



VEHICLE RECALL

G-02502
March, 2002

SUBJECT: VEHICLE RECALL (U.S., EXPORT)
Hydraulic Brake Master Cylinders on FC, FE, and
RE Buses Built From 05/21/91 through 11/08/96.

DEFECT DESCRIPTION

These master cylinders have remote mounted reservoirs and a die cast aluminum adapter plate mounted on top of the cast iron master cylinder body. Galvanic corrosion on the die cast adapter plate can cause distortion of the wagon wheel seals that are mounted on the adapter plate. This condition exists between the aluminum adapter plate and the cast iron master cylinder body. If the seals become distorted, the tipper valves cannot properly seat against the wagon wheel seals. The function of the tipper valves is to seat against the seals and hold fluid pressure during brake applications. If the tipper valves cannot seat completely, the fluid can back flow past the tipper valves towards the reservoir and create a pressure loss for the front brakes, the rear brakes or both.

RISK TO MOTOR VEHICLE SAFETY

The decrease in braking potential is not predictable because it is dependent on the volume of back flow past the tipper valves. This problem can result in an extended stopping distance without warning to the driver and the driver may feel the pedal fade or go completely to the floor. An unpredictable extended stopping condition could cause a vehicular accident, possibly resulting in property damage, personal injury or death.

MODELS INVOLVED AND SPECIFIC BUILD DATES

The bus models involved are the FC, FE, and RE's built from 05/21/91 through 11/08/96 with hydraulic brakes.

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: This procedure begins with a visual inspection to identify the type of aluminum adapter plate on the master cylinder (there are two types of adapter plates, both aluminum). If the master cylinder has a die cast adapter plate as defined in the following procedure, the master cylinder must be replaced.

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

WARNING: To prevent serious eye injury, always wear safe 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. **WARNING:** If the vehicle must be raised, do not work under a vehicle supported only by jacks. Jacks can slip or fall over potentially resulting in serious personal injury or death.
3. Shut off the engine and apply the parking brake.
4. Inspect the master cylinder assembly and identify the type of adapter plate (clean if necessary).

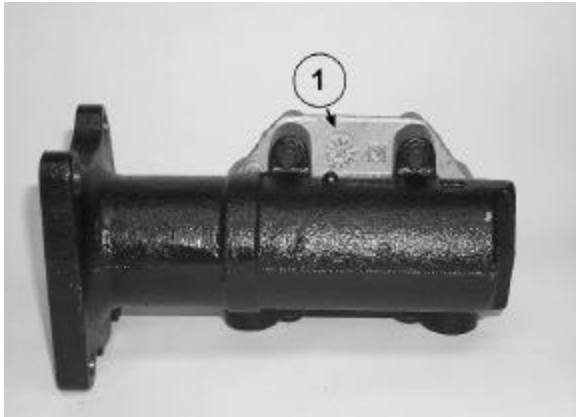


FIGURE 1: DIE CAST ADAPTER.

1. Adapter has indentation with no date markings.

REPLACE

MASTER CYLINDERS



**FIGURE 2:
PERMANENT MOLD ADAPTER**

1. No indentation, adapter has a flat bottom with date markings.

DO NOT REPLACE

IF THERE IS NO INDENTATION

5. If the adapter plate has an indentation on the bottom as shown in FIGURE 1, proceed to Master Cylinder Replacement Instructions; however, if the adapter plate has a flat bottom like in FIGURE 2 (with no indentation) then **DO NOT** replace the master cylinder.

Master Cylinder Replacement Instructions

1. Disconnect pressure differential switch plug.
2. Place a drain pan under the master cylinder and spray lubricant on all four brake line fittings at the master cylinder.
3. Loosen all four brake line fittings, remove the two pressure brake lines, immediately install bleeder kit hoses, loosen reservoir cap and allow all brake fluid in the reservoir to drain through the master cylinder and into the drain pan. Do not reuse the fluid.
4. Remove the four master cylinder mounting nuts.
5. Disconnect the two brake lines on top of the master cylinder and cover the open ends of the lines to prevent contaminants from entering the brake lines and remove the master cylinder.
6. Remove the new master cylinder, which has a new pressure differential switch installed, from the box and save the box to return the old part.
7. Install the new master cylinder. Torque the four mounting nuts to 25-30 **Lbf-Ft** (34-41 NM).
8. Install the top two brake lines and torque to 16-17 **Lbf-Ft** (22-23 NM).
9. Re-connect the wire connector to the pressure differential switch.
10. Re-fill the reservoir with new DOT3 brake fluid.
11. With the bleeder kit, bleed the master cylinder on the vehicle.

12. Re-connect the two pressure lines to the master cylinder and torque to 16-17 **Lbf-Ft** (22-23 NM).
13. Bleed the complete system, top-off reservoir and tighten reservoir cap.
14. Immediately return the removed master cylinder with the R-5185 PARTS DISPOSITION AUTHORIZATION form.

PART INFORMATION

Less than 25% of the buses are expected to need a new master cylinder. When ordering parts, please consider that most vehicles will only be inspected. The part number for the new master cylinder is 1691024C94. Do not use any part numbers that precede this number.

RETURNING PARTS: All master cylinders must be returned.

Return the parts per the instructions on the R-5185 PARTS DISPOSITION AUTHORIZATION form and attach the return authorization form to the part.

LABOR INFORMATION

NOTE: Use either labor operation 1 or labor operation 2 but not both.

<u>Operation No.</u>	<u>Description</u>	<u>Time</u>
A40-02502-1	Inspect master cylinder	0.3 Hrs.
A40-02502-2	Inspect, R&R master cylinder	1.5 Hrs.

CAMPAIGN IDENTIFICATION LABEL

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

Complete the label and attach on a clean surface next to the vehicle identification number (VIN) plate.



The image shows a rectangular label with a black border. At the top and bottom, it says "DO NOT REMOVE" in white capital letters. The label is divided into several sections. On the left, there are labels for "Campaign No.", "VIN", and "Eng.*". In the center, there is a large diamond-shaped graphic with a vertical line through it, and the word "INTERNATIONAL" below it. Below the diamond, it says "COMPLETED". At the bottom, there is a label for "Service Location Code *".

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, 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 Note: Most claims should be for inspection only (cause number of 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	NOUN	C	WARR.	TP	PAD

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 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 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