

Diagnostics with Phenomenon

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

18.Diagnostics with Phenomenon

A: INSPECTION

Symptoms	Problem parts
Shifting vehicle speed is low on "D" range.	<ul style="list-style-type: none"> • Vehicle speed sensor 1 and vehicle speed sensor 2 • Accelerator pedal position sensor • Throttle position sensor • ATF temperature sensor • CAN communication signal
Shifting vehicle speed is high on "D" range.	<ul style="list-style-type: none"> • Vehicle speed sensor 1 and vehicle speed sensor 2 • Accelerator pedal position sensor • Throttle position sensor • CAN communication signal • Brake switch signal • ATF temperature sensor
Excessive shifting shock. ("N" → "D" range)	<ul style="list-style-type: none"> • 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".	<ul style="list-style-type: none"> • 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 • Vehicle speed sensor 1 and vehicle speed sensor 2 • Fluid level and condition
Excessive shift shock on 2nd of "D" range → 3rd of "D" range or "2nd gear of manual mode" → "3rd of manual mode".	<ul style="list-style-type: none"> • 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 • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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".	<ul style="list-style-type: none"> • 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 • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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".	<ul style="list-style-type: none"> • 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 • Vehicle speed sensor 1 and vehicle speed sensor 2 • Fluid level and condition
Excessive shock at kick down.	<ul style="list-style-type: none"> • 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 • Vehicle speed sensor 1 and vehicle speed sensor 2 • Fluid level and condition
Excessive shock at shift up.	<ul style="list-style-type: none"> • 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 • Vehicle speed sensor 1 and vehicle speed sensor 2 • Fluid level and condition
Excessive shock at lock up.	<ul style="list-style-type: none"> • 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 • Vehicle speed sensor 1 and vehicle speed sensor 2 • Fluid level and condition
Excessive shock at engine brake.	<ul style="list-style-type: none"> • Accelerator pedal position sensor • Throttle position sensor • Control cable adjustment • CAN communication signal • Fluid level and condition • Line pressure • Forward brake solenoid valve
Judder occurs at lock up.	<ul style="list-style-type: none"> • Fluid level and condition • Engine speed signal • Turbine speed sensor 1 and turbine speed sensor 2 • Vehicle speed sensor 1 and vehicle speed sensor 2 • Accelerator pedal position sensor • Throttle position sensor • Lock up solenoid valve • ATF temperature sensor
Noise at "R", "N" and "D" range.	<ul style="list-style-type: none"> • Fluid level and condition • Engine speed signal • ATF temperature sensor
Hold at "D" range or 1st on manual mode.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • Direct clutch solenoid valve • Line pressure • Up switch signal • CAN communication signal • Accelerator pedal position sensor

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Hold at "D" range or 2nd on manual mode.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • Line pressure • Up switch signal • Down switch signal • CAN communication signal • Accelerator pedal position sensor
Hold at "D" range or 4th on manual mode.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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".	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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".	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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".	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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	Problem parts
Gear does not shift 4th of "D" range → 5th of "D" range or "4th of manual mode" → "5th of manual mode".	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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.	<ul style="list-style-type: none"> • 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 shifting 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • Oil pressure switch 4 and direct clutch solenoid valve • Line pressure • CAN communication signal

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Symptoms	Problem parts
No shifting 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • Oil pressure switch 5 and high & low reverse clutch solenoid valve • Line pressure • CAN communication signal
No shifting 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • Oil pressure switch 3 and input clutch solenoid valve • Oil pressure switch 1 and front brake solenoid valve • Line pressure • CAN communication signal
No shifting 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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.	<ul style="list-style-type: none"> • Fluid level and condition • Vehicle speed sensor 1 and vehicle speed sensor 2 • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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	Problem parts
Engine brake does not function at 3rd → 2nd of manual mode.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • Fluid level and condition • Line pressure • Accelerator pedal position sensor • Throttle position sensor • CAN communication signal • Inhibitor switch • Control cable adjustment • Vehicle speed sensor 1 and vehicle speed sensor 2
Excessive acceleration failure in “R” range.	<ul style="list-style-type: none"> • 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 • Vehicle speed sensor 1 and vehicle speed sensor 2
Engine skids when start driving (1st) the vehicle. Or slipping occurred.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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	Problem parts
Engine skids when driving at 5th. Or slipping occurred.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • Fluid level and condition • Line pressure • Accelerator pedal position sensor • Throttle position sensor • CAN communication signal • Direct clutch solenoid valve • Vehicle speed sensor 1 and vehicle speed sensor 2
There is no creep.	<ul style="list-style-type: none"> • Fluid level and condition • Engine speed signal • CAN communication signal • Oil pressure switch 4 and direct clutch solenoid valve • Line pressure
Excessive large creep.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • Inhibitor switch • Control cable adjustment
Vehicle can drive on “P” range.	<ul style="list-style-type: none"> • Inhibitor switch • Fluid level and condition • Control cable adjustment • Line pressure
Vehicle can drive on “N” range.	<ul style="list-style-type: none"> • Inhibitor switch • Fluid level and condition • Control cable adjustment • Line pressure
Vehicle cannot drive at any range.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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	Problem parts
Engine cannot start on “N” or “P” range.	<ul style="list-style-type: none">• Starter• Control cable adjustment• Inhibitor switch• CAN communication line• TCM
Engine starts other than “N” or “P” range.	<ul style="list-style-type: none">• Starter• Control cable adjustment• Inhibitor switch• TCM
Engine stalls.	<ul style="list-style-type: none">• 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.	<ul style="list-style-type: none">• 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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