

FUEL SYSTEM

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FUEL PUMP

COMPONENTS

Fig. 6-1

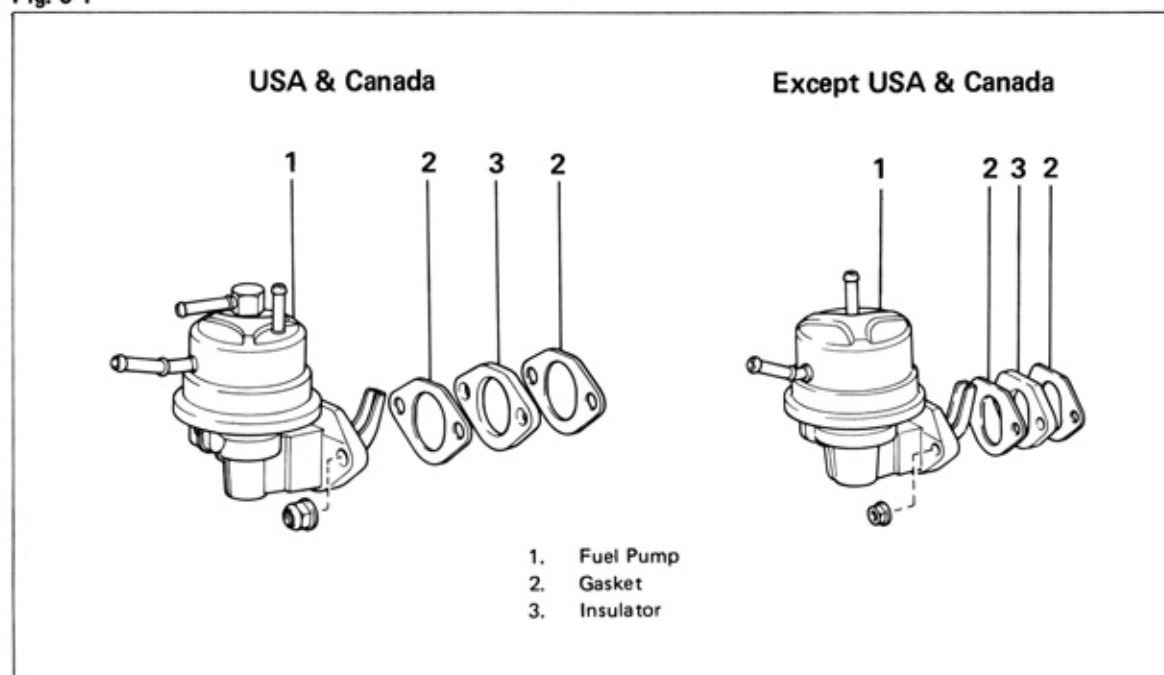
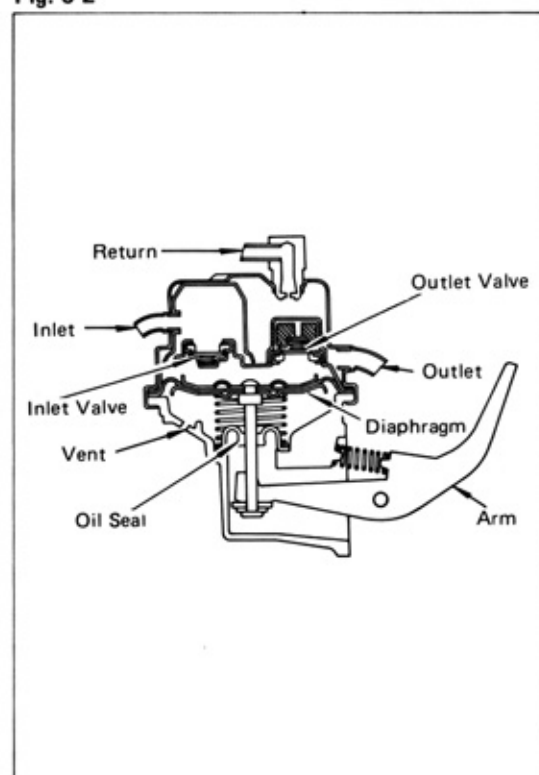


Fig. 6-2



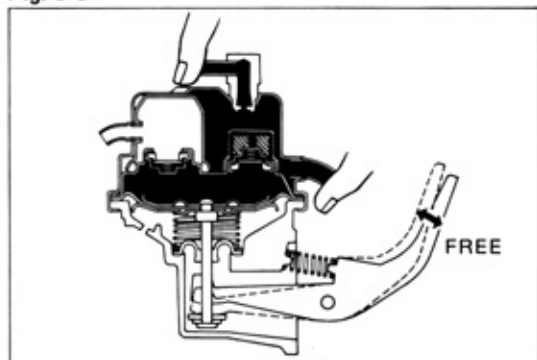
INSPECTION (AIRTIGHT TEST)

— Precaution —

Before performing the following checks on the fuel pump:

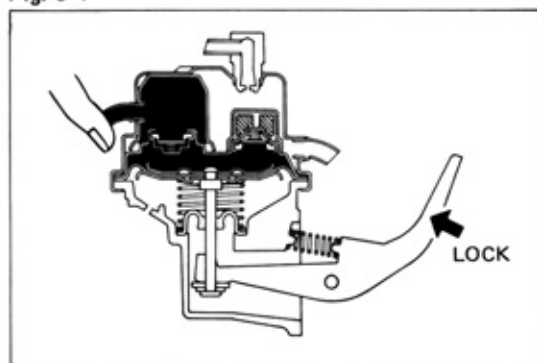
1. Run some fuel through the pump to insure that the check valves seal tightly (a dry check valve may not seal properly).
2. Without blocking off any pipes, operate the pump lever and check the amount of force necessary for operation and the amount of arm play. This same amount of force should be used in the checks.

Fig. 6-3



1. Check inlet valve
Block off the outlet pipes with your finger and check that there is an increase in lever arm play and that the lever arm moves freely (lost motion — no reaction force).

Fig. 6-4

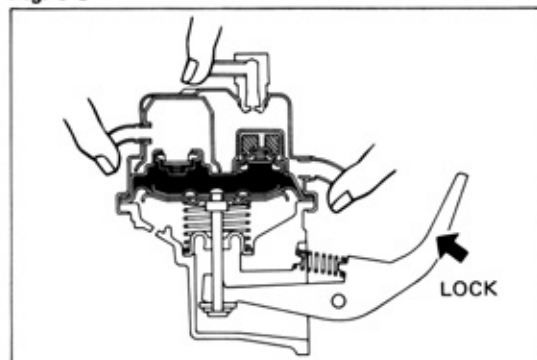


2. Check outlet valve
Block off the inlet pipe with your finger and check that the arm locks (does not operate with same amount of force used in the precheck above).

— Note —

Never use more force than that used in the precheck. This applies to checks 3 and 4 also).

Fig. 6-5

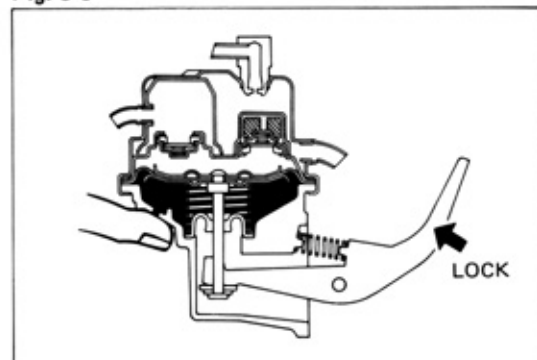


3. Check diaphragm
Block off the inlet and outlet pipes and check that the pump arm locks.

— Note —

If all three of these checks are not as specified, the caulking (sealing) of the body and upper casing is defective.

Fig. 6-6

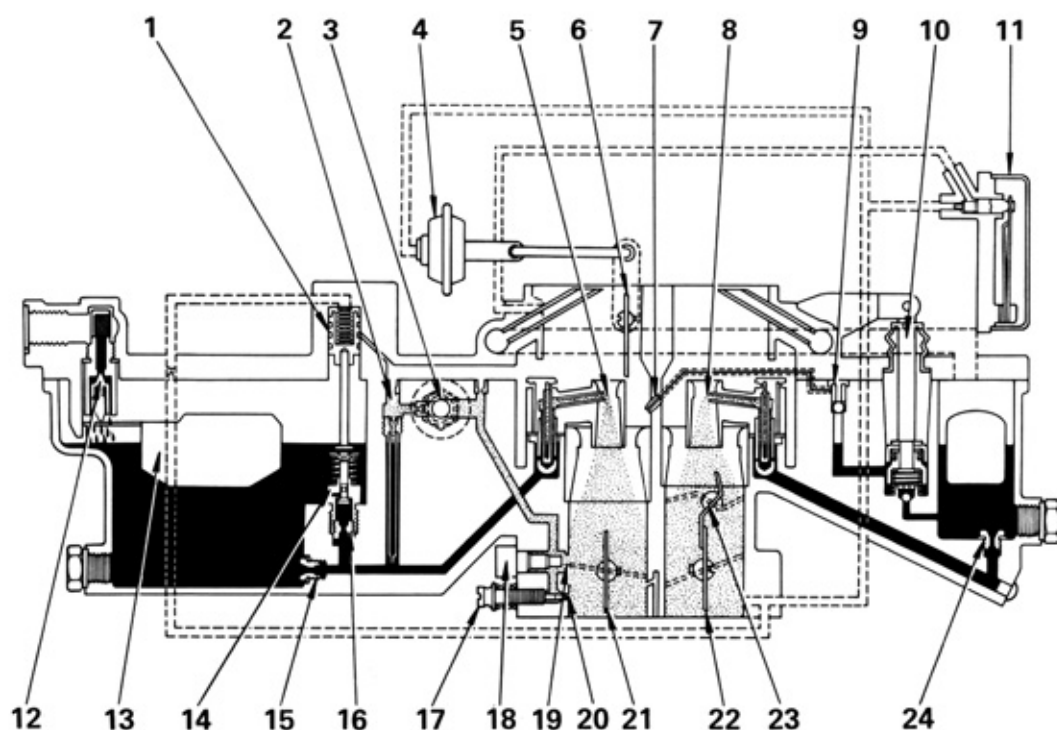


4. Check oil seal
Block off the vent hole with your finger and check that the pump arm locks.

CARBURETOR (Except KP61 Series & KM20 Series)

CARBURETOR CIRCUIT

Fig. 6-7



- | | |
|----------------------------------|----------------------------------|
| 1. Power Piston | 13. Float |
| 2. Slow Jet | 14. Power Valve |
| 3. Solenoid Valve | 15. Primary Main Jet |
| 4. Choke Breaker (Europe 4K A/T) | 16. Power Jet |
| 5. Primary Main Nozzle | 17. Idle Mixture Adjusting Screw |
| 6. Choke Valve | 18. Rivet Plug |
| 7. Pump Jet | 19. Slow Port |
| 8. Secondary Main Nozzle | 20. Idle Port |
| 9. Pump Discharge Weight | 21. Primary Throttle Valve |
| 10. Pump Plunger | 22. Secondary Throttle Valve |
| 11. Thermostat Valve | 23. High Speed Valve |
| 12. Needle Valve | 24. Secondary Main Jet |

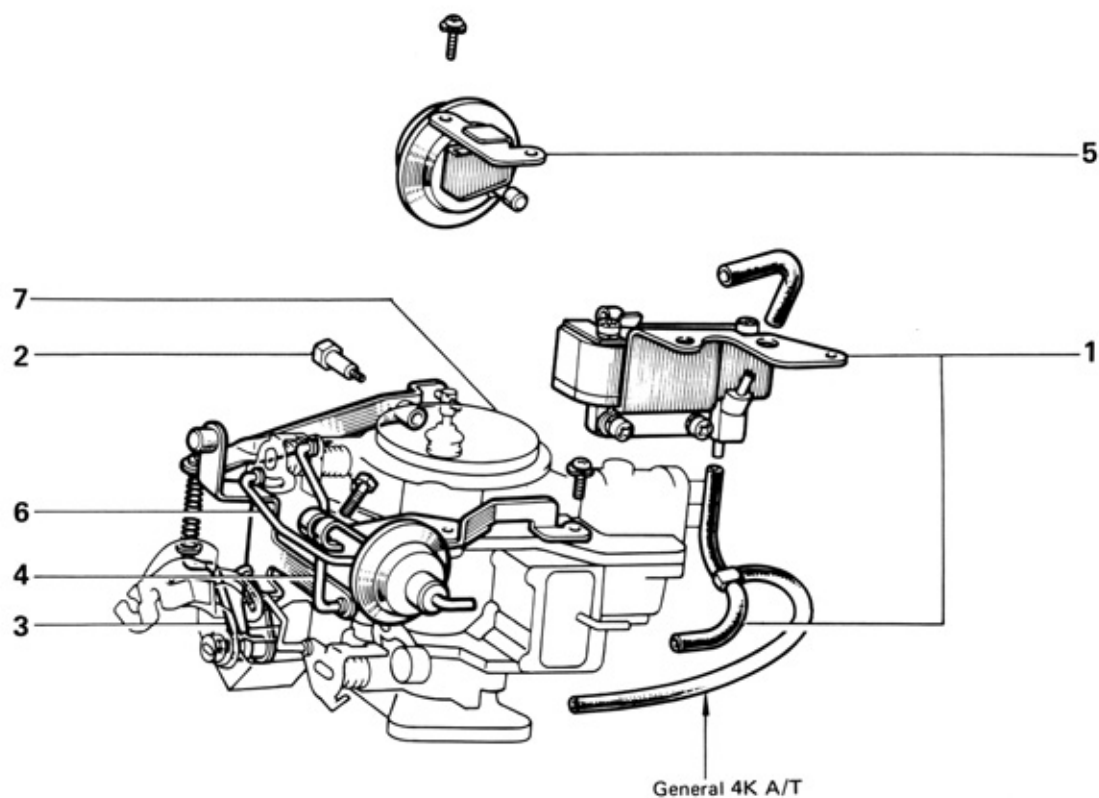
DISASSEMBLY

Air Horn

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

Fig. 6-8

USE SST [09860-11011] FOR CARBURETOR SERVICING



1. Hose & Thermostat Valve
2. Pump Arm Set Screw
3. Pump Connecting Link
4. Fast Idle Connecting Link
5. Throttle Positioner (3K-C & 4K-C)
6. Choke Breaker (Europe 4K A/T)
7. Air Horn

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

Fig. 6-9

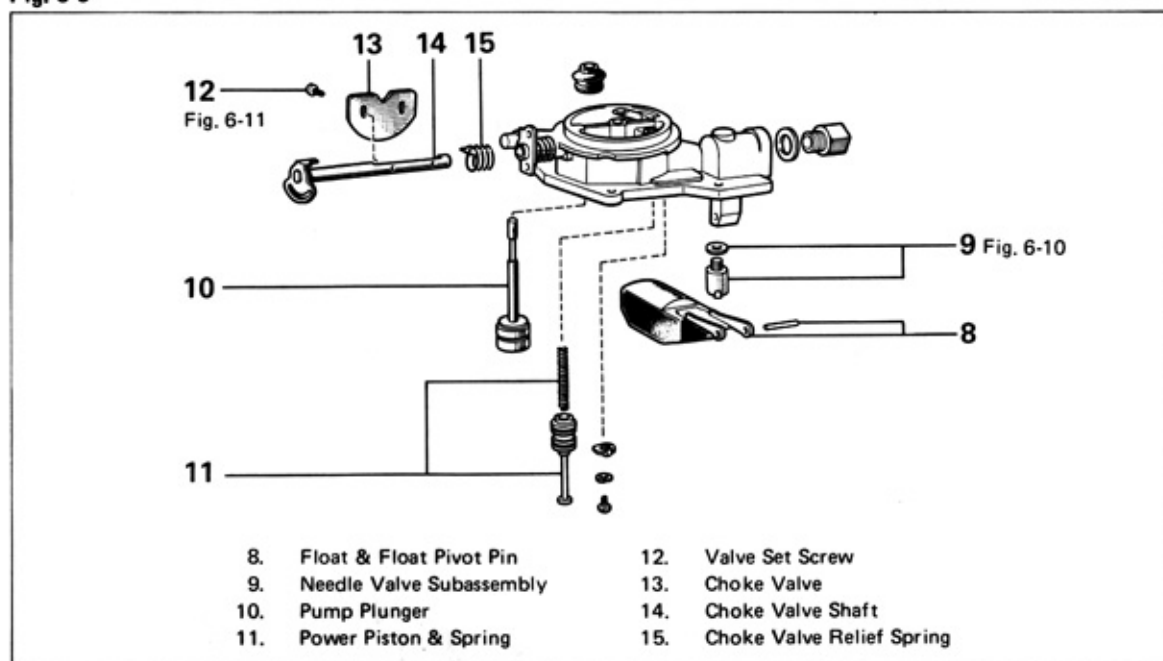
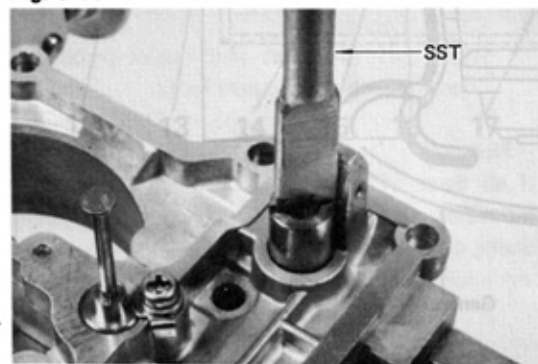
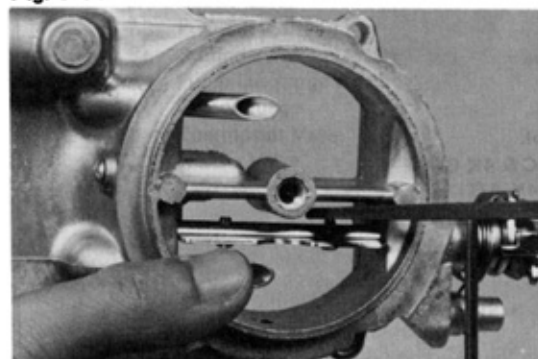


Fig. 6-10



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

Fig. 6-11



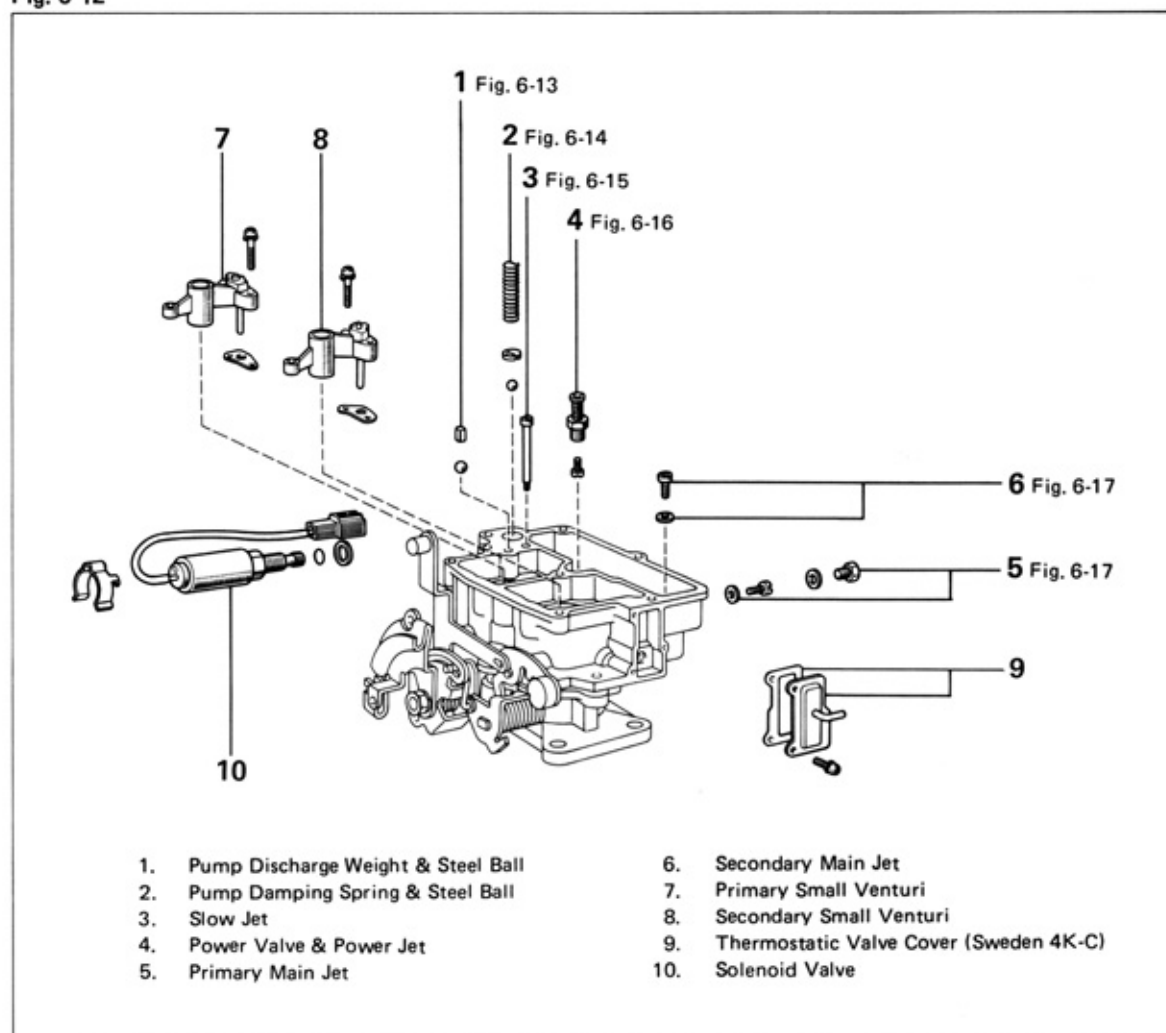
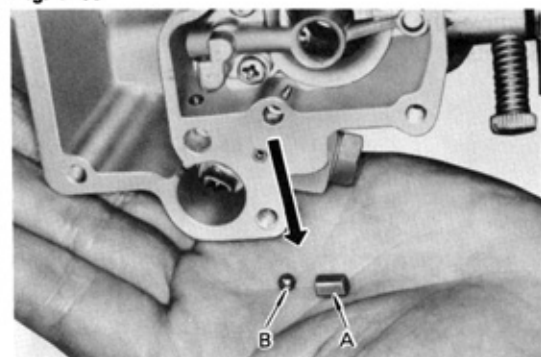
To remove choke valve, file off the end of the set screws.

— Note —

Do this only if it is necessary to replace the choke valve or shaft.

Body

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

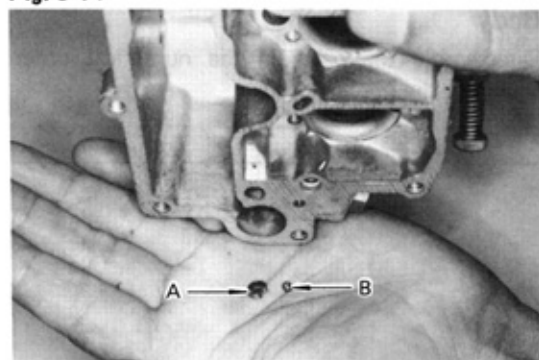
Fig. 6-12**Fig. 6-13**

Turn the carburetor upside down, and remove the pump discharge weight A and steel ball B.



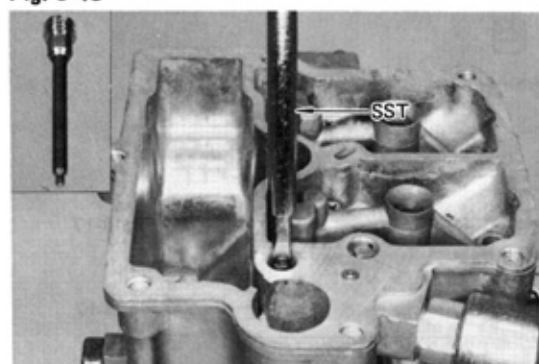
— Caution —
Use care not to lose the steel ball.

Fig. 6-14



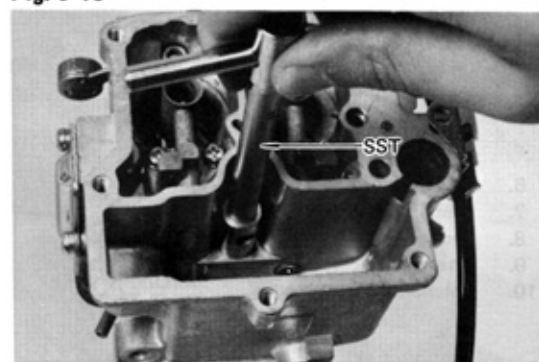
Using tweezers, take out the check ball retainer A from the bottom of pump cylinder. Turn the carburetor upside down and drop out the steel ball B.

Fig. 6-15



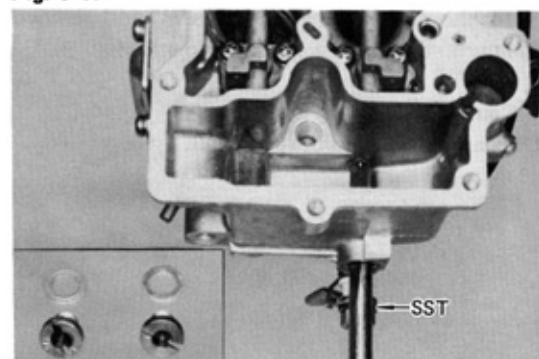
Remove the slow jet with SST.
SST [09860-11011]

Fig. 6-16



Remove the power valve with SST.
SST [09860-11011]

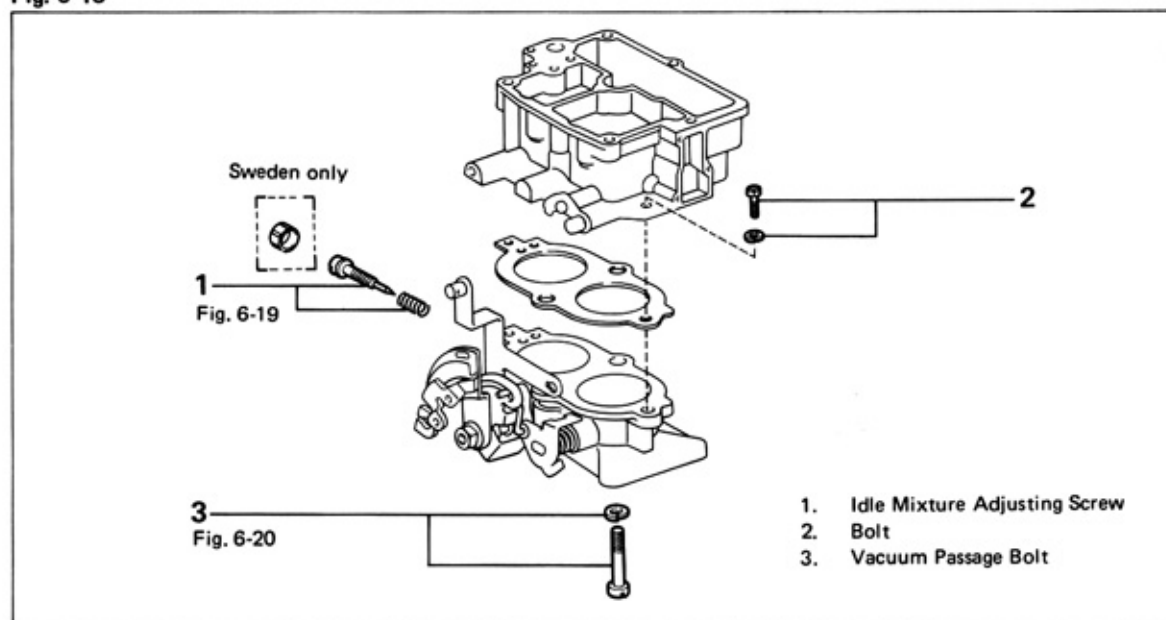
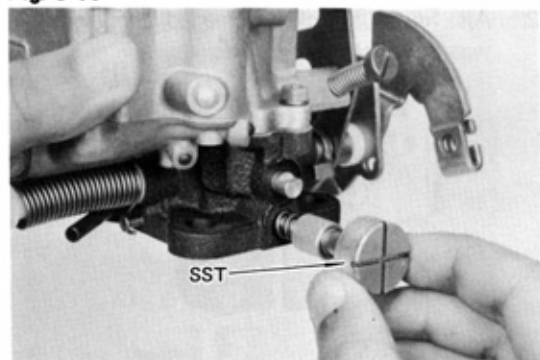
Fig. 6-17



Remove the primary and secondary main jets and gaskets.

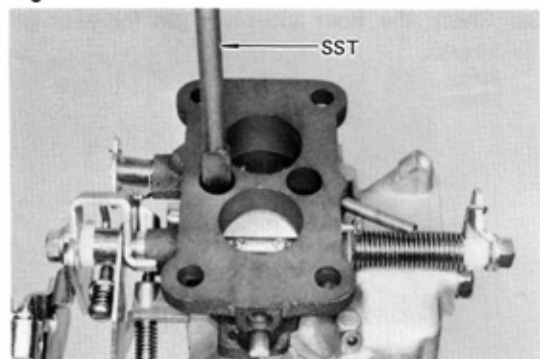
Flange

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

Fig. 6-18**Fig. 6-19**

Remove the idle mixture adjusting screw with SST (Europe) or a screwdriver (General destinations).

SST [09243-00010] or [09243-00020]

Fig. 6-20

Remove the two bolts with SST.

SST [09860-11011]

Fig. 6-21

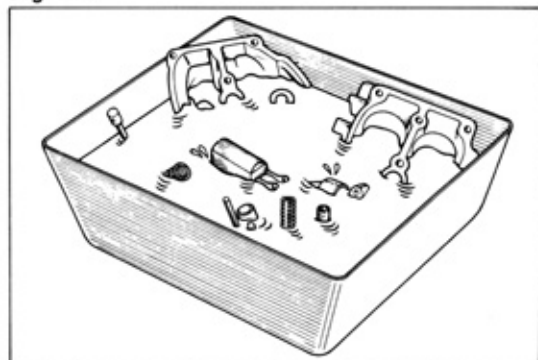


Fig. 6-22

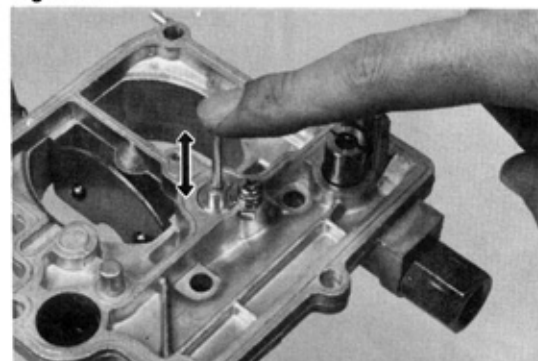


Fig. 6-23

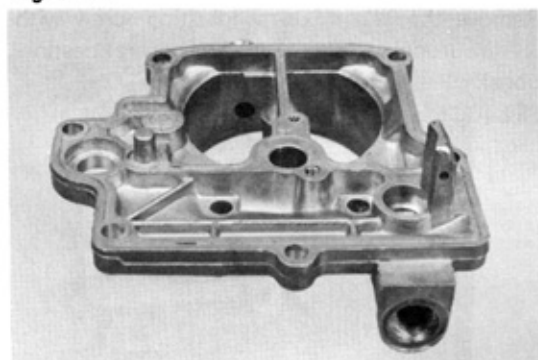
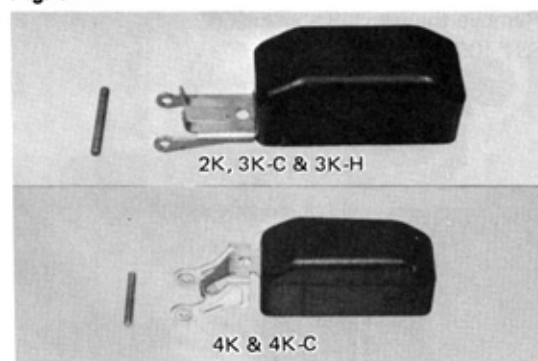


Fig. 6-24



INSPECTION

— Precaution —

1. Before inspecting the parts, wash them thoroughly in gasoline. 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.
2. 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. Make sure that the power piston moves smoothly.

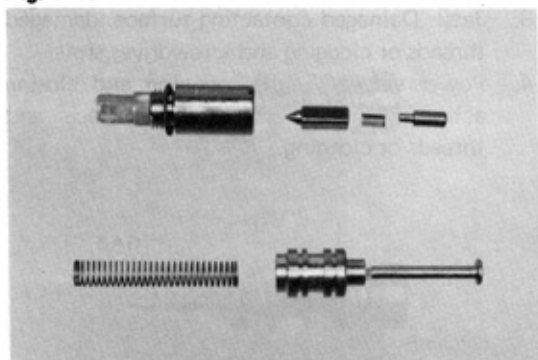


2. Air horn: Cracks, damaged threads, and wear on choke shaft bores.



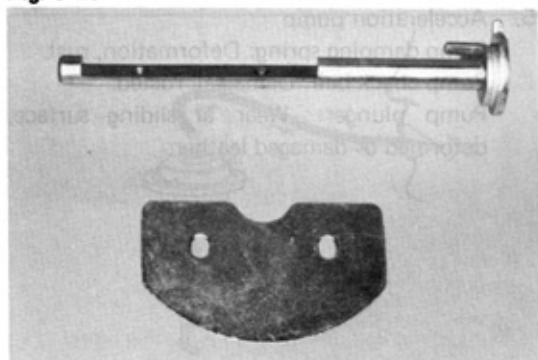
3. Check the float and pivot pin for wear or breaks.

Fig. 6-25



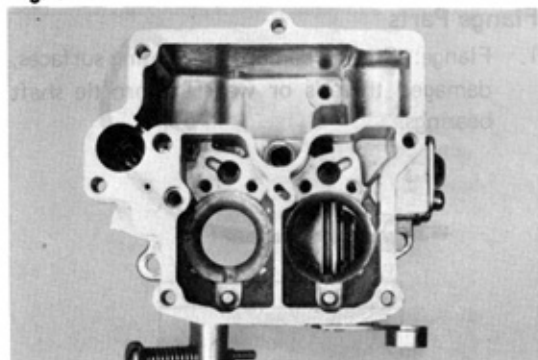
4. Strainer: Rust, breaks.
5. Needle valve surface.
6. Needle valve seat.
7. Power piston: Scratches, excessive wear.
Power piston spring broken or deformed.

Fig. 6-26



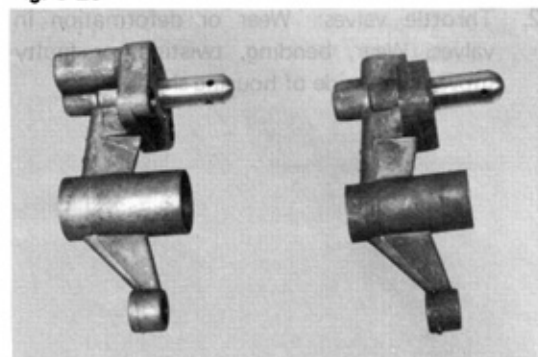
8. Choke valve: Deformation. Choke shaft worn, bent, or not fitting properly in the housing.

Fig. 6-27

**Body Parts**

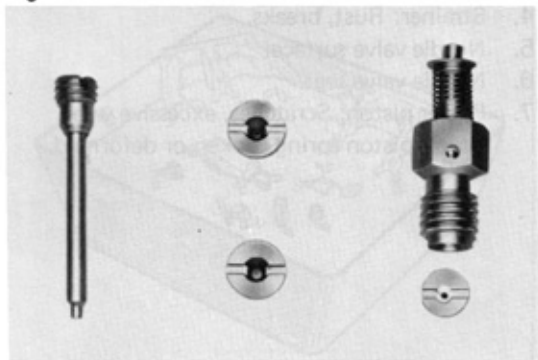
1. Body: Cracks, scored mounting surfaces, damaged threads or clogging.

Fig. 6-28



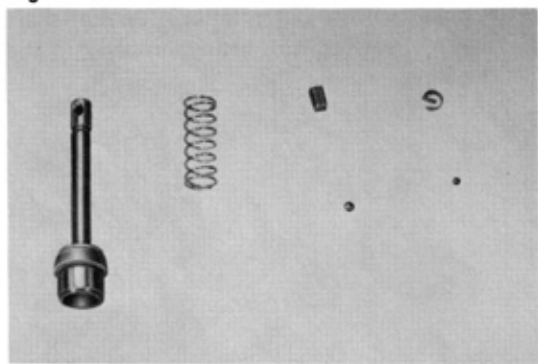
2. Venturi: Damage or clogging.

Fig. 6-29



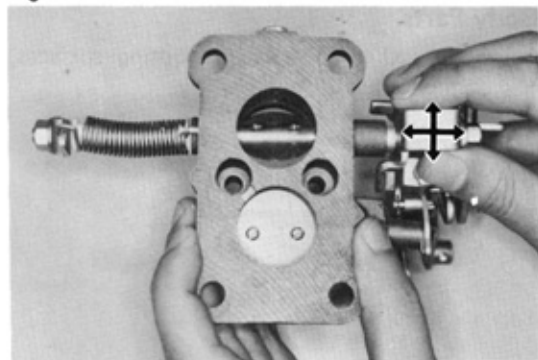
3. Jets: Damaged contacting surface, damaged threads or clogging and screwdriver slots.
4. Power valve: Faulty opening and closing action, damaged contacting surface and threads or clogging.

Fig. 6-30



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

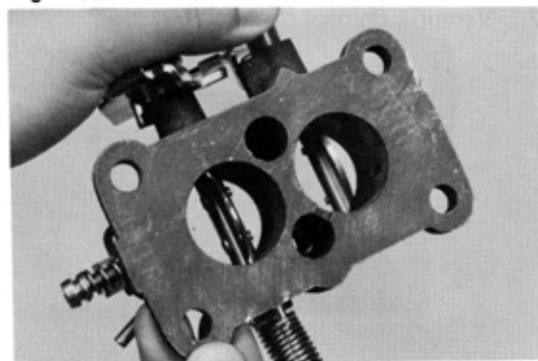
Fig. 6-31



Flange Parts

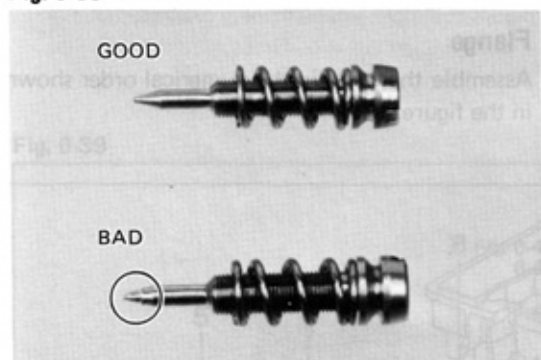
1. Flange: Cracks, damaged mounting surfaces, damaged threads or wear at throttle shaft bearings.

Fig. 6-32



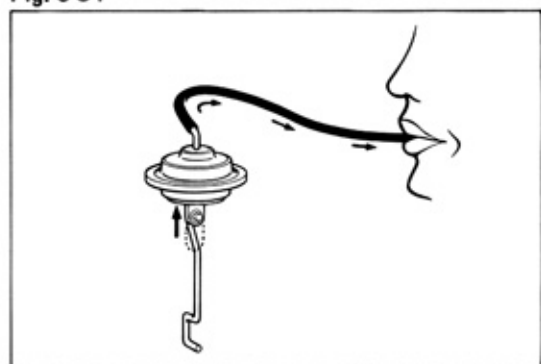
2. Throttle valves: Wear or deformation in valves. Wear, bending, twisting, or faulty movement inside of housing shaft.

Fig. 6-33



3. Idle mixture adjusting screw: Damage tapered tip or threads.

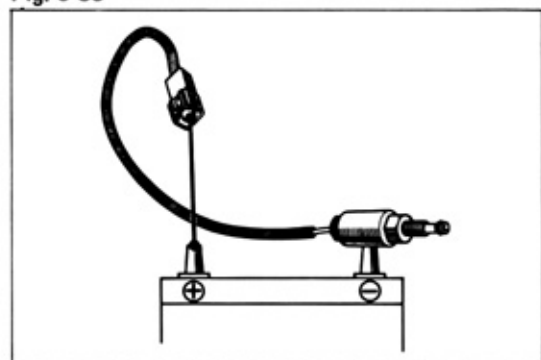
Fig. 6-34



Throttle Positioner & Choke Breaker

Connect a hose to the diaphragm and suck. The diaphragm should move. If not, replace it.

Fig. 6-35



Solenoid Valve

Check operation of solenoid valve. Connect wiring to the battery positive 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. 6-36

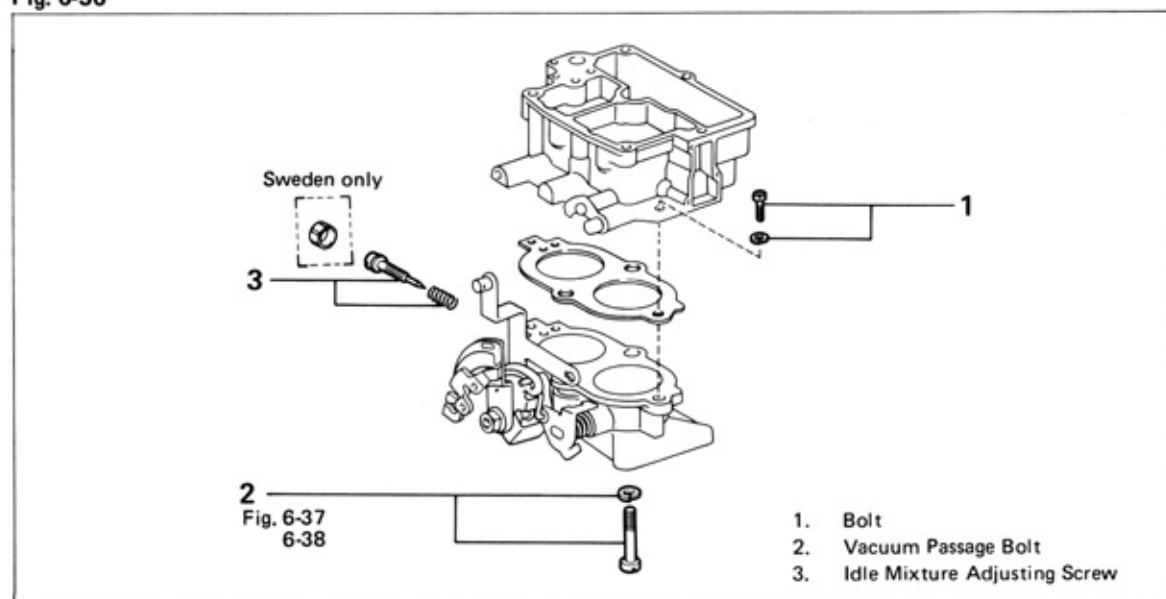
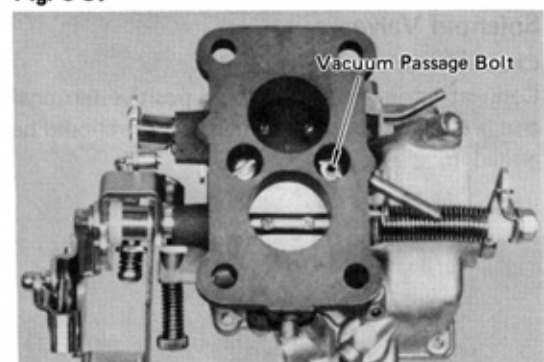


Fig. 6-37

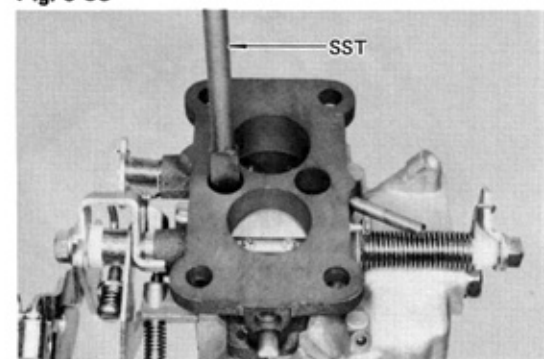


Assemble the vacuum passage bolt in the position shown in the figure.

— Note —

Use a new gasket.

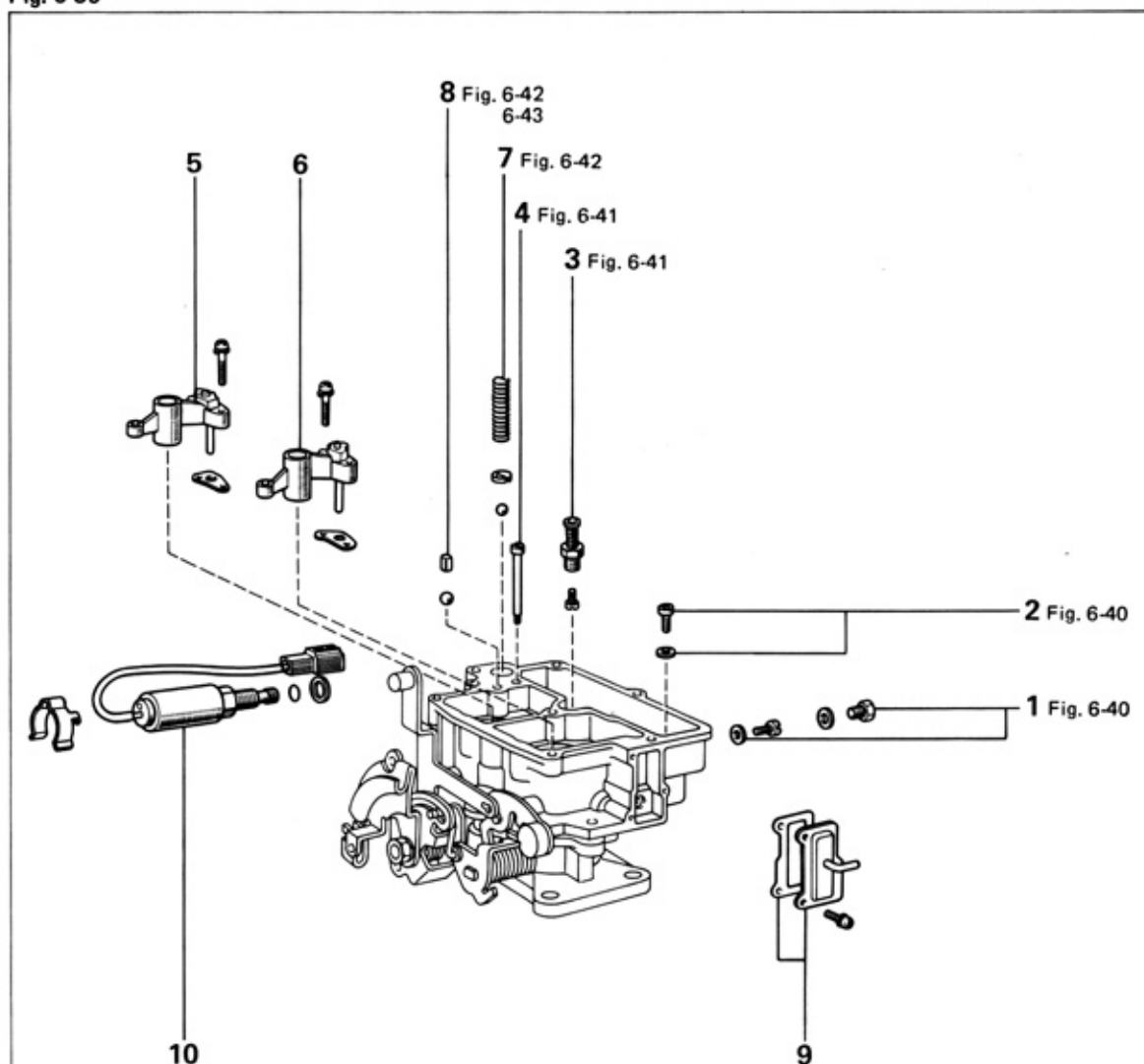
Fig. 6-38



Tighten the bolts with SST.
SST [09860-11011]

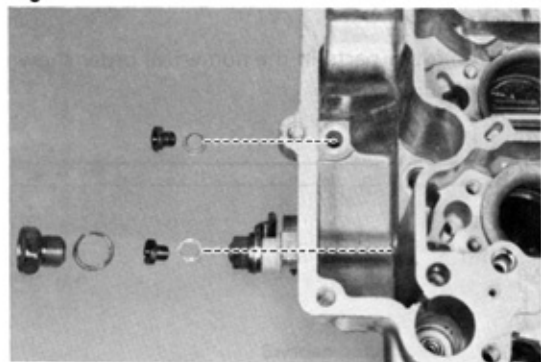
Body

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

Fig. 6-39

- | | |
|----------------------------|---|
| 1. Primary Main Jet | 6. Secondary Small Venturi |
| 2. Secondary Main Jet | 7. Pump Damping Spring & Steel Ball |
| 3. Power Valve & Power Jet | 8. Pump Discharge Weight & Steel Ball |
| 4. Slow Jet | 9. Thermostatic Valve Cover (Sweden 4K-C) |
| 5. Primary Small Venturi | 10. Solenoid Valve |

Fig. 6-40

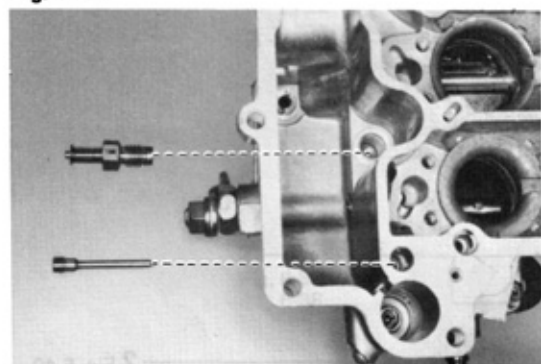


Install the main jets with new gaskets.

Primary jet — Brass

Secondary jet — Chrome

Fig. 6-41

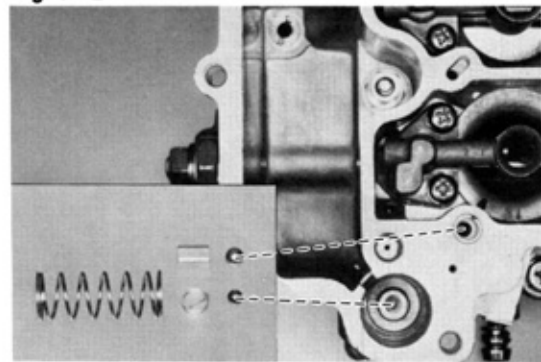


Install the following parts as shown in the figure.

Slow jet

Power valve

Fig. 6-42



Install the pump inlet ball, pump outlet ball and weight.

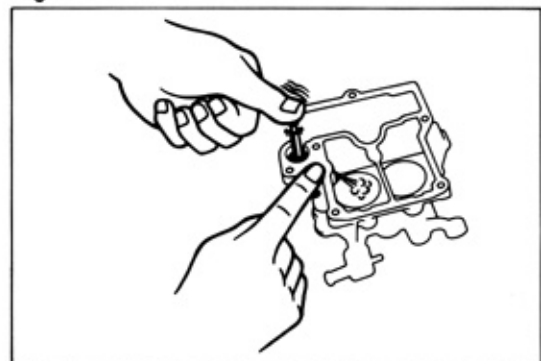
— Note —

There are two sizes of balls.

Larger ball: For pump outlet.

Smaller ball: For pump inlet.

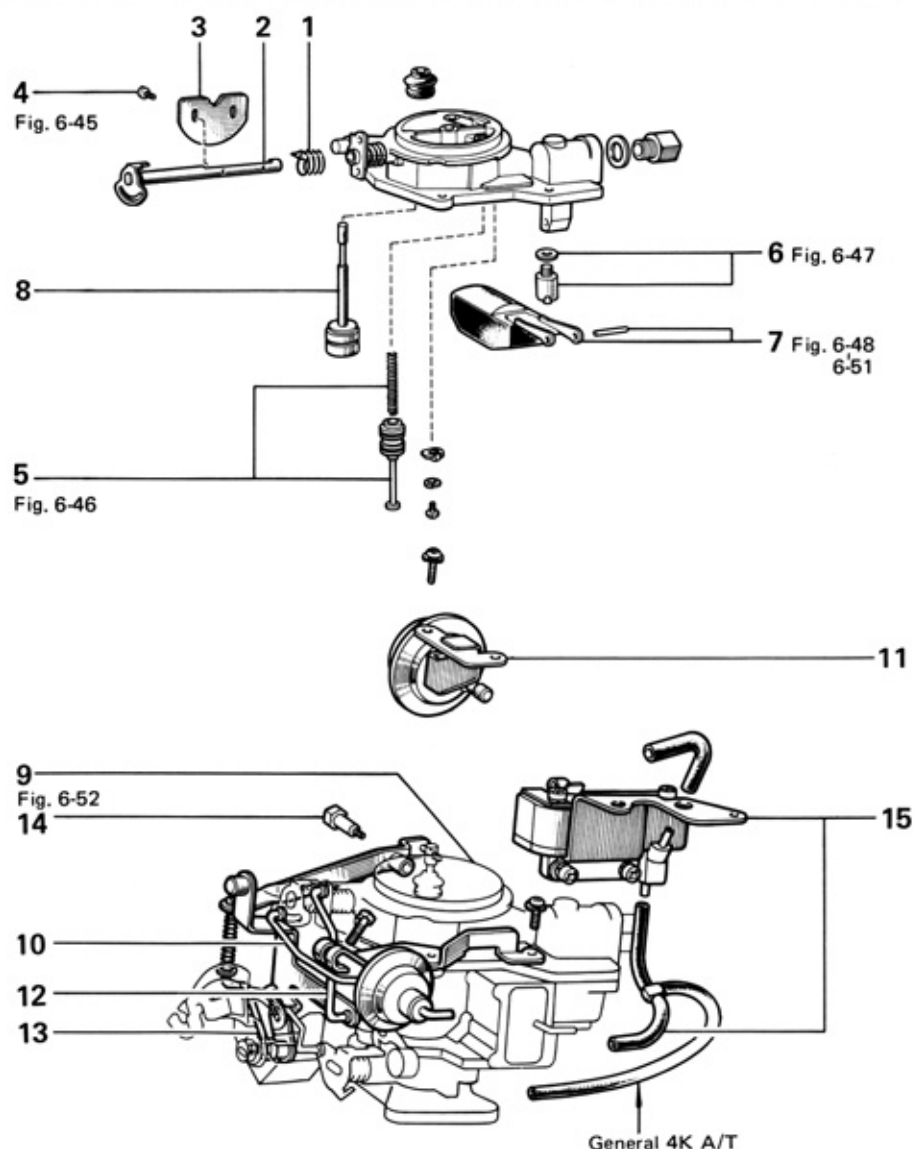
Fig. 6-43



Close off the discharge weight with your finger and put a small amount of fuel into the float chamber. Push the accelerator pump and check to see that fuel spurts from the nozzle.

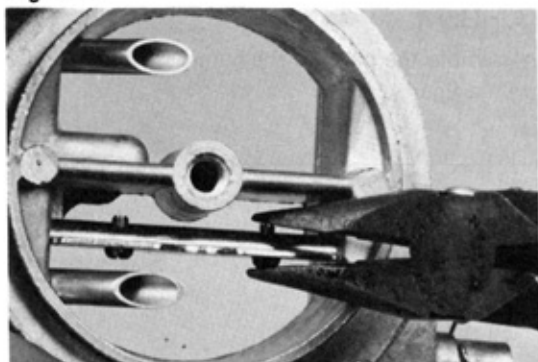
Air Horn

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

Fig. 6-44

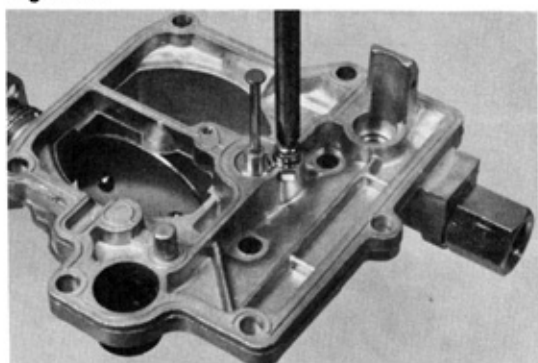
- | | |
|------------------------------|--|
| 1. Choke Valve Relief Spring | 9. Air Horn |
| 2. Choke Valve Shaft | 10. Choke Breaker (Europe 4K A/T) |
| 3. Choke Valve | 11. Throttle Positioner (Sweden 3K-C & 4K-C) |
| 4. Valve Set Screw | 12. Fast Idle Connecting Link |
| 5. Power Piston & Spring | 13. Pump Connecting Link |
| 6. Needle Valve Subassembly | 14. Pump Arm Set Screw |
| 7. Float & Float Pivot Pin | 15. Hose & Thermostatic Valve |
| 8. Pump Plunger | |

Fig. 6-45



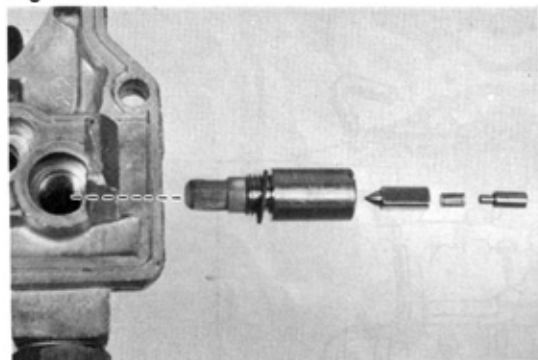
Install the choke valve, and then peen the end of screws.

Fig. 6-46



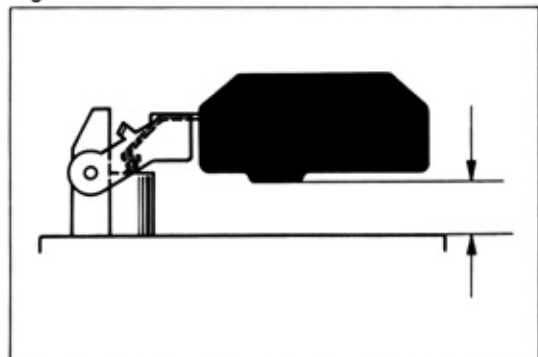
Install the power piston and spring.

Fig. 6-47



Install the valve seat, needle valve, spring and push pin in order.

Fig. 6-48



Adjust the position of the float.

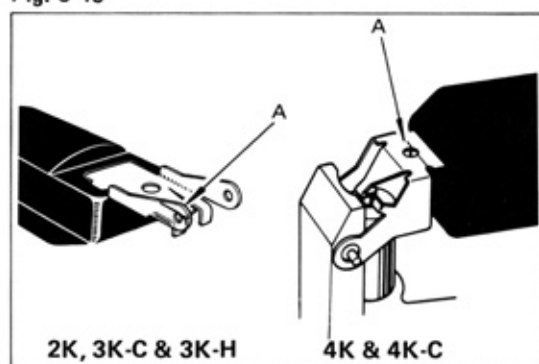
1. Allow the float to hang by its own weight.
2. Check the clearance between the float tip and air horn with SST.

SST [09240-00014]

Raised position clearance:

2K, 3K-C & 3K-H	6.0 mm (0.236 in.)
4K & 4K-C	7.5 mm (0.295 in.)

Fig. 6-49

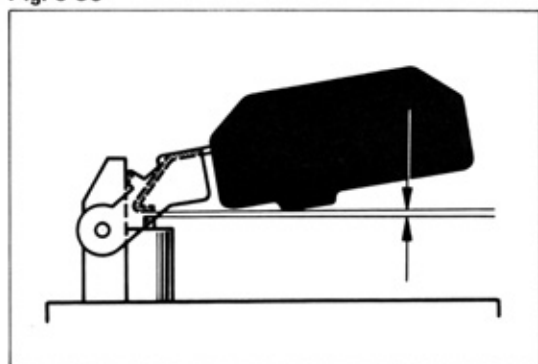


— Note —

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

- Adjust the clearance by bending at point A of the float as shown in the figure.

Fig. 6-50



Adjust lowered position of the float.

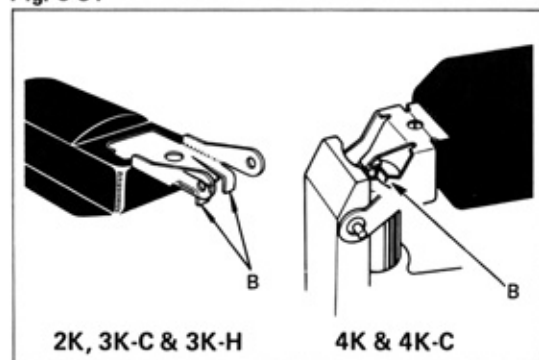
- Lift the float and check the clearance between the needle valve plunger and float lip with SST.

SST [09240-00020]

Lowered position clearance:

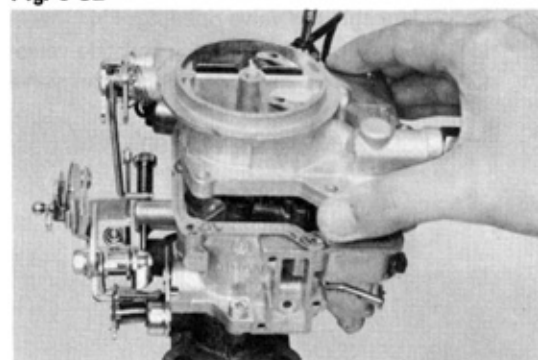
2K, 3K-C & 3K-H	0.9 mm (0.035 in.)
4K & 4K-C	0.6 mm (0.024 in.)

Fig. 6-51



- Adjust the clearance by bending tab B of the float as shown in the figure.

Fig. 6-52

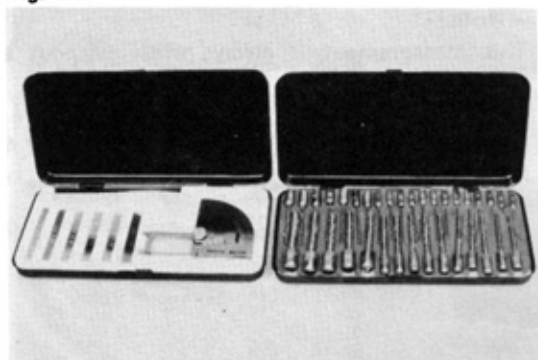


Assemble the body and air horn over a new gasket.

— Caution —

- Take care not to damage the pump plunger leather.
- Assemble the air horn with the pump jet positioned correctly.

Fig. 6-53

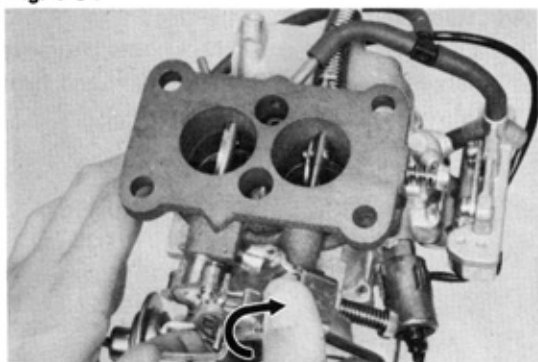
**ADJUSTMENT**

Use SST to make adjustments.

SST [09240-00014]

[09240-00020]

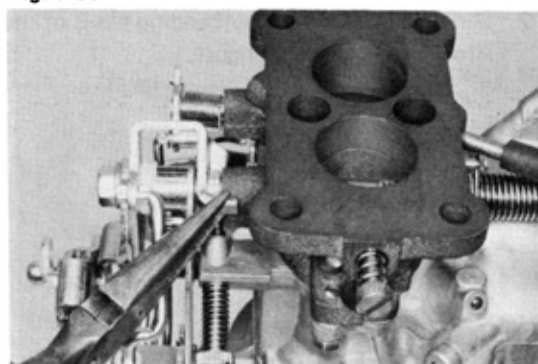
Fig. 6-54



1. Primary throttle valve opening
 - (1) Fully open the primary throttle valve.
 - (2) Check the primary throttle valve opening angle.

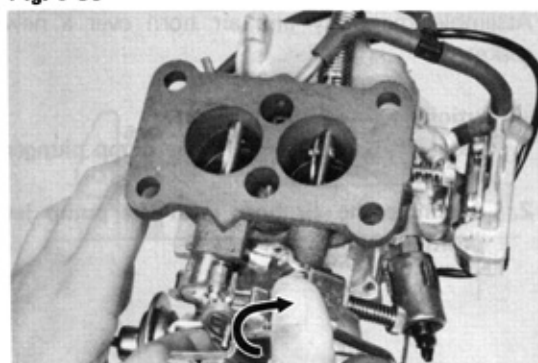
Opening angle: 90°

Fig. 6-55



- (3) Adjust by bending the throttle lever stopper.

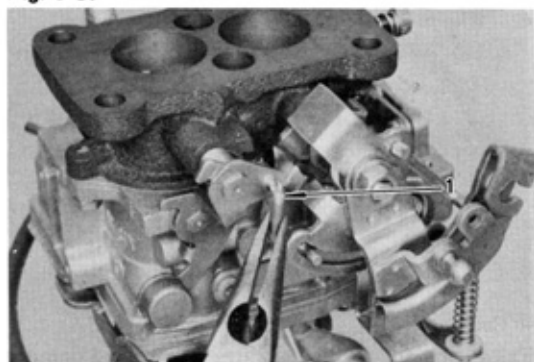
Fig. 6-56



2. Secondary throttle valve opening
 - (1) Fully open the primary throttle valve.
 - (2) Check the secondary throttle valve opening angle.

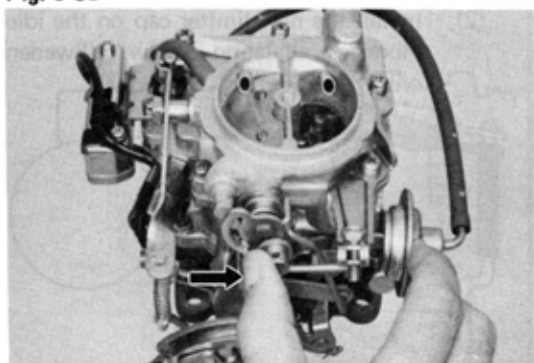
Opening angle: 90°

Fig. 6-57



- (3) Adjust by bending the throttle shaft link 1.

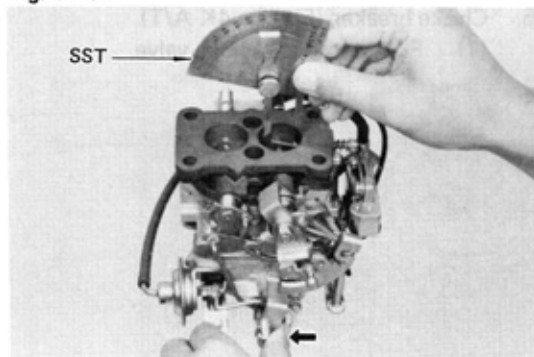
Fig. 6-58



3. Fast idle

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

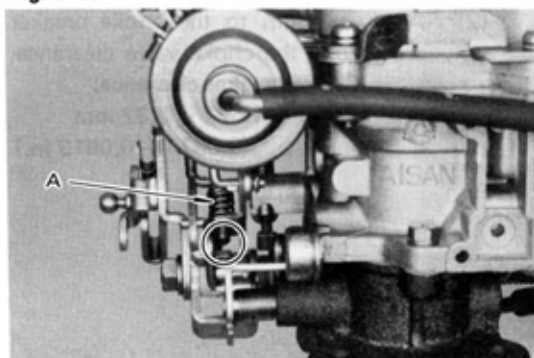
Fig. 6-59



- (2) At this time, check the primary throttle valve opening angle with SST.
SST [09240-00014]

Fast idle angle: 26°

Fig. 6-60

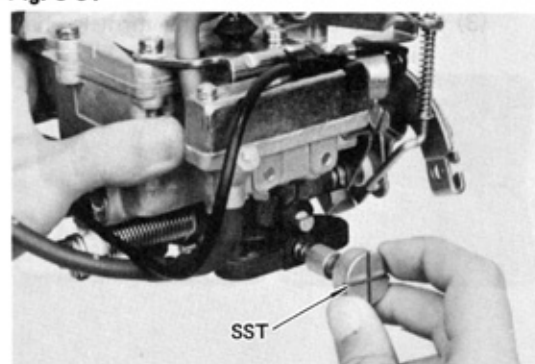


- (3) Adjust by turning the fast idle adjusting screw A.

— Caution —

Be sure there is clearance remaining after adjustment.

Fig. 6-61



4. Idle mixture adjusting screw

- (1) Tighten the idle mixture adjusting screw to fully closed position and then unscrew it as follows with SST (Europe) or a screwdriver (General destinations).

SST [09243-00010] or [09243-00020]

2K & 4K **2½ turns**

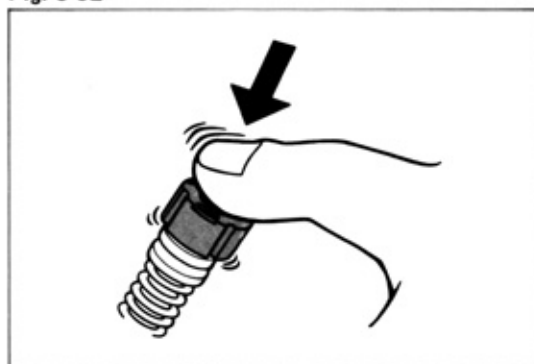
3K-C & 3K-H **3 turns**

4K-C **1½ turns**

— Caution —

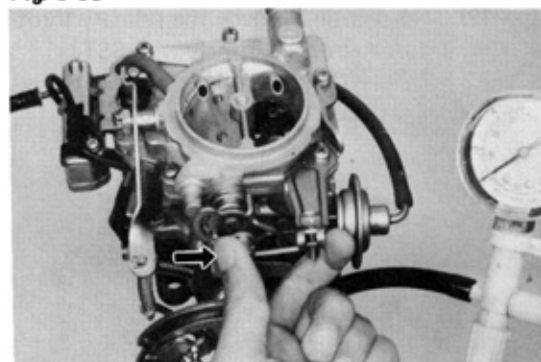
Take care not to screw in too tightly and damage the screw tip.

Fig. 6-62



- (2) Install the new limiter cap on the idle mixture adjusting screw. (Sweden only)

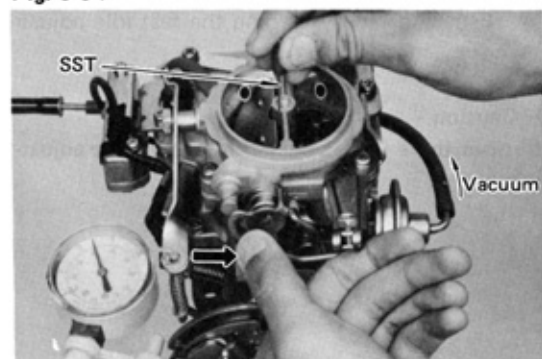
Fig. 6-63



5. Choke breaker (Europe 4K A/T)

- (1) Fully close the choke valve.

Fig. 6-64



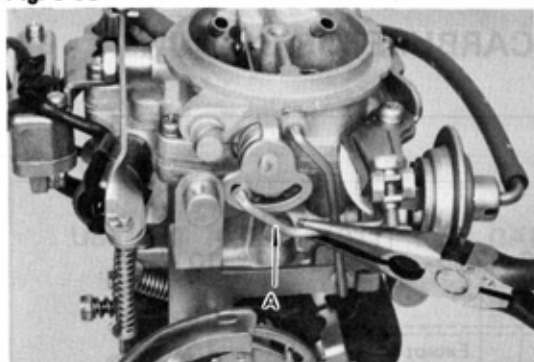
- (2) Apply vacuum to the choke breaker and check the choke valve clearance.

Choke breaker clearance:

2.22 – 2.32 mm

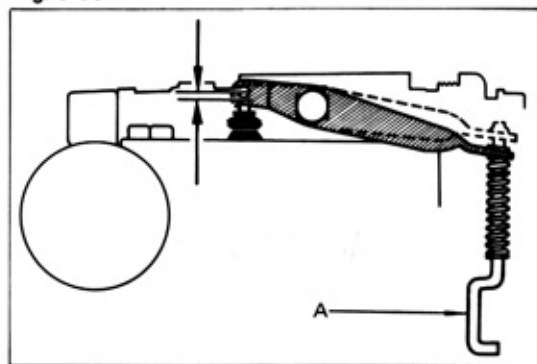
(0.0874 – 0.0913 in.)

Fig. 6-65



- (3) Adjust by bending the connecting link A.

Fig. 6-66



6. Accelerating pump
Adjust the pump stroke by bending part A as shown in the figure.

Accelerating pump stroke:

2K, 4K & 4K-C	4.85 mm (0.1909 in.)
3K-C & 3K-H	3.25 mm (0.1280 in.)

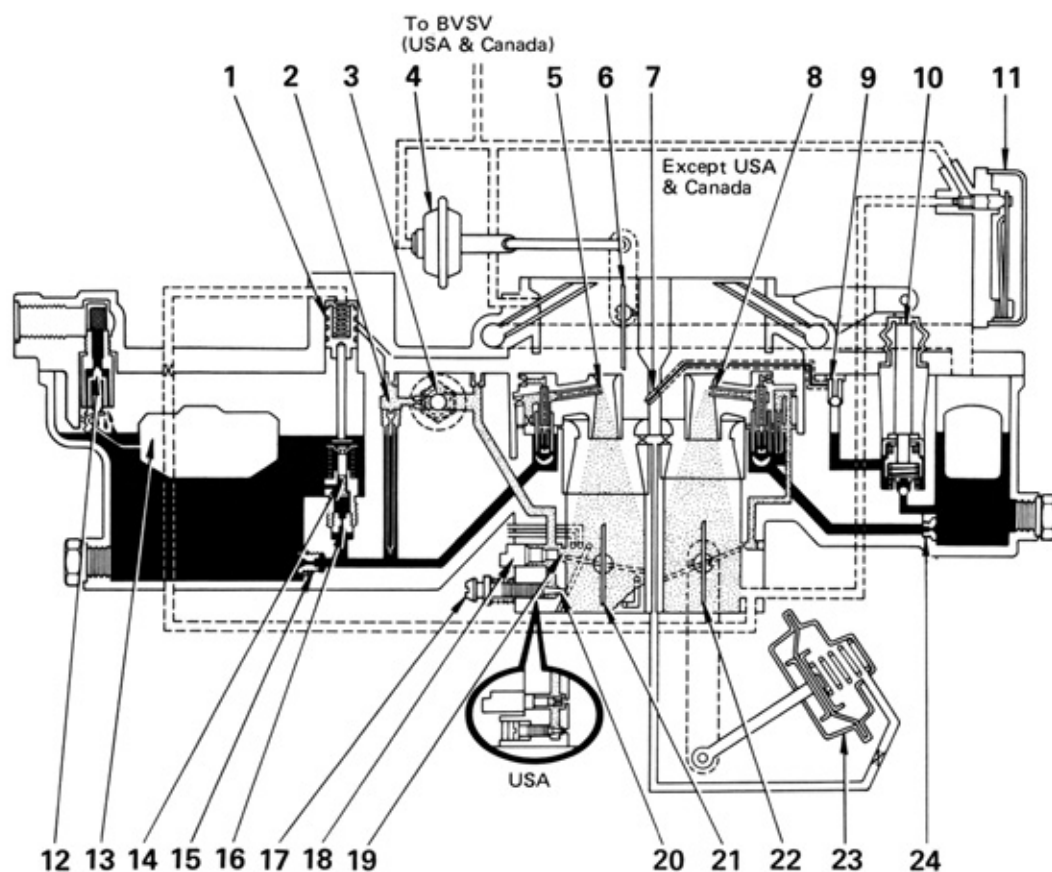
— Note —

After adjustment, be sure to check the linkage to see that it operates smoothly.

CARBURETOR (KP 61 Series & KM20 Series)

CARBURETOR CIRCUIT

Fig. 6-67



- | | |
|---|--|
| 1. Power Piston | 13. Float |
| 2. Slow Jet | 14. Power Valve |
| 3. Solenoid Valve | 15. Primary Main Jet |
| 4. Choke Breaker (Australia 4K-C) or
Choke Opener (USA & Canada) | 16. Power Jet |
| 5. Primary Main Nozzle | 17. Idle Mixture Adjusting Screw |
| 6. Choke Valve | 18. Plug Rivet |
| 7. Pump Jet | 19. Slow Port |
| 8. Secondary Main Nozzle | 20. Idle Port |
| 9. Pump Discharge Weight | 21. Primary Throttle Valve |
| 10. Pump Plunger | 22. Secondary Throttle Valve |
| 11. Thermostatic Valve (Europe & Australia) | 23. Secondary Throttle Valve Diaphragm |
| 12. Needle Valve | 24. Secondary Main Jet |

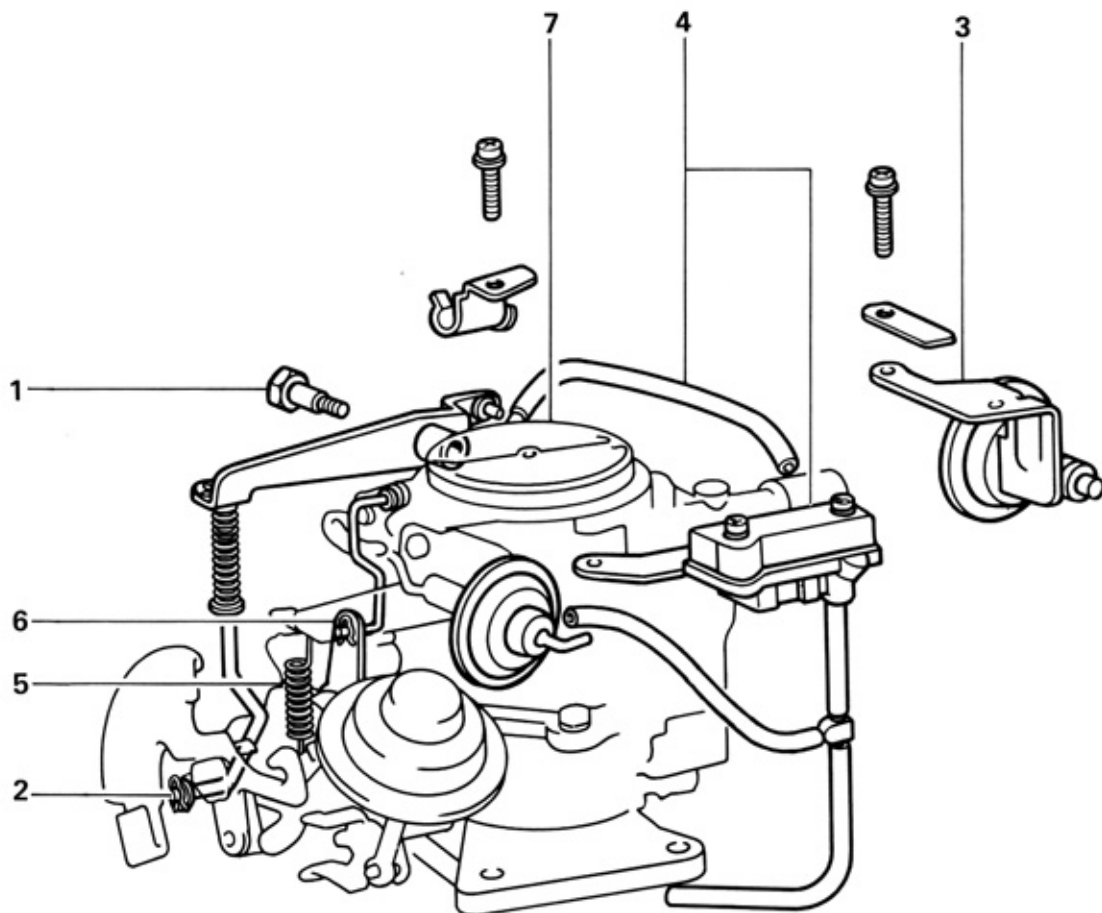
DISASSEMBLY

Air Horn

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

Fig. 6-68

USE SST [09860-11011] FOR CARBURETOR SERVICING



1. Pump Arm Set Screw
2. Pump Connecting Link
3. Throttle Positioner
4. Hose & Thermostatic Valve (Europe & Australia)
5. Back Spring
6. Fast Idle Cam Connecting Link
7. Air Horn

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

Fig. 6-69

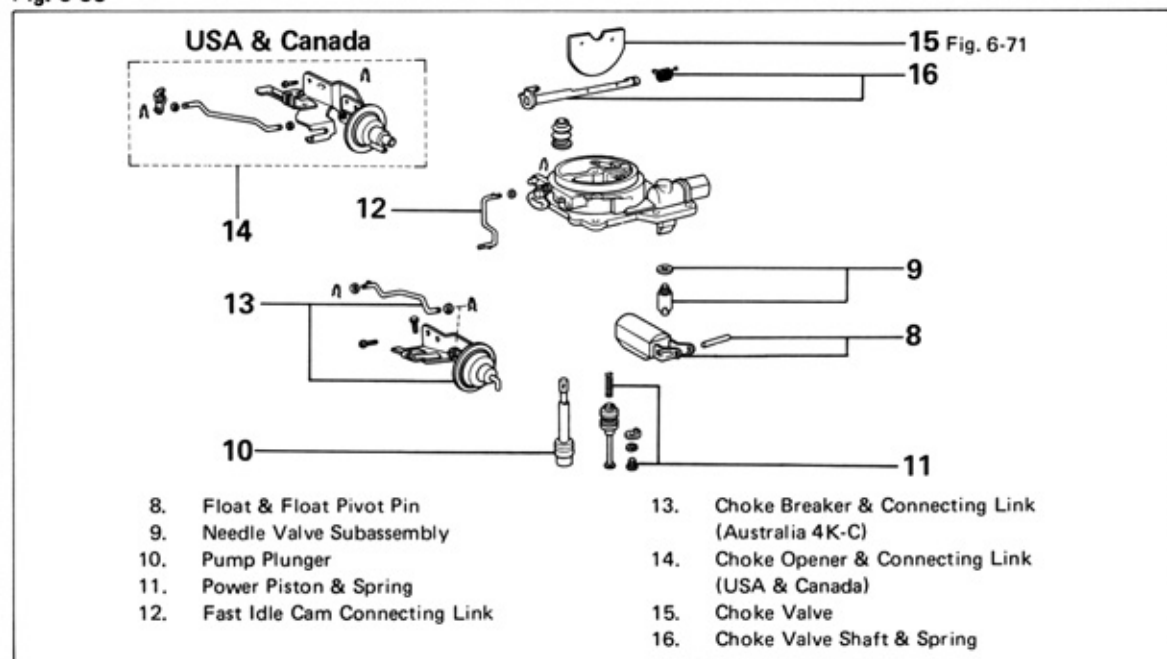
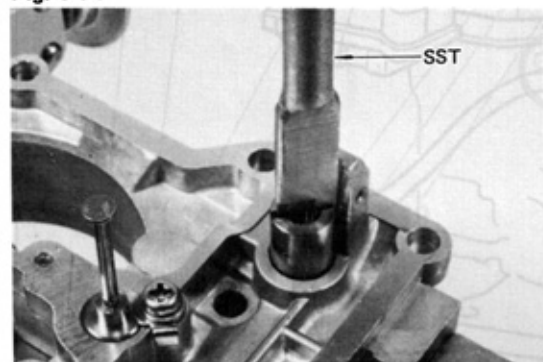
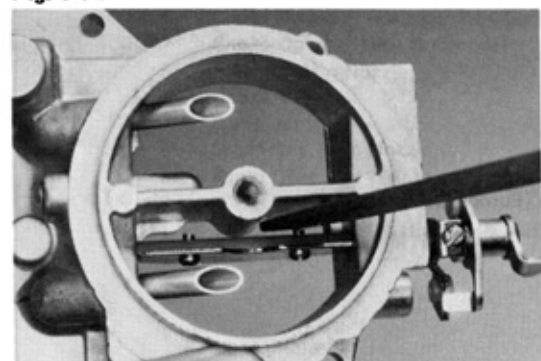


Fig. 6-70



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

Fig. 6-71



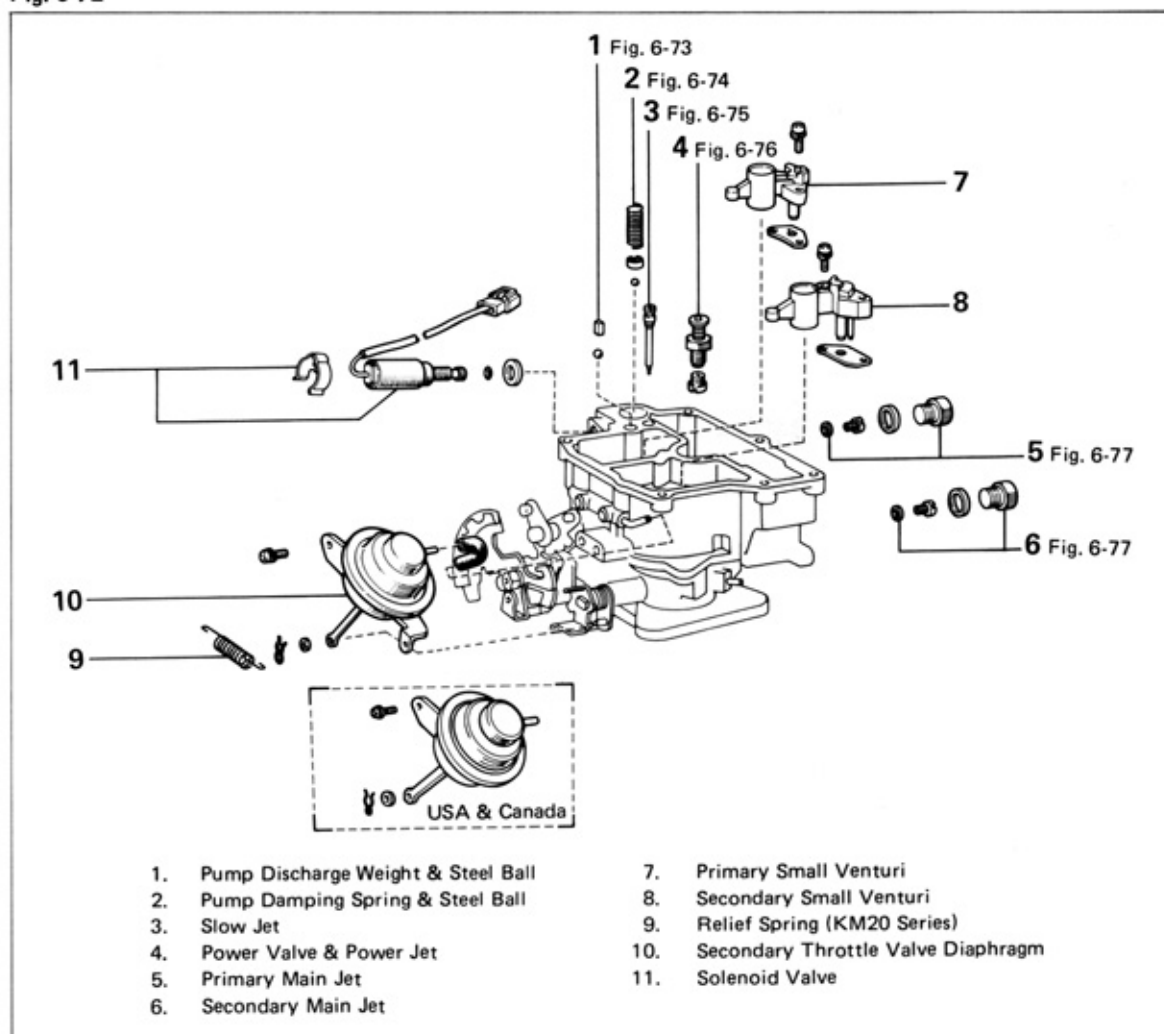
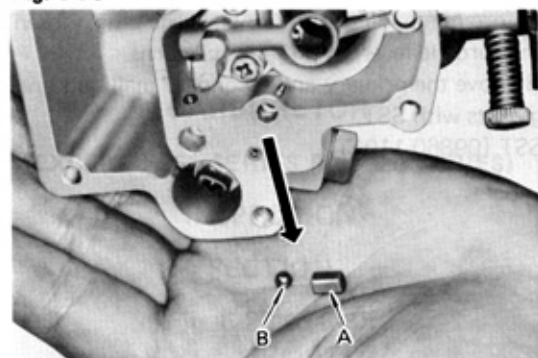
To remove the choke valve, file off the end of the set screws.

— Note —

Do this only if it is necessary to replace choke valve or shaft.

Body

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

Fig. 6-72**Fig. 6-73**

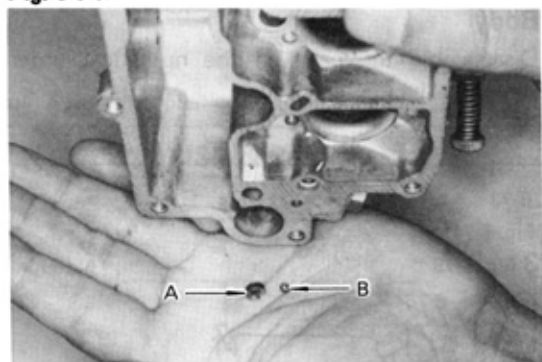
Turn the carburetor upside down, and remove the pump discharge weight A and steel ball B.



— Caution —

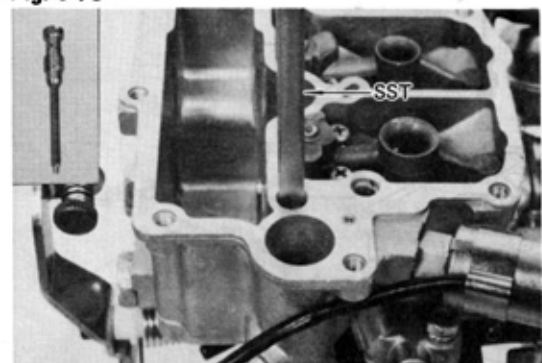
Use care not to lose the steel ball.

Fig. 6-74



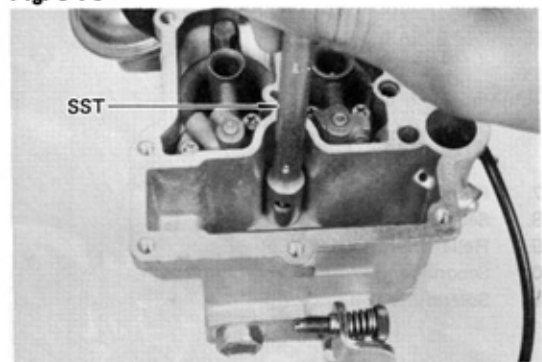
Using tweezers, take out the check ball retainer A from the bottom of pump cylinder. Turn the carburetor upside down and drop out the steel ball B.

Fig. 6-75



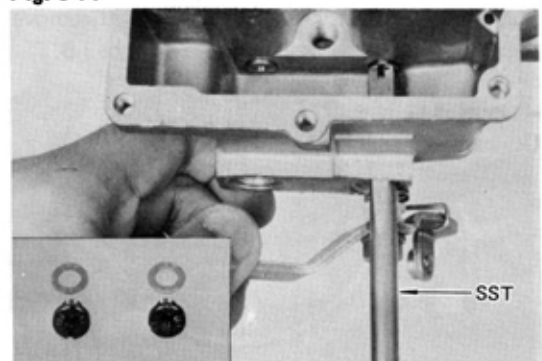
Remove the slow jet with SST.
SST [09860-11011]

Fig. 6-76



Remove the power valve with SST.
SST [09860-11011]

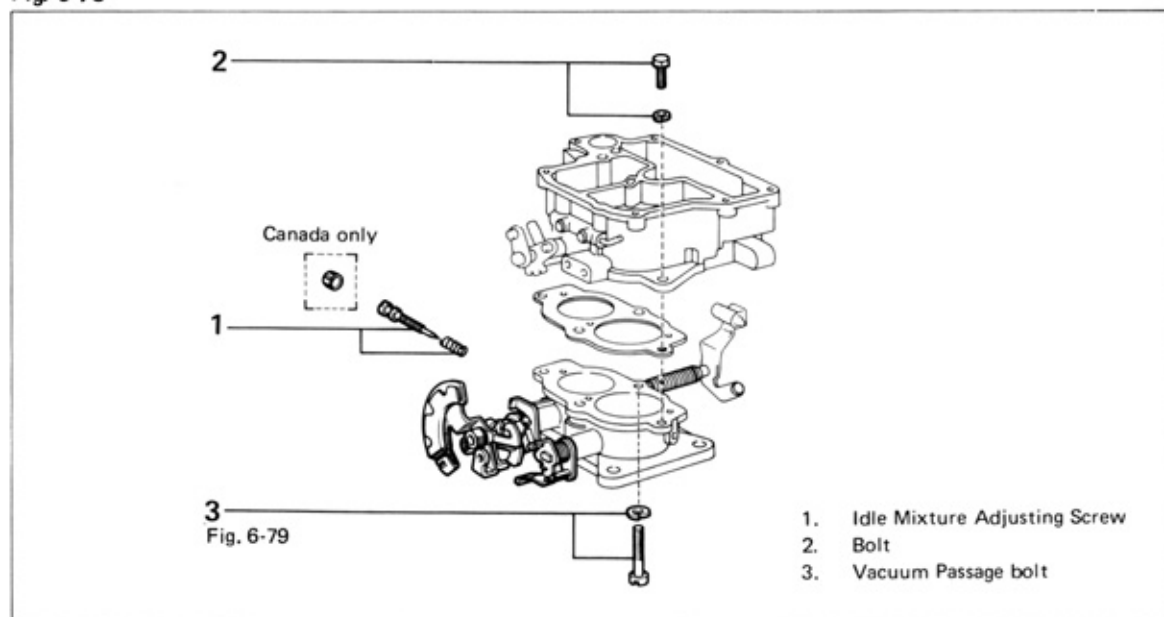
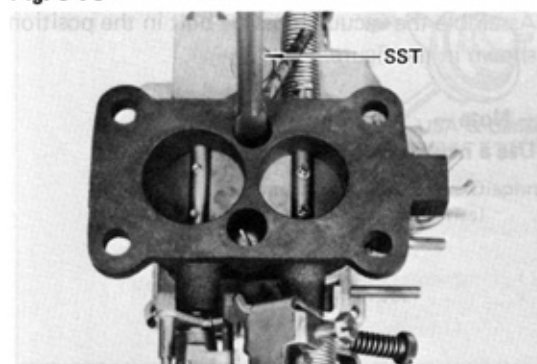
Fig. 6-77



Before removing the primary passage plug, loosen the throttle lever set nut about 4 turns.
Remove the primary and secondary main jets and gaskets with SST.
SST [09860-11011]

Flange

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

Fig. 6-78**Fig. 6-79**

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

Fig. 6-80

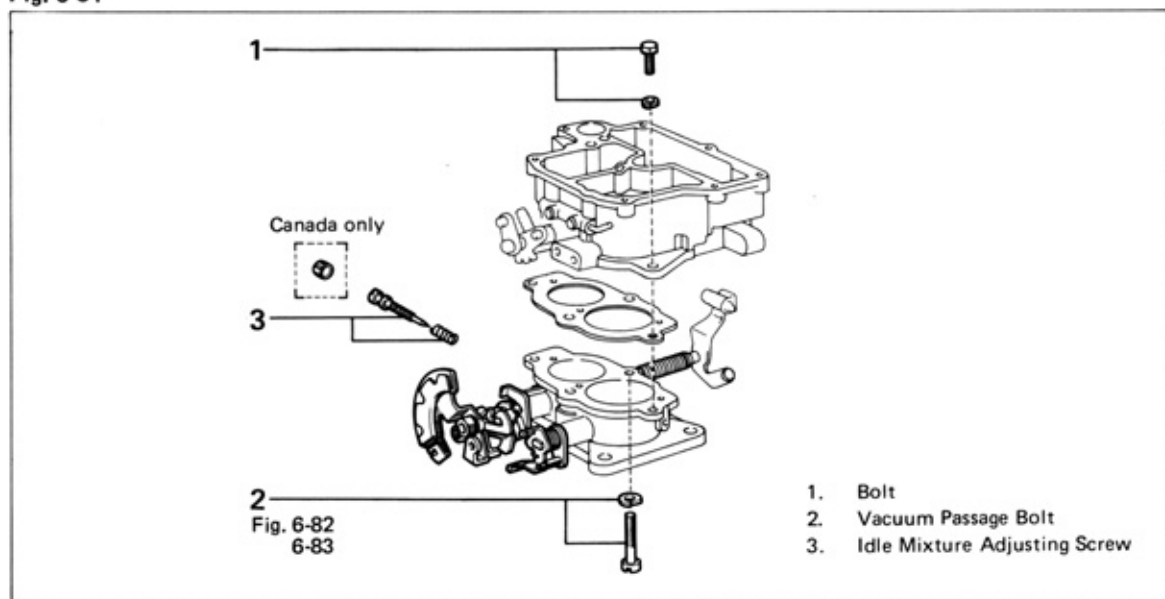
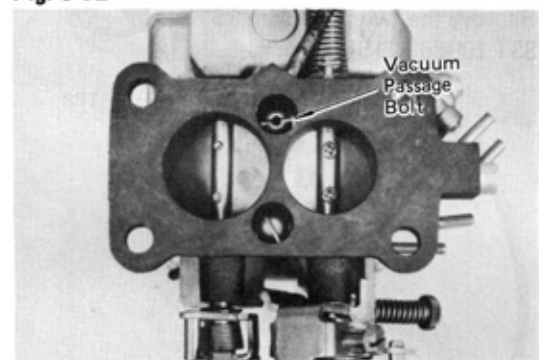
SEE
CARBURETOR
(EXCEPT KP61 SERIES & KM20 SERIES)
INSPECTION
SECTION
Fig. 6-22 to 6-35

INSPECTION**— Precaution —**

1. Before inspecting the parts, wash them thoroughly in gasoline. 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.
2. Never clean the jets or orifices with wire or a drill. This could enlarge the openings and result in excessive fuel consumption.

ASSEMBLY**Flange**

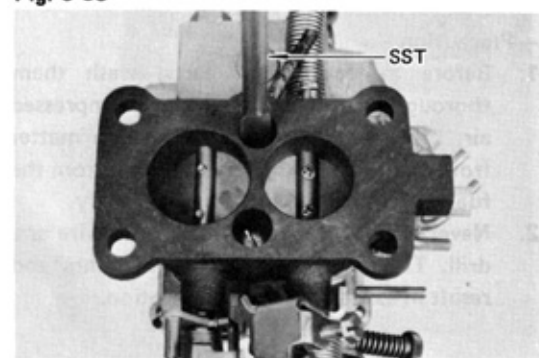
Assemble the parts in the numerical order shown in the figure.

Fig. 6-81**Fig. 6-82**

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

— Note —

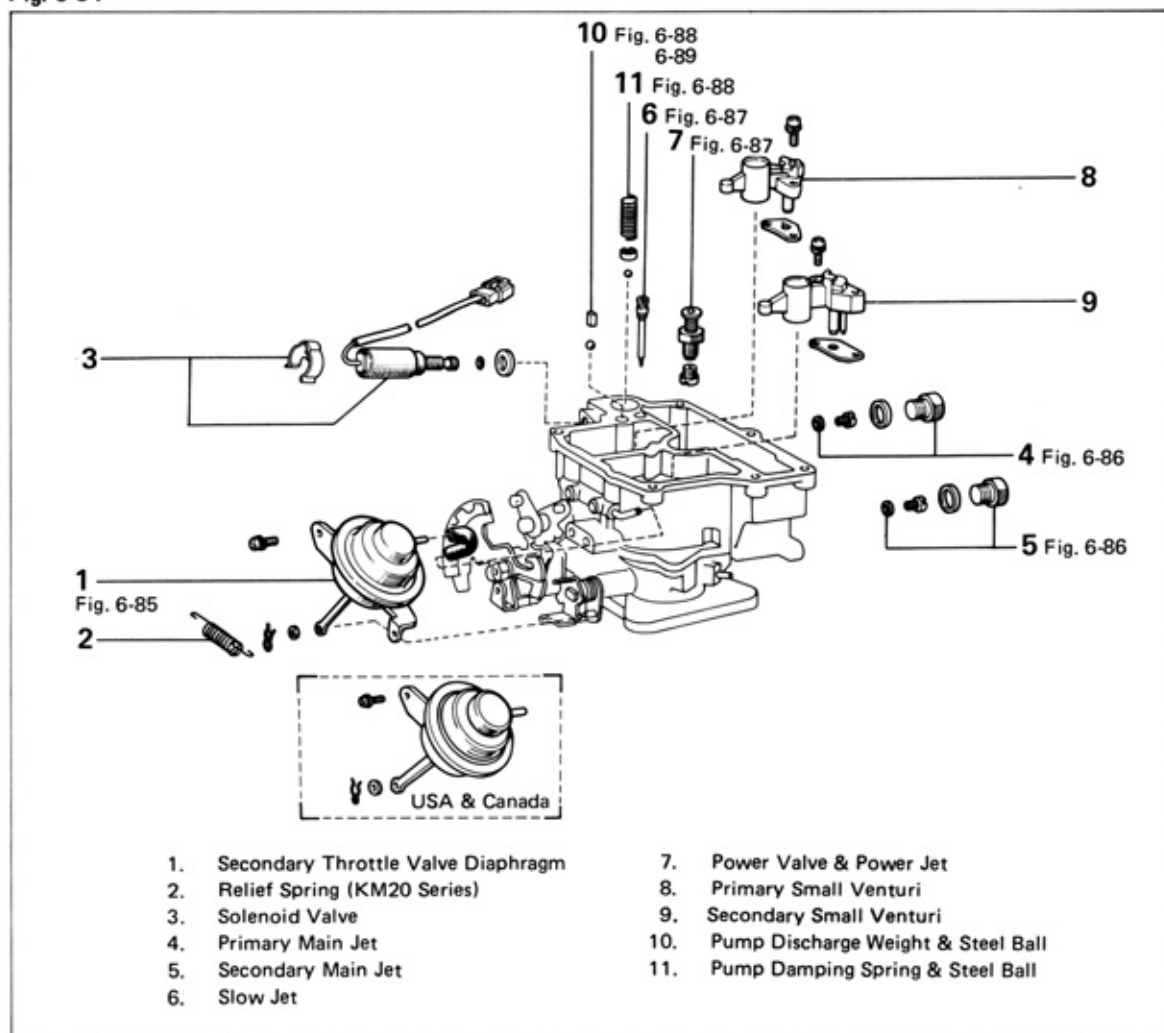
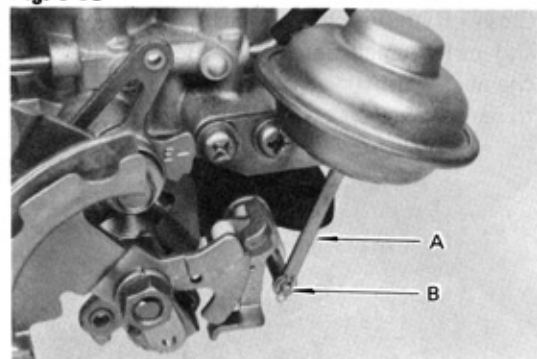
Use a new gasket.

Fig. 6-83

Tighten the bolts with SST.
SST [09860-11011]

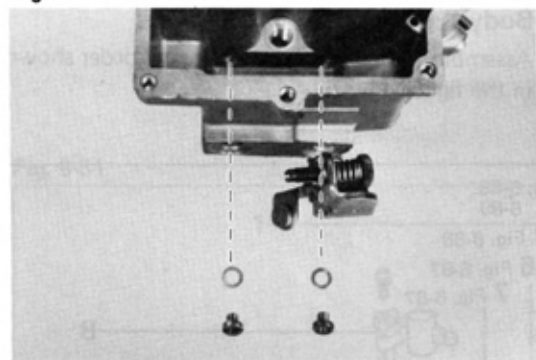
Body

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

Fig. 6-84**Fig. 6-85**

Install the diaphragm rod A and washer onto the diaphragm lever and lock with a snap ring B.

Fig. 6-86

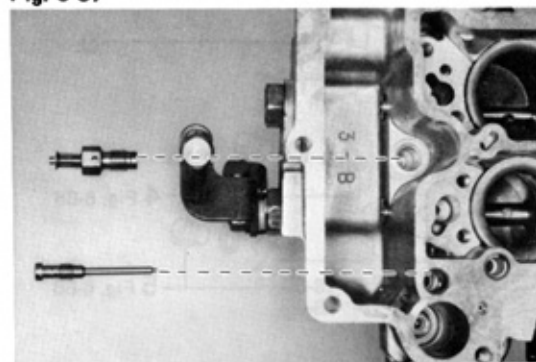


Install the main jets with new gaskets.

Primary jet — Brass

Secondary jet — Chrome

Fig. 6-87

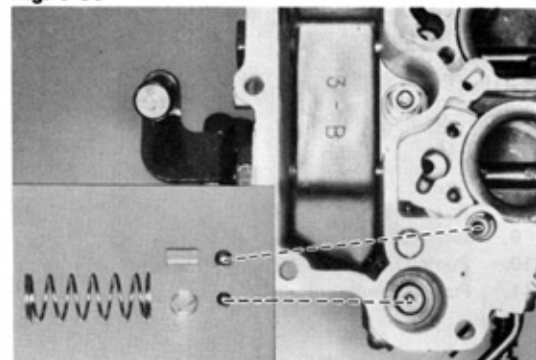


Install the following parts as shown in the figure.

Slow jet

Power valve

Fig. 6-88



Install the pump inlet ball, pump outlet ball and weight.

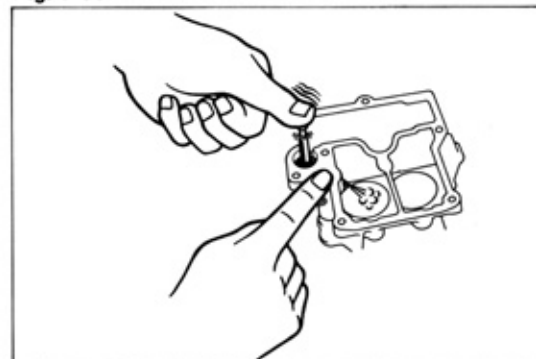
— Note —

There are two sizes of balls.

Larger ball: For pump outlet

Smaller ball: For pump inlet

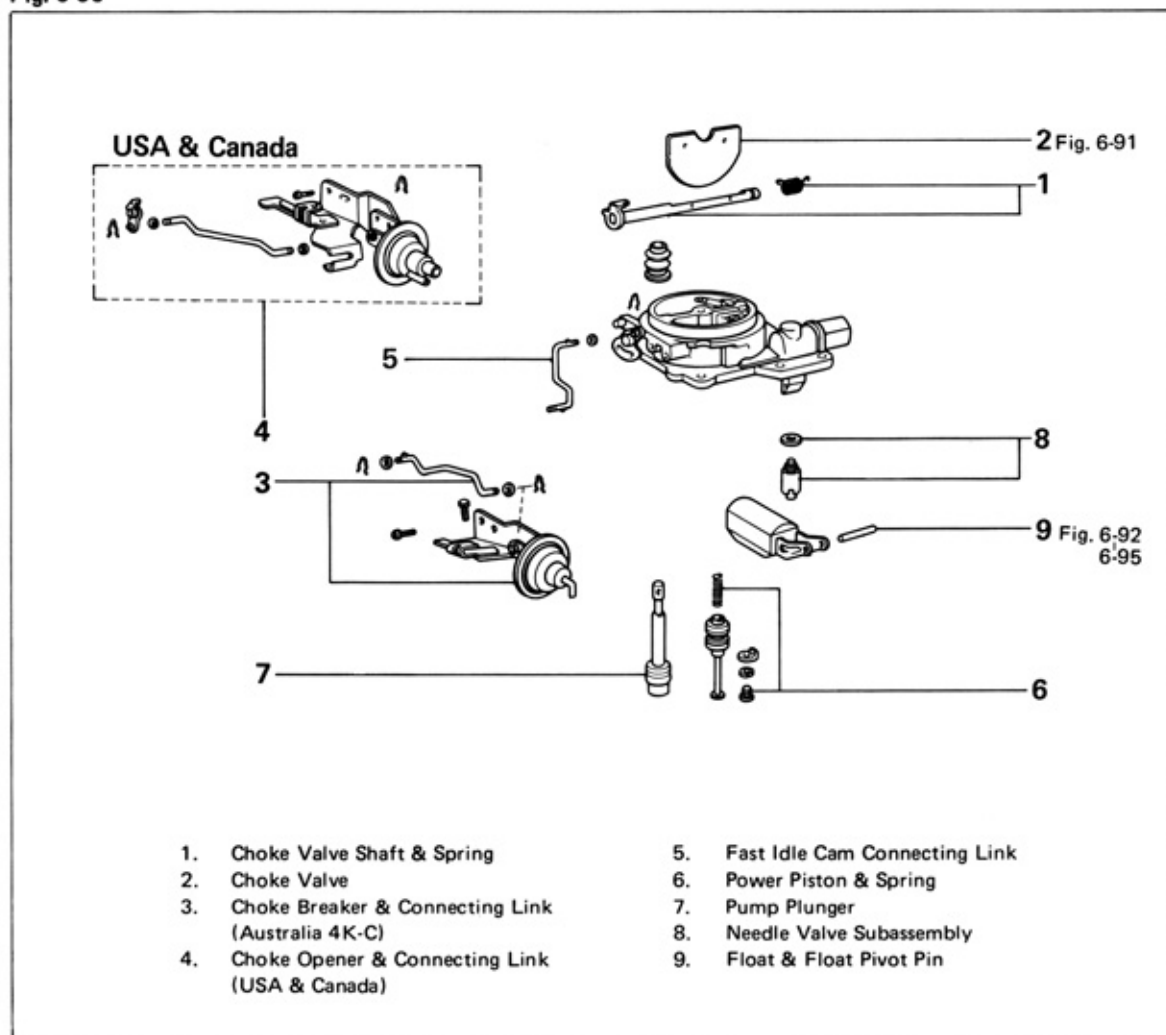
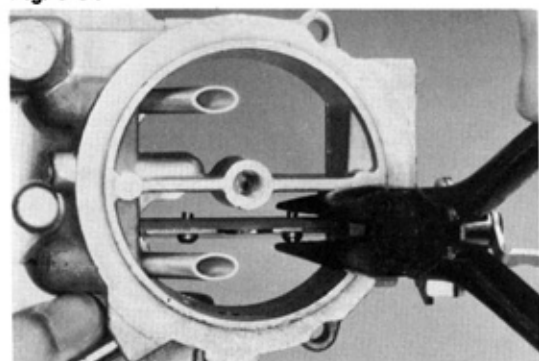
Fig. 6-89



Close off the discharge weight with your finger and put a small amount of fuel into the float chamber. Push the accelerator pump and check to see that fuel spurts from the nozzle.

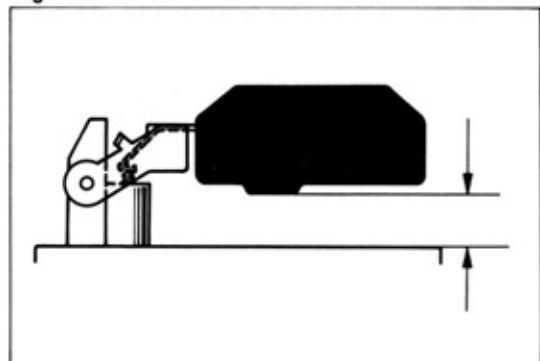
Air Horn

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

Fig. 6-90**Fig. 6-91**

Install the choke valve, and then peen the end of screws.

Fig. 6-92



Adjust the raised position of the float.

1. Allow the float to hang by its own weight.
2. Check the clearance between the float tip and air horn with SST.

SST [09240-00014]

**Raised position clearance: 7.5 mm
(0.295 in.)**

— Note —

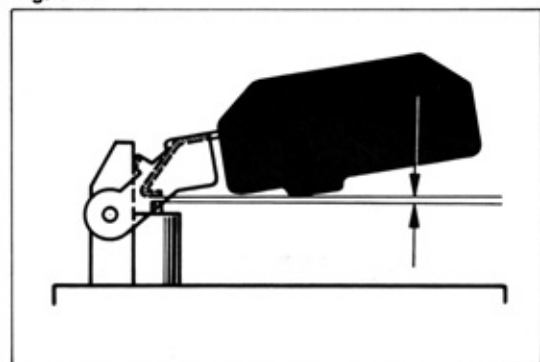
This measurement is always made without any gasket on air horn.

Fig. 6-93



3. Adjust the clearance by bending at point A of the float as shown in the figure.

Fig. 6-94



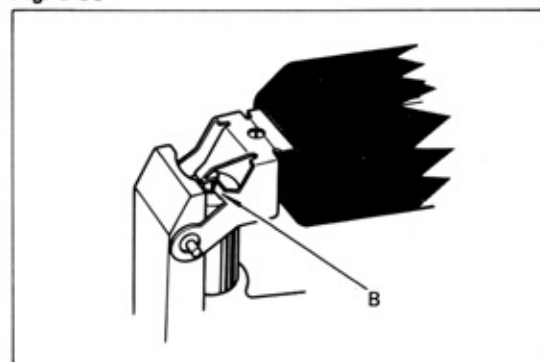
Adjust lowered position of the float.

1. Lift the float and check the clearance between the needle valve plunger and float lip with SST.

SST [09240-00020]

**Lowered position clearance: 0.9 mm
(0.035 in.)**

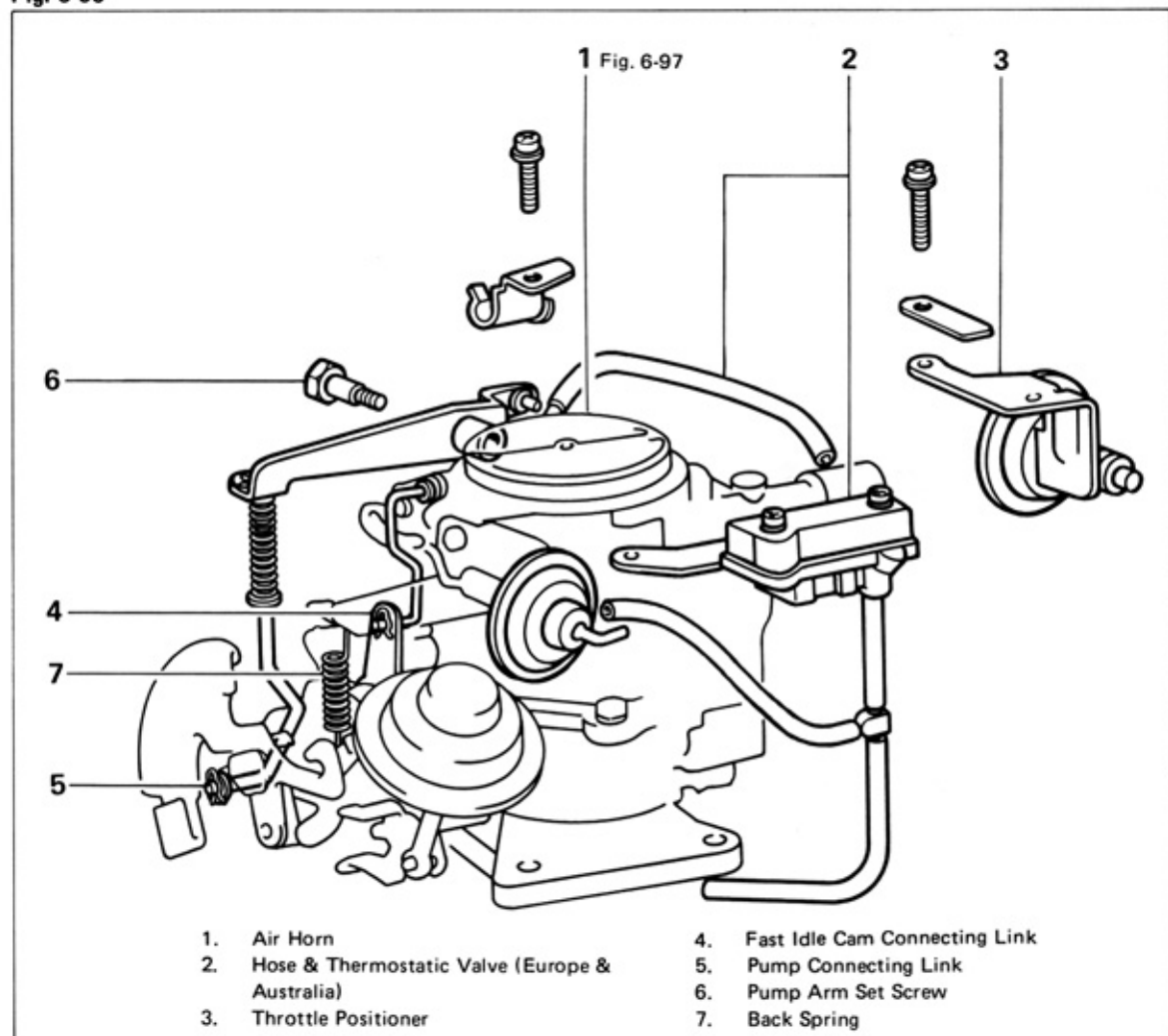
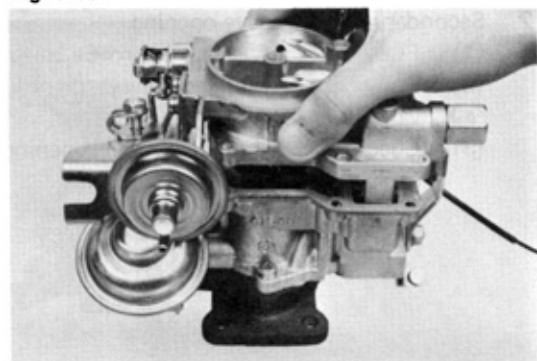
Fig. 6-95



2. Adjust the clearance by bending tab B of the float as shown in the figure.

Body & Air Horn

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

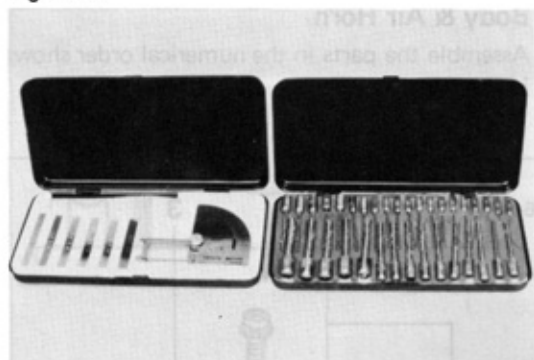
Fig. 6-96**Fig. 6-97**

Assemble the body and air horn with a new gasket.

— Caution —

1. Take care not to damage the pump plunger leather.
2. Assemble the air horn with the pump jet positioned correctly.

Fig. 6-98

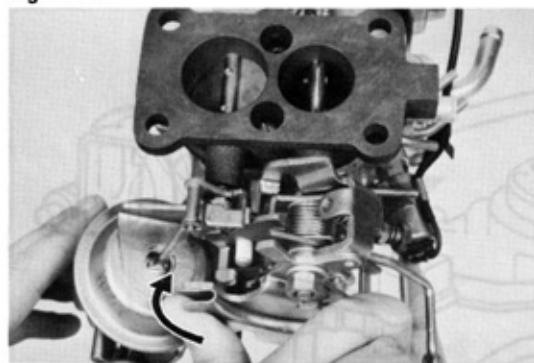
**ADJUSTMENT**

Use SST to make adjustments.

SST [09240-00014]

[09240-00020]

Fig. 6-99

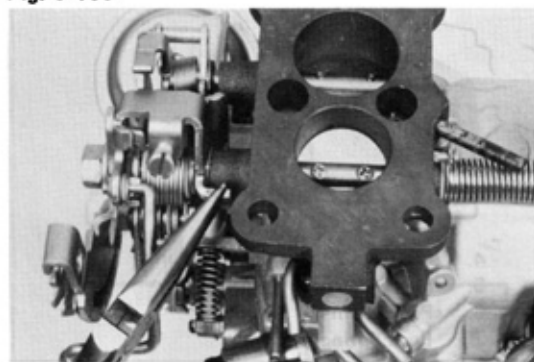


1. Primary throttle valve opening

- (1) Fully open the primary throttle valve.
- (2) Check the primary throttle valve opening angle.

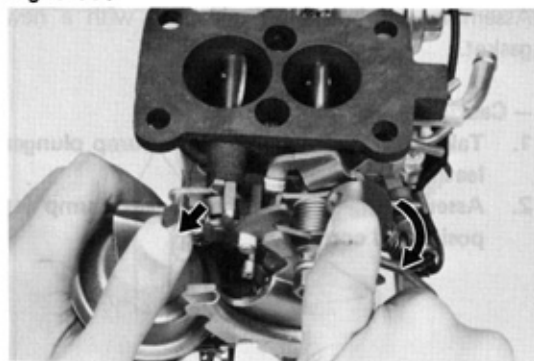
Opening angle: 90°

Fig. 6-100



- (3) Adjust by bending the throttle lever stopper.

Fig. 6-101



2. Secondary throttle valve opening

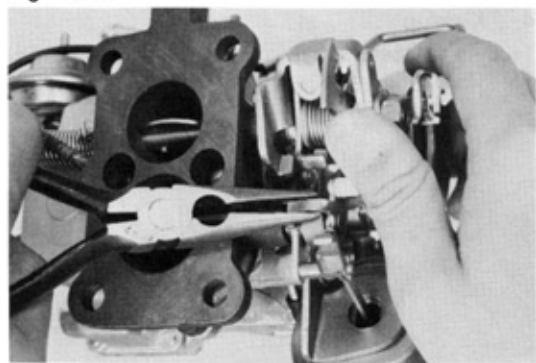
- (1) Fully open the primary throttle valve.
- (2) Fully open the secondary throttle valve lever.
- (3) Check the throttle valve opening angle.

Opening angle:

KP61 Series 75°

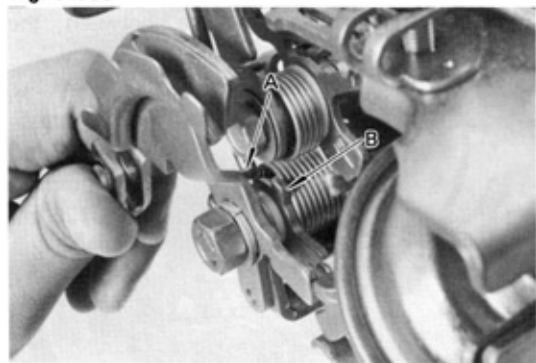
KM20 Series 90°

Fig. 6-102



- (4) Adjust by bending the throttle lever stopper.

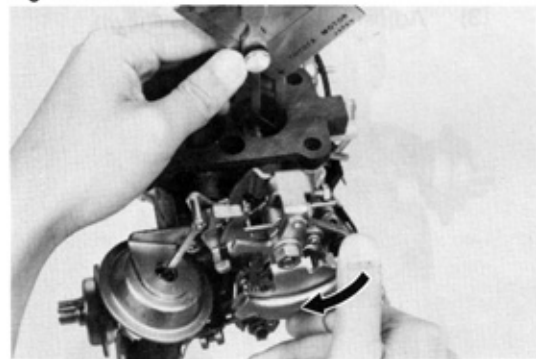
Fig. 6-103



3. Secondary touch angle

- (1) Open the primary throttle valve until the throttle valve lever A touches B, as shown.

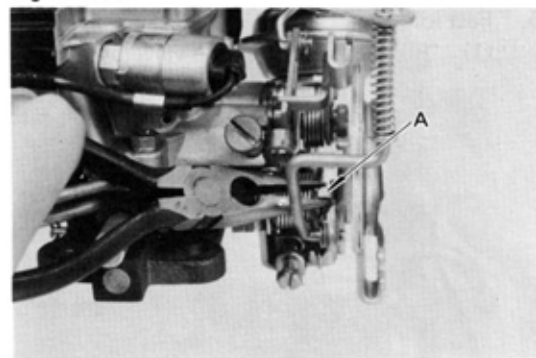
Fig. 6-104



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

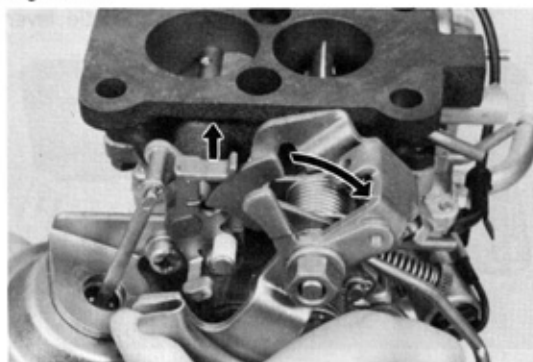
Secondary touch angle: 50°

Fig. 6-105



- (3) Adjust by bending A, as shown.

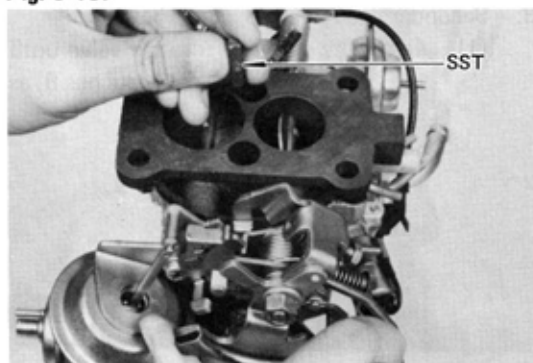
Fig. 6-106



4. Kick-up

- (1) Open the primary throttle valve until the kick arm slightly opens the secondary throttle valve.

Fig. 6-107

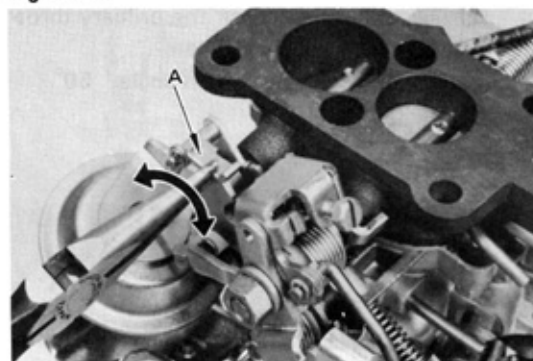


- (2) Check the clearance between the secondary throttle valve and body.

Kick-up clearance :

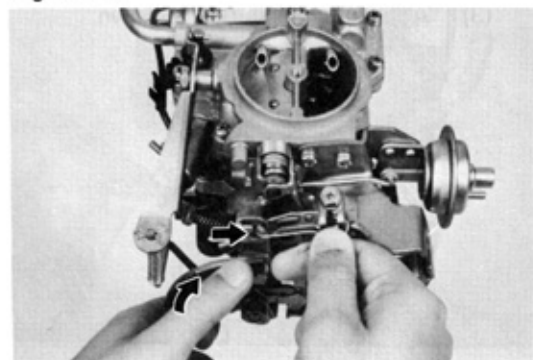
KP61 Series	0.22 mm (0.0087 in.)
KM20 Series	0.32 mm (0.0126 in.)

Fig. 6-108



- (3) Adjust by bending A, as shown.

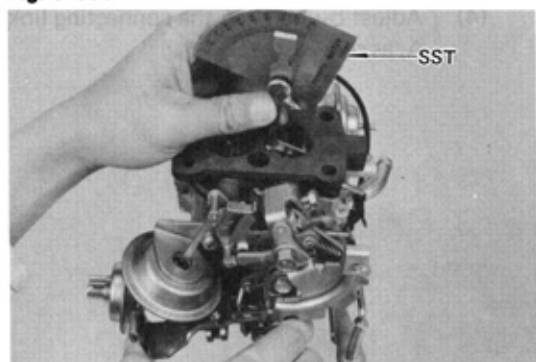
Fig. 6-109



5. Fast idle

- (1) Fully close the choke valve by turning the choke shaft lever.
- (2) Set the throttle shaft lever to the fast idle cam.

Fig. 6-110



- (3) At this time, check the primary throttle valve opening angle with SST.
SST [09240-00014]

Fast idle angle:**General destinations & Europe**

24°

USA & Canada

26°

Australia

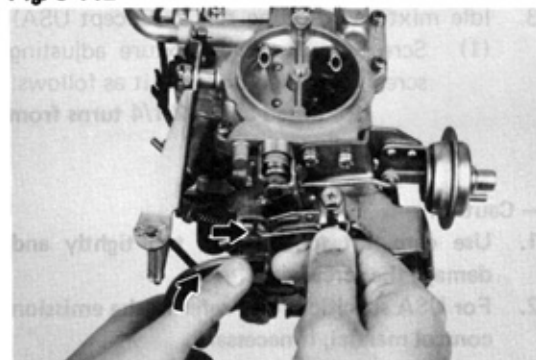
25°

Fig. 6-111



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

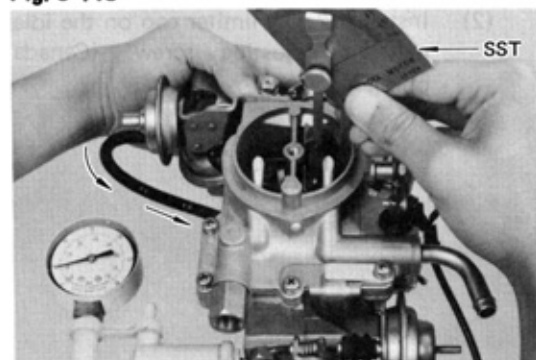
Fig. 6-112



6. Choke Opener (USA & Canada) or Choke Breaker (Australia 4K-C)

- (1) Fully close the choke valve.

Fig. 6-113

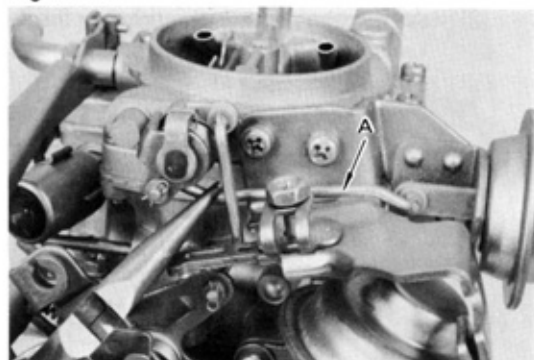


- (2) Apply vacuum to the diaphragm.
(3) Check the choke valve opening angle with SST.

SST [09240-00014]

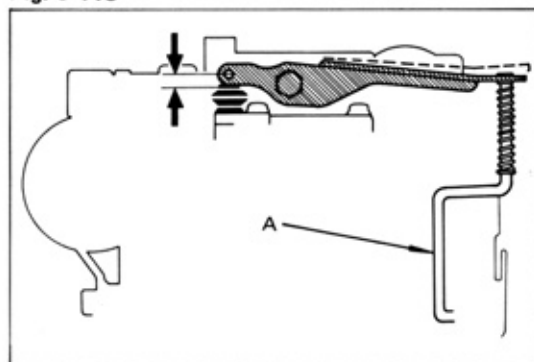
Choke valve opening angle:**Choke Breaker** 64°**Choke Opener** 72°

Fig. 6-114



- (4) Adjust by bending the connecting link A, as shown.

Fig. 6-115



7. Accelerating pump
Adjust the pump stroke by bending part A, as shown.

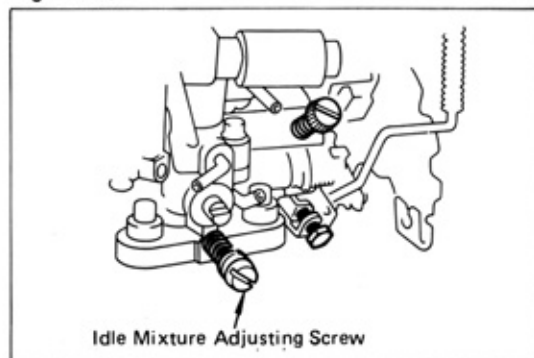
Pump stroke:

KP61 Series	3.25 mm (0.1280 in.)
KM20 Series	5.0 mm (0.197 in.)

— Note —

After adjustment, be sure to check the linkage to see that it operates smoothly.

Fig. 6-116

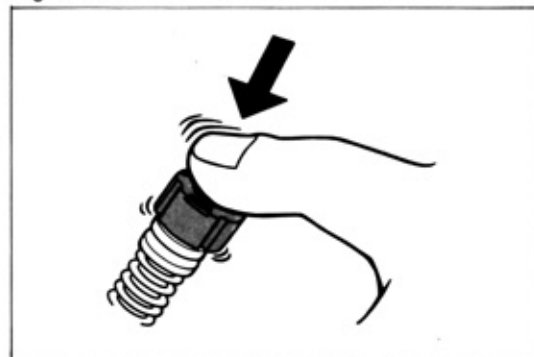


8. Idle mixture adjusting screw (Except USA)
(1) Screw in the idle mixture adjusting screw, and then unscrew it as follows:
Returned about 2-1/4 turns from full closed.

— Caution —

1. Use care not to screw in too tightly and damage the screw tip.
2. For USA specifications, refer to the emission control manual, if necessary.

Fig. 6-117



- (2) Install the new limiter cap on the idle mixture adjusting screw. (Canada only)

