FUEL SYSTEM

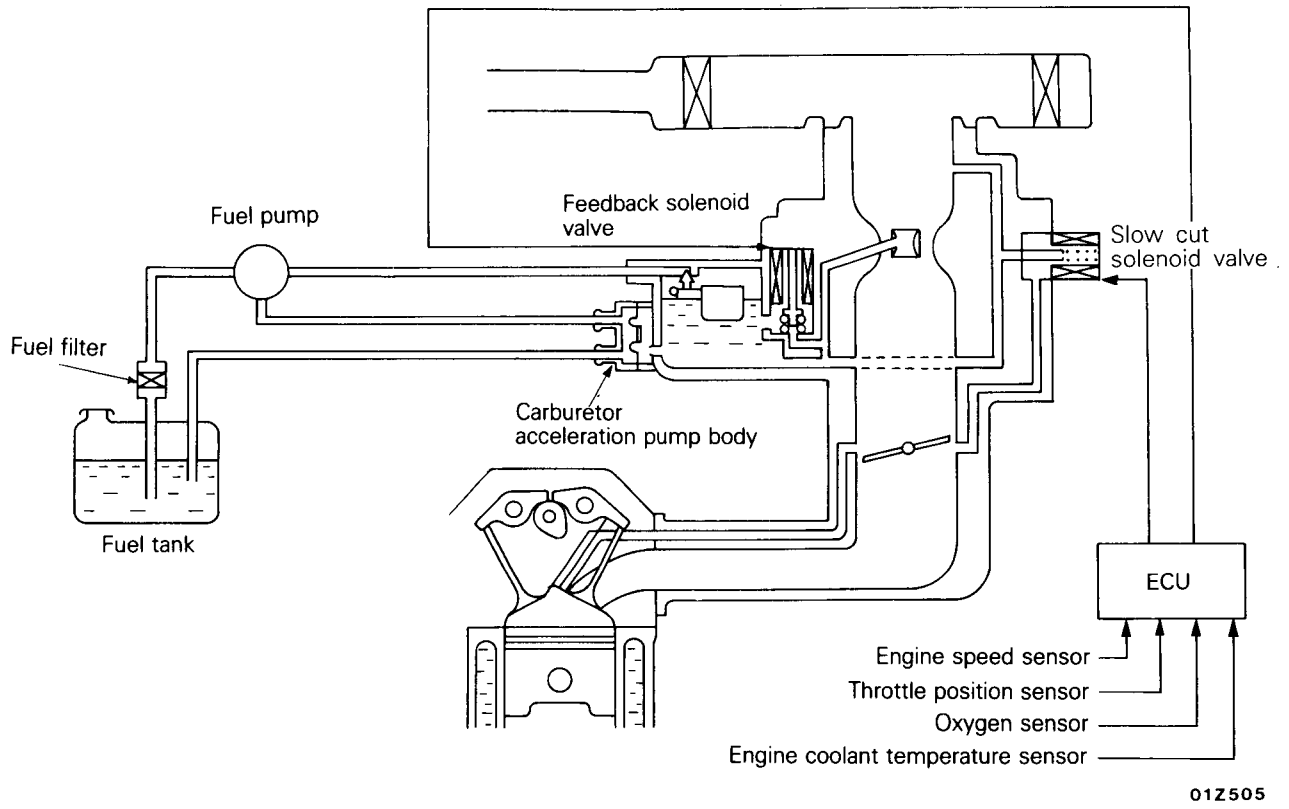
CONTENTS

N14AA--

GENERAL INFORMATION

N14BA--

- The fuel system consists of the fuel tank, the fuel lines (within the fuel return line), the vacuum lines, the fuel pump, the fuel filter, and the carburetor.
- The engine control is the suspended type, and is operated by the accelerator pedal and accelerator cable.
- The FBC (Feedback Carburetor) system is a system which functions to regulate the air/fuel mixture ratio. Input signals from the various sensors enable the electronic control unit (ECU) to determine the operating conditions of the engine, and, depending on the operating conditions, the air/fuel mixture ratio is regulated by the two solenoid valves (the feedback solenoid valve and the slow cut-off solenoid valve) equipped at the carburetor.
  The ECU also functions to control the electric choke, the throttle opener, etc.



SPECIFICATIONS

GENERAL SPECIFICATIONS

N14CA--

Items	Specifications
Fuel	
Fuel tank capacity lit. (U.S.gal., Imp.gal.)	60 (15,9, 13,2)
Fuel return system	Provided
Fuel filter	Cartridge type
Fuel pump	
Type	Mechanical diaphragm type
Drive by	Camshaft
Discharge pressure kPa (psi)	19.6–29.4 (2.8–4.2) – 2500 rpm
Carburetor	
Type	Down-draft, 2-barrel feedback type
Choke type	Automatic (electric type)
Heater	PTC heater
Identification model No.	
for Federal	32–35 DIDEF –410 : M/T 32–35 DIDEF –411 : A/T
for California	32–35 DIDEF –412 : M/T 32–35 DIDEF –413 : A/T
Throttle bore – primary mm (in.)	32 (1.26)
secondary mm (in.)	35 (1.38)
Feedback solenoid valve (FBSV)	Duty cycle solenoid
Slow cut solenoid valve (SCSV)	Duty cycle solenoid
Throttle operer	Diaphragm type
Dash pot	Conventional type
Throttle position senser (TPS)	Variable resister type
Bowl vent valve (BW)	Vacuum type
Mixture control valve (MCV)	Vacuum type : M/T only
Electronic control unit for FBC	
Identification model No.	
for Federal	E2T55071 : M/T E2T55075 : A/T
for California	E2T55071 : M/T E2T55075 : A/T
Input sensors	
Coolant temperature sensor	Thermistor type
Oxygen sensor	Zirconia sensor
Vacuum switch	Control-type switch
Output actuators	
Secondary air control solenoid valve	ON–OFF Solenoid valve
Throttle opener control solenoid valve	ON–OFF Solenoid valve

NOTE
M/T : Manual transmission
A/T : Automatic transmission

SERVICE SPECIFICATIONS

N14CB–

Items	Specifications
Standard value	
Engine adjustments	
Besic ignition timing	7° ± 2° BTDC at curb idle
Actual ignition timig at high altitude – All U.S.A. (high altitude), California	Approx. 12° BTDC
Curb idle speed for M/T rpm	
For the first 500 km (300 miles)	725^{+150}_{-100}
After 500 km (300 miles)	800 ± 100
Curb idle speed for A/T rpm	
For the first 500 km (300 miles)	725^{+150}_{-100}
After 500 km (300 miles)	800 ± 100
Throttle opener adjustment	
Rpm for air conditioner load rpm (when air conditioner ON)	900–950
Dash pot touch rpm rpm	
for M/T	2000
for A/T	1500
Throttle-position sensor (TPS)	
Adjustment voltage (throttle valve completely closed) V	0.25
Carburetor	
Main jet – primary	# 107.5
secondary	# 190
Pilot jet – primary	# 55
secondary	# 70
Enrichment jet	# 65
Automatic choke heater	Continuity-approx. 6 Ω [at 20°C (68°F)]
Choke breaker opening degree	
1st stage mm (in.)	2.5–2.7 (.098 – .106)
2nd stage mm (in.)	3.2–3.4 (.126 – .133)
First idle rpm	
M/T rpm	Approx. 2,350
A/T rpm	Approx. 2,300 (no load, after warm-up, 2nd stage)
Feedback solenoid valve (FBSV) coil resistance Ω	54–66 [at 20°C (68°F)]
Slow cut-off solenoid valve (SCSV) coil resistance Ω	48–60 [at 20°C (68°F)]
Throttle-position sensor (TPS) resistance kΩ	3.5–6.5
Input sensor	
Coolant temperature sensor resistance kΩ	
20°C (68°F)	2.5
80°C (176°F)	0.3
Oxygen sensor output voltage V	Approx. 1
Vacuum switch	ON more than 40 kPa (5.8 psi) OFF less than 26 kPa (3.9 psi)

NOTE
M/T : Manual transmission
A/T : Automatic transmission

Items	Specifications
Output actuator	
Secondary air solenoid valve resistance Ω	38 – 44 [20°C (68°F)]
Throttle opener control solenoid valve resistance Ω	38 – 44 [20°C (68°F)]

TORQUE SPECIFICATIONS

N14CC--

Items	Nm	ft.lbs.
Carburetor installation bolt	15 – 20	11 – 14
Coolant temperature sensor	20 – 40	14 – 29
Oxygen sensor	40 – 50	29 – 36
Throttle-position sensor installation screw	2,5 – 4,5	1,8 – 3,2
Thermo valve (2 nipples)	20 – 35	14 – 25
Drain plug	15 – 25	11 – 18
Fuel tank to body	25 – 30	18 – 22
Fuel gauge unit	1	0,7
Air cleaner to rocker cover	16 – 19	12 – 14

LUBRICANT

N14CD--

Item	Specified lubricant	Quantity
Grease for accelerator arm pin and return spring	Multipurpose grease SAE J310, NLGI No. 3	As required

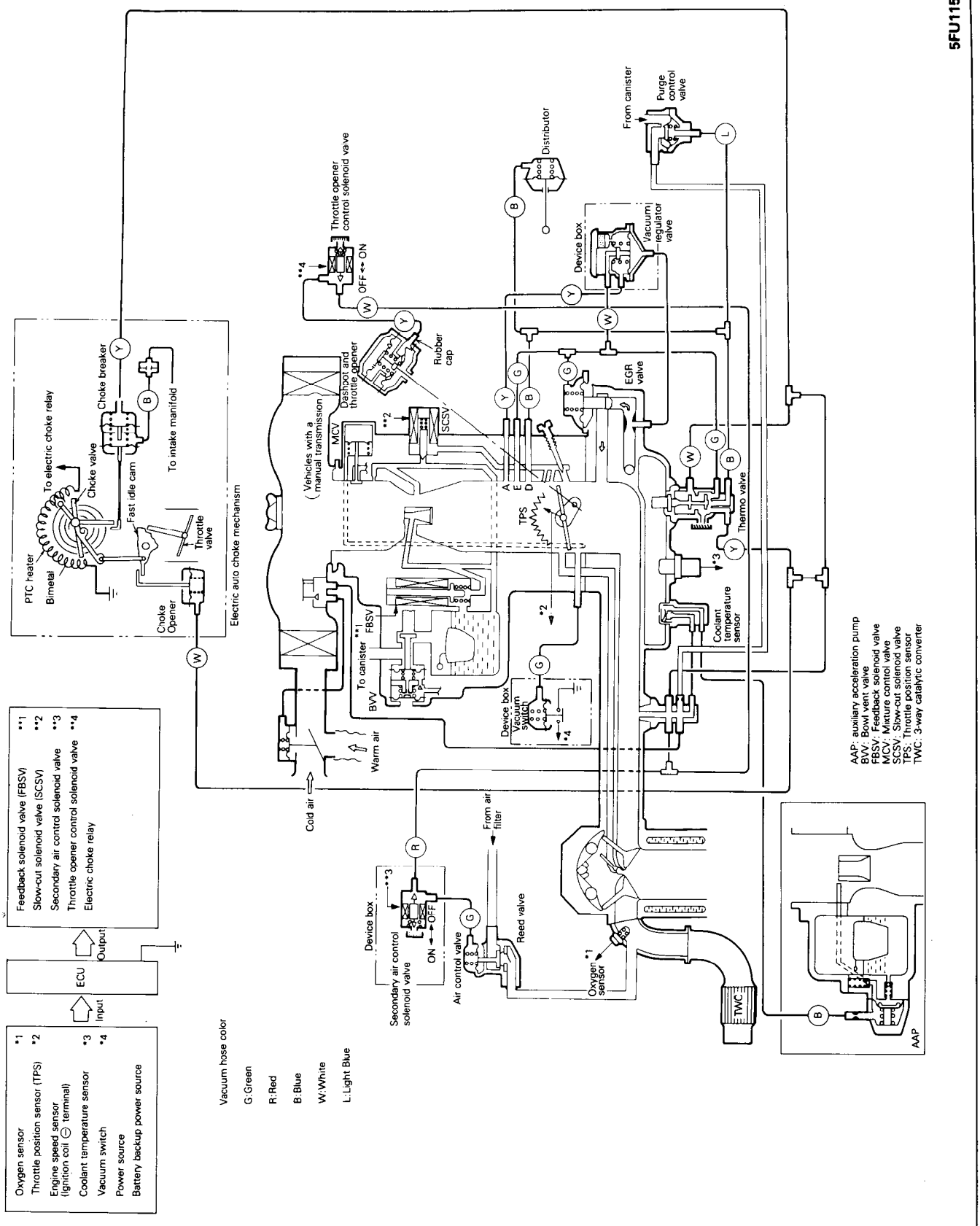
SEALANTS AND ADHESIVES

N14CE--

Items	Specified sealant and adhesive	Quantity
Thermo valve threads	3M Adhesive Nut Locking No. 4171 or equivalent	As required
Coolant temperature sensor threads	3M Adhesive Nut Locking No. 4171 or equivalent	As required

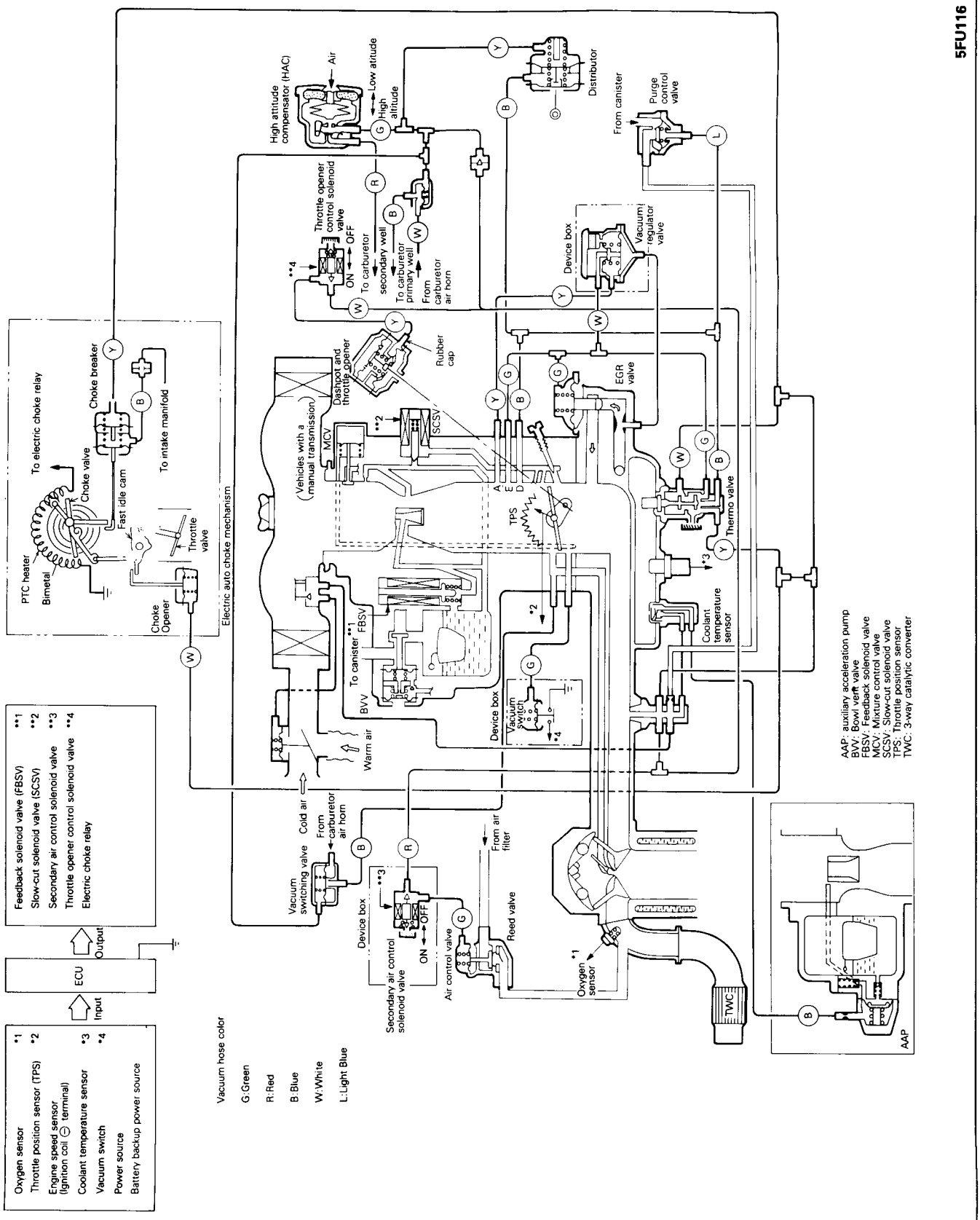
FBC SYSTEM DIAGRAM

VEHICLES FOR THE 49 STATES OTHER THAN CALIFORNIA (EXCLUDING HIGH-ALTITUDE SPECIFICATIONS)



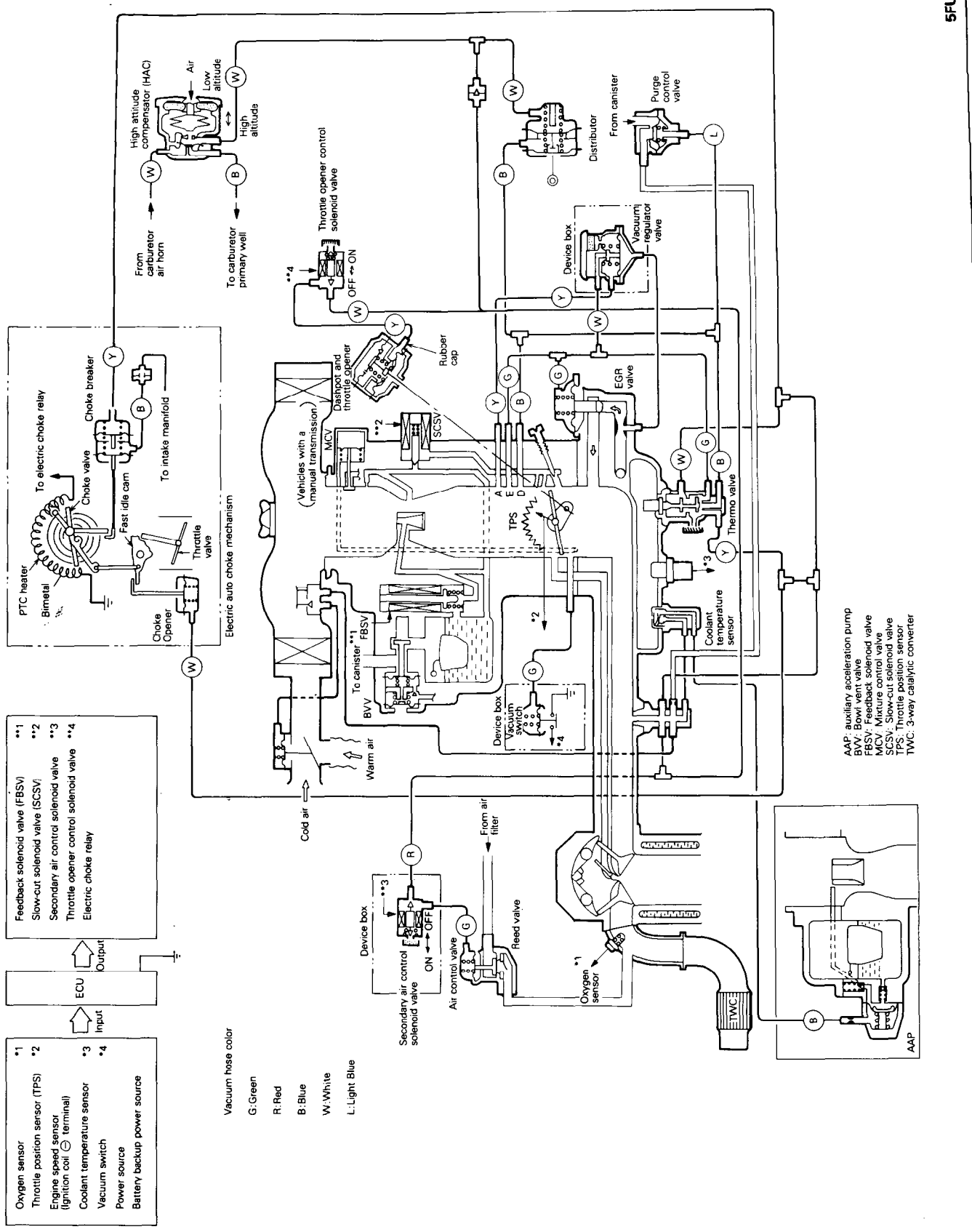
FBC SYSTEM DIAGRAM

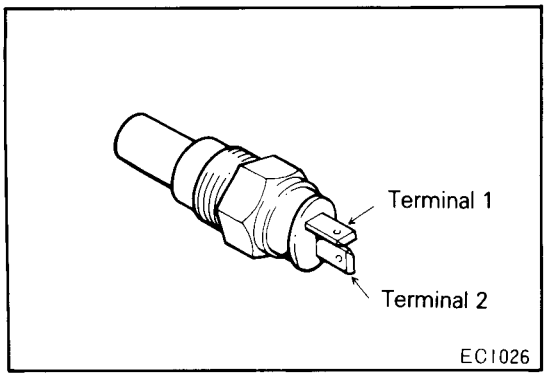
VEHICLES WITH HIGH-ALTITUDE SPECIFICATIONS FOR THE 49 STATES OTHER THAN CALIFORNIA



FBC SYSTEM DIAGRAM

VEHICLES FOR CALIFORNIA



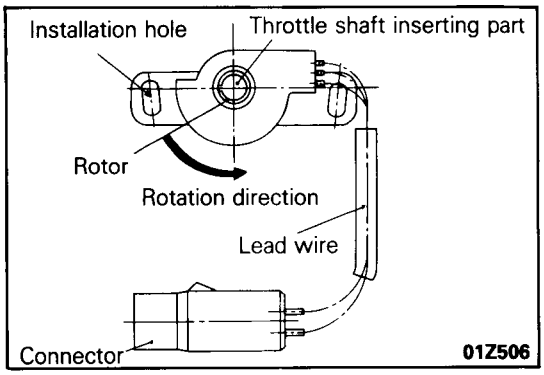


TECHNICAL DESCRIPTION N14BBAA

COMPONENT OF FBC SYSTEM

ENGINE COOLANT TEMPERATURE SENSOR

The engine coolant temperature sensor installed in the engine coolant passage of the intake manifold is a resistor-based sensor. The ECU judges engine warm-up state by the sensor output voltage and make a control to provide optimum fuel enrichment when the engine is cold.

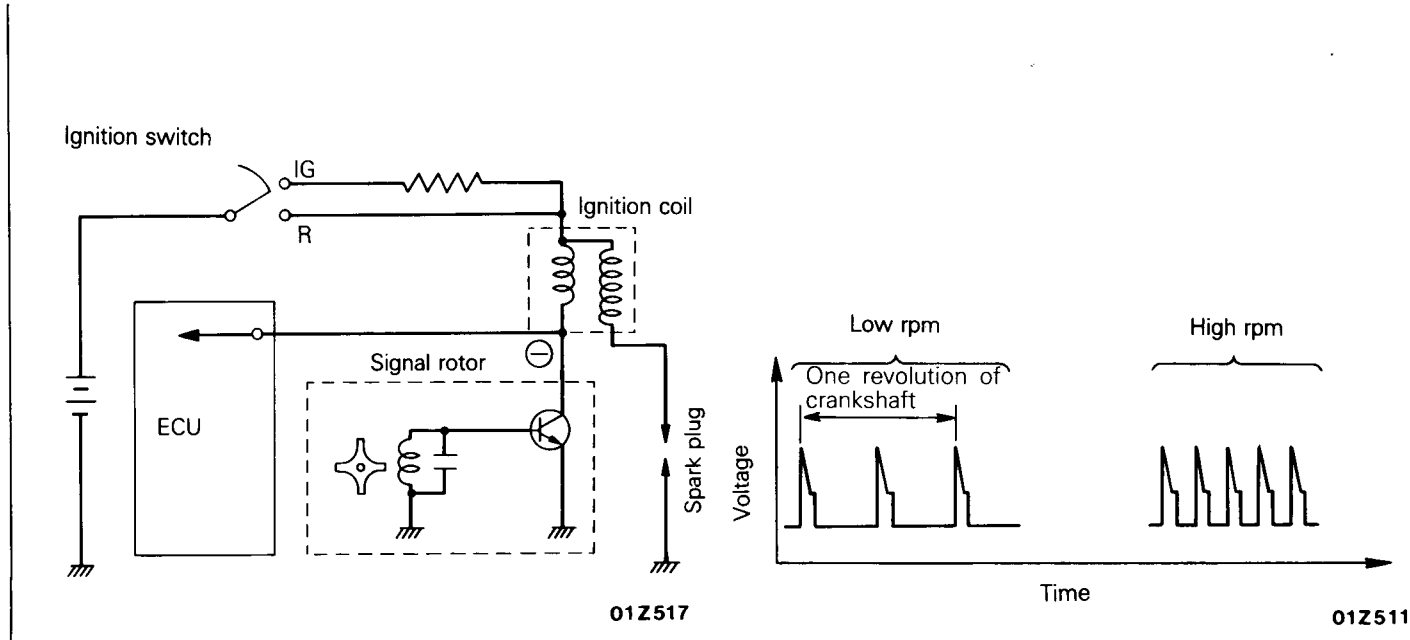


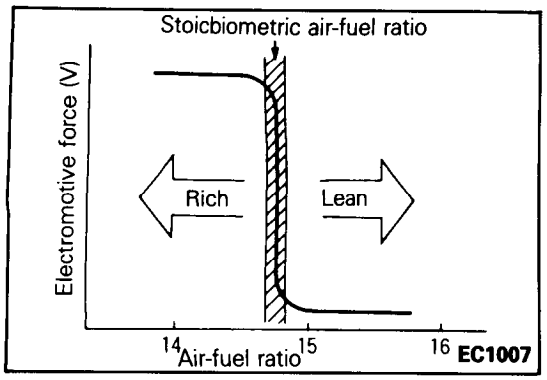
THROTTLE POSITION SENSOR (TPS) N14BBBA

The TPS is a rotation type variable resistor that rotates together with the carburetor throttle shaft to sense the throttle valve angle. As the throttle shaft rotates, the TPS output voltage changes and the ECU detects the throttle valve opening based on the change of the voltage.
Using the TPS output signal, engine speed signal and other signals, the ECU judges the engine operating mode and controls the air-fuel ratio, etc. for an optimum air-fuel mixture in that mode.

ENGINE SPEED SENSOR (IGNITION COIL MEGATIVE TERMINAL VOLTAGE SENSOR) N14BBHC

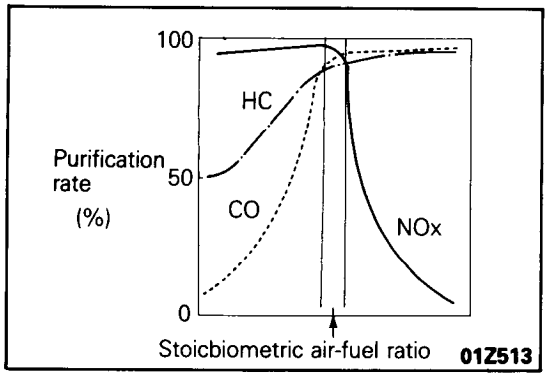
The ignition coil negative terminal voltage makes sudden increase twice per crankshaft revolution synchronously with ignition timing.
By sensing this ignition coil negative terminal voltage change and measuring the time between peak voltages, the ECU computes the engine speed, judges the engine operating mode and controls the air-fuel ratio.



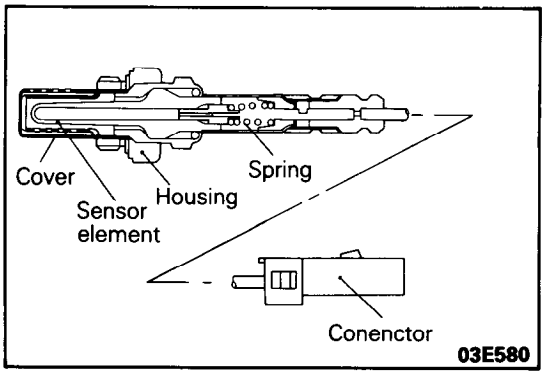


OXGEN SENSOR

The oxygen sensor installed on the exhaust manifold makes use of the principles of solid electrolyte oxygen concentration cell. The oxygen concentration cell is characterized by sharp change of the output voltage in the vicinity of the stoicbiometric air-fuel ratio.



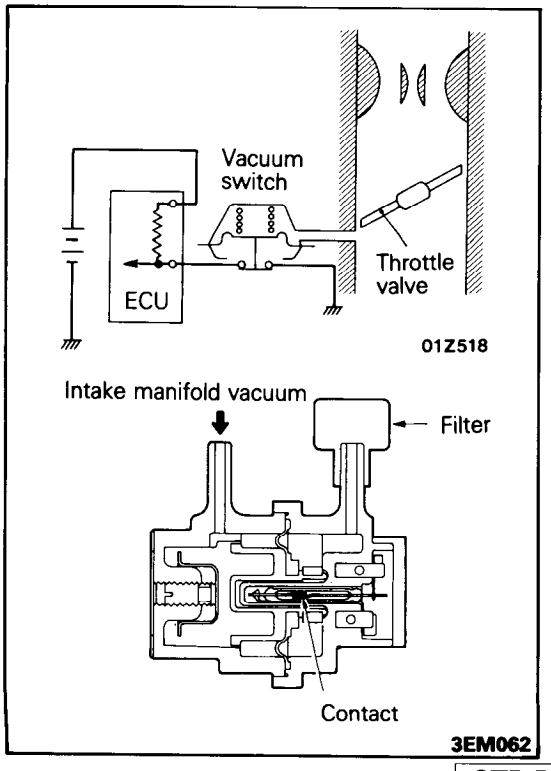
Using such characteristics, the oxygen sensor senses the oxygen concentration in the exhaust gas and feeds it to the ECU. The ECU then judges if the air-fuel ratio is richer or leaner as compared to the stoicbiometric ratio and provides feedback control to adjust the air-fuel ratio to the stoicbiometric ratio where the emission purification rate of the three-catalyst converter is the optimum.

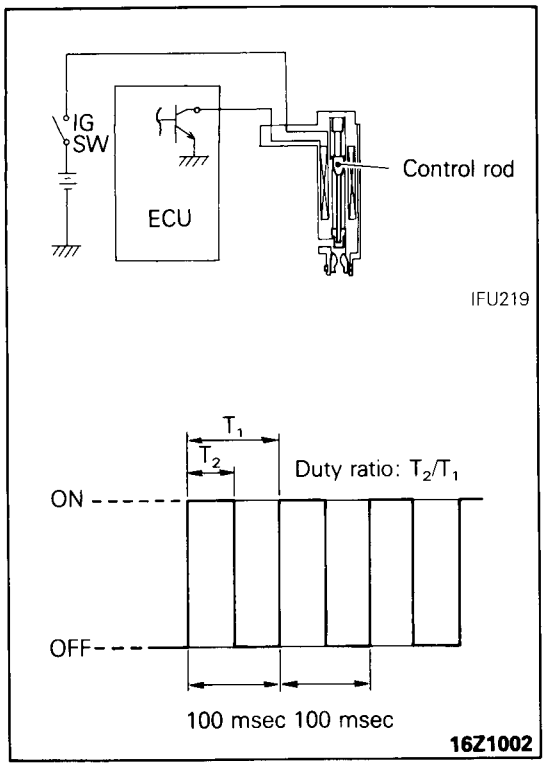


VACUUM SWITCH

N14BBKA

The vacuum switch is a contact type switch that is operated by intake manifold vacuum. When the throttle valve closes, the intake manifold vacuum acts on the vacuum switch to close its contact. By this action, the voltage on the ECU side is grounded and the ECU senses that the throttle valve opening is near the idle opening.

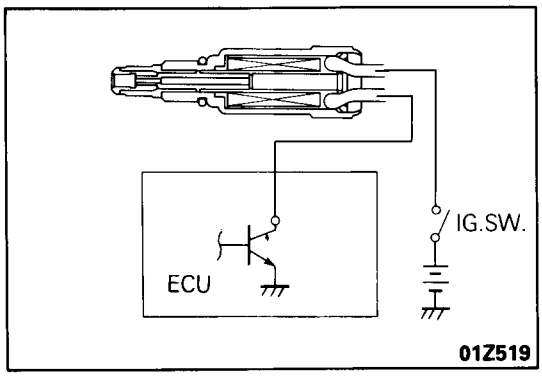




FEEDBACK SOLENOID VALVE (FBSV) N14BCAA

The FBSV is installed on the carburetor float chamber cover.
The ECU controls the air-fuel ratio by controlling the duty cycle of the FBSV.
The higher is the duty ratio, the leaner becomes the air-fuel ratio.

NOTE
The duty cycle control means control of the solenoid valve energization rate by changing the ON time ratio T_2/T_1 (called duty ratio) of 10 Hz pulse.



SLOW CUT SOLENOID VALVE (SCSV) N14BCBA

The SCSV is installed on the carburetor float chamber cover.
The ECU controls the carburetor slow system fuel flow by controlling the duty cycle of the SCSV.

THROTTLE OPENER CONTROL SOLENOID VALVE N14BCIC

Refer to section "Throttle opener system for air Conditioning system" on page 14-14.

ELECTRIC CHOKE RELAY

Refer to section "Carburetor electric choke system." on page 14-18.

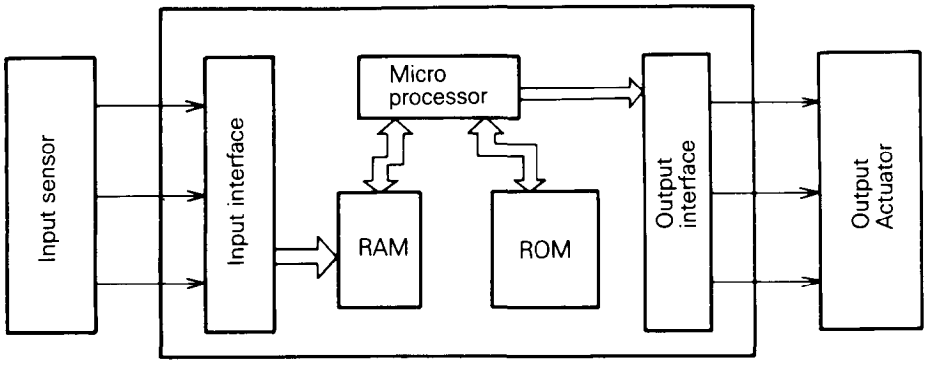
SECONDARY AIR CONTROL SOLENOID VALVE N14BCJA

Refer to GROUP 25 EMISSION CONTROL SYSTEM-Secondary air supply system.

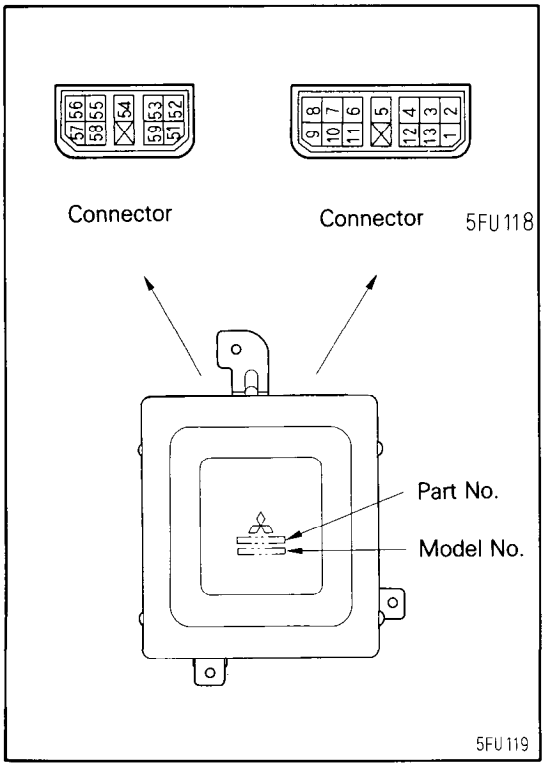
ELECTRONIC CONTROL UNIT (ECU)

N148DAA

Based on the information from various sensors, the ECU determines (computes) an optimum control for varying operating conditions constantly and accordingly drives the output actuators.
The ECU consists of an 8-bit microprocessor, random access memory (RAM), read only memory (ROM) and input/output (I/O) interface.



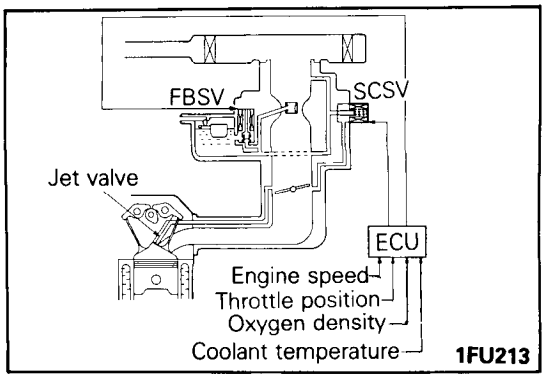
IFU350



ECU Connector I/O Pin Composition

1. Oxygen sensor
2. Ground for sensor
3. Power supply for sensor
4. –
5. Vacuum switch
6. Ground
7. Power supply
8. Power supply
9. Power supply for back-up
10. Engine speed sensor (Ignition coil negative terminal)
11. Ground
12. Coolant temperature sensor
13. Throttle position sensor (TPS)

51. –
52. –
53. Slow cut solenoid valve
54. Throttle opener control solenoid valve
55. Secondary air control solenoid valve
56. Electric choke relay
57. Air conditioner relay
58. –
59. Feedback solenoid valve



OPERATION OF THE FBC SYSTEM N14BEAA

AIR-FUEL RATIO CONTROL SYSTEM

The air-fuel ratio control is achieved by the following two kinds of control.

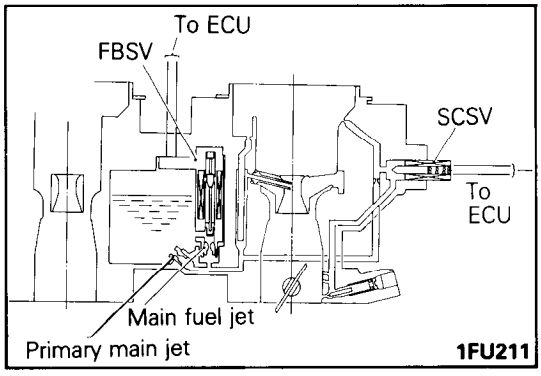
Closed Loop Control (Feedback Control)

In the ordinary operating region after engine warm-up, the air-fuel ratio control is made by the feedback control based on the oxygen sensor signal.
The oxygen sensor has such characteristics that its output voltage changes sharply at the stoicbiometric ratio. The control unit senses this oxygen sensor signal and accordingly provides feedback control of the FBSV duty ratio so that the stoicbiometric ratio that will give the best purification rate of the 3-catalyst converter may be accurately kept. In this state, the SCSV is kept wide open (100% duty).

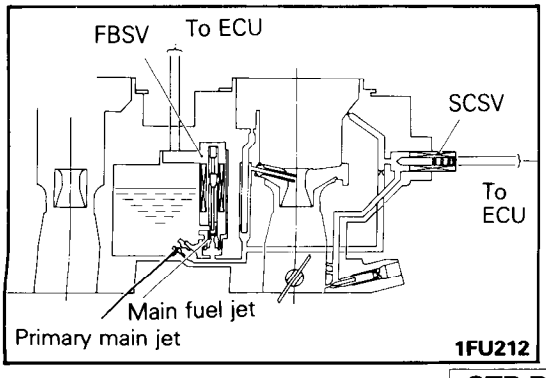
Open Loop Control (No Feedback Control)

During engine start, warm-up operation, high load operation and deceleration, the air-fuel ratio is open-loop controlled by the map values* established previously for engine speed, throttle valve opening angle and engine coolant temperature, to improve startability and driveability. During deceleration, the control on SCSV limits fuel flow for better fuel economy and for prevention of overheating of the catalysts.

* Map value is a value previously established and stored in ROM in ECU.



When the FBSV is energized, the main fuel jet is closed to leave the primary main jet passage as the only fuel passage. This will reduce the amount of fuel, resulting in leaner air-fuel mixture.



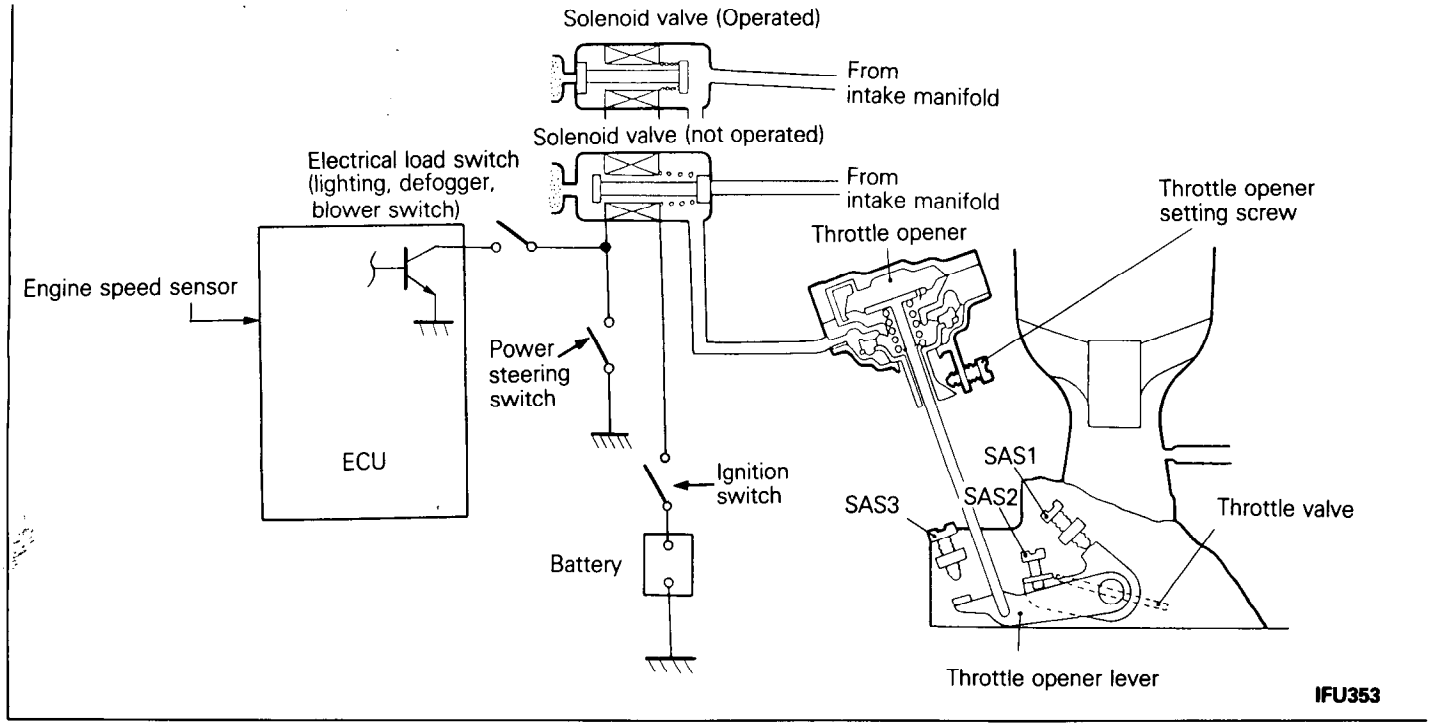
When FBSV is de-enrgized, the main fuel jet is opened to provide two fuel passages including the primary main jet passage. Since this will increase the amount of fuel, richer air-fuel mixture is obtained.
With the ON–OFF operation of SCSV, the slow fuel passage is opened and closed.
The air-fuel ratio at deceleration is controlled in this manner.

SECONDARY AIR CONTROL SYSTEM N14BHAA

Refer to GROUP 25 EMISSION CONTROL SYSTEM-Secondary air supply system.

THROTTLE OPENER SYSTEM FOR AIR CONDITIONING

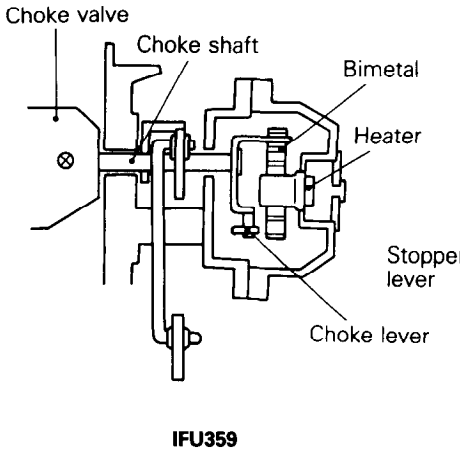
N14BIBB



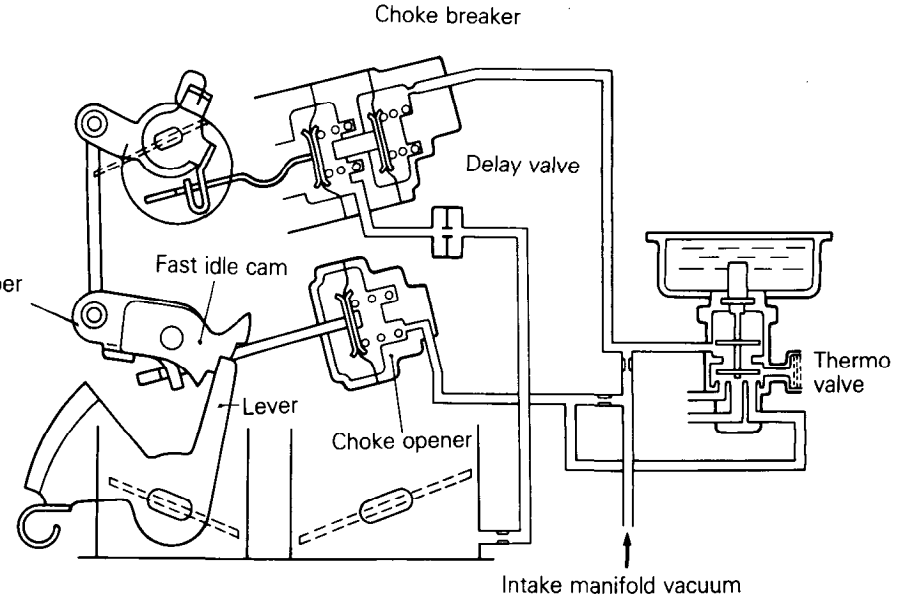
When the engine speed is below the set speed (1,450 rpm), the ECU keeps the power transistor on. Therefore, when the air conditioner relay is turned on (the air compressor is driven by the engine), the throttle opener control solenoid valve is energized to introduce intake manifold vacuum to the throttle opener to open the throttle valve slightly, preventing engine speed drop that would otherwise be caused by air conditioner load.

CARBURETOR ELECTRIC CHOKE SYSTEM

N148PBB



IFU359



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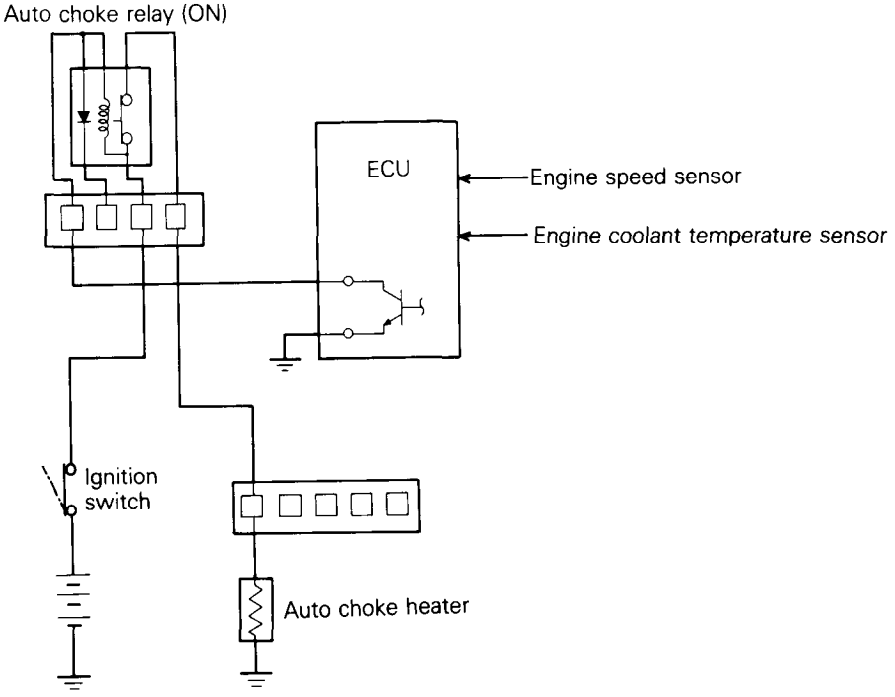


IFU358

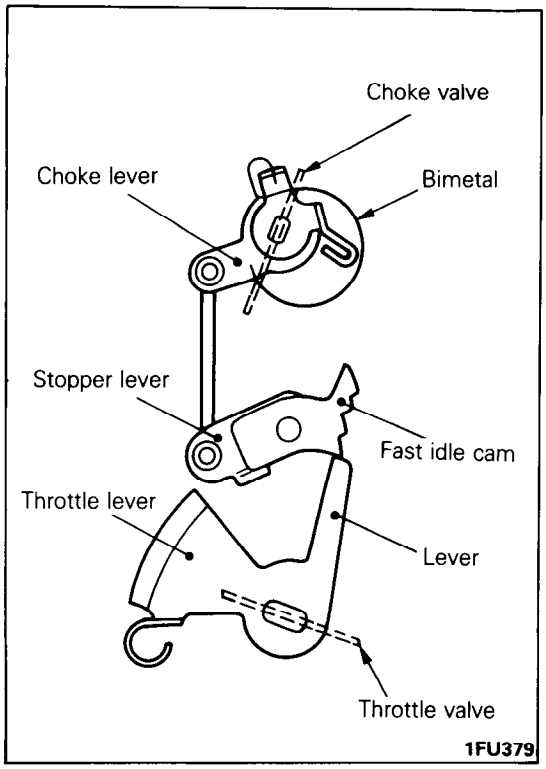
In carburetor electric choke system, a bimetal which is heated by an electric heater (PTC heater*) operates the choke valve and fast idle cam for proper engine warm-up control.

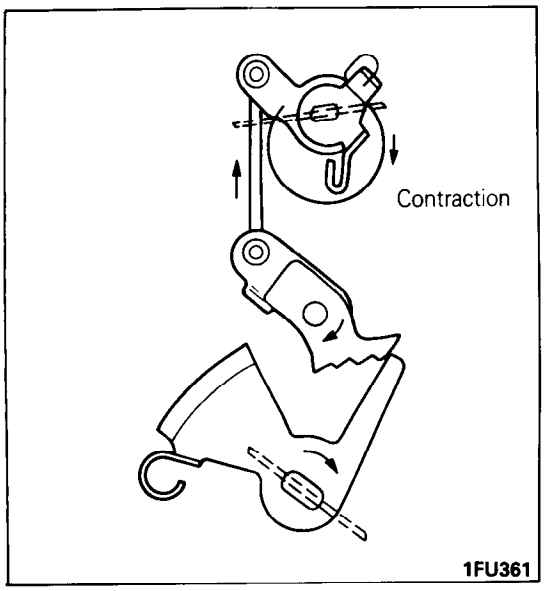
The lower the temperature when the engine is started, the tighten the bimetal closes the choke valve, thus improving startability at cold weather.
As the engine is heated by the heater after start up, the bimetal opens the choke valve gradually by thermal expansion and pushes down the stopper lever.

NOTE
PTC stands for Positive Temperature Coefficient and the PTC heater means a heater with positive temperature coefficient. Namely, as the heater generates heat, its resistance increases and hence limits the current to control heat generation.

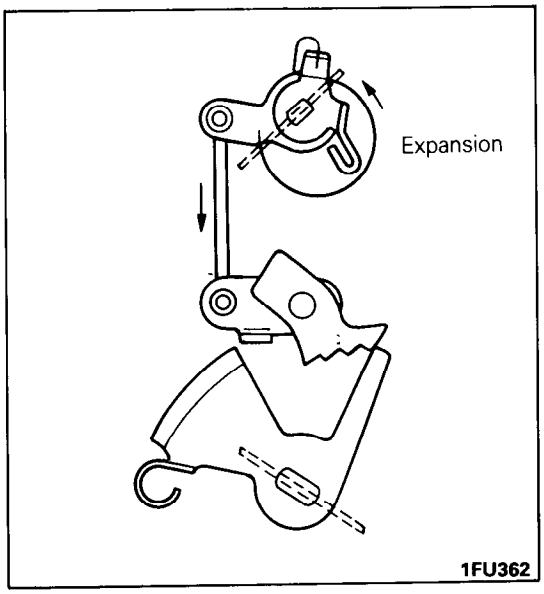
Chole Valve and Fast Idle Cam Operation

1. Before starting the engine, the throttle valve is in the normal idle opening state.

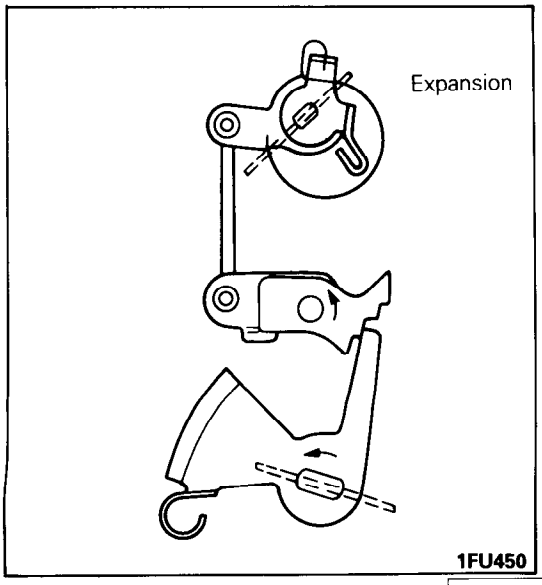




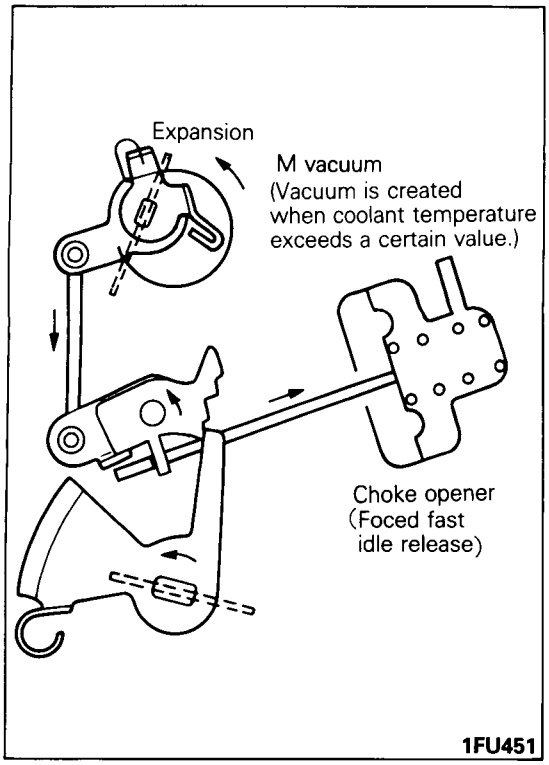
2. Before starting the engine, depress the accelerator pedal to the floor, and the fast idle cam will turn clockwise. Release the accelerator pedal, and the lever will ride on the fast idle cam and the throttle valve will open.
3. When the engine starts, the intake manifold vacuum is applied to the choke breaker to slightly open the choke valve, preventing formation of a too rich mixture of air and fuel.



4. Shortly after starting of engine, the bimetal is heated by the heater and expands to open the choke valve gradually and push down the stopper lever.
   At this time, the engine speed increase gradually.



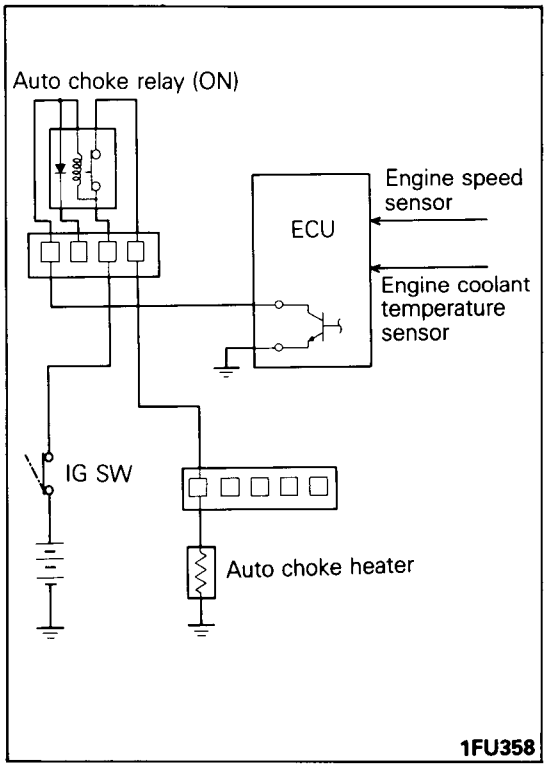
5. Depress the accelerator pedal, and the fast idle cam will turn counter-clockwise. Release the accelerator pedal and the lever will ride on the lower cam of fast idle cam and the throttle valve will close slightly, decreasing the engine speed. After warming up the engine for a while, depress the accelerator pedal and the throttle valve will be further closed.
   By repeating this procedure, the fast idle cam is released and the throttle valve comes to have a normal idle opening.



Operation of Choke Opener

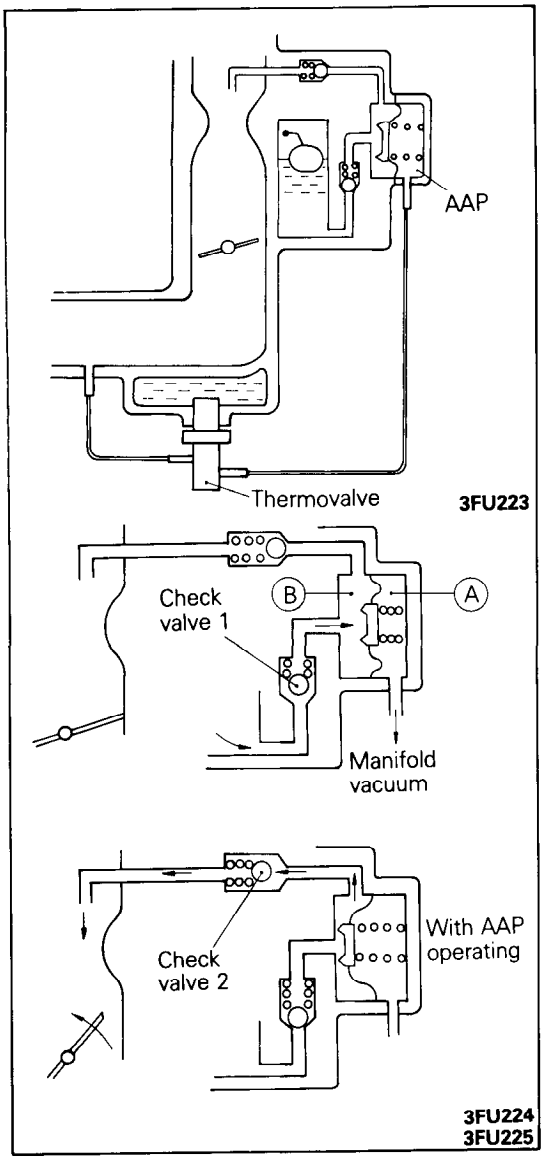
If the engine has been started with the throttle valve lever on the highest fast idle cam detent and left as it is, then the engine speed increases with the engine coolant temperature rises, and finally the engine overruns. In order to prevent such overrun, the choke opener is provided.

1. When the thermo valve closes as the engine coolant temperature rises [65°C (149°F)], the intake manifold vacuum acts on the fast idle breaker.
2. The fast idle breaker forces the fast idle cam to turn counterclockwise so that the lever will rest on the lowest cam, closing the throttle valve to decrease the engine speed.



Electric Choke Relay

The electric choke relay is normally closed (ON) and it opens when its coil is energized.
During engine cranking the ECU turns on the power transistor to energize the electric choke relay coil. This prevents heating of the electric choke heater, improving engine startability.

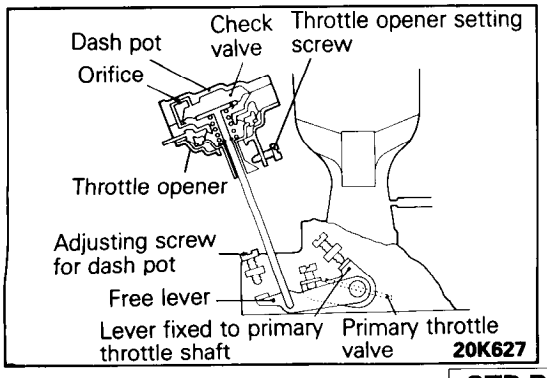


Auxiliary Accelerator Pump (AAP) N14BTAA

The Auxiliary Accelerator Pump is provided to improve driveability while the engine is still cold. AAP is controlled by a thermo-valve and intake manifold vacuum and operates in the high load range while the coolant temperature is low (approx. 45°C/113°F).

The thermo-valve is of the bi-metal type and is mounted on the intake manifold. The valve opens when the engine coolant temperature is below 45°C (113°F) and allows the manifold vacuum to affect AAP chamber [A]. The valve closes when the coolant temperature exceeds 45°C (113°F) to shut off the manifold vacuum and stop the operation of the AAP.

The manifold vacuum operates on AAP chamber [A]. When the diaphragm moves to the right, the fuel pushes check valve 1 open, flows into and fills chamber [B]. When the throttle valve opens quickly and the vacuum in chamber [A] lowers, the diaphragm is pushed to the left by spring pressure. As a result, the fuel in chamber [B] pushes open check valve 2 and jets into the carburetor, enriching the fuel mixture.



DASH POT N14BJAA

The dash pot delays closing of the throttle valve when it closes from the set opening to the idle opening. This delay absorbs shock at the time of deceleration for better driving comfort.

TROUBLESHOOTING

N14EBAA

When checking and correcting engine troubles, it is important to start with inspection of the basic systems. In case you have such troubles as (1) engine start failure, (2) unstable idling or (3) poor acceleration, therefore, you should first check the following basic systems.

(1) Power supply
- Battery
- Fusible link
- Fuse

(2) Body ground

(3) Fuel supply
- Fuel line
- Fuel filter
- Fuel pump

(4) Ignition system
- Spark plug
- High-tension cable
- Distributor
- Ignition coil

(5) Emission control system
- PCV system
- EGR system
- Vacuum leak

(6) Others
- Ignition timing
- Idle speed

Troubles with the FBC system are often caused by poor contact of harness connector. It is, therefore, important to check harness connector contact.

CARBURETOR

Symptom	Probable cause	Remedy	Reference page
Engine will not start or start to hard (cranks OK)	Carburetor Choke valve remains open–cold engine	Clean choke bore and link	14-69
	Improper choke breaker operation	Check and adjust choke breaker	14-38
	Electric choke malfunction	Check electric choke body and choke valve operation	14-35
	Needle valve sticking or clogged	Repair and replace	14-66
	FBC system Engine coolant temperature sensor malfunction	Check by using checker (Check component and replace if faulty)	14-57
	Vacuum hose disconnected or damaged	Repair or replace	14-49
	Slow-cut solenoid valve malfunction	Check component	14-59
	Feedback solenoid valve malfunction	Check component	14-59
	Vacuum switch malfunction–cold engine	Check component	14-58
	Faulty ECU	Replace	14-53
	Harness broken/short circuited or connector not connected securely	Repair or replace	–
Rough idle or engine stalls	Carburetor Choke valve malfunction	Clean choke bore and link	14-69
	Improper fast idle–cold engine	Adjust fast idle speed	14-40
	Improper idle adjustment	Adjust idle speed	14-26
	Electric choke malfunction	Check choke body and choke valve operation	14-35
	Primary pilot jet clogged	Clean up or replace	14-68

Symptom	Probable cause	Remedy	Reference page
Rough idle or engine stalls	Dash pot malfunciton	Adjust	14-30
	FBC system Slow-cut solenoid valve malfunction	Check drive signal by using checker. Check component	14-59
	Engine coolant temperature sensor malfunction	Check by using checker (Check component and replace if faulty)	14-57
	Vacuum hose disconnected or damaged	Repair or replace	14-49
	Throttle position sensor malfunction	Check component and adjust	14-28
	Engine speed sensor malfunction	Check by using checker Check harnesses for continuity	14-58
	Throttle opener control system malfunction	Check system. If faulty, check components	14-28
	Harness broken/short-circuited or connector not connected securely	Repair or replace	–
Engine hesitates or poor acceleration	Carburetor Acceleration pump malfunction	Check pump discharge rate	14-35
	Choke valve remains open–cold engine	Clean choke bore and link Check choke valve operation	14-69
	Choke valve remains closed–hot engine		
	Enrichment valve faulty	Repair or replace	14-68
	Main jet clogged	Clean up	14-68
	Enrichment jet clogged	Clean up	14-68
	Secondary valve operation abnormal	Check valve operation	14-36
	Auxiliary acceleration pump malfunction –cold engine	Check pump discharge rate	14-41
	FBC system Feedback solenoid valve malfunction	Check drive signal by using checker. Check component	14-59
	Vacuum switch malfunction	Check by using checker (Check component and replace if faulty)	14-58
	Engine coolant temperature sensor malfunction	Check by using checker (Check componfent and replace if faulty)	14-57
	Throttle position sensor malfunction	Check component and adjust	14-28
	Engine speed sensor malfunction	Check by using checker Check harnesses for continuity	14-58
	Harness broken/short-circuited or connector not connected properly	Repair or replace	–
Engine dieseling (runs after ignition switch is turned off)	Carburetor Engine idle speed too high	Adjust idle speed	14-26
	FBC system Slow cut solenoid valve malfunction	Check component	14-59

Symptom	Probable cause	Remedy	Reference page
Poor fuel mileage	Carburetor Choke valve operation abnormal	Check valve operation	14-69
	Engine idle speed too high	Adjust idle speed	14-26
	Electric choke malfunction	Check choke body and valve operation	14-35
	Enrichment valve kept open	Repair or replace	14-68
	Auxiliary acceleration pump is in operation –hot engine	Repair or replace	14-41
	FBC system Engine coolant temperature sensor malfunction	Check by using checker (Check component and replace if faulty)	14-57
	Oxygen sensor malfunction	Check by using checker (Check component and replace if faulty)	14-58
	Feedback solenoid valve malfunction	Check drive signal by using checker Check component	14-40
	Slow-cut solenoid valve malfunction	Check drive signal by using checker Check components	14-59
	Throttle position sensor malfunction	Check component and adjust	14-28
	Engine speed sensor malfunction	Check by using checker check harnesses for continuity	14-58
	Harness broken/short circuited or connector not connected properly	Repair or replace	–

CONTROL FUNCTIONS TABLE

N14EE--

Related components \ Function		Air/ fuel mixture ratio control (*FBC)	Throttle opener control	Electric choke relay control	Secondary air control	Individual unit description (page)
Input	Power supply (ignition switch interlock)	×	×	×	×	–
	Power supply (battery back-up)	×	×	×	×	–
	Coolant temperature sensor	×		×	×	14-57
	Throttle-position sensor (TPS)	×				14-57
	Engine-speed sensor	×	×	×	×	14-58
	Oxygen sensor	×				14-58
	Vacuum switch	×			×	14-58
	Air conditioner switch		*×			GROUP 24 HEATERS AND AIR-CONDITIONING
Output	Feedback solenoid valve (FBSV)	×				14-59
	Slow-cut solenoid valve (SCSV)	×				14-59
	Throttle opener control solenoid valve (for air conditioner load)		×			14-59
	Electric choke relay			×		14-36
	Secondary air control solenoid valve				×	GROUP 25 EMISSION CONTROL SYSTEM

NOTE
The * symbol indicates no direct relation to the control unit's control functions.

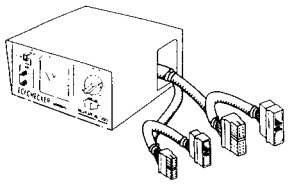
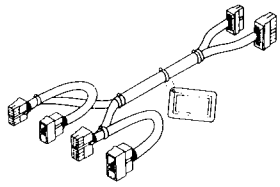
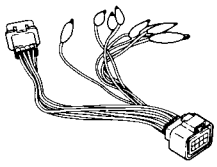
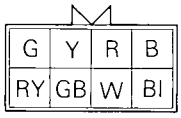
FUEL TANK AND FUEL LINE

N14EAAA

Symptom	Probable cause	Remedy	Reference *page*
Engine malfunctions due to insufficient fuel supply	Bent or kinked fuel pipe or hose	Repair or replace	–
	Clogged fuel pipe or hose	Clean or replace	–
	Clogged fuel filter or in-tank fuel filter	Replace	14-80
	Water in fuel filter	Replace the fuel filter or clean the fuel tank and fuel line	–
	Dirty or rusted fuel tank interior	Clean or replace	–
	Malfunctioning fuel pump (Clogged filter in the pump)	Replace	14-77
Evaporative emission control system malfunctions (When tank cap is removed, pressure releasing noise is heard)	Mispiping of vapor line	Correct	14-82
	Disconnect vapor line piping joint	Correct	14-82, 83
	Folded, bent, cracked or clogged vapor line	Replace	14-82, 83
	Faulty fuel tnak cap	Replace	–
	Malfunctioning overfill limiter (two-way valve)	Replace	14-81

SPECIAL TOOLS

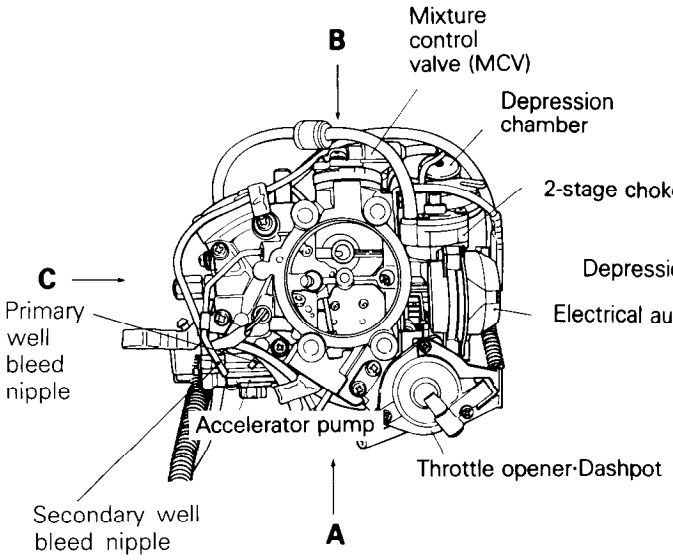
N14DA--

Tool (Number and name)	Use	Tool (Number and name)	Use
MD998406 ECI checker 	Diagnosis and inspection for ECI system and FBC system	MD 998438 Harness connector for FBC 	Inspection for FBC system Use with MD998406
MD998474 Harness connector (8-pin, square)  	Adjustment of TPS		

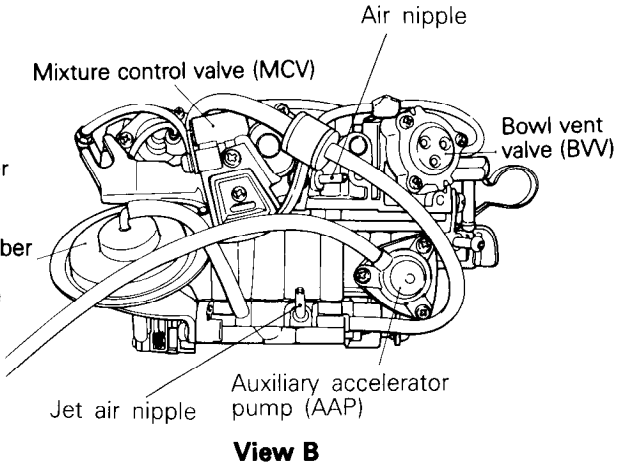
SERVICE ADJUSTMENT PROCEDURES

CARBURETOR EXTERNAL VIEW

N14FJ--

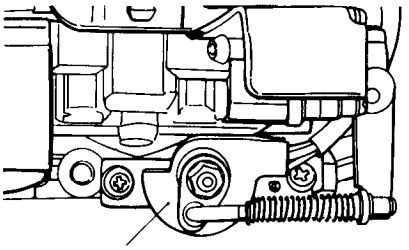


5FU120



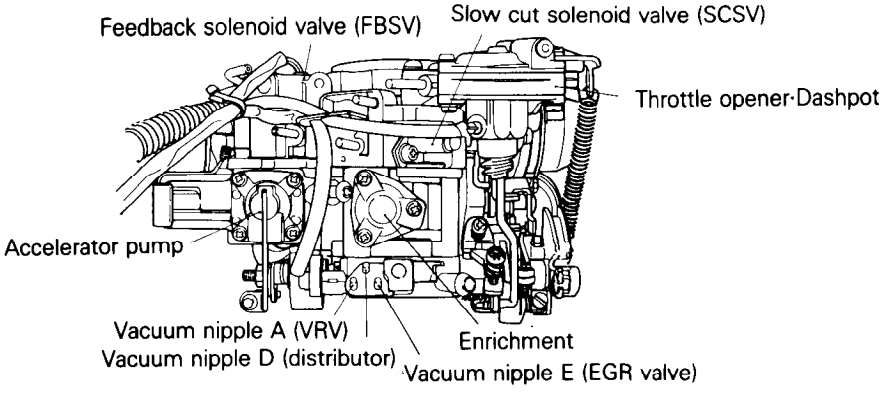
View B

5FU121



View C

5FU123



View A

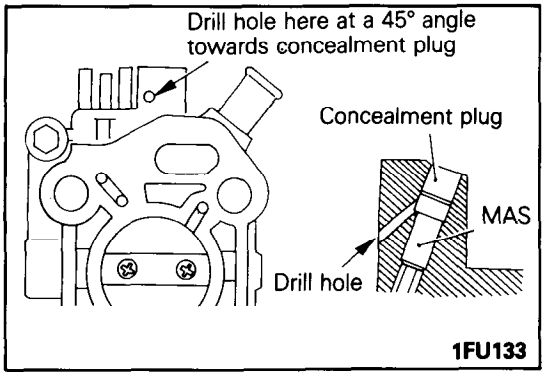
5FU122

IDLE SPEED CHECK PROCEDURE N14FHAA

Refer to GROUP 0 LUBRICATION AND MINTENANCE-Checking and adjustment of the idling rpm

IDLE SPEED ADJUSTMENT N14FHBA

Refer to GROUP 0 LUBRICATION AND MAINTENANCE–Idle Speed Inspection and Adjustment.



IDLE SPEED AND MIXTURE ADJUSTMENT (For Unscheduled Maintenance only)

1. Remove carburetor from engine. (Refer to P.14-61.)
2. Clamp carburetor in a vice with idle mixture adjusting screw (MAS) facing up (protect gasket surface from vice jaws).
3. Drill a 2 mm (5/64 inch) pilot hole in the casting surrounding the idle mixture adjusting screw (MAX) then redrill the hole to 3 mm (1/8 inch).
4. Insert a blunt punch into the hole and drive out plug.
5. Reinstall carburetor on engine.
6. Run the cold engine at fast idle until the cooling water temperature is raised to 80 to 95°C (185 to 205°F).

Inspection Conditions

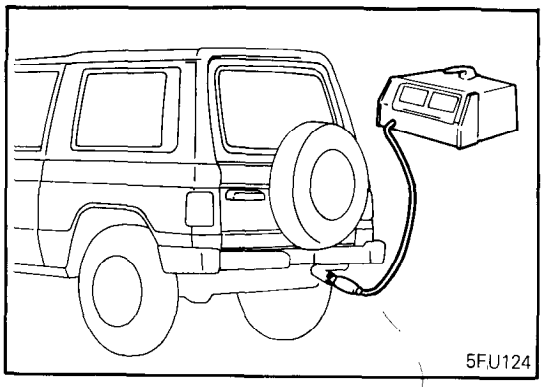
Engine coolant temperature : 85–95°C (185–205°F)
Light and accessory operation : off
Transmission : neutral (N or P for automatic transmission equipped vehicles)
Steering wheel : center position (power steering equipped vehicles)

7. Prepare a timing light and tachometer.
8. Check the cycle of the timing light. Adjust if necessary.

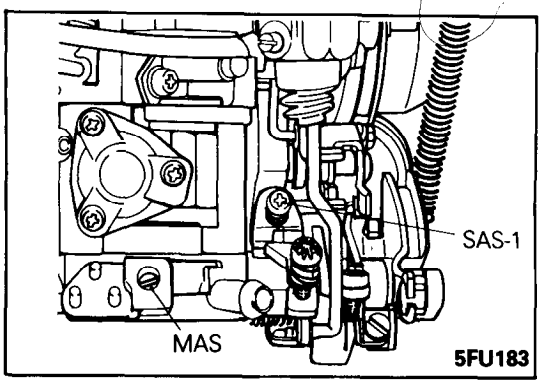
   Timing light cycle : 7° BTDC ±2°

   NOTE
   Refer to GROUP 8 ELECTRICAL–Ignition System, for the timing cycle inspection and adjustment procedures.

9. Turn off the ignition key.
10. Disconnect the cable from the negative terminal of the battery for about 5 seconds. And then reconnect the cable to the original terminal.
11. Disconnect the connector of the exhaust oxygen sensor.
12. Run the engine for more than 5 seconds at the engine speed of 2000 to 3000 rpm.
13. Run the engine at idle for 2 minutes.



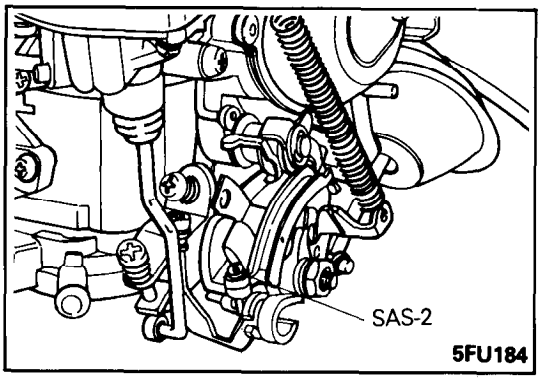
14. Set the CO-HC tester.



15. Set the idle CO and the engine speed to the specified value by adjusting the idle speed adjusting screw No. 1 (SAS-1) and the idle mixture adjusting screw (MAS).

Idle CO : 0.1 to 0.3% at nominal curb idle speed
Curb idle speed :

***1 725 $^{+150}_{-100}$ rpm / *2 800 ±100 rpm**



NOTE
1. *1 : For the first 500 km (300 miles)
2. *2 : After 500 km (300 miles)
3. If the idle CO adjustment fails, suction of secondary air is likely. Plug the secondary air hose and try again.

Caution
DO NOT TOUCH SAS-2. The idle speed adjusting screw (SAS-2) is the preset screw that determines the relationship between the throttle valve and free lever, and has been accurately set at the factory. If this setting is disturbed, throttle opener adjustment and dash pot adjustment cannot be done accurately.

16. Turn off the ignition switch.
17. Connect the oxygen sensor connector.
18. Install the concealment plug into the hole to seal the idle mixture adjusting screw.

THROTTLE OPENER ADJUSTMENT FOR AIR CONDITIONER

N14FKBC

The throttle opener (idle-up actuator) described here controls the idle speed when the air conditioning is applied.

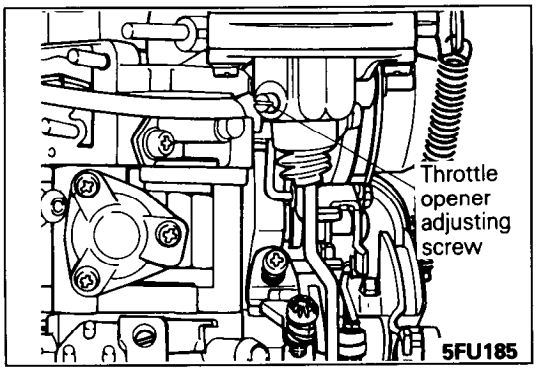
NOTE
Check the ignition timing and idle speed before performing this adjustment.

Inspection Conditions

Engine coolant temperature : 85 – 95°C (185 – 205°F)
Lights and accessories : Set to OFF
Transmission : Neutral
Steering wheel: Straightforward (vehicles with a power steering)

(1) Start the engine.
(2) Set the tachometer.
(3) Turn on the air conditioner switch.

NOTE
The solenoid valve will open and the intake manifold vacuum will act on the throttle opener to fully actuate it.



(4) Check the engine speed during this operation.

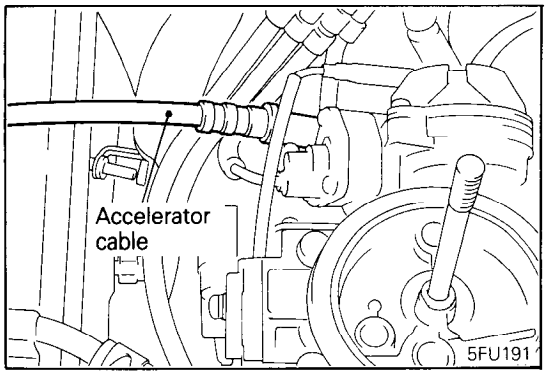
Standard value : 900–950 rpm

If the engine speed is out of specification, adjust using the throttle opener (for air conditioner) adjusting screw.

THROTTLE POSITION SENSOR (TPS) ADJUSTMENT

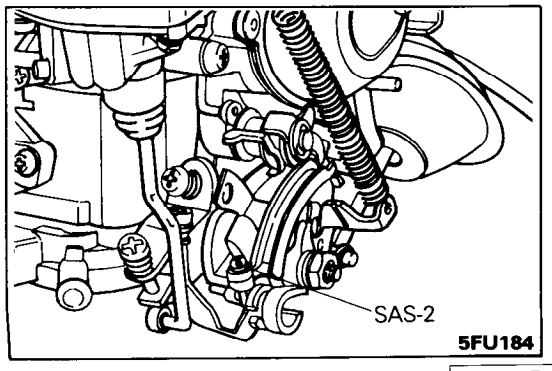
N14FIBC

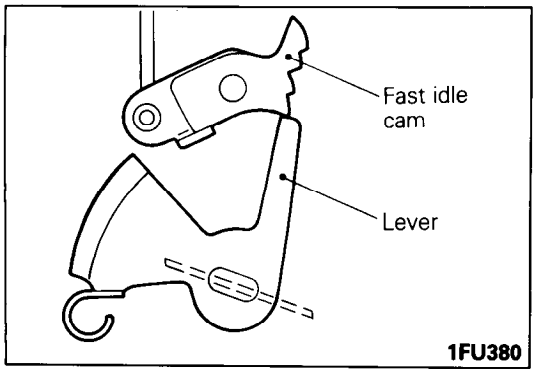
(1) Loosen the accelerator cable enough.



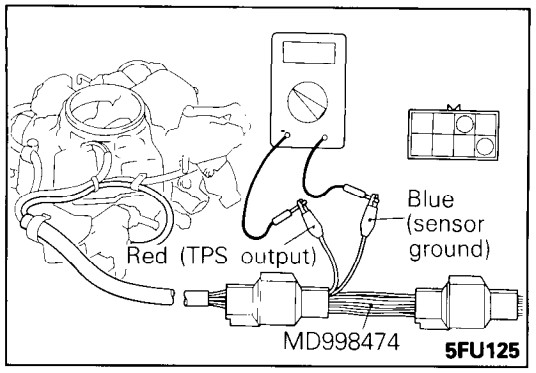
(2) Loosen the speed adjusting screw No. 1 (SAS1) and No. 2 (SAS2) sufficiently to close the throttle valve completely. Record the number of turns loosened.

NOTE
1. Turning the screw counterclockwise closes the valve.





2. At this time, the fast idle control should have been released (the lever not resting on the fast idle cam).



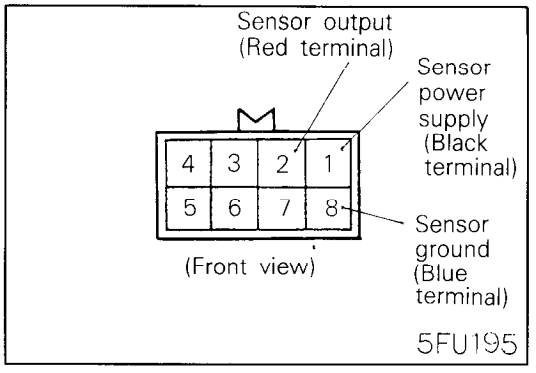
(3) Disconnect the carburetor connectors.
(4) Connect the special tool (harness connector) between the disconnected connectors.

(5) Connect a voltmeter between terminal ② (red: sensor output) and ⑧ (blue: sensor ground) of the carburetor's connectors.

Caution
Use a good, finely calibrated digital type voltmeter.

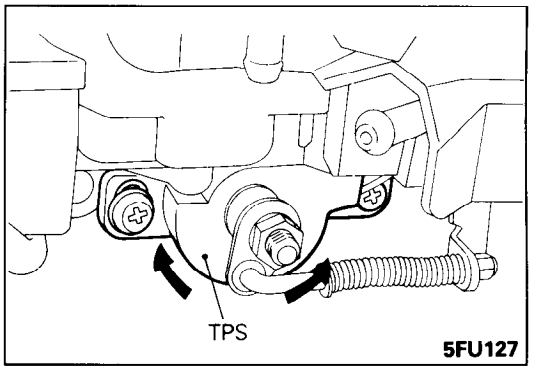
NOTE
Connection of FBC connector and special tool's terminal is as follows:

FBC connector	Special Tool
Terminal ② (sensor output) and	Terminal Red
Terminal ⑧ (sensor ground) and	Terminal Blue



(6) Turn the ignition switch to ON (Don't start the engine).
(7) Measure the voltage of the TPS output.

Standard value : 0.250 V

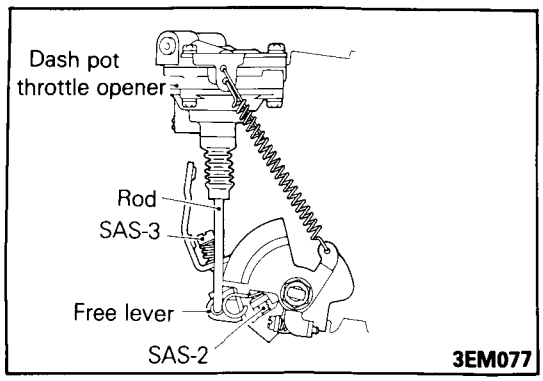


(8) If it is out of specification, loosen the TPS attaching screw and adjust by turning the TPS to the standard value.

NOTE
Turning the TPS clockwise increases the output voltage.
(9) Turn the ignition switch to OFF.
(10) Tighten the SAS1 and SAS2 for the amount recorded in step (2). (Return to the original position.)
(11) Remove the voltmeter and the special tool (harness connector) and connect the carburetor's connectors.

(12) Adjust play of the accelerator cable. (See P.14-84.)
(13) Start the engine and check that the idle speed is as specified.

Standard value :
Curb idle speed
For the first 500 km (300 miles) : 725 $^{+150}_{-100}$ rpm
After 500 km (300 miles) : 800 ±100 rpm



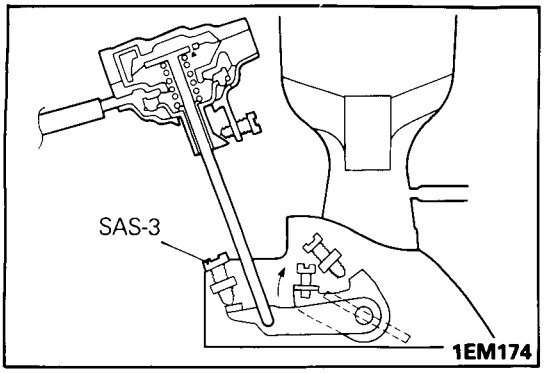
INSPECTION AND ADJUSTMENT OF DASH POT N14FMAB

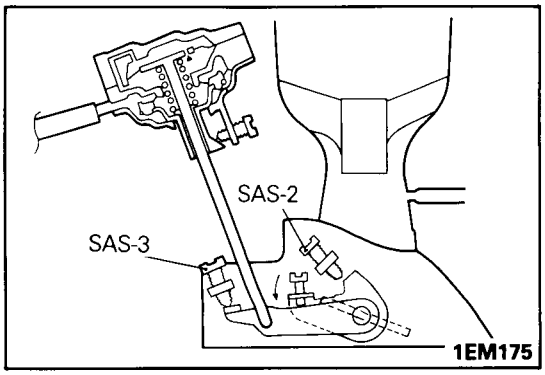
NOTE
Curb idle speed adjustment must be properly adjusted before inspecting dashpot.

Inspection Conditions

Engine coolant temperature : 85 - 95°C (185 - 205°F)
Lights and accessories : Set to OFF
Transmission : Neutral
Steering wheel : Straightforward (vehicles with a power steering)

(1) Start the engine and run at idle.
(2) Open the throttle valve for full stroke of the rod until the free lever contacts SAS3.





(3) Close the throttle valve until SAS2 contacts the free lever and check the engine speed at that moment.

Standard value
Vehicles with a manual transmission : 2000 rpm
Vehicles with an automatic transmission : 1500 rpm

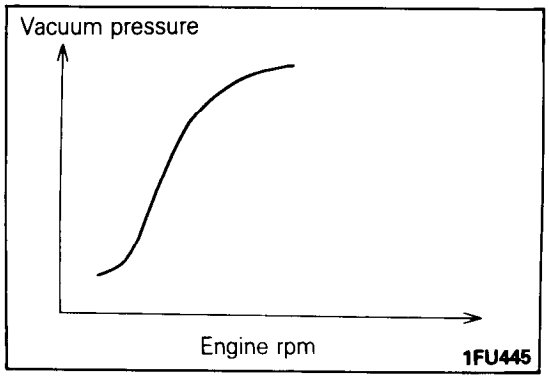
(4) If engine speed is not as specified, adjust dashpot RPM by turning SAS-3.

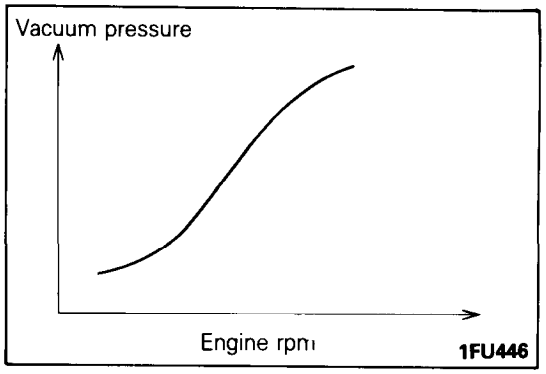
(5) Release the free lever and verify that the engine returns to idle speed slowly.

INSPECTION OF DISTRIBUTOR ADVANCE CONTROL VACUUM (D VACUUM) N14FUAA

Inspection Condition

Engine coolant temperature : 85 - 95°C (185 - 205°F)





(1) Disconnect the vacuum hose from the carburetor D vacuum nipple and connect a hand vacuum pump to the nipple.

NOTE
For the location of the nipple, refer to the Appearance of Carburetor (P.14–25)

(2) Start and race the engine to make sure that D vacuum increases with the engine speed.

NOTE
If abnormality is found in change of vacuum, blocked carburetor D port is suspected. Therefore, clean the port as necessary.

INSPECTION OF EGR VALVE CONTROL VACUUM (E VACUUM) N14FVAA

Inspection Condition

Engine coolant temperature : 85–95°C (185–205°F)

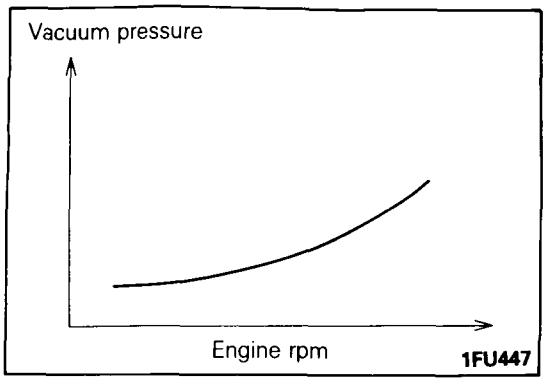
(1) Disconnect the vacuum hose from the carburetor E vacuum nipple and connect a hand vacuum pump to the nipple.

NOTE
For the location of the nipple, refer to the Appearance of Carburetor (P.14–25).

(2) Start and race the engine to make sure that E vacuum increases with the engine speed.

NOTE
If abnormality is found in change of vacuum, blocked carburetor E port is suspected. Therefore, clean the port as necessary.

INSPECTION OF VRV CONTROL VACUUM (A VACUUM) N14FLAA



Inspection Condition

Engine coolant temperature : 85–95°C (185– 205°F)

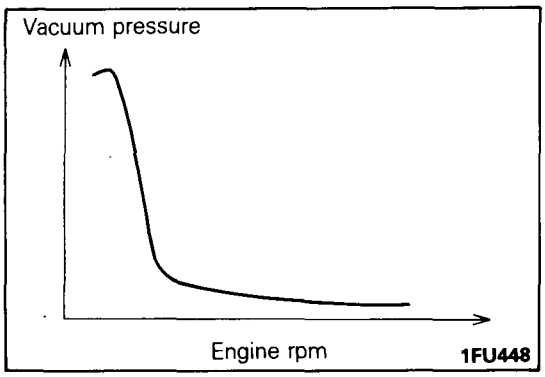
(1) Disconnect the vacuum hose from the carburetor A vacuum nipple and connect a hand vacuum pump to the nipple.

NOTE
For the location of the nipple, refer to the Appearance of Carburetor (P.14–25)

(2) Start and race the engine to make sure that A vacuum increases gradually with the engine speed.

NOTE
If abnormality is found in change of vacuum, blocked carburetor A port is suspected. Therefore, clean the port as necessary.

INSPECTION OF VACUUM SWITCH CONTROL VACUUM (F VACUUM) N14FWAA



Inspection Condition

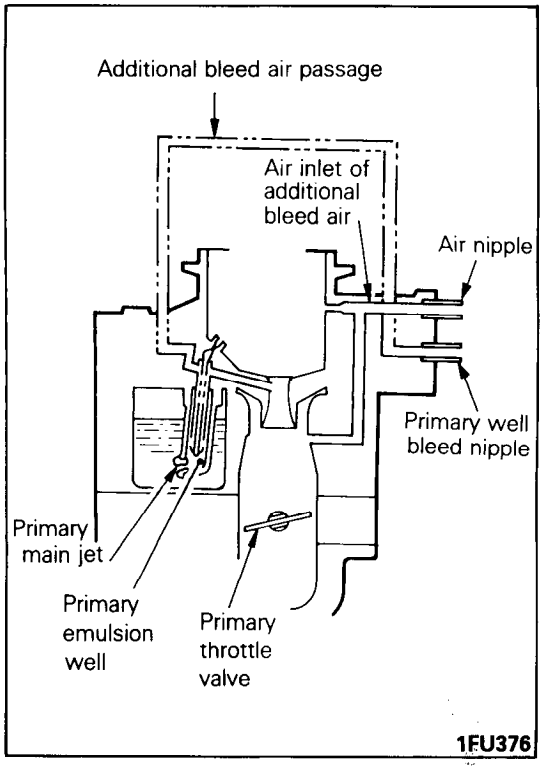
Engine coolant temperature : 85–95°C (185– 205°F)

(1) Disconnect the vacuum hose from the carburetor vacuum nipple and connect a hand vacuum pump to the nipple.

NOTE
For the location of the nipple, refer to the Appearance of Carburetor (P.14–25).

(2) Start and race the engine to make sure that F vacuum drops rapidly.

NOTE
If abnormality is found in change of the vacuum, blocked carburetor F port and vacuum passage. Therefore, disassemble and check the carburetor.

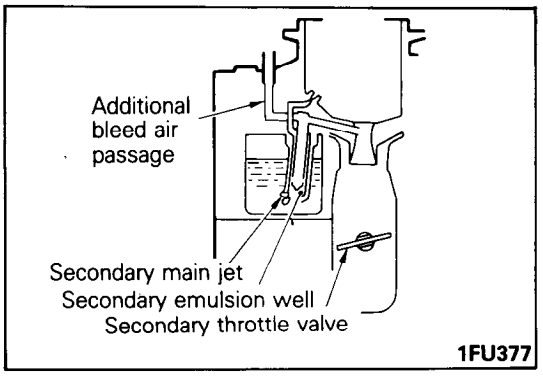


INSPECTION OF CARBURETOR BLEED AIR PASSAGE FOR CLOGGING (INSPECTION OF CARBURETOR HIGH ALTITUDE COMPENSATION SYSTEM) N14FRAB

INSPECTION OF PRIMARY WELL BLEED NIPPLE FOR CLOGGING–for California and high altitude specifications for the 49 states

NOTE
For the nipple position, refer to the Appearance of Carburetor (P.14–25).

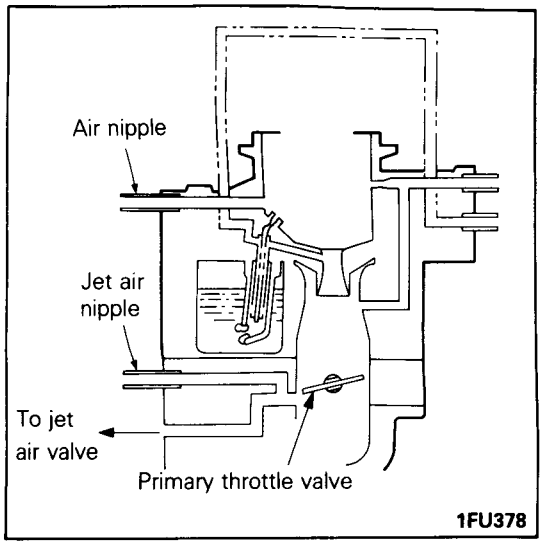
(1) Disconnect the vacuum hoses from the air nipple and connect a hand vacuum pump to the nipple.
(2) Apply vacuum to see that it leaks and does not build up inside the carburetor.
(3) Disconnect the vacuum hose from the primary well bleed nipple and connect a hand vacuum pump.
(4) apply vacuum to see that it leaks and does not build up inside the carburetor.
(5) If vacuum builds up, disassemble and check the carburetor. (Refer to P.14-63).



INSPECTION OF SECONDARY WELL BLEED NIPPLE FOR CLOGGING–High altitude specifications for the 49 states only (excluding California) N14FRBB

NOTE
for the nipple position, refer to the Appearance of Carburetor (P.14–25).

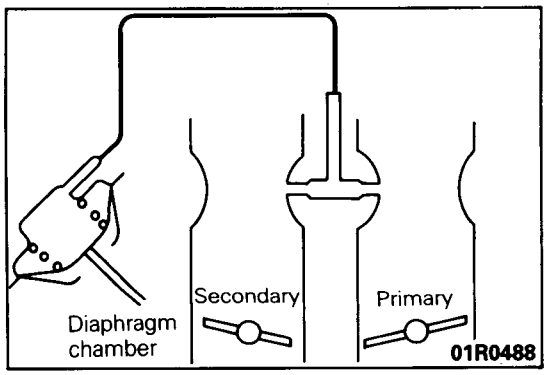
(1) Disconnect the vacuum hose from the bleed nipple and connect a hand vacuum pump to the nipple.
(2) Apply vacuum to see that it leaks and does not build up inside carburetor.
(3) If vacuum builds up, disassemble and check the carburetor. (Refer to P.14-63).



INSPECTION OF JET AIR NIPPLE FOR CLOGGING–High altitude specifications for the 49 states (excluding California) only N14FRCA

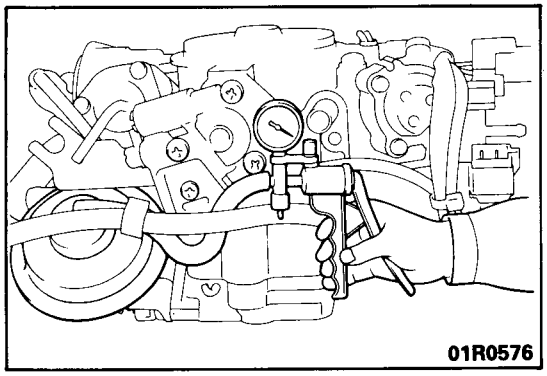
NOTE
For the nipple position, refer to the Appearance of Carburetor (P.14–25).

(1) Disconnect the vacuum hoses from both air nipple and jet air nipple and connect a hand vacuum pump to the nipples.
(2) Apply vacuum to see that it leaks and does not build up inside carburetor.
(3) If vacuum builds up, disassemble and check the carburetor. (Refer to P.14-63).

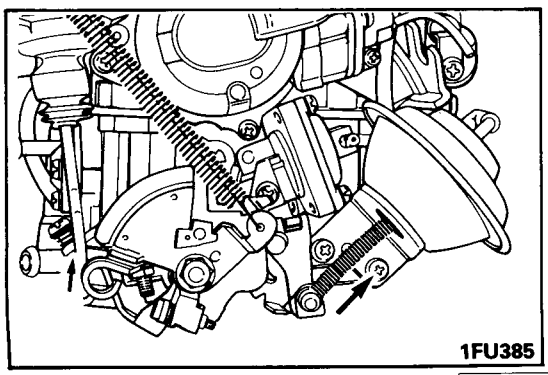


INSPECTION OF CARBURETOR SECONDARY VALVE OPERATION N14FOAA

(1) Remove the air filter assembly.



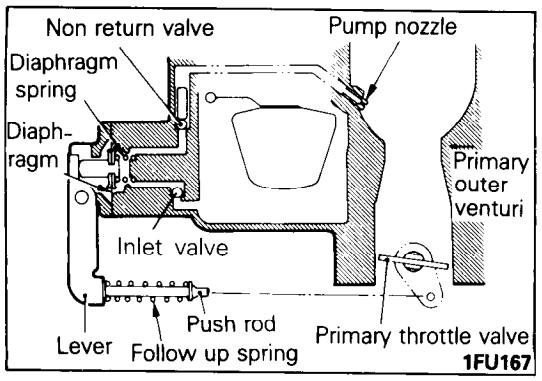
(2) Remove the secondary valve vacuum hose from the carburetor throttle body and connect a hand vacuum pump to the disconnected end of hose.



(3) With a vacuum of 13.3 kPa (1.9 psi) applied by the vacuum pump, fully open the primary throttle valve and check that the secondary throttle valve also opens fully.

Vacuum is not held in depression chamber (vacuum leaks)	Replace depression chamber
Vacuum is held but secondary valve does not operate	Clean secondary throttle valve and related parts

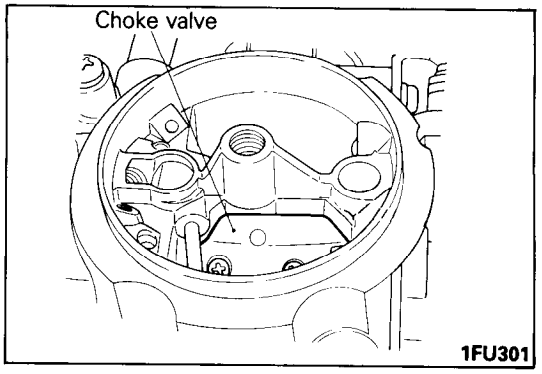
STB Revision



INSPECTION OF CARBURETOR ACCELERATION PUMP

N14FPAA

(1) Remove the air filter assembly cover.
(2) While opening the choke valve, open the throttle valve and check that fuel is injected from the pump nozzle.
If fuel is not injected, clean the carburetor fuel passage.



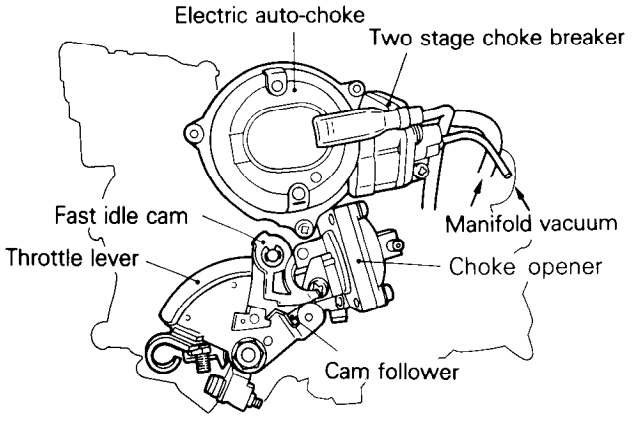
INSPECTION OF CHOKE VALVE

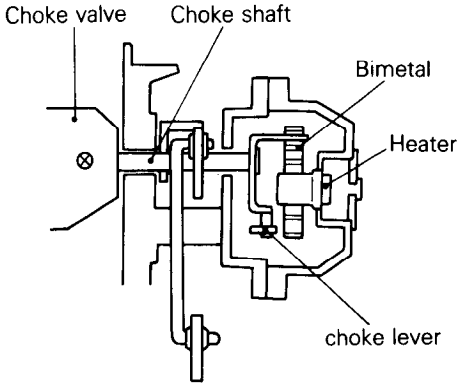
N14FQAA

Refer to GROUP 0 LUBRICATION AND MAINTENANCE–Maintenance Service

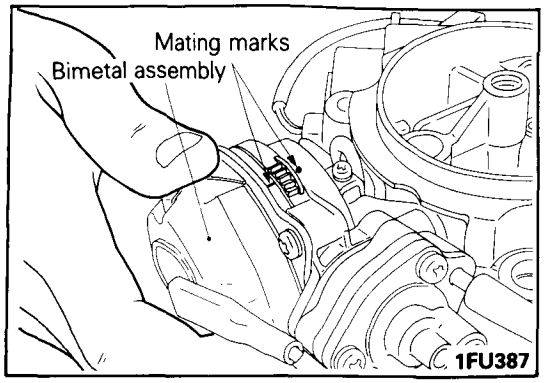
INSPECTION OF ELECTRIC CHOKE

N14FQBB





Caution
All carburetors have a tamper-proof choke. The choke-related parts are factory adjusted. The choke adjustment is not required during service, except when major carburetor overhaul or choke carburetor related parts adjustments are needed by state or local inspections.



(1) Check that the alignment marks on the electric choke and bimetal assembly are lined up. If not, align the marks.

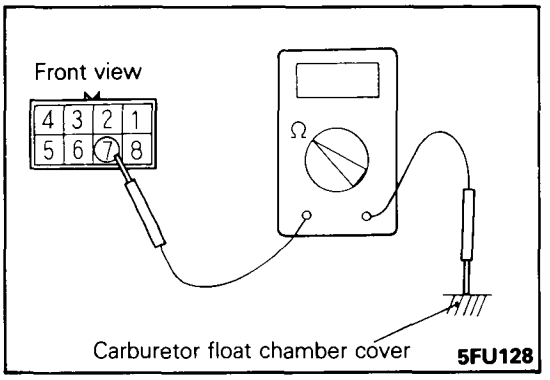
NOTE
1. For removal of the bimetal assembly, refer to DISASSEMBLY AND REASSEMBLY (P.14-67).
2. Misalignment and resultant symptom

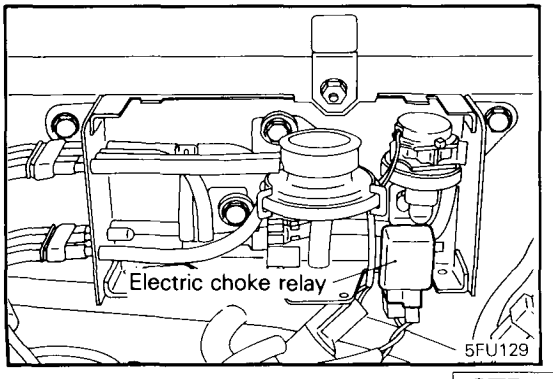
Misalignment	Symptom
Clockwise deviation	Better startability but plugs more likely to be sooty
Counterclockwise deviation	Poorer startability and more likely to stall

(2) Check that engine coolant temperature is below 10°C (50°F).
(3) Start the engine and check operation of the choke valve and fast idle cam, with hand on the electric choke body.

Electric choke body	Gets gradually hotter after engine start
Choke valve	Opens as bimetal temperature rises
Fast idle cam	Fast idle control is released as engine coolant temperature rises and fast idle breaker operates

(4) If the electric choke body remains cool even after the engine is started, check the electric choke.





INSPECTION OF ELECTRIC CHOKE N14FQCA

(1) Disconnect the carburetor connector and check continuity of the heater.

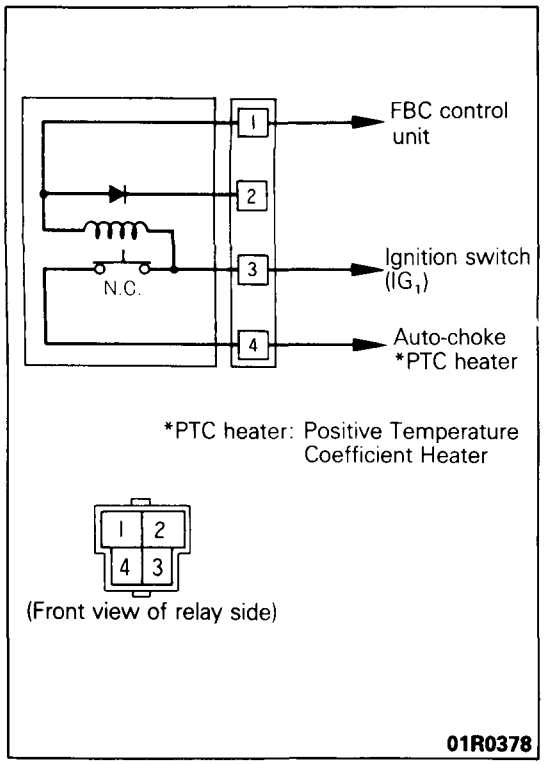
Normal state : Should be conductive [approx. 6 Ω at 20°C (68°F)]

(2) If the heater is not conductive, replace the electric choke body (bimetal assembly).

NOTE
For replacement procedures, refer to DISASSEMBLY AND REASSEMBLY OF CARBURETOR (P.14-67).

CHECKING THE ELECTRIC CHOKE RELAY N14FQDA

(1) Remve the cover of the device box and remove the electric choke relay.



(2) Check for continuity between terminals when there is and is not current flow to the relay coil.

Item	Measured terminals	Continuity
No power flow	Between terminals ① – ②	Yes (0Ω)
	Between terminals ① – ②	No (∞Ω)
	Between terminals ① – ③	Yes (approx. 100Ω)
	Between terminals ③ – ④	Yes (0Ω)
Power flow	Between terminals ③ – ④	No (∞Ω)

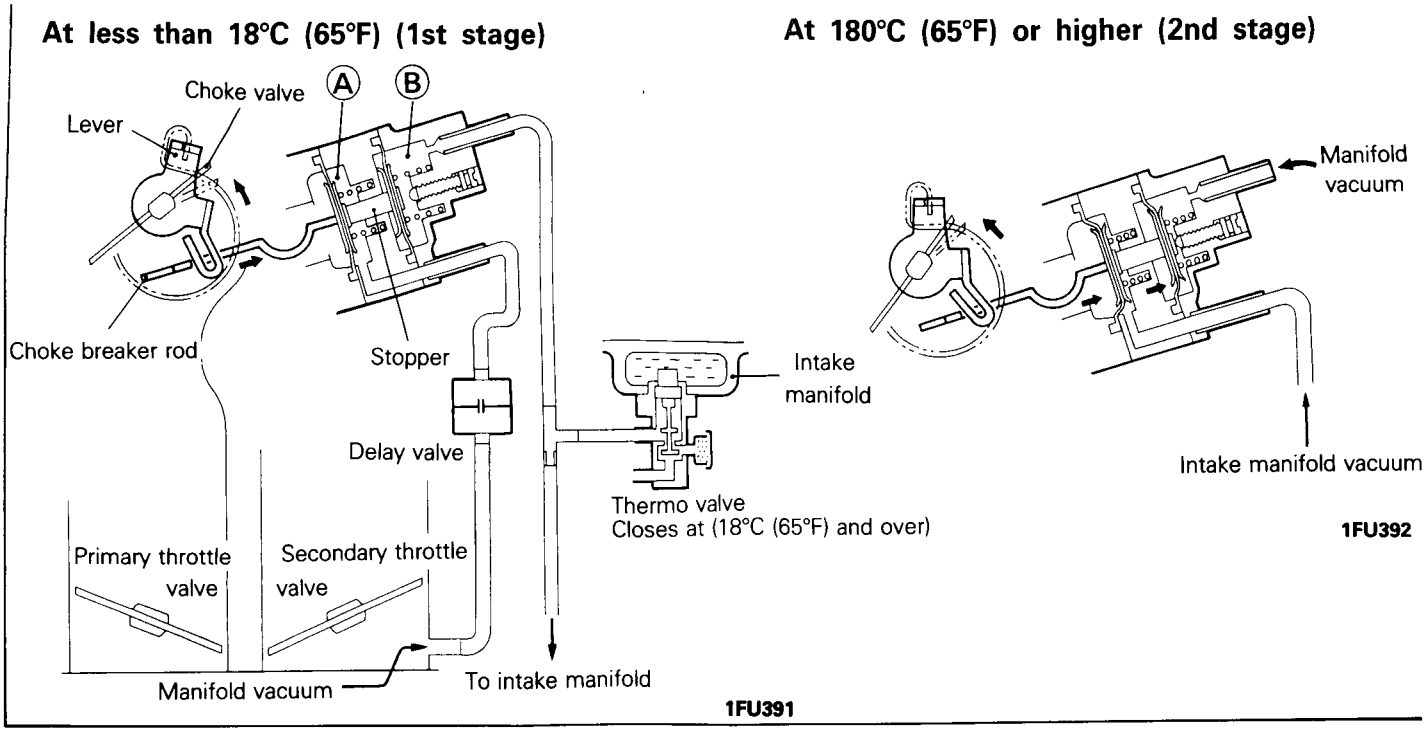
NOTE
1. →indicates the current flow direction.
2. Inspect after checking the infinity of tester.
3. Tonenergize the relay coil, apply battery voltage directly to terminals ①–③.
4. Use care as application of battery voltage to incorrect terminals can cause damage to the relay.

(3) If the continuity test fails, replace the electric choke relay.

NOTE
If the electric choke body remains cool after engine start although the electric choke heater (PTC heater) and electric choke relay are normal, check the vehicle body harness circuit.

CHECKING THE CHOKE BREAKER MECHANISM

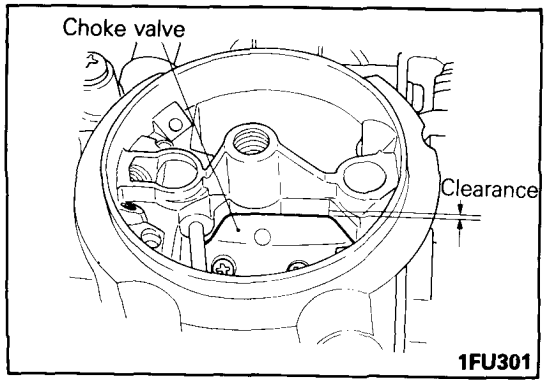
N14FQEC



(1) Remove the air cleaner.
(2) Check conditions of the choke valve according to the procedures given in the table below

Step	Engine coolant temperature	Check conditions	Choke valve when normal	Presumed cause when abnormal
1	10°C (50°F) or lower	Before starting engine	Fully closed	Malfunction of bimetal assembly Malfunction of link
2	10°C (50°F) or lower	Engine idling after start (Start after first fully depressing accelerator pedal one time.)	Slowly open slightly immediately after starting (Clearance: 2.5–2.7 mm (.098–.106 in.))	Delay valve clogged Diaphragm damaged (chamber A)
3	10°C (50°F) or lower	Disconnect the vacuum hose (yellow stripe) from the choke breaker during idling.	No movement	Malfunction of thermo valve
4	25°C (77°F) or higher	Connect the vacuum hose (yellow stripe) and let the engine idle.	When the choke valve is lightly closed by a finger, stops at a position open more than step 2. (Clearance: approx. 3 mm (.12 in.))	Malfunction of thermo valve Diaphragm damaged (chamber B)

NOTE
For information concerning the checking of the thermo valve, refer to GROUP 25, EMISSION CONTROL SYSTEM – Exhaust Gas Emission Control System.



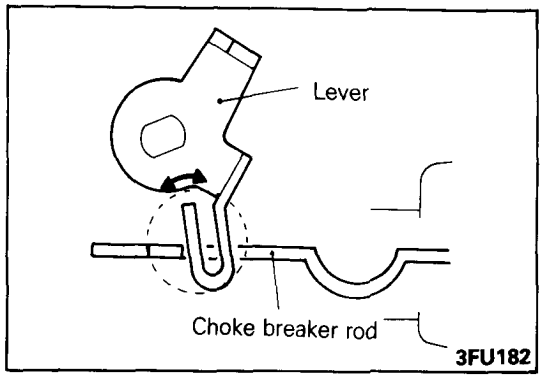
INSPECTION AND ADJUSTMENT OF CHOKE BREAKER OPENING

N14FQFC

(1) After inspection of the choke breaker system, disconnect the vacuum hose (yellow stripe) from the choke breaker and make the following check.

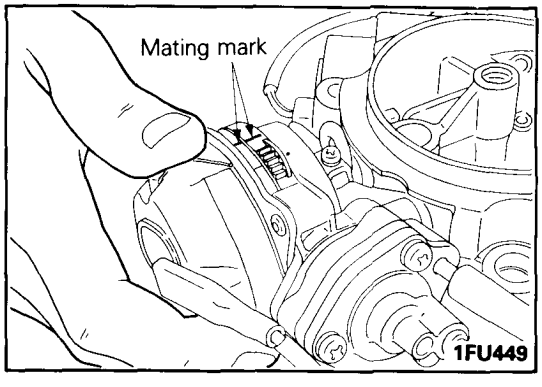
(2) With the engine idling, close the choke valve lightly with a finger until the choke valve stops. Then, measure the choke valve to choke bore clearance.

Standard value : 2.5–2.7 mm (.098–.106 in.)



(3) If the clearance is not as specified, stop the engine, remove the bimetal assembly and adjust the rod end opening for standard clearance.

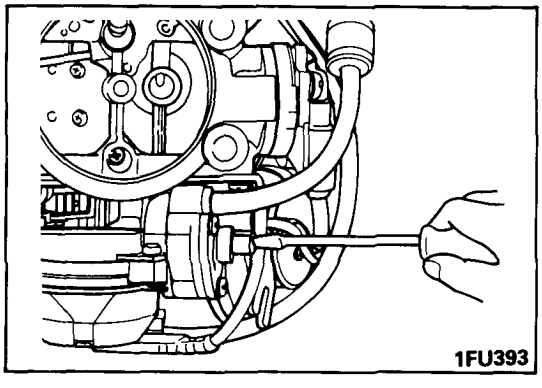
NOTE
For removal of the bimetal assembly, refer to DISASSEMBLY AND REASSEMBLY (P.14-67).



When removing the bimetal assembly, put a mark on the electric choke body.

NOTE

Rod end opening	Valve clearance	Expected result
Large	Large	Poorer startability and stall more likely
Small	Small	Plug likely to get sooty



(4) Reconnect the removed yellow stripe vacuum hose and measure the choke valve to choke bore clearance as in step (2).

Standard value : 3.2–3.4 mm (.126–.133 in.)

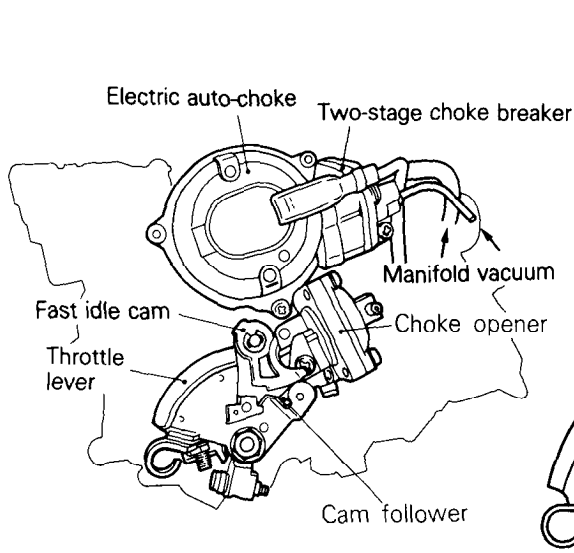
(5) If the clearance is out of specification, adjust by the adjusting screw.

NOTE

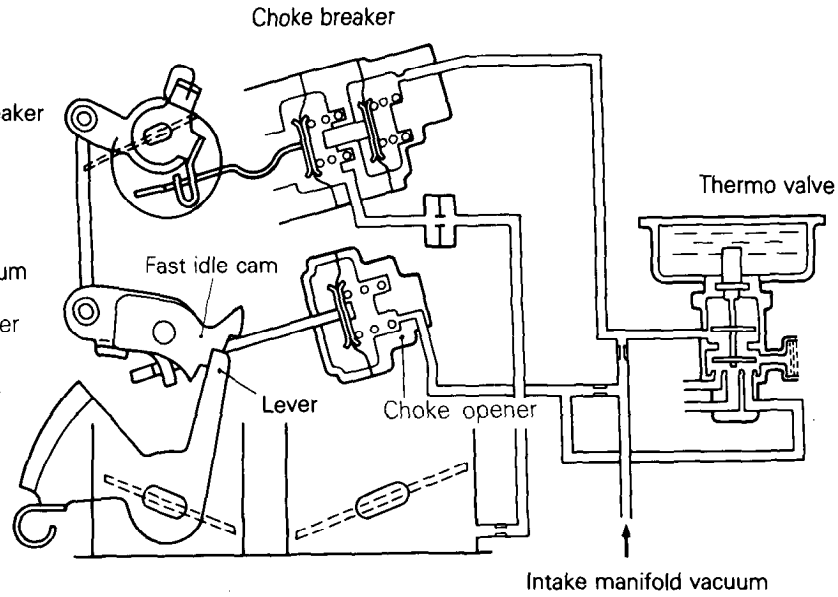
Adjusting screw turning direction	Valve clearance	Expected result
Clockwise	Small	Better startability but plug more likely to get sooty
Counter clockwise	Large	Poor startability and stall more likely

INSPECTION AND ADJUSTMENT OF FAST IDLE

N14FQGB



1FU386

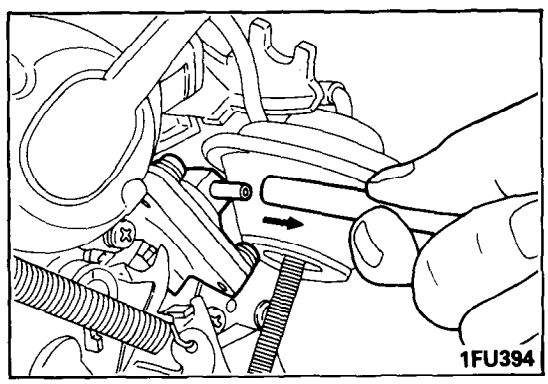


1FU360

Inspection Conditions

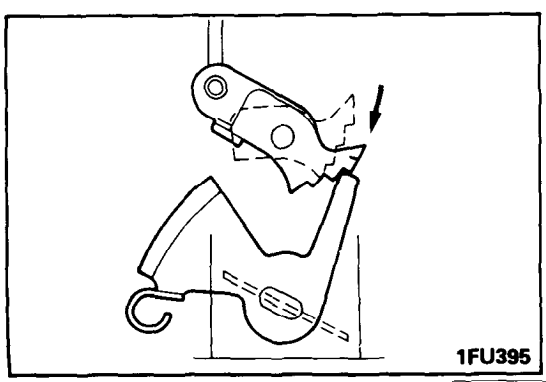
- Engine coolant temperature: 85 - 95°C (185 - 205°F)
- Lights and accessories: Set to OFF.
- Transmission: Neutral (N or P for vehicles with an automatic transmission)
- Steering wheel: Straightforward (vehicles with a power steering)

(1) Remove the air filter.
(2) Install the tachometer.



1FU394

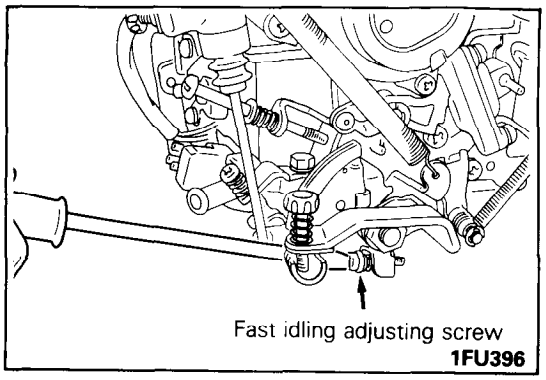
(3) Disconnect the vacuum hose (white stripe) from the choke opener.

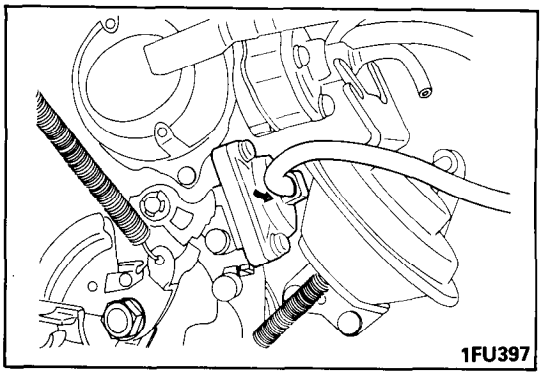


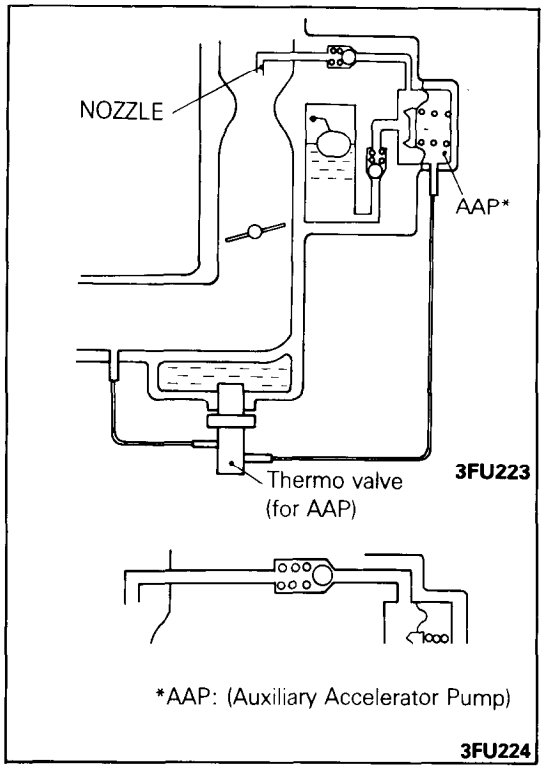
1FU395

(4) Set the lever on the second highest detent of fast idle cam.

STB Revision







(5) Start the engine and check the fast idle speed.

Standard value :
2350rpm
[Vehicles with a manual transmission]
2300rpm
[Vehicles with an automatic transmission]

(6) If the fast idle speed is out of specification, adjust with the fast idle adjusting screw.

NOTE
Rotation direction of adjusting screw and fast idle speed

Adjusting screw direction	Valve opening	Fast idle speed
Clockwise	Large	Increases
Counter-clockwise	Small	Decreases

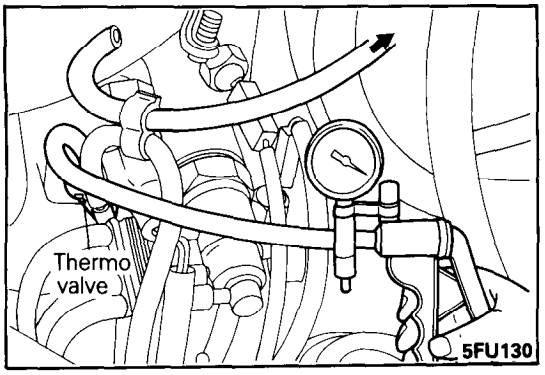
(7) Connect the vacuum hose removed in step (3) to the choke opener and check that the choke opener cancels fast idle.

CHECKING THE AUXILIARY ACCELERATION PUMP (AAP) N14FYAA

(1) Remove the air filter cover.
(2) Check to be sure that the engine coolant temperature is 30°C (86°F) or lower, and then check according to the steps in the table below.

Step	Check conditions	Vacuum hose negative pressure	Pump nozzle
1	With the engine idling, disconnect the black vacuum hose from the carburetor AAP.	Negative pressure is felt when the hose end is covered by a finger.	Fuel is sprayed from the nozzle when the hose is disconnected.
2	Warm-up the engine until the temperature of the engine coolant reaches 50°C (122°F) or higher.	Negative pressure cannot be felt by the finger.	–

(3) If the change of the vacuum negative pressure is incorrect, check the thermo valve for the APP.
If the negative pressure is normal but fuel is not sprayed from the nozzle, clean the carburetor's fuel passage.



CHECKING THE THERMO VALVE (FOR AAP CONTROL) N14FZAB

(1) Disconnect the vecuum hose (black) from the thermo valve and connect a manual vacuum pump to the thermo valve.
(2) Apply a negative pressure of 66 kPa (10.0 psi) to the thermo valve.

When engine is cold[coolant temperature 30°C (86°F) or lower]	Negative pressure is not applied (leakage).
After engine warm-up[coolant temperature 50°C (122°F) or higher]	Negative pressure is applied (no leakage).

(3) If incorrect, replace the thermo valve.

Caution
1. **Do not use a wrench or similar tool at the resin part when removing or installing the thermo valve.**
2. **When installing, apply a coating of the specified adhesive to the threaded part, and then tighten at a torque of 20–35 Nm (14–25 ft.1bs.).**

Specified adhesive : 3M Adhesive Nut Locking No. 4171 or equivalent

REPLACEMENT OF FUEL FILTER N14FCAB

Refer to GROUP 0 LUBRICATION AND MAINTENANCE-Fuel Filter (Replace)

INSPECTION OF FBC SYSTEM

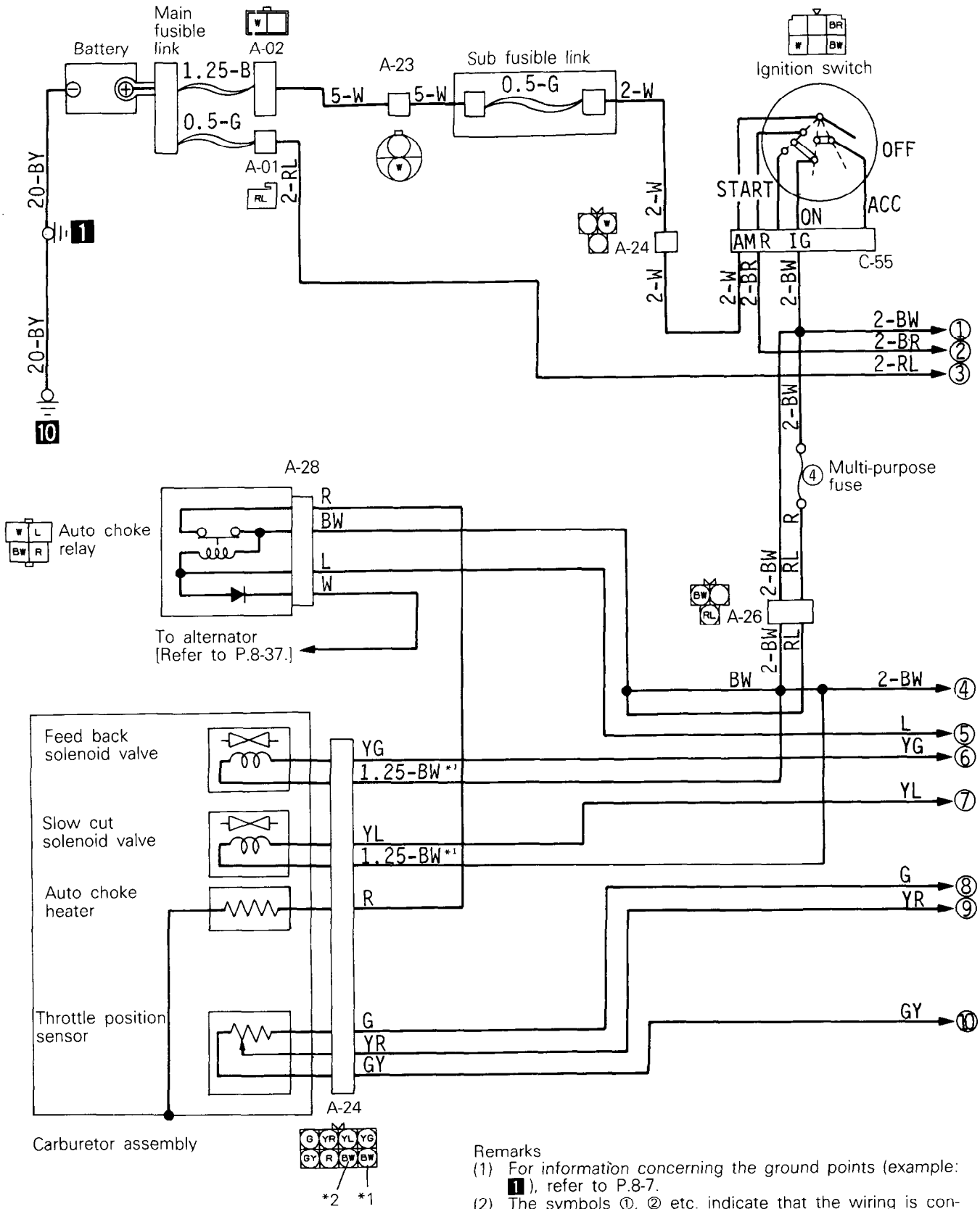
CAUTIONS ON INSPECTION N14PAAC

1. Before removing or installing a part, disconnect the battery ⊖ terminal.
2. Before disconnecting battery terminals, turn off the ignition switch. Removal or connection of battery terminals during engine operation or with the ignition switch ON could cause erroneous operation of the ECU or damage to semiconductors.
3. The control harnesses between ECU and ignition coil [⊖ terminal] and between ECU and oxygen sensor are shielded wires with shield grounded to the vehicle body in order to prevent ignition noises and radio interference. When the shielded wire is faulty, therefore, the control harness must be replaced.
4. When ECI checker is handled, pay attention to the following points.
   - Avoid rough operation of switches.
   - Do not subject ECI checker to shock and other external forces, heat, etc.
   - Keep away water and oil.
   - Store ECI checker in a moisture- and dust-free place and take steps to protect the checker from heat and vibration.

CIRCUIT DIAGRAMS

N14EC--

FEED BACK CARBURETOR CIRCUIT

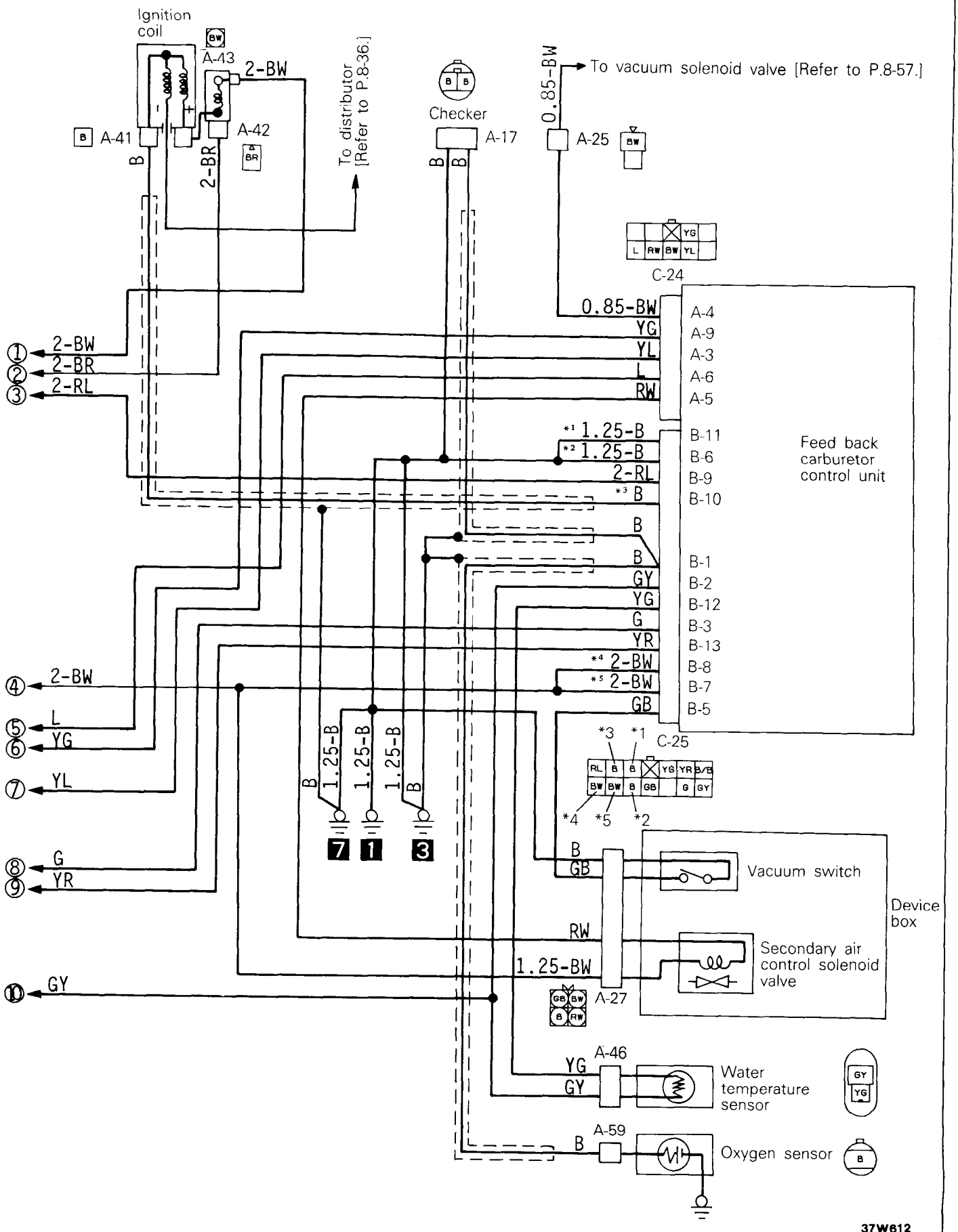


Remarks

(1) For information concerning the ground points (example: 1), refer to P.8-7.

(2) The symbols ①, ② etc. indicate that the wiring is connected (using the same numerical symbol) to the facing page. (In other words, ① on the right page is connected to ① on the left page.)

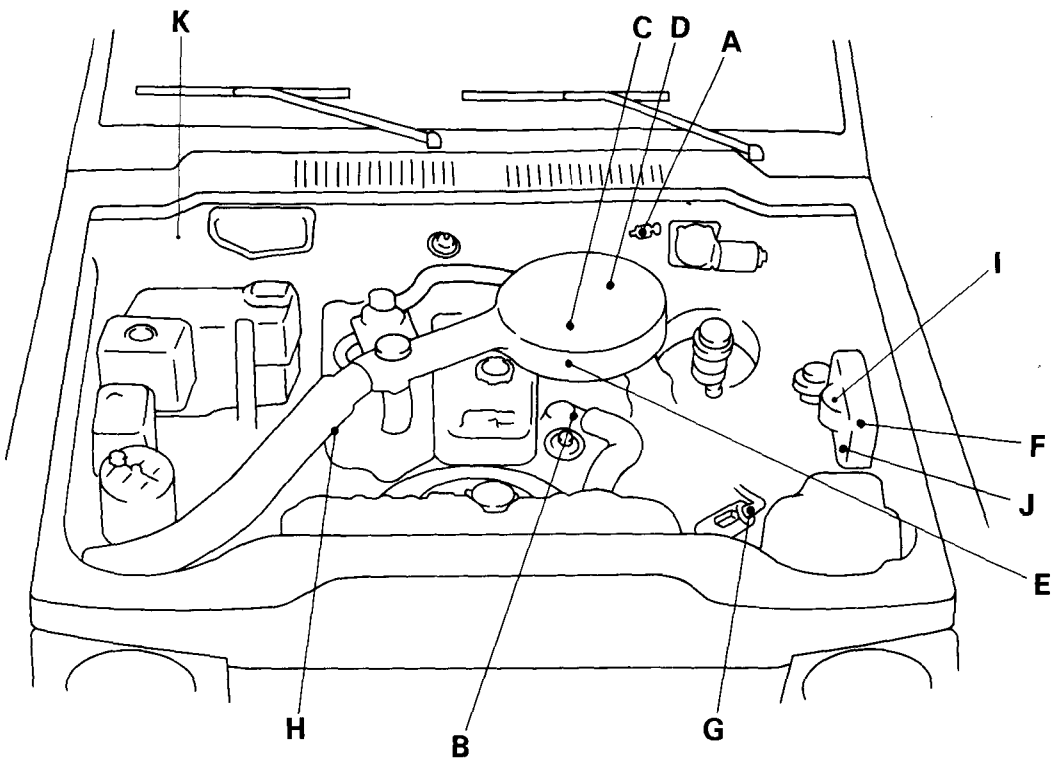
STB Revision


Ignition coil
A-43
2-BW
To distributor [Refer to P.8-36.]
A-41
A-42
2-BR
Checker
A-17
0.85-BW
To vacuum solenoid valve [Refer to P.8-57.]
A-25
C-24
0.85-BW
YG
YL
L
RW
A-4
A-9
A-3
A-6
A-5
*1 1.25-B
*2 1.25-B
2-RL
*3 B
B-11
B-6
B-9
B-10
Feed back carburetor control unit
B
B
GY
YG
G
YR
*4 2-BW
*5 2-BW
GB
B-1
B-2
B-12
B-3
B-13
B-8
B-7
B-5
2-BW
L
YG
YL
G
YR
GY
1.25-B
1.25-B
1.25-B
7
1
3
C-25
Vacuum switch
Device box
Secondary air control solenoid valve
1.25-BW
A-27
A-46
Water temperature sensor
A-59
Oxygen sensor
37W612

COMPONENTS LOCATIONS AND VACUUM HOSES LAYOUT

N14ED--

COMPONENTS LOCATIONS

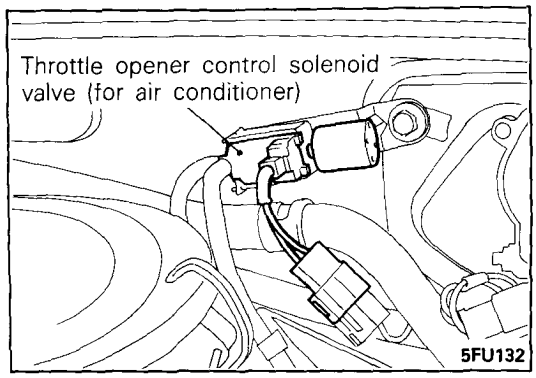


5FU131

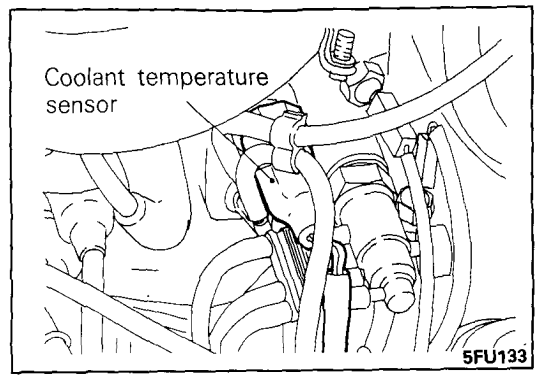
Name	Symbol	Name	Symbol
Throttle opener control solenoid valve (for air conditioner)	A	Engine-speed sensor (ignition coil ⊖)	G
Coolant temperature sensor	B	Oxygen sensor	H
Feedback solenoid valve	C	Secondary air control solenoid valve	I
Slow-cut solenoid valve	D	Electric choke relay	J
Throttle-position sensor	E	Electronic control unit (ECU)	K
Vacuum switch	F	–	–

STB Revision

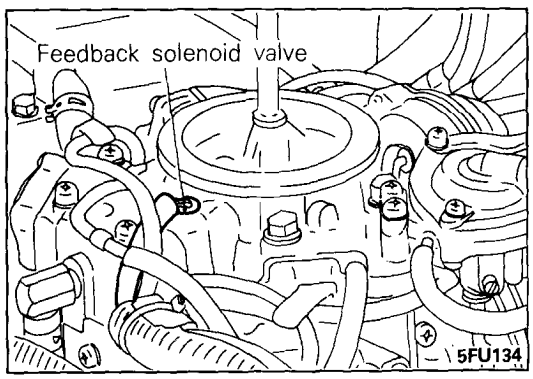
A Throttle Opener Control Solenoid Valve (for air conditioner)



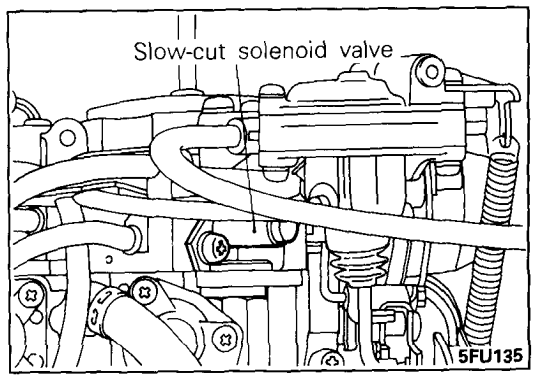
B Coolant Temperature Sensor



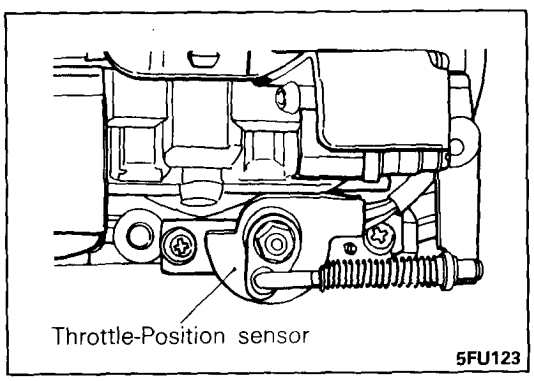
C Feedback Solenoid Valve



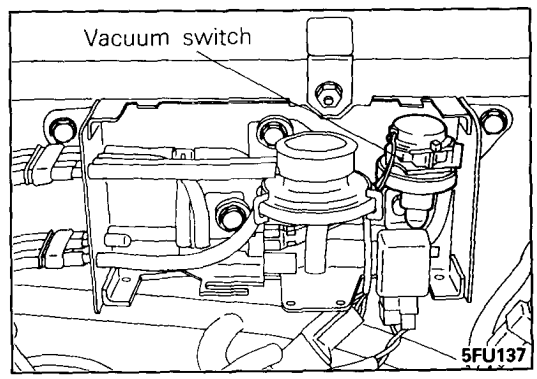
D Slow-cut Solenoid Valve



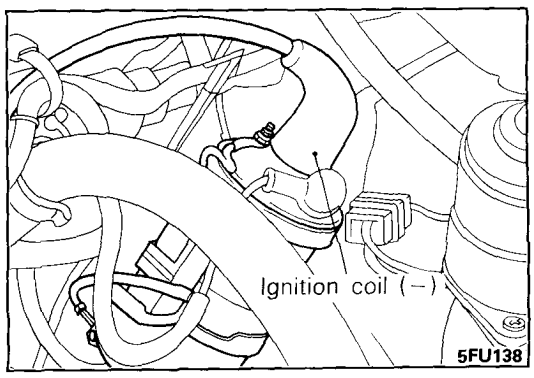
E Throttle-Position Sensor



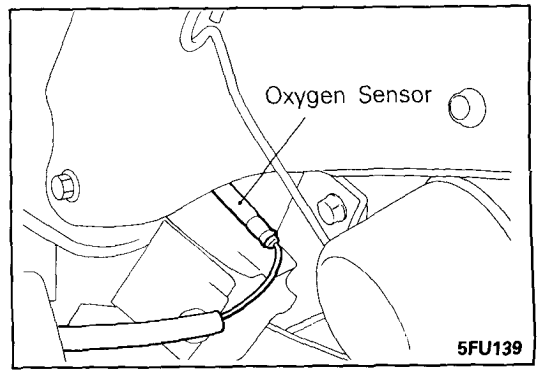
F Vacuum Switch



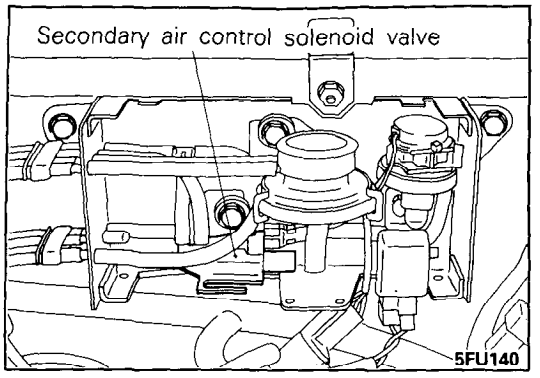
G Ignition Coil (–)



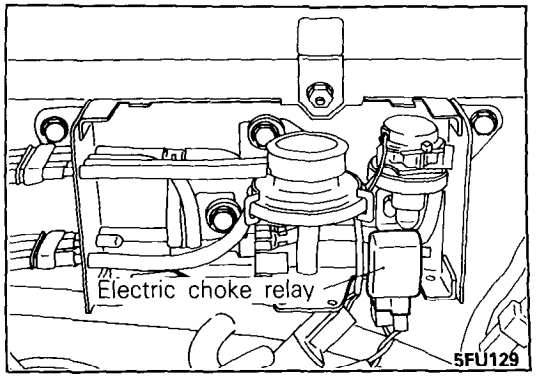
H Oxygen Sensor



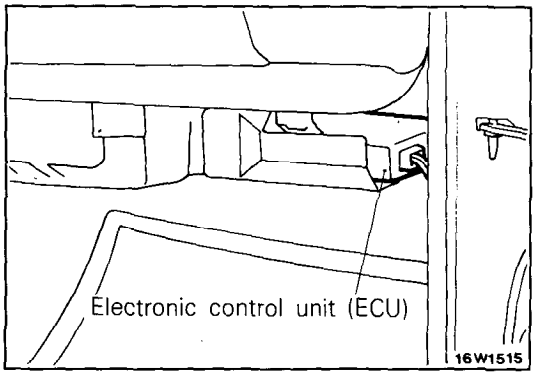
I Secondary Air Control Solenoid Valve



J Electric Choke Relay

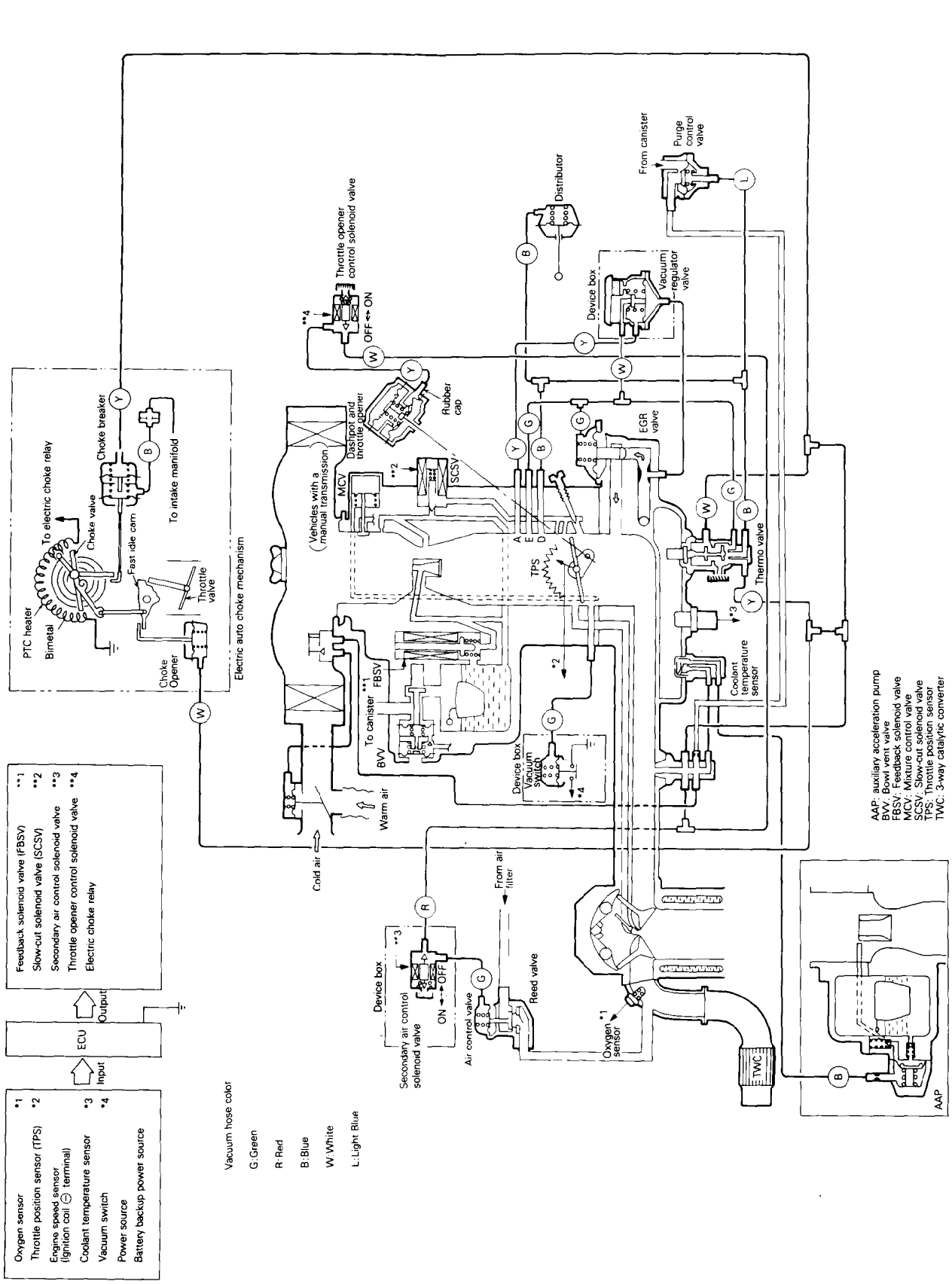


K Electronic Control Unit (ECU)

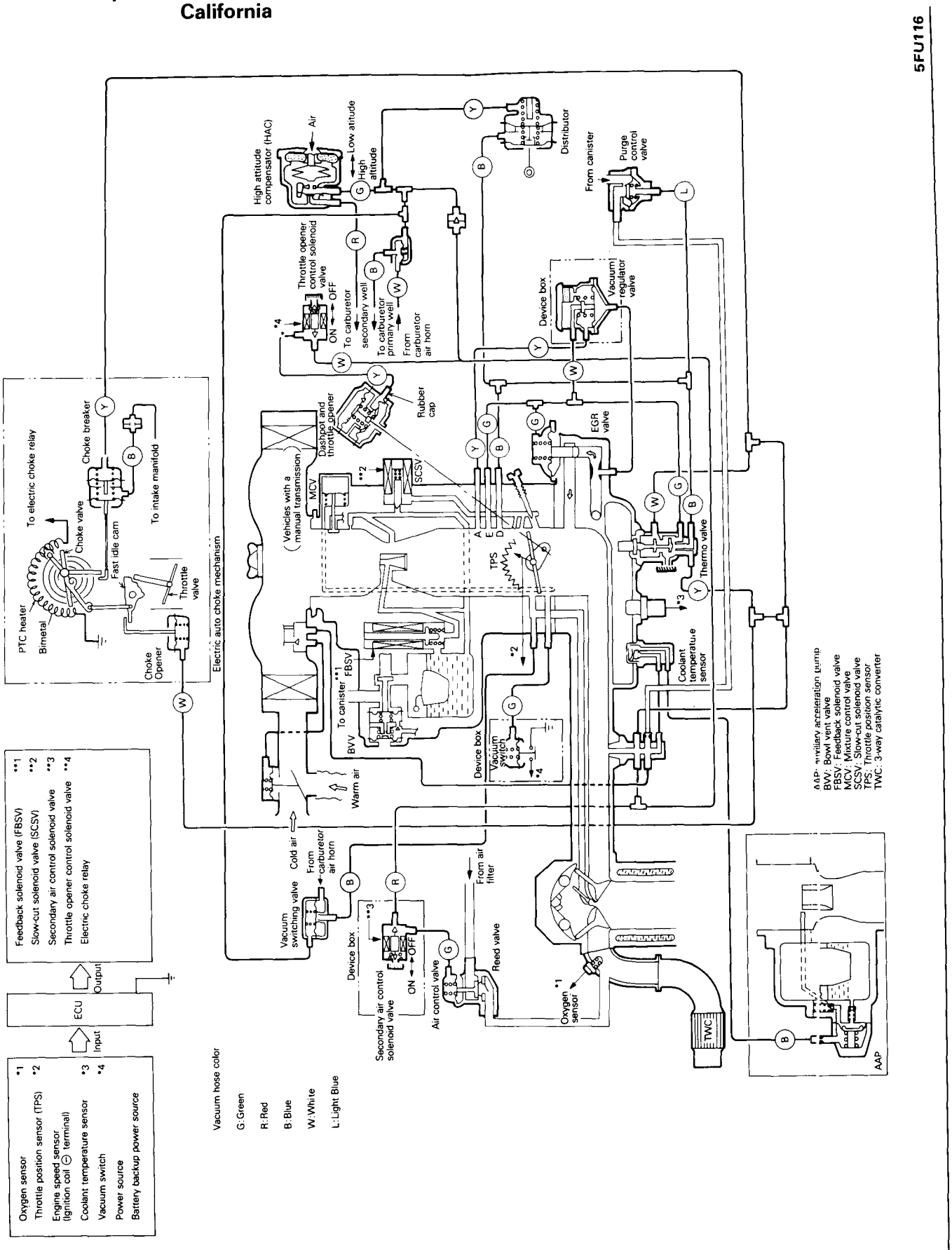


Vacuum Hose Layout...vehicles for the 49 states other than California (excluding high-altitude specifications)

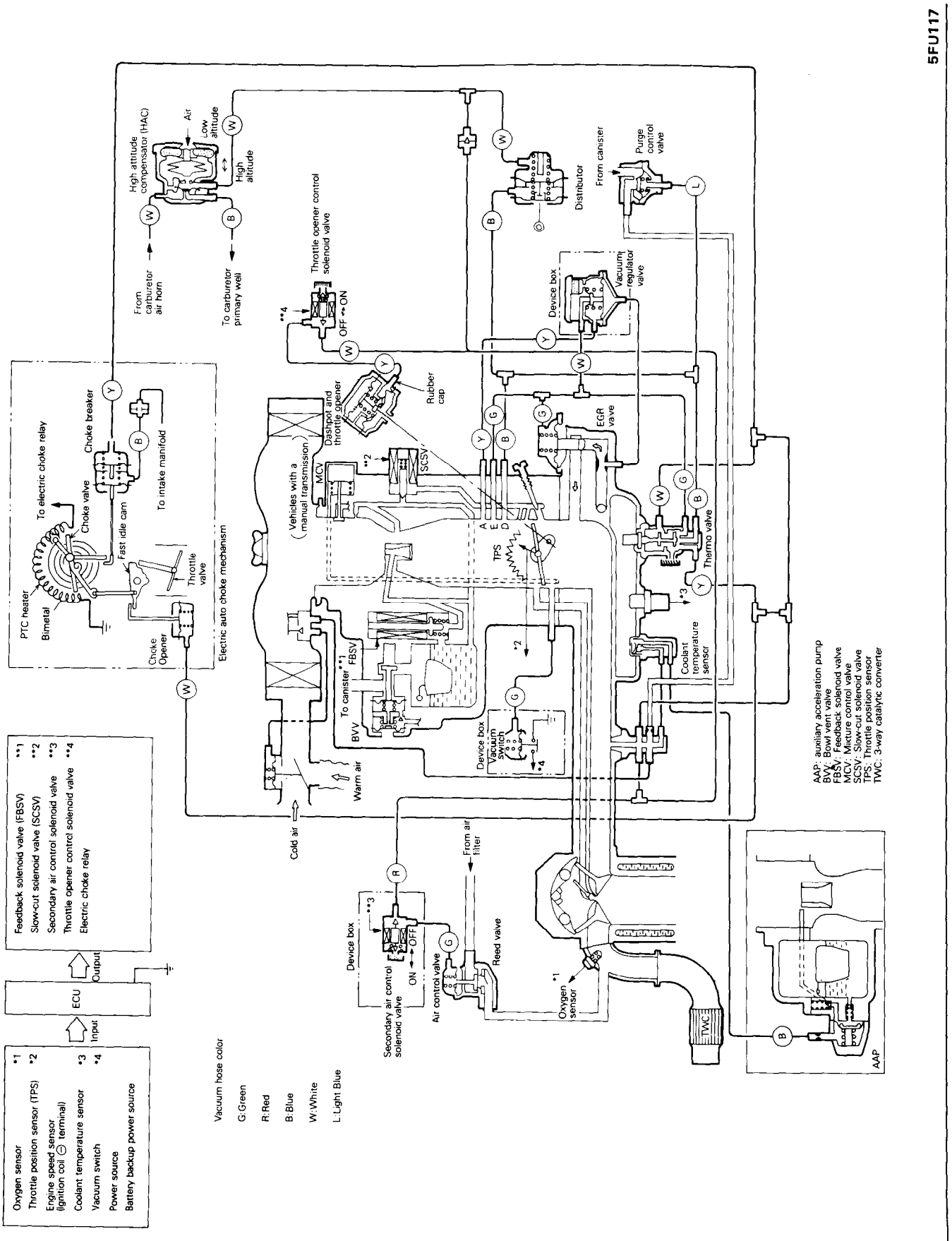
N14ED–B

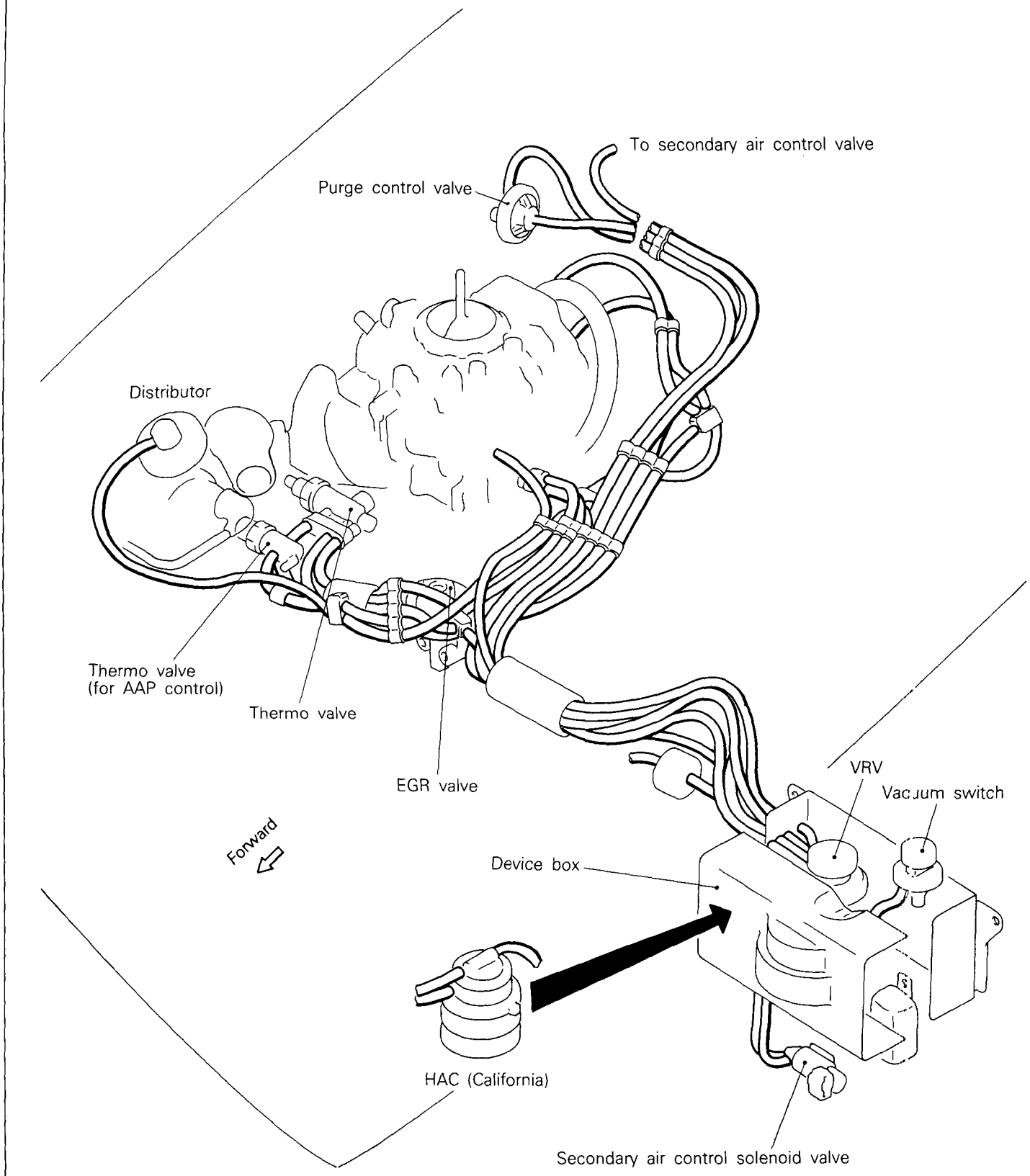


Vacuum Hose Layout ...vehicles with high-altitude specifications for the 49 states other than California



Vacuum Hose Layout ...vehicles for California




To secondary air control valve
Purge control valve
Distributor
Thermo valve
(for AAP control)
Thermo valve
EGR valve
VRV
Vacuum switch
Forward
Device box
HAC (California)
Secondary air control solenoid valve

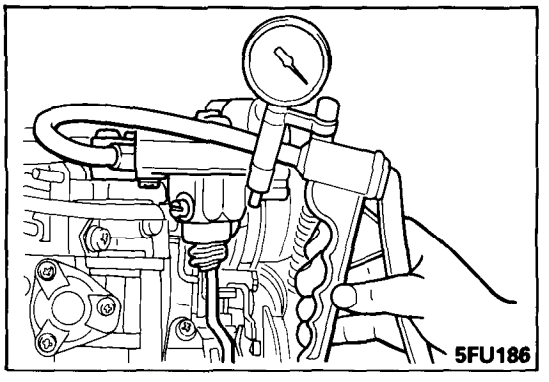
5FU190

INSPECTION OF THROTTLE OPENER CONTROL SYSTEM FOR AIR CONDITIONER LOAD N14PGBB

Inspection Condition

Engine coolant temperature : 85–95°C (185–205°F)

(1) Disconnect the vacuum hose (yellow stripe) from the throttle opener installed on the carburetor and connect a hand vacuum pump to the nipple.
(2) Check that the throttle opener rod is pulled up when vacuum is applied
(3) Apply 67 kPa (10.0 psi) vacuum and check air tightness.
(4) Start the engine and close the vacuum hose (yellow stripe) end with a finger to check vacuum when the air conditioner switch is turned on and off.



Air conditioner switch	Engine speed	Hose end vacuum
OFF	Idle	Absent
ON		Present
	1,200 rpm or more	Absent

ELECTRONIC CONTROL UNIT (ECU) CONNECTOR REMOVAL AND INSTALLATION PROCEDURES N14PBAA

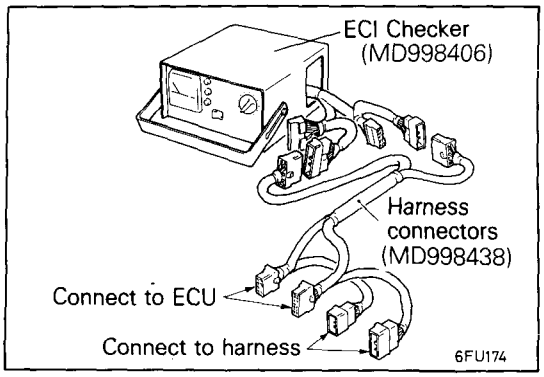
(1) Disconnect the battery negative (–) terminal connection.
(2) Remove the ECU cover.

(3) Unlocking the computer unit connector, pull out the harness connectors.

NOTE
For installation, reverse the removal steps.

INSPECTION OF ELECTRONIC CONTROL UNIT (ECU) INPUT AND OUTPUT ELECTRIC SIGNALS N14PDAB

Inspection and maintenance of electric system in the FBC system can be made quickly by inspecting the ECU input and output electric signals with the ECI checker and then by inspecting the component whose signal is abnormal and the harness between the component and the ECU.



CHECK PROCEDURE (METHOD USING ECI CHECKER)

N14PDAC

Using the special tools (FBC Harness Connector and ECI Checker), check the FBC system by the following procedure.
Inspection Procedure:

(1) Turn ignition switch to "Lock".
(2) Remove the Large harness connector and Small harness connector from the ECU.
(3) Set check switch of the ECI checker to OFF.
(4) Set 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 ECU and harness connectors.
(6) Perform checks according to the FBC System Check Procedure chart.
(7) If checker shows any variance from specifications, check the corresponding sensor and related electrical wiring then repair or replacement.
(8) After repair or replacement, recheck with the ECI checker to confirm that the repair has corrected the problem.
(9) Set check switch of the ECI checker to OFF.
(10) Set ignition switch to "Lock".
(11) Disconnect connectors of the ECI checker and the FBC HARNESS CONNECTOR from the ECU and the body side harness connectors.
(12) Connect the body side harness connectors to the ECU.
(13) After completion of the above test make certain that the trouble has been eliminated on the road test.

STB Revision

FBC SYSTEM CHECK PROCEDURE CHART
(Use FBC Harness Connector MD998438)

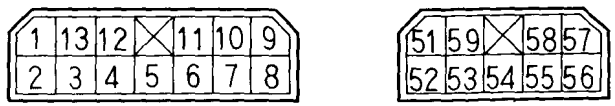
ECI Checker Operation: Select Switch	ECI Checker Operation: Check Switch	Check Item	ECU Terminal # Checked	Condition		Test Specification
Set to "A"	1	Power supply	7	Ignition switch "LOCK→ON"		11V to 13V
	2	Ignition pulse	10	Ignition switch "LOCK→ON"		2V to 8V
	3					
	4	Coolant temperature sensor	12	Ignition switch "LOCK→ON"	0 °C (32 °F)	3.4V to 3.6V
					20 °C (68 °F)	2.4V to 2.7V
					40 °C (104 °F)	1.5V to 1.8V
					80 °C (176 °F)	0.5V to 0.7V
	5	Power supply for sensor	3	Ignition switch "LOCK→ON"		4.5V to 5.5V
	6	Throttle position sensor (TPS)	13	Ignition switch "LOCK ON" (warm engine)	Accelerator fully closed	0.4V to 0.7V
					Accelerator fully opened	4.5V to 5.5V
	7	Vacuum switch for dile position	5	Ignition switch "LOCK→ON"		9V to 13V
				Idling (warm engine)		0V to 0.6V
	8					
	9	Feed back solenoid valve (FBS)	59	Ignition switch "LOCK→ON"		11V to 13V
				Idling (warm engine)		2V to 12V
	10	Slow cut-off solenoid valve (SCS)	53	Idling		0V to 0.6V
				Quick deceleration from above 4000 rpm to idling with "N" position		Momentarily 13V to 15V
	11					
	12					

FBC SYSTEM CHECK PROCEDURE CHART
(Use FBC Harness Connector MD998438)

ECI Checker Operation		Check Item	ECU Terminal # Checked	Condition		Test Specification
Select Switch	Check Switch			Test Result		
Set to "B"	1	Idle up control solenoid valve	54	Idling	A/C switch ON*1	0V to 0.6V
				2000 rpm		9V to 15V
	2	A/C cut-off relay	57	Ignition switch "LOCK → ON" and A/C switch "ON"*1	Accelerator fully closed	0V to 0.6V
					Accelerator fully opened	0V to 0.6V
	3					
	4	Secondary air control solenoid valve	55	Start the warmed up engine and keep it running at idling for more than 70 seconds		0V to 0.6V then 13V to 15V
				Quick deceleration from above 2000 rpm to idling with "N"		Momentarily drop
	5					
	6					
	7					
	8	Oxygen sensor	1	Hold rpm constant above 1300 rpm, after 70 seconds from start of warm engine		0V to 1V ↑ (pulsates) ↓ *2 2V to 3V
	9					
	10					
	11					
	12					

NOTE: *1 ON means compressor clutch engaged.
*2 Failure of parts other than the oxygen sensor can also cause deviation from the specifications. Also check other parts related to air-fuel ratio control, which are listed on page 14–13.

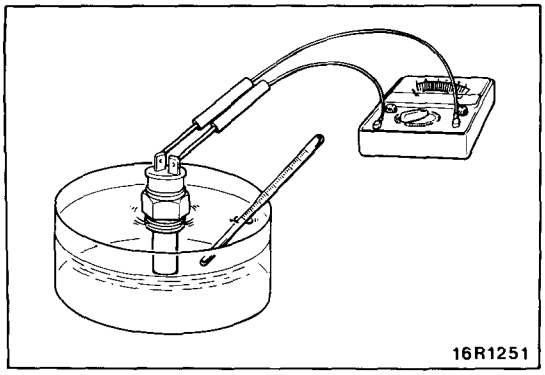
ECU Terminal



View from front as installed in ECU

5FU143

STB Revision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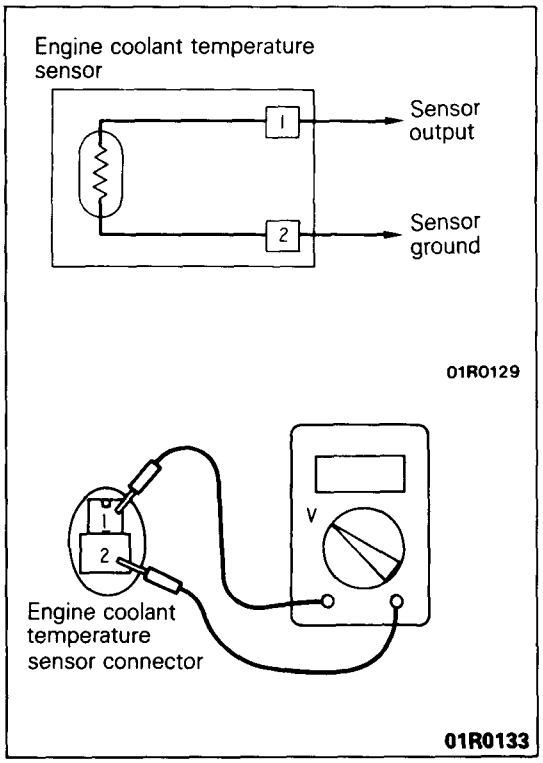
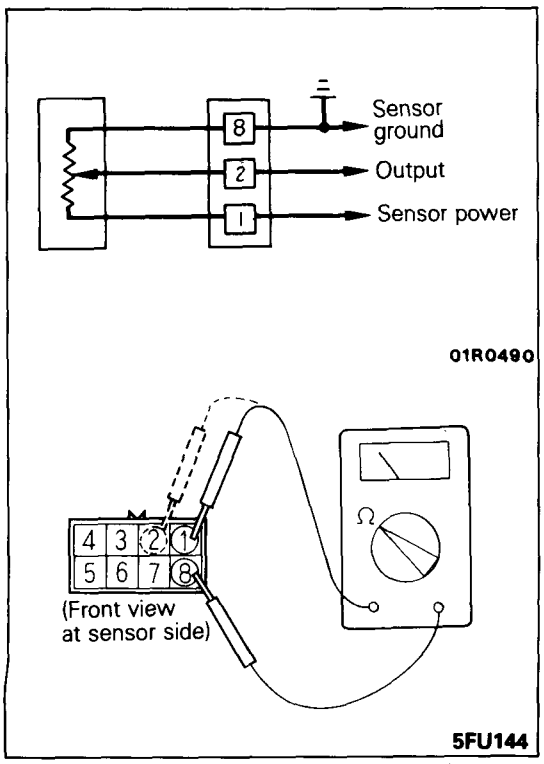




INSPECTION OF FBC SYSTEM COMPONENTS N14QAAA

INSPECTION OF ENGINE COOLANT TEMPERATURE SENSOR

INSPECTION

(1) Remove engine coolant temperature sensor from the intake manifold.
(2) With temperature sensing portion of engine coolant temperature sensor immersed in hot water, check electrical resistance. The sensor should be held with its housing 3 mm (.12 in.) away from the surface of the hot water.

Temperature °C (°F)	Resistance (kΩ)
0 (32)	5.9
20 (68)	2.5
40 (104)	1.1
80 (176)	0.3

(3) If the resistance deviates greatly from the standard value, replace the engine coolant temperature sensor.

INSTALLATION

(1) Apply specified adhesive to threaded portion.

Specified adhesive : 3M Adhesive Nut Locking No. 4171 or equivalent

(2) Install engine coolant temperature sensor and tighten it to specified torque.

Sensor tightening torque : 20–40 Nm (14–29 ft.lbs.)

(3) Fasten harness connectors securely.

INSPECTION OF THROTTLE POSITION SENSOR (TPS) N14QBAB

(1) Disconnect the carburetor connector.
(2) Measure resistance between terminal 1 (sensor power) and terminal 8 (sensor ground).

Standard value : 3.5 – 6.5 kΩ

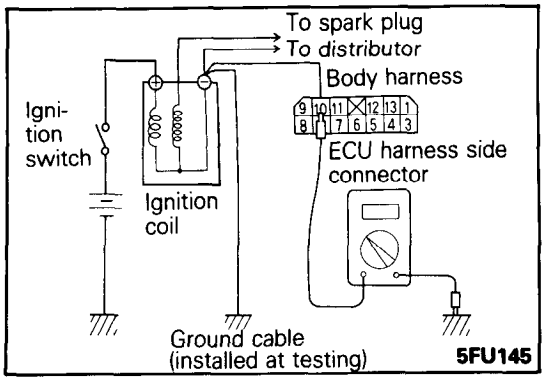
(3) Connect an ohmmeter (pointer type) between terminal 8 (sensor ground) and terminal 2 (sensor output).
(4) Operate the throttle valve slowly from idle position to the full open position and check that the resistance makes a smooth change proportionally with the throttle valve opening.

NOTE
The resistance changes within the range from approx.0.5 kΩ to the value measured at step (2).

(5) If the resistance is out of specification or fails to change smoothly, replace the TPS.

TPS installation torque : 2.5 – 4.5 Nm (1.8 – 3.3 ft. lbs.)

NOTE
Refer to P.14-28 for the throttle position sensor adjusting procedure.



INSPECTION OF ENGINE SPEED SENSOR (IGNITION COIL ⊖ TERMINAL) N14QCAB

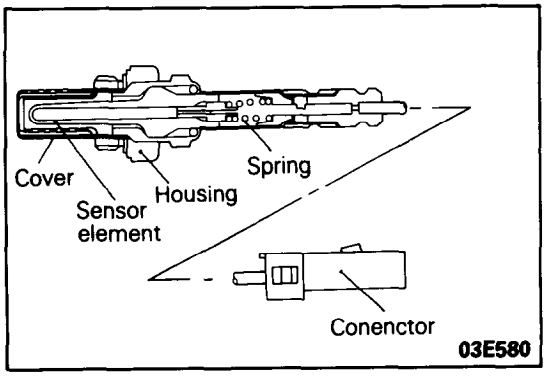
Check that there is continuity between the ignition coil ⊖ terminal and the electronic control unit (ECU) terminal 10.

NOTE
Shake the harness connector to check for lurking open circuit.

INSPECTION OF OXYGEN SENSOR N14QDAA

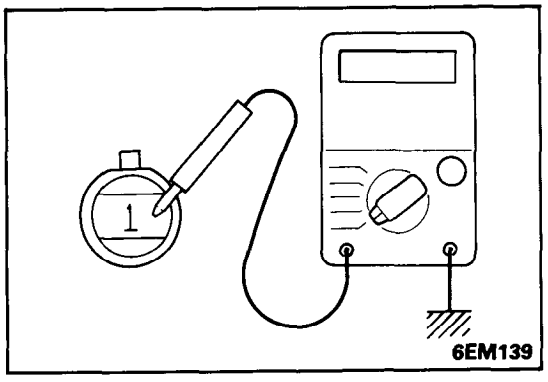
Caution
1. **Before checking, warm up the engine until engine coolant temperature reaches 85 to 95° (185 to 205°F).**
2. **Use an accurate digital voltmeter.**

(1) Separete the oxygen sensor connector and connect a voltmeter to the oxygen sensor connector.



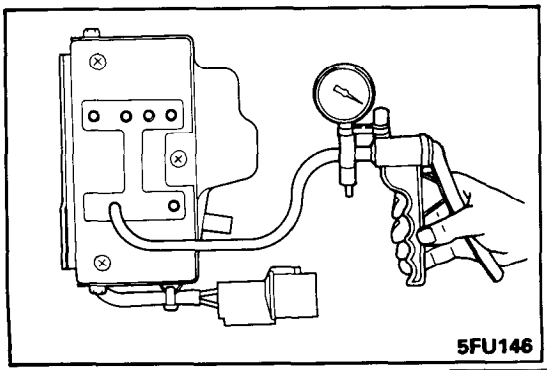
(2) While repeating engine racing, measure the oxygen sensor output voltage.

Engine	Oxygen sensor output voltage	Remarks
Racing	Approx. 1 V	Make air-fuel mixture richer by accelerator operation



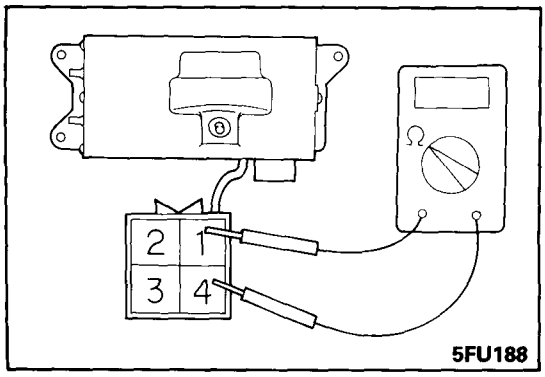
NOTE
For removal and installation of the oxygen sensor, refer to GROUP 11 INTAKE AND EXHAUST SYSTEM -Exhaust Manifold.

Oxygen sensor installation torque : 40 – 50 Nm (30 –36 ft. lbs.)



CHECKING THE VACUUM SWITCH N14QIAA

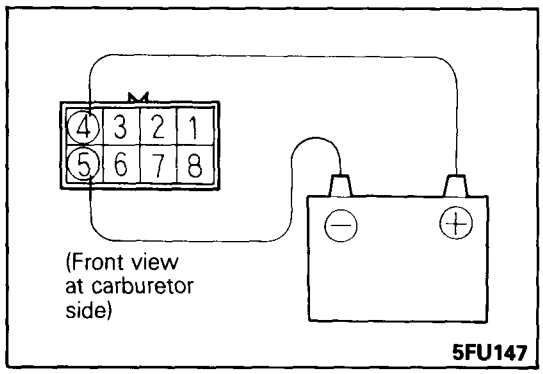
(1) Disconnect the vacuum hose (green stripe) from the device box, and connect a manual vacuum pump to the device box nipple.
(2) Detach the vacuum switch connector.
(3) Apply negative pressure (vacuum) and check whether or not there is continuity between the switch terminals.



5FU188

Vacuum gauge	Measured terminals	Continuity
26 kPa (3.9 psi) or lower	① – ④	No (∞Ω)
40 kPa (5.8 psi) or higher	① – ④	Yes (0Ω)

(4) If there is a problem, remove the device box cover, and replace the vacuum switch assembly.

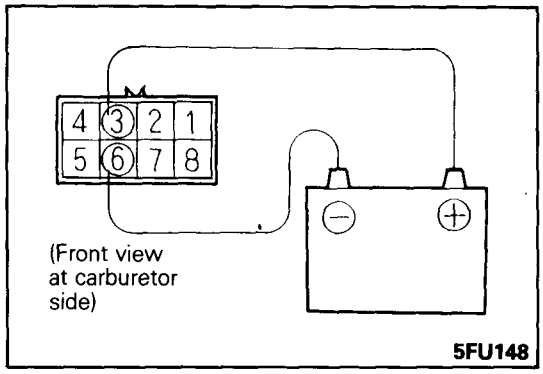


5FU147

SIMPLE INSPECTION OF FEEDBACK SOLENOID VALVE (FBSV) N14QOAB

(1) Disconnect the carburetor connector.
(2) Apply battery voltage (approx. 12V) between the solenoid valve terminals and check that the solenoid valve operates with a click.
If no click is heard, replace the solenoid valve.

NOTE
For the feedback solenoid valve removal and inspection procedures, refer to CARBURETOR DISASSEMBLY AND REASSEMBLY, P.14-63.



5FU148

SIMPLE INSPECTION OF SLOW CUT SOLENOID VALVE (SCSV) N14QPAB

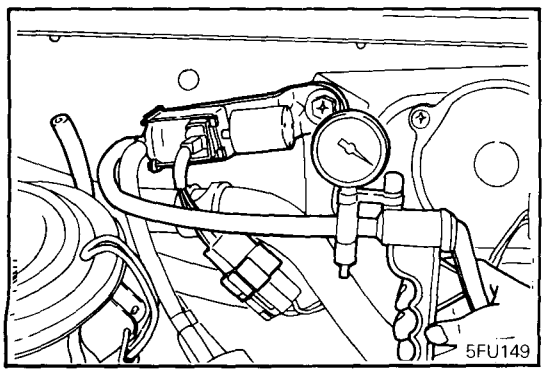
(1) Disconnect the carburetor connector.
(2) Apply battery voltage (approx. 12V) between the solenoid valve terminals and check that the solenoid valve operates with a click.
If no click is heard, replace the solenoid valve.

NOTE
For the slow cut solenoid valve removal and inspection procedures, refer to CARBURETOR DISASSEMBLY AND REASSEMBLY, P.14-63.

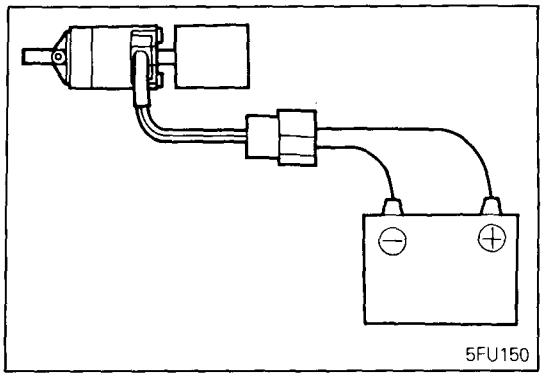
INSPECTION OF THROTTLE OPENER CONTROL SOLENOID VALVE FOR AIR CONDITIONER N14QXBA

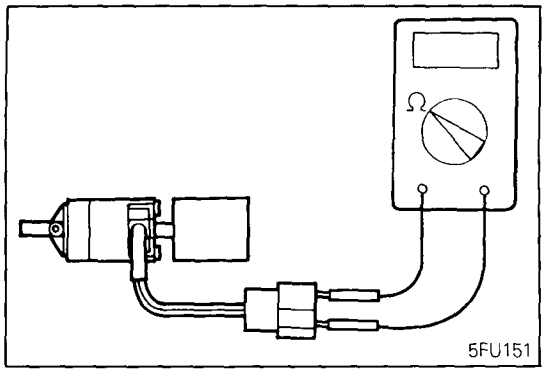
NOTE
When removing the vacuum hoses from the solenoid valve, put marks on the hoses for correct installation.

(1) Remove the vacuum hoses (white stripe, yellow stripe) from the solenoid valve.
(2) Disconnect the harness connector.
(3) Connect a hand vacuum pump to the nipple to which the white stripe vacuum hose has been connected.


5FU149

STB Revision





(4) Apply vacuum and check air tightness for both when battery voltage is directly applied to the solenoid valve terminal and when no voltage is applied.

Battery voltage	The other nipple of solenoid valve	Normal state
Applied	Open	Vacuum leaks
	Closed with finger	Vacuum is held
Not applied	Open	Vacuum is held

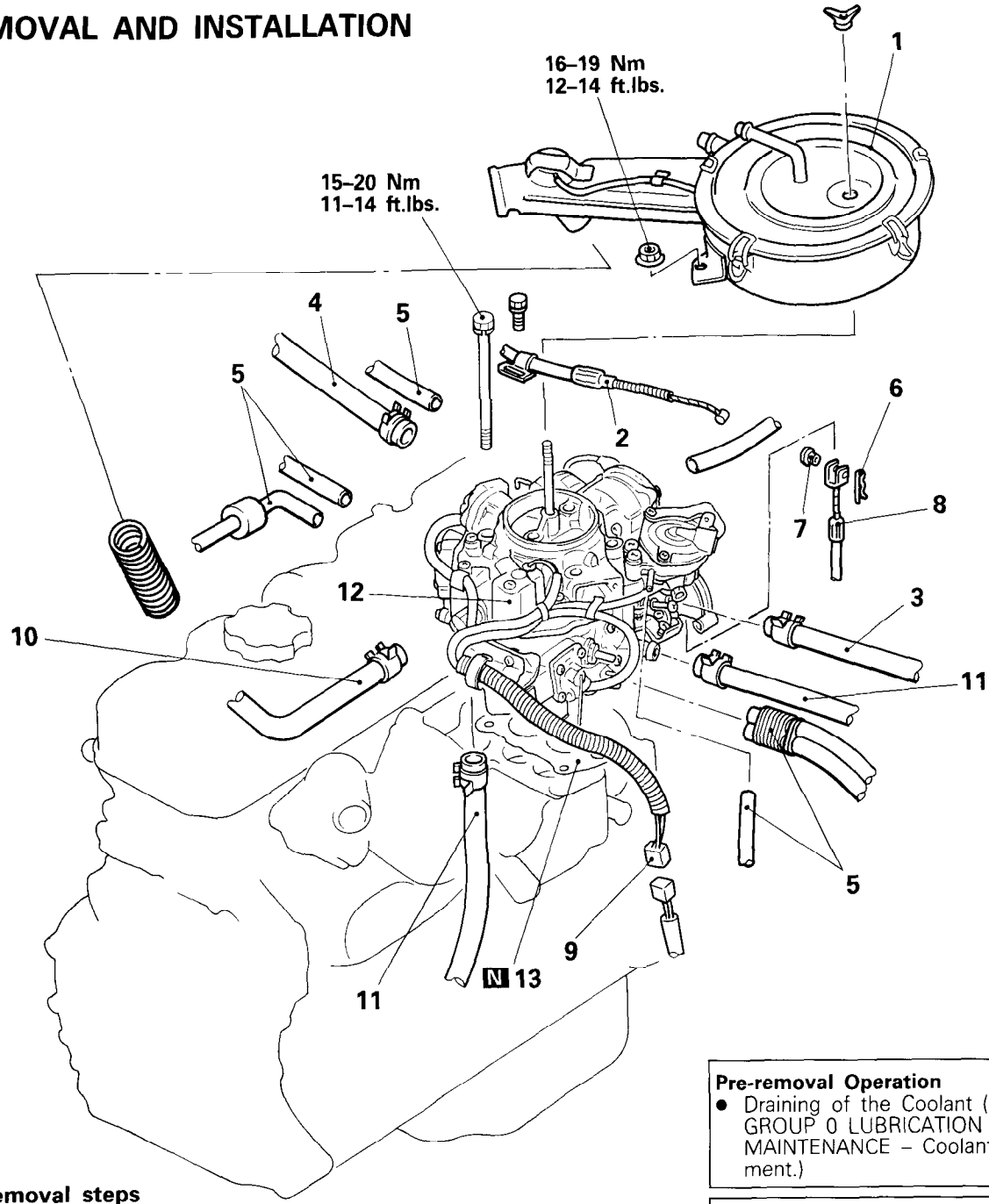
(5) Measure the solenoid coil resistance.

Standard value : 38 – 44Ω [at 20°C (68°F)]

CARBURETOR

REMOVAL AND INSTALLATION

N14MA--



Pre-removal Operation
- Draining of the Coolant (Refer to GROUP 0 LUBRICATION AND MAINTENANCE – Coolant Replacement.)

Post-installation Operation
- Supplying of Coolant (Refer to GROUP 0 LUBRICATION AND MAINTENANCE – Coolant Replacement.)
- Checking and Adjustment of the Idling rpm (Refer to GROUP 0 LUBRICATION AND MAINTENANCE – Checking and Adjustment of the Idling rpm.)

Removal steps

◆◆ ◆◆ 1. Air filter
◆◆ Adjustment of accelerator cable
2. Connection of accelerator cable
3. Connection of water hose
4. Connection of fuel vaper hose
5. Connection of vacuum hoses
◆◆ Adjustment of throttle cable
6. Snap pin
7. Pin
8. Connection of throttle cable } Vehicles with an automatic transmission
9. Connection of control harness connector
◆◆ 10. Connection of main hose
◆◆ 11. Connection of return hose
◆◆ 12. Carburetor
13. Gasket

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆ : Refer to "Service Points of Removal".
(3) ◆◆ : Refer to "Service Points of Installation".
(4) N : Non-reusable parts

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SERVICE POINTS OF REMOVAL N14MBAC

1. REMOVAL OF AIR FILTER

Refer to GROUP 11 INTAKE AND EXHAUST SYSTEM – Air Filter.

11. DISCONNECTION OF RETURN HOSE/10. MAIN HOSE

(1) Before disconnection of the fuel hose, remove the fuel tank cap to lower the pressure in the fuel tank.
(2) With the receiver placed under the fuel inlet fitting to receive fuel left in the hose, remove fuel hose from the carburetor inlet nipple.

12. REMOVAL OF CARBURETOR

NOTE
When the carburetor is removed, keep it horizontally so as not to spill fuel from the carburetor.

SERVICE POINTS OF INSTALLATION N14MDAB

- **ADJUSTMENT OF THROTTLE CABLE**

  Refer to GROUP 21 TRANSMISSION – Adjustment of Throttle Cable.

- **ADJUSTMENT OF ACCELERATOR CABLE FREE PLAY**

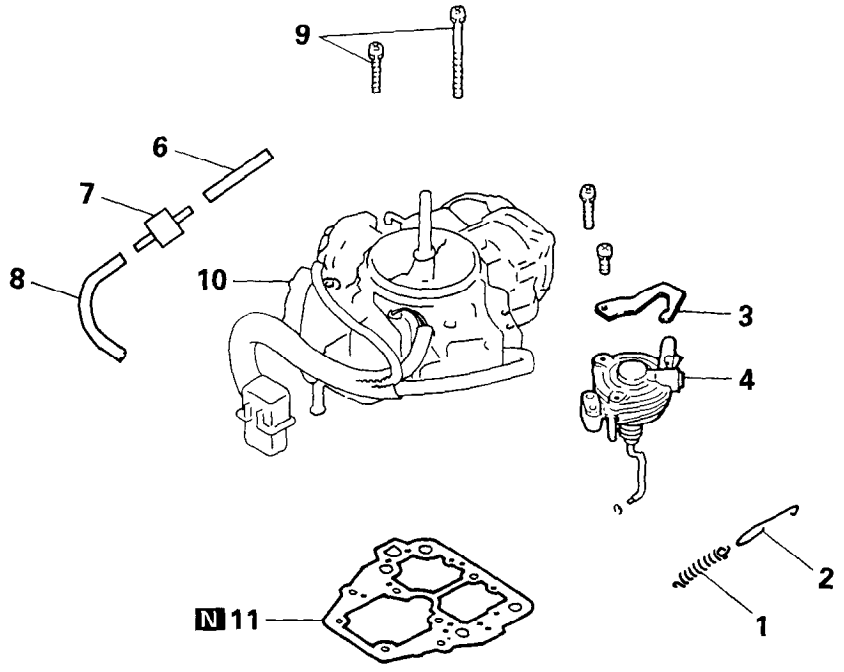
  Refer to P.14-84.

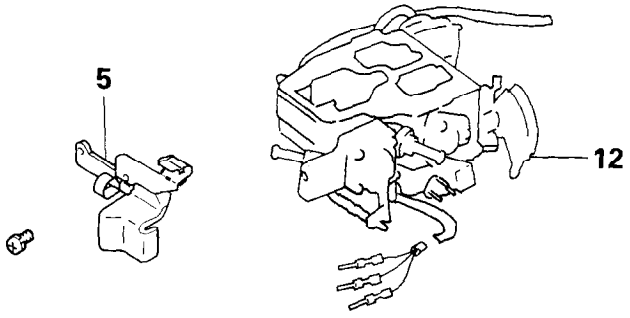
1. INSTALLATION OF AIR FILTER

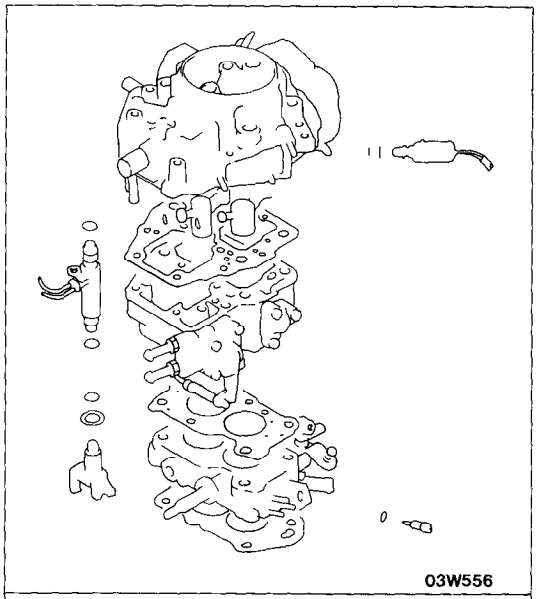
Refer to GROUP 11 INTAKE AND EXHAUST SYSTEM - Air Filter.

DISASSEMBLY AND REASSEMBLY

N14ME--







Carburetor assembly and gasket kit

Disassembly steps

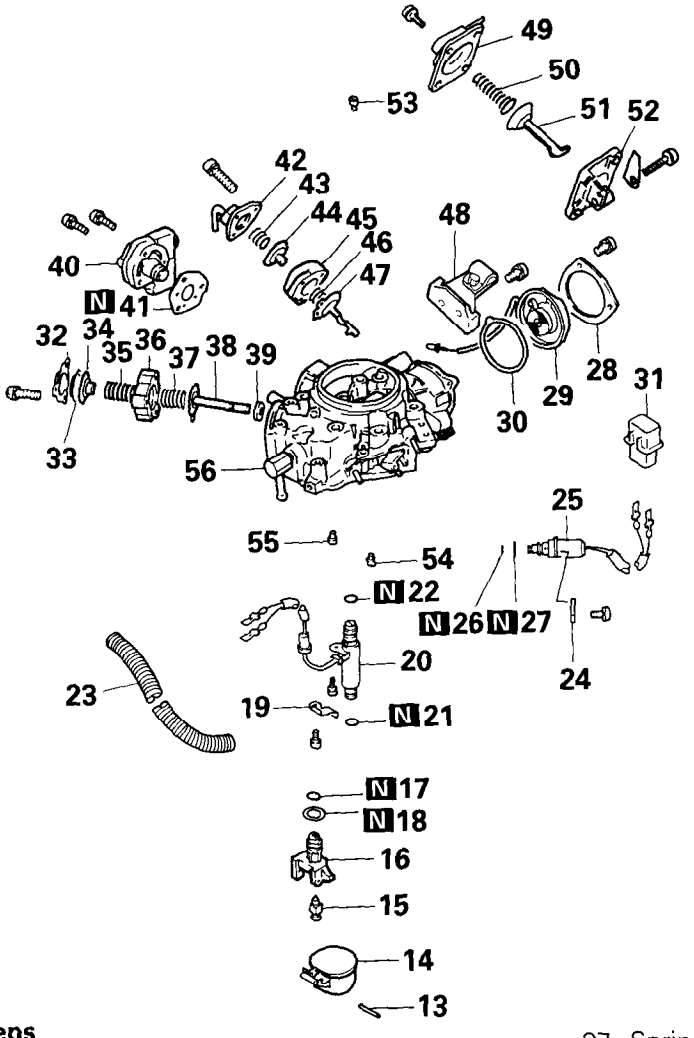
1. Throttle-return spring
2. Damper spring
3. Throttle-return spring bracket
4. Throttle opener/Dash pot
5. Bracket
6. Hose
7. Vacuum-delay valve
8. Hose
9. Screw

◆◆ ▶◀ 10. Float chamber cover assembly
11. Float chamber cover gasket
12. Mixing body and throttle body assembly

NOTE
(1) Reverse the disassembly procedures to reassemble.
(2) ◆◆ : Refer to "Service Points of Disassembly".
(3) N : Non-reusable parts

5FU152

STB Revision

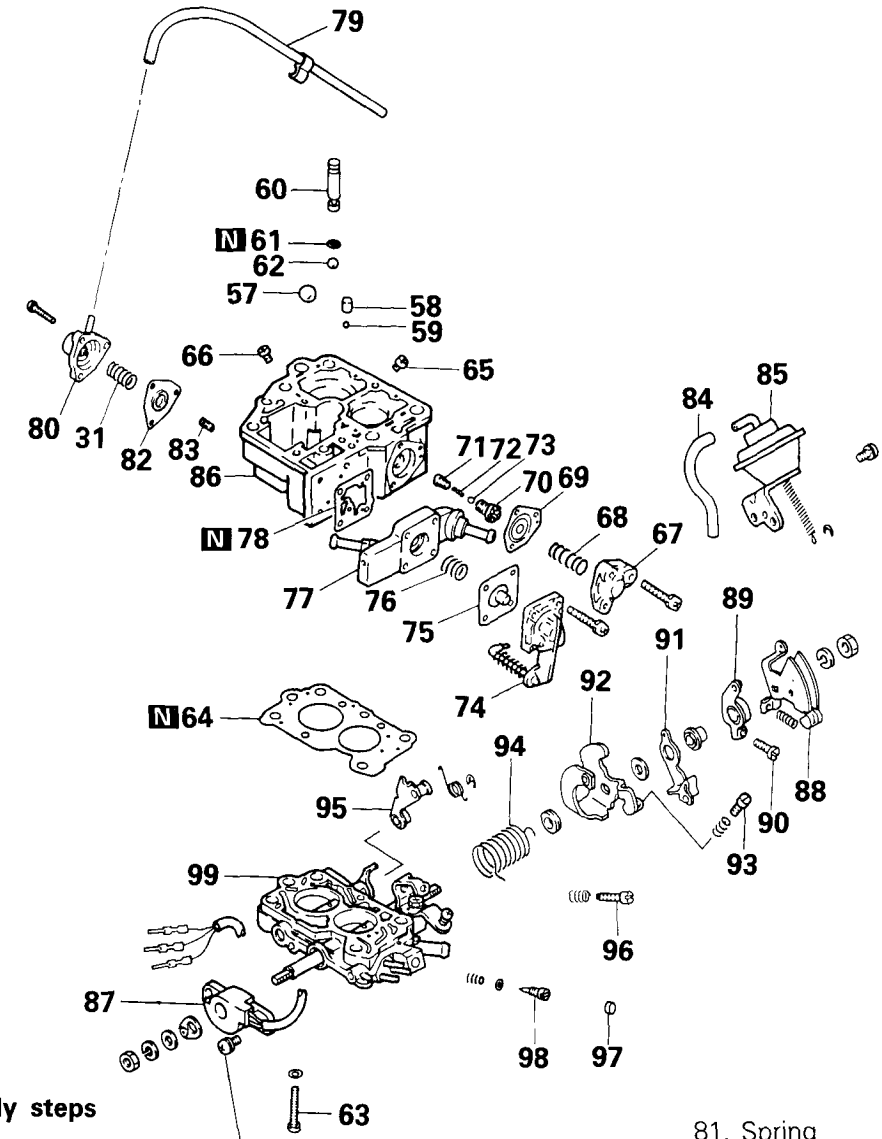


Disassembly steps

- 13. Pin
- ◆◆ 14. Float
- ◆◆ 15. Needle valve
- ◆◆ 16. Needle valve seat
- 17. O-ring
- 18. Packing
- 19. Retainer
- ◆◆ ◆◆ 20. Feedback solenoid valve (FBSV)
- 21. O-ring
- 22. O-ring
- 23. Tube
- 24. Retainer
- ◆◆ ◆◆ 25. Slow-cut solenoid valve (SCSV)
- 26. O-ring
- 27. O-ring
- 28. Plate
- ◆◆ ◆◆ 29. Bimetal assembly
- 30. Packing
- 31. Connector
- 32. Cover
- 33. Diaphragm
- 34. Spring seat
- 35. Spring
- 36. Body
- 37. Spring
- 38. Diaphragm
- 39. Valve
- 40. Mixture control valve (MCV) assembly
- 41. Gasket
- 42. Cover
- 43. Spring
- 44. Diaphragm
- 45. Body
- 46. Spring
- 47. Diaphragm
- 48. Bracket
- 49. Cover
- 50. Spring
- 51. Diaphragm
- 52. Body
- ◆◆ ◆◆ 53. Main air jet (primary)
- ◆◆ ◆◆ 54. Pilot jet (primary)
- ◆◆ ◆◆ 55. Pilot jet (secondary)
- 56. Float chamber cover

NOTE
(1) Reverse the disassembly procedures to reassemble.
(2) ◆◆ : Refer to "Service Points of Disassembly".
(3) ◆◆ : Refer to "Service Points of Reassembly".
(4) N : Non-reusable parts

5FU153



Disassembly steps

- ◆◆ 57. Steel ball
- ◆◆ 58. Weight
- ◆◆ 59. Ball
- ◆◆ 60. Plug
- ◆◆ 61. O-ring
- ◆◆ 62. Ball
- ◆◆ 63. Screw
- 64. Gasket
- ◆◆ ◆◆ 65. Main jet (primary)
- ◆◆ ◆◆ 66. Main jet (secondary)
- 67. Cover
- 68. Spring
- 69. Diaphragm
- ◆◆ 70. Enrichment jet valve
- 71. Enrichment jet
- 72. Spring
- 73. Ball
- 74. Pump cover assembly
- 75. Diaphragm
- 76. Spring
- 77. Pump body
- 78. Gasket
- 79. Hose
- 80. Auxiliary acceleration pump cover
- 81. Spring
- 82. Diaphragm
- 83. Check valve
- 84. Mixing body
- 85. Vacuum hose
- 86. Depression chamber
- 87. Throttle-position sensor (TPS)
- 88. Throttle lever
- 89. Cam follower
- 90. Fast-idle adjustment screw
- 91. Free lever
- 92. Apartment plate
- 93. Idle-speed adjustment screw (SAS-2)
- 94. Spring
- 95. Secondary lever
- 96. Idle-speed adjustment screw (SAS-1)
- ◆◆ 97. Plug
- 98. Mixture-adjustment screw (MAS)
- 99. Throttle body

NOTE
(1) Reverse the disassembly procedures to reassemble.
(2) ◆◆ : Refer to "Service Points of Disassembly".
(3) ◆◆ : Refer to "Service Points of Reassembly".
(4) N : Non-reusable parts

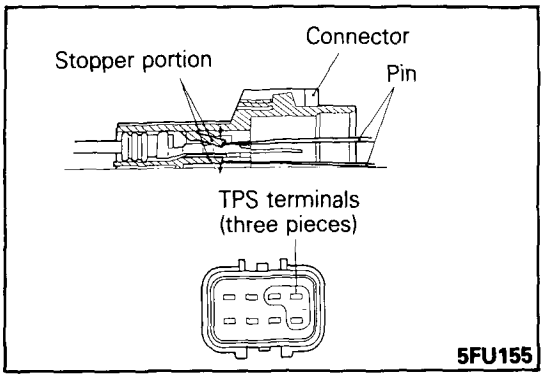
5FU154

STB Revision

SERVICE POINTS OF DISASSEMBLY N14MFAA

Caution

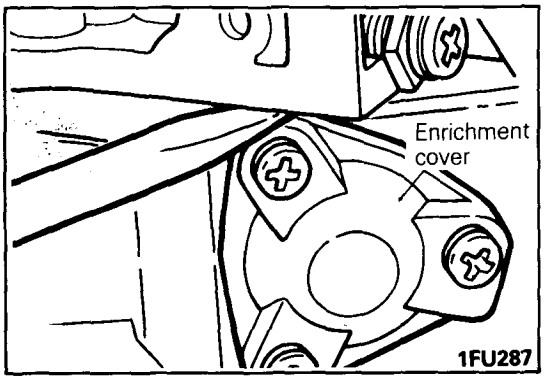
1. **Do not disassemble the following components at the time of disassembly.**
   - **(1) Choke valve, choke shaft and automatic choke device**
   - **(2) Inner venturi**
   - **(3) Throttle valve and throttle shaft**
   - **(4) Fuel inlet nipple**
2. **When loosening a Philips screw which has been firmly tightened, use a Philips screwdriver that is an exact fit for the screw.**



10. REMOVAL OF FLOAT CHAMBER COVER ASSEMBLY

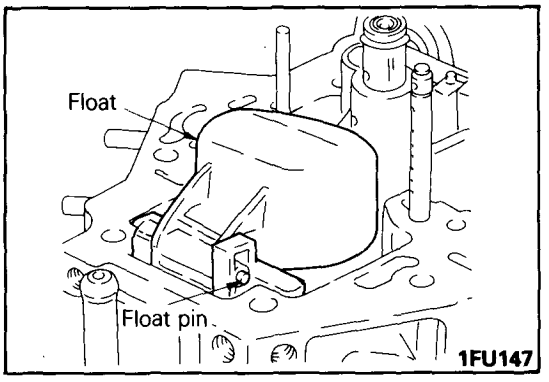
Caution
Ensure that the terminal is not bent during removal of the connector.

(1) With a pin or the like push the stopper portion to remove each of the three TPS terminals from the rear of the connectors.



(2) Do not attempt to remove the cover at a time as it is held in position firmly by gasket. Insert a screwdriver blade between the enrichment cover and the float chamber cover as illustrated and lightly pry and lift up lightly.

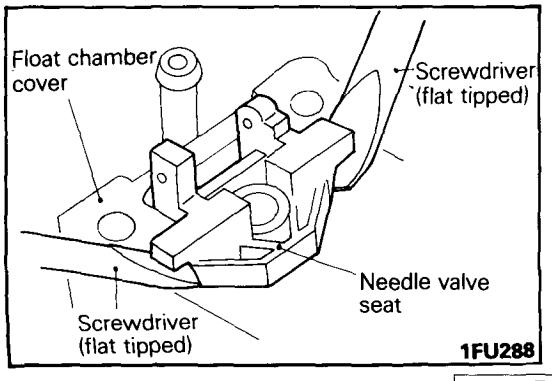
Caution
Do not apply excessive force.



14. REMOVAL OF FLOAT / 15. NEEDLE VALVE

Remove the pin and then remove the float and needle valve.

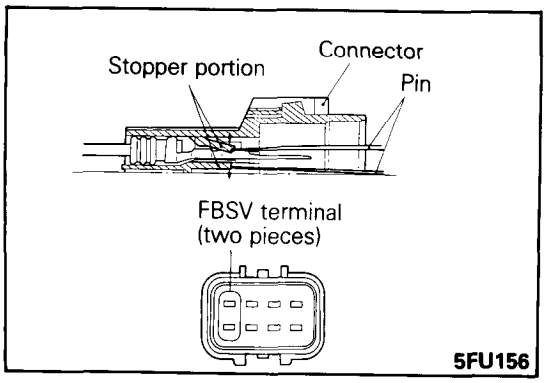
Caution
1. **Do not let the float drop or apply collapsing load.**
2. **Use care not to damage the end of the needle valve.**



16. REMOVAL OF NEEDLE VALVE SEAT

Using flat blade screwdrivers, pry up the needle valve seat at both edges to remove.

Caution
Use care not to damage the float chamber cover when pushing up the needle valve seat.

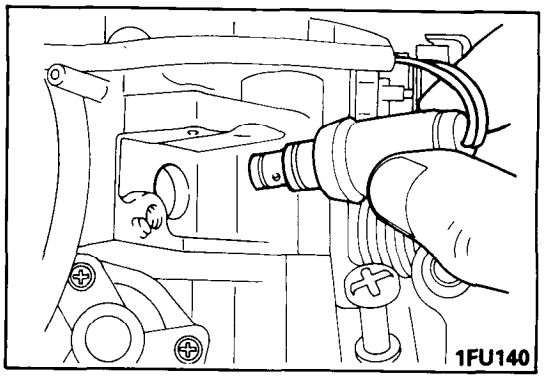


20. REMOVAL OF FEEDBACK SOLENOID VALVE (FBSV)

Using a screwdriver or other tool with a thin flat end, push the stopper portion and remove the two terminals from behind the connector.

Caution
Ensure that the terminal is not bent during removal of the connector.

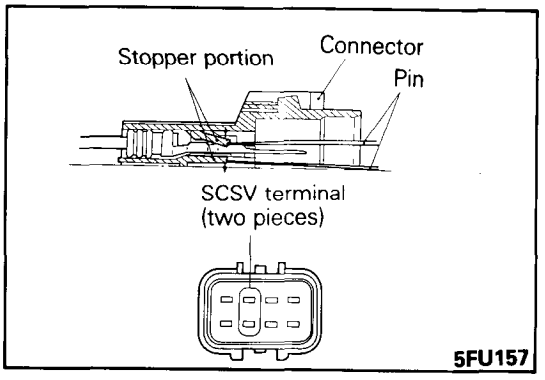
NOTE
Unless the terminals are removed from the connector, the feedback solenoid valve cannot be removed from the float chamber cover.



25. REMOVAL OF SLOW CUT SOLENOID VALVE (SCSV)

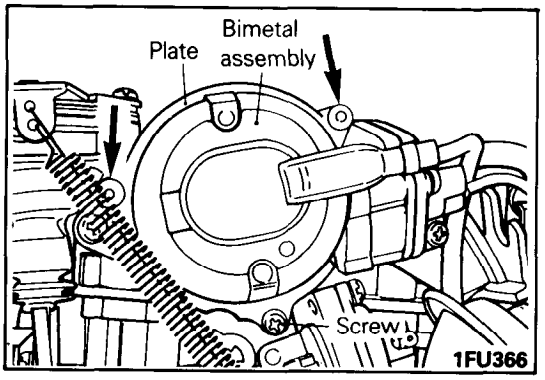
(1) Remove the retainer and pull out the slow cut solenoid valve.

Caution
When removing the valve, do not hold the leads but hold the body.



(2) Using a screwdriver or other tool with a thin flat end, push the stopper section and remove the two terminals from behind the connector.

Caution
Ensure that the terminal is not bent during removal of the connector.

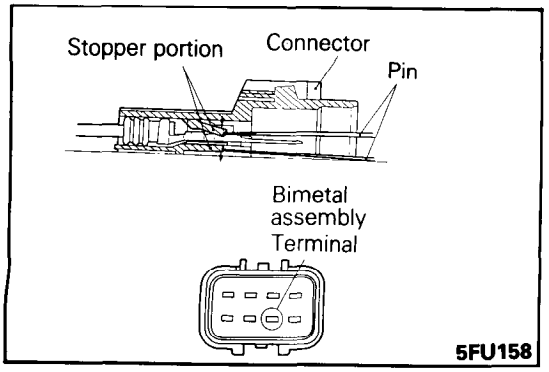


29. REMOVAL OF BIMETAL ASSEMBLY

(1) Grind away the head of the two rivets of the bimetal assembly using an hand grinder or other tool. Remove the screw.

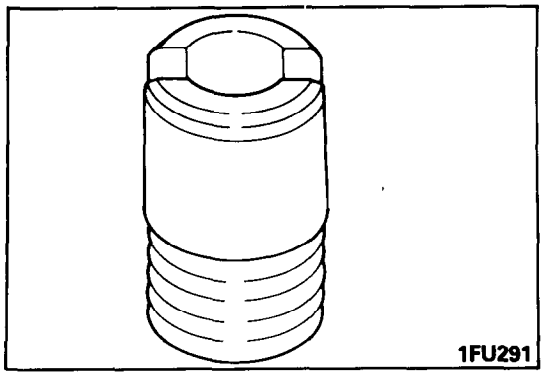
(2) Remove the plate, the bimetal assembly and the packing.

(3) Remove the remaining rivet bodies using a pin punch etc..



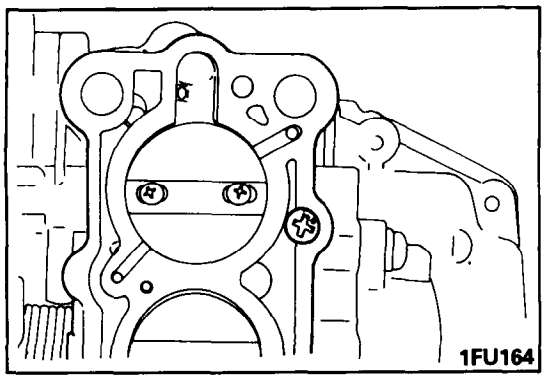
(4) Using a screwdriver or other tool with a thin flat end, push the stopper section and remove the terminal from behind the connector.

Caution
Ensure that the terminal is not bent during removal of the connector.



53. REMOVAL OF MAIN AIR JET (PRIMARY)/54. PILOT JET (PRIMARY)/55. PILOT JET (SECONDARY)

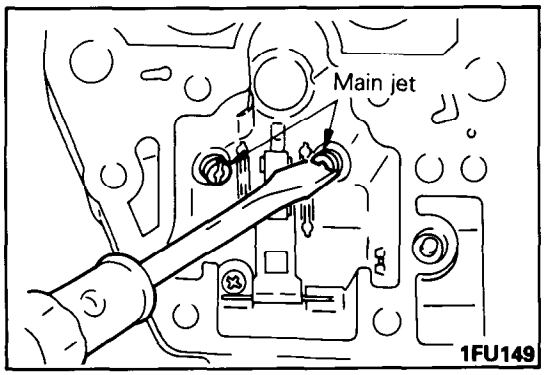
(1) When removing the jets, use a screwdriver that is an exact fit for their slot and work carefully to prevent damage.



63. REMOVAL OF SCREW

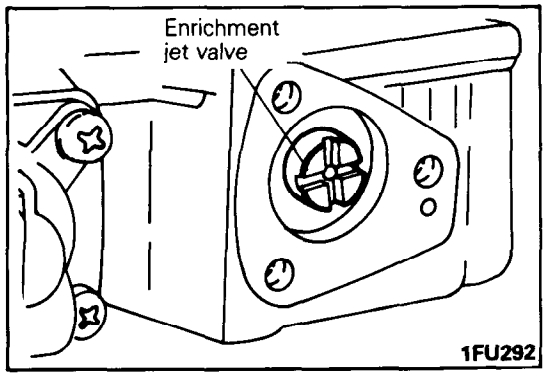
(1) Use a Phillips screwdriver that is an exact fit and work carefully to prevent damage.

Caution
Do not cause burrs to the recess in screw head as they could produce gap between throttle body and the manifold surface.



65. REMOVAL OF MAIN JET (PRIMARY)/66. MAIN JET (SECONDARY)

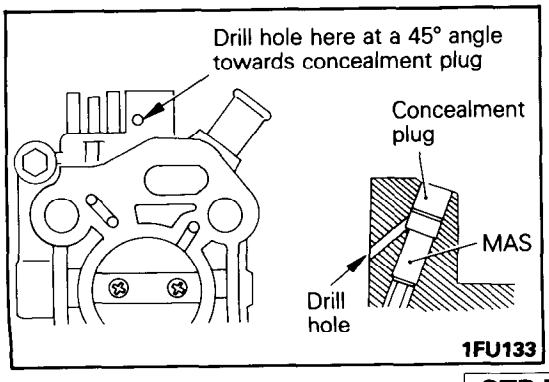
When removing the jets, use a screwdriver that is an exact fit and work carefully to prevent damage.



70. REMOVAL OF ENRICHMENT JET VALVE

Caution
The valve has many small parts. Do not lose them.

(1) When removing the enrichment jet valve from the mixing body, use a screwdriver that is an exact fit for its screwdriver slots and work carefully to prevent damage.
(2) Using a screwdriver, loosen the enrichment jet and take out the spring and ball from the enrichment jet valve.



97. REMOVAL OF PLUG

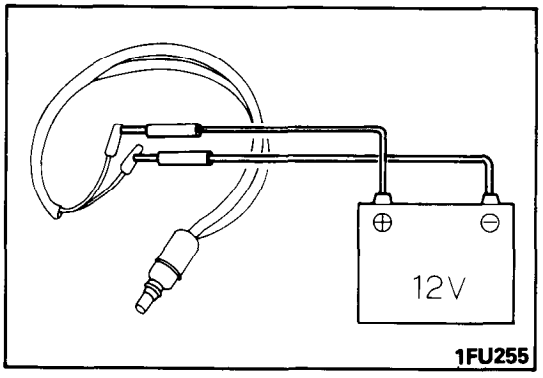
(1) Clamp carburetor in a vice with idle mixture adjusting screw (MAS) facing up (protect gasket surface from vice jaws).
(2) Drill a 2 mm (5/64 in.) pilot hole in the casting surrounding the idle mixture adjusting screw (MAS) then redrill the hole to 3 mm (1/8 in.).
(3) Insert a blunt punch into the hole and drive out plug.

INSPECTION N14MGAA

GENERAL INSPECTION

Check the following and repair or replace parts if necessary.

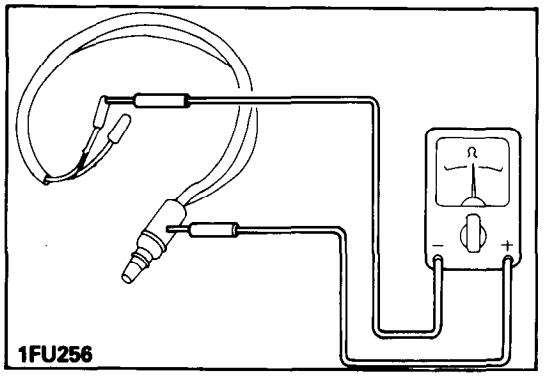
(1) Check the fuel paths (jets) and air paths (jets or orifices) for clogging. If clogged, wash thoroughly with cleaning solvent or detergent and blow by compressed air. Do not use metal wire or other metal pieces.
(2) Check the diaphragms for damage and cracks.
(3) Check that the needle valve operates lightly. If the valve is hard to slide or is binding, repair or replace. If there is overflow, poor valve to seat contact is suspected. Check thoroughly.
(4) Check the fuel inlet filter (located above the needle valve) for clogging and damage.
(5) Check the float operation. Check the float and lever for deformation and damage and replace if necessary.
(6) Check operation of the throttle valve, choke valve and link. If they do not operate lightly, wash well and apply engine oil sparelingly to their shaft.
(7) Check the float chamber and main body for damage and cracks.



1FU255

INSPECTION OF SLOW CUT SOLENOID VALVE (SCSV) OPERATION N14MGBA

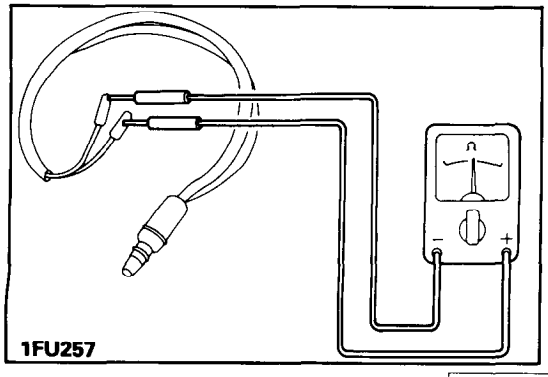
(1) Apply battery voltage directly to the slow cut solenoid valve terminals.
(2) Check that the valve operates with a click.



1FU256

MEASUREMENT OF SLOW CUT SOLENOID VALVE(SCSV) RESISTANCE N14MGCA

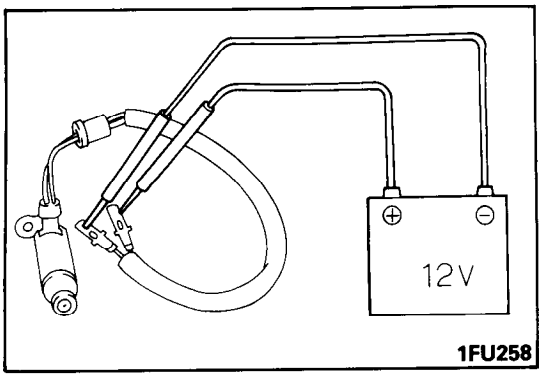
(1) Using a circuit tester, check that there is no continuity between the solenoid valve body and terminals.



1FU257

(2) Measure resistance between the terminals.

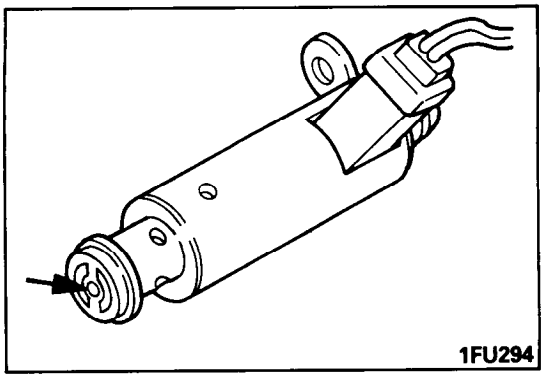
Standard value : 48 – 60Ω [at 20°C (68°F)]



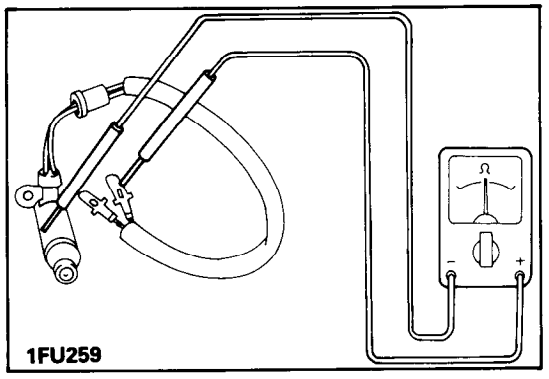
1FU258

INSPECTION OF FEEDBACK SOLENOID VALVE (FBSV) OPERATION N14MGDA

(1) Apply battery voltage directly to the feedback solenoid valve terminals.
(2) Check that the valve operates with a click.

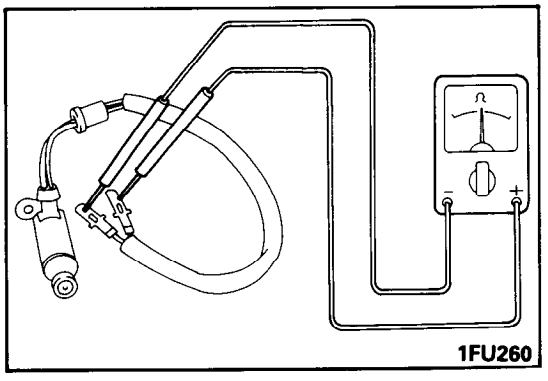

1FU294

(3) Check that the jet is free from clogging.


1FU259

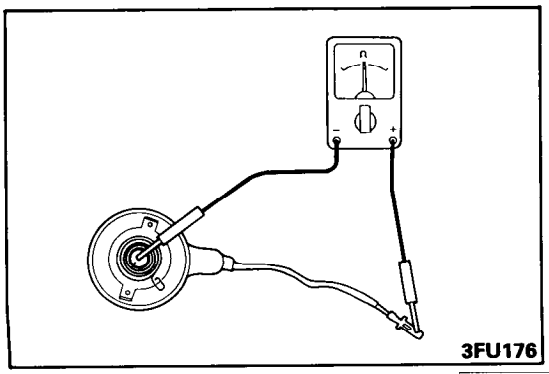
MEASUREMENT OF FEEDBACK SOLENOID VALVE (FBSV) RESISTANCE N14MGEA

(1) Using a circuit tester, check that there is no continuity between the solenoid valve body and terminals.


1FU260

(2) Measure resistance between the terminals.

Standard value : 54 – 66Ω [at 20°C (68°F)]

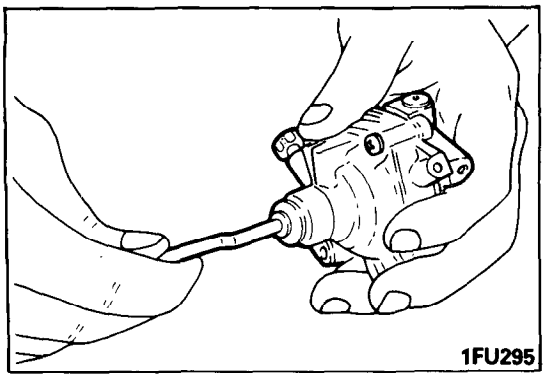

3FU176

MEASUREMENT OF BIMETAL ASSEMBLY RESISTANCE N14MGFA

Using a circuit tester, measure resistance between the terminal and body.

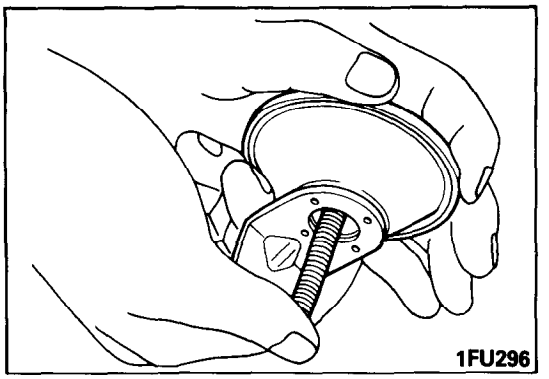
Standard value : Approx. 6Ω [at 20°C (68°F)]

STB Revision



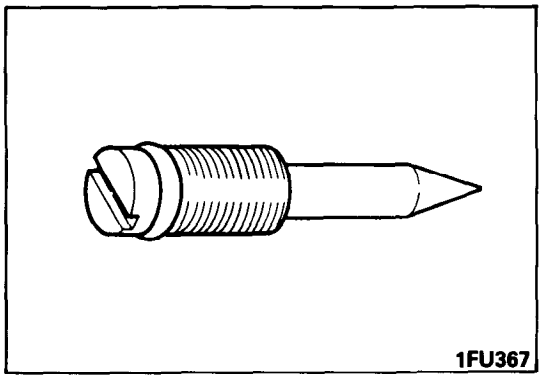
INSPECTION OF DASH POT N14MGGA

Check that the dash pot operates normally. Resistance must be felt when the dash pot rod is pulled. When the rod is released, it must return quickly to the original position. If no resistance is felt when it is pulled, the diaphragm or the check valve is broken. If the rod returns slowly, the check valve is binding. In either case, replace the dash pot.



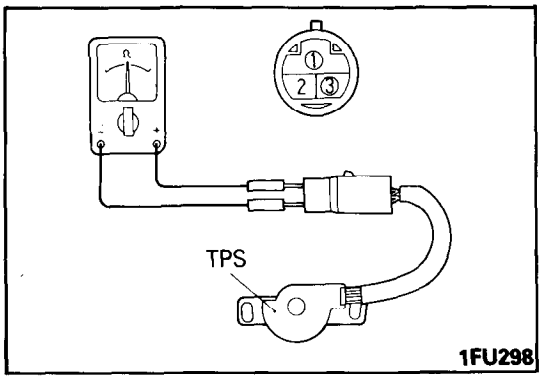
INSPECTION OF DEPRESSION CHAMBER N14MGHA

Check the depression chamber diaphragm for damage. First, push up the rod fully and closing tightly the nipple with a finger, release the rod. The diaphragm is intact if the rod does not return to the initial position while the nipple is held closed with a finger. If the rod returns, the diaphragm is broken. Replace the depression chamber.



MIXTURE ADJUSTING SCREW (MAS) N14MGIA

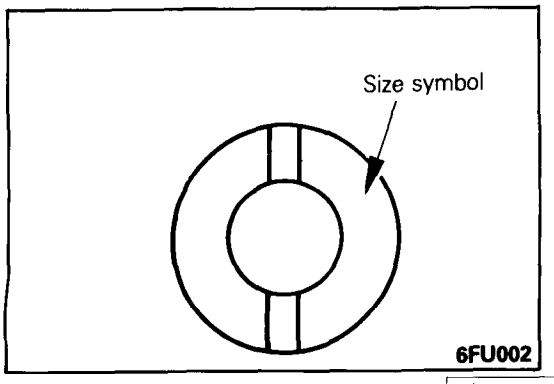
Check the mixture adjusting screw (MAS) for damage caused to its taper end by overtightening etc..



THROTTLE POSITION SENSOR (TPS) N14MGJA

1. Measure resistance between terminals 1 and 3 of the throttle position sensor.

   Standard value : 3.5 – 6.5 kΩ
2. Check the body for crack and damage.

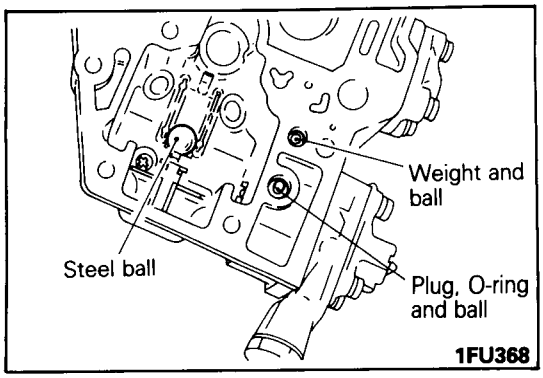


SERVICE POINTS OF REASSEMBLY N14MHAB

66. 65. IDENTIFICATION OF MAIN JETS

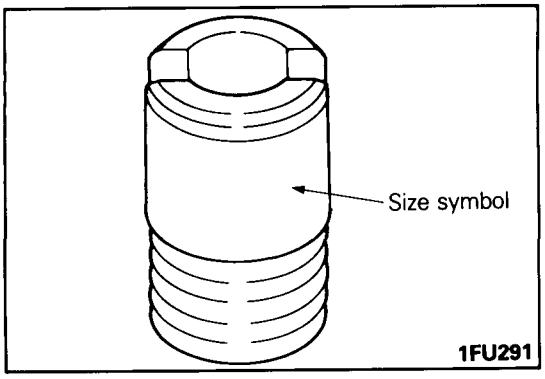
Make sure that correct jets are installed at correct positions. Note the size symbol stamed on each jet for identification.

Primary : #107.5
Secondary : #190



62. INSTALLATION OF BALL/61. O-RING/60. PLUG/59. BALL/58. WEIGHT/57. STEEL BALL

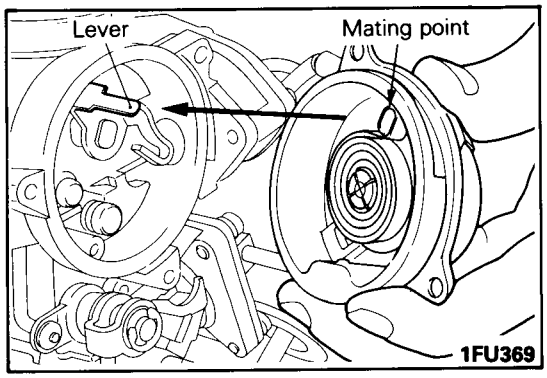
Install in correct sequence and at correct positions.



55. INSTALLATION OF PILOT JET (SECONDARY)/54. PILOT JET (PRIMARY)/53. MAIN AIR JET (PRIMARY)

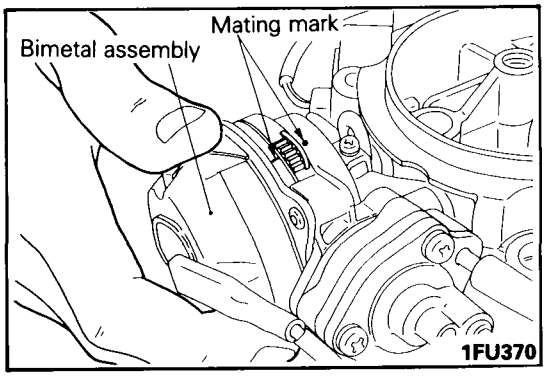
(1) Make sure that correct jets are installed at correct positions. Note the size symbol stamped on each jet for identification.

Main air jet (primary) : #70
Pilot jet (primary) : #55
Pilot jet (secondary) : #70

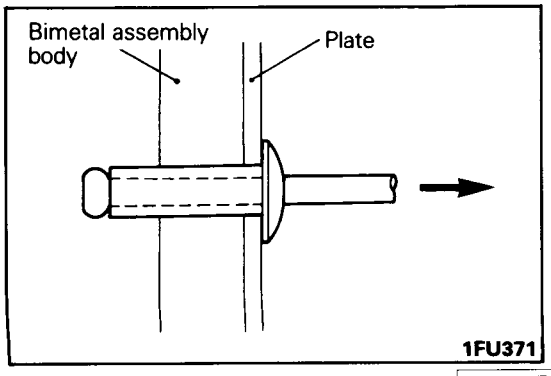


29. INSTALLATION OF BIMETAL ASSEMBLY

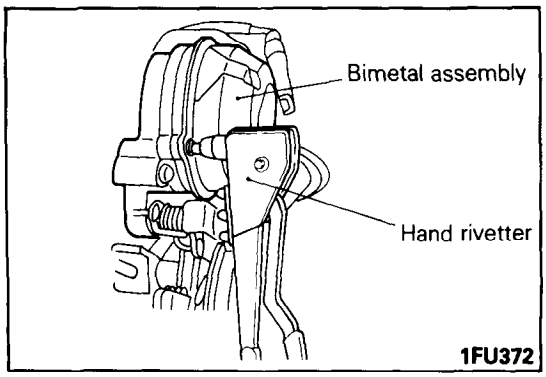
(1) Fit the bimetal end over the choke valve lever.



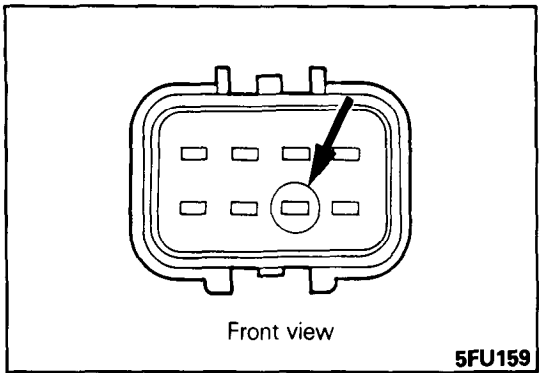
(2) Install the plate and temporarily tighten the screw.
(3) Align the mating marks.



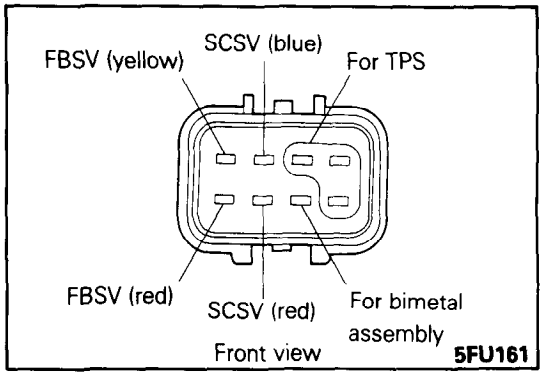
(4) Set the rivet as illustrated.



(5) Install the bimetal assembly using a hand rivetter or similar tool with the mating marks aligned correctly.
(6) Tighten the screw.

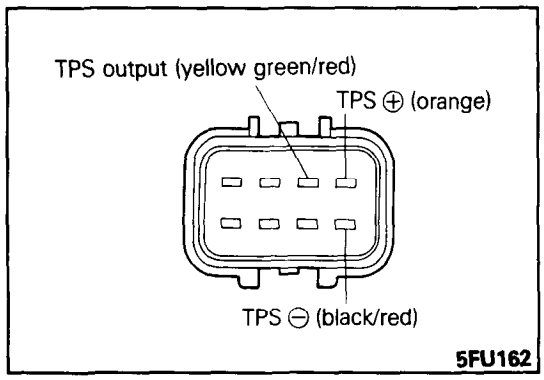


(7) Install terminal to the connector at correct position.



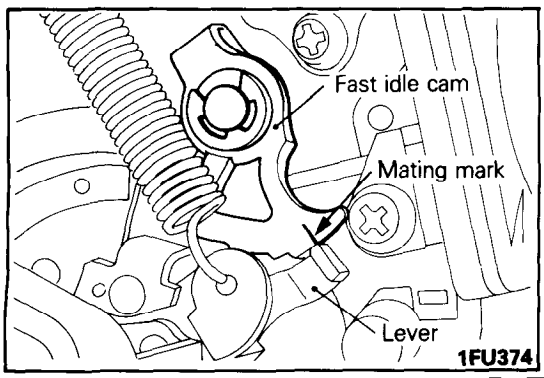
25. INSTALLATION OF SLOW CUT SOLENOID VALVE (SCSV)/20. FEEDBACK SOLENOID VALVE (FBSV)

Install terminals to the connector at correct positions.



10. INSTALLATION OF FLOAT CHAMBER COVER ASSEMBLY

(1) After installing the float chamber cover, install the throttle position sensor (TPS) terminals (3) to the connector, paying close attention to their positions.



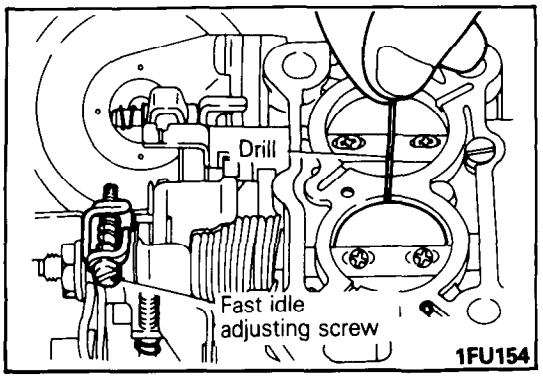
INSPECTION AND ADJUSTMENT AFTER ASSEMBLY

N14MIAB

FAST IDLE OPENING

(1) Set lever on the first highest cam of the fast idle cam.

STB Revision



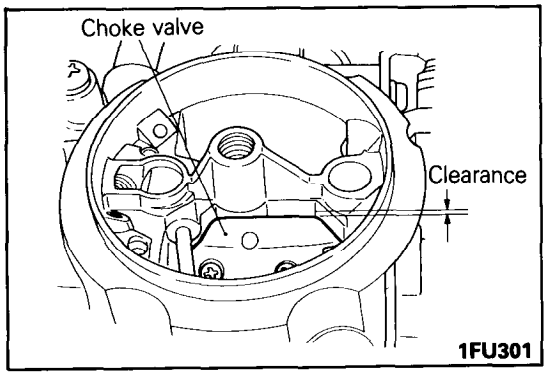
(2) Measure the primary valve to throttle bore clearance.

Standard value :
Vehicles with a manual transmission
1.21 mm (.0476 in.)
Vehicles with an automatic transmission
1.32 mm (.0520 in.)

(3) If the clearance is out of specification, adjust using the fast idle adjusting screw for the standard value.

NOTE
Adjusting screw direction of rotation vs. idle rpm

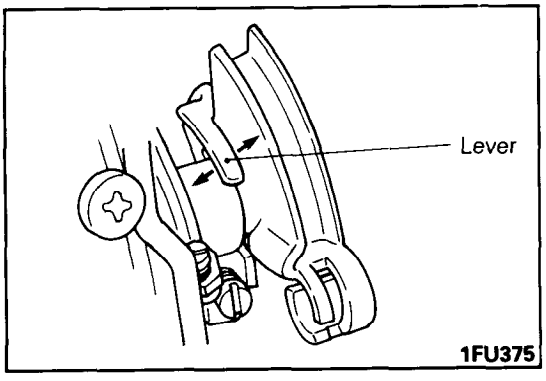
Adjusting screw	Valve opening	Fast idle rpm
Clockwise	Larger	Increases
Counter clockwise	Smaller	Decreases



UNLOADER OPENING N14MIBA

(1) Lightly press the choke valve with a finger to fully close it.
(2) In this state, fully open the throttle valve and measure the choke valve to choke bore clearance.

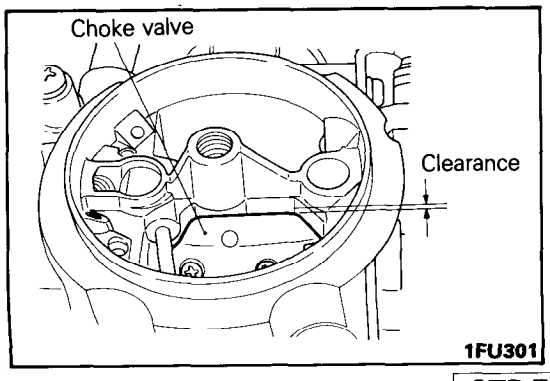
Standard value : 1.9 – 2.1 mm (.075 – .083 in.)



(3) If the clearance is out of specification, bend the throttle lever at illustrated portion to adjust the clearance to the standard value.

NOTE

Lever bending direction	Clearance	Remarks
Up	Larger	Poor response
Down	Smaller	Lower output Plug likely to get sooty

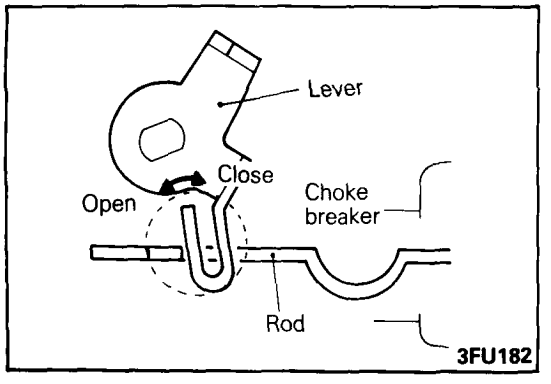


CHOKE BREAKER N14MICB

Caution
Check and adjust with the bimetal assembly removed.

(1) Lightly press the choke valve with a finger to fully close it.
(2) Push the choke breaker rod toward the diaphragm and measure the choke valve to choke bore clearance.

Standard value :
1st stage : 2.5 – 2.7 mm (.098 – .106 in.)
2st stage : 3.2 – 3.4 mm (.126 – .133 in.)



(3) If the clearance is out of specification, adjust by bending the throttle lever at illustrated portion.

NOTE

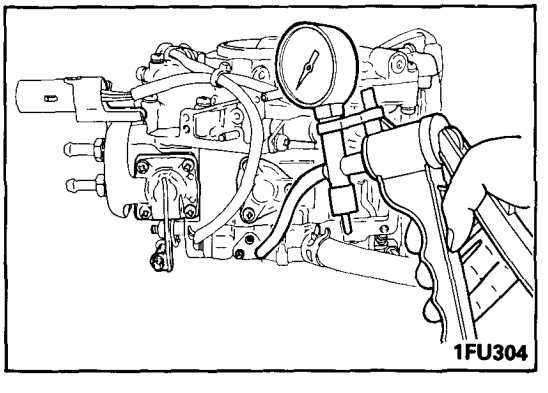
Lever bending direction	Clearance	Remarks
Open	Larger	Poorer startability, more likely to stall
Close	Smaller	Plug likely to get sooty

OPERATION OF CHOKE VALVE N14MIDA

(1) Operate the choke valve with a finger and check for play, incorrect operation and binding.
(2) If the choke fails to operate smoothly and lightly, wash around the choke valve.
(3) If the play is excessively large, replace the float chamber cover.

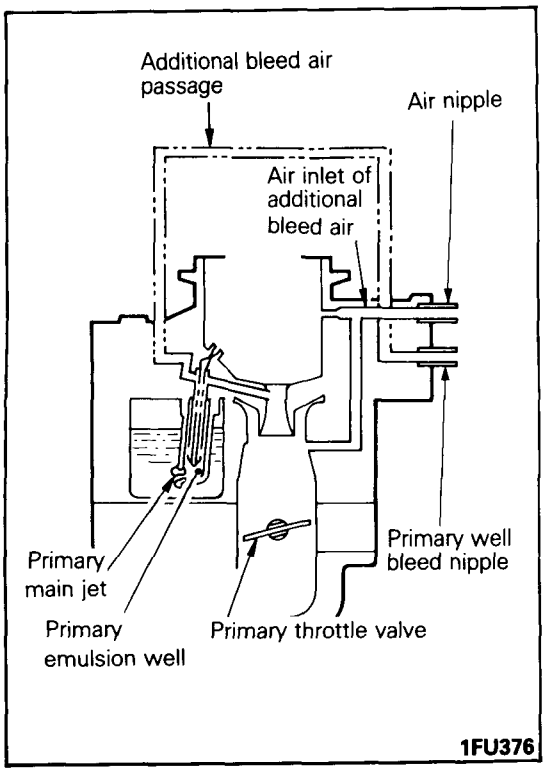
OPERATION OF SECONDARY THROTTLE VALVE N14MIEA

(1) Fully open the throttle valve and operate the secondary throttle valve lever with a finger to check for play, incorrect operation and binding.
(2) If it fails to operate smoothly and lightly, wash and apply thin coat of engine oil to the shaft.
(3) If the play is excessively large, replace the throttle body.



PORTS N14MIFA

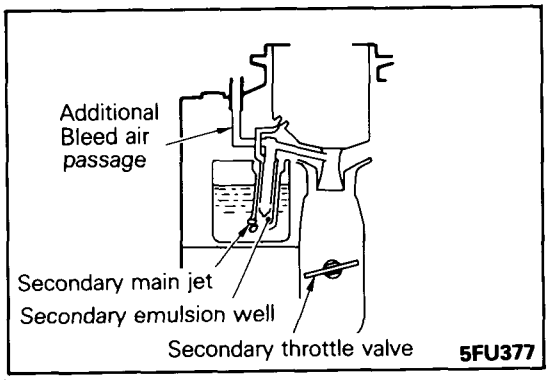
(1) Connect a hand vacuum pump to each port and check for clogging of the passage.
(2) If there is clogging, clean the port and then blow compressed air into the port.



INSPECTION OF HAC BLEED AIR PASSAGE N14MIGB

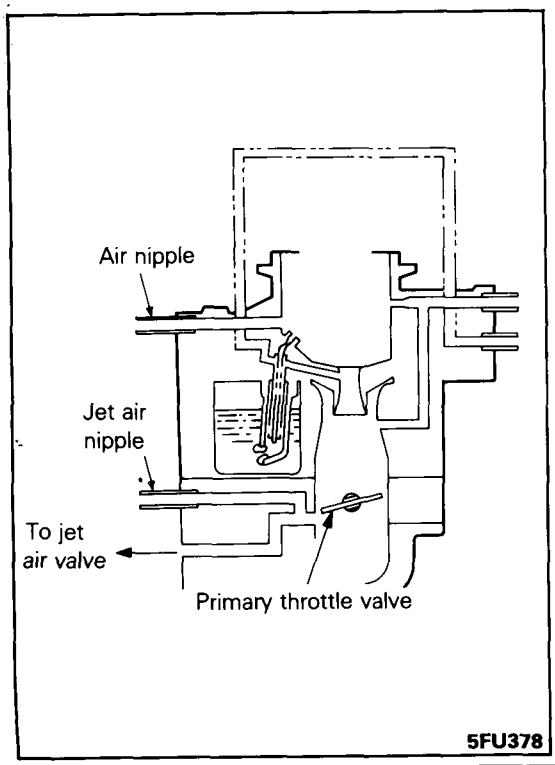
Inspection for Clogging of Primary Well Bleed Nipple – High altitude specifications for the 49 states, California

(1) Connect a hand vacuum pump to the nipple.
(2) Apply vacuum to see that vacuum leaks and does not build up.
(3) If vacuum builds up, disassemble and check the carburetor as incorrect installation of gasket etc. is suspected.



Inspection for Clogging of Secondary Well Bleed Nipple – High altitude specifications for the 49 states N14MIHB

(1) Connect a hand vacuum pump to the nipple.
(2) Apply vacuum to see that vacuum leaks and does not build up.
(3) If vacuum builds up, disassemble and check the carburetor as incorrect installation of gasket etc. is suspected.



Inspection for Clogging of Jet Air Nipple – High altitude specifications for the 49 states N14MIIB

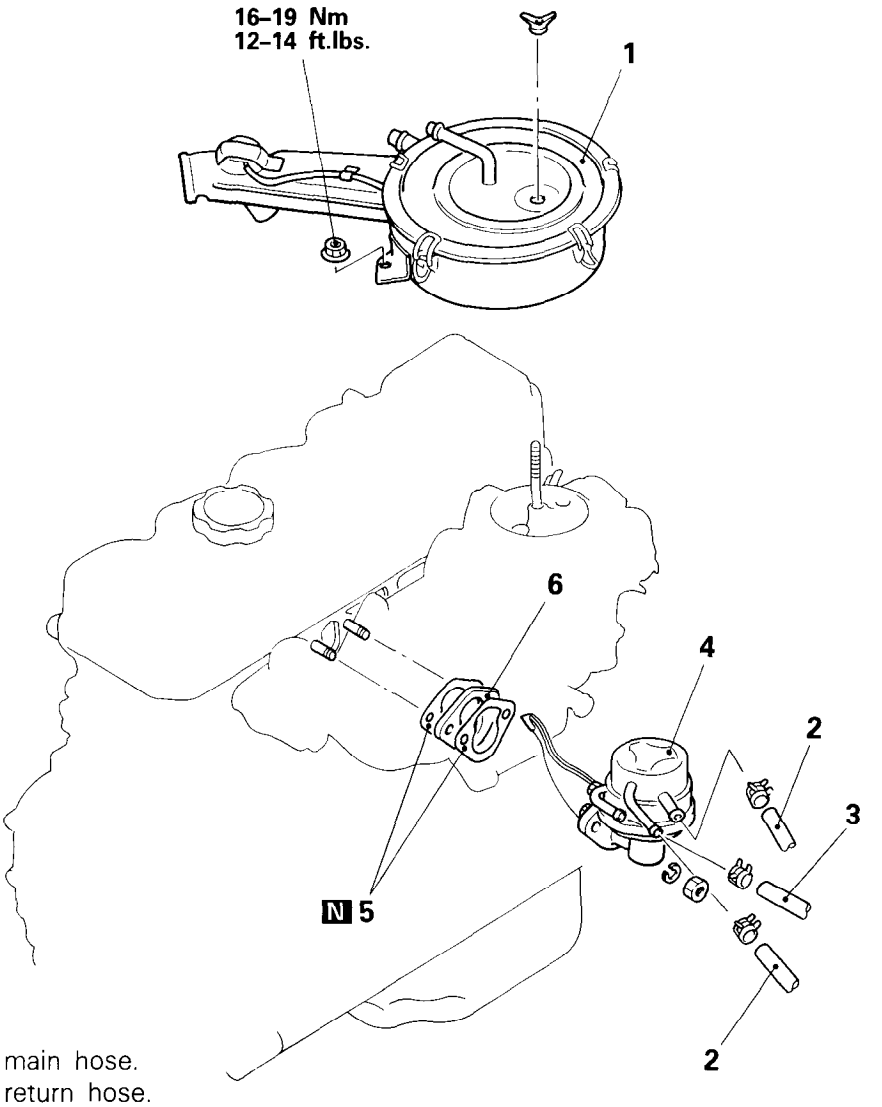
(1) Connect a hand vacuum pump to the nipple.
(2) Apply vacuum to see that vacuum leaks and does not build up.
(3) If vacuum builds up, disassemble and check the carburetor as incorrect installation of gasket etc. is suspected.

STB Revision

FUEL PUMP

REMOVAL AND INSTALLATION

N14HA-



Removal steps

◆◆ ▶◆ 1. Air filter
◆◆ 2. Connection of the main hose.
◆◆ 3. Connection of the return hose.
◆◆ ▶◆ 4. Fuel pump
5. Gasket
6. Insulator

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆ : Refer to "Service Points of Removal".
(3) ▶◆ : Refer to "Service Points of Installation".
(4) N : Non-reusable parts

SERVICE POINTS OF REMOVAL

N14HBAC

1. REMOVAL OF AIR FILTER

Refer to GROUP 11 INTAKE AND EXHAUST SYSTEM – Air Filter.

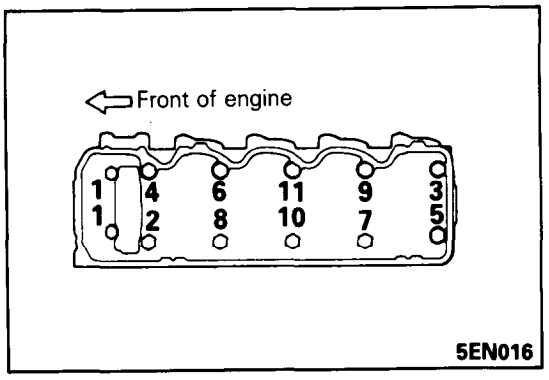
2. DISCONNECTION OF MAIN HOSE/3. RETURN HOSE

Before disconnection of the fuel hose, remove the fuel tank cap to lower the pressure in the fuel tank.

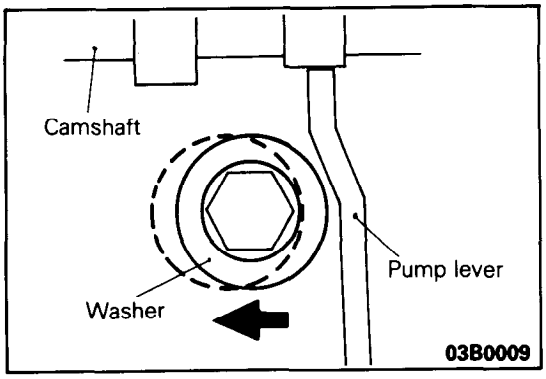
4. REMOVAL OF FUEL PUMP

(1) Turn the crankshaft to place No. 1 cylinder at top dead center on compression stroke.

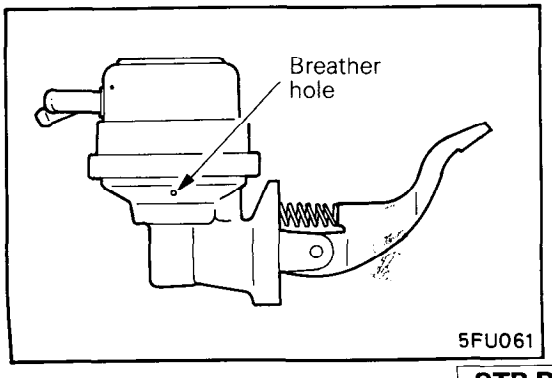
NOTE
The above operation places the lift of fuel pump stroke at the minimum position, resulting in ease of fuel pump removal.



(2) If interference of pump lever occurs in the cylinder head, the washer on the cylinder head bolt may be interfering with the pump lever. Therefore, proceed as follows:
① Remove the rocker cover.
② Loosen cylinder head bolts in the sequence shown in the illustration.



③ Move the washer interfering with the pump lever in the direction shown in the illustration and remove the fuel pump.



INSPECTION N14HCAC

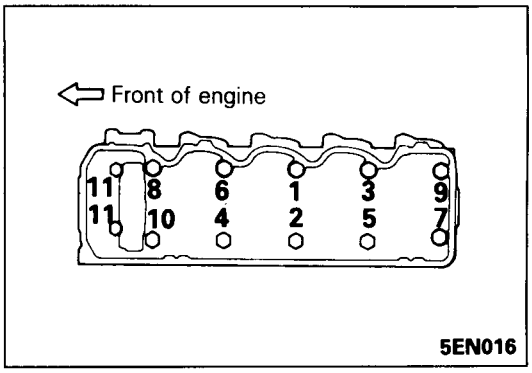
FUEL PUMP

Make the following checks and replace as necessary. Note that the fuel pump is a non-maintainable assembly and must be replaced as an assembly.
- Oil or fuel leaks from breather hole
- Damage, cracks on parts
- Rocker arm for wear

SERVICE POINTS OF INSTALLATION N14HDAC

4. INSTALLATION OF FUEL PUMP

(1) Make sure that piston in No. 1 cylinder is in the top dead center on compression stroke.
(2) If the washer is moved after loosening of cylinder head bolt proceed to the following items.
① Reinstall the washer in position.



② Tighten the cylinder head bolts to specified torque in the sequence shown in the illustration.
③ Install the rocker cover.

1. INSTALLATION OF AIR FILTER

Refer to GROUP 11 INTAKE AND EXHAUST SYSTEM – Air Filter.

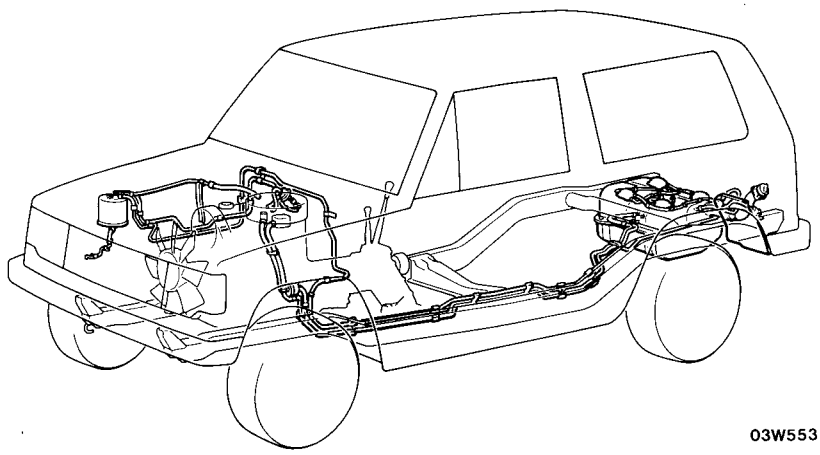
FUEL TANK

REMOVAL AND INSTALLATION

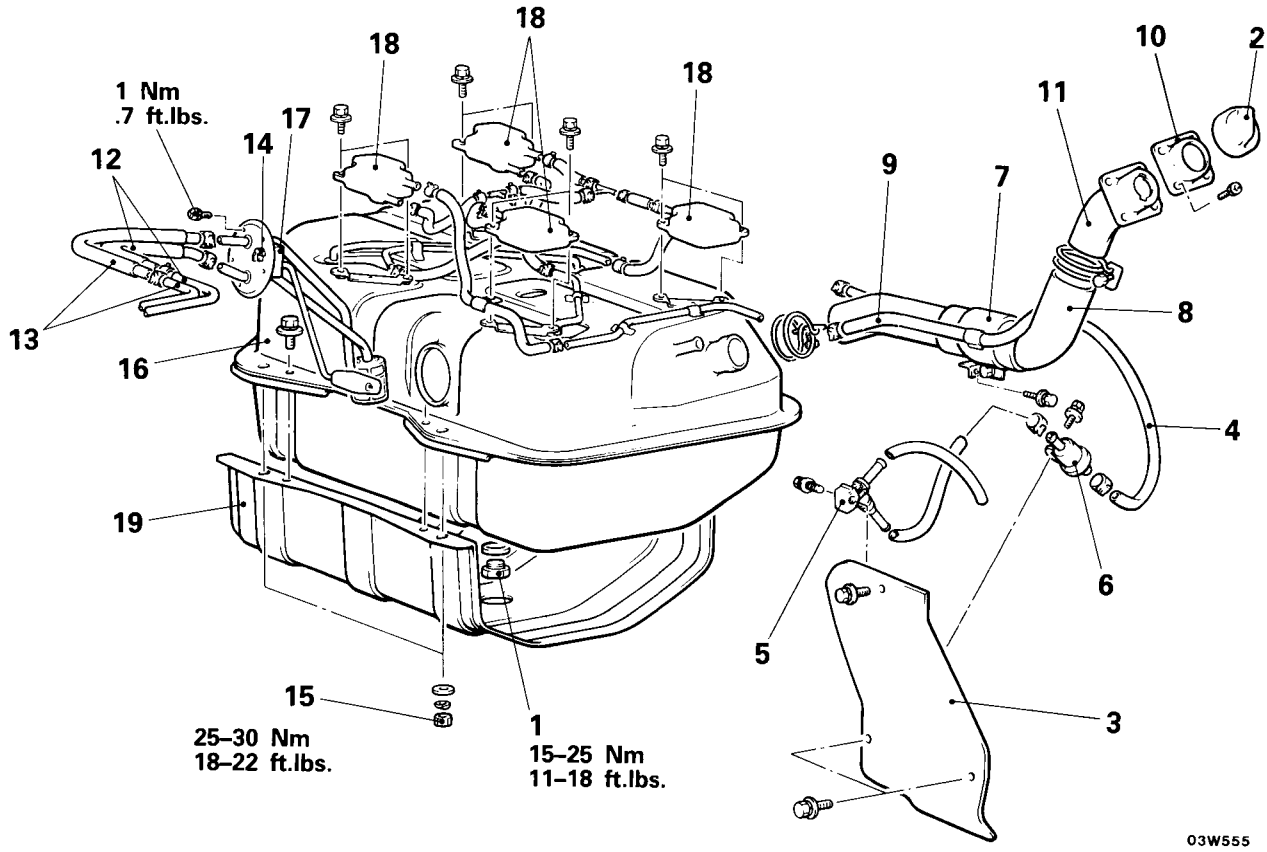
N14GA--

Pre-removal Operation
- Draining of the Fuel.

Post-installation Operation
- Supplying of the Fuel.



03W553



03W555

Removal steps

1. Drain plug
2. Fuel filler cap
3. Fuel filler hose protector
4. ◆◆ Vapor hose
5. ◆◆ Check valve
6. Overfill limiter (Two-way valve)
7. Clamp assembly
8. ◆◆ Fuel filler hose
9. ◆◆ Breather hose
10. Packing
11. Fuel filler neck
12. ◆◆ Main hose
13. ◆◆ Return hose
14. Fuel gauge unit connector connection
15. Fuel tank assembly mounting nuts
16. Fuel tank
17. Pipe assembly
18. Separator tanks
19. Fuel tank protector

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆ : Refer to "Service Points of Installation".

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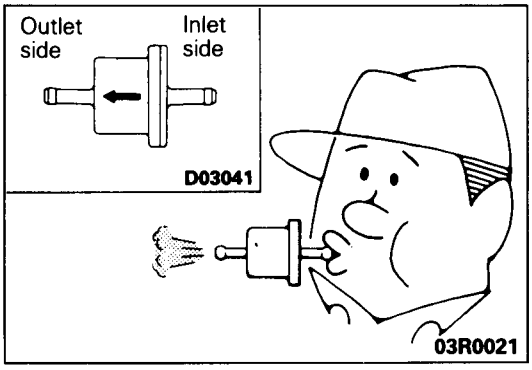
INSPECTION N14GCAC

- Check the hoses and the pipes for crack or damage.
- Check the fuel tank cap for malfunction.
- Check the fuel tank for deformation, corrosion or crack.
- Check the fuel tank for dust or foreign material.

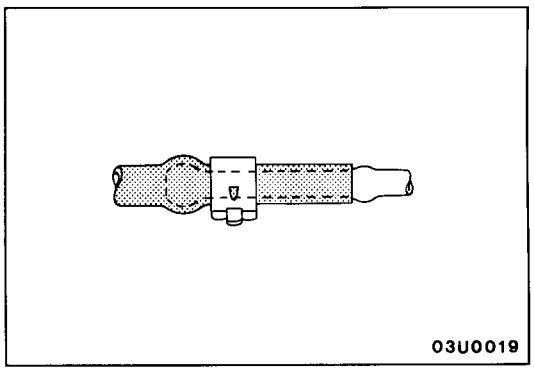
NOTE
If the inside of the fuel tank is to be cleaned, use any one of the following:
(1) Kerosene
(2) Trichloroethylene
(3) A neutral emulsion type detergent

- Check the in-tank fuel filter for damage or clogging.
- Check the check valve for malfunction.



CHECKING OVERFILL LIMITER (TWO-WAY VALVE)

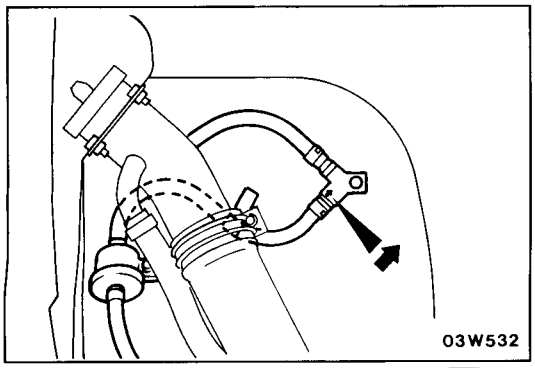
A simple way of inspection, however, may be adopted in which the overfill limiter is removed and then air is lightly blown into either the inlet or outlet by month. If the air passes after a slight resistance, overfill limiter is in good condition.



SERVICE POINTS OF INSTALLATION N14GDAE

13. INSTALLATION OF RETURN HOSE/12. MAIN HOSE/4. VAPOR HOSE

When attaching the hoses to the pipes, be sure that the hose is attached until its end comes in touch with the bulge of the pipe as shown in the illustration.



9. INSTALLATION OF BREATHER HOSE/8. FUEL FILLER HOSE

Insert the hoses until their ends contact the fuel tank.

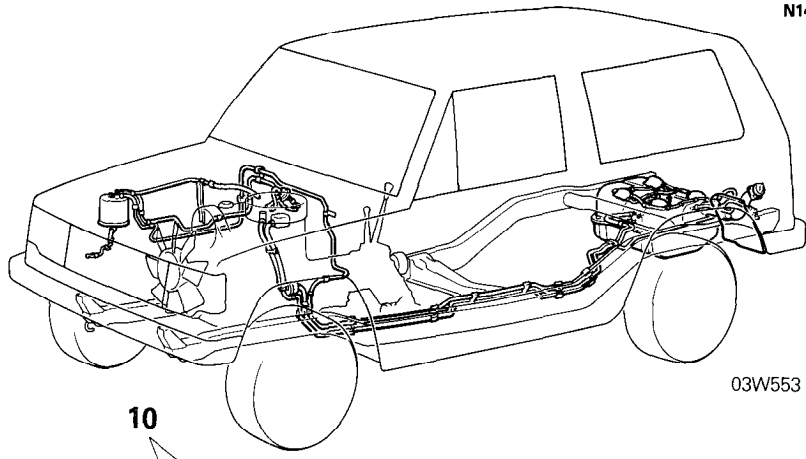
5. INSTALLATION OF CHECK VALVE

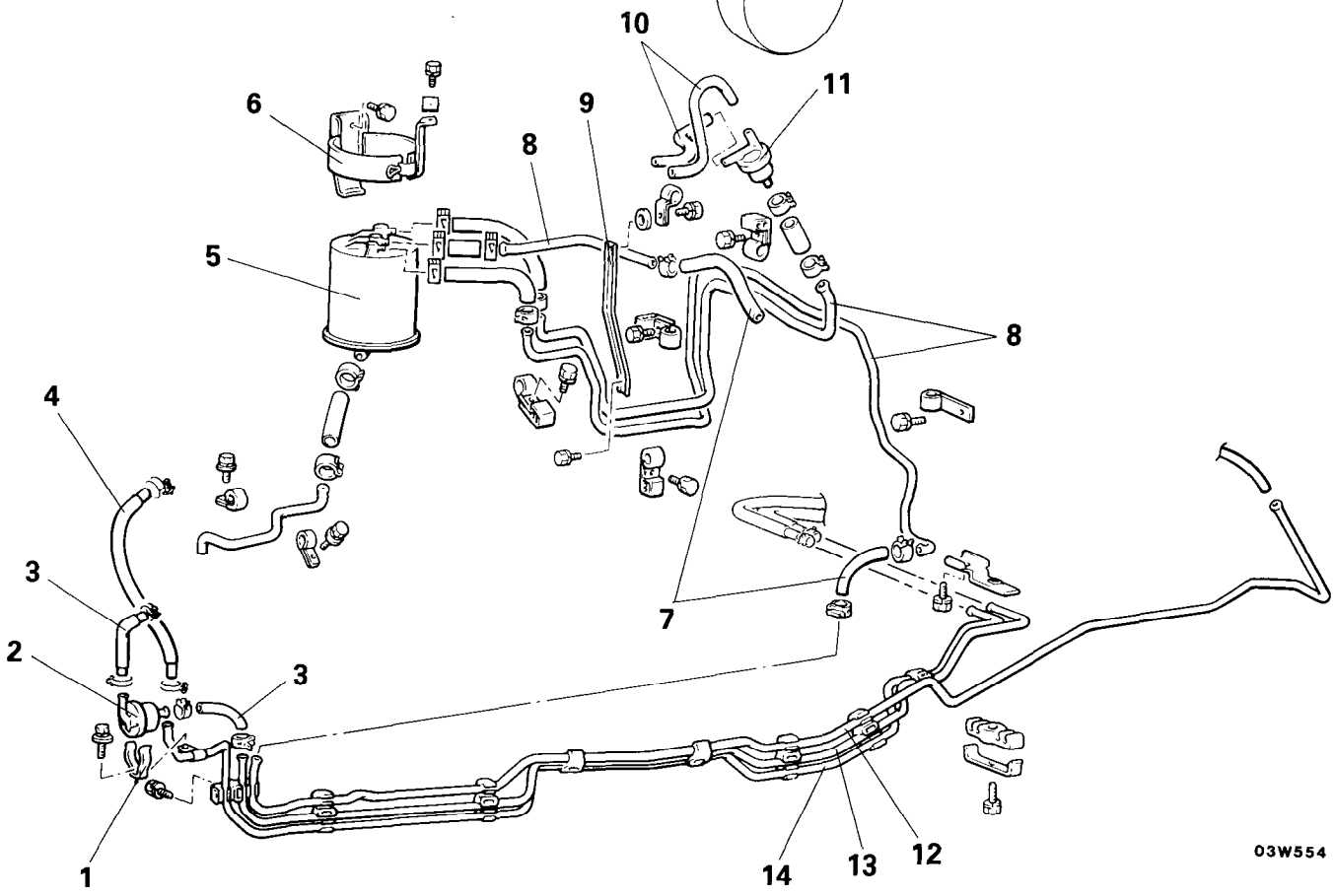
Install the check valve to the fuel filler hose protector so that the check valve's arrow faces as shown in the figure.

FUEL LINE AND VAPOR LINE

REMOVAL AND INSTALLATION

N14KA--



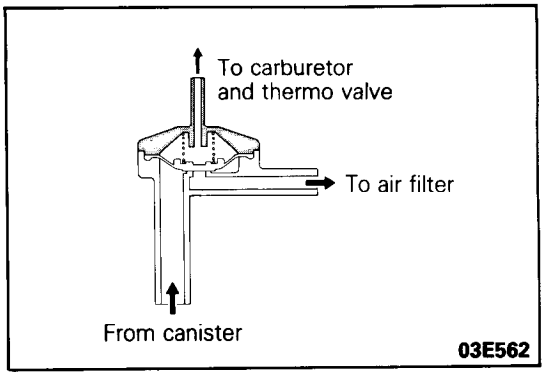


1. Fuel filter clamp
2. Fuel filter
3. Main hose ◆◆
4. Return hose ◆◆
5. Canister
6. Canister holder
7. Vapor hose ◆◆
8. Fuel vapor pipe
9. Stay
10. Fuel purge hose
11. Purge control valve
12. Fuel vapor pipe
13. Fuel main pipe
14. Fuel return pipe

NOTE
◆◆ : Refer to "Service Points of Installation".

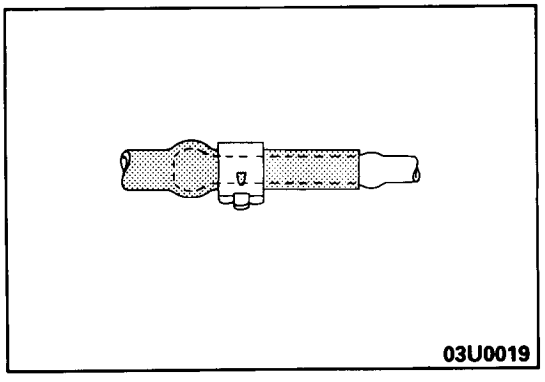
INSPECTION N14KCAB

- Check the fuel hoses and pipes for cracks, bends, deformation, deterioration or clogging.
- Check the fuel filter for clogging or damage.
- Check the canister for clogging or damage.



CHECKING PURGE CONTROL VALVE

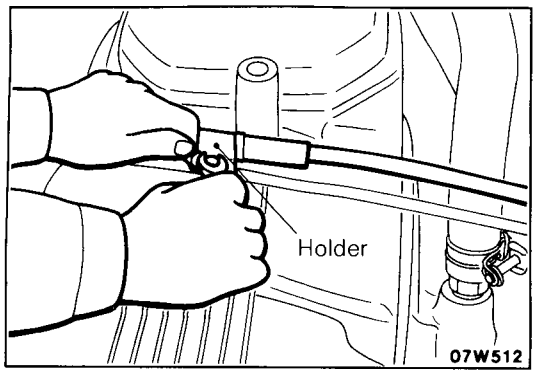
(1) Make sure that the cooling water is at a temperature between 80 and 90°C (180 and 190°F).
(2) Disconnect the purge control hose from the air filter and blow into the purge hose. If the valve is not open, its operation is normal. Then start the engine and increase the engine speed to 1,500 to 2,000 rpm and blow into the purge hose. If the valve is not open, check for clogged or broken vacuum hose, or malfunctioning thermo valve.



SERVICE POINTS OF INSTALLATION N14KDAD

7. INSTALLATION OF VAPOR HOSE/4. RETURN HOSE/3. MAIN HOSE

When attaching the hose to the pipes, be sure that the hose is attached until its end comes in touch with the bulge of the pipe as shown in the illustration.



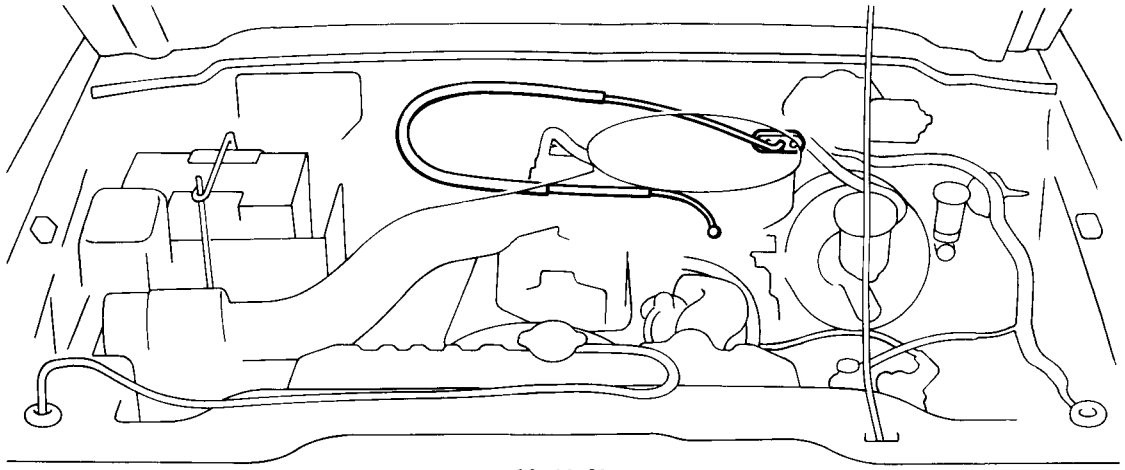
ACCELERATOR CABLE AND PEDAL

ADJUSTMENT OF ACCELERATOR CABLE FREE PLAY

1. Run the engine until it reaches the specified idle speed level.
2. Loosen the locking bolt or adjusting nut at the cable adjusting portion so that the throttle lever is free.
3. Move the holder to the position just before the throttle lever begins to operate, and then return it far enough so that there is an appropriate amount of slack in the inner cable and secure it at this position.
4. Operate the accelerator arm and confirm that the throttle valve changes from fully closed to fully open.

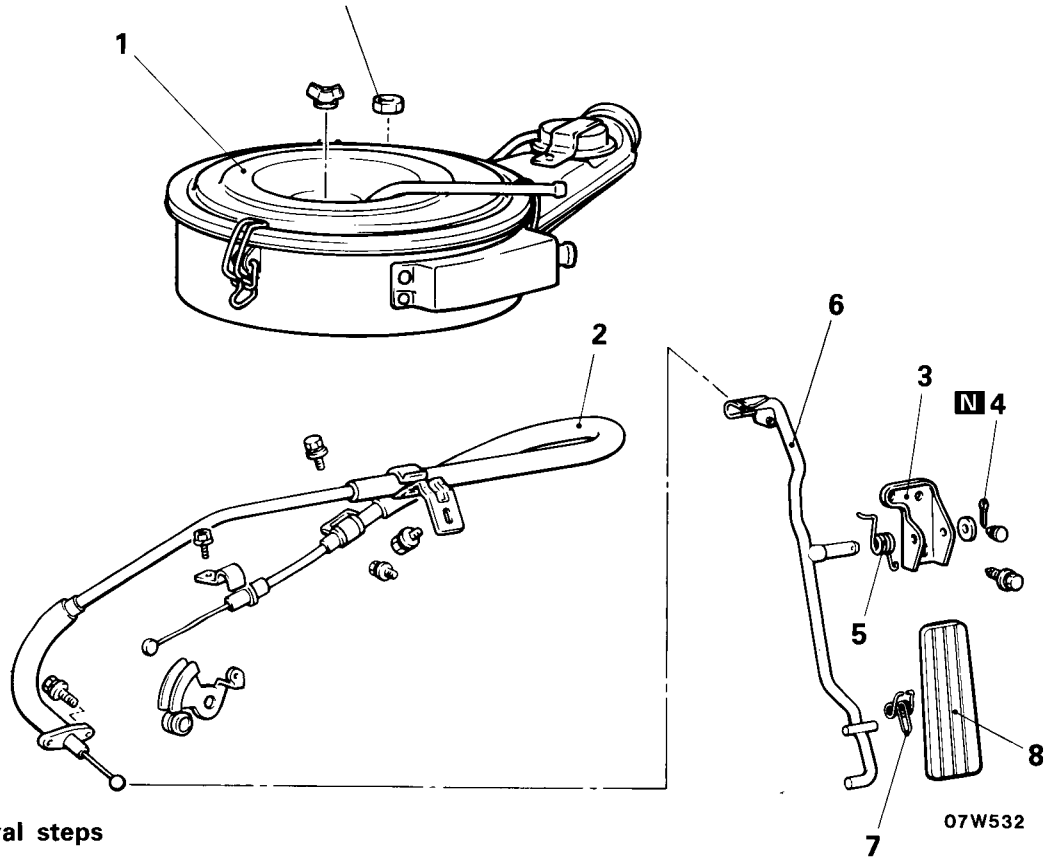
REMOVAL AND INSTALLATION

N140A--



16–19 Nm
12–14 ft.lbs.

07W533



07W532

Accelerator cable removal steps

◆◆ ▶◀ 1. Air filter
▶◀ Adjustment of accelerator cable free play
▶◀ 2. Accelerator cable

Accelerator pedal removal steps

▶◀ 3. Accelerator arm bracket
4. Cotter pin
▶◀ 5. Return spring
▶◀ 6. Accelerator arm
▶◀ 7. Spring
▶◀ 8. Pedal

NOTE
(1) Reverse the removal procedures to reinstall.
(2) ◆◆ : Refer to "Service Points of Removal".
(3) ▶◀ : Refer to "Service Points of Installation".
(4) N : Non-reusable parts

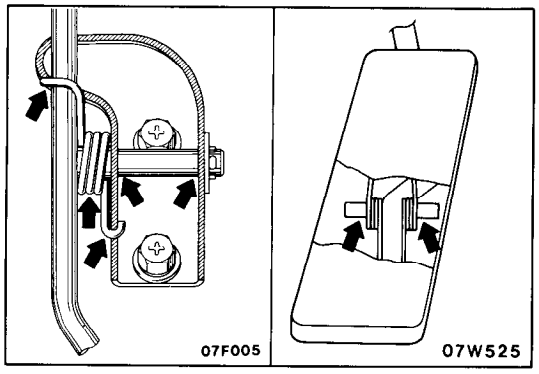
SERVICE POINTS OF REMOVAL N140BAA

1. REMOVAL OF AIR FILTER

Refer to GROUP 11 INTAKE AND EXHAUST SYSTEM – Air Filter.

INSPECTION N140CAB

- Check the cable for damage.
- Check the cable outer casing for damage.
- Check the cable for unsmooth movement.
- Check the accelerator arm for bend.
- Check the return spring for deterioration.
- Check the connection of accelerator cable and end fitting.



SERVICE POINTS OF INSTALLATION N140DAI

8. APPLICATION OF GREASE TO PEDAL/7. SPRING/6. ACCELERATOR ARM/5. RETURN SPRING/3. ACCELERATOR ARM BRACKET

Apply the specified grease around the each moving point of the pedal.

Specified grease : Multipurpose grease SAE J310, NLGI No. 3

2. INSTALLATION OF ACCELERATOR CABLE

Make sure that the accelerator cable is laid without sharp bends.

• ADJUSTMENT OF ACCELERATOR CABLE FREE PLAY

Refer to P.14-84.

1. INSTALLATION OF AIR FILTER

Refer to GROUP 11 INTAKE AND EXHAUST SYSTEM – Air Filter.