# FUEL SYSTEM

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FUEL PUMP

DISASSEMBLY

Disassemble the parts in the numerical order shown in the figure.

1. Lever Return Spring
2. Cover
3. Gasket
4. Upper Body & Check Valve
5. Lower Body, Lever & Diaphragm

Mark the position of the pump cover and upper body.

INSPECTION

Inspect the diaphragms for tear and check valves for defective operation. Replace if damaged.
ASSEMBLY

Assemble the parts in the numerical order shown in the figure.

Fig. 8-4

1. Lower Body, Lever & Diaphragm
2. Upper Body & Check Valve
3. Gasket
4. Cover
5. Lever Return Spring

Fig. 8-5

Assemble the lower and upper body in the direction shown in the figure.

Fig. 8-6

Assemble the upper body and cover over the diaphragm.
Inlet and outlet chamber separating walls should be aligned.
CARBURETOR
CARBURETOR CIRCUIT

Fig. 8-7

1. AAP Outlet Check Valve
2. Pump Plunger
3. Pump Jet
4. Second Slow Jet
5. Second Main Jet
6. Choke Valve
7. First Main Jet
8. Fuel Cut Solenoid Valve
9. First Slow Jet
10. Power Piston
11. Float
12. Needle Valve
13. AAP Diaphragm
14. AAP Inlet Check Valve
15. Second Main Jet
16. Pump Inlet Valve
17. Pump Outlet Valve
18. Second Throttle Valve Diaphragm
19. Second Slow Port
20. Second Throttle Valve
21. First Throttle Valve
22. First Slow Port
23. Idle Port
24. Idle Mixture Adjusting Screw
25. First Main Jet
26. Power Jet
27. Power Valve
DISASSEMBLY

Air Horn
Before disassembling, check following items.
1. Measure the heating coil resistance with an ohmmeter.
   Resistance: 7.5 – 10.0 Ω

2. Check the choke valve action.

3. Check the choke breaker diaphragm action.
   Automatic choke.

Use SST for carburetor servicing.
SST [09860-11011]
Disassemble the parts in the numerical order shown in the figure.

Fig. 8-12

1. Choke Breaker Hose
2. Pump Lever & Connecting Link
3. Fast Idle Cam Link
4. Throttle Valve Return Spring
5. Terminal
6. Union
7. Air Horn
Fig. 8-13

Remove the terminal from the connector.

Fig. 8-14

Lift out the air horn.
Float
Disassemble the parts in the numerical order shown in the figure.

Fig. 8-15

1. Pump Plunger
2. Pin
3. Float
4. Needle Valve Pin, Spring & Valve
5. Needle Valve Seat & Filter
6. Power Piston & Spring

Fig. 8-16

Remove the needle valve seat with SST.
SST[09860-11011]
Check the power piston movement.
**Choke System**

Disassemble the parts in the numerical order shown in the figure.

Fig. 8-18

**AUTOMATIC CHOKE**

1. Coil Housing
2. Choke Lever
3. Thermostat Case & Gasket
4. Choke Breaker
5. Relief Lever
6. Choke Valve
7. Choke Valve Shaft
Body
Disassemble the parts in the numerical order shown in the figure.

1. Throttle Positioner
2. AAP Diaphragm
3. Fuel Cut Solenoid Valve
4. Pump Discharge Weight & Outlet Valve
5. Slow Jet
6. First & Second Main Jet
7. Power Valve
8. First Small Venturi
9. Second Small Venturi
10. AAP Inlet Valve
11. AAP Outlet Valve
12. Pump Inlet Valve
13. Second Throttle Valve Diaphragm
14. HIC Valve
Fig. 8-20
Arrange the acceleration pump nozzle, spring and pump discharge weight.

Fig. 8-21
Remove the slow jet with SST. SST [09860-11011]

Fig. 8-22
Remove the first and second main jets and gaskets.

Fig. 8-23
Remove the power valve with SST. SST [09860-11011]
Fig. 8-24

Remove the AAP outlet valve plug with SST. Then remove the spring and outlet check valve. SST [09860-11011]

Fig. 8-25

Remove the retainer with a tweezers and then remove the inlet check ball.

Fig. 8-26

After removing the diaphragm housing, arrange the gasket.
Flange
Disassemble the parts in the numerical order shown in the figure.

Fig. 8-27

1. Vacuum Passage Bolt  
2. Bolt  
3. Idle Mixture Adjusting Screw  
4. Flange

Fig. 8-28

Remove the two bolts with SST.  
SST [09860-11011]

Fig. 8-29

Remove the idle mixture adjusting screw with SST.  
SST [09243-00010] or [09243-00020]
INSPECTION

- Precaution -
1. Before inspecting the parts, wash them thoroughly in gasoline.

2. Using compressed air, blow all dirt and other foreign matter from the jets and similar parts, and from the fuel passages and apertures in the body.

3. Never clean the jets or orifices with wire or a drill. This could enlarge the openings and result in excessive fuel consumption.

Inspect the following parts and replace any part damaged.

Air Horn Parts
1. Air horn: Cracks, damaged threads, and wear on choke shaft bores.
2. Make sure that power piston moves smoothly.

3. Power piston: Damaged. 
Spring: Deformation and rust.

4. Check float and pivot pin for wear or breaks.

5. Strainer: Rust, breaks.
7. Needle valve seat.
8. Choke valve: Deformation. Choke shaft worn, bent, or not fitting properly into the housing.
9. Coil housing: Cracks, thermostatic bimetal coil deformed.

Body Parts
1. Body
   Cracks, scored mounting surfaces, damaged threads.
2. Venturi
   Damaged or clogged.
3. Jets
   Damaged or clogged.
   Damaged contact surface or threads.
   Screwdriver slots.
4. Power valve
   Faulty opening and closing action.
   Clogged.
   Damaged contact surface or threads.

5. Use a spanner wrench and SST to remove the jet.
   SST[09860-11011]

6. Acceleration pump
   Pump damping spring: Deformation, rust.
   Pump check ball: Damaged, rusted.
   Pump plunger: Wear on sliding surface, deformed or damaged leather.

7. Secondary diaphragm
   Damaged
8. Install the diaphragm as shown in the figure.

9. Auxiliary acceleration pump
Diaphragm damaged

Flange Parts
1. Flange: Cracks, injured mounting surfaces, damaged threads, wear at throttle shaft bearings.

2. Throttle valves: Worn or deformed valves. Wear, bending, twisting, or faulty movement inside housing of shaft.
3. Idle mixture adjusting screw: Damage tapered tip or threads.

Solenoid Valve
Check operation of the solenoid valve. Connect wiring to the battery operative terminal and ground the body. The needle valve should be pulled in.
ASSEMBLY

Flange
Assemble the parts in the numerical order shown in the figure.

Fig. 8-52

1. Flange
2. Vacuum Passage Bolt
3. Bolt

Fig. 8-53

Assemble the vacuum passage bolt in the position shown in the figure.

Fig. 8-54

First finger tighten all bolts and then tighten them down.
Body
Assemble the parts in the numerical order shown in the figure.

1. Second Main Jet
2. First Main Jet
3. Power Valve
4. Slow Jet
5. Pump Inlet Valve & Plunger Return Spring
6. AAP Inlet Valve
7. APP Outlet Valve
8. Pump Discharge Weight & Outlet Valve
9. Second Small Venturi
10. First Small Venturi
11. Second Throttle Valve Diaphragm
12. Fuel Cut Solenoid Valve
13. AAP Diaphragm
14. Throttle Positioner
Fig. 8-56

Install the main jets over gaskets.
First jet: Brass colored
Second jet: Chrome colored

Fig. 8-57

Tighten the first and second main jets with SST.
SST [09860-11011]

Fig. 8-58

Install the jets, air bleed, valve and plugs as shown in the figure.
Install the jets, bleed, valve, venturi and plugs as shown in the figure.

Install the gasket and diaphragm housing.
**Choke System**

Assemble the parts in the numerical order shown in the figure.

1. Choke Valve Shaft
2. Choke Valve
3. Relief Lever
4. Choke Breaker
5. Thermostat Case & Gasket
6. Choke Lever
7. Coil Housing
Hook the lever to the bimetal spring.

Align the case scale standard line against the housing scale line.

Check the choke valve action.
Float
Assemble the parts in the numerical order shown in the figure.

1. Power Piston
2. Needle Valve Seat
3. Needle Valve, Spring & Pin
4. Float & Pin
5. Pump Plunger

Fig. 8-66
After installing, insure that power piston moves smoothly.
Fig. 8-67

Install the needle valve seat with SST.
SST[09860-11011]

Fig. 8-68

Adjust float level.
Allow the float to hang down by its own weight. Then check the clearance between the float and air horn with SST.
SST[09240-00014]

**Float upper level:**

<table>
<thead>
<tr>
<th></th>
<th>STD</th>
<th>3T</th>
<th>3T-C</th>
<th>2T &amp; 2T-B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6.5 mm (0.26 in.)</td>
<td>4.5 mm (0.18 in.)</td>
<td>4.0 mm (0.16 in.)</td>
<td></td>
</tr>
</tbody>
</table>

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**Note**

This measurement is always made without any gasket on the air horn.

Adjust by bending float lip as shown in the figure.
[for USA]
Adjust the clearance by bending at point (A) of the float as shown in the figure.

Fig. 8-69

Fig. 8-70

Adjust lowered position.
Lift up the float and check the clearance between the needle valve plunger and float lip with SST.
SST[09240-00020]

**Float lower level:**

<table>
<thead>
<tr>
<th></th>
<th>STD</th>
<th>1.0 – 1.2 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(0.04 – 0.05 in.)</td>
</tr>
</tbody>
</table>
Adjust by bending the float lip as shown in the figure.
Body & Air Horn
Assemble the parts in the numerical order shown in the figure.

1. Air Horn
2. Union
3. Pump lever & Connecting Link
4. Terminal
5. Fast Idle Cam Link
6. Choke Breaker Hose
7. Throttle Valve Return Spring
Fig. 8-73
Before assembling the air horn, insure that the pump jet is properly assembled.

Fig. 8-74
Before assembling the air horn, insure that pump plunger moves smoothly.

Fig. 8-75
Temporarily install the fuel unions.

Fig. 8-76
Install the clamps in the position shown in the figure.
Fig. 8-77

Tighten the air horn set screws at little at a time in diagonal order.

Fig. 8-78

After assembling, make sure that each link moves smoothly.
ADJUSTMENT

Make adjustments with SST.
SST [09240-00014]
[09240-00020]

1. First throttle valve opening.
   (1) Fully open the first throttle valve.

2. Check the first throttle valve opening angle.
   
   Opening angle: 90°

3. Adjust by bending the throttle lever stopper.
2. Second throttle valve opening.
   (1) Fully open the first throttle valve.

(2) Fully open the second throttle valve lever.

(3) Check the throttle valve opening angle.

   Opening angle: 80°

(4) Adjust by bending the throttle lever stopper.
   (1) Open the first throttle valve until the throttle valve lever (A) part touch (B) part.

(2) At this time, check the first throttle valve opening angle.

   **Secondary touch angle:**
   
   $57^\circ - 61^\circ$

(3) Adjust by bending (A) part.

4. Kick up

   (1) Open the first throttle valve until the kick arm slightly opens the second throttle valve.
Fig. 8-91

(2) Check the clearance between the second throttle valve and body.

Kick up clearance:
0.2 mm
(0.008 in.)

Fig. 8-92

(3) Adjust by bending (A) part.

Fig. 8-93

5—1. Fast idle (automatic choke only)

(1) Fully close the choke valve by turning the coil housing.

Fig. 8-94

(2) Slightly open the first throttle valve and then close it. Insure that the throttle lever (A) part hooks to the fast idle cam.
(3) Check the clearance between the first throttle valve and bore.

**Fast idle clearance:**
- 0.81 mm
- (0.032 in.)

(4) Adjust by turning the fast idle adjusting screw.

5–2. Fast idle (manual choke only)

(1) Fully close the choke valve by turning the choke shaft lever.

(2) Check the clearance between the first throttle valve and bore.

**Fast idle clearance:**
- 1.01 mm
- (0.040 in.)
(3) Adjust by turning the fast idle adjusting screw.

6. Unloader (only automatic choke)
   (1) Fully close the choke valve by turning the coil housing.

(2) Fully open the first throttle valve.

(3) At this time, check the choke valve opening angle.

   Unloader angle: $47^\circ$
7. Choke breaker (automatic choke only)
(1) Fully close the choke valve by turning the coil housing.

(2) Connect a hose to the diaphragm and suck on the hose with your mouth.
(3) At this time, check the clearance between the choke valve and bore.

(4) Adjust by bending (A) part.
8. Automatic choke
   (1) Set the coil housing scale mark so that it will be aligned with the center line of the thermostat case.

   **Note** –
   The choke valve becomes fully closed when the atmospheric temperature reaches 25°C (77°F).

(2) Depending on vehicle operating conditions, turn the coil housing and adjust the engine starting mixture.
   If too rich .... Turn clockwise.
   If too lean ..... Turn counterclockwise.

9. Idle mixture adjusting screw
   Tighten the idle mixture adjusting screw and then unscrew it about three turns.
   **STD (Reference only):**
   Returned about 3 turns from full closed.

   **Note** –
   Be careful not to damage the screw tip by tightening the screw too tightly.

10. Accelerating pump
    Adjust the pump stroke by vening part (A).

    **STD:**
    2T, 3T & 3T-C  5.0 mm  
                   (0.20 in.)
    2T-B            3.0 mm  
                   (0.12 in.)

   **Note** –
   After adjustment, be sure to check the linkage to see that it operates smoothly.
SOLEX CARBURETOR
CARBURETOR CIRCUIT

1. Float Level Adjusting Screw
2. Fuel Strainer
3. Needle Valve
4. Float
5. Main Air Bleet Jet
6. Main Jet Holder
7. Slow Jet
8. Idle Mixture Adjusting Screw
9. Main Jet
10. Starter Disc
11. Air Bleed Tube
12. Pump Discharge Weight
13. Pump Outlet Valve
14. Pump Jet
15. Accelerating Pump Diaphragm
16. Starter Jet
17. Pump Connecting Rod
18. Throttle Valve
Use SST for carburetor servicing.
SST[09860-11011]

DISASSEMBLY

Bowl Cover
Disassemble the parts in the numerical order shown in the figure.

1. Starter Return Spring
2. Fuel Union & Filter
3. Starter Disc
4. Jet Chamber Cover
5. Bowl Cover
6. Float
7. Gasket
8. Float Adjusting Stay
9. Needle Valve
Body
Disassemble the parts in the numerical order shown in the figure.

1. Float Chamber Plate
2. Main Air Bleed Jet
3. Main Jet Holder
4. Slow Jet
5. Starter Jet
6. Pump Discharge Weight & Check Valve
7. Pump Nozzle
8. Idle Mixture Screw
9. Cotter Pin & Washer
10. Accelerating Pump
11. Spring & Pump Rod
12. Sleeve
13. Small Venturi
14. Large Venturi
15. Body
Fig. 8-118

⚠️ Arrange the parts for the right and left sides in respective order.

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Fig. 8-119

Remove the main air bleed jet with SST.
SST[09860-11011]

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Fig. 8-120

Remove the main jet holder with SST.
SST[09860-11011]
Fig. 8-121
Remove the tube from the main jet holder.
Remove the main jet with SST.
SST[09860-11011]

Fig. 8-122
Remove the slow jet with SST.
SST[09860-11011]

Fig. 8-123
Remove the starter jet with SST.
SST[09860-11011]

Fig. 8-124
If the starter jet is difficult to remove, push up from the bottom with a screw driver.
Fig. 8-125

Remove the jet and gasket.

Fig. 8-126

After removing 4 screws, remove the accelerating pump.

Fig. 8-127

Remove the idle mixture adjusting screw with SST.
SST[09243-00010] or [09243-00020]

Fig. 8-128

Do not remove the screw
INSPECTION

— Precaution —
1. Before inspecting the parts, wash them thoroughly in gasoline.

2. Using compressed air, blow all dirt and other foreign matter from the jets and similar parts, and from the fuel passages and apertures in the body.

3. Never clean the jets or orifices with wire or a drill. This could enlarge the openings and result in excessive fuel consumption.

Inspect the following parts and replace any part damaged.

Bowl Cover Parts
1. Bowl cover: Cracks, damaged threads.
2. Starter pipe: Damaged and/or clogged.

3. Filter: Clogged, rusted, or damaged.
   - Note -
   New gasket must always be used whenever the union is removed.

4. Starter disc: Damaged or worn sliding surface.

5. Needle valve: Contacting valve seat.
Fig. 8-137

6. Float: Deformed, wear in float lever pin holes, bent float arms.

Fig. 8-138

Body Parts
1. Body: Cracks, damaged mounting surfaces and threads, wear on throttle shaft bearings, and carbon adherence.

Fig. 8-139

2. Bore: Wear on the throttle valve contacting surface.

Fig. 8-140

3. Throttle valve movement.
4. Jet: Clogging, damage to contacting surface, threads and screwdriver slots.

5. Idle mixture adjusting screw: Damage to tapered tip or threads.
   6. Pump nozzle: Clogged and/or damaged.

7. With the pump level, work the lever and insure that air is forced through the outlet hole.

8. Pump diaphragm: Damaged.
10. Venturi
   - Damaged
   - Small venturi
   - Damaged or clogged
**Body**
Assemble the parts in the numerical order shown in the figure.

**Fig. 8-146**

<table>
<thead>
<tr>
<th>Number</th>
<th>Part Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Large Venturi</td>
</tr>
<tr>
<td>2</td>
<td>Small Venturi</td>
</tr>
<tr>
<td>3</td>
<td>Sleeve</td>
</tr>
<tr>
<td>4</td>
<td>Pump Connecting Rod &amp; Spring</td>
</tr>
<tr>
<td>5</td>
<td>Accelerating Pump Diaphragm</td>
</tr>
<tr>
<td>6</td>
<td>Cotter Pin &amp; Washer</td>
</tr>
<tr>
<td>7</td>
<td>Main Jet Holder</td>
</tr>
<tr>
<td>8</td>
<td>Main Air Bleed Jet</td>
</tr>
<tr>
<td>9</td>
<td>Slow Jet</td>
</tr>
<tr>
<td>10</td>
<td>Starter Jet</td>
</tr>
<tr>
<td>11</td>
<td>Pump Nozzle</td>
</tr>
<tr>
<td>12</td>
<td>Pump Discharge Weight &amp; Check Valve</td>
</tr>
<tr>
<td>13</td>
<td>Mixture Adjusting Screw</td>
</tr>
<tr>
<td>14</td>
<td>Float Chamber Plate</td>
</tr>
</tbody>
</table>
Fig. 8-147
Assemble the small venturi with the long screw.

Fig. 8-148
Install the venturi with the accelerator pump nozzle hole in the center of the venturi slit.

Fig. 8-149
Install the spring in the direction shown in the figure.

Fig. 8-150
Install the gasket as shown in the figure.
Fig. 8-151
Install the cotter pin in the third hole from the tip of the pump rod.

Fig. 8-152
Before installing the main jet holder, assemble the sleeve and main jet into the holder with SST.
SST[09860-11011]

Fig. 8-153
Install the jets, air bleeds, valves and plugs as shown in the figure.
Fig. 8-154

Install the accelerator nozzle with the flat surface facing the intake manifold and with a gasket.

Fig. 8-155

Screw out 1-1/2 turns from the fully closed position.

— Note —
Take care not to mistake the left and right sides.
Bowl Cover
Assemble the parts in the numerical order shown in the figure.

1. Needle Valve
2. Float Adjusting Stay
3. Gasket
4. Float
5. Bowl Cover
6. Starter Disc
7. Jet Chamber Cover
8. Fuel Union & Filter
9. Starter Back Spring
Measure the float position. It should be about 16 mm (0.6 in.) from bowl cover lower surface.

Adjust the float position as shown in the figure, if necessary.

Tighten the screws a little at a time and in diagonal order.

After assembling, check the acceleration pump
1. Remove the bowl cover.
2. Pour gasoline into the carburetor up to the correct level.

Fuel level: 20 – 21 mm
(0.79 – 0.83 in.)
3. Check the fuel discharging time.
Discharging time:
1.1 – 1.7 second

4. Check the fuel injection direction.