BSA SERVICE SHEET No. 424

Printed May, 1960

MODEL C15
REASSEMBLY OF THE ENGINE GEARBOX UNIT

Before commencing to assemble it is important to see that all parts are quite clean and free from road grit and dust both inside and outside as some of the grit may get transferred to vital bearing surfaces during handling.

Crankcase

Clean off all the old jointing compound being careful not to damage the joint faces.

If new bushes or ball races are to be inserted, warm the crankcase halves, extract the old part and press in the new part while the case is still hot.

Where oil ways are drilled in bushes it is essential that the holes are correctly positioned so that the oil ways are not blocked.

On the drive side the bearings are fitted from inside the case and the oil seals from the outside. When fitting a replacement seal note that the lip must be facing inwards.

Flywheel Assembly

To fit a new connecting rod and big end assembly, place the gear side flywheel in the bolster number 61-3589, take up the big end assembly and locate the crankpin in the hole in the flywheel using gauge number 61-3597 so that the oil hole is in line with the oil way in the flywheel and press right home. Now place in position the drive side flywheel, and using the bridge piece, Service Tool number 61-3591 over the crankpin hole press the crankpin fully "home" into the drive side flywheel. (Fig. C16A).

The flywheels will now be only approximately aligned and must be trued.

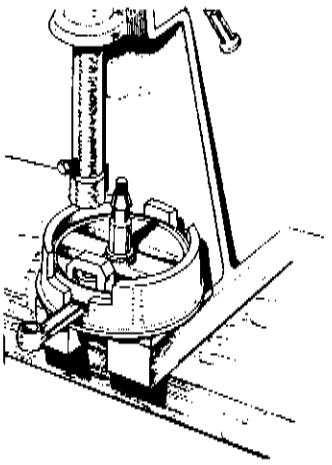


Fig. C16A. Reassembly of the Flywheels.

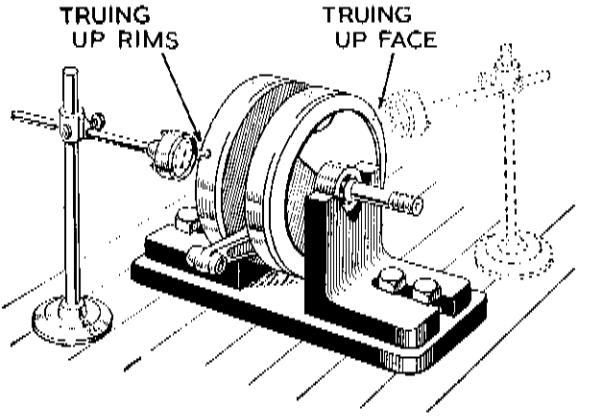
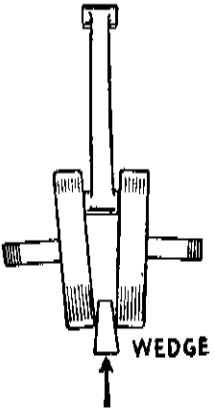


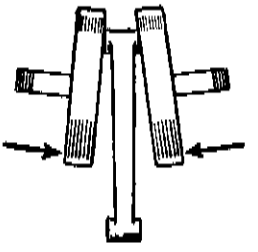
Fig. C17A. Checking Flywheel Alignment.

Mount the assembly in vee blocks with the mainshaft bearing on the drive side shaft and Service Tool number 61-3592 on the gear side shaft over the drilled bush. True up as indicated in Fig. C18A using a dial indicator gauge for checking.

True the wheels to within .005 in., the drive side shaft to within .002 in. and the gear side shaft to within .0005 in.



To bring flywheels parallel, when sides opposite crankpin are converging insert wedge as shown and deal sharp blow with mallet.



To bring fly wheels parallel, a sharp blow with mallet on flywheel rims on opposite side to crankpin.

Fig. C18A.

Having renewed the big end assembly and checked for balance and concentricity, replace the L/H side half crankcase over the flywheel assembly. This operation will be simplified if a block of wood is used, it should be deep enough to keep the end of the shaft clear of the bench and wide enough to support the flywheels.

Apply a coating of jointing compound to the joint faces, fit the R/H half case and replace the three bolts at the front of the case and the four nuts (two at the base of the cylinder and two in the primary case). Tighten the bolts and nuts evenly to avoid distorting the joint faces.

Replace the Woodruff key on the R/H side mainshaft and refit the worm gear and timing pinion with the extension inwards, fit the tab washer and nut, turning over the tab onto the nut after tightening securely.

In order to ensure correct positioning of the distributor, pick up the drive and holding it with the slot in line with the crankshaft, mesh the teeth with those on the mainshaft worm wheel.

Place the distributor drive bush in position on top of the drive and tap gently down until the circular groove is in line with the screw hole in the housing.

Replace the oil pump using a new paper gasket.

The oil pressure release valve is situated on the front R/H half of the crankcase and may not have been disturbed, but it is as well, at this stage, to make sure that it is clean and free from grit.

After thoroughly cleaning the sump filter replace the filter and cover using a new gasket, which need only be "jointed" on one side, tighten the four nuts onto shakeproof washers. Turn the crankshaft to T.D.C.

Now pick up the tappets and insert them into the holes from inside the timing chest and with the lubrication holes in the tappets towards the gearbox. Holding the tappets up insert the camshaft with the screwed end outwards and mesh the timing mark with the mark on the mainshaft pinion.

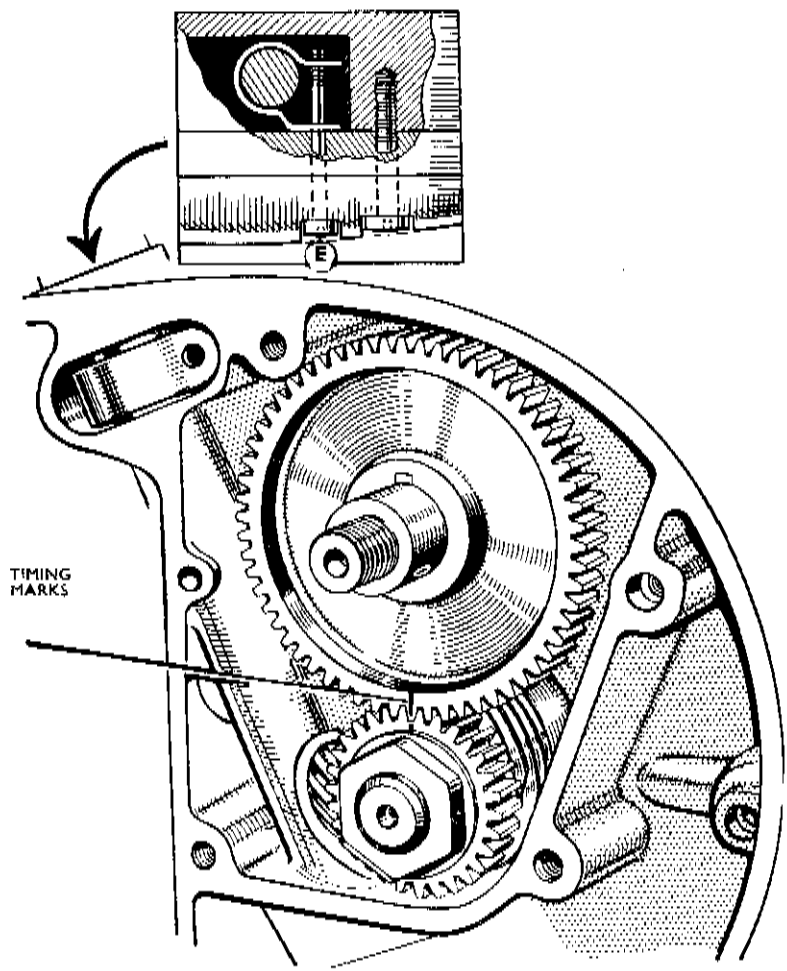


Fig. C19A. Valve Timing Marks.

Insert the distributor clip into the aperture in the crankcase as shown in Fig. C19A, and fit the distributor loosely in position with the wire clip away from the cylinder.

Assembly from this point is described in Service Sheet number 422 continuing with Service Sheet number 421.

After assembly of the engine and gearbox it is only necessary to re-time the ignition. Expose the contact breaker by taking off the cover *A* as shown in Fig. C20A and with the sparking plug out, insert a thin rod through the plug hole, rotate the crankshaft until the piston is at top dead centre on the compression stroke with both valves closed.

Now keeping the rod as vertical as possible rotate the engine backwards until the piston is 1/16 in. from the top of the stroke when the contacts should be just about to open. This is best determined by inserting a piece of cigarette paper between the points which are about to open when the paper can be withdrawn by a gentle pull.

If the setting is incorrect with the piston set as above, rotate the distributor gently until the points are about to open then tighten the clip screw and re-check the setting. The fully open gap *B*, should be .015 in.

Finally reconnect the distributor and alternator leads and replace the spark plug and high tension lead.

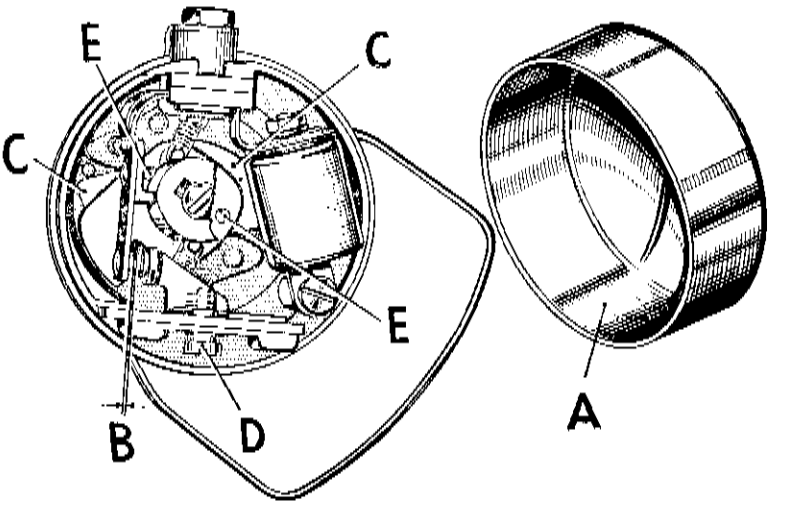


Fig. C20A. Contact Breaker and Auto Advance Mechanism.

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Service Dept., Waverley Works, Birmingham 10.
Printed in England.