

# PIAA

## Instruction manual for H.I.D Bulb/harness kit (H4 Low/High switching type)

Thank you very much for purchasing PIAA product.  
Read this instruction manual thoroughly for proper use of the product.  
Keep this instruction manual carefully.

※ **Caution** marks and **Warning** marks in this manual indicate important notices for installing this product. Be sure to follow these notices in order to ensure safe and reliable work.

**For customers** ..... In lending or handing over this product, be sure to include this instruction manual.

**For installation service agents** ..... Be sure to hand over this instruction manual to the customer after installation.

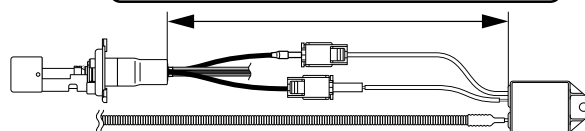
### For customers

- This product is only for the halogen H4 type. This product can not be applied to headlamps other than those which use H4 bulbs.
- Confirm the applicability table for each vehicle type carefully since some bulbs can not be installed due to interference between the tip of the H.I.D. bulb and either the shade or the lens in the lamp body although the bulb is otherwise suited to the customer's vehicle.
- This product is very dangerous because it generates high voltage. Ask a PIAA authorized dealer for installation and parts replacement.
- Please note that such services as maintenance-free service may become halted in some vehicles after installing this product. If you do not accept the above situation, please refrain from installing this product.
- Please note that an additional machining on the bulb-attaching part of the headlamp may become necessary in installing this product.
- Please note that the bulb burnt out monitor may become continuously turned on in some vehicles after installing this product. If you do not accept the above situation, please refrain from installing this product.
- Please note that, due to a remarkable improvement in brightness, some color of light which was not noticeable prior to installation of this product may become visible (especially in projector lamps) or that the light distribution may become different.
- Do not switch low/high beam for more than five times continuously in order to protect the H.I.D. bulb. Also do not switch on the passing lamp for more than five times continuously. These can cause shortened life of the H.I.D. bulb and damage or failure of the low/high switching unit.
- Phenomena that do not arise with halogen bulbs may occur upon installing this product. They are typical of HID bulbs and are not malfunctions. (For details, refer to "In such cases" in a later section.)

### **Warning**

- The wiring from the igniter to the H.I.D. bulb is very dangerous since a high voltage of about 20,000 volts is generated at the moment when the switch is turned on. Do not turn on the switch while holding harnesses.

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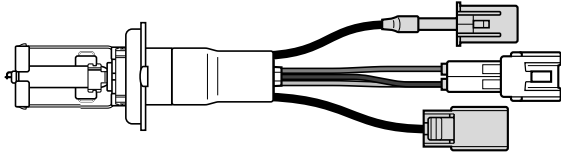


- Do not touch the lamp during lighting and immediately after turning off the headlamp since very high temperature of the lamp can cause burn injury. Turn off the switch and cool down the lamp completely before replacing the lamp.
- In any circumstances do not disassemble the PIAA H.I.D. bulb, the controller, the igniter or the low/high switching unit. Disassembling these components will not only invalidate regular maintenance but also cause serious troubles such as electrical shock if the product is used with these disassembled components.
- Do not wash the vehicle and do not pour water to the headlamp during lighting and immediately after turning off the lamp since the temperature difference can cause breakage of the lens.

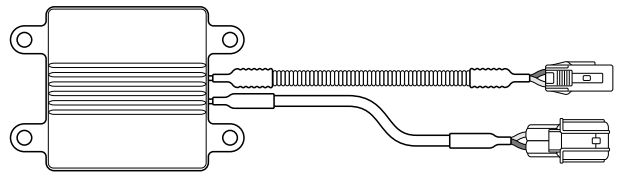
## Content of the kit

※ Confirm that all parts are included in the kit.  
Contact your dealer if any of the parts is missing.

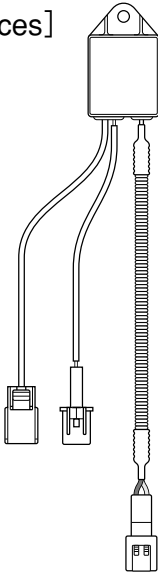
① H.I.D Bulb [Two pieces]



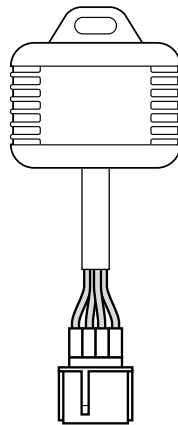
② Controller [Two pieces]



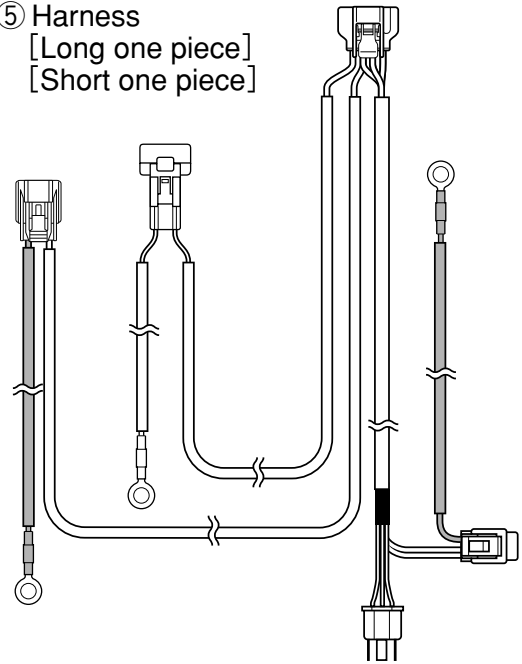
③ Igniter [Two pieces]



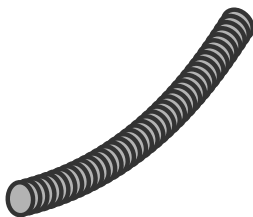
④ Low/high switching unit [Two pieces]



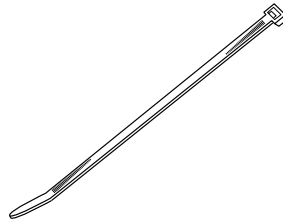
⑤ Harness [Long one piece]  
[Short one piece]



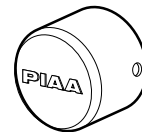
⑥ Corrugate tube [Four pieces]



⑦ Tie wrap [Ten pieces]



⑧ Shade cap [Two pieces]



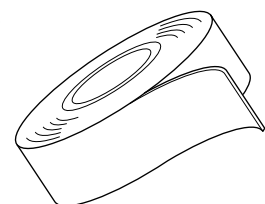
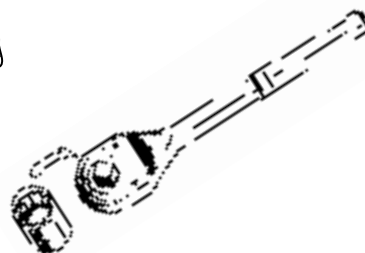
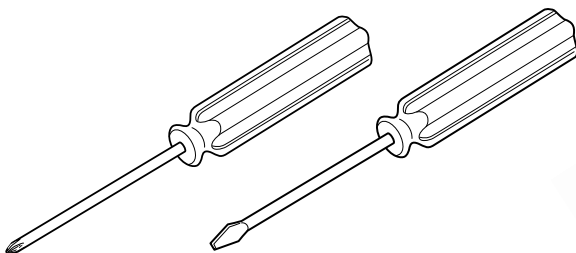
## Tools

※ Use the following tools where necessary.

● Philips Head screwdriver (⊕⊖)

● Ratchet wrench

● Vinyl electrical tape



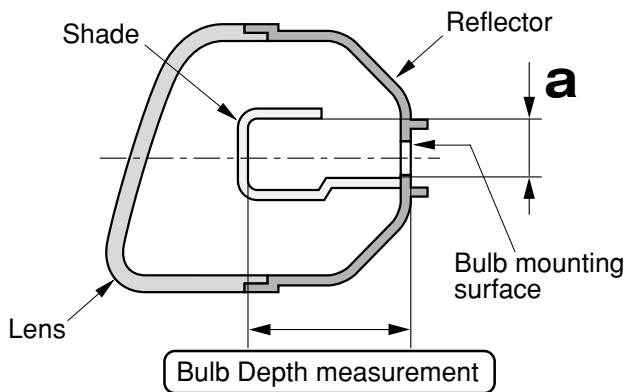
## Before starting installation .....

### Confirmation whether installable or not

- Using a pair of calipers, measure the measurement position given in the drawing, and make sure the dimensions will permit mounting (the distance between the bulb mounting surface and the shade or lens).

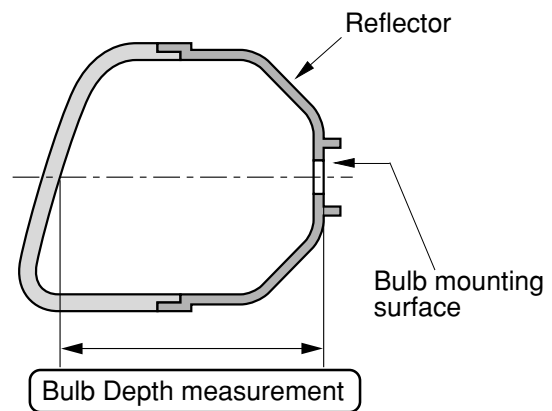
#### FOR LAMP WITH BULB SHADE (BULB MUST NOT TOUCH SHADE)

- Measured depth must be 58mm or greater for bulb clearance. If measurement is less than 58mm the PIAA HID bulb cannot be installed.
- The H4 type HID has a  $\phi$  25mm shade mounted on the bulb itself, and can not be mounted if the diameter of "a" is less than the bulb shade.



#### FOR LAMP WITHOUT BULB SHADE (BULB MUST NOT TOUCH LENS)

- Measured depth must be 60mm or greater for bulb clearance. If measurement is less than 60mm the PIAA HID bulb cannot be installed.
- ※ For lamp without bulb shade must be installed onto bulb shade cap mentioned as below.



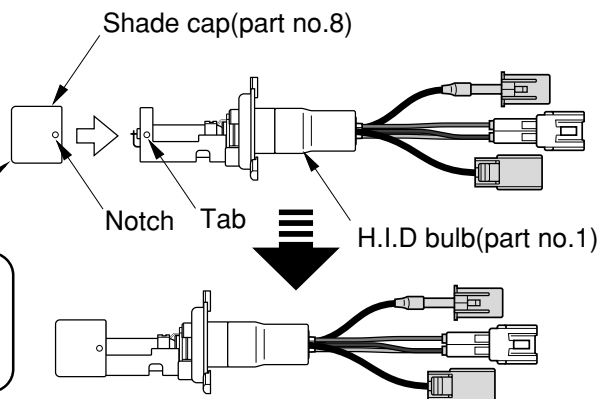
- The bulb may not be installed to a vehicle where the clearance on the backside of the bulb mounting surface is smaller than 60 mm.

#### How to install, Bulb Shade Cap

Attach Bulb Shade Cap (part no.8) to Bulb (part no.1) by lining up the tab on the bulb side to the notch in the cap.



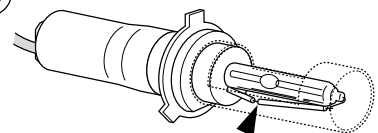
Make sure that **PIAA** logo on the shade cap is right side up.



- ※ The Bulb Shade Cap is not needed if headlamp housing has bulb shade.

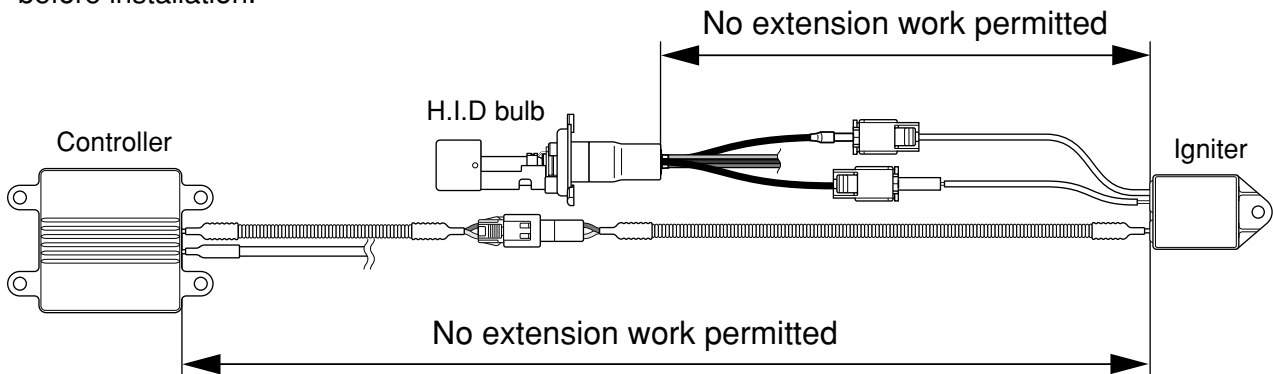
### Confirmation of the other appearance of the bulb

- Make sure that there are no breakage, no scratch and no stain on the bulb. Breakage, scratch or stain of the bulb can cause lighting failure.

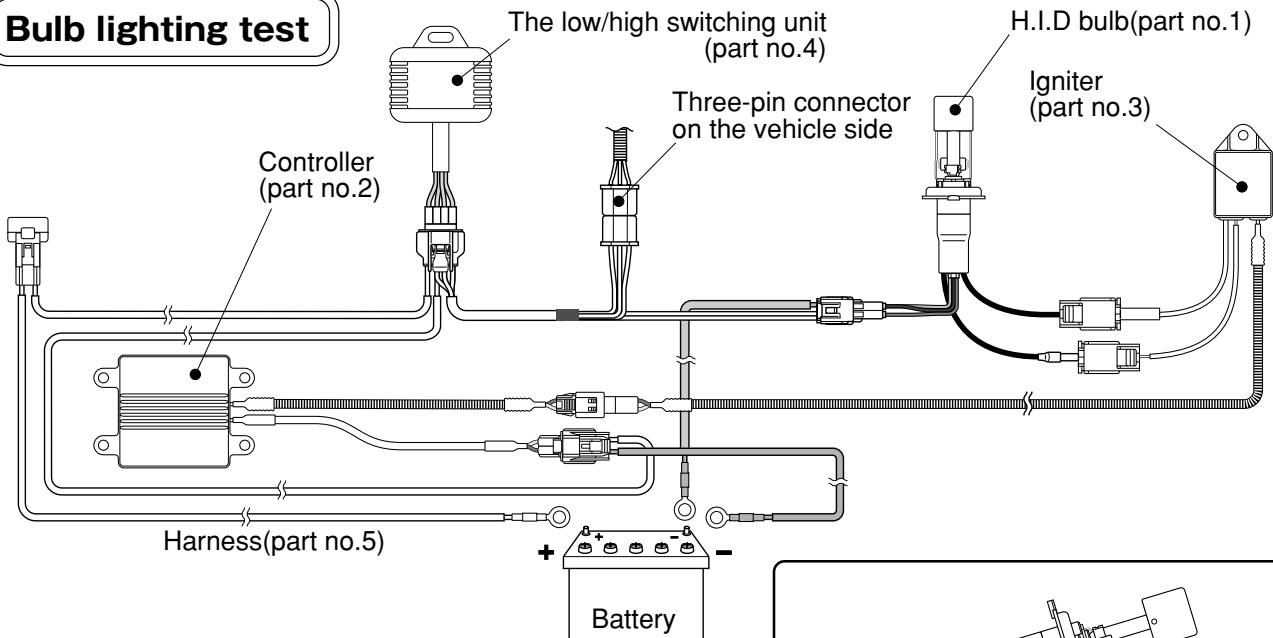


## Confirmation of installing location for the controller and the igniter

- No extension or processing of the wiring from the controller through the igniter to the H.I.D. bulb is permitted. This is because any extension of the wiring can cause lighting failure due to voltage drop. Be sure to confirm installing locations for the controller, the igniter and the low/high switching unit before installation.

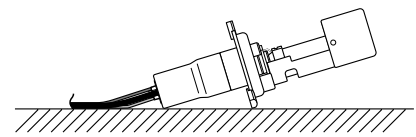


## Bulb lighting test



### 《 Procedure for lighting test 》

- (1) Take out the H.I.D. bulb (part no.1) from the box and connect it to the igniter (part no.3) and the controller (part no.2) respectively according to the wiring diagram. Temporarily connect the harness (part no.5) to the low/high switching unit, battery terminals and the three-pin connector on the vehicle side.
- (2) After completing connections, confirm lighting of the low beam by turning the headlamp switch ON (low beam).
- (3) Turn the headlamp switch to high beam to confirm switching to light the high beam.
- (4) The test will be completed when lighting and low/high switching are confirmed.

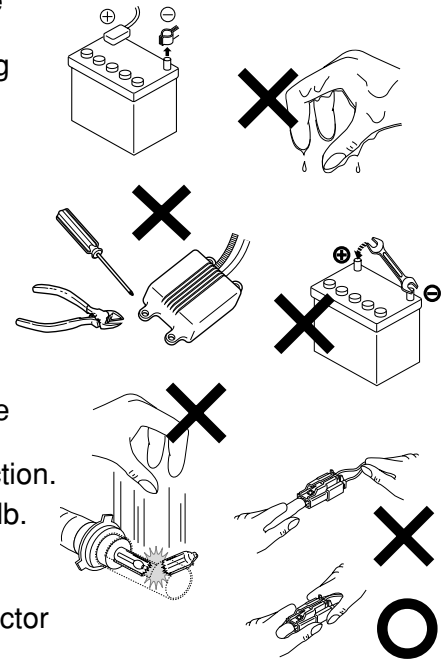


The glass part of the H.I.D. bulb and the shade becomes very hot during lighting. Perform lighting test by placing the bulb as shown in the figure above, keeping the bulb away from flammable material.

- Bulbs should be tested for no longer than 10 seconds.
- In case the lighting test has been omitted, any damage happened during installation shall be out of complaint procedures.
- Do not touch the glass part of the H.I.D. bulb and the shade after the lighting test since the bulb is very hot.

**Caution for installation / Be sure to read the cautions****⚠ Warning**

- Be sure to disconnect the positive and negative terminals of the battery before starting installation. Disconnect the negative terminal of the battery first, while taking care not to short-circuit.
- Avoid work in a place where rain falls. Working with wet hands can cause electrical shock which is very dangerous.
- Do not disassemble or alter the bulb, harnesses, the controller, the igniter or the low/high switching unit. Disassembling or remodeling of these components can cause overheating or short-circuit as well as fire disaster of the vehicle in the worst case. PIAA will not assume responsibility on any trouble due to remodeling.
- Be careful not to contact a metallic object to the positive and the negative terminals of the battery at the same time to avoid electrical shock and short-circuit. Wear rubber gloves for protection.
- Do not drop, apply unreasonable force, or scratch the H.I.D. bulb. Breakage of the bulb can cause injury. Also it may lead to deterioration of function or shortened life.
- Attach and detach the connector correctly by holding the connector body. Incorrect connection can cause lighting failure.

**⚠ Caution**

- Install the product in a level place by ensuring sufficient area and safety. Put the gearshift lever into either neutral or parking, apply the parking brake, stop the engine, turn off the headlamp switch and pull out the ignition key.
- Install the product after the temperature inside the engine room becomes sufficiently low. Do not work while high temperature sections such as the engine unit, the radiator, the oil cooler and the turbine of the turbocharger are hot.
- Be careful to handle bulbs, harnesses, the controller, the igniter and the low/high switching unit. Giving shock by dropping or hitting any object can cause damage to bulbs, harnesses, the controller the igniter and the low/high switching unit
- Be careful not scratch bulbs, harnesses, the controller, the igniter, the low/high switching unit and body parts such as bumpers during detaching and attaching the product.
- Be careful not lose any parts detached.
- Install the product by two or more persons.
- Fasten bolts tightly. Make a test run and fasten the bolt again if it works loose.
- After installing the bulb, be sure to have the light axis adjusted by a PIAA authorized dealer. Adjust the headlamps so that the main light axis of the low beam reaches within 40m in front of the vehicle and is directed to the left of the moving direction in order not to dazzle oncoming cars. (This is as regulated by law.)
- Confirm normal operation of lamps including the headlamp, wipers, and horns after installation of this product.
- Detaching the battery terminals will erase the memories of the clock, the radio and the audio equipment. Readjust them after completing installation. (Refer to the instruction manual of the vehicle for adjustment.)
- Do not touch the glass part of the H.I.D. bulb during handling. Also do not stain the bulb. These can shorten the life as well as deteriorate the function of the bulb.
- Install the H.I.D. bulb correctly by confirming the shape of its metal socket. Also connect the harness correctly and securely. Wrong installation or inaccurate connection can cause lighting failure, dropping or overheating of the bulb and shortened life of the bulb.
- Do not light the H.I.D. bulb outside the lighting fixture except for test lighting.



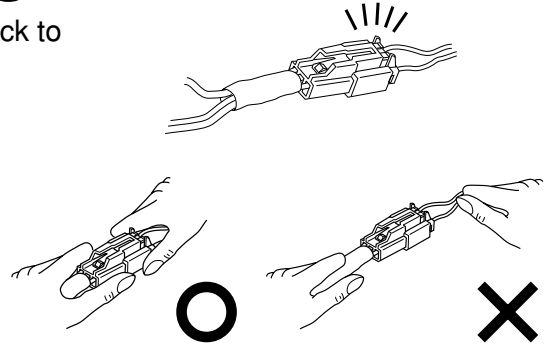
**For authorized dealers**

※ Customers are strongly required to refrain from installing the product by themselves.

## Caution for wiring / Be sure to read the cautions

### ⚠ Warning

- Insert the connector firmly to the end until you hear a click to set it in place.
- Pull the body of the connector to disconnect. It is dangerous to pull the cord since this can damage the connecting part which will result in overheating.



### ⚠ Caution

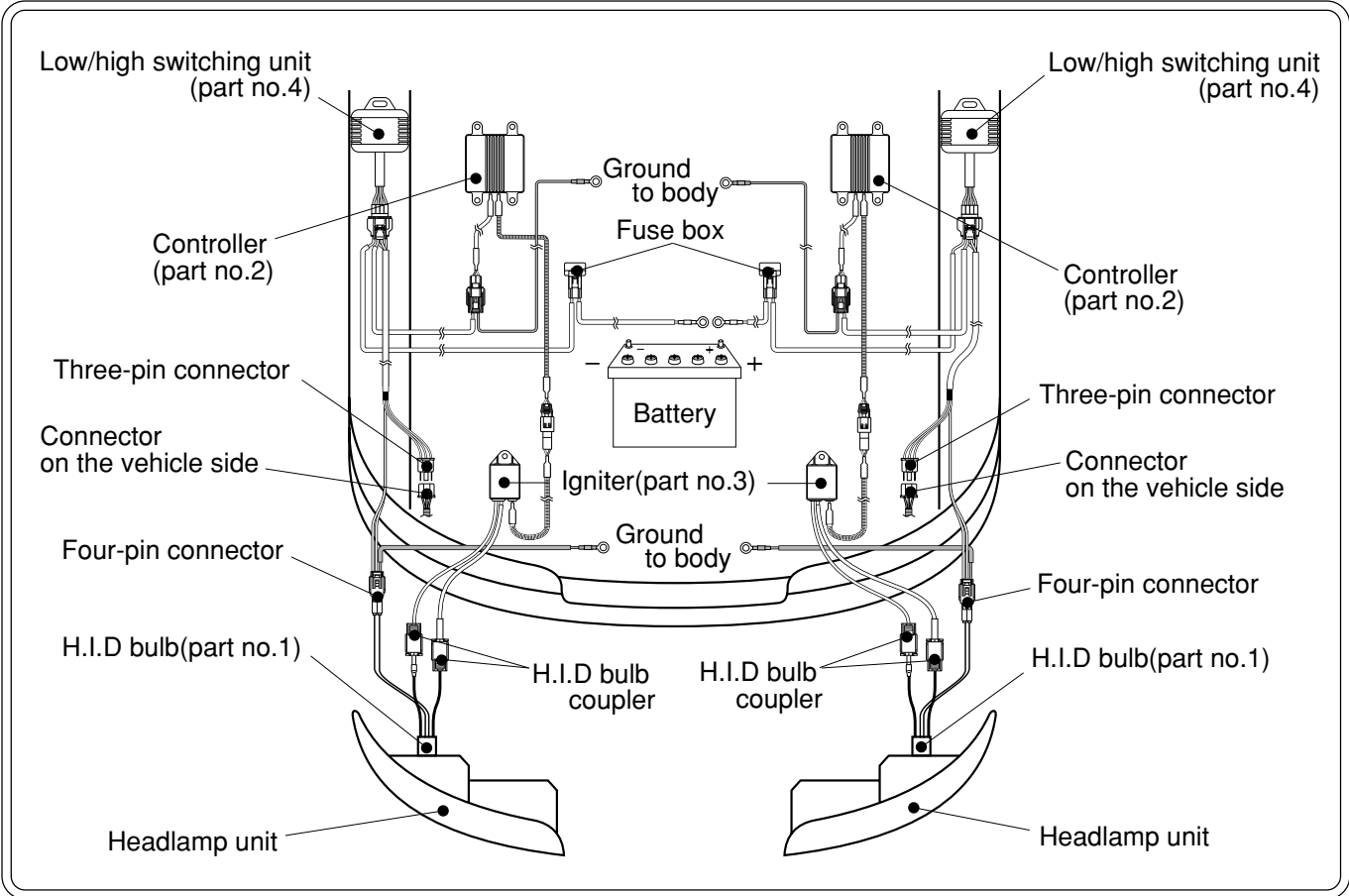
- In disconnecting the battery terminal, if any cord is connected to other electrical component, bundle the positive and the negative cords separately by using adhesive vinyl tapes in order not to mix up the positive and the negative cords.
- Connect the positive power supply cord as well as the negative ground cord correctly by confirming the color of the cords.
- Do not take the positive power supply from the alternator (generator).
- Rout the harness so that it will not contact high temperature sections in the engine room such as the engine unit and the radiator.
- Rout the harness so that it will not be wedged by moving parts.
- Do not fasten the harness to high pressure piping such as brake piping and air conditioner piping.
- In case the harness contacts a sharp edge, use commercially available cushioning tapes to protect the harness.
- Make sure that the wiring is correct before connecting the battery.
- In connecting the battery terminals and the cords of electrical components, make sure that the positive and the negative cords will never be mixed up. Be sure to connect the positive terminal first.
- Confirm operation after completing the wiring. In case the lamp will not light, read "In such cases..." described later.

## Caution for use / Be sure to read the notice for safe use

### ⚠ Caution

- This product is designed and manufactured for automobiles. Do not install it to any object other than an automobile.
- Do not light the lamp near flammable material such as paper and fabric to avoid fire disaster.
- Do not light the lamp near inflammable material such as gasoline, combustible spray cans, thinner and lacquer to avoid fire disaster.
- Lighting the lamp while the engine is not running can cause the battery to run out which will result in a failure of starting the engine.
- Do not switch low/high beam for more than five times continuously in order to protect the H.I.D. bulb. Also do not switch on the passing lamp for more than five times continuously. These can cause shortened life of the H.I.D. bulb and damage or failure of the low/high switching unit.
- Always turn the headlamp switch OFF before turning off the engine. If you start the engine with the headlamp switch ON, the life of HID bulbs may be shortened due to changes in the vehicle voltage, etc.

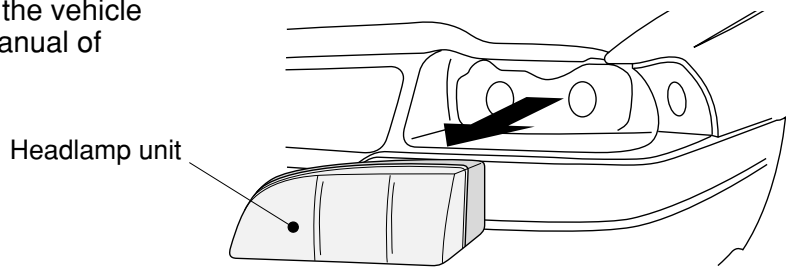
# Outline drawing of wiring and installation



# Outline drawing of wiring and installation

**1** Disconnect the negative and the positive terminals of the battery.

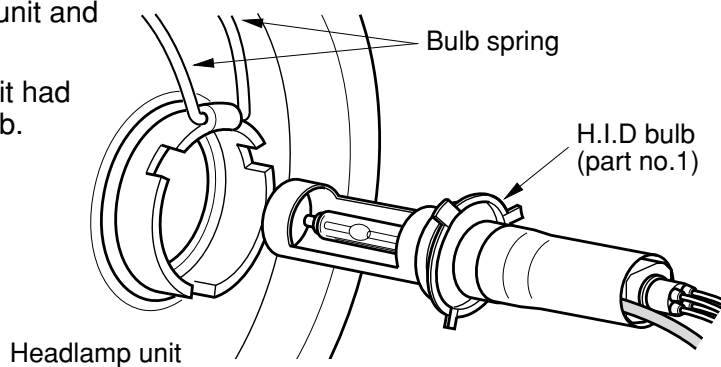
**2** Detach the headlamp unit from the vehicle by referring to the instruction manual of the vehicle.



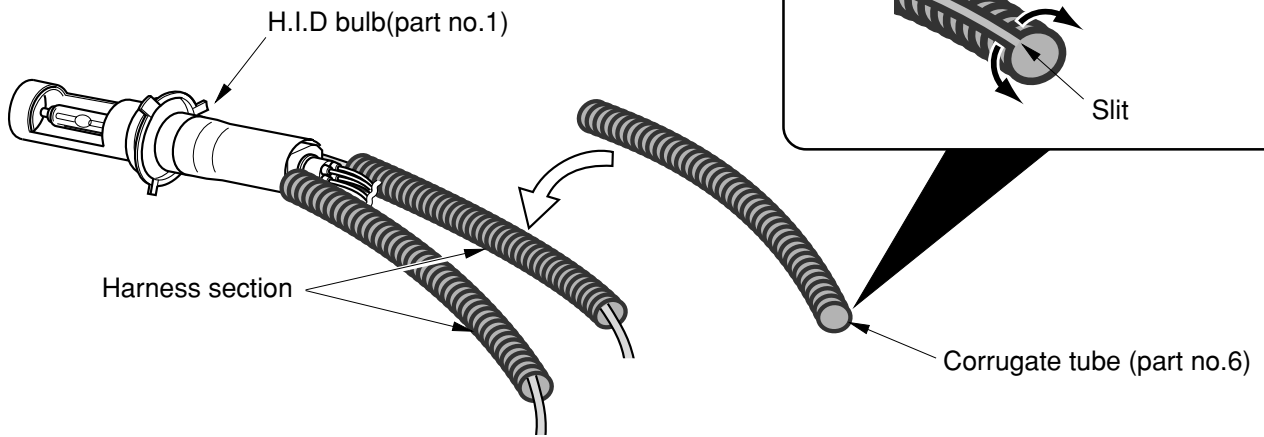
**3** Detach the bulb from the headlamp unit and install the H.I.D. bulb (part no. 1).

※ Install the genuine rubber cap as it had been after installing the H.I.D. bulb.

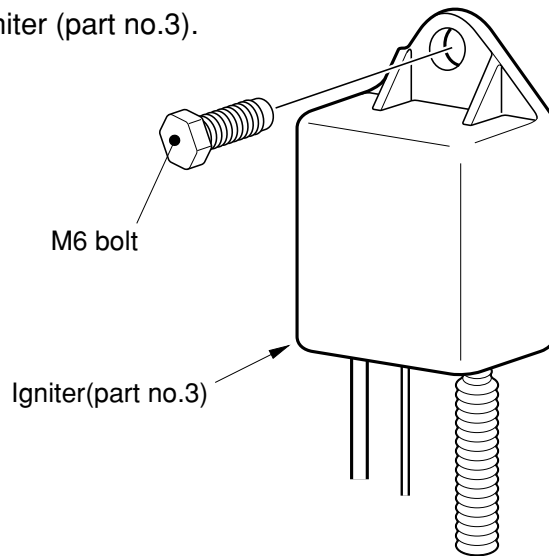
● Some types of bulb springs can make it difficult to install the H.I.D. bulb.



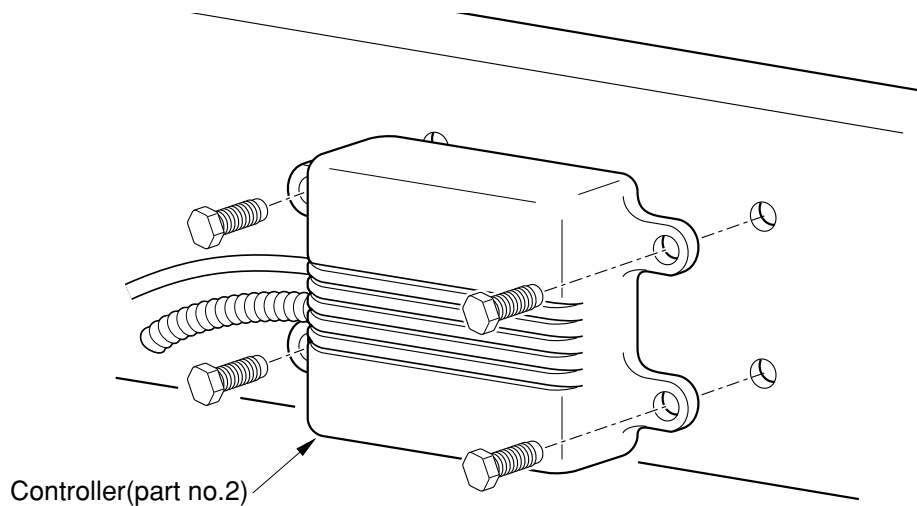
**4** Install the corrugate tube (part no.6) to the harness section of the H.I.D. bulb (part no.1) after attaching the genuine rubber cap.



**5** Fasten the igniter (part no.3).

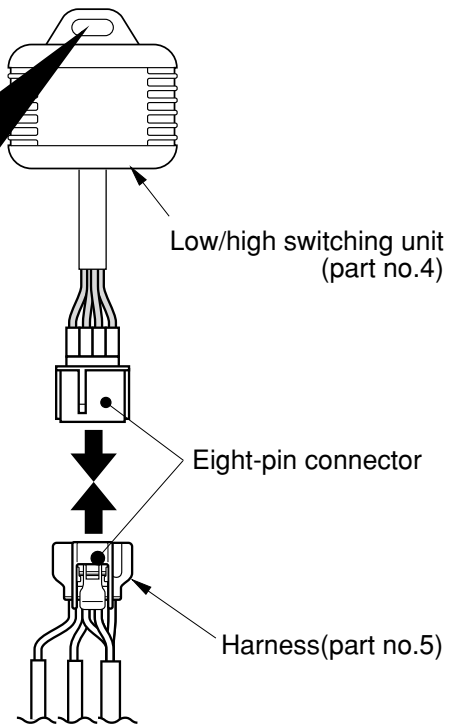
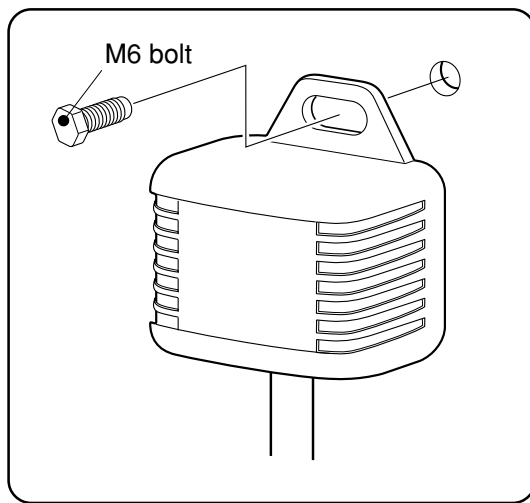


**6** Fasten the controller (part no.2) securely to the body with commercially available brackets as needed.



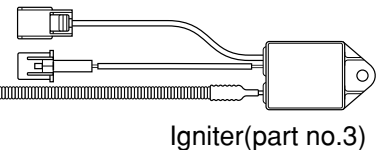
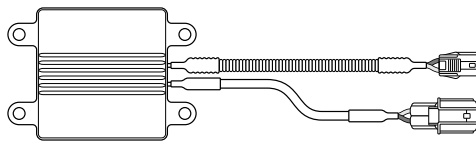


- 7** Fasten the low/high switching unit (part no.4) with an M6 bolt and connect the eight-pin connector as shown below.



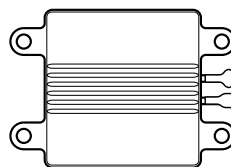
- 8** Connect the controller to the igniter.

Controller(part no.2)



- 9** Connect the harness (part no.5) to the controller.

Controller(part no.2)



Harness(part no.5)

**Caution**

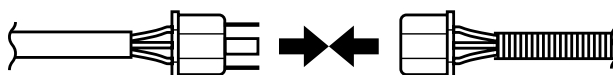
- There are two types of relay harnesses, one with longer cords and the other with shorter cords. Use the harness with shorter cords to connect to a bulb located near the battery, while use the harness with longer cords to connect to a bulb located farther from the battery.

- 10** Ground the closed circular terminals (black vinyl tubes/two pieces for the left and the right sides respectively) of the harness (part no.5) to the body.

※ When grounding to a painted surface of the body, remove the paint before connecting.

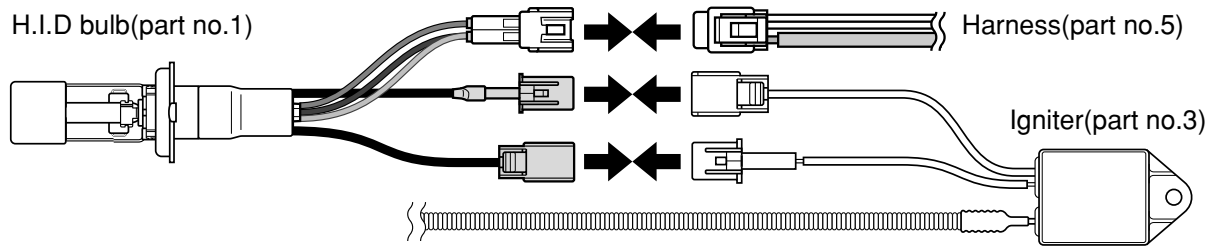
- 11** Connect the three-pin connector on the body side with the three-pin connector on the harness

Three-pin connector on the harness



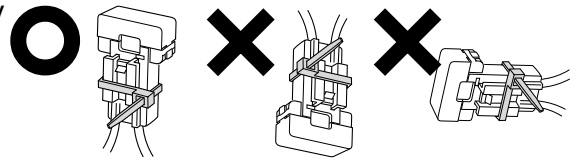
Three-pin connector on the body side

- 12** Reinstall the detached headlamp unit. Connect the H.I.D. bulb couplers with the igniter. Connect the four-pin connector of the H.I.D. bulb with the four-pin connector of the harness.

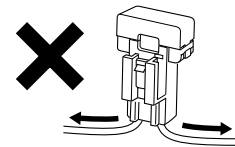


- 13** Fasten the positive terminal of the battery and the closed circular terminals (white vinyl tubes /one piece for the left and the right sides respectively) of the harness (part no.5) together, which have been detached in procedure **1**. Connect the negative terminal of the battery as it was.

- Fasten the relay and the fuse box tightly by using bolts or tie-wraps with the harness pointing downward. Fastening the harness to point either sideways or downward may allow water to enter, which will result in malfunctions.



- Do not tug the harness sideways at the end of the relay or the fuse box. This can cause detaching of the terminal caulking, which will result in bad electrical contact.



- 14** Confirm operation of lighting and low/high switching after installation.

- 15** Attach the parts which have been detached.

- 16** Adjust light distribution to a proper state.  
(Due to a remarkable improvement of brightness, some color of light which was not noticeable prior to installation of this product may become visible and the light distribution may appear differently.)

## In such cases .....

Check out each part by following the description below.

**For customers** ..... In case of abnormality such as lighting failure, halt the use of this product and ask a PIAA authorized dealer for maintenance. Do not touch any parts such as the bulb, the harness, the controller and the igniter.

**For dealers** ..... Be sure to hand over this instruction manual to the customer after installation.

■ The following conditions are not malfunctions.

### ● **The left and right bulbs glow different colors:**

Each bulb may glow a different color due to the characteristics of HID; the bulbs do not glow with exactly the same color. The amount of color change may also vary over time with each bulb.

### ● **The color changes immediately after the bulb is turned on:**

Because of the characteristics of HID, the color changes immediately after the bulb is turned on. It will stabilize within 10 to 60 seconds.

### ● **There is high-frequency sound from the controller or igniter:**

This is the sound of the voltage being controlled, and is not a malfunction.

If problems other than the above are found, inspect each part according to the table below.

## [1] In case the lamp will not light after installation

Check out whether the positive and the negative terminals of the battery are connected.

NG

Connect the positive and the negative terminals of the battery.

OK

Check out all connectors and terminals being connected correctly and properly.

NG

Connect them properly according to the instruction manual.

OK

Check out whether grounding to the body is securely connected.

NG

Connect grounding to the body securely. (The painted surface of the body can cause bad electrical conduction.)

OK

Check out whether the fuse of the harness is blown out.

NG

Replace the fuse after removing the cause of blowout.

OK

**Contact the PIAA authorized dealer to ask for maintenance.**

## [2] In case the lamp goes out suddenly

The safety device of the controller may be activated.  
Turn off the headlamp switch and wait for a few minutes. Then turn on the switch again.

Check out whether connection for each connector is secure.  
Also check out whether the connectors are stained.

NG

Connect all connectors securely.  
Remove stains.

OK

Check out whether grounding to the body is securely connected.

NG

Connect grounding to the body securely. (The painted surface of the body can cause bad electrical conduction.)

OK

Check out whether the fuse of the harness is blown out.

NG

Replace the fuse after removing the cause of blowout.

OK

**Contact the PIAA authorized dealer to ask for maintenance.**

### [3] In case the lamp blinks

Check out whether connection for each connector is secure.  
Also check out whether the connectors are stained.

NG

Connect all connectors securely.  
Remove stains.

OK

Check out the voltage of the battery.  
(12 volts during idling is a rough standard.)

NG

Either recharge or replace the battery.

OK

Check out whether the H.I.D. bulb is damaged.

NG

Replace the H.I.D. bulb.

OK

**Contact the PIAA authorized dealer to ask for maintenance.**

### [4] In case proper light distribution is not obtained after lighting

Adjustment of the light axis is required since the light emitting point may vary to some extent for each bulb. However, if the deviation of the light distribution exceeds the adjustable range of the headlamp unit, refer to the description below.

Check out whether the H.I.D. bulb is properly installed to the socket.

NG

Install the H.I.D. bulb properly to the socket.

OK

**Contact the PIAA authorized dealer to ask for maintenance.**

### [5] In case the lamp is always lighted

**Contact the PIAA authorized dealer to ask for maintenance.**

### [6] In case it is impossible to switch between low and high beams

**Contact the PIAA authorized dealer to ask for maintenance.**

# PIAA CORPORATION

SHIROGANEDAI BLDG., 3-19-6 SHIROKANEDAI, MINATO-KU TOKYO 108-0071, JAPAN