

## TRUCK, LIGHTWEIGHT AND TRUCK, LIGHT - ALL TYPES LAND ROVER 110 4X4 AND 6X6

### INITIAL USE, CLEANING AND REUSE OF PATCH BOLTS FITTED TO IN SERVICE EQUIPMENT

## MISCELLANEOUS 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. Patch Bolts are fasteners which are supplied from the OEM, with the micro-encapsulated adhesive already applied. Patch bolts can come with a range of different colour adhesive applied; the colouring refers to the different strength rating, temperature range and type of use. Figure 1 is an example of the new patch bolt supplied by Land Rover Australia for the driving hubs (note the patch of red adhesive pre-applied to the fastener).

#### NOTE

On release of this EMEI, some Land Rover 110 (4x4 and 6x6 variants) series RPSs, containing groups JC and KC, still required updating to reflect either the correct NSN or manufacture/supplier part number (MPN) or both for the Driving Hub Assembly, Hub Retaining Bolts (with lock patch).

Correct NSN for the Hub Retaining Bolt (with lock patch) is 5305-99-662-6919.

Correct MPN for the Hub Retaining Bolt (with lock patch) is RYG 101010L.



Figure 1 Patch Bolt NSN: 5305-99-662-6919

2. Patch bolts may be re-used as a normal fastener, once the worn adhesive has been removed. Normal fastener inspection techniques apply to ensure the fastener is still fit for continued use.
3. This instruction will detail the initial use, cleaning and re-use of patch bolts.

#### Associated Publications

4. Reference may be necessary to the latest issue of the following documents:
  - a. [EMEI Vehicle G 188](#) – Equipment Inspection and Examination Data;
  - b. [EMEI Vehicle G 103](#) – Truck, Utility, Lightweight, MC2 - Land Rover 110, 4X4 – Light Grade Repair;

- c. [EMEI Vehicle G 104-2](#) – Truck, Utility, Lightweight, MC2 - Land Rover 110, 4X4 – Heavy Grade Repair;
- d. [EMEI Vehicle G 203](#) – Truck, Utility, Lightweight, MC2 - Land Rover 110, 6X6 – Light Grade Repair;
- e. [EMEI Vehicle G 204-2](#) – Truck, Utility, Lightweight, MC2 - Land Rover 110, 6X6 – Heavy Grade Repair;
- f. [Technical Regulation of ADF Materiel Manual - Land \(TRAMM-L\)](#);
- g. [Electronic Supply Chain Manual \(ESCM\)](#);
- h. [ESCM, Volume 4, Section 3](#) – Supply Management Processes, Stores Accounting General; and
- i. [ESCM, Volume 6](#) – Manage Repairable Items.

### Application

5. This procedure is to be applied when patch bolts are fitted on an item of in-service equipment. The information contained in this instruction overrides the procedure detailed in existing land Rover EMEIs when a patch bolt is used.

### Action Required

6. Actions detailed in this instruction are to be performed by technical maintenance organisations authorised to perform Light, Medium and Heavy Grade Repairs. This procedure is to be conducted by qualified tradesmen, or civilian equivalent.

### Affected Equipment

7. All in-service Land Rover vehicles where there is a requirement for the use of an OEM supplied fastener with micro-encapsulated adhesive pre-applied.

### DETAIL

#### Initial Use

8. Install the new patch bolt as follows:
- a. Remove old fastener from assembly.
  - b. Clean and inspect threaded area using either Loctite Primer or an equivalent product and ensure area is dry prior to insertion of bolt. If using a thread cleaner/tap to remove previous adhesive products and/or repair damaged threads, ensure that the correct sized tool is used.

### WARNING

**Ensure correct PPE is worn when cleaning threaded area. If using aerosol based cleaning solvent, ensure adequate ventilation is available. Use of any chemical or other proprietary thread lock product with a new Patch bolt other than that authorised by the OEM may inhibit the performance of the micro-encapsulated adhesive.**

### NOTE

Do not use if package is found to be damaged or fastener contaminated.

- c. Remove new patch bolt from packaging and ensure that the micro-encapsulated adhesive is intact and free from contamination.
- d. Fit new spring washer if required. Refer to relevant vehicle Repair Parts Scale (RPS).
- e. Install new fastener. No additional adhesive or sealant products are to be applied to the fastener.

- f. Torque fastener to specified tension in accordance with relevant vehicle EMEI, using a calibrated torque wrench, suitable for the torque range.

#### **Cleaning and Inspection of Patch Bolt after Disassembly**

- 9. Prior to re-using the removed patch bolt, ensure the following actions are completed:
  - a. Clean all traces of previous adhesive and other contaminates from the fastener threads, using either Loctite Primer or an equivalent product.
  - b. Inspect threaded area for signs of stretching or damaged threads. Discard fastener if signs of stretching or damage is evident.

#### **WARNING**

**Ensure safety glasses are worn when using pressurised air to remove contaminated products from blind holes or personal injury may occur.**

#### **Re-Use of Patch Bolt**

- 10. Re-install the used patch bolt as follows:
  - a. Clean and inspect the threaded area in accordance with Para 8.b.
  - b. Apply liquid thread locking adhesive as directed in relevant vehicle EMEI.
  - c. Fit new spring washer, if required (refer to relevant RPS).

#### **NOTE**

- Thread locking adhesives also provide thread sealing as the adhesives polymerises forming a sealing barrier on the thread.
- d. Install fastener. Ensure no additional sealant products are applied to the fastener when thread locking adhesive is used.
  - e. Torque fastener to specified tension in accordance with the relevant EMEI, using a calibrated torque wrench, suitable for the torque range.

**END**

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