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Coding Information

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**Title:** 6090/6091 Connector Damage

**Applies To:** IC Bus® Electric CE Series, International® eMV™ Series

## CHANGE LOG

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

04/22/2025 - Initial Article Release

## DESCRIPTION

This document will guide the user through identifying a possible damaged 6090/6091 connector due to improper harness routing/clipping.

Each scernio may vary depending on which terminal(s) and/or circuit wire(s) being affected.

## SYMPTOMS

**Diagnostic Trouble Codes & Dashboard Indicator Lights:**

DTC/Light	Description
SPN 2128 FMI 9	Source Address 128 : Abnormal Update Rate
SPN 2176 FMI 9	VCU Communication with DCDC2 : Abnormal Update Rate
SPN 2179 FMI 9	VCU Communication with DCDC1 : Abnormal Update Rate
SPN 2186 FMI 9	VCU Communication with HVDM-TPIM : Abnormal Update Rate
SPN 2187 FMI 9	VCU Communication with HVDM-HVDU : Abnormal Update Rate
SPN 2188 FMI 9	VCU Communication with HVDM-DC Fast Charger : Abnormal Update Rate
SPN 2189 FMI 9	VCU Communication with HVDM-Front A/C Compressor Inverter Module : Abnormal Update Rate
SPN 2190 FMI 9	VCU Communication with HVDM-Rear A/C Compressor Inverter Module : Abnormal Update Rate

SPN 2239 FMI 9	VCU Communication with TPIM : Abnormal Update Rate
SPN 2243 FMI 9	VCU Communication with BMS : Abnormal Update Rate
SPN 517200 FMI 2	J1939 Lost : Data Erratic, Intermittent Or Incorrect
SPN 517207 FMI 4	Under-Voltage (High Voltage) : Voltage Below Normal, Or Shorted To Low Source
SPN 517300 FMI 11	A/C control module: Rear A/C module to A/C control module communication fault : Root Cause Not Known
SPN 520450 FMI 0	DCDC2 Input Voltage Under Limit : Data Valid But Above Normal Operational Range - Most Severe Level
SPN 520450 FMI 0	DCDC1 Input Voltage Under Limit : Data Valid But Above Normal Operational Range - Most Severe Level
SPN 523545 FMI 7	VCU - HVDM Smart Connection Element for - TPIM Faulty : Mechanical System Not Responding Or Out Of Adjustment
SPN 523546 FMI 7	VCU - HVDM Smart Connection Element for - HVDU Faulty : Mechanical System Not Responding Or Out Of Adjustment
SPN 523548 FMI 7	A/C Compressor Inverter Module Faulty : Mechanical System Not Responding Or Out Of Adjustment
SPN 523559 FMI 9	Supervisory Control Unit communication with OCI : Abnormal Update Rate
SPN 523561 FMI 9	Supervisory Control Unit communication with BMS : Abnormal Update Rate
SPN 523643 FMI 5	HVDM/S-BOX High Voltage Interlock : Current Below Normal Or Open Circuit
SPN 523644 FMI 6	TPIM/Drive Motor High Voltage Interlock : Current Below Normal Or Open Circuit
SPN 523645 FMI 5	2-in-1 High Voltage Interlock : Current Below Normal Or Open Circuit
SPN 523646 FMI 5	DCDC1/DCDC2/HVDU HV Interlock : Current Below Normal Or Open Circuit
SPN 523649 FMI 2	Charge Plug : Data Erratic, Intermittent Or Incorrect
SPN 523650 FMI 7	DDC to DC Converter 1 : Mechanical System Not Responding Or Out Of Adjustment
SPN 523651 FMI 7	DC to DC Converter 2 : Mechanical System Not Responding Or Out Of Adjustment
SPN 523655 FMI 14	HVESS Initialization : Special Instructions
SPN 523657 FMI 2	HVESS Battery Switch State : Data Erratic, Intermittent Or Incorrect
SPN 5919 FMI 1	HVESS Voltage Level : Data Valid But Below Normal Operational Range - Most Severe Level
SPN 5919 FMI 2	HVESS Voltage Level : Data Erratic, Intermittent Or Incorrect

#### Customer Observations or Concerns:

Lights on the cluster  
Intermittent derate  
High-voltage drive concerns

## **SPECIAL TOOLS / SOFTWARE**

Tool Description	Tool Number	Comments	Instructions
N/A	N/A	N/A	N/A

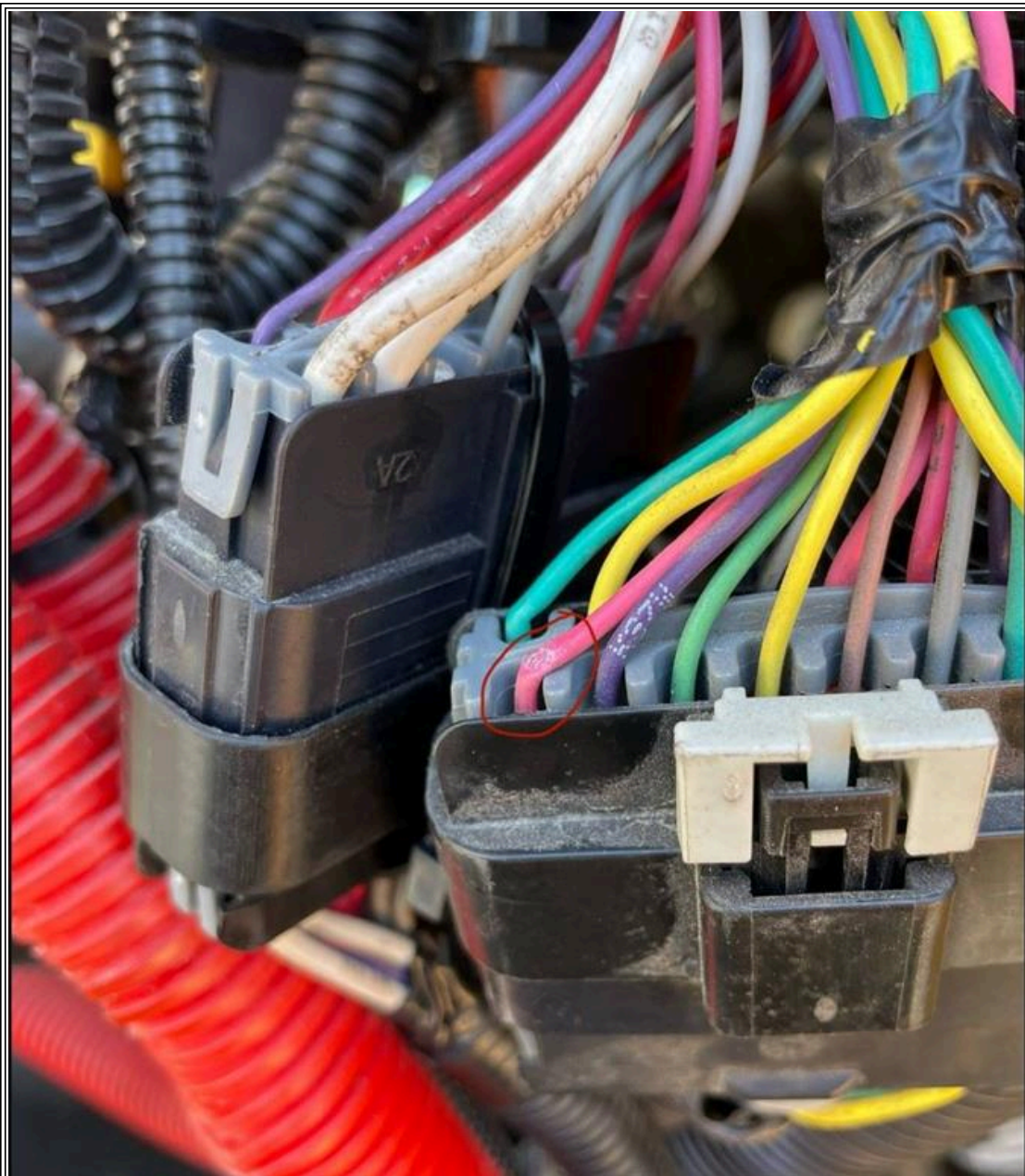
## **SERVICE PARTS INFORMATION**

Kit Description	Part Number	Quantity Required	Notes
Refer to Connector Body Composite	ID from failure	as needed	6090/6091, underhood left side of cowl

**DIAGNOSTIC STEPS**

Step	Action	Decision
1	<b>DIAGNOSTIC:</b>  Are any of the faults listed above active alongside any of the symptoms?	<b>Yes.</b> Perform visual inspection on 6090/6091 connector located underhood at left side of cowl.  Look for: - Damaged wiring - Missing connector lock - Connector pulled apart - Pulled back terminals  Repair accordingly  To prevent re-occurence, cut clipping points to allow slack and re-secure.
		<b>No.</b> No further action needed.

**Failure Examples**



**Figure 1: Wire Tension**



Figure 2: Missing Lock - Connector Pulled Apart



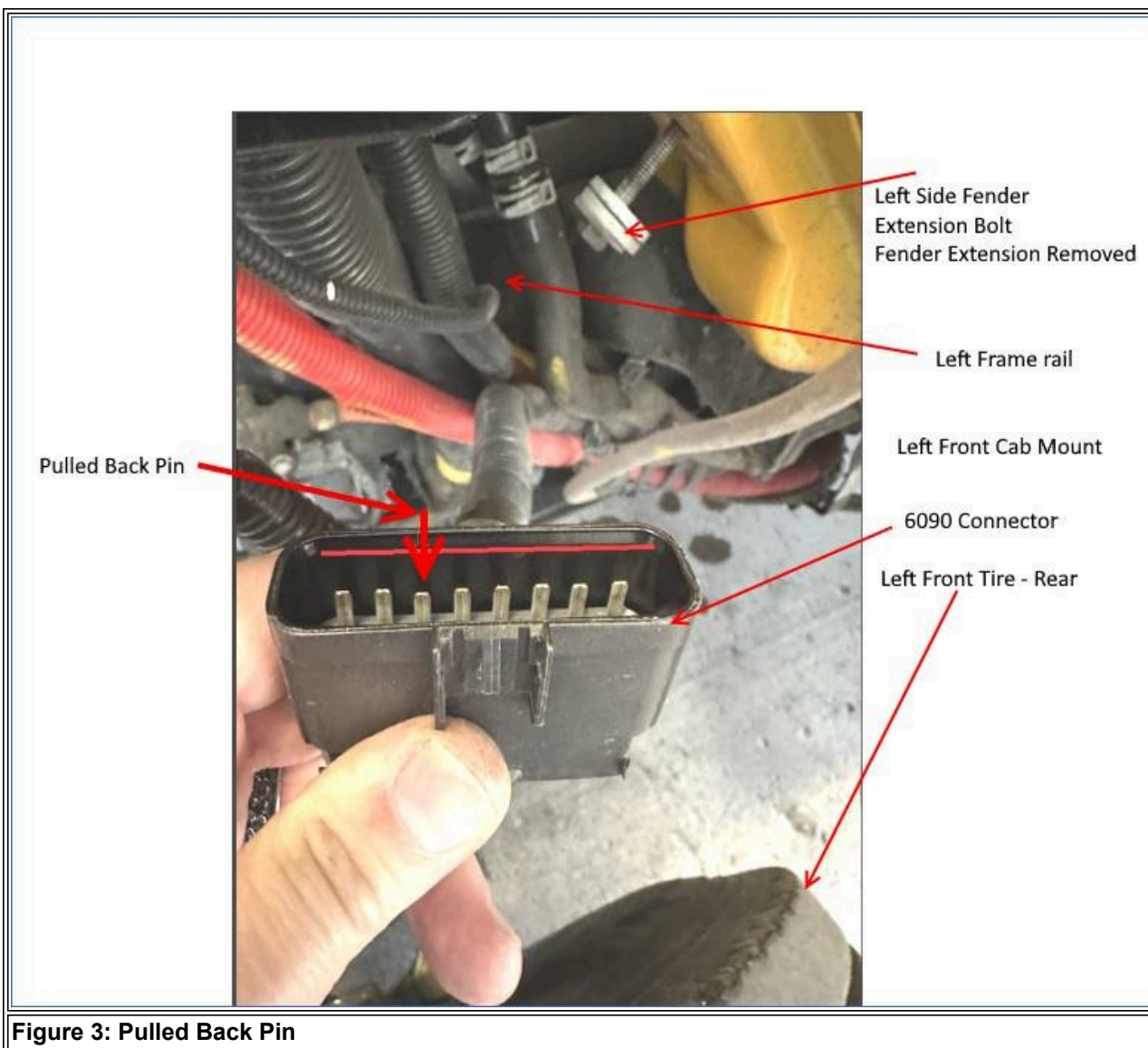


Figure 3: Pulled Back Pin

## NOTE:

**After repairing connector, terminals or wiring; to prevent re-occurrence cut clipping points to allow slack to the 6090/6091. Resecure as needed.**

## 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](#)

Helpful: 2  
Not Helpful: 0

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