

**FPU® SYSTEMS OPERATION MANUAL
(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)
STANDARD AND SPECIALIZED FPU MODULES
BOH FPU Field Pack-up Units**

CHAPTER 5

UNIT MAINTENANCE INSTRUCTIONS

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UNIT MAINTENANCE INSTRUCTIONS

FPU SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) STANDARD AND SPECIALIZED FPU MODULES BOH FPU Field Pack-up Units

FPU Standard Modules and Short HELO Module

INSPECT, SERVICE

INITIAL SETUP:

Materiel/Parts

Lubricant

Personnel Required

One

Tools

Rags, 7/16" wrench, scrap of wood, 18 oz. hammer

References

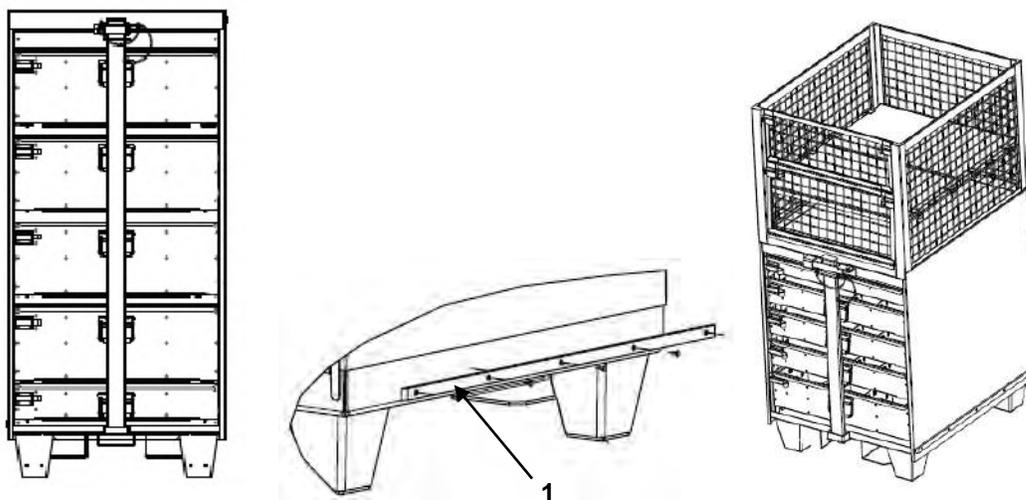
WP 0008 00

Equipment Condition

FPU Module Set-up

INSPECT

With drawers open, inspect handles, missing hardware, latches and drawer operation, and report problems with drawer damage to direct support maintenance.



1. Inspect for missing or damaged side bumper strips (1). Notify maintenance of any missing or damaged bumper strips for replacement.



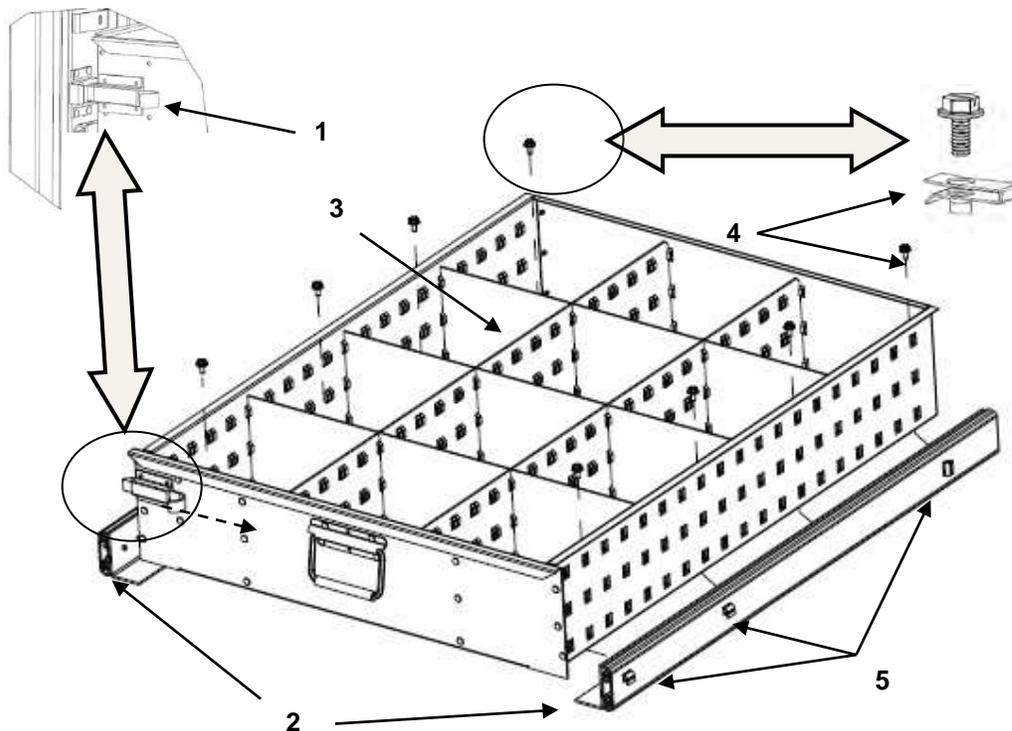
WARNING

The modules must be operated on level ground and periodically be checked for shifting from a level position in or out of the containers. To maintain control, consider the ground surface conditions for adequate traction, such as mud, snow, ice and sand.

0023 00-1

SERVICE

- Lubricate the slam latch (1) and roller bearings (2), front and rear of the slides with light lube spray. Notify maintenance of any missing or damaged slam latch for replacement.
- Replace any missing $\frac{1}{4}$ "-20 TPI x $\frac{1}{2}$ " (4) drawer mounting bolts and automotive threaded clips.



REPLACE

Replacement of drawer assembly

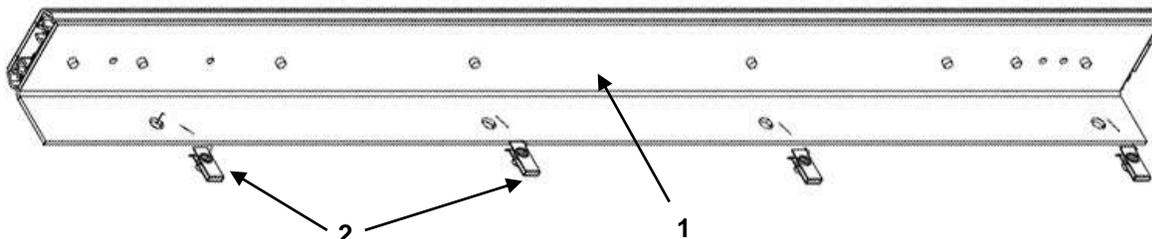
Although the standard modules come in prescribed drawer configurations, there are optional drawers of various sizes that can replace the existing configuration.

Drawer and Slide Removal

- Release the slam latch (1) on the left side of the drawer.
- Pull the drawer to the full out position.
- Remove the material and divider set (3).
- Remove the eight bolts (4) on the interior of the drawer with the $\frac{7}{16}$ " wrench or flat tip screwdriver.
- Lift the drawer from the bearing slides (2).
- Remove the two set bolts that secure the slide to the module housing.
- Use a block of wood and 18 oz. hammer to tap the slides (2) up to disengage the tabs (5) and cleats.

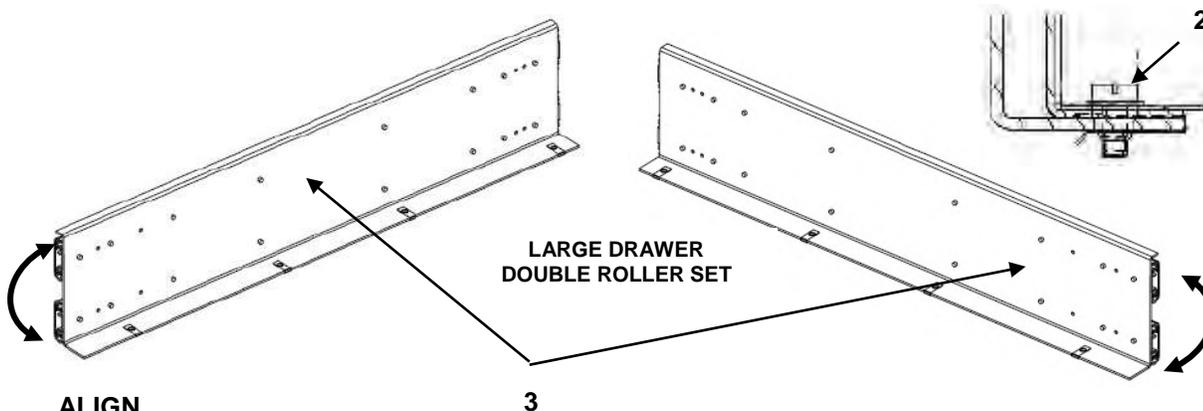
Drawer Slide Bearings

The drawers are attached to the roller slides (1), by means of automotive threaded clips (2) and 1/4-20 x 5/8" TPI bolts.



Note

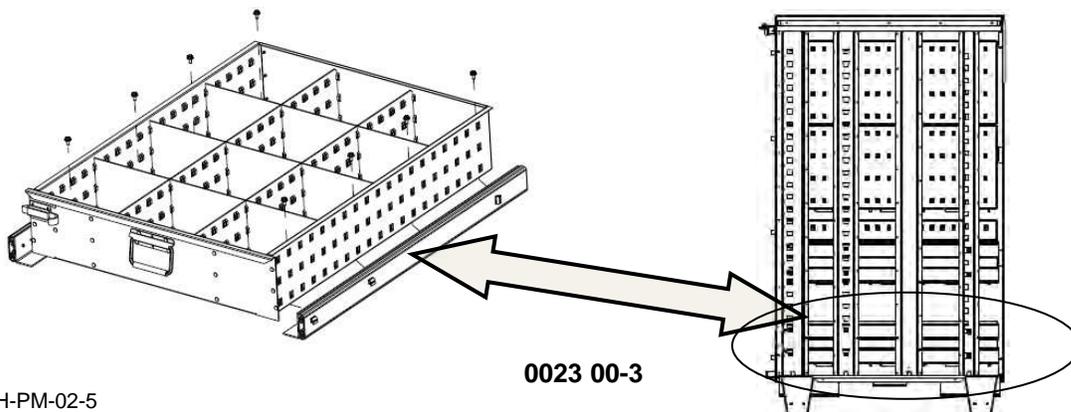
There are two sizes of drawer slides; a single roller and double rollers (3) for the large drawers. The drawer slides come in left and right pairs as part of a drawer replacement kit and are matched to the drawer size.



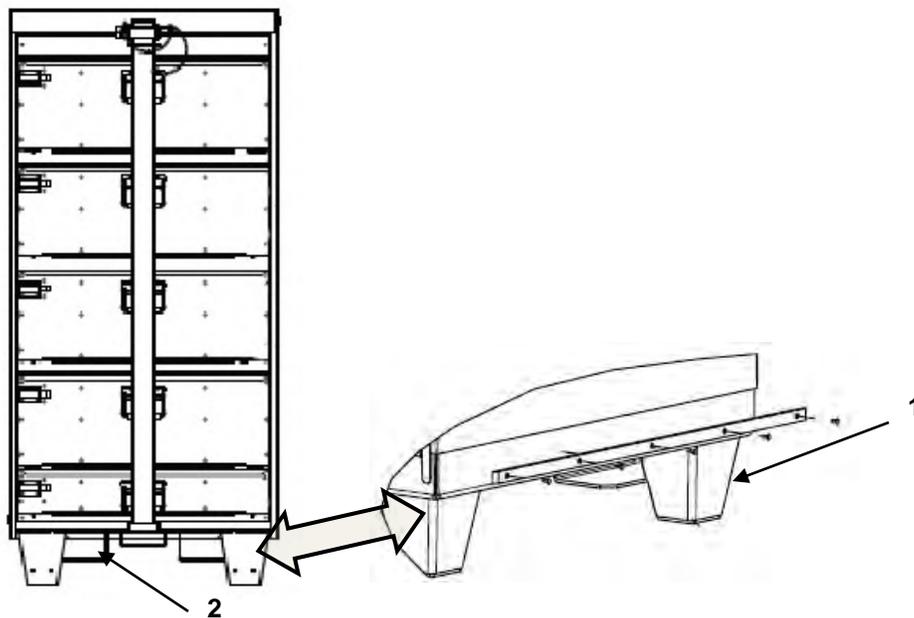
ALIGN

To attach the drawer slide

1. Align the three sets of tabs on the back of the slide and tab holes in the three uprights.
2. Tap the slide down with a block of wood until the slide is level and secure.
3. Install the two set bolts that secure the slide to the module housing.
4. Insert the drawer and tighten the eight bolts with the 7/16" wrench.
5. Push the drawer to the full in position until the slam latch is engaged.



WELD REPAIR



1. Inspect the exterior of the cabinet brackets and all four base feet (1) and forklift pockets (2) for damage.
2. Notify maintenance of any dents or damage requiring weld repair.

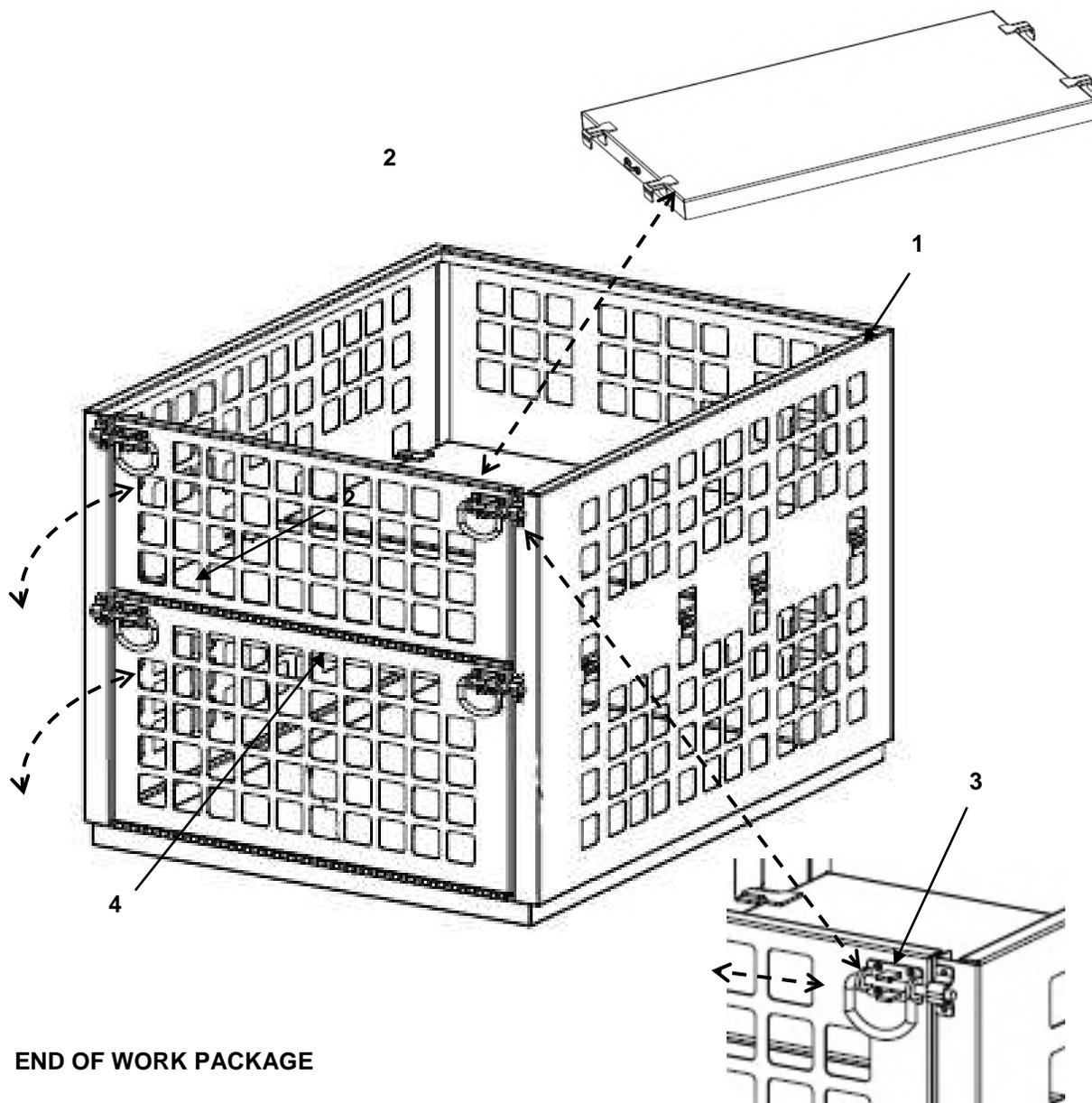
Repairs Requiring Welding

Welding repairs are only required when the FPU SYSTEM module is pierced, punctured, or cracked. Standard welding principles and materials apply to FPU SYSTEM repairs. Welding procedures will not be discussed in this tech manual. Refer to TC 9-237.

SHORT HELO CAGE

The cage doors will fold down when the latches (3) are released.

1. Inspect the HELO Module Cage (1) for missing shelves (2) and the four latches (3).
2. Inspect hinge (4) for smooth operation. Lubricate as needed.



END OF WORK PACKAGE

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UNIT MAINTENANCE INSTRUCTIONS

FPU SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) STANDARD AND SPECIALIZED FPU MODULES BOH FPU Field Pack-up Units

FPU Specialized Weapons Vault Module

INITIAL SETUP:

Materiel/Parts

Lubricant (see Table 2 Lubrication in WP 0025)

Personnel Required

Two

Tools

Rags, 7/16" wrench, 9/16" wrench, #3 flat tip screw driver

References

WP 0008

Equipment Condition

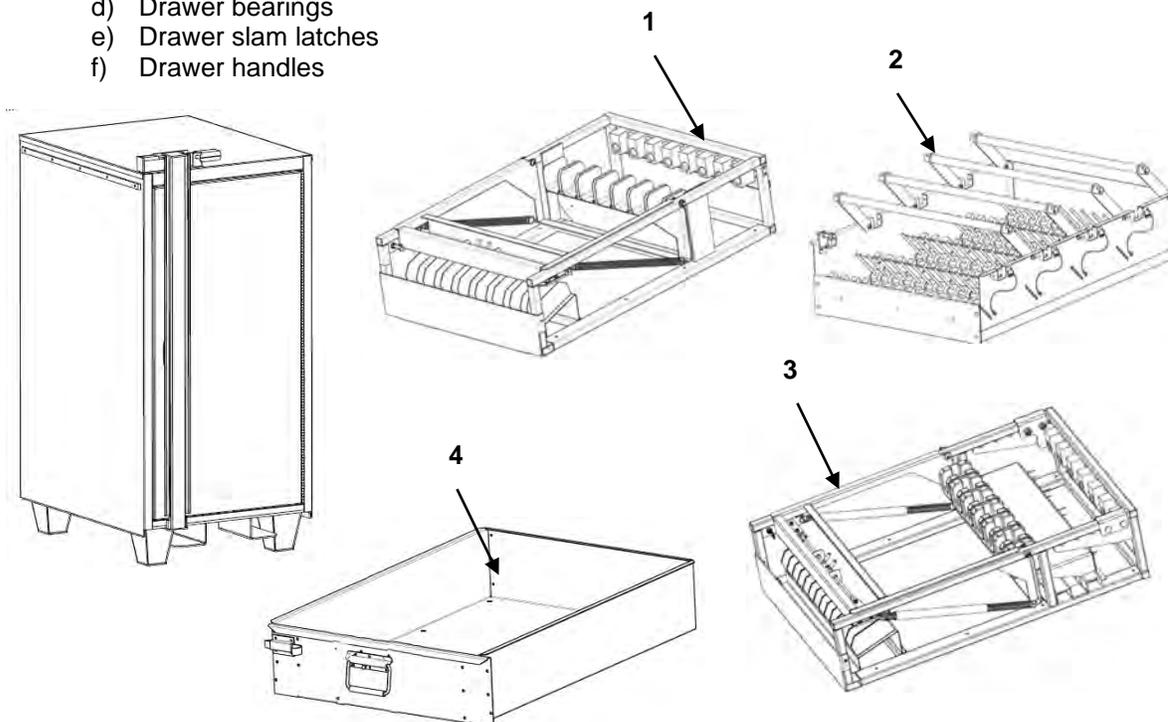
FPU Module Operation Checks

INSPECT, SERVICE

Drawers

The Weapons Vault has four variations of drawers: Rifle drawers M16A2 only (1) and M16A2/M16A4/M4 (3), 9mm Pistol drawer (2), and 8-inch bulk material drawer (4) that are mounted on left and right roller bearing drawer slides.

1. Inspect for missing or loose mounting hardware.
2. Inspect, Wipe down and lubricate all moving hinge points:
 - a) Door T-handle and interior lock set
 - b) Door interior hinge
 - c) Weapons securing bar hinge bolts and latches
 - d) Drawer bearings
 - e) Drawer slam latches
 - f) Drawer handles



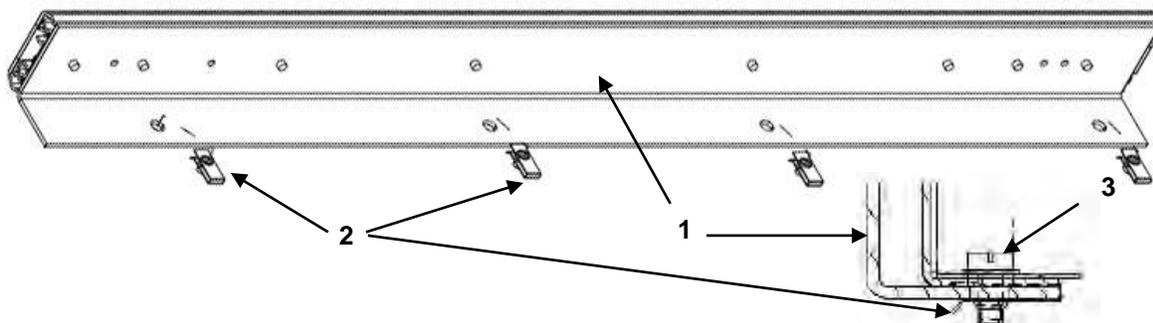
0024 00-1

WARNING

The modules must be operated on level ground and periodically checked for shifting from a level position in or out of the containers. To maintain control, consider the ground surface conditions for adequate traction, such as mud, snow, ice and sand.

REPLACE**Drawer Bearing Slides**

The drawers are attached to the roller slides (1) by means of automotive threaded clips (2) and eight bolts (3). Use a 7/16" open end wrench or a # 3 flat tip screwdriver to remove the drawer and replace the slides.

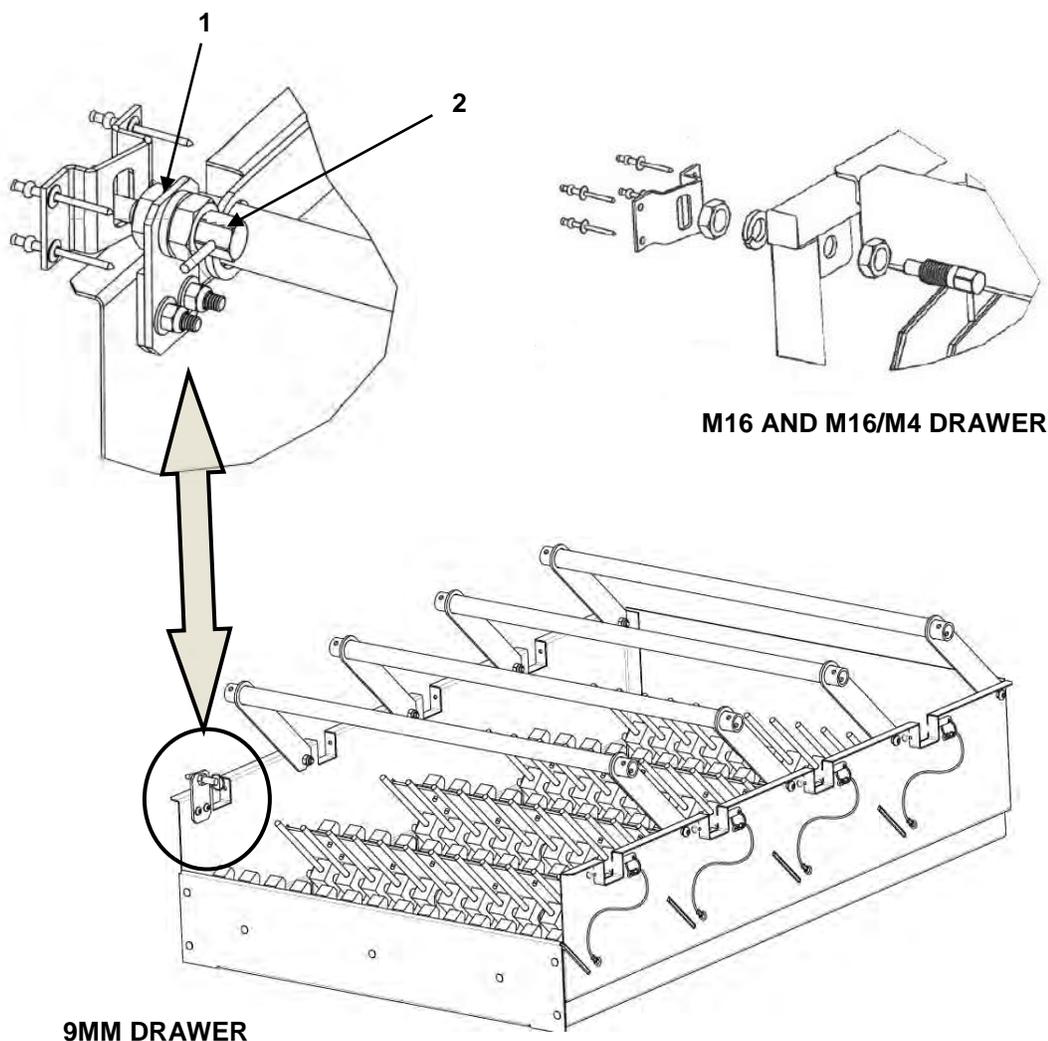
**WARNING**

Seek some assistance when lifting out the rifle or pistol drawers; they may be awkward to handle.

REPLACE**Pistol or Rifle Drawer Spring Pin Latch****Note**

The drawer is not required to be removed for this repair.

1. Release the drawer latch. See page WP 0007 00-5 and 00-10.
2. Pull the drawer to the full out position.
3. The spring pin latch is installed with two jam nuts (1). Remove the outer jam nut with a 13/16" open end wrench.
4. Remove and replace the spring pin latch (2).
5. Install the outer jam nut (1) and tighten with a 13/16" open end wrench.
6. Actuate and ensure the pin latch engages. See page WP 0007 00-5 and 00-10.



0024 00-3

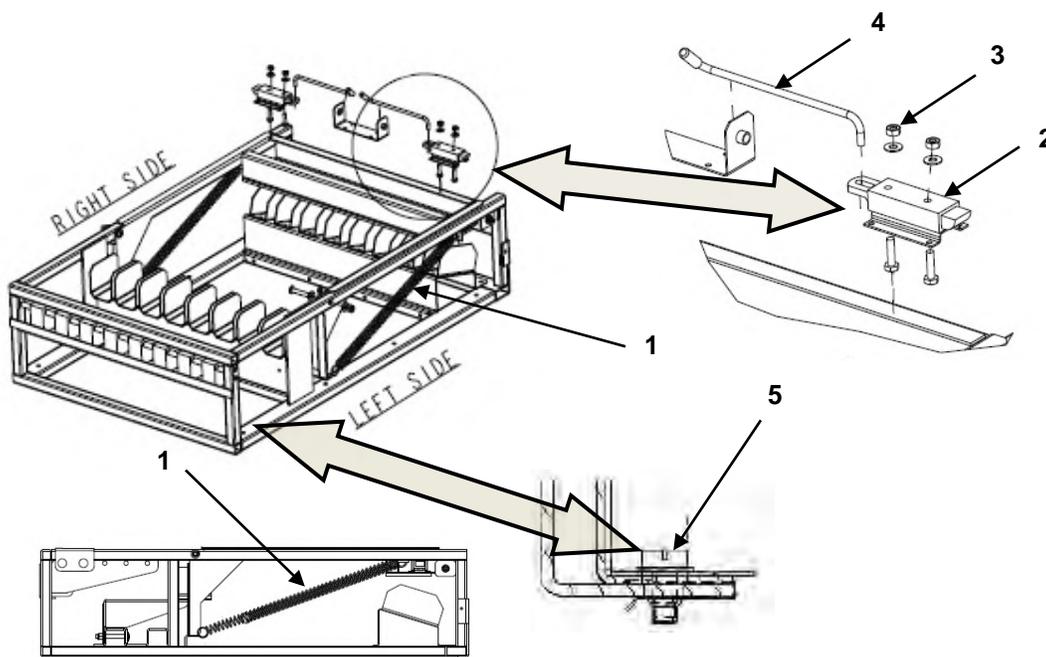
REPLACE

M16-A2 and M16/M4 Rifle Drawer Securing Bar Latches

WARNING

Seek some assistance when lifting and installing the rifle or pistol drawers. The Rifle securing bar is under spring tension. It is recommended that you remove the tension springs (1) before removing the latches. Gloves are recommended when handling the tension springs (1).

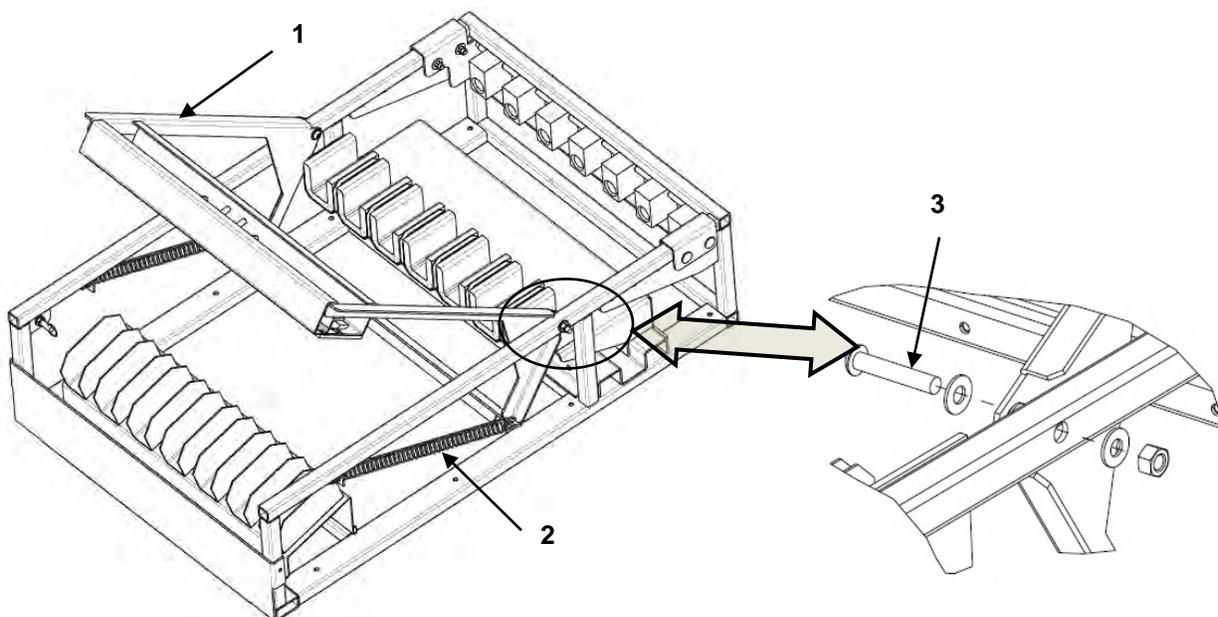
1. Pull the empty rifle drawer to the full out position.
2. Remove the eight bolts (5) from the drawer slides.
3. Remove the drawer and place it on a solid flat work surface.
4. Release and raise the securing bar and remove the left and right tension springs (1).
5. Push the bar down to the latched position.
6. Remove and replace one or both latches (2).
7. Remove the two retaining bolts, nuts and washers (3) with the 7/16" wrench.
8. Lift out the actuating lever (4).
9. Retighten the bolts and install the actuating lever (4).
10. Raise and support the arm to attach each tension spring (1).
11. Lower the arm, check spring tension and ensure the latches (2) engage.
12. Return the drawer to the weapons Vault.
13. Install the eight drawer slide bolts and clips (5).
14. Ensure the pin latch engages. See page WP 0008 00-9.



0024 00-4

REPLACE**M16-A2 and M16/M4 Rifle Drawer Weapons Securing Arm**

1. With the drawer removed and on a flat level work surface, release and raise the securing bar (1).
2. Remove the two tension springs (2).
3. Remove the hinge bolts, nuts and washers (3) with a 7/16" wrench and a #3 screwdriver.
4. Remove and replace the weapon securing arm (1).
5. Reinstall and lubricate the hardware with the 7/16" wrench and screwdriver.
6. Reinstall the two tension springs.
7. Return the drawer to the weapons vault.
8. Install the eight drawer slide bolts.
9. Ensure the pin latch engages. See page WP 0008 00-9.

**WARNING**

Seek some assistance when lifting and installing the rifle or pistol drawers; they may be awkward to handle and may result in injury.

REPLACE**M16-A2 Rifle Muzzle Blocks**

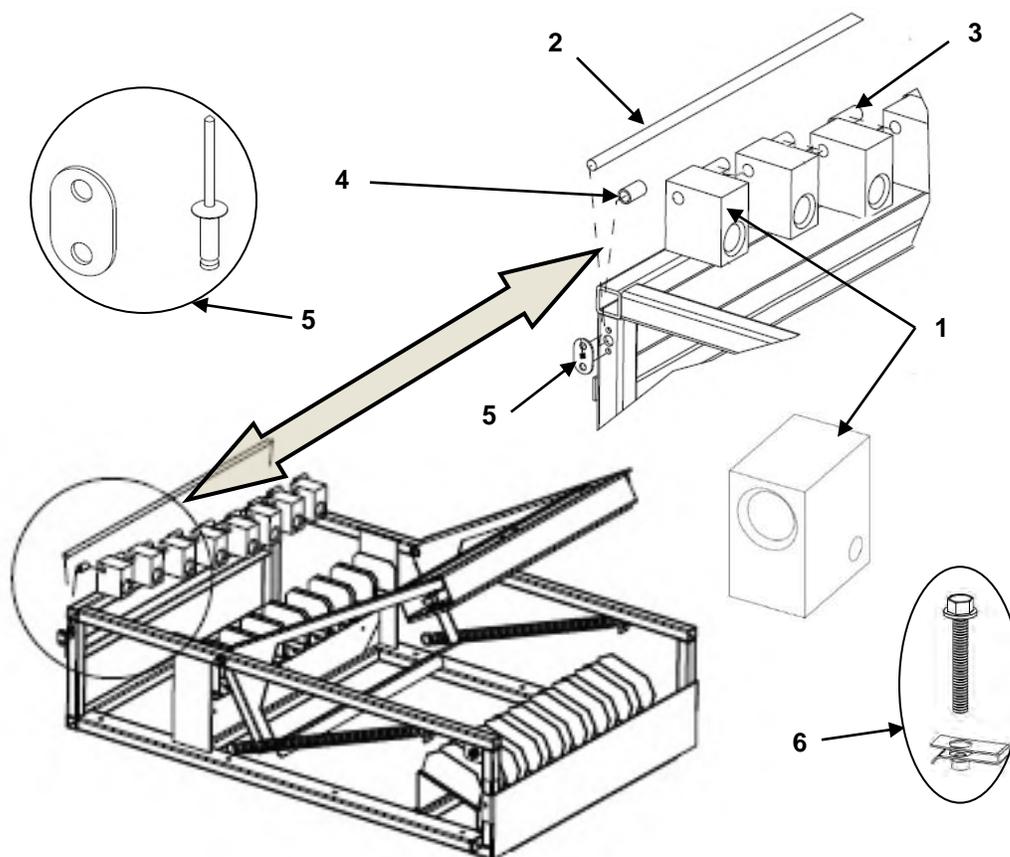
The M16-A2 Rifle drawer muzzle blocks (1) are secured by a rod (2) and separated by eight "B" spacers (3) with one end "A" spacer (4) held in place by a cover plate (5).

1. With the drawer on a stable, flat surface, remove the cover plate and pop rivets (5).
2. Pull out the end spacer "A" (4) and rod (2).

CAUTION

As you remove the rod, take care not to lose any of the spacers (3 & 4).

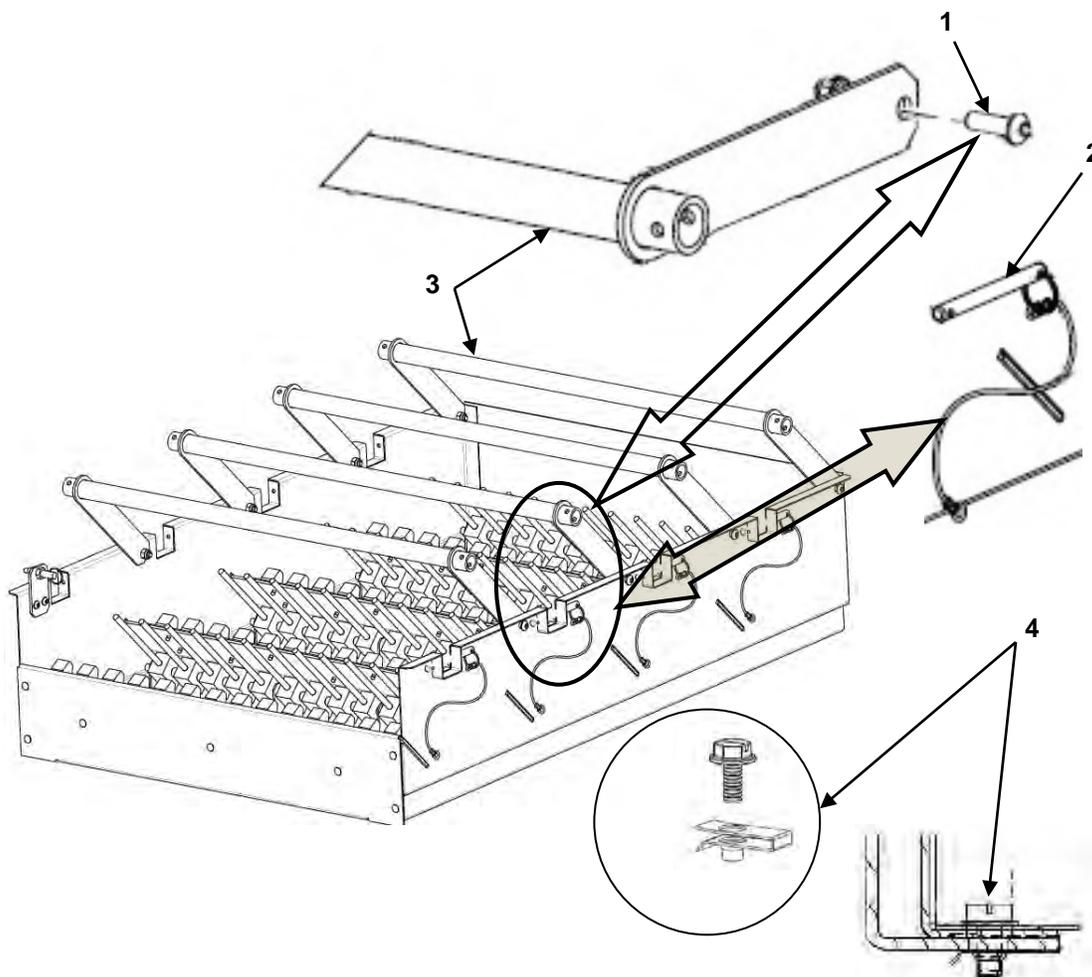
3. Remove the muzzle block to be replaced.
4. Install the new muzzle block and spacer.
5. Insert the rod (2) through the "B" spacers (3) and blocks (1).
6. Insert the end "A" spacer (4).
7. Install the cover (5) with new pop rivets.
8. Return the drawer to the Vault.
9. Install the eight drawer slide bolts and clips (6).
10. Close the drawer and ensure the spring pin latch engages. See chapter 2 page WP 0007 00-7.



0024 00-6

REPLACE**Pistol Drawer Securing Bar**

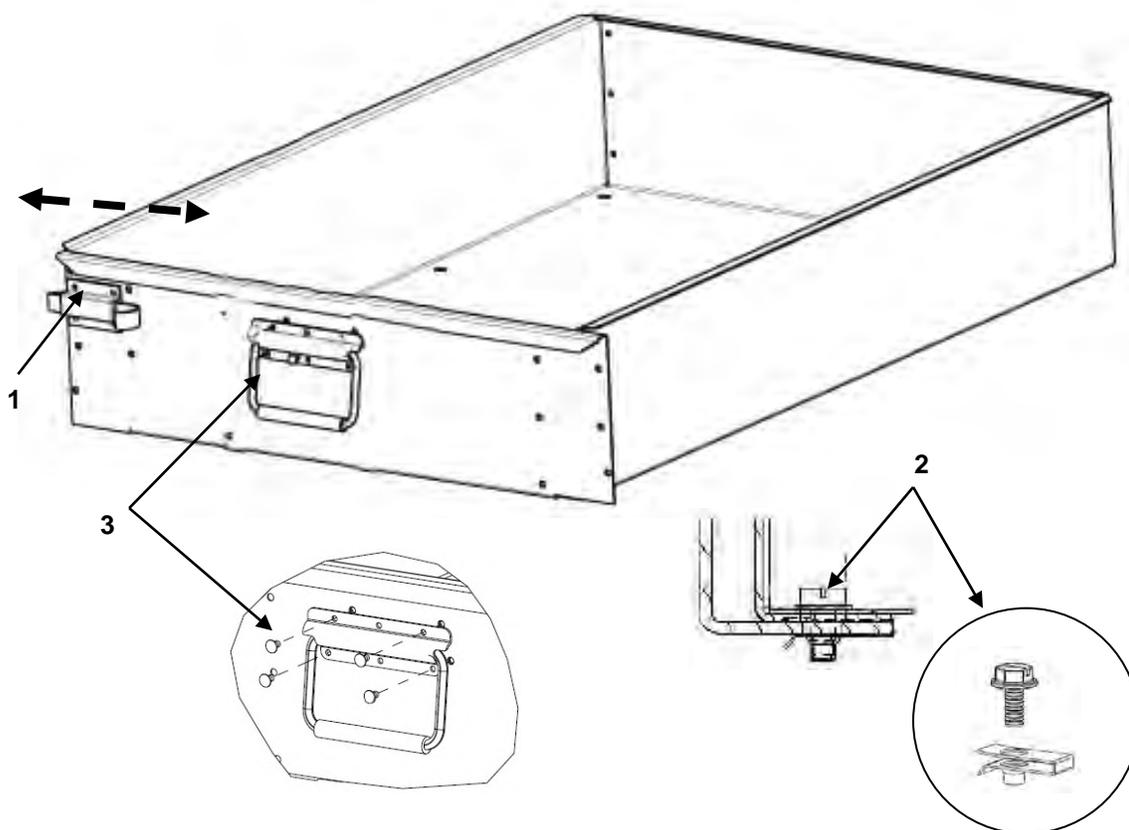
1. Remove the eight bolts and clips (4) of the drawer and remove the drawer from the drawer slides.
2. With the drawer on a stable, flat surface, remove the left and right arm screw, washer and 7/16" nut (1).
3. Pull out both left and right securing pins (2) and raise and remove the securing bar (3).
4. Install the replacement arm with the screw washer and 7/16" nut (1).
5. Test the securing bar (3) for smooth operation.
6. Install the left and right securing pins (2).
7. Return the drawer to the vault and install the eight bolts and clips (4) in the drawer and slides.
8. Return the drawer to the full in stow position.
9. Close the drawer and ensure the spring pin latch engages. See chapter 2 page WP 0007 00-7



0024 00-7

REPLACE**Bulk Material Drawer**

1. Release the drawer slam latch (1) and pull the drawer to the full out position.
2. Remove the eight bolts (2) with a 7/16" wrench or #3 flat tip screwdriver.
3. Remove the drawer from the slides.
4. Install the replacement drawer in the slides and align the screw holes.
5. Reinstall the eight drawer slide bolts (2).
6. Report damage to the drawer handles (3) to maintenance for repair or replacement.
7. Return the drawer to the stow position, actuate and ensure the slam latch engages.

**END OF WORK PACKAGE****0024 00-8**

UNIT MAINTENANCE INSTRUCTIONS

FPU SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) STANDARD AND SPECIALIZED FPU MODULES BOH FPU Field Pack-up Units

FPU Specialized Flammable/Corrosive Module

SERVICE REPAIR:

Materiel/Parts

None

Personnel Required

One

Tools

$\frac{3}{4}$ " Open end wrench, #2 Philips screw driver and Putty Knife

References

WP 0009 00

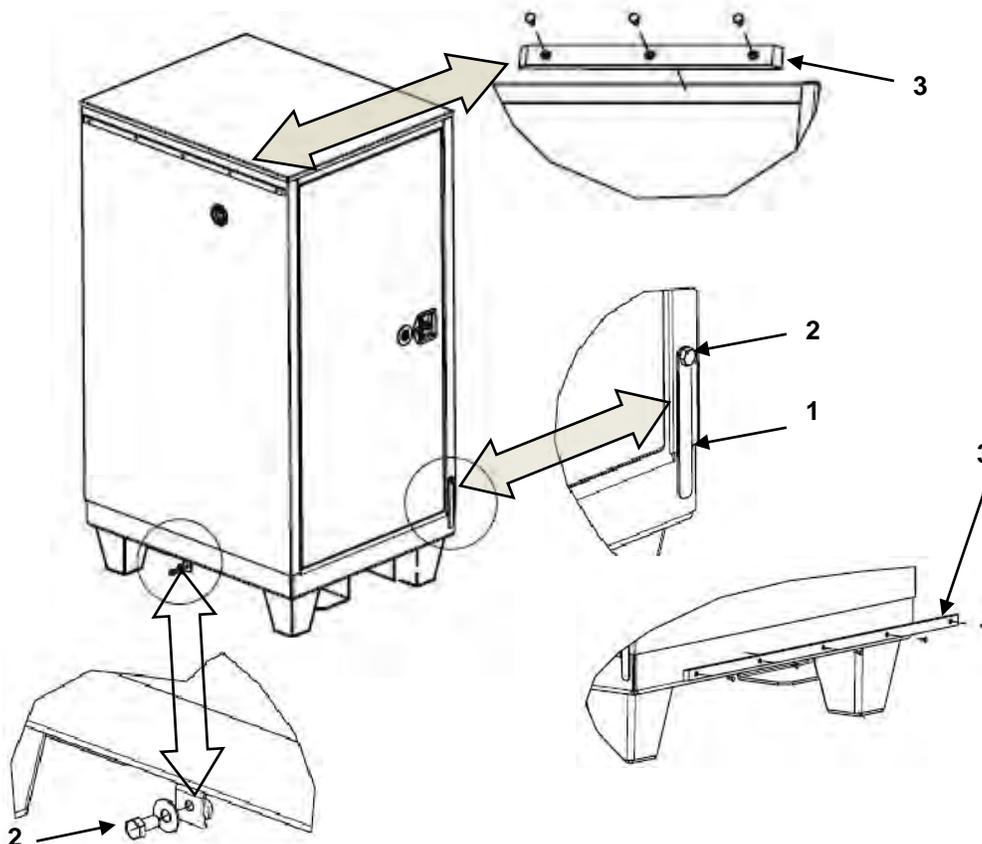
Equipment Condition

FPU Module Operation Checks

INSPECT, SERVICE and REPAIR

Grounding system

1. Inspect for missing, loose, damaged, frayed ground strap (1) and hardware (2).
2. Inspect for missing, loose, damaged front side and rear no-spark bumper strips (3).
3. Remove and replace damaged bumper strips (3) with the 3/16" sb66 pop rivet.
4. Remove and replace damaged ground strap (1) and hardware (2) with $\frac{3}{4}$ " open end wrench.



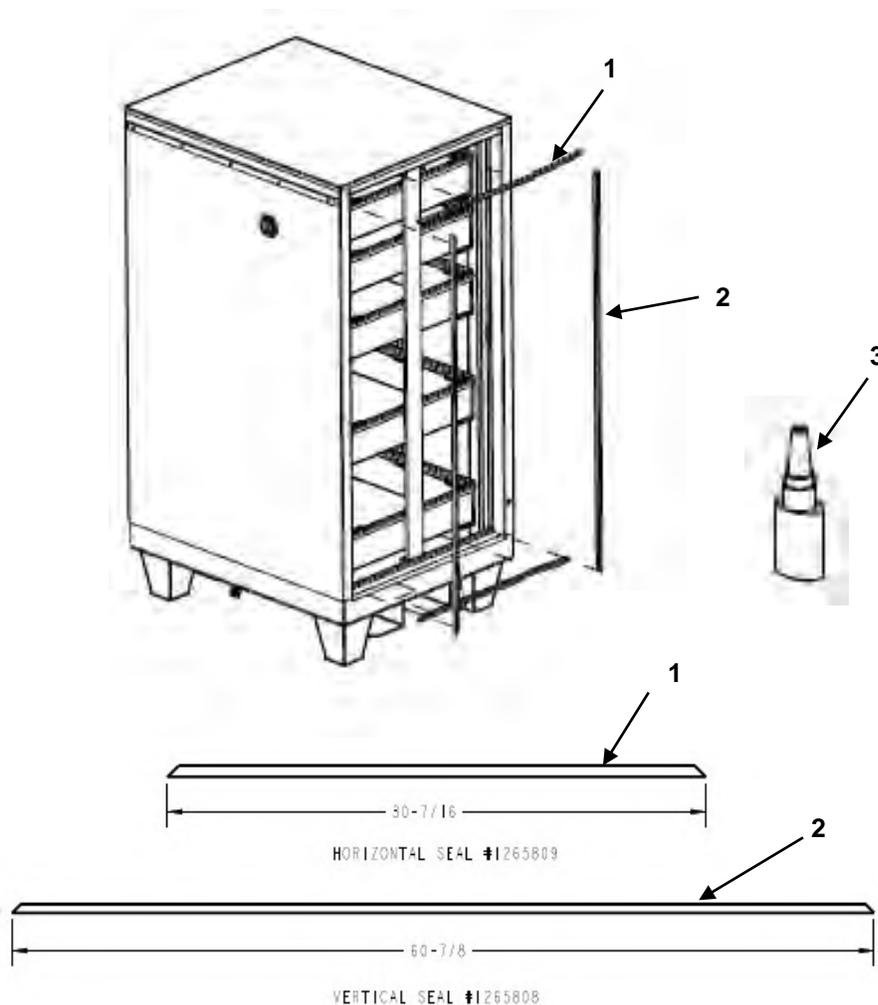
0025 00-1

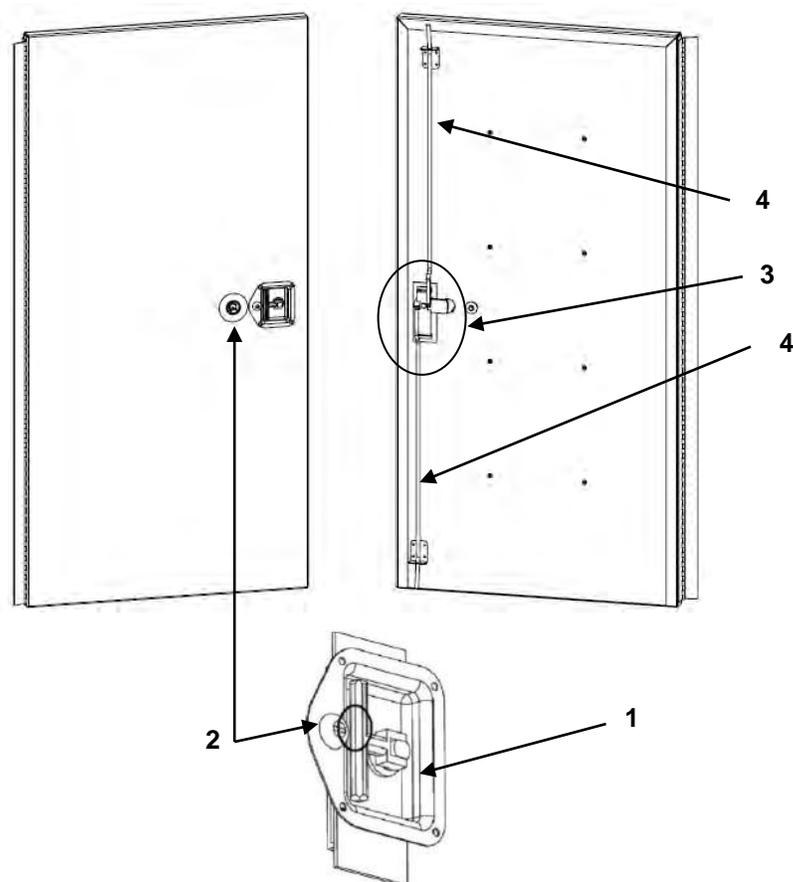
INSPECT REPLACE**Interior Door Seals**

1. Inspect for missing, loose, damaged door seals.
2. Remove damaged horizontal or vertical door seal segment (1 and 2) with the putty knife.
3. Clean off surface with mineral spirits and rags.
4. Dry fit the seals to assure proper position.
5. Use the kit Turbo Glue (3) with the peel and stick adhesive seals (1 and 2) for replacement door seal.
6. Remove the paper backing and apply the Turbo Glue as you apply the seals in a relaxed state. Do not stretch the seals.

Note

The seals have been precut to the proper length. If the seals are stretched during application, do not attempt to reposition the seals. Trim off the excess at the corners.



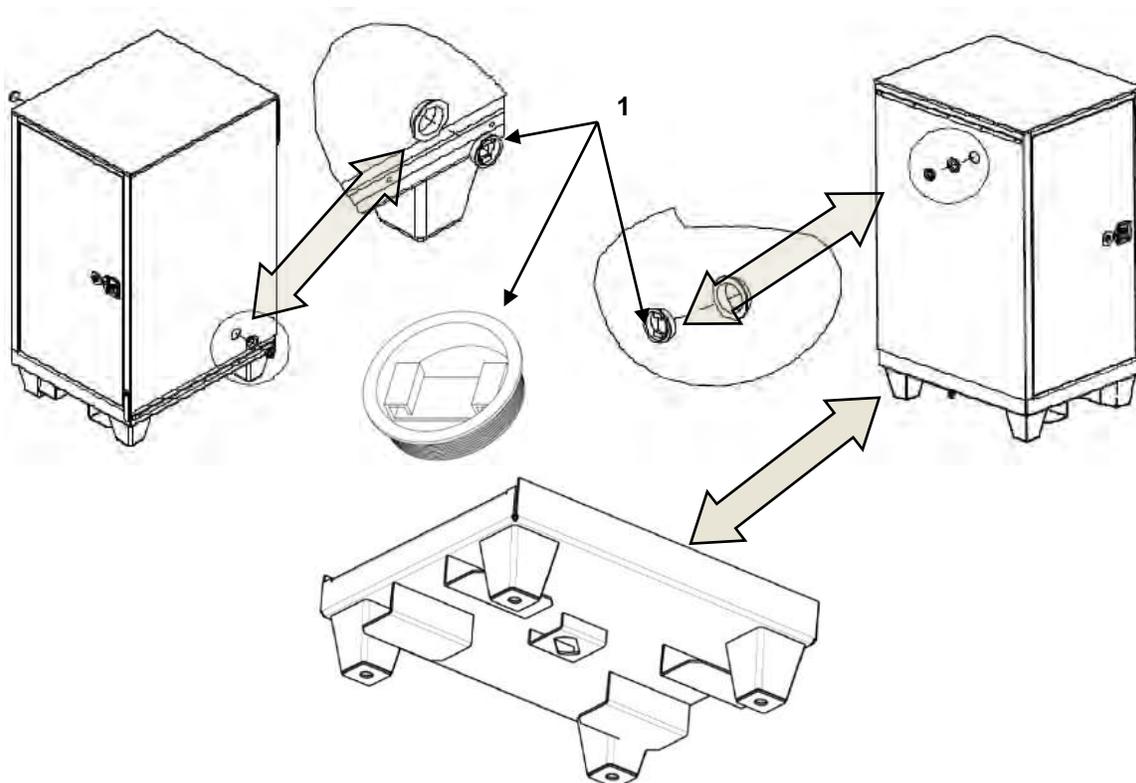
INSPECT SERVICE

1. Inspect door T-handle and lock set (1).
2. Inspect door vent (2). Replace if damaged or inoperable.
3. Inspect interior lock mechanism (3) and lock rods (4). Lubricate if needed with lube spray.
4. Inspect hinge for ease of operation. Lubricate if needed with lube spray.

INSPECT REPAIR

Exterior Ventilation and Base Plate

1. Inspect the exterior for damage, dents, holes, missing vent caps (1) and rust or corrosion.



Repairs Requiring Welding

Welding repairs are only required when the FPU SYSTEM module is pierced, punctured, or cracked. Standard welding principles and materials apply to FPU SYSTEM repairs. Welding procedures will not be discussed in this tech manual. Refer to TC 9-237.

END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

FPU SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) STANDARD AND SPECIALIZED FPU MODULES BOH FPU Field Pack-up Units

FPU Specialized Bulk Storage/Shipping Module

INITIAL SETUP:

Material/Parts

Rags, light lube oil

Personnel Required

Two

Tools

$\frac{3}{4}$ " Open End Wrench, $\frac{1}{2}$ " Ratchet, Socket Wrench and Tape Measure

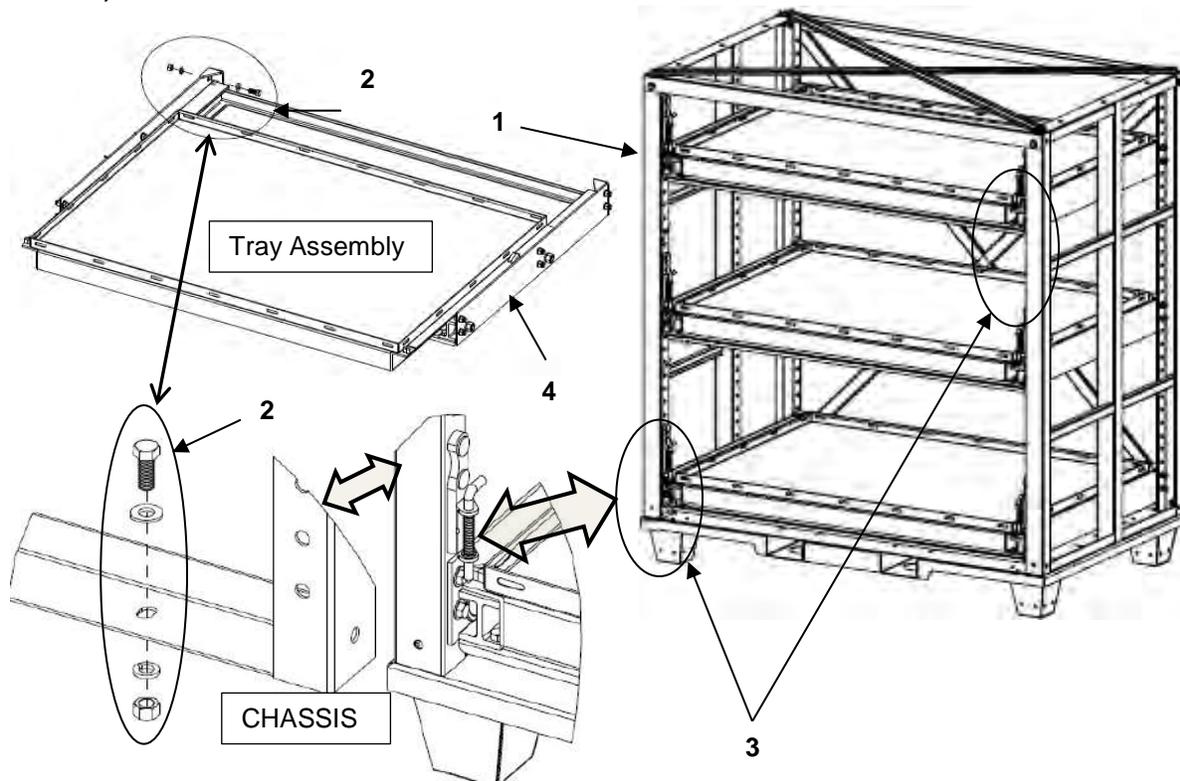
References

Chapter 2 WP 0010

Equipment Condition

FPU Module Operation Checks

INSPECT, SERVICE and REPAIR



1. Inspect all the chassis, trays and bins (1) for loose or missing hardware.
2. Tighten loose hardware (2) with a $\frac{3}{4}$ " open end wrench and $\frac{3}{4}$ " socket wrench.
3. Replace missing hardware.
4. Inspect each left and right locking latch bolts and springs for smooth operation (3). See WP 0010 00-4.
5. Inspect the roller shelves (4) for ease of operation. Review WP 0010 00 for operation.
6. Inspect inside surface of roller tray or bin tracks (4) for dirt or rust. Clean and apply light oil and wipe off excess.

NOTE

Tray and frame hardware (2) are common throughout the module.

0026 00-1

7. Test locking latch bolts and springs for proper operation, See WP 0010 00-4. Clean and lubricate as needed.

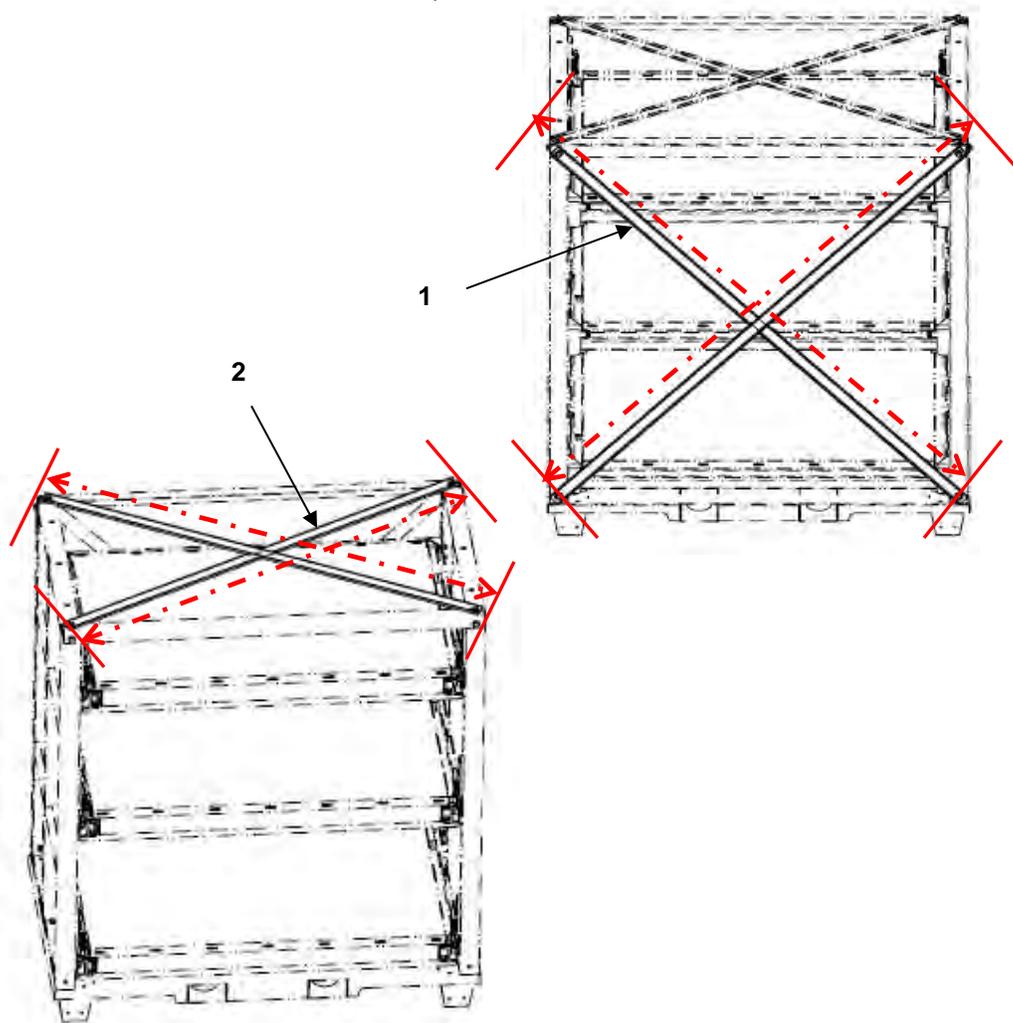
NOTE

Tray or bin roller bearings do not require lubrication. Lubrication will only attract dirt and sand.

Chassis Adjustment

Ensure that the front and rear cross bars are square and equal by measuring diagonally from corner to corner. The measurement should be equal.

1. Place the FPU Bulk Module on a flat, reasonably level surface.
2. Measure both rear (1) and top (2) cross bars corner to corner diagonally.
3. Loosen and adjust until they are of equal distance.
4. Retighten the hardware.
5. Test the roller shelves for smooth operation.



Repairs Requiring Welding: Welding repairs are only required when the FPU SYSTEM module is pierced, punctured, or cracked. Standard welding principles and materials apply to FPU SYSTEM repairs. Welding procedures will not be discussed in this tech manual. Refer to TC 9-237.

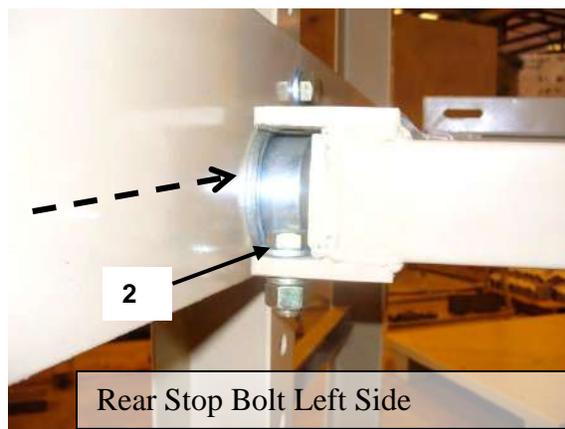
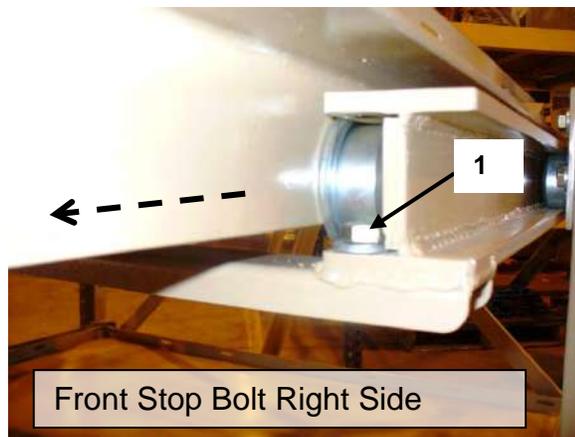
Tray or bin Stop Bolts (Safety Check)

1. Check shelves for all four Stop Bolts, front (1) and rear (2).



WARNING

Always ensure that all four of the front (1) and rear (2) stop bolts are in place that prevent the shelves from rolling out of the chassis. Failure to comply will result in damage, injury or death.



Note

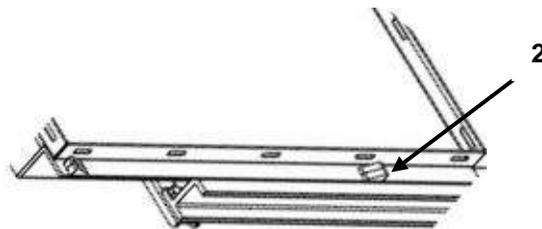
Only remove the stop bolts when removing a tray or bin or repositioning a tray or bin.

Unsafe Condition



WARNING

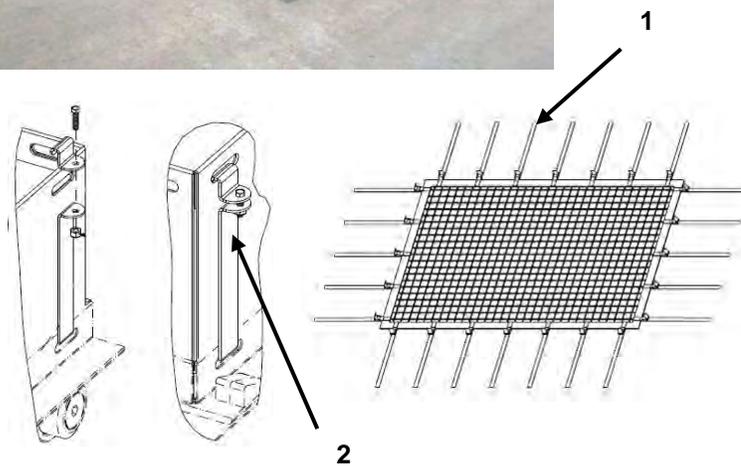
The bin latches (1) are not behind the rear cams (2) and this tray or bin is free to roll in or out. Always ensure that the tray or bin is in the full out position and the latches (1) are behind the rear cam (2) to prevent tray or bin roll back.



0026 00-4

Cargo Nets and 8" tray to bin Adapter

1. Check nets for frayed, missing or torn straps (1).
2. Check the four corner retaining clips (2) for missing or loose hardware.



END OF WORK PACKAGE

0026 00-5

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UNIT MAINTENANCE INSTRUCTIONS
FPU SYSTEMS OPERATION MANUAL
(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)
STANDARD AND SPECIALIZED FPU MODULES
BOH FPU Field Pack-up Units

FPU Specialized Bulk Storage/Shipping Module Shelf Reposition

INITIAL SETUP:

Materiel/Parts

Rags, light lube oil

Personnel Required

Two

Tools

$\frac{3}{4}$ " Open End Wrench, $\frac{1}{2}$ " Ratchet and $\frac{3}{4}$ " Socket Wrench

References

Chapter 2 WP 0009

Equipment Condition

Setup completed

REMOVE, REPOSITION and REPLACE



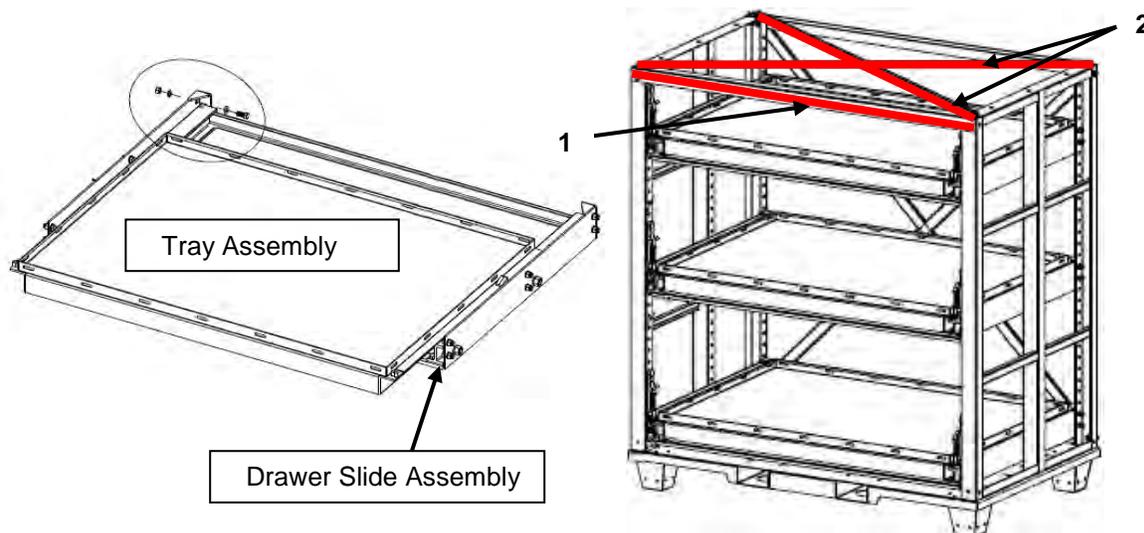
WARNING

This operation requires two personnel. Failure to acquire assistance will result in injury.



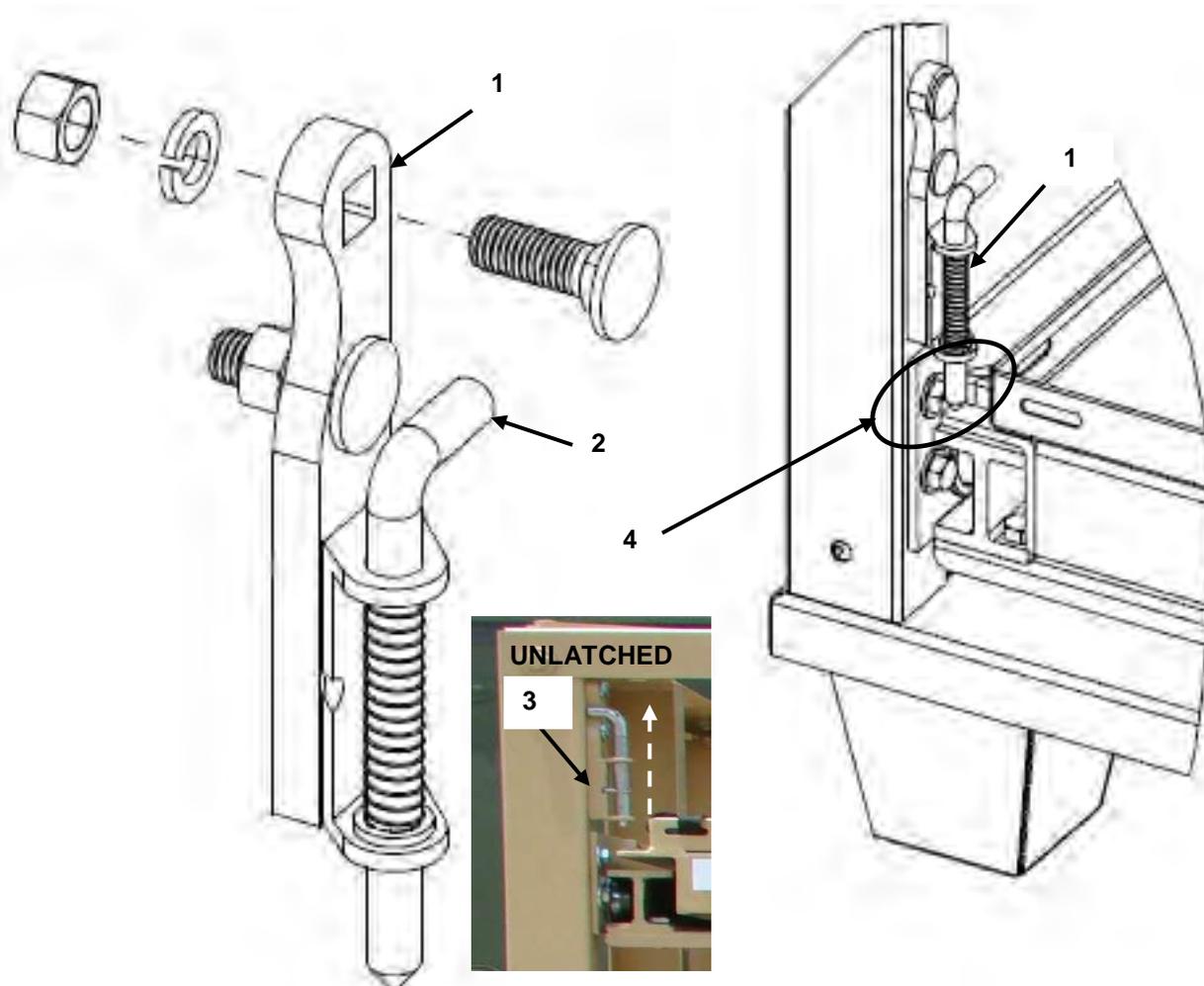
WARNING

Never remove the top spreader bar (1) or top cross members (2) as this will cause the module and drawers to become unstable. Failure to comply could cause damage to equipment, serious injury or even death. Drawers can be adjusted per the procedure found in this WP should additional space be needed.



0027 00-1

1. Remove all material from the trays or bins.
2. Remove the left and right drawer latch bolt assemblies (1).

**Note**

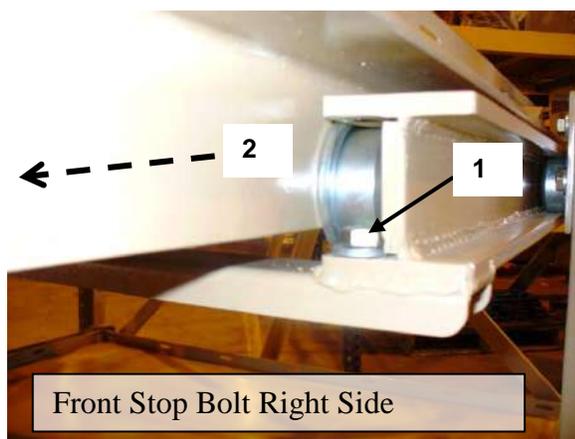
The left latch bolt (2) has a retaining pin (3) to hold it in the unlatched position. The right latch bolt (2) has no retaining pin (3).

3. Set both right and left latch bolts (2) in the latched position (4) to access the mounting bolts.

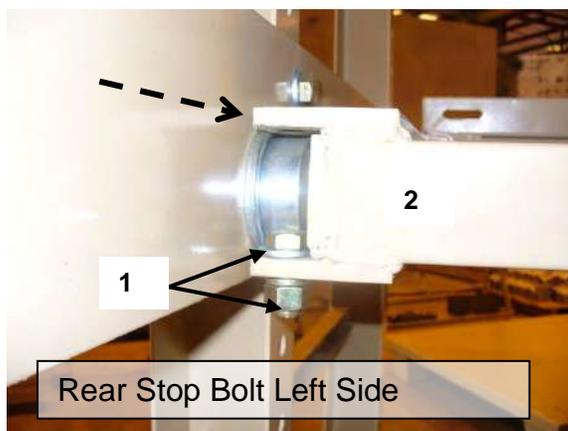
**WARNING**

Removal of the stop bolts, front or rear (1), will allow the shelves to roll out of the chassis. This may result in damage, injury or death. Only remove the stop bolts when removing a tray or bin or repositioning a tray or bin.

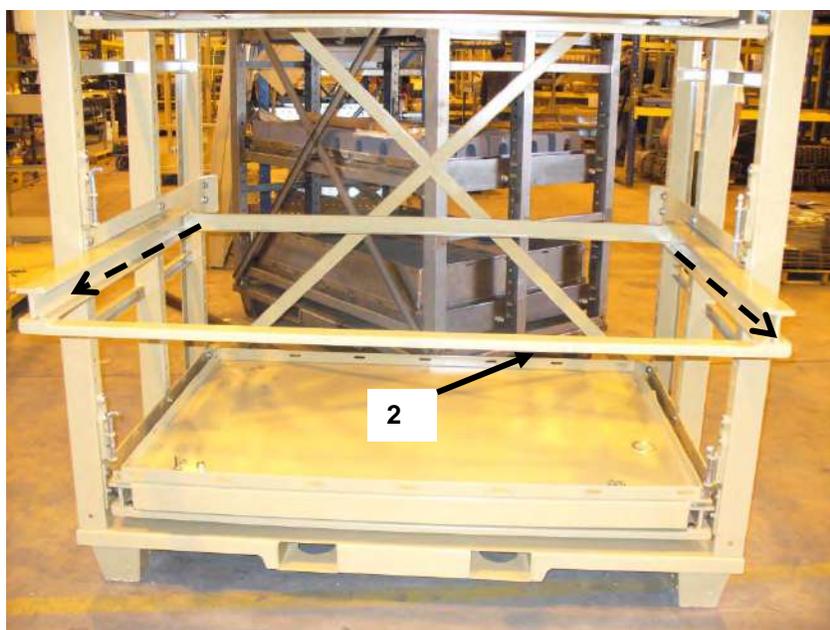
4. Remove the front stop bolts (1), left and right.
5. With assistance, remove the inner tray assembly (2) of the tray or bin and place it aside.



6. Remove the rear stop bolts hardware (1), left and right side.



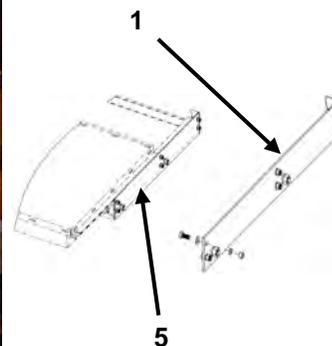
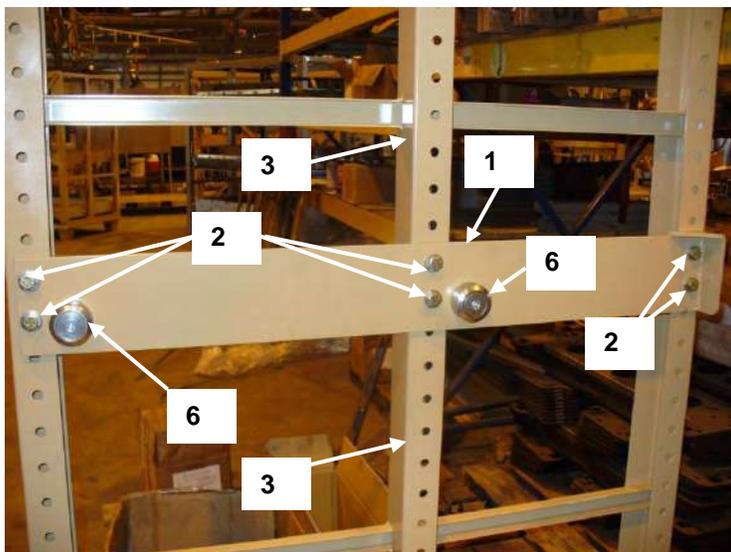
7. Remove the slide rack (2) from the front of the chassis and put it aside.



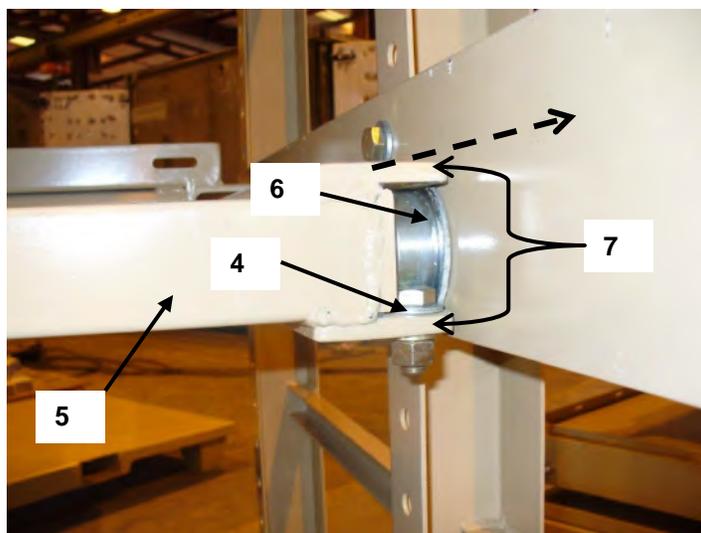
WARNING

Removal of the front or rear (1) stop bolts will allow the shelves to roll out of the chassis. This may result in damage, injury or death. Only remove the stop bolts when removing a tray or bin or repositioning a tray or bin.

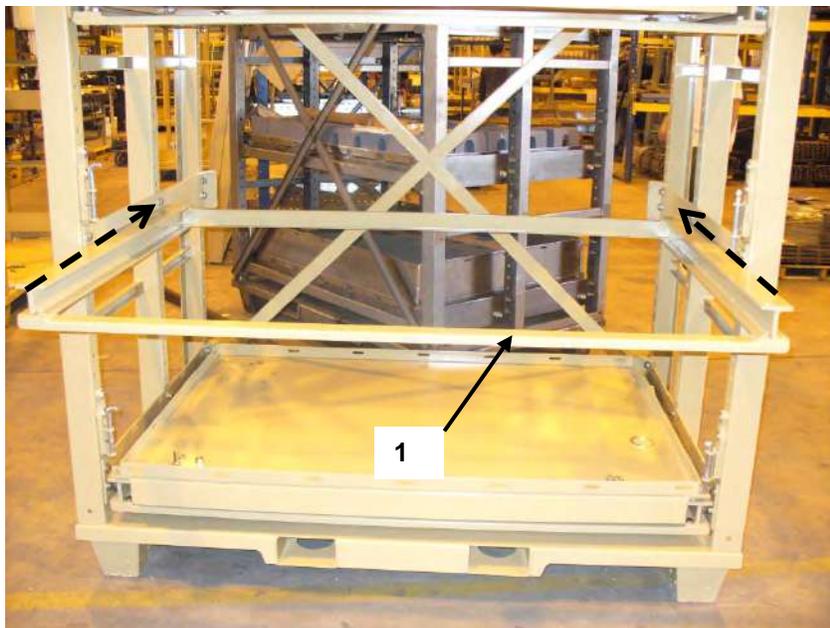
8. Remove the left and right drawer slide assembly (1) by removing the six mounting bolts, washers and nuts (2).



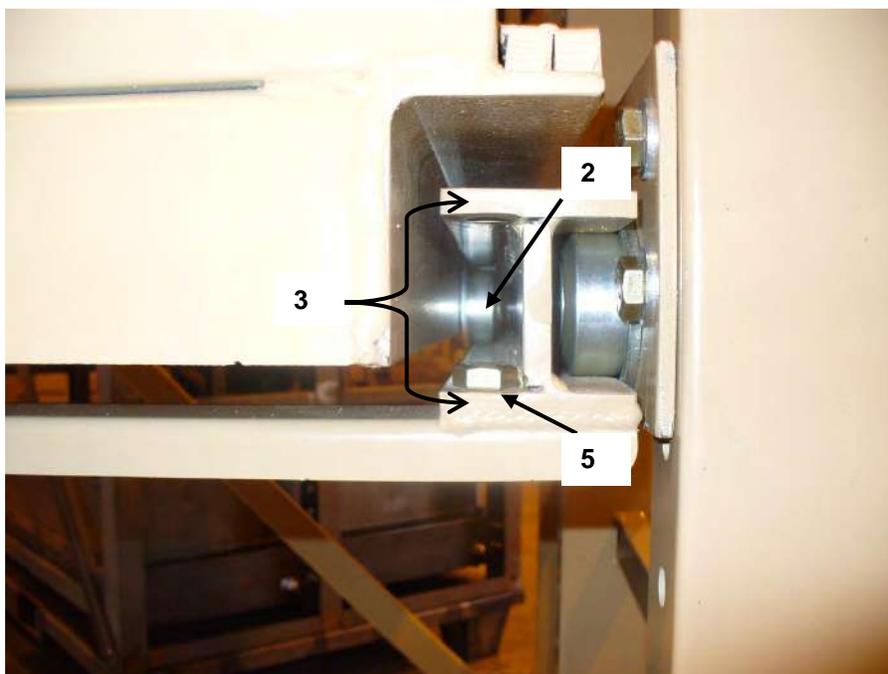
9. Reposition the left and right drawer slide assembly to the desired holes in the chassis (3) and insert and retighten the six nuts and bolts (2).
10. With stop hardware (4) removed, insert the slide rack (5) and guide the four bearings (6) into the outside track (7) of the slide rack (5).
11. Reinsert and tighten the rear stop bolt hardware (4).



12. Position the slide rack (1) to the full in position before attempting to insert the inner tray.



13. With assistance, insert and guide the left and right tray bearings (2) into the internal tracks (3) of the slide rack (1).
14. Insert and tighten the front stop bolt hardware (5).



END OF WORK PACKAGE

0027 00-6

UNIT MAINTENANCE INSTRUCTIONS
FPU SYSTEMS OPERATION MANUAL
(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)
STANDARD AND SPECIALIZED FPU MODULES
BOH FPU Field Pack-up Units

FPU Specialized Bulk Storage/Shipping Module Bearing Replacement

INITIAL SETUP:

Materiel/Parts

Bearing kit

Personnel Required

Two

Tools

$\frac{3}{4}$ " Open End Wrench, $\frac{1}{2}$ " Ratchet, $\frac{3}{4}$ " Socket Wrench, 1 $\frac{1}{8}$ " Open End Wrench and $\frac{3}{8}$ " Allen Wrench

References

Chapter 5 WP 0028 steps 1 - 13

Equipment Condition

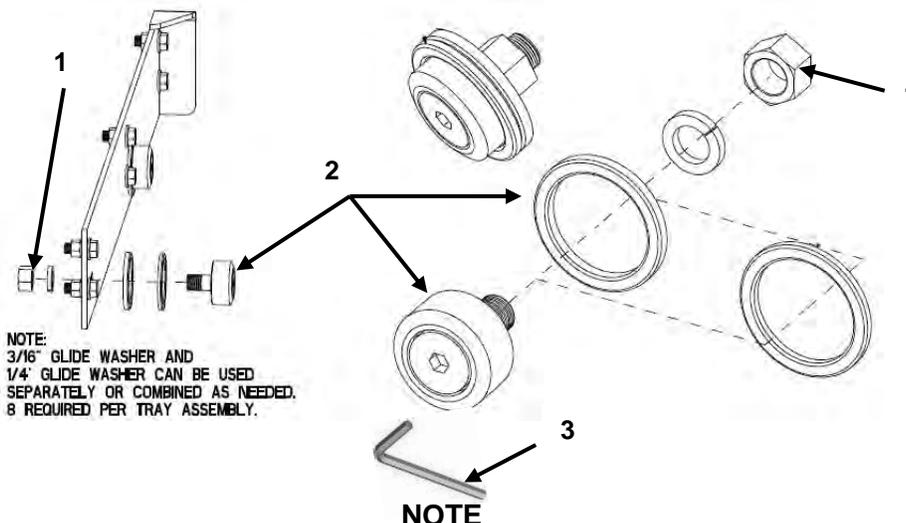
Operational

REMOVE and REPLACE

NOTE

When removing of the entire tray or bin assembly for repositioning, the latch bolt assembly removal is not required. Just raise the latch bolt above the cam stop, to the unlatched position.

1. Remove the tray or bin, see steps 1 thru 13 pages WP 0027 00-1 to 00-6.
2. Do not remove the latch bolt assembly step 2 page WP 0027 00-2.
3. When the tray or bin tray and slide rack have been removed, remove the retaining nut (1) with the 1 $\frac{1}{8}$ " open end wrench.
4. Replace the bearings and washers (2) and replace and tighten the retaining nut (1).
5. Use a 1 $\frac{1}{8}$ " open end wrench and retain the bearing with a $\frac{3}{8}$ " Allen wrench (3).



It is recommended that all bearings be replaced during this operation to maintain uniformity.

6. Reinstall the slide rack (Step 9 - 10 page 0027 00-5).
7. Reinstall the tray (Step 11 - 13 page 0027 00-5 through 00-6).

END OF WORK PACKAGE

0028 00-1

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UNIT MAINTENANCE INSTRUCTIONS

FPU SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) STANDARD AND SPECIALIZED FPU MODULES BOH FPU Field Pack-up Units

FPU Specialized BULK STORAGE/SHIPPING MODULE 8" BIN KIT

INITIAL SETUP:

Materiel/Parts

8" Adapter Kit

Personnel Required

Two

Tools

5/16" Open End Wrench, 3/8" Ratchet, 3" Extension and 5/16" Socket Wrench

References

Chapter 2 WP 0010

Equipment Condition

Setup

INSTALL

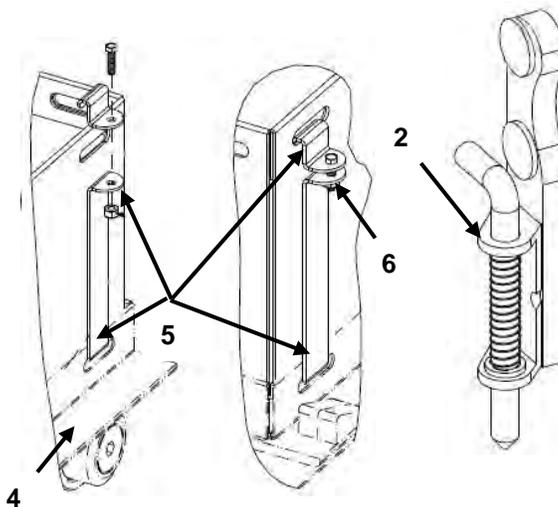
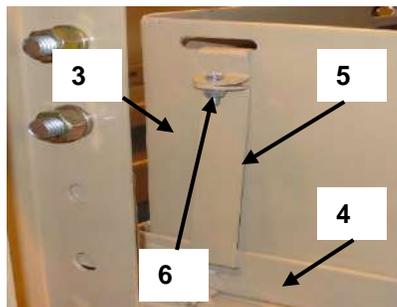
Install 8" Bin Assembly

1. Pull out the tray or bin (1) to the full out position and engage the latch (2) to prevent roll back.
2. With assistance, place the 8" bin adapter (3) inside the tray (4).
3. Insert the top and bottom connector clips (5) in the slots in all four corners.
4. Insert the bolts and tighten the self-locking nuts (6) with the 5/16" wrenches.



WARNING

This operation requires two personnel. Ensure that the tray or bin (1) is in the full out position and bolt latch assemblies (2) are engaged to prevent movement. Failure to acquire assistance may result in injury.



END OF WORK PACKAGE

0029 00-1

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UNIT MAINTENANCE INSTRUCTIONS
FPU SYSTEMS OPERATION MANUAL
(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)
STANDARD AND SPECIALIZED FPU MODULES
BOH FPU Field Pack-up Units
TRICON Container Adapter

INITIAL SETUP:**Materiel/Parts**

None

Personnel Required

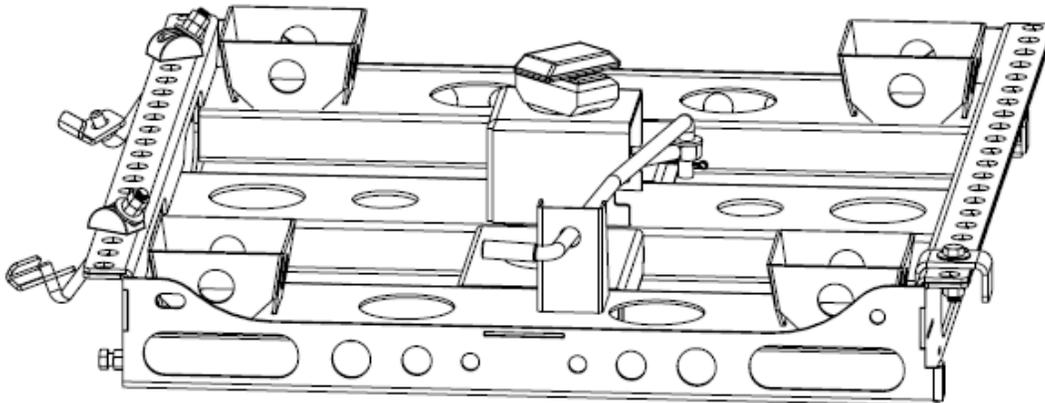
Two

Tools $\frac{3}{4}$ " open end/box end wrench, ratchet and $\frac{3}{4}$ " socket, 3" extension, putty knife, contact cement**References**

Chapter 2 WP 0011

Equipment Condition

FPU Adapter Operation Checks

INSPECT, REPLACE AND REPAIR

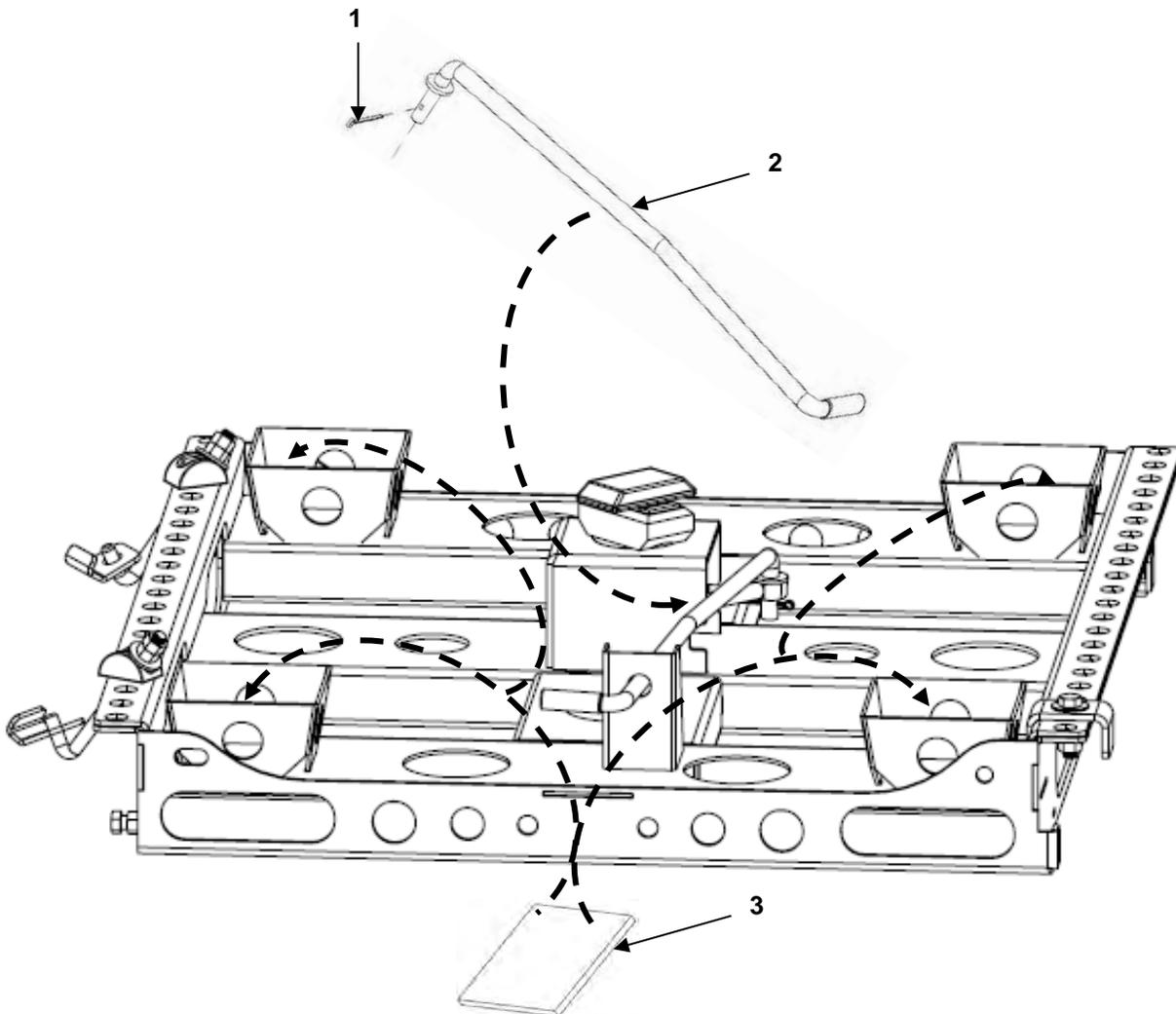
1. Check for missing or loose hardware, tighten with $\frac{3}{4}$ " wrench.
2. Check for cracks in weld, bent or damaged brackets.
3. Check lock arm for free movement.
4. Check for missing or damaged Module Pads.
5. Check Lock handle for damage.

REPLACE

1. Replace missing hardware, tighten with $\frac{3}{4}$ " wrench.
2. Replace damaged module pads

REPAIR

1. Remove the cotter pin (1) and replace damaged lock handle (2).
2. Remove damaged module foot pads with a putty knife and contact cement new module foot pads (3) in place.



Repairs Requiring Welding

Welding repairs are only required when the FPU SYSTEM module is pierced, punctured, or cracked. Standard welding principles and materials apply to FPU SYSTEM repairs. Welding procedures will not be discussed in this tech manual. Refer to TC 9-237.

END OF WORK PACKAGE

0030 00-2