



Service Bulletin

Bulletin No.: 23-NA-072

Date: May, 2023

TECHNICAL

Subject: Shudders or Shakes at Low Speeds

This bulletin replaces PIP5608J. Please discard PIP5608J.

Brand:	Model:	Model Year:		VIN:		Engine:	Transmission (Automatic):
		from	to	from	to		
Buick	Enclave	2019	2023	—	—	LFY	M3W
Cadillac	XT5	2020				LGX	M3W
	XT6					LGX	M3V
Chevrolet	Blazer	2019				LFY	
	Traverse		LGX	M3W			
GMC	Acadia	2020					

Involved Region or Country	North America, Europe, Kazakhstan, Uzbekistan, Russia, Middle East, Israel, Palestine, Chile, Paraguay, Uruguay, Venezuela, Other Central America, GM Korea Company, Cadillac Korea (South Korea), China, Taiwan, Thailand, Singapore, Philippines, Australia/ New Zealand, Other Africa
Condition	Some customers may comment on shudders or shakes at low speeds.
Cause	This condition may be caused by possible torque converter clutch (TCC) shudder on shift and/or poor control.
Correction	Transmission fluid may be contaminated and/or torque converter damaged. Follow diagnostics below to determine condition status or repair.

Diagnostic Tips

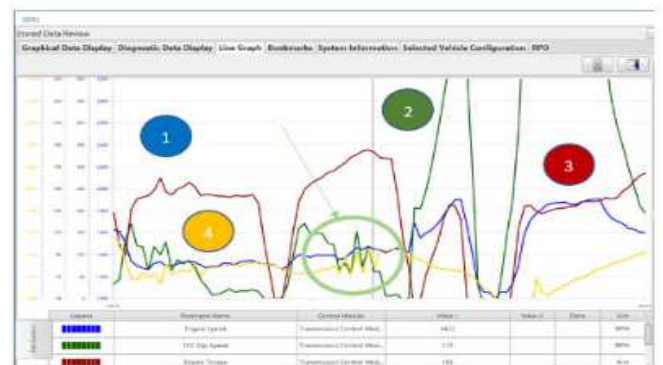
TCC Shudder: (Typically seen on 4th-5th Upshift as ISS Oscillation)

Important: Service agents must comply with all International, Federal, State, Provincial, and/or Local laws applicable to the activities it performs under this bulletin, including but not limited to handling, deploying, preparing, classifying, packaging, marking, labeling, and shipping dangerous goods. In the event of a conflict between the procedures set forth in this bulletin and the laws that apply to your dealership, you must follow those applicable laws.

Record GDS2 Session Log and look for ISS oscillation when driveline disturbance occurs.

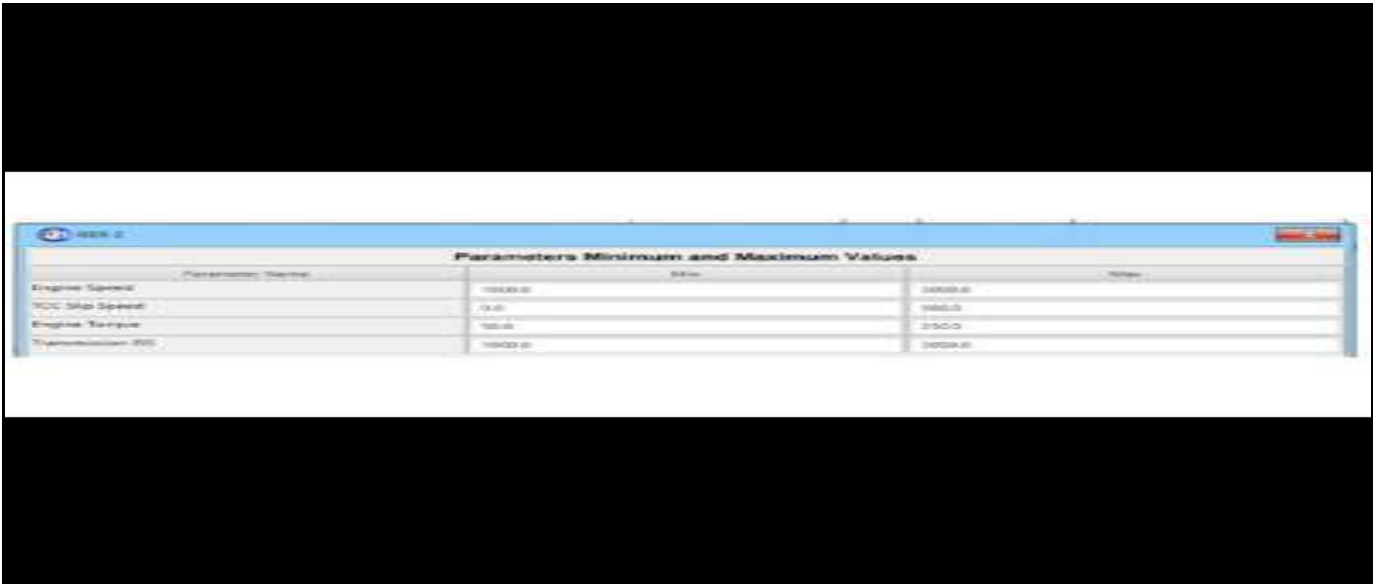
Diagnose by performing launch from 0 mph speed at 15-20% pedal up to 30 mph.

Condition present when TCC Slip less than 150 rpm maximum.



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Line Graph Set-up



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1. Engine Speed
2. TCC Slip Speed
3. Engine Torque
4. ISS (Turbine Speed) will show oscillation

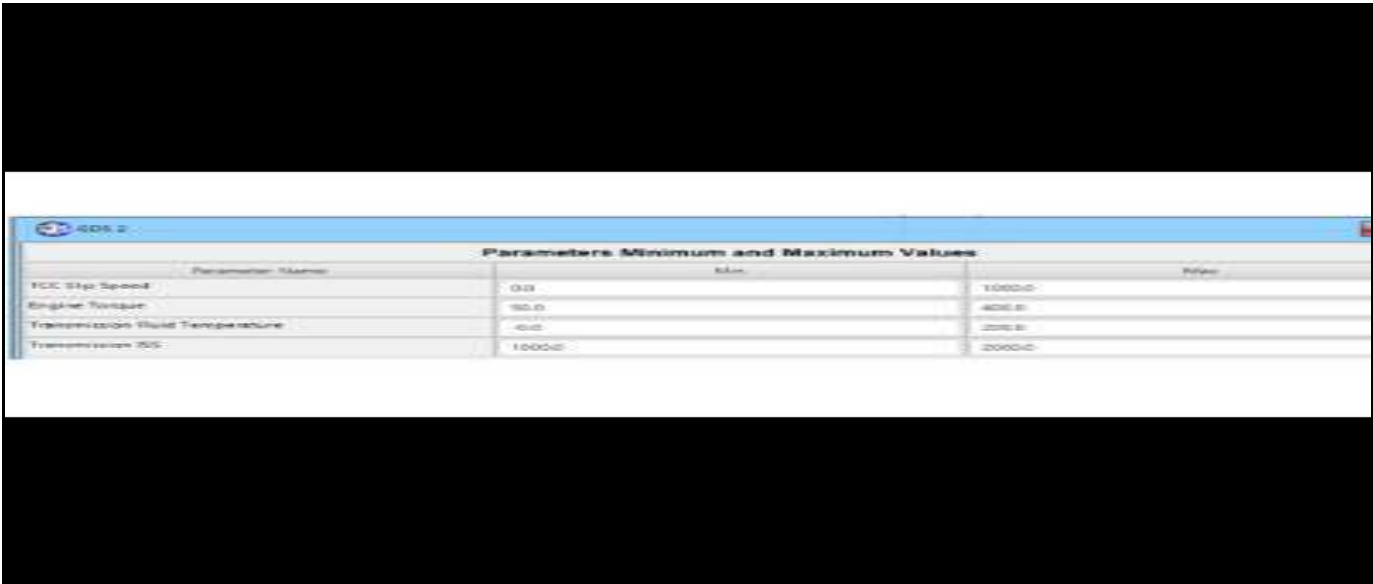
Poor TCC Control: (Typically seen in higher gear 8th-9th) Steady-State Torque (50-70kph)

TCC Shudder	ISS (Peak-Peak)	Action	Comment
Normal	<50 rpm	Do Nothing	Not a Torque Converter/ATF Issue
Degraded	>50 rpm <200 rpm	Proceed with ATF Drain and Refill	ATF Degradation has occurred. Check Fluid Condition (Instructions below "Fluid Condition Check")
Damaged	>200 rpm	Replace Torque Converter	Hardware damage has likely occurred.



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Line Graph Set-up



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1. TCC Slip
2. Gear
3. Engine Torque
4. ATF Temp
5. ISS

Perform TCC slip control test within this procedure. Compare service tool collected data results to normal, degraded, and damaged operation.

TCC Slip Control Test

1. Utilize TIS2Web / GDS2 / MDI service tool
2. Select module diagnostics – TCM
3. Select TCC data for session log / data collection
4. Collect data between 89 and 113 km/h (30 and 50 mph) steady state / steady throttle with minimum 15 seconds.
5. For line graph evaluation, set parameter minimum and maximum to values stated for comparison: See Figure 1
6. Evaluate collected data with line graphs and compare data to each figure below:
 - Normal State: See Figure 2
 - Degraded State: See Figure 3
 - Damaged State: See Figure 4

TCC SLIP CONTROL TEST RESULT	TCC RPM Slip Peak to Peak, at Steady Throttle	ACTION
Figure 2 Normal	Below 20 RPM	Do nothing
Figure 3 Degraded	Near 60 RPM - repeating	ATF Degradation has occurred. Check Fluid Condition (Instructions below "Fluid Condition Check")
Figure 4 Damaged	Near 100 RPM-erratic	Hardware damage has likely occurred. Replace Torque Converter

Figure 1 Parameter Minimum and Maximum Values



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Figure 2 Parameter Normal Test Result



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Figure 3 Parameter Degraded Test Result



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Figure 4 Parameter Damaged Test Result



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Fluid Condition Check

Important: If either shudder condition or slip control observed to be normal than do not proceed with ATF Inspection/Change or Torque Converter Replacement.



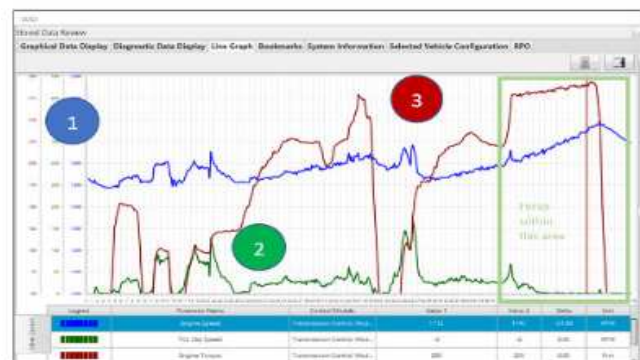
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- The fluid should be red or brown.
- The fluid should be transparent so that objects or writing can be seen through it. Sample #1 is an example of acceptable fluid. Sample #2 is an example of very dark fluid. Sample #3 is an example of black fluid. Samples 1, 2, or 3 would be acceptable to perform the fluid drain and fill if sample does not also have one of the following three conditions.
- In addition to checking the fluid color and transparency, the fluid should be checked for an odor of burnt fluid. If the fluid is very dark (Sample #2), black (Sample #3), and has a burnt odor it would indicate clutch damage has occurred internally in the transmission and it would need to be removed from the vehicle and investigated.
- Fluid that is cloudy or milky or appears to be contaminated with water indicates engine coolant or water contamination. Refer to the latest version of Service Bulletin 08-07-30-035 for testing and, if confirmed, find the source of the coolant/water and repair. Then follow service manual instructions “engine coolant/water in transmission” to repair the transmission.

- Inspect the fluid for excessive metal particles or other debris:
 - A small amount of “friction” material is a “normal” condition.
 - A small amount of “metal” from the manufacturing process is a “normal” condition. This is observed as fine silver streaks floating in the fluid.
 - If large pieces and/or metal pieces are noted in the fluid, or the fluid when rubbed between fingers feels gritty/sandy, it would indicate hardware damage has occurred internally in the transmission and it would need to be removed from the vehicle and investigated.

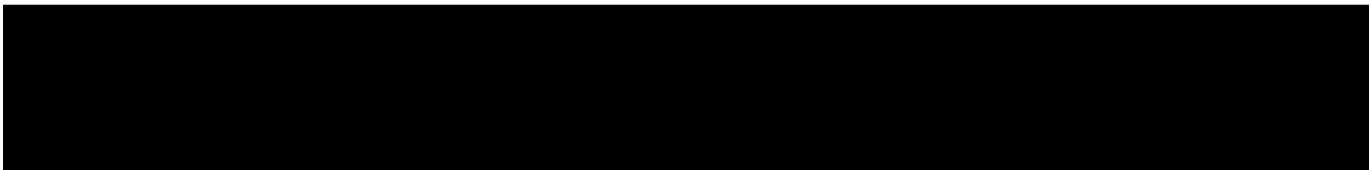
Other Known Normal Operation Conditions

High Torque Locked Condition — If complaint exists at engine torques >287 Nm, where the measured TCC Slip is ~0 rpm, then this is operating as designed. In order to protect the clutch, we must lock it up at these higher engine torques. Commanding TCC Locked should provide same performance as this condition.



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Line Graph Set-up



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1. Engine Speed
2. TCC Slip
3. Engine Torque

AFM Low Torque Operation — If vehicle is an LGX engine and complaint exists at engine torques <100 Nm, it could be an AFM complaint. If placing vehicle in M8 turns off complaint than vehicle is likely operating as designed.

Please proceed with latest version of PIP5601: Vehicle Vibration Diagnosis and TAC Requests for Assistance With Vibration Related Complaints.

Correction

If confirmed to be a TCC shudder and/or Poor TCC Control **DEGRADED CONDITION** while monitoring performance using scan tool and the fluid condition does not show clutch or hardware damage or water/coolant contamination, please drain and refill the transmission using DEXRON VI fluid as per SI instructions.

Note: A minimum of 322 km (200 mi) needs to be driven after the drain and fill to confirm the repair.

If confirmed to be a TCC shudder and/or Poor TCC Control **DAMAGED CONDITION** while monitoring performance using scan tool and the fluid condition does not show clutch or hardware damage or water/coolant contamination, please replace torque converter per SI instructions.

Warranty Information

For vehicles repaired under the Powertrain coverage, use the following labor operation. Reference the Applicable Warranties section of Investigate Vehicle History (IVH) for coverage information.

Labor Operation	Description	Labor Time
8480708*	Transmission Fluid Drain and Fill to Correct Shudder	1.1 hrs
8464810	Torque Converter Replacement	Use Published Labor Operation Time
*This is a unique Labor Operation for bulletin use only.		

Version	2
Modified	Released April 14, 2023 Revised May 23, 2023 – Added Korea to the Involved Region or Country section and improved pictures.

