

SERVICE PROCEDURE

**22507
MAY, 2022**

SUBJECT: SAFETY RECALL
Power Inverter Cables on certain International® LT® Series trucks built 10 February 2017 thru 25 February 2022 with a power inverter installed by Navistar's Truck Specialty Center

CUSTOMER LETTER

Print ready (PDF file) copy of the [Customer Letter](#)

DEFECT DESCRIPTION

The positive battery cable to the inverter may chafe on the side skirts and over time, could result in an electrical short to ground and / or fire. An electrical short to ground may result in a fire which can cause personal injury and / or death, or damage to property.

MODELS INVOLVED

This safety recall involves certain International® LT® Series trucks built 10 February 2017 thru 25 February 2022 with a power inverter installed by Navistar's Truck Specialty Center.

ELIGIBILITY

This procedure applies ONLY to vehicles marked in the International® Service PortalSM with safety recall 22507. Also complete any other open campaigns listed on the Service Portal at this time.

TOOLS REQUIRED

Part Number	Part Description
N/A	Right Angle Drill
N/A	Automatic Center Punch
N/A	1/8-inch Drill Bit
N/A	3/8-inch Drill Bit

PARTS INFORMATION

Part Number	Part Description	Quantity
8900296R91	Inverter Cable Kit # 1	1
8900297R91	Inverter Cable Kit # 2	1; If Necessary
8900298R91	Inverter Cable Kit # 3	1; If Necessary
Source Locally	Wire Loom Tape	If Necessary
3626607C1	Strap Lock, 250-lb, 20-inch	If Necessary
4077219C1	Cable Saddle Spacer	If Necessary

8900296R91 contains the following parts:

Part Number	Part Description	Quantity
30381R1	Nut, M6	3
31045R1	Bolt, Hex Head, Flanged, M6 x 19	1
3534873C2	Nut, Flanged, M8	4
3553742C1	Guide, Brake Hose & Cable, 2-Way Saddle	1
3564070C1	Bolt, Flanged, M8 x 30 – 10.9	4
3626607C1	Strap Lock, 250-lb, 20-inch	11
3813157C3	Support Double Saddle	2
3820568C1	Bolt, M6 x 12	3
3544378C1	Nut, M6	1
4038490C2	Clip, Extension	1
4039319C1	Saddle, Double	1
4061975C1	Clip, Extension	1
465283C1	Clip, Extension	1
4160173C1	Stud, Terminal, Battery MTD Dual	1
3667670C1	Cube Fuse	1
N00091	Cube Fuse Nut	1
476074C1	Nut, Battery Terminal 3/8-inch UNC	1

8900297R91 contains the following parts:

Part Number	Part Description	Quantity
R1H12R1250	Positive Cable	1
3626607C1	Strap Lock, 250-lb, 20-inch	5
3535872C1	Strap Cable Lock, Dual Clamp	10

8900298R91 contains the following parts:

Part Number	Part Description	Quantity
K1H2211210	Negative Cable	1
3626607C1	Strap Lock, 250-lb, 20-inch	5
3535872C1	Strap Cable Lock, Dual Clamp	10

SERVICE PROCEDURE

WARNING! To prevent personal injury and / or death, or damage to property, park vehicle on hard flat surface, turn the engine off, set the parking brake and install wheel chocks to prevent the vehicle from moving in either direction.

WARNING! To prevent personal injury and / or death, or damage to property, if the vehicle must be raised, do not work under the vehicle supported only by jacks. Jacks can slip or fall over.

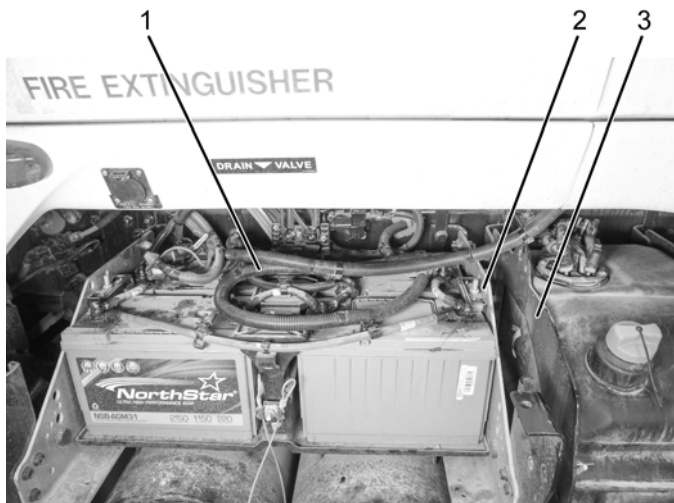
WARNING! To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING! To prevent personal injury and / or death, or damage to property, allow engine / vehicle components to cool before servicing.

WARNING! To prevent personal injury and / or death, or damage to property, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

WARNING! To prevent personal injury and / or death, or damage to property, remove the ground cable from the negative terminal of the battery box before disconnecting any electrical components. Always connect the ground cable last.

1. Park vehicle on flat surface.
2. Shift transmission to Park or Neutral and set parking brake.
3. Install wheel chocks.
4. Unlatch and open hood.
5. Remove front and rear driver-side cab skirts. Refer to technician manual for detailed instructions.
6. Disconnect and isolate negative battery cable on main vehicle battery. Discard battery terminal nut.



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Figure 1. Inverter Harness Interference

1. Inverter harness
2. Battery box edge
3. Diesel Exhaust Fluid (DEF) tank

NOTE: Not all vehicles will have cables ties strapped to all brackets shown.

7. If required, using side cutters, remove and discard cable ties securing inverter harnesses at the DEF tank bracket and battery box.



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Figure 2. Inverter Cable Crossmember Inspection

1. Inverter cable

NOTE: Harness depicted in Figure 2 shown unattached for clarity.

NOTE: Inspect entire length of inverter harness for signs of chafing or rubbing.

8. Inspect inverter harness (Figure 1, Item 1) for any signs of chafing or rubbing. Thoroughly inspect convolute and insulation at battery box, DEF tank edges (Figure 1, Items 2 & 3), cab / sleeper crossmembers (Figure 2, Item 1) above DEF and fuel tank, and in other areas where interference with cab skirts may occur:
 - a. If no signs of chafing are present, proceed to Step 26.
 - b. If signs of chafing are present on convolute only, wrap affected areas with wire loom tape and proceed to Step 26.
 - c. If signs of chafing are present on cable insulation, proceed to Step 9.



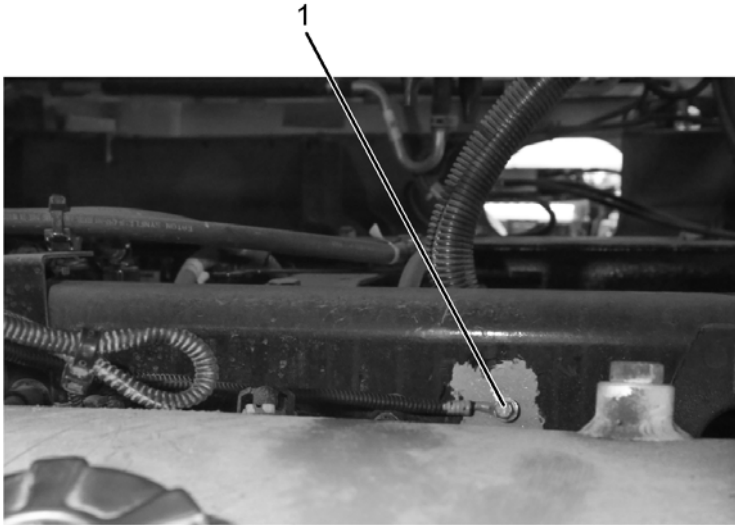
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Figure 3. Inverter Ground Strap

1. Ground strap

NOTE: Steps 9 thru 25 are only required if an inverter cable needs to be replaced.

9. Using side cutters, remove and discard cable ties securing inverter ground strap (Figure 3, Item 1).
10. Disconnect positive and negative inverter harnesses at vehicle batteries.
11. Using side cutters, remove and discard cable ties securing inverter harnesses at existing air lines / vehicle harnesses.



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Figure 4. Inverter Ground Bolt

1. Bolt

CAUTION! To prevent damage to property or vehicle components, RED sealant paint must be thoroughly softened and fully removed from bolt and threads prior to removing inverter ground bolt at frame. Avoid drip onto unwanted surfaces. DO NOT apply to rubber, wire insulation and the like, only metallic surfaces.

12. Remove inverter ground bolt (Figure 4, Item 1) at frame. Save bolt for reuse:
 - a. Shake softener gel container to thoroughly mix contents. Slowly open container.
 - b. Pour needed amount of softener into small metal container. Using paint brush, apply liberally to RED coated threads, nut, and bolt (metal surfaces).
 - c. Let softener sit for 10-15 minutes. Longer set time will yield better results.
 - d. Using scraper, wire brush, and rag, remove as much coating as possible. Second application of softener chemical may be required; use discretion prior to loosening nut and bolt.
 - e. Using abrasive pad or cloth dipped in odorless mineral spirits, remove remaining finish or residues from metal surfaces.

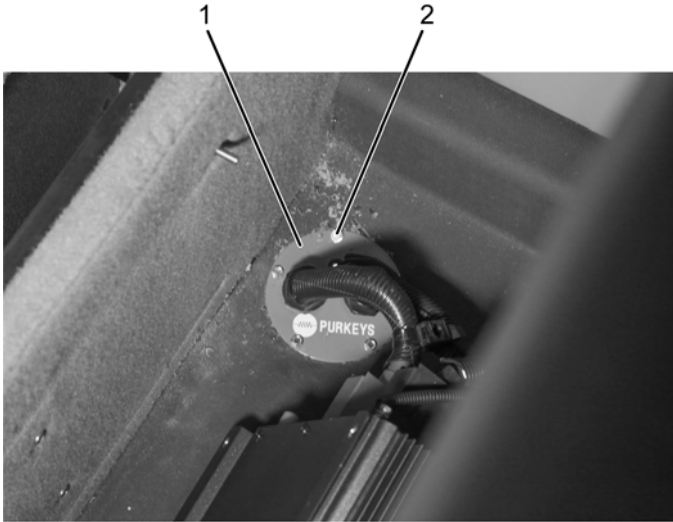


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Figure 5. Inverter

- 1. Remote cable
- 2. Inverter assembly

- 13. Working from vehicle interior, reposition lower bunk mattress.
- 14. Lift and secure lower bunk to access inverter assembly (Figure 5, Item 2).
- 15. Unplug remote cable (Figure 5, Item 1) and any accessories from inverter.
- 16. Remove four fasteners securing inverter and reposition. Save fasteners for reuse.



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Figure 6. Inverter Harness Floor Plate

1. Harness floor plate
 2. Fastener (5 total, 1 not shown)
-
17. Remove five fasteners (Figure 6, Item 2) securing harness floor plate (Figure 6, Item 1). Save fasteners for reuse.
 18. Remove inverter assembly and harness from vehicle interior.
 19. Place inverter assembly on bench.
 20. Replace affected cables as necessary. Save fasteners for reuse:
 - a. Using paint pen or equivalent, mark and record locations of dual clamp ties located on non-affected harness convolute.
 - b. Remove bolt, nut, and lock washer securing affected cable at inverter.
 - c. Remove dual clamp ties separating positive and negative cables from entire length of harness.
 - d. Remove convolute from affected cable between floor plate and inverter connection and discard.
 - e. Remove plastic nut securing affected cable to plastic grommet in floor plate.
 - f. Slide cable out of plastic grommet and discard affected cable.

- g. Position replacement cable relative to existing inverter cable.
- h. Measure, cut, and remove replacement convolute between floor plate and inverter end of cable. Save convolute for reuse.
- i. Slide replacement cable through plastic grommet in metal floor plate.
- j. Reinstall plastic nut and tighten securely.
- k. Reinstall convolute on cable between floor plate and inverter connection.
- l. Using torque wrench and previously removed fasteners, reinstall affected cable on inverter terminal. Tighten fastener securely.
- m. If necessary, repeat Steps 18a - 18l for remaining cable.
- n. Install new convolute on replacement cable between floor plate and battery end of cable.
- o. Install dual clamp tie between positive and negative cable halfway between inverter and metal floor plate.
- p. Referring to previously marked locations, install dual clamp ties between positive and negative cables in original locations.

21. Working from vehicle interior, install inverter assembly:

- a. Feed harness through floor plate in cab floor.
- b. Using previously removed fasteners, secure floor plate to cab floor. Tighten fasteners securely.
- c. Using previously removed fasteners, position and install inverter assembly onto mounting fasteners. Tighten fasteners securely.
- d. Connect remote cable (Figure 5, Item 1) and any previously disconnected accessories to inverter.
- e. Lower bunk and position bunk mattress.

NOTE: Ensure bolt threads are thoroughly clean prior to applying RED sealant paint.

22. Thoroughly clean inverter assembly ground strap bolt and connection point on frame.

23. Using torque wrench, install bolt securing inverter assembly ground strap to frame (Figure 3, Item 1). Tighten bolt to 31 lb-ft (42 N•m).
24. Apply RED sealant paint and thoroughly coat frame bolt, bolt threads, nut, inverter assembly ground strap terminal ring, and frame.

NOTE: DO NOT CONNECT inverter harnesses to batteries.

25. Route positive and negative inverter harnesses to vehicle batteries.



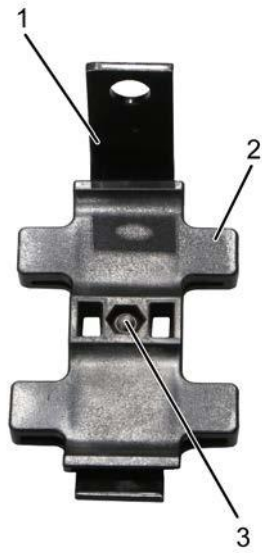
Figure 7. Swivel Saddle Bracket Assemblies

1. Bracket above DEF tank
2. Bracket above fuel tank

NOTE: Steps 26-60 are required for all vehicles.

NOTE: Brackets depicted in Figure 8 are located on driver-side sleeper cab crossmembers above DEF tank and fuel tank.

26. Using sidecutters, remove and discard cable ties securing air lines and vehicle harnesses at saddle lock brackets (Figure 7, Items 1 & 2) located on sleeper floor crossmember.
27. Remove and discard swivel saddle bracket assemblies and speed nut / retaining clip. Using a paint pen or equivalent, mark and record existing hole locations on crossmember for installation of clip extension supplied with kit.



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Figure 8. Assembly – 4061975C1 Clip Extension

1. Clip extension
2. 3813157C3 double saddle support
3. Assembly 30381R1 M6 nut / 3820568C1 6 x 12 M6 bolt

28. Assemble 4061975C1 Clip Extension:

- a. Position double saddle support (Figure 8, Item 2) onto clip extension (Figure 8, Item 1) with upper horizontal edge of clip extension facing outward.
- b. Place M6 nut into opening of double saddle support.
- c. Install M6 bolt through rear of saddle support into M6 nut. Securely tighten bolt and nut assembly (Figure 8, Item 3).

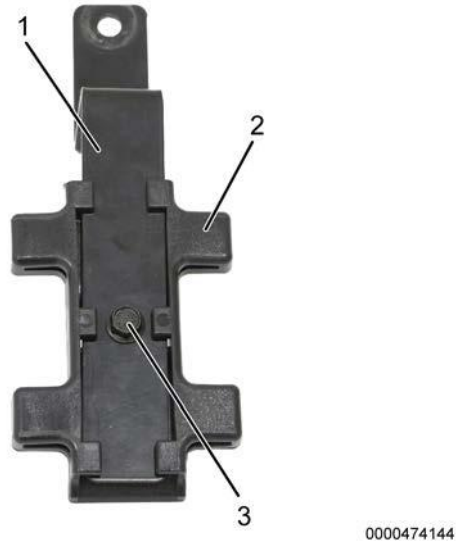
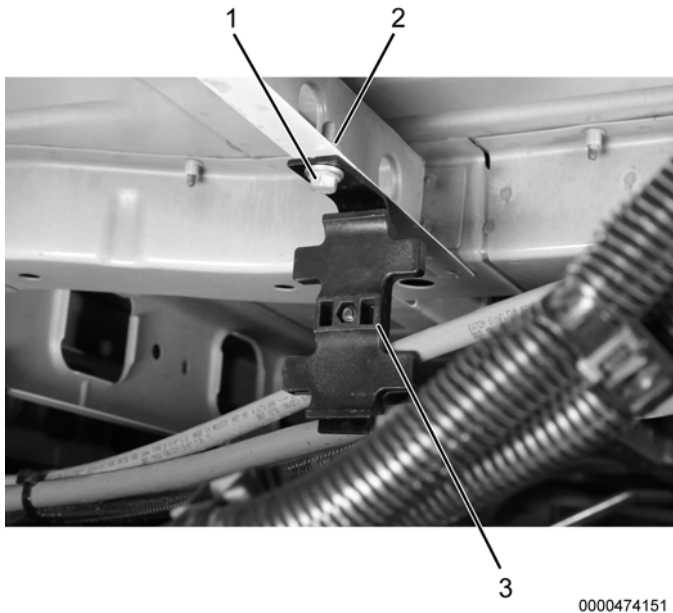


Figure 9. Assembly – 4038490C2 Clip Extension

1. Clip extension
2. 3813157C3 double saddle support
3. Assembly 30381R1 M6 nut / 3820568C1 6 x 12 M6 bolt

29. Assemble 4038490C2 clip extension:

- a. Position double saddle support (Figure 9, Item 2) onto clip extension (Figure 9, Item 1) with upper edge of saddle support facing up.
- b. Place M6 nut into opening of double saddle support.
- c. Install M6 bolt through rear of saddle support into M6 nut. Tighten bolt and nut assembly (Figure 9, Item 3) securely.



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Figure 10. 4061975C1 Clip Extension

1. 3564070C1 flanged M8 x 30 – 10.9 bolt
2. 3534873C2 flanged M8 nut
3. Clip extension assembly

NOTE: Air lines, 7-way cord, and inverter cables will be installed in later steps of this procedure.

30. Using previously recorded crossmember location above fuel tank, position assembled clip extension (Figure 10, Item 3) over hole and loosely install M8 bolt and nut (Figure 10, Items 1 & 2).
31. Using torque wrench, tighten bolt and nut assembly to 23 lb-ft (31 N•m).

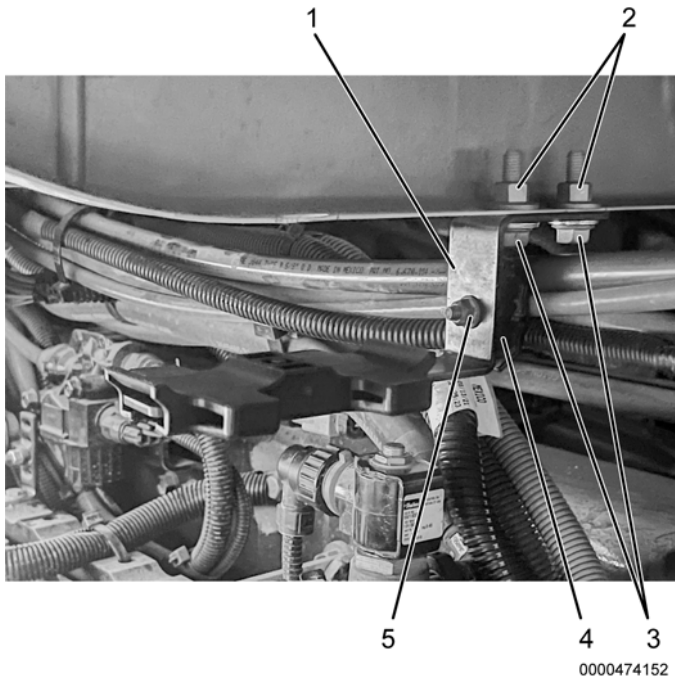


Figure 11. 4038490C2 Clip Extension

1. Clip extension assembly
 2. 3534873C2 flanged M8 nut (2)
 3. 3564070C1 flanged M8 x 30 – 10.9 bolt (2)
 4. 3553742C1 guide, brake hose & cable, 2-way saddle
 5. 4039319C1 M6 nut / 3820568C1 M6 x 12 assembly bolt
32. Using previously recorded crossmember location above DEF tank, position assembled clip extension (Figure 11, Item 1) over hole and loosely install one M8 bolt and nut (Figure 11, Items 2 & 3) until snug.
 33. Mark drill location for clip extension installation:
 - a. Using a scribe and clip extension as a template, mark center location for additional hole.
 - b. Remove clip extension from crossmember.
 - c. Using automatic center punch and previously recorded scribe mark, create a dimple in crossmember.
 - d. Using recorded dimple, right angle drill, and 1/8-inch drill bit, drill pilot hole into sleeper crossmember.
 - e. Using right angle drill, and 3/8-inch drill bit, drill hole into sleeper crossmember using pilot hole as template.
 - f. Deburr hole and remove any sharp edges.

NOTE: Air lines, 7-way cord and inverter cables will be installed in later steps of this procedure.

34. Position clip extension over holes in crossmember and install two M8 bolts and nuts (Figure 11, Items 2 & 3). Tighten to 23 lb-ft (31 N•m).
35. Position saddle (Figure 11, Item 4) to clip extension facing inward and install M6 nut and bolt (Figure 11, Item 5). Tighten to 12 lb-ft (16 N•m).

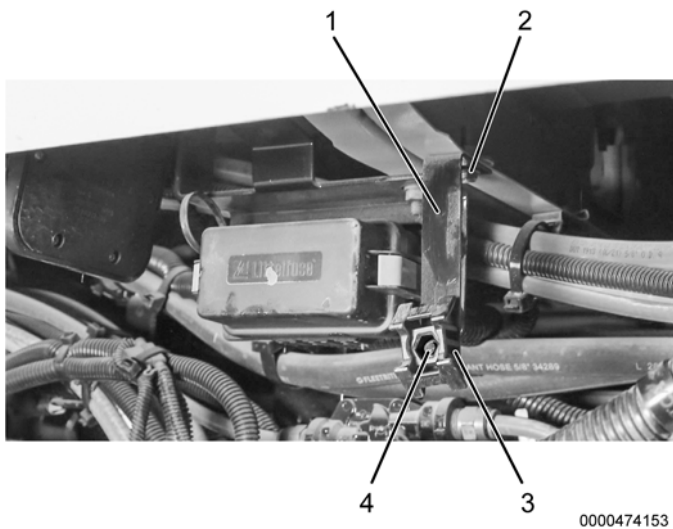


Figure 12. 465283C1 Clip Extension

1. Clip extension assembly
2. 3534873C2 flanged M8 nut / 3564070C1 flanged M8 x 30 – 10.9 bolt
3. 4039319C1 saddle, double
4. 30381R1 M6 nut / 3820568C1 M6 x 12 assembly bolt

NOTE: If clip extension depicted in Figure 12 is present on your vehicle, proceed to Step 38.

36. Locate hole in crossmember rearward of Aftertreatment Power Distribution Module (PDM).
37. Position clip extension (Figure 12, item 1) over hole in crossmember and install M8 bolt and nut (Figure 12, Items 2 & 3). Tighten to 23 lb-ft (31 N•m).
38. Position saddle (Figure 12, Item 3) to clip extension facing outward and install M6 nut and bolt (Figure 12, Item 4). Tighten to 12 lb-ft (16 N•m).

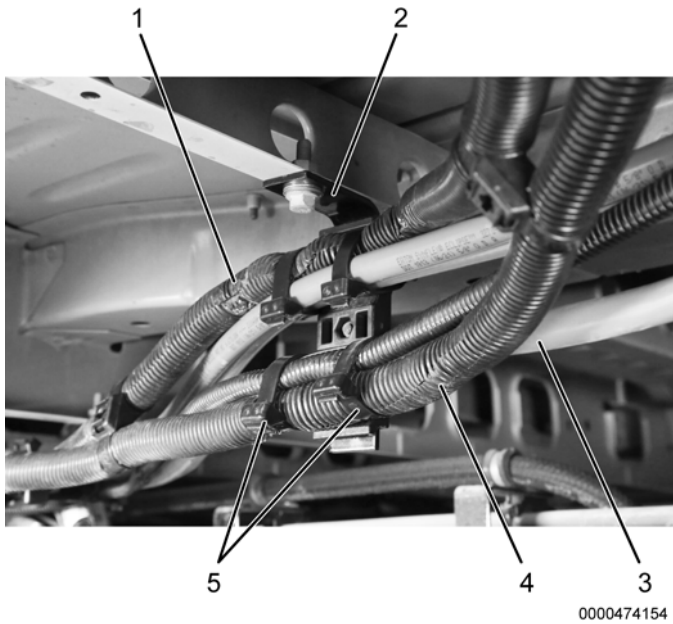


Figure 13. 4061975C1 Extension Clip – Harness Routing

1. Inverter negative harness
 2. Extension clip
 3. Trailer 7-way cord
 4. Inverter positive harness
 5. 3626607C1 strap lock, 250-lb, 20-inch (4 total)
39. Working from rear of vehicle at area of 4061975C1 Extension Clip (Figure 13, Item 2) above fuel tank, position inverter negative harness (Figure 13, Item 1) and brake air lines at upper location of support. Secure with two strap locks (Figure 13, Item 5) supplied with kit.
40. Position inverter positive harness, 7-way cord (Figure 13, Items 3 & 4) and inverter ground cable to lower location of support. Secure with two strap locks (Figure 13, Item 5) supplied with kit.

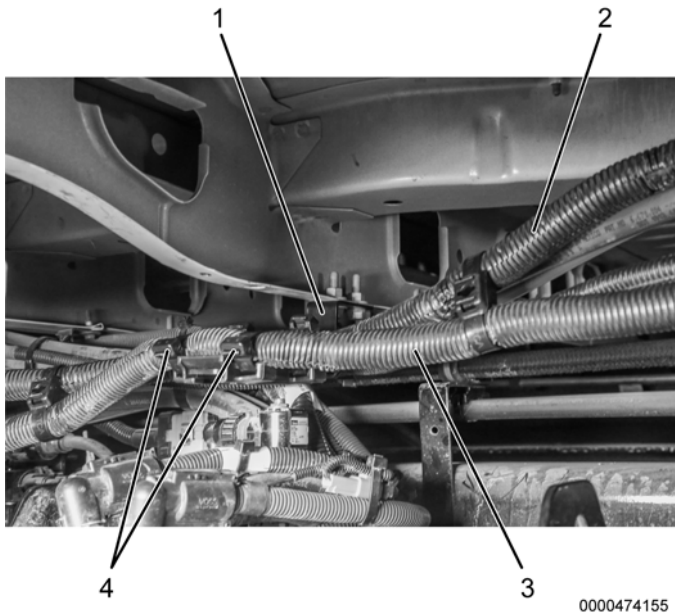


Figure 14. 4038490C2 Extension Clip – Harness Routing

1. Extension clip
 2. Inverter negative harness
 3. Inverter positive harness
 4. 3626607C1 strap lock, 250-lb, 20-inch (4 total, 2 not shown)
-
41. Working at area of 4038490C2 Extension Clip (Figure 14, Item 1) above DEF tank, position air lines, 7-way cord, and inverter ground cable behind clip extension at 2-way saddle. Using cable ties, secure air lines to pre-installed saddle.
 42. Position inverter negative harness (Figure 14, Item 2) at inward location of support. Secure with two strap locks (Figure 15, Item 4) supplied with kit.
 43. Position inverter positive harness (Figure 14, Item 3) to outward location of support. Secure with two strap locks (Figure 14, Item 4) supplied with kit.

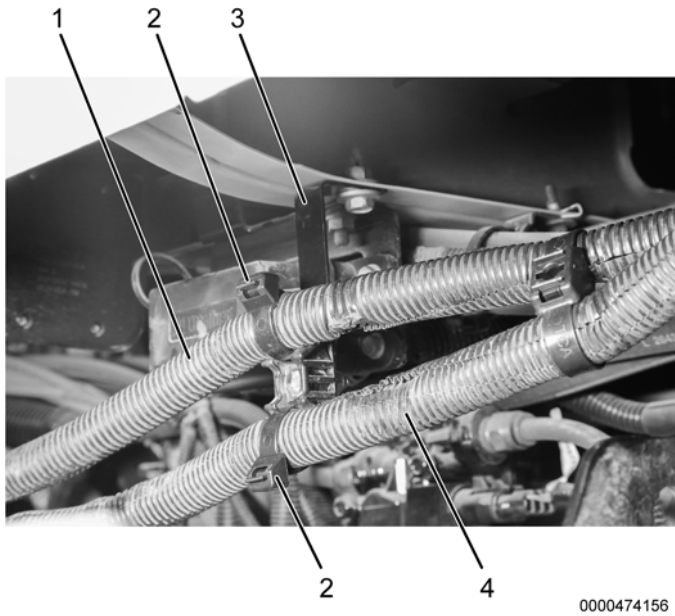
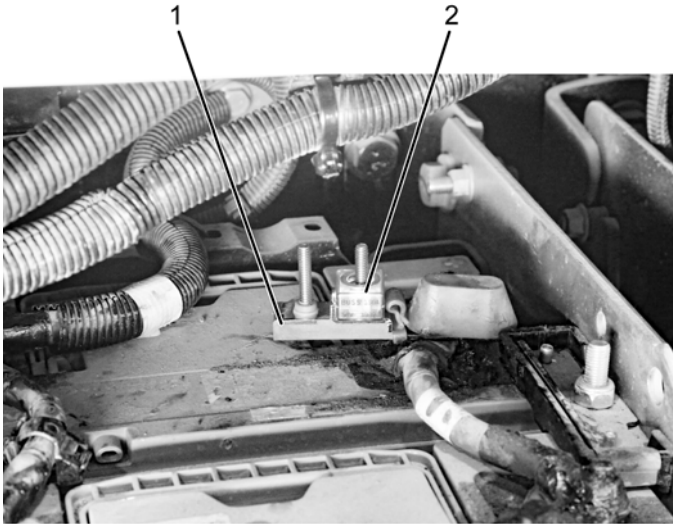


Figure 15. 465283C1 Extension Clip – Harness Routing

1. Inverter negative harness
2. 3626607C1 strap lock, 250-lb, 20-inch (2 total)
3. Extension clip
4. Inverter positive harness

NOTE: Vehicles built before July 2021 will need the extension clip mounted to the crossmember as shown in Figure 15.

44. Working at area of 465283C1 Extension Clip (Figure 15, Item 3), position inverter negative harness (Figure 15, Item 1) at upper location of support. Secure with strap lock (Figure 15, Item 2) supplied with kit.
45. Position inverter positive harness (Figure 15, Item 4) to lower location of support. Secure with strap lock (Figure 15, Item 2) supplied with kit.



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Figure 16. 3667670C1 Cube Fuse

1. 4160173C1 stud, terminal, battery MTD dual
 2. Cube fuse
-
46. Remove terminal stud nut and cube fuse at battery. Discard terminal stud, cube fuse, and nut.
 47. Clean battery terminal with wire brush. Then clean with electrical contact cleaner and dry with shop air.
 48. Install replacement terminal stud (Figure 16, Item 1) at battery.
 49. Apply BLUE dielectric grease to threads of new positive battery stud nut. Using torque wrench, tighten battery stud nut to 12 - 15 lb-ft (16 - 20 N•m).
 50. Position cube fuse (Figure 16, Item 2) to terminal stud.

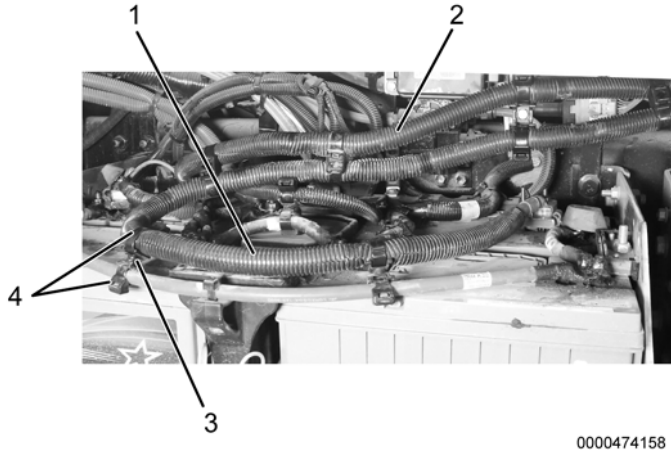


Figure 17. Inverter Harness Routing at Vehicle Battery

1. Inverter positive harness
 2. Inverter negative harness
 3. Cable saddle spacer
 4. Strap lock (2)
-
51. If cable was replaced, using saddles as location points, route inverter positive harness (Figure 17, Item 1) to existing vehicle battery saddles and secure using strap locks supplied with kit.
 52. If cable was replaced, using saddles as location points, route inverter negative harness (Figure 17, Item 2) to existing vehicle battery saddles and secure using strap locks supplied with kit.
 53. Inspect inverter harnesses (Figure 17, Items 1 & 2) to ensure there is no direct contact with battery cables, battery studs, battery box edges, or battery hold downs. If there is, reposition or install saddle clamps (Figure 17, Item 3) and cable tie straps (Figure 17, Item 4) to eliminate direct contact.
 54. Reconnect positive battery cable to terminal with cube fuse installed.
 55. Install N00091 Cube Fuse Nut. Using torque wrench, tighten to 10 - 11 lb-ft (13 - 15 N•m).
 56. Clean negative battery terminal with wire brush. Then clean with electrical contact cleaner and dry with shop air.
 57. Apply BLUE dielectric grease to battery terminal stud, negative battery cable ring terminal, and threads of new battery stud nut.
 58. Reconnect negative battery cable to negative terminal on main vehicle battery and install new battery terminal nut.

59. Using torque wrench, tighten battery stud nut to 12 - 15 lb-ft (16 - 20 N•m).
60. Install front and rear driver-side cab skirts. Refer to technician manual for detailed instructions.
61. Remove wheel chocks.

END OF SERVICE PROCEDURE

LABOR INFORMATION

Operation Number	Description	Time
A40-22507-1	Inspect and Reroute Harnesses	1.3 Hrs.
A40-22507-2	Replace One Harness Cable	1.0 Hrs.
A40-22507-3	Replace Both Harness Cables	1.5 Hrs.

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.

DO NOT REMOVE

INTERNATIONAL

Campaign No. _____

VIN _____

Eng.# _____

COMPLETED

Service Location Code # _____

DO NOT REMOVE

ADMINISTRATIVE / DEALER RESPONSIBILITIES

WARRANTY CLAIMS

Warranty claim expense is to be charged to Warranty. Claims are to be submitted in the normal manner, making reference to Safety Recall 22507.

Section 7 of the Warranty Policy and Procedures Manual contains further information related to the submission and processing of AFC / Recall claims. As with all claim submissions, items acquired locally must be submitted in the "Other Charges" tab.

The cost of any bulk items (such as a bag of cable tie straps, roll of wire, barrel of oil, or tube of silicone) should be prorated for the cost of the individual pieces / amount used during each repair.

GROUP	NOUN	C	WARR.	TP	PAD
GROUP — Enter number	NOUN — Leave blank	C (CAUSE) — Enter either 1, 2, 3. (See below)	WARRANTY — (Warranty Code) Enter 40.	TYPE PART — Enter P for type part causing failure.	PAD — Enter 100

1. Inspected (No repair required).

2. Inspected and repaired.

3. Defective part from parts stock.

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UNITED STATES AND POSSESSIONS

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.

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.

Dealers should 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 make every effort to promptly schedule an appointment with each owner to repair his or her vehicle as soon as possible. However, consistent with the customer notification, dealers are expected to complete the repairs on the mutually agreed upon service date.

Dealers involved in the recall process will be furnished a listing of owner names and addresses to enable them to follow up with owners and have the vehicles corrected. Use of this listing must be limited 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.

CANADA

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.

Dealers should 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.

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EXPORT

Export Distributors should 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 distributor location.

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

Export Distributors are expected to provide full cooperation and follow-up with respect to this important subject matter. If you have any questions or need further assistance, please contact the Regional Service Manager at your regional office.

NAVISTAR, INC.