Symptom Troubleshooting Index (cont'd)

Symptom	Probable cause(s)	Notes
Late shift after shifting from N to D, D3, and S, or excessive shock when shifted into D, D3, and S	• Shift solenoid valve D defective • A/T clutch pressure control solenoid valve A defective • A/T clutch pressure control solenoid valve B defective • A/T clutch pressure control solenoid valve C defective • Shift cable broken or out of adjustment • Connection between shift cable and transmission or body is worn • Input shaft (mainshaft) speed sensor defective • Output shaft (countershaft) speed sensor defective • ATF temperature sensor defective • Foreign material in separator plate orifice • Servo control valve defective • 1st accumulator defective • 1st check ball stuck • Lock-up shift valve defective • 1st clutch defective	• Check for a stored DTC, and check for loose connections. • Test the solenoid valve function with the HDS. • Inspect the A/T clutch pressure control solenoid valve body gasket, ATF feed pipes, and O-rings, for wear and damage. • Inspect the shift solenoid valve O-rings, and check for shift solenoid valve seizure. • Check for a loose shift cable at the shift lever and the transmission control lever. • Check the input shaft (mainshaft) speed sensor and output shaft (countershaft) speed sensor installation. • Inspect the sensor O-ring for wear and damage. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the 1st clutch pressure. • Check the servo control valve in the main valve body for free movement, and check the valve spring for wear and damage. • Inspect the 1st accumulator piston, O-ring, and spring for wear and damage in the regulator valve body. • Check the 1st check ball for being stuck in the main valve body. • Check the lock-up shift valve in the regulator valve body for free movement, and check the valve spring for wear and damage. • Inspect the secondary shaft and 1st clutch for wear and damage. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace them as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If they are OK, adjust the clearance with the clutch end-plate.

Symptom	Probable cause(s)	Notes
Late shift after shifting from N to R, or excessive shock when shifted into R	• Shift solenoid valve D defective • A/T clutch pressure control solenoid valve A defective • Shift cable broken or out of adjustment • Connection between shift cable and transmission or body is worn • Input shaft (mainshaft) speed sensor defective • Output shaft (countershaft) speed sensor defective • ATF temperature sensor defective • Shift fork shaft stuck • Foreign material in separator plate orifice • Shift valve D defective • 5th/reverse accumulator defective • Lock-up shift valve defective • 5th clutch defective	• Check for a stored DTC, and check for loose connections. • Test the solenoid valve function with the HDS. • Inspect the A/T clutch pressure control solenoid valve body gasket, ATF feed pipes, and O-rings, for wear and damage. • Inspect the shift solenoid valve O-rings, and check for shift solenoid valve for seizure. • Check for a loose shift cable at the shift lever and the transmission control lever. • Check the input shaft (mainshaft) speed sensor and output shaft (countershaft) speed sensor installation. • Inspect the sensor O-ring for wear and damage. • Check for a missing shift fork bolt on the shift fork shaft. • Inspect the servo valve O-ring. • Check the shift fork shaft detent for wear and damage. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the 5th clutch pressure. • Check the shift valve D in the main valve body for free movement, and check the valve spring for wear and damage. • Inspect the 5th accumulator piston, O-ring, and spring for wear and damage in the servo body. • Check the lock-up shift valve in the regulator valve body for free movement, and check the valve spring for wear and damage. • Inspect the mainshaft and 5th clutch for wear and damage. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace them as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If they are OK, adjust the clearance with the clutch end-plate.
Transmission does not shift	• Input shaft (mainshaft) speed sensor defective • Output shaft (countershaft) speed sensor defective	• Check for a stored DTC, and check for loose connections. • Check the input shaft (mainshaft) speed sensor and output shaft (countershaft) speed sensor installation. • Inspect the sensor O-ring for wear and damage.

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Symptom Troubleshooting Index (cont'd)

Symptom	Probable cause(s)	Notes
Excessive shock or engine revs up abnormally high on all upshifts and downshifts	• A/T clutch pressure control solenoid valve B defective • A/T clutch pressure control solenoid valve C defective • Input shaft (mainshaft) speed sensor defective • Output shaft (countershaft) speed sensor defective • ATF temperature sensor defective • Foreign material in separator plate orifice	• Check for a stored DTC, and check for loose connections. • Test the solenoid valve function with the HDS. • Inspect the A/T clutch pressure control solenoid valve body gasket, ATF feed pipes, and O-rings for wear and damage. • Check the input shaft (mainshaft) speed sensor and output shaft (countershaft) speed sensor installation. • Inspect the sensor O-ring for wear and damage. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice.
Excessive shock or engine revs up abnormally high on 1-2 upshift or 2-1 downshift	• Shift solenoid valve D defective • A/T clutch pressure control solenoid valve A defective • A/T clutch pressure control solenoid valve B defective • A/T clutch pressure control solenoid valve C defective • Transmission fluid pressure switch A (2nd clutch) defective • Foreign material in separator plate orifice • 1st accumulator defective • 2nd accumulator defective • 1st check ball stuck • 2nd check ball stuck • Lock-up shift valve defective • 1st clutch defective • 2nd clutch defective	• Check for a stored DTC, and check for loose connections. • Test the solenoid valve function with the HDS. • Inspect the A/T clutch pressure control solenoid valve body gasket, ATF feed pipes, and O-rings for wear and damage. • Inspect the shift solenoid valve O-rings, and check for shift solenoid valve for seizure. • Check for a clogged orifice in the transmission fluid pressure switch A (2nd clutch). If the orifice is clogged, remove it and clean the pressure switch. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the 1st and 2nd clutch pressures. • Inspect the 1st accumulator piston, O-ring, and spring for wear and damage in the servo body. • Inspect the 2nd accumulator piston, O-ring, and spring for wear and damage in the servo body. • Check the 1st check ball and 2nd check ball for being stuck in the main valve body. • Inspect the secondary shaft, 1st clutch, and 2nd clutch for wear and damage. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace them as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If they are OK, adjust the clearance with the clutch end-plate. • Inspect the 2nd clutch feed pipe. If the 2nd clutch feed pipe is scored, replace the end cover. • Replace the secondary shaft if the bushing for the 2nd clutch feed pipe is loose or damaged. • Check the lock-up shift valve in the regulator valve body for free movement, and check the valve spring for wear and damage.

Symptom	Probable cause(s)	Notes
Excessive shock or engine revs up abnormally high on 2-3 upshift or 3-2 downshift	• A/T clutch pressure control solenoid valve B defective • A/T clutch pressure control solenoid valve C defective • Transmission fluid pressure switch B (3rd clutch) defective • Foreign material in separator plate orifice • 2nd accumulator defective • 3rd accumulator defective • 2nd check ball stuck • 2nd clutch defective • 3rd clutch defective	• Check for a stored DTC, and check for loose connections. • Test the solenoid valve function with the HDS. • Inspect the A/T clutch pressure control solenoid valve body gasket, ATF feed pipes, and O-rings for wear and damage. • Check for a clogged orifice in the transmission fluid pressure switch B (3rd clutch). If the orifice is clogged, remove it and clean the pressure switch. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the 2nd and 3rd clutch pressures. • Inspect the 2nd and 3rd accumulator pistons, O-rings, and springs for wear and damage in the servo body. • Check the 2nd check ball for being stuck in the main valve body. • Inspect the secondary shaft, mainshaft, 2nd clutch, and 3rd clutch for wear and damage. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace them as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If they are OK, adjust the clearance with the clutch end-plate. • Inspect the 2nd and 3rd clutch feed pipes. • If the 2nd clutch feed pipe is scored, replace the end cover. • If the 3rd clutch feed pipe is scored, replace it and the O-rings under the feed pipe flange. • Replace the secondary shaft if the bushing for the 2nd clutch feed pipe is loose or damaged. • Replace the mainshaft if the bushing for the 3rd clutch feed pipe is loose or damaged.

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Symptom Troubleshooting Index (cont'd)

Symptom	Probable cause(s)	Notes
Excessive shock or engine revs up abnormally high on 3-4 upshift or 4-3 downshift	• A/T clutch pressure control solenoid valve B defective • A/T clutch pressure control solenoid valve C defective • Foreign material in separator plate orifice • 3rd accumulator defective • 4th accumulator defective • 3rd clutch defective • 4th clutch defective	• Check for a stored DTC, and check for loose connections. • Test the solenoid valve function with the HDS. • Inspect the A/T clutch pressure control solenoid valve body gasket, ATF feed pipes, and O-rings for wear and damage. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the 3rd and 4th clutch pressures. • Inspect the 3rd and 4th accumulator pistons, O-rings, and springs for wear and damage in the servo body. • Inspect the mainshaft, secondary shaft, 3rd clutch, and 4th clutch for wear and damage. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace them as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If they are OK, adjust the clearance with the clutch end-plate. • Inspect the 3rd and 4th clutch feed pipes. • If the 3rd clutch feed pipe is scored, replace it and the O-rings under the feed pipe flange. • If the 4th clutch feed pipe is scored, replace it and the O-rings under the feed pipe flange. • Replace the secondary shaft if the bushing for the 4th clutch feed pipe is loose or damaged. • Replace the mainshaft if the bushing for the 3rd clutch feed pipe is loose or damaged.

Symptom	Probable cause(s)	Notes
Excessive shock or engine revs up abnormally high on 4-5 upshift or 5-4 downshift	• A/T clutch pressure control solenoid valve B defective • A/T clutch pressure control solenoid valve C defective • Foreign material in separator plate orifice • 4th accumulator defective • 5th accumulator defective • 4th clutch defective • 5th clutch defective	• Check for a stored DTC, and check for loose connections. • Test the solenoid valve function with the HDS. • Inspect the A/T clutch pressure control solenoid valve body gasket, ATF feed pipes, and O-rings for wear and damage. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the 4th and 5th clutch pressures. • Inspect the 4th and 5th accumulator pistons, O-rings, and springs for wear and damage in the servo body. • Inspect the mainshaft, secondary shaft, 4th clutch, and 5th clutch for wear and damage. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace them as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If they are OK, adjust the clearance with the clutch end-plate. • Inspect the 4th clutch feed pipes. If the 4th clutch feed pipe is scored, replace it and the O-rings under the feed pipe flange. • Replace the secondary shaft if the bushing for the 4th clutch feed pipe is loose or damaged.
Noise from transmission in all shift lever positions	• ATF pump worn or damaged • Mainshaft bearing, countershaft bearing, or secondary shaft bearing defective	• Check the line pressure. • Improper alignment of ATF pump and torque converter housing may cause the ATF pump to seize. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak. • Be careful not to damage the torque converter housing when replacing the main ball bearing. Not torquing the valve body to specification could also damage the ATF pump. This could cause the pump to seize. • Install the main seal flush with the torque converter housing when replacing the main seal. If you push it into the torque converter housing until it bottoms out, it will block the fluid return passage and result in damage. • Inspect the mainshaft, countershaft, and secondary shaft bearing for wear and damage.
Vehicle does not accelerate above 31 mph (50 km/h)	Torque converter one-way clutch defective	Replace the torque converter assembly.
Vibration in all shift lever positions	Drive plate defective or transmission misassembled	• Check for a misinstalled/damaged drive plate, replace the drive plate if it is worn or damaged. • Check the engine idle control system.

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Symptom Troubleshooting Index (cont'd)

Symptom	Probable cause(s)	Notes
Shift lever does not operate smoothly	• Transmission range switch defective or out of adjustment • Shift cable broken or out of adjustment • Connection between shift cable and transmission or body is worn	• Check for a stored DTC, and check for loose connections. • Inspect the transmission range switch. If the transmission range switch is faulty, replace it. If the transmission range switch is out of adjustment, adjust it and shift cable. • Check for a loose shift cable at the shift lever and the transmission control lever.
Transmission does not shift into P	• Shift cable broken or out of adjustment • Connection between shift cable and transmission or body is worn • Park mechanism defective	• Check for a loose shift cable at the shift lever and the transmission control lever. • Check the park pawl spring installation and the park lever spring installation. If installation is incorrect, install the spring correctly. Make sure that the park lever stop is not installed upside down. Check the distance between the park pawl shaft and park lever pin. If the distance is out of tolerance, adjust the distance with the park lever stop.
Torque converter clutch does not disengage	• Shift solenoid valve D defective • A/T clutch pressure control solenoid valve A defective • Torque converter clutch piston defective • Lock-up shift valve defective • Lock-up control valve defective	• Check for a stored DTC, and check for loose connections. • Test the solenoid valve function with the HDS. • Inspect the A/T clutch pressure control solenoid valve body gasket, ATF feed pipes, and O-rings for wear and damage. • Inspect the O-rings, and check the shift solenoid valve for seizure. • Replace the torque converter assembly. • Check the lock-up shift valve in the regulator valve body for free movement, and check the valve spring for wear and damage. • Check the lock-up control valve in the main valve body for free movement, and check the valve spring for wear and damage.
Torque converter clutch does not operate smoothly	• Shift solenoid valve D defective • A/T clutch pressure control solenoid valve A defective • Torque converter clutch piston defective • Torque converter check valve defective • Lock-up shift valve defective • Lock-up control valve defective	• Check for a stored DTC, and check for loose connections. • Test the solenoid valve function with the HDS. • Inspect the A/T clutch pressure control solenoid valve body gasket, ATF feed pipes, and O-rings for wear and damage. • Inspect the O-rings, and check the shift solenoid valve for seizure. • Replace the torque converter assembly. • Check the torque converter check valve in the regulator valve body for free movement, and check the valve spring for wear and damage. • Check the lock-up shift valve in the regulator valve body for free movement, and check the valve spring for wear and damage. • Check the lock-up control valve in the main valve body for free movement, and check the valve spring for wear and damage.

Symptom	Probable cause(s)	Notes
Torque converter clutch does not engage	• Shift solenoid valve D defective • A/T clutch pressure control solenoid valve A defective • Input shaft (mainshaft) speed sensor defective • Output shaft (countershaft) speed sensor defective • Torque converter clutch piston defective • Torque converter check valve defective • Lock-up shift valve defective • Lock-up control valve defective	• Check for a stored DTC, and check for loose connections. • Test the solenoid valve function with the HDS. • Inspect the A/T clutch pressure control solenoid valve body gasket, ATF feed pipes, and O-rings for wear and damage. • Inspect the shift solenoid valve O-rings, and check for shift solenoid valve for seizure. • Check the input shaft (mainshaft) speed sensor and output shaft (countershaft) speed sensor installation. • Inspect the sensor O-ring for wear and damage. • Replace the torque converter assembly. • Check the torque converter check valve in the regulator valve body for free movement, and check the valve spring for wear and damage. • Check the lock-up shift valve in the regulator valve body for free movement, and check the valve spring for wear and damage. • Check the lock-up control valve in the main valve body for free movement, and check the valve spring for wear and damage.
A/T gear position indicator does not indicate shift lever positions	• Transmission range switch defective or out of adjustment • Shift cable broken or out of adjustment • Connection between shift cable and transmission or body worn	• Check for a stored DTC, and check for loose connections. • Inspect the transmission range switch. If the transmission range switch is faulty, replace it. If the transmission range switch is out of adjustment, adjust it and the shift cable. • Check for a loose shift cable at the shift lever and the transmission control lever.
Speedometer and odometer do not work	Output shaft (countershaft) speed sensor defective	• Check for a stored DTC, and check for loose connections. • Check the output shaft (countershaft) speed sensor installation. • Inspect the sensor O-ring.
Engine does not rev to high rpm, and the transmission upshifts at low rpm (engine at normal operating temperature)	Engine rocker arm defective	• Check the engine rocker arms. • Check for a restricted or damaged exhaust system.