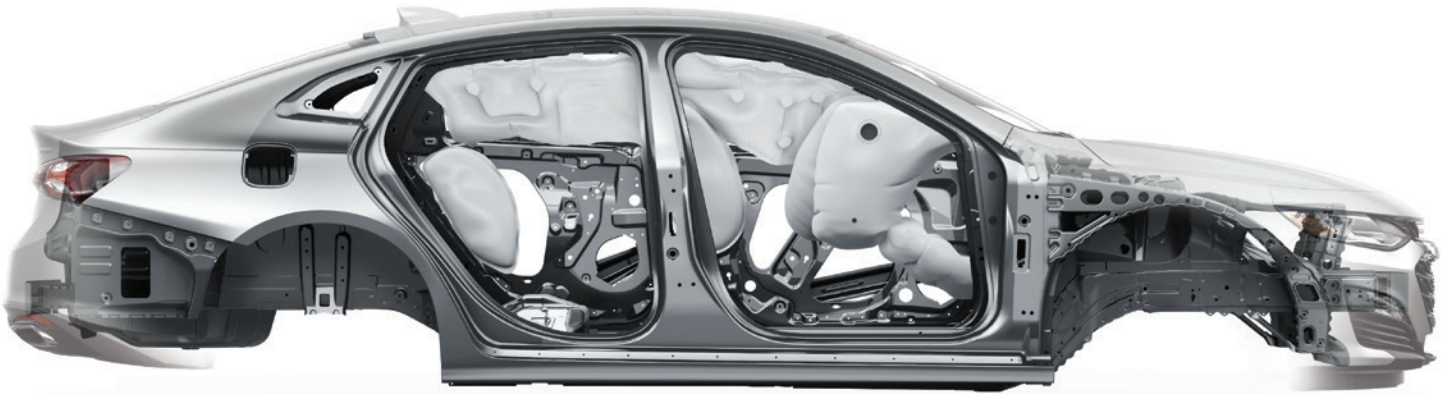


## PREVENTING



# Inadvertent Airbag Deployments



**Front Seat Adjuster Track Assembly Available as Service Part**

see page 4



**Check for Required Calibrations before Installing GM Accessories**

see page 5

*Preventing Inadvertent Airbag Deployments . . . . . 2*

*Transmission Cartridge Filter Return . . . . . 6*

*Inoperative Door Locks with Various Communication DTCs Set . . 7*

*Convertible Top Front Latch Striker Adjustment . . . . . 8*

*New Accessory Wheel Lock Nuts Available for 2022 Model Year . . . . 9*

*Limited or Reduced Propulsion Power Messages . . . . . 10*

# Preventing Inadvertent Airbag Deployments

When making vehicle repairs to or near the Supplemental Inflatable Restraint (SIR) system, technicians always need to consider the consequences. Even during repairs to components that are not directly connected to the SIR system, an inadvertent airbag deployment may be possible if the correct precautions are not taken. Airbag deployments are dangerous and costly.

For example, if a procedure involves removing the shift lever in the center console, first check for the location of the Sensing and Diagnostic Module (SDM) on the vehicle. It's commonly located below the console on many vehicles. If the SIR system has not been disabled, there is a possibility of an airbag deployment if the SDM interprets any jostling or movement of near-by components as an accident or roll-over event.

Any service work to the SIR system, SIR wiring, or a component near or attached to an SIR component should be performed with the ignition off and the SIR system disabled. Repairs that require impact to the body or frame, such as adjusting a door striker using a mallet, also should be done with the ignition off.

The point is to never get too comfortable working around any SIR components and to always follow the proper safety procedures.

Many vehicles contain a number of airbags, depending on available and optional equipment, including the:

- Steering wheel
- Instrument panel
- Driver side (seat)
- Passenger side (seat)
- Driver side (B-pillar)
- Passenger side (B-pillar)
- Driver side (C-pillar)
- Passenger side (C-pillar)
- Driver knee
- Passenger knee
- Left roof rail
- Right roof rail

To view the locations of the airbags, refer to the Master Electrical Component List in the appropriate Service Information.

In order to help avoid accidental airbag deployment, anytime a vehicle requires repair of the SIR system and another vehicle system, it's recommended that repairs be made to the SIR system first, and then repairs made on the other system.



Common airbag locations

## SI WARNINGS

All Service Information warnings should be followed at all times, including the following warning for the SIR system:

*When performing service on or near the SIR components or the SIR wiring, the SIR system must be disabled. Failure to observe the correct procedure could cause deployment of the SIR components. Serious injury can occur. Failure to observe the correct procedure could also result in unnecessary SIR system repairs.*

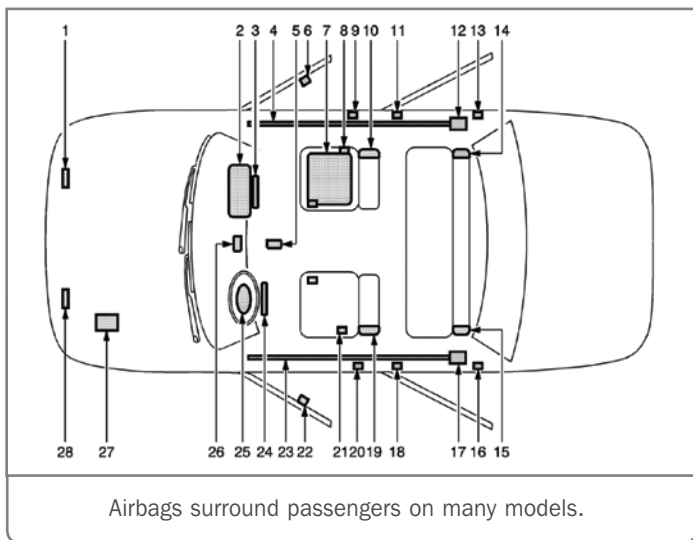


Airbags are identified in the vehicle.

## SIR COMPONENT LOCATIONS

Components of the SIR system are installed in various locations around a vehicle. Refer to the SIR Identification Views in the appropriate Service Information to find the location of the SIR components before performing service on or around SIR components or wiring.

CONTINUED ON PAGE 3



## DISABLING THE SIR SYSTEM

Here's when and how the SIR system should be disabled.

Condition	Action
<p>If the vehicle was involved in an accident with an airbag deployment.</p> <p>When moving, removing or replacing an SIR component or a component attached to an SIR component. (Anytime you remove fasteners.)</p> <p>If the vehicle is suspected of having shorted electrical wires.</p>	<p>Disconnect the negative battery cable(s)</p>
When performing SIR diagnostics.	Follow the appropriate SIR service manual diagnostic procedure(s)
When performing electrical diagnosis on components other than the SIR system.	Remove the SIR/Airbag fuse(s) when indicated by the diagnostic procedure to disable the SIR system

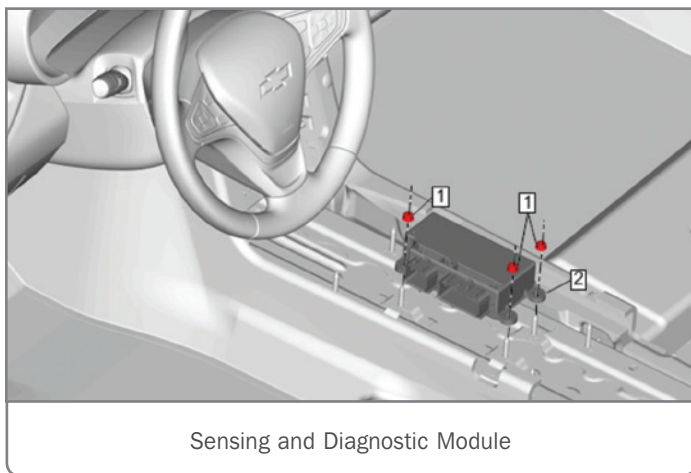
To disable the SIR system by disconnecting the negative battery cable:

1. Turn the steering wheel so that the vehicle's wheels are pointing straight ahead.
2. Place the ignition in the Off position.
3. Disconnect the negative battery cable from the battery.
4. Wait 2 minutes before working on the system.

## HANDLING THE SDM

There is a warning label on the SDM. The SDM fasteners should never be unbolted or removed until the battery is disconnected and the SDM electrical connector is removed, disabling the SIR system. The SDM is equipped with a rollover sensor. Turning the SDM over while connected under power may result in airbag deployment. If the unbolted module is picked up or tilted, and the system is powered, the SDM may see this as a rollover event and the system will respond accordingly. In addition, do not bump, wiggle, strike or jolt the SDM, or drop items on or near the SDM — all of which may be interpreted as a rollover or collision.

After repairs, the fasteners should be reinstalled and torqued to the proper specifications before reattaching the SDM electrical connector. The electrical connector must be reattached and the vehicle reassembled before reconnecting the negative battery cable to the battery.



The SDM also maintains a limited energy reserve that provides deployment power for the airbags if the module loses battery power during a collision. Deployment power is available for as much as 2 minutes after disconnecting the vehicle power. After disabling the system, wait 2 minutes to allow the limited energy reserve to dissipate before beginning any service work on the vehicle.

## LEARN MORE

For additional information, refer to:

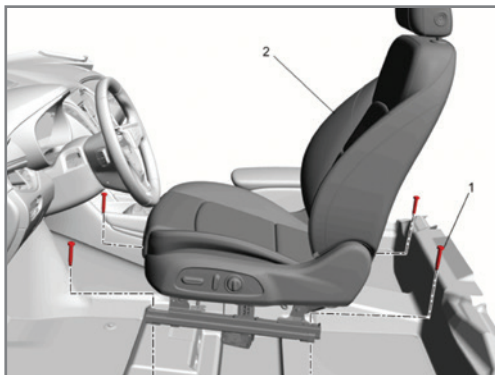
- GM training course 22048.55V – Preventing Unintended Airbag Deployment (U.S.)
- Bulletin #16-NA-055: Information Regarding Servicing Components Located Near SIR Components.

► Thanks to Ernie Haller

# Front Seat Adjuster Track Assembly

AVAILABLE AS SERVICE PART

Diagnosing front seat movement conditions on 2016-2022 Malibu and 2019-2022 XT4 models requires verifying the operation of the seat adjuster track. If there are issues with fore/aft movement, binding or other conditions, check for proper operation of the motor bridge as well as the flex shaft of the H-frame assembly. There should not be any excessive noise or any fore/aft travel restrictions when adjusting the seat position.



Front seat adjuster track

If diagnosis leads to the need to replace the front seat adjuster track, the H-frame assembly has recently been released as a service part. Do not replace the complete seat cushion frame assembly for a seat track movement condition.



New H-frame assembly

## ORDERING THE H-FRAME ASSEMBLY

To order an H-frame assembly for the driver's seat, passenger's seat, or driver's seat with memory functions, refer to the Electronic Parts Catalog (EPC). Search by VIN to identify the correct seat application.

**TIP:** Do not order the complete seat cushion frame assembly in the EPC. Only the H-frame assembly is needed in most cases to address any seat track movement conditions.

## H-FRAME ASSEMBLY REPLACEMENT

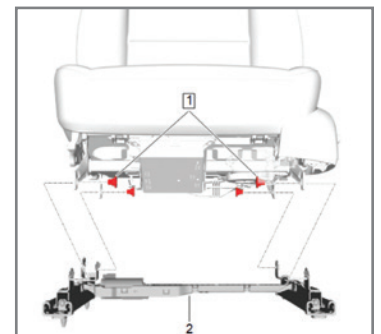
Before removing the front seat from the vehicle, be sure to follow the SIR disabling procedures. Once the seat is removed, turn it over and place it on a protected surface to access the four fasteners attaching the front seat adjuster track

**TIP:** To remove the new H-frame assembly from the shipping container, lift it up with one hand on each track. Do not lift the H-frame by holding the bridge; it may cause damage to the material.

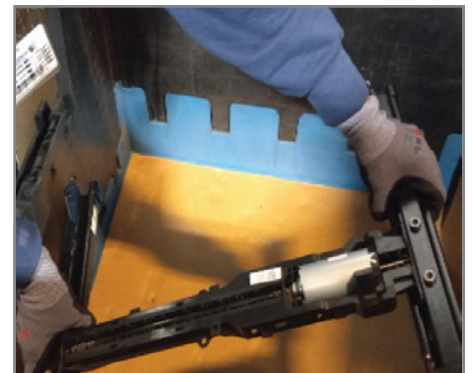
If new threaded components are used when installing the new adjuster track, loosen the adhesive using a metal pick or similar tool before tightening the bracket bolts to specification.

If the threaded components are reused, remove any loose, cured adhesive from the external threads. Thread the cleaned components into the internal mating threads to remove any loose or trapped cured adhesive. Next, apply thread locking adhesive to the external threads, making sure there are not any gaps in the adhesive. Tighten the bracket bolts to specification.

For additional information on adjuster track replacement, refer to Front Seat Adjuster Track Replacement in the appropriate Service Information (Doc ID 5784739). The labor time for the adjuster track replacement service procedure also has been updated. Also refer to Bulletin #21-NA-212.



Four fasteners attach the adjuster track.



Lift the H-frame assembly with one hand on each track.

► Thanks to Daryl Funds and Atampreet Singh



# Check for Required Calibrations before

## Installing GM Accessories

After installing a number of select GM Genuine Accessories, a calibration update from the Techline Customer Support Center (TCSC) is required in order to complete the installation properly.

Current dealer-installed GM Accessories that require a calibration include (but are not limited to):

- Performance airbox
- Illuminated interior trim
- Fog lamps
- Rear Vision camera
- Upsize wheels and tires
- Lift kits
- Lights/cargo lamps
- Handling/lowering kits
- Front grilles
- Trailering hook-up assist
- Wireless charging
- Keyless entry
- Remote start



Certain accessories may not require a calibration update based on vehicle build or trim level. Refer to Service Information installation instructions for specific vehicle requirements.

**TIP:** Limited Production Option (LPO) accessories are ordered with the vehicle at the time of purchase and cannot be installed or sold as an Accessory Catalog Offering (ACO), or over-the-counter accessory, as the required calibration is not available for ACO applications. If the calibration is installed on an incorrect vehicle, several DTCs may set.

### PROGRAMMING REQUIRED CALIBRATIONS

GM Accessories that require updated calibrations must have the calibrations installed to ensure proper operation of the new accessory components as well as other related vehicle systems, whether it's an air intake system that includes an ECM update, a front grill package that involves front camera operation, or larger wheels and tires that impact the operation of Advanced Driver Assistance Systems on the vehicle. Calibration updates that are

not performed following the installation of an accessory may not only limit system performance, but may also leave the vehicle non-compliant with certain government standards/regulations.

Prior to programming, contact the TCSC to have the appropriate calibration applied to the VIN. The VIN and Authorization Code (included in the accessory packaging) must be provided to the TCSC to obtain the accessory calibration.

**TIP:** If programming is attempted before contacting TCSC when installing accessories that require an updated calibration, the Service Programming System (SPS) will not deliver the correct accessory calibration to the vehicle. SPS may display a message advising users that they are attempting to program with the "same calibration" — a warning that the vehicle has not received the required accessory calibration. Do not use any "same calibration," or lack thereof, messaging as an indication that an accessory calibration update is not required.

### ALWAYS REVIEW THE SERVICE INFORMATION

Before installing any GM Accessory, it's critical to review the installation instructions in the appropriate Service Information. Installation sheets for GM Accessories can be found in the Accessories Manuals in the Service Information. By checking the installation procedures, even on commonly installed accessories, any updated information or improvements – including required calibrations – that have been implemented can be reviewed



CONTINUED ON PAGE 6

before installation begins, ensuring that the latest information is followed for an efficient, accurate and quality installation.

## INSTALLATION QUESTIONS

The following sources are available to help dealerships with the installation and operation of GM Accessories.

**Techline Customer Support Center** – Programming concerns with GM Accessories

**Technical Assistance Center** – Installation or help with diagnosing problems related to the installation

**Partech** – Accessory installation sheets, missing kit components, quality issues, and vehicle compatibility questions. Call Partech at 1-855-GMCARES (1-855-462-2737), select prompt 2.

**Accessory Distributor Installer (U.S.)** – Limited Production Option (LPO) parts

► Thanks to Bret Raupp

# Transmission Cartridge Filter Return

GM Engineering is conducting transmission filter inspections on 2020-2021 Corvette models (U.S. only). The Tremec DCT TR9080 dual clutch transaxle (RPO M1L) features a transmission cartridge filter that should be replaced at the initial 7,500-mile (12,000-km) maintenance service.

Once the filter is removed from the transmission:

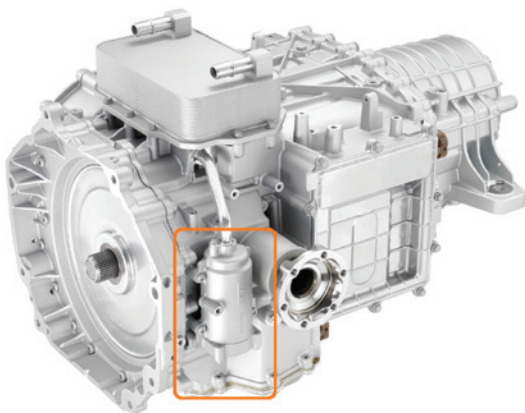
- Do not drain the filter by turning it upside down.
- Do not allow the filter to contact any foreign surface, such as the oil drain pan, before placing into the bag.
- Be sure to tag the bag with the VIN and vehicle mileage.

After the claim is paid, a parts return request will be generated for the filter to be returned to the Warranty Parts Center.

Be sure to follow all steps in the Automatic Transmission Fluid Filter and Seal Replacement (Cartridge) procedure in the appropriate

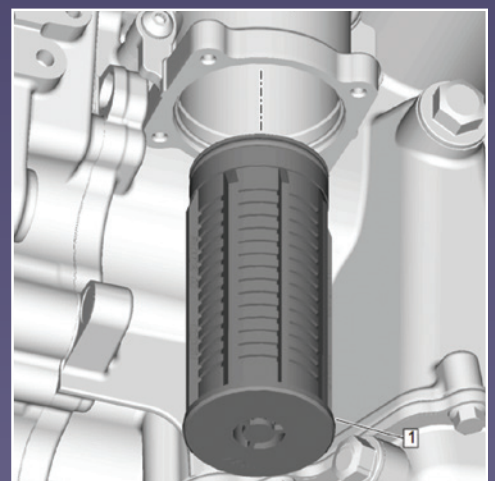
Service Information. In addition to a new filter, a new filter seal and new fluid filter cover bolts must be installed. Use Fuchs TITAN EG FFL-4 TREMEC transmission fluid only.

► Thanks to Marty Leach and Jeff Strausser



Tremec DCT TR9080 transmission cartridge filter

Vehicles that have the first scheduled maintenance performed at 7,500 or within the first year of ownership should have the transmission filter carefully removed and double-bagged for return to the Warranty Parts Center.



Transmission cartridge filter

# Inoperative Door Locks with Various Communication DTCs Set

The door locks may become inoperative and several communication DTCs (U codes) may set on some 2020-2021 Acadia, XT5 and XT6 models. Other conditions that may occur include illuminated instrument panel lights while driving and unwanted horn or hazard warning flasher operation. DTCs B3125, B3130, B3135, B3979, B3980 also may be set.

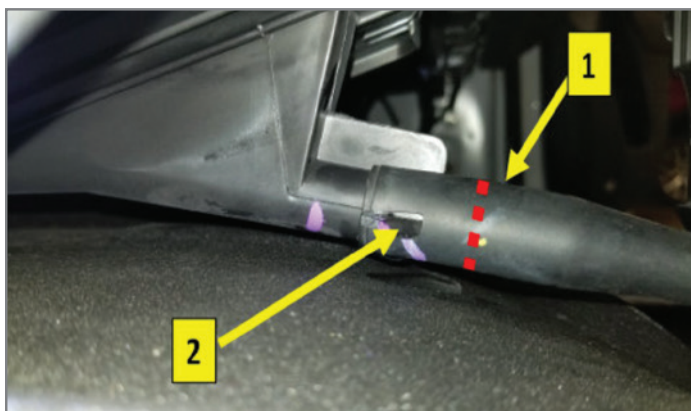
These conditions may be caused by possible water intrusion to the Body Control Module (BCM) from the HVAC drain hose leaking at the connection to the HVAC module.

If the vehicle has inoperative door locks or the instrument panel lights illuminate while driving, and DTCs B3125, B3130, B3135, B3979, B3980 are set in the BCM, check for possible water intrusion to the BCM.

## HVAC DRAIN HOSE CONNECTION

Begin diagnosis by inspecting for water on the HVAC drain shield, wiring or BCM connectors behind the right front floor console extension panel.

If water is not observed, remove the left lower hush panel (if equipped) and the left front floor console extension panel to observe the HVAC drain hose. Start the vehicle, turn the A/C to a low temperature, and set the blower at maximum speed. Once the vehicle has been running long enough for water to begin draining from the hose, inspect the hose connection to the HVAC module on both sides. Check that the hose is clear and free of any kinks.



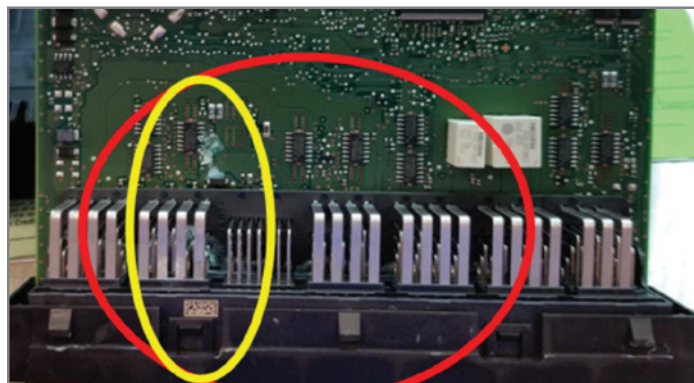
If water is found at the notch in the hose (#2), add a tie strap to the drain hose, below the locking nib (#1) near the top of the hose connection.

If there is a leak at the drain hose connection to the HVAC module, water will be seen at the notch in the hose or just above it.

To prevent any current or potential leaking, add a tie strap to the drain hose, below the locking nib near the top of the hose connection.

## BCM INSPECTION

If water was leaking from the drain hose, inspect the BCM for any signs of corrosion on the terminals or in the connectors.



Water leakage will require an internal BCM inspection.

**TIP:** In order to prevent possible electrostatic discharge damage to the BCM, do not touch the connector pins on the BCM. Electronic components used in the control systems are often designed to carry very low voltage and are susceptible to damage caused by electrostatic discharge. Less than 100V of static electricity can cause damage to some electronic components. By comparison, it takes as much as 4,000V for a person to even feel a static discharge.

Any signs of water leakage on the BCM will require disconnecting the BCM and opening the case for an internal inspection.

Look for corrosion and damage to the BCM (red circled area). Any internal corrosion (yellow circled area) will require replacement of the BCM.

For more details and part information, refer to Bulletin #21-NA-183.

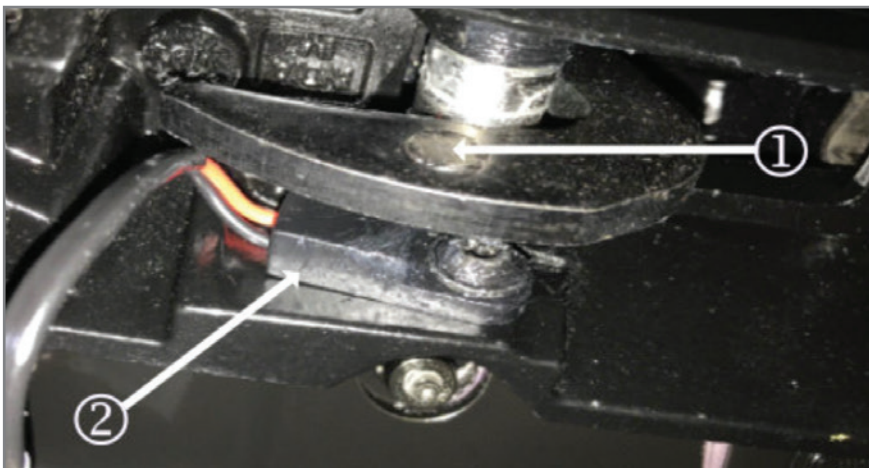
► Thanks to Tom Burlingame



# Convertible Top Front Latch Striker Adjustment

The convertible top may not lower intermittently on some 2020-2021 Corvettes. DTC B19E4 (Hard Top Locked Closed Signal) SYM64 also may be stored in history. SYM64 indicates that the folding top control module detects the signal circuit is invalid for greater than 1 second.

To correct the intermittent convertible top operation, align the hall effect sensor in the right-side front latch striker.



The hall effect sensor (#2) looks for the top to be fully latched. The hook of the latch striker may not be extending far enough to reach the magnet (#1).

The hall effect sensor looks for the convertible top to be fully latched at the header. The hook of the latch striker may not be extending far enough to reach the magnet. The front latch striker should be adjusted so that it latches completely.

**TIP:** The windshield upper garnish molding must be removed completely to adjust the latch striker. Removing fasteners on only one side and flexing the molding may damage the part.

To make the adjustment, mark the location of the outboard bolt washer on the right front latch striker.

CONTINUED ON PAGE 9



# New Accessory Wheel Lock Nuts Available for 2022 Model Year

Next, loosen the two latch striker bolts and move the striker outboard 2 mm (0.08 in.). Keep the same fore/aft positioning.



Mark the location of the outboard bolt washer on the right front latch striker.



Move the striker outboard 2 mm (0.08 in.).

With the latch striker in place, tighten the bolts to specification. Check for the correct function of the convertible top and that the DTCs do not set.

For additional information, refer to Bulletin #21-NA-192.

► Thanks to Jeff Strausser

Several new accessory wheel lock nuts with new designs will be available on some 2022 models. The new design wheel lock nuts, including chrome locks (RPO SFE) and black locks (RPO SPZ), will use carry-over RPOs.

The new lock nuts, which feature an integrated key flange for a cleaner design, will be available beginning with 2022 Acadia, Traverse, Blazer and Enclave models.

The Accessory Information Center (AIC) and Electronic Parts Catalog (EPC) will be updated when the new locks are available.



New design chrome lock



New design wheel lock nuts and key adaptor

CONTINUED ON PAGE 11

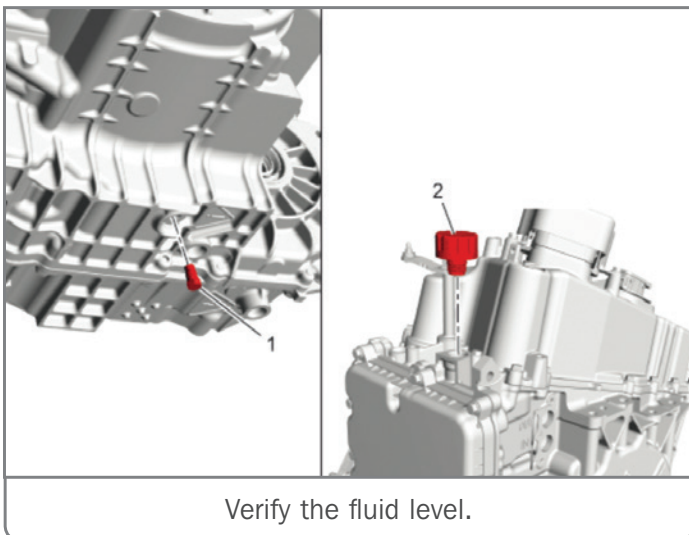
# Limited or Reduced Propulsion Power Messages



Some 2016-2019 Volt models may display a Speed Limited to X MPH or Reduced Propulsion Power message on the Driver Information Center (DIC) and limited vehicle propulsion. These messages may be intermittent and displayed for a brief amount of time. Once the message clears, full propulsion power is restored to the vehicle. No DTCs will be set.

The limited propulsion and related DIC messages may be the result of a low transmission fluid level in the drive unit or a mismatch in the estimated battery pack capacity due to the customer's charging habits.

## CHECK THE FLUID LEVEL



Due to the sensitive and complex nature of the drive unit, there are many inputs that the high-voltage (HV) modules and drive unit take into consideration while propulsion is active. In certain instances, such as while taking a sharp corner on a road, a DIC message may display if there is a low fluid level condition in the drive unit.

If these DIC messages are displayed intermittently, inspect for any transmission fluid leaks and verify the fluid level. If the fluid level is low or a leak is found, follow the appropriate Service Information procedures to correct the condition.

**TIP:** The transmission fluid level must be checked with the transmission fluid temperature at 45–55°C (113–131°F). An under-filled transmission will cause premature component damage. An over-filled transmission may result in overheating and a loss of vehicle propulsion.

## ESTIMATED PACK CAPACITY

A DIC message also may display if there is a discrepancy in estimated battery pack capacity. If a fluid leak is not found and the fluid level is full, review the pack capacity in the Hybrid Powertrain Control Module 2 (HPCM2) and compare it with the Hybrid/EV High Voltage Battery Reduced Range Analysis in the Service Information.

Pack capacity is the deciding factor in determining maximum possible vehicle range when the Hybrid/EV Battery is new and as it ages. Capacity is affected by many factors, including temperature over time, rate of discharge and the normal chemical process over time.

For proper operation, check with the customer that the vehicle is occasionally fully charged, which is how the HPCM2 evaluates the battery. After an extended period of time of not receiving a full charge, or not resting long enough after a full charge, a less accurate battery capacity estimation may be determined, creating a discrepancy between the estimate and the actual pack capacity. Refer to the Hybrid/EV Battery Pack Capacity Learn Procedure – Hybrid/EV Vehicles with Internal Combustion Engine in the appropriate Service Information for more information.

If the DIC messages return and additional assistance is needed, contact the GM Technical Assistance Center (TAC).

For more information, refer to Bulletin #21-NA-204.

► Thanks to Mark Shearer and David Rainey

The lock nuts and new key adaptor have 20 key codes that are specific to GM. Master key sets that include 20 keys to cover all GM key codes can be purchased from the Snap-on/GM Dealer Tools group at [gmdesolutions.com](http://gmdesolutions.com). The key sets are expected to be available in November 2021.

## NEW LOOK, ADDED SECURITY

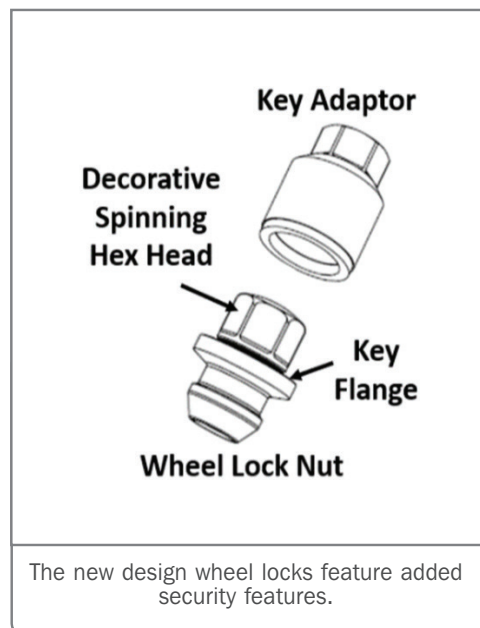
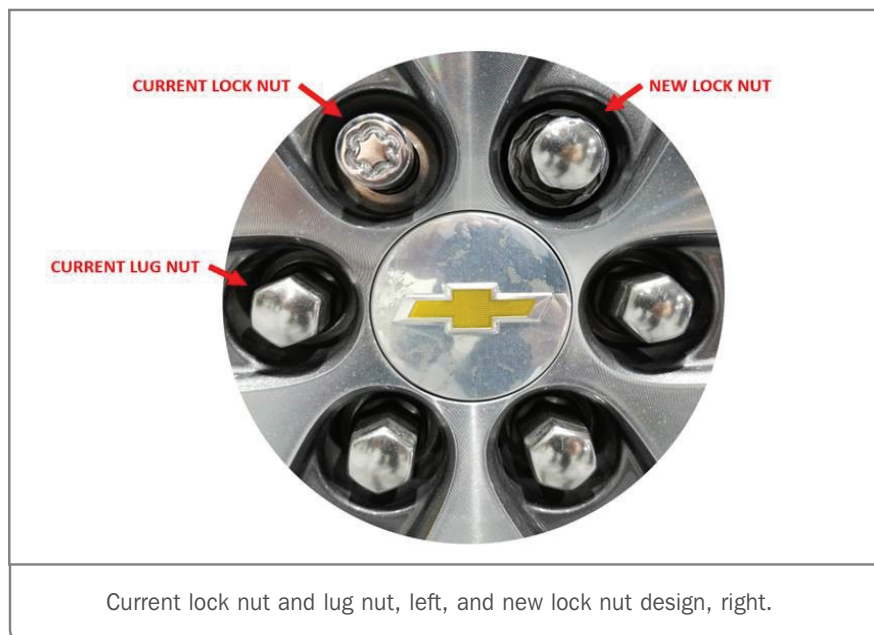
The new design wheel locks feature a number of added security features, including the key flange and hex head. The key flange, located on the side of the lock, offers increased security as well as enhanced corrosion performance. The decorative hex head, designed to have a more uniform

appearance with the Original Equipment (OE) wheel nuts, spins freely for added security.

## KEY ADAPTORS

Customers can register the locks and order spare or replacement key adapters at <https://faradusa.com/en/gmsparekeys.html>. A four-digit code, included with the lock kit, is required to purchase additional key adapters.

► Thanks to Joe Villanueva and Chris Fitzgerald



## TECH LINK

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