



**NUMBER:** 18-148-22

**GROUP:** 18 - Vehicle Performance

**DATE:** November 30, 2022

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**This bulletin supersedes Technical Service Bulletin (TSB) 18-028-21 REV. A, date of issue December 24, 2021, which should be removed from your files. All revisions are highlighted with **\*\*asterisks\*\*** and include additional Diagnostic Trouble Codes (DTCs), software enhancements and LOPs.**

**This Technical Service Bulletin (TSB) has also been released as a Rapid Service Update (RSU) 21-188, date of issue December 24, 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.**

**SUBJECT:**

Flash: Powertrain Control Module (PCM) Updates

**OVERVIEW:**

This bulletin involves reprogramming the PCM with the latest available software.

**MODELS:**

2021 (DT) RAM 1500 Pickup

**NOTE: This bulletin applies to vehicles within the following markets/countries: North America.**

**NOTE: This bulletin applies to vehicles built equipped with a 3.0L V6 Turbo Diesel Engine W/ESS (Sales Code EXH).**

**SYMPTOM/CONDITION:**

Customers may experience a Malfunction Indicator Lamp (MIL) illumination. Upon further investigation, a technician may find one or more of the following DTCs have been set:

- **\*\*P2183 - Engine Coolant Temperature Sensor 2 Circuit Performance.**
- P016F - Closed Loop Fuel Pressure Control At Limit - Pressure Too Low.
- P025C - Fuel Pump Module Control Circuit Low.
- P208B - Reductant Pump 1 Control Performance.
- P0403 - EGR Control Circuit Open.\*\*
- P2D2F - Turbocharger-Supercharger -A- Underboost Condition.
- P01CC - Cylinder 1 Injection Timing Performance - Over Advanced.
- P01CE - Cylinder 2 Injection Timing Performance - Over Advanced.
- P01D0 - Cylinder 3 Injection Timing Performance - Over Advanced.
- P01D2 - Cylinder 4 Injection Timing Performance - Over Advanced.
- P01D4 - Cylinder 5 Injection Timing Performance - Over Advanced.
- P01D6 - Cylinder 6 Injection Timing Performance - Over Advanced.
- P026C - Fuel Injection Quantity Lower Than Expected.
- P220A - Nox Sensor Bank 1 Sensor 1 Supply Voltage Circuit.
- P220B - Nox Sensor Bank 1 Sensor 2 Supply Voltage Circuit.

- P2200 - Nox Sensor 1 Circuit.
- P229E - Nox Sensor Circuit - Bank 1 Sensor 2.
- P258B - Electric Vacuum Pump Performance.
- P04DB - Crankcase Ventilation System Disconnected.
- P040F - EGR Temperature Sensor A-B Correlation.
- P225D - Nox Sensor 1/1 Performance - Signal Stuck Low.
- P0088 - Fuel Rail Pressure Too High.
- P0404 - EGR "A" Control Circuit Range/Performance.
- P20C6 - Reductant Heater 4 Control Circuit Performance.
- P0524 - Engine Oil Pressure Too Low (during start up in cold ambient temps).
- P249C-00 - Excessive Time To Enter Closed Loop Reductant Injection Control.
- P02E8-00 - Diesel Intake Air Flow Position Sensor Circuit Low.
- P20FB-00 - Reductant Pump 2 Control Performance.
- P065A-00 - Generator System Performance.
- P00AF-00 - Turbocharger Boost Control Module "A" Performance.
- P200A-00 - Intake Manifold Runner Performance - Bank 1.
- P200B-00 - Intake Manifold Runner Performance - Bank 2.
- P0106-00 - Manifold Absolute Pressure Sensor Performance.

Customers may comment on one or more of the following:

- \*\*Remote start does not work due to DTC P2183 stored after using engine block heater.\*\*
- Slow acceleration.
- Reduced vehicle speed and torque in high and 4 low.
- Poor cold idle stability.
- Poor idle quality with A/C on.
- Excessive engine speed oscillations at tachometer red-line.
- Following a long key-on situation, poor cold start and idle stability.
- Cold hard start/extended crank.
- Block heater not providing a proper cold start and stable idle.
- High idle speeds at altitude when remote start is active.
- Radio may reset during engine idle.
- Electronic Throttle Control (ETC) lamp turns on.
- After a long cold soak a stumble/hesitation is felt during the first few light accelerations.
- Turbo surge in park or neutral and high idle.
- The cruise control and speed limited set speed doesn't match the speedometer. It could be up to 2.5 kph (1.5 mph) difference.

In addition, the following software enhancements are available:

- \*\*Low speed engine idle improvements.
- Engine restart performance and torque response during low fuel level and/or hot ambient conditions.\*\*
- Corrects instances of vehicles restarting once Selective Catalytic Reduction (SCR) inducement is active and the mileage countdown has expired.
- Reduce engine delay during cold start garage shifts.
- Improve idle stability, improvement of cold start and combustion stability after start during cold ambient temperatures.
- Eliminate turbocharger surge on tip-out.
- Eliminate idle oscillation in park and drive.
- Speedometer accuracy improvement(s).
- Cruise control updates.
- Battery durability improvements in hot ambient temperatures.

- Improved idle quality during remote start.

**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 RSU VIN list, perform the repair. If any vehicle not on the VIN list exhibits the symptom/condition or DTC, perform the repair.

**REPAIR PROCEDURE:**

**NOTE: Install a battery charger to ensure battery voltage does not drop below 13.2 volts. Do not allow the charging voltage to climb above 13.5 volts during the flash process.**

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

1. Is the vehicle on the RSU VIN list?
  - YES>>> Proceed to [Step 2](#).
  - NO>>> Proceed to [Step 3](#).
2. Is the PCM software at the latest version?
  - YES>>> This bulletin has been completed, use inspect LOP **\*\*(18-19-04-BX)\*\*** to close the active RSU. Normal diagnosis should be performed.
  - NO>>> Proceed to [Step 3](#).
3. 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.
4. 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.

**NOTE: The following routines need to be performed after the flash. No part replacement is required when running these routines.**

5. Using wiTECH, navigate to the PCM "Misc Functions" and perform the "Reset Zero Fuel Quantity Calibration" routine. Follow all screen prompts.
6. Using wiTECH, navigate to the PCM "Misc Functions" and perform the "Reset of O2 Values" routine. Follow all screen prompts.
  - a. From the routine menu, select "Reset O2 Values when Rail Pressure Sensor or Injectors are Replaced".
  - b. Follow remaining screen prompts.
7. Cycle the ignition "off" for five minutes.

**POLICY:**

Reimbursable within the provisions of the warranty.

**TIME ALLOWANCE:**

<b>Labor Operation No:</b>	<b>Description</b>	<b>Skill Category</b>	<b>Amount</b>
**18-19-04-BX	Module, Engine Control (ECM) - Inspect (0 - Introduction)	10 - Diesel	0.2 Hrs.
18-19-04-BY	Module, Engine Control (ECM) - Inspect and Reprogram (0 - Introduction)	10 - Diesel	0.3 Hrs.**

**NOTE: The expected completion time for the flash download portion of this procedure is approximately 9 minutes. Actual flash download times may be affected by vehicle connection and network capabilities.**

**FAILURE CODE:**

**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.

RF	Required Flash - RSU
CC	Customer Concern