

## TRUCK, DUMP, MEDIUM, WINCH, MC2 - UNIMOG

### FITMENT OF THE REPLACEMENT HYVA HOIST CONTROL VALVE

## 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.

### INTRODUCTION

1. This instruction details the procedures for the installation of the 'HYVA' (MPN: D130 PP12400) Directional Flow Control Valve (Hoist Valve) to the Unimog Dump. This valve supersedes the original OEM fitted hoist valve, RPS 02158 – WC001, supplied under the same NSN: 4820-66-122-9326.

### Associated Publications

2. Reference may be necessary to the latest issue of the following documents:
  - a. [Technical Regulation of Army Materiel Manual \(TRAMM\)](#);
  - b. [EMEI Vehicle A 029](#) Inspection of B Vehicles, Trailers, Motor Cycles, Stationary Equipment Auxiliary and Small Engines – Servicing Instruction;
  - c. EMEI Workshop E series – Occupational Health and Safety Instructions; and
  - d. [EMEI Vehicle G 633](#) Truck Dump Medium, Winch, MC2 – Light Grade Repair.

### Authority

3. Procedures detailed in this instruction are to be performed by RAEME unit tradespersons within technical support sub units or sub-unit workshops authorised to carry out Light, Medium and Heavy Grade Repairs.

### GENERAL

4. Procedures contained in this instruction detail the requirements for configuring and installing the updated hydraulic directional control valve for use in the Unimog Dump. These procedures are to be used for the replacement of the original OEM hoist valve with the 'HYVA' D130 PP12400 Hoist Valve.



**This EMEI details configuration and installation of the 'HYVA' D130 PP12400 valve assembly only. EMEI Vehicle G 633 contains instructions for the removal of the original Hoist Valve.**

5. The 'HYVA' D130 PP12400 Hoist valve is identified by the following markings on the blue plate riveted to the body of the valve (Figure 1):
  - a. HYVA brand name on the top of the plate;
  - b. Type: 14709015H etched in the plate; and
  - c. Serial: ##### etched in the plate.



Figure 1 HYVA D130 PP12400 Directional Control Valve

**Parts and Fittings**

6. Adaptors and fittings required for installation of the HYVA Hoist valve are listed in Table 1.

**Table 1 Adaptors and Fittings**

Serial	Pirtek Part No	Description	Qty
1	Z20004-M06	M6 to M6 equal tube joiner	2
2	F0207	Nipple 1/8 BSPT 7/16JIC male	1
3	GE6LR	Nipple 1/8 BSPT 6L metric	1
4	F0209	Nipple 1/8 BSPT 9/16JIC male	1
5	CVD0606	Elbow 90 BSPT 3/8 x 3/8 male	1
6	D1206	Reducing Nipple 3/4 BSPT male to 3/8 BSPT male	1
7	Z060061612	Elbow 90 BSPT 3/4 to 1" Barb	1
8	Z20005M0602	PFM56 x 1/8 male stud elbow	2
9	AQ1208	Reducing bush 3/4 BSPT male to 1/2 BSPT	1
10	CVJ0808	Elbow 90 1/2 BSPT male to 1/2 BSPT male	1

7. **Consumable Items.** The following consumable items are required to complete the installation:
- a. Loctite 243 super thread lock;
  - b. Loctite 569 Hydraulic sealant; and
  - c. up to 1 metre of 6 mm air line, NIIN 12-342-2464.

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## HOIST VALVE REPLACEMENT

### NOTE

Use Loctite 243 super thread-lock on the 4 locknuts and mounting bolts. Ensure all fittings are clean prior to assembly. Use Loctite 569 Hydraulic sealant on all hydraulic fittings.

### Preparation

8. Prepare the new Hyva Hoist valve for installation as follows:
  - a. Modify the Elbow 90 BSPT 3/8 x 3/8 Male/Female (Pirtek No CVD0606) by drilling and tapping a 1/8" BSPT hole in the flat section of the elbow (Figure 2).



**Figure 2 Modified Elbow 90 BSPT 3/8 x 3/8 Male/Female**

- b. Identify the correct Nipple (1/8 BSPT 6L metric, 7/16 JIC or 9/16JIC) that connects to the hydraulic line from the pressure gauge and fit it into the tapped hole made in the elbow using Loctite 569 hydraulic sealant.

### NOTE

There are three different types of hoses connecting the gauge to the directional control valve. To compensate, there are three different nipple fittings listed in Table 1. Ensure the correct nipple fitting for the hose fitted to the vehicle is identified before fitting to the replacement control valve. If the fitting in the top of the removed control valve is serviceable and suitable it may be reused.

- c. Install the modified elbow and remaining fittings into the new valve using Loctite 569 hydraulic sealant ensuring that the fittings are facing the correct direction.

## Removal

### WARNING

**Serious injury or death may occur if proper safety precautions are not followed. Ensure no personnel are standing or working beneath the body while the body is in operation or while the body is raised and not resting securely on its safety support. Ensure the dump body is resting securely on the safety support or secured by a suitable overhead crane before carrying out maintenance on the hydraulic system.**

9. Removal of the valve is to be carried out in accordance with the instructions provided in EMEI Vehicle G 633 or as follows:
  - a. Lift the dump body and secure with body prop or overhead crane
  - b. Release all pressure from the dump cylinder hydraulic system
  - c. Release all pressure from the vehicle's air system
  - d. Place a drain tin below the directional control valve
  - e. Mark/tag all of the hydraulic lines and remove them from the directional control valve
  - f. Remove the two air lines from the directional control valve
  - g. Remove the 4 x self locking nuts from the mounting bolts and remove the bolts and valve from the vehicle.

## Installation

10. To fit the new control valve assembly to the vehicle, proceed as follows:
  - a. Place the new directional control valve onto the sub-frame mounting bracket and fit the mounting bolts as shown in Figure 3.



**Figure 3 Position of Valve on Mounting Bracket Viewed from the Left Side of the Vehicle**

### NOTE

The top fitting from the removed control valve has been used for this installation.

- b.** Using Loctite 243, fit 4 x new self locking nuts with flat washers to the mounting bolts and evenly tighten the mounting bolts in a diagonal manner to ensure the directional control valve is not warped during the tightening process.
- c.** Torque the 4 mounting bolts to 20 N.m.
- d.** Connect the hydraulic hose from the hydraulic cylinder to the elbow fitting at the top of the valve (prepared in Paragraph 8) or the fitting from the removed valve as appropriate.
- e.** Connect the hose from the oil pressure gauge to the 1/8" BSPT fitting inserted in the side of the elbow or 'T' fitting from the removed valve as appropriate.
- f.** Fit the hydraulic oil line that returns oil to the hydraulic tank to the large fitting on the side of the directional control valve.
- g.** Fit the hydraulic oil line that connects to the hydraulic pump to the fitting at the bottom of the direction control valve (this may be an elbow or straight fitting depending on the routing of the oil line on the vehicle).
- h.** Fit the 2 x elbow quick-fit air connectors to the pneumatic side of the directional control valve so that they are pointing forward, towards the cabin. Remove the old airline fittings from the end of the control air lines.
- i.** Fit a 6 mm straight quick-fit airline connectors to each control line.

**NOTE**

The 2 x 6 mm airline connectors may have to be reversed if they have not been connected to the correct port on the directional control valve.

- j.** Cut to length 2 x 6 mm airlines and fit to the connectors and directional control valve (Figure 4).



**Figure 4 Air Lines Connected to Replacement Control Valve**

- k.** Start the engine and build up air pressure.



**Carefully use the controls to determine the correct function of the control lever and the correct position of the control airlines.**

- l.** Raise and lower the dump body using the control in the cabin. If the dump body rises when the control lever is lowered, set the dump body back on its safety support and reverse the positions of the airlines. Start the engine and recheck the control handle for correct function.

**NOTE**

If you find the direction control valve is sticking or not activating, lower the body onto its safety support, loosen the 4 mounting bolts and retention them evenly until a smooth operation of the control valve is achieved.

- m.** Start the engine and check for any hydraulic or air leaks and rectify as necessary.
- n.** Lower the body safety support and bleed the hydraulic system by completely raising and lowering the dump body until the operation of the body is immediately responsive to the control (not spongy).
- o.** Check and top up the hydraulic oil.
- p.** Raise the body safety support, lower the dump body and secure the airlines and hydraulic hoses with nylon cable ties, ensuring that they are not chaffing on the vehicle or each other.
- q.** Raise the dump body, lower the body safety support and lower the dump body onto its stop.
- r.** Remove the drain tin.

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**END**

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