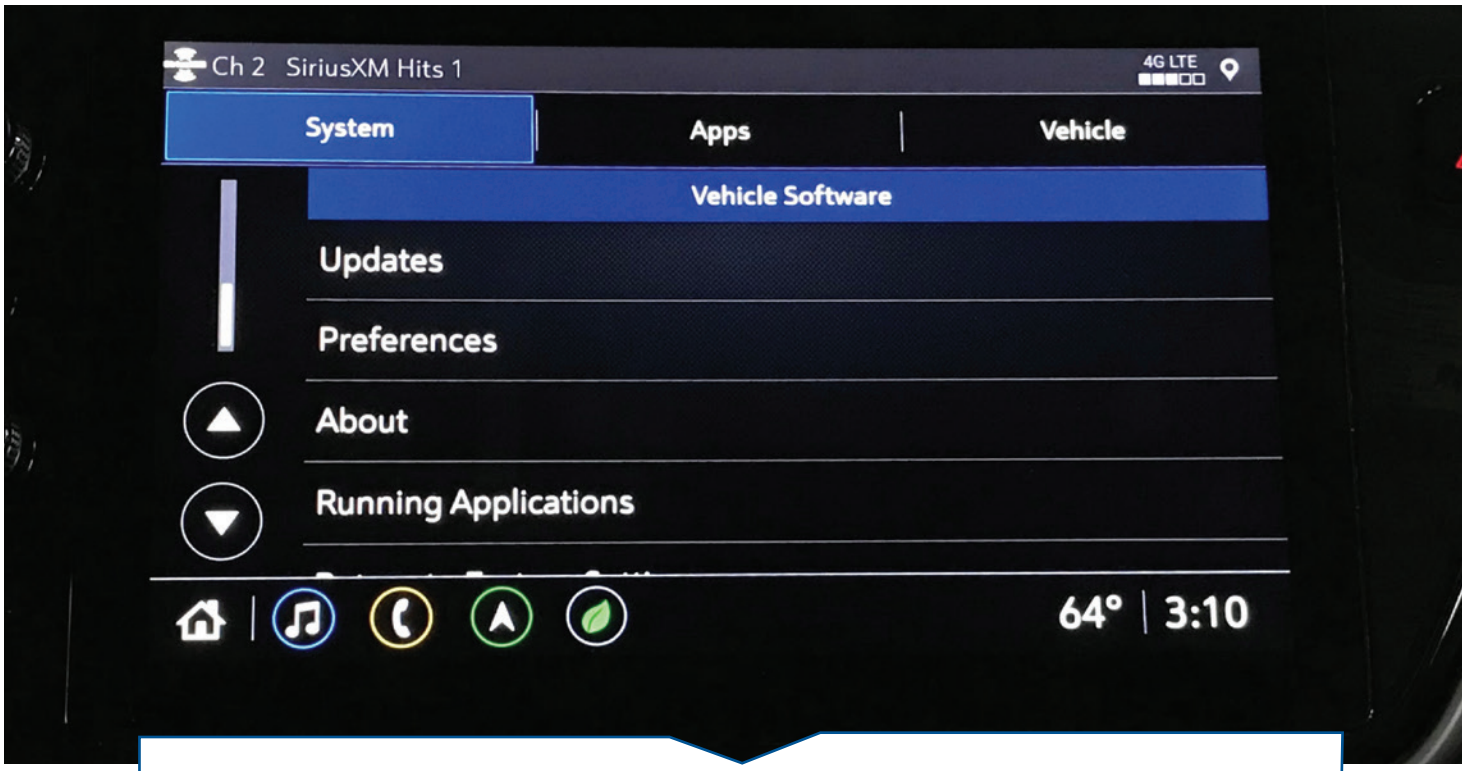
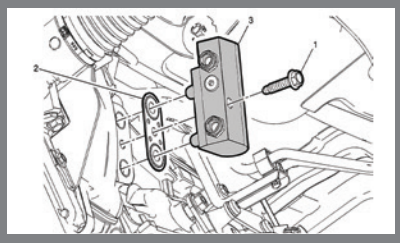
TECH LINK

Mid-September:, Volume 23, No. 18

Program Radio Updates



Following the Bulletin Procedures



Thermal Bypass Valve Installation

see page 3

Updated 9T65 Transmission Diagnosis Guidelines – Tips from the Replacement Pilot Program

see page 4

Program Radio Updates

FOLLOWING THE BULLETIN PROCEDURES

When completing the programming procedures for updating the infotainment system software on vehicles equipped with an Infotainment 3 system (RPO IOR, IOS, IOT, IOU, IOV), SPS (Service Programming System) and/or USB programming may be required. If a service bulletin has been released related to the programming procedure, be sure to follow all steps included in the bulletin. It will state if only SPS programming, only USB programming or both are needed.

Be sure to verify the radio software level before beginning programming. To verify the current radio software version in the vehicle, go to Settings > About > Build Number > Information "i" on the infotainment screen.

Check the software version before programming.

TIP: Some software updates may be delivered to vehicles through Over-the-Air (OTA) updates. Always check the Investigate Vehicle History (IVH) screen in the Global Warranty Management (GWM) system prior to beginning any required inspections and/or repairs.

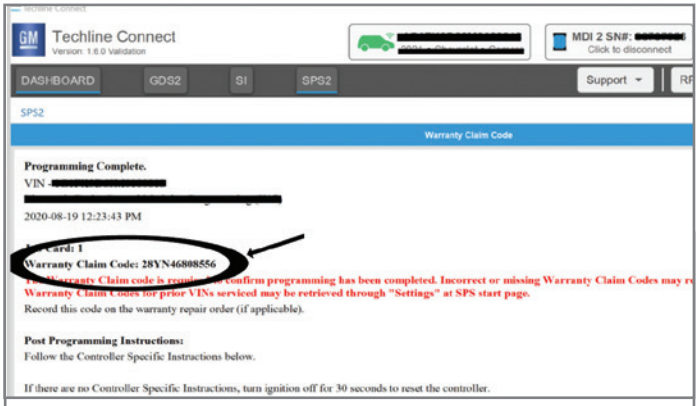
Before proceeding with programming, check for any Info Sys OTA updates under Settings > Updates on the vehicle's infotainment screen. If an update is available, it is more efficient to install the OTA update if it will install successfully. If an Info Sys OTA update is not available, proceed with USB programming.

Typically, Service Information calls for SPS programming first, followed by USB programming, when both programming procedures are required. For complete instructions for SPS and USB programming, refer to the appropriate Service Information.

Unless there are special programming instructions provided in a bulletin, Service Information will always have the latest information to follow to complete repairs.

DOCUMENT THE WARRANTY CLAIM CODES

After a successful programming event, a warranty claim code will be located in the SPS dialogue box of the SPS Summary screen. For warranty claims, it's necessary to document the warranty claim code provided. The warranty claim code must be accurately entered in the warranty transaction.



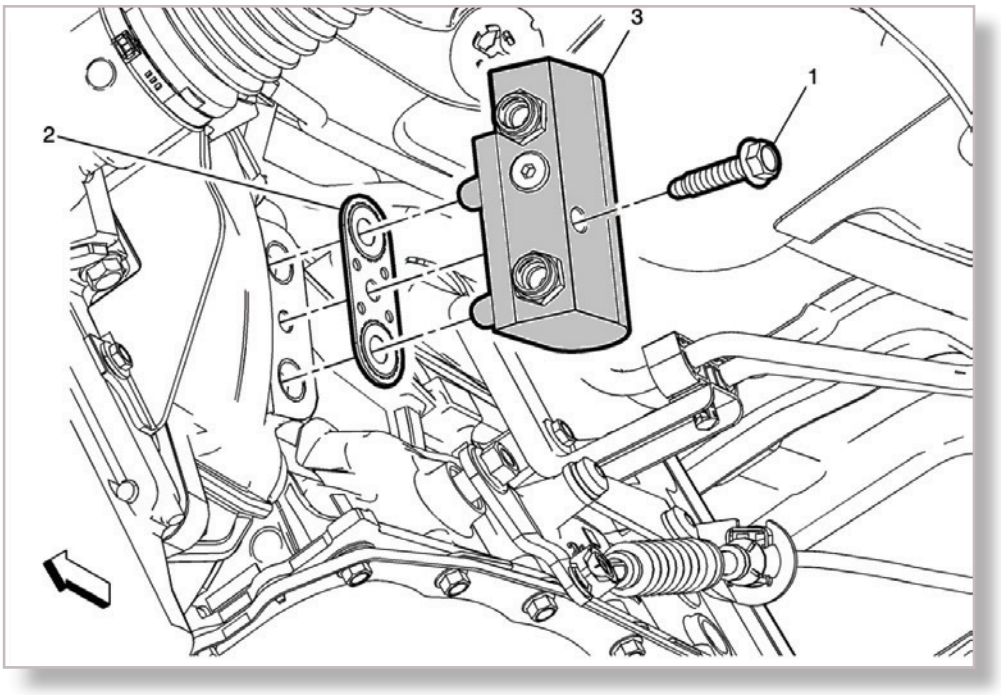
Example of a warranty claim code

When more than one warranty claim code is generated for a programming event, document all codes in the Correction field on the job card (repair order). It is a best practice to enter the final code provided by SPS.

If a bulletin procedure calls for both SPS and USB programming, and only one programming procedure is completed, the warranty claim may be rejected if only one warranty claim code was generated.

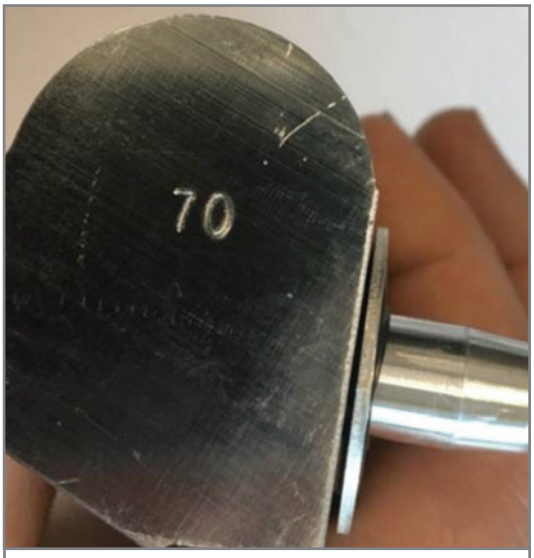
▶ Thanks to Jeremy Richardson

Thermal Bypass Valve Installation



When performing transmission repairs on 2014-2019 Silverado and Sierra models and 2015-2020 Tahoe, Suburban and Yukon models equipped with the 6L80 6-speed automatic transmission (RPO MYC) for harsh shift, delayed shift, shudder, noise or vibration conditions, also replace the Thermal Bypass Valve (TBV).

A new TBV is available that has a cooler operating temperature. The previous TBV had a full-open temperature of 194°F (90°C). The new TBV has a full-open temperature of 158°F (70°C).



New TBV with "70" stamp

The new TBV can be identified by the "70" stamped into the bottom of the valve. The "70" stamp is visible on the valve when it is installed on the transmission.

The TBV should be replaced with the new valve only once for any transmission repairs, including Customer Concern Not Duplicated (CCND). The TBV should not be replaced again unless it is determined through normal diagnosis that the TBV has failed.

TIP: If vehicle is equipped with a new TBV, the transmission fluid level should be checked only after the transmission fluid temperature (TFT) has reached or exceeded an operating temperature of 158°F (70°C). Reaching or exceeding an operating temperature of 158°F (70°C) opens the bypass valve and allows the cooler to fill up with fluid, which will result in a more accurate fluid level check.

Refer to Bulletin #21-NA-199 for additional information and part numbers.

▶ Thanks to Mark Gordon

UPDATED 9T65 TRANSMISSION DIAGNOSIS

Tips from the Replacement Pilot Program

The 9T65 9-speed automatic transmission (RPO M3V, M3W) replacement pilot program (U.S.) for the 2018-2022 Enclave, Traverse; 2019-2022 Blazer; and 2020-2022 Acadia, XT5, and XT6 models concluded on September 30, 2021. Based on the results of the pilot program, several new diagnostic and repair procedures have been developed for low-mileage transmissions. All of these changes are covered in the latest version of Bulletin #20-NA-136.

Diagnostic and repair procedures for the 9T65 9-speed automatic transmission have been updated.

The pilot program, designed to reduce the number of days needed to complete transmission repairs, called for transmission assembly replacement (following the necessary guidelines) instead of making internal transmission repairs. With the end of the pilot program, mandatory transmission assembly replacement is no longer authorized.

Updated Bulletin #20-NA-136 provides an enhanced diagnostic and repair strategy that has been developed through the information and learnings gathered from the teardowns and inspections of transmissions returned as part of the program. The intent of the new procedures, as with the pilot program, is to reduce the number of days to complete the vehicle repair and reduce the potential for repeat repair visits.

TIP: Updated diagnostic information covered in the bulletin applies only to vehicles with less than 12,000 miles (19,000 km).

REPAIR STRATEGY

To determine the repair strategy on a 9T65 transmission, begin diagnosis by first reviewing several previously released bulletins covering 9T65 transmission operating and performance conditions, including shift, sound and vibration concerns. For a complete list of the bulletins as well as other Service Information documents to review, refer to Bulletin #20-NA-136.

9T65 9-speed automatic transmission

The bulletin outlines the necessary steps to take to diagnose various 9T65 transmission concerns. In addition to documenting the condition, cause, and correction information, diagnosis should include:

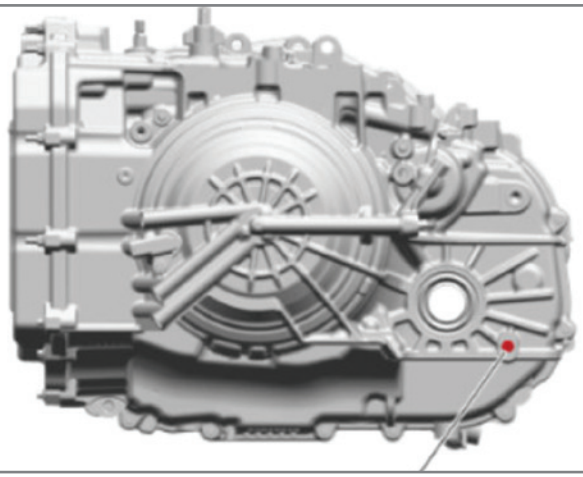
1. Check modules for DTCs
2. Check the transmission fluid and level
3. Check line pressure
4. Perform a road test
5. Check current DTCs or DTCs that reset during the road test

CONTINUED ON PAGE 5

FLUID LEVELS

The transmission fluid level as well as the condition of the fluid should be checked as part of the diagnostic procedure. With the vehicle off and the transmission fluid temperature at approximately 68–77°F (20–25°C), there must be at least enough fluid to drain out of the fluid level hole, which ensures there is enough fluid in the sump to fill components once the vehicle is started.

To check the transmission fluid level, the transmission fluid temperature (TFT) must be 185–203°F (85–95°C). Setting the fluid level with a TFT outside this temperature will result in either an under- or over-filled transmission. An under-filled transmission will cause premature component wear or damage. An over-filled transmission will cause fluid to discharge out the vent tube, fluid foaming, or pump cavitation.



Set the fluid level using the oil level set plug.

If the fluid level is correct, check the condition of the fluid. The color of the fluid should be red or brown. It also should be transparent to the point where objects or writing can be seen through it. Refer to Bulletin #20-NA-136 for examples of acceptable fluid.

When inspecting the fluid, it's also normal to see a small amount of friction material or metal from the manufacturing process (observed as fine sliver streaks) in the fluid. Excessive amounts of particles should be noted on the repair order and would require an internal transmission inspection.

ROAD TEST

The road test procedures verify proper gear engagement. Check the garage shifts for each gear position. The gear engagements should be immediate and not harsh. Harsh engagements may be caused by high engine idle speed, default conditions caused by certain DTCs or incomplete or incorrect adapting.

If there is a delayed engagement of a gear shift, possible causes to check include low idle speed, low fluid level, cold TPT temperature, selector linkage or incomplete or incorrect adapting.

Upshifts and downshifts also should be checked during a road test. The TCM calculates shift points based on throttle position and vehicle speed. The bulletin lists the scan tool parameters to monitor as the transmission shifts. There should be a noticeable shift feel or engine speed change within 2 seconds of the commanded gear change. Follow the appropriate Service Information for any harsh, soft or delayed shift or slipping as well as any noise or vibration conditions.

TIP: If it's difficult to determine if any transmission shifting conditions are internal transmission issues or input/command concerns, use the control function feature in GDS2 to command all shifts. If the transmission shifts into each range commanded, the condition is generally an input/command concern. If ranges are not completed when using GDS2 to commaand, the condition is generally an internal transmission concern.

CHECK ALL DTCS

The updated bulletin includes a list of all DTCs to look for during a road test. If any of the DTCs listed are set, follow the instructions in the bulletin for the specific DTCs. Some DTCs, either with or without a transmission fluid condition, may indicate damage to the clutch plates while others may point to replacement of the solenoid body or valve body.

For additional information about 9T65 transmission diagnosis as well as updated labor operations, refer to Bulletin #20-NA-136.

▶ Thanks to Mark Kevnick

Diagnostic Charge Battery Station Software Update

A new software update (DCAG1-33-24) is now available for the EL-52800 Diagnostic Charge Battery Station (DCBS). All DCBS units should be updated to the latest software version to ensure battery testing is being performed with the latest technology and information.

EL-52800 Diagnostic Charge Battery Station

- Improves the Wi-Fi connection
- Adds Charging time on receipt
- Adds Charging information to display on Diagnostic Receipt
- Addresses "Terminated by User" during pre-charge bug
- Diagnostic Charge Acceptance limit increases from 40A to 80A
- Utilizes the DCBS at 100A capability
- Increases to the top-off charge current limit
- Uses the latest available GM vehicle database update

100A Charging Current Capability

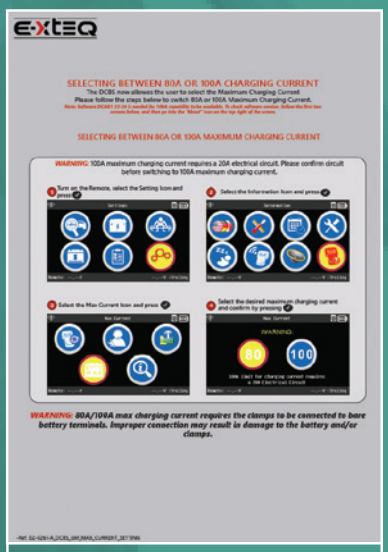
With software update DCAG1-33-24, the DCBS now allows users to select the maximum charging current between 80A or 100A. The 100A maximum charging current requires a 20A electrical circuit. Confirm circuit capability before switching the maximum charging current. Review the Max Current Quick Guide for additional information.

UPDATING THE SOFTWARE

To complete the software update, connect the handheld remote to the PC using the USB cable. If the device has been updated previously, the required Optimus updating software application should already be on the PC. Open Optimus and follow the prompts to update the device

If this is the first time updating the device, it will be necessary to download the Optimus updating software application. To download, go to the E-XTEQ website at www.e-xteq.com and select the Download option on the top menu bar. Once accessed, click Download Optimus and follow the prompts to install the Optimus updating software. After installation, open Optimus and follow the prompts to update the device.

Refer to the DCBS Software Installation Guide for more information.



Max Current Quick Guide

When dealerships receive the new DCBS unit, it is critical that the Optimus software, which is included with the DCBS, be downloaded. The Optimus website is used to store all the testing records that are performed at the dealership. Additionally, all DCBS software updates that are released to keep the DCBS operating with the latest vehicle information and product enhancements will only be delivered to the handheld diagnostic remote through the Optimus program. Any new software availability prompts will be displayed on the handheld remote.

For assistance with accessing the website, downloading the software or any questions about the DCBS, contact EXTEQ Customer Support Center at 1-877-453-3265.

▶ Thanks to Zach Winters

Shudder Condition When Coasting to a Stop

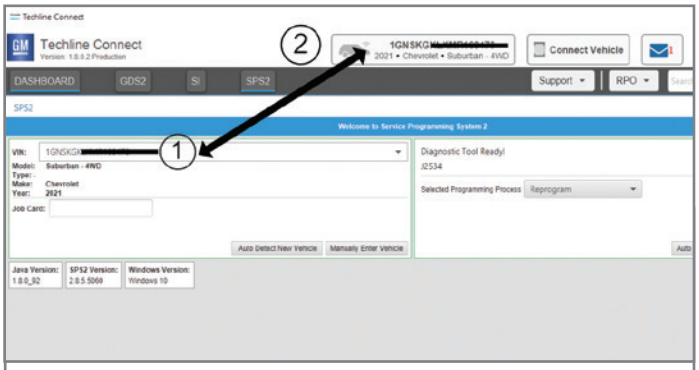
A shudder may occur when coasting between 15—13 mph (24—21 km/h)

Some 2021 Silverado 1500 and Sierra 1500 trucks equipped with the 5.3L V8 (RPO L84) and 10L80 10-speed automatic transmission (RPO MQB), excluding models with RPO YK9, may have a shudder condition when coasting to a stop between 15—13 mph (24—21 km/h). The shudder may feel similar to driving over rumble strips on the pavement when the vehicle is coming to a stop.

During diagnosis, the shudder condition will be easily duplicated every time the vehicle coasts at the affected speeds. The shudder may be due to the reduction in the number of cylinders firing during deceleration, which may lead to structure-borne noise, vibration and harshness (NVH) on some vehicles when coasting to a stop between 15—13 mph (24—21 km/h).

If the shudder condition at the affected speeds is confirmed, reprogram the Engine Control Module (ECM) with the latest calibration available. Do not replace any parts for this condition.

It will also be necessary to perform the Crankshaft Position Variation Learn procedure covered in the appropriate Service Information once the ECM has been updated. The crankshaft position sensor variation is used to calculate reference period errors caused by slight tolerance variations in the crankshaft and crankshaft positon sensor, which allows the ECM to accurately compensate for reference period variations and detect misfire events over a wider range of engine speed and load. If the Crankshaft Position Variation Learn procedure is not completed, the ECM calibration will not provide the desired results.



VIN plate of the vehicle.

TIP: Always verify that the VIN displayed in the left-side drop-down menu in Techline Connect and the top-center window match the VIN plate of the vehicle to be programmed prior to using Service Programming System 2 (SPS2) for programming or reprogramming a module.

Refer to Bulletin #21-NA-207 for additional information.

▶ Thanks to Bryan Salisbury

Resetting a Mobile Device for Connectivity Issues

Concerns about mobile device connections – Apple and Android –on a vehicle equipped with an Infotainment 3 system (RPO IOR, IOS, IOT, IOU, IOV) can be difficult to reproduce and diagnose due to a number of varying factors with the device, ranging from recently released updates to the operating system to the use of different versions of popular apps.

Connectivity issues may be difficult to reproduce and diagnose.

However, in some instances, device connectivity issues may be resolved by rebooting the device. Performing the reboot procedure may help avoid spending additional time diagnosing a device that doesn't always connect with the vehicle.

Mobile devices require being rebooted– powered off and then on again, especially after software updates – on a regular basis. When a device is not rebooted often, it could lead to device connectivity issues with the infotainment system, such as concerns with access to phone contacts, phone connections, wireless and wired projection for Apple CarPlay or Android Auto, and other issues.

TIP: Android phones can be set to "Auto Restart" at a set schedule by going to the phone's Settings menu. Look for the Reset option. Many customers may not know about this feature on their phone. Apple phones do not offer an "Auto Restart" feature.

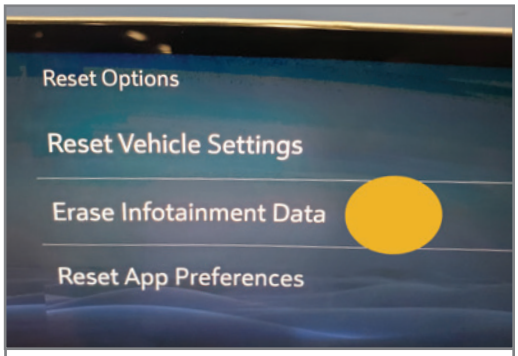
It's recommended that a phone should be rebooted after every operating system (OS) update. Depending on the phone, the reboot may or may not occur automatically.

RESETTING THE DEVICE AND THE INFOTAINMENT SYSTEM

If the customer concern cannot be reproduced, attempt to reset the device as well as the infotainment system:

1. Unpair or delete the device by removing the device from all infotainment system connections (Bluetooth, Wi-Fi and projection). Also remove or "forget" the vehicle from all settings on the device.
2. Restart the device.
3. Cycle off the vehicle ignition long enough for the radio sleep cycle to occur.
4. Reset the radio by selecting Erase Infotainment Data under the Settings > System tab. The Erase Infotainment Data option is under the Reset Options menu.
5. Pair and connect the device to the vehicle again.

The infotainment system should not be reset on a regular basis if device connection issues occur. The system should only be reset once for a condition. If the same or similar conditions appear in the vehicle, additional diagnosis should be performed unless there is a proven device issue.



Erase Infotainment Data option

FACTORY RESET A DEVICE

In some extremely rare cases, it may be necessary to ask customers to perform a "factory reset" to their device.

For example, if a condition only occurs with one specific device, where similar devices don't exhibit the condition, it may be that the condition follows the affected device to identical vehicles, which will require resetting the customer's device. A factory reset should only be done after the customer has performed all necessary backups of all of data on the device.

Once a factory reset is performed, data should not be immediately restored because an app or contact on the backup data may be the source of the customer's concern. Restore data by systematically/logically reinstalling contacts, apps, and other data (photos and media, etc.) to see if the concern returns. This process will help identify the app or data that is causing the issue.

▶ Thanks to Jeremy Richardson

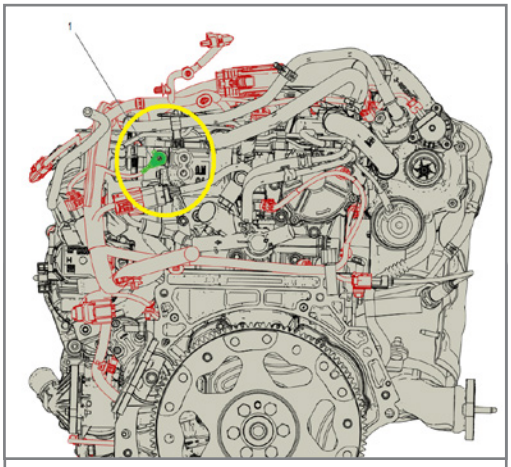
Pop Sound on Heavy Acceleration with Multiple DTCs Set

A pop sound may be heard under heavy acceleration on some 2021-2022 Encore GX and Trailblazer models equipped with the 1.2L engine (RPO LIH).

In addition, one or more of the following DTCs may be set:

- ABS U0100 (Lost Communication with Engine Control Module)
- ABS U0140 (Lost Communication with Body Control Module)
- ABS U026A (Lost Communication with Frontview Camera Module)
- ABS C2A07 (Engine Control Module Indicated Torque Interface Failed)
- BCM U0100 (Lost Communication with Engine Control Module)
- ABS U0151 (Lost Communication with Restraints Control Module)
- ABS C0501 (Steering Assist Control Actuator Return Circuit)
- ABS P0606 (Control Module Processor Performance)
- ECM U1346 (Engine Control Module LIN Bus 2)
- ECM U060F (Lost Communication with Mass Air Flow (MAF) Sensor Bank 1)
- ECM P0102 (Mass Air Flow (MAF) Sensor Circuit Low)
- ECM P0352 (Ignition Coil 2 Control Circuit)
- ECM P0300 (Engine Misfire Detected)
- ECM P0351 (Ignition Coil 1 Control Circuit)
- ECM P228C (Fuel Pressure Regulator 1 Exceeded Control Limits - Pressure Too Low)
- ECM P25A2 (Brake System Control Module Requested MIL Illumination)
- EPS U0415 (Invalid Data Received From Antilock Brake System Control Module)

These conditions may be caused by a loose ground located at G106 on the engine. Tighten the G106 ground nut to specification. No parts are required for this repair.



Tighten the G106 ground nut to specification.

For more information, refer to Bulletin #21-NA-215.

▶ Thanks to Frank Jakubiec

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