

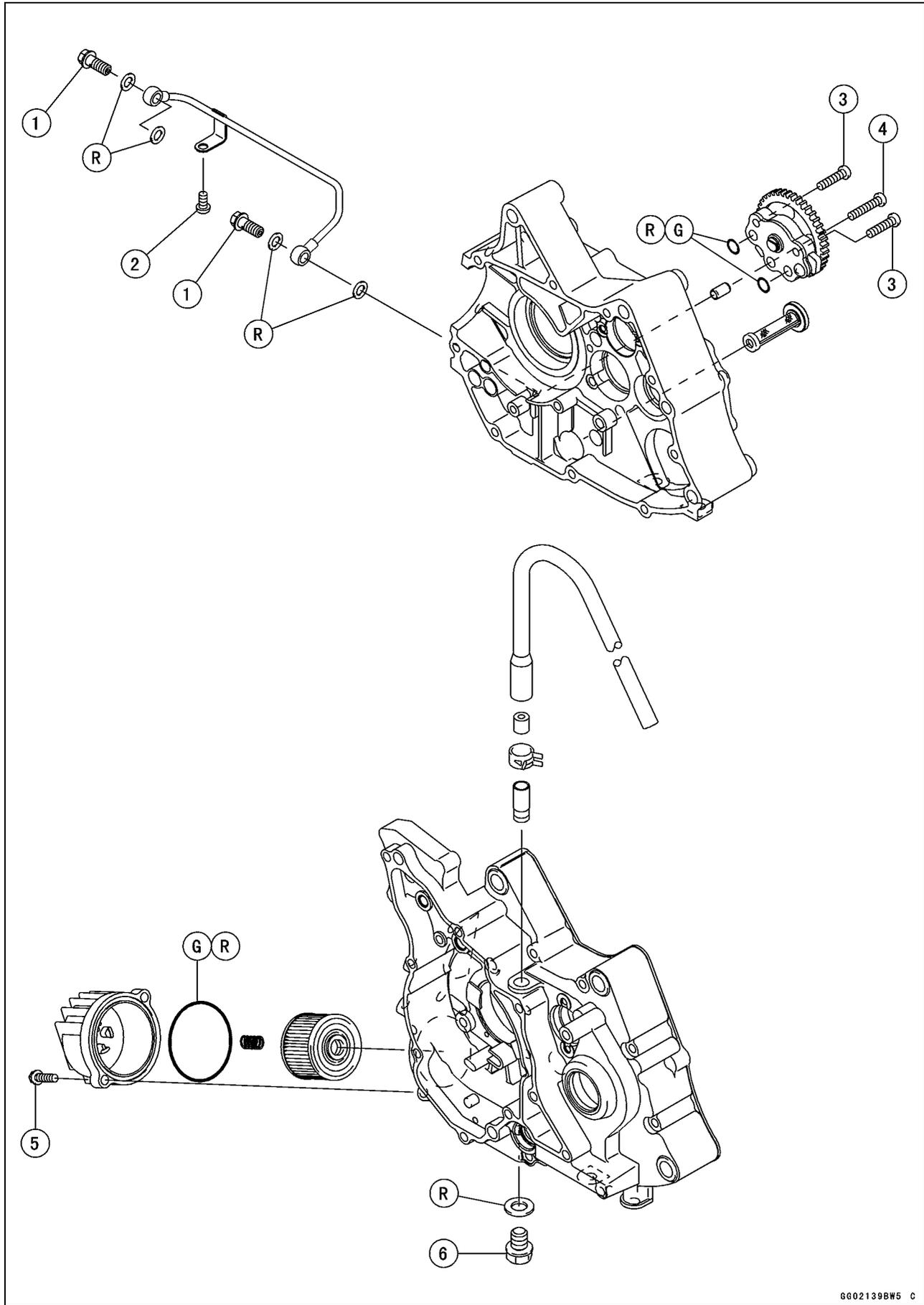
Engine Lubrication System

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6-2 ENGINE LUBRICATION SYSTEM

Exploded View



ENGINE LUBRICATION SYSTEM 6-3

Exploded View

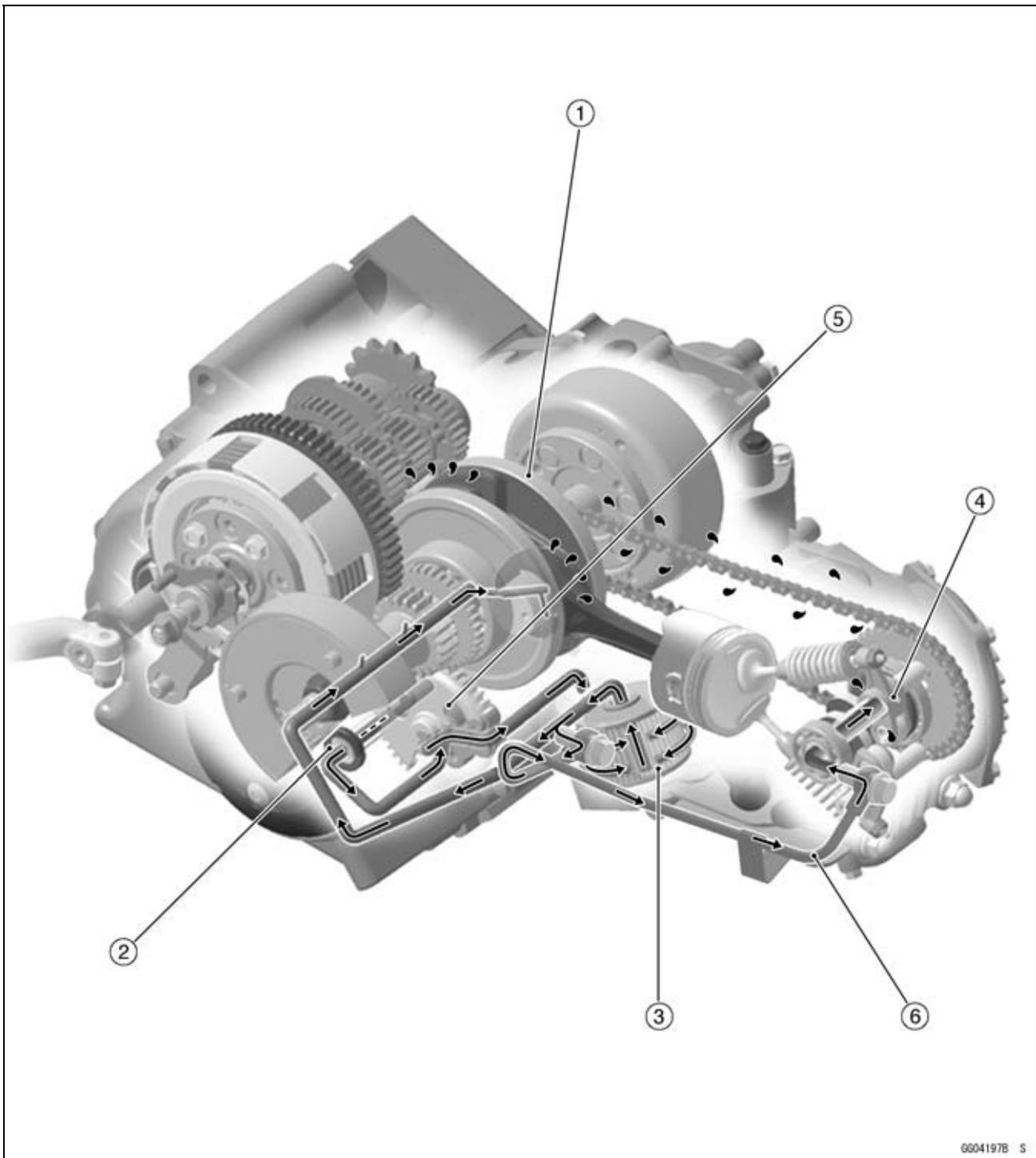
No.	Fastener	Torque			Remarks
		N·m	kgf·m	ft·lb	
1	Oil Pipe Banjo Bolts	15	1.5	11	
2	Oil Pipe Clamp Screw	5.2	0.53	46 in·lb	
3	Oil Pump Mounting Screws (L = 25)	5.2	0.53	46 in·lb	
4	Oil Pump Mounting Screw (L = 30)	5.2	0.53	46 in·lb	
5	Oil Filter Cap Bolts	5.2	0.53	46 in·lb	
6	Engine Oil Drain Plug	29	3.0	21	

G: Apply grease.

R: Replacement Parts

6-4 ENGINE LUBRICATION SYSTEM

Engine Oil Flow Chart



1. Crankshaft
2. Oil Screen
3. Oil Filter
4. Camshaft
5. Oil Pump
6. Oil Pipe

ENGINE LUBRICATION SYSTEM 6-5

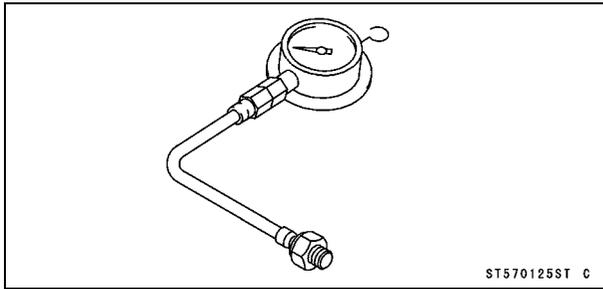
Specifications

Item	Standard
Engine Oil Type Viscosity Capacity Level	API SG, SH, SJ, SL or SM with JASO MA, MA1 or MA2 SAE 10W-40 0.9 L (1.0 US qt) (when filter is not removed) 1.0 L (1.1 US qt) (when filter is removed) 1.1 L (1.2 US qt) (when engine is completely dry) Between upper and lower level lines
Oil Pressure Measurement Oil pressure	88 ~ 147 kPa (0.9 ~ 1.5 kgf/cm ² , 13 ~ 21 psi) at 4 000 r/min (rpm), Oil Temperature 50°C (122°F)

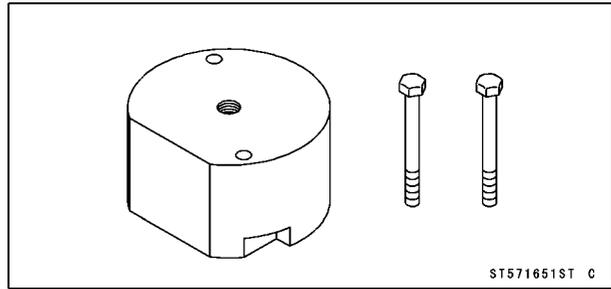
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Special Tools

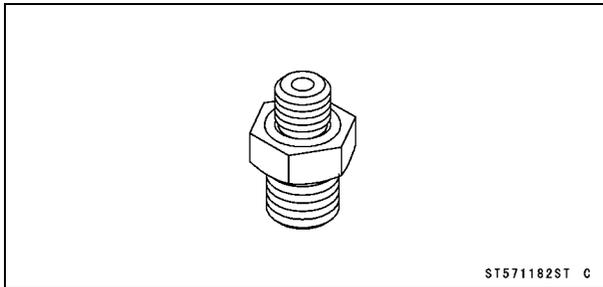
Oil Pressure Gauge, 5 kgf/cm²:
57001-125



Oil Pressure Cap:
57001-1651



Oil Pressure Gauge Adapter, M10 × 1.25:
57001-1182



Engine Oil and Oil Filter

⚠ WARNING

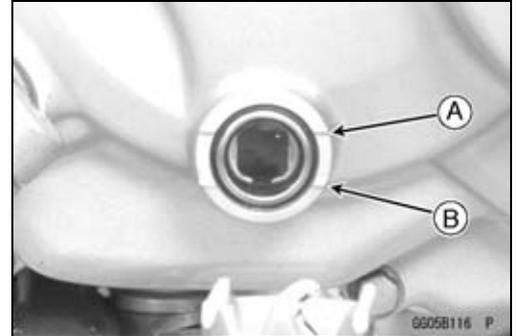
Vehicle operation with insufficient, deteriorated, or contaminated engine oil will cause accelerated wear and may result in engine seizure, accident, and injury. Check the oil level before each use and change the oil and filter according to the periodic maintenance chart.

Oil Level Inspection

- Check that the engine oil level is between the upper [A] and lower [B] levels in the oil level inspection window.

NOTE

- Situate the motorcycle so that it is perpendicular to the ground.
- If the motorcycle has just been used, wait several minutes for all the oil to drain down.
- If the oil has just been changed, start the engine and run it for several minutes at idle speed. This fills the oil filter with oil. Stop the engine, then wait several minutes until the oil settles.



NOTICE

Racing the engine before the oil reaches every part can cause engine seizure.

- ★ If the oil level is too high, remove the excess oil, using a syringe or other suitable device.
- ★ If the oil level is too low, add the correct amount of oil. Use the same type and make of oil that is already in the engine.

NOTE

- If the engine oil type and make are unknown, use any brand of the specified oil to top off the level rather than running the engine with the oil level low. Then at your earliest convenience, change the oil completely.

Engine Oil Change

- Refer to the Engine Oil Change in the Periodic Maintenance chapter.

Oil Filter Change

- Refer to the Oil Filter Replacement in the Periodic Maintenance chapter.

6-8 ENGINE LUBRICATION SYSTEM

Engine Oil and Oil Filter

Oil Screen Cleaning

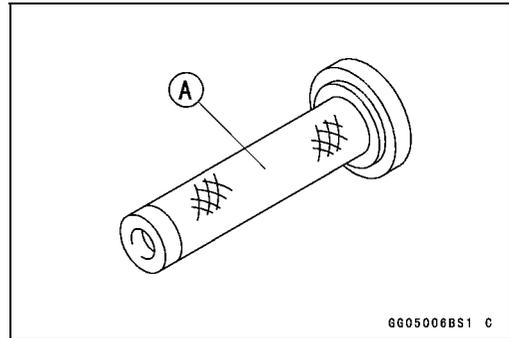
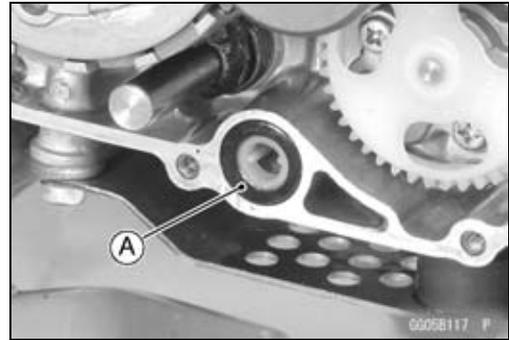
- Drain the engine oil (see Engine Oil Change in the Periodic Maintenance chapter).
- Remove:
 - Clutch Cover (see Clutch Cover Removal in the Clutch chapter)
 - Oil Screen [A]
- Clean the oil screen [A] with high flash-point solvent and remove any particles stuck to it.
- Clean thoroughly whenever the oil screen is removed.

⚠ WARNING

Gasoline and low flash-point solvents can be flammable and/or explosive and cause severe burns. Clean the screen 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 screen.

NOTE

- *While cleaning the screen, check for any metal particles that might indicate internal engine damage.*
- Inspect the screen carefully for net tearing or other damages.
- ★ If the screen is damaged, replace it with a new one.
- Install:
 - Oil Screen
 - Clutch Cover (see Clutch Cover Installation in the Clutch chapter)



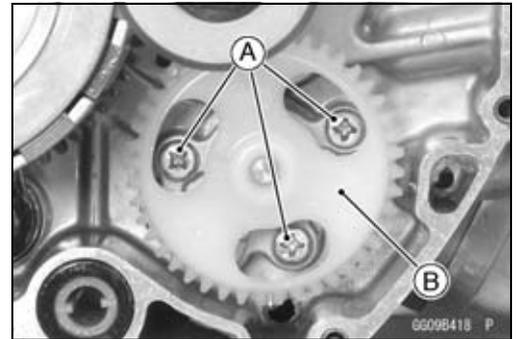
Oil Pump

Oil Pump Removal

- Drain the engine oil (see Engine Oil Change in the Periodic Maintenance chapter).
- Remove the clutch cover (see Clutch Cover Removal in the Clutch chapter).

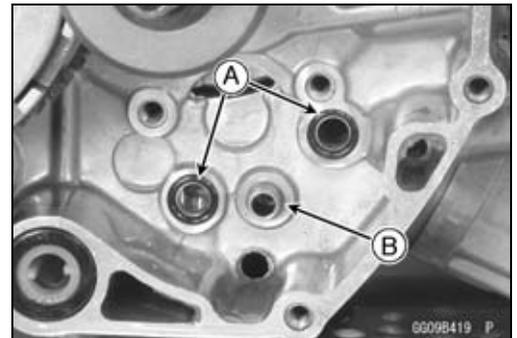
KLX110C Models

- Remove the clutch (see Clutch Removal (KLX110C) in the Clutch chapter).
- Remove the mounting screws [A] and remove the oil pump assembly [B].
- Turn the pump gear so that the pump mounting screws can be removed through the pump gear holes.



Oil Pump Installation

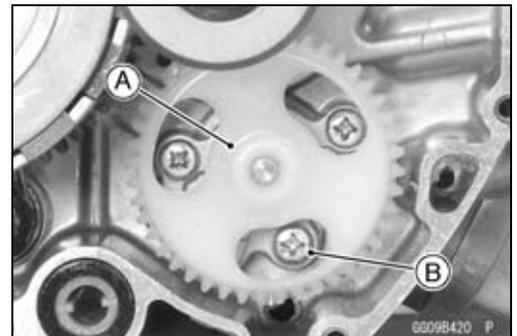
- Replace the O-rings [A] with new ones.
- Apply grease to the O-rings.
- Install the dowel pin [B].



- Install the oil pump assembly [A] and screws.
- The lower screw [B] is longer than the other ones.

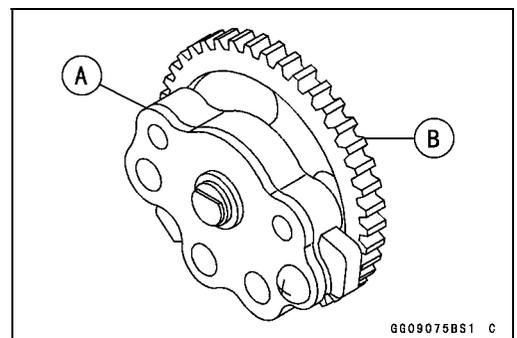
Torque - Oil Pump Mounting Screws: 5.2 N·m (0.53 kgf·m, 46 in·lb)

- Install the clutch cover (see Clutch Cover Installation in the Clutch chapter).



Oil Pump Inspection

- Visually inspect the oil pump body [A] and the gear [B].
- ★ If there is any damage or uneven wear, replace the oil pump assembly.
- Turn the gear by hand to inspect the condition of the oil pump.
- ★ If the rotation of the pump is noisy, does not turn smoothly or has any rough spots, replace the oil pump assembly.



NOTICE

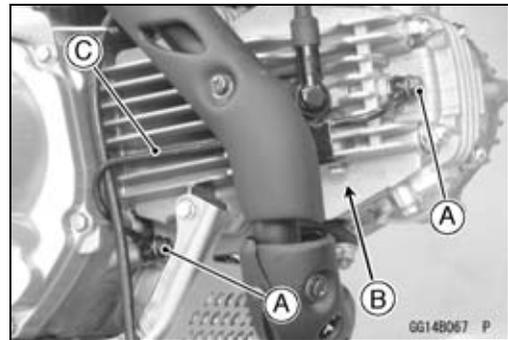
Do not disassemble the oil pump, because the individual parts of pump are not supplied.

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Oil Pipe

Oil Pipe Removal

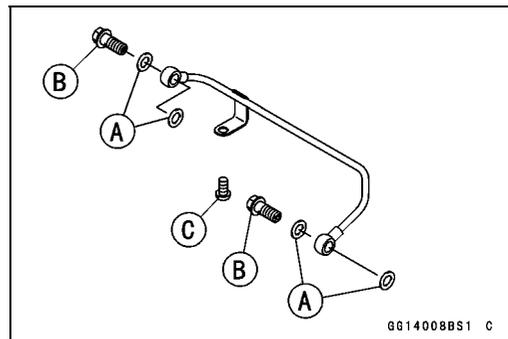
- Drain the engine oil (see Engine Oil Change in the Periodic Maintenance chapter).
- Remove:
 - Banjo Bolts [A]
 - Oil Pipe Clamp Screw [B]
 - Oil Pipe [C]



Oil Pipe Installation

- Before installation, flush out the pipe with a high flash-point solvent.
- Discard the used copper washers and install new washers [A] on each side of the pipe fittings.
- Lightly tighten the banjo bolts and oil pipe clamp screw to a snug fit, and tighten them to the specified torque.

Torque - Oil Pipe Banjo Bolts [B]: 15 N·m (1.5 kgf·m, 11 ft·lb)
Oil Pipe Clamp Screw [C]: 5.2 N·m (0.53 kgf·m, 46 in·lb)

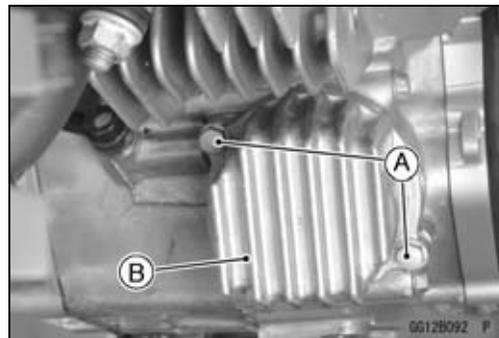


Oil Pressure

Oil Pressure Measurement

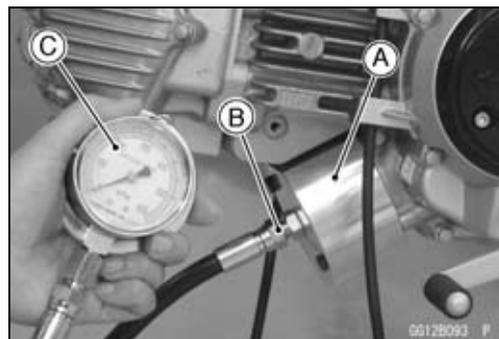
- Remove the engine guard (see Engine Guard Removal/Installation in the Frame chapter).
- Remove the bolts [A] and oil filter cap [B].
- Move the spring and the O-ring of the oil filter cap to the oil pressure cap.

Special Tool - Oil Pressure Cap: 57001-1651



- Attach the oil pressure cap [A], the oil pressure gauge adapter [B] and the oil pressure gauge [C].

Special Tools - Oil Pressure Gauge, 5 kgf/cm²: 57001-125
Oil Pressure Gauge Adapter, M10 × 1.25: 57001-1182
Oil Pressure Cap: 57001-1651



- Start the engine and warm up the engine thoroughly.
- Run the engine at the specified speed, and read the oil pressure value.
- ★ If the oil pressure is much lower than the standard, check the oil pump, and crankshaft oil seal of the clutch cover.
- ★ If the value is much higher than the standard, check the oil pump screen and the oil filter first, and oil passages for dirt or clogging.

Oil Pressure

Standard: 88 ~ 147 kPa (0.9 ~ 1.5 kgf/cm², 13 ~ 21 psi) at 4 000 r/min (rpm), Oil Temperature 50°C (122°F)

- Stop the engine, and remove the oil pressure cap, gauge and adapter.

⚠ WARNING

Hot oil can cause severe burns. Beware of hot engine oil that will drain through the oil passage when the gauge adapter is removed.

- Install the oil filter cap (see Oil Filter Replacement in the Periodic Maintenance chapter).