

UNIMOG HYDRAULIC CABIN TILTING KIT - NSN 2510-66-157-7384

INSPECTION AND SERVICING

GENERAL 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.

GENERAL

Introduction

1. This EMEI details the through life management for the Unimog Hydraulic Cabin Tilting Kit (UHCTK) NSN 2510-66-157-7384. This instruction is applicable to all Army, Navy and RAAF units authorised to conduct Light Grade Repairs to the Unimog 1700 and 1750 series Family of Vehicles (FOV).



Figure 1 Unimog Hydraulic Cabin Tilting Kit

Scope

2. The UHCTK, NSN 2510-66-157-7384 forms part of the Specialist Tools and Test Equipment (ST & TE) suite for the Unimog FOV. These kits are quantity tracked items on MILIS meaning they do not have their own 600 - Equipment Record. The kits are to be managed by the owner repair agency using a similar methodology to that of other workshop equipment such as Lifting/Recovery and Tie-down Equipment (LRTE), vehicle jacks and safety stands.
3. The inspection and maintenance requirements for workshop equipment are to be clearly defined in the unit Technical Integrity Maintenance Directive (TIMD) in the form of a Maintenance Management Plan (MMP).
4. The UHCTK, NSN 2510-66-157-7384 is to be managed by use of the following;
 - a. Preparation Before Use (PBU);
 - b. After Use (AU);
 - c. Technical Inspection (TI); and
 - d. Servicing Requirements.

UNCONTROLLED IF PRINTED

Associated Publications

5. Reference may be necessary to the latest issue of the following documents:
 - a. [Technical Regulation of ADF Materiel Manual - Land \(TRAMM-L\)](#);
 - b. [EMEI VEHICLE G 603 - Light Grade Repair](#);
 - c. [SCES 012469 - Tilting Kit, Cab, Vehicular C/W CES Items](#); and
 - d. [ALI MM 10-11, Integrated Logistic Support Instruction - UNIMOG FOV](#).

Safety

WARNING

CRUSH HAZARD. Personnel are never to be within the crush zone between a raised Unimog cabin and the vehicle chassis without the cabin being safely supported. Use of the cabin support stay is mandatory prior to carrying out vehicle maintenance or leaving the vehicle unattended.

Authority

6. The following personnel are authorised to carry out Technical Inspections on the UHCTK:
 - a. ECN 146 (Fitter Armament);
 - b. ECN 229 (Vehicle Mechanic);
 - c. a trade qualified light Vehicle Mechanic or Navy/RAAF equivalent; or
 - d. a trade qualified Fitter or Navy/RAAF equivalent.

Modifications

7. Modification to any component within the UHCTK is not permitted. Inspect the equipment for any modifications. If any modifications have been incorporated then the modified item contained within the kit is to be replaced otherwise the complete kit must be classified 'XX- Do Not Use' (label AD210).

DETAIL

Preparation Before Use (PBU)

8. The following actions are to be carried out prior to use of the UHCTK:
 - a. **Kit Completeness.** Ensure the kit is complete when checked against the equipment SCES listed in the Associated Publications at Paragraph 5.
 - b. **Kit Condition.** Ensure the kit is free from damage, free from leaks and the reservoir oil level is set correct and is without contamination.
 - c. **Kit Serviceability.** Ensure the kit has current, in-date 'FF – Fully Functional' labels (AD204) affixed to both the lift cylinder and the pumping unit.
 - d. **Quick Disconnect (QD) Couplings.** Ensure the QD couplings are free from dirt or debris prior to connection to the lift cylinder to prevent contamination of the hydraulic oil within the system.

After Use (AU)

9. The following actions are to be carried out after using the UHCTK:

WARNING

CRUSH HAZARD. Personnel are never to be within the crush zone between a raised Unimog cabin and the vehicle chassis without the cabin being safely supported. Use of the cabin support stay is mandatory prior to carrying out vehicle maintenance or leaving the vehicle unattended.

- a. **Wiping Clean.** Ensure the multi-stage lifting cylinder is wiped clean with a lint free rag prior to fully retracting all cylinder stages. To ensure the safety of personnel the wiping clean of the cylinder is only to occur when the cabin is positively secured by the support stay.
- b. **Disconnection.** Disconnect both hoses between the reservoir and lift cylinder and refit clean protection plugs.
- c. **Storage.** Ensure all kit components are re-stowed into the Trimcast box provided until next required.
- d. **Maintenance Request.** Raise a Maintenance Request if a fault is observed or if a Service or TI is due to be performed.

Technical Inspections (TIs)

10. TIs must be conducted, as a minimum, on an annual basis. The UHCTK can also have a TI conducted under the following conditions:

- a. if 12 months has elapsed from the last inspection,
- b. if damage to equipment has occurred,
- c. if directed by a higher authority, or
- d. if equipment disposal action is being sought.

11. The TI, as a minimum, is to inspect the UHCTK for the following:

- a. **Kit Completeness.** Ensure the kit is complete when checked against the equipment SCES listed in the Associated Publications at Paragraph 5.
- b. **Kit Condition.** Ensure the kit is free from damage, free from leaks and the reservoir oil level is correct and is without contamination.
- c. **Lubricate.** Lubricate the spherical bearing at the base of the lift cylinder – use Molykote Longterm W2 or equivalent grease.
- d. **Functionality Check.** A functionality check is to be conducted to ensure the cylinder operates smoothly through its full range of travel in both directions.

WARNING

CRUSH HAZARD. When conducting the Loss of Height Test with partially raised cabin the vehicle is to be cordoned off and observed. This is to prevent injury to personnel in the event of the cabin collapsing without control.

- e. **Loss of Height Test.** A loss of height test is carried out using the UHCTK in the following manner:
 - (1) Prepare the vehicle for a cabin lift in accordance with EMEI Vehicle G 603 with the exception of sliding the alternator forward. The alternator is to remain mounted to the engine bracket.
 - (2) Raise the cabin to an angle of approximately 25 degrees ensuring the cabin firewall does not strike the rear of the alternator.
 - (3) Mark the lower, left-hand corner of the cabin as a reference point (see Figure 2) to ensure all measurements are taken from the same point.



Figure 2 Marking of Left Hand Corner of Cabin

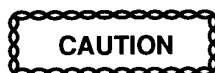
- (4) Mark the ground directly below the cabin mark to ensure all measurements are taken from the same point.
- (5) Take a measurement between the cabin and the ground mark (see Figure 3) and commence a 10 minute loss of height test.



Figure 3 - Taking Measurement between Cabin and Ground

- (6) At the completion of 10 minutes, take a second measurement between cabin and ground marks and compare the measurement taken from the previous step.
 - (7) The UHCTK is deemed to have passed the loss of height test if no more than 10 mm of bleed down has occurred over a 10 minute period.
 - (8) Lower the raised cabin in accordance with EMEI Vehicle G 603 and remove the UHCTK.
- f. **Documentation.** If the UHCTK passes the TI affix new 'FF – Fully Functional' labels (AD204) with 12 month expiry date noting when the next 3 yearly service/6 yearly hose replacement is due. Complete a GI 042 – Technical Inspection and enter all details into the GM 120.

Servicing Requirements



Use only OM-15 or PX-26. Any other fluids may cause damage to the seals and valves within the hydraulics.

12. The UHCTK is to be serviced every 3 years. The servicing schedule is as follows:
 - a. **Oil Change Only (every 3 years).** A 3 yearly oil change is to be conducted by owner unit's repair agency and should be aligned with the TI and noted on the 'FF – Fully Functional' labels (AD204).
 - b. **Oil Change & Hose Replacement (every 6 years).** Every second oil change is to include hose replacement in accordance with Original Equipment Manufacturer (OEM) recommendations. This service is to be performed by the regional OEM dealership network via JLU Business Units. On completion of the 6 year service, kits are to have a TI conducted and new 'FF – Fully Functional' labels (AD204) affixed clearly noting when the next 3 yearly service/6 yearly hose replacement is next due.
13. **Standard Job/MST.** There are no Standard Jobs or MSTs for the servicing of the UHCTK. These kits are to be managed using the guidance provided at Paragraph 2 and Paragraph 3.

DOCUMENTATION

NOTE

UHCTKs are to have each component marked with the serial number of the hydraulic cylinder using indelible marker or number/letter stamping as applicable to ensure all items are subjected to the same TI.

Recording

14. **GM 120.** Units are to raise and maintain individual records for each UHCTK using a GM 120 - Equipment Log Book. Records are to detail the history of all TIs, Servicing and Repairs conducted on the kit.
15. **GI 042.** The condition of the UHCTK is to be recorded using the Technical Inspection Report – General (GI 042). A copy of the latest completed GI 042 is to be retained in the unit plant register and a copy inserted into the GM 120 held with the kit.
16. **TRF labels.** 'FF – Fully Functional' labels (AD204) are to be affixed to the kit on both the pumping unit and the lift cylinder on completion of the TI when the kit is deemed to be with No Outstanding Maintenance (NOM). Kits that have faults identified are to be affixed with 'XX – Do Not Use' labels (AD210) until repaired or replaced.

Repairing and Replacement

17. Extensive repairs such as component overhaul is not authorised to be conducted by owner units. Kits that have been identified as having such faults are to be repaired by the regional OEM dealership network. Units are to raise work requests to supporting JLU business units who will coordinate Trade Repair.
18. Prior to any repairs being authorised, the quotation for repair should be evaluated. Should quotation exceed 60% of replacement value, then units are to proceed with replacement procedure by raising a GI 042 to request kit or component replacement as applicable.

END

Distribution List: **VEH G 26.0 – Code 2** (Maint Level)
(Sponsor: CGSVSPO, Medium Heavy B Vehicle Section)
(DMO Authority EC-002645)