

The bar must be pushed through the spindle and right to the bottom of the hole in the cover or the spindle boss may fracture.

Check the fit of the plunger in the pump disc which should have a minimum of clearance but should be able to be moved in and out by hand.

If, when fitting a new disc or plunger, the plunger is found to be too tight a fit, carefully lap with metal polish until it is just free. If the pump disc is not seating properly or if a new pump disc is being fitted, it should be lapped to the seating with Special Tool No. E.5425, using Carborundum 360 Fine Paste or liquid metal polish until an even grey surface is obtained.

Wash all passages, etc., thoroughly with petrol after lapping to remove all traces of grinding paste.

Check the pump disc spring for fatigue by assembling in the timing cover and placing the pump cover in position. If the spring is correct, the pump cover should be held $\frac{1}{4}$ in. off the timing cover by the pump spring.

The pump spindle must be a good fit in the timing cover and should be renewed if the clearance is such that oil can escape from the pump. Check the gear teeth for excessive wear.

Reassemble the oil pump, replacing the paper cover gasket if necessary. Before fitting the cover fill the pump chamber with clean oil.

Having assembled the pump lay the timing cover flat and fill the oil ports by means of an oilcan. Turn the pump spindle with a screwdriver in a clockwise direction looking on the front and it can then be seen whether the pump is operating correctly.

Refit the timing cover as described in Subsection 19 and time the ignition as described in Subsection 23.

39. Removal of the Timing Chain

Remove the timing cover (Subsection 19).

Loosen the chain tensioner locknut and stud.

Lift the adjusting plate clear of the chain tensioner spindle.

Remove the chain tensioner spindle and sprocket.

Lift the chain off the sprockets.

40. Removal of Pump Worm and Timing Sprocket

Remove the timing chain (Subsection 39).

Unscrew the oil pump worm by means of the hexagon head behind it. This is a **Left-Hand Thread**.

Withdraw the timing sprocket.

41. Removal of the Camshaft and Sprockets

Remove the camshaft together with sprocket as described in Subsection 22.

Hold the timing side cam between soft vice jaws and unscrew the sprocket nut (L.H. thread). The

sprockets can now be extracted using the special extractor Part No. 49907. The special plug must be used in the end of the exhaust camshaft to protect the contact breaker driving taper.

When assembling the sprockets great care must be taken to prevent the key from tipping in the keyway on the shaft otherwise it will be wedged against the end of the bearing causing damage. The sprocket must be fitted with the timing mark facing outwards. The sprocket nut should be tightened to 50 ft. lbs. torque.

42. Removal of the Engine and Clutch Sprockets

The primary chain is endless so that it is necessary to remove both the engine and clutch sprocket simultaneously.

The alternator stator is removed by undoing the three fixing nuts, after which the stator can be pulled off the three studs on which it is located.

Remove the central hexagon nut and washer securing the alternator rotor, which can then be drawn off, taking care not to lose the key.

Unscrew the engine sprocket nut, using Special Tool No. 49908. The engine sprocket is mounted on splines and can then be removed with the clutch sprocket.

To remove the clutch sprocket, unscrew the three pressure plate pins and remove the pressure plate assembly, the centre retaining plate and the assembly of driving and driven clutch plates. The clutch sprocket can then be withdrawn from the centre after the removal of the large circlip which secures it.

43. Removal of the Tappets and Guides

It is only necessary to remove the tappets and guides if they have become worn.

Remove the cylinder heads and barrels. (Subsections 27 and 32).

Extract the tappet guides, using Special Tool No. 49925, having heated the case first.

The guides are made from Nickel Chrome Alloy Iron and if a guide should break while removing it, it can be withdrawn with a pair of pliers if the crankcase is heated locally with a blowlamp. Otherwise it is necessary to dismantle the crankcase and drive the tappet and guide out from underneath using a heavy bar in the cam tunnel.

The guide should have an interference of .0015 to .0025 in. in the crankcase and can be driven in with a bronze drift, care being taken when the guide is nearly home to avoid breaking the collar.

If a tappet guide is taken out it should be replaced by an oversize one.

44. Crankcase Breather

The crankcase breather is in the form of a long plastic tube attached by a hose clip to an adaptor