

Engine/Primary Transmission C

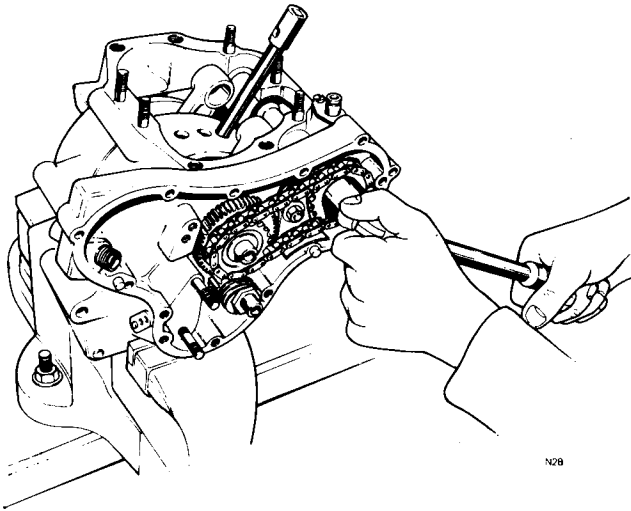


Fig. C22 Preventing flywheel turning by use of a bar lodged in a flywheel balance hole

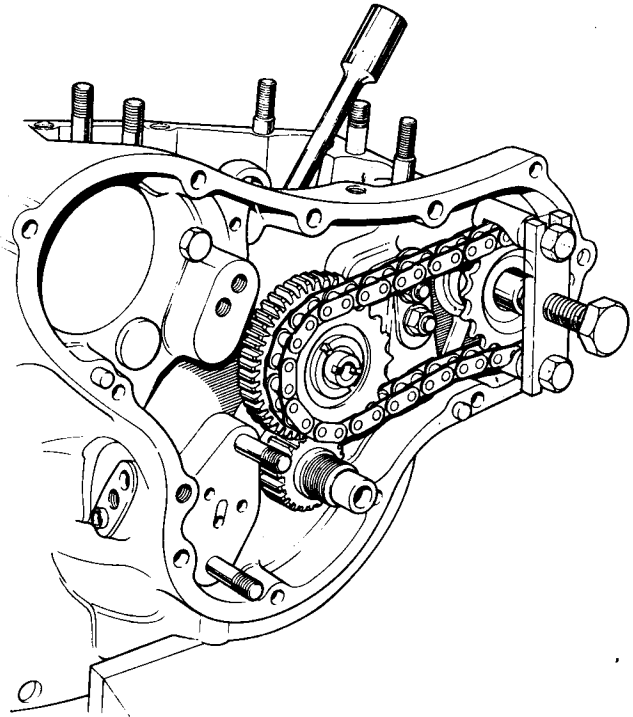


Fig. C23 Releasing a tight camshaft using sprocket service tool 064297

9 With the flywheel still prevented from turning, remove the nut securing the camshaft sprocket. Under no circumstances must anything but firm steady pressure be applied to unscrew the camshaft sprocket nut – normal right hand thread – unless a dummy cut away timing cover is fitted and secured with screws at extreme front rear and bottom. If a hammer or mallet is used without such a cover to support the end of the intermediate gear spindle, there is risk of the latter being pulled out of the crankcase.

The size of the sprocket nut is $\frac{9}{16}$ in. Whitworth.

10 Lift the sprocket, idler gear, and timing chain away as a set. If the camshaft sprocket should prove to be tight on the camshaft, it may be removed by using the special jaws supplied with the 064297 engine sprocket extractor.

Do not remove camshaft key from camshaft except for replacement.

11 Providing the timing cover joint gasket is not damaged during dismantling, there is no reason why it should be removed from the crankcase facing as it will be perfectly suitable for re-use.

12 Using Service Tool ET.2003 as shown in Fig. C24, extract the crankshaft pinion. It should be noted that the jaws of the service tool locate to the spaces provided in the pinion backing washer.

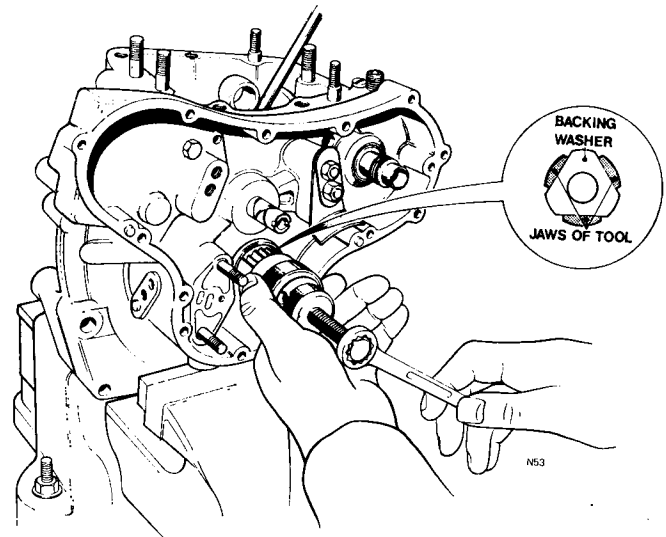


Fig. C24 Extracting crankshaft pinion using tool ET 2003

Gearbox

D

SECTION D9

REFITTING GEAR CLUSTER AND SELECTORS

After inspection of components as in Section D6 commence reassembly as follows:

- 1 Heat the gearbox shell and press the sleeve gear and layshaft bearings fully into position.
- 2 Fit the sleeve gear bearing seal squarely into the housing, lipped side first.
- 3 Fit detent plunger, spring, and acorn nut loosely.
- 4 Fit the quadrant with "O"-ring and secure with bolt and washer.

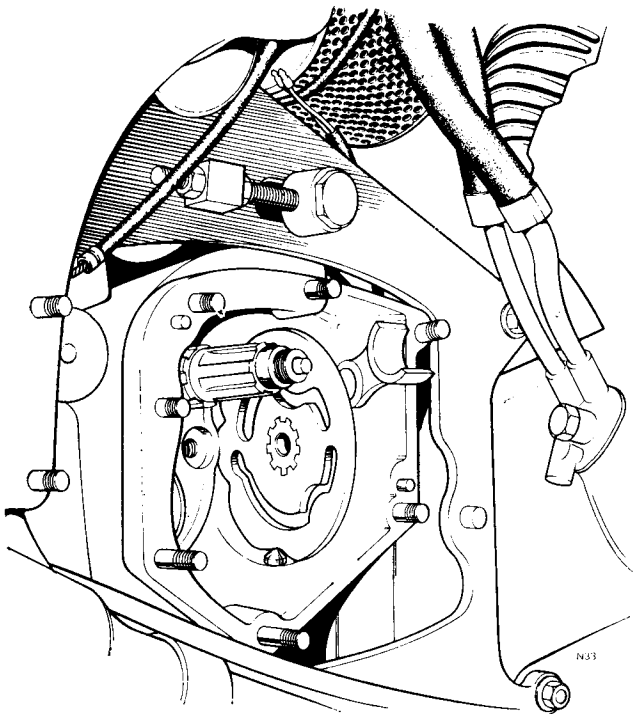


Fig. D2 Location of camplate to index plunger. Knuckle end of quadrant is aligned to top front cover stud

- 5 Lift the knuckle end of the quadrant until the top inside radius is directly in line with the top front cover stud (see Fig. D2), fit the camplate and sealing ring, engaging the teeth of the quadrant and camplate so that the notched edge of the camplate is towards the gearbox sprocket and the smooth edge towards the gearbox inner cover, the last notch at the bottom engaging with the camplate index plunger (see Fig. D2).
- 6 Secure the camplate with "O"-ring, washer and bolt.

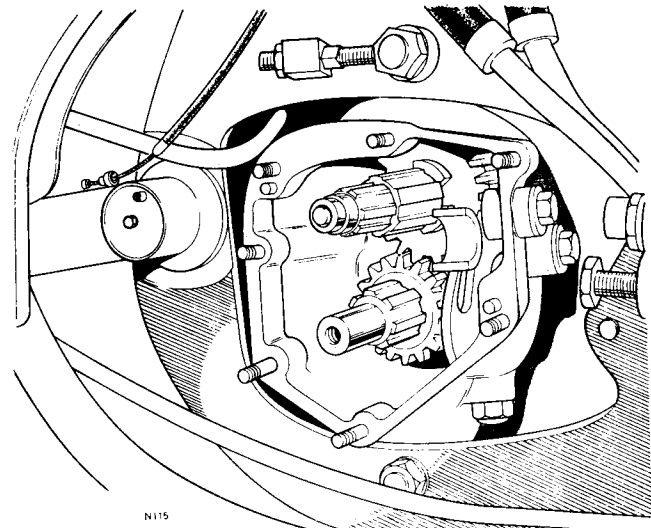


Fig. D3 Mainshaft and layshaft fitted to gearbox shell

- 7 Tighten detent plunger acorn nut.
- 8 Fit the countershaft (sleeve gear) through bearing and seal. Fit sprocket spacer in place inside seal.
- 9 Fit countershaft sprocket (Section D8).
- 10 Fit mainshaft through sleeve gear.
- 11 Fit the 3rd gear free pinion and bush to the layshaft (dog side first to face out of assembled gearbox).
- 12 Fit the fixed high gear pinion to the layshaft, flat side first (toward 3rd gear pinion). The shoulder is to fit against the bearing.
- 13 Push the layshaft into the bearing in the gearbox shell.
- 14 Assemble the mainshaft 3rd gear with selector fork to the mainshaft (selector fork groove side outwards) and engage the pin with the inboard cam track (see Fig. D4).
- 15 Assemble the main shaft 2nd gear with bush to the mainshaft, dogs inwards.
- 16 Assemble the layshaft 2nd gear with selector fork (selector fork groove side inwards) and engage the pin with the outboard cam track.
- 17 Fit the selector fork spindle through the selector forks and screw home into the gearbox shell.
- 18 Fit the layshaft 1st gear.
- 19 Fit the mainshaft 1st gear with shoulder outwards.
- 20 Since the quadrant roller cannot be fitted after the inner cover is fitted, it is imperative that the roller is fitted into the quadrant knuckle at this time.

SECTION G3

REMOVAL OF FRONT FORKS

Removal of the front forks is most easily achieved by dismantling in parts rather than attempting to remove the fork assembly complete. Pre 1971 models had the steering stem captive in the lower yoke whereas 1971 and later models have the stem captive in the upper yoke. This alters the dismantling procedure for the yokes. In the case of disc braked models, it will be found easiest to remove the hydraulic system as an assembly, thus relieving the necessity for refilling and bleeding the system. Release the hydraulic pipe bracket from the right fork slider at the fender bridge. Remove the two bolts and spring washers securing the caliper to the slider and lift the caliper away, complete with pads and still attached to the brake hose. At this stage if the brake lever is operated accidentally, the pads and pistons will be forced from the caliper and the fluid lost. To protect against this, place a spacer between the brake pads – a suitable piece of clean wood or preferably a piece of plastic tubing would be ideal. Remove the four cross-headed screws securing the master cylinder to the right switch cluster, hold the master cylinder but allow the switch cluster to hang on its leads. Pull back the plastic switch cover from the master cylinder and disconnect both Lucar terminals. Release the large spring clips securing the hydraulic hose to the right fork leg and lift the complete hydraulic system away. The system is sealed and can therefore be laid down until it is to be refitted see *Fig. G3*. Support the motorcycle by using a box or block of wood beneath the lower frame rails and proceed as follows:

- 1 Remove the front wheel (see Section H5 for disc brake wheel or Section H8 for drum braked wheel).
- 2 Unscrew and lift the fork tube large chrome top bolts and using two spanners as shown in *Fig. G7* release the damper rod from each top bolt.

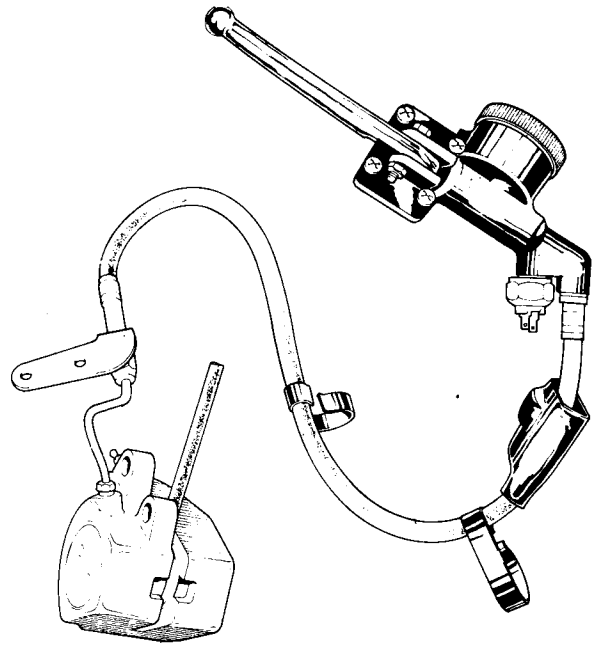
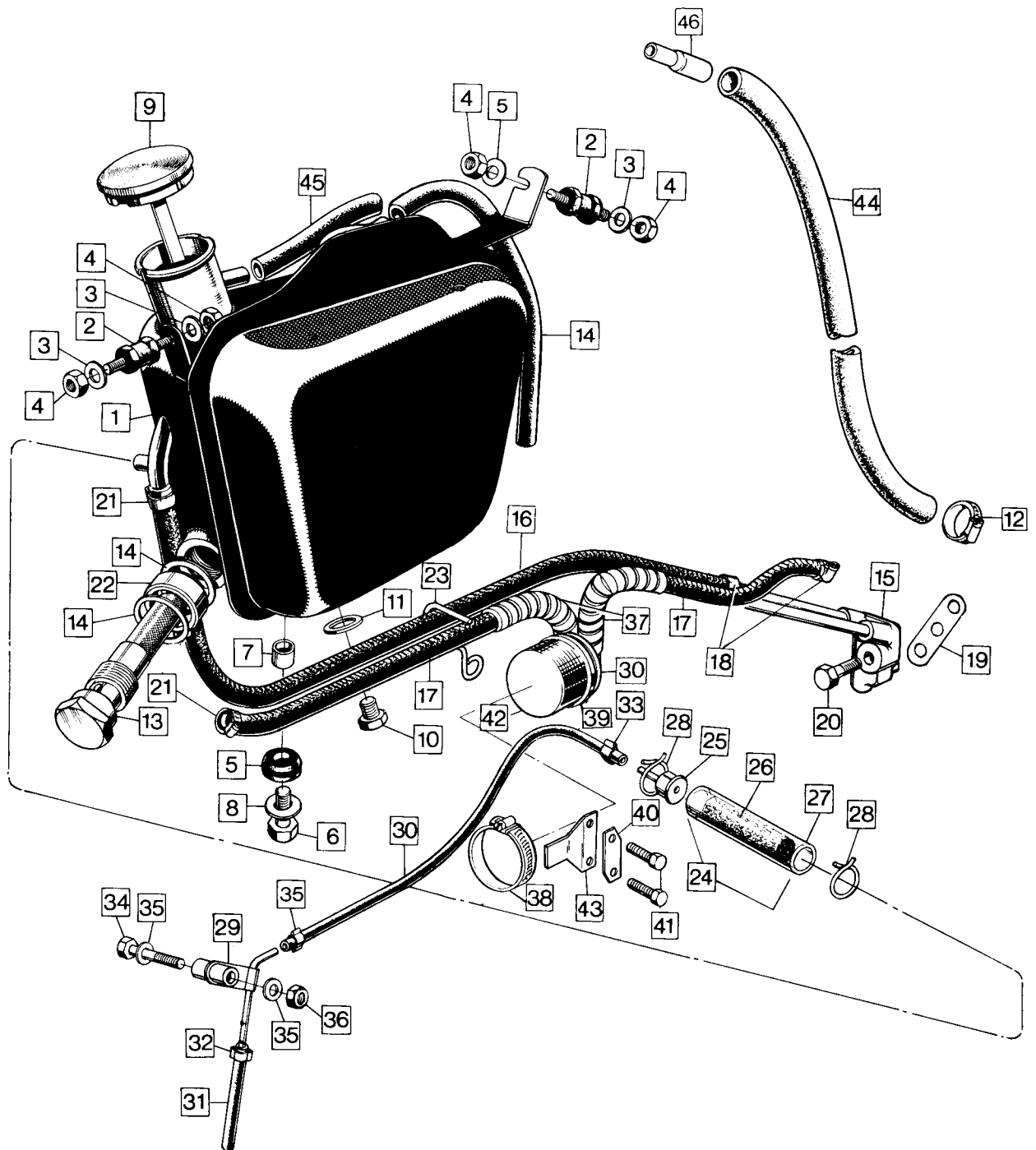


Fig. G3 Hydraulic system removed complete—note spacer between brake pads

- 3 Lift clear the speedometer and tachometer in their cases and allow them to hang on the cables.
- 4 Slacken the lower lug socket headed pinch screws (see *Fig. G8*).

The fork main tubes are a tapered fit into the upper yoke and require a shock to free them. The shock may be delivered by grasping the fork slider with both hands and snatching downwards several times. If this fails to break the taper, replace the chrome top bolt at least six threads without the instrument case and using a block of wood to protect the chrome finish (see *Fig. G4*) deliver several blows with a hammer. This will release the main tube from the upper yoke.



**Oil Tank, Oil Pipes, Junction Block,
 Rear Chain Oiler and Full Flow Oil Filter**