



# VEHICLE RECALL

**G-03510-R1**  
**March 2004**

**SUBJECT: SAFETY RECALL (U.S., EXPORT)**

**Unitized Wheel Hub on Certain 4000, 8000, and 9000 Series  
Models Built 1/9/1998 through 3/1/2002 and Certain Service  
Replacement Unitized Wheel Hubs Installed 5/21/1999 thru  
5/2/2000**



***THIS LETTER REPLACES THE ORIGINAL G-03510 LETTER DATED  
NOVEMBER 2003.***

***ALL VEHICLES MARKED IN ISIS REQUIRE THE RECALL SERVICE  
PROCEDURE TO BE PERFORMED.***

**REVISION DESCRIPTION**

- **MODELS INVOLVED**
  - Addition of vehicles, which may have received defective hubs through service parts.
- **PARTS INFORMATION**
  - The Recall Service Kit part numbers' suffixes were changed from R1 to R91.
- **SERVICE PROCEDURE**
  - A spindle O-ring installation procedure was added. It was inadvertently left out of the original letter.
- **PART INFORMATION**
  - Part return information for Canada was added.

## **DEFECT DESCRIPTION**

The bearings and seals on ArvinMeritor unitized/integrated front axle wheel hubs were manufactured improperly allowing them to wear prematurely. Premature bearing wear could result in wheel separation, wheel fire, or vehicle fire possibly resulting in **property damage, personal injury, or death.**

## **MODELS INVOLVED**

This campaign includes 4000, 8000, and 9000 Series models built 1/9/1998 through 3/1/2002 with the following front axle feature codes: 02ARK(12K), 02ARL(13.2K), 02ASB(12K), 02ASD(12K), 02ASE(13.2K).

This campaign also includes vehicles that may have received defective hubs through service parts. These aftermarket hubs were installed between 5/21/1999 and 5/2/2000.

**ArvinMeritor supplied International with a list of suspect front axle serial numbers and VINs. *International only notified those owners whose vehicles were manufactured with the suspect front axles and owners whose vehicles may have been repaired with a defective hub.* Not all vehicles built in the date range listed above require the recall service.**

***Only those VINs whose owners were specifically notified by International and those VINs that are marked in ISIS will definitely require the recall service.***

## **OWNER NOTIFICATION**

International Truck and Engine Corporation has already notified owners of this campaign on their vehicles. During the recall process, a listing of owner names and addresses were 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.

## **PARTS INFORMATION**

There are two (2) ***possible*** Recall Service Kits required for this recall.



***Please read carefully to determine, via line set ticket, which Service Kit is required for each vehicle.***

They are:

Part Number	Description	Qty	Wheel Feature Code
8900095R91	03510 Recall Service Kit – <b>Short</b> Stud Hub	1	27DMA 27DMH 27DNS
8900096R91	03510 Recall Service Kit – <b>Long</b> Stud Hub	1	27DMB 27DMC 27DMK 27DMJ



**CAUTION:**

Short Wheel Studs are only used with steel wheels.

Short Wheel Studs measure approximately 2.5” from the outboard face of the hub flange to the end of the stud. Trucks with steel wheels receive the Short Stud Hub Kit.



**CAUTION:**

Long Wheel Studs are only used with aluminum wheels.

Long Wheel Studs measure approximately 2.9” from the outboard face of the hub flange to the end of the stud. Trucks with aluminum wheels receive the Long Stud Hub Kit.

The **8900095R91** Recall Service Kit contains the following parts and should be used on vehicles with **27DMA, 27DMH, or 27DNS**:

<b>Kit Number:</b>	<b>8900095R91</b> 03510 Recall Service Kit – Short Stud	
<b>Part Number</b>	<b>Description</b>	<b>Quantity</b>
KIT SKF SS2	Short Stud Recall Kit for Steel Wheels	1
	<b><i>Each KIT SKF SS2 Contains:</i></b>	
	<i>5x1301 O-Ring</i>	2
	<i>2297P8414 Grease</i>	2
	<i>A3262A1275 Hub Cap w/Sealant</i>	2
	<i>1229G4713 Tabbed Washer</i>	2
	<i>1227M1521 Inner &amp; Outer Nut</i>	4
	<i>1229L4640 D-Washer</i>	2
	<i>HFFUOOTS34 Hub Unit</i>	2
	<i>Return Material Label</i>	1
	<i>TP-0385 Hub Replacement Instructions</i>	1
	<i>Return Material Instructions</i>	1
	<i>I.D. Tags for Hub</i>	1

The **8900096R91** Recall Service Kit contains the following parts and should be used on vehicles with **27DMB, 27DMC, 27DMK, or 27DMJ**:

<b>Kit Number:</b>	<b>8900096R91</b> 03510 Recall Service Kit – Long Stud	
<b>Part Number</b>	<b>Description</b>	<b>Quantity</b>
KIT SKF LS2	Long Stud Recall Kit for Aluminum Wheels	1
	<b><i>Each KIT SKF LS2 Contains:</i></b>	
	<i>5x1301 O-Ring</i>	2
	<i>2297P8414 Grease</i>	2
	<i>A3262A1275 Hub Cap w/Sealant</i>	2
	<i>1229G4713 Tabbed Washer</i>	2
	<i>1227M1521 Inner &amp; Outer Nut</i>	4
	<i>1229L4640 D-Washer</i>	2
	<i>HFFUOOTS32 Hub Unit</i>	2
	<i>Return Material Label</i>	1
	<i>TP-0385 Hub Replacement Instructions</i>	1
	<i>Return Material Instructions</i>	1
	<i>I.D. Tags for Hub</i>	1

## Part Return Information



**NOTE:** All **CANADA** removed parts must be shipped  
**COLLECT to:**

**SKF CANADA LIMITED**  
**40 Executive Court**  
**SCARBOROUGH, Ont M1S 4N4**

**Attn: Robert Mullins**



**NOTE:** All **US** removed parts must be shipped **COLLECT** via  
**Yellow Freight to:**

**SKF/ETI**  
**2202 26<sup>th</sup> Street SW**  
**Allentown, PA 18103**

**Attn: Bill Savacool**

**Return Material Labels, Tags, and Instructions are included  
with the Recall Service Kits for US part returns only.**

## **SERVICE PROCEDURE**

All vehicles must have **both front axle** wheel hubs replaced.



### **WARNING:**

*To prevent serious eye injury, always wear safe eye protection when you perform vehicle maintenance or service.*



### **WARNING:**

*Block the wheels to prevent the vehicle from moving. Support the vehicle with safety stands. Do not work under a vehicle supported only by jacks. Jacks can slip or fall over resulting in serious personal injury or death.*



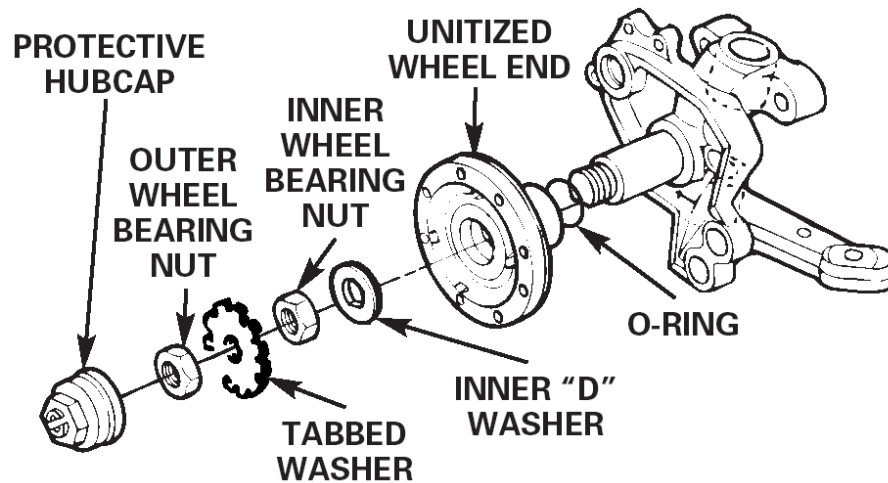
### **WARNING:**

You must follow the unitized wheel-end hub removal and installation procedures provided in this letter and included with the Recall Service Kit to prevent serious personal injury and damage to components.

- Unitized wheel ends are not adjustable.
- Do not attempt to set or adjust end play.

## **REMOVING THE WHEEL HUB UNIT**

1. Use the correct size socket to remove the threaded protective hubcap from the hub by turning the hubcap COUNTERCLOCKWISE.



**Figure 1**

2. Use a jack to raise the vehicle so that the front tires are off the ground. Support the front axle with safety stands.
3. Remove the tire and wheel assembly.

**NOTE:** If instructions are needed at any point in this repair procedure, refer to the CTS-5000 Master Service Manual. Follow all standard safety precautions and procedures recommended by the CTS 5000 Master Service Manual.

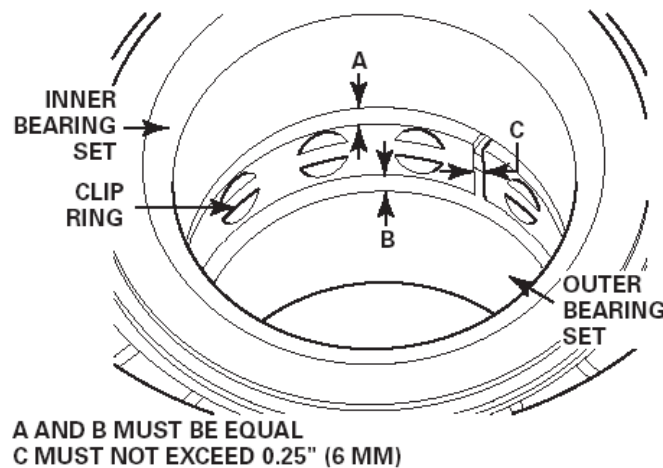
4. Bend back and flatten the washer tab folded against the flat edge of the outer wheel bearing nut.
5. Remove and discard the outer wheel bearing nut and the tabbed washer from the spindle. Replace with new parts during assembly.
6. Remove and discard the inner wheel bearing nut and the inner "D" washer from the spindle. Replace with new parts during assembly.
7. Remove the unitized wheel end STRAIGHT from the spindle.

**NOTE:** The spindle O-ring enables you to remove the unitized wheel-end hub from the spindle more easily, because it helps to prevent contaminants from entering the assembly. You should not need a puller to remove the hub.

8. Remove and discard the spindle O-ring. Replace with new parts during assembly.

## **REPLACEMENT HUB INSPECTION**

1. Remove the replacement hub from the box and place it on a clean surface.
2. Examine the interior of the hub to verify the following:
  - A. The inner clip ring has not become dislodged in shipment and is in correct alignment with the inner and outer bearings. The gap between the inner and outer bearing sets and the clip ring must be equal (Dimensions A & B). See **Figure 2**.
  - B. The gap between the ends of the clip ring and inner/outer bearing set must be equal and not exceed 0.25-inch (6 mm). If necessary, adjust by hand (Dimensions A, B & C). See **Figure 2**.
  - C. The bearing face must be clean with no seal coating, dirt or dust.

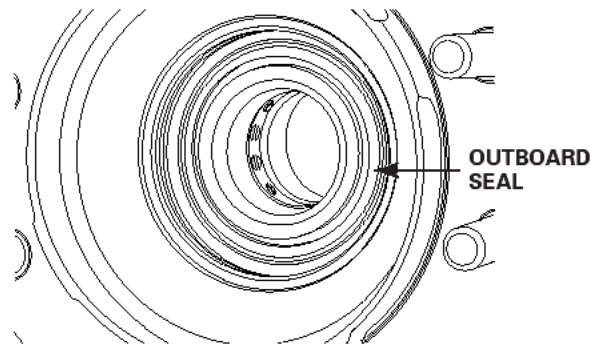


**Figure 2**

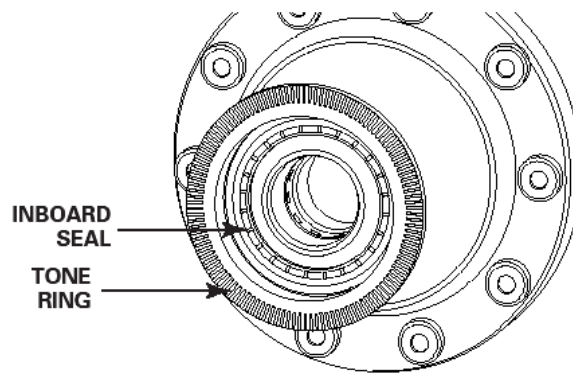
3. Examine the exterior of the hub to verify the following:
  - A. There is no visible damage to the inboard or outboard seals and the bearings have not become unseated. Refer to Figure 3 and Figure 4.



- B. The tone ring teeth are not damaged and there are no broken or missing teeth on the tone ring.



**Figure 3**



**Figure 4**

### **INSTALLING THE REPLACEMENT WHEEL HUB UNITS**

**NOTE:** One (1) kit is required to completely service one axle. One (1) Kit Contains two (2) unitized hubs.

**NOTE:** When you remove the unitized wheel end hub, install a new O-ring contained in the recall service kit.

1. Check the knuckle spindle for scratches, nicks or marks. Minor surface damage may be repaired using a crocus or emery cloth. Refer to Figure 5.

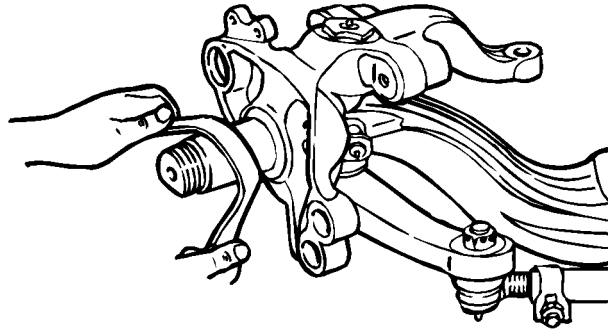


Figure 5

2. Clean knuckle spindle with a clean dry rag. **DO NOT** apply any solvent.
3. Lubricate the inside bore of the replacement hub and the entire axle spindle with NLGI #1 or #2 grease.
4. Coat the new O-ring with a thin coat of grease to assist in its installation.
5. Slide the new O-ring onto the spindle. The O-ring must be positioned against the knuckle shoulder and should not be twisted.



**CAUTION:**

Take care to align unit carefully. Install the new hub unit straight onto spindle. Do not allow the hub unit to misalign and wedge onto spindle threads. Bearing damage could occur.

If the wheel hub unit does not slide on easily, do not force it on the spindle. The wheel hub unit can become jammed on the spindle if care is not taken to align it properly with the spindle.

If the wheel hub unit becomes jammed on the spindle, carefully remove the wheel hub unit from the spindle so as not to disassemble or loosen the inner bearings from the wheel hub unit and repeat procedures.



**CAUTION:**

Disassembly of the wheel hub unit could contaminate the lubricant and will void the manufacturer's warranty. Disassembled hub units cannot be used and require replacement.

Check the bore of the wheel hub unit for any obstructions and check the spindle for any nicks or burrs.

6. Carefully align the new wheel hub unit bore with the spindle and then slide the hub straight onto the spindle.

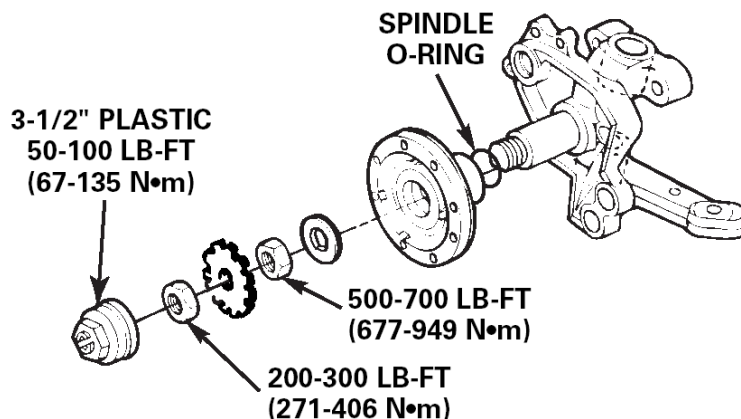


**WARNING:**

*The inner wheel bearing nut and outer wheel bearing nut torque values are unique to the wheel hub unit. Failure to follow the specified torque may result in possible component damage, wheel separation and serious personal injury and/or property damage, or death.*

**NOTE:** The inner wheel bearing nut and the outer wheel bearing nut are identical but torque values are different.

7. Install new thick inner "D" washer and one of the new wheel bearing nuts onto the spindle threads. Tighten the inner wheel bearing nut onto spindle to **500-700 Lbf-Ft (678-949 Nm)** while rotating the hub in both directions. Refer to Figure 6.



**Figure 6**

8. For ABS equipped axles, check that the original ABS sensor has not moved from the sensor holder. Check the sensor wiring back to the chassis wiring for worn insulation and proper routing. Adjust sensor as required. Refer to the CTS-5000 Master Service Manual for sensor adjustments.
9. Install the new tabbed washer onto the spindle threads.
10. Install the new outer wheel bearing nut onto the spindle threads. Tighten the outer wheel bearing nut to **200-300 Lbf-Ft (271-406 Nm)**.
11. Bend tabs of the new outer replacement tabbed washer over the flats of the outer wheel bearing nut and the inner wheel bearing nut. Bend washer tabs onto at least one flat edge to each nut. Use care to ensure that the tool used to bend tabs does not slip past tabs and damage the spindle hub threads.
12. Apply a light coating of NLGI #1 or #2 grease to the axle spindle nuts to protect against corrosion.
13. Install the new plastic hubcap from the kit into the hub threads. Tighten to **50-100 Lbf-Ft (67-135 Nm)**.
14. Install the brake drums and the tire-wheel assemblies. Refer to the International Service Manual CTS-5000 for instructions and torque specifications and tightening sequence.
15. Repeat procedure for other wheel end.

## END OF SERVICE PROCEDURE

### LABOR INFORMATION

<u>Operation No.</u>	<u>Description</u>	<u>Time</u>
A40-03510-1	<b><i>Perform Hub Replacement Procedure</i></b>	1.7 hr



***All suspect front axles must receive the Recall Service!***

## **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.

<b>DO NOT REMOVE</b>
<b>INTERNATIONAL</b>
Campaign No.
VIN Eng.#
<b>COMPLETED</b>
Service Location Code #
<b>DO NOT REMOVE</b>

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

Proceed immediately to make necessary correction to the 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.

## **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:

GROUP	NOUN	C	WARR.	TP	PAD
<div>GROUP: Enter Recall Number</div>	<div>NOUN: Leave Blank.</div>	<div>C: (CAUSE) Enter either 1, 2, or 3. 1. Inspected – no corrections necessary 2. Inspected and repaired. 3. Defective part from parts stock.</div>	<div>WARRANTY: (Warranty Code) Enter 40.</div>	<div>TYPE PART: Enter P for type part causing failure.</div>	<div>PAD: Enter 100.</div>

## **ADMINISTRATIVE/DISTRIBUTOR RESPONSIBILITY (EXPORT)**

Proceed immediately to make necessary correction to the 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**