



GM TECHNICAL ASSISTANCE CENTER (TAC)

Dealer Tips and New Information Newsletter



June 14, 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.

GENERAL

1) Intermittent Concerns

Bulletin #01-00-89-010N has been updated from Comeback Prevention Information and Using Customer Concern Verification Sheets (CCVS) to **Guide to Help Reduce Repeat Visits for the Same Customer Concern**.

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) Noise Concerns

For any noise concerns where a TAC case is needed, refer to **#PIP5358A** Vehicle Noise Diagnosis and TAC Requests for Assistance with Noise-Related Complaints. Also, produce a video or sound file to share.

NOTE: Review the file and ensure that it will play back an audio file that can be heard from the PC speakers. The PicoScope will pick up normal noises and make them clearly audible. Make sure the noise that is being diagnosed is on the file. If the noise is not there, move the sensor and record another file until the source area is found.

5) Attaching GDS2 Session Logs

#PIP5632F Procedure for Attaching GDS2 Session Logs to Technical Assistance Cases Using Dealer Case Management (DCM) (U.S. Dealers Only) can also be used to enter pictures and sound files or videos into the case when requested by TAC.

ENGINE

1) Fuel Quality

When diagnosing a possible fuel quality concern, reference the vehicle's Owner's Manual for fuel requirements and the vehicle's RPO list to verify before sending to parts or tearing it down.

- Ask if the customer knows what fuel is in the vehicle
- Ask if the customer knows what fuel is recommended to be used in the vehicle.
- At what operating temperature is there a concern: Hot or Cold?
- At what ambient temperature is there a concern: Hot or Cold?
- When does it occur – accelerating, decelerating, cruising, aggressive driving, cold, hot, accessories on, etc.
- Can it be driven through?
- Fuel sample

Performance and turbocharged vehicles (and 6.2L and some 6.0L earlier trucks and cars may see issues) may see a larger concern and, related to current fuel costs, some owners may use a lesser octane gasoline than required (**NOT RATED AT THE REQUIRED LEVEL**) or E85 (verify the RPO shows it's compatible and the Owner's Manual agrees).

Example: 2020 T1XX, L87 6.2L: misfire all cylinders, random DTC P0300 – P0308

Document ID: 4262539

Fuel trims ok at cruise and light acceleration. No misfires detected. Hard acceleration on freeway entrance and all cylinders show misfire. Verified fuel was clear and clean. Found 87 octane after discussing with the customer. Per Owner's Manual - Document ID: 4999959, 93 octane should be used. No E85; E15 max. Flushed fuel and refilled with 93 octane and no issues found.

Example: 2017 Cadillac ATS, LSY 2.0L: hesitates on acceleration, noise on acceleration, Check Engine MIL

Document ID: 4262539

Verified customer added E85 blended. No issues except on aggressive driving or hard acceleration - passing or merging. Flushed fuel system and added 93 octane and no further performance concerns found.

Review each case, but **as temperatures rise and fuel prices increase, there will likely be more of these concerns** and only a simple diagnosis and review may be needed - NOT MECHANICAL, NOT BUILD.

These are examples from actual cases, so follow each vehicle build in SI individually. Some of these cases are sensitive and some are not as severely affected.

Review the latest version of **Bulletin #05-06-04-022S** - TOP TIER™ Detergent Gasoline and TOP TIER™ Diesel Fuel Information and Licensed Brands.

2) Repairing Engine Damage

If you find engine damage and are wondering if the engine should be repaired or replaced, review the following documents (depending on the applicable engine):

- **Bulletin #18-NA-073**
- **Bulletin #22-NA-074**
- **Bulletin #19-NA-256**

These bulletins provide photos of different types of damage and covers what may be repairable vs. what would require replacement.

3) Service V8 Engine Pinched Plastic Covering

If you encounter a new replacement V8 engine with part of the plastic covering pinched between the engine and the cylinder head, do not replace the engine.

Remove the affected cylinder head(s), remove the plastic, and replace the head gasket(s) and bolts. The plastic likely was pinched when validated lifters were installed after the engine was already assembled and secured to the crate.



4) New Small Block Bearing Failures have been Identified

Thrust Bearing Failures on 2020 – 2021 model year applications, 6.2L engine RPOs L86/L87/LT2/LT1 and the 6.6L LT8.

These engines were built in the December 2020 to February 2021 time frame. Issues seem to be more prevalent at two specific engine plants, but all plants had an increase in issues between March and April 2021.

The issue can be identified by a thumping, knock, or tap-type noise coming from the lower engine area. Upon inspection, there may be excessive crankshaft endplay along with the #3 main bearing (thrust bearing) being damaged or the side “wing” of the bearing being out of place. Engine replacement is the correct repair for this issue.

Thanks to BQM Bryan Salisbury.



5) #PIP5856: Use of R-99 or R-95 Diesel Fuel

This new PI is now available in SI.

6) #PIP5838B: Service Diesel Exhaust Fluid Tank Wiring Harness Pinout Change. Possible DTCs P20B9 and/or P20C1

This updated PI is now available in SI.

7) Document ID: 5445491 Fuel System Description

Fuel Pressure Regulator 1

The engine control module (ECM) controls the fuel rail pressure using two pulse-width-modulated fuel rail pressure regulators. Fuel pressure regulator 1 is located in the fuel injection pump and meters the amount of fuel that enters the high-pressure side of the pump. From the high-pressure pump, the fuel moves to the fuel rail through a high-pressure steel line. The fuel rail distributes high-pressure fuel to all 8 fuel injectors.

Fuel rail pressure is controlled by fuel pressure regulator 1 when fuel temperature is warmer than 8°C (46.4°F) and the accelerator pedal is at a steady state, during a tip-in, or accelerating.

Fuel Pressure Regulator 2

The engine control module (ECM) controls the fuel rail pressure using two pulse-width-modulated fuel rail pressure regulators. Fuel pressure regulator 2 is located on the rear of the driver's side fuel rail and meters the amount of fuel being returned to the fuel tank.

The ECM varies the pulse-width-modulated voltage to fuel pressure regulator 2 to relieve excessive fuel pressure, which returns to the fuel tank. When the ignition is Off, fuel pressure regulator 2 opens to bleed off the pressure in the fuel rail.

Fuel rail pressure is controlled by fuel pressure regulator 2 when the fuel temperature is colder than 8°C (46.4°F) or during accelerator pedal tip-out.

The use of FPR1 and FPR2 differ slightly from what we are used to.

DTCs P228A and P228B mean the regulator (1 or 2) has reached its authority and is still not able to create enough fuel rail pressure, at least for diesels.

Fuel rail pressure sensor 1 is the only signal used to control fuel rail pressure. The #2 signal is only used to verify the plausibility of #1.

8) LSP DEF Tank Issues and Resolutions

There have been recent changes regarding DEF tanks: If a vehicle is setting DTC P20BB and/or P20C3, there is a new calibration for the DEF controller. The calibration will make it more unlikely that these codes will set.

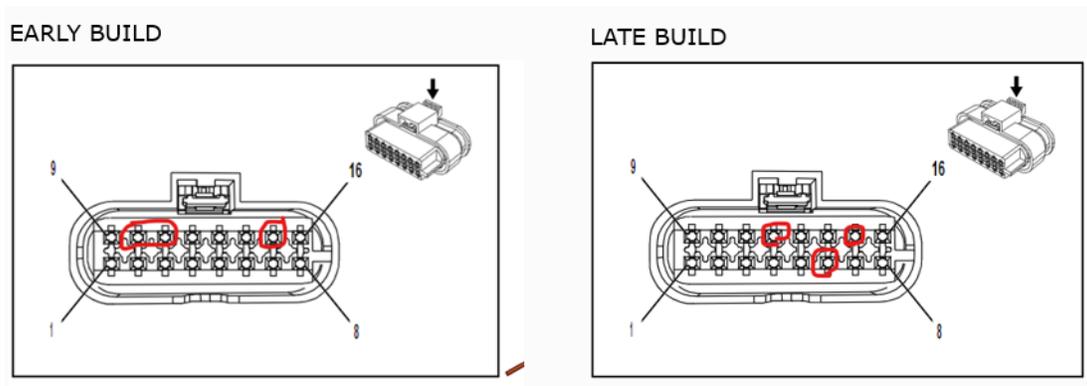
If the vehicle returns, it is likely due to the heater inside the DEF tank having been exposed to DEF fluid. **Bulletin #21-NA-002** illustrates how to test for this condition. If a vehicle fails this test, a new DEF tank will be required to repair the vehicle.

Here is an example of a heater that would set the code if it was in a tank and exposed to DEF. GM now has a different supplier making these heater mats for both production and service.



On a vehicle setting DTC P20C1, P21DD, P221C, P10D9, P10F3, P143C, P20B9, and/or P221E, it is likely that the electrical connector is damaged at the DEF pump assembly and the DEF tank harness. This damage is illustrated in **Bulletin #21-NA-006**. GM has taken two actions to mitigate this issue:

- 1) There is an update to the DEF controller that will lower the amperage to the DEF tank heaters. The DEF controller update was released in N212342980. It is also included in the latest calibration for the DEF controller.
- 2) There is a pinout change in the DEF harness connector at the pump module and in the module itself. The pinout change has been in production since the first of the year. Therefore, there is a first- and second-design schematic for model year 2022. Around the same time, this same change was made to all service parts. Any part ordered today and going forward will have this change. The following illustration shows how the pin locations have changed.



When testing or servicing a DEF tank that has already been replaced, it is important to keep the change in pinout in mind. Service Information will not show a schematic for the change in pin location for model year 2020 or 2021, but **#PIP5838** discusses this change. The same change will be coming in the LM2 pickup trucks followed by the LM2 SUVs. Once these changes have occurred, **#PIP5838** will be deleted and a bulletin will be released.

If there is a DEF level concern and the DEF level reset is performed with less than one gallon (3.5 L) of DEF in the tank, the reset may not work correctly. Make sure there is more than one gallon of DEF in the tank prior to performing a DEF level reset.

ELECTRICAL, CHASSIS AND TRIM

Trucks and Crossovers

1) Component Naming and Labor Operation Code Usage for Air Leveling RPO F47 and Electronic Suspension Control RPO Z95 Systems

A PI with the following information will be released soon.

Models

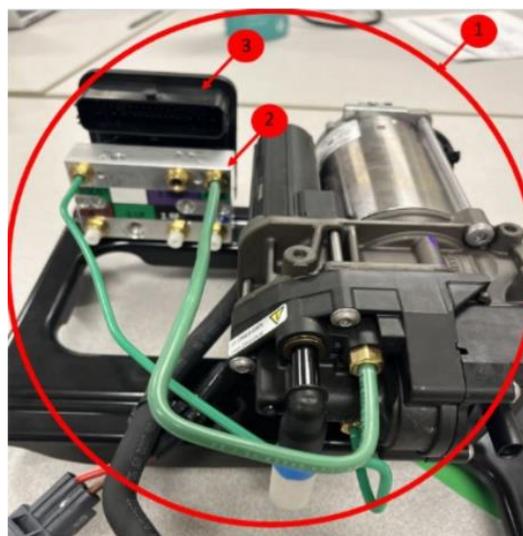
Brand:	Model:	Model Years:	VIN:		Engine:	Transmissions:
			from	to		
Cadillac	Escalade Models	2021-2022	All	All	All	All
Chevrolet	Suburban	2021-2022	All	All	All	All
Chevrolet	Tahoe	2021-2022	All	All	All	All
GMC	Yukon Models	2021-2022	All	All	All	All
Involved Region or Country	North America					
Additional Options (RPO)	F47 and/or Z95					
Condition	There has been some confusion with the component naming and labor operation code usage when servicing either the Air Leveling system RPO F47 and/or the Electronic Suspension Control System RPO Z95. This PI will provide information on the component naming and labor operation usage.					
Cause	New systems.					

Correction:

Air Leveling System RPO F47 Component Naming and Labor Operation Codes:

Item 1 includes everything shown in the red circle and is called the Automatic Level Control Module. The main reason this complete assembly would be replaced is if the air compressor itself needed to be replaced. Use labor operation 8020980 if this complete assembly is being replaced.

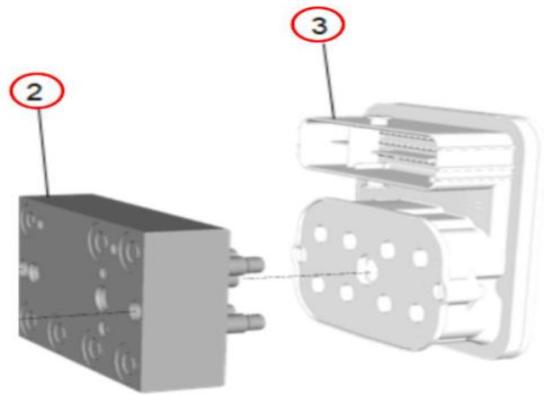
Items 2 and 3 can be replaced separately from the complete Automatic Level Control Module assembly; see below for more information.



Items 2 and 3, shown above and below, can be replaced separately from the complete Automatic Level Control Module assembly.

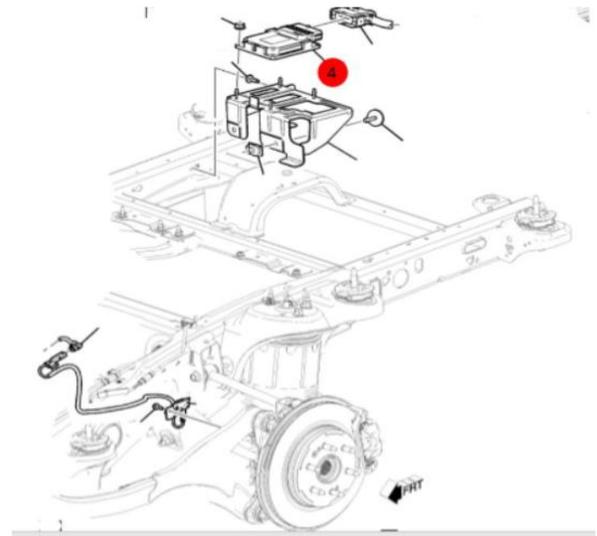
Item 2 is the Air Suspension Controller and labor operation 8020710 should be used if it is replaced.

Item 3 is the Air Suspension Control Module and labor operation 8020700 should be used if it is replaced.



Electronic Suspension Control System RPO Z95 Component Naming and Labor Operation Code:

Item 4 is the Suspension Control Module and labor operation 8020010 should be used if it is being replaced.



Warranty Information

Labor Operation	Description	Labor Time	Item Number
8020980	Automatic Level Control Module	Use Published Time	1
8020710	Air Suspension Controller	Use Published Time	2
8020700	Air Suspension Control Module	Use Published Time	3
8020010	Suspension Control Module Replacement	Use Published Time	4

Version History

Version	1
Modified	created on 6/6/2022

2) **Bulletin #20-NA-206: Service Power Steering Message Displayed, DTC U0100 and/or U1814-02 Set Will Not Clear, Blown Fuse F6DA, Rejected by Control Module Error Message**

This bulletin has been updated to address DTC U0100 setting in the PSCM from model year 2017 to 2022.

3) **New 2022 Silverado 1500 / Sierra 1500 RPO J22 GM Accessory Sport Bar Installation CHMSL Wiring**

The CHMSL wiring is incorrect as shown below. **At this time, do NOT attempt to install.**

SI Document ID: 4888755 Pickup Box Ornamentation Bar Package Installation (Instruction ID: 84219050) has incorrect CHMSL wiring instructions for the new Silverado 1500 / Sierra 1500 RPO J22 trucks. The installation instructions are for the RPO J21 Global A trucks.

There is a Part Alert that has been released for installing the Sport Bar on the new Silverado 1500 / Sierra 1500 RPO J22 and the ADI is not supposed to deliver them for installation.

GM Engineering is working on a new Sport Bar Kit that can be installed on the new Silverado 1500 / Sierra 1500 RPO J22 trucks, but timing on kit availability is not currently available.

At this time, Engineering requests that dealers remove the Sport Bar from any truck it has been installed on so there is a visible, working CHMSL on the vehicle, which will allow the customer to drive it until the new Sport Bar Kit is released.

4) **Front Camera Module**

On some 2022 trucks, when ordering a replacement front camera module at rear view, for any reason, the current module may have a mislabeled service part number (86814414 is for HUMMER EV only). Order the new module in the EPC by the VIN being working on, not the listed service part number on the module.

See below for reference.



INFOTAINMENT AND ONSTAR

1) Bulletin #22-NA-096: Customer Education Video Screenshots for IOK radio

This bulletin is now available in SI.

DCM AND TAC CASES

1) Features of the Dealer Case Management System

DCM resolution search is now available to dealers. Please review the PDF file below for more information.



2) Opening TAC Cases in DCM

When opening a TAC case, run a VIN search to see if a case exists already on the vehicle for the same concern from your dealer or a recent case from other dealers. This will ensure all case information is on the same case from any dealer. If there is a current case, call TAC to have it opened and updated.

If the case 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.

3) 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.

4) 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.