

## EMISSION CONTROL SYSTEM

### CHARCOAL CANISTER

#### CAUTION:

1. Handle the charcoal canister with utmost care, for most likely it has absorbed gasoline.
2. Never attempt to disassemble the charcoal canister. The charcoal canister has been so constructed that it is integral with the check valve.

WM-12036

### INSPECTION

Check the charcoal canister for continuity between ports, as follows:

1. When you blow your breath into the canister through the port A (TO CARB), there should be no continuity. Also, when you blow your breath strongly into the canister through the port B (TO TANK), there should be continuity.
2. While blowing breath strongly into the canister through the port C, perform the continuity check of the check valves located at the ports A and B, following the procedure given below.
  - (1) When the port A is plugged with finger, air should emit from the port B.
  - (2) When the port B is plugged with finger, air should emit from the port A.

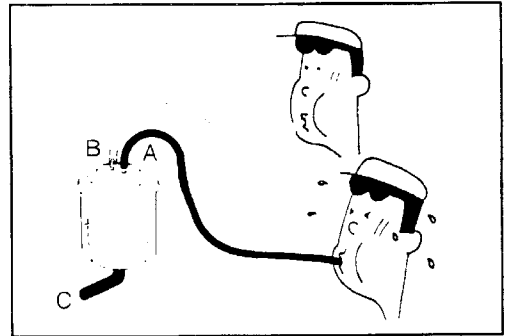


Fig. 12-34

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### MAIN AIR BLEED

In order to maintain proper air-to-fuel ratio during heavy load operation, a VCV has been provided at the main air bleed No. 2.

When the turbocharging pressure exceeds  $0.28 \text{ kg/cm}^2$  ( $+210 \text{ mmHg}$ ), the VCV closes.

As a result, the air ceases flowing from the surge tank to the main air bleed No. 2.

#### VCV Specifications

Valve closing pressure	$0.28 \text{ kg/cm}^2$ ( $+210 \text{ mmHg}$ ) ( $3.98 \text{ psi}$ ( $+210 \text{ mmHg}$ ))
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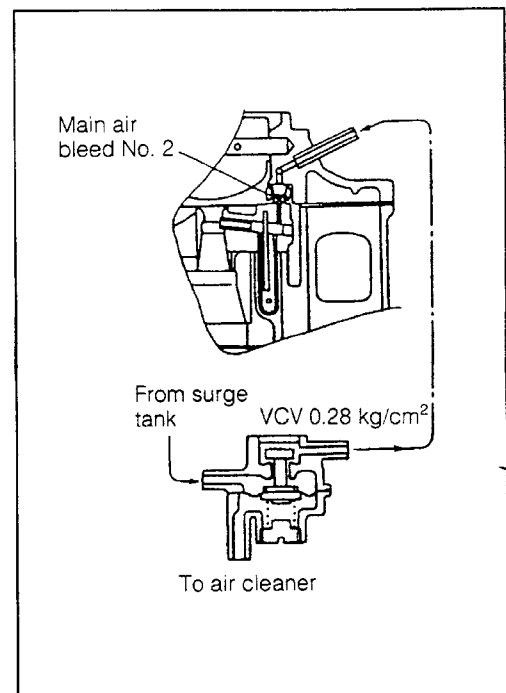
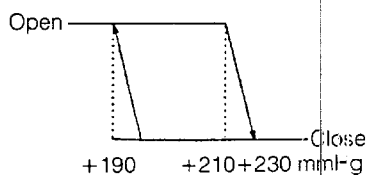


Fig. 12-35

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#### VCV Characteristics



WM-12039

**OPERATION CHECK OF VCV**

1. If air continuity exists when you blow your breath from the side of A or B port, the VCV is satisfactory.
2. Plug the port A side and connect a turbocharger pressure gauge to the port B side. Then, apply a positive pressure of 0.5 kg/cm<sup>2</sup> (7.11 lb/inch<sup>2</sup>) and release the port A. If the pointer is stable at this time, the VCV is satisfactory.
3. Release the port A to reduce the positive pressure gradually. If the pointer suddenly drops from a pressure of about 0.25 kg/cm<sup>2</sup> (3.56 lb/inch<sup>2</sup>), it means that the VCV is functioning properly.

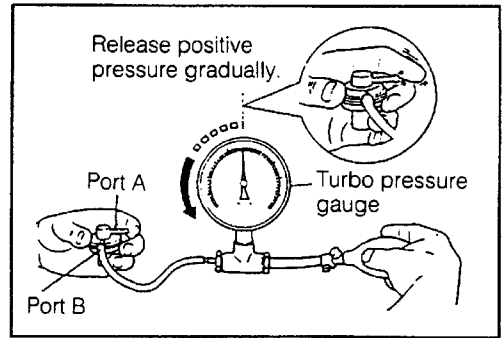


Fig. 12-36

WM-12040

**SECONDARY AIR SUCTION SYSTEM (AS SYSTEM)**

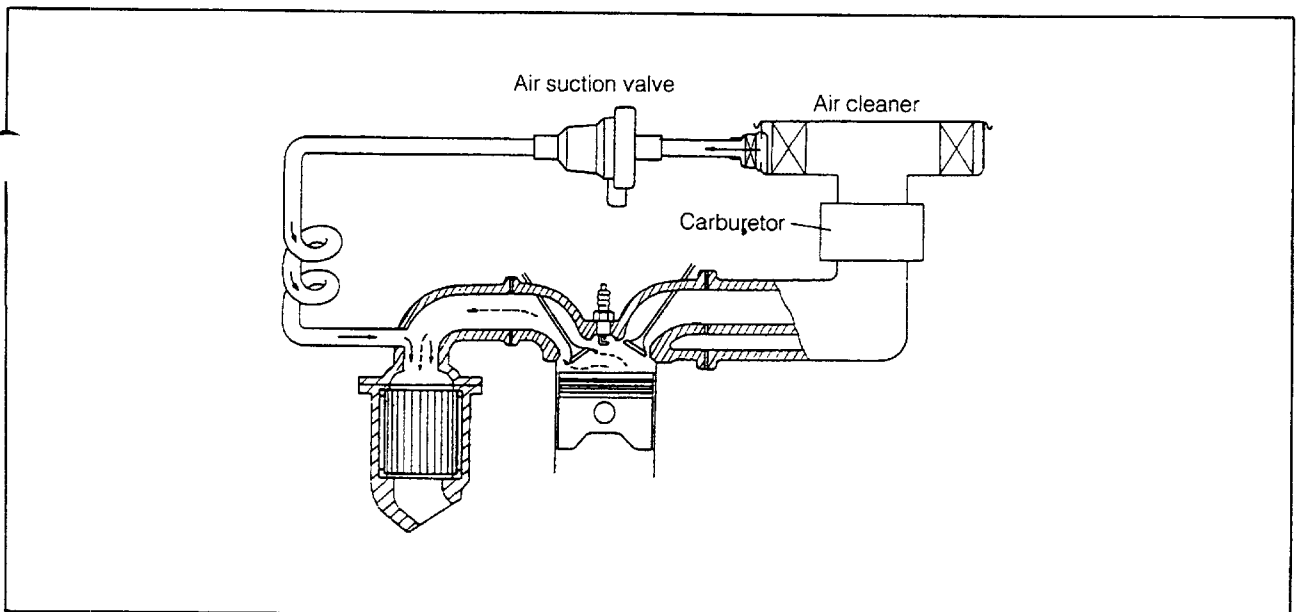


Fig. 12-37

WM-12041

**CHECKING OF SECONDARY AIR SUCTION SYSTEM**

1. Disconnect the hose between the air suction valve and the air cleaner.
2. Start the engine. If you can hear a pumping sound and the pumping sound ceases when you plug the hose with your hand, it indicates satisfactory operation.

**NOTE:**

Ensure that no exhaust gas blows back.

3. Make sure that the AS filter exhibits no restriction, contamination or damage.
4. Check air continuity of the air suction valve, as follows.
  - (1) Air continuity should exist when the section A is lightly blown.
  - (2) No air continuity should exist even when the section B is strongly blown.

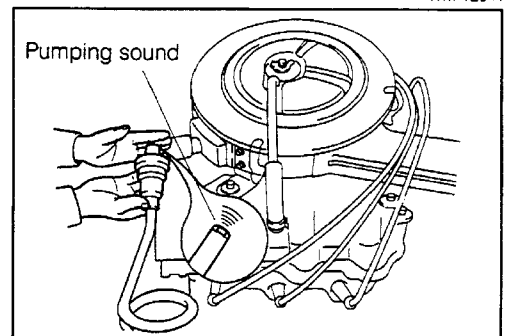


Fig. 12-38

WM-12042

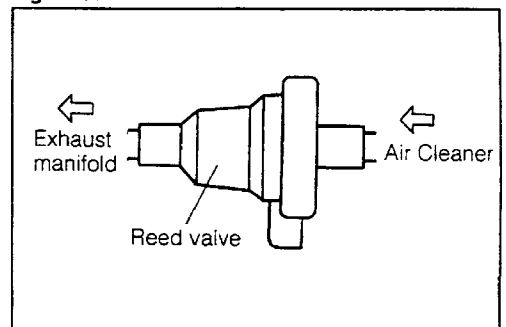


Fig. 12-39

WM-12043

## EMISSION CONTROL SYSTEM

### AIR SUCTION FILTER ELEMENT

1. Replace the air suction filter element.  
Replacement intervals: Two years or 40,000 km running, whichever comes first

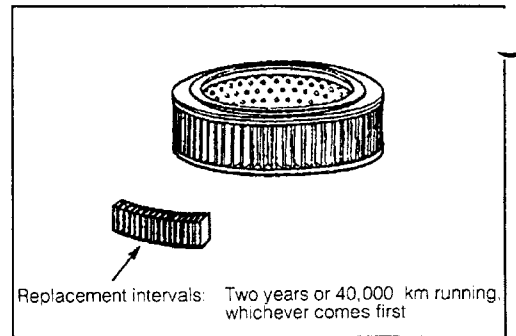


Fig. 12-40

WM-12044

### EGR (EXHAUST GAS RECIRCULATING) SYSTEM

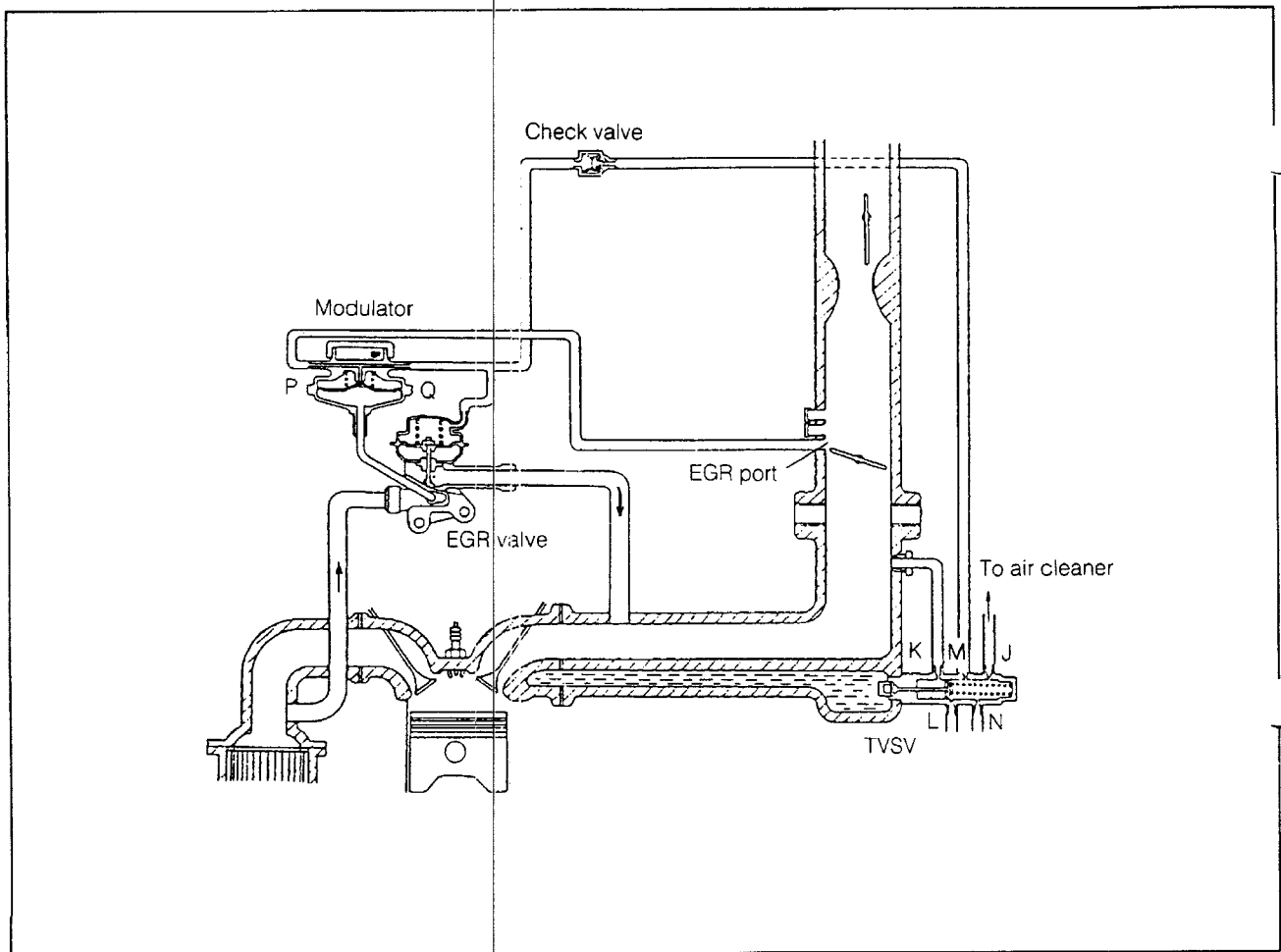


Fig. 12-41

WM-12045

### EGR SYSTEM CHECK

**When engine is cold:**

**(Temperature of cooling water is above 29°C):**

1. Connect a vacuum gauge between the modulator valve and the EGR valve.
2. Start the engine. If the pointer of the vacuum gauge registers between zero and a negative pressure of 100 mm Hg when the engine is idling or even when the engine revolution speed exceeds 3000 rpm, it indicates that the EGR system is functioning properly.

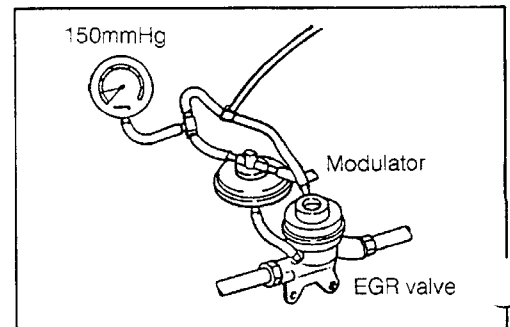


Fig. 12-42

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## EMISSION CONTROL SYSTEM

After engine is warmed-up:  
(temperature of cooling water is above 46.5°C):

1. Connect a vacuum gauge between the modulator valve and the EGR valve.
2. If the pointer of the vacuum gauge registers zero when the engine is started, it shows satisfactory operation.
3. Raise the engine revolution speed to approximately 3500 rpm. If the pointer of the vacuum gauge rises to around 150 mmHg, it indicates that the EGR system is functioning properly.
4. Connect a MityVac to the EGR valve.
5. Apply a negative pressure of 190 mmHg to the EGR valve, if the engine becomes roughly idling or stalls, it indicates that the EGR system is functioning properly.

### UNIT INSPECTION

1. EGR valve
  - (1) Air-tightness check  
Apply a negative pressure of 400 mmHg to the diaphragm chamber, using a MityVac. If the pointer is steady, it indicates that the EGR valve is satisfactory.
  - (2) Air-continuity check  
If air continuity exists between the port A and the port B when a negative pressure of 190 mmHg or more is applied to the diaphragm chamber using a MityVac and if no air continuity exists between the port A and the port B when a negative pressure of 140 mmHg or less is applied to the diaphragm chamber, it indicates that the EGR valve is satisfactory.
2. Modulator  
Plug either the port Q or the port P by your finger. Using a MityVac, apply a negative pressure to the remaining port. If the pointer returns to zero gradually, it indicates that the modulator is functioning properly.

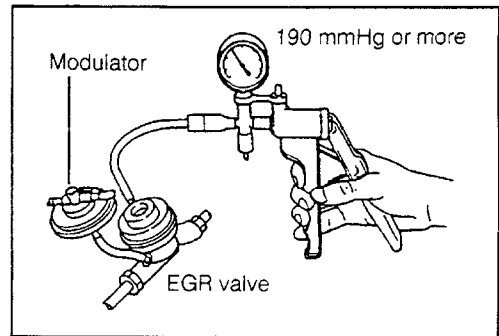


Fig. 12-43

WM-12047

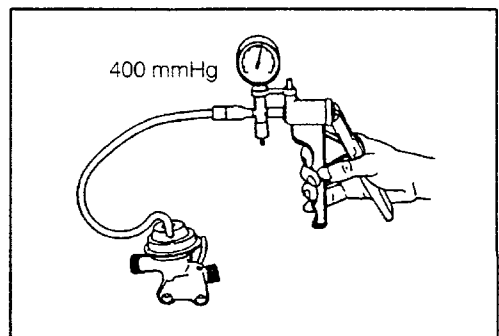


Fig. 12-44

WM-12048

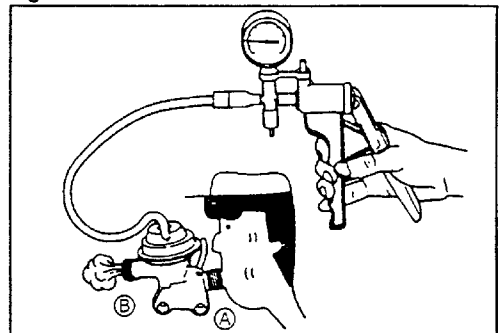


Fig. 12-45

WM-12049

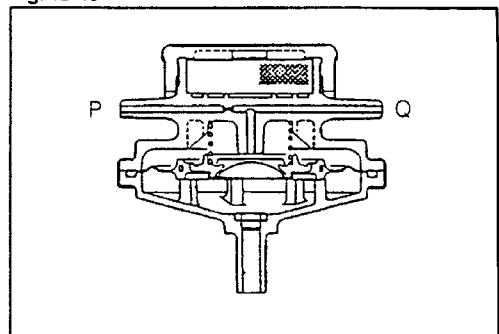


Fig. 12-46

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## EMISSION CONTROL SYSTEM

### 3. Check valve

If air continuity exists when your breath is blown from the port A and no air continuity exists when your breath is blown from the port B, it shows that the check valve is satisfactory.

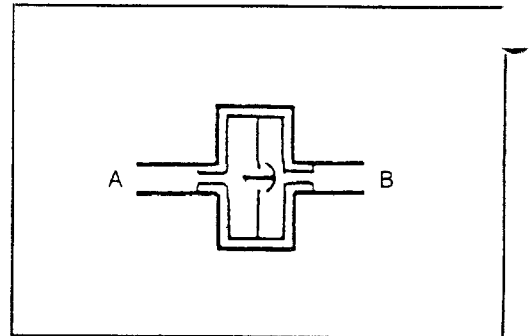


Fig. 12-47

WM-12051

## CHOKE WARNING SYSTEM

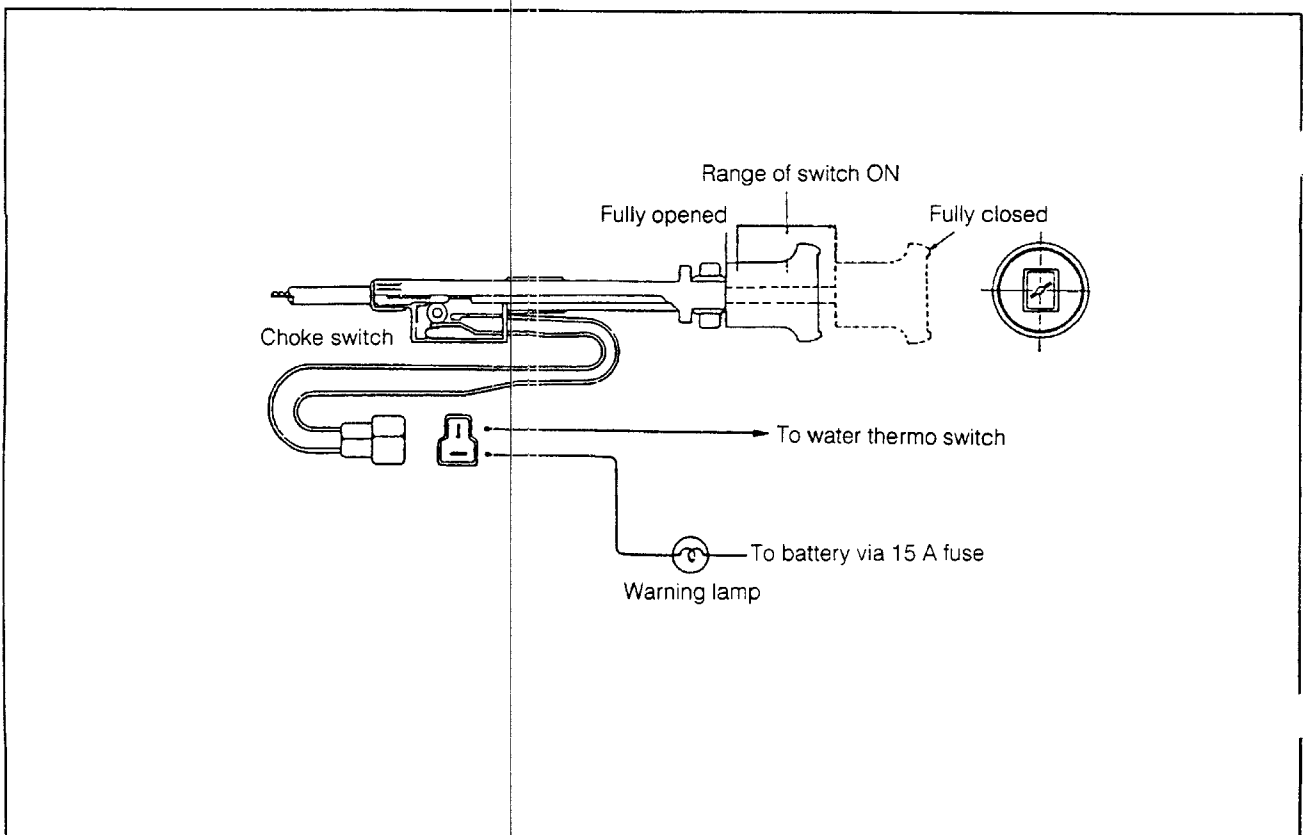


Fig. 12-48

WM-12052

## CHECK

### Choke Warning Lamp and Choke Switch

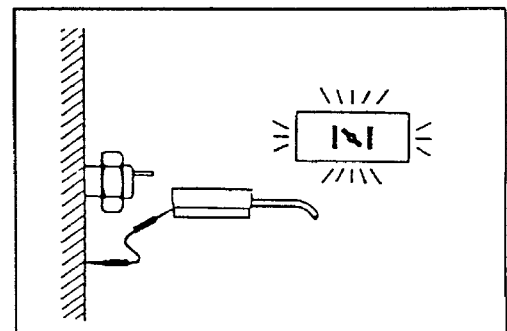
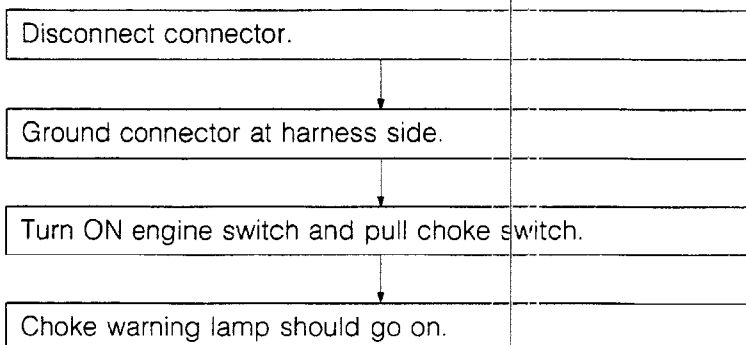


Fig. 12-49

WM-12053

**EMISSION CONTROL SYSTEM**

**Water Thermo Switch**

- Disconnect connector.
- Disconnect connector.
- Ensure that no continuity exists between water thermo switch terminal and earth.
- Ensure that continuity exists between water thermo switch terminal and earth when water temperature exceed 70°C (45°F) after engine started.

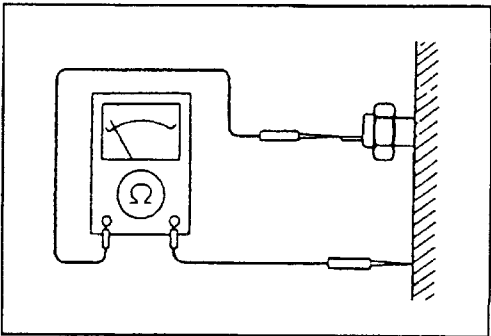


Fig. 12-50 WM-12054

**FUEL CUT SYSTEM DURING DECELERATION**

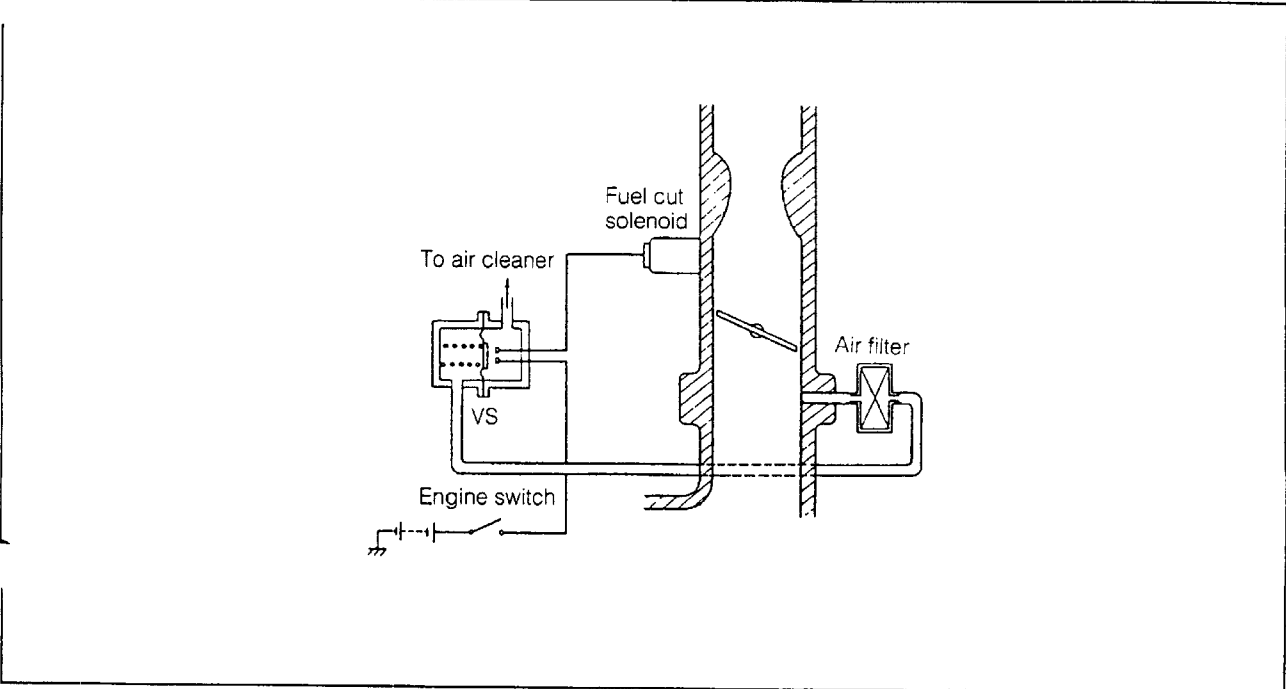
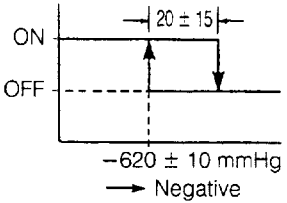


Fig. 12-51 WM-12055

When the intake manifold negative pressure exceeds the specified pressure, the vacuum switch is turned OFF and the fuel supply is cut.

**OPERATING CONDITIONS OF SYSTEM**

Operation Characteristic of Fuel Cut System During Deceleration



WM-12056

## EMISSION CONTROL SYSTEM

### SYSTEM CHECK

1. Connect a MityVac to the port S (CB23: Darkblue side, CB61: Skyblue side) of the vacuum switch. Plug the disconnected hose.

SST: 09258-00030-000

2. Set the engine revolution speed to 2000 rpm by means of the throttle adjusting screw.
3. Apply a negative pressure of at least 675 mmHg to the vacuum switch. If the engine revolution speed drops, it means that the system is functioning properly.
4. Open the port S of the vacuum switch to the atmosphere. If the engine revolution speed rises, it means that the system is functioning properly.

### UNIT CHECK

#### Solenoid Valve

1. Turn ON the engine switch.
2. Repeat the connection/disconnection of the solenoid valve connector. If you can hear a clicking sound or feel the operation with your hand placed on the solenoid valve, the solenoid valve is satisfactory.

### VACUUM SWITCH

#### Continuity Check

600 mmHg or less

Between terminals: Continuity must exist.

675 mmHg or more

Between terminals: No continuity must exist.

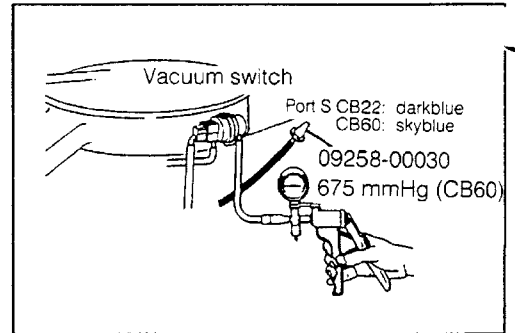


Fig. 12-52

WM-12057

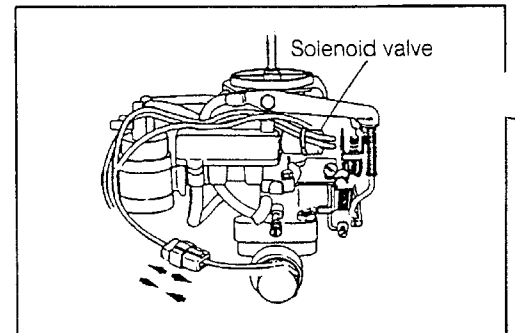


Fig. 12-53

WM-12058

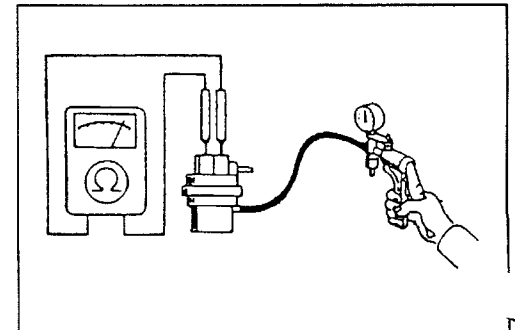


Fig. 12-54

WM-12059