

Diagnostics with Phenomenon

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

18.Diagnostics with Phenomenon

A: INSPECTION

Symptoms	Faulty parts
Shifting vehicle speed is low on "D" range.	• Front and rear vehicle speed sensors • Accelerator pedal position sensor • Throttle position sensor • ATF temperature sensor • CAN communication signal
Shifting vehicle speed is high on "D" range.	• Front and rear vehicle speed sensors • Accelerator pedal position sensor • Throttle position sensor • CAN communication signal • Brake switch signal • ATF temperature sensor
Excessive shift shock ("N" → "D" range)	• Engine idle speed • Engine speed signal • Accelerator pedal position sensor • Throttle position sensor • Control cable adjustment • ATF temperature sensor • Oil pressure switch 1 and front brake solenoid valve • CAN communication signal • Fluid level and condition • TCM power supply
Excessive shift shock on 1st of "D" range → 2nd of "D" range or "1st of manual mode" → "2nd of manual mode".	• Accelerator pedal position sensor • Throttle position sensor • Control cable adjustment • Oil pressure switch 4 and direct clutch solenoid valve • CAN communication signal • Engine speed signal • Turbine speed sensor 1 and turbine speed sensor 2 • Front and rear vehicle speed sensors • Fluid level and condition
Excessive shift shock on 2nd of "D" range → 3rd of "D" range or "2nd of manual mode" → "3rd of manual mode".	• Accelerator pedal position sensor • Throttle position sensor • Control cable adjustment • Oil pressure switch 5 and high & low reverse clutch solenoid valve • CAN communication signal • Engine speed signal • Turbine speed sensor 1 and turbine speed sensor 2 • Front and rear vehicle speed sensors • Fluid level and condition
Excessive shift shock on 3rd of "D" range → 4th of "D" range or "3rd of manual mode" → "4th of manual mode".	• Accelerator pedal position sensor • Throttle position sensor • Control cable adjustment • Oil pressure switch 3 and input clutch solenoid valve • CAN communication signal • Engine speed signal • Turbine speed sensor 1 and turbine speed sensor 2 • Front and rear vehicle speed sensors • Fluid level and condition

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Excessive shift shock on 4th of "D" range → 5th of "D" range or "4th of manual mode" → "5th of manual mode".	• Accelerator pedal position sensor • Throttle position sensor • Control cable adjustment • Oil pressure switch 1 and front brake solenoid valve • CAN communication signal • Engine speed signal • Turbine speed sensor 1 and turbine speed sensor 2 • Front and rear vehicle speed sensors • Fluid level and condition
Excessive shock at kick down.	• Accelerator pedal position sensor • Throttle position sensor • Control cable adjustment • CAN communication signal • Engine speed signal • Turbine speed sensor 1 and turbine speed sensor 2 • Front and rear vehicle speed sensors • Fluid level and condition
Excessive shock at shift up.	• Accelerator pedal position sensor • Throttle position sensor • Control cable adjustment • Engine speed signal • CAN communication signal • Turbine speed sensor 1 and turbine speed sensor 2 • Front and rear vehicle speed sensors • Fluid level and condition
Excessive shock at lock up.	• Accelerator pedal position sensor • Throttle position sensor • Control cable adjustment • Engine speed signal • CAN communication signal • Turbine speed sensor 1 and turbine speed sensor 2 • Lock up solenoid valve • Front and rear vehicle speed sensors • Fluid level and condition
Excessive shock at engine brake.	• Accelerator pedal position sensor • Throttle position sensor • Control cable adjustment • CAN communication signal • Fluid level and condition • Line pressure • Forward brake solenoid valve
Judder is occurred at lock up.	• Fluid level and condition • Engine speed signal • Turbine speed sensor 1 and turbine speed sensor 2 • Front and rear vehicle speed sensors • Accelerator pedal position sensor • Throttle position sensor • Lock up solenoid valve • ATF temperature sensor
Noise at "R", "N" and "D" range.	• Fluid level and condition • Engine speed signal • ATF temperature sensor
Hold at "D" range or 1st on manual mode.	• Fluid level and condition • Front and rear vehicle speed sensors • Direct clutch solenoid valve • Line pressure • Up switch signal • CAN communication signal • Accelerator pedal position sensor

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Symptoms	Faulty parts
Hold at "D" range or 2nd on manual mode.	• Fluid level and condition • Front and rear vehicle speed sensors • Forward brake solenoid valve • Line pressure • Up switch signal • Down switch signal • CAN communication signal • Accelerator pedal position sensor
Hold at "D" range or 3rd on manual mode.	• Fluid level and condition • Front and rear vehicle speed sensors • Line pressure • Up switch signal • Down switch signal • CAN communication signal • Accelerator pedal position sensor
Hold at "D" range or 4th on manual mode.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 3 and input clutch solenoid valve • Oil pressure switch 4 and direct clutch solenoid valve • Oil pressure switch 5 and high & low reverse clutch solenoid valve • Forward brake solenoid valve • Front brake solenoid valve • Line pressure • Up switch signal • Down switch signal • CAN communication signal • Accelerator pedal position sensor • TCM power supply
Hold at "D" range or 5th on manual mode.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 1 and front brake solenoid valve • Line pressure • Down switch signal • CAN communication signal • Accelerator pedal position sensor
Gear does not shift 1st of "D" range → 2nd of "D" range or "1st of manual mode" → "2nd of manual mode".	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 4 and direct clutch solenoid valve • Line pressure • Up switch signal • CAN communication signal • Accelerator pedal position sensor
Gear does not shift 2nd of "D" range → 3rd of "D" range or "2nd of manual mode" → "3rd of manual mode".	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 5 and high & low reverse clutch solenoid valve • Line pressure • Up switch signal • CAN communication signal • Accelerator pedal position sensor
Gear does not shift 3rd of "D" range → 4th of "D" range or "3rd of manual mode" → "4th of manual mode".	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 3 and input clutch solenoid valve • Oil pressure switch 1 and front brake solenoid valve • Line pressure • Up switch signal • CAN communication signal • Accelerator pedal position sensor

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Symptoms	Faulty parts
Gear does not shift 4th of "D" range → 5th of "D" range or "4th of manual mode" → "5th of manual mode".	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 1 and front brake solenoid valve • Oil pressure switch 4 and direct clutch solenoid valve • Turbine speed sensor 1 and turbine speed sensor 2 • ATF temperature sensor • Line pressure • Up switch signal • CAN communication signal • Accelerator pedal position sensor
Gear does not shift down to 4th on "D" range or manual mode.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 1 and front brake solenoid valve • Oil pressure switch 4 and direct clutch solenoid valve • Line pressure • Down switch signal • CAN communication signal • Accelerator pedal position sensor
Gear does not shift down to 3rd on "D" range or manual mode.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 3 and input clutch solenoid valve • Oil pressure switch 1 and front brake solenoid valve • Line pressure • Down switch signal • CAN communication signal • Accelerator pedal position sensor • TCM power supply
Gear does not shift down to 2nd on "D" range or manual mode.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 5 and high & low reverse clutch solenoid • Line pressure • Down switch signal • CAN communication signal • Accelerator pedal position sensor
Gear does not shift down to 1st on "D" range or manual mode.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 4 and direct clutch solenoid valve • Line pressure • Down switch signal • CAN communication signal • Accelerator pedal position sensor
No lock-up occurs.	• Fluid level and condition • Line pressure • Engine speed signal • Turbine speed sensor 1 and turbine speed sensor 2 • Lock up solenoid valve • CAN communication signal • ATF temperature sensor • Accelerator pedal position sensor • Brake switch signal • Range signal
No shift shock occurred when shifting 1st of "D" range → 2nd of "D" range or "1st of manual mode" → "2nd of manual mode". Or clutch slipping occurred.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 4 and direct clutch solenoid valve • Line pressure • CAN communication signal

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Symptoms	Faulty parts
No shift shock occurred when shifting 2nd of "D" range → 3rd of "D" range or "2nd of manual mode" → "3rd of manual mode". Or clutch slipping occurred.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 5 and high & low reverse clutch solenoid valve • Line pressure • CAN communication signal
No shift shock occurred when shifting 3rd of "D" range → 4th of "D" range or "3rd of manual mode" → "4th of manual mode". Or clutch slipping occurred.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 3 and input clutch solenoid valve • Oil pressure switch 1 and front brake solenoid valve • Line pressure • CAN communication signal
No shift shock occurred when shifting 4th of "D" range → 5th of "D" range or "4th of manual mode" → "5th of manual mode". Or clutch slipping occurred.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 1 and front brake solenoid valve • Oil pressure switch 4 and direct clutch solenoid valve • Line pressure • Accelerator pedal position sensor • Throttle position sensor
Engine skids when shifting 5th of "D" range → 4th of "D" range or "5th of manual mode" → "4th of manual mode". Or slipping occurred.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 1 and front brake solenoid valve • Oil pressure switch 4 and direct clutch solenoid valve • Line pressure • Accelerator pedal position sensor • Throttle position sensor
Engine skids when shifting 4th of "D" range → 3rd of "D" range or "4th of manual mode" → "3rd of manual mode". Or slipping occurred.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 3 and input clutch solenoid valve • Oil pressure switch 1 and front brake solenoid valve • Line pressure • Accelerator pedal position sensor • Throttle position sensor
Engine skids when shifting 3rd of "D" range → 2nd of "D" range or "3rd of manual mode" → "2nd of manual mode". Or slipping occurred.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 5 and high & low reverse clutch solenoid valve • Oil pressure switch 4 and direct clutch solenoid valve • Line pressure • Accelerator pedal position sensor • Throttle position sensor
Engine skids when shifting 2nd of "D" range → 1st of "D" range or "2nd of manual mode" → "1st of manual mode". Or slipping occurred.	• Fluid level and condition • Front and rear vehicle speed sensors • Oil pressure switch 4 and direct clutch solenoid valve • Line pressure • Accelerator pedal position sensor • Throttle position sensor
Engine brake does not function at 5th → 4th of manual mode.	• Inhibitor switch • Fluid level and condition • Control cable adjustment • Manual mode switch • Oil pressure switch 1 • Down switch signal
Engine brake does not function at 4th → 3rd of manual mode.	• Inhibitor switch • Fluid level and condition • Control cable adjustment • Manual mode switch • Oil pressure switch 1 and oil pressure switch 3 • Down switch signal

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Symptoms	Faulty parts
Engine brake does not function at 3rd → 2nd of manual mode.	• Inhibitor switch • Fluid level and condition • Control cable adjustment • Manual mode switch • Oil pressure switch 5 • Forward brake solenoid valve
Engine brake does not function at 2nd → 1st of manual mode.	• Inhibitor switch • Fluid level and condition • Control cable adjustment • Manual mode switch • Oil pressure switch 4 • Forward brake solenoid valve
Excessive acceleration failure on “D” range.	• Fluid level and condition • Line pressure • Accelerator pedal position sensor • Throttle position sensor • CAN communication signal • Inhibitor switch • Control cable adjustment • Front and rear vehicle speed sensors
Excessive acceleration failure in “R” range.	• Fluid level and condition • Line pressure • Accelerator pedal position sensor • Throttle position sensor • Oil pressure switch 5 and high & low reverse clutch solenoid valve • CAN communication signal • Inhibitor switch • Control cable adjustment • Front and rear vehicle speed sensors
Engine skids when start driving (1st) the vehicle. Or slipping occurred.	• Fluid level and condition • Line pressure • Accelerator pedal position sensor • Throttle position sensor • CAN communication signal
Engine skids when driving at 2nd. Or slipping occurred.	• Fluid level and condition • Line pressure • Accelerator pedal position sensor • Throttle position sensor • CAN communication signal • Oil pressure switch 4 and direct clutch solenoid valve
Engine skids when driving at 3rd. Or slipping occurred.	• Fluid level and condition • Line pressure • Accelerator pedal position sensor • Throttle position sensor • CAN communication signal • Oil pressure switch 5 and high & low reverse clutch solenoid valve
Engine skids when driving at 4th. Or slipping occurred.	• Fluid level and condition • Line pressure • Accelerator pedal position sensor • Throttle position sensor • CAN communication signal • Oil pressure switch 3 and input clutch solenoid valve

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Symptoms	Faulty parts
Engine skids when driving at 5th. Or slipping occurred.	• Fluid level and condition • Line pressure • Accelerator pedal position sensor • Throttle position sensor • CAN communication signal • Oil pressure switch 1 and front brake solenoid valve
Slip at lock up.	• Fluid level and condition • Line pressure • Engine speed signal • Turbine speed sensor 1 and turbine speed sensor 2 • Lock up solenoid valve • CAN communication signal
Maximum vehicle speed is low.	• Fluid level and condition • Line pressure • Accelerator pedal position sensor • Throttle position sensor • CAN communication signal • Direct clutch solenoid valve • Front and rear vehicle speed sensors
There is completely no creep.	• Fluid level and condition • Engine speed signal • CAN communication signal • Oil pressure switch 4 and direct clutch solenoid valve • Line pressure
Excessive large creep.	• Engine speed signal • CAN communication signal • Oil pressure switch 4
Vehicle cannot be parking condition on "P" range. Parking condition is not released though shifting to other ranges.	• Inhibitor switch • Control cable adjustment
Vehicle can drive on "P" range.	• Inhibitor switch • Fluid level and condition • Control cable adjustment • Line pressure
Vehicle can drive on "N" range.	• Inhibitor switch • Fluid level and condition • Control cable adjustment • Line pressure
Vehicle cannot drive at any range.	• Fluid level and condition • Line pressure • Inhibitor switch • Control cable adjustment • Loosing or damaging of propeller shaft. • Loosing or damaging of drive shaft.
Vehicle cannot drive on "D" range.	• Fluid level and condition • Line pressure • Inhibitor switch • Control cable adjustment • Loosing or damaging of propeller shaft. • Loosing or damaging of drive shaft.
Vehicle cannot drive on "R" range.	• Fluid level and condition • Line pressure • Inhibitor switch • Control cable adjustment • Loosing or damaging of propeller shaft. • Loosing or damaging of drive shaft.

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Symptoms	Faulty parts
Engine cannot start on “N” or “P” range	• Starter • Control cable adjustment • Inhibitor switch • CAN communication line • TCM
Engine start other than “N” or “P” range	• Starter • Control cable adjustment • Inhibitor switch • TCM
Engine stalls.	• Fluid level and condition • Engine speed signal • Turbine speed sensor 1 and turbine speed sensor 2 • Lock up solenoid valve • Line pressure
Engine stalls when shifting to “N” → “D” and “R” range.	• Fluid level and condition • Engine speed signal • Turbine speed sensor 1 and turbine speed sensor 2 • Lock up solenoid valve • Line pressure

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AUTOMATIC TRANSMISSION (DIAGNOSTICS)

MANUAL TRANSMISSION AND DIFFERENTIAL

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	Page
1. General Description	2
2. Transmission Gear Oil	24
3. Manual Transmission Assembly	25
4. Transmission Mounting System	33
5. Oil Seal	35
6. Differential Side Retainer Oil Seal	36
7. Switches and Harness	37
8. Preparation for Overhaul	39
9. Transfer Case and Extension Case Assembly	40
10. Transfer Drive Gear	45
11. Transfer Driven Gear	47
12. Center Differential	49
13. Shift Link Assembly	50
14. Transmission Case	57
15. Main Shaft Assembly for Single-Range	60
16. Drive Pinion Shaft Assembly	66
17. Front Differential Assembly	75
18. Reverse Idler Gear	83
19. Shifter Fork and Rod	88
20. General Diagnostic Table	92