

# Special Bulletin

# SP15-304E

Date	Expiration	Release	Page
01.2015	01.2017	7	1(19)


REVISION E THIS REVISION SUPERSEDES THE PREVIOUS VERSION  
 For vehicles from F-7000, use power cable 3/0 p/n 069282

## ALTERNATOR REPLACEMENT WITH BOSCH HD10PLBH 150A Prevost vehicles

### DESCRIPTION

On the vehicles affected by this bulletin, the Bosch HD10 alternators need to be replaced with new Bosch HD10PLBH 150 Amps alternators.

### MODEL YEAR(S) AND VEHICLES INVOLVED

Model	VIN 																				
NYCT X3-45 Commuter coaches Model Year : 2012, 2014, 2015	From 2PCG33495CC735053 up to 2PCG33495CC735232 incl.  And <table border="0"> <tr> <td>4RKG33495F9737000</td> <td>4RKG3349XF9737011</td> </tr> <tr> <td>4RKG33499F9737002</td> <td>4RKG33491F9737012</td> </tr> <tr> <td>4RKG33490F9737003</td> <td>4RKG33493F9737013</td> </tr> <tr> <td>4RKG33492F9737004</td> <td>4RKG33495F9737014</td> </tr> <tr> <td>4RKG33494F9737005</td> <td>4RKG33497F9737015</td> </tr> <tr> <td>4RKG33496F9737006</td> <td>4RKG33499F9737016</td> </tr> <tr> <td>4RKG33498F9737007</td> <td>4RKG33490F9737017</td> </tr> <tr> <td>4RKG3349XF9737008</td> <td>4RKG33492F9737018</td> </tr> <tr> <td>4RKG33491F9737009</td> <td>4RKG33494F9737019</td> </tr> <tr> <td>4RKG33498F9737010</td> <td>4RKG33494F9737022</td> </tr> </table>	4RKG33495F9737000	4RKG3349XF9737011	4RKG33499F9737002	4RKG33491F9737012	4RKG33490F9737003	4RKG33493F9737013	4RKG33492F9737004	4RKG33495F9737014	4RKG33494F9737005	4RKG33497F9737015	4RKG33496F9737006	4RKG33499F9737016	4RKG33498F9737007	4RKG33490F9737017	4RKG3349XF9737008	4RKG33492F9737018	4RKG33491F9737009	4RKG33494F9737019	4RKG33498F9737010	4RKG33494F9737022
4RKG33495F9737000	4RKG3349XF9737011																				
4RKG33499F9737002	4RKG33491F9737012																				
4RKG33490F9737003	4RKG33493F9737013																				
4RKG33492F9737004	4RKG33495F9737014																				
4RKG33494F9737005	4RKG33497F9737015																				
4RKG33496F9737006	4RKG33499F9737016																				
4RKG33498F9737007	4RKG33490F9737017																				
4RKG3349XF9737008	4RKG33492F9737018																				
4RKG33491F9737009	4RKG33494F9737019																				
4RKG33498F9737010	4RKG33494F9737022																				
<i>The above list of VIN was valid at the time of publishing this document. Please refer to SAP for most recent information about outstanding vehicles</i>																					

## MATERIAL

Order the following parts:




Part No.	Description	Qty
069222	POWER CABLE 3/0 (CIRCUIT 102A) <i>vehicles from C-5053 up to C-5232 (90 first busses)</i>	1
069282	POWER CABLE 3/0 (CIRCUIT 102A) <i>vehicles starting from F-7000 (2nd contract)</i>	1
502573	WASHER, FLAT M6 STAINLESS STEEL	2
504637	CABLE TIE	15
507664	CABLE TIE, DOUBLE LOOP	12
509491	CABLE TIE, WIDE	10
564590	ADAPTER	1
564593	ALTERNATOR, BOSCH HD10PLBH 28V 150A	2
5001182	NUT, M6 STAINLESS STEEL	2
5001341	WASHER, FLAT M8 STAINLESS STEEL	3
5001787	NUT, M8 STAINLESS STEEL	2
500169	SCREW, CAP ¼-20 x 1 ½ GR5	3
502716	NUT, NYRT ¼-20	3
509490	DOUBLE-TIE MOUNT, HELLERMANN TYTON, GREY	3
504751	ANCHOR, DOUBLE SWIVEL HELLERMANN TYTON	1

Other parts or products that **may** be required:

Part No.	Description	
684013	COLOR GUARD RUBBER COATING, 14.5 OZ CAN	
5001853	BOLTS, ALTERNATOR MOUNTING M12 x 130mm lg	QTY: 2
5001728	NUTS, ALTERNATOR MOUNTING M12	QTY: 2
680038	LOCTITE 243, BLUE	
685353	TORQUE SEAL, YELLOW	
680335	ANTI-SEIZE COMPOUND	

Date	Expiration	Release	Page
01.2015	01.2017	7	3(19)

## REQUIRED TOOLS

<b>RATCHET AND SOCKET SET - METRIC</b> 	<b>TORQUE WRENCH</b> 
<b>BRASS WIRE CUP BRUSH</b> 	

## SPECIAL TOOLS REQUIRED TO TIGHTEN THE ALTERNATOR PULLEY MOUNTING NUT



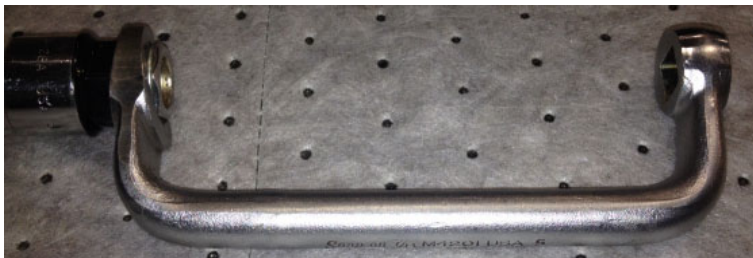
**METRIC 10mm 12-POINTS SPLINE DRIVE LONG (CARLYLE SLTS3810M AVAILABLE FROM NAPA )**



**OFFSET 7/8 WRENCH (CYLINDER HEAD WRENCH), SNAP-ON PART NUMBER M4201**



**7/8 SOCKET (PART NUMBER WA28-28A)**



**OFFSET 7/8 WRENCH FITTED WITH 7/8 SOCKET AND 10mm 12-POINTS SPLINE DRIVE**

Date	Expiration	Release	Page
01.2015	01.2017	7	4(19)



USING THE CYLINDER HEAD WRENCH WITH A RATCHET AND A FLEX SOCKET WRENCH



## PROCEDURE



### DANGER

Park vehicle safely, apply parking brake, stop engine. In the battery box, set the battery cut-off switch to the OFF position prior to working on the vehicle.

1. Remove the A/C compressor belts and then remove A/C compressor idler pulley bracket assembly (3 bolts to be removed, FIGURE 1).

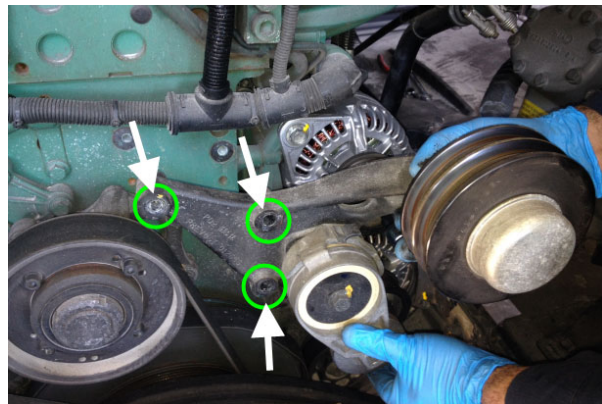


FIGURE 1

Date	Expiration	Release	Page
01.2015	01.2017	7	5(19)

2. Remove the alternator belt (FIGURE 2).
3. Unscrew the alternator pulley mounting nut (FIGURE 2).
4. Remove the alternator pulley (2 pulleys) (FIGURE 2).

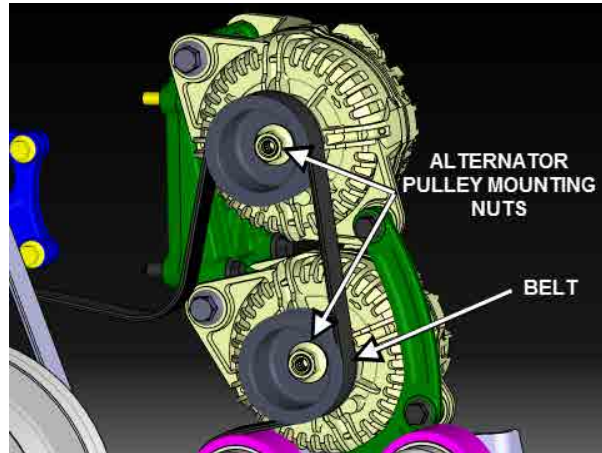


FIGURE 2

5. Remove the existing alternators. To do so, unscrew identified mounting bolts on FIGURE 3 and retain for reuse if in good condition.
6. Identify alternator cables and then disconnect cables. Properly clean cable ring terminals as applicable using a brass wire cup brush, a Scotch-Brite pad or an emery cloth. Take note that the existing power cable identified 102A connected to the upper alternator will not be reused.



BRASS WIRE CUP BRUSH

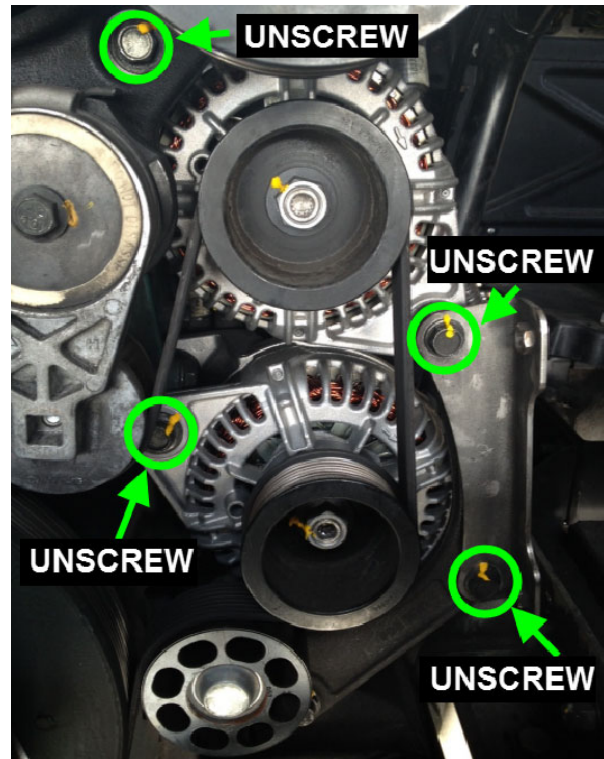


FIGURE 3

Date	Expiration	Release	Page
01.2015	01.2017	7	6(19)

- Install new alternators. Fix lower and upper alternators loosely to alternator supports using bolts **C**. Apply anti-seize compound inside the alternator mounting ears and inside the sleeves found on the support attached to the engine (see location **C** on **FIGURE 4**). Also, mount arched support loosely onto alternators using bolts **B** (**FIGURE 4**). If applicable, install stone guard.

**NOTE: Reuse existing bolts unless they are not in good condition (damaged, pitted, eroded).**

For reference:

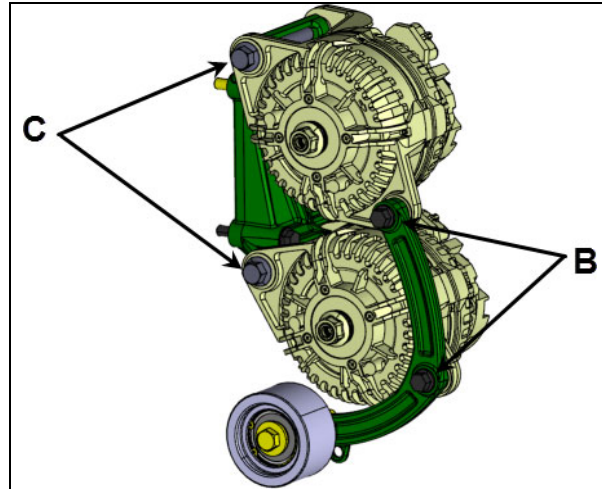
C= nut M12 #5001728

C= bolt M12 #5001853

B= nut M10 #5001727

B= bolt M10 #5001801 (upper one)

B= bolt M10 #5001843 (lower one)



**FIGURE 4**

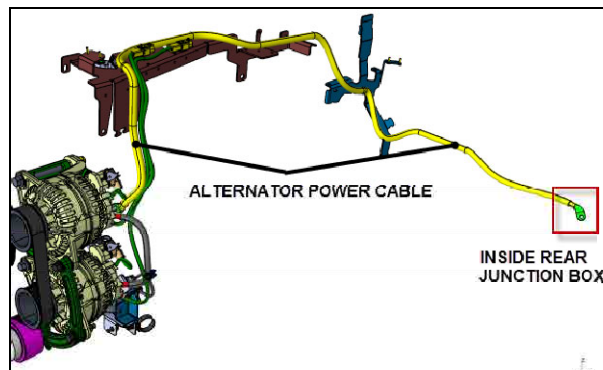
- Replace the existing power cable (circuit 102A) (**FIGURE 5**) with new power cable (#069222 or #069282 as applicable). This cable is routed from the upper alternator B1+ stud terminal up to the 24VI junction block in the rear junction box (**FIGURE 6**, **FIGURE 7**, **FIGURE 8**).

**NOTE:** The red junction block rubber cap is identified "BUSSMAN".

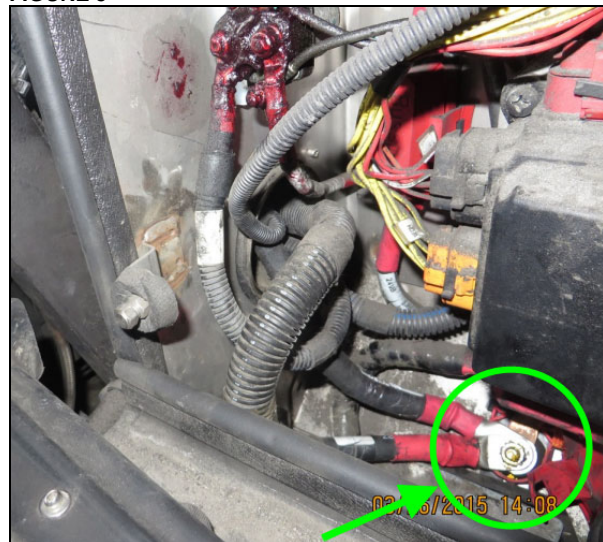
- While removing 102A, separate the AFSS LTD wire from power cable. It will be reinstalled on new power cable 102A similarly using appropriate nylon ties later on.
- It is recommended to install the new power cable simultaneously with the removal of former power cable already there in order to use up to a certain point, the same attachment points and to place appropriate nylon ties at the same locations. Start in the rear junction box.

Installation of power cable 3/0 will required the use of 3 HellermannTyton double-tie mounts #509490 and corresponding hardware: 3x cap screw #500169, 3x nylon insert nut #502716, 3x wide nylon tie #509491 and 3x nylon tie #504637. Use **FIGURE 9**, **FIGURE 10**, **FIGURE 11**, **FIGURE 12**, **FIGURE 13** as reference to complete the installation.

HellermannTyton double-tie mounts mounting screw torque: **8 lbf-ft.**



**FIGURE 5**



**FIGURE 6: POWER CABLE 102A CONNECTED TO BUSSMAN JUNCTION BLOCK - *TORQUE 10 lbf-ft.* APPLY YELLOW TORQUE SEAL AND THEN APPLY COLOR GUARD RUBBER COATING**

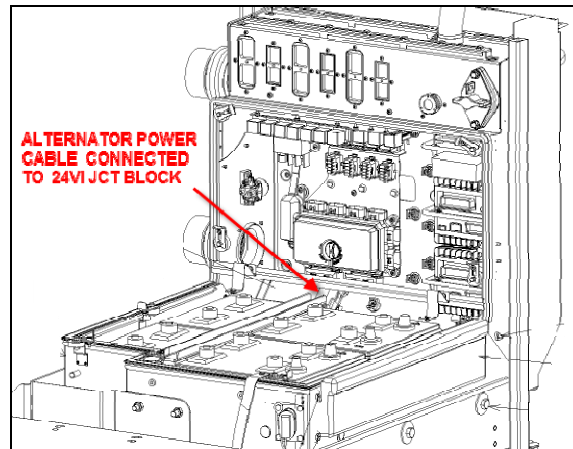


FIGURE 7

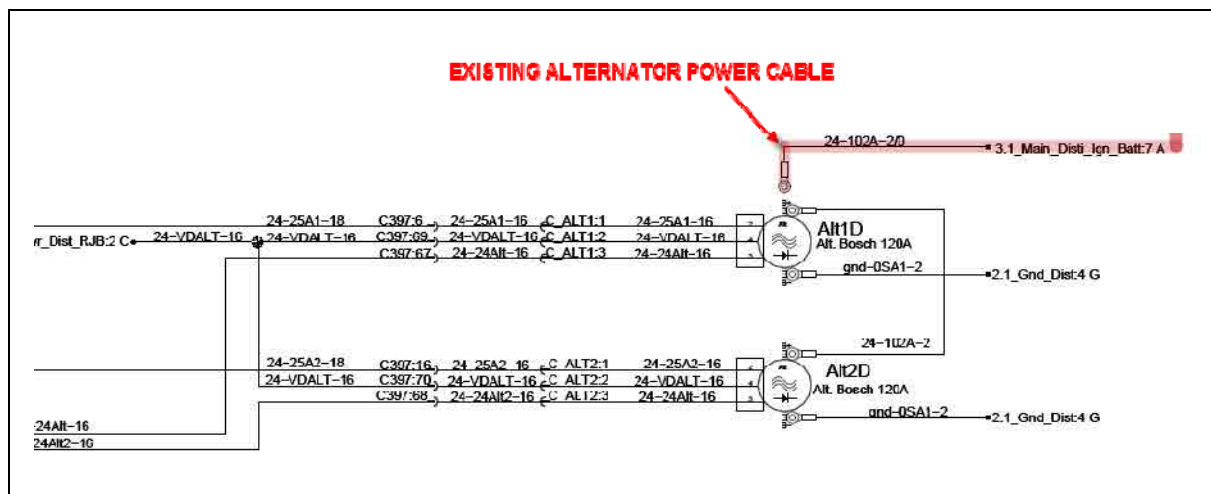
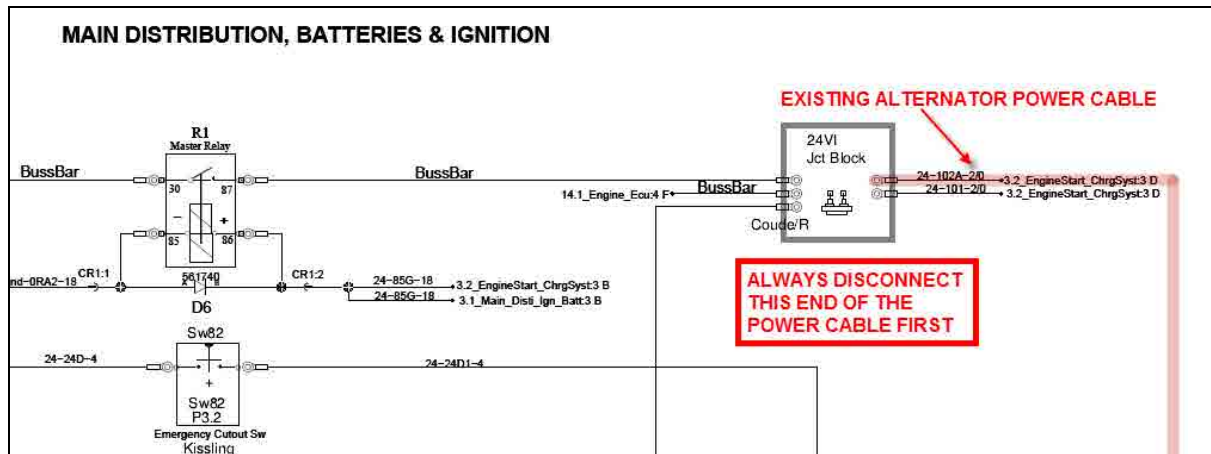
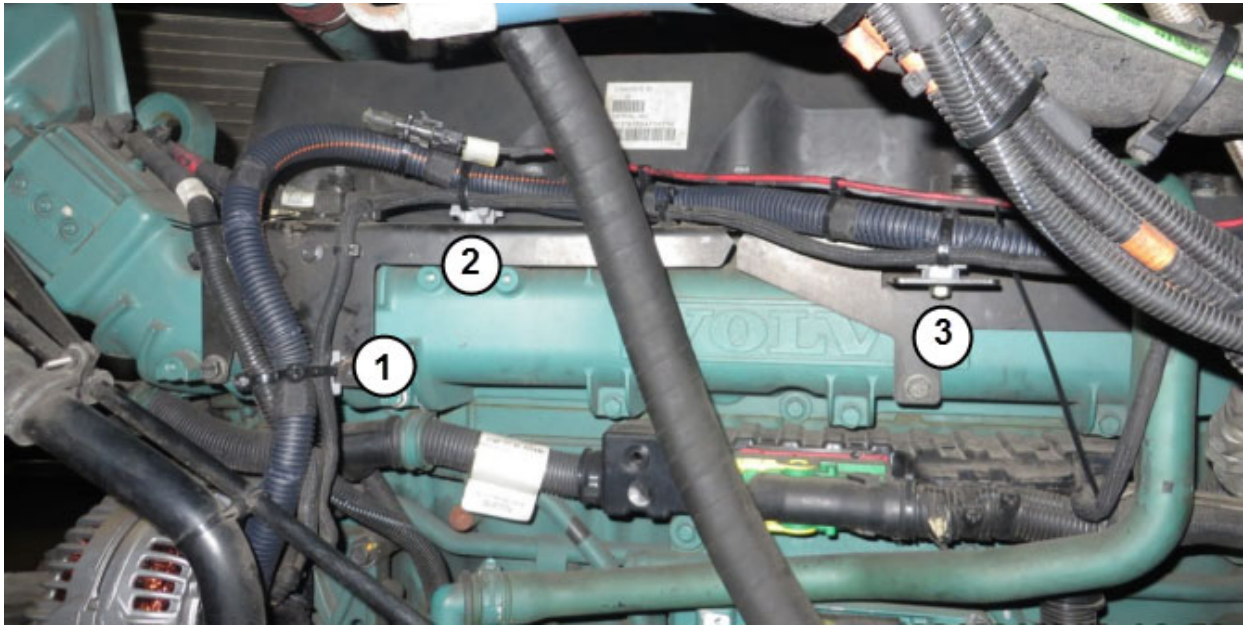


FIGURE 8

Date	Expiration	Release	Page
01.2015	01.2017	7	8(19)



**FIGURE 9: POWER CABLE ATTACHED TO #1, #2, #3 DOUBLE-TIE MOUNT AND PROPER NYLON TIES INSTALLATION**

HellermannTyton double-tie mounts mounting screw torque: **8 lbf-ft.**

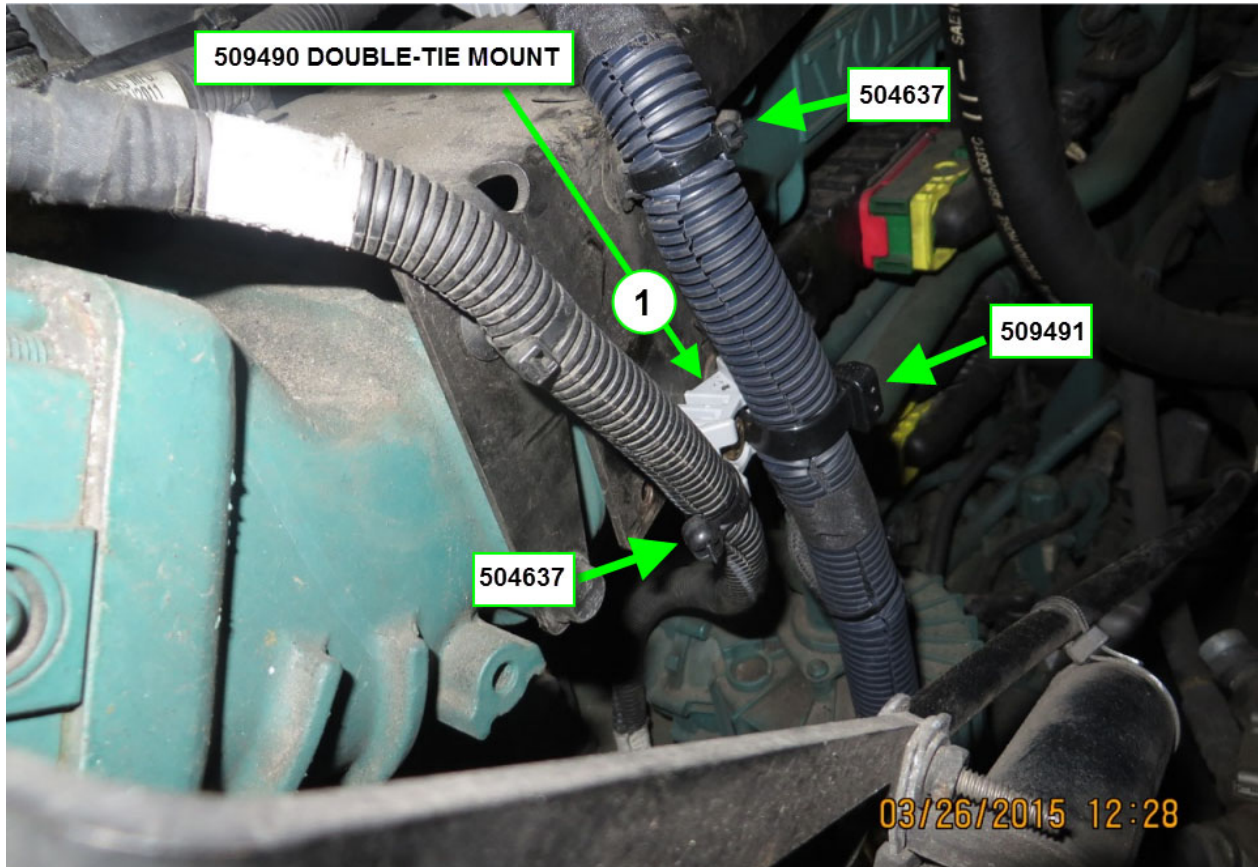


FIGURE 10: POWER CABLE ATTACHED TO #1 DOUBLE-TIE MOUNT AND PROPER NYLON TIES INSTALLATION

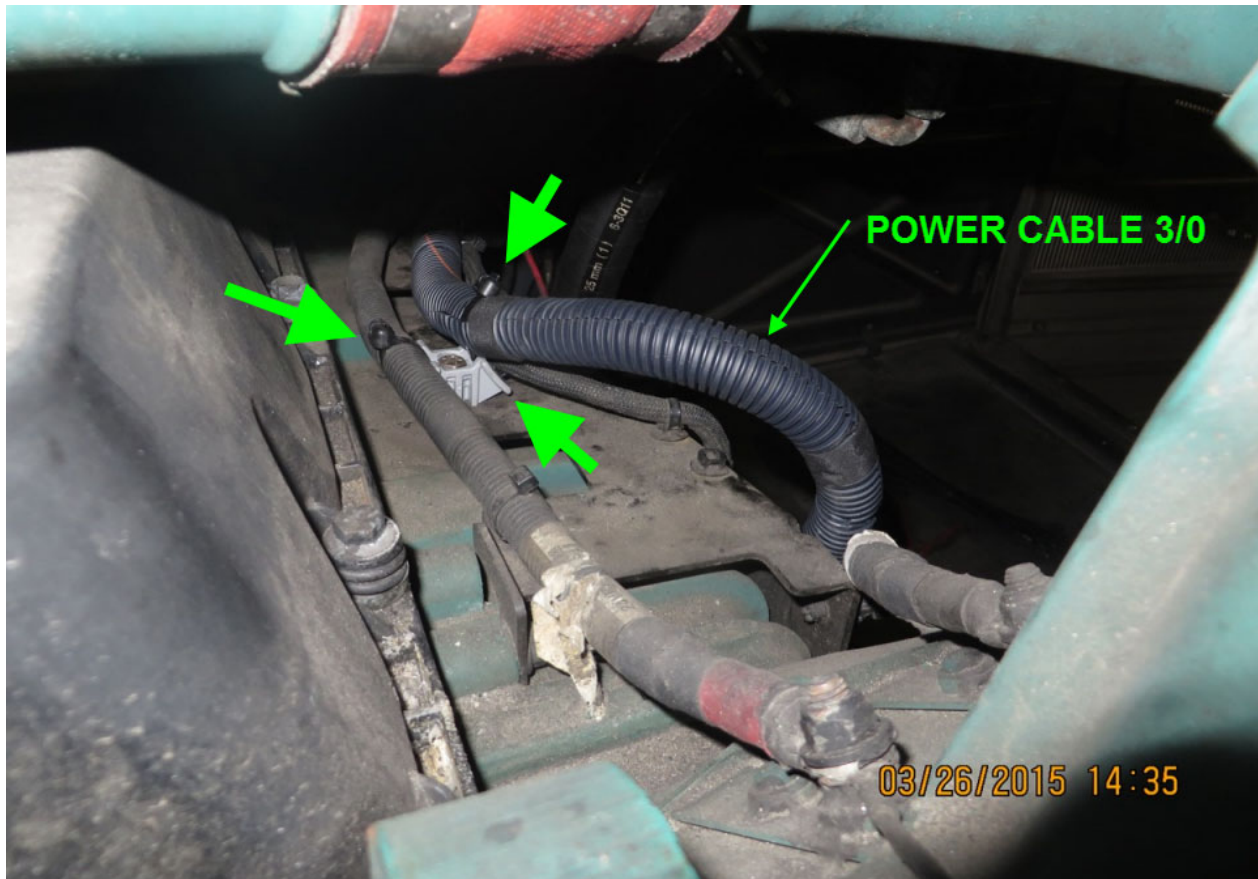


FIGURE 11: POWER CABLE ATTACHED TO #2 DOUBLE-TIE MOUNT AND PROPER NYLON TIES INSTALLATION



FIGURE 12: POWER CABLE ATTACHED TO #2 DOUBLE-TIE MOUNT AND PROPER NYLON TIES INSTALLATION

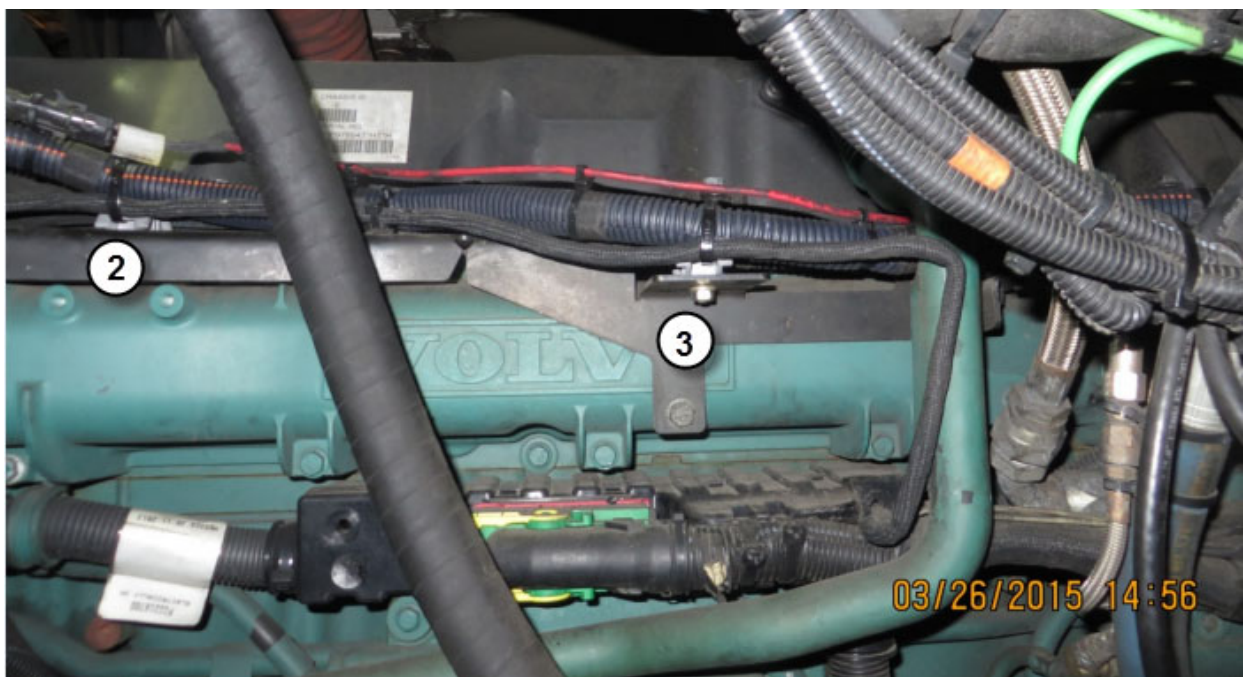
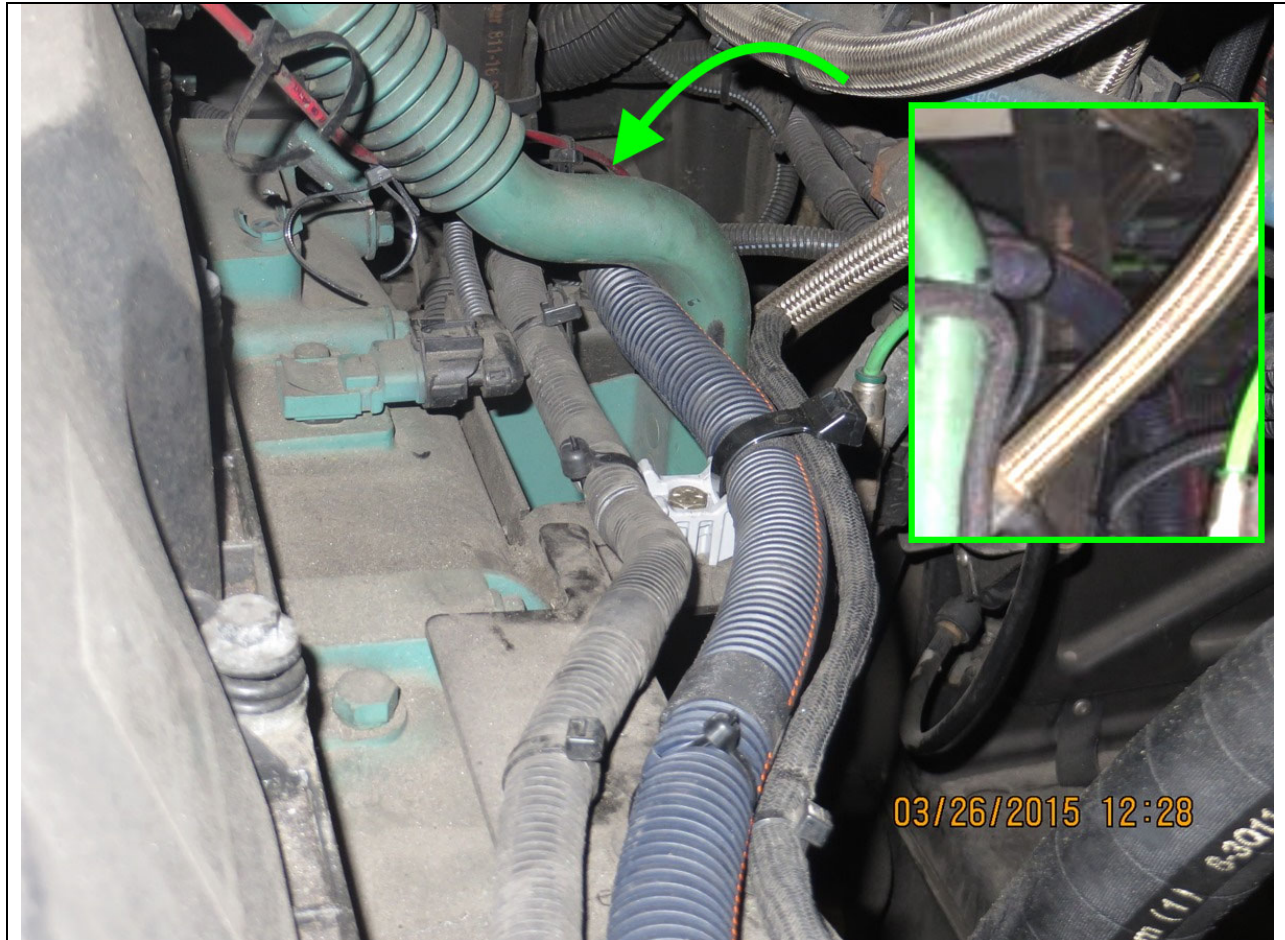
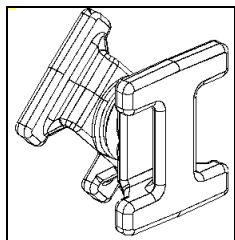


FIGURE 13: POWER CABLE ATTACHED TO #2, #3 DOUBLE-TIE MOUNT AND PROPER NYLON TIES INSTALLATION



**FIGURE 14: USING DOUBLE SWIVEL ANCHOR AND 2 WIDE NYLON TIES, SECURE THE POWER CABLE TO THE AIR COMPRESSOR INLET HOSE**



**DOUBLE SWIVEL ANCHOR**

9. Reinstall the LTD along the power cable using double-loop nylon ties #507664. For proper installation and location, refer to FIGURE 9 to FIGURE 13. You can also refer to the pictures of the production line standard installation; see FIGURE 15 to FIGURE 19 to do so.

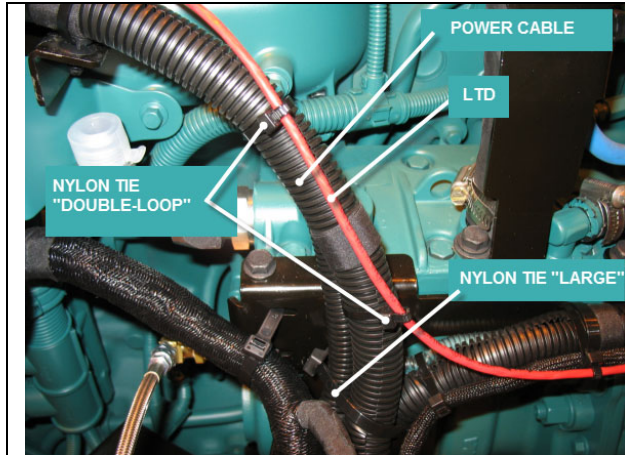


FIGURE 15

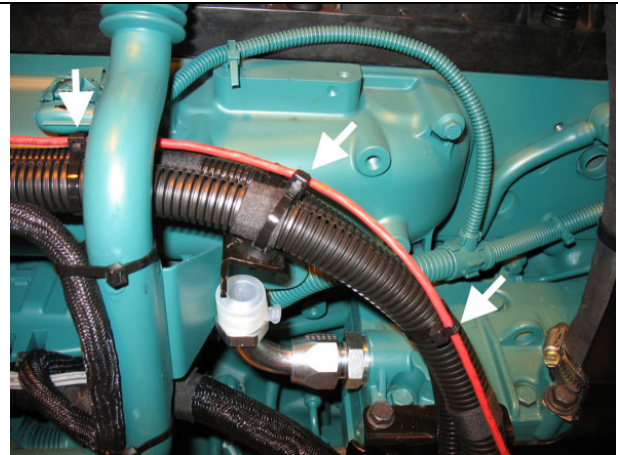


FIGURE 16

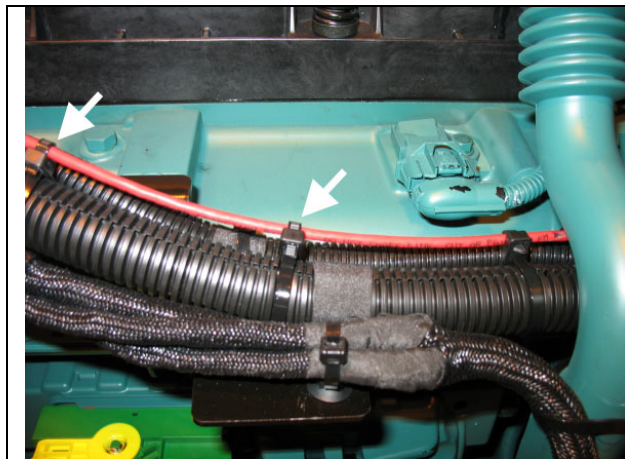


FIGURE 17

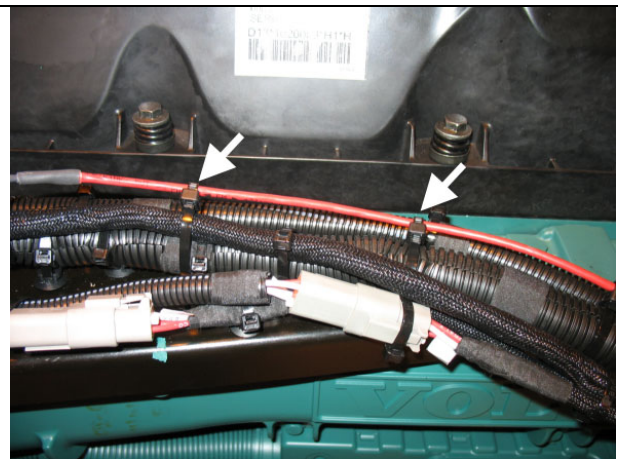


FIGURE 18



FIGURE 19

10. In order to assure proper installation, it is important to tighten the alternator mounting bolts in proper sequence. Use Loctite 243 blue on threads (FIGURE 20). Once properly torqued, apply yellow torque seal.

1<sup>st</sup> Bolt/Nut B, 43 lbf-ft (2x).

2<sup>nd</sup> Bolt/Nut C, 74 lbf-ft (2x).

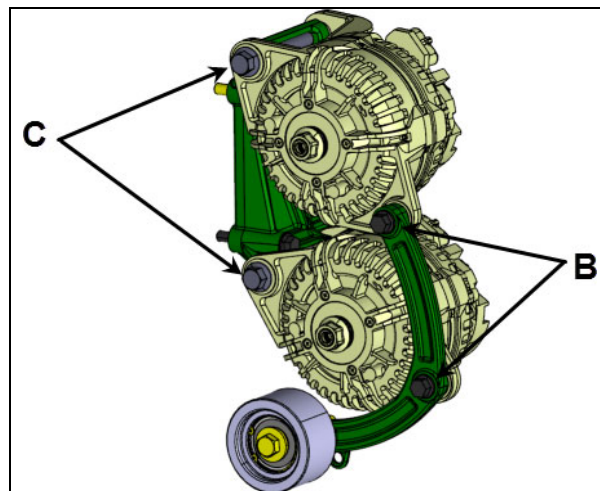
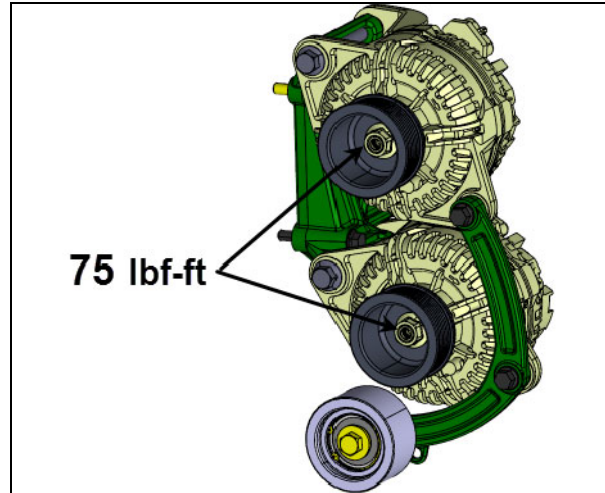


FIGURE 20

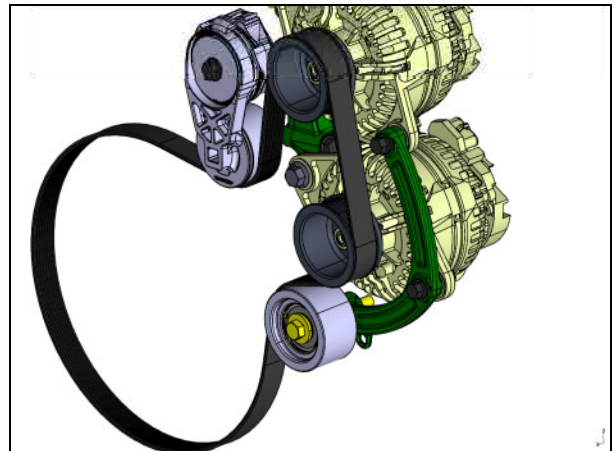
Date	Expiration	Release	Page
01.2015	01.2017	7	15(19)

11. Mount pulley onto alternators (**FIGURE 21**). Use Loctite 243 blue on threads. Tighten pulley mounting nut to **75 lbf-ft** using Prevost tool and a M10 12-points spline drive mounted on a torque wrench (refer to the end of this document for details concerning special tools). Once properly torqued, apply yellow torque seal.



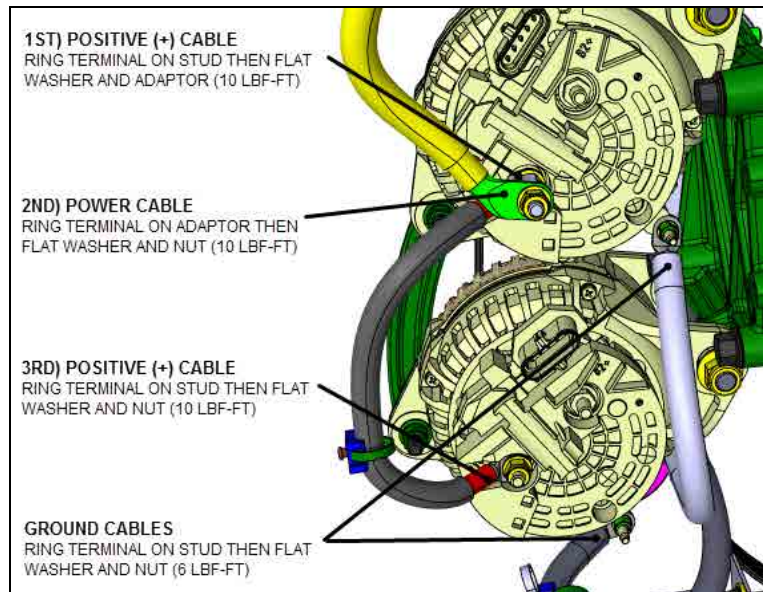
**FIGURE 21**

12. Install the alternator belt (**FIGURE 22**)



**FIGURE 22**

13. Cable connection overview. Upper and lower alternator (**FIGURE 23**).



**FIGURE 23**

## UPPER ALTERNATOR - (use new hardware for cable connection)

### 14. Power cable and jumper (positive) cable.

- Install jumper cable (a.k.a. positive cable) onto **B1+** stud terminal on upper alternator (FIGURE 24).
- Place one new flat washer #5001341 against the cable ring terminal (FIGURE 24).
- Screw and tighten the adapter stud #564590 (torque: 10 lbf-ft) (FIGURE 24) prior installing power cable.
- Fit the power cable terminal onto adaptor stud, place one new flat washer #5001341 against the power cable terminal and screw a new nut #5001787 (nut torque: 10 lbf-ft) (FIGURE 24).

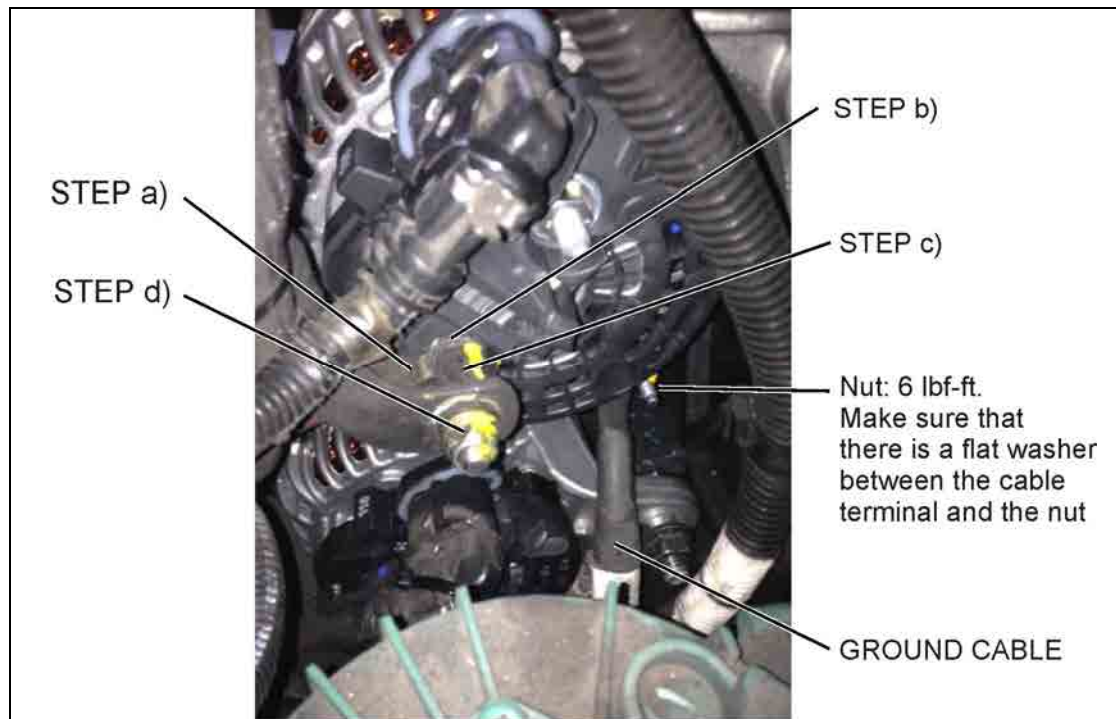


FIGURE 24

- Fit the ground cable onto the alternator ground stud, place one new flat washer #502573 against the ground cable terminal and screw a new nut #5001182 (nut torque: 6 lbf-ft) (FIGURE 24).
- Plug alternator harness onto alternator connector and secure using nylon cable ties (FIGURE 25).

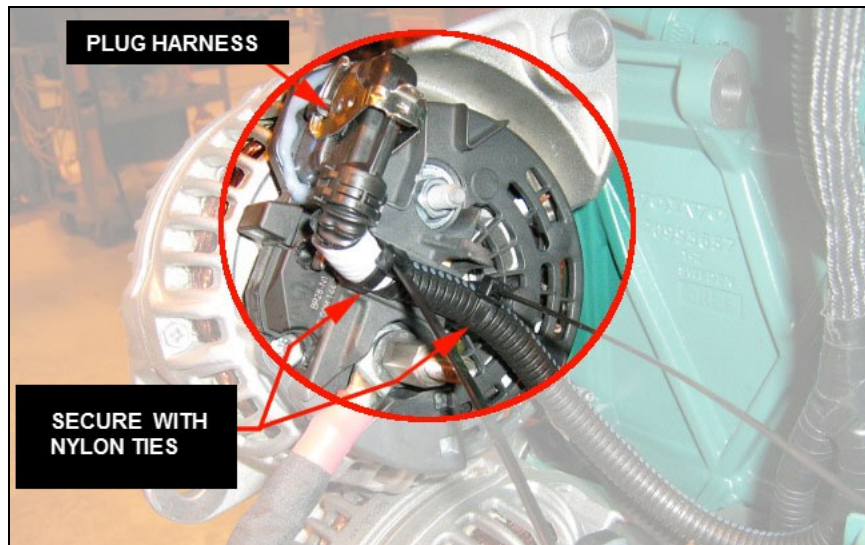


FIGURE 25

## LOWER ALTERNATOR - (use new hardware for cable connection)

### 17. Jumper (positive) cable.

- Fit jumper cable (positive cable) onto **B1+** stud terminal on lower alternator (FIGURE 26).
- Place one new flat washer #5001341 against the cable ring terminal and screw new nut #5001787 (nut torque: 10 lbf-ft) (FIGURE 26).
- Fit the ground cable onto the alternator ground stud, place one new flat washer #502573 against the ground cable ring terminal and screw a new nut #5001182 (nut torque: 6 lbf-ft) (FIGURE 26).

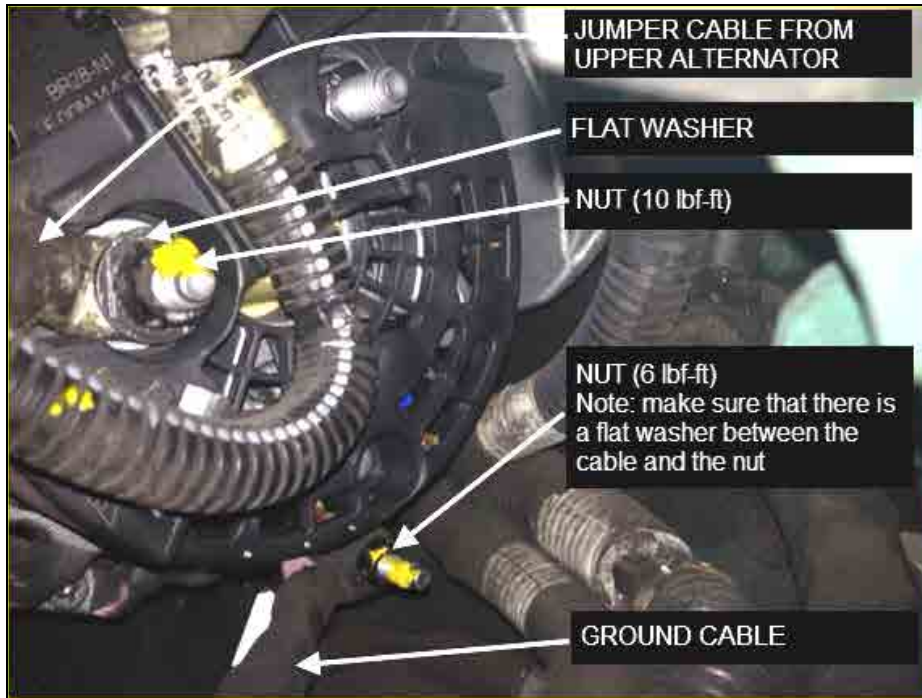


FIGURE 26

18. Plug lower alternator harness onto lower alternator connector and secure using two nylon cable ties #504637 (FIGURE 27).

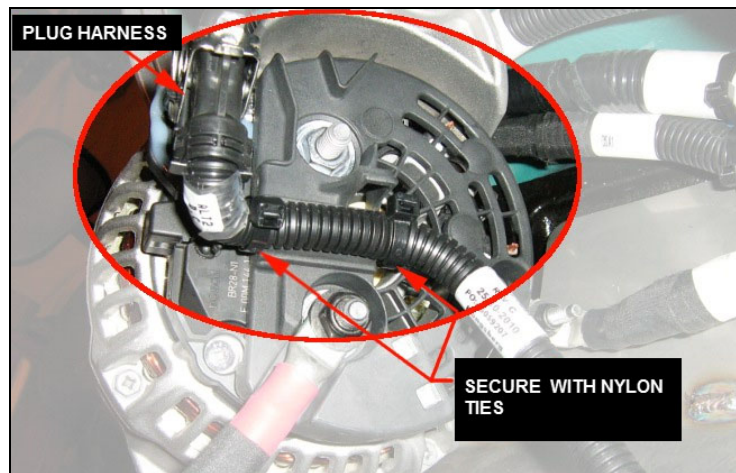


FIGURE 27

19. Apply torque seal according to normal procedure. Apply anti-corrosion compound on alternator terminals and cable ring terminals or use color guard rubber coating #684013 if available.
20. Reinstall the A/C compressor idler pulley bracket assembly (FIGURE 28). Apply Loctite 243 on threads. Reinstall the A/C compressor belts.
21. Finally, check that all cables are properly installed, start engine and check for proper functioning. Check for proper functioning of charging system.

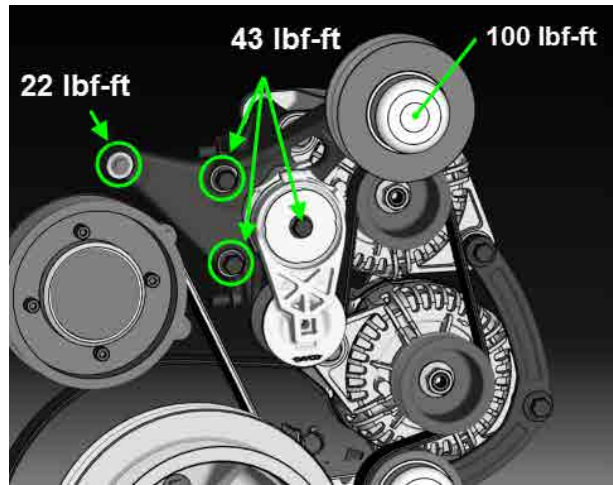


FIGURE 28

## PARTS / WASTE DISPOSAL

Discard waste according to applicable environmental regulations (Municipal/State[Prov.]/ Federal)

## ESTIMATED TIME

The time required to perform this special bulletin is approximately four (4.0) hours.

## OTHER

VBC Bulletin	N/A
Fail Code	06.01
Defect Code	09
System Condition	B
Causal Part	564119

Prevost engages in a continuous program of testing and evaluating to provide the best possible product. Prevost, however, is not committed to, or liable for updating existing products.