



Preliminary Information

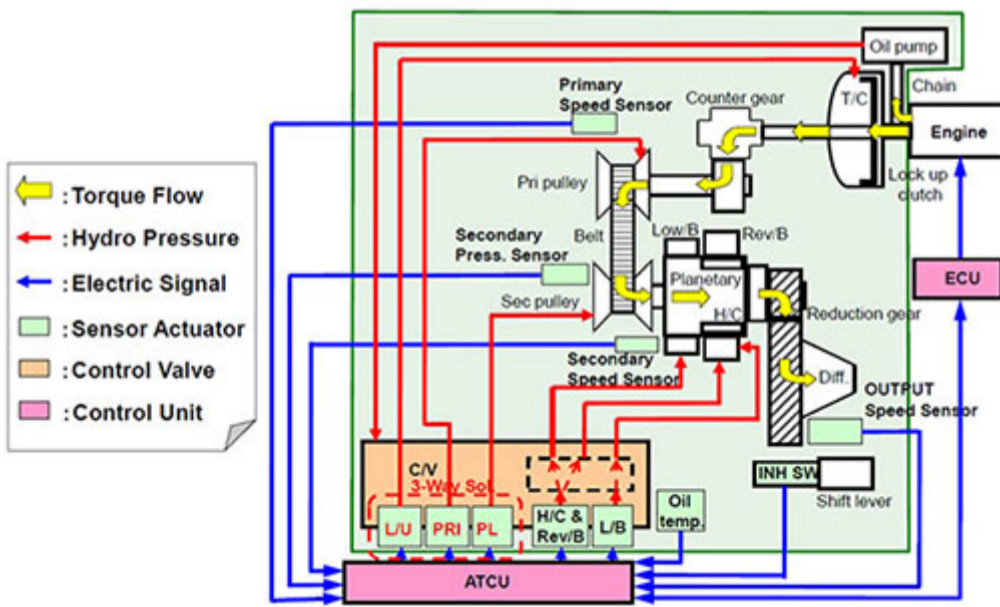
PIP5494A Diagnostic Tips For The CVT7 Automatic Transmission Using GDS2.

Models

Brand:	Model:	Model Years:	VIN:		Engine:	Transmissions:
			from	to		
Chevrolet	Spark	2014 - 2019	All	All	All	M4M, MR8

Involved Region or Country	North America
Condition	Some customers may comment on the operation or performance of the CVT7 transmission.
Cause	Please refer to the following diagnostic tips.

The first step in diagnosing the Jatco CVT7 transmission is to understand how it operates. This transmission has a belt and pulley mechanism that is driven by a counter shaft which is driven by the turbine shaft which is driven by the torque converter. The belt and pulley mechanism drives a planetary gear set. The transmission has a high and a low range along with a reverse range that are controlled by the use of a high clutch, a low brake and a reverse brake as shown below.



Refer to the latest version of [PIP5312](#) for Normal Operating Characteristics And Diagnostic Tips For The CVT7 Transmission before starting any diagnostics on the Jatco CVT7 transmission.

If the customers concern has been duplicated and is found not to be a Normal Operating Characteristic of the Jatco CVT7 transmission please refer to the following.

Using the GDS2 software check and record any DTCs.

Clear any DTCs found and drive the vehicle under the conditions as described by the customer when the concern is present monitoring the transmission data using the GDS2 software.

Note: It may be necessary to have the customer drive the vehicle while monitoring the transmission data if the customers concern cannot duplicated.

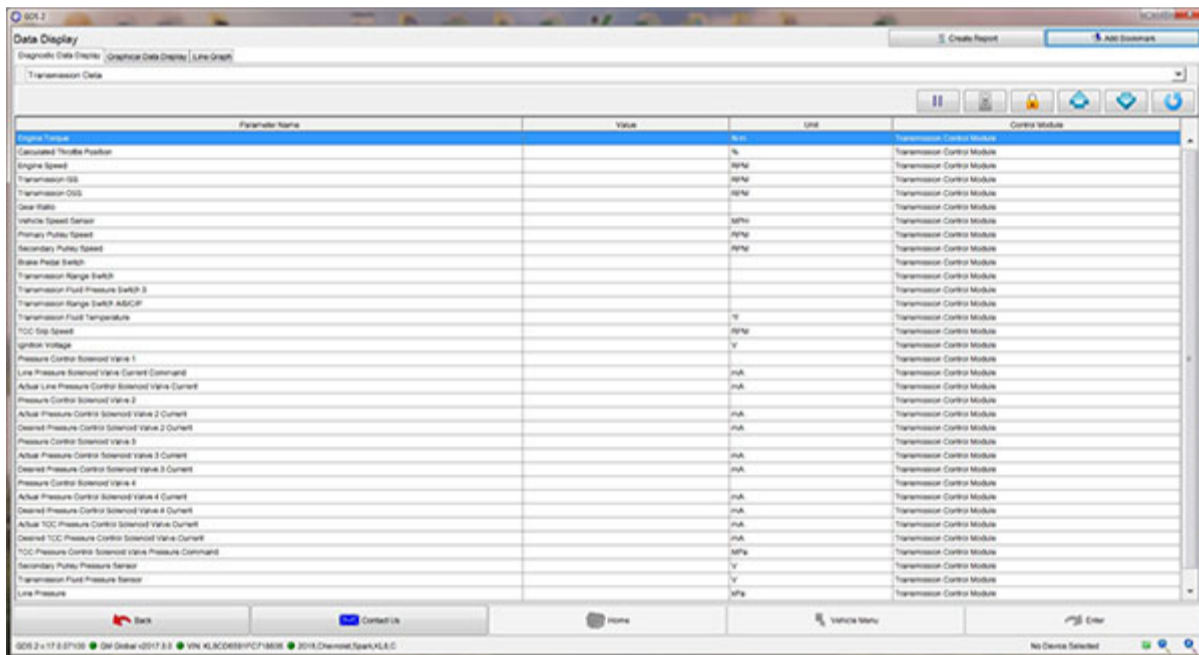
Place a bookmark in the transmission data if and when the concern is duplicated.

Note: The GDS2 session log should be kept at a maximum of 60 seconds to make reviewing the data easier.

Note: Backing out of the transmission data and then going back into it starts a new time stamp in the same session.

The following information may be helpful when reviewing the GDS2 session log.

The following picture shows the Add Bookmark button being highlighted.



The Add Bookmark button can be highlighted before the road test by pressing the tab key until the button is highlighted or by clicking on the button.

Note: Clicking on the button to highlight it will place a bookmark in the data that has nothing to do with the customer concern.

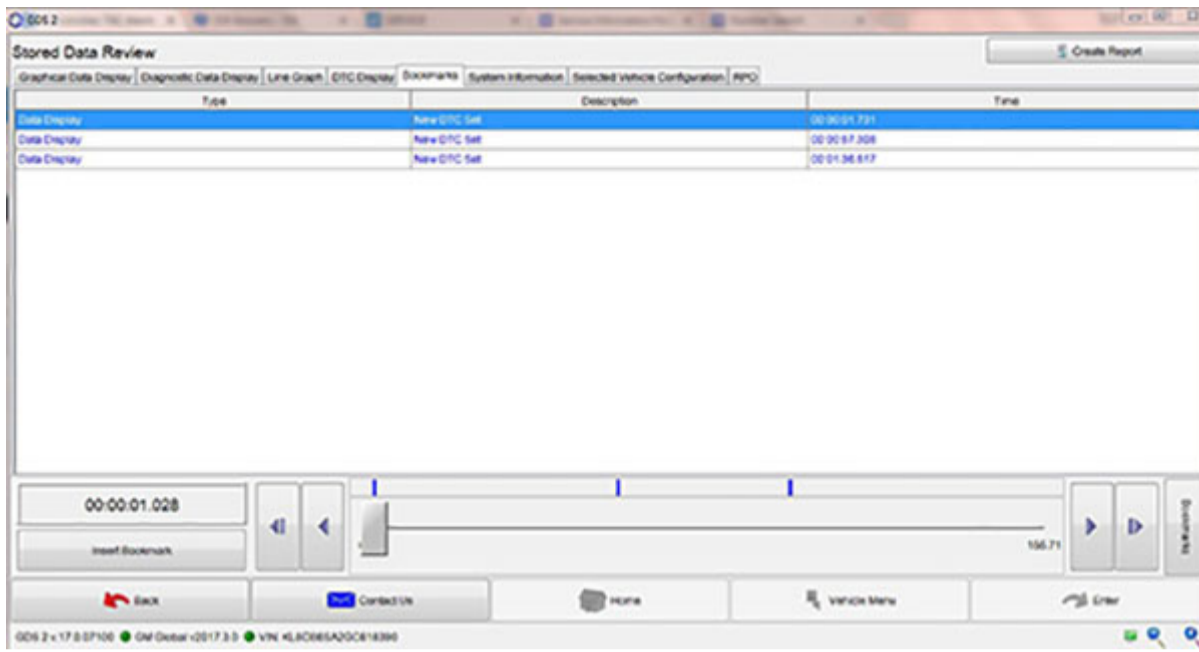
After the Add Bookmark button is highlighted the space bar can be used to place the bookmarks as needed while attempting to duplicate the customers concern.

When reviewing a GDS2 session log it is important to know if the bookmark was created by the user or by a DTC as shown below.

If you create a bookmark it will show up as user.

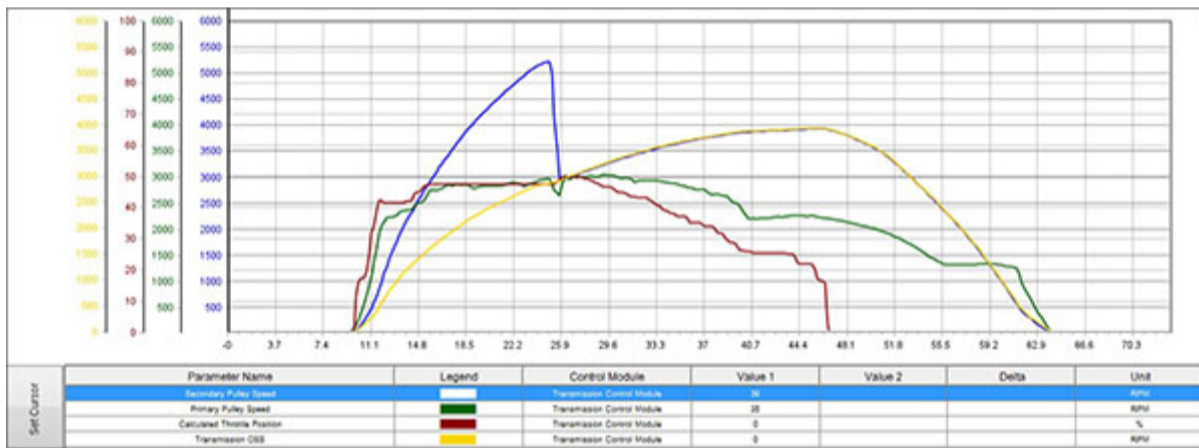
If a DTC set during the road test it will show up as DTC.

If a bookmark is shown as DTC the DTC can be found under the DTC display tab.

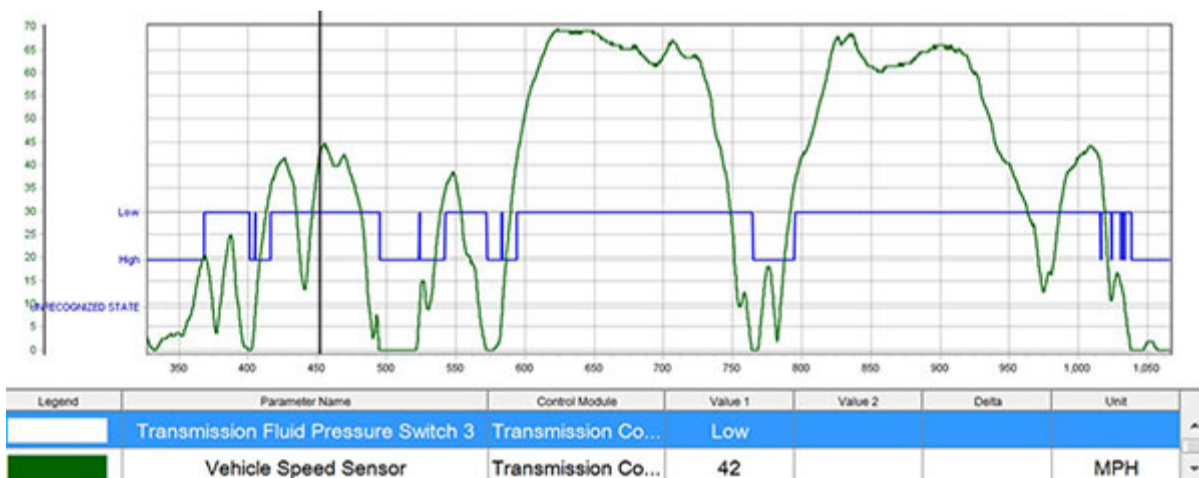


For most CVT7 transmission concerns it is best to monitor the primary pulley speed, the secondary pulley speed, the output speed and the calculated throttle position as shown below in the data showing a CVT7 transmission operating as designed.

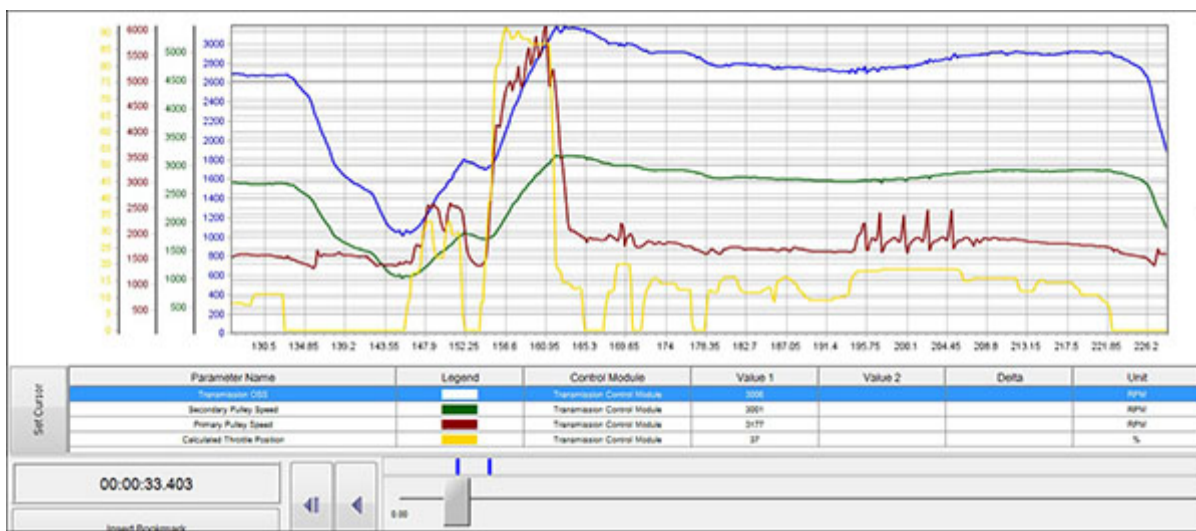
Note The secondary pulley speed will be higher than the output speed when the transmission is in low range and will equal the output speed when the transmission is in high range as shown with the blue and yellow lines.



When the transmission is in low range the pressure switch 3 status will be high and when the transmission is in high range the pressure switch 3 status will be low as shown in the picture below.

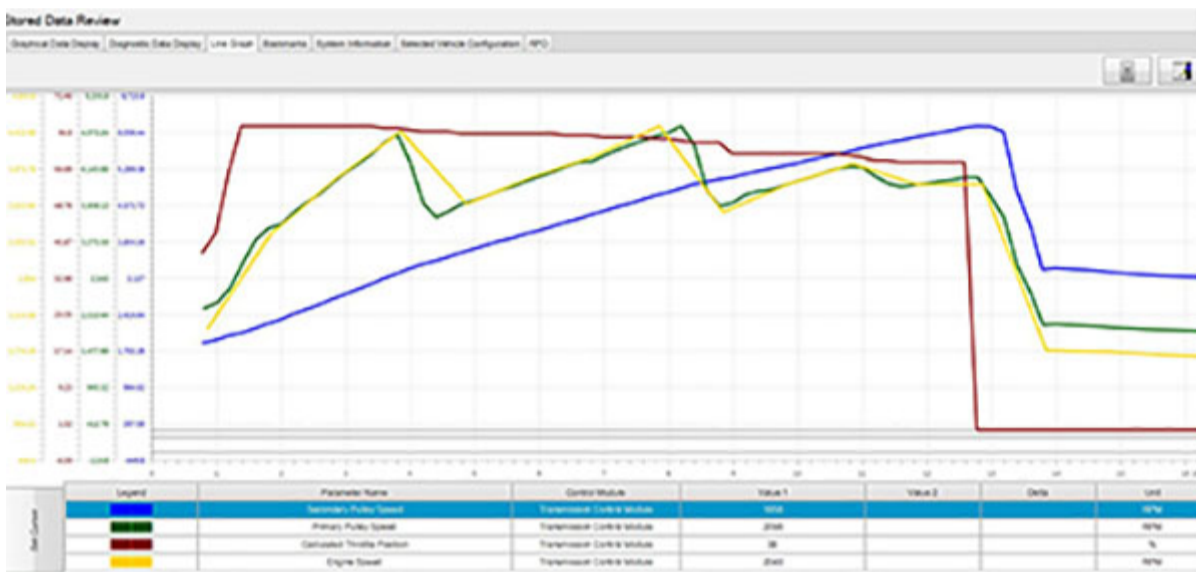


In the picture below the primary pulley data in red has a saw tooth pattern to it. This is an example of the drive belt slipping.



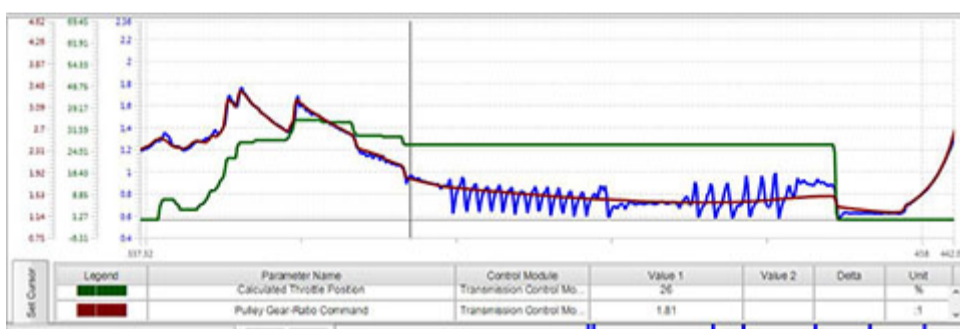
Note: The TCM is programmed to simulate a step transmission upshift (Saw tooth simulated shift) on moderate to hard acceleration which can be misdiagnosed as belt slip.

The following picture shows how the data will look during simulated shifts.



Another way to determine if the belt is slipping is to monitor the actual and commanded pulley gear ratio as shown by the blue and green lines in the picture below.

This picture shows an example of belt slip - the actual pulley ratio does not follow commanded ratio.

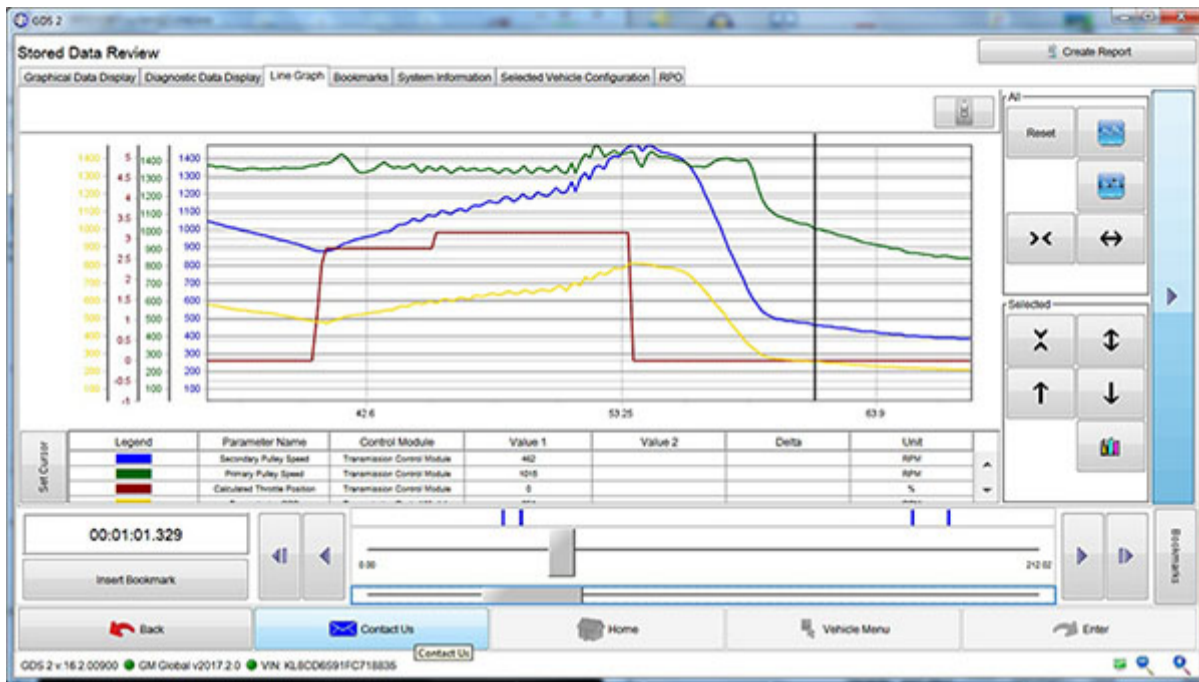


The picture below is an example of what the actual and commanded gear ratio will look like on a transmission that is operating as designed.



The following picture shows an example of an engine performance concerns.

Note: The primary pulley speed is fluctuating along with the secondary and output speed.



Version History

Version	2
Modified	04/25/2017 - Created 02/12/2019 - Updated to add information on simulated shifts and how to determine belt slip using pulley gear ratio data.



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