TECH LINK

Mid-May 2022, Volume 24, No. 10

# DCBS Becomes Essential Equipment

## MIDTRONICS GR8 TO BE DISCONTINUED IN 2024


*In order to accurately diagnose a battery's state of health from a vehicle in for service or that is part of the dealership's inventory, the EL-52800 Diagnostic Charge Battery Station (DCBS) should be used.*

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**Optimizing Fuel Economy with Top Tier Gasoline**

see page 4

The DCBS offers comprehensive battery diagnostic services and testing for lead acid, Absorbent Glass Mat (AGM) and Enhanced Flooded Battery (EFB) batteries and is the recommended and approved tool for diagnosing warranty battery replacement.

With the enhanced testing speed and accuracy of the DCBS, as well as the ability to recover more batteries in the charging process, the Midtronics GR8 battery tester is no longer recommended for battery testing, but will be accepted until every GM dealership has the DCBS.

## ESSENTIAL EQUIPMENT

Effective January 1, 2024, the DCBS will become Essential Equipment for all GM dealerships. GM will arrange to ship one DCBS to those dealerships that do not have a DCBS prior to 2024.

EL-52800 Diagnostic Charge Battery Station (DCBS)

Shipments will begin in May and will continue throughout the year for Tier 1 and Tier 2 dealerships. Remaining dealerships can expect shipments by the end of the 3rd quarter of 2023. The timing of shipments may change based on global supply chain constraints and availability.

## WARRANTY REQUIREMENTS

Beginning January 1, 2024, the Midtronics GR8 will no longer be acceptable equipment for warranty transactions. The DCBS will be the only approved equipment for diagnosing batteries under warranty. The DCBS Warranty Claim Code and test result printout attachment will be the only acceptable supporting documentation for warranty battery replacement transactions.

The warranty code displayed on the printout must be entered in the required Battery Tester Code field when submitting a battery replacement transaction. Technicians must attach the printout to the repair order (job card) when there is a Battery is Bad (DCBS) or Replace Battery (GR8) determination. A copy of the printout must be returned with the paperwork for each battery returned to the Warranty Parts Center.

## BATTERY TESTING

Bulletin #20-NA-132 outlines the testing process and warranty replacement requirements that all GM dealerships must follow.

The DCBS features a hand-held diagnostic remote that can read 1D barcodes and 2D QR codes that, along with an integrated GM vehicle database with battery specifications, offers quick vehicle identification of GM vehicles to help speed up the diagnostic process. The GM database also eliminates the need to find the battery rating on the original battery label during testing. If the original battery has been replaced, the battery specifications from the battery label installed in the vehicle should be used.

On-screen test results using the DCBS will show "Battery is good" if the battery has a good state of health or "Battery is bad" if the battery needs to be replaced. The tool will ask for the RO along

DCSB Warranty Claim Code

with the VIN and BAC if not already entered. It will then print a warranty code if the test was run using the trolley. A warranty code will not be generated when a battery test is done with the remote only.

## SOFTWARE UPDATES

When dealerships receive the new DCBS unit, it is critical that the Optimus software, which is included with the DCBS, be downloaded. The Optimus site is used to store all the testing records (up to 65,000) that are performed at the dealership and enables dealerships to view past test records and retrieve

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# TCM DTCs Set on Vehicle Start Up

Some 2020-2022 Corvette models may have a Service Transmission message on the Driver Information Center (DIC), an illuminated Check Engine MIL and a squealing sound immediately after starting the engine. DTC P0700 (Transmission Control Module Requested Malfunction Indicator Lamp Illumination) may be stored in the Engine Control Module (ECM) and DTC P0606 (Control Module Processor Performance) or P0607 (Control Module Performance) may be stored in history in the Transmission Control Module (TCM). Other P codes also may be set. This condition will be present on vehicle start up only and not when the vehicle is in motion.


The DTCs may set on vehicle start up only.

The DIC transmission message and possible squealing sound are default actions of the DTC as the TCM is in a defaulted state and may not be controlling line pressure, resulting in the transmission operating a maximum line pressure.

DTC P0700 is an informational DTC. Do not replace the control module if DTC P0700 is set.

If DTC P0606 or P0607 is set as a current DTC in the TCM, without other DTCs set, follow the published diagnostics in the appropriate Service Information. The condition should be resolved by allowing the vehicle to go through a complete sleep cycle (i.e., 15 minutes). Explain to customers that they can complete this process if they experience the condition again before a correction is available.

If DTC P0606 or P0607 is set as a history DTC in the TCM with other P codes (e.g., P07E5 or P07E6), the other codes are a byproduct of the controller state. Do not replace the TCM for P0606/P0607 when other P codes are present or when DTCs P0606/P0607 are in history. If DTCs P0606/P0607 are in history, clear the codes and test drive the vehicle to make sure the DTCs do not return. If the DTCs do not set again, return the vehicle to the customer. Permanent repair information will be released when available.

For more information, refer to #PIP5852.

▶ Thanks to Steve Schipansky


"Battery is bad" message

warranty codes. In addition, 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. All DCBS updates are free to dealerships.

Dealerships with any questions regarding the Optimus platform, software updates or general product inquiries should contact the customer help desk at 1-877-453-3265.

For additional information, refer to GlobalConnect message GCUS-9-12992.

▶ Thanks to Zach Winters and Patti Marino

# OPTIMIZING FUEL ECONOMY

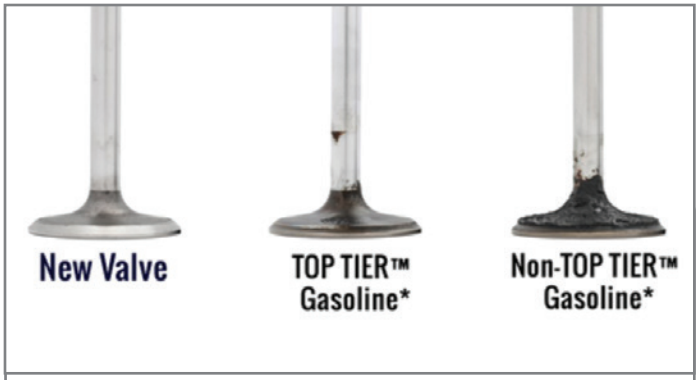
## WITH TOP TIER GASOLINE

Some of the best ways to help enhance fuel economy are through proper maintenance and good driving habits. For example, replacing the engine air filter at the recommended maintenance intervals, maintaining the correct tire inflation pressures and removing any extra equipment from the vehicle, such as bike racks, can help in reducing fuel consumption. At the same time, driving less aggressively and anticipating stops can also help.

There are other items that customers should consider as well to optimize their vehicle's fuel economy. Here are a few things to share with customers regarding optimizing vehicle performance.

### TOP TIER™ GASOLINE

Properly maintained engines can provide optimal fuel economy and performance. TOP TIER gasoline was developed in 2004 when a group of automakers, including General Motors, BMW, Honda, Toyota, Volkswagen, Audi and Mercedes-Benz, recognized the need for a higher detergency gasoline than that required by U.S. regulations. TOP TIER Detergent Gasoline is the premier standard for gasoline performance with a higher detergency standard than the U.S. Environmental Protection Agency (EPA) and Canadian General Standards Board (CGSB) minimum requirement. The added detergents can result in a lower amount of intake valve deposits that can negatively affect fuel economy, emissions, and performance.




The added detergents result in a lower amount of intake valve deposits.

Avoid lower quality gasoline that can leave deposits on critical engine parts, reducing engine performance. TOP TIER fuels are preferable when and where available. Many fueling stations selling TOP TIER licensed brands prominently display the TOP TIER logo on the pump, pump handle, canopy or in a station window.

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**TIP:** The TOP TIER fuel designation should not be confused with higher octane (plus/premium grade fuel) commonly sold at most gas stations. Plus and premium fuels are required in some GM high-performance vehicles. However, they do not necessarily represent the higher detergency that is present in available TOP TIER Detergent Gasolines. For high-performance vehicles that require premium fuel (91 octane or higher), fuels of at least this octane must be used. Using lower octane fuel may result in reduced performance, knocking, and/or permanent engine damage that is not covered under the terms of the New Vehicle Limited Warranty. Using higher octane fuels in a vehicle that only requires regular unleaded fuel will not increase performance or improve gas mileage. Only use the octane-rated fuel recommended as specified in the vehicle's Owner's Manual.

Additional gasoline brands are added to the TOP TIER list as they meet the standards. For a list of TOP TIER Detergent Gasoline retailers, visit toptiergas.com.

TOP TIER™ Detergent Gasoline

Look for the TOP TIER logo.

## ALTERNATE FUELS

A recent idea to improve fuel economy is to blend either kerosene or diesel fuel into gasoline. Both kerosene and diesel fuel are distillate fuels meant for use in compression ignition engines, not spark ignition engines. They have very low octane and, since they are heavier (higher density) than gasoline, they will cause heavy engine deposits, degradation of engine oil and very poor drivability. If kerosene or diesel fuel is put into a gasoline engine vehicle, any performance conditions, drivability concerns or damage to the engine will not be covered by the New Vehicle Limited Warranty.

## FUEL INJECTOR CLEANING

Fuel injector cleaning is recommended only when performed as directed in Service Information diagnostic procedures. However, to address the variation in fuel quality in different areas of the country, the only preventative maintenance currently endorsed by GM regarding its gasoline engine fuel systems is the use of GM Fuel System Treatment PLUS added to a tank of fuel at each oil change. The fuel additive is to help with the prevention and removal of deposits from spark-ignited engines, particularly from the intake valves, fuel injectors, and the combustion chamber.

## DRIVING HABITS

Many driving habits as well as driving conditions affect fuel consumption, such as aggressive driving, altitude, ambient temperature and traffic.

While driving, slow down and drive smoothly. Efficient driving includes avoiding quick/full-throttle acceleration from a standstill at stop lights and high cruising speeds on the interstates. While the optimum MPG or L/100 km for highway cruising speed varies from vehicle to vehicle, faster is almost always worse. If the vehicle is equipped with a Driver Information Center that displays Instant Fuel Economy, select that display and vary the vehicle's cruising speed while on the highway. The display will change continuously with uphill and downhill sections but you should quickly be able to identify on level ground the speed range that the vehicle performs best in.

In addition, before a trip, avoid extended idling when starting the vehicle. There is no need to idle the engine until it reaches full operating temperature. Extended idling time wastes fuel and has a negative impact on fuel economy. When using the Remote Start feature (if equipped), keep the idling time to a minimum. Starting the car on a very cold day and leaving immediately may actually cause the engine to consume more gas. Warming it up and thinning the oil for a few minutes can actually help improve mileage.

For additional information, refer to the latest version of Bulletin #05-00-89-072.

▶ Thanks to Steve Bruder

# FSE Technician

## RECOGNITION AWARDS

## 2ND QUARTER 2022

The GM Field Service Engineer (FSE) Technician Recognition Awards (U.S.) celebrate the skill and dedication of dealership technicians who have recently worked with FSE's on challenging repairs.

Technicians at GM dealerships are selected for recognition based on their focus on safety, customer satisfaction, personal accountability, training achievements, diagnostic abilities, and the level of repair documentation.

Each recognized technician receives a Service Excellence magnetic plaque and an Excellence in Service Award certificate.


Excellence in Service Award

In recognition of your efforts to go above and beyond the call of duty to the delight of General Motors and our customers, delivering exceptional Skill, and Integrity we hereby present

Dealer Technician
ABC GM Dealer

with this certificate of recognition for your high standards of excellence.

### 2ND QUARTER 2022 AWARD WINNERS


**Technician:** Harold "Hop" Colegrove

**Dealership:** Langway of Manchester, Manchester, Vermont

**FSE:** Gustav Cariglio

**Service Excellence:** Harold "Hop" Colegrove is in his early seventies but is a young GM technician at heart. Since GM had three wires connected to its engines, Hop has served our customers, and continues to do so. Hop has survived the elimination of mechanical ignition, the introduction of computer-controlled carburetors, front-wheel drive technology, multiple module data communication and more.

Recently, Hop worked on an intermittent high-speed CAN bus issue. He was energetic, knowledgeable and engaged. Hop had completed the correct diagnostic process for this type of concern and finding the cause was proving not to be an easy task.

Hop personifies all the traits that we in the auto service industry hold dear. He cares about his customers, coworkers, the dealer, and is an asset to surrounding communities. It's a good bet that folks going in for service ask for him by name.

Hop has a thirst for knowledge about leading-edge diagnostic technology, and when he asked for help on using the PicoScope for electrical diagnostics, it was easy to say "yes." There are many great technicians in the northeast, but none are more deserving of this award than Hop Colegrove.


**Technician/Shop Foreman:** David Hedgpeth

**Dealership:** Stillwater Motors, Stillwater, Minnesota

**FSE:** Joe Moyer

**Service Excellence:** David is a real asset to his dealership, their customers, and General Motors. He always puts taking care of the customer first and goes above and beyond to root cause and correct vehicle concerns. A good example is with the DEF tank concerns on the current full-size Chevrolet and GMC trucks. David has been instrumental in assisting with some of these trucks in the field, including identifying some errors in the SI schematics for the second-design tanks, and putting extra time and work in to get some of these vehicles back on the road. His dedication to help GM identify problems and come up with creative solutions is a real asset and deserves our recognition.

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**Technician:** William (Chris) Coombs

**Dealership:** Jerry Ferguson Buick GMC, Broken Arrow, Oklahoma

**FSE:** Scott Kohart

**Service Excellence:** Chris is always focused on safety, demonstrated by how he immediately cleans up trash and spills, and keeps hoses and cords picked up in his stalls. Chris doesn't hesitate to contact TAC on challenging vehicle issues and will seek FSE assistance when not making progress, keeping in mind that customer vehicles need to be repaired as quickly as possible and returned in proper condition. When Chris runs into a concern with a new and low-mileage vehicle, he sends in an FPR or contacts his FSE about the problem so the right engineers get engaged quickly.

Recently, Chris helped find a software update omission on a 2022 Yukon that caused the vehicle to have inoperative wipers. In working with Chris and engineering, it was discovered that a software update for the 2021MY to fix this issue had been omitted from the 2022 MY. Chris is growing in his ability to diagnose vehicles within the areas he specializes in and quickly arrives at a diagnosis on his own without assistance most of the time. Chris exhibits the GM values "Think Customer" and "It's On Me" every day.


**Technician:** Mike Tondre

**Dealership:** Victory Buick GMC, Victoria, Texas

**FSE:** Jorden Ellis

**Service Excellence:** Mike is always looking out for safety (for example, using jack stands when lifting a vehicle even for a brief moment, cleaning up water on the slippery floor from testing for a water leak, and keeping his area clean/walkways clear). Mike is the shop's diagnostic technician and he receives a lot of urgent cases. He is always focused on the customer and doesn't hesitate to communicate with them when trying to help resolve difficult concerns. He is a wealth of knowledge on a vehicle's repair history. When an issue or potential issue is found, he always insists on trying to manipulate or duplicate the concern or have a good and explainable reason as to why it is happening. He spends the time to verify a vehicle is fixed after each repair, such as making sure DTCs run, test driving the vehicle, and double checking his work. Mike has basically all of his GM training and ASE certifications. Some of the cases he has resolved include:

- A very intermittent concern where the vehicle would go into limp mode. Mike had been working on diagnosing the vehicle for quite some time. The concern was narrowed down to the Telematics Module connector, which had a loose ground and CAN + connection.
- On a vehicle that kept stalling out, Mike took it upon himself to keep trying to resolve the issue multiple times. He noticed it would only stall when it was in closed loop. He thought to look at the O2 sensors and found a corroded O2 sensor harness that was causing incorrect readings.
- Customer stated there was a water leak. Mike found that if he sprayed the back sliding glass it would shoot water in. He compared it to two other like vehicles on the lot and they did the same thing. He asked if he should submit an FPR. Looking further into it using the PicoScope with the microphone, we found a body seam that was split by the rear glass. The FPR submitted was a great help to engineering.


**Technician:** Eduardo Santana

**Dealership:** Marten's Chevrolet, Reedley, California

**FSE:** Leonard Tunstall

**Service Excellence:** Recently, Eduardo was tasked with diagnosing a "…harsh erratic shift and door locks cycling" concern on a 2021 GMC Sierra. Using his excellent diagnostic abilities, right away he suspected the Transmission Range Sensor (TRS), given that the door locks were cycling, and, following SI diagnostics replaced the TRS. Unfortunately, this did not fix the vehicle. Going through all of the preliminary circuit checks again did not provide a solid direction on where to go next. Eduardo decided to connect the PicoScope to the TRS circuits and captured a noticeable fluctuation on TCM signal circuit 3338 while duplicating the concern. The fluctuation was resulting in an erratic shift and causing the BCM to cycle the door locks. Restringing circuit 3338 repaired the concern. Eduardo demonstrated very impressive diagnostic abilities on this case. It's an honor to have the opportunity of working with great technicians and Eduardo is one of the best.


**Technician/Shop Foreman:** Rob Wyttenbach

**Dealership:** Marvin K. Brown Cadillac, San Diego, California

**FSE:** William McAuliffe

**Service Excellence:** Rob Wyttenbach is a World Class Technician. His willingness to mentor other technicians at the dealership is outstanding. He freely shares his knowledge and insight (either good or bad) that he has gained in his 25+ years with anyone. Rob is an example to all at the dealership too. He maintains his work area; it is always clean and organized. He keeps his tools, the dealership's tools, and the clients' vehicles in pristine condition. His work ethic is positive and he truly wants to keep the clients happy. He's truly a great gentleman and technician.

▶ Thanks to Hank Poelman

# Transmission Neutral Service Mode on 10-Speed Automatic Transmissions

The 10L80 10-speed automatic transmission (RPO MHS, MQC) available on the new 2022 Silverado 1500 and Sierra 1500 features the Electronic Transmission Range Select (ETRS) system, which electronically shifts the transmission into the gear selected. The ETRS system does not have a mechanical linkage to the transmission.

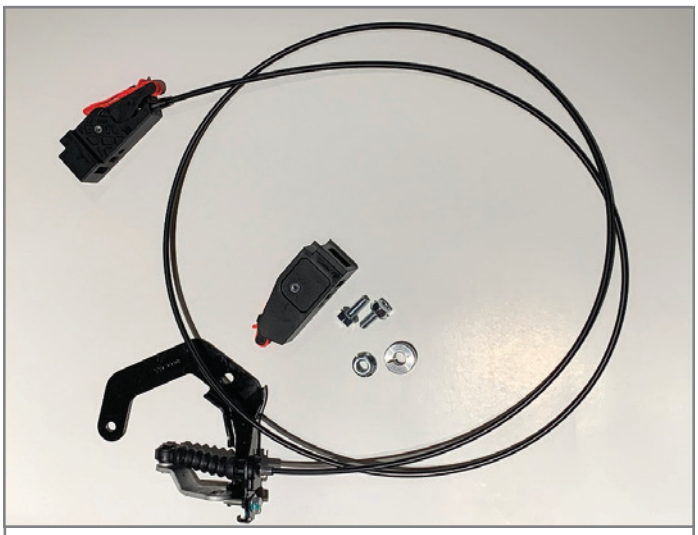
In addition to the new trucks, ETRS is included on 2021-2022 CT4, CT5, Escalade, Tahoe, Suburban and Yukon models equipped with the 10L60 10-speed automatic transmission (RPO MQA) or 10L80 10-speed automatic transmission (RPO MHS, MQC).

The ETRS system requires hydraulic pressure to disengage the park mechanism. Here are some tips to follow to place the transmission in Neutral, depending on the state of vehicle power.

Electronic Transmission Range Select (ETRS) system

## VEHICLES THAT CAN BE STARTED

In cases where the engine can be started, refer to the Neutral Service Mode document in the appropriate Service Information (for example, Document ID # 5286309). There are different procedures to follow to have the transmission remain in neutral with the engine on or engine off and with the driver remaining in the vehicle or exiting the vehicle.



DT-52910 Manual Park Release tool

## VEHICLES THAT CANNOT BE STARTED

In cases where there is an ETRS system fault or a no start condition and the vehicle needs to be moved, the DT-52910 Manual Park Release tool can be installed to temporarily shift the vehicle into Neutral when the engine is not running. The manual park release tool is now available through the GM Special Service Tools website at gmtoolsandequipment.com.

To install the tool, refer to Document ID 5620825. The transmission will be placed in N (Neutral) when the manual park release is pulled. Ensure the vehicle is on level ground, the parking brake applied, and the wheels are blocked prior to installing the manual park release tool.

If the manual park release is pulled while the vehicle is on, or if the ignition is turned on while the manual park release is pulled, the Driver Information Center on the instrument cluster will display a message to service the transmission.

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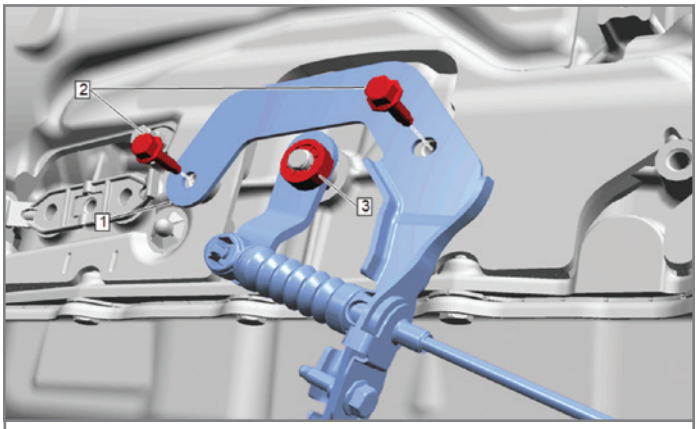
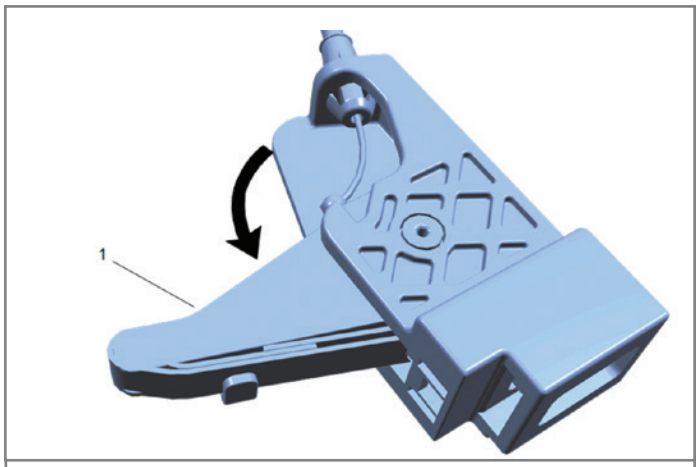



Install the DT-52910 Manual Park Release tool to temporarily shift the vehicle into Neutral.

**TIP:** The latching mechanism in the manual park release lever will release if the vehicle is started and placed in Park. An attempt to override this function or use of an non-approved tool may cause internal damage to the transmission.




The transmission will be placed in Neutral when the manual park release is pulled.

Wheel dolly

In addition to the DT-52910 Manual Park Release tool, wheel dollies or tire skates can be used to move the vehicle when there is an ETRS system fault or a no start condition.

For more information, refer to Bulletin #21-NA-281.

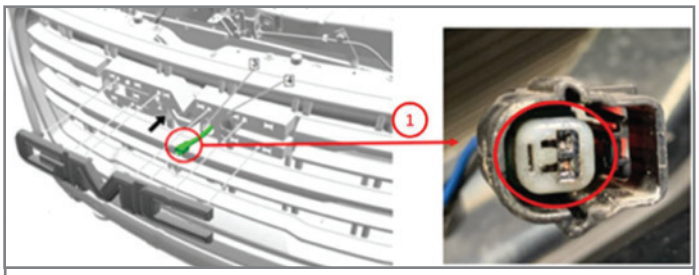
▶ **Thanks to Mark Gordon and David MacGillis**

# Improper Headlamp or Turn Signal Operation Due to GM Accessory Illuminated Emblem

Some 2020-2022 Sierra 1500, Sierra 2500/3500; and 2021-2022 Yukon models may have a driver-side headlamp or turn signal that stays on, flickers or is inoperative. The dealer-installed GM Accessory Illuminated Emblem also may be inoperative. These conditions may be caused by water intrusion from the GM Accessory Illuminated Emblem.


GM Accessory Illuminated Emblem

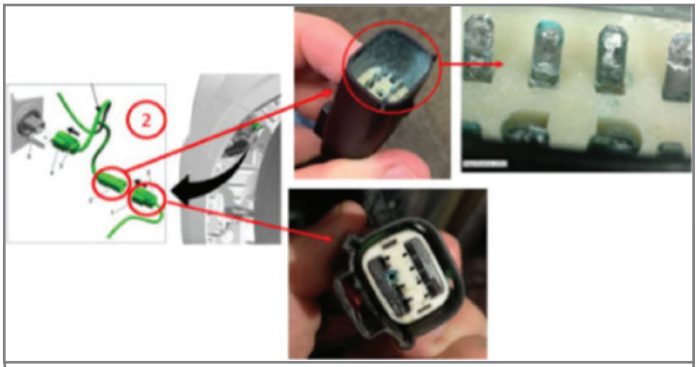
Inspect for water intrusion and corrosion at the GM Accessory Illuminated Emblem connection as well as the driver-side headlamp connector and the inline GM Accessory Illuminated Emblem harness.




GM Accessory Illuminated Emblem connection

If water intrusion or corrosion is found, perform any necessary repairs to the headlamp connector on the body harness and clean the headlamp assembly terminals.

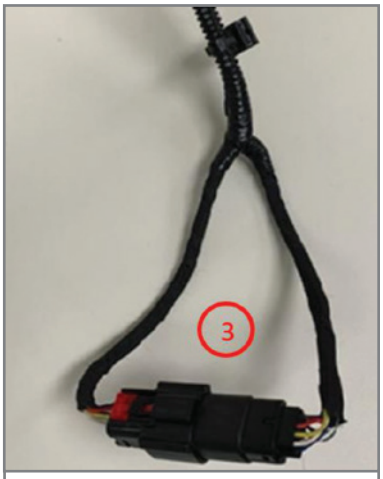
To prevent further improper operation, bypass the GM Accessory Illuminated Emblem harness by plugging the original headlamp connector from the body harness back into the headlamp assembly. This will temporarily disable the Illuminated Emblem. Permanent repair information will be released when available.




Driver-side headlight connector and the inline GM Accessory Illuminated Emblem harness

**TIP:** The headlamp assembly is not currently known to be a source of the water intrusion.

If there is not any water intrusion or corrosion found at any of the connectors, the GM Accessory Illuminated Emblem is not the source of the condition. Follow normal SI diagnostics. The GM Accessory Illuminated Emblem harness should still be disabled to prevent any improper operation in the future. Be sure to verify proper headlamp operation.




Connect and secure the ends of the GM Accessory Illuminated Emblem

The ends of the GM Accessory Illuminated Emblem harness should be connected together and secured to prevent movement.

Refer to #PIT5918 for additional information.

▶ Thanks to Jim Will

# Using R-99 or R-95 Diesel Fuel

GM Engineering has recently approved the use of renewable diesel, R-99 or R-95, for all 2006-2022 GM vehicles equipped with a diesel engine.

Renewable diesel (RD) is essentially any diesel fuel produced from a renewable feedstock, such as recyclable vegetable oil, that is predominantly hydrocarbon (not oxygenates) and meets the requirements for use in a diesel engine. Renewable diesel is chemically identical to Ultra-Low Sulfur Diesel (ULSD) fuel and can be blended in volume ratios of 1 to 99% with ULSD diesel fuel.

**TIP:** Renewable diesel is not the same as biodiesel. B20 diesel fuel is a blend of up to 20% bio components and 80% conventional diesel.

Regular diesel fuel and renewable diesel must meet ASTM D975 diesel fuel standards. Renewable or Biomass fuels have an API (a measure of the fuel specific gravity or density) of up to 50. The API can be between 40 and 50, depending on if the fuel is a combination of #1, #2, and the R-99/95 fuel. Renewable diesel fuel is also clear in color when not mixed with other fuels.

Currently, there are four things to examine when testing fuel:

1. Look at the color of the fuel compared to what is normally seen in your region. Cloudy-looking fuel is an indication that there may be an issue with the fuel.
2. Look for any separation of the fuel, which can be anything from sediment settling or different layers, like water, being seen.
3. Check the Specific Gravity (API) of the fuel.


GM has approved the use of renewable diesel for 2006-2022 GM vehicles with a diesel engine.

4. Check for contamination. Take a sample of the fuel and put it in a Styrofoam cup. Place the cup in a drain pan. Fuel contaminated with gasoline will certainly melt the cup within half an hour. B20 Biodiesel will also melt the Styrofoam cup, but it will take about an hour.

For more information, refer to #PIP5856.

▶ Thanks to Steven Ulch

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