

Road Test Procedure

- Perform this test only when traffic and road conditions permit.
- Observe all traffic safety regulations.
- Perform the road test following the sequence given.
- The km/h (mph) shift points will vary with actual throttle position and driver habits.
- Refer to [Shift Speed](#) Shift Speed Chart Information in order to compare the results of the test.
- The shift speed charts reference PERCENT THROTTLE OPENING to make shift speed measurement more uniform and accurate. It may be necessary to convert THROTTLE ANGLE (DEGREES) to PERCENT THROTTLE OPENING if the TECH 1 is not used.

Electrical/Garage Shift Test

Perform this test before a hoist or road test in order to make sure that electronic control inputs are connected and operating. If you do not check the inputs before operating the transmission, you could misdiagnose a simple electrical condition as a major transmission condition.

1. Start the engine.
2. Depress the brake pedal.
3. Move the gear selector to the following positions:
 - Park (P) to Reverse (R)
 - Reverse (R) to Neutral (N) to Drive (D)
 - Gear selections should be immediate and not harsh.

Upshift Control and Torque Converter Clutch (TCC) Apply

The PCM calculates the upshift points based primarily upon two inputs:

- Throttle angle
- Vehicle speed

When the PCM indicates that a shift should occur, an electrical signal is sent to the shift solenoids, which in turn move the valves to perform the upshift.

The shift speed charts refer to THROTTLE ANGLE instead of MIN THROTTLE or WOT in order to make shift speed measurement more uniform and accurate. A scan tool should be used in order to monitor this throttle angle. Some scan tools have been programmed to record shift point information. Check the instruction manual in order to see if this test is available.

With the gear selector in Overdrive (D4), perform the following steps:

1. Refer to [Shift Speed](#) and choose a percent throttle angle of 5, 10 or 25. Note the desired shift speeds for 2nd, 3rd and 4th gear.
2. Set up the on-board diagnostics or TECH 1 (or similar scan tool) to monitor PERCENT THROTTLE OPENING and VEHICLE SPEED.
3. Accelerate using a steady increasing throttle pressure.

Important

Shift points may vary due to engine operating conditions. The PCM interprets numerous electronic signals from various operational sensors in the vehicle. This may also cause a variation in shift points.

4. Note the shift speed point gear engagement for each of the following gears:
 - 2nd gear
 - 3rd gear
 - 4th gear

Important

The TCC should not apply unless the engine coolant has reached a minimum operating temperature of 60°C (140°F). Drive the car approximately 15 minutes to verify that this temperature is exceeded.

5. The Torque Converter Clutch (TCC) should apply in Third or Fourth gear. Note the speed shift point for this TCC apply. If you do not notice the apply, refer to [Torque Converter Clutch \(TCC\) Evaluation and Diagnosis](#) Torque Converter Clutch Diagnosis.

Part Throttle Detent Downshift

At vehicle speeds of 64-88 km/h (40-55 mph) in Fourth gear, quickly depress the accelerator to a half open position. Verify the following results:

- The TCC releases.
- The transmission downshifts to 3rd gear immediately.
- The 1-2 Shift Solenoid valve turns OFF.
- The 2-3 Shift Solenoid valve remains OFF.

Full Throttle Detent Downshift

At vehicle speeds of 64-88 km/h (40-55 mph) in Fourth gear, quickly depress the accelerator to a wide open position. Verify the following results:

- The TCC releases.
- The transmission downshifts to 2nd gear immediately.
- The 2-3 Shift Solenoid valve turns ON.
- The 1-2 Shift Solenoid valve stays OFF.

Manual Downshifts

1. At vehicle speeds of 64-88 km/h (40-55 mph), release the accelerator pedal while moving the gear selector to Third (D3) gear. Observe the following results:
 - The TCC releases.
 - The transmission downshifts to 3rd gear immediately.
 - The engine slows the vehicle down.
 - The 1-2 Shift Solenoid valve must turn OFF.
 - The 2-3 Shift Solenoid valve must stay OFF.
2. Move the gear selector to Overdrive and accelerate to 64-72 km/h (40-45 mph). Release the accelerator while moving the gear selector to Second (D2) gear and observe the following results:
 - The TCC releases.
 - The transmission immediately downshifts to 2nd gear.

- The engine slows the vehicle down.
 - The 1-2 Shift Solenoid valve should be OFF.
 - The 2-3 Shift Solenoid valve must turn ON.
3. Move the gear selector to Overdrive (D4) and accelerate to 40 km/h (25 mph). Release the accelerator pedal while moving the gear selector to First (D1) gear and observe the following results:
- The TCC releases.
 - The transmission immediately downshifts to 1st gear.
 - Both the 1-2 Shift Solenoid valve and the 2-3 Shift Solenoid valve should be ON.
 - The engine slows the vehicle down.

Coasting Downshifts

1. With the gear selector in Overdrive (D4), accelerate to 4th gear with the TCC applied.
2. Release the accelerator pedal and lightly apply the brakes. Observe the following results:
 - The TCC releases.
 - Downshifts occur at speeds shown on the Shift Speed Chart. Refer to [Shift Speed](#) .

Manual Third (D3)

With the vehicle stopped, move the gear selector to Third (D3) and accelerate in order to observe the following conditions:

- The 1-2 shift
- The 2-3 shift

Manual Second (D2)

1. With the vehicle stopped, move the gear selector to second (D2) and accelerate in order to observe the 1-2 shift.
2. Accelerate to 40 km/h (25 mph) and observe the following conditions:
 - The 2-3 shift does not occur
 - The TCC does not apply

Manual First (D1)

With the vehicle stopped, move the gear selector to First (D1). Accelerate to 24 km/h (15 mph) and observe the following conditions:

- No upshifts occur
- The TCC does not apply
- The 1-2 and 2-3 Shift Solenoid valves must be ON

Reverse (R)

With the vehicle stopped, move the gear selector to Reverse (R) and slowly accelerate to observe the following conditions:

- The 1-2 Shift Solenoid valve is ON
- The 2-3 Shift Solenoid valve is ON