

## 17. Starter System

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### Service Information

#### General Safety

The starter motor can be maintained without removing the engine from the vehicle.

#### Specifications

Unit: mm(in)

Item	Standard value	Service limit
Starter motor brush length	-	6.5mm (0.255)
Starter motor brush spring tension	-	680g

### Troubleshooting

#### Starter motor will not turn

- Battery discharged
- Faulty ignition switch
- Faulty starter switch
- Faulty starter magnetic switch
- Loosen or disconnected wire or cable

#### Starter motor turns engine slowly

- Low specific gravity
- Excessive resistance in circuit
- Binding in starter motor

#### Starter motor turns, but engine does not turn

- Faulty starter clutch
- Faulty starter motor gears
- Faulty starter motor or idle gear

#### Starter motor and engine turns, but engine does not start

- Faulty ignition system
- Engine problems

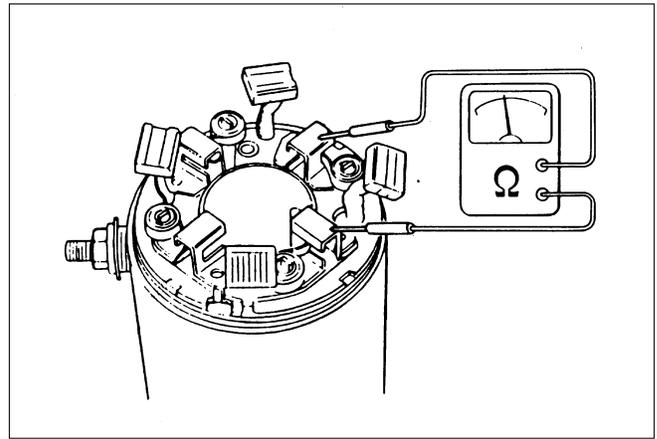
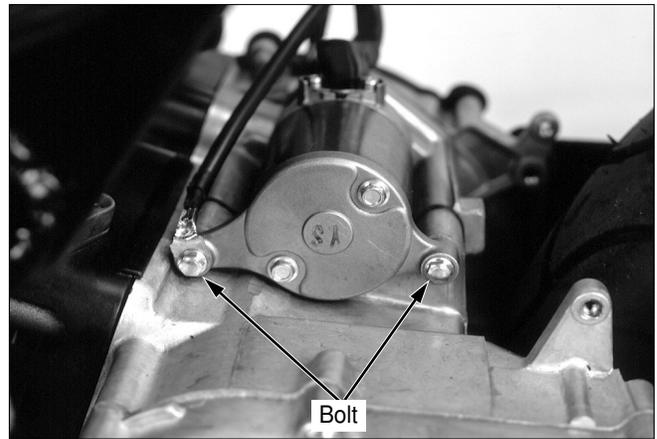
## Starter Motor

### Removal

- Remove the luggage box. ( 4-5)
  - Remove the body cover ( 4-6)
- Remove the starter motor cable from the motor.  
Unfasten the 2 starter motor mounting bolts, and remove the starter motor.

### NOTE

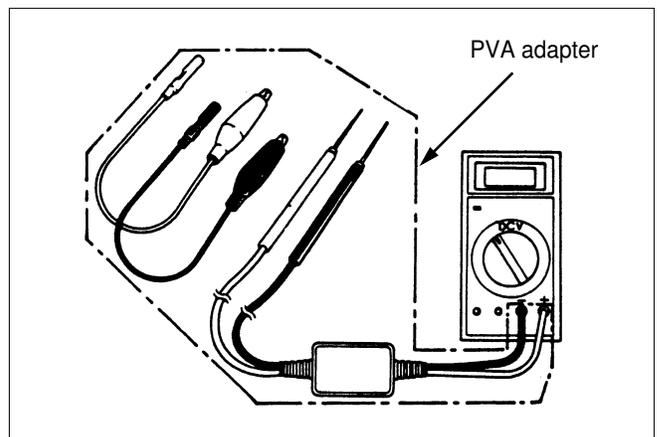
Turn off the main switch prior to servicing the starter motor. If power is connected, the starter motor may be activated and damaged.



### Inspection

Check the starter motor terminal with a tester to determine if power is connected.

**Tester: PVA multi-tester**



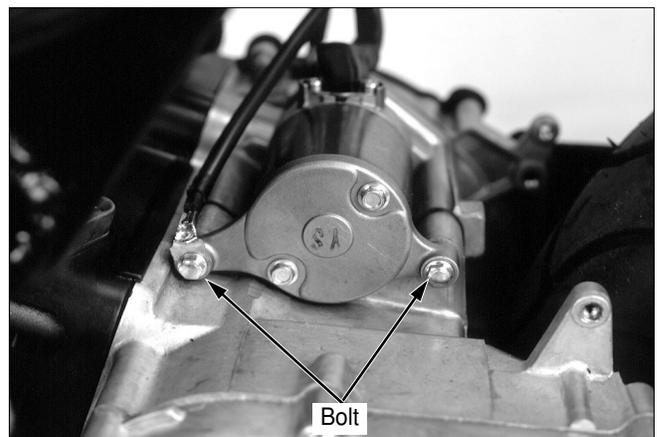
### Installation

Install a new O-ring and apply oil. Insert the starter motor, and tighten the 2 bolts completely.

### NOTE

Accurately connect the earth terminal to the starter motor mounting bolts.

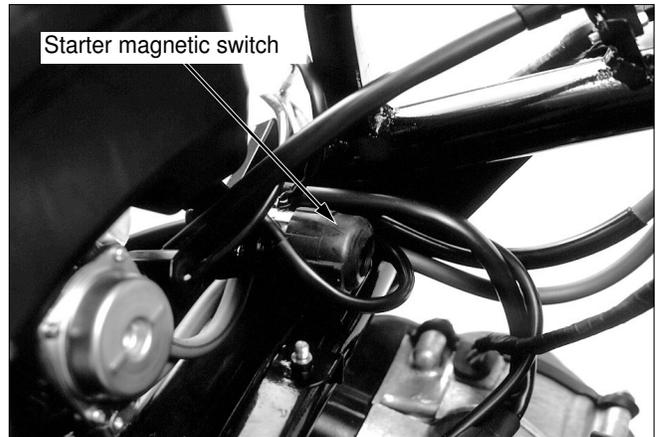
Assemble the luggage box and body cover.



## Starter Magnetic Switch

### Inspection

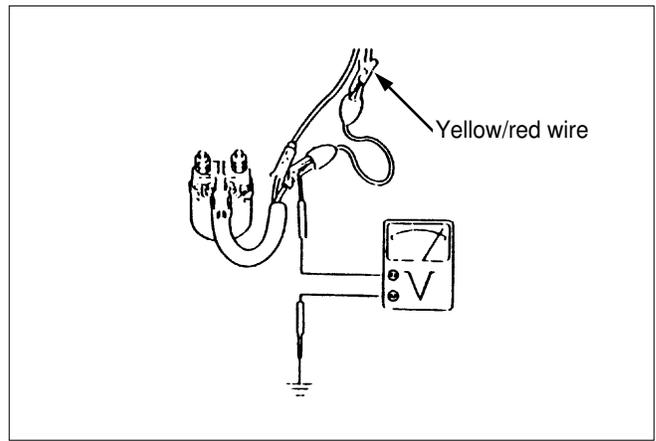
Turn on the main switch, and press the starter button. If the starter magnet switch generates operation signal tone at this time, it indicates satisfactory condition.



### Voltage Check

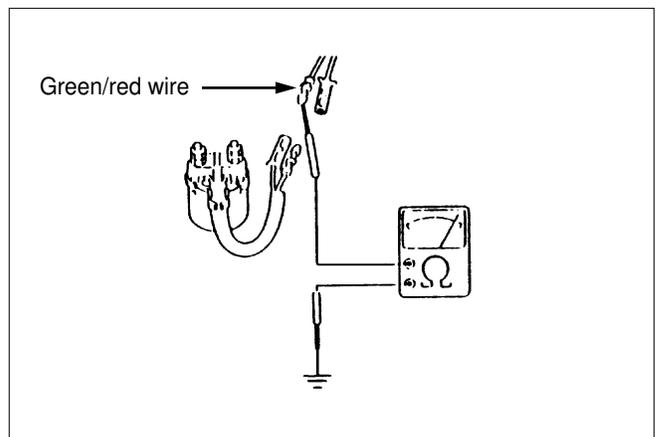
Measure the voltage between the yellow/red wire (+) of the starter magnetic switch and the vehicle earth.

Turn main switch on and press the starter switch. If there is battery voltage displayed, it indicates operation condition is satisfactory.



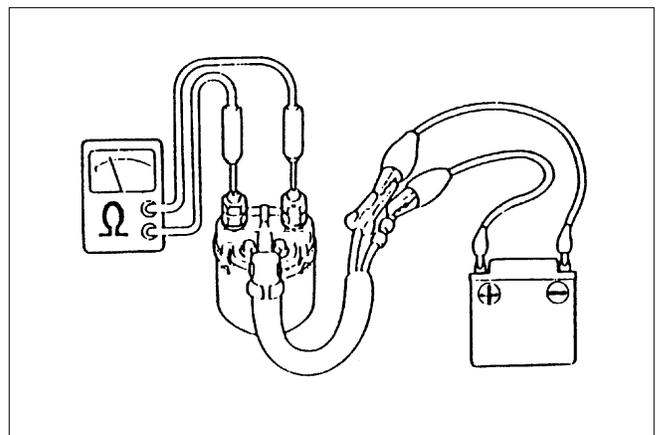
### Earth Circuit Inspection

Disconnect the green/yellow wire connector of the starter magnetic switch. If power is connected between the harness terminal and the vehicle earth, it indicates satisfactory condition.



### Operation Inspection

Disconnect the magnetic switch wire connector. If power is connected between terminals, as shown in the figure, when the yellow/red wire is connected to the positive (+) battery terminal and the green/yellow wire to the negative (-) battery terminal, it indicates the switch is functioning satisfactorily.



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# MEMO

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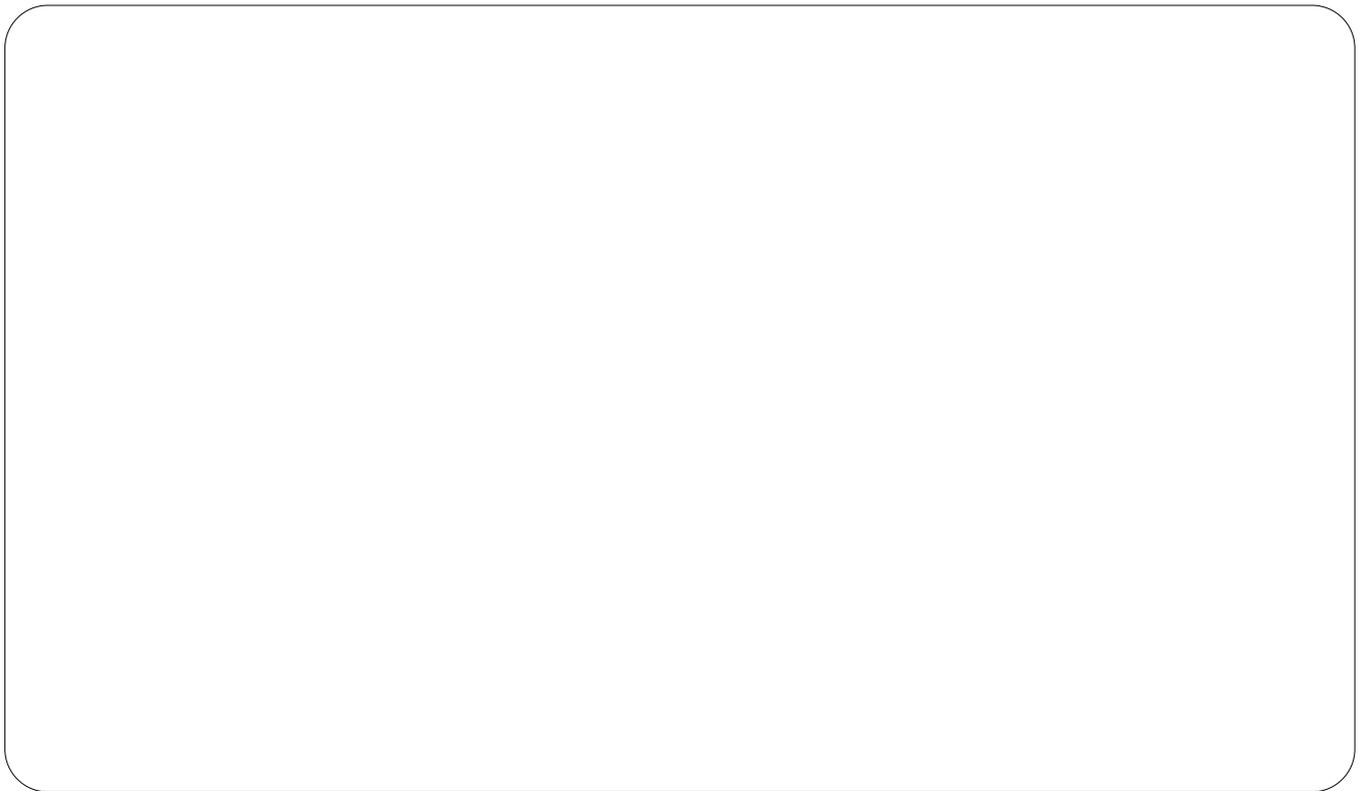
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