



Service Bulletin

Bulletin No.: 18-NA-069

Date: January, 2022

TECHNICAL

Subject: Poor Engine Performance in Extremely Cold Weather Conditions for LFV Engines, Charge Air Cooler Icing - Malfunction Indicator Lamp (MIL) Illuminated - DTC P0299, P0236, P2227 and/or P00C7 Set

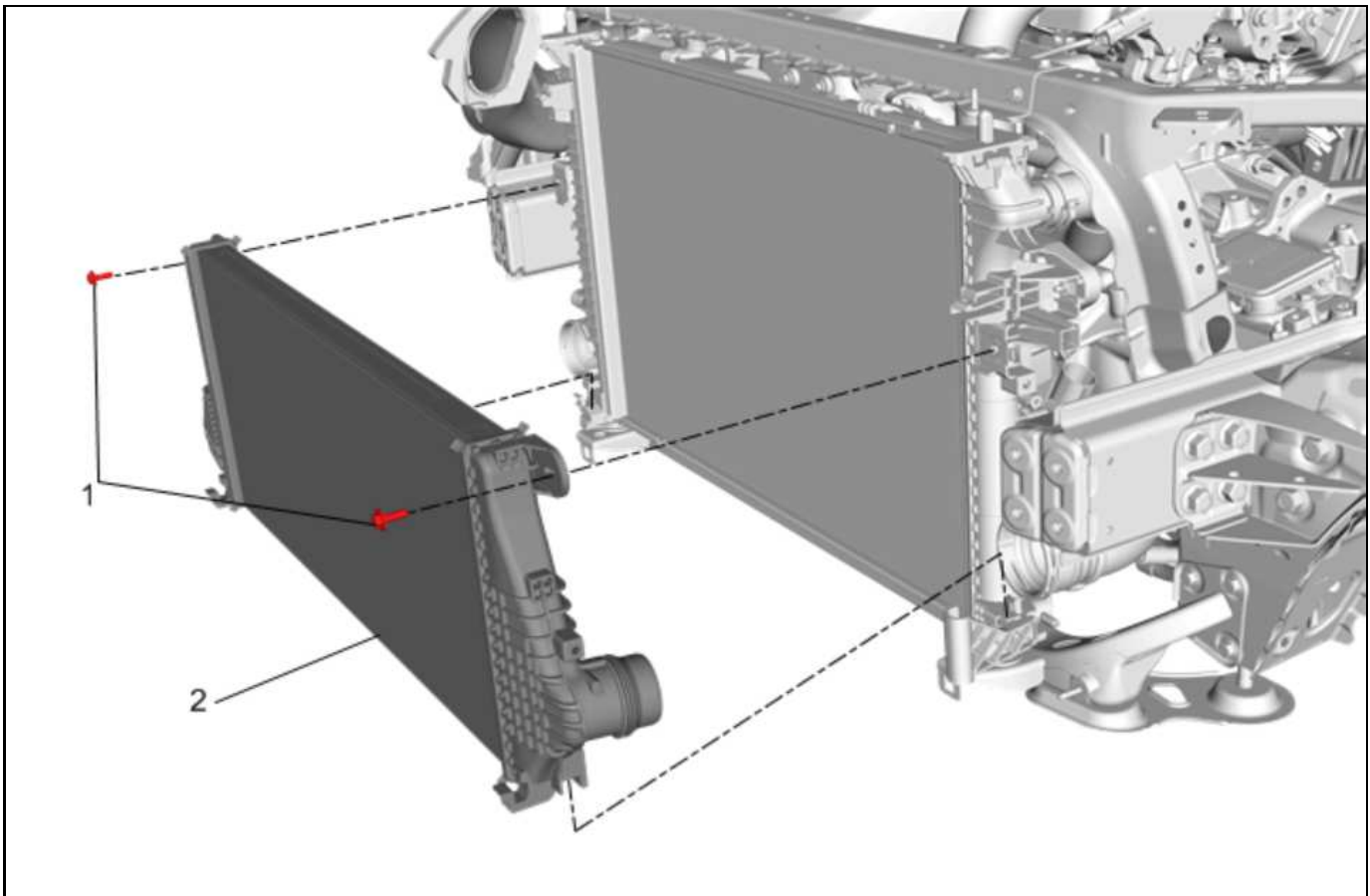
Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
Chevrolet	Malibu	2016	2022	—	—	1.5L (LFV)	—

Involved Region or Country	North America, China
Condition	<p>Some customers may comment on one or more of the following conditions when driving in extremely cold weather conditions (-18°C or less / 0°F or less):</p> <ul style="list-style-type: none">• Loss of power• Hesitation on acceleration• Stalling condition• MIL Illuminated <p>Technicians may find one or more of the following DTCs set:</p> <ul style="list-style-type: none">• P0299• P0236• P2227• P00C7
Cause	This condition may be caused by ice accumulation in the charge air cooler (CAC), restricting air flow.

<p>Correction</p>	<p>Note: DO NOT replace the CAC if the service part is already installed.</p> <p>If any of the above conditions are present, allow time for possible ice build up in the CAC to melt by allowing the vehicle to thaw in a warm environment, and drain the moisture from the CAC.</p> <p>If any of the above conditions are confirmed to be caused by freezing/icing, replace the original CAC with the new design wide fin service part. Confirmation should include:</p> <ul style="list-style-type: none"> • P0299 and/or P0236 present. • >100mL (3.4 oz) moisture drained from thawed CAC. • Confirmed no leaks in CAC / CAC ducts. • Recent vehicle use in extreme cold (-18°C / 0°F or less). <p>If not recently performed, an oil change may be necessary to remove any moisture from the engine.</p> <p>If there is a check engine light with a P0234 or P0299 DTC during cold weather driving, refer to the following information:</p> <ul style="list-style-type: none"> – Frozen oil/water contaminant in the Turbocharger Wastegate Regulator Solenoid Valve (TCV) is often concurrent with vehicle operating conditions that cause CAC freezing. If either DTC P0234 or P0299 is set, refer to PIP5812C for Turbocharger Wastegate Regulator Solenoid Valve Inspection. Cleaning or replacing the TCV solenoid should be performed in addition to CAC protection measures specified in this bulletin. <p>For 2016-2018 Malibu, a new winter grille cover has been released to prevent this issue from occurring in extreme cold weather (-18°C or less/0°F or less). The winter grille cover needs be added to avoid the customer from returning with concerns related to charge air cooler icing.</p> <p>The winter grille cover can be installed by the technician during the repair procedure as listed in this bulletin. After the repair is complete, dealer service personnel must educate the customer on the installation and removal procedure of the winter grille cover. Installation instructions are included with the winter grille cover.</p> <p>Note: The Engine Control Module calibration should be updated. The new calibration will enable a revised transmission shift pattern during cold weather operation, which does not use overdrive as frequently. As a result, <i>some customers</i> may notice elevated engine RPMs 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>The customer must be <i>informed</i> by dealership personnel by explaining the new engine control module calibration and its <i>effects</i> on transmission shift patterns at highway speeds during cold weather to avoid a customer return to the dealership after the programming is completed.</p> <p>Important: <i>The winter grille cover should be installed in the extreme cold weather and removed when the winter season changes.</i></p> <p><i>Additional covers and repeat installation are customer pay.</i></p> <p>Note: <i>Clean the surface before installing the winter grille cover.</i></p>
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Service Procedure

Important: Do Not replace the CAC ducts as part of this repair unless there is evidence of damage and/or a leak from the CAC ducts.

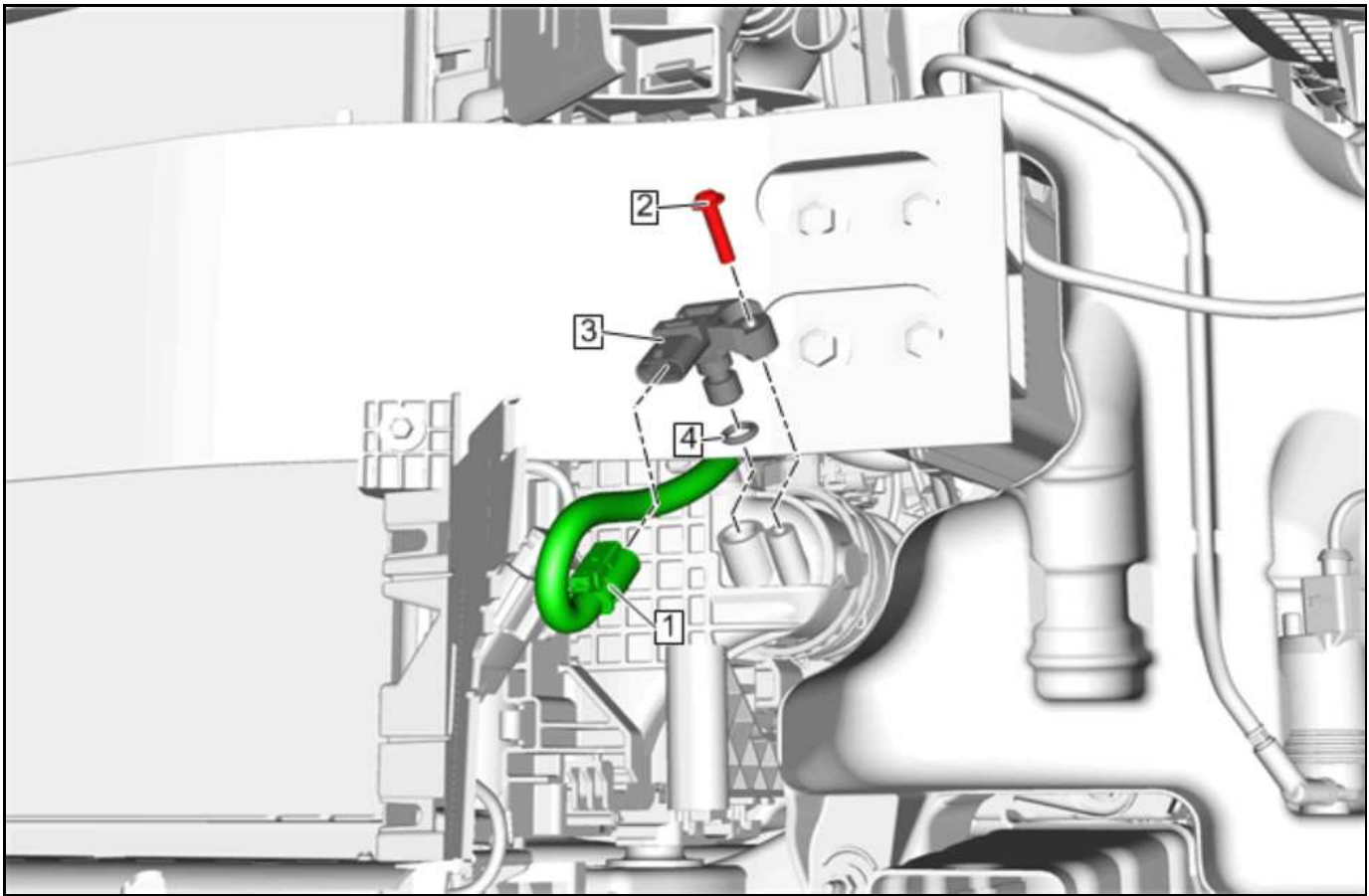


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1. Install the CAC (2). Refer to *Charge Air Cooler Replacement* in SI.

Important: Do Not perform an oil change if the oil change was recently done.

- If the oil change was recently done and no signs of moisture have been confirmed, proceed to step 3.
 - If the oil change was not previously done or moisture has been found in the oil, proceed with procedure.
2. If required, perform an oil change. Refer to *Engine Oil and Oil Filter Replacement* in SI.



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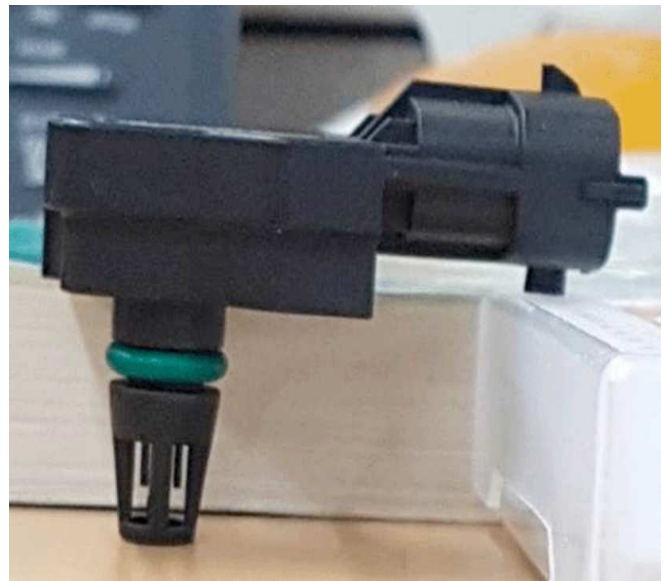
3. Remove the turbocharger air pressure sensor (3). Refer to *Turbocharger Air Pressure Sensor Replacement* in SI.



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Important: Due to the sensitivity of the sensor, **Do Not** use any chemical cleaners including water and **Do Not** use compressed air to remove contaminants.

4. Inspect the sensor of any contaminants.



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5. Allow time for any ice build-up to melt by placing the sensor port down.
6. Clean the sensor with a clean towel.
7. Install the sensor.

Engine Control Module Programming

Important: Updated Engine Control Module calibration: The updated calibration will enable a revised transmission shift pattern during cold weather operation, which does not use overdrive as frequently. As a result, the customer may notice elevated engine RPMs 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.

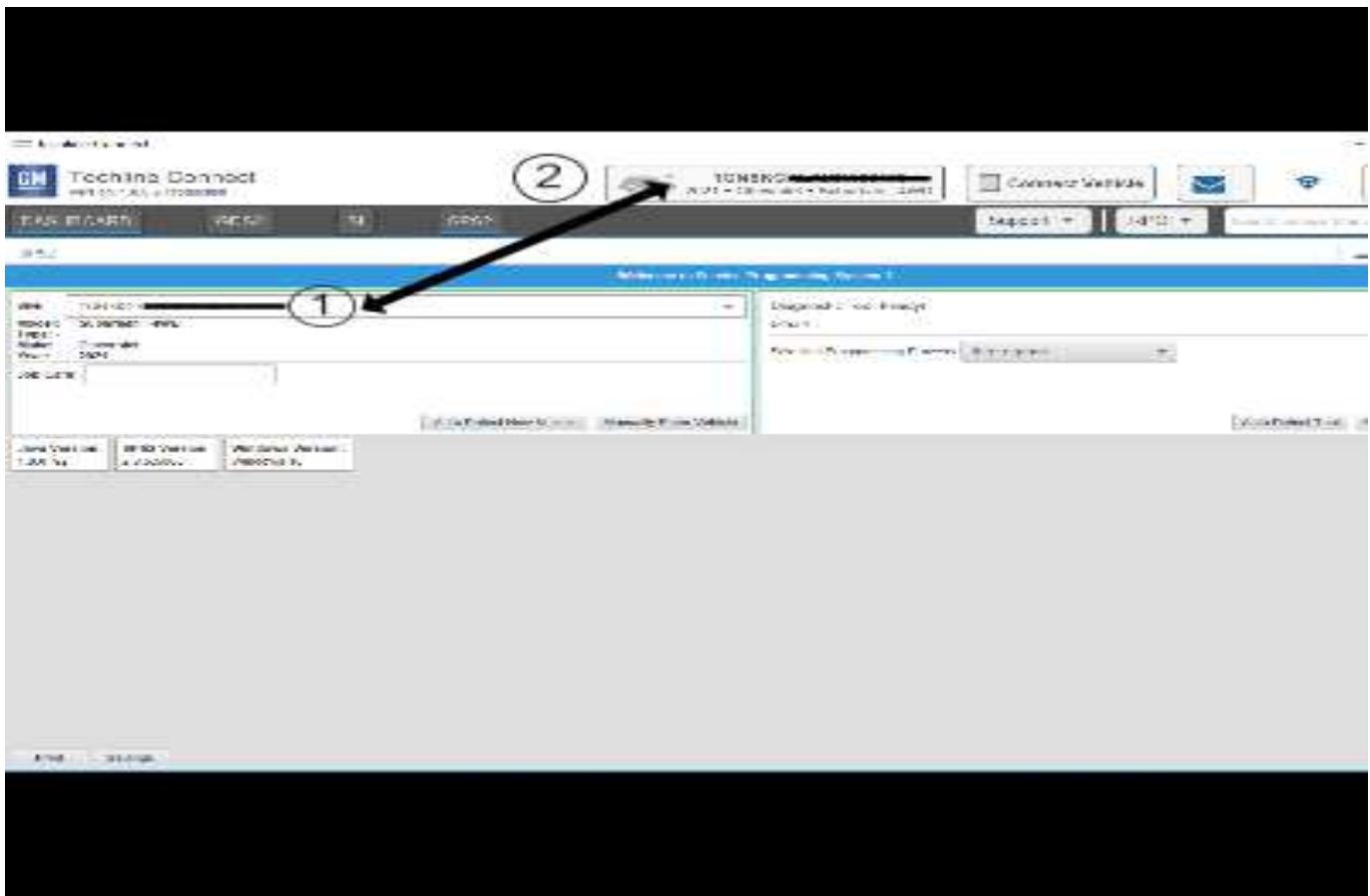
Caution: Before downloading the update files, be sure the computer is connected to the internet through a network cable (hardwired). DO NOT DOWNLOAD or install the files wirelessly. If there is an interruption during programming, programming failure or control module damage may occur.

- 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 www.gmdesolutions.com for further information. If not available, connect a fully charged 12V 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.
- Please verify that the radio time and date are set correctly before inserting USB drive into vehicle for programming, otherwise an error will result.
- 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.

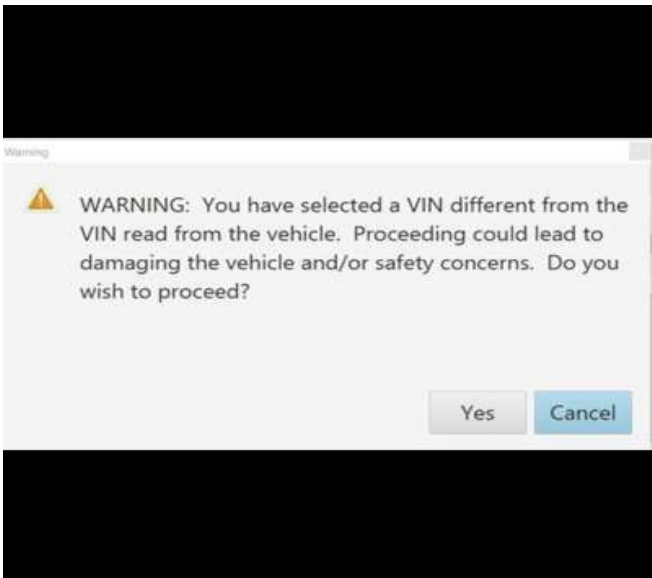
- For the TLC application, service technicians need to always ensure that the power mode (ignition) is "ON" before reading the VIN from the vehicle's VIN master module and that they do not select a VIN that is already in the TLC application memory from a previous vehicle.
- If the VIN that shows up in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

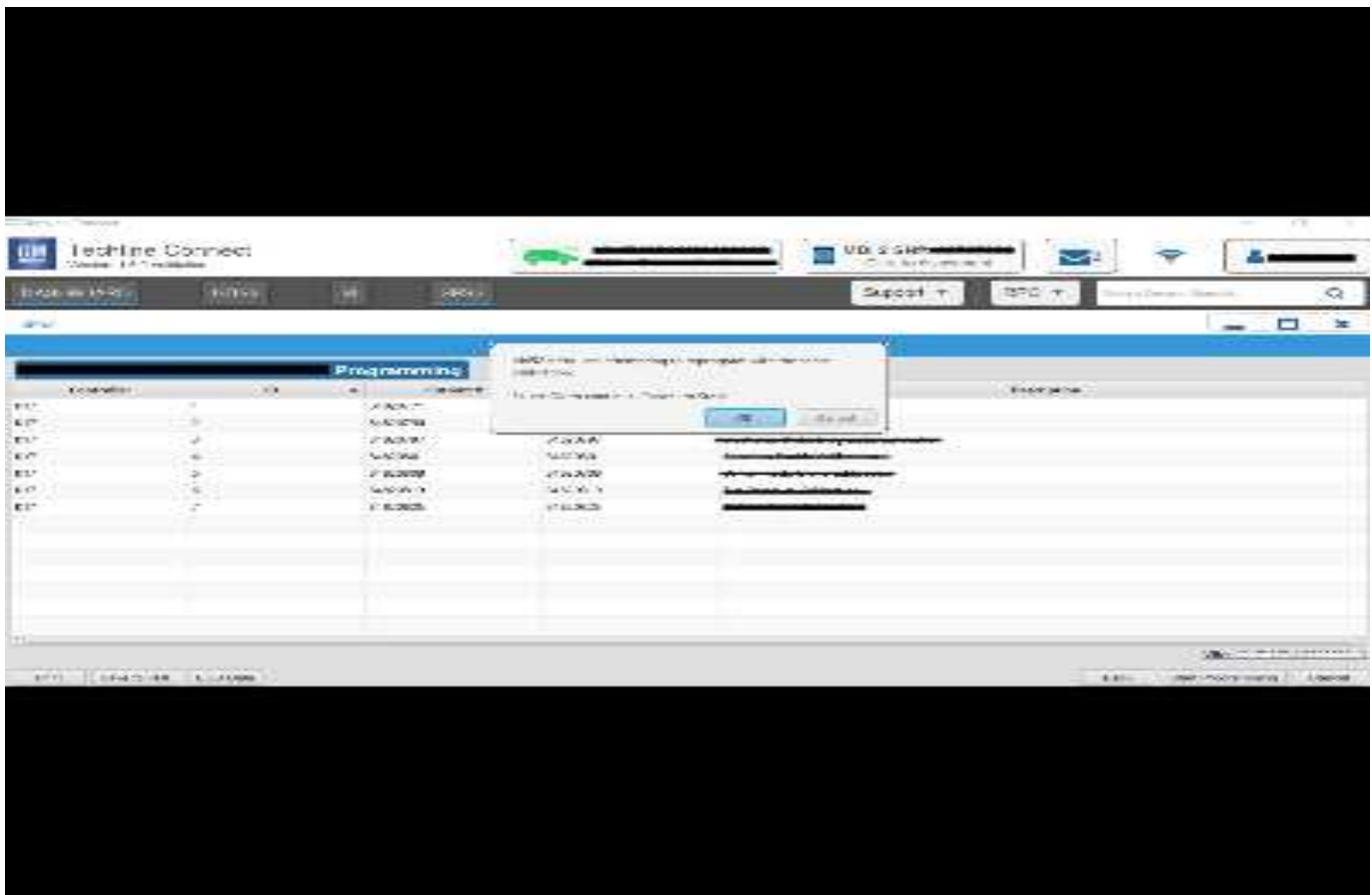


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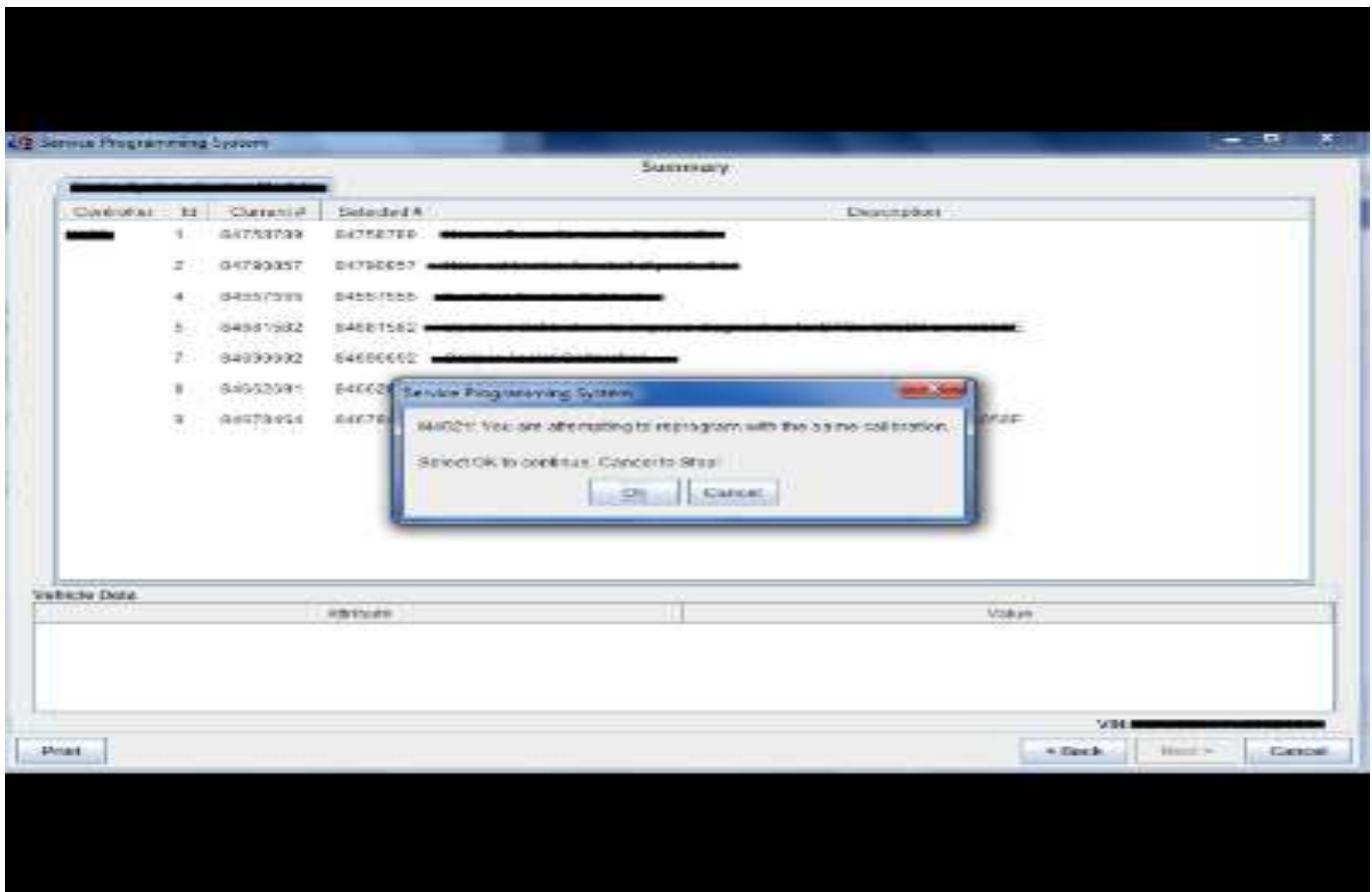
Important: If the vehicle VIN DOES NOT match, the message below will be shown.



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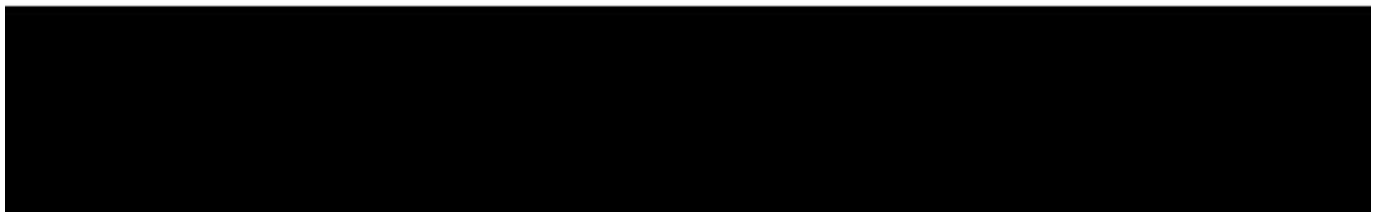


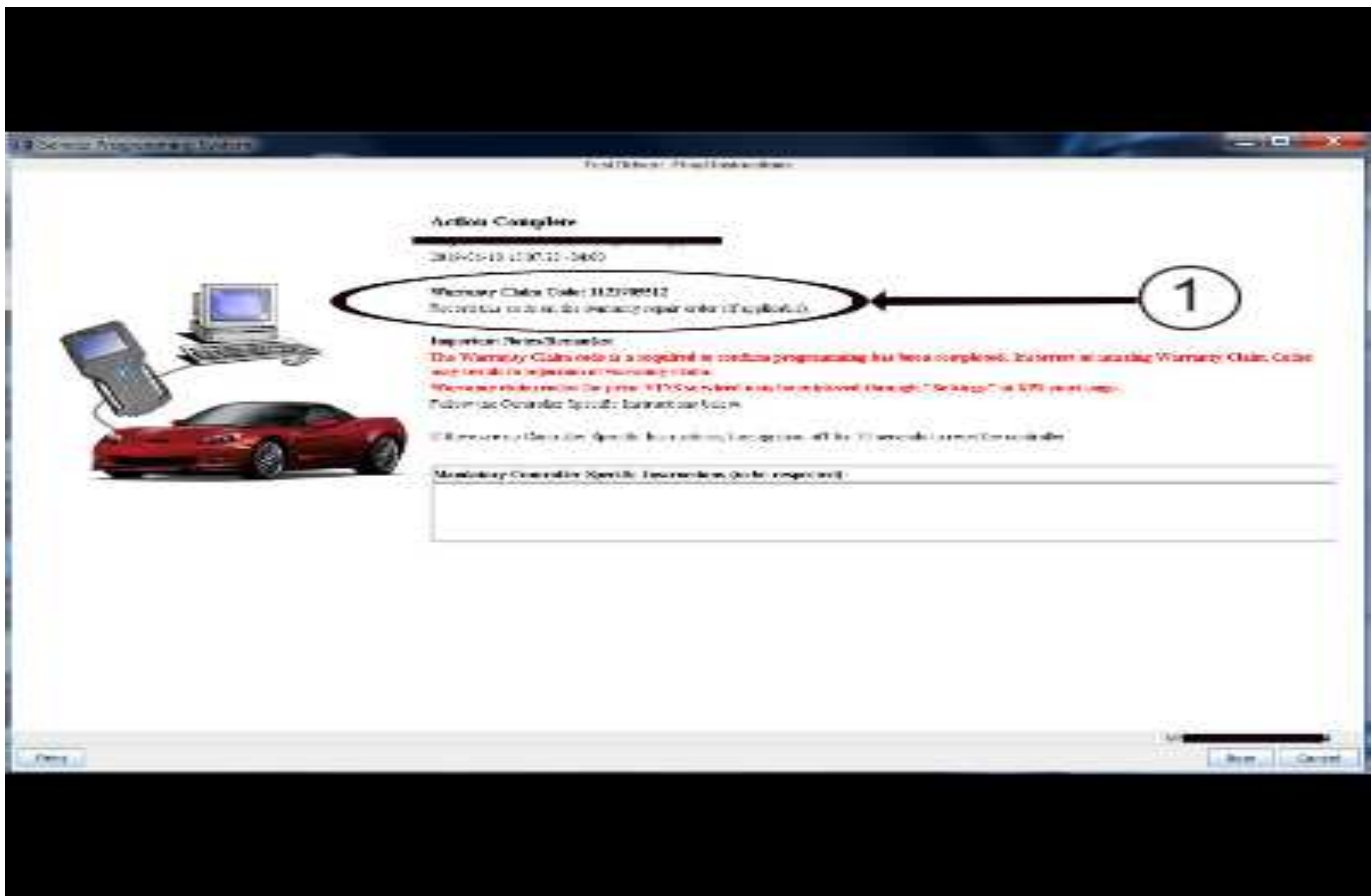
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Important: Techline Connect and TIS2WEB screens shown above.

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 Information section of this bulletin.

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





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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.

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

Parts Information

Causal Part	Description	Part Number	Qty
N/A	COVER, GRILLE (Malibu 2016-2018)	85158791	1
N/A	COOLER ASM-CHRG AIR	84768953	1
N/A	Filter, Oil	Refer to the Electronic Parts Catalog (EPC).	
N/A	Oil		

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 Powertrain coverage, use the following labor operation. Reference the Applicable Warranties section of Investigate Vehicle History (IVH) for coverage information.

Labor Operation	Description	Labor Time
4086058*	Charge Air Cooler Replacement	2.6 hrs
Add	To Recover and Recharge R-1234yf A/C System	1.2 hrs
Add	To Recover and Recharge R-134a A/C System	0.3 hr
Add	IAPT Inspection	0.2 hr
Add	Oil Change	0.3 hr
Add	Install grille Cover on 2016-2018 Malibu	0.2 hr
2888378**	Engine Control Module Re-programming with SPS for Malibu	0.3 hr

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

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

- The Warranty Claim Code must be accurately entered in the "SPS 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 "SPS Warranty Claim Code" field of the transaction, otherwise the transaction will reject. It is best practice to enter the FINAL code provided by SPS/SPS2.

Warranty Claim Code Information Retrieval

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

- Open TLC/TIS on the computer used to program the vehicle.
- Select and start SPS/SPS2.
- Select Settings.
- Select the Warranty Claim Code tab.

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	8
Modified	<p>Released March 05, 2018</p> <p>January 24, 2019 – Added the 2019 Model Year, China to Involved Region or Country, updated the Service Procedure and Warranty Information.</p> <p>October 28, 2019 – Updated the Part Number in the Parts Information.</p> <p>February 21, 2020 – Added the 2020 Model Year and updated the Correction information.</p> <p>March 12, 2020 – Added an Important statement at the beginning of the Service Procedure advising not to replace the CAC ducts.</p> <p>March 02, 2021 – Added the 2021 Model Year and updated the Warranty Information.</p> <p>September 02, 2021 – Added the 2022 Model Year.</p> <p>January 12, 2022 – Added information to reference PIP5812C and winter grille information to Correction section, grille cover for 2016–2018 Malibu to Parts Information section, Engine Control Module Programming section, updated the Warranty coverage information and added ECM Re-programming Labor Operation to Warranty Information.</p>

GM bulletins are intended for use by professional technicians, NOT a "do-it-yourselfer". They are written to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your GM dealer for information on whether your vehicle may benefit from the information.



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