

RELEASED

Sep 23 2024

NAVISTAR, INC

SERVICE PROCEDURE

24505
September, 2024

SUBJECT: SAFETY RECALL
Steering Gear on certain 2025 International®
HV™, HX®, LT®, and MV™ Series trucks and IC
Bus® SFC commercial buses built 01/03/2024
thru 01/18/2024, with R. H. Sheppard HD94P,
HD94S, and M100P steering gears

CUSTOMER LETTER

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

DEFECT DESCRIPTION

Heat treating of the steering gear sector shafts may not have been performed properly and do not meet the required hardness. Sector shaft gear teeth with lower than required hardness may prematurely wear, crack, or fracture. A fractured gear tooth may interfere with the gear mechanism leading to non-smooth steering effort or binding. A steering gear that binds increases the likelihood of a crash.

MODELS INVOLVED

This safety recall involves certain 2025 International® HV™, HX®, LT®, and MV™ Series trucks and IC Bus® SFC commercial buses built 01/03/2024 thru 01/18/2024, with R. H. Sheppard HD94P, HD94S, and M100P steering gears.

ELIGIBILITY

This procedure applies ONLY to vehicles marked in the International® Service PortalSM with Safety Recall 24505. Also complete any other open campaigns listed on the Service Portal at this time.

PARTS INFORMATION

See table at end of document for specific parts information.

NOTE: New trucks and buses in dealer inventory that are found to have a suspect steering gear must be repaired using a steering gear for a non-Delivered To User (DTU) vehicle and not a recall part number.

NOTE: If your location has any steering gears in parts inventory, please refer to the R.H. Shepard link later in this procedure to determine inventory steering gear status.

NOTE: Do not pre-order steering gears for inventory as only 252 of the 469 vehicles will require a replacement. Some customers may experience a higher SUSPECT percentage result.

NOTE: Parts for any suspected steering gear removed should be returned to Product Review Center per warranty standard procedure.

SERVICE PROCEDURE

GOVERNMENT REGULATION: Engine fluid (oil, fuel, and coolant) may be a hazard to human health and the environment. Handle all fluid and other contaminated materials (such as filters and rags) in accordance with applicable regulations. Recycle or dispose of engine fluids, filters, and other contaminated materials according to applicable regulations.

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.

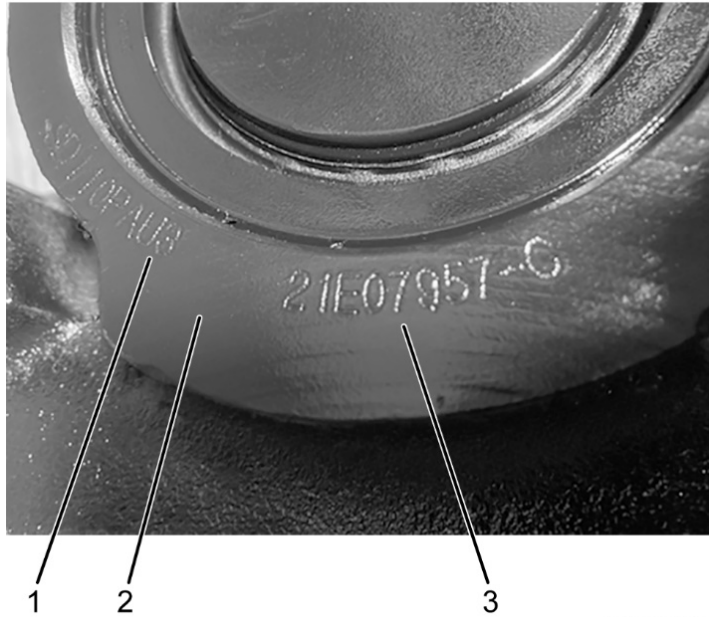
WARNING! To prevent personal injury and / or death, or damage to property, allow engine / vehicle components to cool before servicing.

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. Turn vehicle ignition to Key OFF position.
5. Unlatch and open hood.

NOTE: The steering gear serial number is located on the steering gear housing at the bottom of the sector shaft outlet. The vehicle wheels may need to be turned for proper viewing. Additionally, a small portion of gears may have the serial number at the top of the sector shaft outlet.



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Figure 1. Gear Housing Sector Shaft Output

1. Part number
2. Gear housing sector shaft output
3. Serial number

NOTE: The steering gear serial number is a two-digit year followed by an alphanumeric month - Example: 21E (2021 May).

NOTE: If the serial number and / or part number are illegible due to paint, a flat head screwdriver, wire brush, or emery cloth may be used to lightly remove paint where the numbers are located.

NOTE: If the vehicle you are working on is equipped with dual steering gears and has an HD94 slave steering gear (located on the passenger side) must also be inspected.

6. Record entire main steering gear serial number. Use the R.H. Sheppard link below to determine if gear needs to be replaced.

[Sheppard Steering Gear Classification Tool \(rhsheppard.com\)](https://rhsheppard.com)



Sheppard Steering Gear Classification Tool

STOP !! - READ THIS BEFORE BEGINNING.

Sheppard **remanufactured steering gears, slave gears ARE NOT** affected by this recall.

Refer to the Identification Guideline for identification of affected steering gears as well as interpretation of the serial and part number.

Please select your vehicle make and enter the full 8-character serial number before the dash (-) as shown below without any spaces or the “-C” at the end.

SERIAL NUMBER EXAMPLE:

21 represents the year the steering gear was built.

E indicates the month the steering gear was built (A = January, B = February, C = March, D = April, E = May, etc.).

07957 is the sequential serial number for gears built that month.

-C indicates the steering gear has a snap ring style sector cover with a retainer clip.

NAVISTAR, INTERNATIONAL

21F12257

Search

Reset

USER IS SOLELY RESPONSIBLE FOR THE INPUT OF ACCURATE DATA AND ASSUMES ALL RISKS ASSOCIATED WITH FAILURE TO DO SO.

Result

Steering Gear serial number : Good

Vehicle can be returned to service with no further remedy action

1 2 3 4

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Figure 2. Steering Gear Classification Tool

1. Select vehicle make
2. Result
3. Serial number search box
4. Search button

7. Refer to Figure 2 for suspected steering gear:

- a. Select **Navistar, International** from the **Select Vehicle Make** drop-down list (Figure 2, Item 1).
- b. Enter the serial number (Figure 2, Item 3) and select **Search** (Figure 2, Item 4).

NOTE: Suspect serial numbers will have year / month range of 23I087XX through 24A016XX.

- c. If the result is **Good** or **Serial Number Entered Is Outside The Date Range**, (Figure 2, Item 2), replacement is not required. Proceed to Step 24.
- d. If the result is **Not Found** (Figure 2, Item 2), follow instructions on R.H. Sheppard website.

- e. If the result is **Suspect** (Figure 2, Item 2), the steering gear will require replacement. Proceed to Step 8.

STEERING GEAR REPLACEMENT

NOTE: Because the steering gear is suspect and has not failed, filter change and fluid flush are NOT included in steering gear replacement.

For further information, please refer to the link below:

[RH Sheppard Instructions for Installing Steering Gears](#)

8. Place drain pan under vehicle.
9. Remove power steering return line from steering gear and drain fluid.
10. Disconnect power steering pressure line from steering gear.

NOTE: Do not rotate the steering wheel once the steering shaft has been disconnected from the steering gear.

11. Remove pinch bolt and nut from steering gear input shaft and disconnect steering column. Discard pinch bolt, nut, and washers.
12. Remove retainer from Pitman arm. Pull Pitman arm off steering gear and slowly place on ground while still connected to drag link.
13. Support steering gear and remove steering gear mounting bolts and nuts. Save bolts and nuts for reuse.

NOTE: Record the clocking of both hydraulic fittings and Pitman arm necessary for them to be correctly installed on new steering gear.

TORQUE SPECIFICATION

Gear to Frame Mounting Bolt Size	Socket Size	Lb-ft	N·m
M12	19 mm	95–105 lb-ft	129–142 N·m
M16	24 mm	217–240 lb-ft	294–325 N·m
M20	30 mm	413–461 lb-ft	560–625 N·m
15/16 in	15/16 in	220–240 lb-ft	298–325 N·m
3/4 in	1 1/8 in	330–370 lb-ft	447–502 N·m

Table 1 Gear to Frame Bolt Torque

14. Position new steering gear into place and install mounting bolts. Using a torque wrench, tighten bolts to proper torque specification listed in Table 1.
15. Reconnect Pitman arm to steering gear. Install retainer and tighten to 225 lb-ft (305 N·m).

NOTE: The Pitman arm to steering gear bolt should be tightened to the torque value stamped on the face of the retainer.

16. Torque Pitman arm retainer to torque value stamped onto face of retainer. If two notches of locking washer do not align with notches in the retainer, continue tightening the retainer until they align. Bend retaining tabs into the notches of the retainer.
17. Reconnect steering column shaft to steering gear input shaft, then install new pinch bolt, washers, and nut. Using a torque wrench, tighten bolt to 68–76 lb-ft (92–103 N·m).
18. Install power steering pressure and return lines. Tighten pressure line fitting and return line hose clamp.
19. Fill power steering reservoir.
20. Start engine, bleed system, and inspect for leaks.

CAUTION! Failure to set the adjust of the relief plungers may result in damage to the steering system. Plunger must be set or adjusted whenever a steering gear is replaced.

21. Set the AUTO relief plungers or adjust the manual relief plungers to obtain the proper steering angle.
22. Turn vehicle ignition to Key OFF position.
23. Top off power steering fluid.
24. Close and latch hood.
25. Remove wheel chocks.

END OF SERVICE PROCEDURE

LABOR INFORMATION

Operation Number	Description	Time
A40-24505-1	Inspection Only; Single Gear Is Good	0.3 hrs
A40-24505-2	Inspection Only; Both Dual Gears Are Good	0.5 hrs
A40-24505-5	Inspect & Replace Steering Gear; HV & MV	1.8 hrs
A40-24505-6	Inspect & Replace Steering Gear; HX, LT, SFC	1.5 hrs
A40-24505-7	Inspect & Replace Both Steering Gears; HX	2.5 hrs

Table 2 Labor Information

PARTS INFORMATION

Part Number	Part Description	Quantity
Appropriate Fluid P/N by Vehicle	Fluid	As Needed If Gear Is Replaced
4065729C1	Bolt, Hex HD, 7/16-20 UNF Grade 8	1 If Gear Is Replaced
4066697C1	Nut, Hex Lock, 7/16-20, Grade 8	1 If Gear Is Replaced
25846R1	Washer, 7/16 Hardened	2 If Gear Is Replaced
137214	Pin, Cotter 1/8 X 1 3/4 Inch Lg	1 If Gear Is Replaced

Table 3 Parts Information

NOTE: Using the International[®] parts system, verify the steering gear part number that the vehicle was built with. Using the correct part number, refer to the table below to determine the correct steering gear part number to order.

NOTE: Submit all the steering gear orders as a Critical Order - Unit Down with the VIN number.

NOTE: If a Steering Gear for vehicles without a DTU date is used on a vehicle with a DTU date, the parts cost will be adjusted to the Recall Part Number.

STEERING GEAR INFORMATION

Production Steering Gear PN	Steering Gear Description	Steering Gear for Non-DTU Vehicles	Navistar Recall Part Number
3554373C91	M100PMT3	3554373C91	8900303R91
3885826C91	M100PTD3	3885826C91	8900305R94
3886363C91	M100PTH3	3886363C91	8900311R91
3844903C93	HD94PAH3	3844903C93	8900302R91
3812990C91	HD94SG1	3812990C91	3812990C91
3918870C91	HD94SM1	3918870C91	3918870C91

Table 4 Steering Gear Information

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.



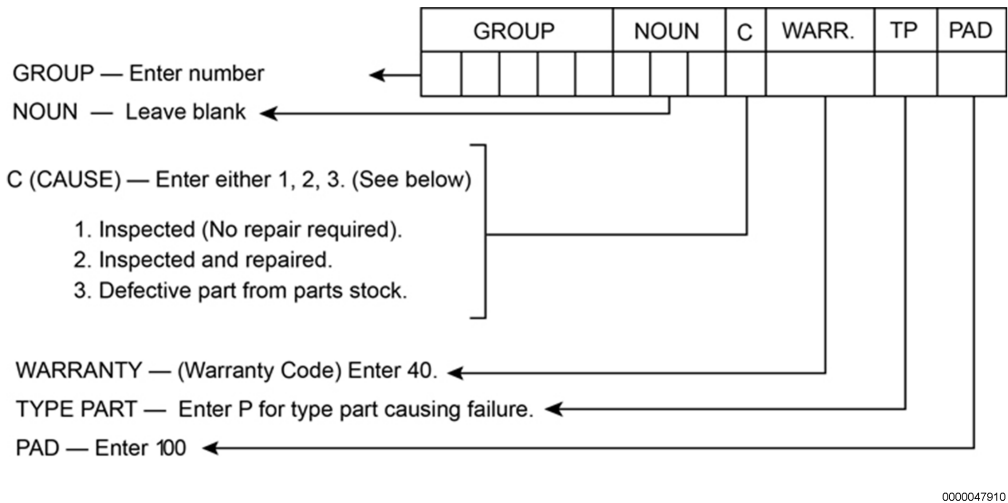
ADMINISTRATIVE / DEALER RESPONSIBILITIES

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 24505.

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.



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. Federal law prohibits a dealer from delivering under a sale or lease, a new motor vehicle or any new or used item of motor vehicle equipment (including a tire) covered by the notification of a recall until the defect or noncompliance is remedied.

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.

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.

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.