

Diagnostics with Phenomenon

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

15. Diagnostics with Phenomenon

A: INSPECTION

Symptom	Problem parts
Starter does not operate when select lever is in "P" or "N" range. Starter operates when select lever is in "R" or "D" range.	<ul style="list-style-type: none"> • Inhibitor switch • Select cable • Select lever • Starter motor and harness
Abnormal noise when select lever is in "P" or "N".	<ul style="list-style-type: none"> • Strainer • Transfer duty solenoid • Oil pump • Drive plate • ATF level too high or too low
Hissing noise occurs during standing start.	<ul style="list-style-type: none"> • Strainer • ATF level too high or too low
Noise occurs while driving in "D1".	<ul style="list-style-type: none"> • Final gear • Planetary gear • Reduction gear • Differential gear oil level too high or too low
Noise occurs while driving in "D2".	<ul style="list-style-type: none"> • Final gear • Planetary gear • Reduction gear • Differential gear oil level too high or too low
Noise occurs while driving in "D3".	<ul style="list-style-type: none"> • Final gear • Low & reverse brake • Reduction gear • Differential gear oil level too high or too low
Noise occurs while driving in "D4".	<ul style="list-style-type: none"> • Final gear • Low & reverse brake • Planetary gear • Reduction gear • Differential gear oil level too high or too low
Vehicle moves when select lever is in "N" range.	<ul style="list-style-type: none"> • Select cable • Inhibitor switch • TCM • Low clutch
Shock occurs when select lever is shifted from "N" to "D" range.	<ul style="list-style-type: none"> • Accelerator pedal position sensor • ATF temperature sensor • Line pressure linear solenoid • Low clutch duty solenoid • Low clutch • TCM • Harness • Control valve • ATF deterioration
Excessive time lag occurs when select lever is shifted from "N" to "D" range.	<ul style="list-style-type: none"> • Control valve • Low clutch • Line pressure linear solenoid • Seal ring • Front gasket of transmission case
Shock occurs when select lever is shifted from "N" to "R" range.	<ul style="list-style-type: none"> • Accelerator pedal position sensor • ATF temperature sensor • Line pressure linear solenoid • TCM • Harness • Control valve • ATF deterioration
Excessive time lag occurs when the select lever is shifted from "N" to "R" range.	<ul style="list-style-type: none"> • Control valve • Low & reverse clutch • Reverse clutch • Line pressure linear solenoid • Seal ring • Front gasket of transmission case

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Vehicle does not start in any shift range. (Engine stalls)	<ul style="list-style-type: none"> Parking brake mechanism Planetary gear
Vehicle does not start in any shift range. (Engine operates)	<ul style="list-style-type: none"> Strainer Line pressure linear solenoid Control valve Drive pinion Hypoid gear Axle shaft Differential gear Oil pump Input shaft Output shaft Planetary gear Drive plate ATF level is too low Front gasket of transmission case
Vehicle does not start in "R" range only. (Engine operates)	<ul style="list-style-type: none"> Select cable Select lever Line pressure linear solenoid Control valve Low & reverse clutch Reverse clutch
Vehicle does not start in "R" range only. (Engine stalls)	<ul style="list-style-type: none"> Low clutch 2-4 brake Planetary gear Parking brake mechanism
Vehicle does not start in "D" range. (Engine operates)	<ul style="list-style-type: none"> Low clutch One-way clutch
Vehicle does not start in "D" range. (Engine stalls)	Reverse clutch
Vehicle does not start in "R" range only. (Engine operates)	Control valve
Acceleration during standing start is poor. (High rpm stall)	<ul style="list-style-type: none"> Control valve Low clutch Reverse clutch ATF level is too low ATF deterioration Front gasket of transmission case Differential gear oil level too high or too low
Acceleration during standing start is poor. (Low rpm stall)	<ul style="list-style-type: none"> Oil pump Torque converter one-way clutch Engine performance
Acceleration is poor when select lever is in "D" range. (Normal rpm stall)	<ul style="list-style-type: none"> TCM Control valve High clutch 2-4 brake Planetary gear
Acceleration is poor when select lever is in "R" range. (Normal rpm stall)	<ul style="list-style-type: none"> Control valve High clutch 2-4 brake Planetary gear
No shift occurs from 1st to 2nd gear.	<ul style="list-style-type: none"> TCM Rear vehicle speed sensor Front vehicle speed sensor Accelerator pedal position sensor Control valve 2-4 brake
No shift occurs from 2nd to 3rd gear.	<ul style="list-style-type: none"> TCM Control valve High clutch

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No shift occurs from 3rd to 4th gear.	<ul style="list-style-type: none"> • TCM • ATF temperature sensor • Control valve • 2-4 brake
Engine brake is not effected when select lever is shifted from 4th gear to 3rd gear.	<ul style="list-style-type: none"> • Inhibitor switch • TCM • Accelerator pedal position sensor • Control valve
Engine brake is not effected when select lever is shifted from 3rd gear to 2nd gear.	Control valve
Engine brake is not effected when select lever is shifted from 2nd gear to 1st gear.	<ul style="list-style-type: none"> • Control valve • Low & reverse brake
Shift characteristics are erroneous.	<ul style="list-style-type: none"> • Inhibitor switch • TCM • Front vehicle speed sensor • Rear vehicle speed sensor • Accelerator pedal position sensor • Control valve • Ground
No lock-up occurs.	<ul style="list-style-type: none"> • TCM • Accelerator pedal position sensor • ATF temperature sensor • Control valve • Lock-up facing • Engine speed signal
Parking brake does not function.	<ul style="list-style-type: none"> • Select cable • Select lever • Parking mechanism
Shift lever cannot be moved or is hard to move from "P" range.	
ATF spurts out.	ATF level too high
Differential oil spurts out.	Differential gear oil level too high
Differential oil level changes excessively.	<ul style="list-style-type: none"> • Seal pipe • Double oil seal
Odor is produced from ATF supply pipe.	<ul style="list-style-type: none"> • High clutch • 2-4 brake • Low & reverse clutch • Reverse clutch • Lock-up facing • ATF deterioration
Shock occurs when shifting from 1st to 2nd gear.	<ul style="list-style-type: none"> • TCM • Torque converter turbine speed sensor • Accelerator pedal position sensor • 2-4 brake duty solenoid • ATF temperature sensor • Line pressure linear solenoid • Control valve • 2-4 brake • ATF deterioration • Engine performance • Low & reverse duty solenoid
Slippage occurs when shifting from 1st to 2nd gear.	<ul style="list-style-type: none"> • TCM • Accelerator pedal position sensor • 2-4 brake duty solenoid • ATF temperature sensor • Line pressure linear solenoid • Control valve • 2-4 brake

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Symptom	Problem parts
Shock occurs when shifting from 2nd to 3rd gear.	<ul style="list-style-type: none"> • TCM • Torque converter turbine speed sensor • Accelerator pedal position sensor • 2-4 brake duty solenoid • ATF temperature sensor • Line pressure linear solenoid • Low & reverse duty solenoid • Control valve • High clutch • 2-4 brake • ATF deterioration • Engine performance • High clutch duty solenoid
Slippage occurs when shifting from 2nd to 3rd gear.	<ul style="list-style-type: none"> • TCM • Accelerator pedal position sensor • 2-4 brake duty solenoid • ATF temperature sensor • Line pressure linear solenoid • Control valve • High clutch • 2-4 brake • Low & reverse duty solenoid
Shock occurs when shifting from 3rd to 4th gear.	<ul style="list-style-type: none"> • TCM • Torque converter turbine speed sensor • Accelerator pedal position sensor • 2-4 brake duty solenoid • ATF temperature sensor • Line pressure linear solenoid • Control valve • Low clutch duty solenoid • 2-4 brake • ATF deterioration • Engine performance
Slippage occurs when shifting from 3rd to 4th gear.	<ul style="list-style-type: none"> • TCM • Accelerator pedal position sensor • 2-4 brake duty solenoid • ATF temperature sensor • Line pressure linear solenoid • Control valve • 2-4 brake
Shock occurs when shifting from 3rd to 2nd gear.	<ul style="list-style-type: none"> • TCM • Torque converter turbine speed sensor • Accelerator pedal position sensor • ATF temperature sensor • Line pressure linear solenoid • Control valve • 2-4 brake duty solenoid • 2-4 brake • ATF deterioration • High clutch duty solenoid
Shock occurs when shifting from 2nd to 1st gear.	<ul style="list-style-type: none"> • TCM • Torque converter turbine speed sensor • Accelerator pedal position sensor • ATF temperature sensor • Line pressure linear solenoid • Control valve • Low & reverse clutch • ATF deterioration • 2-4 brake duty solenoid • Low & reverse brake duty solenoid

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Symptom	Problem parts
Shock occurs when accelerator pedal is released from medium speed.	<ul style="list-style-type: none"> • TCM • Accelerator pedal position sensor • ATF temperature sensor • Line pressure linear solenoid • Control valve • Lock-up damper • Engine performance
Vibration occurs during straight-forward operation.	<ul style="list-style-type: none"> • TCM • Lock-up duty solenoid • Lock-up facing • Lock-up damper
Vibration occurs during turns. (Tight corner braking phenomenon)	<ul style="list-style-type: none"> • TCM • Front vehicle speed sensor • Rear vehicle speed sensor • Accelerator pedal position sensor • ATF temperature sensor • Transfer clutch • Transfer valve • Transfer duty solenoid • ATF deterioration • Harness
Front wheel slippage occurs during standing starts.	<ul style="list-style-type: none"> • TCM • Front vehicle speed sensor • Accelerator pedal position sensor • ATF temperature sensor • Control valve • Transfer clutch • Transfer valve • Transfer pipe • Transfer duty solenoid
It is not set in FWD mode.	<ul style="list-style-type: none"> • TCM • Transfer clutch • Transfer valve • Transfer duty solenoid • Fuse
Select lever is hard to move.	<ul style="list-style-type: none"> • Select cable • Select lever • Detent spring • Manual plate
Select lever is excessively hard to move. (Unreasonable resistance)	<ul style="list-style-type: none"> • Detent spring • Manual plate
Select lever slips out of selected shift position during acceleration or while driving on rough terrain.	<ul style="list-style-type: none"> • Select cable • Select lever • Detent spring • Manual plate
Manual mode can not be set.	<ul style="list-style-type: none"> • SPORT shift switch • TCM • Body integrated unit
Gear does not change though the select lever is operated in manual mode.	<ul style="list-style-type: none"> • Up shift switch • Down shift switch • TCM • Body integrated unit
AWD warning light remains blinking or illuminated.	<ul style="list-style-type: none"> • Tire size • Tire pressure • TCM • FWD switch • Harness

AUTOMATIC TRANSMISSION

5AT

	Page
1. General Description	2
2. Automatic Transmission Fluid	28
3. Differential Gear Oil	30
4. Road Test	31
5. Stall Test	32
6. Time Lag Test	33
7. Line Pressure Test	34
8. Transfer Clutch Pressure Test	35
9. Automatic Transmission Assembly	36
10. Transmission Mounting System	44
11. Extension Case Oil Seal	46
12. Differential Side Retainer Oil Seal	47
13. Inhibitor Switch	48
14. Front Vehicle Speed Sensor	49
15. Rear Vehicle Speed Sensor	51
16. Turbine Speed Sensor 1	54
17. Control Valve Body	55
18. ATF Filter	57
19. Transmission Control Module (TCM)	58
20. Lateral G Sensor	59
21. ATF Cooler Pipe and Hose	60
22. Air Breather Hose	62
23. Oil Charge Pipe	63
24. Torque Converter Assembly	64
25. Drive Plate	65
26. Extension Case	66
27. Transfer Clutch	68
28. Rear Drive Shaft	70
29. Reduction Driven Gear	71
30. Center Differential Carrier	73
31. Parking Pawl	75
32. Converter Case	77
33. Oil Pump Cover	79
34. Drive Pinion Shaft Assembly	83
35. Front Differential Assembly	88
36. AT Main Case	93
37. Transmission Control Device	103