

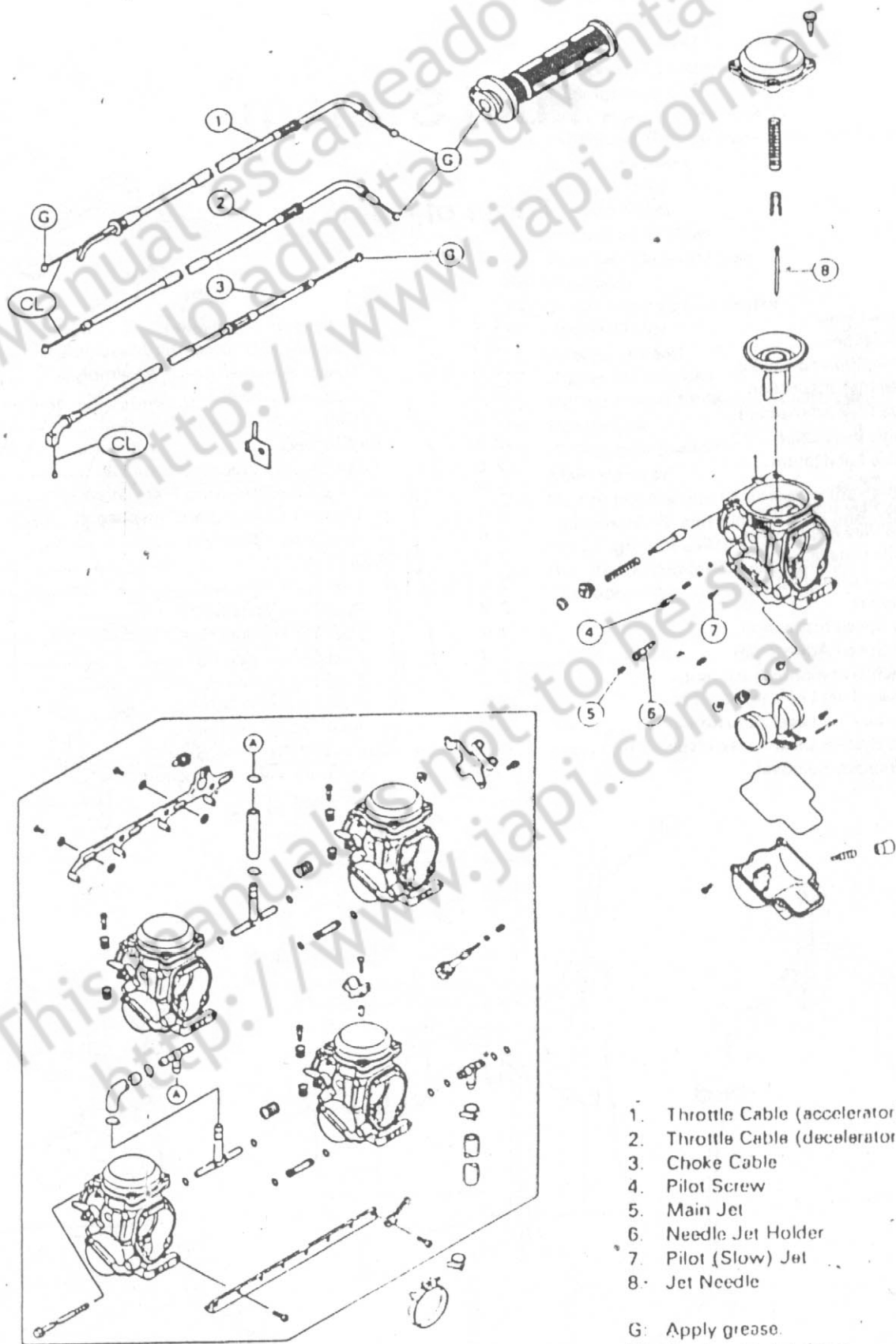
Fuel System

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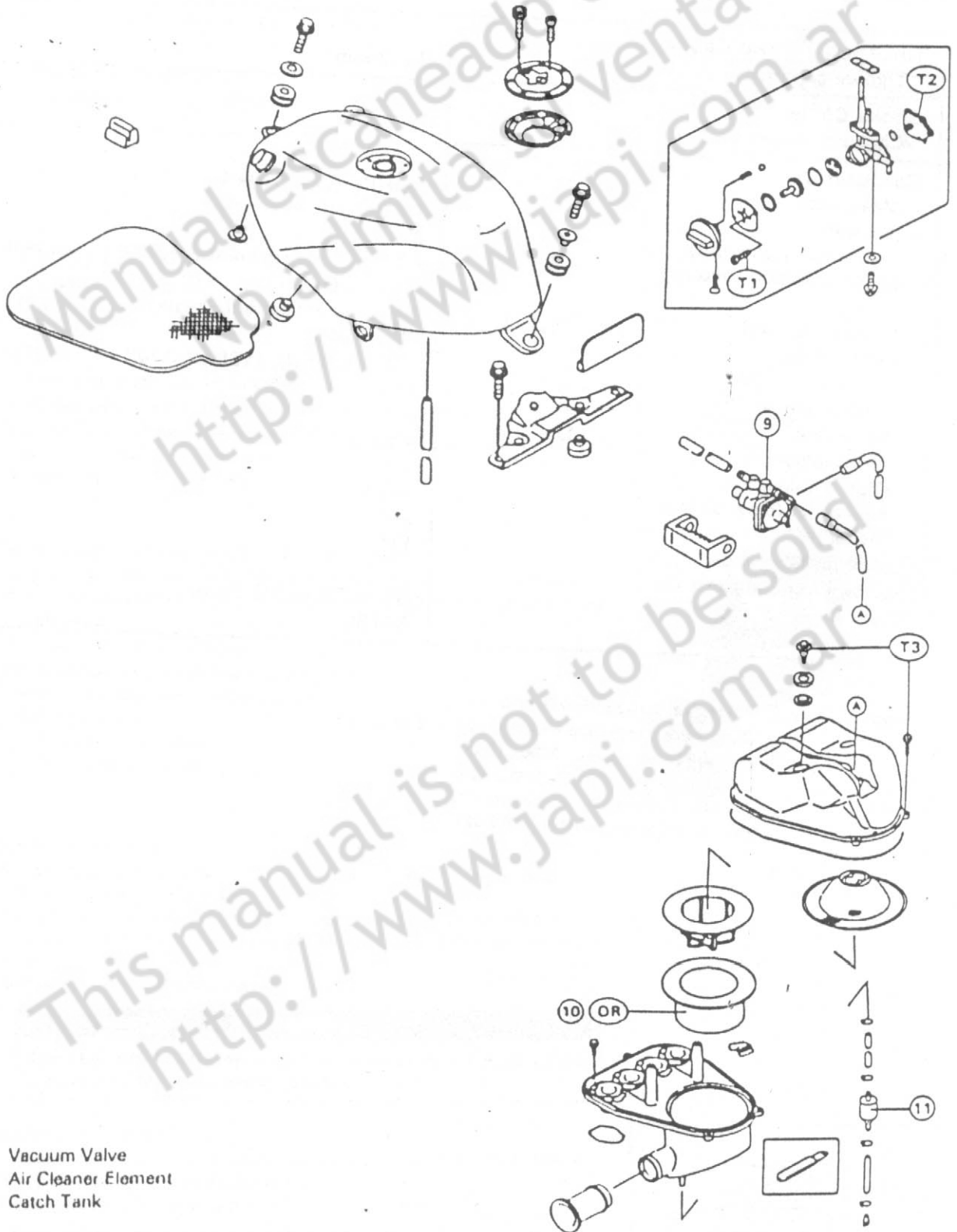
2-2 FUEL SYSTEM

Exploded View



1. Throttle Cable (accelerator)
2. Throttle Cable (decelerator)
3. Choke Cable
4. Pilot Screw
5. Main Jet
6. Needle Jet Holder
7. Pilot (Slow) Jet
8. Jet Needle

G: Apply grease.
CL: Apply cable lubricant.



9. Vacuum Valve
 10. Air Cleaner Element
 11. Catch Tank

T1: 0.8 N·m (0.08 kg·m)
 T2: 1.0 N·m (0.10 kg·m)
 T3: 5.9 N·m (0.60 kg·m)

OR. Apply high-quality-foam-air-filter oil.

2-4 FUEL SYSTEM

Specifications

Item	Standard
Throttle Grip and Cables: Throttle grip free play	2 ~ 3 mm
Choke Cable: Choke cable free play	2 ~ 3 mm
Carburetors: Make, type Idle speed Pilot screw (turns out) Synchronization vacuum Service fuel level Float Height Main jet Main air jet Needle Jet Jet needle mark Pilot jet (slow jet) Pilot air jet (slow air jet) Starter jet Throttle valve angle Air Cleaner Element Oil: Grade Viscosity	KEIHIN, CVK-D30×4 1500 ± 50 r/min (rpm), 2 ¼ ± ¼ 2.7 kPa (2 cmHg) or less difference between two cylinders 9.5 ± 1 mm below the mark 13 ± 2 mm #122 (1, 4 cyl), #125 (2, 3 cyl) #100 #6 N1QW #35 #140 #52 11° SE or SF or SG class SAE30

Special Tools - Fuel Level Gauge: 57001-1017
Carburetor Drain Plug Wrench, Hex 3: 57001-1269
Fork Oil Level Gauge: 57001-1290
Pilot Screw Adjuster, C: 57001-1292
Pilot Screw Adjuster, A: 57001-1239
Pressure Cable Luber: K56019-021

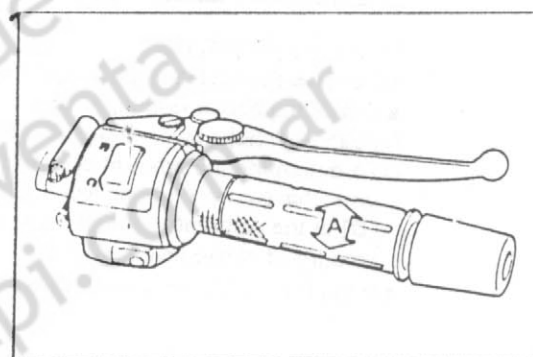
Throttle Grip and Cables

Free Play Inspection

- Check the throttle grip free play [A].
- ★ If the free play is incorrect, adjust the throttle cable.

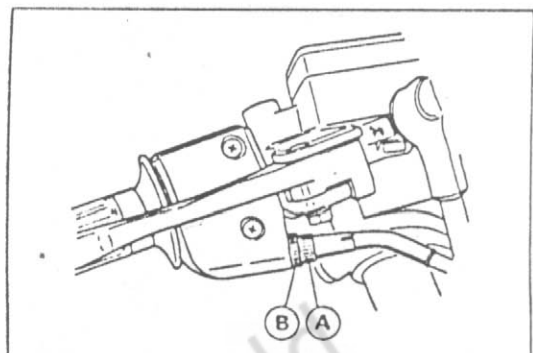
Throttle Grip Free Play

Standard: 2 ~ 3 mm



Free Play Adjustment

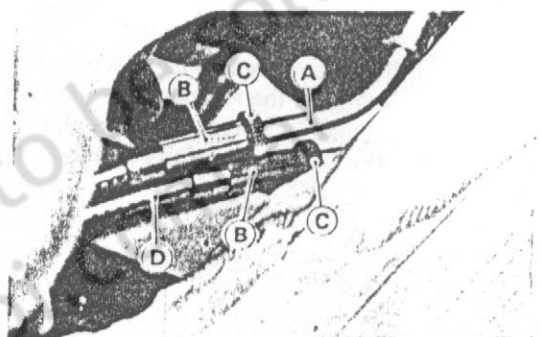
- Loosen the locknut [A].
- Turn the adjuster [B] until the proper amount of free play can be obtained.
- Tighten the locknut securely.
- ★ If the proper amount of free play cannot be obtained by using the adjuster only, use the adjusters at the carburetors side.
- Loosen the locknut, and screw the adjuster at the upper end of the accelerator cable all the way in.
- Tighten the locknut securely.



- Remove the fuel tank (see Fuel Tank Removal).
- Loosen the locknuts [C] at the middle part of the accelerator cable.
- Turn the adjusters [B] until the proper amount of throttle grip free play is obtained.
- Tighten the locknuts securely.
- ★ If the proper amount of free play can not be obtained in the adjustable range of the adjuster, use the adjuster at the upper end of the accelerator cable again.

[A] Accelerator Cable

[D] Decelerator Cable



Cable Installation

- Install the throttle cables in accordance with Cable Routing section in General Information chapter.
- Install the lower ends of the throttle cables in the cable bracket on the carburetor after installing the upper ends of the throttle cables in the grip.
- After installation, adjust each cable properly.

⚠ WARNING

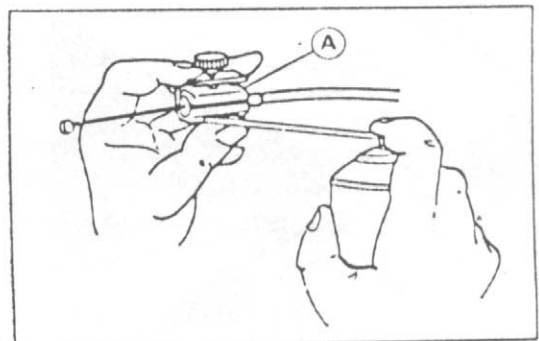
Operation with incorrectly routed or improperly adjusted cables could result in an unsafe riding condition.

Cable Lubrication

Whenever the cable is removed, lubricate the throttle cable as follows:

- Apply a thin coating of grease to the cable lower ends.
- Lubricate the cable with a penetrating rust inhibitor.

Special Tool - Pressure Cable Luber: K56019-021 [A]



2-6 FUEL SYSTEM

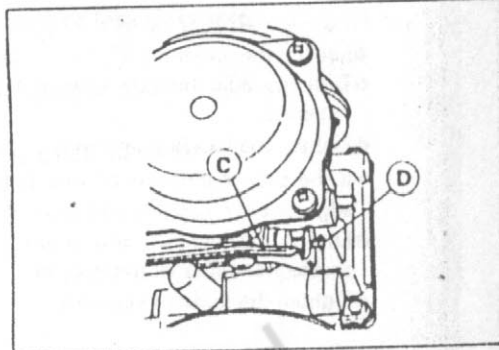
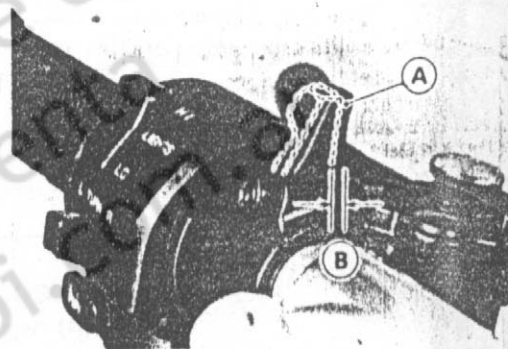
Choke Cable

Free Play Inspection

- Remove the fuel tank (see Fuel Tank Removal).
- Check the choke lever free play.
- Push the choke lever all the way to the front.
- To determine the amount of choke lever play, pull the choke lever [A] until the starter plunger lever [C] contacts with the starter plunger [D] at the carburetor; the amount of choke lever lower end travel is the amount of choke lever play [B].
- ★ If the free play is incorrect, adjust the choke cable.

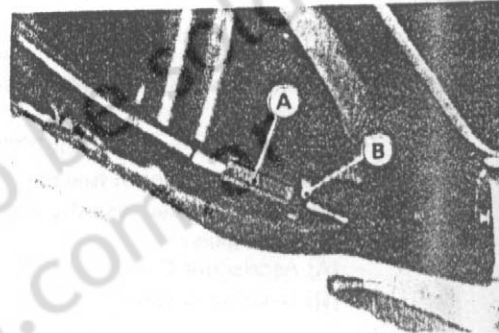
Choke Cable Free Play

Standard: 2 ~ 3 mm



Free Play Adjustment

- Remove the fuel tank (see Fuel Tank Removal).
- Loosen the locknut [B], and turn the adjuster [A] until the cable has the proper amount of free play.
- Tighten the locknut securely.



Cable Installation

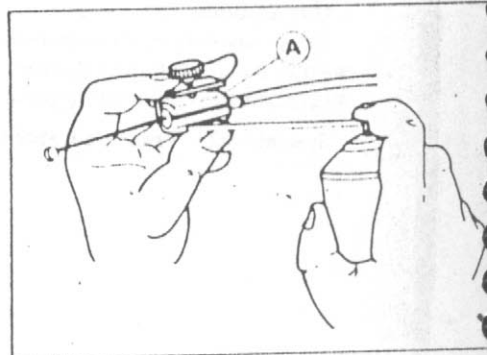
- Install the choke cable in accordance with the Cable Routing section in the General Information chapter.
- After installation, adjust the cable properly.

Cable Lubrication

Whenever the choke cable is removed, lubricate the choke cable as follows:

- Apply a thin coating of grease to the cable upper end
- Lubricate the cable with a penetrating rust inhibitor

Special Tool - Pressure Cable Luber: K56019-021 [A]



Carburetors

Idle Speed Inspection

- Start the engine and warm it up thoroughly.
- With the engine idling, turn the handlebar to both sides.
- ★ If handlebar movement changes the idle speed, the throttle cables may be improperly adjusted or incorrectly routed, or damaged. Be sure to correct any of these conditions before riding (see Cable Routing Section in General Information chapter).

⚠ WARNING

Operation with improperly adjusted, incorrectly routed, or damaged cables could result in an unsafe riding condition.

- Check idle speed
- ★ If the idle speed is out of the specified range, adjust it

Idle Speed

Standard: 1,500 \pm 50 r/min (rpm)

Idle Speed Adjustment

- Start the engine and warm it up thoroughly
- Turn the adjusting screw [A] until the idle speed is correct.
- Open and close the throttle a few times to make sure that the idle speed is within the specified range. Readjust if necessary



Synchronization Adjustment

- Remove the fuel tank (see Fuel Tank Removal).
- Supply fuel to the carburetors with an auxiliary fuel tank.
- Start the engine and warm it up thoroughly.
- Check idle speed.
- Remove the air cleaner housing and vacuum hoses
- Attach a suitable vacuum gauge to the pipes on the carburetor holder.
- Install the air cleaner housing
- Start the engine and let it idle to measure the carburetor intake vacuum.
- ★ If the vacuum is incorrect, adjust the synchronization.

Carburetor Synchronization Vacuum

Standard: Less than 2.7 kPa (2 cmHg) difference between any two carburetors.

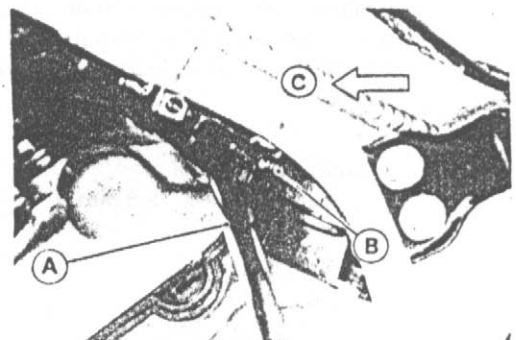
- Turn the adjusting screw to synchronize the carburetors with the pilot screw adjuster [A].

Special Tool – Pilot Screw Adjuster, A: 57001-1239

- First synchronize the left two and then the right two carburetors by means of the left and right adjusting screws. Then synchronize the left two carburetors and the right two carburetors using the center adjusting screw.

[B] Left Adjusting Screw

[C] Front



2-8 FUEL SYSTEM

★ If the carburetor synchronization cannot be obtained by using the adjusting screws, check for dirt or blockage, and then check the pilot screw settings.

Special Tool - Pilot Screw Adjuster, C: 57001-1292

- Check the carburetor synchronization again.

NOTE

○ Do not turn the pilot screws carelessly during carburetor synchronization. You may cause poor running at low engine speed.

- Check idle speed.

Service Fuel Level Inspection

WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Turn the ignition switch OFF. 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).
- Prepare an auxiliary fuel tank and connect the fuel hose to the carburetors.
- Prepare a fuel hose (6 mm out diameter and about 300 mm long).
- Connect the fuel level gauge [A] to the carburetor float bowl with the fuel hose.

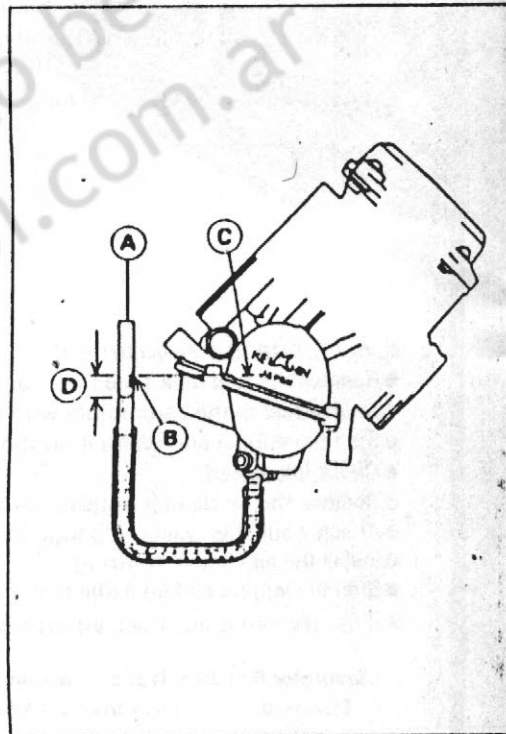
Special Tool - Fuel Level Gauge: 57001-1017

- Hold the gauge vertically against the side of the carburetor body so that the top line [B] is several millimeters higher than the mark [C] on the carburetor body.
- Feed fuel to the carburetor, then turn the carburetor drain plug out a few turns.
- Wait until the fuel level in the gauge settles.
- Keeping the gauge vertical, align the top line with the mark.

NOTE

○ Do not lower the top line below the mark of the carburetor body. If the gauge is lowered and then raised again, the fuel level measured shows somewhat higher than the actual fuel level. If the gauge is lowered too far, dump the fuel into a suitable container and start the procedure over again.

- Read the fuel level [D] in the gauge and compare to the specification.
 - Screw in the carburetor drain plug.
 - Stop feeding and remove the fuel level gauge.
- ★ If the fuel level is incorrect, adjust it (see Service Fuel Level Adjustment).



Service Fuel Level

Standard: 9.5 mm \pm 1 mm below the mark

Service Fuel Level Adjustment

⚠WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Turn the Ignition switch OFF. 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, and drain the fuel into a suitable container.
- Remove the float bowl.
- Bend the tang [A] on the float arm very slightly to change the float height. Increasing the float height lowers the fuel level and decreasing the float height raises the fuel level.

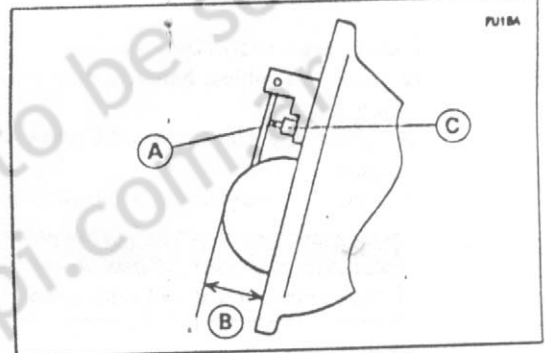
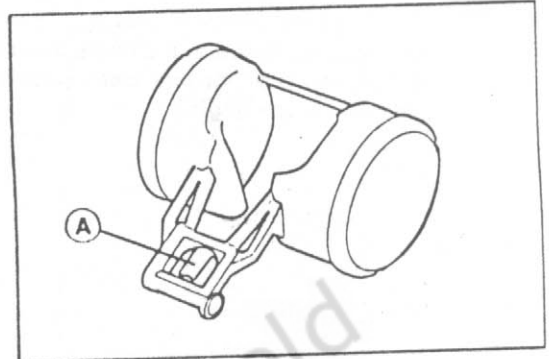
Float Height

Standard: $13 \pm 2 \text{ mm}$

NOTE

○ Do not push the needle rod [A] in during the float height measurement [B].

- Assemble the carburetor, and recheck the fuel level
- ★ If the fuel level cannot be adjusted by this method, the float or the float valve [C] is damaged.



Fuel System Cleanliness Inspection

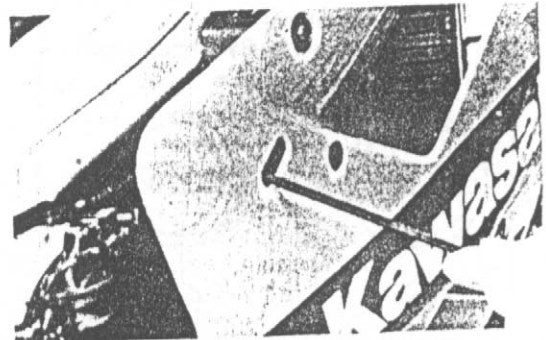
⚠WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Turn the Ignition switch OFF. 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)
 - Air Cleaner Housing (see Air Cleaner Housing Removal)
- Connect a suitable hose to the fitting at the bottom of each carburetor float bowl.
- Run the lower ends of the hoses into a suitable container.
- Turn out each drain plug a few turns and drain the float bowls.

Special Tool – Carburetor Drain Plug Wrench, Hex 3: 57001-1269

- Check to see if water or dirt comes out.
- Tighten the drain plugs.
- ★ If any water or dirt appears during the above inspection, clean the fuel system (see Carburetor Cleaning and Fuel Tank Cleaning).



Carburetor Removal

⚠WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Turn the ignition switch OFF. 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:
 - Seats (see Frame chapter)
 - Fuel Tank (see Fuel Tank Removal)
 - Air Cleaner Housing (see Air Cleaner Housing Removal)
- Loosen the carburetor clamps, and remove the carburetors.
- Stuff pieces of lint-free, clean cloth into the carburetor holders to keep dirt out of the engine.

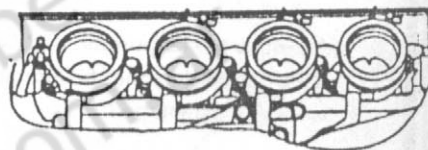
Carburetor Installation

- Route the cables, harness, and hoses correctly (see General Information chapter).
- Tighten the clamps for the carburetor holders at the position in the figure.
- Check fuel leakage from the carburetors.

⚠WARNING

Fuel spilled from the carburetors is hazardous.

- Adjust the following items if necessary.
 - Idle Speed
 - Carburetor Synchronization
 - Throttle Cables
 - Choke Cable



Carburetor Disassembly/Assembly

⚠WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Turn the ignition switch OFF. 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 in the pilot screw and count the number of turns until it seats fully but not tightly, and then remove the screw. This is to set the screw to its original position when assembling.

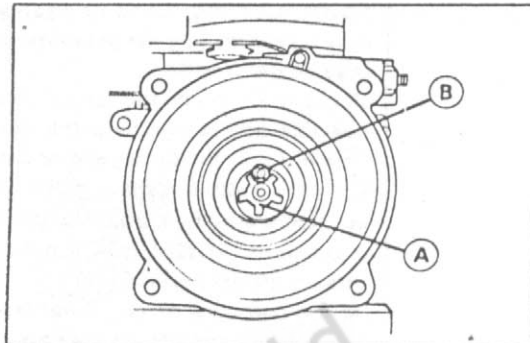
- After installing the upper chamber cover, check that the vacuum piston slides up and down smoothly without binding in the carburetor bore.

CAUTION

During carburetor disassembly, be careful not to damage the diaphragm. Never use a sharp edge to remove the diaphragm.

- Turn in the pilot screw fully but not tightly, and then back it out the same number of turns counted during disassembly.

- Slip the needle through the hole in the center of the vacuum piston, and put the spring seat [A] on the top of the needle. Turn the seat so that it does not block the hole [B] at the bottom of the vacuum piston.



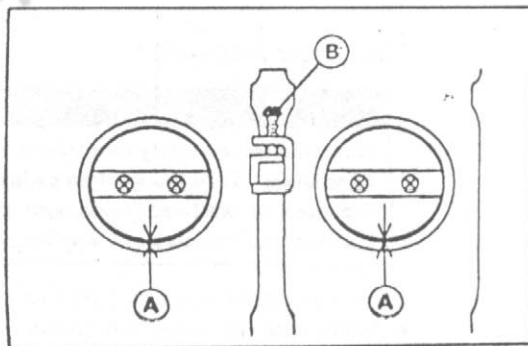
Carburetor Separation/Assembly

- Read the WARNING in Carburetor Disassembly/Assembly.
- The center lines of the carburetor bores must be parallel both horizontally and vertically. If they are not, loosen the mounting screws and align the carburetors on a flat surface. Retighten the mounting screws.
- After assembling the choke mechanism, check to see that the starter plunger lever slides right to left smoothly without abnormal friction.

CAUTION

Fuel mixture trouble could result if the starter plunger lever does not seat properly in its rest position after the choke lever is returned.

- Visually synchronize the throttle (butterfly) valves.
- Check to see that all throttle valves open and close smoothly without binding when turning the pulley.
- Visually check the clearance [A] between the throttle valve and the carburetor bore in each carburetor.
- ★ If there is a difference between any two carburetors, turn the balance adjusting screw(s) [B] to obtain the same clearance.



*Carburetor Cleaning***⚠WARNING**

Clean the carburetors in a well-ventilated area, and take care that there is no sparks or flame anywhere near the working area; this includes any appliance with a pilot light. Because of the danger of highly flammable liquids, do not use gasoline or low flash-point solvents to clean the carburetors.

CAUTION

Do not use compressed air on an assembled carburetor, or the floats may be crushed by the pressure, and the vacuum piston diaphragms may be damaged.

Remove as many rubber or plastic parts from the carburetor as possible before cleaning the carburetor with a cleaning solution. This will prevent damage to or deterioration of the parts.

The carburetor body has plastic parts that cannot be removed. Do not use a strong carburetor cleaning solution which could attack these parts; instead, use a mild high flash-point cleaning solution safe for plastic parts.

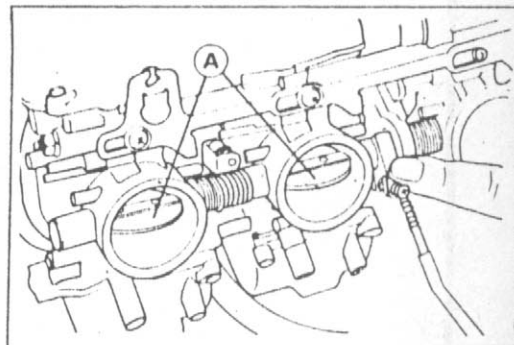
Do not use wire or any other hard instrument to clean carburetor parts, especially jets, as they may be damaged.

- Disassemble the carburetor (see Carburetor Disassembly/Assembly).
- Immerse all the metal parts in a carburetor cleaning solution.
- Rinse the parts in water.
- When the parts are clean, dry them with compressed air.
- Blow through the air and fuel passages with compressed air.
- Assemble the carburetor.

*Carburetor Inspection***⚠WARNING**

Gasoline is extremely flammable and can be explosive under certain conditions. Turn the ignition switch OFF. 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 carburetors (see Carburetor Removal).
- Before disassembling the carburetors, check the fuel level (see Fuel Level Inspection).
- ★ If the fuel level is incorrect, inspect the rest of the carburetor before correcting it.
- Move the starter plunger lever to the left and release it to check that the starter plungers move smoothly and return by spring tension.
- ★ If the starter plungers do not work properly, replace the carburetors.
- Turn the throttle cable pulley to check that the throttle butterfly valves [A] move smoothly and return by spring tension.
- ★ If the throttle valves do not move smoothly, replace the carburetors.



- Disassemble the carburetors (see Carburetor Disassembly/Assembly).
- Clean the carburetors.
- Check that the O-rings on the float bowl and pilot screw and the diaphragm on the vacuum piston are in good condition.

★ If any of the O-rings or diaphragms are not in good condition, replace them.

- Check the plastic tip [A] of the float valve needle [B]. It should be smooth, without any grooves, scratches, or tears.

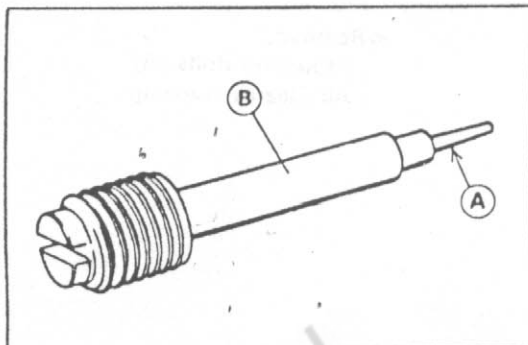
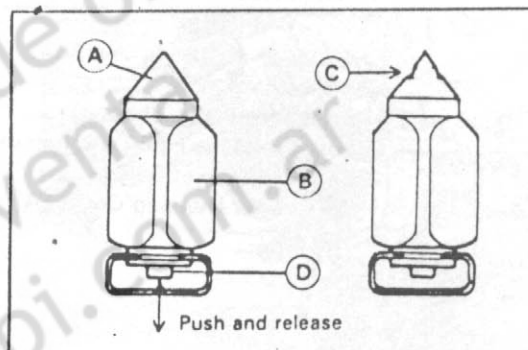
★ If the plastic tip is damaged [C], replace the needle.

- Push the rod [D] in the other end of the float valve needle, and then release it.

★ If the rod does not spring out, replace the needle.

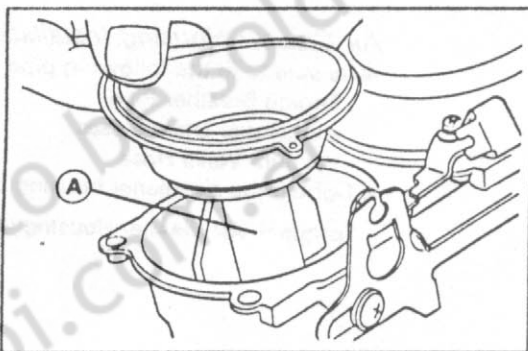
- Check the tapered portion [A] of the pilot screw [B] for wear or damage.

★ If the pilot screw is worn or damaged on the tapered portion, it will prevent the engine from idling smoothly. Replace it.



- Check that the vacuum piston [A] moves smoothly in the carburetor body. The surface of the piston must not be excessively worn.

★ If the vacuum piston does not move smoothly, or if it is very loose in carburetor body, replace the carburetor.

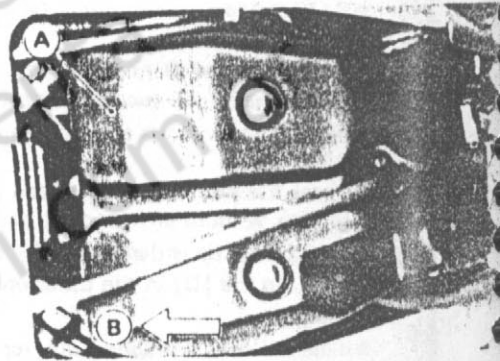


2-14 FUEL SYSTEM

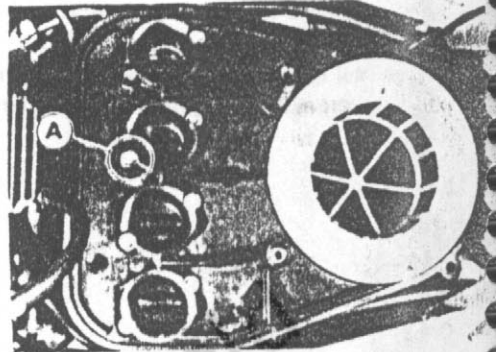
Air Cleaner

Air Cleaner Housing Removal

- Remove:
 - Seats (see Frame chapter)
 - Fuel Tank (see Fuel Tank Removal)
 - Engine Sprocket Cover
 - Air Cleaner Housing Cover [A]
 - [B] Front



- Remove:
 - Mounting Bolts [A]
 - Air Cleaner Housing



Air Cleaner Housing Installation

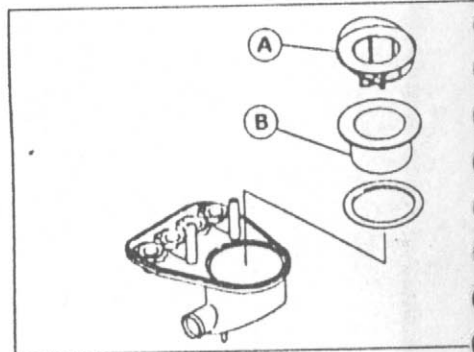
- Be sure to fit the following pipe and hose.
 - Engine Breather Pipe
 - Air Cleaner Drain Hoses
 - Vacuum Valve Hose
- Tighten the air cleaner housing cover bolts.
Torque — Air Cleaner Housing Cover Bolts: 5.9 N·m (0.60 kg·m)

Element Cleaning and Inspection

⚠WARNING

Clean the element in a well-ventilated area, and make sure that there are no sparks or flame anywhere near the working area. Because of the danger of highly flammable liquids, do not use gasoline or a low flash-point solvent to clean the element.

- Remove:
 - Fuel Tank (see Fuel Tank Removal)
 - Air Cleaner Housing Cover
 - Element Holder [A]
 - Element [B]
- Clean the element in a bath of high flash-point solvent, and then dry it with compressed air or by shaking it.
- After cleaning, saturate a clean, lint-free towel with SE, SF, or SG class SAE30 oil and apply the oil to the element by tapping the element outside with the towel.
- Visually check the element for tears or breaks.
- ★ If the element has any tears or breaks, replace the element.

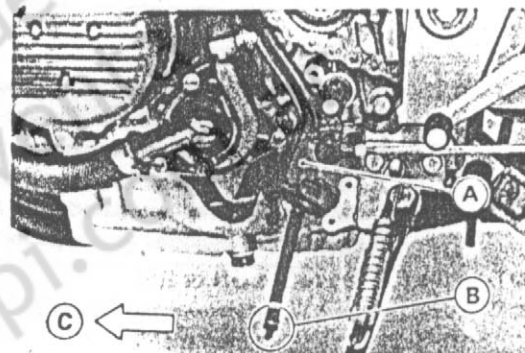


Air Cleaner Draining

A catch tank is provided beneath the air cleaner housing, and catches the water or oil from the bottom of the housing. Usually water or oil does not collect at the bottom of the housing. In the event that rain water is drawn in through the air cleaner, or if engine oil is blown back, drain the housing.

- Visually check the catch tank [A] if the water or oil accumulates in the tank.
- ★ If any water or oil accumulates in the tank, drain it by taking off the drain plug [B] at the lower end of the drain hose.
- Be sure to install the plug firmly, or the air will be drawn in through it.

[C] Front



⚠ WARNING

Be sure to install the plug in the drain hose after draining. Oil could drain from the open hose and get on the tires which could cause an accident and injury.

2-16 FUEL SYSTEM

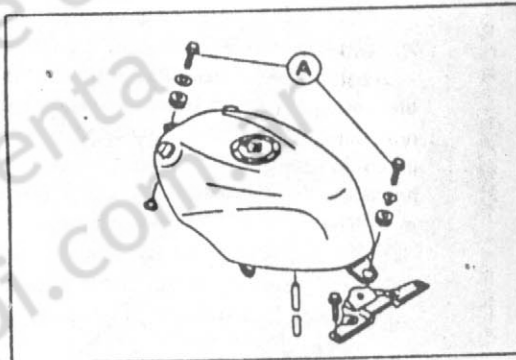
Fuel Tank

Fuel Tank Removal

⚠ WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Turn the ignition switch OFF. 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 ON or RES position.
- Remove:
 - Seat, Side Cover (see Frame chapter)
 - Air Intake Ducts
 - Fuel Hose
 - Vacuum Hose
 - Bolts [A]



Fuel Tank Installation

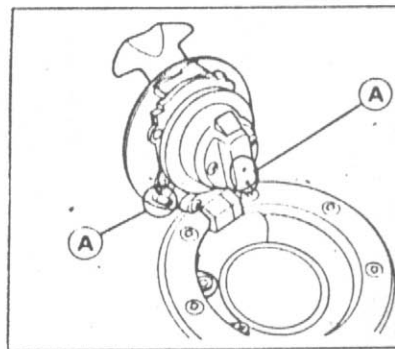
- Read the above WARNING.
- Route the hoses and leads correctly (see General Information chapter).
- Be sure the hoses are clamped securely to prevent leaks.

Fuel Tank Inspection

- Remove the hose(s) from the fuel tank, and open the tank cap.
 - Check to see if the breather pipe in the tank is not clogged. Check the tank cap breather also.
- ★ If they are clogged, remove the tank and drain it, and then blow the breather free with compressed air.

CAUTION

Do not apply compressed air to the air vent holes [A] in the tank cap. This could cause damage and clogging of the labyrinth in the cap.



Fuel Tank Cleaning

⚠WARNING

Clean the tank in a well-ventilated area, and take care that there are no sparks or flame anywhere near the working area. Because of the danger of highly flammable liquids, do not use gasoline or low flash-point solvents to clean the tank.

- Remove the fuel tank and drain it.
- Pour some high flash-point solvent into the fuel tank and shake the tank to remove dirt and fuel deposits.
- Pour the solvent out of the tank.
- Remove the fuel tap from the tank (see Fuel Tap Removal).
- Clean the fuel tap filter screens in a high flash-point solvent.
- Pour high flash-point solvent through the tap in all lever positions.
- Dry the tank and tap with compressed air.
- Install the tap in the tank.
- Install the fuel tank.

Fuel Tap Removal

- Remove the fuel tank and drain it.
- Remove the tap bolts with nylon flat washers and take out the fuel tap.

Fuel Tap Installation

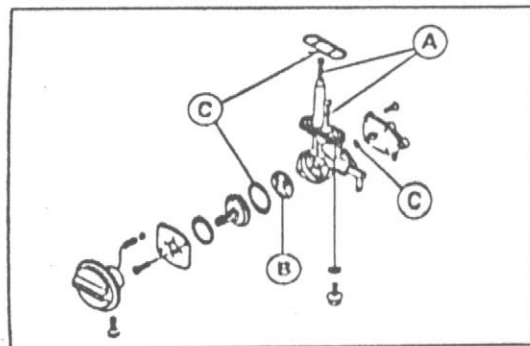
- Be sure the O-ring is in good condition to prevent leaks.
- Be sure to clamp the fuel hoses to the tap to prevent leaks.
- Be sure the nylon washers are in good conditions to prevent leaks.
- Do not use steel washers in place of the nylon washers, because they will not seal the bolts properly and fuel will leak.

Fuel Tap Inspection

- Remove the fuel tap (see Fuel Tap Removal).
- Check the fuel tap filter screens [A] for any breaks or deterioration.
- ★ If the fuel tap screens have any breaks or are deteriorated, they may allow dirt to reach the carburetor, causing poor running. Replace the fuel tap.
- ★ If the fuel tap leaks, or allows fuel to flow when it is at ON or RES position without engine running, replace the damaged gasket [B] or O-ring [C].

Torque - Fuel Tap Plate Screws: 0.8 N-m (0.08 kg-m)

Fuel Tap Diaphragm Plate Screws: 1.0 N-m (0.10 kg-m)



2-18 FUEL SYSTEM

Vacuum Valve

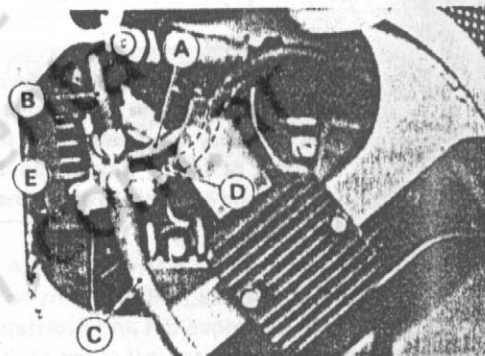
Vacuum Valve Inspection

● Remove:

Fuel Tank (see Fuel Tank Removal)
Vacuum Valve Hoses

● Remove the vacuum valve from the rubber damper.

- [A] Carburetor Air Vent Hose
- [B] To the Atmosphere
- [C] Air Cleaner Hose
- [D] Vacuum Pipe
- [E] Vacuum Valve



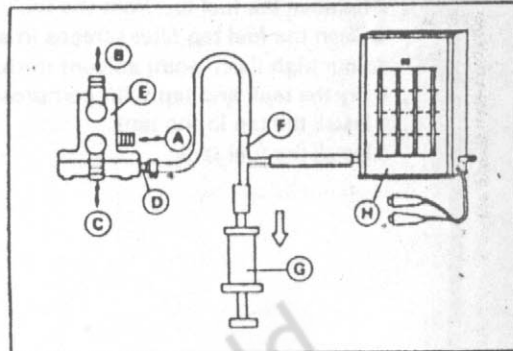
○ Using a suitable vacuum gauge and fork oil level gauge, inspect the vacuum valve operation.

Special Tool – Fork Oil Level Gauge: 57001-1290

○ When applying vacuum (1.5 cmHg) to the vacuum sensing fitting [D], air flows from pipe [A] to pipe [C], and vice versa.

○ When stopping applying vacuum, air flows from pipe [A] to pipe [B], and vice versa.

★ Nevertheless if the vacuum valve does not operate as described, replace it with a new one.



CAUTION

Do not use compressed air during the valve check, or the vacuum valve may be damaged.

- [A] Carburetor Air Vent Joint
- [B] Atmosphere Joint
- [C] Air Cleaner Joint
- [D] Vacuum Pipe
- [E] Vacuum Valve
- [F] T Joint Fitting
- [G] Fork Oil Level Gauge
- [H] Vacuum Gauge