

SECTION 1H

EMISSION CONTROL SYSTEM

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GENERAL DESCRIPTION

EMISSION CONTROL SYSTEM DIAGRAM

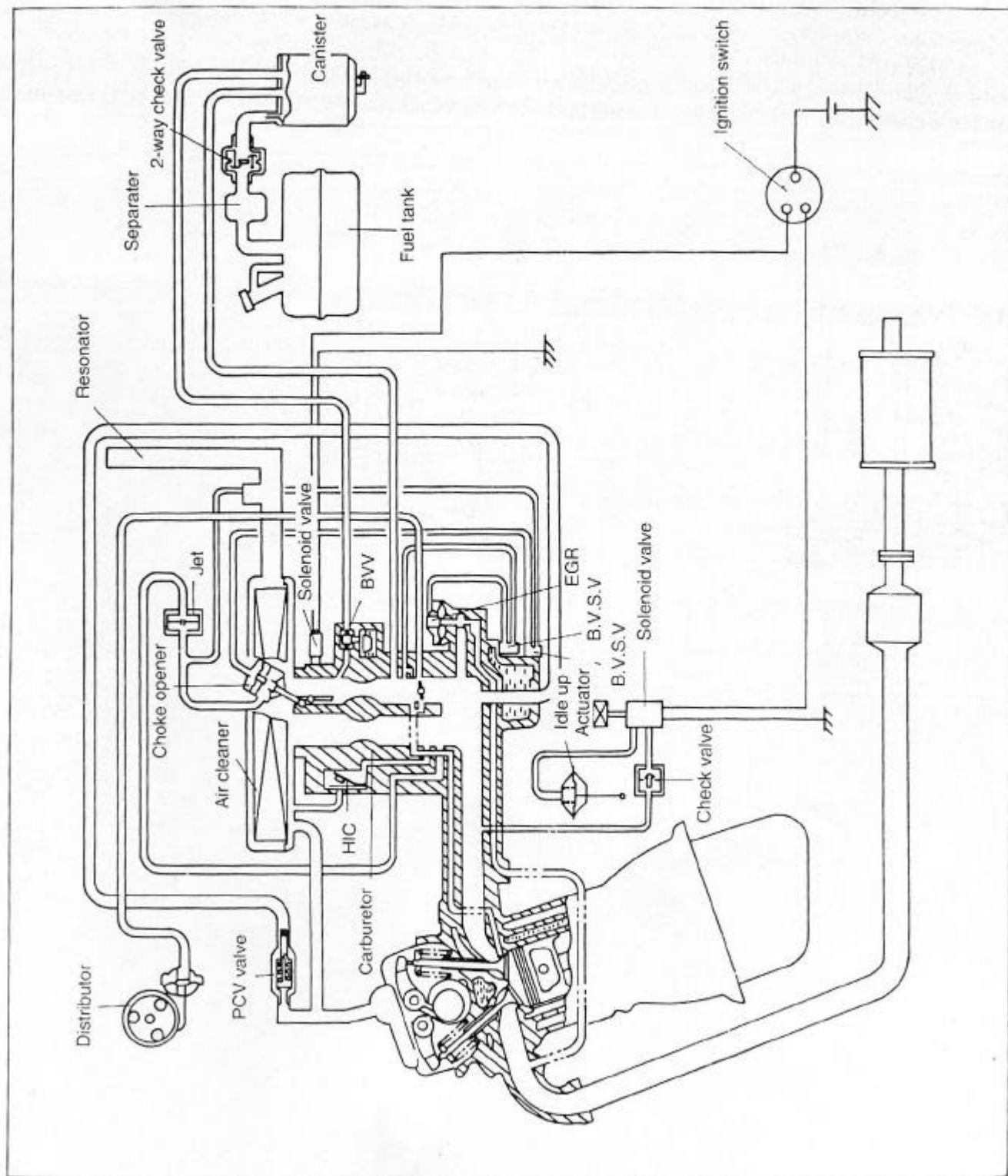


FIG. 1H — 1 EMISSION CONTROL SYSTEM

EXHAUST GAS RECIRCULATION SYSTEM(EGR)

The emission of NO_x is found much near the air fuel ratio for complete combustion, and the higher combustion efficiency. That is, the higher combustion temperature, the more production of NO_x .

Accordingly, EGR system is adopted to reduce NO_x emission by lowering the temperature. EGR system transmits a portion of the exhaust gas into the intake manifold to be mixed with fresh air. At this time, the temperature falls and NO_x emission is reduced.

When the exhausted gas flows into the combustion chamber, the output and combustion ratio will be changed. Therefore it is necessary to reduce such influence to the minimum extent by making rated drawing in according to the coolant temperature and negative pressure in the engine.

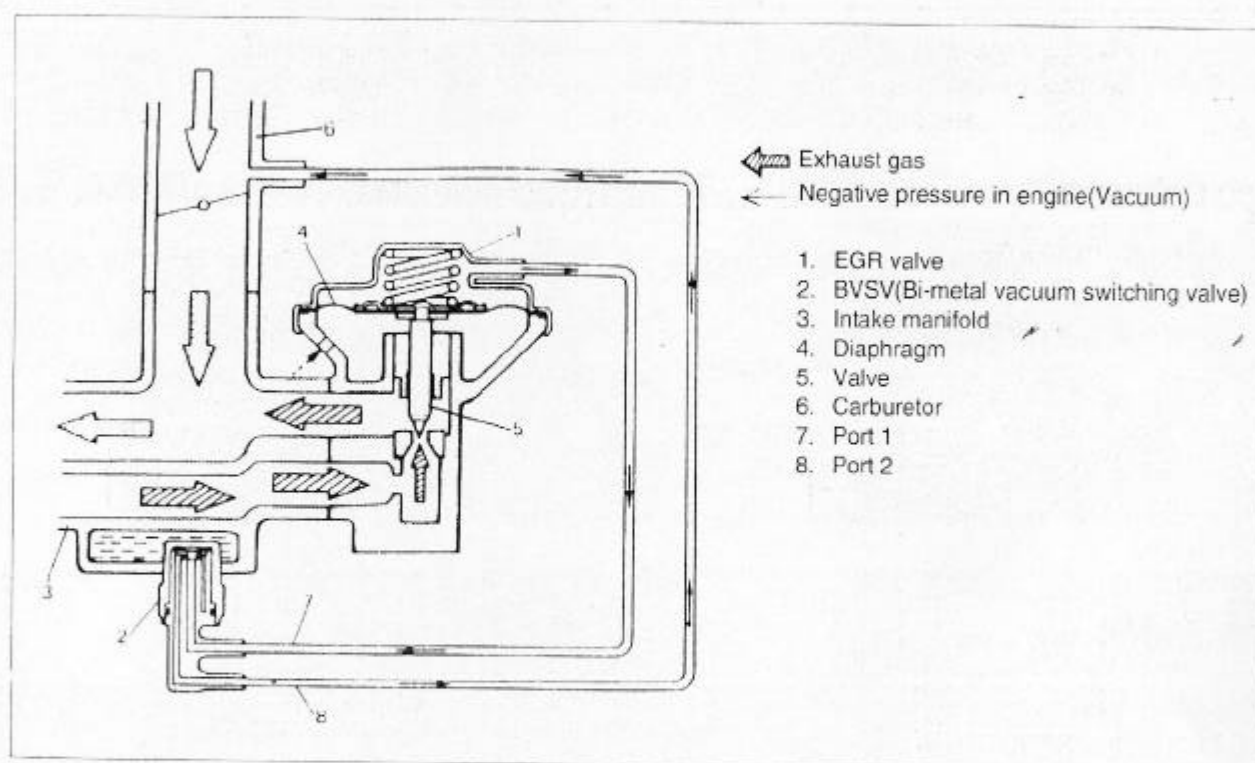


FIG. 1H — 2 EGR SYSTEM

Operation of EGR valve depends on the coolant temperature and negative pressure in engine. As shown in the above figure, vacuum port is located in the upper end of throttle valve. Therefore, when the throttle valve is open to a specified angle, the negative pressure reaches to port 2 of BVSV(Bimetal vacuum switching valve) through engine port. BVSV is installed in the passage of coolant, and when it is above $50 \pm 4^\circ\text{C}$, the passage between port 1 and port 2 is opened to activate EGR valve with the negative pressure from port 2.

Components Check

EGR valve

- Disconnect vacuum hose from BVSV.
- Connect vacuum pump gauge to EGR valve side as shown in the figure.
- Check that EGR valve diaphragm moves smoothly when about 200 mmHg(260mm bar) vacuum is applied to EGR valve.
- If diaphragm does not move, replace EGR valve because it is hold at some position.
- Check vacuum hose connected to BVSV from EGR.

* Negative pressure when EGR valve is activated.

$-60 \pm 8 \text{ mmHg}$ ($-80 \pm 10 \text{ mm bar}$)

BVSV Check

BVSV opens to activate EGR valve at the coolant temperature of $50 \pm 4^\circ\text{C}$, and to make the EGR valve stop working at below 40°C

a. BVSV Check I

Prepare checking as shown in the figure, and blow air in BVSV port(3 in Fig.) while the coolant temperature is below 40°C . Air should not come out of another port(4 in Fig.).

If the ports(3 and 4 in Fig.) is in connection each other, it is caused by faulty BVSV, so BVSV should be replaced.

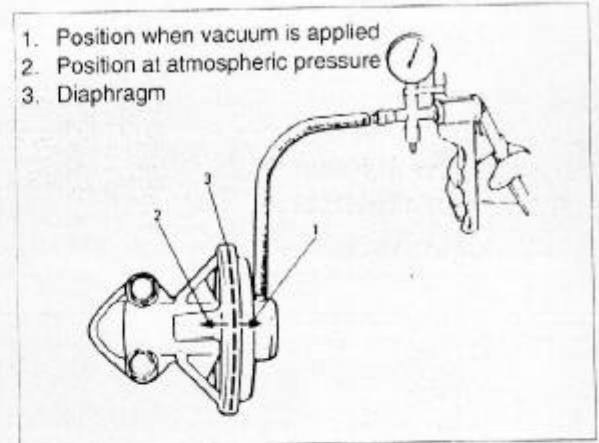


FIG. 1H-3 CHECKING EGR VALVE

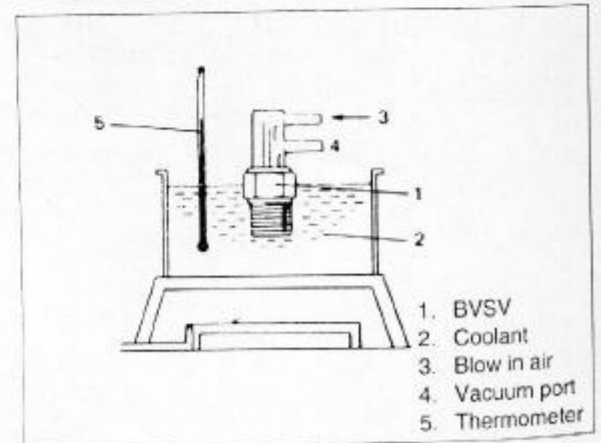
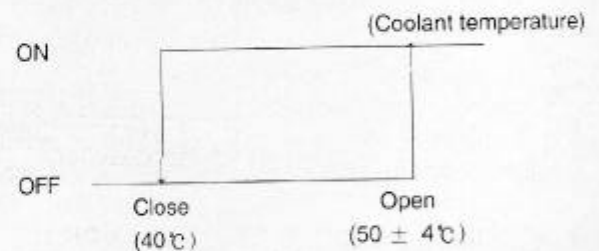


FIG. 1H-4 CHECKING BVSV

b. BVSV Check II

Check in the same method as in checking I. However, as for check II, when the coolant is heated over 50°C by heater, BVSV ports(3 and 4 in Fig.) should be connected each other. No continuity between the ports shows BVSV faulty, so replace it.

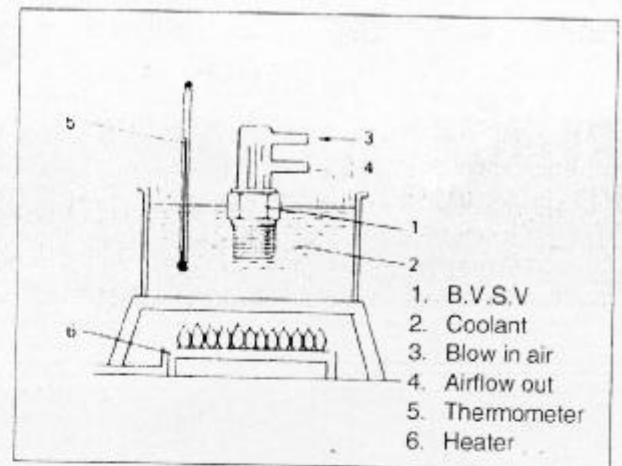


FIG. 1H - 5 CHECKING B.V.S.V

EMISSION CONTROL SYSTEM

Canister gathers the evaporizing fuel gas produced in fuel tank and float chamber where the evaporized gas is apt to be produced. The gas flows into the combustion chamber through intake manifold for combustion when driving engine.

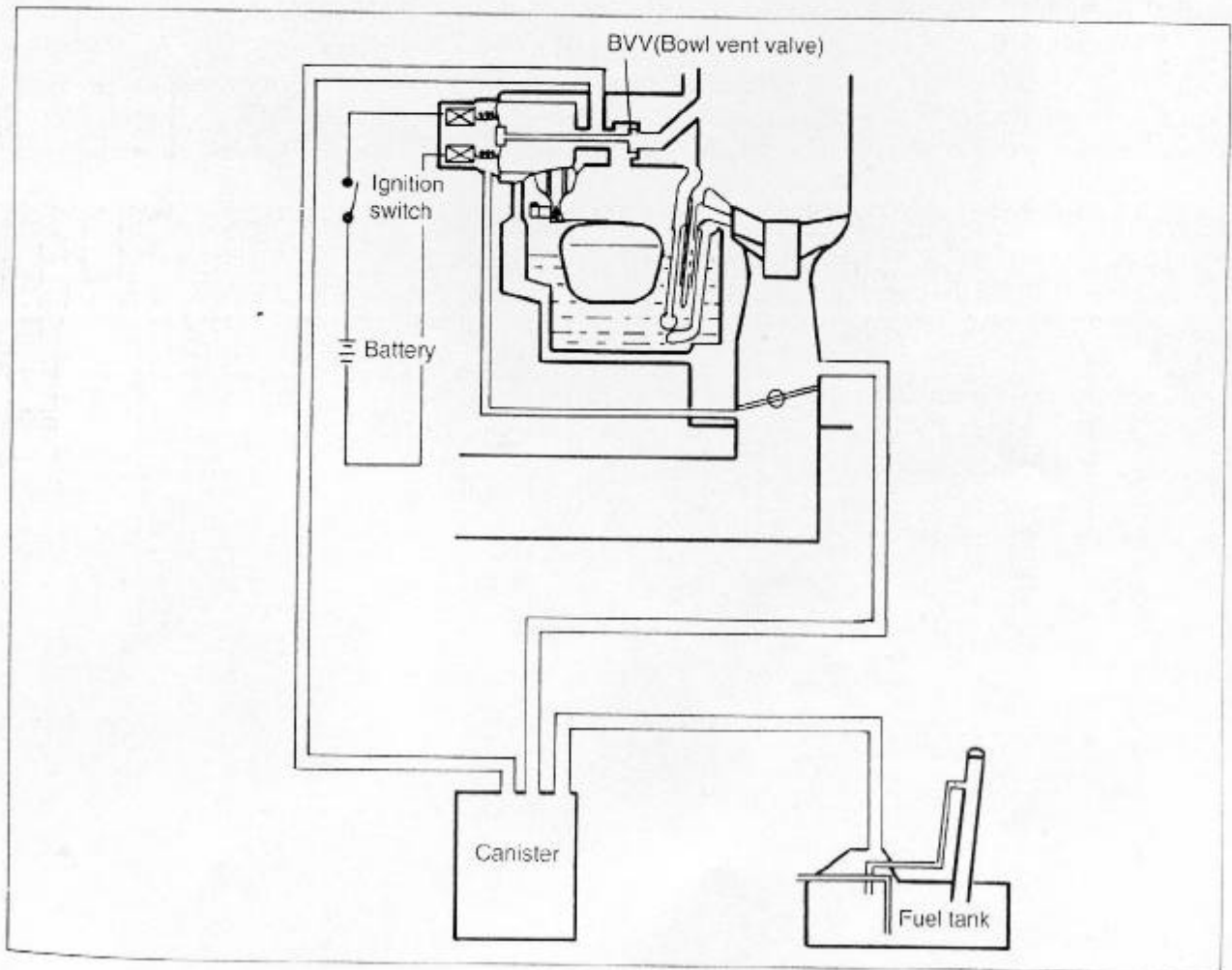


FIG. 1H - 6 EVAPORIZED FUEL GAS CONTROL SYSTEM DIAGRAM

Components

Canister

It always gathers evaporizing gas produced from the fuel tank, and the evaporized gas produced from float chamber of carburetor while engine stops. The evaporized gas is refined by the negative pressure of intake manifold under the specified condition while driving engine.

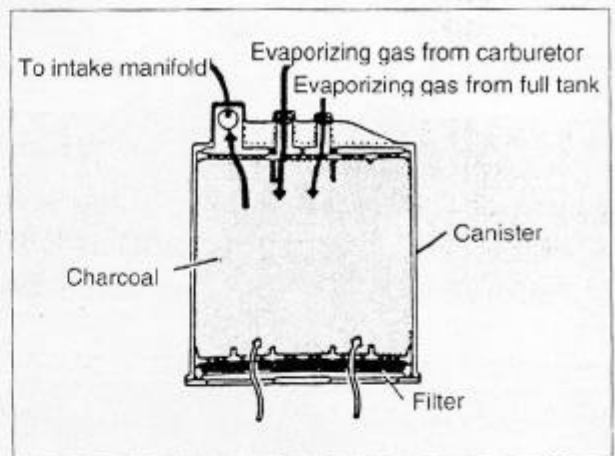


FIG. 1H — 7 CANISTER

a. Check I

Blow out strongly at the air port under canister to inlet, and check the airflow.

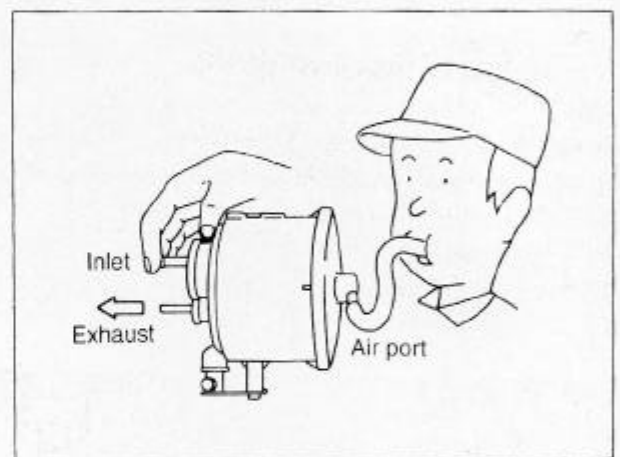


FIG. 1H — 8 CHECKING CANISTER

b. Checking II

Clog the inlet of canister with hand and blow out at the air port below, and check airflow to exhaust port.

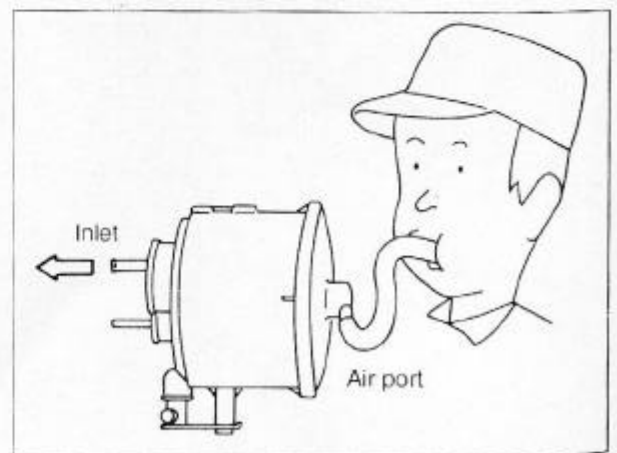


FIG. 1H — 9 CHECKING CANISTER

2- way check valve

- Remove 2-way check valve.
- Blow in air from black side to orange side to check that airflow is not interrupted.
- Check airflow from orange side to black side.
- If there is no airflows through the valve or weak airflows, replace 2-way check valve.

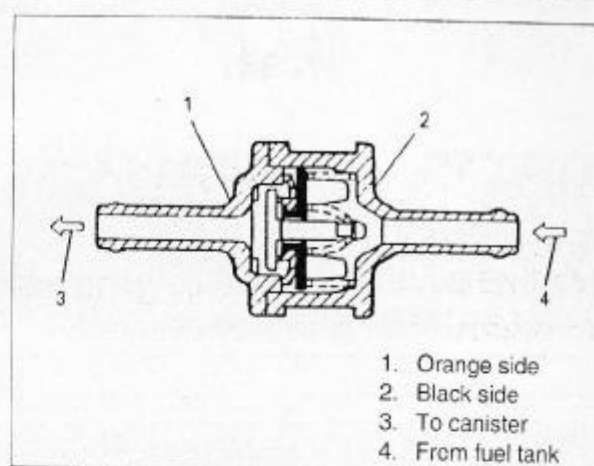


FIG. 1H— 10 2-WAY CHECK VALVE

BVV(Bowl Vent Valve)

When ignition switch is turned OFF, the temperature rises in the engine room to make fuel in float chamber evaporize producing HC into the atmosphere. BVV is to prevent the HC from exhausting into the atmosphere. With ignition switch OFF, BVV closes air vent passage of carburetor to induce the evaporizing gas to canister for strong.

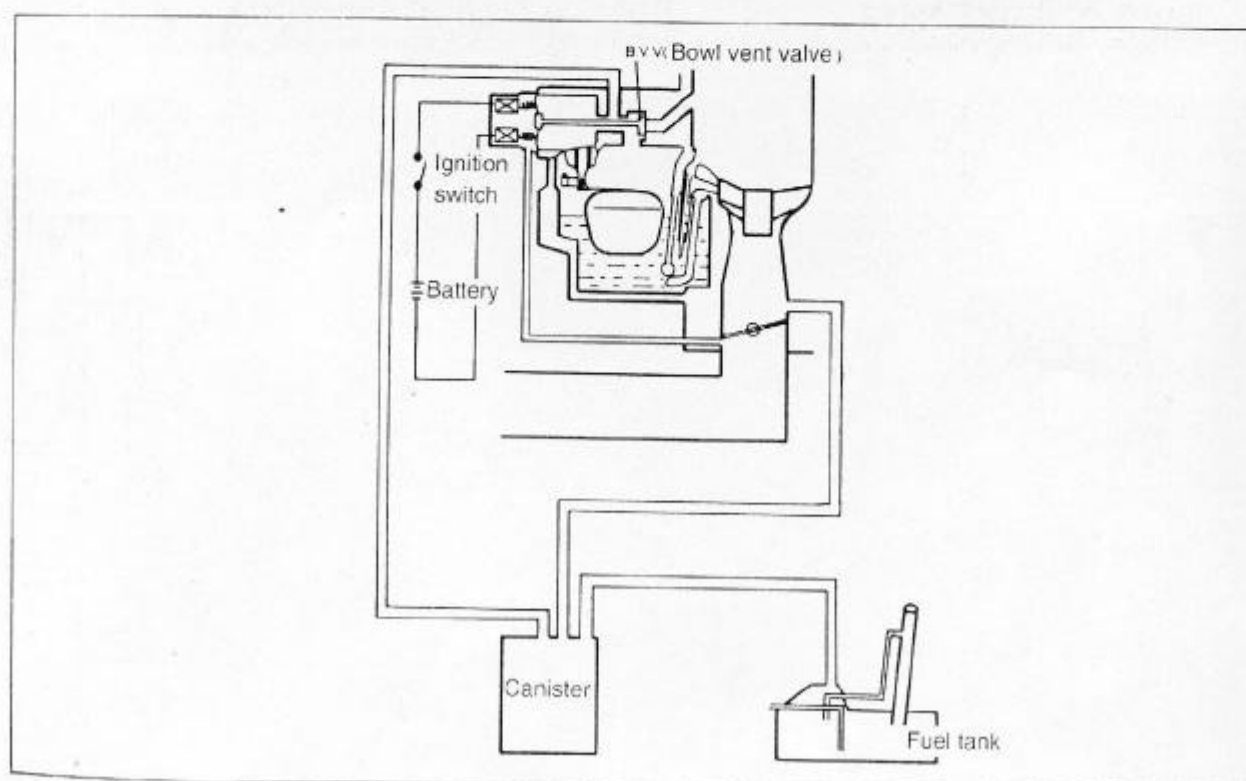


FIG. 1H— 11 BVV OPERATION

BLOW-BY GAS RECIRCULATION SYSTEM

It is a device to recirculate the blow-by gas into inlet system for recombustion preventing it from flowing out into the atmosphere.

PCV(positive crankcase ventilation) valve operates to make small amount of blow-by gas flow into the intake manifold when the intake manifold is in large negative pressure, and to make large amount of blow-by gas flow into the intake manifold when the negative pressure is low.

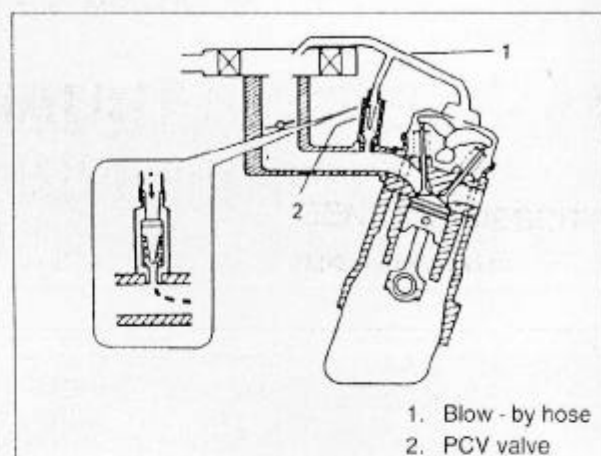


FIG. 1H — 12 BLOW-BY GAS RECIRCULATION SYSTEM

In general, the amount of produced blow-by gas depends on the different load applied to engine. That is, when lightly loaded, blow-by gas is produced in small amount to open the PCV valve a little, and when heavily loaded, it is produced in a large amount to open PCV valve widely.

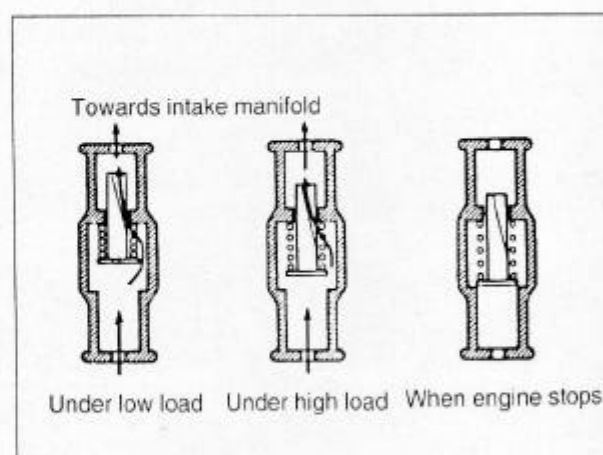


FIG. 1H — 13 PCV VALVE