



Number: FS-2016-04

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Model: **BAE Hybrid Buses**

Approved:

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

Subject: WP 29 Fill Procedure For BAE Hybrid Buses

This bulletin is to modify and clarify the coolant fill procedure on all BAE Hybrid Buses.

This bulletin includes EMP's Service Bulletin on this subject.

The fill procedure is changed to prevent 'dry run' of the EMP pump, PN 1030002225PA09.

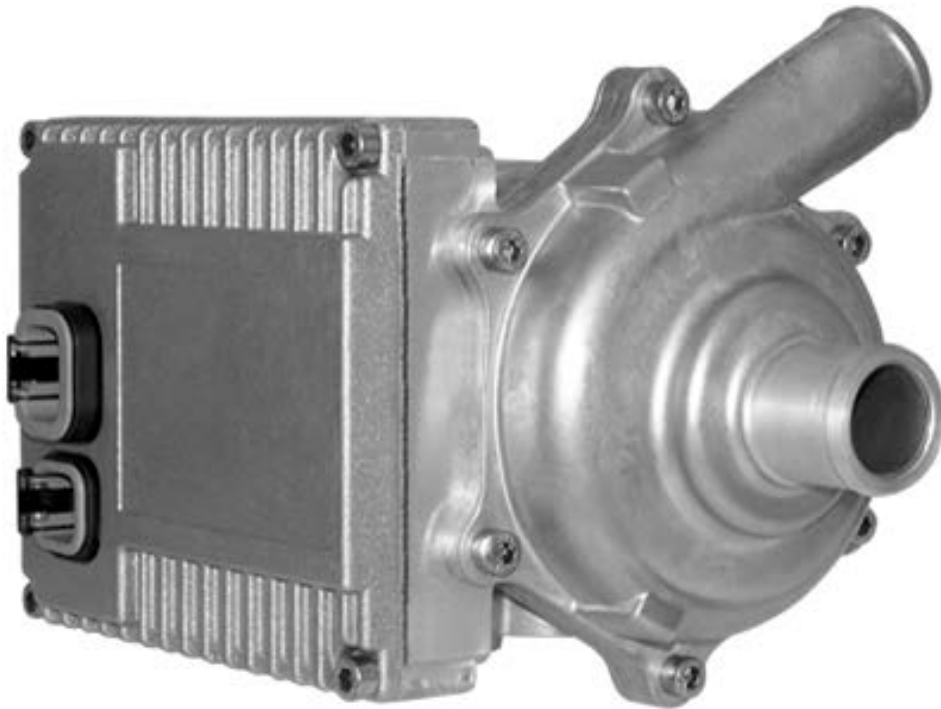
Gillig will be sending a new Hybrid Radiator Fill/Drain Procedure placard, 59-70064-003, for each BAE Hybrid bus.

FIELD SERVICE BULLETIN

RLB:rlb

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Service Bulletin WP29 Fill Procedures for BAE Hybrid Systems on Gillig Buses



This service bulletin is effective for
the following part numbers:

Part Number
1030002225PA09

Rev	Rev By	Date	Description of Change	Approved By
A	JRB	9/7/2016	New Release	ECN4412

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BULLETIN OVERVIEW

The purpose of the Service Bulletin is to describe the required fill procedure required to prevent dry run conditions due to air entrapment.

Gillig fill instructions run the pump at 20% speed. EMP has shown that the pump running at 20% will not evacuate air from the inlet and the pump will operate but would not pump fluid at start-up. This results in damage to the shaft seals inside the pump.

Therefore the instructions must be updated to correct the fill procedure.

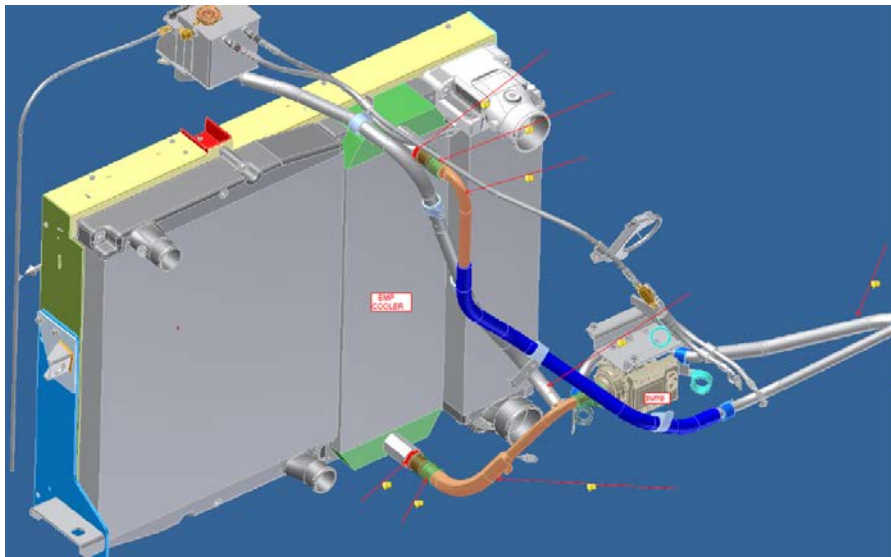


Figure 1 – Gillig MCP System

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The information and specifications contained throughout this manual are up to date at the time of publication. Engineered Machined Products, Inc. reserves the right to change the content of this manual at any time without notice.

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INTRODUCTION

Purpose

The purpose of the Service Bulletin is to describe the required fill procedure required to prevent dry run conditions due to air entrapment.

Service Technician Responsibilities

The Service Technician is responsible to review the installation/service manuals and observe proper cautions prior to maintenance on any of the system components. In addition, the technician must also refer to vehicle documentation regarding the integration of the system into the vehicle and follow all Safety instructions before doing service and test procedures in this manual for the system or vehicle. Familiarization will allow for accurate troubleshooting, diagnosis and repairs.

Liability Disclaimer

EMP cannot anticipate every possible circumstance that might involve a potential hazard. The safety messages in this document, in related manuals, and on the product are therefore not all inclusive. If a tool, procedure, work method, or operating technique that is not specifically recommended by EMP is used, you must satisfy yourself that it is safe for you and for others. You should ensure that the product will not be damaged or be made unsafe by the operation, maintenance, or repair procedures that you choose.

Definition of Terms

LH = Left Hand

RH = Right Hand

TMC = Thermal Management Controller

DLA = Data Link Adaptor

R&R = Remove and Replace

SAFETY

Warnings, Cautions & Notes

Three types of headings are used in this manual to stress your safety and safe operation of the system. They appear in the text as follows:

 **WARNING:** This symbol is used to make you aware of an unsafe condition, hazard, or practice that can result in personal injury or death.

 **CAUTION:** This symbol is used to alert you to a condition or practice that can cause damage to the system or the vehicle, or both.

NOTE: Is used to provide additional information that requires special attention by the technician.

Product Safety Warnings

 **WARNING:** EMP cannot anticipate every possible circumstance that might involve a potential hazard. The safety messages in this document, in related manuals, and on the product are therefore not all inclusive. If a tool, procedure, work method, or operating technique that is not specifically recommended by EMP is used, you must satisfy yourself that it is safe for you and for others. You should ensure that the product will not be damaged or be made unsafe by the operation, maintenance, or repair procedures that you choose.

 **WARNING:** Ensure that all safety messages and information messages are read and understood before installation, maintenance, or any repairs are performed. The person servicing may be unfamiliar with many of the systems on the vehicle. It is important to use caution when service work is performed. Knowledge of the vehicle system and operation are important before the removal or disassembly of any component.

 **WARNING:** Make sure the vehicle is in neutral, the parking brake is set, and the wheels are blocked before doing any work or diagnostic procedures on the EMP component, system, or vehicle.

 **WARNING:** Disconnect the main negative battery cable and/or switch off the battery disconnect switch before installation or servicing.

 **WARNING:** Use extreme caution when working on systems under pressure (i.e. coolant, hydraulic fluids, air, fire suppression, etc...)

 **WARNING:** Make sure the work area is ventilated and well lit.

 **WARNING:** Make sure charged fire extinguishers are in the work area.

 **WARNING:** Reinstall all safety guards, shields, and covers after servicing the vehicle.

 **WARNING:** Make sure all tools, parts, and service equipment are removed from the engine compartment and vehicle after all work is done.

 **WARNING:** Ensure that all system power and ground connection points are torqued to EMP specifications to prevent system damage. Failure to follow specified torque requirements at any point of the vehicle system power and ground can result in loose connections which can damage electronic components on EMP components and systems and will void EMP warranty.

FILL PROCEDURE

Instructions for Fill/Drain Procedure

On subject buses the instructions shown in Figure 2 are provided for the Hybrid radiator fill procedure. The highlighted section regarding pump speed is being updated to prevent dry-run conditions due to air trapped in the system. Pump seal damage due to dry run conditions will not be covered under warranty.

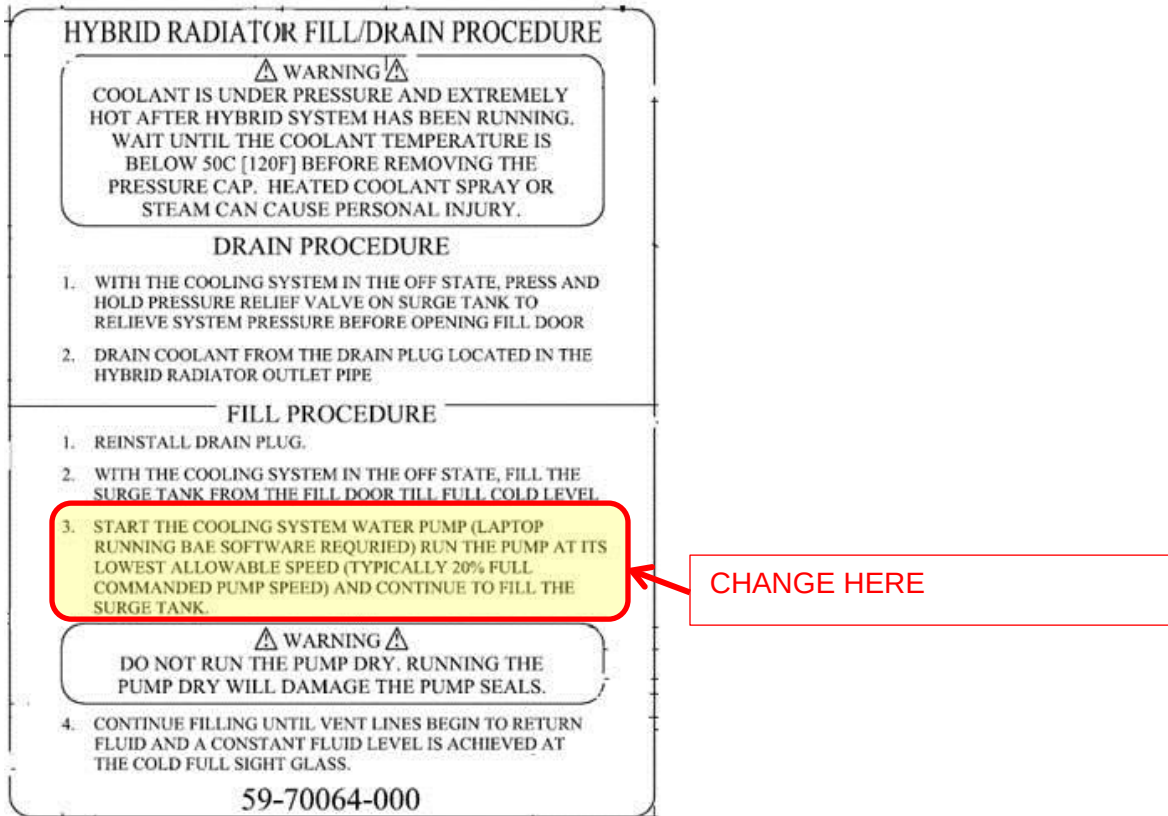


Figure 2 – Instruction Placard on Vehicle

The following changes to the fill procedure are to prevent dry run conditions due to air entrapment:

- If the transit has vacuum fill equipment, EMP recommends vacuum fill as the preferred fill method.
- If not using vacuum fill, the pump speeds during fill procedure should be at max speed.
- Ensure the surge tank **stays full** during the fill procedure. This is important as the pump running at high speed will drain the surge tank very quickly.

NOTE: This requirement may require two people to conduct the fill procedure.

- It is possible to ensure the pump is pumping solid fluid by monitoring the current draw (>7 amps at Max speed)

To fill using the pump, the BAE Software is required.

1. Open IDS. See Figure 3.



Figure 3 – BAE Software (IDS)

2. Click HT06. See Figure 4.

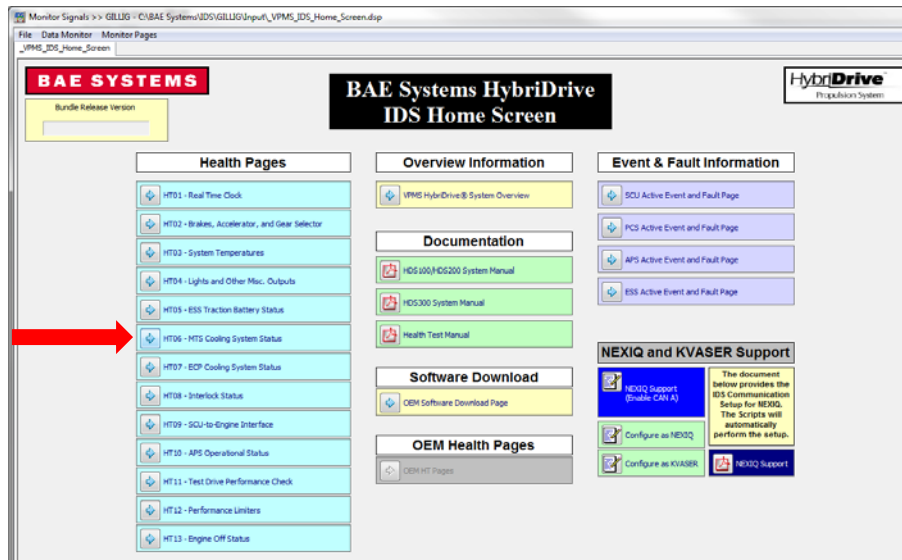


Figure 4 – IDS Home Screen

3. Click on MTS Cooling Override and drag slider to 100% while filling surge tank. See Figure 5.

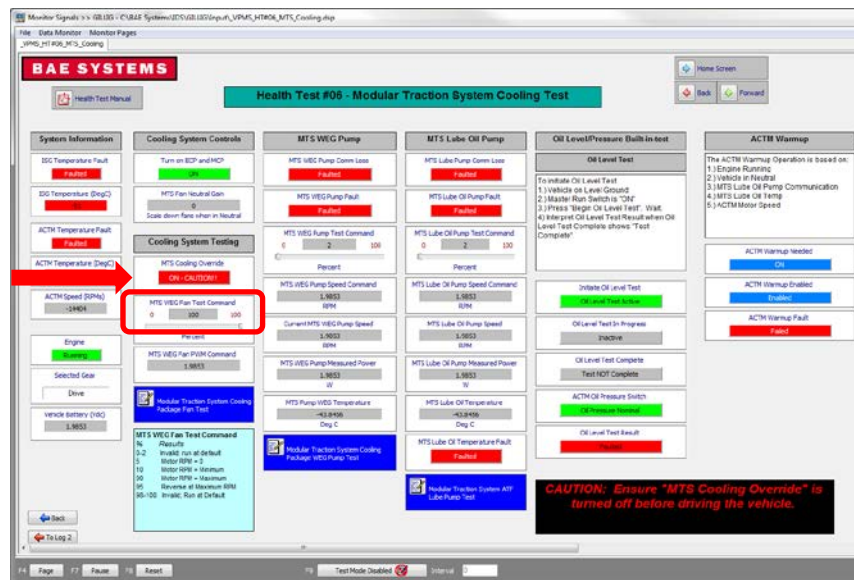


Figure 5 – Cooling System Controls

TECHNICAL HELP

Contact EMP Customer Service for technical help at 1-906-789-7497 or service@emp-corp.com.

Additional information about this product is located under the support tab of the EMP official website: www.emp-corp.com