

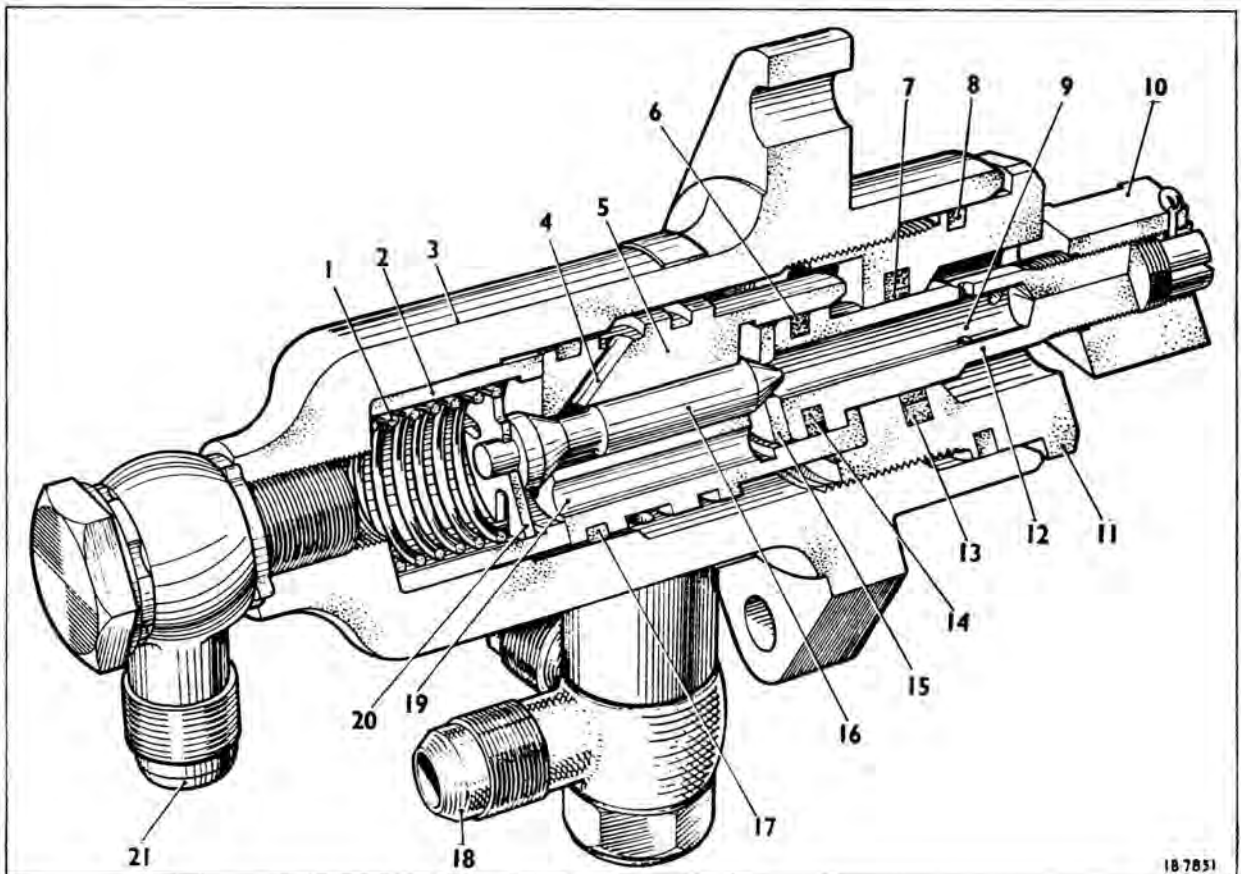
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Fig 21 Transmission layout - diagrammatic

STEERING CONTROL VALVE

349. The steering control valve (Fig 52) is operated by a linkage in the steering box and it is attached to the box so that the hydraulic fluid returned by the action of the control valve passes through the steering box and lubricates the internal mechanism before reaching the fluid supply tank. For details of the linkage see para 296.

350. The control valve comprises a cast-iron body (3) formed with a threaded hole for a 90° banjo union which communicates with the two steering jacks and the hydraulic accumulator, a similar hole for a banjo union which also communicates with the two steering jacks, and a central bore which houses the valve components. A valve



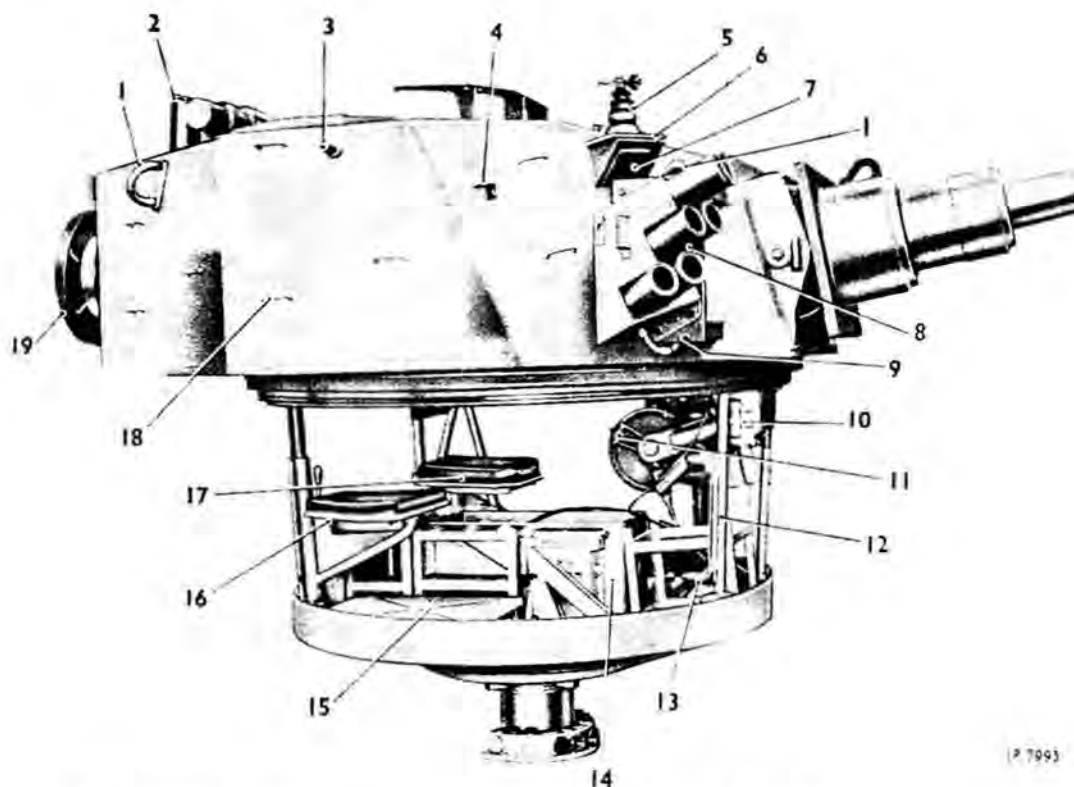
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|-------------------------------|------------------------------|
| 1 Spring | 12 Push-rod |
| 2 Spacing sleeve | 13 Rubber seal |
| 3 Body | 14 Rubber seal |
| 4 Fluid port | 15 Valve washer |
| 5 Valve sleeve | 16 Needle valve |
| 6 Fabric seal (9/16 in. I.D.) | 17 Seal |
| 7 Fabric seal (1/2 in. I.D.) | 18 90° banjo connection |
| 8 Seal | 19 Fluid port |
| 9 Outlet port | 20 Spring retainer |
| 10 Special nut | 21 Straight banjo connection |
| 11 Seal housing | |

Fig 52 Steering control valve

460. The gun mounting is elevated by means of a manually operated single speed gear (Fig 70(10)) supported from a bracket attached to the turret front casting. Movement is obtained through gears to an elevating screw attached to the gun mounting. The elevating handwheel (Fig 69(17)) enables the gunner to lay the gun throughout the elevation range of $+20^{\circ}$ and -10° .

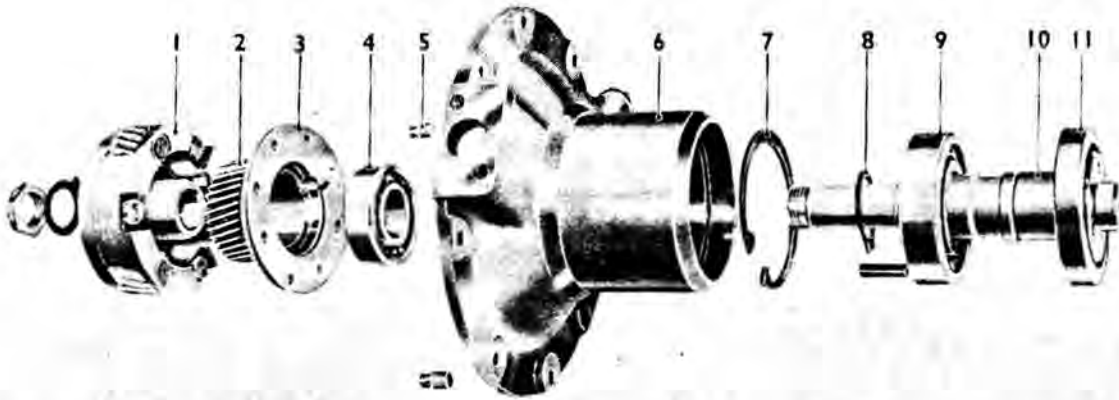
461. A basket floor (platform) (13) is suspended from the turret by a support tube (16) and an inverted V-shaped driving tube (12). Secured centrally below the basket floor is a rotary base junction (14) for connecting the turret and hull electrical circuits. The outer periphery of the basket floor is located between two front and two rear restraining rollers (Fig 95(7)) mounted in the hull.

462. A commander's hatch (Fig 71(8)) and a gunner's hatch (13) on the turret roof plate are each fitted with hinges incorporating a laminated torsion bar to assist opening and closing.



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|---|-------------------------------|----|----------------------------|
| 1 | Lifting eye | 10 | Elevating gear |
| 2 | Commander's hatch stop | 11 | Clicker |
| 3 | MG clamp shaft | 12 | Turret basket support tube |
| 4 | Spotlight bracket | 13 | Fire extinguisher bracket |
| 5 | Aerial base | 14 | Spent case bin |
| 6 | Aerial base mounting | 15 | Commander's platform |
| 7 | Coverplate | 16 | Commander's seat |
| 8 | R.H. smoke discharger | 17 | Gunner's seat |
| 9 | R.H. smoke discharger bracket | 18 | Lashing eye |
| | | 19 | Cable reel |

Fig 70 R.H. side view of turret complete with basket



IP6355A

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|---------------------------------------|---|
| 1 Planet assembly | 7 Circlip retaining bearing
in end cover |
| 2 Input sunwheel | 8 Circlip retaining bearing
to shaft |
| 3 Gasket | 9 Roller bearing |
| 4 Ball bearing | 10 Input shaft |
| 5 Dowel for sunwheel and
end cover | 11 Oil seal |
| 6 End cover | |

Fig 112 Input gear train

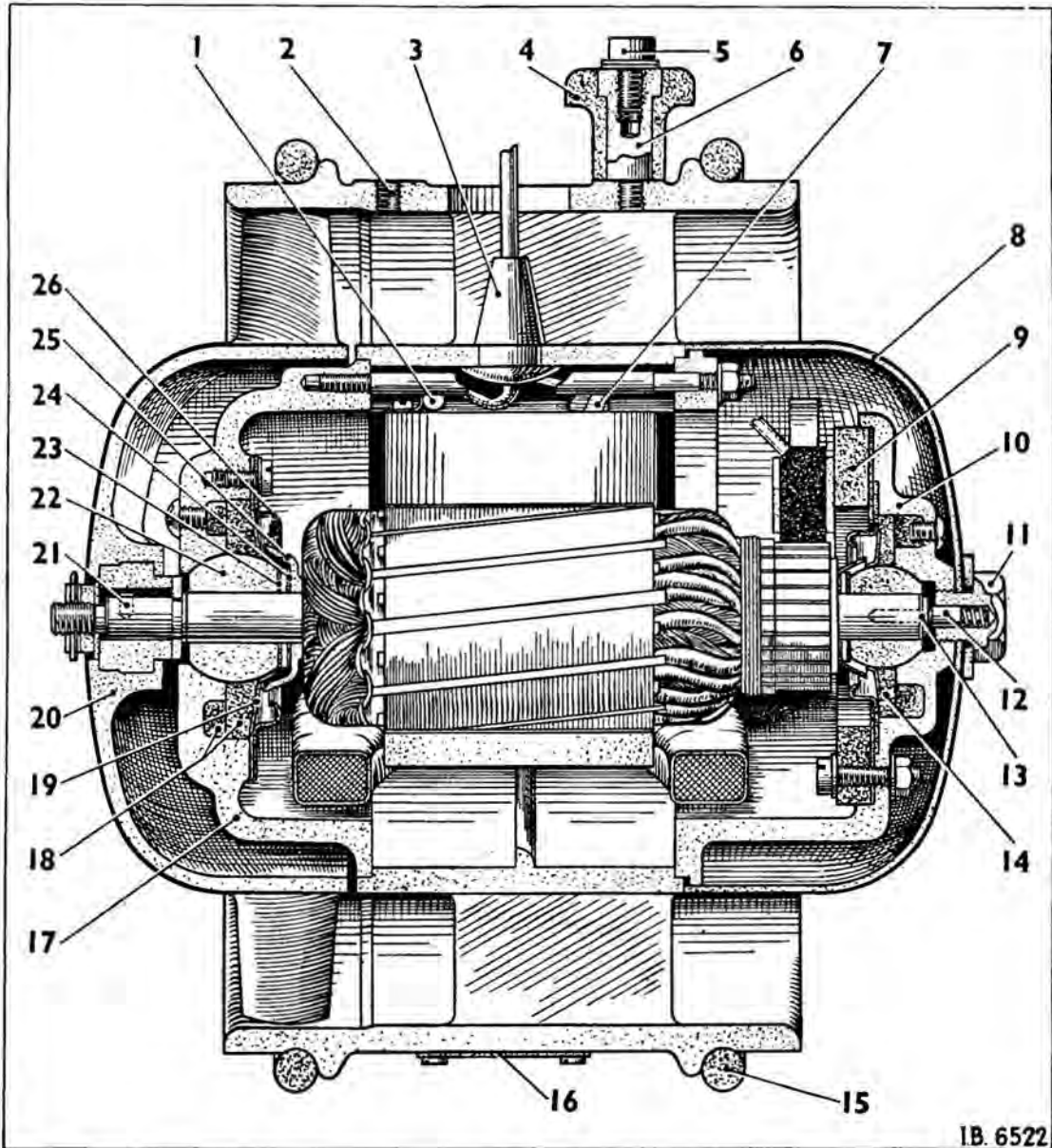
and tab washer. The outer member locates in counterbores in the end cover and sunwheel, the sunwheel and gasket (3), being dowelled to the cover by two pins and secured by nuts and tab washers fitted to six No.2 B.A. cover studs.

719. The planet assembly (1) consists of three planets with freely floating lead bronze bushes, carried on steel pins fitted between a carrier plate and the planet carrier. The pins are riveted to the plate. Three bolts with tab washers clamp the assembly together.

720. The input annulus and clutch assembly (Fig 113(9)) is carried by a phosphor bronze flanged thrust bush (10) fitted to the shouldered end of the output sunwheel (2). The flange of the bush fits between the annulus and the planet carrier to take up lateral thrust. It is a selective fit dependent upon the required flange thickness (Fig 107(X)). The bush is stamped with a size indication letter A (0.308-0.307 in.), B (0.296-0.295 in.), C (0.284-0.283 in.) or D (0.272-0.271 in.). The flange thickness required is determined by measuring the distance from the face of the end cover to the outer face of the planet carrier and subtracting this from the distance from the outer face of the gearbox housing to the inside face of the input annulus. The bush fitted is at least 0.005 in. below and not more than 0.016 in. below this figure, e.g. if the dimension obtained is 0.285 in. the required bush is 'D'.

Output gear train

721. The output gear train (Fig 113) is very similar to the input. In this assembly the annulus (3) is bolted to an inner web of the housing, the sunwheel (2) is keyed to the armature shaft and secured by a nut and tab washer, and the planet assembly (5) is carried on a phosphor bronze bush (6) freely fitted to the outer race of the free-wheel, para 724.



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| 1 Capacitor | 14 Felt washer |
| 2 Alternative position
for location peg | 15 Rubber mounting ring |
| 3 Cable bush | 16 Modification record
plate |
| 4 Bush | 17 Driving end bracket |
| 5 Earth terminal | 18 Felt washer |
| 6 Location peg | 19 Spring plate |
| 7 Choke | 20 Fan |
| 8 Commutator end cover | 21 Key |
| 9 Brush gear assembly | 22 Bearing bush |
| 10 Commutator end bracket | 23 Steel shim |
| 11 Earth brush holder | 24 Fibre shim |
| 12 Earth brush and spring | 25 Oil thrower |
| 13 Earthing stud | 26 Retaining ring |

Fig 158 Ventilating fan