



NUMBER: 25-001-15

GROUP: Emissions Control

DATE: May 30, 2015

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SUBJECT:

Diesel Exhaust Fluid (DEF) Level Gauge Inaccurate Or Stuck

OVERVIEW:

This bulletin involves verifying the correct DEF level in the tank and if necessary, replacing the DEF pump module.

MODELS:

2014-2015	(DJ)	Ram 2500 Pickup
2014-2015	(D2)	Ram 3500 Pickup
2014-2015	(DD)	Ram 3500 Cab Chassis
2014-2015	(DP)	Ram 4500/5500 Cab Chassis

NOTE: This bulletin applies to vehicles built on or after April 1, 2014 (MDH 0401XX) and on or before September 27, 2014 (MDH 1001XX) equipped with a 6.7L Cummins diesel engine (Sales Code ETK).

DISCUSSION:

The DEF system uses a complex radio frequency type level sensor to detect the amount of fluid present in the DEF tank. As the fluid level in the tank decreases, the level sensor becomes exposed to air which alters the signal sent out by the sensor. The sensor translates this signal change into a fluid level and busses the information to the Instrument Panel Cluster (IPC) via the Dosing Control Unit (DCU).

The fluid level sensor is part of the pump module assembly mounted in the DEF tank. Both the 5.7 gallon (21.5 liter) tank used in the pickup applications and the 9.25 gallon (35 liter) tank used in the cab chassis applications use the same pump module assembly. Due to the differences in tank design and capacity, there will be a certain amount of fluid space above the sensor that the sensor will be unable to detect accurately. The 5.7 gallon (21.5 liter) tank will hold approximately .5 gallons (1.8 liters) of fluid above the top of the sensor. The 9.25 gallon (35 liter) tank will hold approximately 2.5 gallons (9.5 liters) of fluid above

the top of the sensor. The system will have to consume the fluid above the top of the sensor before it is able to detect a drop in the tank level. This will give the appearance of the gauge being stuck on full when in fact the system is operating normally.

SYMPTOM/CONDITION:

A small number of customers may comment that their DEF level gauge is stuck for long periods of time or is erratic. The customer may also experience a Malfunction Indicator Lamp (MIL) illumination. Upon further investigation a technician may find one or more of the following Diagnostic Trouble Codes (DTCs).

- P203B - Reductant Level Sensor Circuit Performance
- P203C - (Diesel Exhaust Fluid) Reductant Level Sensor Circuit Low.
- P203D - (Diesel Exhaust Fluid) Reductant Level Sensor Circuit High.

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 the technician finds any of the DTCs listed above, perform the Repair Procedure.

PARTS REQUIRED:

Qty.	Part No.	Description
1 (AR)	68192659AC	Module Kit, Urea Pump/Level Unit
(AR)	68035704AB	Fluid, Diesel Exhaust - 1 gallon
(AR)	68056278AB	Fluid, Diesel Exhaust - 2.5 gallon

REPAIR PROCEDURE:

CAUTION: Due its corrosive nature, DEF fluid must not come in contact with any open electrical connections or harnesses. If fluid contamination in the electrical connections should occur, the harness must be replaced. Ensure that all disconnected harnesses are properly secured up and out of the way of any possible splash zones during the course of this repair.

NOTE: Due to a reserve volume of fluid above the top of the level sensor, there may be a delay before the gauge drops from full during vehicle operation.

1. Is the customer's concern, the DEF level gauge is stuck on full for extended periods of time after filling the tank?
 - a. Yes>>> Proceed to [Step #2](#).
 - b. No>>> Proceed to [Step #8](#).
2. Raise and support the vehicle. Refer to detailed service procedures in DealerCONNECT/TechCONNECT Service Information Section 4 - Vehicle Quick Reference> Hoisting> Standard Procedure> Standard Procedure - Hoisting.
3. If equipped, remove the transfer case skid plate. Refer to detailed service procedures in DealerCONNECT/TechCONNECT Service Information Section 13 - Frame and Bumpers> Underbody Protection> Plate, Skid, Transfer Case> Removal.

4. Disconnect the DEF fill tube from the DEF tank.
5. Using a suitable drain hose, drain approximately 4 gallons (15 liters) the DEF tank through the fill neck on the tank.

NOTE: Ensure that the vehicle has sat for approximately 10-15 minutes with the key off and scan tool disconnected to allow all modules to time out before proceeding to the next step.

6. Turn the ignition key to the run position and note the position of the DEF level gauge.
7. Did the level gauge drop to approximately 1/2 tank or less?
 - a. Yes>>> No further action is required. The system is operating normally. Install all disconnected or removed components and refer to the discussion section of this service action outlining the fluid level gauge operation when the tank is full. Replace all DEF fluid drained out of the tank before returning the vehicle to the customer.
 - b. No>>> Proceed to [Step #8](#).

CAUTION: Due its corrosive nature, DEF fluid must not come in contact with any open electrical connections or harnesses. If fluid contamination in the electrical connections should occur, the harness must be replaced. Ensure that all disconnected harnesses are properly secured up and out of the way of any possible splash zones during the course of this repair.

8. Replace the DEF pump assembly. Refer to detailed service procedures in DealerCONNECT/TechCONNECT Service Information Section 25 - Emissions Control> Diesel Exhaust Fluid Emissions> Assembly, Diesel Exhaust Fluid Pump> Removal/Installation. Ensure that all disconnected harnesses are properly tied up and out of the way during the repair. Do not allow any DEF fluid to come in contact with any of the harness electrical connections.

NOTE: The following steps must be performed once the new pump is installed and the tank is filled. Failure to do so may result in DTC P20E8 - (Diesel Exhaust Fluid) Reductant Pressure Too Low setting in the PCM.

NOTE: The PCM must be at the latest available software level before performing the DEF Reductant Doser Pump Prime Override test. Refer to all applicable published service bulletins for detailed repair procedures and labor times.

9. Ensure that the DEF tank is approximately 1/2 full.
10. Using WiTECH, perform a DEF Reductant Doser Pump Prime Override test a total of 10 times to ensure that the DEF pump has been sufficiently primed and that all air has been purged from the pump and filter.
11. Turn the ignition key on and ensure the DEF level gauge is reading correctly.

POLICY:

Reimbursable within the provisions of the warranty.

TIME ALLOWANCE:

Labor Operation No:	Description	Skill Category	Amount
25-08-12-90	Assembly, Diesel Exhaust Fluid Pump - Inspect Only (Includes partial tank drain) (1 - Semi-Skilled)	10 - Diesel	0.4 Hrs.
25-08-12-91	Assembly, Diesel Exhaust Fluid Pump - Inspect and Replace (1 - Semi-Skilled)	10 - Diesel	0.7 Hrs.

FAILURE CODE:

ZZ	Service Action
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