# FPU® SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) FPU/BOH CARGO CONTAINERS MODELS FPU-8-2, BOH-CARGO-12-1, BOH-CARGO-6 & FPU-20-1 & FPU-20-2 BOH FPU Field Pack-up Units

# **CHAPTER 4**

**OPERATOR MAINTENANCE INSTRUCTIONS** 

# FPU® SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) FPU/BOH CARGO CONTAINERS MODELS FPU-8-2, BOH-CARGO-12-1, BOH-CARGO-6 & FPU-20-1 & FPU-20-2 BOH FPU Field Pack-up Units

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

**INITIAL SETUP:** 

Materiel/Parts References
None None

Personnel RequiredEquipment ConditionOneFPU SYSTEMS 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 FPU SYSTEM 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 FPU SYSTEM, perform Before Operation PMCS checks and services.
- While the FPU SYSTEM is in use, perform **During Operation PMCS** checks and services.
- After using the FPU SYSTEM, perform After Operation PMCS checks and services.

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.

#### Service

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

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### **PMCS TABLE**

INITIAL SETUP:

Materiel/Parts Rags, Water Personnel Required One **References** None

**Equipment Condition** FPU SYSTEMS Set-up

Table 1 Preventative Maintenance Checks and Services for the FPU SYSTEMS PMCS B (Before), D (During), A (After), W (Weekly), M (Monthly)

	В	D	Α	w	M	Inspection Item and Procedure	Equipment Not Ready/Available If
	*	*	*			Doors, Walls	Missing doors, punctures,
1						Check all doors and walls for cracks, dents,	damage that would cause
						holes, or loose/missing hardware.	hazard or injury.
					*	Lubricate hinges, locks, as required.	Hinges and locks do not
							operate smoothly.
						Exterior	Damage or malfunction that
						Check all exterior surfaces for cracks, dents that	would cause the FPU
						effect the operation of the FPU SYSTEM or its	SYSTEM from operating
2			*	*		modules. Check for accumulations of dirt, debris,	properly such as Horizontal
						ice, snow, or salt. Clean as required.	Interconnectors not
						Check Horizontal Interconnectors for proper	tightening properly which can
						function, tightness and debris. Clean as required	cause hazard or injury.
						and replace if not functioning properly.	
						Interior	Module cradles missing or
						Check floor for dirt and debris. Clean with broom	damaged so that module
						or rags as required. Check module cradles in	does not seat properly,
						FPU SYSTEM floor for cracks or missing rubber	center ISO twist locks are
						pads. Schedule cracked cradles for repair.	broken or missing or roof
3			*	*		Check center ISO locks for cracks or missing	access steps cracked or
						items. Check module-locking levers for missing	missing which can cause
						or loose cotter pins. Replace or tighten as	hazard or injury.
						necessary.	
						Check roof access steps for cracks or missing	
						components. Replace as necessary.	
						Data Plates	ISO/CSC Safety Data plates
4			*		*	Check plates for legibility, damage and/or	must be replaced if missing
						missing. Clean with water and rag. Replace as	or system will be non-
						needed.	deployable.

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### **CLEANING AND LUBRICATING**

INITIAL SETUP:

Materiel/PartsReferencesRags, Water, DetergentNone

Personnel RequiredEquipment ConditionOneFPU SYSTEMS Set-up

### **CLEANING AND LUBRICATING**

Cleaning and Lubricating of the FPU is performed to keep the FPU and its associated equipment in good operating condition. The cleaning and lubrication of the FPU 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 container, 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 0011 00 and 0012 00) should be reported for corrective maintenance.

**Table 1 Cleaning** 

SURFACE	OIL/GREASE	SALT/MUD/DIRT DEBRIS	RUST/CORROSION	
Exterior and Interior Walls (All)	Detergent, Water, Rags	Soapy Water, Brush, Rags	Corrosion Removal Compound and Wire Brush, Dry Rag, Coat with Lube Oil or Spot Paint	
Door Seals	Damp and Dry Rags	Damp and Dry Rags	N/A	
Module Cradles, FPU Floor	Detergent, Water, Rags (Remove, clean, and replace rubber pad into footing)	Soapy Water, Brush, Rags (Remove, clean and replace rubber pad into footing)	Corrosion Removal Compound and Wire Brush, Dry Rags, Coat with Lube Oil or Spot Paint (Remove, clean, and replace rubber pad into module cradle footing)	
Container Door Hinges	N/A	Brush, Rag and lubricate as needed to ensure door hinges travel freely	Corrosion Removal Compound and Wire Brush, Dry Rags and Lubricate s needed	
END OF CLEANING TABLE				

**Table 2 Lubrication** 

USAGE	FLUID or LUBRICANT	CAPACITIES	EXPECTED TEMPERATURES	INTERVAL
Door Hinges	General Purpose Lubricating Oil 10W	As Required	All Temperatures	Monthly or as required if under adverse conditions
Door Cam Locks	Molykote Multipurpose Synthetic Grease P/N 26040124	As Required	All Temperatures	Monthly or as required if under adverse conditions
Door Seals	Molykote Multipurpose Synthetic Grease P/N 26040124	As Required	All Temperatures	Monthly or as required if under adverse conditions
Door Lock Shaft Pivot Bearing	Molykote Multipurpose Synthetic Grease P/N 26040124	As Required	All Temperatures	Monthly or as required if under adverse conditions
Folding Steps	General Purpose Lubricating Oil 10W	As Required	All Temperatures	Monthly or as required if under adverse conditions
Horizontal Inter- connectors FPU-8-2/BOH- CARGO-12 (only)	Molykote Multipurpose Synthetic Grease P/N 26040124	As Required	All Temperatures	Monthly or as required if under adverse conditions
Bridge Locks	Molykote Multipurpose Synthetic Grease P/N 26040124	As Required	All Temperatures	Annually or as required if under adverse conditions
Caster Kit for FPU- 8-2	Molykote Multipurpose Synthetic Grease P/N 26040124	As Required	All Temperatures	Monthly or as required if under adverse conditions

Table 2 Lubrication (cont'd)

USAGE	FLUID or LUBRICANT	CAPACITIES	EXPECTED TEMPERATURES	INTERVAL
Vertical Rack Stanchion Recessed Rings BOH-CARGO-12 (only)	General Purpose Lubricating Oil 10W	As Required	All Temperatures	Monthly or as required if under adverse conditions
Pallet Ledge Rear Cam Lock	General Purpose Lubricating Oil 10W	As Required	All Temperatures	Monthly or as required if under adverse conditions
Pallet Ledge Locking Rod	Molykote Multipurpose Synthetic Grease P/N 26040124	As Required	All Temperatures	Monthly or as required if under adverse conditions
Snap Hooks Safety Device on Ratchet Straps and Floor Nets	General Purpose Lubricating Oil 10W	As Required	All Temperatures	Monthly or as required if under adverse conditions
FPU SYSTEM Module Drawer Slides and FPU Parts Storage Aids Drawer Slides.	Molykote Multipurpose Synthetic Grease P/N 26040124	As Required	All Temperatures	Bi-annually or as required if under adverse conditions

Table 2 Lubrication (cont'd)

USAGE	FLUID or LUBRICANT	CAPACITIES	EXPECTED TEMPERATURES	INTERVAL
FPU Parts Storage Aid Drawer Locking Mechanism shafts	General Purpose Lubricating Oil 10W	As Required	All Temperatures	Monthly or as Required if under Adverse Conditions
FPU SYSTEM Module Drawer Slam Locks	Molykote Multipurpose Synthetic Grease P/N 26040124	As Required	All Temperatures	Monthly or as Required if under Adverse Conditions
FPU Cradle Twist Lock	Molykote Multipurpose Synthetic Grease P/N 26040124	As Required	All Temperatures	Monthly or as Required if under Adverse Conditions
FPU Cradle Locking Rod Pivot	Molykote Multipurpose Synthetic Grease P/N 26040124	As Required	All Temperatures	Monthly or as Required if under Adverse Conditions
END OF LUBRICATION TABLE				

# FPU® SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) FPU/BOH CARGO CONTAINERS MODELS FPU-8-2, BOH-CARGO-12-1, BOH-CARGO-6 & FPU-20-1 & FPU-20-2 BOH FPU Field Pack-up Units

### DOOR ASSSEMBLY TYPES

INITIAL SETUP:

Materiel/Parts

None

**Personnel Required** 

One **Tools** Ladder References

WP 0006 00 and WP 0008 00

**Equipment Condition** FPU SYSTEMS Set-up

### **INSPECT**

1. Open and close left/right door assembly, follow steps outlined in (WP 0006 00 and 0008 00) to ensure proper operation and alignment.

### Note

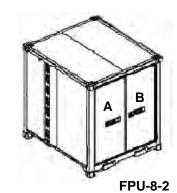
There are two styles of doors for the FPU containers. The BOH-CARGO-12 with external hinge doors that require the right set of door edges to lead when being closed and the FPU-20-1 & 2 and the FPU-8-2 with retracting pocket type doors require the left door to lead when being closed.





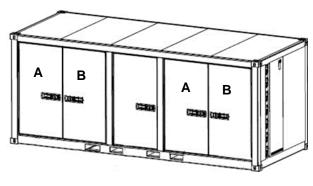
#### WARNING

The containers must be operated on level ground and periodically be checked for shifting from a level position. Use care when opening doors or drawers, physical injury may occur. To maintain control, consider the ground surface conditions for adequate traction, such as mud, snow, ice, sand.

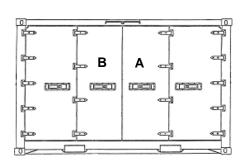




**BOH-CARGO-6** 







**BOH-CARGO-12-1** 

# **NOTE**

The FPU-20-1&2 and the FPU-8-2 are pocket type doors. The BOH-CARGO-12-1 has bi-fold type doors. The BOH-CARGO-6 has a single barn style door.

# **CAUTION**

The doors (A) must lead the doors (B) slightly when being closed to prevent damage to the door edge seals.

- 2. Notify maintenance of any missing or damaged seals and any problems with operation of latch, handle, or hinges for service.
- 3. Notify maintenance of any problems with door alignment.

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# **EXTERNAL PARTS**

INITIAL SETUP:

Materiel/Parts

None

Personnel Required

One

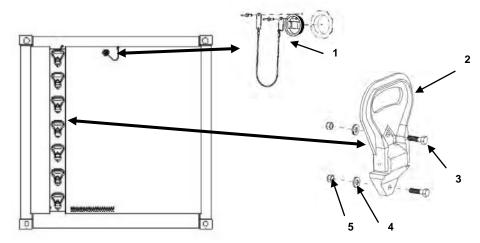
References

None

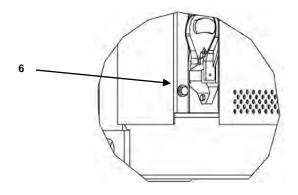
Equipment Condition

FPU SYSTEMS Set-up

### **INSPECT**



- 1. Inspect for missing access bung (1) and lanyard.
- 2. Raise and lower each of the steps (2) to ensure they stow and operate
- 3. Notify maintenance of missing, cracked, broken or poorly operating steps (2).
- 4. Notify maintenance of any broken or missing bolts (3), interior nut and washer (4, 5).
- 5. Inspect for the presence of the ground lug bolt (6) next to the bottom step.



# **END OF WORK PACKAGE**

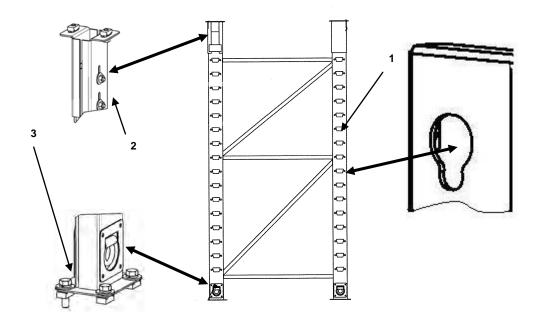
BOH-PM-06-4 Chapter 4 Rev. 4.02

# FPU® SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) FPU/BOH CARGO CONTAINERS MODELS FPU-8-2, BOH-CARGO-12-1, BOH-CARGO-6 & FPU-20-1 & FPU-20-2 BOH FPU Field Pack-up Units

# **VERTICAL RACK FRAME (BOH CARGO-12-1)**

INITIAL SETUP:	
Materiel/Parts	References
None	None
Personnel Required	Equipment Condition
One	FPU SYSTEM Set-up

### **INSPECT**



- 1. Inspect the vertical rack frame (1) for cracks, excessive dents or bending. Report damage to maintenance for repair or replacement.
- 2. Inspect vertical rack upper attachment assembly (2) for cracks, excessive dents or bending. Report damage to maintenance for repair or replacement.
- 3. Inspect vertical rack frame for damaged or missing bolts (3). Report damage to maintenance for repair or replacement.

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### **RECEIVER PADS**

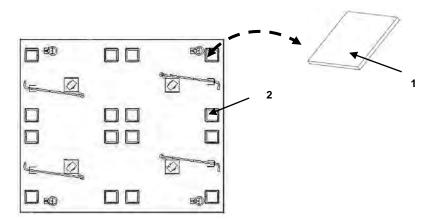
### **INSPECT**

INITIAL SETUP:
Materiel/Parts
Replacement pads
Personnel Required
One
Tools
Putty knife and contact cement

References None Equipment Condition FPU Set-up

### **INSPECT**

Inspect the floor receiver pads (1) of the FPU-8-2, 20-1, or 20-1 for presence of debris, dirt and proper fit.



### **REPLACE**

Replace the receiver pads (1) if dry rotted, damaged.

### **REPAIR**

1. Using a putty knife, scrape out the old material, clean the interior pocket area (2) and glue in the new pads.

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# **CARGO PALLET (BOH-CARGO-12-1 only)**

INITIAL SETUP:

Materiel/Parts

None

Personnel Required

One

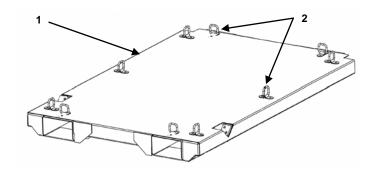
References

None

Equipment Condition

FPU SYSTEMS Set-up

# **INSPECT**



- 1. Inspect pallet (1) for cracks, excessive dents or sagging. Report damage to maintenance for repair or replacement.
- 2. Inspect pallet for missing or damaged D-rings (2). Report damage to maintenance for repair or replacement.

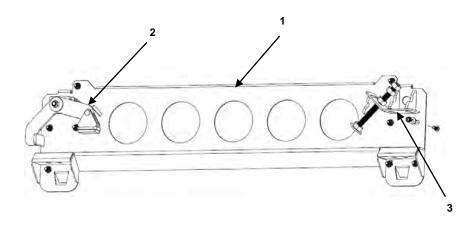
# FPU® SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) FPU/BOH CARGO CONTAINERS MODELS FPU-8-2, BOH-CARGO-12-1, BOH-CARGO-6 & FPU-20-1 & FPU-20-2 BOH FPU Field Pack-up Units

# PALLET LEDGE (BOH-CARGO-12-1)

INITIAL SETUP:
Materiel/Parts
None
Personnel Required
One

References WP 0006 00 Equipment Condition FPU SYSTEMS Set-up

### **INSPECT**



- 1. Remove pallet from container using a forklift.
- 2. Inspect pallet ledges (1) for operation of Cam Locks (2), Lock Rods (3), and missing hardware.
- 3. Inspect pallet ledges for dirt/debris that would affect performance.
- 4. Inspect pallet ledges (1) for operation of Cam Locks (2), Lock Rods (3), and missing hardware. See (WP 0006 00-13 and 00-14).

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**POCKET DOOR (FPU-8-2 & FPU-20-1&2)** 

INITIAL SETUP: Materiel/Parts

None

**Personnel Required** 

One **Tools** Ladder References WP 0006 00

**Equipment Condition** FPU SYSTEMS Set-up

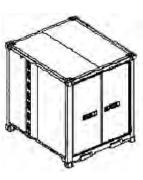
### **INSPECT**

### **Pocket Doors**

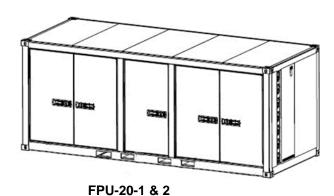
1. Open and close left/right door assemblies, front and rear, to ensure proper operation and alignment.

### **CAUTION**

The left hand doors must lead the right door slightly when closing the doors.



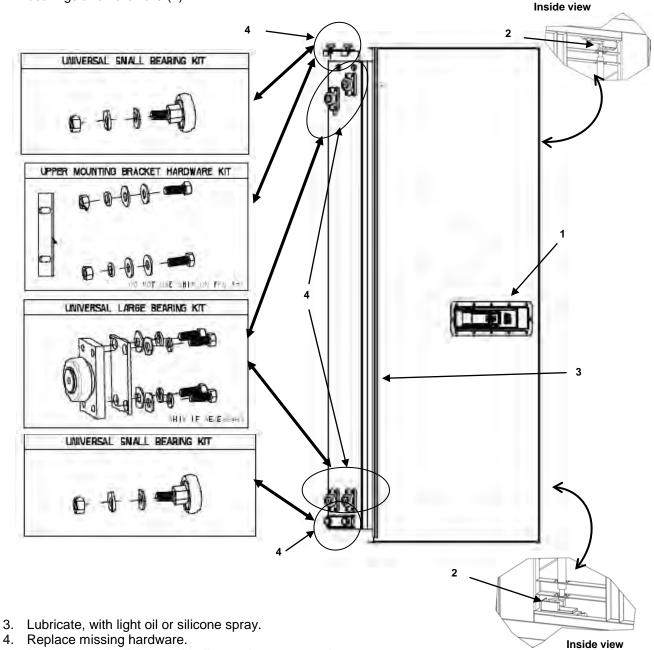




# NOTE

The container should be on relatively level ground.
Unstable or level site may bind or impede the door operation.

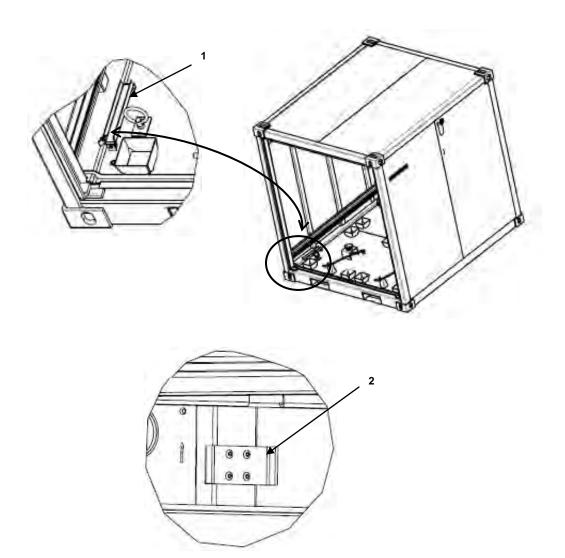
2. Check for ease of operation door handle (1), cams top and bottom (2), continuous hinge (3), roller bearings and hardware (4).



- 5. Report any misalignment, binding or damage to maintenance.
- 6. Notify unit maintenance of any missing welds and any problems with operation of latch, handle, door latch cams and rods, continuous hinge or door rollers.

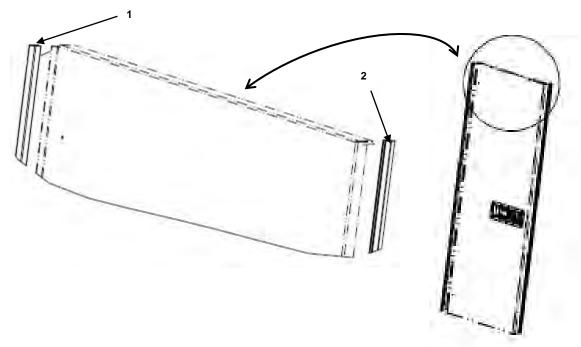
# **Pocket Door Guide and Stops**

- 1. Inspect the door roller guides (1) for debris, dirt, mud and loose or missing hardware.
- 2. Tighten or replace missing or loose hardware.
- 3. Inspect for smooth operation.
- 4. Inspect door stop (2) at the top of center beam for missing or loose hardware
- 5. Tighten or replace missing or loose hardware door stop.



### **Pocket Door Seals**

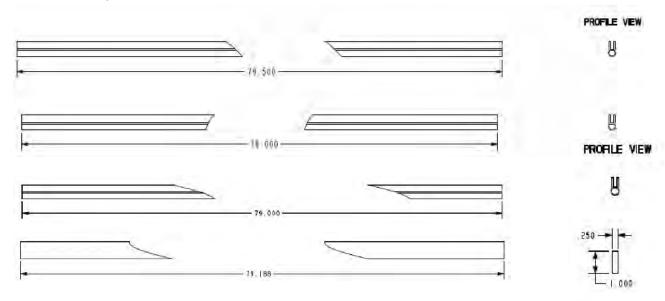




- 2. Inspect door edge seals for missing or loose fastening rivets.
- 3. Replace rivets as needed.
- 4. Notify unit maintenance of any missing, loose or damaged door edge seals.

# Note

Door seals are a specific length and profile to each FPU container model and not interchangeable with other pocket doors.

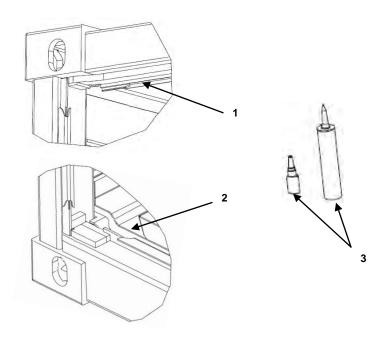


### **CONTAINER ENTRANCE SEALS**

# Note

Entrance door seals are multi-segmented and have container specific lengths and profiles for each FPU container model and are not interchangeable with other container models.

- 1. With the doors open, inspect container entrance top and side seals (1) and bottom seals (2) for cracks, tears, and damage, adhesion or missing segments.
- 2. Remove, replace and glue the seal segments with the proper adhesives and sealant (3) provided in the seal kit.



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**BI-FOLD DOORS (BOH-CARGO 12-1)** 

INITIAL SETUP: Materiel/Parts

None

**Personnel Required** 

One **Tools** 

Flashlight, 9/16" open end wrench

References

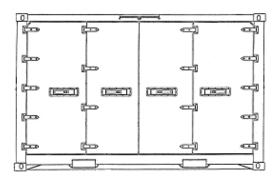
WP 0005 00 and 0006 00 **Equipment Condition** FPU SYSTEMS Set-up

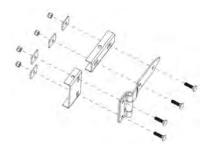




### WARNING

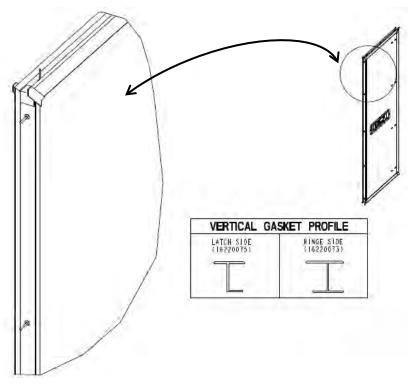
The containers must be operated on level ground and periodically be checked for shifting from a level position. Use care when opening doors or drawers; physical injury may occur. To maintain control, consider the ground surface conditions for adequate traction, such as mud, snow, ice and sand.



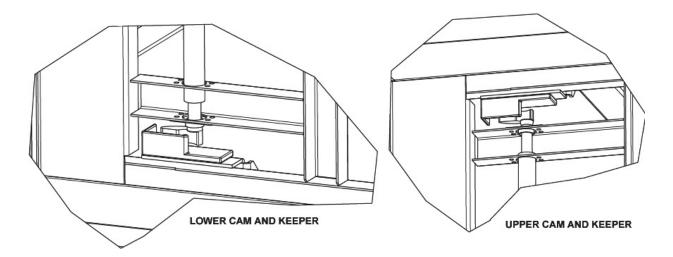


- 1. Inspect the bi fold door handles for smooth operation
- 2. Inspect hinges for rust or missing hardware.
- 3. Lubricate hinges, or replace as needed.

- 4. Inspect door seals for cracks, abrasions, or damage.
- 5. Report damage to maintenance for replacement.



- 6. Inspect the interior door cams for rust, dirt or debris.7. Clear debris and lubricate as needed.
- 8. Contact maintenance for any repair.



# **END OF WORK PACKAGE**

BOH-PM-06-4 Chapter 4 Rev. 4.02

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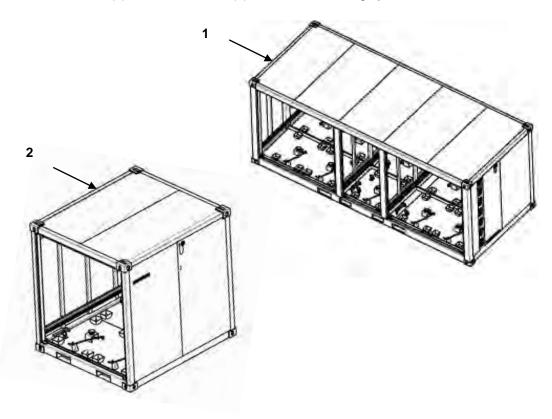
# FLOOR LOCK ASSEMBLIES (FPU-8-2 & FPU-20-1&2)

INITIAL SETUP: Materiel/Parts None Personnel Required

One **Tools** Flashlight References WP 0005 00 and WP 0006 00 Equipment Condition FPU SYSTEMS Set-up

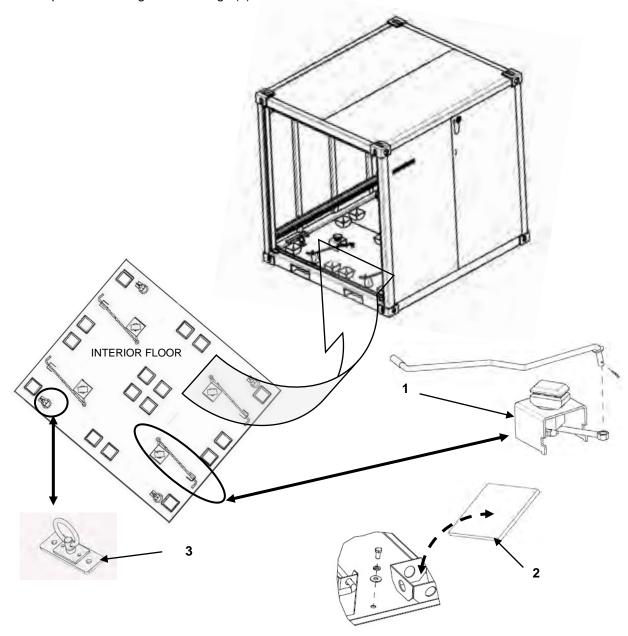
### **INSPECT**

Both the FPU-20-1 & 2 (1) and the FPU 8-2 (2) have a floor locking system that is fixed.



# Floor module locking system

- 1. Inspect for ease of operation of the lock mechanism (1); lubricate if needed.
- Inspect for missing foot pads (2)
   Inspect for missing tie down rings (3)



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# SHELVES AND DOOR (BOH-CARGO-6)

INITIAL SETUP: Materiel/Parts None Personnel Required

One **Tools** 

Damp Rags, Brush, Flashlight

References WP 0008 00

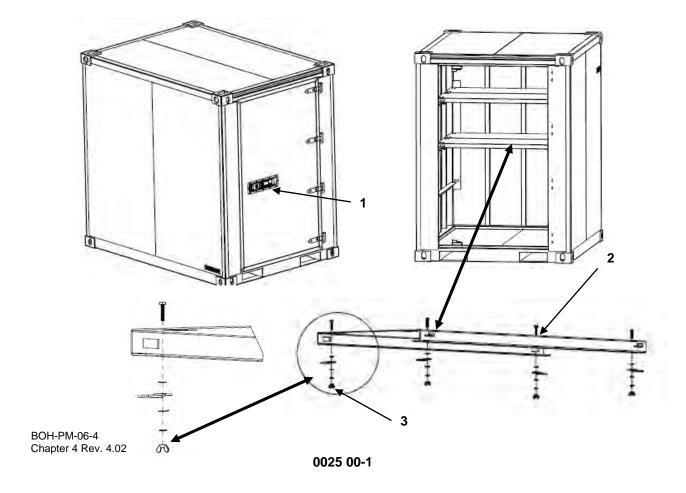
**Equipment Condition** FPU SYSTEMS Set-up

### **INSPECT**

### **Shelves and Door**

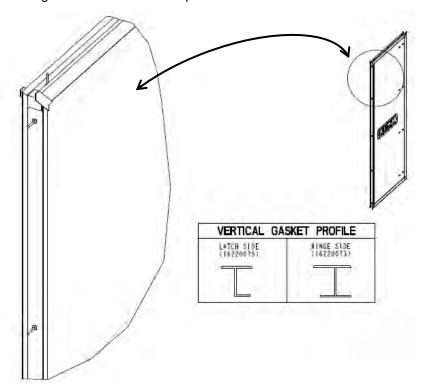
The BOH CARGO-6 is a bulk cargo container with two shelves and one barn style door.

- 1. Inspect door and door handle (1) for smooth operation.
- 2. Inspect for damaged or missing shelves (2).
- 3. Inspect each shelf for eight sets of securing hardware (3), bolts, tabs, washers and wing-nuts.

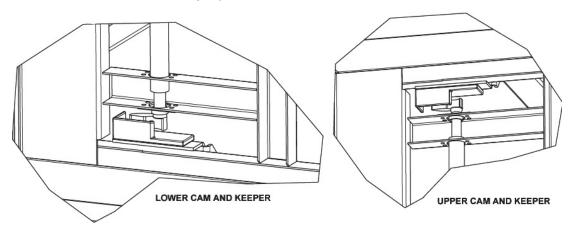


# **Door Seals**

- 1. Inspect the door handles for smooth operation
- 2. Inspect hinges for rust or missing hardware.
- 3. Lubricate hinges or replace hardware as needed.
- 4. Inspect door seals for cracks, abrasions, or damage.
- 5. Report damage to maintenance for replacement.



- 6. Inspect the interior door cams for rust, dirt or debris.
- 7. Clear debris with cleaning brush and lubricate as needed.
- 8. Contact maintenance for any repair.



# **END OF WORK PACKAGE**

BOH-PM-06-4 Chapter 4 Rev. 4.02