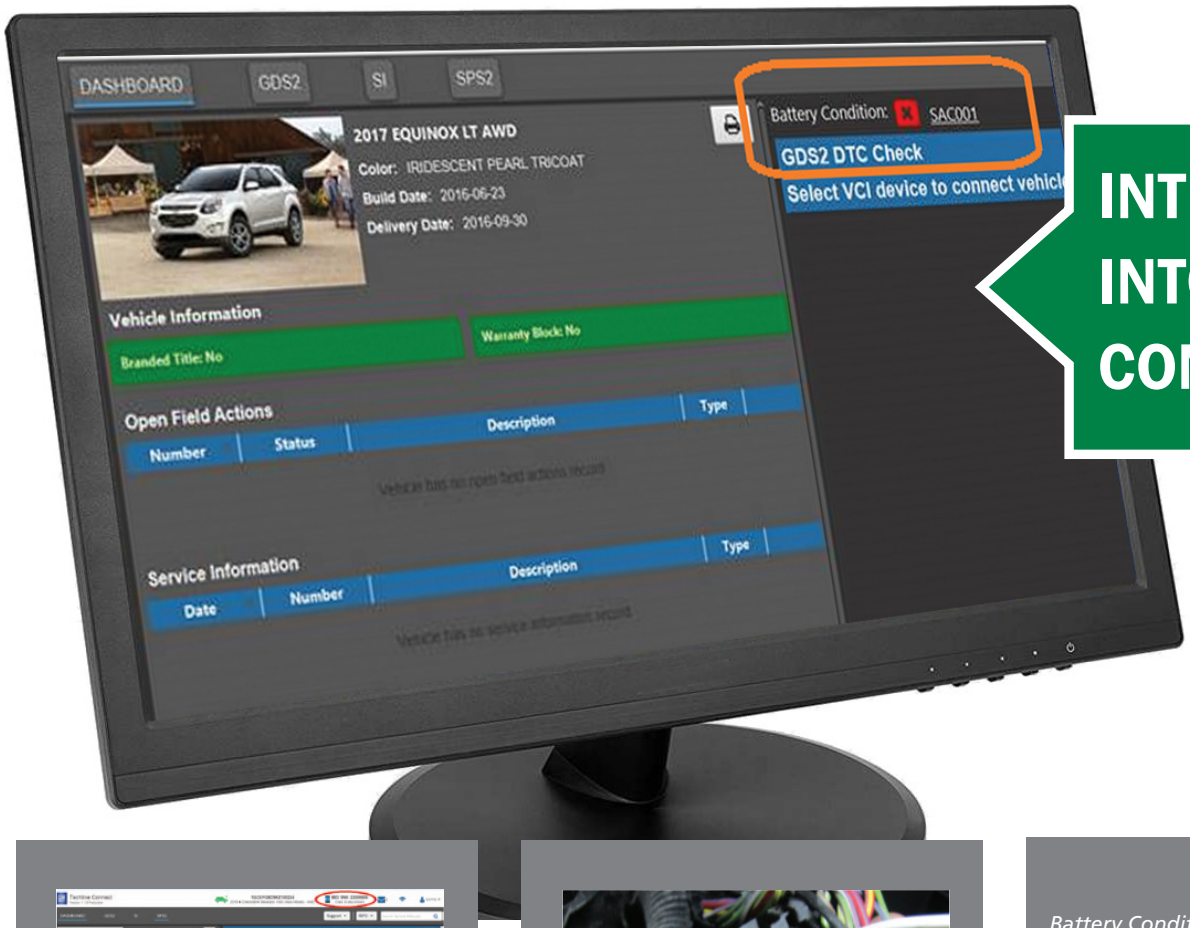
TECH LINK

Mid-October 2020, Volume 22, No. 20

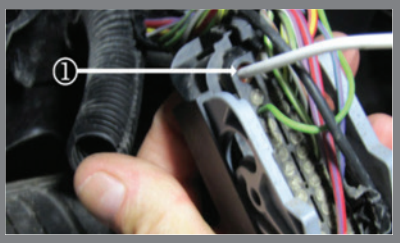
Battery Condition Prognostics



INTEGRATED INTO TECHLINE CONNECT

Techline Connect Tips

see page 4



Excessive Load on Trailer Running Lamps

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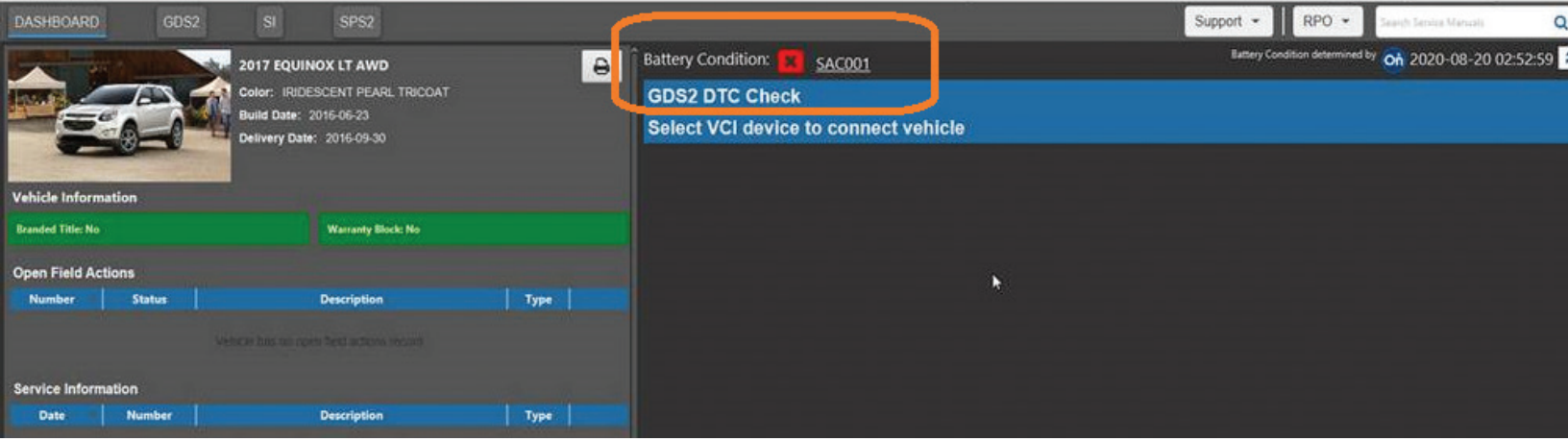

Battery Condition Prognostics Integrated into Techline Connect

Techline Connect, GM's next generation diagnostic application, has released a new tool to help determine the condition of a vehicle's battery. Battery Condition is determined using "Power of Green;" a feature of OnStar Advanced Diagnostics that uses battery voltage, current, and other prognostic-related data collected from the customer's vehicle to predict the battery's health. Power of Green data easily enables technicians to quickly make decisions regarding the battery's health, diagnose other battery-related conditions, or to rule out the battery all together. Battery Condition will be made available to Techline Connect users in the United States and Canada at the end of October 2020.

BATTERY STATUS

Battery Condition will display battery health information for the selected vehicle if supported by OnStar service. The battery status will be indicated by green, red, yellow, or grey icons at the top of the Techline Connect dashboard. The timestamp to the right indicates the last time OnStar made a determination of the battery's health.

A green check mark icon will be displayed if OnStar has collected enough relevant data and has not received any Proactive Alerts from the Starting and Charging (SAC) system of the vehicle. If the battery icon is green, it is unlikely that the battery needs replacement.

A red X icon is triggered by an SAC001 Proactive Alert. It indicates that OnStar has received data from the vehicle

The Battery Condition green check mark icon indicates it is unlikely that the battery needs replacement.

The Battery Condition red X icon indicates a battery replacement is needed.

The Battery Condition yellow ! warning icon indicates further diagnosis is needed.

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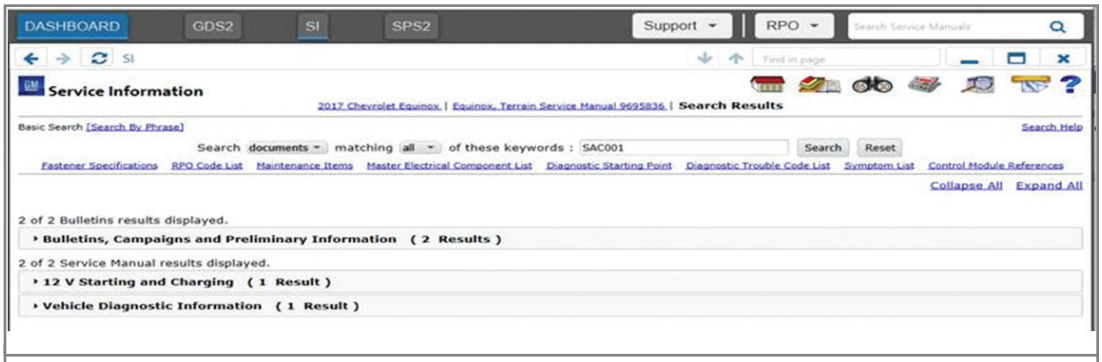
indicating a battery short cell and has determined the customer needs a battery replacemen



Service Information is linked to the SAC identifier.

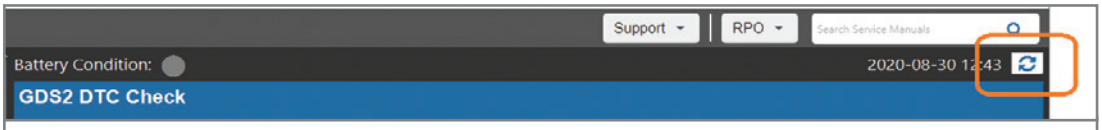
A yellow ! warning icon is triggered by any other SAC Proactive Alert. These identifiers indicate problems with the Starting and Charging system, but further diagnosis is required before the solution to the issue can be determined. The highest-priority SAC Proactive Alert received from the vehicle will be displayed.

The SAC identifier links to the Service Information procedure. Click the identifier to easily view the diagnostic information that can help correct the Proactive Alert.

At times, there may not be enough information available from the vehicle for OnStar to make a determination. If this occurs, a grey icon will appear.

The Battery Condition grey icon indicates not enough information is available to make a determination on the battery.

A grey icon does not mean the battery is at fault. The lack of data may be due to some of the battery data being too old to be of use or connection issues to the Power of Green database. If a grey icon is present, proceed with any diagnostics as needed. If a battery issue is suspected, perform the normal Battery Inspection/Tests as outlined in the Service Information.



Select the Refresh icon to try to obtain updated battery data.

It also may be possible to obtain updated battery condition data by selecting the "Refresh" icon at the top, right corner of the dashboard.

If a customer's battery is replaced during the service visit, it will take some time for OnStar to re-evaluate the battery's state of health, and the Battery Condition may not change during vehicle diagnosis.

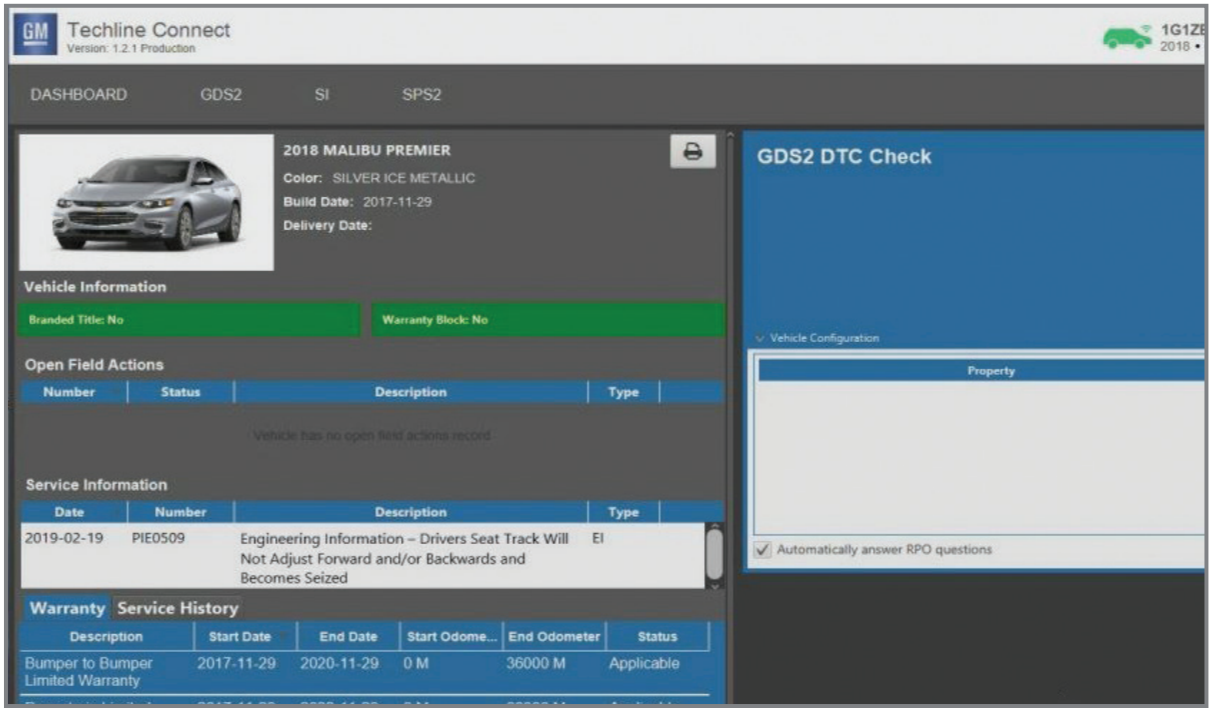
For more details about Proactive Alerts on eligible vehicles, review the TechLink article Proactive Alerts – Updated Service Procedures and Warranty Information.

For more information about the operation of Proactive Alerts and Battery Condition, refer to the Service Information under Diagnostic Overview, Starting Point, and Programming > Vehicle Diagnostic Information > Description and Operation > Proactive Alerts Description and Operation (Document ID: 4444874).

Submit any comments, concerns, or feedback on Battery Condition via the Techline Connect 'Support' dropdown menu. Select Feedback Type as 'TLC Online Questionnaire' to provide your feedback!

Thanks to Nate O'Rourke, Kevin Corr and Ernest Haller

Getting the Most Out of the All-in-One Application



Techline Connect brings together all the common resources technicians use every day for diagnosis and repairs in an all-in-one application. The all-new application has a single sign-on for access to nine applications — integrating Service Information, reprogramming, diagnostics, vehicle information and other features — to help technicians efficiently and accurately manage the information available to them in the service department.

TIP: As Techline Connect is the replacement for TIS2Web, GM recently announced a wind down phase that includes no additional updates for TIS2Web. The wind down of TIS2Web will be in a 60-day multi-phased window. More information about the wind down process will be released soon.

To help technicians get the most out of Techline Connect (TLC), here are a few tips about some of the key features of the application.

LOGGING IN TO TECHLINE CONNECT

Before getting started, ensure your GlobalConnect credentials are valid. To verify, simply log in to GlobalConnect. If you cannot log in, check with your dealership's Partner Security Coordinator (PSC).

Like TIS2Web, installation of Techline Connect requires the use of Administrative Rights. During installation, if the PC doesn't have the correct rights, the user will most likely be unable to perform completion of the installation.

Once installation has completed, it may be necessary to update your location and language. From the log-in screen, select the Preference tab at the top right of the page to change your selections.

The Quick Start Guide provides additional details, including screen shots to help ensure a successful installation the first time through.

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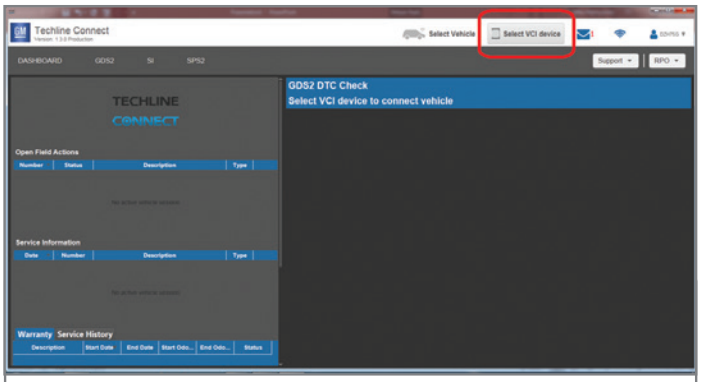
ACCESS THROUGH THE TECHLINE CONNECT ICON

Once Techline Connect has been installed on the PC, a Techline Connect icon will be placed on the desktop that will allow direct access to the application without having to log in to GlobalConnect.

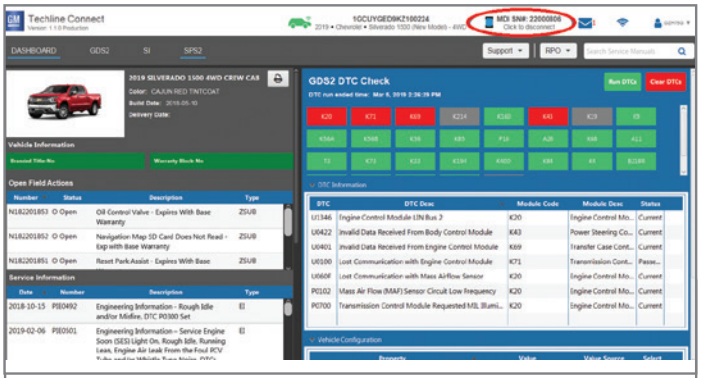
SELECT VCI DEVICE

To display any connected MDI tools (USB connection) or MDI tools that are wirelessly connected and active, click the Select VCI Device button at the top of the Techline Connect dashboard.



Select VCI Device

Selecting an MDI tool will establish the MDI connection and attempt to establish a vehicle connection, retrieving the VIN.

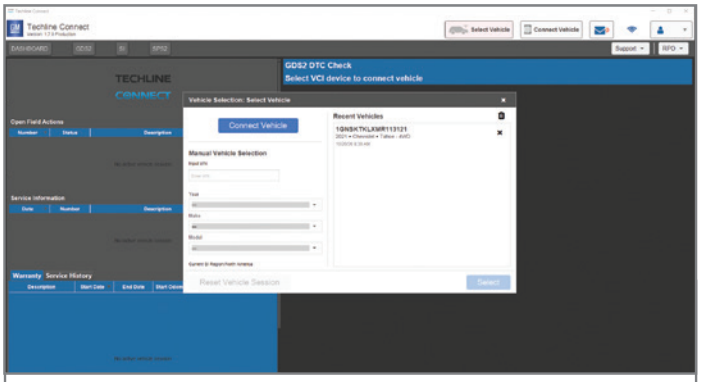


MDI connect to a vehicle

SELECT VEHICLE

Always start by clicking the Select Vehicle button at the top of the dashboard. From here, you can:

- Select Connect Vehicle to use the VCI device to read the VIN directly from the connected vehicle
- Or type in a VIN or copy and paste a VIN



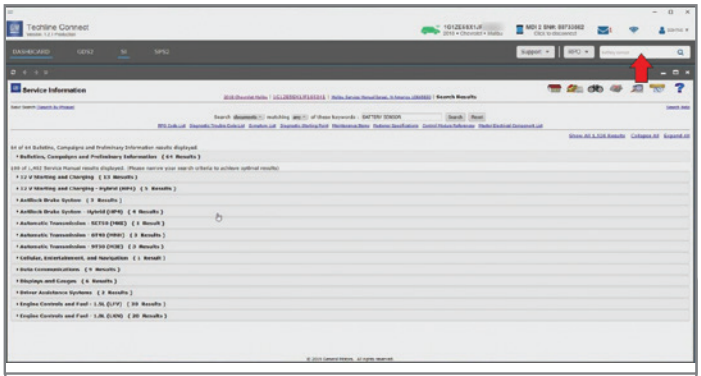
Start by clicking Select Vehicle

- Select a Year/Make/Model
- Select a previous search from history

SEARCHING THE SERVICE INFORMATION

After entering a VIN or selecting Year/Make/Model from the Select Vehicle function, select the Service Information (SI) application at the top of the dashboard to begin using the Service Information. The VIN and year/make/model will be populated automatically. Enter a keyword or phrase in the quick search field at the top of the dashboard and Techline Connect automatically performs an SI search for the connected vehicle.

If you'd like to perform another SI search not related to the connected vehicle while still maintaining the connection on the dashboard, select the Search Another Vehicle option under the SI menu.



Use the quick search field to perform an SI search.

To view the printing options in SI, right-click in any panel to access the print dialog box. The SI page will open in the default browser to print. If viewing an image in SI, use the Print button available in the image viewer. Plug-ins are no longer needed when viewing SI using Techline Connect.

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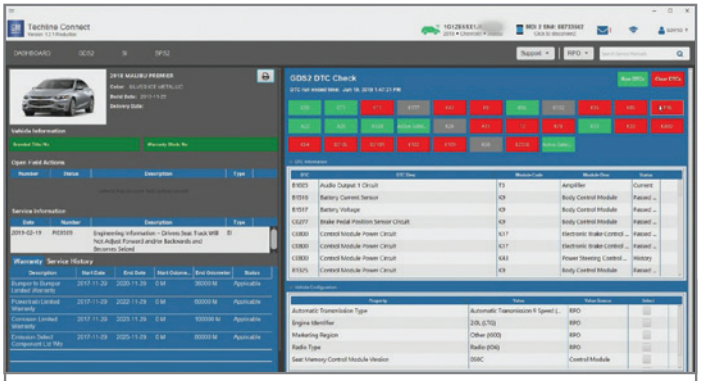
DTC CHECK

Use the GDS2 app to perform a vehicle-wide DTC scan from the Techline Connect dashboard. This feature is only available to use on vehicles with a global electrical architecture – Global A and Vehicle Intelligence Platform (VIP) vehicles. Vehicles that use all other protocols (GMLAN, Class II) require the Tech 2.

In order to use the GDS 2 DTC check, an active MDI/VCI and vehicle connection is required.

The DTC check will report communication with vehicle control modules and any DTCs detected.

- A green box indicates successful communication with the module but no DTCs.
- A red box indicates successful communication with the module and that DTCs were detected. Select each red box to view the related DTCs.
- A grey box indicates no communication with the module, which can mean that the module does not exist on the vehicle or that the module is not responding.



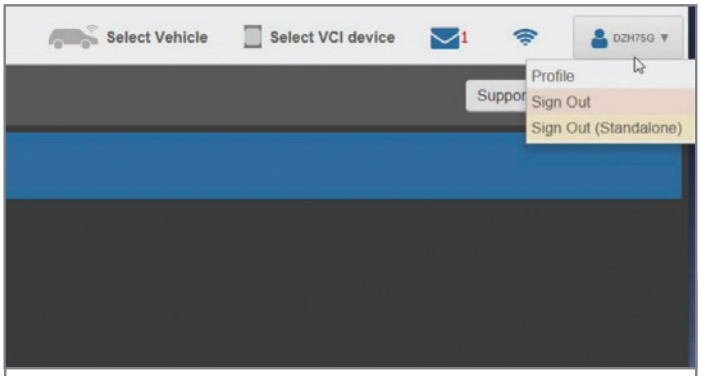
Use the GDS 2 app to perform a vehicle-wide DTC scan

CLEARING ALL DTCS

After programming using the SPS2 application, some vehicle architectures support a 'quick clear' of DTCs from the SPS2 warranty claim screen, which should quickly remove any programming-related DTCs. However, some DTCs may remain after programming. Go to the Techline Connect dashboard and use GDS2 to clear all DTCs vehicle-wide if the situation calls for a thorough clear.

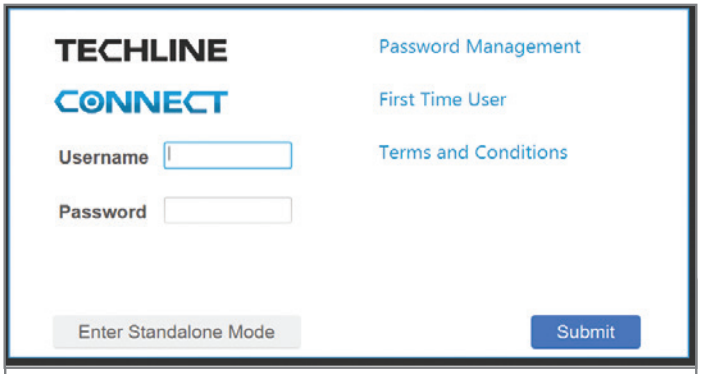
USING GDS2 DURING A TEST DRIVE (STANDALONE)

The Standalone sign out option under the Profile menu allows you to log out of Techline Connect (no connection to the Service Information and SPS) but still use GDS2 diagnostics during a test drive.



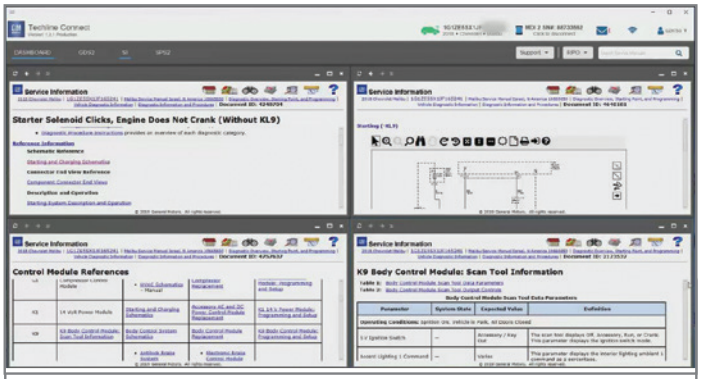
Select the Standalone option to use GDS 2 during test drives.

Standalone also can be accessed from the log-in page. Enter log-in information as normal and click the Enter Standalone Mode button.



Standalone Mode can be accessed from the log-in page.

PANEL MANAGEMENT



Multi panel view

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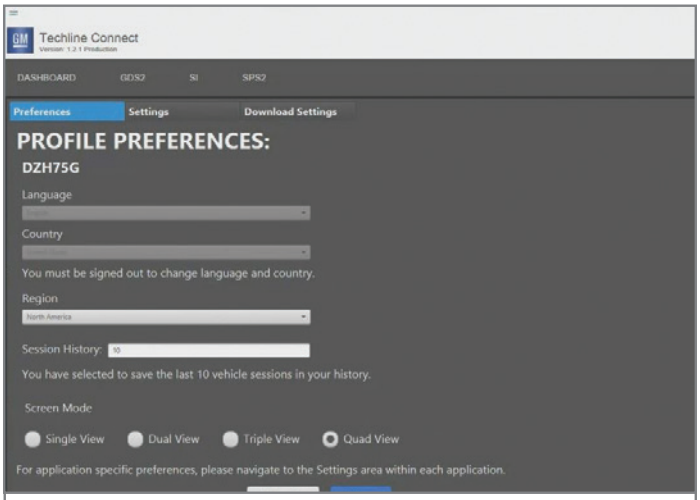
The multi panel view function allows up to four panels to be shown on the screen at one time, which can be helpful, for example, when using GDS2 while viewing diagnostic information and a schematic in SI. Right-click on a link and select Open in a New Page to open it in a new panel. Click and drag the top of the panel to move its location or grab the border to resize the window.

To enable the multi panel view function, go to the Profile section under the User I.D. menu at the top right of the dashboard and select the desired screen mode. If the maximum number of panels are currently in use when opening a new panel or application, Techline Connect will ask which panel to replace with the new panel or app. Also, any panel can be selected to be viewed full screen. Click the X at the top of each panel to close it.



Select the number of panels in the Profile Preferences.

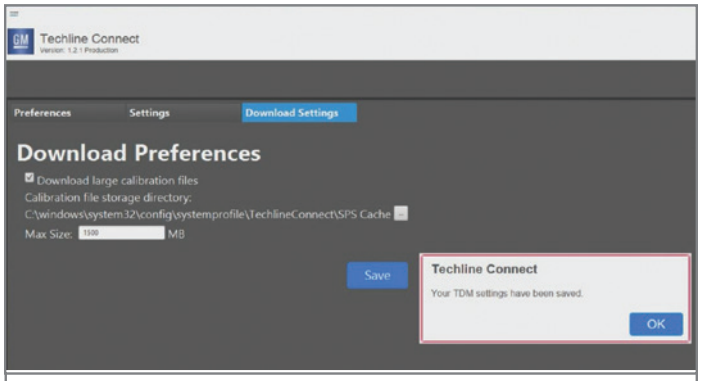
SCREEN RESOLUTION FOR LARGER MONITORS

Change the screen resolution based on the size of the monitor being used to make it easier to view and use the apps. The resolution can be changed on the PC under the display settings. Right click on the desktop to access the settings.

The scale of applications also can be made larger or smaller from the Windows display settings. Under Scale and Layout, text in all apps, including Techline Connect, can be made larger by increasing the scale.

APPLICATION UPDATES

The new Update Manager that is part of Techline Connect will perform all updates needed to keep the applications up to date when logging in to Techline Connect, including GDS 2 and MDI updates and large calibration files (if configured in the Profile Preferences). To ensure all updates are downloaded properly, make sure your dealership's IT department correctly configures all of the Techline PC's security settings.



Download Settings preferences

If the PC's security settings do not allow updates to occur or be seen by the user, Techline Connect will continue the log in process. As a result, the app may not be up to date at all times. If a core update for Techline Connect is not made, it will affect all of the component apps.

TIP: Many dealership networks have elevated administrative rights. If Techline Connect on your PC is not getting updates, try to Run as Admin.

To Run as Admin:

1. Right-click the Techline Connect icon, and then select Properties.
2. In the Shortcut tab, click the Advanced button.
3. Click the check box 'Run as Administrator.'
4. Click OK, and then Apply.

These settings will run Techline Connect as an administrator by default.

Updates for Techline Connect are typically released on weekends. If an app works on Friday, but does not on Monday, it may be due to the PC security settings not allowing the update.

Check the Messages box at the top of the Techline Connect dashboard to see if an update has been released and should have been downloaded. A message will be sent out when all updates are released. If the download did not occur, it may be necessary to contact your dealership's IT department or the Techline Customer Support Center.

QUESTIONS?

The mail icon at the top of the Techline Connect dashboard can be used to send an email to the Techline Customer Support Center (TCSC) with any questions about an application.

▶ Thanks to Lisa Scott and Nate O'Rourke

HVAC Afterblow Feature Enabled at the Factory

2021 Acadia

the factory on 2021 Acadia, Blazer, Bolt EV, XT5 and XT6 models. Previously, the Afterblow feature was disabled when the vehicle was delivered to the dealership, but could be enabled using a scan tool.

The Afterblow feature dries condensate water on the evaporator surface by operating the blower motor after the engine is turned off. Drying the evaporator surface aids in reducing odor from the air conditioning system.

AFTERBLOW OPERATION

The Afterblow feature will run the blower motor for a short period at low speed up to four times if the following criteria are met at system-specified levels.

- The vehicle must be off and locked
- Outside air temperature must exceed a given level
- The A/C compressor has run for a specified amount of time
- Battery voltage must be in the normal range

It is normal for the Afterblow feature to operate with the vehicle off and will not cause harm to the vehicle or its systems. No repair is necessary.

Disabling or enabling the Afterblow feature can be performed using GDS2 (after software update GWH#10) by selecting the HVAC Afterblow Configuration function.

HVAC ODOR

The most common causes of undesirable odors are:

- Debris in the heater and air conditioning evaporator and blower module.
- Microbial growth on the evaporator core.

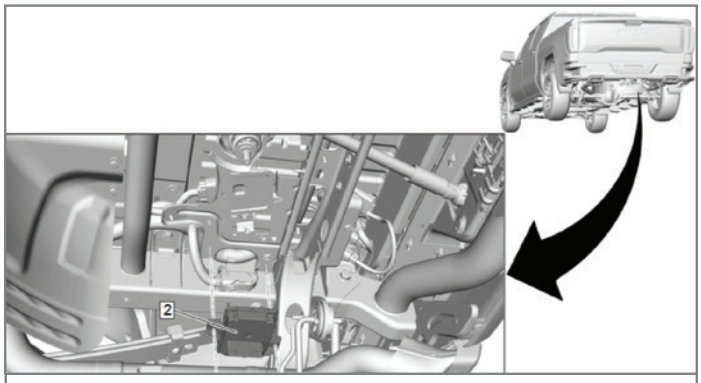
In addition to enabling the Afterblow feature, odors can be reduced by checking that the fresh air inlet is clear of debris, the heater and air conditioning evaporator and blower module drain is not blocked, and the passenger compartment air filter is in good condition.

Thanks to Tom Burlingame

Excessive Load on Trailer Running Lamps

The trailer running lamps may illuminate momentarily and then turn off or may flash when connected to 2019 Silverado 1500 and Sierra 1500 models. When operating a trailer running lamp circuit with more than 7-8 amps of current draw, the trailer lamps will illuminate for a second and then go out or, on trailers with LED lighting, the lamps will flash about once every 10 seconds.

These conditions may be caused by a trailer with incandescent running lamps that may have in-rush current that exceeds the Trailer Lamp Control Module limits for current flow. On trailers with LED lighting, the monitoring voltage may illuminate the LED lights even when the trailer theft deterrent feature is not enabled.

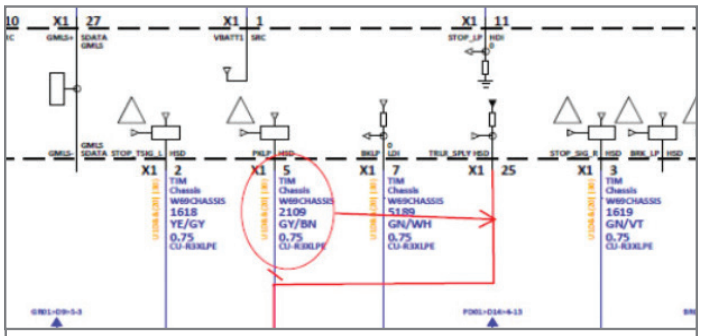


Trailer Lamp Control Module

2019 model year trucks equipped with the Trailer Information Indicator (RPO U1D) use the K68 Trailer Lighting Control Module to control all trailer lighting through pulse width modulated (PWM) voltage. The Trailer Lamp Control Module has a current handling capability on the running lamp circuit of about 9 amps. On a trailer with a large number of incandescent lights, in-rush current can exceed 20 amps before it settles back to around 8-9 amps. During this in-rush or "marriage" current period, the Trailer Lamp Control Module identifies the current as an overload and goes into protection mode.

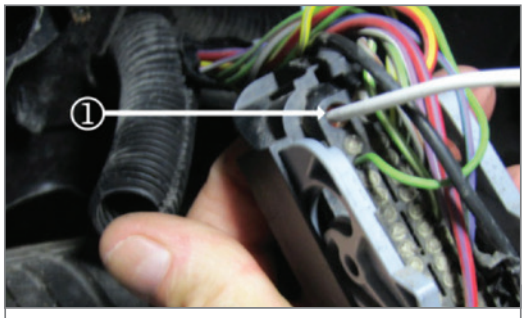
For 2020 model year trucks, a change was made to allow 16 amps of continuous current flow by routing the current through an internal relay in the Trailer Lamp Control Module. 2019 models can be modified to operate in the same way with the use of the 2020 design software and a re-pin of the running lamps to pin 25 using the internal relay to operate the running lamps.

The update requires a terminated lead to be inserted into cavity 25 on the chassis harness X1 connector. Wiring connected to pin 5 on the X1 will need to be cut and reconnected to pin 25. The terminal in cavity 5 will remain, but must be blunt cut and sealed with a closed-end Duraseal splice to prevent water intrusion through pin 5.



Re-pin the running lamps to pin 25.

The updated 2020 software is managed by the Techline Customer Support Center (TCSC). A record must exist of which trucks have been reprogrammed and that the procedure covered in Bulletin #20-NA-198 has been completed. Software will not work with the production configuration of wiring. The update also changes the trailer connection detection flashing of LED lighting from every 10 seconds to every 42 minutes. If trailer theft deterrent is enabled in the trailering profile, the flashes will still occur about every 10 seconds, which is by design and cannot be changed.



Insert a terminated lead into cavity 25 (#1) on the chassis X1 connector.

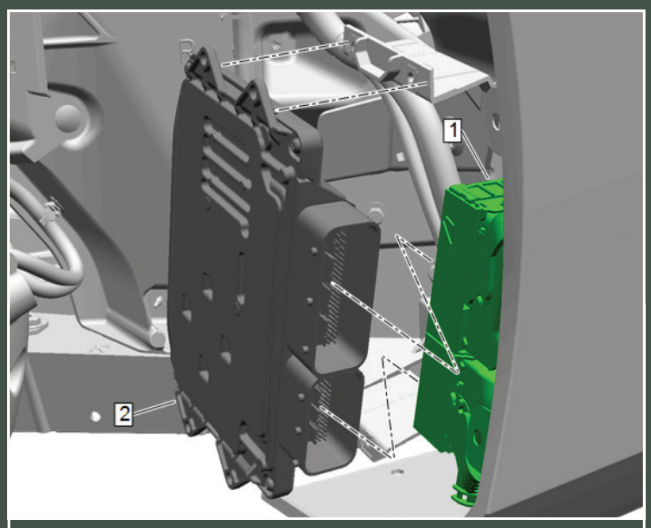
TIP: Concerns of excessive flashing of LED lights when parked on 2020 models also can be addressed with the same software update. The update does not affect lamp operation of the trailer theft deterrent system. It only changes the trailer connection detection from once about every 10 seconds to once every 42 minutes when the trailer theft deterrent option is not selected. Previously, both selections would produce lamp flashes every 10 seconds with the trailer parked.

To review the service procedure to move circuit 2109 on the Trailer Lamp Control Module from X1 cavity 5 to X1 cavity 25, and program new software from SPS into the Trailer Lamp Control Module, refer to Bulletin #20-NA-198.

▶ Thanks to David MacGillis

DTCs Set in the TCM

Some 2020 Corvettes may have an illuminated Check Engine MIL and a reduced engine power message on the instrument cluster with no noticeable performance issues. DTCs P1967 (Serial Data Message Safety Performance 1) and/or P1968 (Serial Data Message Safety Performance 2) may be set in the Transmission Control Module (TCM).



TCM

Follow the diagnostics for these DTCs in the appropriate Service Information. If there are other DTCs set in the TCM, diagnose those DTCs first.

If only DTCs P1967 or P1968 are set, do not request a TCM replacement per #PIP5703 (TCM Restriction). Perform the even and odd-related clean procedures in GDS2 and a transmission service fast learn. After completing these procedures, re-evaluate the condition.

These conditions are not a performance issue with the TCM or transmission assembly. A software update is currently being evaluated.

For additional information, refer to #PIP5757.

▶ Thanks to Steve Schipansky

Tapping Sound from Engine

Some 2020-2021 Encore GX and 2021 Trailblazer models equipped with the 1.3L engine (RPO L3T) may have a tapping sound coming from the engine that may sound similar to a valvetrain tick or tap noise.

Using the J-39570 Chassis Ears, it may be determined that the sound is coming from the engine block below the cylinder head area. To identify the source of the sound, cancel each cylinder to isolate the affected component.

Following the diagnostics in the Service Information for "Lower Engine Noise, Regardless of Engine Speed," remove the piston and rod assemblies. Once the piston/rod assembly is removed, place and hold the rod flat on the end of a workbench. Center the piston/wrist pin in the small end of the rod and rock the piston back and forth along the axis of the piston pin.

1. Piston pin retainer
2. Piston pin
3. Piston
4. Connecting rod

A noisy assembly will have a loose feel when the piston is rocked back and forth in the direction of the piston pin axis. It may help to compare to other assemblies in the engine. Replace any loose piston rods/pins to correct the tapping sound condition.

▶ Thanks to Raymond Haglund

Misfire & ENGINE NOISE CONDITION

Some 2020 Silverado, Sierra; 2020-2021 Camaro; 2021 Corvette, Tahoe, Suburban, Yukon, and Escalade models equipped with the 5.3L engine (RPOs L82, L84), 6.2L engine (RPOs L87, LT1, LT4, LT2), or 6.6L engine (RPO L8T) may have a misfire and engine noise condition. The Check Engine MIL also may be illuminated along with possible DTCs P0300 (Engine Misfire Detected), P0106 (Manifold Absolute Pressure Sensor Performance), and P0506 (Idle Speed Low). These conditions may be due to a broken valve spring.

If it's determined during an inspection that the engine has a broken valve spring, a cylinder leakage test on the affected cylinder must be performed.

5.3L AND 6.6L ENGINES

On 5.3L and 6.6L engines (RPOs L82, L84 and L8T) built from June 1, 2020 to October 7, 2020, if cylinder leakage is not observed, replace only the affected valve spring.

6.2L ENGINES

On 6.2L engines (RPOs L87, LT1, LT4 and LT2) built from June 1, 2020 to October 7, 2020, if cylinder leakage is not observed, replace all valve springs on both cylinder banks.

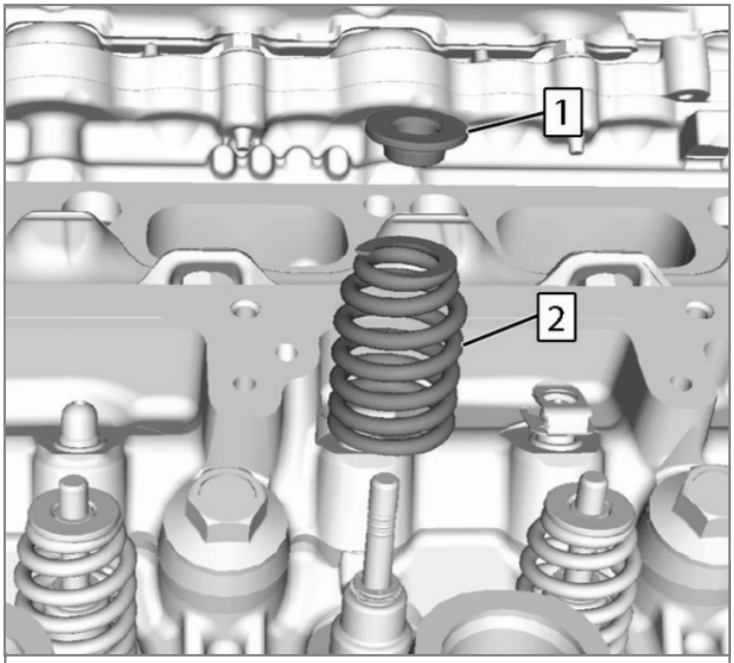
If there is cylinder leakage in the engine, perform further diagnosis to determine the extent of the engine damage and the correct repairs required.

For 6.2L engines (RPOs L87, LT1, LT4 and LT2) that have engine damage, follow the engine restriction procedures outlined in #PIP5759.

TIP: All valve springs are requested to be sent back for further engineering analysis and inspection.

If there is a valve spring concern, contact the GM Technical Assistance Center (TAC) (U.S.) or Canadian Technical Assistance Centre for assistance with issue verification and expediting parts if needed. U.S. dealerships should create a TAC DCM case before calling TAC.

For additional information, refer to #PIP5752E.

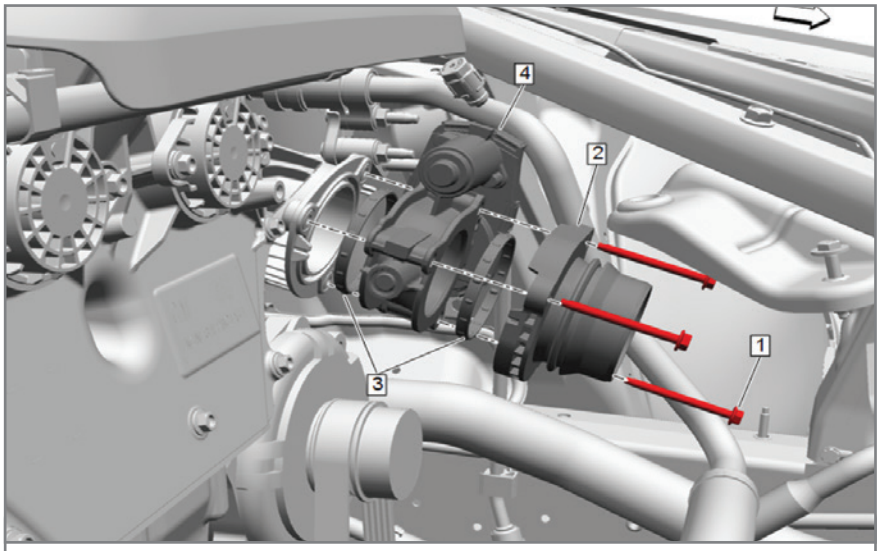


Valve spring (RPO L82, L84)

▶ Thanks to Bryan Salisbury

DTC P2101 Set in History

DTC P2101 (Throttle Actuator Position Performance) may be set in history on some 2020-2021 CT5 models equipped with the 2.0L engine (RPO LSY). If DTC P2101 is set, complete all the published diagnostics in the appropriate Service Information for the DTC.



Throttle body assembly

Unless the diagnostic procedure in the Service Information leads to replacement of the throttle body assembly for history DTC P2101, do not replace the throttle body assembly. Throttle body assemblies returned for warranty analysis have been inspected and tested with no trouble found.

The Throttle Actuator Control (TAC) system is controlled by the Engine Control Module (ECM), which determines the driver's intent based on input from the accelerator pedal position sensors and calculates the appropriate throttle response. The ECM achieves throttle positioning by providing a pulse width modulated voltage to the throttle actuator motor. The throttle blade is spring loaded in both directions, and the default position is slightly open. When the ECM detects a condition with the TAC system, the ECM may enter a reduced engine power mode. DTC P2101 may set if the vehicle battery is weak or the throttle blade is stuck.

If the Service Information diagnostics do not isolate a cause for DTC P2101 set in history, clear the code and operate the vehicle under the conditions necessary for running the DTC.

If DTC P2101 does not set again, return the vehicle to the customer.

For additional information, refer to #PIP5756.

▶ Thanks to Robert Halas

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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