TECH LINK

Mid-December 2022, Volume 24, No. 24

# Communication DTCs Set

## ON 3.0L DURAMAX DIESEL ENGINE

*Several communication DTCs may be set on some 2022 Silverado 1500, Tahoe, Suburban, Sierra 1500, Yukon and Escalade models equipped with the 3.0L Duramax diesel engine (RPO LM2).*

continued on page 2

### Side Blind Zone Alert Reset

see page 5

# Communication DTCs Set on 3.0L Duramax Diesel Engine

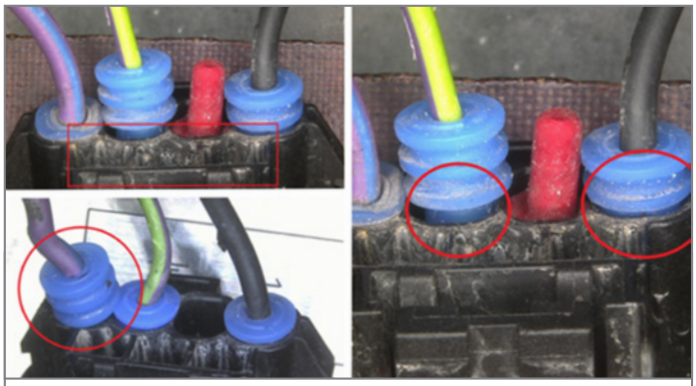
Along with an illuminated Check Engine MIL, DTCs U1345 (Engine Control Module LIN Bus 1), U02A9 (Loss of Communication with Charge Air Cooler Pump), U0284 (Lost Communication with Active Grill Air Shutter Actuator 1) and U0285 (Lost Communication with Active Grill Air Shutter Actuator 2) may be set in the Engine Control Module (ECM).

Based on the specific DTCs set in the ECM, there are several possible repairs to perform.

## ELECTRICAL CONNECTOR

DTCs U02A9 and U1345 may be caused by an unsealed pump electrical connector allowing water leakage into the (M10) connector. Moisture introduced into the charge air cooler pump electrical connector may lead to communication failure.

Check the CAC Pump connector sealing. Be sure to look for any corrosion at the pump due to possible water leakage.



Unsealed pump connector

## WIRING HARNESS TO IN-LINE CONNECTOR

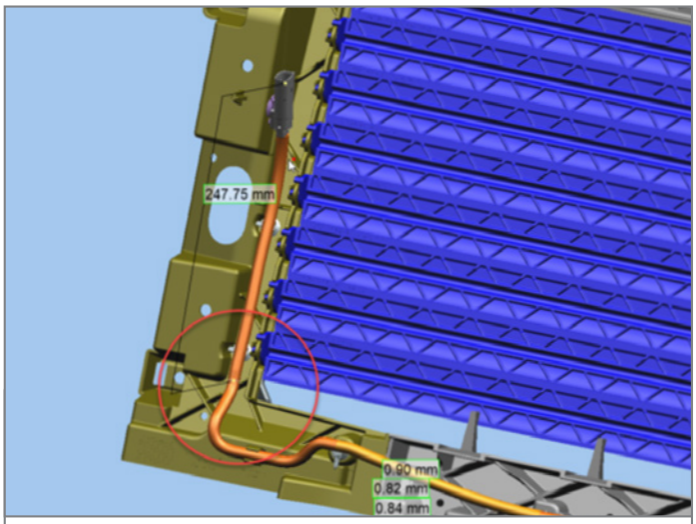
DTCs U1345, U0284 and U0285 may be caused by the engine wiring harness-to-active grille air shutter actuator in-line connector. The connector may not be properly connected, not properly held in place by the rear clip, or may be grounded on the radiator. Check the connection of circuit 4621 for any these possible concerns.

Check the circuit 4621 connection.

## PINCHED WIRING

DTCs U1345 and U0284 may be caused by the active grill air shutter wiring being pinched at the radiator support.

Check the routing of the active grill air shutter wiring, especially at the lower-left corner of the shutter, to determine if there are any possible damaged points in the wiring. Repair the wiring as needed.




Possible location of pinched wiring

For additional information, refer to Bulletin #22-NA-252.

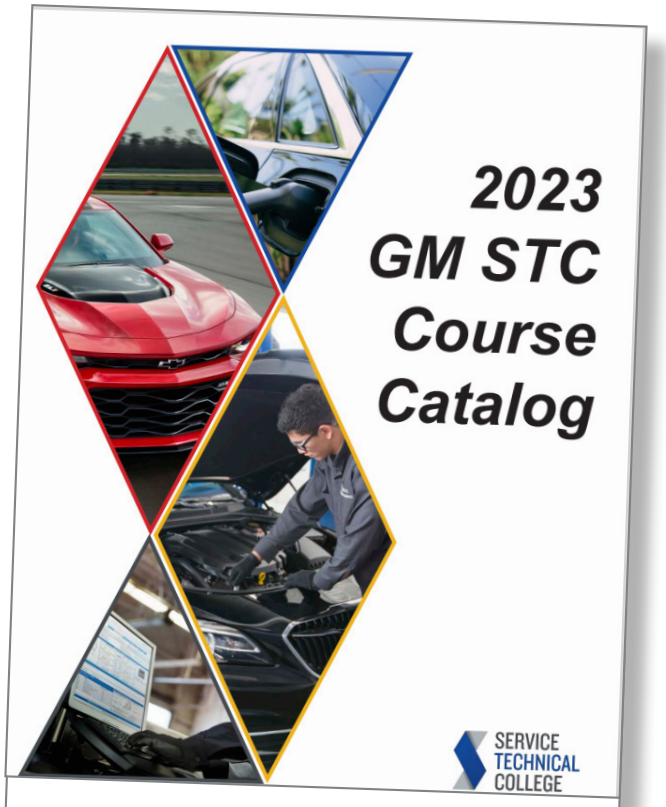
▶ Thanks to Larry Yaw

# New 2023 STC Course Catalog Released

The new 2023 GM Service Technical College (STC) Course Catalog (U.S.) is now available. The new catalog can be accessed through the Service Technician Training, Recruiting, Retention, and Recognition App on GlobalConnect and on GMSTC.com.

The 2023 course catalog has been updated with the current GM STC course curriculum and divisional training requirements along with a variety of other training information, including an overview of the technician training program and performance-based curriculum as well as details about training provided by GM-approved suppliers and other helpful learning resources.

The 2023 catalog provides an overview of GM STC training, the current Service Training Standards (STS), the recommended path to 100% STS, and how to achieve GM Master Technician Certification (MTC) and GM World Class Technician certification.



2023 GM STC Course Catalog

## TRAINING OPTIONS

Center of Learning training is available at the dealership through a variety of media. GM STC courses include traditional instructor-led to blended learning as well as more flexible delivery methods. Available training courses are offered as Web-Based Training (WBT), Interactive Video, Virtual Classroom Training (VCT), Performance Support Object (PSO), Video On Demand (VOD), Diagnostic Exercises (DE), and Hands-On Training or Virtual and Performance Instructor-Led Training.

## CERTIFICATION CATEGORIES

The 2023 Dealer Divisional STS and MTC Requirements include 16 certification areas covering cars and light-duty trucks:

1. Emerging Issues
2. Fundamentals
3. Engine Repair
4. Automatic Transmission/Transaxle
5. Steering and Suspension
6. Electrical/Electronics Systems
7. Heating, Ventilation and Air Conditioning
8. Brakes
9. Engine Performance
10. Diesel Engine Performance
11. Manual Drivetrain and Axle
12. Mechanical /Electrical Body Repair
13. Hybrid/Electric Vehicles
14. Bi-Fuels
15. Body Structural Repair (I-CAR)
16. Paint and Refinish

The Medium Duty category does not have a training path in the Center of Learning.

## VIEW THE CATALOG

To view and save the 2023 catalog for reference throughout the year:

- Launch the Service Technician Training, Recruiting, Retention, and Recognition App from GlobalConnect.
- Select the Communications tab and then the GM STC Course Catalog category.
- Select the 2023 GM STC Course Catalog to download a copy.

Thanks to Eric Kenar

# Dual Clutch Transmission Canister Filter and Maintenance Schedule

The Tremec DCT TR9080 dual clutch transmission (RPO M1L, M1M) on 2020-2023 Corvettes features a transmission canister filter that should be replaced at the initial 7,500-mile (12,000-km) maintenance service and at regular intervals. The canister filter change in the first 7,500 miles (12,000 km) is critical due to the initial break-in of the internal transmission components.

Transmission canister filter

The initial filter change should be at 7,500 miles (12,000 km).

The initial filter change should be at 7,500 miles (12,000 km) and then at 22,500-mile (36,210-km) intervals.

The filter does not need to be change earlier than 7,500 miles (12,000 km). GM will only cover one filter change.

Recommended miles intervals should be followed. If a customer elects to have the filter changed before 7,500 miles (12,000 km), it should be changed again at 7,500 miles (12,000 km). Check the maintenance schedule in the appropriate Service Information.

## MAINTENANCE COVERAGE

GM has extended maintenance coverage of the filter to two years or 7,500 miles (12,000 km), whichever comes first, on the first filter change to cover vehicles that do not accumulate 7,500 miles in the first year. It is recommended to only replace the filter at the required maintenance intervals due to the loading characteristics of the filter.

Service Information

2022 Chevrolet Corvette | Chevrolet Corvette Owner Manual GMNA-Localizing-U.S./Canada/Mexico-15342622 | Service and Maintenance | Maintenance Schedule | Maintenance | Document ID: 5431228

**Maintenance Schedule (US/CAN)**

- Visually inspect gas strut for signs of wear, cracks, or other damage. Check the hold open ability of the strut. If the hold open is low, service the gas strut. See Gas Strut(s).

| Maintenance Schedule Additional Required Services - Normal | 12 000 km/7,500 mi | 24 000 km/15,000 mi | 36 000 km/22,500 mi | 48 000 km/30,000 mi | 60 000 km/37,500 mi | 72 000 km/45,000 mi | 84 000 km/52,500 mi | 96 000 km/60,000 mi | 108 000 km/67,500 mi | 120 000 km/75,000 mi | 132 000 km/82,500 mi | 144 000 km/90,000 mi | 156 000 km/97,500 mi | 168 000 km/105,000 mi | 180 000 km/112,500 mi | 192 000 km/120,000 mi | 204 000 km/127,500 mi | 216 000 km/135,000 mi | 228 000 km/142,500 mi | 240 000 km/150,000 mi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Perform Required Services. Check engine oil level and oil life percentage. Change engine oil and filter, if needed. Check engine air filter life percentage and status. Change engine air filter, if needed. (1) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Replace passenger compartment air filter. (2) | | | ✓ | | | ✓ | | | ✓ | | | ✓ | | | ✓ | | | ✓ | | |
| Inspect evaporative control system. (3) | | | | | | ✓ | | | | | | ✓ | | | | | | ✓ | | |
| Check the dual clutch transmission fluid life percentage. Change the fluid if needed. (4) | | | | | | ✓ | | | | | | ✓ | | | | | | ✓ | | |
| Change the dual clutch transmission canister filter. (5) | ✓ | | ✓ | | | ✓ | | | ✓ | | | ✓ | | | ✓ | | | ✓ | | |
| Replace spark plugs. Inspect spark plug wires and/or boots. | | | | | | | | | | | | | ✓ | | | | | | | |

CONTINUED ON PAGE 5

**TIP:** Filter change information should be shared with your service advisors and service management. GM will be reviewing maintenance records on transmission warranty claims. Lack of maintenance on the canister filter cartridge may affect warranty coverage.

## MAINTENANCE MINDER

The 2023 Corvette features a new maintenance minder on the Driver Information Center and will display a maintenance message shortly before the 7,500-mile (12,000-km) maintenance interval. The message will appear every 22,500 miles (36,210 km) after the first maintenance service is performed. The transmission filter minder cannot be reset like the engine oil life monitor.

If the transmission is replaced, customers will need to keep track of the mileage, starting with the first 7,500 mile (12,000 km) maintenance service for the new transmission.


2023 Corvettes feature a maintenance minder for the transmission filter.

Thanks to Marty Leach

# Side Blind Zone Alert Reset

The Side Blind Zone Alert indicator on some 2021-2023 CT4, CT5, Escalade, Tahoe, Suburban and Yukon models equipped with Super Cruise (RPO UKL or UKL and 00U/02O) may not operate properly when passing other vehicles after a Short Range Radar (SRR) Rear Side Sensor module has been replaced.

The Side Blind Zone Alert system can provide an alert on the side mirrors when a moving vehicle is detected in a side blind zone of an adjacent lane. The system uses two control modules: the B233SL Short Range Radar Sensor Rear Side Sensor – Left and the B233SR Short Range Radar Rear Side Sensor – Right located behind the fascia in the rear corners of the vehicle.

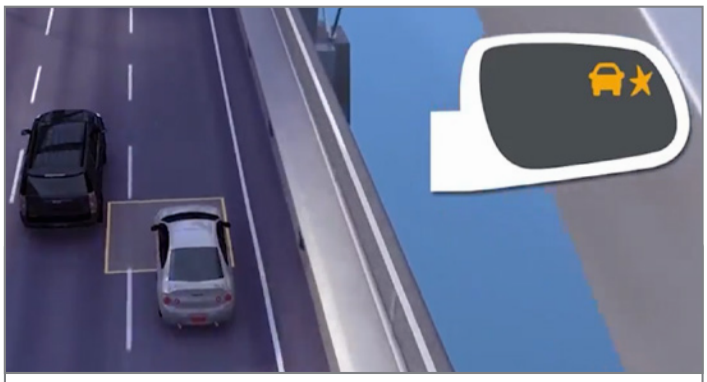
After a rear side SRR module has been replaced, the Size Blind Zone Alert (SBZA) indicator may not illuminate in the side mirrors when the customer drives past a vehicle. However, the alert indicator will illuminate when another vehicle is passing the customer. This condition will only be present after an SRR module is replaced using part number 84907387.

To address the Side Blind Zone Alert indicator condition, the system should be reset. On the infotainment screen, go to Settings > System > Return to Factory Settings.

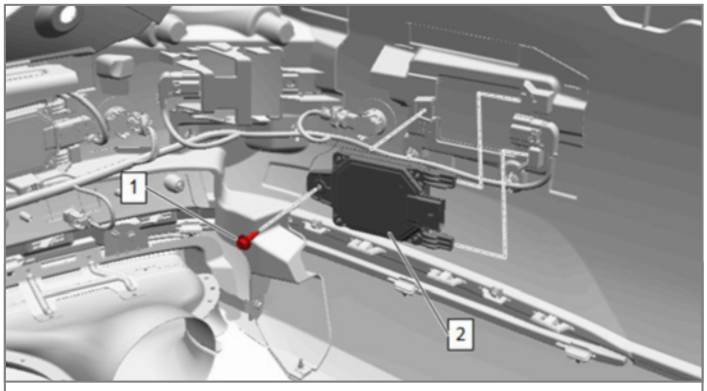
The reset of the factory settings will reset the modules to allow the Side Blind Zone Alert system to operate properly when passing or being passed by a vehicle.

Refer to #PIT5969 for more details, including part numbers.

Thanks to Jim Will



Side Blind Zone Alert indicator




Short Range Radar Rear Side Sensor

# HFV6 Gen 2 Engine Timing Chain Installation

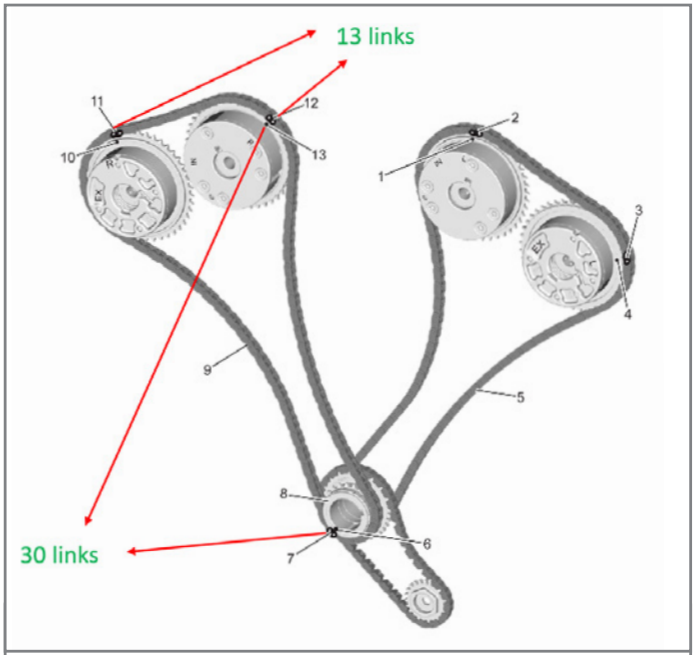
Proper timing chain installation on the High Feature V6 engine (RPO LGX, LGZ, LGY, LGW) requires confirming the location of the green-colored chain links. In order to get a proper perspective of the chain on the crankshaft sprocket, it's critical to view the chain directly in front of the crankshaft.

## STAGE 2 TIMING

If the green-colored links are not lined up before chain removal, correct timing still can be verified.

There should be 30 chain links, including the links on the timing marks, between the intake camshaft actuator timing mark (#12) and the crankshaft sprocket timing mark (#7).

There also should be 13 chain links, including the links on the timing marks, between the exhaust actuator timing mark (#10) and the intake actuator timing mark (#13).




There should be 30 links between the intake camshaft actuator timing mark (#12) and the crankshaft sprocket timing mark (#7), and 13 chain links between the exhaust actuator timing mark (#10) and the intake actuator timing mark (#13).

To verify correct Stage 2 timing:

1. Put the crankshaft keyway at the Stage 2 (3 o'clock) position.
2. Count the links between the intake actuator timing mark and the crankshaft timing mark. It should be 30 links.
3. Count the links between the intake actuator timing mark and the exhaust actuator timing mark. It should be 13 links.

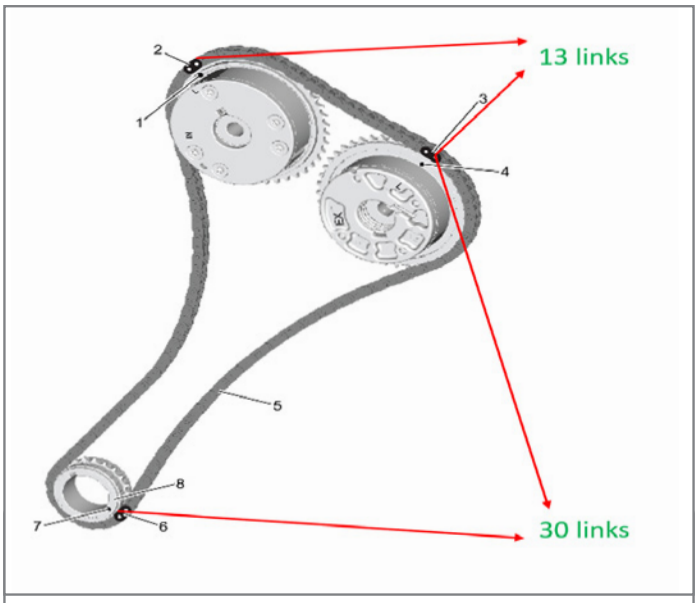
**TIP:** Stage 1 and 2 chains are the same part number. Stage 1 and 2 crankshaft chain drive sprockets also are the same part number.

## STAGE 1 TIMING

The correct Stage 1 timing also can be verified if the green-colored links are not lined up before chain removal.

Between the exhaust camshaft actuator timing mark (#4) and the crankshaft sprocket timing mark (#7), there should be 30 chain links, including the links on the timing marks.

Between the intake actuator timing mark (#2) and the exhaust actuator timing mark (#3), there should be 13 chain links, including the links on the timing marks.




Between the exhaust camshaft actuator timing mark (#4) and the crankshaft sprocket timing mark (#7), there should be 30 chain links; and between the intake actuator timing mark (#2) and the exhaust actuator timing mark (#3), there should be 13 chain links.

To verify correct Stage 1 timing:

1. Remove the Stage 2 chain and crank sprocket.
2. Remove the oil pump chain and crank sprocket.
3. Put the crankshaft keyway at the Stage 1 (11 o'clock) position.

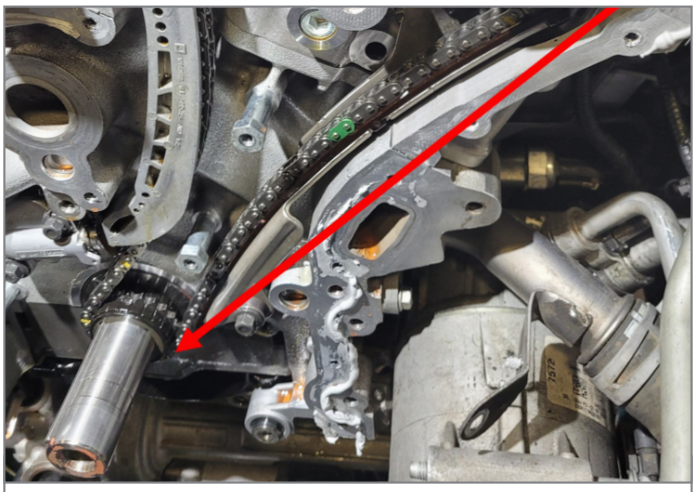
CONTINUED ON PAGE 7

4. Count the links between the exhaust actuator timing mark and the crankshaft timing mark. It should be 30 links.
5. Count the links between the intake actuator timing mark and the exhaust actuator timing mark. It should be 13 links.

## SETTING THE TIMING CHAIN

A common error when setting the chain timing is not looking straight on at the crankshaft sprocket, especially Stage 1.

From a high angle (as shown), it is very difficult to see if the chain link is properly set on the crank sprocket timing mark.

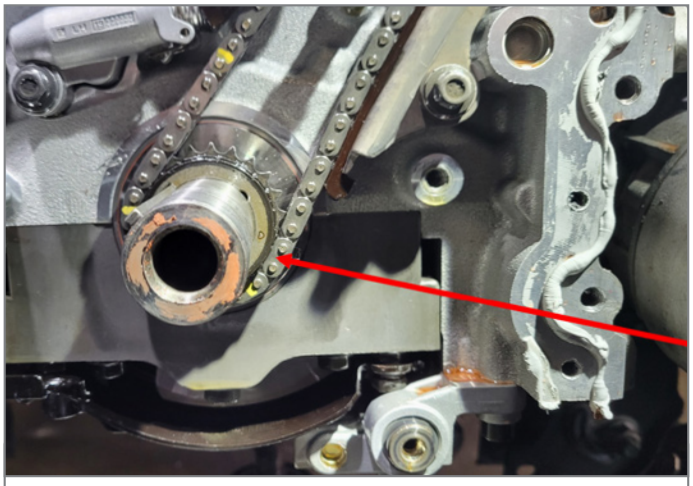


Angle makes it difficult to see the chain link on the crank sprocket timing mark.

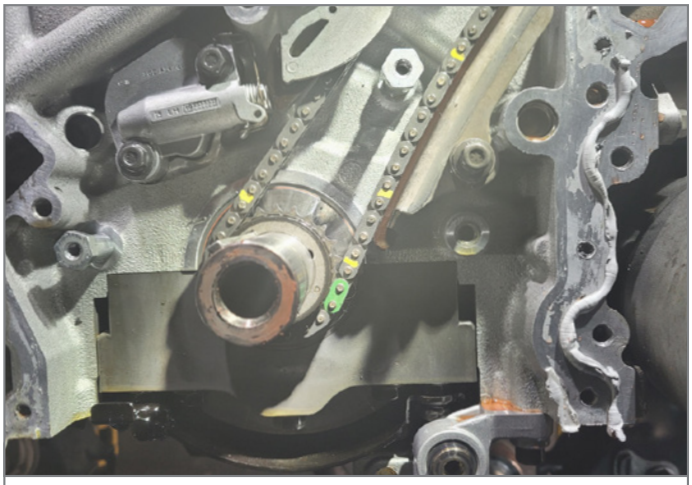
Even with the green-colored links not lined up prior to Stage 1 chain removal, counting the links can show that link number 30 is off one tooth from the timing mark, as shown below.

From a higher angle, the chain may look correct, but with a straight-on view, it is easy to see it is off. Improper timing as shown may set Stage 2 DTCs P0018, P0019 and P0021.

When viewing the crankshaft straight on, it's easy to see if the green-colored link is in the correct position to the sprocket timing mark.



Straight-on view shows timing chain is one tooth off



Green-colored link in the correct position to the sprocket timing mark.

Viewing the crankshaft at the correct angle — either visually or by using a camera — is critical to properly installation of the chain on the crankshaft drive sprocket.

**Thanks to Hank Poelman**

# Front Axle Click Sound in 2WD

A squeak or click sound may be heard coming from the front of some 2019-2022 Silverado 1500, Sierra 1500; 2021-2022 Tahoe, Suburban, Yukon and Escalade models equipped with all-wheel drive/four-wheel drive and front axle RPO SU4. The sound may be heard with the vehicle in 2WD but goes away in 4WD.

If the sound is heard, it may be caused by the left-side front axle output shaft. The sound does not affect the durability or operation of the vehicle.

Test drive the vehicle to confirm the sound is present. During a test drive, it may be easiest to duplicate the condition in warmer ambient temperatures after approximately 30 miles (48 km) of driving.

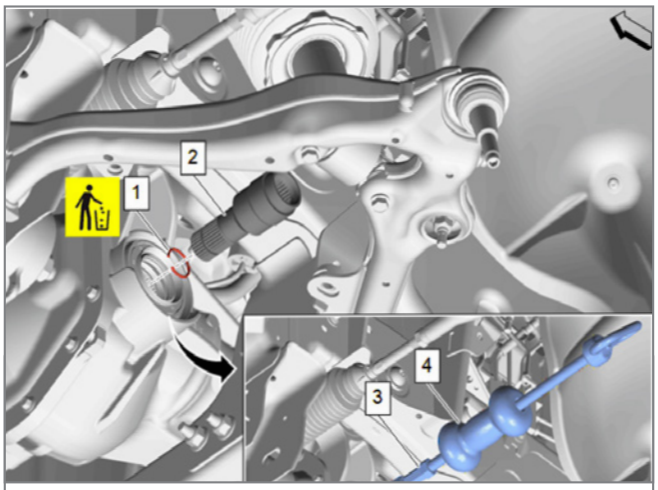
After confirming the sound is present and isolated to the front-left axle seal area, replace the left-side front axle output shaft (or front-wheel drive shaft). A new part number is available, which includes the slinger and retaining ring. The slinger and retaining ring are single-use parts.

To replace the left front-wheel drive shaft, refer to Front Wheel Drive Shaft Seal Replacement - Left Side or Front Wheel Drive Shaft Replacement - Left Side (SU4) in the appropriate Service Information.

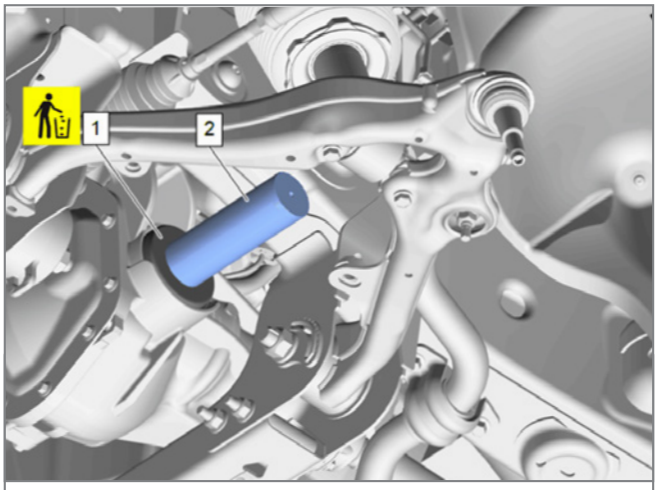
**TIP:** The repair with the new part number is different than previous repair attempts. Any vehicle that has had a previous repair attempted and/or the condition has returned prior to January 27, 2022, should have this repair performed with the new part number.

Refer to Bulletin #22-NA-251 for more information and part numbers.

▶ Thanks to Robert Cross




Left-side front axle output shaft (#2)




Front-wheel drive shaft slinger (#1)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