

EMISSION CONTROL SYSTEMS

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N25AA--

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SPECIFICATIONS

GENERAL SPECIFICATIONS

N25CA--

Items	Specifications
Crankcase emission control system	Closed type with positive crankcase ventilation valve"
Evaporative emission control system Canister	Canister storage type Charcoal type
Exhaust emission control system Exhaust gas recirculation system EGR valve <Except Federal and Canada-I .8L Engine> Thermo valve <Federal and Canada–2.0L DOHC Engine> EGR temperature sensor <California> EGR control solenoid valve <California> Catalytic converter Location	Vacuum-activated diaphragm type Bimetal type Thermistor type Duty cycle solenoid valve Monolith type Under floor

SERVICE SPECIFICATIONS

N25CB--

Items	Specifications
Purge-control solenoid valve coil resistance Ω	36-44 [at 20°C (68°F)]
Thermo valve closing temperature °C (°F)	65 (149)
EGR temperature sensor resistance $k\Omega$	60–83 [at 50°C (122°F)] 11-14 [at 100°C (212°F)]
EGR control solenoid valve coil resistance Ω	36-44 [at 20°C (68°F)]

TORQUE SPECIFICATIONS

N25CC--

Items	Nm	ft.lbs.
Positive crankcase ventilation valve	8-12	6-8.5
EGR valve installation bolt <Federal and Canada-I .8L Engine> <2.0L DOHC Engine>	10–15 15-22	7.2–10 10–15.5
Thermo valve <Federal and Canada–2.0L DOHC Engine>	20–40	15–30
EGR temperature sensor	10–12	7.3-8.6

SEALANT

N25CE--

Items	Specified sealant
Thermo valve thread portion	MOPAR Part No.4318034 or equivalent

TROUBLESHOOTING

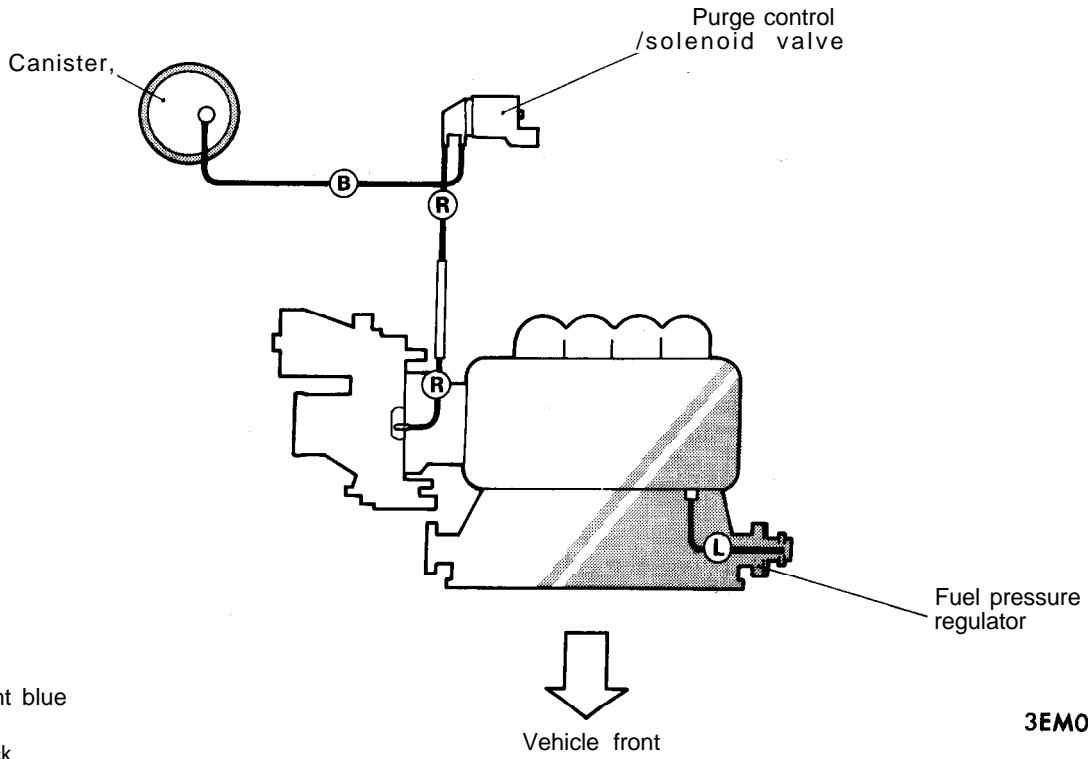
N25EA--

Symptom	Probable cause	Remedy
Engine will not start or hard to start	Vacuum hose disconnected or damaged The EGR valve is not closed Malfunction of the purge control solenoid valve	Repair or replace
Rough idle or engine stalls	The EGR valve is not closed. Vacuum hose disconnected or damaged	Repair or replace
	Malfunction of the positive crankcase ventilation valve	Replace
	Malfunction of the purge control system	Check the system; if there is a problem, check its component parts
Engine hesitates or poor acceleration	Malfunction of the exhaust gas recirculation system	Check the system; if there is a problem, check its component parts
Excessive oil consumption	Positive crankcase ventilation line clogged	Check positive crankcase ventilation system
Poor fuel mileage	Malfunction of the exhaust gas recirculation system	Check the system; if there is a problem, check its component parts

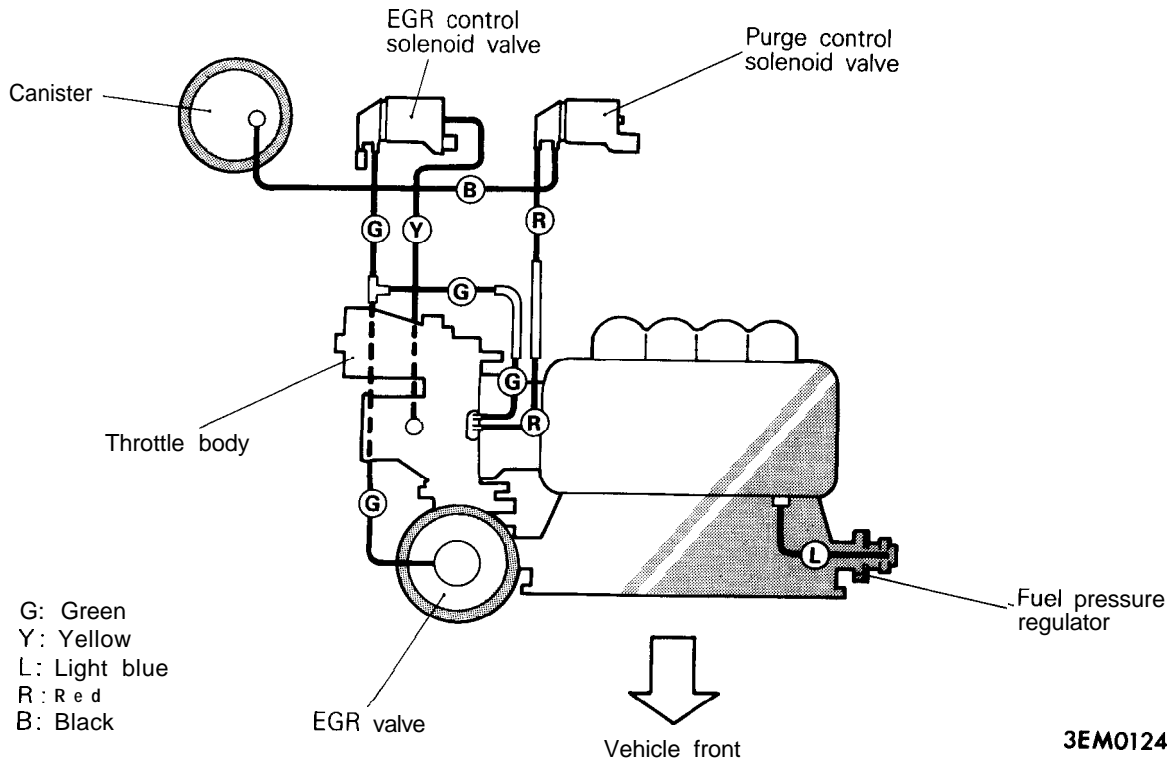
VACUUM HOSES

VACUUM HOSES ROUTING

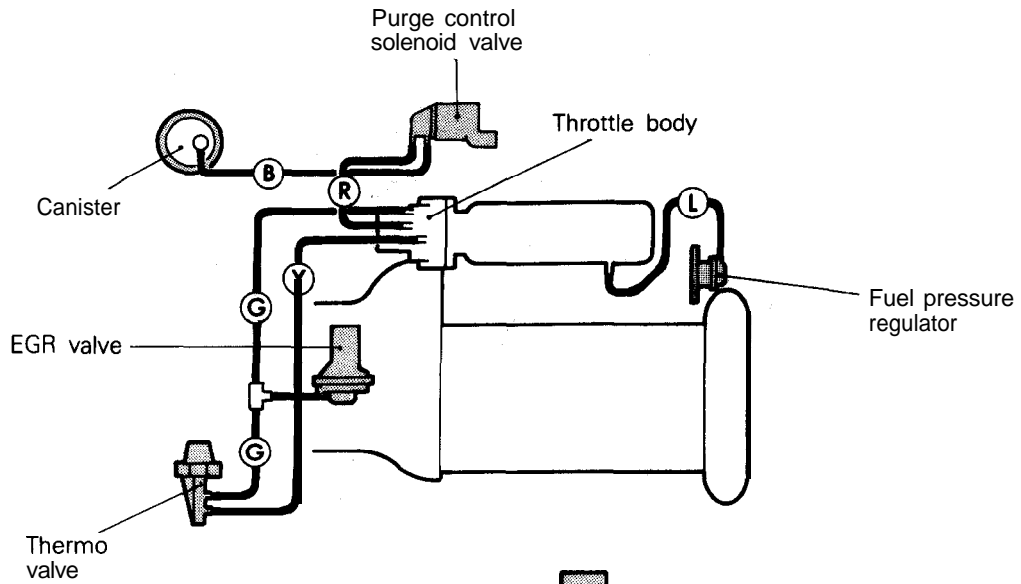
<Federal and Canada- 1.8L Engine>



<California– 1.8L Engine>



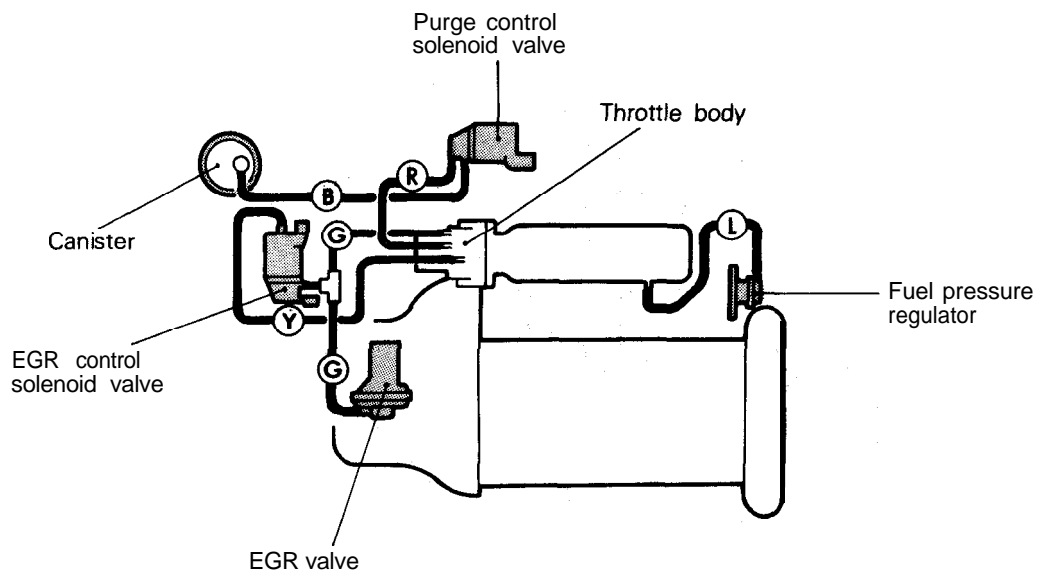
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Vehicle front

6EM0191

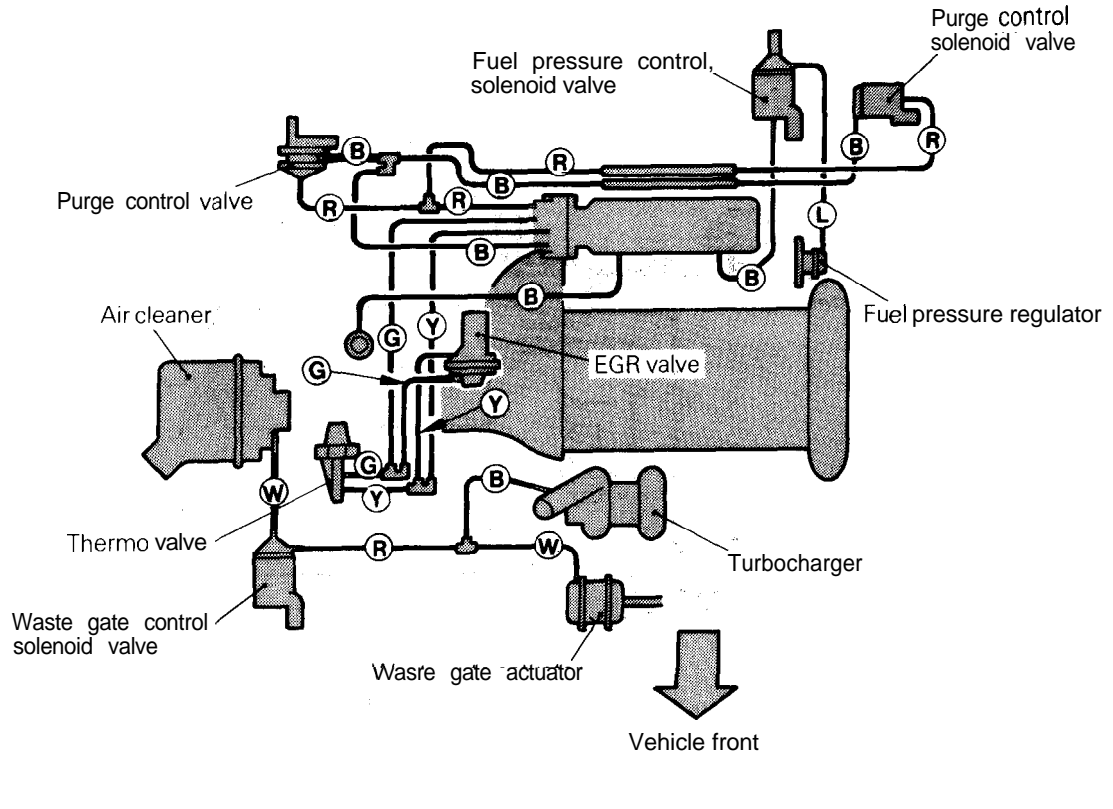
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Vehicle front

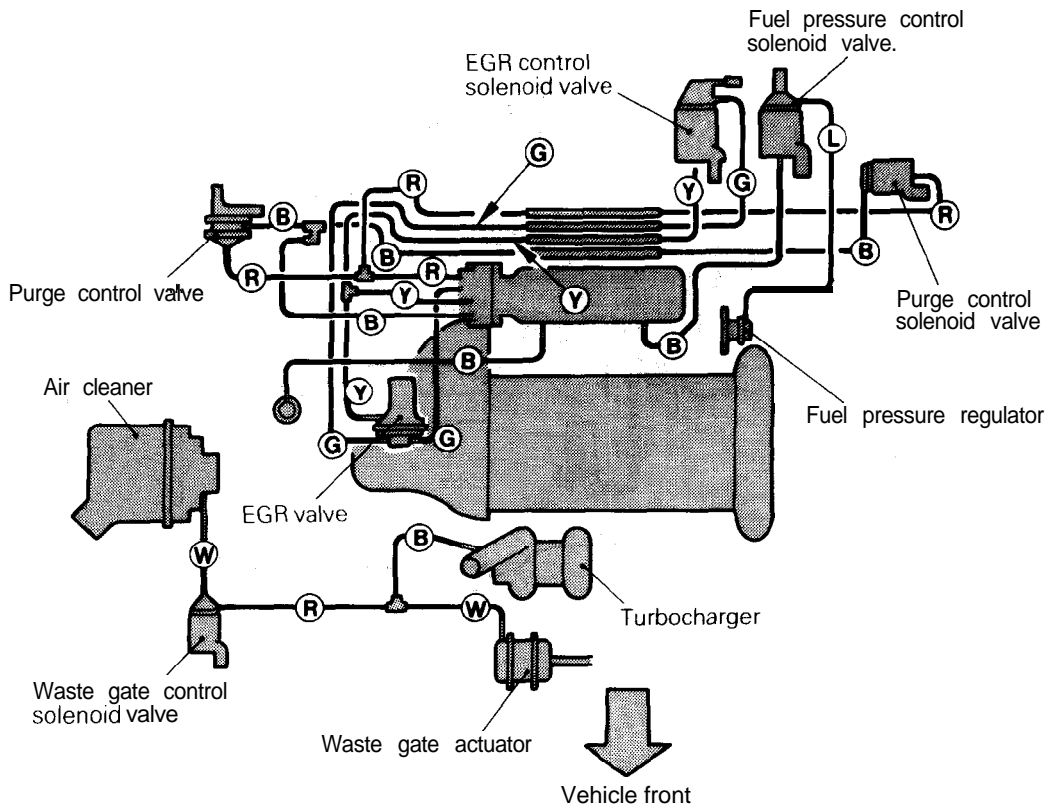
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<Federal and Canada–2.0L DOHC Engine Turbo>



6EM0222

<California–2.0L DOHC Engine Turbo>



6EM0223

INSPECTION

N25JCAD

- (1) Referring to the VACUUM HOSES ROUTING, confirm that the vacuum hoses are properly connected.
- (2) Check the hoses for irregularities (disconnection, looseness, etc.) and confirm that there is no breakage or damage.

INSTALLATION

N25JDAD

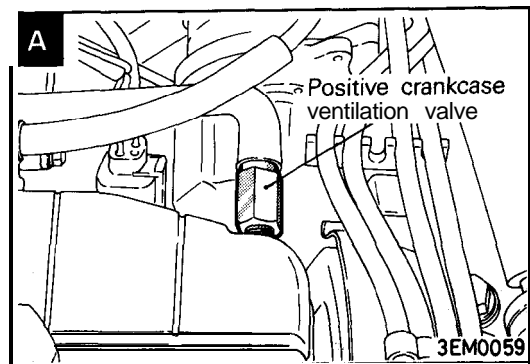
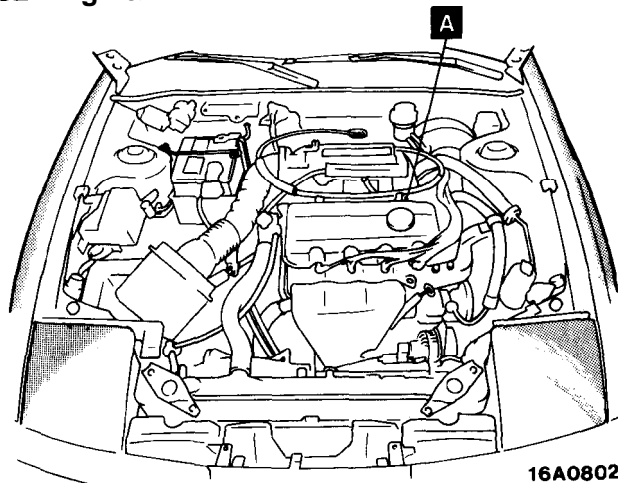
- (1) When connecting a hose, firmly press it onto the nipple.
- (2) Referring to the VACUUM HOSES ROUTING, connect the hoses correctly.

CRANKCASE EMISSION CONTROL SYSTEM

N25IA--

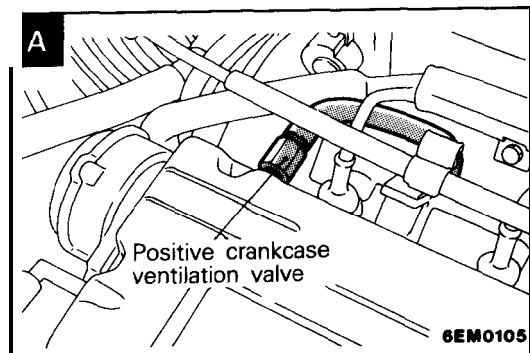
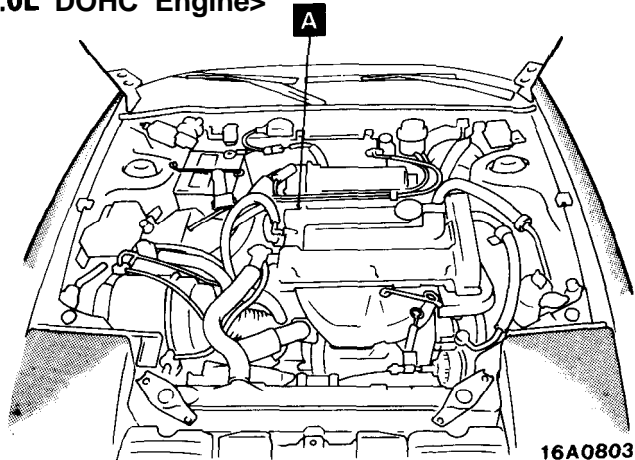
COMPONENTS LOCATION

<1.8L Engine>

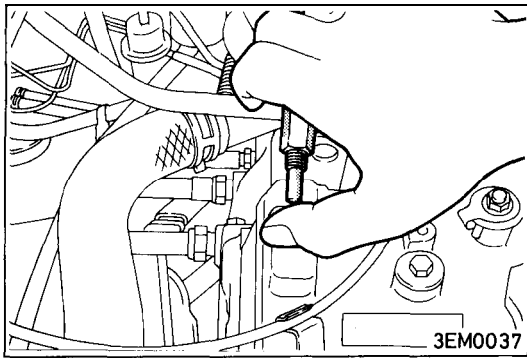


Name	Symbol
Positive crankcase ventilation valve	A

<2.0L DOHC Engine>



Name	Symbol
Positive crankcase ventilation valve	A



CRANKCASE VENTILATION SYSTEM INSPECTION

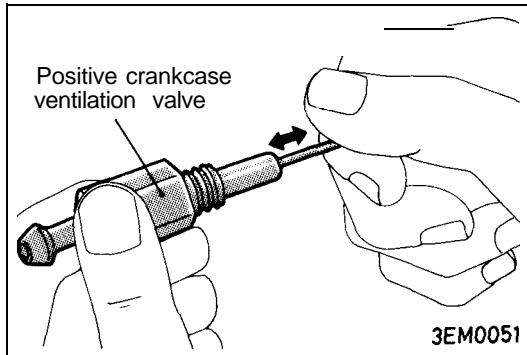
N25IAAH

- (1) After disconnecting the ventilation hose from the positive crankcase ventilation valve, disconnect the positive crankcase ventilation valve from the rocker cover, and reconnect the positive crankcase ventilation valve to the ventilation hose.
- (2) Idle engine, put finger on the opening end of the positive crankcase ventilation valve, and check that the negative pressure of the intake manifold is felt with finger.

NOTE

At this time, the plunger in the positive crankcase ventilation valve moves back and forth.

- (3) If negative pressure is not felt, clean or replace the positive crankcase ventilation valve.



POSITIVE CRANKCASE VENTILATION VALVE INSPECTION

- (1) Remove the positive crankcase ventilation valve.
- (2) Insert a thin stick into the positive crankcase ventilation valve from the threaded side to check that the plunger moves.
- (3) If the plunger does not move, the positive crankcase ventilation valve is clogged. Clean it or replace.

INSTALLATION

Install the positive crankcase ventilation valve and tighten to specified torque.

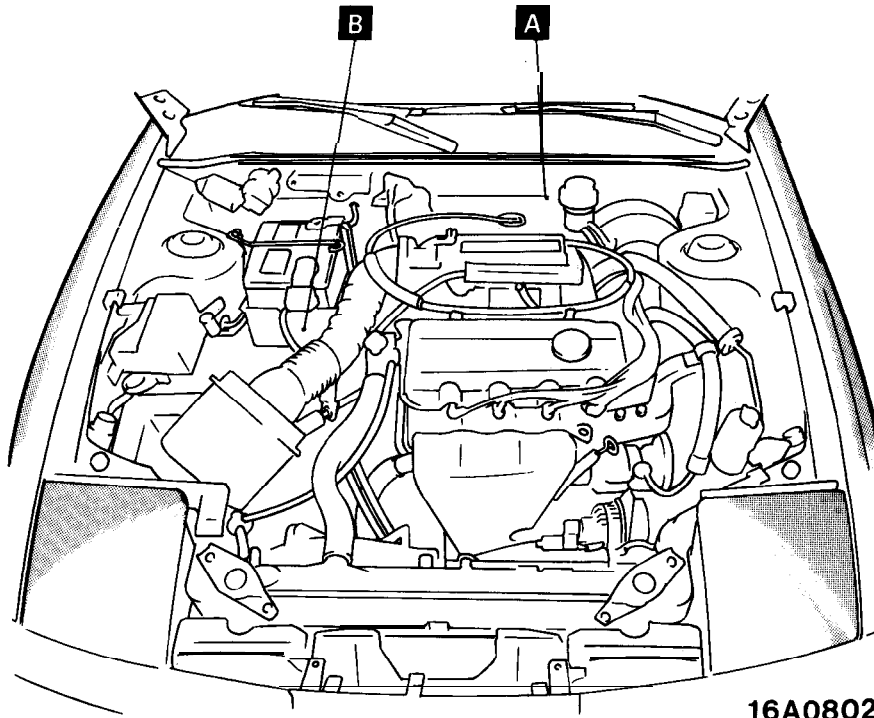
Specified tightening torque: 8-12 Nm (6-8.5 ft.lbs.)

EVAPORATIVE EMISSION CONTROL SYSTEM

N251B--

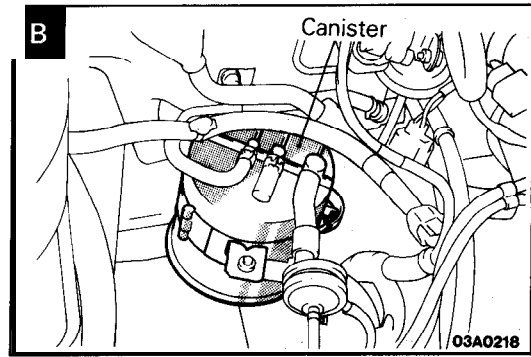
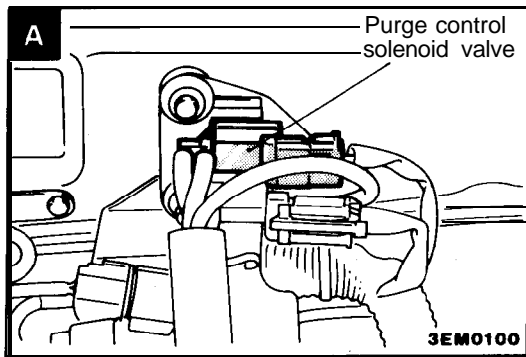
COMPONENTS LOCATION

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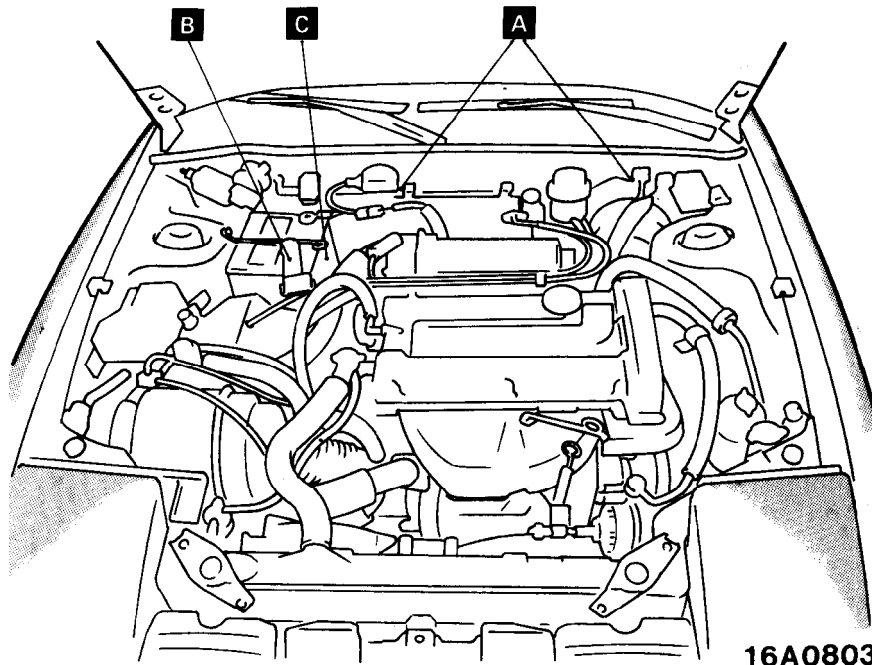


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Name	Symbol
Canister	B
Purge control solenoid valve	A

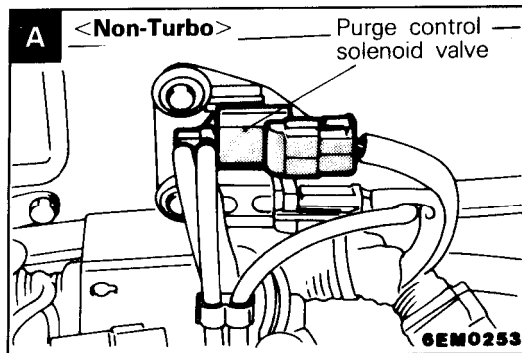


<2.0L DOHC Engine>

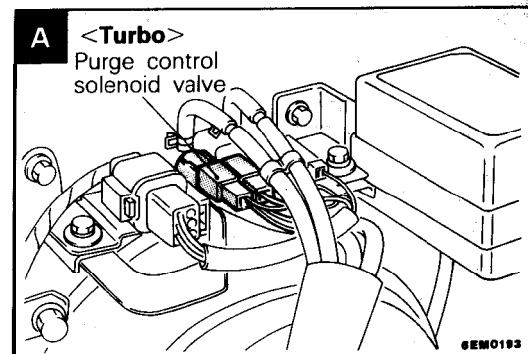


16A0803

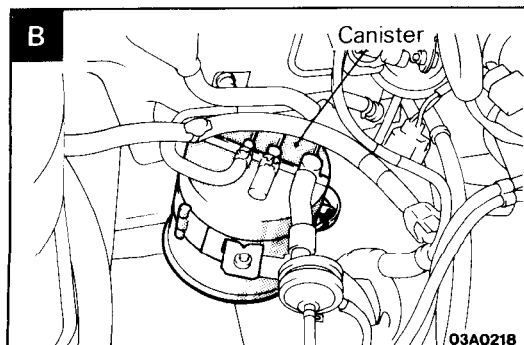
Name	Symbol
Canister	B
Purge control solenoid valve	A
Purge control valve <Turbo>	C



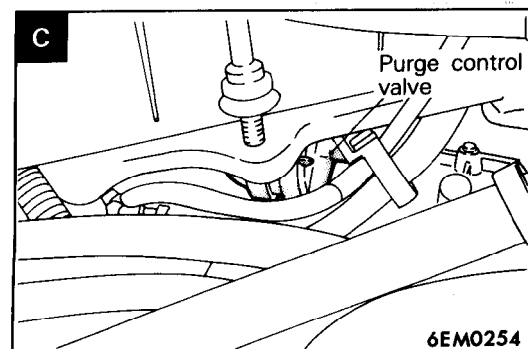
6EM0253



6EM0183



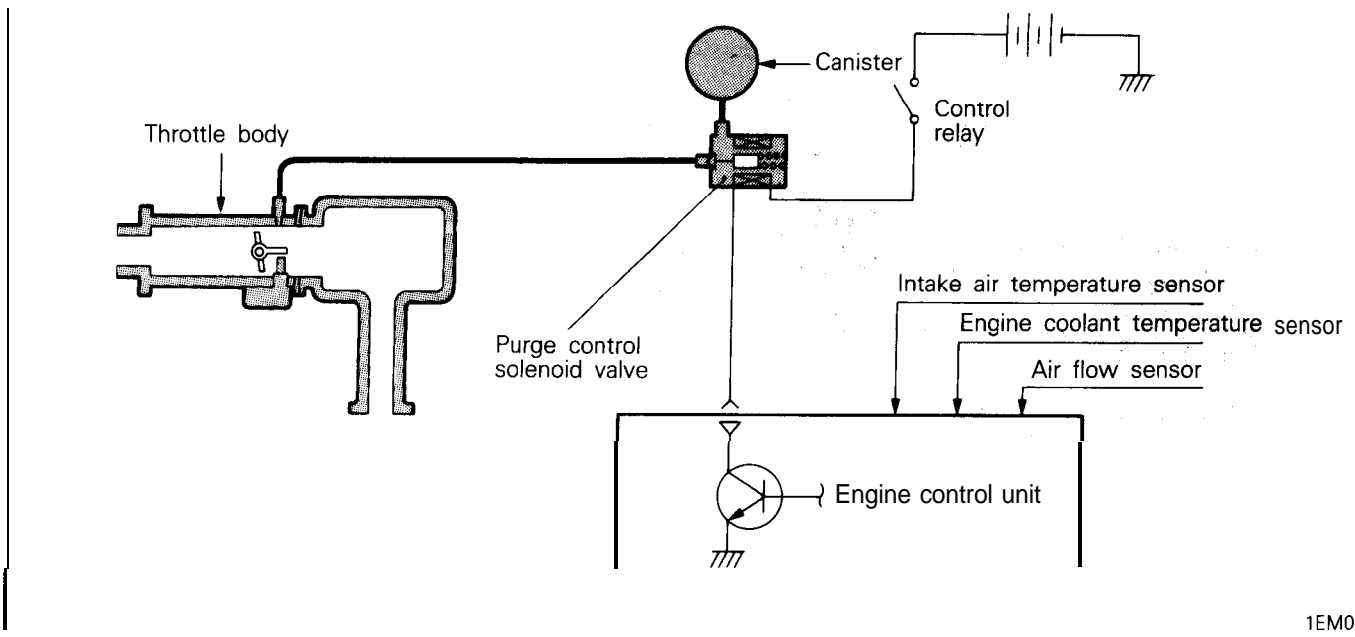
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6EM0254

PURGE CONTROL SYSTEM INSPECTION <Non-Turbo>

N251BBK



1EM0086

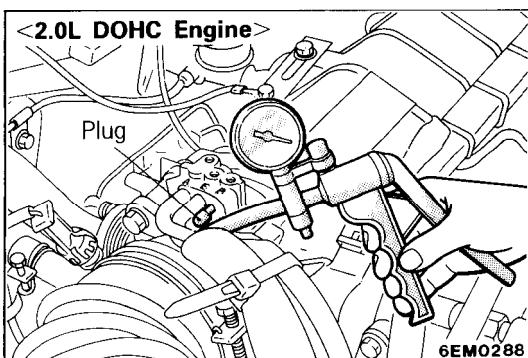
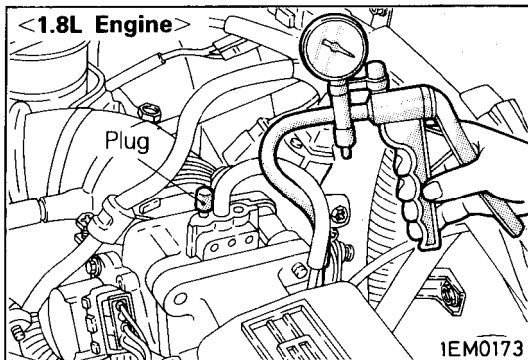
- (1) Disconnect the vacuum hose (red stripes) from the throttle body and connect it to a hand vacuum pump.
- (2) Plug the nipple from which the vacuum hose is disconnected.
- (3) Under the engine conditions shown below, check by applying vacuum from a hand vacuum pump.

When engine is cold-engine coolant temperature:
60°C (140°F) or less

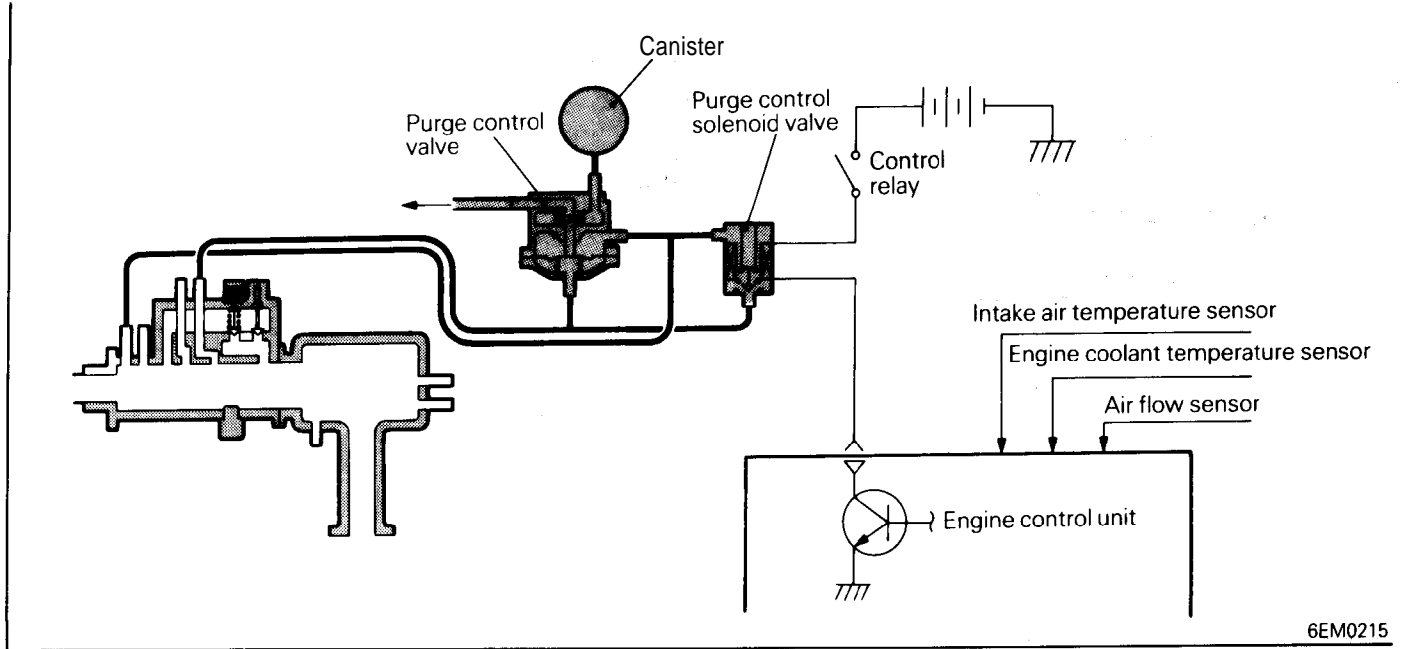
Engine operating condition	Applying vacuum	Result
Idling	375 mmHg (14.8 in.Hg.)	Vacuum is maintained
3,000 rpm		

When engine is hot-engine coolant temperature:
70°C (158°F) or higher

Engine operating condition	Applying vacuum	Result
Idling	375 mmHg (14.8 in.Hg.)	Vacuum is maintained
3,000 rpm within three minutes after starting engine	Try applying vacuum	Vacuum leaks
3,000 rpm after three minutes have elapsed after starting engine	375 mmHg (14.8 in.Hg.)	Vacuum will be maintained momentarily, after which it will leak. NOTE The vacuum will leak continuously if the altitude is 2,200 m (7,200 ft.) or higher, or the intake air temperature is 50°C (122°F) or higher.



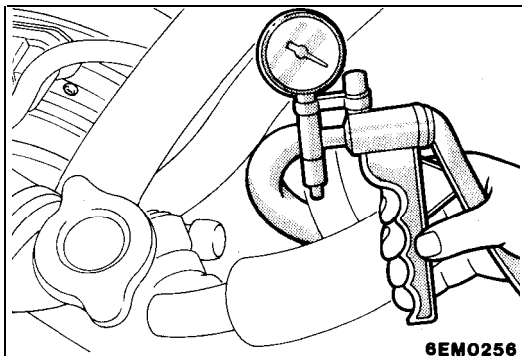
PURGE CONTROL SYSTEM INSPECTION <Turbo>



6EM0215

- (1) Disconnect the purge air hose from the air intake hose, and plug the air intake hose. Then, connect the hand vacuum pump to the purge air hose.
- (2) Under the engine conditions shown below, check by applying vacuum from a hand vacuum pump.

**When engine is cold-engine coolant temperature:
60°C (140°F) or less**

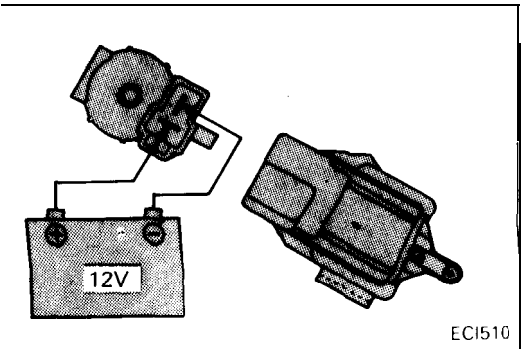
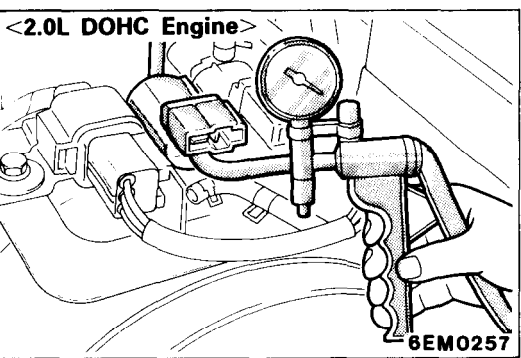
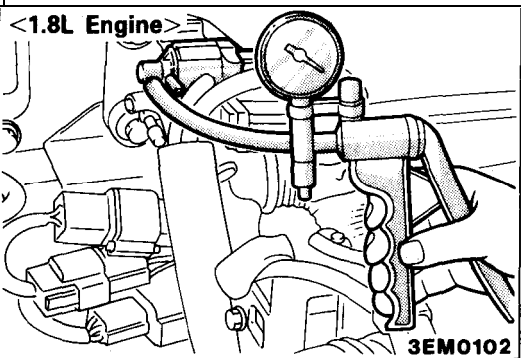
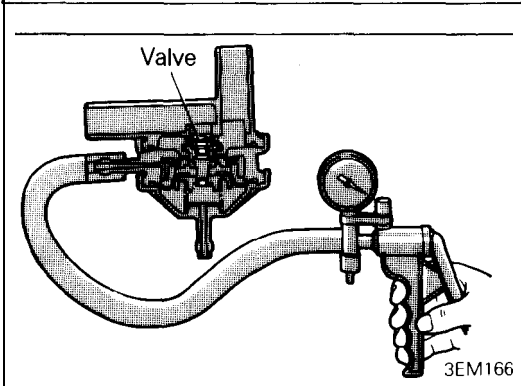
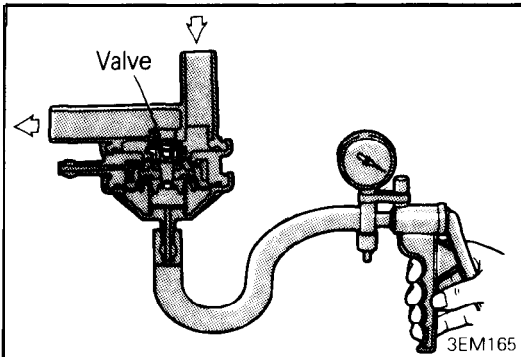


6EM0256

Engine operating condition	Applying vacuum	Result
Idling	375 mmHg (14.8 in.Hg.)	Vacuum is maintained
3,000 rpm		

**When engine is hot-engine coolant temperature:
70°C (158°F) or higher**

Engine operating condition	Applying vacuum	Result
Idling	375 mmHg (14.8 in.Hg.)	Vacuum is maintained
3,000 rpm within three minutes after starting engine	Try applying vacuum	Vacuum leaks
3,000 rpm after three minutes have elapsed after starting engine	375 mmHg (14.8 in.Hg.)	Vacuum will be maintained momentarily, after which it will leak. NOTE The vacuum will leak continuously if the altitude is 2,200 m (7,200 ft.) or higher, or the intake air temperature is 50°C (122°F) or higher.



PURGE CONTROL VALVE <Turbo>

N251BCCa

INSPECTION

- (1) Remove the purge control valve.
- (2) Connect a hand vacuum pump to, the vacuum nipple of the purge control valve.
- (3) Apply a vacuum of 400 mmHg (15.7 in.Hg.) and check airtightness.
- (4) Blow in air lightly from the canister side nipple and check conditions as follows.

Hand vacuum pump vacuum	Normal condition
0 mmHg (0 in.Hg.) (No vacuum is applied)	Air does not blow through
200 mmHg (8.0 in.Hg.) or more	Air blow through

- (5) Connect a hand vacuum pump to the positive pressure nipple of the purge control valve.
- (6) Apply a vacuum of 400 mmHg (15.7 in.Hg.) and check airtightness.

PURGE CONTROL SOLENOID VALVE

N251BFH

INSPECTION

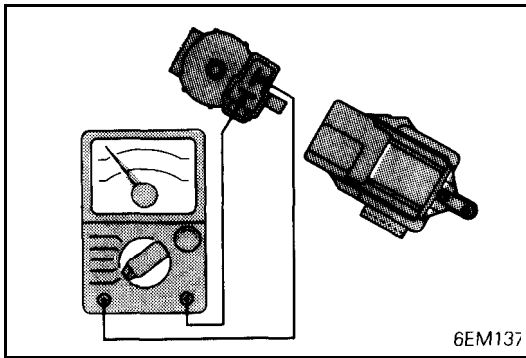
NOTE

When disconnecting the vacuum hose, make an identification mark on it so that it can be reconnected to the original position.

- (1) Disconnect the vacuum hoses (non stripe and red stripe hose) from the solenoid valve
- (2) Disconnect the harness connector from solenoid valve.
- (3) Connect a hand vacuum pump to the nipple to which the red-striped vacuum hose was connected.

- (4) Apply a vacuum and check for air-tightness when voltage applied directly to the purge control solenoid valve and when the voltage is discontinued.

Battery voltage		Result
Non-Turbo	When applied	Vacuum leaks
	When discontinued	Vacuum is maintained
Turbo	When applied	Vacuum is maintained
	When discontinued	Vacuum leaks



- (5) Measure the resistance between the terminals of the solenoid valve.

Standard value: 36-44 Ω [at 20°C (68°F)]

AIR FLOW SENSOR, ENGINE COOLANT TEMPERATURE SENSOR AND INTAKE AIR TEMPERATURE SENSOR

N25IBGB

To inspect these parts, refer to GROUP 14—MPI System Components.

AIR CONDITIONER SWITCH

N25IBHB

To inspect the air conditioner switch, refer to GROUP 24—Air Conditioner Switch.

OVERFILL LIMITER (TWO-WAY VALVE)

N25IBEB

To inspect the overfill limiter (two-way valve), refer to GROUP 14—Fuel Tank.

CANISTER

N25IBIB

To inspect the canister, refer to GROUP 14—Fuel Line and Vapor Line.

FUEL FILLER CAP INSPECTION

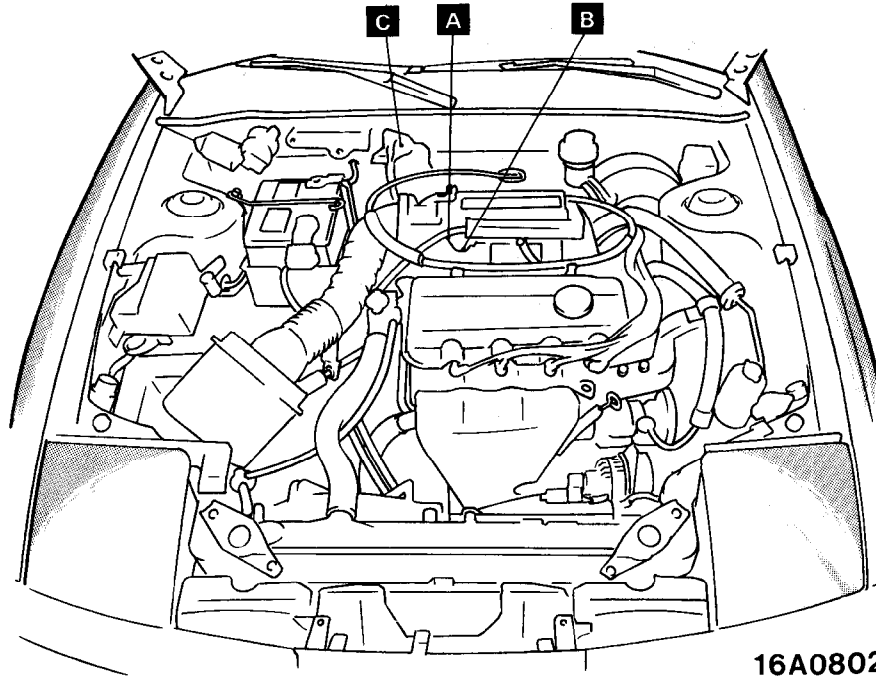
N25IBJA

Check the gasket of the fuel filler cap, and, the filler cap itself, for damage or deformation; replace the cap if necessary.

EXHAUST GAS RECIRCULATION (EGR) SYSTEM

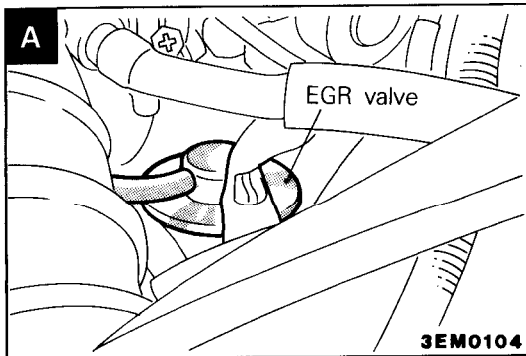
COMPONENTS LOCATION

<1.8L Engine>

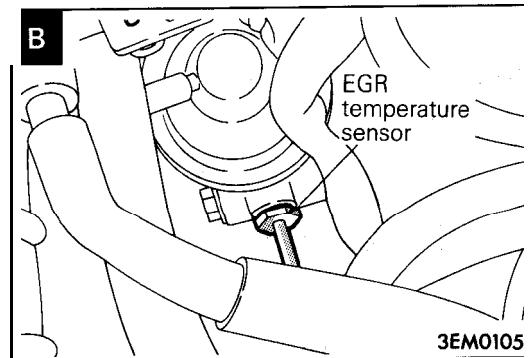


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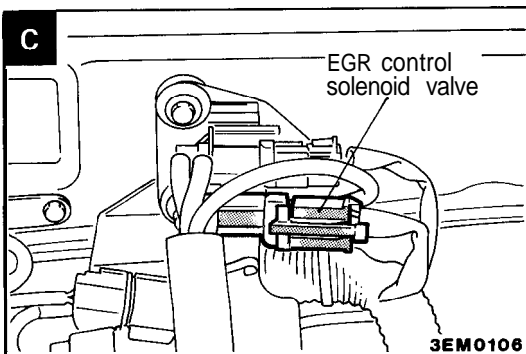
Name	Symbol
EGR control solenoid valve <California>	C
EGR temperature sensor <California>	B
EGR valve <California>	A



3EM0104

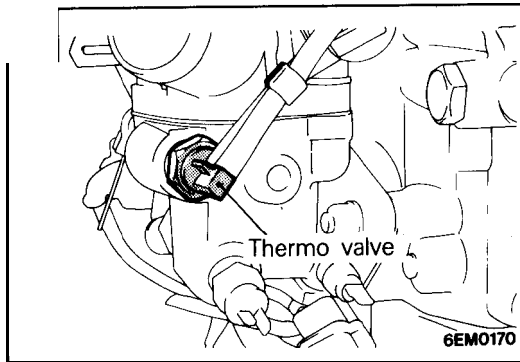
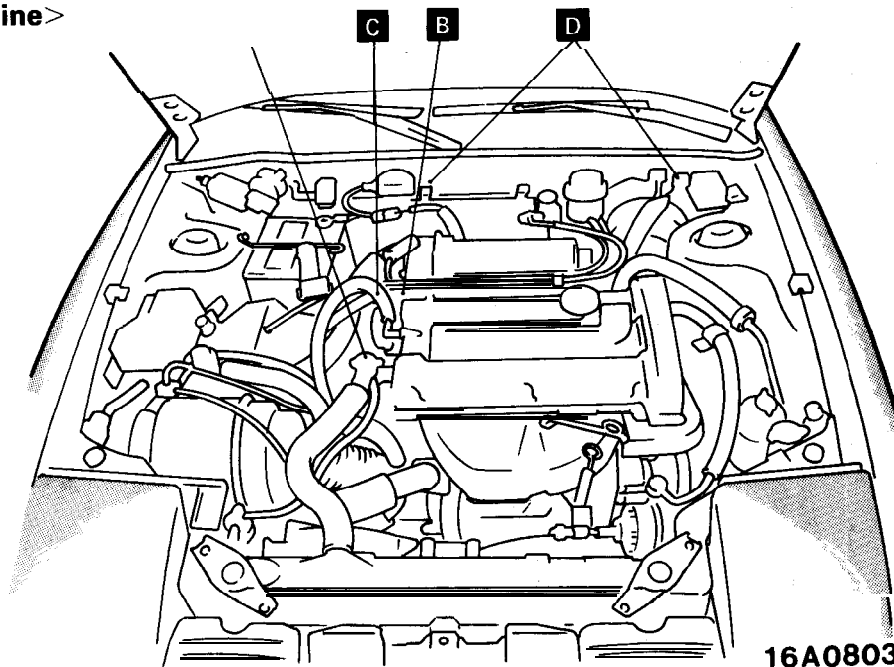


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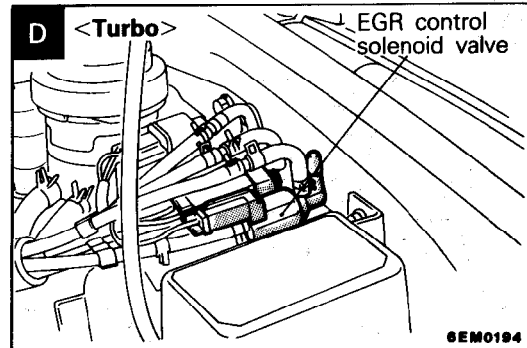
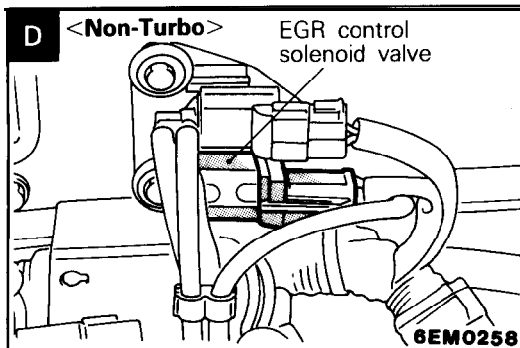
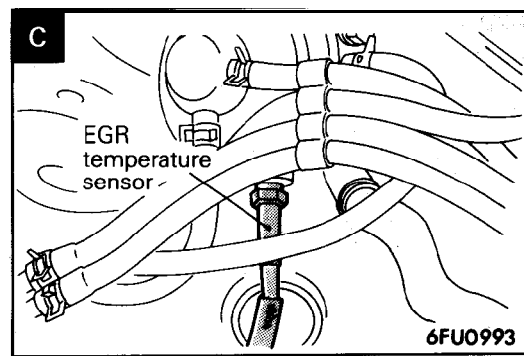
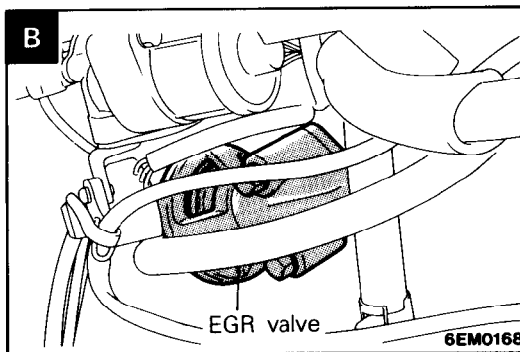


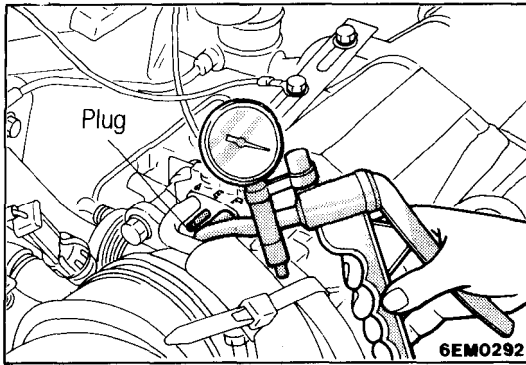
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<2.0L DOHC Engine>



Name	Svmbol
EGR control solenoid valve <California>	D
EGR temperature sensor <California>	C
EGR valve	B
Thermo valve <Federal and Canada>	A





EGR SYSTEM INSPECTION <Federal and Canada–2.0L DOHC Engine>

N25ICJMa

- (1) Disconnect the vacuum hose (green stripe) from the throttle body, and connect a hand vacuum pump to the vacuum hose.
- (2) Plug the nipple from which the vacuum hose is disconnected.
- (3) Under the engine conditions shown below, check by applying vacuum from a hand vacuum pump.

When Engine is Cold–

engine coolant temperature 40°C (104°F) or below

Engine operating condition	Applying vacuum	Result
Idling	Try applying vacuum	Vacuum leaks

When Engine is Hot–

engine coolant temperature 80°C (176°F) or higher

Engine operating condition	Applying vacuum	Result
Idling	45 mmHg (1.8 in.Hg.)	Vacuum is maintained
Changes from idling to slightly unstable	215 mmHg (8.5 in.Hg.)	Vacuum is maintained

EGR SYSTEM INSPECTION <California>

N25ICJN

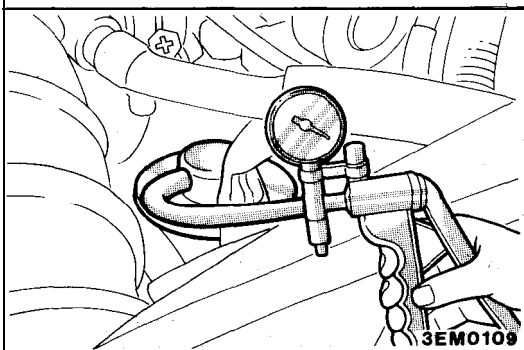
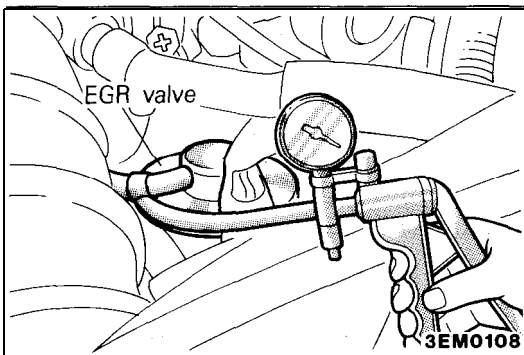
- (1) Disconnect the vacuum hose (green-striped) from the EGR valve, and connect the hand vacuum pump through the three-way terminal.
- (2) Regarding cold condition [coolant temperature: 20°C (68°F) or less] and warm condition [coolant temperature: 70°C (158°F) or more] of the engine, check the following two points:

<Cold condition of engine>

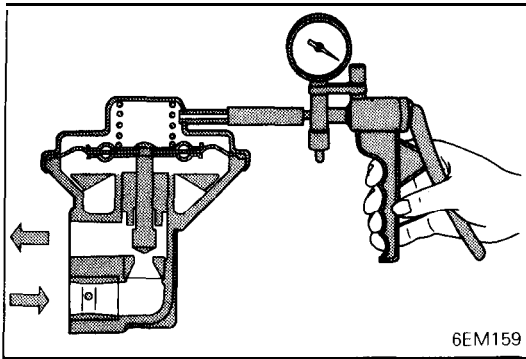
Engine operation	Normal state
Race the engine by rapidly press in the accelerator pedal.	The negative pressure does not vary. (Atmospheric pressure)

<Warm condition of engine>

Engine operation	Normal state
Race the engine by rapidly press in the accelerator pedal.	The negative pressure rises to 100 mmHg (3.9 in.Hg.) or more.



- (3) Disconnect the three-way terminal, and connect the hand vacuum pump to the EGR valve.
- (4) When a negative pressure of 215 mmHg (8.5 in.Hg.) is applied during idling, check that the engine stops or idles unstably.



6EM159

EGR VALVE <Except Federal and Canada-1 .8L Engine>

N25ICK1

INSPECTION

- (1) Remove the EGR valve and check it for sticking, deposit of carbon, etc.
If such condition exists, clean with adequate solvent to ensure tight valve seat contact.
- (2) Connect a hand vacuum pump to the EGR valve.
- (3) Apply a vacuum of 500 mmHg (19.8 in.Hg.) and check air-tightness.
- (4) Blow in air from one passage of the EGR to check condition as follows.

Applying vacuum	Result
45 mmHg (1.8 in.Hg.) or less	Air does not blow through
215 mmHg (8.5 in.Hg.) or more	Air blows through

INSTALLATION

Install a new gasket and EGR valve, tighten bolts to specified torque.

Specified tightening torque:

- <1.8L Engine> **10–15 Nm (7.2–10 ft.lbs.)**
- <2.0L DOHC Engine> **15-22 Nm (10–15.5 ft.lbs.)**

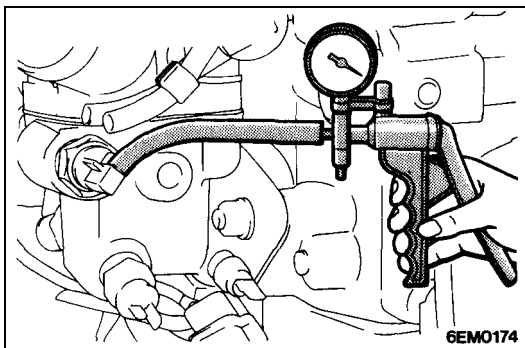
THERMO VALVE <Federal and Canada–2.0L DOHC Engine>

N25ICNGb

INSPECTION

- (1) Disconnect the vacuum hoses from the thermo valve, and connect a hand vacuum pump to nipple of the thermo valve.
- (2) Apply a vacuum and check the air passage through the thermo valve.

Engine coolant temperature	Result
50°C (122°F) or less	Vacuum leaks.
80°C (176°F) or more	Vacuum is maintained.



6EM0174

REMOVAL

- (1) When removing the thermo valve, do not use wrenches or other tools on the resin part.
- (2) When disconnecting the vacuum hoses, put a mark on the hose so that it may be reconnected at original position.

INSTALLATION

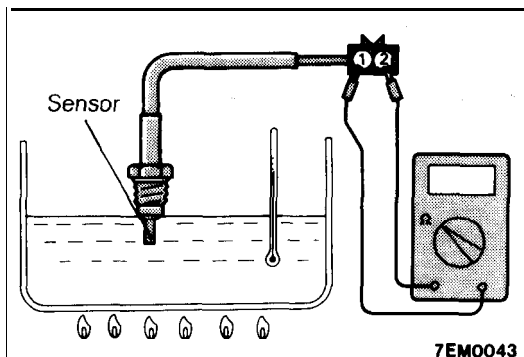
- (1) Apply specified sealant to the threads of thermo valve and tighten to specified torque. When installing the thermo valve, do not use wrenches or other tools on the resin part.

Specified sealant:

MOPAR Part No.4318034 or equivalent

Specified torque: 20–40 Nm (15–30 ft.lbs.)

- (2) Reconnect the vacuum hoses in position.



EGR TEMPERATURE SENSOR <California> N25/CZB

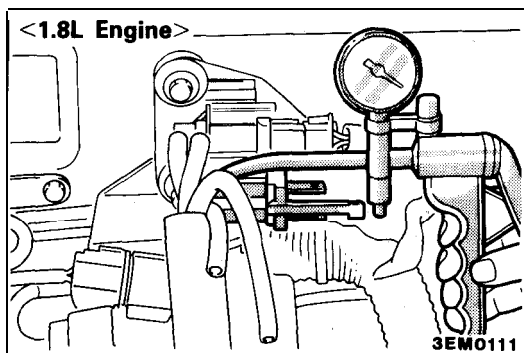
INSPECTION

- (1) Remove the EGR temperature sensor.
- (2) Place the EGR temperature sensor in water, and then measure the resistance value between terminals 1 and 2 while increasing the water's temperature. Replace the EGR temperature sensor if there is a significant deviation from the standard value.

Temperature °C(°F)	Resistance kΩ
50 (122)	60-83
100 (212)	11-14

INSTALLATION

Install the EGR temperature sensor tighten to specified torque.
Specified tightening torque: 10-12 Nm (7.3-8.6 ft.lbs.)



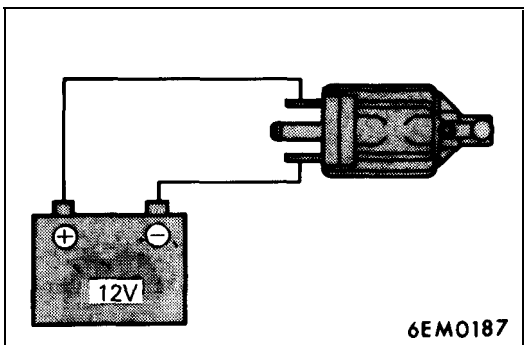
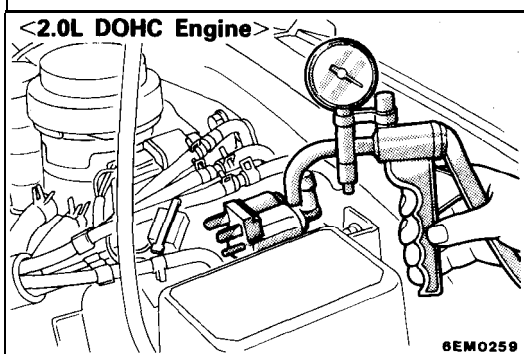
EGR CONTROL SOLENOID VALVE <California> N25/CRD

INSPECTION

NOTE

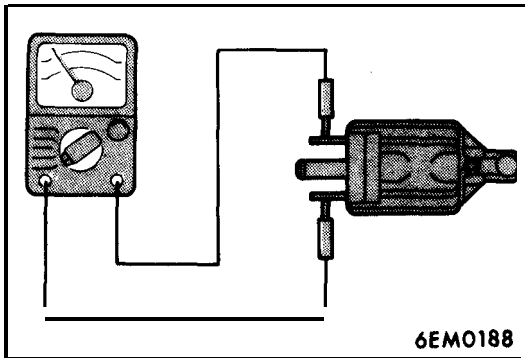
When disconnecting the vacuum hose, make an identification mark on it so that it can be reconnected to the original position.

- (1) Disconnect the vacuum hose (yellow and green stripe) from the solenoid valve.
- (2) Disconnect the harness connector.
- (3) Connect a hand vacuum pump to the nipple to which the green-striped vacuum hose was connected.



- (4) Apply a vacuum and check for air-tightness when voltage applied directly to the EGR control solenoid valve and when the voltage is discontinued.

Battery voltage	Result
When applied	Vacuum is maintained.
When discontinued	Vacuum leaks.



- (5) Measure the resistance between the terminals of the solenoid valve.

Standard value: 36-44 Ω [at 20°C (68°F)]

AIR-FUEL RATIO CONTROL (MPI) SYSTEM N25CAD

- To inspect the air-fuel ratio control (MPI) system, refer to GROUP 14 FUEL SYSTEM-Service Adjustment Procedures.
- For detailed information concerning the illumination pattern of the malfunction-indicator light and other aspects of the self-diagnosis function, refer to GROUP 14 FUEL SYSTEM-Self Diagnosis.

CATALYTIC CONVERTER N25CBH

INSPECTION.

Inspect for damage, cracking or deterioration. Replace if faulty.

Caution

1. Operation of any type, including **idling**, should be avoided if engine misfiring occurs. Under this condition the exhaust system will operate at **abnormally** high temperature, which may cause damage to **the catalyst** or underbody parts of the vehicle.
2. Alteration or deterioration of ignition or fuel system, or any type of operating condition which results in **engine** misfiring must be corrected to avoid overheating the catalytic converters.
3. Proper maintenance and tune up according to manufacturer's specifications should be made to correct the conditions as soon as possible.