


Diagnosis involves a number of operations which help to pinpoint causes of malfunction -- and include stall test, road testing, hydraulic pressure checks and air pressure checks.

A. Stall Test

The stall test is made in the drive, low, and reverse ranges (with full throttle only) and determines whether the bands and clutches are holding properly.

 **CAUTION** While making this test, do not hold the throttle open more than five seconds at a time -- to prevent overheating and serious damage to the transmission.

1. Connect a tachometer and make sure engine idle speed is correct at normal operating temperature. Start the engine, then firmly apply the parking brake and the foot brake. Place the selector in DR (drive). Then press the accelerator all the way to the floor. The engine speed should be within the RPM range given.
2. If the engine speed is below the minimum limit, tune the engine and repeat the test. If the stall test is low in the drive range, after the engine has been properly tuned, the trouble is caused by malfunction of the converter stator assembly. The vehicle must then be driven to determine the exact source of the trouble.
3. If the engine speed exceeds the maximum limit, release the accelerator immediately because front band or clutch slippage is indicated.
4. To determine whether the front band or the front clutch is causing the slippage, move the selector to LO (low) position and repeat the test.
5. If the slippage is evident in the low range also, the front clutch is slipping.
6. If the slippage is found in the drive range, but not in the low or reverse ranges, the front band is causing the slippage.
7. If the engine exceeds the maximum limit with the selector in the R (reverse) position, the rear band or rear clutch is slipping. To detect the faulty component, move the selector lever to the LO (low) position. If the slippage is evident in the low and reverse ranges, but not in the drive range, the rear band is slipping. When the slippage is noted in the reverse range, but not in the low or drive range, the rear clutch is causing the slippage.

TABLE 2 -- STALL TEST ENGINE R.P.M.

	1952-1954	1955	1956	1957
Ford 6	1300-1500	1380-1580	1380-1580	1380-1580
Ford V-8	1365-1565	---	---	---
Ford V-8 (272)	---	1450-1650	1460-1660	1460-1660
Ford V-8 (292)	---	1550-1750	1540-1740	1550-1750
Ford V-8 (312)	---	---	1590-1790	1590-1820
Mercury	1400-1600	1510-1710	1590-1790	1620-1820
Mercury-Montclair	---	1550-1750	1610-1810	1620-1820
Mercury (368)	---	---	---	1820-2020
Lincoln	---	---	1610-1810	1620-1820
Lincoln (368)	---	---	1820-2020	1820-2020

B. Road Test

1. Check to determine whether initial band and clutch engagements are smooth.

(a) Run the engine until the normal operating temperature is reached. With the engine at the correct idle speed move the selector from N (neutral) to DR (drive), and observe the initial band and clutch engagements. Repeat this operation in the LO and REVERSE ratios.

(b) Band and clutch engagements should be smooth in all positions. Rough initial engagements are caused by high engine idle speed, high throttle pressure, high transmission pressures, or faulty operation of the pressure regulator valve assembly or control valve assembly.

2. Check shift points.

(a) If the stall speeds were below specifications when the stall test was made the trouble could be caused by malfunction of the converter stator assembly. Check for this as follows during the road test. If the vehicle cruises properly but the acceleration is very

poor it indicates that the stator one way clutch is slipping. Check the one way clutch sprags and/or races for wear or damage. If the vehicle drags at cruising speeds and acceleration is also very poor, the stator one way clutch is installed backwards. If the stall test, however, is within specifications, but the vehicle drags at cruising speeds the difficulty can be due to a seized stator assembly.

(b) Select a smooth level road for the test. First test the shift from intermediate to high with a minimum throttle. Place the selector in DR (drive). Starting from a standstill, apply the accelerator lightly but steadily. The 2-3 shift should occur within the vehicle speed ranges shown in Table 3.

(c) Next, decelerate until a normal 3-2 downshift occurs. Closed throttle downshift speed variations for the various models are given in Table 3.

(d) With the vehicle in high gear, "floor" the accelerator pedal. This full throttle, forced 3-2 downshift should occur within the speed ranges shown in Table 3.

- (e) Place the selector in DR (drive). Then, starting from a standstill, fully open the throttle (do not press the accelerator pedal through the kickdown detent). The full throttle 2-3 upshift should occur within the speed ranges given in Table 3.
- (f) With the vehicle speed between 40-45 m.p.h. shift the selector from DR (drive) to LO (low). Instead of shifting to low range, the transmission should make a 3-2 downshift. When speed is reduced to within the range shown in Table 3, the transmission should then make a 2-1 downshift. The drive-to-low manual shift can be made at any vehicle speed.
- (g) 2-1 forced downshift -- 1955 and later models. With the selector in DR (drive) and the speed below 19

m.p.h., fully depress the accelerator pedal (through the kickdown detent). This action shifts the transmission from intermediate or high to low. This shift should take place from a standstill to the speeds specified in Table 3. As long as the accelerator pedal is held fully depressed, the transmission will not upshift to intermediate until the speeds listed in Table 3 are reached.

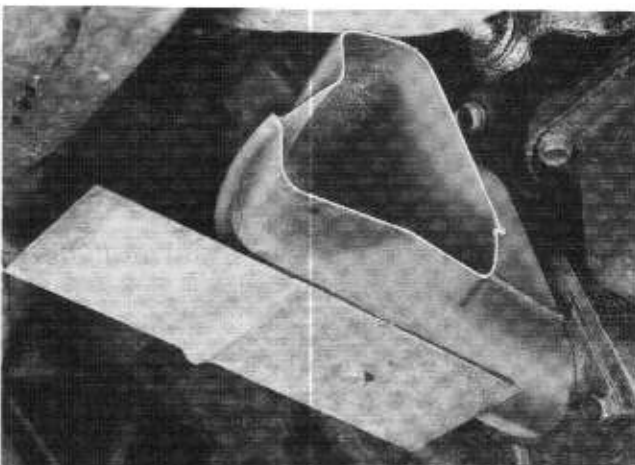
- (h) Bring the vehicle to a full stop and place the selector in the R (reverse) position. The vehicle should move in the reverse direction, smoothly with no chatter, upon light application of the accelerator pedal.

TABLE 3 -- SHIFT POINTS

Shift	1-2		2-1		2-3		3-2		3-2* and 2-1*
	Throttle	Max.	Forced	Min.	Max.	Min.	Forced		
CAR									
Ford 6		26-32	17-15	13-18	53-63	10-4	60-20	21-27	
Ford V-8		27-33	17-15	14-19	55-66	10-4	61-20	21-27	
Mercury		27-33	19-15	15-20	57-70	11-3	62-20	21-27	
Lincoln		30-36	19-15	11-3	65-77	11-3	66-20	19-25	

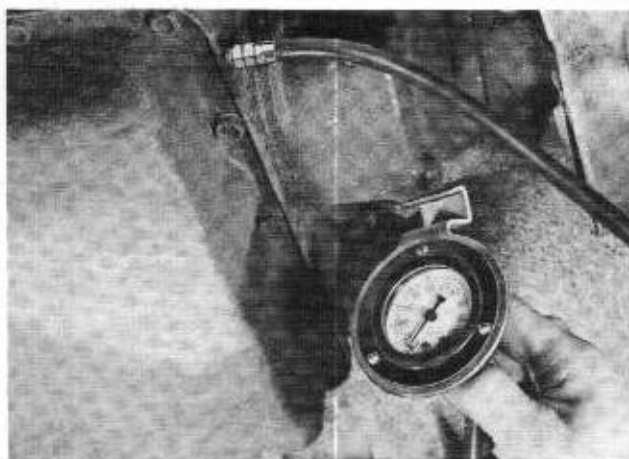
NOTE The shift speeds given here will vary slightly owing to different rear axle ratios, tire sizes, and speedometer condition. *Manual shift from drive to low.

C. Fluid Pressure Test



Improper shifting is caused by either mechanical malfunctions or improper hydraulic pressures. To determine whether improper hydraulic pressures are the cause of trouble, the following pressure test is made.

1. Set the parking brake, and connect a tachometer to the engine. This and a pressure gauge are necessary for checking fluid pressures.
2. Remove the converter air intake duct.



NOTE The engine should be at normal operating temperature, the linkage properly adjusted, and engine idle set to "specs".

3. Remove the pipe plug located in the case near the throttle lever. .

NOTE On some models, the plug is on the rear face of the transmission case. With such transmissions it is not necessary to remove the converter air intake duct.

4. Install the pressure gauge, tightening it securely
5. Then run the engine at the speeds and in the ranges shown in Table 4, below.
6. If stall pressures are low or high, it indicates faulty operation of the hydraulic system.

TABLE 4 -- PRESSURE TEST SPECIFICATIONS (Pressure per Square Inch)

CAR	-- PRESSURES AT --			
	In Drive Idle	In Drive 1000 RPM	Stall in DR or LO	Stall in Rev.
Ford ('52, '53, '54)	60-80	*87	120-145	140-165
Ford V-8 ('55)	50-63	*70	130-150	175-190
Ford 6 ('55)	47-60	*67	122-142	166-182
Mercury ('52, '53)	60-80	*87	120-145	140-160
Mercury ('54)	76-96	*103	120-145	154-186
Mercury ('55)	45-68	*75	125-155	170-195
Ford V-8 ('56, '57)	51-69	80-85	133-165	181-205
Mercury ('56, '57)	56-70	*80	150-175	195-220
Ford 6 ('56, '57)	49-69	80-85	124-155	173-195
Lincoln	56-70	*80	150-175	195-220

*Approximate

D. Fluid Pressure Test Interpretation

1. Idle pressure.

LOW

Insufficient transmission oil
Improper idle
Faulty pressure regulator assy.
Faulty valve body
Internal leakage
Insufficient pump output

HIGH

Improper linkage adjustment (TV rod too long)
Bent throttle linkage components
Faulty pressure regulator assembly
Faulty valve body

2. Drive pressure at 1,000 RPM.

LOW

Insufficient transmission oil
Improper linkage adjustment (TV
rod short)
Insufficient pump output
Faulty pressure regulator valve
assembly
Faulty valve body
Internal leakage

HIGH

Improper linkage adjustment (TV
rod too long)
Bent throttle linkage components
Faulty pressure regulator
assembly
Faulty valve body

3. Drive pressure at stall.

LOW

Insufficient transmission oil
Faulty pressure regulator assy.
Faulty valve body
Insufficient pump output
Internal leakage

HIGH

Faulty pressure regulator
assembly
Faulty valve body
Restricted fluid passages

4. Reverse pressure at stall.

LOW

Insufficient transmission oil
Faulty pressure regulator assy.
Faulty valve body
Insufficient pump output
Internal leakage

HIGH

Faulty pressure regulator
Faulty valve body
Restricted fluid passages

5. Low range pressure at stall.

LOW

Should be the same as drive at
stall. Any differences can be
traced to the rear servo apply
circuit.

HIGH

Should be the same as drive at
stall. Any differences can be
traced to the rear servo apply
circuit.

When low pressure is noted in all ranges, the following items should
be checked:

Transmission oil level
Front pump for improper output
Faulty pressure regulator pressure valve
Internal leakage.

If pressures are low in reverse, but within specs in drive and low,
leakage is indicated in the rear clutch circuit.

If pressures are low in reverse and low, but within specs in drive,
leakage is indicated in the rear servo circuit.

If pressures are low in drive, but within specs in low and reverse,
leakage is indicated in the front servo apply circuit.

If pressures are low in drive and low, but within specs in reverse,
leakage is indicated in the front clutch circuit.

E. Air Pressure Checks

A "NO DRIVE" condition can exist, even with a correct transmission fluid pressure, because of inoperative clutches or bands. The inoperative units can often be located through a series of air pressure tests which help to determine the location of the malfunction.

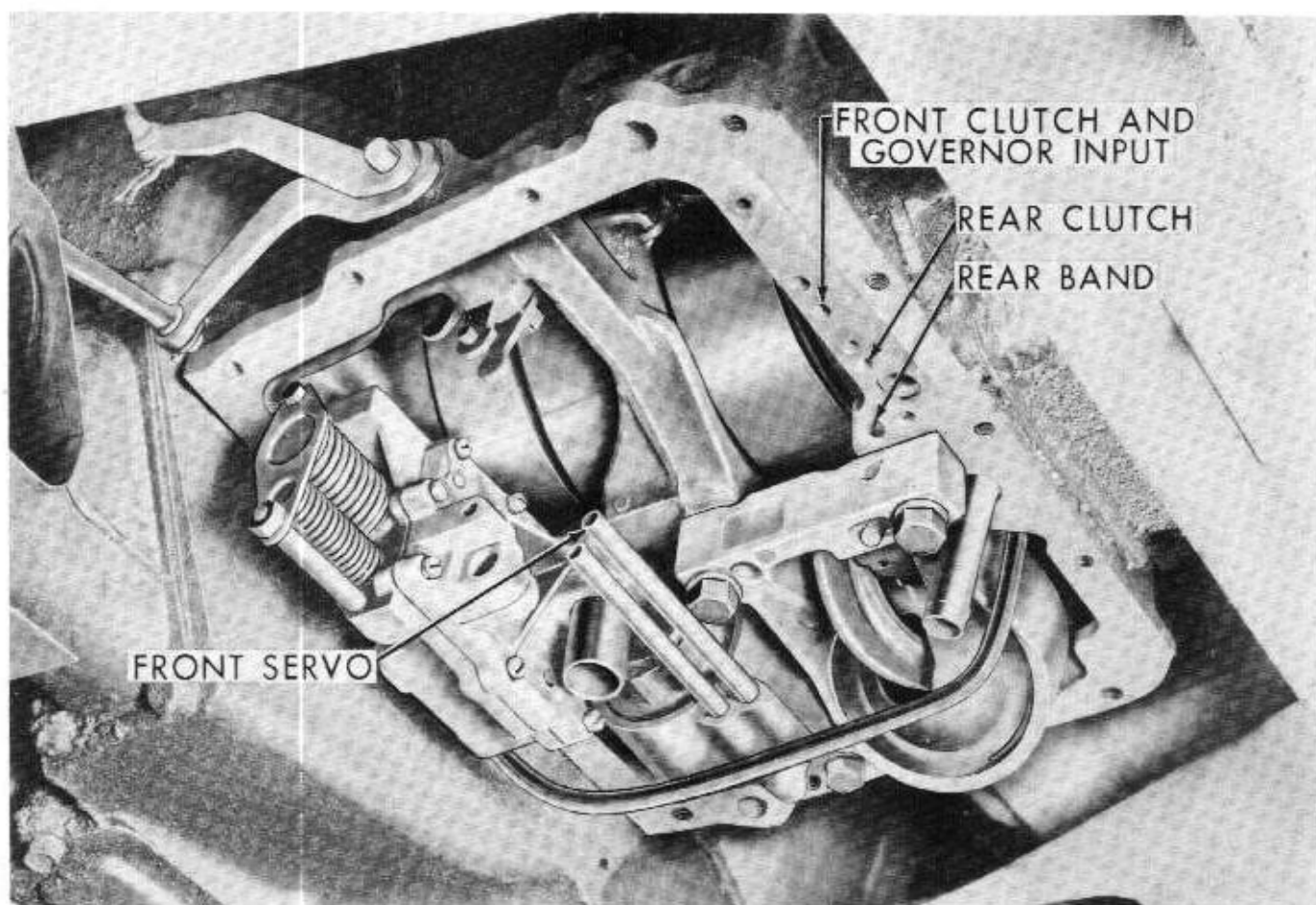
When the selector is in DR (drive), a "NO DRIVE" condition may be caused by an inoperative front clutch or front band. When there is no drive in the low range, the difficulty could be caused by improper functioning of the

front clutch or the rear band. Failure to drive in the reverse range could be caused by a malfunction of the rear clutch or rear band. Erratic shifts or no shift could be caused by a malfunction of the governor.

The inoperative units can be located by introducing air pressure into the transmission case passages leading to the clutches, rear servo, and governor, and into the front servo apply and release tubes. To make the air pressure tests perform the following steps.

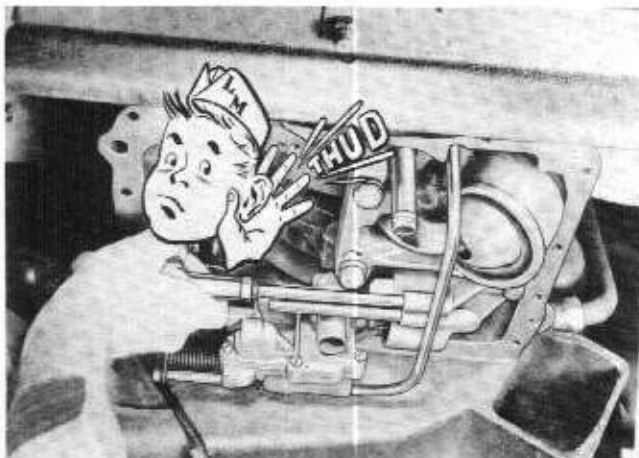
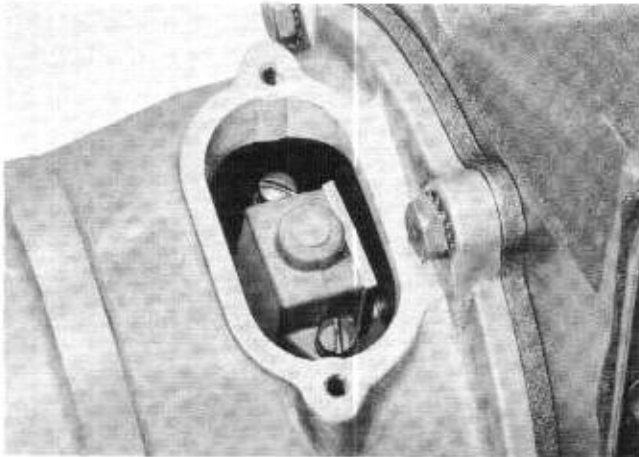
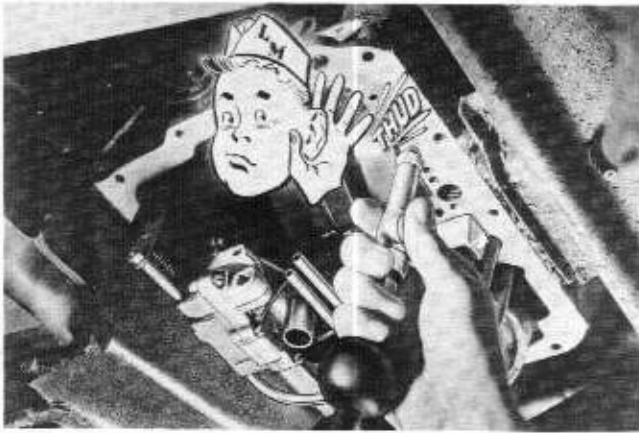
1. Remove the control valve assembly as described in Chapter III, Section Four, Part C.

2. Tighten the front servo bolt or bolts.
3. The passages to be checked are shown in the picture below.



Chapter II

Section TWO



4. Apply air pressure to the front clutch passage in the case. Listen for a dull thud which indicates the clutch is operating. If no thud is heard, place your fingers on the front drum, and again apply air pressure to the front clutch passage. Movement of the piston can be felt if the clutch applies.

5. Remove the governor inspection cover, and apply air pressure to the front clutch passage in the case. Listen for a sharp click, and observe whether the governor valve snaps inward. If the valve moves inward, correct valve operation is indicated. If the valve doesn't move inward, repair or replace the governor.

6. Apply air pressure to the rear clutch passage. A dull thud indicates that the rear clutch is applying. If no thud is heard, place your finger tips on the rear drum, and again apply air pressure to the rear clutch passage. Movement of the piston can be felt if the clutch applies. If either the front or rear clutch is inoperative overhaul it.

7. Apply air pressure to the front servo apply tube. Front servo operation is indicated when the front band tightens around the front drum.

NOTE Hold a cloth over the release tube to catch spray.

8. With air pressure maintained on the front servo apply tube, also apply air pressure to the front servo release tube. The front servo should release the front band.



9. Apply air pressure to the rear servo apply passage. The rear band should tighten around the rear drum.

10. If the front servo is inoperative, remove it, and apply air directly to its passages. If the front servo piston stem does not move, repair or replace the front servo.

11. If the rear servo is inoperative, remove it and apply air directly to its passages. If the rear servo piston stem does not move, repair or replace the rear servo.

12. If servos, clutches, and governor operate with air pressure, and all passages are clear, then no-drive problems, erratic shifts, or no upshifts point to the control valve body as the cause of trouble.

13. The results of air pressure checks will in many cases verify the results of the other tests -- stall tests, road tests, and fluid pressure tests. The use of all the tests will enable you to determine with accuracy the general areas of trouble, and tell you whether total overhaul or on-the-car repairs are necessary.

14. After making air checks loosen the front servo bolt or bolts. Then, install the control valve body as described in Chapter 3, Section Four, Part C.

F. Trouble Shooting Chart

Condition	Possible Causes	Corrections
Intermediate to high - upshift occurs above specified speeds.	<ol style="list-style-type: none"> 1. Throttle linkage too long. 2. Throttle linkage components worn or damaged. 3. Governor valve stuck or operating improperly. 4. Governor oil delivery circuit leaking. 5. Valves sticking in control valve assembly. 	<ol style="list-style-type: none"> 1. Adjust throttle linkage to correct length. 2. Check all linkage and replace damaged or worn parts. 3. Air check the governor and repair it or replace it if it is the source of trouble. 4. Make an air pressure check which will indicate presence of a leak. If there is a leak make the necessary corrections. 5. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged.
Intermediate to high - upshift occurs below specified speeds.	<ol style="list-style-type: none"> 1. Throttle linkage too short. 2. Throttle linkage components worn or damaged. 3. Valves sticking in control valve assembly. 4. Internal leak in control valve assembly -- possibly caused by loose screws or rough mating surfaces. 	<ol style="list-style-type: none"> 1. Adjust the throttle linkage to proper length. 2. Inspect the complete linkage and replace any damaged parts. 3. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged. 4. Remove the control valve assembly, lap all mating surfaces and properly torque all screws.

Condition	Possible Causes	Corrections
Rough upshift intermediate too high.	<ol style="list-style-type: none"> 1. Throttle linkage too long. 2. Throttle linkage components worn or damaged. 3. Bands out of adjustment. 4. Improper hydraulic operating pressures. 5. Valve sticking in control valve assembly. 6. Internal leak in control valve assembly caused by loose screws or rough mating surfaces. 	<ol style="list-style-type: none"> 1. Adjust throttle linkage to proper length. 2. Inspect all linkage and replace any damaged parts. 3. Adjust the bands to specifications or replace. 4. Make fluid pressure tests to locate trouble and correct as indicated. 5. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged. 6. Remove the control valve assembly, lap all mating surfaces and properly torque all screws.
Slippage in 2-3 upshifts light and/or heavy throttle.	<ol style="list-style-type: none"> 1. Throttle linkage adjustment. 2. Bands out of adjustment. 3. Valves sticking in control valve assembly. 	<ol style="list-style-type: none"> 1. Adjust throttle linkage to specifications. 2. Adjust bands to specifications or replace. 3. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged.

Condition	Possible Causes	Corrections
<p>Slippage in 2-3 upshifts light and/or heavy throttle. (Continued)</p>	<ol style="list-style-type: none"> 4. Internal leak in control valve assembly caused by loose screws or rough mating surfaces. 5. Improper hydraulic operating pressures. 6. Throttle linkage components worn or damaged. 7. Internal leakage in the rear clutch apply circuit. 8. Front servo leak. 	<ol style="list-style-type: none"> 4. Remove the control valve assembly, lap all mating surfaces and properly torque all screws. 5. Make fluid pressure tests to locate trouble and correct as indicated. 6. Inspect all linkage and replace any damaged or worn parts. 7. Air check the rear clutch apply passage and correct as indicated. 8. Air check front servo and correct as indicated.
<p>No. 2-3 upshift.</p>	<ol style="list-style-type: none"> 1. Valve sticking in governor or improper valve operation. 2. Governor oil delivery circuit leaking. 3. Valves sticking in control valve assembly. 4. Fluid distributor sleeve in output shaft out of position. 5. Internal leakage in rear clutch apply circuit. 	<ol style="list-style-type: none"> 1. Check the governor with air pressure and repair or replace governor if faulty. 2. Make an air pressure check which will indicate presence of a leak. If there is a leak make the necessary corrections. 3. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged. 4. Replace output shaft with new or reconditioned shaft. 5. Air check the rear clutch apply passage and correct as indicated.

Condition	Possible Causes	Corrections
Rough 1-2 up-shift (through detent).	<ol style="list-style-type: none"> 1. Throttle linkage too long. 2. Line pressure too high. 3. Valves sticking in control valve assembly. 4. Rear servo sticking. 	<ol style="list-style-type: none"> 1. Adjust throttle linkage to proper length. 2. Make fluid pressure check and correct as indicated. 3. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged. 4. Repair or replace rear servo.
Rough 3-2 closed throttle downshift.	<ol style="list-style-type: none"> 1. Improper engine idle. 2. Throttle linkage too long. 3. Bands out of adjustment. 4. Front servo sticking when applying. 5. Valves sticking in control valve assembly. 6. Internal leak in control valve assembly caused by loose screws or rough mating surfaces. 	<ol style="list-style-type: none"> 1. Adjust to specifications. 2. Adjust throttle linkage to proper length. 3. Adjust to specifications or replace. 4. Make air pressure check and correct as indicated. 5. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged. 6. Remove the control valve assembly, lap all mating surfaces and properly torque all screws.

Condition	Possible Causes	Corrections
No forced downshift.	<ol style="list-style-type: none"> 1. Throttle linkage too short. 2. Improper accelerator pedal height. 3. Throttle linkage components worn or damaged. 4. Valves sticking in control valve assembly. 	<ol style="list-style-type: none"> 1. Adjust linkage to proper length. 2. Set accelerator pedal at proper height. 3. Inspect all linkage and replace any damaged or worn parts. 4. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged.
Slippage in 3-2 and 2-1 forced downshifts.	<ol style="list-style-type: none"> 1. Bands out of adjustment. 2. Valves sticking in control valve assembly. 3. Internal leakage. 	<ol style="list-style-type: none"> 1. Adjust bands to specifications or replace. 2. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged. 3. Check control valve assembly and front and rear servos.

Condition	Possible Causes	Corrections
Rough initial engagements in all ratios.	<ol style="list-style-type: none"> 1. Improper engine idle. 2. Throttle linkage too long. 3. Throttle linkage components worn or damaged. 4. Bands out of adjustment. 5. Rear servo accumulator faulty. 6. Improper hydraulic operating pressures. 7. Valves sticking in control valve assembly. 8. Internal leak in control valve assembly caused by loose screws or rough mating surfaces. 9. Pressure regulator faulty. 	<ol style="list-style-type: none"> 1. Adjust engine idle to specifications. 2. Adjust throttle linkage to proper length. 3. Inspect all linkage and replace any damaged or worn parts. 4. Adjust bands to specifications or replace. 5. Repair or replace rear servo. 6. Make fluid pressure tests to locate trouble and correct as indicated. 7. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged. 8. Remove the control valve assembly, lap all mating surfaces and properly torque all screws. 9. Repair or replace pressure regulator.
Slips in intermediate ratio.	<ol style="list-style-type: none"> 1. Throttle linkage not adjusted properly. 2. Bands out of adjustment. 	<ol style="list-style-type: none"> 1. Adjust linkage. 2. Adjust bands to specifications or replace.

Condition	Possible Causes	Corrections
Slips in intermediate ratio. (Continued)	<ol style="list-style-type: none"> 3. Improper hydraulic operating pressure. 4. Improper front servo operation. 5. Internal leak in control valve assembly caused by loose screws or rough mating surfaces. 6. Valves sticking in control valve assembly. 7. Front clutch inoperative 	<ol style="list-style-type: none"> 3. Make fluid pressure tests to locate trouble and correct as indicated. 4. Make air pressure check and repair or replace the front servo. 5. Remove the control valve assembly, lap all mating surfaces and properly torque all screws. 6. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged. 7. Check with air pressure and correct as indicated.
Slips in low ratio.	<ol style="list-style-type: none"> 1. Throttle linkage not adjusted properly. 2. Bands out of adjustment. 3. Improper hydraulic operating pressure. 4. Improper rear servo operation. 	<ol style="list-style-type: none"> 1. Adjust linkage. 2. Adjust bands to specifications or replace. 3. Make fluid pressure tests to locate trouble and correct as indicated. 4. Make air pressure check and correct as indicated.

Condition	Possible Causes	Corrections
Slips in low ratio. (Continued)	<p>5. Internal leak in control valve assembly caused by loose screws or rough mating surfaces.</p> <p>6. Valves sticking in control valve assembly.</p> <p>7. Front clutch inoperative.</p>	<p>5. Remove the control valve assembly, lap all mating surfaces and properly torque all screws.</p> <p>6. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged.</p> <p>7. Make air pressure check and correct as indicated.</p>
Slips in reverse ratio.	<p>1. Throttle linkage not adjusted properly.</p> <p>2. Bands out of adjustment.</p> <p>3. Improper hydraulic operating pressure.</p> <p>4. Improper rear servo operation.</p> <p>5. Internal leak in control valve assembly caused by loose screws or rough mating surfaces.</p> <p>6. Rear clutch inoperative.</p>	<p>1. Adjust linkage.</p> <p>2. Adjust bands to specifications or replace.</p> <p>3. Make fluid pressure tests to locate trouble and correct as indicated.</p> <p>4. Make air pressure test and correct as indicated.</p> <p>5. Remove the control valve assembly, lap all mating surfaces and properly torque all screws.</p> <p>6. Make air pressure test and correct as indicated.</p>

Condition	Possible Causes	Corrections
Slips in reverse ratio. (Continued)	7. Valves sticking in control valve assembly.	7. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged.
Poor starting acceleration.	1. One way clutch slipping.	1. Replace sprag and/or races.
Poor starting acceleration and dragging at cruising speeds.	1. One way clutch installed backwards.	1. Assemble the clutch correctly and replace parts if damaged.
Dragging at cruising speeds.	1. Frozen one way clutch.	1. Replace the clutch assembly.
No drive in drive.	1. Front band out of adjustment. 2. Front servo not applying. 3. Front clutch inoperative. 4. Valves sticking in control valve assembly.	1. Adjust bands to specifications or replace. 2. Make air pressure test and correct as indicated. 3. Make air pressure test and correct as indicated. 4. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged.

Condition	Possible Causes	Corrections
No drive in drive. (Continued)	<ol style="list-style-type: none"> 5. Improper hydraulic operating pressure. 6. Pressure regulator faulty. 	<ol style="list-style-type: none"> 5. Make fluid pressure tests to locate trouble and correct as indicated. 6. Repair or replace.
No drive in LO	<ol style="list-style-type: none"> 1. Rear band out of adjustment. 2. Rear servo inoperative. 3. Front clutch inoperative. 4. Valves sticking in control valve assembly. 5. Improper hydraulic operating pressure. 6. Pressure regulator faulty. 	<ol style="list-style-type: none"> 1. Adjust bands to specifications or replace. 2. Make air pressure test and correct as indicated. 3. Make air pressure test and correct as indicated. 4. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged. 5. Make fluid pressure tests to locate trouble and correct as indicated. 6. Repair or replace.
No drive in reverse.	<ol style="list-style-type: none"> 1. Rear band out of adjustment. 2. Rear servo inoperative. 3. Rear clutch inoperative. 	<ol style="list-style-type: none"> 1. Adjust bands to specifications or replace. 2. Make air pressure test and correct as indicated. 3. Make air pressure test and correct as indicated.

Condition	Possible Causes	Corrections
No drive in reverse. (Continued)	<ol style="list-style-type: none"> 4. Valves sticking in control valve assembly. 5. Improper hydraulic operating pressure. 6. Pressure regulator faulty. 	<ol style="list-style-type: none"> 4. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged. 5. Make fluid pressure tests to locate trouble and correct as indicated. 6. Repair or replace.
No drive in any range.	<ol style="list-style-type: none"> 1. Fluid level low. 2. Faulty manual linkage. 3. Improper hydraulic operating pressure. 4. Broken or improperly assembled front clutch will cause loss of drive in all positions except reverse. 5. Valves sticking in control valve assembly. 	<ol style="list-style-type: none"> 1. Bring fluid level to full mark. 2. Adjust or replace worn parts. 3. Make fluid pressure tests to locate trouble and correct as indicated. 4. Assemble properly or replace parts or replace entire unit. 5. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged.

Condition	Possible Causes	Corrections
No drive in any range. (Continued)	6. Front pump inoperative.	6. Repair or replace front pump and/or front pump drive hub.
Locks up in reverse.	1. Front clutch not releasing. 2. Manual linkage faulty. 3. Leak in rear servo apply passage. 4. Bands out of adjustment. 5. Valves sticking in control valve assembly. 6. Improperly assembled control valve assembly.	1. Repair or replace clutch. 2. Adjust or replace parts. 3. Check apply passage with air pressure making certain the servo applies and releases freely without tending to stick or clatter. Repair or replace as indicated. 4. Adjust to specifications or replace. 5. Remove and disassemble control valve assembly. Thoroughly clean all parts and check the valves for freedom of movement in their bores. Remove any burrs being careful not to round off valve corners. Replace control valve assembly if otherwise damaged. 6. Assemble properly.
Lock up in LO or drive.	1. Rear clutch applied. 2. Manual linkage faulty.	1. Repair or replace. 2. Adjust or replace worn parts.

Condition	Possible Causes	Corrections
Lock up in LO or drive. (Continued)	3. Internal leak in control valve assembly caused by loose screws or rough mating surfaces. 4. Improperly assembled control valve assembly.	3. Remove the control valve assembly, lap all mating surfaces and properly torque all screws. 4. Assemble control valve assembly properly.
Unable to start engine by pushing.	1. Rear pump inoperative.	1. Repair or replace.
Parking lock will not hold.	1. Faulty manual linkage. 2. Parking linkage faulty.	1. Adjust or replace worn parts. 2. Repair or replace linkage.
Transmission overheating.	1. Converter cooling air passages blocked. 2. Improper hydraulic operating pressure. 3. Bands out of adjustment. 4. Converter one way clutch improperly installed. 5. Oil cooler lines and oil cooler core restricted. 6. Slippage which causes overheating.	1. Clean out passages. 2. Make fluid pressure tests to locate trouble and correct as indicated. 3. Adjust bands to specifications or replace. 4. Assemble properly. 5. Clean out lines and core. 6. Check back through various slippage conditions in this chart to locate the cause of slippage.