



**Mack Trucks, Inc.**  
Greensboro, NC USA

# Field Service Bulletin Trucks

This service bulletin replaces FSB 284-047 dated 9.2013.

Date	Group	No.	Release	Page
10.2013	<b>284</b>	<b>047</b>	<b>02</b>	1(9)

## **SB-10054025-4212**

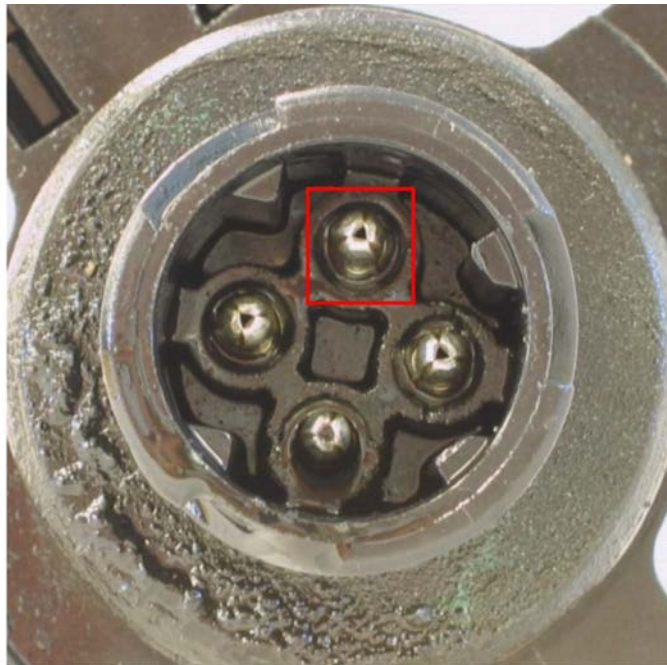
Oil Level Sensor Harness Wire Splice  
CHU, CXU, GU, LEU, MRU, TD

### **FSB 284-047, Oil Level Sensor Harness Wire Splice**

(October 2013)

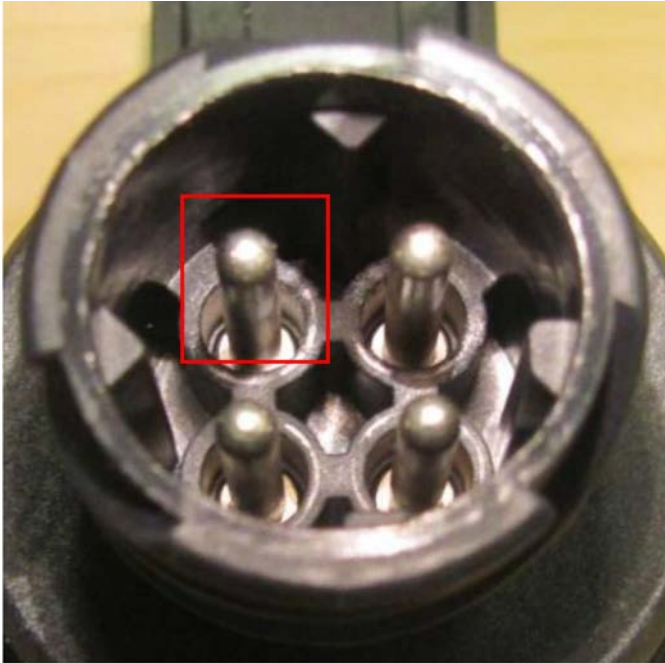
Some MACK vehicles with MP engines built between January 2004 and September 19, 2013 may experience an oil level sensor failure that leads to oil contamination into the engine wire harness. A new anti-wicking pigtail splice kit, part number 85137983, is now available. Follow the procedure below if wicking is observed. Chassis with build date September 20, 2013 and later have the new solid pin connector and no action is required. The oil level sensor part number 21521353 with hollow pin type connector is now replaced with the new solid pin type connector oil level sensor part number 22022794. The new solid pin connector does not allow oil to wick into the engine harness.

**Note:** It is not necessary to replace the entire engine harness for oil contamination.



W2085817

Old Style Hollow Pin Connector



W2085818

#### New Style Solid Pin Connector

If a sensor is being replaced for electrical faults and oil has not wicked into the harness, **REPLACE THE SENSOR ONLY.**

If a sensor has failed **AND** is wicking oil into the engine harness, **REPLACE THE SENSOR AND INSTALL THE PIGTAIL AS INSTRUCTED IN THIS BULLETIN.**

If the engine harness is being replaced for other reasons and the sensor connector is the older hollow pin type, **REPLACE THE SENSOR ONLY.** The new harness will **NOT** require the pigtail kit.

**Note:** The only purpose for the pigtail harness installation is to prevent oil in the harness from migrating back to the new sensor in the event oil has previously wicked into the harness giving the false indication the sensor has failed.

## Required Parts

Splice kit part number 85137983. The kit contains:

Quantity	Part Number	Description
1	3093296	Shrink Tubing
2	948211	Cable Tie
4	6781769	Connector (Splice)
1	22210355	Wire Harness

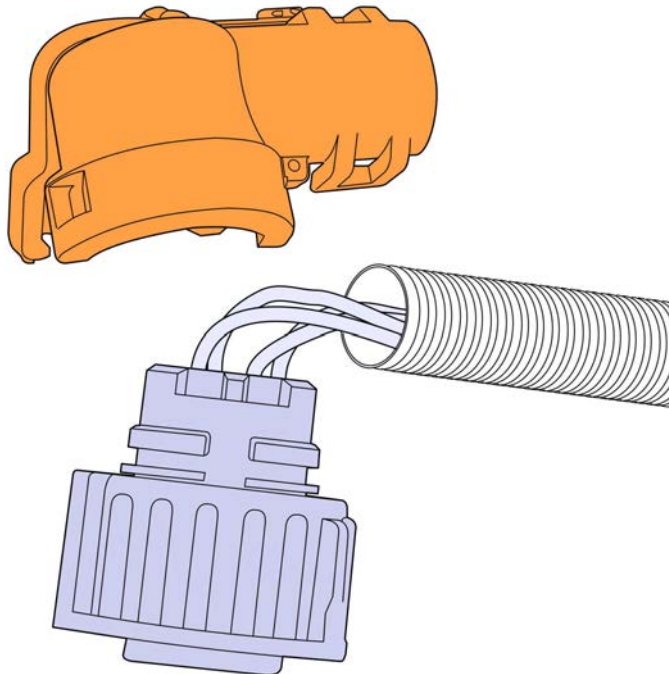
You must read and understand the precautions and guidelines in Service Information, Function Group 30, "General Safety Practices, Electrical and Electronics" before performing this procedure. If you are not properly trained and certified in this procedure, ask your supervisor for training before you perform it.

## Repair

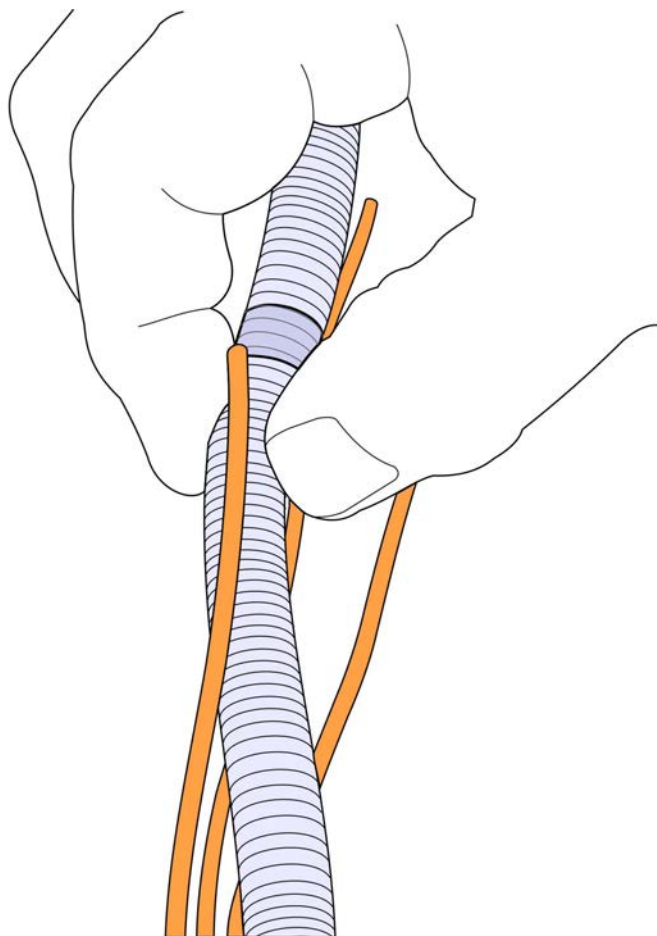
- 1 Secure the vehicle for service by parking it on a flat level surface, applying the parking brake, chocking the rear wheel, and placing the transmission in neutral.
- 2 Disconnect all cables from the negative (ground) battery terminals to prevent personal injury from electrical shock and prevent damage to electrical components.
- 3 Raise hood or raise cab.
- 4 If necessary, remove driver side inner fender.
- 5 If necessary, remove the power steering reservoir and oil fill tube fasteners, position out of the way and remove the power steering reservoir frame mounted bracket.
- 6 Clip applicable cable ties and remove P-clamps securing the oil level sensor harness leg. Pull the leg up, over the frame rail, to provide best access to the length of the harness.
- 7 Cut the appropriate length of the contaminated harness leg that will still allow for proper working room. Make sure the pigtail kit wire length is sufficient to reach the contaminated harness.

**Note:** The length of harness to be removed will depend on the vehicle.

- 8 Remove the oil level sensor harness connector backshell and slide the loom away from the connector. Do not damage the backshell nor the loom, they will be reused.

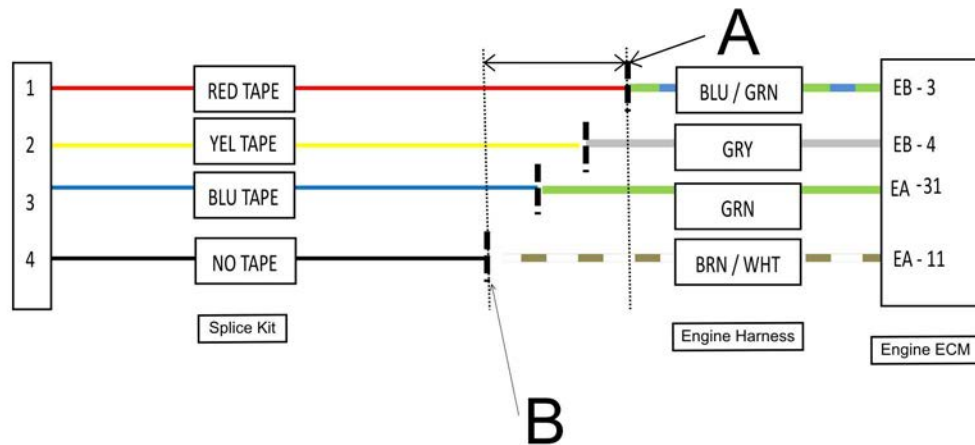


- 9 Remove the contaminated harness connector and wires from the loom. Take the splice kit connector and place it beside the connector from the harness.



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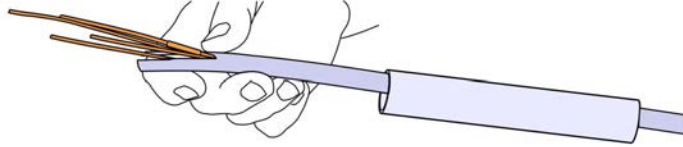
10 Stretch the wires together and clip one wire from the splice kit to the same length as the wires on the contaminated harness. Cut the rest of the wires in the splice kit in a staggered pattern at increasing lengths. The length from the shortest wire to the longest wire should be approximately 75 mm (3 in). Install the previously removed loom over the splice kit connector.



W3085820

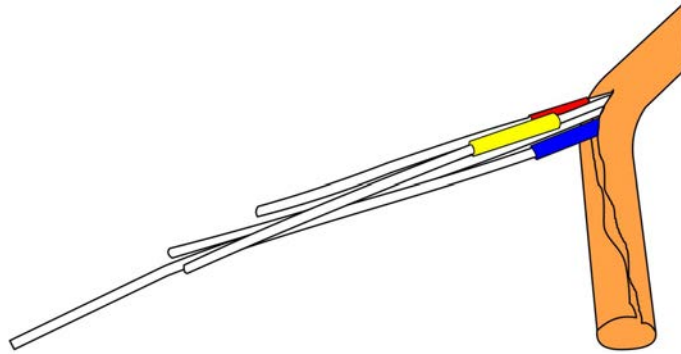
A.	Length of cut harness plus 75 mm (3 in) to allow the splice stagger
B.	Length of initial harness cut

- 11 Slide a section of heat shrink tubing over the engine harness leg or the splice kit end loom and away from the splice area.



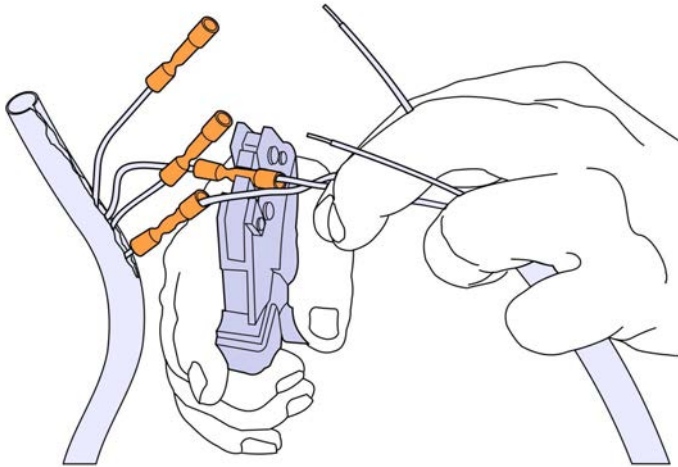
W2083445

- 12 Cut the loom lengthwise approximately 50 mm (2 in) in each direction from the splice area.



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- 13 Align the ends of the shortest wire on the splice kit and its matching color wire on the engine harness and install a butt connector. Align the ends of the next shortest wire on the splice kit and its corresponding wire on the engine harness. Trim the length of the engine harness wire to maintain the staggered pattern and install a butt connector. Repeat the process for the remaining wires.



W2083446

- 14 Using a heat gun, shrink and seal each butt connector. Return the wires inside the loom sections. Slide the previously installed heat shrink tubing over the splice area and cut looms. Using the heat gun, shrink the tubing to seal the repair. Install the connector backshell.
- 15 Route the oil level sensor harness back to its original location. Install necessary cable ties and P-clamps. Connect the sensor.
- Note:** If oil has wicked to the engine control module connectors, clean the connectors thoroughly with electronic cleaner and dry with compressed air.
- 16 If removed, install the power steering reservoir frame mounted bracket. Install the power steering reservoir and oil fill tube fasteners.
- 17 If removed, install driver side inner fender.
- 18 Install all the previously removed cables to the negative (ground) battery terminals.
- 19 Start the engine and check for proper operation.
- 20 Close hood or lower cab.
- 21 Use Tech Tool to clear any diagnostic trouble codes (DTC).

**Reimbursement**

<b>This repair may be eligible for reimbursement if a product failure was experienced within time and mileage limits of the applicable Warranty coverage. Reimbursement is obtained via the normal claim handling process.</b>	
<b>Claim Type (used only when uploading from the Dealer Bus. Sys.)</b>	01
<b>Labor Code</b>	
Primary Labor Code	2732E-01-80 CHU, CXU, LEU, MRU, TD — 0.7 hrs. GU — 1.4 hrs.
<b>Causal Part</b>	21521353

Mack Trucks Inc. reserves the right to make any changes in design or to make additions to or upon its products without incurring any obligations to install the same on vehicles previously built.