(ES/ESS As of June, 2008 No.1)

USER'S GUIDE

ENGINE
STARTER SWITCH

Thank you for purchasing PIVOT "ENGINE STARTER SWITCH". Please read these instructions carefully before installing or using this device. Please do not lose this user's guide, as you will held liable for the cost of reissuing it.

⚠CAUTION Improper use or disregard of these warnings may result in the injury or death of people.

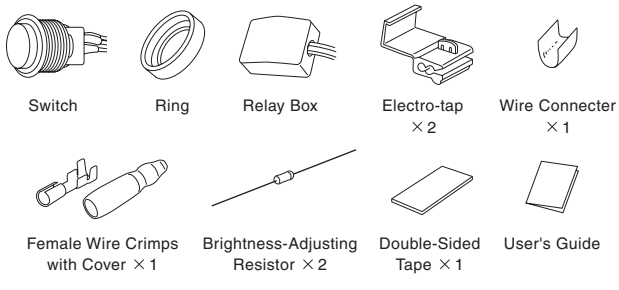
- The improper installation of this product may cause damage to your car including engine failure. Please take great care to install this product safely and properly.
- Make sure to disconnect the battery's ⊖ terminal when doing any wiring. (Reconnect to check wiring.)
- Make sure to properly insulate all connections.
- Make sure to lay wires so as not to cause a short or a break in the wire.
- Make sure that all wiring and fastening down of the product does not interfere with driving nor be done in such a way as to cause poor connections.

⚠NOTE Improper use or disregard of these warnings may cause injury to persons, damage the product and / or other things.

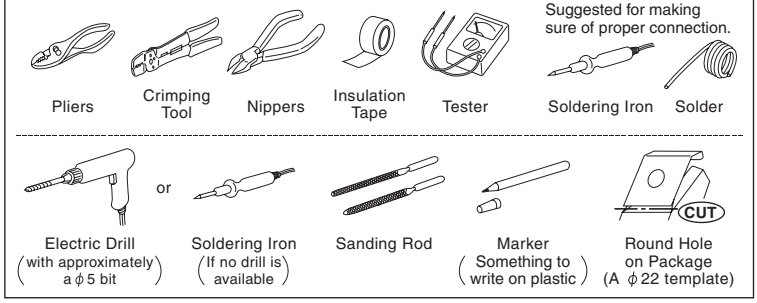
- If the device is improperly installed or settings have been improperly made a check lamp may go on.
- When installing this product, we recommend that if technical knowledge becomes necessary please consult a qualified mechanic.

⚠ PIVOT does not sell or supply special harnesses for the Turbo Timer. To get a compatible harness, please contact a supplier or maker of such harnesses.

Please check the contents of the package.



Please prepare all tools necessary for wiring and connection.



FEATURES

Versatile Switch : Use to Start Engine and Use Flashing Light for Protection

Press Switch to Start Engine

Starting the engine can be done with the push type starter after the key has been put into the ON position. (this does not apply to standard push type starters)

New Random Flashing Light means Increased Theft Prevention

When engine is stopped, the random flashing light of the switch button brings about a greater threat than one which blinks at a set interval and hence better prevention.

Switch Button Lights Up

While the engine is on the switch button remains lit, and for easy locating when the engine is off the switch remains flashing.

Easy to Install

By purchasing a specialized harness for the Turbo Timer it is possible to install simply by connecting the coupler. (Wiring may be necessary for some types of harnesses)

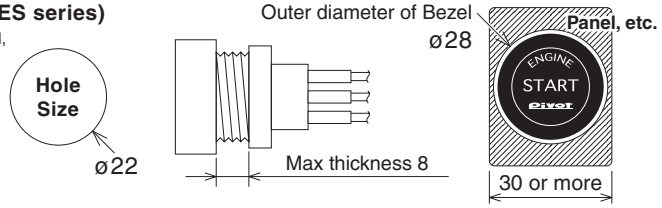
Can be installed in a Variety of Places

By making a hole for the switch button, it can be installed in places such as shown below. (A drill is necessary for making the hole)

Switch Size unit : mm

Standard Size (ES series)

Cigarette Lighter, Panel, Large Blanking Cover, etc ···



Small Size (ESS series)

Small Blanking Cover, etc ···

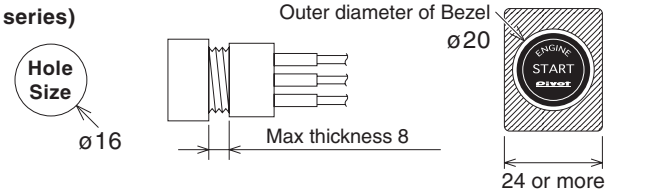
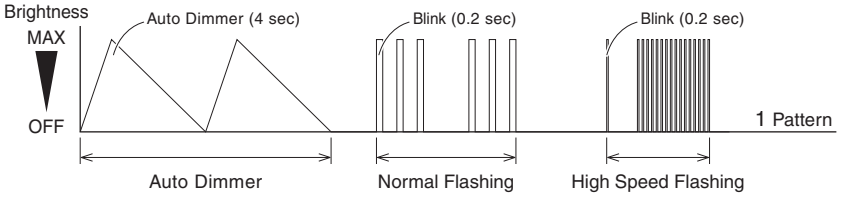


Image of flashing pattern

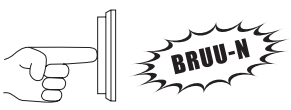


USING THE ENGINE STARTER SWITCH

1 Key Switch ON



2 Press switch to start engine



How to use the Engine Starter

- Can be used in conjunction with starting by key.
- Wiring method available that allows you to start only by the installed switch.

※ For details, see Page2 [CONNECTING THE WIRES].

CONNECTING THE WIRES

1 Check the Wiring

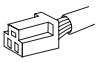
Check which type of connection method you should use.

Are you using a harness for your type of car model?

It is possible to use a harness already being used for a turbo timer or engine starter. (Possible to be used in combination with other products.)

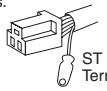
- NO → **WIRING METHOD A** — Using a tester, prepare, connect and test all wiring behind the key switch.
- YES → **Is the coupler branching off from the harness a 3-pin type?**

A 3-pin type is the usual type used to connect to a turbo timer.



- NO → **NOTE**: Cut off the 3-pin coupler and connect **RED** and **YELLOW** wires from the relay box.
- YES → **Is there an ST terminal branching off?**

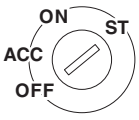
The ST terminal is a terminal branching off from the starter power source wires.



- NO → **WIRING METHOD B** — Using a tester, prepare, connect and test the ST wiring (starter power) from the harness.
- YES → **WIRING METHOD C** — Without using a tester, prepare and connect the wiring. (In some cases it may be necessary to use a tester.)

2 Check the Wiring with a Tester

Check the wiring connected to the back of the key switch, and search for key switch position where there is an electric flow of 12V.

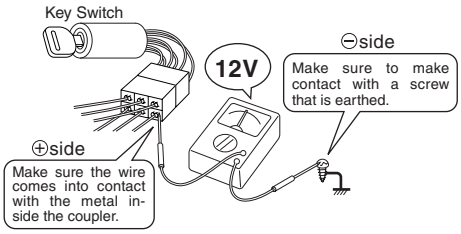


The display may differ with model of car.

Key Switch Position	Power Types	Notes when Checking	Wire Color
OFF	⊕B (Normal Power)	Some car models have wires (⊕B1, ⊕B2)	**RED**
ACC	ACC (Accessory Power)	(Not used with this product.)	**—**
ON (IG)	IG (Ignition Power)	Some car models have wires (IG1,IG2)	**YELLOW**
ST (START)	ST (Starter Power)	Some car models have wires (ST1,ST2)	**WHITE**

NOTE

- Make sure to check the wiring connected to the back of the key switch.
- If there are 2 ⊕B wires, and one is thicker than another, connect to the thicker one.
- Especially the preparation and connection methods differ depending on whether there is 1 ST wire or 2 wires. (For details, see each [WIRING METHOD].)



3 Carry out Wiring

Please see 1 and 2 for details about how to properly carry out the wiring.

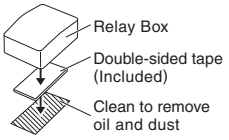
▷□ = Wire Crimps ■ = Wire Connecter/Electro-tap/Solder

Notes on Wiring

Relay Box Installation

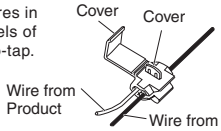
Affix the relay box with double-sidedtape in an out-of-the-way place.

※Make sure to remove all dirt and oil before affixing.

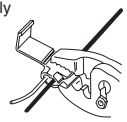


How to use the Electro-Tap ※If possible please solder and insulate properly possible.

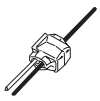
1 Set wires in channels of electro-tap.



2 With pliers, firmly press down on contact.



3 Lock the cover.



How to use the Connecters

How to use the Cut Connecter

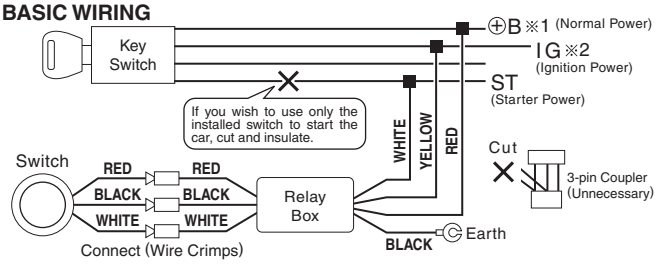
1	Peel off about 10mm of the vinyl cover at connection.	3	Twist the uncovered wires.	※Use a crushing tool to press the cut connector, if you do not have such a tool, use pliers or such to fold and crush the ※connector together for a secure contact. After covering, make sure to insulate properly with vinyl tape.
2	Peel off about 10mm of the vinyl cover at the end of the product's wire.	4	Close tightly with cut connector.	

How to use Female Wire Crimps

1	Peel off about 10mm of vinyl covering from the tip of the wire.	2	Bend the outside wires around the core to make the wire thicker.	3	Pull the wire through the cover.	4	Place the wire onto the crimp.
5	Crush the center tabs of the crimp down to hold the center of the wire.	6	Crush down the outer tab of the crimp over the vinyl covering.	※Securely connect the male and female crimps, making sure to twist the male cover firmly into the female cover.			

WIRING METHOD A — DIRECT WIRING METHOD (without special harness)

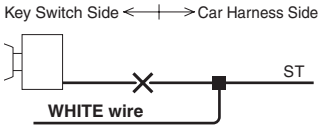
BASIC WIRING



※1 If there are 2 ⊕B wires and one is thicker than another, connect to the thicker one.
※2 If there are 2 IG wires, either one can be used.

CONNECT WHITE WIRE

If there is 1 ST wire



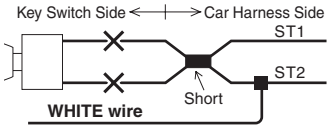
1 Connect WHITE wire to the ST.

If you wish to use only the installed switch to start the car.

Cut the ST wires on the key switch side of the spot where they are shorted. (Marked ✕ in above figure)

※Make sure to properly insulate the tip of the cut wires.

If there are 2 ST wires



1 Short the 2 ST wires.

2 Make sure to insulate wire from the key switch side.

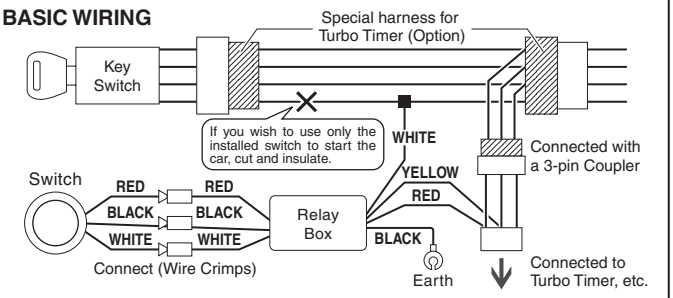
If you wish to use only the installed switch to start the car.

Cut the 2 ST wires on the key switch side of the spot where they are shorted. (Marked ✕ in above figure)

※Make sure to properly insulate the tip of the cut wires.

WIRING METHOD B — WIRING METHOD USED WITH SPECIAL HARNESS (without ST terminal branching off)

BASIC WIRING

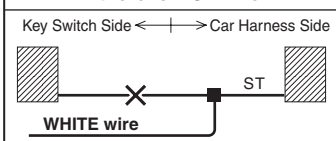


CONNECT WHITE WIRE

※For details about connecting the RED and YELLOW wires, see WIRING METHOD C [CONNECT RED AND YELLOW WIRES].

※Check the wires that aren't connected to the 3-pin coupler by tester.

If there is 1 ST wire



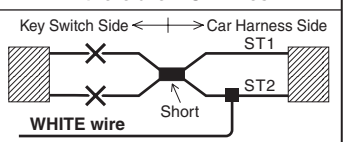
1 Connect WHITE wire to the ST.

If you wish to use only the installed switch to start the car.

Cut the ST wires on the key switch side of the spot where they are shorted. (Marked ✕ in above figure)

※Make sure to properly insulate the tip of the cut wires.

If there are 2 ST wires



1 Short the 2 ST wires.

2 Make sure to insulate wire from the key switch side.

If you wish to use only the installed switch to start the car.

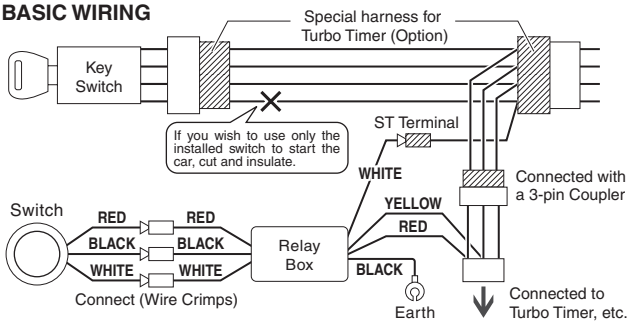
Cut the 2 ST wires on the key switch side of the spot where they are shorted. (Marked ✕ in above figure)

※Make sure to properly insulate the tip of the cut wires.

WIRING METHOD **C**

WIRING METHOD USED WITH SPECIAL HARNESS (with ST terminal branching off)

BASIC WIRING

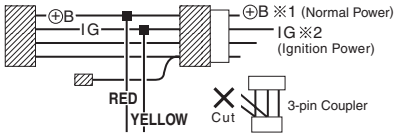


CONNECT RED AND YELLOW WIRES

RED Wire (⊕B) and YELLOW Wire (IG) = Connect to the 3-pin coupler of the harness

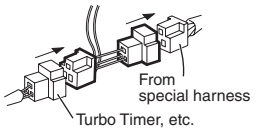
If a Turbo Timer is connected

Connect the 3-pin coupler between the special harness and the Turbo Timer.



If other than a 3-pin coupler

Make sure that all connection places are correct, cut off the 3-pin coupler and properly connect each wire.



※1 If there are 2 ⊕B wires and one is thicker than another, connect to the thicker one.
※2 If there are 2 IG wires, either one can be used.

CONNECT WHITE WIRE

※Connect the WHITE wire to the ST terminal coming from the harness using a crimp connector.

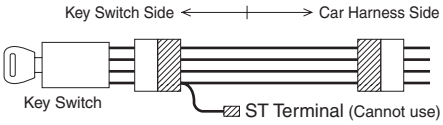
If you wish to start the engine by using only the newly installed switch please follow the directions below for the type of harness being used.

1 CHECK WHITE WIRE

※When you install the special harness in your car, check to see if the ST terminal is branching off from the key switch side or the from the harness side.

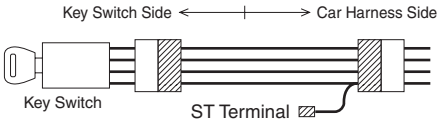
▶ The ST terminal is branching off from the key switch side.

Cannot use an ST terminal



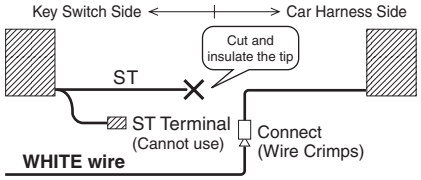
▶ The ST terminal is branching off from the car harness side.

Can use an ST terminal



2 PREPARE AND CONNECT WHITE WIRE

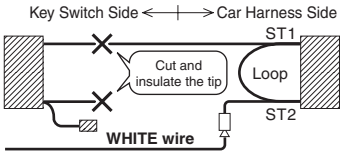
BASIC WIRING



1 Cut the wire of the special harness connected to the ST terminal. (= ST wire)
2 Install a female connector to the ST wire from the car harness side and connect the WHITE wire.
3 Make sure to insulate wire from the key switch side.

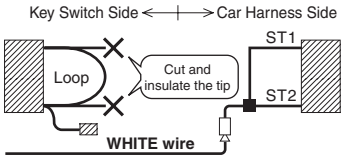
If the harness connected to the ST terminal has a loop wiring it to another wire. (= 2 ST wires)

[If there is a loop on the car harness side]



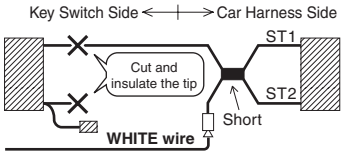
1 Cut both wires connected by the loop.
2 Install a female connector to the ST wire from the car harness side and connect the WHITE wire.
3 Make sure to properly insulate the remaining tip of the cut wires.

[If there is a loop on the key switch side]



1 Cut both wires connected by the loop.
2 Install a female connector to the ST wire from the car harness side and connect the WHITE wire.
3 Connect the other ST wire to the ST wire you just connected to WHITE wire.
4 Make sure to insulate wires from the key switch side.

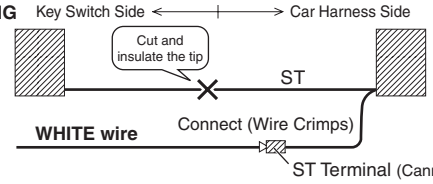
[The wires are shorted on the harness side]



1 Cut the 2 wires on the key switch side of the spot where they are shorted.
2 Connect the WHITE wire to the car harness side.
3 Make sure to properly insulate the remaining tip of the cut wires.

2 PREPARE AND CONNECT WHITE WIRE

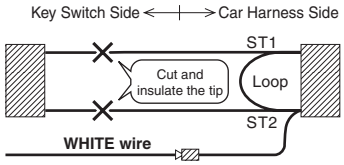
BASIC WIRING



1 Cut the wire of the special harness connected to the ST terminal. (= ST wire)
2 Connect the WHITE wire to the ST terminal.
3 Make sure to properly insulate the remaining tip of the cut wires.

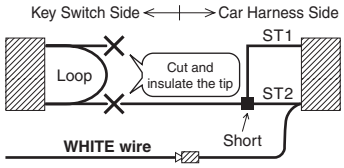
If the harness connected to the ST terminal has a loop wiring it to another wire. (= 2 ST wires)

[If there is a loop on the car harness side]



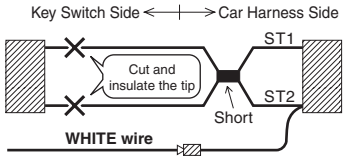
1 Cut both wires connected by the loop.
2 Connect the WHITE wire to the ST terminal.
3 Make sure to properly insulate the remaining tip of the cut wires.

[If there is a loop on the key switch side]



1 Cut both wires connected by the loop.
2 Connect the WHITE wire to the ST terminal.
3 Short the 2 wires on the harness side.
4 Make sure to insulate wires from the key switch side.

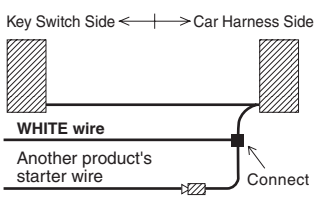
[The wires are shorted on the harness side]



1 Cut the 2 wires on the key switch side of the spot where they are shorted.
2 Connect the WHITE wire to the ST terminal.
3 Make sure to properly insulate the remaining tip of the cut wires.

If another product is using the ST terminal.

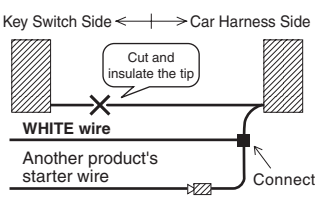
Connect the WHITE wire to the ST terminal or to the starter wire of another company's product by using an electro-tap or other suitable connector.



If installed for starting by switch only.

⚠ Make sure to connect the WHITE wire and/or any other company's starter wire to **the car harness side**.

※If the WHITE wire and/or any other company's starter wire are connected to the key switch side, you will not be able to start your car.



SWITCH INSTALLATION

Place the circular part of the package at the spot where you wish to open a hole and with a marking pen draw an outline of the necessary size of circle.

Note on Installation

Necessary size for each type

ES (Standard Size) = Hole Diameter ϕ 22 Outer diameter of nut ϕ 25

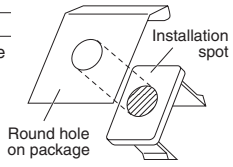
ESS (Small Size) = Hole Diameter ϕ 16 Outer diameter of nut ϕ 18

1 Decide the Place for Installation

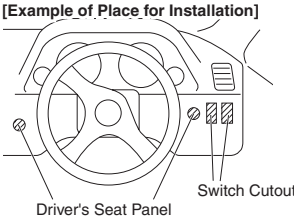
Make sure you can open a ϕ 22 hole where you wish to install.

How to Check

Place the template or round hole on package against the installation spot.

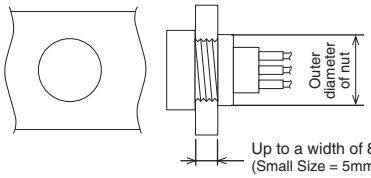


[Example of Place for Installation]



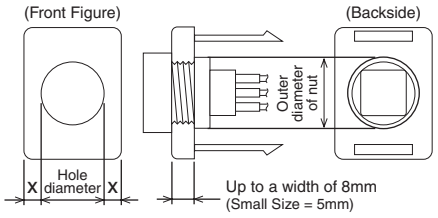
⚠ Confirm the following before starting installation.

IN CASE OF DRIVER'S SEAT PANEL



- On the backside make sure it is possible to tighten a nut.
- It is impossible to remove the panel, make sure there are no wires on the backside in the area.

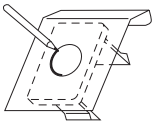
IN CASE OF SWITCH CUTOUT



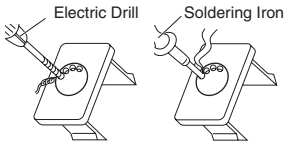
- On the backside make sure it is possible to tighten a nut.
- Make sure that installation will not cause shape changes or damage; such as the area marked X in the Front Figure becoming narrow.

2 Opening a Hole

1 Place the circular part of the package at the spot where you wish to open a hole and with a marking pen draw an outline of the necessary size of circle.

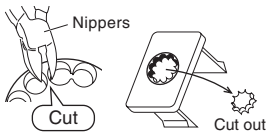


2 Open holes on inside of the circle with electric drill or soldering iron.



Open the holes as close as possible to each other.

3 With the nippers connect the holes to cut a hole out of the middle section.



4 Use the sanding rod to take off the remaining parts to enable the insertion of the switch.

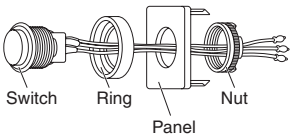


3 Installing the Switch

1 Pass the switch through the ring.

2 Insert the switch through the hole.

3 Fasten the nut on the backside.



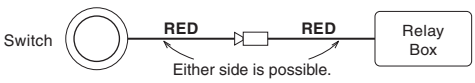
TROUBLESHOOTING

Trouble	Possible Causes		Possible Solutions	
The starter does not turn over when the key is switched ON. ⋮ Check to see if there is a sound in the relay box when you push the switch button.	There is a sound.	Improper ⊕B (Normal Power) wiring connection.	If directly connected	● Check the RED wire connections or conditions. ● Check to make sure of a proper connection to the ⊕B.
			If connected with a 3- pin coupler	● Check the wire connections or conditions. ● Make sure you are using the proper harness for your car model.
		Improper ST (Starter Power) wiring connection.	● Check the WHITE wire connections or conditions. ● Check to make sure of a proper connection to the ST. (If you have only processed the switch) ● Check the WHITE wire is connected to the car harness side. ● If there are 2 ST wires, make sure they have been processed properly.	
	There is no sound.	Improper IG (Ignition Power) wiring connection.	If directly connected	● Check the YELLOW wire connections or conditions. ● Check to make sure of a proper connection to the IG.
			If connected with a 3- pin coupler	● Check the wire connections or conditions. ● Make sure you are using the proper harness for your car model.
		Improper wiring between Relay Box and switch.	● Make sure that the WHITE and BLACK wire coming out of the relay box (with female connector) is connected securely to the male connector of the WHITE and BLACK wire coming from the switch.	
		Improper GND wiring connection.	● Check the contact of the BLACK wire (GND wire). ● Make sure there is a connection to place that is earthed.	
The starter turns over by pushing the switch when the key is on ACC (engine will not start).	The YELLOW wire is connected to the ACC (Accessory Power).		If directly connected	● Check to make sure of a proper connection to the IG.
			If connected with a 3- pin coupler	● Make sure you are using the proper harness for your car model. (The wire connected to the YELLOW wire of the 3-pin coupler goes to the ACC.)
The switch illumination does not come on.	Improper ⊕B (Normal Power) wiring connection.		If directly connected	● Check the RED wire connections or conditions. ● Check to make sure of a proper connection to the ⊕B.
			If connected with a 3- pin coupler	● Check the wire connections or conditions. ● Make sure you are using the proper harness for your car model.
	Improper wiring between Relay Box and switch.		● Check the RED and BLACK wire connections or conditions.	
	Improper GND wiring connection.		● Check the contact of the BLACK wire (GND wire). ● Make sure there is a connection to place that is earthed.	

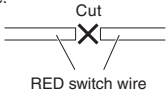
IF THE ILLUMINATION IS TOO BRIGHT AT NIGHT

Connect a brightness-adjusting resistor to the middle of the RED switch wire and adjust the brightness.

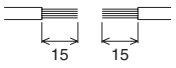
※ If there is improper contact, the illumination will not light up, so please make sure to connect properly.



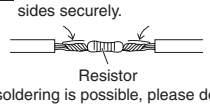
1 Cut the red cable on the switch side.



2 Peel off the vinyl cover about 15mm from the cut ends.



3 Connect the resistor to both sides securely.



4 Be sure to insulate and secure with vinyl electrical tape.



※ If it is still bright after connecting 1 resistor, add another resistor directly next to the first one.



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