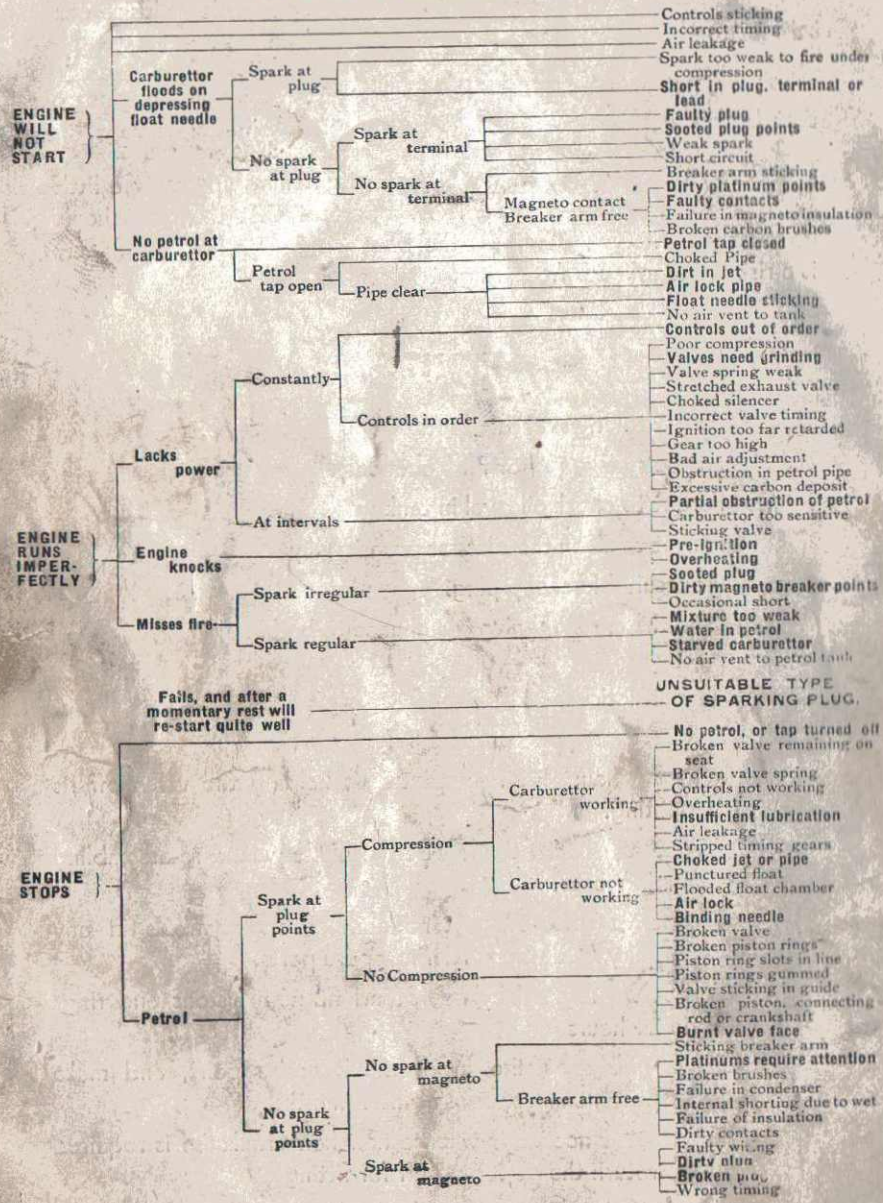


FAULT FINDING CHART.



14 Nov 1950

All Items +50%



Total 11 ✓

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MBS.01

necessary to guard against an excessive clearance between the valve stem and tappet head; since through this the valve timing is considerably altered, causing a loss of power. This alteration to the timing has a further serious effect; for cam contours are so plotted that the valves are at first lifted gently from their seatings, and are returned in the same manner. With too great a tappet clearance a hammering effect is set up, owing to the swiftly moving tappet striking the stationary valve stem, and this causes excessive wear on all parts. The TAPPET CLEARANCES, then, should be checked over frequently WHEN THE ENGINE IS COLD. THE CORRECT GAP is .004 in. on the inlet and .006 in. on the exhaust valve.

Valve timings seem to the beginner to bristle with difficulties. There is, however, no real reason for this, as timing an engine is by no means hard, the main point to remember is that the exhaust valve should be almost closed, and the inlet valve just opening, when the piston is at top dead centre.

Any engine timed in this manner is bound to run, provided nothing else is out of order. At the same time, for best results, an exact setting of the valve timing is essential and this can be obtained, as described on a previous page, by the use of a different keyway on the mainshaft pinion. The oil valve opens 15° before top centre.

In setting the magneto timing the following method should be adopted. The engine should be turned forward until the piston is 38° before the top dead centre of the compression stroke. The contact-breaker on the magneto should then be placed in the fully advanced position, and the armature rotated until the contact-breaker points are just being separated by the cam. The magneto sprocket must then be pushed on to the armature spindle, and locked with the nut, care being taken not to move the armature while so doing. The timing should then be verified. In modern magnetos a high standard of reliability has been attained, but in the case of any loss of power due to this instrument it should be returned to the makers.

If for any reason the connections to the dry sump pump have been disturbed, it is essential to see that all joints are airtight when

assembling. Should excessive oil consumption be noted, it is most probably due to air leaks at either the unions, nipples, or joints on the return side of the pump. This results in the oil not returning to the tank correctly. The first symptoms are the sparking plugs constantly oiling up. Another cause is incorrect timing of the rotary valve.

After every 50 hours the crankcase and oil tank should be drained of all oil and recharged with fresh oil. Decarbonisation should be undertaken at least every 250 hours. It is much the best way to carry out this work with the engine out of the frame and on the bench. Absolute cleanliness is the essential point in dismantling and re-assembling a power unit, and all parts should be thoroughly washed in clean paraffin. When removing the cylinder, care is necessary to prevent the piston skirt falling against the connecting rod; while the valve side of the piston should be marked if it is to be removed from the rod. If the crankcase is parted it is advisable to verify that the flywheels are running perfectly true. When re-assembling, it is necessary to make sure that the piston rings are free in their grooves; while the slots must be spaced evenly round the piston. It is not necessary to fit a paper washer at any joint, as all faces are carefully machined to fit; but a film of goldsize will make oil leakage still more unlikely. The cylinder holding-down nuts or bolts must be tightened down diagonally, a little at a time, as otherwise the cylinder neck may be strained.