

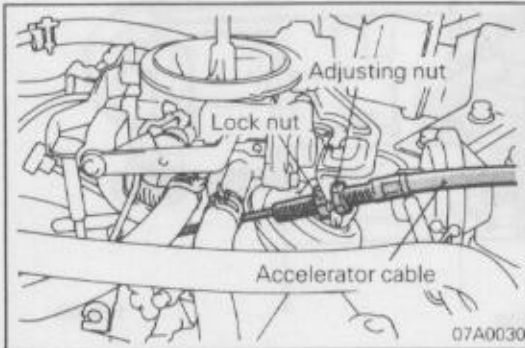
SERVICE ADJUSTMENT PROCEDURES <CONVENTIONAL CARBURETTOR>

AISAN TYPE <Other than vehicles for Australia>

E13FCAO

GENERAL INSPECTION

ACCELERATOR CABLE INSPECTION AND ADJUSTMENT



- (1) Turn the air conditioner and lamps OFF.
Perform the inspection and adjustment at no load.
- (2) Warm up the engine until it stabilizes at idle.
- (3) Confirm that the idle speed is at the prescribed r/min.
- (4) Stop the engine (ignition switch OFF).
Remove the air cleaner.
- (5) Confirm that there are no sharp bends in the accelerator cable.
- (6) Check inner cable for the correct amount of slack.
- (7) If there is too much slack or no slack, adjust the play by the following procedures.

- ① Loosen the adjusting nut so that throttle lever is free.
- ② Tighten the adjusting nut until throttle lever just starts moving. Loosen 1 turn, and lock it with the lock nut. This adjusts accelerator cable play to the standard value.

Standard value: 1 – 2 mm (0.04 – 0.08 in.)

NOTE

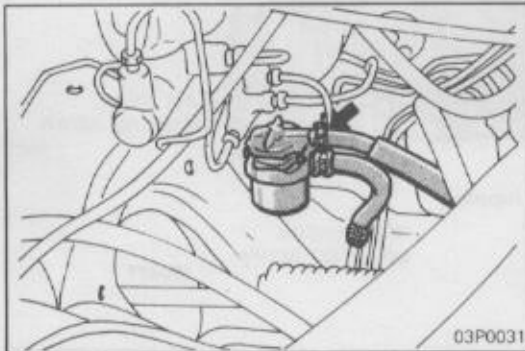
If there is excessive play of the accelerator cable, the vehicle speed drop ("undershoot") when climbing a slope will be large.

If there is no play (excessive tension) of the accelerator cable, the idling speed will increase.

- ③ After adjusting, confirm that the throttle valve fully opens and closes by operating the pedal.

FUEL FILTER REPLACEMENT

E13FZABa



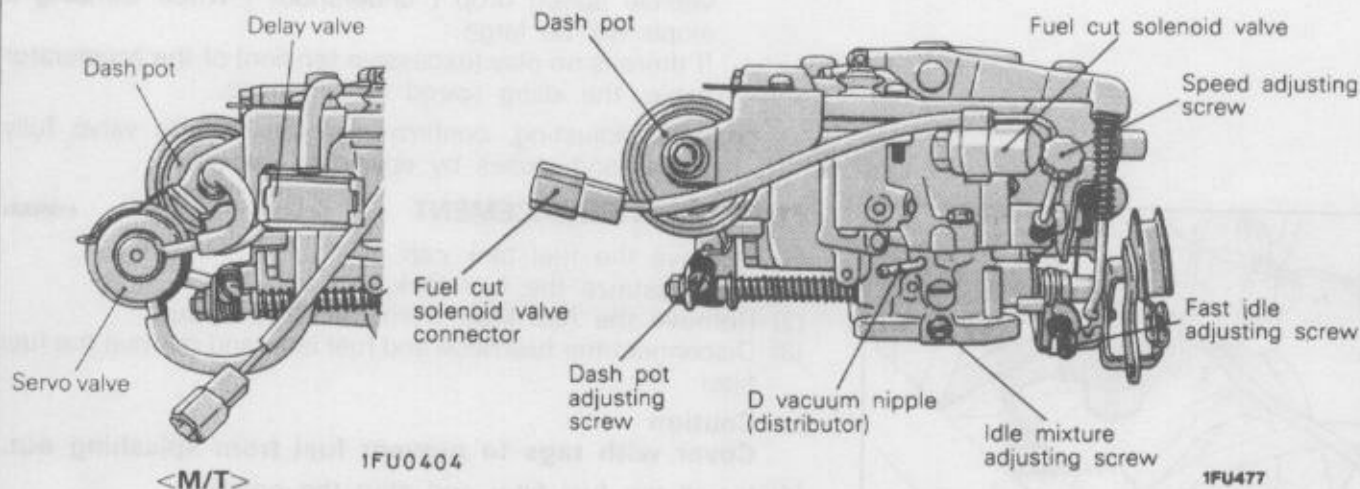
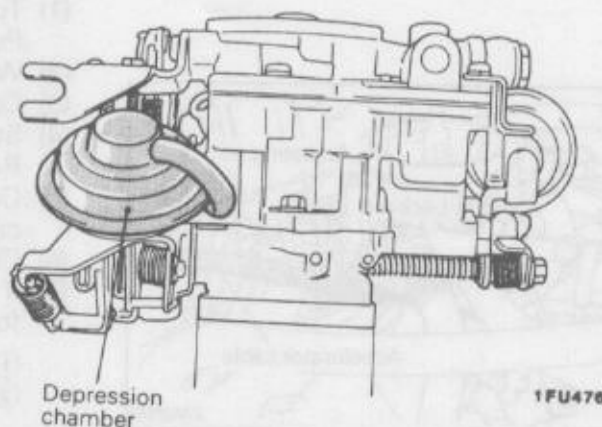
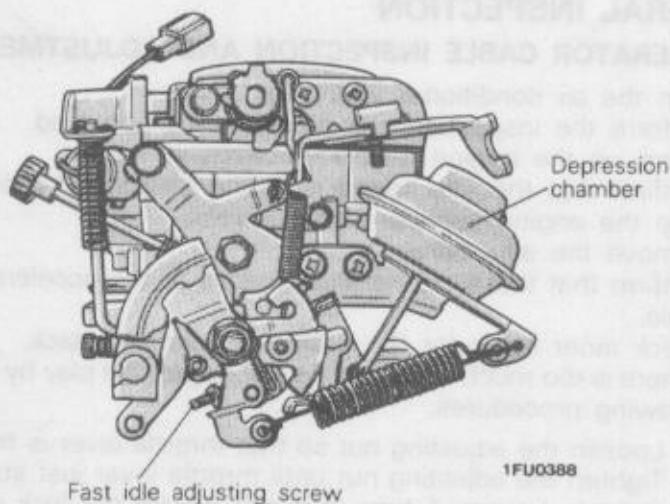
- (1) Remove the fuel tank cap.
De-pressurize the fuel tank.
- (2) Remove the fuel filter from the filter clamp.
- (3) Disconnect the fuel hose and fuel filter and remove the fuel filter.

Caution

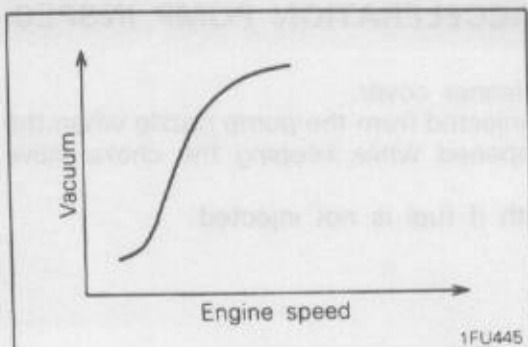
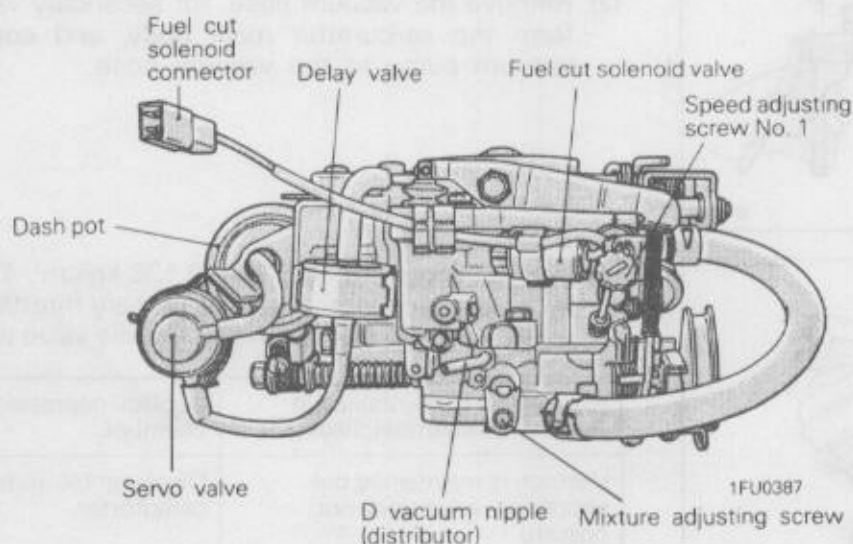
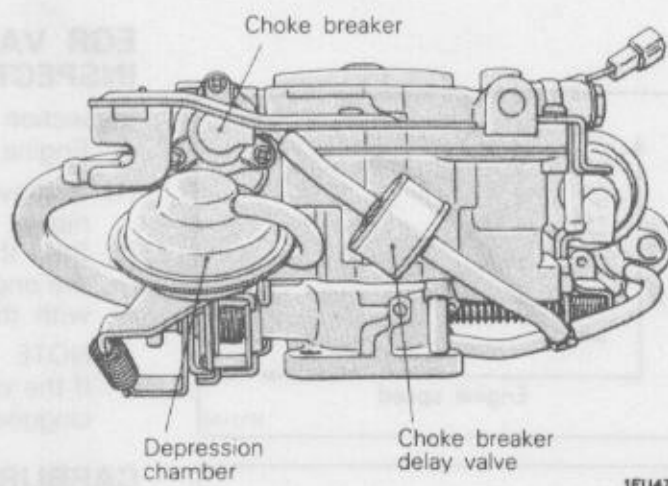
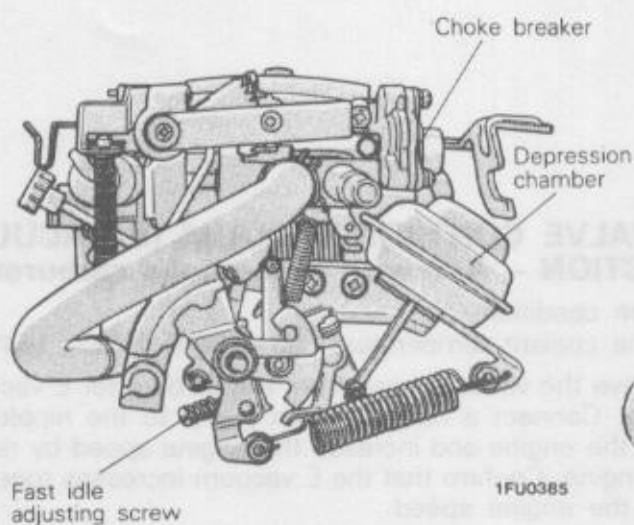
Cover with rags to prevent fuel from splashing out.

- (4) Install the fuel filter and start the engine.
Check for fuel leaks.

MANUAL CHOKE CARBURETTOR APPEARANCE



AUTO-CHOKE CARBURETTOR APPEARANCE



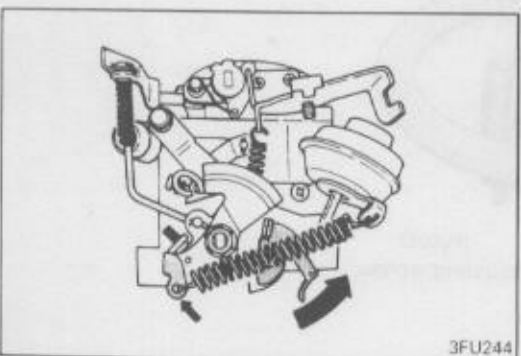
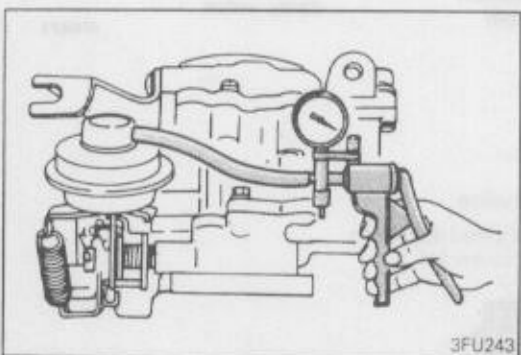
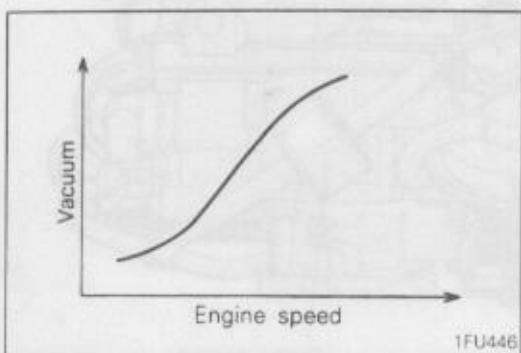
DISTRIBUTOR ADVANCE ANGLE CONTROL VACUUM (D VACUUM) INSPECTION

Inspection condition

- Engine coolant temperature: 80 – 90°C (176 – 194°F)
- (1) Remove the vacuum hose from the carburettor D vacuum nipple. Connect a hand vacuum pump to the nipple.
 - (2) Start the engine and increase the engine speed by racing the engine. Confirm that the D vacuum increases together with the engine speed.

NOTE

If the vacuum is not normal, the carburettor D port may be clogged. Clean the port.



EGR VALVE CONTROL VACUUM (E VACUUM) INSPECTION – A/T with auto-choke carburettor

Inspection condition

- Engine coolant temperature: 80 – 90°C (176 – 194°F)
- (1) Remove the vacuum hose from the carburettor E vacuum nipple. Connect a hand vacuum pump to the nipple.
- (2) Start the engine and increase the engine speed by racing the engine. Confirm that the E vacuum increases together with the engine speed.

NOTE

If the vacuum is not normal, the carburettor E port may be clogged. Clean the port.

CARBURETTOR SECONDARY VALVE OPERATION INSPECTION

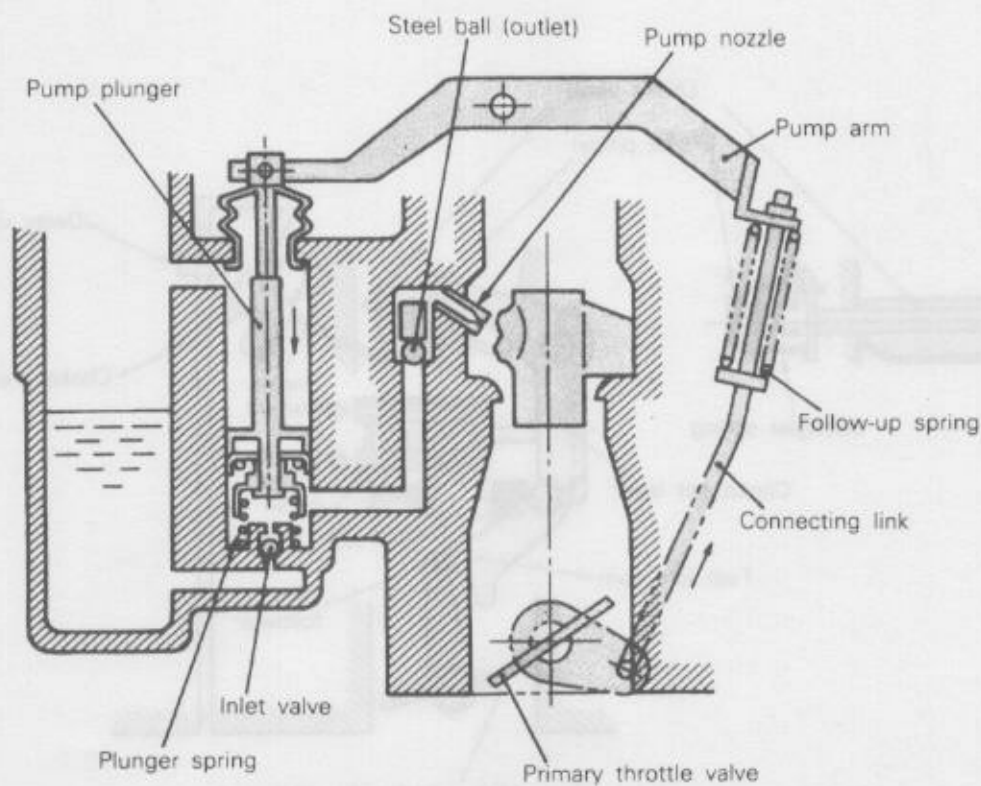
- (1) Remove the air cleaner.
- (2) Remove the vacuum hose, for secondary valve operation, from the carburettor main body, and connect a hand vacuum pump to the vacuum hose.

- (3) With a vacuum of 13.6 kPa (0.136 kg/cm², 1.9 psi) applied by a vacuum pump, open the primary throttle valve fully to make sure that the secondary throttle valve is fully opened.

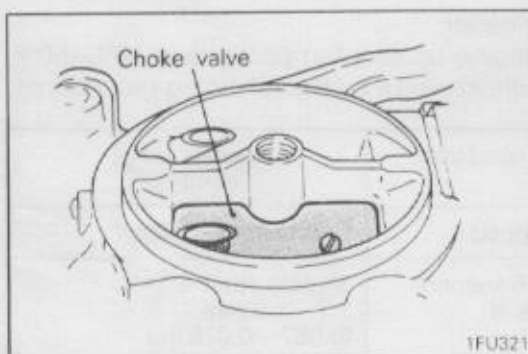
No vacuum is maintained in depression chamber. (leaky)	Replace depression chamber.
Vacuum is maintained but secondary valve does not operate.	Disassemble and inspect carburettor.

CARBURETTOR ACCELERATION PUMP INSPECTION

- (1) Remove the air cleaner cover.
- (2) Check that fuel is injected from the pump nozzle when the throttle valve is opened while keeping the choke valve open.
Clean the fuel path if fuel is not injected.



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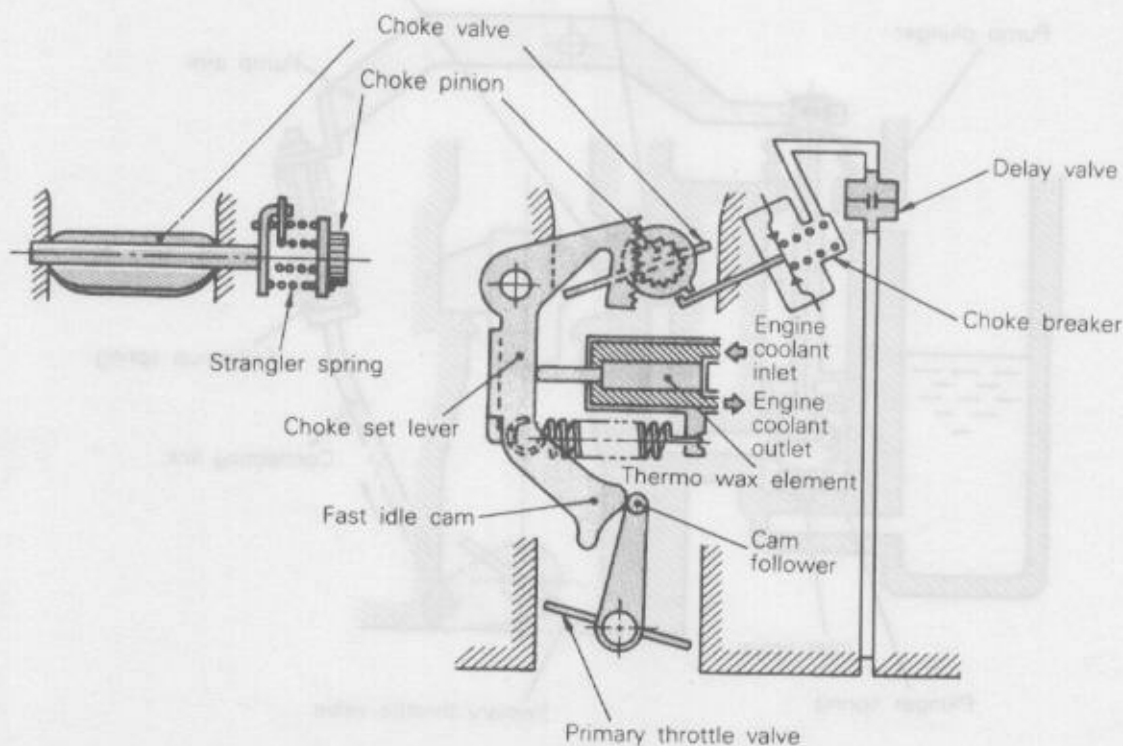
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CHOKE VALVE INSPECTION – Vehicles with auto-choke carburettor

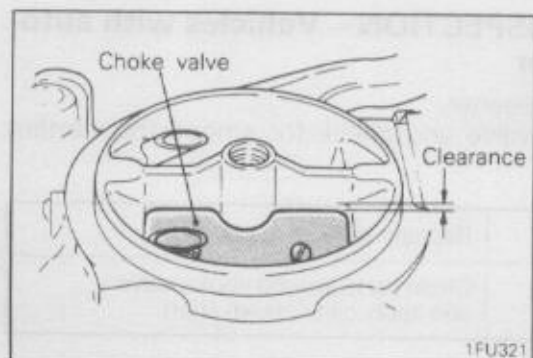
- (1) Remove the air cleaner.
- (2) Move the choke valve and check for smooth movement without backlash.

Excessive backlash	Replace air horn assembly.
Faulty (Stuck)	Clean parts around choke valve and apply oil to choke shaft.

FULL-AUTO-CHOKE INSPECTION – Vehicles with auto-choke carburettor



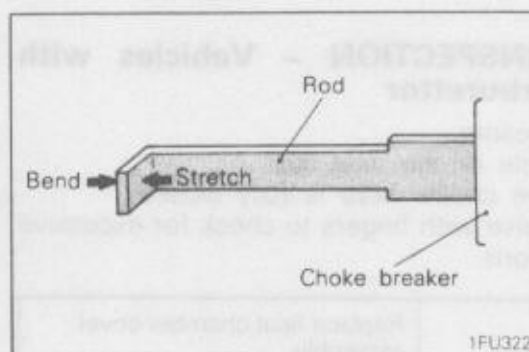
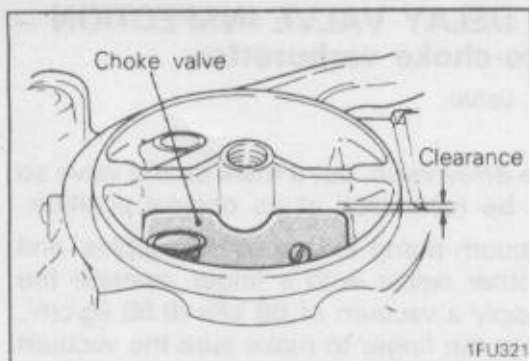
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- (1) Remove the air cleaner.
- (2) Confirm that the engine coolant temperature is 10°C (50°F) or less. Check the choke valve by the following procedures.

Check procedure	Check condition	Choke valve condition
1.	Engine stopped.	Fully closed.
2.	More than 6 seconds after engine is started.	Slightly open. 1.7 – 1.9 mm (0.067 – 0.075 in.)
3.	Remove vacuum hose from the choke breaker with engine idling.	Closes [at engine coolant temperature of 20°C (68°F) or less.] [Plug vacuum hose end with finger and confirm that intake manifold vacuum can be felt.]
4.	Engine warmed up.	Valve opens as engine coolant temperature rises.



CHOKE BREAKER OPENING ADJUSTMENT – Vehicles with auto-choke carburettor

- (1) Adjust after performing a full-auto-choke inspection.
- (2) Close the choke valve slowly with the fingers with the engine idling. Measure the clearance between the choke valve and choke bore at the moment the choke valve stops.

Standard value: 1.7 – 1.9 mm (0.067 – 0.075 in.)

- (3) If the clearance is not within the standard value range, stop the engine and adjust the clearance by altering the bend at the tip of the rod.
- (4) Carry out the starting test, and re-adjust if required.

<Reference>

Rod tip	Valve clearance	Conditions
Bend	Large	Difficult to start. Tends to stall.
Stretch	Small	Spark plug tends to smolder.

FAST IDLE ADJUSTMENT – Vehicles with auto-choke carburettor

- (1) Confirm that the engine coolant temperature at 10°C (50°F) or less.
- (2) Start the engine. Confirm that the fast idle speed changes smoothly as the engine warms up and the engine water temperature rises, and that the speed stabilizes at the standard value.
- (3) Adjust the idling speed if an abnormality is detected.

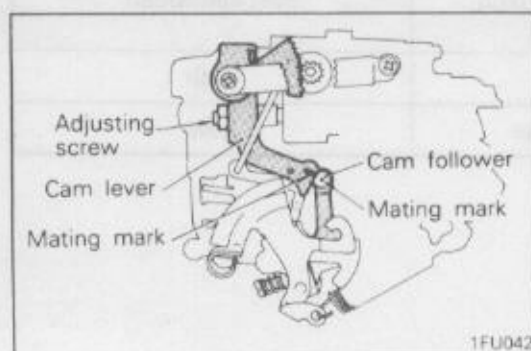
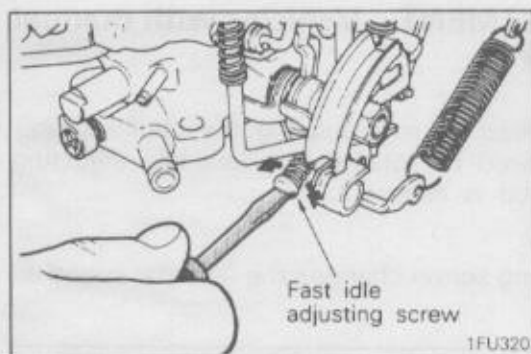
<Reference>

- (1) Rotation direction of fast idle adjusting screw and fast idle speed.

Adjusting screw	Fast idle speed
Clockwise	High
Counterclockwise	Low

- (2) The mating mark (notch) on the cam lever and the mating mark of the cam follower (punch mark).

Status of mating marks at the thermo wax element temperature of 23°C (73°F)	Fast idle speed
Matches	Normal
Does not match	Faulty

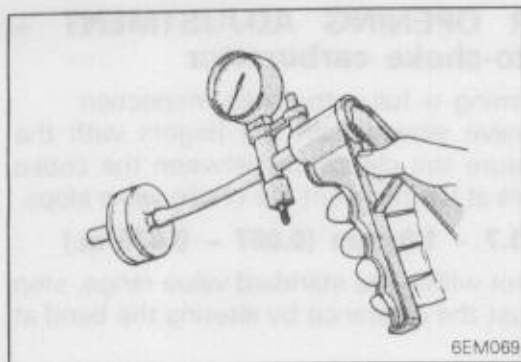


Caution

Mating marks are adjusted at the factory to a high degree of precision.

Do not make adjustments by the adjusting screw in ordinary adjustment conditions.

PWME8802



6EM069

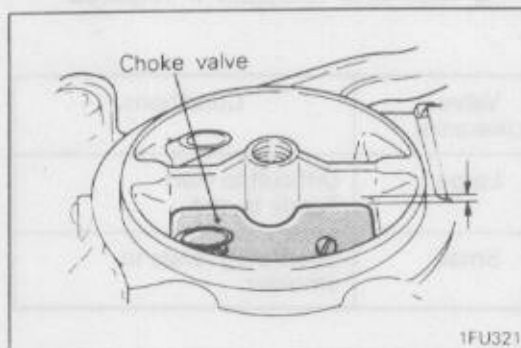
CHOKE BREAKER DELAY VALVE INSPECTION – Vehicles with auto-choke carburettor

- (1) Remove the delay valve.

NOTE

When removing the delay valve, put a mark on the valve so that the valve can be reinstalled at its original position.

- (2) Connect a hand vacuum pump to one of the nipples, and while closing the other nipple with a finger, operate the vacuum pump to apply a vacuum of 68 kPa (0.68 kg/cm², 9.7 psi). Then release the finger to make sure the vacuum leaks slowly.

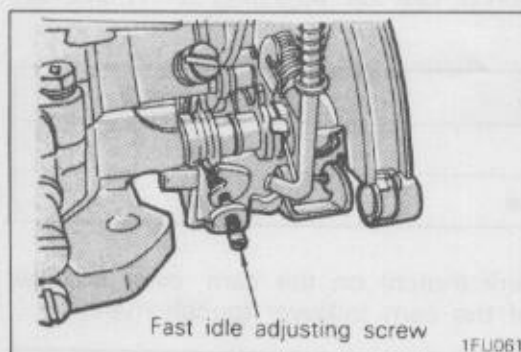


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CHOKE VALVE INSPECTION – Vehicles with manual choke carburettor

- (1) Remove the air cleaner.
- (2) Pull the choke cable all the way out.
- (3) Make sure that the choke valve is fully closed.
- (4) Move the choke valve with fingers to check for excessive play and malfunctions.

Excessive play	Replace float chamber cover assembly.
Poor operation (Seizure)	Clean the choke valve and apply a small amount of oil to choke shaft.



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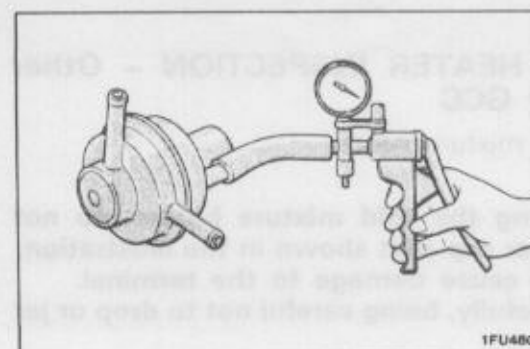
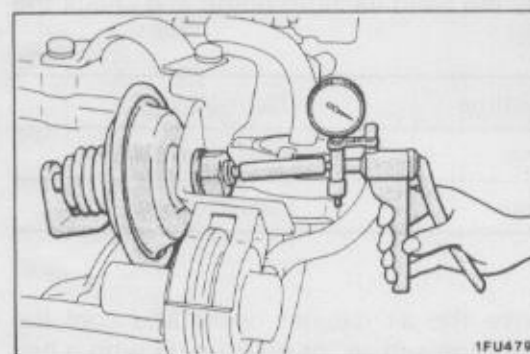
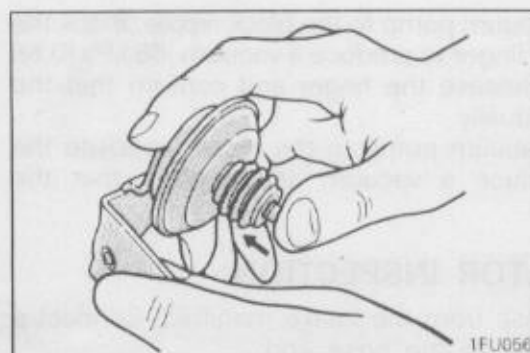
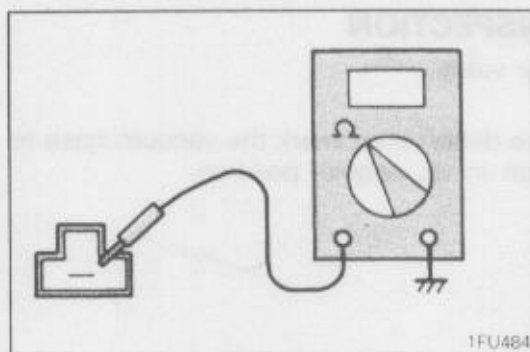
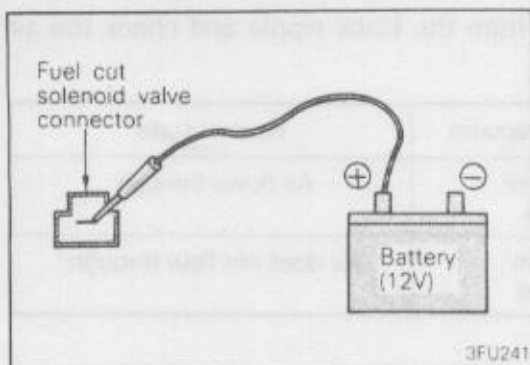
FAST IDLE ADJUSTMENT – Vehicles with manual choke carburettor

- (1) Start the engine.
- (2) Check the idle speed by manipulating the choke knob.
- (3) Adjust the idle speed by rotating the fast idle adjusting screw, if idle speed is incorrect.

<Reference>

Turning the adjusting screw changes the fast idle speed as follows:

Adjusting screw turning direction	Fast idle speed
Clockwise	High
Counterclockwise	Low



FUEL CUT SOLENOID VALVE SIMPLE INSPECTION

- (1) Disconnect the fuel cut solenoid valve connector.
- (2) Apply battery voltage (approx. 12 V) to the solenoid valve terminal to check solenoid valve for an operating sound (click).

If no operating sound is heard, replace the solenoid valve.

- (3) Measure the solenoid coil resistance.

Standard value: approx. 90 Ω [at 20°C (68°F)]

DASH POT (CONVENTIONAL TYPE) INSPECTION

- (1) Remove the dash pot.
- (2) Push dash pot rod in lightly and confirm that there is resistance.

NOTE

1. The resistance increases as the rod is pushed harder.
2. If the rod can be pushed in with no resistance, either the diaphragm or the check valve is faulty.

- (3) Release the finger and confirm that the rod returns to its original position quickly.

NOTE

If the rod returns slowly, the check valve is faulty.

DASH POT (CONTROL VALVE TYPE) INSPECTION

- (1) Remove the vacuum hose connected to the dash pot.
- (2) Connect a hand vacuum pump to the dash pot.
- (3) Create a 54 kPa (0.54 kg/cm², 7.7 psi) vacuum, and confirm that the seal is maintained.
- (4) Open the throttle valve fully and confirm that the rod returns quickly to its original position when the hand vacuum pump is removed (i.e. vacuum is removed).

SERVO VALVE INSPECTION

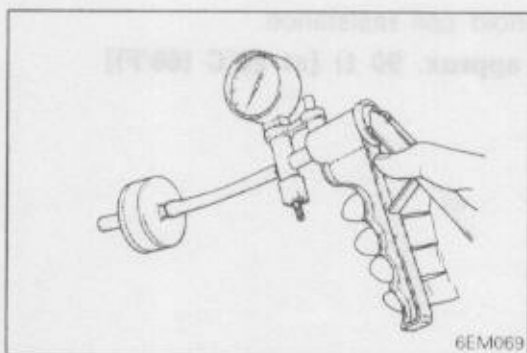
NOTE

When removing the vacuum hose, mark it so that it may be replaced to its original position.

- (1) Remove the servo valve.
- (2) Connect the hand vacuum pump to the blue servo valve nipple.
- (3) Create an 82 kPa (0.82 kg/cm², 11.7 psi) vacuum, and confirm that the seal is maintained.

- (4) Blow air in lightly from the black nipple and check the air flow.

Hand vacuum pump vacuum	Normal state
75 kPa (0.75 kg/cm ² , 10.7 psi) or less	Air flows through.
82 kPa (0.82 kg/cm ² , 11.7 psi) or more	Air does not flow through.

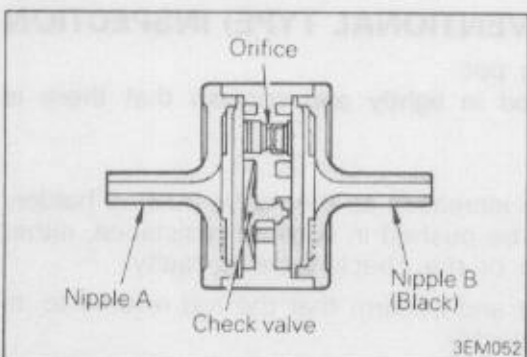


DELAY VALVE INSPECTION

- (1) Remove the delay valve.

NOTE

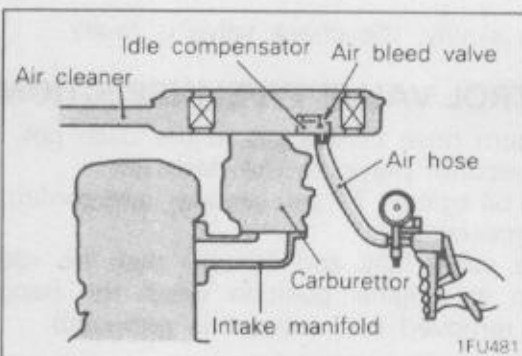
When removing the delay valve, mark the vacuum hose to permit reconnection in its original position.



- (2) Connect a hand vacuum pump to the black nipple. Block the other nipple with a finger to produce a vacuum [68 kPa (0.68 kg/cm², 9.7 psi)]. Release the finger and confirm that the vacuum leaks gradually.
- (3) Connect a hand vacuum pump to the nipple opposite the black nipple. Produce a vacuum and confirm that the vacuum leaks.

IDLE COMPENSATOR INSPECTION

- (1) Remove the air hose from the intake manifold. Connect a hand vacuum pump to the hose end.
- (2) Create a vacuum by the hand vacuum pump and check the air bleed valve seal.



Air bleed valve temperature	Normal state
50°C (122°F) or less	Vacuum is maintained.
60°C (140°F) or more	Vacuum leaks.

NOTE

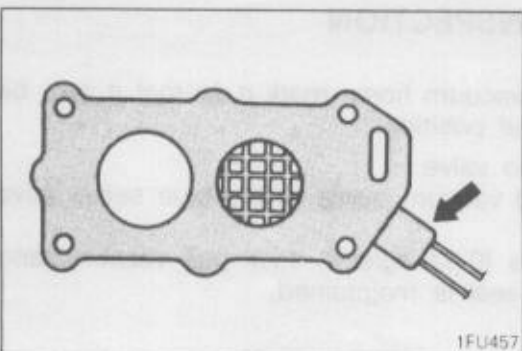
If necessary, remove the air cleaner cover and cool the valve by blowing compressed air, or warm it up with a hair dryer.

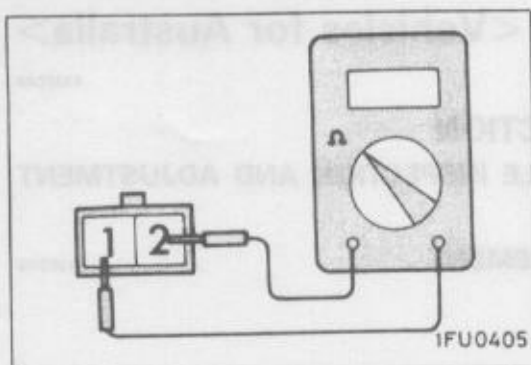
COLD MIXTURE HEATER INSPECTION – Other than vehicles for GCC

- (1) Remove the cold mixture heater.

Caution

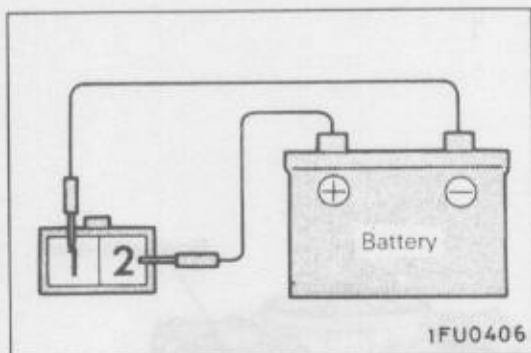
- When removing the cold mixture heater, do not hold the rubber cap part shown in the illustration; doing so will cause damage to the terminal.
- Remove it carefully, being careful not to drop or jar it.





- (2) Check for continuity of the cold mixture heater.
Replace it if there is no continuity.

Normal state: Conductive [with approx. 1 Ω resistance at 20°C (68°F)]



- (3) Apply battery voltage directly to the heater terminal and check that the heater becomes hot.

Caution

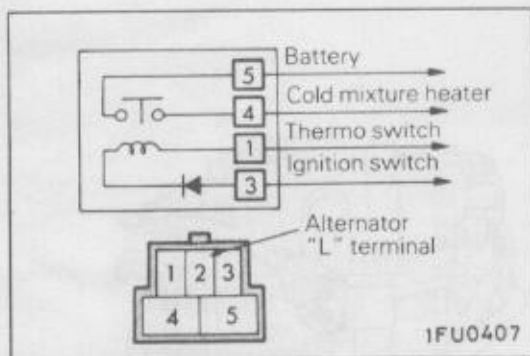
The heater will become very hot; do not touch it.

COLD MIXTURE HEATER RELAY INSPECTION – Other than vehicles for GCC

Caution

When applying battery voltage directly to the heater, connect the correct terminals. Incorrect connection can damage the relay.

- (1) Remove the cold mixture heater relay.



- (2) Check for continuity between terminals for both when the relay coil is energized and when not.

Description	Measuring terminals	Continuity
Not energized	④ – ⑤	Non-conductive (with $\infty \Omega$ resistance)
Energized	④ – ⑤	Conductive (with 0 Ω resistance)

NOTE

"Energized" means that battery voltage is directly applied between terminal ① (negative terminal) and terminal ③ (positive terminal).

MIKUNI TYPE <Vehicles for Australia>

E13FCAK

GENERAL INSPECTION

ACCELERATOR CABLE INSPECTION AND ADJUSTMENT

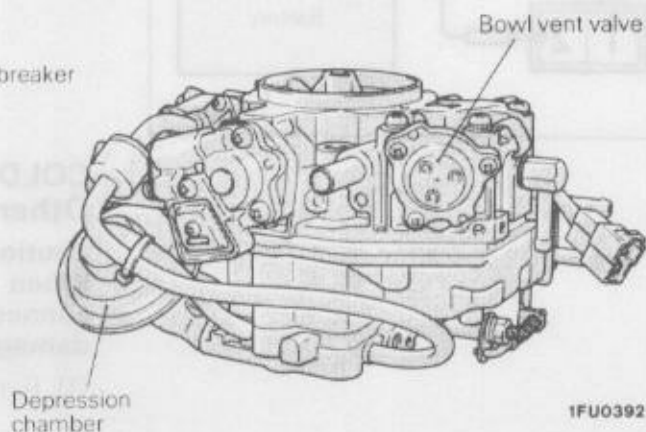
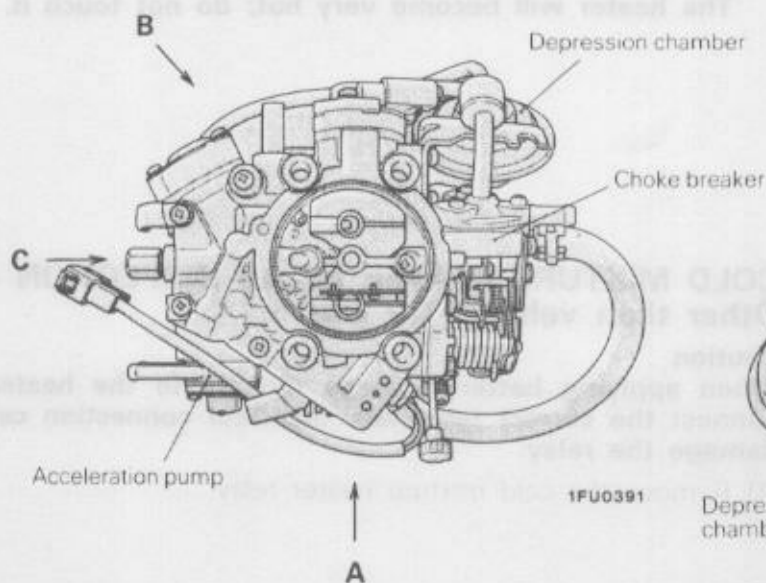
Refer to P.13-15.

FUEL FILTER REPLACEMENT

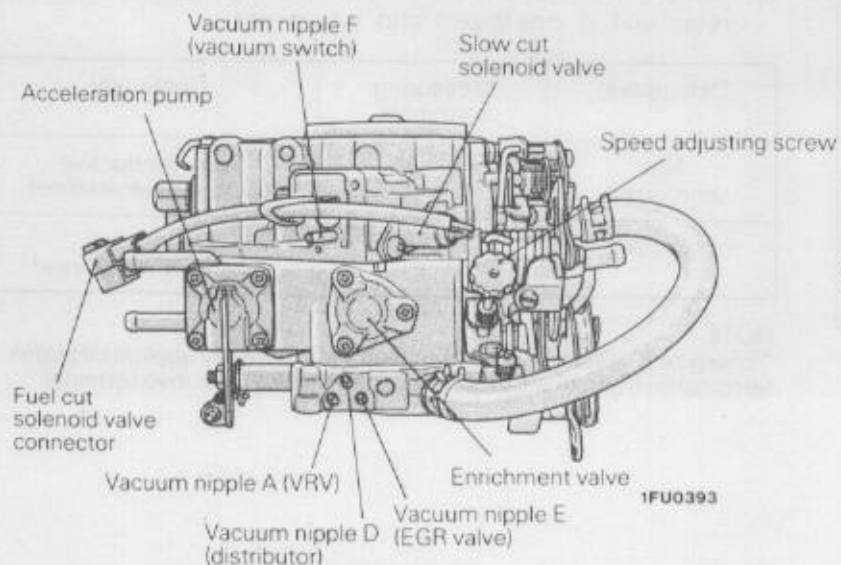
Refer to P.13-15.

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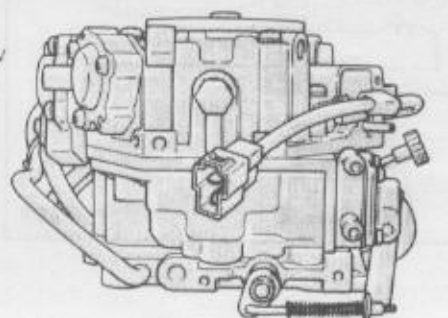
AUTO-CHOKE CARBURETTOR APPEARANCE



View B



View A



View C

DISTRIBUTOR ADVANCE ANGLE CONTROL VACUUM (D VACUUM) INSPECTION

Refer to the corresponding instructions for the AISAN TYPE carburettor (P.13-17).

EGR VALVE CONTROL VACUUM (E VACUUM) INSPECTION

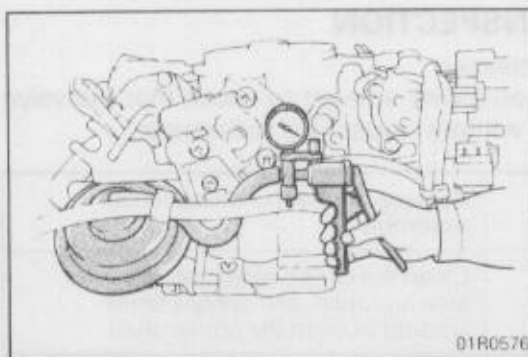
Refer to the corresponding instructions for the AISAN TYPE carburettor (P.13-18).

VRV CONTROL VACUUM (A VACUUM) INSPECTION

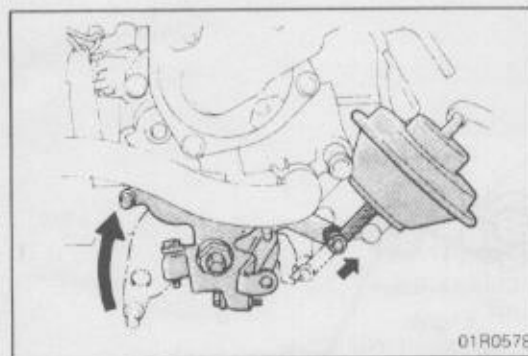
Refer to the corresponding instructions for the <FBC> (P.13-37).

VACUUM SWITCH CONTROL VACUUM (F VACUUM) INSPECTION

Refer to the corresponding instructions for the <FBC> (P.13-38).



01R0576



01R0578

CARBURETTOR SECONDARY VALVE OPERATION INSPECTION

- (1) Remove the air cleaner.
- (2) Remove the vacuum hose, for secondary valve operation, from the carburettor main body, and connect a hand vacuum pump to the vacuum hose.
- (3) With a vacuum of 14 kPa (0.14 kg/cm², 2.0 psi) applied by the vacuum pump, open the primary throttle valve fully to make sure that the secondary throttle valve is fully opened.

No vacuum is maintained in depression chamber. (leaky)

Replace the depression chamber.

Vacuum is maintained but secondary valve does not operate.

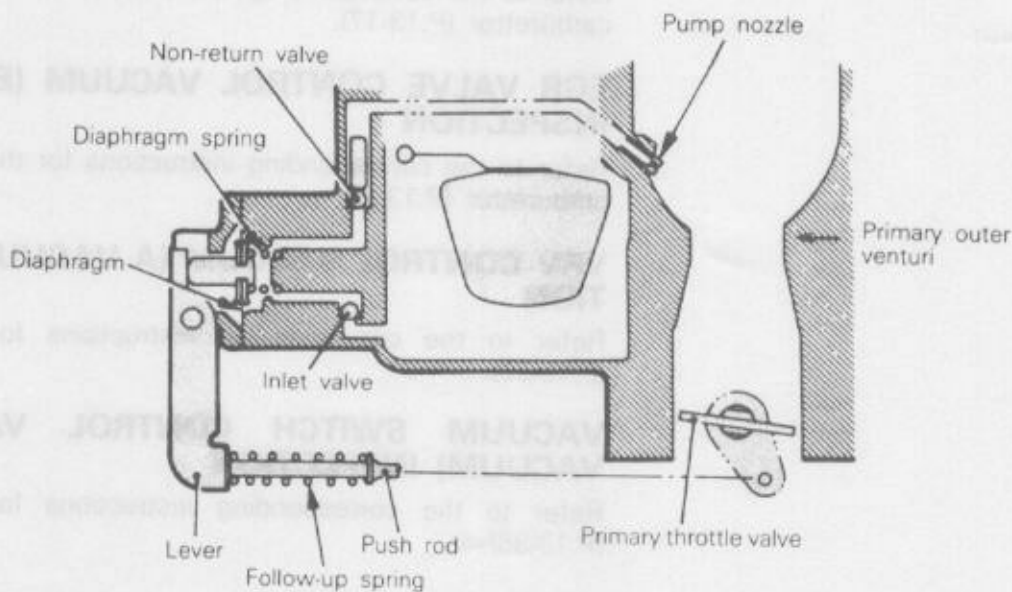
Clean the secondary throttle valve and the area around it.

CARBURETTOR ACCELERATION PUMP INSPECTION

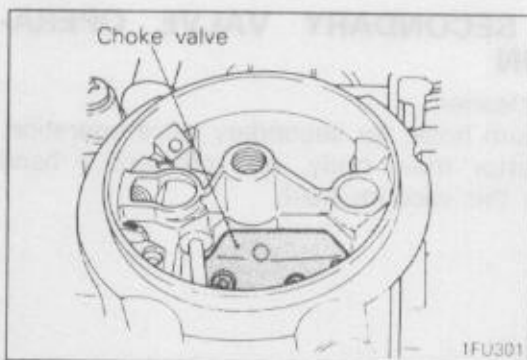
- (1) Remove the air cleaner cover.
- (2) Check that fuel is injected from the pump nozzle when the throttle valve is opened while keeping the choke valve open.
Clean the fuel path if fuel is not injected.

NOTE

If the acceleration pump is defective, poor acceleration will result.



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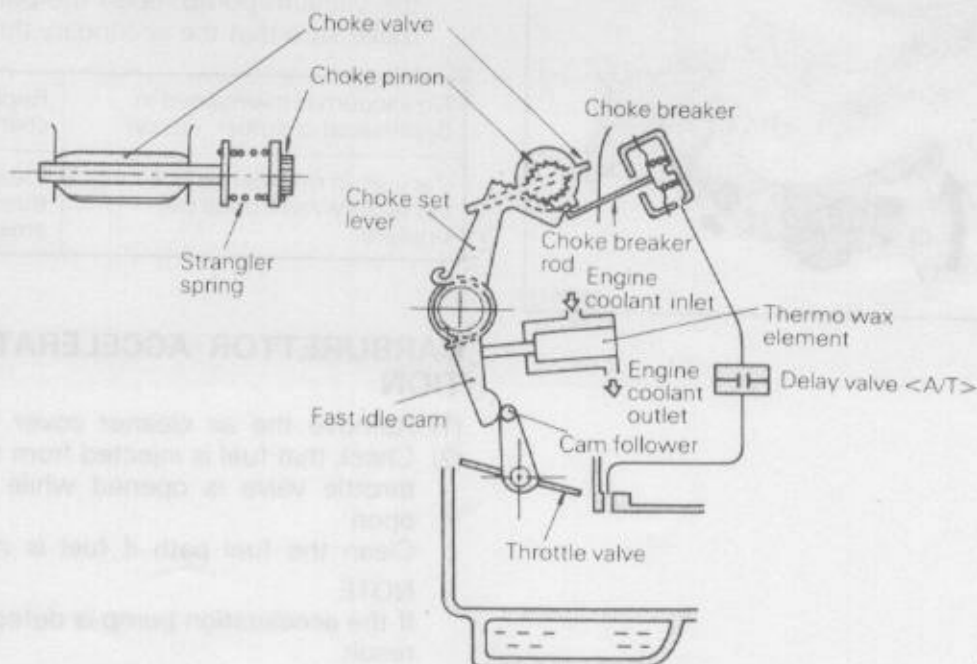
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CHOKE VALVE INSPECTION

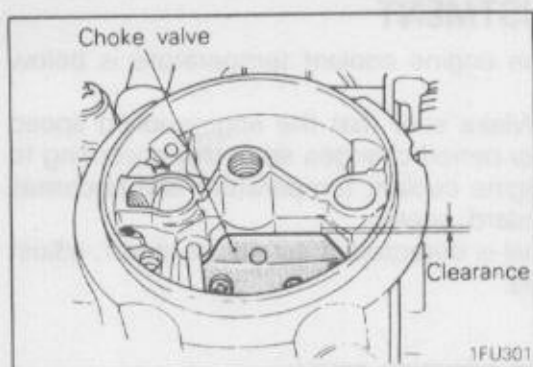
- (1) Remove the air cleaner.
- (2) Move the choke valve with a finger to check that the valve moves smoothly without excessive looseness.

If the valve is excessively loose.	Replace the float chamber cover assembly.
If the valve is stuck.	Clean the choke valve and the area around it, and apply a small amount of oil to the choke shaft.

FULL-AUTO-CHOKE INSPECTION



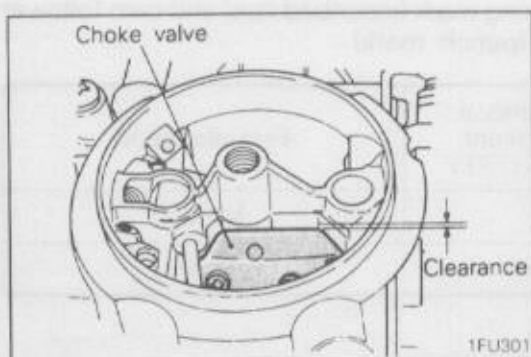
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- (1) Remove the air cleaner.
- (2) Make sure that the engine coolant temperature is below 10°C (50°F).
- (3) Check the operation of the choke valve under various engine conditions.

Engine condition	Choke valve operation
Before starting	Closed
Just after starting	Slightly opens [approx. 1.5 mm (0.059 in.) clearance]
During warming up	Opens wider as engine coolant temperature increases
After warming up (running at idle)	Completely opens

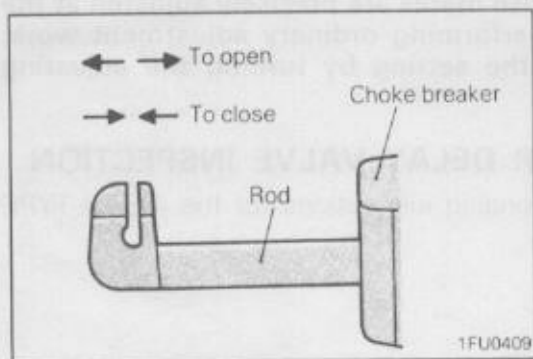
- (4) If anything wrong is detected as a result of the above check, inspect and adjust the full-auto-choke carburettor.



CHOKE BREAKER OPENING ADJUSTMENT

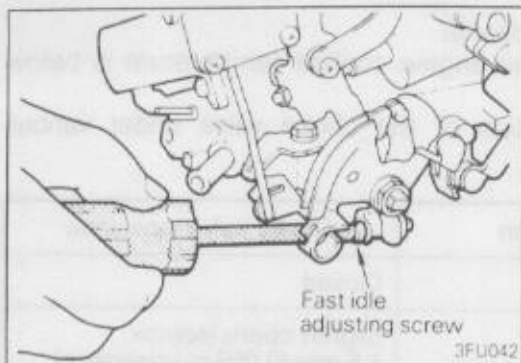
- (1) Inspect the auto-choke fully before performing the choke breaker opening adjustment.
- (2) Run the engine at idle. Move the choke valve in the closing direction with a slight finger force until the valve offers resistance to being moved. Measure the clearance between the choke valve and choke bore at this point.

Standard value: 1.5 – 1.7 mm (0.059 – 0.067 in.)



- (3) If the clearance is not within the specified range, stop the engine and adjust the clearance by opening or closing the end of the choke breaker rod.
- (4) Perform engine starting test. Make the adjustment again if necessary.

Rod end	Valve clearance	Remarks
Opened	Larger	Engine becomes more difficult to start and tends to stall
Closed	Smaller	Carbon tends to accumulate on spark plugs



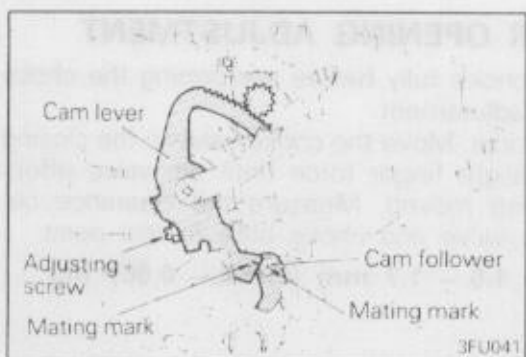
FAST IDLE ADJUSTMENT

- (1) Make sure that the engine coolant temperature is below 10°C (50°F).
- (2) Start the engine. Make sure that the engine idling speed during the warm-up period changes smoothly according to increase of the engine coolant temperature and becomes stable at the standard speed.
- (3) If anything abnormal is detected in the above check, adjust the fast idle speed.

<Reference>

- ① Fast idle speed adjusting screw
Turning the adjusting screw changes the fast idle speed as follows:

Adjusting screw turning direction	Fast idle speed
Clockwise	Increases
Counterclockwise	Decreases



- ② Cam lever mating mark (inscribed line) and cam follower mating mark (punch mark)

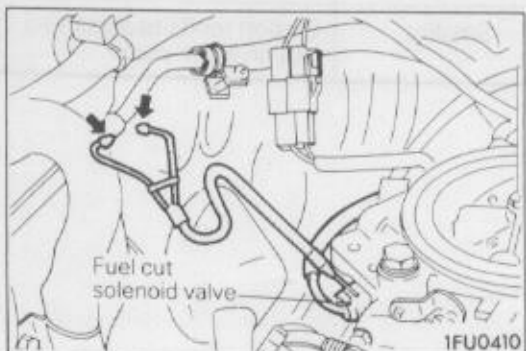
Status of mating marks at the thermo wax element temperature of 23°C (73°F)	Fast idle speed
Matches	Normal
Does not match	Faulty

Caution

Alignment of these marks are precisely adjusted at the factory. When performing ordinary adjustment work, do not disturb the setting by turning the adjusting screw.

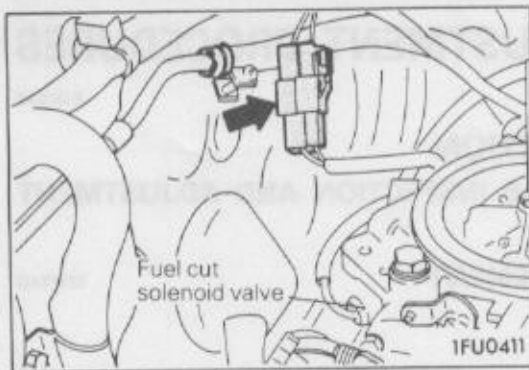
CHOKE BREAKER DELAY VALVE INSPECTION

Refer to the corresponding instructions for the AISAN TYPE carburettor (P.13-22).



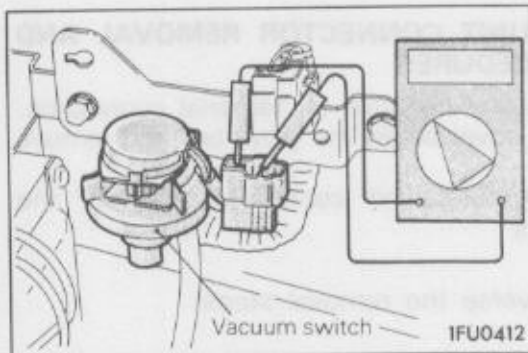
FUEL CUT SOLENOID VALVE INSPECTION

- (1) Using a sound scope, check that the valve produces an operating sound when the ignition switch is turned to the ON position.



- (2) Start the engine. Let the engine run at idle and make sure that the engine stalls when the fuel cut solenoid valve connector is disconnected.
- (3) Stop the engine. Measure the coil resistance of the fuel cut solenoid valve.

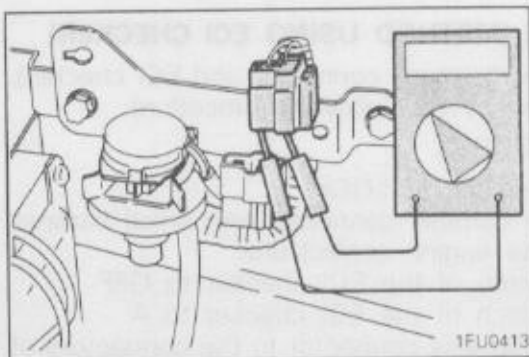
Standard value: 48 – 60 Ω [at 20°C (68°F)]



VACUUM SWITCH INSPECTION

Check the continuity between the terminals of the vacuum switch.

Engine condition	Continuity
Stopped	Conductive
Idling	Non-conductive



ENGINE SPEED SENSOR INSPECTION

Unplug the vacuum switch connector and connect a tester to the harness side connector to measure the voltage.

Engine condition	Voltage
Idling	Approx. 0.8 V
Running at 2,500 r/min. or higher speed	Approx. 14 V (system voltage)

IDLE COMPENSATOR INSPECTION

Refer to the corresponding instructions for the AISAN TYPE carburettor (P.13-24).

COLD MIXTURE HEATER INSPECTION

Refer to the corresponding instructions for the AISAN TYPE carburettor (P.13-24).

COLD MIXTURE HEATER RELAY INSPECTION

Refer to the corresponding instructions for the AISAN TYPE carburettor (P.13-25).

SERVICE ADJUSTMENT PROCEDURES <FBC>

E13FCAK

GENERAL INSPECTION

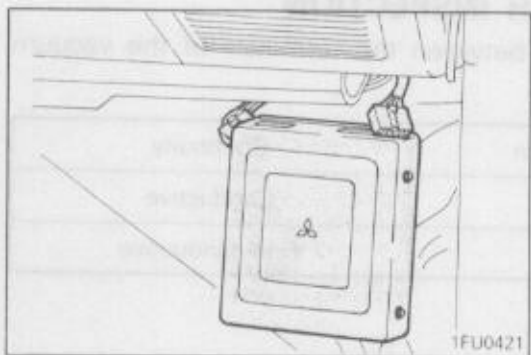
ACCELERATOR CABLE INSPECTION AND ADJUSTMENT

Refer to P.13-15.

FUEL FILTER REPLACEMENT

E13FZAG

Refer to P.13-15.



ENGINE CONTROL UNIT CONNECTOR REMOVAL AND INSTALLATION PROCEDURES

- (1) Disconnect the battery negative (-) terminal connection.
- (2) Remove the under cover below the glove box and remove the glow box.
- (3) Unlocking the computer unit connector, pull out the harness connectors.

NOTE

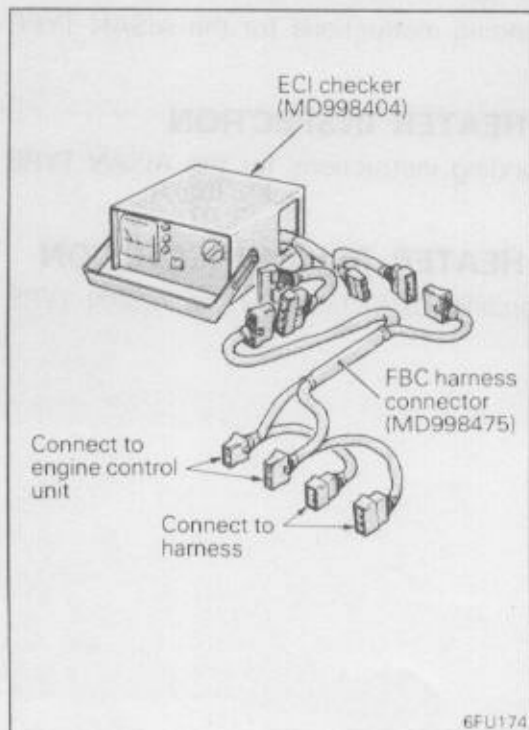
For installation, reverse the removal steps.

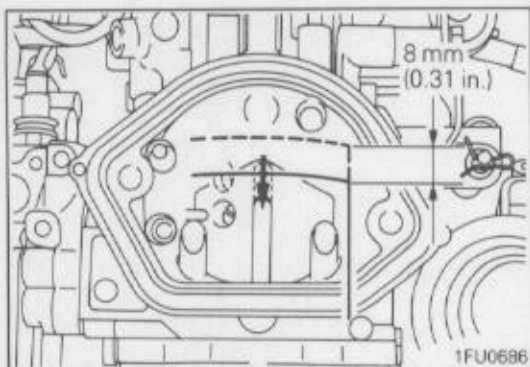
CHECK PROCEDURE (METHOD USING ECI CHECKER)

Using the special tools (harness connector and ECI checker), perform the inspection by the following procedure.

INSPECTION PROCEDURES

- (1) Turn the ignition switch to LOCK.
- (2) Remove the large harness connector and small harness connector from the engine control unit.
- (3) Set the check switch of the ECI checker to OFF.
- (4) Set the select switch of the ECI checker to A.
- (5) Connect the FBC harness connector to the connectors of the ECI checker, and then connect the FBC harness connector to the engine control unit and the harness connectors.
- (6) Perform checks according to the "FBC System Check Procedure Chart".
- (7) If checker shows any deviation from specifications, check the corresponding sensor and related electrical wiring. Repair or replace if necessary.
- (8) After repair or replacement, recheck with the ECI checker to confirm that the repair has removed the problem.
- (9) Set the check switch of the ECI checker to OFF.
- (10) Set the ignition switch to LOCK.
- (11) Disconnect the connectors of the ECI checker and the FBC harness connector from the engine control unit and body side harness connectors.
- (12) Connect the body side harness connector to the engine control unit.
- (13) After completion of the above test, perform a road test to be sure that the trouble has been eliminated.

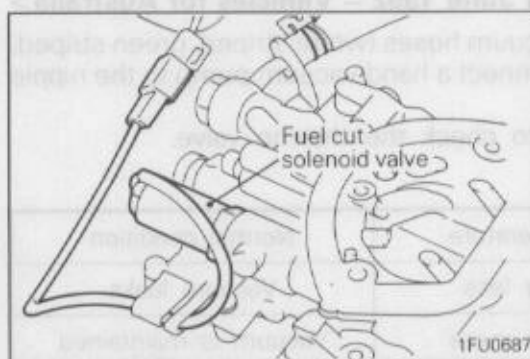




UNLOADER LIFT (SUCTION PISTON LIFT) INSPECTION

- (1) Measure the suction piston stroke when the throttle valve is opened fully from the idle position.

Standard value: 8 mm (0.31 in.) or more



FUEL CUT SOLENOID VALVE INSPECTION

<Operation Inspection>

- (1) Place a sound scope against the fuel cut solenoid valve and check that a click is heard when the ignition switch is turned ON.
- (2) Start the engine and check that the engine stops when the fuel cut solenoid valve connector is disconnected while the engine is running at idle.

DASH POT (CONVENTIONAL TYPE) INSPECTION

Refer to P.13-23.

DELAY VALVE INSPECTION

Refer to P.13-24.

THERMO VALVE (FOR NO.1 BREAKER VALVE) INSPECTION

<Vehicles built up to May 1992>

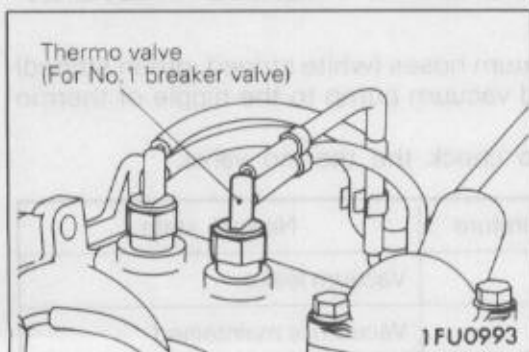
- (1) Remove the thermo valve.
- (2) Install a hand vacuum pump to the thermo valve resin nipple (white).
- (3) Apply a negative pressure and check continuity.

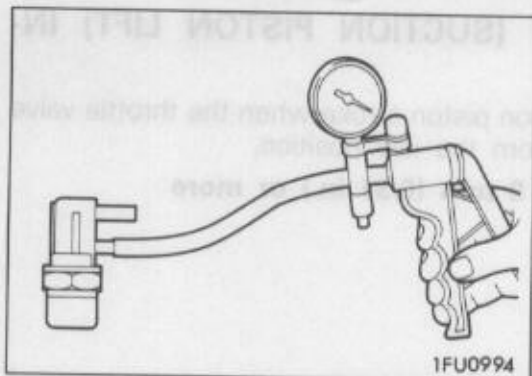
When lower than 0°C (32°F)	Vacuum is maintained
When higher than 25°C (77°F)	Vacuum leaks

<Vehicles built from June 1992 – Vehicles for General Export>

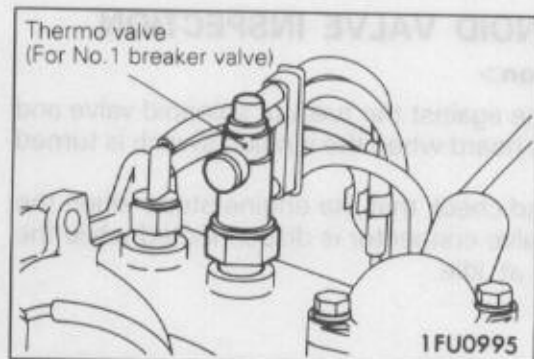
- (1) Disconnect the vacuum hoses (yellow striped, green striped) and connect a hand vacuum pump to the nipple of thermo valve.
- (2) Apply a vacuum to check the thermo valve.

Coolant temperature	Normal state
0°C (32°F) or less	Vacuum leaks
20°C (68°F) or more	Vacuum is maintained

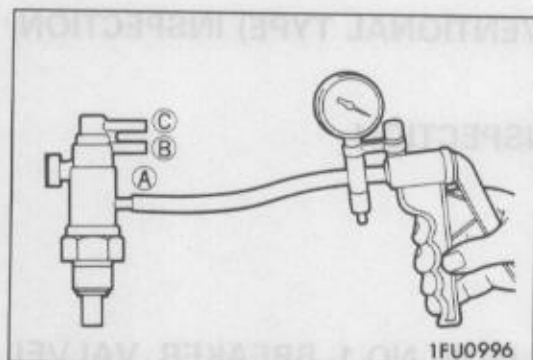




1FU0994



1FU0995



1FU0996

<Vehicles built from June 1992 – Vehicles for Australia>

- (1) Disconnect the vacuum hoses (white striped, green striped, red striped) and connect a hand vacuum pump to the nipple of thermo valve.
- (2) Apply a vacuum to check the thermo valve.

Nipple A

Coolant temperature	Normal condition
0°C (32°F) or less	Vacuum leaks
20°C (68°F) or more	Vacuum is maintained

NOTE
Plug the nipple B.

Nipple B

Coolant temperature	Normal condition
30°C (86°F) or less	Vacuum leaks
70°C (158°F) or more	Vacuum is maintained

NOTE
Plug the nipple A.

IDLE COMPENSATOR INSPECTION

Refer to P.13-24.

VACUUM SWITCH INSPECTION

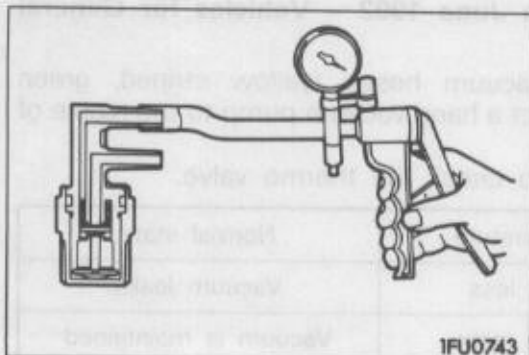
Refer to P.13-31.

ENGINE SPEED SENSOR INSPECTION

Refer to P.13-31.

COLD ADVANCE CONTROL THERMO VALVE INSPECTION

- (1) Disconnect the vacuum hoses (white striped, green striped) and connect a hand vacuum pump to the nipple of thermo valve.
- (2) Apply a vacuum to check the thermo valve.



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Engine coolant temperature	Normal state
40°C (104°F) or less	Vacuum leaks
80°C (176°F) or more	Vacuum is maintained