

## Shift Speed

Maximum Shift Speed (rpm)	Normal Mode
1-2 shift	6500
2-3 shift	6500
3-4 shift	6500
4-5 shift	N/A
5-6 shift	N/A

**Important:** Shift speed points are affected by many different vehicle and transmission operating conditions. The table above represents shift speed points calibrated at specific throttle angles during normal operating conditions and a temperature range between 0 -130°C (32-266°F). These shift speed points are also based on an axle ratio of 3.42, and assume a production-intent tire size. The table below illustrates a number of different variables that influence these shift speed points. Based on a given operating condition, these variables may override the normal shift speed points. To assist in monitoring the different variables, the respective scan tool data parameter is also listed.

Scan Tool Parameter	Shift Speed Variables
Calculated Throttle Position	Calculated. Throttle Position (TP) is one of the most important inputs in the transmission shift pattern logic. A very low TP angle will impact the shift pattern by causing upshifts. A very high TP angle will impact the shift pattern by causing downshifts.
Commanded Gear	Based on numerous inputs, the transmission control module (TCM) selects the optimum gear. Once the TCM commands a gear, the pressure control solenoids are activated to hydraulically control engagement of the proper clutch.
Cruise	When cruise control is activated, the shift pattern is altered to reduce excessive shifting.
ECT	Shift speed points may be offset to enhance engine coolant temperature (ECT) warm-up. Also, operating the vehicle at higher engine speeds will reduce the time to warm the ECT and the TFT.
Engine Speed	To protect against an over speed condition, engine speed is monitored. If the engine speed becomes too high, an upshift will occur.
Engine Torque	Engine torque is used to predict vehicle operating conditions, in order to determine the optimum gear and provide for a smoother ride.
IMS	The internal mode switch (IMS) indicates the position of the transmission manual valve. The operator controls this valve by moving the gear range selector. Therefore, the possible gears may be limited by this valve position.
TCC PC Sol. Duty Cycle	The torque converter clutch (TCC) pressure control (PC) solenoid duty cycle indicates when the TCC has been engaged.
TCC Slip Speed	The TCC Slip Speed indicates the difference between engine speed and transmission input speed. The TCC is locked when slip speed is at or near zero, and may be controlling slip when at lower slip speeds.

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TFP Switch 1, 3, 4 or 5	The transmission fluid pressure (TFP) switch is used to indicate if fluid pressure to a specific clutch has been applied or released.
Trans. Fluid Temp.	A lower TFT will extend shift speeds, a higher TFT, or hot mode condition, will invoke shorter shift speeds in order to establish a shift pattern required to cool the TFT.
Transmission Hot Mode	If the TFT becomes too hot, a hot mode shift pattern is used. The hot mode shift pattern will invoke lower shift speed points to establish a shift pattern necessary to cool the TFT.
Transmission OSS	The transmission output speed sensor (OSS) is one of the most important inputs into the transmission shift pattern logic. A very low transmission output speed will impact the shift pattern by causing downshifts. A very high transmission output speed will impact the shift pattern by causing upshifts.