

FUEL SYSTEM

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TROUBLE SHOOTING

Symptoms & Probable CausesRemediesCarburetor

- | | |
|--|---|
| 1. Rough idling. | |
| a. Defective manifold gasket/s, vibration insulator or insulator gasket/s. | Replace gasket/s or vibration insulator |
| b. Incorrect idle adjusting screw. | Adjust idle adjusting screw |
| c. Defective idle adjusting screw. | Replace idle adjusting screw |
| d. Clogged slow jet or slow air bleed jet. | Clean jet/s |
| e. Unbalanced throttle valve opening | Adjust throttle valve opening |
| f. Incorrect fuel level. | Adjust fuel level |
| g. Starter disc leaks. | Clean or replace starter disc |
| h. Clogged slow ports. | Clean slow ports |
| 2. Irregular running. | |
| a. Incorrect idling adjustment. | Adjust idling |
| b. Incorrect linkage. | Adjust linkage |
| c. Incorrect fuel level. | Adjust fuel level |
| d. Clogged or loose main jet or main air bleed jet. | Clean or tighten jet/s |
| e. Loose small venturi set screw. | Tighten set screw |
| f. Unbalanced throttle valve opening | Adjust throttle valve opening |
| 3. Stalling (Lack of fuel mixture at high speed) | |
| a. Clogged or loose main jet or main air bleed jet. | Clean or tighten jet/s |
| b. Loose small venturi set screw. | Tighten set screw |
| c. Incorrect fuel level. | Adjust fuel level |
| d. Clogged fuel strainer. | Clean strainer |
| 4. Poor acceleration (Lack of fuel mixture for acceleration) | |
| a. Clogged pump jet in small venturi. | Clean jet |
| b. Defective diaphragm. | Replace diaphragm rod |
| c. Loose small venturi set screw. | Tighten set screw |
| d. Improper operation of discharge check valve. | Replace check ball or weight |
| e. Improper operation of charge check valve. | Replace diaphragm housing |
| f. Weak pump spring. | Replace spring |
| g. Defective pump linkage. | Adjust or replace linkage. |

4-2 FUEL SYSTEM - Trouble Shooting

<u>Symptoms & Probable Causes</u>	<u>Remedies</u>
j. Unbalanced throttle valve opening.	Adjust throttle valve opening
5. Excessive fuel consumption.	
a. Incorrect idle adjustment.	Adjust idling
b. Incorrect throttle valve linkage adjustment.	Adjust linkage
c. Starter disc leaks.	Clean or replace starter disc
d. Incorrect pump lever link rod	Adjust link rod
e. Loose main jet/s.	Tighten jet/s
f. Fuel level too high.	Adjust fuel level
g. Defective gasket/s.	Replace gasket/s
h. Defective diaphragm.	Replace diaphragm
6. Engine hard starting.	
a. Starter disc leaks	Clean or replace starter disc
b. Clogged starter disc jet.	Clean starter disc jet
c. Incorrect fuel level.	Adjust fuel level
d. Clogged main jet, slow air bleed jet or slow jet	Clean jet/s
7. Flooding.	
a. Improper seating or damaged needle valve.	Clean or replace needle valve
b. Deformed float arm.	Replace float
c. Incorrect fuel level.	Adjust fuel level
d. Excessive fuel pump pressure	Check fuel pump
e. Defective bowl cover gasket.	Replace gasket
f. Loose bowl cover attaching screws.	Tighten attaching screws

Fuel Pump

- Fuel pump does not operate.
 - Burned or poor contact of fuse. Repair or replace fuse
 - Opened wiring or poor connection. Repair
 - Opened coil in fuel pump Replace fuel pump
 - Defective transistor in fuel pump relay. Replace fuel pump relay
 - Shorted coil in fuel pump. Replace fuel pump
 - Defective condenser. Replace fuel pump relay
- Fuel pump operates, but fuel is not discharged or insufficient fuel delivery.
 - Improper valve/s or valve seating in fuel pump. Repair or replace valve/s

- | | |
|---|------------------------|
| b. Broken or weak plunger spring/s in fuel pump | Replace spring/s |
| c. Improper sealing of rubber packing/s. | Replace packing/s |
| d. Loose fuel hose connection. | Tighten connection |
| e. Clogged fuel filter or fuel hose/s | Clean filter or hose/s |
| f. Poor connection of wiring. | |

CARBURETOR

This engine is equipped with triple SOLEX 40PHH-2 two-barrel side-draft type carburetor to insure efficient high performance of the carburetors under low to high speed operation.

A manual mixture control is provided which operates on all three carburetors.

Construction & Operation

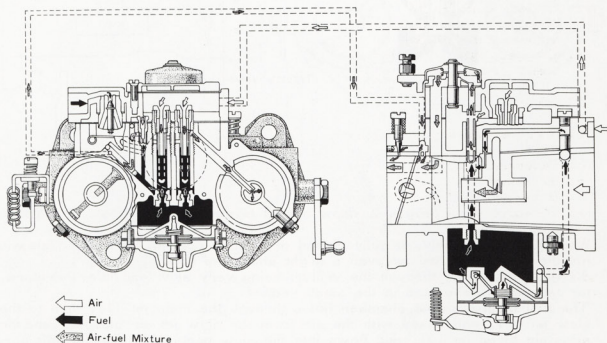


Fig.4-1 Fuel & Air Passages of Carburetor

Y5204

1. Float chamber and air vent system.

The float chamber serves as a constant level fuel reservoir.

The fuel enters into the float chamber through the strainer, and the needle valve.

The quantity of fuel is regulated by the needle valve opening movement from the valve seat, and also by the fuel pump pressure.

These items are very important to obtain proper performances of the carburetor.

4-4 FUEL SYSTEM - Carburetor

Air vent is connected to the flange of the carburetor to maintain the same air pressure in the air horns, and the float chamber, eliminating the effect of a clogged air cleaner.

2. Low speed system.

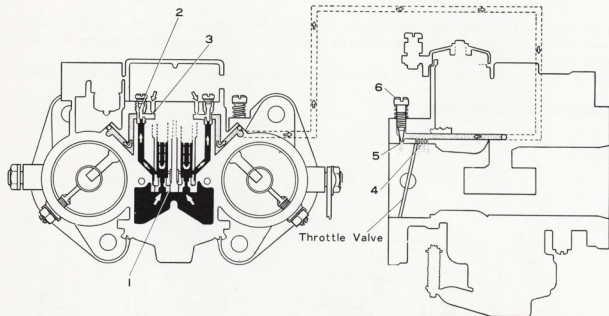


Fig.4-2 Low Speed System

Y5063

When the throttle valve is fully closed or slightly opened, the main nozzle will not discharge any fuel or even a slight amount of fuel.

As the air passing through the venturi being very slow and little, therefore, no vacuum is generated in the small venturi.

The fuel from the float chamber flows through the main jet (1), then to the slow jet (2), and mixes with the air from the slow jet air bleeder, and the slow air bleed jet (3), and flows into the slow ports (4), and the idle port (5) to be discharged into the intake manifold in spray form.

The idle fuel discharged is controlled by the idle adjusting screw (6).

When the throttle valve starts to open slightly, and as the edge of the throttle valve moves past the slow ports, the intake manifold vacuum is applied onto the slow ports, and these ports start discharging the air-fuel mixture same as the idle ports.

3. High speed system.

This system is provided to supply the air-fuel mixture for part-load operating and full-load operating requirements.

When the throttle valve opens, low pressure area is transferred from the slow ports to the main nozzle.

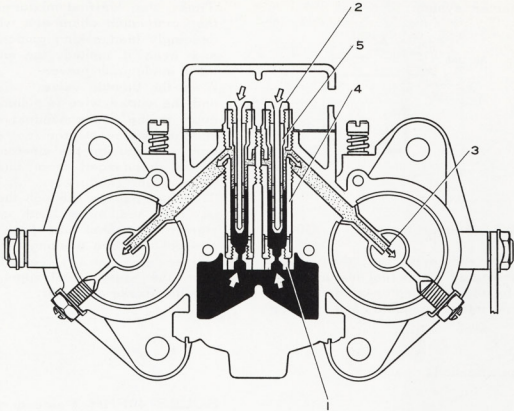


Fig.4-3 High Speed System

G0086

The fuel passes through the main jet (1), and mixes with the air from the main air bleed (2).

The main jet holder (4) is provided with the main air bleeder tube (5) to facilitate mixture with fuel and air. Then the air-fuel mixture passing through the main nozzle (3) flows out into the small venturi.

4. Accelerating system.

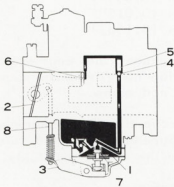


Fig.4-4 Accelerating System G0087

When the throttle valve is suddenly opened from the closed position, a momentary out-of-balance condition occurs in the carburetor.

To obtain an immediate engine power additional rich fuel mixture is required. When the accelerator pedal is depressed for quick acceleration, the diaphragm (1) connected to the throttle lever (3) is pushed up by the pump lever (3).

The pumped fuel pushes the check ball (4), and flows out from the pump jet (6) to enrich the mixture necessary for acceleration.

When the throttle valve is closed, the diaphragm is pushed down by the diaphragm spring (7) so that the pump chamber becomes refilled with fuel, ready for the next acceleration period. The diaphragm stroke can be controlled by changing the position of the pump lever link rod (8).

5. Starter system.

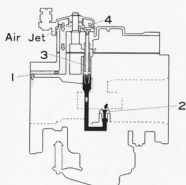


Fig.4-5 Starter System G0088

When the engine is cold, the fuel vapor contained in the fuel mixture supplied by the carburetor condenses on the cold intake manifold, and cylinder walls.

Specification :

Type

Throttle bore diameter
 Large venturi bore diameter
 Small venturi bore diameter
 Main jet
 Main air bleed jet
 Slow jet
 Slow air bleed jet diameter
 Throttle valve
 Idle port diameter
 Fuel level
 Pump jet diameter
 Pump stroke at normal

SOLES 40PHH-2 side-draft,
 two-barrel
 40 mm (1.575")
 32 mm (1.260")
 8.5 mm (0.334")
 130#
 150#
 60#
 0.8 mm (0.032")
 165#
 0.9 mm (0.035") 20° taper
 17 mm (0.669")
 0.3 mm (0.012")
 4.0 mm (0.158")

Removal

1. Disconnect the air cleaner hose from the air intake connector No.1.
2. Remove the air intake connector No.1, all air horns, and the air intake connector No.2.
3. Disconnect the choke wire from the starter cover of each carburetor.
4. Disconnect the fuel hoses from the unions on the carburetors.

Thus, the air-fuel mixture entering the combustion chambers will be exceedingly lean making ignition difficult, and even if ignited, the engine will have inadequate power.

When the throttle valve is closed, and the choke wire is pulled, the vacuum in the intake manifold is directly effected on the starter fuel supplying port (1) causing the air-fuel mixture to be discharged from this port to form richer mixture.

The fuel passes through the starter jet (2), and mixes with air in the starter emersion tube (3), then the air-fuel mixture passing through the starter disc jet (4), and flows out from the starter fuel supplying port into the intake manifold.

5. Disconnect the accelerator connecting rods from the accelerator link rod arms.

6. Remove the carburetors with the carburetor vibration insulators from the intake manifolds.

Disassembly

For disassembling and assembling of the carburetor, the Carburetor Driver Set 09860-11010 should be utilized. Proper wrenches with correct sizes should be used, and the parts re-

moved must be thoroughly washed with clean gasoline. These removed parts should be kept in clean container to facilitate the assembly.

1. Remove the carburetor vibration insulator from the carburetor. Remove the starter return spring (1), and the union (2). Remove the bowl cover assembly (3).

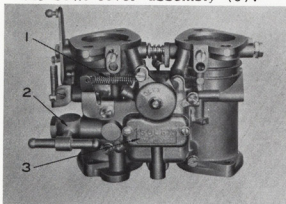


Fig. 4-6 Bowl Cover Removal V1575

2. Remove the snap ring (4), and washer (5), and pull out the starter cover (6), starter disc spring (7), and the starter disc (8) from the bowl cover.

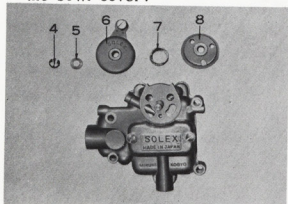


Fig. 4-7 Starter Mechanism V1576 Disassembly

3. Take care not to bend the float arm, and remove the float (1). Screw out the main jet holder assemblies (2) with a wrench.

4. Remove the main air bleed jet (3),

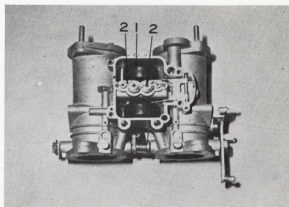


Fig. 4-8 Float, Main Jet Holder Removal V1577

main air bleed tube (4), and the main jet (5) from the main jet holder (6).

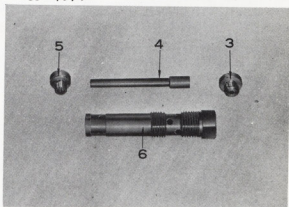


Fig. 4-9 Main Jet Holder Disassembly V1574

5. Screw out the starter jet (7), slow jets (8), and the pump passage plug No.1 (9).

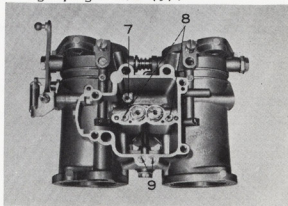


Fig. 4-10 Jets & Passage Plugs Removal V1578

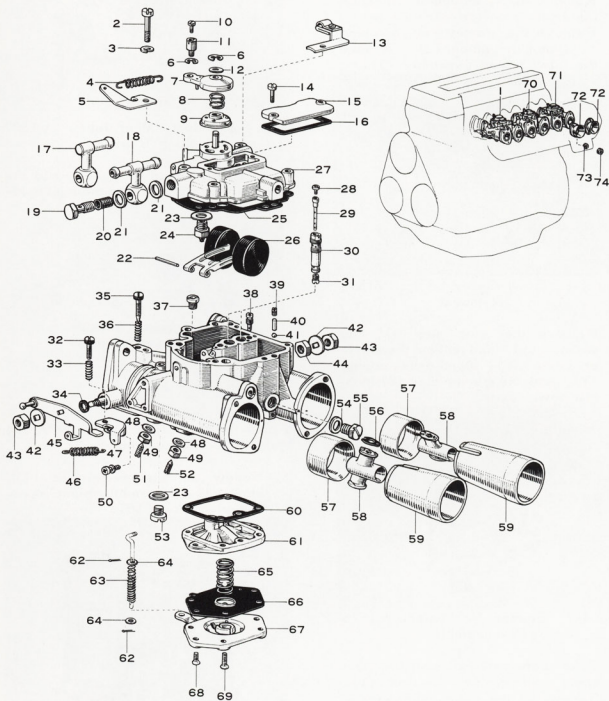


Fig.4-11 Carburetor Components

1. Carburetor assembly No.1
2. Screw
3. Lock washer
4. Starter return spring
5. Spring stopper
6. Snap ring
7. Starter cover
8. Starter disc spring
9. Starter disc
10. Screw
11. Wire support
12. Washer
13. Wire clamp
14. Screw
15. Jet chamber cover
16. Gasket
17. Union No.1
18. Union No.2
19. Union bolt
20. Strainer
21. Gasket
22. Float lever pin
23. Gasket
24. Needle valve
25. Gasket
26. Float
27. Bowl cover
28. Main air bleed jet
29. Air bleed tube
30. Main jet holder
31. Main jet
32. Throttle adjusting screw
33. Spring
34. Seal ring
35. Idle adjusting screw
36. Spring
37. Starter jet
38. Slow jet
39. Passage plug No.1
40. Valve weight
41. Valve check ball
42. Lock washer
43. Nut
44. Collar set nut
45. Throttle lever
46. Return spring
47. Spring stopper
48. Lock washer
49. Lock nut
50. Screw
51. Set screw
52. Set screw
53. Passage plug
54. Gasket
55. Passage plug No.2
56. Gasket
57. Large venturi
58. Small venturi
59. Sleeve
60. Gasket
61. Diaphragm housing
62. Cotter pin
63. Pump spring
64. Washer
65. Diaphragm spring
66. Diaphragm rod
67. Pump lever
68. Screw
69. Screw
70. Carburetor assembly No.2
71. Carburetor assembly No.3
72. Air horn
73. Lock washer
74. Nut

Invert the carburetor, and remove the pump valve weights, and the valve check balls.

6. Unhook the throttle lever return spring from the throttle lever, and the return spring stopper.
7. Remove the return spring stopper.
8. Loosen the lock nut, and remove the sleeve set screw, then pull out the sleeve (1) from the carburetor body air horn.
9. Loosen and remove the small venturi set screw, and then take out the small venturi (2), and the gasket from the carburetor body air horn.
10. Loosen and remove the large venturi set screw, then pull out the large venturi (3) from the carburetor body air horn.

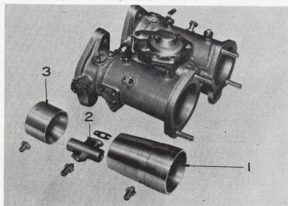


Fig.4-12 Sleeve, Small & V1581
Large Venturis Removal

11. Remove the cotter pin and the washer from the pump lever link rod, and remove the pump lever together with the diaphragm housing and the gasket.
12. Separate the pump lever, diaphragm rod, and the diaphragm housing.
13. Throttle valve mechanism disassembly.
It is recommended that throttle

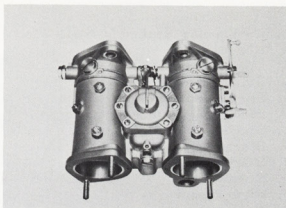


Fig.4-13 Pump Lever V1579
Removal

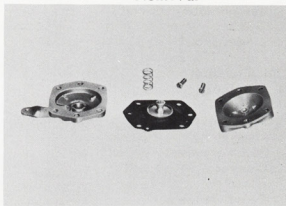


Fig.4-14 Pump Components V1580

valve mechanism should not be disassembled except for replacement of any part of the throttle valve mechanism.

- a. Insert a screwdriver between the carburetor body, and the throttle valve shaft pump link arm (11), and pry off the link arm. Next remove the straight pin (8) from the throttle valve shaft (10).
- b. Straighten the lock washer, and remove the nut (5), lock washer (6), and the collar (7).
- c. Unscrew the throttle valve retaining screws (1), and (3), then remove the throttle valves (2), and (4).
- d. Remove the snap ring (9), and then remove the throttle valve shaft (10), washer (13), link arm (11)

and the spring (12).
Remove the seals (14) and (15) from the carburetor body.

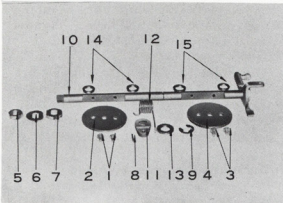


Fig.4-15 Throttle Valve V1582 Mechanism Disassembly

Inspection & Repair

Wash the disassembled parts in clean gasoline, blow all fuel passages with compressed air, and remove the dirt. Wash the exterior of the parts with a soft brush. Wash and clean the carbon deposits around the throttle valve shaft. Never use a wire for cleaning the jets or passages.

Bowl cover

1. Inspect the bowl cover for cracks, nicks or distortion at gasket surface.
2. Check the float needle valve for proper seating.
To check the needle valve proper seating, assemble the needle valve onto the bowl cover.
Invert the bowl cover, and then suck the fuel passage of the union. At this time, if any leak is present, the valve seating is not satisfactory.
3. Inspect the starter disc for wear, or scores at the sliding surface. Check the fuel passage for clog.
4. Inspect the strainer in the fuel union for rust and damage.
5. Inspect the float lever for deformation, and worn lever pin bore.

Carburetor body

1. Inspect the body for cracks, nicks or burrs at gasket surfaces.
2. Check the throttle valves if these close firmly or not, and check them for smooth operation, and excessive play of the shaft.
3. Check the jets for damaged threads, damaged head slots, damaged holes. Never use a wire for cleaning the jets.
4. Check the taper condition of the idle adjusting screw.
5. Inspect the sleeve, large venturi, and the small venturi for cracks or deformation.
Check the pump fuel passage of the small venturi for clog.
6. Check the pump valve weight, and the check ball for rust, nicks or burrs.
7. Check the pump lever, and the diaphragm housing for cracks, nicks or burrs at gasket surfaces.
8. Inspect the check valve proper seating in the diaphragm housing.
To check, suck the fuel passage at time, and if any leak is present, the valve seating is not satisfactory.
9. Check the diaphragm rod for tear or other defects.

Assembly

All gaskets or seals should be replaced upon assembly.
Before assembling, check that all fuel passages are already cleaned.

1. If the throttle valve shaft was removed during disassembly.
 - a. Fit the seals (14) and (15) into the throttle valve shaft bores in the carburetor body.

b. Slide the throttle valve shaft (10) into the carburetor body, also assemble the snap ring (9), washer (13), and the link arm (11) at the same time.

c. Install the collar (7), and the lock washer (6) onto the throttle valve shaft end (10), and torque the nut (5) securely.
Pry off the link arm (11) with a screwdriver, then install the straight pin (8) into the throttle valve shaft (10) for connecting the link arm to the throttle valve shaft.

Caution:

The link arm (11) is provided with a slot, and this must face towards the straight pin side.
Before assembling the link arm (11) onto the throttle valve shaft (10), the pump lever link rod should be installed onto the link arm.

d. Inspect the throttle valve shaft for smooth operation, and then insert the throttle valves (2) and (4) into the throttle valve shaft (10).

Check the throttle valve whether it will close firmly or not, and also for smooth operation.

Tighten the throttle valve retaining screw firmly.

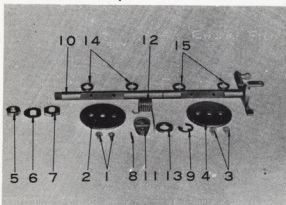


Fig.4-16 Throttle Valve V1582 Components

2. Slide the large venturi (1) into the air horn of the carburetor body.

Find out the indent on the large venturi outer which should align with the threaded hole in the carburetor body, then screw in the set screw into the hole. Tighten the lock nut securely.

3. Assemble the small venturi (2) with gasket into the air horn of the carburetor body.

Screw in the set screw, and tighten the lock nut securely.

4. Slide the sleeve (3) and install the set screw. Tighten the lock nut.

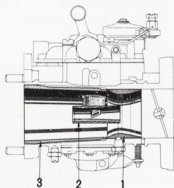


Fig.4-17 Venturi & Sleeve G0323 Installation

5. Position the gasket, and assemble the diaphragm housing, diaphragm spring, diaphragm rod, and the pump lever onto the carburetor body.

6. Install the pump spring onto the pump lever link rod, and connect the link rod onto the pump lever.

7. Put in the check ball and the valve weight into the pump passage, then screw in the pump passage plug No.1 securely.

8. Assemble the main jet, main air bleed jet to the main jet holder. Screw in the main jet holder assembly into the carburetor body. Install the slow jet into the carburetor body.

9. Assemble the starter disc, spring and the starter cover onto the bowl cover, then place the washer and engage the snap ring.
10. Place the gasket and assemble the bowl cover assembly with the starter return spring stopper on the carburetor body. Tighten the retaining screws firmly.
11. Hook the starter return spring onto the starter cover, and the return spring stopper.
12. Install the fuel union, strainer, and the gaskets with the union bolt.
13. Install the idle adjusting screw and the spring.
14. Install the throttle return spring stopper, and hook the throttle lever return spring.
15. Install the carburetor vibration insulators onto the carburetor.

Adjustment & Installation

The carburetor should be adjusted after installing onto the engine.

1. Install the assembled carburetor onto the manifold, and connect the fuel lines.
Position the air intake connector No.2 with gaskets, and install all air horns onto the carburetor.

2. Adjustment of fuel level.

a. Turn on the ignition switch key to first position. At this position, the ignition system and the fuel pump are operated, and the fuel is being filled into the carburetor float chamber.
Do not run the engine at this stage.

b. Remove the jet chamber cover, and then remove the main jet holder assembly.

c. Insert the Float Level Gauge 09240-43010 into the main jet holder fitting hole as shown in figure 4-18, and check the fuel level. The fuel level should be within the red lines which are scribed on the Float Level Gauge 09240-43010.

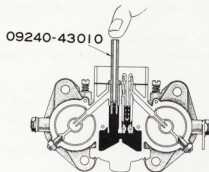


Fig.4-18 Checking Fuel Level G0324

Note:

Three red lines are scribed on the Float Level Gauge, and the distance from the flange of the gauge to the center red line is 17 mm (0.669").



Fig.4-19 Float Level Gauge

d. To adjust the fuel level, disconnect the fuel line, and remove the bowl cover assembly.

Remove the needle valve assembly, and adjust the thickness of the needle valve gasket to obtain the specified fuel level.

The needle valve gaskets are available in the following; 0.5 mm (0.02"), 1.0 mm (0.04"), 1.5 mm (0.06").

e. After adjusting the fuel level, reassemble the main jet holder assembly, and the bowl cover assembly onto the carburetor body. Connect the fuel lines.

3. Install each carburetor connecting rods, and connect the choke wire to the starter on each carburetors.

NOTE:

The length of all accelerator connecting rods should be the same.

4. Remove the plugs on the intake manifolds (No.1, No.3, and No.5 cylinders), and install the vacuum gauge hose connectors. Connect the vacuum gauges to each hose connectors.

5. Screw in the idle adjusting screw firmly finger tight, next screw out the screw to $7/8 \pm 1/8$ of a turn, the arrow mark on the idle adjusting screw should be positioned between the mark to mark on the carburetor body.

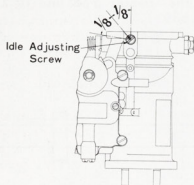


Fig.4-20 Position of Idle G0328
Adjusting Screw

6. Warm up the engine at 1700 to 1900 rpm by the screw on the idle adjusting arm No.1 to operating temperature more than 60°C (140°F) before the carburetor adjustment.

7. Accelerator linkage adjustment.

a. Set the engine speed at 1750 to 1850 rpm by the screw (1),

and read the vacuum gauge on the No.1 cylinder. The reading should be 290 ~ 340 mmHg (11.42 to 13.39 inHg).

To adjust, loosen the lock screw (2) on the accelerator link rod arm of the carburetor No.1, and adjust the arm to obtain the specified vacuum reading.

Tighten the lock nut securely.

b. After adjusting the accelerator link rod arm of the carburetor No.1, adjust the accelerator link rod arms of the carburetor No.2 and No.3.

To adjust, tighten the lock screws (3) and (4) on the idle adjusting arms No.2, and loosen the lock screws (5) and (6) on the accelerator link rod arms.

Next, read the vacuum gauges on the No.3 and No.5 cylinders, and adjust the accelerator link rod arms by the adjusting screws (7) or (8).

The vacuum gauges reading should be 290 ~ 340 mmHg (11.42 to 13.39 inHg), and the difference between each gauges should be ± 5 mmHg (0.20 inHg) reading.

Tighten the lock screws (5) and (6) securely after adjusting the accelerator link rod arms.

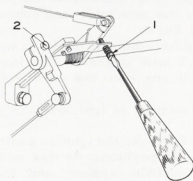


Fig.4-21 Accelerator G0325
Linkage Adjustment No.1

Caution:

If varying the engine speed during the accelerator link rod arms adjustment, readjust the adjusting

screw on the idle adjusting arm No.1, and set the engine speed to 1,750 ~ 1,850 rpm.

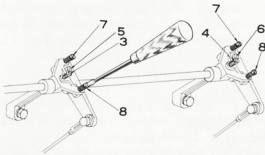


Fig.4-22 Accelerator Linkage Adjustment No.2 G0327

Note:

Carburetor balancer is available to balance twin or more carburetors which is quite convenient for balancing the carburetors.

When using the carburetor balancer, the difference of the float lever should be ± 5 mm (0.2") between each carburetor.

8. Idle speed adjustment.

a. After adjusting the accelerator linkage, screw out the adjusting screw on the idle adjusting arm No.1 until to free condition.

Next, set the engine speed to 700 to 800 rpm (750 ~ 850 rpm W/PCV), and each vacuum gauges reading to be more than 250 mmHg (9.84 inHg), and the difference between each carburetor to be within ± 5 mmHg (0.2 inHg) with the throttle valve adjusting screws on each carburetors.

When using the carburetor balancer the difference of the float level should be less than ± 7 mm or 0.27" between each carburetors.

b. Confirm the arrow marks on the idle adjusting screws of all carburetors.

The arrow marks should be positioned between the mark to mark on the carburetor body.

c. Disconnect the fuel hoses from each carburetor, and then connect a gasoline mileage tester onto each carburetor fuel lines.

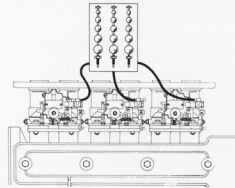


Fig.4-23 Gasoline Mileage Y5206 Connection

d. Check the fuel consumption at engine speed of 700 ~ 800 rpm (750 ~ 850 rpm W/PCV) with a gasoline mileage tester. The fuel consumption of each carburetor should be 0.43 ~ 0.36 l/hr or 0.91 ~ 0.76 US pint/hr (0.46 ~ 0.41 l/hr or 0.97 ~ 0.87 US pint/hr) and difference between each carburetor indication should be less than 0.04 l/hr (0.08 US pint/hr).

If necessary, adjust the idle adjusting screw/s.

Screw in the idle adjusting screw to decrease the fuel consumption After completing all of the above adjustments, perform the following adjustments.

d. Set the engine speed at 700 ~ 800 rpm (750 ~ 850 rpm W/PCV) for 10 ~ 15 minutes, and check the alteration of the engine speed.

The engine speed should not alter. After idling the engine speed for 10 ~ 15 minutes, remove all spark plugs, and check the electrodes condition.

If the spark plugs show burning white or excessive carbon deposits, readjust the idle adjusting screw/s for abnormal conditioned spark plugs.

If the spark plugs show burning white, the fuel mixture is lean. After completing all of the carburetor adjustments, recheck the engine running condition for smooth engine operation.

- Remove the vacuum gauge hose connectors, and install the plugs into the intake manifolds.

Disconnect the gasoline mileage tester from the carburetors, and connect the fuel hoses on each carburetors.

- Install the air intake connector No.1, and connect the air cleaner hose onto the connector No.1.

FUEL PUMP

The fuel pump in this car is of an electric fuel pump which uses an electric-magnet to operate a plunger, and is installed near the fuel tank.

This fuel pump will fill the carburetors merely by turning on the ignition switch key.

As the fuel pump is installed away from the heat of the engine to reduce the chance of vapor lock.

Operation

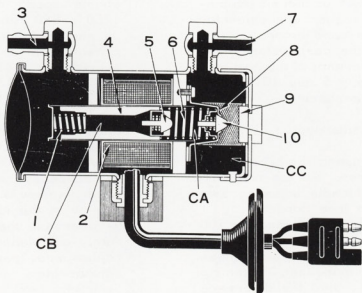


Fig. 4-24 Fuel Pump Cross Sectional View

G0321

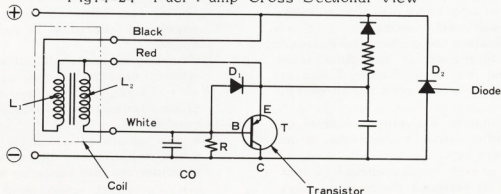


Fig. 4-25 Fuel Pump Diagram

G0322

When the ignition switch is turned to ON, the little current flows from the battery through the coil "L1" in the fuel pump, through the "E" to "B" of the transistor "T" and back to the battery through the "R" (resistor), and "C0" (condenser) is charged.

And if the basic current flows, the "E" and "C" become conductance. At this time, the magnet field built up in the coil "L1", and also occur the voltage flow in the coil "L2", which pull down the plunger by the pull-in force of the coil "L1".

When the corrector current becomes stabilized, the voltage in the coil "L2" is decreased. As the voltage in the coil "L2" decreases, also the corrector current is further decreased, and the plunger (4) returns upward by the plunger spring (6).

The plunger (4) in the fuel pump is pulled down by the pull-in force of the coil "L1", as the fuel pressure in chamber "CA" rises, and the discharge valve (5) is opened, and the charge valve (10) is closed, the fuel in chamber "CB" is discharged to the carburetor.

When the plunger (4) is returned by the plunger spring (6), the discharge valve (5) is closed, and the charge valve (10) is opened, and fuel in chamber "CC" is drawn into the chamber "CA".

The fuel pump is provided with a magnet (9), and the filter (8) to prevent the entry of dust.

Specification :

Type	Electric fuel pump and plunger type
Voltage	8 ~ 16 volts
Maximum discharge pressure	0.36 kg/cm ² (5.12 psi)
Discharge amount at 0.2 kg/cm ² (2.84 psi)	1000 cc/min (1.06 US qts/min or 0.88 Imp. qt/min)
Amperage	2.3 amperes

Performance Test in Car

This test should be performed before the fuel pump is disassembled.

1. Discharge pressure test.

a. Disconnect the fuel hose from the carburetor No.3, next connect the pressure gauge onto the removed hose.

b. Turn on the ignition switch, and operate the fuel pump, and check the fuel discharge pressure. The fuel pressure should be 0.36 kg/cm² (5.12 psi) or less.

The fuel discharged should be more than 1,000 cc per minute (1.06 US qts/min, 0.88 Imp qt/min). At this time, also check the amperage of the fuel pump. The specified ammeter reading is 2.3 amperes or less.

Removal

2. Discharge quantity test.

Operate the fuel pump, and receive the fuel with a graduated beaker, and control the discharge pressure to 0.2 kg/cm² (2.84 psi).

1. Remove the right parcel floor panel, then dismount the spare wheel.
2. Disconnect the fuel hoses, and remove the fuel filter.
3. Remove the fuel pump cover, and disconnect the fuel hoses, and wires, then remove the fuel pump assembly.

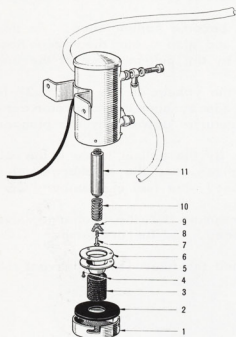
Disassembly

Fig.4-26 Fuel Pump Y5203
Components

1. Turn the filter cover (1) counter-clockwise, and remove the cover (1), rubber packing (2), and the fuel pump filter (3).

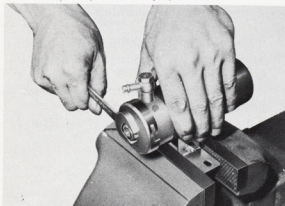


Fig.4-27 Removing Filter W5449
Cover

2. Unscrew the valve stopper attaching screws (4), and remove the valve stopper (5), rubber packing (6), check valve (7), spring (8), and the spring guide (9).

3. Remove the plunger spring (10), and the plunger (11) with the damper spring.

Inspection

Clean the disassembled parts with clean gasoline, and inspect the parts as follows.

1. Inspect the sliding surface of the plunger for scores, and other defects.
2. Check the valves, and valve seats for proper seating condition, and proper operation.
3. Inspect the springs for weakness, and corrosion.

Specification:

Plunger spring:

Free length	43 mm (1.693")
Installed length	28 mm (1.102")
Installed pressure	616 g (21.73 oz)

Plunger damper spring:

Free length	16 mm (0.630")
Installed length	16 mm (0.630")
Spring constant	2 kg/mm ²

Check valve spring:

Free length	6.5 mm (0.256")
Installed length	4.0 mm (0.157")
Installed pressure	15 g (0.53 oz)

4. Check the fuel pump filter for clog, and corrosion.
The fuel pump filter should be cleaned every 20,000 kilos or every 12,000 miles.
5. The independent fuel filter should be replaced every 20,000 kilos or every 12,000 miles.

Assembly

Follow the disassembly procedures in the reverse order.

1. The rubber packings should be replaced upon assembly.

FUEL TANK

2. The plunger damper spring retaining hole should be faced upward of the fuel pump.

Installation

Follow the removal procedures in the reverse order.

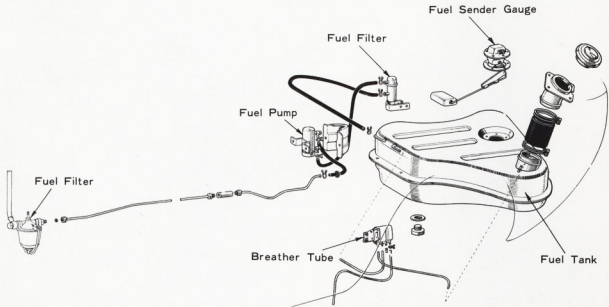


Fig.4-28 Fuel Tank & Related Components

Y5201

Removal

1. Drain the fuel.
2. Remove the right and left parcel floor panel, and dismount the spare wheel, and the fuel breather tubes.
3. Disconnect the fuel hose from the fuel tank, and remove the fuel tank inlet upper pipe. Next disconnect the fuel tank inlet pipe joint from the fuel tank.
4. Remove the fuel pump cover, then remove the fuel pump assembly.
5. Remove the tail lamp cover left side.

6. Disconnect the wire from the fuel sender gauge unit.
7. Remove the fuel tank attaching bolts, and remove the fuel tank assembly.

Inspection

Inspect the fuel tank for cracks, and corrosion. If any defect is present, repair or replace as necessary. To repair, steam the fuel tank thoroughly and sufficiently to remove the explosive gas fume.

Installation

Follow the removal procedures in the reverse order.