

DAIHATSU

G202

EC

CB-Engine

EMISSION CONTROL SYSTEMS

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G2EC00001-00000

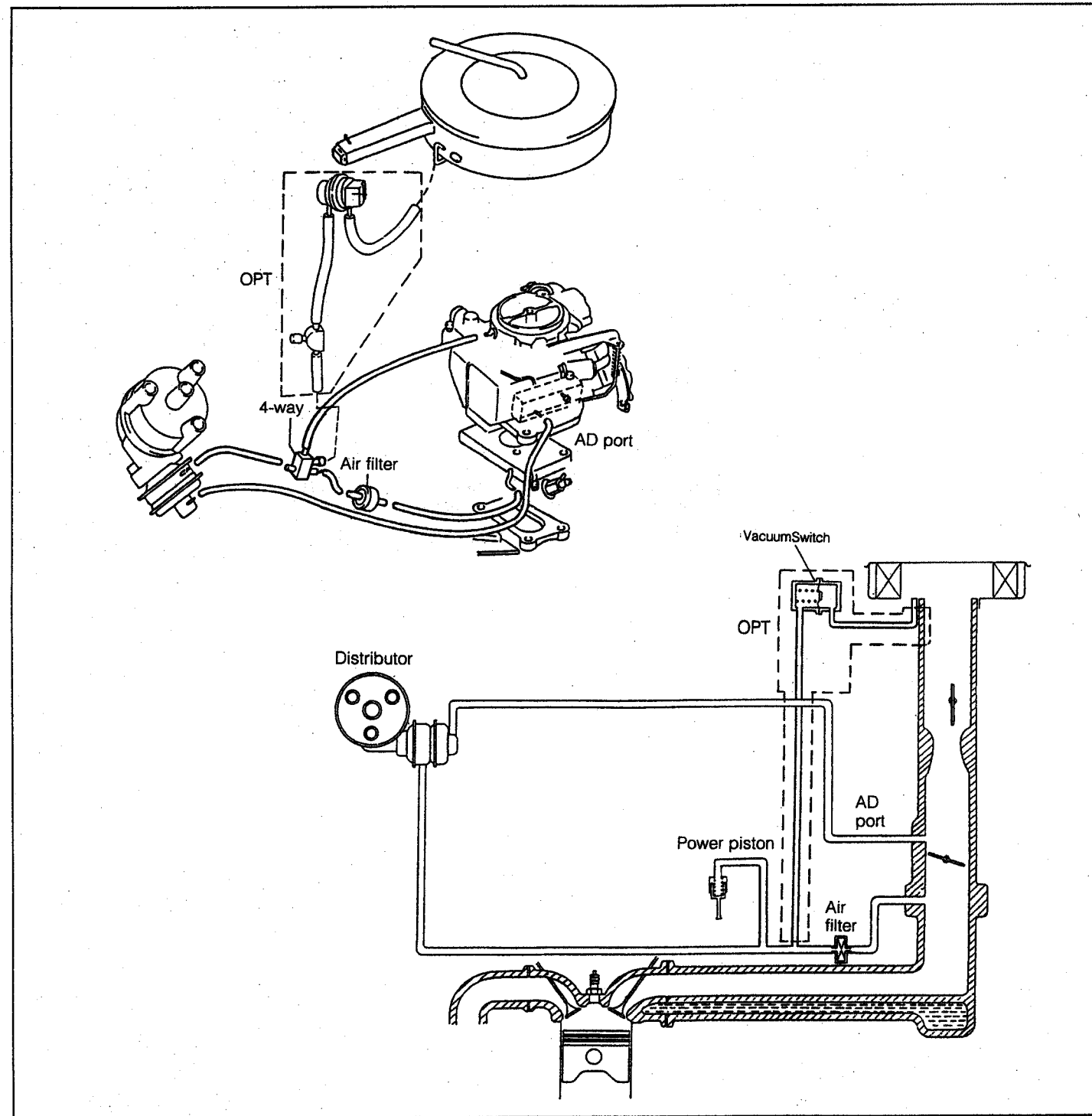
PURPOSE OF SYSTEM

System	Abbreviation	PURPOSE
Positive crank case ventilation	PCV	Prevents blow-by gases from being released to atmosphere (HC)
Choke opener	C/O	Reduces HC and CO.
Throttle positioner	TP	Reduces HC and CO.
Fuel evaporative emission control	—	Reduces HC.

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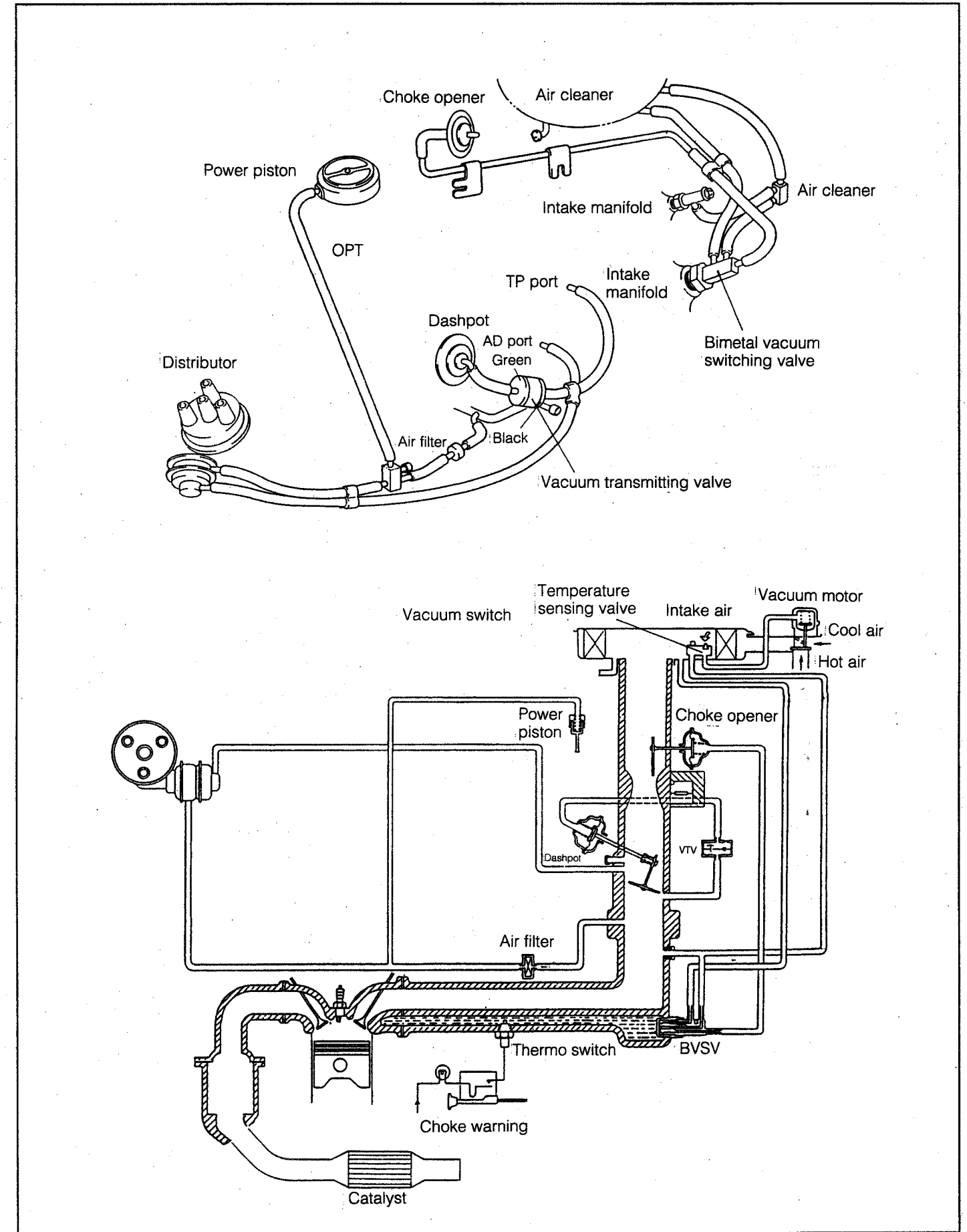
COMPONENT LAYOUT

General Specifications



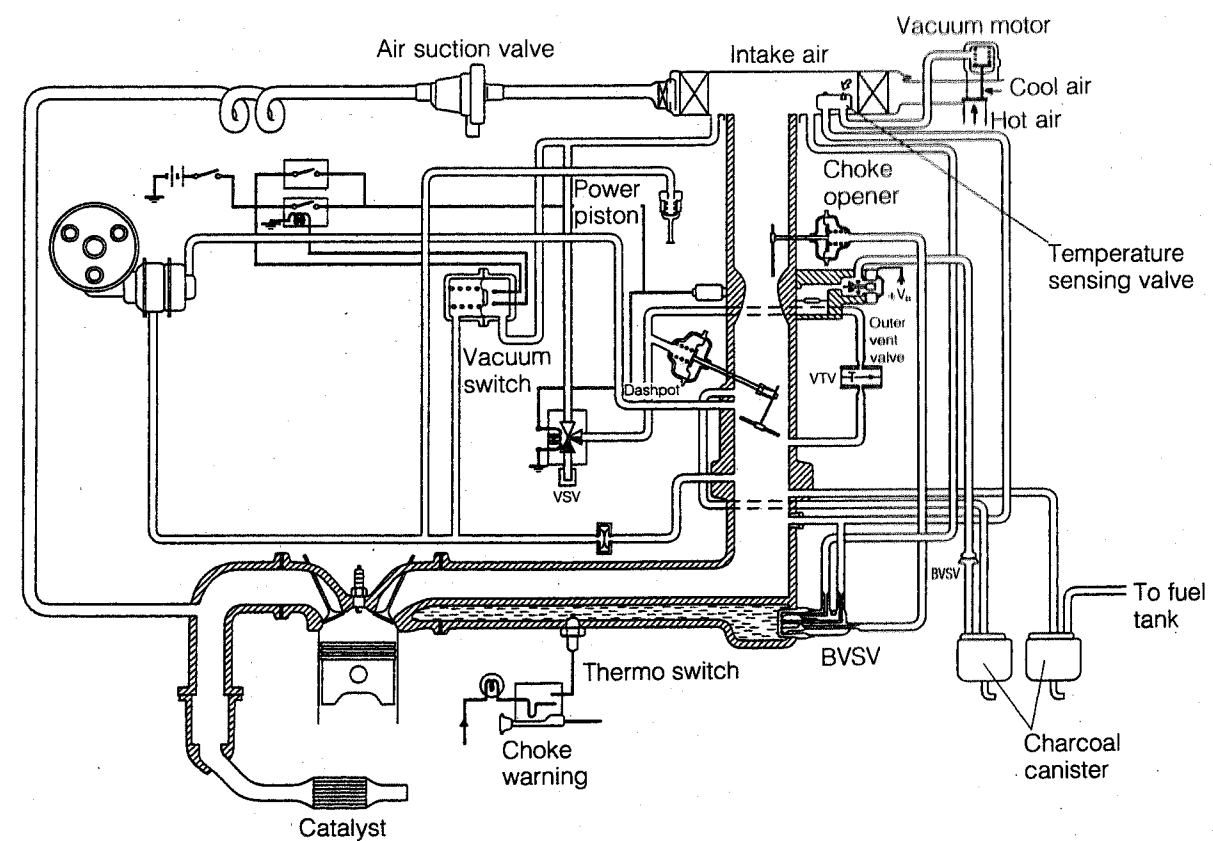
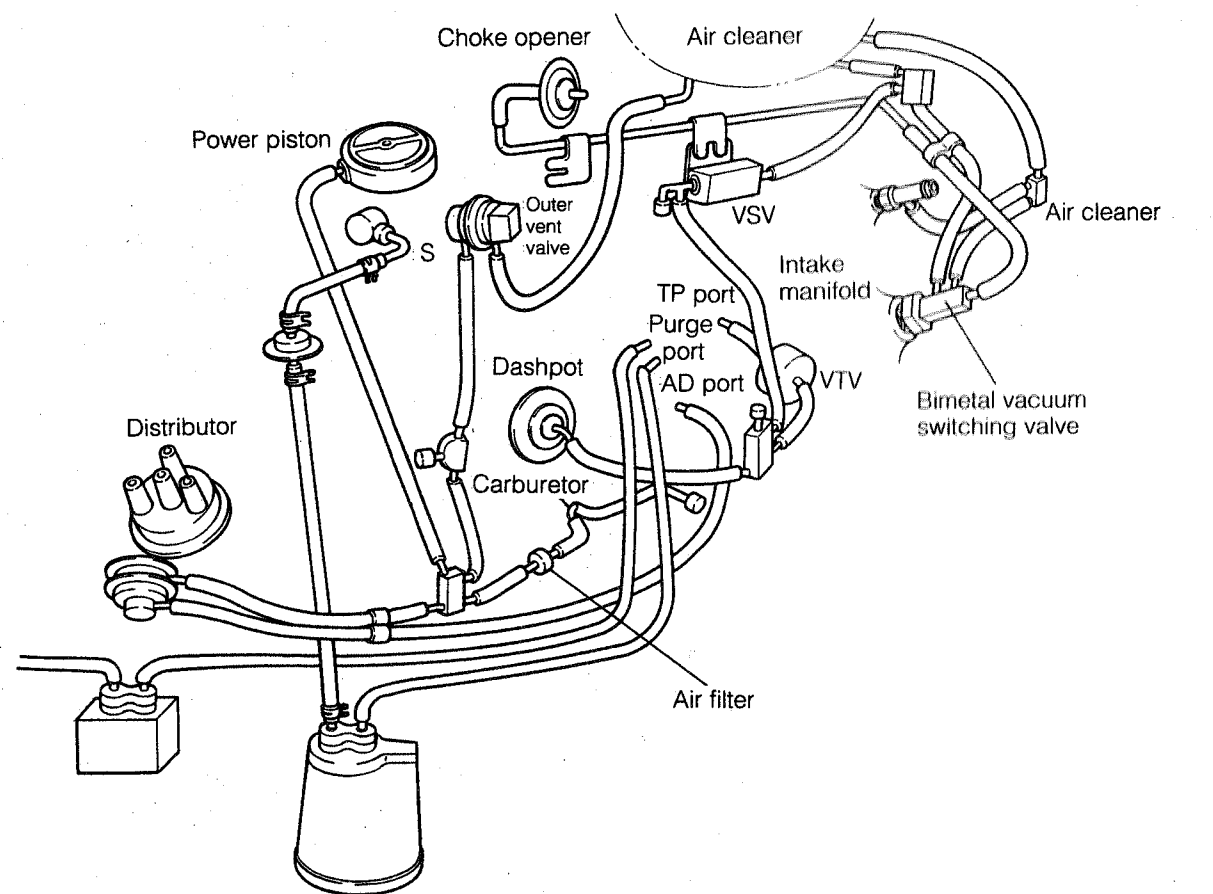
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European Specifications



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Australian Specifications



POSITIVE CRANKCASE VENTILATION

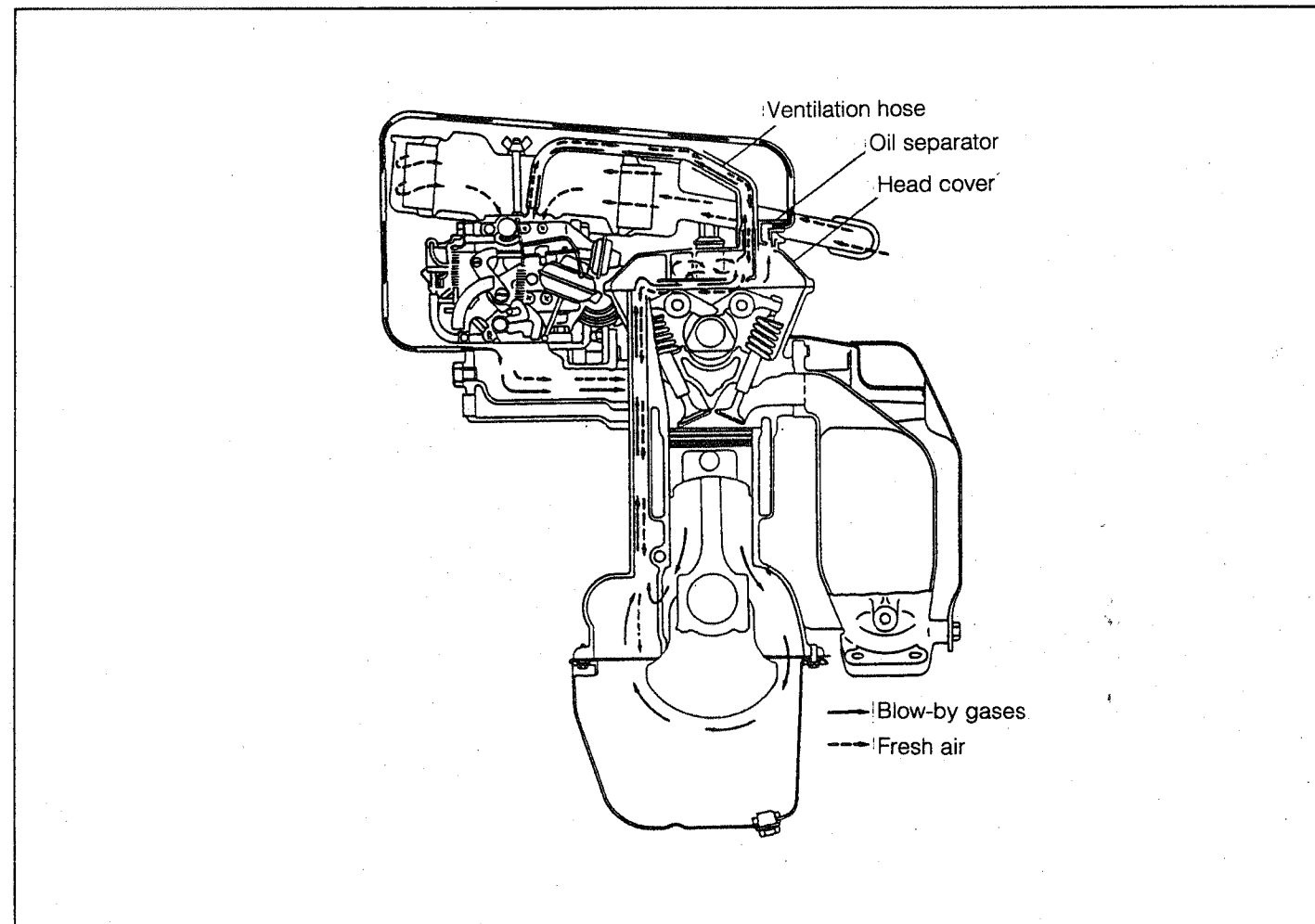
To combat with air-pollution problems, the engine is equipped with a sealed type positive crankcase ventilation system in order to prevent blow-by gases generated inside the crankcase from being released into the atmosphere.

The blow-by gases generated inside the crankcase flow into the cylinder head side through the gas passages of the cylinder block.

When the throttle valve opening degree is small, first the oil in the blow-by gas is separated by the oil separator provided at the cylinder head cover. Then, the blow-by gases flow from the carburetor heat insulator section to the intake manifold. Thus, the gases are sucked into the cylinder and burned there again.

At this time, fresh air flows from the upstream of the throttle valve into the cylinder head cover. The air flow rate is restricted by a jet located at the cylinder head cover, thus stabilizing the engine idling.

When the throttle valve opening degree is great and/or a large amount of blow-by gases are generated, the blow-by gases flow through both the upstream and the downstream of the throttle valve and are sucked into the combustion chamber.



INSPECTION OF PCV HOSE & CONNECTION

Visual inspection of hoses and connection

Check the hoses for improper connections, cracks, leak or damage.

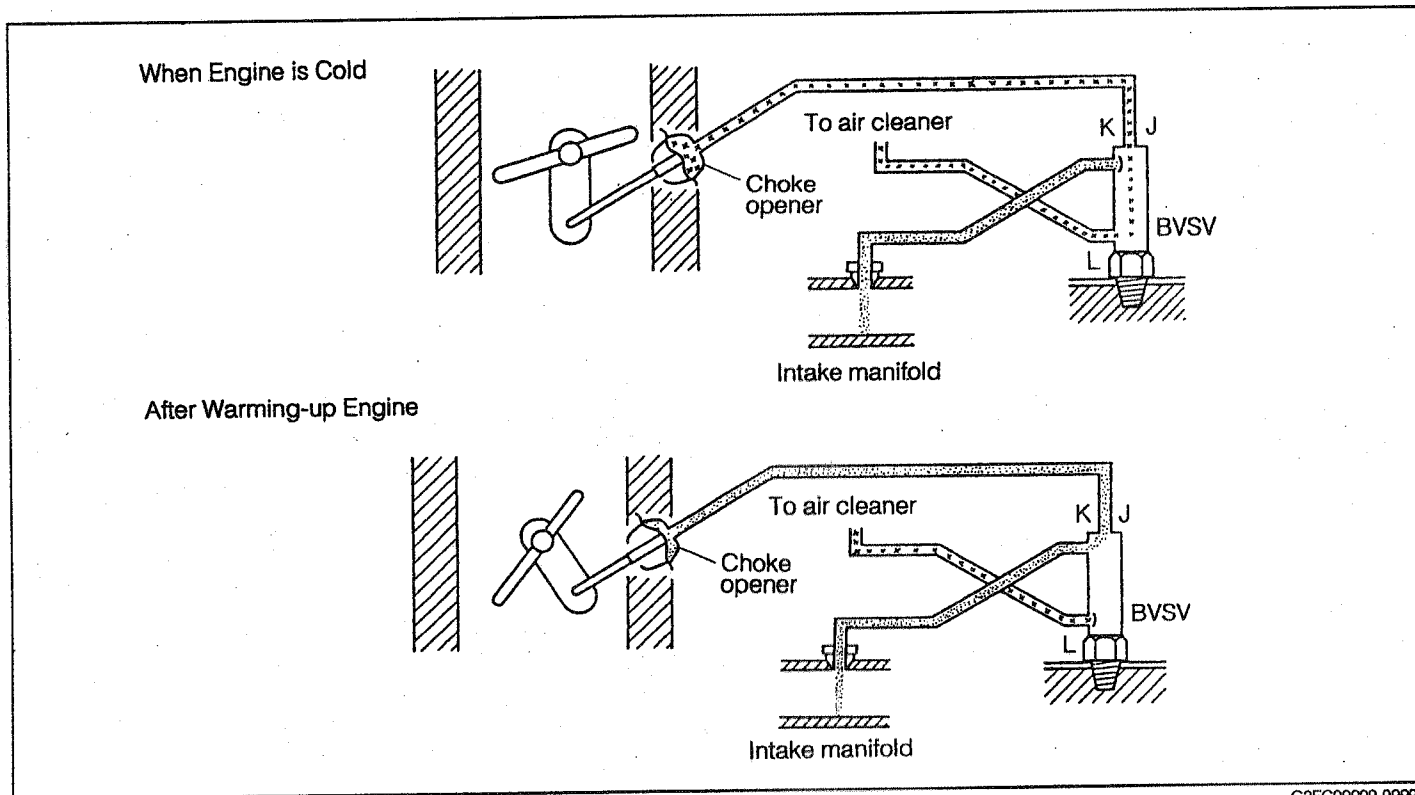
Replace or repair any part which exhibits defects.

CHOKE OPENER SYSTEM

If the choke valve remains closed after the engine has warmed up, the mixture becomes too rich, thereby increasing HC and CO emissions.

In order to prevent this condition, this system detects the cooling water temperature by means of the BVSV. If the cooling water temperature rises above 30°C (86°F), this system operates the choke opener by means of the intake manifold negative pressure so as to open the choke valve forcibly. In this way, the HC and CO emissions can be reduced.

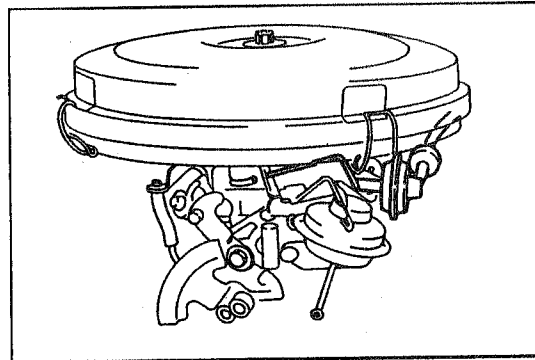
Furthermore, if the fast idle cam rests on the fast idle cam follower, this system lifts the fast idle cam through the link, thus releasing the fast idling.



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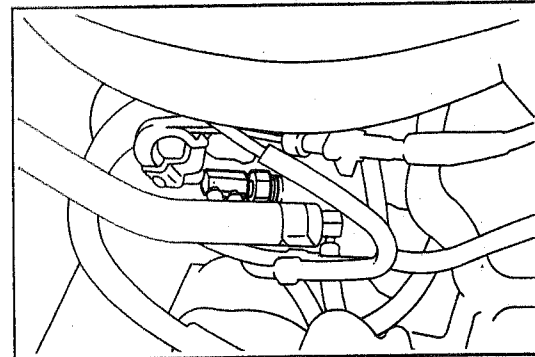
Inspection of choke opener system

1. Warm up the engine thoroughly.
2. Ensure that the choke opener is operating.
If it is not operating, check the BVSV and choke opener.



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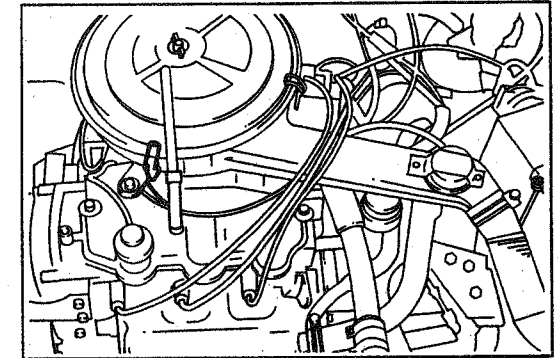
3. With the vacuum hose of the BVSV at the choke opener side disconnected, ensure that the choke opener remains inoperative.
If it is operating, check the choke opener.



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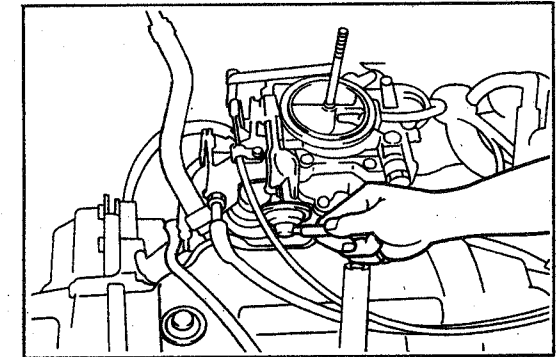
Unit inspection of choke opener

1. Removal of air cleaner element
 - (1) Remove the resistive cord.
 - (2) Disconnect the hoses and duct from the air cleaner.
 - (3) Remove the air cleaner.



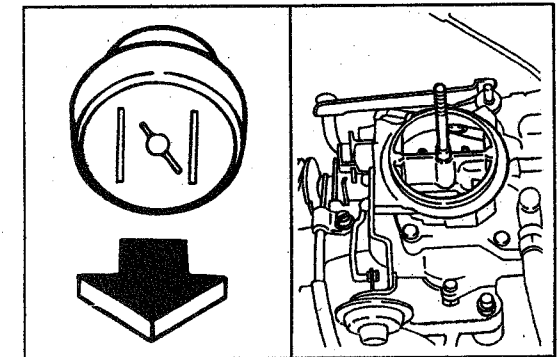
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2. Disconnect the vacuum hose connected to the choke opener.



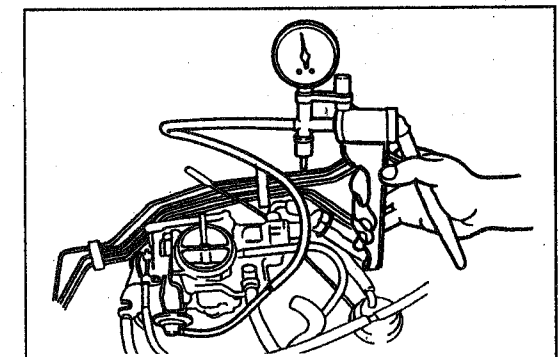
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3. With the choke knob fully pulled, depress the accelerator pedal fully once. Ensure that the choke valve is closed.
<Reference>
Choke Valve Full-closing Angle: $20^\circ \pm 2^\circ$



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4. Connect a MityVac to the choke opener and apply a negative pressure (250 mmHg or more). Ensure that the choke valve opens about 10 degrees.
<Reference>
Choke Valve Opening Angle: $30^\circ \pm 2^\circ$



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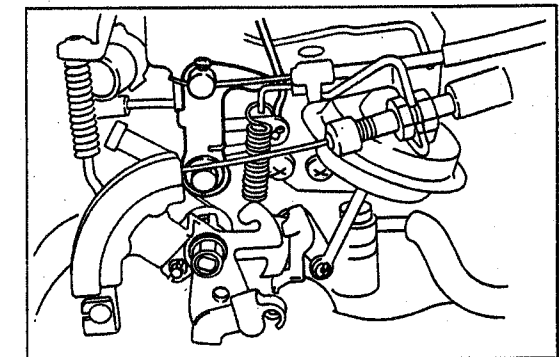
If the choke valve will not open, check the choke opener. If the choke valve will not open to the specified degree, replace the choke opener rod.

Ensure that the fast idle cam follower resting on the fast idle cam is disengaged from the first stage at the same time as the choke valve opens.

If the fast idle cam follower will not be disengaged, replace the fast idle cam rod.

If the choke valve opening degree fails to meet the specified angle, bend the choke opener link so that the choke valve opening degree becomes the specified angle.

5. Connect the vacuum hose to the choke opener.
6. Install the air cleaner element.



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Inspection of BVS

1. Disconnect the vacuum hose connected to the BVS.
2. Plug the vacuum hose.
SST: 09258-00030-000

3. Check to see if continuity exists between each port under the following cooling water temperature conditions.

Port name	K	J	L
Cooling water temperature			
10°C (50°F) or below		○—○	○—○
30°C (86°F) or above	○—○	○—○	

○—○ mark denotes that vent continuity exists. If the requirements above are not satisfied, perform the BVS unit inspection.

4. Connect the vacuum hose to the BVS.

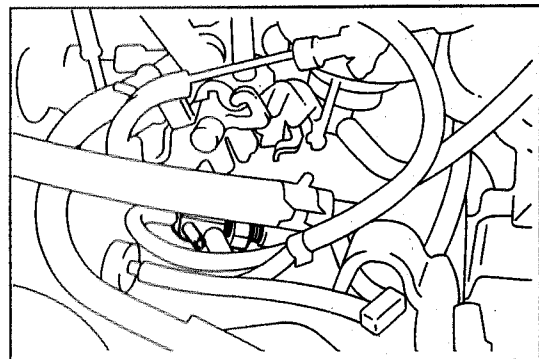
Unit Inspection of BVS

1. Drain the cooling water.
(See page CO-3.)

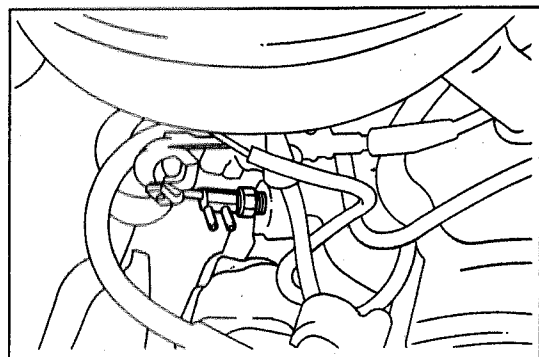
2. Remove the BVS.

NOTE:

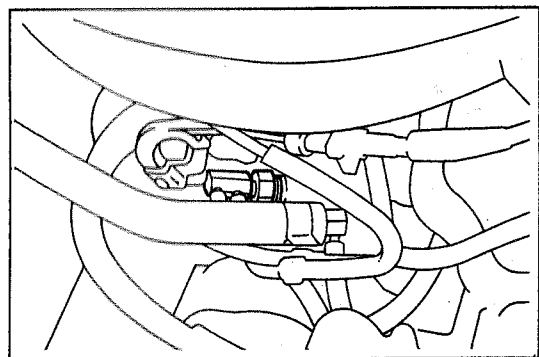
- Be very careful not to damage the BVS by hitting it to the by-pass pipe.



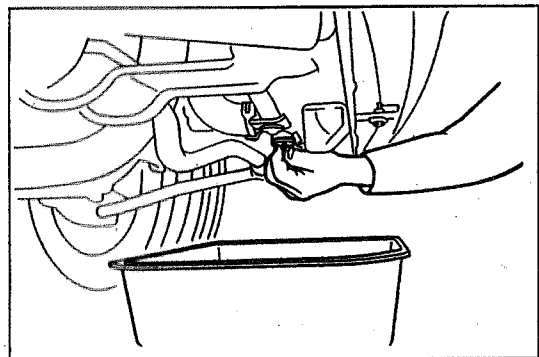
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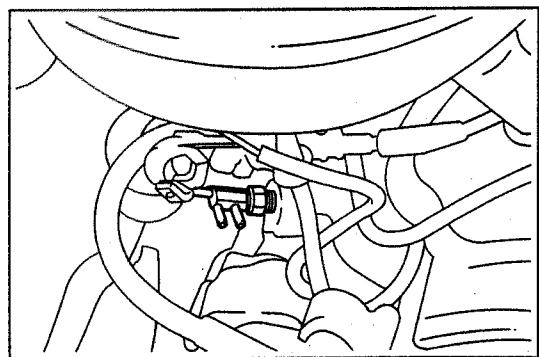
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G2EC00019-99999



G2EC00020-99999



G2EC00021-99999

3. Inspection of BVS
Submerge the BVS thermo sensing section into water. Check to see if continuity exists between each port under the following conditions.

Port name	K	J	L
Condition			
Cooling water temperature: 10°C (50°F) or below		○—○	○—○
Cooling water temperature: 30°C (86°F) or above	○—○	○—○	

○—○ mark denotes that vent continuity exists.

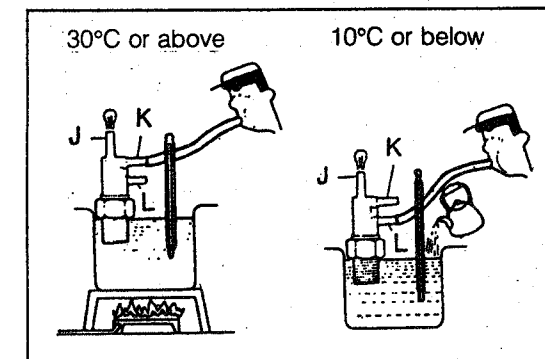
If the requirements in the table above are not satisfied, replace the BVS.

4. Wind seal tape around the threaded portion of the BVS. Install the BVS on the cylinder head.
Tightening Torque: 24.5 - 34.3 N·m
(2.5 - 3.5 kg·m, 18.1 - 25.3 ft·lb)

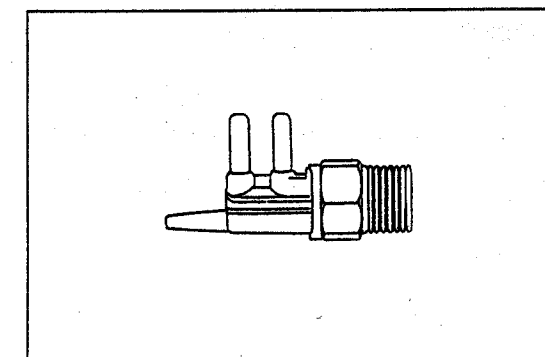
NOTE:

- Make sure that the pipe comes to the position indicated in the right figure.
- The new BVS is coated with sealer therefore remove the sealer thoroughly, before seal tape is winding if the sensor is replaced with new one.
- Clean the cylinder head side hole thread, before installing the BVS.

5. Fill cooling water.
(See page CO-3.)



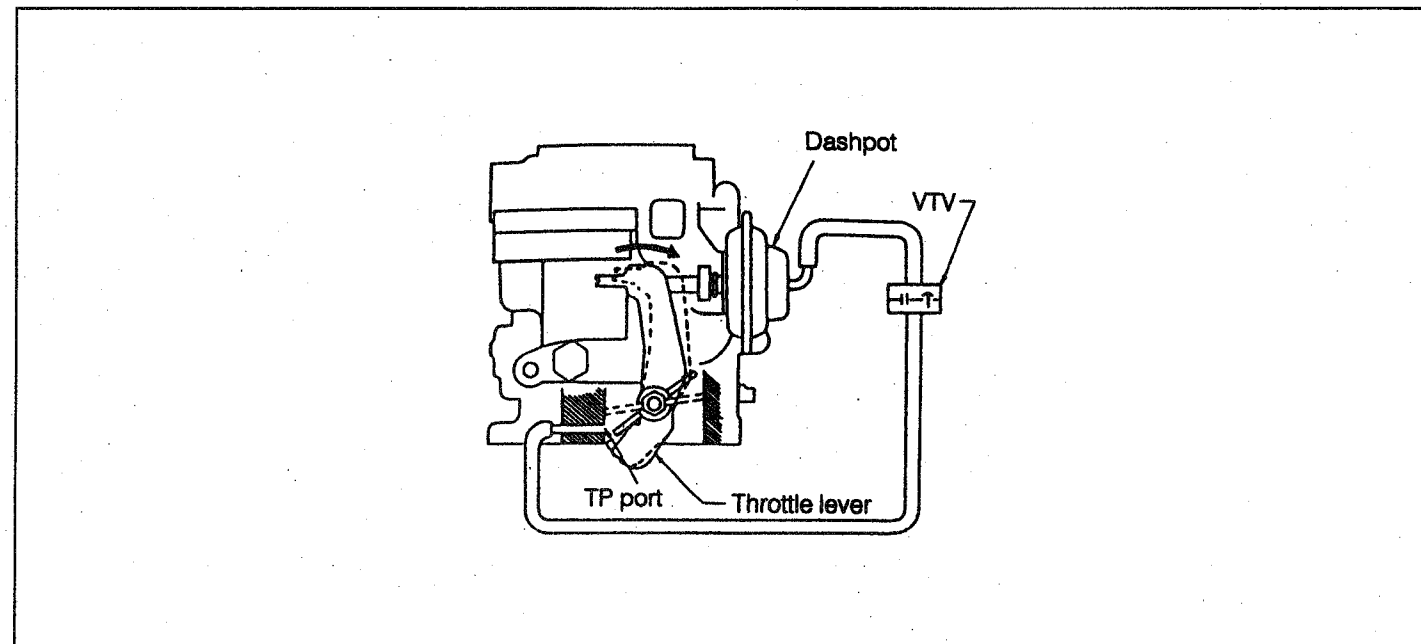
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G2EC00023-99999

THROTTLE POSITIONER SYSTEM

This system prevents the throttle valve from suddenly closing, thus reducing the CO and HC emission.



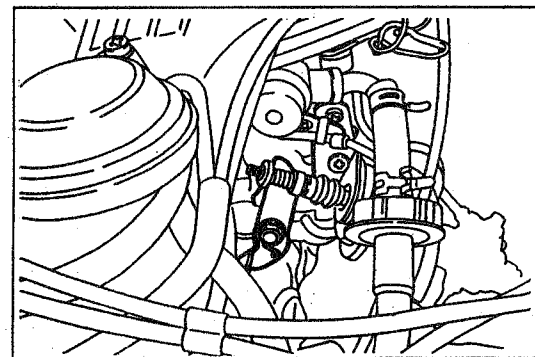
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Inspection of throttle positioner

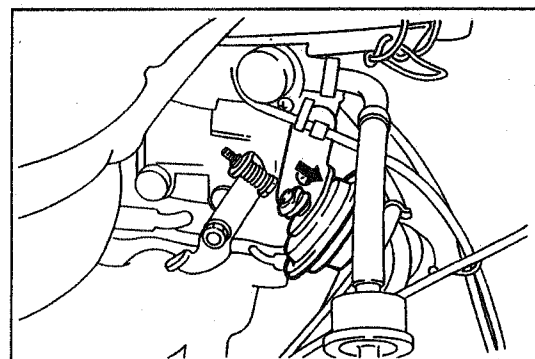
NOTE:

- On the automatic transmission vehicles, make sure that the idle-up mechanism is not functioning. Also, make certain that the all accessory switches are turned OFF.

- Connect a tachometer.
- When the engine is stopped, ensure that the dashpot shaft is extended fully.
- Start the engine. Ensure that the dashpot shaft has retracted fully into the inside of the dashpot.
- Open the throttle valve to keep the engine speed at about 2500 rpm. Ensure that the dashpot shaft is extended fully.



G2EC00026-99999

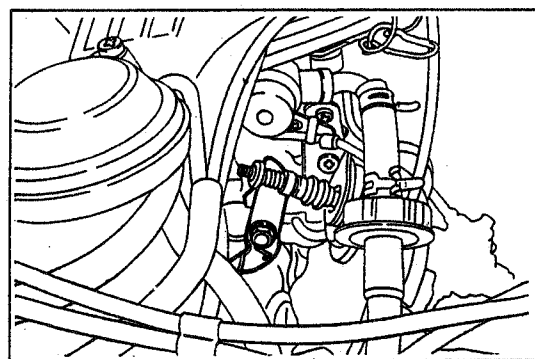


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- Quickly close the throttle valve. Take the reading of the engine revolution speed at the time when the throttle lever contacts the dashpot.

Dashpot Touch Revolution Speed:

- 1600 ± 50 rpm
- 1300 ± 50 rpm (Australian Specification)

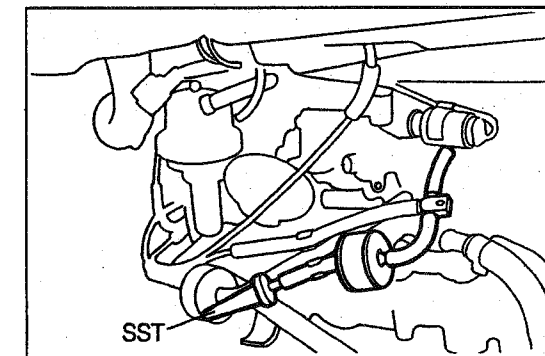


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If the touch revolution speed will not conform to the specified value, turn the adjusting screw so that the touch revolution speed may meet the specification.

NOTE:

- Prior to the adjustment, the rubber hose connected to the throttle positioner should be disconnected and be plugged, using the following SST.
SST: 09258-00030-000



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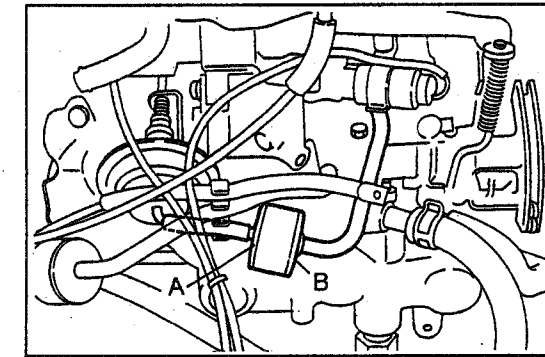
- Hold the engine revolution speed at about 3000 rpm at least five seconds by opening the throttle valve. Then, release the throttle lever. Check that the time required for the engine revolution speed to drop from 2000 rpm to 1000 rpm conforms to the specified value.
Specified Time: 1.0 - 3.0 seconds

If the time will not conform to the specification, check the direction of the VTV. Then, proceed to check the VTV.

- Remove the tachometer.

Inspection of VTV

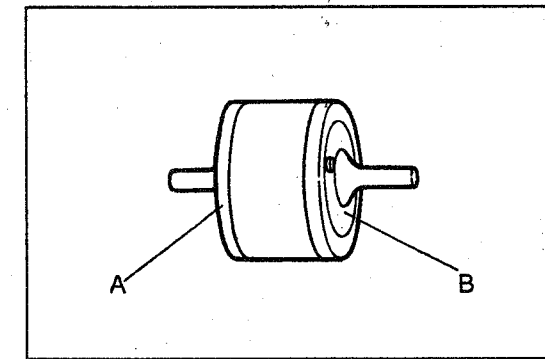
- Remove the VTV. Blow your breath into the VTV from the carburetor side (side B). Ensure that the air passes through without restriction. If significant restriction exists, replace the VTV.



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G2EC00031-99999

- Blow your breath into the VTV from the throttle positioner side (side A). Ensure that there is restriction. If no restriction exists, replace the VTV.

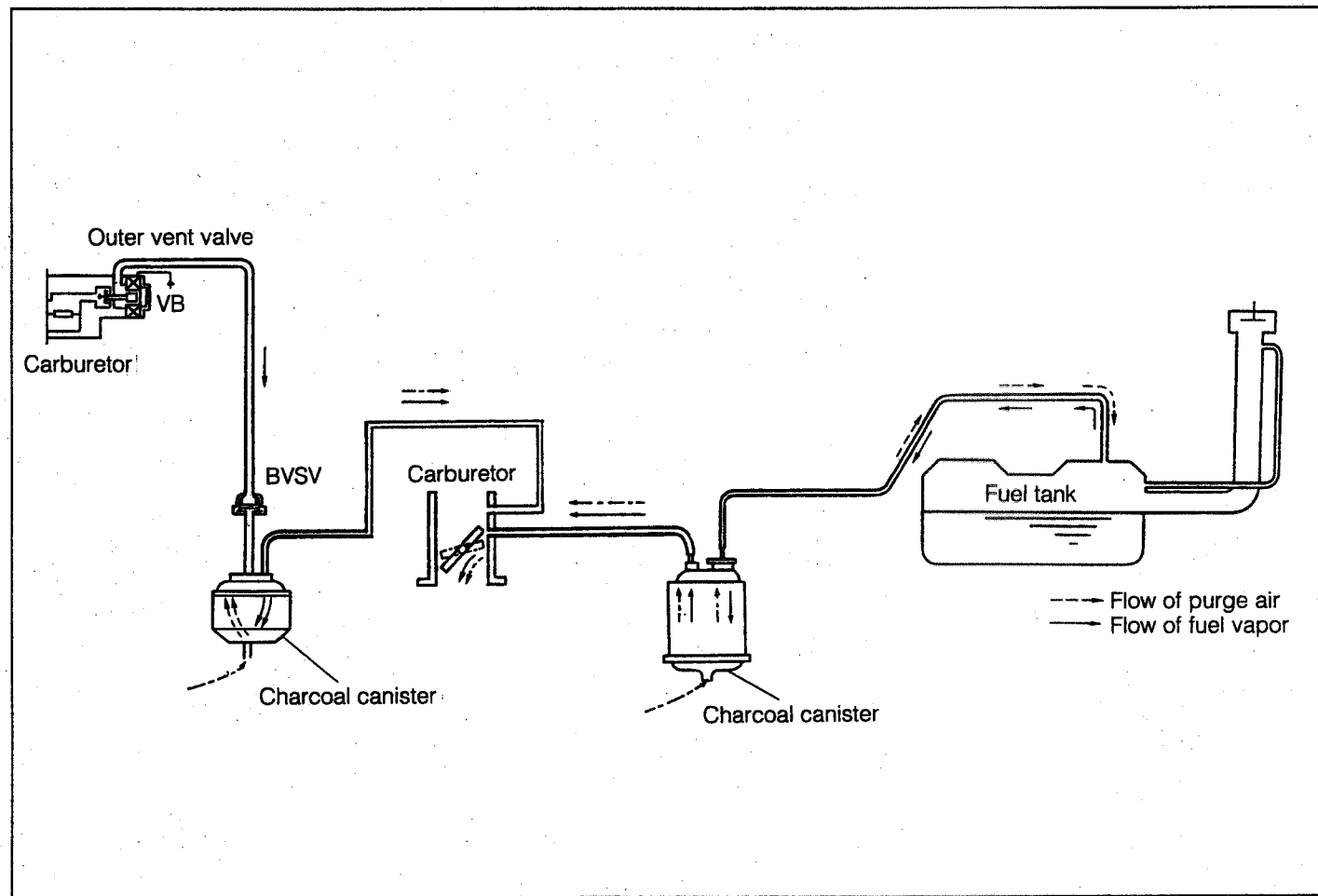


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FUEL EVAPORATIVE EMISSION CONTROL SYSTEM

(Australian Specifications Only)

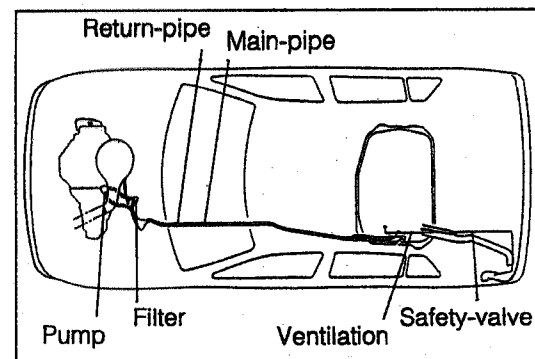
This system prevents the HC emission evaporated from the carburetor float chamber and fuel tank from being released directly to the atmosphere.



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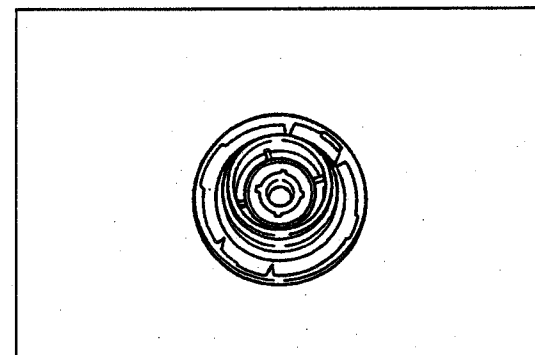
Inspection of fuel vapor lines, fuel tank & filler cap

1. Visual inspection of fuel vapor line and connections
Check the line and connections for loose connections, kinks or damage.
2. Visual inspection of fuel tank
Check the fuel tank for deformation, cracks or fuel leakage.



G2EC00034-99999

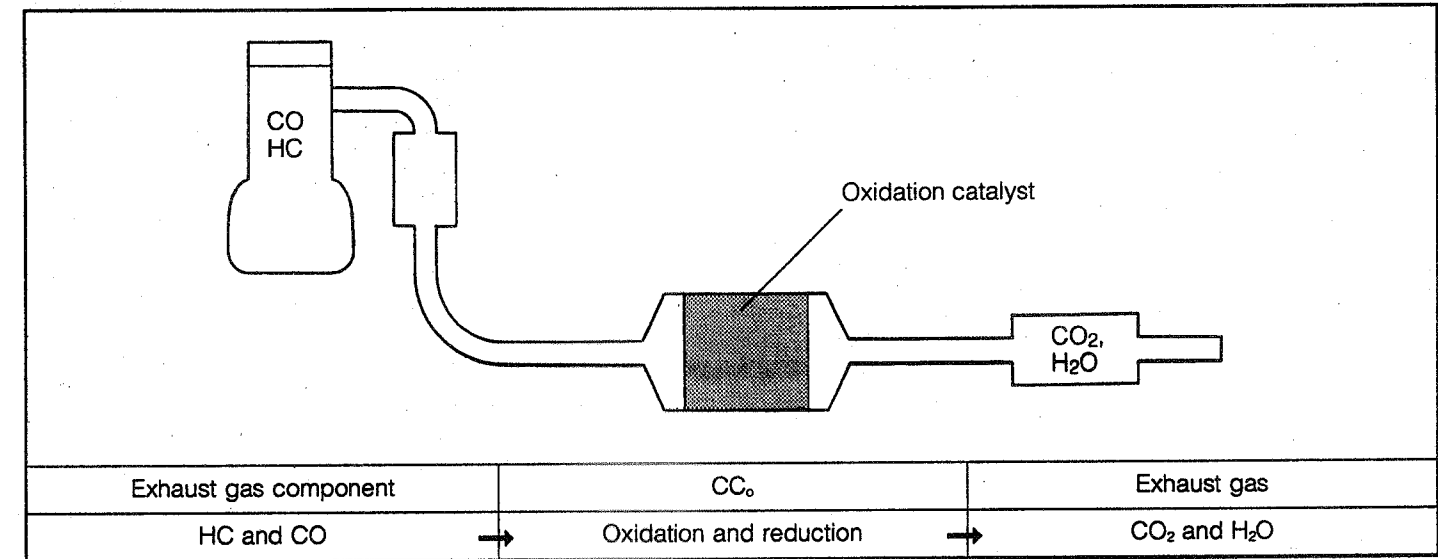
3. Visual inspection of fuel filler cap
Check the cap and gasket for damage or deformation.
Replace the cap, if necessary.
4. Inspection of charcoal canister
(Refer to the MA section of the service manual.)
5. Inspection of outer vent valve
(Refer to the MA section of the service manual.)
6. Inspection of BVSV
(Refer to the MA section of the service manual.)



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OXIDATION CATALYST SYSTEM

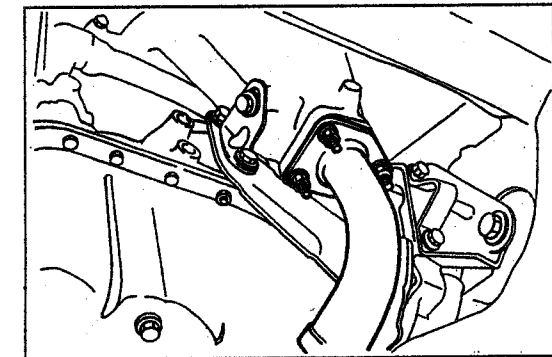
In this oxidation catalyst, the oxidation of carbon monoxide (CO) in the exhaust gas take place simultaneously. Thus, the oxidation catalyst purifies the exhaust gas by converting its harmful component gas into harmless carbon dioxide (CO₂) and water vapor (H₂O).



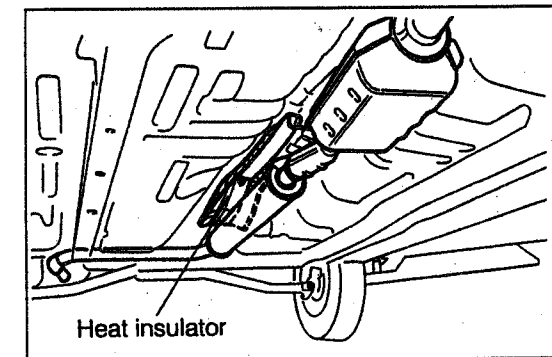
G2EC00036-99999

Inspection of exhaust pipe assembly

1. Check the connections for looseness or damage.
Repair or replace the parts, as required, if any looseness or damage is present.
2. Check the clamps for weakness, bend or damage.
Repair or replace the parts, as required, if any damage is present.
3. Inspection of heat insulator
Check the exhaust pipe heat insulator for damage.
If the heat insulator exhibits any damage, repair or replace the exhaust pipe.



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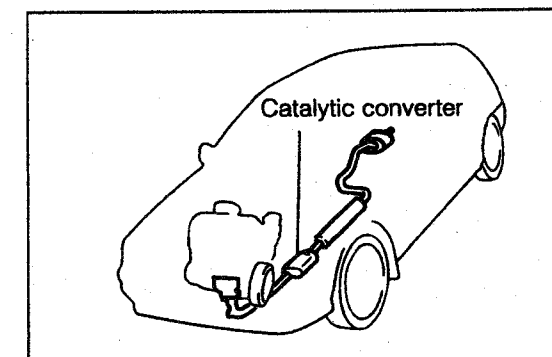
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Inspection of catalytic converter

Check of heat protector for dents or damage
If any part of the protector is damaged or dented to such an extent that it contacts the catalysts, repair or replace the protector.
Replace the front exhaust pipe, if the converter heat protector is damaged. However, protector is integrated with the front exhaust pipe.

NOTE:

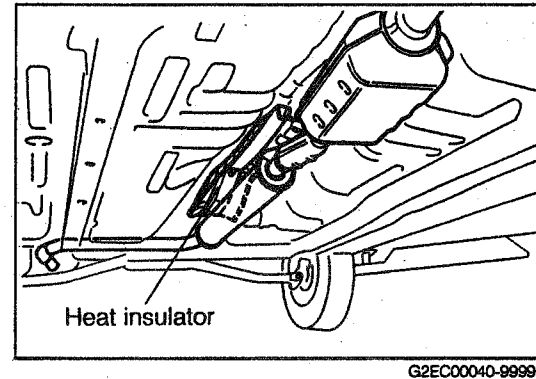
- For replacement of the front exhaust pipe as well as replacement of the heat insulator of the catalytic converter and catalytic converter, refer to the BO section of the service manual.



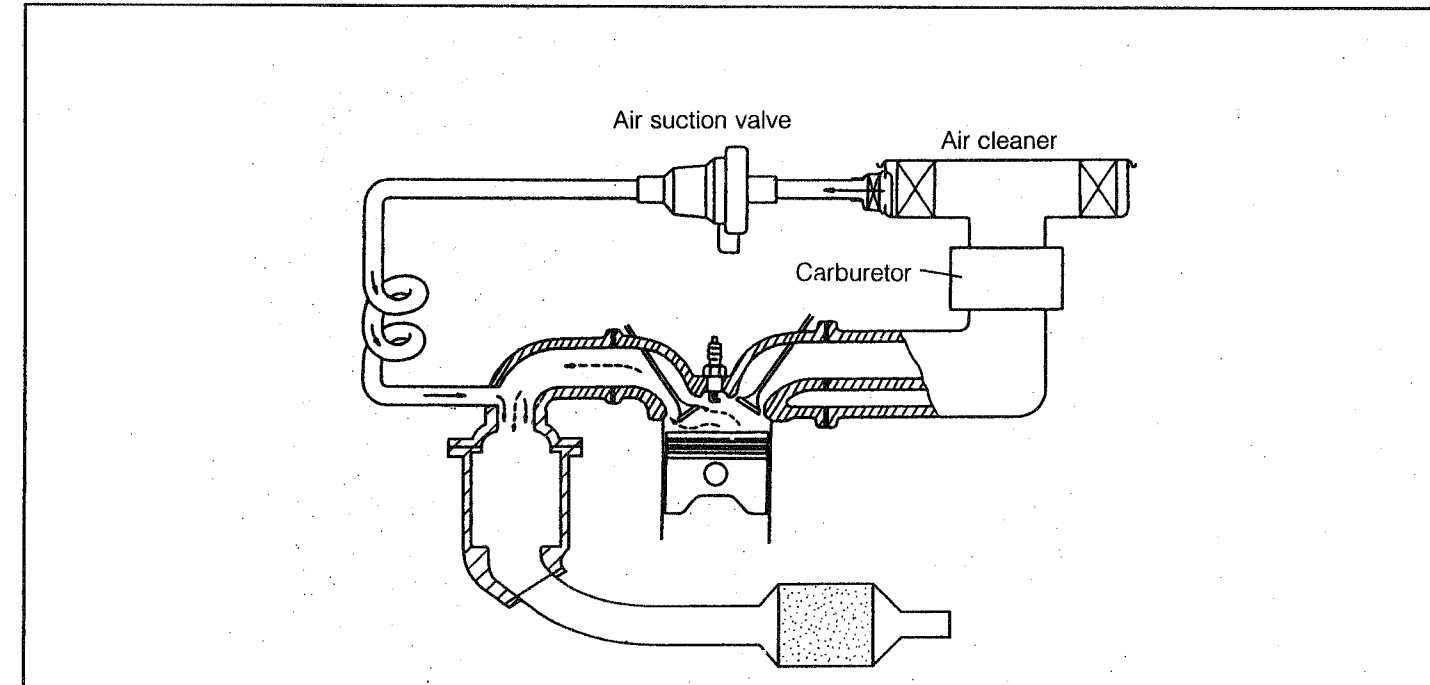
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Inspection of heat insulator

Check the heat insulator for damage.
If the heat insulator exhibits any damage, repair or replace the heat insulator.



SECONDARY AIR SUCTION SYSTEM (AS SYSTEM)



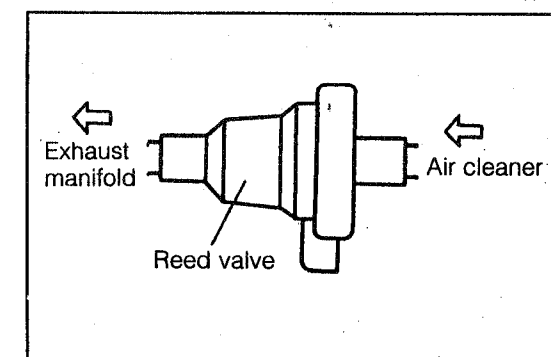
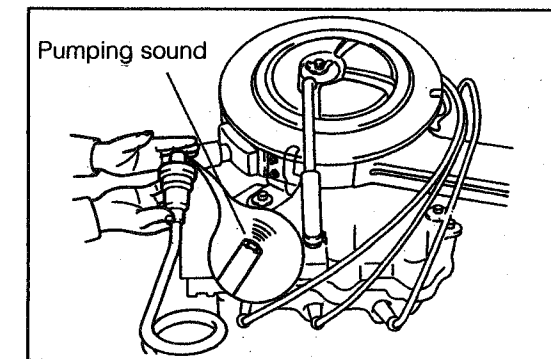
CHECKING OF SECONDARY AIR SUCTION SYSTEM

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.



AIR SUCTION FILTER ELEMENT

Replace the air suction filter element.

Replacement Intervals:

Two years or 40,000 km running, whichever comes first

