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Coding Information

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Title: 5 gallon SSI DEF level sensor/ multifunction head unit retrofit

Applies To: 2014MY and 2015MY Durastar and Workstar Models built with Navistar N9/N10 engines with a 5 gallon DEF tank.

## CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

11/1/2019 - Initial Article Release

## DESCRIPTION

This document will guide the user through retrofitting a SSI DEF level sensor/ multifunction head unit and accompanying DEF tank on certain vehicles built with 5 gallon DEF tanks. Vehicles equipped with an N9/N10 engine built with feature code 0015WCN (5 gallon tank) and a build date between 4/29/14 and 11/27/15 have a new replacement DEF level sensor available. The new sensor is secured to the tank with 6 bolts and a gasket vs the old design that has a retaining ring with 2 bolts. To accomodate the new sensor the tank must be replaced. The tank mounts in the same location using the same hardware as the previous tank. The new sensor kit will also include new DEF supply and return lines along with an additional vent line.

## SYMPTOM(s)

### Diagnostic Trouble Code(s) & Dashboard Indicator Light(s):

DTC/Light	Description
SPN 1761 FMI 1	Aftertreatment 1 Diesel Exhaust Fluid Tank Volume: Data Valid But Below Normal Operational Range – Most Severe Level
SPN 1761 FMI 10	Aftertreatment 1 Diesel Exhaust Fluid Tank Volume: Abnormal Rate Of Change
SPN 1761 FMI 17	Aftertreatment 1 Diesel Exhaust Fluid Tank Volume: Data Valid But Below Normal Operating Range – Least Severe Level
SPN 1761 FMI 18	Aftertreatment 1 Diesel Exhaust Fluid Tank Volume: Data Valid But Below Normal Operating Range – Moderately Severe Level
SPN 1761 FMI 19	Aftertreatment 1 Diesel Exhaust Fluid Tank Volume: Received Network Data In Error

Customer Observations or Concerns:

MIL and/or stop light illuminated  
 DEF level gauge reading incorrectly  
 Reduced power and possibly a 5MPH derate  
 Warning Chimes for low DEF level or derate

## **SPECIAL TOOL(s) / SOFTWARE**

Not Applicable

## **SERVICE PARTS INFORMATION**

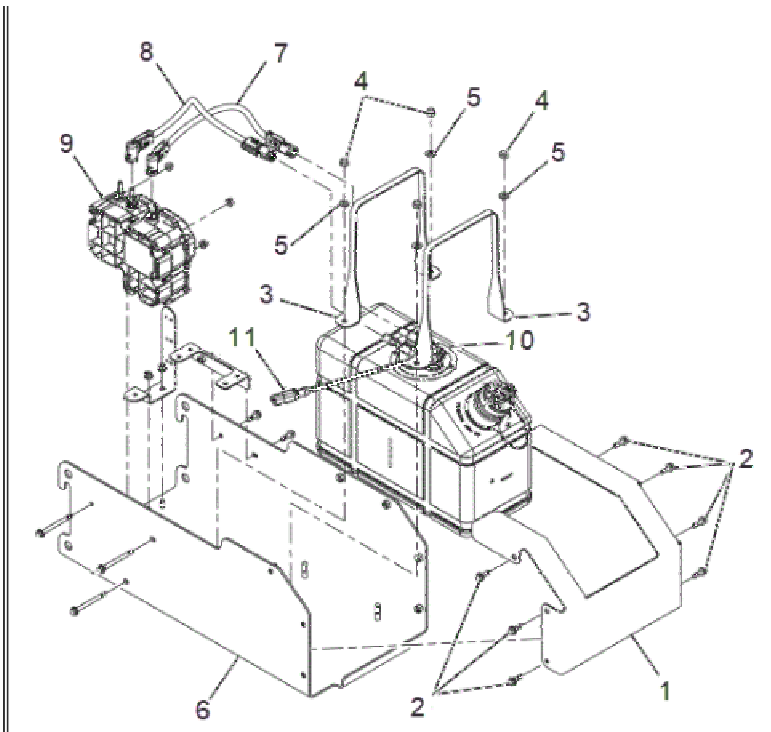
<b>Kit Description</b>	<b>Part Number</b>	<b>Quantity Required</b>	<b>Notes</b>
KIT, 5 GAL DEF SENSOR 2013 EMI	2518077C92	1	Kit includes DEF level sensor, sensor to tank seal, DEF suction line, DEF return line, and vent line
TANK ,DEF, 5 GAL ASSEMBLY	4099787C92	1	Includes cap
SCREW, TRUSS HEAD CROSS RECESSED 1/4-20 X 1 INCH	4088015C1	6	

## **DIAGNOSTIC STEP(s)**

Diagnostics does not change from the applicable diagnostic manual and FCAPS. Follow the applicable diagnostics to determine if the DEF level sensor has failed. If the diagnostics leads to sensor replacement and the vehicle is equipped with an N9/N10 engine built with feature code 0015WCN (5 gallon DEF tank) and a build date between 4/29/14 and 11/27/15 use the part numbers and repair steps outlined in this Iknow.

## **REPAIR STEP(s)**

### **REMOVAL PROCEDURE:**

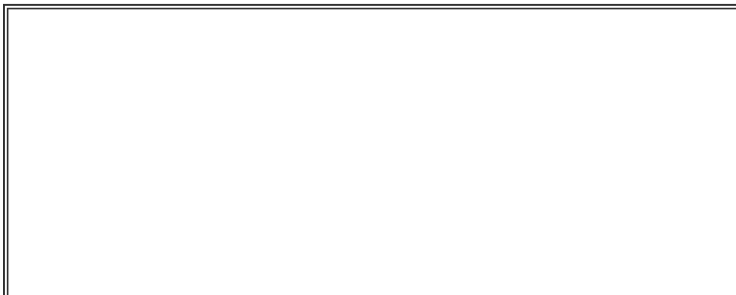


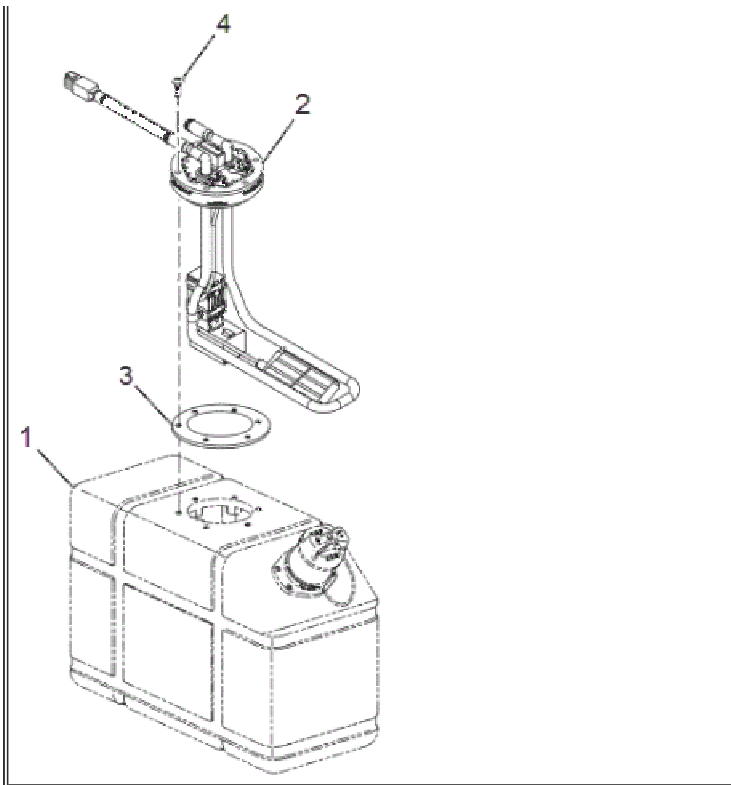
**Figure 1: 5 gallon DEF tank Assembly**

- Item 1: DEF Tank Cover
- Item 2: DEF Tank Cover to DEF Tank Support bracket bolts
- Item 3: DEF Tank Straps
- Item 4: DEF Tank Strap nuts
- Item 5: DEF Tank Strap washers
- Item 6: DEF Tank Support
- Item 7: DEF Suction Line
- Item 8: DEF Return Line
- Item 9: DEF Supply Module
- Item 10: DEF Level Sensor/ Multifunction Head unit
- Item 11: DEF Level Sensor/ Multifunction Head unit electrical connector

1. Remove 7 bolts securing DEF tank cover (Figure 1 Item 2) and remove DEF tank cover (Figure 1 Item 1)
2. Drain engine cooling system or clamp off DEF coolant lines and remove the DEF coolant lines from the DEF Level Sensor/ Multifunction Head unit (Figure 1 Item 10)
3. Disconnect the DEF Level Sensor/ Multifunction Head unit electrical connector (Figure 1 Item 11) from DEF tank harness.
4. Disconnect electrical connectors from the DEF Suction Line (Figure 1 Item 7) and DEF Return Line (Figure 1 Item 8).
5. Remove and discard the DEF Suction Line (Figure 1 Item 7) and DEF Return Line (Figure 1 Item 8).
6. Remove 4 DEF Tank Strap nuts and washers (Figure 1 Items 4 and 5) and remove the DEF tank straps (Figure 1 Item 3).
7. Remove DEF tank from DEF tank support (Figure 1 Item 6).

**INSTALLATION PROCEDURE:**

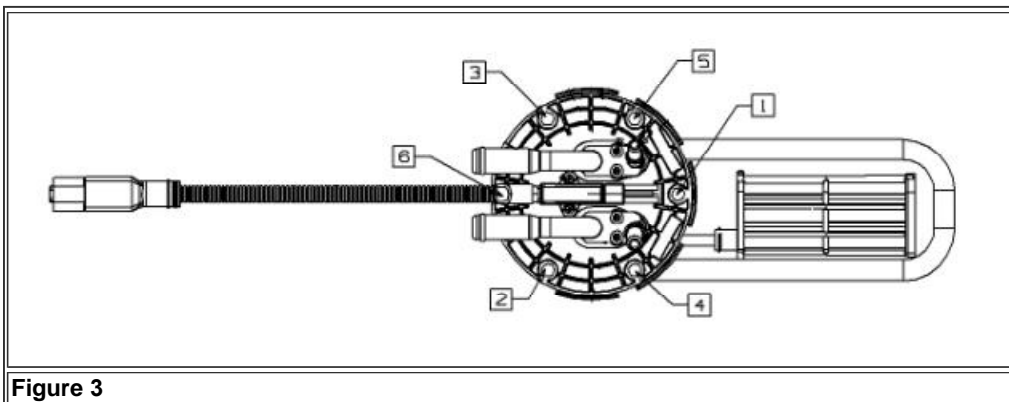




**Figure 2: SSI DEF level sensor and tank assembly**

- Item 1: DEF Tank Part #4099787C92  
 Item 2: DEF Level Sensor/ Multifunction Head unit Part #2518077C92  
 Item 3: DEF Level Sensor seal (part of sensor kit)  
 Item 4: DEF level Sensor bolts part #4088015C1

1. Place new DEF Level Sensor seal (Figure 2 Item 3) around sensor opening on new DEF Tank (Figure 2 Item 1)
2. Carefully insert new DEF Level Sensor/ Multifunction Head Unit (Figure 2 Item 2) through opening on seal and tank (Figure 2 Items 1 and 3)
3. Use 6 new bolts (Figure 2 Item 4) to secure DEF level sensor to tank. Tighten to 9-18 inch-lbs (1-2 Nm) using pattern in Figure 3. Repeat pattern tightening to 35-80 inch-lbs (4-9Nm).
4. Install supplied 3/8in vent line from new sensor kit onto vent line connection between the DEF coolant line connections on DEF Level Sensor/ Multifunction Head unit.
4. Reverse removal procedure to install new tank assembly, new DEF Suction Line (Figure 1 Item 7), and new DEF Return Line (Figure 1 Item 8). Torque DEF tank strap nuts to 71-89 inch-lbs (8-10Nm). Torque DEF Tank Cover bolts to 16 lb-ft (22 Nm).



**Figure 3**

## **WARRANTY INFORMATION**

### **Warranty Claim Coding:**

Refer to the [Warranty Coding Manual](#) for Group and Noun Codes.

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### **Standard Repair Time(s):**

Refer to the [SRT Manual](#) for Repair Times

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## **OTHER RESOURCES**

[Master Service Information Site](#)

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