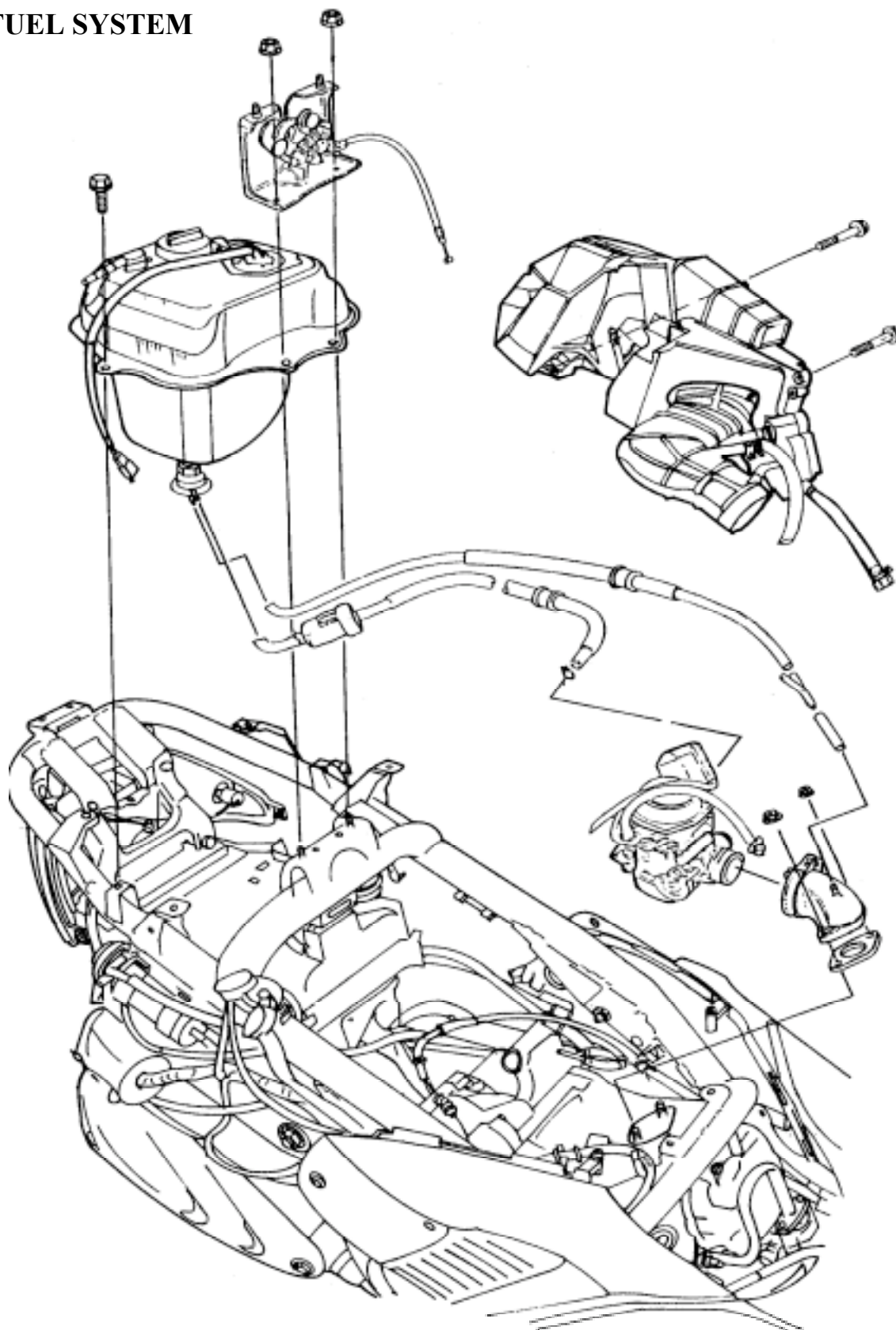


5. FUEL SYSTEM

FUEL SYSTEM



5. FUEL SYSTEM

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SERVICE INFORMATION

GENERAL INSTRUCTIONS

*

Gasoline is very dangerous. When working with gasoline, keep sparks and flames away from the working area.
Gasoline is extremely flammable and is explosive under certain conditions. Be sure to work in a well-ventilated area.

- When disassembling the carburetor, be sure to service the vacuum piston and float chamber.
- Do not bend or twist control cables. Damaged control cables will not operate smoothly.
- When disassembling fuel system parts, note the locations of O-rings. Replace them with new ones during assembly.
- Before float chamber disassembly, loosen the drain screw to drain the residual gasoline into a clean container.
- After the carburetor is removed, plug the intake manifold side with a clean shop towel to prevent foreign matters from entering.
- Remove the vacuum diaphragm before cleaning the carburetor air and fuel passages with compressed air to avoid damaging the vacuum diaphragm.
- When the motorcycle is not used for over one month, drain the residual gasoline from the float chamber to avoid erratic idling and clogged slow jet due to deteriorated fuel.

SPECIFICATIONS

Item	Standard
Venturi dia. (mm)	22.1
Identification number	VE020B
Float level (mm)	18.5
Main jet	#110
Slow jet	#35
Idle speed	1700±100rpm
Throttle grip free play	2_ 6mm
Pilot screw opening	3±1/2

SPECIAL TOOL

Float level gauge

5. FUEL SYSTEM

TROUBLESHOOTING

Engine is hard to start

- No spark at plug
- Compression too low
- No fuel to carburetor
 - Clogged fuel filter
 - Restricted fuel line
 - Faulty float valve
 - Incorrectly adjusted float level
- Engine flooded with fuel
 - Clogged air cleaner
 - Fuel overflowing
- Intake air leak
- Contaminated fuel
- Faulty auto bystarter
- Clogged idle system or auto bystarter passages

Rich mixture

- Faulty auto bystarter
- Faulty float valve
- Float level too high
- Clogged air jets
- Dirty air cleaner
- Flooded carburetor

Backfiring at deceleration

- Improper air cut-off valve operation
- Lean mixture in idle system

Misfiring during acceleration

- Faulty ignition system
- Lean mixture

Engine idles roughly, stalls or runs poorly

- Clogged fuel system
- Ignition malfunction
- Rich or lean mixture
- Contaminated fuel
- Intake air leak
- Incorrect idle speed
- Incorrectly adjusted pilot screw
- Clogged idle system or auto bystarter passages
- Incorrectly adjusted float level

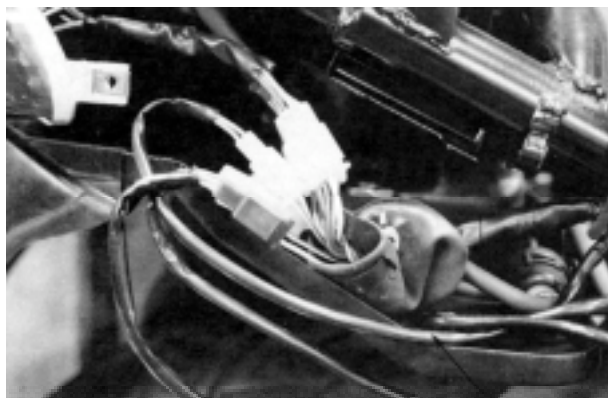
Lean mixture

- Clogged fuel jets
- Faulty float valve
- Float level too low
- Clogged fuel system
- Intake air leak
- Improper vacuum piston operation
- Improper throttle operation

5. FUEL SYSTEM

CARBURETOR REMOVAL

Remove the frame body cover. (⇒2-3)
Disconnect the auto bystarter wire connector.



Auto Bystarter Wire

Loosen the drain screw and drain the fuel from the float chamber.
Disconnect the fuel tube and vacuum tube at the carburetor.

Fuel Tube



Air Cleaner Connecting Tube Vacuum Tube
Adjusting Nut Lock Nut

Loosen the throttle cable adjusting nut and lock nut, and disconnect the throttle cable from the carburetor.
Loosen the carburetor intake manifold band and air cleaner connecting tube band screws and then remove the carburetor.



Throttle Cable Intake Manifold Band

AUTO BYSTARTER

OPERATION INSPECTION

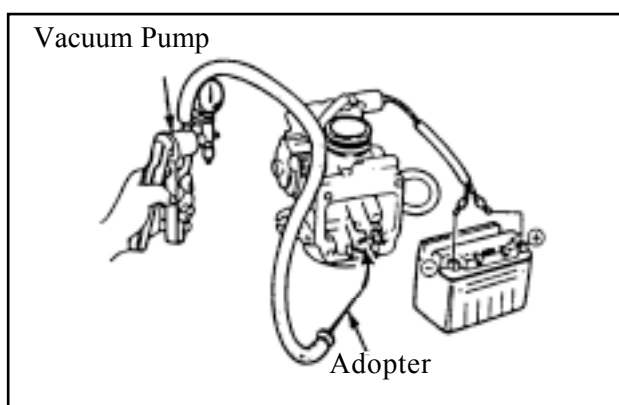
Measure the resistance between the auto bystarter wire terminals.

Resistance: 10Ω max. (10 minutes minimum after stopping the engine)

If the reading is not within the limit, replace the auto bystarter with a new one.

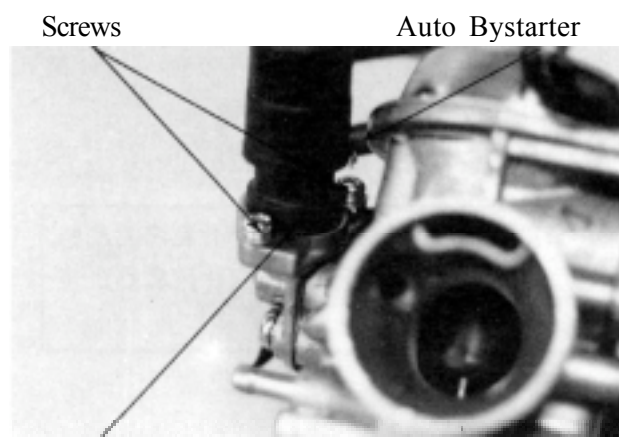
5. FUEL SYSTEM

Connect a hose to the fuel enriching circuit of the carburetor. Connect the auto bystarter yellow wire to the positive (+) terminal of a battery and green wire to the negative (-) terminal. Wait 5 minutes and blow the hose with mouth or vacuum pump. If the passage is blocked, the auto bystarter is normal. Disconnect the auto bystarter from the battery. Wait 30 minutes and blow the hose with mouth or vacuum pump. If air can be blown into the hose, the auto bystarter is normal.



REMOVAL

Remove the set plate screws and set plate. Remove the auto bystarter from the carburetor.

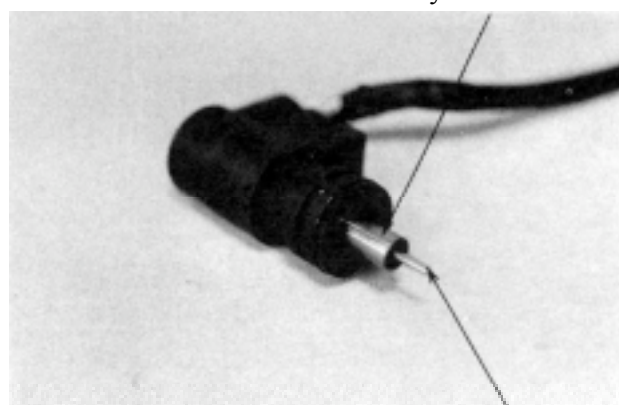


Set Plate

Bystarter Valve

AUTO BYSTARTER INSPECTION

Check the auto bystarter valve and needle for nicks, wear or damage. If any faulty part is found, replace the auto bystarter as a set.



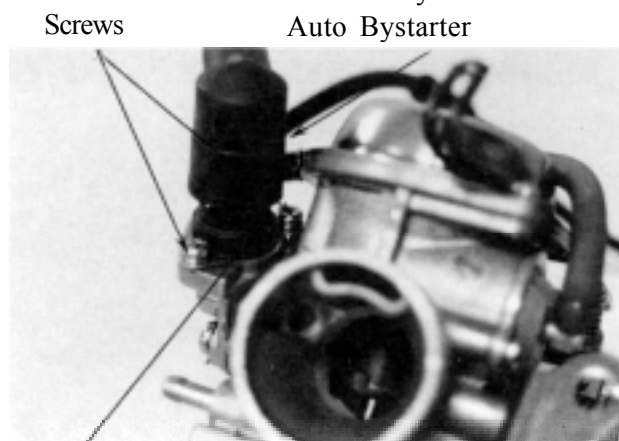
Bystarter Needle

INSTALLATION

Insert the auto bystarter into the carburetor body until it bottoms. Position the set plate into the groove in the auto bystarter and tighten the screws.

*

- Be sure to install the auto bystarter and set plate properly.
- Install the set plate with its bottom face facing down.



Set Plate

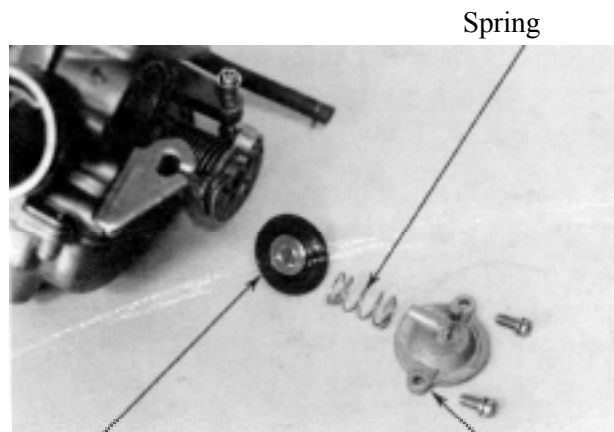
5. FUEL SYSTEM

AIR CUT-OFF VALVE

DISASSEMBLY

Disconnect the vacuum tube from the air cut-off valve.

Remove the two screws to remove the air cut-off valve cover, spring and vacuum diaphragm.



Vacuum Diaphragm

Air Cut-off valve Cover

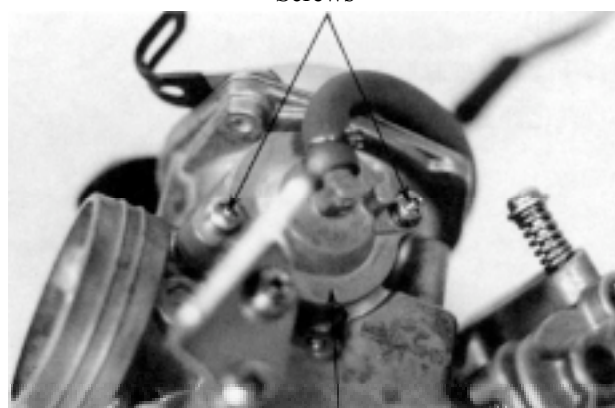
ASSEMBLY

Install the vacuum diaphragm onto the carburetor.

Install the spring and air cut-off valve cover and then tighten the two screws.

*

- Be sure to set the vacuum diaphragm lip into the groove on the carburetor.
- When installing the air cut-off valve cover, make sure that the vacuum diaphragm is properly installed.

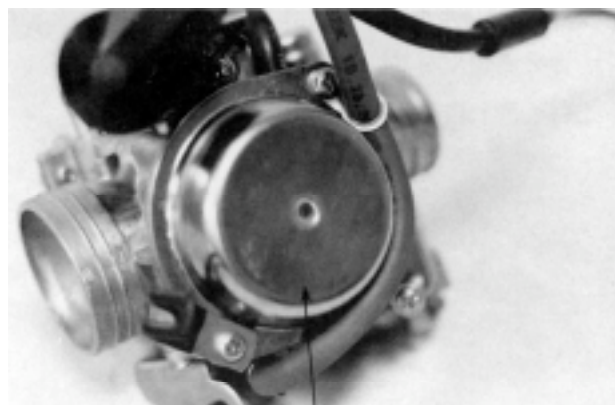


Air Cut-off valve Cover

VACUUM CHAMBER

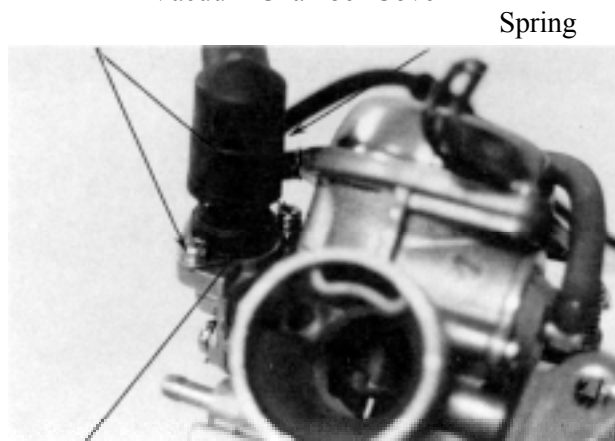
DISASSEMBLY

Remove the two vacuum chamber cover screws and the cover.



Vacuum Chamber Cover

Remove the spring and vacuum diaphragm/piston.

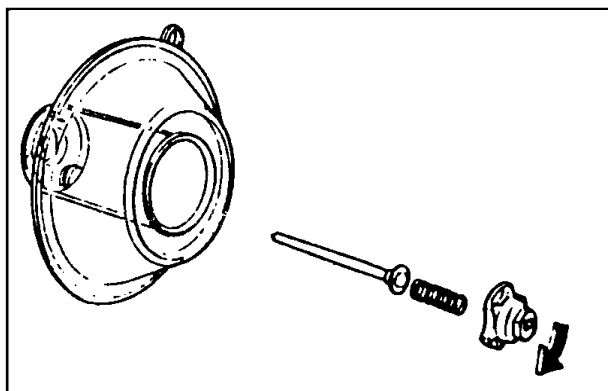


Vacuum Diaphragm/Piston

5. FUEL SYSTEM

Push the needle holder in and turn it left to remove the needle holder.
Remove the spring and jet needle from the piston.

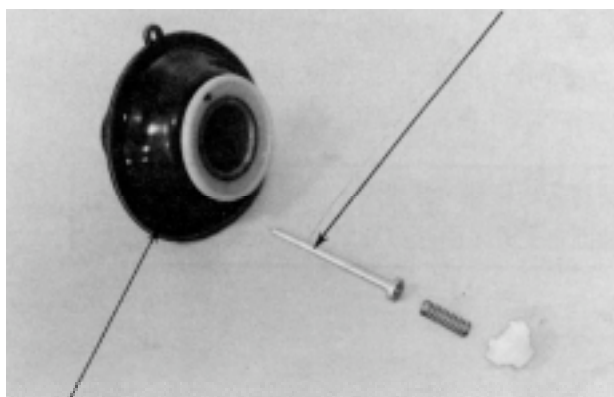
- * Be careful not to damage the vacuum diaphragm.



Jet Needle

INSPECTION

Inspect the needle for stepped wear.
Inspect the vacuum piston for wear or damage.
Inspect the diaphragm for deterioration and tears.



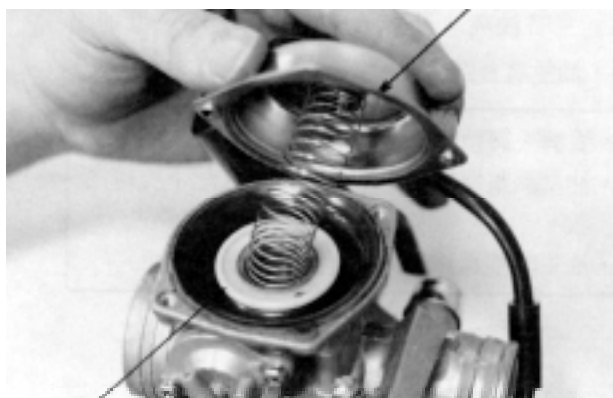
Vacuum Diaphragm

Vacuum Chamber Cover

ASSEMBLY

Install the vacuum piston/diaphragm in the carburetor body and align the tab on the diaphragm with the groove in the carburetor body.
Install the spring.
Install the vacuum chamber cover and tighten it with the two screws.

- * Be careful not to damage the diaphragm.
- * Hold the vacuum piston while tightening the vacuum chamber cover.



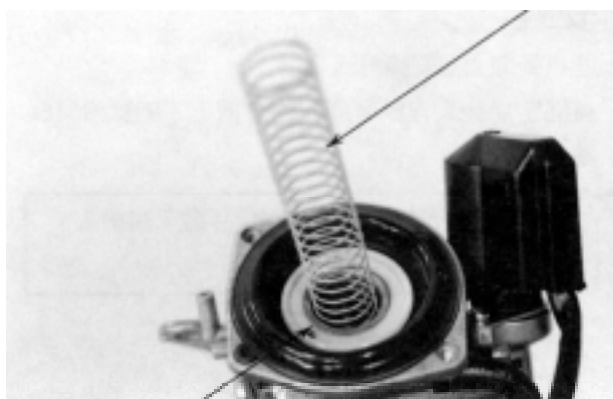
Vacuum Diaphragm

Screws

FLOAT CHAMBER

DISASSEMBLY

Remove the four float chamber screws and the float chamber.



Float Chamber

5. FUEL SYSTEM

Remove the float pin, float and float valve.

INSPECTION

Inspect the float valve and valve seat for damage or clogging.

Inspect the float valve and valve seat contact area for stepped wear or contamination.

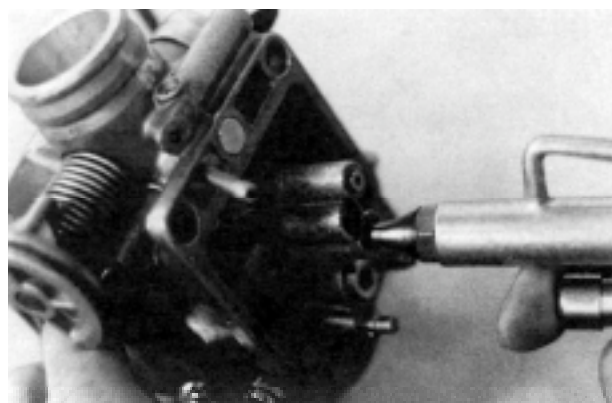
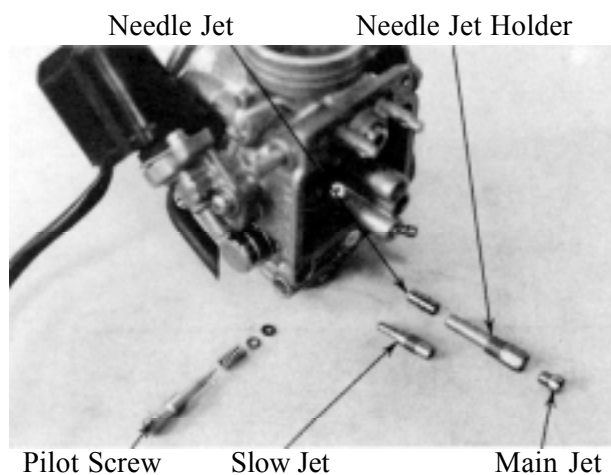
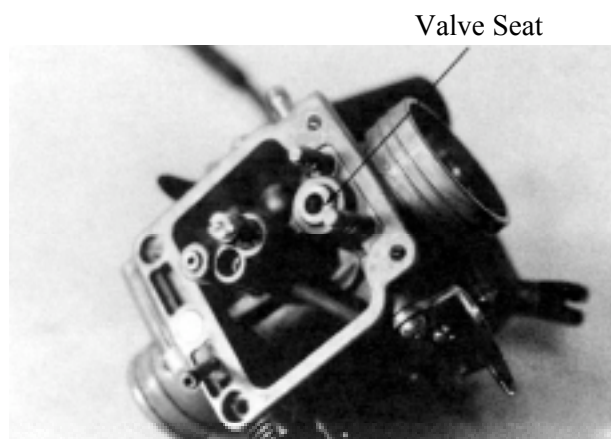
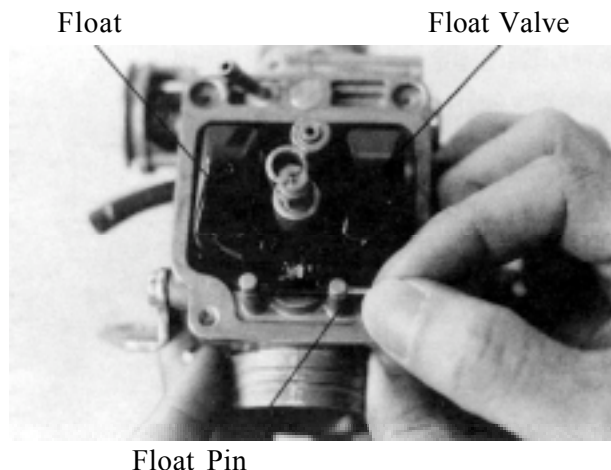
- * Worn or contaminated float valve and valve seat must be replaced because it will result in float level too high due to incomplete airtightness.

Remove the main jet, needle jet holder, needle jet, slow jet and pilot screw.

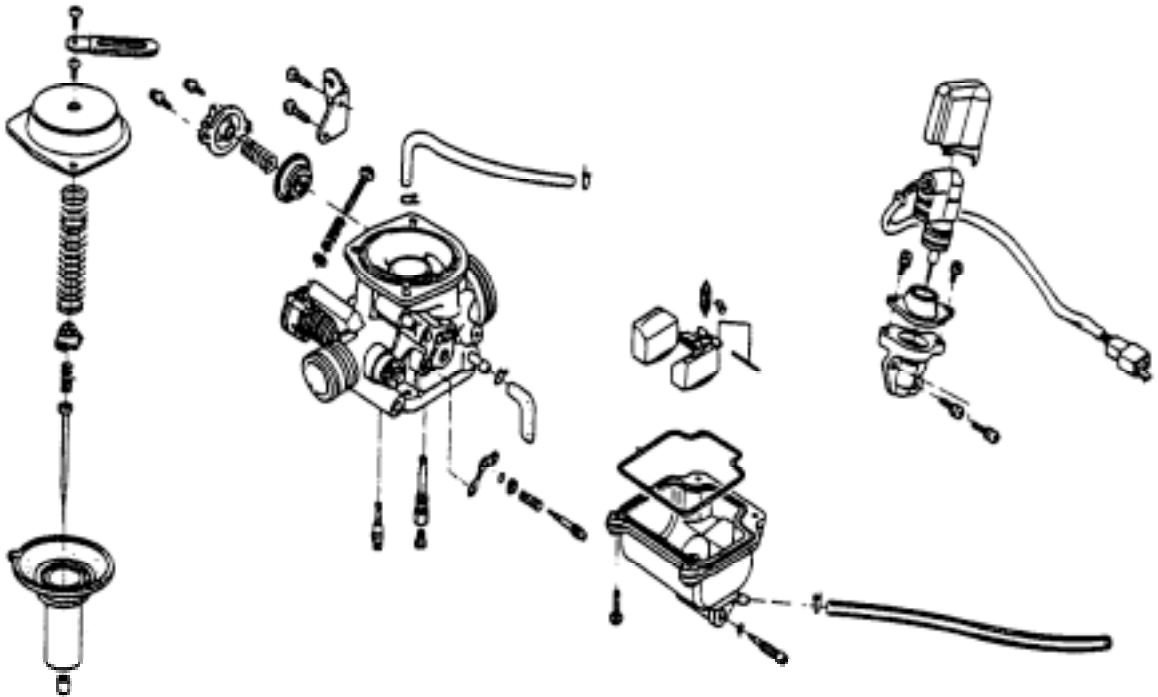
- *
 - Be careful not to damage the fuel jets and pilot screw.
 - Before removing, turn the pilot screw in and carefully count the number of turns until it seats lightly and then make a note of this.
 - Do not force the pilot screw against its seat to avoid seat damage.

Clean the removed fuel jets with detergent oil and blow them open with compressed air. Blow compressed air through all passages of the carburetor body.

- * Also remove and clean the vacuum chamber and air cut-off valve.



5. FUEL SYSTEM



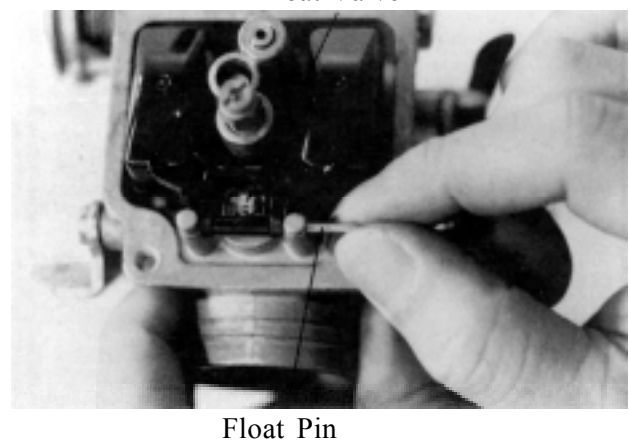
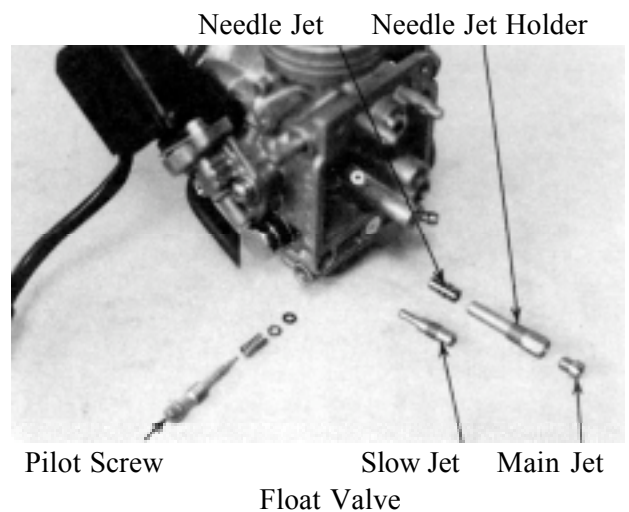
ASSEMBLY

Install the slow jet, needle jet, needle jet holder, main jet and pilot screw.

* Return the pilot screw to the original position as noted during removal.

Standard Opening: $3 \pm 1/2$ turns

Install the float valve, float and float pin.



5. FUEL SYSTEM

FLOAT LEVEL INSPECTION

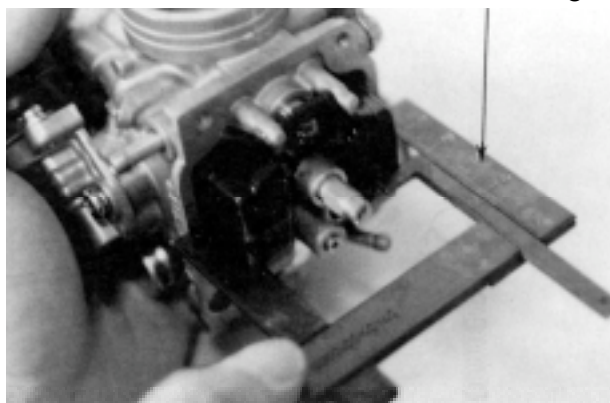
- * Check the operation of the float valve and float before float level inspection.
- Measure the float level by placing the float level gauge on the float chamber face parallel with the main jet.

Measure the float level.

Float Level: 18.5mm

Special

Float Level Gauge



Float Level Gauge

CARBURETOR INSTALLATION

Tighten the drain screw.

Install the carburetor onto the intake manifold, aligning the tab on the carburetor with the cutout in the intake manifold.

Tighten the band screw.

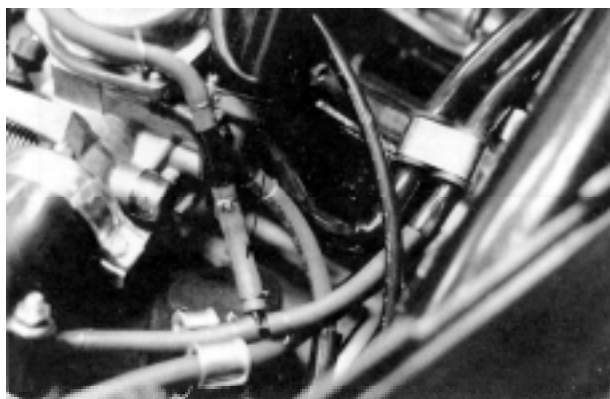
Install the air cleaner connecting tube and tighten the band screw.

Connect the throttle cable to the throttle wheel on the carburetor.



Throttle Cable

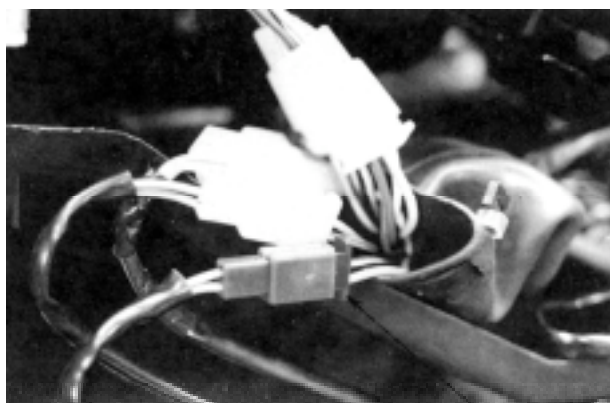
Connect the fuel tube and vacuum tube to the carburetor.



Connecting Tube Band
Vacuum Tube

Connect the auto bystarter wire connector. Perform the following inspections and adjustments:

- Throttle grip free play (⇒3-3)
- Carburetor idle speed (⇒3-6)



Auto Bystarter Wire

5. FUEL SYSTEM

PILOT SCREW ADJUSTMENT

* ADJUSTMENT

- * The pilot screw is factory pre-set and no adjustment is necessary. During carburetor disassembly, note the number of turns of the pilot screw and use as a reference when reinstalling it.
- Place the motorcycle on its main stand on level ground for this operation.

A tachometer must be used when adjusting the engine speed.

Turn the pilot screw clockwise until it seats lightly and back it out to the specification given.

Standard Opening: $3 \pm 1/2$ turns

* CAUTION

- * Do not force the pilot screw against its seat to prevent damage.

Warm up the engine and adjust the throttle stop screw to obtain the specified idle speed.

Idle Speed: 1700 ± 100 rpm

Turn the pilot screw in or out slowly to obtain the highest engine speed.

Slightly accelerate several times to make sure that the idle speed is within the specified range.

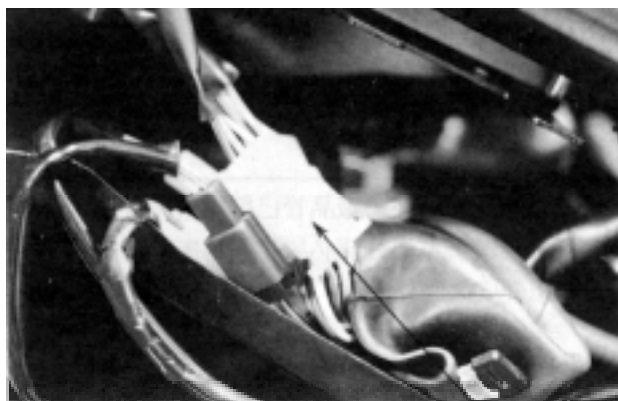
If the engine misses or runs erratic, repeat the above steps.

5. FUEL SYSTEM

FUEL TANK

REMOVAL

Remove the frame body cover. (⇒2-2, 2-3)
Disconnect the fuel unit wire connector.



Fuel Unit Wire Connector

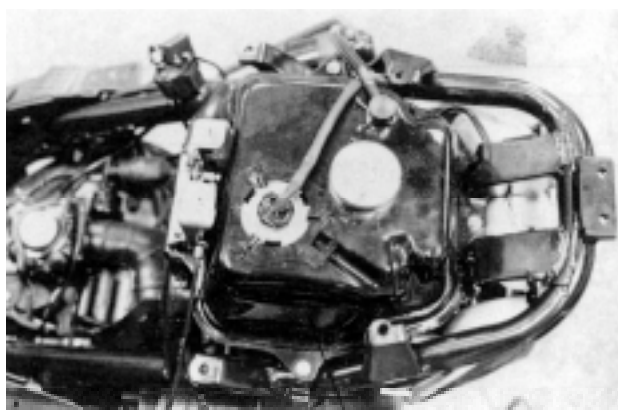
Disconnect the fuel tube and vacuum tube at the auto fuel valve.

Auto Fuel Valve



Vacuum Tube

Remove the four fuel tank mounting bolts and fuel tank.



Fuel Tank

INSTALLATION

Install the fuel tank in the reverse order of removal.

5. FUEL SYSTEM

AUTO FUEL VALVE

* **No Smoking!**

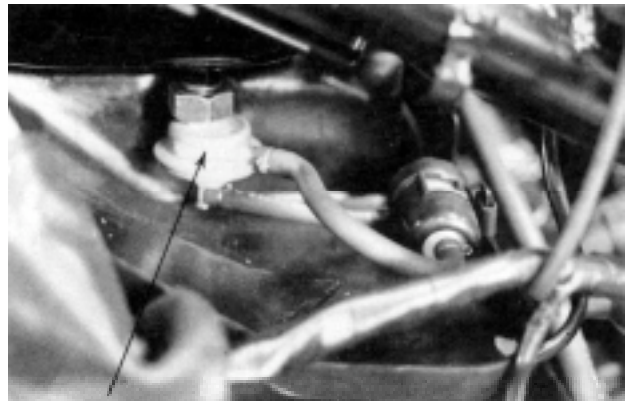
* First clean the fuel tube.

Disconnect the fuel tube and vacuum tube from the carburetor.

Connect a vacuum pump to the vacuum tube and apply vacuum. Check if fuel flows out.

- The valve is operating normally if fuel flows out of the fuel tube when the vacuum is applied.
- The fuel shall stop flowing out when the vacuum pump is disconnected.

If the fuel valve does not operate normally, Check the vacuum diaphragm for poor installation or damage and inspect the fuel tube for clogging.



Auto Fuel Valve

FUEL UNIT

* Refer to Section 17 for the fuel unit inspection.

REMOVAL

Disconnect the fuel unit wire connector. Turn the fuel unit retainer counterclockwise and remove the fuel unit.

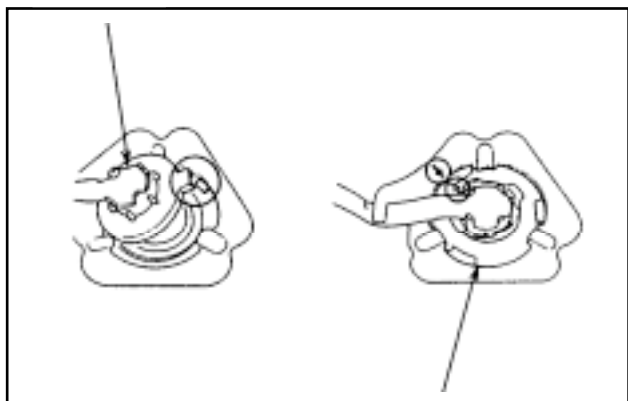
* Do not bend the fuel unit float arm; otherwise, the fuel unit metering values will be incorrect.



Fuel Unit

INSTALLATION

Inspect the fuel unit gasket for damage. Install the fuel unit by aligning the groove in the fuel unit with the tab on the fuel tank.



Retainer

5. FUEL SYSTEM

Install the fuel unit retainer and turn the retainer clockwise to secure it.

- * Make sure that the arrow on the retainer is aligned with the arrow on the fuel tank.

Connect the fuel unit wire connector.

Arrow



Retainer

AIR CLEANER

Loosen the air cleaner connecting tube band screw.

Disconnect the transmission case breather tube from the air cleaner case.

Remove the two bolts and air cleaner case.



Air Cleaner Case

The installation sequence is the reverse of removal.

