

Fuel System

Table of Contents

Exploded View	3-2
Specifications	3-6
Special Tool	3-7
Throttle Grip and Cable	3-8
Free Play Inspection	3-8
Free Play Adjustment	3-8
Throttle Cable Replacement	3-8
Throttle Cable Lubrication	3-9
Throttle Cable Inspection	3-9
Choke Cable Removal	3-9
Choke Cable Installation	3-10
Choke Cable Lubrication	3-10
Choke Cable Inspection	3-10
Carburetor	3-11
Idle Speed Inspection	3-11
Idle Speed Adjustment	3-11
Service Fuel Level Inspection	3-11
Float Height Inspection	3-12
Carburetor Removal	3-13
Carburetor Installation	3-14
Carburetor Disassembly	3-14
Carburetor Cleaning	3-15
Carburetor Inspection	3-16
Carburetor Assembly	3-18
Air Cleaner	3-19
Air Cleaner Housing Removal	3-19
Air Cleaner Housing Installation	3-19
Air Cleaner Element Removal	3-19
Air Cleaner Element Installation	3-20
Air Cleaner Element Cleaning and Inspection	3-20
Air Cleaner Oil Draining	3-20
Fuel Tank	3-21
Fuel Tank Removal	3-21
Fuel Tank Installation	3-21
Fuel Tap Removal	3-22
Fuel Tap Installation	3-22
Fuel Tap Cleaning	3-22
Fuel Tap and Filter Inspection	3-22
Fuel Inspection	3-22

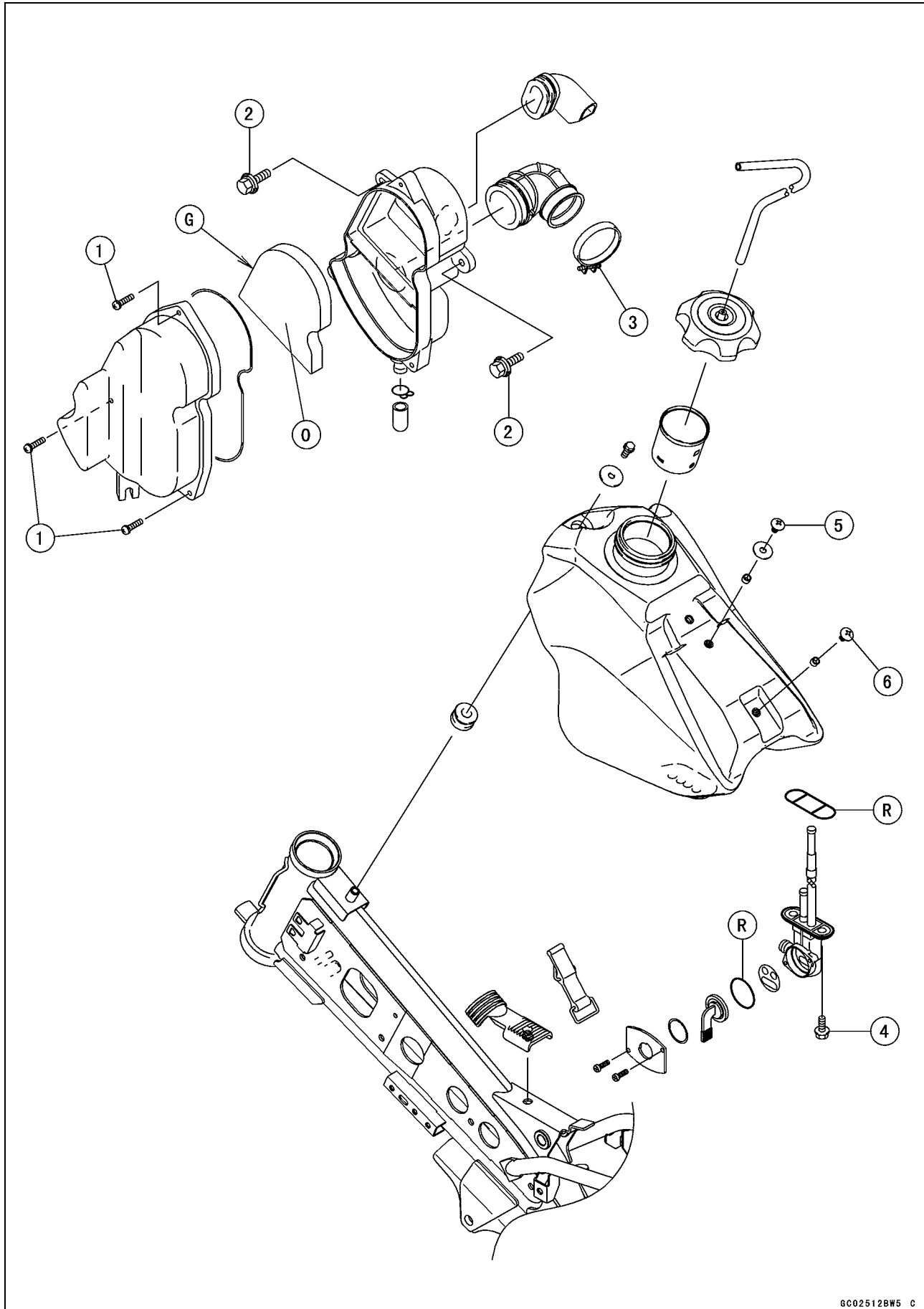
Exploded View

No.	Fastener	Torque			Remarks
		N·m	kgf·m	ft·lb	
1	Carburetor Holder Bolts	5.2	0.53	46 in·lb	
2	Throttle Cable Housing Cap Screws	0.6	0.06	5.3 in·lb	

- 3. Throttle Cable
- 4. Choke Cable
- 5. Throttle Grip
- 6. Carburetor Cap
- 7. Retainer
- 8. Circlip
- 9. Jet Needle
- 10. Throttle Valve
- 11. Idle Adjusting Screw
- 12. Needle Jet
- 13. Needle Jet Holder
- 14. Pilot Jet
- 15. Float Valve Needle
- 16. Main Jet
- 17. Float
- 18. Carburetor Drain Plug
- 19. Fuel Hose
- CL: Apply cable lubricant.
- G: Apply grease.
- R: Replacement Parts

3-4 FUEL SYSTEM

Exploded View



Exploded View

No.	Fastener	Torque			Remarks
		N·m	kgf·m	ft·lb	
1	Air Cleaner Cover Screws	1.5	0.15	13 in·lb	
2	Air Cleaner Housing Bolts	3.5	0.36	31 in·lb	
3	Air Duct Clamp Screw	2.0	0.20	18 in·lb	
4	Fuel Tap Mounting Bolts	4.4	0.45	39 in·lb	
5	Screw (for Seat Hook)	5.0	0.51	44 in·lb	
6	Screw (for Rubber Band Hook)	5.0	0.51	44 in·lb	

G: Apply grease.

O: High-quality foam air filter oil.

R: Replacement Parts

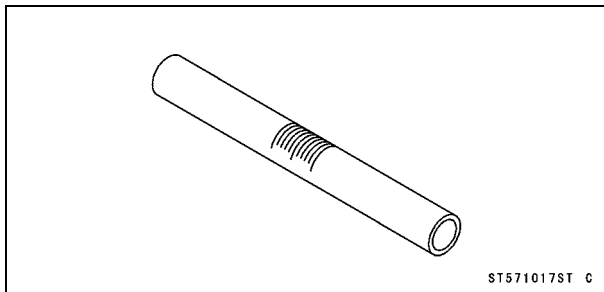
3-6 FUEL SYSTEM

Specifications

Item	Standard
Throttle Grip and Cable Throttle Grip Free Play	2 ~ 3 mm (0.08 ~ 0.12 in.)
Carburetor Make/Type Idle Speed Main Jet Main Air Jet Jet Needle Throttle Valve Cutaway Slow Jet Pilot Screw (turns out) Service Fuel Level (below the bottom edge of the carburetor body) Float Height	KEIHIN PB18 1 600 ~ 1 700 r/min (rpm) #78 #180 NCFA 3.0 #40/40 1 3/8 3.0 ±1 mm (0.12 ±0.04 in.) 10.7 ±2 mm (0.421 ±0.08 in.)
Air Cleaner Air Cleaner Element Oil	High quality form air filter oil

Special Tool

Fuel Level Gauge:
57001-1017



3-8 FUEL SYSTEM

Throttle Grip and Cable

If the throttle grip has excessive free play due to cable stretch or misadjustment, there will be a delay in throttle response. Also, the throttle valve may not open fully at full throttle. On the other hand, if the throttle grip has no play, the throttle will be hard to control, and the idle speed will be erratic. Check the throttle grip play periodically in accordance with the Periodic Maintenance Chart, and adjust the play if necessary.

The throttle cable routing is shown in Cable, Wire and Hose Routing Section in the Appendix chapter.

Free Play Inspection

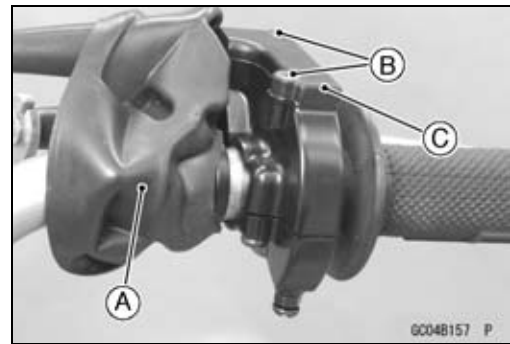
- Refer to the Throttle Grip Free Play Inspection in the Periodic Maintenance chapter.

Free Play Adjustment

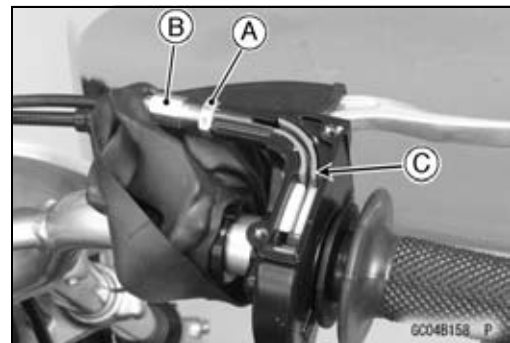
- Refer to the Throttle Grip Free Play Adjustment in the Periodic Maintenance chapter.

Throttle Cable Replacement

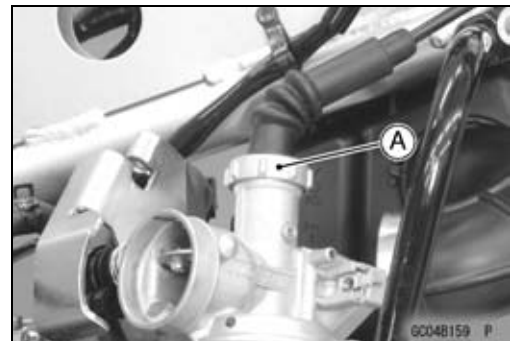
- Tuck up the dust cover [A].
- Remove the throttle cable housing cap screws [B], and take off the cap [C].



- Loosen the locknut [A], and screw in the adjuster [B].
- Remove the throttle cable [C] from the cable housing.



- Remove the fuel tank (see Fuel Tank Removal).
- Loosen the cap [A], and remove the throttle valve (see Carburetor Disassembly).



Throttle Grip and Cable

- Lubricate the cable.
- Apply grease to the tips of the cables.
- Insert the throttle valve assembly.
- Run the throttle cable in accordance with the Cable, Wire and Hose Routing section in the Appendix chapter.
- Install the throttle cable to the cable housing.
- Tighten:

Torque - Throttle Cable Housing Cap Screws: 0.6 N·m (0.06 kgf·m, 5.3 in·lb)

- After the installation, adjust the cable properly.

⚠ WARNING

Operation with improperly adjusted, incorrectly routed or damaged cables could result in an unsafe riding condition. Follow the service manual to be make sure to correct any of these conditions.

Throttle Cable Lubrication

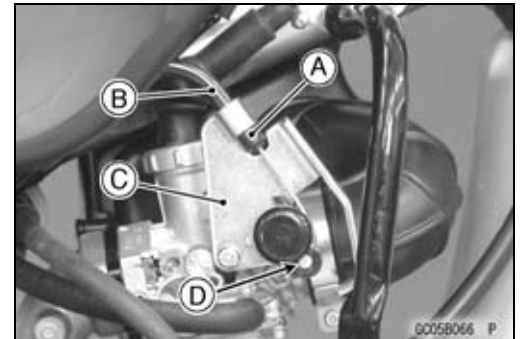
- Whenever the throttle cable is removed or in accordance with the Periodic Maintenance Chart, lubricate the these cables (see Lubrication in the Periodic Maintenance chapter).
- Apply a little grease to the cable upper or lower ends.
- Use a commercially available pressure cable lubricator to lubricate these cables.

Throttle Cable Inspection

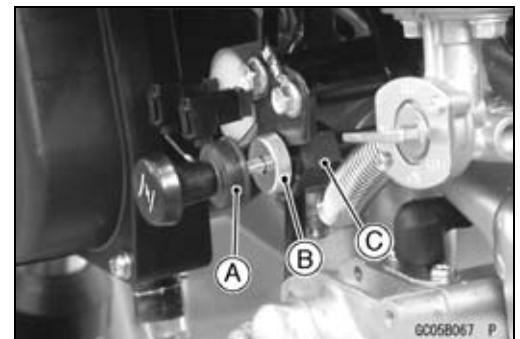
- Refer to the Cable Inspection in the Periodic Maintenance chapter.

Choke Cable Removal

- Remove the shroud (see Shroud Removal in the Frame chapter).
- Free the boot [A], and remove the choke cable [B] from the choke holder [C].
- Remove the choke cable lower end [D].



- Tuck up the boot [A].
- Loosen the adjuster [B] and locknut [C].
- Remove the cable from the bracket.



3-10 FUEL SYSTEM

Throttle Grip and Cable

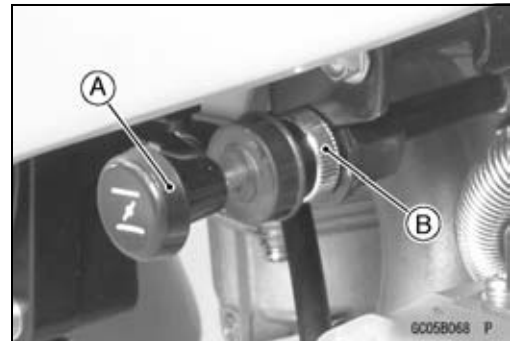
Choke Cable Installation

- Installation is the reverse of removal.
- Install the choke cable in accordance with the Cable, Wire and Hose Routing section in the Appendix chapter.
- After the installation, adjust the cable properly.

⚠ WARNING

Operation with improperly adjusted, incorrectly routed or damaged cables could result in an unsafe riding condition. Follow the service manual to be make sure to correct any of these conditions

- Adjust the choke knob operation as the following procedures.
 - Pull the choke knob [A] fully.
 - Turn the adjuster [B] to adjust the hardness of the knob operation.
 - ★ If the adjuster too tight, the knob operation becomes heavy.
 - ★ If the adjuster too loose, the position of the knob cannot be fixed.



Choke Cable Lubrication

- Whenever the choke cable is removed or in accordance with the Periodic Maintenance Chart, lubricate the these cable (see Lubrication in the Periodic Maintenance chapter).

Choke Cable Inspection

- Refer to the Cable Inspection in the Periodic Maintenance chapter.

Carburetor

Since the carburetor regulates and mixes the fuel and air going to the engine, there are two general types of carburetor trouble: too rich a mixture (too much fuel), and too lean a mixture (too little fuel). Such trouble can be caused by dirt, wear, maladjustment or improper fuel level in the float chamber. A dirty or damaged air cleaner can also alter the fuel to air ratio.

Idle Speed Inspection

- Refer to the Idle Speed Inspection in the Periodic Maintenance chapter.

Idle Speed Adjustment

- Refer to the Idle Speed Adjustment in the Periodic Maintenance chapter.

Service Fuel Level Inspection

⚠ WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Always stop the engine and do not smoke. Make sure the area is well-ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

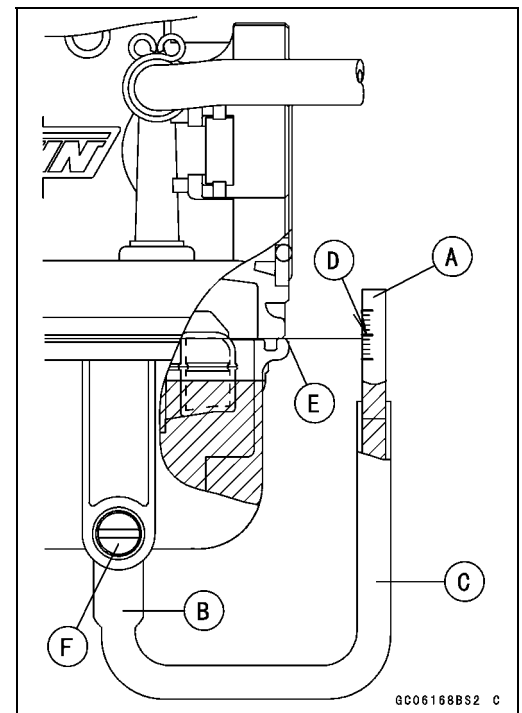
- Remove:
 - Fuel Tank (see Fuel Tank Removal)
 - Carburetor (see Carburetor Removal)
- Hold the carburetor in true vertical position on a stand.
- Put the fuel tank on a bench, and connect the fuel tap to the carburetor with a fuel hose.
- Connect the fuel gauge [A] to the carburetor drain [B] using a suitable hose [C].

Special Tool - Fuel Level Gauge: 57001-1017

- Hold the gauge vertically against the side of the carburetor body so that the "middle" line [D] is several millimeters higher than the bottom edge [E] of the carburetor body.
- Turn the fuel tap to the ON position to feed fuel to the carburetor, then turn out the drain plug [F] a few turns.
- Wait until the fuel level in the gauge settles.
- Keeping the gauge vertical, slowly lower the gauge until the "middle" line is even with the bottom edge of the carburetor body.

NOTE

○Do not lower the "middle" line below the bottom edge of the carburetor body. If the gauge is lowered and then raised again, the fuel level measure shows somewhat higher than the actual fuel level. If the gauge is lowered too far, dump the fuel out of it into a suitable container and start the procedure over again.



3-12 FUEL SYSTEM

Carburetor

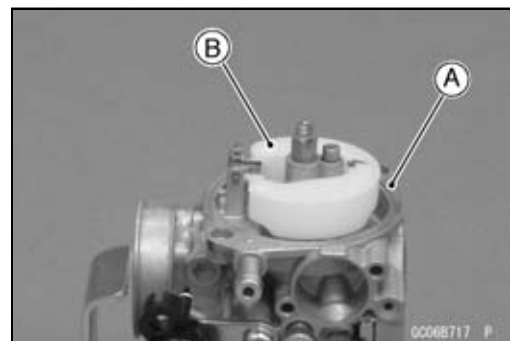
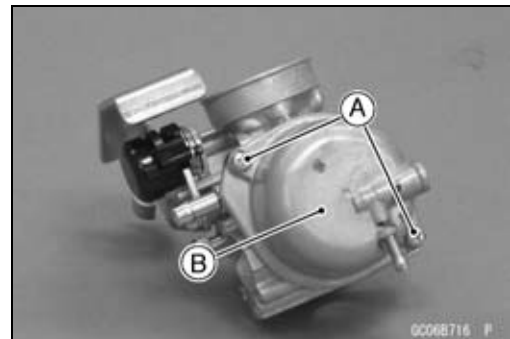
- Check the fuel level in the gauge.
Service Fuel Level (below the bottom edge of the carburetor body)
Standard: 3.0 ± 1 mm (0.12 ± 0.04 in.)
- Screw the carburetor drain plug.
- Turn the fuel tap to the OFF position and remove the fuel level gauge.
- ★ If the fuel level is incorrect, inspect the float, the float valve needle and the contacting surface between the carburetor body and its float valve needle. If they are damaged, replace them with new ones.
- This carburetor cannot adjust the fuel level.
- Install the carburetor (see Carburetor Installation).

Float Height Inspection

⚠ WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Always stop the engine and do not smoke. Make sure the area is well-ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

- Remove the carburetor (see Carburetor Removal).
 - Drain the fuel of the carburetor.
 - Remove the screws [A], and take off the float bowl [B].
-
- Measure the height between the float bowl mating surface [A] (with the gasket removed) and the float upper surface [B].
- Float Height**
Standard: 10.7 ± 2 mm (0.421 ± 0.08 in.)
- ★ If the float level is incorrect, inspect the float, the float valve needle and the contacting surface between the carburetor body and its float valve needle. If they are damaged, replace them with new ones.
 - This carburetor cannot adjust the float level.

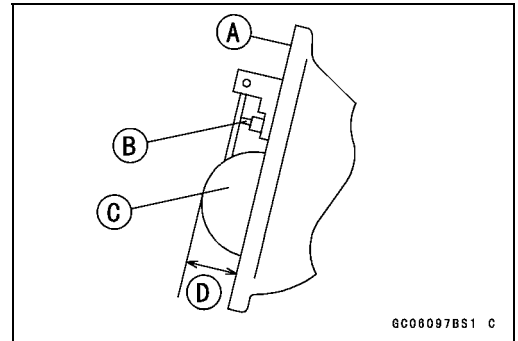


Carburetor

- Float Bowl Mating Surface [A]
- Float Valve Needle Rod (contacted but unloaded) [B]
- Float [C]
- Float Height [D]

NOTE

- Measure the height with the carburetor upside down.
- Do not push the needle rod in during the float height measurement.



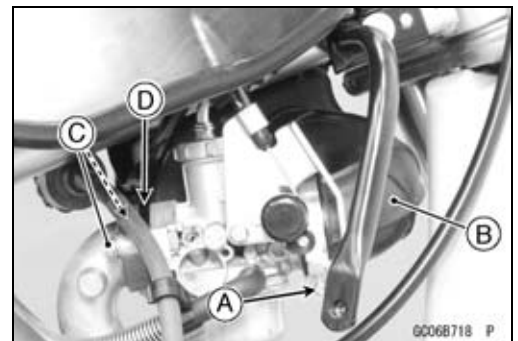
- Install:
 - Float Bowl
 - Carburetor (see Carburetor Installation)

Carburetor Removal

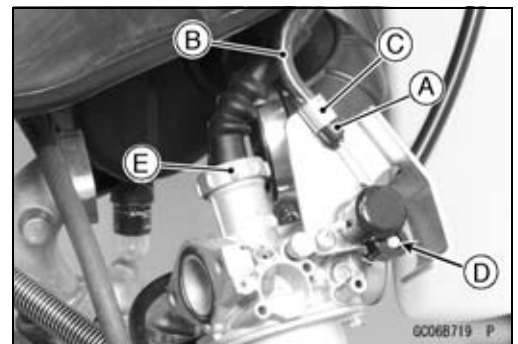
⚠ WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Always stop the engine and do not smoke. Make sure the area is well-ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

- Turn the fuel tap to the OFF position.
- Remove the shroud (see Shroud Removal in the Frame chapter).
- Loosen the clamp screw [A] and pull out the air duct [B] from the carburetor.
- Remove:
 - Carburetor Holder Bolts [C]
 - Insulator [D]



- Free the boot [A] and remove the choke cable [B] from the holder [C].
- Remove the choke cable lower end [D].
- Unscrew the cap [E] and pull out the throttle cable lower end with the throttle valve, spring and jet needle as a set.



⚠ WARNING

If dirt or dust is allowed to pass through into the carburetor, the throttle may become stuck, possibly causing accident. Replace the air cleaner element according to the maintenance chart.

NOTICE

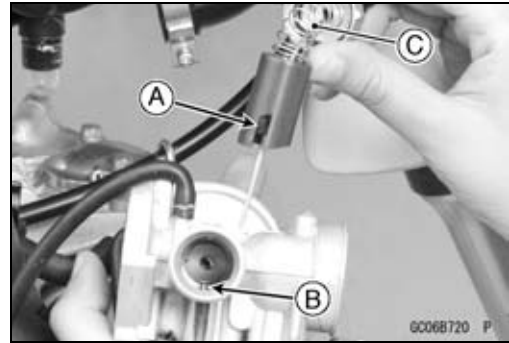
If dirt gets through into the engine, excessive engine wear and possibly engine damage will occur. If the throttle valve is not removed from the cable, wrap clean cloths around the throttle valve to avoid damaging to it.

3-14 FUEL SYSTEM

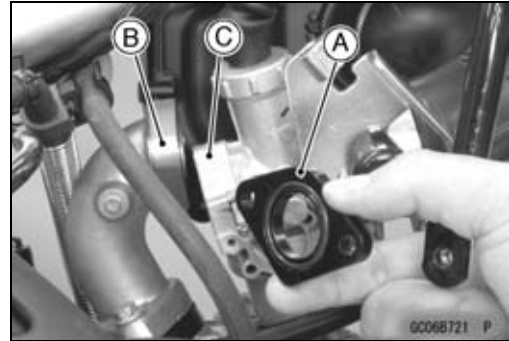
Carburetor

Carburetor Installation

- Installation is the reverse of removal.
- Fit the slit [A] and the projection [B], and insert the throttle valve assembly [C] into the carburetor body.



- Replace the O-ring with a new one.
- Install the insulator [A] between intake pipe [B] and carburetor [C] so that the O-ring faces to the intake pipe.
- Tighten:
Torque - Carburetor Holder Bolts: 5.2 N·m (0.53 kgf·m, 46 in·lb)



- After installing the carburetor, perform the following.
- Check fuel leakage from the carburetor.

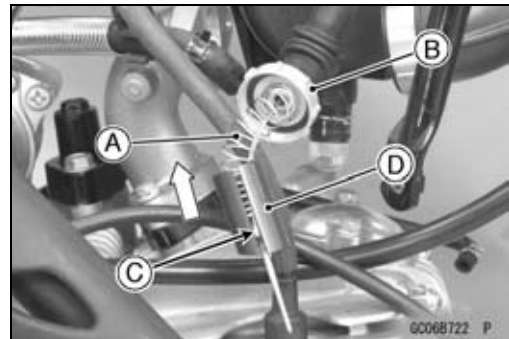
⚠ WARNING

Fuel spilled from the carburetor is hazardous.

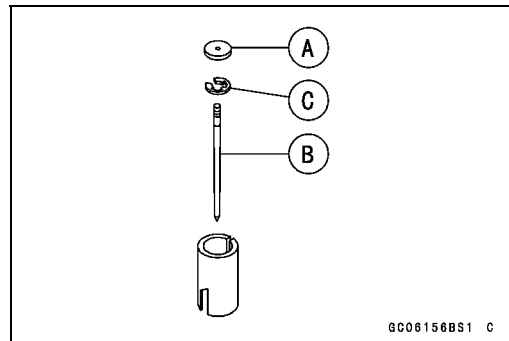
- Adjust the following:
Idle Speed (see Idle Speed Adjustment in the Periodic Maintenance chapter)
Throttle Grip Free Play (see Throttle Cable Adjustment in the Periodic Maintenance chapter)

Carburetor Disassembly

- Remove the carburetor (see Carburetor Removal).
- Pull the whole of spring [A] to the cap [B] side, and hold it.
- Free the cable lower end [C] from the throttle valve [D].



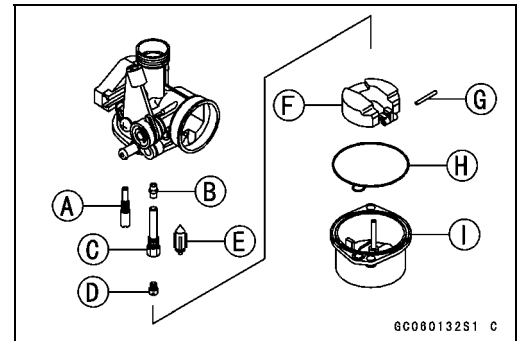
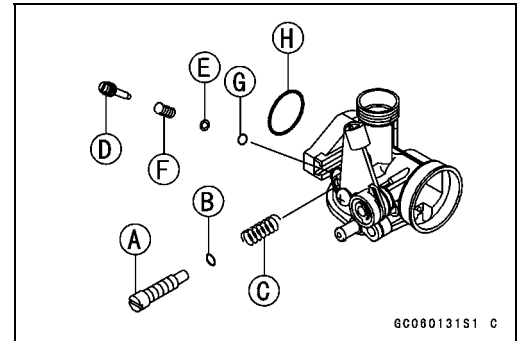
- Remove the retainer plate [A] and the jet needle [B] with the clip [C].



Carburetor

- Remove the following parts from the carburetor body.
 - Idle Adjusting Screw [A]
 - O-ring [B]
 - Spring [C]
 - Pilot Screw [D]
 - Washer [E]
 - Spring [F]
 - O-ring [G]
 - O-ring [H]

- Pilot Jet [A]
- Needle Jet [B]
- Needle Jet Holder [C]
- Main Jet [D]
- Float Valve Needle [E]
- Float [F]
- Pin [G]
- O-ring [H]
- Float Bowl [I]



Carburetor Cleaning

WARNING

Gasoline and low flash-point solvents can be flammable and/or explosive and cause severe burns. Clean the carburetor in a well-ventilated area, and take care that there are no sparks or flame anywhere near the working area; this includes any appliance with a pilot light. Do not use gasoline or a low flash-point solvent to clean the carburetor.

- Make sure the fuel tap is in the OFF position.
- Remove the carburetor (see Carburetor Removal).
- Drain the fuel in the carburetor.
- Disassemble the carburetor (see Carburetor Disassembly).

NOTICE

Do not use compressed air on an assembled carburetor, the float may be deformed by the pressure. Remove as many rubber or plastic parts from the carburetor as possible before cleaning the carburetor with cleaning solution. This will prevent damage or deterioration of the parts. Do not use strong carburetor cleaning solution which could attack the plastic parts; instead, use mild high flash-point cleaning solution safe for plastic parts. Do not use wire or any other hard instrument to clean carburetor parts, especially jets, as they may be damaged.

3-16 FUEL SYSTEM

Carburetor

- Immerse all the metal parts in carburetor cleaning solution.
- Rinse the parts in water.
- After the parts are cleaned, dry them with compressed air.
- Blow through the air and fuel passages with compressed air.
- Assemble the carburetor, and install it on the motorcycle.

Carburetor Inspection

⚠ WARNING

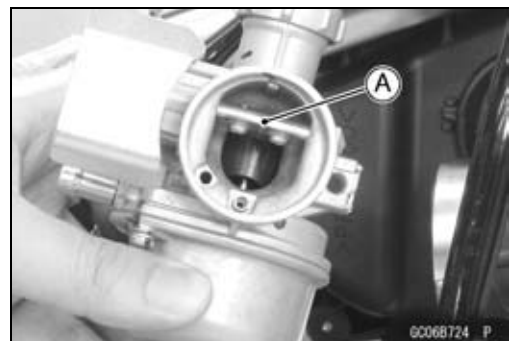
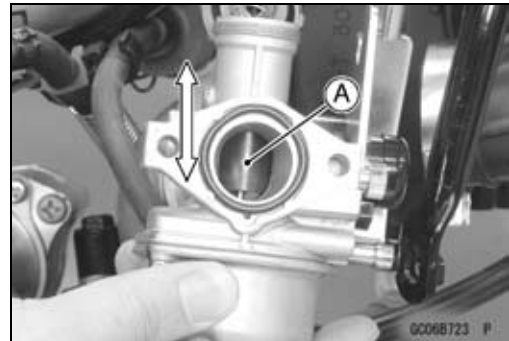
Gasoline is extremely flammable and can be explosive under certain conditions. Always stop the engine and do not smoke. Make sure the area is well-ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

- Remove the carburetor (see Carburetor Removal).
- Before disassembling the carburetor, check the fuel level.
- ★ If the fuel level is incorrect, inspect the rest of the carburetor before correcting it.
- Check that the throttle valve [A] moves smoothly and return back with the spring tension. The surface of the valve must not be excessively worn.
- ★ If the throttle valve does not move smoothly, or if it is very loose in the carburetor body. Replace the carburetor.
- ★ If the spring tension is weak, replace it.
- Turn the choke cable bracket to check that the choke butterfly valve [A] move smoothly and return with spring tension.
- ★ If the choke butterfly valve do not move smoothly, replace the carburetor.

NOTE

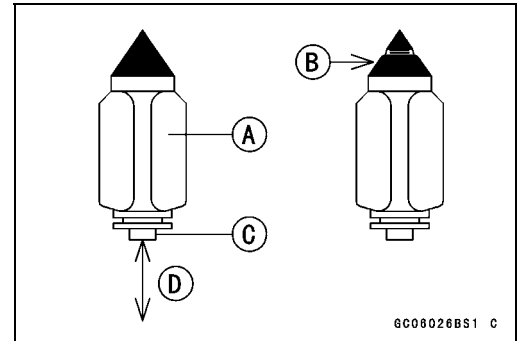
○ *Do not remove the pilot screw from the carburetor or change the pilot screw setting, or you will lose the best setting.*

- Disassemble the carburetor (see Carburetor Disassembly).
- Clean the carburetor (see Carburetor Cleaning).
- Check that the O-rings on the float bowl, drain plug and the intake pipe are in good condition.
- ★ If any of the O-rings are not in good condition, replace them.

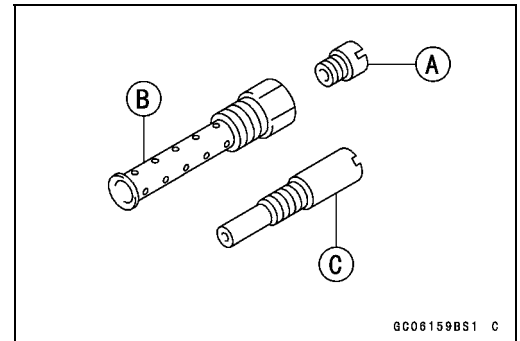


Carburetor

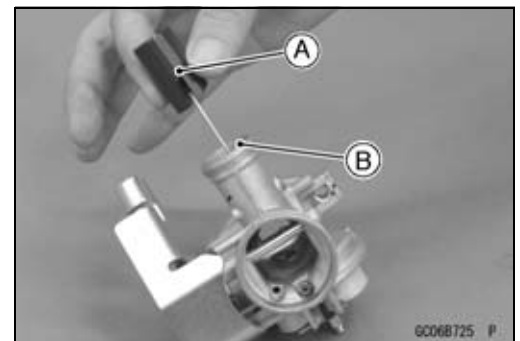
- Remove the float valve needle.
- Check the float valve needle [A].
- ★ If the needle is worn [B] as shown in the figure, replace the valve needle.
- Push the rod [C] in the valve needle, and then release it [D].
- ★ If the rod does not spring out, replace the valve needle.



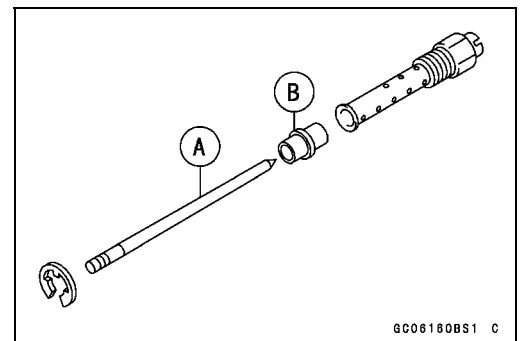
- Check the main jet [A], needle jet holder [B] and pilot jet [C] for any damage.
- ★ If they are damaged, replace them with new ones.



- Inspect the outside of the throttle valve [A] for scratches and abnormal wear.
- ★ If the valve is badly scratched or worn, replace it.
- Inspect the inside of the carburetor body for these same faults.
- ★ If it is badly scratched or worn, replace the entire carburetor.
- [B] Sliding Surface



- Check the jet needle [A] and needle jet [B] for wear.
- ★ A worn needle jet holder or jet needle should be replaced.



- Disassemble the carburetor, and clean the fuel, air passages with high flash-point solvent and compressed air.
- Stuff the lint-free, clean cloths into the air cleaner housing to keep dirt or other foreign material from entering.

WARNING

If dirt or dust is allowed to pass through into the carburetor, the throttle valve may become stuck, possibly causing accident. Replace the air cleaner element according to the maintenance chart.

3-18 FUEL SYSTEM

Carburetor

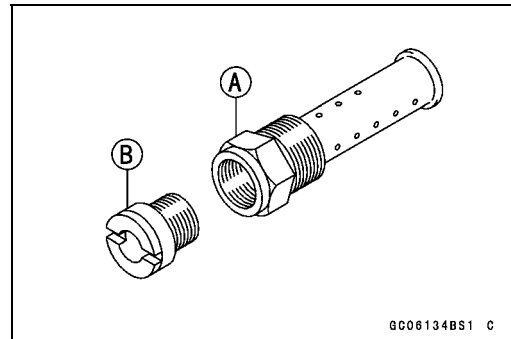
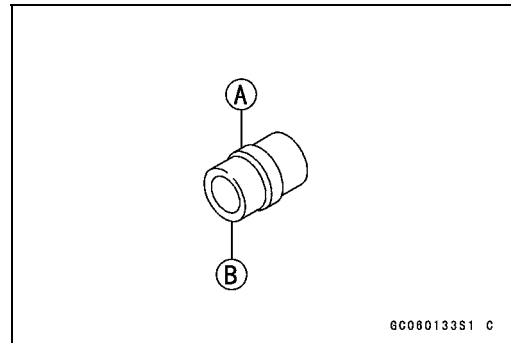
Carburetor Assembly

- Clean the disassembly parts before assembling.
- Clean the fuel and air passages with high flash-point solvent and compressed air.
- Install the needle jet [A] into the carburetor so that the smaller diameter end [B] of the jet goes in first.

- Carefully screw in the needle jet holder. It will seat against the needle jet, pushing the end of the jet into the carburetor bore.

NOTICE

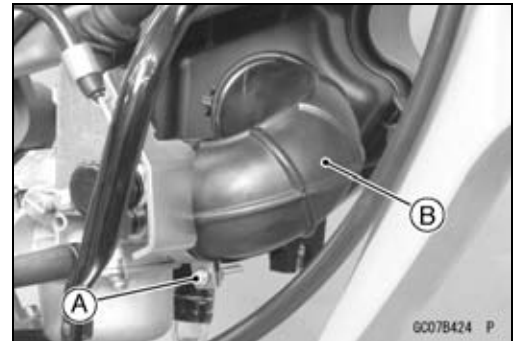
Do not force the needle jet holder [A] and main jet [B] or overtighten them. The needle jet or the carburetor body could be damaged requiring replacement.



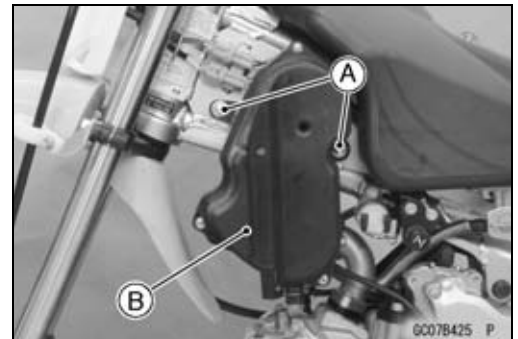
Air Cleaner

Air Cleaner Housing Removal

- Remove the shroud (see Shroud Removal in the Frame chapter).
- Loosen the clamp screw [A] and pull out the air cleaner duct [B] from the carburetor.

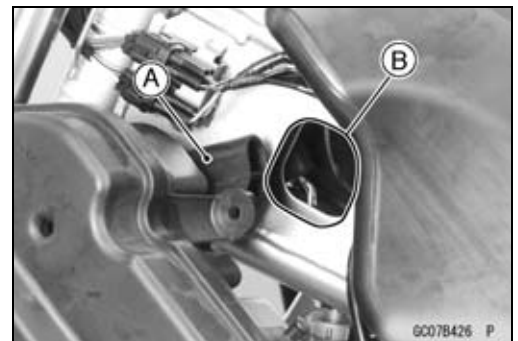


- Remove the air cleaner housing mounting bolts [A].
- Remove the air cleaner housing [B].



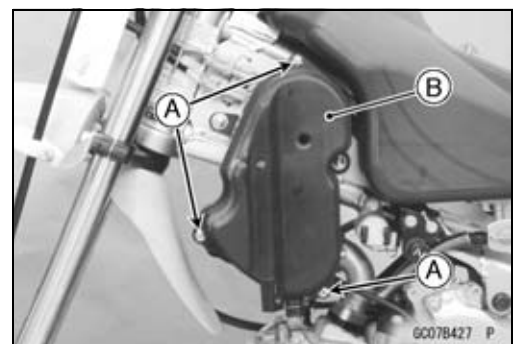
Air Cleaner Housing Installation

- Installation is the reverse of removal.
- Install the intake portion [A] of the air cleaner housing into the frame hole [B].

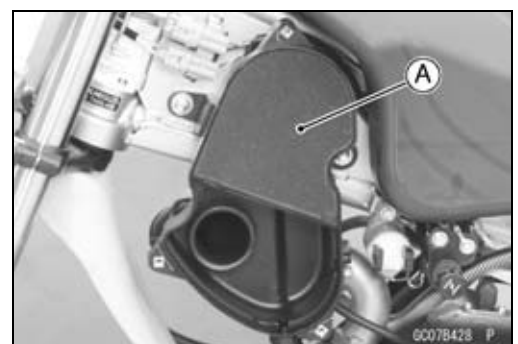


Air Cleaner Element Removal

- Remove:
 - Shroud (see Shroud Removal in the Frame chapter)
 - Screws [A]
 - Air Cleaner Cover [B]



- Pull out the element [A].
- Stuff a clean, lint-free cloth into the air cleaner housing so no dirt is allowed to enter the carburetor.
- Wipe out the inside of the air cleaner housing with a clean damp towel.



NOTICE

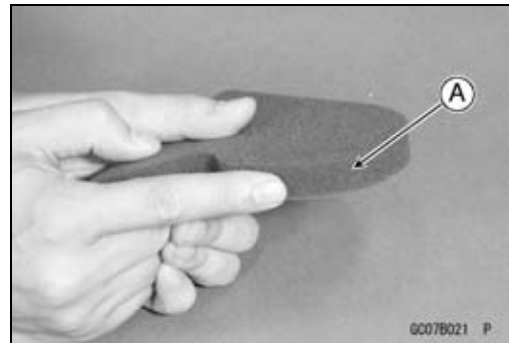
Check inside of the inlet tract and carburetor for dirt. If dirt is present, clean the inlet tract and carburetor thoroughly. You may also need to replace the element and seal the housing and inlet tract.

3-20 FUEL SYSTEM

Air Cleaner

Air Cleaner Element Installation

- Installation is the reverse of removal.
- When installing the element, coat the lip of the element with a thick layer of all purpose grease [A] to assure a complete seal against the air cleaner element base. Also, coat the base where the lip of the element fits.
- Take out the cloth from the carburetor securely.

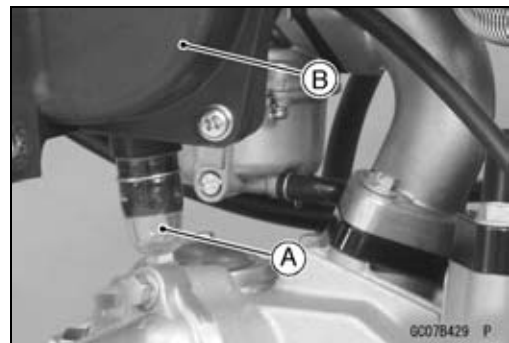


Air Cleaner Element Cleaning and Inspection

- Refer to the Air Cleaner Element Cleaning and Inspection in the Periodic Maintenance chapter.

Air Cleaner Oil Draining

- Inspect the transparent plug [A] under the air cleaner housing [B] to see if the water or oil accumulates.
- ★ If any water or oil accumulates in the cap, remove the plug and drain it.



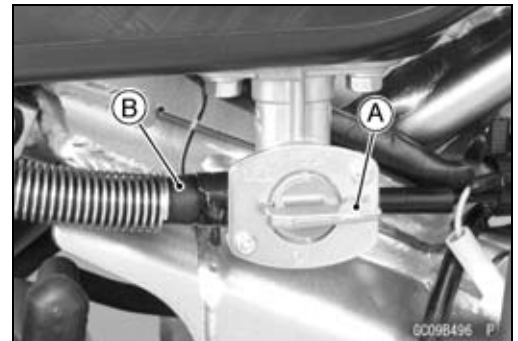
Fuel Tank

Fuel Tank Removal

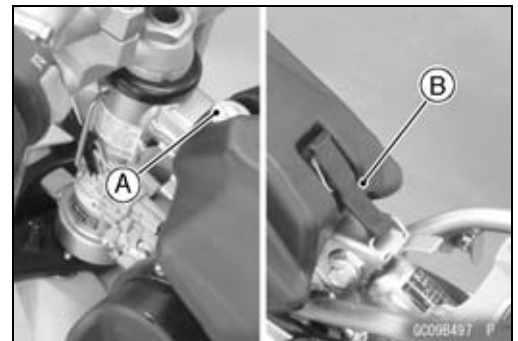
⚠ WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Always stop the engine and do not smoke. Make sure the area is well-ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

- Remove the shroud (see Shroud Removal in the Frame chapter).
- Install the fuel tank cap.
- Turn the fuel tap lever [A] to the OFF position.
- Disconnect the fuel hose [B] from the fuel tap.

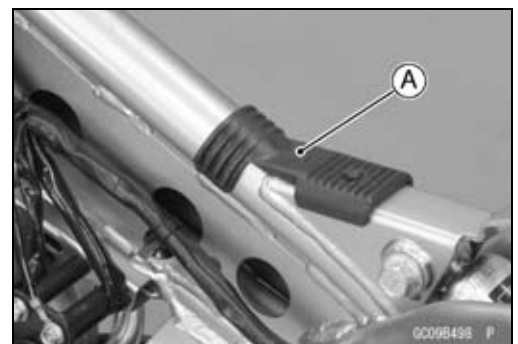


- Remove the fuel tank mounting bolt [A] and washer.
- Take off the fuel tank, and remove the rubber band [B].



Fuel Tank Installation

- Inspect the rubber damper [A] on the frame.
- ★ If the damper is damaged or deteriorated, replace it with a new one.
- Set the fuel tank on the frame.
- Connect the fuel hose to the fuel tap securely.



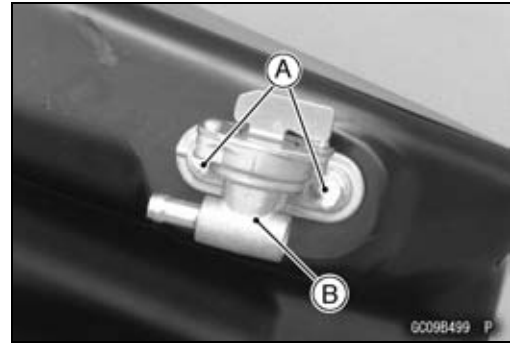
- Install the rubber band, fuel tank bolt and other removed parts.
- Insert the fuel tank breather hose outlet end into the number plate hole.

3-22 FUEL SYSTEM

Fuel Tank

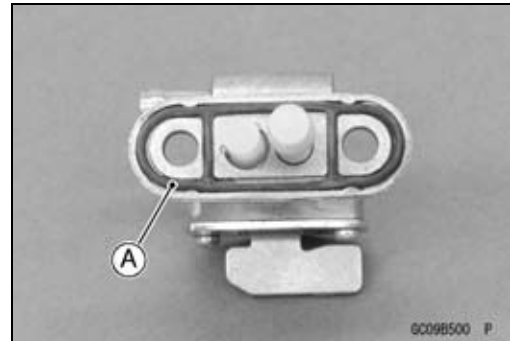
Fuel Tap Removal

- Remove the fuel tank (see Fuel Tank Removal).
- Drain the fuel.
- Remove the mounting bolts [A] and take off the fuel tap [B].



Fuel Tap Installation

- Replace the O-ring [A] with a new one.
 - Insert the filter part into the tank, and tighten the bolts.
- Torque - Fuel Tap Mounting Bolts: 4.4 N·m (0.45 kgf·m, 39 in·lb)**

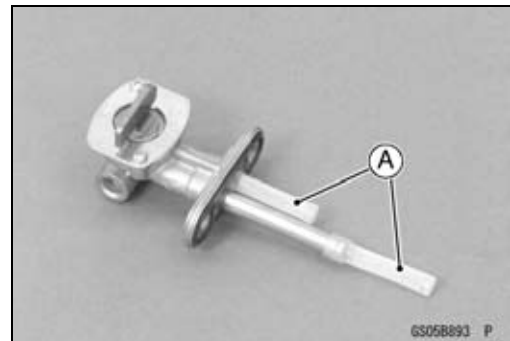


Fuel Tap Cleaning

- Refer to the Fuel Tap Cleaning in the Periodic Maintenance chapter.

Fuel Tap and Filter Inspection

- Remove the fuel tap from the fuel tank.
- Check the fuel filters [A] for any breaks or deterioration.
- ★ If the fuel filters have any breaks or are deteriorated, it may allow dirt to reach the carburetor, causing poor running. Replace the fuel tap.
- Check the fuel tap for fuel leaks.
- If the fuel tap leaks, or allows fuel to flow when it is at OFF position, replace the O-ring in the fuel tap lever with a new one.



Fuel Inspection

⚠ WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Always stop the engine and do not smoke. Make sure the area is well-ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

Fuel Tank

- Turn the fuel tap to the OFF position.
- Place a suitable container beneath the carburetor drain hose [A].
- Loosen the drain plug [B] from the bottom of the float bowl and check for water or dirt in the fuel.
- ★ If any water or dirt comes out, clean the carburetor, fuel filter, fuel tap and fuel tank.
- Tighten the drain plug securely.

