Manual No.:KM-8TG-E
Vol. No. :T8TG-E-02

# AH350-D and AH400-D Articulated Dump Truck Operation and Tests

## TECHNICAL MANUAL
## AH350-D and AH400-D Articulated Dump

Sarvice Manual (Manual No. KM-3540DE) consists of the following two separated volumes;

| | |
|---|---|
| Technical Manual | : vol. No. T8TG-E |
| Workshop Manual | : vol. No. W3540DE |

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| Symptom | Problem | Solution |
|---|---|---|
| | Wiring or connections. | Check transmission control harness (W12) and transmission harness (W13). |
| | Transmission internal wiring harness or C3 pressure switch. | Repair or replace wiring harness or C3 pressure switch. See Disassemble and Assemble Control Valve (Group 0350 in repair manual). |
| | Damaged valve body gaskets or stuck (or sticky) valves. | Replace gaskets. Clean or replace valves as necessary. See Disassemble and Assemble Control Valve (Group 0350 in repair manual). |
| | Worn or damaged clutches. | Repair or replace transmission. See Remove and Install Transmission (Group 0300 in repair manual). See Disassemble Transmission (Group 0350 in repair manual). |
| | TCU (A5). | Replace TCU. See Remove and Install Transmission Control Unit (this group). |
| **5587 — Oncoming C3PS Test After N1 to R Shift**<br>*DNS, DNA, and RPR conditions exists.*<br>*Transmission service light ON.* | Oil level too low or too high. | Add or remove oil to obtain correct level. |
| | Worn oil pump. | Repair pump. See Disassemble and Assemble Front Support and Charging Oil Pump (Group 0350 in repair manual). |
| | Wiring or connections. | Check transmission control harness (W12) and transmission harness (W13). |



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## AH400-D/AH350-D STALL SPEEDS

| Model | Low idle | High idle | Stall speed |
|---|---|---|---|
| AH400-D | 600 rpm | 2240 rpm | 1637 rpm |
| AH350-D | 600 rpm | 2240 rpm | 1596 rpm |

### Analysing Stall Test Results

If stall test readings are 150 RPM higher or lower than specifications...

- The stall test readings are acceptable.
- Stall test readings may vary slightly above or below specifications, depending on ambient temperature, altitude, tachometer variations and other conditions.

If stall test readings are 200 RPM or more below specifications...

- The engine may be down on power.
- The engine may not be attaining full fuel.

If stall test readings are extremely low (about 30% lower than specifications...)

- The engine may be severely down on power.
- The engine may not be attaining full fuel.
- The converter stator may be freewheeling.

If stall test readings are 200 RPM or more above specifications...

- The transmission may have slipping clutches.
- Transmission oil level might be too low or high.
- Converter out pressure may be too low due to internal transmission problem.

If stall test readings are normal, but there are high converter out temperatures after cool down...

- The converter stator may be stuck.
- The transmission cooling system may not be operating properly.
- The engine cooling system may not be operating properly.

### Trouble Shooting A Freewheeling Stator

A freewheeling stator can cause extremely low stall speeds.

- To verify a freewheeling stator prior to tear down, road test the vehicle.
- If the vehicle has no power at low speed, but performs normally at high speeds, the stator may be freewheeling.
- Elevated oil temperatures or no full-throttle upshifts can also indicate a freewheeling stator.

### Troubleshooting A Stuck Stator

A stuck stator can cause high converter out temperatures after cool down, despite normal stall test readings.

- A stuck stator can also prevent the vehicle from reaching its top speed and/or transmission overheating at highway speeds.
- To verify a stuck stator prior to tear down, stall test as follows:
- Stall until converter out temperature reaches 120-130°C (250- 270 °F.)
- Place the transmission in neutral, then accelerate the engine to between 1200 and 1500-RPM for 2 to 3 minutes.
- If the converter out temperature doesn't drop, the stator may be stuck or the engine/ transmission cooling system may be malfunctioning.

If tests confirms that the converter stator is suspect, remove the transmission, disassemble the torque converter and inspect the stator, springs, rollers and race.

### Stall Torque Ratio

Stall torque ratio reflects the amount of turbine shaft torque the converter develops compared to the amount of torque the engine develops.

Example: If the converter configuration provides a 2:1 stall torque ratio, the torque converter is capable of delivering twice the engine's torque to the transmission gearing.

**NOTE: The Stall Torque Ratio Of The B40D Is 1.9: 1**





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## Diagnose Heater System Malfunctions

| Symptom | Problem | Solution |
|---|---|---|
| **Heater System Does Not Operate** | AC/heater blower fuse | Replace fuse. |
| | Blower motor switch/blower motor fan switch (if equipped) | Check switch. |
| | Wiring Harness | Check side console harness and cab roof harness wiring. |
| **Heater Does Not Warm Interior of Cab** | Engine coolant temperature cold | Engine must be at operating temperature. |
| | Fresh air filter restricted | Clean or replace filter. |
| | Recirculating air filter restricted | Clean or replace filter. |
| | Heater hose kinked, pinched or collapsed | Re-route or re-index hoses. Replace collapsed hoses. |
| | Heater coil fins clogged with dirt or dust | Clean heater fins. |
| | AC/heater blower motor/heater blower motor (if equipped) failed or operating too slowly | Check motor. See Heating/Air Conditioning Component Location (Group 9031-15). |
| | Heater valve does not open | Inspect, repair, adjust or replace heater valve or cable. |
| **Interior Windows Continue to Fog** | Fresh air filter restricted | Clean or replace filter. |
| | A/C system off (if equipped) | Move A/C-heater ON/OFF switch to A/C position. |

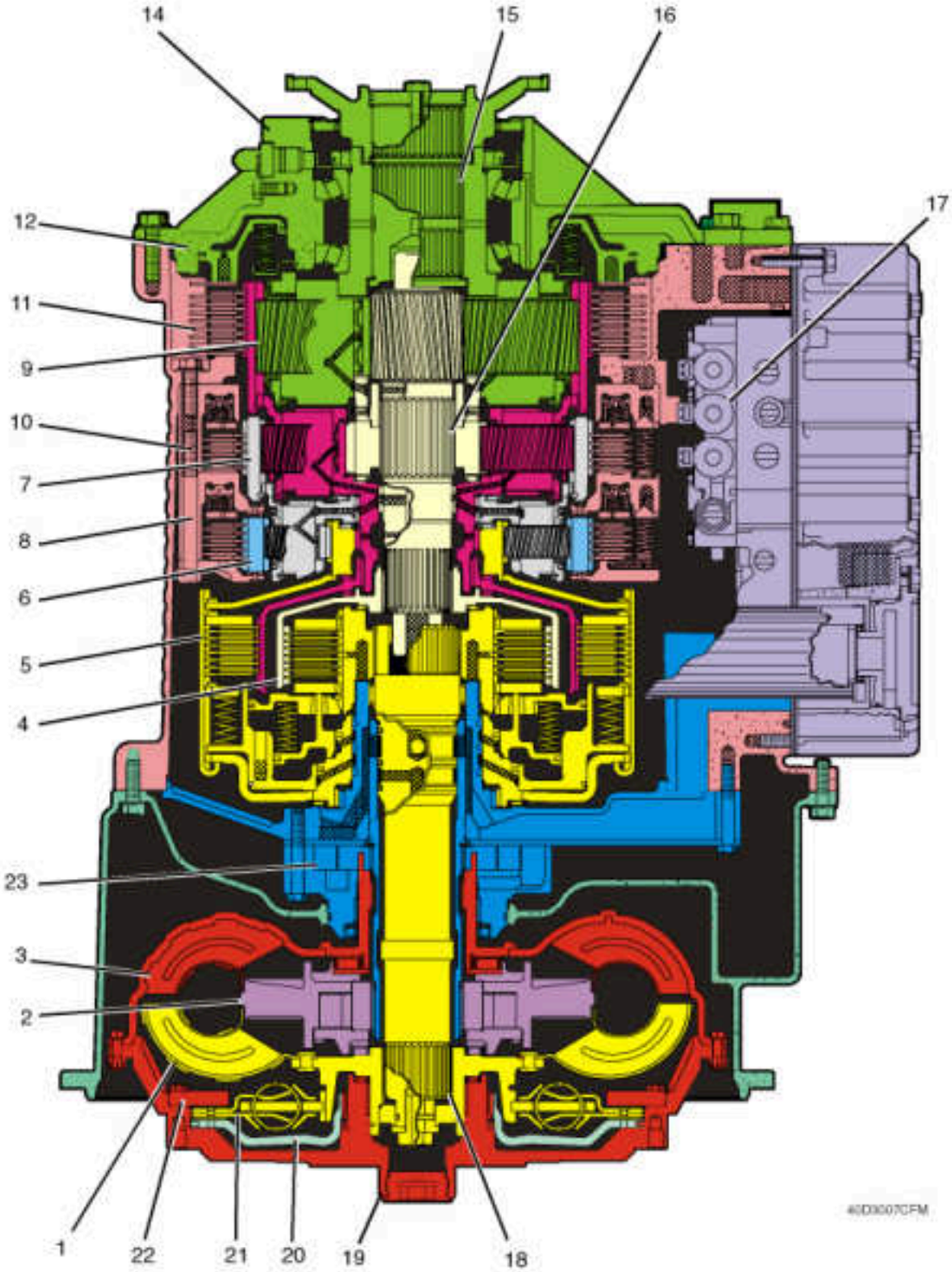
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## Transmission Cross Sectional Diagram

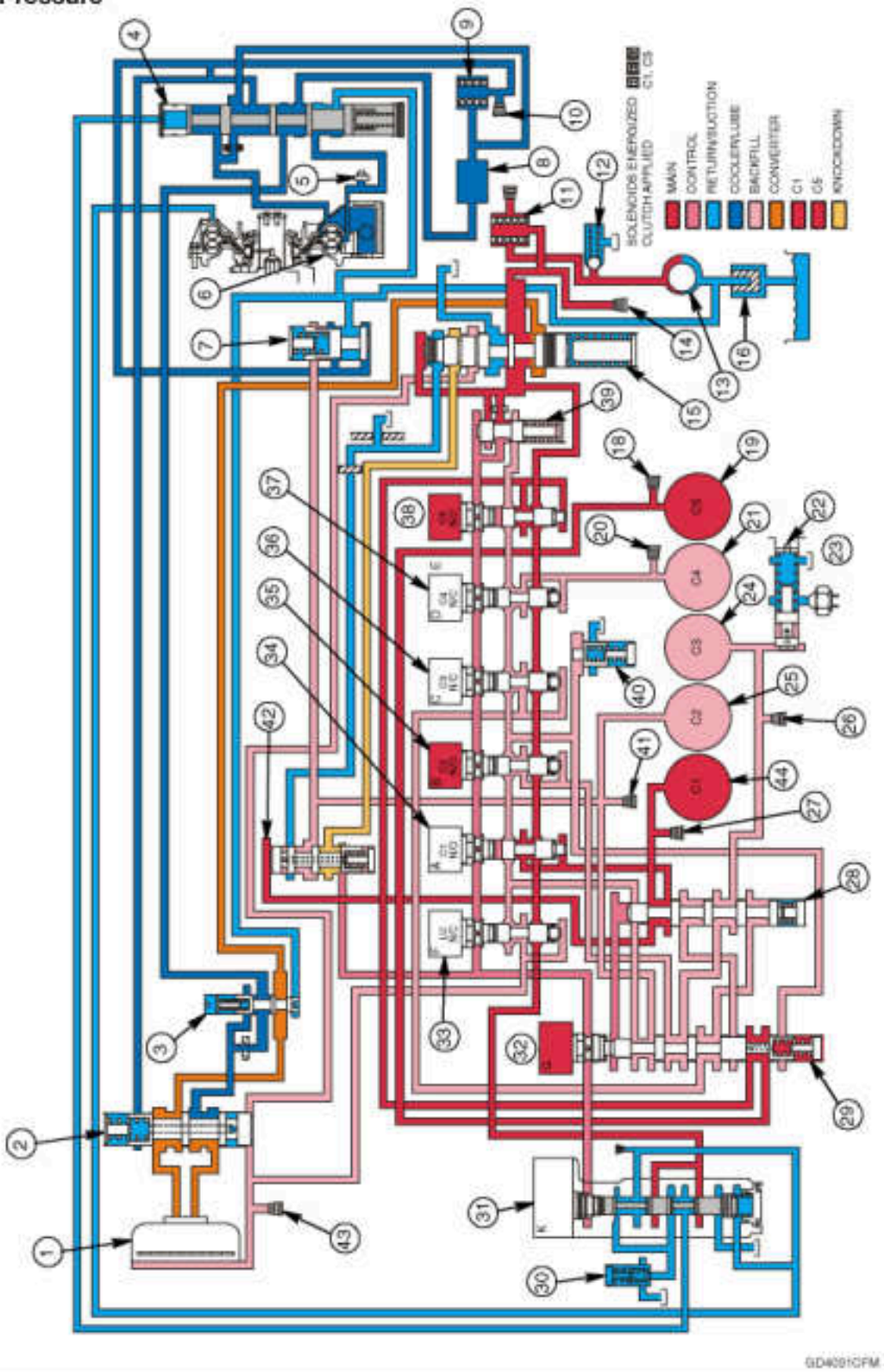







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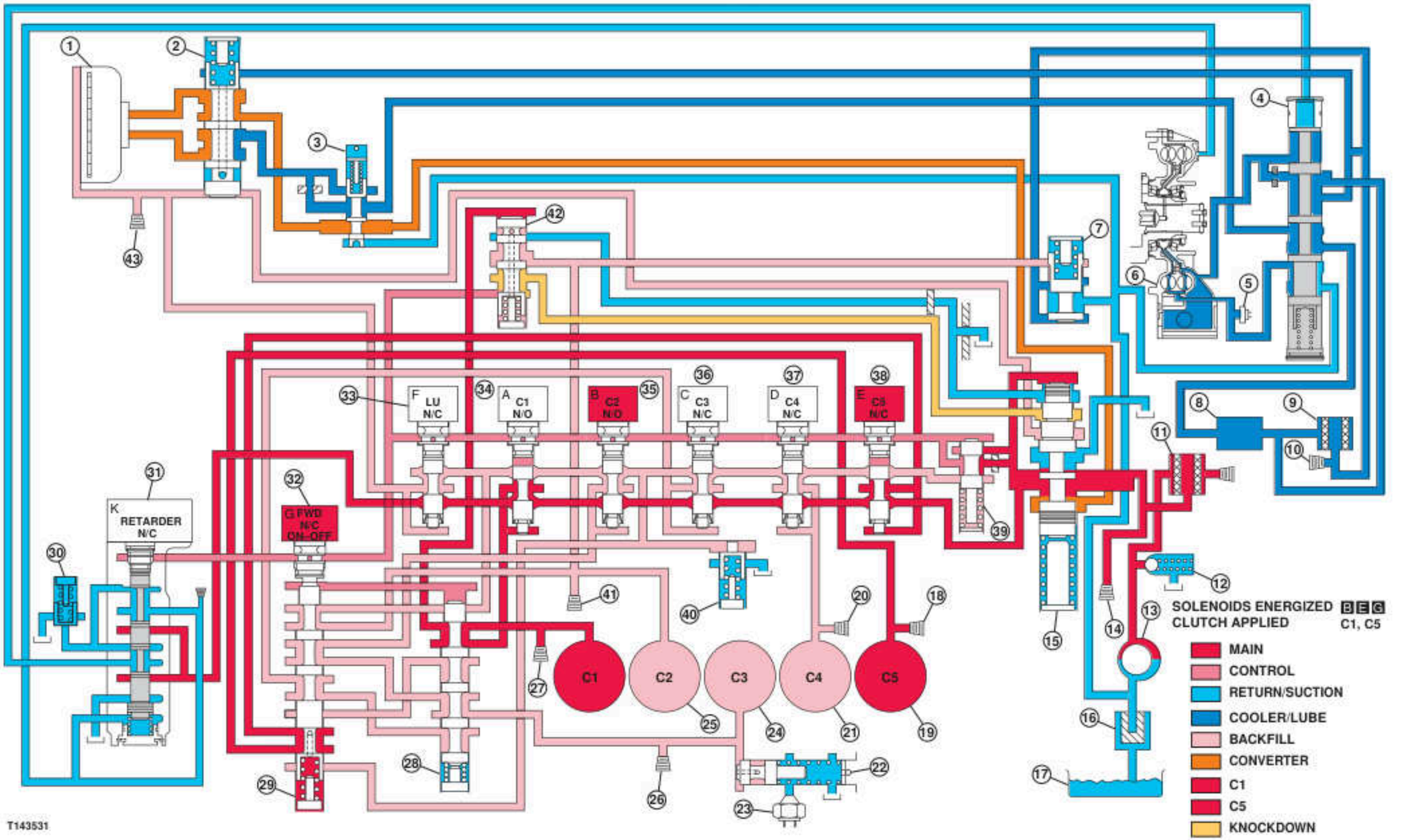
## Backfill Pressure








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