FPU<sup>®</sup> SYSTEMS OPERATION MANUAL BOH PORTABLE DRAWER MODULE (PDM) (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) BOH FPU Field Pack-up Units

**CHAPTER 4** 

**OPERATOR MAINTENANCE INSTRUCTIONS** 

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### FPU® SYSTEMS OPERATION MANUAL BOH PORTABLE DRAWER MODULE (PDM) (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) BOH FPU Field Pack-up Units

#### INTRODUCTION TO PREVENTATIVE MAINTENANCE CHECKS & SERVICES (PMCS)

| INITIAL SETUP:     |                       |
|--------------------|-----------------------|
| Materiel/Parts     | References            |
| None               | None                  |
| Personnel Required | Equipment Condition   |
| One                | BOH PDM MODULE Set-up |

#### INTRODUCTION TO PREVENTATIVE MAINTENANCE CHECKS & SERVICES (PMCS)

Preventative Maintenance Checks and Services (PMCS) are performed to keep the FPU System containers in good operating condition. These checks aid in finding, correcting, or reporting problems. Operator personnel are to perform the PMCS tasks as shown in the PMCS table.

Perform PMCS procedures each day the BOH PDM MODULE is in operation, using the PMCS table in WP 0014 00. There are different intervals to perform PMCS procedures: before, during and after using the equipment, as well as weekly and monthly. Look at the table carefully to identify the required PMCS interval.

Perform all checks and services keeping in mind the following guidelines:

- Before you begin using the BOH PDM MODULE , do Before Operation PMCS
- While the BOH PDM MODULE is in use, do During Operation PMCS
- After using the BOH PDM MODULE , do After Operation PMCS

If you find something wrong when performing PMCS, fix it using troubleshooting and/or maintenance procedures. Pay attention to WARNING and CAUTION statements. A **WARNING** means someone could be injured or killed. A **CAUTION** means equipment could be damaged.

If tools that are required to perform PMCS are not listed in the procedures, notify your supervisor.

#### Inspection

Look for signs of trouble. Use your senses to feel, smell, hear, or see problems that may exist. Inspect to see if items are in good condition. Are components correctly installed and secured? Is any damage to the frame or components visible? Correct any faults or notify Unit Maintenance.

### **Associated Components**

There are some common items to check on the FPU SYSTEM and associated equipment. These include the following:

- Condition and proper connection of ratchet straps.
- Condition and proper connection of the forklift base plate

### Service

Proper service of the BOH PDM MODULE and components is an integral part of maintenance. Regular cleaning prevents possible problems in the future, so make it a habit to clean the BOH PDM MODULE and components whenever necessary.

### FPU® SYSTEMS OPERATION MANUAL BOH PORTABLE DRAWER MODULE (PDM) (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) BOH FPU Field Pack-up Units

#### PMCS TABLE

| INITIAL SETUP:     |                       |
|--------------------|-----------------------|
| Materiel/Parts     | References            |
| Rags, Water        | None                  |
| Personnel Required | Equipment Condition   |
| One to four        | BOH PDM MODULE Set-up |

#### Table 1 Preventative Maintenance Checks and Services for the BOH PDM MODULE PMCS B (Before), D (During), A (After), W (Weekly), M (Monthly)

|   | в | D | Α | w | М | Inspection Item and Procedure   | Equipment Not<br>Ready/Available If  |
|---|---|---|---|---|---|---|--|
| 1 | * |   | * | * |   | <b>RACHET STRAPS</b><br>Check for missing ratchet straps. Each module<br>should have two ratchet straps.<br>Check ratchet straps for tears, frays or<br>discoloration. This will indicate failure of the strap.<br>Check ratchet strap hook and ratchet for proper<br>operation. Replace as needed.   | WARNING: Ratchet straps<br>that are damaged or missing<br>could cause injury or damage<br>to the equipment.<br>See WP 0006   |
| 2 | * |   | * |   |   | MODULE TRAYS AND CASES<br>Check all frames for cracks, dents, holes, or<br>loose/missing hardware. Check frame latches for<br>freedom of operation. Check spring for distortion.<br>Check for accumulations of dirt, debris, ice, snow,<br>or salt. Clean as required. Lubricate with WD-40<br>lubricant spray. Replace missing or damaged<br>hardware.<br>Check drawer tray latch and drawer stop block for<br>damage. | Weld crack damage will<br>cause malfunction and<br>hazard or injury.<br>WARNING: Discontinue use<br>of drawer until the damaged<br>part is replaced. Failure to<br>comply could cause serious<br>injury. |
| 3 |   |   |   |   | * | Lubricate hinges, latches, with WD-40 lubricant spray as required.  | Hinges and latches do not operate smoothly.  |
| 4 | * |   | * | * |   | DRAWER Exterior<br>Check all exterior surfaces for cracks, dents that<br>effect the operation of the module system. Check<br>drawer hinge weld for cracks or distortion. Check<br>drawer latches for freedom of operation. Check<br>for loose rivets. Check for accumulations of dirt,<br>debris, ice, snow, or salt. Clean as required.  | Damage that would cause  |

|   | в                 | D | Α | w | М | Inspection Item and Procedure  | Equipment Not<br>Ready/Available If   |
|---|-------------------|---|---|---|---|--|---|
| 5 | *                 | * | * | * |   | <b>DRAWER Interior</b><br>Check drawer for dirt and debris. Clean with a<br>brush or rags as required. Check cutout drawer<br>dividers at the struts for proper position. Check all<br>drawer dividers for dents, bends or distortion.<br>Check for missing, bent or distorted center<br>dividers. Replace dividers if needed. Check gas<br>spring cylinders for freedom of operation, bent or<br>damaged shaft or missing cylinder head retention<br>clips. Replace as necessary. | Failure to position the cutout<br>dividers will impede the<br>operation of the drawer<br>and/or damage the lid or gas<br>spring cylinder.<br>Damaged strut cylinders will<br>render the lid inoperable.<br>See chapter 2 WP 0008 00-2 |
| 6 | *                 |   | * |   | * | <b>Drawer Seal</b><br>Check drawer seals for cuts, cracks, distortion,<br>proper alignment and attachment. Reattach with<br>proper glue or replace if necessary. Check for<br>moisture on or in material.  | Failure of the seal will allow<br>water and moisture to enter<br>the drawer and damage the<br>stored material in the drawer.  |
| 7 | *                 |   | * |   | * | Attachment Rivets<br>Check for missing or loose attachment rivets on<br>drawer handles, drawer latches, side, front and<br>rear drawer dividers and all frame bearing guide<br>pads. Schedule shop replacement if necessary.   | Loose or missing rivets will impede the operation and may cause injury or damage.   |
| 8 | *                 |   | * |   | * | <b>Forklift Base Plate</b><br>Check for weld cracks, bends, dents or frame<br>distortion. Check tie-down rings for weld cracks,<br>breaks or distortion. Replace or schedule weld<br>shop repair if needed.  | Failure to repair welds or tie-<br>down rings will cause<br>damage or injury.   |
| 9 |                   |   | * |   | * | <b>Data Plates</b><br>Check plates for legibility, damage and/or<br>missing. Clean with water and rag. Replace as<br>needed.   | N/A   |
|   | End Of PMCS Table |   |   |   |   |  |   |

### FPU® SYSTEMS OPERATION MANUAL BOH PORTABLE DRAWER MODULE (PDM) (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) BOH FPU Field Pack-up Units

#### **CLEANING AND LUBRICATING**

| INITIAL SETUP:         |                       |
|------------------------|-----------------------|
| Materiel/Parts         | References            |
| Rags, Water, Detergent | None                  |
| Personnel Required     | Equipment Condition   |
| One                    | BOH PDM MODULE Set-up |

#### CLEANING AND LUBRICATING

Cleaning and Lubricating of the BOH PDM MODULES is performed to keep the module and its associated equipment in good operating condition. The cleaning and lubrication of the module can be conducted along with the Preventative Maintenance Checks and Services (PMCS) procedures described in WP 0014 00. Specific areas described below need to be cleaned after an operational event or periodically if stored/staged outside of a fixed facility to keep the modules, and accessories performing as designed. Cleaning also assists in maintaining the condition of the materiel stored within the system. Any damage discovered when cleaning and/or lubricating that cannot be corrected using the troubleshooting procedures described in WP 0012 00 should be reported for corrective maintenance.

| SURFACE   | OIL/GREASE                | SALT/MUD/DIRT<br>DEBRIS            | RUST/CORROSION and<br>LUBRICATION                                       |  |
|---|---------------------------|------------------------------------|---|--|
| Exterior and Interior<br>surfaces (All)                 | Detergent, Water,<br>Rags | Soapy Water, Brush,<br>Rags        | Corrosion Removal<br>Compound and Wire Brush,<br>Dry Rag and Spot Paint |  |
| Seals and Gaskets                                       | Damp and Dry Rags         | Damp and Dry Rags                  | N/A   |  |
| Module Trays and<br>Cases, Drawer<br>handles, latches   | Detergent, Water,<br>Rags | Soapy Water, Brush,<br>Rags        | Corrosion Removal<br>Compound and Wire Brush,<br>Dry Rags, Spot Paint   |  |
| Module Frames and<br>Forklift Base Plate                | Detergent, Water,<br>Rags | Brush, Soapy Water,<br>Brush, Rags | Corrosion Removal<br>Compound and Wire Brush,<br>Dry Rags, Spot Paint   |  |
| Guide Pads  | Detergent, Water,<br>Rags | Damp and Dry Rags                  | WD-40 lubricant spray as<br>needed                                      |  |
| Drawer Hinges,<br>Drawer Lid Strut<br>Cylinders Shaft   | Detergent, Water,<br>Rags | Damp and Dry Rags                  | Corrosion Removal<br>Compound, Dry Rags, Coat<br>with WD-40 lubricant   |  |
| Drawer Lid Strut<br>Cylinder Body and End<br>Connectors | Detergent, Water,<br>Rags | Damp and Dry Rags                  | Corrosion Removal<br>Compound and Wire Brush,<br>Dry Rags               |  |
| Ratchet Straps  | Detergent, Water,<br>Rags | Damp and Dry Rags                  | N/A   |  |
| End of Cleaning Table 1                                 |                           |                                    |   |  |

### Table 1 Cleaning

| USAGE                            | FLUID or<br>LUBRICANT   | CAPACITIES  | EXPECTED<br>TEMPERATURES | INTERVAL  |
|----------------------------------|---|-------------|--------------------------|---|
| Drawer Hinges                    | General<br>Purpose<br>Lubricating Oil<br>10W                    | As Required | All Temperatures         | Monthly or as<br>required if under<br>adverse<br>conditions |
| Drawer Slam<br>Latches           | Molykote<br>Multipurpose<br>Synthetic<br>Grease P/N<br>26040124 | As Required | All Temperatures         | Monthly or as<br>required if under<br>adverse<br>conditions |
| Drawer Lid Seals                 | N/A   | As Required | All Temperatures         | Monthly or as<br>required if under<br>adverse<br>conditions |
| Door Lock Shaft<br>Pivot Bearing | Molykote<br>Multipurpose<br>Synthetic<br>Grease P/N<br>26040124 | As Required | All Temperatures         | Monthly or as<br>required if under<br>adverse<br>conditions |
| Ratchet Straps                   | N/A   | As Required | All Temperatures         | Monthly or as<br>required if under<br>adverse<br>conditions |
| End of Lubrication Table 2       |   |             |                          |   |

### FPU® SYSTEMS OPERATION MANUAL BOH PORTABLE DRAWER MODULE (PDM) (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) BOH FPU Field Pack-up Units

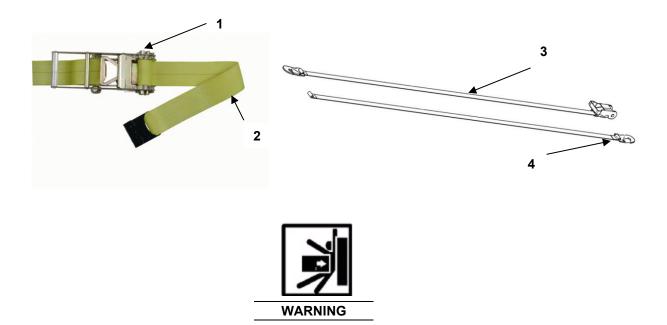
### **INSPECTION OF RATCHET STRAPS**

| INITIAL SETUP:            |
|---------------------------|
| Materiel/Parts            |
| None                      |
| <b>Personnel Required</b> |
| One                       |

References Chapter 2 WP 0006 00-4 to 00-6 Equipment Condition BOH PDM MODULES Set-up

#### **INSPECT RATCHET STRAPS**

- 1. Check for missing ratchet straps (1). Check straps (2) for cuts, wear, frays and discoloration.
- 2. Check for proper tension of straps and hooks (3) for proper connection to the forklift base plate.
- 3. Check hook latch (4) for distortion or damage



Ratchet Straps (2) that have cuts, frays, signs of wear and discoloration indicate weakness, and the entire ratchet strap should be replaced immediately. Failure to replace could cause injury to personnel. Ratchet straps should be secure and tensioned for smooth, stable, safe operation of the module.

## END OF WORK PACKAGE

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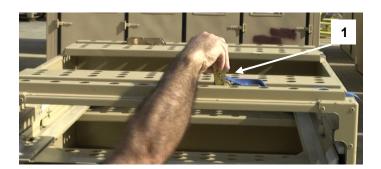
### FPU® SYSTEMS OPERATION MANUAL BOH PORTABLE DRAWER MODULE (PDM) (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) BOH FPU Field Pack-up Units

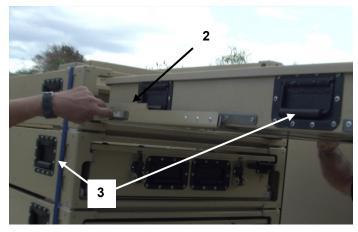
### **INSPECTION OF LATCHES AND HANDLES**

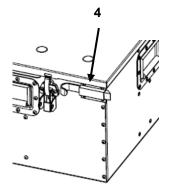
| INITIAL SETUP:     |                        |
|--------------------|------------------------|
| Materiel/Parts     | References             |
| None               | WP 0006 00             |
| Personnel Required | Equipment Condition    |
| One                | BOH PDM MODULES Set-up |

#### **INSPECT LATCHES AND HANDLES**

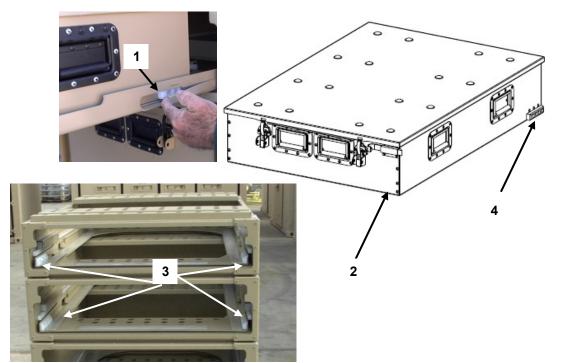
- 1. Check for missing or damaged ratchet straps, front and rear (1)
- 2. Check drawer release operation (2).
- 3. Check for missing or damaged drawer handles and case handles (3).
- 4. Check the slam latch for damage and operation (4).







- 5. Release and pull out the drawer by the handles to the full extended position.
- 6. Check drawer tray release (1) and drawer stop block (4).
- 7. Remove the drawer (2).
- 8. Check for missing or damaged guide strips (3).
- 9. Check for external damage, dents or holes to the drawer (2).



WARNING



When pulling the drawer to its fully extended position, ensure there is no damage to the drawer tray latch or drawer guides. Should these parts become damaged, the drawer may bypass the tray latch causing serious injury.



Missing or damaged latches will cause injury to personnel during operation or movement of the module. Notify maintenance of any missing parts, damage or problems with operation of latches or handles. Repair or replace missing or damaged latches or handles immediately.

# END OF WORK PACKAGE

### FPU® SYSTEMS OPERATION MANUAL BOH PORTABLE DRAWER MODULE (PDM) (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) BOH FPU Field Pack-up Units

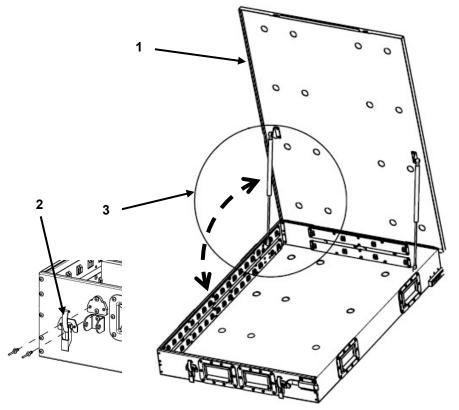
### INSPECTION OF DRAWERS, CYLINDERS, SEALS AND DIVIDERS

| INITIAL SETUP:     |                        |
|--------------------|------------------------|
| Materiel/Parts     | References             |
| None               | Chapter 2 WP 0008 00-2 |
| Personnel Required | Equipment Condition    |
| One                | BOH PDM MODULES Set-up |

#### INSPECT

#### **INSPECT DRAWER ASSEMBLY**

- 1. With the drawer pulled to the full extended position, unlatch the drawer and raise the lid (1) to the full open position.
- 2. Check for missing or damaged drawer lid latches (2).

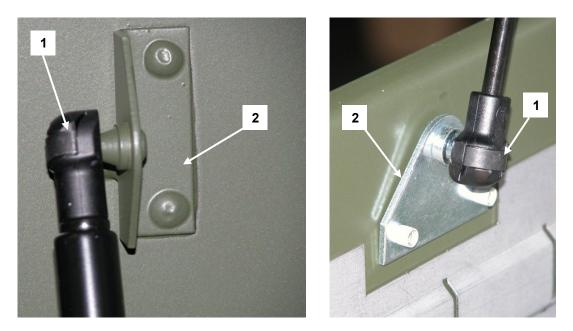


3. Check for missing or damaged strut cylinders (3).

### INSPECT

### DRAWER STRUT CYLINDERS

1. Check for missing or damaged cylinder head retainer clips (1) and mounting brackets (2) at each end of the two cylinders.





### WARNING

Missing or damaged retainer clips (1) or mounting brackets (2) will cause injury to personnel during operation of the drawer lid. Notify maintenance of any missing or damaged lids or problems with operation of lid or cylinders. Repair or replace missing or damaged retainers or cylinders immediately.

#### INSPECT

### DRAWER LID SEALS

- 1. Check for missing or damaged continuous lid seals (1).
- 2. Check for cracks, distortion, and complete attachment.



### CAUTION

Damaged, deteriorated, or missing seals will diminish the effectiveness of the water tightness of the drawer.

## INSPECT

### **DRAWER DIVIDERS**

- Check for missing or damaged drawer dividers (1).
  Check for dirt, debris, or parts under the dividers (1).
  Check location of left and right cutout dividers (2) for their position within the first eight slots of the side divider supports.

