SERVICE BULLETIN

***NUMBER:*** 18-021-15 REV. E

***GROUP:*** Vehicle Performance

***DATE:*** October 07, 2015



**THIS BULLETIN SUPERSEDES SERVICE BULLETIN 18-021-15 REV. D, DATED SEPTEMBER 26, 2015, WHICH SHOULD BE REMOVED FROM YOUR FILES. ALL REVISIONS ARE HIGHLIGHTED WITH **ASTERISKS** AND INCLUDE UPDATED RRT INFORMATION.**

****THIS SERVICE BULLETIN IS ALSO BEING RELEASED AS RAPID RESPONSE TRANSMITTAL (RRT) 15-094. ALL APPLICABLE SOLD AND UN-SOLD RRT VIN's HAVE BEEN LOADED. TO VERIFY THAT THIS RRT SERVICE ACTION IS APPLICABLE TO THE VEHICLE, USE VIP OR PERFORM A VIN SEARCH IN TECHCONNECT. ALL REPAIRS ARE REIMBURSABLE WITHIN THE PROVISIONS OF WARRANTY.****

**HELP USING THE wiTECH DIAGNOSTIC APPLICATION FOR FLASHING AN ECU IS AVAILABLE BY SELECTING "HELP" THEN "HELP CONTENTS" AT THE TOP OF THE wiTECH DIAGNOSTIC APPLICATION WINDOW.**

**THE wiTECH SOFTWARE IS REQUIRED TO BE AT THE LATEST RELEASE BEFORE PERFORMING THIS PROCEDURE.**

***SUBJECT:***
Flash: 3.0L Powertrain Diagnostic And System Enhancements

***OVERVIEW:***
This bulletin involves reprogramming the Powertrain Control Module (PCM) with the latest available software. It also involves replacement of the Oxygen (O2) Sensor and cleaning or replacement of the Exhaust Gas Temperature (EGT) Sensor 1/2 if necessary depending on Diagnostic Trouble Codes (DTC) that may have set.

***MODELS:***

| | | |
|---|---|---|
| 2014 | (DS) | RAM 1500 Pickup |

**NOTE: This bulletin applies to vehicles equipped with a 3.0L Diesel Engine (Sales Code EXF).**

***SYMPTOM/CONDITION:***

A small number of customers may experience an intermittent engine shudder or vibration which may not set a Diagnostic Trouble Code (DTC). In addition other customers may experience a Malfunction Indicator Lamp (MIL) illumination upon which the technician may find one or more of the following DTCs have been set:

- P26AB-00 - Engine Coolant Bypass Valve Stuck.
- P24AF-00 - Particulate Matter Sensor Circuit Performance.
- P2196-00 - O2 Sensor 1/1 Stuck Rich.
- P1E0C-00 - Empty Fuel Tank.
- P2237-00 - O2 Sensor 1/1 Pump Cell Current Circuit Open.
- P1297-00 - EGR Slow Response - Decreasing Flow.
- P0420-00 - Catalyst Efficiency (Bank 1).
- P20C2-00 - Reductant Heater 3 Control Circuit Performance.
- P204F-00 - Reductant System Performance.
- P20E9-00 - Reductant Pressure Too High.
- P249C-00 - Excessive Time To Enter Closed Loop Reductant Injection Timing Control.
- P1288-00 - NOX Sensor 1/2 Zero Offset Too High.
- P2002-00 - Diesel Particulate Filter Efficiency Below Threshold.
- P2299-00 - Brake Pedal Position / Accelerator Pedal Position Incompatible.
- P241D-00 - SCR Inducement - Forced Engine Shutdown.
- P016A-00 - Excessive Time To Enter Closed Loop Air/Fuel Ratio Control.
- P2459-00 - Diesel Particulate Filter Regeneration Frequency.
- P0133-00 - O2 Sensor 1/1 Slow Response.
- P2084-00 - Exhaust Gas Temperature Sensor Circuit Performance - (1/2).
- P0171-00 - Fuel System 1/1 Lean.
- P0426-00 - Catalyst Temperature Sensor Circuit Performance (1/1).
- P0045-00 - Turbocharger Boost Control Circuit/Open.
- P0087-00 - Fuel Rail Pressure Too Low.
- P009A-00 - Intake Air Temperature/Ambient Air Temperature Correlation.
- P0128-00 - Thermostat Rationality.
- P0234-00 - Turbocharger Overboost Condition.
- P05F8-00 - Reductant Heater Control Module Performance.
- P050E-00 - Cold Start Engine Exhaust Temperature Too Low.
- P200A-00 - Intake Manifold Runner Performance - (Bank 1).
- P200B-00 - Intake Manifold Runner Performance - (Bank 2).
- P202E-00 - Reductant Injection Valve Circuit Performance.
- P2080-00 - Exhaust Gas Temperature Sensor Circuit Performance.
- P20BA-00 - Reductant Heater 1 Control Circuit Performance.
- P20BE-00 - Reductant Pressure Line Heater Control Circuit Performance.
- P20C2-00 - Reductant Heater 3 Control Circuit Performance.
- P225C-00 - NOX Sensor 1/1 Performance - Signal Stuck High.
- P225D-00 - NOX Sensor 1/1 Performance - Signal Stuck Low.
- P2453-00 - Diesel Particulate Filter Differential Pressure Sensor Circuit Performance.

- P24C2-00 - Exhaust Gas Temperature Measurement System - Multiple Sensor Correlation (Bank 1).
- P24F2-00 - EGR Temperature/Charge Air Cooler Temperature Correlation.
- P2564-00 - Turbocharger Position Sensor Circuit Low.
- P2565-00 - Turbocharger Position Sensor Circuit High.
- U029D-00 - Lost Communication With NOX Sensor Module "A".
- U029E-00 - Lost Communication With NOX Sensor Module "B".

The following powertrain system improvements/enhancements are also included in this software release.

- Enhancements to improve A/C compressor relay duty cycle operation to prevent ignition off battery draw.
- Powertrain system improvements to enable EGR cleaning routine.

***DIAGNOSIS:***

Using a Scan Tool (wiTECH) with the appropriate Diagnostic Procedures available in TechCONNECT, verify all vehicle 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. For all other customers that describe the symptom/condition or if a technician finds any of the DTCs listed above, perform the Repair Procedure.

***PARTS REQUIRED:***

| Qty. | Part No. | Description |
|---|---|---|
| 1 (AR) | 68171190AA | Sensor, Oxygen |
| 1 (AR) | 68231738AA | Sensor, Exhaust Gas Temperature (EGT) |

***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.**

**CAUTION: **Do not interrupt the software update process in any way once it has begun. It may cause permanent damage to the PCM which will require replacement. It is highly recommended to have a new generic PCM unit available at the workshop before starting the Repair Procedure.****

1. Using wiTECH, check for any codes setting in the PCM and record them on the repair order. If necessary, perform a vehicle scan report and save it for your records.
2. Check for updated PCM software. Is updated software available?
   a. Yes>>> Proceed to Step #3.
   b. No>>> Proceed to Step #7.
3. Reprogram the PCM with the latest available software. Detailed instructions for flashing control modules using the wiTECH Diagnostic Application are available by selecting the “HELP” tab on the upper portion of the wiTECH window, then “HELP CONTENTS.” This will open the Welcome to wiTECH Help screen where help topics can be selected.
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. Under the PCM “System Tests” perform the “SCR DEF Tank Fluid Level Reset” procedure.
6. Turn the ignition off for 35 seconds to complete the flash.
7. With the ignition key off, test for voltage on fuse F62 (10 amp red) located in the under hood Power Distribution Center (PDC) using a volt meter connected to ground. Was 12 volts measured at the fuse with the ignition off?
   a. Yes>>>Further diagnosis and repair is required. Refer to all applicable published TSBs or service information in DealerCONNECT/TechCONNECT regarding ignition off battery draw. Proceed to Step #8.
   b. No>>> Proceed to Step #8.
8. Was the vehicle built on or before September 08, 2014?
   a. Yes>>> Proceed to Step #9.
   b. No>>> The bulletin is now complete. No further action is required. Use Labor Op 18-19-04-CT to close out the RRT portion of this service action.
9. Refer back to the codes recorded in Step #1. Were DTCs, P0171-00 - Fuel System 1/1 Lean and/or P0133-00 - O2 Sensor 1/1 Slow Response found setting in the PCM memory?
   a. Yes>>> Proceed to Step #10.
   b. No>>> The bulletin is now complete. No further action is required. Use Labor Op 18-19-04-CU to close out the RRT portion of this service action.
10. Visually inspect all Air Induction and Charge Air Cooler (CAC) connections for proper installation and torque. Repair as necessary and proceed to Step #11.

**NOTE: Care must be taken not to drop or strike the new O2 sensor during installation. If dropped, the sensor must be discarded and another sensor installed.**

11. Replace the O2 sensor. Refer to detailed repair procedures available in DealerCONNECT> TechCONNECT> Service Info Section 14 - Fuel System> Fuel Injection, Diesel> Sensor, Oxygen> Removal/Installation. Proceed to Step #12.
12. Remove the EGT Sensor 1/2 located in the inlet of the Diesel Particulate Filter (DPF)/Diesel Oxidation Catalyst (DOC) assembly. Refer to detailed removal procedures available in DealerCONNECT> TechCONNECT> Service Info Section 11 - Exhaust System> Sensor, Exhaust Temperature> Removal> Exhaust Gas Temperature Sensor 1/2.
13. Inspect the sensor body and probe for any signs of damage or excessive soot. See (Fig. 1).

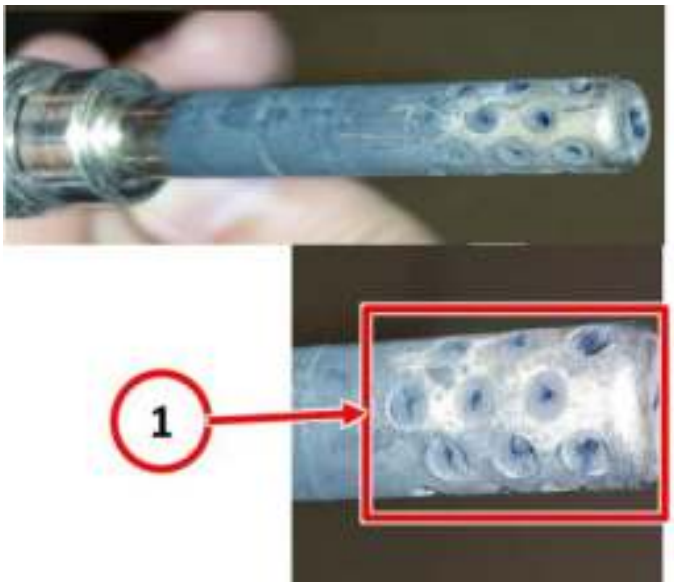


***Fig. 1 EGT Sensor Bank 1 Sensor 1***

1 - Excessive soot blocking sensor ports

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14. Was excessive soot found on the sensor?
    a. Yes>>> Proceed to Step #15.
    b. No>>> Proceed to Step #16.
15. Using shop air set to a maximum of 80 psi, clean all excessive soot from the sensor probe.
16. Using a suitable multi-meter with appropriate test probes, test the resistance between the sensor connector terminals 1 and 2. With the sensor at room temperature, 65-75 °F (18-25 °C), the resistance should measure between 200 and 240 ohms.

17. Is the temperature sensor resistance within specifications?
    a. Yes>>> Install the original EGT sensor 1/2. Refer to detailed installation procedures available in DealerCONNECT> TechCONNECT> Service Info Section 11 - Exhaust System> Sensor, Exhaust Temperature> Installation> Exhaust Gas Temperature Sensor 1/2.
    b. No>>> Install a new EGT sensor 1/2. Refer to detailed installation procedures available in DealerCONNECT> TechCONNECT> Service Info Section 11 - Exhaust System> Sensor, Exhaust Temperature> Installation> Exhaust Gas Temperature Sensor 1/2.
18. Verify all engine systems are operating as designed. The bulletin is now complete.

***POLICY:***

Reimbursable within the provisions of the warranty.

***TIME ALLOWANCE:***

| Labor Operation No: | Description | Skill Category | Amount |
|---|---|---|---|
| 18-19-04-CT | Module, Powertrain Control (PCM) - Inspect Software Level Only, (includes fuse voltage check). (2 - Skilled) | 10 - Diesel | 0.2 Hrs |
| 18-19-04-CU | Module, Powertrain Control (PCM) - Reprogram Only, (Includes fuse voltage check). (2 - Skilled) | 10 - Diesel | 0.4 Hrs |

***RELATED LABOR OPERATIONS:***

**NOTE: This Labor Operation can only be used on vehicles built on or before September 08, 2014.**

| Labor Operation No: | Description | Skill Category | Amount |
|---|---|---|---|
| 18-19-04-50 | Replace O2 sensor, and clean or replace EGT sensor, (includes fuse voltage check) (2 - Skilled) | 10 - Diesel | 0.7 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. If the customer came in with an issue and the dealer found updated software to correct that issue, use failure code CC, for all other use failure code RF.**

- If the customer's concern matches the SYMPTOM/CONDITION identified in the Service Bulletin, than failure code CC is to be used.
- If an available flash is completed while addressing a different customer concern, failure code RF is to be used.

| | |
|---|---|
| CC | Customer Concern |
| RF | Routine Flash |