

## SYMPTOM RELATED DIAGNOSTIC

### AUTOMATIC TRANSMISSION (DIAGNOSTICS)

## 16.Symptom Related Diagnostic

### A: INSPECTION

Symptom	Problem parts
Starter does not rotate when select lever is in "P" or "N"; starter rotates when select lever is in "R", "D", "3" or "2".	<ul style="list-style-type: none"> <li>• Inhibitor switch</li> <li>• Select cable</li> <li>• Select lever</li> <li>• Starter motor and harness</li> </ul>
Abnormal noise when select lever is in "P" or "N".	<ul style="list-style-type: none"> <li>• Strainer</li> <li>• Transfer duty solenoid</li> <li>• Oil pump</li> <li>• Drive plate</li> <li>• ATF level too high or too low</li> </ul>
Hissing noise occurs during standing start.	<ul style="list-style-type: none"> <li>• Strainer</li> <li>• ATF level too high or too low</li> </ul>
Noise occurs while driving in "D1".	<ul style="list-style-type: none"> <li>• Final gear</li> <li>• Planetary gear</li> <li>• Reduction gear</li> <li>• Differential gear oil level too high or too low</li> </ul>
Noise occurs while driving in "D2".	
Noise occurs while driving in "D3".	<ul style="list-style-type: none"> <li>• Final gear</li> <li>• Low &amp; reverse brake</li> <li>• Reduction gear</li> <li>• Differential gear oil level too high or too low</li> </ul>
Noise occurs while driving in "D4".	<ul style="list-style-type: none"> <li>• Final gear</li> <li>• Low &amp; reverse brake</li> <li>• Planetary gear</li> <li>• Reduction gear</li> <li>• Differential gear oil level too high or too low</li> </ul>
Engine stalls while shifting from one range to another.	<ul style="list-style-type: none"> <li>• Control valve</li> <li>• Lock-up damper</li> <li>• Engine performance</li> <li>• Input shaft</li> </ul>
Vehicle moves when select lever is in "N".	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Low clutch</li> </ul>
Shock occurs when select lever is moved from "N" to "D".	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Harness</li> <li>• Control valve</li> <li>• ATF deterioration</li> </ul>
Excessive time lag occurs when select lever is moved from "N" to "D".	<ul style="list-style-type: none"> <li>• Control valve</li> <li>• Low clutch</li> <li>• Line pressure duty solenoid</li> <li>• Seal ring</li> <li>• Front gasket transmission case</li> </ul>
Shock occurs when select lever is moved from "N" to "R".	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Harness</li> <li>• Control valve</li> <li>• ATF deterioration</li> </ul>
Excessive time lag occurs when select lever is moved from "N" to "R".	<ul style="list-style-type: none"> <li>• Control valve</li> <li>• Low &amp; reverse clutch</li> <li>• Reverse clutch</li> <li>• Line pressure duty solenoid</li> <li>• Seal ring</li> <li>• Front gasket transmission case</li> </ul>
Vehicle does not start in any shift range (engine stalls).	<ul style="list-style-type: none"> <li>• Parking brake mechanism</li> <li>• Planetary gear</li> </ul>

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**SYMPTOM RELATED DIAGNOSTIC****AUTOMATIC TRANSMISSION (DIAGNOSTICS)**

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

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**SYMPTOM RELATED DIAGNOSTIC****AUTOMATIC TRANSMISSION (DIAGNOSTICS)**

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

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**SYMPTOM RELATED DIAGNOSTIC****AUTOMATIC TRANSMISSION (DIAGNOSTICS)**

Symptom	Problem parts
Shock occurs from 2nd to 3rd gear.	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Throttle position sensor</li> <li>• 2-4 brake duty solenoid</li> <li>• ATF temperature sensor</li> <li>• Line pressure duty solenoid</li> <li>• Control valve</li> <li>• High clutch</li> <li>• 2-4 brake</li> <li>• ATF deterioration</li> <li>• Engine performance</li> <li>• 2-4 brake timing solenoid</li> </ul>
Slippage occurs from 2nd to 3rd gear.	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Throttle position sensor</li> <li>• 2-4 brake duty solenoid</li> <li>• ATF temperature sensor</li> <li>• Line pressure duty solenoid</li> <li>• Control valve</li> <li>• High clutch</li> <li>• 2-4 brake</li> <li>• 2-4 brake timing solenoid</li> </ul>
Shock occurs from 3rd to 4th gear.	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Throttle position sensor</li> <li>• 2-4 brake duty solenoid</li> <li>• ATF temperature sensor</li> <li>• Line pressure duty solenoid</li> <li>• Control valve</li> <li>• 2-4 brake timing solenoid</li> <li>• 2-4 brake</li> <li>• ATF deterioration</li> <li>• Engine performance</li> <li>• Low clutch timing solenoid</li> <li>• Low clutch</li> </ul>
Slippage occurs from 3rd to 4th gear.	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Throttle position sensor</li> <li>• 2-4 brake duty solenoid</li> <li>• ATF temperature sensor</li> <li>• Line pressure duty solenoid</li> <li>• Control valve</li> <li>• 2-4 brake</li> <li>• 2-4 brake timing solenoid</li> </ul>
Shock occurs when select lever is moved from "3" to "2" range.	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Throttle position sensor</li> <li>• ATF temperature sensor</li> <li>• Line pressure duty solenoid</li> <li>• Control valve</li> <li>• 2-4 brake duty solenoid</li> <li>• 2-4 brake</li> <li>• ATF deterioration</li> <li>• 2-4 brake timing solenoid</li> </ul>
Shock occurs when select lever is moved from "D" to "1" range.	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Throttle position sensor</li> <li>• ATF temperature sensor</li> <li>• Line pressure duty solenoid</li> <li>• Control valve</li> <li>• ATF deterioration</li> <li>• 2-4 brake duty solenoid</li> <li>• 2-4 brake timing solenoid</li> <li>• Low clutch timing solenoid</li> </ul>

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**SYMPTOM RELATED DIAGNOSTIC****AUTOMATIC TRANSMISSION (DIAGNOSTICS)**

Symptom	Problem parts
Shock occurs when select lever is moved from "2" to "1" range.	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Throttle position sensor</li> <li>• ATF temperature sensor</li> <li>• Line pressure duty solenoid</li> <li>• Control valve</li> <li>• Low &amp; reverse clutch</li> <li>• ATF deterioration</li> <li>• 2-4 brake duty solenoid</li> <li>• 2-4 brake timing solenoid</li> <li>• Low clutch timing solenoid</li> </ul>
Shock occurs when accelerator pedal is released at medium speeds.	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Throttle position sensor</li> <li>• ATF temperature sensor</li> <li>• Line pressure duty solenoid</li> <li>• Control valve</li> <li>• Lock-up damper</li> <li>• Engine performance</li> <li>• 2-4 brake duty solenoid</li> <li>• 2-4 brake timing solenoid</li> <li>• Low clutch timing solenoid</li> </ul>
Vibration occurs during straight-forward operation.	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Lock-up duty solenoid</li> <li>• Lock-up facing</li> <li>• Lock-up damper</li> </ul>
Vibration occurs during turns (tight corner "braking" phenomenon).	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Front vehicle speed sensor</li> <li>• Rear vehicle speed sensor</li> <li>• Throttle position sensor</li> <li>• ATF temperature sensor</li> <li>• Transfer clutch</li> <li>• Transfer valve</li> <li>• Transfer duty solenoid</li> <li>• ATF deterioration</li> <li>• Harness</li> </ul>
Front wheel slippage occurs during standing starts.	<ul style="list-style-type: none"> <li>• TCM</li> <li>• Front vehicle speed sensor</li> <li>• FWD switch</li> <li>• Throttle position sensor</li> <li>• ATF temperature sensor</li> <li>• Control valve</li> <li>• Transfer clutch</li> <li>• Transfer valve</li> <li>• Transfer pipe</li> <li>• Transfer duty solenoid</li> </ul>
Vehicle is not set in FWD mode.	<ul style="list-style-type: none"> <li>• TCM</li> <li>• FWD switch</li> <li>• Transfer clutch</li> <li>• Transfer valve</li> <li>• Transfer duty solenoid</li> </ul>
Select lever is hard to move.	<ul style="list-style-type: none"> <li>• Select cable</li> <li>• Select lever</li> <li>• Detent spring</li> <li>• Manual plate</li> </ul>
Select lever is too high to move (unreasonable resistance).	<ul style="list-style-type: none"> <li>• Detent spring</li> <li>• Manual plate</li> </ul>
Select lever slips out of operation during acceleration or while driving on rough terrain.	<ul style="list-style-type: none"> <li>• Select cable</li> <li>• Select lever</li> <li>• Detent spring</li> <li>• Manual plate</li> </ul>

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## SYMPTOM RELATED DIAGNOSTIC

### AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Symptom	Problem parts
System does not shift to SPORT shift mode.	SPORT shift mode switch
Engine brake is not effected in SPORT shift mode with 1st gear.	<ul style="list-style-type: none"><li>• SPORT shift solenoid</li><li>• Control valve</li><li>• Low &amp; reverse clutch</li></ul>

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Vehicle-id:  
SIE-id::A:Inspection

## SYMPTOM RELATED DIAGNOSTIC

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

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**MEMO:**

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Vehicle-id:  
SIE-id::A:Inspection

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