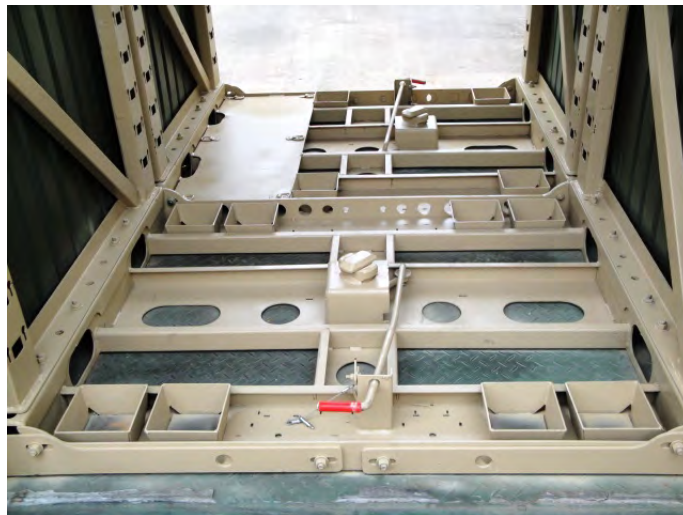


---

**FPU® SYSTEMS OPERATION MANUAL**  
**(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)**  
**BOH QUADCON MODULES, ADAPTERS and RESTRAINT SYSTEM**  
**BOH FPU Field Pack-up Units**

---



**BOH FPU® Systems**  
**BOH ENVIRONMENTAL LLC**  
**14520 Avion Parkway, Suite 220**  
**Chantilly, VA 20151**  
**POC Doug Cresap (985) 674-0725**  
**<http://www.bohpusystems.com>**

This page was intentionally left blank

## 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 QUADCON Module system to swing if using an overhead lift. Always ensure an appropriate sling and lifting points are used in the lifting the Module. Always use properly sized forklift, crane, or lifting device. Failure to comply could cause injury, death or damage to the equipment.



### WARNING

Use extreme caution when moving QUADCON Modules units into a transport vehicle or system. Make sure all QUADCON Modules connectors latches and straps are properly seated and locked, and secured before movement of the QUADCON Module. Failure to comply could cause injury, death or damage to the equipment.



Standard forklift principles apply when working on the QUADCON Modules. When working with ground guides during the loading or unloading of a module, never move the QUADCON Modules into the container while the ground guide is between the fork, QUADCON Modules, and the container. Serious injury could occur if the ground guide is pinned between the forklift and the container. 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 partially loaded container from the wrong side. Always lift with the forklift tines in the fork pockets provided in the base. A tilt situation exists when the heaviest part of the load is out on the tips of the tines or on uneven ground 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 QUADCON Modules and their contents are heavy and could cause injury if they fall onto or strike personnel. A tilt hazard exists when the drawer is either not latched or frames have not been secured to the base plate. As a rule, always work on one 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.

### WARNING



Use extreme caution when lifting QUADCON Adapters into a container. Never attempt to lift adapters while they have material on them. Two personnel are required to lift empty adapters into and out of the container. Make sure all latches 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 and/or stored material.

## 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

When using a crane to lift the QUADCON Modules, ensure the proper sling and sling point are used. Do not allow the system to swing if using an overhead lift. Always use properly sized forklift, crane, or lifting device. Ensure module drawers and adapters are secure within the container prior to moving the container. Failure to comply could cause injury, death or damage to the equipment.

### WARNING



The module drawers, shelves and their contents are heavy and could cause injury if they fall onto or strike personnel. A tilt hazard exists when the module drawer is extended, but not locked down to the base plate. As a rule, always work on one drawer at a time. Never have more than one drawer extended in the full open position at a time, especially if loaded with material. Personnel should never stand on a drawer.

### WARNING



Always inspect the working areas, insure that the front, rear and sides are free of oils, lubricants, and other potentially slippery substances. The module drawers may be used to store various forms of lubricants, and other potentially slippery substances. Keeping the drawers clean and the work area around the module clear is important to prevent spillage and slippery surfaces.

### WARNING



The module drawers and shelves can be heavy and awkward to handle by a single person. This is especially true of the larger components. The movement of these items is a two-person operation for empty drawers. Assistance is required from one or more personnel to separate and remove drawers from the frame of each assembly. DO NOT remove or lift QUADCON module drawers without assistance; injury to personnel will occur. A forklift and MHE support is required to load and unload the QUADCON Module into and out of the QUADCON containment system and other transport vehicles.

### 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.

## 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.



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

This page was intentionally left blank

**FPU® SYSTEMS OPERATION MANUAL  
 (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)  
 BOH QUADCON MODULES, ADAPTERS and RESTRAINT SYSTEM  
 BOH FPU Field Pack-up Units**

---

**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: [dcresap@bohfpusystems.com](mailto:dcresap@bohfpusystems.com) A reply will be furnished directly to you.

Approved for public release; distribution is unlimited.

**TABLE OF CONTENTS**

	<u>WP Sequence No.</u>
WARNING SUMMARY .....	a
HOW TO USE THIS MANUAL .....	iii
<b>CHAPTER 1 – INTRODUCTORY INFORMATION WITH THEORY OF OPERATION</b>	
General Information.....	0001 00
Equipment Characteristics, Components and Features .....	0002 00
<hr/>	
<b>CHAPTER 2 – OPERATOR INSTRUCTIONS</b>	
Operation of QUADCON System.....	0003 00
Operation of QUADCON Adapters .....	0004 00
Operation of QUADCON Adapters Restraint System Installation .....	0005 00
Loading the Modules in the Container .....	0006 00
QUADCON System Operation under Unusual Conditions .....	0007 00
<hr/>	
<b>CHAPTER 3 - TROUBLESHOOTING PROCEDURES</b>	
Introduction.....	0008 00
Troubleshooting Index .....	0009 00
Troubleshooting Procedures.....	0010 00
<hr/>	
<b>CHAPTER 4 – OPERATOR MAINTENANCE INSTRUCTIONS</b>	
Service upon Receipt .....	0011 00
Introduction to Preventative Maintenance Checks and Services (PMCS).....	0012 00
PMCS Table .....	0013 00
Cleaning and Lubricating .....	0014 00
QUADCON System Inspection .....	0015 00
<hr/>	
<b>CHAPTER 5 – UNIT MAINTENANCE INSTRUCTIONS</b>	
QUADCON Module Repair .....	0016 00
QUADCON Adapters .....	0017 00
QUADCON Adapters Restraint System Repair and Adjustment .....	0018 00
<hr/>	

---

---

CHAPTER 6 – PARTS SUPPORTING INFORMATION

Introduction to Maintenance Allocation Chart (MAC) .....	0019 00
Maintenance Allocation Chart (MAC).....	0020 00
Introduction to Parts List .....	0021 00
QUADCON Module Repair Parts List .....	0022 00
QUADCON Adapters Repair Parts List.....	0023 00
QUADCON Adapters Restraint System Repair Parts List.....	0024 00

Group Numbers

- 00 QUADCON Modules and Adapters System
- 01 QUADCON Module Configurations #1 to #5
  - 0101 Module Drawers Assemblies
  - 0102 Universal Drawer parts
  - 0103 Drawer Divider Sets
- 02 QUADCON Floor Adapters
  - 0201 QUADCON Floor Adapters style A and style B
  - 0202 QUADCON Multi-Use Adapters
  - 0203 Adapter Attachment Hardware
- 03 QUADCON Adapters Restraint System
  - 0301 Restraint Framework

NSN Index.....	0025 00
Part Number Index .....	0026 00
Special Tools List .....	0027 00

**Note**

The QUADCON Adapter Attachment Hardware is designed to secure the Floor Adapters in QUADCON containers that have attachment devices such as anchor blocks or tie-down rings.

**Note**

The QUADCON Adapter Restraint System is designed to secure the Floor Adapters in QUADCON containers that have no attachment devices.

---

---



## REAR MATTER

BOH product Warranty  
Metric Conversion Chart

### HOW TO USE THIS MANUAL

This manual contains general information, operating instructions, Preventative Maintenance Checks and Services (PMCS), and maintenance/repair instructions for the QUADCON Module units.

Front matter consists of front cover, warning summary, title block, table of contents, "how to use this manual" pages, and provides information on the QUADCON Module Units and their 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 Preventative Maintenance Checks and Services (PMCS) and Operator Maintenance Instructions. Chapter 5 contains unit maintenance repair 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 module systems.

#### Manual Organization and Page Numbering

This manual is divided into six 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 "XXXX YY-ZZ", where "XXXX 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. Blank pages will be labeled "This page was 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.

This page was intentionally left blank

**FPU<sup>®</sup> SYSTEMS OPERATION MANUAL  
(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)  
BOH QUADCON MODULES, ADAPTERS and RESTRAINT SYSTEM  
BOH FPU Field Pack-up Units**

**CHAPTER 1  
INTRODUCTORY INFORMATION  
WITH  
THEORY OF OPERATION**

This page was intentionally left blank

**INTRODUCTORY INFORMATION WITH THEORY OF OPERATION  
FPU® SYSTEMS OPERATION MANUAL  
BOH QUADCON MODULES, ADAPTERS and RESTRAINT SYSTEM  
BOH FPU Field Pack-up Units  
(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)**

**GENERAL INFORMATION**

**SCOPE**

**Equipment Covered**

This technical manual contains instructions for the operation, preventive maintenance, and recommended Unit/Direct Support corrective maintenance for the QUADCON System of Modules, Adapters and Restraint and the associated equipment.

**Type of Manual**

This is an Operator, Unit and Direct Support, Operation and Maintenance Manual for the QUADCON System of Modules and Adapters.

**Equipment Name, Part Number and NSN**

**BOH FPU QUADCON Module Table**

QUADCON FPU MODULES	PART NUMBER	NSN
CONFIGURATION # 1 MODULE	15440001	8145-01-606-2565 (GREEN) 8145-01-606-3447 (TAN)
CONFIGURATION # 2 MODULE	15440002	8145-01-606-2560 (GREEN) 8145-01-606-2824 (TAN)
CONFIGURATION # 3 MODULE	15440003	8145-01-606-2549 (GREEN) 8145-01-606-2819 (TAN)
CONFIGURATION # 4 MODULE	15440004	8145-01-606-2800 (GREEN) 8145-01-606-2540 (TAN)
CONFIGURATION # 5 MODULE	15440005	8145-01-606-2792 (GREEN) 8145-01-606-2796 (TAN)
<b>End of BOH QUADCON FPU Module Table</b>		

**QUADCON ADAPTER TABLE**

QUADCON FPU MODULES	PART NUMBER	NSN
Multi Use QUADCON Adapter	15441100	8145-01-606-2147 (GREEN) 8145-01-606-2131 (TAN)
QUADCON Adapter A	15441120	8145-01-606-2145 (GREEN) 8145-01-606-2138 (TAN)
QUADCON Adapter B	15441130	8145-01-606-2141 (GREEN) 8145-01-606-2135 (TAN)
Adapter Restraint System	15441141	8145-01-606-2125 (GREEN) 8145-01-606-2120 (TAN)
<b>End of QUADCON Adapter Table</b>		

## FPU Types and Configurations

### DESCRIPTION

#### QUADCON System

The BOH FPU QUADCON System is specifically designed for the QUADCON containers with tie-down provisions at the floor for the three container floor adapters and consists of five configured modules with parts drawers tailored to meet individual Supply/Maintenance and Logistical Support needs. The system has the ability to operate in fixed facilities or field environments in either its uploaded or downloaded configuration. The FPU QUADCON Modules come in two color variations: Forest Green and Desert Sand.

#### Note

The QUADCON Adapters are designed to be used with Standard QUADCON and non-standard QUADCON containers that have floor level tie-down devices, such as tie-down rings and blocks within the container. **For information contact** <http://www.bohfpsystems.com>

#### Adapter Restraint System

The BOH Adapter Restraint System is designed to be used in QUADCONs without floor level tie-down devices within the containers.

**For information contact** <http://www.bohfpsystems.com>

### REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your FPU QUADCON system needs improvements in design and/or performance, let us know. Send us a description of the recommended change to <http://www.bohfpsystems.com>

### CORROSION PREVENTION AND CONTROL (CPC)

It is our understanding that Corrosion Prevention and Control (CPC) is a continuing concern for the military. While corrosion is typically associated with rusting of metals, it can also include deterioration of other material, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

All units must adhere to their specific corrosion maintenance plan. At a minimum, equipment should be inspected for corrosion on a quarterly basis (monthly if equipment is operated/stored in a high salt air environment). If corrosion is discovered, consult your unit/installation corrosion control manager to schedule repair. It is important that any corrosion problem with the FPU be reported so that the problem can be corrected and improvements can be made to prevent the problem in the future.

### PREPARATION FOR STORAGE OR SHIPMENT

All preventative maintenance checks and services should be performed on the FPU QUADCON system and its components prior to any storage or shipment.

### RECEIVING THE FPU INVENTORY

#### Unpacking and Inventory of FPU Components upon Initial Receipt

With the FPU QUADCON system received, check the equipment against the packing list. Report any discrepancy to your supervisor.

### END OF WORK PACKAGE

**INTRODUCTORY INFORMATION WITH THEORY OF OPERATION  
FPU® SYSTEMS OPERATION MANUAL  
BOH QUADCON MODULES, ADAPTERS and RESTRAINT SYSTEM  
BOH FPU Field Pack-up Units  
(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)**

**EQUIPMENT CHARACTERISTICS, COMPONENTS AND FEATURES**

**EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES**

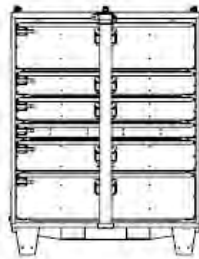
**QUADCON Containers and Adapter**

The FPU QUADCON Adapters are designed to adapt the QUADCON Container floor to allow the installation of five configurations of FPU QUADCON Modules. The installation of the FPU QUADCON Adapter requires no drilling or welding through use of existing QUADCON floor level cargo tie-down rings/fixtures.

**Five QUADCON Module Configurations**

**Dimensions** 61.541" (H) x 48.74" (W) x 44.22" (D)

QUADCON Modules have tie-down rings and rubber mat on the top of the module to secure additional material.



**CONFIG # 1**  
4" Drawers - 1  
6" Drawers - 2  
8" Drawers - 1  
12" Drawer - 2



**CONFIG # 2**  
4" Drawers - 1  
6" Drawers - 2  
8" Drawers - 4



**CONFIG # 3**  
4" Drawers - 1  
6" Drawers - 3  
8" Drawers - 2  
10" Drawers - 1



**CONFIG # 4**  
4" Drawers - 3  
6" Drawers - 1  
8" Drawers - 1  
10" Drawers - 1  
12" Drawer - 1



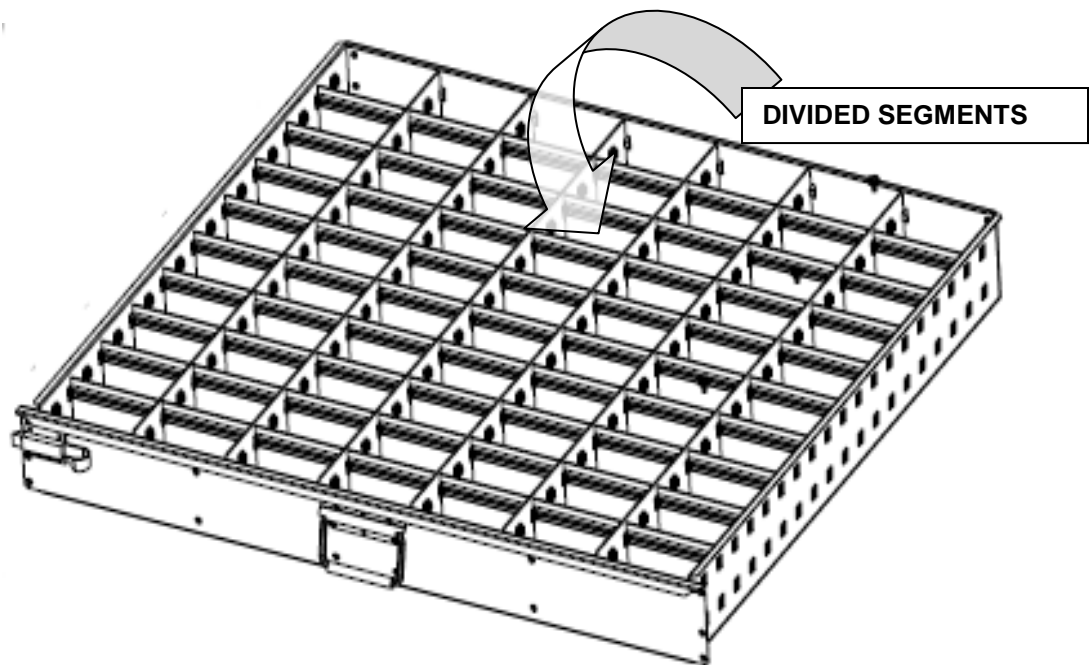
**CONFIG # 5**  
6" Drawers - 1  
10" Drawers - 3  
12" Drawer - 1

### Module Drawer Divider Segments

Each of the five standard module configurations has a set number of divided drawer segments. With added optional divider sets, the capacity of the module storage divided segments can be increased.

**MODULE CONFIGURATION TABLE**

QUADCON MODULE CONFIGURATIONS	STANDARD DIVIDED SEGMENTS	MAXIMUM DIVIDED SEGMENTS
CONFIGURATION # 1 MODULE	244 Segments	622 Segments
CONFIGURATION # 2 MODULE	274 Segments	740 Segments
CONFIGURATION # 3 MODULE	321 Segments	780 Segments
CONFIGURATION # 4 MODULE	314 Segments	760 Segments
CONFIGURATION # 5 MODULE	127 Segments	440 Segments
<b>End of Module Configuration Table</b>		



See Chapter 6 WP 0022 00-18 to 00-23 for divider sets

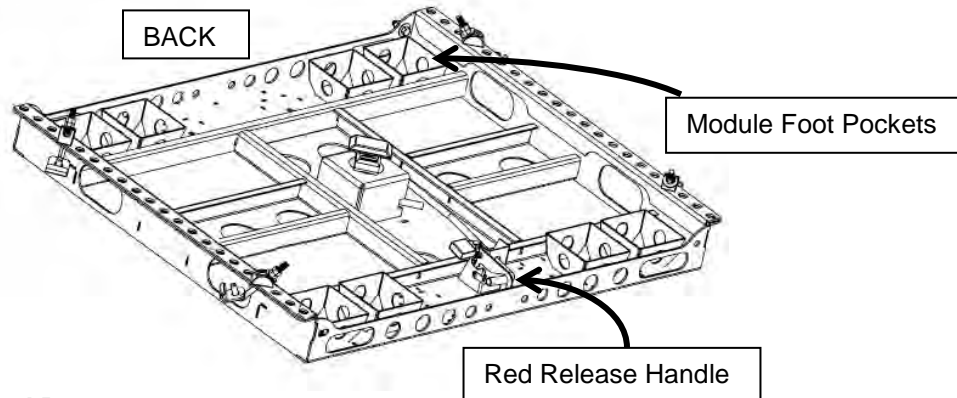


## QUADCON Adapters

There are three models of the floor adapters that are designed to accept and secure various other FPU modules with the QUADCON Adapter System. Ensure the height of the module is compatible with the container. For further information, contact BOH Environmental LLC <http://www.bohfpsystems.com>

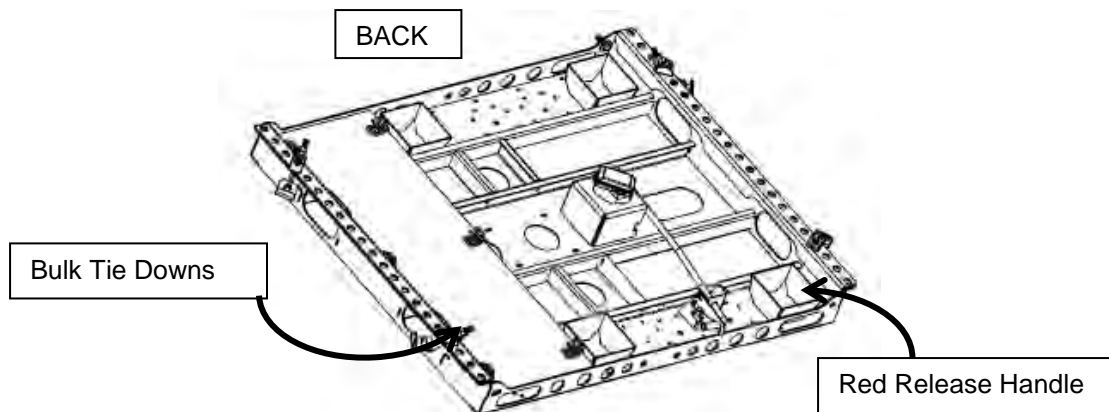
### MULTI USE QUADCON ADAPTER

The Multi Use QUADCON Adapter has eight module foot pockets to accept the 48" QUADCON modules and is designed to accept various other BOH FPU modules.



### ADAPTER A and B

The QUADCON Adapters A and B are designed to be installed back to back and accept various BOH FPU modules and these two modules provide a bulk storage platform when installed.



#### NOTE

The QUADCON module system requires that the QUADCON container have some tie down device present to attach the QUADCON adapters to; otherwise, the adapter restraint system is required.

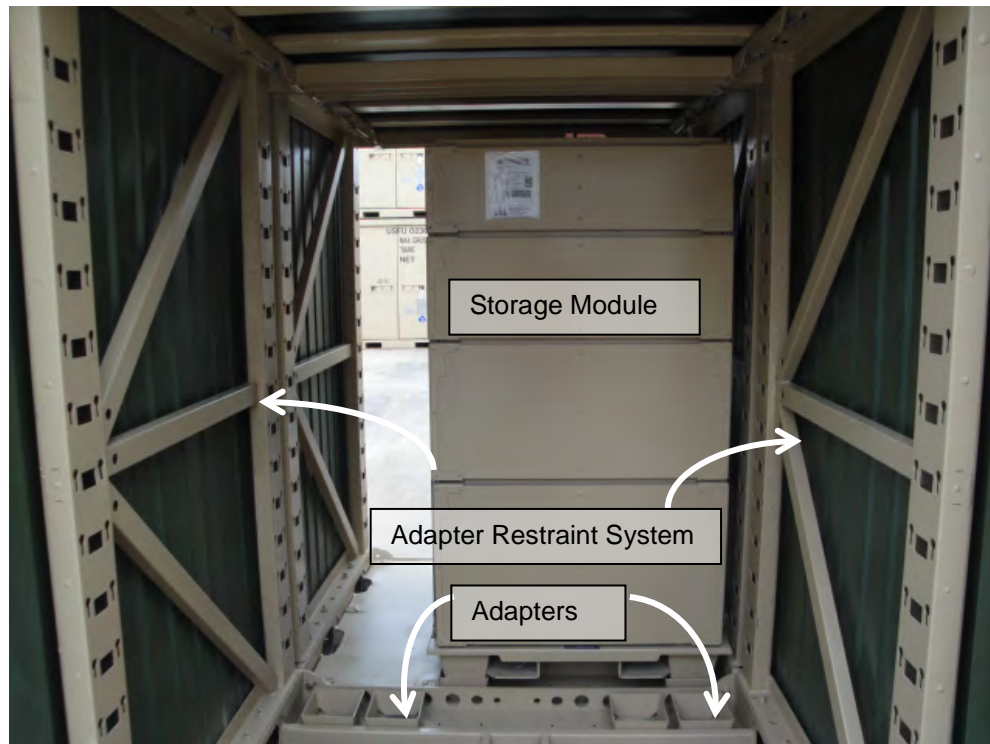
#### CAUTION

Always ensure that adapter attaching hardware is installed properly before installation of the module.

Review Chapter 2 WP 0005 00

### QUADCON Adapter Restraint System

The BOH QUADCON Adapter Restraint System when installed is a self-supporting internal frame that restrains and secures the Multi-Use Adapters and Adapters A and B in QUADCON containers that have no floor level tie-down rings or attachment devices.



**Quadcon Module Data Tags**

QUADCON CABINET MODULE  
SHIPPING/STORAGE, SINGLE

**BOH FPU SYSTEMS**  
BOH ENVIRONMENTAL, LLC  
143 TERRA BELLA BLVD  
COVINGTON, LA 70433  
TEL. (985) 674-0725

NSN: \_\_\_\_\_  
MODULE NO. \_\_\_\_\_  
PART NO. \_\_\_\_\_  
SERIAL NO. \_\_\_\_\_  
CONTRACT NO. \_\_\_\_\_  
DO NO. \_\_\_\_\_  
DATE MANUFACTURED \_\_\_\_\_  
PATENT NO. \_\_\_\_\_ US6299008

QUADCON CABINET KIT  
SHIPPING/STORAGE, SINGLE

**BOH FPU SYSTEMS**  
BOH ENVIRONMENTAL, LLC  
143 TERRA BELLA BLVD  
COVINGTON, LA 70433  
TEL. (985) 674-0725

NSN: \_\_\_\_\_  
KIT NO. \_\_\_\_\_  
PART NO. \_\_\_\_\_  
PATENT NO. \_\_\_\_\_ US6299008  
CONTRACT NO. \_\_\_\_\_  
DO NO \_\_\_\_\_

**Quadcon Adapter Data Tag**

MULTI-USE ADAPTER PLATE  
SHIPPING/STORAGE, SINGLE

**BOH FPU SYSTEMS**  
BOH ENVIRONMENTAL, LLC  
143 TERRA BELLA BLVD  
COVINGTON, LA 70433  
TEL. (985) 674-0725

NSN: \_\_\_\_\_  
PART NO. \_\_\_\_\_  
PATENT NO. \_\_\_\_\_  
DATE MANUFACTURED \_\_\_\_\_

**END OF WORK PACKAGE**

This page was intentionally left blank