

<b>REFERENCE:</b>	<b>TSB:</b> 08-031-23 REV. A <b>GROUP:</b> 08 - Electrical	<b>Date:</b>	November 1, 2023	<b>REVISION:</b>	08-031-23
<b>VEHICLES AFFECTED:</b>	<b>2022 (WL) Jeep Grand Cherokee</b> <b>This bulletin applies to vehicles built on or before equipped with 2.0L I4 DOHC DI Turbo PHEV Engine (Sales Code ECX).</b>			<b>MARKET APPLICABILITY:</b> <input checked="" type="checkbox"/> NA <input checked="" type="checkbox"/> IAP <input checked="" type="checkbox"/> EE <input checked="" type="checkbox"/> MEA <input checked="" type="checkbox"/> SA <input checked="" type="checkbox"/> CH	
<b>CUSTOMER SYMPTOM:</b>	<p><b>**Customers may experience a Malfunction Indicator Lamp (MIL) illumination. Upon further investigation the technician may find the following Diagnostic Trouble Code (DTC) has been set in the Hybrid Control Processor (HCP) module:</b></p> <ul style="list-style-type: none"> <li>• P16F0-00 - SPI Comm Hardware Fault.</li> </ul> <p><b>Customer may experience one or more of the following:</b></p> <ul style="list-style-type: none"> <li>• Unexpected engine start during a crank (customer is expecting EV mode but the gas engine starts).**</li> <li>• "Service Charging System" popup when keying the vehicle to off while still in drive.</li> <li>• Engine must be started twice to achieve drive ready (at low temperatures around 30°C, 22°F) when the vehicle was entered and started quickly.</li> <li>• Radiator fan cycling while in park and with vehicle operational. May be described as "breathing" sound from the front of the vehicle.</li> <li>• "Performance Limited, Service Fuel System" popup while driving.</li> <li>• Radiator fan spinning at max speed while charging. The vehicle is providing max cooling when the charging module reaches high temperature. May be described as a loud sound that disappears when the vehicle is unplugged.</li> <li>• Poor cabin heat in electric mode.</li> <li>• Temporary loss of cabin cooling (&lt;5s) while driving in electric mode.</li> <li>• State of Charge (SoC) dropping lower than expected while in eSave Battery Charge mode.</li> <li>• Turtle mode while refueling in hot ambient.</li> <li>• Unable to enter electric mode driving while FORM is active.</li> </ul>				
<b>CAUSE:</b>	<b>HCP/AHCP software</b>				

This bulletin supersedes Technical Service Bulletin (TSB) 08-031-23, date of issue January 27, 2023, which should be removed from your files. All revisions are highlighted with **\*\*asterisks\*\*** and include the addition of a DTC, symptom and LOP.

#### REPAIR SUMMARY:

This bulletin involves reprogramming the HCP and AHCP or also known as Power Inverter Module (PIM) with the latest available software.

**NOTE: Additional module flashes are required for this update to be effective. The following modules are all to be updated along with this HCP and AHCP update:**

- **Powertrain Control Module (PCM).**
- **Transmission Control Module (TCM).**

**CLAIMS DATA:**

Labor Operation No:	Labor Description	Skill Category	Labor Time
**18-19-86-AW	Processor, Hybrid Control (HCP/AHCP) - Reprogram (0 - Introduction)	1 - Engine Repair and Performance	0.5 Hrs.**
Failure code	CC	Customer Concern	

**RELATED TIME ALLOWANCE:**

Labor Operation No:	Labor Description	Skill Category	Labor Time
18-19-87-51	5 Minute Power down After Disabling HV Battery Contactors (0 - Introduction)	6 - Electrical and Body Systems	0.2 Hrs.

**NOTE:** The related LOP for high voltage power contactors disable and enable can only be claimed one time when updating these additional modules at the same dealership visit:

- Hybrid Control Processor (HCP), Auxiliary Hybrid Control Processor (AHCP) also known as the Power Inverter Module (PIM).
- Transmission Control Module (TCM).
- Powertrain Control Module (PCM).
- Integrated Dual Charging Module (IDCM).
- Battery Pack Control Module (BPCM).

**The dealer must use failure code CC with this Technical Service Bulletin.**

- If the customer's concern matches the SYMPTOM identified in the Technical Service Bulletin, failure code CC is to be used.
- When utilizing this failure code, the 3C's (customer's concern, cause and correction) must be provided for processing Technical Service Bulletin flash/reprogramming conditions.

**DIAGNOSIS:**

Using a Scan Tool (wiTECH) with the appropriate Diagnostic Procedures available in DealerCONNECT/Service Library, verify all related systems are functioning as designed. If DTCs or symptom conditions, other than the ones listed above are present, record the issues on the repair order and repair as necessary before proceeding further with this bulletin.

If the customer describes any of the symptoms listed above in the customer symptom section, perform the Repair Procedure.

**SPECIAL TOOLS/EQUIPMENT:**

Description	Ref. No.	Notes
wiTECH or Equivalent	–	–

## REPAIR PROCEDURE:

### WARNING!

- Before performing the software reprogramming, it is necessary to make the vehicle safe.
- When performing repairs that directly involve or imply possible contact with live high voltage components/systems, the technician must ensure that the power supply of the high-voltage system is disconnected throughout the operation.
- Only specifically trained technicians qualified to perform repairs on vehicles with high voltage systems under current national laws/regulations are authorized to work on the vehicle.
- Before performing any diagnostic repair work on the vehicle, carefully read and comply with the general instructions for working safely on hybrid/electric vehicles and use suitable general equipment and Personal Protective Equipment (PPE).

**NOTE:** The Powertrain Control Module (PCM) and Transmission Control Module (TCM) must be updated to the latest available software at the conclusion of this repair procedure. Refer to all applicable published technical service bulletins for detailed repair procedures and labor times regarding updating the PCM and TCM software.

**NOTE:** Install a battery charger to maintain the 12 volt system voltage.

**NOTE:** If this flash process is interrupted/aborted, the flash should be restarted.

1. Disable HV battery contactors with wiTECH - Go to the Misc Functions tab --> Select Disable HV Battery Contactors --> then follow the wiTECH prompts.
2. Using wiTECH, confirm that the contactors are open and waiting five minutes. If the contactors do not open, turn the ignition ON then OFF. Once successful, a note will appear on the wiTECH screen indicating the contactors are open.
3. Reprogram the HCP and AHCP with the latest software. Detailed instructions for flashing control modules using the wiTECH Diagnostic Application are available by selecting the application's "HELP" tab.
4. Clear all DTCs that may have been set in any module due to reprogramming. The wiTECH application will automatically present all DTCs after the flash and allow them to be cleared.
5. Verify the TCM and the PCM are also programmed with the latest available software. Refer to all applicable published service bulletins for detailed repair procedures and labor times regarding updating the TCM and the PCM software.
6. Enable HV battery contactors with wiTECH - Go to the Misc Functions tab --> Select Enable HV Battery Contactors For Service--> then follow the wiTECH prompts.

## POLICY:

Reimbursable within the provisions of the warranty.

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