
**FPU® SYSTEMS OPERATION MANUAL
FOR
MODELS FPU-8-4/BOH-CARGO-12-3 & FPU-20-3
(INCLUDING REPAIR PARTS & ACCESSORIES)**



FPU-8-4 / BOH-CARGO-12-3



FPU-20-3



**FPU-8-4 / FPU-12-3
with Bulk Storage Aids**



**FPU-20-3
with Parts Storage Aids**

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WARNING SUMMARY

This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in serious injury or death to persons using equipment.



WARNING

Do not allow the system to swing if using an overhead lift. Always ensure an appropriate sling is used in the lift. Always use properly sized forklift, crane, or lifting device. Failure to comply could cause injury or damage to the equipment.



WARNING

Use extreme caution when loading or unloading the FPU to or from a transport vehicle. Keep hands, finger, and feet clear of the container and components during this operation. Forklift support is required. Make sure all container connectors are properly seated and locked secure. Failure to comply could cause serious injury. Failure to follow proper connection procedures may result in damage to the equipment.



Standard forklift principles apply when working with or on the FPU container. Ground guides and the HME operators must insure that personnel are clear of the containers during this operation. When working with ground guides during the loading or unloading, never move the container while the ground guide is unseen. Serious injury could occur if the ground guide is pinned between the FPU container and other objects. Forklift operators must maintain visual contact with their ground guides at all time.



Always follow standard forklift procedures. A tilt hazard exists when forklift operators try to lift a FPU container from the wrong side. Always lift a container via the forklift pockets that are provided. This places the heavier part of the load back into the tines versus out on the tips. A tilt situation exists when the heaviest part of the load is out on the tips of the tines, on uneven ground, with forks fully extended, and while traveling. Operators should always keep loads low and close to the forklift carriage. Operators should never travel when the load is in the fork's extended position.

WARNING



The modules and their contents are heavy and could cause injury if they fall onto or strike personnel. A tilt hazard exists when the module is either outside of the FPU container system or inside the FPU container system, but not locked down. As a rule, always work on one pallet or drawer at a time. Never have more than one drawer extended in the full open position at a time, especially if loaded. Personnel should never stand on a drawer or pallet.

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WARNING

Do not allow the system to swing if using an overhead lift. Always ensure an appropriate sling is used in the lift. Always use properly sized forklift, crane, or lifting device. Failure to comply could cause injury or damage to the equipment.



WARNING

The modules and their contents are heavy and could cause injury if they fall onto or strike personnel. A tilt hazard exists when the model is either outside of the FPU-8 container or inside the FPU container, but not locked down. As a rule, always work on one pallet or drawer at a time. Never have more than one drawer extended in the full open position at a time, especially if loaded. Personnel should never stand on a drawer or pallet.



WARNING

Fall hazards exist when climbing onto or working from the top of the container. Always maintain three points of contact to the ladder and container when climbing onto the container. Never move, step, or walk backwards when working on top of the system. All movement should be in the forward direction. A fall can occur if personnel lose concentration and step backwards off of the edge. Stand erect only if necessary and only away from the edge. Working from a kneeling position helps reduce the threat of a fall.

The FPU may be used to store various forms of oils, lubricants, and other potentially slippery substances. Keeping the inside floor of the FPU clean is important, nevertheless always move with caution inside of the FPU. Failure to maintain cleanliness and caution could cause a slip and injury.

WARNING



The model drawers and pallets can be heavy and awkward to handle by a single person. This is especially true of the larger components. The adjustment of these items is a two-person operation. While a forklift is not essential MHE support to hold the pallets in position while the hardware is installed and secured, it simplifies the effort. Do not try to adjust the pallets or drawers without assistance or MHE support.

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ISO Container Overhead Power Line Warning.



WARNING

Overhead power lines and obstructions can cause serious injury or damage to property. Forklift operators, truck drivers, and ground guides should always clear overhead when loading, unloading, moving the FPU containers or when accessing the roof.



WARNING

Protective gloves should be worn when handling metal parts in below freezing temperatures. Failure to wear gloves may result in skin freezing to the metal upon contact and cause tearing of the flesh when attempting to pull away from the metal.

WARNING



The FPU is NOT designed to be operated in contaminated NBC Environments. Do not operate the FPU in contaminated NBC environments. If possible cease operation of the FPU prior to a NBC event and do the following:

Close and secure all doors. External surfaces of the FPU's are CARC painted and can be decontaminated, however, whenever possible avoid contamination of the internal areas of the FPU's.

Decontaminate the exterior surfaces of the FPU in accordance with FM 3-5. Only Qualified NBC NCO's should check for residual contamination before opening the container. Remain in MOPP 4 posture when opening the doors and have the NBC NCO check for contamination on interior surfaces. If thorough decontamination is required refer to NBC NCO and FM 3-5 for procedures.

GENERAL WARNINGS



HEAVY PARTS - heavy object on human figure shows that heavy parts present a danger to life or limb.



HEAVY PARTS - heavy object pinning human figure against wall shows that heavy, moving parts present a danger to life or limb.



HEAVY PARTS - hand with heavy object on top shows that heavy parts can crush and harm.



HEAVY PARTS - foot with heavy object on top shows that heavy parts can crush and harm.



SLICK FLOOR - wavy line on floor with legs prone shows that slick floor presents a danger for slipping or falling.



HEAVY OBJECT - human figure stooping over heavy object shows physical injury potential from improper lifting technique.



ELECTRICAL - electrical wire to arm with electricity symbol running through human body shows that shock hazard is present.



ELECTRICAL - electrical wire to hand with electricity symbol running through hand shows that shock hazard is present.



CRYOGENIC - hand in block of ice shows that the material is extremely cold and can injure human skin or tissue.



FIRE - flame shows that a material may ignite and cause burns.

**FPU SYSTEMS OPERATION MANUAL
(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)
FOR
MODELS FPU-8-4/BOH-CARGO-12-3 & FPU-20-3
DISTRBUTION STATEMENT**

DISTRIBUTION STATEMENT A - Approved for public release; distribution is unlimited.

FPU SYSTEMS OPERATION MANUAL, is updated as follows:

1. File this sheet in front of the manual for reference.
2. This change is a result of ...
3. New or updated text is indicated by a vertical bar in the outer margin of the page.
4. Added illustrations are indicated by a vertical bar adjacent to the figure number. Changed illustrations are indicated by a miniature pointing hand adjacent to the updated area and a vertical bar adjacent to the figure number.
5. Remove old pages and insert new pages as indicated below.

Remove Pages

Insert Pages

6. Replace the following work packages with their revised version.

Work Package Number

7. Add the following new work packages.

Work Package Number

WP 0004 00-9 Movement and Connection Safety

WP 0021 00 Door Seal replacement

INSERT LATEST CHANGED PAGES / WORK PACKAGES. DESTROY SUPERSEDED DATA.

LIST OF EFFECTIVE PAGES / WORK PACKAGES

NOTE

The portion of text affected by the changes is indicated by a vertical line in the outer margins of the page. Changes to illustrations are indicated by miniature pointing hands. Changes to wiring diagrams are indicated by shaded areas.

Dates of issue for original and changed pages / work packages are:

Initial Manual	Date 28 October 2009
Revision 1	Date 30 January 2010
Revision 2	Date 20 January 2011
Revision 3	Date 25 February 2011
Revision 4	Date 4 March 2011

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 262 AND TOTAL NUMBER OF WORK PACKAGES is 43 CONSISTING OF THE FOLLOWING:

Page / WP * No.	Change No.	Page / WP No.1	*Change No. 2	Page / WP No. 3	*Change No.
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a-c	0				
d-e	0				
A	0				
B	0				
i-v	0				
WP 0001 00 - 0043 00	2	WP 0004 00-9	WP 0021		
Authentication Page	0				

*Zero in this column indicates an original page or work package.

Revision 1 Added WP 0004 00-9 Movement Connection Safety.

Revision 2 Illustrations changes.

Revision 3 Added WP 0021 Door seal replacement and illustrations changes.

Revision 4 New cover and P/N corrections.

**FPU SYSTEMS OPERATION MANUAL
(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)
FOR
MODELS FPU-8-4/BOH-CARGO-12-3 & FPU-20-3
REPORTING ERRORS & IMPROVEMENTS**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. Please let us know if you find any mistakes or if you know of a way to improve the procedures. You may send in your recommended changes by E-mail directly to: jstokes@bohenviromental.com. A reply will be furnished directly to you.

Approved for public release; distribution is unlimited.

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REAR MATTER

Boh change to publication recommendation form
Boh product Warranty
Metric Conversion Chart

HOW TO USE THIS MANUAL

This manual contains general information, operating instructions, Preventive Maintenance Checks and Services (PMCS), and maintenance/repair instructions for the FPU-8-4/BOH-CARGO-12-3 & FPU-20-3

Front matter consists of front cover, warning summary, title block, table of contents, "how to use this manual" pages, and provides information on the FPU and its associated equipment. Chapter 1 provides equipment description and data as well as the theory of operation. Chapter 2 provides instructions for operating under usual and unusual conditions. Chapter 3 contains troubleshooting procedures authorized at the Operator and Unit level. Chapter 4 contains Preventive Maintenance Checks and Services (PMCS) and Operator Maintenance Instructions. Chapter 5 contains Unit Maintenance Instructions. Chapter 6 contains the Maintenance Allocation Chart (MAC); it also includes the Repair Parts & Special Tools List (RPSTL) that identifies parts or tools unique to the operation and maintenance of the FPU.

Manual Organization and Page Numbering

This manual is divided into seven major chapters that detail the topics mentioned above. Within each chapter are work packages covering a wide range of topics. Each work package is numbered sequentially at page 1, and has its own page numbering scheme that is independent of the page numbering used by other work packages. Each page of a work package has a page number of the form "XXX YY-ZZ", where "XXX YY" is the work package number (e.g. 0010 00 is work package 10) and "ZZ" represents the number of the page within that work package. A page number such as "Blank" means that the page has been intentionally left blank.

Finding Information

The Table of Contents permits the reader to quickly find information in the manual. The reader should start here first when looking for a specific topic. The Table of Contents lists the topics contained within each chapter and the work package sequence number where it can be found.

Types of notations

Warnings - Warnings are posted immediately prior to text covering any area that would present a situation that may result in injury or death. Compliance is mandatory.

Cautions - Cautions will be found on the same page and preceding the text covering any area that would present a situation that may result in damage to equipment.

Notes - Notes will precede text covering an area with the intent to alter normal procedures for unique situations or equipment, or point out areas of special concern.