



# Service Bulletin

Bulletin No.: 22-NA-007

Date: January, 2022

## TECHNICAL

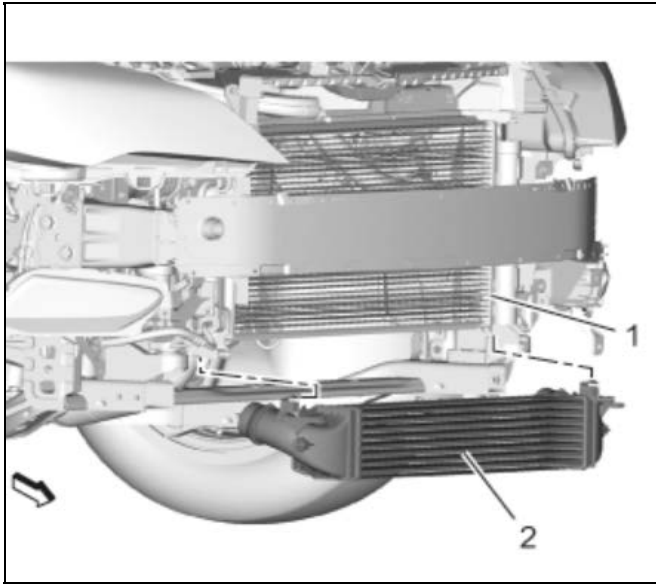
**Subject:** Poor Engine Performance in Extremely Cold Weather Conditions for LE2 Engines, Charge Air Cooler (CAC) Icing - Malfunction Indicator Lamp (MIL) Illuminated, DTC P0299, P0234, P0236, P2227, P00C7 Set

| Brand:    | Model: | Model Year: |      | VIN: |    | Engine:          | Transmission: |
|-----------|--------|-------------|------|------|----|------------------|---------------|
|           |        | from        | to   | from | to |                  |               |
| Chevrolet | Cruze  | 2016        | 2019 | —    | —  | 1.4L Turbo (LE2) | —             |

| Involved Region or Country | North America                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Condition                  | <p>Some customers may comment that when driving short distances and/or slow speed driving cycles, their vehicle experiences one or several of the following conditions within the first 10 to 15 minutes of vehicle operation in extremely cold weather conditions (-18 C or less / 0 F or less):</p> <ul style="list-style-type: none"><li>" Loss of power</li><li>" Hesitation on acceleration</li><li>" Stalling condition</li><li>" May also notice a Malfunction Indicator Lamp illuminated</li><li>" After driving for a period of time, the driveability issues seem to diminish.</li></ul> <p>This condition may also cause an increase in crankcase pressure, creating oil leaks at seals and gaskets.</p> <p>Technicians may find one or more of the following DTCs set:</p> <ul style="list-style-type: none"><li>" P0234</li><li>" P0236</li><li>" P0299</li><li>" P2227</li><li>" P00C7</li></ul> |
| Cause                      | <p>This condition may be caused by ice accumulation in the charge air cooler (CAC), restricting air flow to the throttle body.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Correction                 | <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.</p> <p>If there is a check engine light with a P0234 or P0299 DTC during cold weather driving, refer to Turbocharger/Supercharger Boost Sensor Inspection below.</p> <ul style="list-style-type: none"><li>– 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.</li></ul> <p>Follow the Service Procedure below once the vehicle has had time to thaw.</p>            |

Important: Allow time for the vehicle to thaw in a warm environment to avoid damaging or breaking parts that may be required to be re-installed.

## Service Procedure



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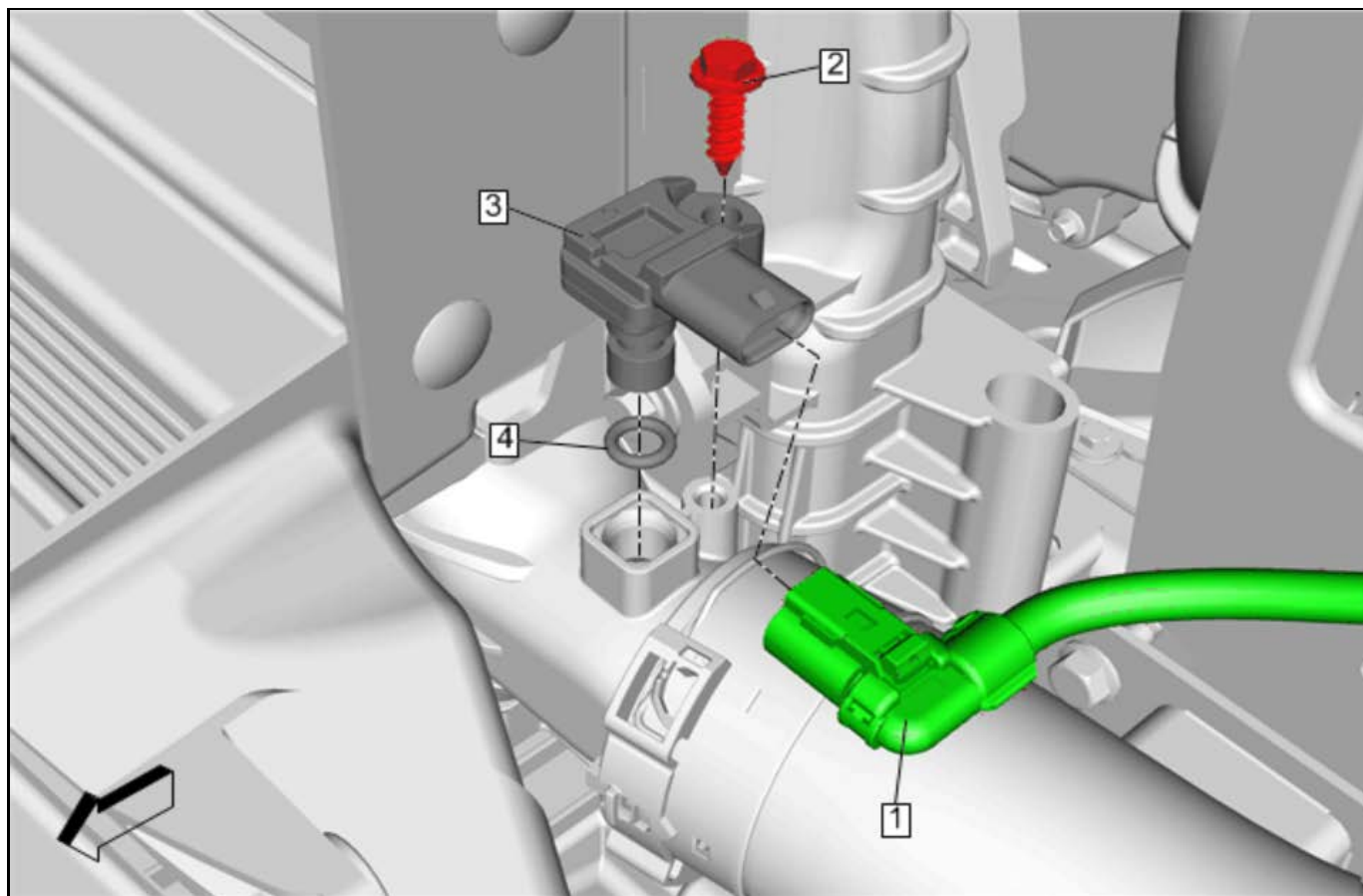
1. Remove the CAC (2) and drain any moisture built up. Refer to Charge Air Cooler Replacement in SI.

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. Perform an oil change. Refer to Engine Oil and Oil Filter Replacement in SI.

## Turbocharger/Supercharger Boost Pressure Sensor Inspection

Important: Only perform steps 1-5 if DTC P0299 is set.

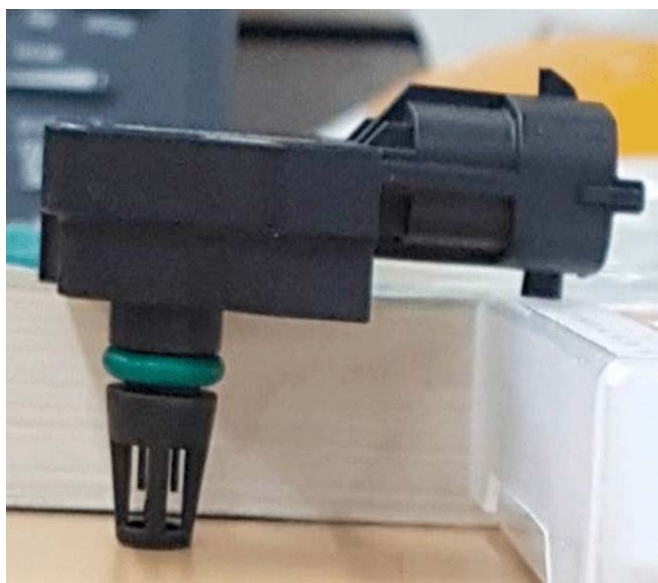


1. Remove the turbocharger Air Pressure sensor (3). Refer to Turbocharger/Supercharger Boost Pressure Sensor Replacement in SI.

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.

2. Inspect the sensor for any contaminants.





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3. Allow time for any ice build-up to melt by placing the sensor port down.
4. Clean the sensor with a clean towel.
5. Install the sensor. Refer to Turbocharger/Supercharger Boost Pressure Sensor Replacement in SI.

## 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.

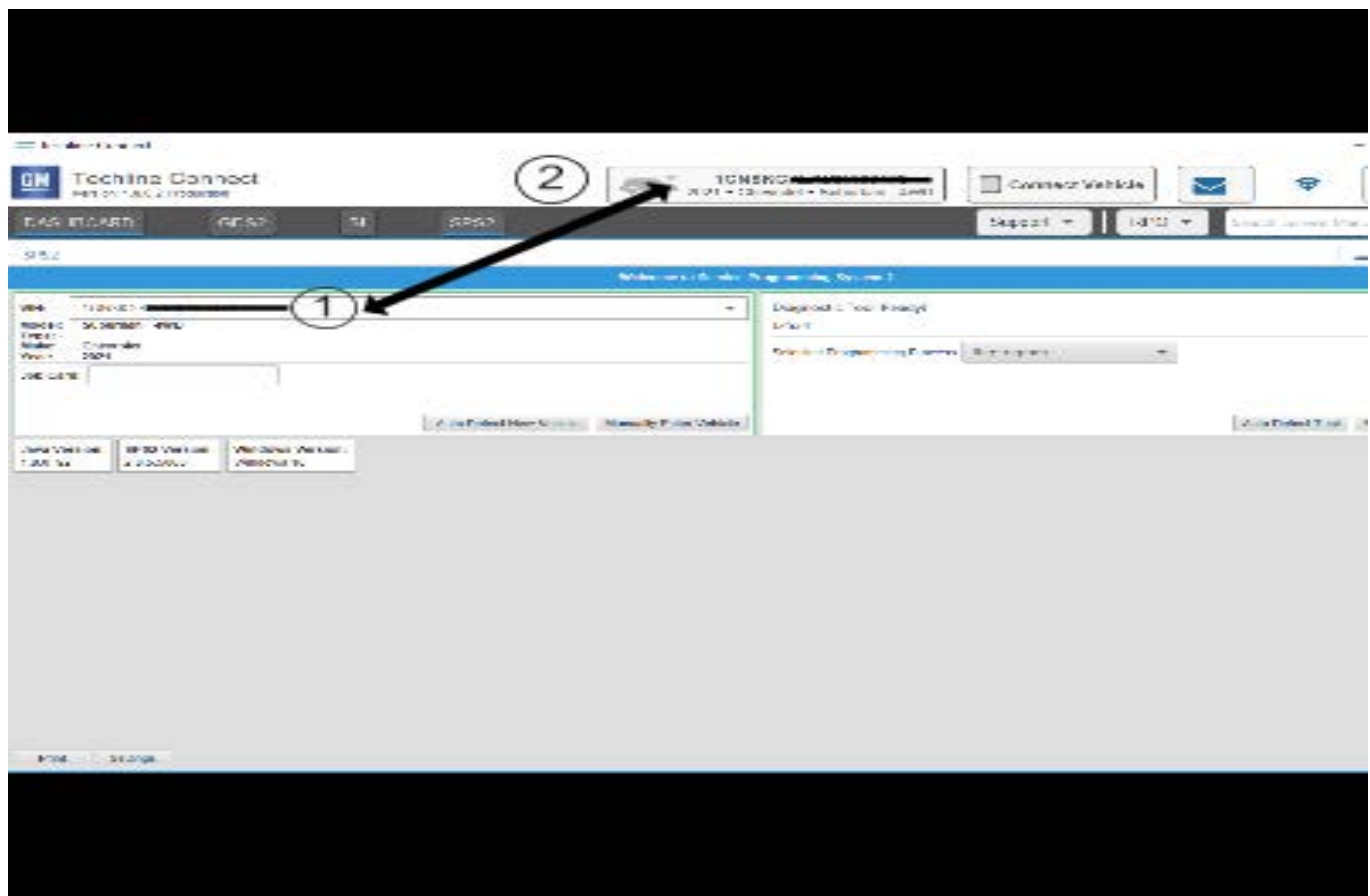
- " Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- " Stable battery voltage is critical during programming. Any fluctuation, 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](http://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.

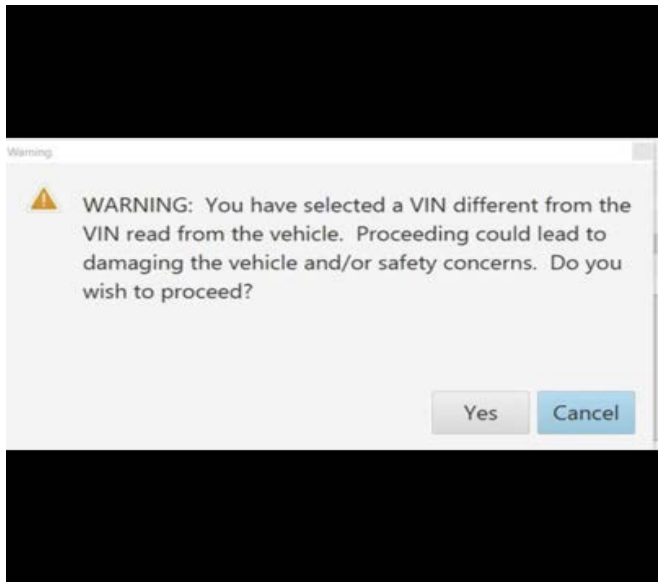
- " For the TLC application, service technicians need to always ensure that the power mode (ignition) is "ON" before reading the VIN from the vehicle's VIN master module and that they do not select a VIN that is already in the TLC application memory from a previous vehicle.
- " If the VIN that shows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

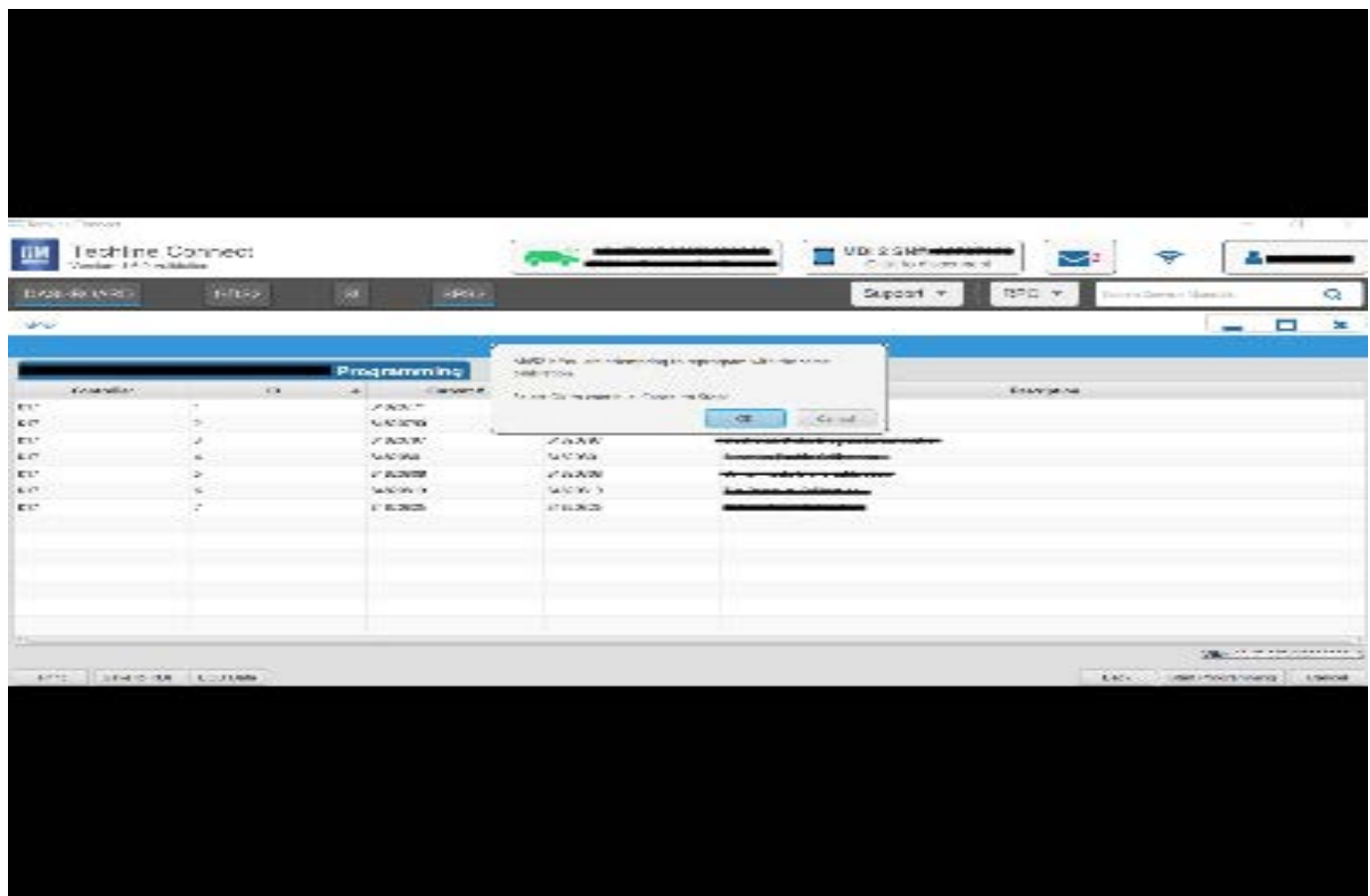


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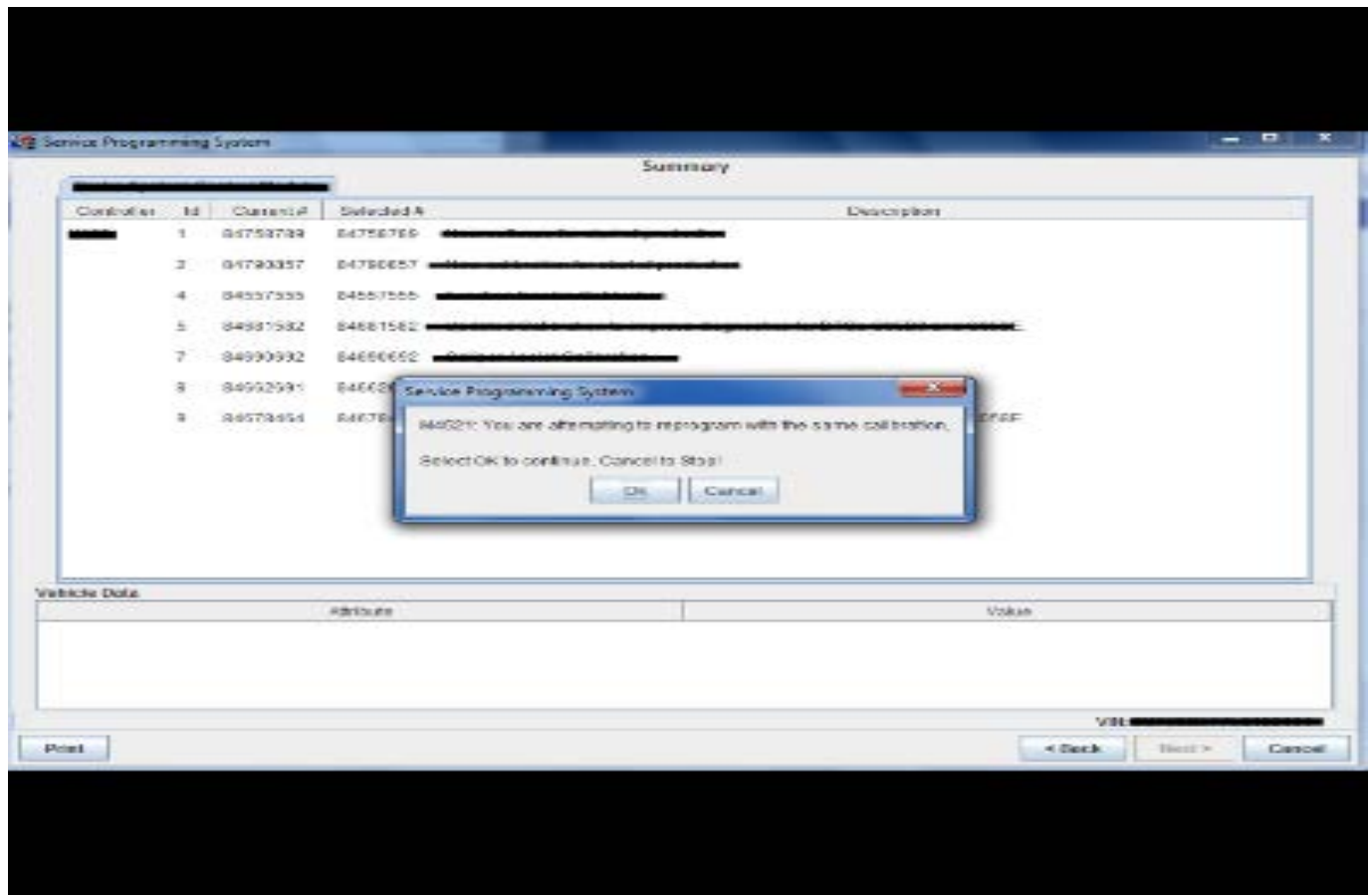
Important: If the vehicle VIN DOES NOT match, the message below will be shown.



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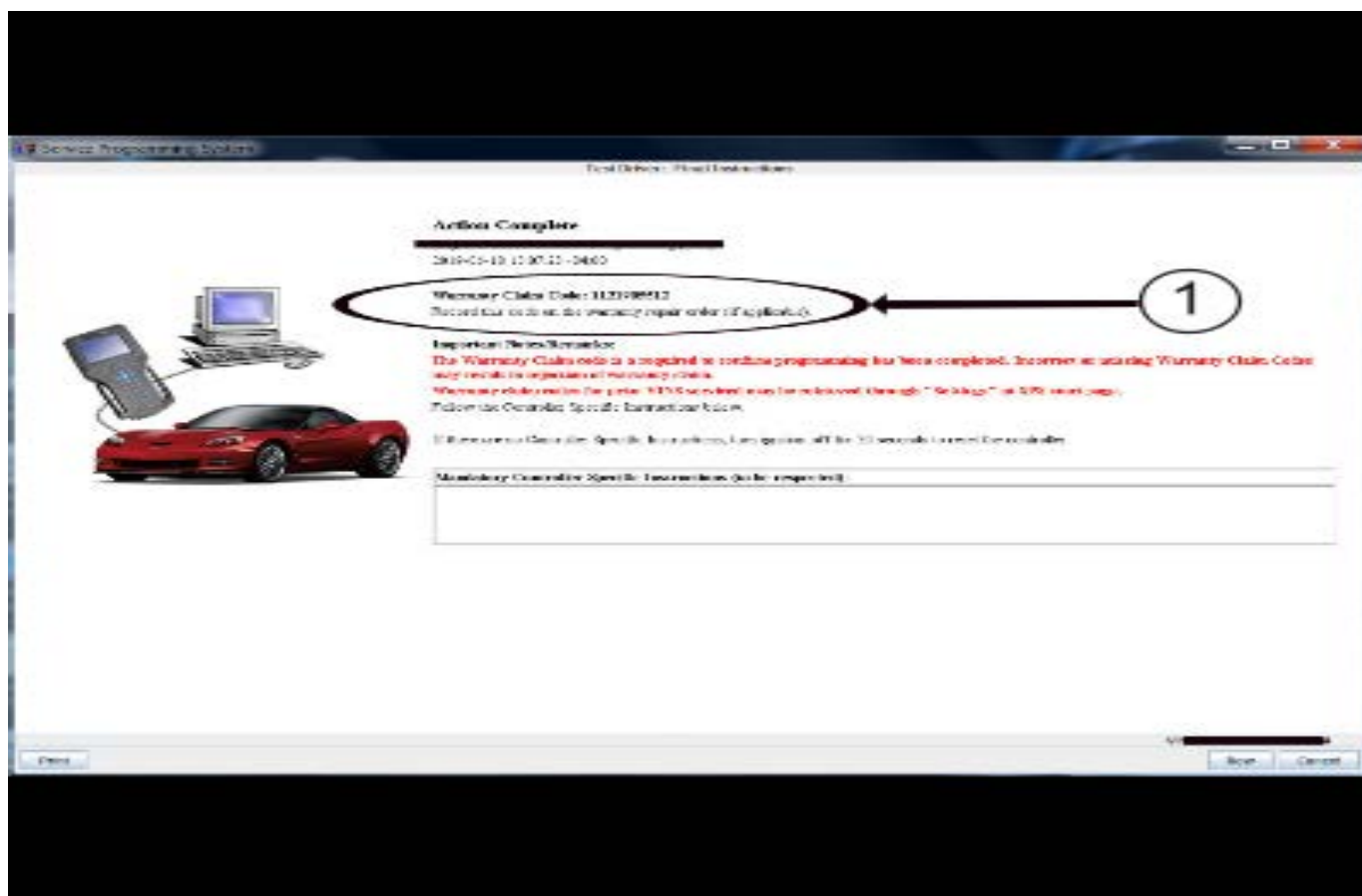
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Important: Techline Connect and TIS2WEB screens shown above.

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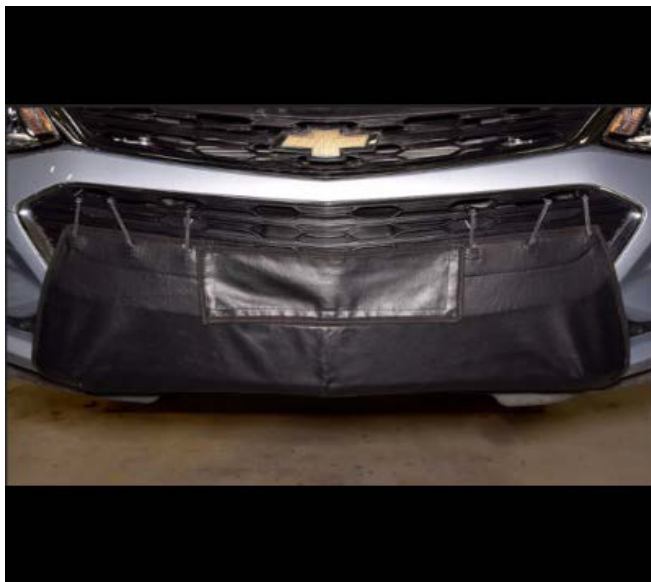
Note: The screenshots above are an example of module programming and may not be indicative of the specific module that is being programmed. Module selection and VIN information have been blacked out.

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.

The customer must be educated by dealership personnel by explaining the new engine control module calibration and its effect on transmission shift patterns at highway speeds during cold weather to avoid a customer return to the dealership after the programming is completed.

## Grille Winter Cover Installation



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Warning: Remove grille cover during temperatures above 32 F/0 C to prevent engine and transmission overheating. Remove grille cover before towing a trailer of any size. Failure to do so will decrease transmission cooling efficiency and possibly cause damage to the drivetrain.

Install the service winter grille cover around the front bumper to prevent ice-build in the CAC. The installation instructions will be provided with the service part.

## Parts Information

| Description          | Model Year | Part Number                                  | Qty |
|----------------------|------------|----------------------------------------------|-----|
| Cover, Grille Winter | 2016–2018  | 42819129                                     | 1   |
|                      | 2019       | 42819130                                     | 1   |
| Filter, Oil          | 2016-2019  | Refer to the Electronic Parts Catalog (EPC). |     |
| 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 |
|-----------------|--------------------------------------------------|------------|
| 4088338*        | Charge Air Cooler and IAPT Draining and Cleaning | 1.4 hrs    |
| Add             | Winter Grille Cover Installation                 | 0.2 hr     |
| Add             | Oil Change                                       | 0.3 hr     |

| Labor Operation                                                                                                                                                                                                                                                                                                                                                                            | Description                                             | Labor Time |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------|
| 2888368**                                                                                                                                                                                                                                                                                                                                                                                  | Engine Control Module Re-programming with SPS for Cruze | 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:

1. Open TLC/TIS on the computer used to program the vehicle.
2. Select and start SPS/SPS2.
3. Select Settings.
4. 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  | 2                                                                                                                                                              |
| Modified | Released January 11, 2022<br>January 14, 2022 – Changed Winter Grille Cover Installation and Oil Change to Add conditions in the Warranty Information section. |