

49. Oil Feed Relief Valves

There are two pressure relief valves in the oiling system, both are located at the top of the crankcase, behind the right hand cylinder barrel. (See Fig. 11).

The right hand screw holds a $\frac{5}{16}$ dia. ball and spring in position, forming the main relief valve holding a pressure of 60 lbs./sq. in. in the oil supply line to the big-ends. It is important that the correct washer is used under the head of the screw, a thinner washer or no washer at all will give a higher pressure and a thicker washer will give a lower pressure than intended. Too high a pressure in this part of the system could cause damage to the crankshaft seal in the timing cover and leakage at this point will reduce the amount of oil passing the main release valve. This could cause oil starvation at the rockers and lead to excessive wear of cams and tappets and poor lubrication of camshaft bearings. If the pressure in the main system is too low, the amount of oil reaching the big-ends will be reduced.

The second screw forms a pressure relief valve for the oil supply to the overhead rockers. The unit is pre-set at the Works to release at 10-15 lbs./sq. in. and cannot be adjusted.

50. Fitting the Alternator

The alternator consists of two parts, the stator and the rotor.

The stator is mounted on to the primary chaincase with three studs and distance pieces.

The rotor, which contains the permanent magnets, is mounted on the end of the crankshaft and is located by a key and secured by a stud, nut and washer.

The radial air gap between the rotor and the poles of the stator should be .020 in. in all positions and care must be taken when refitting to see that it is not less than .010 in. at any point.

Fit the rotor first, making sure that it is located concentrically on the end of the crankshaft. Attention must be given to the seating of the key because a badly-fitting key may cause the rotor to run unevenly. Finally secure the rotor with the appropriate nut and washer.

Place the three distance pieces over the three chaincase studs. The stator can then be fitted, with the coil connections facing outwards.

Replace the nuts and shakeproof washers only fingertight, and insert six strips (preferably of non-magnetic material) .015 in. thick and about $\frac{1}{8}$ in. wide between the rotor and each pole piece.

Tighten the stator nuts and withdraw the strips.

Check the air gap with narrow feelers and, if less than .010 in. at any point, remove the stator and set the three studs carefully until the correct gap is obtained.

An alternative, and more satisfactory, method of assembling the alternator requires the use of Special Tool No. T2055/19.

This is a gauge .015 in. greater in radius than the rotor and fits over the adaptor on the end of the crankshaft in the rotor's place.

The stator is then put in position on the studs in the chaincase and the nuts tightened up.

Remove the gauge and fit the rotor, then check the air gap.

Service operations with Engine Removed

51. Removal of the Engine Gearbox Unit from the Frame

Remove battery cover and disconnect the battery leads.

Remove the petrol tank (Subsection 26).

Remove the cylinder head steady plates.

Remove the exhaust pipes.

Loosen the rectifier bracket and swing the rectifier clear.

Disconnect the contact breaker leads and alternator leads.

Remove the sparking plug caps.

Loosen the breather tube clip and disconnect the tube from the adaptor.

Remove fixed portion of rear chainguard and remove rear chain.

Remove air intake tubes from carburettors.

Remove screws holding mixing chamber tops to carburettors and withdraw slides.

Disconnect the clutch cable.

Disconnect the tachometer drive cable.

Remove the footrest bar.

Slacken off the nuts holding the prop stand cross bar to the frame.

Remove the bottom rear engine bolt and the bolt securing the gearbox bracket to the frame. Loosen the nuts on the chainstay pivot bolt.

Support the engine on a suitable box or wood block.

Raise the centre stand and remove the spring.

Loosen the bottom gearbox nuts and swing the lower engine plates down.

Remove the front engine plates, and stand.

Lift the engine out of the frame.