

Symptom-to-Component Chart

Hydraulic System

SYMPTOM	Check these items on the PROBABLE CAUSE List	Check these items on the NOTES List
Engine runs, but vehicle does not move in any gear.	1, 2, 3, 5, 6, 9, 39, 44	K, L, R, S
Vehicle moves in 3/M and 2 , but not in D position.	8, 9, 10, 11	C, M, O
Vehicle moves in D , 3/M , 1 , but not in 2 position.	7, 9, 12, 13	C, L
Vehicle moves in D , 3/M , 2 , 1 , but not in R position.	4, 9, 14, 20, 34	C, L, Q
Vehicle moves in D , 3/M , 2 , but not in 1 position.	9, 11, 61	
Vehicle moves in N position.	11, 13, 33, 34, 36, 37, 38	C, D
Excessive idle vibration.	2, 35, 39, 50, 51, 53	B, K, L
Poor acceleration; flares on starting off in D position.		
Stall rpm high in D , 3/M , 2 , 1 position.	1, 2, 3, 9, 44, 47	K, L, R
Stall rpm high in D position.	8, 9, 11, 13	C, D
Stall rpm is in specification.	15	N
Stall rpm low.	17, 35, 50, 51, 53	R
No shift.	20, 21, 22, 46, 53, 54, 57	G, L
Fails to shift in D position; from 1st to 4th gear.	21, 22, 57	
Erratic upshifting.		V
1-2 upshift, 2-3 upshift, 3-4 upshift	57	
1-2 upshift	53, 57	
2-3 upshift	54, 57	
3-4 upshift	53, 57	
Harsh upshift (1-2).	13, 18, 19, 20, 23, 30	C, D, E, V
Harsh upshift (2-3).	18, 19, 21, 23, 24, 26, 30, 33	C, D, E, H, L, V
Harsh upshift (3-4).	18, 19, 22, 24, 25, 27, 31, 34	C, D, E, I, L, V
Harsh downshift (2-1).	11, 18, 19, 20, 23, 30, 40	O
Harsh downshift (3-2).	13, 18, 19, 21, 23, 24, 31, 41, 59	C, D, E, H
Harsh downshift (4-3).	18, 19, 22, 24, 25, 32, 33, 42, 60	C, D, E, I
Flares on 2-3 upshift.	18, 19, 21, 23, 24, 26, 28, 31, 33	E, L, V
Flares on 3-4 upshift.	18, 19, 22, 24, 25, 27, 28, 32, 34	E, L, V, N
Excessive shock on 2-3 upshift.	18, 19, 23, 24, 30, 41, 48	E, L, N
Excessive shock on 3-4 upshift.	18, 19, 24, 25, 27, 31, 42, 48	E, L, N
Late shift from N position to D position.	4, 11, 28, 29	M
Late shift from N position to R position.	4, 20, 34, 58	Q
Noise from transmission in all shift lever positions.	2, 43	K, L, Q
Shift lever does not operate smoothly.	9, 45	P
Fails to shift; stuck in 4th gear.	53, 54, 57	
Transmission will not shift into parking gear in P position.	9, 45	P
Lock-up clutch does not disengage.	18, 19, 49, 50, 51, 52, 55, 56, 57	E, L, V
Lock-up clutch does not operate smoothly.	18, 19, 49, 50, 51, 52, 55, 56, 57	L
Lock-up clutch does not engage.	18, 19, 47, 49, 50, 51, 52, 55, 56, 57	E, L, V
No engine braking in 1 position.	11, 61	C, D, L
Vibration in all positions.	39	



PROBABLE CAUSE			
1	Low ATF.	41	3rd check ball stuck.
2	ATF pump worn or binding.	42	4th check ball stuck.
3	Regulator valve stuck or spring worn.	43	Torque converter housing or transmission housing ball bearing worn/damaged.
4	Servo valve stuck.	44	ATF strainer clogged.
5	Mainshaft worn/damaged.	45	Joint in shift cable and transmission or body worn.
6	Final gears worn/damaged (2 gears).	46	Modulator valve stuck.
7	Secondary shaft worn/damaged.	47	Torque converter check valve stuck.
8	One-way (sprag) clutch worn/damaged.	48	Foreign material in separator plate orifice.
9	Shift cable broken/out of adjustment.	49	Lock-up timing valve stuck.
10	1st gears worn/damaged (2 gears).	50	Lock-up shift valve stuck.
11	1st clutch defective.	51	Lock-up piston defective.
12	2nd gears worn/damaged (2gears).	52	Lock-up control valve stuck.
13	2nd clutch defective.	53	Shift control solenoid valve A defective.
14	Reverse gears worn/damaged (2 gears).	54	Shift control solenoid valve B defective.
15	Excessive ATF.	55	Lock-up control solenoid valve A defective.
16	Torque converter one-way clutch defective.	56	Lock-up control solenoid valve B defective.
17	Engine throttle cable out of adjustment.	57	TCM defective.
18	Throttle valve B stuck.	58	Servo control valve stuck.
19	Linear solenoid defective.	59	3-2 kick-down valve stuck.
20	1-2 shift valve stuck.	60	4-3 kick-down valve stuck.
21	2-3 shift valve stuck.	61	1st-hold clutch defective.
22	3-4 shift valve stuck.		
23	2nd accumulator defective.		
24	3rd accumulator defective.		
25	4th accumulator defective.		
26	2nd orifice control valve stuck.		
27	3rd orifice control valve stuck.		
28	Foreign material in main orifice.		
29	Foreign material in 1st orifice.		
30	Foreign material in 2nd orifice.		
31	Foreign material in 3rd orifice.		
32	Foreign material in 4th orifice.		
33	3rd clutch defective.		
34	4th clutch defective.		
35	Engine output low.		
36	Needle bearing worn/damaged.		
37	Thrust washer worn/damaged.		
38	Clutch clearance incorrect.		
39	Drive plate defective or transmission misassembly.		
40	2nd check ball stuck.		

(cont'd)

Symptom-to-Component Chart

Hydraulic System (cont'd)

The following symptoms can be caused by improper repair or assembly.	Check these items on the PROBABLE CAUSE DUE TO IMPROPER REPAIR	Items on the NOTES CHART
Vehicle creeps in [N] position.	R1, R2	
Vehicle does not move in [D] position.	R4	
Transmission locks up in [R] position.	R3, R12	
Excessive drag in transmission.	R6	R, K
Excessive vibration, rpm related.	R7	
Noise with wheels moving only.	R5	
Main seal pops out.	R8	S
Various shifting problems.	R9, R10	
Harsh upshifts.	R11	

PROBABLE CAUSE DUE TO IMPROPER REPAIR	
R1.	Improper clutch clearance.
R2.	Improper gear clearance.
R3.	Parking brake lever installed upside down.
R4.	One-way (sprag) clutch installed upside down.
R5.	Reverse selector hub installed upside down.
R6.	ATF pump binding.
R7.	Torque converter not fully seated in ATF pump.
R8.	Main seal improperly installed.
R9.	Springs improperly installed.
R10.	Valves improperly installed.
R11.	Ball check valves not installed.
R12.	Shift fork bolt not installed.

NOTES	
B.	Set idle rpm in gear to specified idle speed. If still no good, adjust motor mounts as outlined in engine section of service manual.
C.	If the large clutch piston O-ring is broken, inspect the piston groove for rough machining.
D.	If the clutch pack is seized or is excessively worn, inspect the other clutches for wear and check the orifice control valves and throttle valves for free movement.
E.	If throttle valve B is stuck, inspect the clutches for wear.
G.	If the 1—2 shift valve is stuck closed, the transmission will not upshift. If stuck open the transmission has no 1st gear.
H.	If the 2nd orifice control valve is stuck, inspect the 2nd and 3rd clutch packs for wear.
I.	If the 3rd orifice control valve is stuck, inspect the 3rd and 4th clutch packs for wear.
J.	If the clutch pressure control valve is stuck closed, the transmission will not shift out of 1st gear.
K.	Improper alignment of main valve body and torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak.



NOTES

L.	If the ATF strainer is clogged with particles of steel or aluminum, inspect the ATF pump and differential clutch and planetary gear assembly. If all are OK and no cause for the contamination is found, replace the torque converter.
M.	If the 1st clutch feedpipe guide in the end cover is scored by the mainshaft, inspect the ball bearing for excessive movement in the transmission housing. If OK, replace the end cover as it is dented. The O-ring under the guide is probably worn.
N.	Replace the mainshaft if the bushings for the 1st and 4th feedpipe are loose or damaged. If the 1st feedpipe is damaged or out of round, replace it. If the 4th feedpipe is damaged or out of round, replace the end cover.
O.	A worn or damaged one-way (sprag) clutch is mostly a result of shifting the transmission in D position while the wheels rotate in reverse, such as rocking the car in snow.
P.	Inspect the frame for collision damage.
Q.	Inspect for damage or wear: 1. Reverse selector gear teeth chamfers. 2. Engagement teeth chamfers of countershaft 4th and reverse gear. 3. Shift fork for scuff marks in center. 4. Differential clutch or planetary gear assembly for wear. 5. Bottom of 3rd clutch for swirl marks. Replace items 1, 2, 3 and 4 if worn or damaged. If transmission makes clicking, grinding or whirring noise, also replace mainshaft 4th gear and reverse idler gear and countershaft 4th gear in addition to 1, 2, 3 or 4. If differential clutch or planetary gear assembly is worn, overhaul differential assembly and replace ATF strainer and thoroughly clean transmission, flush torque converter, cooler and lines. If bottom of 3rd clutch is swirled and transmission makes gear noise, replace the countershaft and final driven gear.
R.	Be very careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will result in ATF pump seizure if not detected. Use proper tools.
S.	Install the main seal flush with the torque converter housing. If you push it into the torque converter housing until it bottoms out, it will block the fluid return passage and result in damage.
T.	Harsh downshifts when coasting to a stop with zero throttle may be caused by the linear solenoid not working.
V.	Linear solenoid shim selection is essential for proper operation of the transmission. Not only does it affect the shift quality if misadjusted, but also the lock-up clutch operation. A thick shim will result in throttle pressure being too low for the amount of engine torque input into the transmission and may cause clutch slippage. A thin shim will result in too high throttle pressures which may cause harsh shifts, erratic shifts and torque converter hunting.