



Service Bulletin

Bulletin No.: 23-NA-002

Date: July, 2024

TECHNICAL

Subject: Charge Air Cooler (CAC) Icing, Check Engine Lamp Illuminated, Possible P0299, P2227 and/or P0300 DTCs Set

Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
Chevrolet	Silverado 1500	2019	2021			L3B 2.7L, 4-cylinder Gas Engine	
	Silverado 1500 LTD (RPO J21, VIN Digit 5 = W / Y)	2022	2022				
	Silverado 1500 New (RPO J22, VIN Digit 5 = A / D)						
	Silverado 1500	2023	2023				
GMC	Sierra 1500	2019	2021			L3B 2.7L, 4-cylinder Gas Engine	
	Sierra 1500 Limited (RPO J21, VIN Digit 5 = 8 / 9)	2022	2022				
	Sierra 1500 New (RPO J22, VIN Digit 5 = H / U)						
	Sierra 1500	2023	2023				

Involved Region or Country	North America, Europe, Uzbekistan, Russia
Additional Options (RPOs)	
Condition	Some customers may comment on a Check Engine Lamp illuminated in the DIC and/or reduced engine power. Technician may find DTCs P0299 and/or P2227, or P0300 set current or in recent history.
Cause	The cause of the condition may be that Ambient and PCV moisture can freeze, where ice or sludge can accumulate in the CAC, restricting flow, and causing a Check Engine Lamp, reduced engine power, and DTCs P0299 and/or P2227, or P0300 to set.
Correction	Update ECM calibration and add a baffle to help reduce CAC icing.

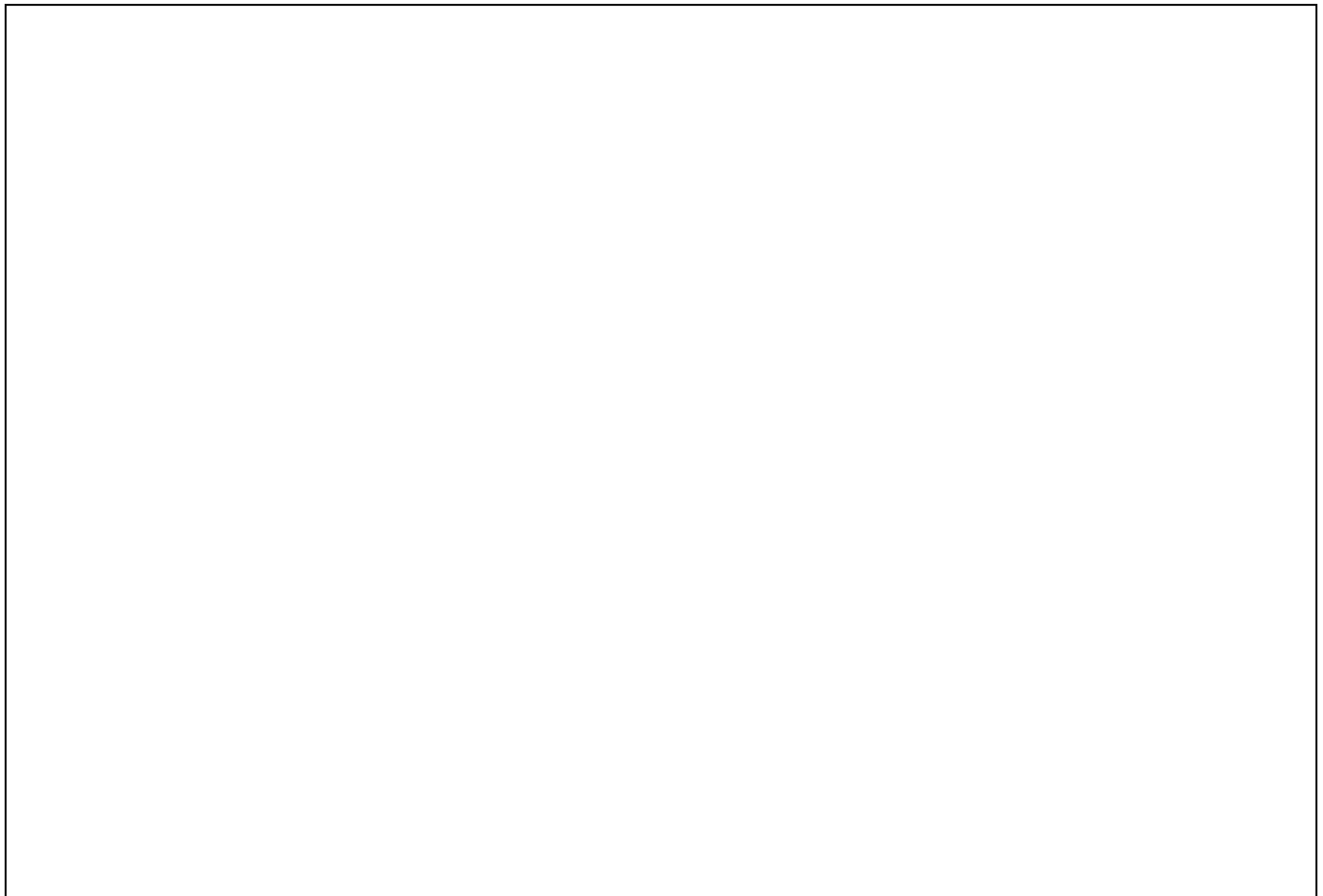
Service Procedure

Important: Service agents must comply with all International, Federal, State, Provincial, and/or Local laws applicable to the activities it performs under this bulletin, including but not limited to handling, deploying, preparing, classifying, packaging, marking, labeling, and shipping dangerous goods. In the event of a conflict between the procedures set forth in this bulletin and the laws that apply to your dealership, you must follow those applicable laws.

1. Remove the Front Bumper Impact Bar. Refer to *Front Bumper Impact Bar Replacement*.

2. Remove the Throttle Inlet Absolute Pressure (TIAP) sensor, circled above.
3. Using a fluid extractor or suction tool, drain any remaining moisture from the Charge Air Cooler end tank.
4. Reinstall and tighten the Throttle Inlet Absolute Pressure (TIAP) sensor and bolt. Refer to *Fastener Specifications* in SI.

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5. Remove the four push pins (1) securing the top of the Front Bumper Lower Air Baffle.

excessive power (exterior lights, HVAC blower motor, etc) is off.

- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Important: The service technician always needs to verify that the VIN displayed in the TLC left side drop down menu and the top center window match the VIN plate of the vehicle to be programmed prior to using Service Programming System 2 (SPS2) for programming or reprogramming a module.

- For the TLC application, service technicians need to always ensure that the power mode (ignition) is "ON" before reading the VIN from the vehicle's VIN master module and that they do not select a VIN that is already in the TLC application memory from a previous vehicle.
- If the VIN that shows up in the TLC top center window after correctly reading the VIN from the vehicle does not match the VIN plate of the vehicle, manually type in the VIN characters from the vehicle VIN plate into the TLC top center window and use these for programming or reprogramming the subject module with the correct vehicle VIN and software and/or calibrations.
- The Engine Control Module (ECM) is the master module (for VIP vehicles) that TLC reads to determine the VIN of the vehicle. If the VIN read from the vehicle by TLC does not match the VIN plate of the vehicle, the ECM also needs to be reprogrammed with the correct VIN, software and calibrations that match the vehicle's VIN plate.
- The Body Control Module (BCM) is the master module (for GEM vehicles) that TLC reads to determine the VIN of the vehicle. If the VIN read from the vehicle by TLC does not match the VIN plate of the vehicle, the BCM also needs to be reprogrammed with the correct VIN, software and calibrations that match the vehicle's VIN plate.

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6. Install the Radiator Air Front Lower Baffle, slipping the tabs behind the outermost tabs of the Front Bumper Lower Air Baffle as circled above. Then, snap the top of the Radiator Air Front Lower Baffle in place on top of the charge air cooler.
7. Reinstall the four push pins (1) removed in step 5.
8. Reinstall the Front Bumper Impact Bar. Refer to *Front Bumper Impact Bar Replacement*.
 - Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
 - Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. Install a GM Authorized Programming Support Tool to maintain system voltage. Refer to www.gmdesolutions.com for further information. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
 - Follow the on-screen prompts regarding ignition power mode, but ensure that anything that drains

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Important: If the vehicle VIN DOES NOT match, the message below will be shown

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Important: Techline Connect screens shown above.

Important: If the same calibration/software warning is noted on the TLC Summary screen, select OK and follow screen instructions. After a successful programming event, the WCC is located in the Service Programming System dialogue box of the SPS Summary screen. No further action is required. Refer to the Warranty section of the bulletin.

9. Reprogram the Engine Control Module. Refer to
K20 Engine Control Module: Programming and Setup.

Note: The screenshot above is an example of module programming and may not be indicative of the specific module that is being programmed. Module selection and VIN information have been blacked out.

Important: To avoid warranty transaction rejections, you **MUST** record the warranty claim code provided on the Warranty Claim Code (WCC) screen shown above on the job card. Refer to callout 1 above for the location of the WCC on the screen.

10. Record SPS Warranty Claim Code on job card for warranty transaction submission.

Parts Information

Causal Part	Description	Part Number	Qty
X	BAFFLE-RAD AIR FRT LWR	85580962	1

Labor Operation	Description	Labor Time
*2889148	Replace Radiator Air Front Lower Baffle and Reprogram ECM	2.5 hr

*This is a unique Labor Operation for Bulletin use only.

Important: **To avoid warranty transaction rejections, carefully read and follow the instructions below:

Warranty Information

Important: Warranty coverage code E2 applies for this module programming event. ECM reprogramming is covered for 8 years/80,000 miles (U.S.) or 8 years/130,000 km (Canada).

For vehicles repaired under the Emission coverage, use the following labor operation. Reference the Applicable Warranties section of Investigate Vehicle History (IVH) for coverage information.

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Labor Operation	Description	Labor Time
6125814 - The Warranty Claim Code must be accurately entered in the "Warranty Claim Code" field of the transaction. - When more than one Warranty Claim Code is generated for a programming event, it is required to document all Warranty Claim Codes in the "Correction" field on the job card. Dealers must also enter one of the codes in the "Warranty Claim Code" field of the transaction, otherwise the transaction will reject. It is best practice to enter the FINAL code provided by SPS2.		

Warranty Claim Code Information Retrieval

If the Warranty Claim Code was not recorded on the Job Card, the code can be retrieved in the SPS2 system as follows:

1. Open TLC on the computer used to program the vehicle.

2. Select and start SPS2.

3. Select Settings (1).

4. Select the Warranty Claim Code tab (2).

The VIN, Warranty Claim Code and Date/Time will be listed on a roster of recent programming events. If the code is retrievable, dealers should resubmit the transaction making sure to include the code in the SPS Warranty Claim Code field.

Failure to submit this serial number by RPT may cause the claim to reject.

Version	2
Modified	Released January 19, 2023 Revised July 10, 2024 - Revised Transmission column.