


## Diagnosis By Symptom

### Special Tool(s)

 <p>ST2834-A</p>	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool
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The Diagnosis by Symptom Index gives the technician diagnostic information and direction, and suggests possible components, using a symptom as a starting point.

### Diagnosis by Symptom Index — Directions

1. Using the Symptom Index, select the Concern/Symptom that best describes the condition.
2. Refer to the routine indicated in the Diagnosis by Symptom Index.
3. Always begin diagnosis of a symptom with:
  - a. preliminary inspections.
  - b. verification of conditions.
  - c. checking the transmission fluid level.
  - d. carrying out other test procedures as directed.
4. **NOTE:** Not all concerns and conditions with electrical components will set a DTC. Be aware that the components listed may still be the cause.

**NOTE:** When the battery is disconnected or a new battery is installed, certain transmission operating parameters can be lost. The PCM must relearn these parameters. During this learning process, you may experience slightly firm shifts, delayed or early shifts. This operation is considered normal and will not affect the function of the transmission. Normal operation will return once these parameters are stored by the PCM.

Begin with the ROUTINE, if indicated. Follow the reference or action statements. Always carry out the On-Board Diagnostic (OBD) test as necessary. Never skip steps. Repair as necessary.

5. These components are listed in the removal sequence and by most probable cause. All components listed must be inspected to make sure that the repairs are complete.

### Diagnosis by Symptom Index

#### Diagnosis by Symptom Index

5R55S	Routines
<b>Engagement Concerns:</b>	
<ul style="list-style-type: none"> <li>• No Forward in D or D ((D) cancelled) Only</li> </ul>	201A
<ul style="list-style-type: none"> <li>• No Forward Only (All Positions)</li> </ul>	201B
<ul style="list-style-type: none"> <li>• No Reverse Only</li> </ul>	202

• Harsh Reverse Only	203
• Harsh Forward Only	204A
• Harsh Manual 1st Gear Only	204B
• Delayed/Soft Reverse Only	205
• Delayed/Soft Forward Only	206
• No Forward and No Reverse	207
• Harsh Forward and Harsh Reverse	208
• Delayed Forward and Delayed Reverse	209
<b>Shift Concerns:</b>	
• Some/All Shifts Missing (Automatic Mode Only)	210
• Timing Concern	
Early/Late (Some/All)	211
Erratic/Hunting (Some/All)	212
• Feel Concerns	
Soft/Slipping (Some/All)	213
Harsh (Some/All)	214
• No First Gear in Drive, Engages in a Higher Gear	215
• No First Gear in Manual 1st	216
• No Manual 2nd Gear	217
• No 1-2 Shift	220
• No 2-3 Shift	221
• No 3-4 Shift	222
• No 4-3 Shift	223
• No 3-2 Shift	224
• No 2-1 Shift	225
• Soft/Slipping 1-2 Shift	226
• Soft/Slipping 2-3 Shift	227
• Soft/Slipping 3-4 Shift	228
• Soft/Slipping 4-3 Shift	229
• Soft/Slipping 3-2 Shift	230
• Soft/Slipping 2-1 Shift	231
• Harsh 1-2 Shift	232
• Harsh 2-3 Shift	233
• Harsh 3-4 Shift	234
• Harsh 4-3 Shift	235
• Harsh 3-2 Shift	236
• Harsh 2-1 Shift	237
• No 4-5 Shift	270
• No 5-4 Shift	271
• Soft/Slipping 4-5 Shift	272
• Soft/Slipping 5-4 Shift	273
• Harsh 4-5 Shift	274
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<b>Torque Converter Clutch (TCC) Operation Concerns:</b>	
• Does Not Apply	240

• Always Applied/Stalls Vehicle	241
• Cycling/Shudder/Chatter	242
<b>Other Concerns:</b>	
• Selector Lever Efforts High	251
• External Leaks	252
• Noise/Vibration — Forward or Reverse	254
• Engine Will Not Crank	255
• No Park Range	256
• Transmission Overheating	257
• No Engine Braking in Manual 2nd Position	258
• No Engine Braking in Manual 1st Position	259
• Transmission Fluid Venting or Foaming	261
• Vehicle Movement with Selector Lever in "N"	262
• Slips/Chatters in Manual 1st Gear	263
• Slips/Chatters in Manual 2nd Gear	264
• No Engine Braking in Manual 3rd Position	280
• No Engine Braking in Manual 4th (D (D) cancelled) Position	281
• Slips/Chatters in Manual 3rd Gear	282
• Engine Braking in ALL Gears	283
• No 2nd and 5th Gears (manual 2nd is ok)	284
• No 3rd, 4th and 5th gears	285

## Diagnostic Routines

### Engagement Concern: No Forward in D or D ((D) Cancelled) Only

Possible Component	Reference/Action
<b>201A — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Pressure Control Solenoid B (PCB)</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test D.</a></li> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Main control body-to-case screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valves, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install a new main control valve assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Center Support</b>	
<ul style="list-style-type: none"> <li>Screw not tightened to</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>

specification	
<ul style="list-style-type: none"> <li>Seal rings or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Outside diameter of case bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Support damaged or leaking</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li><a href="#">O/D</a> servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b><a href="#">O/D</a> Band</b>	
<ul style="list-style-type: none"> <li><a href="#">O/D</a> band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Case</b>	
<ul style="list-style-type: none"> <li>Damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

#### Engagement Concern: No Forward

Possible Component	Reference/Action
<b>201B — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Pressure Control Solenoid B (PCB)</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test D.</a></li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>Adjust transmission fluid to the correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<ul style="list-style-type: none"> <li>Transmission fluid condition</li> </ul>	<ul style="list-style-type: none"> <li>Carry out the Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screw not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valves, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install a new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Check ball damaged, missing, not seating, off</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>

location	
<ul style="list-style-type: none"> <li>Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Center Support</b>	
<ul style="list-style-type: none"> <li>Screw not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Seal rings or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Outside diameter of case bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Support damaged or leaking</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Planetary Assembly</b>	
<ul style="list-style-type: none"> <li>Planetary damage</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Low One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Case</b>	
<ul style="list-style-type: none"> <li>Damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

### Engagement Concern: No Reverse

Possible Component	Reference/Action
<b>202 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Pressure Control Solenoid C (PCC), Shift Solenoid B (SSB)</li> </ul>	<ul style="list-style-type: none"> <li>Carry out <a href="#">OBD</a> tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a> and <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun the <a href="#">OBD</a> test.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valves, springs damaged, misassembled, missing, stuck or bore damage</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install a new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Torque Converter Assembly</b>	
<ul style="list-style-type: none"> <li>Torque converter internal failure preventing engagement, piston release</li> </ul>	<ul style="list-style-type: none"> <li>Remove the transmission. Inspect for damage. Refer to <a href="#">Torque Converter Contamination Inspection</a> in this section. If the torque converter fails to pass the criteria or is damaged, install a new or remanufactured torque converter.</li> </ul>

<b>Direct Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect or damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Band</b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Drum Assembly</b>	
<ul style="list-style-type: none"> <li>One-Way Clutch (OWC) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Install a new drum assembly.</li> </ul>
<ul style="list-style-type: none"> <li>Bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Install a new drum assembly.</li> </ul>

**Engagement Concern: Harsh Reverse ONLY**

Possible Component	Reference/Action
<b>203 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Pressure Control Solenoid C (PCC)</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test D.</a></li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valves, spring damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install a new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Check ball damaged, missing not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>

<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Drum Assembly</b>	
<ul style="list-style-type: none"> <li>• One-Way Clutch (OWC) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install a new drum assembly.</li> </ul>
<ul style="list-style-type: none"> <li>• Bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install a new drum assembly.</li> </ul>

**Engagement Concern: Harsh Forward ONLY**

Possible Component	Reference/Action
<b>204A — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Pressure Control Solenoid A (PCA), Pressure Control Solenoid C (PCC)</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test D.</a></li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valves, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install a new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission</li> </ul>

	damage.
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Center Support</b>	
<ul style="list-style-type: none"> <li>Screw not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Seal rings or bearing damage</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Outside diameter of case bore damage</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Support damaged or leaking</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

#### Engagement Concern: Harsh Manual 1st Gear ONLY

Possible Component	Reference/Action
<b>204B — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Pressure Control Solenoid B (PCB), Turbine Shaft Speed (TSS)</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>

#### Engagement Concern: Delayed or Soft Reverse ONLY

Possible Component	Reference/Action
<b>205 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Pressure Control Solenoid C (PCC)</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>Low pressure</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>



<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valves, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install a new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

**Engagement Concern: Delayed/Soft Forward ONLY**

Possible Component	Reference/Action
<b>206 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Pressure Control Solenoid B (PCB)</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• Low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valves, spring damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install a new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	

<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged.</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Center Support</b>	
<ul style="list-style-type: none"> <li>• Screw not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Seal rings or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Outside diameter of case bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Support damaged or leaking</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction element damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

### Engagement Concern: No Forward and No Reverse

Possible Component	Reference/Action
<b>207 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Pressure Control Solenoid B (PCB)</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>• Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust transmission fluid to the correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<ul style="list-style-type: none"> <li>• Transmission fluid condition</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section.</li> </ul>
<b>Selector Lever Cable/Transmission Range (TR) Sensor</b>	
<ul style="list-style-type: none"> <li>• Cable system or <a href="#">TR</a> sensor damaged, misaligned</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect and repair as necessary. Refer to <a href="#">Transmission Range (TR) Sensor Adjustment</a> in this section.</li> </ul>
<b>Main Control</b>	

<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten screws to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valve, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Input Shaft</b>	
<ul style="list-style-type: none"> <li>• Damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Pump Assembly</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten screws to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Gasket damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new gasket.</li> </ul>
<ul style="list-style-type: none"> <li>• Porosity, cross leaks, ball missing, plugged hole</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Pump gears cracked and/or seized</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install a new pump.</li> </ul>
<ul style="list-style-type: none"> <li>• Flow control valves, springs, or seals damaged, stuck or not assembled correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install a new seal or flow control valve.</li> </ul>
<b>Overdrive (O/D) Planetary Assembly</b>	
<ul style="list-style-type: none"> <li>• Planetary damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Center Shaft Assembly</b>	
<ul style="list-style-type: none"> <li>• One-Way Clutch (OWC) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Planetary Assembly</b>	
<ul style="list-style-type: none"> <li>• Planetary damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Planetary Assembly</b>	
<ul style="list-style-type: none"> <li>• Planetary damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Output Shaft</b>	
<ul style="list-style-type: none"> <li>• Damage</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Torque Converter</b>	
<ul style="list-style-type: none"> <li>• Damaged flexplate or adapter plate</li> </ul>	<ul style="list-style-type: none"> <li>• Remove the transmission. Inspect for damage. Refer to <a href="#">Torque Converter Contamination Inspection</a> in this section. If the torque converter fails to pass the criteria or is damaged, install a new or remanufactured torque converter.</li> </ul>
<ul style="list-style-type: none"> <li>• Damaged impeller hub</li> </ul>	

<ul style="list-style-type: none"> <li>• Damaged turbine hub</li> </ul>	
<b>Direct <a href="#">OWC</a></b>	
<ul style="list-style-type: none"> <li>• Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

**Engagement Concern: Harsh Forward and Harsh Reverse**

Possible Component	Reference/Action
<b>208 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Transmission Range (TR) sensor, Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test B</a> and <a href="#">GO to Pinpoint Test C</a>.</li> <li>• Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>• Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust transmission fluid to the correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<ul style="list-style-type: none"> <li>• Transmission fluid condition</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valves, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

**Engagement Concern: Delayed Forward and Delayed Reverse**

Possible Component	Reference/Action
<b>209 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test B</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>Adjust transmission fluid to the correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<ul style="list-style-type: none"> <li>Transmission fluid condition</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valves and springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install a new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Pump Assembly</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten screws to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Gasket damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new gasket.</li> </ul>
<ul style="list-style-type: none"> <li>Porosity, cross leaks, ball missing, plugged hole</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Pump gears cracked and/or seized</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Install a new pump.</li> </ul>
<ul style="list-style-type: none"> <li>Flow control valves, springs, or seals damaged, stuck or not assembled correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Install a new seal or flow control valve.</li> </ul>

**Shift Concern: Some/All Shifts Missing (Automatic Mode Only)**

Possible Component	Reference/Action
<b>210 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Shift Solenoid B (SSB), Shift Solenoid C (SSC), Torque Converter Clutch (TCC) solenoid, Pressure Control Solenoid A (PCA), Pressure Control Solenoid B (PCB), Pressure Control Solenoid C</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM, <a href="#">IAT</a> and <a href="#">VSS</a>.</li> </ul>

(PCC), Output Shaft Speed (OSS) sensor, Transmission Range (TR) sensor, Intake Air Temperature (IAT) sensor, Vehicle Speed Sensor (VSS) input	
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test C</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> <li>• Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Some Shifts Missing ONLY</b>	
	<ul style="list-style-type: none"> <li>• If only some shifts are missing, determine which shift(s) is missing.</li> <li>• Refer to the following routine(s) for further No Shift concerns: <ul style="list-style-type: none"> <li>■ No 1-2 Shift, Routine 220</li> <li>■ No 2-3 Shift, Routine 221</li> <li>■ No 3-4 Shift, Routine 222</li> <li>■ No 4-5 Shift, Routine 270</li> <li>■ No 5-4 Shift, Routine 271</li> <li>■ No 4-3 Shift, Routine 223</li> <li>■ No 3-2 Shift, Routine 224</li> <li>■ No 2-1 Shift, Routine 225</li> </ul> </li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>• Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust transmission fluid to correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<ul style="list-style-type: none"> <li>• Transmission fluid condition</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section.</li> </ul>
<b>Selector Lever Cable/ <a href="#">TR</a> Sensor</b>	
<ul style="list-style-type: none"> <li>• Cable system or <a href="#">TR</a> sensor damaged, misaligned</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect and repair as necessary. Refer to <a href="#">Transmission Range (TR) Sensor Adjustment</a> in this section.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valve, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Pump Assembly</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten screws to specification.</li> </ul>

<ul style="list-style-type: none"> <li>• Gasket damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new gasket.</li> </ul>
<ul style="list-style-type: none"> <li>• Porosity, cross leaks, ball missing, plugged hole</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Pump gears cracked and/or seized</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install a new pump.</li> </ul>
<ul style="list-style-type: none"> <li>• Flow control valves, springs, or seals damaged, stuck or not assembled correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install a new seal or flow control valve.</li> </ul>
<b>Overdrive (O/D) Planetary Assembly</b>	
<ul style="list-style-type: none"> <li>• Planetary damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Center Support</b>	
<ul style="list-style-type: none"> <li>• Screw not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Seal rings or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Outside diameter of case bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Support damaged or leaking</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

**Shift Concern: Timing Concerns — Early/Late**

Possible Component	Reference/Action
<b>211— ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Output Shaft Speed (OSS) sensor, Intake Air Temperature (IAT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM and <a href="#">IAT</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test E</a> .</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Some Shifts Early/Late ONLY</b>	
	<ul style="list-style-type: none"> <li>• If only some shifts are early/late, determine which shift(s) is missing.</li> <li>• Refer to the following routine(s) for further No Shift concerns: <ul style="list-style-type: none"> <li>■ Soft/Slipping 1-2 Shift, Routine 226</li> <li>■ Soft/Slipping 2-3 Shift, Routine 227</li> <li>■ Soft/Slipping 3-4 Shift, Routine 228</li> <li>■ Soft/Slipping 4-5 Shift, Routine 272</li> <li>■ Soft/Slipping 5-4 Shift, Routine 273</li> <li>■ Soft/Slipping 4-3 Shift, Routine 229</li> <li>■ Soft/Slipping 3-2 Shift, Routine 230</li> <li>■ Soft/Slipping 2-1 Shift, Routine 221</li> </ul> </li> </ul>

<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>• Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust transmission fluid to the correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<ul style="list-style-type: none"> <li>• Transmission fluid condition</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valve, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

### Shift Concern: Timing Concerns — Erratic/Hunting (Some/All)

Possible Component	Reference/Action
<b>212 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Output Shaft Speed (OSS) sensor, Intake Air Temperature (IAT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM and <a href="#">IAT</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test E</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>• Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust the transmission fluid to the correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<ul style="list-style-type: none"> <li>• Transmission fluid condition</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valve, springs damaged,</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control</li> </ul>



misassembled, missing, stuck or bore damaged	assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Further Diagnosis</b>	
<ul style="list-style-type: none"> <li>For further diagnosis for timing issues, refer to Reference/Action</li> </ul>	<ul style="list-style-type: none"> <li>Refer to the following routine(s) for specific diagnosis: <ul style="list-style-type: none"> <li>No 1-2 Shift, Routine 220</li> <li>No 2-3 Shift, Routine 221</li> <li>No 3-4 Shift, Routine 222</li> <li>No 4-5 Shift, Routine 270</li> <li>No 5-4 Shift, Routine 271</li> <li>No 4-3 Shift, Routine 223</li> <li>No 3-2 Shift, Routine 224</li> <li>No 2-1 Shift, Routine 225</li> <li>Soft/Slip 1-2 Shift, Routine 226</li> <li>Soft/Slip 2-3 Shift, Routine 227</li> <li>Soft/Slip 3-4 Shift, Routine 228</li> <li>Soft/Slip 4-5 Shift, Routine 272</li> <li>Soft/Slip 5-4 Shift, Routine 273</li> <li>Soft/Slip 4-3 Shift, Routine 229</li> <li>Soft/Slip 3-2 Shift, Routine 230</li> <li>Soft/Slip 2-1 Shift, Routine 231</li> <li>Harsh 1-2 Shift, Routine 232</li> <li>Harsh 2-3 Shift, Routine 233</li> <li>Harsh 3-4 Shift, Routine 234</li> <li>Harsh 4-5 Shift, Routine 274</li> <li>Harsh 5-4 Shift, Routine 275</li> <li>Harsh 4-3 Shift, Routine 235</li> <li>Harsh 3-2 Shift, Routine 236</li> <li>Harsh 2-1 Shift, Routine 237</li> </ul> </li> </ul>

**Engagement Concern: Feel — Soft/Slipping (Some/All)**

Possible Component	Reference/Action
<b>213 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Shift Solenoid B (SSB), Shift Solenoid C (SSC), Pressure Control Solenoid A (PCA), Pressure Control Solenoid B (PCB), Pressure Control Solenoid C (PCC), intermediate shaft speed sensor, Transmission Fluid Temperature (TFT) sensor, Intake Air Temperature (IAT) sensor, Vehicle Speed Sensor (VSS) input</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM, <a href="#">IAT</a> and <a href="#">VSS</a>.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Some Shifts Soft/Slipping ONLY</b>	
	<ul style="list-style-type: none"> <li>If only some of the shifts are soft/slipping,</li> </ul>

	<p>determine which shift(s) is missing.</p> <ul style="list-style-type: none"> <li>Refer to the following routine(s) for further Soft/Slipping concerns: <ul style="list-style-type: none"> <li>Soft/Slipping 1-2 Shift, Routine 226</li> <li>Soft/Slipping 2-3 Shift, Routine 227</li> <li>Soft/Slipping 3-4 Shift, Routine 228</li> <li>Soft/Slipping 4-5 Shift, Routine 272</li> <li>Soft/Slipping 5-4 Shift, Routine 273</li> <li>Soft/Slipping 4-3 Shift, Routine 229</li> <li>Soft/Slipping 3-2 Shift, Routine 230</li> <li>Soft/Slipping 2-1 Shift, Routine 231</li> </ul> </li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>Adjust transmission fluid to the correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<ul style="list-style-type: none"> <li>Transmission fluid condition</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valves, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Torque Converter Assembly</b>	
<ul style="list-style-type: none"> <li>Torque converter internal failure preventing engagement, piston release</li> </ul>	<ul style="list-style-type: none"> <li>Remove the transmission. Inspect for damage. Refer to <a href="#">Torque Converter Contamination Inspection</a> in this section. If the torque converter fails to pass the criteria or is damaged, install a new or remanufactured torque converter.</li> </ul>
<b>Fluid Pump Assembly</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten screws to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Gasket damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new gasket.</li> </ul>
<ul style="list-style-type: none"> <li>Porosity, cross leaks, ball missing, plugged hole</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Pump gears cracked and/or seized</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Install a new pump.</li> </ul>
<ul style="list-style-type: none"> <li>Flow control valves, springs, or seals damaged, stuck or not assembled correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Install a new seal or flow control valve.</li> </ul>
<b>Coast Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Check ball damaged, missing, not seating, off</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for mislocation, poor seating,</li> </ul>

location	damage. Install a new cylinder.
• Friction elements damaged or worn	• Inspect for damage. Repair as necessary.
• Return springs damaged	• Inspect for damage. Repair as necessary.
<b>Center Support</b>	
• Screw not tightened to specification	• Tighten to specification.
• Seal rings or bearings damaged	• Inspect for damage. Repair as necessary.
• Outside diameter of case bore damage	• Inspect for damage. Repair as necessary.
• Support damaged or leaking	• Inspect for damage. Repair as necessary.
<b>Intermediate Servo</b>	
• Servo retaining screws damaged	• Inspect for damage. Repair as necessary.
• Seals (piston and cover) damaged	• Inspect for damage. Repair as necessary.
<b>Intermediate Band</b>	
• Band damaged	• Inspect for damage. Repair as necessary.
• Servo worn or damaged	• Inspect for damage. Repair as necessary.
• Not adjusted correctly	• Inspect for damage. Repair as necessary.
<b>Direct Clutch Assembly</b>	
• Seals, piston damaged	• Inspect for damage. Repair as necessary.
• Check ball damaged, missing, not seating, off location	• Inspect for mislocation, poor seating, damage. Install a new cylinder.
• Friction elements damaged or worn	• Inspect for damage. Repair as necessary.
• Return springs damaged	• Inspect for damage. Repair as necessary.
<b>Forward Clutch Assembly</b>	
• Seals, piston damaged	• Inspect for damage. Repair as necessary.
• Check ball damaged, missing, not seating, off location	• Inspect for mislocation, poor seating, damage. Install a new cylinder.
• Friction elements damaged or worn	• Inspect for damage. Repair as necessary.
• Return springs damaged	• Inspect for damage. Repair as necessary.
• Bronze seal ring or bearing damaged	• Inspect for damage. Repair as necessary.
<b>Reverse Servo</b>	
• Servo retaining screws damaged	• Inspect for damage. Repair as necessary.
• Seals (piston and cover) damaged	• Inspect for damage. Repair as necessary.
<b>Reverse Band</b>	
• Band damaged	• Inspect for damage. Repair as necessary.
• Servo worn or damaged	• Inspect for damage. Repair as necessary.
• Not adjusted correctly	• Inspect for damage. Repair as necessary.
<b>Case</b>	
• Damaged	• Inspect for damage. Repair as necessary.

#### Shift Concern: Feel — Harsh (Some/All)

Possible Component	Reference/Action
<b>214— ROUTINE</b>	
<b>Powertrain Control System</b>	
• PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Shift Solenoid B (SSB), Shift Solenoid C	• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain

(SSC), Pressure Control Solenoid A (PCA), Pressure Control Solenoid B (PCB), Pressure Control Solenoid C (PCC), intermediate shaft speed sensor, Transmission Range (TR) sensor, Transmission Fluid Temperature (TFT) sensor, Intake Air Temperature (IAT) sensor, Vehicle Speed Sensor (VSS) input	Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM, <a href="#">IAT</a> and <a href="#">VSS</a> .
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> <li>• Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Some Shifts Harsh ONLY</b>	
	<ul style="list-style-type: none"> <li>• If only some of the shifts are harsh, determine which shift(s) is missing.</li> <li>• Refer to the following routine(s) for further No Shift concerns: <ul style="list-style-type: none"> <li>■ Harsh 1-2 Shift, Routine 232</li> <li>■ Harsh 2-3 Shift, Routine 233</li> <li>■ Harsh 3-4 Shift, Routine 234</li> <li>■ Harsh 4-5 Shift, Routine 274</li> <li>■ Harsh 5-4 Shift, Routine 275</li> <li>■ Harsh 4-3 Shift, Routine 235</li> <li>■ Harsh 3-2 Shift, Routine 236</li> <li>■ Harsh 2-1 Shift, Routine 237</li> </ul> </li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>• Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust transmission fluid to the correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valves, springs damaged, misassembled, missing, stuck, or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Input Shaft</b>	
<ul style="list-style-type: none"> <li>• Damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install new as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as</li> </ul>

	necessary.
<b>O/D Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Center Shaft Assembly</b>	
<ul style="list-style-type: none"> <li>• Center shaft assembly damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• One-Way Clutch (OWC) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Center Support</b>	
<ul style="list-style-type: none"> <li>• Screw not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<b>Intermediate Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Output Shaft</b>	
<ul style="list-style-type: none"> <li>• Damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install new as</li> </ul>

	necessary.
<b>Case</b>	
<ul style="list-style-type: none"> <li>• Damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

### Shift Concern: No 1st and 2nd Gear in Drive, Engages in a Higher Gear

Possible Component	Reference/Action
<b>215 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Shift Solenoid B (SSB), Shift Solenoid C (SSC), Transmission Range (TR) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a> and <a href="#">GO to Pinpoint Test C</a>.</li> <li>• Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valves/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>• Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Low <a href="#">OWC</a></b>	
<ul style="list-style-type: none"> <li>• Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

### Engagement Concern: No 1st Gear in Manual 1 Position

Possible Component	Reference/Action
<b>216 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Shift Solenoid B (SSB), Pressure Control Solenoid B</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>

(PCB), Pressure Control Solenoid C (PCC)	
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a> and <a href="#">GO to Pinpoint Test D</a>.</li> <li>• Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valves, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Planetary Assembly</b>	
<ul style="list-style-type: none"> <li>• Planetary damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>• Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Low <a href="#">OWC</a></b>	
<ul style="list-style-type: none"> <li>• Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

#### Shift Concern: No 2nd Gear in Manual 2 Position

Possible Component	Reference/Action
<b>217 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Shift Solenoid B (SSB), Shift Solenoid C (SSC), Pressure Control Solenoid B (PCB)</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. For additional information, refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a> and <a href="#">GO to Pinpoint Test D</a>.</li> <li>• Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valves, springs damaged, misassembled, missing, stuck or</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install a new main control assembly. If misassembled, reassemble correctly.</li> </ul>

bore damaged	DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Band</b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Low <u>OWC</u></b>	
<ul style="list-style-type: none"> <li>Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

**Shift Concern: No 1-2 Shift**

Possible Component	Reference/Action
<b>220 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid B (PCB), Output Shaft Speed (OSS) sensor, Transmission Range (TR) sensor, Vehicle Speed Sensor (VSS) input</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM and <a href="#">VSS</a>.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test C</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>Adjust transmission fluid to correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>



<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Planetary Assembly</b>	
<ul style="list-style-type: none"> <li>• Planetary damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

### Shift Concern: No 2-3 Shift

Possible Component	Reference/Action
<b>221 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid B (SSB), Torque Converter Clutch (TCC) solenoid, Pressure Control Solenoid A (PCA), Output Shaft Speed (OSS) sensor, Transmission Range (TR) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test C</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball, damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<b>Intermediate Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

**Shift Concern: No 3-4 Shift**

Possible Component	Reference/Action
<b>222 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Pressure Control Solenoid C (PCC), Output Shaft Speed (OSS) sensor, Transmission Range (TR) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a> , <a href="#">GO to Pinpoint Test C</a> , <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a> .</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Center Support</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Seal rings or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Outside diameter of case bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Support damaged or leaking</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>

**Shift Concern: No 4-3 Shift**

Possible Component	Reference/Action
<b>223 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Shift Solenoid B (SSB), Pressure Control Solenoid A (PCA), Output Shaft Speed (OSS) sensor, Transmission Range (TR) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test C</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valves/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

**Shift Concern: No 3-2 Shift**

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Possible Component	Reference/Action
<b>224 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid B (PCB), Output Shaft Speed (OSS) sensor, Transmission Range (TR) sensor</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test C</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valves/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b><a href="#">O/D</a> Band</b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

#### Shift Concern: No 2-1 Shift

Possible Component	Reference/Action
<b>225 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid B (PCB), Output Shaft Speed</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>

(OSS) sensor, Transmission Range (TR) sensor	
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test C</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valves/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b><a href="#">O/D</a> Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

### Shift Concern: Soft/Slipping 1-2 Shift

Possible Component	Reference/Action
<b>226 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid B (PCB), Transmission Fluid Temperature (TFT) sensor, Vehicle Speed Sensor (VSS) input</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a> and <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>

<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>• Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust transmission fluid to correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<ul style="list-style-type: none"> <li>• Transmission fluid condition</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

### Shift Concern: Soft/Slipping 2-3 Shift

Possible Component	Reference/Action
<b>227 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Pressure Control Solenoid A (PCA), intermediate shaft speed sensor, Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valve/springs damaged, misassembled,</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main</li> </ul>

missing, stuck or bore damaged	control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<b>Intermediate Band</b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

### Shift Concern: Soft/Slipping 3-4 Shift

Possible Component	Reference/Action
<b>228 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Pressure Control Solenoid C (PCC), Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a> and <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valves/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<b>Center Support</b>	
<ul style="list-style-type: none"> <li>Screw not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Seal rings or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Outside diameter of case bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Support damaged or leaking</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct Clutch Assembly</b>	

<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

### Shift Concern: Feel — Soft/Slipping 4-3 Shift

Possible Component	Reference/Action
<b>229 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Pressure Control Solenoid A (PCA), Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a> , <a href="#">GO to Pinpoint Test B</a> and <a href="#">GO to Pinpoint Test D</a> .</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valves/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

### Shift Concern: Soft/Slipping 3-2 Shift

Possible Component	Reference/Action
<b>230 — ROUTINE</b>	



<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid B (PCB), intermediate shaft speed sensor, Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valves/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b><a href="#">O/D Band</a></b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

### Shift Concern: Feel — Soft/Slipping 2-1 Shift

Possible Component	Reference/Action
<b>231 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid B (PCB), Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a> and <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>

<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valves/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

### Shift Concern: Harsh 1-2 Shift

Possible Component	Reference/Action
<b>232 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid B (PCB), Turbine Shaft Speed (TSS) sensor, Transmission Range (TR) sensor, Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a>, <a href="#">GO to Pinpoint Test C</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b><a href="#">O/D</a> Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

**Shift Concern: Harsh 2-3 Shift**

Possible Component	Reference/Action
<b>233 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid B (SSB), Pressure Control Solenoid A (PCA), Turbine Shaft Speed (TSS) sensor, intermediate shaft speed sensor, Transmission Range (TR) sensor, Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a>, <a href="#">GO to Pinpoint Test C</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b><a href="#">O/D</a> Band</b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Band</b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>• Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

**Shift Concern: Harsh 3-4 Shift**

Possible Component	Reference/Action
<b>234 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Pressure Control Solenoid C (PCC), Transmission Range (TR) sensor, Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a>, <a href="#">GO to Pinpoint Test C</a> and <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Center Support</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Seal rings or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Outside diameter of case bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Support damaged or leaking</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Servo</b>	
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

**Shift Concern: Harsh 4-3 Shift**

Possible Component	Reference/Action
<b>235 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Pressure Control Solenoid A (PCA), Transmission Range (TR) sensor, Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a>, <a href="#">GO to Pinpoint Test C</a> and <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valves, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Band</b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

**Shift Concern: Harsh 3-2 Shift**

Possible Component	Reference/Action
<b>236 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid B (PCB), Turbine Shaft Speed (TSS) sensor,</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>

intermediate shaft speed sensor, Transmission Range (TR) sensor, Transmission Fluid Temperature (TFT) sensor	
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a>, <a href="#">GO to Pinpoint Test C</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b><u>O/D</u> Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

### Shift Concern: Harsh 2-1 Shift

Possible Component	Reference/Action
<b>237 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid B (PCB), Turbine Shaft Speed (TSS) sensor, Transmission Range (TR) sensor, Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>

	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a>, <a href="#">GO to Pinpoint Test C</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct Clutch One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>• Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

#### Torque Converter Operation Concerns: Does Not Apply

Possible Component	Reference/Action
<b>240 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Torque Converter Clutch (TCC) solenoid, Transmission Fluid Temperature (TFT) sensor and Engine Coolant Temperature (ECT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a> and <a href="#">GO to Pinpoint Test B</a>.</li> <li>• Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>

<ul style="list-style-type: none"> <li>Valve, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Torque Converter Assembly</b>	
<ul style="list-style-type: none"> <li>Torque converter internal failure preventing engagement, piston application</li> </ul>	<ul style="list-style-type: none"> <li>Remove the transmission. Inspect for damage. Refer to <a href="#">Torque Converter Contamination Inspection</a> in this section. If the torque converter fails to pass the criteria or is damaged, install a new or remanufactured torque converter.</li> </ul>
<b>Pump Assembly</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten screws to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Gasket damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new gasket.</li> </ul>
<ul style="list-style-type: none"> <li>Porosity, cross leaks, ball missing, plugged hole</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Pump gears cracked and/or seized</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Install a new pump.</li> </ul>
<ul style="list-style-type: none"> <li>Flow control valves, springs or seals damaged, stuck or not assembled correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Install a new seal or flow control valve.</li> </ul>

#### Torque Converter Operation Concern: Always Applied/Stalls Vehicle

Possible Component	Reference/Action
<b>241 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Torque Converter Clutch (TCC) solenoid</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A.</a></li> </ul>
	<ul style="list-style-type: none"> <li>Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valve, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Torque Converter Assembly</b>	
<ul style="list-style-type: none"> <li>Torque converter internal failure preventing engagement, piston release</li> </ul>	<ul style="list-style-type: none"> <li>Remove the transmission. Inspect for damage. Refer to <a href="#">Torque Converter Contamination Inspection</a> in this section. If the torque converter fails to pass the criteria or is damaged, install a new or remanufactured torque converter.</li> </ul>
<b>Low One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>Worn, damaged or assembled incorrectly.</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>



### Torque Converter Operation Concern: Cycling/Shudder/Chatter

Possible Component	Reference/Action
<b>242 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Torque Converter Clutch (TCC) solenoid</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a>.</li> <li>Repair as necessary. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>Transmission fluid condition — contaminated, degraded</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section. If contaminated, locate source of contamination. If burnt, inspect mechanical bands, clutches. Repair as necessary. Change transmission fluid. Carry out drain and refill procedure. Refer to <a href="#">Transmission Fluid Drain and Refill — Without Torque Converter Drain Plug</a> in this section. Carry out fluid cooler and torque converter cleaning procedure. Refer to <a href="#">Transmission Fluid Cooler Backflushing and Cleaning</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valve, springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Torque Converter Assembly</b>	
<ul style="list-style-type: none"> <li>Torque converter internal leakage, clutch material damaged</li> </ul>	<ul style="list-style-type: none"> <li>Remove the transmission. Inspect for damage. Refer to <a href="#">Torque Converter Contamination Inspection</a> in this section. If the torque converter fails to pass the criteria or is damaged, install a new or remanufactured torque converter.</li> </ul>

### Other Concerns: Selector Lever Efforts High

Possible Component	Reference/Action
<b>251 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Transmission Range (TR) sensor</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test C</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle</li> </ul>

	and rerun <a href="#">OBD</a> test.
<b>Selector Lever Cable, <a href="#">TR</a> Sensor</b>	
<ul style="list-style-type: none"> <li>Selector lever cable system or <a href="#">TR</a> sensor damaged, misaligned</li> </ul>	<ul style="list-style-type: none"> <li>Inspect and repair as necessary. Refer to <a href="#">Transmission Range (TR) Sensor Adjustment</a> in this section or <a href="#">Section 307-05</a>.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Case</b>	
<ul style="list-style-type: none"> <li>Manual control lever assembly damage, manual valve inner lever pin bent, manual valve inner lever damaged, spring rod damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new part.</li> </ul>
<ul style="list-style-type: none"> <li>Manual valve lever shaft retaining pin damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, repair as necessary.</li> </ul>

### Other Concerns: External Leaks

Possible Component	Reference/Action
<b>252 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>Output Shaft Speed (OSS) sensor, intermediate shaft speed, Turbine Shaft Speed (TSS) sensor, Transmission Range (TR) sensor</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for leakage. If areas around sensor show signs of leakage, install a new sensor O-ring seal. If area behind <a href="#">TR</a> sensor shows signs of a leak, a new manual lever shaft seal may need to be installed.</li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>Adjust transmission fluid to correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<b>Case</b>	
<ul style="list-style-type: none"> <li>Case vent damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Output shaft flange damage</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, repair as necessary.</li> </ul>
<b>Seals/Gaskets</b>	
<ul style="list-style-type: none"> <li>Leakage at gaskets, seals, cooler lines, torque converter studs, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to <a href="#">Leakage Inspection</a> in this section for potential leak locations.</li> </ul>
	<ul style="list-style-type: none"> <li>Remove all traces of lubricant on exposed surfaces of the transmission. Check vent for free breathing. Operate the vehicle at normal temperatures and carry out the Leakage Check with a Black Light, refer to <a href="#">Leakage Inspection</a> in this section. Repair as necessary.</li> </ul>
<b>Vents</b>	
<ul style="list-style-type: none"> <li>Transmission fluid leakage</li> </ul>	<ul style="list-style-type: none"> <li>Incorrect transmission fluid level may cause the transmission</li> </ul>

through the vent system into the bellhousing	fluid to vent. If not already carried out, verify and adjust the fluid to the correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.
	<ul style="list-style-type: none"> <li>Verify the transmission operating temperature by monitoring the Transmission Fluid Temperature (TFT) while driving the vehicle for 32 km (20 mi) or 20 minutes. If the <b>TFT</b> exceeds 102°C (215°F) during the drive, refer to Routine No . 257 Transmission Overheating, Main Control, Thermostatic bypass valve.</li> </ul>
	<ul style="list-style-type: none"> <li>Remove all traces of transmission fluid on exposed surfaces of the transmission.</li> </ul>
	<ul style="list-style-type: none"> <li>Check the vent for damage and obstructions. Verify that the vent is operating correctly by applying air through the vent tubes. If the vent is damaged or obstructed, repair as necessary.</li> </ul>

### Other Concern: Noise/Vibration — Forward or Reverse

**NOTE:** NVH symptoms should be identified using the diagnostic tools that are available. For a list of these tools, an explanation of their uses and a glossary of common terms, refer to [Section 100-04](#) . Since it is possible any one of multiple systems may be the cause of a symptom, it may be necessary to use a process of elimination type of diagnostic approach to pinpoint the responsible system. If this is not the causal system for the symptom, refer back to [Section 100-04](#) for the next likely system and continue diagnosis.

Possible Component	Reference/Action
<b>254 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Torque Converter Clutch (TCC) solenoid, Pressure Control Solenoid A (PCA), Pressure Control Solenoid B (PCB), Pressure Control Solenoid C (PCC)</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a> and <a href="#">GO to Pinpoint Test D</a> .</li> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Selector Lever Cable/Transmission Range (TR) Sensor</b>	
<ul style="list-style-type: none"> <li>Selector lever cable or <b>TR</b> sensor damaged, misaligned</li> </ul>	<ul style="list-style-type: none"> <li>Inspect and repair as necessary. Refer to <a href="#">Transmission Range (TR) Sensor Adjustment</a> in this section or <a href="#">Section 307-05</a> .</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valves/springs damaged, misassembled, missing, stuck, or bore damaged, thermostatic bypass valve damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Torque Converter Assembly</b>	
<ul style="list-style-type: none"> <li>Torque converter hub damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Flexplate or Adapter Plate</b>	

<ul style="list-style-type: none"> <li>• Damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Nuts not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Adapter plate not aligned correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Remove transmission and using special service tool and procedure in this section, align adapter plate.</li> </ul>
<b>Pump Assembly</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten screws to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Gasket damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new gasket.</li> </ul>
<ul style="list-style-type: none"> <li>• Porosity, cross leaks, ball missing, plugged hole</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Pump gears cracked and/or seized</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install a new pump.</li> </ul>
<ul style="list-style-type: none"> <li>• Flow control valves, springs or seals damaged, stuck or not assembled correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install a new seal or flow control valve.</li> </ul>
<b>Low One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>• Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Clutch Assemblies</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage, mislocation, poor seating. Install a new cylinder as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

#### Other Concern: Engine Will Not Crank

Possible Component	Reference/Action
<b>255 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Transmission Range (TR) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test C</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Selector Lever Cable/ <a href="#">TR</a> Sensor</b>	
<ul style="list-style-type: none"> <li>• Selector lever cable or <a href="#">TR</a> sensor damaged, misaligned</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect and repair as necessary. Refer to <a href="#">Transmission Range (TR) Sensor Adjustment</a> in this section or <a href="#">Section 307-05</a>.</li> </ul>
<b>Main Control/Park System/ <a href="#">TR</a> Sensor Alignment</b>	
<ul style="list-style-type: none"> <li>• Detent spring, rooster comb, manual lever and <a href="#">TR</a> sensor are not correctly aligned together</li> </ul>	<ul style="list-style-type: none"> <li>• Disconnect <a href="#">TR</a> sensor electrical connector. Remove outer manual lever nut. Loosen <a href="#">TR</a> sensor screws. Loosen detent spring screw. Move manual lever through all gear ranges. Place manual lever into the NEUTRAL position. Tighten the detent spring screw to correct specification. Install TR Sensor Alignment Gauge. Tighten the <a href="#">TR</a> sensor screws alternating sequence until correct tightening specification is obtained. Remove the TR Sensor Alignment Gauge. Install outer manual lever and nut. Tighten nut</li> </ul>

	to correct specification. Install <a href="#">TR</a> sensor connector. Verify that the vehicle will start in PARK and NEUTRAL. Verify that the reverse backup lamps illuminate in REVERSE.
<b>Flexplate or Adapter Plate</b>	
<ul style="list-style-type: none"> <li>• Damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Pump Assembly</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten screws to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Gasket damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new gasket.</li> </ul>
<ul style="list-style-type: none"> <li>• Porosity, cross leaks, ball missing, plugged hole</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Pump gears cracked and/or seized</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install a new pump.</li> </ul>
<ul style="list-style-type: none"> <li>• Flow control valves, springs or seals damaged, stuck or not assembled correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install a new seal or flow control valve.</li> </ul>

#### Other Concern: No Park Range

Possible Component	Reference/Action
<b>256 — ROUTINE</b>	
<b>Selector Lever Cable/Transmission Range (TR) Sensor</b>	
<ul style="list-style-type: none"> <li>• Selector lever cable system or <a href="#">TR</a> sensor damaged, misaligned</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect and repair as necessary. Refer to <a href="#">Transmission Range (TR) Sensor Adjustment</a> in this section or <a href="#">Section 307-05</a>.</li> </ul>
<b>Case</b>	
<ul style="list-style-type: none"> <li>• Manual control lever assembly damaged, manual valve inner lever pin bent, manual valve inner lever damaged, spring rod damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Manual valve lever shaft retaining pin damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, repair as necessary.</li> </ul>
<b>Park System</b>	
<ul style="list-style-type: none"> <li>• Park gear, parking pawl, parking pawl return spring, park or guide plate, parking actuating rod, parking pawl shaft, manual lever, manual lever detent spring damaged or misassembled</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• External linkages/brackets damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, repair as necessary.</li> </ul>

#### Other Concern: Transmission Overheating

Possible Component	Reference/Action
<b>257 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Torque</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests.</li> </ul>

<p>Converter Clutch (TCC) solenoid, Pressure Control Solenoid A (PCA), Pressure Control Solenoid B (PCB), Pressure Control Solenoid C (PCC), Transmission Fluid Temperature (TFT) sensor</p>	<p>Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</p>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a> and <a href="#">GO to Pinpoint Test D</a>.</li> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<p><b>Transmission Fluid</b></p> <ul style="list-style-type: none"> <li>• Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust transmission fluid to correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<p><b>Hydraulic/Mechanical</b></p> <ul style="list-style-type: none"> <li>• Thermostatic bypass valve in the main control valve body assembly</li> </ul>	<ul style="list-style-type: none"> <li>• Verify correct thermal valve function, while monitoring the <a href="#">TFT</a>. Drive the vehicle for about 32 km (20 mi) or 20 minutes. If the temperature exceeds 102°C (215°F) during the drive, install a new main control valve body assembly.</li> </ul>
<p><b>Incorrect Pressures</b></p> <ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<p><b>Main Control</b></p> <ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> <li>• Separator plate damaged</li> <li>• Contamination</li> <li>• Valves/springs damaged, misassembled, missing, stuck or bore damaged, thermostatic bypass valve damaged</li> <li>• Filter damaged, missing</li> <li>• Thermostatic bypass valve damaged or malfunctioning</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> <li>• Inspect for damage. If damaged, install a new separator plate.</li> <li>• Disassemble and clean.</li> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> <li>• Inspect for damage. Repair as necessary.</li> <li>• If the verification procedure confirms the malfunction, install a new main control valve body assembly. If not malfunctioning, inspect for damage. If damaged, install a new main control valve body assembly.</li> </ul>
<p><b>Torque Converter Assembly</b></p> <ul style="list-style-type: none"> <li>• Seized torque converter One-Way Clutch (OWC)</li> <li>• Excessive slip detected</li> </ul>	<ul style="list-style-type: none"> <li>• Remove the transmission. Inspect for damage. Refer to <a href="#">Torque Converter Contamination Inspection</a> in this section. If the torque converter fails to pass the criteria or is damaged, install a new or remanufactured torque converter.</li> </ul>
<p><b>Pump Assembly</b></p> <ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> <li>• Gasket damaged</li> <li>• Porosity, cross leaks, ball missing, plugged hole</li> <li>• Pump gears cracked and/or seized</li> <li>• Flow control valves, springs or seals damaged, stuck or not assembled correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten screws to specification.</li> <li>• Inspect for damage. If damaged, install a new gasket.</li> <li>• Inspect for damage. If damaged, repair as necessary.</li> <li>• Inspect for damage. Install a new pump.</li> <li>• Inspect for damage. Install a new seal or flow control valve.</li> </ul>

<b>Case</b>	
<ul style="list-style-type: none"> <li>Case vent damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, repair as necessary.</li> </ul>
<b>Other</b>	
<ul style="list-style-type: none"> <li>Restriction in the transmission cooling system</li> </ul>	<ul style="list-style-type: none"> <li>Refer to <a href="#">Section 307-02</a> for information and diagnosis of cooling system.</li> </ul>
<ul style="list-style-type: none"> <li>Excessive trailer tow load</li> </ul>	<ul style="list-style-type: none"> <li>Refer to the Owner's Literature for specifications on trailer towing.</li> </ul>
<ul style="list-style-type: none"> <li>Engine driveability concerns</li> </ul>	<ul style="list-style-type: none"> <li>Check engine. Refer to <a href="#">Section 303-00</a>.</li> </ul>

**Other Concerns: No Engine Braking in Manual 2nd Position**

Possible Component	Reference/Action
<b>258 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Shift Solenoid C (SSC), Shift Solenoid D (SSD), Pressure Control Solenoid A (PCA)</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a> and <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>Adjust transmission fluid to correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b><a href="#">O/D Band</a></b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

**Other Concern: No Engine Braking in Manual 1st Position**

Possible Component	Reference/Action
<b>259 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Shift Solenoid C (SSC), Shift Solenoid D (SSD), Pressure Control Solenoid A (PCA), Pressure Control Solenoid B (PCB)</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a> and <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test</li> </ul>

	the vehicle and rerun <a href="#">OBD</a> test.
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>• Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust transmission fluid to the correct level, refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<b>Incorrect pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Reverse Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

#### Other Concerns: Transmission Fluid Venting/Foaming

Possible Component	Reference/Action
<b>261 — ROUTINE</b>	
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>• Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust transmission fluid to correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<ul style="list-style-type: none"> <li>• Transmission fluid condition</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section.</li> </ul>
<b>Pump Assembly</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten screws to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Gasket damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new gasket.</li> </ul>
<ul style="list-style-type: none"> <li>• Porosity, cross leaks, ball missing, plugged hole</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, repair as necessary.</li> </ul>
<b>Case</b>	
<ul style="list-style-type: none"> <li>• Case vent damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, repair as necessary.</li> </ul>
<b>Other</b>	
<ul style="list-style-type: none"> <li>• Transmission overheating</li> </ul>	<ul style="list-style-type: none"> <li>• Refer to 257 routine in this section.</li> </ul>

#### Other Concern: Vehicle Movement with Gear Selector in N Position

Possible Component	Reference/Action
<b>262 — ROUTINE</b>	
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>• Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust transmission fluid to correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<b>Selector Lever Cable/Transmission Range (TR) Sensor</b>	
<ul style="list-style-type: none"> <li>• Cable system or <a href="#">TR</a> sensor damaged, misaligned</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect and repair as necessary. Refer to <a href="#">Transmission Range (TR) Sensor Adjustment</a> in this section.</li> </ul>
<b>Incorrect Pressures</b>	



<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<b>Clutch Assemblies</b>	
<ul style="list-style-type: none"> <li>Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage, mislocation, poor seating. Install a new cylinder as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Friction elements damaged or worn.</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Case</b>	
<ul style="list-style-type: none"> <li>Manual control lever assembly damage, manual valve inner lever pin bent, manual valve inner lever damaged, spring rod damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Manual valve lever shaft retaining pin damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, repair as necessary.</li> </ul>

#### Other Concern: Slips/Chatters in Manual 1st Position

Possible Component	Reference/Action
<b>263 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Pressure Control Solenoid A (PCA), Pressure Control Solenoid B (PCB)</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test D</a> .</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>Adjust transmission fluid to the correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<ul style="list-style-type: none"> <li>Transmission fluid condition</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>

<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	
<ul style="list-style-type: none"> <li>• Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Pump Assembly</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten screws to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Gasket damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new gasket.</li> </ul>
<ul style="list-style-type: none"> <li>• Porosity, cross leaks, ball missing, plugged hole</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Pump gears cracked and/or seized</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install a new pump.</li> </ul>
<ul style="list-style-type: none"> <li>• Flow control valves, springs, or seals damaged, stuck or not assembled correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Install a new seal or flow control valve.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Reverse Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>• Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

**Other Concern: Slips/Chatters in Manual 2nd Position**

Possible Component	Reference/Action
<b>264 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Pressure Control Solenoid A (PCA), Pressure Control Solenoid B (PCB)</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>

<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>• Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust transmission fluid to the correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<ul style="list-style-type: none"> <li>• Transmission fluid condition</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Planetary Assembly</b>	
<ul style="list-style-type: none"> <li>• Planetary damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

#### Shift Concern: No 4-5 Shift

Possible Component	Reference/Action
<b>270 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid B (PCB), Output Shaft Speed (OSS) sensor, Transmission Range (TR) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
<ul style="list-style-type: none"> <li>• Transmission Control Switch (TCS)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a> , <a href="#">GO to Pinpoint Test C</a> , <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a> .</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
	<ul style="list-style-type: none"> <li>• For <a href="#">TCS</a> diagnosis, refer to <a href="#">Section 307-05</a> .</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>

<ul style="list-style-type: none"> <li>Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Band</b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

**Shift Concern: No 5-4 Shift**

Possible Component	Reference/Action
<b>271 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid C (PCC), Output Shaft Speed (OSS) sensor, Transmission Range (TR) sensor</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a> , <a href="#">GO to Pinpoint Test C</a> , <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a> .</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<ul style="list-style-type: none"> <li>Transmission Control Switch (TCS)</li> </ul>	<ul style="list-style-type: none"> <li>For <a href="#">TCS</a> diagnosis, refer to <a href="#">Section 307-05</a> .</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valves/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Band</b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

- Not adjusted correctly

- Inspect for damage. Repair as necessary.

### Shift Concern: Soft/Slipping 4-5 Shift

Possible Component	Reference/Action
<b>272 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid B (PCB), Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a> and <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valves/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b><a href="#">O/D</a> Band</b>	
<ul style="list-style-type: none"> <li>• Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

### Shift Concern: Feel — Soft/Slipping 5-4 Shift

Possible Component	Reference/Action
<b>273 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid C (PCC), Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a> and <a href="#">GO to Pinpoint Test D</a>.</li> </ul>

	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valves/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

#### Shift Concerns: Harsh 4-5 Shift

Possible Component	Reference/Action
<b>274 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid B (PCB), Turbine Shaft Speed (TSS) sensor, Transmission Range (TR) sensor, Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a>, <a href="#">GO to Pinpoint Test C</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>

<ul style="list-style-type: none"> <li>Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seal (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Band</b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

### Shift Concern: Harsh 5-4 Shift

Possible Component	Reference/Action
<b>275 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid C (SSC), Pressure Control Solenoid C (PCC), Turbine Shaft Speed (TSS) sensor, Transmission Range (TR) sensor, Transmission Fluid Temperature (TFT) sensor</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test B</a>, <a href="#">GO to Pinpoint Test C</a>, <a href="#">GO to Pinpoint Test D</a> and <a href="#">GO to Pinpoint Test E</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Band</b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

<ul style="list-style-type: none"> <li>• Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>• Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>

**Other Concern: No Engine Braking in Manual 3rd Position**

Possible Component	Reference/Action
<b>280 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>• PCM, vehicle wiring harnesses, Shift Solenoid A (SSA), Shift Solenoid B (SSB), Shift Solenoid C (SSC), reverse pressure switch, Pressure Control Solenoid A (PCA), Pressure Control Solenoid B (PCB)</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>, <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>• Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust transmission fluid to correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>• High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>• Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>• Contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>• Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<ul style="list-style-type: none"> <li>• Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Coast Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>• Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>• Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Center Support</b>	
<ul style="list-style-type: none"> <li>• Screw not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>• Seal rings or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Outside diameter of case bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Support damaged or leaking</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Servo</b>	
<ul style="list-style-type: none"> <li>• Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect for damage. Repair as necessary.</li> </ul>



Intermediate Band	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

**Other Concern: No Engine Braking in Manual 4th (D (D) Cancelled) Position**

Possible Component	Reference/Action
<b>281 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid D (SSD), reverse pressure switch, Pressure Control Solenoid B (PCB)</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a> , <a href="#">GO to Pinpoint Test D</a> .</li> </ul>
	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>Adjust transmission fluid to correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<b>Main Control</b>	
<ul style="list-style-type: none"> <li>Screws not tightened to specification</li> </ul>	<ul style="list-style-type: none"> <li>Tighten to specification.</li> </ul>
<ul style="list-style-type: none"> <li>Filter damaged, missing</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Separator plate damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. If damaged, install a new separator plate.</li> </ul>
<ul style="list-style-type: none"> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble and clean.</li> </ul>
<ul style="list-style-type: none"> <li>Valve/springs damaged, misassembled, missing, stuck or bore damaged</li> </ul>	<ul style="list-style-type: none"> <li>If damaged or parts are missing, install new main control assembly. If misassembled, reassemble correctly. DO NOT stone, file or sand valves. This will remove the anodized finish and may result in further main control or transmission damage.</li> </ul>
<b>Coast Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

**Other Concern: Slip/Chatters in Manual 3rd Position**

Possible Component	Reference/Action
<b>282 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Pressure Control Solenoid A (PCA), Pressure Control Solenoid B (PCB)</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test D</a> .</li> </ul>

	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Transmission Fluid</b>	
<ul style="list-style-type: none"> <li>Incorrect transmission fluid level</li> </ul>	<ul style="list-style-type: none"> <li>Adjust transmission fluid to the correct level. Refer to <a href="#">Transmission Fluid Level Check</a> in this section.</li> </ul>
<ul style="list-style-type: none"> <li>Transmission fluid condition</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Transmission Fluid Condition Check. Refer to <a href="#">Preliminary Inspection</a> in this section.</li> </ul>
<b>Incorrect Pressures</b>	
<ul style="list-style-type: none"> <li>High/low pressures</li> </ul>	<ul style="list-style-type: none"> <li>Carry out Line Pressure Test. Refer to <a href="#">Special Testing Procedures</a> in this section.</li> </ul>
<b>Overdrive (O/D) Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Band</b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Servo</b>	
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Intermediate Band</b>	
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Not adjusted correctly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Forward Clutch Assembly</b>	
<ul style="list-style-type: none"> <li>Seals, piston damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Check ball damaged, missing, not seating, off location</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for mislocation, poor seating, damage. Install a new cylinder.</li> </ul>
<ul style="list-style-type: none"> <li>Friction elements damaged or worn</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Return springs damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Bronze seal ring or bearing damaged</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Direct One-Way Clutch (OWC)</b>	
<ul style="list-style-type: none"> <li>Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>Low <a href="#">OWC</a></b>	
<ul style="list-style-type: none"> <li>Worn, damaged or assembled incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>

#### Other Concern: Engine Braking in ALL Gears

Possible Component	Reference/Action
<b>283 — ROUTINE</b>	
<b>Powertrain Control System</b>	
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Shift Solenoid D (SSD)</li> </ul>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> </ul>
	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A.</a></li> </ul>

	<ul style="list-style-type: none"> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<b>Torque Converter Assembly</b>	<ul style="list-style-type: none"> <li>Remove the transmission. Inspect for damage. Refer to <a href="#">Torque Converter Contamination Inspection</a> in this section. If the torque converter fails to pass the criteria or is damaged, install a new or remanufactured torque converter.</li> </ul>
<ul style="list-style-type: none"> <li>Torque converter internal failure preventing engagement, piston release</li> </ul>	

**Other Concern: No 2nd and 5th Gears (Manual 2nd is OK)**

Possible Component	Reference/Action
<b>284 — ROUTINE</b>	
<b>Hydraulic/Mechanical</b>	<ul style="list-style-type: none"> <li>Verify that Manual 2 is present and functions correctly. If Manual 2 is not operating correctly go to Shift Concerns: Routine 210 - Some/All Shifts Missing (Automatic Mode) and continue diagnosis. If Manual 2 is operating correctly continue with this routine.</li> </ul>
<b>Powertrain Control System</b>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> <li><a href="#">GO to Pinpoint Test D</a>.</li> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Pressure Control Solenoid B (PCB), Pressure Control Solenoid C (PCC)</li> </ul>	

**Other Concern: No 3rd, 4th and 5th Gears**

Possible Component	Reference/Action
<b>285 — ROUTINE</b>	
<b>Powertrain Control System</b>	<ul style="list-style-type: none"> <li>Carry out On-Board Diagnostic (OBD) tests. Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual for diagnosis and testing of the PCM.</li> <li><a href="#">GO to Pinpoint Test D</a>.</li> <li>Repair as required. Clear the DTCs, road test the vehicle and rerun <a href="#">OBD</a> test.</li> </ul>
<ul style="list-style-type: none"> <li>PCM, vehicle wiring harnesses, Pressure Control Solenoid A (PCA), Pressure Control Solenoid B (PCB)</li> </ul>	
<b>Overdrive (O/D) Servo</b>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	
<ul style="list-style-type: none"> <li>Seals (piston and cover) damaged</li> </ul>	
<b>O/D Band</b>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> <li>Inspect for damage. Repair as necessary.</li> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Band damaged</li> </ul>	
<ul style="list-style-type: none"> <li>Servo worn or damaged</li> </ul>	
	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<b>O/D Planetary Assembly</b>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Planetary damaged</li> </ul>	
<b>Intermediate Servo</b>	<ul style="list-style-type: none"> <li>Inspect for damage. Repair as necessary.</li> </ul>
<ul style="list-style-type: none"> <li>Servo retaining screws damaged</li> </ul>	

• Seals (piston and cover) damaged	• Inspect for damage. Repair as necessary.
<b>Intermediate Band</b>	
• Band damaged	• Inspect for damage. Repair as necessary.
• Servo worn or damaged	• Inspect for damage. Repair as necessary.
• Not adjusted correctly	• Inspect for damage. Repair as necessary.

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