



Preliminary Information

PIP5312B Normal Operating Characteristics And Diagnostic Tips For The CVT7 Transmission

Models

| Brand: | Model: | Model Years: | VIN: | | Engine: | Transmissions: |
|-----------|--------|--------------|------|-----|---------|----------------|
| | | | from | to | | |
| Chevrolet | Spark | 2014 - 2020 | All | All | All | M4M, MR8 |

Supersession Statement

This PI was superseded to add model years. Please discard PIP5312A.

The following diagnosis might be helpful if the vehicle exhibits the symptom(s) described in this PI.

Condition / Concern

Some customers may comment on the operation or performance of the CVT7 transmission.

Recommendations / Instructions

Please refer to the following normal operating characteristics of the CVT7 transmission before attempting any diagnostics or repairs to the engine or transmission on this vehicle.

Some customers may comment that the engine rpm is too high and the transmission will not shift when cold, or the transmission is slipping when cold.

One of the automatic transmission operating characteristics for this vehicle is to prevent 2nd gear ratio upshift until the transmission fluid temperature warms up to above -20°C (-4°F).

This is a normal operating characteristic and is designed to provide improved vehicle emission and heater performance. Verify the transmission fluid level. Refer to Transmission Fluid Level and Condition Check in SI.

If the 2nd gear ratio upshift is achieved at transmission fluid temperatures above -20°C (-4°F), please do not attempt to repair this condition.

When the transmission is at operating temperature torque converter lockup can occur as low as 8 mph and the range for lockup is 8-18mph depending on the throttle angle.

Torque converter lock up is disabled below 10°C (50°F).

CVT transmissions are usually thought of as a no shift transmission however the CVT7 transmission has a high and low range made possible by the use of two clutch packs and one planetary gear set.

The input torque into these clutches and planetary gear set comes from the drive belt and pulleys.

The torque converter clutch locking up or releasing may also feel like a shift to the customer.

While in low range the RPM of the engine may sound loud at low speed operation (5-15 mph) because there is not enough road noise to cancel it out.

While in high range at the same engine RPM the road noise will cancel out the engine noise due to the increase in vehicle speed. (50-60 mph).

The TCM is programmed to simulate a step transmission upshift (Saw tooth simulated shift) on moderate to hard acceleration. This feature is built into the calibration and cannot be changed.

For 2014 model year vehicles with low power at a launch, shudder, shift or engagement into gear concerns make sure that the TCM calibration is up to date per the latest version of [PI1309](#).

The 2015 model year vehicles already have the updated calibration installed at the factory.

For both the 2014 and 2015 model year vehicle confirm that 20710A: Customer Satisfaction - Drive Quality Degradation and/or Transmission Harsh Shift has been performed.

For transmission slipping or high engine rpm concerns with P0885 setting refer to the latest version of [PI1053](#).

The transmission may stay in high range gear during a rolling stop or complete stop even after the latest TCM calibration update is installed to avoid a bump feel at a stop or a launch.

The amount of throttle required to cause a shift into low range is much less after the TCM calibration update for the 2014 model year vehicles.

During a light throttle launch the transmission may stay in high range.

Anytime a DTC is set in the TCM check for a damaged TCM cover on 2014- 2015 model year vehicles. The location of the TCM may allow a driver to push on it with his/her foot and dent the cover.

Many engine and transmission DTCs will cause the transmission to go into limp mode.

While in limp home mode the transmission pulley and gear ratios may be locked. Torque converter lockup may be disabled. Engine torque will be limited.

Some DTCs will cause pressure control system to request maximum line pressure which will cause a whine noise from the transmission fluid pump.

For other noise concerns refer to the latest version of [PIP5548](#).

The latest version of [PIP5283](#) shows the pin location of the transmission pass thru connector.

Please follow this diagnostic or repair process thoroughly and complete each step. If the condition exhibited is resolved without completing every step, the remaining steps do not need to be performed.



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