



VEHICLE FACTORS ATTACHMENT

Service Procedure G-05514-R2

Teutopolis, IL

HWY23MH017

(19 pages)

SERVICE PROCEDURE

G-05514-R2
February 2006

**SUBJECT: SAFETY RECALL (U.S., EXPORT)
BATTERY CABLES on 9000 models built 4/1/2002
thru 6/15/2005**

REVISION DESCRIPTION

PARTS INFORMATION

- Added engine block to starter ground cable.

SERVICE PROCEDURE

- Added the FINAL INSPECTION to the ***INSPECTION/REPLACEMENT PROCEDURE TABLE***.
- Modified Step 5.
- Added **NOTE** below ***SADDLE CLAMP INSTALLATION***.
- Modified ***Caterpillar® Engine Warning***
 - Added **NOTE** below Figure 7.
 - Re-worded clocking step.
- Added **Figure 8a**.
- Added ***FINAL INSPECTION***.

DEFECT DESCRIPTION

The positive battery cable between the batteries and the starter may rub against an electrical ground cable between the starter and frame rail possibly causing an electrical short and/or fire. This may result in **property damage, personal injury or death**.

MODELS INVOLVED

This Safety Recall involves 9000 models built at the Chatham, Ontario manufacturing facility 4/1/2002 thru 6/15/2005 and 9000 models built at the Escobedo, Mexico manufacturing facility 4/1/2002 thru 5/25/2004.

PARTS INFORMATION

The parts that may be required for this recall are:

Part Number	Part Description	Quantity
3554554C1	GUIDE,BRK HOSE & CABLE*SWIVEL	1 per vehicle AS REQ'D PER INSPECTION
306132C1	STRAP,CABLE LOCK	2 per vehicle AS REQ'D PER INSPECTION
AS PER LINESET TICKET	BATTERY TO STARTER CABLE, POSITIVE	AS REQ'D PER INSPECTION
AS PER LINESET TICKET	STARTER TO FRAME CABLE, GROUND	AS REQ'D PER INSPECTION
AS PER LINESET TICKET	STARTER TO ENGINE CABLE, GROUND	AS REQ'D PER INSPECTION
AS PER LINESET TICKET	CONDUIT	AS REQ'D PER INSPECTION

Destroy and discard all removed parts locally.

SERVICE PROCEDURE



WARNING:

TO PREVENT SERIOUS EYE INJURY, ALWAYS WEAR SAFE EYE PROTECTION WHEN YOU PERFORM VEHICLE MAINTENANCE OR SERVICE.



WARNING:

TO PREVENT UNEXPECTED MOVEMENT OF THE VEHICLE AND POSSIBLE SERIOUS PERSONAL INJURY OR DEATH, BLOCK THE WHEELS TO PREVENT THE VEHICLE FROM MOVING IN BOTH DIRECTIONS.

INSPECTION/REPLACEMENT PROCEDURE TABLE

Please refer to Table 1 to determine which procedure to follow regarding battery cable gap measurement, battery cable inspection and saddle clamp installation.

<i>Engine Configuration</i>	<i>Procedures Required to be Performed</i>
Caterpillar, Cummins ISX, Cummins ISM, w/o Fuel Filter	Battery Cable GAP Measurement <i>(required)</i> Battery Cable Inspection <i>(if necessary)</i> Saddle Clamp Installation <i>(if necessary)</i> FINAL INSPECTION <i>(required)</i>
Cummins ISM, w/Fuel Filter	Battery Cable Inspection <i>(required)</i> Saddle Clamp Installation <i>(required)</i> FINAL INSPECTION <i>(required)</i>

Table 1 – Engine Configuration based Service Procedure

NOTE: A Cummins ISM w/Gear Pump Mounted Fuel Filter will ALWAYS require the SADDLE CLAMP INSTALLATION.

BATTERY CABLE GAP MEASUREMENT

You may wish to cut a wooden, bulk hose, or cardboard template to perform subsequent measurements. Template should be 1.5 inches (38mm) long.

DO NOT USE A METALLIC MEASURING DEVICE

1. For Cummins ISM w/ fuel filter, do not perform the gap measurement, skip to the **BATTERY CABLE INSPECTION PROCEDURE**.
2. For Caterpillar, Cummins ISX, and Cummins ISM w/o fuel filter, perform the following gap measurement.
3. Measure the smallest gap between the positive cable's conduit and the closest point to the negative cable bolted to the frame rail. See Figure 1.

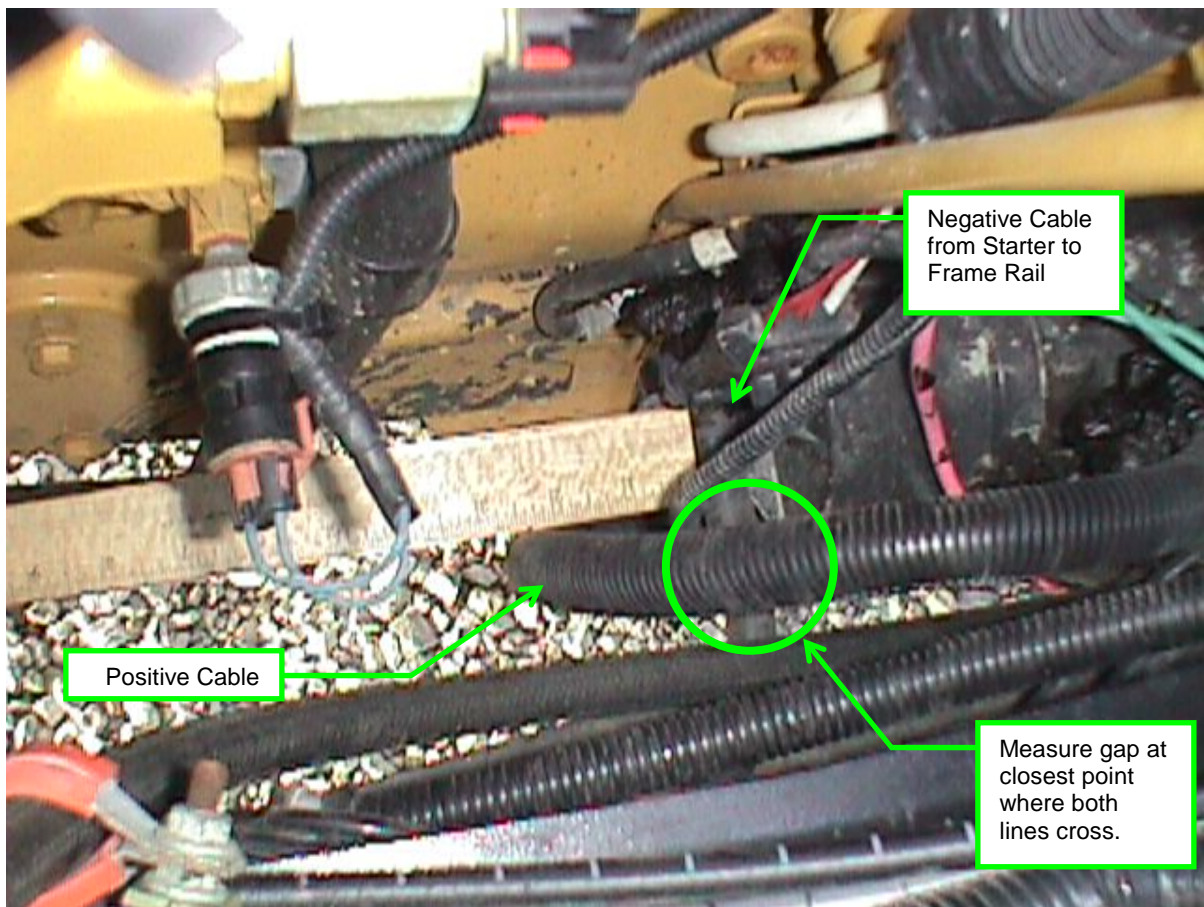


Figure 1 – Gap Measurement

4. If the smallest gap is less than 1.5 inches (38mm) continue on to **BATTERY CABLE INSPECTION PROCEDURE.**

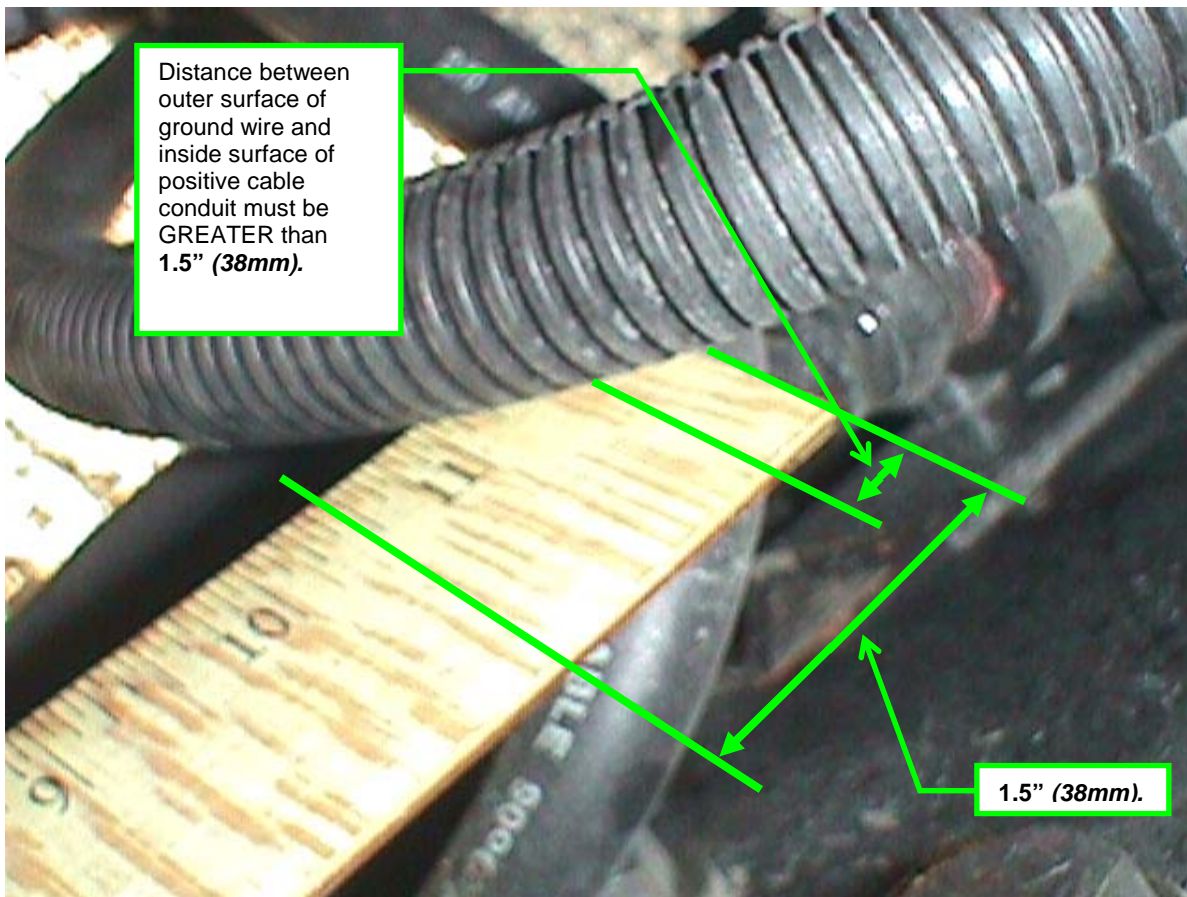


Figure 2 – Saddle Clamp Installation REQUIRED

5. If the smallest gap is 1.5 inches (38mm) or LARGER, then no saddle clamp installation is necessary, skip to **FINAL INSPECTION**.

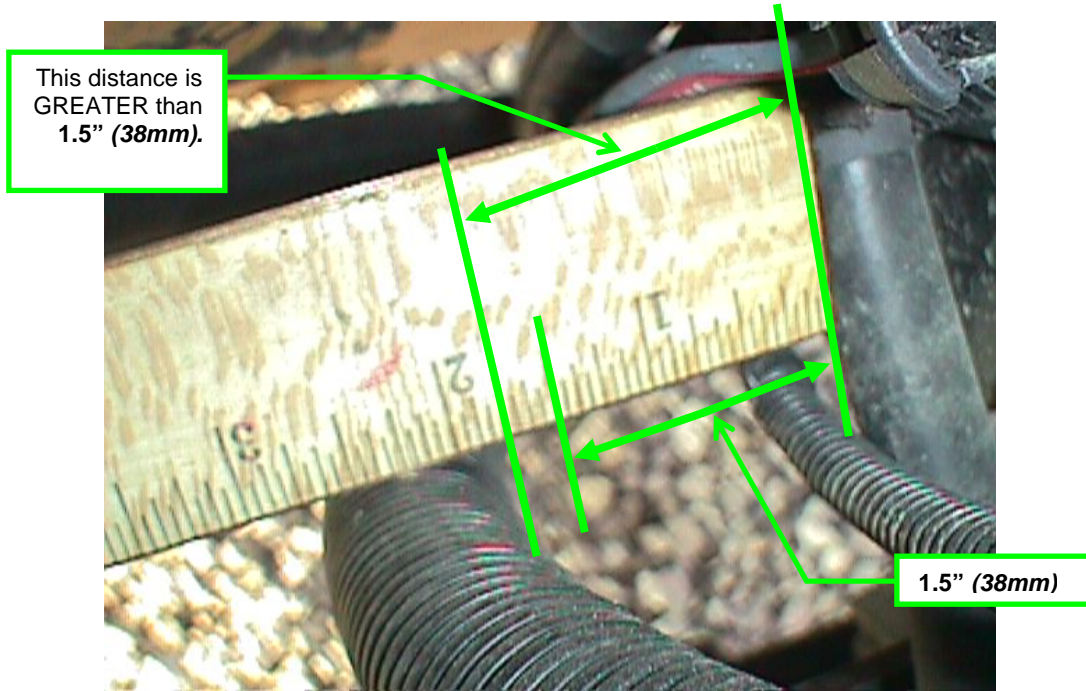


Figure 3 – No Saddle Clamp Necessary – Skip to FINAL INSPECTION

BATTERY CABLE INSPECTION PROCEDURE

6. For ALL suspect vehicles, if the gap measured above is less than 1.5 inches (38mm), perform the following battery cable inspection procedure.
7. Inspect positive (red) battery cables, conduit and ground cable (black) in areas indicated below:

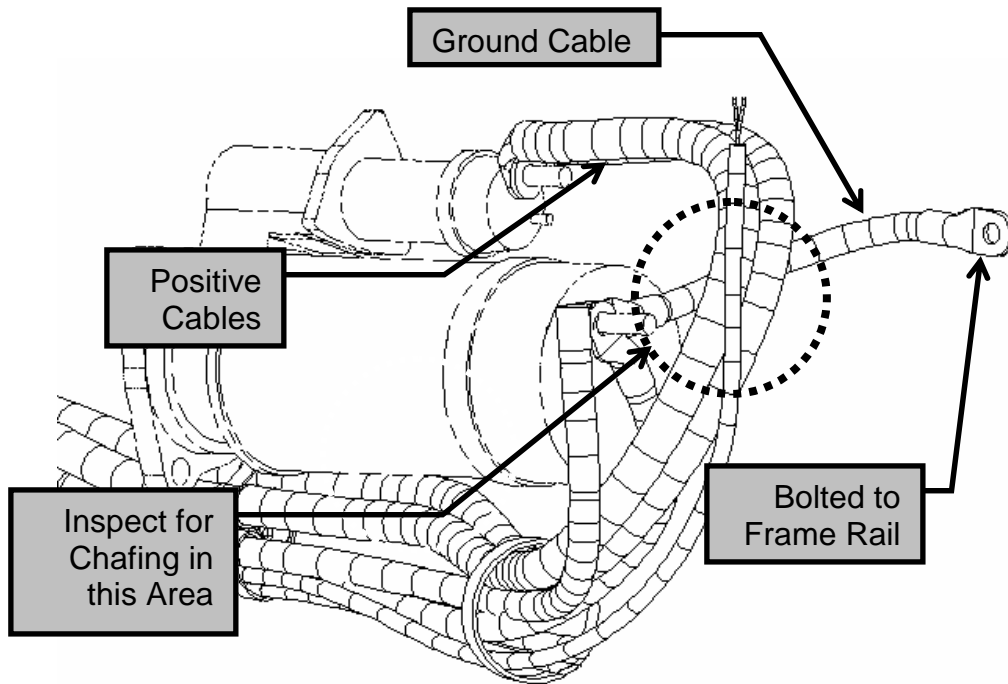


Figure 4 – Engine Removed for Clarity

8. If ANY indication of chafing or rubbing is evident, replace any affected cables and continue to step 11.
9. If there is NO indication of chafing or rubbing, continue on to **SADDLE CLAMP INSTALLATION**.

SADDLE CLAMP INSTALLATION

NOTE: Before installing the saddle clamp, ensure the battery cable conduit has not fallen past where the saddle clamp will be installed.

Reposition or replace the conduit as necessary.

Install the saddle clamp and strap-locks over the conduit on the battery cables.

10. For Caterpillar, Cummins ISX, and Cummins ISM (w/o fuel filter), see Figure 5.

11. Install saddle clamp and strap-locks as indicated below:

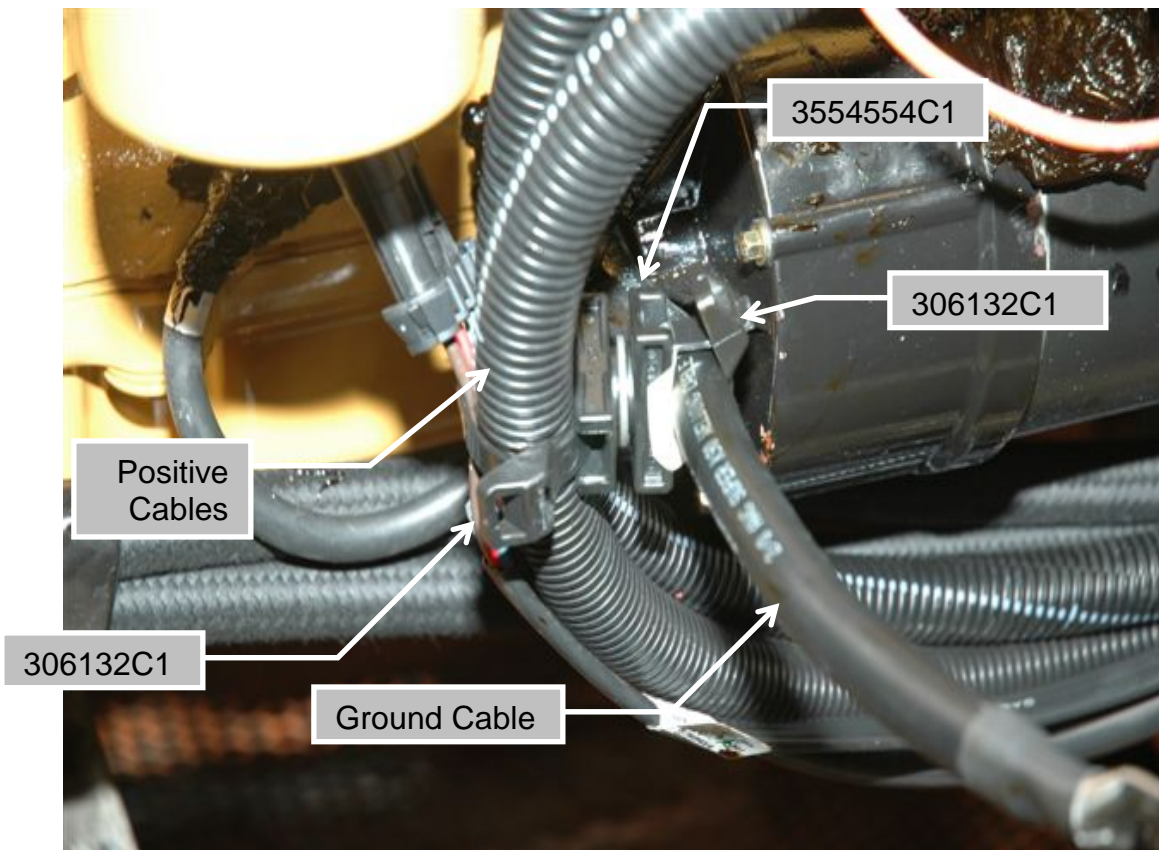


Figure 5 – w/o fuel filter

12. For Cummins ISM engines with fuel filter please see Figure 6.

13. Install saddle clamp and strap locks as indicated below.

14. Re-route battery cables between the fuel filter and engine block.

NOTE: Ensure battery cables do not touch fuel filter assembly or fittings.

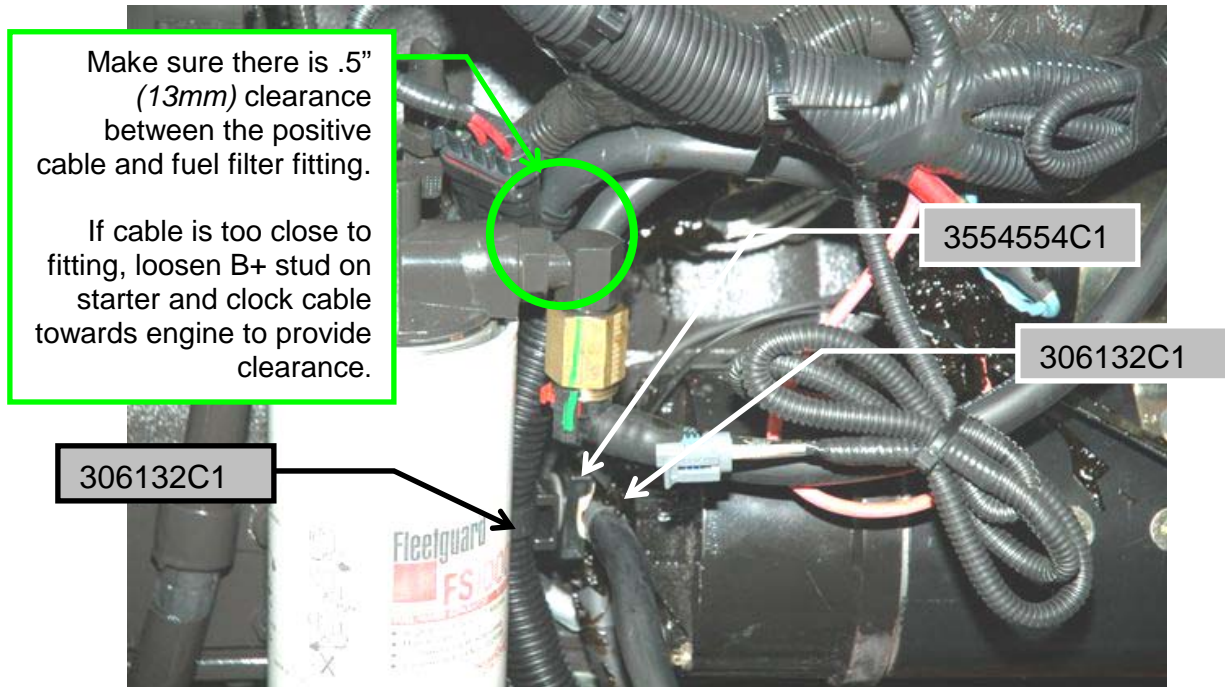


Figure 6 – Cummins ISM w/Fuel Filter

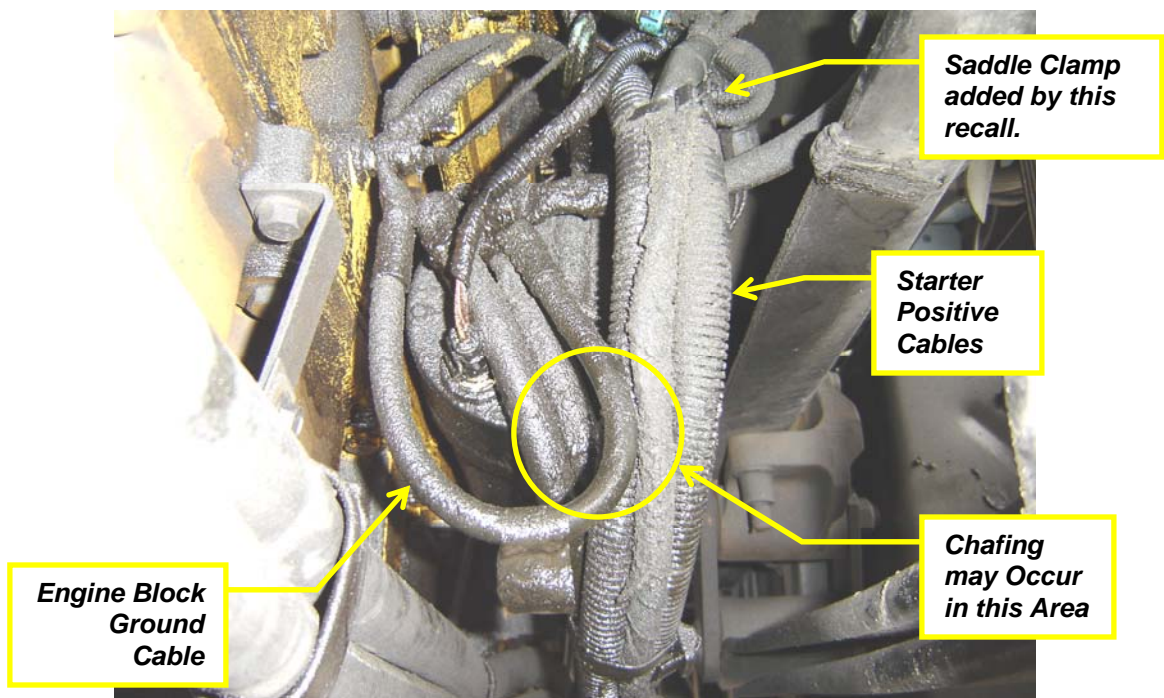
Caterpillar Engine Warning

- After performing this recall on vehicles with Caterpillar engines, please inspect the routing of the ENGINE BLOCK ground cable.



IMPORTANT:

TO PREVENT CHAFING OF THE POSITIVE CABLES AGAINST THE ENGINE BLOCK GROUND CABLE (SEE FIGURE 7), PLEASE ENSURE ENGINE BLOCK GROUND CABLE IS CLOCKED IN THE DOWNWARD (6 O'CLOCK) POSITION, SEE FIGURE 8.



**Figure 7 --
Chafing may occur between Engine Block Ground and Newly Located Positive cables.**

NOTE: *If NO rubbing or chafing is present between CAT ENGINE GROUND cable and battery cables, NO re-clocking is necessary.*

- ***If rubbing or chafing of the ENGINE GROUND cable against the Battery Cables is present, rotate and tighten the new ground cable on the starter terminal so it is straight down (6 o'clock position) and not contacting the starter positive cables, see figure 8.***

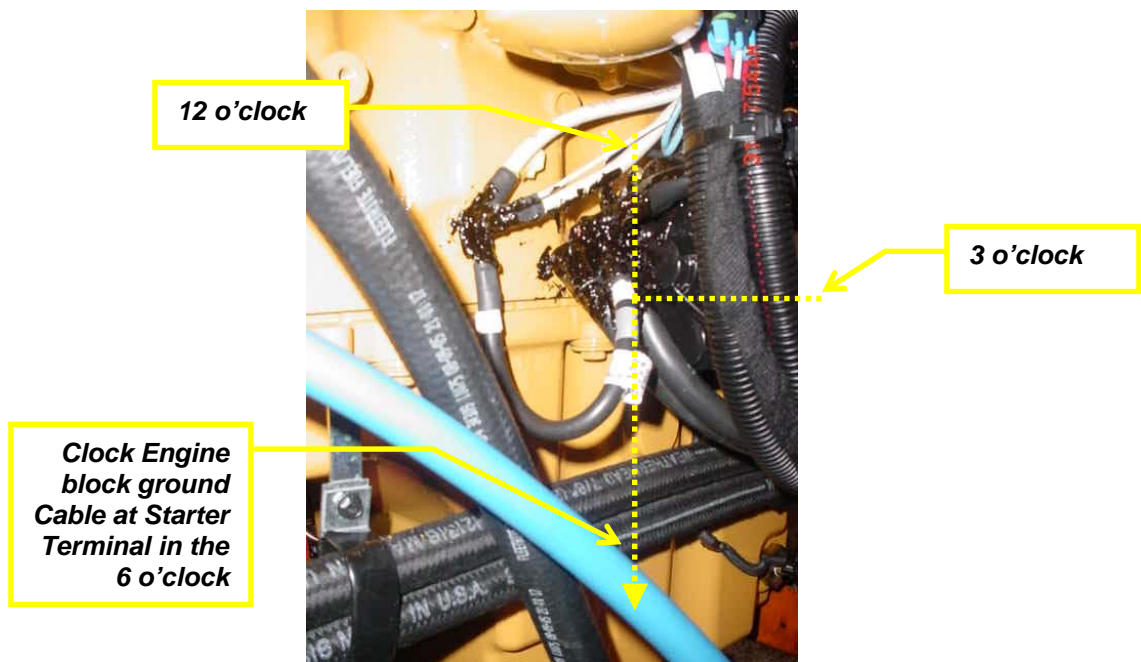


Figure 8 – Correct CAT (non-C15) engine block ground cable routing.

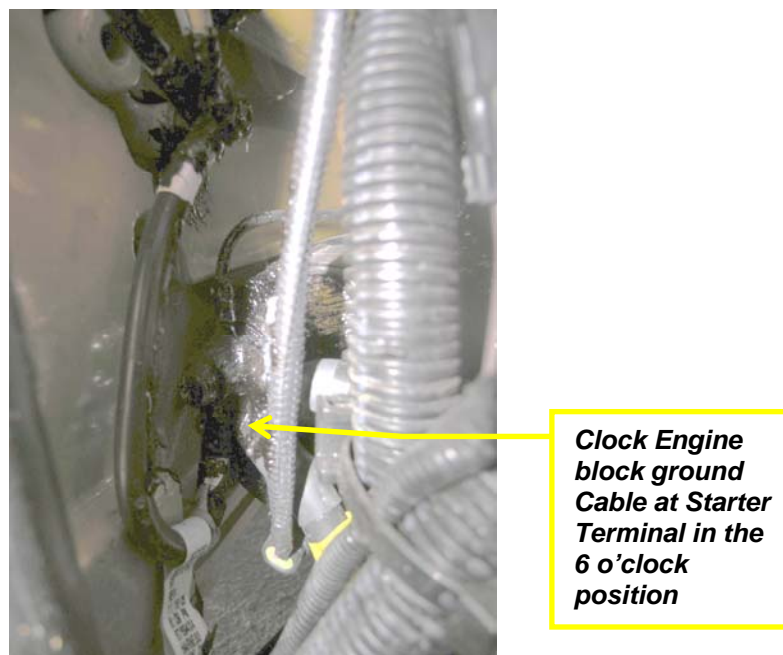


Figure 8a – Correct CAT C15 engine block ground cable routing.

FINAL INSPECTION

- Regardless of whether or not the saddle clamp was installed, please perform this final inspection on **all** vehicles to ensure the electrical cables are properly routed.
- Please inspect the starter electrical cable routing for rubbing or chafing in the following areas:
 - Battery Cables to frame rail.
 - Battery Cables to FRAME ground cable.
 - Battery Cables to ENGINE BLOCK ground cable .
 - Battery Cables to starter case, starter terminal studs or other starter components and wiring.
 - Battery Positive Cable to BATTERY ground cable.
 - Battery Positive Cable to FUEL FILTER housing.
- It may be necessary to loosen and/or remove a battery cable to re-orient it.
- It may also be necessary to loosen/replace routing/clipping points (p-clamps, extension clips, etc...) to facilitate a no-rub condition.
- See figures below for a representation of rub conditions that require remedied.

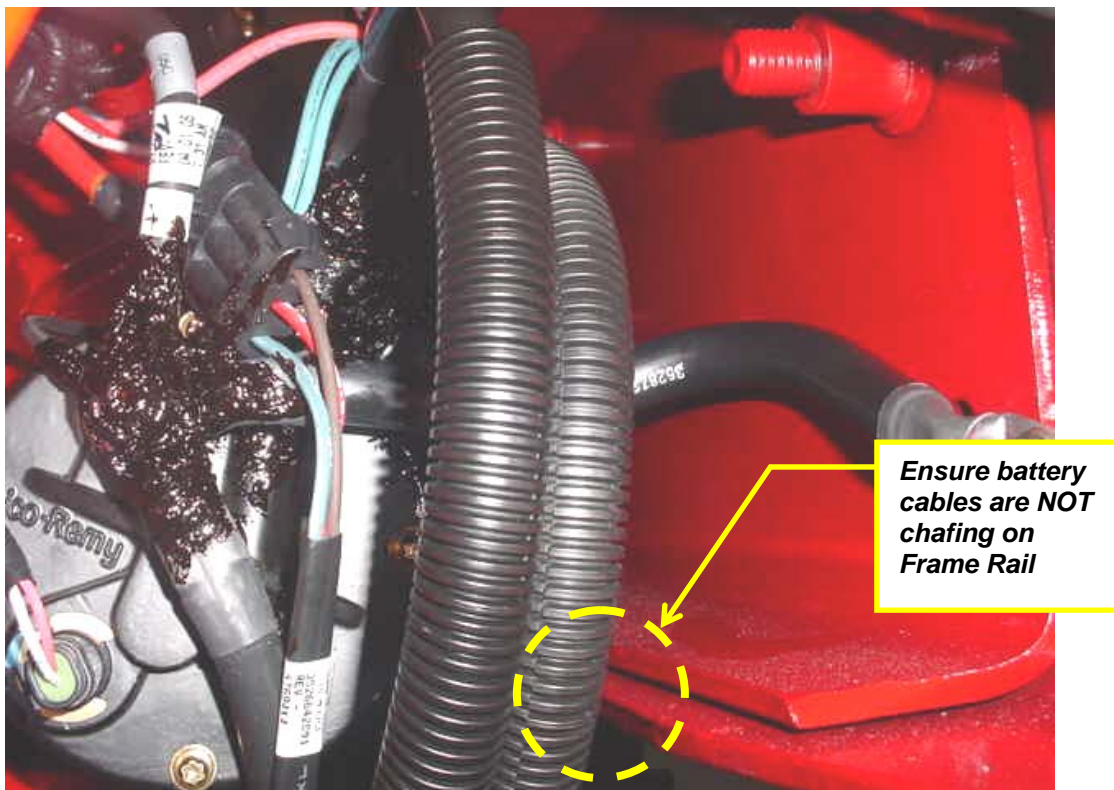


Figure 9 – Battery Cables to frame rail rub

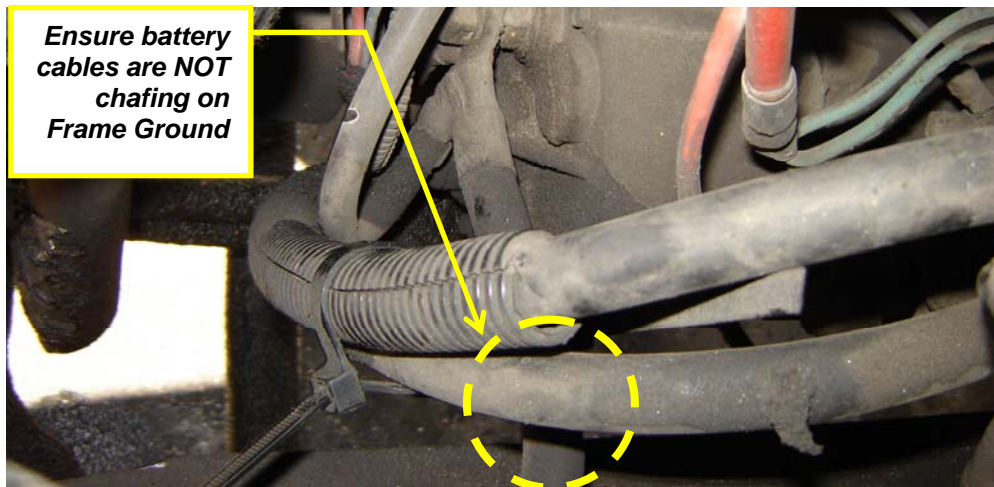


Figure 9a – Battery Cables to FRAME GROUND rub

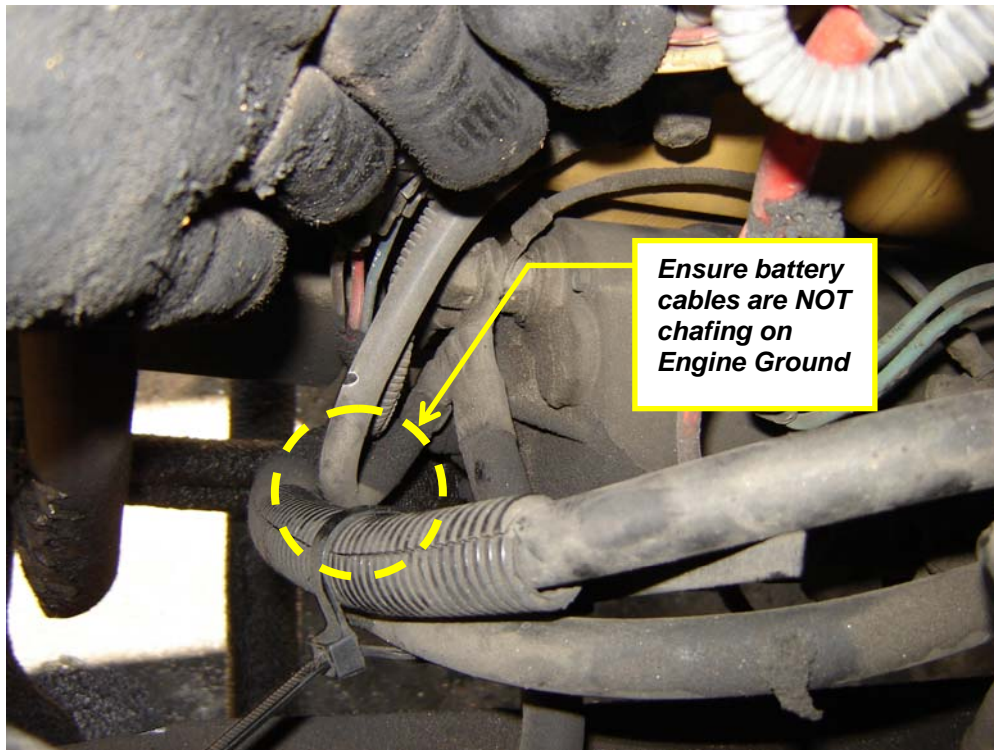


Figure 9b- Battery Cables to ENGINE BLOCK GROUND rub

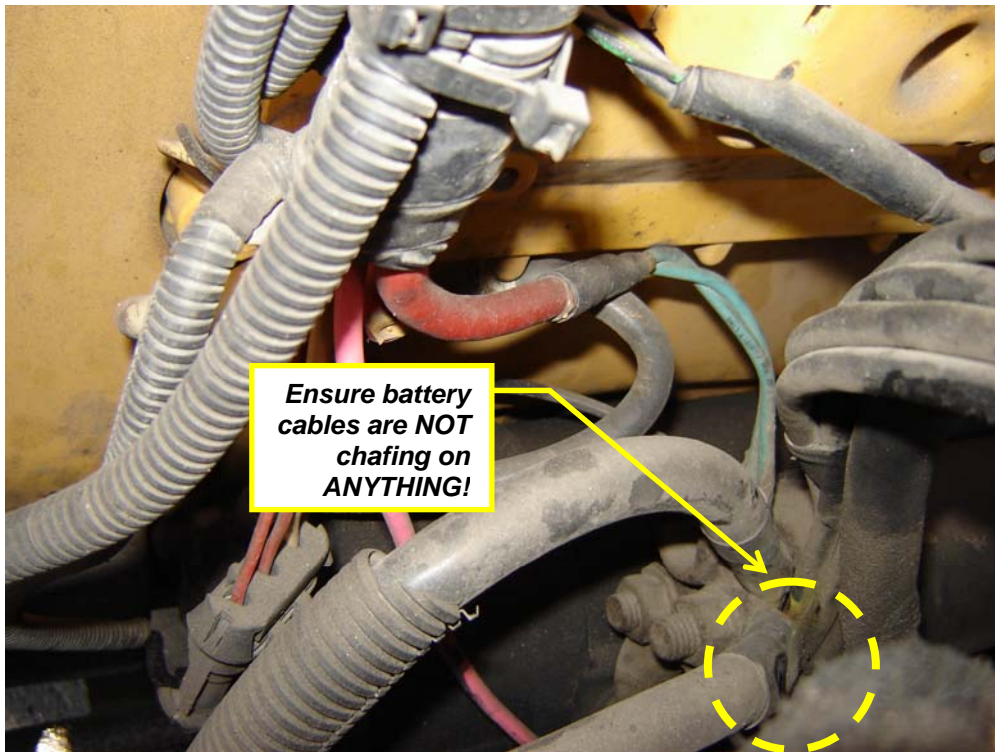


Figure 9c – Battery cables to starter case, starter terminal studs or other starter components and wiring.

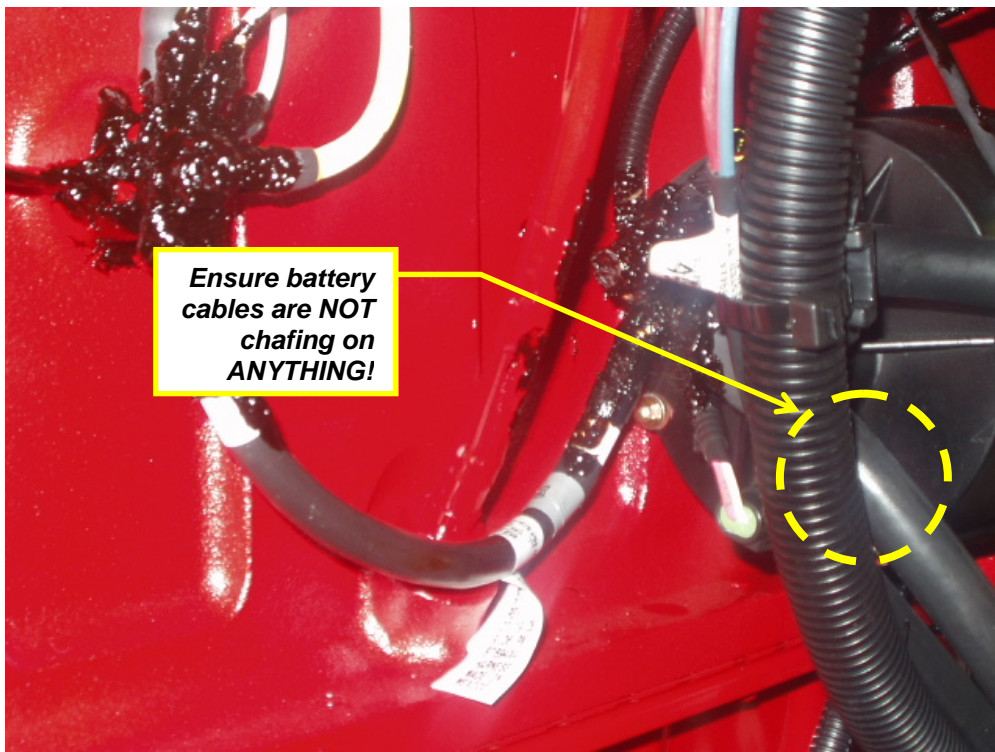


Figure 9d – Battery POSITIVE cables to Battery GROUND cables

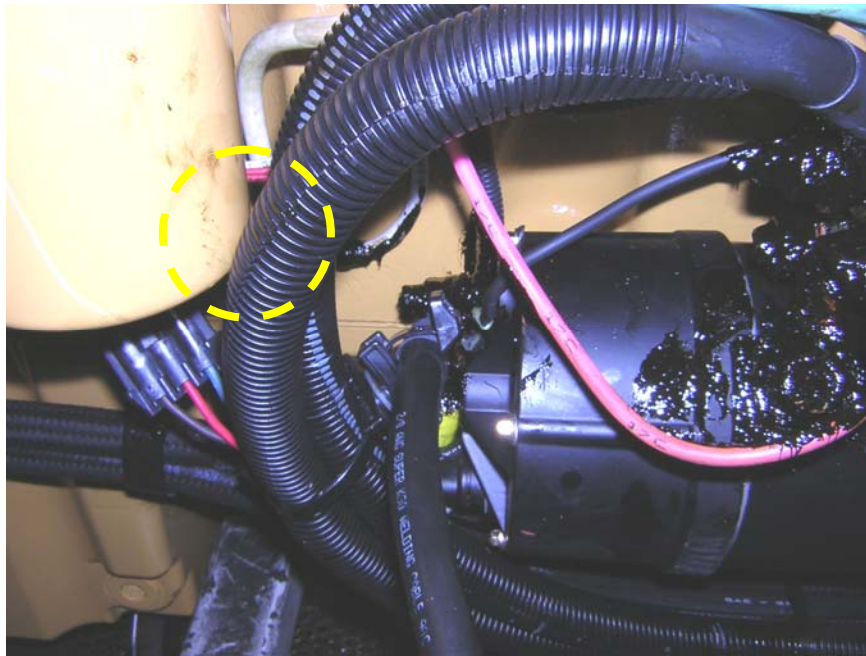


Figure 9e – Battery POSITIVE cables Rubbing on Fuel Filter housing (CAT engine shown, however condition may also exist on Cummins ISM)

END OF SERVICE PROCEDURE

LABOR INFORMATION

<u>Operation No.</u>	<u>Description</u>	<u>Time</u>
A40-5514-1	Inspect Battery Cable Gap – NO SADDLE CLAMP INSTALLATION	0.3 Hr
A40-05514-2	Install Saddle Clamp and Strap Locks Caterpillar and Cummins WITHOUT Fuel Filter	0.4 Hr
A40-05514-3	Install Saddle Clamp and Strap Locks, Cummins ISM WITH Fuel Filter	0.5 Hr
A40-05514-4	Install Saddle Clamp, Strap Locks, and REPLACE Battery Cables – all engines	1.0 Hr
A40-05514-5	ADD ON ONLY – Caterpillar Engine Block GROUND CABLE Re-Clock	0.2 Hr

CAMPAIGN IDENTIFICATION LABEL

*Each vehicle corrected in accordance with this campaign **must be** marked with a CTS-1075 Campaign Identification Label.*

Complete the label and attach on a clean surface next to the vehicle identification number (VIN) plate.

ADMINISTRATIVE/DEALER RESPONSIBILITIES (U.S. & POSSESSIONS)

Proceed immediately to make necessary correction to units in inventory. **All inventory vehicles subject to this recall campaign must be corrected prior to sale, transfer or delivery.** If vehicles have been sold or transferred and you are in receipt of Customer Notification Letters and Authorization for Recall Service cards for those vehicles, the transfer location or customer must be notified **IMMEDIATELY** from your dealer location.

Dealers must correct all vehicles subject to this campaign at no charge to the owner, regardless of mileage, age of vehicle, or ownership, from this time forward.

The National Traffic and Motor Vehicle Safety Act, as amended, provides that each vehicle that is subject to a vehicle recall campaign must be adequately **repaired** within a reasonable time after the owner has tendered it for repair. A failure to adequately repair within **60 days** after a tender of a vehicle is prima

facie evidence of failure to repair within a reasonable time. If the condition is not adequately repaired within 60 days, the owner may be entitled to **replacement** with an identical or reasonable equivalent vehicle at no charge, or to a **refund** of the purchase price less a reasonable allowance for depreciation.

However, consistent with the customer notification, dealers are expected to complete the repairs on the mutually agreed upon service date.

To avoid having to replace an owner vehicle or refund the purchase price, every effort must be made to promptly schedule an appointment with each owner to repair his or her vehicle as soon as possible.

During the recall process, a listing of owner names and addresses will be furnished to the involved dealers to enable dealers to follow up with owners and have the vehicles corrected. You must limit the use of this listing to this campaign because the list may contain information obtained from state motor vehicle registration records and the use of such motor vehicle registration data for purposes other than this campaign is a violation of law in several states.

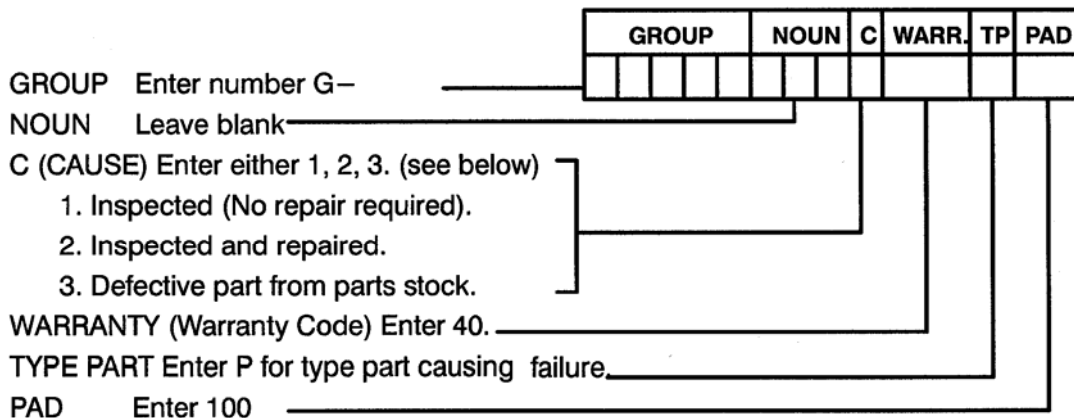
POSSIBLE CUSTOMER REIMBURSEMENT

There may be an occasion when a customer was charged for repairs related to this recall prior to the recall being released. The customer letter contains a statement for the customer to contact the Dealer if they believe they are entitled to reimbursement costs. The Dealer should follow the Customer Reimbursement guidelines in Warranty Policy Letter 03-001G. The Warranty Procedures and Administrative Policies manual (CTS1100) is in the process of being updated to include the information in Policy Letter 03-001G.

WARRANTY CLAIMS

Refer to Dealer Warranty Manual for procedures to conduct Recall Campaigns.

It is important that the Recall Coding be completed properly to assist in processing the warranty claim. Complete instructions will be found in the Warranty Manual, Section 7-1. Special attention should be given to Items 39 through 44:



ADMINISTRATIVE/DISTRIBUTOR RESPONSIBILITY (EXPORT)

Proceed immediately to make necessary correction to units in inventory. All inventory vehicles subject to this recall campaign must be corrected prior to sale, transfer or delivery. If vehicles have been sold or transferred and you are in receipt of Customer Notification Letters and Authorization for Recall Service cards for those vehicles, the transfer location or customer must be notified from your distributor location.

Export locations are to submit warranty claims in the usual manner making reference to this recall number.

We ask for your full cooperation and follow-up to this important subject matter. If you have any questions or need further assistance, please contact the Regional Service Manager at your regional office.

INTERNATIONAL TRUCK AND ENGINE CORPORATION