TECH LINK

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Keep Your Cool — Air Conditioning Refrigerant Leak Diagnostic Tips

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Unlatching the Front Compartment Hood with a Weak 12V Battery

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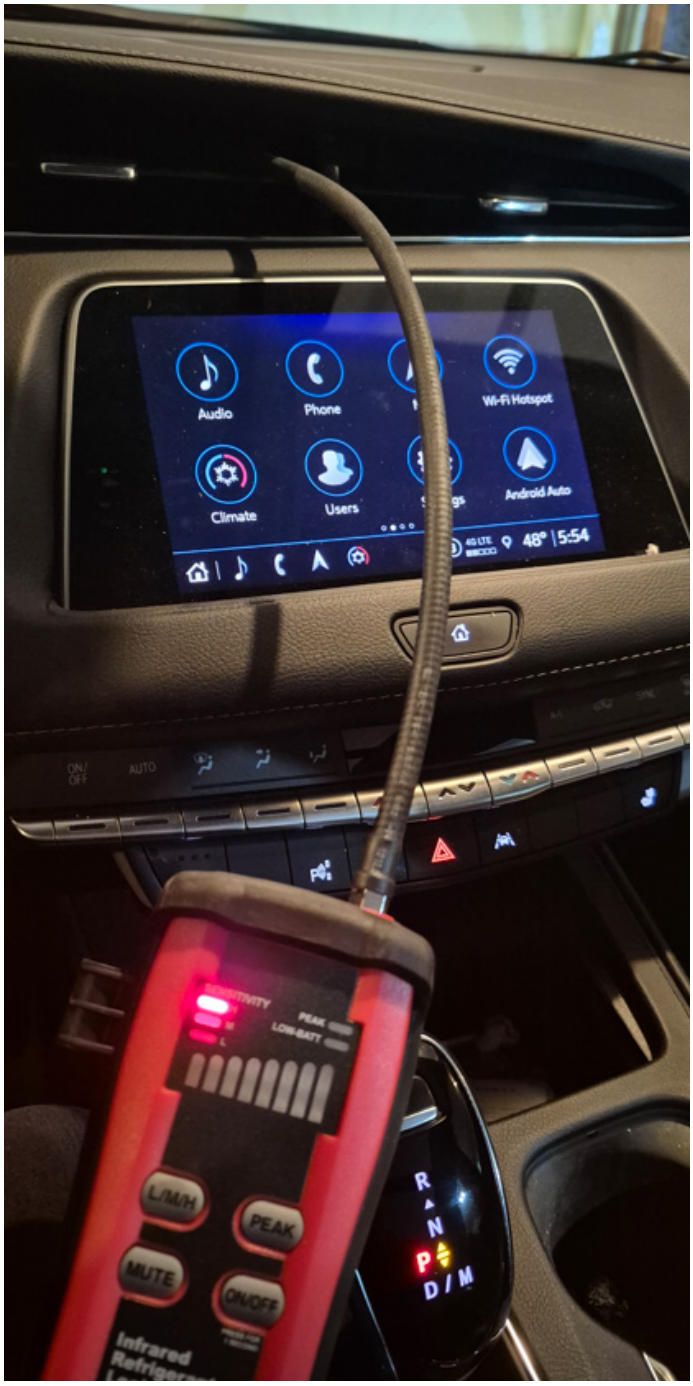
Keep Your Cool — Air Conditioning Refrigerant Leak Diagnostic Tips



All current GM vehicles are manufactured with fluorescent dye installed in the air conditioning refrigerant system. The dye mixes and flows with the A/C compressor oil to help in locating any leaks in the A/C system over time. Leaks in the system will be indicated in a light green or yellow color when using the GE-42220 Universal 12V Leak Detection Lamp to check fittings and connections, A/C components, seals, hoses and other areas.

Fluorescent dye will assist in locating most medium-to-large leaks in the A/C system, but to verify some passive leaks, the GE-50078 Electronic Leak Detector or other SAE J2913-certified electronic leak detector may be required.

TIP: Only use a SAE J2913-certified electronic leak detector when checking for leaks in an R-1234yf A/C refrigerant system.

Before replacing any parts in the A/C system, a thorough diagnostic process following the appropriate Service Information (SI) should be used to identify the root cause of the condition. In a number of recent cases analyzing evaporators returned under warranty, there has been a high rate of No Trouble Found for these components. Following the diagnostics in SI will help prevent the unnecessary replacement of system components.

USING THE SNIFFER PROBE

When using an electronic leak detector to check the evaporator, the probe should not be placed in the A/C vents or outlets. The outlets are too far from the evaporator to be effective.

In addition, HVAC module plastics and sealing materials can off-gas hydrocarbons, which may trigger the sniffer alarm. As a result, putting the sniffer probe in an A/C outlet introduces a high risk for a false trigger where the sniffer says there is a leak but there really is not.

In fact, SAE J1628 (Industry Refrigerant Leak Detection Best Practices) and the EPA 609 Certification process suggest using the sniffer probe in the A/C outlets should be a last resort during diagnosis.

Instead of inserting the sniffer probe in an A/C outlet, the probe should be placed within 3/8-inch of the part, joint, seam, seal,

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Placing the probe in the A/C vents or outlets will not be effective in finding a system leak.

A/C evaporator drain tube

etc., being checked. The electronic leak detector will not be effective if the sensor is not within 3/8-inch of the component seam, joint, seal or interface being checked.

EVAPORATOR LEAKS

The preferred method for determining if there is an evaporator leak is by checking for the presence of fluorescent dye or excessive compressor oil on the HVAC condensation drain tube.

When looking at the evaporator during leak diagnosis, focus on the evaporator drain tube using a simple process:

- Confirm the system is low on refrigerant.
- Ensure the system has been fully checked, and there are not any refrigerant leaks anywhere in the plumbing connections, condenser, R/D tube/cap, etc.
- Check that there is a presence of oil residue and/or refrigerant dye under a black light at the evaporator drain tube.

Refer to Heating, Ventilation and Air Conditioning > Diagnostic Information and Procedures in the appropriate Service Information for more details on diagnosing the A/C system.

▶ Thanks to Scott Jesnig

Unlatching the Front Compartment Hood with a Weak 12V Battery

The front compartment hood on some 2024-2025 Corvette models may not fully unlatch when one of the hood release buttons is pressed if the 12V battery is weak, resulting in the hood getting stuck in the secondary latch position. If this occurs, pulling the manual release cable near the steering column also may not release the hood.

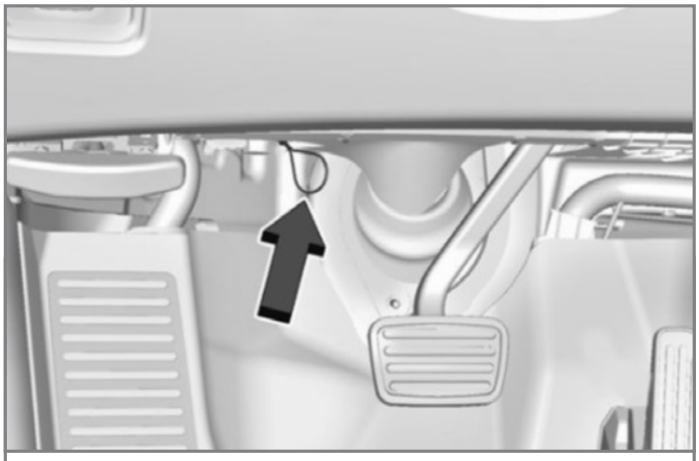
The front compartment hood on may not fully unlatch if the 12V battery is weak.

The hood release not fully unlatching may be caused by the 12V battery being too weak to start the engine, yet it may still be strong enough to electrically release the front compartment hood when commanded. The hood may release from the primary release latch, but it is possible that it may become stuck on the secondary latch. The secondary latch release requires more power than what may be available from the vehicle's 12V battery in that moment.

The incomplete functionality of the hood release is a common condition when trying to access the front compartment to charge a weak 12V battery. In order to open the front compartment, first press down on the hood manually to close it completely. Next, firmly pull the manual release cable — located at the base of the steering column — twice to open the front compartment hood.

TIP: For the manual release cable to work properly, the front compartment hood must be fully closed on the primary latch. The manual release cable will require a fair amount of effort to pull. If a hook tool is available, it may work much easier than using just a finger.

Press down on the hood manually to close it completely before using the manual release cable.



Manual release cable

Refer to Bulletin #25-NA-089 for more details.

▶ Thanks to Lane Rezek

Super Cruise Disengages or is Unavailable

The Super Cruise driver assistance technology may disengage or be unavailable on some 2021-2025 Escalade; 2023-2025 LYRIQ; 2024-2025 Traverse, Acadia; 2025 Enclave, CT5, ESCALADE IQ, OPTIQ, Blazer EV, Equinox EV, Silverado EV, Tahoe, Suburban, Sierra EV and Yukon models. A Driver Attention Assist Unavailable message or Can't See Face Clearly message also may be displayed on the Driver Information Center. These conditions may be due to inoperative infrared emitter LEDs on the steering wheel.

Infrared emitter LEDs on the steering wheel

The Driver Monitoring System is used as an input to enable or disable the Super Cruise system. It is only active when its function is requested by the K124 Image Processing Module. The system uses an infrared camera, located on the steering column, and infrared illumination, provided by IR LEDs embedded in the steering wheel, to monitor the driver and provide an estimate of the driver's attention state to the Image Processing Module. The IR LEDs in the steering wheel may be visible as a dim red glow when the system is active.

If Super Cruise disengages or is unavailable, with the vehicle in Service Mode or the vehicle running or powered on, apply the brake, shift the vehicle to Drive, and look for the three illuminated LEDs on each side of the light bar in the steering wheel. GDS2 can be used to command on the LEDs. Go to K124 Image Processing Module 1 Processor 2 > Configuration/Reset Functions > Driver Monitoring System Illumination Command. When using this function, the LEDs will alternate from left to right.

TIP: The LEDs may not be visible to the naked eye. Using a mobile phone camera set to Live > Long Exposure may make it easier to see if both LEDs are illuminating.

If the LEDs are inoperative on one side or both sides, replace the steering wheel. Do not replace the Image Processing Module.

If all LEDs are illuminated, the steering wheel is not the cause of the Super Cruise condition. Follow the diagnostics in the appropriate Service Information to diagnose the concern.

Look for the three illuminated LEDs on each side of the light bar in the steering wheel.

Note: Super Cruise and other safety or driver assistance features are not a substitute for the driver's responsibility to operate the vehicle in a safe manner. The driver should remain attentive to traffic, surroundings and road conditions at all times. Visibility, weather and road conditions may affect feature performance. Refer to the Owner's Manual for important feature limitations and information.

For more information, refer to #PIT6356

▶ Thanks to Dave Goodrow

TCSC Top Issues This Week

The Techline Customer Support Center (TCSC) is available to help dealerships with diagnostic and programming issues related to Techline Connect (TLC) and the Service Programming System (SPS).

TCSC has now released their latest tips to help technicians when using Techline Connect applications. Look for the latest tips on TechLink each week.

To get the most out of Techline Connect, be sure to review the following items before making a call to the TCSC.

The following information covers current issues and trends facing dealerships as of April 10, 2025.

COMMON ISSUES

1. TLC Restricted Access

The following message may be seen when attempting to access Techline Connect:

The message indicates the current ID is blocked from accessing Global Connect. This can be for a multitude of reasons but typically is due to a counterfeit MDI device.

To unblock the account, reach out to TCSC via Dealer Case Management (DCM) with the following information:

- User ID in Global Connect
- Email of User
- First and Last Name of User
- BAC/Dealer Code and Name of Dealership

TCSC will be able to reach out to the Cybersecurity team that will be able to determine the cause of the block and may be able to unblock the account. In the case of a counterfeit MDI, the counterfeit tool must be destroyed, and a legitimate Bosch device must be used to ensure the ID is not blocked again. Repeat offenders may not be unblocked from access.

2. E-9111/E-9113 TCM/MCVM Operation Errors

An E-9113 or E-9111 error may occur when programming the TCM, or after replacing the transmission assembly/valve body, and entering the TUN/PUN under MCVM Operations in SPS2.

The error is caused by a mismatch in data between the vehicle's TUN/PUN and the TUN/PUN uploaded in the GM database. Please ensure the complete TUN/PUN number is entered correctly, and that the TUN/PUN is in capital letters. Double check that the number zero (0) is not a letter "O" and that there are not any typos or extra characters.

If the TUN/PUN is correct, open a DCM case with TCSC and attach a clear picture of the replacement TUN/PUN in the case, as TCSC will require these to work with Engineering and have the issue addressed.

If you are receiving these errors via programming and the TUN/PUN was not replaced, TCSC may still require the TUN number.

3. Radio/IPC Part Missing from SPS2 Part Dropdown

When performing IPC Graphics programming or Radio USB programming, you may be prompted in SPS2 to select "Service Hardware." However, this is inaccurate.

For IPC Graphics programming, use the "Boot Software Part Number 1" found in GDS2 under Identification Information.

Similarly, for Radio USB Programming, use the "Calibration Part Number 1" (also may be called "Application Part Number 1") found in GDS2 under Identification Information.

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4. 2024-2025 Silverado 2500HD/3500HD and Sierra 2500HD/3500HD Adding ZW9 (Bed Delete) Built with UV2 (HD Surround Vision Camera)

Engineering has confirmed that there are no compatible calibrations that support both RPO ZW9 (Bed Delete) and RPO UV2 (HD Surround Vision Camera).

Please be advised that ZW9 cannot be added to vehicles with UV2 regardless of trim level.

5. 2024+ T1 Trucks and SUVs Downsizing Tires Not Supported.

At this time, TCSC is unable to support downsizing the tire size on any MY2024+ Silverado, Tahoe, Suburban, Sierra, Yukon and Escalade model, including accessories, reconfigurations, or tire swaps taken off another vehicle for programming.

6. 2025 Blazer EV Rocker Lighting Inoperative

There is a newly released customer satisfaction bulletin for 2025 Blazer EV models that may have inoperative rocker lighting: N242490010. The Body Control Module (BCM) and Electronic Lighting Control Module (ELM) will need reprogramming for this issue.

WEEKLY ISSUES

7. U3000 Set After One or Both Side Blind Zone Modules Replaced on 2023+ Colorado, Canyon, Corvette and Envision

Engineering is tracking down the cause of this concern. Please answer the following questions to the best of your ability and provide them in your DCM case to TCSC for the quickest possible service:

- Do the replacement SBZ module(s) have a green dot/line on the part label?
- Where did you obtain the new service parts from?
- Were these parts ordered? If so, from where?
- Is there currently a SPAC case set up for this issue?
- Were these parts obtained from another dealer?

8. CASE Learn Issues on 2024-2025 T1XX Trucks Built with L5P Engines

Engineering is investigating an issue that occurs on 2024-2025 T1XX trucks built with the L5P engine, where the ECM was replaced and sets DTC P060C. These trucks will fail the CASE (Crank Angle Sensor Learn) in SPS2 and GDS2. Engineering is investigating the root cause and trying to determine the best resolution.

Engineering still needs data! When calling TCSC, please inform the agent of the VIN, DTC P060C set, and the CASE learn failing. Some logs will be collected and forwarded to engineering for review.

9. ECM E-4398s on MY24+ Colorado and Canyon

Technicians may receive an E-4398 when programming the Engine Control Module (ECM) in SPS2. Vehicles may show in the build sheet that they were built with two different tire types/sizes. E-4398 indicates data is missing for the controller.

Please take note of the size of the actual tires installed on the vehicle before reaching out to TCSC as this will aid in quickly adding the data.

HOW TO CONTACT TCSC

- For U.S. ONLY: Assistance can be provided by using the Dealer Case Management (DCM) portal on Global Connect. If additional support is needed once the DCM case is created, contact TCSC at 1-800-828-6860. For U.S. only, a DCM case is required for phone support.
- For Canada: Contact TCSC at 1-800-828-6860 (English) or 1-800-503-3222 (French).
- For all other regions: Contact your regional Technical Assistance team for Global Techline Support.

▶ **Thanks to the Techline team**

Water Leak at the A-Pillar Body Plug

There may be several inoperative electrical features on some 2019-2025 Blazers. These conditions may include inoperative door chimes and door lamps, inoperative power mirrors or a distorted driver-side mirror, and the radio may stay on when a door is opened.

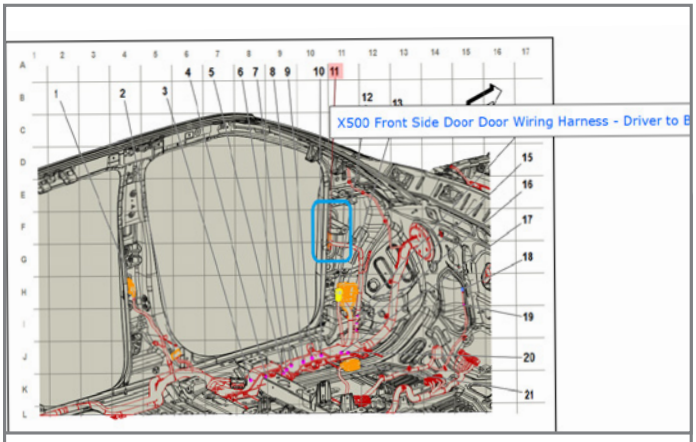
f any of these conditions are present, check for possible water intrusion into connector X500 (front driver's door wiring harness) or X600 (front passenger's door wiring harness). There may be water leaking past the A-pillar body plug.

Any corrosion in a connector should be repaired and, if necessary, replace any damaged terminals with terminated leads. Refer to Wire and Connector Repair in the appropriate Service Information.

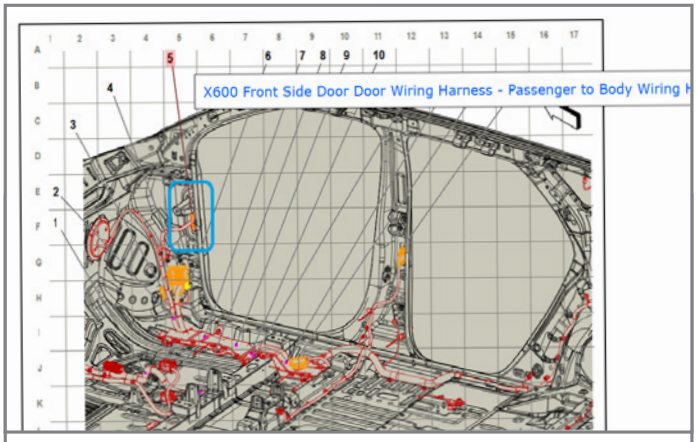
To prevent future water intrusion, install a new body plug and apply a sealant.

Refer to #PIT6354 for additional information.

Thanks to Dave Goodrow



X500 connector



X600 connector

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