

Safety Recall

INTERNATIONAL

G—01507

U.S., Export

Date: July, 2001

Subject File: FRONT AXLE

Subject: Steering Knuckles On Dana I-200 Front Steer Axles On Vehicles Built From 4/2/01 Through 4/20/01

Model: 2000

Start Date: 04/02/2001 End Date: 04/20/2001

Model: 4000

Start Date: 04/02/2001 End Date: 04/20/2001

Model: 5500i

Start Date: 04/02/2001 End Date: 04/20/2001

Model: 8100

Start Date: 04/02/2001 End Date: 04/20/2001

Model: 9200i

Start Date: 04/02/2001 End Date: 04/20/2001

DEFECT DESCRIPTION

Print ready (PDF file) copy of the dealer letter

Print ready (PDF file) copy of the customer letter

There are cracks in the seal surface diameter and large bearing surface diameter on steer axle knuckles, which can reduce the life expectancy of the knuckles. If one of the suspect steering knuckles fails, the wheel on that end would completely separate from the vehicle without warning and the driver would experience a sudden loss of steering control and **possibly have a vehicular accident resulting in property damage, personal injury, or death.**

MODELS INVOLVED

Only 2000, 4000, 5500i, 8100, and 9200i models built from 4/2/01 through 4/20/01 with front axle codes 02ADH, 02ADJ, 02ADK and 02ADY.

OWNER NOTIFICATION

International Truck and Engine Corporation will notify owners of these vehicles about this campaign. A copy of the owner letter is attached. 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 since 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.

SERVICE PROCEDURE

INTRODUCTION: The repair for this recall is to replace both steering knuckles on the involved vehicles. There is no inspection option. The repair will require one recall kit number and two wheel seals. See the PART INFORMATION section for the seal part numbers for your VIN.

Removing the Steering Knuckles

(Utilize this procedure for removing the steering knuckles on both sides.)

1. Park the vehicle on turn plates, put the transmission in neutral, set the parking brake and shut off the engine.
- 2.



WARNING – Block the rear wheels to prevent the vehicle from moving in either direction. If the vehicle rolls unexpectedly, the result could be serious personal injury or death.

3. Measure the turn angles using the turn plates by turning the wheels fully left and record the turn angle, then turn the wheels fully right and record the turn angle.
- 4.



WARNING – Support the vehicle with safety stands. Do not work under a vehicle supported only by jacks. Jacks can slip or fall over and cause injury.

5. Remove the front wheels. Refer to GROUP 17 - WHEELS, RIMS AND TIRES Section in the Master Service Manual.
6. Remove the brake assembly. Refer to GROUP 04 – BRAKES in the Master Service Manual.
7. Remove the tie rod assembly and drag link from the steering arms and completely remove the steering and tie rod arms from the knuckle. Refer to GROUP 05 – STEERING in the Master Service Manual.
8. Remove the threaded draw keys. First remove the nut and the Belleville washers, and then drive the keys out by striking the threaded end of the draw key with a brass drift and hammer.
9. Remove the top and bottom steering knuckle caps.
10. Carefully remove the top and bottom O-rings that are under the caps. These O-rings must be re-used.
11. Carefully tap the kingpin downward and out using a brass drift and hammer on the top of the kingpin. Be sure not to damage the kingpin because it must be re-used. If the kingpin is difficult to remove, a hydraulic press can be used.

NOTE – Both draw keys must be removed to get kingpin out.

SERVICE PROCEDURE (CONT.)

12. Remove the steering knuckle, thrust bearing, and all shims. The removed shims may be re-used if not damaged so keep the shims together to re-install with the new knuckle. There are also some new shims in the recall kit.
13. Remove the steering stop bolt and jam nut from the removed knuckle before discarding the defective knuckle. Do not return or re-use the defective knuckles, destroy and recycle the removed knuckles locally.

Installing the Steering Knuckles

(Utilize this procedure for installing the steering knuckles on both sides.)

1. Install the steering stop bolt and jam nut in the new knuckle.
2. Install the kingpin seals by positioning the knuckle in a vise upside down to install seal in upper bore. Hand start the seal with the sealing lip out or rounded edge into bore. Press the seal into the bore with a steel plate until the seal is flush with the knuckle surface. Then invert the knuckle in the vise and utilize the same procedure to install the lower seal.
3. Clean the kingpin and the axle eye and lubricate the axle eye, kingpin, and the inside of the new bushings with Fleetrite EP2 Moly grease or equivalent NLGI No. 2 multi-purpose lithium grease to provide initial lubrication.
4. Slide the thrust bearing between the lower face of the axle center and the lower steering knuckle yoke with the seal lip towards the bottom of the knuckle. Figure 1 below shows the seal lip on the bottom.

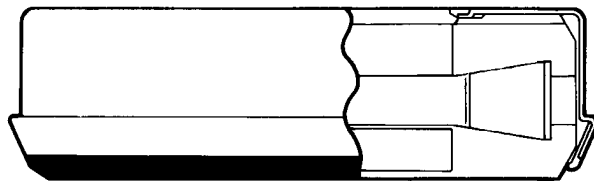


Figure 1 One-Piece Sealed Thrust Bearing Installed With The Seal Lip Towards The Bottom Of The Knuckle

5. Align the steering knuckle yoke holes with the axle and thrust bearing holes.
6. Slide the spacer shim(s) between the upper face of the axle eye and the bottom of the upper steering knuckle yoke. The installed shim thickness should be equal to the thickness of the shims initially removed. Old shims must be clean to re-use.
7. Install the kingpin from the top (the flats are closer to the top of the kingpin), taking care to align the notches in the kingpin with the draw key holes in the I-beam and vertically center the kingpin to allow both the top and bottom caps to be installed without interference.
8. Apply chassis grease to the draw key bores and install the new draw keys from the recall kit. Install the top draw key with the threaded end towards the front of the axle and the bottom draw key with the threaded end towards the rear of the axle. Drive the draw keys in completely with a brass drift and hammer. Do not install nuts and washers yet. Reference Figure 2 below.

SERVICE PROCEDURE (CONT.)

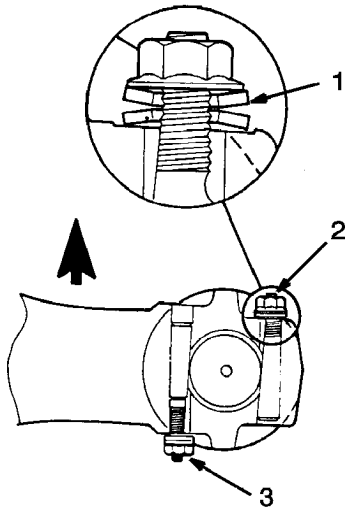


Figure 2 Draw Key Installation

1. BELLVILLE WASHERS
2. TOP DRAW KEY
3. BOTTOM DRAW KEY

9. Check the spindle vertical endplay to determine if additional shimming is required. Place a jack under the lower side of the steering knuckle yoke and raise the knuckle so that all clearance is taken up between the lower yoke, the thrust bearing and the lower face of the axle center end (see Figure 3 below, Item 2). Using a feeler gage, check the clearance gap between the top face of the upper axle center end and the lower face of the knuckle pin upper boss should be **between 0.005 and 0.015 inch** or 0.127 and 0.381 mm (see Figure 3 below, Item 1). If the clearance is not within this range, adjust the clearance gap using the proper size shim(s).

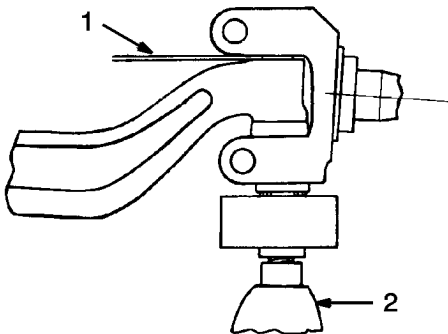


Figure 3 Place Jack Under Steering Knuckle Yoke

1. FEELER GAGE
2. JACK

10. After the knuckle is properly shimmed, install the new washers and nuts on the draw keys. Torque the draw key nuts to **25 - 30 Lbf-Ft** (34-41 Nm). Seat the draw keys with a drift and hammer and then re-torque the draw key nuts.

SERVICE PROCEDURE (CONT.)

11. Install kingpin caps and O-rings. Torque cap bolts to **12 – 16 Lbf-Ft** (16 – 22 Nm).
12. Before installing the brake assembly, grease the kingpin and bushings through the upper and lower cap grease fittings and verify lubricant flow.
13. Install the steering and tie rod arms in the knuckle and torque to **775 Lbf-Ft** (1,051 Nm) minimum. Maximum torque not to exceed **1200 Lbf-Ft** (1,627 Nm). If the cotter pin cannot be installed, tighten to next position - do not back off. Install new cotter pins and bend ends to the retaining position. Refer to GROUP 05 -STEERING in the Master Service Manual.
14. Install the tie rod to the tie rod arm and the drag link to the steering arm and torque to **120 Lbf-Ft** (163 Nm) minimum. If the cotter pin cannot be installed, tighten to next position - do not back off. Maximum torque not to exceed **270 Lbf-Ft** (366 Nm). Install new cotter pins and bend ends to the retaining position. Refer to GROUP 05 -STEERING in the Master Service Manual.
15. Install the brake components. Refer to GROUP 04 – BRAKES in the Master Service Manual.
16. Clean and inspect the front wheel bearings. Install the bearings in the hub assembly using new seals, and install hub assembly. Be sure to lubricate bearing and add lubricant to the hub. Refer to the GROUP 17 – WHEELS, RIMS, AND TIRES in the Master Service Manual.
17. Install wheel and tire as instructed in GROUP 17 - WHEELS, RIMS, AND TIRES in the Master Service Manual.
18. Check and adjust toe-in. Refer to Group 02 – FRONT AXLE, General Service Information And Front Wheel Alignment in the Master Service Manual.
19. Remove the vehicle from the floor stands and set the vehicle on the turn plates.
20. Set the turn angles by adjusting the stop bolts to achieve the previously measured turn angles. Tighten the stop bolt jam nuts to **90 – 120 Lbf-Ft** (122 – 163 Nm).
21. Verify or reset the steering gear relief plungers so the proper pressure relief is achieved in both directions, refer to Group 05 – STEERING (Power Steering Gear Sheppard M-Series) in the Master Service Manual.

PARTS INFORMATION

To repair a vehicle, you will have to order the recall kit and two wheel seals. The recall kit **8900078R91** does not contain the two wheel seals required for each vehicle repaired because there is a standard seal and an optional seal. The VIN's for the vehicles that need the optional seals are listed in Table 2. All VIN's not listed in Table 2 must use the standard seals. See Table 2 on the next page for wheel seal part numbers.

Table 1 **Kit Contents for 8900078R91**

Description	Quantity
I200 - L.H. Knuckle w/bushings already pressed in	1
I200 - R.H. Knuckle w/bushings already pressed in	1
Knuckle Oil Seal	4
Short Draw Key, For the Outer or Upper Hole	2

PARTS INFORMATION (CONT.)

Table 1 Kit Contents for 8900078R91 (cont.)

Description	Quantity
Long Draw Key, For the Inner or Lower Hole	2
Draw Key Washers: Bellville Washers	8
Draw Key Nuts	4
Shim .005"	4
Shim .010"	2
Shim .020"	2
Instruction Sheet	1
Cotter pin: 0.187" X 2.250" Steering Arms	4
Cotter pin: 0.187" X 2.250" Wheel	2
Cotter pin: 0.125" X 1.750" Tie Rod	2

Table 2 Wheel Seals

If your VIN is not listed below, order two of wheel seal part number 794408C91.			
VIN1	VIN2	Wheel Seal Code	Part #
2HSCNAST6	2C029744	0029593	Order two of the optional wheel seals for the VIN's shown to the left. 1612877C91
2HTCEAXT5	2C030095	0029593	
1HTGGATT4	2H401385	0029594	
1HTGGATT6	2H401386	0029594	
1HTGGATT8	2H401387	0029594	
1HTGGATTX	2H401388	0029594	Order two of the optional wheel seals for the VIN's shown to the left. 1612877C91
1HTGGATT1	2H401389	0029594	
1HTGGATT8	2H401390	0029594	
1HTGGATTX	2H401391	0029594	
1HTGGATT1	2H401392	0029594	
1HTGGATT3	2H401393	0029594	Order two of the optional wheel seals for the VIN's shown to the left. 1612877C91
1HTGGATT5	2H401394	0029594	
1HTGGATT7	2H401395	0029594	
1HTGGATT9	2H401396	0029594	
1HTGGATT0	2H401397	0029594	
1HTGGATT2	2H401398	0029594	

PARTS INFORMATION (CONT.)

Table 2 Wheel Seals (cont.)

If your VIN is not listed below, order two of wheel seal part number 794408C91.			
VIN1	VIN2	Wheel Seal Code	Part #
1HTGGATT4	2H401399	0029594	Order two of the optional wheel seals for the VIN's shown to the left. 1612877C91
1HTGGATT7	2H401400	0029594	
1HTGGATT9	2H401401	0029594	
1HTGGATT0	2H401402	0029594	
1HTGGATT2	2H401403	0029594	
1HTGGATT4	2H401404	0029594	Order two of the optional wheel seals for the VIN's shown to the left. 1612877C91
1HTGGATT6	2H401405	0029594	
1HTGGATT8	2H401406	0029594	
1HTGGATTX	2H401407	0029594	
1HTGGATT1	2H401408	0029594	
1HTGGATT3	2H401409	0029594	Order two of the optional wheel seals for the VIN's shown to the left. 1612877C91
1HTGGATTX	2H401410	0029594	
1HTGGATT1	2H401411	0029594	
1HTGGATT7	2H401414	0029594	
1HTGGAET5	2H410285	0029594	
1HTGGAET7	2H410286	0029594	Order two of the optional wheel seals for the VIN's shown to the left. 1612877C91
1HSGLAHR1	2H411420	0029594	
1HTGBAAR2	2H414562	0029594	
1HTGBAAR4	2H414563	0029594	

NOTE: Only one labor operation should be used per vehicle for this campaign and there is no inspection option. All vehicles in this campaign need to have the steering knuckles replaced.

Table 3 Labor Information

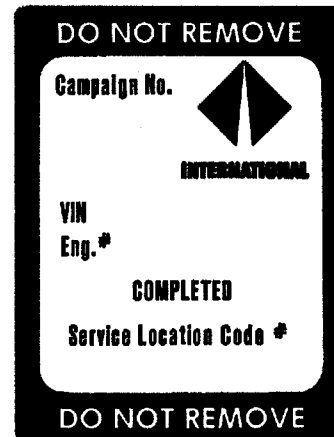
Operation Number	Description	Time
A40-01507-1	R & R steering knuckles	5.5 hrs

Campaign Identification Label

CAMPAIGN IDENTIFICATION LABEL

Each vehicle corrected in accordance with this Campaign will require a CTS-1075 Campaign Identification Label.

Attach the CTS-1075 label 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, 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.

In order to avoid having to replace an owner vehicle or refund the purchase price less a reasonable allowance for depreciation, every effort must be made to promptly schedule an appointment with each owner to repair his or her vehicle as soon as possible.

Refer to Dealer's Policy 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 Dealer Policy Manual, Section 7-1. Special attention should be given to Items 39 through 44:

GROUP				NOUN				C	WARR.	TP	PAD
GROUP Enter number G—											
NOUN Leave blank											
C (CAUSE) Enter either 1, 2, 3. (see below)											
1. Inspected (No repair required).											
2. Inspected and repaired.											
3. Defective part from parts stock.											
WARRANTY (Warranty Code) Enter 40.											
TYPE PART Enter P for type part causing failure.											
PAD Enter 100											

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, 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 Recall letter G-01507.

We ask for your full cooperation and follow-up to this important subject matter.