VEHICLE RECALL

G-02513
December 2002

SUBJECT: VEHICLE RECALL (U.S., EXPORT)
Driveline Parking Brake May Not Function Properly On Certain 3200, 4200, 4300 and 4400 Models Built Between 11/16/00 and 4/19/02

DEFECT DESCRIPTION

The driveline parking brake assembly may not hold the vehicle in position when the parking brake is applied. Factors that may contribute to this possible condition are: 1) Cracked or broken cams; 2) Loose or broken anchor screws; 3) Initial shoe diameter not properly set during assembly; 4) Bent adjuster levers; or 5) Automatic adjuster cables that are disconnected.

RISK TO MOTOR VEHICLE SAFETY

If the parking brake does not function properly, the vehicle may begin to roll without warning even though the parking brake lever has been set. If the parking brake does not hold the vehicle in position, it could result in an accident, possibly resulting in property damage, personal injury or death.

DESCRIPTION OF VEHICLES INVOLVED

Certain 3200, 4200, 4300 and 4400 models with hydraulic brakes and driveline parking brake code 04GAR and built between 11/16/00 and 4/19/02 are involved in this recall. Verify vehicles involved by using ISIS.

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, 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.

SERVICE PROCEDURE

INTRODUCTION: The purpose of this procedure is to inspect components of the parking brake system, replace specific hardware, and adjust the park brake system. This will consist of a visual inspection of the system; replacement of the park brake cam, park brake apply lever and park brake anchor screw; visual inspection and possible servicing of the park brake self-adjust feature; setting of the park brake-to-drum cage diameter; and setting the adjusting cable tension to the specified value.

BEFORE PERFORMING THE SERVICE, PLEASE READ AND UNDERSTAND THE FOLLOWING INSTRUCTIONS COMPLETELY.

WARNING: To prevent serious eye injury, always wear appropriate eye protection when performing vehicle maintenance or service.

INSPECTION OF SYSTEM

1. Set the parking brake.

2. **WARNING: Block the front wheels to prevent the vehicle from moving. If a vehicle moves unexpectedly or suddenly, the result could be serious personal injury or death.**

3. **WARNING: Raise the rear axle(s) as necessary. Do not work under a vehicle supported only by jacks. Jacks can slip or fall over, potentially resulting in serious personal injury or death.**

4. Release the park brake lever in the cab and put the transmission in neutral so that the drive shaft will rotate freely.

5. Unbolt the park brake drum and pull it forward from the brake shoes so you can identify the brake assembly. It may be necessary to back off the adjuster to get the drum off. If the brake assembly looks like Figure 1, the recall must be completed, continue to step 6. Some vehicles built close to the end of the build date range might not need the recall if they were built with the brake assembly shown in Figure 2. If your vehicle matches Figure 2, it is not involved in this recall; therefore, install the brake drum and torque the bolts to 45 Lbf-Ft (61 NM) and jump to the **BRAKE SHOE ADJUSTMENT** section of this letter.

6. Slide the drum back over the shoes and disconnect the drive shaft at the yoke. Completely remove the drum and clean the dust off of the individual brake components.

7. Visually inspect the park brake shoes. Linings should be replaced if there is uneven lining wear or when the remaining lining is 0.76mm (.030” or approximately 1/32”) thick or less above the shoe. If grease, automotive fluids or other foreign matter that would compromise friction performance is found on, soaked into, or embedded in the linings, the shoes should be

replaced. If cracks, excessive deformation, or wear of either end is found, the shoes should be replaced.

8. Inspect all springs and hold down pins in the park brake for excessive corrosion, heat discoloration, wear or other damage.

9. Inspect the brake adjuster cable assembly for damage or wear (See Figure 1).

10. Inspect the adjuster star wheel and screw for burs, chips or other damage to the threads or teeth. Damaged teeth or threads may prevent proper operation of the self-adjusting function.

11. Inspect the adjuster lever and replace if bent or damaged.

12. Clean any dust or grease present on the inside of the drum. Replace the drum if it exceeds the maximum inside diameter, is worn unevenly or has deep grooves, or excessive run out.

CAM, LEVER AND ANCHOR SCREW REPLACEMENT

Any components identified as needing replacement during the inspection above can be replaced at the same time as the cam, lever and anchor screw replacement. See Figure 1 for identification of brake components.

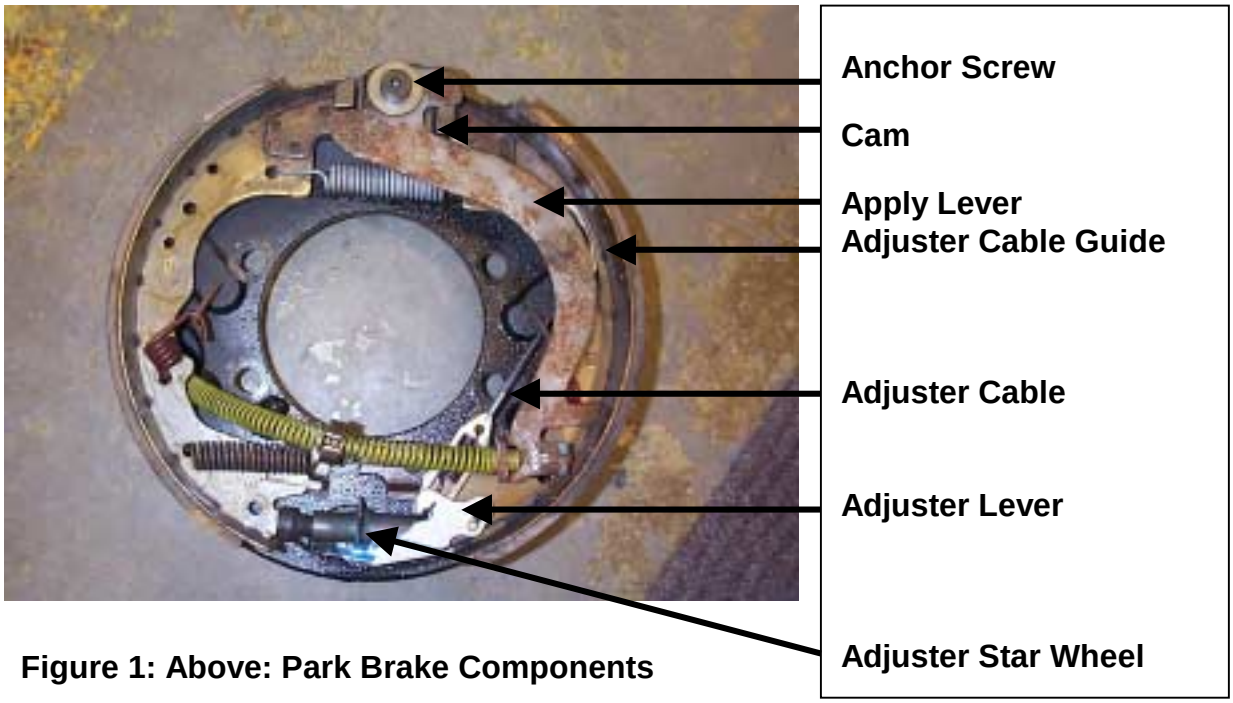


Figure 1: Above: Park Brake Components

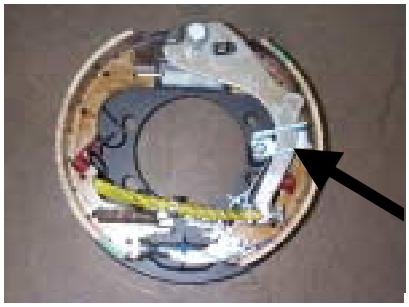


Figure 2: Left

VEHICLE DOES NOT NEED RECALL
Vehicles with the lever arm and guide called out here do not need the recall performed.

1. Locate the parking brake cable adjustment turnbuckle in the left frame rail (Reference Figure 5).

2. With the cab parking brake lever in the released position, de-adjust (loosen) the parking brake cable turnbuckle for maximum slack or until approximately 2 threads of engagement remain.

3. At the park brake, detach the parking brake cable and yellow return spring from the apply lever inside the brake.

4. Detach the adjuster cable from the adjuster lever and slide the cable off the adjuster cable guide located on the brake shoe (reference Figure 1).

5. Remove the anchor screw (see Figure 1).

   NOTE: It may be necessary to use vice grips or a similar tool on the knurling of the anchor head screw to loosen it because, a hex key may break or deform under the required removal torque.

6. Remove the flat washers (if equipped), anti-rattle spring, apply lever, cam and adjuster cable (reference Figure 1).

7. Remove the remaining cured thread-locking compound from the anchor screw hole threads in the brake backing plate. Run an M10 x 1.5 bottoming tap fully in and then back out. Use shop air to remove debris from the anchor screw hole.

8. Apply a thin film of high load grease (such as Chevron heavy duty, lithium complex, extreme pressure grease, or equivalent) to all four cam legs where they contact the shoes and brake apply lever.

   Warning: To avoid property damage, personal injury, or possibly death, care should be taken so as not to get any grease on either the shoes (friction material) or drum as this could result in a loss of park brake function and result in an accident.

9. Reinstall the adjuster cable, new cam, new apply lever, anti-rattle spring (small end toward screw head), flat washers (if equipped), and new anchor screw (see Figure 3). **Caution:** Thread anchor screw ONLY 1 to 2 turns to temporarily hold assembly together. DO NOT thread in completely until ready

to tighten to specification (the screw has pre-applied locking compound). A faulty installation will result in the thread locking compound activating and beginning to cure prior to fully tightening the screw.

Caution: When the anchor screw is installed, make sure the upper end of the adjuster cable is not pinched under the shoulder of the anchor screw during re-assembly and final torque (see Figure 3). Clamping the adjuster cable may prevent proper function of the brake self-adjusting feature.

10. Tighten the anchor screw to 37 +/- 2 lb ft (50 +/- 3 Nm).

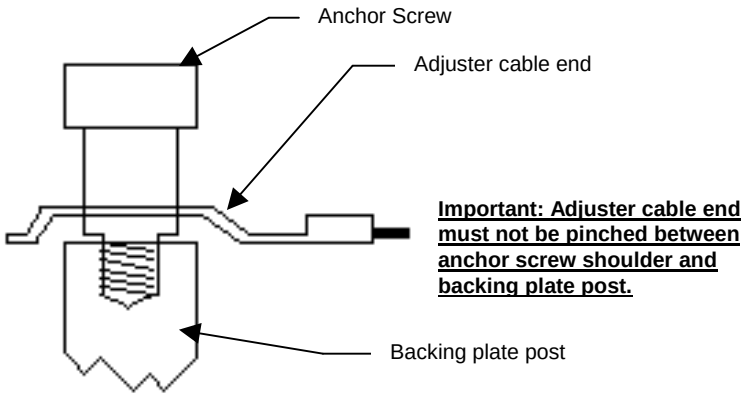


Figure 3 – Anchor Screw

11. Reinstall the yellow return spring end into the apply lever and the parking brake cable to the end of the brake apply lever.

12. Route the adjuster cable around the adjuster cable guide located on the shoe, then under the shoe hold down spring, and attach the spring end of the adjuster cable to the adjuster lever.

    WARNING: See notes that follow. Failure to correctly assemble the adjuster cable may result in reduced brake performance, possibly causing vehicle damage, personal injury, or death.

    Notes: See Figure 1.
    - Ensure that the spring end of the adjuster cable attaches against the back side of the adjuster lever and that the purple spring hook end faces outward.

    - Ensure that the edge of the adjuster lever is in contact with the adjuster nut star wheel.

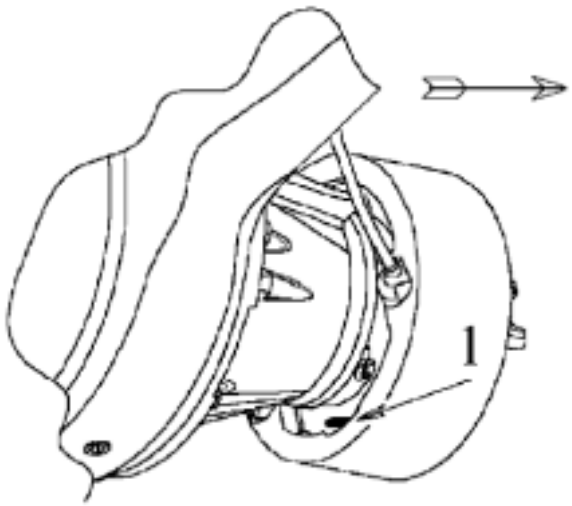
13. Make a final inspection of the brake and its components.

WARNING: TO AVOID PROPERTY DAMAGE, PERSONAL INJURY, OR POSSIBLY DEATH, MAKE SURE NO GREASE OR OTHER CONTAMINATION WAS ACCIDENTALLY APPLIED TO THE LININGS OR THE BRAKE DRUM, AS THIS COULD RESULT IN A LOSS OF PARK BRAKE FUNCTION AND RESULT IN AN ACCIDENT.

14. Install brake drum and torque bolts to 45 Lbf-FT (61 NM).

BRAKE SHOE ADJUSTMENT

Refer to Figure 4 and follow these steps to adjust the brake shoe:



1- Adjusting Access Slot

Figure 4 – Parking Brake and Rear Differential Assembly

1. Insert a brake-adjusting tool (or flathead screw driver) through the adjusting access slot in the back of the park brake and move the adjuster screw teeth downward to expand the brake shoes outward. Continue expanding the shoes until the drum cannot be rotated by hand.

2. Adjust the teeth upward to retract the shoes until the drum just begins to rotate freely without drag from the linings. This will be approximately ½ - 1 turn of the adjuster screw. To retract the shoes it may be necessary to insert a second tool through the adjusting slot and gently push the adjusting lever away from the star teeth to allow rotation of the adjuster star.

3. Reinstall the drive shaft and torque bolts to the appropriate torque. Half-inch bolts should be tightened to 115 – 135 Lbf-Ft (156 – 183 NM). Three-eighths bolts should be tightened to 50 – 60 Lbf-Ft (68 – 81 NM). M12 bolts should be tightened to 100 – 120 Lbf-Ft (136 – 163 NM).

4. Remove the vehicle from the floor stands.

PARK BRAKE CABLE ADJUSTMENT:

Refer to Figures 5, 6 and 7 and follow these steps to make an adjustment to the park brake cable.

1. Apply the parking brake lever in the cab.

2. Tighten the parking brake cable turnbuckle (item 1, Figure 5) located in the left frame rail to remove excess slack.

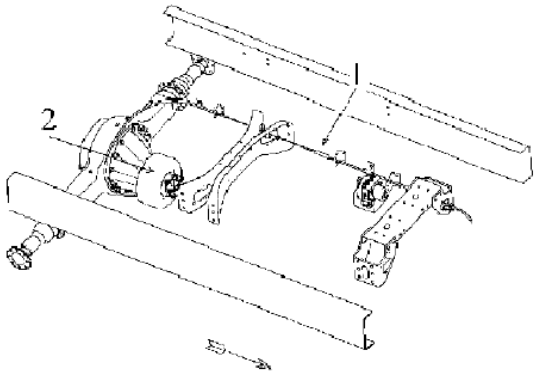


Figure 5 – Parking Brake System Overview
1. Brake cable adjustment turnbuckle
2. Parking brake

3. Apply and release the park brake five times and then apply the parking brake.

Note: Check the cable tension immediately forward of the turnbuckle on the coated cable. Recheck the cable tension at the same location every time.

4. **CAUTION: Do not allow the Tension Measuring Tool handle to snap back when the tool is off the cable, as the tool will be damaged.** Fully depress the Tension Measuring Tool handle so that the wheel will contact the cable as shown in Figure 6.

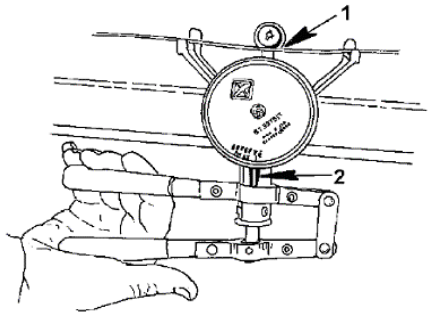


Figure 6 - Tension Measuring Tool
1. Wheel
2. Indicating bar

Note: The correct cable tension for adjustment of a new (replacement) cable is 500 +/- 25 lb. The correct cable tension for adjustment of existing cable is 390 +/- 25 lb. (See Figure 7)

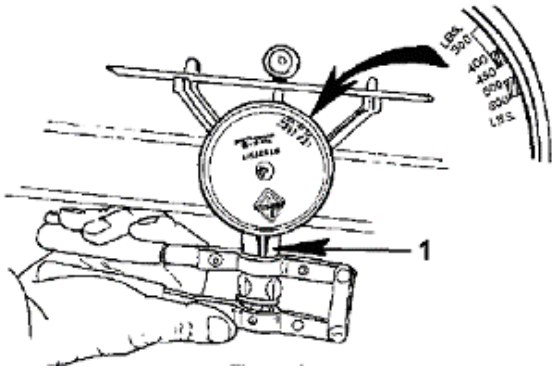


Figure 7 – Tension Measuring Tool Handles Depressed
1. Indicating bar

5. Release the handle quickly but smoothly and read the direct tension units on the dial face next to the indicating bar. If the tension is incorrect, remove tool, release park brake, and re-adjust the tension using the park brake cable turnbuckle. Recheck the cable tension after applying the parking brake lever in the cab. Repeat steps 3-5 until the tension is within correct limits.

PARTS INFORMATION

An estimated 99% of the vehicles in this recall will need kit 8900092R91 installed to complete this recall.

RETURNING PARTS: **Do Not Return Any Parts.**
Scrap all removed parts locally.

Table 1: Kit Contents For 8900092R91

Description: Int'l Kit 8900092R91 Bosch Kit number 0204212112FIX	**Bosch Part Numbers**	**Quantity**
Lever	0204212116	1
Cam	0204212112	1
Screw	0204212485	1

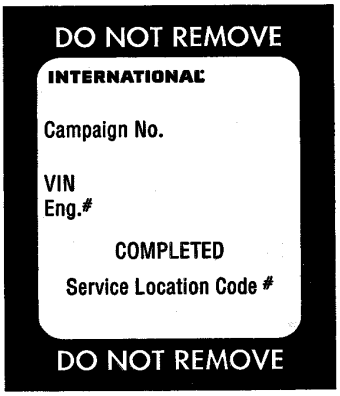
LABOR INFORMATION

Labor operation one or two will be used but not both. 99% of the vehicles in this campaign must have the recall kit installed (labor operation number 1). There may be a few built at the end of the build date range that have a different version

of the brake assembly. If you find one of these, do not complete the procedure, but complete a warranty claim for inspection only, no repair required (labor operation number 2.

Operation Number	Description	Time
A40-02513-1	Inspect & Install 8900092R91	1.0 Hrs
A40-02513-2	Inspect & Adjust, no repair required	0.6 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.

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

Proceed immediately to make necessary correction to all units in your inventory that are marked for this recall. **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 the 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 a vehicle or refund the purchase price less a reasonable allowance for depreciation, every effort must be made to promptly

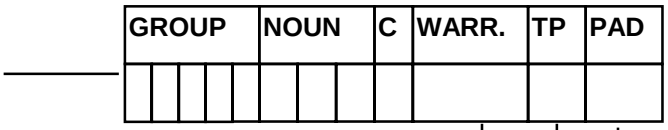
schedule an appointment with each owner to repair his or her vehicle as soon as possible.

WARRANTY CLAIMS

NOTE: Most vehicles in this campaign must have the parts replaced (use cause number 2 below). However, there may be a few vehicles built at the end of the build date range that have a different version brake assembly and will not need the procedure completed (use cause number 1 below).

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: Enter The Recall Number

NOUN: Leave Blank.

C: (CAUSE) Enter number 1 or 2.

1. Inspected, no repair required
2. Inspected and repaired.

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 all involved units in your 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 the 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 your Regional Service Manager.

INTERNATIONAL TRUCK AND ENGINE CORPORATION