

# ROLLS-ROYCE AUTOMATIC GEARBOX

## SECTION 14 — OIL CIRCULATION

Oil for the fluid coupling, the hydraulic servo system and gearbox lubrication is supplied from the sump which is filled through a filler neck on the right-hand side of the gearbox. The oil is drawn through a gauze filter in the sump by the two pumps as previously described. The flow to the fluid coupling passes forward through the annular space between the front drive

shaft and the pump body, into the fluid coupling. When the coupling has filled with oil, a relief valve opens to permit a flow between the main and intermediate drive shafts to lubricate the bearings, and through holes drilled in the shafts to lubricate the clutches, gears, splines and thrust washers of the rotating assemblies (see Fig. 19).

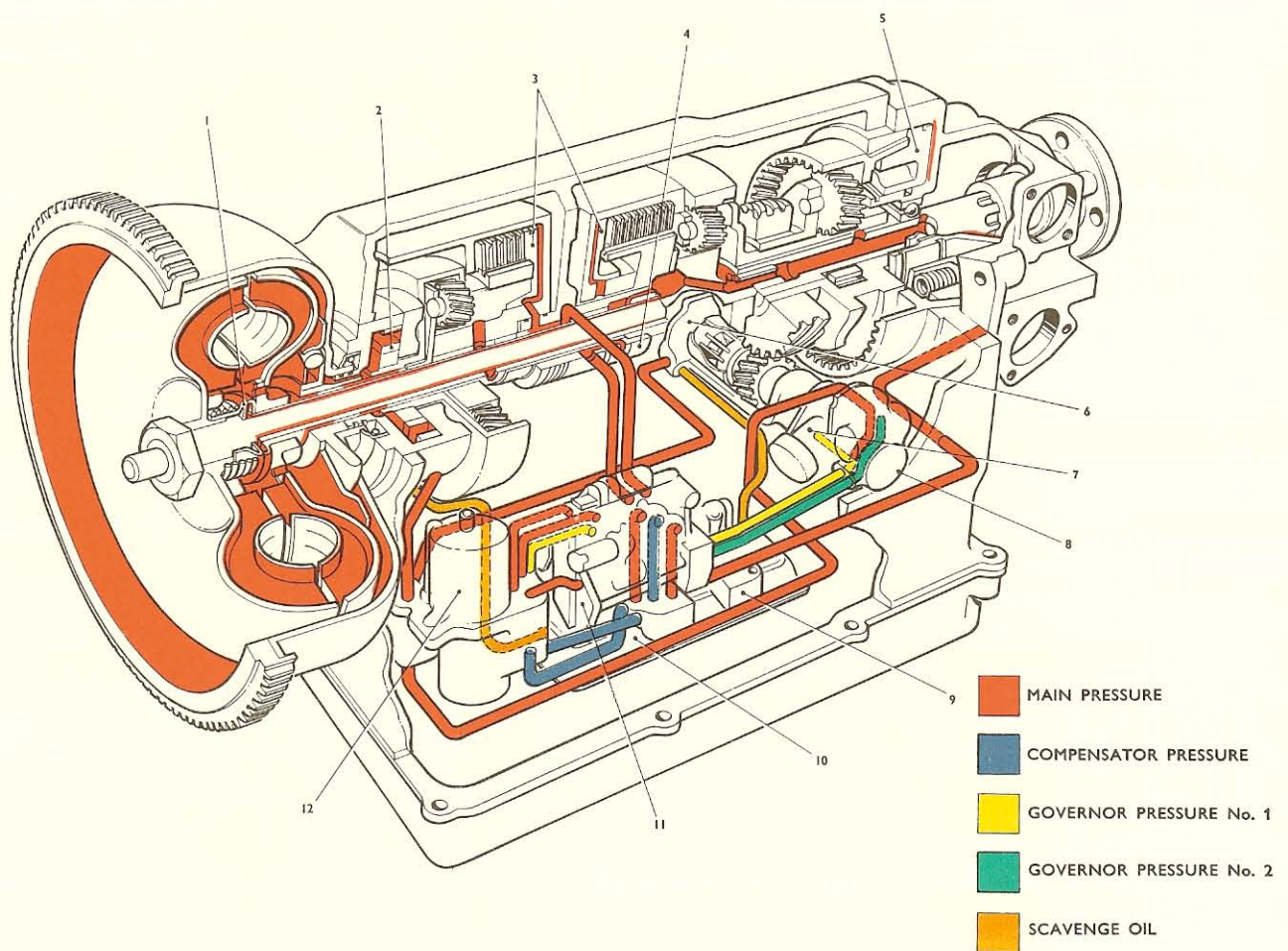


Fig. 19 Oil circulation diagram

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1 CHECK VALVE  
2 FRONT PUMP  
3 CLUTCH PISTONS

4 OIL DELIVERY SLEEVE  
5 REVERSE PISTON  
6 REAR PUMP

7 GOVERNOR  
8 GOVERNOR SLEEVE  
9 REAR SERVO

10 FILTER  
11 CONTROL VALVE UNIT  
12 FRONT SERVO

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Pipes carry the oil from both pumps to the casing of the front servo unit from where it passes through drillings in the main casing to the control valve assembly, then back to operate the servo pistons. The oil feed to the governor is through drillings in the casing; the governor pressures pass from the governor sleeve to the control valve assembly through the two straight oil pipes.

The annular spaces in the governor sleeve are sealed from each other by piston-ring type oil seals.

The oil flow from the control valve assembly passes through drillings in the main casing to the front and rear servo units and to an oil delivery sleeve on the intermediate shaft between the front and rear drums. This sleeve forms the centre plain bearing and is located in the centre web of the main casing by a dowel in the bearing cap. Oil passes through the delivery sleeve to the front and rear clutches; oil leakage is prevented by piston-ring type oil seals.

The oil to the reverse clutch passes through a pipe and drillings in the rear casing.