



Service Bulletin

Bulletin No.: 19-NA-018

Date: August, 2021

TECHNICAL

Subject: Shake and/or Shudder During Light Throttle Acceleration Between 40 and 128 KM/H (25 and 80 MPH) at a Steady State

Attention: This bulletin only applies to Mexico and Export Regions outside of the U.S. and Canada.

Brand:	Model:	Model Year:		VIN Breakpoint		Engine: (2.0L, 3.0L, 3.6L, 5.3L, 6.2L)	Transmission: (8-Speed Automatic)
		from	to	from	to		
Cadillac	ATS	2016	2019	—	—	LGX, LTG, LT4, LF4	M5N, M5U, M5T
	CT6	2016	2018			LGX, LGW, LTG	M5N, M5U
	CTS	2016	2019			LGX, LTG, LT4, LF4	M5N, M5U
	Escalade Models	2015	2017			L86	M5U
Chevrolet	Camaro	2016	2019			LGX, LTG	M5T
		2016	2018			LT1	M5U
	Colorado (VIN S, T)	2016	2021			LGZ	M5T
	Corvette	2015	2019			LT1, LT4	M5U
	Silverado Models	2015	2018			L83, L86, L8B	M5U, M5X
GMC	Yukon Models	2015	2017			L86	M5U
	Canyon	2016	2021			LGZ	M5T
	Sierra Models	2015	2018			L83, L86, L8B	M5U, M5X

Involved Region or Country	Mexico, Argentina, Brazil, Chile, Ecuador, Guatemala, Peru, Europe, Israel, Middle East, China, Japan, GM Korea Company, Cadillac Korea (South Korea), Philippines, Thailand
Condition	<p>Some customers may comment on any of the following conditions:</p> <ul style="list-style-type: none"> • A shake and/or shudder during light throttle acceleration between 40 and 128 km/h (25 and 80 mph) steady state driving when transmission is not actively shifting gears. • A shudder feeling that may be described as driving over rumble strips or rough pavement. • Shudder feeling is evident in both Drive and M7 MY15-16 & L7 MY17, MY18 and MY19 mode.

Diagnosis Instructions

To ensure TCC Shudder is diagnosed correctly, please drive the following schedule on a smooth road with transmission sump temperature between 122°F (50°C) - 158°F (70°C).

Important: For some road conditions, it may be required to apply the brake pedal and throttle simultaneously to stay within desired gear, engine firing mode, engine torque range, and engine/vehicle speed ranges.

For Full Size Trucks/SUVs - Press and hold the tow-haul mode button for 5 seconds to disable grade braking to prevent downshifts during test.

Run the following tests for 3 operational modes:

- A. Normal Operation (GDS2 for viewing only)
- B. GDS2 Commanding TCC in Disabled Operation (TCC Open)
- C. GDS2 Commanding TCC in Enabled Operation (TCC Locked)

Shudder Test

Refer to the table below for conditions pertaining to specific applications. In each vehicle, constant throttle input on a smooth grade is desirable. PicoScope Measured Frequency is the approximate vibration frequency where TCC Shudder can be found, discussed in detail below.

Vehicle Information					Shudder Test Conditions					Pico-scope
Make	App	Eng Type	Eng RPO	Trans RPO	Gear	Eng Mode (V4, V6, V8)	Trans Input Speed (rpm)	Vehicle Speed (mph)	Eng Torque (Nm)	Meas Freq (+/- 2 Hz)
Cadillac	CTS	6 CYL. NA	LGX	M5N	8	V6	1100-1500	42-55	100-250	23
Cadillac	CTS	4 CYL. Turbo	LTG	M5N	8	V4	1100-1500	42-55	100-250	23
Cadillac	CTS-V	8 CYL. SCHGD	LT4	M5U	8	V8	1000-1500	42-62	200-375	28
Cadillac	ATS	4 CYL. NA	LCV	M5T	8	V4	1100-1500	42-55	100-250	23
Cadillac	ATS	6 CYL. NA	LGX	M5N	8	V6	1100-1500	42-55	100-250	23
Cadillac	ATS	4 CYL. Turbo	LTG	M5N	8	V4	1100-1500	42-55	100-250	23
Cadillac	ATS-V	6 CYL. Twin Turbo	LF4	M5U	8	V6	1100-1500	42-55	150-300	26
Cadillac	CT6	6 CYL. Twin Turbo	LGW	M5X	8	V6	1100-1500	42-55	150-300	26
Cadillac	CT6	6 CYL. NA	LGX	M5N	8	V6	1100-1500	42-55	100-250	23
Cadillac	CT6	4 CYL. Turbo	LTG	M5N	8	V4	1100-1500	42-55	100-250	23
Chevrolet	Camaro	6 CYL. NA	LGX	M5T	8	V6	1100-1500	42-55	100-250	23
Chevrolet	Camaro	4 CYL. Turbo	LTG	M5T	8	V4	1100-1500	42-55	100-250	23
Chevrolet	Camaro SS	8 CYL. NA	LT1	M5U	8	V4/V8	1000-1,500	40-55	(V4) 100-200 (V8) 175-375	28
Chevrolet	Corvette	8 CYL. NA	LT1	M5U	8	V4 (Eco Driving Mode)	1000-1800	40-80	125-250	28

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Chevrolet	Corvette Z06	8 CYL. SCHGD	LT4	M5U	8	V4 (Eco Driving Mode)	1000-1800	40-80	125-250	28
Chevrolet/GMC	Silverado/Sierra	8 CYL. NA	L83	M5U	8	V8	1050-1500	45-55	200-375	26
Chevrolet/GMC	Silverado/Sierra	8 CYL. NA BAS	L8B	M5X	8	V8	1050-1500	45-55	200-375	26
Chevrolet/GMC/Cadillac	Silverado/Sierra/Yukon/Denali/Denali XL/Escalade/ESV	8 CYL. NA	L86	M5U	8	V8	1050-1500	45-55	200-375	26
Chevrolet/GMC	Colorado/Canyon	6 CYL. NA	LGZ	M5T	8	V6	1100-1500	42-55	150-250	25

SCHGD = Supercharged

To confirm TCC Shudder, the vibration concern must be created in normal operation (Mode A) of the test. If the concern is gone with the torque converter clutch disabled (Mode B, TCC Open) and is gone with torque converter clutch enabled (Mode C, TCC Locked), then the vibration root cause is TCC Shudder, and the fluid flush procedure corrective action described below should be performed.

If the concern is not present in Mode A, then the vibration concern is NOT TCC shudder.

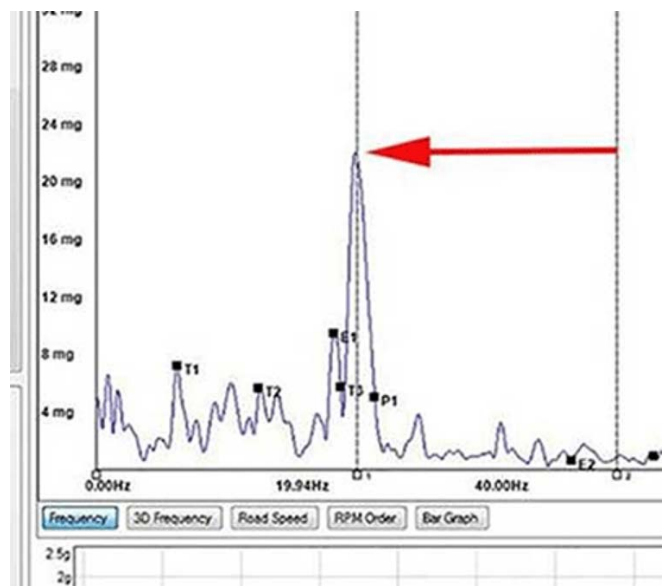
If the concern is still present with the torque converter clutch disabled (Mode B) or with the torque converter clutch enabled (Mode C, TCC slip speed at zero), then the vibration root cause is NOT TCC Shudder.

Vibrations not identified as TCC Shudder should be further investigated using the Vehicle Vibration Diagnosis in SI as a starting point.

Picoscope Test

The PicoScope (CH-51450) essential tool and NVH software or GDS must be used to confirm TCC Shudder, Engine, Tire, or Driveline component related conditions.

To confirm TCC Shudder, record the PicoScope data while driving in 8th gear in the application specific condition above. Minimize extraneous vibration input by testing on a smooth road and correct any other known vehicle vibration issues (tires, brakes, etc.) before conducting test. If TCC Shudder is present, a vibration peak will appear (highlighted by arrow below) within +/- 2 Hz of the frequency listed in the table above. TCC Shudder vibration frequency is stationary in 8th gear. If the vibration frequency follows vehicle speed or engine speed, then it is NOT TCC Shudder.



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In the above illustration, frequency and default view have been selected.

Important: Obtain a screen print from GDS or PICO Scope that shows the TCC shudder event. This screen print must be attached to the Repair Order hard copy for reference.

Service Procedure

Fluid Exchange Procedure – Perform Triple Drain and Fill

Important: This procedure must be followed as published. The exchange process is required to obtain proper level of new Synthetic LV ATF HP fluid. Intermixing of other types of transmission fluid or aftermarket additive packages will result in a low concentration level of new fluid and will not provide satisfactory results.

1. Raise the vehicle.
2. Remove the transmission oil pan and drain the transmission fluid following Service Information (SI) for the vehicle you are servicing.
3. Install the transmission oil pan.
4. Fill the transmission with 7 liters of Synthetic LV ATF HP fluid following Service Information for your vehicle.
5. Lower the vehicle keeping the wheels off the ground and run the transmission through all 8 forward gears, reverse and neutral.
6. Repeat steps 2-5 for the 2nd drain and fill.
7. Repeat step 2- 3, clean the transmission oil pan and magnet, repeat step 4, and steps 8.
8. Perform the fluid level set procedure:
 - 8.1. Get the transmission fluid temperature to the proper temperature outlined below.
 - 8.2. Remove the DT-51190 fluid fill adapter and DT-45096-31 TransFlow adapter.
 - 8.3. Install the level set plug.

Tighten

Tighten the plug to 9 N•m(80 lb in).

The TCC shudder condition should be directional improved immediately after the fluid exchange procedure. It may take up to 200 miles for the TCC shudder condition to be eliminated.

Fluid Level Check Procedure

This procedure checks both the transmission fluid level, as well as the condition of the fluid itself. Since the transmission on this vehicle is not equipped with a fill tube and dipstick, a tube in the bottom pan is used to set the fluid level.

Warning: *The transmission fluid level must be checked when the transmission fluid temperature (TFT) is between 35–45°C (95–113°F). If the TFT is not within this range, either idle or brake torque the vehicle to raise the fluid temperature, or shut off the vehicle to allow the fluid to cool as required. Setting the fluid level with a TFT outside this range will result in either an under or over-filled transmission. $TFT > 45^\circ\text{C} = \text{under-filled}$, $TFT < 35^\circ\text{C} = \text{over-filled}$. An under-filled transmission will cause premature component wear or damage. An over-filled transmission will cause fluid to discharge out the vent tube, possibly causing a fire that may result in serious bodily injury or severe vehicle damage, fluid foaming, or pump cavitation.*

Note: Silverado, Sierra, Yukon and Escalade Models equipped with a thermal bypass valve, the transmission fluid level should be checked only after the TFT has reached or exceeded an operating temperature of 90°C (194°F). Once the TFT has reached or exceeded 90°C (194°F), then turn OFF the vehicle and allow the TFT to cool back down to 35–45°C (95–113°F) before checking the fluid level as required. Reaching or exceeding an operating temperature of 90°C (194°F) opens the bypass valve and allows the cooler to fill up with fluid, which will result in a more accurate fluid level check.

1. Observe the TFT using the driver information center (DIC) or a scan tool.
2. Start and idle the engine.
3. Depress the brake pedal and move the shift lever through each gear range. Pause for at least 3 seconds in each range. Move the shift lever back to PARK. Ensure the engine RPM is low (500–800 RPM).
4. Allow the engine to idle for at least 1 minute.
5. Raise the vehicle on a hoist.

Caution: THE ENGINE MUST BE RUNNING when the trans oil level check plug is removed or excessive fluid loss will occur, resulting in an under-filled condition. An under-filled transmission will cause premature component wear or damage.

⇒ The vehicle must be level, with the engine running and the shift lever in the PARK range.

Note: Continue to monitor the TFT. If the TFT is not within the specified values, reinstall the trans oil level check plug and repeat the previous steps.

7. Remove the transmission oil level check plug (1) from the transmission fluid pan. Allow any fluid to drain.
 - If the fluid is flowing as a steady stream, wait until the fluid begins to drip.
 - If no fluid comes out, add fluid until fluid drips out. Refer to *Transmission Fluid Fill Procedure* in SI.
8. Reinstall the transmission oil level check plug and tighten to **9 N•m (80 lb in)**.
9. Inspect for external leaks. Refer to *Fluid Leak Diagnosis* in SI.

Parts Information

Refer to the Electronic Parts Catalog (EPC) to determine the proper part numbers for your specific application.

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
8480838*	Flush and Drain Fluids for Transmission Shake and/or Shudder Repair	Submit Actual Clock Time
*This is a unique Labor Operation for bulletin use only.		

Version	2
Modified	Released February 07, 2019 August 25, 2021 – Added the 2020-2021 Model Years to Chevrolet Colorado and GMC Canyon and updated the Involved Region or Country section.

