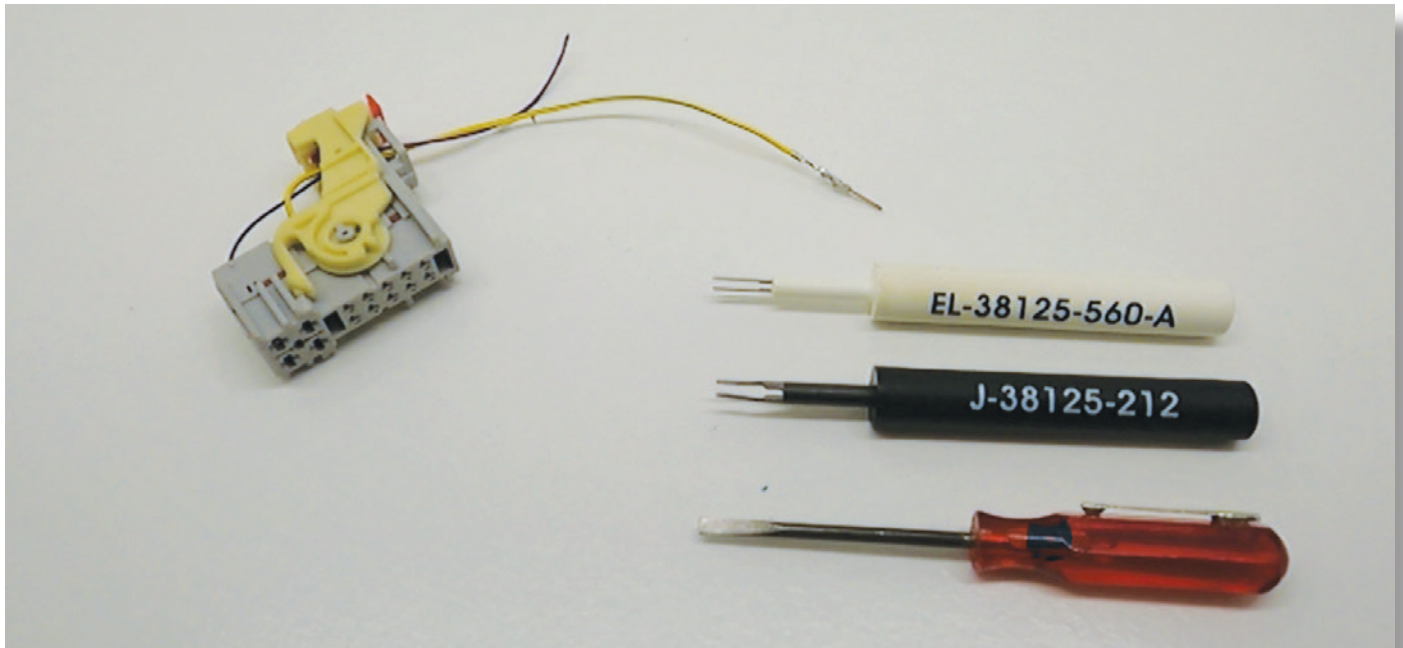


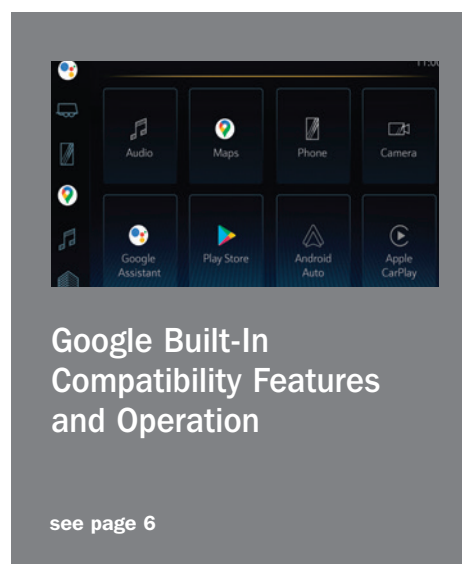
# Global Wiring Harness



## REPAIR STRATEGY AND PARTS INFORMATION UPDATE

GM's global repair strategy for large wiring harnesses (body, engine, instrument panel, forward lamp, headliner/roof harness, and truck chassis) is to repair/replace the components (cables, terminals, connectors, etc.) instead of replacing the harness.

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# Global Wiring Harness Repair Strategy and Parts Information Update

The repair strategy was developed to help reduce repair costs while reducing squeak and rattle conditions.

GM Customer Care and Aftersales (CCA) has released all required components to repair these harnesses. For connectors that have 8 cavities or less, a fully populated pigtail with the correct DuraSeal splice is available. For all connectors that have 9 cavities or greater, a connector kit, DuraSeal splices and terminated leads are available.

For smaller harnesses (door, seat, steering column, etc.), the repair strategy is to replace the harness.

## PART NUMBERS IN SERVICE INFORMATION (SI)

The Connector End View section of the Service Information is the source for part number information. The part information is found just below the connector end view drawing and is presented two ways — the legacy format typically associated with TIFF viewer-supported graphics and the new format typically associated with the new CGM viewer-supported graphics.

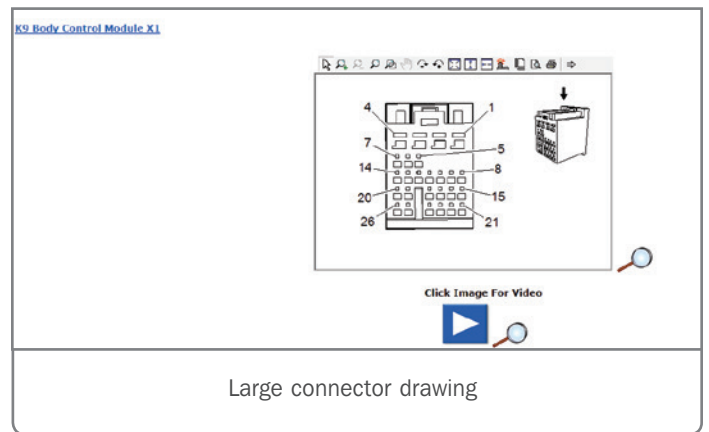
Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool	Service Terminal	Tray Name	Core Crimp	Insulation Crimp
I	Not Required	84-35616-58 (BK)	No Tool Required	Not Required	Not Required	Not Required	Not Required

A22 Radio Controls						
Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
1	0.35	BU/BD	2807	Radio Keypad Voltage Reference	I	—
2	0.35	GN/BK	2805	Radio Keypad Ground Return	I	—
3	0.35	VT/WH	2810	Radio Keypad Button Signal	I	—
4	0.35	BN/WH	2809	Radio Keypad Power Signal	I	—
5	0.35	BU/GY	2808	Radio Keypad Dimming Control	I	—
6	0.35	BU	4215	Radio Volume Up Signal	I	—
7	0.35	GY/BN	4214	Radio Volume Down Signal	I	—
8	0.35	BK/YE	2806	Radio Keypad Low Reference	I	—

Connector part information

For larger connectors (9 cavities or greater), the Service Information shows the connector kit and the terminated leads.



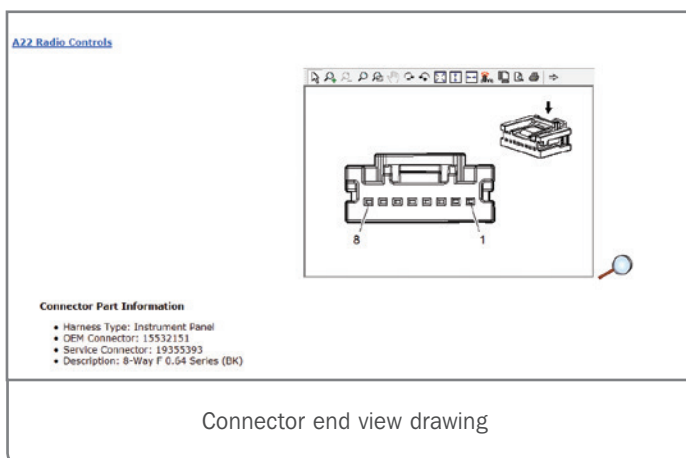
K9 Body Control Module X1						
Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
1	0.75	BK	1850	Ground	III	—
2	0.75	RD/BU	2540	Battery Positive Voltage	III	—
3	1	RD/GY	2140	Battery Positive Voltage	II	—
4	0.5	RD/BN	2240	Battery Positive Voltage	III	—
5	0.5	WH	6810	Indicator Dimming Control	I	—
6	—	—	—	Not Occupied	—	—
7	0.35	BK/YE	5005	Instrument Panel Lamp Dimmer Switch Low Reference	I	—
8 - 9	—	—	—	Not Occupied	—	—
10	0.5	BU/YT	1134	Park Brake Switch Signal	I	—
11	0.35	GN/BN	305	Headlamp Switch Headlamps Off Signal Control	I	—
12	—	—	—	Not Occupied	—	—

Large connector pin information

CCA Engineering has been developing videos to help show how to probe and release terminals for these larger harnesses. These videos are available in the Service Information.

Terminal Part Information							
Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool	Service Terminal	Tray Name	Core Crimp	Insulation Crimp
I	13582297	J-35616-648 (LT BK)	J-38125-22	Not Available	Not Available	Not Available	Not Available
II	13587507	J-35616-35 (YE)	J-38125-12A	SNAC-A0617-H2.8	Delphi 20	C	A
III	13587507	J-35616-35 (YE)	J-38125-12A	SNAC-A0617-H2.8	Delphi 20	B	A

Large connector terminal part information



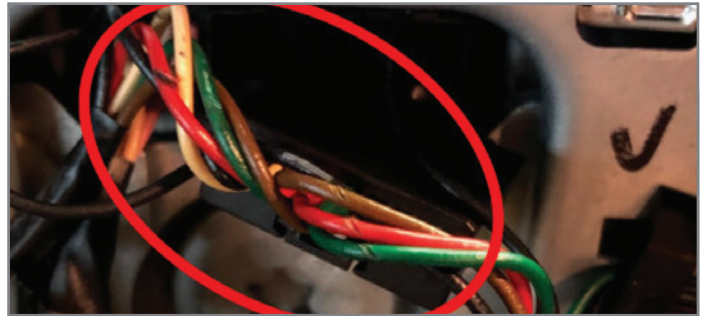
CONTINUED ON PAGE 3

# Steering Wheel Wiring Harness Condition

Some 2019-2020 Encore and Trax models may have several features operating improperly, including an unwanted windshield wiper swipe upon starting the vehicle, the front wipers may not park and the steering wheel controls may be inoperative at times. DTCs P155A SYM00 (Cruise Control Switch State Undetermined) and B1529 SYM03 (Control Module Voltage Reference Output 5 Circuit Low Voltage) may be set.



Check the condition of the wiring under the steering wheel inflator module.

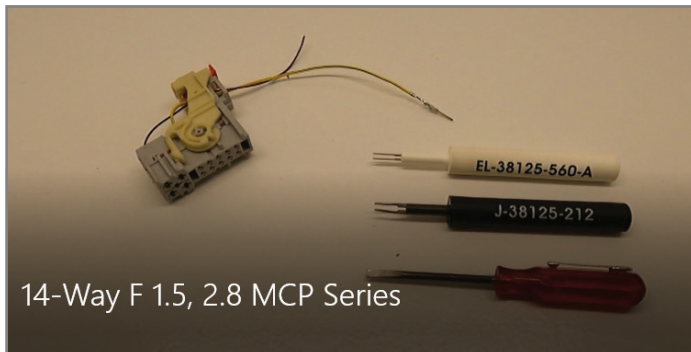


Look for a short in the steering wheel harness.

If these conditions are found, check the condition of the wiring under the steering wheel inflator module. There may be a short in the steering wheel harness. If repairs are needed, refer to Wire to Wire Repair in the appropriate Service Information for more information about proper wire repair procedures.

For additional information, refer to Bulletin #21-NA-246.

► Thanks to Frank Jakubiec



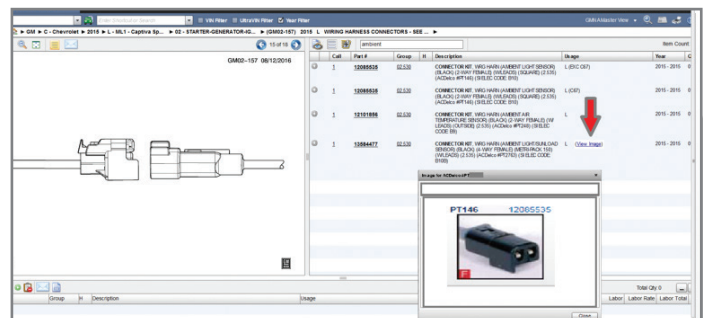
14-Way F 1.5, 2.8 MCP Series

Videos in SI show how to release terminals.

## ELECTRONIC PARTS CATALOG (EPC) INFORMATION

Starting with the 2018 model year, all connector kits, pigtails, and terminated leads are called out by book code and model year in the EPC. Updates to the EPC will allow better searchability for wiring repair components. In addition, pictures are being added to the EPC for these parts to help in ordering the correct wire component.

Battery cables, infotainment cables and hoses also are listed in the EPC.



Electronic Parts Catalog includes connector kits, pigtails and terminated leads.

## TXL WIRE

Use TXL wire to maintain factory specifications for wire harness integrity. TXL wire is available through the Customer Care and Aftersales parts catalog within the Chemical Catalog section. In the EPC, find TXL wire in the Chemicals – Fuses – Wire – book section.

For additional information on wiring repairs, refer to Bulletin #13-00-89-008B.

► Thanks to Tammy Burt and Eric Baur

# Exhaust Brake Operation



The exhaust brake may not seem to work properly on some 2020 Silverado and Sierra models equipped with the 6.6L Duramax diesel engine (RPO L5P). No DTCs will be set.

The exhaust brake system, which can be used to provide additional braking when the vehicle is decelerating with a heavy load and/or down a steep grade, is activated using a driver-selected switch. The Engine Control Module (ECM) controls exhaust brake operation based on various sensor inputs and commands the turbocharger vane position to maximum boost for exhaust brake operation.

## NEW CALIBRATIONS MAY BE AVAILABLE

For the 2020 model year, the movement of the turbocharger vanes is slower than in previous models and, as a result, there may be a feeling that the exhaust brake is not operating correctly. If the exhaust brake does not seem to be working properly, check for any ECM or Transmission Control Module (TCM) calibration updates that may be available. For additional information, refer to Bulletin #21-NA-214.

If available, both ECM and TCM calibration updates should be performed in order to enhance the operating feel of the exhaust brake.

If the TCM is updated without updating the ECM, the enhancements to the operation of the exhaust brake may not be felt. In addition, if only the ECM is updated without updating the TCM, the vehicle may operate in reduced

power mode with communication codes set as the engine and transmission may not be able to communicate properly.

## EXHAUST BRAKE DETAILS

For additional customer information, refer to the following exhaust brake description from the Owner's Manual:

- Automatic downshifts will not occur if the vehicle is in Range Selection Mode. See Manual Mode in the Owner's Manual.
- The exhaust brake only activates when the transmission torque converter is locked. This can vary based on vehicle speed, gear, and load.
- To activate the system, press the Exhaust Brake button on the center stack. A light in the switch will come on when the exhaust brake is activated. The switch must be pressed at each vehicle start for the system to be active. The Driver Information Center (DIC) displays the message Exhaust Brake On for approximately three seconds, and then clears.
- To turn the exhaust brake off, press the exhaust brake switch a second time. The DIC displays the message Exhaust Brake Off for approximately three seconds, and then clears.
- The exhaust brake will be more active when in Tow/Haul Mode.

► Thanks to Scott Willems



# Low Coolant or Air

## *Trapped in Engine Cooling System*

An illuminated Check Engine MIL and DTC P3075 (Engine Coolant Flow Too Low) may be set in the Engine Control Module (ECM) on some 2019-2022 XT4, Blazer, Silverado 1500, Sierra 1500; 2019-2021 Malibu; 2020-2022 Encore GX, CT4, CT5, XT5, XT6, and Acadia; and 2021-2022 Trailblazer models equipped with the 1.3L engine (RPO L3T), 2.0L engine (LSY) or 2.7L engine (RPO L3B). These conditions may be caused by low coolant or air trapped in the engine cooling system.

**TIP:** For 2019 MY vehicles equipped with the 2.7L engine, refer to Bulletin #19-NA-149 to verify the vehicle has the most current level of software.

If these conditions are found, do not replace the coolant pump. Begin diagnosis by pressure testing the cooling system using the EN-24460-A Cooling System Pressure Tester to check for any coolant leaks. Repair any leaks to the cooling system following the procedures in the appropriate Service Information.

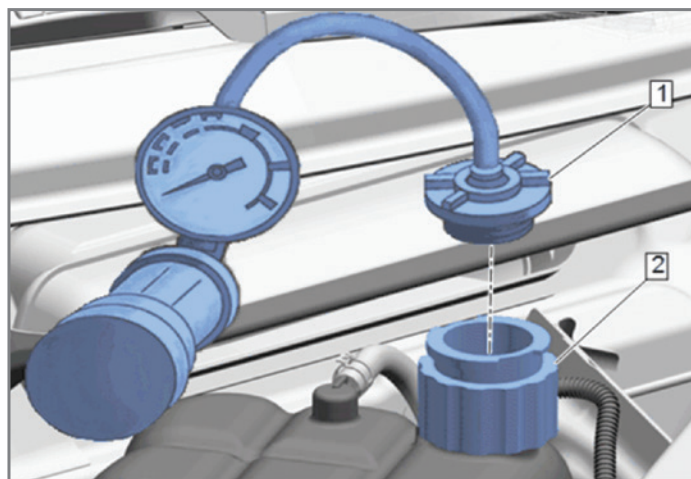
Once any coolant leaks have been repaired, follow the Cooling System Draining and Filling procedure in the appropriate Service Information to fill and bleed the cooling system. Once the engine is started after the coolant service fill procedure, DTC P3075 may reset until all the air is properly purged from the cooling system. At this point, codes should be cleared, the engine should be at operating temperature and the vehicle road tested to completely purge any remaining air from the cooling system.

After a road test, clear any DTCs and operate the vehicle under the conditions for running DTC P3075 following the Service Information procedures. DTC P3075/P3076 can detect coolant flow-based failures. The intrusive diagnostic test will run once per ignition cycle if all enable conditions are met. The coolant pump will run at roughly 4,000 rpm for 15 seconds and the pump motor AC current should be within the expected range. The coolant pump AC current feedback will be lower if the cooling system is leaking or low on coolant. Use GDS to confirm that DTC P3075 test has run and passed in the current drive cycle.

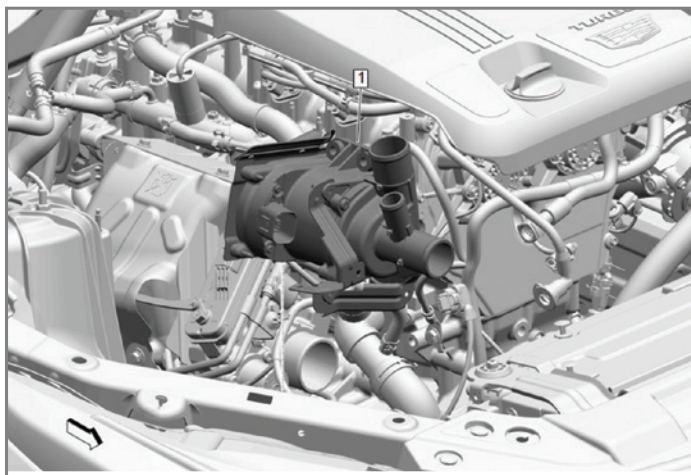
If the vehicle returns a second time with DTC P3075 set, replace the coolant pump assembly. Parts will be returned to the Warranty Parts Center.

For additional information, refer to Bulletin #21-NA-257.

► Thanks to Marcus Plant



EN-24460-A Cooling System Pressure Tester



Coolant pump on the 2.0L engine



# Google Built-In Compatibility Features and Operation

The new Infotainment 3 Premium system (RPO IOK) available on the 2022 Tahoe, Suburban and Yukon features Google built-in compatibility. Google built-in offers access to some popular Google apps and services, including hands-free help and live traffic updates, to provide a seamless and personalized in-vehicle experience.

The system also features a 10.2-inch diagonal HD color touchscreen, Bluetooth streaming audio for music and most phones; wireless Android Auto and Apple CarPlay capability for compatible phones, advanced voice recognition, in-vehicle apps, and personalized profiles for infotainment and vehicle settings.

Before beginning any diagnosis of system concerns, be sure to fully understand the operation of the Google built-in features.

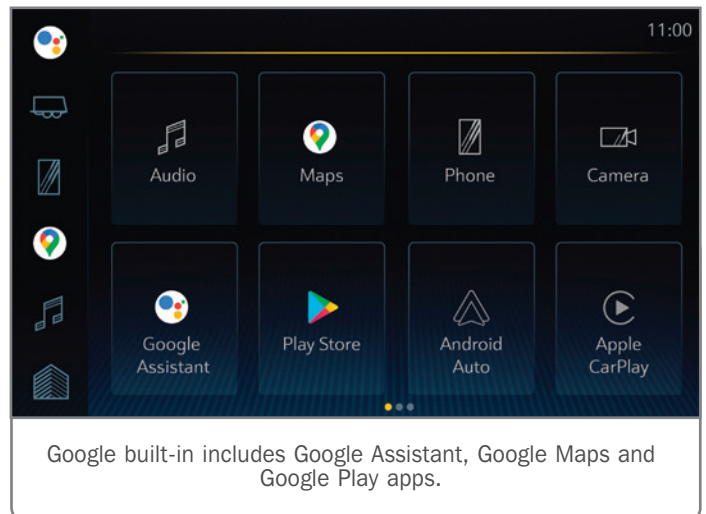
## SYSTEM FEATURES

This new infotainment system with Google built-in provides voice control, navigation and in-vehicle app functionality. Some features, including Google Assistant, Google Maps and Google Play apps, require a Connected Services subscription and a Google account. There are different subscription trial periods available, which have varying lengths of service, based on the vehicle/trim.

A personal Google Account is not required, but one will provide a more personalized experience. In addition, some features require users to pair their compatible phone to the in-vehicle system. Third-party apps (such as Spotify) also may require a separate account and, in some cases, a paid subscription to access them in the vehicle.

- **Voice Control:** With Google Assistant, users can use their voice to get directions, listen to music and control vehicle functions. Just say “Hey Google” to get started.

- **Navigation:** With Google Maps built-in, the system offers real-time traffic info, automatic rerouting, and voice control. Users that sign in can add home and saved locations.
- **In-Vehicle Apps:** With Google Play, some favorite apps can be easily downloaded just as they would on a mobile phone.



## TOUCHSCREEN DISPLAY

The app-based interface offers new screen layouts and ways to interact with features. Depending on the vehicle's specific equipment, the options and screen layout may vary.

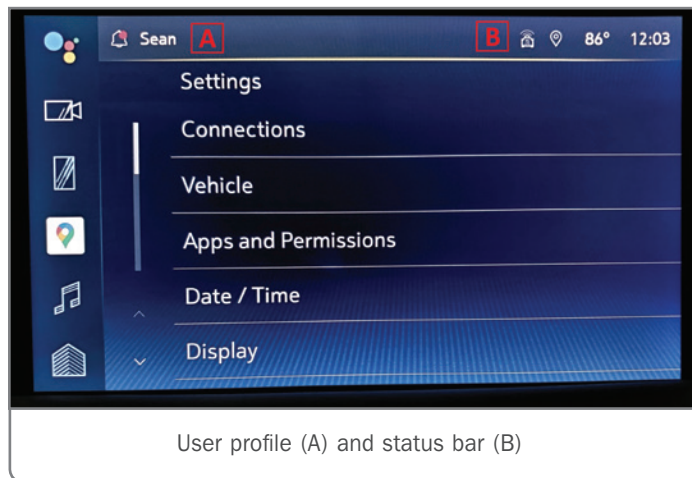
Some of the new features include a vertical app tray on the left side of the screen. Drag and drop favorite apps into this area.

The User Profile at the top of the screen identifies the signed-in account. Tap to switch profiles or access profile-related settings.

The center portion of the screen displays the system's available apps, functions and menus. Tap an icon to launch the app; press

and hold to rearrange the icons on the screen. Swipe left or right on the screen to display additional pages.

The status bar at the top of the screen shows the signal strength and battery level of a connected device. A location icon also is displayed if Location Services are enabled.



## USER ACCOUNTS

New users should sign in to their Chevrolet or GMC account the first time they use the system, using the same email address provided to the dealership when the vehicle was purchased (also the same address used to access the vehicle's mobile app).

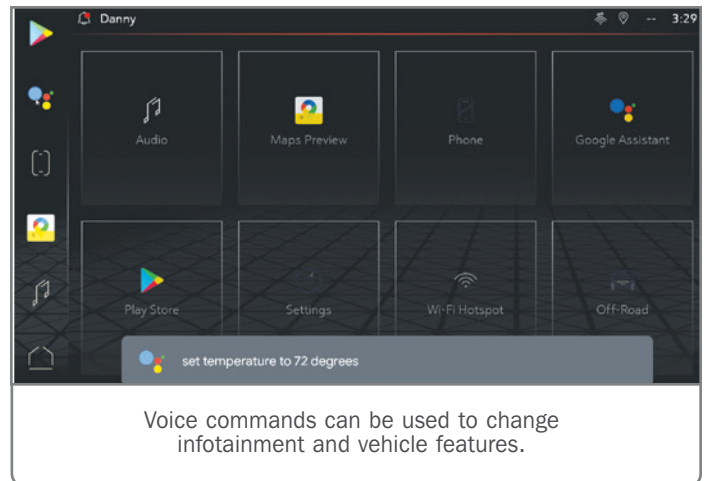
A Google Account is not required to use the system, but signing in to Google will provide access to customized and personalized features. Using a Google account also requires acceptance of the Google terms and privacy statement. Customers are highly encouraged to sign in to their Google account while using Google built-in, which also allows the apps to automatically update in the background when needed.

After signing in, the profile name in the vehicle will match the Google Account name. To view or switch profiles, tap the user name in the upper-left corner of the screen to access the profile settings. All accounts, including the Chevrolet or GMC account and Google account, are stored within the profile.

## VOICE CONTROL

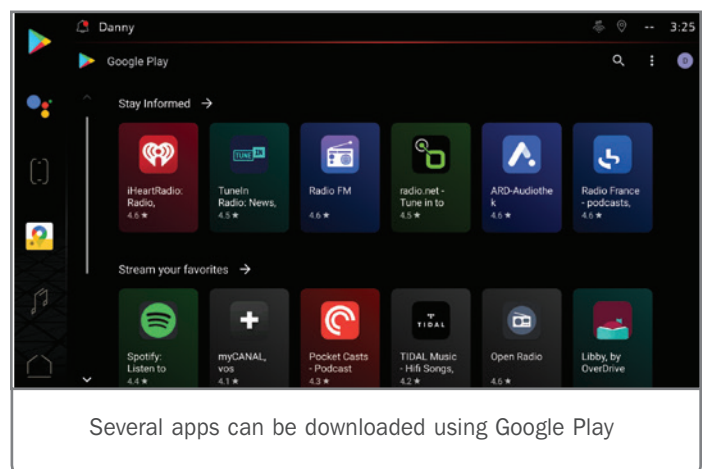
The Google Assistant feature offers hands-free help in the vehicle, allowing users to call or text, listen to music, set reminders, or perform other vehicle functions, such as changing the temperature in the vehicle. Some vehicle commands, such as climate controls, can only be accessed using Google Assistant.

To get started with a voice command, simply say, "Hey Google" from inside the vehicle. Other options are to tap the Google Assistant icon in the app tray on the touchscreen or using the Push-to-Talk button on the steering wheel (a short press). In addition, navigation commands can be requested by tapping the microphone icon when using Google Maps.



## IN-VEHICLE APPS

Google Play enables a number of favorite apps to be downloaded and used in the vehicle, including music streaming, news, weather and other apps. To browse the catalog and download apps, users must be signed into their Google Account on the infotainment system. Google Play requires a paid service plan or trial.



## KEYGUARD

Keyguard is similar to a code to unlock a cell phone. When this feature is enabled, the user creates a lock (pattern, PIN or password), which will need to be entered to unlock the infotainment system at every ignition cycle. When the system is locked, SPS diagnostics will be unavailable. To use SPS diagnostics when the infotainment system is locked, enter the "Guest Mode" feature.

For an overview of the Google built-in capability, review the Chevrolet course (B101F.022W1) and the GMC course (B501F.022W1) available on the Center of Learning.

► Thanks to Kristin Clancy



# Mark of Excellence Program Enrollment Open Now for 2022

The Mark of Excellence program (U.S.) recognizes the achievements, professionalism, and commitment of many members of the GM dealership community. For 2022, service technicians enrolled in the program can earn recognition awards when they meet program qualifiers and other criteria.

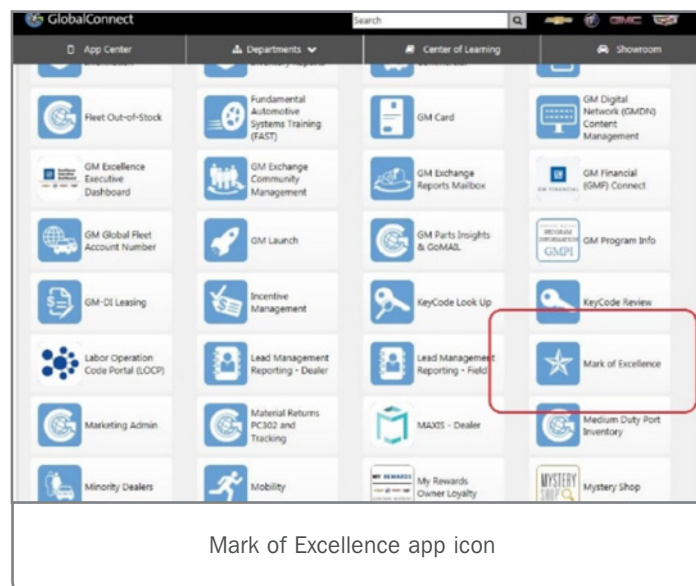
The enrollment period for the 2022 Mark of Excellence program is December 6 – December 17.

The 2022 Mark of Excellence program runs from January 4, 2022 through January 3, 2023.

## ENROLLMENT DOES NOT CARRYOVER

New for 2022, there is not an additional fee to enroll in the Service Technician program! Be sure to review the Program Rules located under the Resources Tab on the Mark of Excellence website for additional changes to the 2022 program.

Enrollment in the 2022 program is done through the Mark of Excellence app in the GM GlobalConnect App Center. There are not any automatic enrollment confirmations for dealership personnel who were previously enrolled in the Mark of Excellence program.



Once enrollment is completed, all dealership personnel with a valid GlobalConnect email address who are enrolled in the 2022 program will receive an email message notifying them of their program status and other enrollment details. Enrolled individuals can update their email address through their GlobalConnect profile.

## SERVICE AND PARTS – SERVICE TECHNICIAN

### Recognition

- Toolbox medallion
- Top 20 Service Technician Zone Recognition Award
- Top 50 Service Technician National Recognition Award

## SERVICE AND PARTS – NON-TECHNICAL

### Recognition

- Desktop award or nameplate update
- 500 Mark of Excellence personalized business cards
- Logged recognition award

### Premiere

- 500 earnPower points

### Service BDC Manager

- Desktop award or nameplate update
- Mark of Excellence business cards

For more information about the 2022 Mark of Excellence program, select the Mark of Excellence app on the GM GlobalConnect App Center or contact Program Headquarters at 1-800-368-1638.

► Thanks to Diana Sancya



# Coolant Leak Under the Vehicle

Some 2020-2022 Silverado 2500/3500 and Sierra 2500/3500 trucks equipped with the 6.6L Duramax diesel engine (RPO L5P) may have a coolant leak under the vehicle. The Check Engine MIL may be illuminated along with DTC P2C48 (Low Temperature Loop Coolant Pump Performance) set in the Engine Control Module. These conditions may be the result of contact between the auxiliary diesel fuel cooler coolant hose and the front driveshaft at the crossmember. This type of contact typically occurs when driving through deeper water or snow.

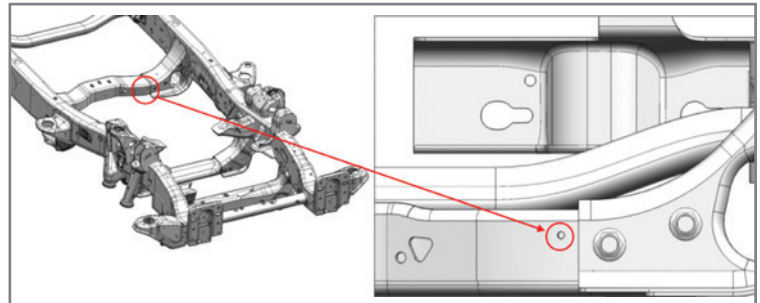
The auxiliary cooling system is a low-temperature system designed to carry heat away from diesel fuel system components.

Repair any coolant leaks found and, to prevent future contact, re-route the coolant hose away from the front driveshaft. Drill a 6.5 mm-sized hole near the middle of the transmission crossmember.

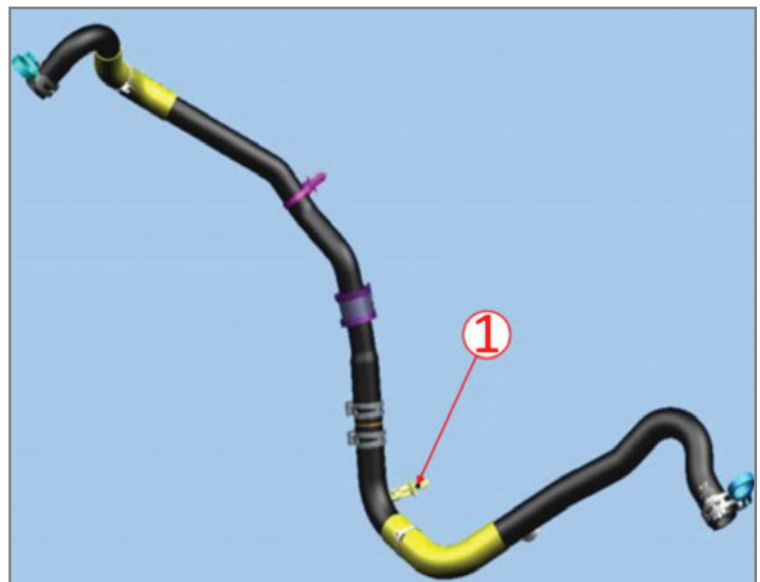
Add a retainer or equivalent onto the coolant hose and install the retainer into the hole in the crossmember.

For more information and part numbers, refer to Bulletin #21-NA-265.

► Thanks to Kevin Minor



Drill a hole in the transmission crossmember for a retainer.



Install the retainer into the hole in the crossmember.

## TECH LINK

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