Carburetor
Training Manual

SECTION INDEX

<table>
<thead>
<tr>
<th>Name</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL</td>
<td>1</td>
</tr>
<tr>
<td>SYSTEM OPERATION</td>
<td>2</td>
</tr>
<tr>
<td>INSPECTION AND ADJUSTMENT</td>
<td>3</td>
</tr>
<tr>
<td>DISASSEMBLY AND ASSEMBLY</td>
<td>4</td>
</tr>
<tr>
<td>TROUBLESHOOTING</td>
<td>5</td>
</tr>
</tbody>
</table>

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. Toyo Kogyo reserves the right to make changes in designs without previous notice.
**GENERAL**

1. CARBURETOR TYPE ......................................................... 1: 1
2. MODEL ........................................................................ 1: 2
3. IDENTIFICATION CODE .................................................. 1: 4
GENERAL

1. CARBURETOR TYPE

Down-draft
Two-stage
Two-barrel


Fig 1-1

Down-draft
Two-stage
Four-barrel

Applied model: RX-7

Fig 1-2

Horizontal-draft
Two-stage
Two-barrel

Applied models: E1600, E2000

Fig 1-3
2. MODEL

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

Nikki with automatic choke.

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

Hitachi with automatic choke.
Applied model: GLC.
2. MODEL

Nikki with manual choke.

Fig 1-10

Nikki with manual choke.
Applied model: E1600.

Fig 1-11

Nikki with manual choke.

Fig 1-12
3. IDENTIFICATION CODE

NIKKI


Fig 1-13

HITACHI

Applied models: 323, GLC, E1300.

Fig 1-14
SYSTEM OPERATION

1. FUEL INLET AND RETURN SYSTEM ............................................ 2: 1
2. FLOAT SYSTEM ........................................................................ 2: 3
3. SLOW FUEL SYSTEM ................................................................ 2: 4
4. PRIMARY MAIN FUEL SYSTEM .................................................. 2: 6
5. SECONDARY OPENING SYSTEM ............................................... 2: 7
6. STEP SYSTEM .......................................................................... 2: 9
7. SECONDARY MAIN FUEL SYSTEM ........................................... 2:10
8. ENRICHMENT SYSTEM ............................................................ 2:11
9. ACCELERATING PUMP SYSTEM ............................................... 2:15
10. CHOKE SYSTEM ...................................................................... 2:17
11. HOT START ASSIST SYSTEM .................................................... 2:21
12. SUB-ZERO START ASSIST SYSTEM .......................................... 2:22
13. CLOSED AIR VENT SYSTEM .................................................... 2:23
1. FUEL INLET AND RETURN SYSTEM

Fig 2-1

Fig 2-2

Fig 2-3

Fig 2-4
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.
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.

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

OFF-IDL E 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
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
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
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 to open against the counterweight.

Fig 2-25

Fig 2-26
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
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 systems.
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 carburetor.

Fig 2-31

Fig 2-32

Fig 2-33
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 mixture.
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
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.
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.
9. ACCELERATING PUMP SYSTEM

ACCELERATING PUMP (DIAPHRAGM TYPE RX-7 E2000)

Fig 2-43

Fig 2-44
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.

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 mixture.
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
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.

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.
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
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.
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

ENGINE OIL TEMPERATURE
ABOVE -18°C (0°F): OFF
BELOW -18°C (0°F): ON

Fig 2-58
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.
INSPECTION AND ADJUSTMENT

1. FUEL INLET AND RETURN ......................................................... 3: 1
2. FLOAT SYSTEM ........................................................................... 3: 2
3. CHOKE SYSTEM (MANUAL CHOKE) ........................................... 3: 6
   CHOKE SYSTEM (AUTOMATIC CHOKE) ......................................... 3: 9
4. SLOW FUEL SYSTEM ................................................................. 3:14
5. MAIN FUEL SYSTEM (PRIMARY AND SECONDARY) .................. 3:15
6. SECONDARY THROTTLE VALVE ..................................................... 3:16
7. ENRICHMENT SYSTEM ............................................................... 3:18
8. ACCELERATING PUMP SYSTEM .................................................. 3:19
1. FUEL INLET AND RETURN

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

RESTRICTED FUEL FLOW
Clogged, rusted or damaged fuel strainer
Foreign matter (dirt, rust, etc.) in fuel lines, filter or tank
2. FLOAT SYSTEM

FUEL LEVEL ADJUSTMENT (NIKKI)

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

Float Level

Fig 3-5

Fig 3-6

Fig 3-7

Fig 3-8

Float Drop

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

Fig 3-9

Fig 3-10
FUEL LEVEL ADJUSTMENT (HITACHI)

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.

Fig 3-11

Fig 3-12

Fig 3-13

Measure without the gasket.

Fig 3-14

Fig 3-15
2. FLOAT SYSTEM

**FUEL LEVEL ADJUSTMENT (NIKKI)**

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)

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**Fig 3-16**

**Float Level**

![Diagram of Float Level]

**Float Drop**

![Diagram of Float Drop]
2. FLOAT SYSTEM

NEEDLE VALVE AND FLOAT

Fig 3-19

Valve seat and needle: Sticking, excessive wear, scratches

Fig 3-20

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

Fig 3-21
3. CHOKE SYSTEM (MANUAL CHOKE)

CHOKE VALVE AND SHAFT

Sticking or not fitting properly: Worn or bent shaft

Fig 3-22

FAST IDLE ADJUSTMENT

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

Fig 3-23

Bend the connecting rod.

Fig 3-24
3. CHOKE SYSTEM (MANUAL CHOKE)

CHOOSE VACUUM BREAK DIAPHRAGM ADJUSTMENT

Apply vacuum or push in.

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

Adjust the clearance by bending the connecting rod.

Lower: Cold weather country.
Upper: Hot weather country.
3. CHOKE SYSTEM (MANUAL CHOKE : RX-7)

FAST IDLE ADJUSTMENT

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

Fig 3-29

Bend the fast idle rod to obtain the specified clearance.

Fig 3-30

CHOKE VACUUM BREAK DIAPHRAGM ADJUSTMENT

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

Fig 3-31

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

Fig 3-32
3. CHOKE SYSTEM (AUTOMATIC CHOKE: 626, GLC, B2000)

FAST IDLE CAM ADJUSTMENT

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

626:
Turn adjusting screw to obtain the specified clearance.

Fig 3-33

GLC:
Turn adjusting screw to obtain the specified clearance.

Fig 3-34
3. CHOKE SYSTEM (AUTOMATIC CHOKE: 626, GLC, B2000)

CHOKE VALVE ADJUSTMENT

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

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

GLC:
Adjust the choke valve opening clearance by bending the fast idle cam.
3. CHOKE SYSTEM (AUTOMATIC CHOKE: 626, GLC, B2000)

**CHOKE VACUUM BREAK DIAPHRAGM**

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

---

**Fig 3-38**

**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.

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

---

**Fig 3-41**
3. CHOKE SYSTEM (AUTOMATIC CHOKE: 626, GLC, B2000)

UNLOADER ADJUSTMENT

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.

(GLC)
Bend the cam lever tab.
INSPECTION AND ADJUSTMENT

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

CHOKE BI-METAL COVER

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

Fig 3-44

Check the choke heater resistance with an ohmmeter.

Fig 3-45

BI-METAL COVER INDEX MARK SET

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.

Fig 3-46
4. SLOW FUEL SYSTEM

MIXTURE ADJUST SCREW AND AIR ADJUST SCREW ADJUSTMENT

Check for damaged tip.

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

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

Damage at tapered tip.
5. MAIN FUEL SYSTEM (PRIMARY AND SECONDARY)

MAIN BODY

LEAKING FUEL AND/OR AIR

Damaged gasket

Cracks, nicks or burrs on gasket surface

Damaged, clogged or loose jets

Damaged or scratched venturi

Nikki
- Primary jets: Yellow
- Secondary jets: white

Hitachi
- Primary jets: yellow
- Secondary jets: Yellow
6. SECONDARY THROTTLE VALVE

SECONDARY THROTTLE VALVE ADJUSTMENT

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 3-55

Bend the connecting rod to obtain the specified clearance.

Fig 3-56

Fig 3-57
6. SECONDARY THROTTLE VALVE

LINKAGE

Check for binding, sticking, bending.

Fig 3-58

Fig 3-59

VACUUM DIAPHRAGM

Check for damage or leaks.

Fig 3-60

Fig 3-61

SECONDARY THROTTLE VALVE

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

Fig 3-62
7. ENRICHMENT SYSTEM

POWER VALVE

Vacuum piston: Stuck.
Power valve: Stuck leaks.

COASTING RICHER

Solenoid valve:
Should pull in when power is applied.
Check for damaged tip.
8. ACCELERATING PUMP SYSTEM

PUMP PLUNGER, DIAPHRAGM

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

FUEL PASSAGE AND FUEL DISCHARGE

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.)
ACCELERATING PUMP STROKE (DISCHARGE) ADJUSTMENT

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

Outer hole: Summer
Inner hole: Winter

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

Adjust the lock nut to specification.
DISASSEMBLY AND ASSEMBLY

1. 121, 121L, 929L, 626, B1800, B1600 ...........................................4: 1
2. 626 B2000 WITH AUTOMATIC CHOKE ...........................................4: 4
3. 323, E1300 .................................................................................4: 7
4. GLC .........................................................................................4:10
5. RX-7 .......................................................................................4:13
6. E2000 ......................................................................................4:16
7. E1600 ......................................................................................4:19

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.
Fig 4-1

Fig 4-2
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.
2. 626, B2000 WITH AUTOMATIC CHoke

**Fig 4-6**
DISASSEMBLY AND ASSEMBLY

2. 626, B2000 WITH AUTOMATIC CHOKE

AIR HORSE

Fig 4-7

MAIN BODY

Fig 4-8
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.
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.
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.
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.
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.
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

1. POSSIBLE CAUSE AND CORRECTION ............................................. 5: 1
2. ENGINE HARD STARTING WHEN COLD ........................................... 5:10
3. ENGINE HARD STARTING WHEN HOT ........................................... 5:11
4. ROUGH IDLING AND STALLING .................................................... 5:12
5. ENGINE RUNS UNEVEN OR SURGES ............................................ 5:13
6. POOR ACCELERATION ............................................................... 5:14
7. LACK OF POWER ON ACCELERATION OR AT HIGH SPEED .............. 5:15
8. HESITATION ON ACCELERATION .................................................. 5:16
9. POOR FUEL ECONOMY ............................................................... 5:17

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)
1. POSSIBLE CAUSE AND CORRECTION

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.

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

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
1. POSSIBLE CAUSE AND CORRECTION

4) FUEL RETURN ORIFICE MISSING OR INCORRECT PART
   Replace

Fig 5-5

5) AIR CLEANER ELEMENT DIRTY OR CLOGGED
   Clean or replace

Fig 5-6

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

Fig 5-7
1. POSSIBLE CAUSE AND CORRECTION

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

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

9) HIGH OR LOW FUEL LEVEL
   1. Improper float adjustment
      Adjust
   2. Float binding
      Repair
   3. Float leaking
      Replace

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
1. POSSIBLE CAUSE AND CORRECTION

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 5-12

12 IDLE ADJUSTMENT INCORRECT
1. Worn tapered tip or threads
   Replace
2. Setting incorrect
   Adjust

RX-7: Mixture adjust screw

Fig 5-13

RX-7: Air adjust screw

Fig 5-14

RX-7

Fig 5-15
1. POSSIBLE CAUSE AND CORRECTION

13 FUEL PASSAGES, AIR BLEEDS OR JETS
1. Dirty or plugged
   Clean, blow out or replace
2. Loose
   Tighten

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 gillie, radiator and hood seals.

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)
1. POSSIBLE CAUSE AND CORRECTION

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

17) IMPROPER ACCELERATING PUMP STROKE
   Check and adjust (refer to page 3:20)
1. POSSIBLE CAUSE AND CORRECTION

18 PRIMARY THROTTLE VALVE NOT WIDE OPEN
1. Throttle valve or shaft sticks clean, lubricate or replace
2. Accelerator pedal linkage too short
   Adjust

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

20 AIR VALVE NOT OPEN PROPERLY
Valve, shaft or linkage sticks
Clean, lubricate or replace
1. POSSIBLE CAUSE AND CORRECTION

21 POWER VALVE STUCK CLOSED
1. Power valve stuck
   Clean or replace
2. Power valve solenoid sticking (RX-7 only)
   Replace

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 replace

23 COASTING RICHER NOT WORKING
1. Solenoid disconnected, inoperative
   Connect or replace
2. Needle valve stuck or damaged
   Clean or replace
1. POSSIBLE CAUSE AND CORRECTION

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 5-30

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 5-31

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

Fig 5-32

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 WORKING

26. CHoke VALVE NOT CLOSING PROPERLY

12. IDLE ADJUSTMENT INCORRECT

8. VACUUM LEAKS

7. AIR LEAKS

6. DIRT, RUST OR WATER IN FUEL SYSTEM

3. LOW OR NO FUEL IN CARBURETOR
3. ENGINE HARD STARTING WHEN HOT

- **CHOKE VALVE NOT COMPLETELY OPENING**
- **SLOW FUEL CUTOFF SOLENOID VALVE NOT WORKING**
- **LOW OR NO FUEL IN CARBURETOR**
- **CARBURETOR FLOODING**
- **FUEL PERCOLATION**
- **VACUUM LEAKS**
- **LOW OR NO FUEL IN CARBURETOR**
- **HOT START ASSIST DEVICE NOT WORKING RX-7 ONLY**
4. ROUGH IDLING AND STALLING

- Low or no fuel in carburetor
- Carburetor flooding
- Choke valve not completely opening
- Idle adjustment incorrect
- Coasting richer not working (RX-7 only)
- Air leaks
- Low or no fuel in carburetor
- Carburetor icing (freezing)
- Fuel passages, air bleeds or jets dirty, plugged or loose
- Fuel level high or low
- Slow fuel cutoff solenoid valve
- Vacuum leaks
6. POOR ACCELERATION

- AIR VALVE NOT PROPERLY OPEN
- IMPROPER ACCELERATING PUMP STROKE
- SECONDARY THROTTLE VALVE NOT PROPERLY OPEN OR IS DELAYED
- AIR CLEANER ELEMENT DIRTY OR CLOGGED
- AIR LEAKS
- LOW OR NO FUEL IN CARBURETOR
- CARBURETOR FLOODING
- HIGH OR LOW FUEL LEVEL
- DEFECTIVE ACCELERATING PUMP SYSTEM
- FUEL PASSAGES, AIR BLEES OR JETS DIRTY, PLUGGED OR LOOSE
7. LACK OF POWER ON ACCELERATION OR AT HIGH SPEED

- Air Valve Not Properly Open
- Secondary Throttle Valve Not Open Properly or Is Delayed
- Primary Throttle Valve Not Wide Open
- Air Leaks
- Air Cleaner Element Dirty
- Fuel Return Orifice Missing or Incorrect Part
- Not Enough Fuel in Carburetor
- DIRT, Rust or Water in Fuel System
- Fuel Passage, Air Bleeds or Jets Dirty, Plugged or Loose
- High or Low Fuel Level
- Power Valve Stuck Closed
8. HESITATION ON ACCELERATION

1. SECONDARY THROTTLE VALVE NOT OPEN PROPERLY OR IS DELAYED
2. DIRT, RUST OR WATER IN FUEL SYSTEM
3. FUEL RESTRICTION
4. AIR LEAKS
5. FUEL PASSAGES AND / OR AIR BLEEDS DIRTY OR PLUGGED
6. HIGH OR LOW FUEL LEVEL
7. DEFECTIVE ACCELERATING PUMP SYSTEM
8. IMPROPER ACCELERATING PUMP STROKE
9. AIR VALVE NOT PROPERLY OPEN

323 CARBURETOR
9. POOR FUEL ECONOMY

1. CHOKE VALVE NOT OPENING COMPLETELY OR PROPERLY
2. FUEL PASSAGES AND / OR AIR BLEEDS DIRTY OR PLUGGED
3. DEFECTIVE ACCELERATING PUMP SYSTEM IMPROPER ACCELERATING PUMP STROKE
4. POWER VALVE STAYS OPEN
5. FUEL LEAKS
6. AIR CLEANER ELEMENT DIRTY OR CLOGGED
7. INTAKE AIR TOO HOT OR TOO COLD
8. CARBURETOR FLOODING
9. HIGH FUEL LEVEL
10. FUEL PERCOLATION

626 CARBURETOR