

April 2011
FL590A
NHTSA #11V-110
Transport Canada #11-076

Work Instructions

Subject: EPA 2010 Cummins ISX Engine Alternator Cables

Models Affected: Specific Freightliner Cascadia and Coronado vehicles and Western Star 4900 vehicles manufactured with Cummins ISX EPA 2010 engines April 22, 2010, through January 28, 2011.

How to Handle Possible Additional Parts

- **Alternator Cables** - If an alternator cable is found to be damaged when inspected, it may be replaced. *In Legacy*, replace without additional authorization when the reason is included in the claim story. *In OWL*, submit as a recall pre-approval with the reason in the story.
- **Cable Clamps** - In a few cases, additional clamps may be needed. *In Legacy*, claim part number 23-13322-008 without additional authorization when the reason is included in the claim story. *In OWL*, submit as a recall pre-approval with part number 23-13322-008 claimed and the reason in the story.
- **Cable/Wire Ties** - When more ties than are included in the recall kit are needed, they may be claimed without additional authorization in both Legacy and OWL.

Rerouting and Inspection Procedure

1. Check the base label (Form WAR259) for a completion sticker for FL590 (Form WAR260) indicating this work has been done. The base label is usually located on the passenger-side door about 12 inches (30 cm) below the door latch. If a sticker is present, nothing further needs to be done. If there is no sticker, proceed with step 3 below.
2. Disconnect the main batteries at the negative terminals.
3. If the vehicle is equipped with a ParkSmart™ system, disconnect the auxiliary batteries at the negative terminals.
4. Open the hood.
5. Remove the wire-ties for the remote sense wire harnesses up to and including the first charging cable standoff at the rear of the alternator. See **Fig. 1**.
6. Remove the charging cable standoff and install the 5/16-inch ID rubber hose on the stud.
7. Inspect the charging cable for heat damage. Repair or replace the cable or convoluted tubing, if there is evidence of heat damage.
8. Disconnect the positive and negative leads from the alternator. See **Fig. 1**.
9. Clean the connection points on the alternator and cable terminals as needed.

NOTICE

Place a shop towel over the alternator to prevent metal fragments from entering the alternator while drilling the hole in the standoff bracket. Allowing metal fragments into the alternator could cause damage to the alternator.

10. Drill out the existing hole in the standoff bracket to about 11/32 inch, to accommodate a 5/16 inch bolt. See **Fig. 2**.
11. Using parts from the kit, install a 5/16 x 1-1/4 inch full-threaded bolt (23-10744-125) in the hole and secure it with a prevailing-torque lock nut (23-09900-105).

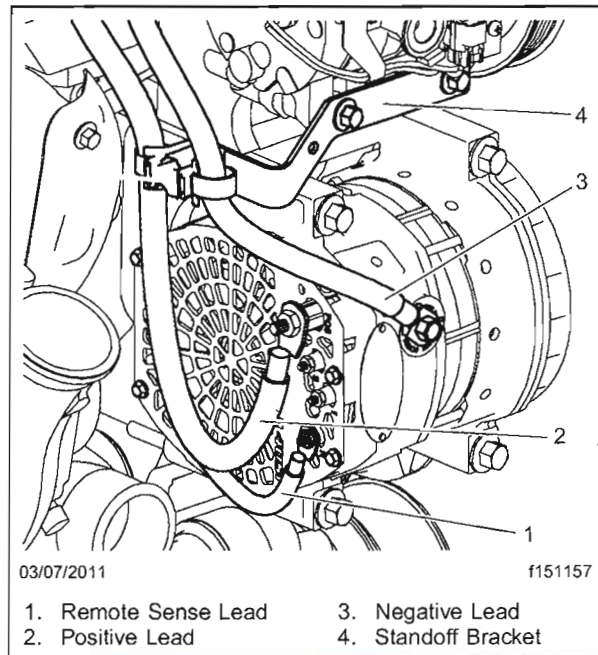


Fig. 1, Original Harness Installation

12. Reroute the harnesses as shown in **Fig. 3**, making sure that they do not rub on any adjacent components, and are at least three inches (eight cm) from the exhaust manifold heat shield.
13. Connect the positive and negative leads to the alternator. Do not tighten the fasteners at this time.
14. Install a new dual standoff clamp from the kit (23-13322-008) loosely onto the charging cables where they are routed at the bolt installed in step 12.
15. Verify that the installation is not rubbing on any adjacent components, then secure the wire harnesses as shown in **Fig. 3**.
16. Trim off the excess-length material from the wire ties.
17. Tighten the positive and negative leads to the alternator. See **Table 3** for the correct torque values for each of the different alternators.

Alternator, Terminal Fastener Torque			
Brand	Description	Size	Torque: lbf-in (N-cm)
Delco Remy	Output ("BAT") Terminal Hexnut	5/16-18	100 (1140)
	Ground ("GND") Terminal Hexnut or Capscrew	1/4-20	50 to 60 (565 to 675)
		5/16-18	60 to 90 (675 to 1016)
	Terminal Hexnut	10-24	20 (220)
Leece Neville	Output ("BAT") Terminal Hexnut	5/16-24	100 (1140)
	Ground ("GND") Terminal Hexnut	1/4-28	75 to 80 (850 to 900)
	Remote Sense Terminal or Lamp Driver	M5 x 0.8	25 to 30 (280 to 330)

Table 3, Alternator Terminal Fastener Torque

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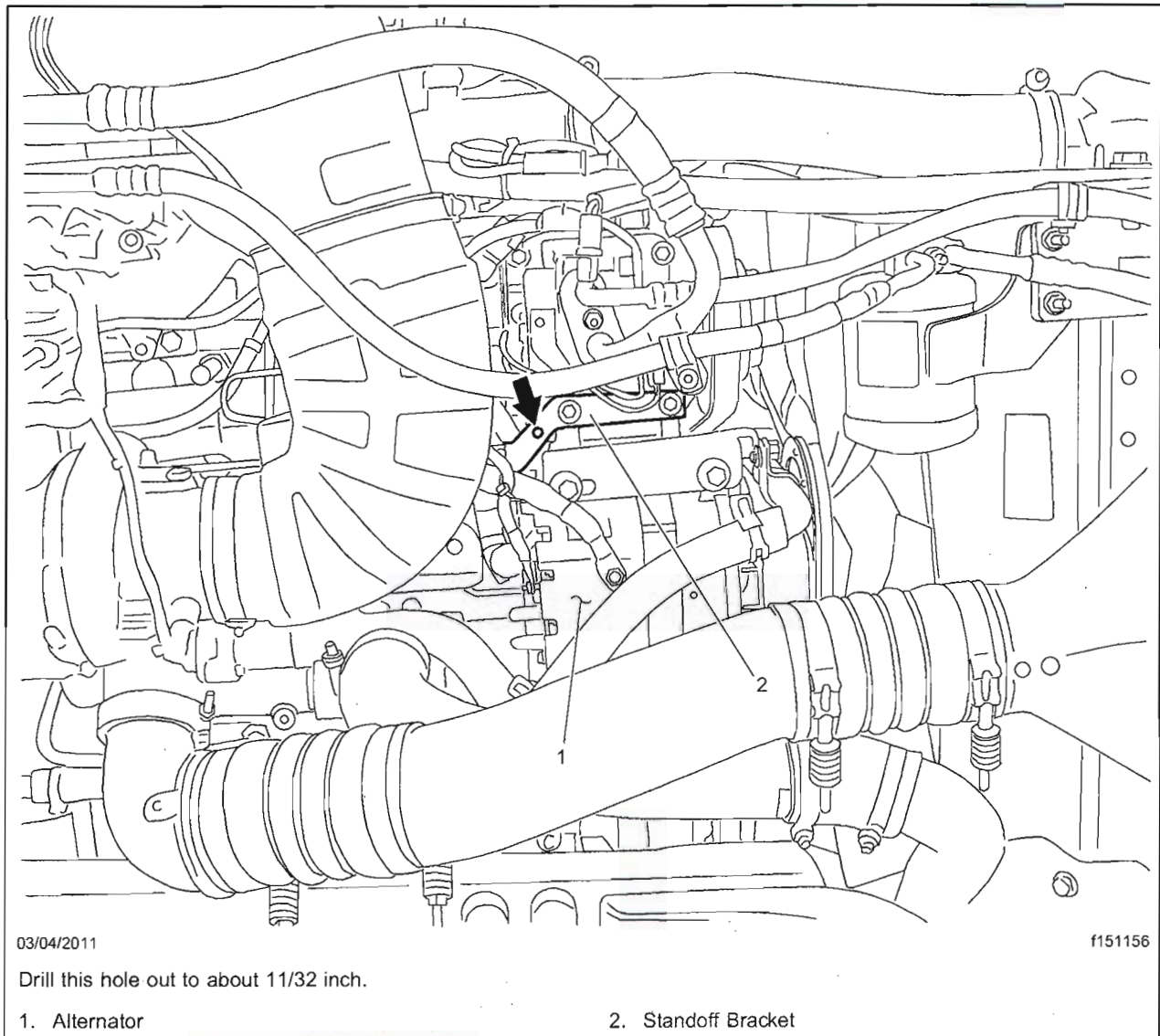
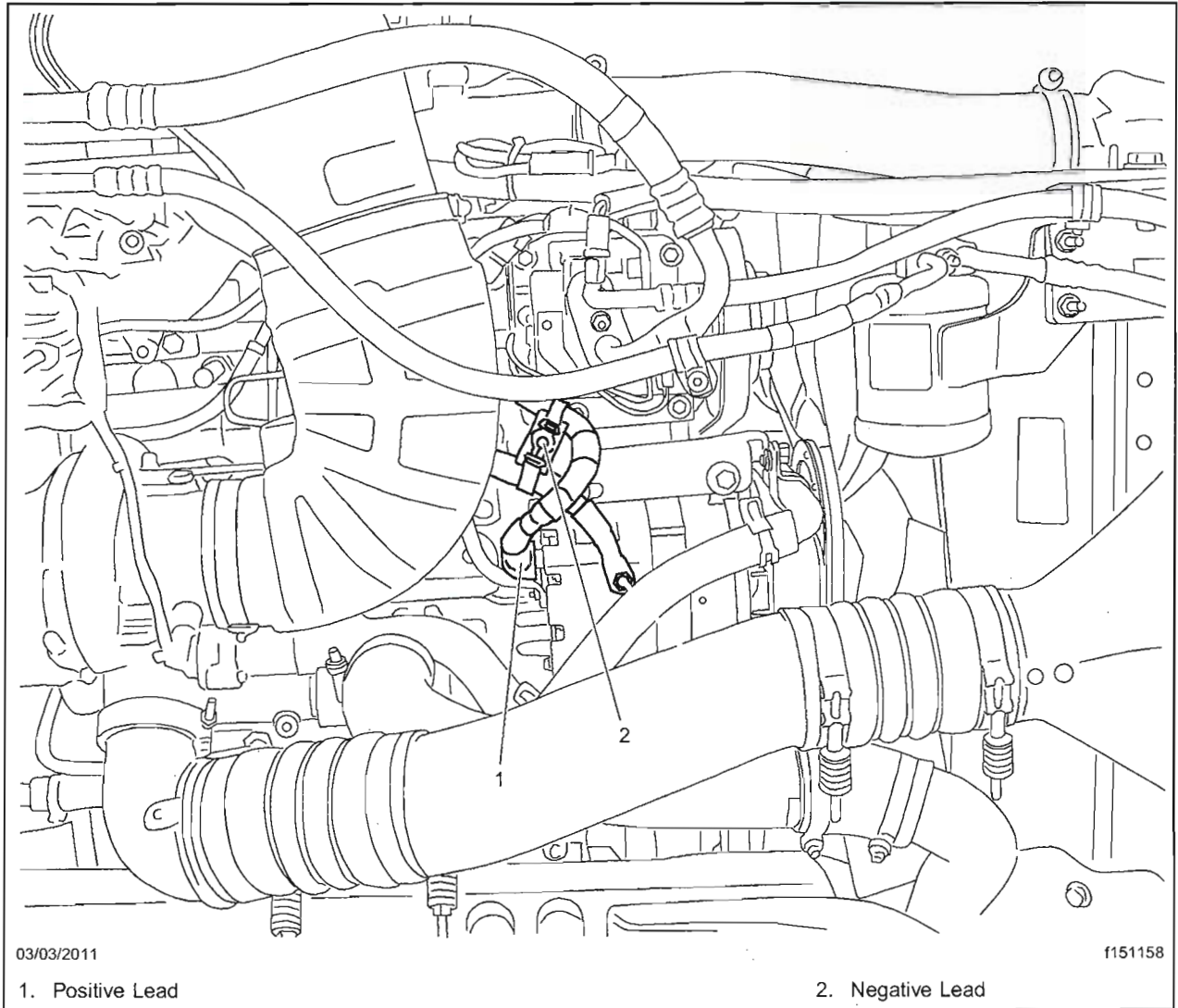


Fig. 2, Drilling Out the Hole

18. Replace any other wire ties that were removed.
19. Inspect the charging cable routing from the alternator to the starter. Both charging cables must be routed and secured inside the dual standoff clamps along the routing. If either of the cables is not routed inside the dual standoff clamps, replace the clamps as needed, and route the charging cables inside a new dual standoff clamp (23-13322-008, additional clamps are not in the recall kit). See Fig. 4.



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1. Positive Lead

2. Negative Lead

Fig. 3, New Harness Installation

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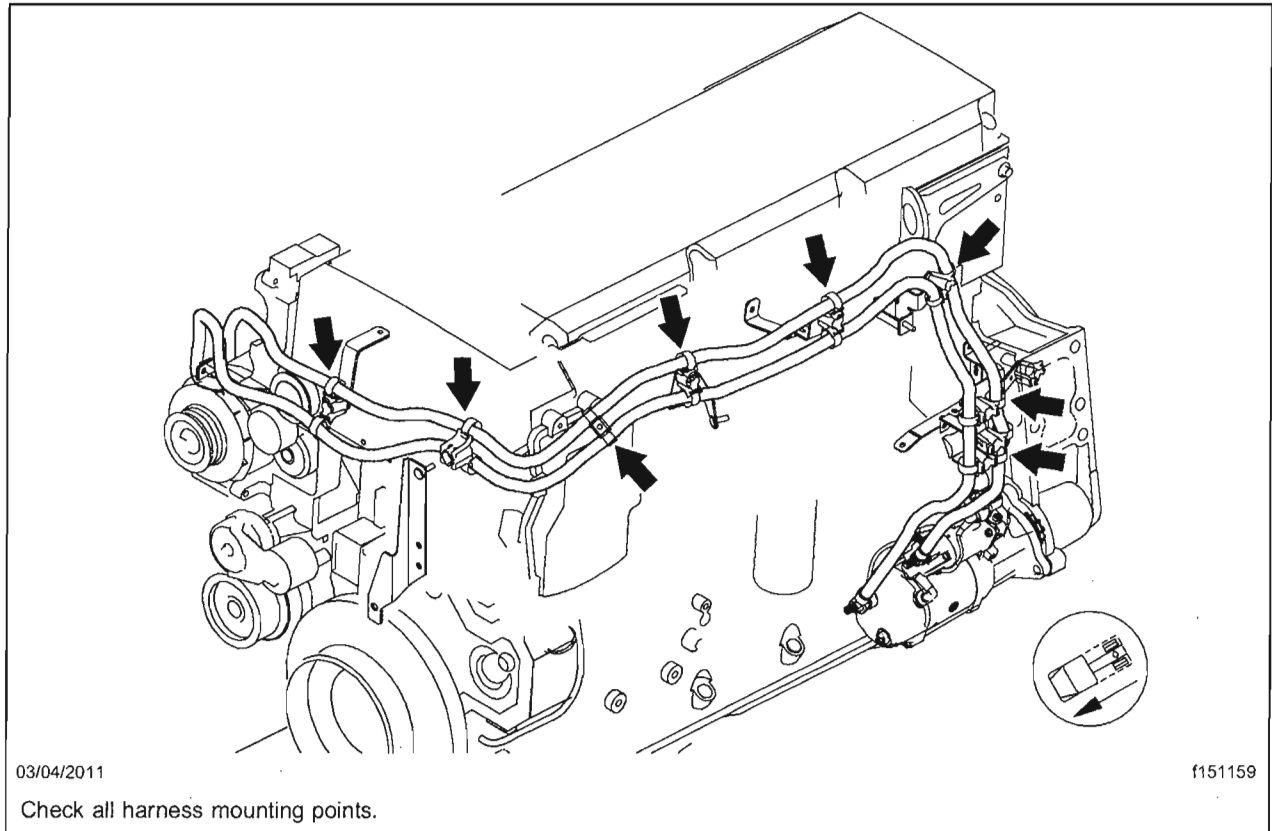


Fig. 4, Harness Installation Inspection

20. Connect the batteries.
21. Clean a spot on the base label (Form WAR259) and attach a completion sticker for FL590 (Form WAR260) to the base label.