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**CARBURETOR/FUEL PUMP/  
FUEL TANK**

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# 12. CARBURETOR/FUEL PUMP/ FUEL TANK

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- When working with gasoline, keep away from sparks and flames..
- Note the locations of O-rings when disassembling and replace them with new ones during assembly.
- All cables, fuel lines and wires must be routed and secured at correct locations.
- Bleed air from the oil lines whenever they are disconnected.

SPECIFICATIONS	SH10CA(SP)	SH10CA(IT)	SH10CA(GR)
Venturi dia.	14mm		
Identification number	PB109_	PB103_	PB118_
Float level	8.6mm		
Main jet(Unlimited/limited speed)	#75	#75	#88
Slow jet	#35		
Air screw opening	1_ ± _		
Idle speed	2000±100rpm		
Throttle grip free play	2_ 6mm		

### SPECIAL TOOL

Float level gauge

### TROUBLESHOOTING

#### Engine does not start

- No fuel in tank
- Too much fuel getting to cylinder
- Clogged fuel filter
- Clogged air cleaner

#### Lean mixture

- Clogged fuel jets
- Clogged fuel cap vent
- Clogged fuel filter
- Bent, kinked or restricted fuel line

- Faulty float valve
- Float level too low
- Clogged air cleaner

#### Engine idles roughly, stalls or runs poorly

- Incorrect idle speed
- Ignition malfunction
- Compression too low
- Incorrectly adjusted air screw
- Incorrect float level
- Clogged air cleaner
- Intake air leaks
- Fuel contaminated
- Faulty reed valve
- Clogged fuel jets

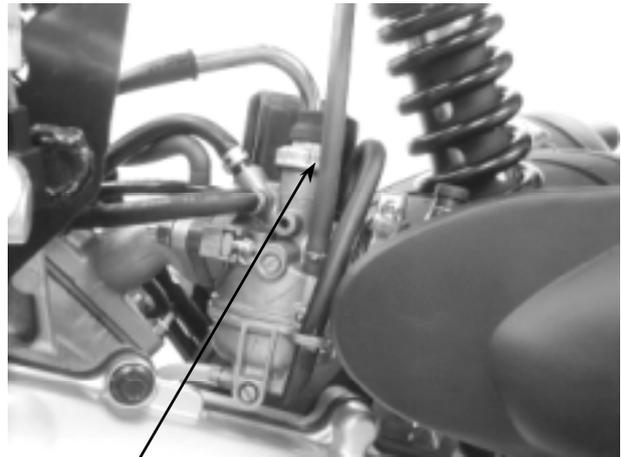
#### Rich mixture

- Faulty float valve
- Float level too high
- Clogged air jets

## 12. CARBURETOR/FUEL PUMP/ FUEL TANK

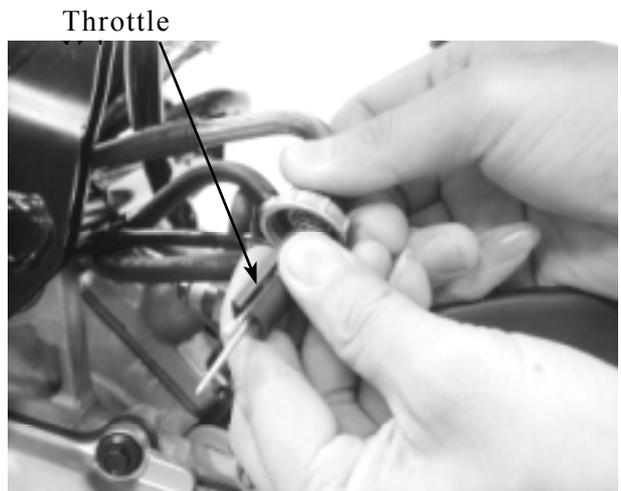
### THROTTLE VALVE DISASSEMBLY

Remove the rear carrier. (⇒2-3)  
Remove the met-in box. (⇒2-4)  
Loosen the carburetor cap and remove the throttle valve.



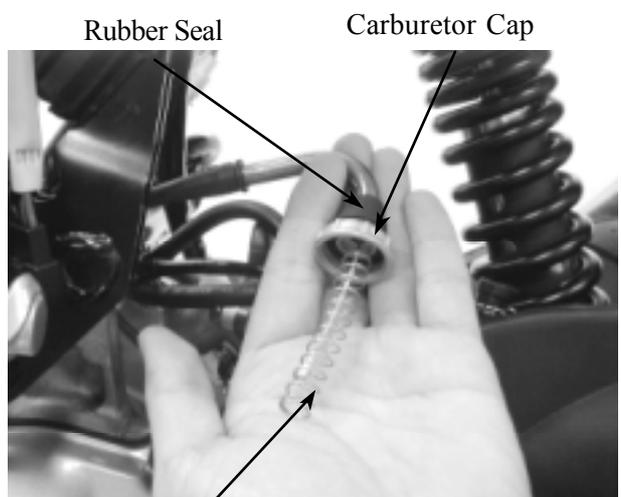
Carburetor Cap

Disconnect the throttle cable from the throttle valve.



Throttle

Remove the throttle valve spring, carburetor cap and rubber seal.



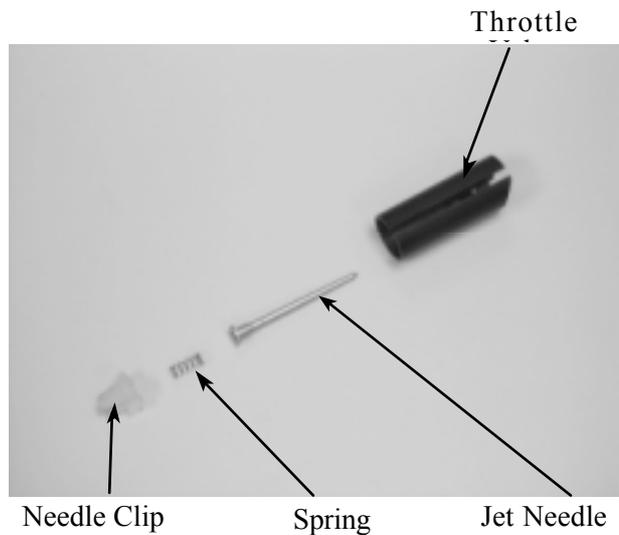
Rubber Seal

Carburetor Cap

Spring

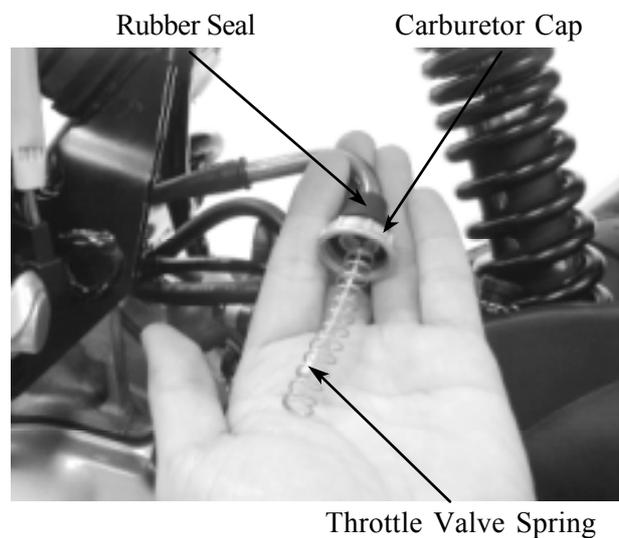
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Remove the jet needle by removing the needle clip.  
Check the jet needle and throttle valve for wear or damage.

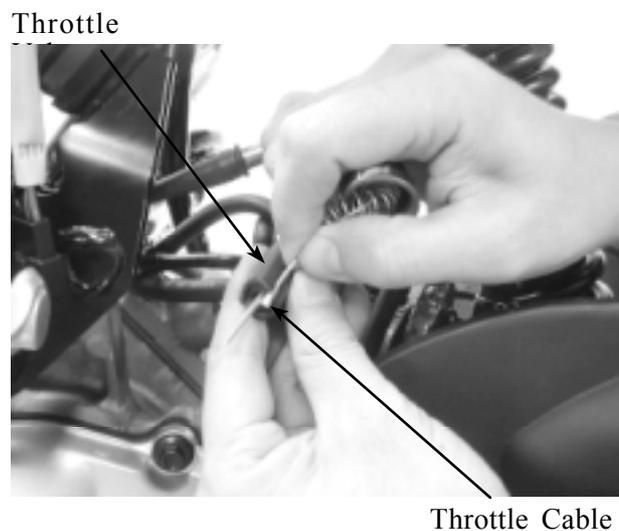


### THROTTLE VALVE INSTALLATION

Install the jet needle on the throttle valve and secure with the needle clip.

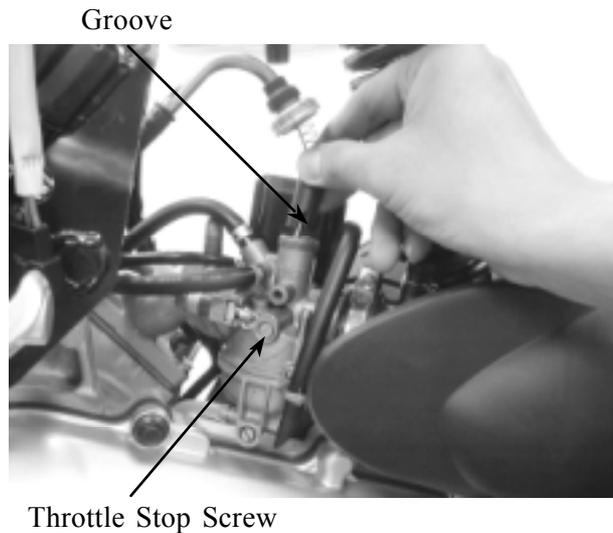


Install the rubber seal on the throttle cable and then install the carburetor cap and throttle valve spring.  
Connect the throttle cable to the throttle valve.



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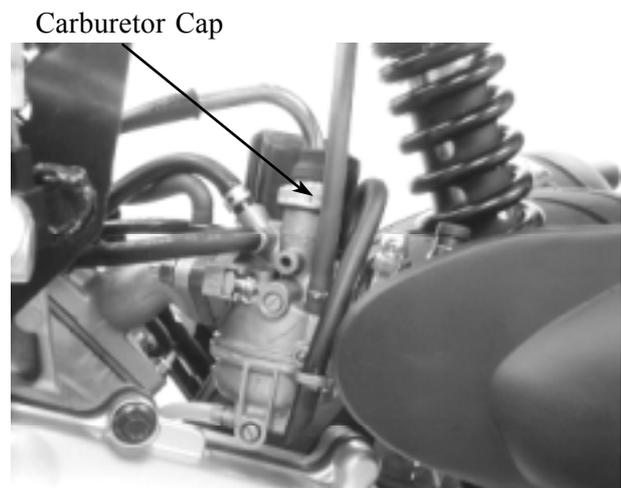
Install the throttle valve by aligning the groove in the throttle valve with the throttle stop screw.



Tighten the carburetor cap.  
After installation, perform the following adjustments and inspections.

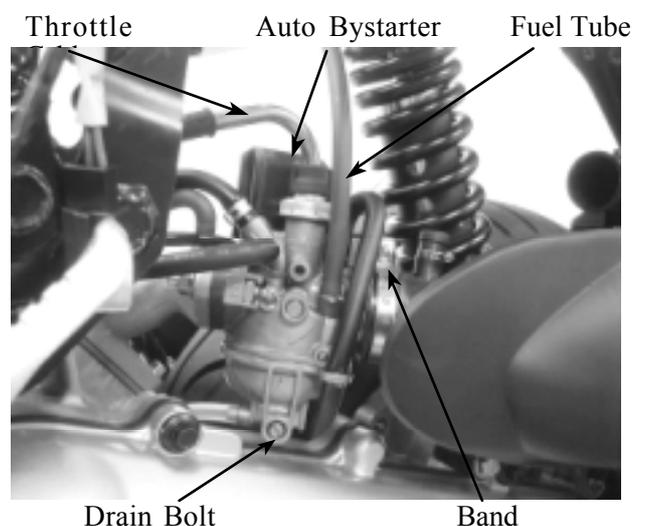
- Throttle cable free play (⇒3-12)
- Idle speed adjustment (⇒3-11)

Install the met-in box.



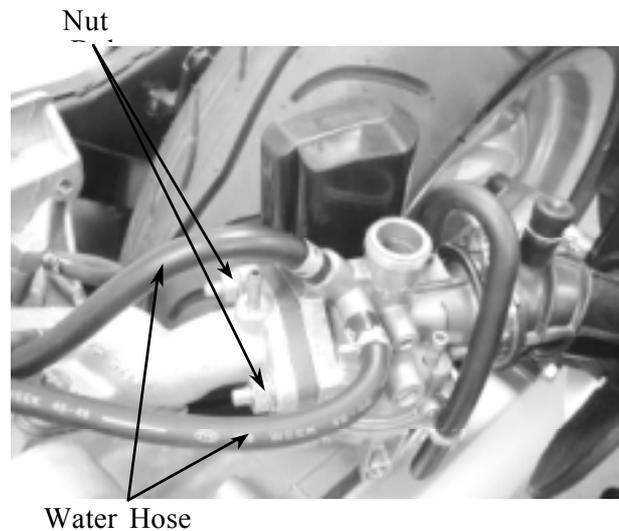
### CARBURETOR REMOVAL

Remove the met-in box. (⇒2-3)  
Remove the air cleaner by removing the air cleaner band screw and attaching bolts.  
Disconnect the fuel tube.  
Loosen the drain bolt to drain fuel from the carburetor.  
Disconnect the auto bystarter wire connector.



## 12. CARBURETOR/FUEL PUMP/ FUEL TANK

Remove the two carburetor lock nuts.  
Remove the carburetor and water hose.



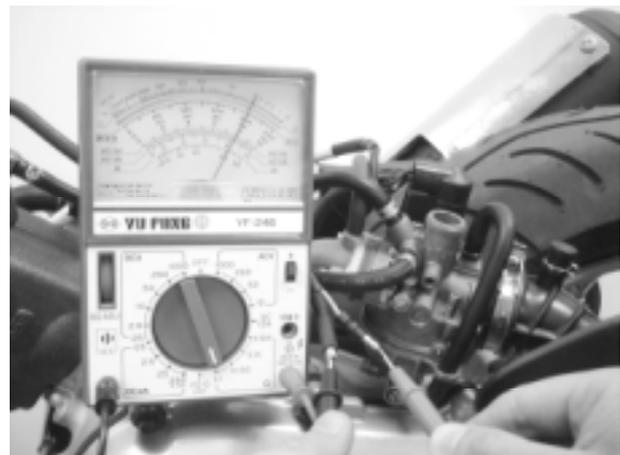
### AUTO BYSTARTER

#### AUTO BYSTARTER INSPECTION

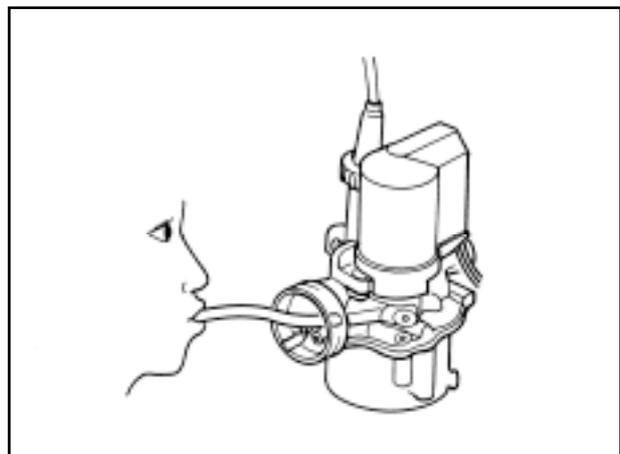
Measure the resistance between the auto bystarter wire terminals.

**Resistance:**  $5\Omega$  (10 minutes minimum after stopping the engine)

If the resistance exceeds  $5\Omega$ , replace the auto bystarter with a new one.

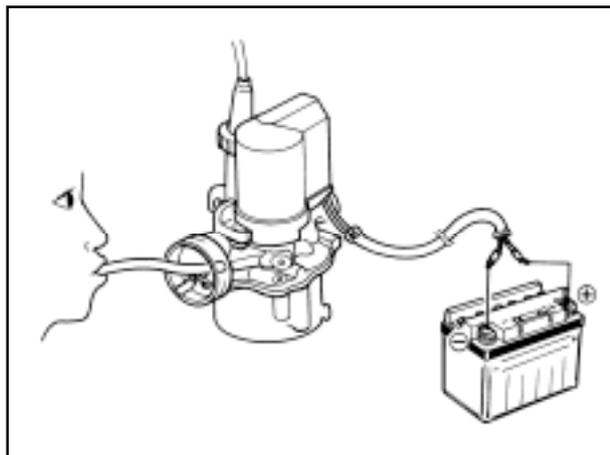


After the engine stops for 30 minutes, connect a hose to the fuel enriching circuit and blow the hose with mouth.  
If air cannot be blown into the hose (clogged), the auto bystarter is faulty.  
Replace it with a new one.



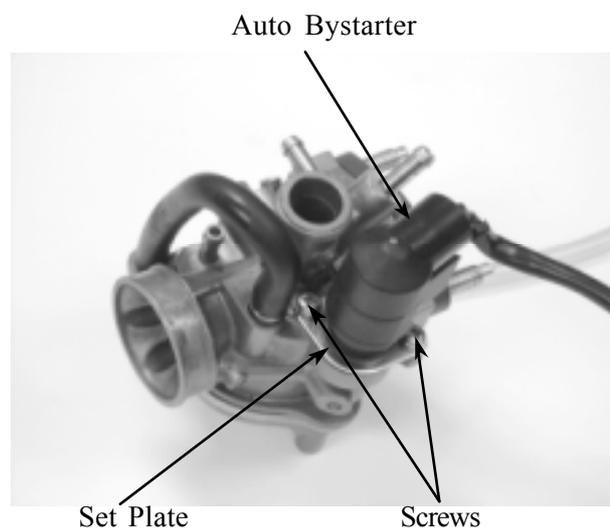
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Connect the auto bystarter yellow wire to the battery positive (+) terminal and green/black wire to the battery negative (-) terminal and wait 5 minutes.  
Connect a hose to the fuel enriching circuit and blow the hose with mouth.  
If air can be blown into the hose, the auto bystarter is faulty and replace it with a new one.

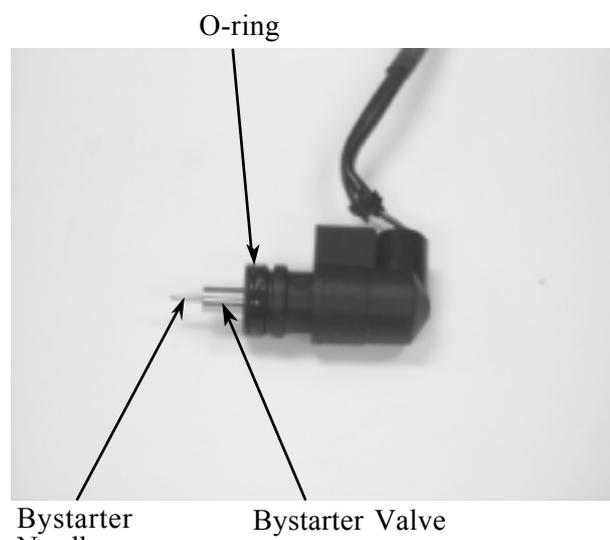


### AUTO BYSTARTER REMOVAL

Remove the auto bystarter cover.  
Remove the two auto bystarter set plate screws to remove the auto bystarter.



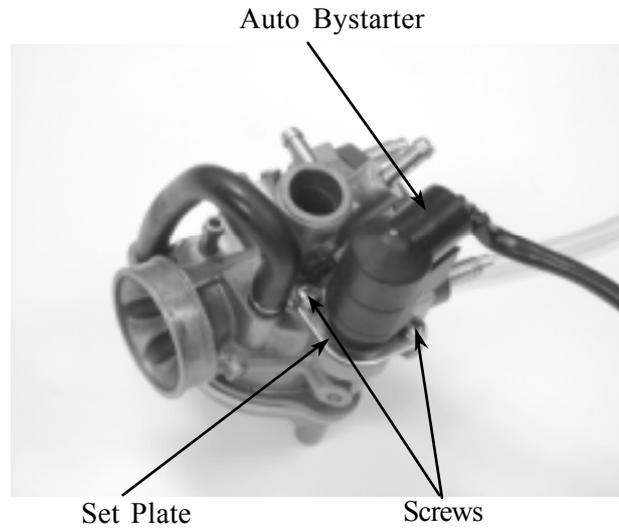
Check the auto bystarter valve and needle for wear or damage.  
Check the O-ring for wear or damage.



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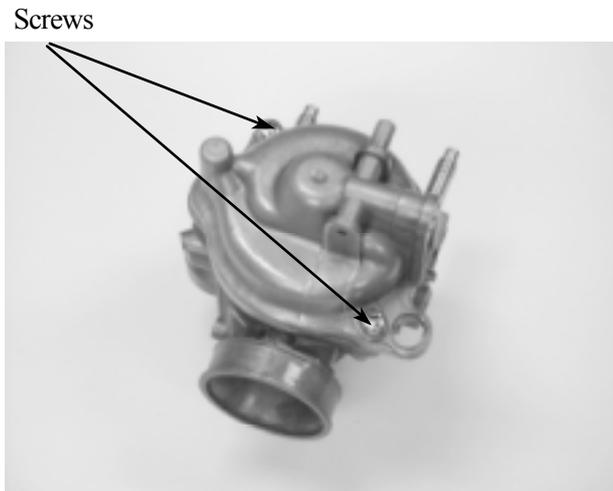
### AUTO BYSTARTER INSTALLATION

Install the auto bystarter into the carburetor body until it bottoms..  
Install the set plate and then tighten the two screws.

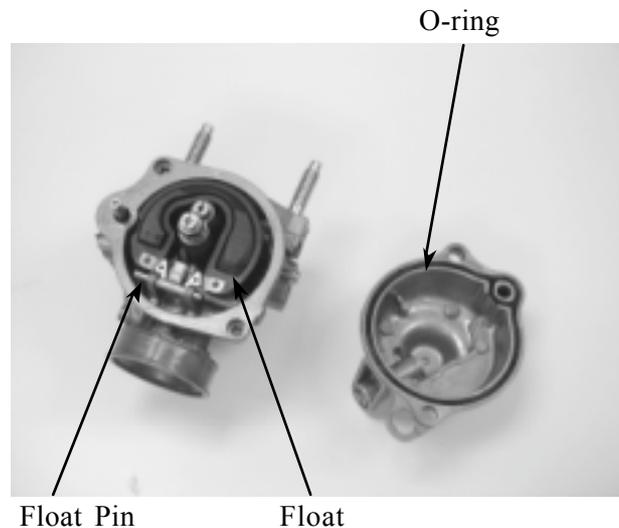


### FLOAT CHAMBER

Remove the two float chamber screws and the float chamber.



Remove the screw and O-ring.  
Remove the float pin, float and float valve.

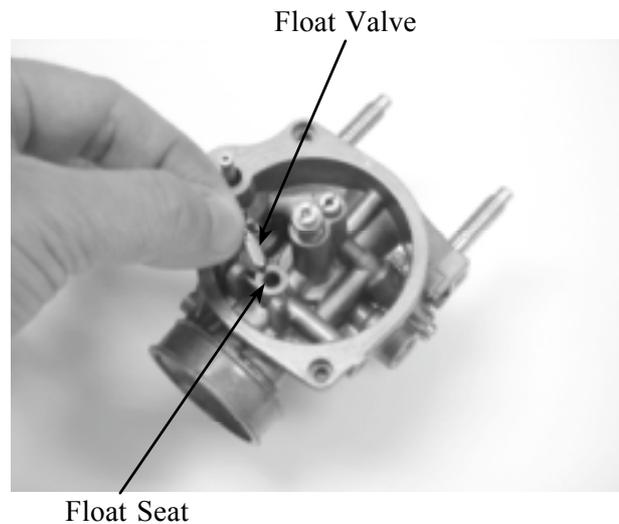


## 12. CARBURETOR/FUEL PUMP/ FUEL TANK

### FLOAT/FLOAT VALVE INSPECTION

Inspect the float for damage or fuel inside the float.

Check the float valve seat for wear or damage.

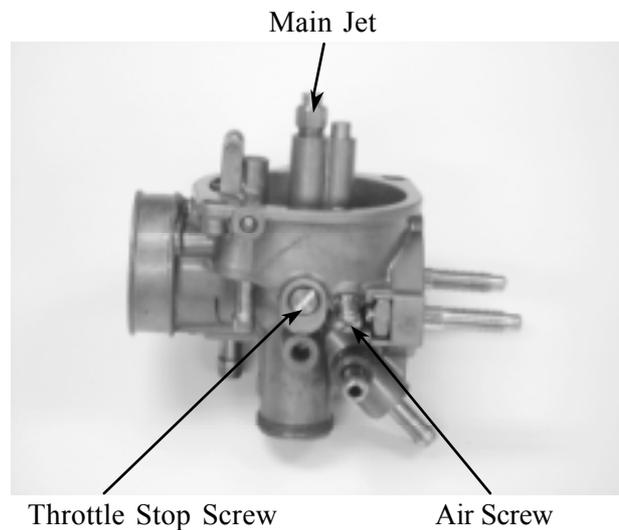


### JETS/SCREWS REMOVAL

Before removing the throttle stop screw or air screw, record the number of rotations until it seats lightly. Then, remove them.

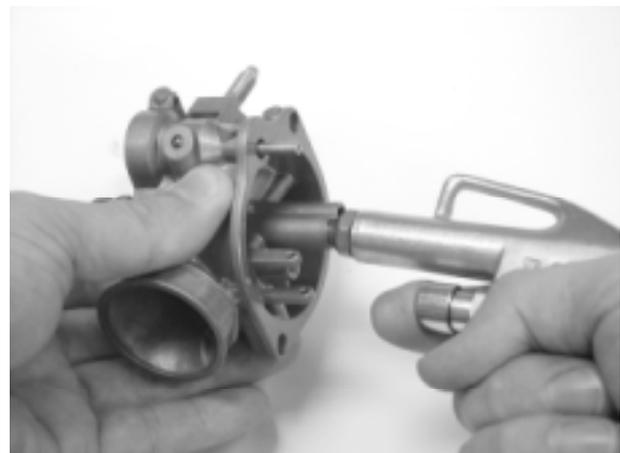
Ⓢ Do not force the air screw against its seat to prevent damage.

Remove the main jet and needle jet holder.



### CARBURETOR PASSAGES CLEANING

Blow compressed air through all passages of the carburetor body with an air gun.

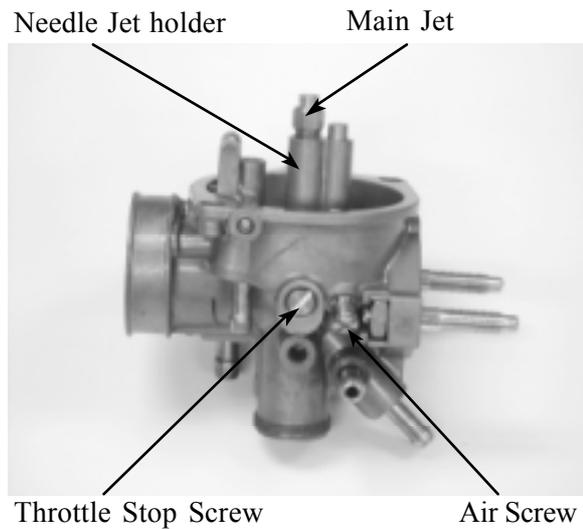


## 12. CARBURETOR/FUEL PUMP/ FUEL TANK

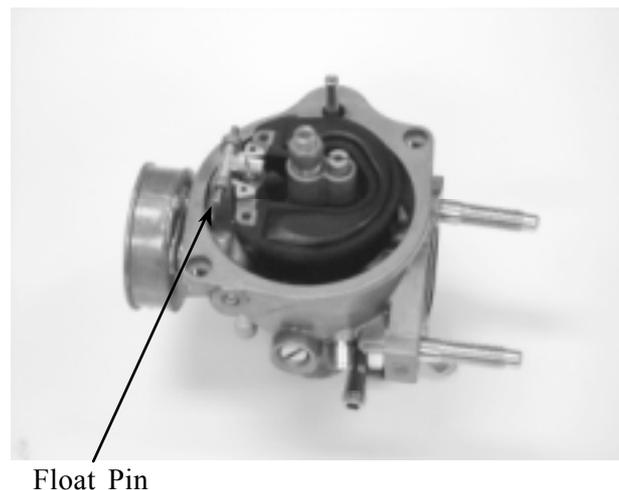
### FLOAT CHAMBER ASSEMBLY

Install the main jet and needle jet holder.  
Install the air screw and throttle stop screw  
according to the rotations recorded.

◦  If the air screw must be replaced, be sure to perform the air screw adjustment again.



Install the float valve, float and float pin.  
Tighten the float screw securely.

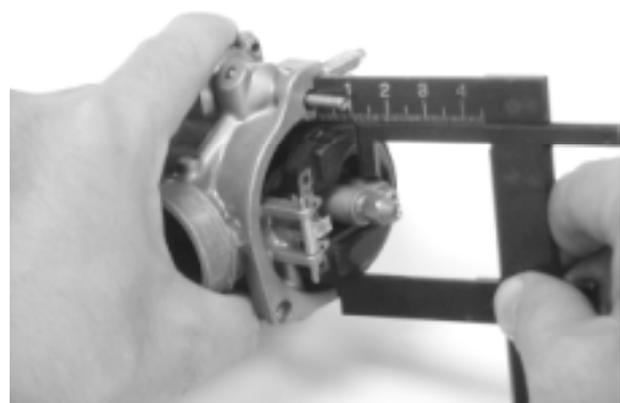


### FLOAT LEVEL INSPECTION

Slightly tilt the carburetor and measure the float level with the float valve just connecting the float arm.

**Float Level:** 8.6 mm

Replace the float if the level is out of the specified level range.  
Install the O-ring.  
Check the operation of the float and install the float chamber.  
Tighten the screws.



## 12. CARBURETOR/FUEL PUMP/ FUEL TANK

### CARBURETOR INSTALLATION

-  When installation, do not allow foreign particles to enter the carburetor.

Check the carburetor insulator and O-ring for wear or damage.

Install the carburetor and insulator onto the intake manifold and tighten the two lock nuts.

Connect the fuel tube and auto bystarter wire connector.

-  Route the auto bystarter wire correctly and properly.

Install the carburetor cap. (⇒12-4)

Install the air cleaner onto the carburetor and tighten the band screw.

Install the met-in box. (⇒2-3)

### AIR SCREW ADJUSTMENT

Remove the met-in box. (⇒2-3)

-  Warm up the engine before air screw adjustment.

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

#### Air Screw Opening:

SH10CA:  $1 \pm$  turns

Start the engine and turn the air screw in or out slowly to obtain the highest engine speed.

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

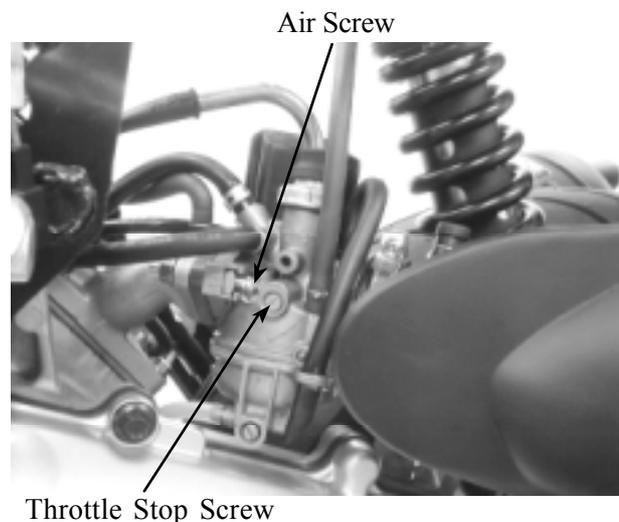
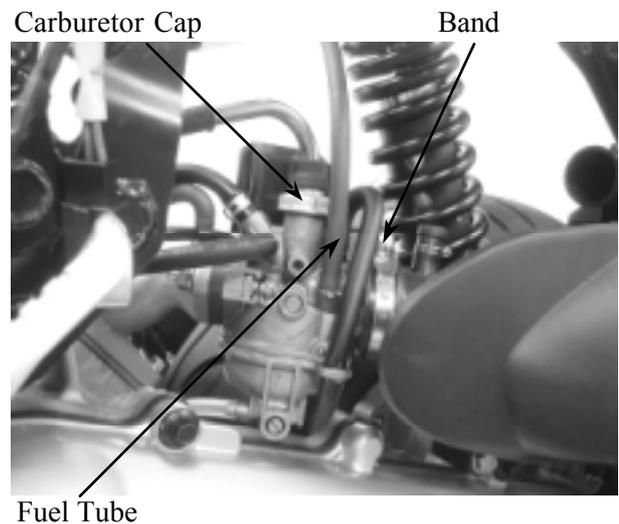
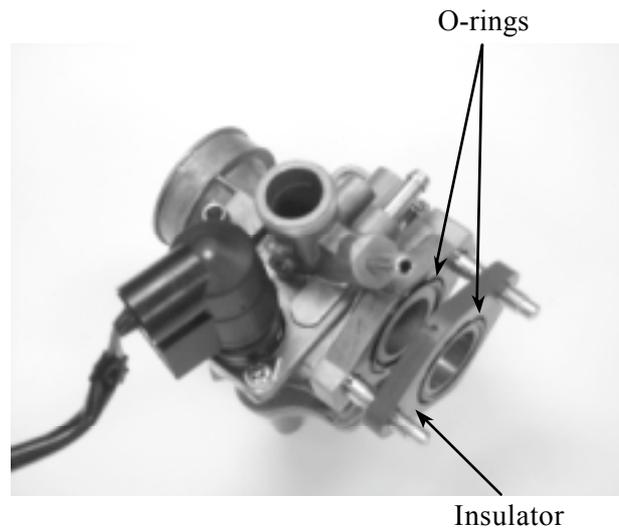
Turn the throttle stop screw to obtain the specified idle speed.

#### Idle Speed:

SH10CA:  $2000 \pm 100$ rpm

Slightly increase the engine speed and make sure that the engine does not miss or run erratic.

If the adjustment of the air screw within the range of  $\pm$  turn makes no difference to the engine performance, check other related items.

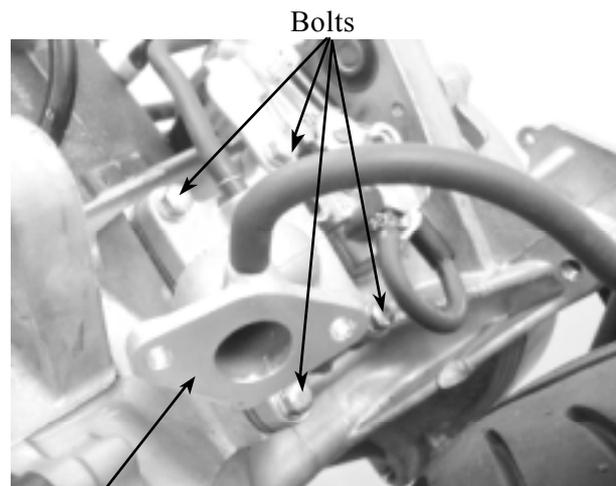


## 12. CARBURETOR/FUEL PUMP/ FUEL TANK

### REED VALVE

#### REMOVAL

- Remove the rear carrier.
- Remove the frame body cover.
- Remove the four intake manifold bolts and gasket.
- Remove the reed valve and gasket.

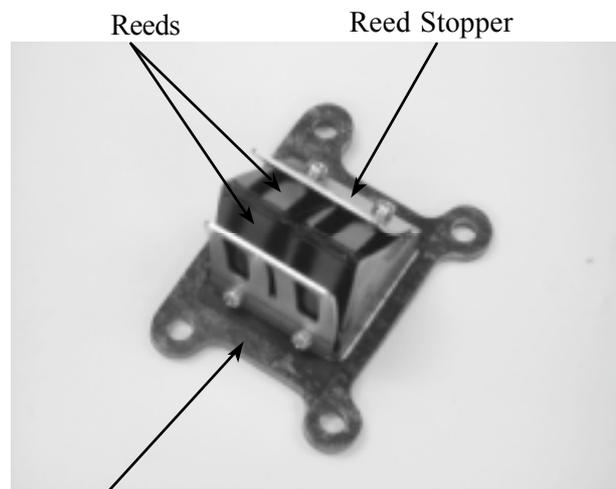


Intake Manifold

#### INSPECTION

- Check the reed valve for damaged or weak reeds.
- Check the reed valve seat for cracks, damage or clearance between the seat and reed.
- Replace the valve if necessary.

ⓘ Do not disassemble or bend the reed stopper. To do so can cause loss of engine power and engine damage. If any of the stopper, reed or valve seat is faulty, replace them as a unit.



Reed Valve Seat

#### INSTALLATION

- Install the reed valve in the reverse order of removal.

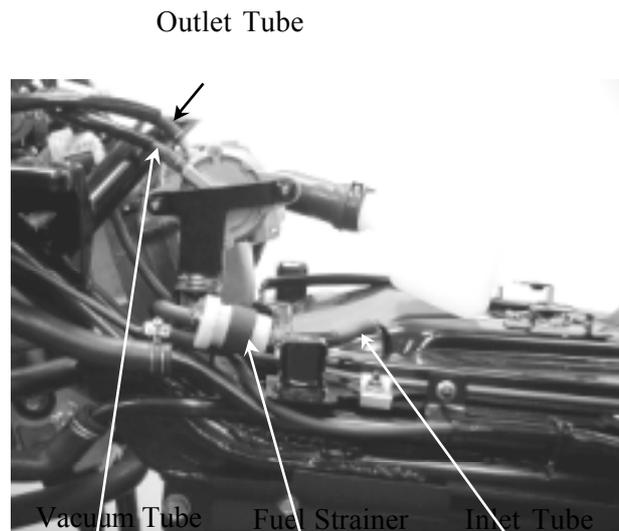
ⓘ

- Install a new gasket with the gasket indentation aligned with the reed valve.
- After installation, check for intake air leaks.

## 12. CARBURETOR/FUEL PUMP/ FUEL TANK

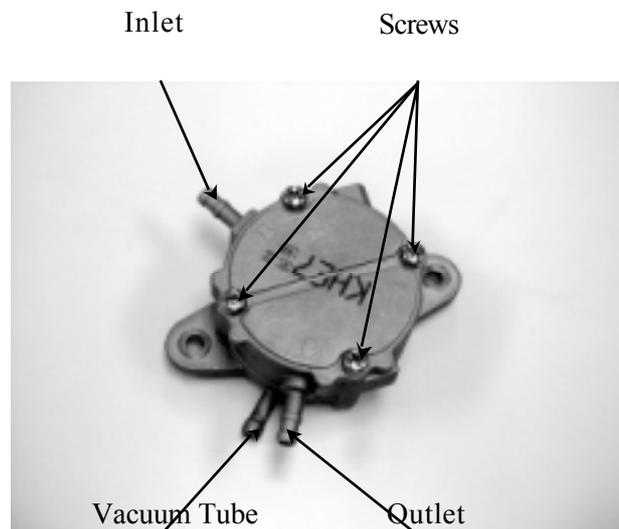
### FUEL PUMP REMOVAL

Remove the frame center cover.  
Disconnect the fuel pump inlet, outlet and vacuum tubes.  
Remove the two fuel pump attaching bolts and the fuel pump.



### FUEL PUMP DISASSEMBLY

Remove the four fuel pump body screws.



Disassemble the fuel pump.

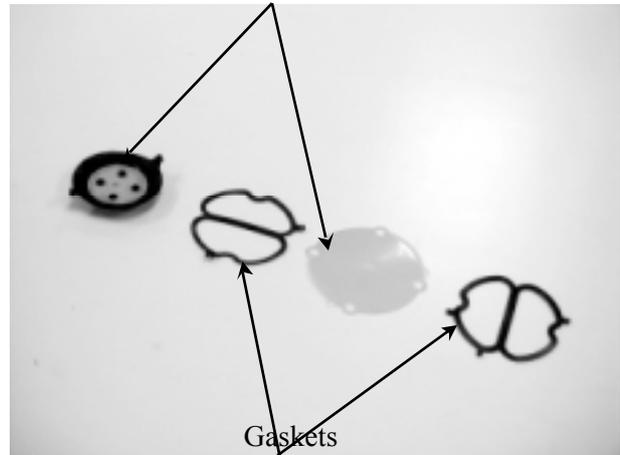


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### FUEL PUMP INSPECTION

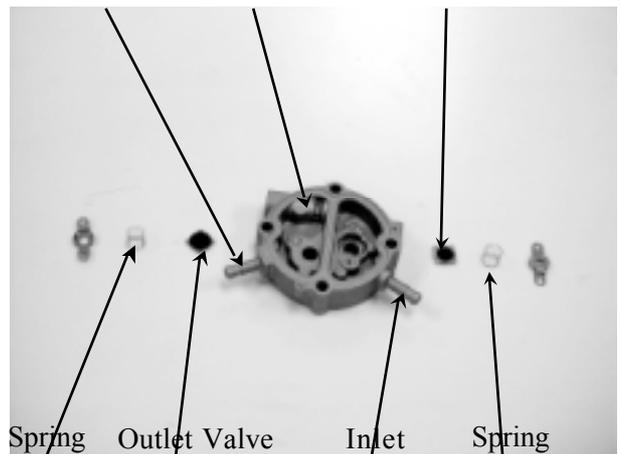
Inspect the fuel pump diaphragms A and B for damage.  
Inspect each gasket for damage.

Diaphragm



Inspect the suction valve, outlet valve and relief valve in the fuel pump body for damage, cracks or foreign matters.

Outlet Relief Valve Suction Valve

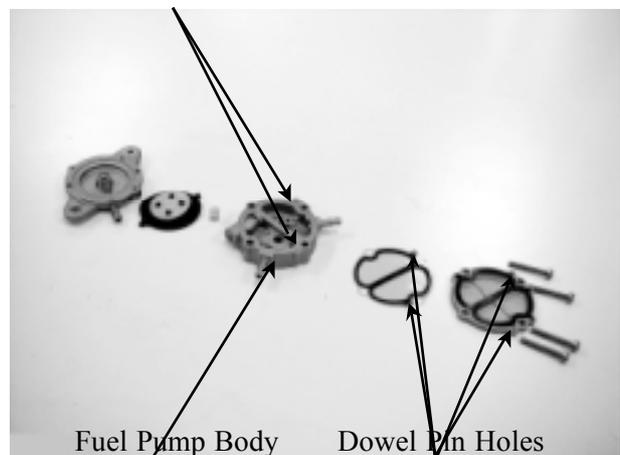


### FUEL PUMP ASSEMBLY

Assemble the fuel pump in the reverse order of disassembly.

- During assembly, be sure to install the gaskets and diaphragms properly to avoid damage.
- Do not allow any foreign matter to enter the fuel pump during assembly.

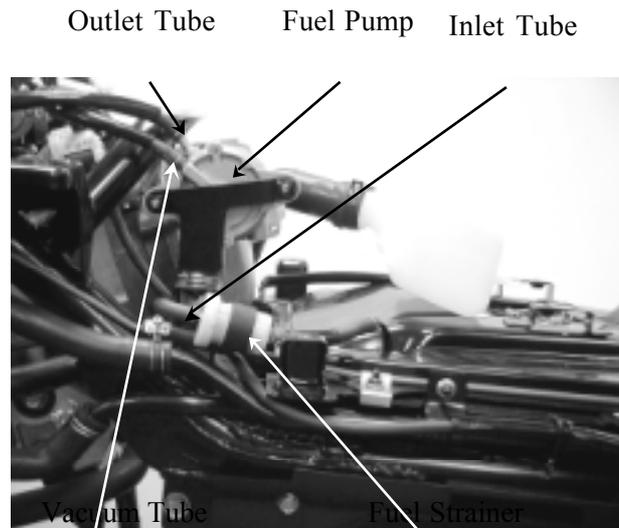
Dowel Pins



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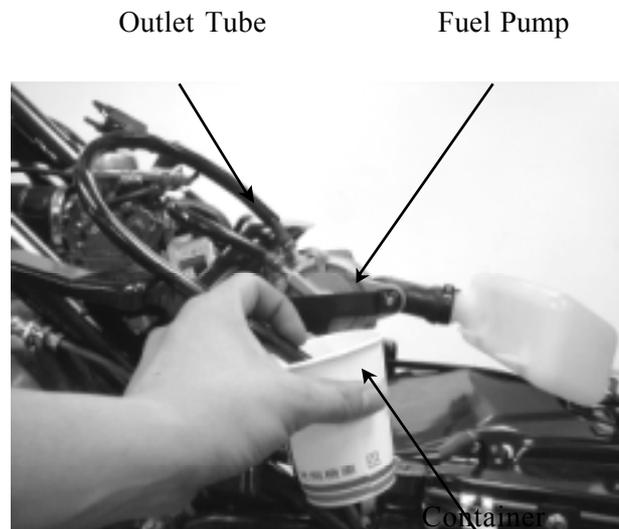
### FUEL PUMP INSTALLATION

Install the fuel pump and secure it with the two bolts.  
Connect the fuel pump inlet, outlet and vacuum tubes.  
Install the seat, met-in box and frame center cover.



Measure the fuel pump output.  
Start the engine and disconnect the fuel outlet tube and place a clean container under the tube to check the fuel output.

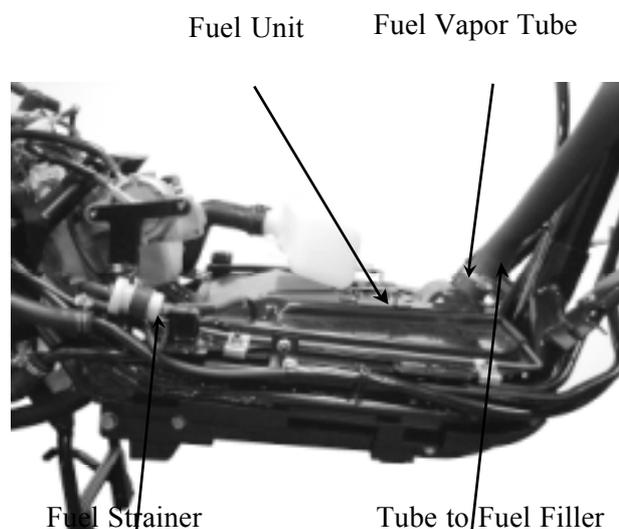
**Output:** 40cc/1500rpm/10 seconds .



### FUEL TANK REMOVAL

Remove the floor board. (⇒2-4)  
Remove the leg shield . (⇒2-5)  
Disconnect the fuel unit wire connector.  
Remove the fuel tube between the fuel tank and the fuel filler.  
Disconnect the fuel vapor tube.  
Remove the fuel tank.

The installation sequence is the reverse of removal.



## 12. CARBURETOR/FUEL PUMP/ FUEL TANK

### FUEL STRAINER REMOVAL

Remove the fuel strainer from the fuel tank.

### INSPECTION

Inspect if the fuel strainer is clogged and clean it with compressed air.

- When removing the fuel strainer, do not allow flames or sparks near the working area and drain the residual gasoline into a container.



### INSTALLATION

Install the fuel strainer with its arrow mark toward the fuel pump.

