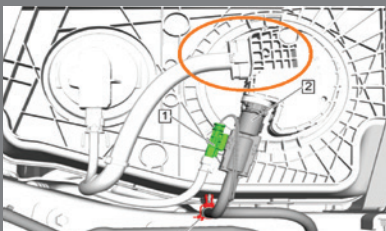




Techline App Enhancements

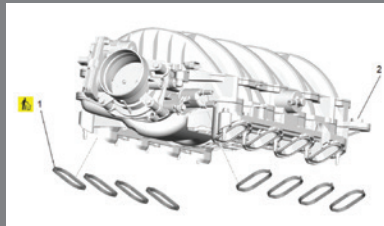
Coming Soon

5



Faulty Emission Reduction Fluid Tank Heater

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Updated Service Information with Easier-to-Use Format Expands

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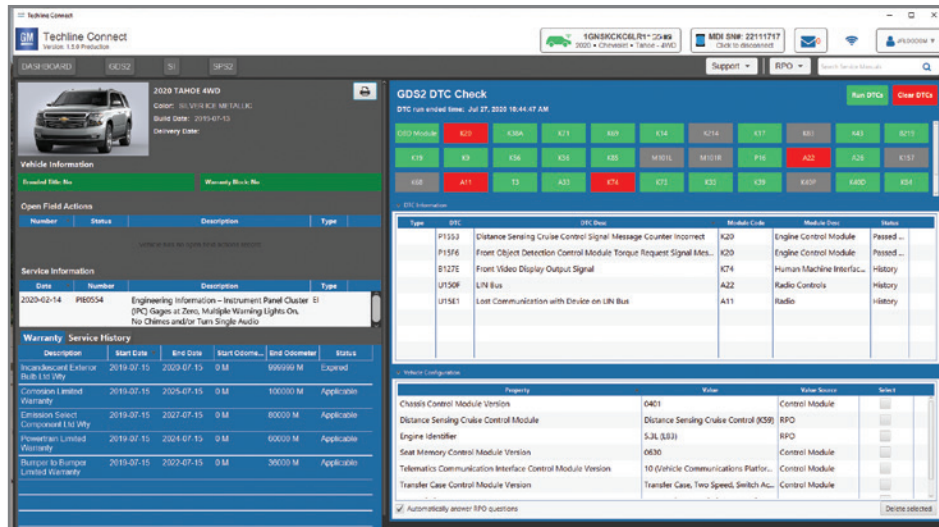
Escalade OLED Infotainment

System Demo Mode 9

Exhaust Odor in Cabin or Engine

Compartment 10

App Enhancements Coming Soon



With the retirement of TIS2Web approaching, the Techline Connect team has received significant feedback from dealership technicians. As always, technicians' comments are taken into account when developing and supporting all Techline applications. In fact, the feedback is a crucial part of developing the improvement priorities of the apps.

With all Techline apps receiving continuous improvements as part of their regular updates, here are the latest details on some of the planned application updates that have recently been implemented or will be released soon.

TECHLINE CONNECT CORE APPLICATION

Automatic Logout Time – The auto logout timer was recently extended to 4 hours.

Implemented: December 2020

Intermittent Lockups – Lockups that may occur when the Techline Connect app is minimized will be addressed shortly

Expected update: March 2021

RPO Data Availability – Improvements to address RPO data availability will be implemented in several phases.

Expected first phase update: May 2021

Navigation Bars – The navigation bars at the top of the Techline Connect dashboard will be downsized to enable improved visibility of key information when using the various apps.

Expected update: June 2021

Field Actions – An enhancement is being developed that will change the Dashboard Open Field Actions display from a static list to active links. With one click, users will be able to directly open the relevant Field Action document.

Expected update: October 2021

SERVICE INFORMATION

Improved Graphics and New Functionality – A number of new enhancements are planned that will make SI easier to view and use. These improvements include changes that will allow graphics to load and display more quickly. In addition, a multiple window function will make it possible to easily display several windows within SI, enabling users to view different documents at the same time. A zoom feature also will be introduced to address concerns about font size and readability along with an integrated print function that will provide a direct path to printing SI documents.

Expected update: May 2021

GDS2

Screen Layout – To enhance the layout and functionality of key screens, User Interface improvements will be introduced in several phases. In the first phase, Techline Connect will introduce Full Screen mode, allowing content of individual applications to be displayed without the Techline Connect menu and headers. Full Screen mode addresses a current concern in which GDS2 displays are compromised for technicians using laptops with smaller screens.

Expected first phase update: May 2021

SPS2

Errors – The SPS2 Application Fails to Load error (E9003), along with the Programming Blocked error (E9056) on some Chevrolet Trax models, were both recently addressed.

Implemented: January 2021

New Functionality – A new feature that enables users to proceed with the same VIN as well as the elimination of needing to reenter VIN and job card information will be available soon. Along with these new features, print functionality improvements will ensure the Warranty Claim Code and related information is clear and fully visible.

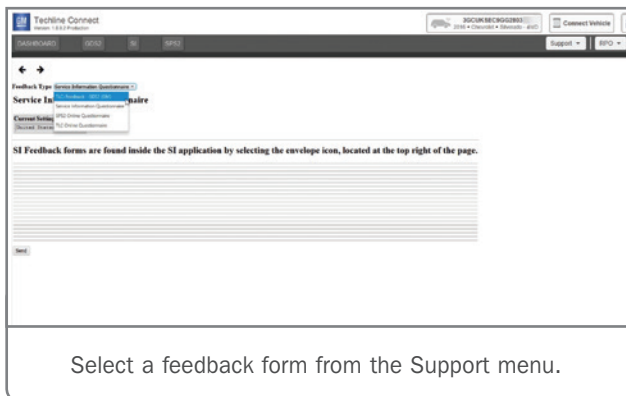
Expected update: March 2021

TECHLINE CONNECT RESOURCES

For newer users of Techline Connect, there are several videos available that provide an overview of the app as well as more detailed information on specific features. The videos include:

- Installing and Launching Techline Connect
- Getting Started with Techline Connect
- Techline Connect Dashboard Features
- Retrieving Warranty Claim Code History
- Battery Condition Dashboard Feature

SUBMITTING FEEDBACK



To submit online feedback on all Techline apps, log in to Techline Connect and select Support from the dropdown menu on the Dashboard. A number of feedback forms are available to comment on specific areas of concern.

For assistance with Techline Connect, contact the Techline Customer Support Center (TCSC) at 1-800-828-6860 (English) or 1-800-503-3222 (French), or send an email to TCSC by clicking the mail icon at the top of the Techline Connect dashboard.

► Thanks to the Techline Connect team

Auxiliary TRANSMISSION Oil Cooler Eliminated

2021 Express and Savana models equipped with the 4.3L V6 engine (RPO LV1) or 6.6L V8 engine (RPO L8T) may have a build list that includes a V14 auxiliary transmission oil cooler, but the auxiliary cooler is not installed on the vehicle as it was on previous model years.

For the 2021 model year, engineering has validated that an external transmission oil cooler is not needed and new models will no longer have the auxiliary cooler installed. A loop of coolant tubing will be visible behind the grille. Vehicles without the auxiliary cooler are built correctly and no repairs are necessary.



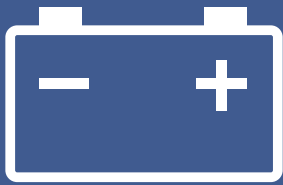
Elimination of the auxiliary cooler does not affect transmission performance. All durability testing on the transmission was passed without the additional cooler.



2021 models without the auxiliary cooler should not have an external transmission oil cooler installed at the dealership or have a warranty claim submitted for the missing auxiliary cooler.

Refer to Bulletin #21-NA-021 for additional information.

► Thanks to Matt Singer

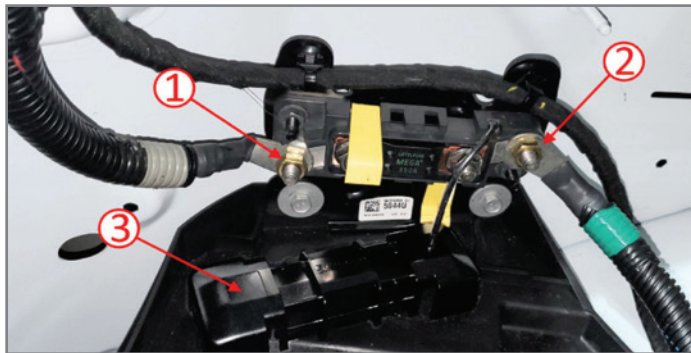


Low Battery Charge After Vehicle Sits for a Short Time

Some 2021 Express and Savana vans equipped with the 6.6L V8 engine (RPO L8T) may have a low battery charge after sitting for a short period of time. The low battery charge may be due to the a voltage draw caused by the anti-rotation tabs on the positive-side cables, located at the mega fuse, contacting the mega fuse mounting stud nuts.

If the vehicle has a low battery charge, check for battery cable contact with the mega fuse mounting stud nuts. If there is contact, trim the anti-rotation tabs on the positive battery cables.

To trim the anti-rotation tabs, first remove the battery, mega fuse cover and the fasteners that secure the pre- and post-positive

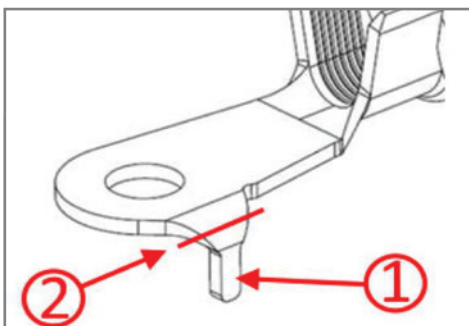


1. Pre-positive cable
2. Post-positive cable
3. Mega fuse cover

cables to the mega fuse.

Approximately 2 mm of the anti-rotation tab should be trimmed from the bottom of the tab.

Be sure to only cut enough of the tab so that it does not contact



From the bottom of the anti rotation tab (#1), measure up approximately 2 mm (#2).

the stud or the fastener. Do not cut the anti-rotation tab flush. Cutting the tab flush may cause the cables to rotate and contact the fasteners or the mega fuse mounting studs.



Only cut enough of the tab so that it does not contact the stud or the fastener.

After trimming the tabs, reinstall the cables onto the mega fuse



Trimmed anti-rotation tabs on installed cables.

post and tighten to specification. When tightening the fasteners, hold the cables so they do not contact the studs.

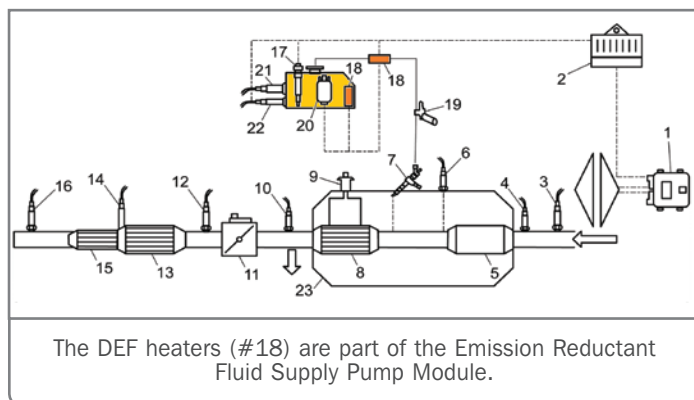
For additional information, refer to Bulletin #20-NA-225.

► Thanks to Matt Singer

FAULTY EMISSION REDUCTION FLUID TANK HEATER

The Emission Reduction Fluid Tank heater may be faulty on some 2020 Silverado 1500, Silverado 2500HD/3500HD, Sierra 1500, Sierra 2500HD/3500HD; 2021 Tahoe, Suburban, Yukon and Escalade models equipped with the 6.6L Duramax diesel engine (RPO L5P) or 3.0L Duramax diesel engine (RPO LM2). If the Emission Reduction Fluid Tank heater is not operating properly, there may be a Service Emission System/Service Exhaust Fluid System message on the Driver Information Center along with an illuminated Check Engine MIL. DTCs P20BB (Reductant Heater 1 Control Circuit Low Voltage) and P20C3 (Reductant Heater 3 Control Circuit Low Voltage Test Status) also may be set in the Engine Control Module (ECM).

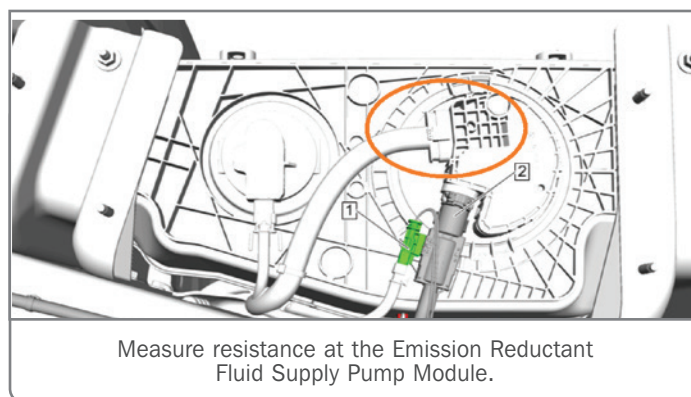
The faulty Emission Reduction Fluid Tank heater may be caused by the tank heating elements being exposed to Diesel Exhaust Fluid (DEF) and shorting to the pump ground. Within the Emission Reduction Fluid Tank is the Emission Reductant Fluid Supply Pump Module, which contains an electrically operating reductant pump; reductant level, quality, and temperature sensors; and reductant system heaters. The reductant control module is mounted outside the tank.



To determine if there is a short to ground, measure resistance at the Emission Reductant Fluid Supply Pump Module, which would indicate that the heater has been exposed to DEF.

TIP: Be sure that the DEF tank is at least half full of DEF before performing the resistance measurement.

With the Emission Reduction Fluid Tank wiring harness disconnected, measure resistance from pin 9 to pin 14 using a Digital Multimeter. Next, measure resistance from pin 10 to pin 14.



If either resistance reading is less than 10M ohm, the heater is faulty and the Emission Reduction Fluid Tank should be replaced. If both resistance readings are greater than 10M ohm, continue with diagnostics according to the appropriate Service Information.

COLD WEATHER OPERATION

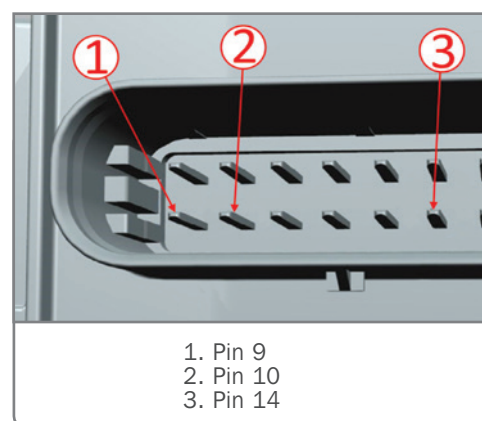
The two reductant (DEF) heaters are designed to thaw DEF that has become frozen in temperatures below 32°F (0°C) in the Emission Reduction Fluid Tank and supply line to the DEF injector.

The reductant control module monitors the reductant temperature sensor located within the Emission Reduction Fluid Tank in order to determine if reductant temperature is below its freeze point. If

the control module determines that the reductant may be frozen, it energizes the reductant heaters. Reductant pump operation is disabled for a calibrated amount of time to allow the heaters time to thaw the frozen DEF.

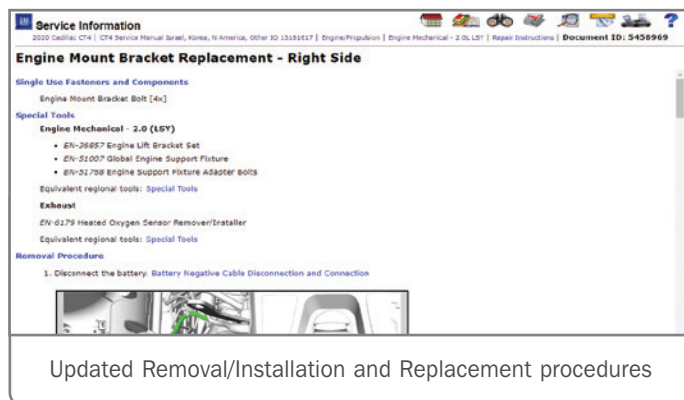
For more information, refer to Bulletin #21-NA-002.

► Thanks to Larry Yaw



Updated Service Information with *EASIER-TO-USE* Format Expands to More Models for 2021

Technicians using the GM Service Information (SI) will soon find updated Removal/Installation and Replacement procedures with more detailed steps and fewer procedure links to other SI documents. The updated procedures have been optimized to only include the specific steps necessary to complete the repair. Many procedures may appear to be longer, but the added steps already existed in previously linked procedures.



Updated Removal/Installation and Replacement procedures

The procedure links that remain in the Removal/Installation and Replacement procedures will be limited to content that contains steps that will always be performed, regardless of where they are used. Examples of these types of links include SIR Disable/Enable, Lifting and Jacking, Fuel Pressure Relief, and others.

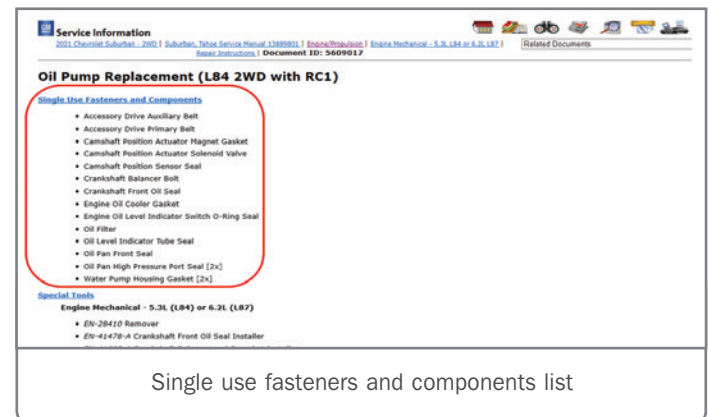
The new authoring style was implemented for the 2020 Cadillac CT4 and the 2021 Tahoe/Suburban, Yukon/XL, and Escalade/ESV. The current model Silverado 1500 and Sierra 1500 will be updated by April 2021. In the future, new or major vehicle program updates will be created using the new format. Most existing vehicle programs will not be changed to the new style until the next major redesign of that particular model.

In addition to the updated service procedures, users will notice a few other changes that have been made to the Service Information. These changes in authoring style and content only affect Removal/Installation and Replacement procedures in SI. Other areas, such as Diagnostics and Schematics are not affected by these changes.

SINGLE USE FASTENERS AND COMPONENTS

All procedures will begin with a list of all single use fasteners and components and the quantity required to complete the repair. The

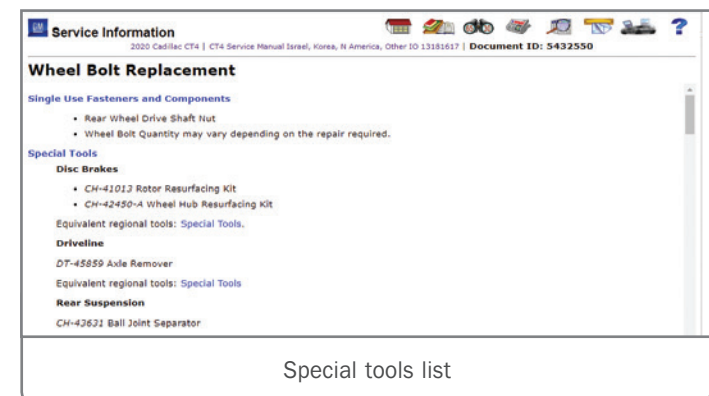
goal is to provide an initial list of replacement components that the technician will need to complete the repair and avoid repair delays.



Single use fasteners and components list

ENHANCED SPECIAL TOOL LISTS

Special tool lists have always appeared in service procedures. Due to the change in authoring style, there will be an increase in the number of special tools used within certain service procedures. Because of the increase, the special tool list at the beginning of the procedure will be organized to show the subsection title and include the "Special Tools" link for the subsection where the tool originates.



Special tools list

FASTENER SPECIFICATIONS

In the new authoring style, torque specifications have been removed from the service procedures. In place of the specifications, a link will appear to "Fastener Specification." Previously, torque specifications appeared in the procedure and in the Fastener

Specification table. Now, the specifications will only appear in the Fastener Specification table. The service procedures will include a link to the appropriate “Fastener Specifications” for the component being installed and tightened.

FASTENER SPECIFICATION TABLES

10. Prepare the 3 rear wheel hub bolts (1) for installation as follows:
10.1. Remove all traces of the adhesive patch from the bolts and the mating threads using the appropriate tools.
10.2. Clean the threads of the bolts and mating threads with denatured alcohol or equivalent and allow to dry.
10.3. Apply thread locking adhesive to the bolts. **Adhesives, Fluids, Lubricants, and Sealers**
10.4. **Ensure there are no gaps in the thread locking adhesive once applied to the bolt.**
Caution: Refer to Fastener Caution.
11. **Rear Wheel Hub Bolt (1) - Install and tighten [3x] - Fastener Specifications**
Note: **Always** ensure the brake rotor has been separated from the hub/axle flange; any rust or contaminants should be cleaned from the hub/axle flange and the brake rotor mating surfaces. Failure to do this may result in excessive assembled lateral runout (LRO) of the brake rotor, which could lead to brake pulsation.
12. Using the CH-42450-A Wheel Hub Resurfacing Kit, thoroughly clean any rust or corrosion from the mating surface of the hub/axle flange.
13. Using the CH-41013 Rotor Resurfacing Kit, thoroughly clean any rust or corrosion from the mating surface and mounting surface of the brake rotor.

Fastener specs link

As part of the new authoring style, fastener specification tables are being changed to a visual format. With the addition of graphics, the tables will more clearly identify the location of the fasteners being tightened. Tightening sequence graphics have also been added. In most cases, the graphics will only include callouts for fasteners and components mentioned in the tables.

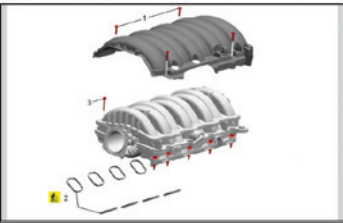
Columns have been added to the table to indicate single use or the need for thread locking adhesive. The last column in the table will contain a link to the procedure where the component or fastener was first removed.

SINGLE USE FASTENER AND COMPONENT IDENTIFICATION

In current service procedures, single use fasteners and components are identified in the respective steps with the use of “Remove and DISCARD” and “Install NEW” in the text. They were also shown in specific tables within Fastener Specifications. In the new authoring style, the use of “Remove and DISCARD” and “Install NEW” text will continue, but two additional enhancements are being implemented.

Service Information
2021 Chevrolet Suburban - 2021 Suburban Tahoe Service Manual 13899803 | Engine/Transmission | Engine/Mechanical | 5.3L I36 or 5.2L I37 | Specifications | Document ID: 5576507

Fastener Specifications



Intake Manifold and Components


Component Name / Component	Single Use Fastener / Component	Thread Locking Adhesive	Specification

Fastener specs table

As mentioned earlier, a list of “Single Use Fasteners and Components” will appear at the beginning of every procedure that includes components that require replacement. In addition,

Service Information
2021 Chevrolet Suburban - 2021 Suburban Tahoe Service Manual 13899803 | Engine/Transmission | Engine/Mechanical | 5.3L I36 or 5.2L I37 | Specifications | Document ID: 5576507

Fastener Specifications

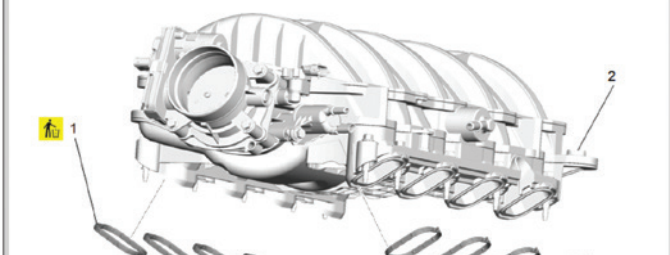


Intake Manifold Bolt Sequence

Link to procedure where component or fastener was first removed

graphics that show the single use fastener or component will include a “trash can” icon (highlighted in yellow) next to the callout. The trash can will appear in the procedure and fastener table graphics.

Service Information
2021 Chevrolet Suburban - 2021 Suburban Tahoe Service Manual 13899803 | Engine/Transmission | Engine/Mechanical | 5.3L I36 or 5.2L I37 | Specifications | Document ID: 5576507



Trash can icon identifies single use fasteners or components.

CHECK SI FOR EVERY REPAIR

As part of GM’s initiative to develop innovative approaches to repairs, the service procedures provided in SI are continuously reviewed to ensure each step provides a safe, effective and efficient repair, including reducing unnecessary disruption to unaffected components, minimizing parts removal, and the mandatory replacement of bolts, fasteners, gaskets, etc. Any changes are included in regular SI updates in order to provide technicians with the latest, most accurate information available to diagnose and repair GM vehicles.

Since SI is updated often, both in the new authoring style and the older format, it’s important to always review the service procedures before beginning a repair in order to confirm the latest procedures are being followed, even if it’s a well-known or common repair.

► Thanks to Kevin Jakobiak, Greg Havens and Rodrigo Andrade

Misfire Due to Collapsed Lifter

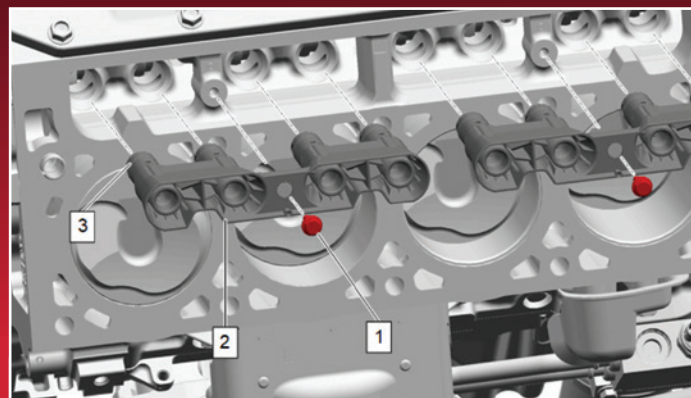
Some 2019-2021 Silverado, Sierra; 2021 Tahoe, Suburban, Yukon and Escalade models equipped with the 5.3L V8 engine (RPO L84) or 6.2L V8 engine (RPO L87) may have a misfire condition with a bent pushrod that leads to a collapsed lifter or the lifter comes apart. Misfire DTCs P0300 – P0308 may be set.

If Service Information diagnostics lead to a collapsed lifter and/or a lifter that has come apart, it is recommended to replace the valve lifter guide and the four lifters. It is not necessary to replace the oil control solenoid valve.

Note the installed position of the valve lifter guide. The notched area of the lifter guide aligns with the locating tab on the engine block. Install the new valve lifter guide and the lifters as an assembly.



Valve lifter guide and four lifters



The notched area of the lifter guide aligns with the locating tab on the engine block.

The part will be requested back by GM engineering. Be sure to mark the guide to show the location of the cylinder for inspection. Do not cover the date code.

For more information, refer to #PIP5776.

► Thanks to Richard Renshaw

New STC Course Catalog for 2021



The new 2021 GM Service Technical College (STC) Course Catalog (U.S.) is now available on the Service Technician Training, Recruiting, Retention, and Recognition App on GlobalConnect and on GMSTC.com. The 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 curriculum as well as details about GM-approved training suppliers and other helpful learning resources.

The 2021 catalog also features 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.

Available training courses offer a number of delivery methods, such as Web-Based Training (WBT), Virtual Classroom Training (VCT), Virtual & Performance Instructor-Led Training (V-ILT & P-ILT), Hands-On Training, GM TechTubes, Video On Demand (VOD), Performance

Support Objects (PSO), Diagnostic Exercises (DE), and interactive Video (iVideo).

The 2021 Dealer Divisional STS and MTC Requirements include the following training categories:

1. Emerging Issues
2. Fundamentals
3. Engine Repair
4. Automatic Transmission/Transaxle
5. Steering and Suspension
6. Electrical/Electronics
7. Heating, Ventilation and Air Conditioning
8. Brakes
9. Engine Performance

CONTINUED ON PAGE 9

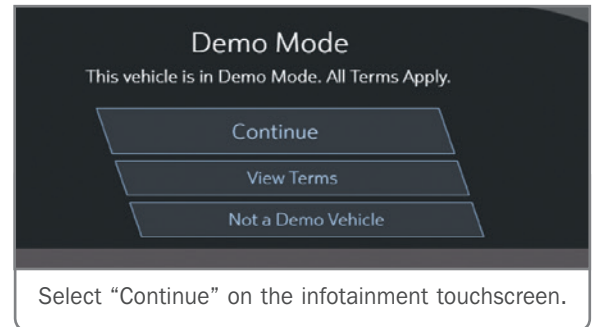
Escalade OLED Infotainment System Demo Mode

The 2021 Cadillac Escalade features the automotive industry's first OLED (Organic Light Emitting Diode) Infotainment System. With 38 inches (965 mm) of total diagonal display area, it has twice the pixel density of a 4K television and its curved design positions the three displays for optimal visibility.

When the vehicle leaves the assembly plant, the dealership Demo Mode for the Infotainment System is active. The Demo Mode enables the technology of the infotainment system to be showcased while protecting the privacy of potential customers interacting with the system by erasing data at every ignition cycle. Erased data includes the list of paired phones, data obtained from paired phones, and navigation destinations – all common items entered and displayed during a test drive.



Infotainment System



SELECTING CONTINUE ON THE TOUCHSCREEN

While Demo Mode is active, a screen will appear at every ignition cycle asking that the Continue button be selected in order to remain in Demo Mode. Select "Continue" on the infotainment touchscreen.

Do not use the shortcut buttons next to the rotary controller on the center console to exit the Demo Mode screen. Using the shortcut buttons will cause errors in the Demo Mode experience, including issues with the Cluster Display content, steering wheel controls and voice recognition. No repairs are necessary if these conditions are present.

RESTORING THE DEMO MODE EXPERIENCE

If a vehicle is in a faulty Demo Mode state, it can be restored to the full Demo Mode experience by following these steps:

1. Turn off the vehicle ignition.
2. Open and close the driver's door.
3. Wait 3-5 minutes for vehicle systems to go to sleep.
4. On the next ignition cycle, the Demo Mode screen will reappear. Select "Continue" on the touchscreen to maintain the full Demo Mode experience.

► Thanks to Hassan Abdallah

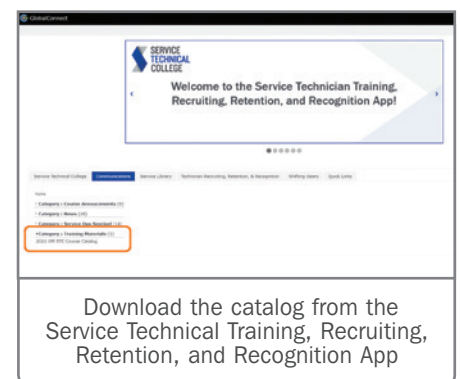
10. Diesel Engine Performance
11. Manual Drivetrain and Axle
12. Mechanical /Electrical Body Repair
13. Hybrid/Electric Vehicles (Advanced Technology Vehicles)
14. Body Structural Repair (I-CAR)
15. Paint and Refinish
16. Medium Duty

VIEW THE CATALOG

To view and save the 2021 catalog:

- Launch the Service Technical Training, Recruiting, Retention, and Recognition App from GlobalConnect
- Select the Communications tab and then the Training Materials category
- Select the 2021 GM STC Course Catalog to download a copy.

For information regarding enrollment, specific charges and/or program information, contact the Center of Learning Help Desk using the Live Chat feature on the Help page on www.centerlearning.com.



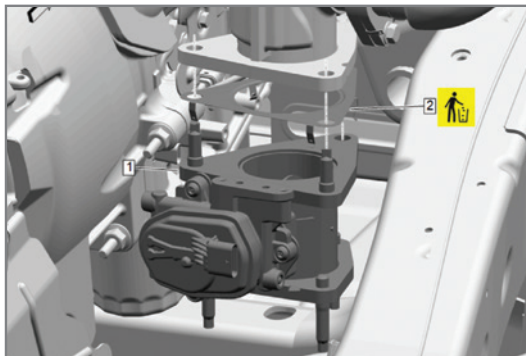
► Thanks to Eric Kenar

Exhaust Odor in Cabin or Engine Compartment

An exhaust odor in the cabin or in the engine compartment may be noticed on some 2020-2021 Silverado and Sierra models and 2021 Tahoe, Suburban, Yukon, and Escalade models, equipped with the 3.0L diesel engine (RPO LM2). The exhaust odor may be caused by an improper weld on the exhaust backpressure valve.

If an exhaust odor is present, test for a leaking exhaust backpressure valve weld joint using the GE-52250 Power Smoke Diagnostic Leak Detector or soapy water. Refer to the latest version of #PIP5684 for more information on using the GE-52250 detector.

The exhaust backpressure valve is located between the downpipe from the Selective Catalyst Reduction (SCR) with filter and the under-floor SCR.



Exhaust backpressure valve

Smoke from the GE-52250 detector may not get through the Diesel Particulate Filter (DPF), so test downstream in the exhaust system by administering the smoke at the fitting on the tailpipe bladder seal. The tailpipe bladder seal does not reach the exhaust cooler, so it will be necessary to wrap duct tape around the tailpipe to seal the cooler holes. Be sure to remove the duct tape from the exhaust cooler after completing testing.

Repair any leaks identified after testing the exhaust system components. An ineffective weld at the flange joint may be a source of a leak. If the weld joint is leaking, replace the exhaust backpressure valve.



Ineffective weld at the flange joint

► Thanks to Robert Bastien

TECH LINK

GM TechLink is published for all GM retail technicians and service consultants to provide timely information to help increase knowledge about GM products and improve the performance of the service department.

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