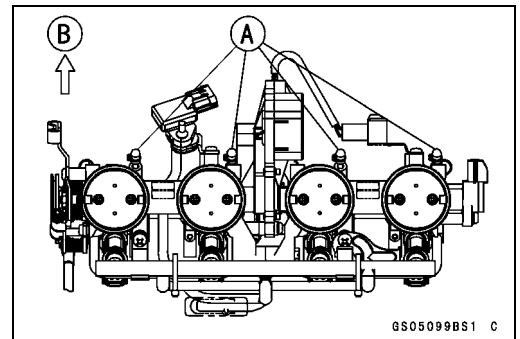
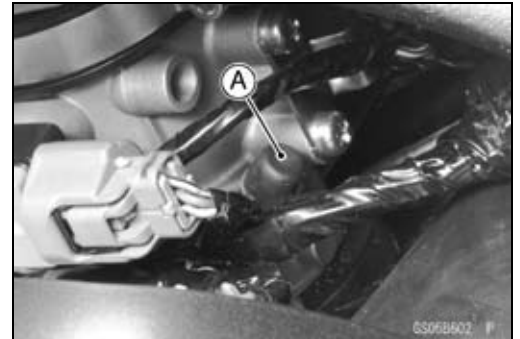


Maintenance Procedure

- Remove:
Subframe Bolts [A] with Washer
Right Fairing Bracket Bolt (Front Side)



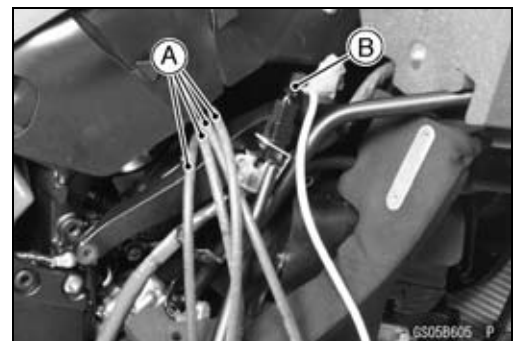
- Pull off the rubber caps [A] from the fittings of each throttle body.
- For the rubber cap #2, remove the air cleaner duct.
Front [B]



- Pull off the air switching valve hose [A] from the air cleaner housing.
- Plug the air switching valve hose end and air cleaner housing hole.



- Connect a vacuum gauge and hoses [A] to the fittings on the throttle body.
- **Special Tool - Vacuum Gauge: 57001-1369**
- Connect a highly accurate tachometer [B] to one of the stick coil primary leads.



2-18 PERIODIC MAINTENANCE

Maintenance Procedure

- Start the engine and warm it up thoroughly.
- Check the idle speed, using a highly accurate tachometer [A].
- ★ If the idle speed is out of the specified range, adjust it with the adjust screw.

CAUTION

Do not measure the idle speed by the tachometer of the meter unit.

- While idling the engine, inspect the throttle body vacuum, using the vacuum gauge [B].

Throttle Body Vacuum

**Standard: 33 ±1.33 kPa (250 ±10 mmHg) at Idle Speed
1 100 ±50 r/min (rpm)**

- ★ If any vacuum is not within specifications, first synchronize the balance of the left (#1, #2 throttle valves) and right (#3, #4 throttle valves) assemblies.

Example:

- #1: 240 mmHg
- #2: 250 mmHg
- #3: 230 mmHg
- #4: 240 mmHg

- With the engine at the correct idle speed, equalize higher vacuum of #1 or #2 (for example 250 mmHg) to higher vacuum of #3 or #4 (for example 240 mmHg) by turning the center adjusting screw [A].
Pilot Screw Adjuster, C [B]

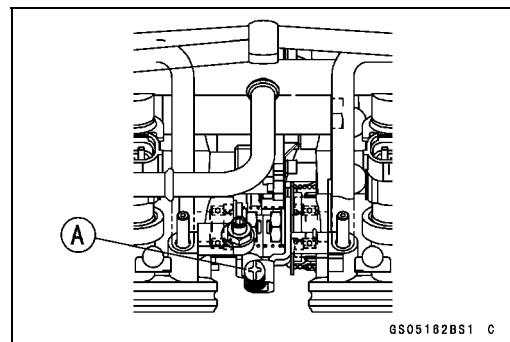
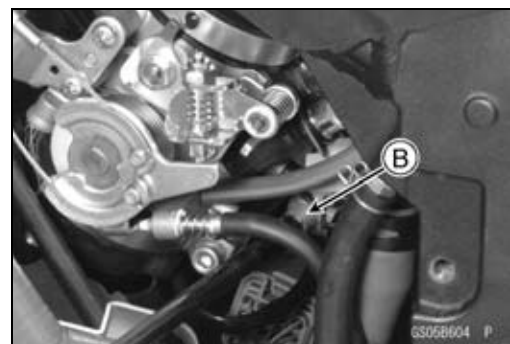
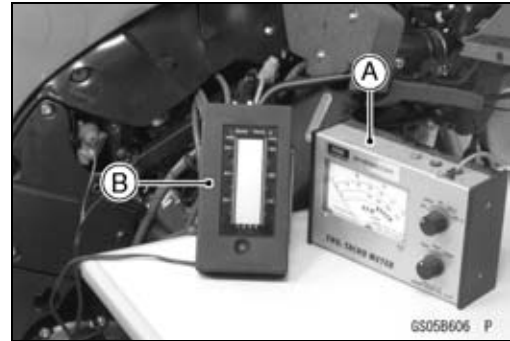
Special Tool - Pilot Screw Adjuster, C: 57001-1292

Pilot Screw Adjuster Adapter, φ5: 57001-1372

NOTE

○ After adjustment, the final vacuum measurement between the highest throttle valves may not be 250 mmHg (for example). The goal is to have the highest two vacuums between the left (#1 and #2) and right (#3 and #4) banks be the same and be within the service limits.

- Open and close the throttle after each measurement, and adjust the idle speed as necessary.
- Once the throttle valves have been synchronized, inspect output voltage of the main throttle sensor to ensure proper operation (procedure is explained at the end of this section).

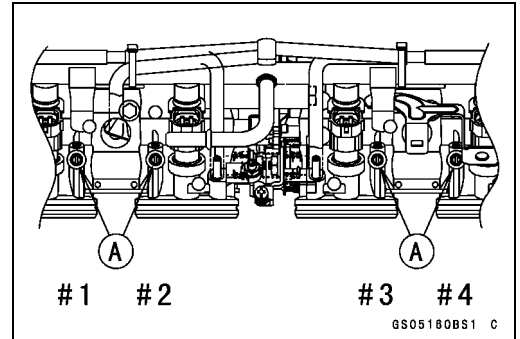
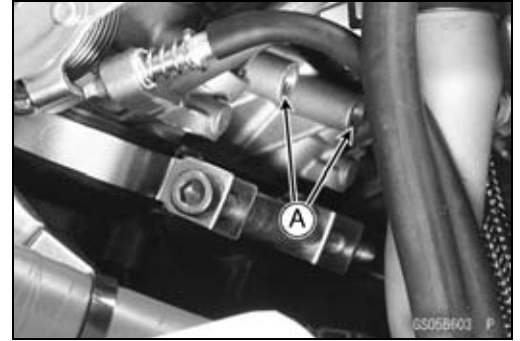


Maintenance Procedure

★ If a value of measured vacuum pressure is out of the specified range after synchronization, adjust the bypass screws [A].

**Special Tool - Pilot Screw Adjuster, C: 57001-1292
Pilot Screw Adjuster Adapter, φ5: 57001-1372**

- Adjust lower vacuum between #1 and #2 to higher vacuum of #1 and #2.
- Adjust the lower vacuum between #3 and #4 to higher vacuum of #3 and #4.
- Open and close the throttle valves after each measurement, and adjust the idle speed as necessary.
- Check the vacuums as before.
- ★ If all vacuums are within the specification range, finish the engine vacuum synchronization.
- ★ If any vacuum cannot be adjusted within the specification, remove the bypass screws #1 ~ #4 and clean them.

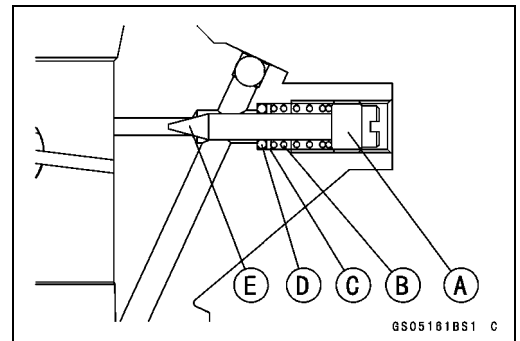


- Turn in the bypass screw [A] with counting the number of turns until it seals fully but not tightly. Record the number of turns.

Torque - Bypass Screw: 0.2 N·m (0.02 kgf·m, 1.8 in·lb)

CAUTION

Do not over tighten them. They could be damaged, requiring replacement.



- Remove:
 - Bypass Screw
 - Spring [B]
 - Washer [C]
 - O-ring [D]
- Check the bypass screw and its hole for carbon deposits.
- ★ If any carbons accumulate, wipe the carbons off from the bypass screw and the hole, using a cotton pad penetrated with a high-flash point solvent.
- Replace the O-ring with a new one.
- Check the tapered portion [E] of the bypass screw for wear or damage.
- ★ If the bypass screw is worn or damaged, replace it.
- Turn in the bypass screw until it seats fully but not tightly.

Torque - Bypass Screw: 0.2 N·m (0.02 kgf·m, 1.8 in·lb)

2-20 PERIODIC MAINTENANCE

Maintenance Procedure

- Back out the same number of turns counted when first turned in. This is to set the screw to its original position.

NOTE

○A throttle body has different “turns out” of the bypass screw for each individual unit. On setting the bypass screw, use the “turns out” determined during disassembly.

- Repeat the same procedure for other bypass screws.
- Repeat the synchronization.
- ★ If the vacuums are correct, check the output voltage of the main throttle sensor (see Output Voltage Inspection in the Main Throttle Sensor Section).

Main Throttle Sensor Output Voltage

Connections to ECU

Meter (+) → Y/W lead (terminal 26)

Meter (–) → BR/BK lead (terminal 34)

Standard: DC 0.61 ~ 0.63 V (at idle throttle opening)

- ★ If the output voltage is out of the range, check the throttle input voltage of the main throttle sensor (see Input Voltage Inspection in the Main Throttle Sensor Section).
- Remove the vacuum gauge hoses and install the rubber caps on the original position.
- For the California Model, install the vacuum hoses.
- Route the vacuum hoses according to Cable, Wire, and Hose Routing section in the Appendix chapter. Refer to the diagram of the evaporative emission control system in the Fuel System (DFI) chapter too.

Idle Speed Inspection

- Start the engine and warm it up thoroughly.
- With the engine idling, turn the handlebar to both sides [A].
- ★ 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, Wire, and Hose Routing section in the Appendix chapter).

⚠ WARNING

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

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

Idle Speed

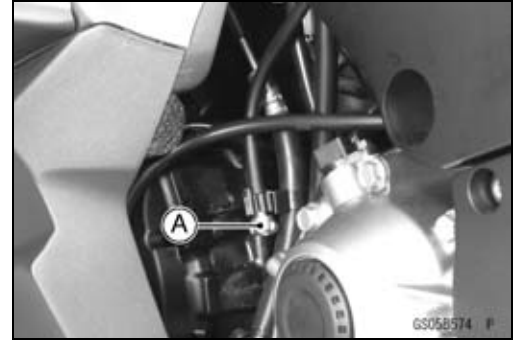
Standard: 1 100 ±50 r/min (rpm)



Maintenance Procedure

Idle Speed Adjustment

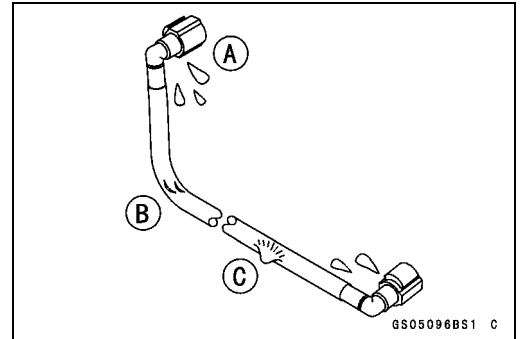
- Start the engine and warm it up thoroughly.
- Turn the adjusting screw [A] until the idle speed is correct.
- Open and close the throttle a few times to make sure that the idle speed is within the specified range. Readjust if necessary.



Fuel Hose Inspection (fuel leak, damage, installation condition)

○ If the motorcycle is not properly handled, the high pressure inside the fuel line can cause fuel to leak [A] or the hose to burst.

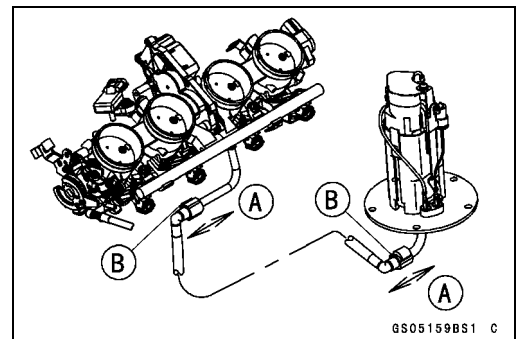
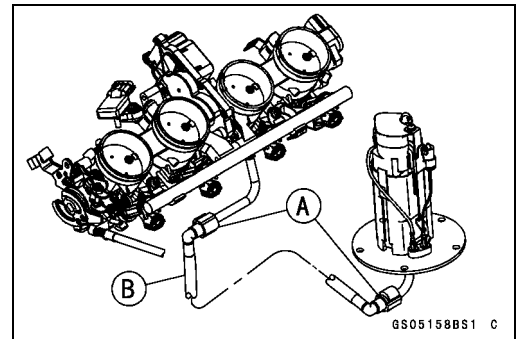
- Remove:
 - Fuel Tank (see Fuel Tank Removal in the Fuel System (DFI) chapter)
 - Left middle fairing (see Middle Fairing Removal in the Frame chapter)
- Check the fuel hose.
- ★ Replace the fuel hose if any fraying, cracks [B] or bulges [C] are noticed.
- Check that the hoses are routed according to Cable, Wire, and Hose Routing section in the Appendix chapter.
- ★ Replace the hose if it has been sharply bent or kinked.
- Hose Joints [A]
- Fuel Hose [B]



- Check that the hose joints are securely connected.
- Push and pull [A] the hose joint [B] back and forth more than two times, and make sure it is locked.
- ★ If it does not locked, reinstall the hose joint.

⚠ WARNING

Make sure the hose joint is installed correctly on the delivery pipe by sliding the joint, or the fuel could leak.



2-22 PERIODIC MAINTENANCE

Maintenance Procedure

Cooling System

Coolant Level Inspection

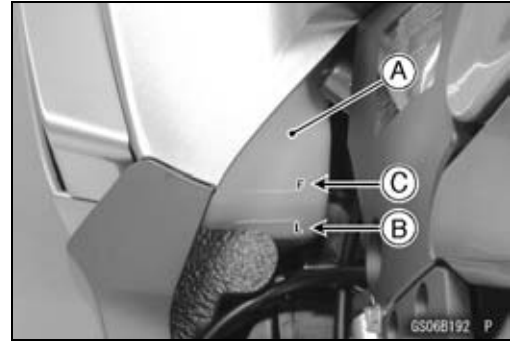
NOTE

○ Check the level when the engine is cold (room or ambient temperature).

- Check the coolant level in the reserve tank [A] with the motorcycle held perpendicular (Do not use the sidestand).
- ★ If the coolant level is lower than the "L" level line [B], unscrew the reserve tank cap and add coolant to the "F" level line [C].

"L": low

"F": full



CAUTION

For refilling, add the specified mixture of coolant and soft water. Adding water alone dilutes the coolant and degrades its anticorrosion properties. The diluted coolant can attack the aluminum engine parts. In an emergency, soft water alone can be added. But the diluted coolant must be returned to the correct mixture ratio within a few days.

If coolant must be added often or the reservoir tank has run completely dry, there is probably leakage in the cooling system. Check the system for leaks.

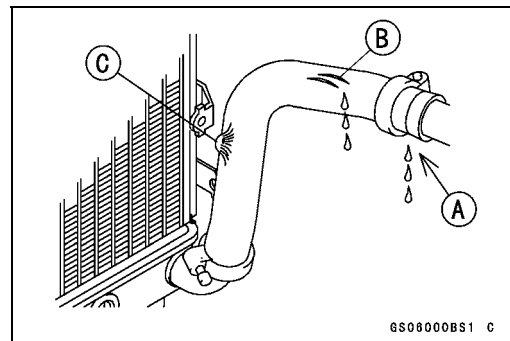
Coolant ruins painted surfaces. Immediately wash away any coolant that spills on the frame, engine, wheels or other painted parts.

Radiator Hose and Pipe Inspection

(Coolant leak, damage, Installation Condition)

- The high pressure inside the radiator hose can cause coolant to leak [A] or the hose to burst if the line is not properly maintained.
- Visually inspect the hoses for signs of deterioration. Squeeze the hoses. A hose should not be hard and brittle, nor should it be soft or swollen.
- ★ Replace the hose if any fraying, cracks [B] or bulges [C] are noticed.
- Check that the hoses are securely connected and clamps are tightened correctly.

Torque - Radiator Hose Clamp Screws: 2.0 N·m (0.20 kgf·m, 18 in·lb)

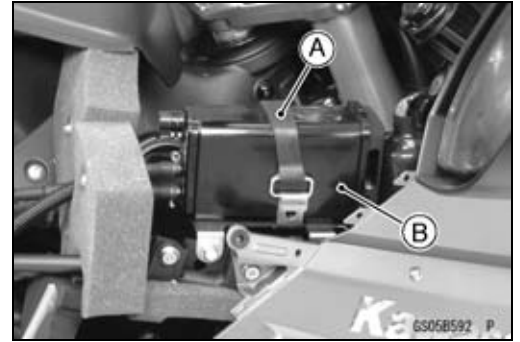


Maintenance Procedure

Evaporative Emission Control System (California Model)

Evaporative Emission Control System Inspection

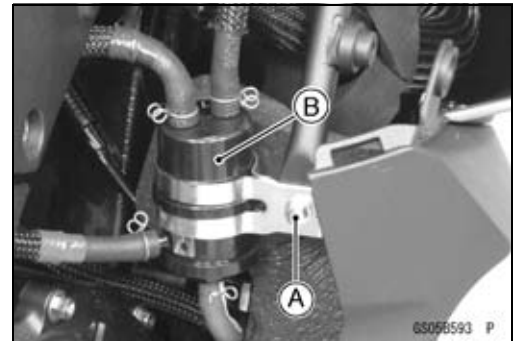
- Remove:
 - Rear Right Middle Fairing (see Middle Fairing Removal in the Frame chapter)
 - Band [A]
 - Canister [B]
- Disconnect the hoses from the canister.
- Visually inspect the canister for cracks or other damage.
- ★ If the canister has any cracks or bad damage, replace it with a new one.



NOTE

○ *The canister is designed to work well through the motorcycle's life without any maintenance if it is used under normal conditions.*

- Remove the bolt [A].
- Disconnect the hoses from the separator.
- Remove the separator [B].
- Visually inspect the separator for cracks and other damage.
- ★ If the separator has any cracks or damage, replace it with a new one.
- To prevent the gasoline from flowing into or out of the canister, hold the separator perpendicular to the ground.
- Check the hoses of the evaporative emission control system as follows.
 - Check that the hoses are securely connected and clips are in position.
 - Replace any kinked, deteriorated or damaged hoses.
 - Route the hoses according to Cable, Wire, and Hose Routing section in the Appendix chapter. Refer to the diagram of the evaporative emission control system in the Fuel System (DFI) chapter too.
 - When installing the hoses, avoid sharp bending, kinking, flattening or twisting, and route the hoses with a minimum of bending so that the emission flow will not be obstructed.



Air Suction System

Air Suction System Damage Inspection

- Remove the fairing bracket (see Fairing Bracket Removal in the Frame chapter).
- Pull the air switching valve hose [A] out of the frame.



2-24 PERIODIC MAINTENANCE

Maintenance Procedure

- Start the engine and run it at idle speed.
- Plug [A] the air switching valve hose end with your finger and feel vacuum pulsing in the hose.
- ★ If there is no vacuum pulsation, check the hose line for leak. If there is no leak, check the air switching valve (see Air Switching Valve Unit Test in the Electrical System chapter) or air suction valve (see Air Suction Valve Inspection in the Engine Top End chapter).



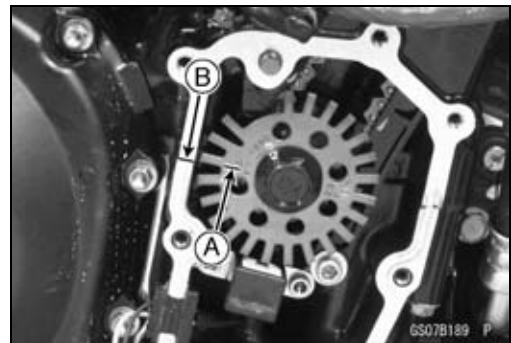
Engine Top End

Valve Clearance Inspection

NOTE

○ Valve clearance must be checked and adjusted when the engine is cold (at room temperature).

- Remove:
 - Lower Fairings (see Lower Fairing Removal in the Frame chapter)
 - Middle Fairings (see Middle Fairing Removal in the Frame chapter)
 - Crankshaft Sensor Cover (see Crankshaft Sensor Removal in the Electrical System chapter)
 - Cylinder Head Cover (see Cylinder Head Cover Removal in the Engine Top End chapter)
- Position the crankshaft at 1, 4 piston TDC.
 - TDC Mark [A] for #1, 4 Pistons
 - Timing Mark [B] (crankcase halves mating surface)



- Using a thickness gauge [A], measure the valve clearance between the cam and the valve lifter.

Valve Clearance

Standard:

Exhaust	0.19 ~ 0.24 mm (0.0075 ~ 0.0094 in.)
Inlet	0.12 ~ 0.17 mm (0.0047 ~ 0.0067 in.)

