

52. Removal of the Gearbox

Remove the engine sprocket and clutch (Subsections 42 and 45).

Remove the rear half of the primary chaincase by removing three socket screws and the centre stud.

The gearbox and gearbox bracket can now be withdrawn from the back of the crankcase after unscrewing the four nuts which secure them.

53. Dismantling the Crankcase

Drain the oil tank by removing the drain plug.

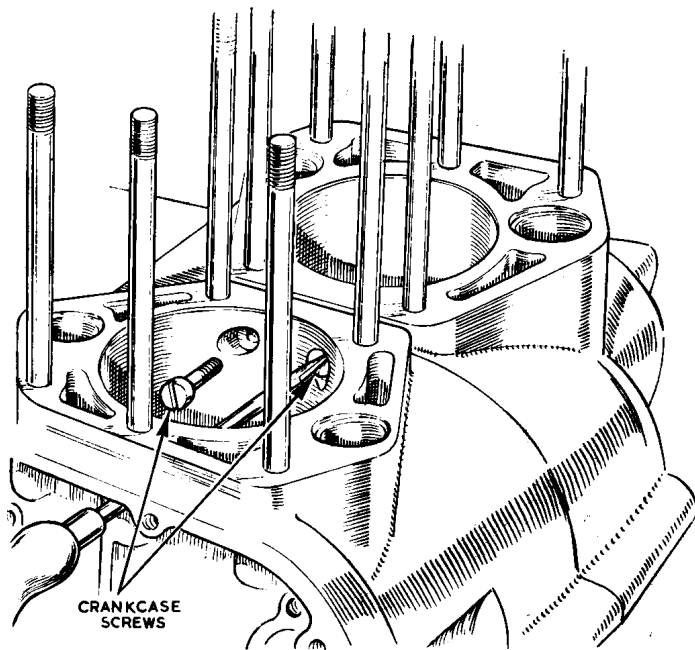
Having removed the engine from the frame as described in Subsection 51, dismantle the heads, barrels, pistons, timing gear and camshafts, as described in Subsections 19, 22, 27, 32, 33, 39, and 40.

Remove the gearbox as described in Subsection 52.

Remove the two screws holding the crankcases together at the top. Holes are provided in the timing-side case to provide access for the screwdriver (See Fig. 12).

Remove three nuts in the timing chest, two loose studs through the rear of the crankcase and four screws through the bottom of the oil tank. (The other studs have already been removed to take the engine out of the frame).

Turn the crankshaft until the connecting rods are at bottom dead centre and the two halves of the crankcase can then be separated, tapping the crankcase with a soft mallet.



REMOVAL OF SCREWS IN CRANKCASE

Fig. 12

The inner race of the roller bearings on the timing side will remain on the crankshaft bringing with it the cage and rollers and leaving the outer race fixed to the crankcase.

The inner race of the ball bearing on the driving side is a tight fit on the shaft and can be removed with Special Tool No. W49910. If this is not available, the shaft can be driven out with a hide mallet or a soft metal drift.

To avoid damage to the ball bearing the case should be heated to about 100°C. before doing this.

54. Main Bearings

To remove the ball bearing from the driving side crankcase, heat the crankcase to about 100 degrees C. by immersion in hot water or in an oven after which the bearing can be driven out using a drift **which applies pressure to the outside race only.**

When refitting a new ball bearing, heat the crankcase in the same way and use the same drift taking great care to keep the bearing square with the bore.

To remove the outer roller race from the timing side crankcase, first heat the crankcase then drive the race out using a small punch through the three holes provided.

The inner race and rollers can be withdrawn from the crankshaft using a claw type extractor.

When refitting the inner race drive it on to the shaft until the shaft projects $\frac{1}{8}$ in. from the face of the bearing.

55. Fitting the Connecting Rods

To remove the connecting rods from the crankshaft, unscrew the socket screws in the connecting rods, having first removed the security wires through the heads.

If the big end bearing caps are removed to examine the condition of the bearings, *make sure that the caps are refitted the same way round on the same rods and that the rods themselves are refitted the same way round on the same crank pins.*

In refitting the connecting rods, the socket screws should be tightened with a torque wrench set at 275 in. lb. (23 ft. lb.)

No cotter pins or other locking devices are fitted. If the socket screws are correctly tightened they will never come loose. If they are *not* adequately tightened they are liable to fatigue failures. Use only genuine big end screws, Part No. 47876 These have a very high fatigue strength due to the use of a special steel and the fact that the threads are rolled *after* heat treatment.

Wire the heads using .024" diameter stainless steel wire.

If it is necessary to replace the big ends, a service crankshaft can be supplied with connecting rods fitted.