

18. Diagnostics with Phenomenon

A: INSPECTION

Symptoms	Faulty 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 switchSelect cableSelect leverStarter motor and harness
Abnormal noise when select lever is in "P" or "N".	<ul style="list-style-type: none">StrainerTransfer duty solenoidOil pumpDrive plateATF level too high or too low
Hissing noise occurs during standing start.	<ul style="list-style-type: none">StrainerATF level too high or too low
Noise occurs while driving in "D1".	<ul style="list-style-type: none">Final gearPlanetary gearReduction gearDifferential gear oil level too high or too low
Noise occurs while driving in "D2".	<ul style="list-style-type: none">Final gearLow & reverse brakeReduction gearDifferential gear oil level too high or too low
Noise occurs while driving in "D3".	<ul style="list-style-type: none">Final gearLow & reverse brakePlanetary gearReduction gearDifferential gear oil level too high or too low
Noise occurs while driving in "D4".	<ul style="list-style-type: none">Final gearLow & reverse brakePlanetary gearReduction gearDifferential gear oil level too high or too low
Vehicle moves when select lever is in "N" range.	<ul style="list-style-type: none">Select cableInhibitor switchTCMLow clutch
Shock occurs when select lever is shifted from "N" to "D" range.	<ul style="list-style-type: none">Accelerator pedal position sensorATF temperature sensorLine pressure linear solenoidLow clutch duty solenoidLow clutchTCMHarnessControl valveATF deterioration
Excessive time lag occurs when select lever is shifted from "N" to "D" range.	<ul style="list-style-type: none">Control valveLow clutchLine pressure linear solenoidSeal ringFront 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 sensorATF temperature sensorLine pressure linear solenoidTCMHarnessControl valveATF deterioration
Excessive time lag occurs when select lever is shifted from "N" to "R" range.	<ul style="list-style-type: none">Control valveLow & reverse clutchReverse clutchLine pressure linear solenoidSeal ringFront gasket of transmission case

Diagnostics with Phenomenon

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Symptoms	Faulty parts
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)	<ul style="list-style-type: none"> • Reverse clutch
Vehicle does not start in "R" range only. (Engine operates)	<ul style="list-style-type: none"> • 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
Will not shift from 1st to 2nd gear.	<ul style="list-style-type: none"> • TCM • Front vehicle speed sensor • Accelerator pedal position sensor • Control valve • 2-4 brake
Will not shift from 2nd to 3rd gear.	<ul style="list-style-type: none"> • TCM • Control valve • High clutch

Diagnostics with Phenomenon

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Symptoms	Faulty parts
Will not shift 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.	<ul style="list-style-type: none"> • 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 • 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.	<ul style="list-style-type: none"> • ATF level too high
Differential oil spurts out.	<ul style="list-style-type: none"> • 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

Diagnostics with Phenomenon

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Symptoms	Faulty 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

Diagnostics with Phenomenon

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Symptoms	Faulty 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 • Accelerator pedal position sensor • ATF temperature sensor • Transfer clutch • Control 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 • Control valve • Transfer pipe • Transfer duty solenoid
It is not set in FWD mode.	<ul style="list-style-type: none"> • TCM • Transfer clutch • Control valve • Transfer duty solenoid
Select lever does not shift smoothly.	<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

Diagnostics with Phenomenon

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

MANUAL TRANSMISSION AND DIFFERENTIAL

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