



VEHICLE RECALL

G-02510
November 2002

SUBJECT: VEHICLE RECALL (U.S., EXPORT)

**Push in of Hydraulic Anti-lock Brake System (ABS)
Wheel Speed Sensors, Brake Rotor Corrosion
Evaluation and Functionality Check on Certain 1552,
1652, 3400, 3800, 4700, 4900 and FE, IC, CE and RE
Bus Models**

DEFECT DESCRIPTION

The TRW model 410M hydraulic ABS ECU can misinterpret erratic or low amplitude wheel speed signals. If the ECU misinterprets these false signals, the TRW ECU may not properly distinguish between an actual wheel rotation signal or an erratic errant signal. The ECU may activate the ABS, instead of deactivating the ABS in response to a false signal. This may result in the driver experiencing a hard pedal feel and a decrease in deceleration at the end of the stop, resulting in extended stopping distance. During the described conditions, the ABS warning indicator light may not come on to warn the driver of a system malfunction.

RISK TO MOTOR VEHICLE SAFETY

If a vehicle experiences one of the false signal generating conditions as described above and if the ECU misinterprets the signal, the driver may experience an unexpected extended stopping distance which could result in a vehicle accident, possibly resulting in property damage, personal injury or death.

DESCRIPTION OF VEHICLES INVOLVED

Certain 1552, 1652, 3400, 3800, 4700, 4900 and FE, IC, CE and RE Bus models are involved in this recall. **We have included and will notify only those customers whose vehicles meet both of the following criteria:**

1. Vehicles that were built between 3/01/99 and 4/01/02, but also were
2. Delivered to the user (DTU'd) from 3/01/99 through 4/01/02.

RESOLUTIONS

WHAT CAN BE DONE NOW AS AN INTERIM ACTION

1. Customers with hydraulic ABS brakes on trucks & buses delivered before 4/01/02 will be notified and given the option to push in their ABS wheel speed sensors themselves. International also has asked customers to bring their vehicle to a dealer if: (1) they are unable or do not want to perform the procedure themselves, (2) their ABS light is on, or (3) they are experiencing a brake problem (see attached customer letter).
2. This letter provides the Service Procedure for dealers to push in the wheel speed sensors and check ABS functionality. This Service Procedure is a preliminary action to another recall that will replace the ABS ECU.

FINAL RESOLUTION

The ABS ECU is in the process of being re-designed by the supplier to eliminate the problems that result from a false wheel speed signal interpretation. A new recall number will be released to replace the ABS ECU after the re-design and testing is completed, and adequate ECU inventory is acquired to begin the campaign. **This will possibly be mid-2003.**

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

DESCRIPTION: All four ABS wheel speed sensors must be pushed in on all vehicles in this recall. After this procedure has been performed, the vehicle must be test-driven. If the ABS warning light comes on during the test drive, further trouble-shooting will be required to identify and correct the condition. Some vehicles that have been exposed to road salts or extreme moisture may have developed corrosion or rust on the ABS tone ring teeth. Tooth profile variation due to severe corrosion on the tone ring may cause a faulty signal condition even when there is an adequate air gap between the tone ring and the sensor. If the sensor has been pushed in to contact the tone ring and tooth variation seems to be causing a faulty signal from the tone ring, the rotor should be replaced. If a rotor is replaced, it must be held at your location to be inspected by your Customer Service Engineer (CSE).

PUSHING IN THE ABS WHEEL SPEED SENSORS

Before performing the service, please read and understand the following instructions completely.

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

1. **WARNING:** Block the wheels to prevent the vehicle from moving. If a vehicle moves unexpectedly or suddenly, the result could be serious personal injury or death.
2. Shut off the engine, apply the parking brake and put the transmission in neutral.
3. Push in all four wheel speed sensors by hand until they contact the tone ring and stop moving. Sometimes the sensor may only move 0.002 inches. Be careful not to damage the sensor wires. The four sensors can easily be located by following the sensor wires on the axles to the backside of the wheel ends. The sensor wires are the only wires that will go from the axle to the backside of the wheel end. Be careful not to damage the sensor wires. You will find the four sensors on the inner side of each wheel end, two on the front axle and two on the rear axle. Push in all four wheel speed sensors by hand (with your thumb) until they contact the tone ring on the rotor. Sensors fit tightly in the holes and may only move a small amount (0.002 inches), but you should be able to feel them move. It may take a lot of force to push in the sensors, but it should not take any more force than what you can apply by hand. Do not strike or pound on the sensor with any type of tool.
4. Test drive the vehicle at various speeds up to at least 30 MPH and make several brake applications to verify that the ABS warning light stays off and that the brakes function properly. Brake pedal feel should be normal, without any pulsing, fading, or hard apply when making normal brake application on dry pavement. If the ABS light stays off and the brakes are functioning normally, no further action is required at this time, but please read steps 5 and 6 for future reference. If the ABS light comes on, continue to step 5.
5. If the ABS brake light comes on during the test drive, proceed by troubleshooting the fault and taking the appropriate action to correct the condition. The ABS fault may be due to certain conditions, including, but not limited to, tone ring tooth profile deterioration from corrosion, chafed sensor wire(s), poor electrical connections in the ABS or a faulty sensor. If the fault is due to corroded teeth on a tone ring, replace only the rotor that is causing the fault code. Brake pads, calipers and all other non-ABS brake parts are not covered under this recall. Rotors with worn out brake pad surfaces are not covered as well. The above procedure for sensors should be performed at every maintenance interval on trucks and buses operated in road salt states (per Table 1 in step 6) until the ECU is available. On units operated in non salt belt states, the above procedure for sensors is only required once. For an on-line service procedure with illustrations you can go to: <http://www.internationaldelivers.com>, and select "Customer Support".

6. **Table 1:** The above procedure for sensors should be performed at every maintenance interval on trucks and buses operated in road salt states (per Table 1) until the ECU is available. On units operated in non-salt belt states, the push in procedure for sensors is only required once.

Vehicle Operated In	Location
<i>Non-salt belt Perform procedure once</i>	<i>AL, AR, AZ, FL, GA, HI, LA, NC, OK, OR, SC, TN TX, UT, WA</i>
<i>Salt belt: high corrosion Performed at every maintenance interval</i>	<i>All other states and All of Canada</i>

PART INFORMATION

ALL REMOVED CORRODED BRAKE ROTORS MUST BE HELD AT YOUR LOCATION TO BE INSPECTED BY YOUR CSE BEFORE YOU MAY DISPOSE OF THEM.

Hold all rotors for inspection by your CSE per the instructions on the R-5185 PARTS DISPOSITION AUTHORIZATION form.

LABOR INFORMATION

There is no inspection only option. There is only one labor operation set up for this recall because most vehicles are expected to require only pushing in of the ABS wheel speed sensors. Should a rotor require replacement due to tone ring corrosion, use standard repair operation for labor reimbursement. **More than one claim may be filed** for this repair on units that are operated in high corrosion states as outlined in Table 1 of this letter.

<u>Operation No.</u>	<u>Description</u>	<u>Time</u>
A40-02510-1	Push in ABS Sensors	0.3 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 (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

SPECIAL NOTES: ALL CLAIMS MUST BE CAUSE NUMBER 2 BELOW, which is for “inspected and repaired”. There is no inspection only option for this Safety Recall. All vehicles must have labor operation A40-02510-1 performed. **More than one claim may be filed** for this repair on units that are operated in high corrosion states as outlined in Table 1 of this letter.

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
GROUP: Enter The Recall Number	NOUN: Leave Blank.	C: (CAUSE) Enter number 2.	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