

TRUCK, HEAVY, MC3, MACK - ALL TYPES

TRANSFER CASE OIL COOLER

MODIFICATION INSTRUCTION

This instruction is authorised for use by command of the Chief of Army. It provides direction, mandatory controls and procedures for the operation, maintenance and support of equipment. Personnel are to carry out any action required by this instruction in accordance with EMEI General A 001.

INTRODUCTION

1. This instruction details three modifications to the transfer case oil cooler modification completed in accordance with EMEI Vehicle G 797-18.

NOTE

EMEI Vehicle G 797-18 has been cancelled. Therefore, this modification instruction only affects those vehicles that have had the transfer case cooling and filtration system modification (modification strike 36) completed.

This transfer case oil cooler modification is not to be completed on any vehicle that has not been modified in accordance with EMEI vehicle G 797-18.

Vehicles that have been modified in accordance with EMEI Vehicle G 797-18 are not to have the modification reversed.

2. **Associated Publications.** Reference may be necessary to the latest issue of the following documents:
- a. Current version of the Technical Regulation of ADF Materiel Manual (TRAMM-L) (available from DTR-A website <http://intranet.defence.gov.au/armyweb/Sites/DTRA>);
 - b. Electronic Supply Chain Manual (ESCM), Volume 4, Section 3 – Supply Management Processes, Stores Accounting General, ESCM website <http://escmv4web/8210.htm>; and
 - c. ESCM, Volume 6 – Manage Repairable Items, <http://escmv4web/2071.htm>.
3. **Authority.** ECO LVSP0 031/05 is the authority to carry out this modification.

GENERAL

4. **Modification Application.** This modification is to be applied to trucks modified in accordance with EMEI Vehicle G 797-18 (modification strike 36) prior to its cancellation.
5. **Items Affected.** This modification alters the following components introduced in accordance with EMEI Vehicle G 797-18:
- a. **Oil Cooler Plug.** The current steel oil cooler plug is replaced by a brass plug to overcome oil leak problems associated with the steel plug.
 - b. **Filter.** The current oil filter is replaced with a larger capacity filter, complete with an adaptor and base plate to facilitate the fitting of the filter.
 - c. **Relief Valve.** To overcome the difficulties experienced with the removal, installation and cleaning of the current relief valve, a multi-piece valve, with an elongated external case, replaces the current one.
6. **Priority – Group 2.** All applicable equipment is to be modified:
- a. when next in a workshop for Light, Medium or Heavy Grade Repair; or
 - b. prior to issue from depot or pool stock.

NOTE

Where modification would delay priority issues of depot or pool stock, equipment may be issued unmodified providing the equipment record book is endorsed appropriately.

7. Action Required. Actions detailed in this instruction are to be performed by technical maintenance organisations authorised to carry out Light, Medium or Heavy Grade Repairs utilising unit technicians ECN 229-2 (Vehicle Mechanic) or tri-service/civilian equivalents.

NOTE

On receipt of this instruction, enter all relevant information other than date completed in the modifications section of the GM 120 – Record Book for Service Equipment.

8. Task Recording. No standard job has been raised in MMM to record the implementation of this modification.

9. Estimated Workhours. For initial planning purposes only, it is estimated that this modification will take one and a half workhours to perform.

10. Stores Required. The stores required are listed in Table 1. All stores are to be demanded through normal supply channels.

Table 1 Stores Required

Serial	NSN	Mfr Part No	Designation or Description	Unit of Issue	Qty per Equip
1	2590-66-155-3737	NMX-10-18-24-05-01	Kit, Circulation Unit, Plug	Kit	1
2	4330-66-153-5679	NMX-10-18-15-14	Adaptation Kit	Kit	1
3	4330-66-153-5686	NMX-10-18-24-03-F01	Filter Kit	Kit	1
4	4330-66-154-0119	NMX-CV-100	Valve, Relief	ea	1

11. Items to be Removed. The items to be removed are listed in Table 2. All stores removed are to be processed in accordance with the ESCM.

Table 2 Items to be Removed

Serial	NSN	Mfr Part No	Designation or Description	Qty per Equip
1	N/A	Z7B05/NF E 27-180-M10x6	Screw, Set, Socket Hd, M10 x 1 mm pitch x 6 mm long	1
2	4730 66-152-3347	Z01G8/10-18-24-03-90	Strainer Element, sediment oil filter, spin-on type, 10 to 20 micron, 25 LPM (max), MRWP 8 bar, ¾ in -16 UNF - 2B THD, 65 mm dia by 90 mm hgt, min burst pressure 17.5	1
3	N/A	Z7B05/D04B2-6.9U	Valve, Cartridge	1
4	N/A	Z7B05/BS-014	O ring, 0.489 in ID by 0.070 in thick, AS568A-014, Viton	1
5	N/A	Z4470/22068-10	O ring, 7/8 in UNO, 0755 in ID by 0.097 in thick, AS568A – 910, Viton	1

DETAIL

Oil Cooler Plug

12. Replacement. Replace the oil cooler plug as follows:

- a. Remove the transfer case cooler pump/filter assembly in accordance with EMEI Vehicle G 703.
- b. Clean the transfer case cooler pump/filter assembly.
- c. Secure the transfer case cooler pump/filter assembly in a vice, with the cooler pump/filter base facing upwards.

UNCONTROLLED IF PRINTED

- d. Remove and discard the oil cooler plug (Figure 1).
- e. Apply Loctite 569 (or equivalent) to the threads of the new oil cooler plug.
- f. Install the oil cooler plug (Figure 2).

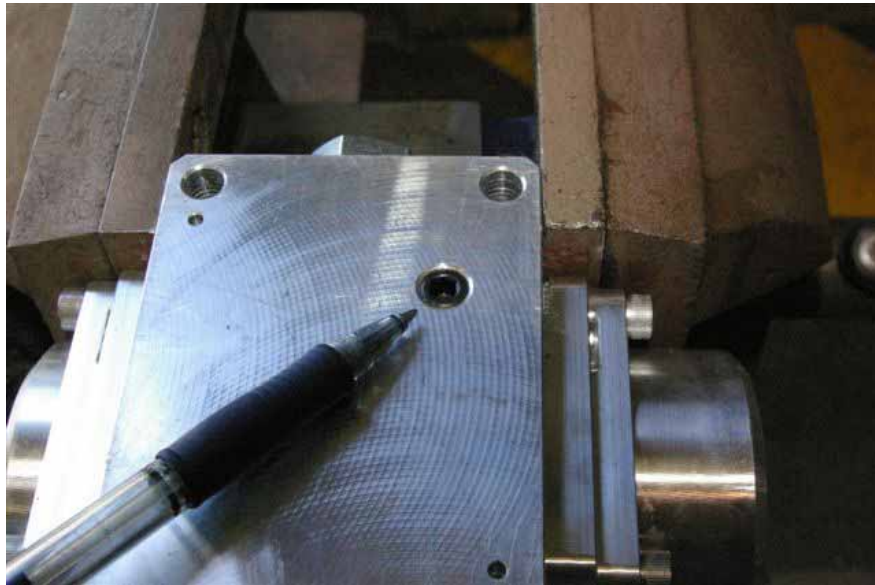


Figure 1 Oil Cooler Plug



Figure 2 Installing the New Plug



Do not tighten the new oil cooler plug with an Allen key. Using an Allen key may damage the plug and not provide sufficient tightness.

- g. Tighten the oil cooler plug with a spanner until approximately one to one and a half threads protrude above the face of the cooler pump/filter assembly base.
- h. Remove and discard the cap screw and nut from oil cooler plug.
- i. File the oil cooler plug level with the base of the cooler pump/filter base (Figure 3).
- j. Remove the transfer case oil cooler pump/filter assembly from the vice.

- k. Retain the transfer case modification plate (supplied with the kit) for installation at the completion of the modification.

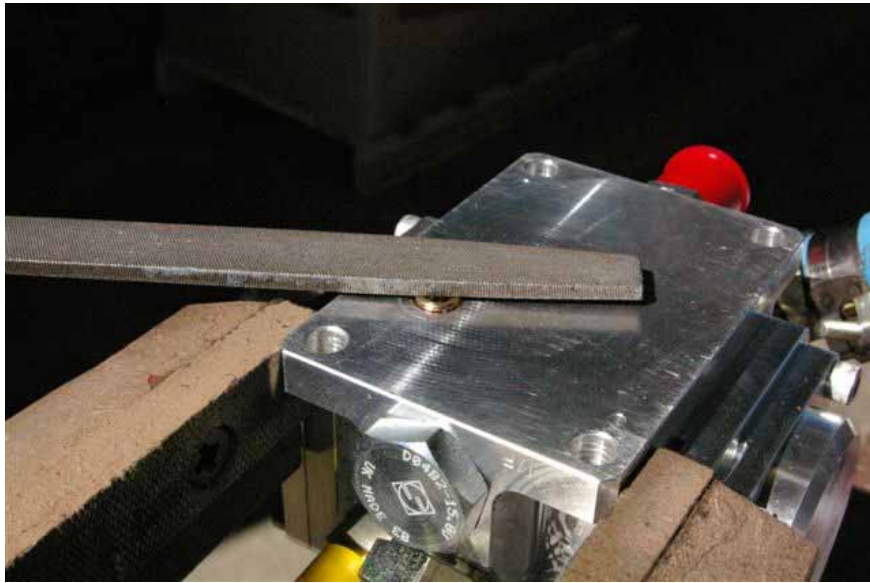


Figure 3 Filing the New Oil Cooler Plug

Oil Cooler Filter

- 13. **Replacement.** Replace the oil cooler filter as follows:

- a. Remove the oil cooler filter.
- b. Remove and clean the threaded insert, which the oil cooler filter screws on to (Figure 4).

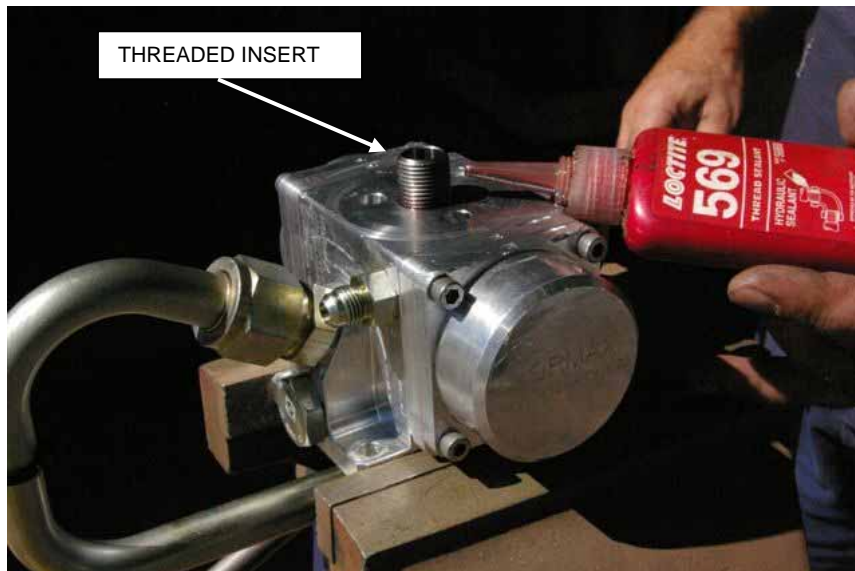


Figure 4 Threaded Insert

- c. Coat half the threads of the threaded insert with Loctite 569 (or equivalent).
- d. Reinstall the coated end of the threaded insert and hand tighten it.
- e. Apply Loctite 569 (or equivalent) to the threads of the filter adaptor (Figure 5).
- f. Install the filter adaptor and tighten it.
- g. Apply a light coat of oil to the O ring of the filter seat, and install the filter seat on the threaded rod (Figure 6).

- h. Apply a light film of oil to the gasket on the oil filter.
- i. Install the oil filter.



Figure 5 Filter Adaptor



Figure 6 Filter Seat

Relief Valve

- 14. **Replacement.** Replace the relief valve as follows:
 - a. Remove the relief valve (Figure 7).



Figure 7 Relief Valve

- b. Install the new relief valve (Figure 8).
- c. Tighten the valve to 5 N.m.



Figure 8 New Relief Valve Installed

Modification Plate

- a. Deface the bottom, left-hand square of the modification record plate with a drill or similar tool (Figure 9).
- b. Remove the top left-hand cap screw from the oil cooler/filter assembly (Figure 9).
- c. Position the modification plate over the hole and secure it with the cap screw (Figure 9).
- d. Tighten the cap screw to 9–10 N.m.
- e. Refit the transfer case cooler pump/filter assembly in accordance with EMEI Vehicle G 703.



Figure 9 Modification Plate

15. **Post Modification Testing.** Complete the post modification testing as follows:
- a. Start and run the engine.
 - b. Check for leaks (rectify as necessary).
 - c. Shutdown the engine.

UNCONTROLLED IF PRINTED

16. Recording Action. On completion of the modification, the following action is to be taken in accordance with TRAMM-L:

- a.** Complete the modification details in the GM 120 – Record Book for Service Equipment.
- b.** Forward the modification completion details using form GM 119 – Advice of Change in Build State to:
Fleet Manager, Med/Hvy B Vehicles Section
CGSVSPO, DMO
7th Floor, Defence Plaza, 661 Bourke St.
MELBOURNE VIC 3001

UNCONTROLLED IF PRINTED

END

Distribution List: **VEH G 50.0 – Code 2** (Maint Level)
(Sponsor: CGSVSPO, Med/Hvy B Vehicles Section)
(Authority: ECO MHB/031/05)