



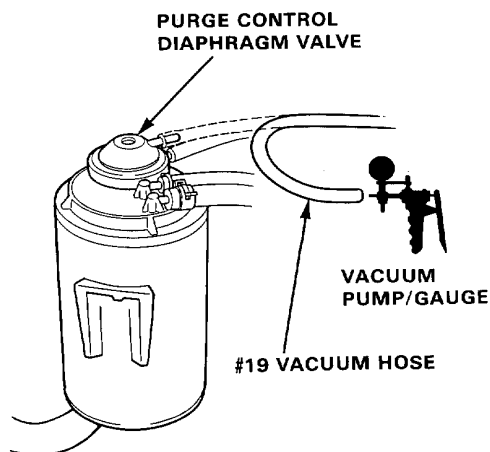
## Evaporative Emission Controls

(KX, KS, KG, KQ)

### Testing (COLD ENGINE)

NOTE: Engine coolant temperature must be below 63 °C (145°F)

1. Disconnect the vacuum hose (KQ: #19) at purge control diaphragm valve and connect vacuum pump/gauge to the hose.



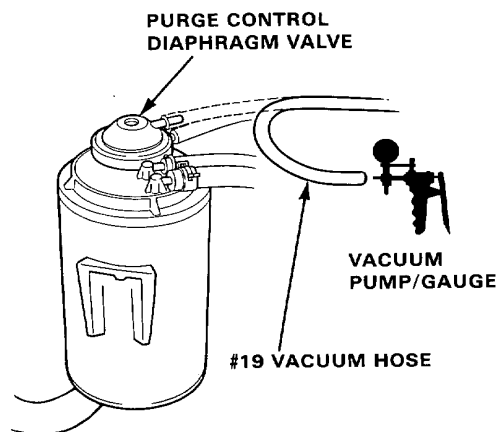
2. Start the engine and allow to idle.

There should be no vacuum.

- If there is no vacuum, go to hot engine test (next column).
- If there is vacuum, go to troubleshooting (page 6-119).

### Testing (HOT ENGINE)

1. Disconnect the vacuum hose (KQ: #19) at the purge control diaphragm valve and connect a vacuum pump/gauge to the hose.



2. Start the engine and warm up to normal operating temperature (the cooling fan comes on). Block rear wheels and set the parking brake. Jack up the front of the car and support with safety stands.

**⚠ WARNING** Block rear wheels before jacking up front of car.

Place the shift or selector lever in 2nd gear or "2" range and accelerate above 5 km/h, 2,000 min<sup>-1</sup> (rpm).

There should be vacuum.

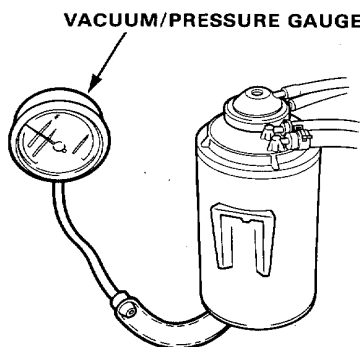
- If there is vacuum, go to step 3.
  - If there is no vacuum, check the #19 and #12 vacuum line for proper connection, cracks, blockage or disconnected hose. If OK, go to troubleshooting (page 6-119).
3. Disconnect a vacuum pump/gauge and reconnect hose.
  4. Remove fuel filler cap.

(cont'd)

# Emission Control System

## Evaporative Emission Controls (cont'd)

5. Remove the canister purge air hose from frame and connect hose to a vacuum gauge as shown.



6. Place the shift or selector lever in 2nd gear or "2" range and raise the engine speed to 3,500 min<sup>-1</sup> (rpm). Vacuum should appear on the gauge within 1 minute.

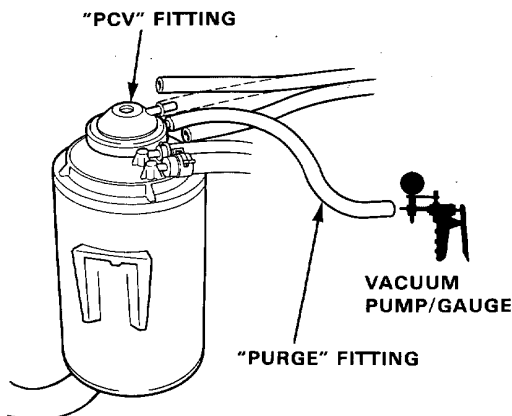
- If vacuum appears on the gauge in 1 minute, remove the gauge and go on to step 8.
- If no vacuum, disconnect the vacuum gauge and reinstall the fuel filler cap.

7. Remove the charcoal canister and check for signs of damage.

- If damaged, replace the canister.
- If OK, go on to step 8.

8. Stop the engine. Disconnect the hose from the canister PCV fitting. Connect a vacuum pump to the canister PURGE fitting as shown, and apply vacuum.

Vacuum should remain steady.



- If vacuum remains steady, go on to step 9.

- If vacuum drops, replace the canister and retest.

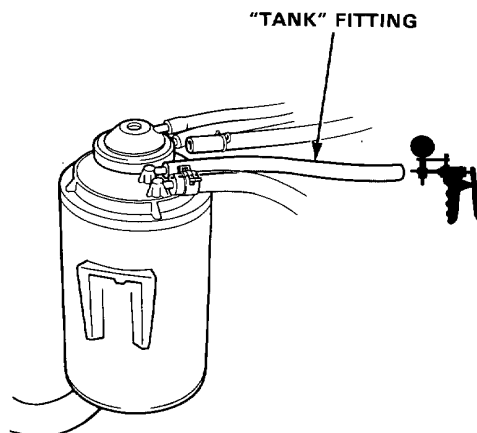
9. Restart the engine. Reconnect the hose to the canister PCV fitting, and raise engine to 3,500 min<sup>-1</sup> (rpm) (in 2nd gear or "2" range).

PURGE side vacuum should drop to zero.

- If PURGE side vacuum does not drop to zero, replace the canister and retest.

10. Connect a vacuum pump to TANK fitting as shown, and apply vacuum.

If should not hold vacuum.



- If it does not hold vacuum, reinstall fuel filler cap and canister; test is complete.

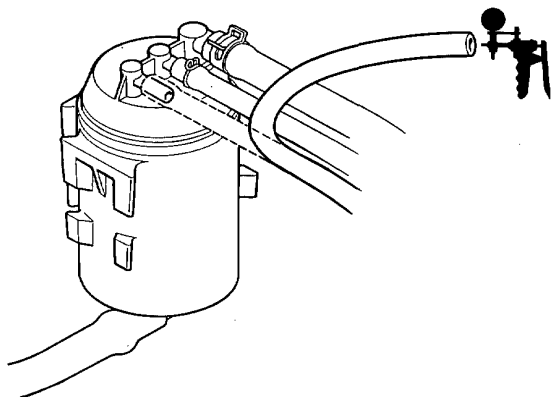
- If it holds vacuum, replace canister and retest.



(Except KX, KS, KG, KQ)

### Testing

1. Disconnect vacuum hose at the charcoal canister, connect a vacuum pump/gauge to hose.



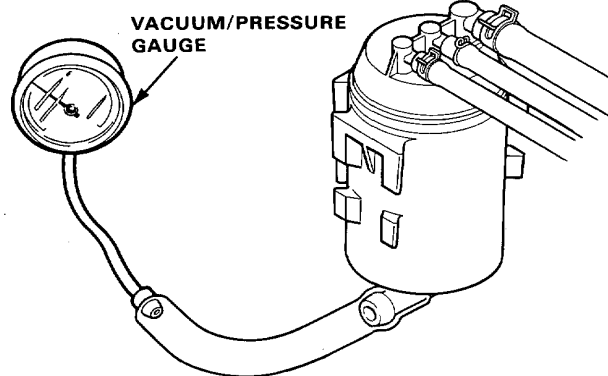
2. Start the engine and raise speed to 3,500 min<sup>-1</sup> (rpm).

There should be vacuum.

- If vacuum is available, go on to step 3.
- If vacuum is not available, check the vacuum line.

3. Disconnect a vacuum pump/gauge and reconnect hose. Remove fuel filler cap.

4. Remove canister purge air hose from frame and connect hose to a vacuum gauge as shown.



5. Raise engine speed to 3,500 min<sup>-1</sup> (rpm). Vacuum should appear on gauge within 1 minute.

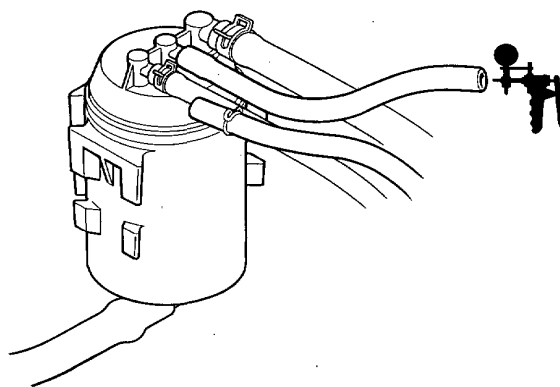
- If vacuum appears on gauge in 1 minute, remove gauge and go on to step 7.
- If no vacuum, disconnect a vacuum pump/gauge and go on to step 6.

6. Remove charcoal canister and check for signs of damage or defects.

- If defective, replace the charcoal canister.
- If OK, except KY: test is complete (KY: go on to step 7).

7. KY:

Connect vacuum pump/gauge to TANK fitting as shown, and apply vacuum.



- If vacuum does not remain steady, test is complete.
- If vacuum remains steady, replace the charcoal canister.

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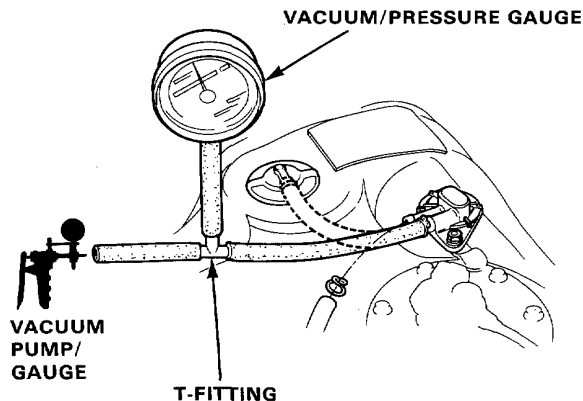
# Emission Control System

## Evaporative Emission Controls (cont'd)

(KX, KS, KG, KO, KY)

### Two-Way Valve

1. Remove the filler cap.
2. Remove vapor line from the fuel tank and connect a T-fitting from a vacuum gauge and vacuum pump as shown.

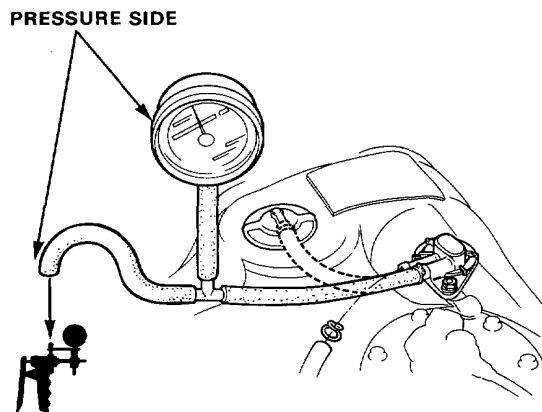


3. Slowly draw a vacuum while watching the gauge.

Vacuum should stabilize at 5 to 15 mmHg (0.2 to 0.6 in. Hg).

- If vacuum stabilizes momentarily (two-way valve opens) between 5 and 15 mmHg (0.2 and 0.6 in. Hg), go on to Step 4.
- If vacuum stabilizes (valve opens) below 5 mmHg (0.2 in. Hg) or above 15 mmHg (0.6 in. Hg), install new valve and retest.

4. Move hand pump hose from vacuum to pressure fitting, and move vacuum gauge hose from vacuum to pressure side as shown.



5. Slowly pressurize the vapor line-while watching the gauge.

Pressure should stabilize at 10 to 35 mmHg (0.4 to 1.4 in. Hg).

- If pressure momentarily stabilizes (valve opens) at 10 to 35 mmHg (0.4 to 1.4 in. Hg), the valve is OK.
- If pressure stabilizes below 10 mmHg (0.4 in. Hg) or above 35 mmHg (1.4 in. Hg), install a new valve and retest.



# **Troubleshooting Flowchart    Purge Cut-off Solenoid Valve** (KX, KS, KG, KQ)

Inspection of Purge Cut-off Solenoid valve.

Open the control box.

Disconnect the lower vacuum hose of the solenoid valve from the joint and connect a vacuum pump.

Disconnect vacuum hose (KQ:# 19) of the solenoid valve from the vacuum hose manifold and connect a vacuum gauge.

Start the engine.

Apply vacuum.

Is vacuum indicated on the gauge ?

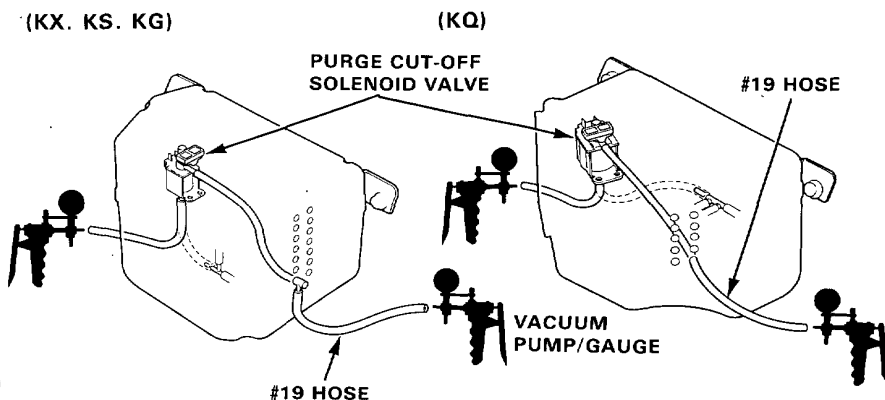
NO

Block rear wheels and set the parking brake. Jack up the front of the car and support with safety stand.

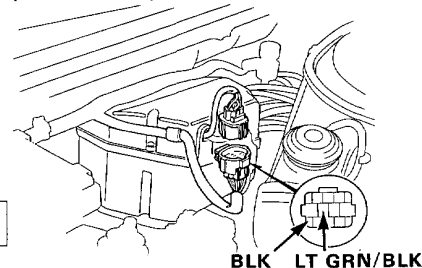
Place the shift or selector lever in second or "2" and accelerate above 5 km/h, 2,000 min<sup>-1</sup> (rpm).

(To page 6-120)

(KX, KS, KG)



(KX, KS, KG)



Turn the ignition switch OFF.

Disconnect the connector on the control box.

Start the engine.

Measure voltage between;  
KX, KS, KG: LT GRN/BLK (+) and BLK (-) terminals.  
KQ: ORN (+) and BLK (-) terminals.

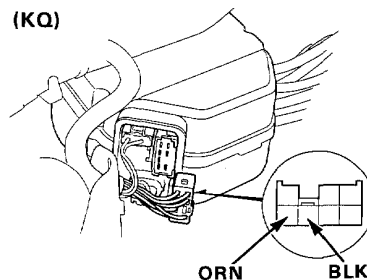
Is there battery voltage ?

NO

Measure voltage between;  
KX, KS, KG: LT GRN/BLK (+) and body ground.  
KQ: ORN (+) and body ground.

(To page 6-120)

(KQ)



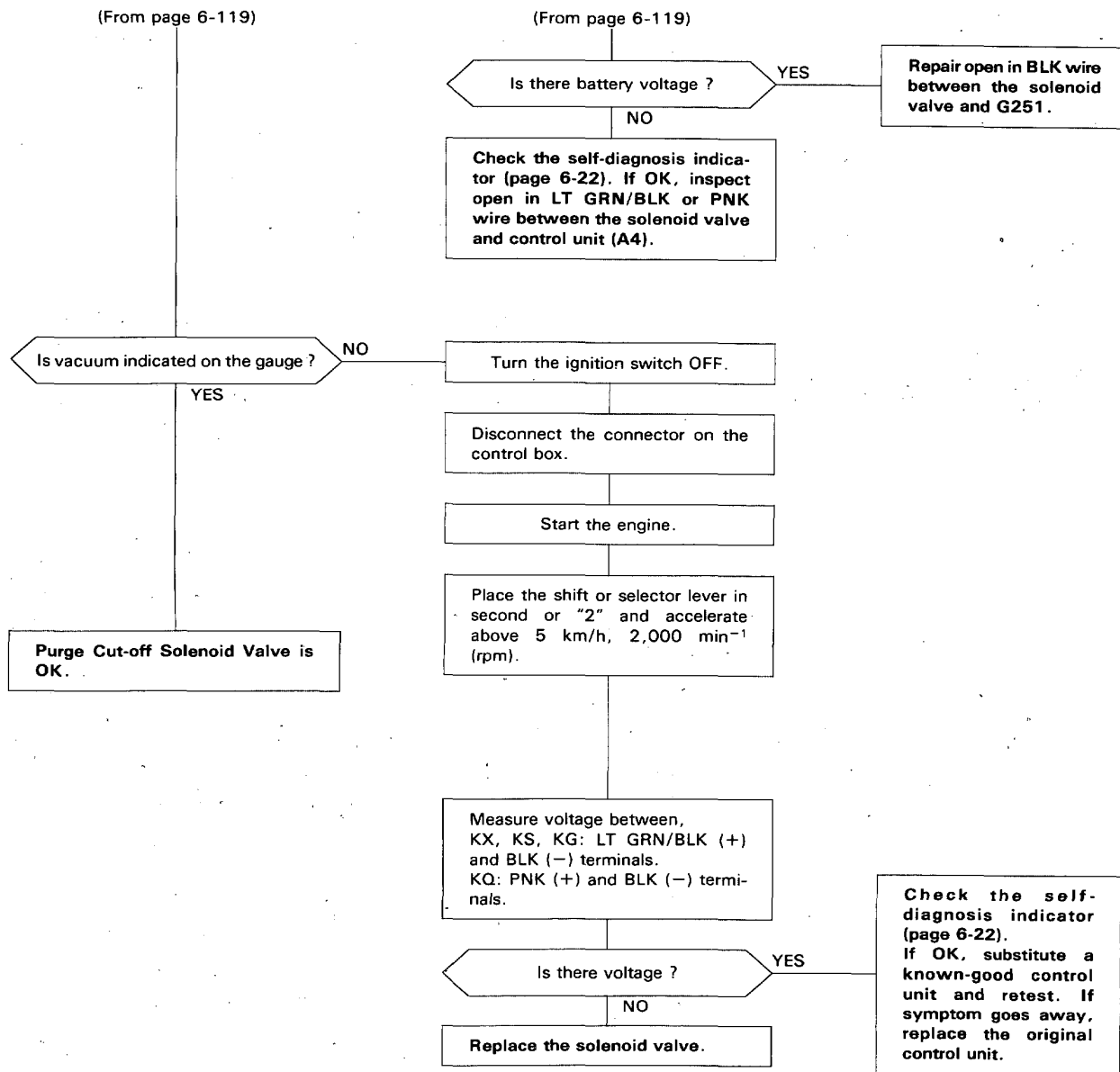
Replace the solenoid valve.

**⚠ WARNING** Block rear wheels before jacking up front of car.

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# Emission Control System

## Evaporative Emission Controls (cont'd)





# **Troubleshooting Flowchart    Air Vent Cut-off Solenoid Valve** **(Except KT, KP)**

Inspection of Air Vent Cut-off Solenoid Valve.

Disconnect the vacuum hose from the vacuum hose manifold.

Apply 100 mmHg (4 in.Hg) vacuum to the hose.

Does solenoid valve hold vacuum ?

YES

Replace the solenoid valve.

NO

Turn the ignition switch ON.

Apply 100 mmHg (4 in.Hg) vacuum to the hose.

Does solenoid valve hold vacuum ?

NO

Turn the ignition switch OFF.

Disconnect the connector of the solenoid valve.

Turn the ignition switch ON.

Measure voltage between BLK/YEL (+) terminal and body ground.

Is there battery voltage ?

NO

Repair open in BLK/YEL wire between the ignition switch and the connector as well as No.2 fuse.

VACUUM  
PUMP/GAUGE

AIR VENT CUT-OFF  
SOLENOID VALVE

BLK/YEL

Air Vent Cut-off Solenoid Valve is OK.

Replace the solenoid valve.