



Service Bulletin

Bulletin No.: 21-NA-293

Date: January, 2025

TECHNICAL

Subject: Poor Engine Performance in Extremely Cold Weather Conditions, Charge Air Cooler Icing - Malfunction Indicator Lamp (MIL) Illuminated, DTC P0299, P0234, P0236, P00C7 Set

Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
Buick	Encore GX	2020	2023				
Chevrolet	Trailblazer	2021					

Involved Region or Country	United States and Canada
Condition	<p>Some customers may comment that when driving short distances and/or slow speed driving cycles, within the first 10 to 15 minutes of vehicle operation in extremely cold weather conditions (-18°C or less / 0°F or less) vehicle may experience several conditions. After driving for a period of time, the drivability issues seem to diminish. Vehicles may experience one or several of the following conditions:</p> <ul style="list-style-type: none"> • Loss of power • Hesitation on acceleration • Possible Malfunction Indicator Lamp illuminated <p>Technicians may also find one or more of the following DTCs:</p> <ul style="list-style-type: none"> • P0234 • P0236 • P0299 • P00C7 <p>Note: This condition may also cause an increase in crankcase pressure, creating oil leaks at seals and gaskets.</p>
Cause	The cause of the condition may be ice accumulation in the charge air cooler (CAC), restricting air flow to the throttle body.
Correction	<p>Reprogram the Engine Control Module.</p> <p>Note: See 20-NA-028 for adding a winter cover for vehicles in Canada</p>
Customer Information	<p>The customer must be informed by dealership personnel by explaining the new engine control module calibration and its effects on transmission shift patterns at highway speeds during cold weather to avoid a customer return to the dealership after the programming is completed. Follow published diagnostics for each DTC.</p> <p>The new calibration will enable a revised transmission shift pattern during cold weather operation which does not use overdrive as frequently. As a result, some customers may notice elevated engine RPM's during highway operation. This operating mode will reduce the potential for ice to build up inside the charge air cooler, and the potential for setting P0299 or P0234 diagnostic codes.</p> <p>Note: If the charge air cooler is not leaking, but is frozen and/or contaminated, remove it, thaw it, wash it out, and reinstall it.</p>

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.

Note: If the charge air cooler is not leaking, but is frozen and/or contaminated, remove it, thaw it, wash it out, and reinstall it.

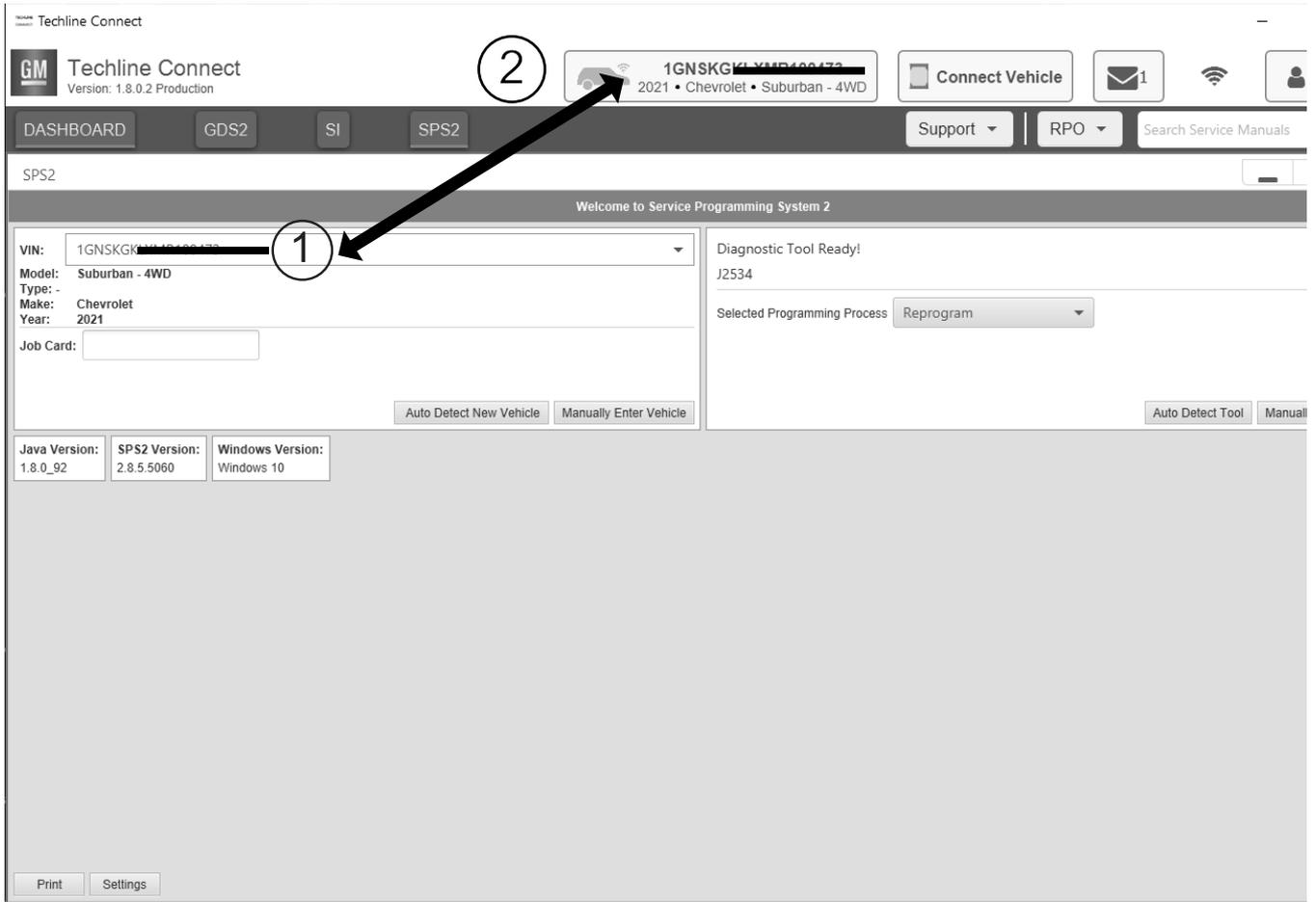
Caution: Before downloading the update files, be sure the computer is connected to the internet through a network cable (hardwired). DO NOT DOWNLOAD or install the files wirelessly. If there is an interruption during programming, programming failure or control module damage may occur.

- 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 <http://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 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.

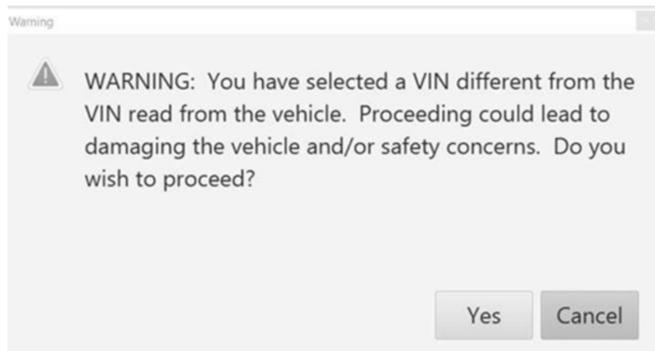
- For the TLC application, service technicians need to always ensure that the power mode (ignition) is "ON" before reading the VIN from the vehicle's VIN master module and that they do not select a VIN that is already in the TLC application memory from a previous vehicle.
- If the VIN that shows up in 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.

Caution: Be sure the VIN selected in the drop down menu (1) is the same as the vehicle connected (2) before beginning programming.



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



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The screenshot shows the Techline Connect software interface. At the top, there is a navigation bar with 'DASHBOARD', 'GDS2', 'SI', and 'SPS2' buttons. A search bar for 'Search Service Manuals' is on the right. Below this is a 'Programming' window with a table of calibration data. A dialog box is overlaid on the table, displaying a warning message: 'M4521: You are attempting to reprogram with the same calibration. Select OK to continue, Cancel to Stop!'. The table has columns for Controller, ID, Current #, and Description. The VIN is visible at the bottom right of the window.

Controller	ID	Current #	Description
K17	1	84820771	
K17	2	84820790	
K17	3	84820797	84820797 Electronic Brake Diagnostic Calibration
K17	4	84820801	84820801 Function Enable Calibration
K17	5	84820808	84820808 Driver mode brake calibration
K17	6	84820819	84820819 Low Pressure Calibration
K17	7	84820825	84820825

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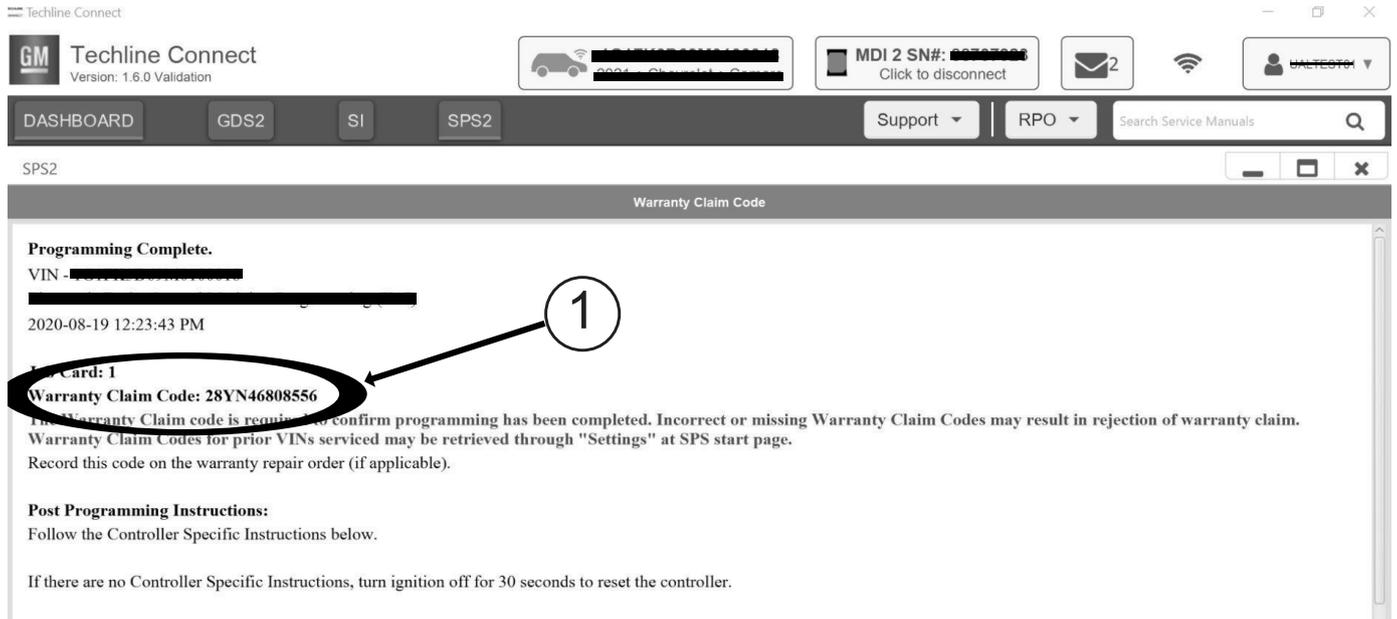
Important: Techline Connect and TIS2WEB screens shown above.

Important: If the same calibration/software warning is noted on the TLC or SPS 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.

1. Reprogram the Engine Control Module. Refer to *K20 Engine Control Module: Programming and Setup* in SI.

Note: Select this calibration **ONLY** to address issues related to charge air cooler icing occurring on vehicles operated in cold climates.

Note: If the charge air cooler is not leaking, but is frozen and/or contaminated, remove it, thaw it, wash it out, and reinstall it.



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Note: The screenshots above are 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 SPS Warranty Claim Code (WCC) screen shown above on the job card. Refer to callout 1 above for the location of the WCC on the SPS screen

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

Warranty Information

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).

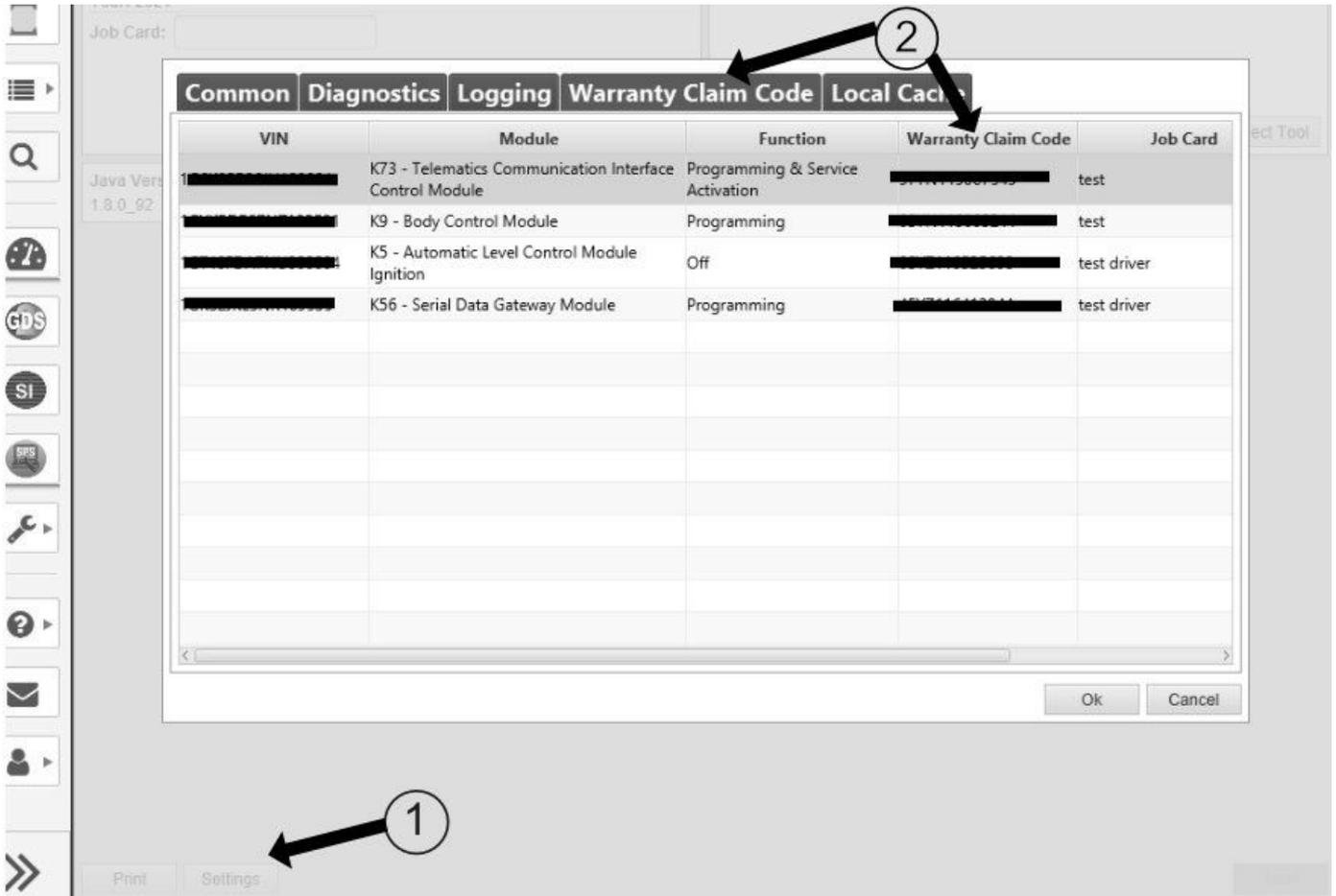
Labor Operation	Description	Labor Time
*2888338	Engine Control Module Reprogramming with SPS for Cold Weather Engine Performance	0.3 hr
Add	Removing, Cleaning and Reinstalling Charge Air Cooler if Frozen and/or Contaminated	3.0 hr

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

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

Labor Operation	Description	Labor Time
<p data-bbox="113 387 233 407">Labour Time [Top]</p> <p data-bbox="113 412 260 432">Labour Operation Code:</p> <p data-bbox="113 477 341 497">Additional labour op code information:</p> <p data-bbox="512 465 671 486">SPS Warranty Claim Code:</p> <div data-bbox="512 486 671 501" style="border: 1px solid black; width: 100px; height: 7px;"></div> <p data-bbox="1422 804 1489 824" style="text-align: right;">6125814</p> <ul data-bbox="137 835 1457 965" style="list-style-type: none">• 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. <p data-bbox="113 987 1437 1032">Note: Select this calibration ONLY to address issues related to charge air cooler icing occurring on vehicles operated in cold climates.</p>		

Warranty Claim Code Information Retrieval



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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.

Version	4
Modified	Released January 10, 2022 Revised January 13, 2022 – Added note to Correction Section and updated warranty statement in Warranty Information. Revised July 28, 2023 – Added 2023 Model Year and updated Programming Procedure. Revised January 16, 2025 - Added note to Customer Information section and Service Procedure, as well as an add time for removal and cleaning to the labor operation under Warranty Information.

