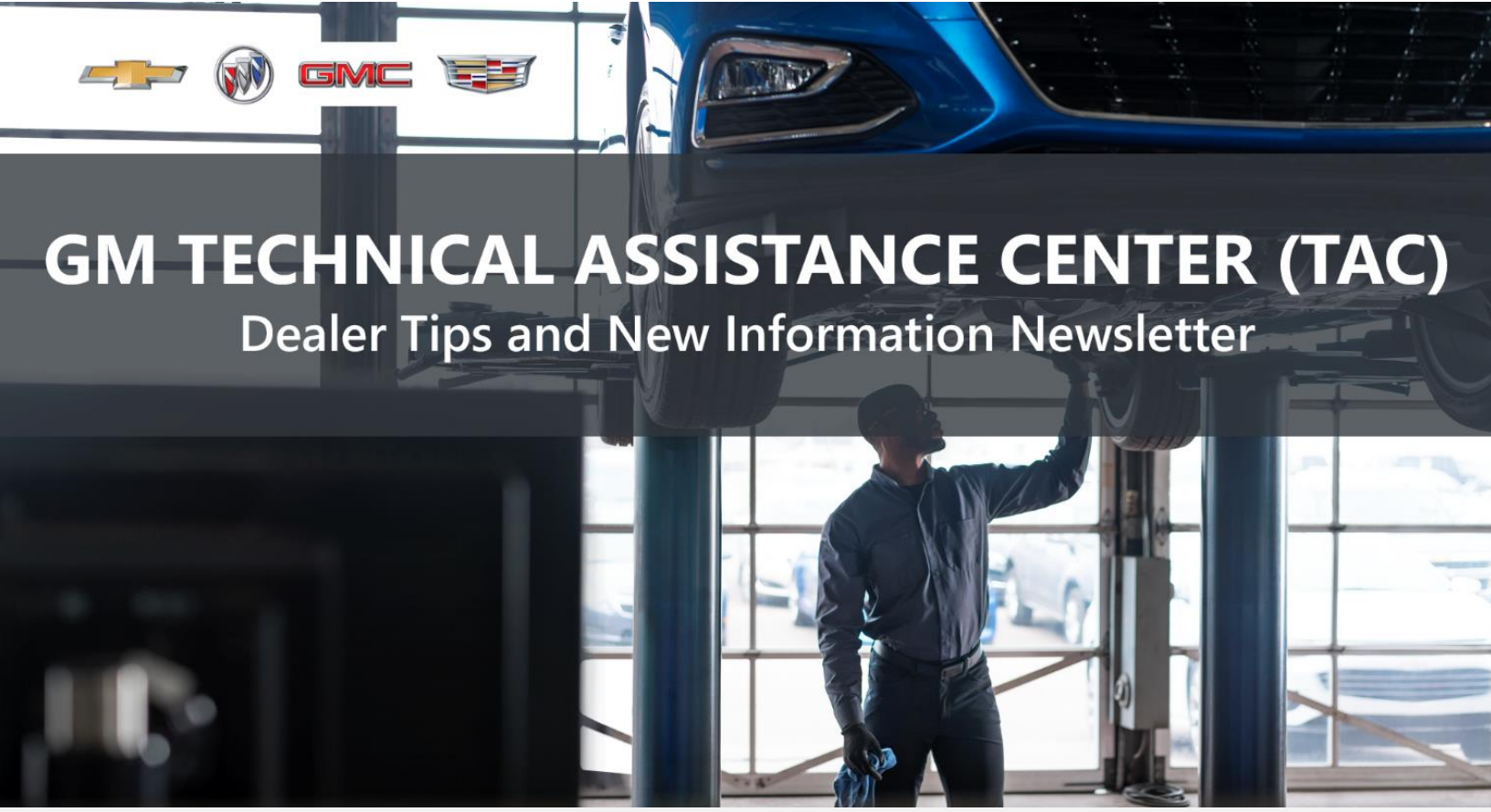


# GM TECHNICAL ASSISTANCE CENTER (TAC)

## Dealer Tips and New Information Newsletter

April 4, 2022

"PROVIDE ADVANCED TECHNICAL REPAIR GUIDANCE,
RESULTING IN A SUPERIOR CUSTOMER EXPERIENCE"

The following are key TAC Tips as well as information from recent TAC cases to help resolve some known concerns or identify normal conditions on various GM models. (U.S.)

## GENERAL

1) **Intermittent Concerns**

**Bulletin #01-00-89-010N** has been updated with Comeback Prevention Information and using Customer Concern Verification Sheets (CCVS) to help reduce repeat visits for the same customer concern.

This is the body of the revised document.

**Models: 2022 and Prior GM Passenger Cars and Trucks**

Attention: Only GM Authorized callers such as GM Dealership Service Department Personnel and GM Approved Service Facilities are allowed to contact the GM Technical

Assistance Center (TAC). DO NOT direct any GM vehicle owners, aftermarket or independent service facilities to contact TAC.
This bulletin has been revised to update the Subject, add 2021 and 2022 Model Years and update applicable information, including new flowcharts. Please discard Corporate Bulletin Number 01-00-89-010N.

## Bulletin Purpose

This bulletin is designed to aid technicians in duplicating an intermittent issue that a customer reported.

## Location of Useful Forms

The Customer Concern Verification Sheets (CCVS) are available on Global Connect under Service Forms:
https://dealer.autopartners.net/sites/usserviceforms/Pages/default.aspx

## First time in for a particular issue

Has anyone asked the customer if they use anything that was not originally attached to the vehicle (**aftermarket devices or cords**)? See the latest version of PIC5650 if needed.
If you are onto something and need more diagnostic time, see your manager.

It may be useful to search for **bulletins** and **PIs** or review the **diagnostic aids** and **strategy based diagnostics**.

For codes in history only or intermittent issues, refer to **Intermittent** in the symptoms section of SI for the complaint that the customer is experiencing. (ex. Brakes, Disc Brakes, Diagnostic Information and Procedures, Symptoms - Brake Pad Life Monitor, **Intermittent**).

For any codes that cannot be duplicated, consider looking at **freeze frame** and/or **inhibit data** in GDS2. Be sure to look at **all codes vehicle wide**. **Mode 6 data** may be useful
https://gsi.ext.gm.com/gmspo/mode6/index.html

If you cannot duplicate the complaint, do you have all the information that you need to duplicate the complaint (when, where and how the vehicle was it driven)?

1. If not, contact the customer and fill out the **CCVS** for the system with the issue.
   https://dealer.autopartners.net/sites/usserviceforms/Pages/default.aspx
2. Sometimes a **photo** or a **video** from the customer experiencing the issue can be useful. Verify that the system that you are working on has the latest **calibration**.

Please communicate to the customer that we are unable to duplicate complaint. Consider having someone **drive the vehicle with the customer** to duplicate the concern when the vehicle is picked up. Does the vehicle exhibit the same characteristics?

First time in for a particular issue flowchart

| First Time In Flowchart | | |
|---|---|---|
| 1. Can you duplicate the complaint? | YES | Refer to SI for the concern. |
| NO, move onto 2. | | |
| 2. Does the driver use any aftermarket equipment in the vehicle. Is the use of the equipment causing the complaint. | YES | Consult with the customer about alternatives to the device being used |
| NO, move onto 3. | | |
| 3. Did any bulletins, PIs, diagnostic aids, strategy based diagnostics, or the symptoms section help you duplicate the complaint? | YES | Refer to SI for the concern |
| NO, move onto 4. | | |
| 4. Did freeze frame data, inhibit data, other vehicle codes, or mode 6 data help you duplicate the complaint? | YES | Refer to SI for the concern. |
| NO, move onto 5. | | |
| 5. Using a CCSV, photos, or a video help you duplicate the complaint? | YES | Refer to SI for the concern |
| NO, move onto 6. | | |
| 6. After someone drives with the customer, does the information gathered help you duplicate the complaint? | YES | Refer to SI for the concern |
| NO, move onto 7. | | |
| 7. Verify that the system that you are working on has the latest calibration | — | — |

## Second time in for the same issue

Have someone drive with the customer to verify the concern. Be on the lookout for what the customer does when they sit down in the vehicle (aftermarket devices or cords)? See the latest version of PIC5650 if needed.

**Ask the customer if there is something that they normally have in the vehicle that is not with them today**.

Review the steps that you have taken to duplicate the complaint with your **manager**.

If the concern cannot be duplicated and if the SI diagnostics do not lead to a solution, initiate a technical assistance case. A completed CCVS sheet will be useful for TAC to help you duplicate the concern. Be prepared to answer questions about the diagnostic process that you followed so far.

**If this is related to an infotainment issue, you will be asked for the software version in the vehicle, the type of phone, the version of phone used as well as the carrier**.

If you still cannot duplicate the concern, ask your manager to contact the **DVM (district service manager)**. The DVM can escalate a Technical Assistance Center (TAC) case through the system or suggest another diagnostic path

**Second time in and subsequent visit for the same issue flowchart**

| Second Time In Flowchart | | |
|---|---|---|
| Was someone able to drive with the customer and duplicate the concern? | YES | Refer to SI for the concern |
| | NO | |
| Review what you have done to duplicate the complaint with your manager. Using your managers recommendations, can you duplicate the complaint? | YES | Refer to SI for the concern |
| | NO | |
| Review what you have done to duplicate the complaint with TAC. Using TAC recommendations, can you duplicate the complaint? | YES | Refer to SI for the concern |
| | NO | |
| Contact your DVM (district service manager) | — | — |

### Third or subsequent time in for a particular issue

Review the diagnostic steps that you have performed to duplicate/diagnose the vehicle with your manager immediately.

The dealer must contact the DVM if you haven't already.

Contact TAC and ask them for additional assistance. Be prepared to answer the questions related to the recommendations that TAC offered earlier.

### Third time in or more flowchart.

| Third Time In or More Flowchart | | |
|---|---|---|
| Contact your manager. Using your managers recommendations, can you duplicate the complaint? | YES | Refer to SI for the concern |
| NO | | |
| Contact your DVM (district service manager), can you duplicate the complaint? | YES | Refer to SI for the concern |
| NO | | |
| Contact TAC and ask them for additional assistance | — | — |

## 2) Field Product Reports

If any unusual conditions are noticed on a vehicle, please submit a Field Product Report using **Bulletin #02-00-89-002T** information for Dealers/Technicians on When and How to Submit a Field Product Report (FPR) (U.S. Dealers Only)

## 3) Service Information (SI) Feedback

For any issues with Service Information, please submit feedback using the feedback button "  " on the page with an error. This helps us all get better results from our searches.

## 4) Electrical Connection Concerns

In many areas, we are seeing components and modules being replaced and then finding poor grounds, wiring chafes or even loose terminals to be the root cause. Please be diligent in checking for electrical connections and terminals prior to component replacement. Thanks to FSE input.

5) **FSE Requests from Dealers**

At the request of FSE management, following is the normal course of action when dealing with the Technical Assistance Center and then Field Service Engineers. It is important to utilize TAC at least on the second time in for the same concern.

Prior to Field Service Engineering assistance, the dealer should:

A. Have a clear understanding of the customer concern
B. Utilized the Customer Concern Verification Sheets **(Bulletin #01-00-89-010N)**
C. Road test the vehicle with the customer/have customer demonstrate their concern
D. Contact GM TAC and performed a thorough search for bulletins
E. Accurately completed SI procedures and ALL TAC recommendations
F. Not omitted any diagnostic steps because they would take too long or did not feel it would work
G. Engage all available technical knowledge/experience
H. Ensure a properly trained and experienced technician is involved
I. Ensure the shop foreman or service manager is involved

Knowing these things helps all of us who are trying to help our customers. In this way, TAC can help in retaining customers for life and ensure the future of our business.

# ENGINE

1) **#PIE0683: Engineering Information - Internal Engine Concern**

This PIE has been entered into SI to root-cause internal engine concerns on the 4.2L LTA engine prior to any repairs.

2) **Bulletin #22-NA-074: Gasoline Engine Replacement Guidelines after Connecting Rod or Crankshaft Main Bearing Damage - Replace Oil Cooler, Oil Cooler Lines and Oil Tank**

This bulletin is now in SI for all gas engines MY 2000 – 2022.

3) **#PIP5844: Diagnostic Tip: Possible DTC P06DD After Changing Engine Oil and Filter**

This PI is now available in SI.

4) #PIE0688: Engineering Information – Malfunction Indicator Lamp (MIL) Illuminated On Driver Information Center (DIC)

   This PIE is out for 2022 Colorado and Canyon with 3.6 LGZ engine setting DTC's P0300, P0302, and/or P050D.

5) Bulletin #22-NA-077: DTC P261F – Coolant Pump A Stuck On Setting Check Engine Lamp to Illuminate After Two Faults

   This bulletin is now available for 2021 and 2022 C1Ux and C1TL vehicles with 3.6L LGX engine.

6) #PIP5628E: Diagnostic Aids for Engine Misfire/Rough Running with DTC P0300-P0308 and/or DTC P050D

   This PI is now available for all misfire concerns on gasoline engines.

7) Bulletin #22-NA-056: Malfunction Indicator Lamp (MIL) Illuminated - DTC P0172, P06DE and/or P0521 Set

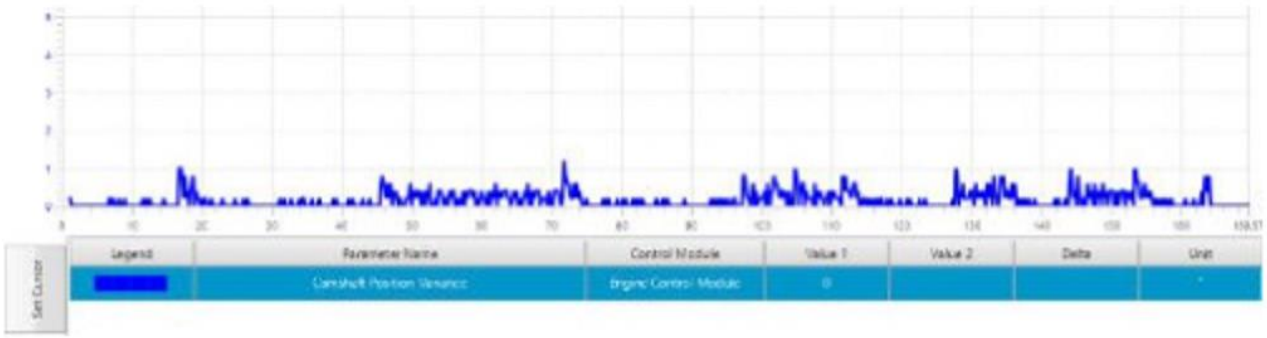
   This bulletin is now available for all 2020 – 2022 2.0L LTG engines.

## 8) Subject: Diagnostic Tips for Engine Related Shudder Concerns

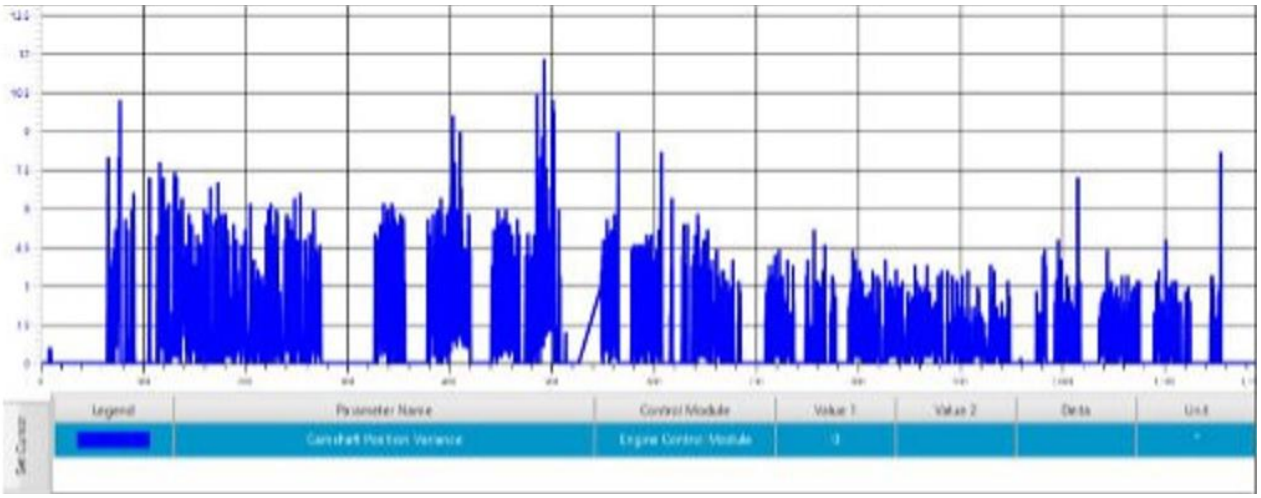
| Brand: | Model: | Model Year: | | Breakpoint Date: | | Engine: | Transmission: |
|---|---|---|---|---|---|---|---|
| | | from | to | from | to | | |
| Cadillac | Escalade Models | 2015 | 2022 | SOP | EOP | 4.3L (LV3), 5.3L (L82, L83, L84) 6.2L (LT1, LT2, LT4, L86, L87), 6.6L (L8T) | □ |
| | CT5 | 2022 | 2022 | | | | |
| Chevrolet | Camaro | 2016 | 2022 | | | | |
| | Corvette | 2014 | 2022 | | | | |
| | Express | 2021 | 2022 | | | | |
| | Silverado | 2014 | 2018 | | | | |
| | Silverado LD | 2019 | 2019 | | | | |
| | Silverado 1500 (New Model) | 2019 | 2021 | | | | |
| | Silverado 1500 - LTD (RPO J21, VIN Digit 12 = 4 or less) | 2022 | 2022 | | | | |
| | Silverado 1500 - New (RPO J22, VIN Digit 12 = 5 or greater) | | | | | | |
| | Silverado 2500HD/3500HD | 2020 | | | | | |
| | Suburban | 2015 | | | | | |
| | Tahoe | | | | | | |
| GMC | Savana | 2021 | 2022 | | | | |
| | Sierra | 2014 | 2018 | | | | |
| | Sierra Limited | 2019 | 2019 | | | | |
| | Sierra 1500 (New Model) | 2019 | 2021 | | | | |
| | Sierra 1500 - Limited (RPO J21, VIN Digit 12 = 4 or less) | 2022 | 2022 | | | | |
| | Sierra 1500 - New (RPO J22, VIN Digit 12 = 5 or greater) | | | | | | |
| | Sierra 2500HD/3500HD | 2020 | | | | | |
| | Yukon Models | 2015 | | | | | |

| | |
|---|---|
| **Involved Region or Country** | North America, Europe, Uzbekistan, Middle East, Iraq, Israel, Palestine, Argentina (Mercosur), Brazil (Mercosur), Bolivia (West), Chile (West), Colombia (West), Ecuador (West), Paraguay (West), Peru (West), Uruguay (West), Venezuela (West), Japan, Cadillac Korea (South Korea), GM Korea Company, China - SGM, Taiwan , Thailand (ASEAN), Singapore, Phiippines, Australia/New Zealand, Egypt, Other Africa, South Africa |
| **Condition** | Some customers may comment that they feel a Shudder or Surge type feeling when driving at a steady speed.<br>– Some customers may mistake it for a transmission related concern. |
| **Cause** | This condition may be caused by the camshaft actuator magnet sticking. |
| **Correction** | If the concern has been determined to be engine related and not being caused by the transmission the following diagnosis may be helpful:<br>– While duplicating the Shudder or Surge concern monitor the data parameter "Camshaft Position Variance" in GDS2. Although target variance is 0 degrees, it is not uncommon to observe variance of up to 3-4 degrees on a properly functioning system.<br>– Any variance exceeding 3-4 degrees could potentially cause a noticeable Shudder or Surge concern. If after diagnosis you confirm that the concern has been isolated to the camshaft actuator system, it is recommended to replace the camshaft actuator magnet and re-evaluate. Refer to Camshaft Position Actuator Magnet Replacement.<br>If the Shudder/Surge is still present after camshaft actuator magnet replacement and camshaft actuator variance is over 4 degrees, refer to GM Service Information for further diagnosis. |

Below are line graph examples from GDS2: one showing normal operation of the camshaft actuator system and one that is considered suspect and not operating properly.




Normal operation (variance under 4 degrees)



Suspect fault in camshaft actuator system (variance over 4 degrees)

## Parts Information

| Causal Part | Description | Part Number | Qty |
|---|---|---|---|
| X | MAGNET, CM/SHF POSN ACTR | 12675031 | 1 |

## Warranty Information

For vehicles repaired under warranty, use:

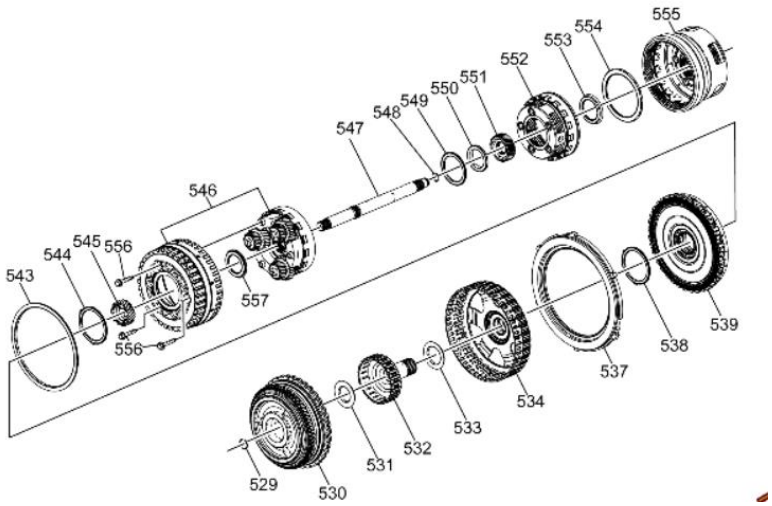
| Labor Operation | Description | Labor Time |
|---|---|---|
| 4064870 | Camshaft Position Actuator Magnet | Use the Published Labor Operations Time |
| 4021760 | | |

# TRANSMISSION AND DRIVETRAIN

1) **Incorrect Part Number in EPC for the GF9 Transmission**

The parts catalog for item #550 shown below from document #4368697 shows P/N 24260431, but should be and will be changed to 24268852.

There is very low inventory as of right now on this part number. See the diagram below.




# ELECTRICAL, CHASSIS AND TRIM

## Trucks and Crossovers

1) **2022 Silverado or Sierra with Missing Rear Wheelhouse Liners**

Mar. 30, 2022, Chevrolet and GMC Dealers: This communication is to advise of an action required due to a series of events at a supplier including a recent flood at their production facility. Effectively immediately, certain Chevrolet Silverado and GMC Sierra trucks will be built without Rear Wheelhouse Liners. This change is not due to the semiconductor shortage. We expect this change to be in place for a few weeks of scheduled production.

Rear Wheelhouse Liners (B1J) will no longer be available on certain 2022 model year trucks as standard equipment or optionally packaged:

- NEW 2022 Chevrolet Silverado 1500 & 2022 Silverado Heavy Duty 2500/3500
- NEW 2022 GMC Sierra 1500 & 2022 Sierra Heavy Duty 2500/3500

This change has been implemented with vehicles to begin arriving at dealership the week of Mar. 28, 2022.

For orders with a scheduled production date on or after March 18, 2022, GM will build certain full-size trucks with the RPO code RFZ – 'Not Equipped with Rear Wheelhouse Liner' (refer to the table below for trim details). This RPO code will be reflected on the Dealer Invoice along with an associated $140 MSRP credit in the U.S.

Due to how quickly this change was implemented, initial impacted vehicles will arrive at dealerships with shipping labels only. A replacement Monroney label will be mailed to the dealer and will include this credit and indicate that the vehicle is not equipped with Rear Wheelhouse Liners.

There will be no retrofit process once these parts become available. The dealer has the responsibility to and must advise affected sold order customers immediately. In addition, dealers are strongly urged to counsel directly with all customers who purchase affected vehicles to ensure each customer understands its vehicle content. The wheelhouse liners are offered as Accessories and can be ordered through the dealerships parts department or via the brand Parts and Accessory eCommerce website. Please note that there is currently a limited availability for these parts.

A listing of affected trims is listed below and is subject to change by General Motors:

NEW 2022 CHEVROLET SILVERADO 1500 – Available on WT, CUSTOM, CUSTOM TRAIL BOSS, LT, RST, LT TRAIL BOSS; Standard on ZR2, LTZ, HIGH COUNTRY

2022 CHEVROLET SILVERADO HD 2500/3500 – Available LT; Standard LTZ, HIGH COUNTRY

NEW 2022 GMC SIERRA 1500 – Available on Pro, SLE, ELEVATION; Standard on SLT, AT4, AT4X, DENALI

2022 GMC SIERRA HD 2500/3500 – Available on SLE; Standard on SLT, AT4, DENALI

2) **2021 2022 Acadia, Blazer, Canyon, Colorado, Enclave, Traverse, XT5, XT6 for Front Brake Grind/Groan Noise**

If a 2021MY vehicle with pad P/N 85520396 (C1XX) or P/N 85139417 (31XX) returns with a front brake grind/groan noise, or if a 2022MY vehicle comes in with a front brake grind/groan noise, do the following:

Note: The pads will have GA9140/GM9140 stamped on the top edge.

A. Scuff the rotor surface (i.e.: Scotch pad)
B. Replace pads again
C. Burnish per SI and **Bulletin #21-NA-142**

If the vehicle returns again

A. Replace Front Rotors and Pads

B. Burnish per SI and bulletin 21-NA-142

# INFOTAINMENT AND ONSTAR

## 1) Contacting TAC for Infotainment Issues

When contacting TAC for assistance with an Infotainment issue, please provide the vehicle's current Radio Software Version. The software version will greatly assist the Infotainment team in determining the best recommendations for the issue.

## 2) DID Improvements for Global A UVS and UV2 Camera Systems

We are working on updating SI and possible other ways to improve diagnostics for RVC issues. DID's have been added for Global A UVS and UV2 rear camera systems in the VPM and should be viewable in GDS2. Most of these are pretty straight forward, but some may be unclear.

The most common will be the boxed-in section and will increment in counts. VPM reset counter shows how many times the module has needed to reset (should only last a couple of seconds) and is designed into the programming strategy. Most of this will be expected operation, but can help out by showing that there is a fault in the system and the VPM needed to reset to try and clear it.

The frame rate out of range could possibly be a coax issue, but most likely it is internal to the camera itself.

The synchronization counter tells that there is "interference" in the signal from that camera branch. In most cases, it will be a coax issue.

The camera position counter shows if the X, Y, Z location is inaccurate when compared to what is expected. Possible causes are body damage, mounting, etc.

There is also an easy test to split up the system for easier diagnosis. If the system is in a failed state, unplug all camera coax and USB cables from the VPM (if equipped with recorder) and leave just the rear camera plugged in. Cycle the VPM connector to reinitialize the VPM and see if the rear camera is displayed. If the rear camera is displayed, plug the camera branches back in one at a time (USB as well) to see if one camera branch is taking down the system.

If there is not an image with just the rear camera branch plugged in, then the concern is with the radio, coax between the radio and VPM, VPM, coax between the radio and VPM, or the rear camera. Splitting up the system this way makes diagnosis a little easier.

A quick matrix is being developed that will help with resolving the B101D/E issues. Most of the B101D/E codes are due to an unwanted diagnostic strategy and shouldn't be treated the same as in the past with other modules with the same codes. In most cases, a B101E or B101D should not result in replacing the VPM; instead, review coax/connector issues as well as the video recorder SD Card, if equipped (make sure it's not corrupted).

There have been quite a few issues on vehicles equipped with the video recorder where the customer's SD card was causing an issue. In most of these cases, the VPM is continually resetting every 10 seconds or so, but not always. Removing the video recorder SD card should identify if that is the issue.

NOTE: Please make sure the system is powered down when removing and inserting cards. Files can be corrupted if the card is removed or inserted when the system is powered up.

| 15284125 | **Video Processing Module Internal Status** | Data Display Name | | |
|---|---|---|---|---|
| 15588392 | Rear Camera Communication Fail Counter | Counts | DID | $16 |
| 15588393 | Front Camera Communication Fail Counter | Counts | DID | $16 |
| 15588394 | Right Camera Communication Fail Counter | Counts | DID | $16 |
| 15588395 | Left Camera Communication Fail Counter | Counts | DID | $16 |
| 15588396 | Video Processing Module Reset Counter | Counts | DID | $16 |
| 15588397 | Rear Camera Open Circuit Fail Counter | Counts | DID | $16 |
| 15588398 | Front Camera Open Circuit Fail Counter | Counts | DID | $16 |
| 15588399 | Right Camera Open Circuit Fail Counter | Counts | DID | $16 |
| 15588400 | Left Camera Open Circuit Fail Counter | Counts | DID | $16 |
| 15588401 | Rear Camera Short To Voltage Fail Counter | Counts | DID | $16 |
| 15588402 | Front Camera Short To Voltage Fail Counter | Counts | DID | $16 |
| 15588403 | Right Camera Short To Voltage Fail Counter | Counts | DID | $16 |
| 15588404 | Left Camera Short To Voltage Fail Counter | Counts | DID | $16 |
| 15588405 | Rear Camera Short To Ground Fail Counter | Counts | DID | $16 |
| 15588406 | Front Camera Short To Ground Fail Counter | Counts | DID | $16 |
| 15588407 | Right Camera Short To Ground Fail Counter | Counts | DID | $16 |
| 15588408 | Left Camera Short To Ground Fail Counter | Counts | DID | $16 |
| 15588409 | Rear Camera Frame Rate Out Of Range Fail Counter | Counts | DID | $16 |
| 15588410 | Front Camera Frame Rate Out Of Range Fail Counter | Counts | DID | $16 |
| 15588411 | Right Camera Frame Rate Out Of Range Fail Counter | Counts | DID | $16 |
| 15588412 | Left Camera Frame Rate Out Of Range Fail Counter | Counts | DID | $16 |
| 16030811 | Rear Camera To Video Processing Module Synchronization Fail Counter | Counts | DID | $16 |
| 16030812 | Front Camera To Video Processing Module Synchronization Fail Counter | Counts | DID | $16 |
| 16030813 | Right Camera To Video Processing Module Synchronization Fail Counter | Counts | DID | $16 |
| 16030814 | Left Camera To Video Processing Module Synchronization Fail Counter | Counts | DID | $16 |
| 15588413 | Video Processing Module Voltage Above Threshold Fail Counter | Counts | DID | $16 |
| 15588414 | Video Processing Module Voltage Below Threshold Fail Counter | Counts | DID | $16 |
| 15588415 | Rear Camera Out Of Position Fail Counter | Counts | DID | $16 |
| 15588416 | Front Camera Out Of Position Fail Counter | Counts | DID | $16 |
| 15588417 | Right Camera Out Of Position Fail Counter | Counts | DID | $16 |
| 15588418 | Left Camera Out Of Position Fail Counter | Counts | DID | $16 |
| 15588419 | Video Processing Module VIN Mismatch | Counts | DID | $16 |

# DCM AND TAC CASES

1) **Opening TAC Cases in DCM**

When opening a TAC case that includes several DTCs, submit a session log into the case per the latest version of **#PIP5632** to ensure that all codes are included. In addition, on VIP vehicles, include the Network Communication Event Results and Network Communication Status data lists.

2) **Closing TAC Cases**

When finishing a vehicle with a TAC case, please submit a closing with as much information as possible. This can be done by entering it into the DCM per TAC closing information or by simply calling into TAC and the advisor will submit it for you. By doing so, we can all help each other share as much information as possible to help take care of our customers efficiently. Remember: ONE TEAM.

When submitting a case closing, please only submit cases when the vehicle has actually been repaired. If the vehicle is no longer at the dealership or is waiting for parts, the case can be closed unlinked, which becomes unsearchable so that incomplete information is not shared with others.

3) **Previous TAC cases**

If you already have a recent TAC case on a vehicle and you find that it is closed, and you would like to update it for the same issue, please call TAC and case can be reopened instead of starting a new case. Reopening the case will help ensure that all relevant information will be in one place for the consultant to best assist with the concern.