PREVOST

SAFETY RECALL

SR13-03E

DATE : MARCH 2013	SECTION : 23-ACCESSORIES
SUBJECT :	AUTOMATIC FIRE DETECTION AND SUPPRESSION SYSTEM – LINEAR THERMAL DETECTOR REPLACEMENT

REVISION : E THIS RELEASE SUPERSEDES PREVIOUS VERSION.

B: Image added at step 10 for better understanding. Inspection of the new LTD needed prior installation, see step 2. With the exception of step 2, the procedure remains the same as with the previous revision.
C: Addition of the procedure suitable for EPA2007 vehicles
D: Part 5, step 4. Part 4 should not be performed, thus step 4 is removed.
E: 08/21/2013, simplified procedure applicable to EPA2007 H3 Series vehicles and EPA2007 vehicles equipped with a coolant preheater

APPLICATION

NOTICE TO SERVICE CENTERS

*Verify vehicle eligibility by checking safety recall status with **SAP** or **Vehicle Warranty Information** tool found on Prevost–Systems tab of the Volvo Trucks Dealer Portal*

	Model	VIN
EPA 2007 EMISSIONS LEVEL	H341, H3-45 coaches Model Year : 2010	Volvo D13 engine equipped vehicles with AFSS within the following range From 2PCH33493AC71***1643*** up to 2PCH33496AC71***1720*** incl.
	X3-45 coaches Model Year : 2010	Volvo D13 engine equipped vehicles with AFSS within the following range From 2PCG33496AC72***9873*** up to 2PCG33499AC72***9995*** incl.
	XLII-45 Entertainers Model Year : 2010 - 2011	Volvo D13 engine equipped vehicles with AFSS within the following range From 2PCY33493AC72***9883*** up to 2PCYS3490BC73***5001*** incl.
EPA 2010 EMISSIONS LEVEL	H341, H3-45 coaches Model Year : 2011 - 2013	Volvo D13 engine equipped vehicles with AFSS within the following range From 2PCH33496BC71***1721*** up to 2PCH3349XDC71***2163*** incl.
	X3-45 coaches Model Year : 2011 - 2013	Volvo D13 engine equipped vehicles with AFSS within the following range From 2PCG33491BC73***5002*** up to 2PCG33495DC73***5295*** incl.
	XLII-45 Entertainers Model Year : 2011 - 2013	Volvo D13 engine equipped vehicles with AFSS within the following range From 2PCY33498BC73***5003*** up to 2PCYS3491DC73***5298*** incl.

This Safety Recall does not necessarily apply to all the above-mentioned vehicles, some vehicles may have been modified before delivery. The owners of the vehicles affected by this recall will be advised by a letter indicating the Vehicle Identification Number (VIN) of each vehicle concerned.

DESCRIPTION

On the vehicles involved in this recall, there is a possibility that the Automatic Fire Detection and Suppression System (AFSS) activates by mistake due to wear of the linear thermal detector (LTD). AFSS system may activate while no fire, causing the vehicle to come to an unplanned stop.

You need to perform either Procedure 1 or Procedure 2 depending on the type of vehicle and emission level as follows:

perform	for
PROCEDURE 1 Inspection of Linear Thermal Detector (LTD)	• H3 SERIES EPA2007 EMISSIONS LEVEL • ALL EPA2007 VEHICLES EQUIPPED WITH COOLANT PREHEATER
PROCEDURE 2 Moving of IR optical detector and installation of shorter LTD Linear Thermal Detector with new routing around the engine	• XLII ENTERTAINER EPA2007 AND EPA2010 EMISSIONS LEVEL • X3 SERIES EPA2007 NOT EQUIPPED WITH COOLANT PREHEATER • ALL EPA2010 EMISSIONS LEVEL VEHICLES

NOTE

*The Linear Thermal Detector (LTD) is a twin conductor cable with temperature-sensitive insulation protected by a **red outer sheath**. It operates by short-circuiting in a fire or overheat condition. The cable cannot be reset; if the wire alarms to a fire, the wire must be replaced or the damaged section cut out and a new section added prior to returning the system to service.*

MATERIAL

- ALL EPA2010 EMISSIONS LEVEL VEHICLES

Part No.	Description	Qty
068552	SUPPORT BRACKET	1
068564	LINEAR THERMAL DETECTOR	1
504013	MOUNT, CABLE TIE 1/4	2
504637	CABLE TIE	8
507664	CABLE TIE, DOUBLE LOOP	30
509815	FIR TREE MOUNT	2
564099	INSULATING FABRIC ADHESIVE TAPE, ROLL	1

- EPA2007 XLII ENTERTAINER
- EPA2007 X3 SERIES NOT EQUIPPED WITH COOLANT PREHEATER

Part No.	Description	Qty
068552	SUPPORT BRACKET	1
068855	EXTENSION HARNESS, IR SENSOR	1
068564	LINEAR THERMAL DETECTOR	1
500524	SCR TP PAN PH SS #12x5/8	1
502830	SCREW, CAP HEX N500 M6-1.0x20 G8.8	2
502841	NUT HEX NYRT N500 M5-0.8	2
504013	MOUNT, CABLE TIE 1/4	3
504637	CABLE TIE	8
507664	CABLE TIE, DOUBLE LOOP	40
509491	CABLE TIE, STRONG	6
509815	FIR TREE MOUNT	2
563587	TERMINATION RESISTOR, MODULE	1
564099	INSULATING FABRIC ADHESIVE TAPE, ROLL	1
5001146	SCREW, CAP HEX SS NSS M5x20	2
5001833	WASHER, LOCK SPR SS 301 6.65X17.4X1.27	2

- H3 SERIES EPA2007
- EPA2007 EMISSIONS LEVEL VEHICLES EQUIPPED WITH COOLANT PREHEATER

Part No.	Description	Qty
507664	CABLE TIE, DOUBLE LOOP	30

NOTE
Material can be obtained through regular channels.

EPA2007 VEHICLES ARE EQUIPPED WITH DIESEL PARTICULATE FILTER ONLY
EPA2010 VEHICLES ARE EQUIPPED WITH DIESEL PARTICULATE FILTER AND DEF TANK

PROCEDURE 1

H3 SERIES EPA2007 & ALL EPA2007 VEHICLES EQUIPPED WITH COOLANT PREHEATER

DANGER

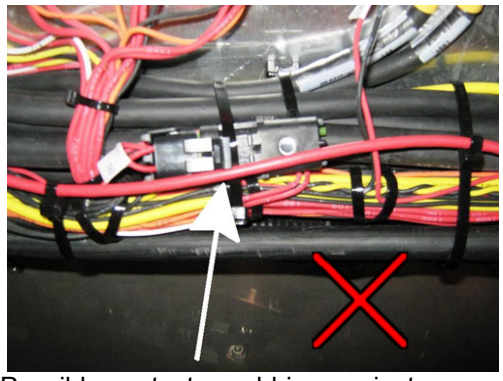
Park vehicle safely, apply parking brake, stop engine and set battery master switch(es) to the OFF position prior to working on the vehicle.

1. Inspect the Linear Thermal Detector (LTD) routed around the engine and the coolant preheater. Make sure there is no risk of rubbing against sharp edges, clamps, surrounding parts, etc. Make sure that the LTD installation respects the following guidelines.

NOTE

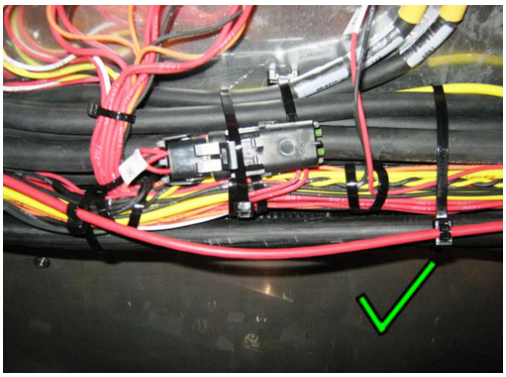
Always use double loop cable ties to secure LTD. LTD must be tied alone, with no other cables in the loop.

NOT ALLOWED



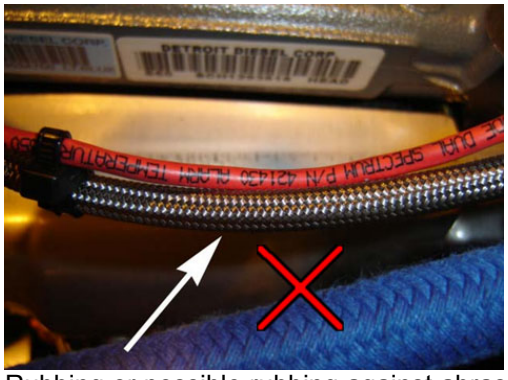
Possible contact or rubbing against screws, edges, etc.

CORRECT



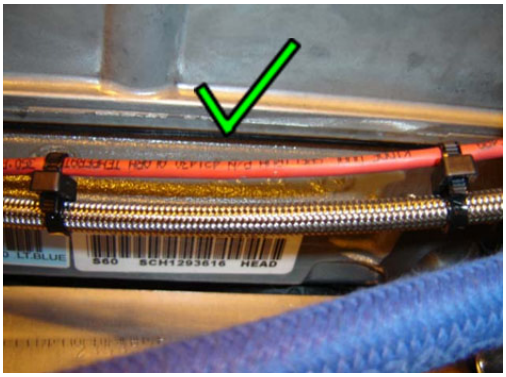
LTD must be routed clear of screws, sharp edges, etc.

NOT ALLOWED



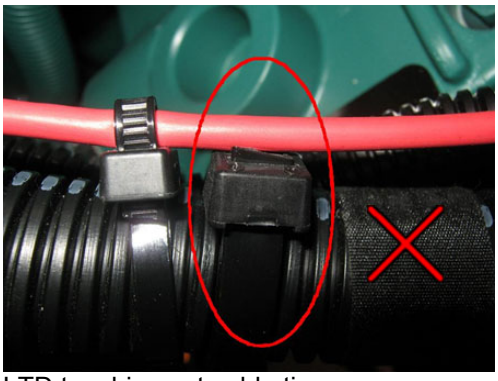
Rubbing or possible rubbing against abrasive surfaces

CORRECT



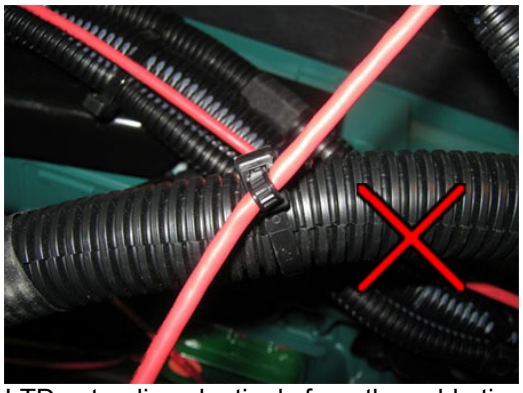
LTD must be secured with double loop cable ties. Distance between cable ties must not exceed 4 inches (100mm) max

NOT ALLOWED



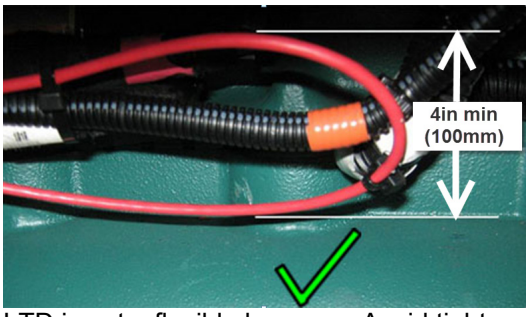
LTD touching cut cable tie

NOT ALLOWED



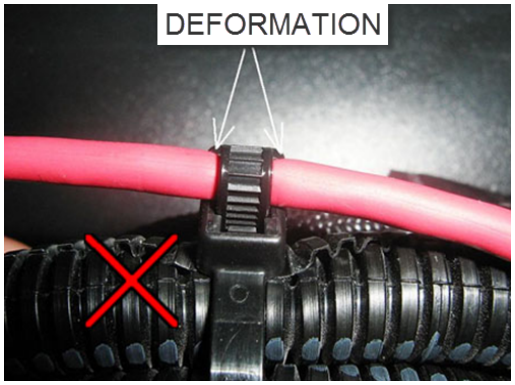
LTD extending slantingly from the cable tie

CORRECT



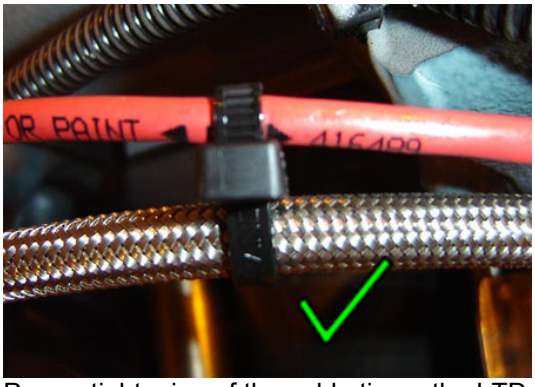
LTD is not a flexible harness. Avoid tight bends and kinks which could short circuit the LTD. Loops must hace a minimum radii of 4 inches (100 mm)

NOT ALLOWED



Cable tie tighten in excess on the LTD. Tighten cable tie on LTD by hand only. Tighten just enough to prevent LTD from slipping from once side to the other inside the cable tie loop

CORRECT



Proper tightening of the cable tie on the LTD

PROCEDURE 2

XLII ENTERTAINER EPA2007 AND EPA2010, X3 SERIES EPA2007 NOT EQUIPPED WITH COOLANT PREHEATER & ALL EPA2010 EMISSIONS LEVEL VEHICLES

DANGER

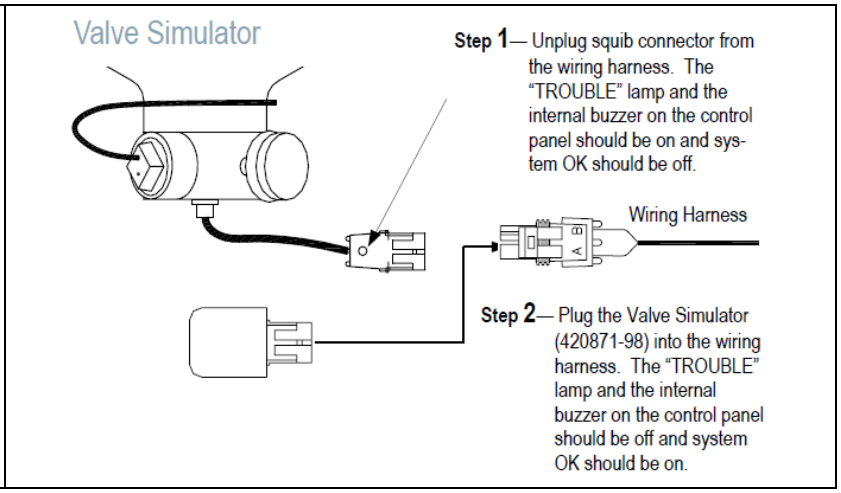
Park vehicle safely, apply parking brake, stop engine and set battery master switch(es) to the OFF position prior to working on the vehicle.

PART 1: PREPARATION

2. If possible, proceed to the replacement of the LTD on a cold engine.
3. **Inspect the new LTD connectors**. Make sure that the contact terminals are properly inserted into the connector housing. Make sure that the contact terminals are firmly crimped onto the wire by pulling gently on the wire. Repair/crimp if applicable.
4. With the battery master switch to the ON position and the ignition switch to the ON position, check that there are no trouble conditions on the AFSS system. Check that the driver's area AFSS protection panel SYSTEM OK green lamp is illuminating. If it is not illuminating, then the TROUBLE lamp should blink or illuminate steady. You should troubleshoot and correct that situation prior proceeding to this safety recall.
5. Disconnect the extinguisher bottle connector. If available, plug special device Kidde Valve Simulator (Prevost #685128).

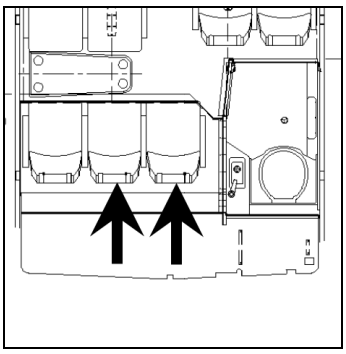
   The Valve Simulator is used to simulate the squib and discharging of an extinguisher. It plugs into the wiring harness of the extinguishing circuit and provides an audible warning (chirp) when a signal is received from the control panel to discharge the extinguisher.

   Failure to do so may result in extinguisher discharge at time of resetting the system if the LTD is short circuited due to improper manipulations and/or faulty installation.



6. Turn the ignition switch to the OFF position. Set the battery master switch to the OFF position.
7. Inside the front electrical compartment, pull fuse F45 to cut electrical supply to the AFSS protection panel. You will find F45 in an inline blade-type fuse holder among nearby harnesses.

8. To ease access to the engine, remove the access hatch located at the rear of the passengers' area. On X3 series coaches, there is a second access hatch found under the 2 rear seats next to the lavatory compartment wall (see image below). You have to remove the seat cushions first in order to remove the entire seat.

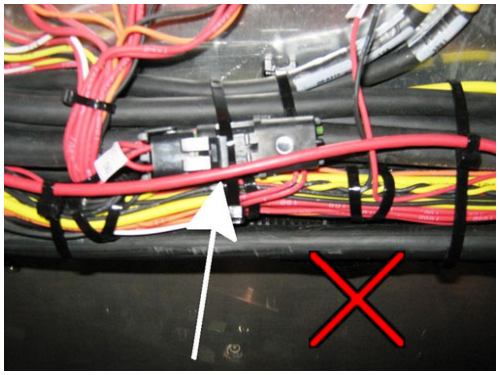


PART 2: GUIDELINES

IMPORTANT: WHEN INSTALLING THE "LTD", THE FOLLOWING GUIDELINES MUST BE FOLLOWED.

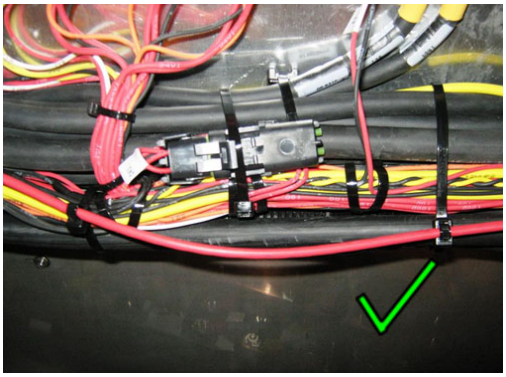
NOTE
Always use double loop cable ties to secure LTD. LTD must be tied alone, with no other cables in the loop.

NOT ALLOWED



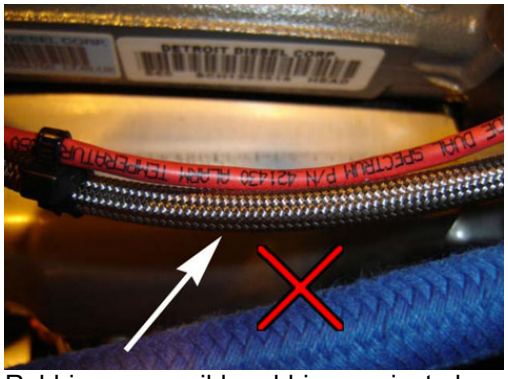
Possible contact or rubbing against screws, edges, etc.

CORRECT



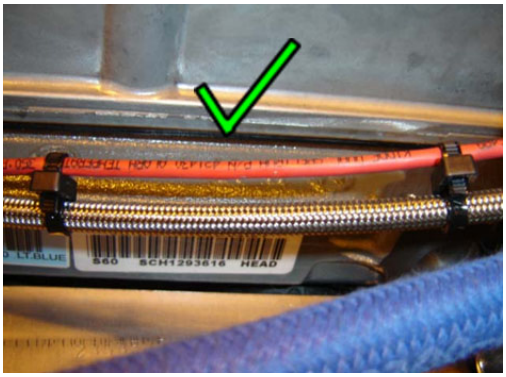
LTD must be routed clear of screws, sharp edges, etc.

NOT ALLOWED



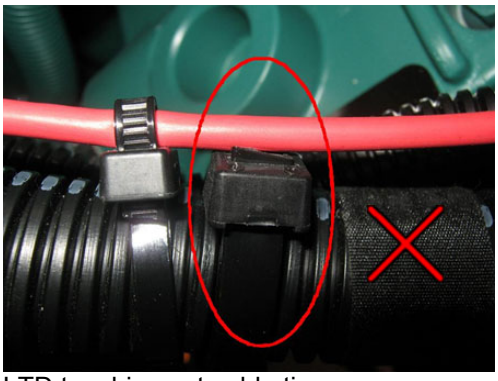
Rubbing or possible rubbing against abrasive surfaces

CORRECT



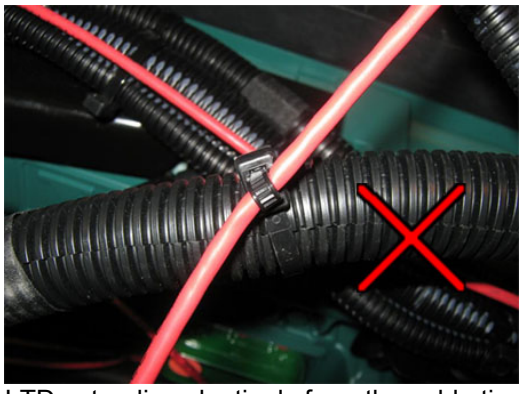
LTD must be secured with double loop cable ties. Distance between cable ties must not exceed 4 inches (100mm) max

NOT ALLOWED



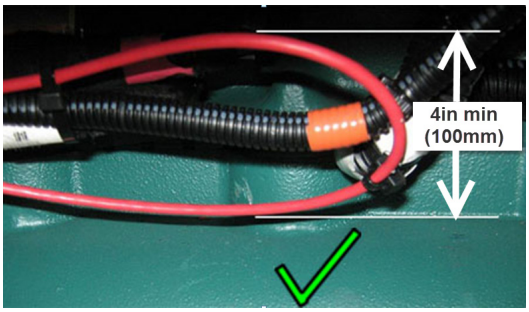
LTD touching cut cable tie

NOT ALLOWED



LTD extending slantingly from the cable tie

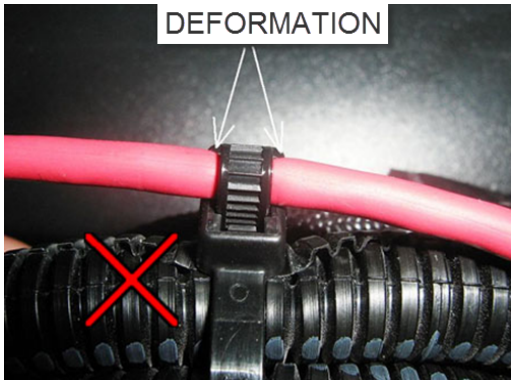
CORRECT



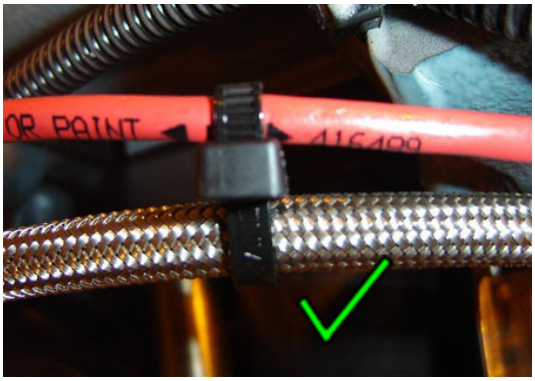
LTD is not a flexible harness. Avoid tight bends and kinks which could short circuit the LTD. Loops must hace a minimum radii of 4 inches (100 mm)

NOT ALLOWED

CORRECT



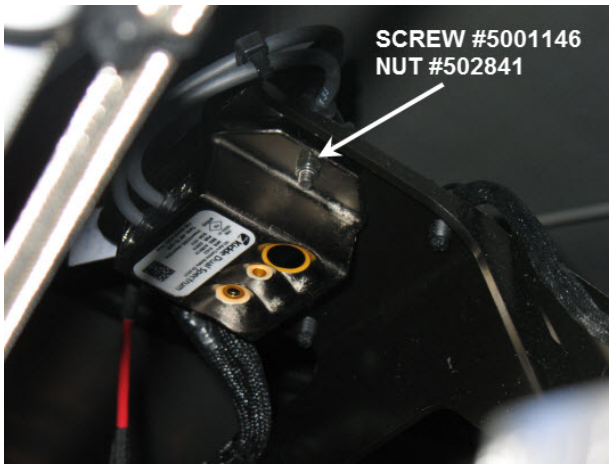
Cable tie tighten in excess on the LTD. Tighten cable tie on LTD by hand only. Tighten just enough to prevent LTD from slipping from once side to the other inside the cable tie loop

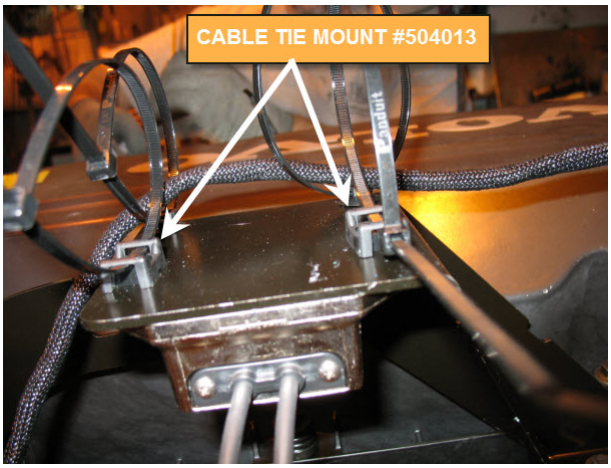


Proper tightening of the cable tie on the LTD

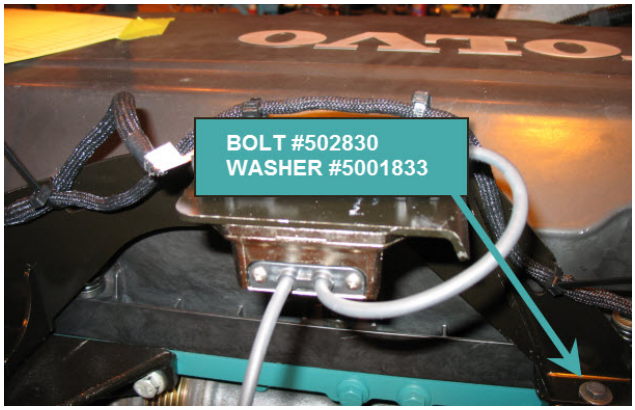
PART 3: REMOVAL OF IR SENSOR AND INSTALLATION OF IR SENSOR SUPPORT BRACKET ON EPA2007 VEHICLES ONLY (FOR EPA2010 VEHICLES, JUMP TO PART 4)

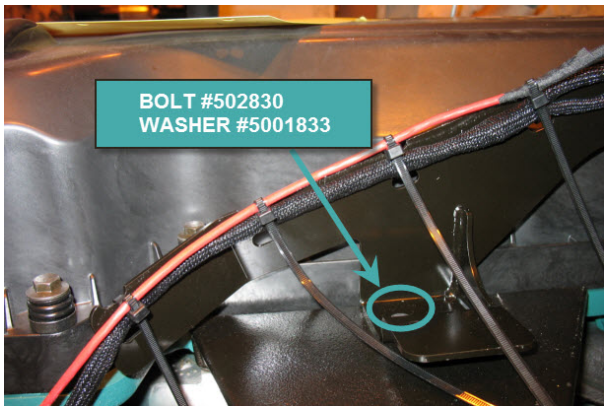
1. Unplug connector **A131A** and **A131B** if applicable from the IR optical detector.
2. Dismount the IR sensor.
3. Install the IR sensor on support bracket #068552 using cap screw #5001146 (2x) and nut #502841 (2x). Install two (2) cable tie mounts #504013 as shown on the second image below.





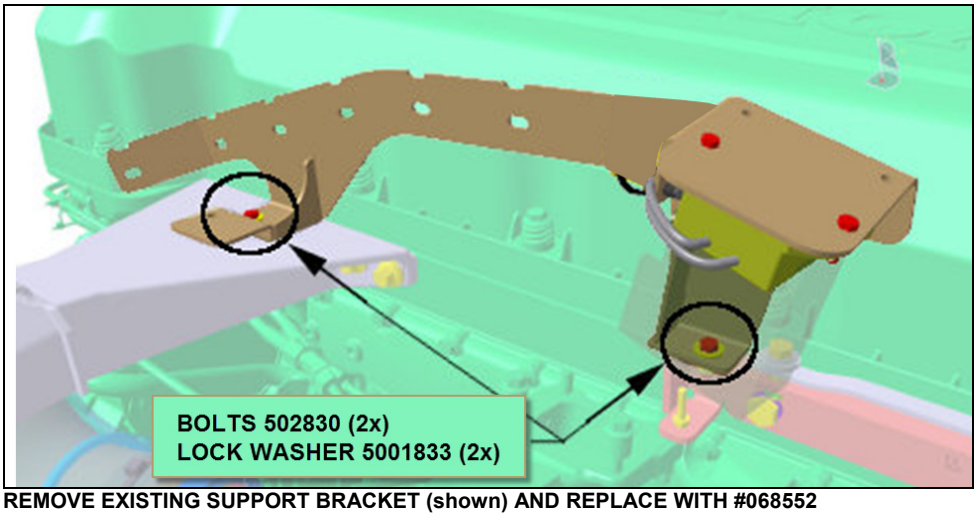
4. Mount support bracket complete with IR sensor along the valve cover (see image below) using bolt #502830 (2x) and washer #5001833 (2x).





PART 4: REMOVAL AND REPLACEMENT OF IR SENSOR SUPPORT BRACKET ON EPA2010 VEHICLES (FOR EPA2007 VEHICLES, JUMP TO PART 5)

1. Disconnect the existing LTD connector and the power supply connector from the IR optical detector. The IR optical detector is located on turbocharger side, close to the valve cover.
2. Remove the existing IR sensor support bracket. Dismount the IR sensor from support bracket and install similarly on the new support bracket #068552 using existing hardware (see following pictures).
3. Using existing hardware, install new support bracket #068552 complete with IR sensor similarly as the former one.



REMOVE EXISTING SUPPORT BRACKET (shown) AND REPLACE WITH #068552

PART 5: REPLACEMENT OF LTD (EPA2007 & EPA2010)

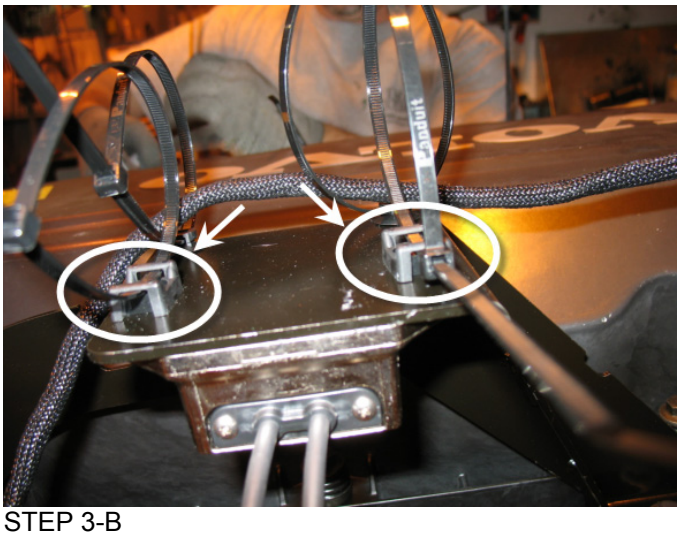
1. Remove the existing LTD routed around the engine simultaneously with the installation of new LDT #068564, while proceeding successively from one attachment point to the other. **Take note that the LTD will not be routed under the starter anymore.**

NOTE
Distance between cable ties must not exceed 4 inches.

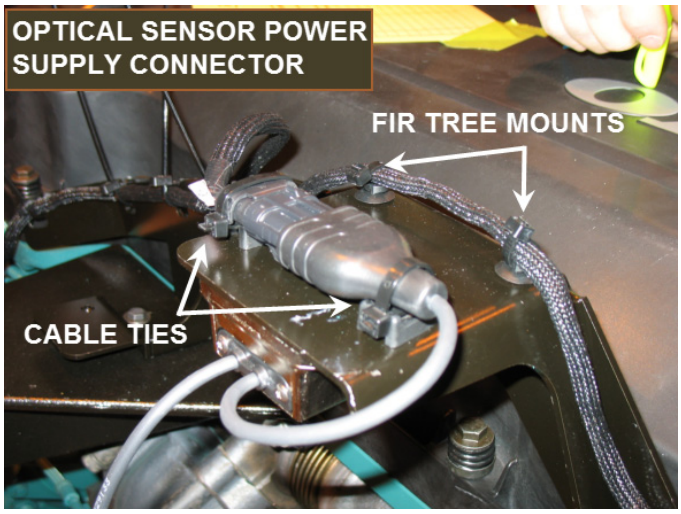
2. For each attachment point, fix one loop of the cable tie around the close harnesses corrugated sleeve. Use the second loop to attach the LTD. Tighten the loop fixing the LTD by hand only. Follow the general recommendations.

3-A Refer to the following pictures for proper attachment point location and installation method (consult the PDF color version of this document).

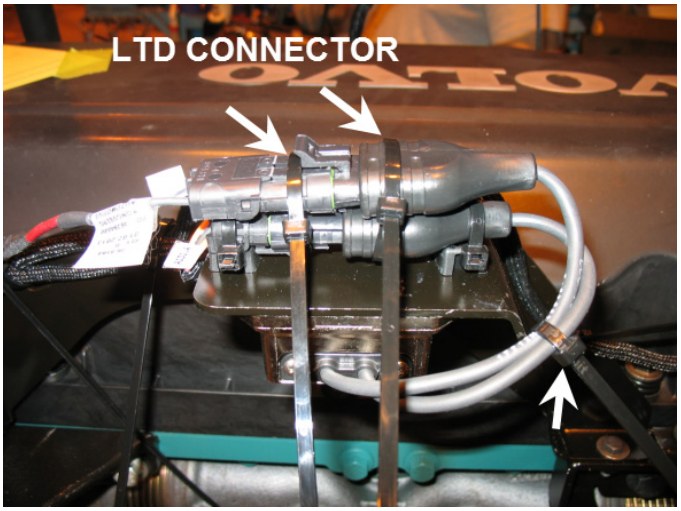
ENGINE HOT SIDE



STEP 3-B
Using the existing hardware, install two (2) cable tie mounts as shown (if not previously installed). Place two (2) cable ties (504637) for later use.

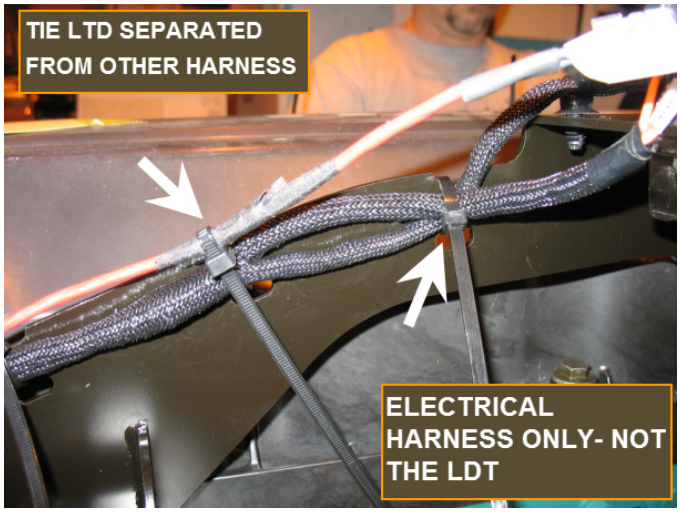


STEP 3-C
Plug the power supply harness A131A to optical sensor connector (R.H. gray cable) as shown and tighten cable tie. Install two fir tree mounts next to the connector as shown and secure existing harness using cable ties #504637. Note that on EPA2007 vehicles, the extension harness #068855 is required and is to be routed between the optical sensor's former location and its new location to extend the already existing circuit. Installation of extension harness is described in Part 6 of this procedure.



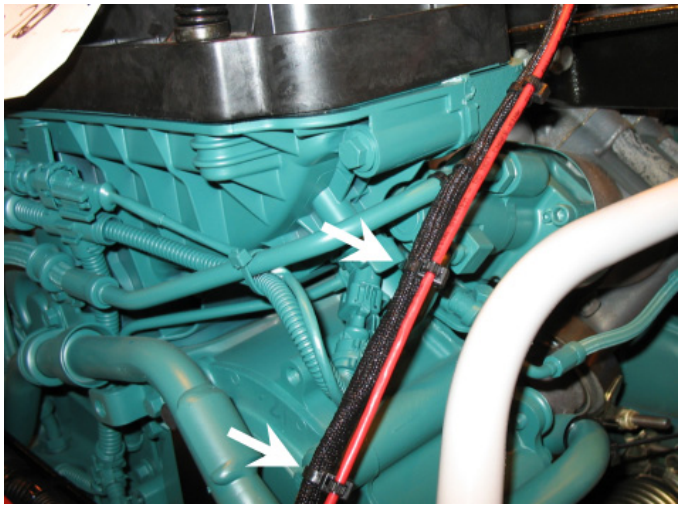
STEP 3-D
Plug new LTD #068564 connector A131B to optical sensor connector (L.H. gray cable) and tie on the previously installed connector using two (2) cable ties (504637). This new LTD will be routed around the engine. Tie the two gray cables together as shown using a cable tie (504637). [redacted]

STEP 3-F
Secure LTD and harnesses using double loop cable ties, **placing the LTD on top**. Refer to the image for proper attachment points.



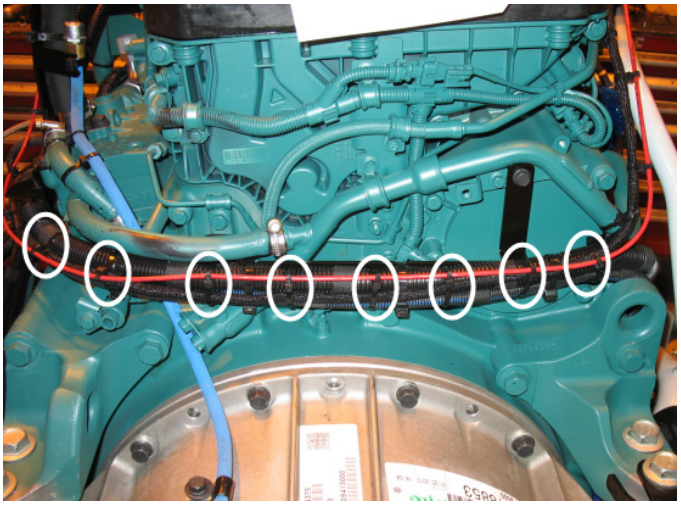
STEP 3-E
Secure the two harnesses in braided sleeve at the first attachment point as shown using a cable tie #504637 if applicable.

Apply three layers of fabric adhesive tape on the LTD and secure LTD using a double loop cable tie. **In the turbocharger area, LTD must be placed over the two harnesses**.

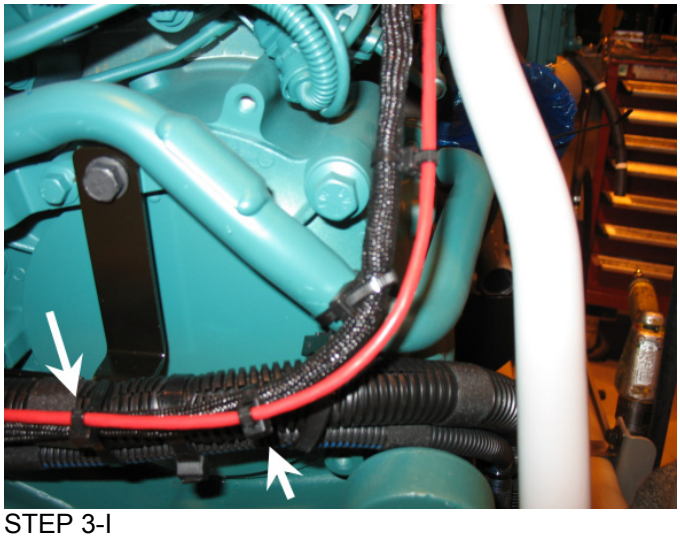


STEP 3-G
Secure LTD on nearby harnesses using double loop cable ties. Refer to the image for proper attachment points. **Do not route the LTD under the starter as previously routed.**

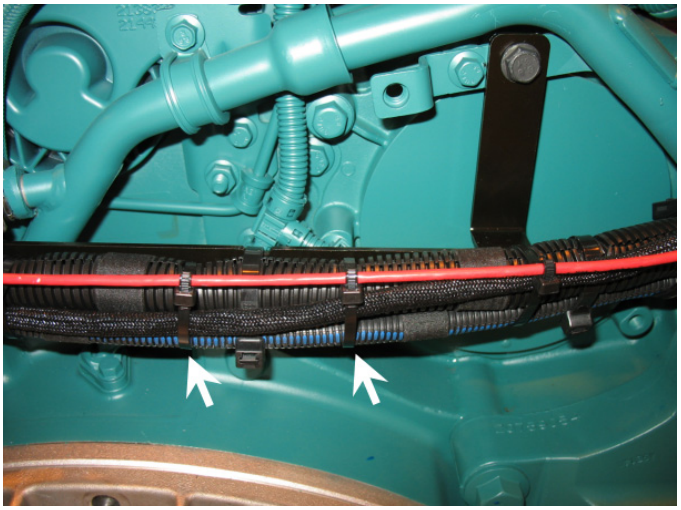
TRANSMISSION SIDE



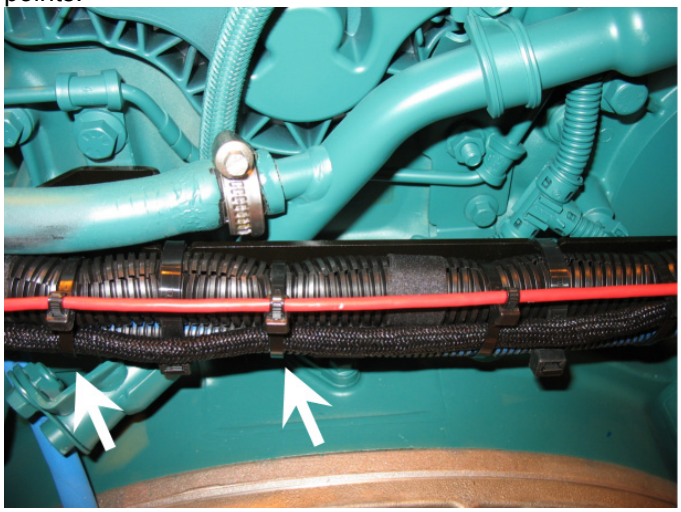
STEP 3-H – OVERVIEW
LTD will be secured on corrugated sleeves (eight attachment points)



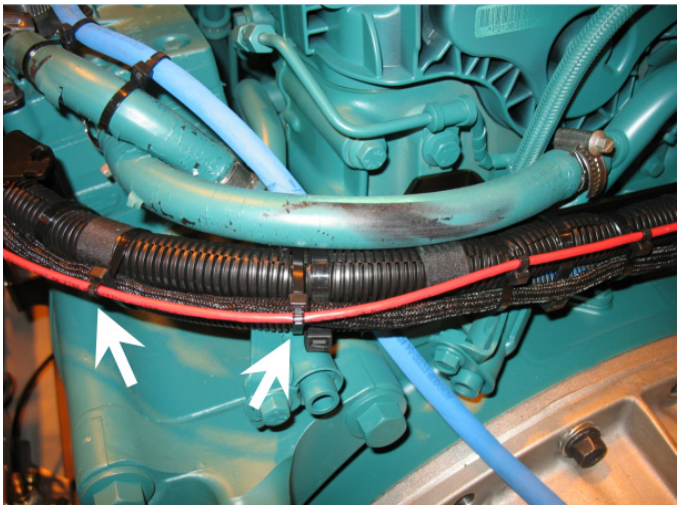
STEP 3-I
Secure LTD on corrugated sleeves using double loop cable ties. Refer to the image for proper attachment points.



STEP 3-J



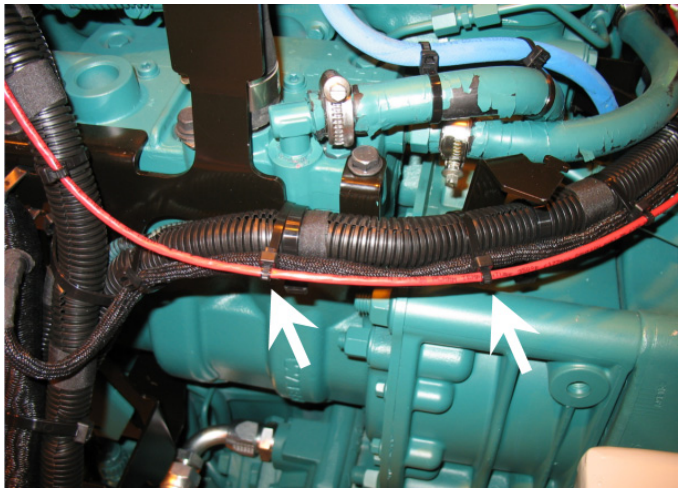
STEP 3-K



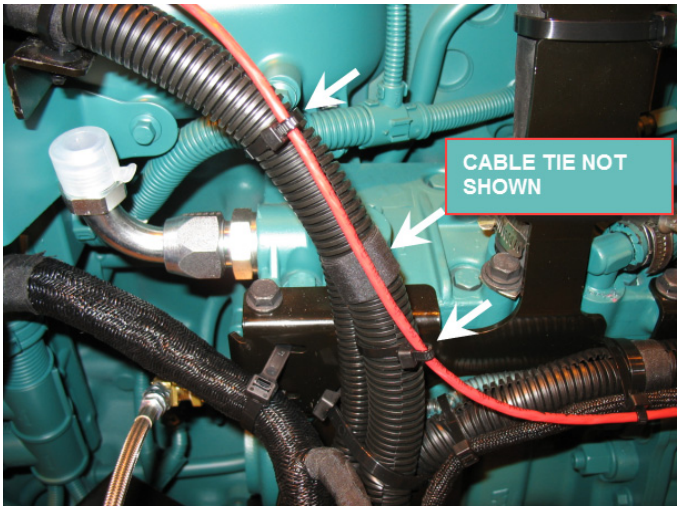
STEP 3-L

ENGINE COLD SIDE

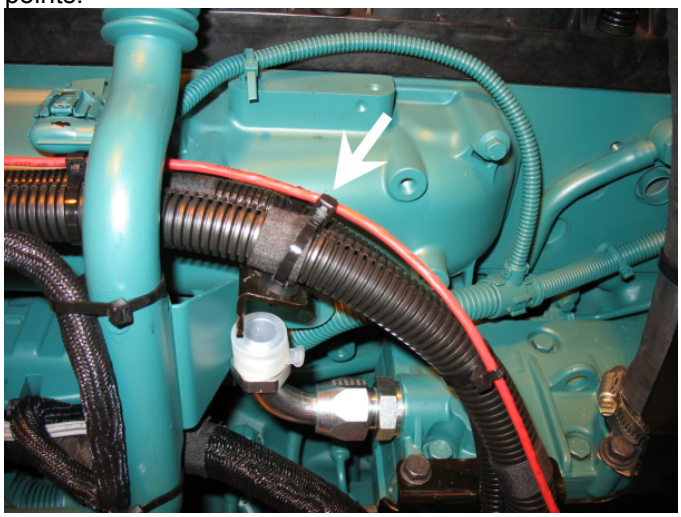
STEP 3-M OVERVIEW
LTD will be secured on corrugated sleeves (ten attachment points)



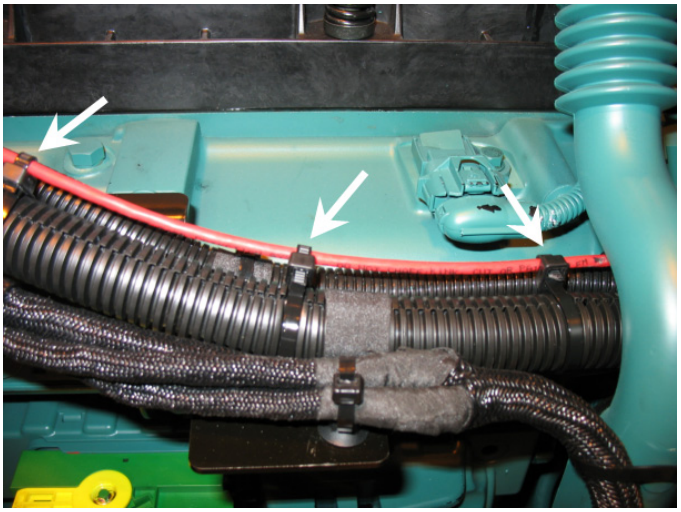
STEP 3-N
Secure LTD on corrugated sleeves using double loop cable ties. Refer to the image for proper attachment points.



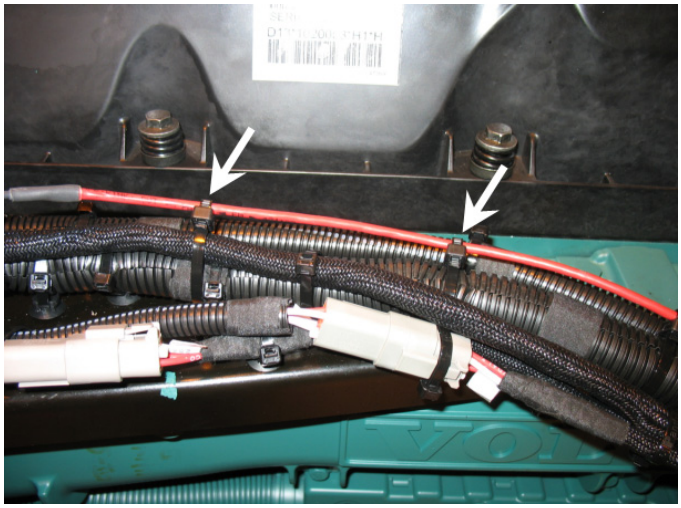
STEP 3-O
Refer to the image for proper attachment points.



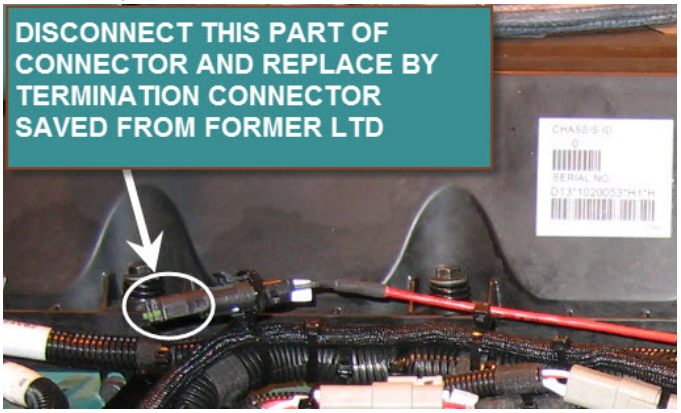
STEP 3-P



STEP 3-Q



STEP 3-R



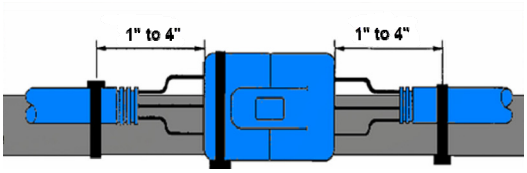
STEP 3-S

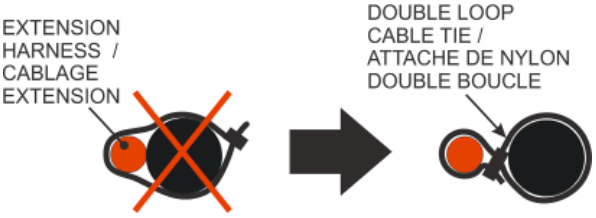
STEP 3-T

Secure the LTD end connector as shown. Unplug the connector housing fitted with green rubber plugs and replace with the termination connector found on the previously installed LTD. This termination connector includes a 10k Ohms resistor required to close the circuit.

PART 6: INSTALLATION OF IR SENSOR POWER SUPPLY EXTENSION HARNESS ON EPA2007 VEHICLES ONLY

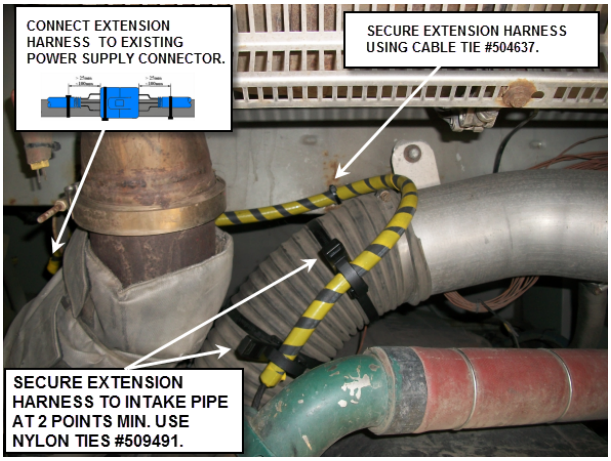
1. Use the extension harness #068855 to extend the existing harness located at the optical sensor's former location. Connect extension harness to existing harness and to connector **A131A on the optical sensor**.
2. Route extension harness #068855 as indicated on the images below. Proper routing is represented on the images below by the rubber hose with a striped yellow ribbon.



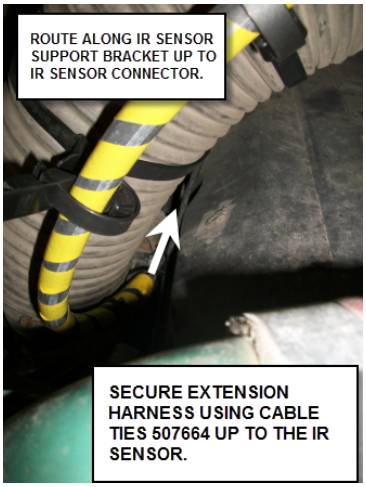


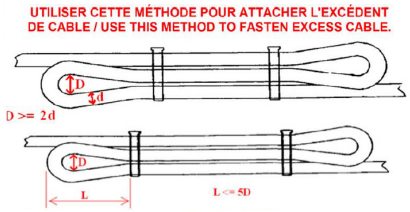
1- X3 & XLII SERIES

2- X3 & XLII SERIES



3- X3 & XLII SERIES





PART 7 FINAL (EPA2007 & EPA2010)

1. Put fuse F45 back in place. Set the battery master switch to the ON position.
2. Set the ignition switch to the ON position and check that the driver's area AFSS protection panel SYSTEM OK green lamp is illuminating and that no fire detected/extinguisher discharge condition has been triggered. If no Kidde valve simulator is installed, the TROUBLE lamp should illuminates steady, indicating there is a fault in the extinguishing circuit, which is normal if the extinguisher circuit is not connected to the extinguisher bottle. The TROUBLE lamp will blink if there is a fault in the detection circuit.

   If the ALARM lamp illuminates steady, a fire detected and extinguisher discharge conditions exist. Do not connect the extinguisher bottle to the extinguisher circuit.
3. If no fire detected/discharge condition exists, you can disconnect the valve simulator and plug the extinguisher bottle to the wiring harness of the extinguishing circuit.

PARTS DISPOSITION

Return LTD to Prevost with A.F.A. for full reimbursement

WARRANTY

This modification is covered by Prevost's normal warranty. We will reimburse you the parts and labor as follows:

H3 Series	2 hours and 30 minutes (2.5h) of labor upon receipt of a completed A.F.A. form on which you must specify as per "Safety Recall 13-03". **You also have to fill the ''Safety Recall Certification Sheet'' provided with this bulletin and return it with your A.F.A. form to be reimbursed.**
X3 and XLII Series	3 hours and 30 minutes (3.5h) of labor upon receipt of a completed A.F.A. form on which you must specify as per "Safety Recall 13-03". **You also have to fill the ''Safety Recall Certification Sheet'' provided with this bulletin and return it with your A.F.A. form to be reimbursed.**

OTHER

Fail Code	23.08
Defect Code	09
System Condition	R
Causal Part	067405

Access all our Service Bulletins on
http://prevostparts.volvo.com/technicalpublications/en/pub.asp
Or scan the QR-Code with your smart phone.