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Title: Power Electronics & Cabin Heat Cooling System Fitting Leaks

Applies To: Electric CE Bus & eMV

CHANGE LOG

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

06/27/2023 - Initial Article Release

DESCRIPTION

This document will guide the user through the repair steps when a coolant leak is found at the Power Electronics Cooling System (PECS) & Cabin Heat Cooling System level sensors/fittings.

SYMPTOMS

Diagnostic Trouble Codes & Dashboard Indicator Lights:

DTC/Light	Description
SPN 523634 FMI 1	Cabin Heater Coolant Level : Data Valid But Below Normal Operational Range - Most Severe Level
SPN 523635 FMI 1	Medium Temperature Coolant Level : Data Valid But Below Normal Operational Range - Most Severe Level

Customer Observations or Concerns:
Low coolant
Coolant leak coming from level sensor/fitting

SPECIAL TOOLS / SOFTWARE

Tool Description	Tool Number	Comments	Instructions
Coolant Management Tool	KL5007NAV		
Cooling System Adapter	09-040-03		
High-voltage Personal Protective Equipment (PPE)		Class 0 Electrical Insulating Gloves (Red Label) Electrical Hazard (EH) rated safety shoes/boots Flame-resistant clothing and face shield	

SERVICE PARTS INFORMATION

Kit Description	Part Number	Quantity Required	Notes

FLUID,LOCTITE , 545	4467012C1	1	1 Bottle = 34 Sensors

DIAGNOSTIC STEPS

WARNING! To prevent personal injury and / or death, or damage to property, park vehicle on hard flat surface, turn the engine off, set the parking brake, and install wheel chocks to prevent the vehicle from moving in both directions.

WARNING! To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING! To prevent personal injury and / or death, or damage to property, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

WARNING! To prevent personal injury and / or death, NEVER service a high voltage vehicle without completing high-voltage safety training. Before working on vehicle, read and obey all High-Voltage Safety and Lock-Out Tag-Out procedures and information.

WARNING! To prevent personal injury and / or death, wear and use approved high-voltage Personal Protective Equipment (PPE) when near a high-voltage electric vehicle. Inspect PPE before use. Do not use gloves or other PPE with expired dates, holes, cracks, or damage. NEVER touch energized orange highvoltage cables or high-voltage components without wearing approved highvoltage PPE.

WARNING! To prevent personal injury and / or death, read all information in the Safety Information and High-Voltage Safety sections of the service manual.

WARNING! To prevent personal injury and / or death, or damage to property, remove the ground cable from the negative terminal of the battery box before disconnecting any electrical components. Always connect the ground cable last.

Step	Action	Decision
1	**DIAGNOSTIC:** Is there a coolant leak coming from the Power Electronics or Cabin Heat cooling system level sensor(s)/fitting(s)?	**Yes**. Proceed to the repair section of this document.
		No. Return vehicle back to service

REPAIR STEPS

REMOVAL PROCEDURE:

1. Park vehicle on a dry, level surface

2. Put drive mode selector in Neutral, key OFF, parking brake set and wheel chocks installed.

3. Turn 12V disconnect switch OFF

4. Perform High-Voltage Isolation Level 1, if needed see proper section within Service Manual

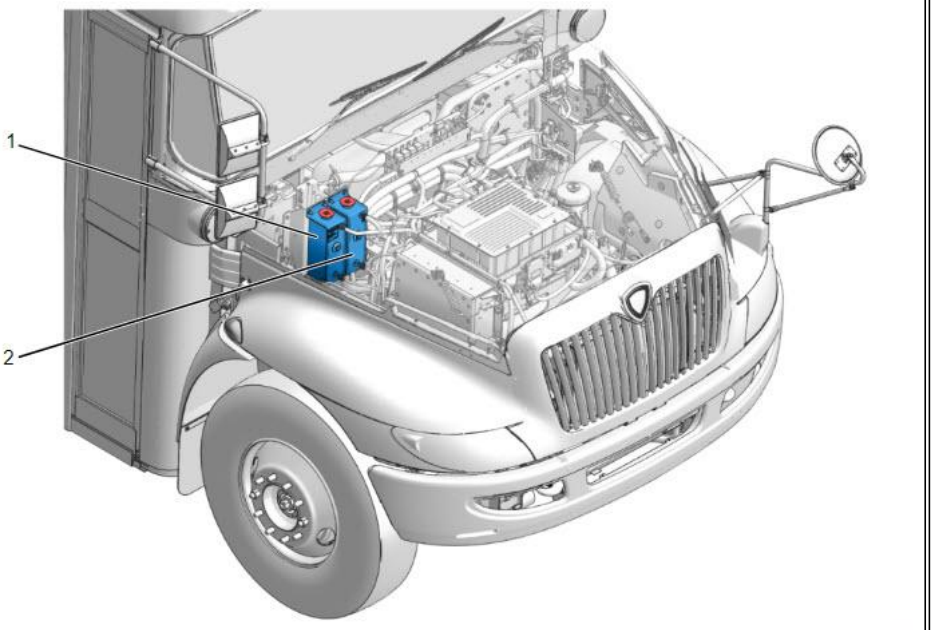

Figure 1: Electric CE Bus Surge Tank Locations

Item 1: Power Electronics Coolant System Surge Tank
Item 2: Cabin Heater Coolant System Surge Tank

Figure 2: eMV Surge Tank Locations

Item 1: Power Electronics Coolant System Surge Tank
Item 2: Cabin Heater Coolant System Surge Tank

5. Perform coolant drain procedure on the identified system with leak. If needed see proper section within Service Manual

6. Place drain pan under surge tank(s)

7. Disconnect coolant level sensor connector

8. Remove coolant level sensor from surge tank

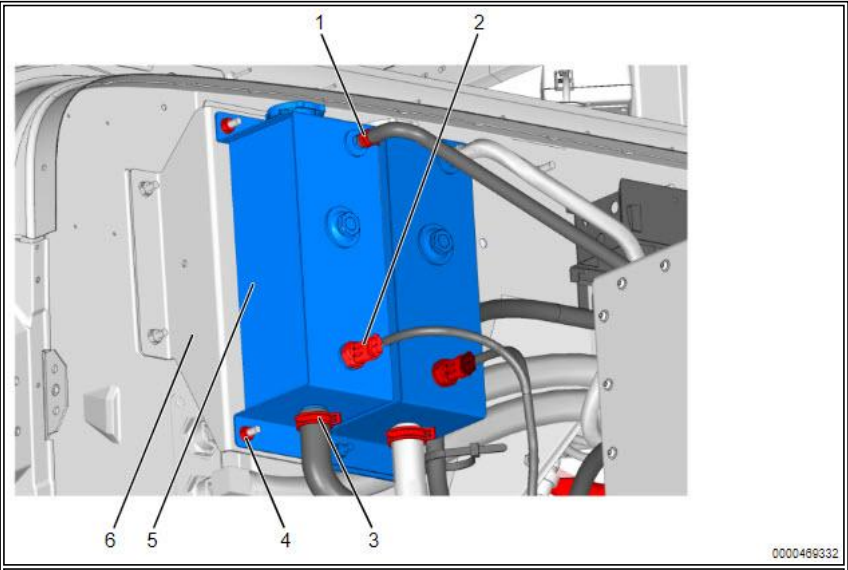

Figure 2: Coolant Level Sensor Location (Example)

Item 2: Cabin Heat Coolant Level Sensor (Example)

INSTALLATION PROCEDURE:

9. Clean, dry coolant level sensor threads

10. Apply a small amount of Loctite 545 to the threads

11. Install coolant level sensor into the surge tank

12. Torque coolant level sensor to 25Nm

13. Install coolant level sensor connector

14. Perform coolant fill procedure, if needed see proper section within Service Manual

15. Check for leaks

16. Return vehicle back to service

WARRANTY INFORMATION

Warranty Claim Coding:
Refer to the Warranty Coding Manual for Group and Noun Codes.

Standard Repair Times:
Refer to the SRT Manual for Repair Times

OTHER RESOURCES

Master Service Information Site

Hide Details

Feedback Information

Viewed: 35
Helpful: 3
Not Helpful: 0

No Feedback Found
