

USER MANUAL FOR MWC MODULAR WORKSHOP CONTAINER

User and General Purpose Maintenance Manual

FPU® SERIES

MODULAR WORKSHOP CONTAINER (TAN)

MODULAR WORKSHOP CONTAINER (GREEN)

PART NUMBER

15002028-T

15002028-G

NSN

8145-01-524-4030

8145-01-524-4030



Version 001A, 25 Oct 2005

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BOH DATA PLATE

Located to the right of the entrance door

MODULAR WORKSHOP CONTAINER	
ACSI	BOH
ADVANCED CONTAINMENT SYSTEMS INC. 8720 LAMBRIGHT RD. HOUSTON, TX. 77075 TEL. (713) 987-0336	ENVIRONMENTAL, LLC 730 SOUTH TONTI ST. NEW ORLEANS, LA. 70119 TEL. (985) 674-0725 TEL. (708) 448-6020
NSN	8145-01-524-4030
MODEL NO.	MWC-12 STANDARD
PART NO.	15002028
SERIAL NO.	_____
CONTRACT NO.	_____
DEL. ORDER NO.	_____
WEIGHT LB.	3300
WEIGHT KG.	1500

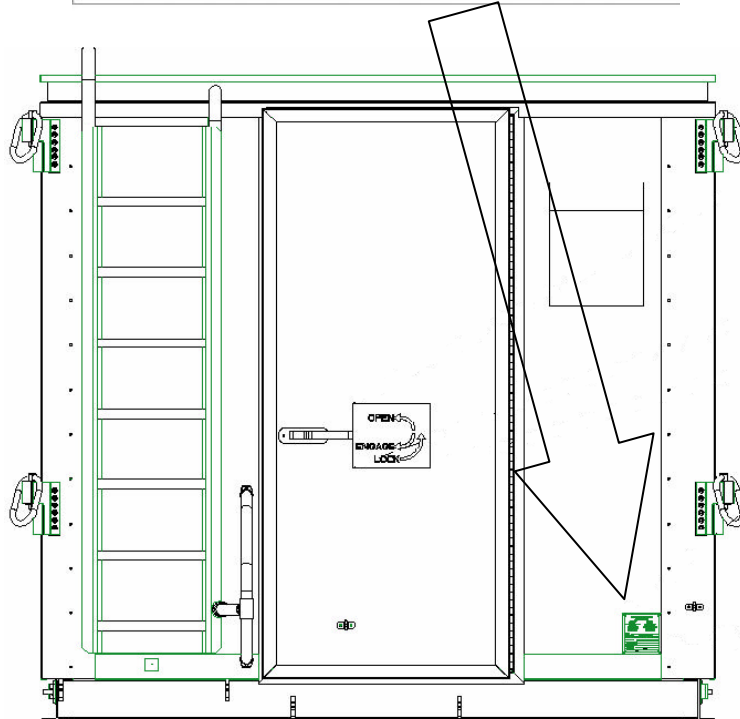


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SAFETY SUMMARY

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

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.



VAPOR - human figure in a cloud shows that material vapors present a danger to life or health.



CHEMICAL - drops of liquid on hand shows that the material will cause burns or irritation to human skin or tissue.



EYE PROTECTION - person with goggles shows that the material will injure the eyes.

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 Modular Workshop Container (MWC) 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 to personnel or damage to the equipment.

WARNING



Use extreme caution when loading the MWC onto a FPU transport system or other transport device. Forklift support or crane is required. Make sure all container materials are properly seated, locked and secured. Failure to comply could cause serious injury. Failure to follow proper connection to the transport vehicle or transport device procedures may result in damage to the equipment or injury or death to personnel.

Standard forklift principles apply when working with or on the MWC. When working with ground guides during the loading or unloading of a MWC, never move the MWC onto the FPU transport system or other transport vehicle while the ground guide is between the forklift, MWC and the transport system or vehicle. Serious injury could occur if the ground guide is pinned between the forklift and the MWC. 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 MWC from the wrong side. Always lift a MWC with the heavier side closest to the forklift operator. 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 MWC and its contents are heavy and could cause injury if interior equipment drawers and shelves are not secured and locked in position. A tilt hazard exists when the drawers or shelves inside of the MWC container are not locked down. 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



Fall hazards exist when climbing onto or working from the top of the MWC. Always maintain three points of contact to the ladder and container when climbing onto the roof. 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 MWC may be used to store various forms of oils, lubricants and other potentially slippery substances. Keeping the inside floor of the containers clean is important; nevertheless, always move with caution inside a MWC. Failure to maintain cleanliness could cause a slip and injury.

WARNING



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

WARNING



To prevent electrical shock hazard, only trained and qualified personnel should attempt to correct electrical discrepancies. Additionally, electrical power must be disconnected before any electrical system work is performed.

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



Dry cleaning solvent is flammable and cannot be used near an open flame. Use only in well-ventilated places and have a fire extinguisher available. Use of protective clothing as directed in the product MSDS is required. Failure to comply could result in injury or equipment damage. Do not allow cleaning solvents or compounds to come in contact with door seals, covers, fabric, or rubber components. Damage to these components will occur.

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**SECTION I
INTRODUCTION AND GENERAL INFORMATION**

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SECTION I INTRODUCTION AND GENERAL INFORMATION

1.1 INTRODUCTION

1.1.1 Purpose. This User Manual provides operational, safety and maintenance information for the Modular Workshop Container (MWC) which is a series of containers and modules.

1.1.2 Manual Scope. This manual will cover safety, minor repair, suggested service and maintenance, troubleshooting, and provides a parts list with illustrations to help operating personnel use the system to its full capacity.

1.2 GENERAL INFORMATION

1.2.1 Descriptions. BOH Environmental's Modular Workshop Container (MWC) is a durable, workshop/office that can be adapted across the spectrum of military Family of Mobile Tactical Vehicles (FMTV).

1.2.2 Container. The MWC system consists of a workshop and office with a wide range of optional, easily installed interchangeable modular inserts.

1.2.3 Modules. There are standard workshop and office modules, and a wide range of specialized equipment/supply module systems that will enable the customer to design a mobile package to meet any requirement.

1.2.4 MWC System Benefits. The MWC system provides an air-conditioned/heated mobile workshop with tool storage cabinets and an office workstation for technical references, maintenance and repair record keeping. The Aluminum construction provides lightweight, long-term durability for rugged use in the field. The MWC provides the operators with rapid set-up or takedown capability for the quick deployment and relocation of the workshop. The combination of the MWC with the FPU Transport System creates an asset that is readily mobile and has a detachable stairway/ladder for access without removing the workshop from the transport system.

1.2.5 MWC Manufacturer's Data Plate. MWC data plates identify the manufacturer's part number, serialization, contract and delivery order number and National Stock Number (NSN). They are easily visible at the exterior ends of each container. Each container has a MWC data plate unique by serial number. Further information with regard to the BOH line of products can be found on the BOH web site.

www.bohenviromental.com

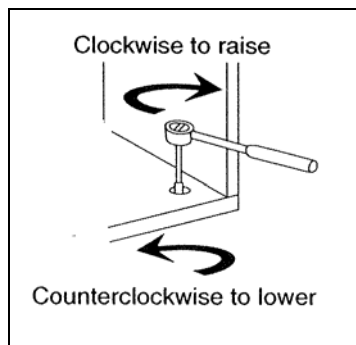
Additionally, BOH can be reached at:

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FPU Mobility Systems Division
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1.3 SPECIAL TOOLS AND TEST EQUIPMENT

1.3.1 **Descriptions.** A General Mechanics Tool Set (NSN 5180-01-454-3787) is sufficient to perform minor repairs on the containers and modules.

Note: All hardware is standard thread and removed with a Counterclockwise rotation and tightened with a Clockwise rotation.



Personnel performing electrical repairs and service should be certified electricians and have the proper tools and test equipment.

SECTION II
MWC STANDARD CONFIGURATION

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SECTION II MWC STANDARD CONFIGURATION

This section describes the primary interior components.

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2.1 MWC INTERIOR MODULE TYPES & CONFIGURATIONS

- 2.1.1 Description/Certifications.** The system consists of a standard workshop and office work station with other optional modules available that may be added, or replace an existing module to accommodate a specific tailored need by the military unit.
- 2.1.2 MWC Modules** The standard modules include a workbench attached to the interior left side that has a shelf module and a drawer module under a continuous metal top (1), a workbench attached to the interior right side that has two drawer modules under a continuous metal top (2). These are easily moved or repositioned via floor and wall uni-strut nut and bolt connection.
See Figure 2.1-1.
- 2.1.3** The MWC is also provided with left and right wall mounted file cabinets (3) with latch type doors and a 3-section wall mounted file bin (4) with a net over the front.
See Figure 2.1-1.
- 2.1.4** The MWC is provided with a desk workstation, two lockable file cabinets (5) holding four drawers mounted to the floor and wall with the same uni-strut fasteners. **See Figure 2.1-1.**

Figure 2.1-1
MWC Modules

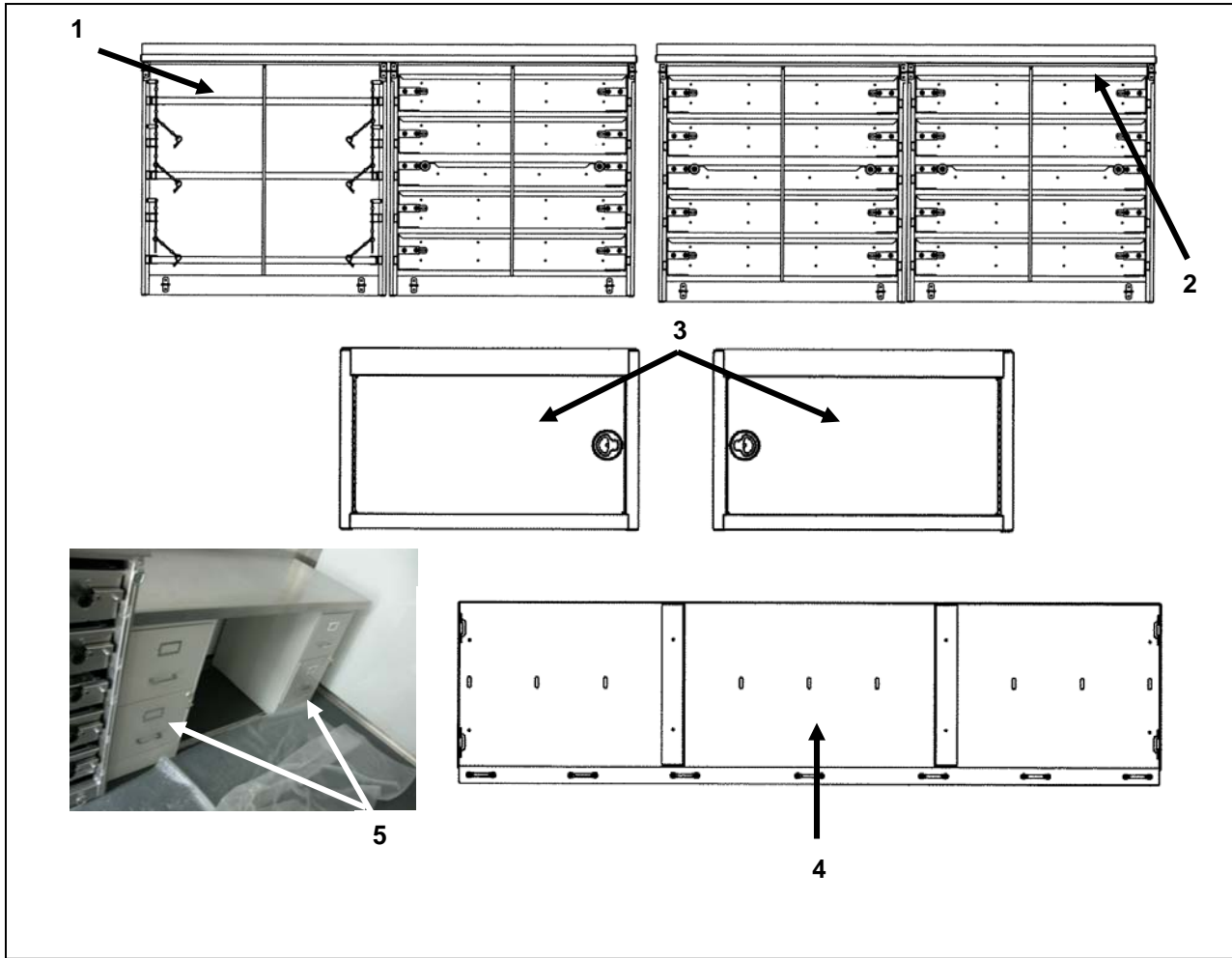
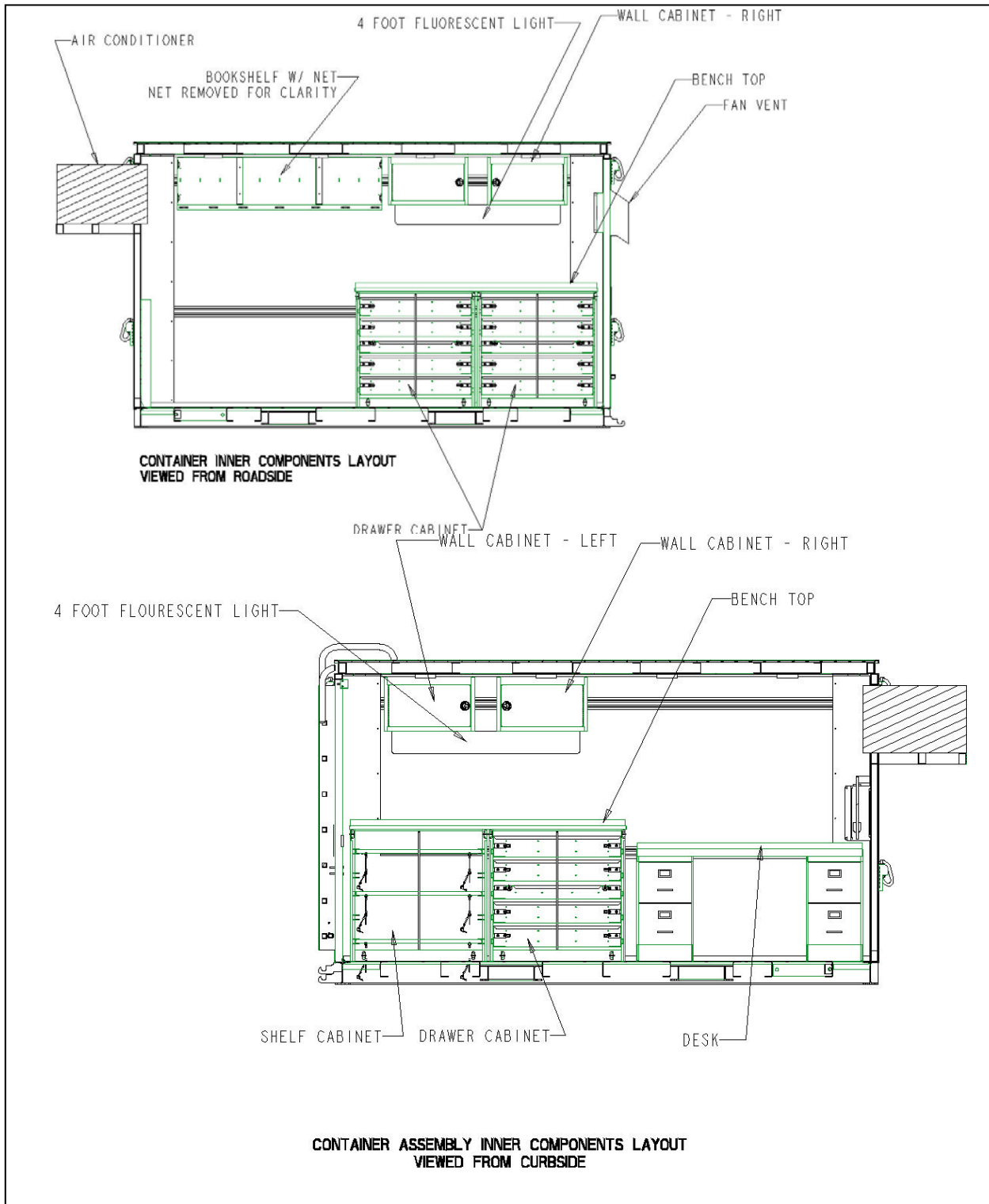


Figure 2.1-2
Interior Components Layout



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**SECTION III
PREPARATION FOR USE, STORAGE,
MOVEMENT AND SHIPMENT**

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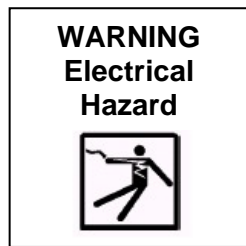
SECTION III PREPARATION FOR USE, STORAGE, MOVEMENT, AND SHIPMENT

3.1 Preparation for Use

Review the Safety Summary prior to any MHE Movement, Service or Operation of the MWC Container (Pages vii and viii).

Relatively level terrain, soil and weather conditions, mud, ice, snow and sand should be considered when selecting a container staging site to insure the safety of operating personnel.

Refer to MWC Load Spec's. **Table 3.4-1.**



3.2 Preparation for Storage

3.2.1 All container materials should be removed and general cleaning and inspection should be performed, removing debris that may inhibit proper operation of doors, drawers, and ladders. **See Cleaning Table 6.1-1.**

3.2.2 Lubrication of all moving parts, devices, locks, latches, pins and hinges should be performed. **Note:** Lubrication of the moving parts is recommended prior to long-term storage or shipment. **See Lubrication Table 6.1-2.**

3.2.4 All racks, upright drawer and tray lock rods, poles and ladder should be securely locked in place with pins and or straps prior to storing the MWC.

3.3 Preparation for Movement

3.3.1 All drawer and shelf material should be removed and general cleaning and inspection should be performed, removing debris that may inhibit operation of the ladder, retractable drawers, shelves, pins and other locking devices.

3.3.2 All locking devices, pins, ladder and cabinets should be swept or wiped clean of debris and inspected to insure they function prior to securing the MWC. **See Cleaning Table 6.1-1.**

3.3.3 MWC equipment, racks, retractable drawers, safety chains and ladders should be securely locked in place with straps or pins prior to moving the MWC.

3.3.4 MWC should be securely mounted and restrained to the transport vehicle using standard tie down procedures.

3.4 Preparation for Shipment



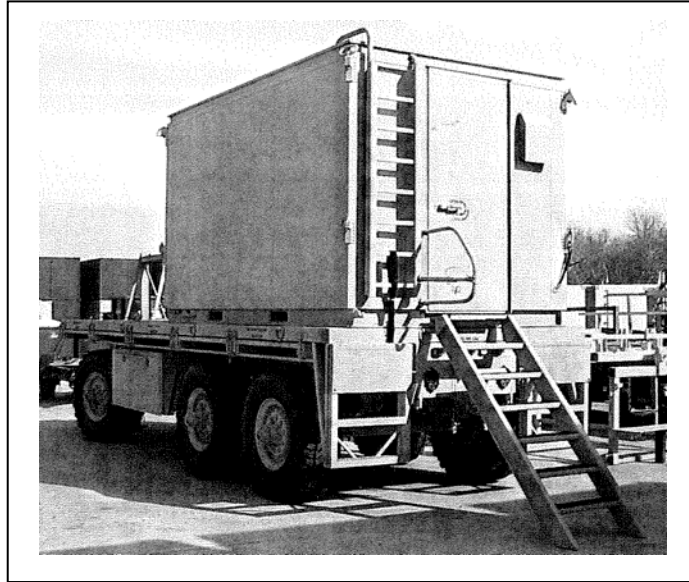
Consult the manufacturer’s data for Maximum Gross Weight for the MWC container. See Table 3.4-1.

When transporting any material inside MWC, that material should be properly tied down and secured.

**Table 3.4-1
MWC Load Certifications Specifications**

Nomenclature	Tare Weight	Payload Ground	Maximum Capacity	Payload Air	Certification	Inter-modal
MWC	3,300 lbs	N/A	5,000 lbs	5,000 lbs	N/A	N/A

Figure 3.4-1
MWC Loaded on FPU Transport System



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**SECTION IV
MWC OPERATIONS**

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SECTION IV MWC OPERATIONS

4.1.1 MWC Container Setup and Operation Instruction

This section provides step-by-step instructions for the download, set-up and moving of the MWC containers. Review the Safety Summary prior to any MHE Movement, Service or Operation of the Container on pages iv and v.

WARNING



During movement of any kind or if the container is dropped, contents may have shifted; extreme care should be taken when opening the doors to prevent material from falling on and injuring personnel.

4.2 Site Requirements

WARNING



If used in a ground-based operation, the MWC Container must be operated on level ground and periodically checked for shifting from a level position. Use care when first opening doors or draws as physical injury may occur. To maintain control, consider the ground surface conditions for adequate traction such as mud, snow, ice and sand.

CAUTION

Flood plane conditions should be considered. If in doubt, consult the operations supervisor or commander.

4.3 Preparing MWC Shipping/Storage for Use

- 4.3.1 MWC Shipping/Storage** The MWC is designed for use with a FPU-TS. It provides a highly mobile platform with a MWC container ready for immediate use in most circumstances, and it has the advantage of rapid setup and access without unloading the MWC as well as quick mobile relocation.

CAUTION

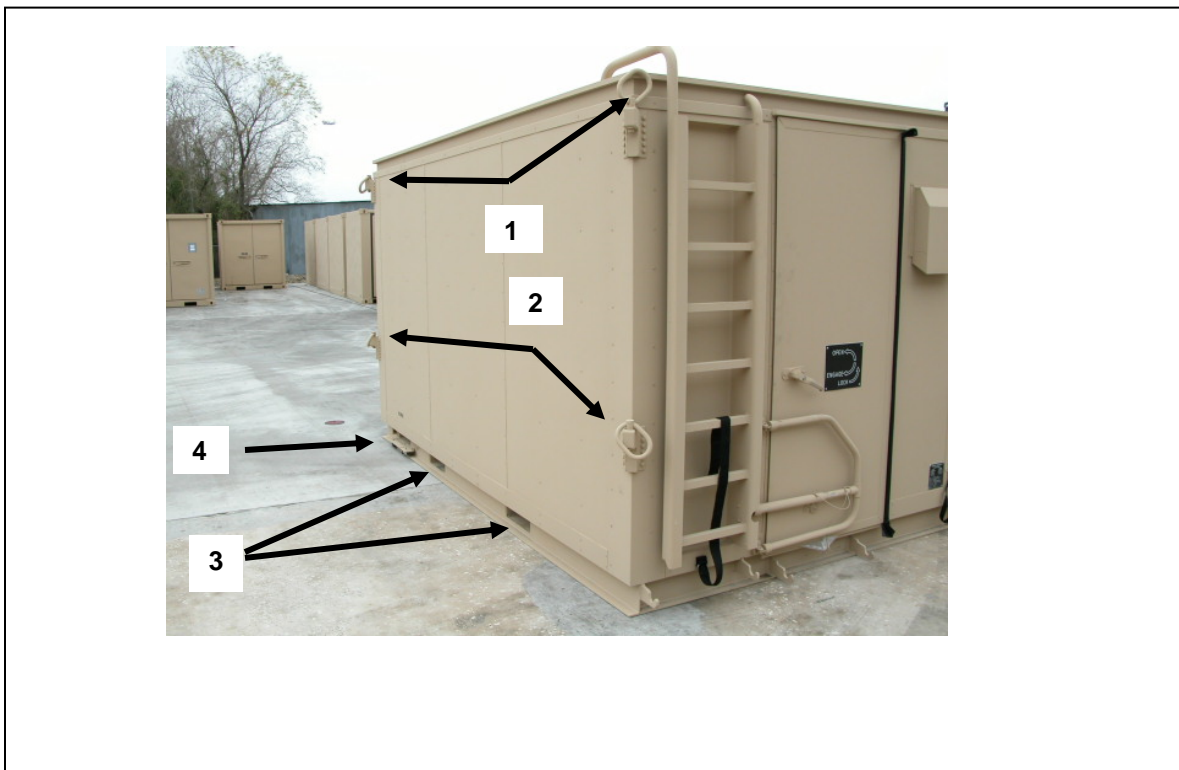
The MWC is constructed of aluminum to conserve weight and should **not be** stacked. It is not an ISO-configured or certified container and has no ISO corner blocks. The MWC is provided with four large lifting rings (1) one at each top corner for crane lifting operation. Additionally, there are four rings (2) provided to chain or

cable tie-down the MWC to the FPU Transport System, FMTV transport vehicle or flat bed trailer. See Figure 4.3-1.

There are two forklift pockets (3) on each side of the MWC for forklift movement. See Figure 4.3-1.

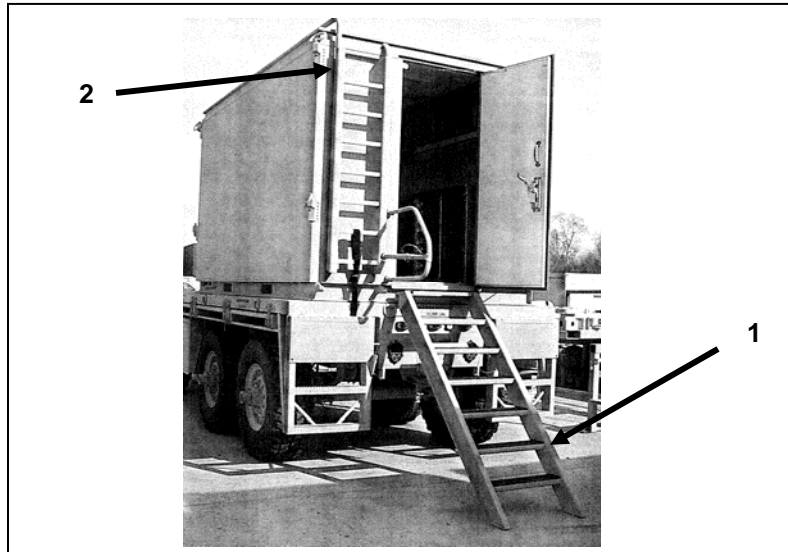
There are also trap doors (4) on each side of the container that provide electrical hook-up and are not to be used for lifting the container. See Figure 4.3-1

Figure 4.3-1
Lifting / Tie Down Rings



- 4.3.2 MWC Entrance Ladder** The MWC is equipped with two ladders, one ladder (1) for access to the workshop door when the MWC is positioned on the FPU Transport System or other transport vehicles, and a fixed roof ladder (2) See **Figure 4.3-2**.

**Figure 4.3-2
Ladders**



4.4 Operation of Roof Access Ladder

The roof access ladder consists of a fixed ladder (1) on the front of the MWC to the left of the door. Access to the roof is required during MWC Sling Lift from, or to, the FPU-TS and other transport vehicle. A fixed handrail (2) is provided for safe access to the roof to facilitate sling-lifting operation. See **Figure 4.4-1**.

WARNING

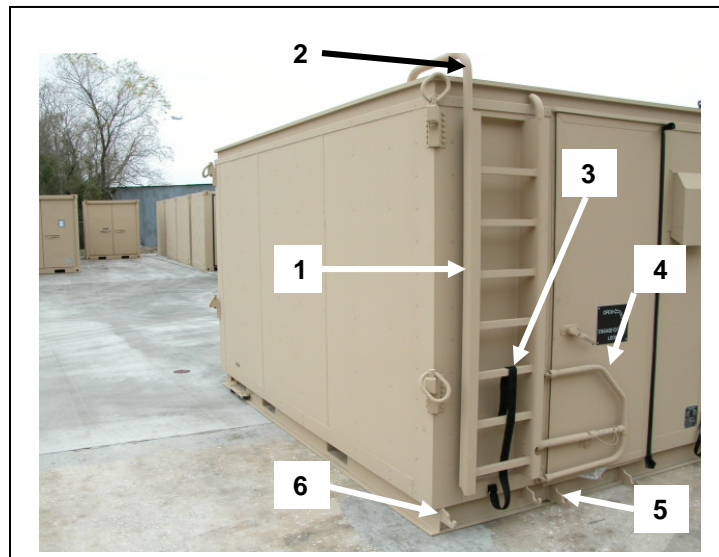


Fall hazards that may result in injury or death exist when climbing onto, returning from or working from the top of the container. Always maintain three points of contact with the folding steps and roof when climbing onto the container. All movement should be in the forward direction. Never move, step, or walk backwards when working on top of the system. A fall can occur if the worker loses concentration and steps 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.

- 4.4.1** With the MWC loaded and secured on the rear of the transport vehicle, remove the Velcro retaining strap (3) located at the bottom of the access ladder. **Figure 4.4-1**.
- 4.4.2** Unpin (2) the safety grab handle (1) and swing outward 90 degrees. **Figure 4.6-1**.

- 4.4.3 Pin the safety grab handle (1) through the slot located in the center tub (4) of the grab handle. **Figure 4.6-1.**
- 4.4.4 Lift the ladder upwards until clear of the top fixed step of the roof access ladder and remove.
- 4.4.5 Attach removable ladder to the mounting bracket (5) located at the bottom of the access door for access to the inside of the MWC or the mounting bracket (6) located at the bottom of the roof access ladder if roof access is desired. **Figure 4.4-1.**

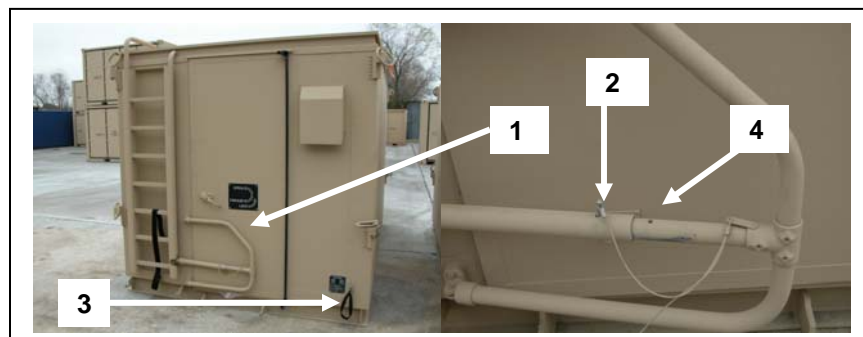
Figure 4.4-1
Roof Access Ladder
(MWC)



4.5 MWC Entrance Door

- 4.5.1 **Door/Hand Rail** The MWC has a large handrail (1) that is locked in place by pins (2) that must be unpinned and swung to its deployed position prior to attempting to open the door. **Refer to procedures in 4.4.** The door is also provided with a securing strap (3) for windy conditions. **See Figure 4.6-1.**

Figure 4.6-1
Door/Hand Rail



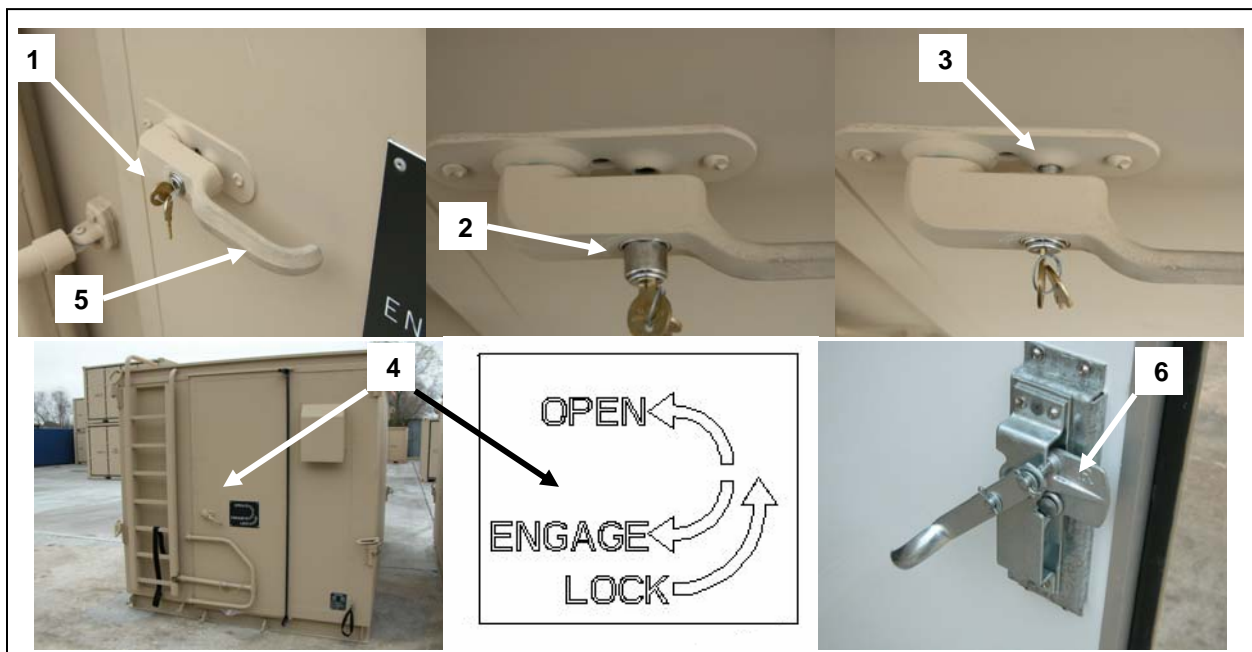
4.5.2 Door locks The MWC has a robust lock system that consists of a large handle with a key (1) and piston (2). When engaged, the piston (2) provides a positive locked position (3) to secure the door handle. A door handle instruction plate (4) is provided on the door. **See Figure 4.6-2.**

4.5.3 The door handle operation is as follows:

1. To engage the interior door lock-blade (6), swing the exterior handle (5) downward then return it to the center position; at this point the door may be key locked. **See Figure 4.6-2.**
2. To open the door and disengage the interior lock-blade (6), swing the handle (5) to the upward OPEN position and return to center position. **See Figure 4.6-2.**

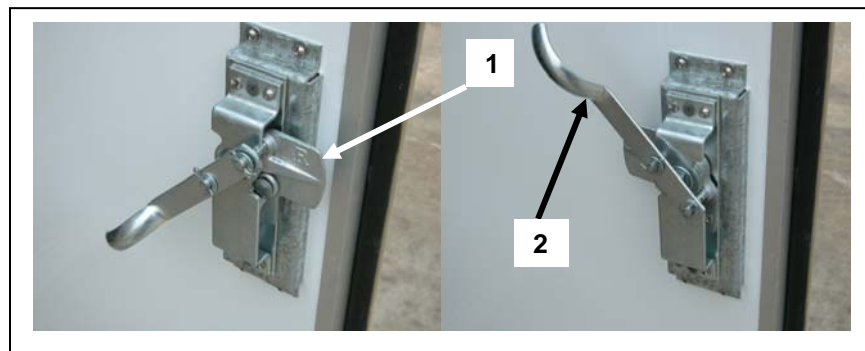
NOTE: Ensure the door is in the unlocked position before attempting to open or close.

**Figure 4.6-2
Door lock**



4.6 Interior Door Lock. The MWC door mechanism is design to allow exit while the exterior lock is engaged. Pull door handle (2) upward to open. **See Figure 4.6-3.**

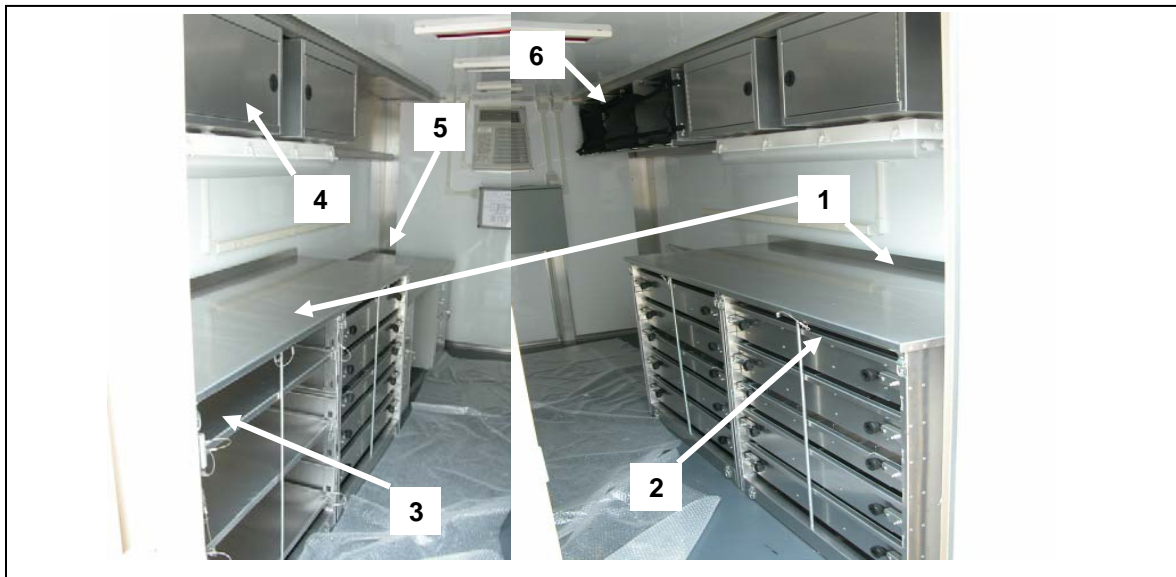
**Figure 4.6-3
Interior Door Lock**



4.7 Workshop Interior Components (Standard Configuration)

- Two modular Work cabinets (1) with **See Figure 4.7-1**
- Fifteen rollout drawers (2) **See Figure 4.7-1**
- Two fixed shelves (3) **See Figure 4.7-1**
- Four wall mounted storage cabinets with doors (4) **See Figure 4.7-1**
- Three wall-mounted cabinets with netting (6) **See Figure 4.7-1**
- One desk with two filing cabinets (5) **See Figure 4.7-1**

**Figure 4.7-1
Interior Workshop**



4.7.1 The rollout drawers and shelves have slam latches (1) on either side to latch the drawer in the closed position when not in use. There are additional security bars (2) secured by a linchpin and lanyard (3) to insure drawers stay in their closed position during transit. **See Figure 4.7-2**

4.7.1.1 To operate drawers the restraint rods need to be removed.

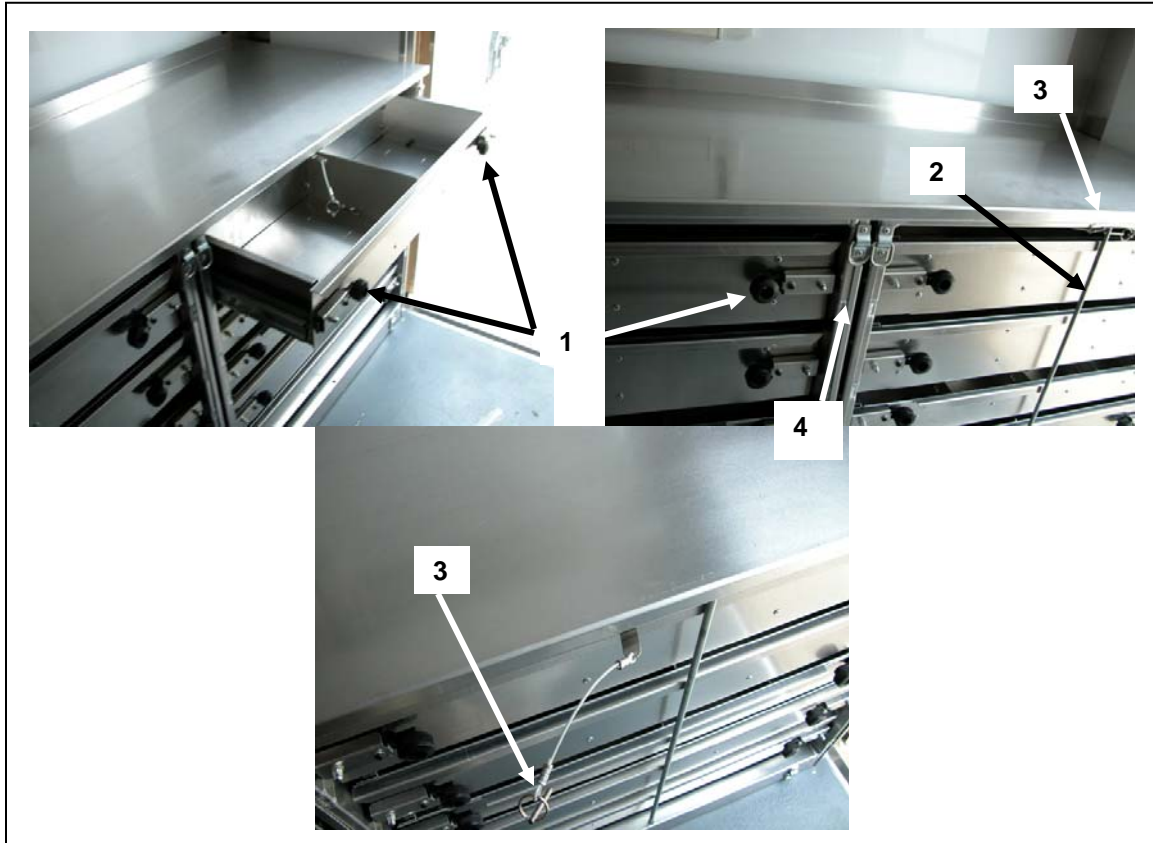
4.7.1.2 To remove restraint rods (2) first remove the restraint rod retainer pins (3). **See Figure 4.7.2.**

4.7.2.3 Lift restraint rod (2) upward until it is clear of the bottom-securing slot and pull outward. **See Figure 4.7.2.**

4.7.1.4 Store the restraint rods in a safe place. **See Figure 4.7.2.**

4.7.1.5 Grab both slam latches (1) and pull towards the center of the drawer and pull drawer outward until slam latches are clear of the strike plate (4). **See Figure 4.7.2.**

**Figure 4.7-2
Slam Latches and Security Bars**



CAUTION

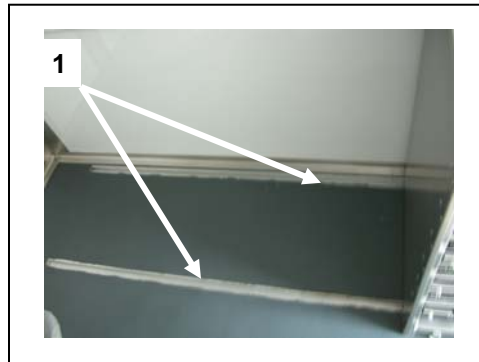
Workbench drawers, shelves and cabinets have the following weight limitations:

**Figure 4.7-3
Storage Weight Limits**

STORAGE WEIGHT LIMITS		
	EA	MAX WEIGHT
WALL CABINETS	25 lbs / CABINET	100 lbs
BOOK SHELF	10 lbs / CUBICLE	30 lbs
SHELF UNIT	50 lbs / SHELF	150 lbs
DRAWER UNIT	50 lbs / DRAWER	750 lbs
FILE CABINET	30 lbs / FILE CAB	60 lbs

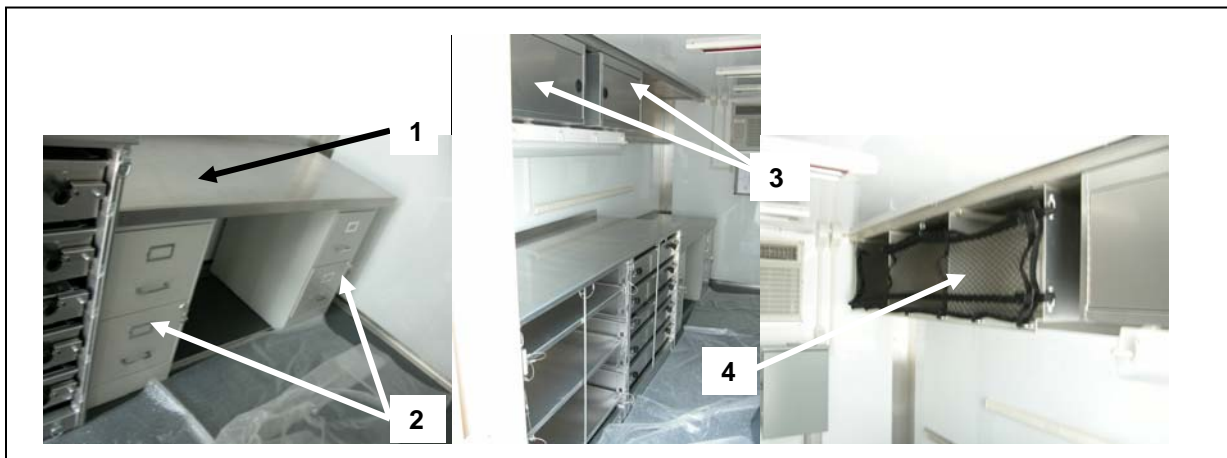
- 4.7.2** The modular work cabinets are affixed to the wall and floor by means of uni-strut nuts and bolts in uni-strut tracks (1) that provides the option to move or exchange the work cabinets within the workshop. **See Figure 4.7-4.**

**Figure 4.7-4
Uni-Strut Floor Tracks**



- 4.7.3** The workshop is provided with a work desk (1) with two lockable file cabinets (2) for technical record keeping. There are also four wall cabinets (3) above each workbench and three bookshelves (4) with nets to secure manuals and other record keeping materials. **See Figure 4.7-5. Note: For weight limitations chart, see Figure 4.7-3.**

**Figure 4.7-5
Desk and Cabinets**



4.8 Interior Lighting System and Electrical Operation

- 4.8.1** The MWC is provided with 12 VAC overhead lighting (1) that may be pre-selected to white or red lighting conditions. The bank of switches (2, 3 and 4) are located on the left side just inside the door. **See Figure 4.8-1 and 4.8-2.**
- 4.8.2** The switch (2) on the right of the bank is used to select 110VAC workbench lighting from the external power source. **See Figure 4.8-1.**
- 4.8.3** The two-position switch at the top (3) is for red or white light condition selection. **See Figure 4.8-1.**

- 4.8.4** The three-position switch (4) at the bottom of the bank of switches operates the door activation switch (5). **The three positions are as follows:**
1. Up position DOOR ACTIVE. The door switch (5) is active. The Door switch (5) will activate the Red condition lights when the door is open.
 2. Center position OFF. The overhead lighting is off.
 3. Down CONTINUOUS. The Door Switch (5) is now inactive and, if the overhead lighting switch (3) is selected Red, it will be on continuous red. If the overhead lighting switch (3) selection is White when the door is opened, the red lighting will override the White to a Red Lighting condition. **See Figure 4.8-1.**

NOTE It is important to understand that the workbench lighting should be turned off when red light conditions are desired, as it is a separate circuit and will not go to a red condition.

- 4.8.5** The door is also provided with a switch (5) to activate the selection of red light when the door is opened during red light conditions. **See Figure 4.8-1.**

- 4.8.6** The MWC is also provided with 110 VAC florescent lighting (6) above the workbenches that is activated from the light switch (2). Each light fixture has an on/off switch. **See Figure 4.8-1.**

NOTE: The 110 VAC Florescent Light should not be used during red light conditions. The door switch does not turn this light off and white light will escape if the door is opened.

- 4.8.7** The MWC is also provided with a bank of 110 VAC GFCI outlets (7) above each workbench for electrical appliances, i.e. soldering tool. **See Figure 4.8-1.**

**Figure 4.8-1
Lighting System, Exhaust Fan, GFCI Outlets**

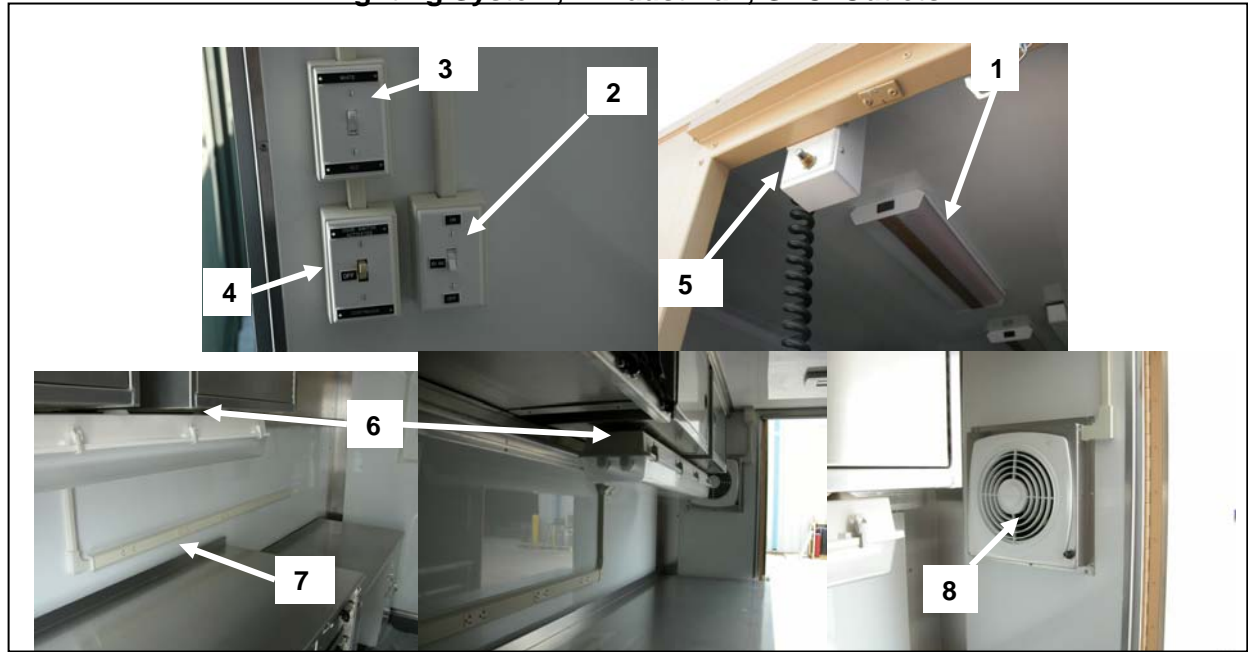
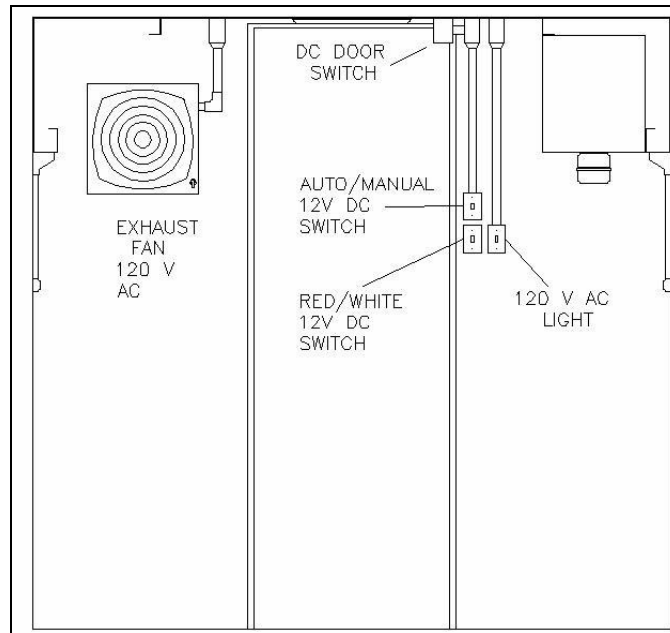


Figure 4.8-2
Front Interior Layout Diagram

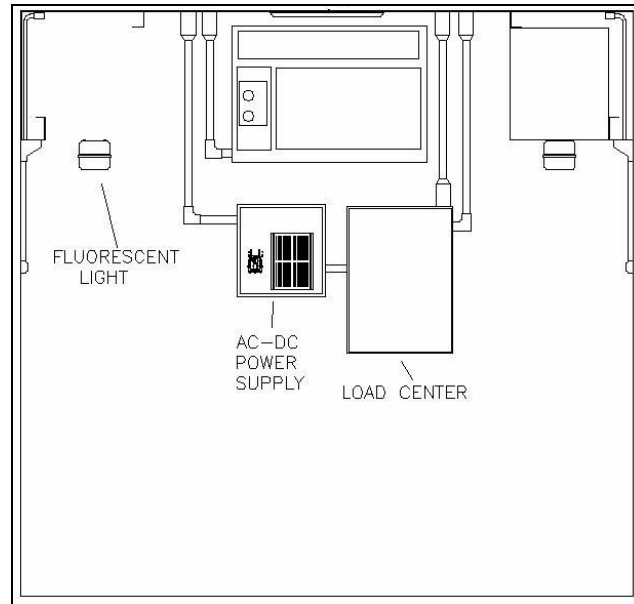


- 4.8.8** The MWC is provided with a non-filtered 120 VAC vent fan (8) located on the right just inside the door to evacuate fumes or smoke from the work area during repair operations, i.e. soldering.
See Figure 4.8-1 and 4.8-2.
- 4.8.9** The load center circuit breaker box (2) is located against the rear wall center of the MWC.
See Figure 4.9-1 and 4.9-2.

NOTE: To open the load center circuit panel door, pull downward ½" to clear the top cover then swing open.

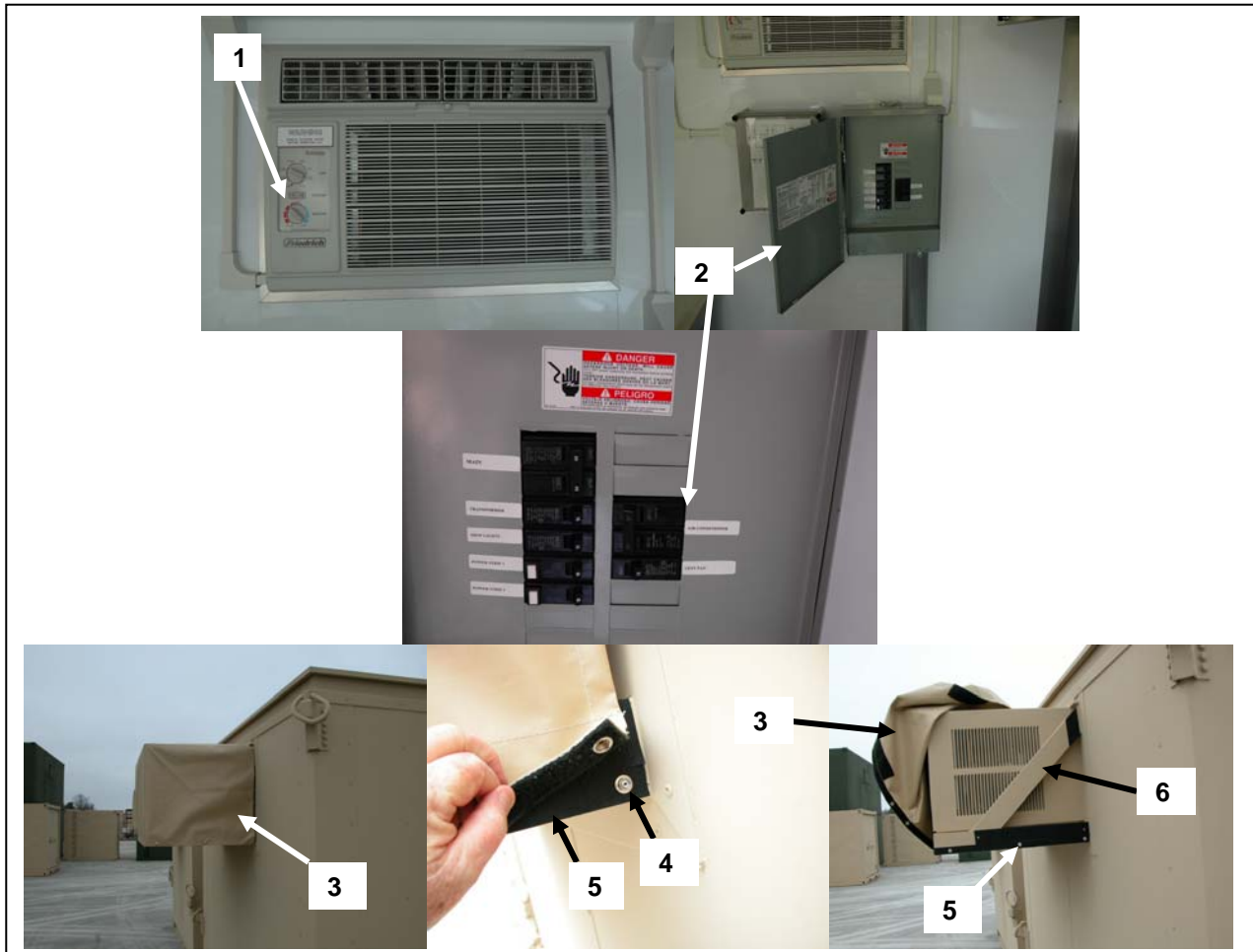
4.9 HVAC Heater/Air-Conditioned Unit

Figure 4.9-1
Rear Interior Layout Diagram



- 4.9.5** The MWC is provided with a Heater/Air-conditioned Unit (1) that is in a fixed position mounted into a frame (6) that extends through the rear wall above the load center circuit breaker box (2). **See Figure 4.9-1 and 4.9-2.**
- 4.9.6** The HVAC (1) has a Dust/Weather Cover (3) attached by snaps (4) and hook and pile fabric (5) to protect it from adverse weather and dust during travel. **See Figure 4.9-2.**

**Figure 4.9-2
HVAC and Dust/Weather Cover**



4.9.7 The weather cover (3) must be removed prior to operation of the HVAC. **See Figure 4.9-2.**

CAUTION

Failure to remove the HVAC weather cover (3) will cause the unit to overheat. See Figure 4.9-2.

4.10 Exterior Electrical Connections

4.10.1 The MWC is provided with an external cable (1) for connection to the transport vehicle auxiliary 12VDC power for the overhead lighting system. **See Figure 4.10-2.**

4.10.1.1 Connect black wire to negative battery terminal. Connect white wire to positive battery terminal.

NOTE: Connect both wires to the terminal post of a single battery in multiple battery applications.

4.10.2 The MWC is also provided with an external cable (2) connection to an external generator for

240VAC supply. The MWC is 110VAC, 60Hz, Single Phase, GFCI and workbench florescent lighting. **See Figure 4.10-2.**

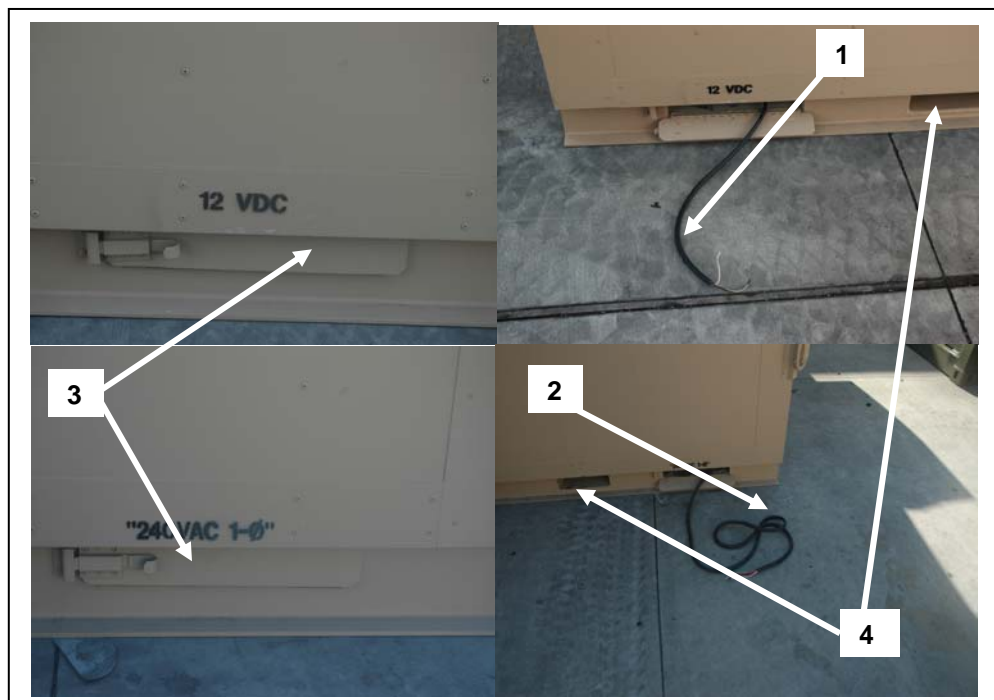
- 4.10.2.1** Connect wires as follows:
Black wire --- shore power line 1
Red wire----- shore power line 2
White wire---- shore power neutral
Green wire---- shore power ground

NOTE: This is standard residential coloring. A generator should have outputs labeled as L1, L2, N, G or by color or both.

- 4.10.3** The cables are housed within protective compartments (3) at the bottom, to the rear of the forklift pockets (4), on either side of the MWC. **See Figure 4.10-2.**

NOTE: The 240VAC (2) and the 12VDC (1) wire ends are (bare wire) open ends with no connectors so the user may determine the type and style of connection required to a source such as vehicle auxiliary power, battery pack, 12VAC battery charger, generator or 240VAC power source. **For the Phase wiring connection diagram, see Section VII, Figure 7. 1-1.**

**Figure 4.10-1
Exterior Electrical Connections**



CAUTION

Do Not utilize the exterior wire compartments for forklift pockets; they are not to be used for any lifting operation. Damage will occur.

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SECTION V
MWC MODULAR WORKBENCHES

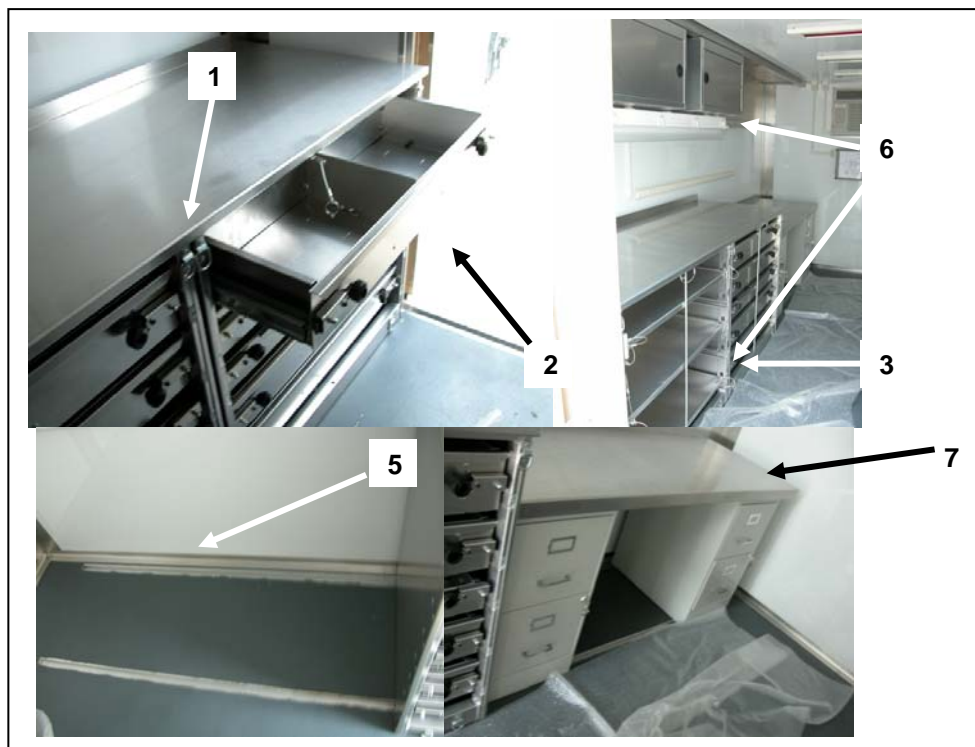
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SECTION V MWC MODULAR WORKBENCHES

5.1 Modular Workbenches

- 5.1.1 There are two types of MWC workbench modules mounted under a continuous metal top (1). **See Figure 5.1-1.**
- 5.1.2 The module workbench on the interior right hand side of the MWC consists of two drawer type modules (2). **See Figure 5.1-1.**
- 5.1.3 The module workbench on the interior left hand side of the MWC consists of one drawer type module and one shelf type module (3). **See Figure 5.1-1.**
- 5.1.4 The modules are completely interchangeable and may be repositioned with the removal of the drawers (2) or shelves (3) and loosening of uni-strut type nut and bolts (4) in the floor tracks (5) and the back of the workbench. **See Figure 5.1-1.**

**Figure 5.1-1
Modular Workbench**



- 5.1.5 At this point the entire workbench may be moved, or the top may be removed to exchange the drawer (1) or shelf type (2) module.

Caution

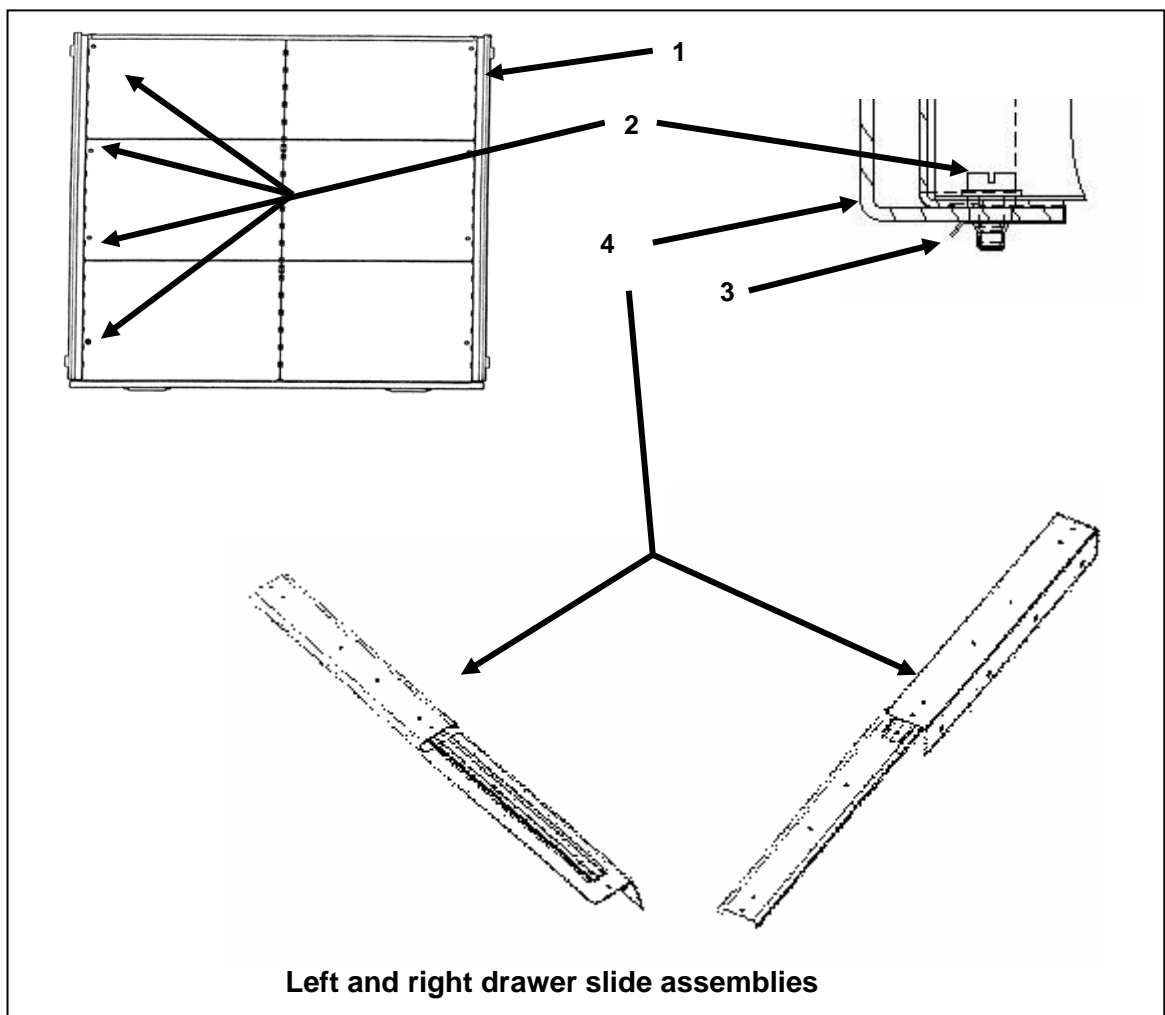
It is recommended that only the modules be exchanged and the workbenches remain in their position to provide lighting. It is not recommended that the florescent lighting (6) be moved because of the wiring structure.

The floor tracks are there to provide an additional, optional work desk (7) or other BOH optional modules.

5.2 Drawer Replacement

- 5.2.1 The drawers and shelves (1) of the MWC workbenches are held in place by eight screws (2) and automotive Aveco clips (3) attached to the drawer/shelf slides (4). See Figure 5.2-1.

**Figure 5.2-1
Drawer/Shelf Mounting**



**SECTION VI
MWC MAINTENANCE GUIDE**

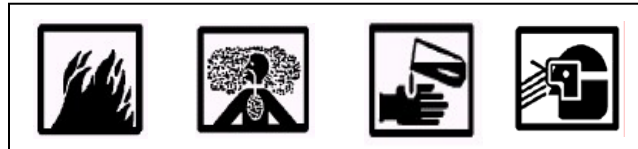
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**SECTION VI
MWC MAINTENANCE GUIDE**

Review the Safety Summary on pages iv through vii prior to any MHE Movement, Service or Operation of the MWC.

6.1 Cleaning, Lubrication and Preventative Maintenance Checks and Services (PMCS)

**WARNING
Chemical Hazard**



6.1.1 Cleaning. Cleaning is performed after an operational event and periodically if stored/ staged outside to insure the containers, modules and accessories will perform as designed. Cleaning also assists in the performance of maintenance and insures the good operating condition of the MWC.
See Table 6.1-1.

**Table 6.1-1
Cleaning Procedures**

SURFACE	OIL/GREASE	SALT/MUD/DIRT/ DEBRIS	RUST/CORROSION
Exterior and Interior Surfaces (All)	Detergent, Water, Rags	Soapy Water, Brush, Rags	Corrosion Removal Compound and Wire Brush, Dry Rag, Coat with Lube Oil or Spot Paint
Fabric Safety Straps	Detergent, Water, Rags	Soapy Water, Brush	N/A
Storage Box Seals and Gaskets	Damp and Dry Rags	Damp and Dry Rags	N/A
MWC Floor	Detergent, Water, Rags	Soapy Water, Brush, Rags	Dry Rags, Coat with Lube Oil or Spot Paint
Ladder and Door Hinges, Drawer/Shelf Glides, and Rails, Floor Tracks	N/A	Brush, Rag and lubricate as needed to ensure rails travel freely	Corrosion Removal Compound and Wire Brush, Dry Rags and Lubricate as needed

6.1.2 Lubrication. Lubrication is performed after cleaning, periodic events and prior to storage to insure good operation and prevention of corrosion of moving parts. **See Table 6.1-2.**

**Table 6.1-2
Lubrication Procedures**

USAGE	FLUID LUBRICANT	CAPACITIES	EXPECTED TEMPERATURES	INTERVAL
Drawer/Shelf Slides, Pins, Floor Locking Mechanisms	OE/HDO	As Required	All Temperatures	Monthly or as Required if under Adverse Situations
Storage Box door Locks, Hinges, Handles	Lubricating Oil, General Purpose Preservative	As Required	All Temperatures	Monthly or as Required if under Adverse Situations
Local Lube Points, Door Hand Rail Hinge Points	Dry Lubricant	As Required	All Temperatures	Monthly or as Required if under Adverse Situations

6.1.2 PMCS. Preventative Maintenance Checks and Services (PMCS) should be performed at the established periods in order to insure smooth and proper operation of the equipment in the system. **See Table 6.1-3.**

**Table 6.1-3
Preventive Maintenance Checks and Services (PMCS)**

PMCS B (Before) D (During) A (After) W (Weekly) M (Monthly)

#	B	D	A	W	M	INSPECTION ITEM AND PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
1	*	*	*			Storage Box Doors, Walls, MWC Ladder Check all doors, walls and ladder steps for cracks, dents, holes, or loose/missing hardware.	Missing doors, punctures, damage that would cause hazard or injury
					*	Lubricate hinges and locks as required.	
2			*	*		Exterior Check all exterior surfaces for cracks and dents that effect the operation of the MWC. Check for accumulations of dirt, debris, ice, snow, or salt. Clean as required. Check MWC floor for dirt and debris. Clean with broom or rags as required. Check MWC Drawer/Shelf Lock devices for cracks or missing latches, pins and lanyards. Check Ladder and Hand Rail for damaged or missing linchpins and lanyards, hook and pile straps. Replace or tighten as necessary.	Damage that would cause malfunction of the MWC working systems such as lock down devices that would cause injury. Missing or damaged pins that would cause injury by not securing the door, ladder or safety Hand Rail. Replace any missing or damaged pins. ?
3			*		*	Data Plates Check plates for legibility, damage and/or absence. Clean with water and rags. Replace as needed.	Missing data that will impair maritime shipment.

6.2 Repairs

Repair, adjustment and replacement of parts can be accomplished with a General Mechanic's Tool set (NSN 5180-01-454-3787).

6.3 Technical and Replacement Part Information Sources

Table 6.3-1
Technical and Replacement Part Information Sources

FUNCTION	TECH MANUAL & TITLE	MFG. WEB SITE / ADDRESS & PHONE NUMBER
HVAC	TWITEMP MODEL EM18J34B TECH WEB LIBRARY FRIEDRICH OPERATING GUIDE & INSTALLATION INSTRUCTION LOCATED IN THE FILE CABINET	HTTP://WWW.FRIEDRICH.COM/PDF/
BODY REPAIR & WELDING	TM9-237 Welding Theory and Application TM9-510 Metal Body Repair and Related Operation	WWW.LOGSA.COM
BOH EQUIPMENT REPAACEMENT	PARTS LIST SECTION VIII, PAGE 29.	PHONE (703) 449-6020 FAX (703) 449-6022

6.4 Troubleshooting

Review the Safety Summary prior to any MHE Movement, Service or Operation of the MWC on pages iv through vii.

Table 6.4-1
Troubleshooting Checks

FUNCTION	CHECKS
MWC Operation Section 4.3	
Workbench drawers will not open	1. Insure the material stored inside is not obstructing the drawer operation.
Fan will not operate	1. Check and reset fan circuit breaker.
HVAC is overheating	1. Insure the weather cover has been removed. 2. Inspect the filter and replace if necessary. 3. Inspect the Freon charge. 4. For other conditions consult the HVAC Website. See Table 6.3-1
No Electrical Power	1. Insure that the external electrical power source or generator is properly connected, operating and grounded, i.e. power generator or extension cord to a domestic facility AC power source. 2. Insure the power connection cables make firm connection. See Section VII 3. Check and reset circuit breakers.

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**SECTION VII
MWC ELECTRICAL DIAGRAMS**

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Figure 7.1-1
Internal Electrical Power Diagram

MAIN

TRANSFORMER 120AC 12 VDC

SHOP LIGHTS

POWER STRIP 1

POWER STRIP 2

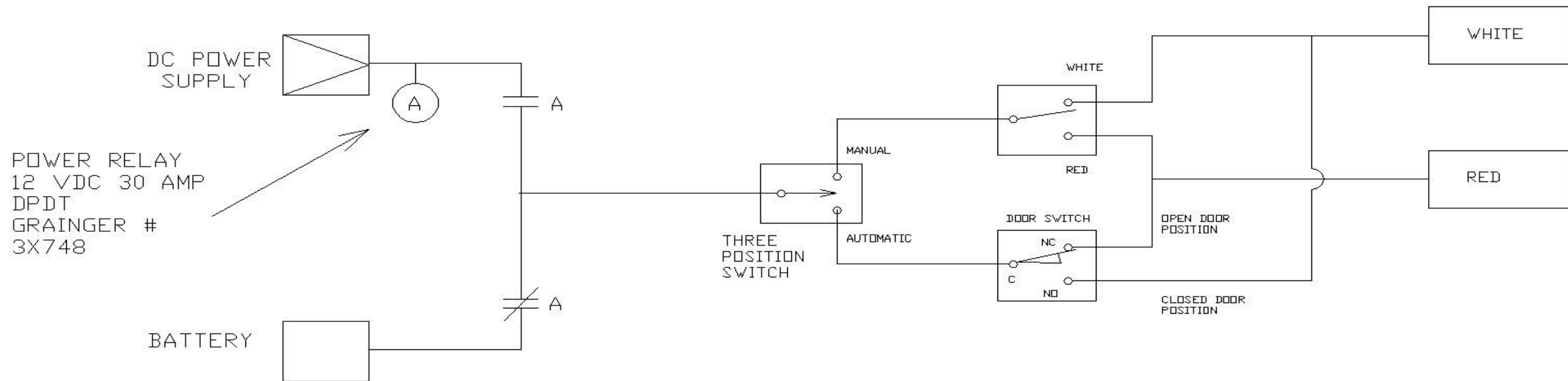
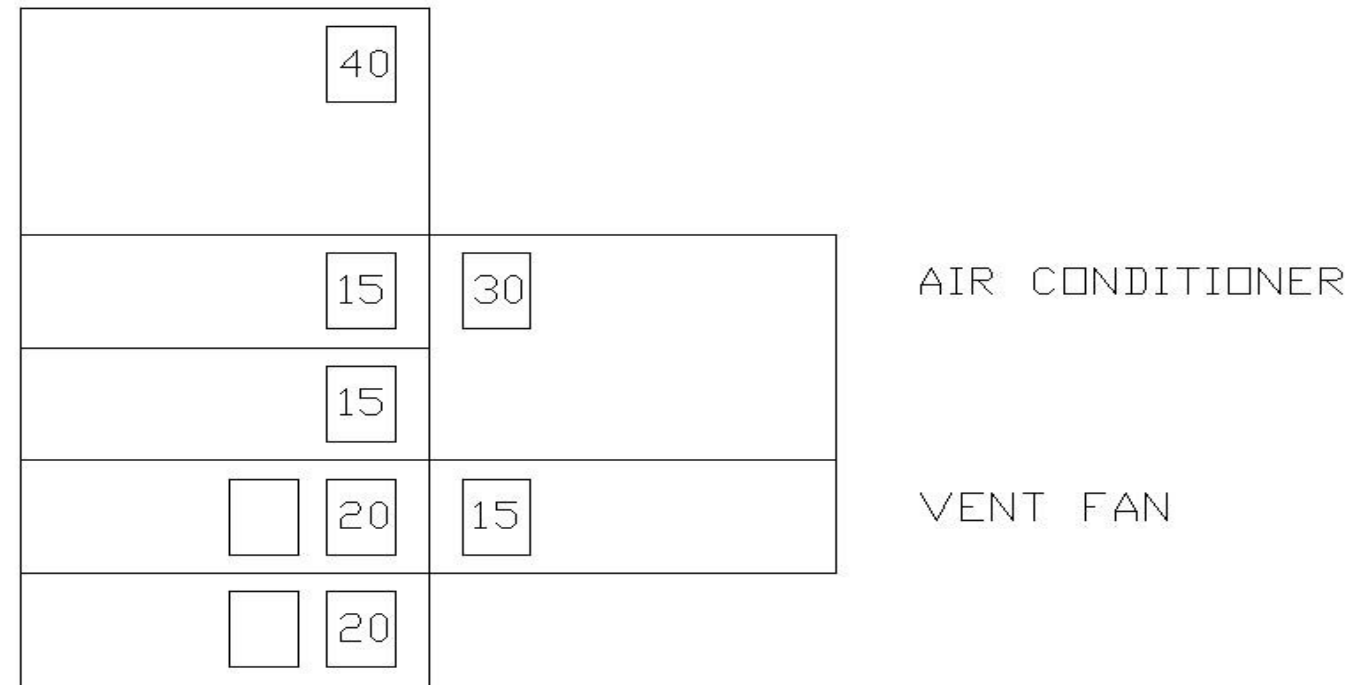
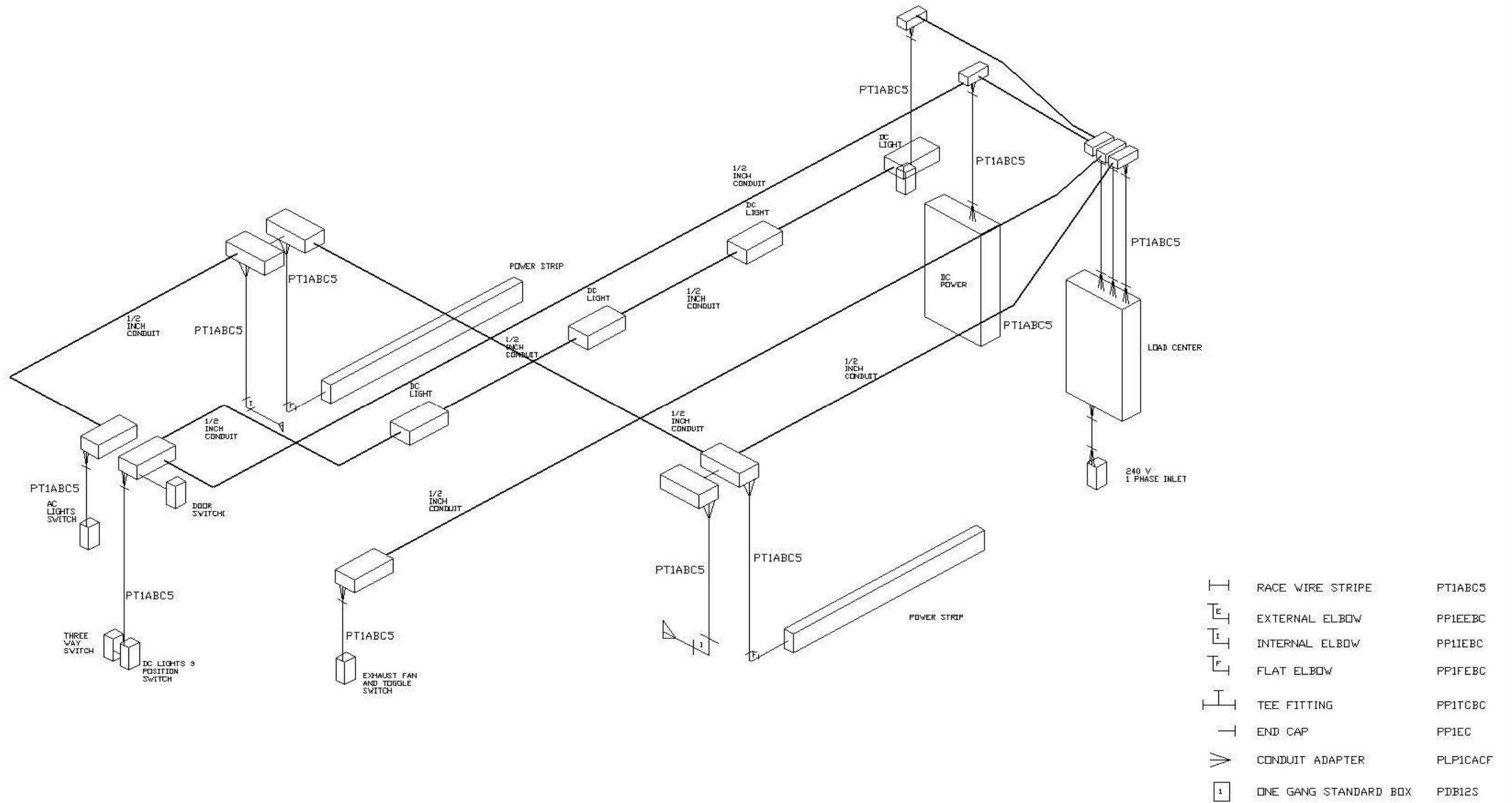


Figure 7.1-2
External Electrical Power Diagram



**SECTION VIII
MWC PARTS LISTS**

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SECTION VIII MWC PARTS LIST

8.1 Replacement Parts List

**Table 8.1-1
Replacement Parts List (The BOH CAGE Code is 1NSG3)**

PAGE	FIG. ITEM	ITEM	CAGE MFG.	PART NUMBER
20	4.9-2 (1)	HVAC Model EM18 Twin Temp	89338	EM18J34B
17	4.8-1 (8)	Vent Fan	1NSG3	94400308
11	4.3-2 (1)	Ladder (removable)	1NSG3	16335051
12	4.6-1 (3)	Door Strap	1NSG3	16335037
12	4.6-1 (1)	Ladder Hand Rail (swing)	1NSG3	16335035
12	4.4-1	Ladder Strap	1NSG3	16335055
4	2.1-2	Drawer 4" deep	1NSG3	16335065
4	2.1-2	Drawer 6" deep	1NSG3	16335060
4	2.1-2	Workbench Top	1NSG3	16332029
4	2.1-2	Desk Top	1NSG3	16332531
4	2.1-2	Drawer 4" Dividers	1NSG3	16332007
4	2.1-2	Drawer 6" Dividers	1NSG3	16332003
4	2.1-2	Shelf sliding (workbench)	1NSG3	16332026
4	2.1-2	Pin Assembly, Shelf Restraint	1NSG3	16332111
15	4.7-2 (2)	Restraint Rod, Drawer	1NSG3	16332023
15	4.7-2 (2)	Pin, Restraint Rod	1NSG3	15120668
16	4.7-5 (3)	Book Shelf	1NSG3	16332540
16	4.7-5 (4)	Cargo Net	1NSG3	15990115
4	2.1-2	File Cabinet	1NSG3	91020303
10	4.3-1 (1,2)	Corner Lifting Ring	1NSG3	46500132

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**SECTION IX
MWC WARRANTY**

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Boh Environmental, L.L.C

MANUFACTURER'S LIMITED WARRANTY TERMS

Boh Environmental, LLC (BOH) warrants that the Products, including the Field Pack-Up (FPU Systems) and other Containerized Mission Systems, it manufactures shall be free from defects in materials and workmanship for a period of one year from date of purchase when normally used and operated by the Customer. Unused Product containing missing or defective components shall be returned within the warranty period, with proof of purchase, to BOH with transportation charges prepaid. BOH, at its option, shall supply a replacement item(s) or refund the purchase price of the Product. BOH will determine, at its sole discretion, that the claim is a valid warranty item. If so, BOH will pay costs (actual transportation plus handling charge) for shipping of the replacement item, when this option is selected.

This warranty is void if Products have been damaged by the Customer as the result of improper or unreasonable use, or other causes not arising out of defects in material or workmanship. The warranty is also void if the Product has at any time been stored or used other than in accordance with the directions set out in the literature relating to the Product. BOH makes no other warranty or representation concerning the Products except that each will meet the performance specifications set forth in the literature relating to the Product. There are no further warranties, including any warranty of merchantability or fitness for a particular purpose covering the Product.

BOH will, at its option, either (1) credit user in the amount paid for any Product which does not perform to these specifications, or (2) replace such Product, provided user so notifies BOH within twelve (12) months of the Products purchase date. BOH shall not be responsible for any consequential damages to user arising as a result of such performance. The Customer will return the item at their cost, if required. BOH may elect to have its representative inspect the item to validate the claim.

Other product components included in the fabrication of items purchased under contract (e.g. air conditioners and generators) that are not manufactured by Boh Environmental are warranted by their individual manufacturer. Copies of such warranties are supplied with the finished Product or are available through Boh Environmental.

www.bohenvironmental.com

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