



NUMBER: 18-010-21

GROUP: 18 - Vehicle Performance

DATE: February 4, 2021

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This bulletin supersedes Technical Service Bulletin (TSB) 18-059-20, date of issue August 07, 2020, which should be removed from your files. All revisions are highlighted with **asterisks**** and include additional Diagnostic Trouble Codes (DTCs), symptom/conditions and LOP**

SUBJECT:

Flash: Powertrain Control Module (PCM) Updates

OVERVIEW:

This bulletin involves reprogramming the Engine Control Module (ECM) / Powertrain Control Module (PCM) with the latest available software.

MODELS:

2019	(DJ)	RAM 2500 Pickup
2019	(D2)	RAM 3500 Pickup

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

NOTE: This bulletin applies to vehicles equipped with a 6.7L I6 Cummins Turbo Diesel Engine (Sales Code ETL) or 6.7L I6 Cummins HO Turbo Diesel Engine (Sales Code ETM).

SYMPTOM/CONDITION:

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

- ****P20E8-00 - Reductant Pressure Too Low.**
- P0301-00 - Cylinder 1 Misfire (**Sym Cam Pump Only**).
- P0302-00 - Cylinder 2 Misfire (**Sym Cam Pump Only**).
- P0303-00 - Cylinder 3 Misfire (**Sym Cam Pump Only**).
- P0304-00 - Cylinder 4 Misfire (**Sym Cam Pump Only**).
- P0305-00 - Cylinder 5 Misfire (**Sym Cam Pump Only**).
- P0306-00 - Cylinder 6 Misfire (**Sym Cam Pump Only**).
- P1C54-00 - SCR NOx Catalyst Missing.
- P242F-00 - Diesel Particulate Filter Restriction - Ash Accumulation (**68RFE Only**).
- P2463-00 - Diesel Particulate Filter Restriction - Soot Accumulation Bank 1 (**68RFE Only**).
- P1451-00 - Diesel Particulate Filter System Performance (**68RFE Only**).
- P0299-00 - Turbocharger Underboost.
- P2706-00 - MS Solenoid Circuit (68RFE Only).******
- P2463-00 - Diesel Particulate Filter Restriction - Soot Accumulation Bank 1.
- P242F-00 - Diesel Particulate Filter Restriction - Ash Accumulation .
- P1D73-00 - AGS Performance.

- P0299-00 - Turbocharger Underboost (**Additional Improvement for D2 ETM Only**).
- P1451-00 - Diesel Particulate Filter System Performance.
- P0421-00 - Catalyst 1 Efficiency Below Threshold Bank 1.
- P24A5-00 - EGR Cooler Bypass Bank 1 Control Stuck.
- P21C4-00 - Reductant Line Heater Relay Control Circuit High.
- P2560-00 - Engine Coolant Level Low.
- P2201-00 - Aftertreatment NOX Sensor Circuit Performance - Bank 1 Sensor 1.
- P0604-00 - Internal Control Module Ram.
- P0607-00 - ECU Internal Performance.
- P0868-00 - Line Pressure Low (Module, Powertrain Control (PCM), (**68RFE Only**)).
- P0740-00 - TCC Out Of Range.
- P218F-00 -Reductant No Flow Detected.
- P20EE - NOx Catalyst Efficiency Below Threshold.
- P226C - Turbocharger Boost Control "A" Slow Response (In extreme cold ambient temperatures).
- P061A - Level 2 Torque Performance.
- P061B - Internal Control Module Torque Calculation Performance.
- P061E - Internal Control Module Brake Signal Performance.
- P062C - Etc Level 2 Mph Performance.
- P203F - (Diesel Exhaust Fluid) Reductant Level Too Low.
- P0420 - Catalyst System Efficiency Bank 1.
- U02A3 - Lost of Communication with PM Sensor.
- P1507 - Crankcase Filter Restriction.
- P0116 - Engine Coolant Temperature Sensor Performance.
- P0106 - Manifold Absolute Pressure Sensor Performance (In extreme cold ambient temperatures).
- U3017 - Control Module Timer/Clock Performance.
- P0870 - Hydraulic Pressure Test (**68RFE Only**).
- U0101 - Lost Communication with TCM.
- P2579 - Turbocharger Speed Sensor Circuit.

The customer may also notice one or more of the following:

- **Harsh downshift clunk during exhaust brake deceleration.
- DEF gauge erratic when DEF level is low.
- Stall when putting in reverse in cold ambient temps.
- Engine stumble during engine warm up.
- Unstable idle when AC compressor cycles.**
- Engine surge felt while driving (**D2 with ETM Sales Code**).
- Idle Fluctuation.
- Tachometer bouncing at idle with no change in RPM.
- Speed Control/Adaptive Cruise Control icon remains on in cluster after function has been canceled.
- Stumble on acceleration in higher altitudes (**D2 High Output Only**).
- Cruise Control Resume Function will not go to last set speed after cruise control was turned off.
- Rough idle.
- Oil life monitor resets after PCM flash
- Diesel exhaust fluid (DEF) level gauge inaccurate.
- Excessive DEF consumption
- Poor idle quality at times when engaging cab heat feature.

In addition the following enhancements are included:

- ****Cold Start improvements (Sym Cam only).**
- Oil change monitor improvement for severe duty operation.
- Engine Warm up Protection Improvement to help promote better oil delivery to engine bearings during cold starts.
- Transmission Overall Shift Schedule Improvements.**
- wiTECH “Fuel Injector Cutoff Test” fix.
- wiTECH Mass Air Flow (MAF) Sensor data display additional fix.
- Enabling wiTECH Particulate Matter (PM) Sensor Regeneration Test in PCM “Misc Functions”.
- Hydrocarbon Desorption (HCD) Mode operational improvement. HCD mode resumes after key cycle.
- Enabling message in dash alerting operator when in “Exhaust Brake - Cab Warm Up” mode.
- System Improvement for “Exhaust Brake - Cab Warm Up” mode.
- Transmission upshift quality enhancements **(68RFE Only)**.
- wiTECH “Fuel Pressure Override” test improvement.
- wiTECH Mass Air Flow (MAF) data parameter improvement (displaying raw value instead of estimated).
- wiTECH fuel system run-up test improvement.
- wiTECH fan actuation test improvement.
- Smart Exhaust Brake operation improvement.
- Engine warm up protection system improvement. Max engine speed limit change from 1,200 RPM to 1,000 RPM during initial startup in extreme cold ambient temperatures.
- Improved shift quality and engine performance when in 4LO.
- Idle Shutdown Timer System improvement.

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 the symptom/conditions listed above or if the technician finds the DTCs, perform the Inspection Procedure.

INSPECTION:

NOTE: You may be presented with two calibration choices when flashing the ECM. Please follow the inspection steps in this service bulletin closely to avoid choosing the incorrect calibration. Choosing the incorrect calibration will result in an undesirable noise from the High Pressure Fuel Pump, requiring the ECM to be flashed again with the correct calibration.

The fuel injection pump must be inspected to determine which design pump is installed on the vehicle. Older design pumps have an Asymmetrical design internal cam. The newer design pumps have a Symmetrical design internal cam. The design of the pump will determine which calibration will need to be programmed into the ECM. From outward appearance both pumps look identical, with the exception of specific identification marks machined into the body of the pump.

1. Inspect the fuel injection pump to see which pump the vehicle has:
 - Vehicles with the new style Symmetrical Cam design pump will have one large single dot embossed in the pump housing (Fig. 1)
 - For vehicles equipped with a Symmetrical Cam pump, choose the calibration labeled Symmetric Cam, or Sym Cam.



Fig. 1

New Style Symmetrical Cam Design Pump

1 - One large Single Dot on Housing

- Vehicles with the old style Asymmetrical Cam design will have multiple dots embossed in the pump housing (Fig. 2) .
- For vehicles with an Asymmetrical Cam pump, choose the calibration labeled Asymmetric Cam or Asym Cam.

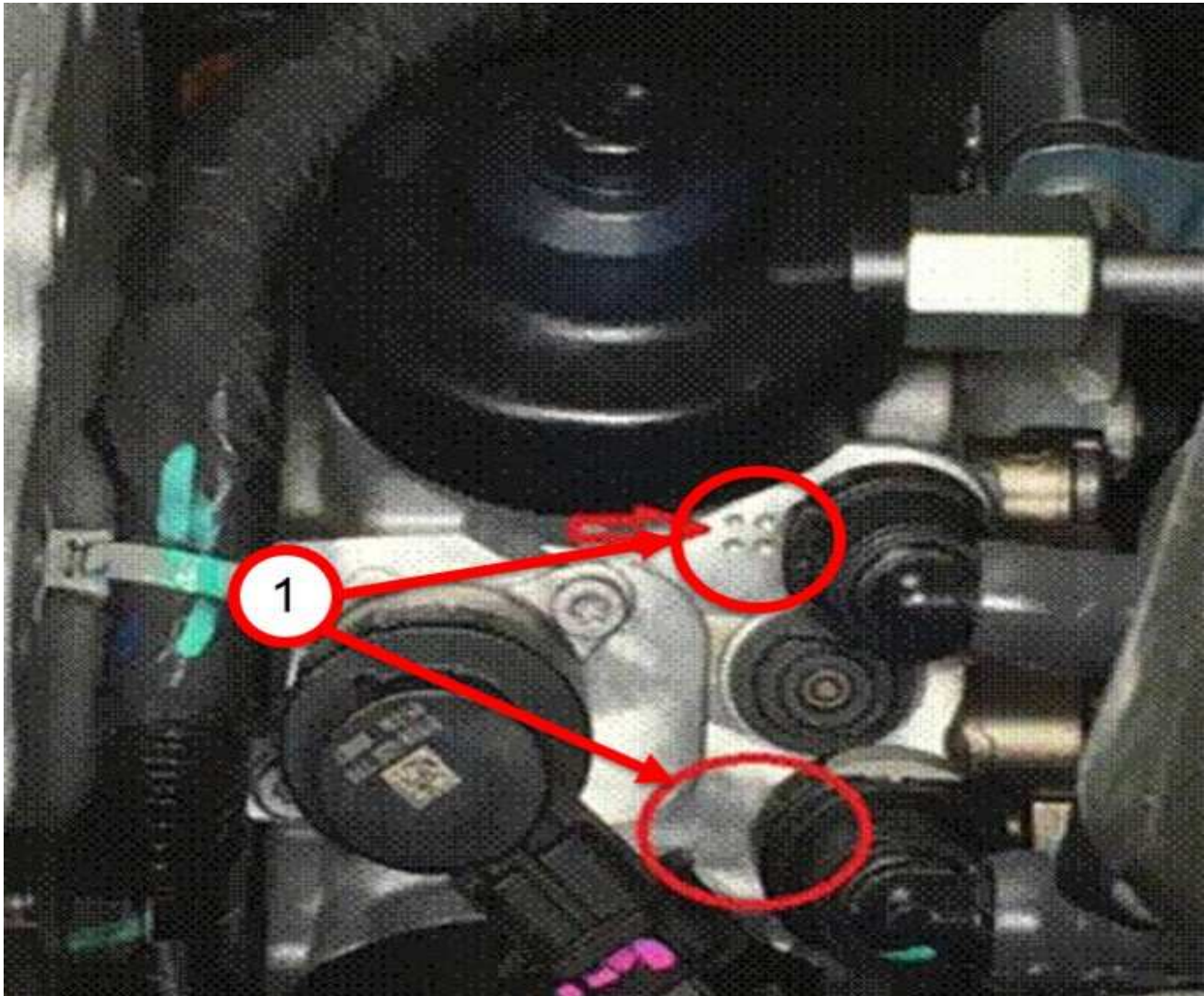


Fig. 2

Old Style Asymmetrical Cam Design Pump

1 - Multiple Dots on Housing

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. Reprogram the PCM/ECM with the latest software. Detailed instructions for flashing control modules using the wiTECH Diagnostic Application are available by selecting the application's "HELP" tab.
2. Is this vehicle equipped with the 68RFE automatic transmission?
 - YES>>> Proceed to [Step 3](#) of the repair procedure.
 - NO>>> Proceed to [Step 4](#) of the repair procedure.
3. Perform the transmission "Quicklearn" procedure. Follow the detailed service procedures available in DealerCONNECT/Service Library, Service Info Section 08 - Electrical > 8E - Electronic Control Modules > Module, Transmission Control > Standard Procedure > Quicklearn.
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. Using wiTECH, perform the "Oil Life Restore" procedure located in the ECM "Misc Functions".

POLICY:

Reimbursable within the provisions of the warranty.

TIME ALLOWANCE:

Labor Operation No:	Description	Skill Category	Amount
**18-19-04-MF	Module, Engine Control (ECM) - Sym Cam Injection Pump Calibration - Inspect and Reprogram (1 - Semi-Skilled)	10 - Diesel	0.4 Hrs.
18-19-04-ME	Module, Engine Control (ECM) - Asym Cam Injection Pump Calibration - Inspect and Reprogram (1 - Semi-Skilled)	10 - Diesel	0.4 Hrs.**

NOTE: The expected completion time for the flash download portion of this procedure is approximately 10 minutes. Actual flash download times may be affected by vehicle connection and network capabilities.

FAILURE CODE:

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

- If the customer's concern matches the SYMPTOM/CONDITION identified in the 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 Service Bulletin flash/reprogramming conditions.

CC	Customer Concern
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