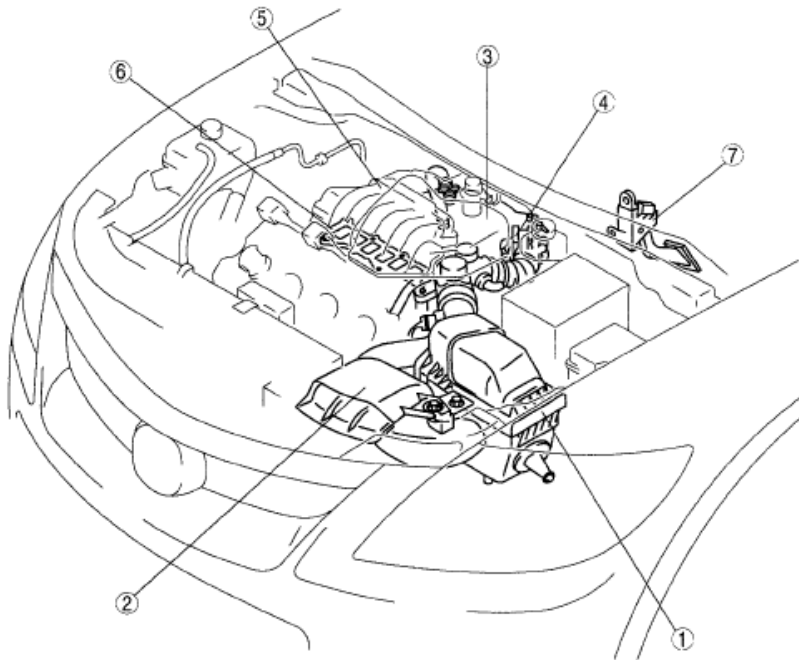


2008 ENGINE PERFORMANCE

Intake-Air System (MZI-3.7) - Mazda CX-9

INTAKE-AIR SYSTEM LOCATION INDEX [MZI-3.7]



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1	Air cleaner (See 01-13-3 INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION [MZI-3.7].) (See 01-13-6 AIR CLEANER ELEMENT INSPECTION [MZI-3.7].)
2	Fresh-air duct (See 01-13-3 INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION [MZI-3.7].)
3	Resonance chamber (See 01-13-3 INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION [MZI-3.7].)

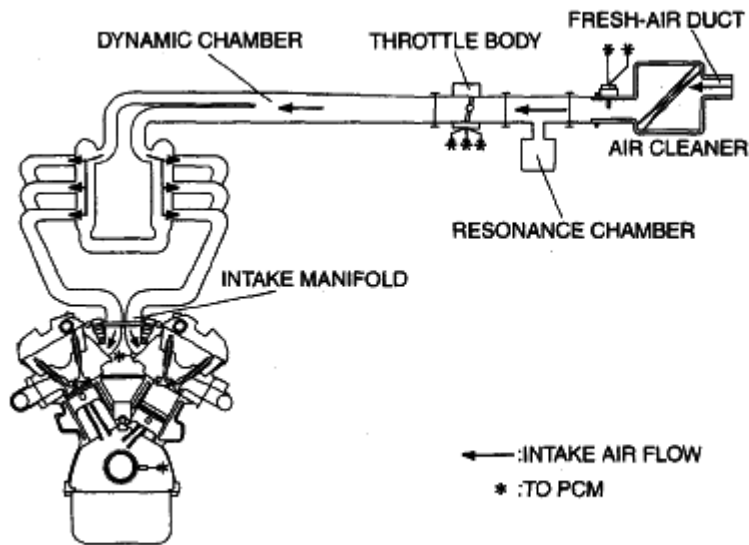
4	Throttle body (See 01-13-3 INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION [MZI-3.7].) (See 01-13-7 THROTTLE BODY INSPECTION [MZI-3.7].)
5	Dynamic chamber (See 01-13-3 INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION [MZI-3.7].)
6	Intake manifold (See 01-13-3 INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION [MZI-3.7].)
7	Accelerator pedal (See 01-13-9 ACCELERATOR PEDAL REMOVAL/ INSTALLATION [MZI-3.7].)

**Fig. 1: Identifying Intake-Air System Components Location**  
Courtesy of MAZDA MOTORS CORP.

INTAKE-AIR SYSTEM DIAGRAM [MZI-3.7]

## 2008 Mazda CX-9 Grand Touring

2008 ENGINE PERFORMANCE Intake-Air System (MZI-3.7) - Mazda CX-9

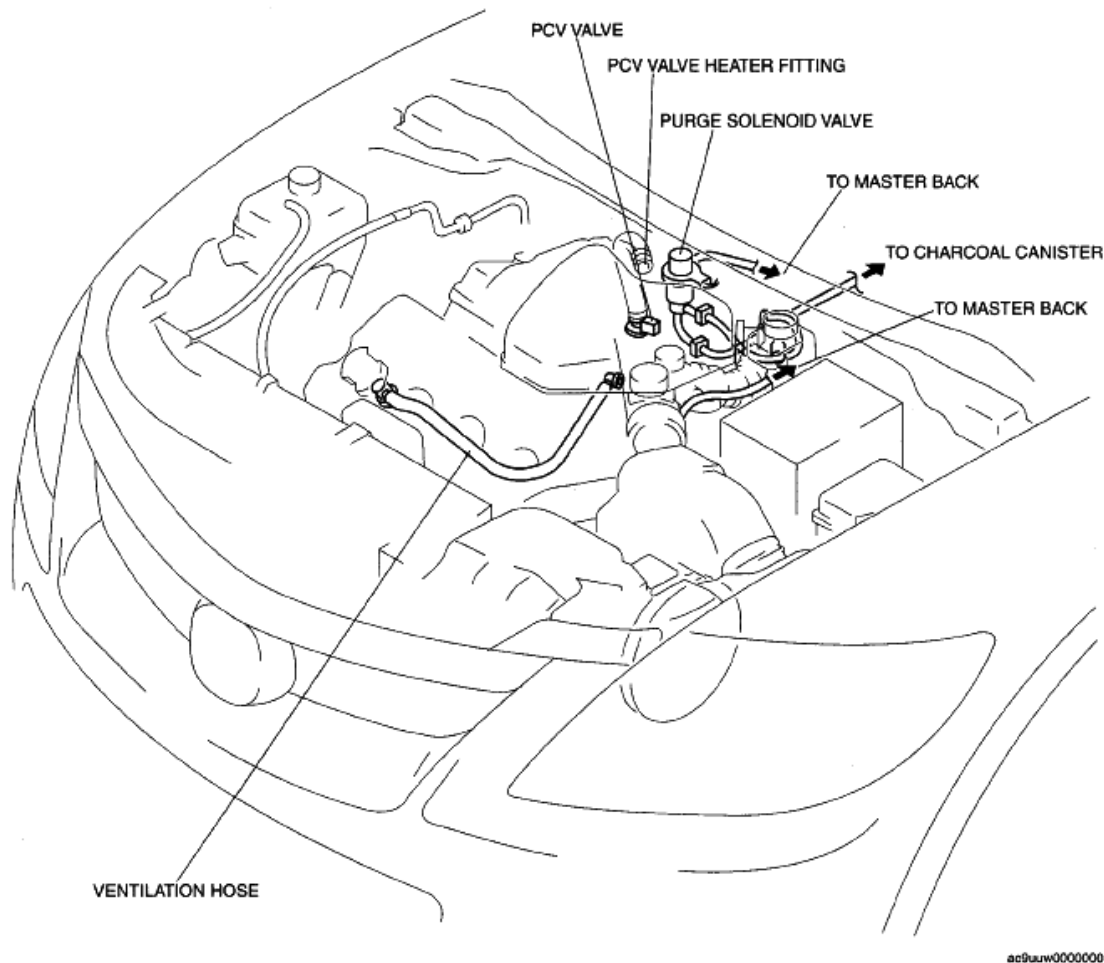


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**Fig. 2: Intake-Air System Diagram**

Courtesy of MAZDA MOTORS CORP.

## INTAKE-AIR SYSTEM VACUUM HOSE ROUTING DIAGRAM [MZI-3.7]



**Fig. 3: Intake-Air System Vacuum Hose Routing Diagram**

Courtesy of MAZDA MOTORS CORP.

## INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [MZI-3.7]

### WARNING:

- When the engine and intake-air system are hot, they can badly burn. Turn off the engine and wait until they are cool before removing the intake-air system.
- Fuel vapor is hazardous. It can easily ignite, causing serious injury and damage. Always keep sparks and flames away from fuel.
- Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. Fuel can also irritate skin and eyes. To prevent this, always complete the "Fuel Line Safety Procedure".

1. Complete the "BEFORE SERVICE PRECAUTION". (See **BEFORE SERVICE PRECAUTION [MZI-3.7]** .)
2. Remove the battery. (See **BATTERY REMOVAL/INSTALLATION [MZI-3.7]** .)

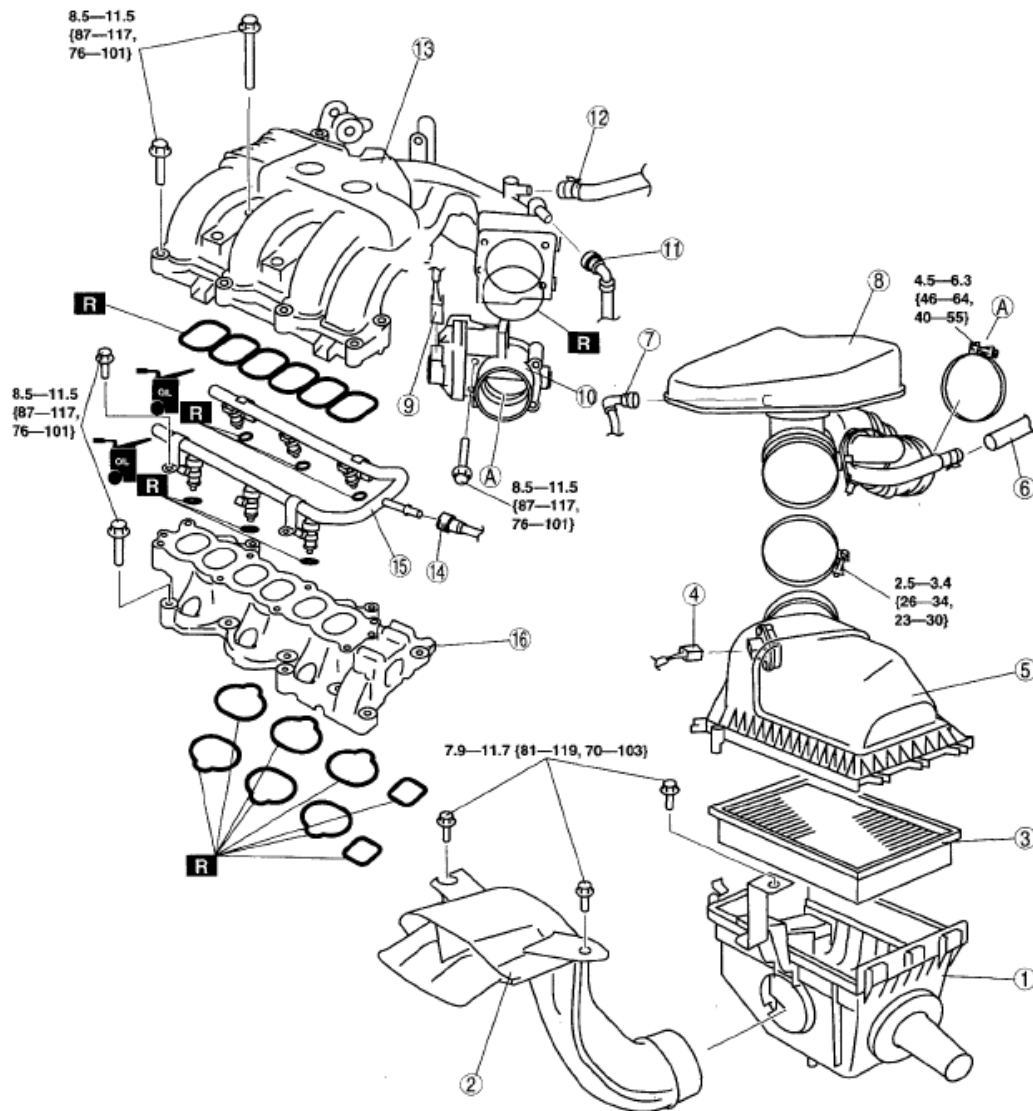
## 2008 Mazda CX-9 Grand Touring

2008 ENGINE PERFORMANCE Intake-Air System (MZI-3.7) - Mazda CX-9

3. Remove the engine cover. (See **ENGINE COVER REMOVAL/INSTALLATION [MZI-3.7]** .)
4. Remove in the order indicated in the table.
5. Install in the reverse order of removal.
6. Complete the "AFTER SERVICE PRECAUTION". (See **AFTER SERVICE PRECAUTION [MZI-3.7]** .)

## 2008 Mazda CX-9 Grand Touring

### 2008 ENGINE PERFORMANCE Intake-Air System (MZI-3.7) - Mazda CX-9



N-m (kgf-cm, in-lbf)

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1	Air cleaner case
2	Fresh-air duct
3	Air cleaner element
4	MAF/IAT sensor connector
5	Air cleaner cover
6	Vacuum hose (to master back)
7	Ventilation hose (See 01-16-16 QUICK RELEASE CONNECTOR (EMISSION SYSTEM) REMOVAL/INSTALLATION [MZI-3.7].)
8	Resonance chamber
9	TP sensor connector

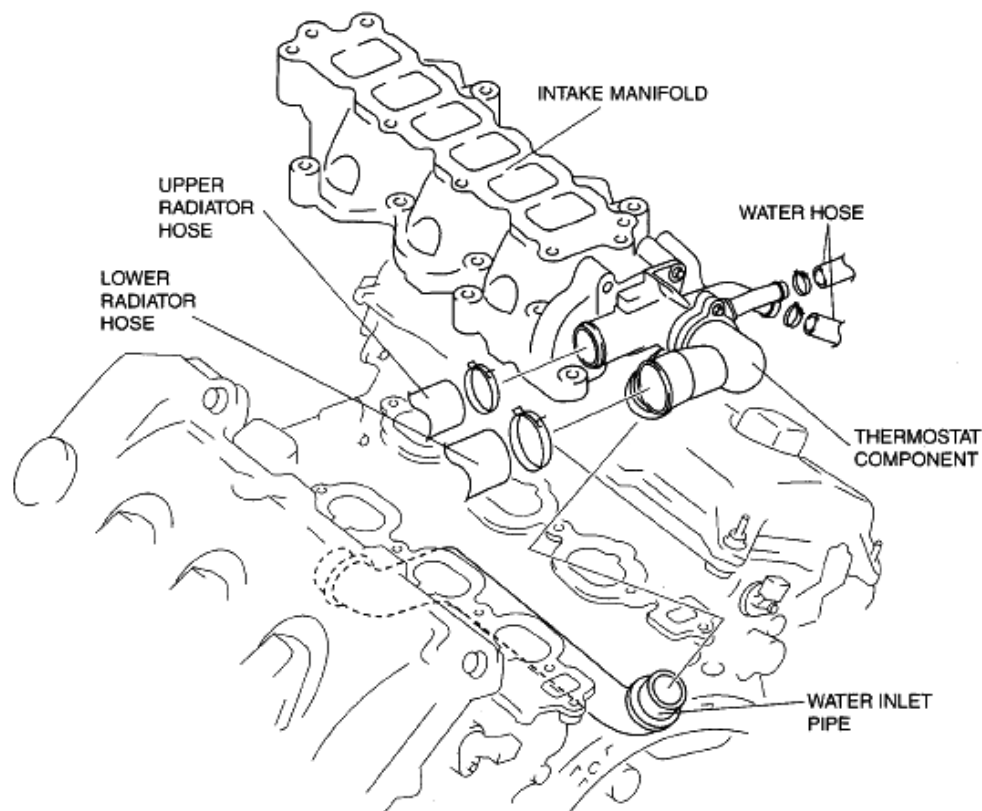
10	Throttle body
11	Vacuum hose (to purge solenoid valve) (See 01-16-16 QUICK RELEASE CONNECTOR (EMISSION SYSTEM) REMOVAL/INSTALLATION [MZI-3.7].)
12	Vacuum hose (to master back)
13	Dynamic chamber (See 01-13-6 Dynamic Chamber Installation Note.)
14	Fuel hose (See 01-16-16 QUICK RELEASE CONNECTOR (EMISSION SYSTEM) REMOVAL/INSTALLATION [MZI-3.7].)
15	Fuel distributor (See 01-14-23 FUEL INJECTOR REMOVAL/INSTALLATION [MZI-3.7].)
16	Intake manifold (See 01-13-5 Intake Manifold Removal Note.) (See 01-13-6 Intake Manifold Installation Note.)

**Fig. 4: Exploded View Of Intake-Air System & Torque Specification**

Courtesy of MAZDA MOTORS CORP.

### INTAKE MANIFOLD REMOVAL NOTE

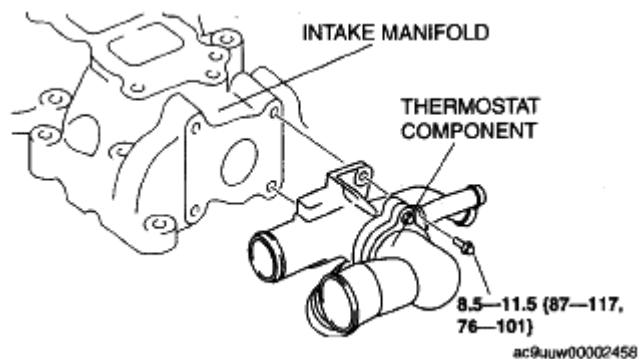
1. Drain the engine coolant. (See ENGINE COOLANT REPLACEMENT [MZI-3.7] .)
2. Disconnect the upper radiator hose.



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**Fig. 5: Identifying Intake Manifold Components Location**  
Courtesy of MAZDA MOTORS CORP.

3. Disconnect the lower radiator hose.
4. Disconnect the two water hose from the thermostat component.
5. Disconnect the thermostat component side of the water inlet pipe which is under the intake manifold.
6. Remove the intake manifold and thermostat component as a single unit.
7. Remove the thermostat component from the intake manifold.



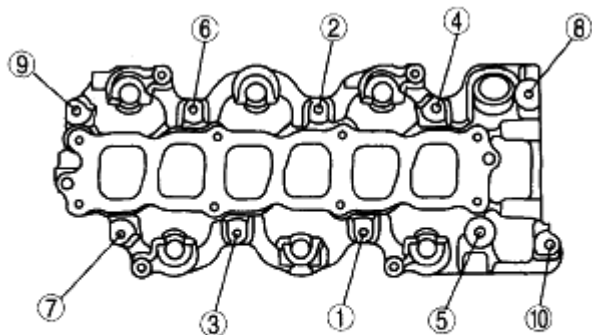
**Fig. 6: Identifying Intake Manifold, Thermostat Component & Torque Specification**  
Courtesy of MAZDA MOTORS CORP.

### INTAKE MANIFOLD INSTALLATION NOTE

1. Tighten the intake manifold installation bolts in the order shown.

#### **Intake manifold installation bolt tightening torque**

**8.5-11.5 N.m {87-117 kgf.cm, 76-101 in.lbf}**



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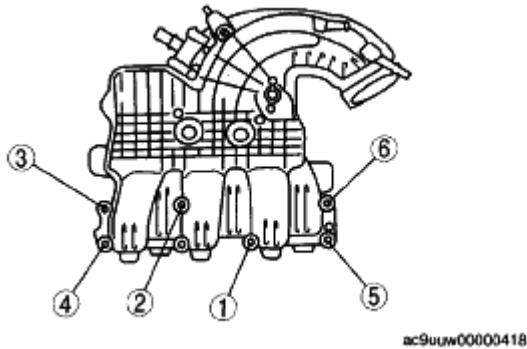
**Fig. 7: Identifying Intake Manifold Bolts Tighten Sequence**  
Courtesy of MAZDA MOTORS CORP.

### DYNAMIC CHAMBER INSTALLATION NOTE

1. Tighten the dynamic chamber installation bolts in the order shown.

#### **Dynamic chamber installation bolt tightening torque**

**8.5-11.5 N.m {87-117 kgf.cm, 76-101 in.lbf}**



**Fig. 8: Identifying Dynamic Chamber Bolts Tighten Sequence**  
Courtesy of MAZDA MOTORS CORP.

## AIR CLEANER ELEMENT INSPECTION [MZI-3.7]

1. Remove the air cleaner element. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [MZI-3.7].)
2. Verify that the air cleaner element surface is free of dirt.
  - If there is dirt, use an air gun or similar tool to clean the element.
  - If the replacement time limit has passed, replace the element.

## THROTTLE BODY INSPECTION [MZI-3.7]

**NOTE:**           • Perform the following inspection only when directed.

### RESISTANCE INSPECTION

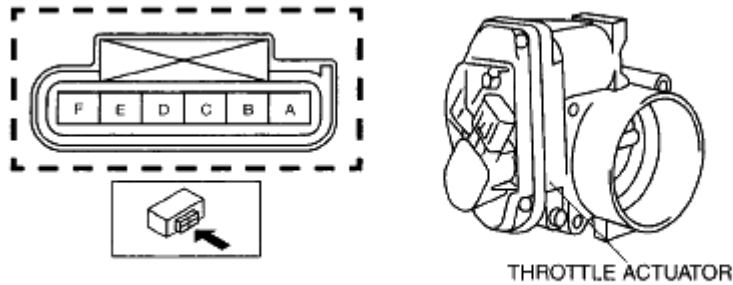
1. Disconnect the negative battery cable. (See BATTERY REMOVAL/INSTALLATION [MZI-3.7].)
2. Remove the engine cover. (See ENGINE COVER REMOVAL/INSTALLATION [MZI-3.7].)
3. Disconnect the throttle body connector.
4. Measure the resistance between throttle body terminals A and B.
  - If not as specified, replace the throttle body. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [MZI-3.7].)
  - If as specified, carry out the "Circuit Open/Short Inspection".

**Throttle actuator resistance 1-900 ohms**



# 2008 Mazda CX-9 Grand Touring

2008 ENGINE PERFORMANCE Intake-Air System (MZI-3.7) - Mazda CX-9

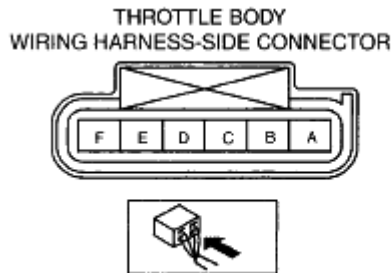


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**Fig. 9: Identifying Throttle Actuator**  
Courtesy of MAZDA MOTORS CORP.

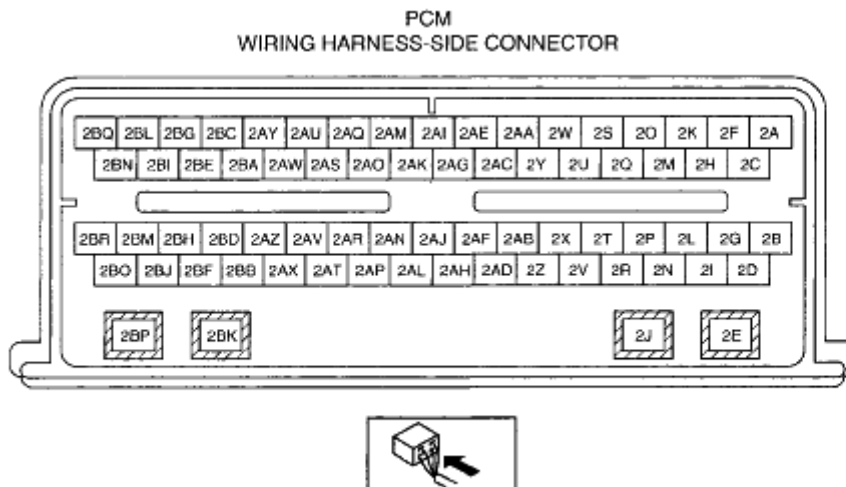
## CIRCUIT OPEN/SHORT INSPECTION

1. Disconnect the PCM connector.
2. Inspect the following wiring harnesses for open or short (continuity check).



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**Fig. 10: Identifying Throttle Body Wiring Harness-Side Connector**  
Courtesy of MAZDA MOTORS CORP.



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**Fig. 11: Identifying PCM Wiring Harness-Side Connector**  
 Courtesy of MAZDA MOTORS CORP.

**Open circuit**

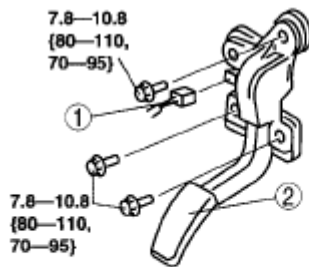
- If there is no continuity, the circuit is open. Repair or replace the wiring harness.
  - Throttle body terminal A and PCM terminal 2BO
  - Throttle body terminal B and PCM terminal 2BR

**Short circuit**

- If there is continuity, the circuit is shorted. Repair or replace the wiring harness.
  - Throttle body terminal A and power supply
  - Throttle body terminal A and ground
  - Throttle body terminal B and power supply
  - Throttle body terminal B and ground

**ACCELERATOR PEDAL REMOVAL/INSTALLATION [MZI-3.7]**

1. Disconnect the negative battery cable. (See **BATTERY REMOVAL/INSTALLATION [MZI-3.7]** .)
2. Remove the dashboard under cover (Driver side). (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
3. Remove in the order indicated in the table.



N·m (kgf·cm, in·lbf)

ac9uurw0000001

1	Connector
2	Accelerator pedal

**Fig. 12: Identifying Accelerator Pedal, Connector & Torque Specification**  
 Courtesy of MAZDA MOTORS CORP.

4. Install in the reverse order of removal.