

## Technical Service Bulletin (TSB)

### Flash: Powertrain Control Module (PCM) Updates

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |                   |                                                                                                                                                                                                                                                                                     |                  |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| REFERENCE:         | TSB: 18-051-22 REV. B<br>GROUP 18 - Vehicle Performance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Date: | December 23, 2022 | REVISION:                                                                                                                                                                                                                                                                           | 18-051-22 REV. A |
| VEHICLES AFFECTED: | 2021 (JL) Jeep Wrangler<br>Equipped with a 2.0L I4 DOHC DI Turbo PHEV Engine (Sales Code ECX).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                   | MARKET APPLICABILITY:<br><input checked="" type="checkbox"/> NA<br><input checked="" type="checkbox"/> SA<br><input checked="" type="checkbox"/> EE<br><input checked="" type="checkbox"/> MEA<br><input checked="" type="checkbox"/> IAP<br><input checked="" type="checkbox"/> CH |                  |
| CUSTOMER SYMPTOM:  | Customers may experience a Malfunction Indicator Lamp (MIL) illumination. Upon further investigation the technician may find one or more of the following Diagnostic Trouble Code (DTC). <ul style="list-style-type: none"><li>• U0402-00 - Implausible Data Received From TCM.</li><li>• U145D - Implausible Data Received From TCM On D-PT.</li></ul> <b>**Customers may experience one or more of the following:</b> <ul style="list-style-type: none"><li>• Vehicle may not be able to enter electric mode driving while Fuel Oil Refresh Mode (FORM) is active.</li><li>• FORM staying on too long.**</li></ul> <b>Other software enhancement included with this update:</b> <ul style="list-style-type: none"><li>• On Board Fuel Consumption Monitoring Updates (China Only).</li></ul> |       |                   |                                                                                                                                                                                                                                                                                     |                  |
| CAUSE:             | PCM software.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |                   |                                                                                                                                                                                                                                                                                     |                  |

This bulletin supersedes Technical Service Bulletin (TSB) 18-051-22 REV. A, date of issue May 13, 2022, which should be removed from your files. All revisions are highlighted with **\*\*asterisks\*\*** and include additional symptom/conditions and LOP.

This Technical Service Bulletin (TSB) has also been released as a Rapid Service Update (RSU) 21-124, date of issue August 26, 2021. All applicable Sold and Un-Sold RSU VINs have been loaded. To verify this RSU service action is applicable to the vehicle, use VIP or perform a VIN search in DealerCONNECT/Service Library. All repairs are reimbursable within the provisions of warranty. This RSU will expire 18 months after the date of issue.

#### REPAIR SUMMARY:

This bulletin involves reprogramming the PCM 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 PCM update:

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

**CLAIMS DATA:**

| Labor Operation No: | Labor Description                                                           | Skill Category                    | Labor Time |
|---------------------|-----------------------------------------------------------------------------|-----------------------------------|------------|
| 18-19-06-DK         | Module, Powertrain Control (PCM) - Inspect (0 - Introduction)               | 1- Engine Repair and Performance  | 0.2 Hrs.   |
| **18-19-06-FX       | Module, Powertrain Control (PCM) - Inspect and Reprogram (0 - Introduction) | 1 - Engine Repair and Performance | 0.3 Hrs.** |
| Failure code        | RF                                                                          | Required Flash                    |            |

**RELATED TIME ALLOWANCE:**

| Labor Operation No: | Description                                                                  | Skill Category                  | Amount     |
|---------------------|------------------------------------------------------------------------------|---------------------------------|------------|
| **18-19-87-50       | 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).
- Integrated Dual Charging Module (IDCM).
- Battery Pack Control Module (BPCM).\*\*

The dealer must choose which failure code to use depending on if this is a Rapid Service Update (RSU) or Technical Service Bulletin.

- The “RF” failure code is required for essential module flash/reprogramming and can only be used after confirmation that the VIN is included on the RSU.
- The failure code “RF” (Required Flash) can no longer be used on Technical Service Bulletin flashes. The “RF” failure code must be used on an RSU.
- If the customer’s concern matches the SYMPTOM/CONDITION identified in the Technical Service Bulletin, failure code CC is to be used. When utilizing this failure code, the 3C’s must be supplied.

**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 a customer’s VIN is listed in VIP or your RRT VIN list, perform the repair. If any vehicle not on the VIN list exhibits the DTCs, perform the repair.

**SPECIAL TOOLS/EQUIPMENT:**

| Description          | Ref. No. | Notes |
|----------------------|----------|-------|
| wiTECH or Equivalent | —        | —     |

## REPAIR PROCEDURE:

**NOTE:** The HCP, AHCP, TCM, BPCM and IDCM 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 HCP, AHCP, TCM, BPCM and IDCM software.

**CAUTION!** Failure to update all modules following an PCM software update may result in vehicle malfunctions.

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

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

### 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).\*\*
1. Is the vehicle on the RSU VIN list?
    - YES>>> Proceed to [Step 2](#).
    - NO>>> Proceed to [Step 3](#).
  2. Does the PCM have the latest software already installed?
    - YES>>> This bulletin has been completed, use inspect LOP (18-19-06-DK) to close the active RSU. Proceed to [Step 6](#).
    - NO>>> Proceed to [Step 3](#).
  3. \*\*Disable HV battery contactors with wiTECH - Go to the Misc Functions tab --> Select Disable HV Battery Contactors --> then follow the wiTECH prompts.

**NOTE:** To prevent Diagnostic Trouble Code (DTC) P0AA4 from setting wait five minutes after the verifying BPCM contactors are disabled before proceeding.

4. 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.\*\*
5. Reprogram the PCM with the latest software. Detailed instructions for flashing control modules using the wiTECH Diagnostic Application are available by selecting the application's "HELP" tab.
6. Clear any DTCs that may have been set in any modules due to reprogramming. The wiTECH application will automatically present all DTCs after the flash and allow them to be cleared.
7. Verify the HCP, AHCP, TCM, BPCM and IDCM 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 HCP, AHCP, TCM, BPCM and IDCM software.
8. \*\*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.