

creased, oil pressure is raised a sufficient amount to counteract the diaphragm spring and open the circuit (indicator light "off"). Oil signal light switch cannot be repaired. Defective switches must be replaced.

OIL PRESSURE

The oil pump is non-regulatory and delivers its entire volume of oil under pressure to the engine. When a cold engine is started, engine oil will be thick or viscous, restricting circulation through the oiling system and causing high oil pressure; as engine becomes hot and oil thins, pressure will correspondingly drop. Similarly, when an engine is operated at high speeds, the volume of oil circulated through the oiling system increases, resulting in higher oil pressure; as engine speed is reduced, volume of oil pumped is also reduced resulting in lower oil pressure.

To check oil pressure, use Oil Pressure Gauge, Part No. 96921-52. Remove oil pressure switch from motorcycle as described in "Disassembling Oil Pump Check Valve," Section 3E. Insert pressure switch hose fitting in oil switch connection of pump nipple.

Run the engine until oil becomes hot. Under normal riding conditions oil pressure will vary from 10-14 lbs. Idle down, retard spark and check the gauge. Oil pressure will vary from 3 to 7 lbs.

SERVICING OIL FILTER (Fig. 3A-5)

Thoroughly wash filter element (3) in clean gasoline or solvent at least every 2000 miles or whenever engine oil is changed. Renew filter element every 5000 miles. To disassemble filter, follow order of disassembly under Fig. 3A-5. Assembly is essentially the reverse order of disassembly. Be sure "O" ring (8) is positioned in filter cup (7) flange.

SERVICING OIL TANK CAP AND FILLER OPENING (Fig. 3A-5)

Clean and inspect all parts replacing any that are worn or damaged. Pay particular attention to the oil tank cap gasket (10) and the cap washer (13). To disassemble tank cap follow order of disassembly under Fig. 3A-5. Assembly is the reverse order of disassembly.

If oil leakage should occur between the tank cap and the filler opening, (and the cap and gasket are in good condition), check the lip of the filler opening. A tank cap drawn too tight will bend the lip of the filler opening resulting in a poor seat between gasket and lip.

Using a mallet as a driver and a piece of wood as a cushion, bend the lip down until flush with sealing surface of tank cap. Use emery cloth to remove any nicks or rough spots from lip.

IMPORTANT

Before refilling oil tank, thoroughly flush and clean tank with kerosene to remove any foreign material that may have fallen into tank.

ENGINE OILING AND BREATHER SYSTEM (Fig. 3A-6)

1. Gravity feed to oil pump.
2. Feed section of oil pump.
3. Check valve prevents gravity oil drainage from tank to engine. Builds up oil pressure to operate oil signal switch.
4. Oil is forced through pinion gear shaft to lubricate lower connecting rod bearings from which oil splashes to cylinder walls, piston, piston pin and main bearings.
5. Oil is forced through oil lines to lubricate rocker arm bearings and rods, valve stems, valve springs and push rod sockets.
6. Oil drains from cylinder head through passages in each cylinder, then flows through two holes in the base of each cylinder, lubricating cylinder walls, piston, piston rings and main bearings.
7. Oil flows from the rocker arm boxes into the gearcase compartment, lubricating push rods, tappets, tappet-guides and tappet rollers.
8. Oil accumulated in crankcase base is scavenged by the flywheels to the breather oil trap.
9. The rotary breather valve is timed to open on the downward stroke of pistons, allowing crankcase exhaust air pressure to expel scavenge oil from crankcase breather oil trap into timing gearcase. Breather valve closes on upward stroke of pistons, creating vacuum in crankcase.
10. Oil blown and drained into timing gearcase (steps 7 and 9), lubricates generator drive gear, timing gears and gear shaft bearings.
11. Crankcase exhaust air escapes from timing gearcase through outside breather tube. Any oil still carried by exhaust air is separated from the air by an oil slinger on the generator drive gear.
12. Gearcase oil flows through fine mesh oil strainer preventing foreign particles from entering scavenge section of pump.
13. Scavenge (return) section of oil pump.
14. Engine oil returns to tank and also supplies oil to the rear chain oiler.
15. Vent line from oil tank.

ENGINE REPAIR PROCEDURE

GENERAL

When an engine needs repair, it is not always possible to definitely determine beforehand whether repair can be made with only cylinder head, cylinders and pistons removed from engine or whether engine must be completely disassembled for crankcase repair.