



Number: FS-2012-06

Date: December 6, 2012

Model: All Buses With 2010 Emission Level Engines

Approved:

Robert L. Birdwell, Executive Director  
Quality Control & Field Service

---

Subject: DEF Tank Drain Plug

***The manufacturer of the DEF Tank used on Gillig buses, Shaw Development, has released the attached Technical Bulletin, TB-2709 REV B.***

***It was discovered that approximately 130 DEF tanks were assembled using zinc-plated steel drain plugs I/O stainless steel drain plugs.***

***Since it was determined that the plug may corrode only after a very long time, they ask that you check the material of the drain plug at your earliest convenience.***

***Should you find one of more of your DEF tanks have non-stainless drain plugs, please order replacements from Johnny, (510-264-5076), in Gillig's Field Service. The Kit part number is Shaw Part Number 908-0841-01.***

**FIELD  
SERVICE  
BULLETIN**

RLB:rlb

---

Gillig, LLC  
25800 Clawiter Road  
Hayward, CA 94545  
(800) 735-1500  
(510) 785-1500  
FAX: (510) 785-1348  
[BB@Gillig.com](mailto:BB@Gillig.com)

TB-2709 REV B

# **Technical Bulletin**

## **For**

### **Diesel Exhaust fluid (DEF) Reservoir**

### **DRAIN PLUG**

**DEF Tank Drain Plug**  
**P/N's 908-0380-02**



#### **NOTICE OF CONFIDENTIAL INFORMATION AND PROPRIETARY RIGHTS**

THIS DOCUMENT MAY NOT BE DISCLOSED TO OTHERS EXCEPT BY EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. THIS DOCUMENT CONTAINS CONFIDENTIAL COMMERCIAL AND TECHNICAL DATA, CONCEPTS AND OTHER INFORMATION, ALL OF WHICH ARE PROPRIETARY AND OF ECONOMIC VALUE TO SHAW DEVELOPMENT, LLC. THIS DOCUMENT MAY NOT BE USED FOR MANUFACTURE OR PROCESSING USES ABSENT EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. ANY USE OTHER THAN CONFIDENTIAL EVALUATION IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF SHAW DEVELOPMENT, LLC. © 2012 Shaw Development, LLC. All rights reserved.

## **APPROVAL SUMMARY**

**Written by:**

Jason Valentin  
Engineering Liaison  
Shaw Development, LLC

**Engineering Approval:**

Faheem Qureshi  
Engineering Manager  
Shaw Development, LLC

**Quality Approval:**

Steve Shock  
Director of Operations  
Shaw Development, LLC

### **NOTICE OF CONFIDENTIAL INFORMATION AND PROPRIETARY RIGHTS**

THIS DOCUMENT MAY NOT BE DISCLOSED TO OTHERS EXCEPT BY EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. THIS DOCUMENT CONTAINS CONFIDENTIAL COMMERCIAL AND TECHNICAL DATA, CONCEPTS AND OTHER INFORMATION, ALL OF WHICH ARE PROPRIETARY AND OF ECONOMIC VALUE TO SHAW DEVELOPMENT, LLC. THIS DOCUMENT MAY NOT BE USED FOR MANUFACTURE OR PROCESSING USES ABSENT EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. ANY USE OTHER THAN CONFIDENTIAL EVALUATION IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF SHAW DEVELOPMENT, LLC. © 2012 Shaw Development, LLC. All rights reserved.

**INDEX OF REVISIONS**

| <b>REVISION</b> | <b>DESCRIPTION</b>                          | <b>APPROVED BY/<br/>DATE</b> |
|-----------------|---------------------------------------------|------------------------------|
| A               | Initial Release                             | JAV<br>18-OCT-2012           |
| B               | P/N changed from 999-0841-01 to 908-0841-01 | JAV<br>31-Oct-12             |
|                 |                                             |                              |
|                 |                                             |                              |

**NOTICE OF CONFIDENTIAL INFORMATION AND PROPRIETARY RIGHTS**

THIS DOCUMENT MAY NOT BE DISCLOSED TO OTHERS EXCEPT BY EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. THIS DOCUMENT CONTAINS CONFIDENTIAL COMMERCIAL AND TECHNICAL DATA, CONCEPTS AND OTHER INFORMATION, ALL OF WHICH ARE PROPRIETARY AND OF ECONOMIC VALUE TO SHAW DEVELOPMENT, LLC. THIS DOCUMENT MAY NOT BE USED FOR MANUFACTURE OR PROCESSING USES ABSENT EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. ANY USE OTHER THAN CONFIDENTIAL EVALUATION IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF SHAW DEVELOPMENT, LLC. © 2012 Shaw Development, LLC. All rights reserved.

**TABLE OF CONTENTS**

| <b>SECT.</b> | <b>DESCRIPTION</b>                 | <b>PAGE</b> |
|--------------|------------------------------------|-------------|
| 1.0          | INTRODCUTION:.....                 | 5           |
| 1.1          | PURPOSE: .....                     | 5           |
| 1.2          | ISSUE: .....                       | 5           |
| 1.3          | PART & COMPONENTS .....            | 5           |
| 1.4          | AFFECTED PARTS: .....              | 5           |
| 1.5          | RISK: .....                        | 5           |
| 1.6          | ACTION REQUIRED BY CUSTOMER: ..... | 5           |
| 1.7          | RECOMMENDED TIMING:.....           | 5           |
| 1.8          | CONTACT US:.....                   | 6           |
| 2.0          | PART EVALUATION:.....              | 6           |
| 3.0          | REPLACEMENT PROCEDURE: .....       | 7           |

**NOTICE OF CONFIDENTIAL INFORMATION AND PROPRIETARY RIGHTS**

THIS DOCUMENT MAY NOT BE DISCLOSED TO OTHERS EXCEPT BY EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. THIS DOCUMENT CONTAINS CONFIDENTIAL COMMERCIAL AND TECHNICAL DATA, CONCEPTS AND OTHER INFORMATION, ALL OF WHICH ARE PROPRIETARY AND OF ECONOMIC VALUE TO SHAW DEVELOPMENT, LLC. THIS DOCUMENT MAY NOT BE USED FOR MANUFACTURE OR PROCESSING USES ABSENT EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. ANY USE OTHER THAN CONFIDENTIAL EVALUATION IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF SHAW DEVELOPMENT, LLC. © 2012 Shaw Development, LLC. All rights reserved.

**1.0 INTRODUCTION:****1.1 PURPOSE:**

This Technical Bulletin is intended to alert vehicle manufacturers, that there is a potential that the drain plug in the Diesel Exhaust Fluid (DEF) reservoir may have been manufactured using the incorrect material. In addition this document provides a method on how to identify if the Drain Plug is manufactured with the correct material (**Stainless Steel**) and a repair procedure (If applicable).

**1.2 ISSUE:**

The drain plug in the DEF reservoir may have been manufactured using incorrect material (correct material should be **stainless steel**). The drain plug may corrode overtime.

**1.3 PART & COMPONENTS**

All DEF reservoirs that use Drain Plug 9/16; Shaw part number 908-0380-02

**1.4 AFFECTED PARTS:**

DEF reservoirs produced during - **July 15, 2012 – October 16, 2012**

**1.5 RISK:**

There are no immediate risks associated with this issue.

**1.6 ACTION REQUIRED BY CUSTOMER:**

- a) Evaluation of drain plug to determine if Drain Plug is a suspect part. Please follow procedure as outlined under section 2.0 of this TB.
- b) Replacement of incorrect Drain Plug. Please follow procedure as outlined under section 3.0 of this TB.

**1.7 RECOMMENDED TIMING:**

- a) At the next regularly scheduled maintenance.
- b) Or, prior to the next DEF reservoir fill up when the DEF in the reservoir is at its lowest level. This will minimize the amount of DEF that would have to be drained before performing this service.

**NOTICE OF CONFIDENTIAL INFORMATION AND PROPRIETARY RIGHTS**

THIS DOCUMENT MAY NOT BE DISCLOSED TO OTHERS EXCEPT BY EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. THIS DOCUMENT CONTAINS CONFIDENTIAL COMMERCIAL AND TECHNICAL DATA, CONCEPTS AND OTHER INFORMATION, ALL OF WHICH ARE PROPRIETARY AND OF ECONOMIC VALUE TO SHAW DEVELOPMENT, LLC. THIS DOCUMENT MAY NOT BE USED FOR MANUFACTURE OR PROCESSING USES ABSENT EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. ANY USE OTHER THAN CONFIDENTIAL EVALUATION IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF SHAW DEVELOPMENT, LLC. © 2012 Shaw Development, LLC. All rights reserved.

## 1.8 CONTACT US:

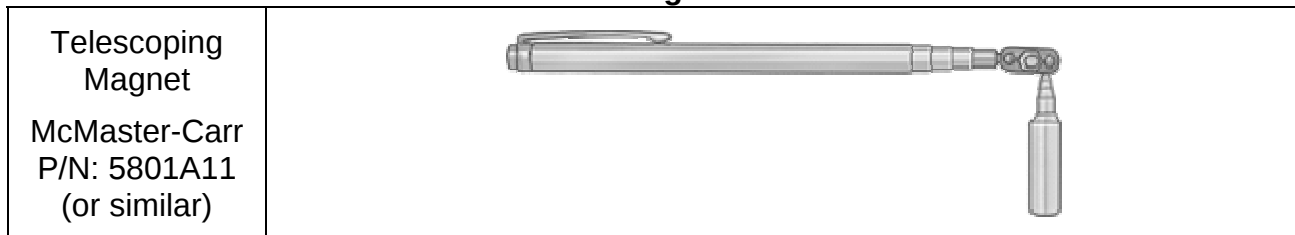
a) For any questions please feel free to contact:

Bob McKeen at (239) 405-6174 or e-mail [Rmckeen@shawdev.com](mailto:Rmckeen@shawdev.com)

## 2.0 PART EVALUATION:

**TOOLS REQUIRED - MAGNET** as shown in figure A

**Figure A**



- 1) To verify if the DEF drain plug is made of stainless steel, bring the magnet to the plug shown in Figure B. If the magnet is not attracted to the drain plug, then the plug is stainless steel and **no further action is necessary**. If the magnet is attracted to the drain plug then it is required to replace the plug. Proceed to section 3.0.

**Figure B**



### NOTICE OF CONFIDENTIAL INFORMATION AND PROPRIETARY RIGHTS

THIS DOCUMENT MAY NOT BE DISCLOSED TO OTHERS EXCEPT BY EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. THIS DOCUMENT CONTAINS CONFIDENTIAL COMMERCIAL AND TECHNICAL DATA, CONCEPTS AND OTHER INFORMATION, ALL OF WHICH ARE PROPRIETARY AND OF ECONOMIC VALUE TO SHAW DEVELOPMENT, LLC. THIS DOCUMENT MAY NOT BE USED FOR MANUFACTURE OR PROCESSING USES ABSENT EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. ANY USE OTHER THAN CONFIDENTIAL EVALUATION IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF SHAW DEVELOPMENT, LLC. © 2012 Shaw Development, LLC. All rights reserved.

**3.0 REPLACEMENT PROCEDURE:**

**CAUTION: The use of safety goggles and gloves are recommended!**

- ❖ *If the capability to siphon or pump DEF out of the tank is unavailable, it is recommended that this procedure be conducted when the tank is empty or as close to empty as possible.*

**TOOLS REQUIRED** – Refer to Figure C

**Figure C**

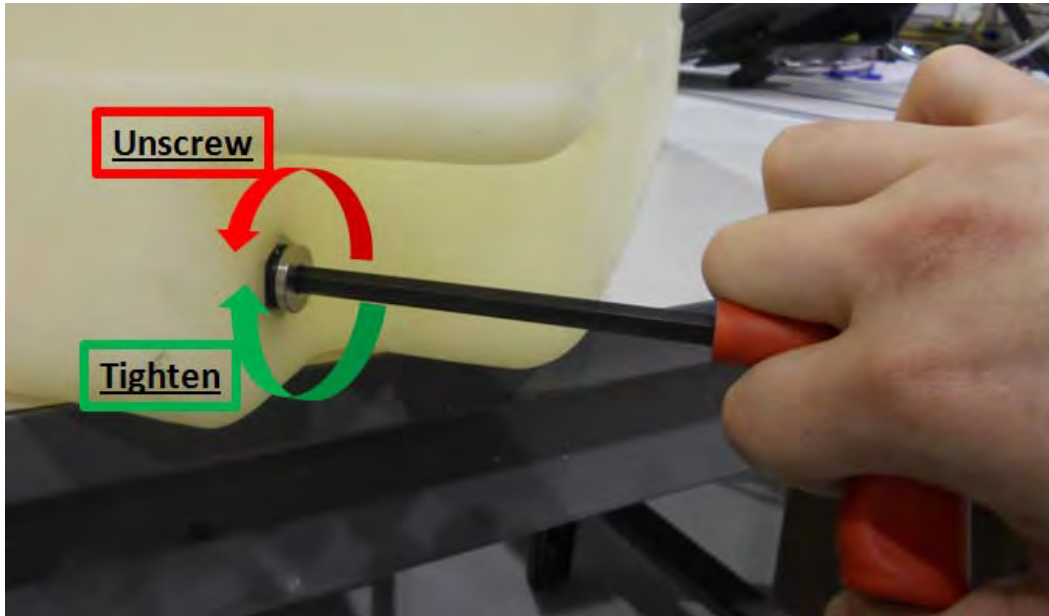
|                                                                                                                    |                                                                                      |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <p>1/4" Allen Wrench</p>                                                                                           |   |
| <p>Torque Wrench<br/>McMaster-Carr<br/>P/N: 7767A12<br/>(or similar and capable of measuring up to 80 in. lb.)</p> |  |
| <p>DEF Drain Plug Replacement Kit</p>                                                                              | <p>Shaw P/N:<br/>908-0841-01</p>                                                     |

**NOTICE OF CONFIDENTIAL INFORMATION AND PROPRIETARY RIGHTS**

THIS DOCUMENT MAY NOT BE DISCLOSED TO OTHERS EXCEPT BY EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. THIS DOCUMENT CONTAINS CONFIDENTIAL COMMERCIAL AND TECHNICAL DATA, CONCEPTS AND OTHER INFORMATION, ALL OF WHICH ARE PROPRIETARY AND OF ECONOMIC VALUE TO SHAW DEVELOPMENT, LLC. THIS DOCUMENT MAY NOT BE USED FOR MANUFACTURE OR PROCESSING USES ABSENT EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. ANY USE OTHER THAN CONFIDENTIAL EVALUATION IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF SHAW DEVELOPMENT, LLC. © 2012 Shaw Development, LLC. All rights reserved.

- 2) Using the ¼" Allen Wrench, unscrew the drain plug from the reservoir as shown in Figure D.

**Figure D**



- 3) Once drain plug is removed, discard the plug and install the new drain plug provided in the replacement kit. Utilize the torque wrench to confirm the plug is tightened 40 - 60 in. lbs. of torque.
- 4) Now fill the reservoir to full capacity and confirm there is no sign of leakage. If there is no sign of leakage, then the reservoir is ready for use.
- 5) **Estimated time to perform repair procedure : 15 minutes.**

**NOTICE OF CONFIDENTIAL INFORMATION AND PROPRIETARY RIGHTS**

THIS DOCUMENT MAY NOT BE DISCLOSED TO OTHERS EXCEPT BY EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. THIS DOCUMENT CONTAINS CONFIDENTIAL COMMERCIAL AND TECHNICAL DATA, CONCEPTS AND OTHER INFORMATION, ALL OF WHICH ARE PROPRIETARY AND OF ECONOMIC VALUE TO SHAW DEVELOPMENT, LLC. THIS DOCUMENT MAY NOT BE USED FOR MANUFACTURE OR PROCESSING USES ABSENT EXPRESS WRITTEN PERMISSION OF SHAW DEVELOPMENT, LLC. ANY USE OTHER THAN CONFIDENTIAL EVALUATION IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF SHAW DEVELOPMENT, LLC. © 2012 Shaw Development, LLC. All rights reserved.