

**FPU® SYSTEMS OPERATION MANUAL  
(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)  
BOH Modular Workshop Container (MWC)  
BOH FPU Field Pack-up Units**

**CHAPTER 2  
OPERATOR INSTRUCTIONS**

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**OPERATOR INSTRUCTIONS**

**FPU® SYSTEMS OPERATION MANUAL  
(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)  
BOH Modular Workshop Container (MWC)  
BOH FPU Field Pack-up Units**

**PREPARATION FOR MOVEMENT OPERATION AND TRANSPORT****INITIAL SETUP:**

FPU Packed up

**Maintenance Level**

Operator / Crew / MHE Operator

**Personnel Required**

Three (plus one supervisor)

**PREPARATION FOR MOVEMENT**

This work package provides step-by-step instructions for the download, set-up and movement of FPU containers.

**WARNING**

Ground guides and the HME operators must maintain direct line of sight and ensure that personnel are clear of the containers during this operation. If the forklift operator loses visual contact with either ground guide, stop all operations, turn off the forklift and set the emergency brake. Resume only after reestablishing visual contact with both ground guides.

**Site Requirements****WARNING**

The MWC is intended to remain on the transport vehicle. Always ensure that the transport vehicle is properly secured with brakes engaged and wheel chocks in place, to prevent movement of the vehicle during loading and every day operation of the MWC. To maintain control, consider the ground surface conditions for adequate traction, such as mud, snow, ice, and sand.

**MWC Container tare weight 3,300 lb.  
MWC Gross Weight 5,000 lb.**

## TRANSPORT

### Transport vehicle

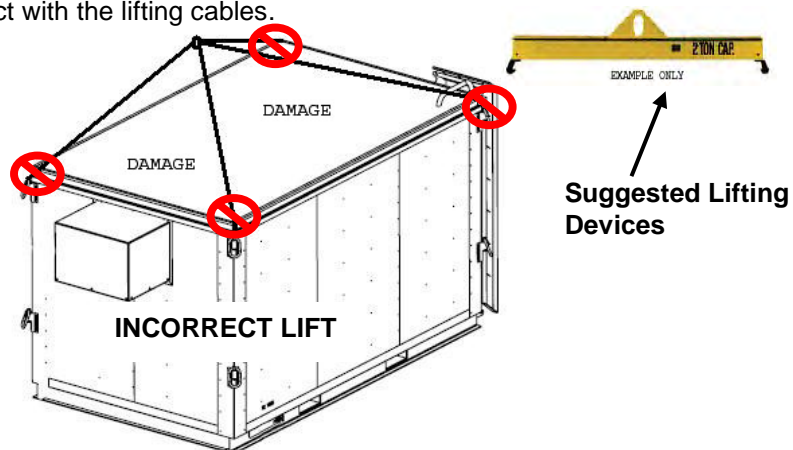
#### CAUTION

Before lifting the MWC, ensure the contents of the MWC are retained and secure. The eight corner rings are designed to tie down the MWC utilizing the LMTV tie-down device P/N: 50353-050 NSN: 8145-01-509-0245. Consult the LMTV TM 9-2320-365-10 for tie-down procedure.



#### CAUTION

If the eye assemblies are used to lift the MWC using a crane, any lifting rig must have a spreader device that spans beyond the roof line to avoid damage to the MWC roof corners from contact with the lifting cables.



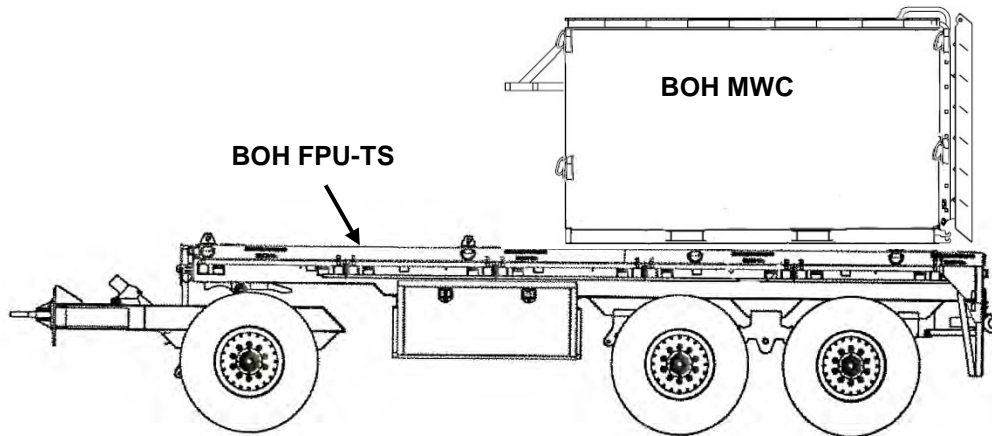
#### WARNING



Overhead power lines and obstructions can cause serious injury or damage to property. Forklift operators, truck drivers, crane operators and ground guides should always ensure it's clear overhead when loading, unloading or accessing the roof of the MWC.

### Optional Transport Trailer

The MWC may be transported by the BOH FPU-TS Trailer. The FPU-TS trailer maximum gross weight is 45,000 lbs. and a load capacity of 31,000 lbs. The eight corner rings are designed to tie down the MWC utilizing the LMTV tie-down device P/N: 50353-050 NSN: 8145-01-509-0245 to secure the MWC to the FPU-TS.



### NOTE

For detailed operation of the FPU-TS refer to the trailer manual which can be found on our website, or by contacting us at:

**BOH ENVIRONMENTAL LLC**  
**14520 Avion Parkway, Suite 220**  
**Chantilly, Va. 20151**  
**POC Jim Stokes (703) 449-6020**  
**<http://www.bohfpusystems.com>**

## OPERATION

### Operation of roof access system

#### WARNING



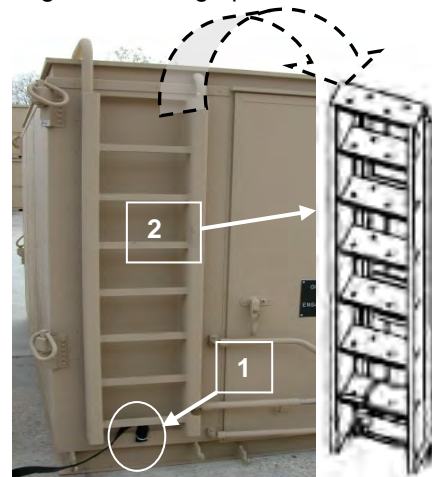
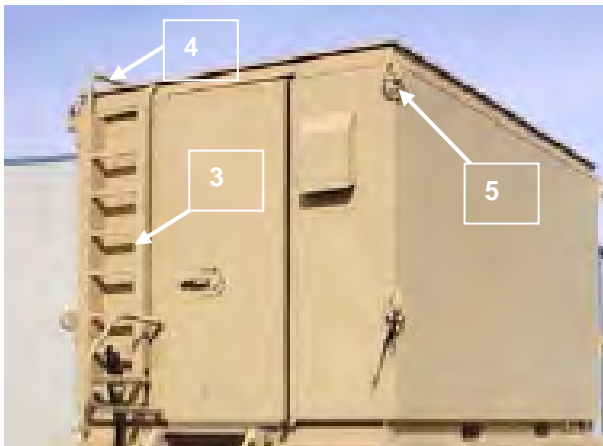
Fall hazards exist when climbing onto, working on top of the MWC. When returning from the top, always utilize the hand rail on the top of the container. Always maintain three points of contact to the roof access ladder when climbing to/from the MWC roof. Never move, step, or walk backwards when working on top of the MWC. All movement should be in the forward direction. 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.

#### NOTE

The Stairway does not have to be removed from the ladder to access the roof.

#### Roof Access Ladder

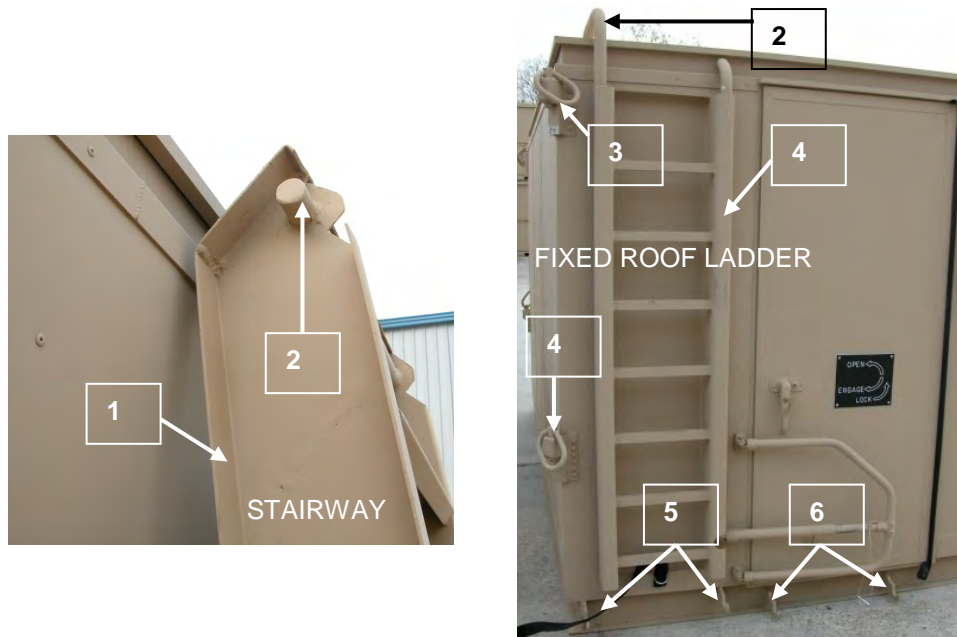
1. To gain access to the roof ladder, undo the black retention strap (1) on the stairway (2).
2. Grasp the sides of the stairway (2) and remove it by lifting it up and away.
3. Place it aside in a safe location away from the loading or unloading operation.



4. Access the roof via the roof ladder (3) utilizing the hand rail (4).
5. Make a four point connection with the four upper lifting rings (5) and crane sling with spreader bars that span the roof to avoid damage to the roof on page 0005 00-2.
6. Return to the roof ladder (3) utilizing the hand rail (4) and return to the ground.
7. The Ground Guide should direct the crane operation.
8. When utilizing a forklift the ground guide must ensure that personnel are clear of the MWC when positioning the MWC onto the vehicle.
9. Connect the eight eye assemblies (upper and lower) of the MWC with the LMTV tie-down device P/N: 50353-050 NSN: 8145-01-509-0245 as shown on page 0005 00-2.

## Stairway and Handrail

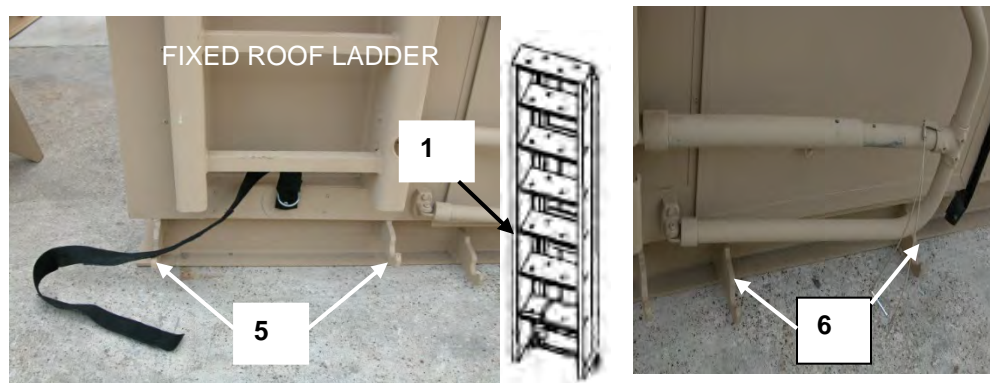
1. Install the stairway (1) by the dowels (2) at the top end of the stairway (1), on the two matching hooks (6) just below the door edge.



### WARNING

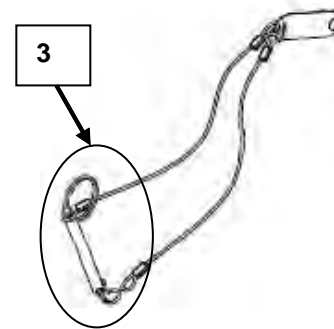


Ensure there is no personnel in the MWC that may exit and fall when the stairway is repositioned. When accessing the roof via the roof ladder (4) when the MWC is on the transport vehicle, the stairway must be positioned on the two hooks (5) to the left of the door just below the ladder (4). For access to the MWC interior, reposition the stairs on the hooks (6) below the door edge. Never attempt to use the removable stairway (1) as a ladder.



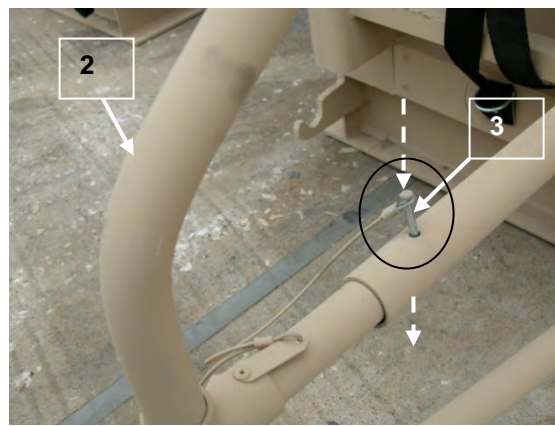
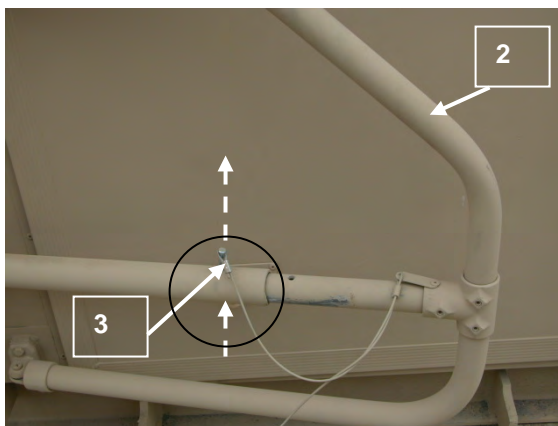


2. Ensure the bottom of the stairway (1) is on a flat surface and that the stairway does not rock or tip.



### Door handrail

1. To open the door, the hand rail must be swung to the full out position 90 degrees from the door.
2. Pull out the securing pin (3) completely and swing the handrail (2) to the full out position 90 degrees from the door.
3. Secure the hand rail by inserting the pin (3) completely into the hole when the handrail (2), is in the full out position.





**WARNING**

Failure to secure the handrail (1) will allow it to swing and cause injury from a possible fall from the stairway. **Unsafe Condition :** The Door Handrail (1) has not been secured with the pin (2) and could swing and cause a trip hazard.

**NOTE**

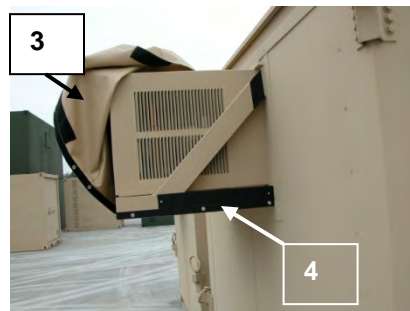
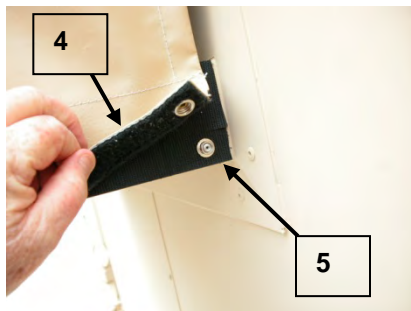
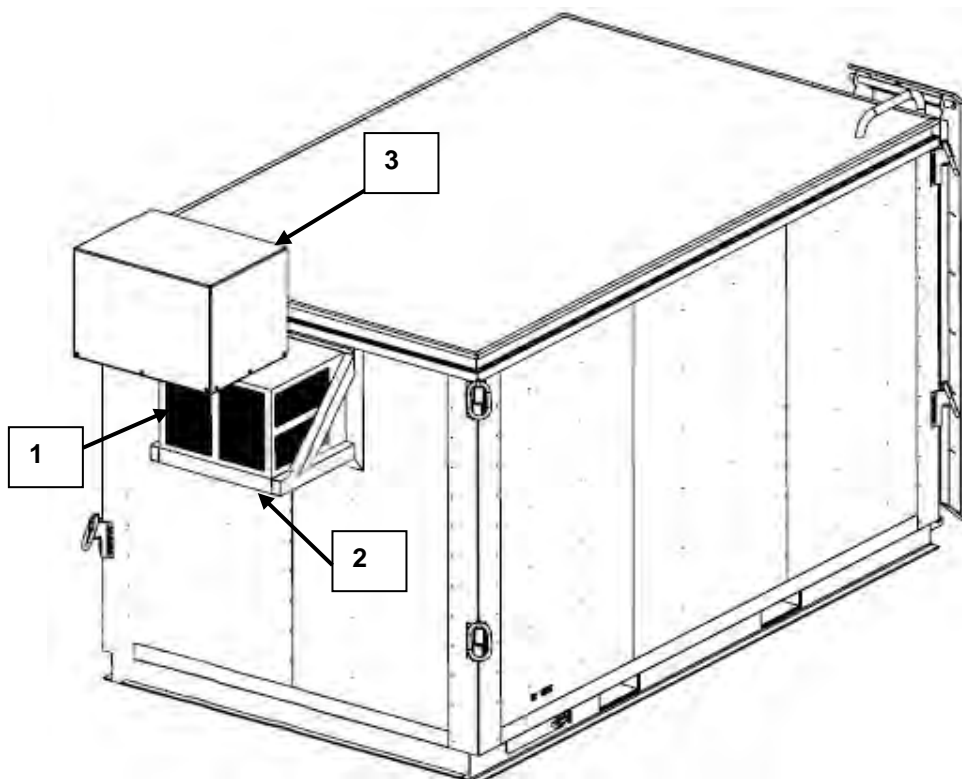
The Hand Rail (1) must be swung to the full out position, and pinned to gain access to the door, and then be pinned in place.

## HVAC Cover

The MWC is provided a heating and air-conditioning unit HVAC (1) that is cradled in a frame (2) and has a HVAC vinyl dust cover (3) that is secured with hook and pile fabric (4) and metal snaps (5). The dust cover (3) must be in place when the MWC and vehicle are traveling or in dust, or snow/sand storm conditions to protect the HVAC.

### **CAUTION**

During operation, the HVAC dust cover (3) must be removed completely to prevent overheating of the unit. Store the HVAC Dust Cover (3) somewhere inside the MWC to prevent loss of the cover.



## Door Entrance

The MWC entrance door has a key and piston handle lock that when engaged provides a closed handle position positive lock.

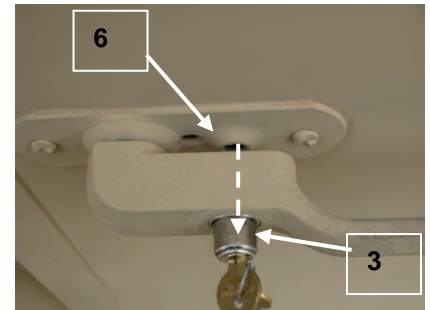
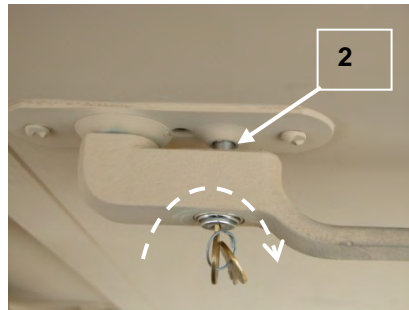
### CAUTION

If the door is required to remain in the open position, utilize the tie-down shackle and strap assembly (1) at the lower right corner of the MWC.



## The Older Door Handle Lock System

1. To disengage the door handle lock piston (2), insert the key, rotate the key clockwise, and pull the key and lock set (3) outward until the lock piston (2) is disengaged.



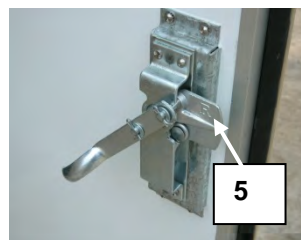
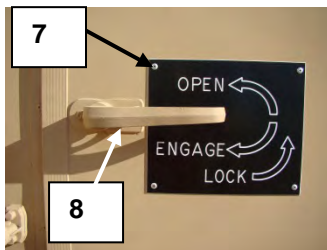
2. To open the door, swing the handle (4) in a 90 degree upward motion to the open position; this disengages the interior door lock blade (5).
3. Return the handle (4) to the center position and pull open the door.

### NOTE

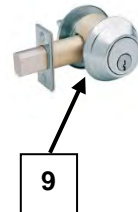
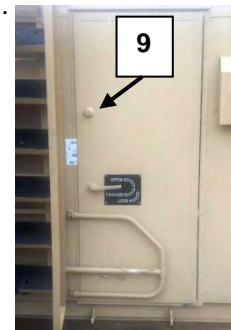
Follow the instruction plate (7) to the right of the door handle (4).

## Locking the Door

1. To engage the interior lock blade (5) with the door closed, rotate the handle (4) downward 90 degrees to the engage position.
2. Return the handle (4) to the center position.
3. To engage the door handle lock piston (2), rotate the key counter-clockwise, and push the key and lock set (3) inward until engaged in the plate socket (6).



Door Interior

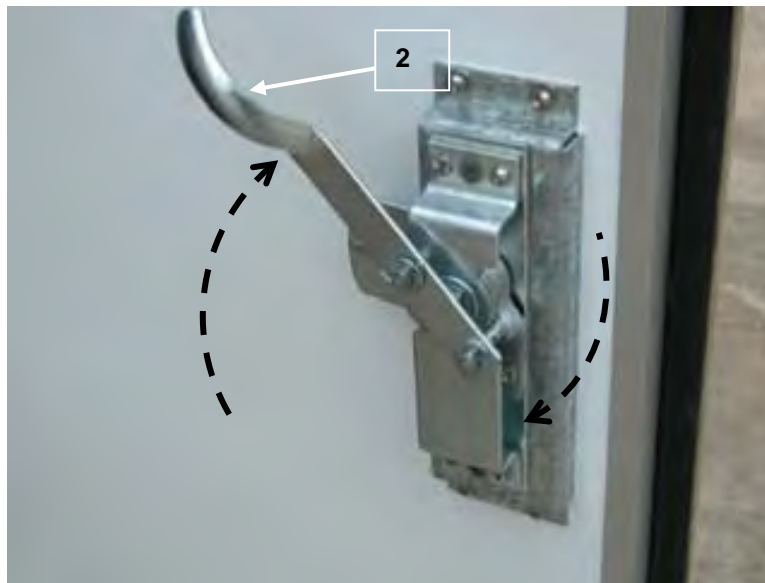
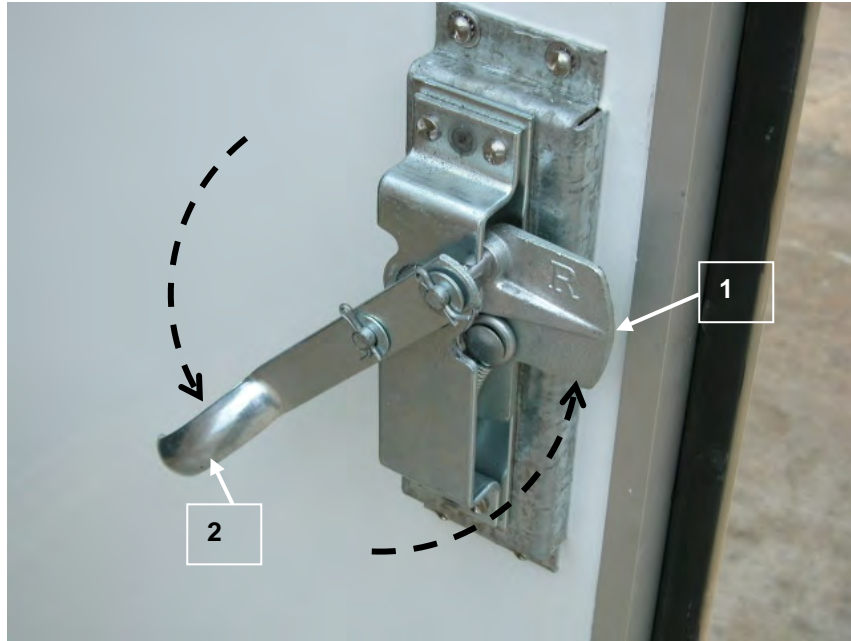


### NOTE

The new handle version (8) no-longer has a key lock device (3). The new deadbolt (9) replaces the handle key lock device (3). See pages 0017 00-4 to 00-5 applied to Serial # AC15002028-04207 and beyond.

## Interior Door Handle

1. To engage the door lock blade (1), rotate the handle (2) downward.
2. To open the door and retract the door lock blade (1), rotate the door handle (2) upward.



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**PREPARATION FOR ELECTRICAL/ INTERIOR COMPONENTS****INITIAL SETUP:**

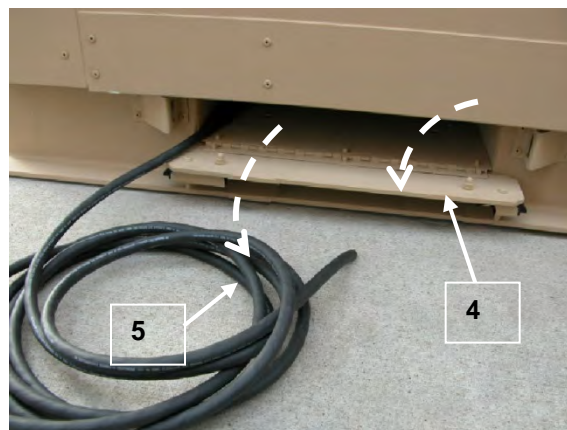
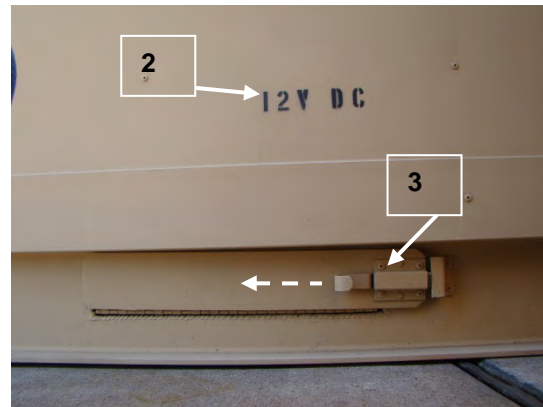
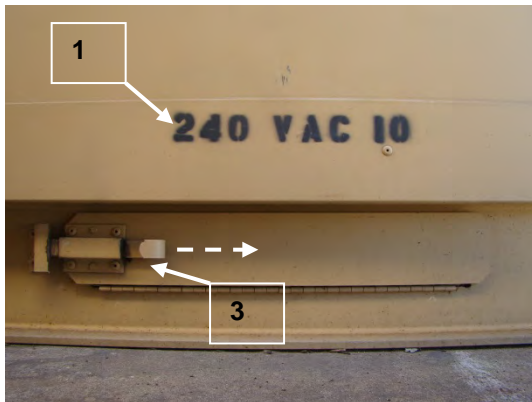
**Maintenance Level**  
Operator / Electrician

**Personnel Required**  
Two (plus one supervisor)

**Electrical Connection**

Access the required electrical cable from the stowage box single phase 240 VAC (1) and the 12 VDC (2) and make the proper connection to the available power source.

1. Pull the spring loaded release slam latch (3) toward the center and pull down the door (4).
2. Extract the connection cable (5).





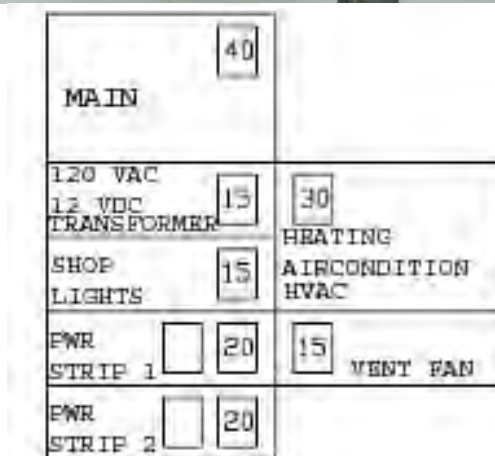
**WARNING**

Ensure all circuit breakers and the power source is switched off before making electrical connections. Ensure the electrical proper single Phase 240 VAC or 12 VDC cable connectors are installed by a certified electrician Army MOS 21R.

**Circuit Breakers**

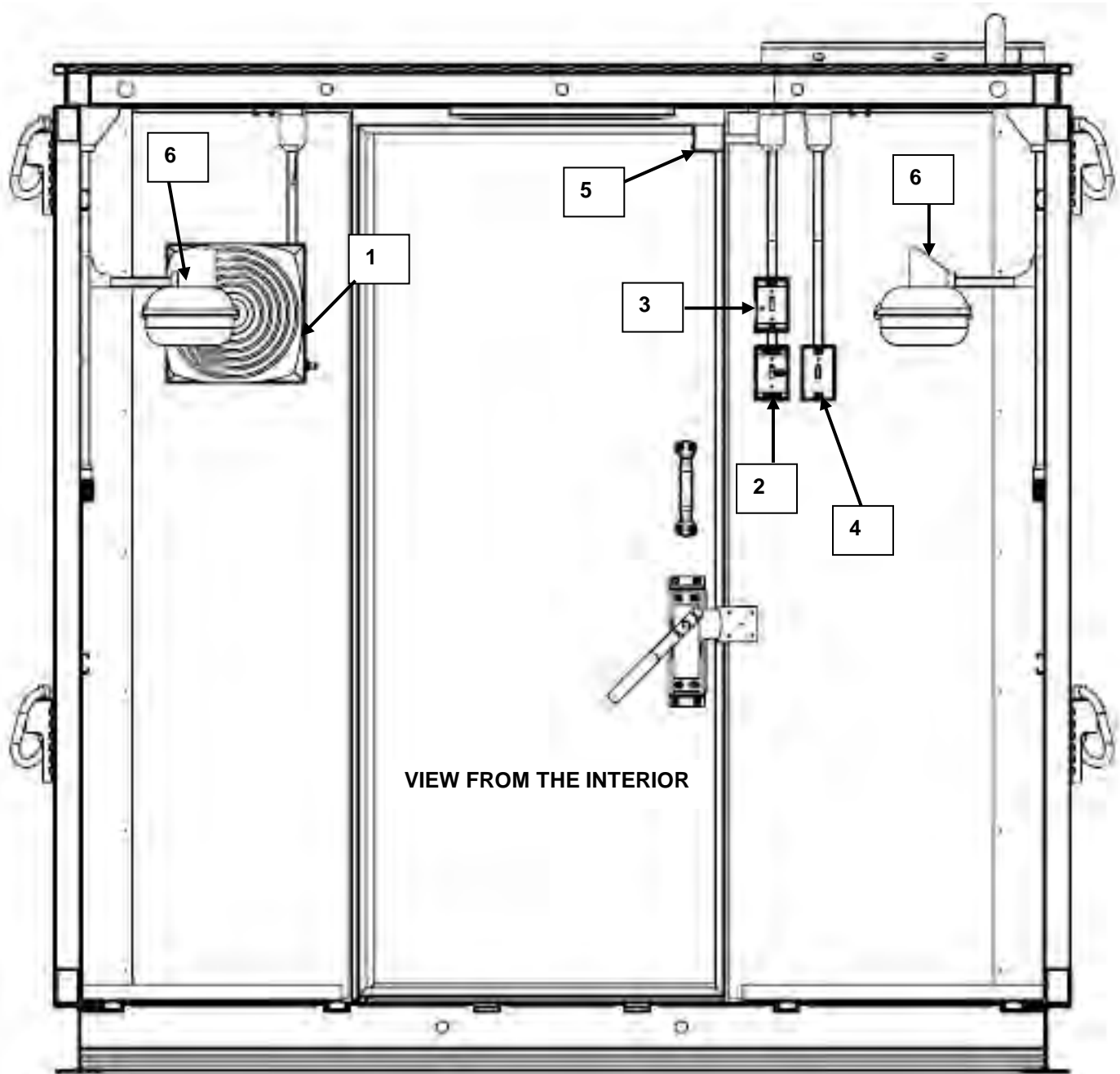
The circuit breaker box is on the back wall just below the HVAC unit.

1. Activate the 40 amp Main breaker and other breaker switches by pushing them to the center position.

**CIRCUIT BREAKER DIAGRAM**

## Interior Electrical Components

The MWC is provided a ventilation fan (1), to remove off gasses from maintenance operation. Facing the door on the interior, the fan is located to the left of the door. To the right of the door, there are three switches: one red/white light selector (2), one door switch activation (3) and one interior workbench light on off switch (4). The door lighting activation switch (5) is located at the top interior of the door and activates interior lighting when the door is closed. The two workbench fluorescent lights (6) are located above the workbenches.



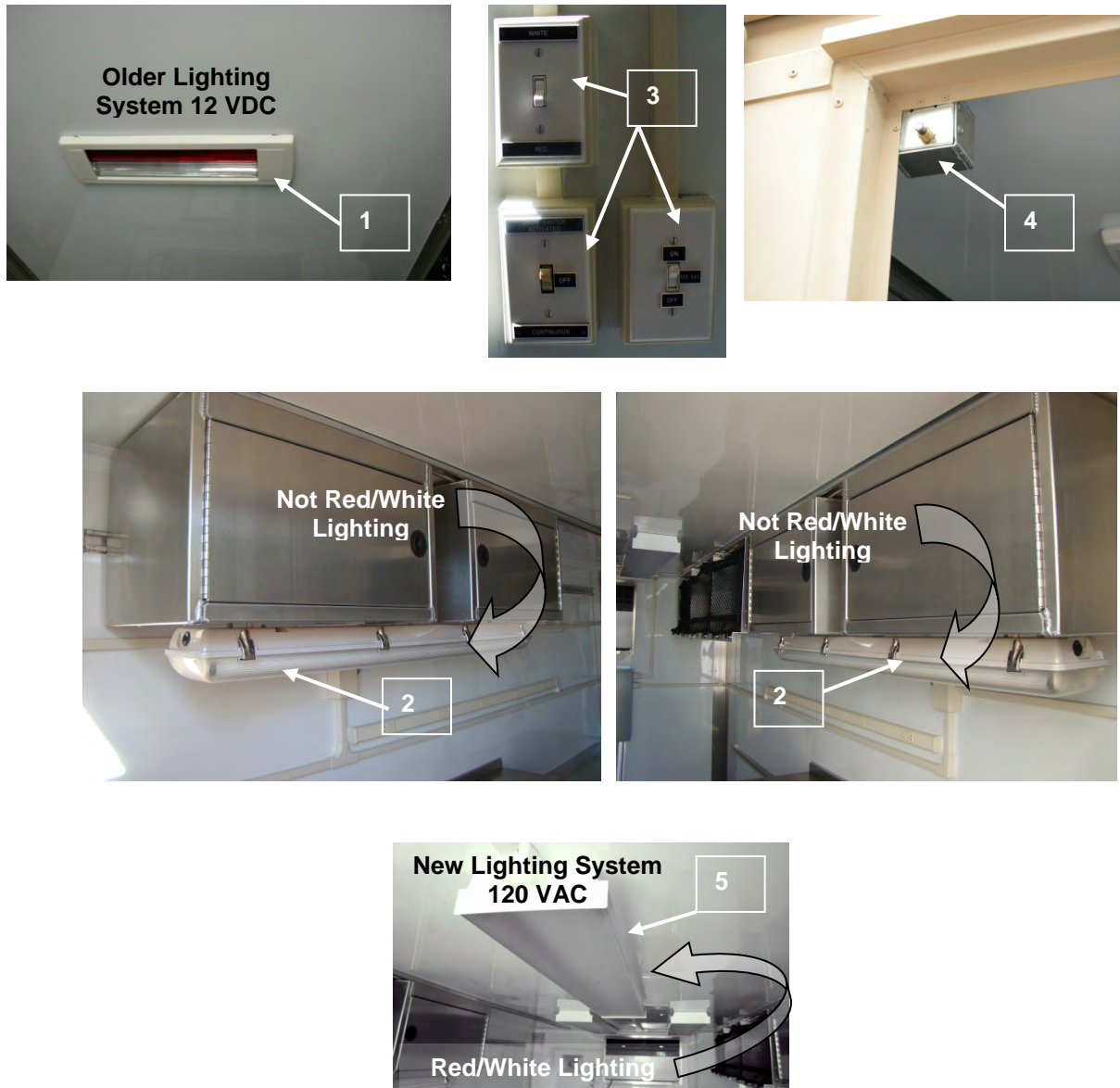


## Interior Lighting

The six interior 12 VDC ceiling lights (1) and the two 120 VAC workbench lights (2) are operated by a bank of three switches at the door (3) and a door activation switch (4), at the top of the door.

### NOTE

The 120 VAC workbench lighting (2) is independent of the red/white ceiling lights (1).



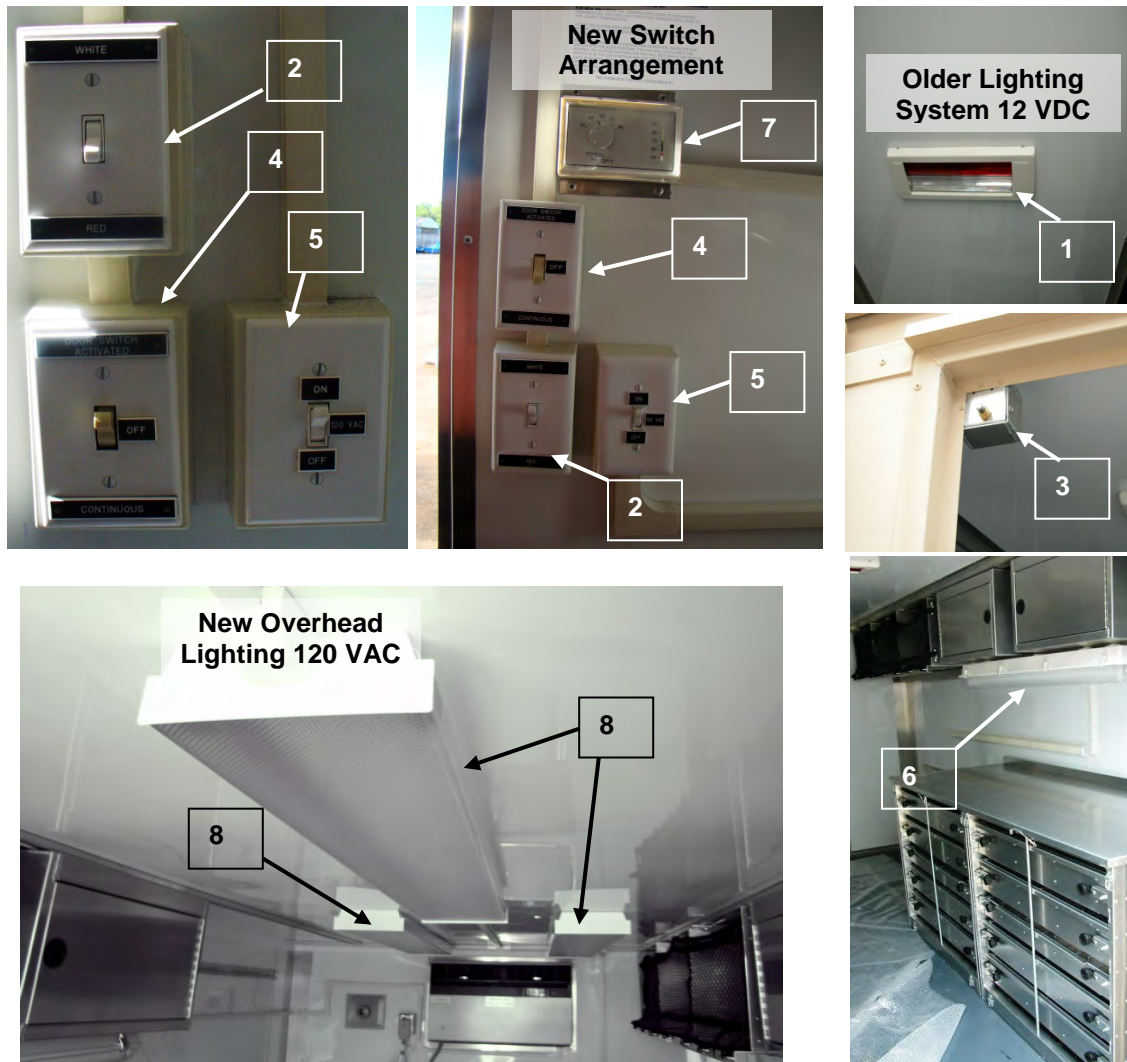
### NOTE

The 120 VAC workbench lighting (2) should not be used under red lighting blackout conditions. See new overhead lighting system (5) chapter 5 pages 0019 00-6 and 7.

## Interior Light Switches

### New Lighting Selection

Three 120 VAC ceiling light fixtures (8) are provided for red and white lighting conditions and are selected by the upper switch (2). The door lighting activation switch (3) will override the white selection and change the lighting to red when the door is opened and return to white when the door is closed. The three way selection switch (4), is used to select door activation mode, for continuous red/white lighting or ceiling lighting off. The switch to the right is a two way switch (5), used to operate the workbench white lights (6) and is independent of the red/white lighting system. There is a HVAC thermostat (7) above the group of switches.



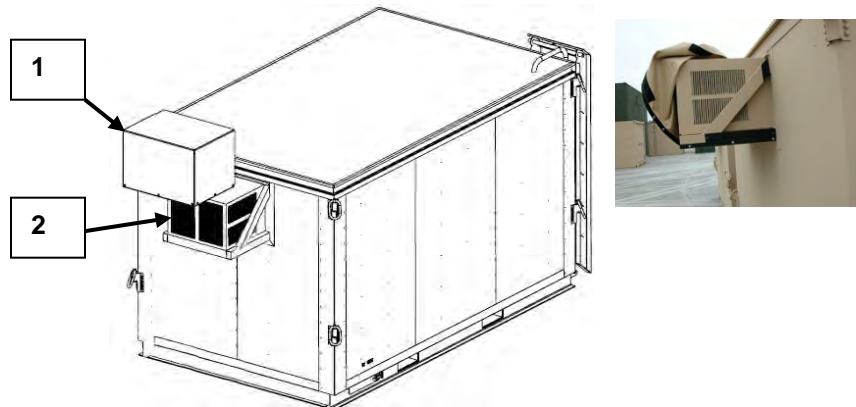
### NOTE

The 120 VAC workbench lighting (6) should not be used under red lighting blackout conditions. The new overhead lighting fixtures (8) is a Red/White lighting system described in chapter 5 pages 0019 00-6 and 7.

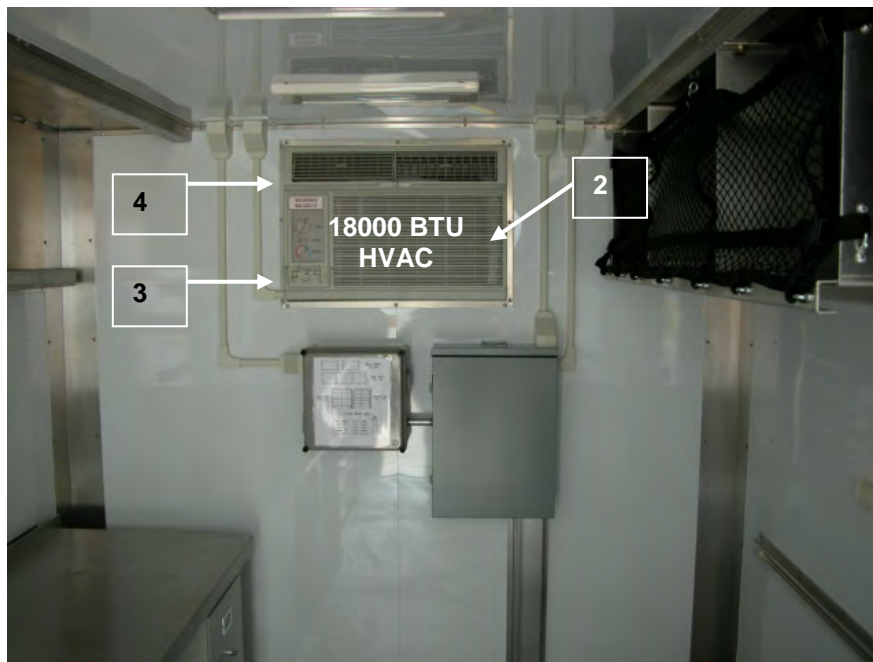
## Heating and Air-conditioning unit 18000 BTU HVAC

### **CAUTION**

Ensure that the exterior HVAC vinyl cover (1) has been removed and stored prior to operating the HVAC (2). Failure to do so will cause overheating damage to the unit.



1. The HVAC (2) is located in the center of the interior back wall.
2. Heating and cooling controls (3) are on the left side of the unit.
3. Switch the unit on and select the desired setting, heating or cooling.
4. The internal fan of the unit should activate and circulate air.
5. Adjust the directional vent fins (4) at the top of the unit to direct air flow.



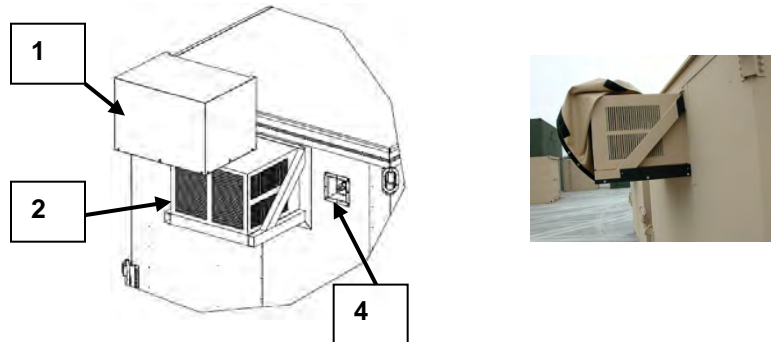
### **Note**

The 18000 BTU HVAC uses R22 Freon which is no longer supported and cannot be replaced.

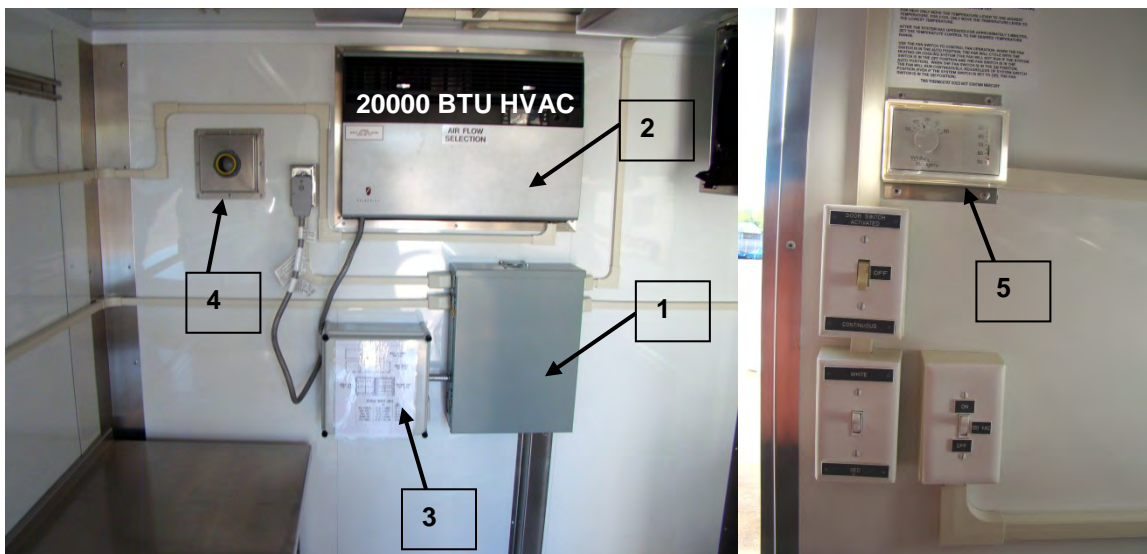
## New Heating and Air-conditioning unit 20000 BTU HVAC

### CAUTION

Ensure that the exterior HVAC vinyl cover (1) has been removed and stored prior to operating the HVAC (2) failure to do so will cause over heating damage to the unit.



The MWC circuit breaker panel (1) is located on the back wall just below the new 20000 BTU HVAC unit (2) Transformer, (3) Pass Through communication connection (4), the HVAC controls (5) are at the door.



### **NOTE**

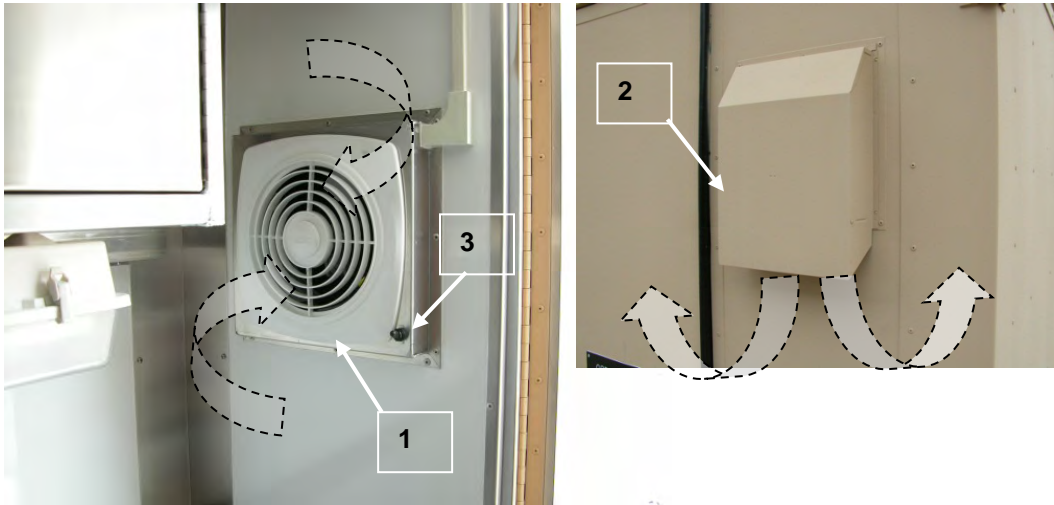
The new 20000 BTU HVAC uses available R410A Freon and has greater efficiency.  
The new HVAC Thermostat (5) is just inside the door to the left above the light switches.  
The new HVAC 20000 BTU system is applied from MWC Serial # AC15002028-04226,  
See Chapter 5 WP 0020.



## Ventilation Fan

The vent fan (1) is located to the right when entering the door. The fan (1) provides air circulation and removes and prevents buildup of off-gasses, smoke and fumes from the interior work space. The exterior vent cover (2) is a fixed cover that directs the fumes down and away from the MWC.

1. Activate the fan (1) by depressing the toggle switch (3).



### **WARNING**



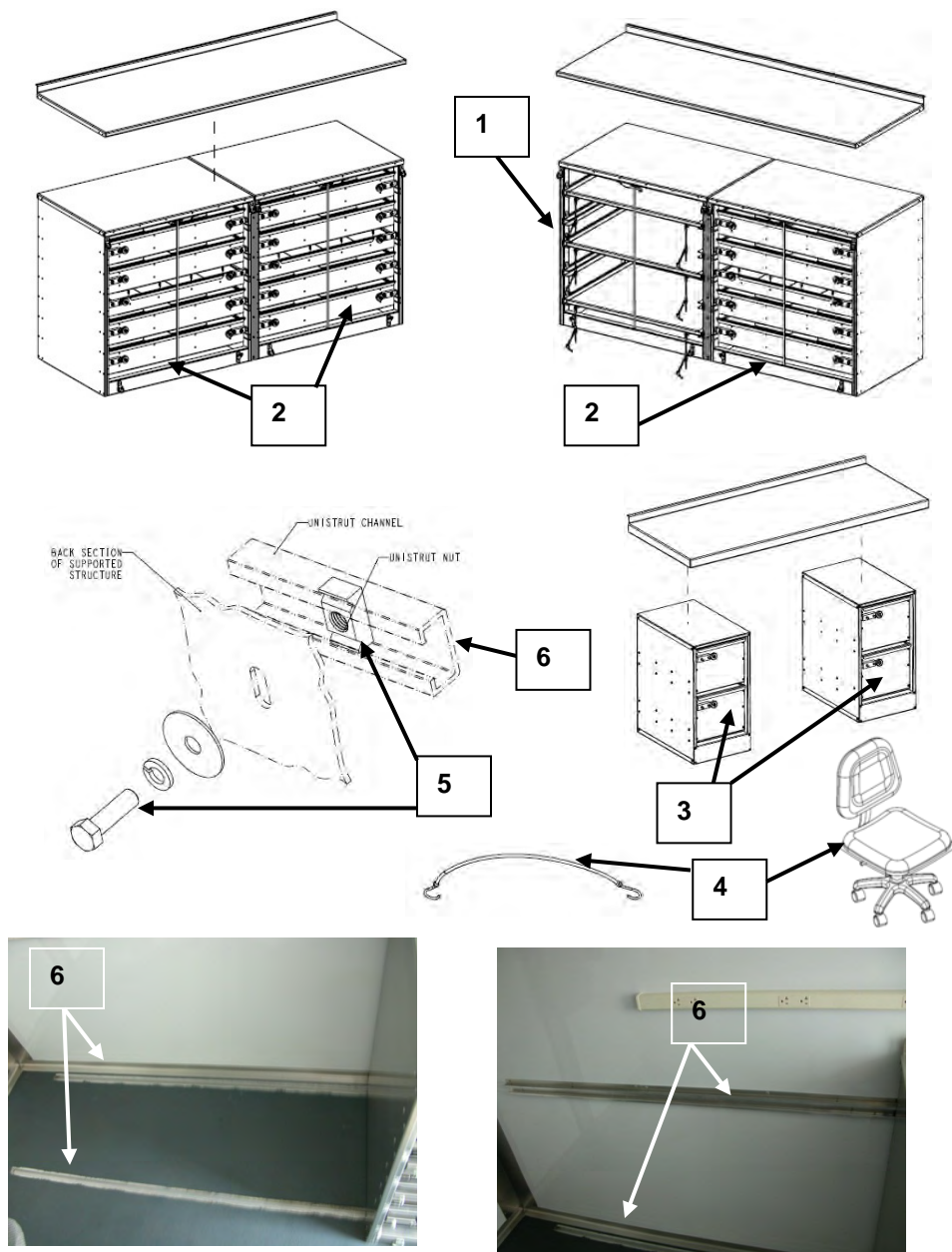
Always utilize the vent fan when painting, soldering, and welding or any operation that may emit off gasses, smoke or fumes that may be flammable, explosive or hazardous.

## Cabinetry

### Lower Cabinets Left and Right Side

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

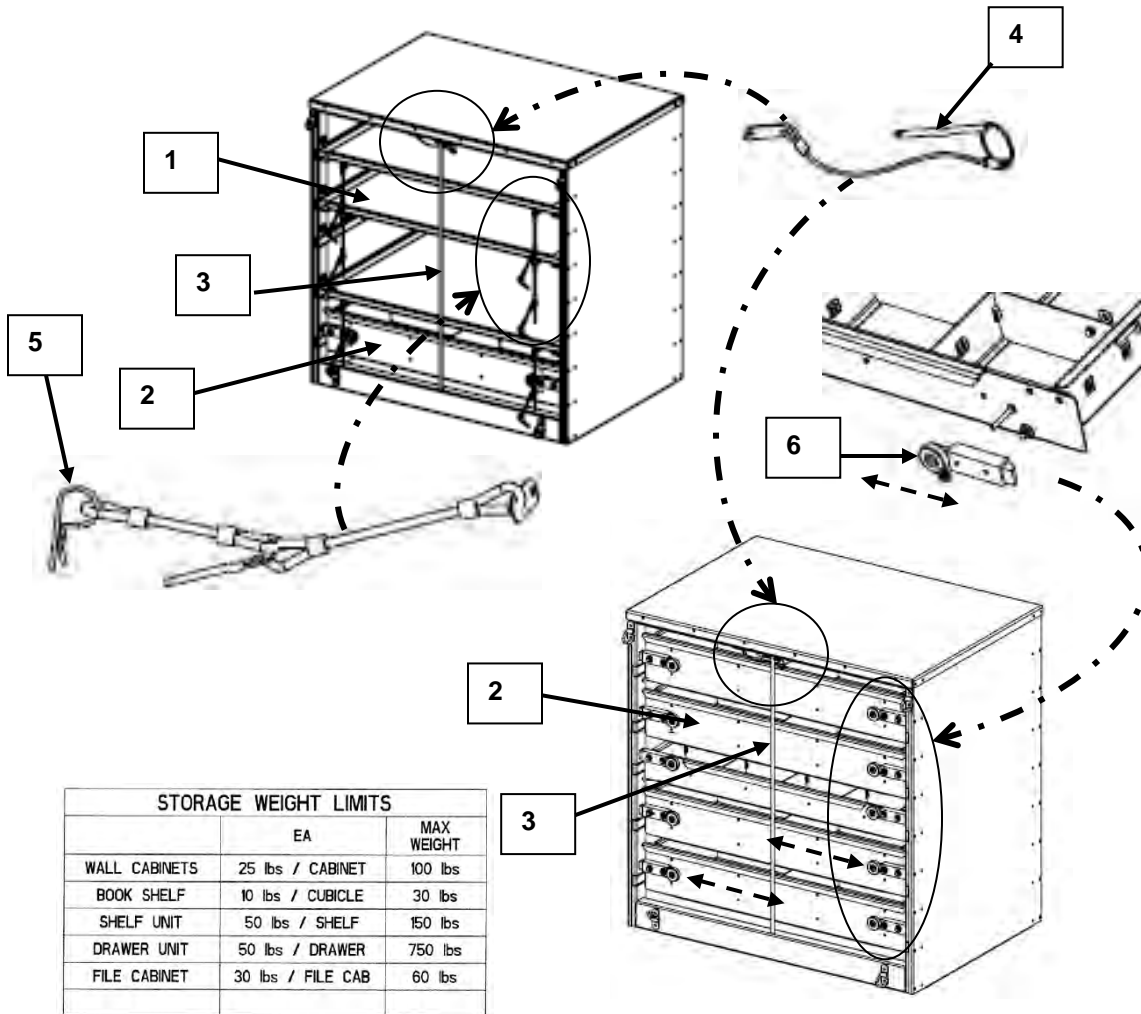
The cabinetry in the MWC is of unitized construction. There is space available for additional cabinets or other accessories on the left side at the rear of the workshop. There is a shelf cabinet (1) and a drawer cabinet (2) and a new two desk drawer unit (3) and swivel chair with retaining strap (4) on the left side. All units are retained by bolts and UNI-Strut nuts (5) and channels (6) in the floor and wall.



## Shelves and Drawers

### Shelf Units

Cabinet shelves (1) can be repositioned within the cabinet to accommodate bulk type material of various sizes and can be configured with drawers (2) within the cabinet. The shelves and drawer as a group are retained by a center restraint bar (3) with pin and lanyard (4) and each shelf (1) is retained by two hairpins with lanyards (5).



### Drawer Units

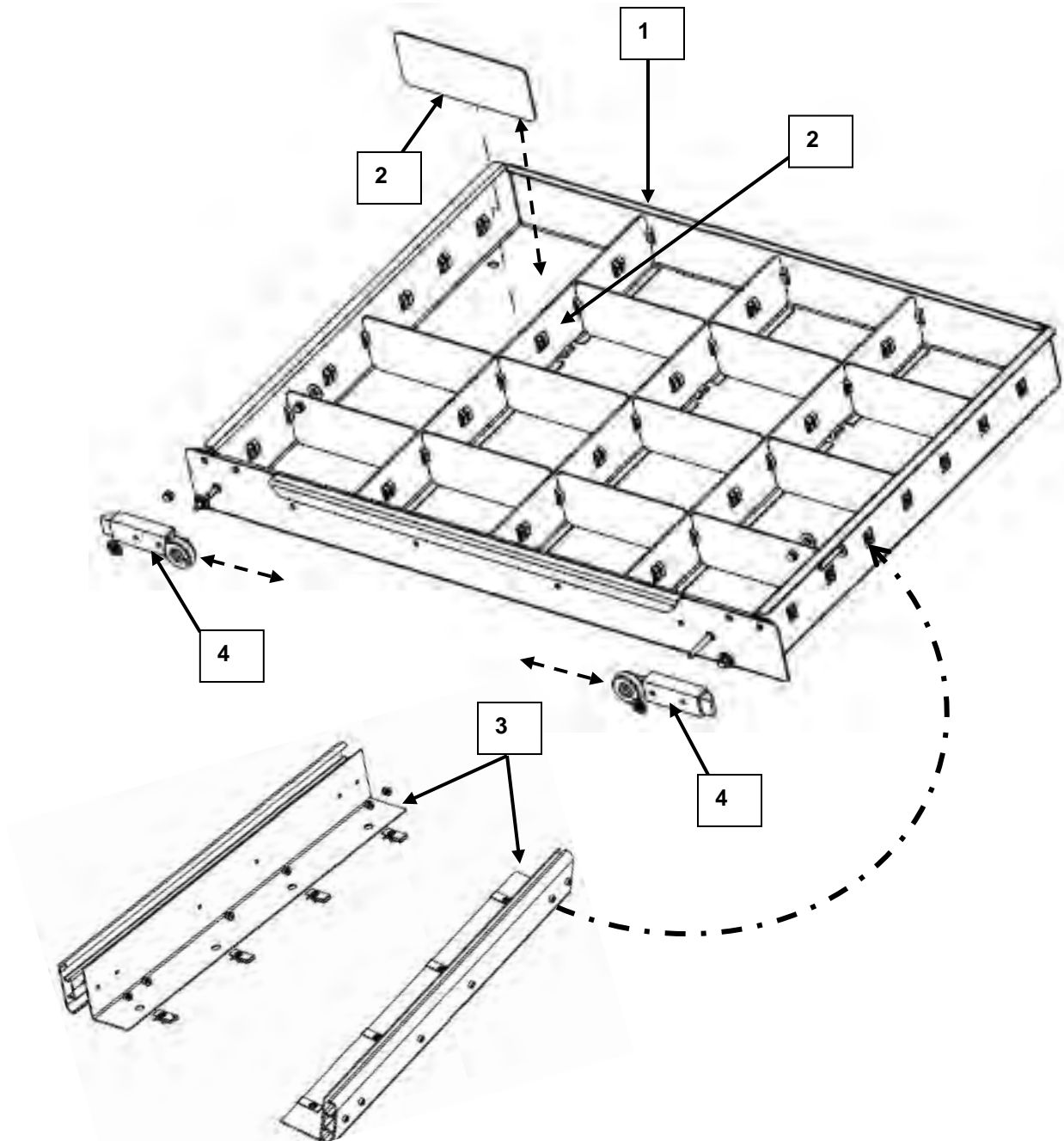
Cabinet drawers (2) are retained by the center restraint bar (3) and by left and right spring loaded slam latches (6).



## Cabinet Drawers

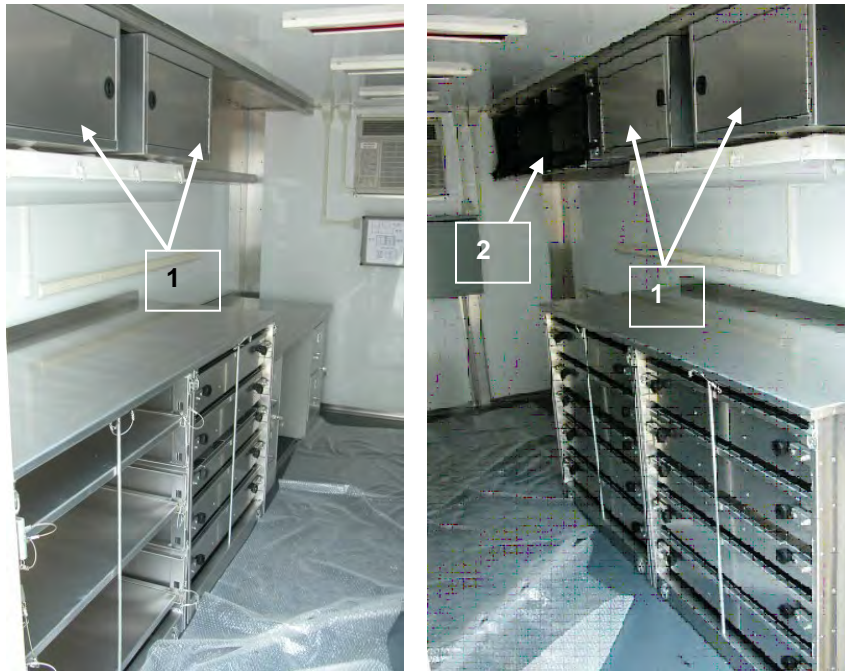
Cabinet Drawers (1) come in 6 and 4 inch depth sizes with matching drawer segment dividers (2) to arrange the drawers to storage needs. The drawers (1) have bearing slides (3) for ease of operation and spring loaded slam latches (4) to retain the drawers.

1. Remove the pin and drawer center restraint bar.
2. Pull the left and right slam latches (4) toward the center while pulling the drawer (1) outward.
3. Arrange the dividers (2) to storage needs.

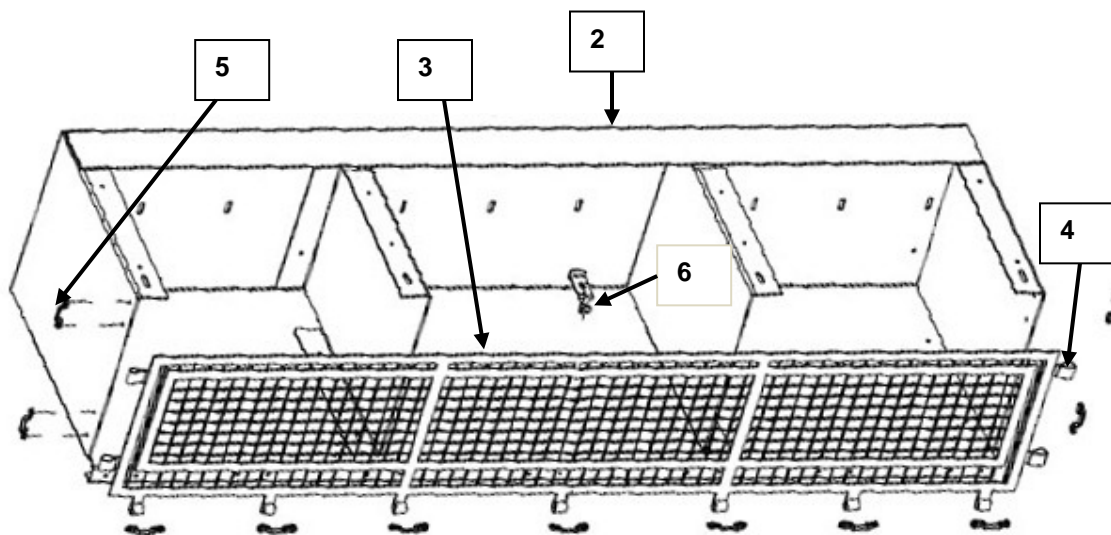


### Overhead Cabinets and Shelves

The MWC has additional cabinets (1) and book shelves (2) above the work space for storage of documents and other material.



Book shelves (2) have a net (3) to retain material while the MWC is moving. The net (3) is attached by eleven straps (4) and footman loops (5) and a center net retaining hook (6).



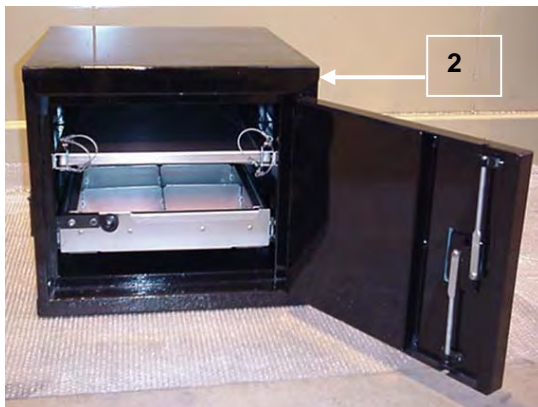
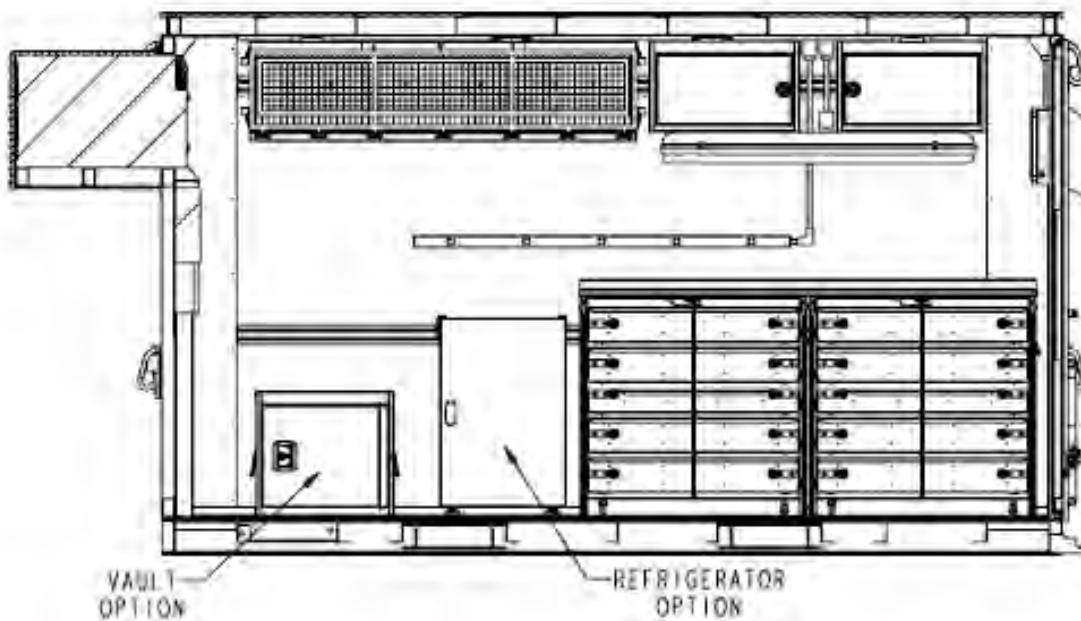
### Optional Equipment

There are two optional components, which include a refrigerator (1) and a vault (2) to secure documents available for the MWC.

#### NOTE

The optional refrigerator (1) and vault (2) are factory installed and must be requested when ordering the MWC, to provide the installed supporting brackets.

#### SIDE CUTAWAY VIEW



### END OF WORK PACKAGE

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**OPERATOR INSTRUCTIONS****FPU® SYSTEMS OPERATION MANUAL  
(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)  
BOH Modular Workshop Container (MWC)  
BOH FPU Field Pack-up Units****OPERATION UNDER UNUSUAL CONDITIONS**

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**INITIAL SETUP:**

MWC Downloaded and Operating

**Maintenance Level**

Operator/Crew

**Personnel Required**Two (plus one supervisor)

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This work package provides instructions for the operation of the MWC exterior parts under unusual conditions. These include adverse weather, nuclear, biological and chemical attack, and emergency blackout conditions.

**Operation in Rain and/or Mud**

1. Provide an adequate drainage ditch to prevent standing water around the MWC vehicle.
2. Secure all accessories and container during extremely harsh rain.

**Operation in Hot Weather**

1. Use gloves when operating door handle, stairway, and MWC tie-down rigging, handrail during extreme hot conditions to prevent burning hands and fingers.

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**WARNING**

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In extreme hot conditions, do not touch metal parts with bare hands. Severe skin damage may result.

**Operation in Snow, Ice, or Extreme Cold****WARNING**

In extreme cold conditions, do not touch metal parts with bare hands. Severe skin damage may result.

**Interim Nuclear, Biological, and Chemical (NBC) Decontamination Procedures****WARNING**

The MWC is NOT designed for active operations in contaminated NBC Environments. Do not operate the MWC in contaminated NBC environments. If possible, cease operation in the MWC system prior to an NBC event and close all doors.

**END OF WORK PACKAGE**