DAIHATSU

F300

[HD-Engine]

FUEL SYSTEM

WFE90-FU001

PRECAUTIONS

1. Before working on the fuel system, be sure to disconnect the ground cable from the negative (–) terminal of the battery.
2. When working on the fuel system, never allow any naked fire to be brought near the working site. Also, never smoke cigarette or the like.
3. Do not allow the fuel to get to any parts made of rubber or resin.
4. Do not work on the fuel system of more than one vehicle at the same time.
5. Be certain to keep each part of the fuel system from contamination.
6. Be very careful not to allow any dirt or the like be mixed into the fuel system during the servicing operation.
7. Make sure to keep the working site clean. Also, be sure not to loose any part, specifically small parts.
8. Never loose nor mix up those pins, clips and springs with each other.

WFE90-FU200

TROUBLE SHOOTING

Problem	Possible cause	Remedy	Page
Engine will not start/hard to start (Only case where cranking by startor motor is normal)	Carburetor problems		
	• Choke operation	Check choke system	FU–10
	• Needle valve sticking or clogged	Check float and needle	FU–22
	• Vacuum hose disconnected or damage		EC– 3
	• Fuel cut solenoid valve not open	Check fuel cut solenoid valve	FU–10, FU–23
	• Outer vent valve not open	Check outer vent valve	FU–11, FU–23
Rough idle or stalls	Carburetor problems		
	• Idle speed incorrect	Adjust idle speed	EM–23
	• Slow jet clogged		FU–23
	• Idle mixture incorrect	Adjust idle mixture	EM–23
	• Fuel cut solenoid valve not open	Check fuel cut solenoid valve	FU–10, FU–23
	• Fast idle speed setting incorrect (Cold engine)	Adjust fast idle speed	EM–24
	• Choke valve open (Cold engine)	Check choke system	FU–10, FU–23
	• Fuel pump faulty		FU–35
	• Fuel filter clogged		FU–39
	• Fuel line clogged		
	• Fuel line bent or kinked		
Engine hesitates/poor acceleration	Carburetor problems		
	• Float level too low	Adjust float level	FU–28
	• Accelerator pump faulty		FU–10
	• Power valve faulty	Check power valve	FU–23
	• Power piston faulty	Check power piston	FU–22
	• Choke valve closed (hot engine)	Check choke system	FU–10
	• Choke valve stuck open (cold engine)		

WFE90-FU100

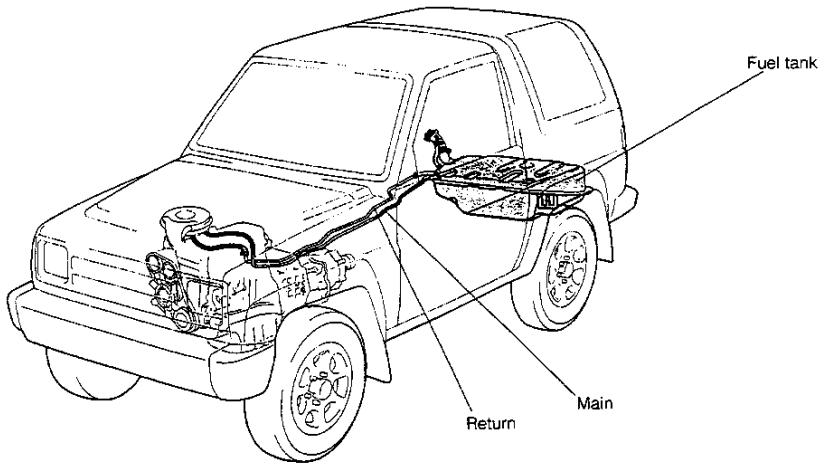
Problem	Possible cause	Remedy	Page
Engine hesitates/poor acceleration	• Fuel line clogged	Check fuel line	
	• Fuel pump faulty	Check fuel pump	FU–35
	• Fuel filter clogged	Replace fuel filter	FU–39
	• Fuel line bent or kinked	Replace fuel line	
Engine dieseling (Runs after ignition switch is turned off)	Carburetor problems		
	• Linkage sticking		FU–10
	• Idle speed out of adjustment	Adjust idle speed	EM–23
	• Fuel cut solenoid faulty	Check fuel cut solenoid valve	FU–10, FU–23
Poor fuel mileage	Carburetor problems		
	• Choke faulty	Check choke system	FU–10
	• Idle speed too high	Adjust idle speed	EM–23
	• Power valve always open	Check power piston and valve	FU–22, 23
	• Idle mixture incorrect	Adjust idle mixture	EM–25
	Fuel leak	Repair as necessary	
Unpleasant odor	Outer vent valve always open	Check outer vent valve	FU–11, FU–23

WFE90-FU101

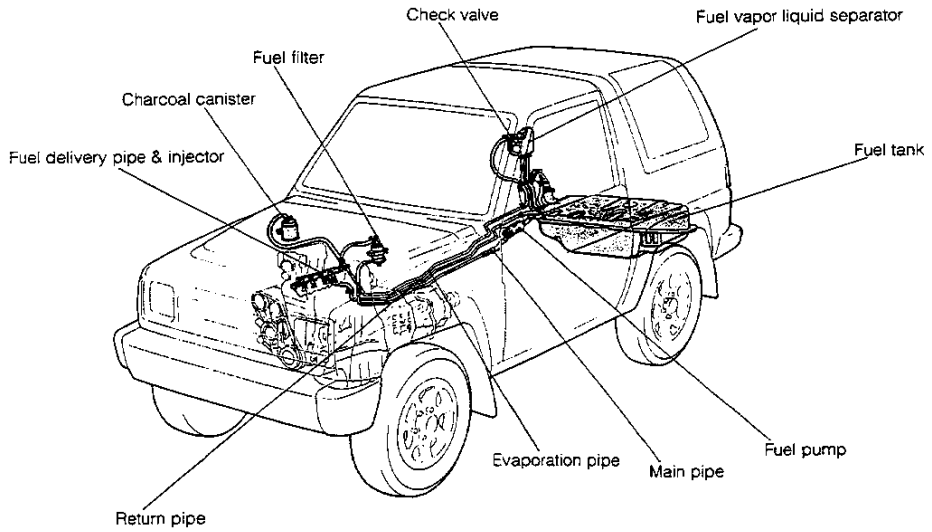
FUEL SYSTEM OUTLINE

No modification has been made on the fuel system.
On Type HD-E engine, the installation method has been changed to a two-point support so as to reduce the vibration of the fuel pump bracket.

HD-C (Typical Example of R.H.D. Vehicle)



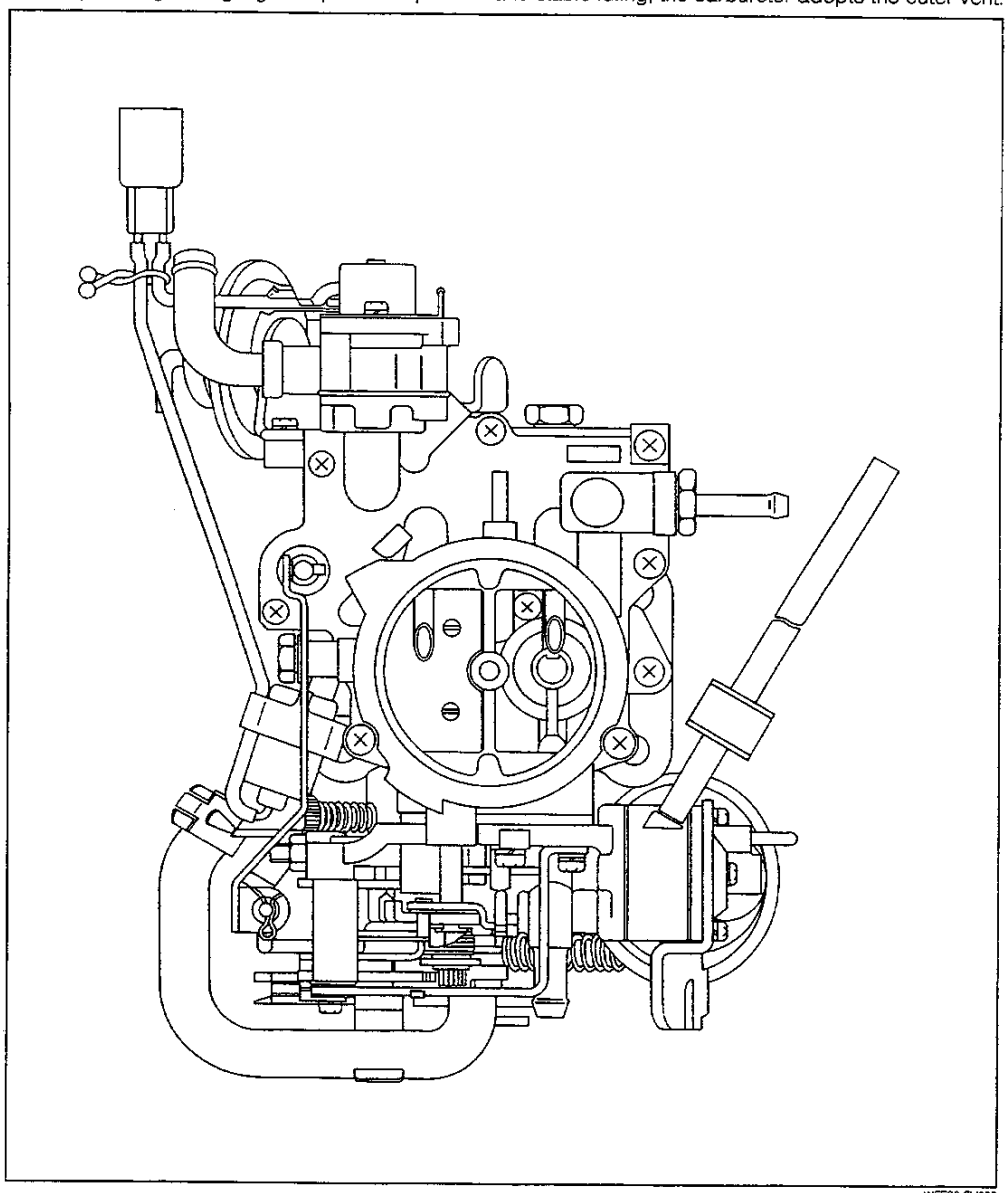
HD-E (Typical Example of L.H.D. Vehicle)



WFE90-FU002

CARBURETOR

The carburetor is a two-barrel, down-draft type. It is equipped with an automatic choke and an outer vent. The automatic choke employs a hot-water circulation method and a wax type. The automatic choke regulates the opening degree of the throttle valve in accordance with the engine warming-up condition.
For easy starting during high-temperature operation and stable idling, the carburetor adopts the outer vent.



WFE90-FU003

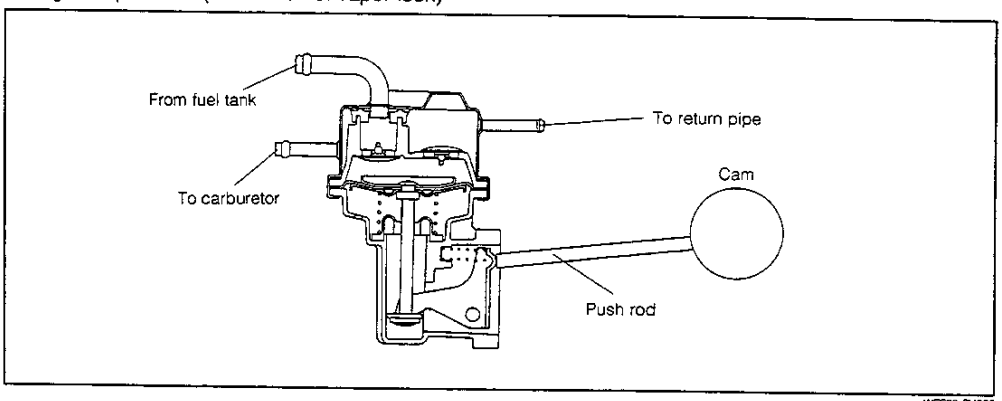
Carburetor specifications

Item			
Type			Down flow, Two-barrel
Air horn inner diameter		mm	58
Throttle bore diameter	Primary	mm	28
	Secondary	mm	32
Large venturi diameter	Primary	mm	21
	Secondary	mm	28
Small venturi diameter	Primary	mm	9
	Secondary	mm	8
Main nozzle diameter	Primary	mm	2.0
	Secondary	mm	2.2
Main jet diameter	Primary	mm	0.98
	Secondary	mm	1.74
Slow jet diameter	Primary	mm	0.49
	Secondary	mm	0.66
Main air bleed	Primary	mm	0.60
	Secondary	mm	No.1 0.80 No.2 0.60
Slow air bleed	Primary	mm	No.1 1.50 No.2 1.50 No.3 1.00
	Secondary	mm	0.65
Power jet diameter		mm	0.50
Pump jet diameter		mm	0.40
Power piston function (starting) vacuum		kPa (mmHg)	21.3 ± 2.7 (160 ± 20)
Accelerating pump stroke		mm	4.0
Economizer jet diameter		mm	1.20
Fuel level (measured from top surface of body)		mm	22 ± 1
Float adjustment values	Float descent position (clearance between needle valve and float lip)	mm	1.6
First throttle valve	Fully-closed-fully-opened angle	deg	9 - 90
	Secondary valve operation-starting angle	deg	50 ± 1
Secondary throttle valve	Fully-closed-fully-opened angle	deg	20 - 80
Choke valve	Fully-closed-fully-opened angle	deg	20 - 90
Fast idle	Angle of primary throttle valve at time when choke valve opens fully	deg	18.0 ± 1
Choke Breaker	Angle of choke valve at time when choke breaker is functioning	deg	1st stage 20 ± 1 2nd stage 27 ± 2
Throttle positioner	Angle of primary throttle valve at time when throttle positioner is functioning	deg	16 ± 1

WFE90-RJ004

FUEL PUMP (HD-C Engine)

This nondisassembling type fuel pump is mounted at the right rear section of the cylinder head.
The fuel pump is driven via a push rod by the fuel pump driving cam provided at the rear section of the camshaft. Furthermore, the fuel pump is equipped with a return pipe which contributes to stable idle operation during hot operation. (Prevention of vapor lock)



WFE90-FU005

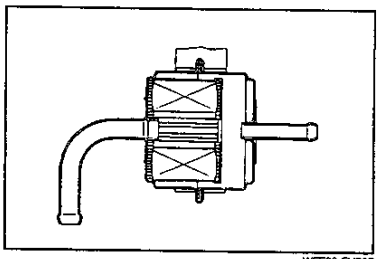
Fuel pump specifications

Item		Specifications
Delivery rate	cm^3/min	800 or more (Cam revolution speed: 3,000 rpm)
Delivery pressure	kPa (kgf/cm^2)	19.6 - 29.4 (0.20 - 0.30)
Fuel inlet negative pressure	kPa (mmHg)	–40 (–300) or below

WFE90-FU006

FUEL FILTER (HD-C Engine)

The fuel filter is installed at the right fender section inside the engine compartment.



WFE90-FU007

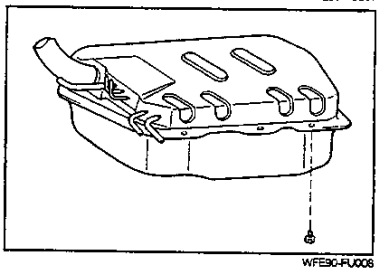
Filter specifications

Item		Specifications
Type		Throw-away type
Filtering area	cm^2	130
Rated flow rate	dm^3/min	1.0

FUEL TANK

The fuel tank is mounted on the chassis frame section at the rear section of the vehicle.

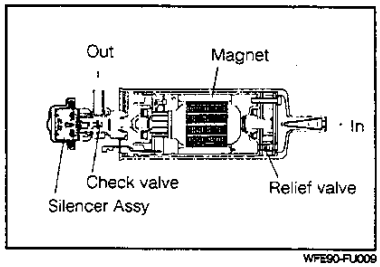
Fuel Tank Capacity: 60 dm^3



WFE90-FU008

FUEL PUMP (HD-E Engine)

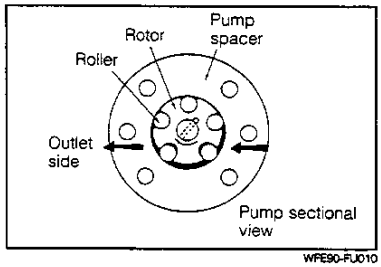
The fuel pump is used to suck fuel from the fuel tank so that the fuel may be sent to the injectors under a pressurized condition. The fuel pump is an in-line type which is provided in close proximity of the fuel tank.
The fuel pump is composed of a pump section, a motor section, a relief valve, a check valve and so forth, as shown in the right figure.



WFE90-FU009

Forced feed of fuel

The pump section consists of a rotor, a pump spacer and a rotor. When the rotor starts to turn, the roller moves along with the spacer inner wall owing a centrifugal force. As the volume enclosed by these parts varies, the fuel is sucked into the pump. Then, the sucked fuel flows through the motor housing. Finally, it is delivered to the outlet side under a pressurized state.



WFE90-FU010

Relief valve

If the pressure at the outlet side abnormally rises due to some reasons, such as restriction of the fuel filter, this relief valve opens at a pressure of 343 - 490 kPa (3.5 - 5.0 kgf/cm^2). In this way, trouble resulting from an excessive pressure rise can be prevented.

Check valve

After the engine has stopped, the check valve prevents any drop in the residual pressure in the fuel line, thus assuring easy engine starting.

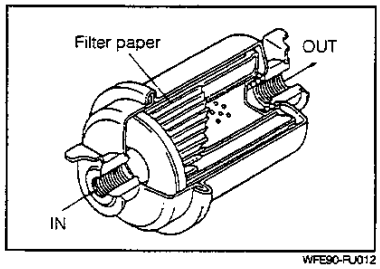
WFE90-FU011

Silencer assembly

The silencer absorbs any pulsations generated in the pump. Moreover, its diaphragm serves as a silencer to reduce the noise level.

FUEL FILTER (HD-E Engine)

The fuel filter is located in the fuel line between the fuel pump and the injectors. The fuel filter is a vortex type which features an excellent pressure-resistant property and a large filtering area and yet a compact design. It is installed at the dash panel inside the engine compartment.



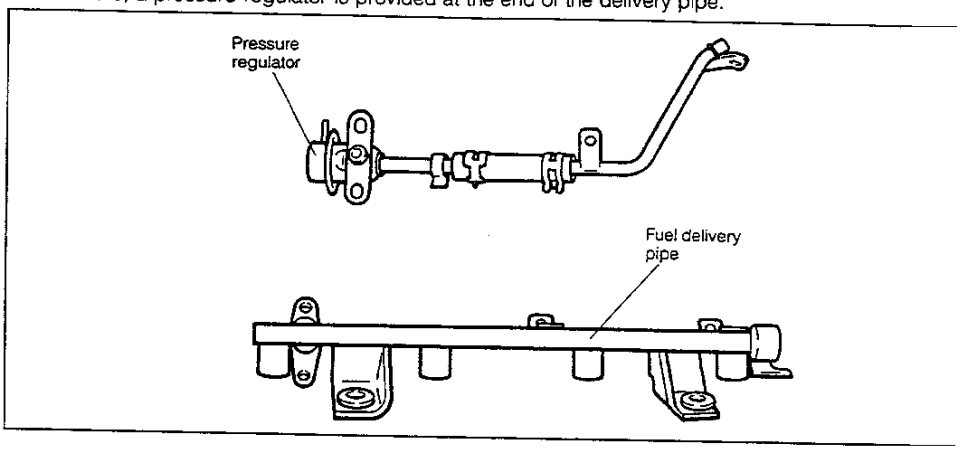
WFE90-FU012

Specifications

Filtering area	cm^2	1500

FUEL DELIVERY PIPE (HD-E Engine)

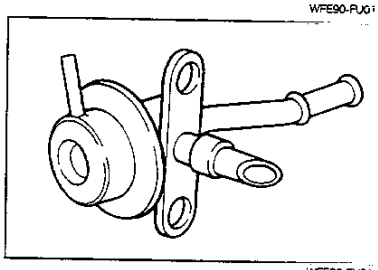
The fuel delivery pipe distributes high-pressure fuel to each injector.
Furthermore, a pressure regulator is provided at the end of the delivery pipe.



WFE90-FU01

PRESSURE REGULATOR (HD-E Engine)

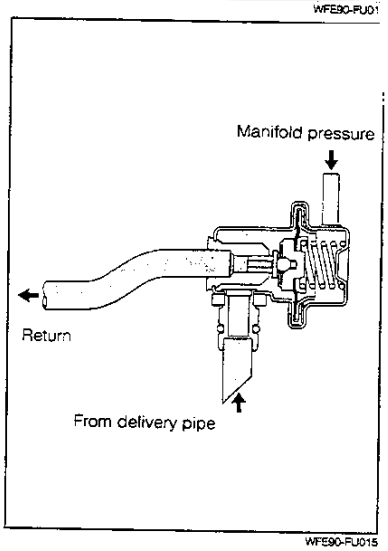
The pressure regulator adjusts the fuel pressure being applied to the injectors. The difference in pressure between those points before and after the injector must be kept always at a constant level. To accomplish this, the spring chamber of the pressure regulator is connected to the intake manifold. Thus, the fuel pressure is always maintained at a pressure 250 kPa (2.55 kgf/cm^2) higher than the intake manifold inner pressure.



WFE90-FU01

Operation

When the difference in pressure between the fuel pressure and the manifold inner pressure exceeds 250 kPa (2.55 kgf/cm^2), the diaphragm is pushed upward. As a result any excess fuel is returned to fuel tank through the return pipe.

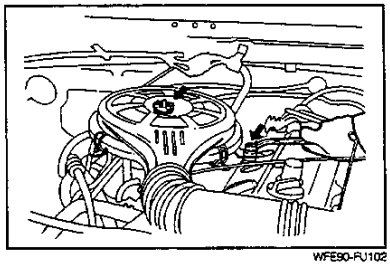


WFE90-FU015

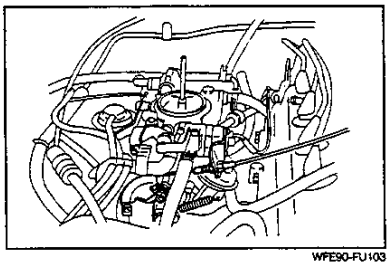
IN-VEHICLE INSPECTION [HD-C Engine]

1. Removal of air cleaner
   NOTE:
   - **Before starting the engine, plug the ITC valve hoses, etc. to prevent rough idling.**

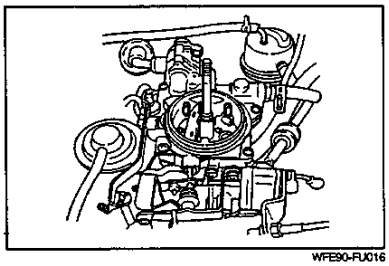
   (1) Remove the three bolts securing the air cleaner and air intake hose.
   (2) Remove the wing nut located at the center of the air cleaner. Remove the air cleaner and air intake hose subassembly.


WFE90-FU102

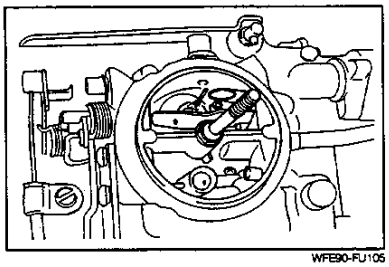
2. Inspection of carburetor and linkage
   (1) Ensure that each screw plug is installed correctly.
   (2) Check each linkage for evidence of excessive wear. Also, check to see if any snap ring is missing.
   (3) With the acceleration pedal fully depressed, check to see if the throttle valve opens fully.


WFE90-FU103

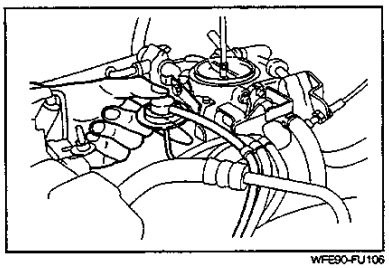
3. Inspection of choke system
   Check that choke valve is completely closed when engine is cold.
   Then, start the engine, check that choke valve is gradually opened in accordance with the warming-up condition of the engine.


WFE90-FU016

4. Inspection of acceleration pump
   Check to see if the fuel spurts out from the acceleration nozzle when throttle valve is opened quickly.

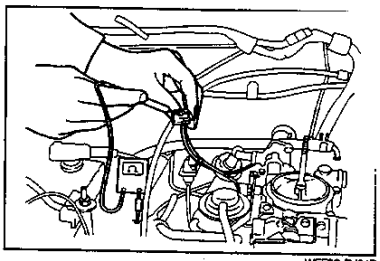

WFE90-FU105

5. Inspection of solenoid valve
   (1) Check to see if you can feel the operation of the solenoid valve when the ignition switch is turned ON/OFF.
   If the solenoid valve remains inoperative, check the power supply for the solenoid valve. Then, proceed to the check described in the step (2) next page.

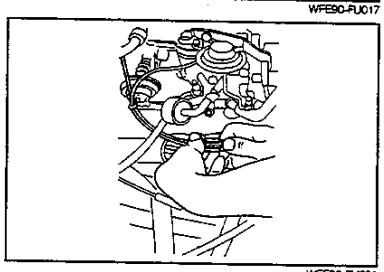

WFE90-FU106

(2) Disconnect the connector from the carburetor.
Check to see if the resistance between the solenoid valve terminal and the carburetor proper conforms to the specification.
Specified Resistance: 80 - 100Ω at 20°C

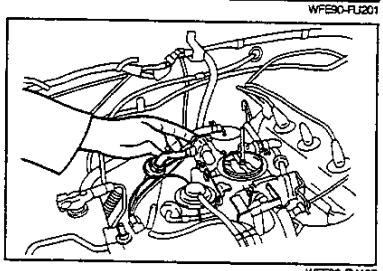
If the resistance fails to conform to the specification, replace the solenoid valve.


WFE90-FU017

(3) Reconnect the connector.

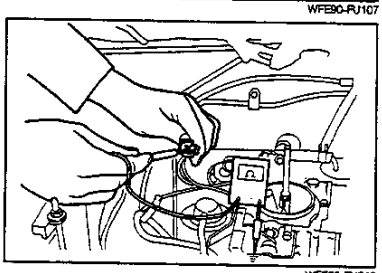

WFE90-FU201

6. Inspection of outer vent valve
(1) Check to see if you can feel the operation of the outer vent valve when the ignition switch is turned ON/OFF.
If the outer vent valve remains inoperative, check the power supply for the outer vent valve. Then, proceed to the check described in the step (2) below.


WFE90-FU107

(2) Disconnect the connector from the carburetor. Check to see if the resistance between the outer vent valve terminal and the carburetor proper conforms to the specification.
Specified Resistance: 30 - 40Ω at 20°C

If the resistance fails to conform to the specification, replace the outer vent valve.

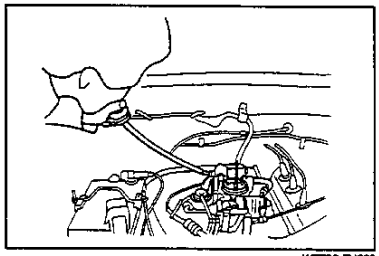

WFE90-FU018

(3) Reconnect the outer vent valve connector.
(4) Disconnect the outer vent hose from the BVSV. Turn ON the ignition key switch.

WFE90-FU202

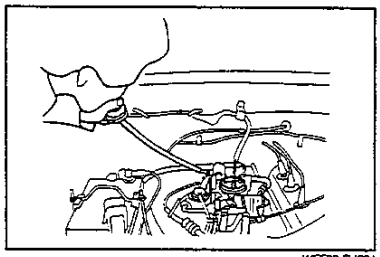
(5) Blow air from the outer vent hose. Ensure that no air continuity exists.
If air continuity exists, replace the outer vent valve.

WARNING:
- **Be very careful not to inhale the air.**

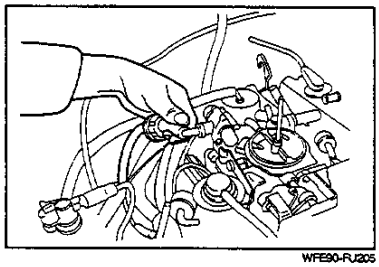

WFE90-FU203

(6) Turn OFF the ignition key switch.
(7) Blow air from the outer vent hose. Ensure that air continuity exists.
If no air continuity exists, replace the outer vent valve.

WARNING:
- **Be very careful not to inhale the air.**


WFE90-FU204

(8) Connect the outer vent hose to the BVSV.


WFE90-FU205

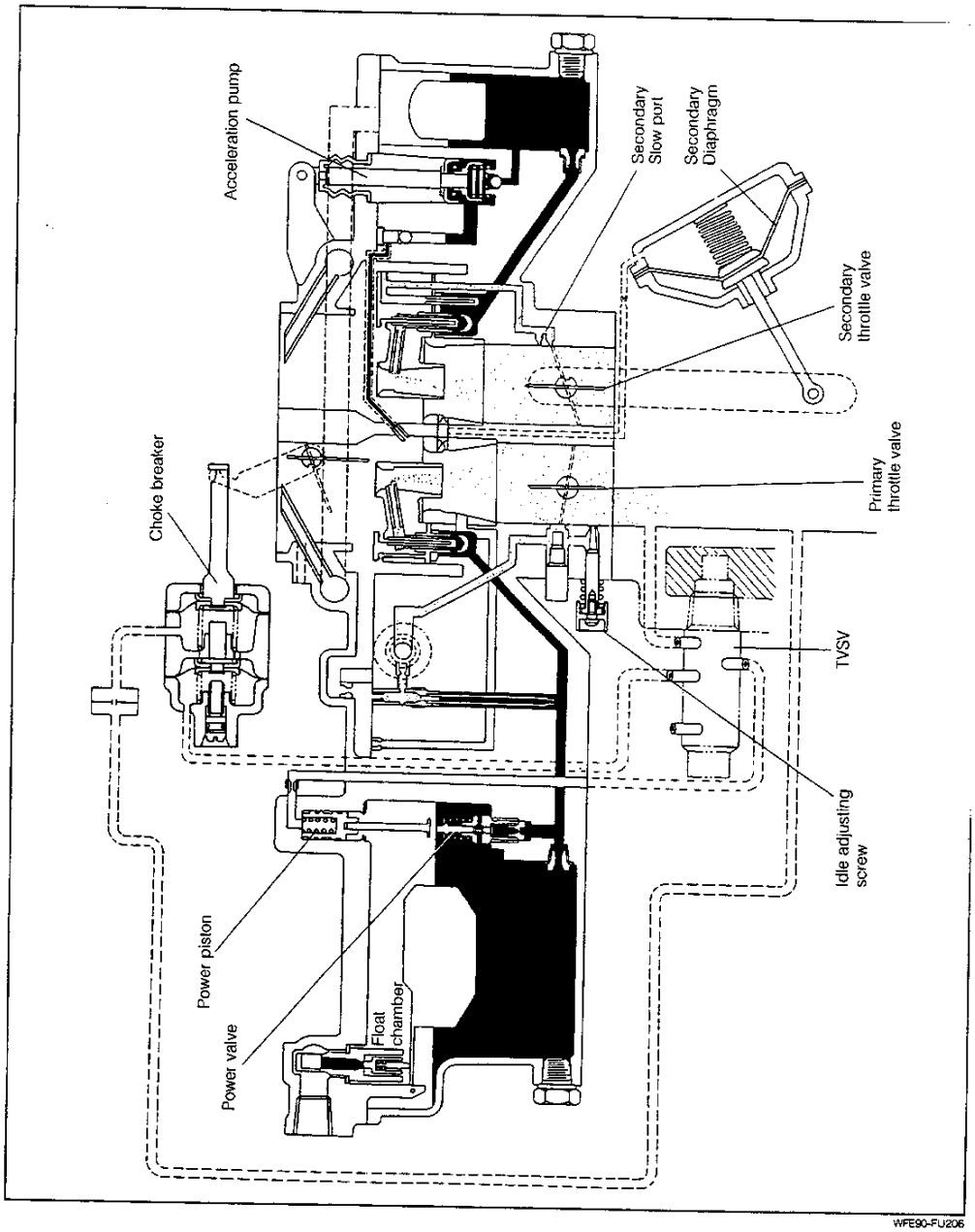
7. Inspection of choke breaker
(See page FU-6.)

8. Inspection of throttle positioner
(See page EC-11.)

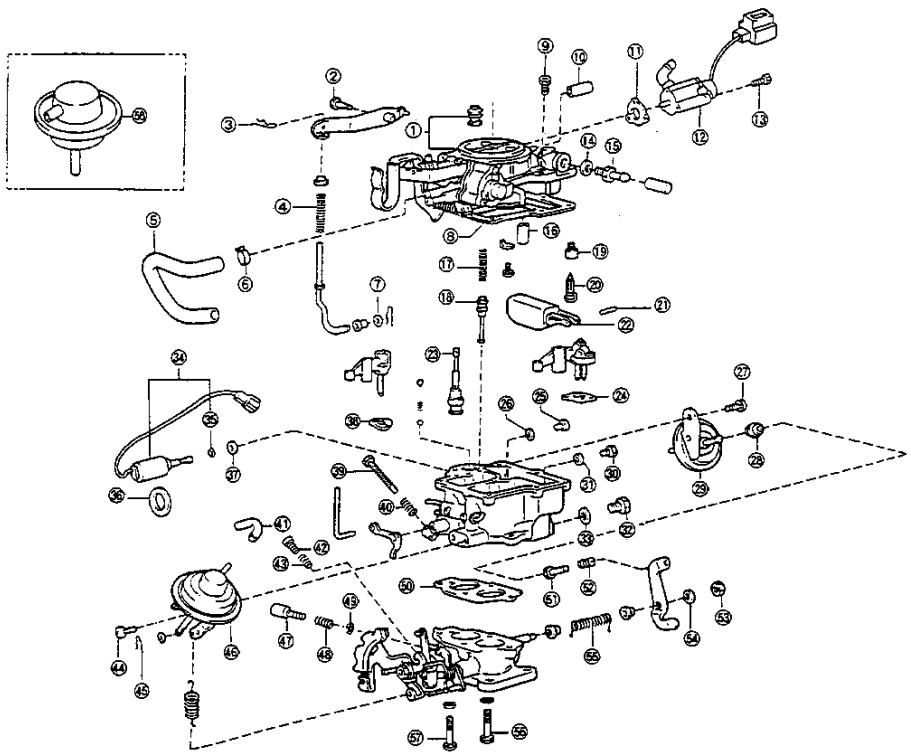
WFE90-FU019

CARBURETOR

SCHEMATIC DIAGRAM



COMPONENTS

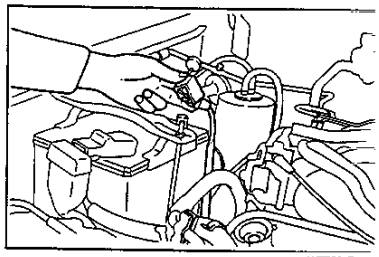


① Air horn
② Pump arm set screw
③ Clip
④ Spring
⑤ Hose No. 2
⑥ Clip
⑦ Washer
⑧ Gasket
⑨ Bolt
⑩ Hose
⑪ Gasket
⑫ Outer vent valve
⑬ Bolt
⑭ Washer
⑮ Union nipple
⑯ Vacuum hose No. 2
⑰ Spring
⑱ Power piston
⑲ Needle valve seat
⑳ Needle valve
㉑ Float lever pin
㉒ Float assembly
㉓ Pump plunger
㉔ Venturi gasket No. 2
㉕ Main jet
㉖ Main jet gasket
㉗ Bolt
㉘ Boot
㉙ Positioner
㉚ 2nd main jet
㉛ 2nd main jet gasket
㉜ Main passage plug
㉝ Main passage plug gasket
㉞ solenoid valve
㉟ O ring
㊱ Solenoid valve wire clamp
㊲ Solenoid valve gasket
㊳ Venturi gasket
㊴ Throttle adjusting screw
㊵ Spring
㊶ Vacuum hose
㊷ Screw
㊸ Throttle adjusting spring
㊹ Diaphragm hosing set screw
㊺ Snap ring No. 1
㊻ Diaphragm sub assembly
㊼ Idle mixture adjusting screw
㊽ Idle adjusting spring
㊾ Washer
㊿ Body flange gasket
(51) Adjusting screw
(52) Adjusting screw spring
(53) Throttle lever set screw
(54) Lock washer
(55) Return spring
(56) Set screw
(57) Set screw
(58) Diaphragm

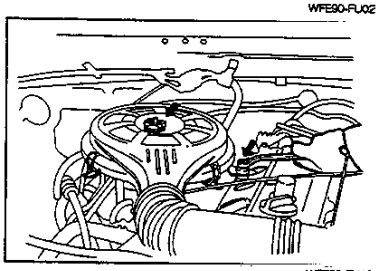
WFE90-FU020

REMOVAL OF CARBURETOR

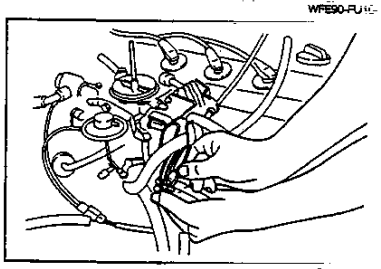
1. Disconnect the ground cable terminal from the negative (–) terminal of the battery.
2. Drain the coolant. (See page CO–12.)


WFE90-FU02

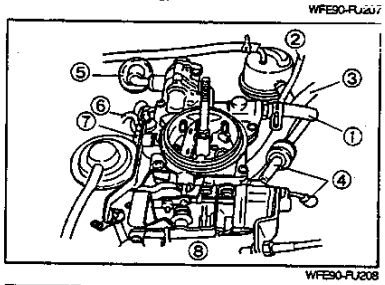
3. Removal of air cleaner
   (1) Remove the three bolts securing the air cleaner and air intake hose.
   (2) Remove the wing nut located at the center of the air cleaner. Remove the air cleaner and air intake hose subassembly.


WFE90-FU

4. Disconnect the accelerator cable from the carburetor.

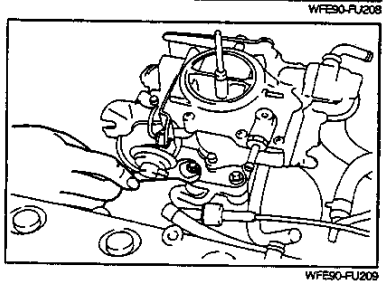

WFE90-FU207

5. Remove the following hoses from the carburetor:
   ① Fuel inlet hose
   ② ITC vacuum hose
   ③ PCV gas hose
   ④ Choke breaker vacuum hose
   ⑤ Outer vent hose
   ⑥ Throttle positioner vacuum hose
   ⑦ Vacuum hose to distributor
   ⑧ Coolant circulating hoses



WFE90-FU208

6. Disconnect the solenoid valve outer vent valve connector.
7. Remove the four attaching nuts of the carburetor. Remove the carburetor.


WFE90-FU209

DISASSEMBLY OF CARBURETOR

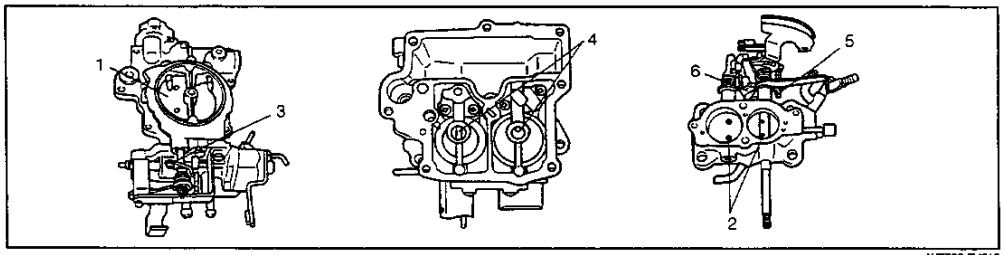
NOTE:

- The following operations have been arranged in such a way that checks are performed for a certain single unit alone at a time. This will avoid any occurrence of wrong assembling of similar subassemblies which would likely occur when operations were carried out concurrently.
  (1) Be sure to arrange the disassembled parts in order that reassembling may be performed readily.
  (2) Do not mix up those balls, clips, springs and so forth.
  (3) Be sure to employ the following SST, a set of screw-drivers for carburetor use.
  SST: 09860-11011-000

WFE90-FU022

Do not disassemble the following sections.

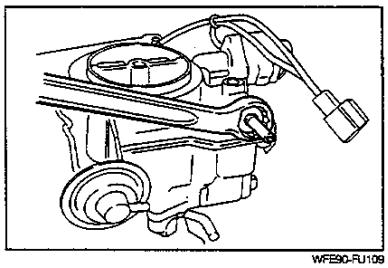
1. Choke valve set screw
2. Throttle valve set screw
3. Automatic choke mechanism
4. Small venturis
5. Fast idle adjust screw
6. Acceleration lever, link connecting nut



WFE90-FU210

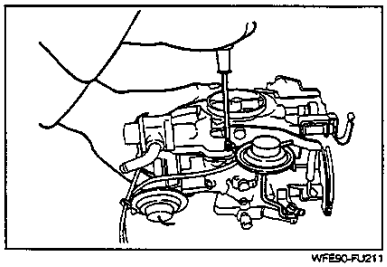
Disassembly of air horn

1. Remove the air cleaner set bolt.
2. Removal of air horn assembly
   (1) Remove the fuel inlet union and gasket.



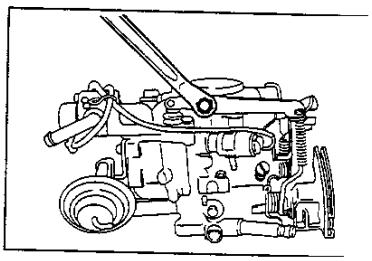
WFE90-FU109

(2) Remove the idle-up actuater for power steering.
(only for power steering equipped vehicle)



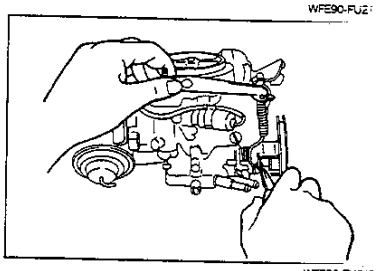
WFE90-FU211

(3) Remove the accelerator pump arm set screw.



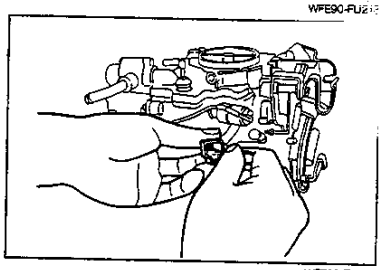
WFE90-FU21

(4) Remove the accelerator pump rod and lever.



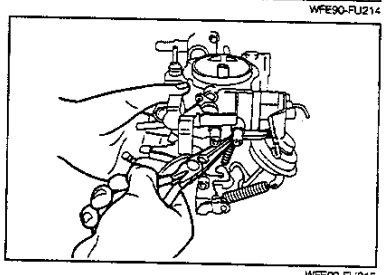
WFE90-FU21

3. Disconnect the outer vent valve connector from the socket.



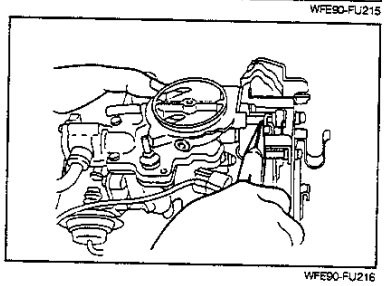
WFE90-FU214

4. Remove the spring from the carburetor.



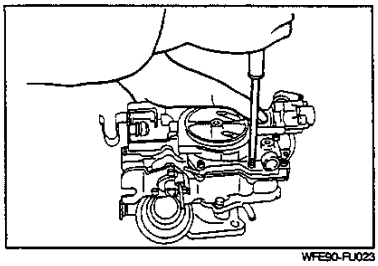
WFE90-FU215

5. Disconnect the choke lever linkage at the upper side.



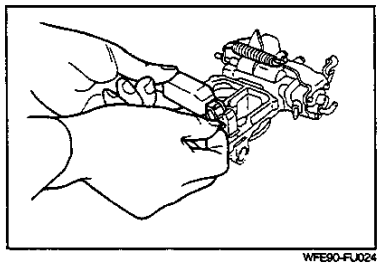
WFE90-FU216

6. Remove the seven screws (five screws in the case of idle-up actuator equipped model) and disassemble the air horn assembly.



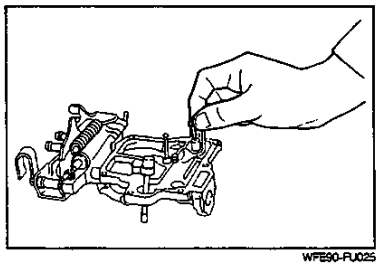
WFE90-FU023

7. Remove the float.



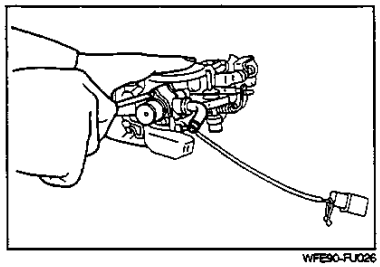
WFE90-FU024

8. Remove the needle valve.



WFE90-FU025

9. Remove the outer vent valve assembly by removing the three screws.



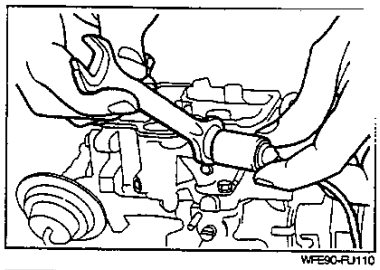
WFE90-FU026

10. Remove the needle seat of the float valve, using the SST.
11. Loosen the screws that retain the lock plate.
    Remove the power piston.
    NOTE:
    - **Care must be exercised not to allow the power piston spring located under the power piston to jump out.**

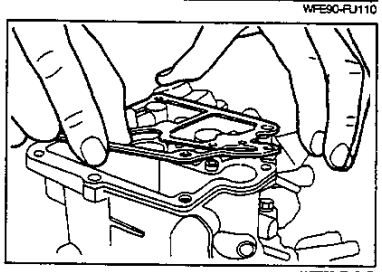
WFE90-FU027

Disassembly of carburetor body & flange

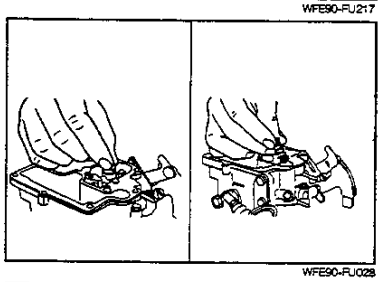
1. Remove the solenoid valve wire clamp.
2. Remove the solenoid valve.


WFE90-FU110

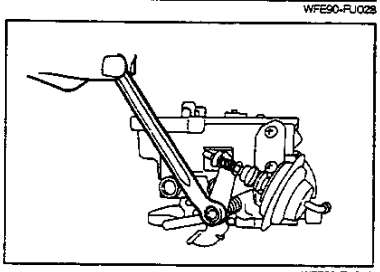
3. Remove the gasket.


WFE90-FU217

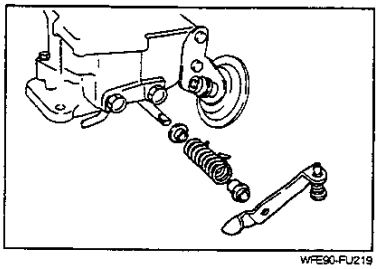
4. Remove the discharge weight, spring and ball.
5. Remove the acceleration pump return spring.


WFE90-FU028

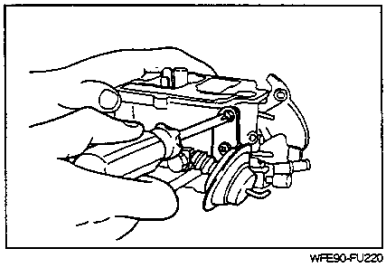
6. Removal of throttle positioner
   (1) Remove the throttle lever set nut.
   NOTE:
   - **Be sure to hold the throttle lever firmly during this operation so as to prevent deformation of the throttle shaft and breakage of the throttle valve.**


WFE90-FU218

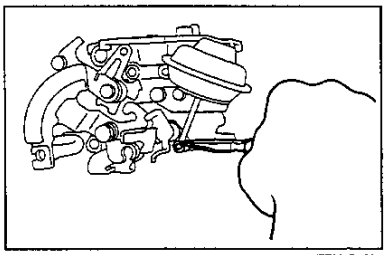
   (2) Remove the throttle positioner lever.
   (3) Remove the collars and spring.


WFE90-FU219

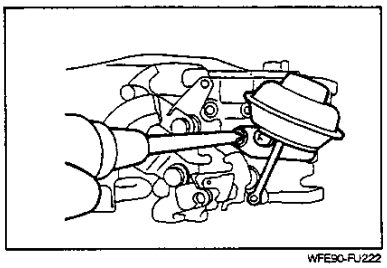
(4) Remove the throttle positioner.


WFE90-FU220

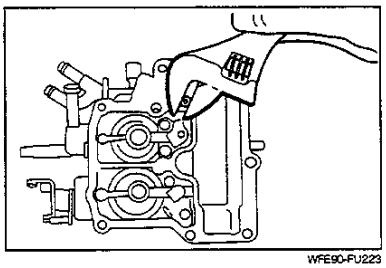
7. Removal of secondary throttle valve diaphragm
   (1) Remove the spring.
   (2) Remove the pin. Disconnect the link.


WFE90-FU221

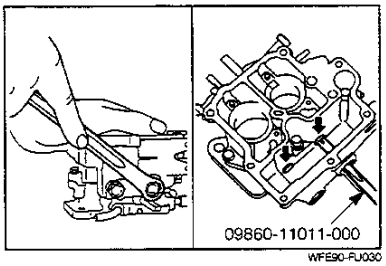
   (3) Remove the secondary throttle valve.
   (4) Remove the rubber hose.


WFE90-FU222

8. Remove the slow jet.
   NOTE:
   • Never reuse the "O" ring.

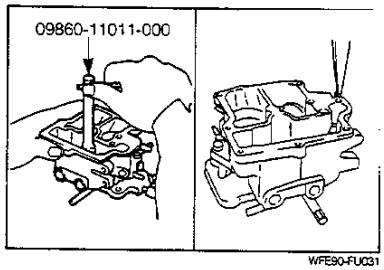

WFE90-FU223

9. Remove the main passage plugs. Remove the primary and secondary main jets, using the SST.
   SST: 09860-11011-000



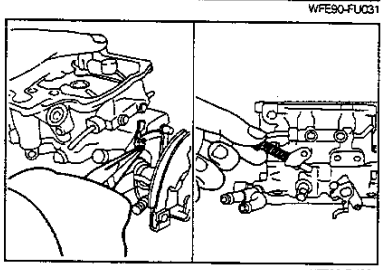
WFE90-FU030

10. Remove the power valve, using the SST.
11. Remove the acceleration pump check ball retainer and ball.
    SST: 09860-11011-000

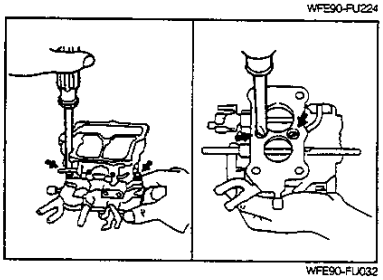


WFE90-FU031

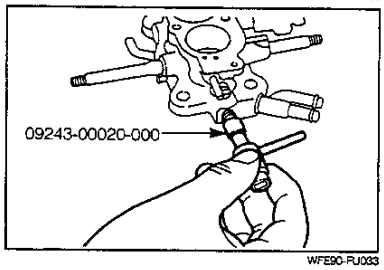
12. Remove the auto choke linkage.
13. Remove the throttle adjusting screw.


WFE90-FU224

14. Disassembly of the carburetor body and flange.
    (1) Remove the attaching bolts.
    (2) Disassemble the carburetor body and flange.

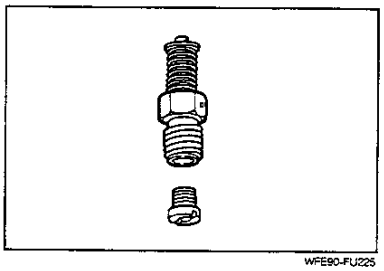

WFE90-FU032

15. Remove the idle mixture adjusting screw, using the SST.
    SST: 09243-00020-000



WFE90-FU033

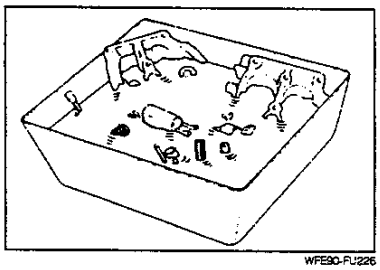
16. Remove the power jet from the power valve.


WFE90-FU225

CLEANING OF EACH PARTS

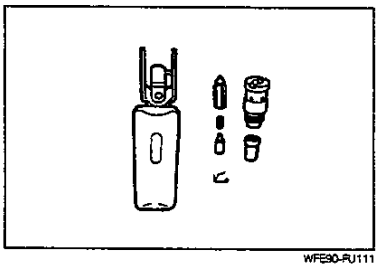
1. Clean the carburetor parts except for the diaphragms and electrical parts, using carburetor cleaner and a soft brush.
2. Remove carbon deposits by means of a soft brush.
3. Clean each of the jets and nozzles, using compressed air.
   NOTE:
   - Never clean the jets or orifices with a piece of wire or a drill.
   - This could enlarge the openings and result in poor fuel mileage.

WARNING:
- **Be sure to protect your eyes with safety goggles, when using compressed air.**

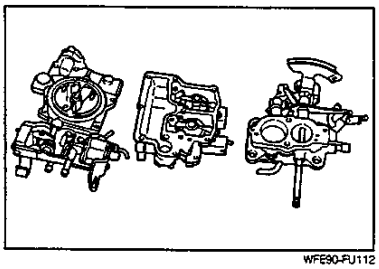

WFE90-FU226

INSPECTION OF CARBURETOR

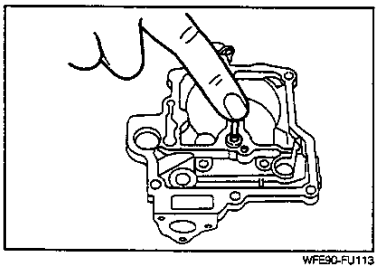
1. Inspection of float and needle valve
   (1) Inspect the float lever pin for scratches excessive wear, and damage.
   (2) Inspect the float for broken lip or damage.
   (3) Inspect the valve and plunger for wear or damage.
   (4) Inspect the spring for deformation.
   (5) Inspect the strainer for breakage, restriction or damage.
   (6) Inspect the valve seat for wear or damage.


WFE90-FU111

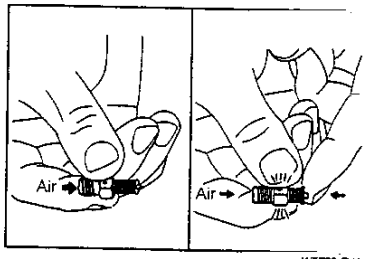
2. Inspection of air horn, body and flange
   (1) Check each part for cracks, wear or damage.
   (2) Check to see if each valve functions smoothly.
   (3) Check each air passage for restriction.
   Replace any defective part, as required.


WFE90-FU112

3. Inspection of power piston
   Check to see if the power piston functions smoothly.

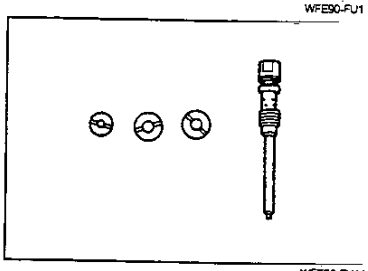

WFE90-FU113

4. Inspection of power valve
   Ensure that air continuity exists when the valve is pushed. Also, ensure that no air continuity exists when the valve is not pushed.

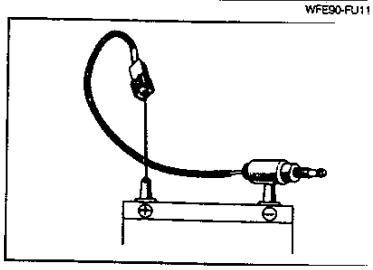


WFE90-FU1

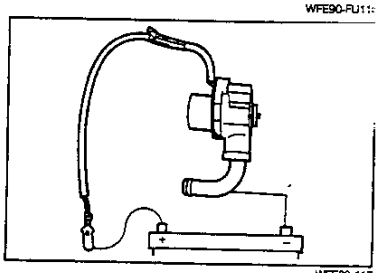
5. Inspection of jets
   Check each jet for restriction or damage.


WFE90-FU11

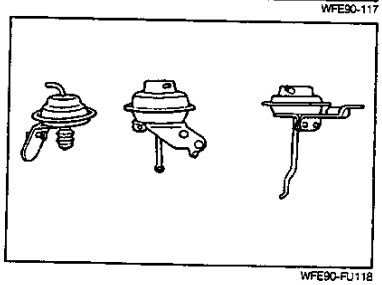
6. Inspection of solenoid valve
   Ensure that the valve is opened when the solenoid valve is energized. Also, ensure that the valve is closed when the solenoid valve is not energized.


WFE90-FU11

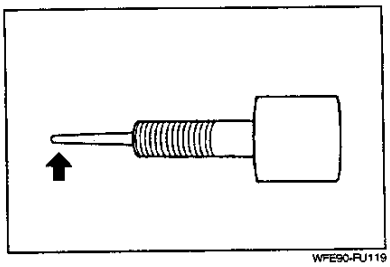
7. Inspection of outer vent valve
   Ensure that the valve is closed when the solenoid valve is energized. Also, ensure that the valve is opened when the solenoid valve is not energized.


WFE90-117

8. Inspection of each diaphragm
   Ensure that the rod is drawn into the diaphragm chamber when a negative pressure is applied to each diaphragm.


WFE90-FU118

3. Inspection of idle mixture adjusting screw
   Check to see if any damage or wear is present at the tip end of the adjusting screw.

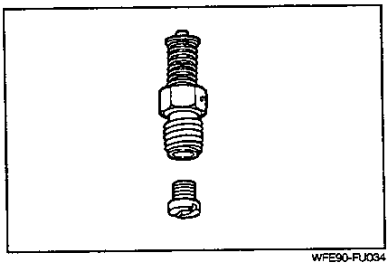

WFE90-FU119

ASSEMBLY OF CARBURETOR

NOTE:
- Be sure to use new gaskets and "O" rings.

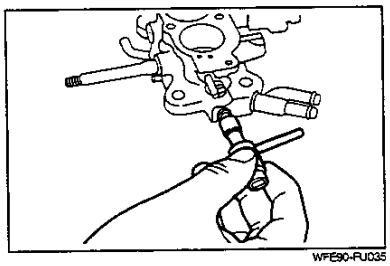
Assembly of carburetor body & flange

1. Install the power jet in the power valve, using the SST.
   SST: 09860-11011-000

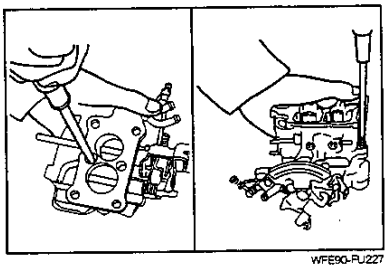

WFE90-FU034

2. Screw in the idle mixture adjusting screw fully into the flange, using the SST. Then, back off the adjusting screw four turns.
   NOTE:
   - Care must be exercised to ensure that no damage may be made to the tip-end of the adjusting screw by tightening the idle mixture adjusting screw excessively.

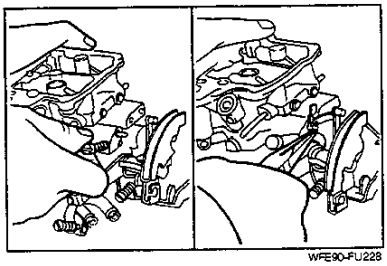
   SST: 09243-00020-000


WFE90-FU035

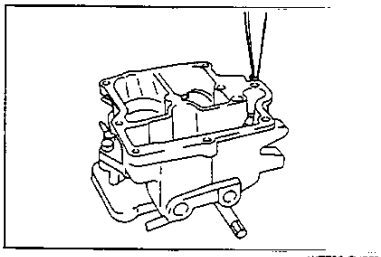
3. Assembly of carburetor body and flange
   Install the throttle body with a new gasket interposed.


WFE90-FU227

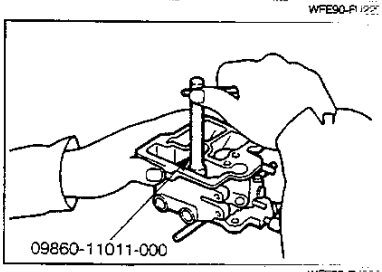
4. Install the throttle adjusting screw.
5. Install the auto choke linkage.


WFE90-FU228

6. Install the check ball retainer with the acceleration pump check ball inserted in place.

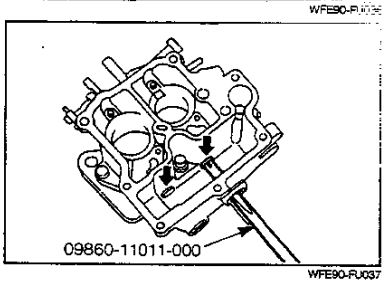


7. Install the power valve, using the SST.
   SST: 09860-11011-000

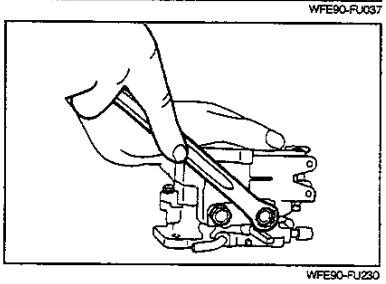


8. Install the primary and secondary main jets, using the SST.
   NOTE:
   - Be sure to use new gaskets.

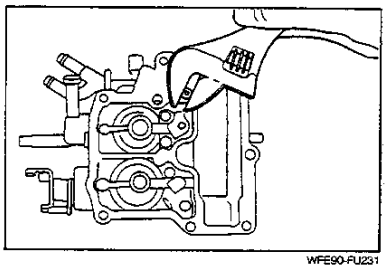
   SST: 09860-11011-000



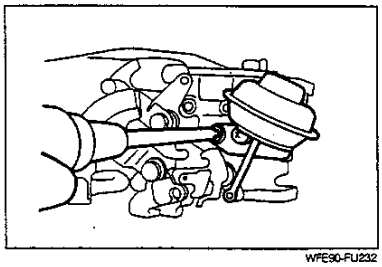
9. Install the main passage plug.
   NOTE:
   - Be sure to use a new gasket.



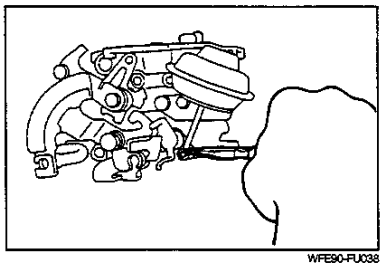
10. Install the slow jet, with a new "O" ring.



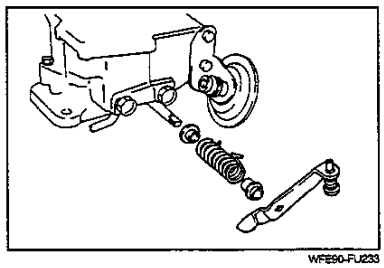
11. Installation of secondary throttle diaphragm
    (1) Connect the rubber hose to the diaphragm.
    (2) Install the diaphragm to the carburetor body.
    (3) Install the rubber hose to the carburetor body.


WFE90-FU232

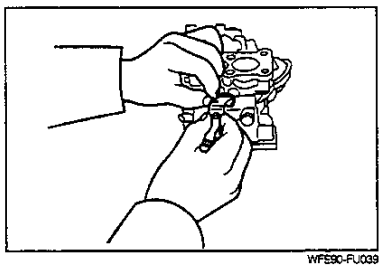
12. Connect the diaphragm rod and install the washer snap ring.
13. Install the snap ring.


WFE90-FU038

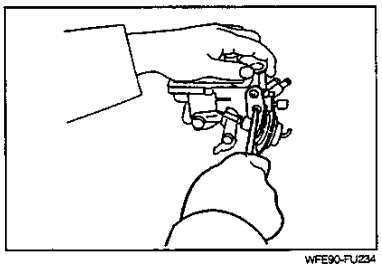
14. Installation of the throttle positioner
    (1) Install the collar, throttle return spring and thrust washer onto the throttle shaft.


WFE90-FU233

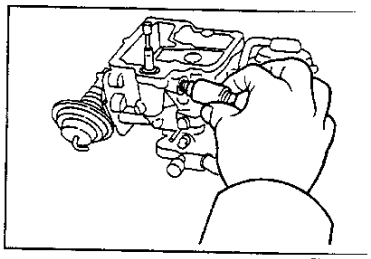
    (2) While installing the dashpot lever on the throttle shaft, attach the return spring to the dashpot lever.
    (3) Install the spring washer and tighten the nut.
    NOTE:
    - **Be very careful not to damage the throttle valve when tightening the nut.**


WFE90-FU039

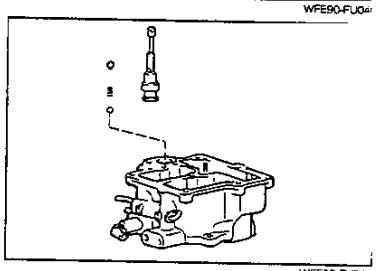
    (4) Install the throttle positioner.
    NOTE:
    - **Be careful not to damage the rubber boot section during the installation.**


WFE90-FU234

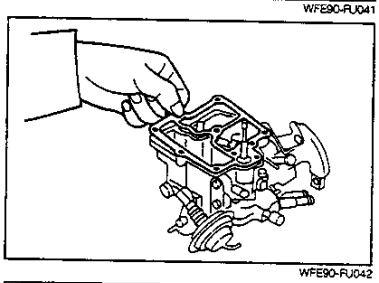
15. Install the solenoid valve.
16. Install the solenoid valve wire clamp in place.



17. Assembly of the acceleration pump
    (1) Install the return spring for the acceleration pump.
    (2) Install the ball, spring and discharge weight.
    (3) Assemble the acceleration pump to the carburetor.

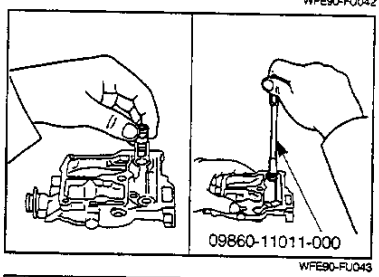


18. Install the gasket.

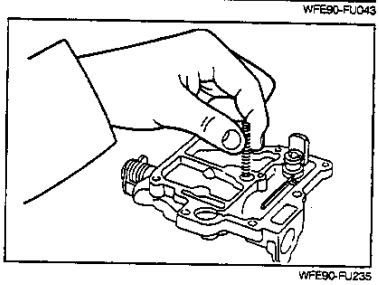


ASSEMBLY OF AIR HORN

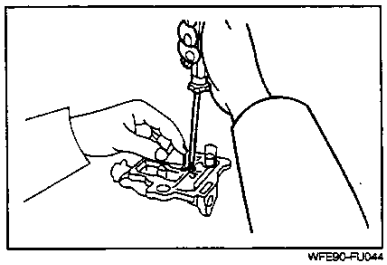
1. Install the needle valve seat to the air horn with a new gasket interposed, using the SST.
   SST: 09860-11011-000



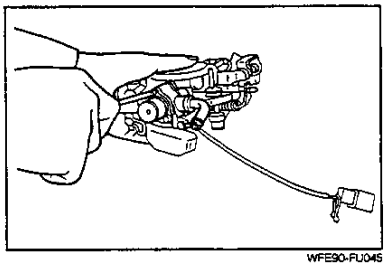
2. Insert the power piston spring into the air horn.



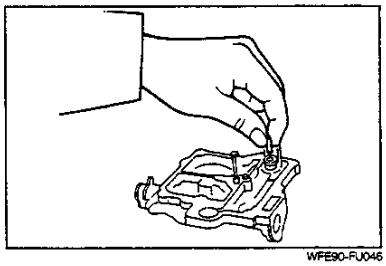
3. While inserting the power piston into the air horn, install the lock plate.


WFE90-FU044

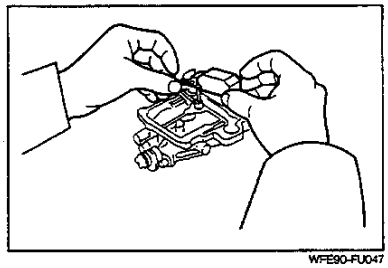
4. Install the outer vent valve assembly onto air horn.
5. Tighten the three screws of air horn.


WFE90-FU045

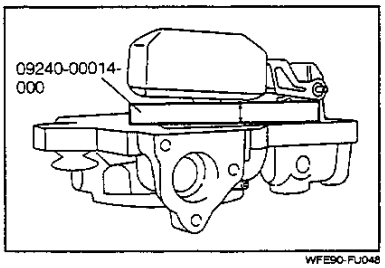
6. Remove the snap pin for pulling-off needle valve use. Insert the snap pin into the valve seat.


WFE90-FU046

7. Install the float.

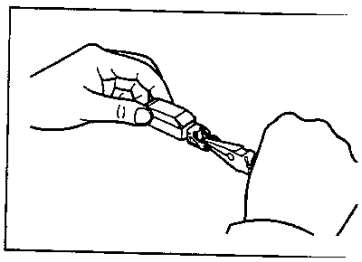

WFE90-FU047

8. Adjustment of float level
   (1) Check the dimension under the float's own weight, using the following SST.
   Dimension under Float's Own Weight: 8 mm
   SST: 09240-00014-000

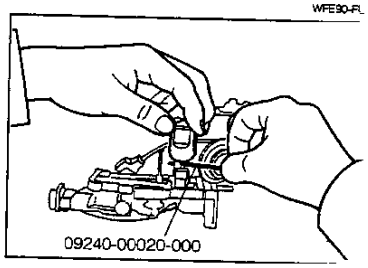


WFE90-FU048

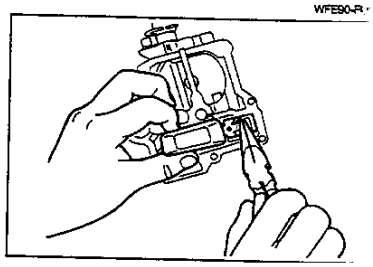
Adjust the dimension under the float's own weight by bending the lip section of the float if the measured value fails to conform to the specified value.



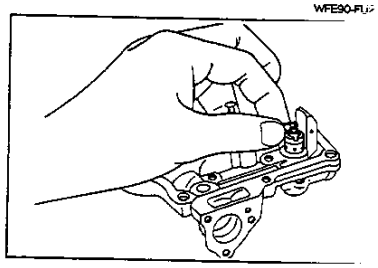
(2) Check the lip dimension using the following SST.
Lip Dimension: 1.6 mm
SST: 09240-00020-000



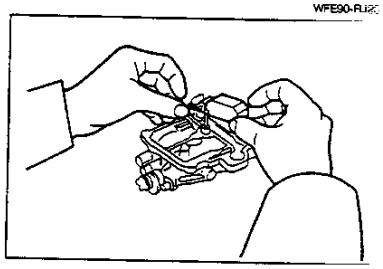
Adjust the lip dimension by bending the lever of the float if the measured value fails to conform to the specified value.



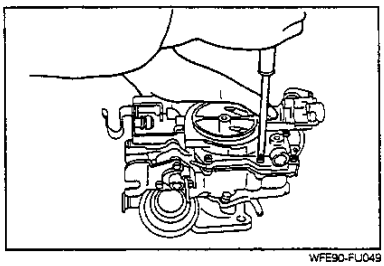
(3) Remove the float. Install the snap pin for pulling-off use to the needle valve.



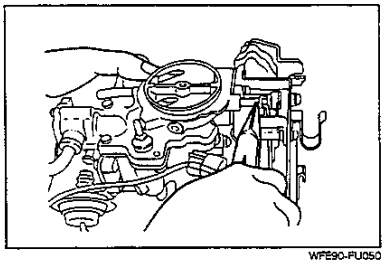
(4) Install the float.



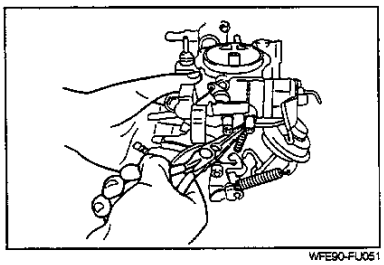
9. Install the air horn assembly onto the carburetor body.
10. Tighten the seven screws (five screws in case of the idle-up actuator equipped model) of the air horn.


WFE90-FU049

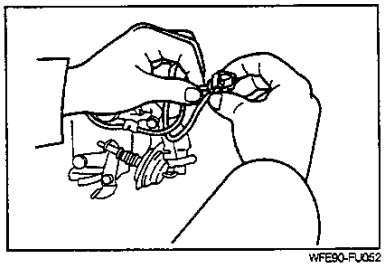
11. Connect the choke lever linkage at the upper side.


WFE90-FU050

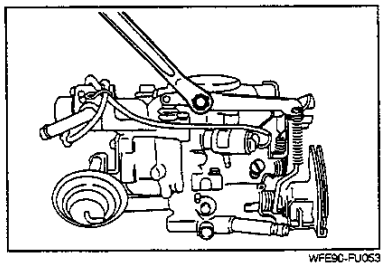
12. Install the spring to the carburetor.


WFE90-FU051

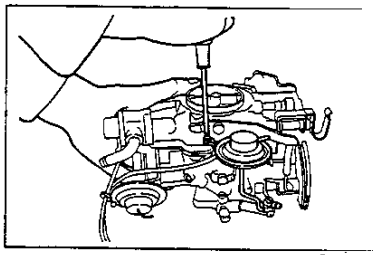
13. Connect the outer vent terminal to the connector.


WFE90-FU052

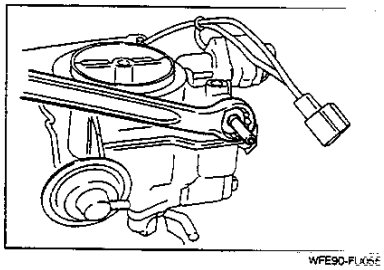
14. Install the accelerator pump and lever.
    Tighten the accelerator pump arm set screw.


WFE90-FU053

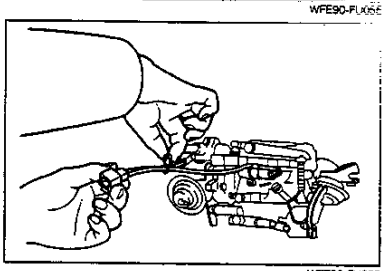
15. Install the idle-up actuator to the carburetor.
(only for the power steering-equipped vehicle)


WFE90-FU05

16. Install the gasket and fuel inlet union.
17. Install the air cleaner set bolt.

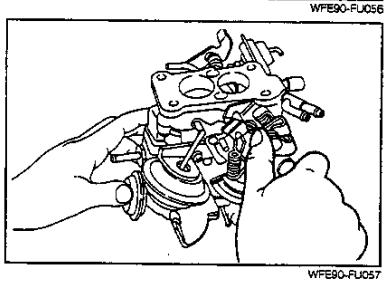

WFE90-FU05

18. Attach the harness clamp.

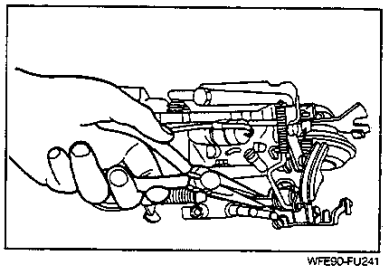

WFE90-FU056

ADJUSTMENT OF CARBURETOR

1. Inspection of throttle valve opening angle
(1) Visually inspect the valve opening angle when the primary throttle valve is opened fully.
Full Opening Angle: 90 ± 1°

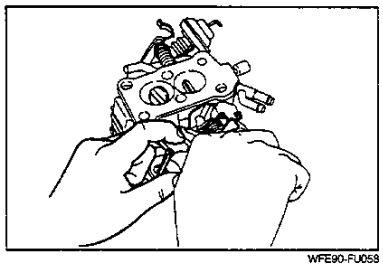

WFE90-FU057

Adjust the opening angle by bending the throttle lever stopper if the measured value fails to conform to the specified value.

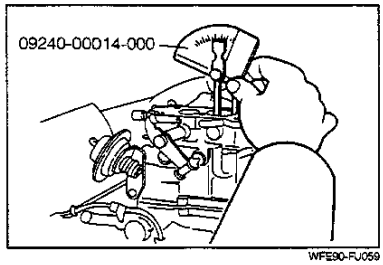

WFE90-FU241

(2) Visually inspect the valve opening angle when the secondary throttle valve is opened fully.
Full Opening Angle: 80 ± 1°

Adjust the opening angle by bending the throttle lever stopper if the measured value fails to conform to the specified value.

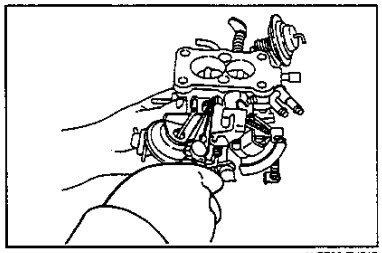

WFE90-FU058

2. Inspection of kick-up opening angle
Measure the opening angle of the secondary valve when the primary throttle valve is opened fully, using the following SST.
SST: 09240-00014-000
Kick-Up Opening Angle: 23 ± 1°

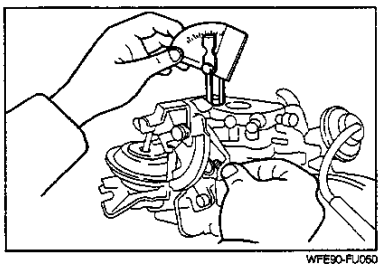


WFE90-FU059

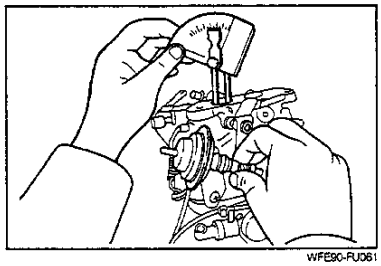
Adjust the kick up opening angle by bending the secondary throttle lever if the measured value fails to conform to the specified value.


WFE90-FU242

3. Adjust the throttle adjusting screw so that the throttle valve opening angle may become 11.4 ± 1°.
NOTE:
- **Be sure to apply a negative pressure to the throttle positioner so as to keep it in an operating state.**


WFE90-FU060

4. Under the condition that a negative pressure is not applied to the throttle positioner, adjust the opening angle of the throttle valve to about 16 ± 1°.


WFE90-FU061

5. Ensure that each part operates smoothly.
6. Install the air cleaner set bolt.

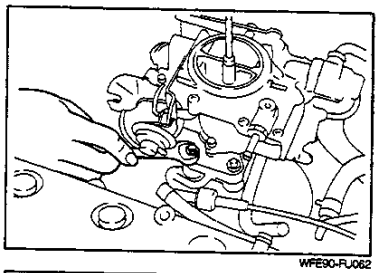
INSTALLATION OF CARBURETOR

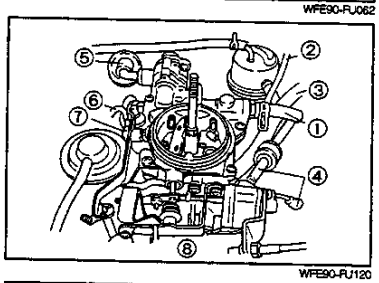
1. Inspection of heat insulator
   Visually inspect the gasket surface of the heat insulator. Replace the heat insulator if it exhibits damage.
2. Install the carburetor to the intake manifold with the heat insulator interposed. Tighten the four attaching nuts to the specified torque.
   Tightening Torque: 14.7 - 21.6 N·m (1.5 - 2.2 kgf·m)
3. Connect the outer vent valve connector of the solenoid valve and the throttle position sensor connector.
4. Connect the following hoses to the carburetor.
   ① Fuel inlet hose
   ② ITC vacuum hose
   ③ PCV gas hose
   ④ Choke breaker vacuum hose
   ⑤ Outer vent hose
   ⑥ Throttle position vacuum hose
   ⑦ Vacuum hose to distributor

   ⑧ Coolant circulating hoses

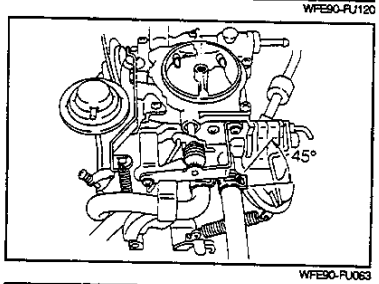
   NOTE:
   - **Ensure that the hose clamp is installed at correct position as indicated at right figure.**

5. Connect the accelerator cable to the carburetor. Adjust the axial play of the accelerator cable to 3 - 8 mm.

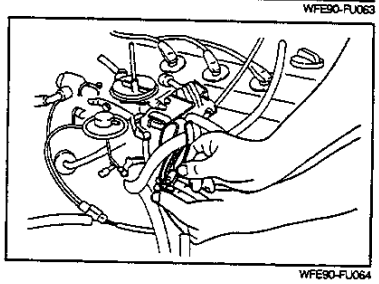

WFE90-FU062



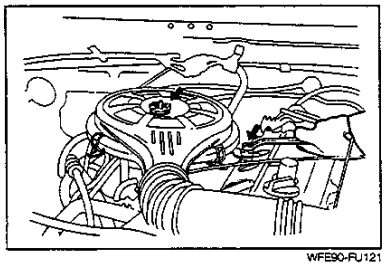
WFE90-FU120



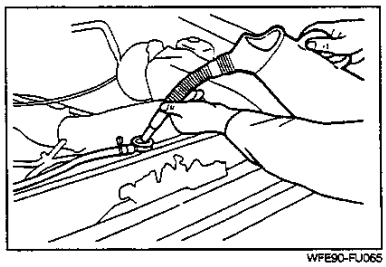
WFE90-FU063


WFE90-FU064

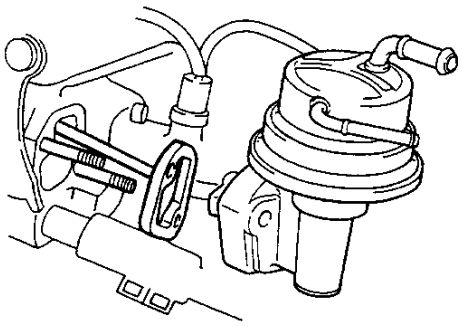
6. Installation of the air cleaner
   (1) Place the air cleaner and air intake hose subassembly.
   (2) Connect the wing nut located at the center of the air cleaner.
   (3) Connect the three bolts securing the air cleaner and air intake hose.


WFE90-FU121

7. Fill coolant.
   (See page CO-13.)
8. Connect the ground cable to the negative (–) terminal of the battery.
9. Tune up the engine.


WFE90-FU065

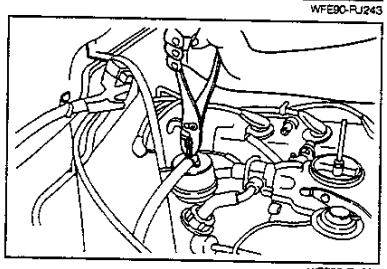
FUEL PUMP



WFE90-FU243

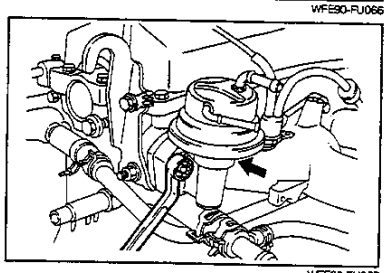
REMOVAL OF FUEL PUMP

1. Disconnect the fuel hoses from the fuel pump.
   NOTE:
   - Plug the disconnected hose so that no fuel will flow out.
   - Release the inner pressure of the fuel tank by removing the fuel filler cap in advance.
   - Since the fuel will flow out, be certain to place a suitable container or cloth, etc. under the fuel pump.



WFE90-FU066

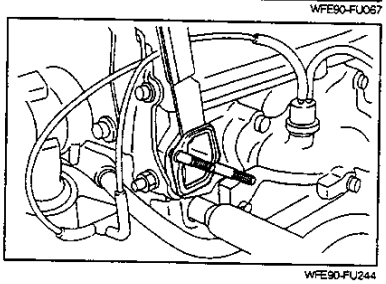
2. Remove the fuel pump by removing the attaching nuts.
   NOTE:
   - Since the engine oil will flow out, be certain to place a suitable container or cloth so that no engine oil may splash on the starter and so forth.



WFE90-FU067

3. Remove the insulator.
   NOTE:
   - Never reuse the insulator.

4. Cut the gasket along the intake manifold. Remove any gasket material remaining on the fuel pump installation section, using a gasket scraper.
   NOTE:
   - This cutting of the gasket is required only when the gasket used at the assembly line in the manufacturer has been installed.
   - Be very careful not to damage the gasket installation surface during the operations.



WFE90-FU244

INSPECTION

1. Inspection of fuel pump

CAUTION:

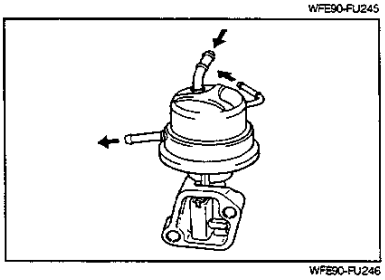
- Prior to the check, fill a small amount of fuel into the fuel pump. Thus, the inspection should be performed under a condition that the valve is wet. When the valve is dry, the following inspection can not be performed correctly.

WARNING:

- Never work on the fuel system in proximity of a fire.
- Never allow any fire to be brought near the working site.

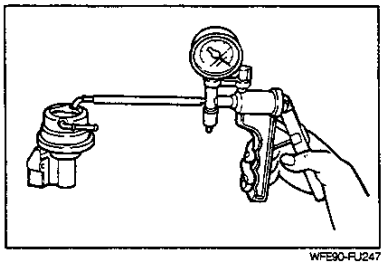
(1) Blow air from the inlet side of the fuel pump. Ensure that air continuity exists.
Replace the fuel pump if no air continuity exists.

WFE90-FU245



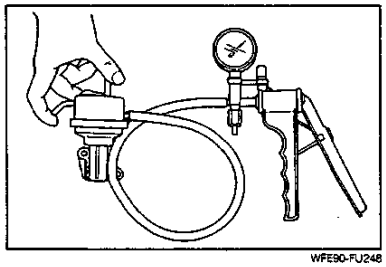
WFE90-FU246

(2) Install a MityVac to the inlet side of the fuel pump and apply a negative pressure. Ensure that the applied pressure is retained.
Replace the fuel pump if the pressure is not retained.



WFE90-FU247

(3) Plug the inlet pipe and return pipe of the fuel pump. Install a MityVac to the outlet pipe and apply a negative pressure. Ensure that the applied pressure is retained. Replace the fuel pump if the pressure is not retained.



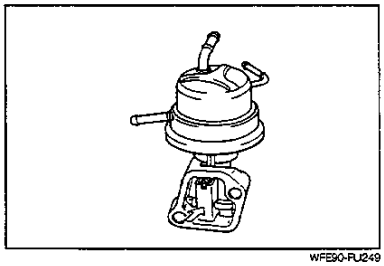
WFE90-FU248

(4) Visually inspect the push rod-contact-surface of the fuel pump.

NOTE:

- When the contact surface is not a mirror-like surface, it means that the contact surface is worn out.

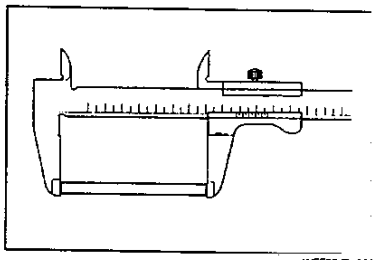
Replace the fuel pump if the contact surface exhibits wear.



WFE90-FU249

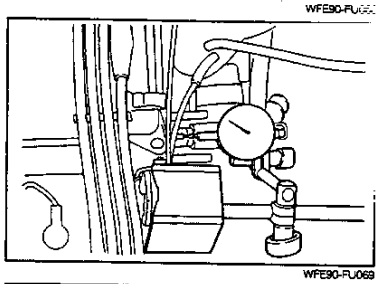
2. Inspection of fuel pump push rod
   Ensure that the overall length of the push rod is the specified value or more.
   Minimum Length: 87.00 mm
   Reference
   STD: 87.95 - 88.25 mm

   Replace the push rod if its overall length is less than the specified value.



4. Checking fuel pump cam for wear
   (1) Insert the push rod of the fuel pump into the cylinder head. Set a dial gauge.
   (2) Turn the crankshaft two turns. Measure the stroke of the push rod of the fuel pump. Ensure that the stroke is the specified value or more.
   Minimum Stroke: 4.8 mm

   Replace the camshaft if the stroke is less than the specified value.

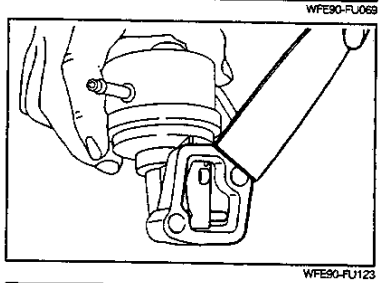


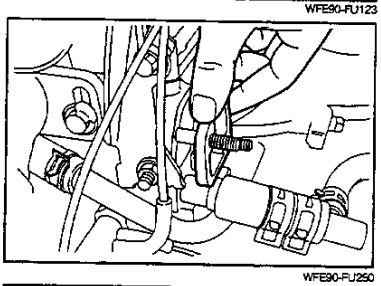
INSTALLATION OF FUEL PUMP

1. Remove any remaining gasket material from the insulator installation surface of the fuel pump, using a gasket scraper.
   NOTE:
   - **Be very careful not to damage the gasket contact surface.**

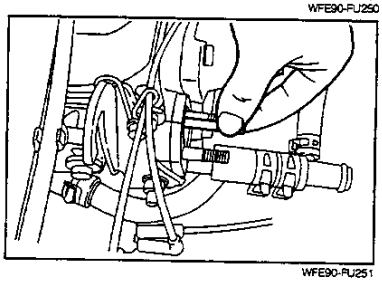
2. Wipe off any oil from the fuel pump installation surface of the cylinder head.

3. Install a new insulator to the cylinder head.
   NOTE:
   - **Never reuse the insulator.**

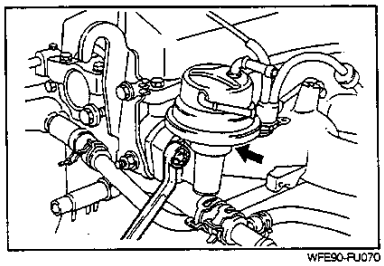




4. Insert the fuel pump push rod into the cylinder head.

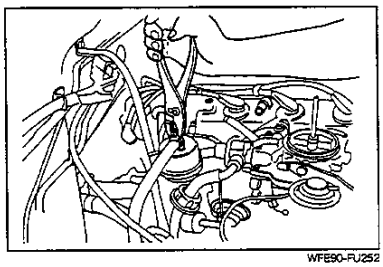


5. Install the fuel pump to the cylinder head.
   Tighten the attaching nuts.
   Tightening Torque: 14.7 - 21.6 N·m (1.5 - 2.2 kgf·m)



WFE90-FU070

6. Connect the fuel hose to the fuel pump.
   Attach the hose bands.

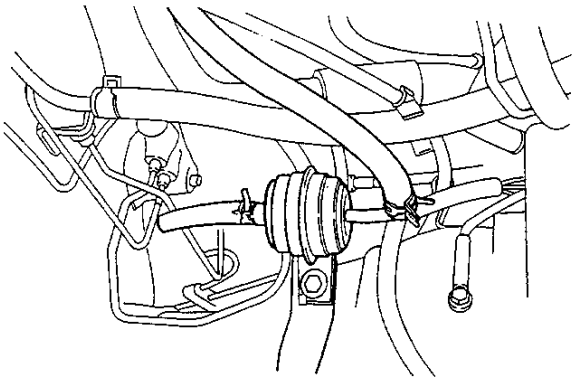


WFE90-FU252

7. Start the engine. Ensure that the engine exhibits no fuel leakage.
   Repair any leaky points, as required.

WFE90-FU071

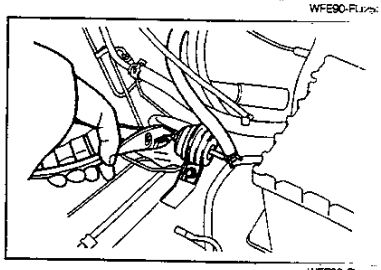
FUEL FILTER



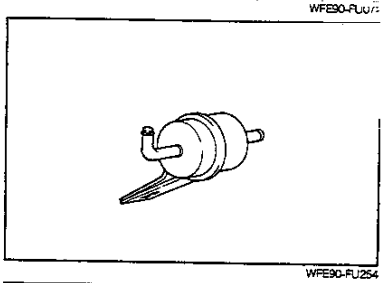
REPLACEMENT OF FUEL FILTER

WARNING:
- **Never work on the fuel system in proximity of a fire.**
- **Never allow any fire to be brought near the working site.**

1. Disconnect the fuel hose from the fuel filter.
   NOTE:
   - **Plug the disconnected hose so that no fuel may flow out.**
   - **Release the inner pressure of the fuel tank by removing the fuel filler cap in advance.**
2. Remove the fuel filter by removing the attaching bolt.
3. Install a new fuel filter. Tighten the attaching bolts.

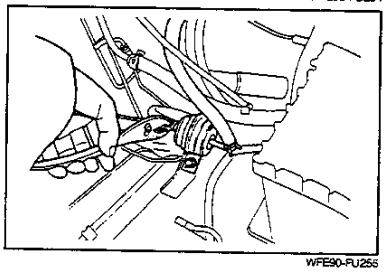


WFE90-FU0?



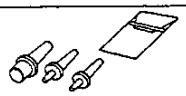
WFE90-FU254

4. Connect the fuel hose to the fuel filter.
   Attach the hose bands.
5. Start the engine. Ensure that the engine exhibits no fuel leakage.
   Repair any leaky points, as required.



WFE90-FU255

SST [Special Service Tools]

Shapes	Part No. and Name	Purpose	Remarks
	09258-00030-000 Plug set	Plugging rubber hoses	
	09860-11011-000 Carburetor screwdriver set	Overhaul of carburetor	
	09243-00020-000 Idle adjust wrench	Adjustment of idle mixture adjusting screw	
	09240-00020-000 Wire gauge set	Adjustment of carburetor	
	09240-00014-000 Carburetor adjusting gauge set	Adjustment of carburetor	

WFE90-FU073

TIGHTENING TORQUE

Tightening component	Tightening torque			Remark
	N·m	kgf·m	ft-lb	
Cylinder head × Fuel pump	14.7 - 21.6	1.5 - 2.2	10.8 - 15.9	Dry
Intake manifold × Carburetor	14.7 - 21.6	1.5 - 2.2	10.8 - 15.9	Dry

WFE90-FU074

SPECIFICATIONS

Carburetor	Float level	Dimension assumed by its own weight	8 mm
		Lip dimension	1.6 mm
	Throttle valve closed angle		
		Primary	9°
		Secondary	20°
	Throttle valve fully opened angle		
		Primary	90 ± 1°
		Secondary	80 ± 1°
	Kick-up angle		23 ± 1°
	Secondary touch angle		50 ± 1°
	Throttle opening angle		11.4 ± 1°
	Throttle positioner operating angle		16 ± 1°
	Number of backing-off of idle mixture adjusting screw		4 1/2 rev
	Solenoid valve resistance		80 - 100 Ω
	Outer vent resistance		30 - 45 Ω
Fuel pump (HD-C)	Suction force at 3,000 rpm		19.6 - 29.4 kPa (0.20 - 0.30 kgf/cm²)
	Push rod length	Standard	87.95 - 88.25 mm
		Minimum	87.000 mm
	Push rod stroke	Standard	5.0 mm
		Minimum	4.8 mm

WFE90-FU075

Item \ Engine type			HD-C	HD-E
Fuel System	Fuel tank	Capacity dm³	60	60
		Location	Underneath rear seat floor	Underneath rear seat floor
	Fuel pipe material		Rubber and steel tube	Rubber and steel tube
	Fuel pump type		Diaphragm type	Electromotor type
	Fuel filter type		Filter paper type	Filter paper type
	Carburetor	Manufacturer	Aisan industry	—
		Type	Down draft, 2-barrel type	—
		Venturi diameter mm	Primary: 21, Secondary: 28	—
		Choke valve type	Wax type auto choke	—
	Fuel injection device		—	Electronic type
	Injection nozzle or Injector	Type of nozzle retainer	—	With cushion rubber type
		Nozzle type	—	Electronic controlled throttle type
		Injection pressure kPa (kgf/cm²)	—	250 (2.55)

WFE90-FU076