

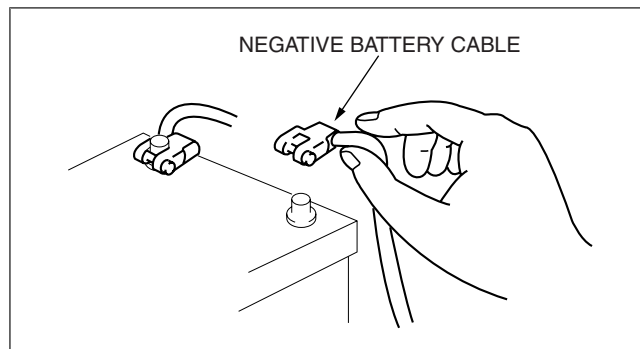
ELECTRICAL SYSTEM

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Electrical Parts

Battery cable

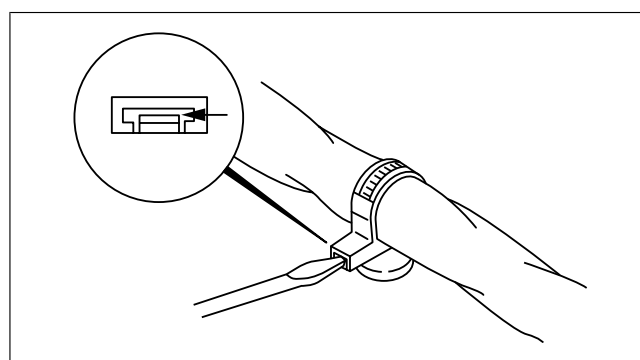
- Before disconnecting connectors or removing electrical parts, disconnect the negative battery cable.



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Wiring harness

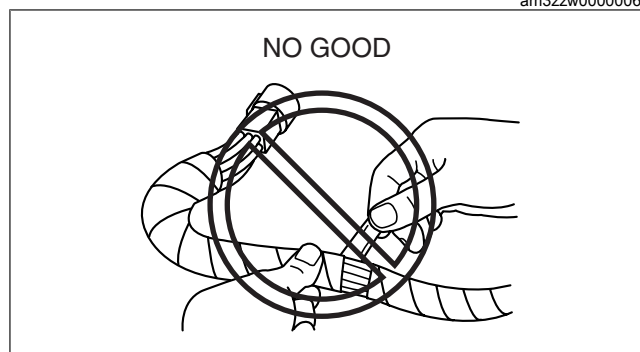
- To remove the wiring harness from the clip in the engine room, pry up the hook of the clip using a flathead screwdriver.



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Caution

- Do not remove the wiring harness protective tape. Otherwise, the wires could rub against the body, which could result in water penetration and electrical shorting.

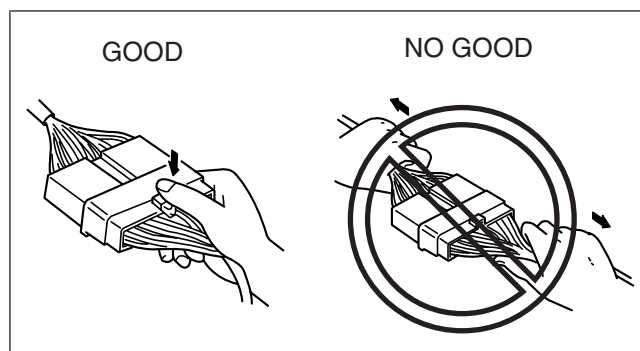


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Connectors

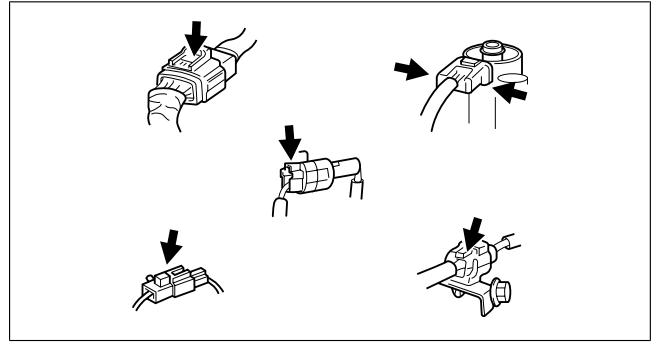
Disconnecting connectors

- When disconnecting connector, grasp the connectors, not the wires.



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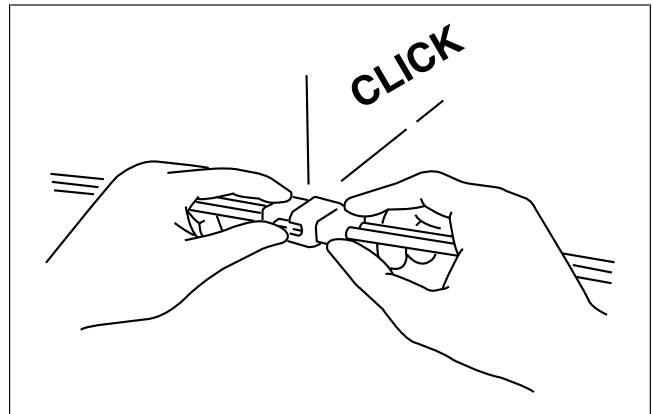
- Connectors can be disconnected by pressing or pulling the lock lever as shown.



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Locking connector

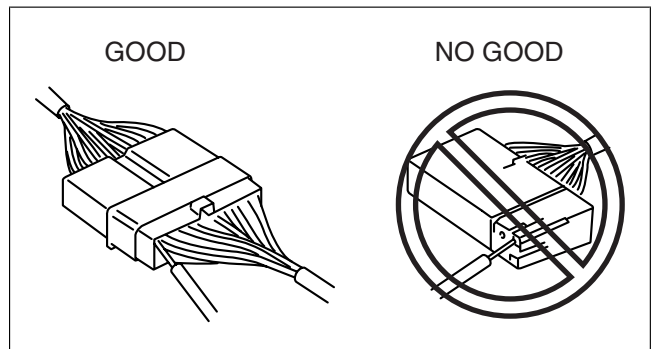
- When locking connectors, listen for a click indicating they are securely locked.



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Inspection

- When a tester is used to inspect for continuity or measuring voltage, insert the tester probe from the wiring harness side.

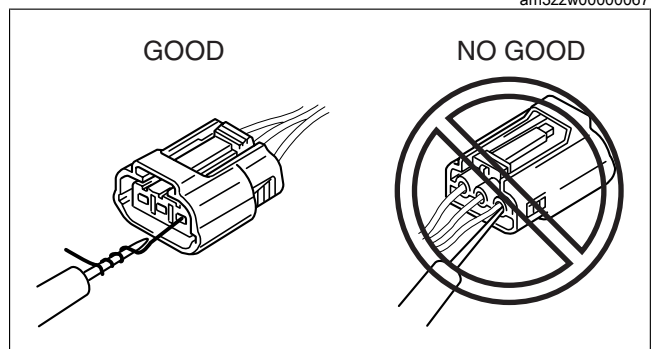


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- Inspect the terminals of waterproof connectors from the connector side since they cannot be accessed from the wiring harness side.

Caution

- To prevent damage to the terminal, wrap a thin wire around the tester probe before inserting into terminal.

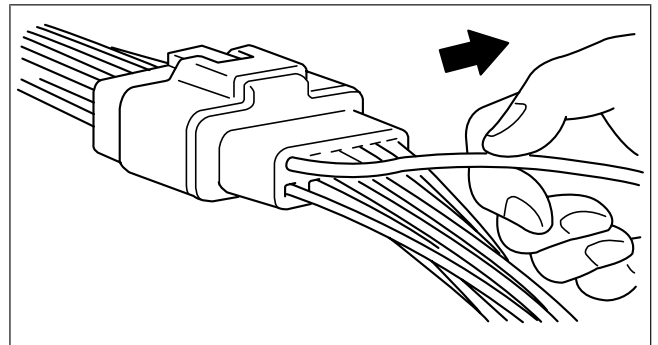


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Terminals

Inspection

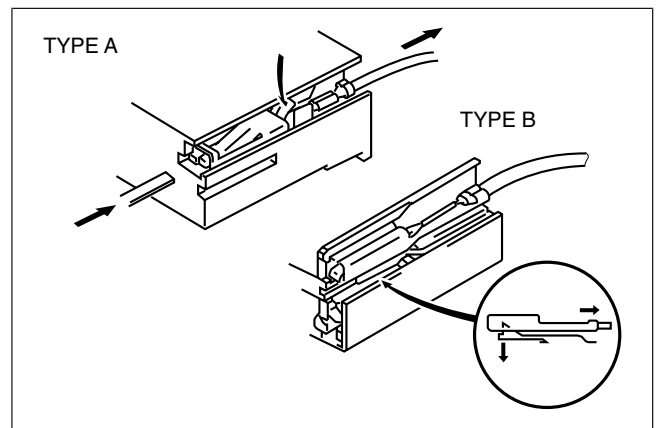
- Pull lightly on individual wires to verify that they are secured in the terminal.



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Replacement

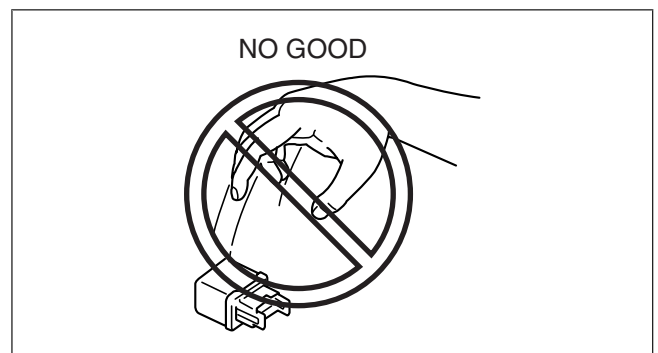
- Use the appropriate tools to remove a terminal as shown. When installing a terminal, be sure to insert it until it locks securely.
- Insert a thin piece of metal from the terminal side of the connector and with the terminal locking tab pressed down, pull the terminal out from the connector.



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Sensors, Switches, and Relays

- Handle sensors, switches, and relays carefully. Do not drop them or strike them against other objects.



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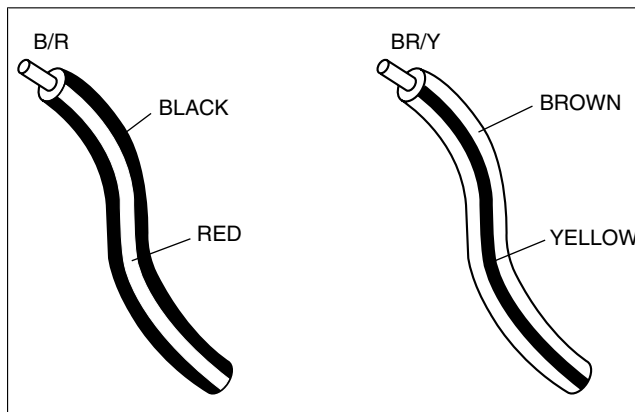
Wiring Harness

Wiring color codes

- Two-color wires are indicated by a two-color code symbol.

- The first letter indicates the base color of the wire and the second is the color of the stripe.

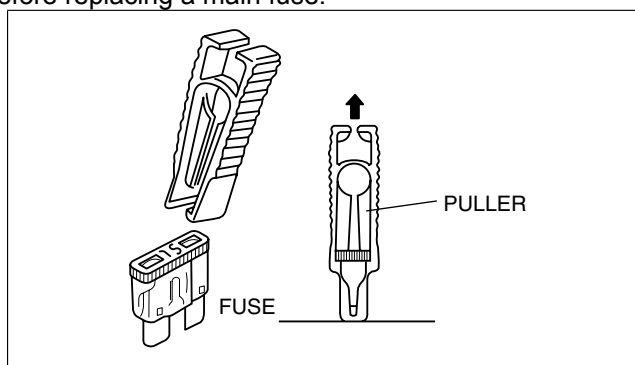
CODE	COLOR	CODE	COLOR
B	Black	O	Orange
BR	Brown	P	Pink
G	Green	R	Red
GY	Gray	V	Violet
L	Blue	W	White
LB	Light Blue	Y	Yellow
LG	Light Green	—	—



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Fuse Replacement

- When replacing a fuse, be sure to replace it with one of the same capacity. If a fuse malfunctions again, the circuit probably has a short and the wiring should be inspected.
- Be sure the negative battery terminal is disconnected before replacing a main fuse.
- When replacing a pullout fuse, use the fuse puller.



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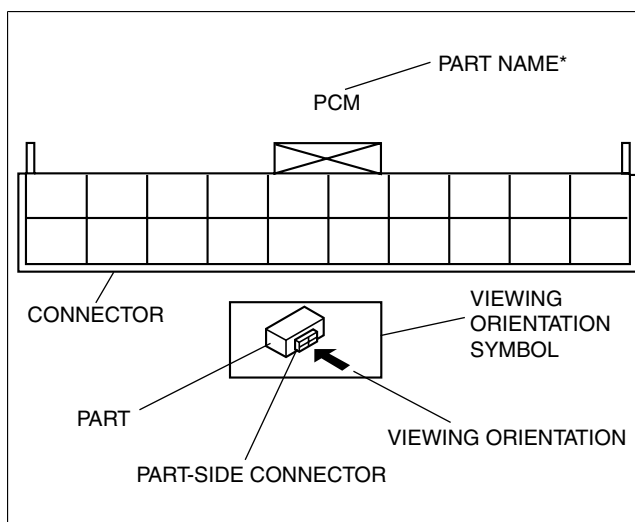
Viewing orientation for Connectors

- The viewing orientation for connectors is indicated with a symbol.
- The figures showing the viewing orientation are the same as those used in Wiring Diagrams.
- The viewing orientations are shown in the following three ways:

Part-side connector

The viewing orientation for part-side connectors is from the terminal side.

* : Part names are shown only when there are multiple connector drawings.

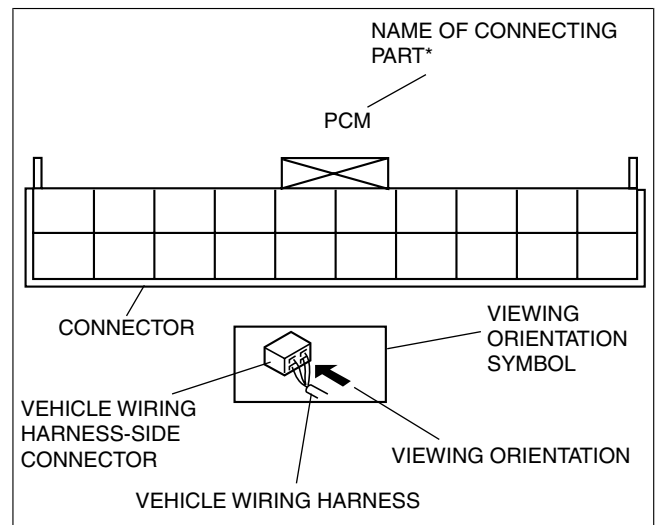


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Vehicle harness-side connector

The viewing orientation for vehicle wiring harness-side connectors is from the wiring harness side.

* : Part names are shown only when there are multiple connector drawings.

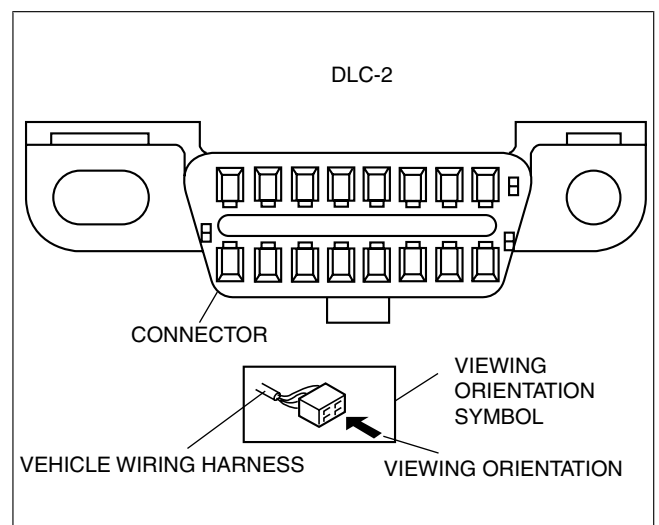


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Other

When it is necessary to show the terminal side of the vehicle wiring harness-side connectors, such as the following connectors, the viewing orientation is from the terminal side.

- Main fuse block and the main fuse block relays
- Data link connector
- Check connector
- Relay box



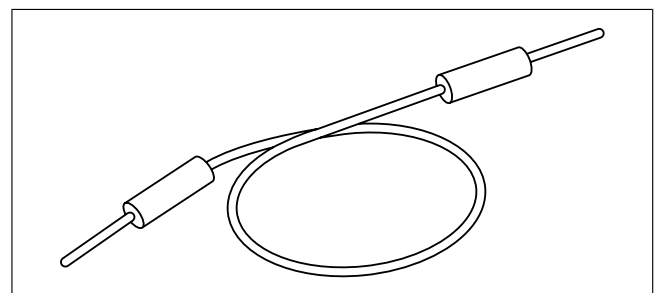
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Electrical Troubleshooting Tools

Jumper wire

Caution

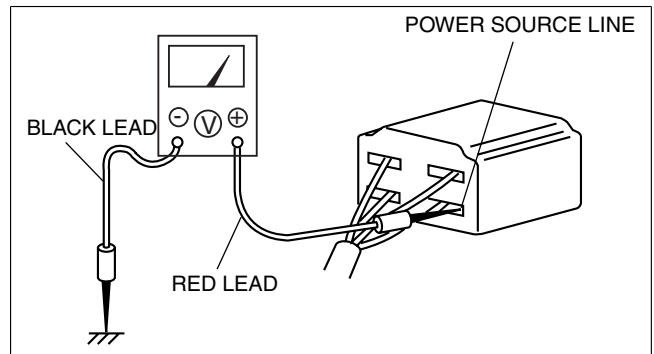
- **Do not connect a jumper wire from the power source line to a body ground. This may cause burning or other damage to wiring harnesses or electronic components.**
- A jumper wire is used to create a temporary circuit. Connect the jumper wire between the terminals of a circuit to bypass a switch.



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Voltmeter

- The DC voltmeter is used to measure circuit voltage. A voltmeter with a range of **15 V or more** is used by connecting the positive (+) probe (red lead wire) to the point where voltage will be measured and the negative (-) probe (black lead wire) to a body ground.

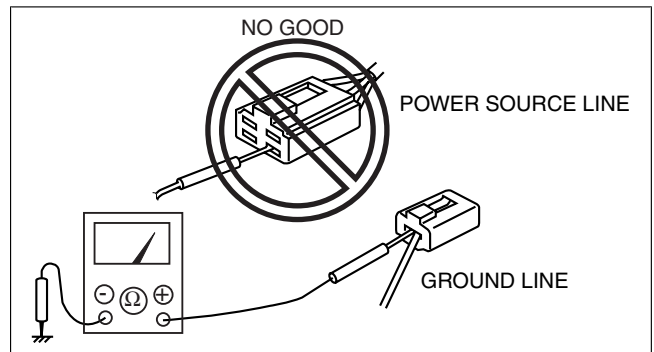


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Ohmmeter

Caution

- Do not connect the ohmmeter to any circuit where voltage is applied. This will damage the ohmmeter.**
- The ohmmeter is used to measure the resistance between two points in a circuit and to inspect for continuity and short circuits.

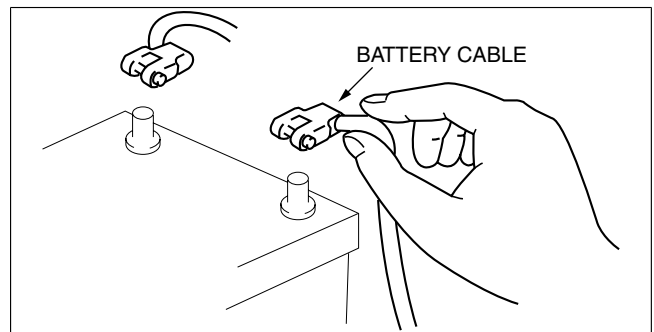


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Precautions Before Welding

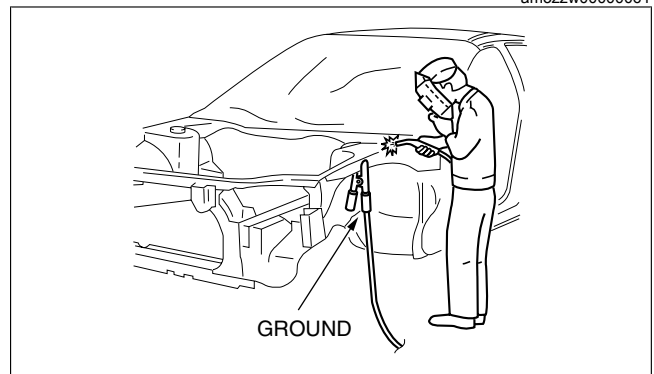
A vehicle has various electrical parts. To protect the parts from excessive current generated when welding, be sure to perform the following procedure.

- Turn the ignition switch to the LOCK position.
- Disconnect the battery cables.



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- Securely connect the welding machine ground near the welding area.
- Cover the peripheral parts of the welding area to protect them from weld spatter.



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