MACK TRUCKS, INC.
2100 MACK BOULEVARD
P.O. BOX M
ALLENTOWN, PA 18105-5000

January 18, 2007

TO: DISTRIBUTOR PRINCIPALS
SERVICE MANAGERS

SUBJECT: Vehicle Safety Recall - SC0317
ASET™ AC Fuel Injection Lines

On certain Mack CH, CHN, CX, and CXN model vehicles manufactured from January 2002 through October 6, 2006 with ASET AC model engines, there exists the potential that a leak in the fuel injection line may spray fuel on the Exhaust Gas Recirculation (i.e. EGR) pipes that carry hot exhaust gases, which could potentially result in an engine fire.

Approximately 37,013 vehicles (33,761 US, 3,236 Canada and 16 Export) are involved in this safety recall.

A copy of the service bulletin covering the repair instructions and procedures is enclosed.

It is important that preparation be made immediately to assure prompt inspection and/or correction of all vehicles involved. The National Traffic and Motor Vehicle Safety Act and Canadian Motor Vehicle Safety Act requires dealers to insure that all new and used vehicles are free of safety defects and comply with all relevant safety standards at the time of delivery to the consumer. All Safety Recalls, which affect new or used inventory, must be performed before the vehicle is sold or leased. Please refer to Service Operations Service Letter #SL-004-001 dated 11/19/92 regarding the aforementioned amendment.

Please note that Dealers are responsible for performing the recall on all vehicles subject to the recall at no charge to the owner regardless of mileage, age of vehicle, or ownership from this time forward. Additionally, the National Traffic and Motor Vehicle Safety Act requires that the owner's vehicle(s) be corrected within a reasonable time after parts are available to the Dealer. The law states that failure to repair a vehicle within (60) days after tender for repair shall be a prima facia evidence of unreasonable time. However, circumstances of a particular situation may reduce the sixty (60) day period. If the vehicle is not repaired within a reasonable time, the vehicle owner may be entitled, without charge, to a reasonable equivalent vehicle or refund of the purchase price, less reasonable allowances for depreciation.

Please use the enclosed Notice of Mandatory Safety Campaign card(s) to report sold or transferred trucks. Make sure these cards are returned to us and not directly to the customer or to another dealer. A notice of the recall will be mailed to all identified registrants of affected vehicles. To avoid warranty denial of your claim for reimbursement of expenses connected with this recall, first, make sure the truck presented for the recall work is on your list. If not, check for the recall authorization on the MACKnet chassis inquiry. Also, check that another Mack dealer has not previously completed the recall.

Mack Trucks, Inc., recommends a follow-up by telephone or a personal visit, of all owners of vehicles subject to the recall who fail to bring the vehicle(s) in for repair. Your District Service Manager will be contacting you to assure that this recall attains the visibility we feel is necessary to ensure 100% completion. Please be prepared to review your progress and/or any problems associated with the recall.

If you have any questions about this recall, which may not have been covered in this letter or enclosures, please contact the Regulatory Affairs group by email at vtna.regulatoryaffairs@volvo.com

Very truly yours,

MACK TRUCKS, INC.

Enclosures: Customer Notice
Service Bulletin
Notification Cards

SAFETY RECALL

(Previously called Vehicle Recall)

SC317

(Not applicable to Mack Trucks Australia)

Date: **01/19/07**

To: **All MACK Dealers**

Subject: **Fuel Line Sleeve Installation — ASET™ AC Engines**

Information:

On ASET™ AC engines, fuel leakage may develop at the high pressure injection line-to-cylinder head connection. A leak at this connection may spray fuel on hot components such as the EGR tubes, and can potentially lead to an engine fire. To prevent this from occurring, a fuel line sleeve kit (kit No. 57GC2251) has been developed and must be installed on the six high pressure injection lines. This kit contains six aluminium sleeves and enough safety wire to service one vehicle. Approximately 37,014 ASET™ AC-equipped chassis are involved in this campaign. A list of affected chassis has been sent to all applicable dealers.

Procedures:

Before proceeding, verify Safety Recall eligibility by:

a. Checking Safety Recall status in eWarranty.

b. Checking the campaign completion label located on the passenger-side door. If the campaign has been completed, SC317 should be written on the label. Campaign completion can also be verified by checking for the presence of the sleeves installed on the high-pressure injection lines.

NOTE

Service Program PI628 must be performed prior to performing this Safety Recall.

Procedures for installing the fuel line sleeves are as follows:

1. Secure the chassis for service, apply the parking brakes and block the wheels to prevent the vehicle from moving.
2. Open the hood.
3. Remove the air intake duct between the air cleaner and the turbocharger.

⚠ CAUTION

Cover the turbocharger inlet to prevent the entry of dirt or other debris.

4. Remove the air cleaner assembly.

SERVICE PUBLICATIONS, ALLENTOWN, PA 18105

5. Remove the retaining nuts securing the unit pump outer heat shields, and then remove the outer shields from the engine.
6. Remove the retaining nuts that secure the unit pump inner heat shield to the cylinder block, and then position the shield so that the high-pressure injection line-to-unit pump line nuts can be accessed.
7. Inspect for fuel leakage at both the cylinder head and unit pump ends of the high-pressure injection line. Based upon the results of this inspection, proceed as follows:

   - If fuel leakage is evident, replace all six fuel lines per the instructions outlined in service bulletin SB222012. When installing the injection lines, lightly oil the line nut threads and the ends of the lines where they mate with the nozzle tube and the unit pump. After the lines have been installed and torqued to specifications, perform a short road test and verify that there is no leakage from the lines.

   NOTE

   To ensure a proper injection line connection, the end nuts (both the cylinder head and unit pump ends) must be tightened to specifications, immediately backed-off one nut flat and retightened to specifications.

   - If no fuel leakage is seen, check line nut torque as outlined below. Do not break the line nuts loose, simply apply the specified torque to each nut and observe that the nut does not rotate. If the line nut does rotate during the torque check procedure, perform a short road test and verify that there is no leakage from the fuel lines.

   Line nut torque specifications are:

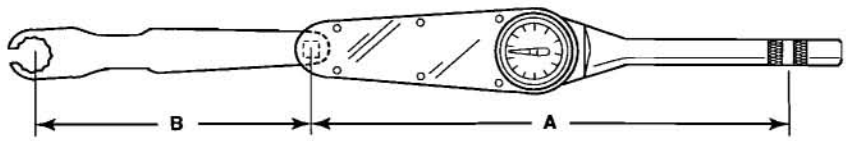
   - **Cylinder Head End** — 48 N•m (35 lb-ft)
   - **Unit Pump End** — 41 N•m (30 lb-ft)

   The fuel line nuts must be tightened using an accurately calibrated torque wrench. When tightening the 19 mm nuts at the cylinder head end of the lines, the special line nut torque adapter (tool No. 85109006) must be used, and when tightening the nuts at the unit pump end of the lines, a 17 mm flare nut crow foot adapter (such as Snap-On tool No. FRHM17, or equivalent) must be used. An open-end crowfoot will begin to spread at an applied torque above 34 N•m (25 lb-ft).

When using either the crow foot or the special line nut torque adapter, force applied to the torque wrench MUST be reduced according to the lengths of the wrench and adapter. Refer to the following illustrations for calculating the correct torque value.

NOTE

The length of the adapter (dimension B in the diagram below) is 152.4 mm (6 inches). The injection line nut torque specification is 48 N•m (35 lb-ft).



FORMULA TO CALCULATE APPLIED TORQUE

$$X = \frac{(A)(T)}{A+B}$$

X = TORQUE VALUE TO BE APPLIED
A = LENGTH OF TORQUE WRENCH
B = LENGTH OF ADAPTER
T = TORQUE SPECIFICATION

EXAMPLE
A = 14" (LENGTH OF TORQUE WRENCH)
B = 6" (LENGTH OF ADAPTER)
T = 35 LB-FT (ACTUAL TORQUE SPECIFICATION)

$$X = \frac{(14)(35)}{14+6}$$

$$X = \frac{490}{20}$$

X = 24.5 LB-FT

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Figure 1 — Calculating Torque When Using Line Nut Torque Adapter

The table below lists the correct torque value that must be applied to the wrench in order to achieve 48 N•m (35 lb-ft) torque on the nut for some of the most common torque wrench lengths (dimension A in the illustration above) when used in combination with the torque adapter (tool No. 85109006).

Torque Wrench Length (Dimension A Above)	Torque Setting on Wrench
330.2 mm (13")	35.5 N•m (24 lb-ft)
355.6 mm (14")	33.2 N•m (24.5 lb-ft)
368.3 mm (14-1/2")	33.9 N•m (25 lb-ft)

The following illustration shows the proper use of the tool. Note that the adapter must be in line with the torque wrench.

NOTE

For proper torque to be applied, the torque adapter tool MUST be in line with the torque wrench.

⚠ CAUTION

There is a limited amount of space available to turn the wrench before contact with the exhaust manifold is made. If the torque wrench contacts any component before full torque is applied to the end nut, proper torque will not be applied. Be sure to reposition the wrench during the tightening process to ensure that interference with the manifold does not affect the torque reading.

⚠ CAUTION

DO NOT apply more torque to the torque wrench than required, or damage to the adapter WILL occur. Also, DO NOT use this torque adapter to tighten other nuts or bolts. This tool is designed ONLY for use in tightening the injection line nuts to the specified torque value. The adapter WILL be damaged and rendered useless if used on other nuts or bolts at higher torque values.

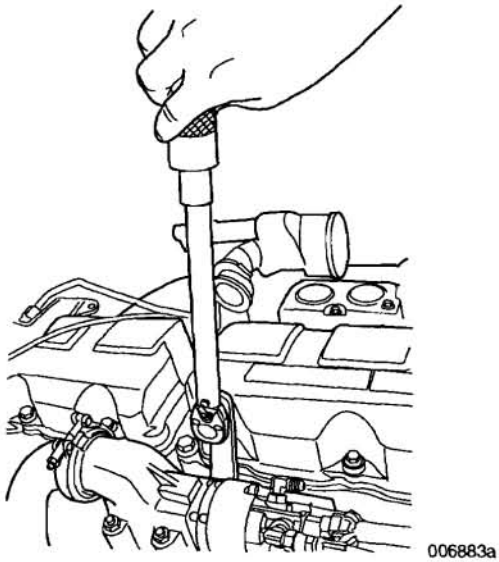
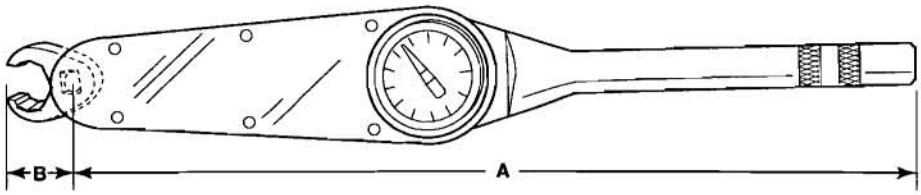


Figure 2 — Proper Use of Injection Line Nut Torque Adapter

The illustration below shows how to calculate the proper torque value which must be applied to the torque wrench when using a flare nut crow foot adapter when tightening the line nut on the unit pump end of the injection line.



FORMULA TO CALCULATE APPLIED TORQUE

$$X = \frac{(A)(T)}{A+B}$$

X = TORQUE VALUE TO BE APPLIED
A = LENGTH OF TORQUE WRENCH
B = LENGTH OF ADAPTER
T = TORQUE SPECIFICATION

EXAMPLE
A = 14" (LENGTH OF TORQUE WRENCH)
B = 1.25" (LENGTH OF CROW'S FOOT)
T = 30 LB-FT (ACTUAL TORQUE SPECIFICATION)

$$X = \frac{(14)(30)}{14+1.25}$$

$$X = \frac{420}{15.25}$$

X = 27.6 LB-FT

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Figure 3 — Calculating Torque When Using Flare Nut Crow Foot Adapter

8. Install an aluminum sleeve over the No. 1 fuel line. The sleeve must be installed with the split facing upward over the exhaust manifold and outboard of the engine as it is routed along the line down to the unit pump. The upper end of the sleeve must cover as much of the line nut at the cylinder head as possible. Due to the size of the upper line nut, however, there will be a gap of approximately 6.35 mm (1/4") at the hex of the nut.

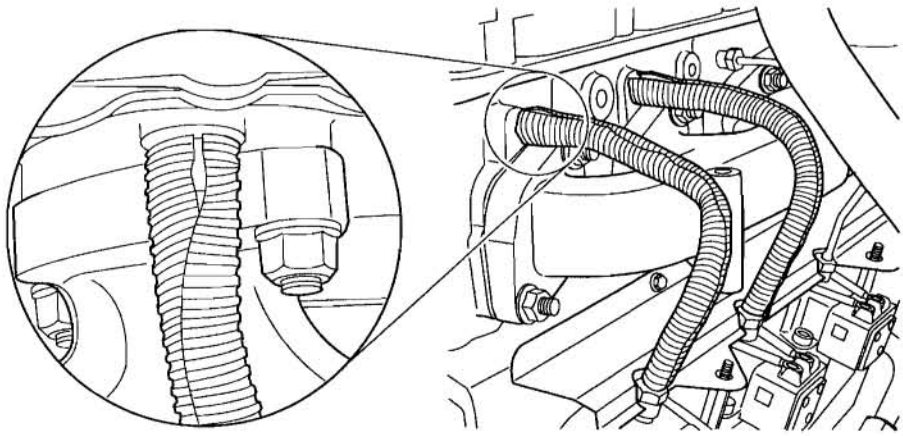

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Figure 4 — Aluminum Sleeve Installation (Upper Line Nut End)

The lower end of the sleeve must be flush with the line nut, but must not cover the nut hex.

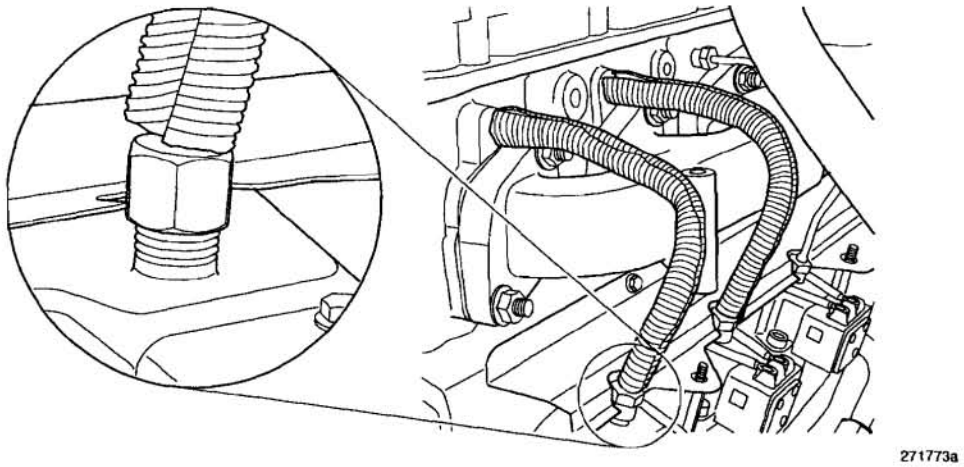

Figure 5 — Aluminum Sleeve Installation (Lower Line Nut End)

9. Insert one edge of the split underneath the other edge, and then gently compress the entire length of the sleeve so there is an overlap of approximately 6.35 mm (1/4") along the entire length of the sleeve except at the upper line nut where this would not be possible.

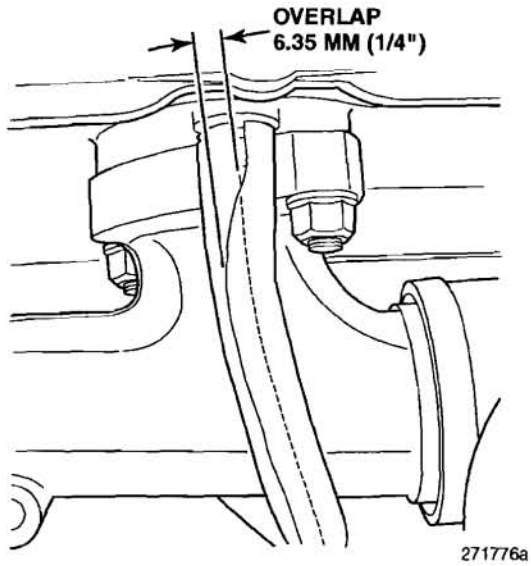

Figure 6 — Overlap Edges of Sleeve

10. Repeat steps 8 and 9 for the remaining five injection lines.

11. Reinstall the unit pump inner and outer heat shields and tighten the heat shield retaining nuts to 20 N•m (15 lb-ft).

12. Using the 0.040" stainless steel safety wires supplied with the kit, secure the aluminum sleeves to the fuel line. The safety wire must be installed at the upper line nut, approximately two grooves from the end of the sleeve (approximately the mid-nut location as shown in the following illustration), and 6.35 mm to 12.7 mm (1/4" to 1/2") from the end of the sleeve at the lower line nut. Additionally, install a wire at the mid-length location on the sleeve.

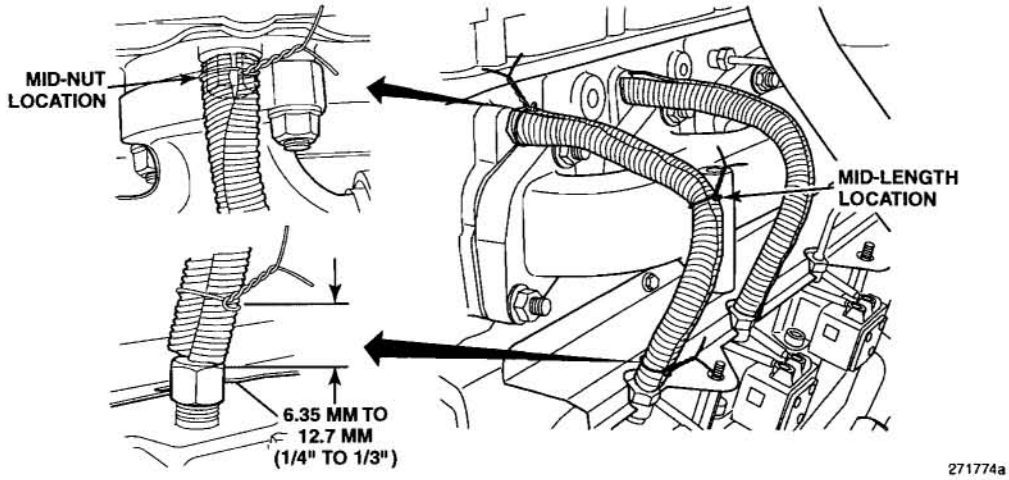

Figure 7 — Securing Sleeve with Safety Wire

Install the safety wire by wrapping a single loop around the sleeve inside a groove, and then twist the ends of the wire together. Use a pliers to perform the final twisting of the wires to snug the loop against the sleeve.

NOTE

Twist-tighten the wire only until it is snug against the sleeve. Over-tightening will deform the sleeve and may result in the wire cutting into the sleeve. Should this occur, it will be necessary to replace the sleeve.

Once the wire loop is tight, cut the end of the twisted wire, leaving approximately 19 mm (3/4") of length. Grasp approximately 6.35 mm (1/4") of the twisted end with a needle-nose pliers (or an equivalent tool) and then form the end of the wire into a loop as shown in the following illustration. Use the pliers to squeeze the small loop together. Doing this prevents injury which can occur from scraping against the exposed jagged ends of the safety wire.

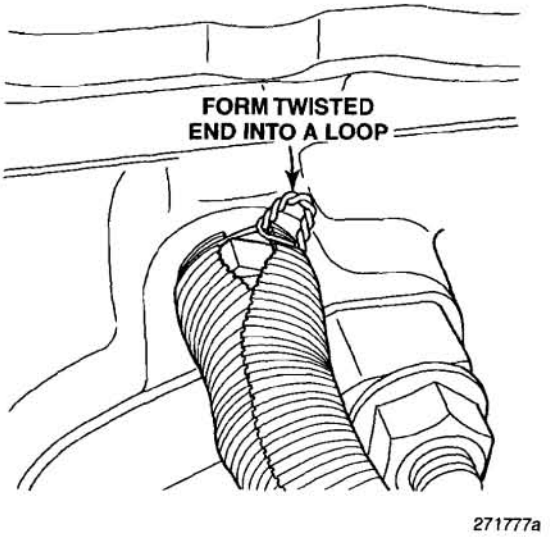

Figure 8 — Twisting Cut End into Loop

13. Reinstall the air cleaner assembly.
14. Remove the cover from the turbocharger inlet, and then reinstall the intake air duct between the air cleaner and the turbocharger. Be sure the clamps are oriented properly and tighten the clamps to 9 N•m (80 lb-in).

⚠ CAUTION

Make sure there are no tools, rags, hardware or any other type of debris inside the turbocharger inlet before installing the inlet air duct.

NOTE

To signify that the campaign has been completed, use a permanent-type marker (such as a Sharpie®) to write the campaign number (SC317) and completion date in the spaces provided on the Campaign Completion label located on the lower edge (below the door latch) of the passenger-side door. If a label is not already affixed to the door, apply a label (part No. TS897) and supply the information as required. Campaign Completion labels are available in packs of 50 and can be ordered by faxing a completed BR313 to Pacesetters Business Services at 610-264-9465.

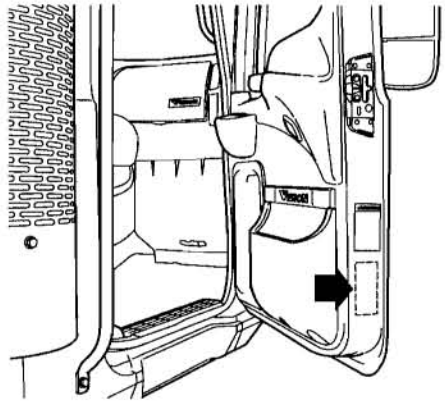

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Figure 9 — Campaign Label Location

Parts Required:

Order vehicle recall parts on a separate stock order and process through the parts distribution center normally serving your area. Do not include parts on this requisition that are not required for this recall campaign.

International orders are to be prefixed — V.O.R.

Qty.	Part No.	Description
1	57GC2251	Fuel injection line sleeve kit (contains seven sleeves and twenty-one 304.8 mm [12"] pieces of safety wire, enough to service one engine). The additional sleeve and wires are provided should one sleeve be damaged.

Reimbursement:

Campaign expenses are to be recovered through normal warranty claim procedures. Enter the following information on the warranty claim:

UNDER	ENTER	
Failed Part (Causal Part)	SC0317	
eWarranty Authorization No.....	SC0317	
Labor Code/Allowance	222 3A 00 95 — 0.2 hr.	Time allowed to take charge of vehicle and determine campaign status by checking eWarranty and the campaign completion label.
	222 3B 00 95 — 2.1 hrs.	Time allowed to check for leakage at high-pressure fuel lines, check fuel line end nut torque, perform short road test and install aluminum sleeves.
	222 2A 00 95 — 0.7 hrs.	Additional time to replace all six injection lines if required.

NOTE

As required by Federal Motor Vehicle Safety Standards 49 CFR 573.11, no vehicle subject to an open safety campaign shall be delivered to the customer until such time as the defect or noncompliance is remedied.

MACK TRUCKS, INC.
2100 MACK BOULEVARD
P.O. BOX M
ALLENTOWN, PA 18105-5000

SAFETY RECALL SC0317
JANUARY 2007

DEAR MACK TRUCK OWNER:

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

Mack Trucks, Inc. has decided that a defect, which relates to motor vehicle safety, exists in certain Mack CH, CHN, CX, and CXN model vehicles manufactured from January 2002 through October 2006.

SAFETY DEFECT: There exists the potential that a leak in the fuel injection line may spray fuel on the Exhaust Gas Recirculation (i.e. EGR) pipes that carry hot exhaust gases.

SAFETY RISK: This failure, if it occurs, could potentially result in an engine fire.

PRECAUTIONS YOU CAN TAKE: There are no precautions you can take other than having your vehicle repaired by a Mack Parts and Service Center.

TIME REQUIRED FOR THE REPAIR: The labor time required to repair your vehicle is approximately 3 hours.

WHAT YOU SHOULD DO: You should contact the nearest Mack Parts and Service Center and make an appointment. The fuel lines will be inspected, any lines that have leaks will be replaced, and a protective sleeve will be installed on all the fuel injection lines at **no charge** to you. All Mack Parts and Service Centers have been sent a bulletin covering all the details required to perform the safety recall.

You can locate the closest Mack Parts and Service Center by going on line to http://www.macktrucks.com/ and selecting "Dealer & Service Locations" or by calling our toll-free number: (800) 866-1177.

NOTICE REGARDING LEASED VEHICLES: If you are a Lessor of vehicles subject to this Notice, you have an obligation under Federal Law to provide a copy of this Notice to all Lessees within 10 days of your receipt of this Notice. Further, you must maintain a record, which identifies the Lessee(s) to whom you send a copy of this letter, the date you send this letter, and the Vehicle Identification Number(s) of the vehicle(s) that you have leased to that lessee. For purposes of this Notice, the term Lessor means: a person or entity that is the owner, as reflected on the vehicle's title, of any five or more leased vehicles (as defined in CFR Section 577.4), as of the date of notification by the manufacturer of the existence of a safety-related defect or non-compliance with a Federal Motor Vehicle Safety Standard in one or more of the leased motor vehicles.

OWNER RECALL RESPONSE CARD:

The enclosed "Notice of Vehicle Recall" identifies your vehicle. If you no longer own the vehicle, please help us update our records by completing the "Vehicle Disposition Record" portion of the enclosed postage-free Notice of Mandatory Safety Campaign card and mailing it back to us.

ASSISTANCE/ COMPLAINTS:

If your vehicle has not been repaired within a reasonable time after delivering it to a Mack Parts and Service Center, please contact:

Mack Trucks Inc.
Regulatory Affairs Department,
P.O. Box 26115
Greensboro, NC 27402-6115
vtna.regulatoryaffairs@volvo.com

You may also submit complaints to the Administrator of the National Highway Safety Administration (400 Seventh Street, S.W., Washington DC 20590 or call the toll-free Auto Safety Hot Line at 1-888-327-4236 (TTY: 1-800-424-9153), or go to http://www.safercar.gov if you believe that Mack Trucks Inc. has failed to remedy the defect without charge, or has failed to remedy the vehicle within 60 days of the owners first tender to obtain repair following the earliest time that parts are available.

PRE NOTIFICATION REMEDIES:

If you have previously paid for repairs as a result of this issue, you may be entitled to recovery of those expenses.

Submit copies of all documentation supporting your claim according to the rules specified in the "General Plan for Reimbursement of Pre-notification Remedies" provided in this mailing.

We regret any inconvenience this may cause to your operation, but hope you will appreciate our sincere efforts to demonstrate Mack's commitment to provide our customers with the best possible product.

MACK TRUCKS, INC.

General Plan for Reimbursement of Pre-Notification Remedies

Mack Trucks Inc. will administer this plan through its Corporate Regulatory Compliance Department.

The provisions of this plan set forth the procedures to be followed for reimbursing owners (claimants) for the costs associated with repairs performed prior to notification of a recall, to remedy safety defects and non-compliances.

Required Information:

If the claimant's Mack vehicle is affected by a recall campaign and the claimant had the problem corrected at their own expense prior to receiving notification of the recall, Mack Trucks will reimburse the claimant by check for the reasonable amount paid for the appropriate pre-remedy repairs (i.e. the cost of parts, labor, taxes and disposal fees) in accordance with the provisions set forth in this document. In order to process each claim, the claimant **MUST** submit the following documentation to support the request to the Regulatory Compliance Department as specified in the section titled "*Contact Information*":

- Claimant's name, mailing address, and telephone number; and,
- The recall number, title, and description; and,
- The complete 17 digit Vehicle Identification Number (V.I.N.); and,
- A notarized statement by the claimant that the pre-notification repair addressed the defect specified in the owner notification letter; and,
- A copy of the repair invoice or receipt for the repairs.
    - The invoice / receipt must provide the VIN, total amount paid (i.e. total amount of reimbursement requested by the claimant), and include a breakdown of the parts, labor, and other costs.

Limitation of Claims

Mack Trucks will consider all claims, but may deny all or part of the claim for any of the following reasons:

- The vehicle was not part of the recall;
- The repairs were performed more than one (1) year prior to the date, that Mack Trucks notified the National Highway Traffic Safety Administration or Transport Canada, that a safety related defect or non-compliance exists;
- The repairs were performed more than 10 calendar days after the last mailing of the initial customer notification letter, pertaining to the recall;
- The vehicle was still covered by warranty or extended warranty on the date of repair which would have provided a free repair;
- If the receipt / invoice is not itemized by parts & labor;
- If the repair did not address the safety defect or non-compliance that led to the recall;
- If the repair was not reasonably necessary to correct the safety defect or non-compliance that led to the recall;
- If the claim is fraudulent;
- If the repair was not of the same type (repair, replacement, and refund) as the recall remedy;
- If adequate documentation as described above is not submitted to the appropriate address specified in this plan in the section titled "*Contact Information*".

Contact Information

Submit copies of all documentation supporting your claim to:
Mack Trucks Inc.
Regulatory Compliance Department
Attn: Regulatory Compliance Administrator
P.O. Box 26115
Greensboro, NC 27402-6115
Claims will be processed within 60 days of receipt