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SECTION 12 — REAR OIL PUMP AND GOVERNOR

The rear pump and governor (see Fig. 18) are mounted on a shaft driven by a bronze skew gear on the reverse planet gear carrier. The shaft is split and incorporates a spring drive between the steel driven gear and the pump gears, to suppress pump noise. 'R' type and early S1 rear pumps were not fitted with a spring drive, the rear pump having a solid drive between gears.

The pump consists of a small gear, meshing with a larger annulus gear which itself rotates in the pump casing. The inlet and outlet ports are separated by a crescent shaped projection of the pump casing which also forms a seal between the periphery of both gears. Oil is carried in sealed pockets between the gear teeth from the inlet to the outlet port.

A flat plate secured by four screws seals the chamber. Oil is drawn through an inlet pipe which projects into the sump filter and is delivered through a pipe to the front servo.

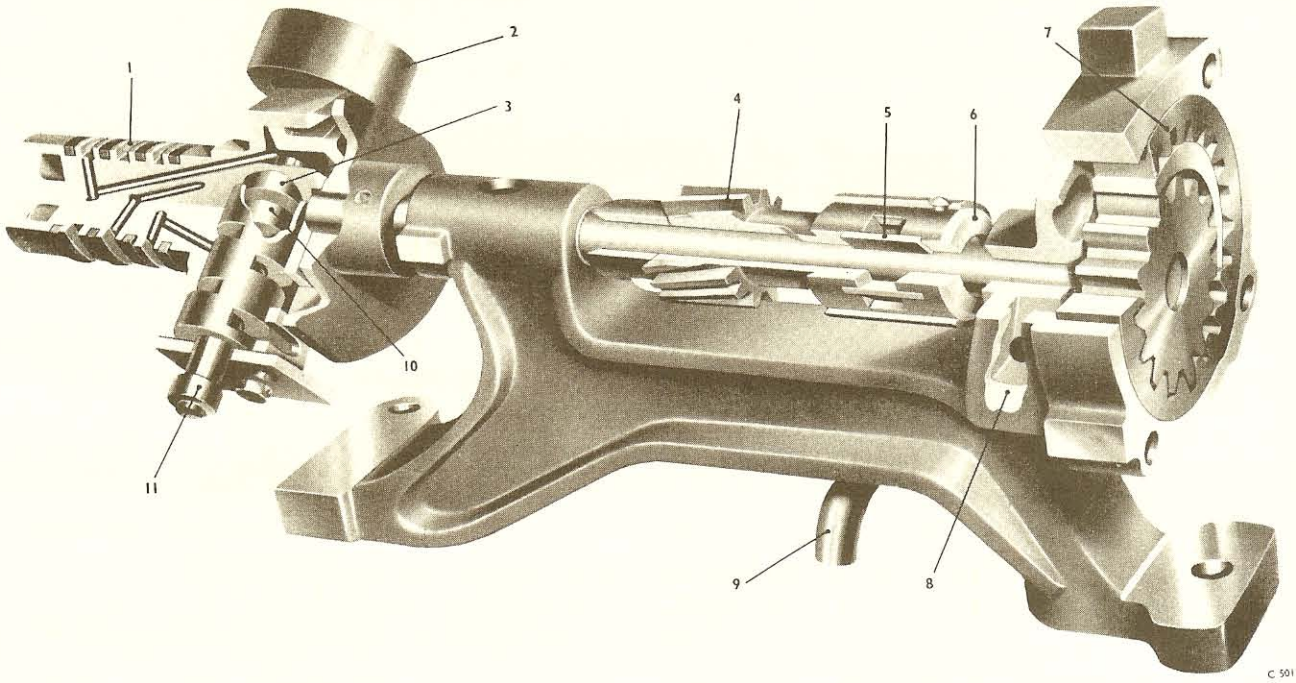

Fig. 18 Rear pump and governor

1. PISTON-RING TYPE SEALS
2. G1 WEIGHT
3. G1 VALVE
4. DRIVEN GEAR
5. DRIVE VANE
6. DRIVING DOG
7. ANNULUS GEAR
8. DELIVERY PORT
9. INTAKE PIPE
10. G2 VALVE
11. G2 WEIGHT

The governor consists of a small casting bolted to a flange which is pinned to the oil pump drive shaft. Oil is fed to the casting through a stationary sleeve, which is a close fit around three annular grooves, these are sealed from each other by four piston-ring type seals. From the annular grooves the oil flows through drillings to ports controlled by two valves and operated by governor weights.

The valves are balanced by metered oil pressure tending to hold them in, and centrifugal force trying to move them out. Each valve attains equilibrium when the centrifugal force equals the pressure holding it in, and as one governor weight is heavier than the other, the governor delivers two pressures both of which are functions of road speed. Oil at these pressures, termed G1 and G2, flows through drillings in the sleeve to pipes leading to the control valve unit. G1 pressure builds up more quickly with speed than G2 pressure, because the G1 governor weight is the heavier of the two.