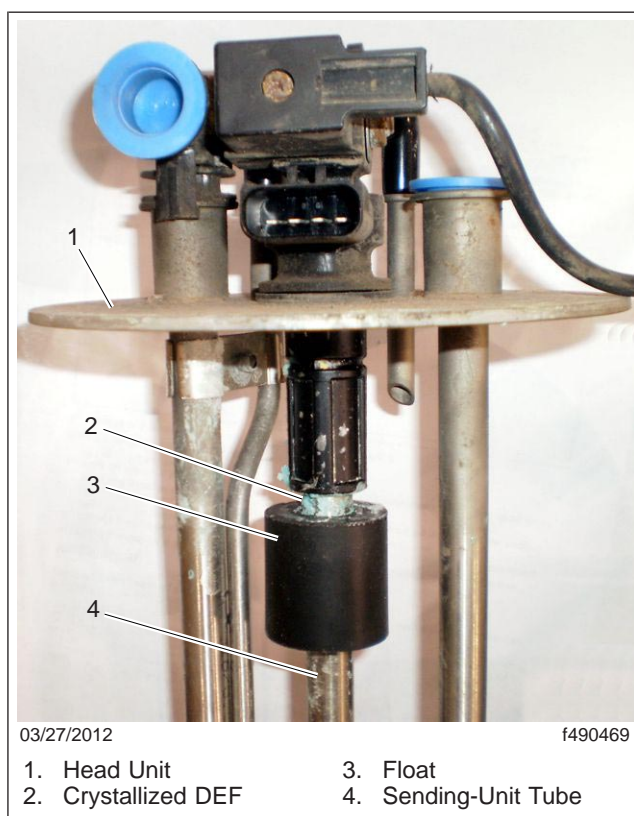


**Description of Revisions:** *This bulletin replaces the version dated September 2012. A new VMRS code was added.*

## General Information

When a vehicle equipped with a diesel exhaust fluid (DEF) system sits for an extended period of time, the DEF in the tank may crystallize around the float on the DEF level sending-unit tube and require cleaning. This crystallization may cause the float to stick on the tube. See **Fig. 1**. If the DEF level indicator displays an incorrect level reading, complete the procedure below.



**Fig. 1, Stuck DEF Float**

1. Check to see if there is DEF in the tank. If the tank is not empty, drain the tank.  
On vehicles with a 6-gallon DEF tank, disconnect the DEF line from the DEF outlet port and let the DEF drain into the drain pan.  
On vehicles with a 13- or 23-gallon DEF tank, use a siphon to empty the DEF from the tank.
2. Remove the tank from the vehicle. For instructions refer to **Group 49** of the vehicle's Workshop Manual.
3. Remove the DEF-level sending unit. For instructions refer to **Group 49** of the vehicle's Workshop Manual.
4. Clean the float and tube thoroughly with hot water, to restore free movement of the float on the tube.
5. Clean all DEF crystallization from the remainder of the unit with hot water.

6. Using a digital multimeter (DMM), test the sending unit resistance to make sure it is working properly. Refer to [Table 1](#) for DEF level sensor resistance.
  - 6.1 Connect the ohm meter to the sending unit connector on the pins identified in [Table 1](#).
 

NOTE: DEF level testing by moving the float with the sensor connected to the vehicle wiring is not recommended because the display response time to any movement in the DEF sensor float can take several minutes.
  - 6.2 Position the float at the full, midpoint, and empty positions and compare the resistance to that shown in [Table 1](#).
 

If the readings are within approximately  $\pm 10$  percent of those listed in [Table 1](#), the unit is good. Go to the next step.

If the readings are not within range, replace the sending unit with a new one.
7. Install the sending unit in the tank. For instructions refer to [Group 49](#) of the vehicle's Workshop Manual.
8. Install the tank. For instructions refer to [Group 49](#) of the vehicle's Workshop Manual.
9. Fill the tank with DEF.

DEF Level Sensor Resistance Measurement		
Vehicle Engine	Detroit	Cummins
Test at Sensor Connector Pins	1 and 2	1 and 4
Resistance with Float at Top of Travel	~19800 $\Omega$	~70 $\Omega$
Resistance with Float at Center of Travel	~2035 $\Omega$	~730 $\Omega$
Resistance with Float at Bottom of Travel	~240 $\Omega$	~4810 $\Omega$

**Table 1, DEF Level Sensor Resistance Measurement**

## Warranty

This procedure is warrantable only if the described condition exists and the repair is performed within the applicable base or extended coverage warranty period. If a failure is not found, this procedure is considered preventive and warranty does not apply.

Normal warranty applies. See [Table 2](#) for QuickClaim damage code and labor allowance information. Refer to this service bulletin by number at the beginning of the claim comments. See [Table 3](#) for OWL VMRS codes and labor allowance information. Enter this service bulletin number in the *Service Bulletin #* field.

QuickClaim Damage Code and Labor Allowance			
Damage Code	SRT Code	Description	Time: Hours
234-000A07130	234-5010A	DEF Level Sensor, R/R and Clean	2.5

**Table 2, QuickClaim Damage Code and Labor Allowance**

OWL VMRS Codes and Labor Allowance					
Primary Failed Part	Component Code	Cause Code	SRT Code	Description	Time: Hours
DEF Level Sensor	043-007-156	37	234-5010A	DEF Level Sensor, R/R and Clean	2.5

# DEF Gauge Reading Incorrectly

# 49-11

> Constellation  
Heritage  
> 4700 Models

> 4800 Models  
> 4900 Models

> 5900 Models  
> 6900 Models

**Western Star  
Service Bulletin**

OWL VMRS Codes and Labor Allowance					
Primary Failed Part	Component Code	Cause Code	SRT Code	Description	Time: Hours
DEF Level Sensor	043-007-012	37	234-5010A	DEF Level Sensor, R/R and Clean	2.5

**Table 3, OWL VMRS Codes and Labor Allowance**