

Service Manual

Allison Transmission

HD 4060, 4060P, 4060R, 4060PR

HD 4560, 4560P, 4560R, 4560PR

HD 4070, 4070P, 4070R, 4070PR

B 500, B 500P, B 500R, B 500PR

Revision No. 2 January 1999

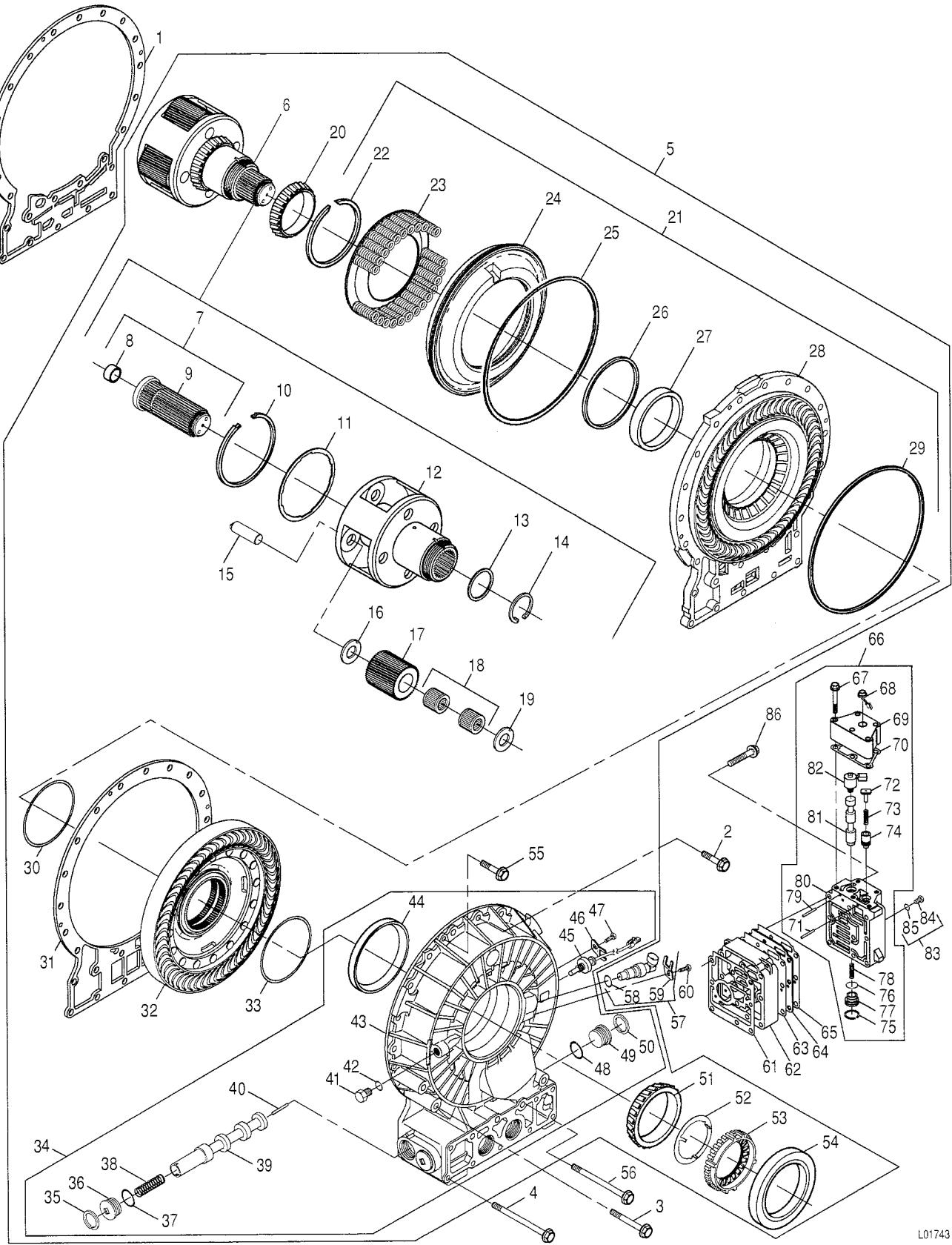
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Allison Transmission

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Foldout 10,A. Retarder And P3 Planetary, Retarder Valve Body Module — Exploded View

HD 4000/B 500 SERIES AUTOMATIC TRANSMISSIONS

This Page Contains The Text For Foldout 10,A.

- 1 — Retarder Housing Gasket
- 2 — Bolt, M12 x 1.75 x 55 (12), **A**
- 3 — Bolt, M12 x 1.75 x 105 (2), **A**
- 4 — Bolt, M10 x 1.5 x 160 (7), **B**
- 5 — Retarder and P3 Planetary Module
- 6 — P3 Planetary Carrier Assembly
- 7 — Output Shaft Assembly
- 8 — Bushing
- 9 — Output Shaft
- 10 — Internal Retaining Ring
- 11 — P3 Indexing Ring
- 12 — P3 Planetary Carrier
- 13 — Thrust Washer
- 14 — External Retaining Ring
- 15 — P3 Planetary Spindle (4)
- 16 — P3 Thrust Washer (4)
- 17 — P3 Pinion Gear (4)
- 18 — Roller Bearing Assembly (4 groups of 2)
- 19 — P3 Thrust Washer (4)
- 20 — Cone and Roller Bearing Assembly
- 21 — Retarder Stator Assembly
- 22 — External Retaining Ring
- 23 — Spring and Retainer Assembly
- 24 — C5 Clutch Piston
- 25 — C5 Piston Outer Sealring
- 26 — C5 Piston Inner Sealring
- 27 — Roller Bearing Cup
- 28 — Retarder Stator
- 29 — O-Ring
- 30 — Retarder Sealring
- 31 — Retarder Housing Gasket
- 32 — Rotor Assembly
- 33 — Retarder Sealring
- 34 — Retarder Housing Assembly
- 35 — Retaining Ring
- 36 — Valve Plug
- 37 — O-Ring
- 38 — Valve Spring
- 39 — Retarder Valve
- 40 — Spring Pin
- 41 — Tachograph Plug, **C** if used with Brass Washer
42; **D** if used with O-Ring 42
- 42 — Brass Washer (later models);
O-Ring (earlier models)
- 43 — Retarder Housing
- 44 — Roller Bearing Cup
- 45 — Temperature Sensor Assembly
- 46 — Retainer
- 47 — Bolt, M8 x 1.25 x 20, **D**
- 48 — O-Ring

- 49 — Valve Plug
- 50 — Retaining Ring
- 51 — Cone and Roller Bearing Assembly
- 52 — Locknut Retainer
- 53 — Bearing Retainer Locknut, **E**
- 54 — Oil Seal Assembly
- 55 — Bolt, M8 x 1.25 x 25 (3), **F**
- 56 — Bolt, M12 x 1.75 x 165 (4), **A**
- 57 — Speed Sensor Assembly
- 58 — O-Ring
- 59 — Speed Sensor Retainer
- 60 — Bolt, M8 x 1.25 x 20, **D**
- 61 — Channel Plate Gasket
- 62 — Channel Plate
- 63 — Separator Plate Gasket
- 64 — Solenoid Separator Plate
- 65 — Separator Plate Gasket
- 66 — Retarder Control Body Assembly
- 67 — Bolt, M8 x 1.25 x 55 (5), **D**
- 68 — Solenoid Connector
- 69 — Modulating Solenoid Cover
- 70 — Solenoid Cover Gasket
- 71 — Retaining Pin, 3 OD x 43
- 72 — Valve Stop
- 73 — Spring, 7.8 OD x 29.2
- 74 — Exhaust Back-Fill Valve
- 75 — Retaining Ring
- 76 — O-Ring
- 77 — Plug
- 78 — Spring
- 79 — Retaining Pin, 2.5 OD x 40
- 80 — Retarder Control Body
- 81 — Retarder Control Valve
- 82 — Solenoid
- 83 — Pressure Tap Plug Assembly
- 84 — Pressure Tap Plug, **G**
- 85 — O-Ring
- 86 — Bolt, M8 x 1.25 x 100 (9), **D**

| Torque | N·m | lb ft |
|----------|--------|-------|
| A | 90–110 | 66–81 |
| B | 51–61 | 38–45 |
| C | 60–67 | 45–49 |
| D | 24–29 | 18–21 |
| E | * | * |
| F | 12–15 | 9–11 |
| G | 10–13 | 7–10 |

* Before module is installed 193–207 N·m (143–152 lb ft);
After Module is installed 74–88 N·m (55–64 lb ft)