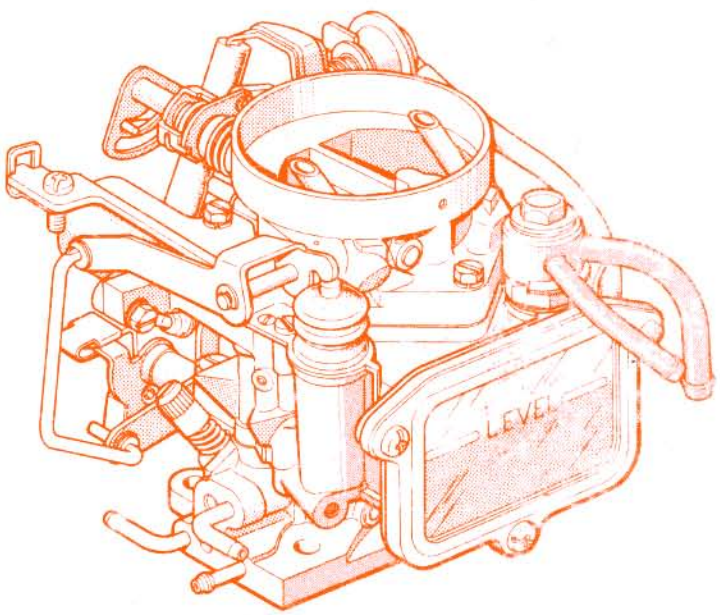
Carburetor

Training Manual



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Yes, that's me up there, displaying my rotary geekery.

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This version is provided as a service for owners of first generation Mazda RX-7s who are having a devil of a time locating the factory service manuals and dealer mechanic's materials for a reasonable price.
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03/29/05

Carburetor Training Manual

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FOREWORD

This training manual has been prepared for training service personnel of authorized Mazda dealers.
The models covered are 1979 and 1980 Mazda 121, 121L, 929L, 626, 323, GLC, RX-7, B2000, B1800, B1600, E2000, E1600, E1300.
All information, photographs and drawings contained in this manual were the best available at printing time.
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HIROSHIMA JAPAN

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GENERAL

GENERAL

1. CARBURETOR TYPE

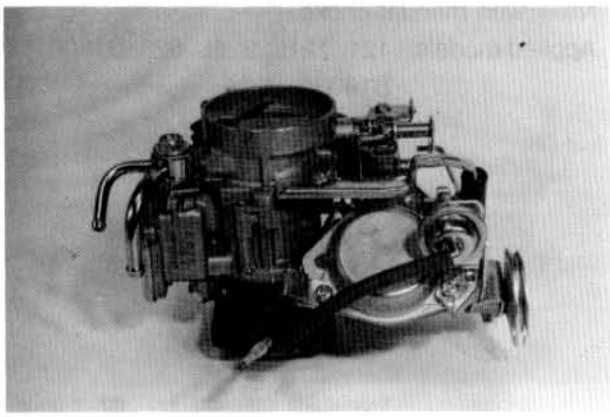


Fig 1-1

Down-draft
Two-stage
Two-barrel

Applied models: 121, 121L, 929L, 626, 323, GLC.
E1300, B2000, B1800, B1600.

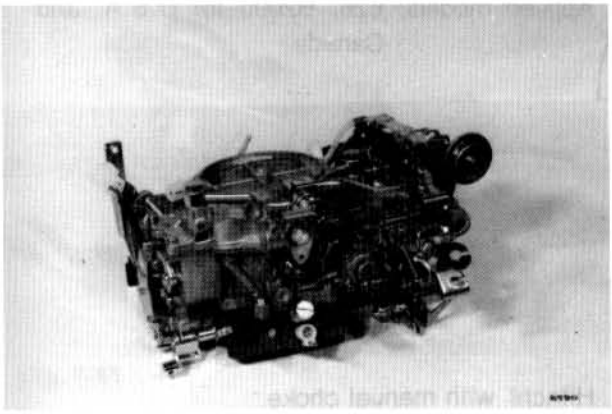


Fig 1-2

Down-draft
Two-stage
Four-barrel

Applied model: RX-7

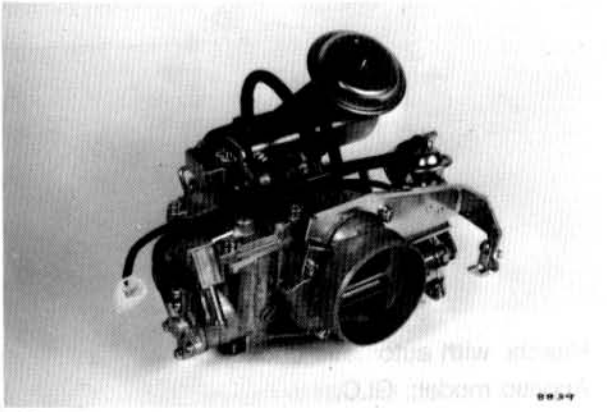


Fig 1-3

Horizontal-draft
Two-stage
Two-barrel

Applied models: E1600, E2000

GENERAL

2. MODEL

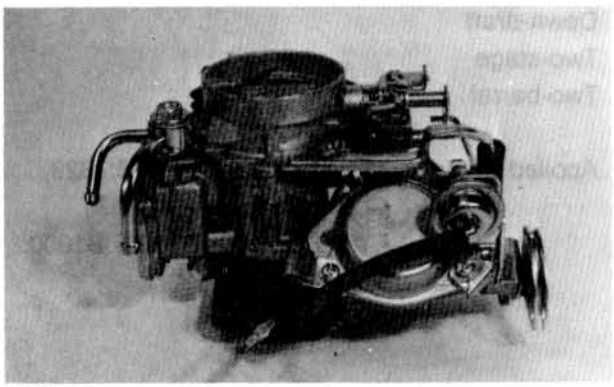


Fig 1-6

Nikki with manual choke.
Applied models: 121, 121L, 929L, 626, B1800, B1600.

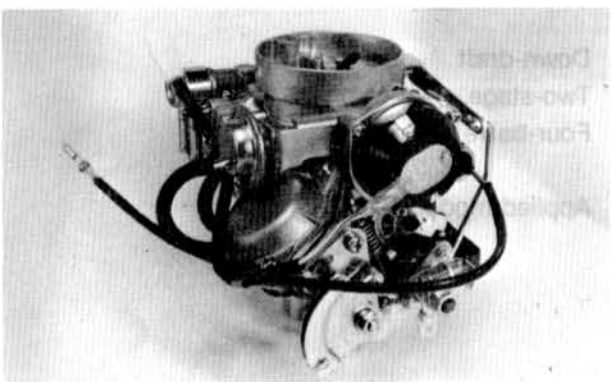


Fig 1-7

Nikki with automatic choke.
Applied models: 626, B2000 for U.S.A. and Canada.

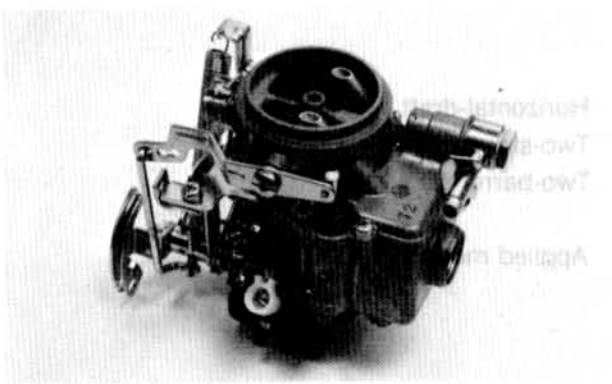


Fig 1-8

Hitachi with manual choke.
Applied models: 323, E1300.

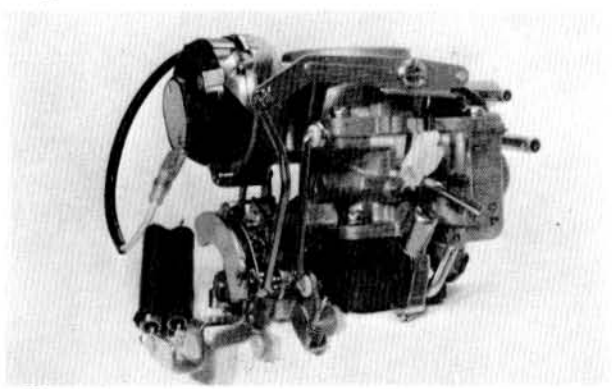


Fig 1-9

Hitachi with automatic choke.
Applied model: GLC.

GENERAL

2. MODEL

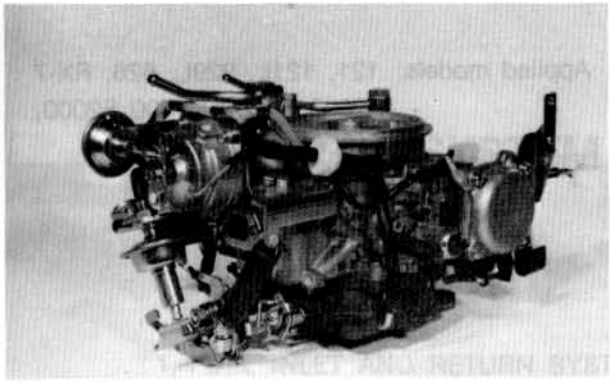


Fig 1-10

Nikki with manual choke.
Applied model: RX-7.

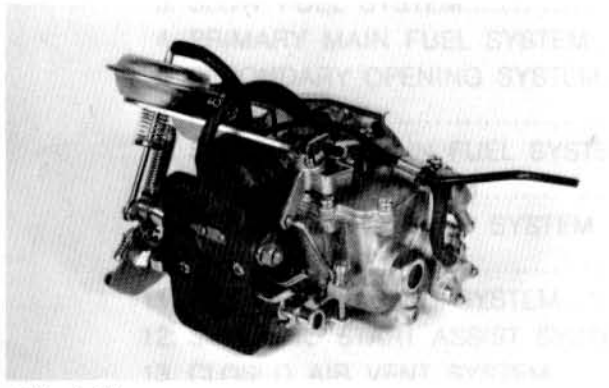


Fig 1-11

Nikki with manual choke.
Applied model: E1600.

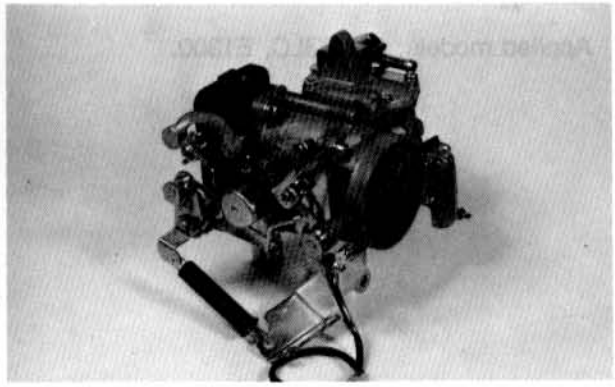


Fig 1-12

Nikki with manual choke.
Applied model: E2000.

GENERAL

3. IDENTIFICATION CODE

NIKKI

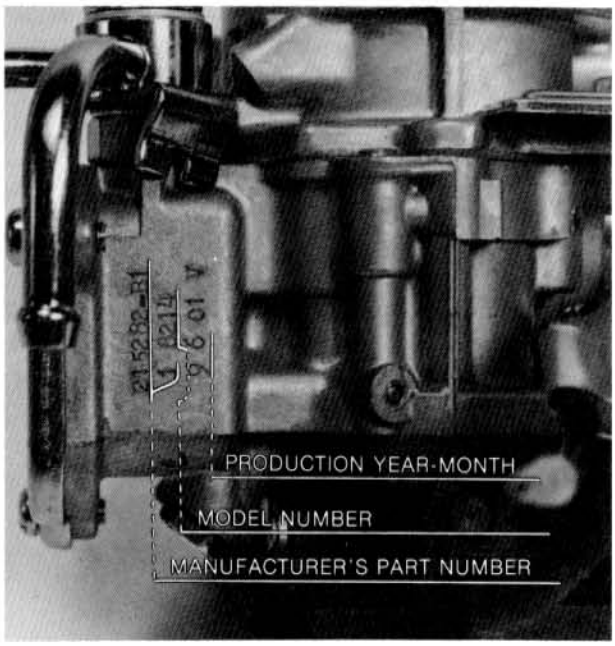


Fig 1-13

Applied models: 121, 121L, 929L, 626, RX-7 B2000, B1800, B1600, E2000, E1600.

HITACHI

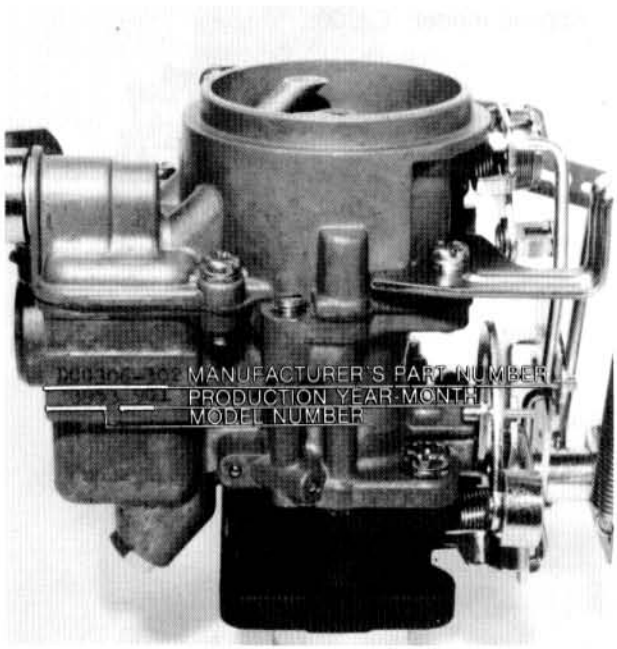


Fig 1-14

Applied models: 323, GLC, E1300.

SYSTEM OPERATION

SYSTEM OPERATION

1. FUEL INLET AND RETURN SYSTEM

626

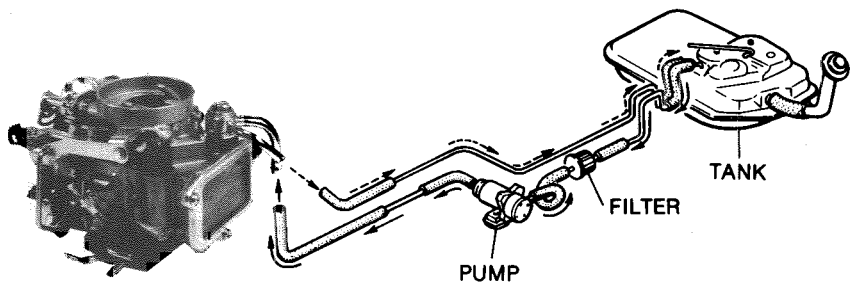


Fig 2-1

E1600

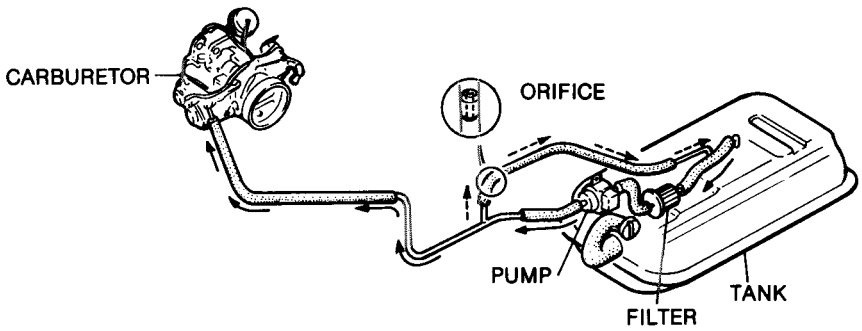


Fig 2-2

323

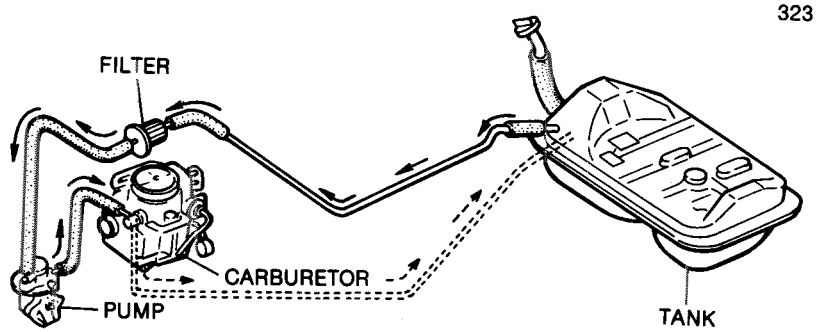


Fig 2-3

626 U.S.A Canada

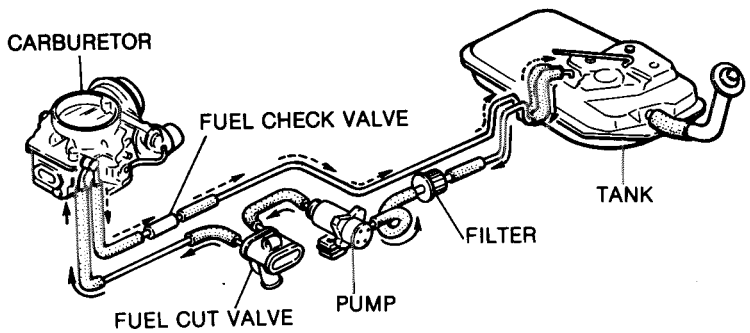


Fig 2-4

SYSTEM OPERATION

1. FUEL INLET AND RETURN SYSTEM

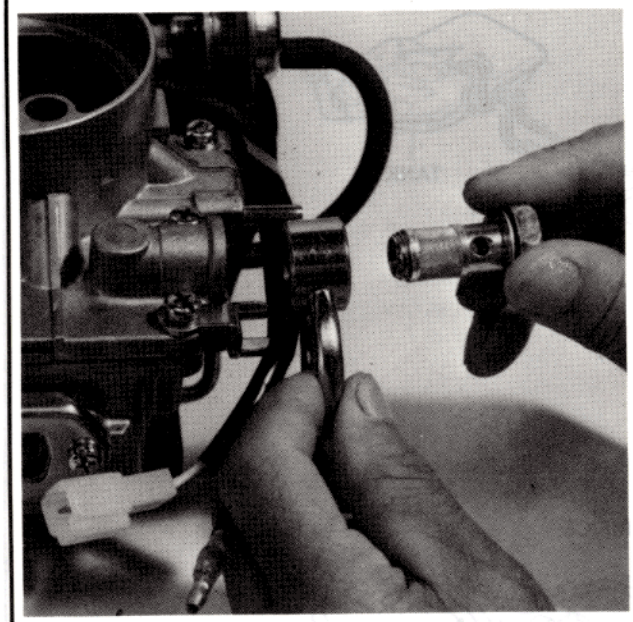


Fig 2-5

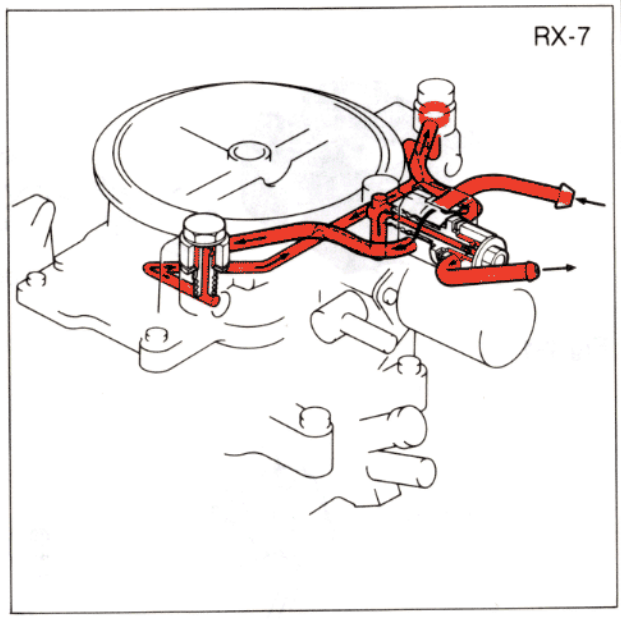


Fig 2-6

Fig 2-7

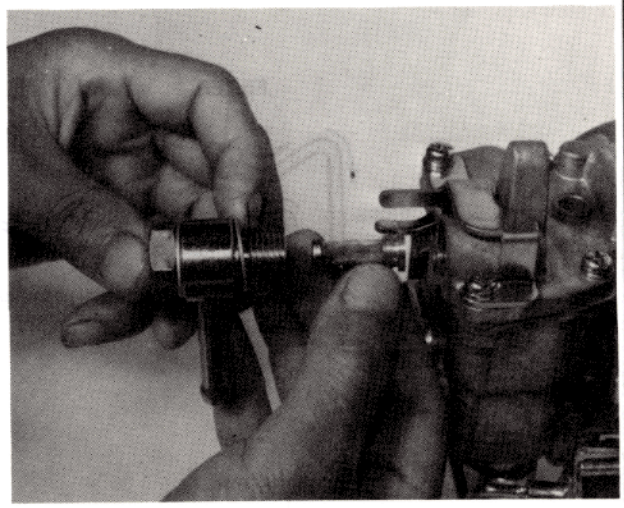


Fig 2-8

SYSTEM OPERATION

2. FLOAT SYSTEM

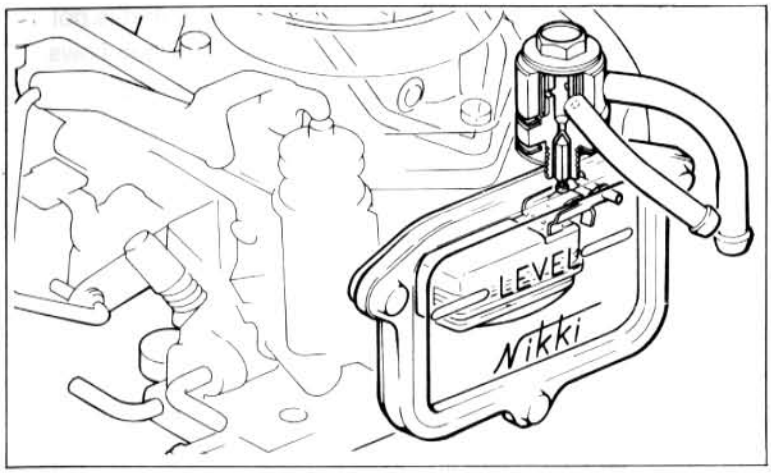


Fig 2-9

Fig 2-10

Fig 2-11

Float Level Mark

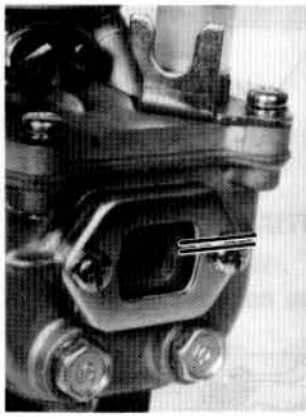


Fig 2-12

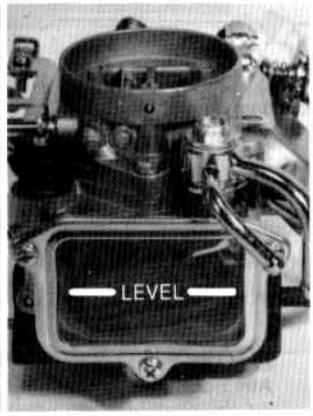


Fig 2-13

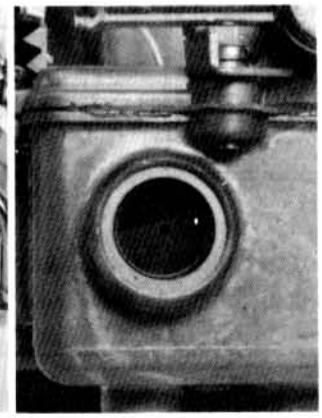


Fig 2-14

Float

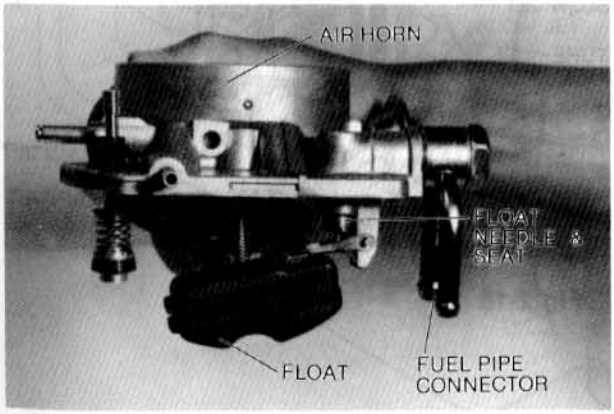


Fig 2-15

Fuel enters the carburetor at the fuel inlet and flows through the float needle valve into the chamber. When the fuel reaches the proper level, the rising float closes the needle valve. The needle valve is spring-loaded to provide uniform seating under all operating conditions. The float chamber is internally vented into the air horn.

SYSTEM OPERATION

3. SLOW FUEL SYSTEM

IDLE OPERATION

During the idle and early part-throttle operation, air flow through the venturi is very low and is not great enough to cause fuel to flow from the main nozzle. Fuel from the float chamber flows through the main jet and slow jet, and mixes with air entering through the slow air bleed. The air-fuel mixture then flows down through the slow fuel passage and into the idle port.

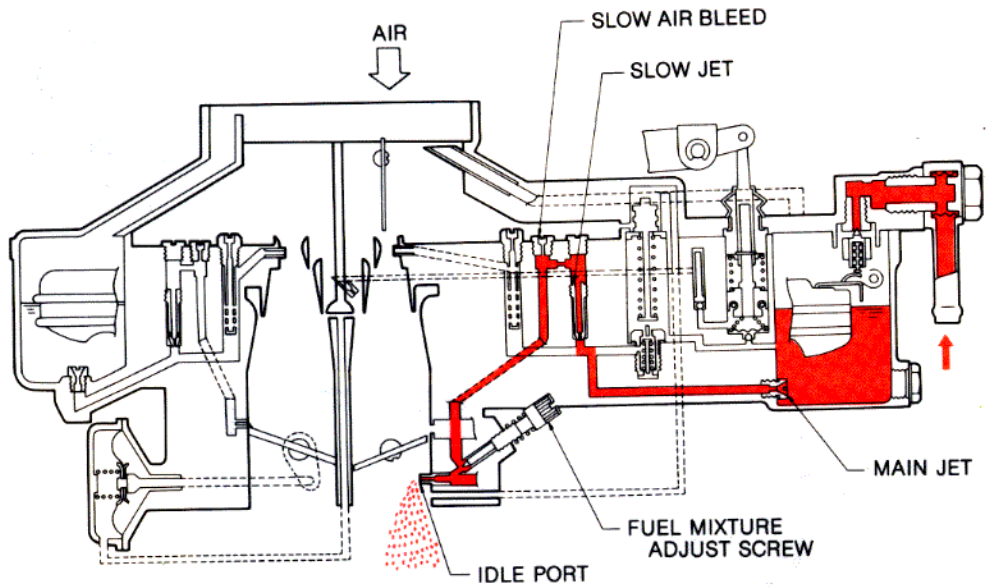


Fig 2-16

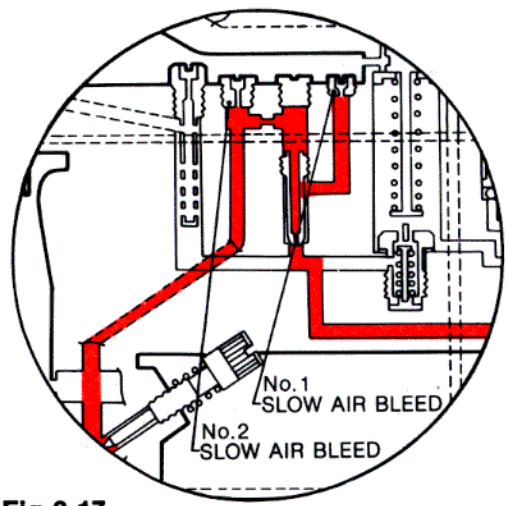


Fig 2-17

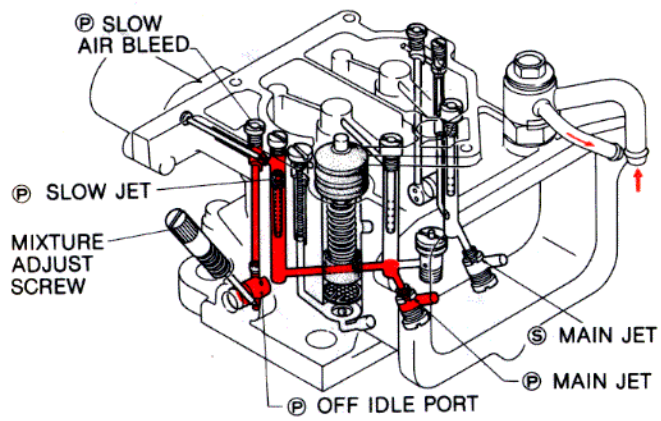


Fig 2-18

Some models use No.1 and No.2 slow air bleeds to supply additional air for engine requirements.

SYSTEM OPERATION

3. SLOW FUEL SYSTEM

OFF-IDLE OPERATION

The idle adjust screw controls the amount of fuel mixture which enters the intake manifold. As the primary throttle valve opens, air-fuel mixture drawn from the off-idle port (slow port) provides smooth transition from idle to the high-speed system.

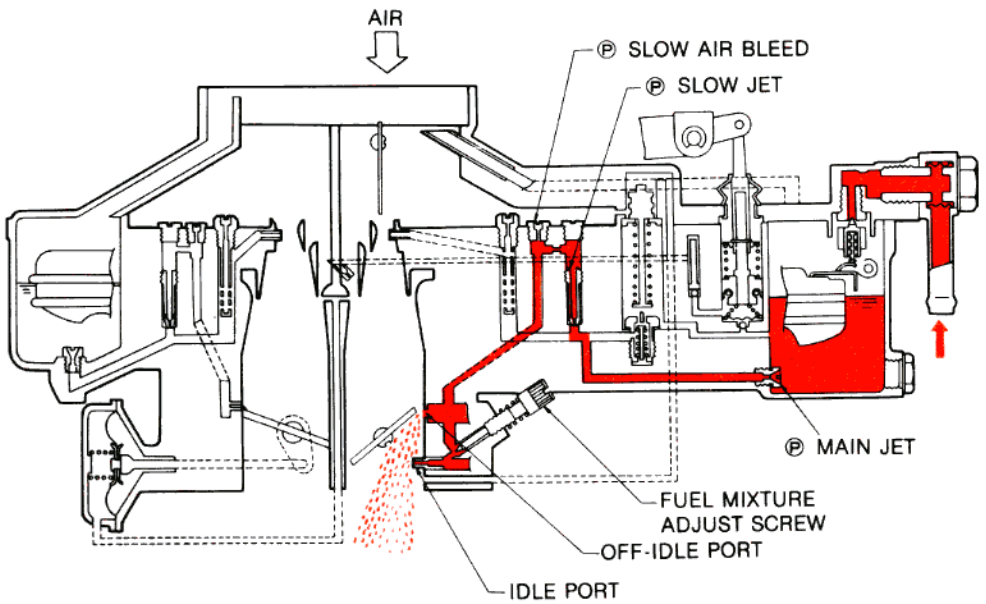


Fig 2-19

SLOW FUEL CUTOFF

To prevent run-on, a solenoid-actuated fuel cutoff valve is situated in the slow fuel passage. When the ignition switch is turned off, power leaves the solenoid, closing the valve.

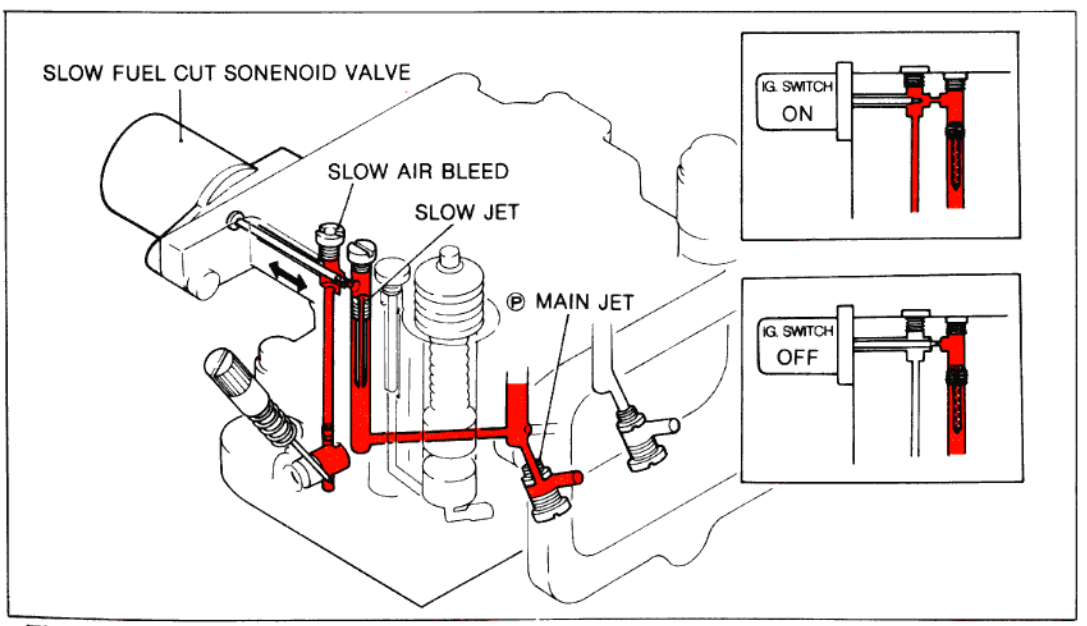


Fig 2-20

SYSTEM OPERATION

4. PRIMARY MAIN FUEL SYSTEM

PART-THROTTLE AND FULL THROTTLE OPERATION

During part-throttle and full throttle operation, the difference in pressure between normal air pressure in the float bowl and the vacuum in the venturi forces fuel to flow through the main metering system.

Fuel from float bowl flows through the main jet, mixes in the emulsion tube with air entering through the main air bleed and sprays through the main nozzle into the venturi.

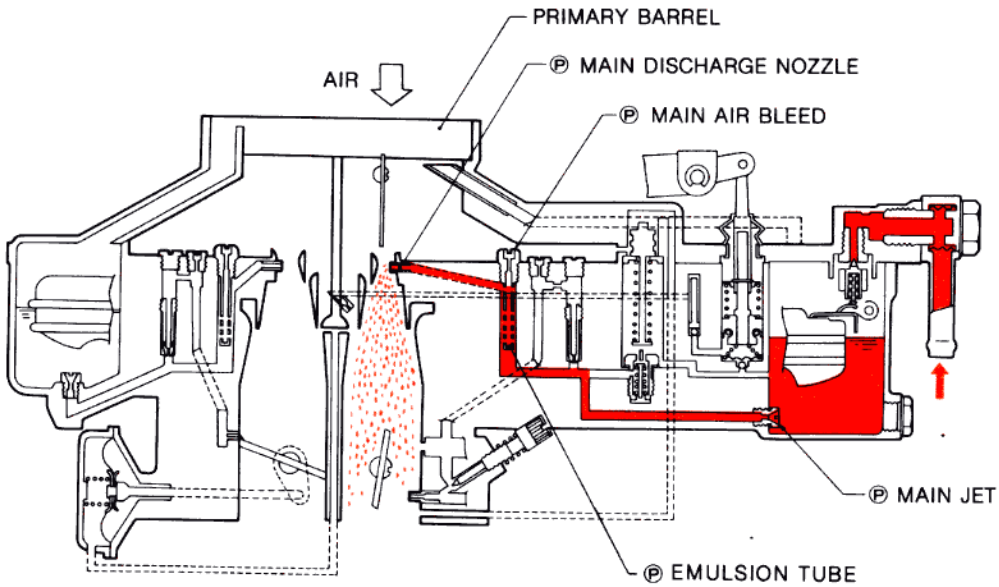


Fig 2-21

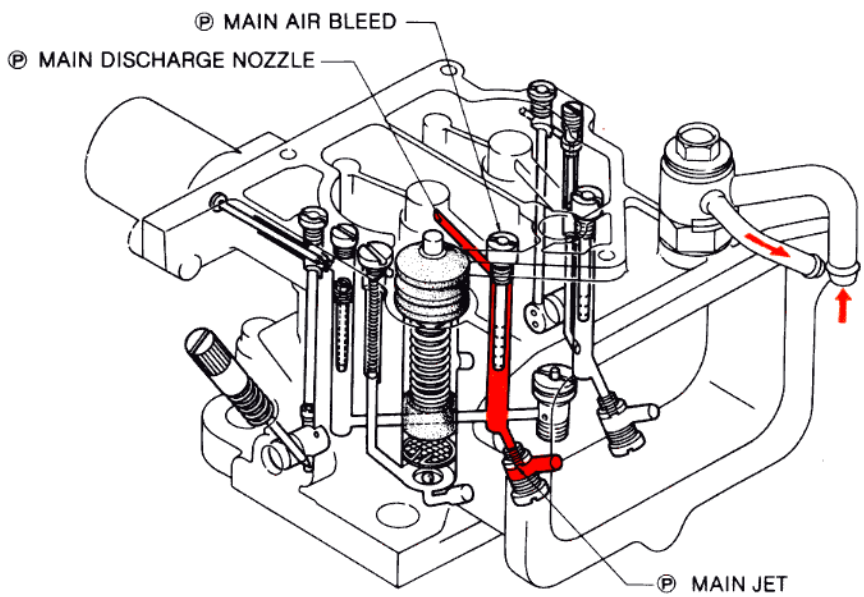


Fig 2-22

SYSTEM OPERATION

5. SECONDARY OPENING SYSTEM

VACUUM CONTROL

After the lockout lever is released, the secondary throttle valve is pulled open (through a diaphragm) by vacuum formed in the venturi. The valve is held open against the spring tension by vacuum from the vacuum pick-up bottle.

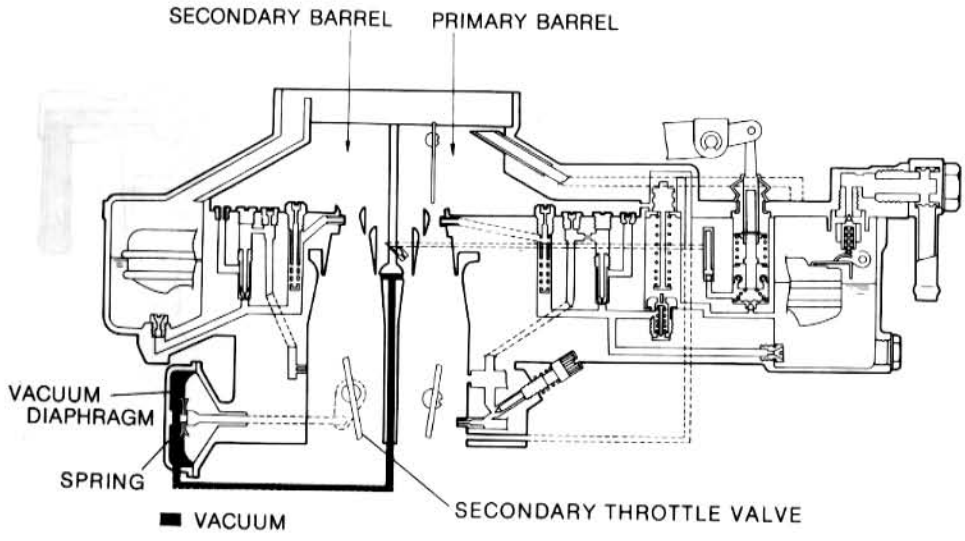


Fig 2-23

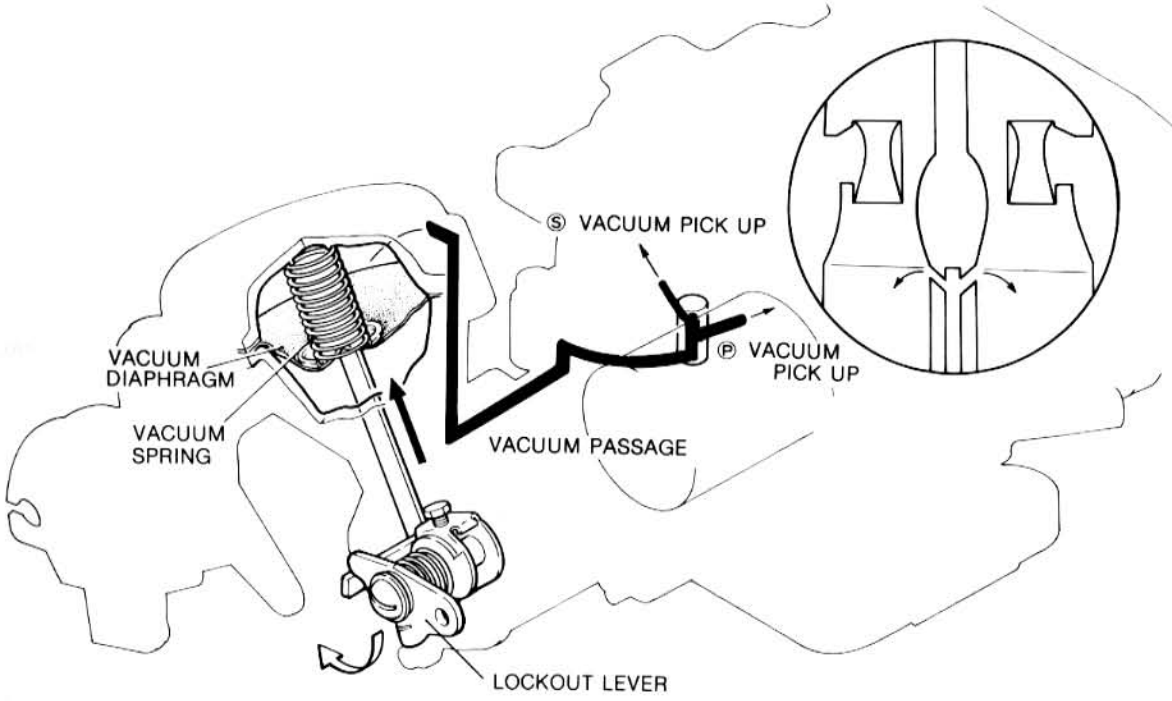


Fig 2-24

SYSTEM OPERATION

5. SECONDARY OPENING SYSTEM

MECHANICAL CONTROL

The secondary throttle valve is mechanically connected to the primary throttle lever. When the secondary throttle valve begins to open, manifold vacuum appears below the air valve. The air valve reacts to the pressure drop and starts O open against the counterweight.

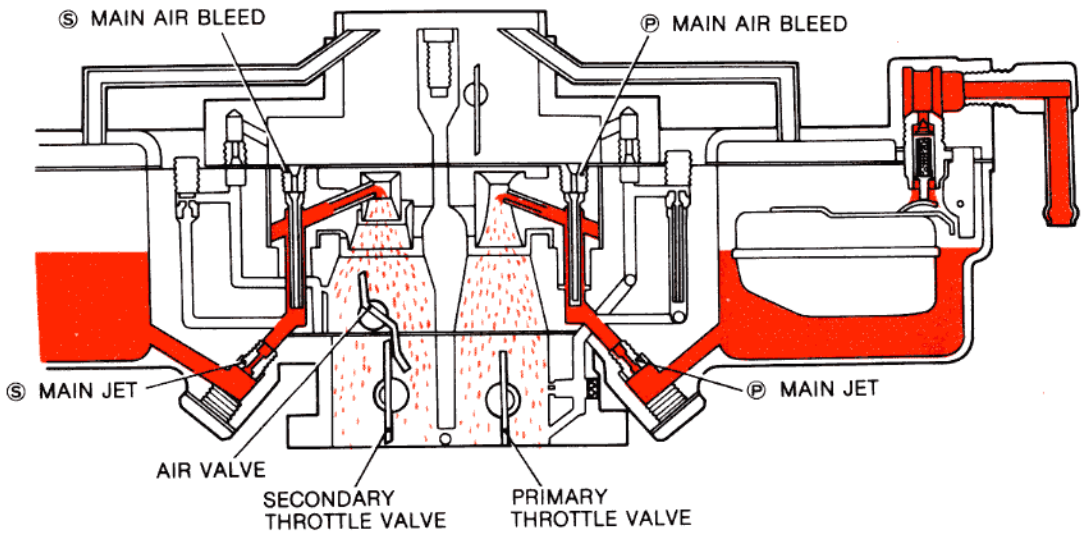


Fig 2-25

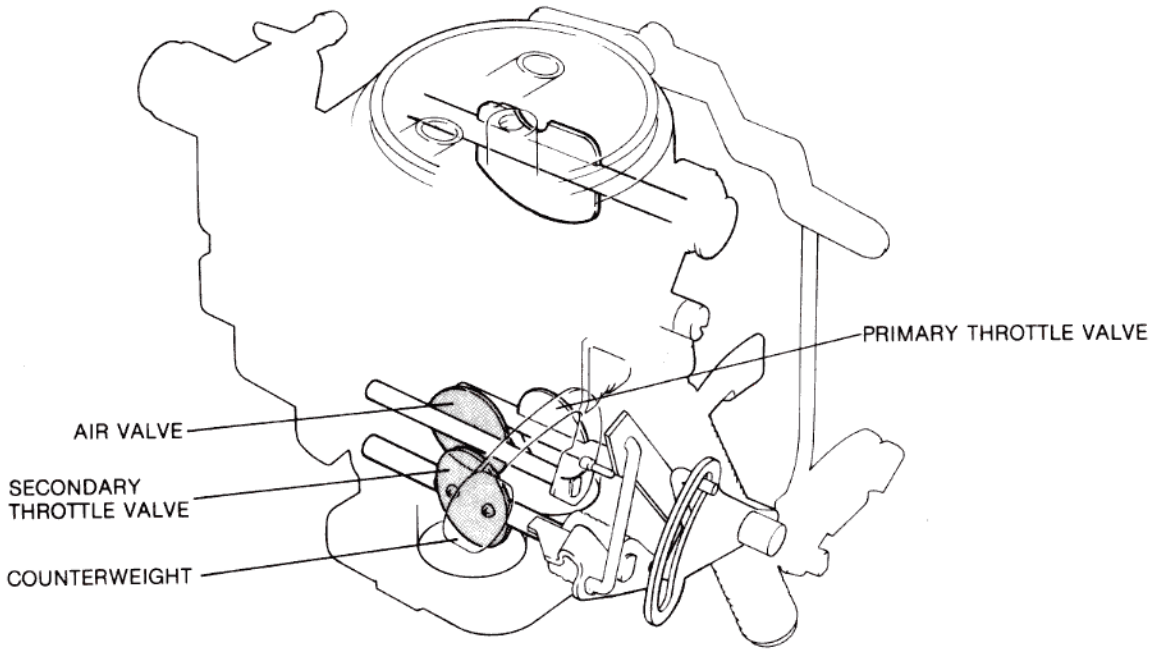


Fig 2-26

SYSTEM OPERATION

6. STEP SYSTEM

The step system provides a smooth transition from the primary to the secondary barrel. Fuel from the step jet mixes with air from the step air bleed and is sprayed through the step port that's located just above the closed secondary throttle valve.

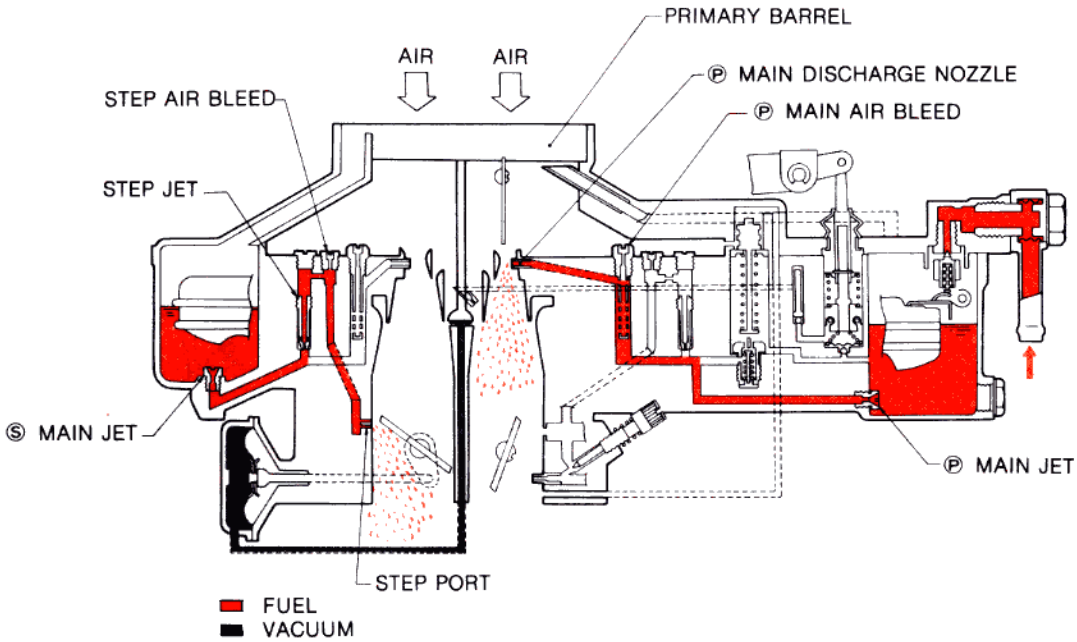


Fig 2-27

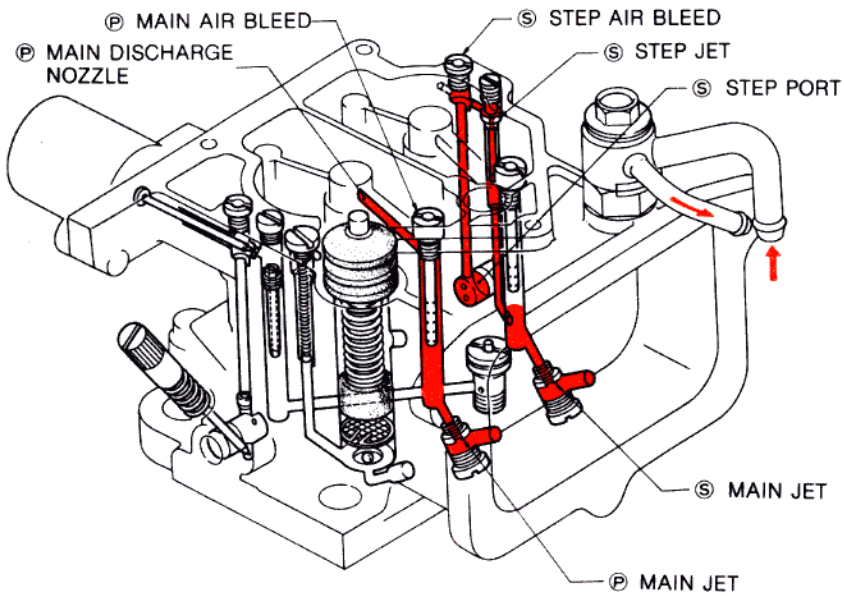


Fig 2-28

SYSTEM OPERATION

7. SECONDARY MAIN FUEL SYSTEM

When engine speed increases, the primary main fuel system can no longer meet engine air and fuel requirements.
To meet these demands, the secondary main fuel system is used.
The proper air-fuel mixture and volume are supplied by a combination of the two system.

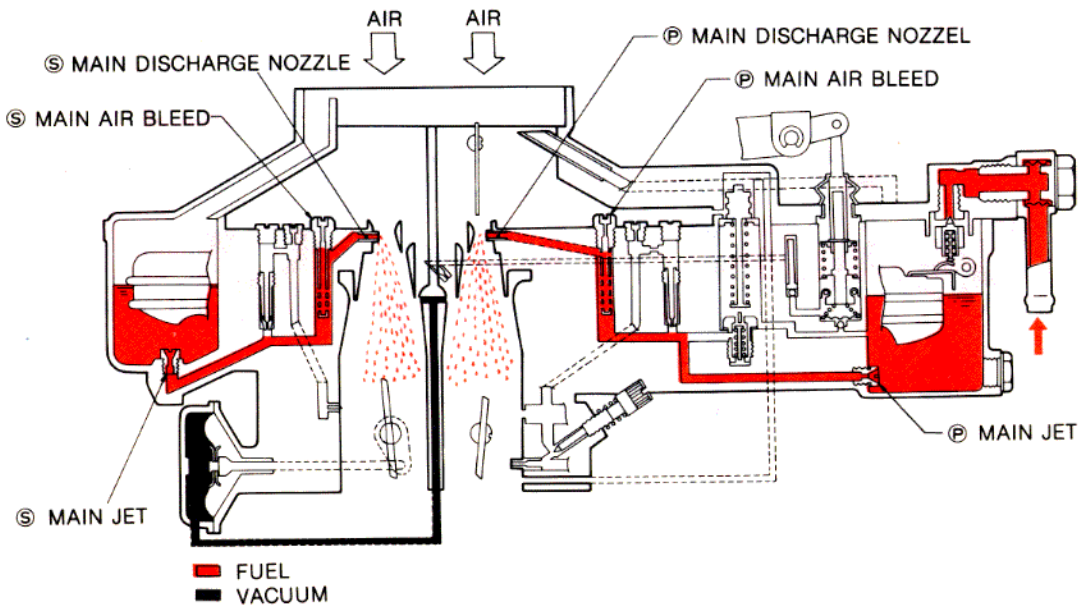


Fig 2-29

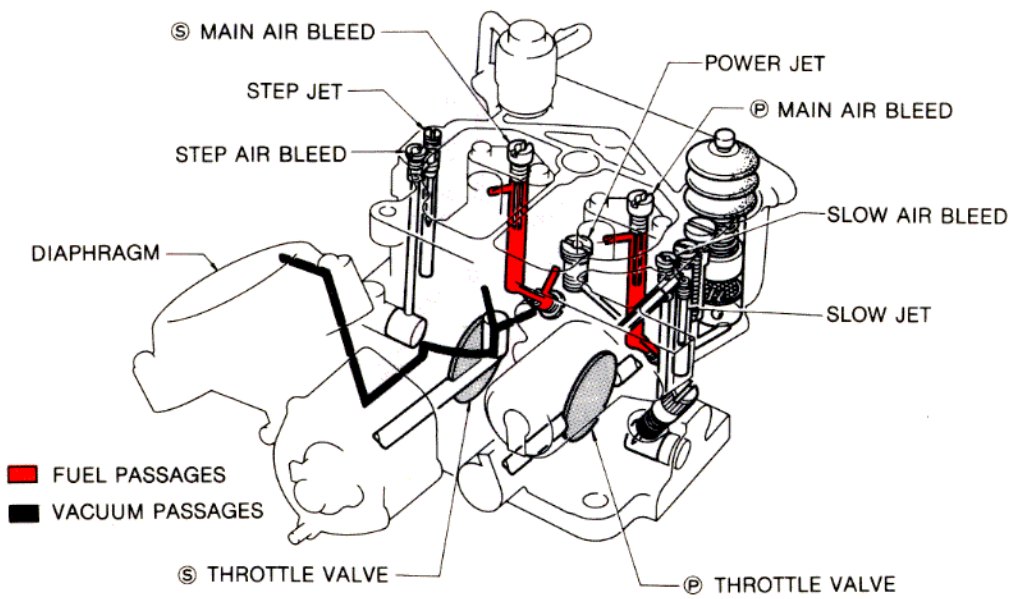


Fig 2-30

SYSTEM OPERATION

8. ENRICHMENT SYSTEM

POWER VALVE OPERATION (PISTON TYPE)

The power valve provides an extra-rich mixture for heavy acceleration or high speed operation. The richer mixture is supplied through the main fuel system in the primary side of the carubretor.

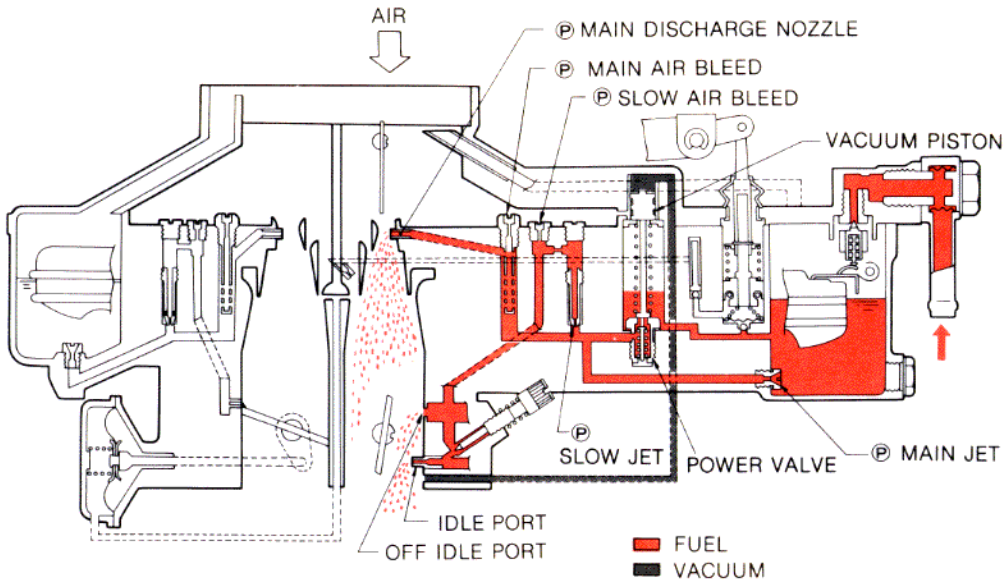


Fig 2-31

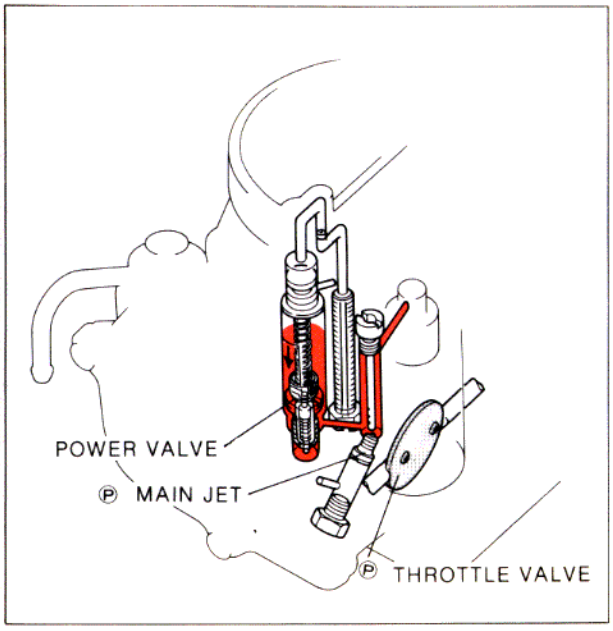


Fig 2-32

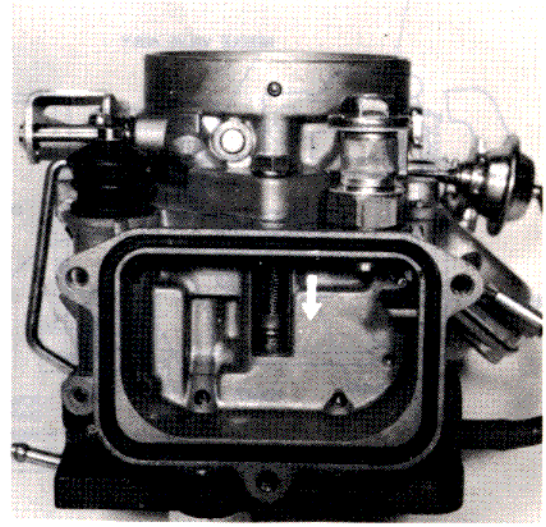


Fig 2-33

SYSTEM OPERATION

8. ENRICHMENT SYSTEM

POWER VALVE OPERATION (DIAPHRAGM TYPE E1600)

With light load and high manifold vacuum a diaphragm is pulled to the right shutting off the power valve.

When the manifold vacuum is low (heavy acceleration or high speed) the spring forces the diaphragm to the left, opening the power valve.

Whenever the power valve is opened additional fuel from the float bowl bypasses the main jet to enrich the high-speed mixuture.

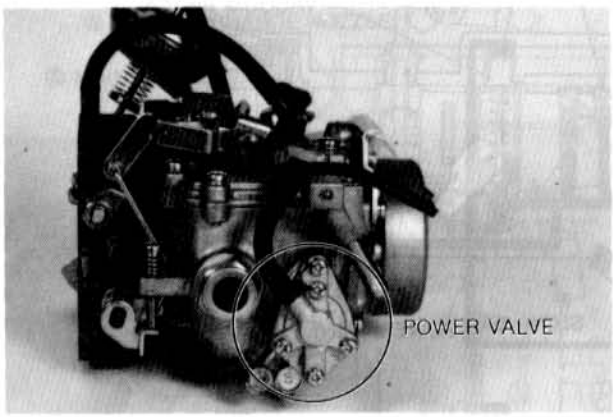


Fig 2-34

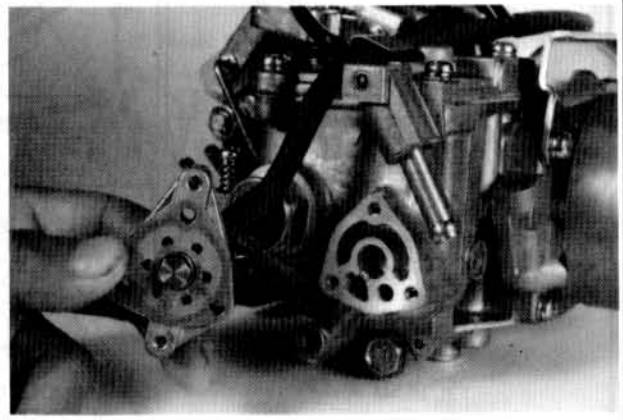


Fig 2-35

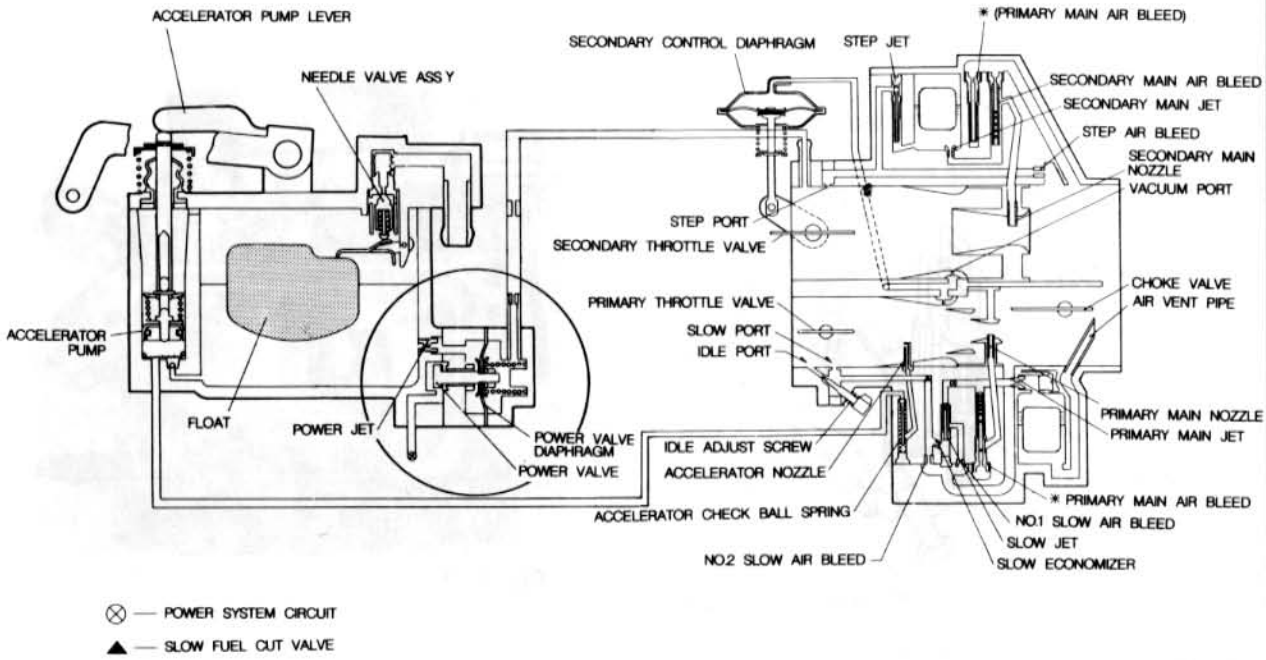


Fig 2-36

SYSTEM OPERATION

8. ENRICHMENT SYSTEM

POWER VALVE OPERATION (PISTON WITH SOLENOID, RX-7)

The power valve opens under certain conditions when the solenoid is energized. Refer to the workshop manual for details.

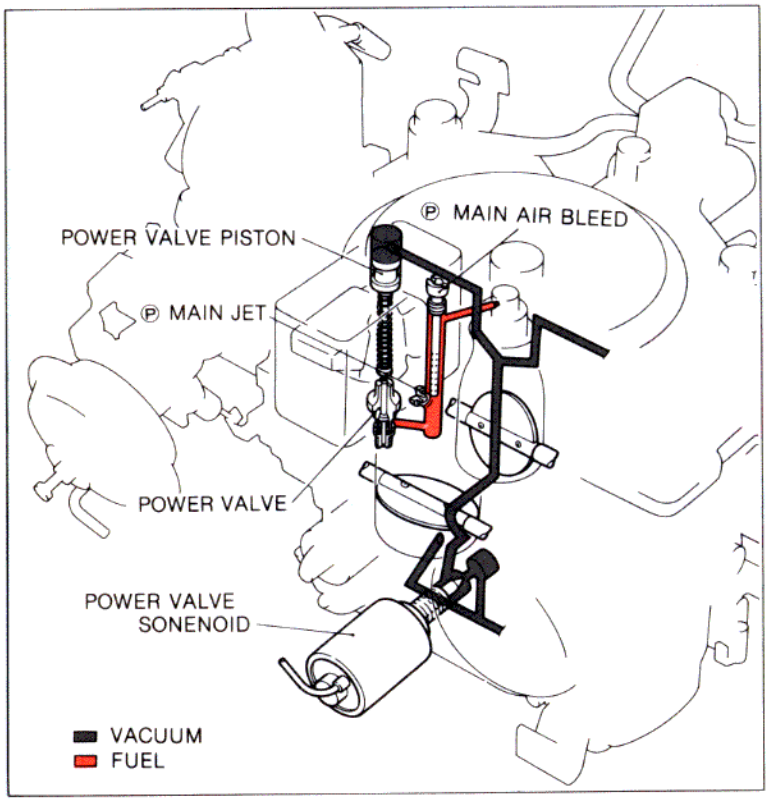


Fig 2-37

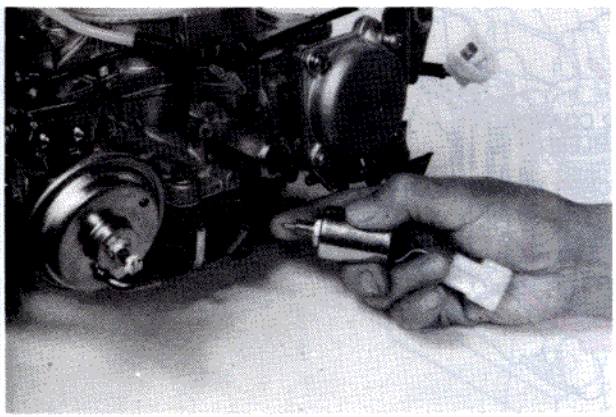


Fig 2-38

SYSTEM OPERATION

8. ENRICHMENT SYSTEM

COASTING RICHER (RX-7)

The coasting richer works during specified engine speed under deceleration to prevent afterburn. The coasting richer valve, upon a signal from the control unit, opens the fuel passage to the port located below the closed secondary throttle valve to supply additional fuel and provide an optimum fuel-air ratio.

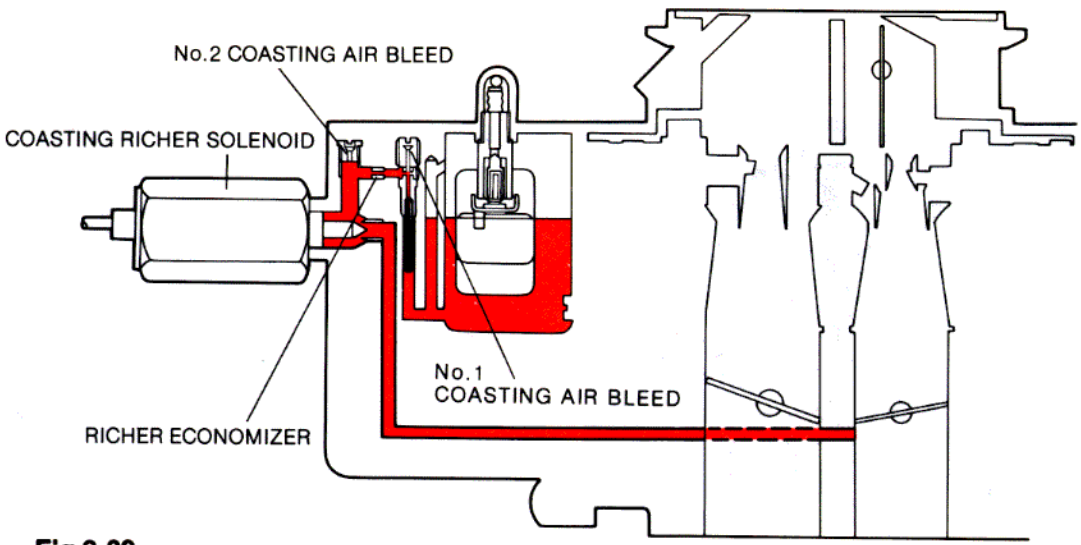


Fig 2-39

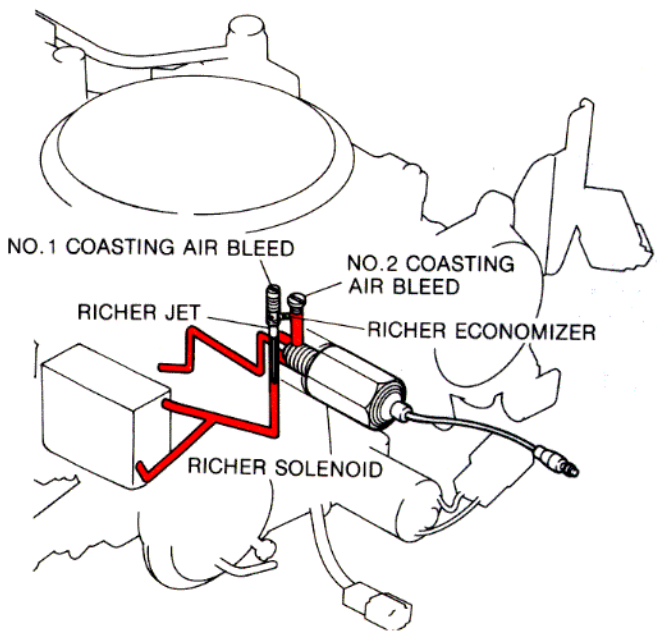


Fig 2-40

SYSTEM OPERATION

9. ACCELERATING PUMP SYSTEM

ACCELERATING PUMP OPERATION (PLUNGER TYPE)

The accelerating pump is operated by the primary throttle shaft through a connecting rod and pump arm. When the throttle valve is closed, the pump plunger is raised and fuel is drawn into the pump cylinder through an inlet check ball. When the throttle valve is opened, the pump plunger is moved downward.

This motion seats the inlet check ball and forces fuel through the discharging passage, where it unseats the outlet check ball and passes on through to the nozzle in the venturi.

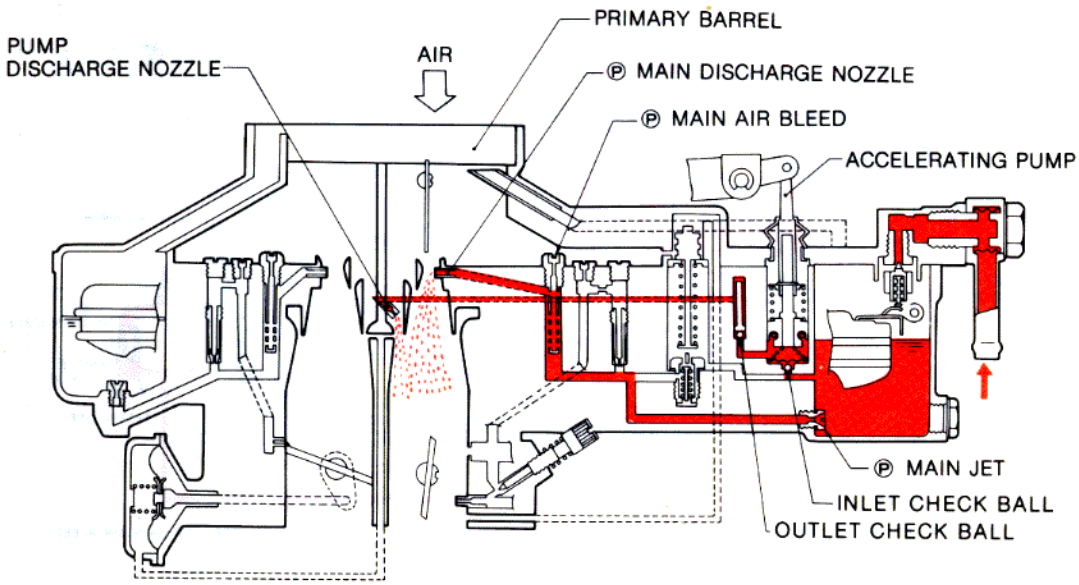


Fig 2-41

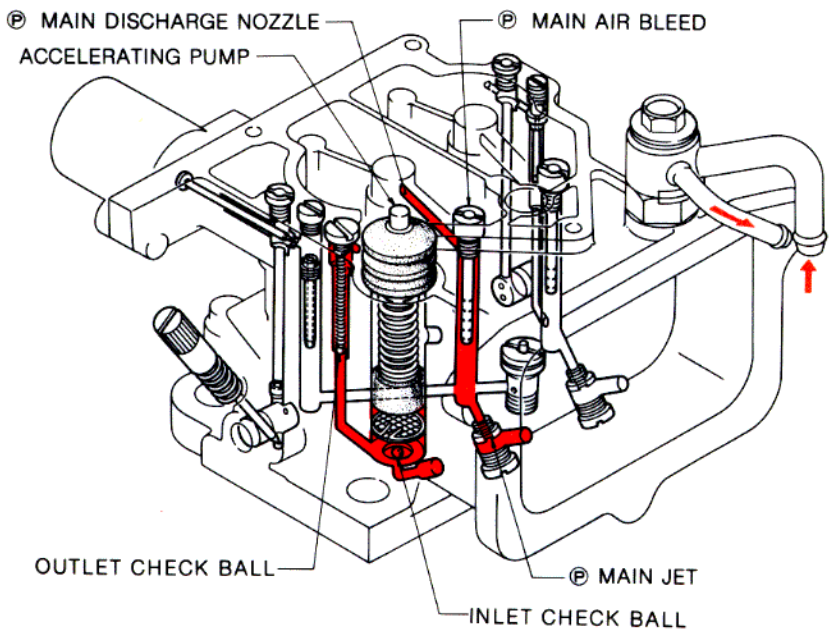


Fig 2-42

SYSTEM OPERATION

9. ACCELERATING PUMP SYSTEM

ACCELERATING PUMP (DIAPHRAGM TYPE RX-7 E2000)

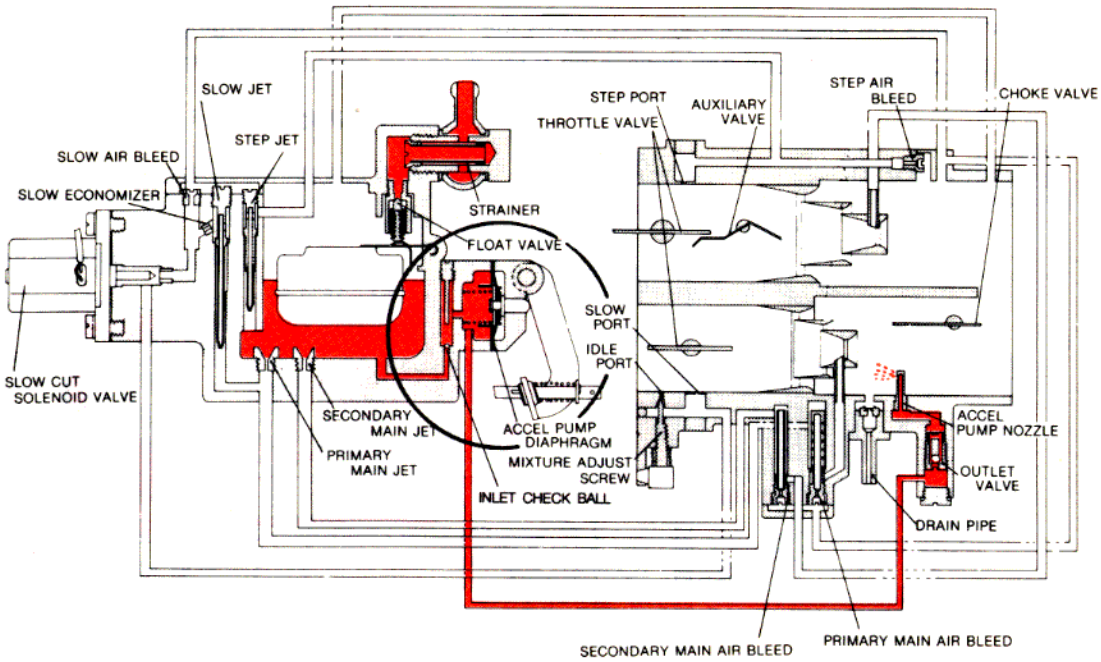


Fig 2-43

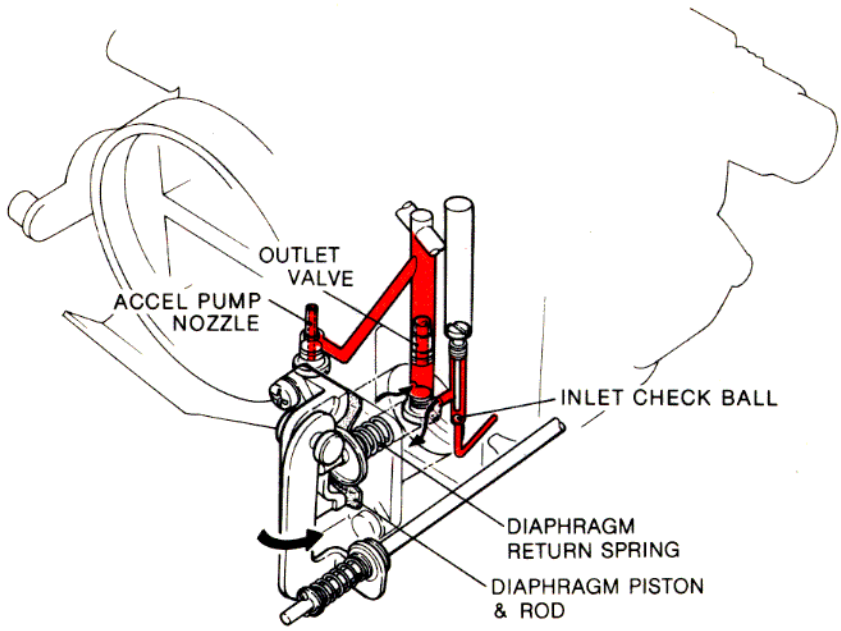


Fig 2-44

SYSTEM OPERATION

10. CHOKE SYSTEM

MANUAL CHOKE

The choke is actuated by a control wire. When the choke is closed the throttle valve shaft is rotated by the fast idle rod and the throttle valve is slightly opened. During cranking, engine vacuum below the choke valve pulls fuel from the idle circuit and main discharge nozzle providing adequate enrichment for a good cold start.

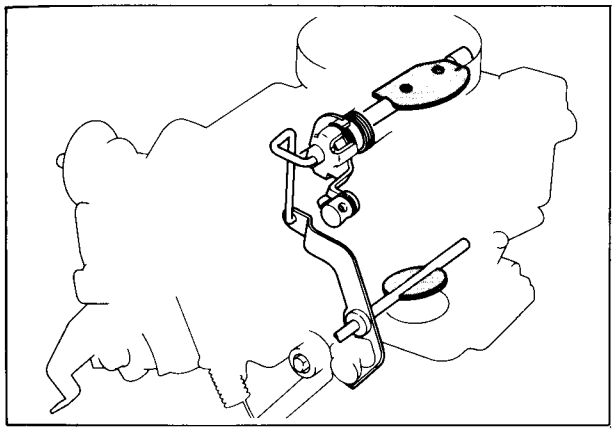


Fig 2-45

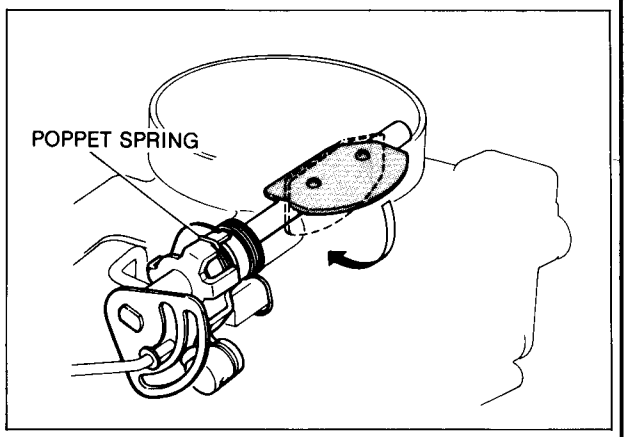


Fig 2-46

As soon as the engine starts (as intake manifold vacuum overcomes the choke break diaphragm spring tension), the choke break diaphragm partially opens the choke valve. Also, the offset choke valve spring tension is relieved by manifold vacuum to partially open the choke valve.
This helps prevent an over-rich mixutre.

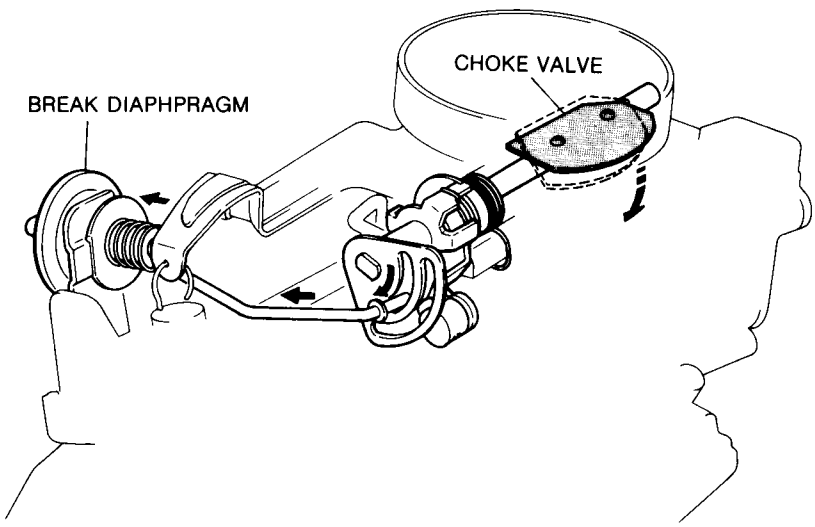


Fig 2-47

SYSTEM OPERATION

10. CHOKE SYSTEM

AUTOMATIC CHOKE OPERATION (626 GLC B2000)

To close the choke valve, depress the accelerator pedal fully. This allows the fast idle lever to clear the steps of the fast idle cam.

At this point, tension of the bi-metal will rotate the choke valve to the closed position. It also rotates the fast idle cam so the high step lines up with the fast idle cam on the throttle lever.

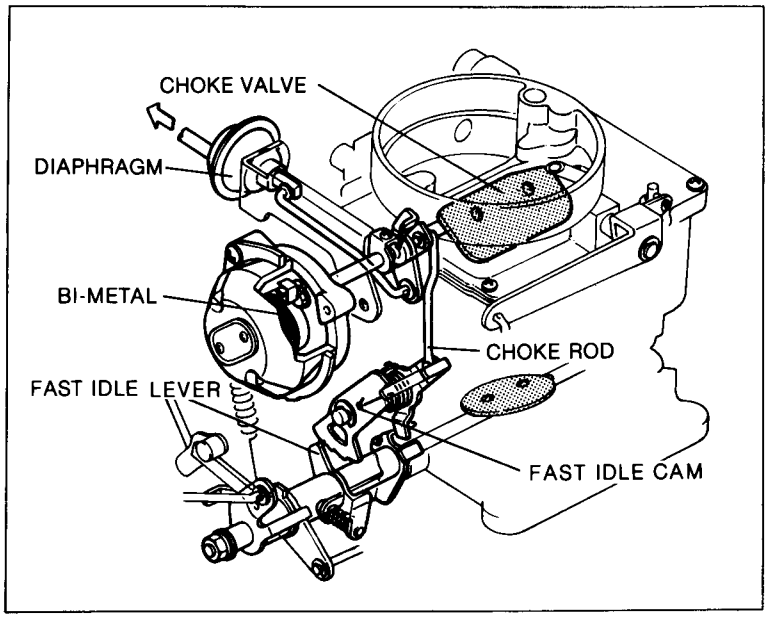


Fig 2-48

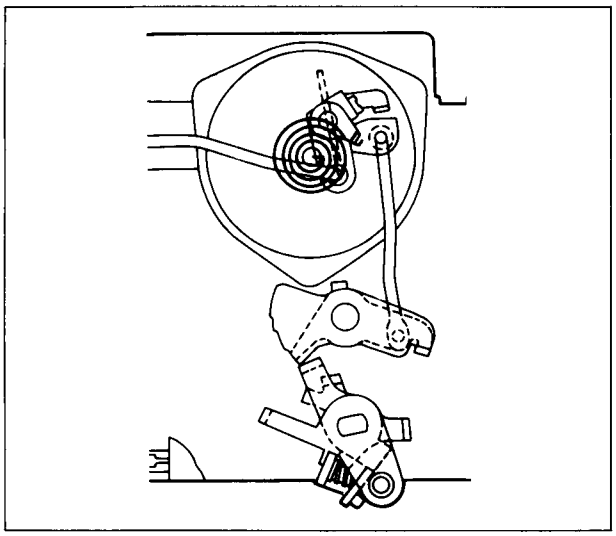


Fig 2-49

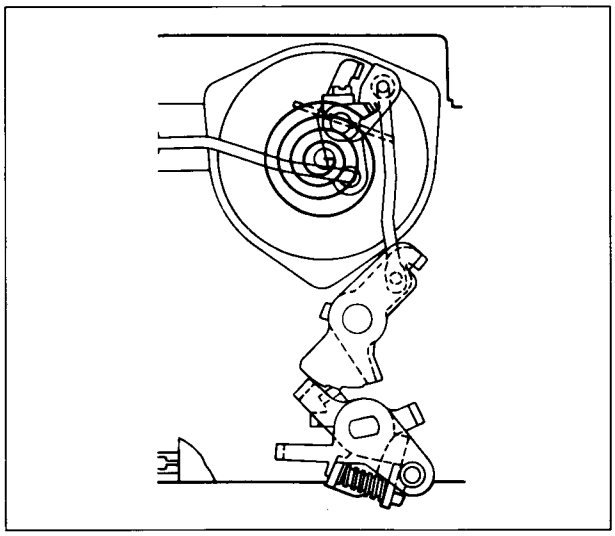


Fig 2-50

SYSTEM OPERATION

10. CHOKE SYSTEM

During engine cranking, the closed choke valve restricts air flow through the carburetor bore to provide a richer mixture.
When the engine starts, the choke break diaphragm partially opens the choke valve as intake manifold vacuum overcomes the diaphragm's spring tension.

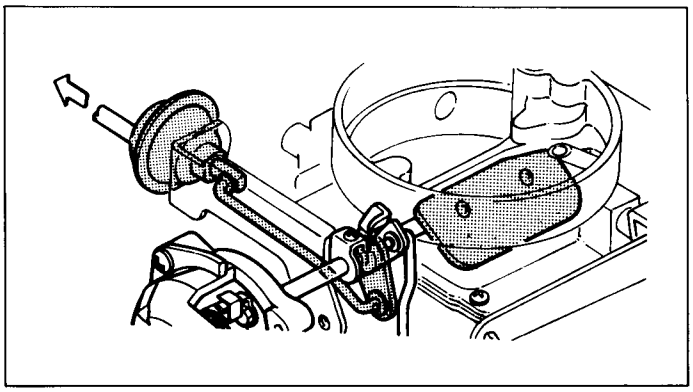


Fig 2-51

An electric heater in the choke bi-metal cover warms a bi-metal piece which controls the positions of the choke valve and throttle valve in accordance with the time elapsed, the warm-up condition of the engine, and the outside ambient temperature.

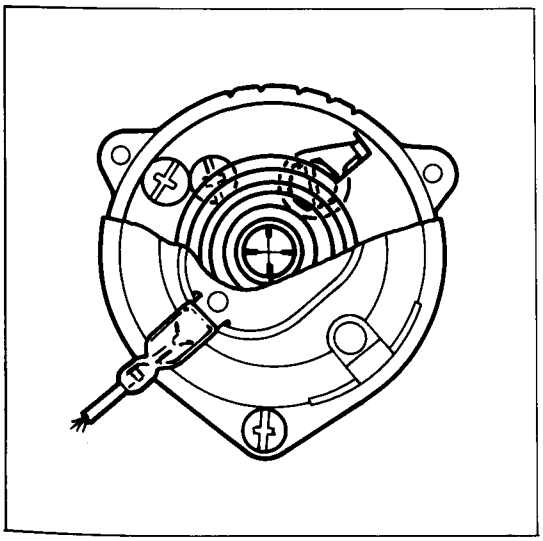


Fig 2-52

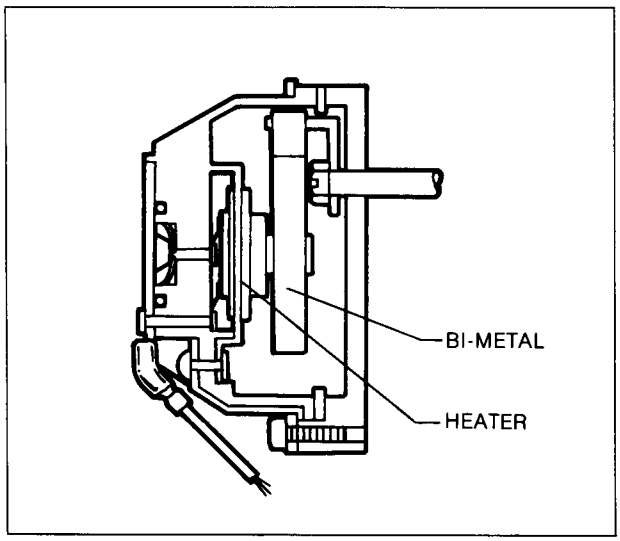


Fig 2-53

SYSTEM OPERATION

10. CHOKE SYSTEM

AUTOMATIC CHOKE : UNLOADER SYSTEM

If the engine becomes flooded during the starting period, the unloader partially opens the closed choke valve; allowing more air to lean out the over-rich mixture.

With the throttle valve fully open, a tang on the throttle lever contacts an arm on the fast idle cam and forces the choke valve partially open.

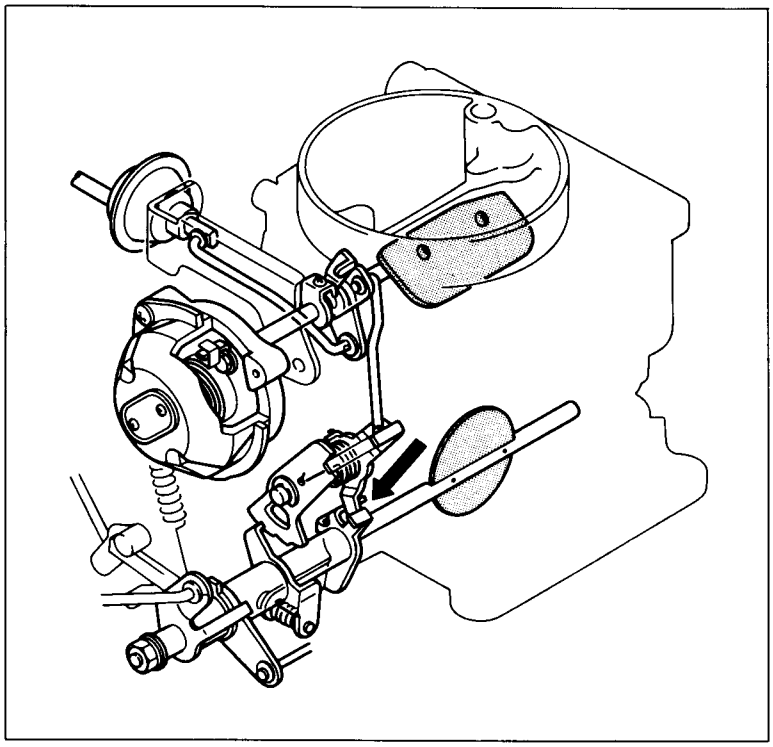


Fig 2-54

SYSTEM OPERATION

11. HOT START ASSIST SYSTEM (RX-7)

To start the engine easily under hot weather conditions, the throttle valve is opened by the hot start motor. The coolant temperature controls the opening.

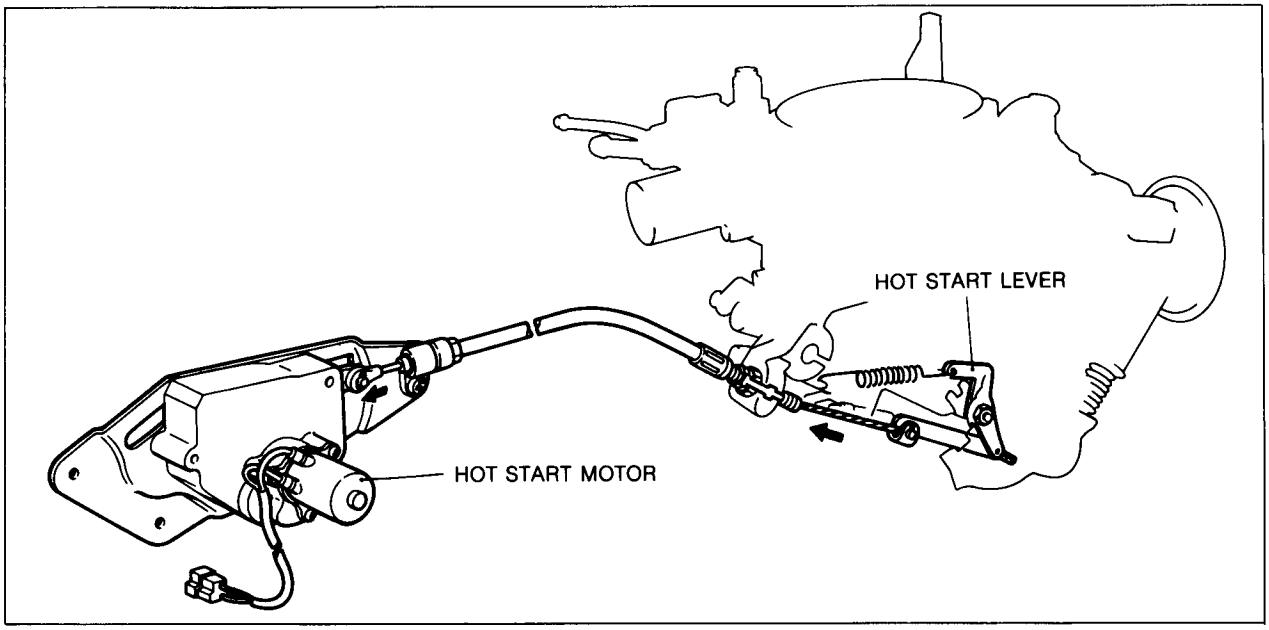


Fig 2-55

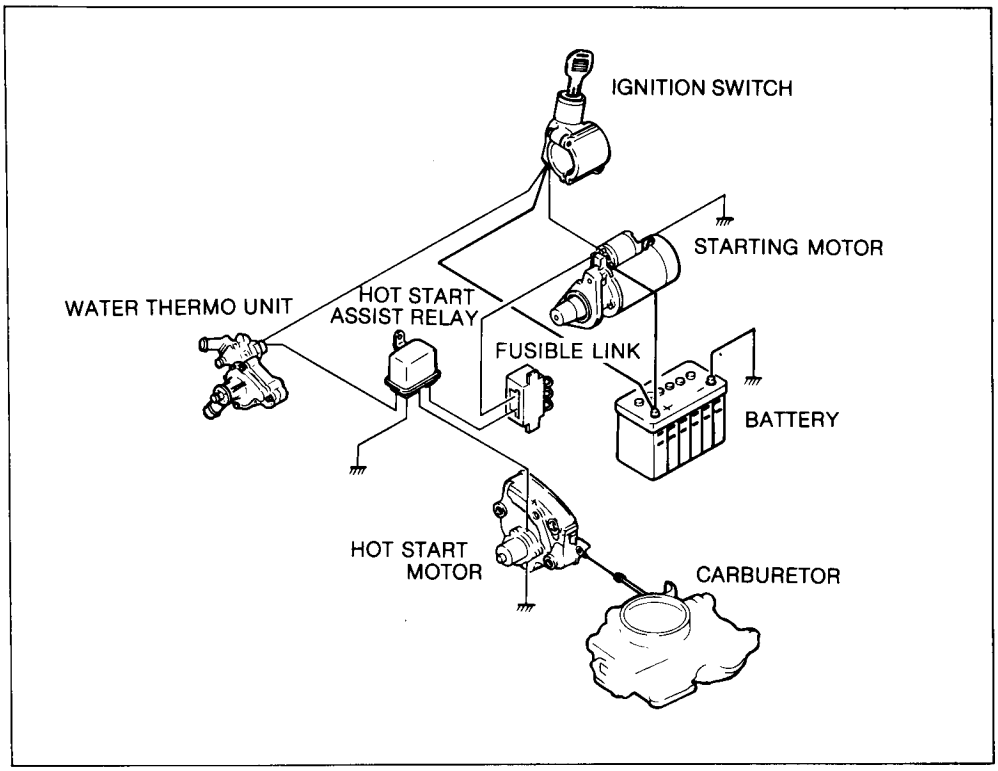


Fig 2-56

SYSTEM OPERATION

12. SUB-ZERO START ASSIST SYSTEM (RX-7)

To start the engine easily under severely cold weather conditions, starting assist fluid is supplied to the primary side of the carburetor to obtain good compression pressure.

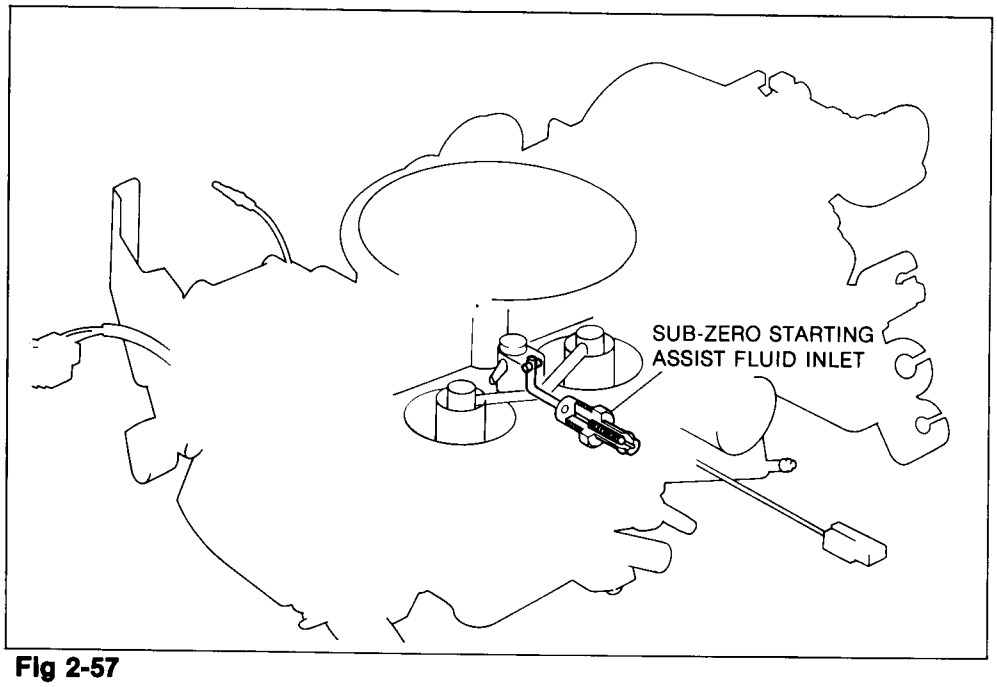


Fig 2-57

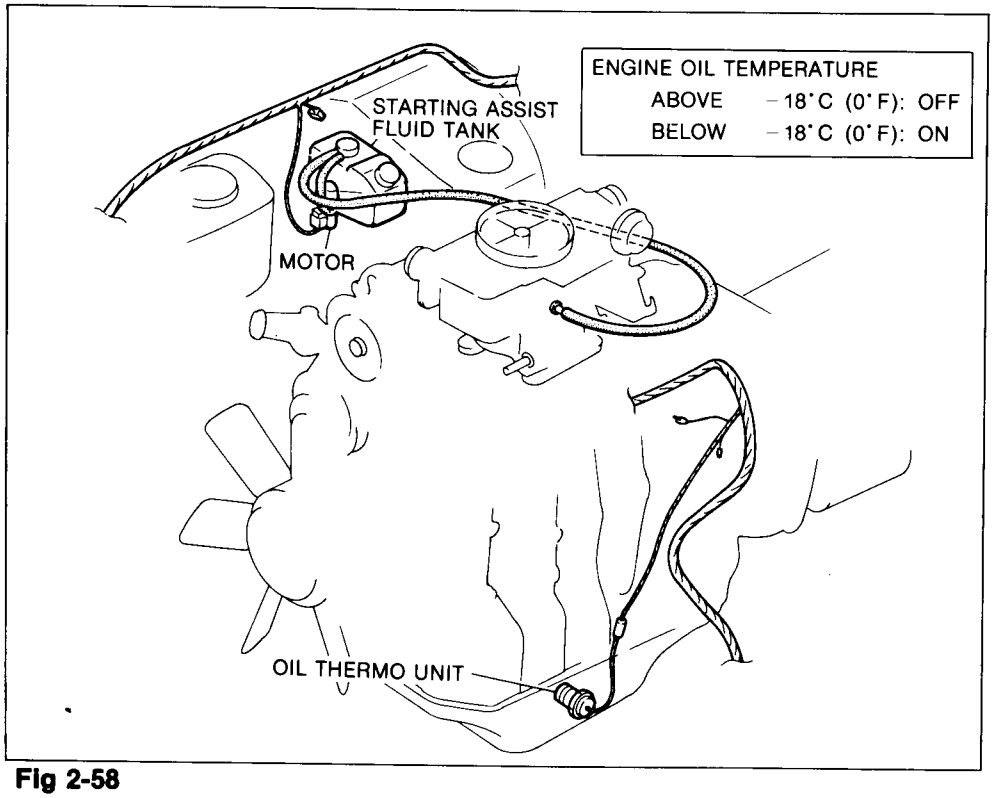


Fig 2-58

SYSTEM OPERATION

13. CLOSED AIR VENT SYSTEM (RX-7)

The float chamber air vent is opened by means of a solenoid valve. This connects the float chamber with the charcoal canister when the engine is not running or with the choke chamber when it is running.
Therefore, the fuel vapor in the float chamber is led into the canister and absorbed in charcoal when the engine is not running.

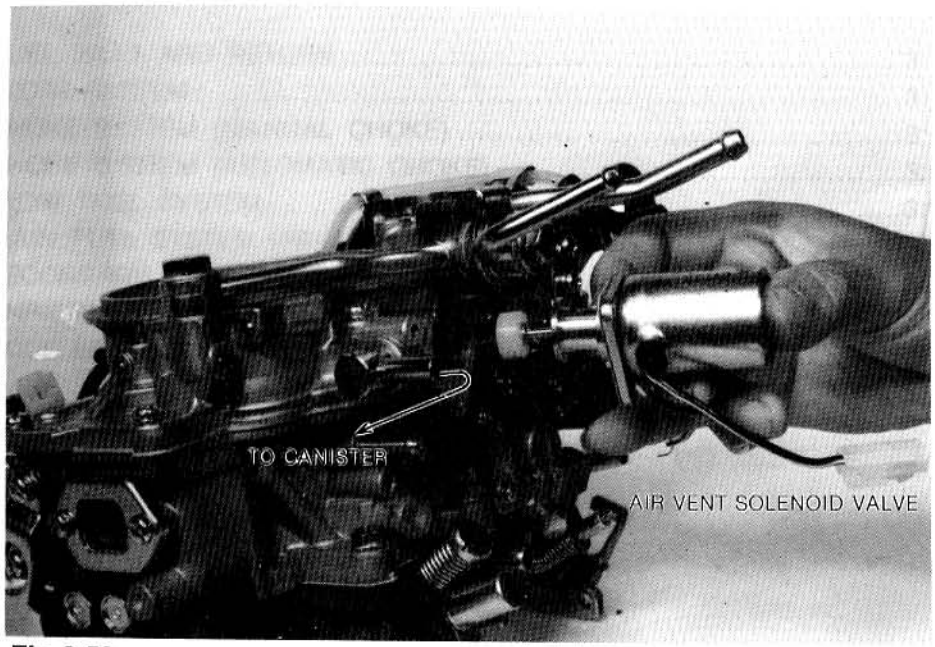


Fig 2-59

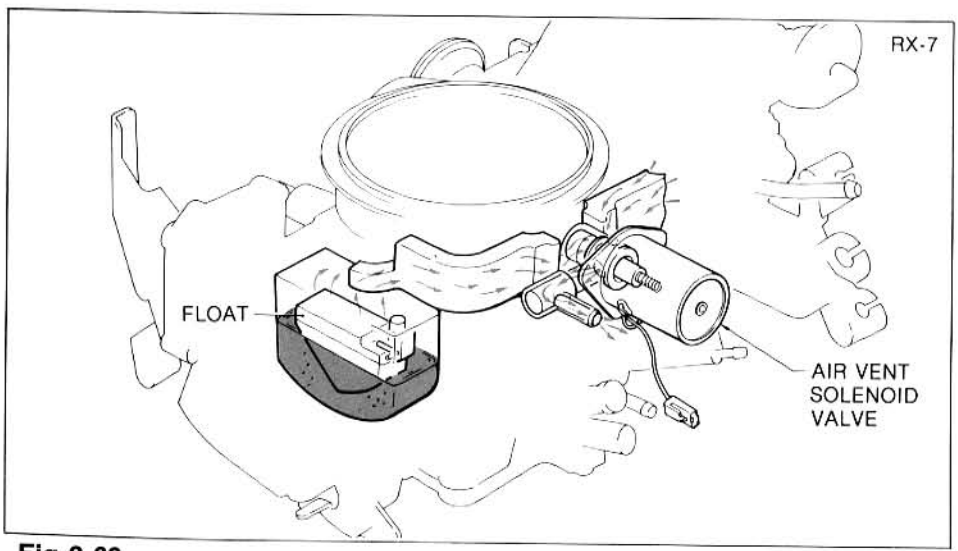


Fig 2-60

INSPECTION AND ADJUSTMENT

INSPECTION AND ADJUSTMENT

1. FUEL INLET AND RETURN

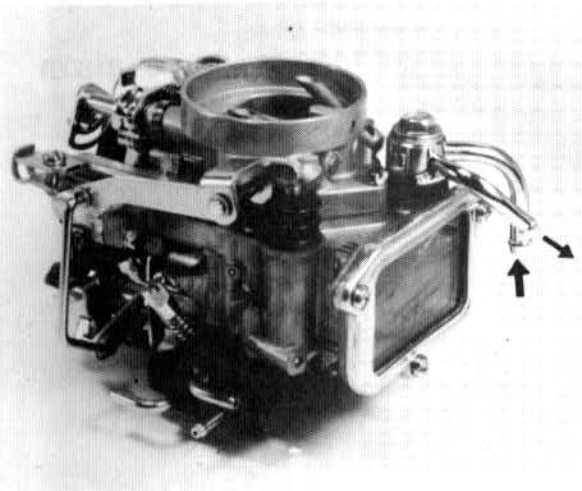


Fig 3-1

FUEL LINES

Large diameter: Inlet from fuel pump
Small diameter: Return to fuel tank

Fig 3-2

Fig 3-3

RESTRICTED FUEL FLOW

Clogged, rusted or damaged fuel strainer
Foreign matter (dirt, rust, etc.) in fuel lines, filter or tank

INSPECTION AND ADJUSTMENT

2. FLOAT SYSTEM

FUEL LEVEL ADJUSTMENT (NIKKI)

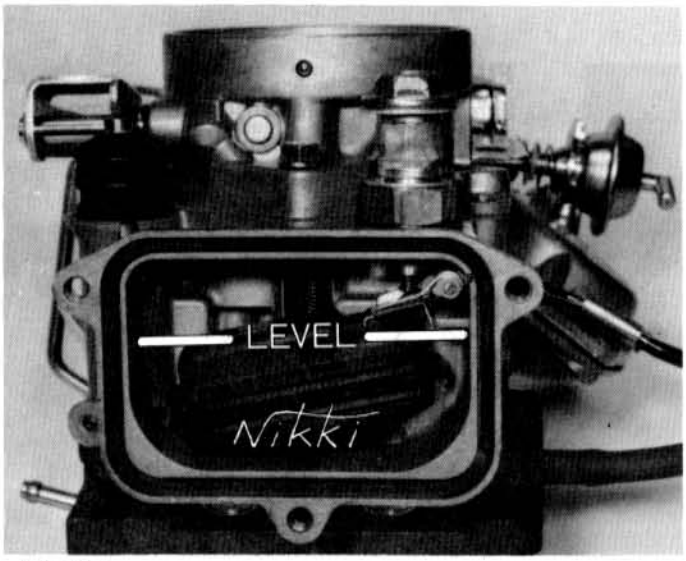


Fig 3-5

With the engine operating, check the fuel level through the fuel level sight glass.
(121, 929L, 626, B1600, B1800)

Float Level

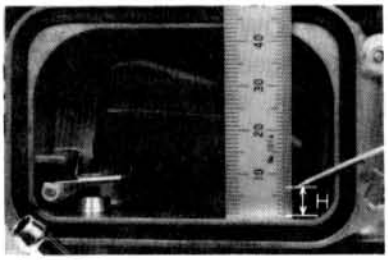


Fig 3-6

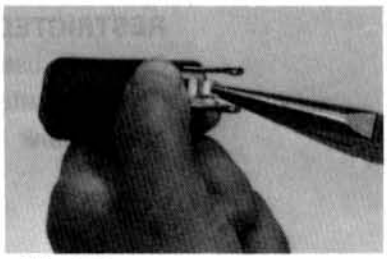


Fig 3-7

Fig 3-8

Float Drop

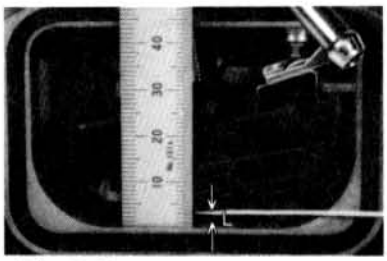


Fig 3-9

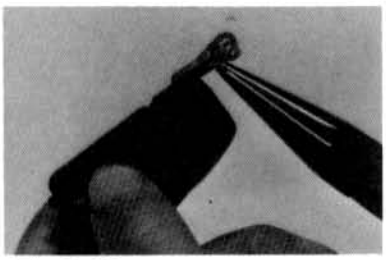


Fig 3-10

Adjust fuel level by bending the float stopper or seat lip in the proper direction.

INSPECTION AND ADJUSTMENT

2. FLOAT SYSTEM

FUEL LEVEL ADJUSTMENT (HITACHI)

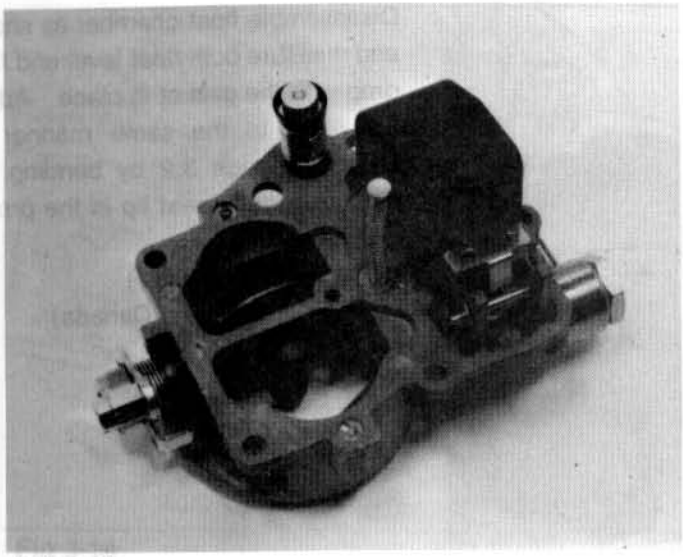


Fig 3-11

With the engine operating, check the fuel level through the fuel level sight glass.
(323, GLC, E1300)

Adjust fuel level by carefully bending the float stopper or seat lip in the proper direction.

Float Level

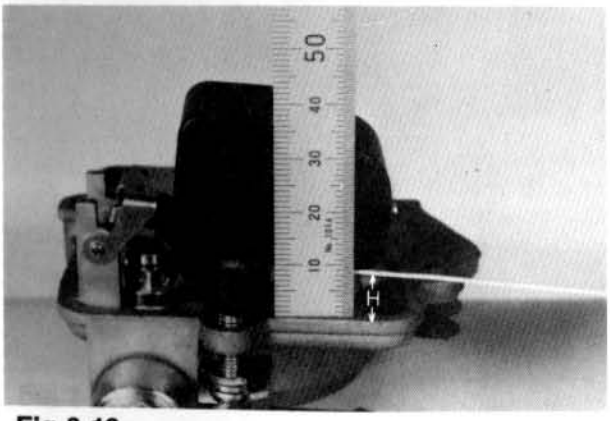


Fig 3-12

Fig 3-13

Measure without the gasket.

Float Drop

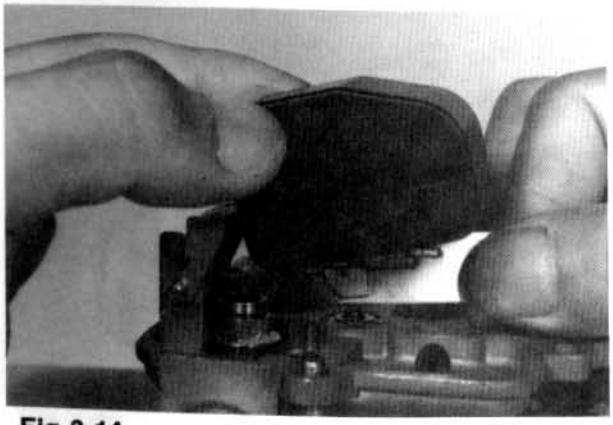


Fig 3-14

Fig 3-15

INSPECTION AND ADJUSTMENT

2. FLOAT SYSTEM

FUEL LEVEL ADJUSTMENT (NIKKI)

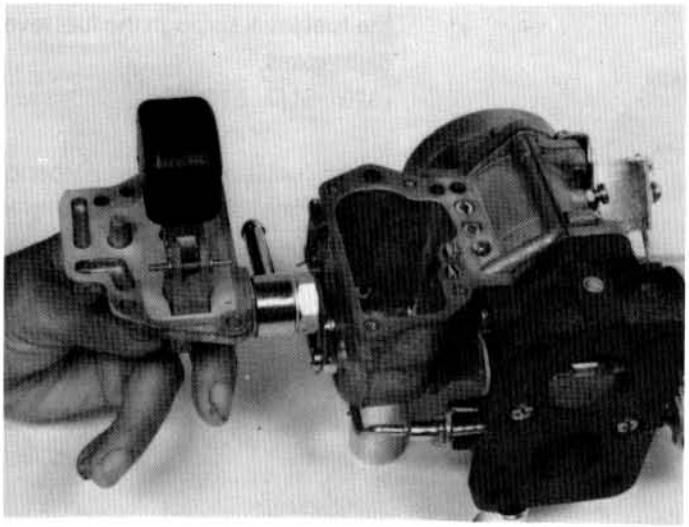
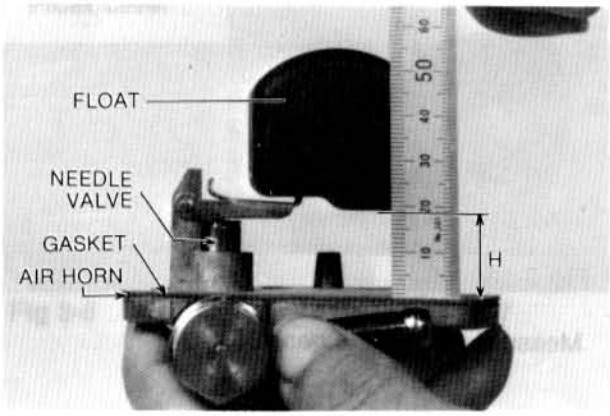


Fig 3-16

Disassemble float chamber as shown and measure both float level and float drop with the gasket in place. Adjust fuel level in the same manner as shown on page 3:2 by bending the float stopper or seat lip in the proper direction.
(RX-7, E2000, E1600.)
(626 for U.S.A. and Canada)

Float Level



Float Drop

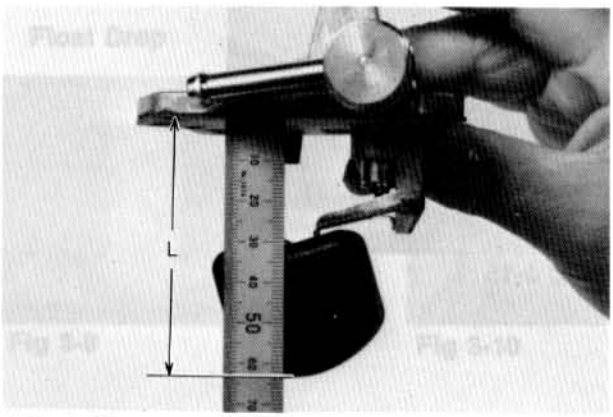


Fig 3-18

INSPECTION AND ADJUSTMENT

2. FLOAT SYSTEM

NEEDLE VALVE AND FLOAT

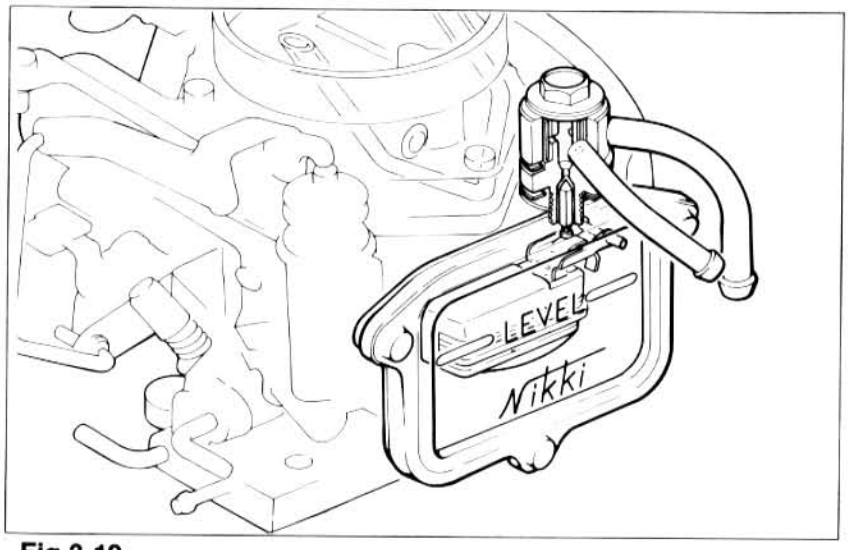


Fig 3-19

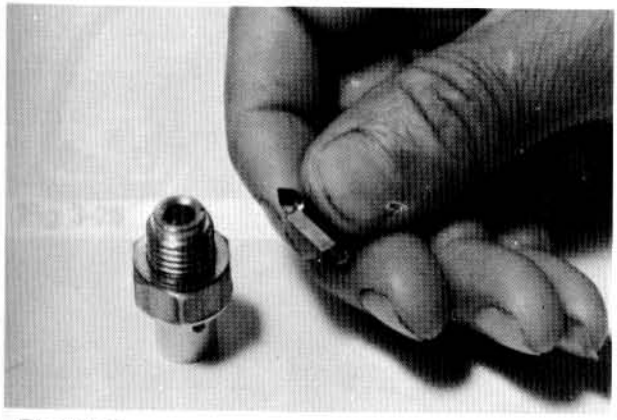


Fig 3-20

Valve seat and needle: Sticking, excessive wear, scratches

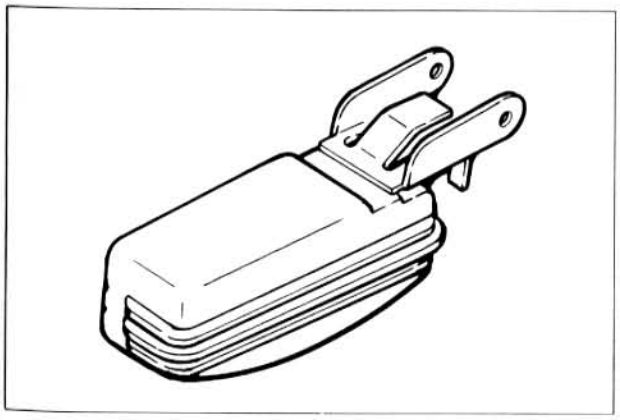


Fig 3-21

Float: Deformed, damaged stopper, worn lever pin bore, leaks

INSPECTION AND ADJUSTMENT

3. CHOKE SYSTEM (MANUAL CHOKE)

CHOKE VALVE AND SHAFT

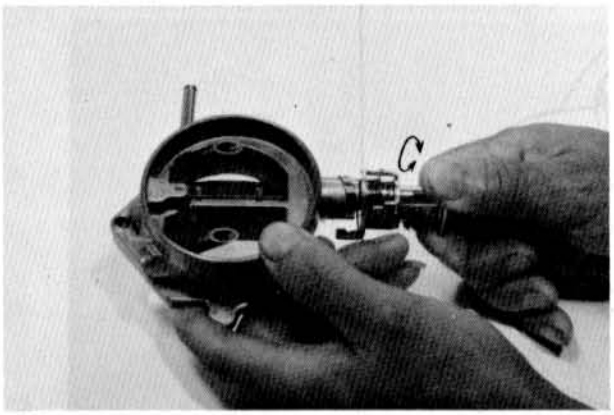


Fig 3-22

Sticking or not fitting properly: Worn or bent shaft

FAST IDLE ADJUSTMENT

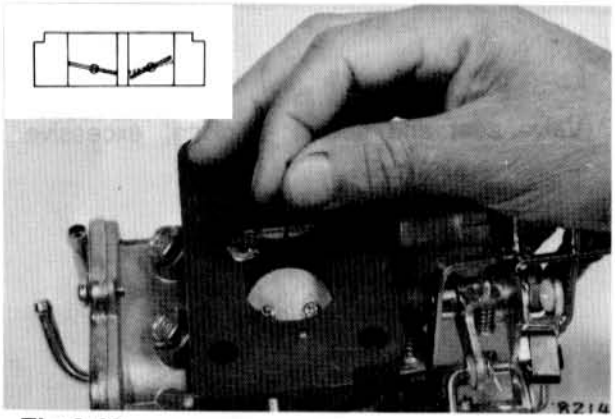


Fig 3-23

With the choke valve fully closed, measure the clearance between the primary throttle valve and the wall of the throttle bore.

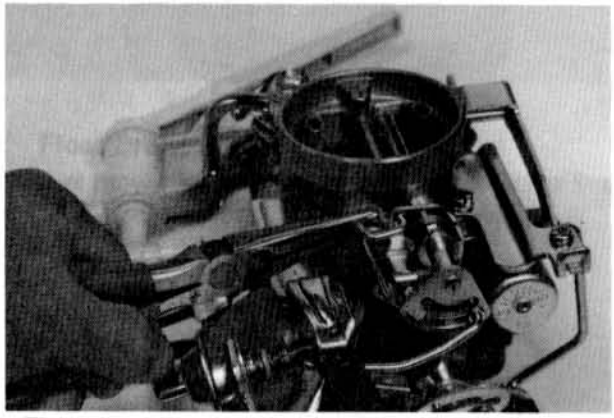


Fig 3-24

Bend the connecting rod.

INSPECTION AND ADJUSTMENT

3. CHOKE SYSTEM (MANUAL CHOKE)

CHOKE VACUUM BREAK DIAPHRAGM ADJUSTMENT

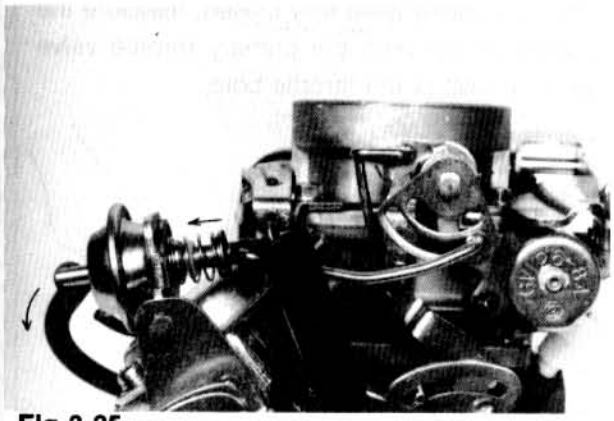


Fig 3-25

Apply vacuum or push in.

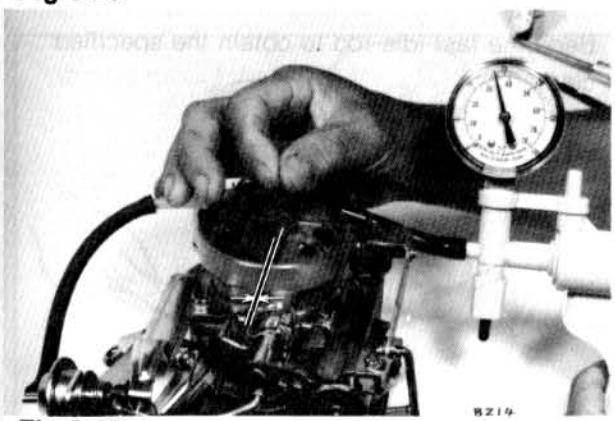


Fig 3-26

With the choke valve fully closed, apply vacuum to the vacuum break diaphragm.
Check clearance.

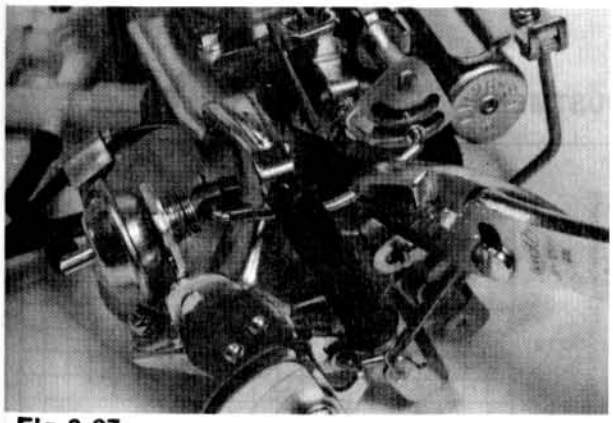


Fig 3-27

Adjust the clearance by bending the connecting rod.

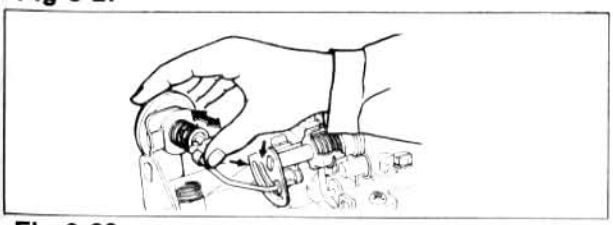


Fig 3-28

Lower: Cold weather country.
Upper: Hot weather country.

INSPECTION AND ADJUSTMENT

3. CHOKE SYSTEM (MANUAL CHOKE : RX-7)

FAST IDLE ADJUSTMENT

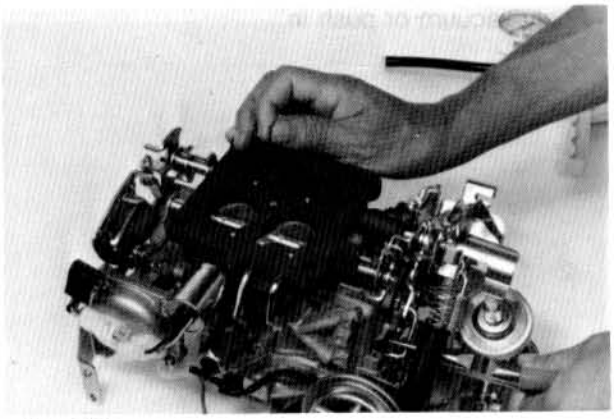


Fig 3-29

With the choke valve fully closed, measure the clearance between the primary throttle valve and the wall of the throttle bore.

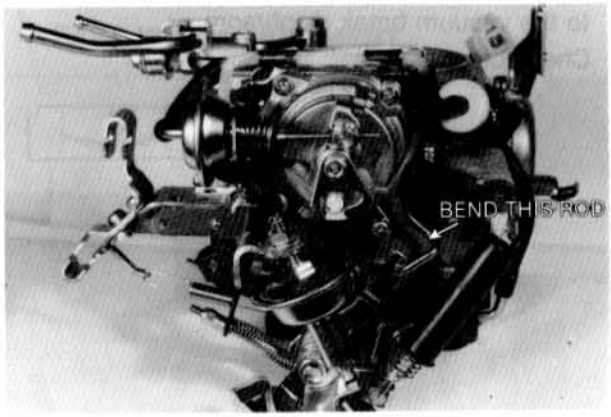


Fig 3-30

Bend the fast idle rod to obtain the specified clearance.

CHOKE VACUUM BREAK DIAPHRAGM ADJUSTMENT

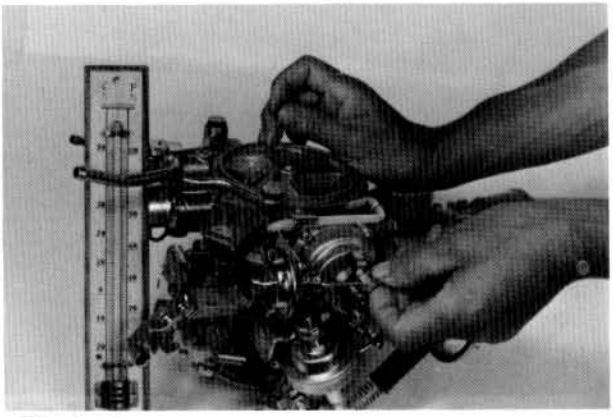


Fig 3-31

With the choke valve fully closed, apply the specified vacuum to the vacuum diaphragm.

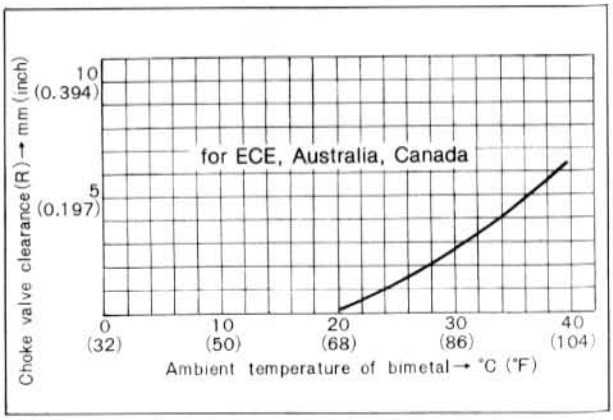


Fig 3-32

Measure the ambient temperature and check the clearance with the specifications.

INSPECTION AND ADJUSTMENT

3. CHOKE SYSTEM (AUTOMATIC CHOKE: 626, GLC, B2000)

FAST IDLE CAM ADJUSTMENT

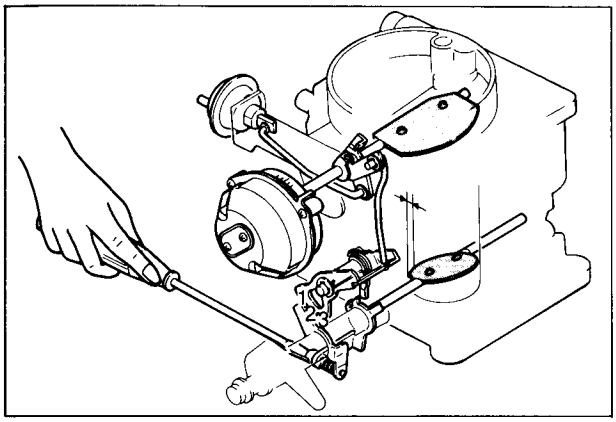


Fig 3-33

With the choke valve fully closed, position the fast idle cam on the
2nd postion - '80 model
1st position - '79 model

626:
Turn adjusting screw to obtain the specified clearance.

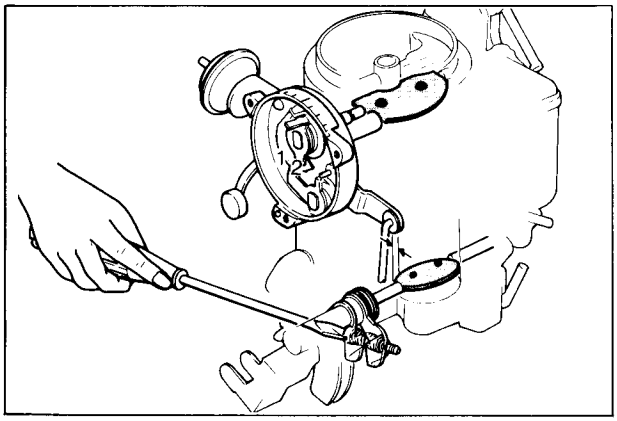


Fig 3-34

GLC:
Turn adjusting screw to obtain the specified clearance.

INSPECTION AND ADJUSTMENT

3. CHOKE SYSTEM (AUTOMATIC CHOKE: 626, GLC, B2000)

CHOKE VALVE ADJUSTMENT

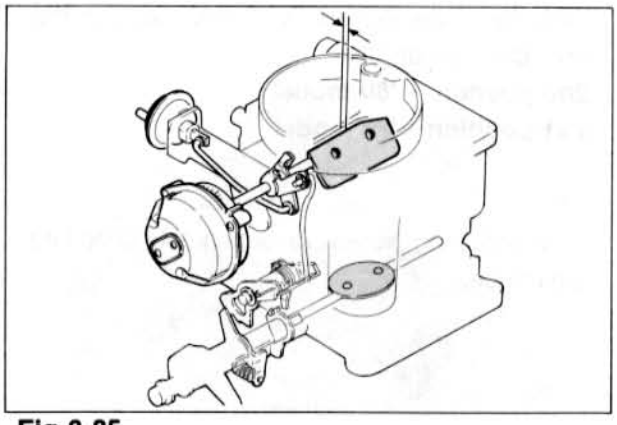


Fig 3-35

After confirming the fast idle cam adjustment, position the fast idle cam select arm on the:
2nd position -- '80 model
1st position -- '79 model

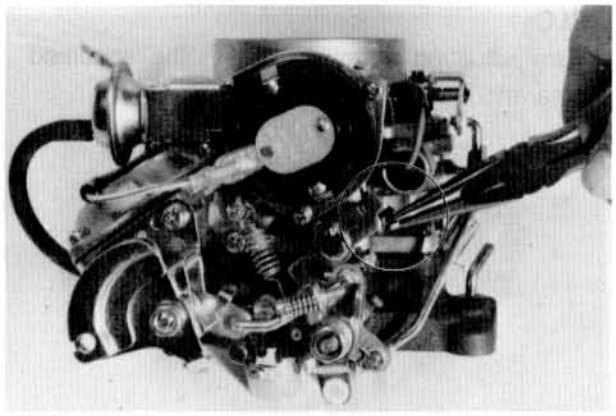


Fig 3-36

626, B2000:
Adjust the choke valve opening clearance by bending the starting arm.

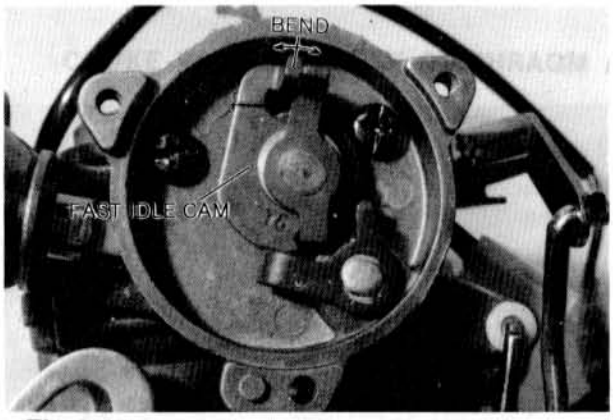


Fig 3-37

GLC:
Adjust the choke valve opening clearance by bending the fast idle cam.

INSPECTION AND ADJUSTMENT

3. CHOKE SYSTEM (AUTOMATIC CHOKE: 626, GLC, B2000)

CHOKE VACUUM BREAK DIAPHRAGM

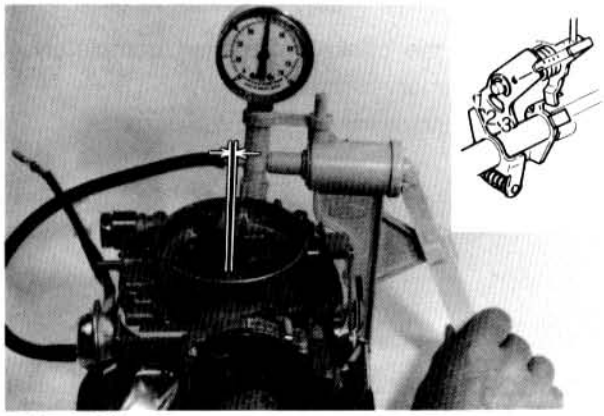


Fig 3-38

Position the fast idle cam select arm on the **1st position**

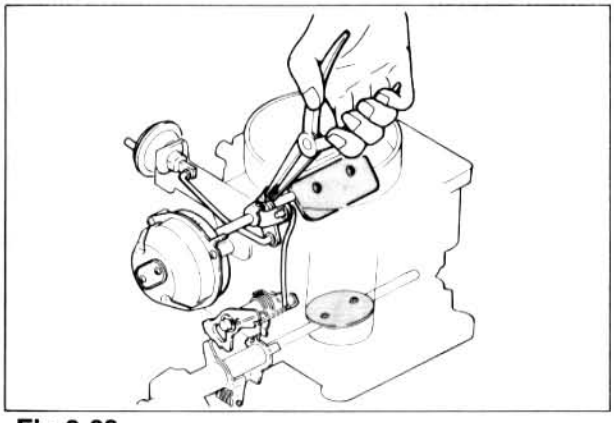


Fig 3-39

626, B2000:
Bend the choke lever to obtain the specified choke valve opening clearance.

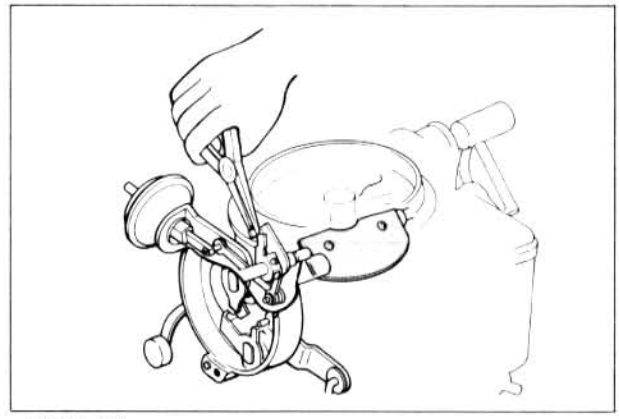


Fig 3-40

GLC:
Bend the choke lever to obtain the specified choke valve opening clearance.

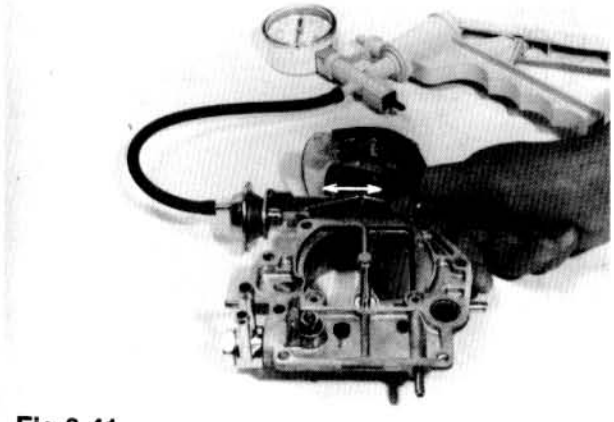


Fig 3-41

Should move smoothly. If not:
diaphragm is damaged or shaft is bent or rusted.

INSPECTION AND ADJUSTMENT

3. CHOKE SYSTEM (AUTOMATIC CHOKE: 626, GLC, B2000)

UNLOADER ADJUSTMENT

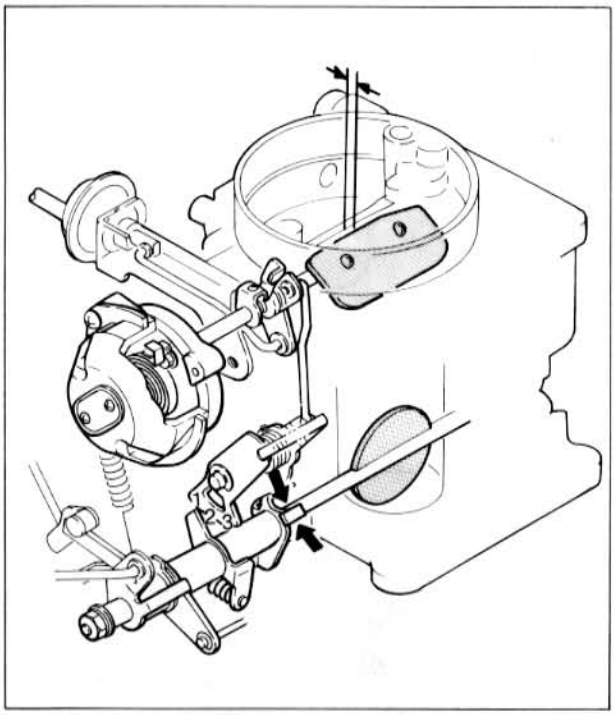


Fig 3-42

TO CHECK

Fully close the choke valve then completely open the primary throttle valve.
Check the choke valve opening clearance.

TO CORRECT

(626, B2000)
Bend the unloader adjusting lever.

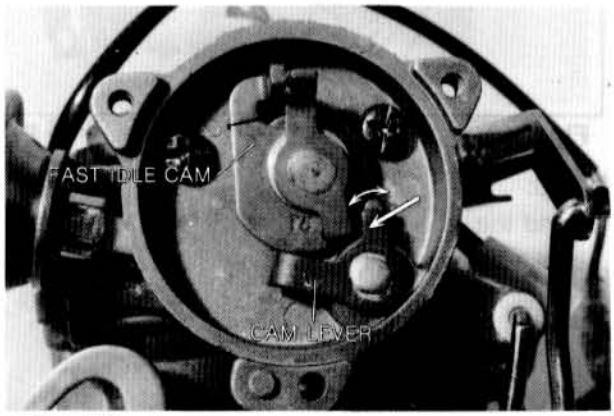


Fig 3-43

(GLC)
Bend the cam lever tab.

INSPECTION AND ADJUSTMENT

3. CHOKE SYSTEM (AUTOMATIC CHOKE : 626, GLC, B2000)

CHOKE BI-METAL COVER

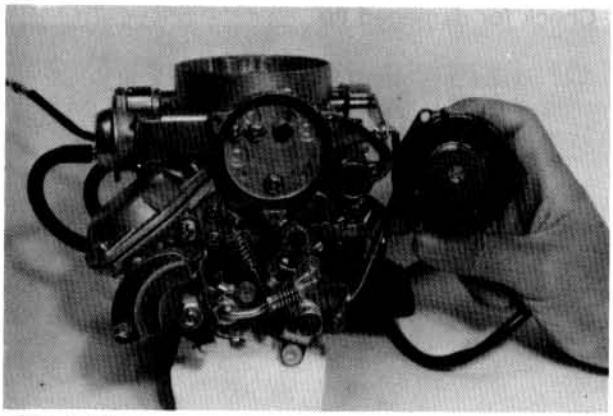


Fig 3-44

Check for cracked bimetal cover or incorrect spring tension on bi-metal.

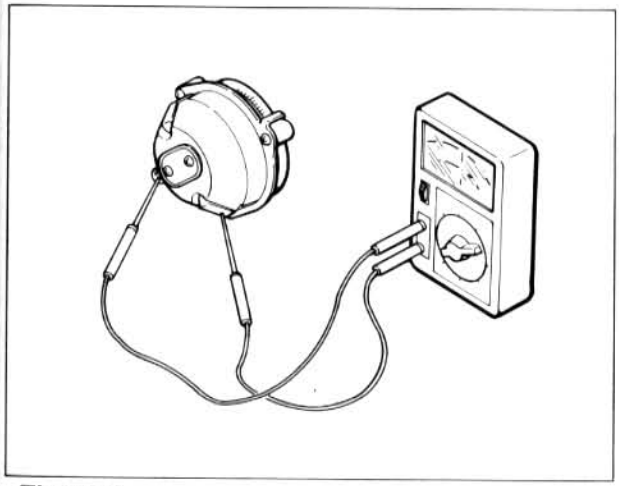


Fig 3-45

Check the choke heater resistance with an ohmmeter.

BI-METAL COVER INDEX MARK SET

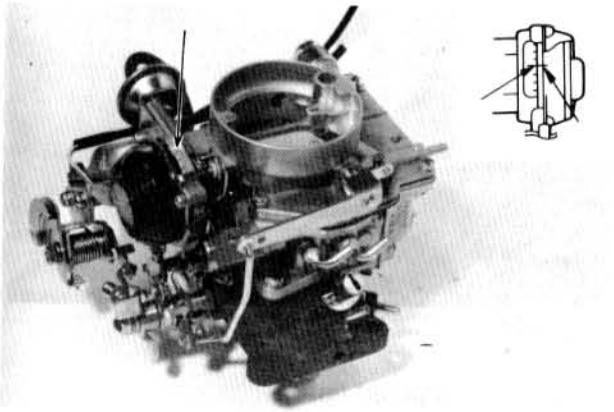


Fig 3-46

Set bi-metal cover index mark at the center of the choke housing.

Note:
Do not set at any position except the center of choke housing index mark.

INSPECTION AND ADJUSTMENT

4. SLOW FUEL SYSTEM

MIXTURE ADJUST SCREW AND AIR ADJUST SCREW ADJUSTMENT

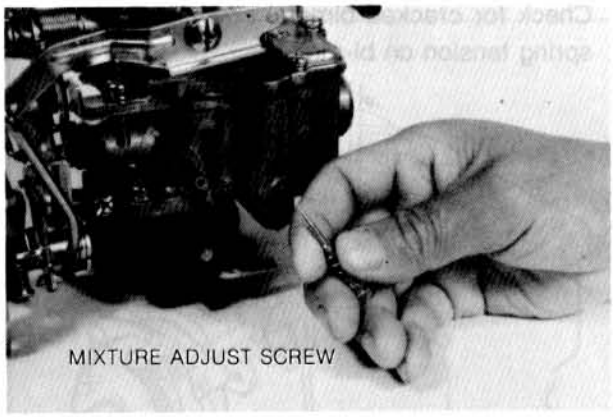


Fig 3-47

Check for damaged tip.

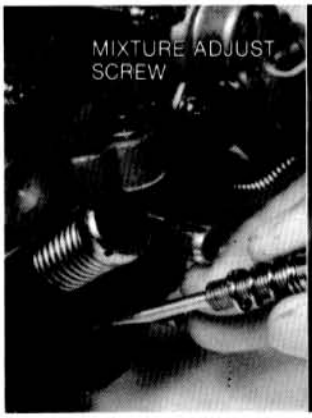


Fig 3-48

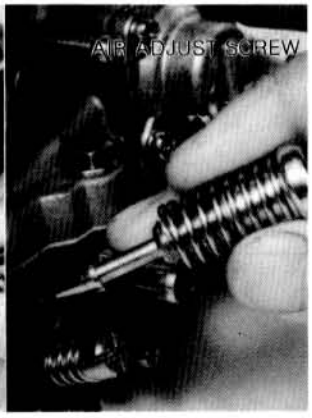


Fig 3-49

RX-7:
Check mixture and air adjust screws for damaged tips.

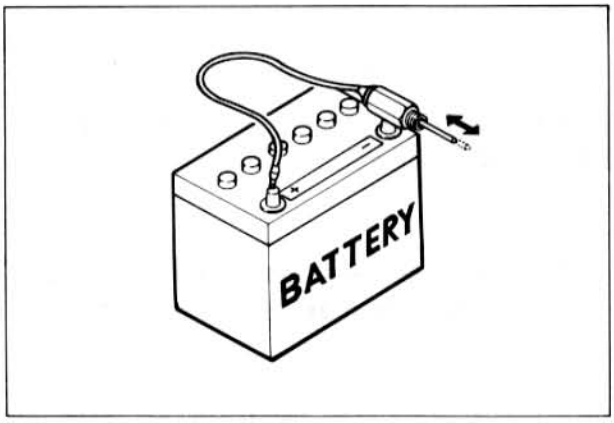


Fig 3-50

Should pull in when power is applied.
Check for damaged tip.

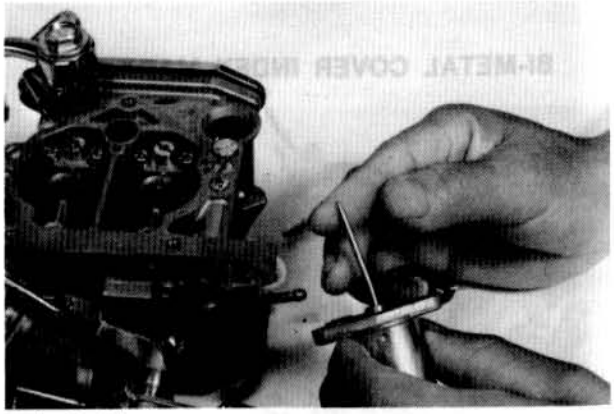


Fig 3-51

Damage at tapered tip.

INSPECTION AND ADJUSTMENT

5. MAIN FUEL SYSTEM (PRIMARY AND SECONDARY)

MAIN BODY

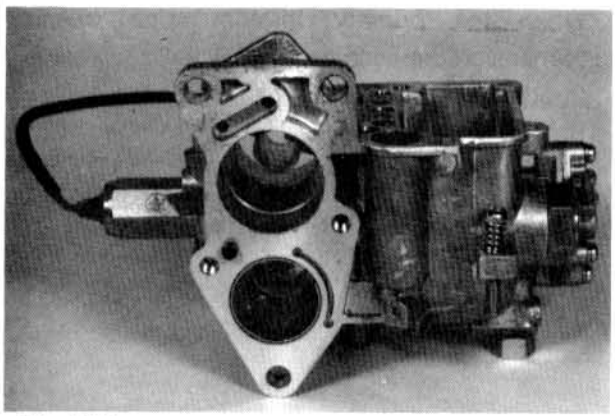


Fig 3-52

LEAKING FUEL AND/OR AIR

Damaged gasket

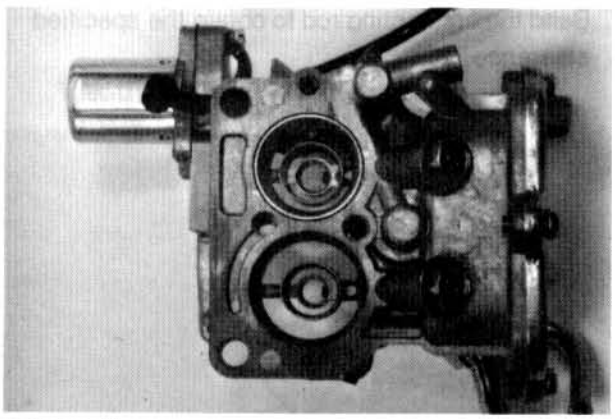


Fig 3-53

Cracks, nicks or burrs on gasket surface

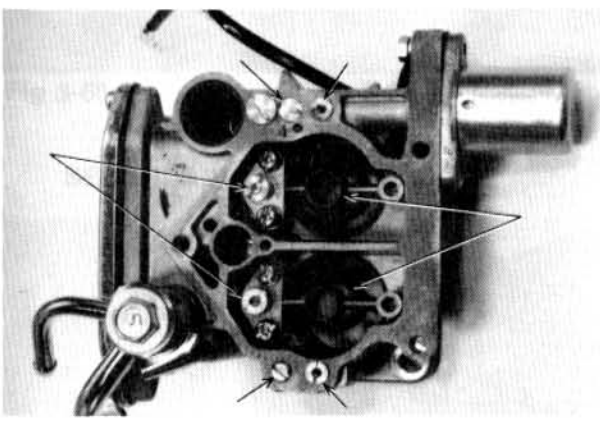


Fig 3-54

Damaged, clogged or loose jets

Damaged or scratched venturi

Nikki
- Primary jets: Yellow
- Secondary jets: white

Hitachi
- Primary jets: yellow
- Secondary jets: Yellow

INSPECTION AND ADJUSTMENT

6. SECONDARY THROTTLE VALVE

SECONDARY THROTTLE VALVE ADJUSTMENT

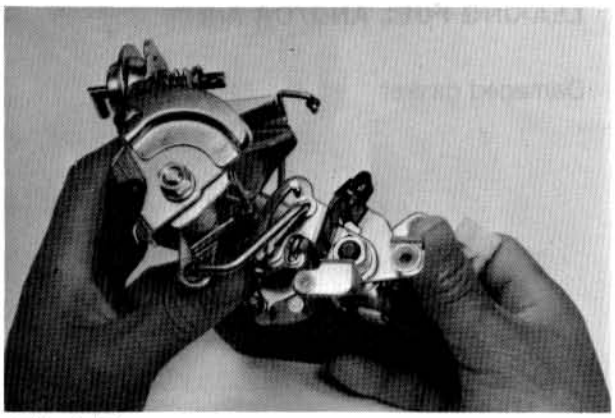


Fig 3-55

When the primary throttle valve opens (dimension depends on model) the secondary throttle valve or lock-out also begins opening. Both primary and secondary valves open fully simultaneously.

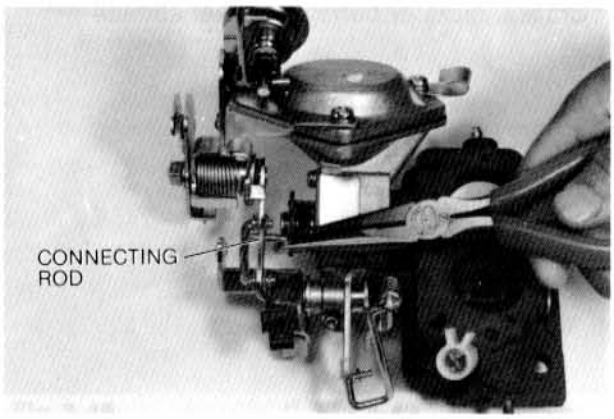


Fig 3-56

Bend the connecting rod to obtain the specified clearance.

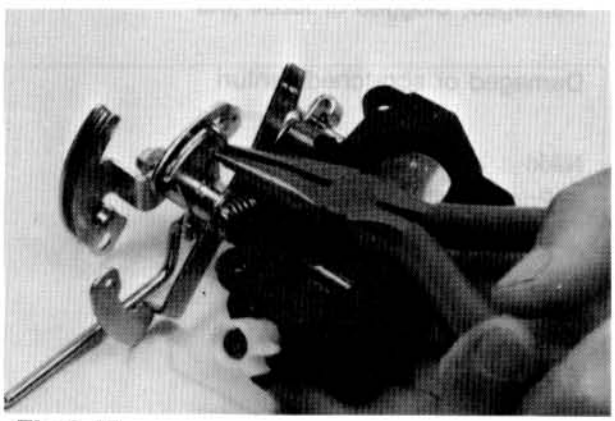


Fig 3-57

INSPECTION AND ADJUSTMENT

6. SECONDARY THROTTLE VALVE

LINKAGE

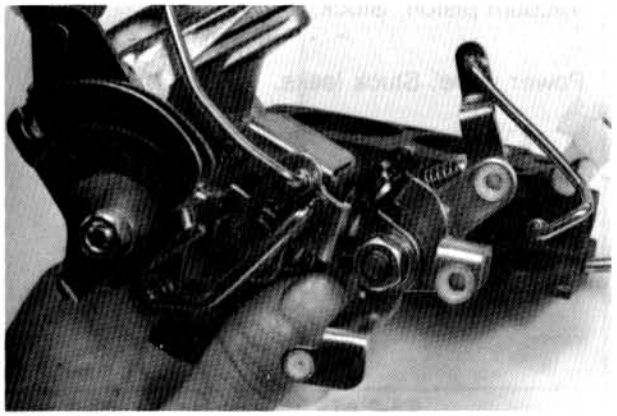


Fig 3-58

Check for binding, sticking, bending.

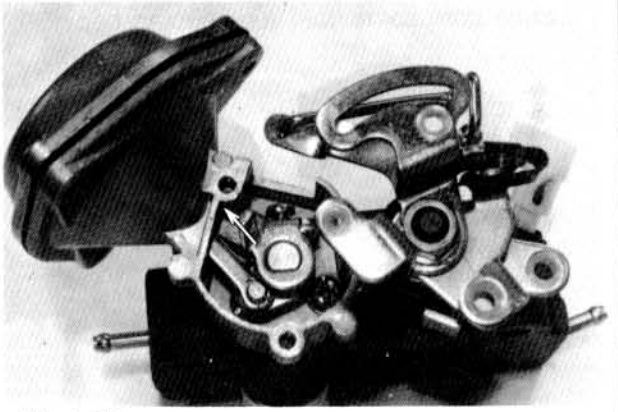


Fig 3-59

VACUUM DIAPHRAGM

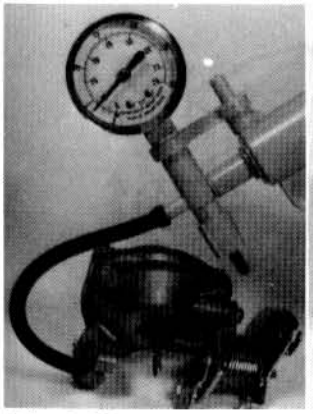


Fig 3-60

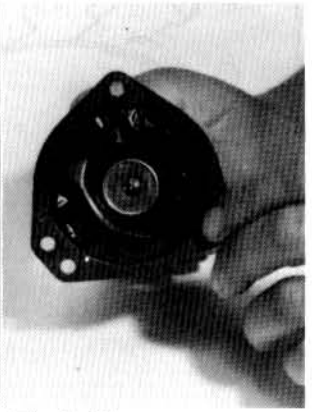


Fig 3-61

Check for damage or leaks.

SECONDARY THROTTLE VALVE

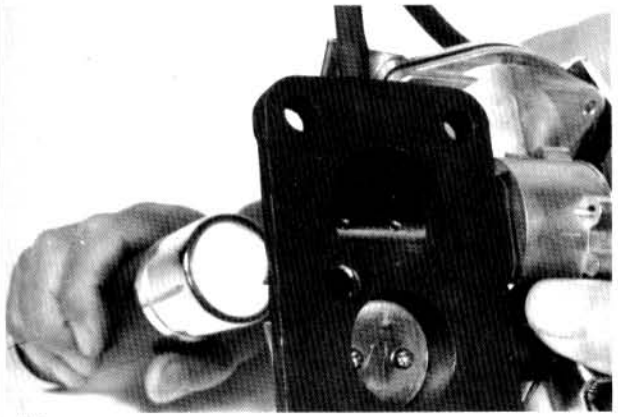


Fig 3-62

Check for binding, sticking.
Leaks can be checked by using an inspection lamp or sunlight.

INSPECTION AND ADJUSTMENT

7. ENRICHMENT SYSTEM

POWER VALVE

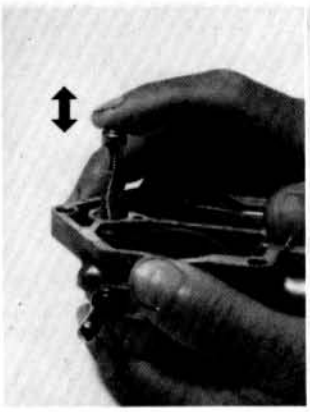


Fig 3-63

Fig 3-64

Vacuum piston: Stuck.

Power valve: Stuck leaks.

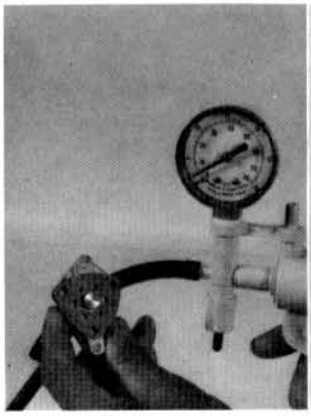


Fig 3-65

Fig 3-66

COASTING RICHER

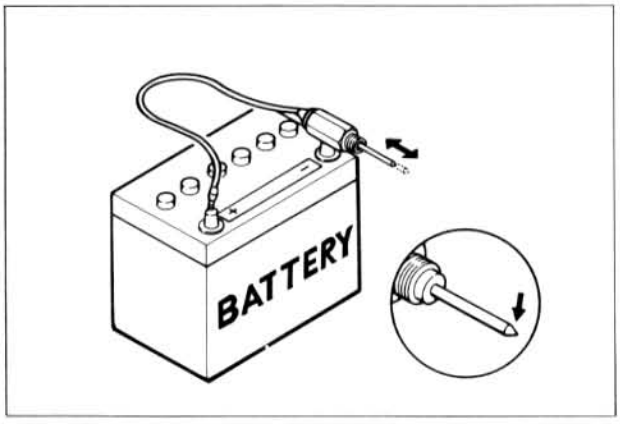


Fig 3-67

Solenoid valve:
Should pull in when power is applied.
Check for damaged tip.

INSPECTION AND ADJUSTMENT

8. ACCELERATING PUMP SYSTEM

PUMP PLUNGER, DIAPHRAGM

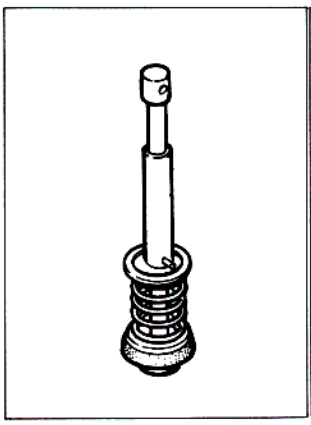


Fig 3-68

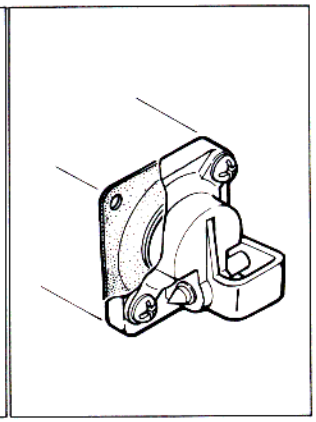


Fig 3-69

Check for wear on the sliding surface and damaged or dried-out leather causing leaks.

FUEL PASSAGE AND FUEL DISCHARGE

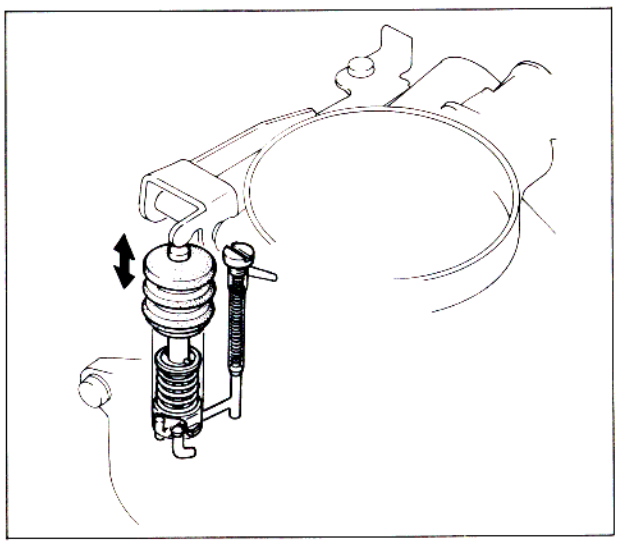


Fig 3-70

Inspection:
Remove air cleaner, look into the carburetor bores and watch for the pump stream. Fuel should spray from the nozzle when the throttle is depressed quickly.
If not, check for: Worn check ball and weight valve or damaged accelerator pump. (Fuel will not spray if pump is not operating.)

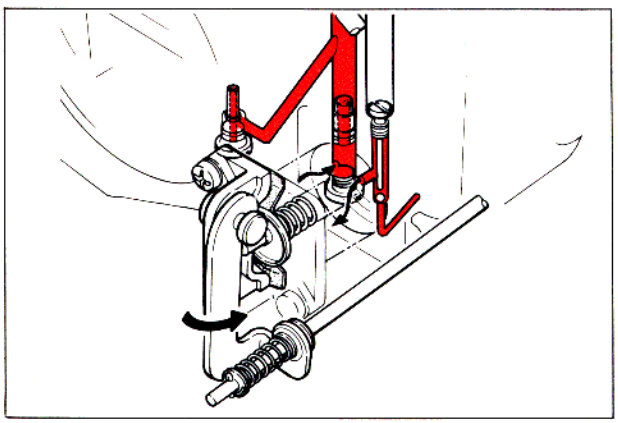


Fig 3-71

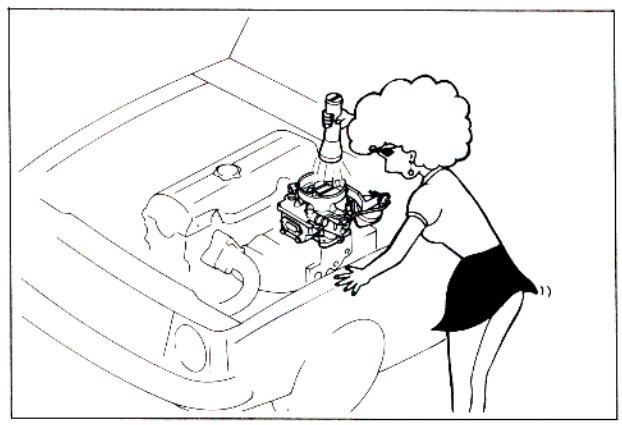


Fig 3-72

INSPECTION AND ADJUSTMENT

8. ACCELERATING PUMP SYSTEM

ACCELERATING PUMP STROKE (DISCHARGE) ADJUSTMENT

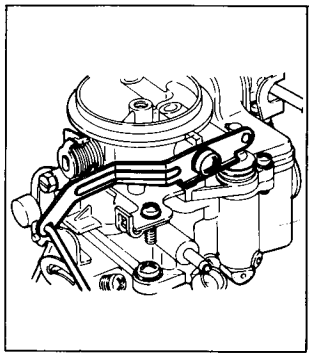


Fig 3-73

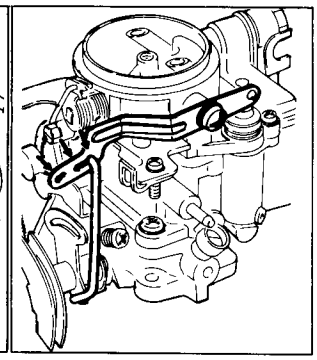


Fig 3-74

The holes located on the accelerating pump lever provide summer and winter settings for the accelerating pump stroke.

Outer hole: Summer
Inner hole : Winter

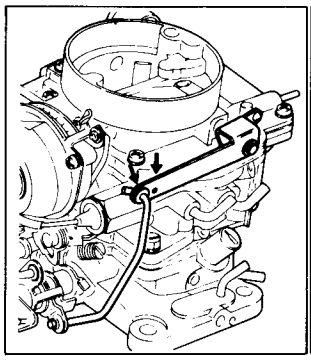


Fig 3-75

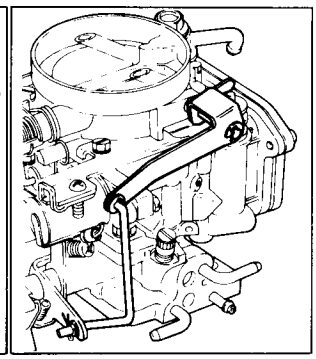


Fig 3-76

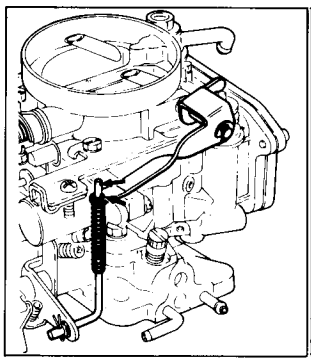


Fig 3-77

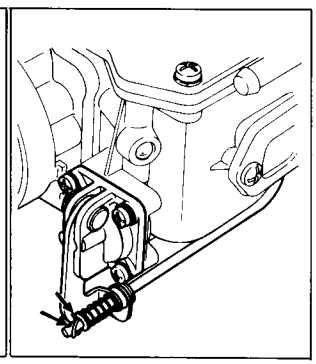


Fig 3-78

The lower hole, or inner hole, on the connecting rod provides maximum pump capacity and is suitable for cold weather operation.

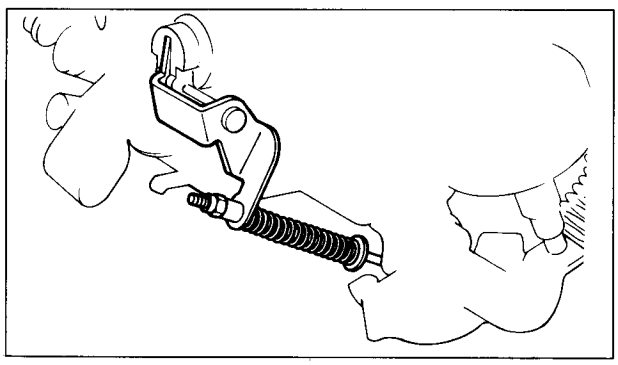


Fig 3-79

Adjust the lock nut to specification.

DISASSEMBLY AND ASSEMBLY

PRECAUTION:

Before disassembling the carburetor wash the outside with carburetor cleaner. Use separate containers for the various assemblies' component parts to facilitate cleaning, inspection and assembly. Certain carburetor components may be serviced without complete disassembly. Before assembling or inspecting the component parts, blow out the fuel passages with compressed air to remove all dirt and foreign matter. Never use a wire for cleaning the jets or air bleeds.

DISASSEMBLY AND ASSEMBLY

1. 121, 121L, 929L, 626, B1800, B1600

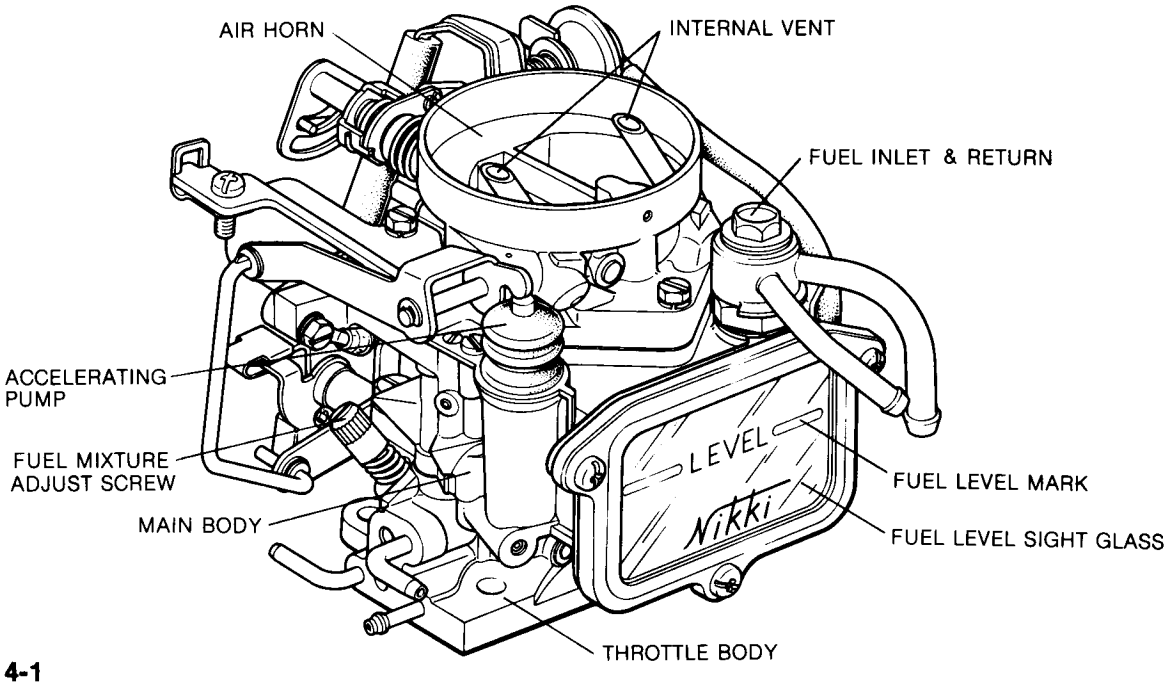


Fig 4-1

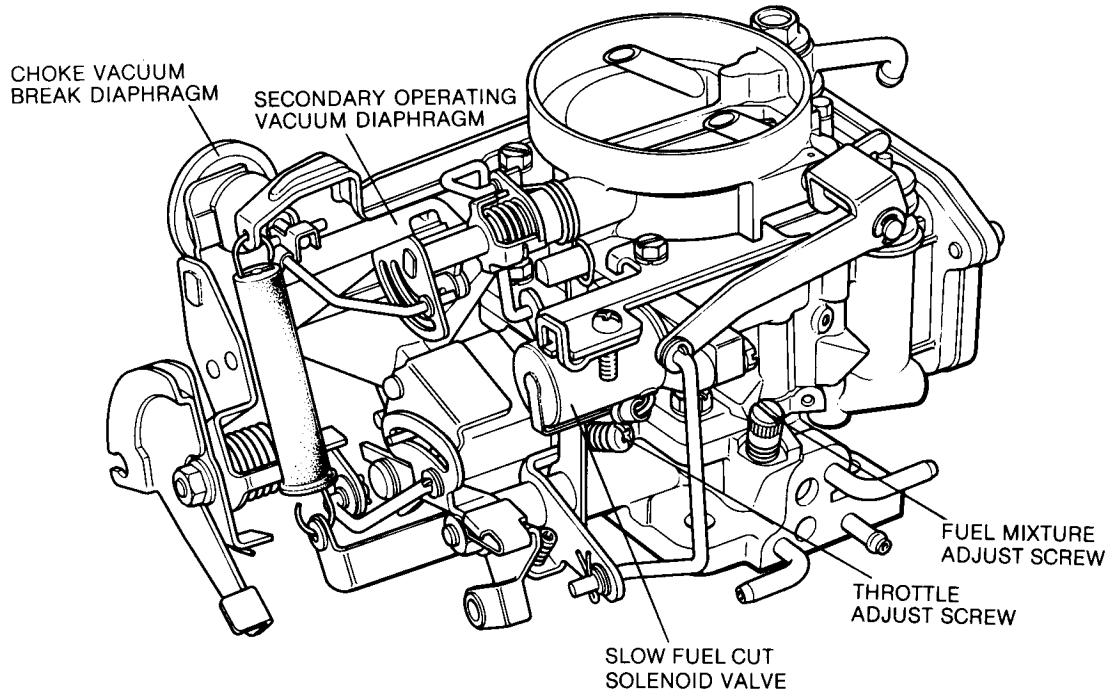


Fig 4-2

DISASSEMBLY AND ASSEMBLY

1. 121, 121L, 929L, 626, B1800, B1600

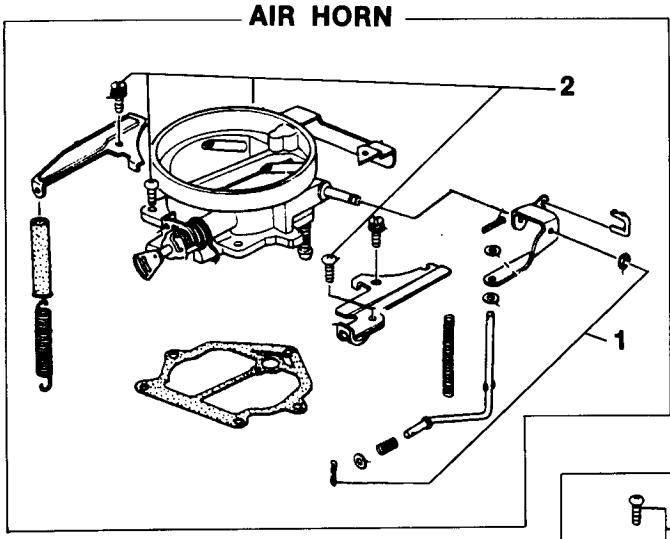


Fig 4-3

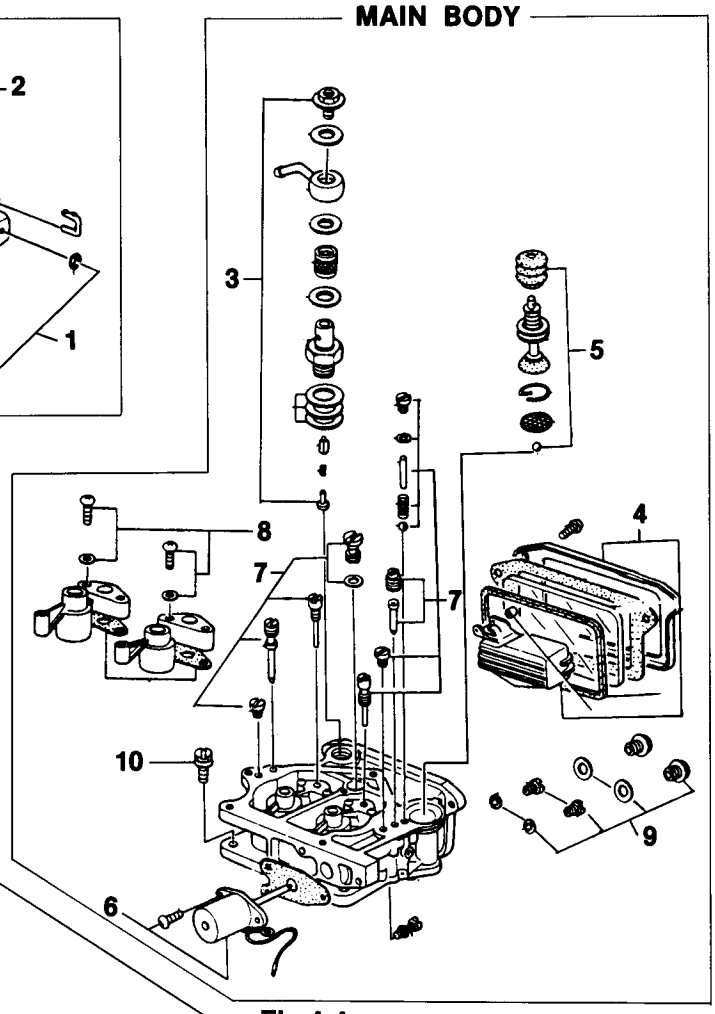


Fig 4-4

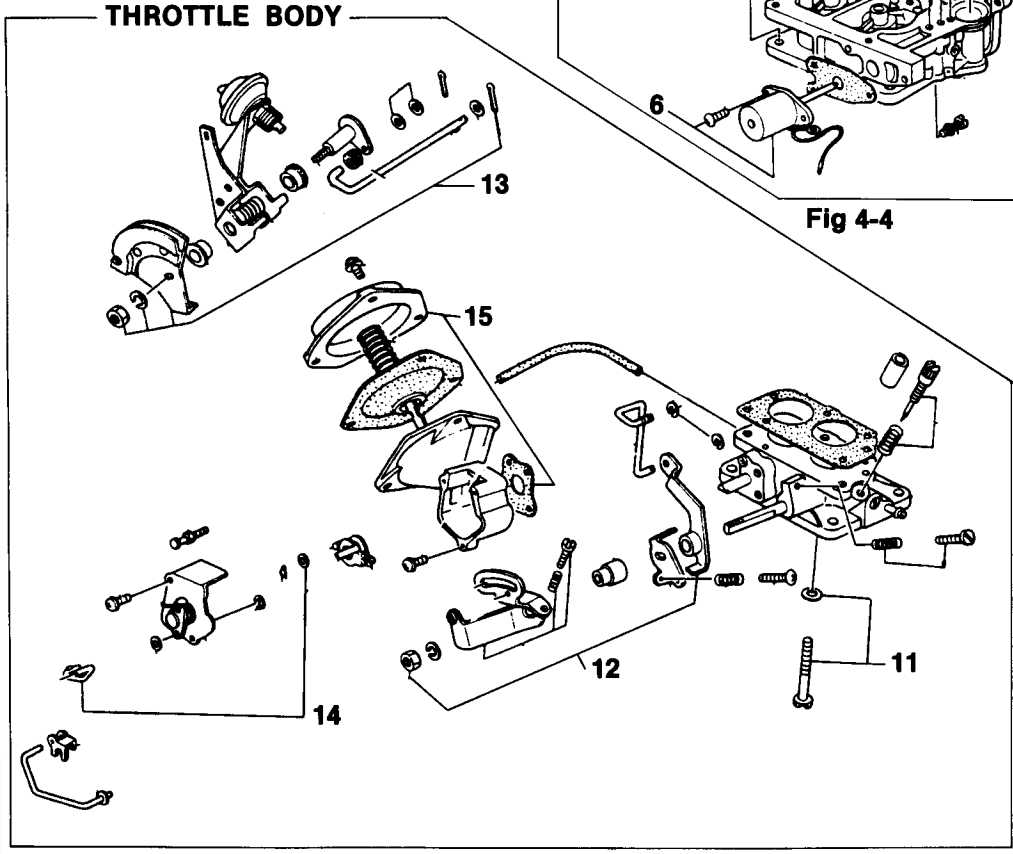


Fig 4-5

DISASSEMBLY AND ASSEMBLY

1. 121, 121L, 929L, 626, B1800, B1600

Disassemble in numerical order.

1 Accelerator pump / lever / rod
2. Air horn / gasket
3. Needle valve
4. Fuel level sight glass / float
5. Accelerator pump plunger
6. Slow fuel cut solenoid valve / gasket
7. Air bleed / jet / pump outlet check ball
8. Venturi, primary / secondary
9. Plug / main jet
10. Main body / screw
11. Throttle body / screw
12. Lever
13. Vacuum break diaphragm / throttle link
14. Cover
15. Diaphragm cover / spring

Assemble in reverse order.

DISASSEMBLY AND ASSEMBLY

2. 626, B2000 WITH AUTOMATIC CHOKE

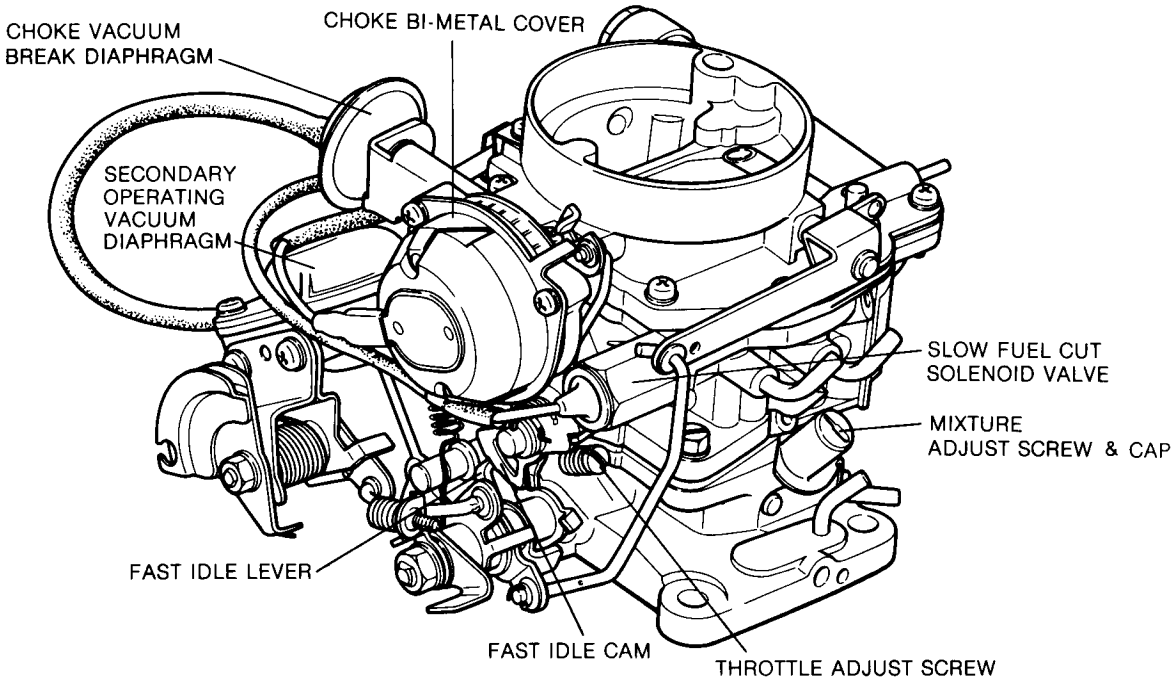


Fig 4-6

DISASSEMBLY AND ASSEMBLY

2. 626, B2000 WITH AUTOMATIC CHOKE

AIR HORN

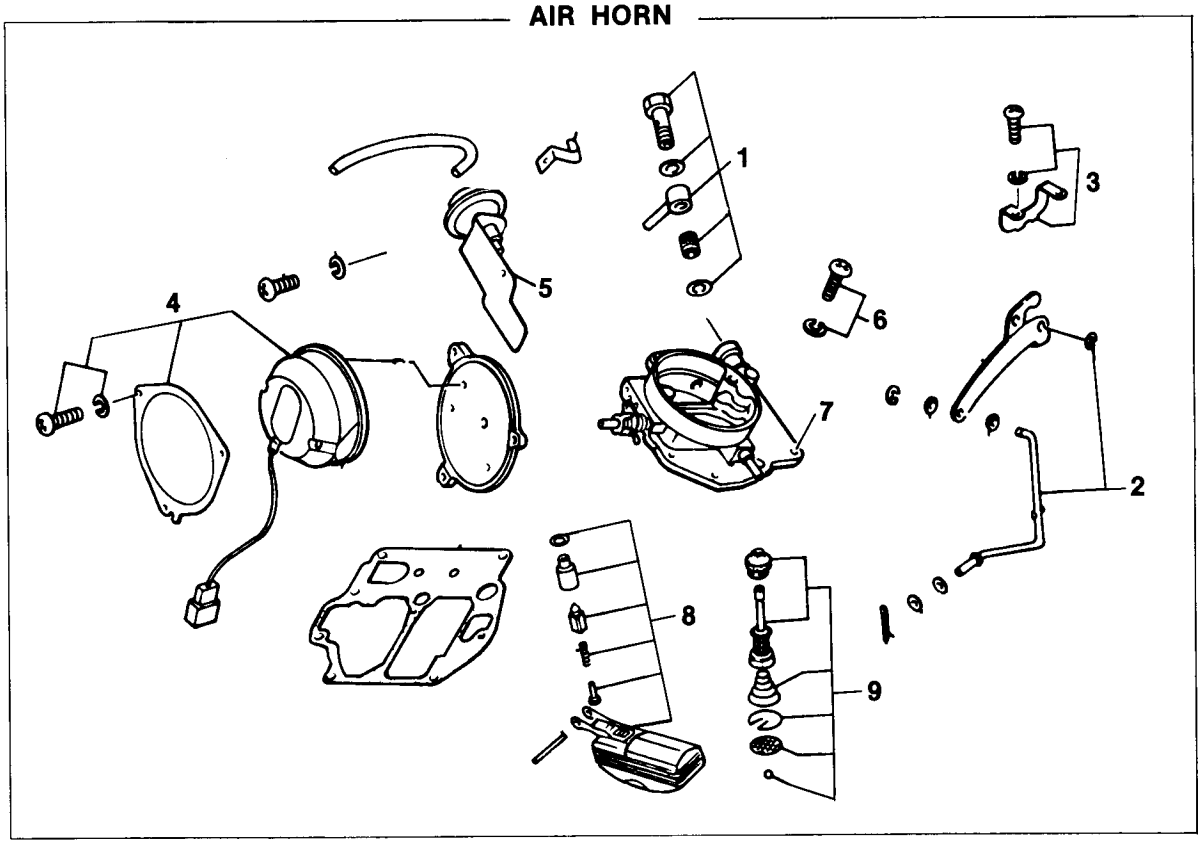


Fig 4-7

MAIN BODY

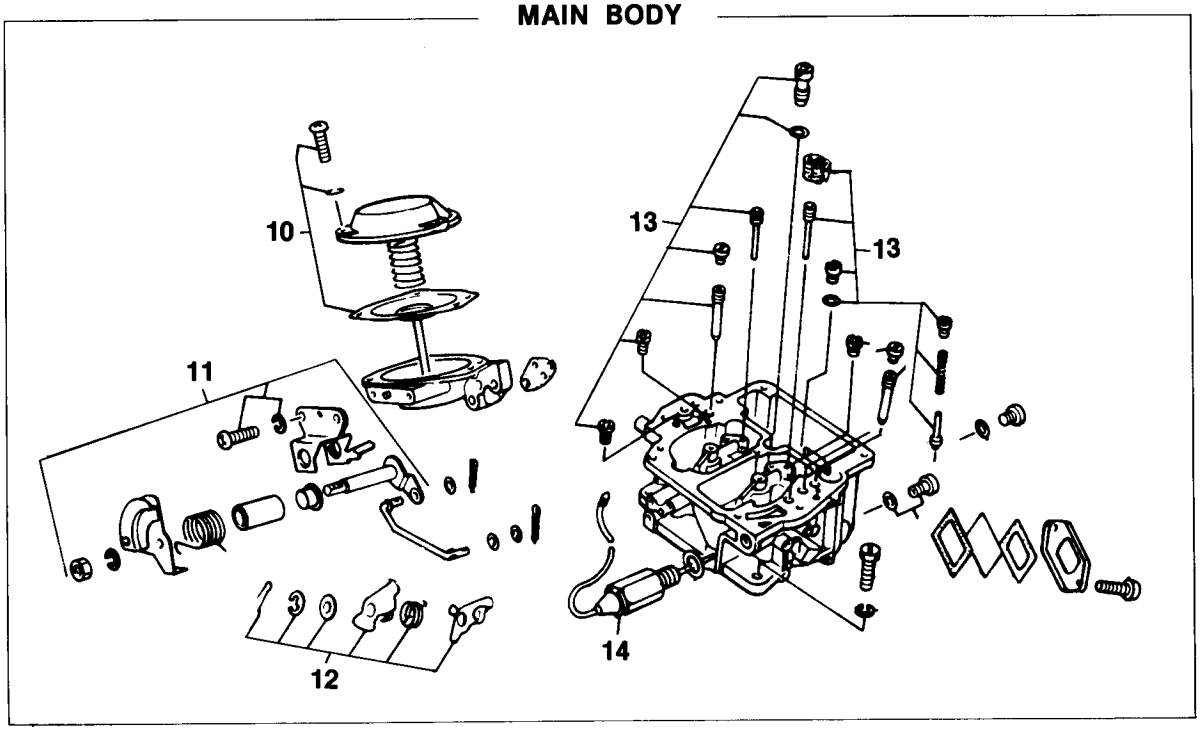


Fig 4-8

DISASSEMBLY AND ASSEMBLY

2. 626, B2000 WITH AUTOMATIC CHOKE

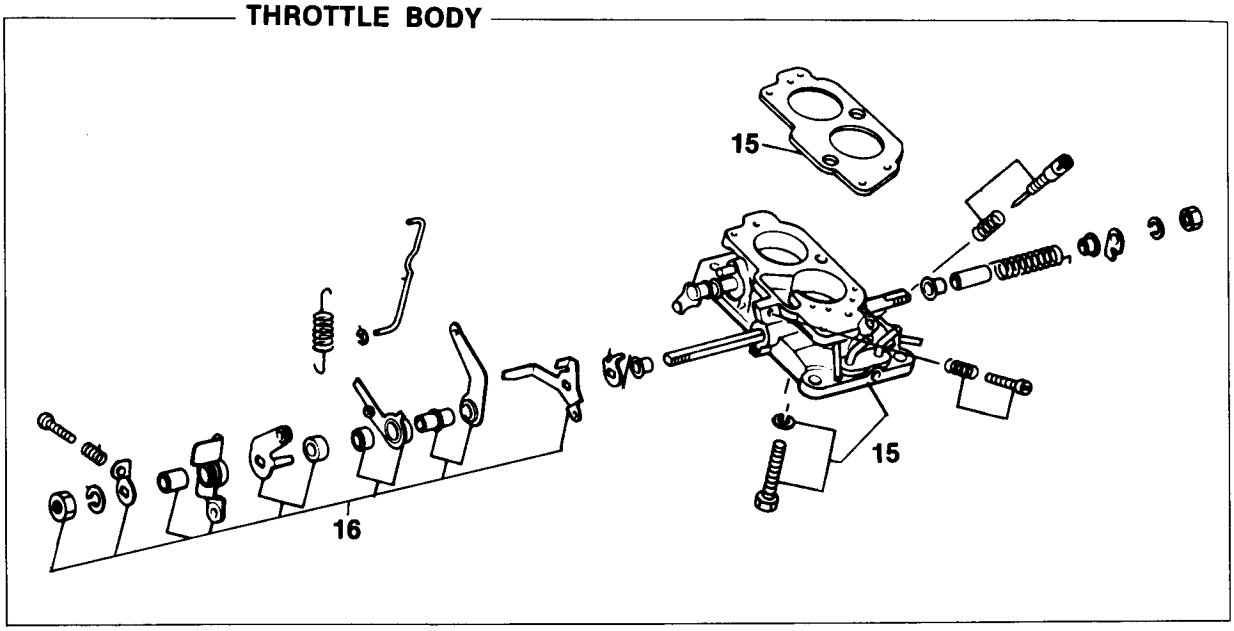


Fig 4-9

Disassemble in numerical order.

1. Fuel pipe connecter
2. Accelerator pump lever / rod
3. Bracket
4. Bi-metal cover
5. Vacuum break diaphragm
6. Screw
7. Air horn / gasket
8. Float / needle valve
9. Accelerator pump plunger
10. Diaphragm cover / spring
11. Throttle link / shaft
12. Fast idle cam
13. Air bleed / jet
14. Slow fuel cut solenoid valve
15. Throttle body / gasket
16. Lever

Assemble in reverse order.

Note: The fuel mixture adjust screw cap must be installed in accordance with the regulation.

DISASSEMBLY AND ASSEMBLY

3. 323, E1300

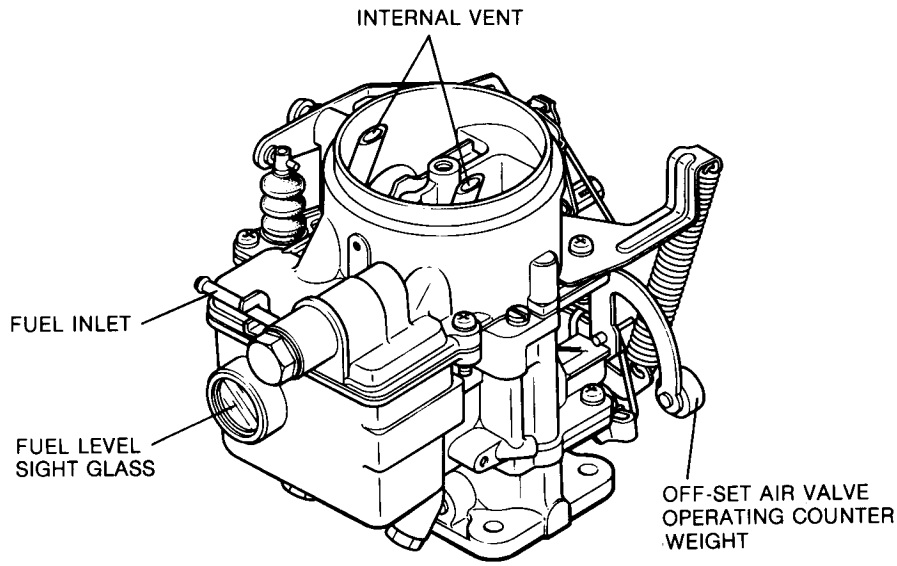


Fig 4-10

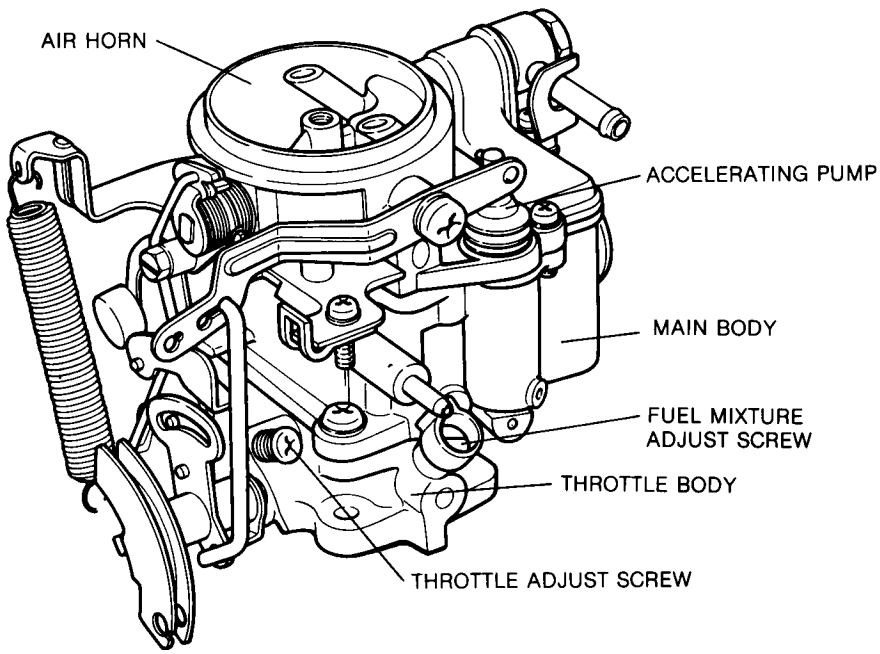


Fig 4-11

DISASSEMBLY AND ASSEMBLY

3. 323, E1300

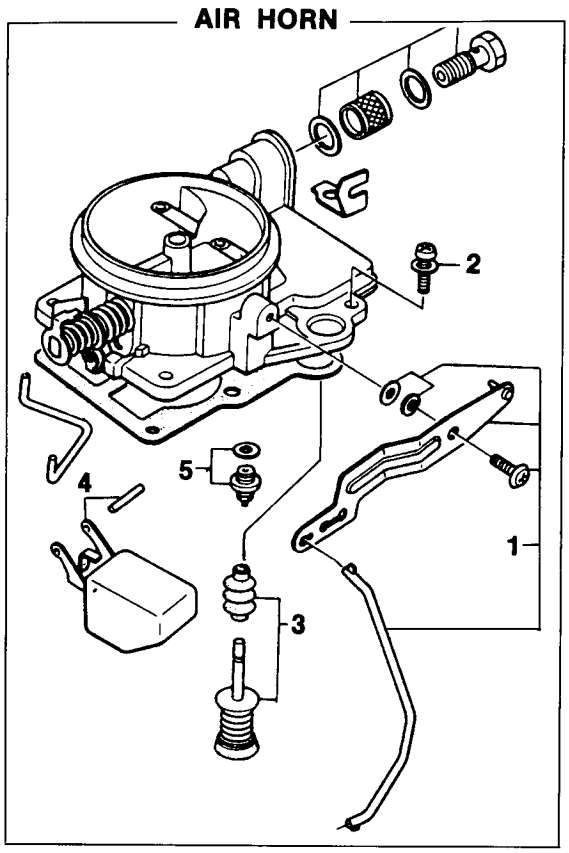


Fig 4-12

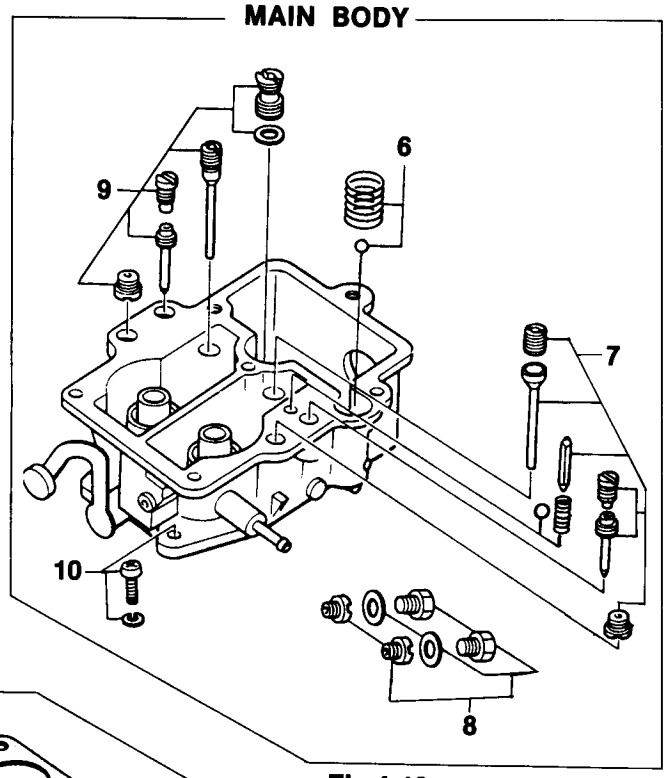


Fig 4-13

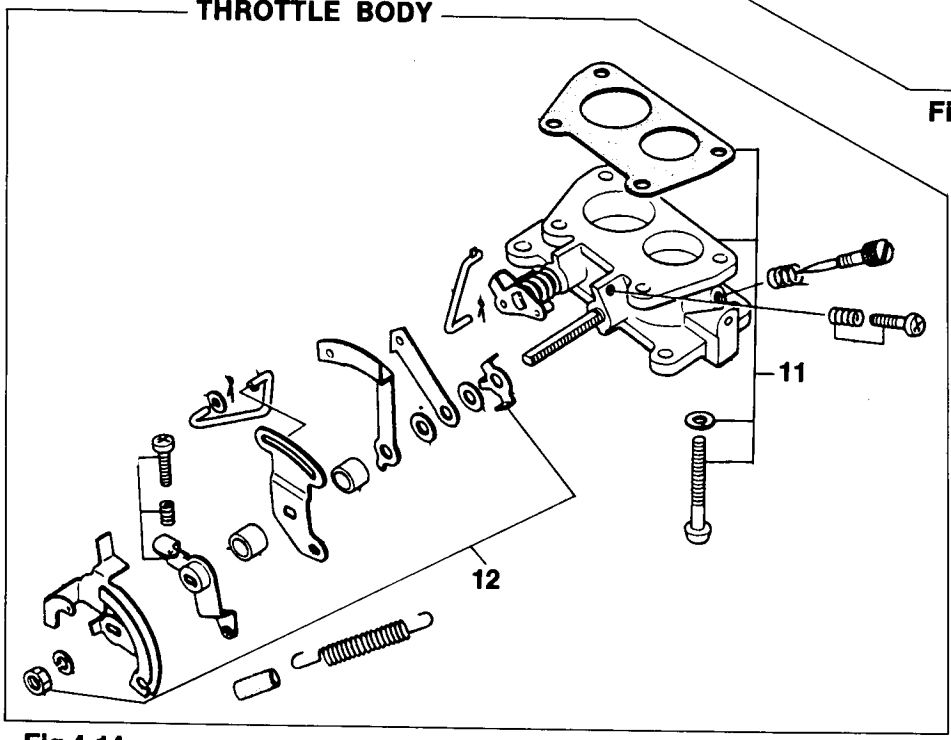


Fig 4-14

DISASSEMBLY AND ASSEMBLY

3. 323, E1300

Disassemble in numerical order

1. Accelerator pump lever / rod / screw
2. Air horn / gasket
3. Accelerator pump plunger / boot
4. Float
5. Needle valve
6. Accelerator pump spring / ball
7. Air bleed / jet / pump spring / ball
8. Plug / main jet
9. Air bleed / jet / power valve
10. Main body
11. Throttle body / gasket
12. Lever

Assemble in reverse order.

DISASSEMBLY AND ASSEMBLY

4. GLC

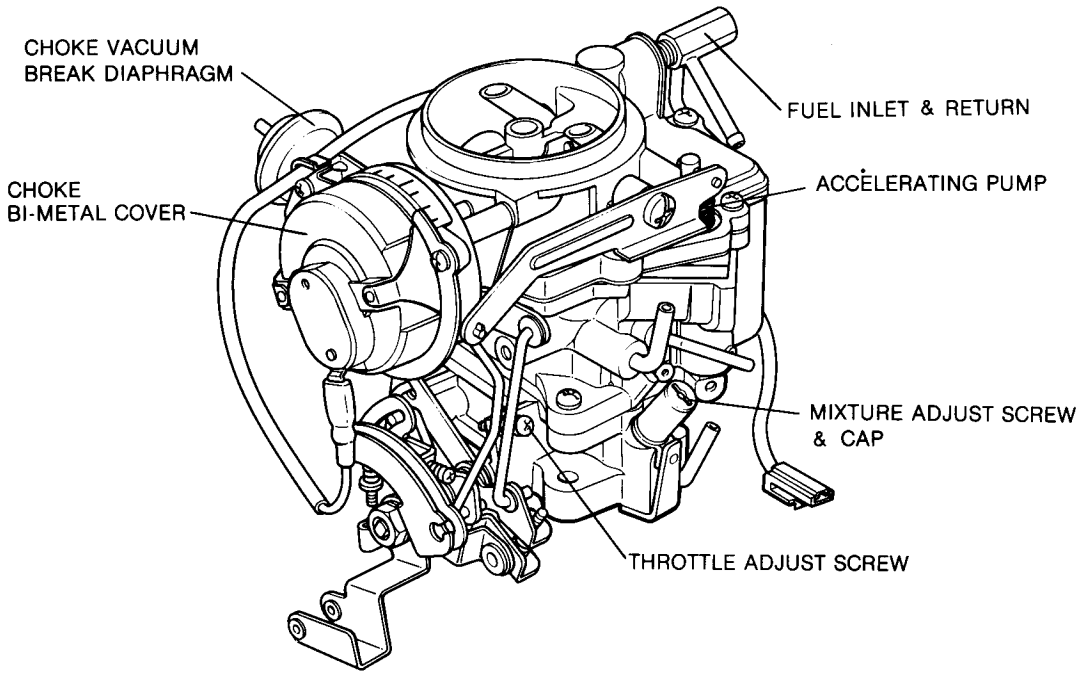


Fig 4-15

DISASSEMBLY AND ASSEMBLY

4. GLC

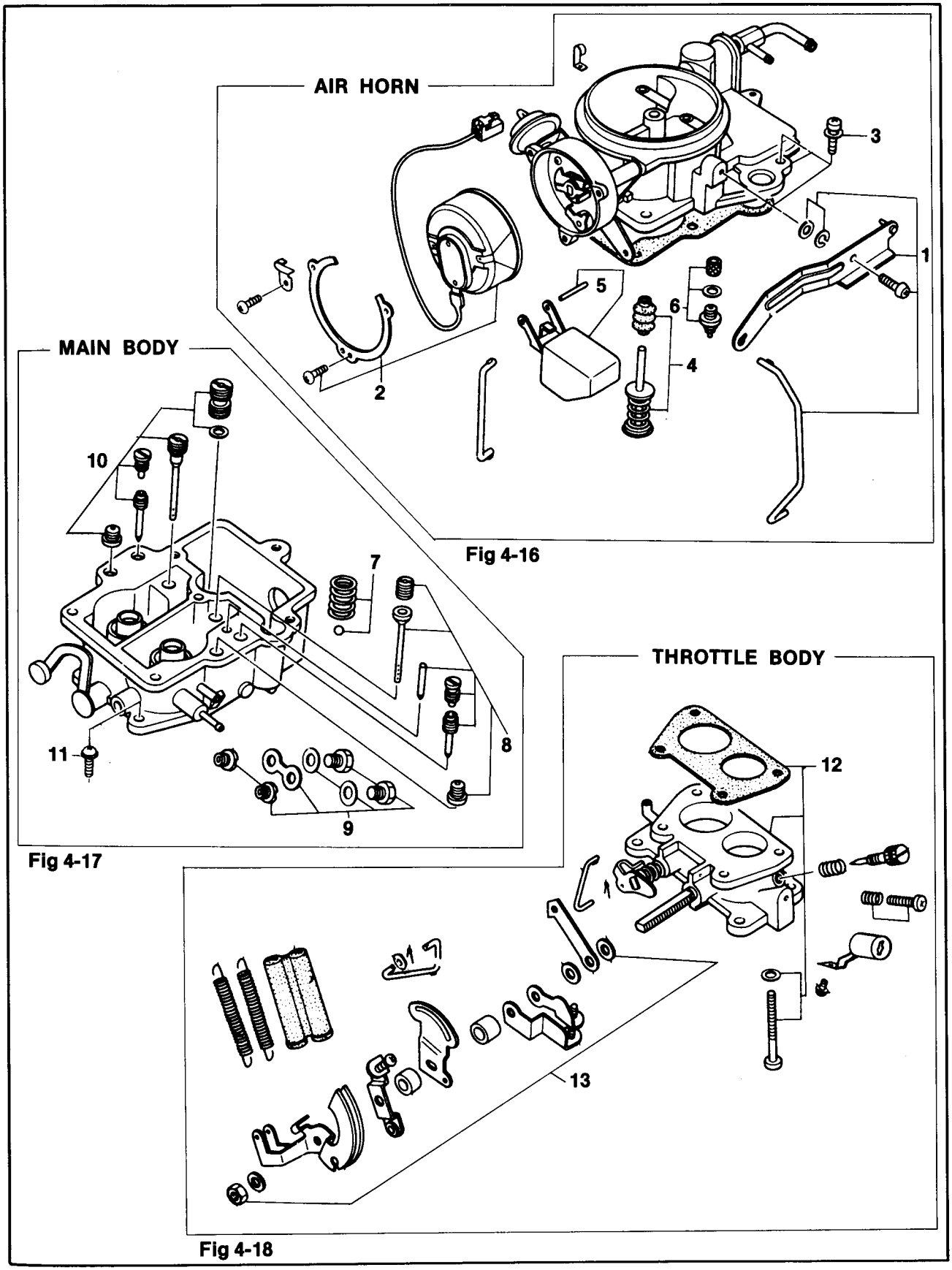


Fig 4-16

Fig 4-17

Fig 4-18

DISASSEMBLY AND ASSEMBLY

4. GLC

Disassemble in numerical order.

1. Accelerator pump lever / rod / screw
2. Bi-metal cover
3. Airhorn / gasket
4. Accelerator pump plunger / boot
5. Float
6. Needle valve
7. Accelerator pump spring / check ball
8. Air bleed / jet / injector weight
9. Main jet
10. Air bleed / jet / power valve
11. Main body
12. Throttle body / gasket
13. Lever

Assemble in reverse order.

Note: The fuel mixture adjust screw cap must be installed in accordance with the regulation.

DISASSEMBLY AND ASSEMBLY

5. RX-7

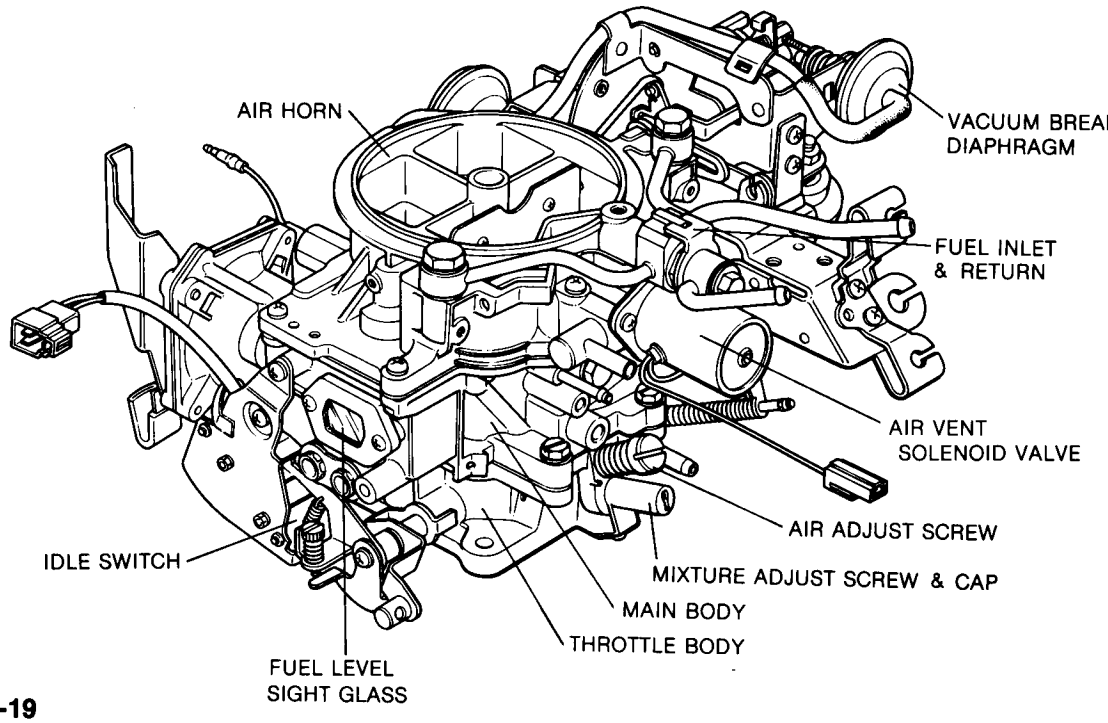


Fig 4-19

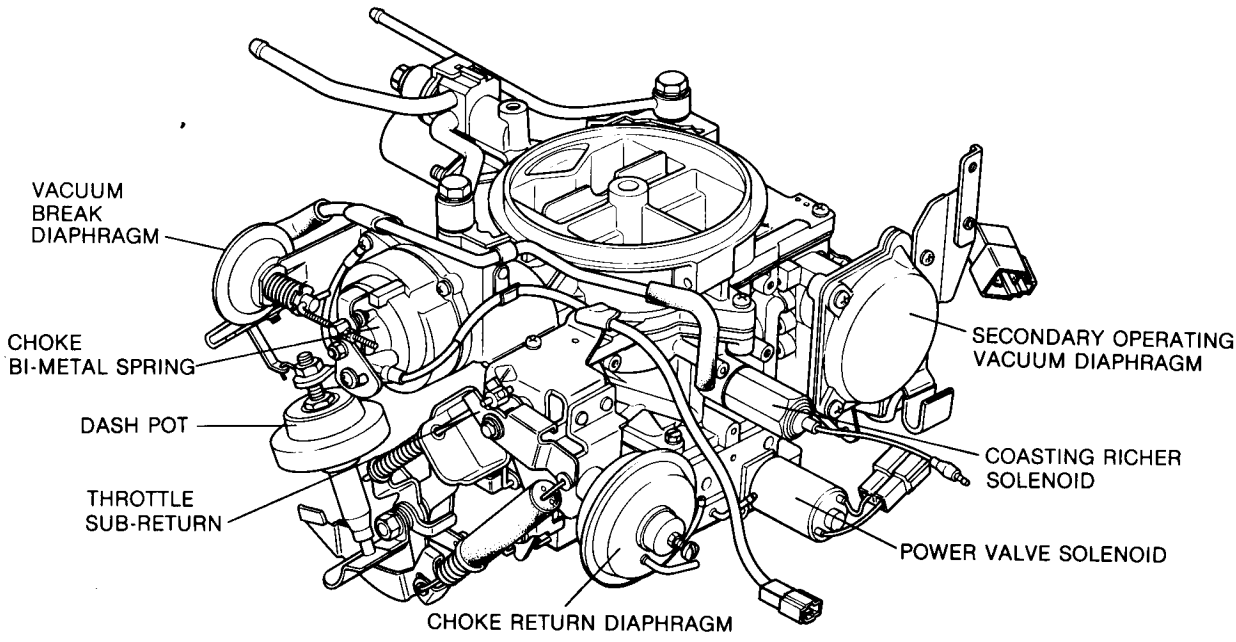


Fig 4-20

DISASSEMBLY AND ASSEMBLY

5. RX-7

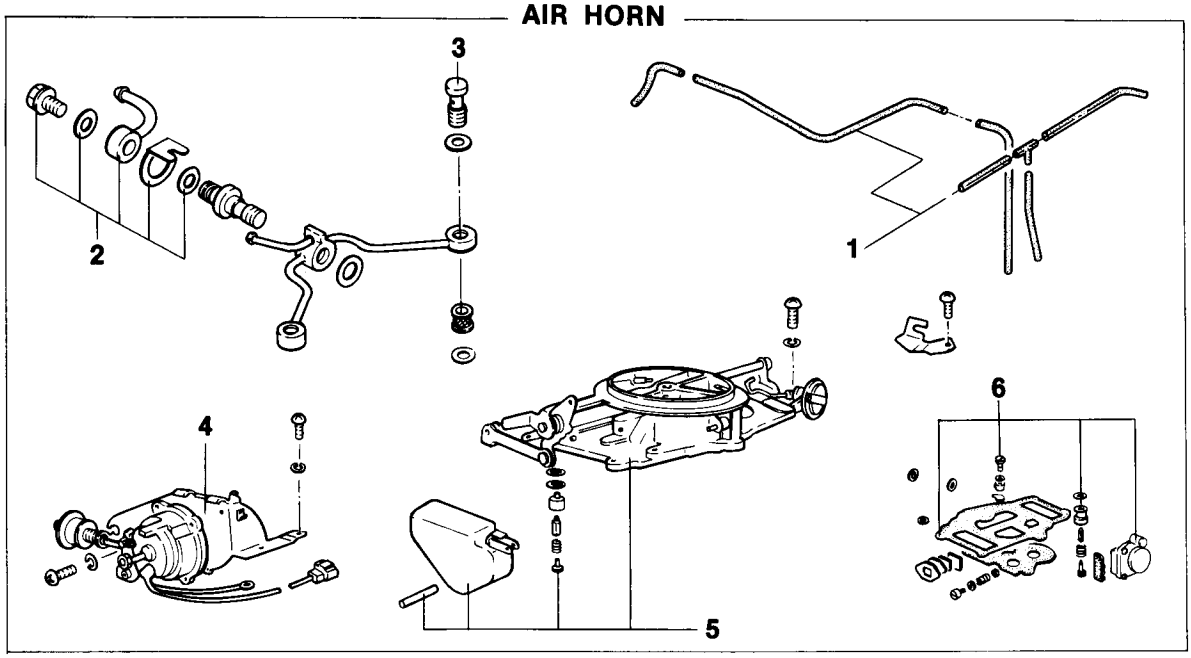


Fig 4-21

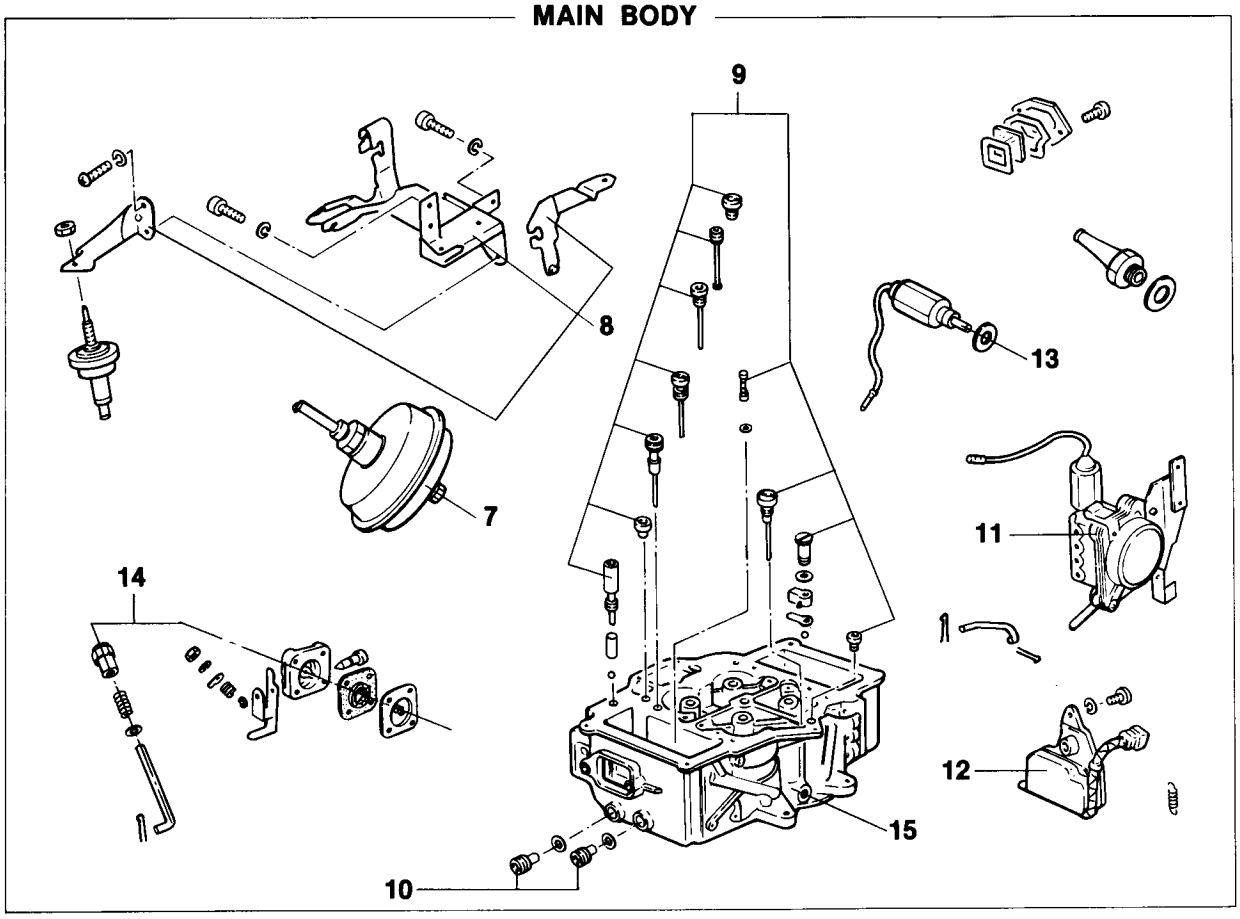


Fig 4-22

DISASSEMBLY AND ASSEMBLY

5. RX-7

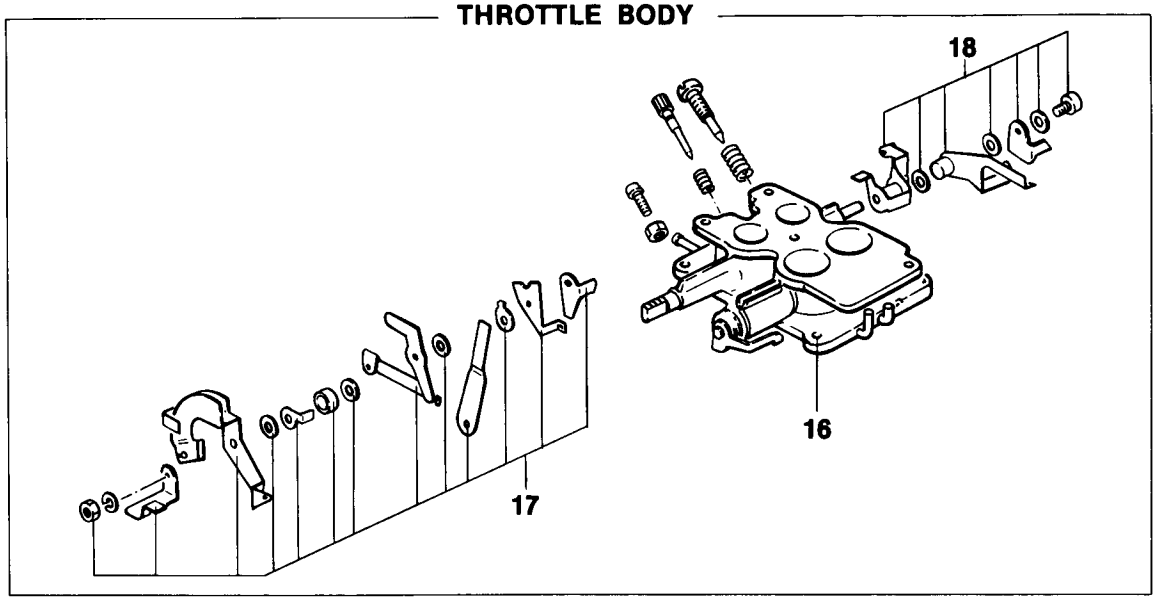


Fig 4-23

Disassemble in numerical order.

1. Vacuum pipe
2. Inlet pipe connector
3. Pipe connector
4. Bi-metal spring housing
5. Air horn / float
6. Gasket / needle valve
7. Dash pot diaphragm
8. Bracket
9. Air bleed / jet
10. Main jet
11. Diaphragm
12. Idle switch
13. Coasting richer solenoid valve
14. Accelerator pump rod / diaphragm
15. Main body / gasket
16. Throttle body
17. Lever
18. Lever

Assemble in reverse order.

DISASSEMBLY AND ASSEMBLY

6. E2000

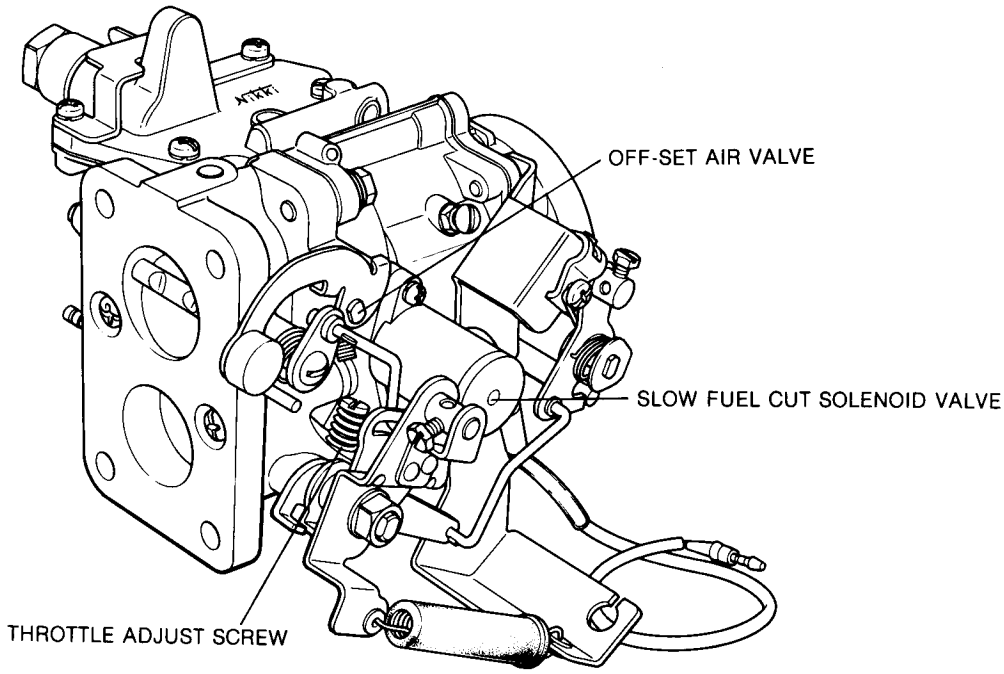


Fig 4-24

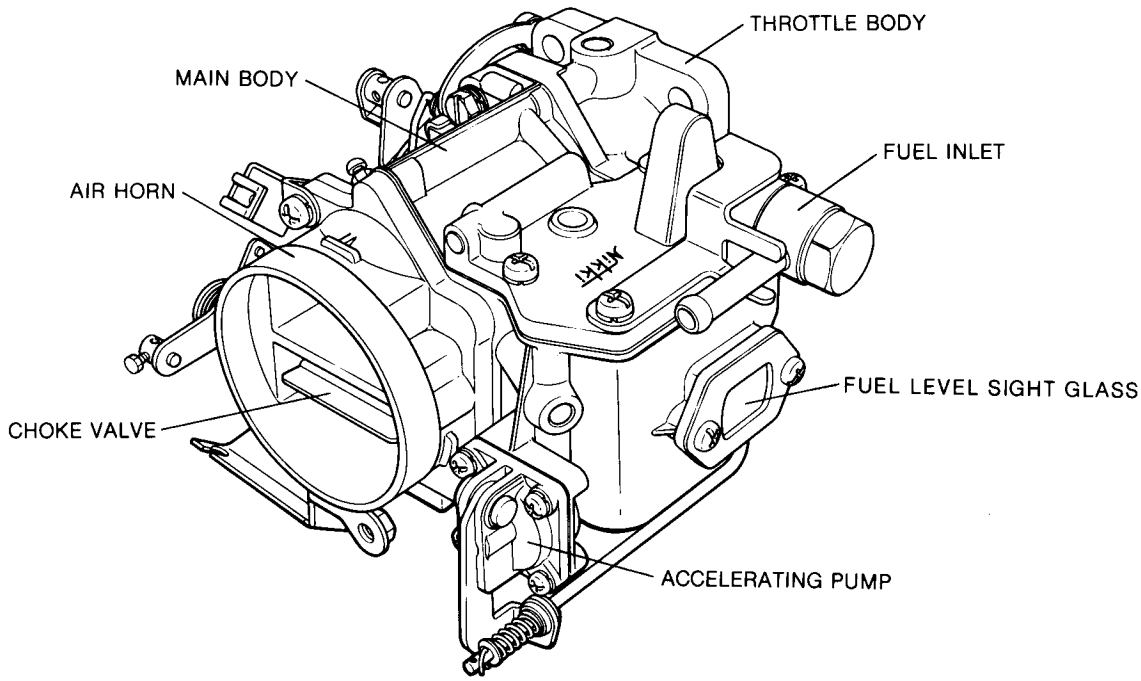


Fig 4-25

DISASSEMBLY AND ASSEMBLY

6. E2000

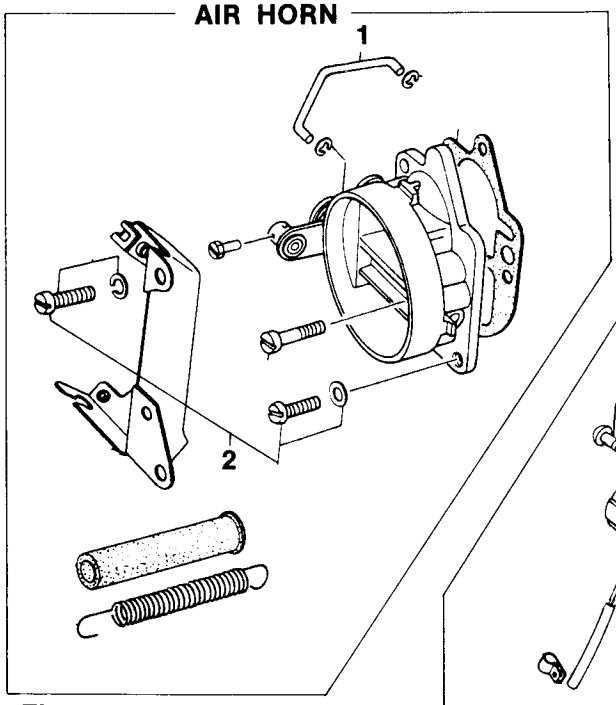


Fig 4-26

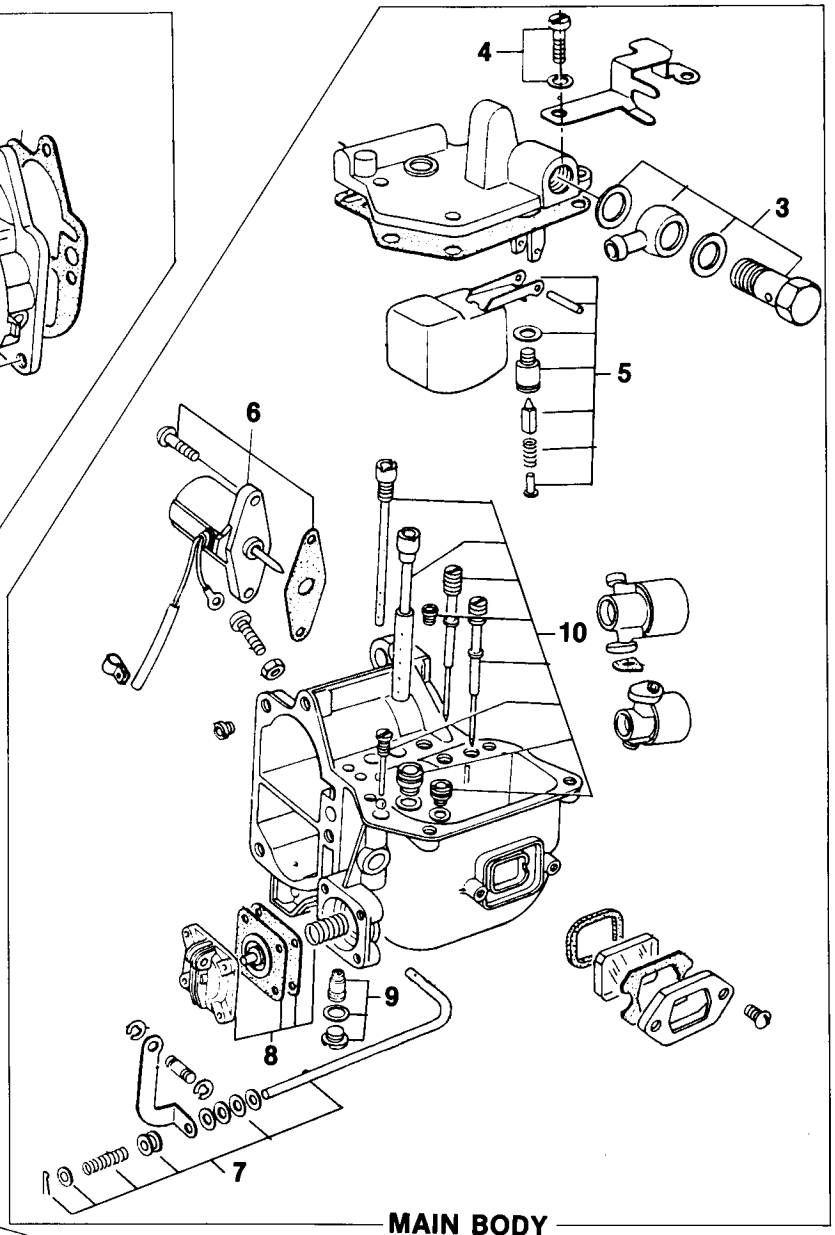


Fig 4-27

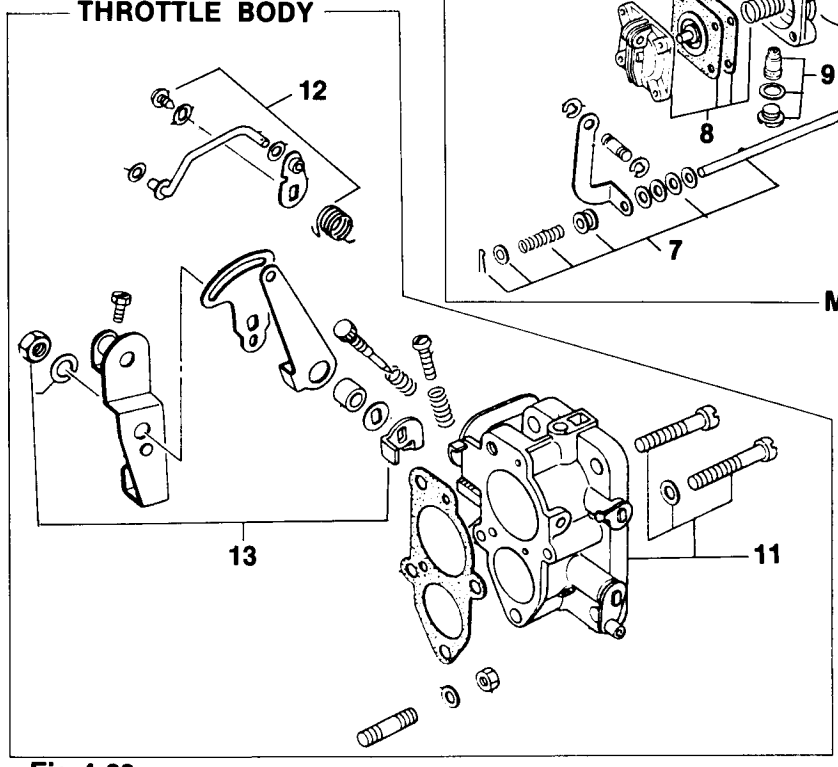


Fig 4-28

DISASSEMBLY AND ASSEMBLY

6. E2000

Disassemble in numerical order.

1. Rod
2. Air horn
3. Fuel pipe connector
4. Float cover
5. Float / needle valve
6. Slow fuel cut solenoid valve
7. Accelerator pump rod
8. Diaphragm / cover
9. Outlet valve / plug
10. Air bleed / jet
11. Throttle body / gasket
12. Rod
13. Lever

Assemble in reverse order.

DISASSEMBLY AND ASSEMBLY

7. E1600

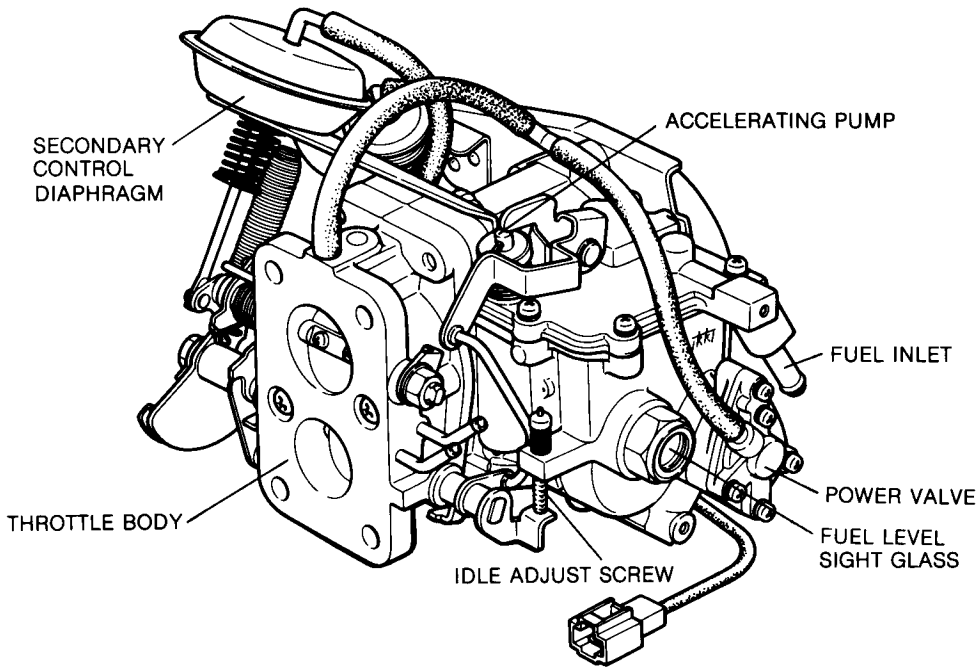


Fig 4-29

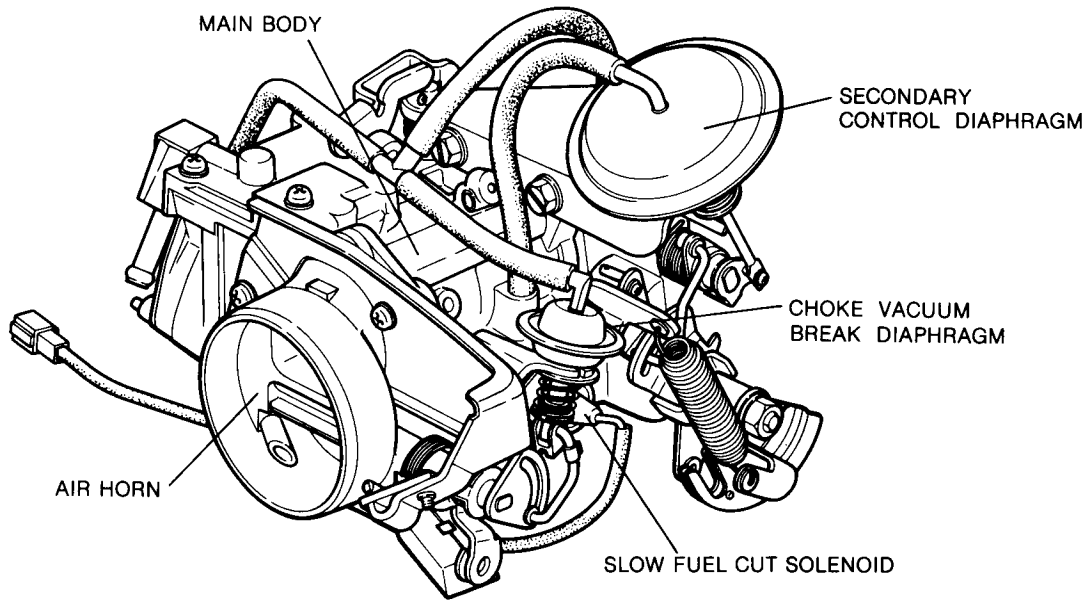
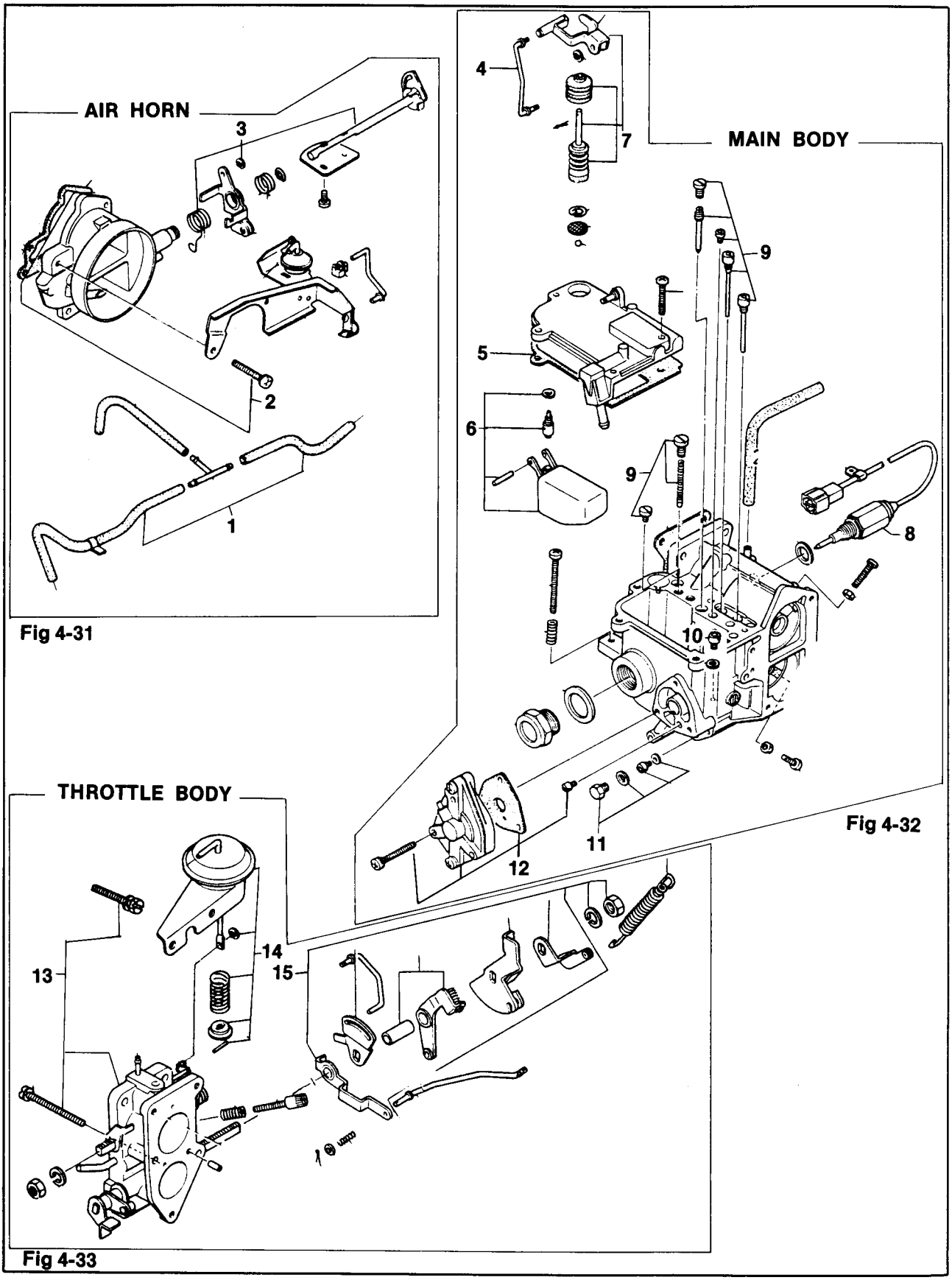


Fig 4-30

DISASSEMBLY AND ASSEMBLY

7. E1600



DISASSEMBLY AND ASSEMBLY

7. E1600

Disassemble in numerical order

1. Vacuum tube
2. Air horn / gasket
3. Choke valve / shaft
4. Accelerator pump rod
5. Float cover
6. Float / needle valve
7. Accelerator pump plunger / boot
8. Slow fuel cut solenoid valve
9. Air bleed / jet / pump spring
10. Main jet
11. Main jet
12. Power valve / jet
13. Throttle body / gasket
14. Diaphragm / bracket
15. Lever

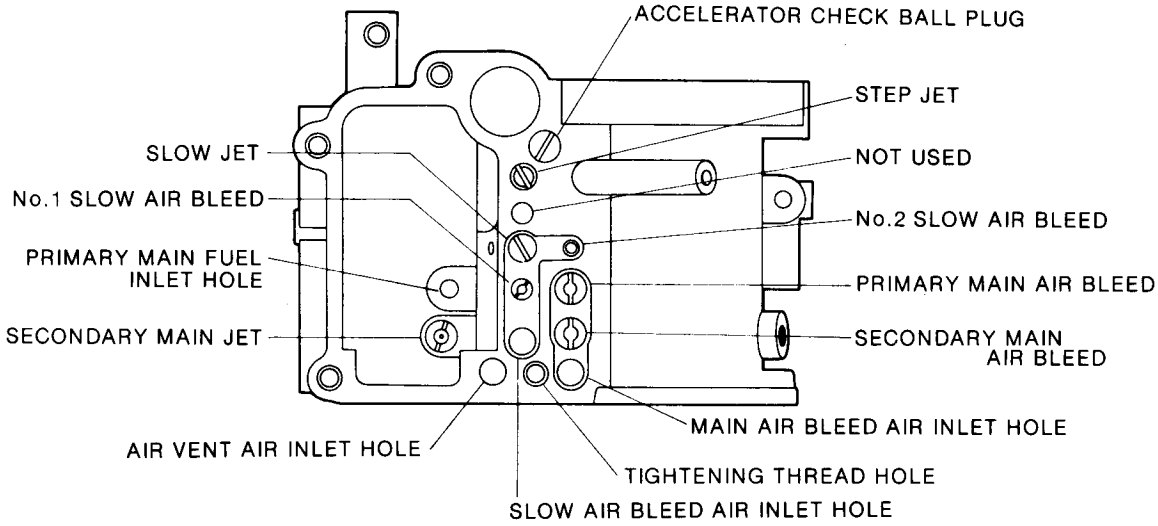


Fig 4-34

Assemble in reverse order.

TROUBLESHOOTING

There are many and various reasons for engine trouble. So, before working on the carburetor, first check and diagnose the following:

1. Ignition system (including timing)
2. Fuel (research octane number 89 or higher)
3. Fuel supply system
4. Emission control systems (If equipped)
5. Engine compression
6. Engine temperature (compartment and coolant)

TROUBLESHOOTING

1. POSSIBLE CAUSE AND CORRECTION

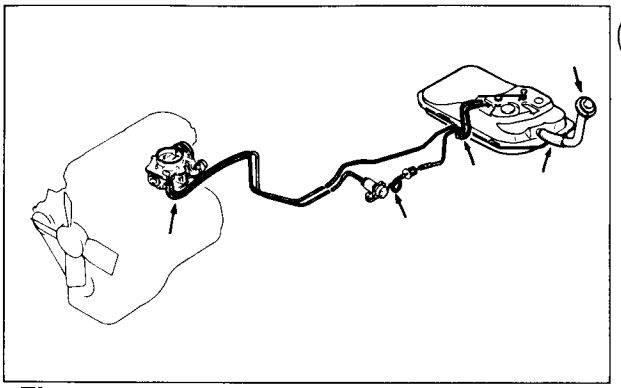


Fig 5-1

(1) FUEL RESTRICTION

1. Kinked or leaking fuel lines.
   Inspect-correct or replace, as necessary.
2. Fuel tank breather hose plugged.
   Blow out or replace.

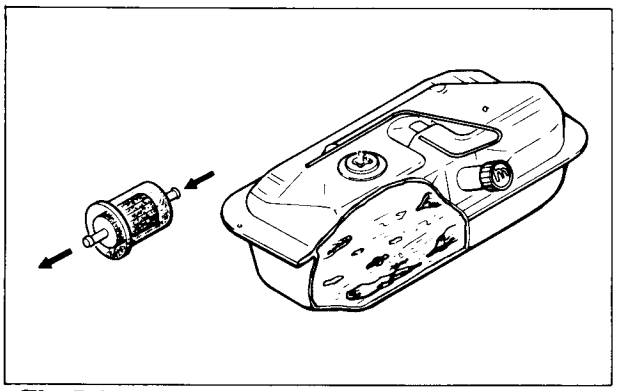


Fig 5-2

(2) DIRT, RUST OR WATER IN FUEL SYSTEM

1. Fuel tank
   Remove and clean
2. Fuel filter
   Replace
3. Carburetor float chamber
   Drain and clean

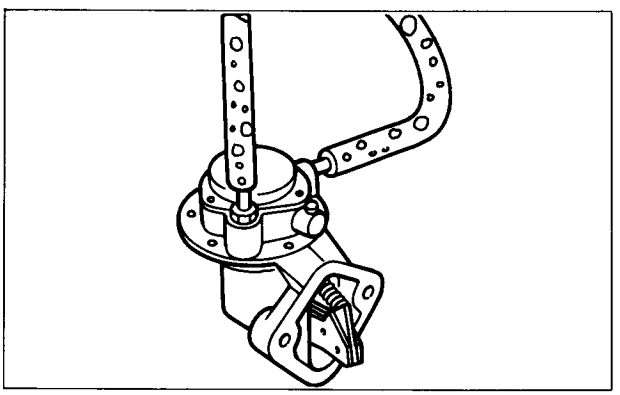


Fig 5-3

(3) LOW OR NO FUEL IN CARBURETOR

1. Fuel vapor or air in fuel line
   Disconnect and clear
2. Fuel pump not working
   Replace or repair
3. Fuel pump pressure or volume too low
   Replace or repair

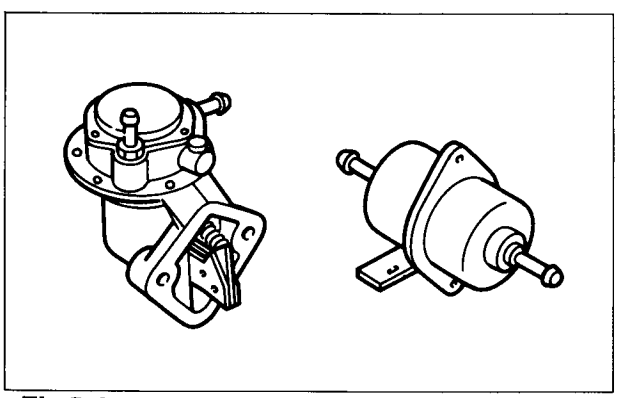


Fig 5-4

TROUBLESHOOTING

1. POSSIBLE CAUSE AND CORRECTION

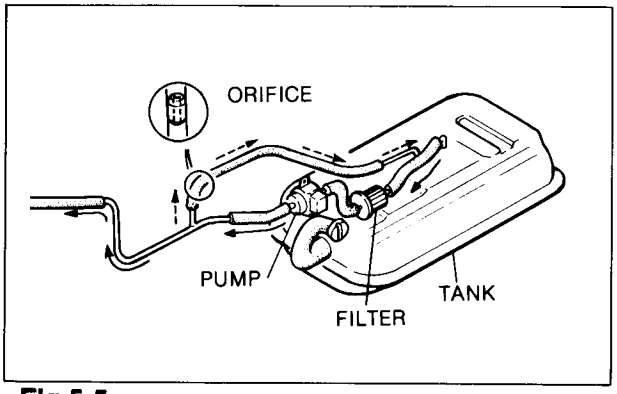


Fig 5-5

4 FUEL RETURN ORIFICE MISSING OR INCORRECT PART

Replace

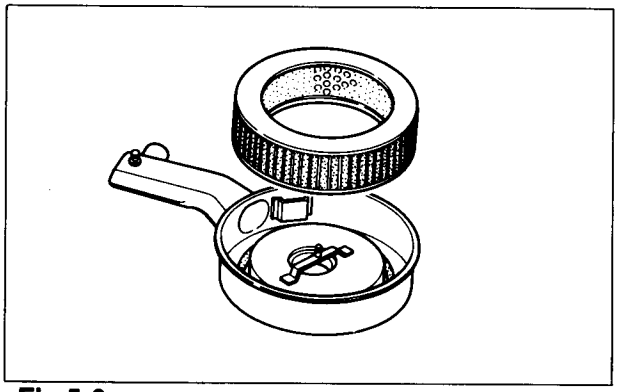


Fig 5-6

5 AIR CLEANER ELEMENT DIRTY OR CLOGGED

Clean or replace

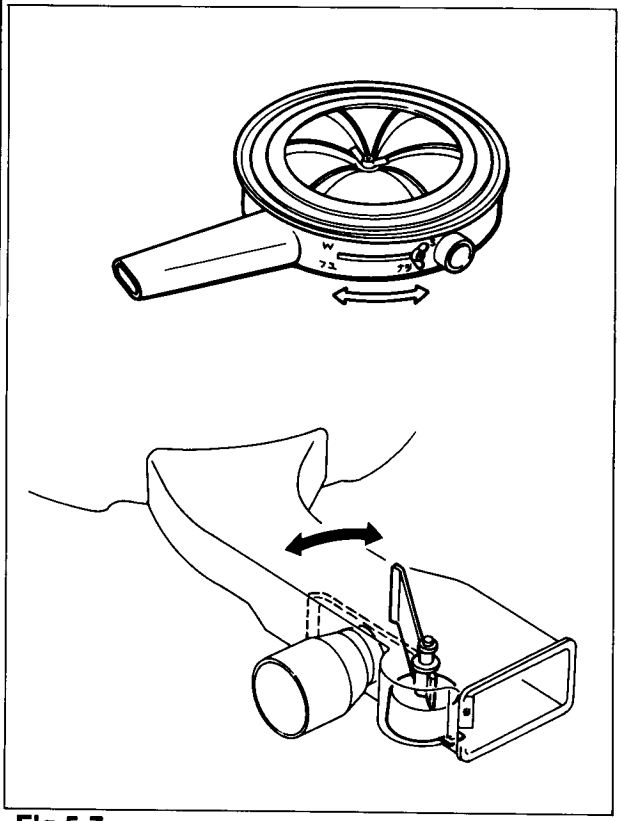


Fig 5-7

6 INTAKE AIR TOO HOT OR TOO COLD

1. Manual control
   Correct position for ambient temperature
   "S" Above 10 ~ 15°C (50 ~ 60°F)
   "W" Below 10 ~ 15°C (50 ~ 60°F)

2. Valve sticking on automatic control
   Clean and lubricate or replace

TROUBLESHOOTING

1. POSSIBLE CAUSE AND CORRECTION

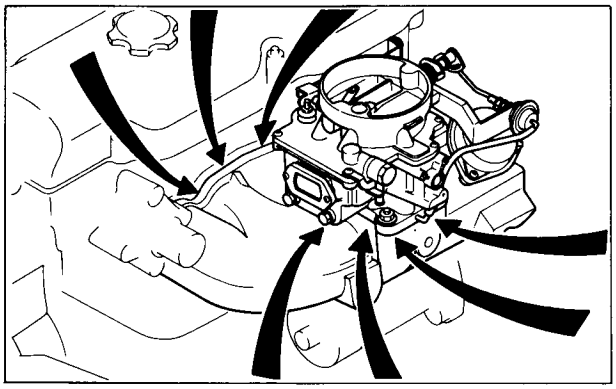


Fig 5-8

(7) AIR LEAKS

1. Carburetor loose on intake manifold
   Tighten mounting nuts
2. Intake manifold loose
   Tighten mounting bolts
3. Defective gaskets
   Replace
4. Inoperative PCV valve
   Clean or replace, as necessary

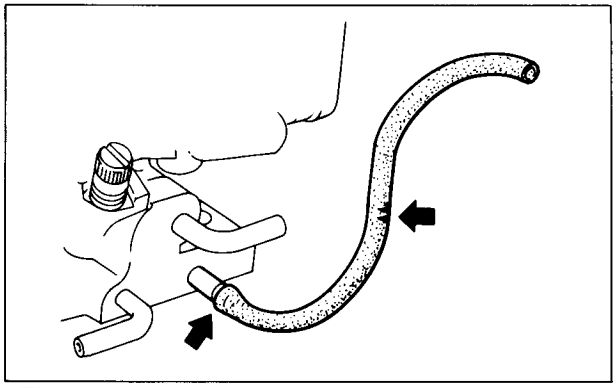


Fig 5-9

(8) VACUUM LEAKS

1. Hoses disconnected or improperly installed
   Repair or connect
2. Hoses cracked, broken or connections loose
   Replace

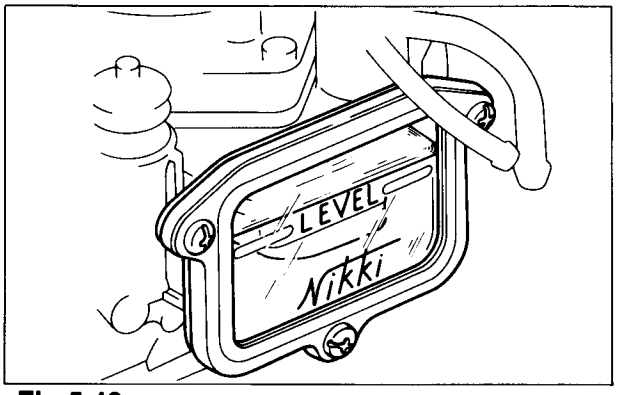


Fig 5-10

(9) HIGH OR LOW FUEL LEVEL

1. Improper float adjustment
   Adjust
2. Float binding
   Repair
3. Float leaking
   Replace

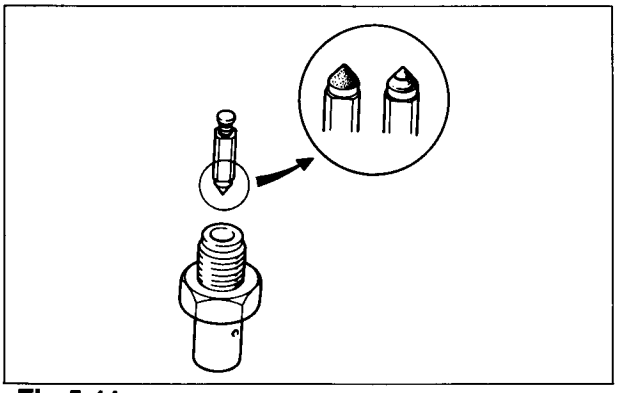


Fig 5-11

(10) LOW OR NO FUEL IN CARBURETOR, CARBURETOR FLOODING

Needle valve sticking open or closed, caused by: needle valve excessively worn or dirt in needle seat.
Clean or replace, as necessary

TROUBLESHOOTING

1. POSSIBLE CAUSE AND CORRECTION

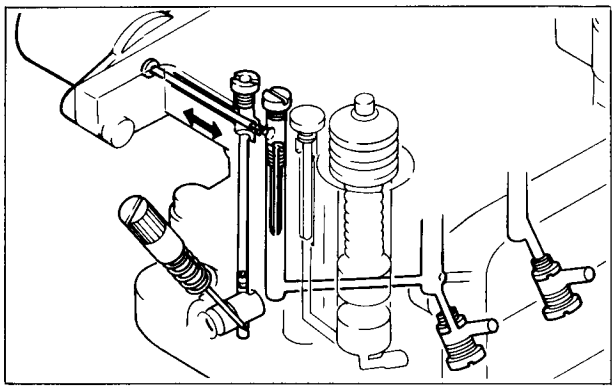


Fig 5-12

(11) SLOW FUEL CUTOFF SOLENOID VALVE NOT WORKING

1. Disconnected
   Connect
2. Needle valve excessively worn
   Replace
3. Needle valve stuck
   Clean or replace, as necessary

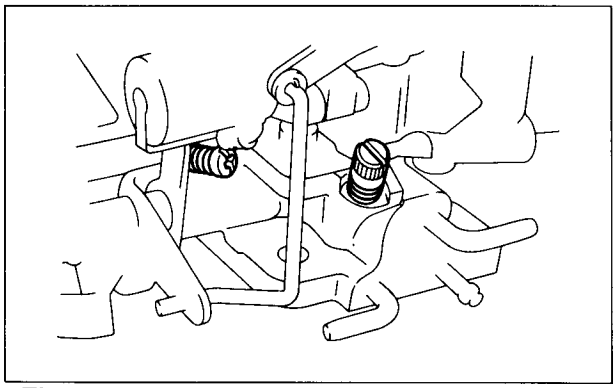


Fig 5-13

(12) IDLE ADJUSTMENT INCORRECT

1. Worn tapered tip or threads
   Replace
2. Setting incorrect
   Adjust

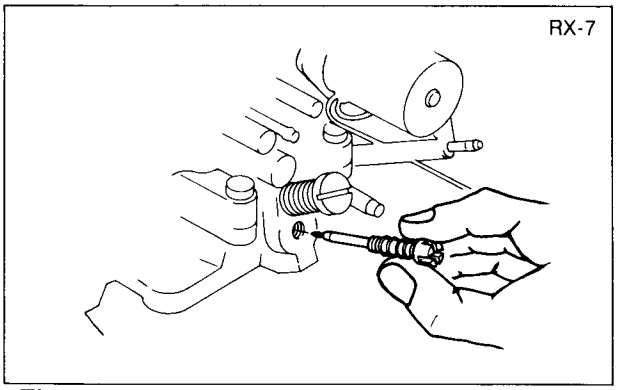


Fig 5-14

RX-7: Mixture adjust screw

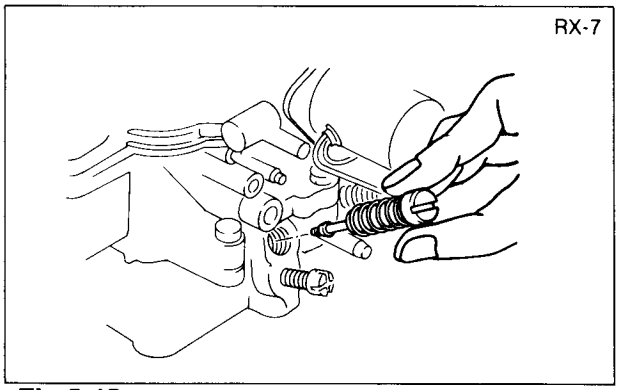


Fig 5-15

RX-7: Air adjust screw

TROUBLESHOOTING

1. POSSIBLE CAUSE AND CORRECTION

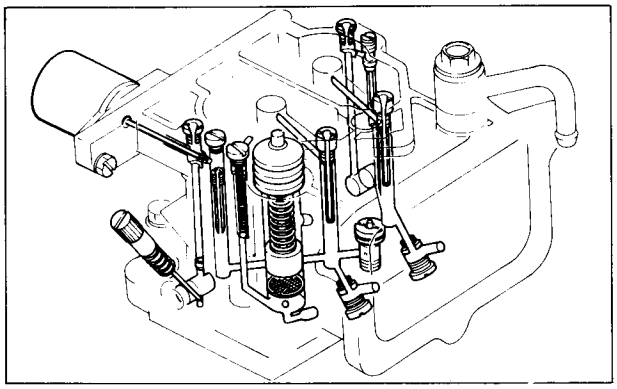


Fig 5-16

(13) FUEL PASSAGES, AIR BLEEDS OR JETS

1. Dirty or plugged
   Clean, blow out or replace
2. Loose
   Tighten

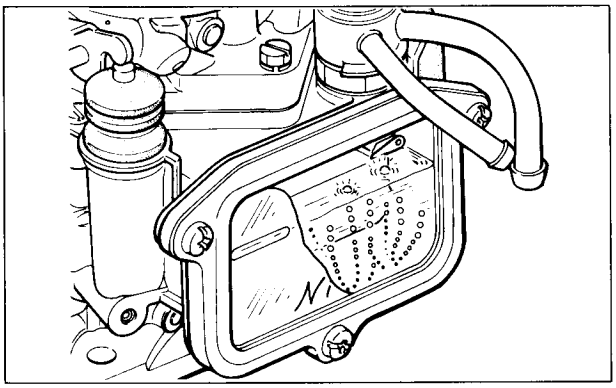


Fig 5-17

(14) FUEL PERCOLATION

Fuel in percolating because engine compartment temperature too high.
Correct by either allowing outside ambient temperature to cool and / or increasing air flow in engine compartment.
Check for obstructions near gfille, radiator and hood seals.

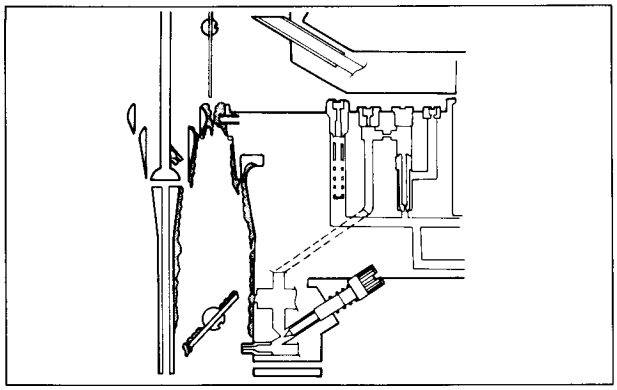


Fig 5-18

(15) CARBURETOR ICING (FREEZING)

If intake air temperature is within the ambient temperature and humidity range shown in Fig. 5-19, freezing may occur.
Check air cleaner intake air valve for proper location and adjust.
(Refer to page 5:2)

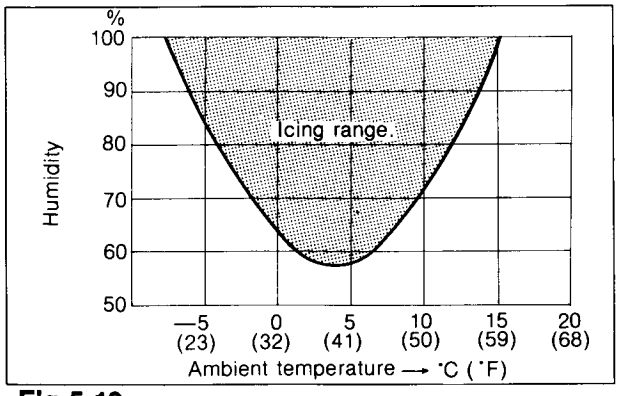


Fig 5-19

TROUBLESHOOTING

1. POSSIBLE CAUSE AND CORRECTION

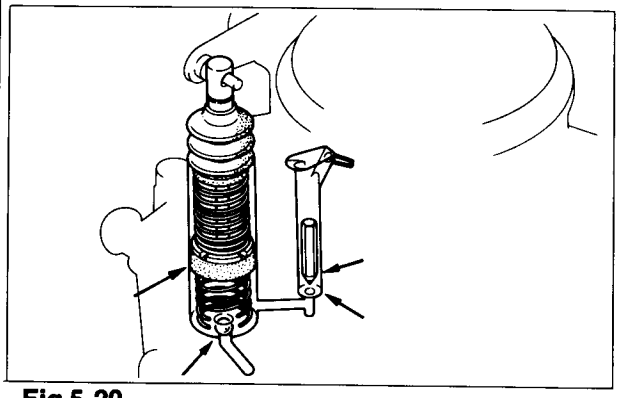


Fig 5-20

16 DEFECTIVE ACCELERATING PUMP SYSTEM

1. Piston cup may be cracked, scored or distorted
   Replace
2. Discharge ball or weight improperly seated
   Clean or correct

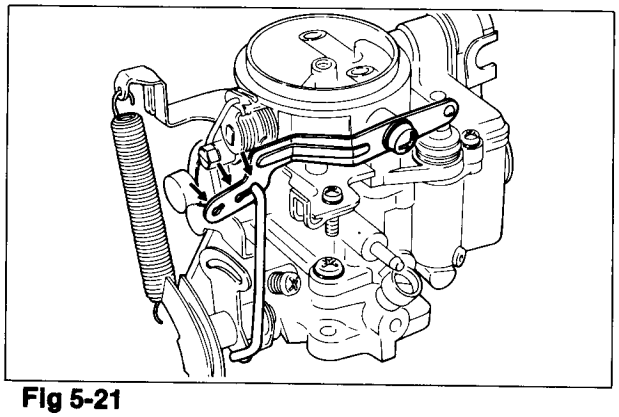


Fig 5-21

17 IMPROPER ACCELERATING PUMP STROKE

Check and adjust (refer to page 3:20)

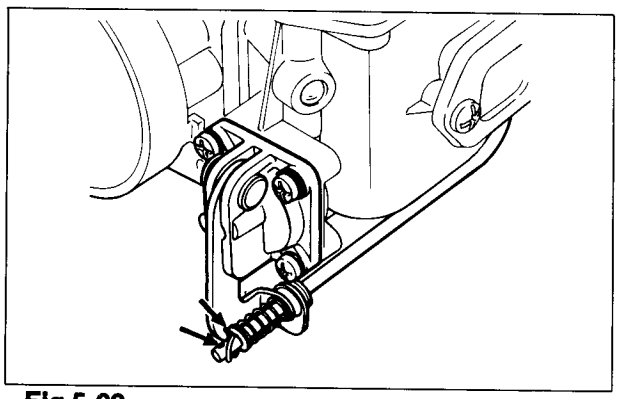


Fig 5-22

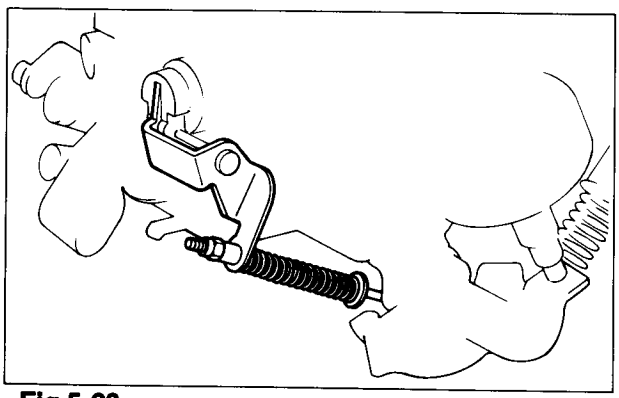


Fig 5-23

TROUBLESHOOTING

1. POSSIBLE CAUSE AND CORRECTION

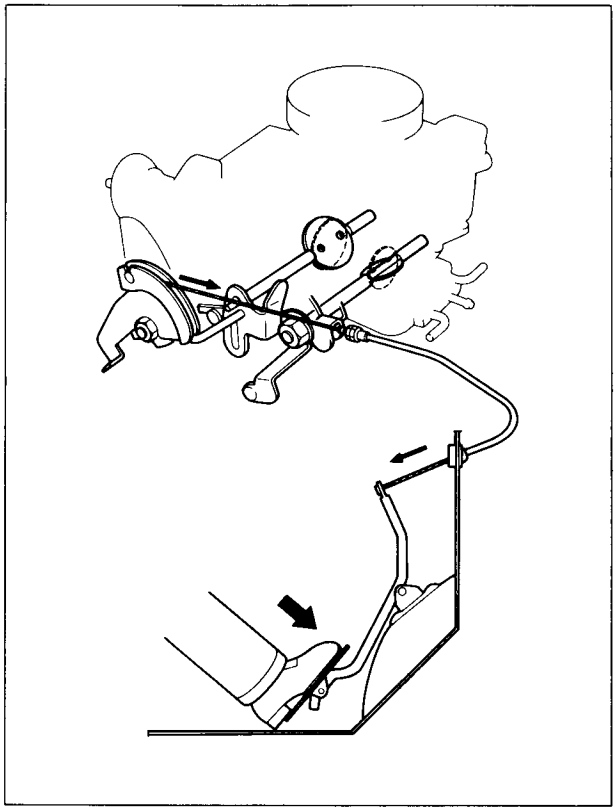


Fig 5-24

(18) PRIMARY THROTTLE VALVE NOT WIDE OPEN

1. Throttle valve or shaft sticks clean, lubricate or replace
2. Accelerator pedal linkage too short
   Adjust

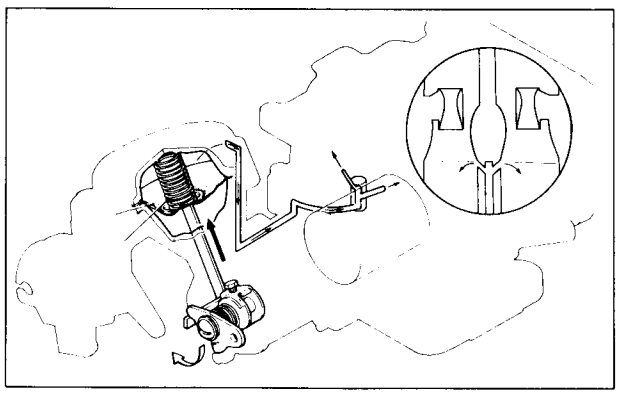


Fig 5-25

(19) SECONDARY THROTTLE VALVE NOT OPEN PROPERLY OR IS DELAYED

1. Secondary throttle valve, shaft or linkage sticks
   Clean, lubricate or replace
2. Vacuum diaphragm damaged
   Replace
3. Weak spring
   Replace

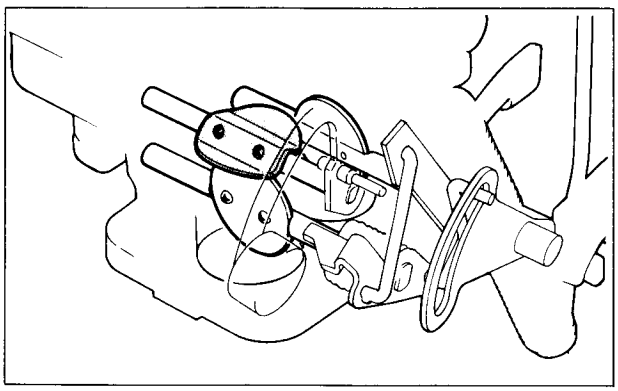


Fig 5-26

(20) AIR VALVE NOT OPEN PROPERLY

Valve, shaft or linkage sticks
Clean, lubricate or replace

TROUBLESHOOTING

1. POSSIBLE CAUSE AND CORRECTION

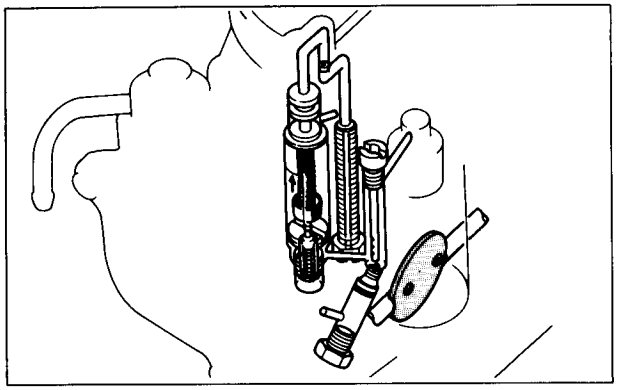


Fig 5-27

(21) POWER VALVE STUCK COLSED

1. Power valve stuck
   Clean or replace
2. Power valve solenoid sticking (RX-7 only)
   Replace

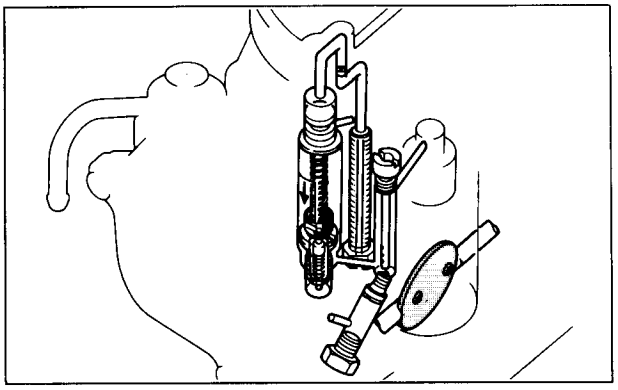


Fig 5-28

(22) POWER VALVE STAYS OPEN

1. Intake manifold vacuum leak
   Reseal or tighten
2. Power valve solenoid stuck (RX-7 only)
   Clean, lubricate or replace
3. Power valve stuck
   Clean or replace
4. Loose power valve
   Tighten or repalce

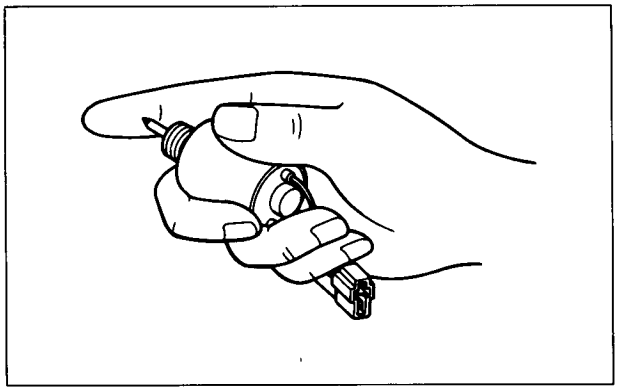


Fig 5-29

(23) COASTING RICHER NOT WORKING

1. Solenoid disconnected, inoperative
   Connect or replace
2. Needle valve stuck or damaged
   Clean or replace

TROUBLESHOOTING

1. POSSIBLE CAUSE AND CORRECTION

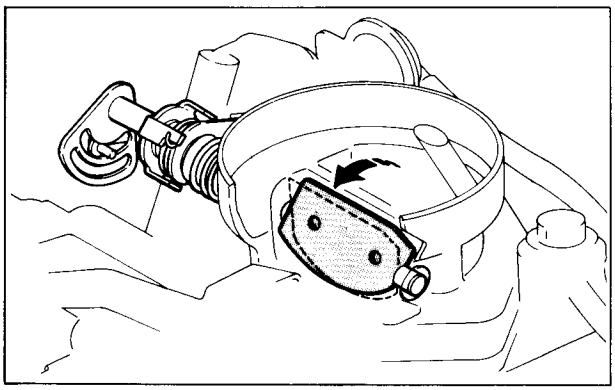


Fig 5-30

(24) CHOKE VALVE NOT COMPLETELY OPENING

1. Choke valve, linkage or shaft is binding or sticking
   Clean, lubricate or replace
2. Choke cable improperly adjusted
   Adjust or replace

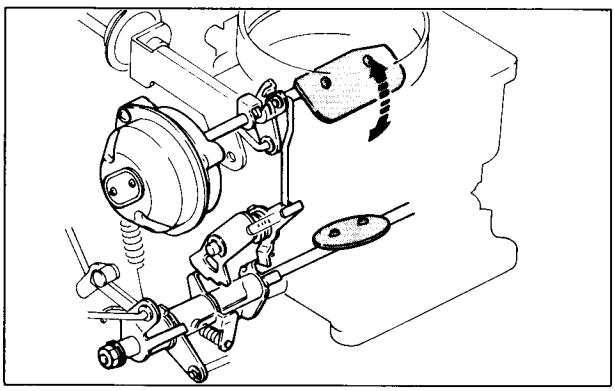


Fig 5-31

(25) CHOKE VALVE NOT OPENING PROPERLY

1. Vacuum break diaphragm damaged
   Replace
2. Automatic choke heater not working
   Reconnect, repair or replace
3. Linkage sticking or binding
   Clean, repair, lubricate or replace

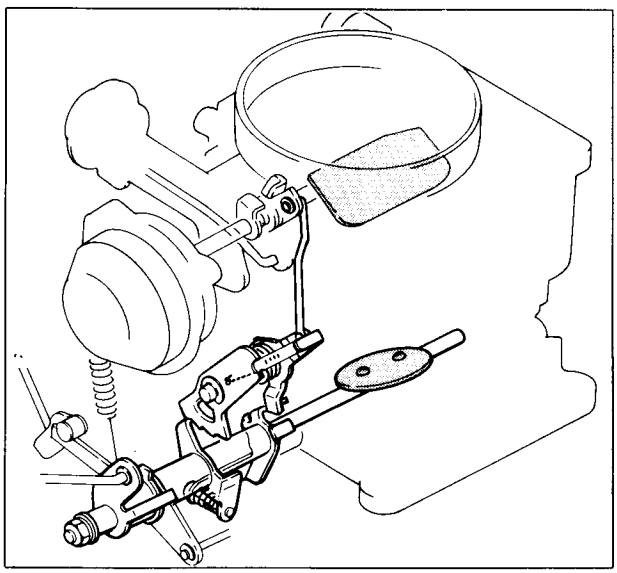


Fig 5-32

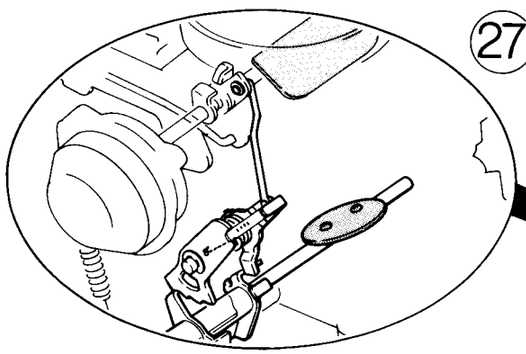
(26) CHOKE VALVE NOT CLOSING PROPERLY

1. Linkage sticking or binding
   Clean, repair, lubricate or replace, as necessary
2. Bi-metal sticking or no spring tension
   Clean or replace

(27) CHOKE VALVE/THROTTLE VALVE ADJUSTMENT NOT CORRECT

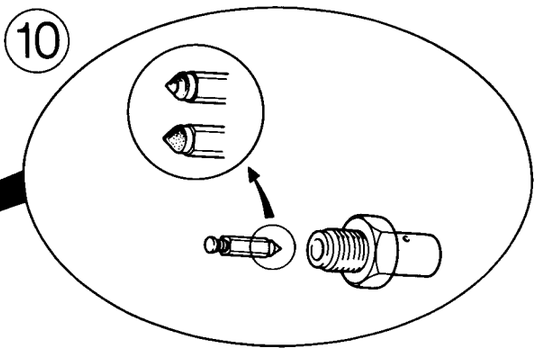
1. Fast idle speed
   Lubricate or adjust
2. Throttle valve opening clearance
   Adjust
3. Unloader system
   Adjust

2. ENGINE HARD STARTING WHEN COLD



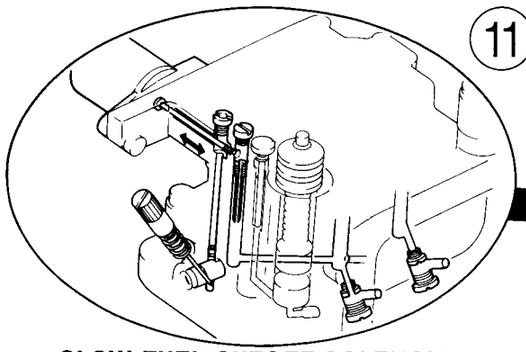
27

CHOKE VALVE-THROTTLE VALVE ADJUSTMENT NOT CORRECT



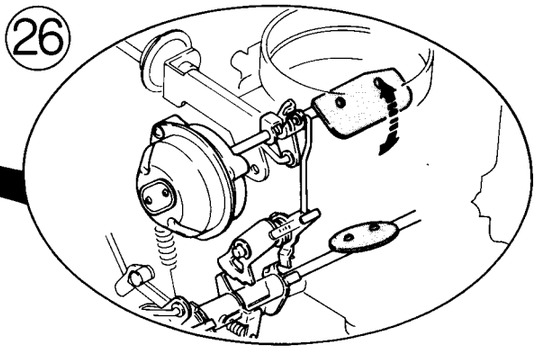
10

LOW OR NO FUEL IN CARBURETOR CARBURETOR FLOODING



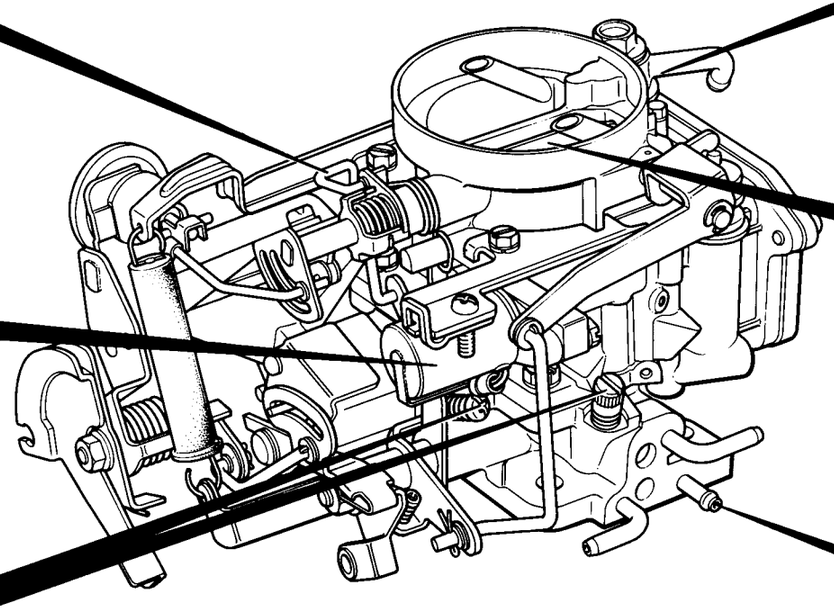
11

SLOW FUEL CUTOFF SOLENOID VALVE NOT WORING

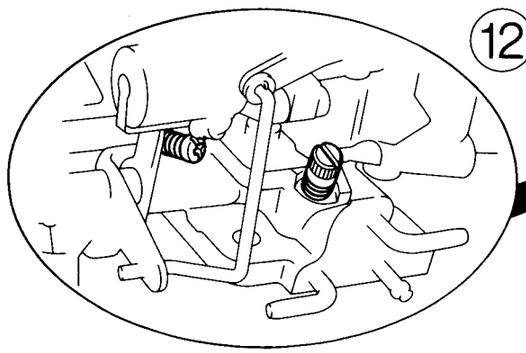


26

CHOKE VALVE NOT CLOSING PROPERLY

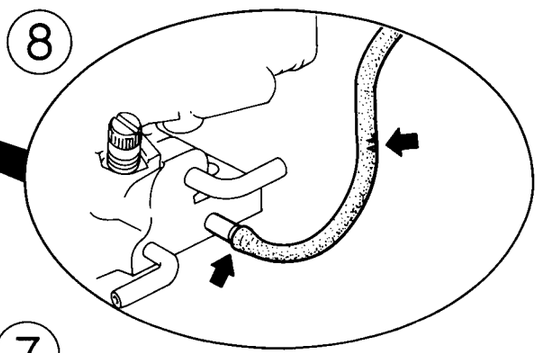


626 CARBURETOR



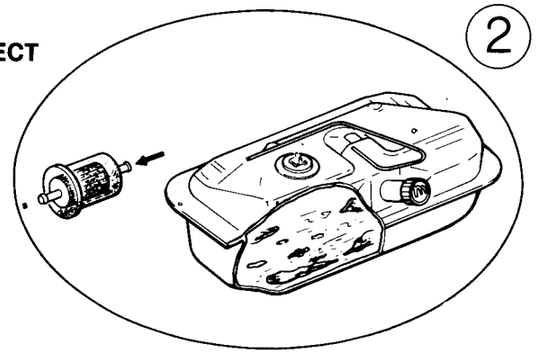
12

IDLE ADJUSTMENT INCORRECT



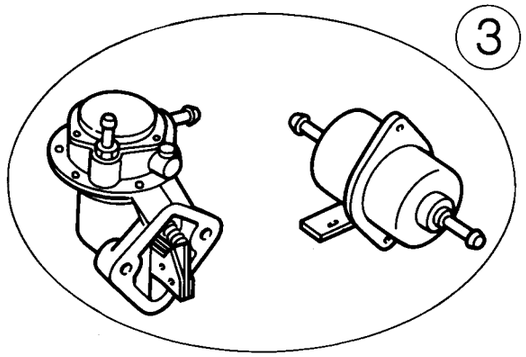
8

VACUUM LEAKS



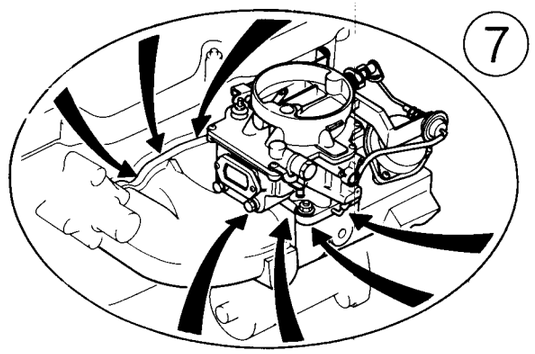
2

DIRT, RUST OR WATER IN FUEL SYSTEM



3

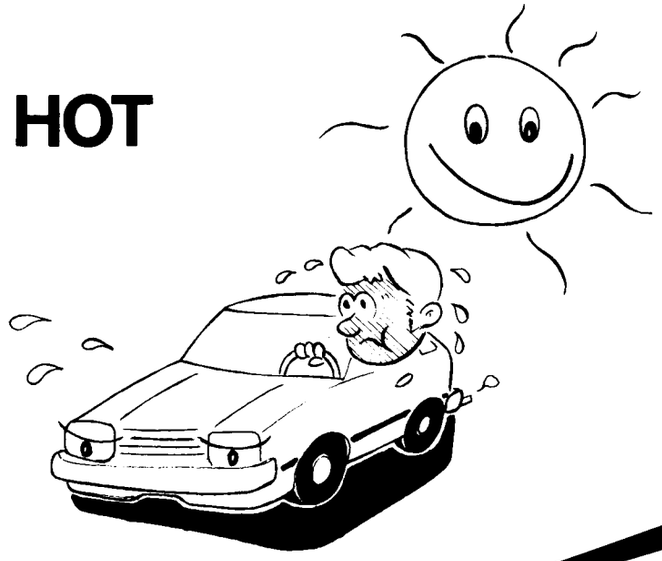
LOW OR NO FUEL IN CARBURETOR

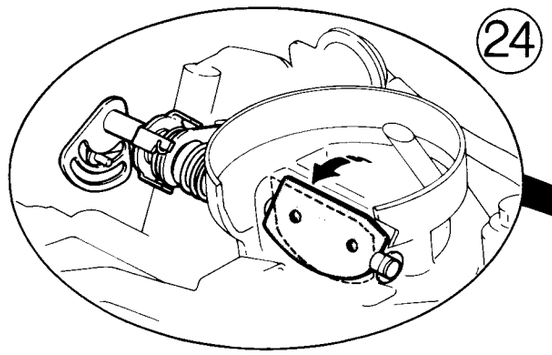


7

AIR LEAKS

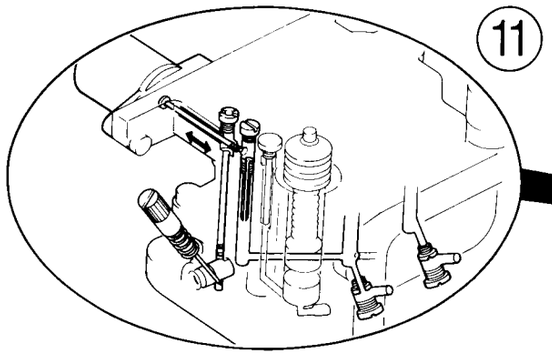
3. ENGINE HARD STARTING WHEN HOT





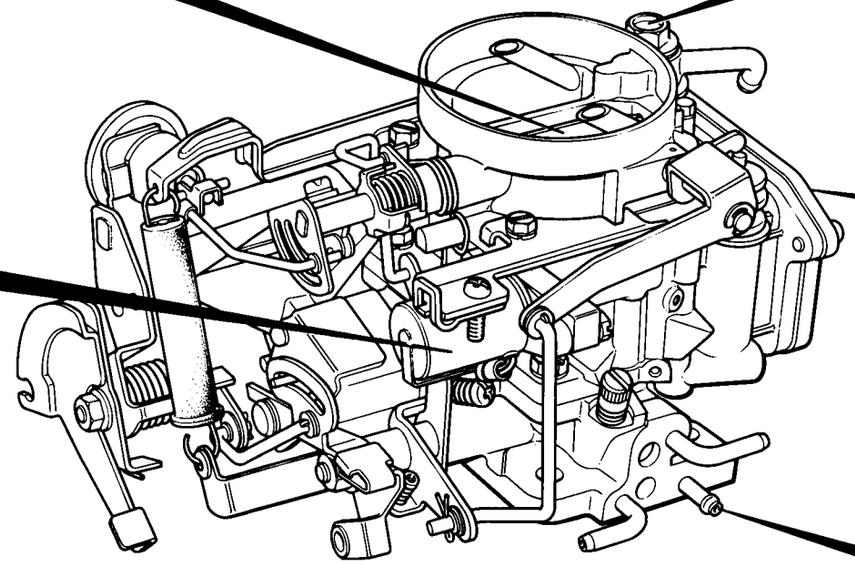
24

CHOKE VALVE NOT COMPLETELY OPENING

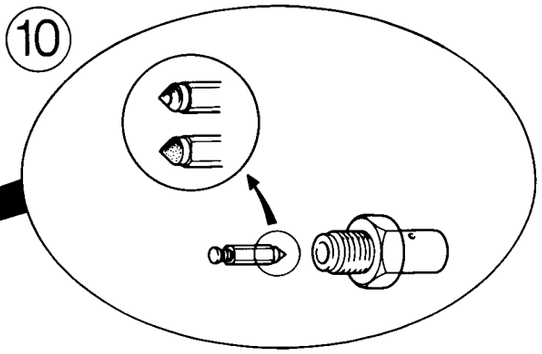


11

SLOW FUEL CUTOFF SOLENOID VALVE NOT WORKING

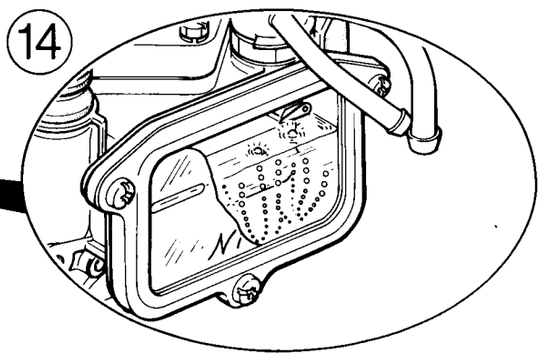


626 CARBURETOR



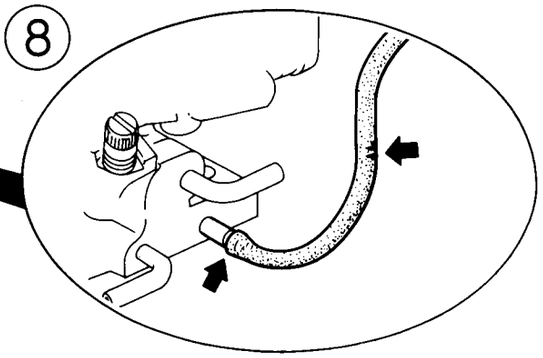
10

LOW OR NO FUEL IN CARBURETOR
CARBURETOR FLOODING



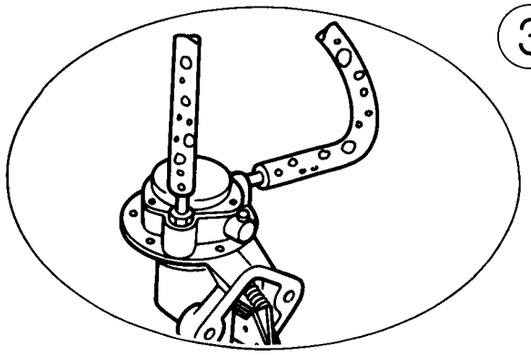
14

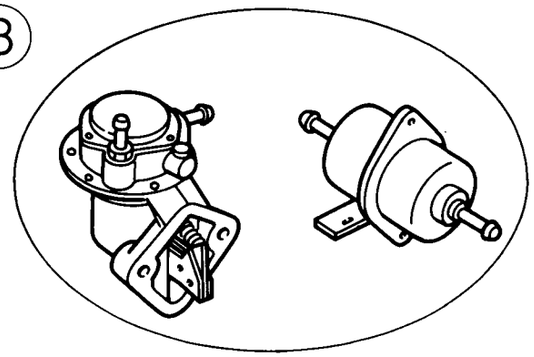
FUEL PERCOLATION



8

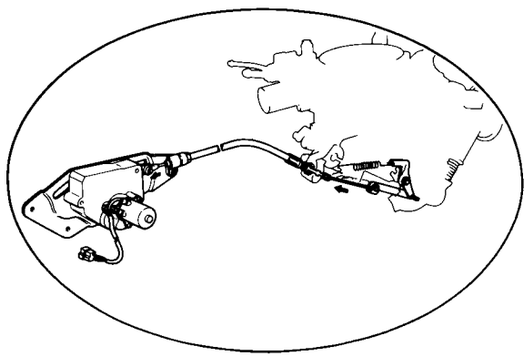
VACUUM LEAKS





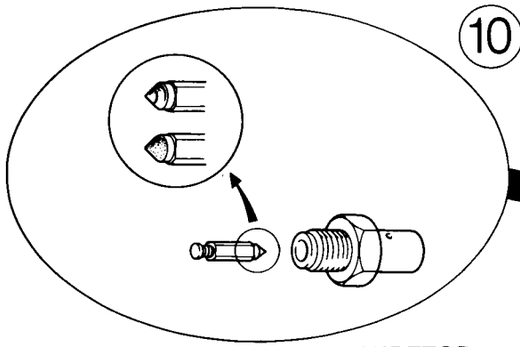
3

LOW OR NO FUEL IN CARBURETOR



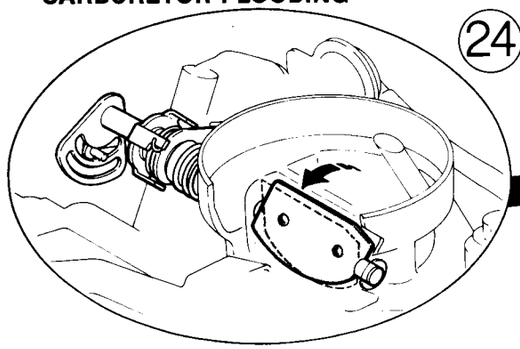
HOT START ASSIST DEVICE NOT WORKING RX-7 ONLY

4. ROUGH IDLING AND STALLING



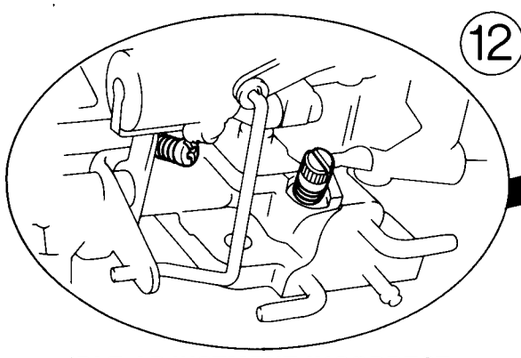
10

LOW OR NO FUEL IN CARBURETOR
CARBURETOR FLOODING



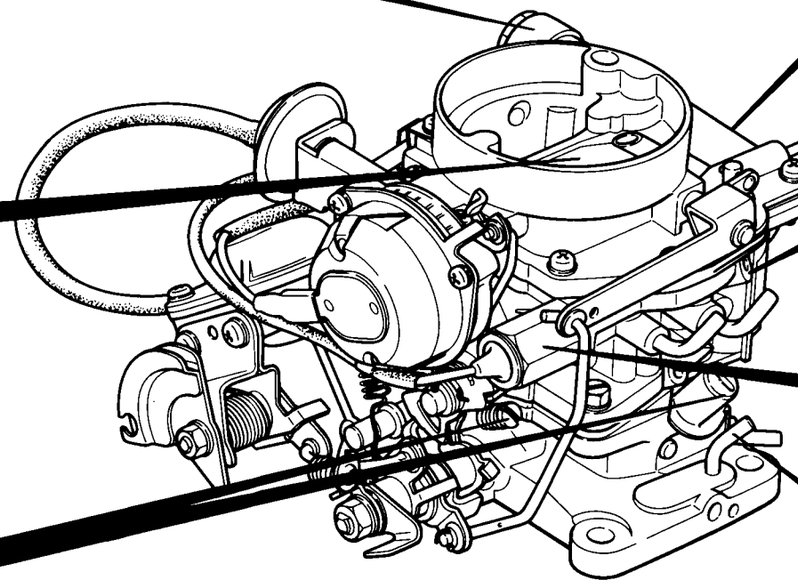
24

CHOKE VALVE NOT COMPLETELY OPENING

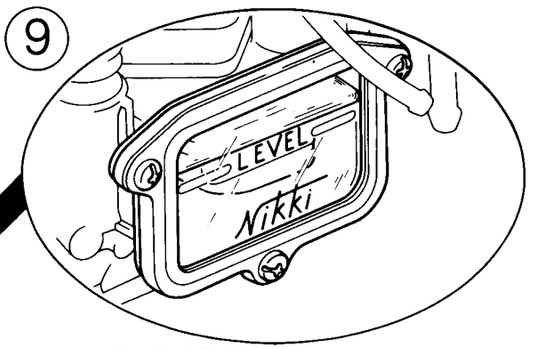


12

IDLE ADJUSTMENT INCORRECT

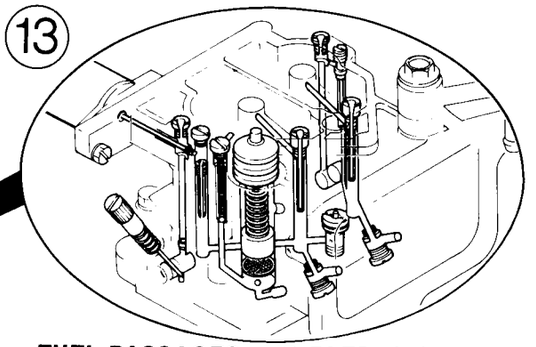


626 CARBURETOR WITH AUTOMATIC CHOKE



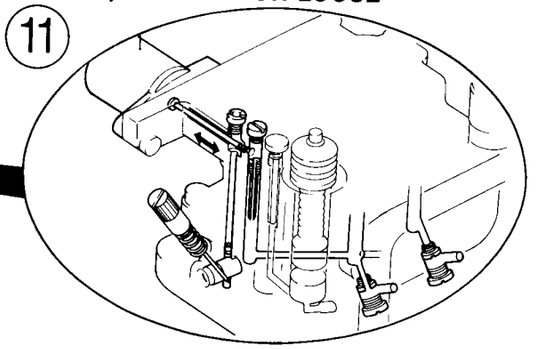
9

FUEL LEVEL HIGH OR LOW



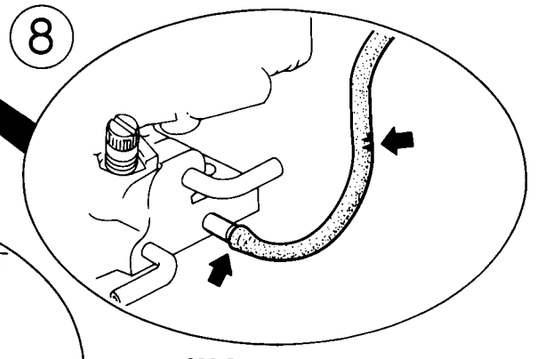
13

FUEL PASSAGES, AIR BLEEDS OR JETS
DIRTY, PLUGGED OR LOOSE



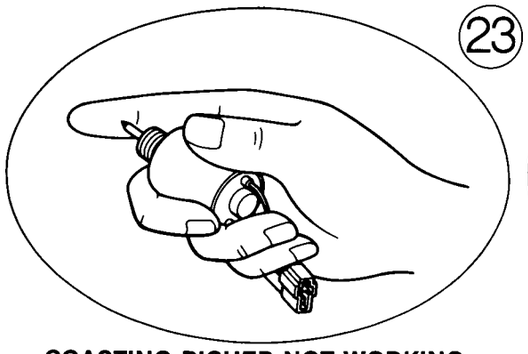
11

SLOW FUEL CUTOFF SOLENOID VALVE



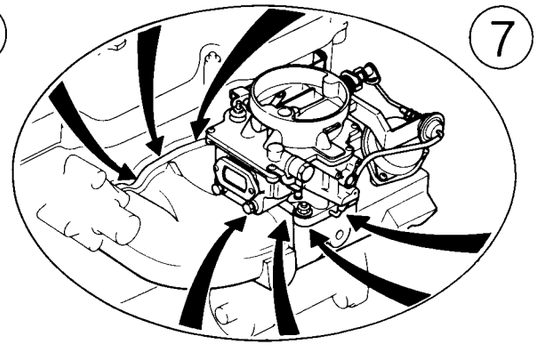
8

VACUUM LEAKS



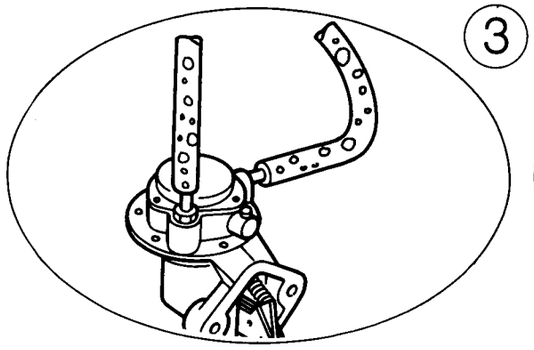
23

COASTING RICHER NOT WORKING
RX-7 ONLY



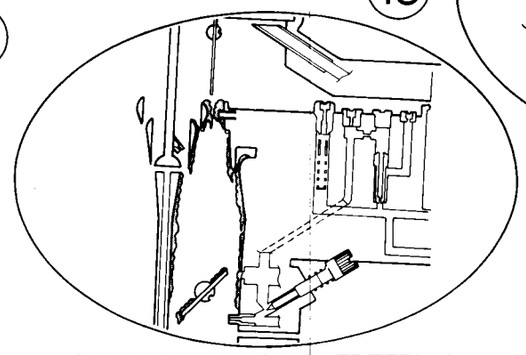
7

AIR LEAKS



3

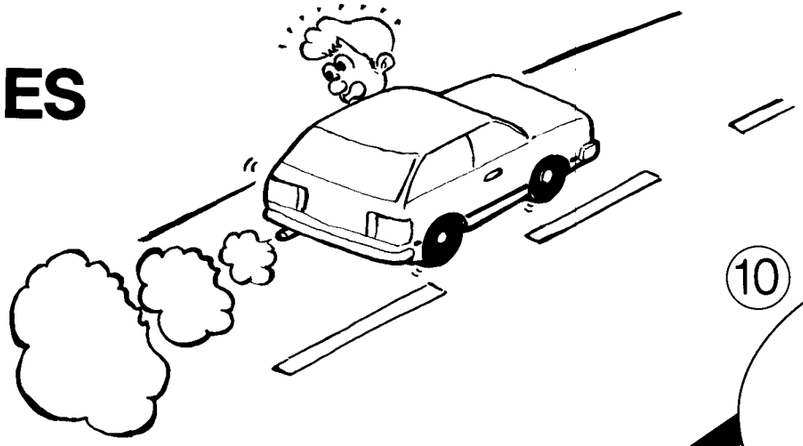
LOW OR NO FUEL IN CARBURETOR

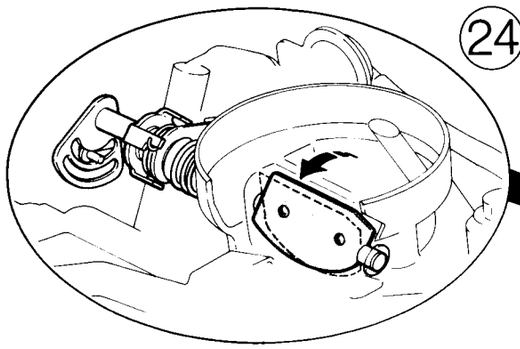


15

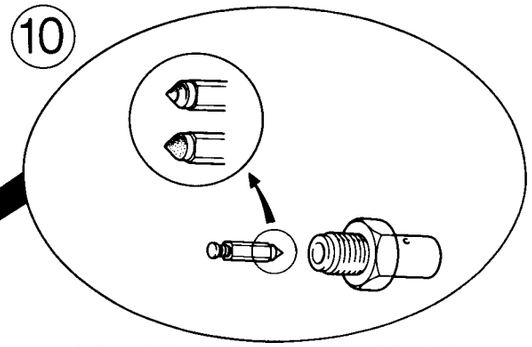
CARBURETOR ICING (FREEZING)

5. ENGINE RUNS UNEVEN OR SURGES

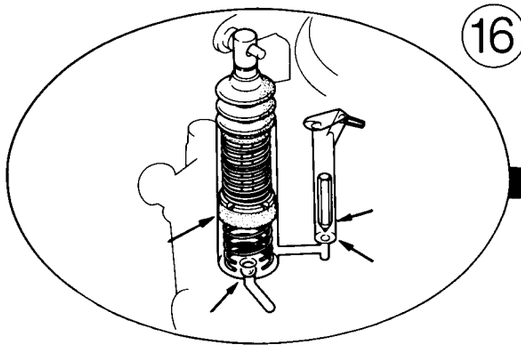




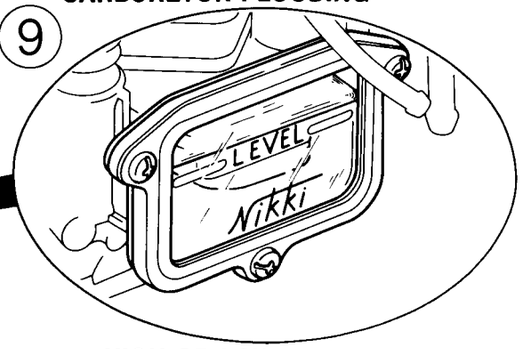
CHOKE VALVE NOT COMPLETELY OPENING



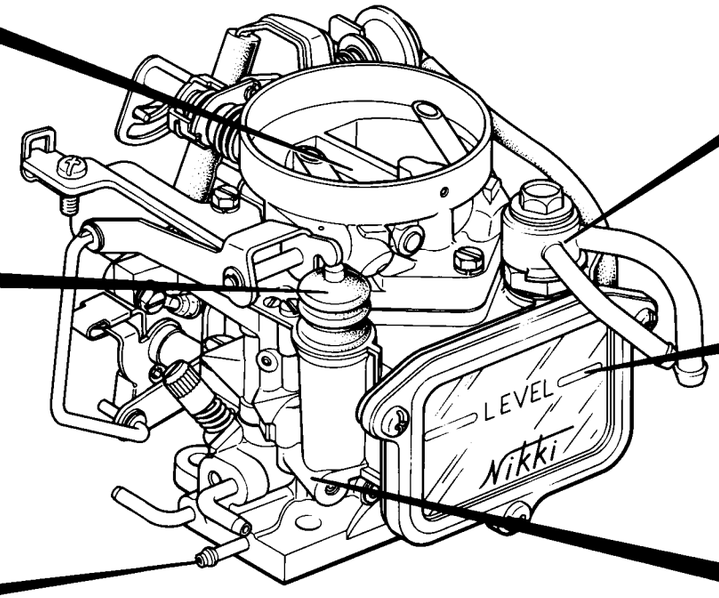
LOW OR NO FUEL IN CARBURETOR
CARBURETOR FLOODING



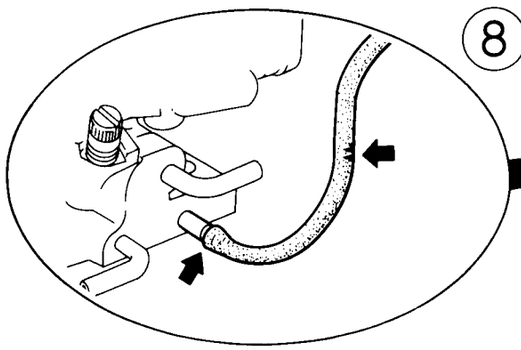
DEFECTIVE ACCELERATING PUMP SYSTEM



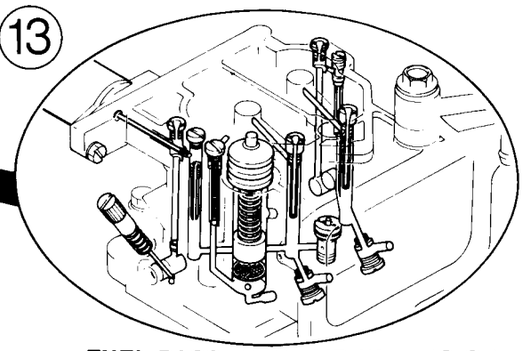
HIGH OR LOW FUEL LEVEL



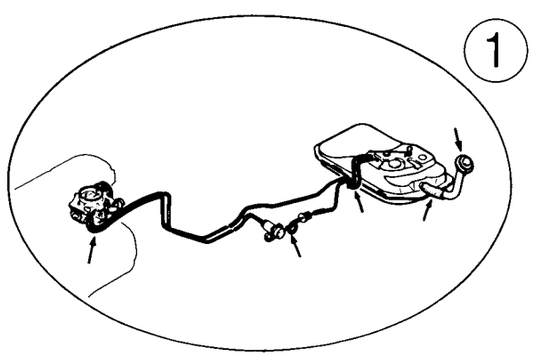
626 CARBURETOR



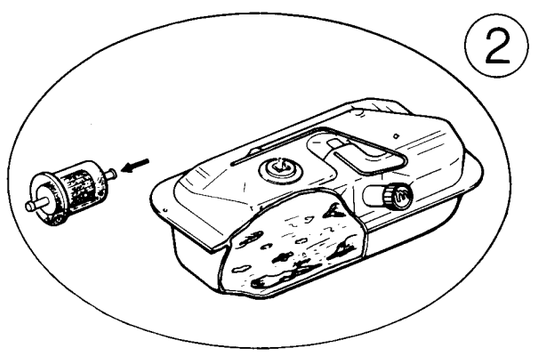
VACUUM LEAKS



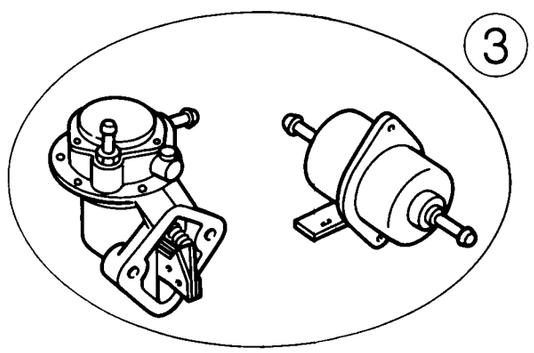
FUEL PASSAGES, AIR BLEEDS OR
JETS DIRTY, PLUGGED OR LOOSE



FUEL RESTRICTION

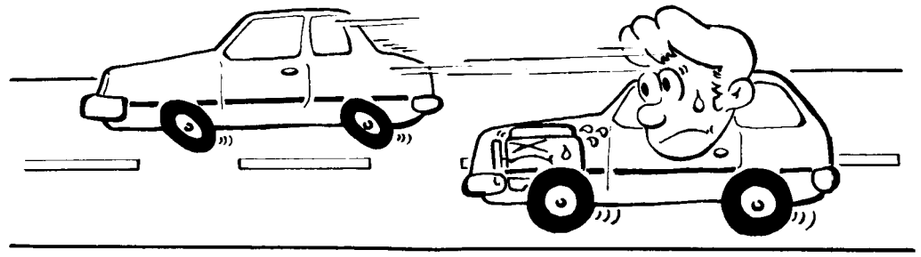


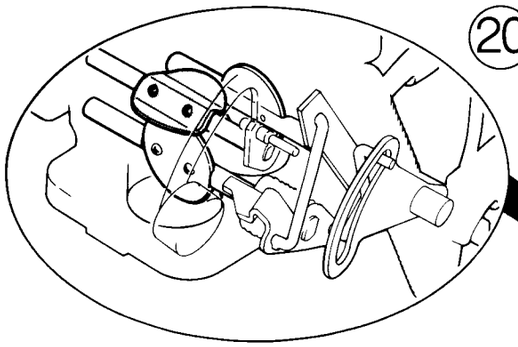
DIRT, RUST WATER IN FUEL SYSTEM



NOT ENOUGH FUEL TO CARBURETOR

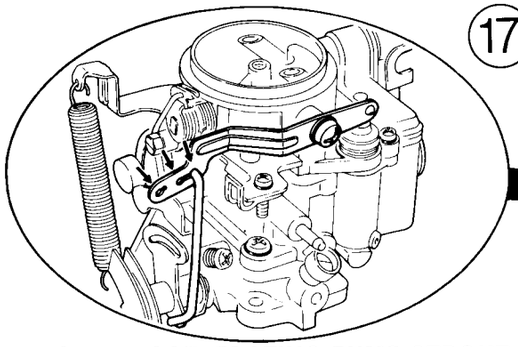
6. POOR ACCELERATION





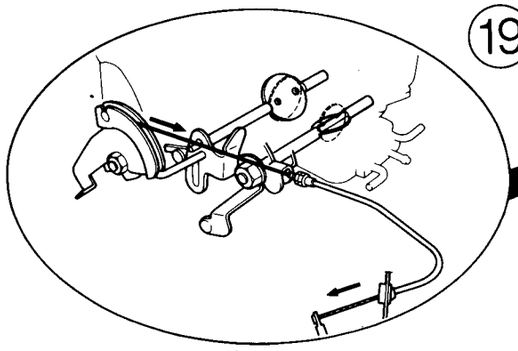
20

AIR VALVE NOT PROPERLY OPEN



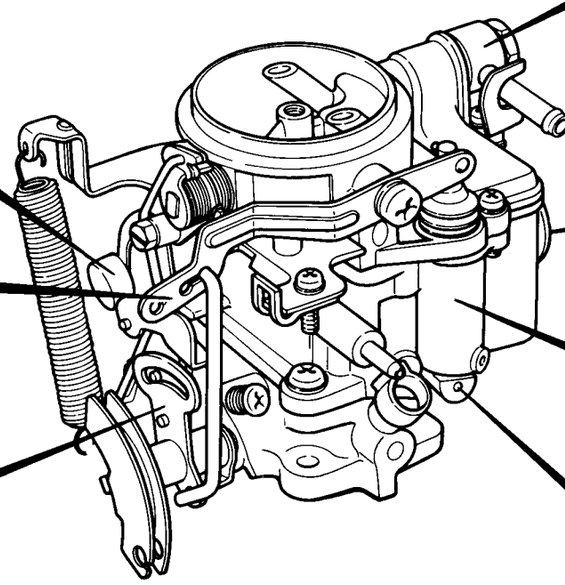
17

IMPROPER ACCELERATING PUMP STROKE

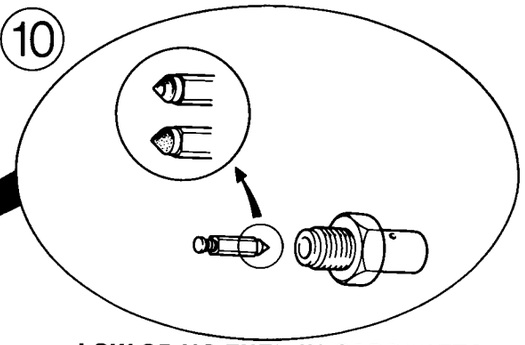


19

SECONDARY THROTTLE VALVE NOT PROPERLY OPEN OR IS DELAYED

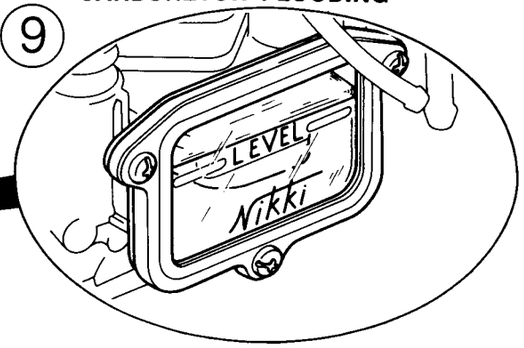


323 CARBURETOR



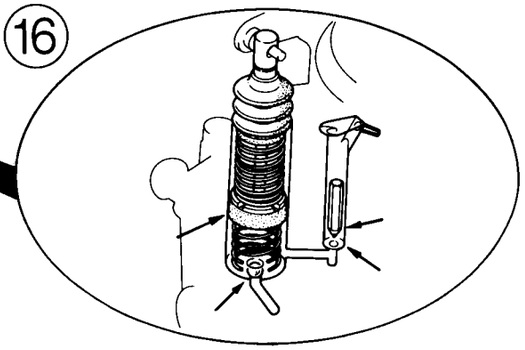
10

LOW OR NO FUEL IN CARBURETOR
CARBURETOR FLOODING



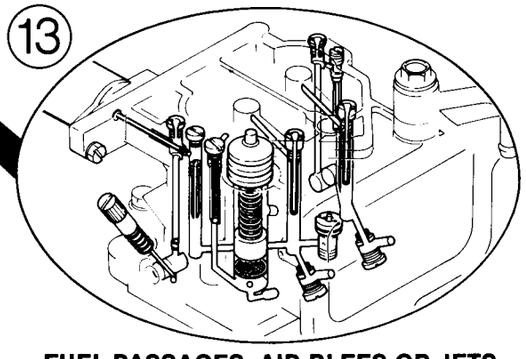
9

HIGH OR LOW FUEL LEVEL



16

DEFECTIVE ACCELERATING PUMP SYSTEM

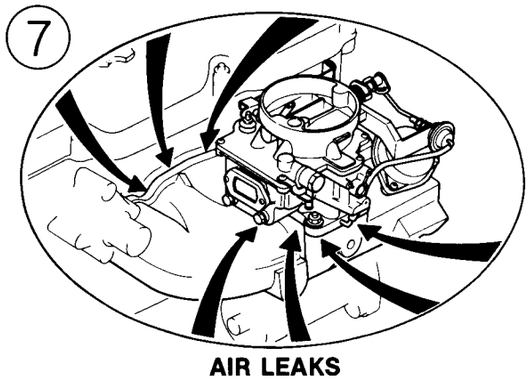


13

FUEL PASSAGES, AIR BLEES OR JETS
DIRTY, PLUGGED OR LOOSE

5

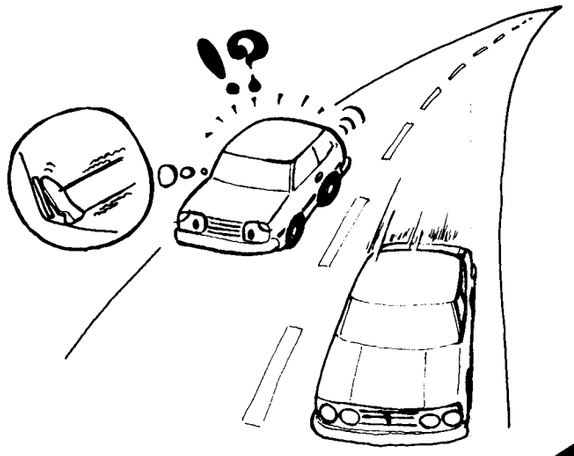
AIR CLEANER ELEMENT DIRTY OR CLOGGED

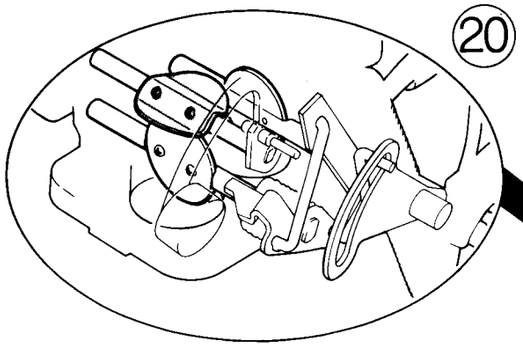


7

AIR LEAKS

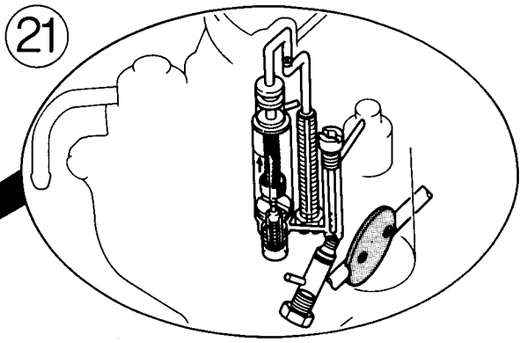
7. LACK OF POWER ON ACCELERATION OR AT HIGH SPEED





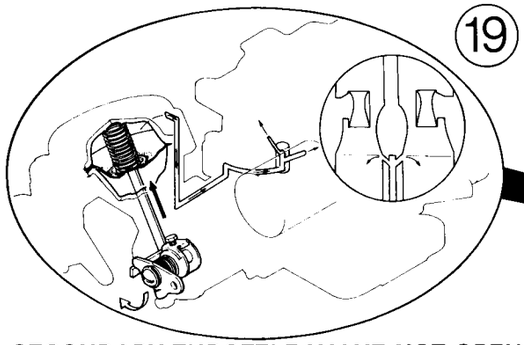
20

AIR VALVE NOT PROPERLY OPEN



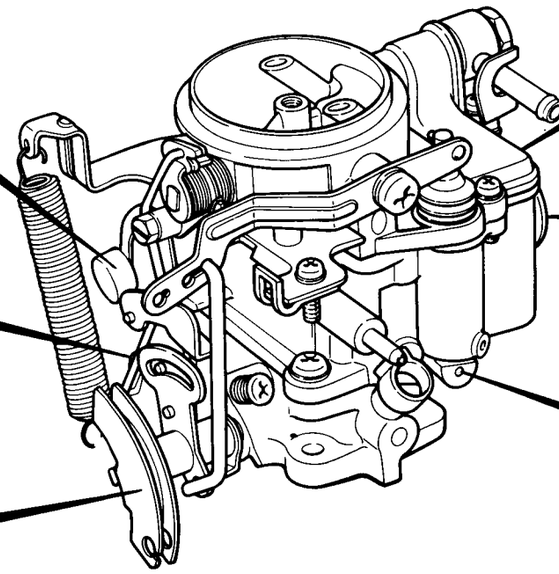
21

POWER VALVE STUCK CLOSED

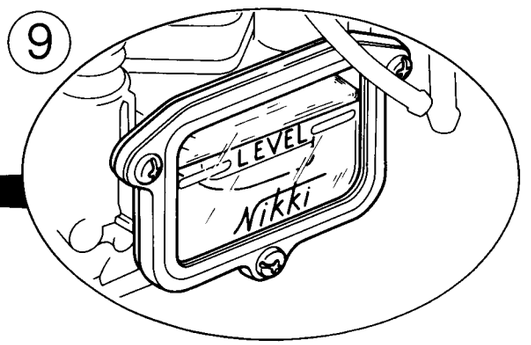


19

SECONDARY THROTTLE VALVE NOT OPEN PROPERLY OR IS DELAYED

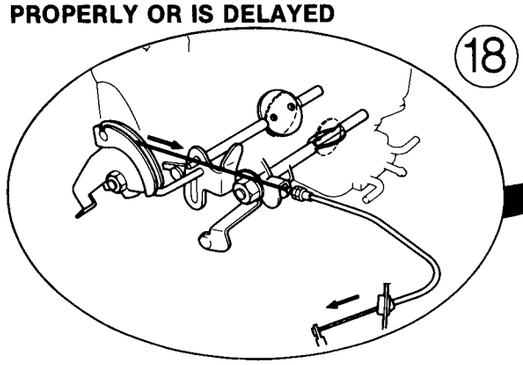


323 CARBURETOR



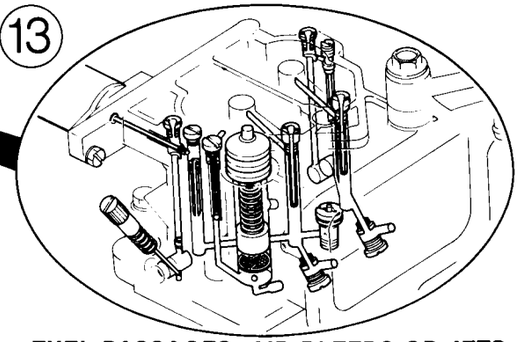
9

HIGH OR LOW FUEL LEVEL



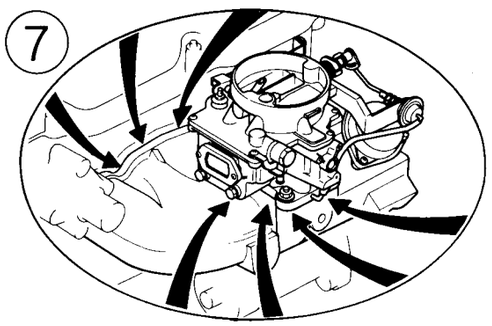
18

PRIMARY THROTTLE VALVE NOT WIDE OPEN



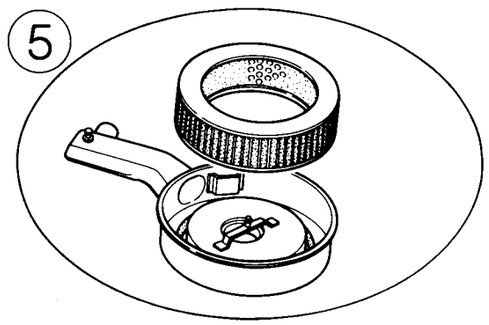
13

FUEL PASSAGES, AIR BLEEDS OR JETS DIRTY, PLUGGED OR LOOSE



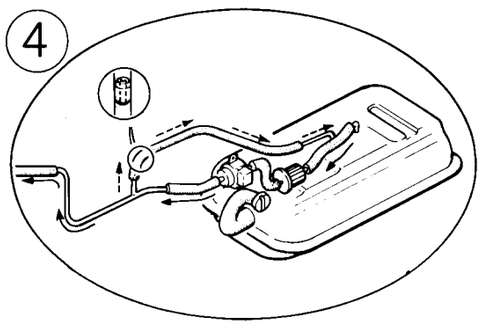
7

AIR LEAKS



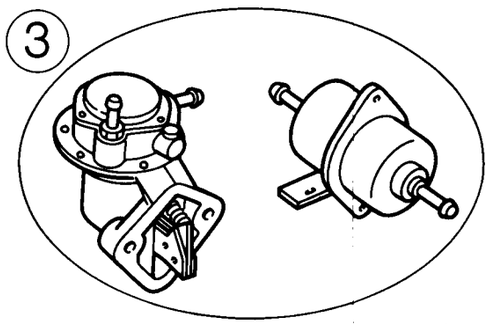
5

AIR CLEANER ELEMENT DIRTY



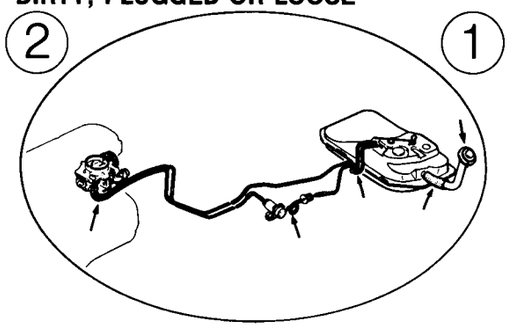
4

FUEL RETURN ORIFICE MISSING OR INCORRECT PART



3

NOT ENOUGH FUEL IN CARBURETOR

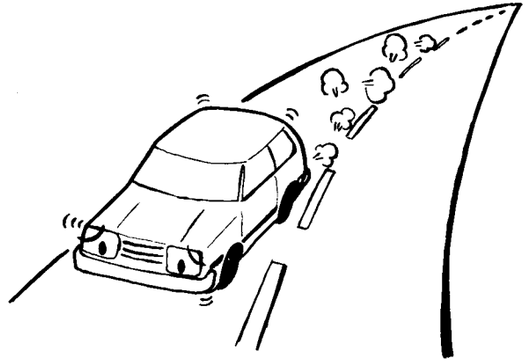


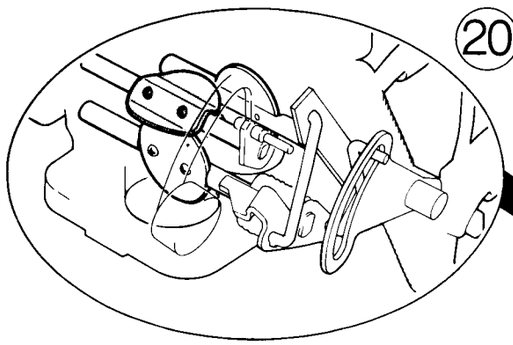
2

1

DIRT, RUST OR WATER IN FUEL SYSTEM FUEL RESTRICTION

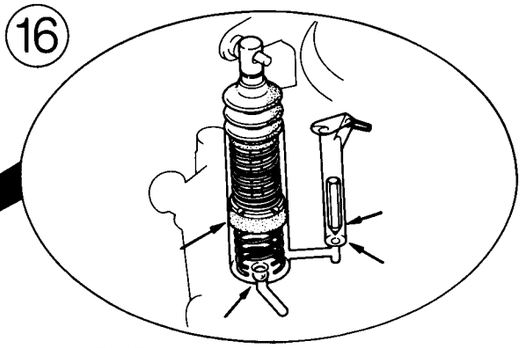
8. HESITATION ON ACCELERATION





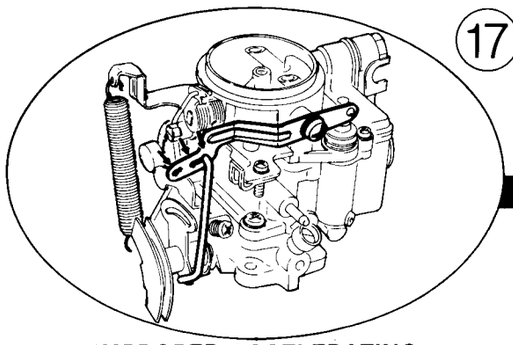
20

AIR VALVE NOT PROPERLY OPEN



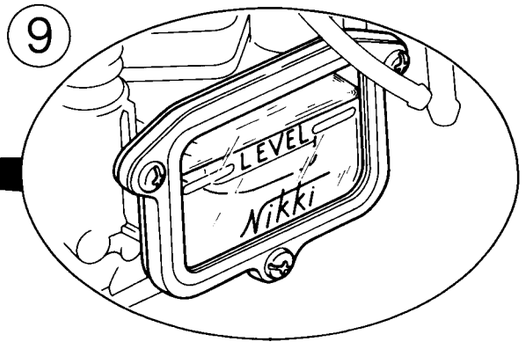
16

DEFECTIVE ACCELERATING PUMP SYSTEM



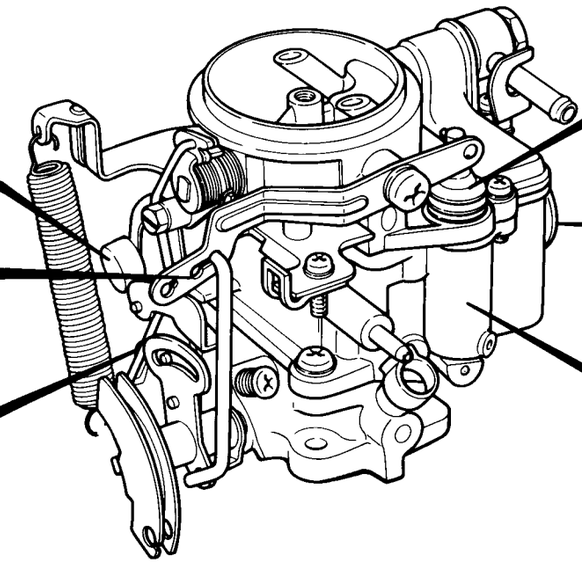
17

IMPROPER ACCELERATING PUMP STROKE

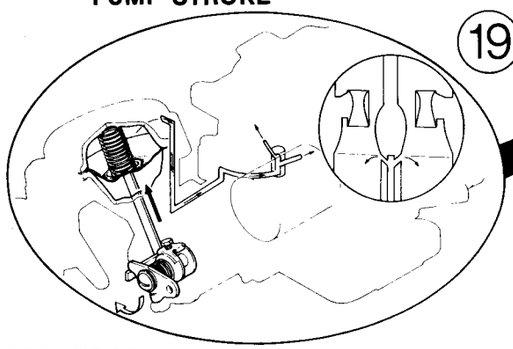


9

HIGH OR LOW FUEL LEVEL

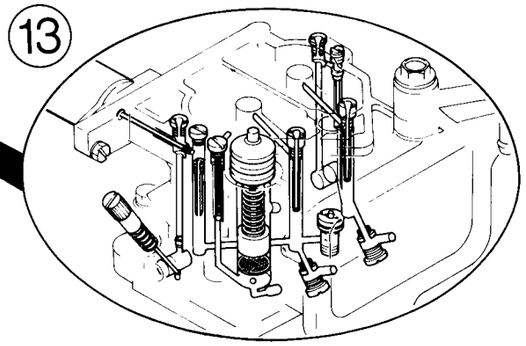


323 CARBURETOR



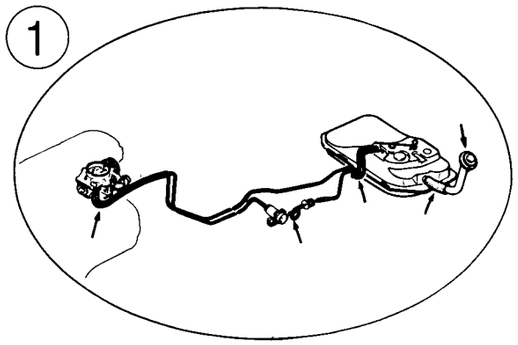
19

SECONDARY THROTTLE VALVE NOT OPEN PROPERLY OR IS DELAYED



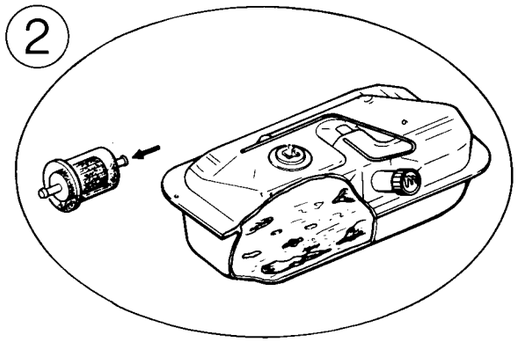
13

FUEL PASSAGES AND / OR AIR BLEEDS DIRTY OR PLUGGED



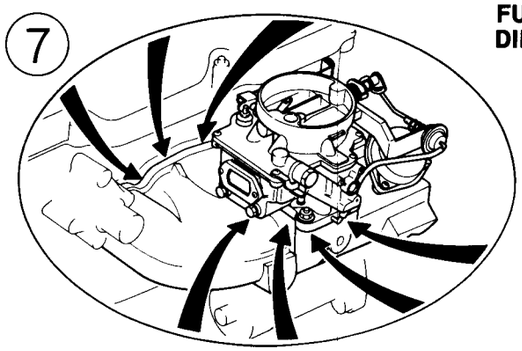
1

FUEL RESTRICTION



2

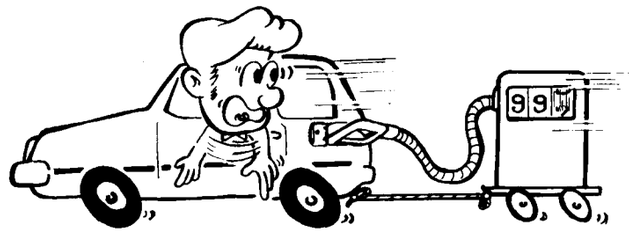
DIRT, RUST OR WATER IN FUEL SYSTEM

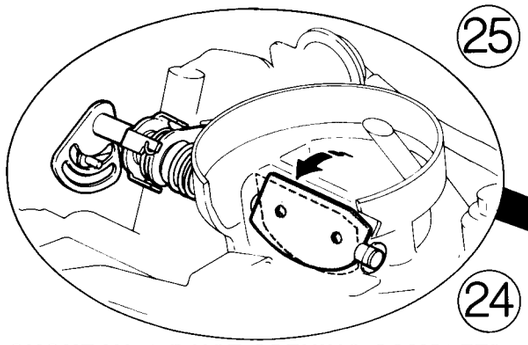


7

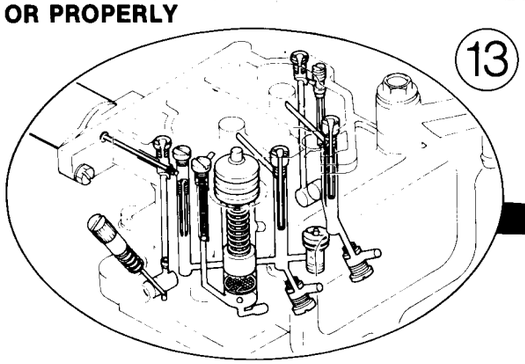
AIR LEAKS

9. POOR FUEL ECONOMY

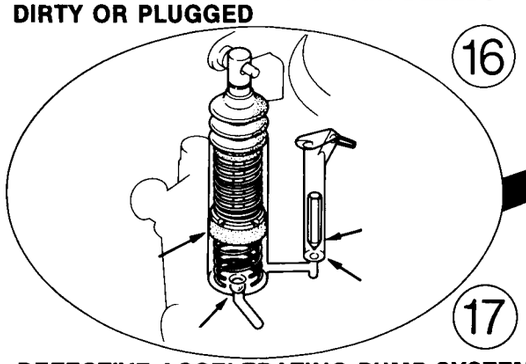




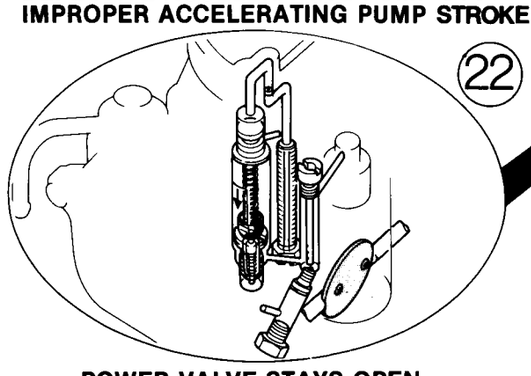
CHOKE VALVE NOT OPENING COMPLETELY OR PROPERLY



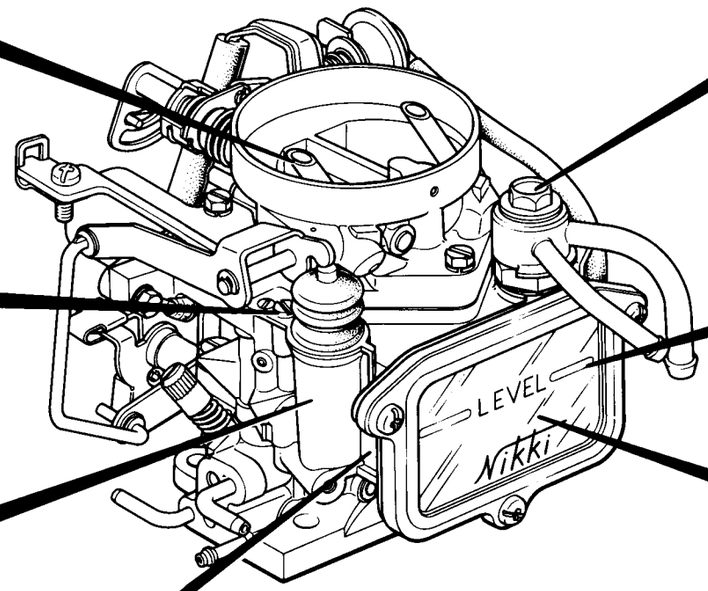
FUEL PASSAGES AND / OR AIR BLEEDS DIRTY OR PLUGGED



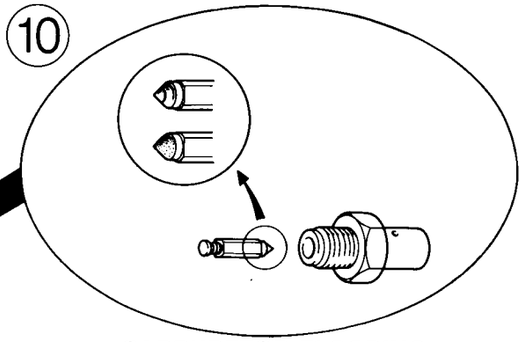
DEFECTIVE ACCELERATING PUMP SYSTEM
IMPROPER ACCELERATING PUMP STROKE



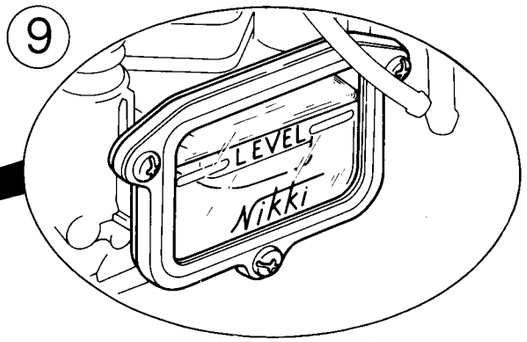
POWER VALVE STAYS OPEN



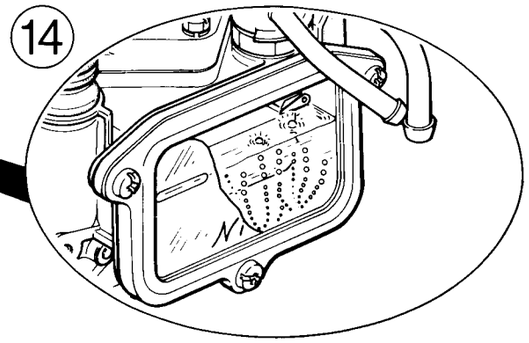
626 CARBURETOR



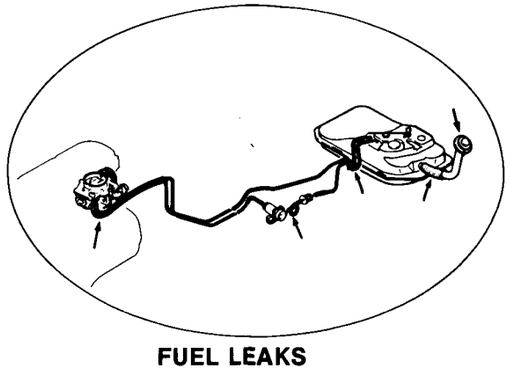
CARBURETOR FLOODING



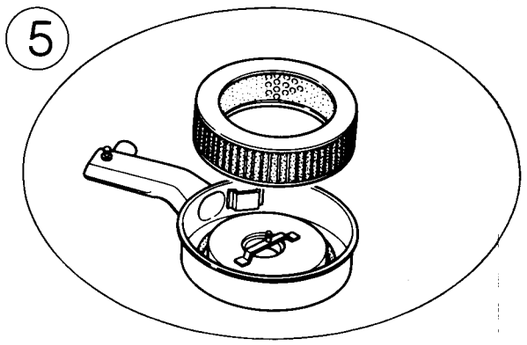
HIGH FUEL LEVEL



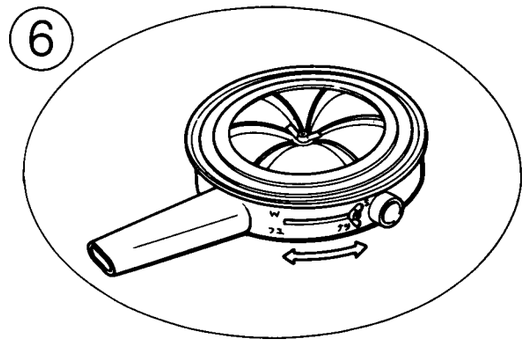
FUEL PERCOLATION



FUEL LEAKS



AIR CLEANER ELEMENT DIRTY OR CLOGGED



INTAKE AIR TOO HOT OR TOO COLD