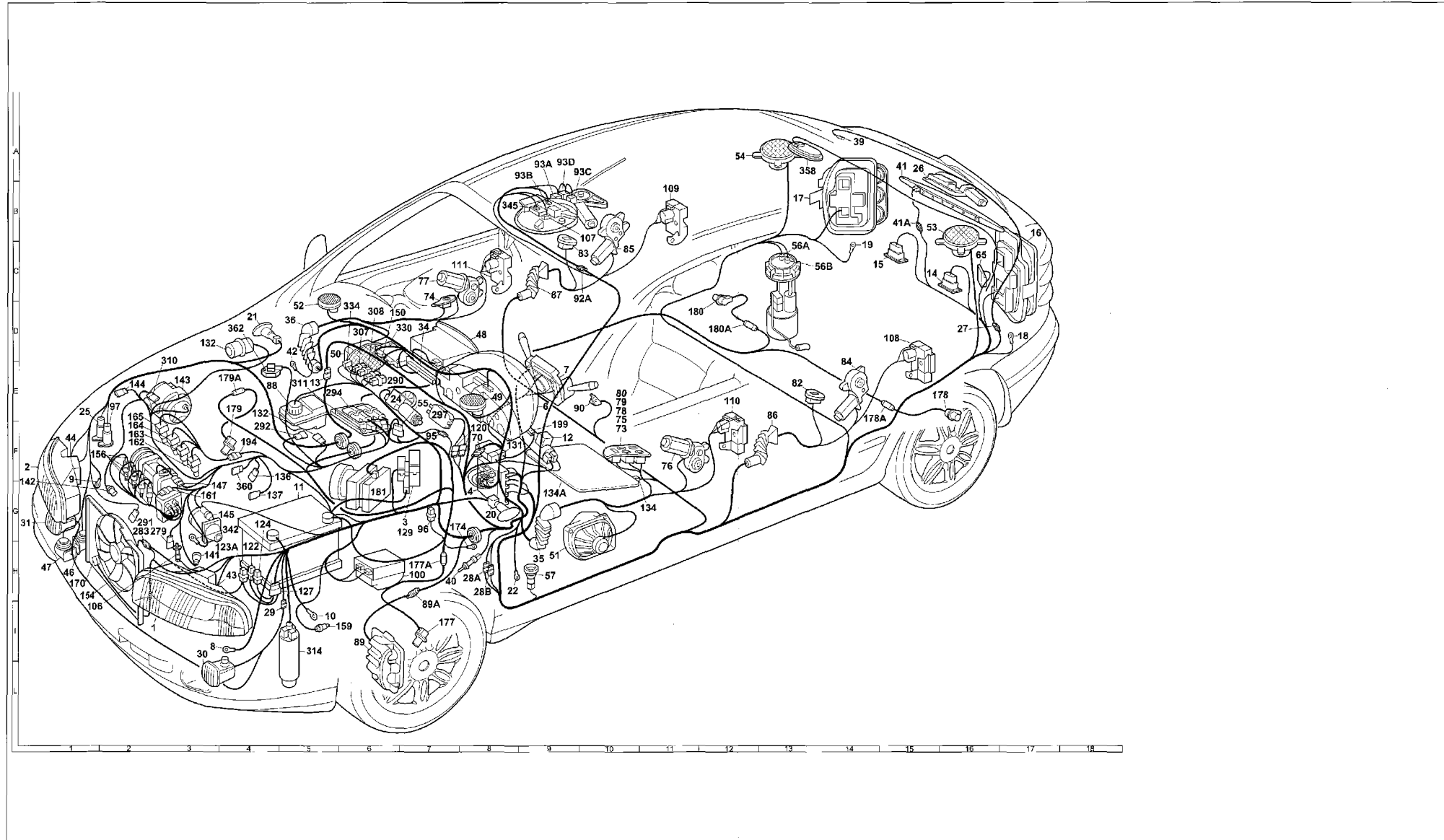
**N.D.** Ultrasound welding taped in cable loom



P4A395107

55.

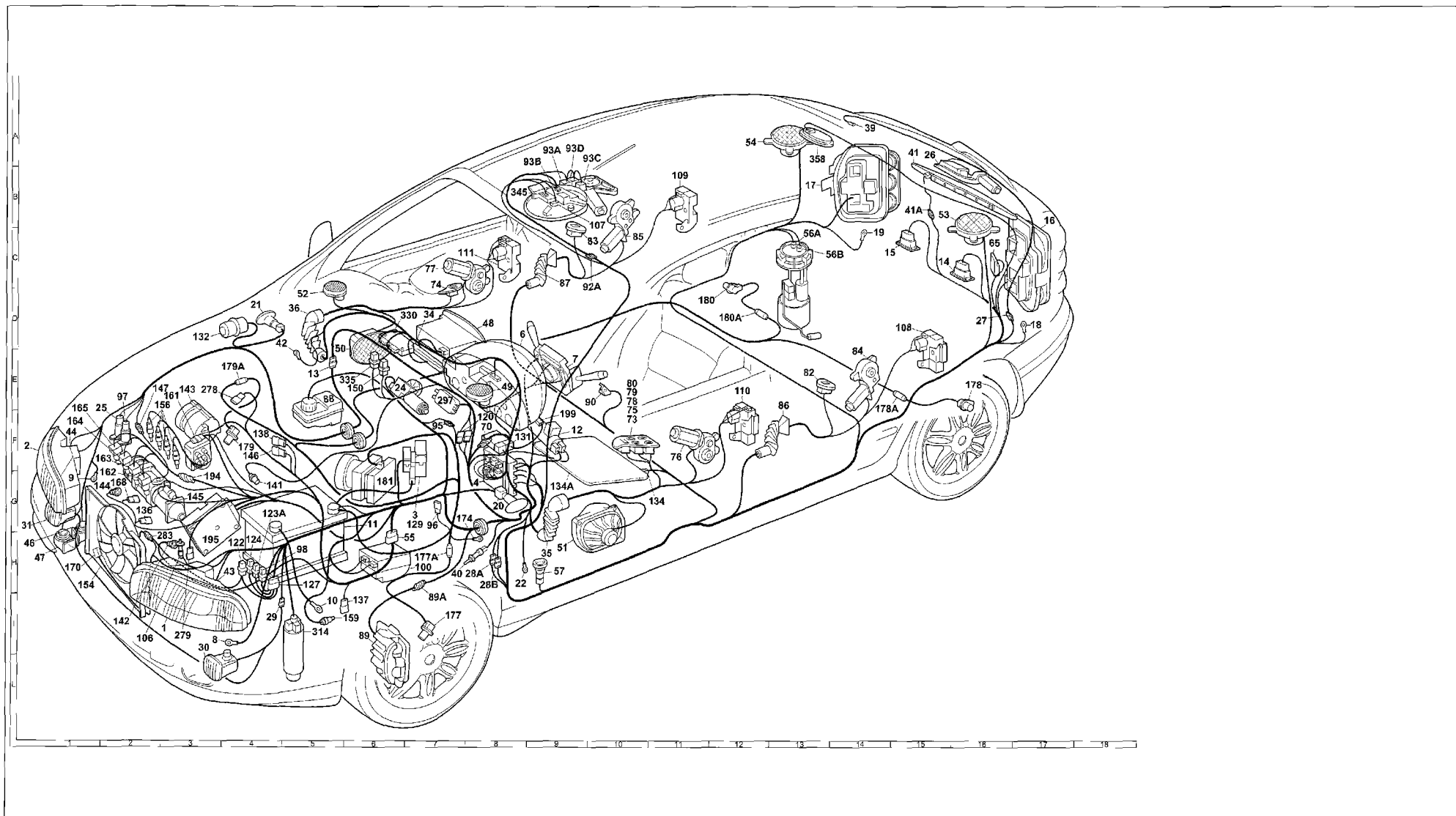
Comprehensive perspective view showing location of cable loom and components (See key at end of wiring diagrams)





55.

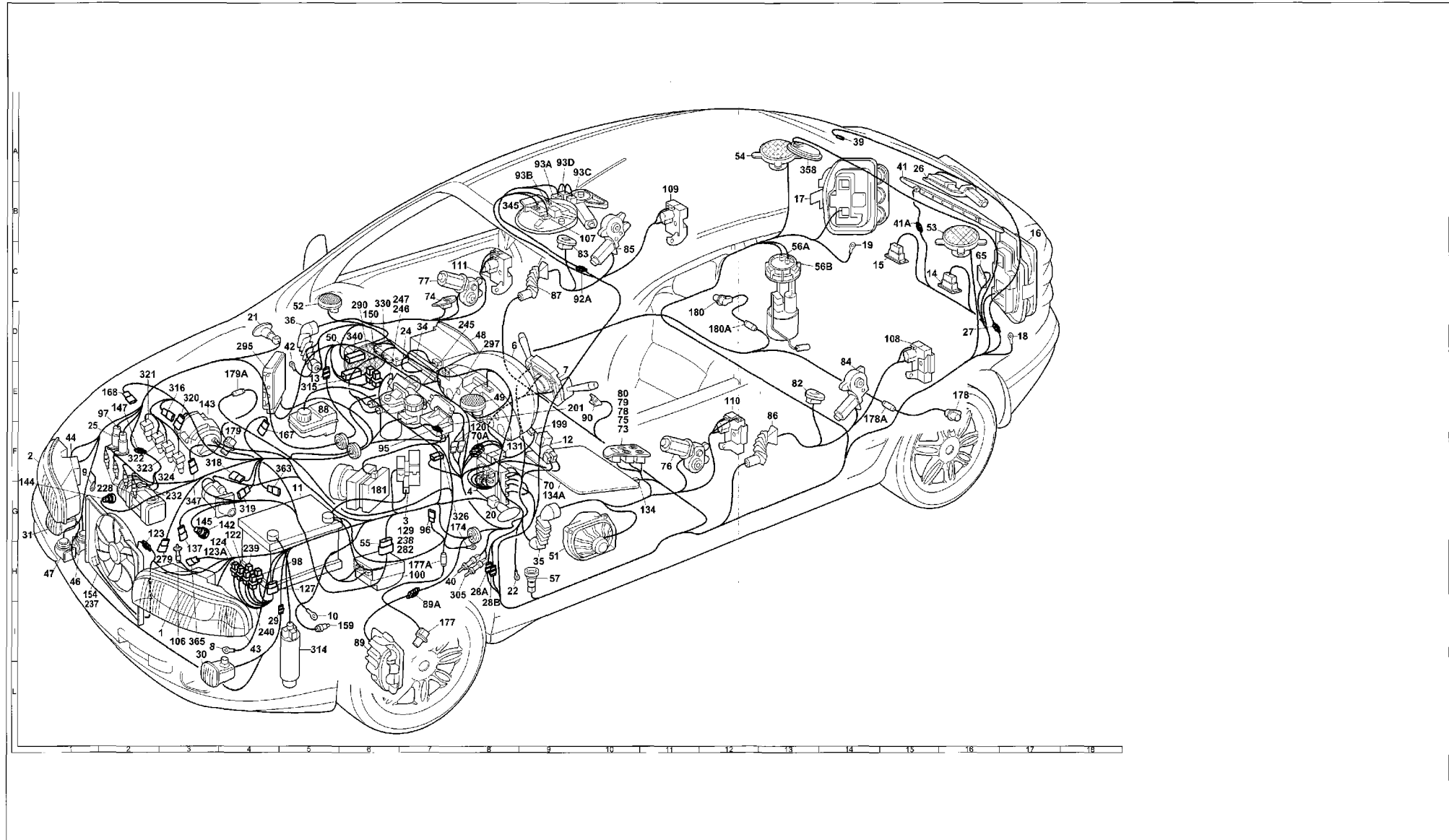
Comprehensive perspective view showing location of cable loom and components (See key at end of wiring diagrams)



4A112NL01

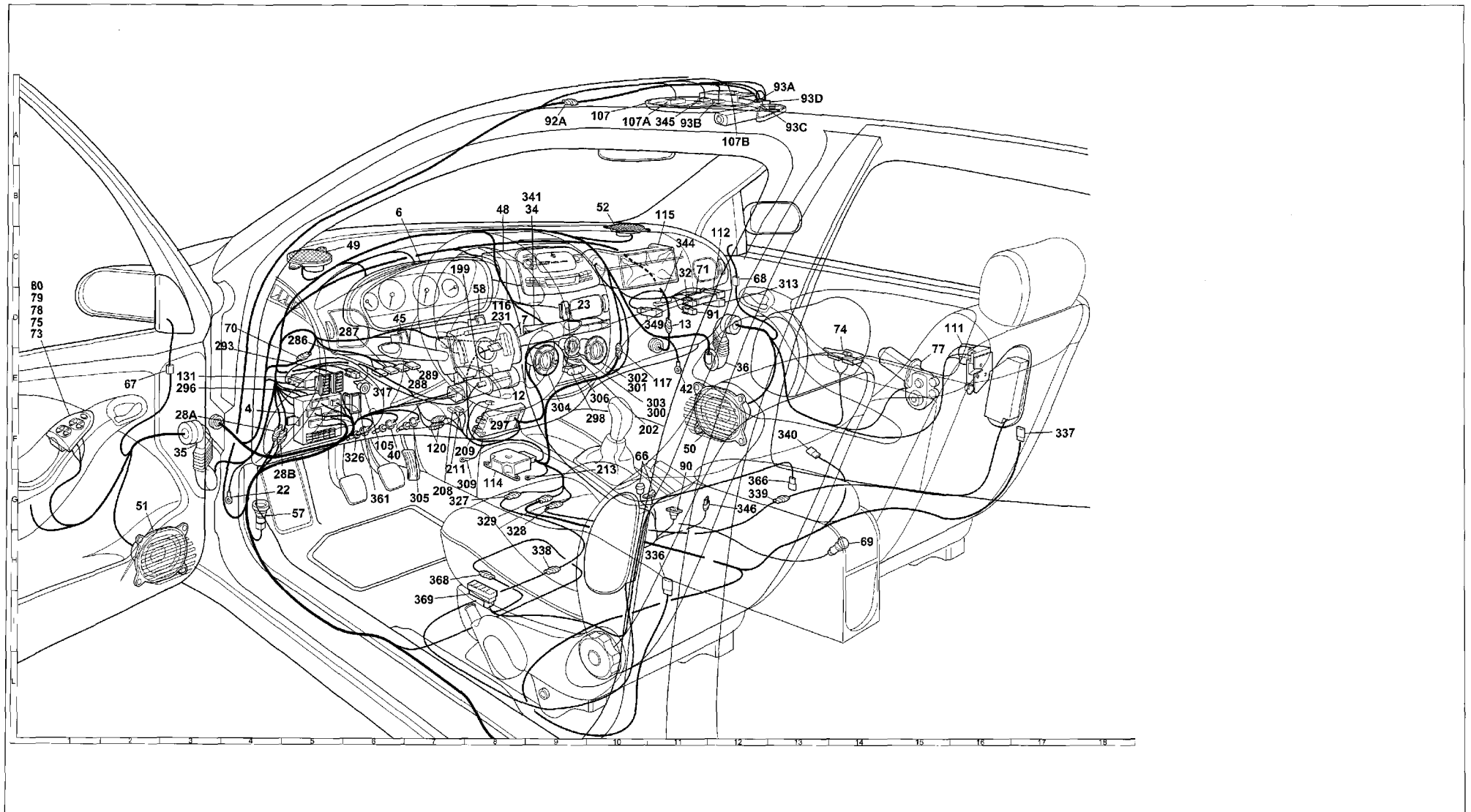
55.

Comprehensive perspective view showing location of cable loom and components (See key at end of wiring diagrams)



**55.**

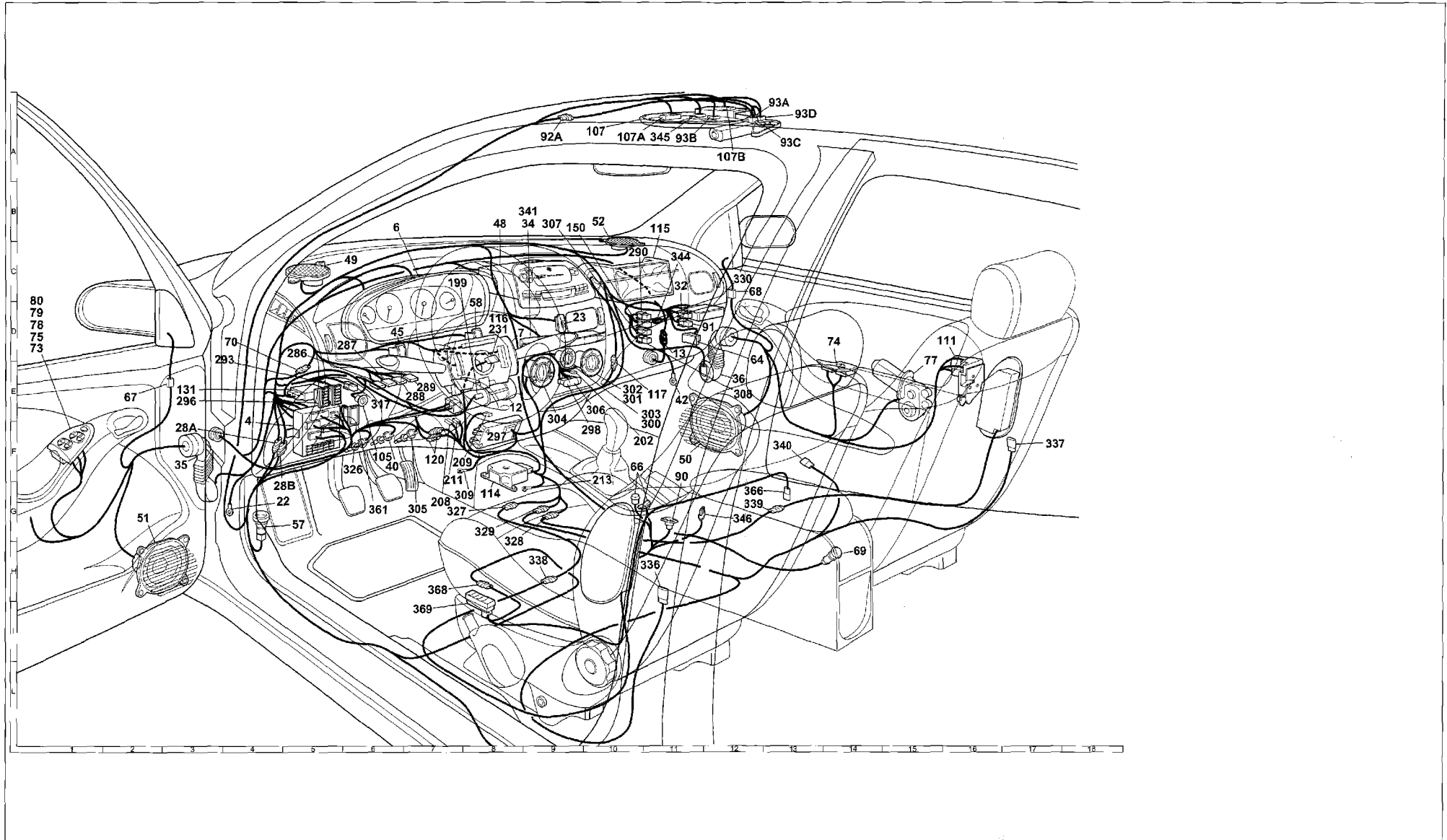
Version without ABI  
Perspective view of dashboard showing location of cable loom and components (See key at end of wiring diagrams)



4A112NL01

55.

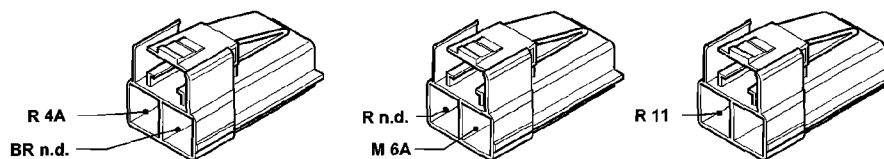
Perspective view of dashboard showing location of cable loom and components (See key at end of wiring diagrams)



4A113NL01

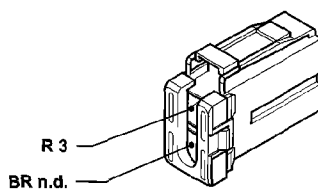
**55.**

**3** Power fusebox



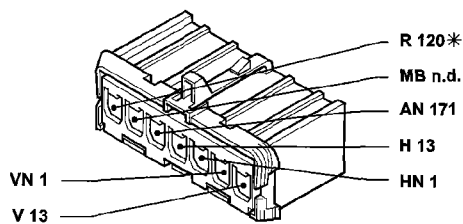
4A082NL01

**4A** Junction unit



4A082NL02

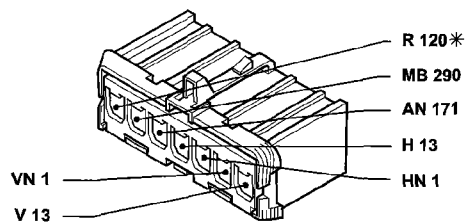
**4C** Junction unit (1581)



\* Only for versions with air conditioning

4A082NL03

**4C** Junction unit (1242) (JTD)



\* Only for versions with air conditioning

4A082NL04

**Component key**

- 1 Left front light cluster (I3\*)
- 2 Right front light cluster (F1\*)
- 3 Power fusebox (G7\*)
  - A 30A fuse protecting injection system (80A for D versions)
  - B 40A fuse protecting ignition system
  - C 80A fuse protecting optional equipment
  - D 80A fuse protecting junction unit
- 4 Junction unit (G8\*) (E4\*\*)
  - E1 Switch discharge relay
  - E2 Horn relay feed
  - E3 Heated rear windscreen relay feed
- 6 Instrument panel (D8\*) (B6\*\*)
  - A Battery recharging warning light
  - B Low engine oil pressure warning light
  - C Left direction indicator warning light
  - D Right direction indicator warning light
  - E Side lights warning light
  - F Instrument panel ideogram light
  - G Main beam warning light
  - H EURO BAG system failure warning light
- H1 Passenger EURO-BAG disabled warning light
  - I Anti-lock brakes failure warning light
- J1 Fuel reserve warning light
- K Fuel level gauge
- L Fiat CODE failure warning light
- M Petrol/DSI injection system failure warning light
- N Maximum turbocharger pressure warning light (H4\*)
- O Heater plugs warning light
- Q Front brake pad wear warning light
- R Handbrake applied/insufficient brake fluid level warning light
- S Brake lights failure electronic module
- T Brake lights failure warning light
- U Doors open warning light
- V Speedometer
- W Rev counter
- X Engine coolant temperature gauge
- X1 Water in fuel filter warning light (JTD)
- Y Handbrake applied/insufficient brake fluid level warning light
- Y1 Speed control module
- Z Miometer/trip meter display
- Z1 Trip meter zeroing button
- Z2 Trip meter light
- 7 Steering column switch unit (E9\*) (D8\*\*)
  - D Headlamp flasher button
  - E Dipswitch/main beam headlamps control switch
  - F Side lights control switch
- G Direction indicators/hazard warning lights switch
- H Direction indicators control switch
- 8 Left front earth (H4\*)
- 9 Right front earth (F2\*)
- 10 Battery earth on bodyshell (I5\*)
- 11 Battery (F5\*)
- 12 Ignition switch (F9\*) (E8\*\*)
  - Connection between right/left front cables (E11\*\*)
- 13 (E9\*) (D11\*)
- 14 Left number plate light (C15\*)
- 15 Right number plate light (C14\*)
- 16 Left rear light cluster (B17\*)
- 17 Right rear light cluster (B13\*)
- 18 Left rear earth (D17\*)
- 19 Right rear earth (C14\*)
- 20 Left front side direction indicator (G8\*)
- 21 Right front side direction indicator (D4\*)
- 22 Left dashboard earth (H8\*) (G3\*)
- 23 Hazard warning lights switch unit (D9\*)
  - A Hazard warning lights warning light
  - B Hazard warning lights control switch
- 27 Contact board for rear connections with luggage compartment light switch incorporated (D16\*)
- 27A Button for luggage compartment light, engaging alarm and signalling tailgate open
- 28 Connection between dashboard/longitudinal cables (H8\*) (E3\*)
- 28A Connection between longitudinal/right rear door cables (H4\*)
- 29 Connection between front/fog light cables (H4\*)
- 30 Left fog light (I3\*)
- 31 Right fog light (G1\*)
- 32 Fog lights relay feed (C11\*)
- 33 20A fuse protecting fog lights (C9\*)
- 34 Switch control unit (E7\*) (B8\*\*)
  - A Anti-theft device on warning light
  - B Rear fog lamps control switch
  - C Rear fog lamps relay feed
  - D Rear fog lamp warning light
  - E Heated rear windscreen control switch
  - F Heated rear windscreen warning light
  - G Switch panel ideogram light
  - H Fog lights warning light
  - I Fog lights control switch
  - L Outside temperature control switch
- 35 Connection between dashboard/left front door cables (H8\*) (F3\*)
- 36 Connection between dashboard/right front door cables (D6\*) (D12\*\*)
- 40 Brake lights control switch (H7\*) (F7\*\*)
  - 41 Additional brake light (A15\*)

- 41A Connection for additional brake light rear cables (B15\*)
- 42 Right dashboard earth (D5\*) (E11\*\*)
- 43 Left headlamp alignment corrector (H4\*)
- 44 Right headlamp alignment corrector
- 9 Right front earth (F2\*)
- 46 Headlamp alignment device control unit (D6\*\*)
- 48 Radio receiver with clock (D8\*) (B8\*\*)
- 55 Connection between front left cables/engine pre-wiring (H6\*)
- 56 Fuel gauge unit
  - A Fuel level sensor (C13\*)
  - B Electric fuel pump (C13\*)
- 58 Light dimmer (C7\*\*)
- 68 Right electrically adjustable exterior rear view mirror (C12\*\*)
- 70 Connection between dashboard/front cables (F8\*) (D4\*\*)
- 70A Connection between dashboard/front cables (JTD)
- 73 Left front electric window control buttons (F10\*) (D11\*\*)
- 74 Right front electric window control buttons (C7\*) (D14\*\*)
- 75 Right front electric window control buttons on left front door (F10\*) (D11\*\*)
- 76 Left front window motor (F11\*)
- 77 Right front window motor (C7\*) (D15\*\*)
- 80 Rear electric window inhibition switch (E10\*) (D11\*\*)
- 88 Connection between longitudinal/left rear door cables (E13\*)
- 87 Connection between longitudinal/right rear door cables (C9\*)
- 88 Insufficient brake fluid level sensor (E5\*)
- 89 Left brake pad wear sensor (I6\*)
- 89A Left brake pad wear sensor cables (I7\*)
- 90 Switch signalling handbrake applied (E10\*) (F11\*\*)
- 91 Power relay (D12\*\*)
- 92A Connection for electric sun roof cables (C10\*) (A9\*\*)
- 93A Electric sun roof control unit (A9\*)
- 91 Power relay (D12\*\*)
- 93B Electric sun roof control button (A9\*)
- 159 Ignition power module (E3\*)
- 33C Electric sun roof motor (A9\*) (B13\*\*)
- 93D Electric sun roof end of travel switch (A9\*) (A13\*\*)
- 95 Connection between front cables/anti-lock brakes (A.B.S.) (F7\*)
- 96 60A power fuse protecting electrical equipment (G7\*)
- 100 Alarm electronic control unit (H7\*)
- 105 Anti-theft disengagement switch (F6\*\*)
- 106 Anti-theft engagement switch (H2\*)
- 107A Central locking remote control receiver (B10\*) (A10\*\*)

- 108 Left rear central locking/alarm on switch (D15\*)
- 109 Right rear central locking/alarm on switch (E11\*)
- 110 Left front central locking/alarm on switch (D8\*\*)
- 111 Right front central locking/alarm on switch (C7\*) (D18\*\*)
- 114 EURO-BAG electronic control unit (G8\*\*)
- 115 Passenger EURO BAG (B11\*\*)
- 116 Driver's EURO BAG (D8\*\*)
- 117 Connection between EURO-BAG/dashboard cables (E11\*\*)
- 120 Connection for air conditioning unit cables (E8\*) (F7\*\*)
- 122 Engine cooling fan low speed relay feed (G4\*)
- 123 Engine cooling fan high speed timer (G3\*)
- 123A Engine cooling fan high speed relay feed (H5\*)
- 124 Air conditioning compressor control relay (H4\*)
- 127 Connection between front left cable/cable on relay holder bracket (H5\*)
- 129 Power fuse (50A) protecting engine cooling fan (G7\*)
- 131 Fiat-CODE electronic control unit (F8\*) (E3\*)
- 132 Petrol vapour cut out solenoid valve (controller) (E2\*)
- 136 Detonation sensor (F3\*)
- 137 Vehicle speed sensor (G5\*)
- 141 Heated lambda sensor (H3)
- 142 Switch signalling insufficient engine oil pressure (G4\*TD) (F1\*1242) (I2\*1581) (H4\*1742)
- 143 Alternator (E3\*)
- 144 Rpm and TDC sensor (F2\*)
- 145 Starter motor (G3\*)
- 147 Compressor for air conditioning (F3\*)
- 147A Coupling for air conditioning compressor
- 150 Injection system relay feed (D8\*) (C11\*\*)
- 154 Engine cooling fan (H1\*)
- 156 Spark plugs (F2\*)
- 159 Reversing lights control switch (I6\*) (A11\*\*)
- 161 Ignition power module (E3\*)
- 162 Injector (1) (E2\*)
- 163 Injector (2) (F2\*)
- 164 Injector (3) (F2\*)
- 166 Injector (4) (F2\*)
- 167 Air flow meter (F5\*)
- 168 Timing sensor (H1\*)
- 170 Engine cooling fan limit resistor (H1\*)
- 171 Connection for heater unit cables
- 174 Power earth for anti-lock brakes (A.B.S.) (I5\*)
- 177 Sensor on left front wheel for anti-lock brakes (A.B.S.) (I7\*)

- C 25A fuse protecting rear electric windows (non-existent for SX versions)
- D 26A fuse protecting A.B.L. control unit, central locking
- E 20A fuse protecting current socket; cigar lighter; electric seats; electric sun roof
- F 10A fuse protecting EURO BAG
- 284 Injection/ignition electronic control unit (I242) (E1\*)
- 295 Injection/ignition electronic control unit 1910 UNIJET (D4\*)
- 296 Fuse holder base on front cable
  - A 7.5A fuse protecting cooling system/electronic injector; A.C. system; Alarm
  - B 20A fuse protecting windscreen wiper with A.B.L. or without A.B.L.
  - C 7.5A fuse protecting electronic injection/cooling system Fiat CODE
  - D 10A fuse protecting ABS
  - E 7.5A fuse protecting climate control system
  - F 7.5A fuse protecting electronic injection system/Fiat CODE
- 297 Air conditioning control unit (E7\*) (E8\*\*)
  - A Air conditioning control switch
  - B Recirculation control switch
  - C Fan sensor
- 300 Heater fan electronic transformer (E11\*\*)
- 301 Vehicle interior mixture control actuator (E10\*\*)
- 302 Maximum demisting control switch (E10\*\*)
- 303 Interior ventilation potentiometer (E11\*\*)
- 304 Vehicle interior temperature potentiometer
- 306 Treated air sensor
- 305 Potentiometer on accelerator pedal (H7\*)
- 306 Treated air sensor (F10\*\*)
- 307 15A fuse protecting injection system (E10\*\*)
- 308 15A fuse protecting canister solenoid valve (D6\*) (E12\*\*)
- 309 Earth for air conditioning unit (G8\*\*)
- 310 Absolute pressure and outside temperature sensor (E2\*)
- 311 Engine pre-wiring earth (1242 16V) (E5\*)
- 313 Air conditioning signal reversal relay (D12\*\*)
- 314 Four stage pressure switch (I5\*)
- 315 15A fuse protecting electronic injection control unit (1910 JTD) (E3\*)
- 316 Fuel pressure regulator for injection system (1910 JTD) (E3\*)
- 317 Headlamp maintenance remote control switch (E5\*)

**Cable colour code**

- A Light blue
- B White
- G Yellow
- H Grey
- L Dark blue
- M Brown
- N Black
- R Red
- S Purple
- Z Pink
- AB Light blue-White
- AG Light blue-Yellow
- AN Light blue-Black
- AR Light blue-Red
- AV Light blue-Purple
- BG White-Yellow
- BL White-Dark blue
- BN White-Black
- BR White-Red
- BV White-Green
- BZ White-Purple
- CA Orange-Light blue
- CB Orange-White
- CN Orange-Black
- GN Yellow-Black
- GL Yellow-Dark blue
- GV Yellow-Green
- HG Grey-Yellow
- HN Grey-Yellow
- HR Grey-Black
- HV Grey-Red
- LB Grey-Green
- LG Dark blue-White
- LN Dark blue-Yellow
- LR Dark blue-Black
- LV Dark blue-Green
- MB Brown-White
- MN Brown-Black
- NZ Black-Purple
- RB Red-White
- RG Red-Yellow
- RN Red-Black
- RV Red-Green
- SN Pink-Black
- VB Green-White
- VN Green-Black
- VR Green-Red
- ZB Purple-White

\* Co-ordinates of components in complete diagrammatic views from page 111 to page 113  
 \* Co-ordinates of components in complete diagrammatic views from page 114 to page 115