

Customer Satisfaction Program

N202323690 Advanced Onboard Diagnostics Upgrade



Release Date: April 2021

Revision: 00

Attention: This is a phased launch.
 ONLY EV Certified dealers can complete this repair.
This program is in effect until May 31, 2023.

| Make | Model | Model Year | | RPO | Description |
|-----------|---------|------------|------|-----|-------------|
| | | From | To | | |
| Chevrolet | Bolt EV | 2019 | 2019 | | |

Involved vehicles are marked “open” on the Investigate Vehicle History screen in GM Global Warranty Management system. This site should always be checked to confirm vehicle involvement prior to beginning any required inspections and/or repairs.

| | |
|-------------------|---|
| Condition | Certain 2019 model year Chevrolet Bolt EV vehicles have a new software package of advanced onboard diagnostics. |
| Correction | Dealers will update the software on the body control module and HPCM2 module. |

Parts

Note: Use the vehicle identification number (VIN) and the GM Electronic Parts Catalog (EPC) to determine which battery section or pack to order. Lithium Ion material is on part exchange in the US and Canada. For ordering instructions, use bulletin #18-NA-236 for modules and #19-NA-194 for packs as directed by TAC. For markets outside of US and Canada; the local TAC organization should be contacted for direction.

Warranty Information

| Labor Operation | Description | Labor Time | Trans. Type | Net Item |
|-----------------|---|------------|-------------|----------|
| 9105423* | EV Battery Parameter inspection, BCM Programming and HPCM 2 Programming | 1.1 | ZFAT | ** |
| 9105424* | Cell Battery Module Replacement (Includes EV Battery Parameter inspection, BCM Programming, HPCM 2 Programming and Smoke Test) | | ZFAT | ** |
| | Row 1 | 6.4 | | |
| | Row 2 | 6.2 | | |
| | Row 3 | 6.9 | | |
| | Row 4 | 7.3 | | |
| | Row 5 | 6.6 | | |
| 9105664* | Drive Motor Battery Replacement and Shipping Preparation (Includes EV Battery Parameter inspection, BCM Programming and HPCM 2 Programming) | 4.3 | ZFAT | ** |

Important: ** GM will provide reimbursement to the dealership for providing the service of picking up and returning a customer's vehicle while this repair is completed. It must be noted on the job card that this service was provided. Reimbursement is limited to \$7.50 each way (\$15 maximum per job card) and is to be submitted in the Net/Shuttle field of the Field Action transaction.

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

- 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 SPS/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 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.

Customer Satisfaction Program

N202323690 Advanced Onboard Diagnostics Upgrade



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.

Note: Most vehicles involved will only require a programming update but there is a slight chance that a high voltage battery pack repair/replacement will be required. Advise waiting customers prior to starting that the time required will likely be about an hour but could require longer if parts replacement is required.

Note: It is recommended dealers assure their EV Battery Depowering Tool (EL-50332-B) has the most recent software update. Software updates are available from Special Tools and Software Updates accessed through GlobalConnect.

Service Procedure

Note: Stable 12 V battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt the procedure. 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.

- Do not plug-in charge the vehicle or perform aggressive acceleration and/or braking maneuvers just prior to performing the GDS2 parameter inspection procedure.
- Do not clear DTC Information before GDS2 parameter inspection procedure.
- Do not program any control module until instructed to do so.

Customer Satisfaction Program

N202323690 Advanced Onboard Diagnostics Upgrade



Procedure 1 GDS2 Parameter Inspection

GDS2

Data Display

Diagnostic Data Display | Graphical Data Display | Line Graph | DTC Display

Voltage Data

| Parameter Name | Value | Unit | Control Module |
|---|-------|------|---------------------------------------|
| Hybrid/EV Battery Voltage Sensors Average | 3.94 | V | Hybrid/EV Powertrain Control Module 2 |
| Minimum Hybrid/EV Battery Module Voltage | 3.94 | V | Hybrid/EV Powertrain Control Module 2 |
| Hybrid/EV Battery Voltage Sensor with Minimum Value | 65 | | Hybrid/EV Powertrain Control Module 2 |
| Hybrid/EV Battery Pack State Of Charge | 76 | % | Hybrid/EV Powertrain Control Module 2 |

| Parameter Name | Value | Unit | Control Module |
|---|----------------|------|---------------------------------------|
| High Voltage System Interlock Circuit | Energized | | Hybrid/EV Powertrain Control Module 2 |
| High Voltage System Interlock Circuit Status | Closed Circuit | | Hybrid/EV Powertrain Control Module 2 |
| Battery Charging System High Voltage Interlock Circuit | Energized | | Hybrid/EV Powertrain Control Module 2 |
| Battery Charging System High Voltage Interlock Circuit Status | Passed | | Hybrid/EV Powertrain Control Module 2 |
| Hybrid/EV Battery Pack Voltage | 380.12 | V | Hybrid/EV Powertrain Control Module 2 |
| Hybrid/EV Battery Cell State of Charge Variation | 1 | % | Hybrid/EV Powertrain Control Module 2 |
| Maximum Hybrid/EV Battery Module Voltage | 3.96 | V | Hybrid/EV Powertrain Control Module 2 |
| Hybrid/EV Battery Voltage Sensor with Maximum Value | 10 | | Hybrid/EV Powertrain Control Module 2 |
| Hybrid/EV Battery Pack Maximum Voltage | 402.48 | V | Hybrid/EV Powertrain Control Module 2 |

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- Perform a vehicle diagnostic system check prior to using this diagnostic procedure. Refer to *Diagnostic System Check – Vehicle* in SI.
 - If any Powertrain DTCs (Pxxxx) are set, store any Freeze Frame/Failure Records and go to *Diagnostic Trouble Code (DTC) List – Vehicle* in SI. Return to this procedure after DTC repair.
 - If no DTCs are set, go to Step 3.
- Vehicle ON, use GDS2 to view the following data screens while connected to the vehicle:
 - From Module Diagnostics, select Hybrid Powertrain Control Module 2.
 - Data Display Folder
 - Data Display Icon
 - Voltage Data
 - Observe and record the parameters

Hybrid/EV Battery Voltage Sensors Average and Minimum Hybrid/EV Battery Module Voltage

Hybrid/EV Battery Voltage Sensors Average (Value A) : _____

Minimum Hybrid/EV Battery Module Voltage (Value B) : _____

- Subtract the minimum voltage from the average voltage.

Value A – Value B : _____

Customer Satisfaction Program

N202323690 Advanced Onboard Diagnostics Upgrade



- If the voltage difference is less than or equal to 0.08V, proceed directly to **Procedure 3: Software Flashing Procedure**.
- If the voltage difference is greater than 0.08V, Observe and record the value of parameter **Hybrid/EV Battery Voltage Sensor with Minimum Voltage** and **Hybrid/EV Battery Pack State of Charge** and proceed to Step 4.

Hybrid/EV Battery Voltage Sensor with Minimum Voltage (Value C): _____

Hybrid/EV Battery Pack State of Charge (Value D): _____

4. Observe the battery pack state of charge parameter (Value D), is the SOC 30% or greater?
 - If the battery pack SOC is less than 30%:
 1. Plug in Charge the battery pack to between 30 to 50% (do NOT charge the battery pack to full at this time).
 2. Remove the charge cord and allow the battery to rest (vehicle OFF) for 30 minutes.
 3. Return to step 1 of **Procedure 1: GDS2 Parameter Inspection Procedure**.
 - If the battery pack SOC is greater than 30%, proceed to step 5.
5. **FOR MARKETS WITH CELL MODULE REPLACEMENT CAPABILITIES (Including US, Canada, and South Korea):** There is at least one battery cell module row that requires replacement. Advise the customer and coordinate rental vehicle, transportation home, etc. as required. Most vehicles will only require a single cell battery module section/row. To determine if an additional cell battery module section/row or if the entire battery pack assembly requires replacement proceed to **Procedure 2: Multiple Cell Group Identification Procedure**.
6. **FOR MARKETS WITHOUT CELL MODULE REPLACEMENT CAPABILITIES: Advise the customer that an entire replacement battery pack will need to be ordered to service their vehicle. Do not update the HPCM2 with the latest calibration until the pack is replaced. Provide the customer with a courtesy loaner vehicle until the repair can be performed.**

Procedure 2 Multiple Cell Group Identification Procedure

1. Vehicle ON, use GDS2 to view the following data screens while connected to the vehicle:
 - From Module Diagnostics, select K16 Battery Energy Control Module
 - Data Display Icon
 - Voltage Data 1, Voltage Data 2, and then Voltage Data 3
 - From Identification Information Folder, select the Identification Information Icon.

Note: For emailing GDS2 session logs in the US, contact TACsnapshot@GM.Com. In Canada, contact TACsnapshotcanada@GM.Com. All other regions must use their established local technical support center.

2. Start a GM TAC case for the vehicle. Email the GDS2 session log from the vehicle to GM TAC. Refer to the latest version of PIP4902 for assistance in creating and emailing a session log.
3. TAC will compare the data from the session log and advise which battery section(s) to replace. In some cases, TAC may advise that the entire pack should be replaced due to multiple cells with low voltage.
4. Replace the identified cell battery module. Refer to **Cell Battery Module Replacement** (Row 1-5) in SI.
5. After repair proceed to **Procedure 3: Software Flashing Procedure**.

Note: While waiting for a replacement battery cell module row to arrive, do not charge the vehicle or drive more than a half mile. Follow bulletin #18-NA-236 for module ordering instructions.

Important: Do not flash any software before repairs are completed. Keep state of charge at or below 90%.

Procedure 3 Software Flashing Procedure

This update will perform the following:

- Hybrid/EV Powertrain Control Module 2
 - Revise existing Hybrid/EV Battery Circuit Performance DTCs P0B3C, P0B41, etc.
 - Implement new DTCs P0BBD.

Customer Satisfaction Program

N202323690 Advanced Onboard Diagnostics Upgrade



- Implement new GDS2 parameters to support DTCs P0BBD.
- Restore maximum battery pack charging to 100% capability.
- Body Control Module
- Coordinated change to implement thermal propagation warning feature.

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.

Note: Carefully read and follow the instructions below.

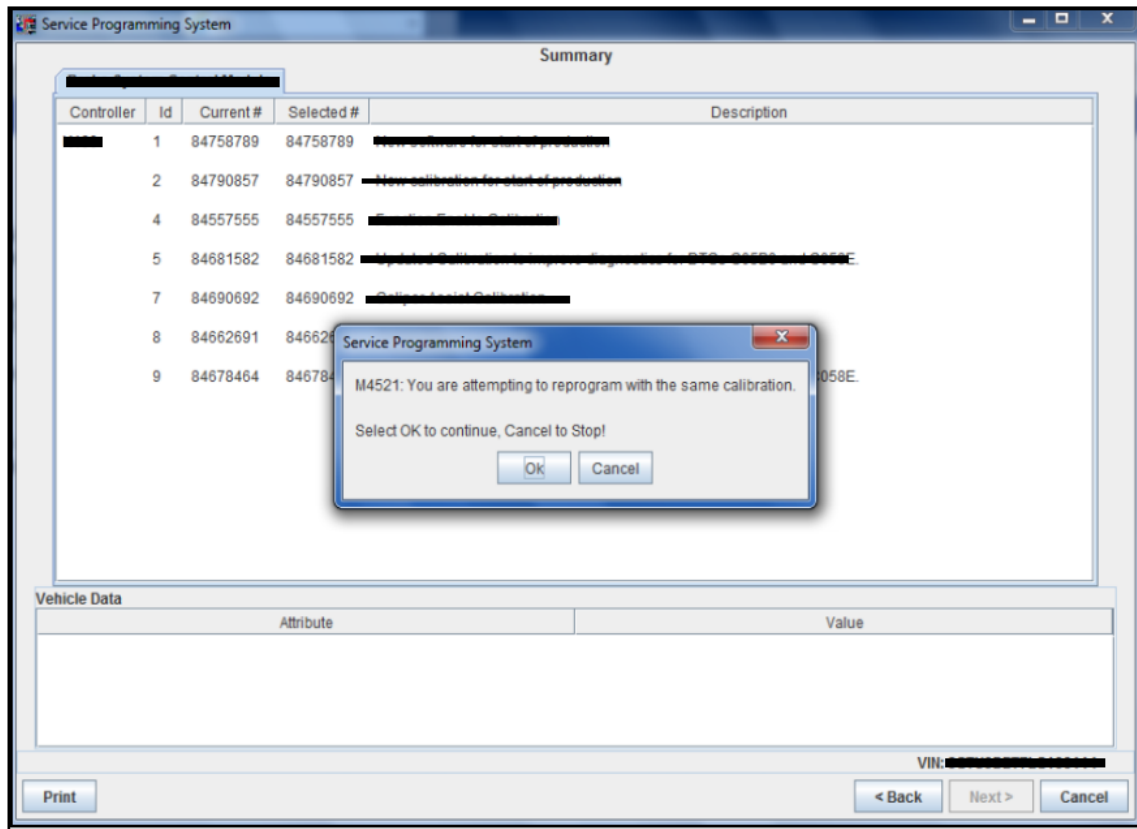
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, 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.
- Turn OFF or disable systems that may put a load on the vehicle battery such as: interior lights, exterior lights (including daytime running lights) HVAC etc.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

The screenshot shows the Techline Connect software interface. At the top, there is a header with the GM logo, 'Techline Connect Version: 1.6.0 Validation', and various status icons including a vehicle, MDI 2 SN#, and network connectivity. Below the header is a navigation bar with tabs for 'DASHBOARD', 'GDS2', 'SI', and 'SPS2'. The main area displays a 'Programming' table with columns for Controller, ID, and Current #. A dialog box is overlaid on the table, displaying the message: 'M4521: You are attempting to reprogram with the same calibration. Select OK to continue, Cancel to Stop!'. The table contains the following data:

| Controller | ID | Current # | Description |
|------------|----|-----------|---|
| K17 | 1 | 84820771 | |
| K17 | 2 | 84820790 | |
| K17 | 3 | 84820797 | 84820797 Electronics Brake-Brake-Brake-Calibration |
| K17 | 4 | 84820801 | 84820801 Function-Engine-Extension |
| K17 | 5 | 84820808 | 84820808 Power-Mode-Linker-Calibration |
| K17 | 6 | 84820819 | 84820819 Pre-Pressure-Calibration |
| K17 | 7 | 84820825 | 84820825 |

At the bottom of the interface, there are buttons for 'Print', 'Save to PDF', 'ECU Data', 'Back', 'Start Programming', and 'Cancel'. A VIN field is also visible at the bottom right.

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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 K114B Hybrid/EV Powertrain Control Module 2. Refer to *K114B Hybrid/EV Powertrain Control Module 2: Programming and Setup* in SI.

Customer Satisfaction Program

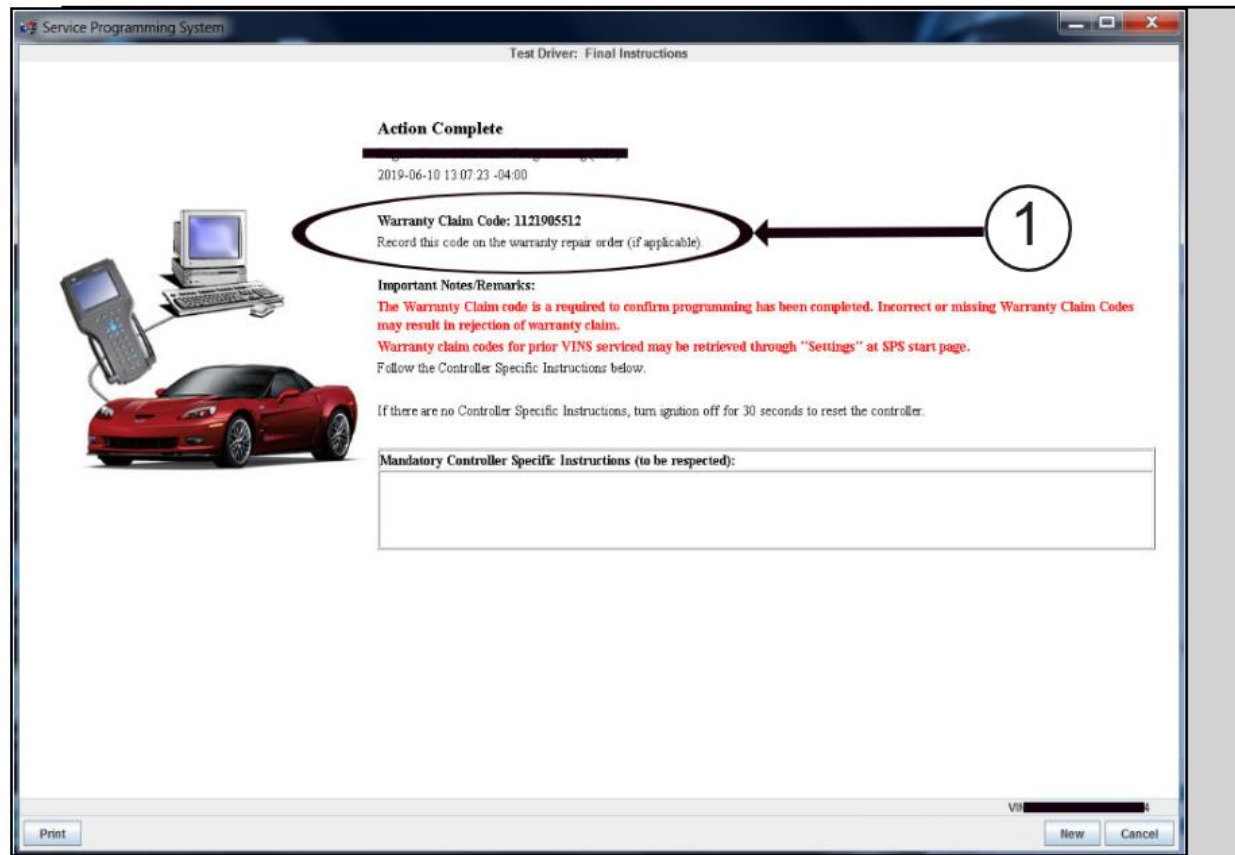
N202323690 Advanced Onboard Diagnostics Upgrade



2. Reprogram the K9 Body Control Module. Refer to *K9 Body Control Module Programming and Setup* in SI.



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Customer Satisfaction Program

N202323690 Advanced Onboard Diagnostics Upgrade



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 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.

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

Prior to returning the vehicle to the customer:

1. Vehicle ON, perform the Diagnostic System Check – Vehicle.
 - If any DTCs are set, store any Freeze Frame/Failure Records and go to Diagnostic Trouble Code (DTC) List – Vehicle in Si. Return to this procedure after DTC repair.
 - If no DTCs are set, go to Step 2.
2. Vehicle ON, use GDS2 to view Specific DTC status:
 - From Module Diagnostics, select Hybrid Powertrain Control Module 2.
 - Select Diagnostic Trouble Codes folder
 - Select Specific DTC
 - Ensure the following DTCs have Ran and Passed this ignition: DTC P0BBD.
 - If the DTCs have ran and passed proceed to Step 3
 - If the DTCs have failed go to Diagnostic Trouble Code (DTC) List – Vehicle
 - If DTC P0BBD is not supported an error has occurred during programming, repeat Procedure 3: Software Flashing Procedure.



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3. If the customer is not waiting, plug-in charge the vehicle and ensure battery pack state of charge is 80% or greater. 80% state of charge is represented when 3 bars remain unlit on the vehicle instrument panel gauge display. You may use Level 1, Level 2 or DC fast charging (note: After programming, the vehicle must be driven at vehicle speeds greater than 3 km/h (2 mph) to enable DC fast charging).

Dealer Responsibility

All new, used, GM Certified Used, courtesy transportation vehicles, dealer shuttle vehicles, etc. in dealers' possession and subject to this program must be held and inspected/repared per the service procedure of this bulletin before customers take possession of these vehicles. Involved vehicles must be held and not delivered to customers, dealer-traded, released to auction, used for demonstration, or any other purpose.

All GM Certified Used vehicles currently in the dealers' inventory within the Certified Pre-Owned Inventory System (CPOIS) will be de-certified and must be held and remedied per the service procedure in this bulletin. Upon submitting an accepted/paid warranty transaction in the Global Warranty Management (GWM) system, the vehicle can be re-certified for sale within the CPOIS system, or once again be used in the CTP program.

Customer Satisfaction Program

N202323690 Advanced Onboard Diagnostics Upgrade



Dealers are to service all vehicles subject to this program at no charge to customers, regardless of mileage, age of vehicle, or ownership, through May 31, 2023. Customers who have recently purchased vehicles sold from your vehicle inventory, and for which there is no customer information indicated on the involved vehicle listing, are to be contacted by the dealer. Arrangements are to be made to make the required correction according to the instructions contained in this bulletin. A copy of the customer letter is provided in this bulletin for your use in contacting customers. Program follow-up cards should not be used for this purpose, since the customer may not as yet have received the notification letter.

In summary, through May 31, 2023, whenever a vehicle subject to this field action enters your vehicle inventory you must take the steps necessary to ensure the program correction has been made before selling the vehicle. In addition, for vehicles entering your facility for service, you are required to ensure the customer is aware of the open field action and make every reasonable effort to implement the program correction as set forth in this bulletin prior to releasing the vehicle.

Dealer Reports

For dealers with involved vehicles, a listing has been prepared and will be available through GM GlobalConnect Maxis Field Action Reports or sent directly to export dealers. The Inventory tab of the dealer reports will contain VINs that apply to this field action. This information is intended to assist dealers with the **PROMPT COMPLETION** of these vehicles. The Customer In-Service tab will contain customer names and addresses from Motor Vehicle Registration Records. The use of such motor vehicle registration data for any purpose other than follow-up necessary to complete this field action may be a violation of law in several states.

Courtesy Transportation – For USA & Canada

Courtesy transportation is available for customers whose vehicles are involved in this customer satisfaction program.

Customer Notification

USA & Canada - General Motors will notify customers of this program on their vehicle (see copy of customer letter included with this bulletin).

Export - Letters will be sent to known owners of record located within areas covered by the US National Traffic and Motor Vehicle Safety Act. For owners outside these areas, dealers should notify customers using the attached sample letter.

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 tools, equipment, 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 dealer for information on whether your vehicle may benefit from the information.



**We Support
Voluntary Technician
Certification**

Customer Satisfaction Program

N202323690 Advanced Onboard Diagnostics Upgrade



May 2021

This notice applies to your vehicle, **VIN:** _____

Dear General Motors Customer:

We are pleased to announce that a free software upgrade is available for your 2019 model year Chevrolet Bolt EV. This new software is a package of advanced onboard diagnostics that GM developed for your vehicle's high-voltage battery system. The software is available now at your Chevrolet dealer as a free upgrade to your Bolt EV.

What We Will Do: Your GM dealer will update the software on your vehicle's body control module and hybrid/EV powertrain control module 2 (HPCM2). This service will be performed for you at **no charge until May 31, 2023**. After that, any applicable warranty will apply.

What You Should Do: To limit any possible inconvenience, we recommend that you contact your dealer as soon as possible to schedule an appointment to receive the software upgrade. When scheduling your appointment, confirm with the dealer that they are an EV certified dealer.

If you have questions or concerns that your dealer is unable to resolve, please contact the EV Concierge team at 833-EVCHEVY (833-382-4389). Hours of operation are Monday through Friday, 8:00 AM to 7:00 PM ET.

We want you to know that we will do our best, throughout your ownership experience, to ensure that your Chevrolet Bolt EV provides you many miles of enjoyable driving.

Neelie O'Connor
Global Executive Director
Customer Experience Operations

N202323690

GLOBAL SAFETY FIELD INVESTIGATIONS
DCS5776
URGENT - DISTRIBUTE IMMEDIATELY

Date: April 29, 2021

Subject: N202323690 - Customer Satisfaction Program
Advanced Onboard Diagnostics Upgrade

Models: 2019 Chevrolet Bolt EV

To: All General Motors Dealers

General Motors is releasing Customer Satisfaction Program N202323690 today. The total number of U.S. vehicles involved is 6,993. Please see the attached bulletin for details.

This software is not yet available for 2020-2021 model year vehicles. General Motors is working diligently to finalize updated software for the 2020-2021 model years. When this software is available, this Customer Satisfaction Program will be revised to include 2020-2021 model year vehicles.

Customer Letter Mailing

The customer letter mailing will begin in the near future.

Global Warranty Management (GWM)

The Required Field Action section on the Investigate Vehicle History (IVH) screen will be updated April 30, 2021 or sooner. A list of involved vehicles in dealer new inventory is attached to this message. Please hold all warranty transactions until IVH has been updated. Only EV Certified dealers can complete this repair. If you are not an EV certified dealer and need to know where the closest EV certified dealer is located, please contact the Dealer Business Center.

END OF MESSAGE
GLOBAL SAFETY FIELD INVESTIGATIONS