



more than one-fifth open. When the car is in overdrive and the throttle is closed the switch passes current to the windings of number 2 relay, the contacts of which short circuit the centrifugal and manual switches, so as to render them non-operative. When the throttle is opened the throttle switch opens allowing the centrifugal switch and manual switch to operate normally.

THE HYDRAULIC SYSTEM

The hydraulic system is supplied with oil by a plunger type pump operated by a cam on the gearbox third motion shaft extension. The pump body is a press-fit into the overdrive front casing, and is fed with oil from the sump of the casing through a fine mesh strainer. The oil is delivered through a non-return ball valve to the accumulator cylinder, in which a piston moves back against a powerful compression spring until the required pressure of 430-460 lb. per square inch (30.23-33.34 kilogrammes per square centimetre) is reached, when relief holes are uncovered. From the relief holes the oil is led through drilled passages in the overdrive body to an annular groove between the two steady bushes for the gearbox shaft extension. Radial holes in the shaft collect the oil and deliver it along an axial drilling to other radial holes in the shaft, providing positive pressure-fed lubrication to the sun wheel, thrust washers, planet carrier and planet bearings. From the accumulator cylinder oil under pressure is supplied to the operating valve chamber by way of a drilled passage in the unit casing. When the operating valve is lifted, the oil flows under pressure via another drilled passage to the two operating pistons which work in cylinders formed in the unit casing. When the operating valve is closed, the oil in the operating cylinders is returned to the sump.

CARE AND LUBRICATION

The oil in the overdrive is common with that in the synchromesh gearbox. The oil to use is ordinary mineral oil, in the following grades:—

Normal summer climates - - - S.A.E.30

Normal winter climates - - - S.A.E.20

Under no circumstances should extreme pressure gear oils such as S.A.E.80, S.A.E.90 be used because the centrifugal effect of the planets may separate some of the additives from the oil and cause sludging. The oil capacity of the gearbox and overdrive unit is 4½ pints (2.556 litres), and the correct level must be carefully maintained. It will be necessary to remove the drain plugs from both gearbox and overdrive unit to drain them, but refilling is done through the gearbox only.

Refill the gearbox with oil after draining and then drive the car a short distance, after which top up with oil because some of the oil will have been taken into the hydraulic system. Do not run car with no oil in the unit because air may enter the hydraulic system.

Cleanliness is the keynote to satisfactory performance of any hydraulic system. The smallest amount of dirt or "fluff" from a wiping cloth which finds its way into a valve will cause a great deal of unnecessary difficulty. Pay particular attention to the clean condition of the oil used for filling, and carefully clean all around the filler plug each time before removing it. Regular attention to these small details will be rewarded by long and trouble-free service. Access to the gearbox filler plug C (Fig. 14) is obtained through a small panel, secured by one screw and positioned at the extreme front right-hand side of the centre tunnel.

3 3/4 qts to
ALL
GB+OD