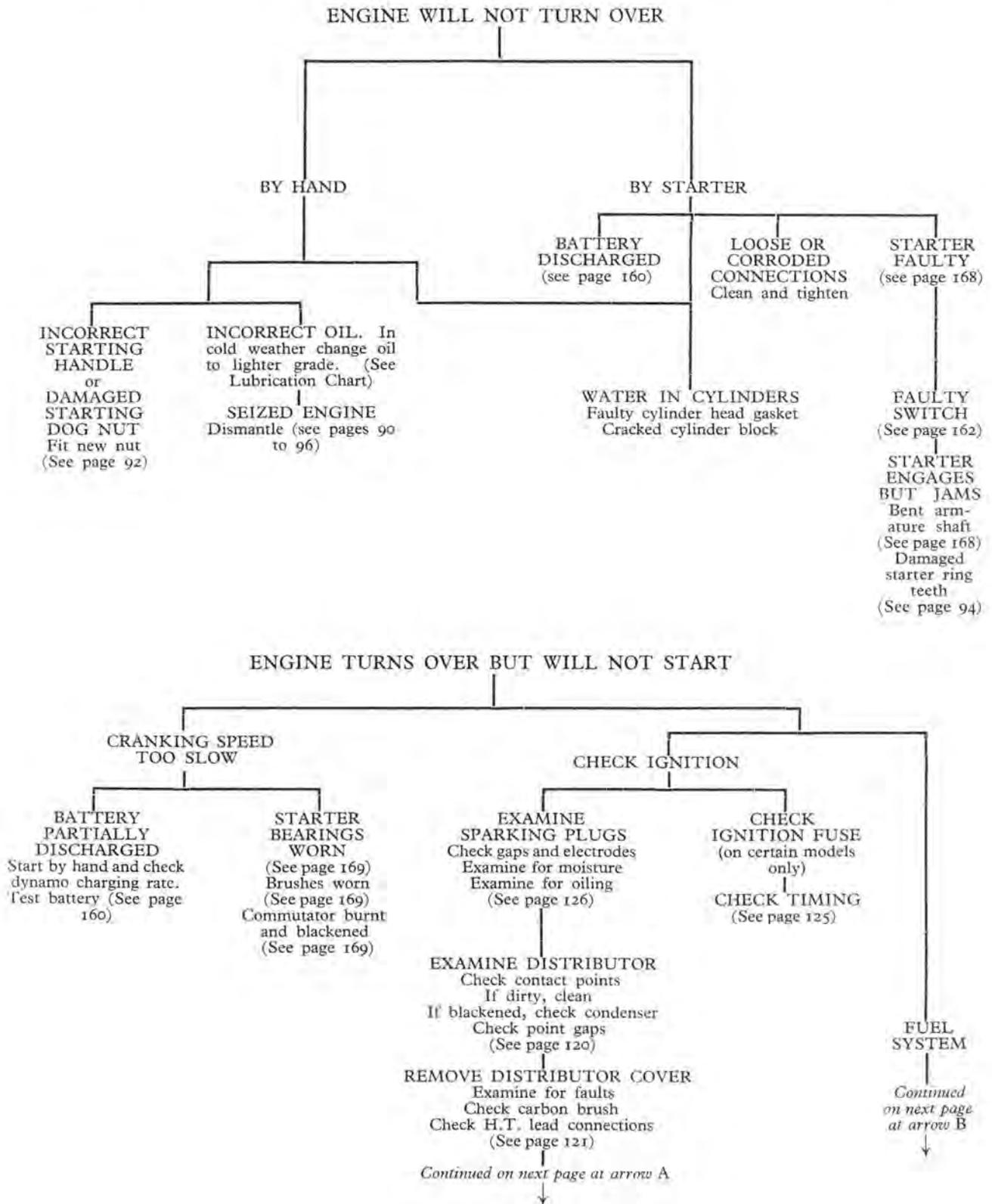


DIAGNOSIS CHART

These charts have been compiled to help personnel to trace possible engine faults, but it must be appreciated that difficulties may be caused by either one single fault or by any combination of them.



Chapter 1C

Do not mark the valve heads with a centre punch, but lay out the valve assemblies on the bench in removal order, taking care they are not in a position from which they will be moved.

The Front Cover and Oil Seal—Removal

Two semi-circular asbestos type packings behind which is an oil slinger prevent oil leakage from the front end of the sump.

One of these packings is fitted in the forward end of the sump, the other in the front cover.

To remove the front cover and oil seal :

1. Remove the distributor as described in Chapter 1C, page 120, Items Nos. 1 and 2
2. Unscrew the crankshaft starting dog and draw the pulley off the crankshaft and remove the Woodruff key.

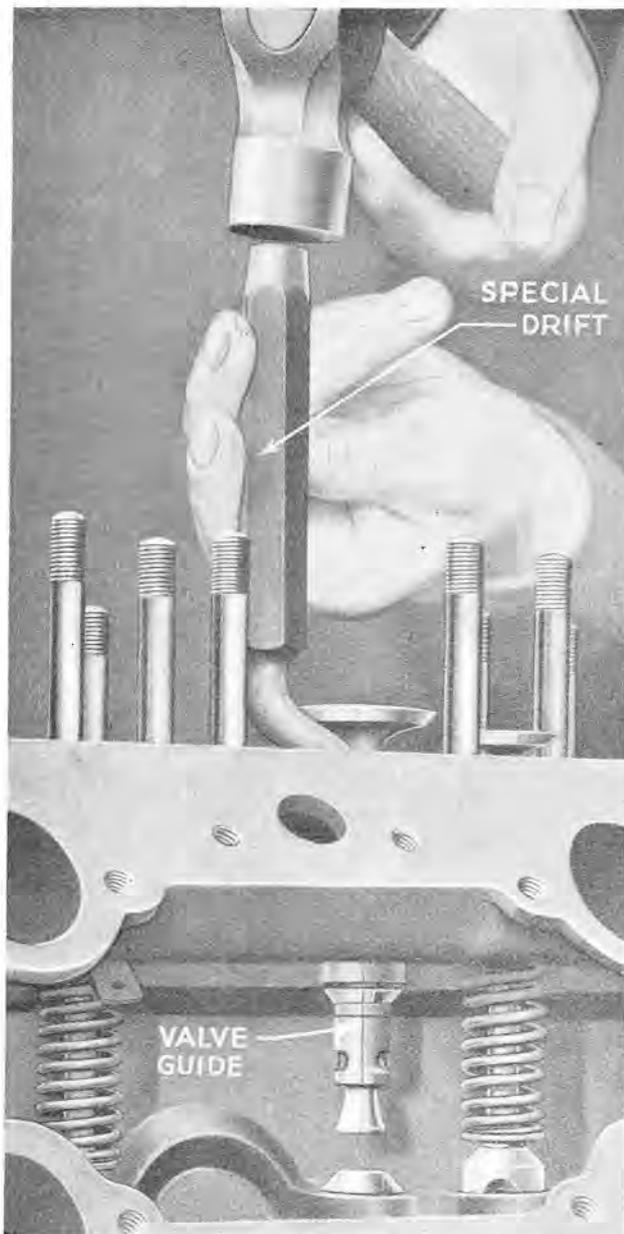


Fig. 57. VALVE GUIDE REMOVAL.

3. Unscrew the five bolts securing the cover to the cylinder block and the two bolts securing the sump to the underside of the cover, which may now be removed, taking care not to damage the gasket between the cover and the block, in order to use the same gasket again.

The Valve Push Rods—Removal

To remove the valve push rods from the push rod guides in the cylinder block, proceed as follows :—

1. Rotate the engine so that the peak of the cam fully raises the push rod and withdraws it from the guide.
2. Continue the operation until all the push rods have been removed.

Should difficulty be experienced in withdrawal, insert a piece of hooked wire in the top of the helical cut-away of the push rod, where it protrudes past the top of the push rod guide, and lift out each one in turn.

The Camshaft—Removal

When removing the camshaft from the cylinder block, care should be taken to prevent damage to the white metal camshaft bearings by the cam peaks during withdrawal.

To remove the camshaft proceed as follows :—

1. Ease the camshaft forward, then, by grasping the gear, withdraw the shaft with an oscillating turning movement.
2. To remove the gear from the camshaft, use only the special extractor tools.

Failure to use these may cause damage and distortion to the gear or camshaft shoulder where the gear is pressed on.

Oil Sump—Removal

1. Remove the drain plug and drain the oil, if this has not been done after engine removal.
2. Remove the starter motor securing bolts, when the starter motor may be removed.
3. Remove the dipstick, remove the sump bolts at each side and at the flywheel housing, then lower the sump clear of the engine.
4. The pump filter gauze may be detached for cleaning when the retainer clip has been removed.

The Oil Pump—Removal

To release the oil pump, remove the lock wire and retaining screw (K) (see Fig. 58), when the pump can be drawn out of the engine.

It is not necessary to dismantle the pump drive gears in order to remove the pump assembly.

COMPLETE INSTRUCTIONS FOR DISMANTLING WILL BE FOUND ON PAGE 95.

The Connecting Rods, Pistons and Big End Bearings—Removal

This operation follows the removal of the cylinder heads and oil sump.

1. Remove big end bearing bolt split pins, undo the nuts and take off the bearing cap.

Note :—Each bearing cap and connecting rod is stamped with a letter and number. The

Chapter IV C

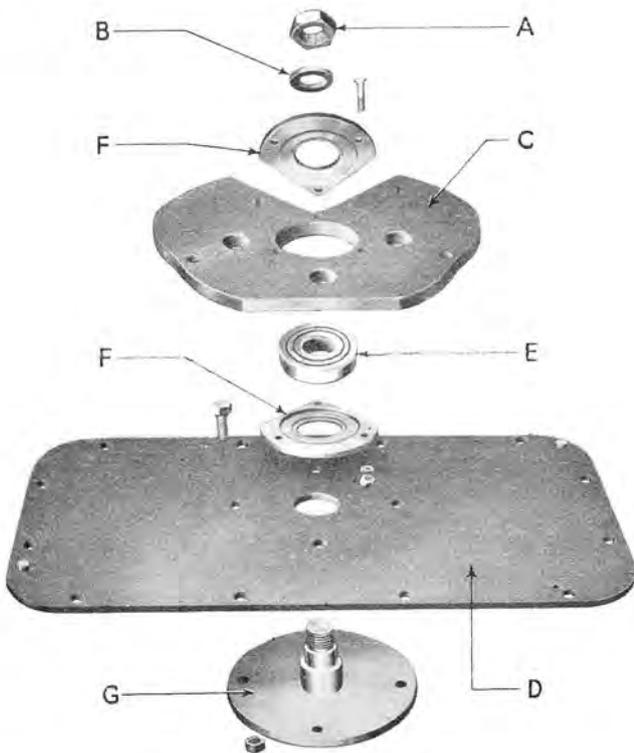


Fig. 117. STEERING CAM.

Reassembly

1. Tap the cam bearing (E) into place and pack the cavity with grease. (See Lubricating Chart.)
2. Replace the bearing plates (F) and tighten their bolts.
3. Reassemble the actuating rods to the cam, inserting the pins so that their heads are on the same side of the cam as the heads of the bearing plate bolts.
4. Replace and tighten the pin lock nuts so that their rods can freely oscillate on the pins.

5. Place the cam assembly on to the spigot (G) on the mounting plate (D), with all nuts downwards towards the plate.

This is to ensure adequate clearance for movement of the steering cross tube over the cam assembly.

6. Tap the cam and bearing down in position.

7. Replace the bearing spacer collar (B) and tighten the pivot nut (A).

This nut is sometimes relieved to clear the cross tube. When such is the case, the nut should be tightened down so that the relieved portion faces forward.

(The corner dowel hole on the mounting plate is at the rear left-hand of the plate in relation to the vehicle.)

The cam unit is now ready for replacement on to the vehicle.

Dismantling the Bogie Steering Cross Tube

1. Remove the track and jack up the vehicle, finally withdrawing the bogie assemblies (Fig. 118).
2. Remove the cam plate assembly.
3. Mark the cam roller clamps before dismantling in such a manner that each of the four clamps can be replaced in exactly the same position on the tube.
4. Remove the bolts and withdraw the clamps, together with the cam roller assemblies.
5. Detach the wires binding the leather gaiters to the cross tube sliding blocks.
6. Ease the cross tube out of the hull, passing it carefully through the cross tube bracket and the leather gaiters.
7. Unbolt and remove the cross tube brackets from the hull side plates, and detach their dust covers (J). (The lubricator (H) (refer to Fig. 44, page 63) must be removed to allow this.)
8. Unscrew and withdraw the roller pins (A) from the cross tube brackets (B), finally removing the rollers (C) and bushes (D).

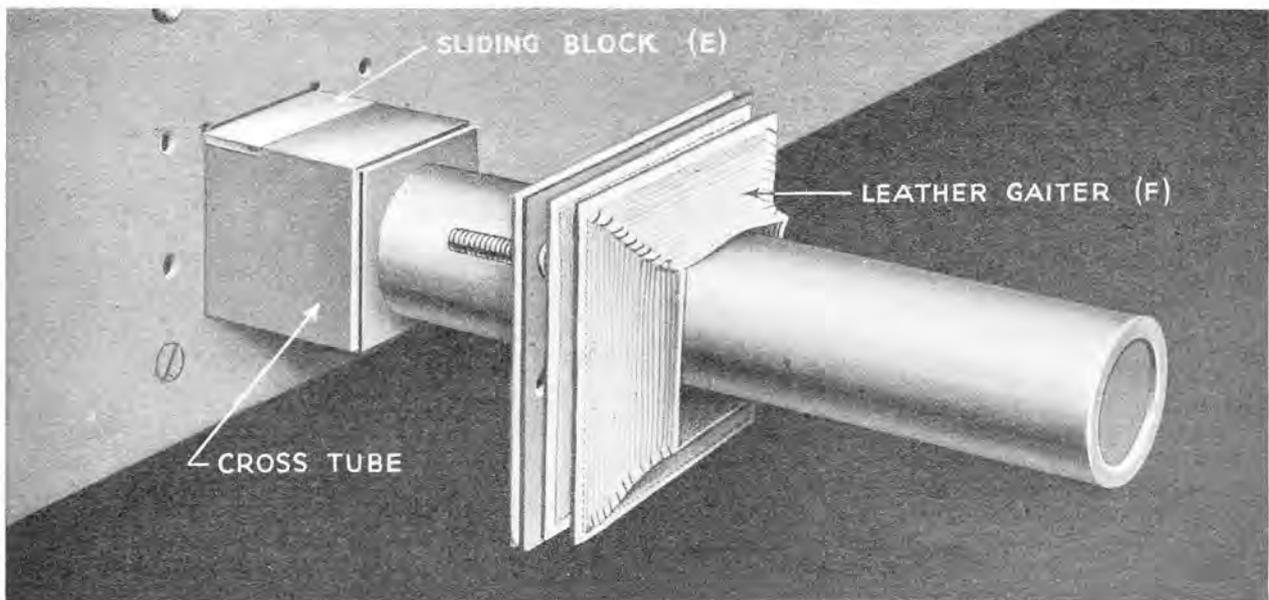


Fig. 118. STEERING CROSS TUBE.

FUEL PUMPS.

