TM 10-5419-207-10

TECHNICAL MANUAL

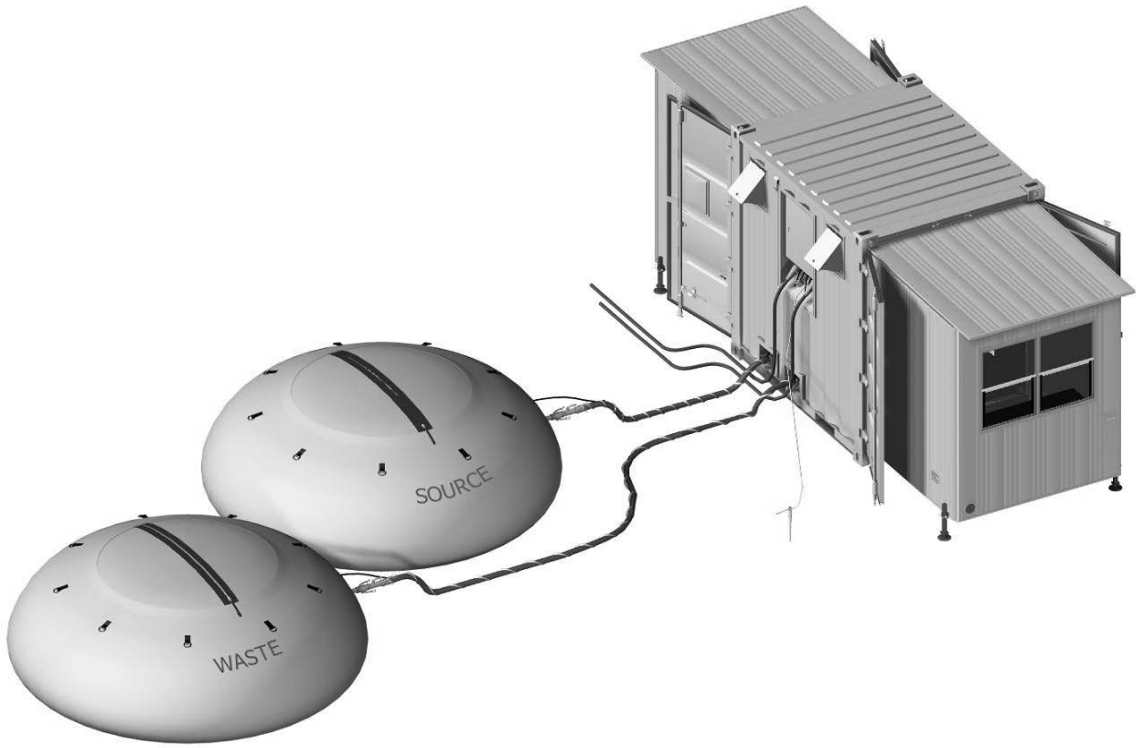
OPERATOR'S MANUAL

FOR

EXPEDITIONARY TRICON KITCHEN SYSTEM (ETKS)

(NSN: 5419-01-571-4107) (Green)

(NSN: 5419-01-571-4108) (Tan)



HEADQUARTERS, DEPARTMENT OF THE ARMY

7 NOVEMBER 2016

WARNING SUMMARY

This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation of this equipment. Failure to observe these precautions could result in serious injury or death to personnel. Also included are explanations of safety and hazardous materials icons used within this technical manual.

FIRST AID DATA

First aid is the care given to the sick or injured before being treated by medical personnel.
For First Aid treatment, refer to TC 4-02.1.

GENERAL SAFETY WARNING ICONS

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

FLYING PARTICLES – arrows bouncing off face with face shield shows that particles flying through the air will harm face.

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

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

HOT AREA – hand over object radiating heat shows that part is hot and can burn.

MOVING PARTS – hand with fingers caught between gears shows that the moving parts of the equipment present a danger to life or limb.

SHARP OBJECT – pointed object in hand shows that a sharp object presents a danger to limb.

GENERAL SAFETY WARNINGS DESCRIPTION

WARNING

The Expeditionary TRICON Kitchen System (ETKS) requires 208VAC, 3-phase and 110VAC, single phase 50-60Hz electrical power to operate the various subsystems. Only maintenance personnel shall conduct servicing beyond troubleshooting on electrical controls and circuits. Contact with energized connections will result in serious personal injury or death. Seek immediate medical attention if injury occurs.

The ETKS and generator or shore power source must be electrically grounded. Do not stand in water while handling live power cable or electrical shock may result. Position all power cables so that they are out of the way during operation and are not lying in the water. Failure to establish electrical ground may result in equipment damage, serious injury, or death from electrical malfunction. Seek immediate medical attention if injury occurs.

WARNING

The ETKS contains folding panels that create pinch points when the unit is being set up and taken down. Be aware of rotating blades on the ETKS ventilation fans and air conditioner. Personnel must keep their hands, feet, clothing, and loose personal items clear while equipment is operating. Failure to follow this warning may result in serious personal injury or death. Seek immediate medical attention if injury occurs.

WARNING

When raising or lowering the wings, one member of the crew must act as a spotter to ensure that all personnel stay clear. The spotter will also make certain that the folded wing walls remain in position when the roof is being lowered. Failure to follow this warning may result in serious personal injury or death. Seek immediate medical attention if injury occurs.

GENERAL SAFETY WARNINGS DESCRIPTION – CONTINUED

WARNING

The 3000-gal collapsible water bags require three personnel to lift. The air conditioner and 50-ft power cables require two personnel to lift. Hoses and other items are heavy and should be lifted by multiple personnel when possible. Serious injury to personnel could result from improper lifting.

Exercise safe lifting techniques when deploying the wings. Use your legs as a base when lifting or lowering the roof or floor. Seek immediate medical attention if injury occurs.

WARNING

The steam and hold oven, griddle, convection oven, cook and hold oven, immersion heater, air conditioner (operating in heat mode) and space heater can have surface temperatures up to 500ºF (200°C). Avoid contact with these hot surfaces. Failure to follow this warning may result in serious burn injury to personnel. Seek immediate medical attention if injury occurs.

WARNING

Precautions must be taken when working with pressurized water systems. Residual pressure must be vented or isolated to prevent release before hoses, fittings, or equipment are connected or disconnected. Failure to follow this warning may result in personal injury. Seek immediate medical attention if injury occurs.

WARNING

Compressed air used for cleaning or drying purposes, clearing restrictions, or purging water lines should never exceed 30 psi (207 kPa). Wear protective clothing (goggles/shield, gloves, etc.), and use caution to avoid injury to personnel. Seek immediate medical attention if injury occurs.

GENERAL SAFETY WARNINGS DESCRIPTION – CONTINUED

WARNING

Before moving the ETKS, ensure that all loose equipment inside the unit is properly stowed. On the ETKS exterior, ensure ventilation duct covers are latched, power distribution panel door is secured, and container doors are closed and secured. Failure to follow this warning may result in injury to personnel or damage to equipment. Seek immediate medical attention if injury occurs.

WARNING

Before moving the ETKS, ensure that all loose equipment is properly stowed and that nothing will drag on the ground. Failure to follow this warning may result in injury to personnel or damage to equipment. Seek immediate medical attention if injury occurs.

WARNING

Operating personnel must be familiar with system operation, warnings, and emergency procedures prior to operating the ETKS. Failure to operate this equipment properly can cause severe injury or death to yourself or other personnel working nearby. Seek immediate medical attention if injury occurs.

HAZARDOUS MATERIALS ICONS

BIOLOGICAL – abstract symbol bug shows that a material may contain bacteria or viruses that 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.

POISON – skull and crossbones shows that material is poisonous or is a danger to life.

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

HAZARDOUS MATERIALS WARNINGS DESCRIPTION

WARNING

Wastewater generated during operation may contain biohazardous materials. When sanitizing equipment or maintaining or servicing water plumbing or associated components, personnel must wear impermeable gloves and goggles for protection. Failure to follow this warning may result in serious illness or death to personnel.

WARNING

In the event of a fluorescent lamp breakage, care must be taken in removing broken glass fragments and phosphorus dust that may be dispersed from the fixture. Inhaling phosphorus dust can cause serious personal illness.

WARNING

Bleach and other sanitizers used with the ETKS are irritants. Operators must refer to Material Safety Data Sheet for pertinent information. Impermeable gloves and eye protection must be worn when handling or dispensing these items. Failure to follow this warning may result in personal illness or injury.

WARNING

Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. To prevent this, refer to TM 9-247 for further instructions.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE: Zero in the "Change No." column indicates an original page or work package.

Date of issue for the original manual is:

Original 7 NOVEMBER 2016

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 48 AND TOTAL NUMBER OF WORK PACKAGES IS 73, CONSISTING OF THE FOLLOWING:

Page / WP No.	Change No.	Page / WP No.	Change No.
Front Cover	0	WP 0038 (2 pgs)	0
Warning Summary (6 pgs)	0	WP 0039 (30 pgs)	0
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HEADQUARTERS, DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 7 NOVEMBER 2016

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REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any errors, or if you would like to recommend any improvements to the procedures in this publication, please let us know. The preferred method is to submit your DA Form 2028 (Recommended Changes to Publications and Blank Forms) through the Internet on the TACOM Unique Logistics Support Applications (TULSA) Web site. The Internet address is https://tulsa.tacom.army.mil. Access to all applications requires CAC authentication, and you must complete the Access Request form the first time you use it. The DA Form 2028 is located under the TULSA Applications on the left-hand navigation bar. Fill out the form and click on SUBMIT. Using this form on the TULSA Web site will enable us to respond more quickly to your comments and to better manage the DA Form 2028 program. You may also mail, e-mail, or fax your comments or DA Form 2028 directly to the U.S. Army TACOM Life Cycle Management Command. The postal mail address is U.S. Army TACOM Life Cycle Management Command, ATTN: AMSTA-LCL-IMP/TECH PUBS, MS 727, 6501 E. 11 Mile Road, Warren, MI 48397-5000. The e-mail address is usarmy.detroit.tacom.mbx.ilsc-tech-pubs@mail.mil. The fax number is DSN 786-1856 or Commercial (586) 282-1856. A reply will be furnished to you.

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HOW TO USE THIS MANUAL

HOW TO OBTAIN TECHNICAL MANUALS

When a new system is introduced to the Army inventory, it is the responsibility of the receiving units to notify and inform the Unit Publications Clerk that a Technical Manual is available for the new system. Throughout the life cycle of the new system, the Publications Proponent will also provide updates and changes to the Technical Manual.

To receive new Technical Manuals or change packages to fielded Technical Manuals, provide the Unit Publications Clerk the full Technical Manual number, title, date of publication, and number of copies required. The Unit Publications Clerk will then justify the request through the Unit Publications Officer. When the request is approved, DA Form 12 is used to order the Technical Manual from the Army Publishing Directorate (APD). Obtain the form and request a publications account from the APD Web site at http://www.apd.army.mil. Once on the Website, click on the “Orders/Subscriptions/Reports” tab. From the dropdown menu, select “Establish an Account,” then select “Tutorial” and follow the instructions in the tutorial presentation.

Complete information for obtaining Army publications can be found in DA PAM 25-33.

HOW TO USE THIS MANUAL

In this manual, primary chapters appear in upper case/capital letters; work packages are presented in numeric sequence, e.g., 0001, 0002; paragraphs within a work package are not numbered and are presented in a titled format. For a first level paragraph, titles are in all upper case/capital letters, e.g., FRONT MATTER. Subordinate paragraph titles will have the first letter of the first word of each principle word all upper case/capital letters, e.g., Manual Organization and Page Numbering System. The location of additional material that must be referenced is clearly marked. Illustrations supporting maintenance procedures/text are located underneath, or as close as possible to, their referenced paragraph.

FRONT MATTER – Front matter consists of front cover, warning summary, title block, table of contents, and how to use this manual.

CHAPTER 1 – GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION. Chapter 1 contains introductory information on the Expeditionary TRICON Kitchen System (ETKS) and its associated equipment, as well as equipment description and data and theory of operation.

CHAPTER 2 – OPERATOR INSTRUCTIONS. Chapter 2 contains preparation for use information, operating information for usual and unusual conditions, and controls and indicators.

CHAPTER 3 – TROUBLESHOOTING INSTRUCTIONS. Chapter 3 contains troubleshooting procedures and individual work package information for crew.

CHAPTER 4 – PMCS MAINTENANCE INSTRUCTIONS. Chapter 4 contains PMCS maintenance procedures.

CHAPTER 5 – CREW MAINTENANCE INSTRUCTIONS. Chapter 5 contains all the crew maintenance information and individual service maintenance work packages.

CHAPTER 6 – SUPPORTING INFORMATION. Chapter 6 contains references, components of end item and basic issue items lists, additional authorization list, and expendable and durable items list.

REAR MATTER – Rear matter consists of an alphabetical index, DA Form 2028, authentication page, and back cover.

HOW TO USE THIS MANUAL – CONTINUED

Manual Organization and Page Numbering System. The manual is divided into eight 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 starting at page 1. The work package has its own page numbering scheme and 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 where XXXX is the work package number (e.g. 0010 is work package 10) and YY represents the number of the page within that work package. A page number such as 0010-1/2 Blank means that page 1 contains information but page 2 of that work package has been intentionally left blank.

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

Example: If the reader were looking for information about the purpose of the ETKS, which is a general information topic, the table of contents indicates that general information can be found in Chapter 1. Scanning down the listings for chapter 1, information on the purpose of the ETKS can be found in WP 0001, General Information. (I.e. Work Package 01).

An Alphabetical Index can be found at the back of the manual; specific topics are listed with the corresponding work package number.

CHAPTER 1

GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION FOR EXPEDITIONARY TRICON KITCHEN SYSTEM (ETKS)

CREW MAINTENANCE

GENERAL INFORMATION

SCOPE

Type of Manual

This technical manual provides operator maintenance instructions for the Expeditionary TRICON Kitchen System (ETKS), (NSN: 5419-01-571-4107) (Green) (NSN: 5419-01-571-4108) (Tan).

Model Number(s) and Equipment Name

EXPEDITIONARY TRICON KITCHEN SYSTEM (ETKS)

Purpose of Equipment

The purpose of the ETKS is to provide food preparation facilities at field locations.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by (as applicable) DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual; DA PAM 738-751, Functional Users Manual for the Army Maintenance Management Systems - Aviation (TAMMS-A); or AR 700-138, Army Logistics Readiness and Sustainability.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your ETKS needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance.

If you have Internet access, the easiest and fastest way to report problems or suggestions is to go to https://aeps.ria.army.mil/aepspublic.cfm (scroll down and choose the “Submit Quality Deficiency Report” bar). The Internet form lets you choose to submit an Equipment Improvement Recommendation (EIR), a Product Quality Deficiency Report (PQDR) or a Warranty Claim Action (WCA).

You may also submit your information using an SF 368 (Product Quality Deficiency Report). You can send your SF 368 via e-mail, regular mail, or facsimile using the addresses/facsimile numbers specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual. We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

Corrosion specifically occurs with metals. It is an electrochemical process that causes the degradation of metals. It is commonly caused by exposure to moisture, acids, bases, or salts. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking.

Plastics, composites, and rubbers can also degrade. Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically UV) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking.

SF Form 368, Product Quality Deficiency Report should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

OZONE DEPLETING SUBSTANCES (ODS)

There are no ozone depleting substances used in the operation or maintenance of the ETKS.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Refer to TM 750-244-3, Procedures for Destruction of Equipment to Prevent Enemy Use (Mobility Equipment Command).

PREPARATION FOR STORAGE OR SHIPMENT

There are no specific requirements for storage or shipment. Refer to WP 0019 - WP 0021 of this manual to prepare the ETKS for movement. In this configuration the ETKS will be ready for storage or shipment.

NOMENCLATURE CROSS-REFERENCE LIST

Table 1. Nomenclature Cross-Reference List.

Common Name	Official Nomenclature
50-ft Power Distribution Cable	Cable Assembly, Special Purpose, Electrical
Appliance Manual	Manual, Operating, Expeditionary TRICON Kitchen System
Cook and Hold Oven	Cabinet, Food Warming, Electrically Heated
Convection Oven	Oven, Baking and Roasting, Deck
Floor Mat	Mat, Floor, Anti-Fatigue, 3 ft X 5 ft
Floor Mat	Mat, Floor, Anti-Fatigue, 42 in X 72 in
Food Carriers	Food Container, Insulated
Griddle	Griddle, Self-Heating
Kitchen	Expeditionary TRICON Kitchen System
Liquid Dispenser	Dispenser, Liquid, Insulated
Power Cable	Service Feeder
Protective Gear Rack	Bracket, Mounting, Helmet
Sanitation Sink	Sanitation System, Sink
Sanitation Sink Supply Hose	Hose Assembly, Supply, Sanitation Sink, 3/4 in X 7 ft
Sanitation Sink Waste Hose	Hose Assembly, Waste, Sanitation Sink, 1-1/2 in X 7 ft
Serving Table	Table Assembly, 24 in X 60 in
Spice Rack	Shelving, Storage and Display, Spice
Steam and Hold Oven	Cabinet, Food Warming, Steam Heated
Steam Kettle	Kettle, Steam Jacketed
Steel Wool	Wool, Metallic
SOURCE Water Bag	Tank, Fabric, Collapsible, 3000-Gal, “SOURCE”
Source Water Hose	Hose Assembly, Nonmetallic, 1-1/2 in, (Source Water)
Tie Down Strap	Strap, Tie-down, Ratchet, 1 in X 12 ft, 1500 lb Test
Utility Table	Table Assembly, 18 in X 72 in
Vent Fan	Fan, Tubeaxial
WASTE Water Bag	Tank, Fabric, Collapsible, 3000-Gal, “WASTE”
Wastewater Hose	Hose Assembly, Nonmetallic, 2 in (Wastewater)
Weapon Rack	Mount, Rifle
Wing Jack	Jack, Leveling-Support

LIST OF ABBREVIATIONS/ACRONYMS

Table 2. List of Acronyms and Abbreviations.

Acronym/Abbreviation	Meaning
A/C	Air Conditioner
Amp	Ampere
AR	Army Regulation
BER	Beyond Economical Repair
BTU	British thermal unit
°C	Degree Celsius
CAGEC	Commercial and Government Entity Code
Cfm	Cubic Feet Per Minute
cm	Centimeter
CPC	Corrosion Prevention and Control
Cu ft	Cubic Feet
Cu m	Cubic Meter
DA	Department of the Army
DA PAM	Department of the Army Pamphlet
EIR	Equipment Improvement Recommendation
ETKS	Expeditionary TRICON Kitchen System
°F	Degree Fahrenheit
FM	Field Manual
ft	Foot
Gal	Gallon
GFCI	Ground Fault Circuit Interrupter
Hz	Hertz (frequency or cycles per second)
IAW	In accordance with
In	Inch
inHg	Inch of Mercury
ISO	International Organization for Standardization
Kg	Kilogram
kW	Kilowatt
lb	Pound
L	Liter
m	Meter
MTOE	Modification Table of Organization and Equipment
NSN	National Stock Number
PMCS	Preventive Maintenance Checks and Services
PQDR	Product Quality Deficiency Report
Psi	Pounds Per Square Inch
QD	Quick Disconnect
Qt	Quart
Qty	Quantity
RPSTL	Repair Parts and Special Tools List
SF	Standard Form
TAMMS	The Army Maintenance Management System
TB	Technical Bulletin
TM	Technical Manual
TRICON	Triple container
TOE	Table of Organization and Equipment
VAC	Volts Alternating Current
WCA	Warranty Claim Action
WP	Work Package

SAFETY, CARE AND HANDLING

The following subparagraphs summarize the safety, care and handling requirements for the ETKS assembly.

Safety

Always pay attention to Warnings, Cautions and Notes appearing throughout the manual. They will appear prior to applicable procedures. Ensure you read and understand their content to prevent serious injury to yourself and others, or damage to equipment.

Care and Handling

Every effort shall be made to protect the equipment from weather elements, dust, dirt, oil, grease, and acid. When available, an environmentally controlled building should be used to store equipment. Equipment shall be stored in a dry, well-ventilated location and protected from pilferage, dampness, fire, dirt, insects, rodents, and direct sunlight.

END OF WORK PACKAGE

CREW MAINTENANCE

EQUIPMENT DESCRIPTION AND DATA

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

Characteristics

The Expeditionary TRICON Kitchen System (ETKS) (Figure 1) provides food preparation and servicing facilities at field locations. The ETKS is a self-contained unit housed within an International Organization for Standardization (ISO) frame triple container (TRICON). The container has two wings or sections that expand out of the base container for operation. These expanded sections provide an operational floor space approximately three times the size of a basic, non-expandable TRICON. The front of the unit is considered the end of the ETKS where the data and nameplates are located.

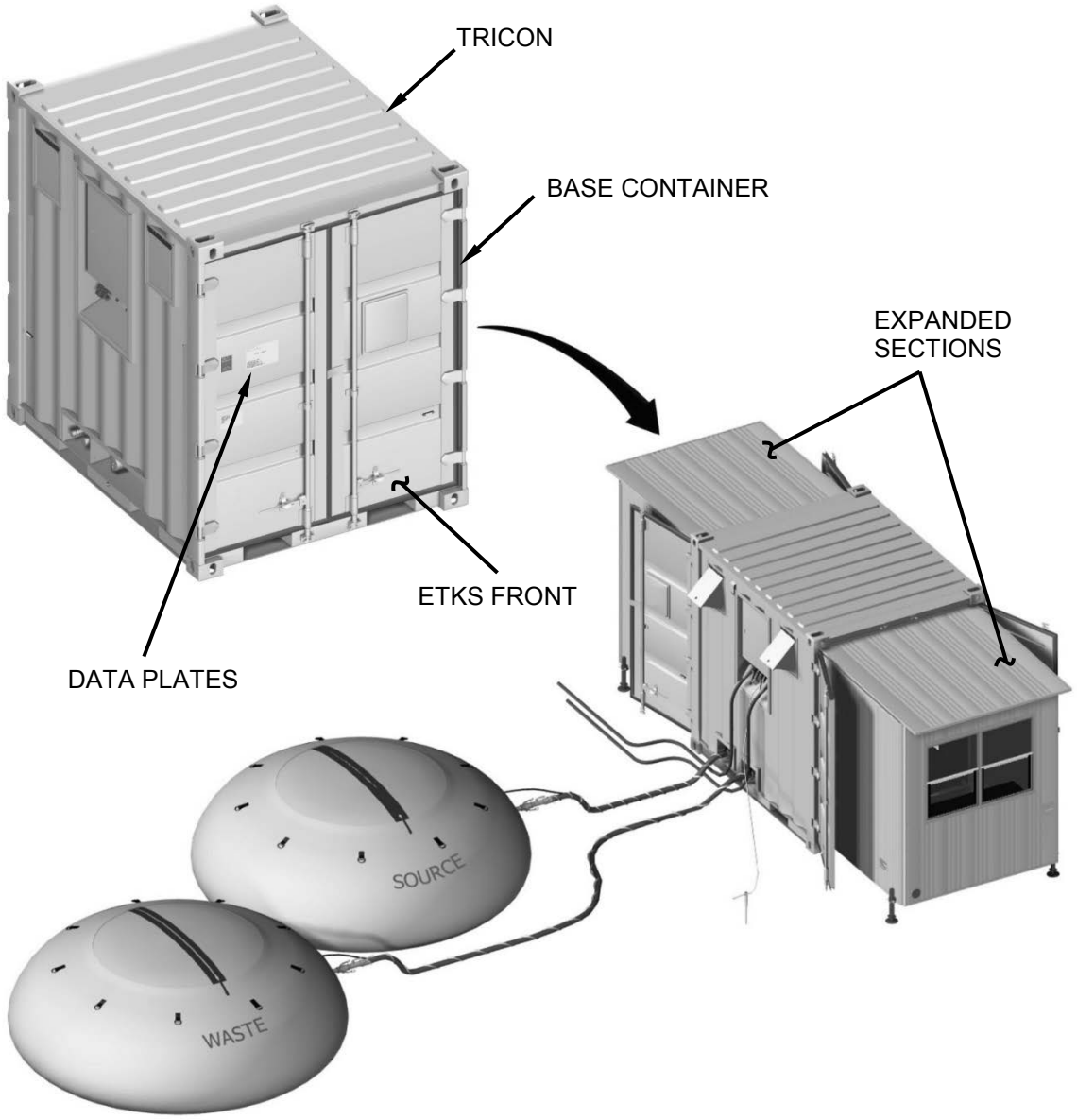


Figure 1. Expeditionary TRICON Kitchen System.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

ISO Container

The ETKS components are mounted in an 8 ft (2.44 m) wide x 8 ft. (2.44 m) high x 6.5 ft (1.98 m) long ISO container (Figure 2). Eight ISO corner fittings provide lifting, tie down, and attaching points for the ETKS. This allows the unit to be transported via a variety of military and commercial ground trailer and vehicle combinations. The ETKS is also transportable by C-130 and larger aircraft, rotary winged aircraft, sealift support watercraft, rail, and ship. Two sets of forklift pockets are provided in the frame base to allow the container to be lifted in either direction. The wide sides of the ISO frame contain fixed walls that house components and utility provisions used when the unit is set up for operation. The narrow sides of the ISO frame each have a set of double doors. The doors have locking bars that are used to secure the doors to the frame and provide added strength to the structure. The doors are sealed to protect the components and equipment packed within the unit from being exposed to the weather in the storage and transport mode. The doors also contain bubble levels that are used to level the unit during setup.

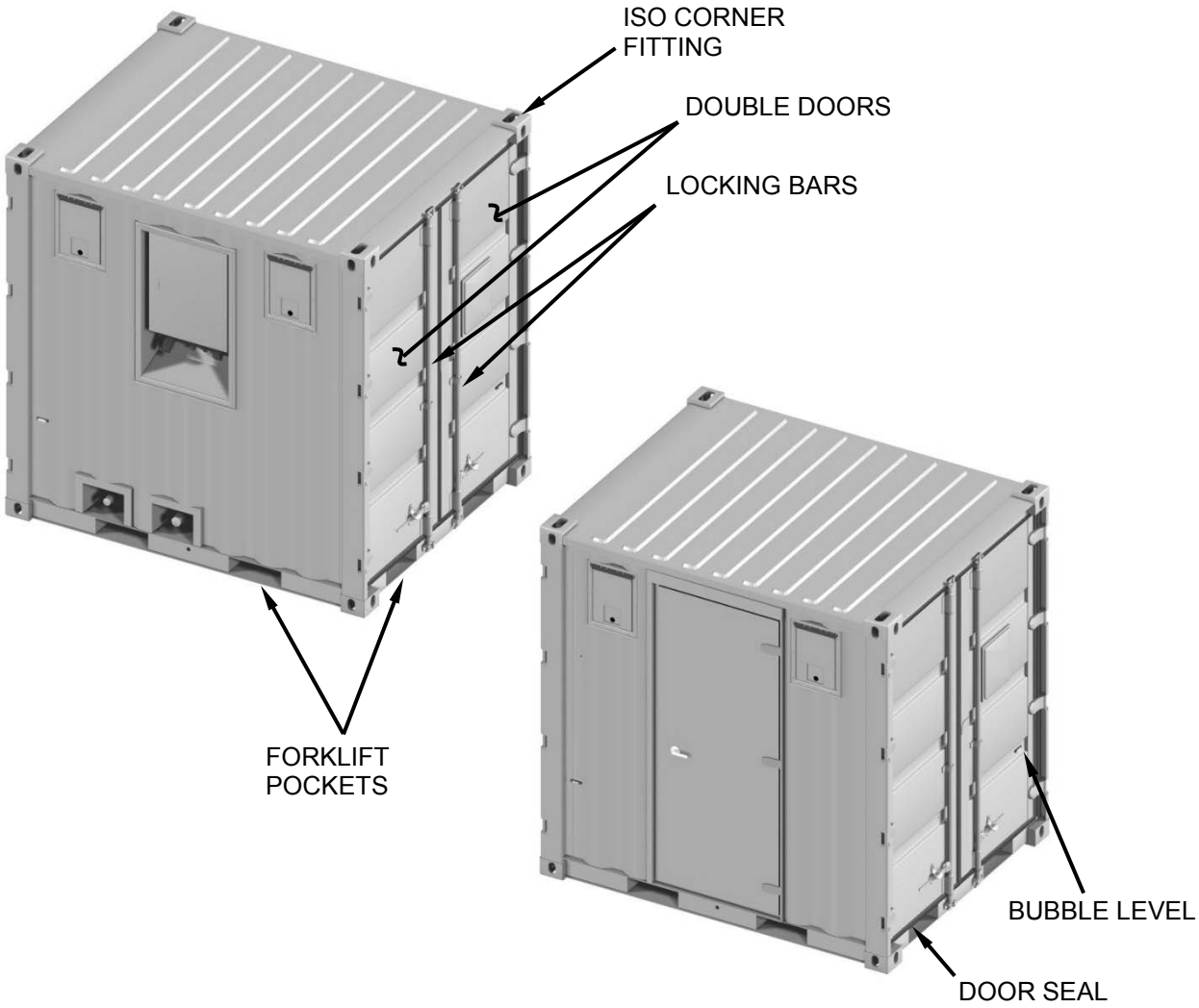


Figure 2. ETKS ISO Frame.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

Side Walls

The ETKS fixed side wall (Figure 3) components include ventilation inlet filter covers, a pressure relief device, ventilation fan covers, a waste drain connection, a water supply connection, input power connections, a power distribution panel, and the personnel door. One wall of the TRICON contains the power distribution panel. The power distribution panel includes water-proof electrical connectors that allow external power to be connected to the ETKS. The panel contains connections so that power out of the ETKS can be distributed to the unit's external source water heater, wastewater heater, and source and wastewater heat traces. The two input power connections are Class L connectors rated for 208 VAC, 3-Phase, 50-60 Hz, 100 amp service. External power to operate the auxiliary heaters is provided via four service receptacles each rated for single phase 120 VAC, 20 amps. The power distribution panel also contains circuit breakers that protect the unit's internal branch circuits and the chassis ground lug. The outboard upper corners of the fixed walls contain provisions to house the unit's ventilation system. The ventilation system consists of two filter air intakes and two exhaust fans. The filters and fans are covered with spring-hinged panels that pop out when the unit is set up and stow flat against the walls when the unit is packed up. Along the base of the fixed wall are provisions for connecting cold water supply and drain hoses to the unit. These provisions are male cam and groove type connections with protective caps. The water supply connection is 1.5 in (3.81 cm) and the drain connection is 2 in (5.08 cm). The side wall that has the electrical and water connections contains a pressure relief vent that allows pressure inside the container to equalize with outside pressure in the event of rapid decompression during air transport. The opposite wall contains a personnel door which provides access to the interior of the unit.

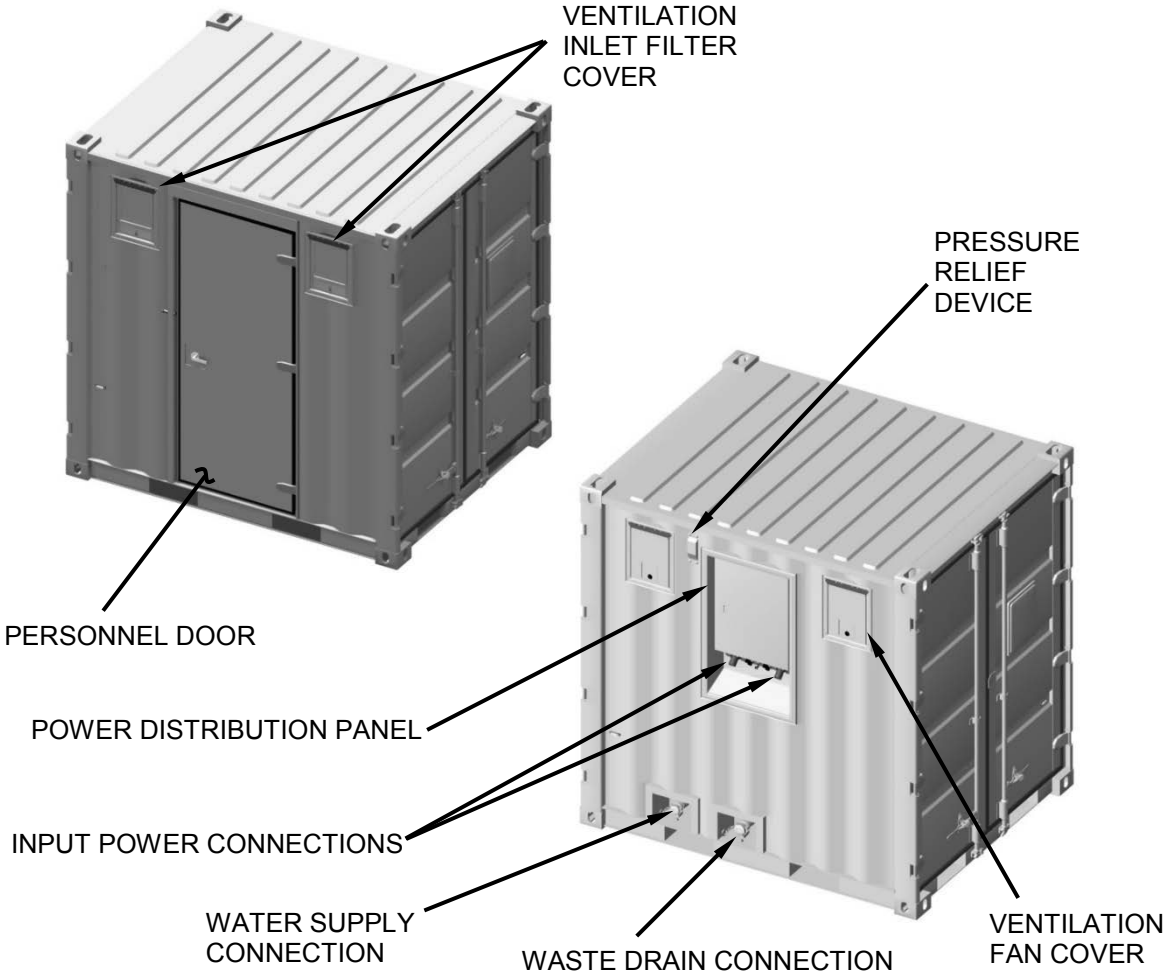


Figure 3. ETKS Fixed Side Wall Views.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

Expanded Frame

The ETKS expandable panel (Figure 4) components include hinged panels, sealed edges, panel latches, a power distribution cable pass through, support legs, and a service window. Behind each pair of double doors is a set of collapsible panels that form the ceiling, side walls, end walls, and floor of the expanded unit. Each panel section is hinged to allow it to be easily deployed and stowed. Seals are provided along the edges of the panels to ensure that the expanded sections are weather-tight when deployed. The panels have latches and latch receptacles located at strategic points to allow the panel sections to be secured to each other. The end wall of the front wing contains a service window for providing food and beverages. This end wall also has a pass through for a power distribution cable to provide power outside the unit. The rear end wall contains mounting provisions for a removable air conditioning unit. Mounting provisions are provided at the outer end of both side walls to attach jack stands that are used to provide added stability to the deployed sections.

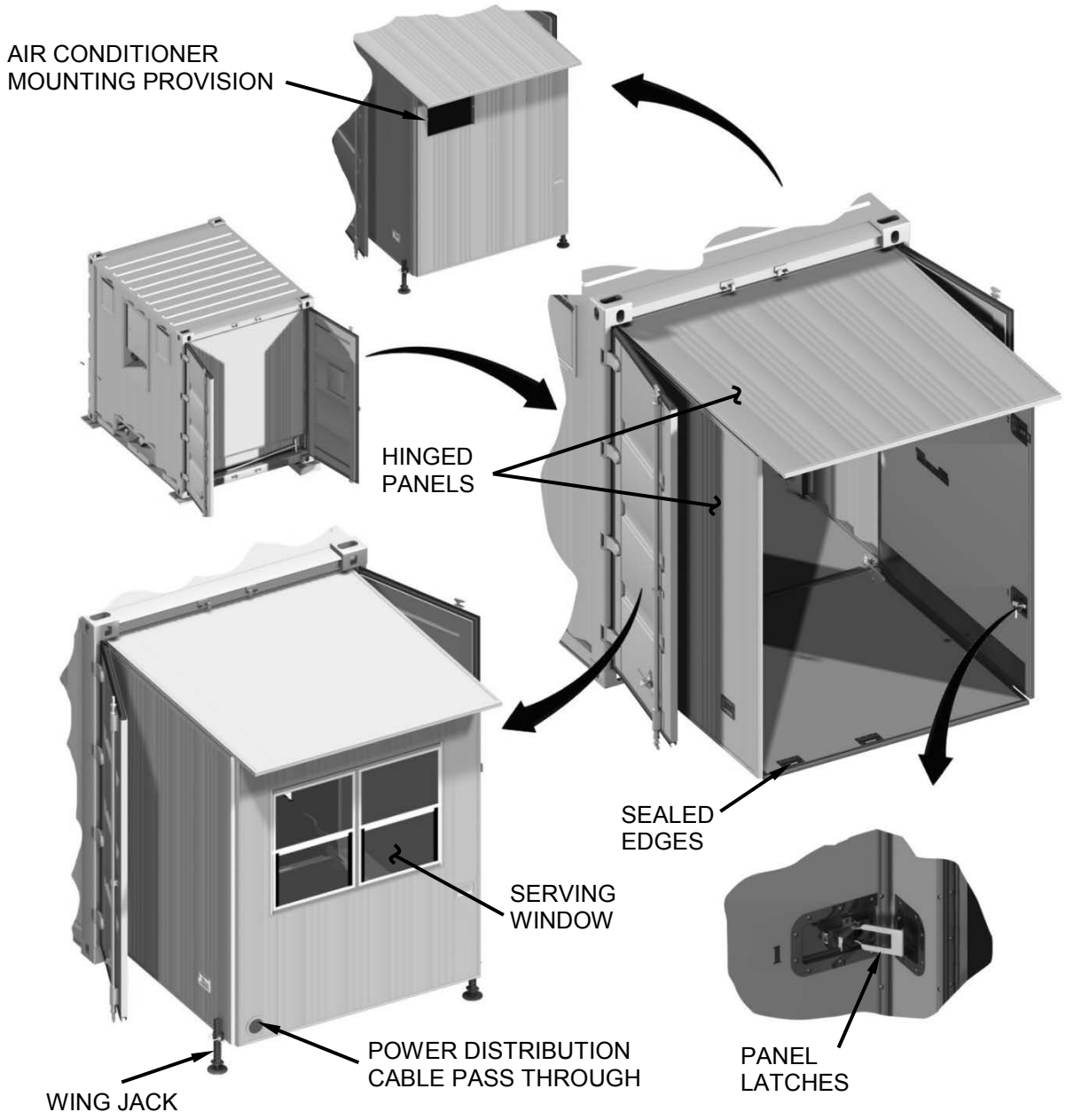


Figure 4. ETKS Expandable Panels.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

Interior Layout

The ETKS interior layout for the fixed area (Figure 5) components include a steam kettle, griddle, refrigerator with attached space heater, steam and hold oven, and light fixtures. The center area of the ETKS contains a refrigerator. A space heater is mounted below the refrigerator. Located on top of the refrigerator are a steam and hold oven, a griddle, and a steam kettle. Two fluorescent light fixtures are mounted in the ceiling above the appliances. The light fixtures contain both normal (white) light and blackout (blue) light. On the wall of the fixed section with the personnel door there is a light mode switch. There is also an emergency stop button and a ventilation fan switch. On the same wall is a protective gear rack and weapon rack.

The opposite wall in the fixed section contains dedicated plugs for the major appliances, as well as a 115 VAC GFCI duplex interior service receptacle.

The front expandable section of the ETKS (Figure 6) contains both a convection oven and a cook and hold oven mounted on a rolling rack. A folding table is located under the service window.

The rear expandable section of the ETKS contains a sanitation sink, which has three sink basins for washing and rinsing cookware. The sink contains wastewater hose connections and source water hose connections. A shelf is mounted above the sink. A spice rack is also mounted on the left wall of the rear expandable section. There is a utility table located under the mounted rack. Also mounted on the end wall is a removable air conditioner that has both heating and cooling capability. Drains are provided in the floor in each section of the ETKS.

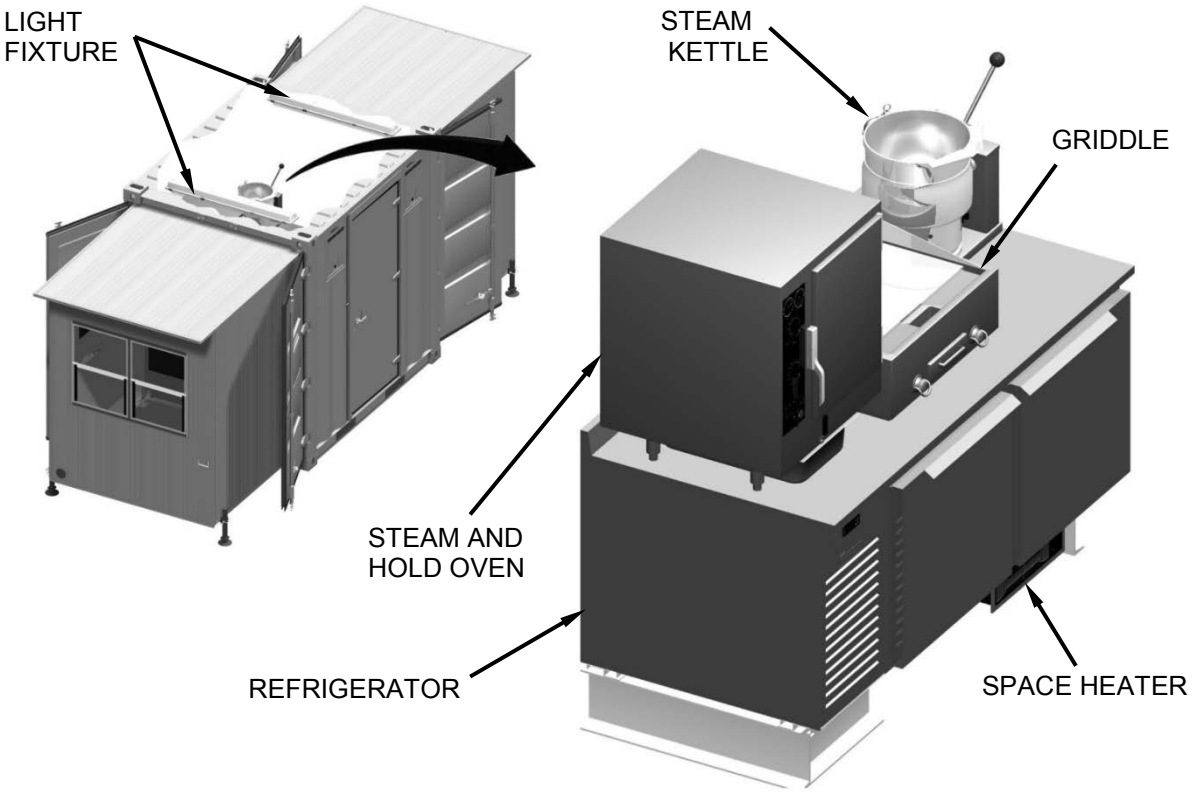


Figure 5. ETKS Interior Layout (Fixed Area).

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

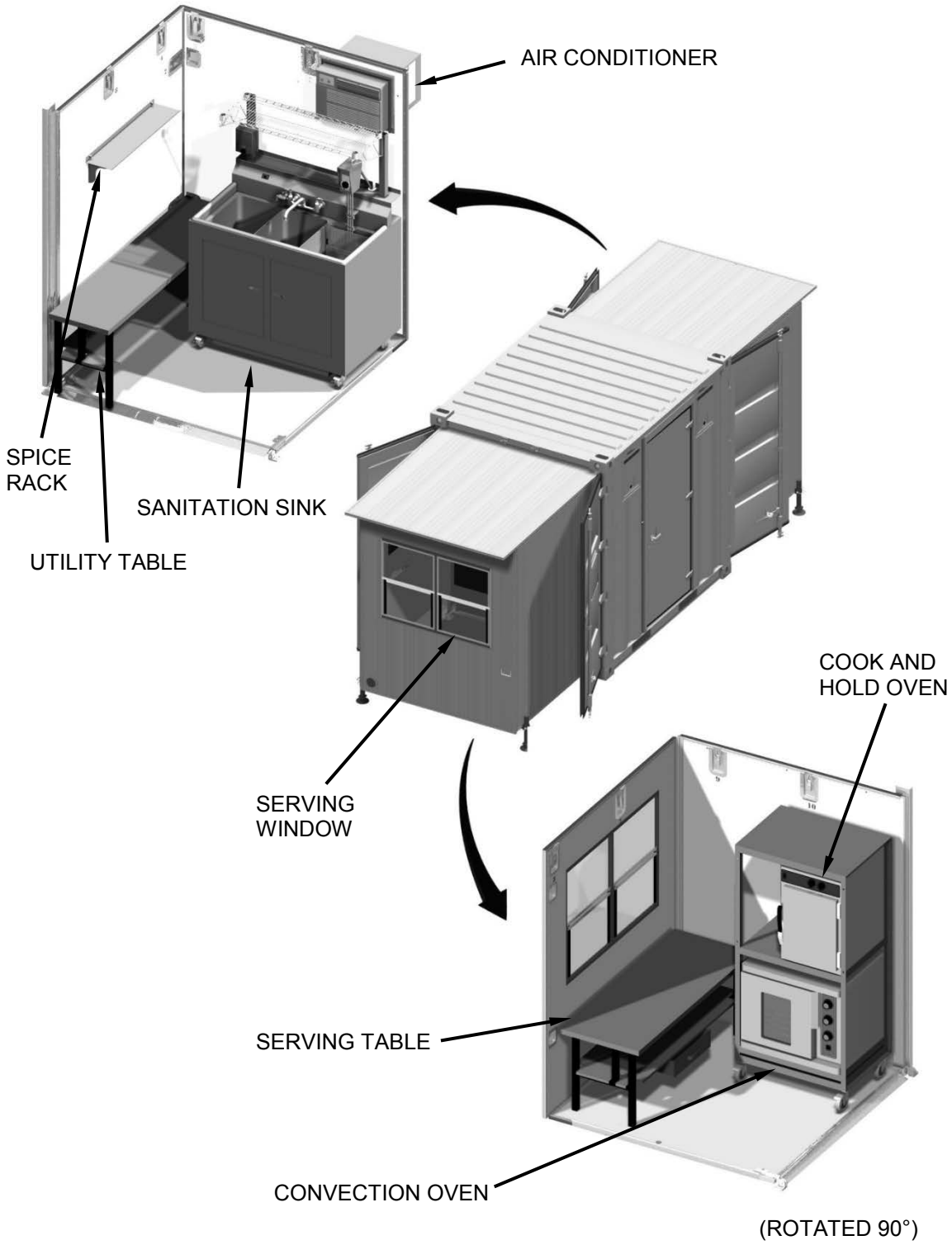


Figure 6. ETKS Interior Layout (Expanded Areas).

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

Exterior Layout

The exterior of the ETKS (Figure 7) is equipped with hoses and water bags used to supply the unit with potable water and collect the wastewater. Potable water is normally supplied from a 3000-gallon (11,356 L) SOURCE water bag. The bag is connected to the ETKS water supply connection. Wastewater from the sanitation sink runs to a drain that is connected to a 3000-gallon (11,356 L) WASTE water bag.

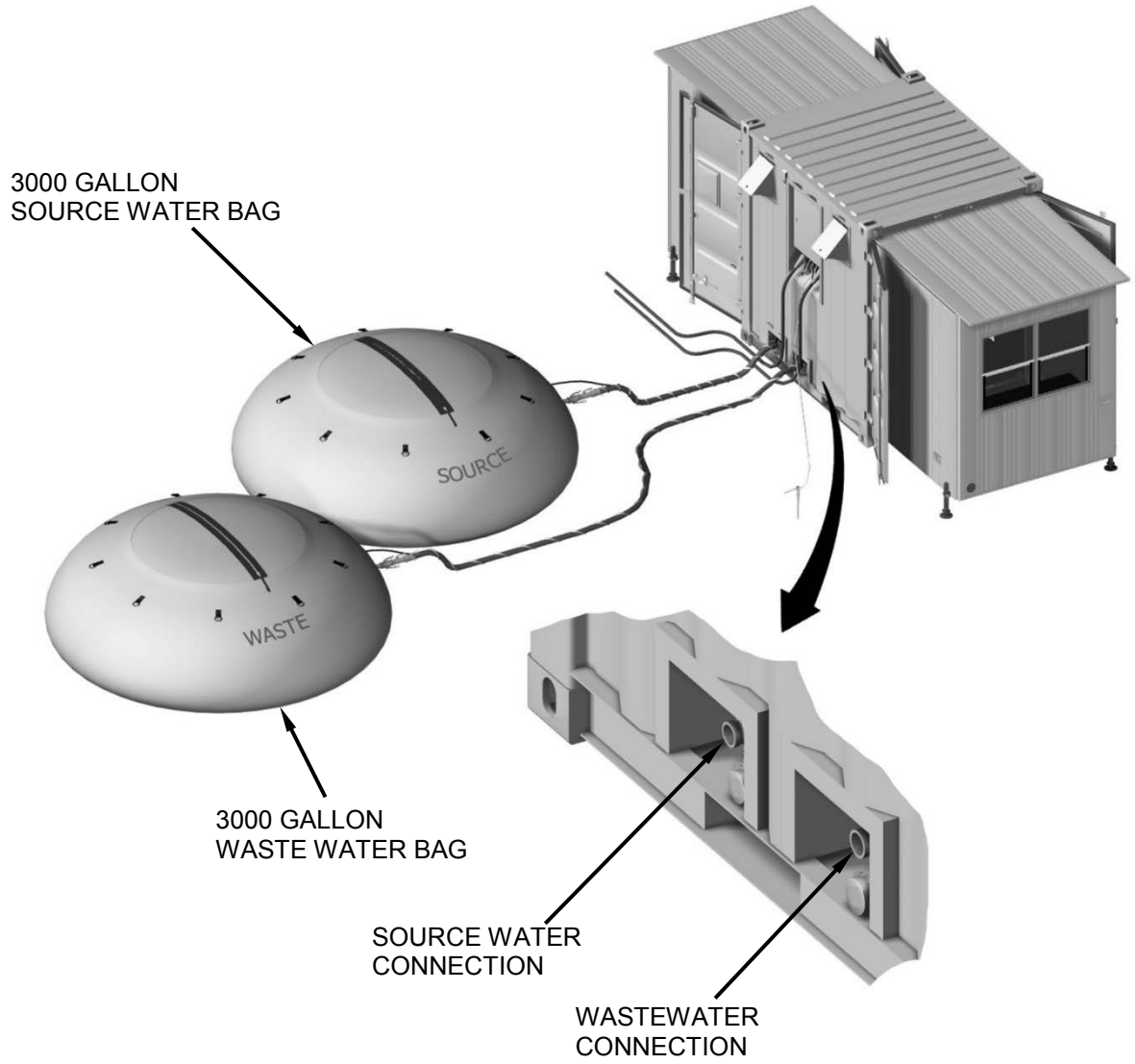


Figure 7. ETKS Exterior Layout.

EQUIPMENT DATA

Table 1 provides information pertaining to operational, electrical, mechanical, and environmental characteristics of the ETKS. Table 2 provides information pertaining to operational, electrical, and mechanical characteristics of the ETKS ancillary equipment.

Table 1. Equipment Data.

ITEM	CHARACTERISTICS
Operational Characteristics	
Potable Supply Water Holding Capacity	3,000 gal (11,356 L)
Waste (Grey/Black) Water Holding Capacity	3,000 gal (11,356 L)
Electrical Characteristics	
Input Power Requirement	208 VAC, 3-Phase, 50-60 Hz, 200-Amp
Output Power	120 VAC, 3-Phase, 50-60 Hz, 20-Amp (Four each)
External Water Connections	
Cold Water Inlet Size/Type	1-1/2 in/Cam & Groove
Wastewater Outlet Size/Type	2 in/Cam & Groove
Internal Water Connections	
Cold Water Inlet Size/Type	1 in/Cam & Groove
Wastewater Outlet Size/Type	1-1/4 in/Cam & Groove
Mechanical Characteristics	
Shipping Configuration	
Length	78 in (198 cm)
Width	96 in (244 cm)
Height	96 in (244 cm)
Cube	334 cu ft (9.45 cu m)
Maximum Gross Weight Rating	14,900 lb (6,759 kg)
Tare Weight (Empty TRICON)	6,940 lb (3,155 kg)
Net Weight	7,960 lb (3,618 kg)
Ground Operating Configuration	
Length (Expanded wings)	248 in (630 cm)
Width (Including SOURCE water and WASTE water bags)	530 in (1346 cm)
Height	96 in (244 cm)
Maximum Slope for Setup	5 degrees
Environmental Characteristics	
Storage Temperature	-60°F to 160°F (-51°C to 71°C)
Operating Temperature	-25°F to 120°F (-32°C to 49°C)
Operating Altitude	7,500 ft (2,286 m) maximum

EQUIPMENT DATA – CONTINUED

Table 2. Ancillary Equipment Data.

ITEM	CHARACTERISTICS
Sanitation Sink Characteristics	
Water Inlet Size	1 in/Cam and Groove
Water Outlet Size	1-1/4 in/Cam and Groove
Immersion Heater Characteristics	
Input Power Requirement	208 VAC, Single-Phase, 4 kW
Water Heater Characteristics	
Input Power Requirement	208 VAC, Three-Phase, 50-Amp
Power Output	18 kW
Pressure Pump Characteristics	
Input Power Requirement	115 VAC, Single-Phase, 0.5-Amp
Water Flow	4.5 gpm (17 lpm)
Pressure	20 psi (cut in) 40 psi (cut out)
Accumulator Pre-charge	20 psi
Transfer Pump Characteristics	
Input Voltage Requirement	115 VAC, Single-Phase, 1.52-Amp
Water Flow	8.3 gpm (31.4 lpm)
Waste Removal Pump Characteristics	
Input Voltage Requirement	115 VAC, Single-Phase, 9.6-Amp
Water Flow	43 gpm (163 lpm)
Steam and Hold Oven Characteristics	
Input Power Requirement	208 VAC, Three-Phase, 60 Hz, 22-Amp, 8 kW
Steamer Water Capacity	3 gal (11 L)
Convection Oven Characteristics	
Input Power Requirement	208 VAC, Three-Phase, 60 Hz, 24/12/15-Amp, 5.6kW
Cook and Hold Oven Characteristics	
Input Power Requirement	120 VAC, Single-Phase, 60 Hz, 16-Amp, 1.92 kW
Steam Kettle Characteristics	
Input Power Requirement	208 VAC, Single-Phase, 60 Hz, 22-Amp, 8 kW
Kettle Capacity	10 Qt (9.4 L)
Jacket Capacity	1 Qt (0.9 L)

EQUIPMENT DATA – CONTINUED

Table 2. Ancillary Equipment Data – Continued.

ITEM	CHARACTERISTICS
Griddle Characteristics	
Input Power Requirement	208 VAC, Three-Phase, 60 Hz, 14/28.1/14-Amp, 6.75 kW
Refrigerator Characteristics	
Input Power Requirement	115 VAC, Single-Phase, 60 Hz, 6.3-Amp, 0.8 kW
Air Conditioner Characteristics	
Input Power Requirement	115 VAC, Single-Phase, 50-60 Hz, 15-Amp
Cooling Capacity	7,500 BTUs
Heating Capacity	4,000 Watts
Air Flow	165 CFM
Output	1,500 Watts
Space Heater Characteristics	
Input Power Requirement	120 VAC, Single-Phase, 60 Hz, 12.5/6.3-Amp
Heat Output	1,500 Watts
Air Flow	45 CFM
Ventilation Fan Characteristics (2 each)	
Input Power Requirement	115 VAC, Single-Phase, 50-60 Hz, 1-Amp
Air Flow	606 CFM @ 0 inches water column

END OF WORK PACKAGE

CREW MAINTENANCE

THEORY OF OPERATION

GENERAL

The ETKS (Figure 1) provides food preparation and serving facilities at field locations for up to 150 personnel per day. The ETKS is divided into three sections: serving, food preparation, and sanitization. Environmentally controlled air is provided to heat, cool, and ventilate the ETKS. The ETKS is supplied by external power and must be connected to a SOURCE water bag and WASTE water bag (Figure 1). The ETKS contains several sub systems and ancillary equipment used to support food service operations as described below.

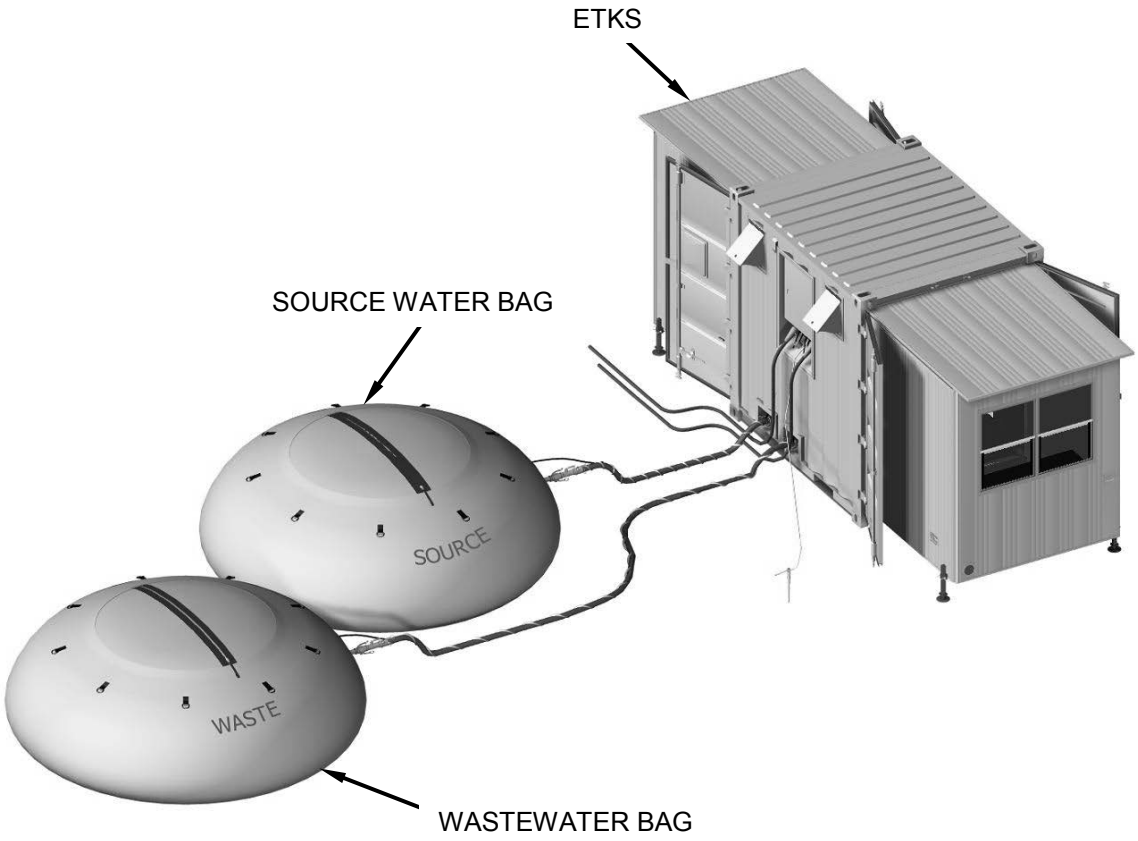


Figure 1. ETKS Set Up for Operation.

THEORY OF OPERATION – CONTINUED

Power Distribution System Theory of Operation

The power distribution system (Figure 2) provides the electrical interface between externally supplied electrical power and the ETKS electrical components. The system contains circuit protection devices (circuit breakers) for the various branch circuits routed within and external to the ETKS.

The ETKS requires 208 VAC, 3-Phase, 50/60 Hz electrical power and uses both 208 VAC, 3-Phase and 120 VAC, single-phase power. This power can be supplied from a stand-alone or grid-tied field generator or other external electrical source. Power is connected to two Class L 100-Amp receptacles mounted on the ETKS power distribution panel. These receptacles are wired to two MAIN 100-Amp circuit breakers that distribute power to four banks of circuit breakers mounted horizontally within the circuit breaker panel. Power is then distributed through single and 3-phase circuit breakers to branch circuits used to power individual components. There are four GFCI circuit breakers that supply power to external service connections. These connections are normally used to supply power to hose and tank heaters that are part of the cold weather equipment (not supplied with the ETKS). There is an internal service receptacle and an external service receptacle with 50-ft power distribution cable to provide power to external appliances. These service receptacles consist of GFCI protected convenience duplex outlets. More detailed information for each of the electrical circuits within the ETKS can be found in the theory of operation narrative for each system within this work package.

THEORY OF OPERATION – CONTINUED

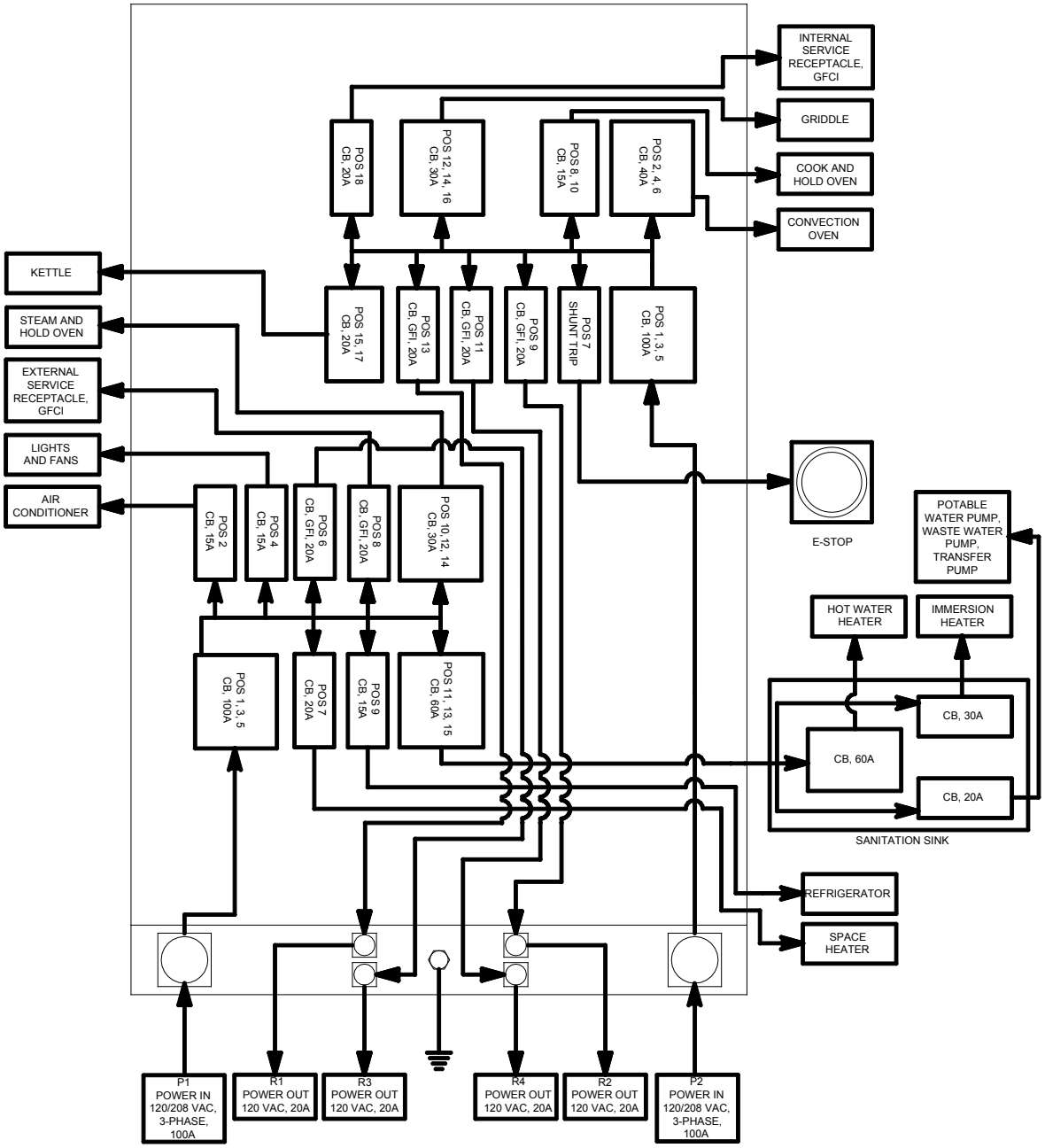


Figure 2. Power Distribution System Block Diagram.

THEORY OF OPERATION – CONTINUED

Lighting System Theory of Operation

The ETKS lighting system (Figure 3) consists of two fixed lighting fixtures used to supply lighting when conducting kitchen operations in normal conditions and in blackout operation. A light fixture is mounted in the ceiling in each half of the ETKS in the left and right hand sides of the center section. The light fixture on the right hand side also serves as a conduit for the air conditioner power cable. Each light fixture contains four fluorescent lamps. The two outboard lamps in each fixture are covered with a blue colored filter to provide lighting for blackout operation. The two center normal task lamps are wired separately from the two blackout lamps and are controlled by a three-position light mode switch. This switch is located on the inside of the entry door wall on the right side of the door. When power is supplied to the ETKS and the circuit breaker at position 4 is on, power will be available to the light switch. If the mode switch is positioned to NORMAL the inboard task (white) lights will be on. If the mode switch is positioned to BLACKOUT the outboard blackout (blue) lights will be on.

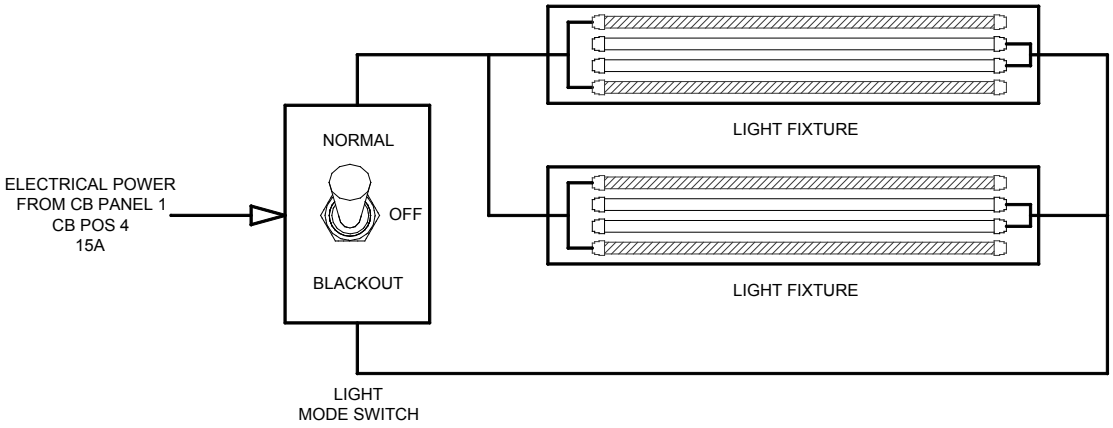


Figure 3. Interior Lighting Block Diagram.

THEORY OF OPERATION – CONTINUED

Ventilation Air Flow and Conditioning Theory of Operation

Two ventilation fans are mounted on the fixed wall of the ETKS opposite the side of the personnel door (Figure 4). The fans are located so that they draw air primarily from within the center and front sections. When the personnel door and serving windows are closed, the fresh air enters the ETKS through filtered inlet ducts located on the door wall opposite the ventilation fans. The filters are removable and cleanable. When power is supplied to the ETKS and the circuit breaker is on, the ventilation fans can be operated by a control knob located above the light mode switch. Rotating the knob clockwise turns the fans on and decreases fan speed. The ventilation fans can be turned off by rotating the switch fully counter-clockwise.

One portable 7,500 BTU air conditioning unit, mounted at the rear end wall, provides cool air to the inside of the unit. The air conditioner also contains an electric heat strip that provides up to 4,000 watts of heat. Additional heat inside the ETKS is supplied by a 1,500 watt space heater located below the refrigerator.

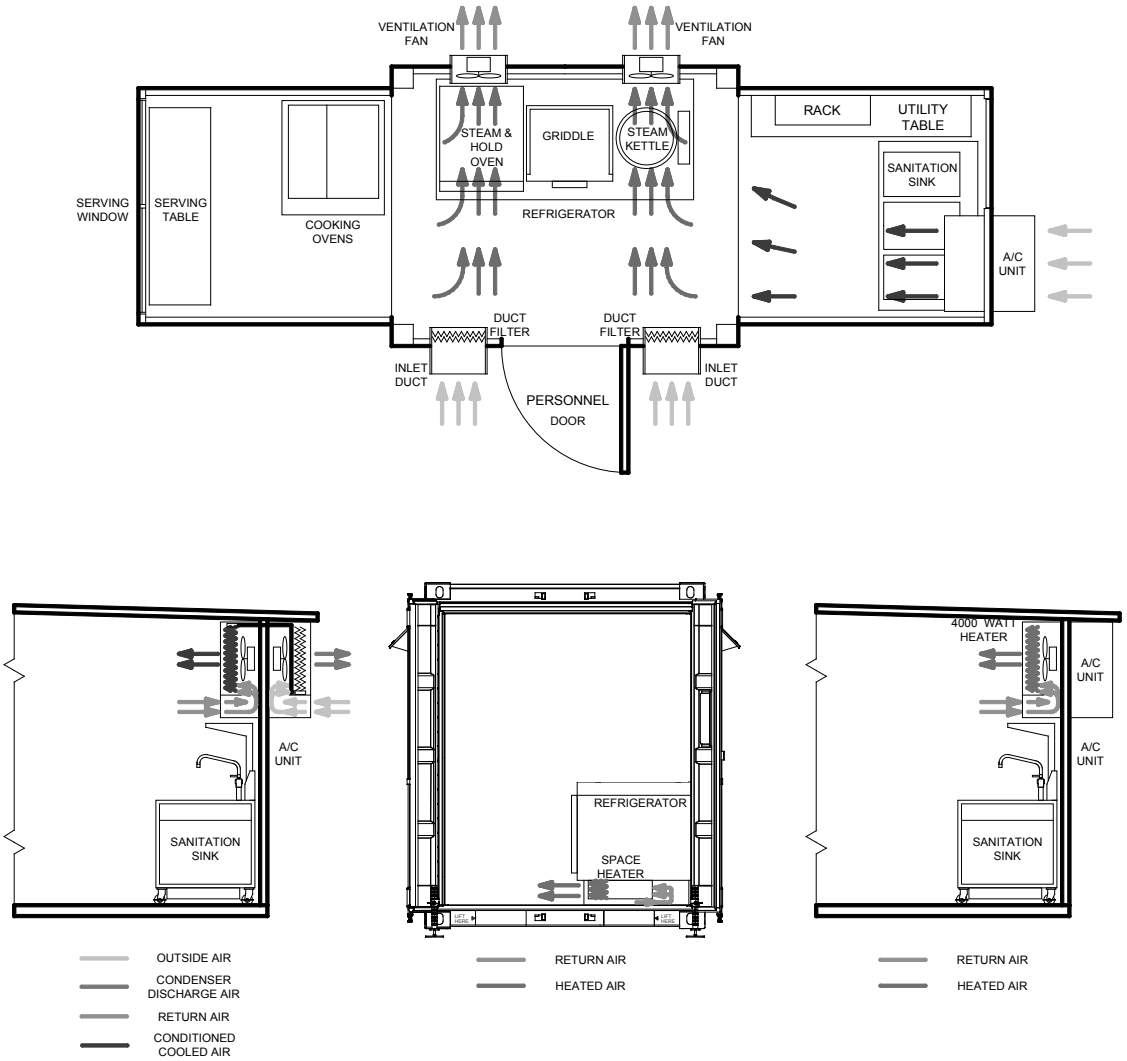


Figure 4. ETKS Ventilation Air Flow and Conditioning.

THEORY OF OPERATION – CONTINUED

Water Supply System

The water system (Figure 5) draws water from an external water source and supplies cold water to the sanitization sink at the rear of the ETKS. The water source can be pressurized or non-pressurized and normally consists of a 3,000-gallon SOURCE water bag that is supplied with the ETKS. If the source is pressurized, a pressure regulator (not supplied with the ETKS) must be installed in-line to limit source water pressure to less than 45 psi.

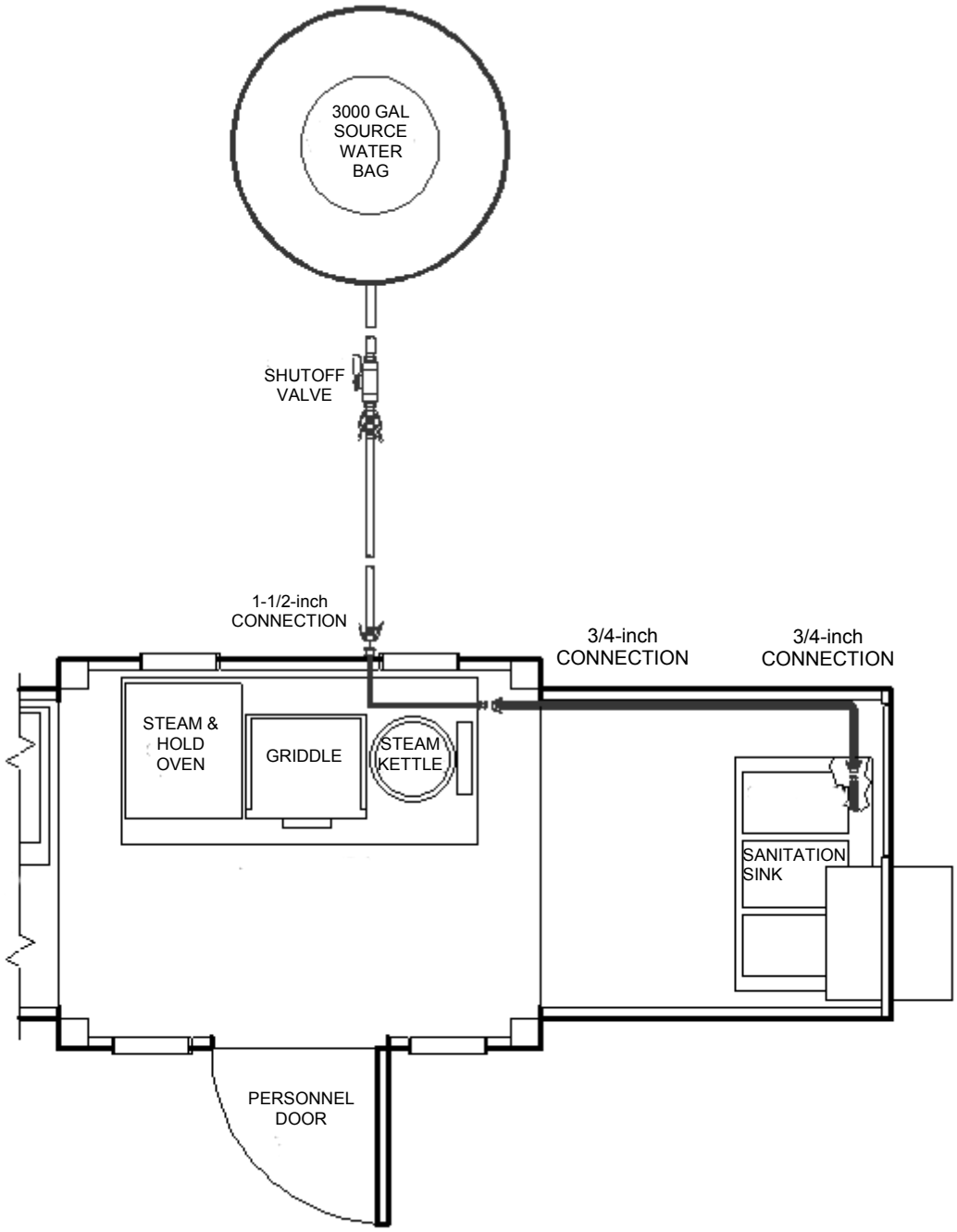


Figure 5. Water Supply Diagram.

THEORY OF OPERATION – CONTINUED

Sanitation Sink

The sanitation sink (Figure 6) is a mobile, self-contained system capable of washing, rinsing and sanitizing utensils and cookware. The sanitation sink consists of a three compartment, NSF approved stainless steel unit. The sanitation sink is capable of maintaining the proper water temperature of 140ºF (60ºC) for washing (left basin), 160ºF (71.11ºC) for rinsing (middle basin) and 180ºF (82.22ºC) for sanitizing (right basin), meeting sanitation requirements. The sanitation sink is mounted on a cabinet equipped with swivel casters.

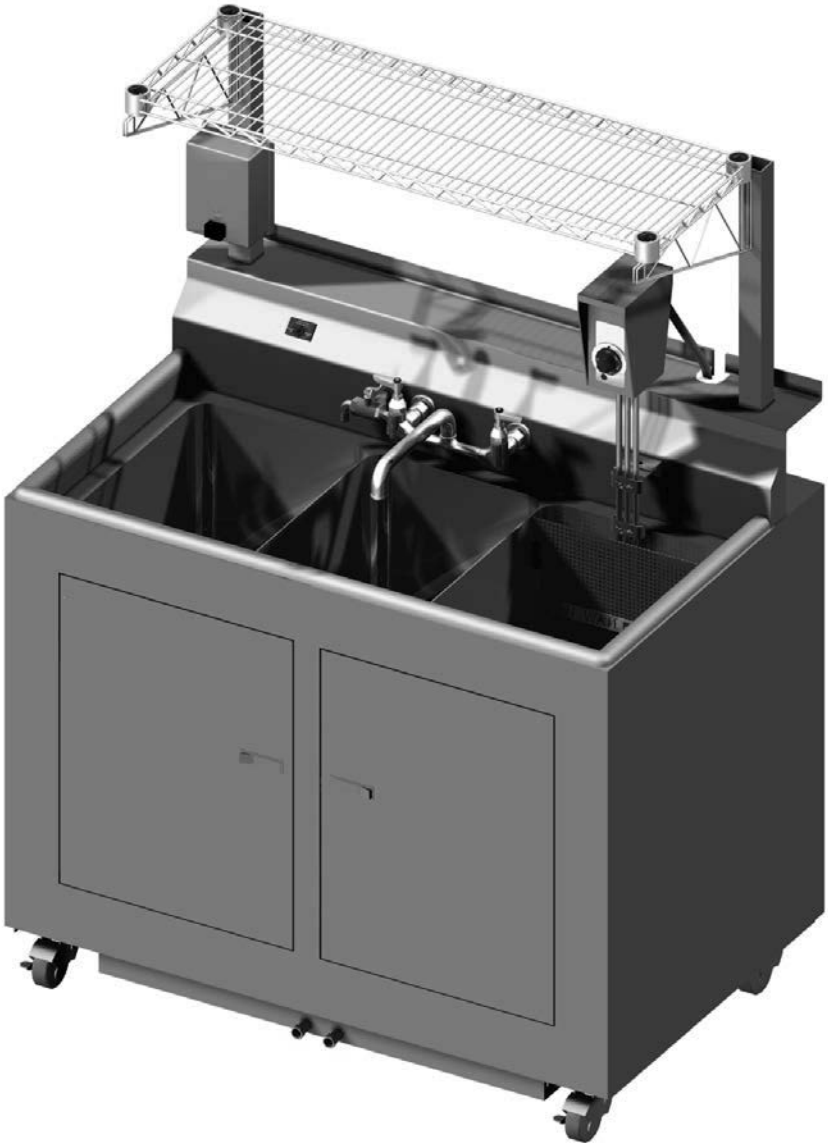


Figure 6. Sanitation Sink.

THEORY OF OPERATION – CONTINUED

Sanitation Sink Water Pressure Control

The sink is supplied with water by a pressure pump with two pressure accumulators (Figure 7). The pump inlet is connected to an external water supply by a 1-in cam lock fitting located on the left end of the cabinet. When the system is on, the pump maintains a preset pressure in the accumulators and supplies cold and hot water to any one of the three sink basins.

Water flows into the system from the cam and groove inlet port through a strainer to the pressure pump. The strainer has a removable 40 mesh stainless steel filter screen which can be removed and cleaned. The mesh strainer is accessed by removing the clear, twist-off, plastic bowl.

Water pressure is generated by a continuous duty, diaphragm, self-priming pump. The pump has a built in pressure switch set at 20 psi cut in and 40 psi cut out. Two accumulators are installed downstream of the pump. The accumulators are pulsation dampening devices designed to hold water under pressure. The accumulators provide additional water storage to assist the pump in meeting the demands of the system. The accumulators extend pump life by minimizing pump pulsations. The accumulators also allow water to be available on demand without cycling the pump. Each accumulator is pre-charged to 20 psi.

Hot water from the sink faucet is supplied by an on demand instant water heater. The instant water heater functions by directing the incoming cold water over three electric elements connected in series. The instant hot water system is capable of increasing the inlet water temperature by up to 80 °F (26.67 °C). Final temperature of the water depends on the inlet temperature and the rate of water flow, which is set at the factory. The water heater drain is a ¼ turn ball valve with a handle located underneath the hot water heater. This valve is opened when purging the hot water heater with air before packing the system for transport or long term storage.

Cold water from the sanitation sink is also supplied to ports that are connected to the coffee brewer and ancillary supply valves. The coffee brewer provides provisions to connect compressed air to blowout the water plumbing to prevent freeze damage when the system is packed for transport.

THEORY OF OPERATION – CONTINUED

Sanitation Sink Water Pressure Control

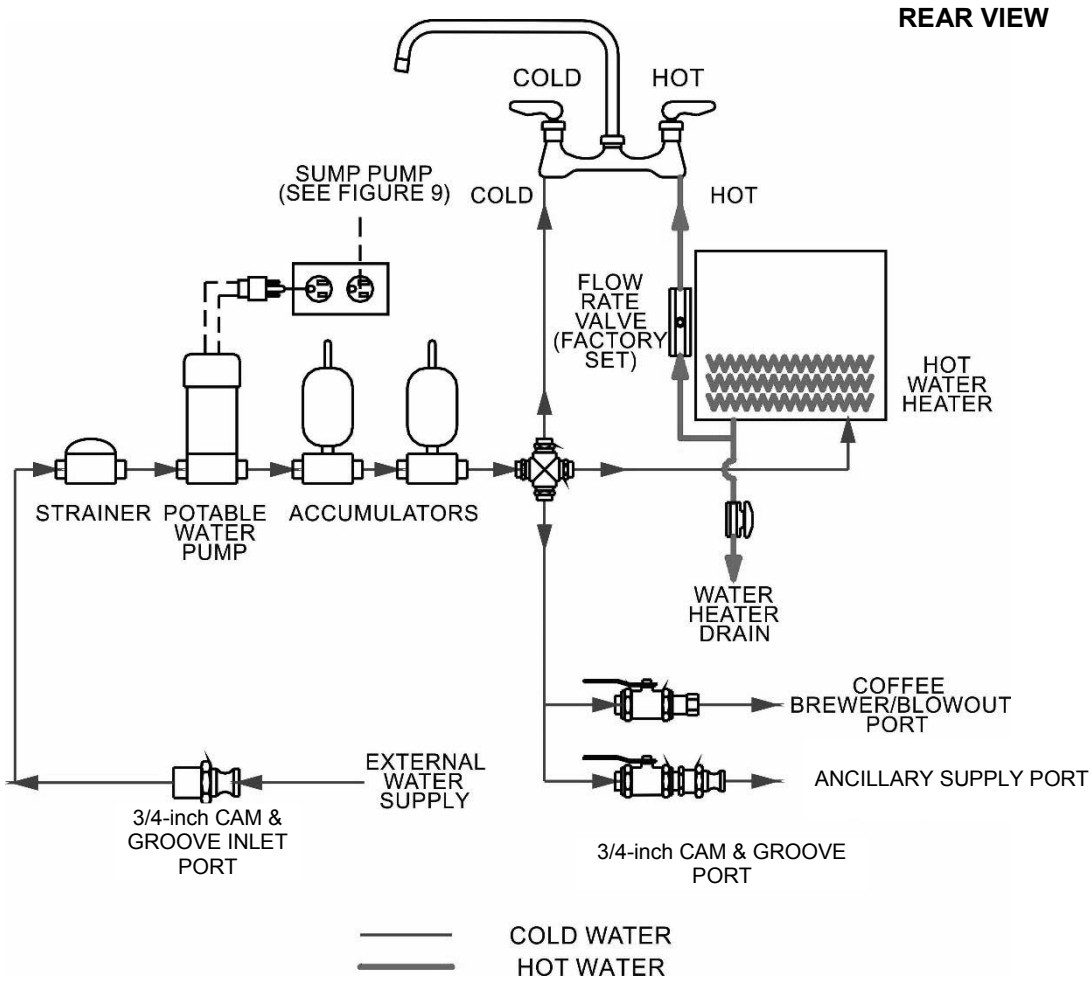


Figure 7. Sanitation Sink Water Pressure Control.

THEORY OF OPERATION – CONTINUED

Sanitation Sink Water Heating

The right hand (sanitizing) sink of the system is equipped with an immersion heater capable of heating the water to 180 °F (82.22 °C) required for sanitizing (Figure 8). An indicator light indicates when the immersion heater is on. The heater is thermostatically controlled, cycling on and off as required by the water temperature and settings. The thermostat may be set between 60 °F to 212 °F (15.56 °C to 100 °C). The sink is equipped with a minimum water level indicator and a thermometer for determining sink water temperatures.

The middle (rinsing) and left hand (washing) sink basins may be supplied with hot water either directly from the faucet or from the right hand (sanitizing) sink by using a transfer pump and valve located to the left of the standard sink faucet. This valve is a three-position valve with center OFF and right or left delivery. If hot water is required from the right hand (sanitizing) sink, the valve position is set to the receiving sink (either the left or middle basin) and the transfer pump operated.

The transfer water pump has a thermally protected, fan cooled motor. The pump head is designed to handle fluids to 200 °F (93.33 °C) through a seal-less, magnetic drive. The pump can transfer up to 8 gallons of water from the sanitizing sink per minute to either the middle or left sink basins. Cold or hot water can be added from the faucet to achieve the wash, rinse and sanitation temperatures needed.

Each sink has a drain and a drain plug. Each drain plug has a perforated basket for straining food and other debris from water flowing out of the sink. The plug has center stalk which can be rotated to lift the basket and allow water to drain without removing the plug. The plugs are also used to prevent the flow restrictor (Figure 9) from becoming clogged with food particles.

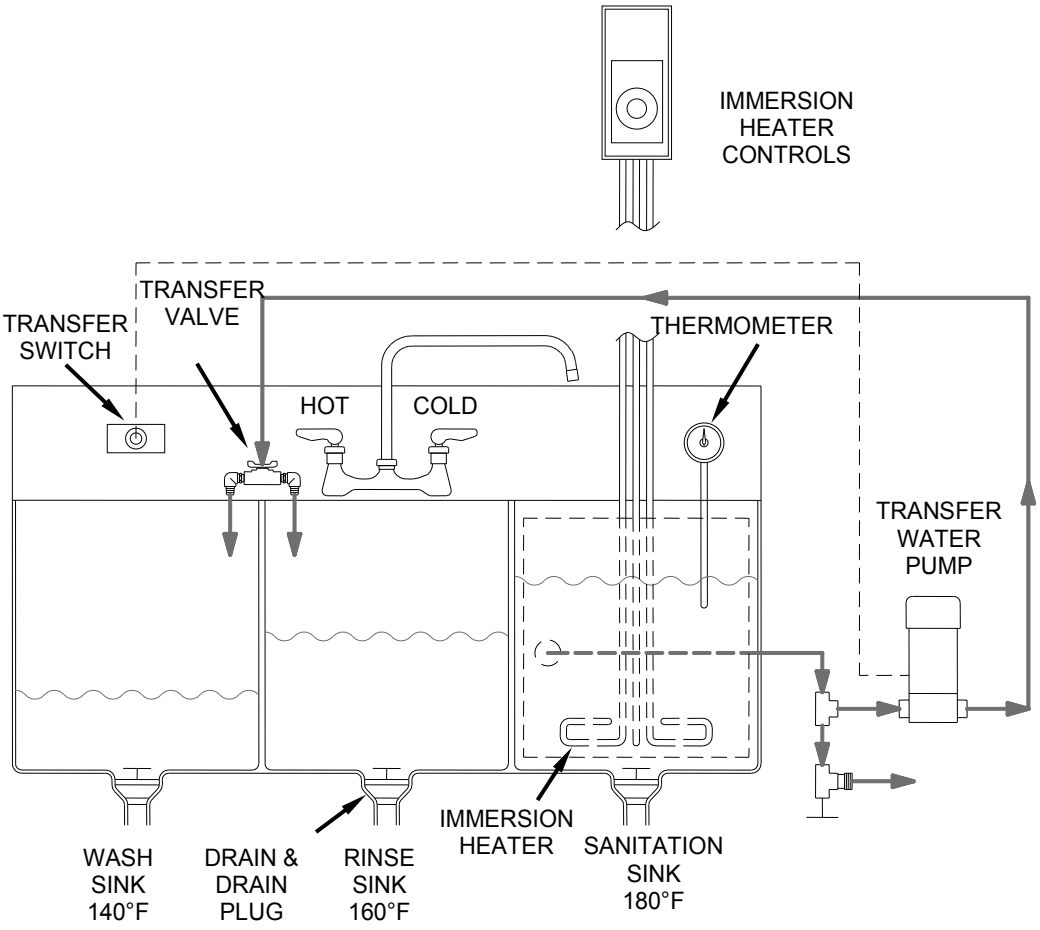


Figure 8. Sanitation Sink Water Heating.

THEORY OF OPERATION – CONTINUED

Sanitation Sink Draining

The sink basins drain through a grease trap. The grease trap is equipped with a flow restrictor tee fitting and a ventilation stack. Draining time is governed by the flow restriction required by the grease trap. The grease trap drains wastewater into a stainless steel waste tank equipped with a float operated waste removal pump. As water rises in the tank, the float switch will make contact to energize the pump. The pump discharges wastewater through a cam-lock fitting to a 1-1/2-in removable waste hose (Figure 9). As water is removed, the float lowers and shuts off the pump.

The cleanout port has a threaded plug which can be removed if the flow restrictor becomes clogged. The port faces the rear of the sanitation unit and is located below the right sink basin.

The grease trap is located behind the right hand door of the sanitation sink. The lid of the grease trap is secured with a center bolt which can be removed to perform cleaning. The waste tank is located behind the left hand door of the sanitation sink. The waste tank cover can be removed to gain access to the float and waste removal pump. A hose is supplied to facilitate draining of the grease trap and wastewater tank to the outside of the ETKS. This hose is stowed on the inside face of the right hand door.

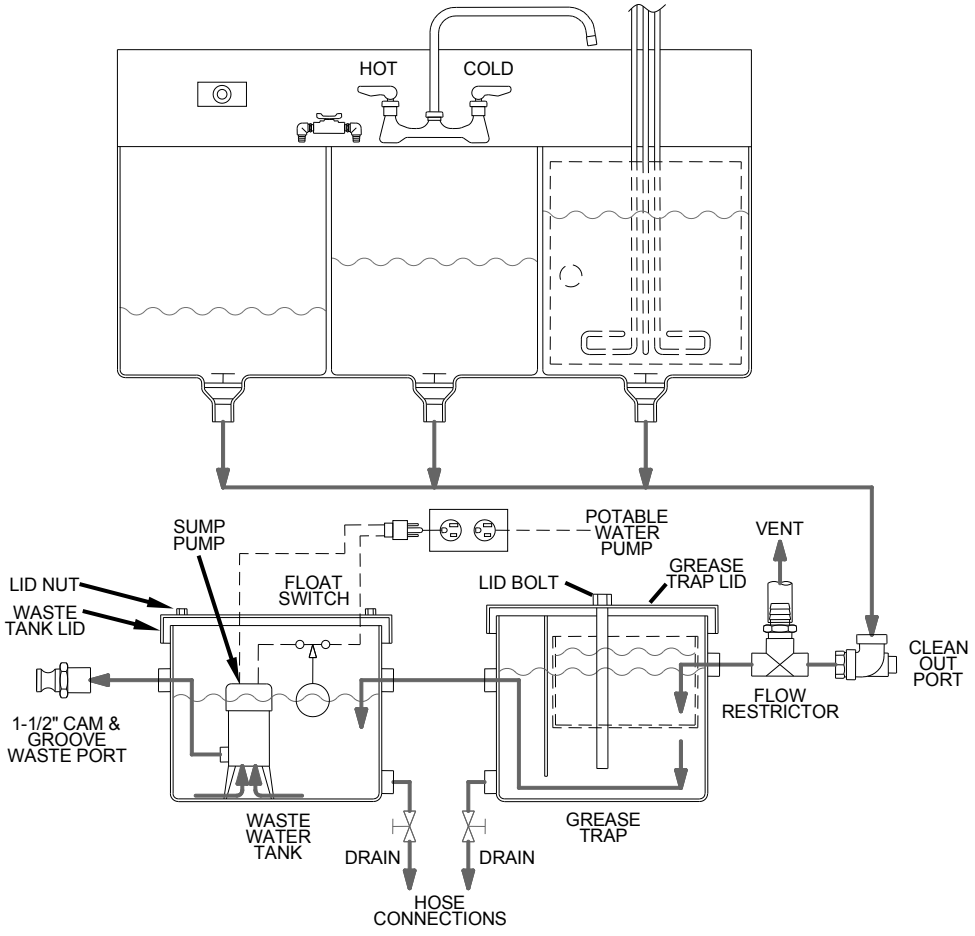


Figure 9. Sanitation Sink Draining.

THEORY OF OPERATION – CONTINUED

Waste System Theory of Operation

The waste system (Figure 10) collects wastewater coming from the sanitation sink located within the ETKS and routes the wastewater to a collection point. The collection point normally consists of a 3,000-gallon fabric tank that is supplied with the system.

Waste Collection

To collect wastewater from the sanitation sink, liquid is routed to the wastewater connection port on the exterior of the container through a waste hose and container plumbing. The waste port has a cam and groove fitting which connects to a 1-1/2-inch discharge hose. The discharge hose is routed through the left side of the cabinet, along the interior of the left wall of the front wing out to a cam and groove port located at the lower right wing jack of the refrigerator. The port is plumbed to the container waste discharge piping and routes the wastewater to a 2-inch external wastewater connection on the lower left side of the container. A 25 foot 2-inch wastewater hose is connected to a shutoff valve and the waste bladder for wastewater collection.

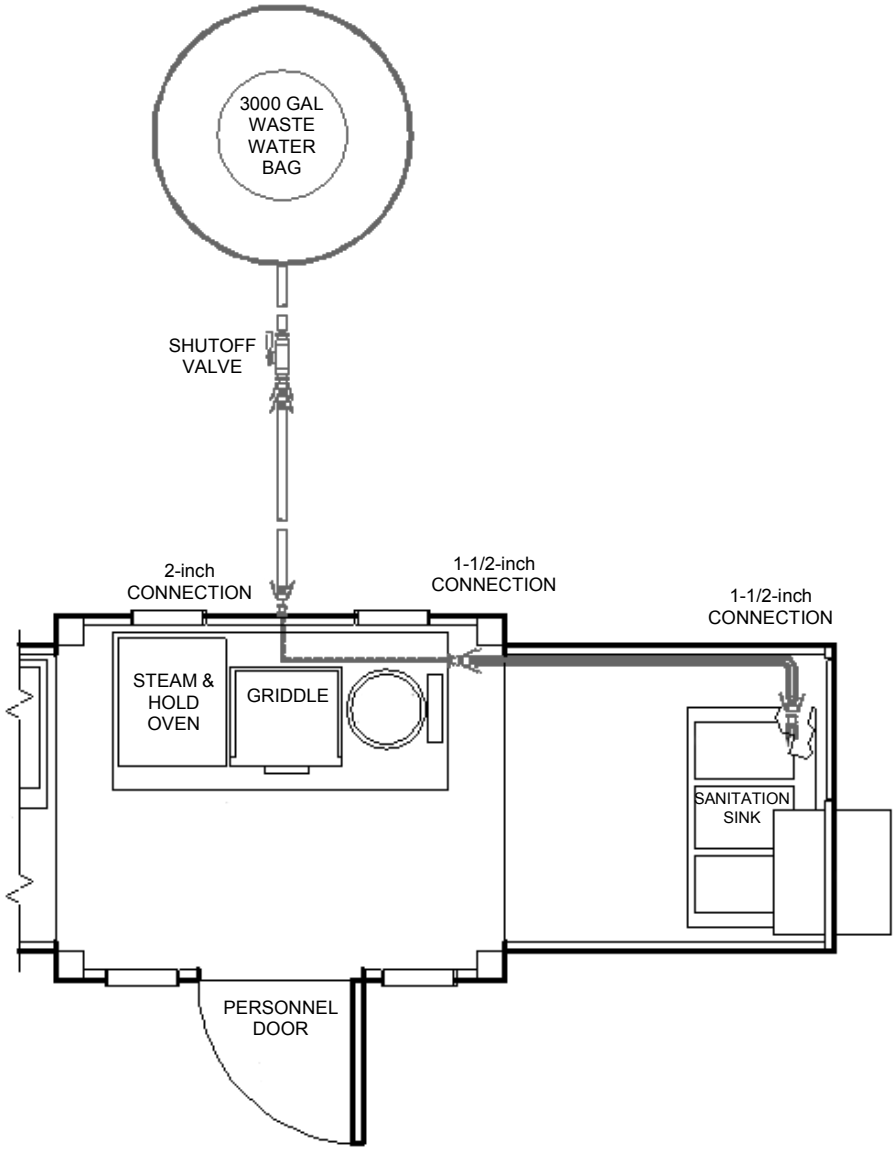


Figure 10. Waste Collection Diagram.

THEORY OF OPERATION – CONTINUED

Food Preparation Equipment

The ETKS appliances (Figure 11) include an electric griddle, steam kettle, refrigerator, and three separate ovens for food preparation. The steam and hold oven cooks food with steam in a low pressure chamber. The convection oven cooks food by re-circulating heated air. The cook and hold oven is primarily used to keep previously cooked food at a constant temperature without letting the food dry out but can also be used to crisp food if desired. The cook and hold oven also can be used in cook mode to prepare food.

The steam and hold oven is located at the top left of the refrigerator. The cook and hold and the convection ovens are located to the left of the refrigerator on their own cart. The cart is equipped with locking casters. Each oven has its own power cable and dedicated receptacle.

The ETKS also contains an electric griddle and a steam kettle for cooking and serving soups. These are also located on top of the refrigerator.

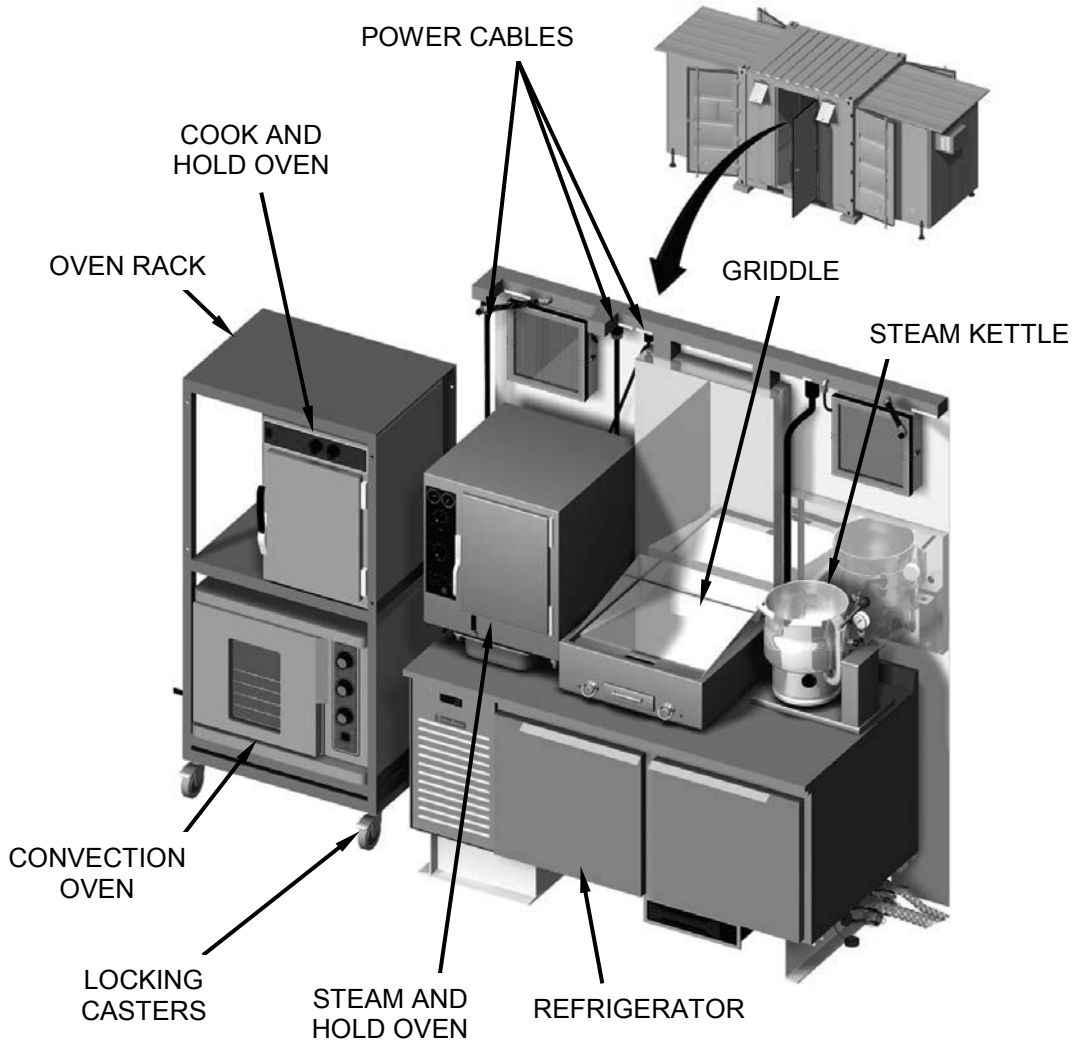


Figure 11. ETKS Appliances.

THEORY OF OPERATION – CONTINUED

Steam and Hold Oven

The steam and hold oven (Figure 12) cooks food with steam under controlled conditions. This is accomplished by reducing the internal atmospheric pressure of the cooking compartment, thereby lowering the temperature at which the water begins to boil. This allows the operator to control the temperature of the steam for cooking. Controlling the steam temperature gives the operator the ability to cook the food to the desired temperature without over-cooking. Once the cooking time expires, the appliance automatically enters the “HOLD” mode. In this mode, the thermostat regulates the internal temperature. At this time, steam is no longer generated and the cooking compartment is held at the desired temperature at a relative humidity of 100%. This eliminates food from drying out by suppressing the evaporation of the products’ natural moisture. This oven can keep most food products in a ready-to-serve state for several hours after cooking.

Figure 12. Steam and Hold Oven.

THEORY OF OPERATION – CONTINUED

Convection Oven

The convection oven (Figure 13) cooks food by constantly re-circulating heated air over the product by a fan in an enclosed chamber. The moving air continually strips away the layer of cool air surrounding the product, quickly allowing the heat to penetrate. The result is food cooked at a lower temperature in a shorter amount of time. Heat normally lost is recirculated within the cooking chamber before being vented from the oven.

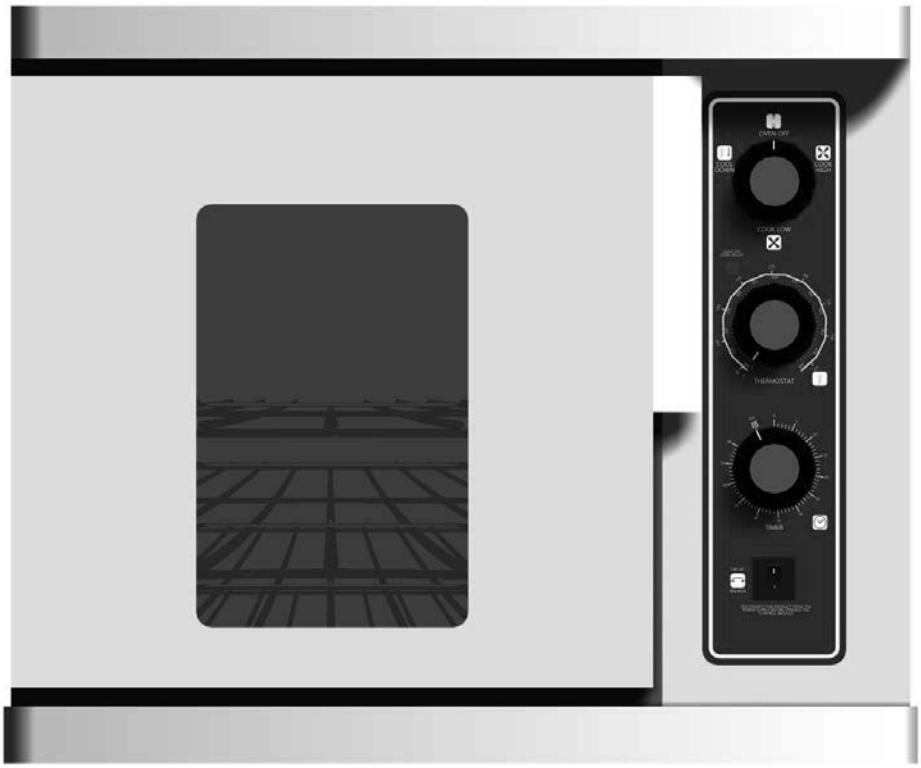


Figure 13. Convection Oven.

THEORY OF OPERATION – CONTINUED

Cook and Hold Oven

The cook and hold oven (Figure 14) is used to provide proper holding temperatures for specific food products. Oven settings are based on the moisture content of the product, product density, volume, and proper serving temperatures. Safe holding temperatures can also be correlated with palatability in determining the length of holding time for a specific product. The oven maintains the maximum amount of product moisture content without the addition of water, water vapor, or steam. In addition to product moisture retention, the oven maintains a consistent temperature throughout the cabinet without the necessity of a heat distribution fan, thereby preventing further moisture loss due to evaporation or dehydration. The cook and hold oven is capable of thermostatic control between 60°F and 200°F (15.56ºC to 93.33ºC). With the oven vents closed the unit will retain a moist holding environment. With the oven vents open the unit will retain a crisp holding environment.

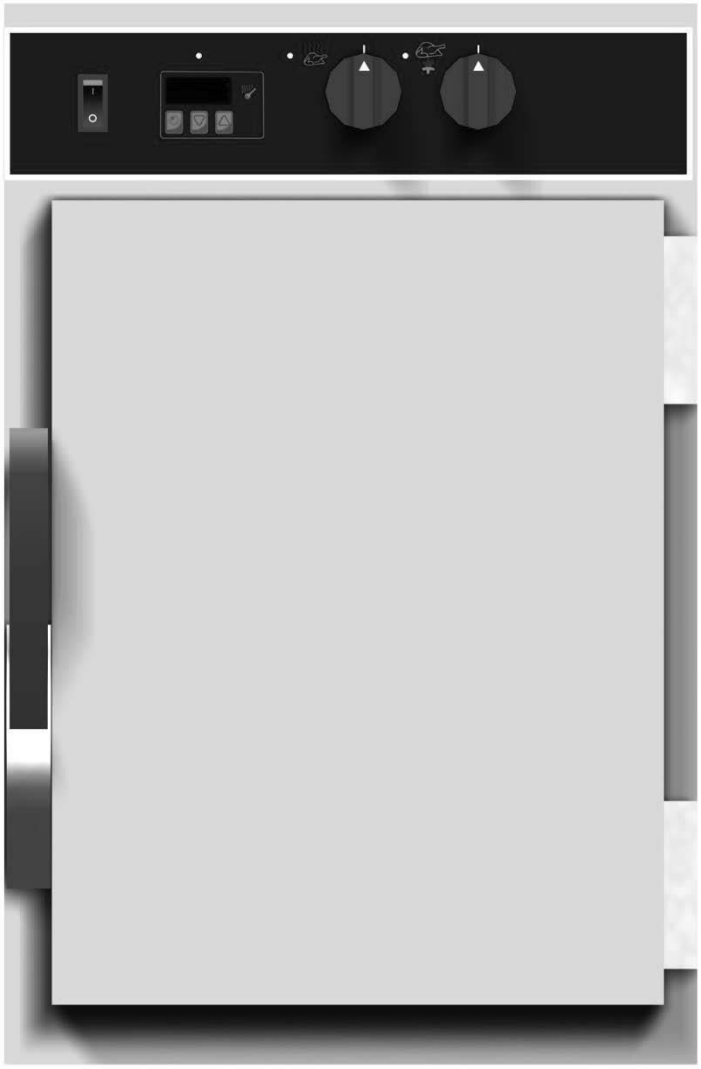


Figure 14. Cook and Hold Oven.

THEORY OF OPERATION – CONTINUED

Griddle

The griddle (Figure 15) can be used to cook a variety of fried foods. The front of the griddle has two control knobs. Power is applied to the heating elements according to the control knob position and the actual temperature sensed at a thermo-bulb. When the element is energized the heating indicator will glow. Each section of the griddle is individually controllable. Dial position is an indication of the temperature setting. The actual temperature at the griddle surface will vary, depending upon the initial type and temperature of the product, and other variables. The griddle contains a grease trough with rounded corners for easier cleaning. The trough slopes toward a large waste hole that empties into the removable grease tray. The grease tray is removable through the front for easy cleaning. A stainless steel splash guard simplifies griddle maintenance and helps to keep grease from splattering onto adjacent walls and equipment.

Figure 15. Griddle.

THEORY OF OPERATION – CONTINUED

Steam Kettle

The kettle (Figure 16) can be used to cook a variety of soups, stocks and vegetables. The kettle is a table top mounted, tilting, steam jacketed with a thermostatically controlled, self-contained, electrically-heated steam supply and appropriate controls. The kettle is furnished with a reinforced rim and a butterfly shaped pouring lip. It has a steam jacket rated for working pressures up to 50 psi. A tilt handle allows the operator to manually tilt the kettle body in a controlled manner. Pouring height accepts pans up to 4 inches high on the table top. A built-in steam generator, sized for the kettle capacity and heated by electricity, delivers steam into the jacket. “Airless” operation of the steam jacket permits uniform, efficient heating at temperatures as low as 150°F (65.56°C) and as high as 295°F (146.11°C). In addition to the adjustable thermostat for operating control, the unit has a tilt cut-off switch, low water control, safety valve, and pressure switch as safety features. A heating indicator light, pressure gauge, and sight glass are provided for monitoring kettle operation. A single electrical connection is required for installation. The unit employs single phase 208 or 240 volt power.

Turning the operating thermostat dial from OFF to a desired setting, causes a thermostat switch to close. This lets power flow to the heater element. When the temperature of the steam jacket reaches the value corresponding to the dial setting, the thermostat switch opens. This turns off the heating element light and de-energizes the heaters. As soon as the thermostat senses that the kettle is cooling below the set point, the thermostat switch closes and the heaters come on again. The heating element will cycle ON/OFF continually to maintain the kettle set temperature. Every time the kettle is tilted, the tilt cut-off switch interrupts the power supply to the heaters, so that the heating elements will not operate while not submerged in the jacket water. If steam pressure greater than 50 psi is generated in the jacket, the safety valve will open and relieve the excess pressure. In the event that the jacket water level gets too low and the heating elements overheat, the low water control will open and shut off power to the elements. Setting the operating thermostat dial to OFF shuts down all control and heating circuits.

Figure 16. Steam Kettle.

THEORY OF OPERATION – CONTINUED

Refrigerator

The refrigerator (Figure 17) is equipped with microprocessor controller, which regulates operation and provides alarms when problems occur. The refrigerator controls feature an internal time clock which can be quickly adjusted to customize the defrost cycle to suit individual location and use.

The refrigerator does not require manual defrosting. During normal operation, the refrigerator continuously circulates above freezing cabinet air through the coil. A compressor OFF cycle occurs every 2 1/2 hours for 20 minutes to melt any frost which may accumulate on the coil during the compressor ON cycle. The control will read “dEF” and the green water drop will be illuminated. With standard holding refrigerators, high relative humidity is also maintained to prevent dehydration of stored product.

The refrigerator controller features four different defrost lockout periods. The lockout prevents the unit from going into a defrost cycle during peak kitchen use.

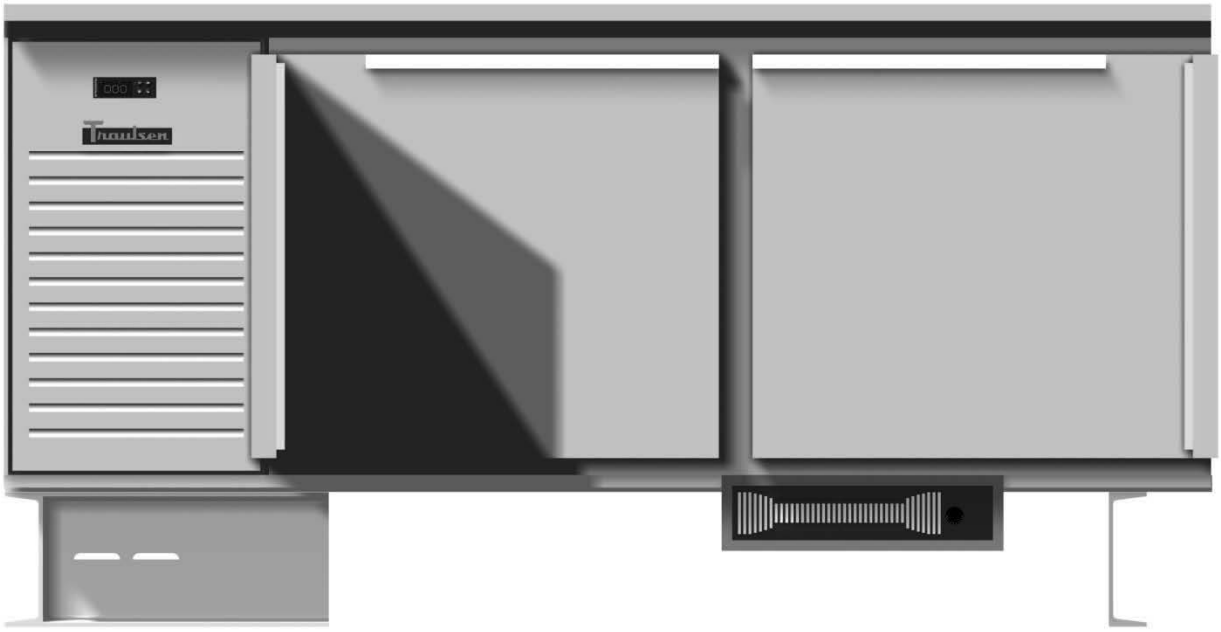


Figure 17. Refrigerator.

END OF WORK PACKAGE

CHAPTER 2

OPERATOR INSTRUCTIONS
FOR
EXPEDITIONARY TRICON KITCHEN SYSTEM (ETKS)

CREW MAINTENANCE

DESCRIPTION AND USE OF CONTROLS AND INDICATORS

INTRODUCTION

The following paragraphs contain illustrations that show the location of each control and indicator used to operate the ETKS. Each control and indicator is clearly labeled as it appears on the equipment. Review these paragraphs thoroughly before operating the system.

CONTROLS AND INDICATORS

Figure 1 shows the location of the controls found on the power distribution panel. Table 1 describes the controls.

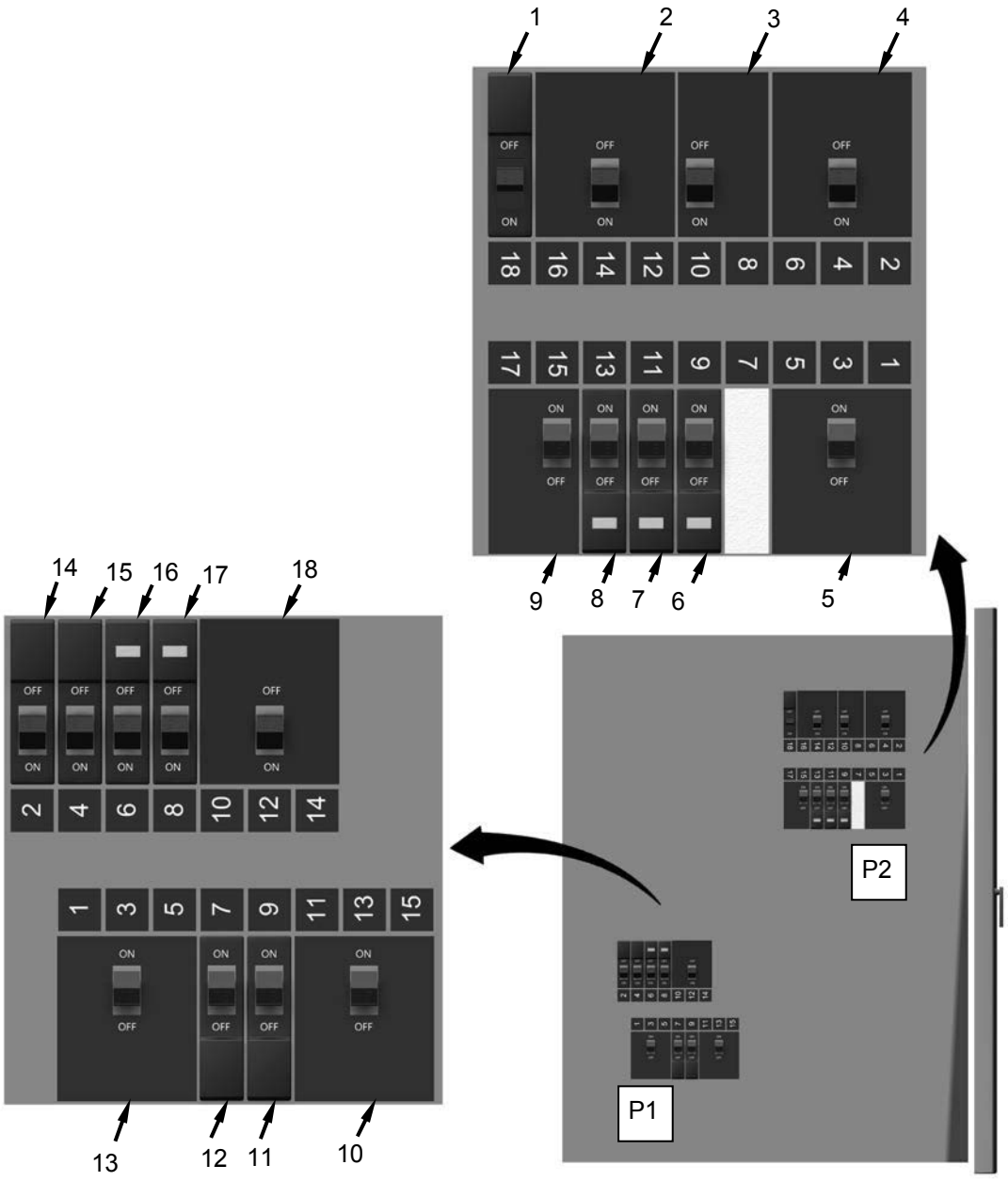


Figure 1. Power Distribution Panel Controls and Indicators.

CONTROLS AND INDICATORS – CONTINUED

Table 1. Power Distribution Panel Controls.

Key	Item	Function
1	CIRCUIT BREAKER (Upper Panel Position 18), 20 AMP, Lever Actuated	Protects interior service receptacle #5. Circuit is closed (energized) when lever is pointing down.
2	CIRCUIT BREAKER (Upper Panel Positions 12, 14, and 16), 30 AMP, Lever Actuated	Protects griddle. Circuit is closed (energized) when lever is pointing down.
3	CIRCUIT BREAKER (Upper Panel Positions 8 and 10), 15 AMP, Lever Actuated	Protects cook and hold oven. Circuit is closed (energized) when lever is pointing down.
4	CIRCUIT BREAKER (Upper Panel Positions 2, 4, and 6), 40 AMP, Lever Actuated	Protects convection oven. Circuit is closed (energized) when lever is pointing down.
5	CIRCUIT BREAKER (Upper Panel Positions 1, 3, and 5), 100 AMP, Lever Actuated	Protects ETKS main power feed circuit in Upper panel. Circuit is closed (energized) when lever is pointing up.
6	CIRCUIT BREAKER (Upper Panel Position 9), 20 AMP, Lever Actuated, GFCI protected	Protects external service receptacle R2. Circuit is closed (energized) when lever is pointing up.
7	CIRCUIT BREAKER (Upper Panel Position 11), 20 AMP, Lever Actuated, GFCI protected	Protects external service receptacle R4. Circuit is closed (energized) when lever is pointing up.
8	CIRCUIT BREAKER (Upper Panel Position 13), 20 AMP, Lever Actuated, GFCI protected	Protects external service receptacle R1. Circuit is closed (energized) when lever is pointing up.
9	CIRCUIT BREAKER (Upper Panel Positions 15 and 17), 20 AMP, Lever Actuated	Protects steam jacketed tilting kettle. Circuit is closed (energized) when lever is pointing up.
10	CIRCUIT BREAKER (Lower Panel Positions 11, 13, and 15), 60 AMP, Lever Actuated	Protects sanitation sink. Circuit is closed (energized) when lever is pointing up.

CONTROLS AND INDICATORS – CONTINUED

Table 1. Power Distribution Panel Controls – Continued.

Key	Item	Function
11	CIRCUIT BREAKER (Lower Panel Position 9), 15 AMP, Lever Actuated	Protects refrigerator. Circuit is closed (energized) when lever is pointing towards up.
12	CIRCUIT BREAKER (Lower Panel Position 7), 20 AMP, Lever Actuated	Protects space heater. Circuit is closed (energized) when lever is pointing up.
13	CIRCUIT BREAKER (Lower Panel Positions 1, 3, and 5), 100 AMP, Lever Actuated	Protects ETKS main power feed circuit in lower panel. Circuit is closed (energized) when lever is pointing up.
14	CIRCUIT BREAKER (Lower Panel Position 2), 15 AMP, Lever Actuated	Protects air conditioner unit. Circuit is closed (energized) when lever is pointing down.
15	CIRCUIT BREAKER (Lower Panel Position 4), 15 AMP, Lever Actuated	Protects lights and fans. Circuit is closed (energized) when lever is pointing down.
16	CIRCUIT BREAKER (Lower Panel Position 6), 20 AMP, Lever Actuated, GFCI protected	Protects external service receptacle R3. Circuit is closed (energized) when lever is pointing down.
17	CIRCUIT BREAKER (Lower Panel Position 8), 20 AMP, Lever Actuated, GFCI protected	Protects exterior service receptacle. Circuit is closed (energized) when lever is pointing down.
18	CIRCUIT BREAKER (Lower Panel Positions 10, 12, and 14), 30 AMP, Lever Actuated	Protects steam and hold oven. Circuit is closed (energized) when lever is pointing down.

CONTROLS AND INDICATORS – CONTINUED

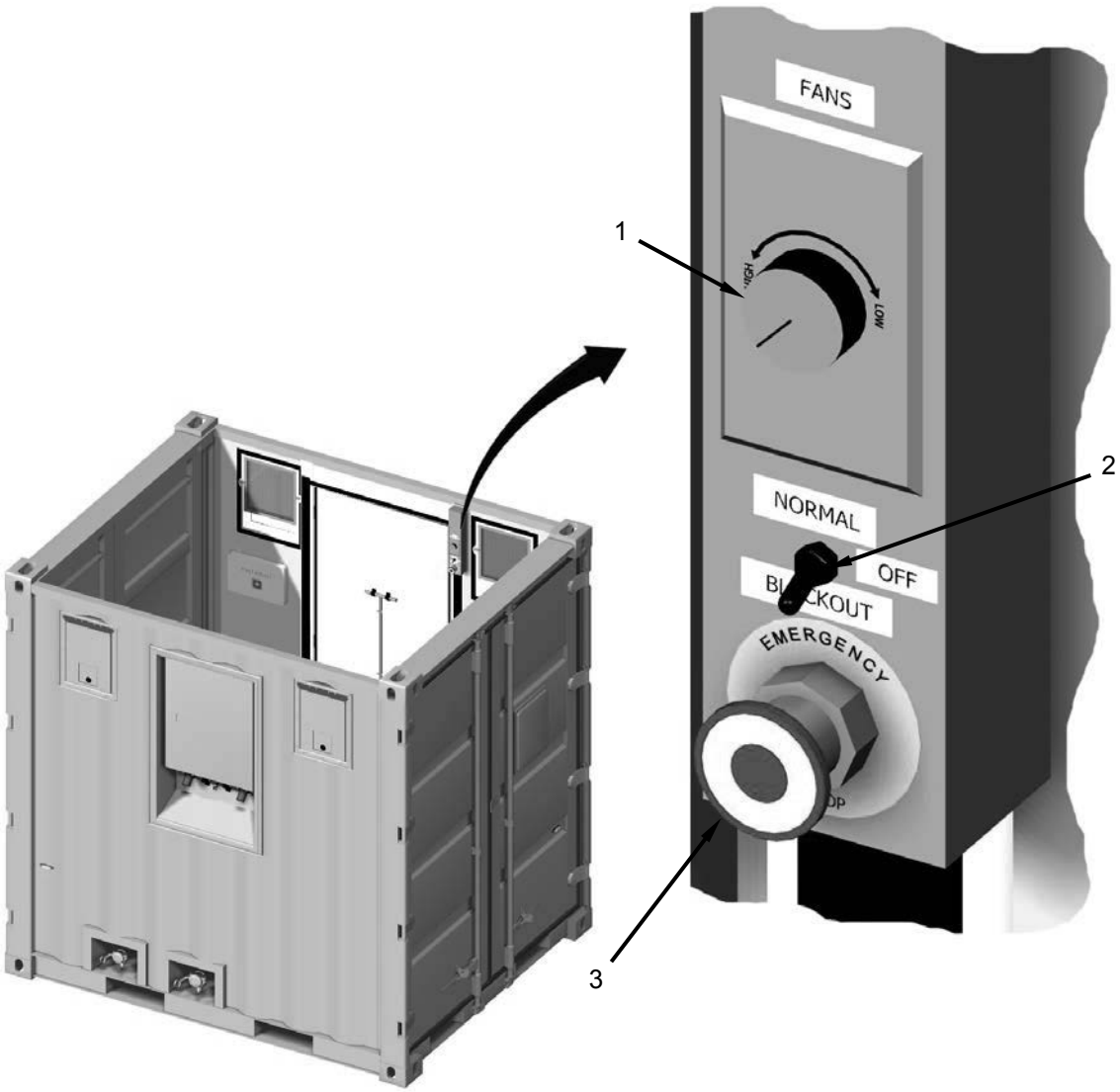


Figure 2. ETKS Center Section Controls.

Table 2. ETKS Center Section Controls.

Key	Item	Function
1	Fan Switch, Rotary	Controls fan operation. Rotating the knob fully counter-clockwise turns off the fans. Rotating the knob clockwise turns on the fans and decreases fan speed.
2	Light Switch, 3-position Toggle	Controls mode of operation for overhead lights. NORMAL (Up) position turns on white lights. OFF (Center) position turns off the lights. BLACKOUT (Down) position turns on blackout lights.
3	Emergency Stop, Push Button Switch	Disconnects all electrical power from the ETKS. Pushing in the emergency stop button trips both 100-amp breakers in the power distribution panel. The button must be manually pulled out to reset it.

CONTROLS AND INDICATORS – CONTINUED

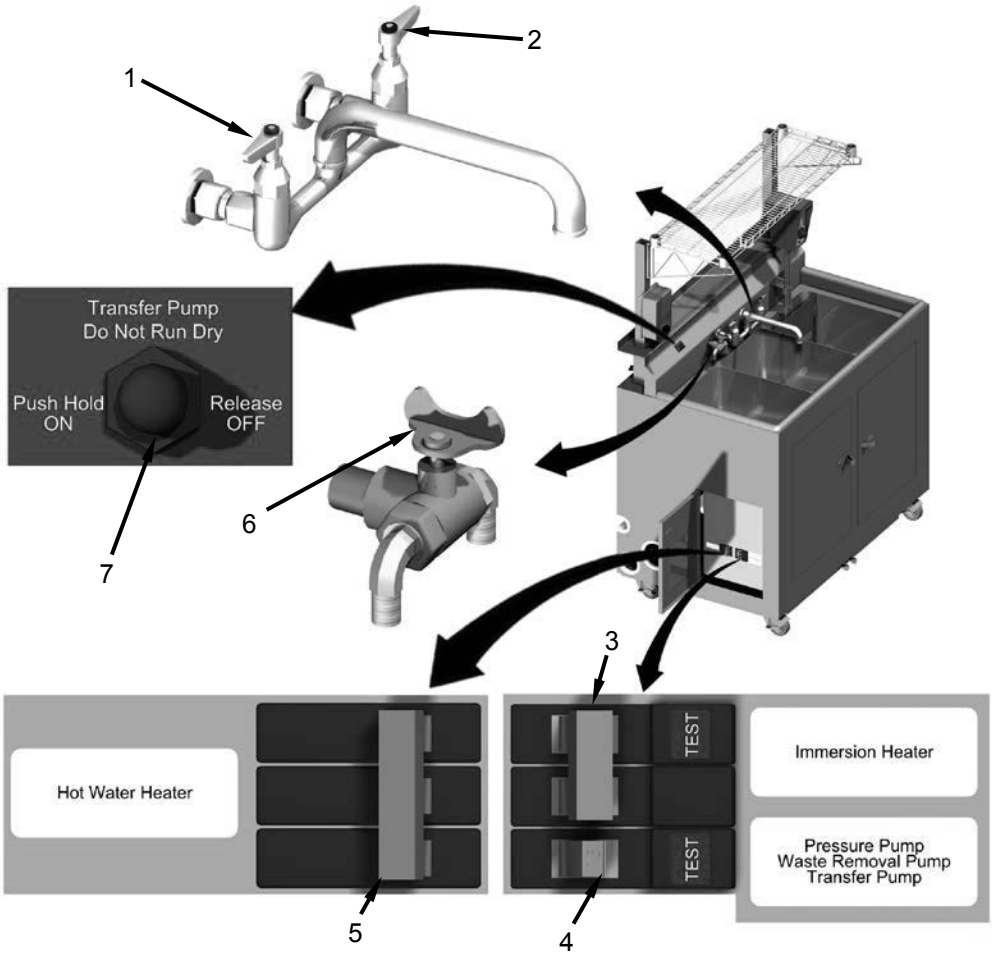


Figure 3. Sanitation Sink Controls.

Table 3. Sanitation Sink Controls.

Key	Item	Function
1	Hot Water Valve	Used to control hot water flow to sink.
2	Cold Water Valve	Used to control cold water flow to sink.
3	CIRCUIT BREAKER, 30 AMP, Lever Actuated	Protects immersion heater. Circuit is closed (energized) when lever is pointing towards center of panel.
4	CIRCUIT BREAKER, 20 AMP, Lever Actuated	Protects the pressure pump, the waste removal pump, and the transfer pump. Circuit is closed (energized) when lever is pointing towards center of panel.
5	CIRCUIT BREAKER, 60 AMP, Lever Actuated	Protects the hot water heater. Circuit is closed (energized) when lever is pointing towards center of panel.
6	Transfer Valve	Used to divert the flow of water from either the center or left sink. The middle position of this valve is the OFF position.
7	Transfer Pump Push Button, Momentary	Used to run the transfer pump. Push and hold to turn pump on, release to turn pump off.

CONTROLS AND INDICATORS – CONTINUED

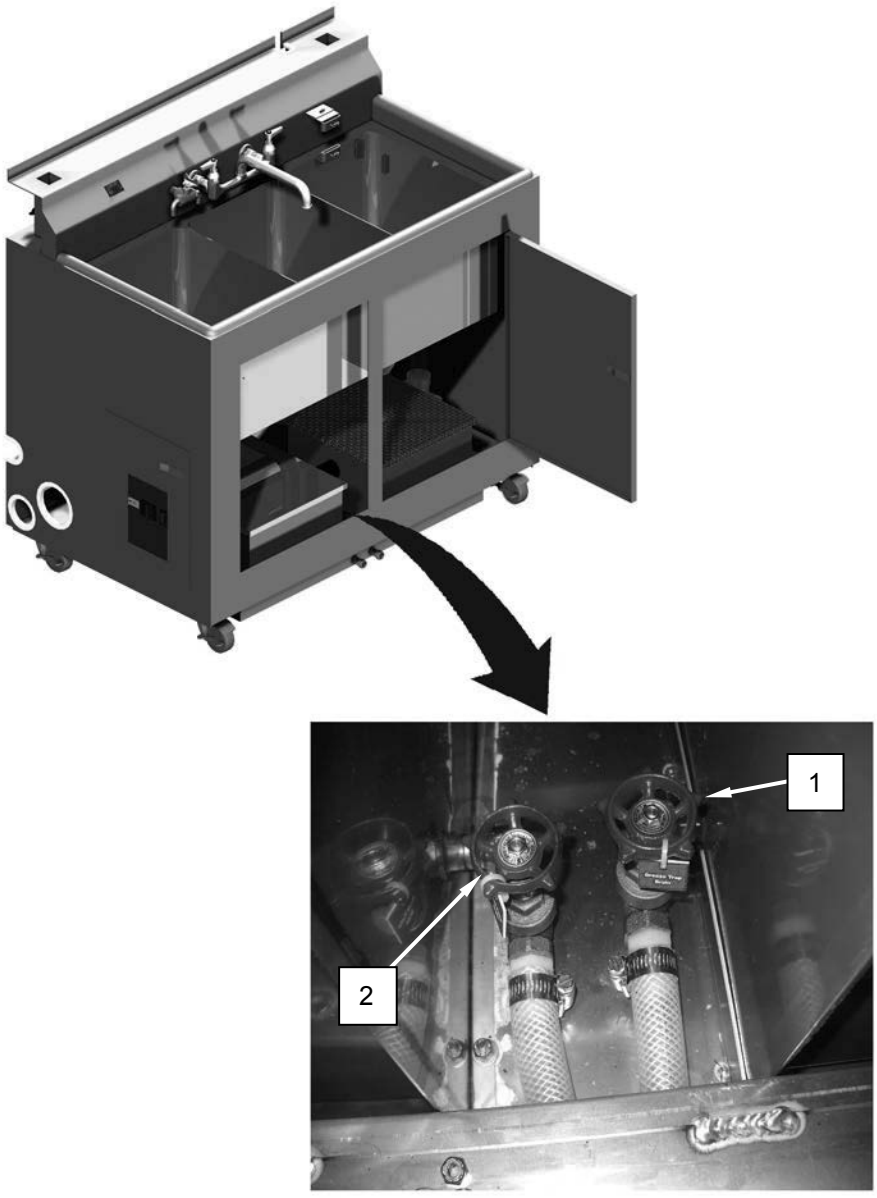


Figure 4. Sanitation Sink Front Drain Controls.

Table 4. Sanitation Sink Front Drain Controls.

Key	Item	Function
1	Grease Trap Drain Valve, Rotary Handle	Drains the grease trap. Rotating the handle counter-clockwise opens the drain; rotating the handle clockwise closes the drain.
2	Waste Tank Drain Valve, Rotary Handle	Drains the waste tank. Rotating the handle counter-clockwise opens the drain; rotating the handle clockwise closes the drain.

CONTROLS AND INDICATORS – CONTINUED

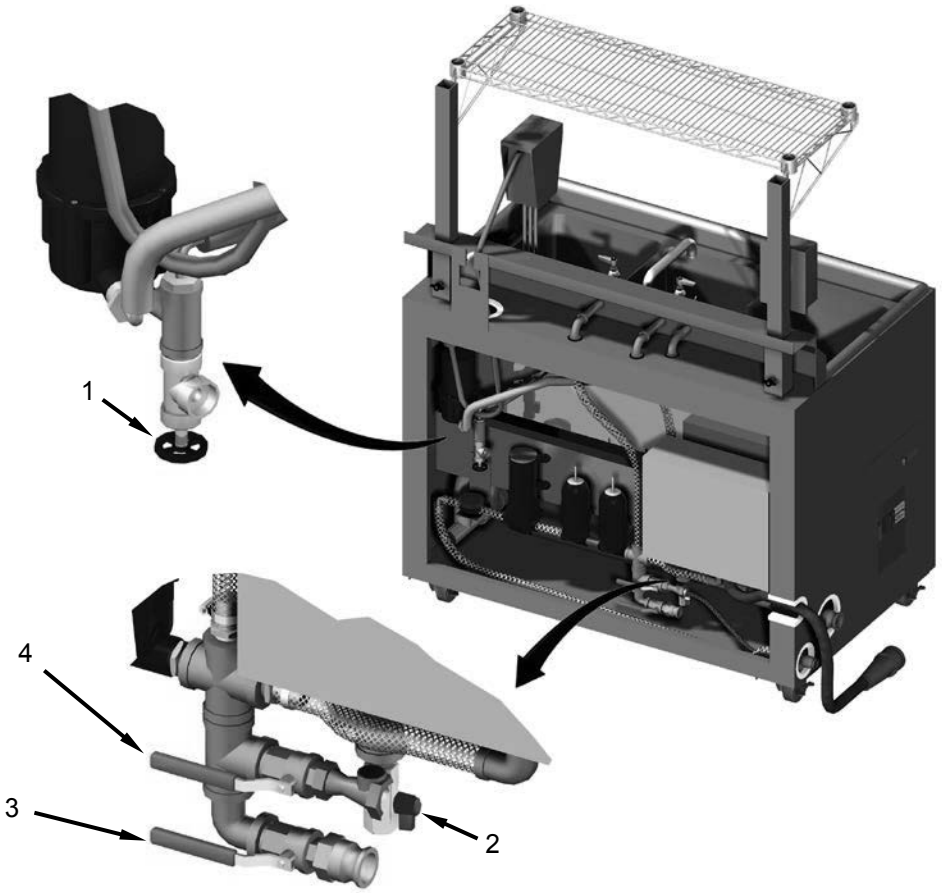


Figure 5. Sanitation Sink Rear Controls.

Table 5. Sanitation Sink Rear Controls.

Key	Item	Function
1	Transfer Pump Drain Valve, Rotary Handle	Drains the transfer pump. Rotating the handle counter-clockwise opens the drain; rotating the handle clockwise closes the drain.
2	Water Heater and Hot Water Drain Valve, Wedge Handle	Drains the water heater and the hot water supply hoses. Turn handle down to open; turn handle up to close.
3	Ancillary Supply Ball Valve, Quarter-Turn Handle	Supplies potable water to any connected ancillary equipment. Rotating the handle counter-clockwise opens the valve; rotating the handle clockwise closes the valve.
4	Coffee Pot Ball Valve, Quarter-Turn Handle	Supplies potable water to the optional coffee pot. Rotating the handle counter-clockwise opens the valve; rotating the handle clockwise closes the valve.

CONTROLS AND INDICATORS – CONTINUED

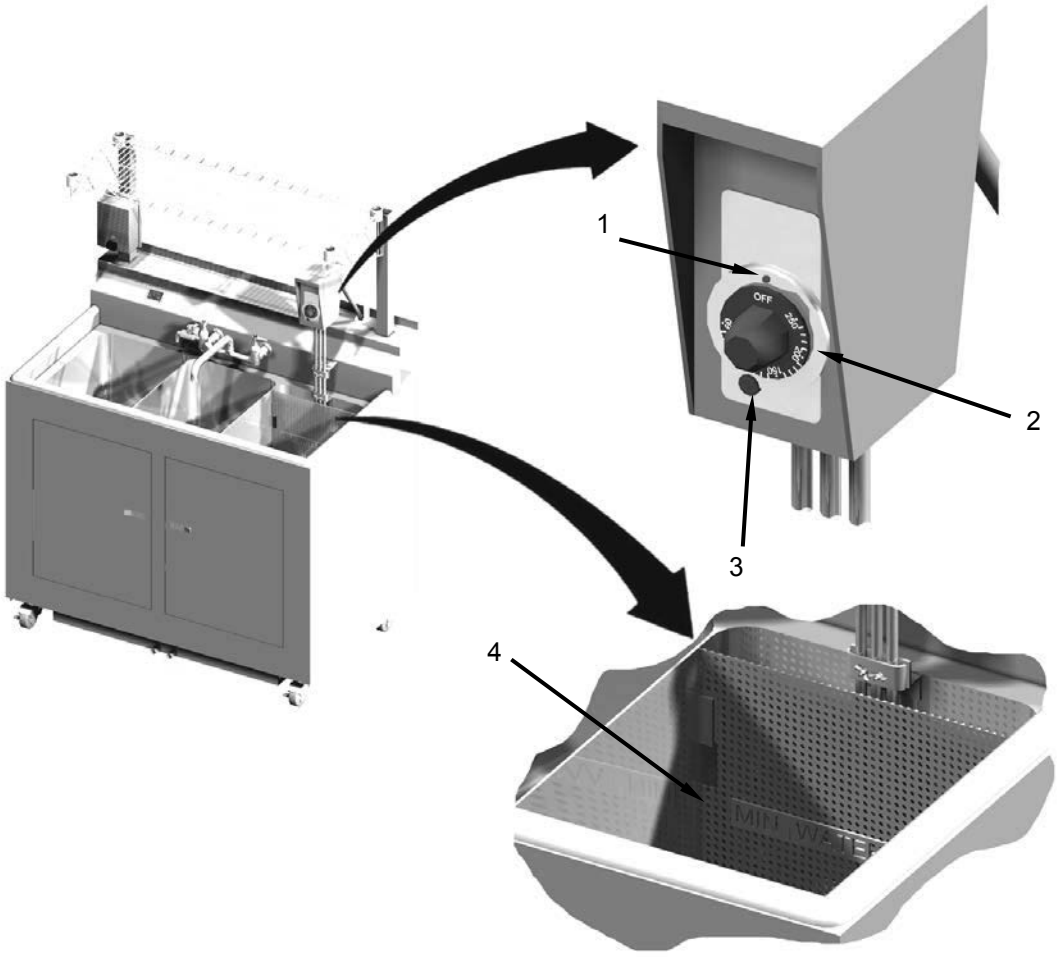


Figure 6. Immersion Heater Controls.

Table 6. Immersion Heater Controls.

Key	Item	Function
1	Indicator Light	Indicates when the immersion heater is on.
2	Thermostat, Rotary Knob Control, 60 – 250°F	Controls when the immersion heater turns on. Rotating it counter-clockwise to the OFF position turns off the heater.
3	Reset Button	Turns on the heater when the thermostat is not set to the OFF position.
4	Minimum water level indicator	Indicates the minimum water level required to safely operate the transfer pump and the immersion heater.

CONTROLS AND INDICATORS – CONTINUED

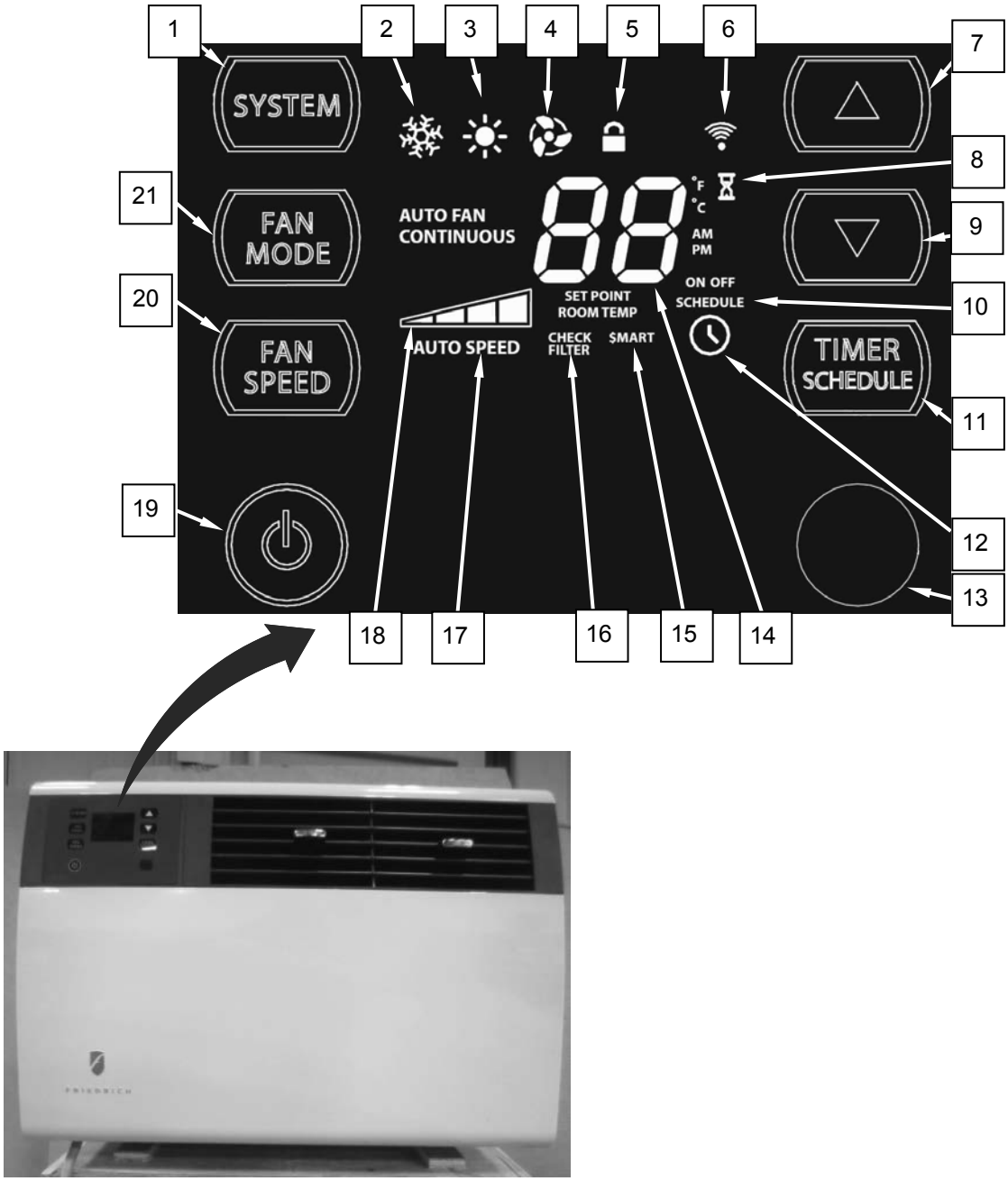


Figure 7. Air Conditioner Controls.

CONTROLS AND INDICATORS – CONTINUED

Table 7. Air Conditioner Controls.

Key	Item	Function
1	System	Cycles between Heat, Cool, and Fan Only modes.
2	Cool	Cool - indicates that air conditioner is in Cool mode.
3	Heat	Heat - indicates that air conditioner is in Heat mode.
4	Fan Only	Fan Only - indicates that air conditioner/Heater is in Fan Only mode.
5	Control Locked	Control Locked – indicates that air conditioner/Heater control has been locked.
6	WiFi Operating (if equipped)	WiFi Operating – indicates that air conditioner/Heater WiFi is in operation.
7	Temperature Increment Up	Used to increase the temperature setting.
8	Wait	Indicates the compressor time delay is active.
9	Temperature Increment Down	Used to decrease the temperature setting.
10	Schedule	Indicates the schedule function is in use.
11	Timer Schedule	Used to command the unit to turn ON and OFF at scheduled times.
12	Timer On	Indicates that timer function is in use.
13	IR Window (Do not block)	Allows remote control to transmit commands to the unit.
14	Two Digit Display	Shows settings for set point (temperature), room temperature, and clock (AM/PM).
15	Smart Operating	Indicates equipment is being controlled remotely.
16	Check Filter	Indicates that filter needs to be cleaned or replaced.
17	Auto Speed	Indicates unit is set to automatically select best fan cooling speed.
18	Fan Speed	Indicates selected fan speed.
19	ON/OFF	Turns unit ON or OFF.
20	Fan Speed	Sets fan speed: LOW, MED, HIGH, or AUTO (as equipped).
21	Fan Mode	Sets fan to either cycle automatically or run continuously.

CONTROLS AND INDICATORS – CONTINUED

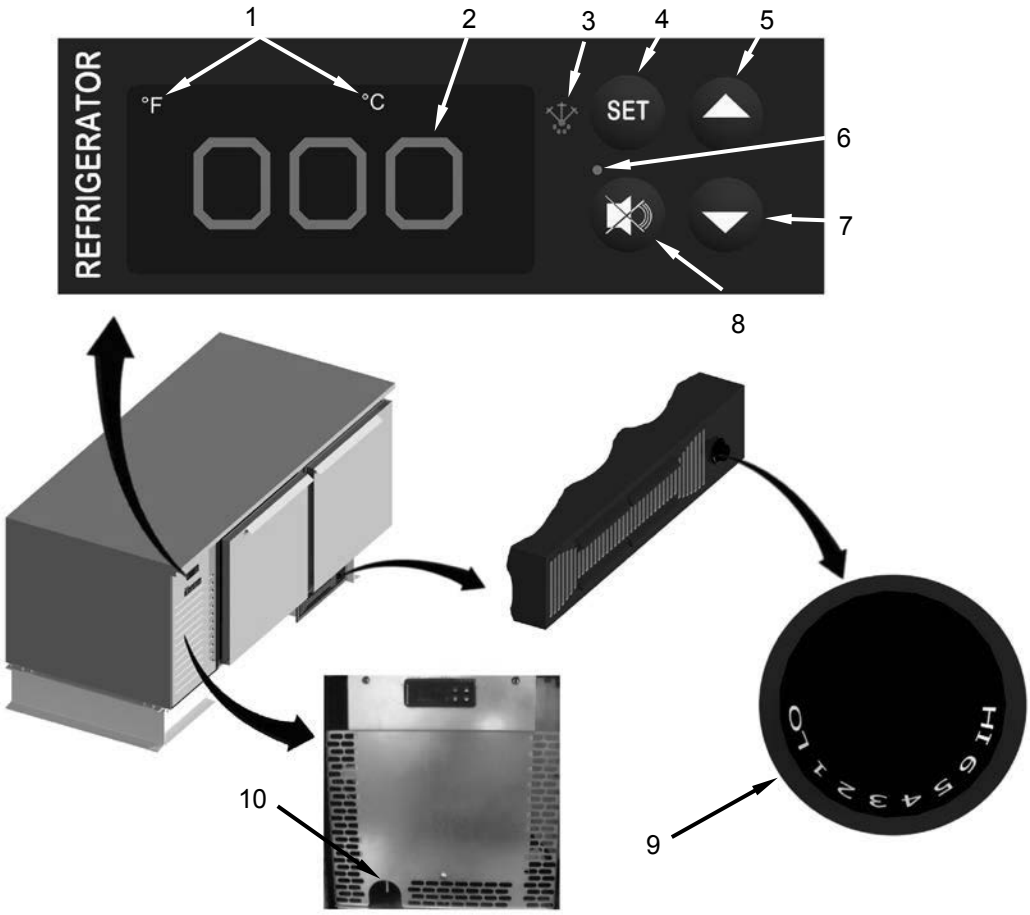


Figure 8. Refrigerator and Space Heater Controls.

Table 8. Refrigerator and Space Heater Controls.

Key	Item	Function
1	Temperature Scale LED light	Indicates whether the Fahrenheit or Celsius temperature scale is in use.
2	3-Digit LED display	Displays the cabinet temperature, alarm codes, or programming options.
3	LED Defrost Icon	Displays when the compressor is OFF to defrost the coil.
4	Set Button	Used to program the refrigerator.
5	Up Button	Used to program the refrigerator.
6	Alarm LED Light	Indicates the presence of an alarm.
7	Down Button	Used to program the refrigerator.
8	Alarm Cancel Button	Turns off audible alarms and/or clears the LED display alarm code. Also used to program the refrigerator.
9	Thermostat, Rotary Knob Control	Use to turn space heater on and off and set the level of heat. Rotating the knob fully counter-clockwise turns off the heater. Rotating the knob clockwise turns on the heater and increases the heat output.
10	Power Switch	Use to turn refrigerator on and off.

CONTROLS AND INDICATORS – CONTINUED

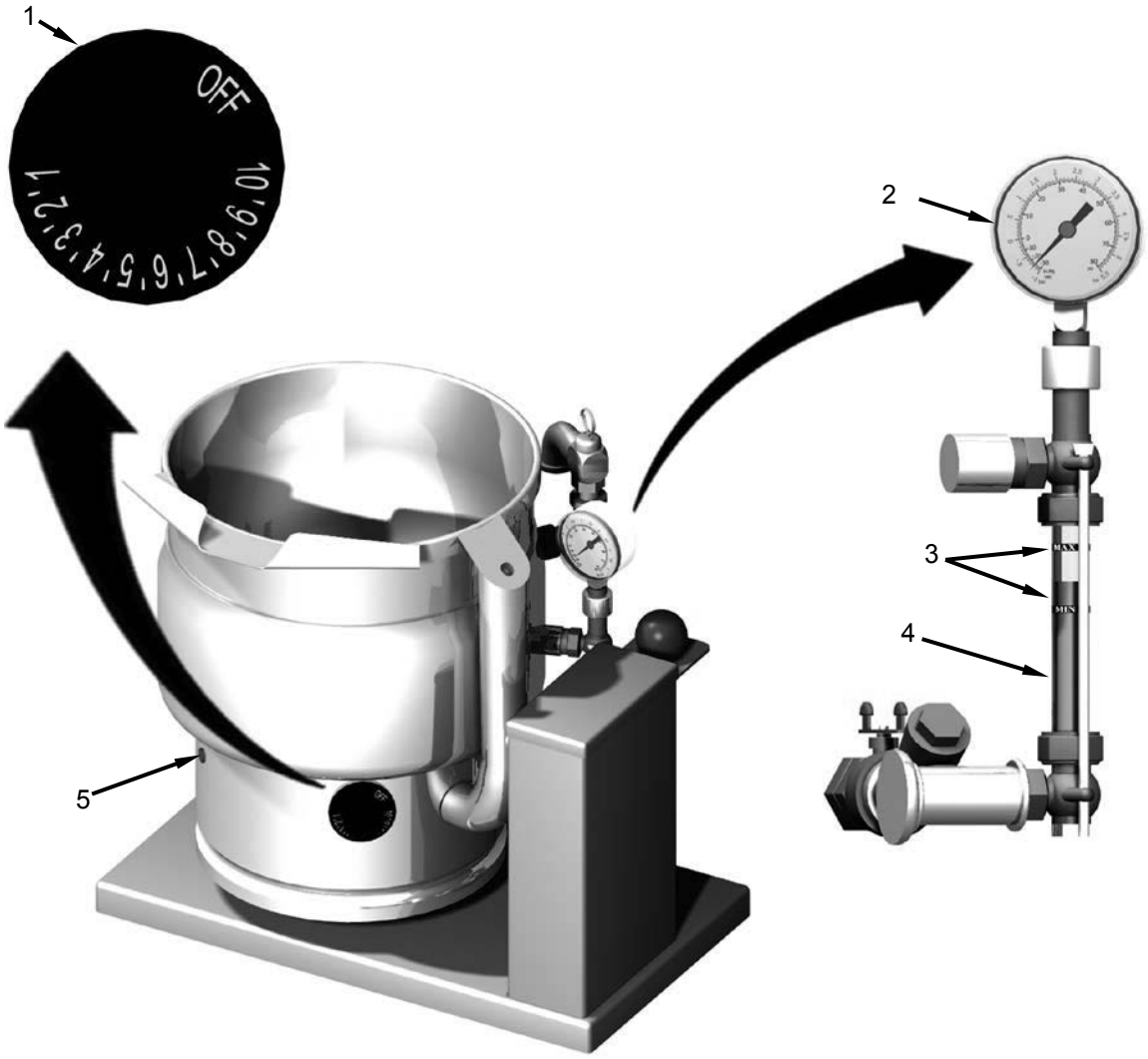


Figure 9. Steam Kettle Controls.

Table 9. Steam Kettle Controls.

Key	Item	Function
1	Thermostat	Turns the heating element on and off and sets the level of heat. Rotating the knob fully counter-clockwise turns off the heating element. Rotating the knob clockwise turns on the heating element and decreases the heat level.
2	Pressure Gauge	Indicates water pressure in the steam jacket. Positive pressure reading given in psi and bar. Vacuum reading given in bar and inHg.
3	Sight Glass MAX / MIN Marks	Indicates the maximum and minimum required water level.
4	Water Level, Sight Glass	Indicates the water level in the steam jacket.
5	Indicator Light	Illuminates red to indicate that the heating element is on.

CONTROLS AND INDICATORS – CONTINUED

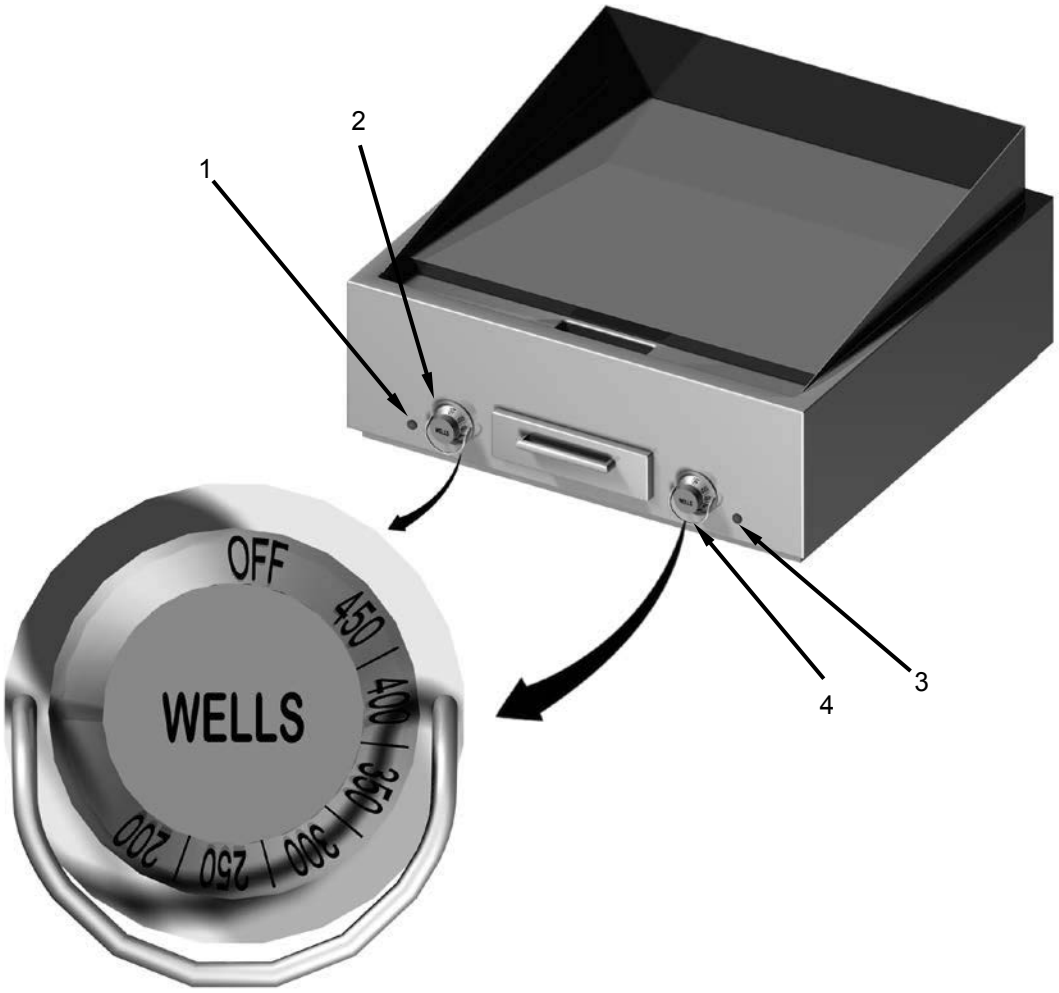


Figure 10. Griddle Controls.

Table 10. Griddle Controls.

Key	Item	Function
1	Indicator Light, Left	Indicates when the left heating element is on.
2	Thermostat, Rotary Knob Control, 200 – 450°F, Left	Turns the left heating element on and off and sets the level of heat. Rotating the knob fully clockwise turns off the heating element. Rotating the knob counter-clockwise turns on the heating element and decreases the heat level.
3	Indicator Light, Right	Indicates when the right heating element is on.
4	Thermostat, Rotary Knob Control, 200 – 450°F, Right	Turns the Right heating element on and off and sets the level of heat. Rotating the knob fully clockwise turns off the heating element. Rotating the knob counter-clockwise turns on the heating element and decreases the heat level.

CONTROLS AND INDICATORS – CONTINUED

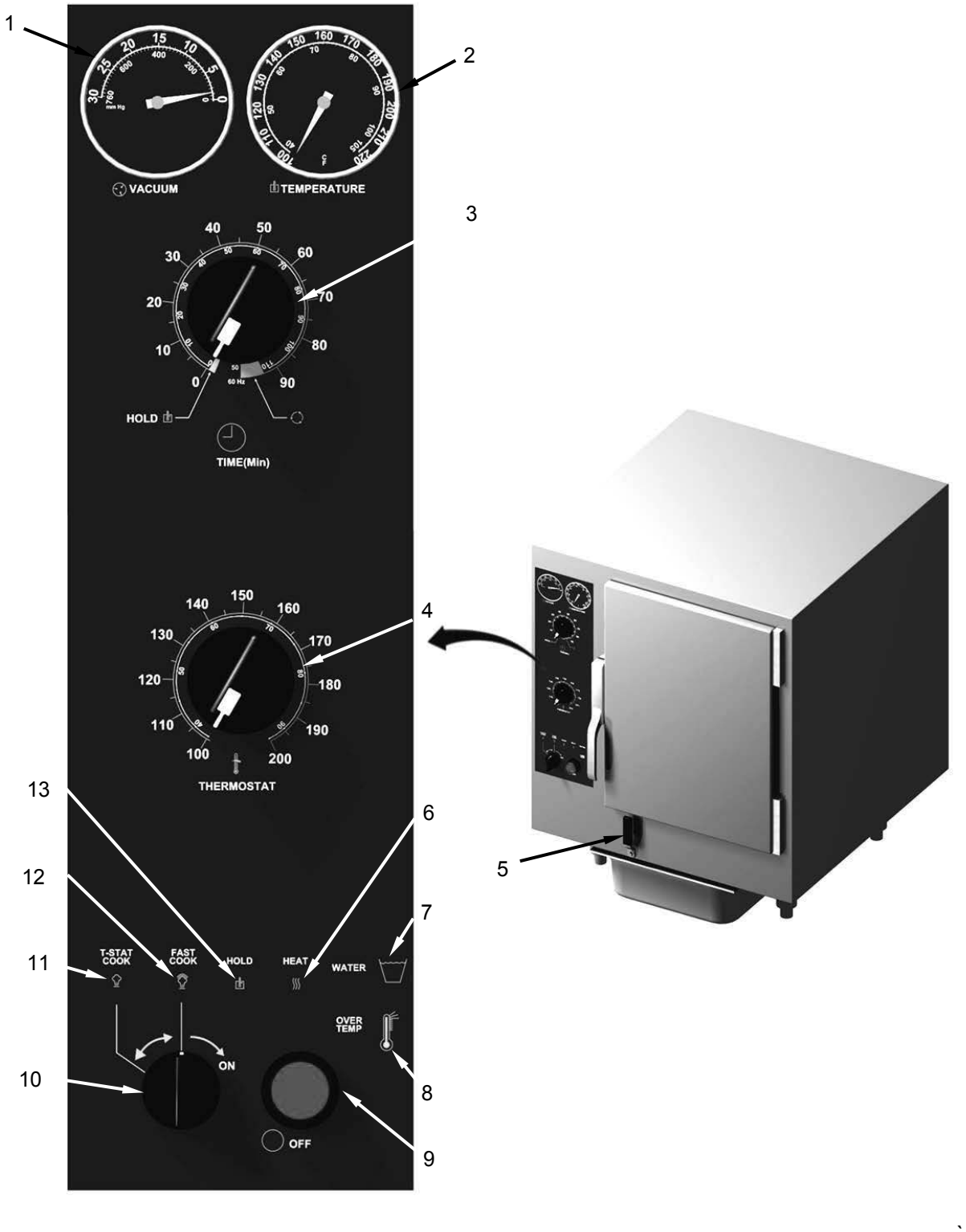


Figure 11. Steam and Hold Oven Controls.

CONTROLS AND INDICATORS – CONTINUED

Table 11. Steam and Hold Oven Controls.

Key	Item	Function
1	Vacuum Gauge, Analog	Displays the internal atmospheric pressure.
2	Temperature Gauge, Analog (100 – 220°F)	Displays the temperature inside the steam and hold oven.
3	Timer, Rotary Knob, 0 – 90 min	Sets the time that the steam and hold oven will cook at reduced internal atmospheric pressure. Rotating the knob to CONTINUOUS sets the oven to cook for an indefinite amount of time. Rotating the knob to the HOLD position will maintain the temperature set by the temperature controller without reducing the internal atmospheric pressure.
4	Temperature Controller, Rotary Knob, (100 – 200°F)	Use to set the level of heat. Rotating the knob clockwise increases the heat output.
5	Drain Valve, Quarter-turn Handle	Controls the oven drain. Rotating the lever clockwise to horizontal closes the drain. Rotating the lever counter- clockwise to vertical opens the drain.
6	HEAT Indicator Light	Indicates that the steam and hold oven is heating up.
7	LOW WATER Indicator Light	Indicates that the water level has fallen below a safe level.
8	OVER TEMP Indicator Light	Indicates that the temperature has risen past the desired level.
9	Power Switch, Push Button	Turns off the steam and hold oven.
10	Toggle Switch	Momentarily rotating the knob fully clockwise turns on the unit. Controls the oven mode. There are two settings: T-STAT COOK – maintains the temperature set by the thermostat and reduces the internal atmospheric pressure. FAST COOK – heats to 212°F and reduces the internal atmospheric pressure.
11	T-STAT COOK Indicator Light	Indicates that the steam and hold oven is in T-STAT COOK mode.
12	FAST COOK Indicator Light	Indicates that the steam and hold oven is in FAST COOK mode.
13	HOLD Indicator Light	Indicates that the steam and hold oven is in HOLD mode.

CONTROLS AND INDICATORS – CONTINUED

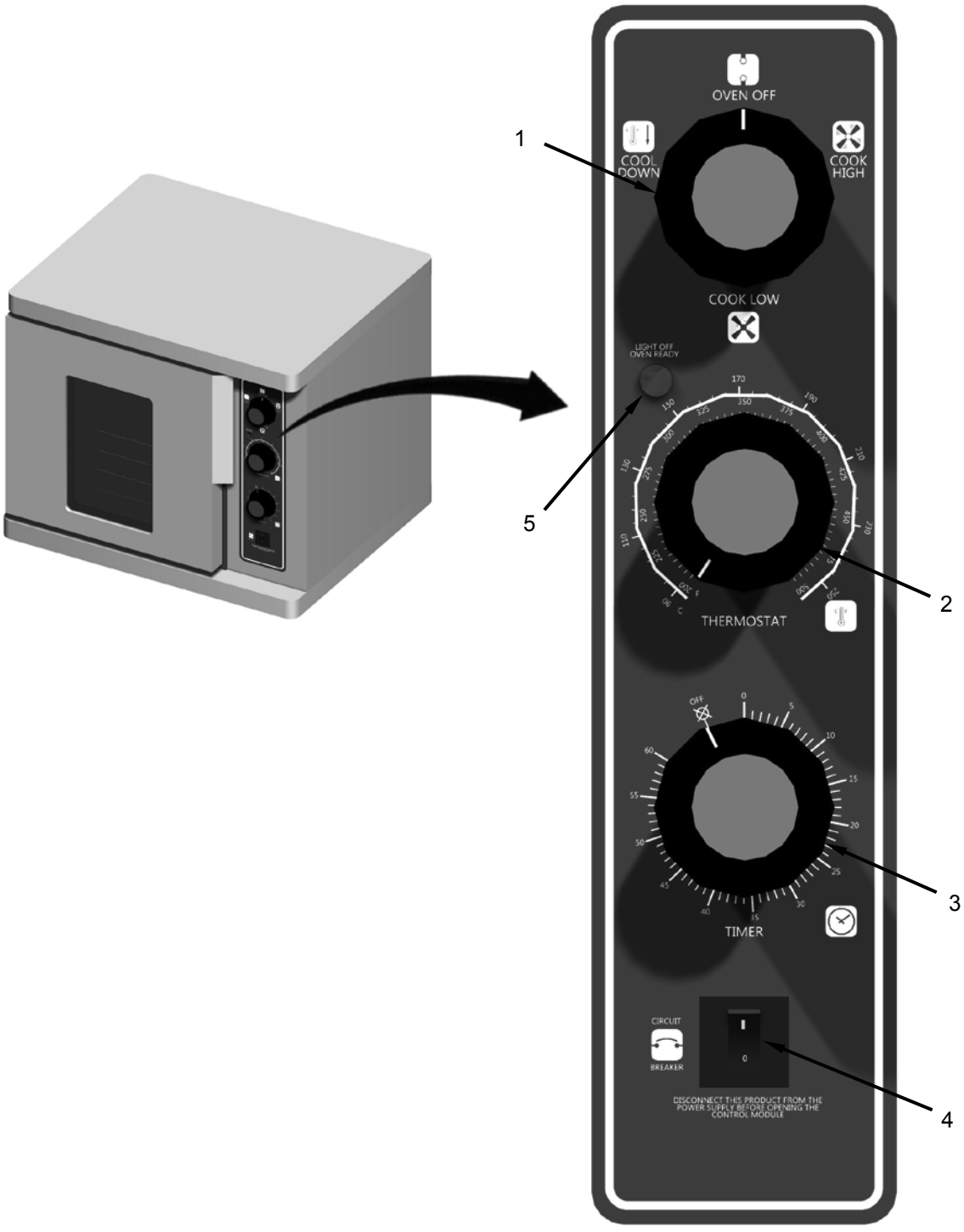


Figure 12. Convection Oven Controls.

CONTROLS AND INDICATORS – CONTINUED

Table 12. Convection Oven Controls.

Key	Item	Function
1	Mode Select Switch, Rotary Knob	Controls power to the oven. There are four modes: OVEN OFF – turns off the oven. COOK HIGH: heats the oven to the selected temperature with high fan speed. COOK LOW: heats the oven to the selected temperature with low fan speed. COOL DOWN: turns on the fans but not the heating elements.
2	THERMOSTAT, Rotary Knob Control, (200 – 500°F)	Use to set the level of heat. Rotating the knob clockwise increases the heat output.
3	TIMER, Rotary Knob, (0 – 60 min)	Sets the time that the oven will cook.
4	Power Switch	Controls power to the convection oven. 0 position is off. I position is on.
5	Indicator Light	Indicates that heater is on and the oven is heating up.

CONTROLS AND INDICATORS – CONTINUED

Cook and Hold Oven Controls

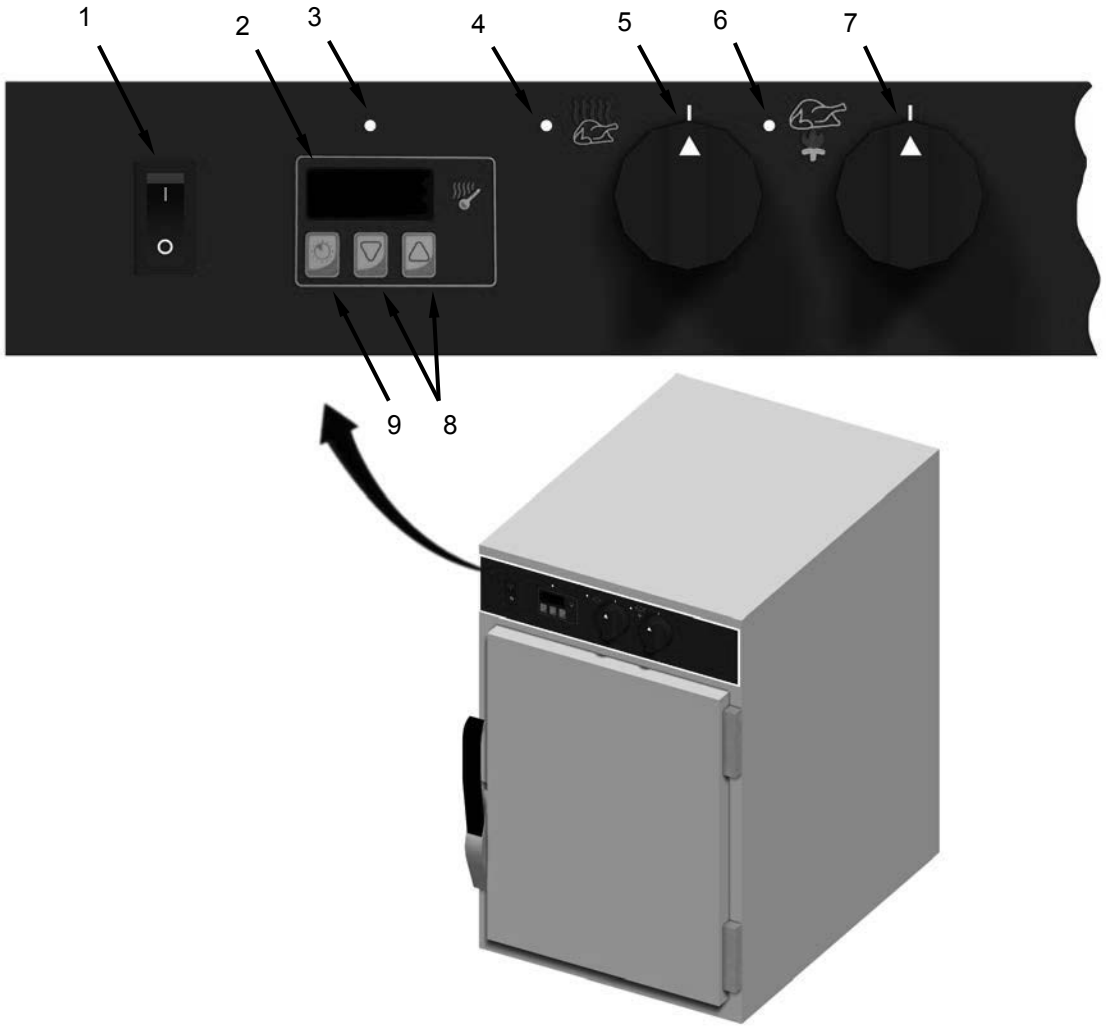


Figure 13. Cook and Hold Oven Controls.

Table 13. Cook and Hold Oven Controls.

Key	Item	Function
1	Power Switch	Provides power to the cook and hold oven. 0 position is off. I position is on.
2	LED Digital Display	Used to program the unit.
3	Heat Indicator Light	Indicates that the heating element is in operation.
4	Holding Indicator Light	Indicates that the oven is in hold mode.
5	Hold Thermostat, Rotary Knob, (60 – 205°F)	Sets the desired holding temperature.
6	Cooking Indicator Light	Indicates that the oven is in cook mode.
7	Cook Thermostat, Rotary Knob, (200 – 325°F)	Sets the desired cooking temperature.
8	Up and Down Arrow Keys	Used to program the unit.
9	Time Key	Used to program the unit.

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
SITING REQUIREMENTS AND SHELTER REQUIREMENTS

INITIAL SETUP:

Personnel Required	References
92G Food Service Specialist (1)	TM 10-8340-244-13&P

SITING REQUIREMENTS

Proper siting and setup of the Expeditionary TRICON Kitchen System (ETKS) is an important factor in achieving mission success. Prior to setup there are many considerations that must be taken into account. These include terrain, space constraints, and traffic flow. The following paragraphs provide guidance for choosing a location to set up the ETKS and conduct kitchen operations.

Terrain

WARNING

Any device used to lift the container must be rated to safely lift 10,000 lb (4,536 kg). Only use authorized licensed operators. Ensure proper precautions are observed when moving Using improperly rated equipment could expose personnel to serious injury.

The ETKS must be operated on firm ground with a 5º slope (1 inch rise on a 12 inch run) or less. When operating the ETKS on the ground the more level the terrain the easier it will be to set up the unit. The area where the ETKS is placed should be free of large rocks or obstacles that would damage the unit when deployed. This includes the area where the 3,000-gallon water bags will be placed. Once in position, level can be achieved using wing jacks or blocking at the four corners of the unit as shown in Figure 1. The ETKS should be positioned in a manner that allows rainwater to run away, so as to not be a nuisance when entering or exiting the kitchen. Since water cannot flow uphill, the ETKS should be positioned so that the wastewater hoses are not oriented uphill.

SITING REQUIREMENTS – CONTINUED

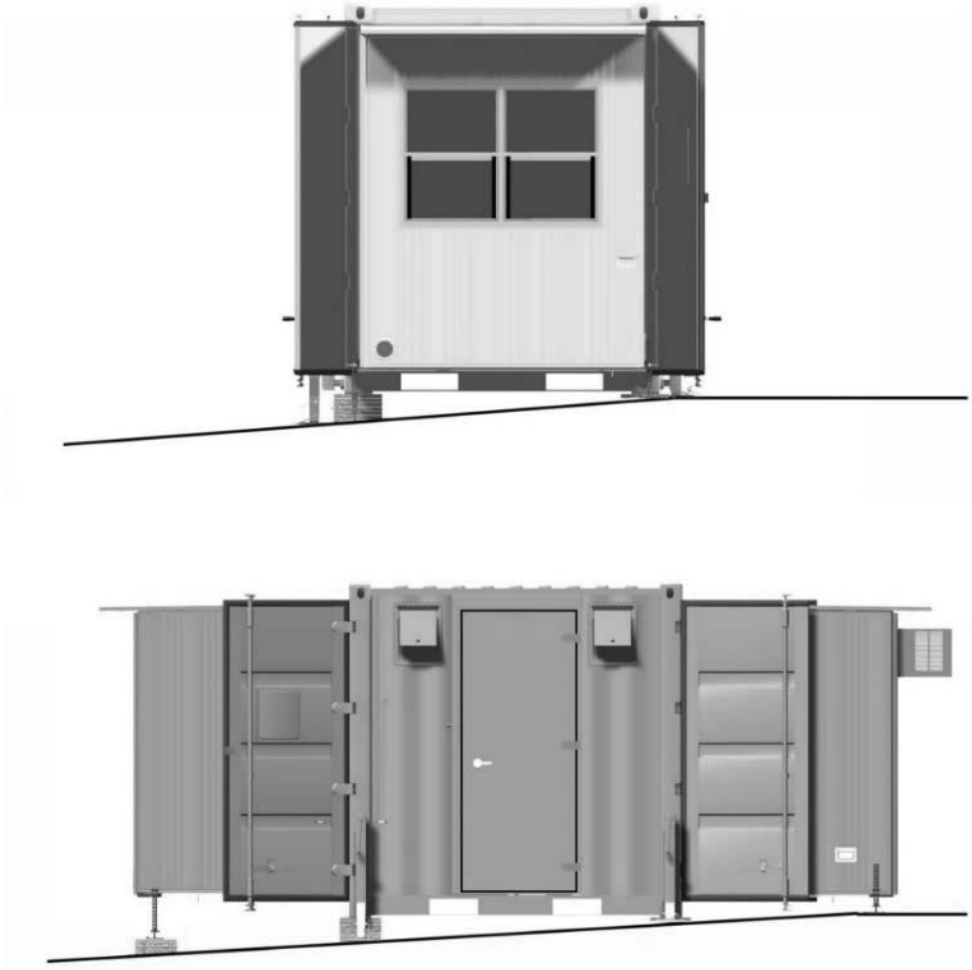


Figure 1. ETKS Leveling Options.

SITING REQUIREMENTS – CONTINUED

Space Constraints

Providing adequate space for kitchen use is essential for efficient use (Figure 2). Allow adequate space to access all four sides of the ETKS for operator PMCS and maintenance. Also allow space for the wings to be lowered and deployed. Extra space should be allotted to allow room for personnel to wait outside the serving window and for entry and exit through the main door. Ensure adequate space is provided to allow setup of the 3,000-gallon water SOURCE bag and WASTE bag. Overhead vegetation and other hindrances must clear the top of the ETKS by 8 feet (2.44 m) minimum. The 3,000-gallon water bags must be within 25 feet (7.62 m) of the ETKS source water and wastewater connection points. The ETKS must also be located within 50 feet (15.24 m) of the power source unless extra cabling is provided.

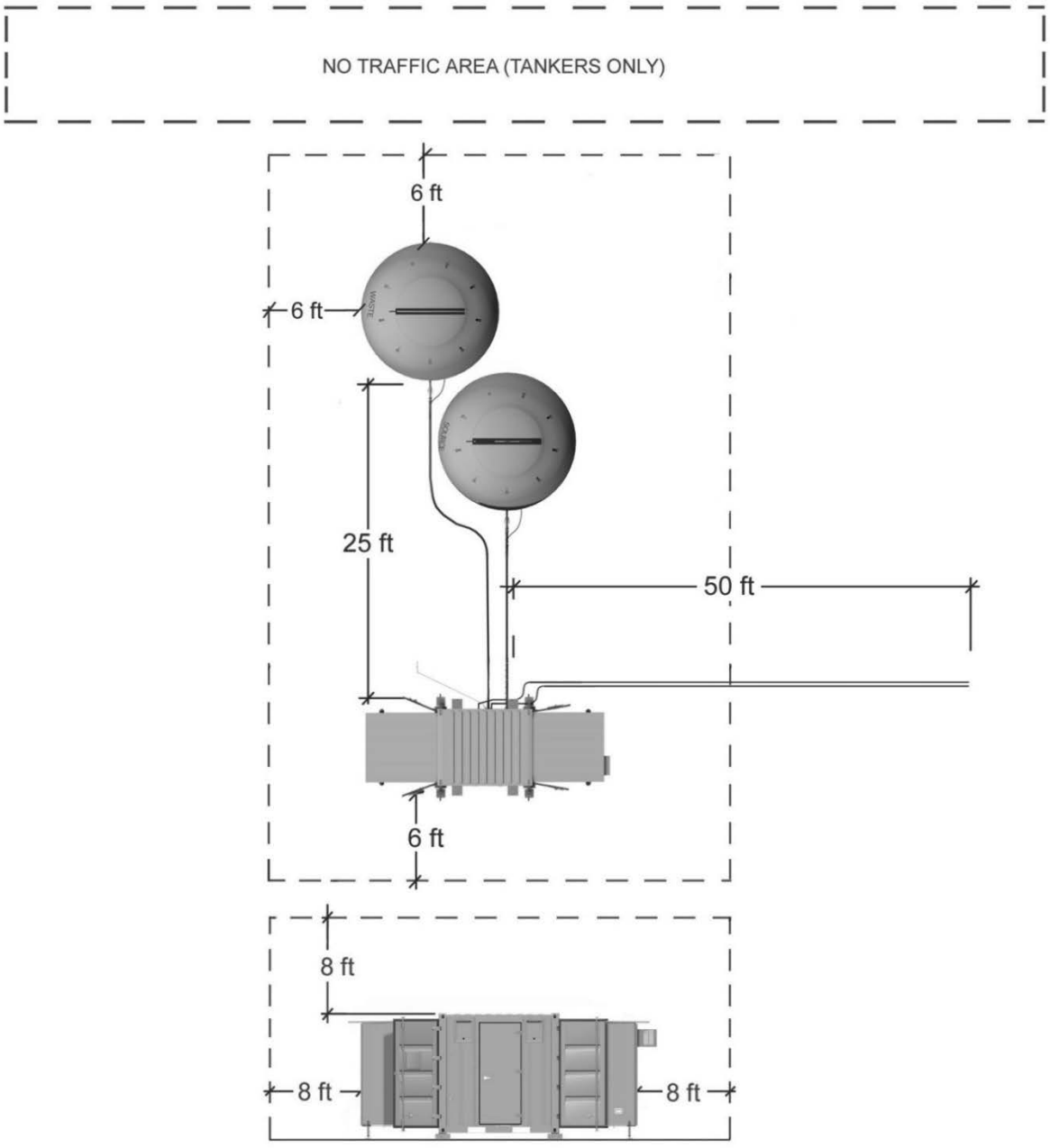


Figure 2. Space Requirements for Operation.

SITING REQUIREMENTS – CONTINUED

Traffic Flow

Designated areas should be laid out for vehicles in a manner that prevents vehicle traffic from interfering with kitchen operations. The SOURCE bag and WASTE bag should be routed to avoid both vehicle and foot traffic areas. Water and waste hoses and electrical power cable must also be routed away from traffic. An unrestricted path must be maintained to allow tankers to service the 3,000-gallon SOURCE bag and WASTE bag.

Shelter Requirements

The ETKS can be operated as a stand-alone unit with no shelter or can be complexed to one TEMPER Type XXXVII air beam tent (Figure 3). The tent provides additional space for serving and eating. The shelter is connected to the serving window end wall on one end of the ETKS. The shelter is provided with entry and exit points. Refer to TM 10-8340-244-13&P regarding information on the TEMPER air beam tent.

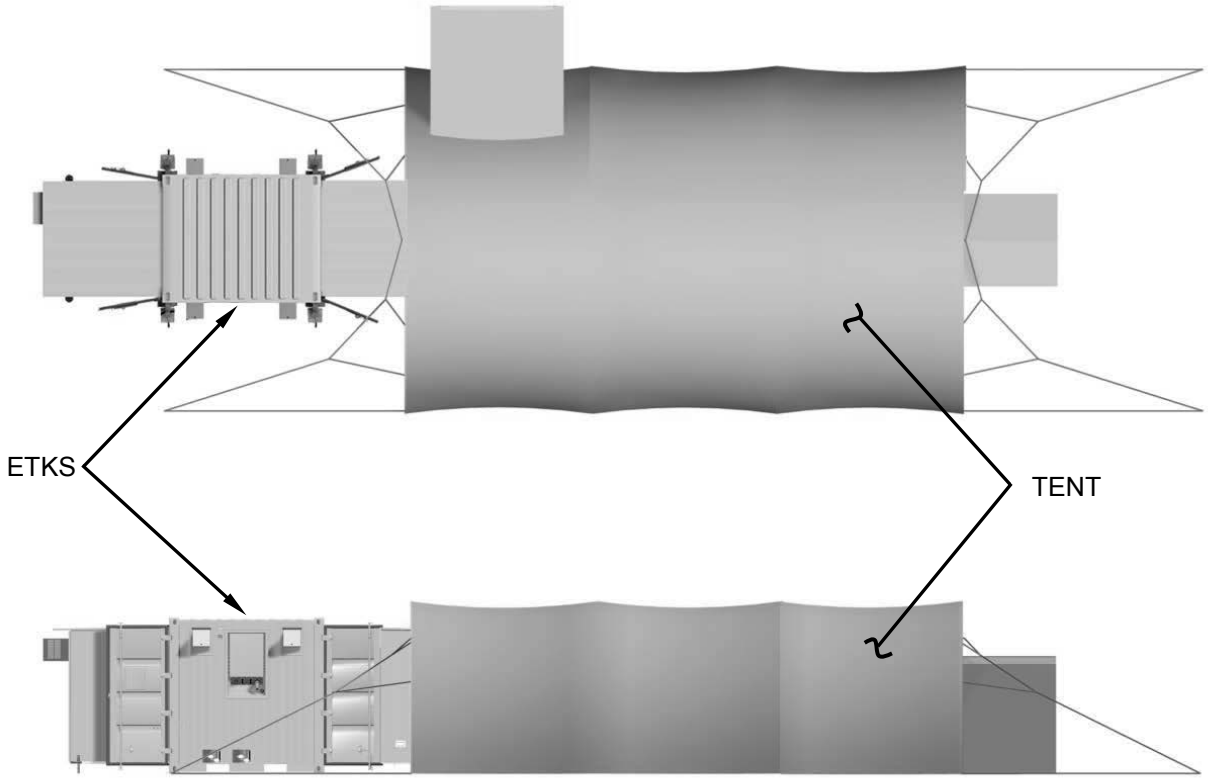


Figure 3. Shelter Requirements.

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
ASSEMBLY AND PREPARATION FOR USE – UNPACK

INITIAL SETUP:

Personnel Required	Equipment Condition
92G Culinary Specialist (1)	ETKS siting completed (WP 0005)

ASSEMBLY AND PREPARATION FOR USE – UNPACK

Level ETKS

WARNING

The ETKS weighs 7,960 lb (3,618 kg) and require a material handling equipment (forklift) rated to safely lift 10,000 lb (4,536 kg) to move. Only use authorized licensed forklift operators. Ensure proper precautions are observed when moving and leveling the Expeditionary TRICON Kitchen System (ETKS). Failure to comply may cause injury or death to personnel.

Prior to deploying the ETKS wings, the base container must be level. Use only solid boards or other non-compressible objects as blocking material. Always stack blocking materials with the widest and longest objects on bottom. Ensure blocking material is at least as wide and long as corner fittings. Failure to achieve proper level and block unit can cause it to shift or tip to one side. This may result in serious injury to personnel inside or around the unit and damage to the deployed wing sections. Seek immediate medical attention if injury occurs.

NOTE

It is highly recommended that blocking be placed under each corner fitting or jack pad even if the ETKS is on level ground. This will prevent the container or jacks from sinking into the ground and will make it easier to break the container and jacks loose if the ground freezes. In addition, the ETKS must be sitting high enough that the waste connection port it is at least 1 inch higher than the WASTE water bag.

1. Level ETKS as follows:

   a. Observe bubble levels (Figure 1, Item 2) on both side walls (Figure 1, Item 1) and right doors (Figure 1, Item 4) and determine which the lowest two corners are.

   b. Raise the ETKS only enough to place blocking (Figure 1, Item 3) under each corner fitting.

   c. Place the appropriate thickness blocking (Figure 1, Item 3) under each corner fitting so that when the ETKS is lowered it will be level in both directions.

   d. Lower the ETKS and observe bubble levels (Figure 1, Item 2). Ensure bubbles are within indicator marks. If unit is level proceed to Deploy ETKS Wings. If unit is not level repeat steps a through c until unit is level

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

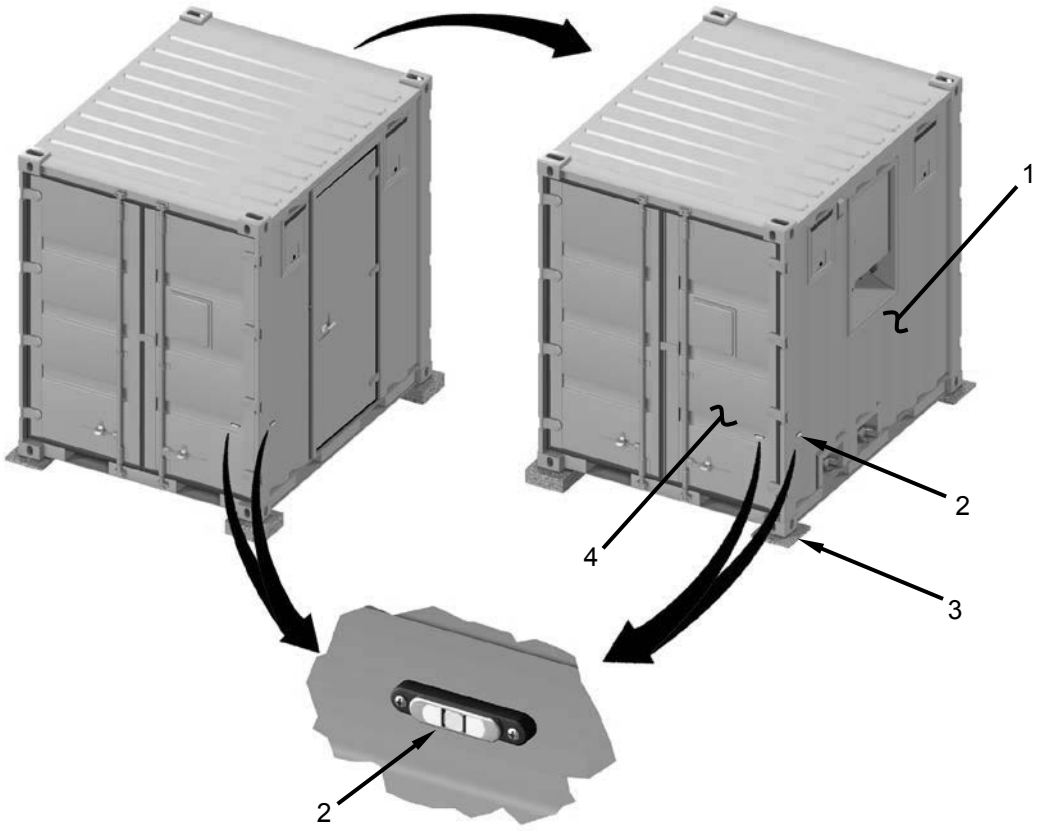
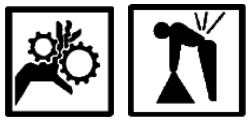


Figure 1. Leveling ETKS.

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

Deploy ETKS Wing Sections

WARNING



Use extreme care when unfolding wing sections to avoid pinching fingers in hinges and where sections connect together. Failure to do so could result in serious injury. Seek immediate medical attention if injury occurs.

Exercise safe lifting techniques when handling wing sections. Ensure you lift with your legs and not with your back to avoid injury. Seek immediate medical attention if injury occurs.

CAUTION

Care must be used when deploying roof and wall sections not to damage seals at edges of each section. Seal damage can occur if each section is not properly supported as it is being pivoted into place and mated with its adjoining section. Seal damage will prevent proper latching of the sections to each other and allow moisture (rain and snow) to seep into kitchen area.

When lowering floor section the floor must be supported so that it does not go past horizontal. If the floor is allowed to drop too far, damage to the hinge and structure will occur.

NOTE

During wing deployment, a minimum of two people are required to unfold, handle, and secure wing sections.

1. At either side of container open doors (Figure 2, Item 1) as follows:

   a. Remove lock or seal from hasp (Figure 2, Item 3) on right door (Figure 2, Item 2).

   b. Pivot hasp (Figure 2, Item 3) upward then lift and turn handle (Figure 2, Item 4) outward until locking rod (Figure 2, Item 5) disengages from holder (Figure 2, Item 6).

   c. Swing door (Figure 2, Item 2) outward until door is clear of container frame (Figure 2, Item 7).

   d. Rotate handle (Figure 2, Item 4) back towards door and place handle back into hasp (Figure 2, Item 3).

   e. Pivot hasp (Figure 2, Item 3) back over handle (Figure 2, Item 4) then reinstall lock if used.

   f. Fully open door (Figure 2, Item 2).

   g. Repeat steps b through f to open left door (Figure 2, Item 8).

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

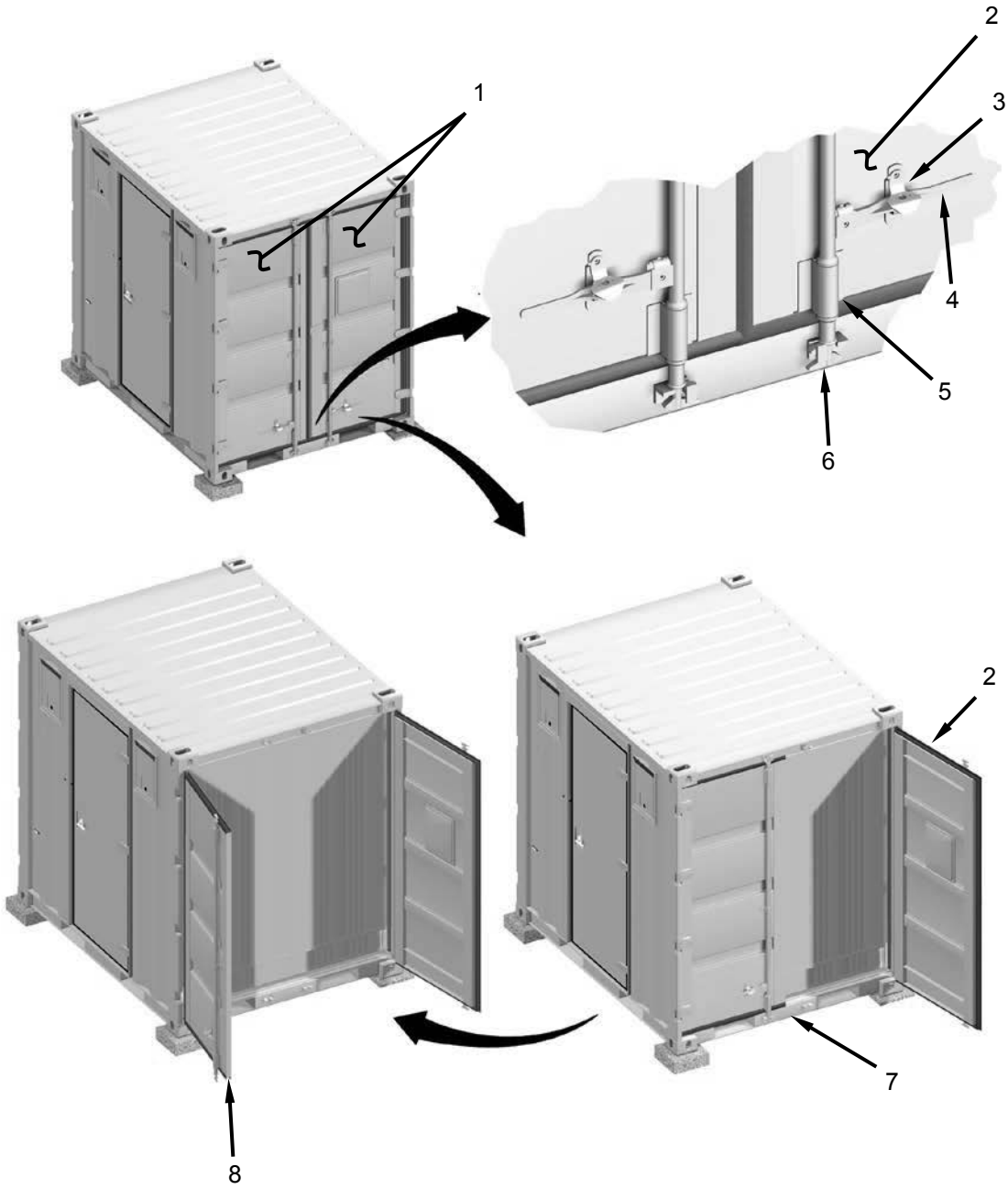


Figure 2. Opening Container Doors.

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

2. Remove T-handle (Figure 3, Item 1) from stowed position on personnel door (Figure 3, Item 2).

NOTE

The roof section must be held in the air for up to a minute while the remaining wings sections are deployed. Make sure person lifting up on roof is prepared to properly hold roof for this duration.

3. Unfold roof section (Figure 3, Item 3) as follows:

   a. With a person on each side of roof section (Figure 3, Item 3), lift up on roof while walking toward outer edge of roof.

   b. While one person holds roof section (Figure 3, Item 3), position tip of T-handle (Figure 3, Item 1) in receptacle (Figure 3, Item 4) at outboard edge of roof section.

   c. Push up on T-handle (Figure 3, Item 1) to raise roof section (Figure 3, Item 3) high enough to allow other wall sections to be deployed.

4. Unfold first wall section (Figure 3, Item 5) so that it is slightly past right edge of roof section (Figure 3, item 3).

5. Lift up on handle (Figure 3, Item 7) then unfold second wall section (Figure 3, Item 6) slightly past left edge of roof section (Figure 3, Item 3).

WARNING

While unfolding the end wall section visually verify that the locking pins (Figure 3, Item 11) of the floor section are securely latched. Failure to do so could allow the floor section to unexpectedly fall, resulting in serious injury.

6. Lift up on handle (Figure 3, Item 7) then unfold end wall section (Figure 3, Item 8) out far enough to allow floor section (Figure 3, Item 9) to be lowered.

7. Ensure first and second wall sections (Figure 3, Items 5 and 6) are still slightly past area where floor section will be lowered then carefully lower roof section (Figure 3, Item 3) to temporarily maintain all wall section positions.

8. Lower floor section (Figure 3, Item 9) as follows:

   a. While supporting weight of floor section (Figure 3, Item 9) rotate handle (Figure 3, Item 13) on either locking pin (Figure 3, Item 11) out away from stop (Figure 3, Item 12) then slide pin out of receiver (Figure 3, Item 10).

   b. Repeat step a to unlatch second locking pin (Figure 3, Item 11).

   c. Slowly lower floor section (Figure 3, Item 9) then walk out towards the end wall (Figure 3, Item 8). While still holding floor section step out between end wall (Figure 3, Item 8) and first wall section (Figure 3, Items 5).

   d. Maneuver side wall sections (Figure 3, Items 5 and 6) inward and lower floor section (Figure 3, Item 9) until floor hook brackets (Figure 3, Item 14) are captured on edges of side walls.

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

9. Repeat steps 1 through 8 to deploy opposite wing sections.

10. Set T-handle (Figure 3, Item 1) aside for later use.

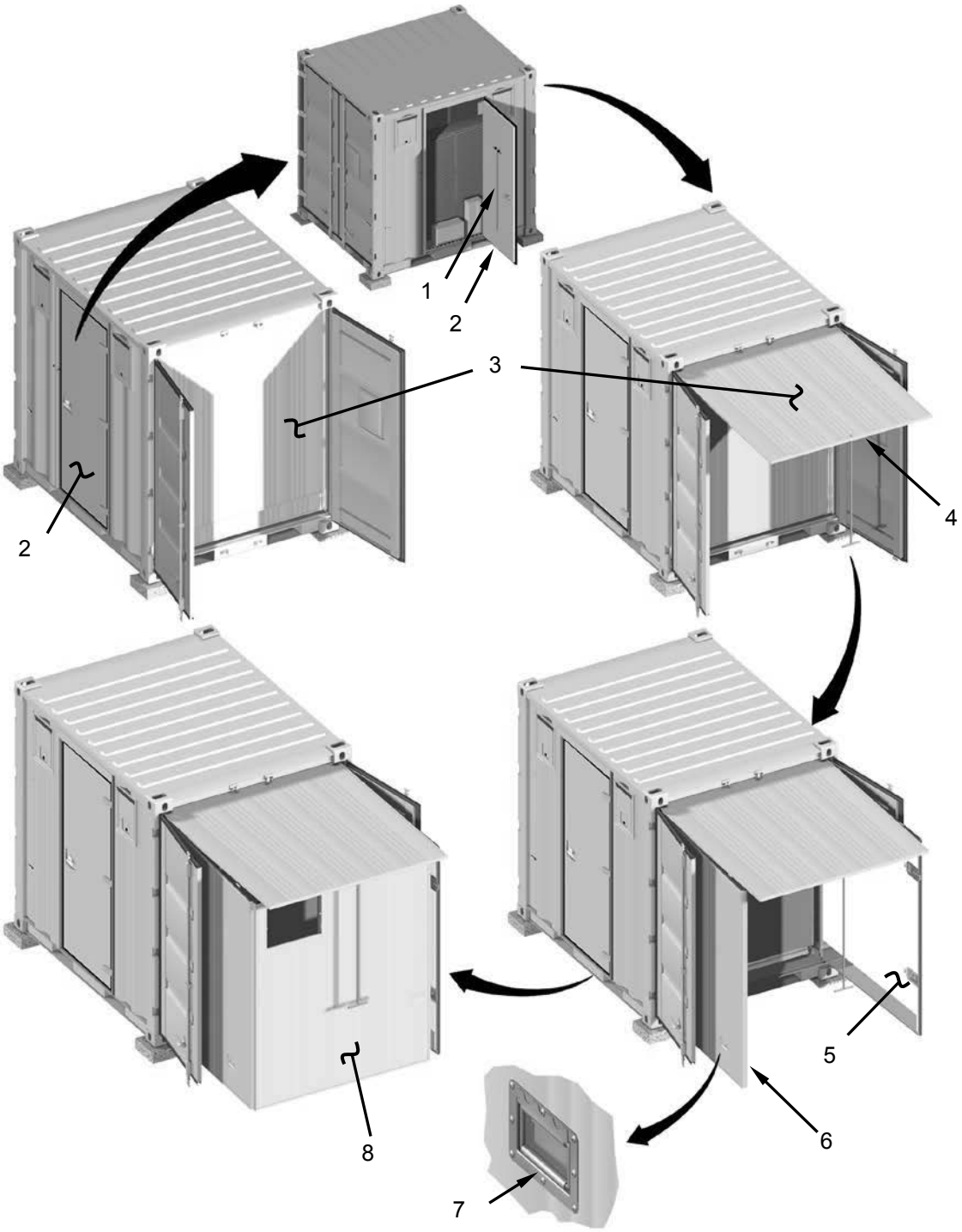


Figure 3. Unfolding Roof, Walls, and Floor (Sheet 1 of 2).

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

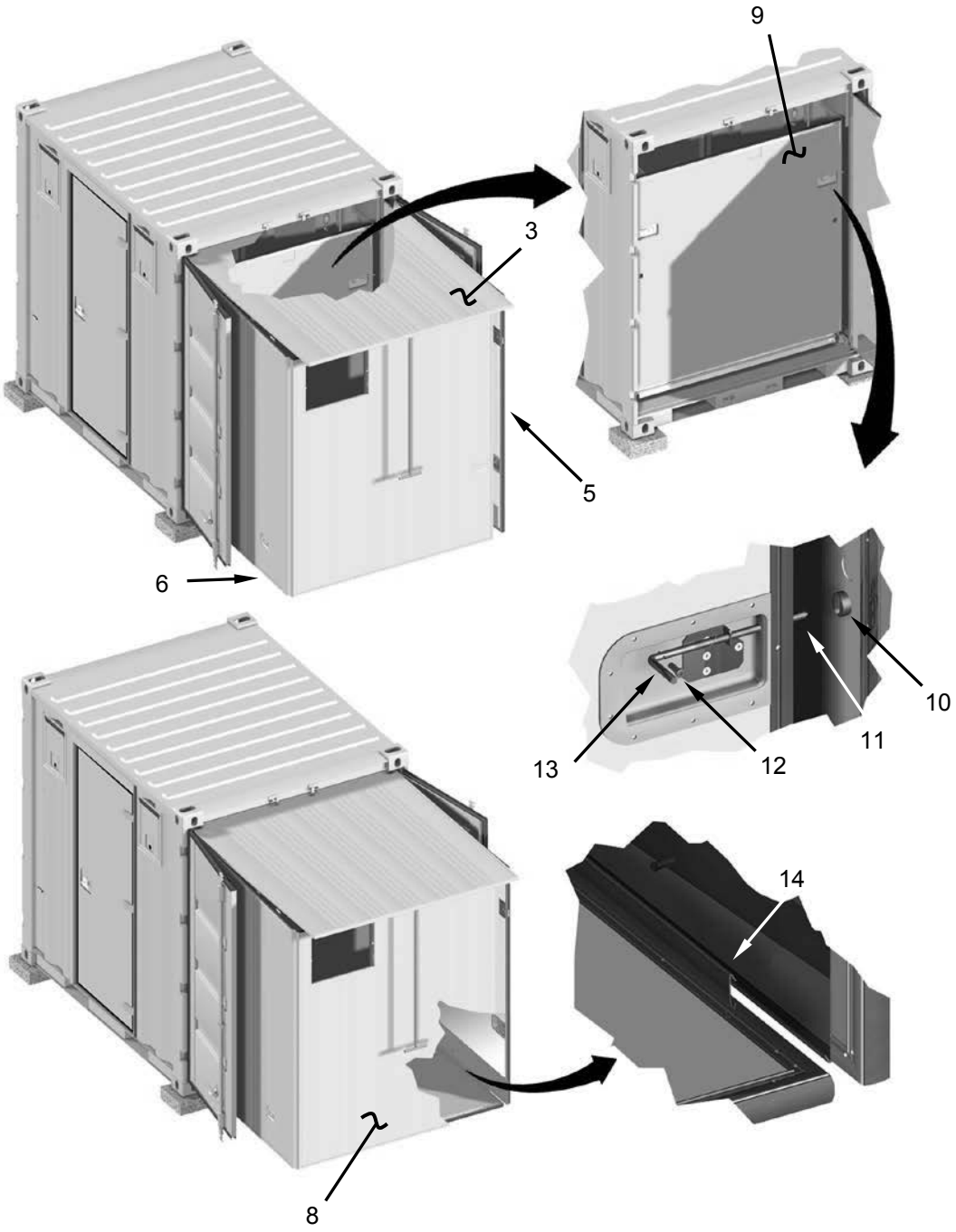


Figure 3. Unfolding Roof, Walls, and Floor (Sheet 2 of 2).

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

WARNING

Do not place heavy equipment on floor of expanded wing until latches labeled “1” and “2” are engaged to secure side wall to end wall. Placing heavy loads on the floor prior to securing the sections together could cause the floor and roof sections to shift and separate from the side and end walls causing the entire wing to collapse. Failure to follow this precaution may result in severe injury from falling through floor or by being contacted by a swinging wall or roof section. Seek immediate medical attention if injury occurs.

CAUTION

When latching wing sections to each other, if latch will not properly engage then the sections are not properly aligned or mated. If latches will not engage with hand pressure, do not force or beat on latches to close. Return to previous step and ensure sections are aligned if this condition occurs. Forcing latches closed will result in damage to latches and section edge seals.

NOTE

The end walls will be unlatched until the sanitation sink can be moved due to lack of adequate movable space for personnel.

11. Starting with latch labeled “1”, and working in sequence through latch labeled “10”, secure the deployed wing sections together as follows:

    a. Flip catch (Figure 4, Item 1) up and engage latch with strike (Figure 4, Item 2) on adjacent section.

    b. Push down on handle (Figure 4, Item 3) until you observe and feel latch locking in place.

12. To unsecure the end walls, unlatch latches labeled 1, 2, 3, 5, 6, and 8.

13. Repeat steps 11 and 12 for other side of container.

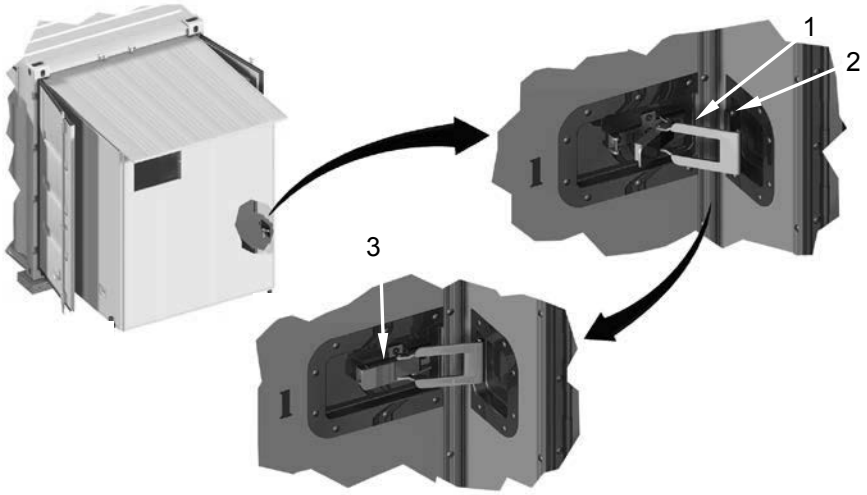


Figure 4. Securing Deployed Sections.

ASSEMBLY AND PREPARATION FOR USE – CONTINUED

Install Wing Jacks

WARNING

Jacks must be installed to prevent accidental tipping of container which may occur if too many people stand on floor area. Failure to follow this precaution may result in severe injury from falling and equipment damage from the container tipping over. Seek immediate medical attention if injury occurs.

1. Install wing jacks (Figure 5, Item 3) as follows:

   a. Open personnel door (Figure 5, Item 1) and remove corrugated box (Figure 5, Item 2) containing four wing jacks (Figure 5, Item 3). Remove wing jacks (Figure 5, Item 3) from box. Set box aside for later reuse.

   b. Pull keeper pin (Figure 5, Item 7) off of clevis pin (Figure 5, Item 5) then slide clevis pin out of bracket (Figure 5, Item 4).

   c. Separate bracket (Figure 5, Item 4) from leg (Figure 5, Item 10).

   d. Position bracket (Figure 5, Item 4) on side wall (Figure 5, Item 8) and align mounting hole in bracket with threaded hole in side wall.

   e. Install screw (Figure 5, Item 6) to loosely secure bracket (Figure 5, Item 4) to side wall (Figure 5, Item 8).

   f. While holding bracket (Figure 5, Item 4) straight tighten screw (Figure 5, Item 6) just enough to prevent bracket from rotating. Do not over-tighten.

   g. Mate leg (Figure 5, Item 10) to bracket (Figure 5, Item 4) and align pin holes in leg with holes in bracket at a height that will place foot pad (Figure 5, Item 9) slightly off the ground.

   h. Install clevis pin (Figure 5, Item 5) to secure leg (Figure 5, Item 10) to bracket (Figure 5, Item 4).

   i. Flip keeper pin (Figure 5, Item 7) over clevis pin (Figure 5, Item 5) to prevent clevis pin movement.

   j. Rotate foot pad (Figure 5, Item 9) until pad is firmly contacting the ground.

   k. Repeat steps a through j at other three wing jack locations.

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

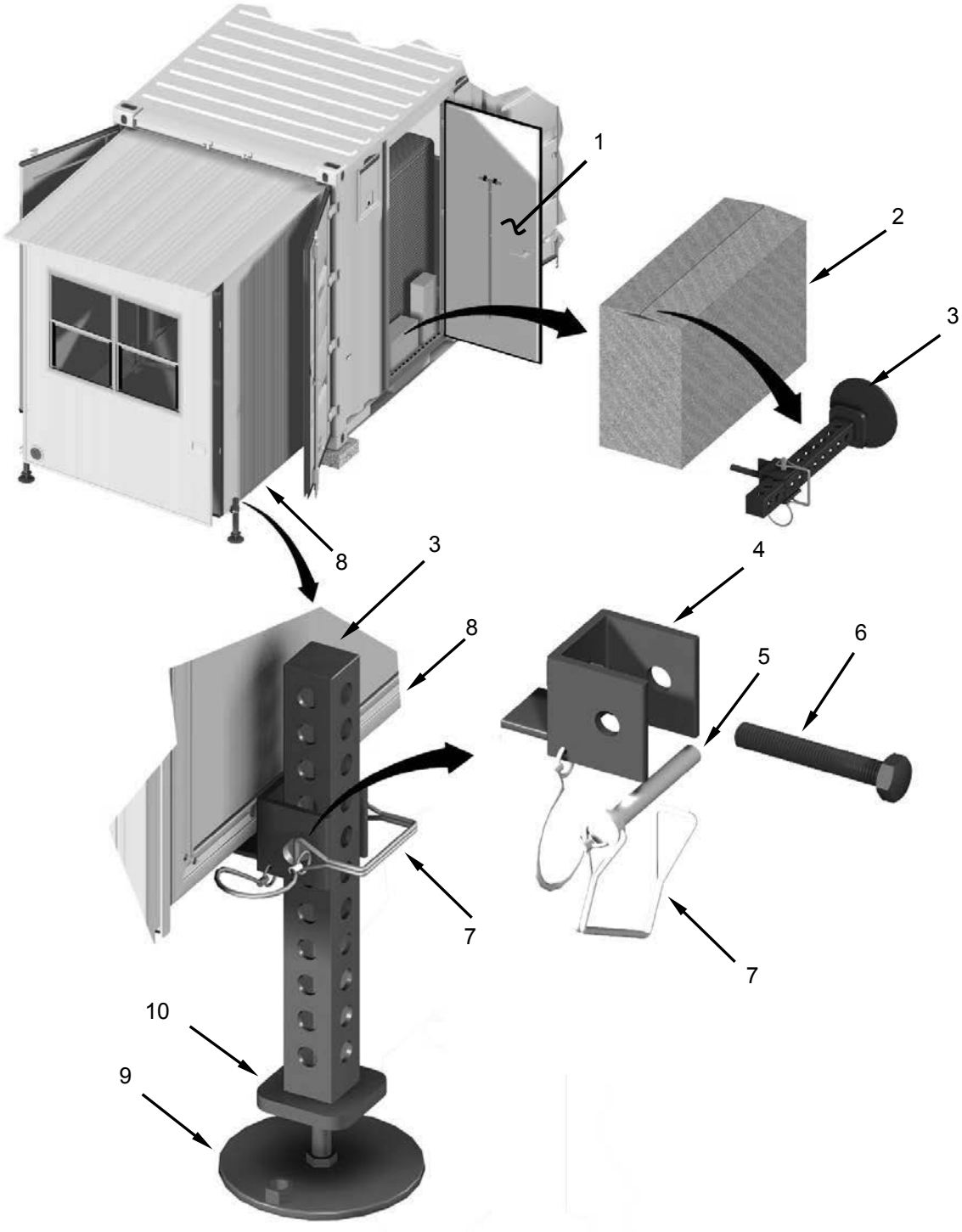


Figure 5. Install Wing Jacks.

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

Unpacking Kitchen Center Area

WARNING

When removing packed items, take all items out of the ETKS as they are removed to keep interior areas clear. Failure to follow this precaution can result in creating trip hazards leading to serious injury. Seek immediate medical attention if injury occurs.

The SOURCE water and WASTE water bags require three person lift. The air conditioner and power cables require two person lift. Hoses and other heavy items should be carried by more than one person when possible. Exercise safe lifting techniques. Ensure you lift with your legs and not with your back to avoid injury. Seek immediate medical attention if injury occurs.

CAUTION

Items may have shifted during transport. Prior to releasing tension on straps ensure items will not fall or be damaged when straps are removed.

Care must be taken when passing equipment through the personnel door opening. Seal damage can occur if this precaution is not followed. Seal damage will prevent proper closing or latching of the door and allow moisture (rain and snow) to seep into the kitchen area.

NOTE

Figures 6 through 9 provide visual guidance for the locations of the items packed in the ETKS center area. Tables 1 and 2 provide information on the items stored in the center area. Information is also provided in Tables 1 and 2 for the sequence the items should be unpacked, the quantity of each item, and the number of personnel required to safely lift and carry each item.

1. Loosen straps (Figure 6, Item 1) securing packed items in ETKS center area as follows:

   a. Slide catch (Figure 6, Item 9) outward and unfold handle (Figure 6, Item 8) to release strap tension.

   b. Disconnect strap hook (Figure 6, Item 6) from hole, slot, structural support, or other strap (Figure 6, Item 7).

   c. If possible, roll up strap (Figure 6, Item 1) and set aside for later use to secure container doors.

   d. Repeat steps a through c for remaining straps.

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

2. Remove operating manual (Figure 6, Item 4), box of three container couplers (Figure 6, Item 5), and utility table (Figure 6, Item 3) from behind personnel door.

3. Remove two serving tables (Figure 6, Item 2) off of oven rack and on top of the sanitation sink.

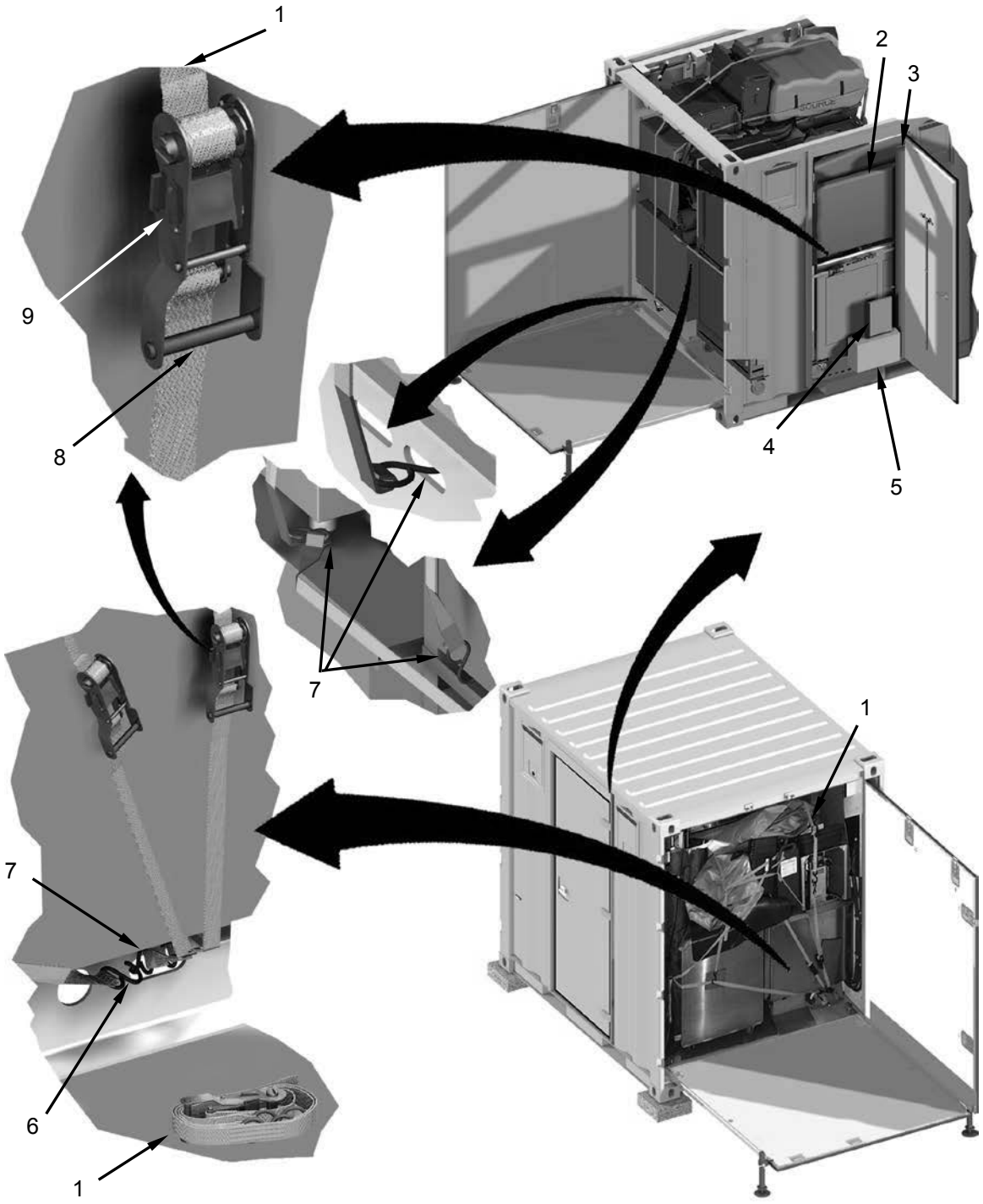


Figure 6. Unpacking Kitchen Center Area.

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

4. Remove wastewater hose (Figure 7, Item 15) and two floor mats (Figure 7, Item 14) from in between the oven rack (Figure 7, Item 10) and steam and hold oven (Figure 7, Item 1).

5. Move oven rack (Figure 7, Item 10) unit into front wing (Figure 7, Item 12) of ETKS as follows:

   a. Disconnect strap hook from other strap hook (Figure 7, Item 13), loosen the ratchet strap (Figure 7, Item 9) at the ratchet handle (Figure 7, Item 7 and 8) and remove from oven rack (Figure 7, Item 10).

   b. Remove two serving table shelves and utility table shelf from the oven rack.

   c. Release locks (Figure 7, Item 6) on casters (Figure 7, Item 5) by pushing down on locks with foot.

   d. Carefully maneuver oven rack (Figure 7, Item 10) into front wing (Figure 7, Item 12) of ETKS and place unit to the left side of the Refrigerator (Figure 7, Item 11).

   e. Secure casters (Figure 7, Item 5) by pushing down on locks (Figure 7, Item 6) with foot.

6. One at a time, remove the items packed above sanitation sink following the sequence and lifting guidance listed in Table 1.

Table 1. Above Sanitation Sink Area Packout Information.

ITEM	DESCRIPTION	QTY	LIFT
1	WASTE Water Bag, 3000-Gallon	1	3
2	Tool Box	1	1
3	Floor Mat, 42-in X 72 in	1	1
4	Power Input Cable, 50-ft	2	2
5	Furniture Pad	4	1

7. Move sanitation sink (Figure 7, Item 2) into rear wing (Figure 7, Item 3) of ETKS as follows:

   a. Release locks (Figure 7, Item 6) on casters (Figure 7, Item 5) by pushing down on locks with foot.

   b. Carefully maneuver sanitation sink (Figure 7, Item 2) into rear wing (Figure 7, Item 3) of ETKS. Leave room between the end wing wall (Figure 7, Item 4) and the rear of the sanitation sink for access to set up the system.

   c. Secure casters (Figure 7, Item 5) by pushing down on locks (Figure 7, Item 6) with foot.

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

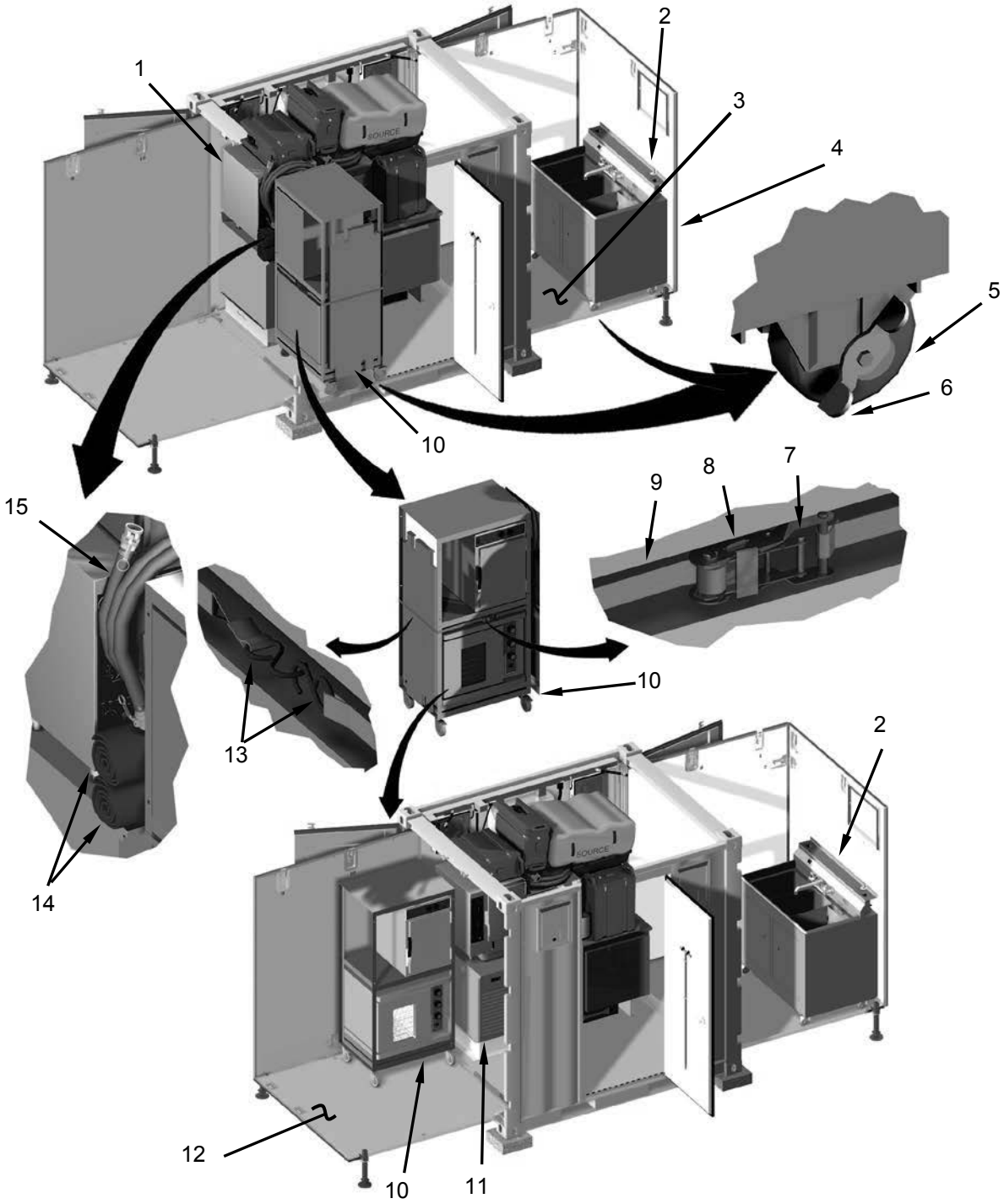


Figure 7. Moving the Sanitation Sink and Oven Rack.

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

8. One at a time, remove the items packed above the refrigerator (Figure 8) following the sequence and lifting guidance listed in Table 2.

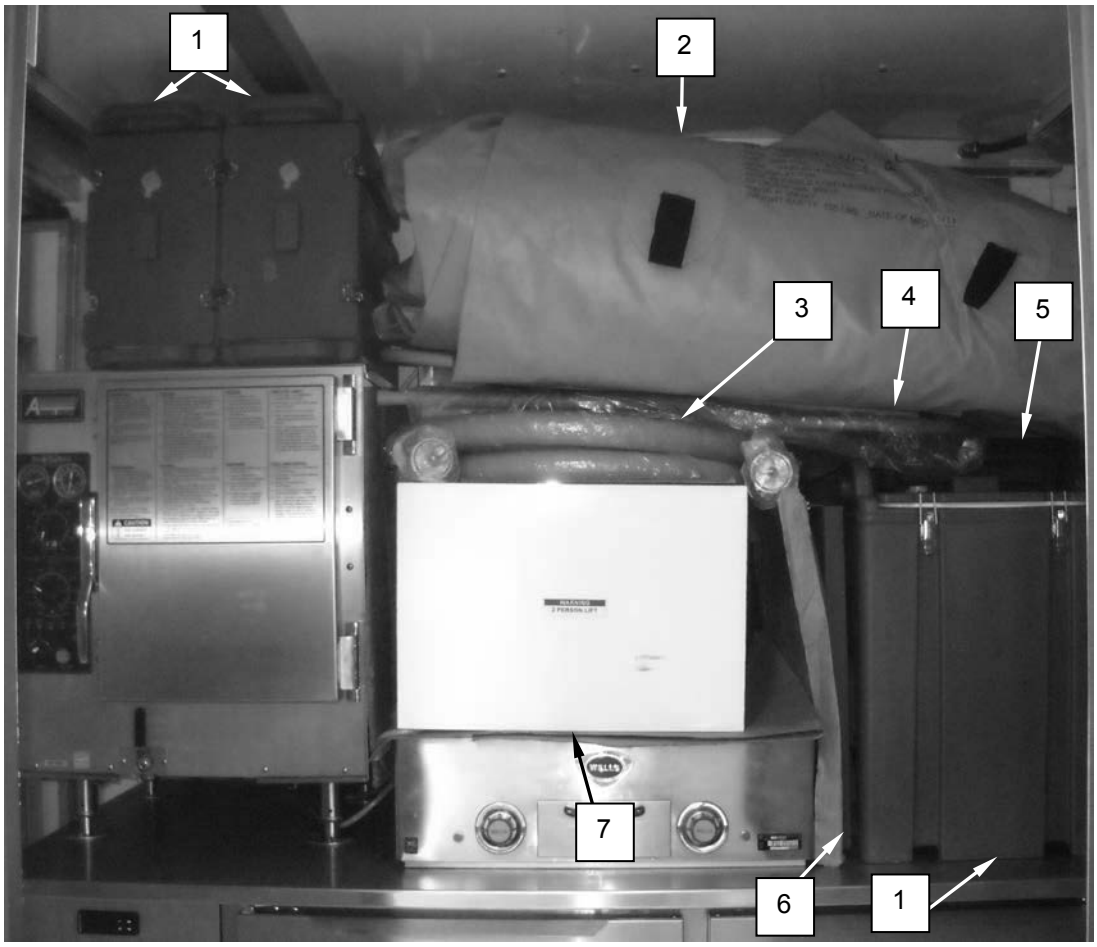


Figure 8. Unpacking Items Stowed Above Refrigerator.

Table 2. Packout Items Above Refrigerator.

ITEM	DESCRIPTION	QTY	LIFT
1	Liquid Dispenser	3	1
2	SOURCE Water Bag, 3000-Gallon	1	3
3	Source Water Hose, 1-1/2-inch X 25 feet	1	2
4	Folding Chair, Steel	2	1
5	Insulated Food Carrier	1	1
6	A/C Shelf	1	1
7	Air Conditioner (With Covers)	1	2
8	Steam Kettle Rack (located behind liquid dispenser)	1	1

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

9. Remove two pigtail cables (Figure 9, Item 2) and grounding rod assembly (Figure 9, Item 1) from their stowed position under the refrigerator.

10. Remove all packing material used to protect the pigtails and grounding rod and set aside for repacking items prior to transport if possible.

11. Set the liquid dispensers and the insulated food carrier aside for unpacking and inventory.

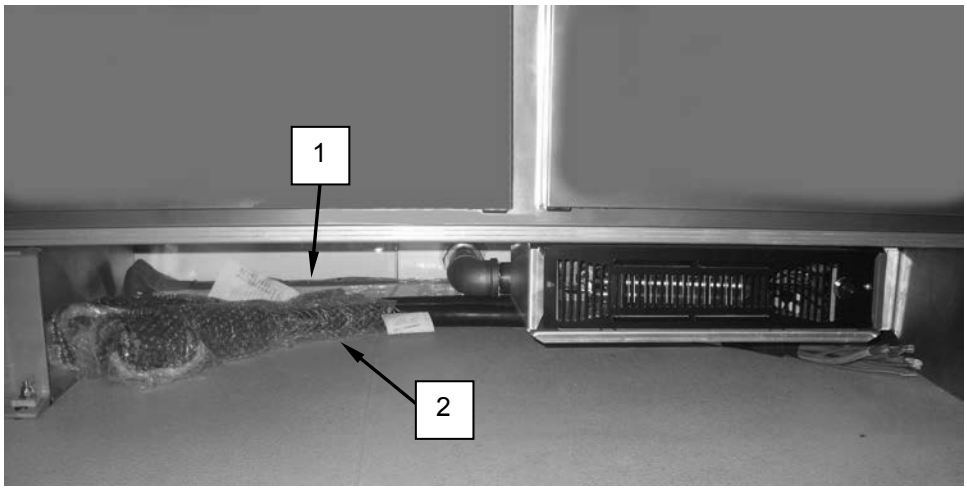


Figure 9. Remove Pigtail Cables and Grounding Rod.

12. Remove and inventory items packed in the refrigerator following the information listed in Table 3 and Figure 10.

Table 3. Refrigerator Packout Information.

ITEM	DESCRIPTION	QTY
1	Liquid Measure, 2-qt	2
2	Sink Shelf Stand	2
3	Serving Pan, Half-size	4
4	Serving Pan, Full-size	10
5	Can Opener, Table Mounted	1
6	Insulated Food Carrier	3
7	Refrigerator Shelf	4
8	Serving Table Drawer	2
9	Furniture Pad	1
10	Sink Rack	1
11	Spice Rack	1

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

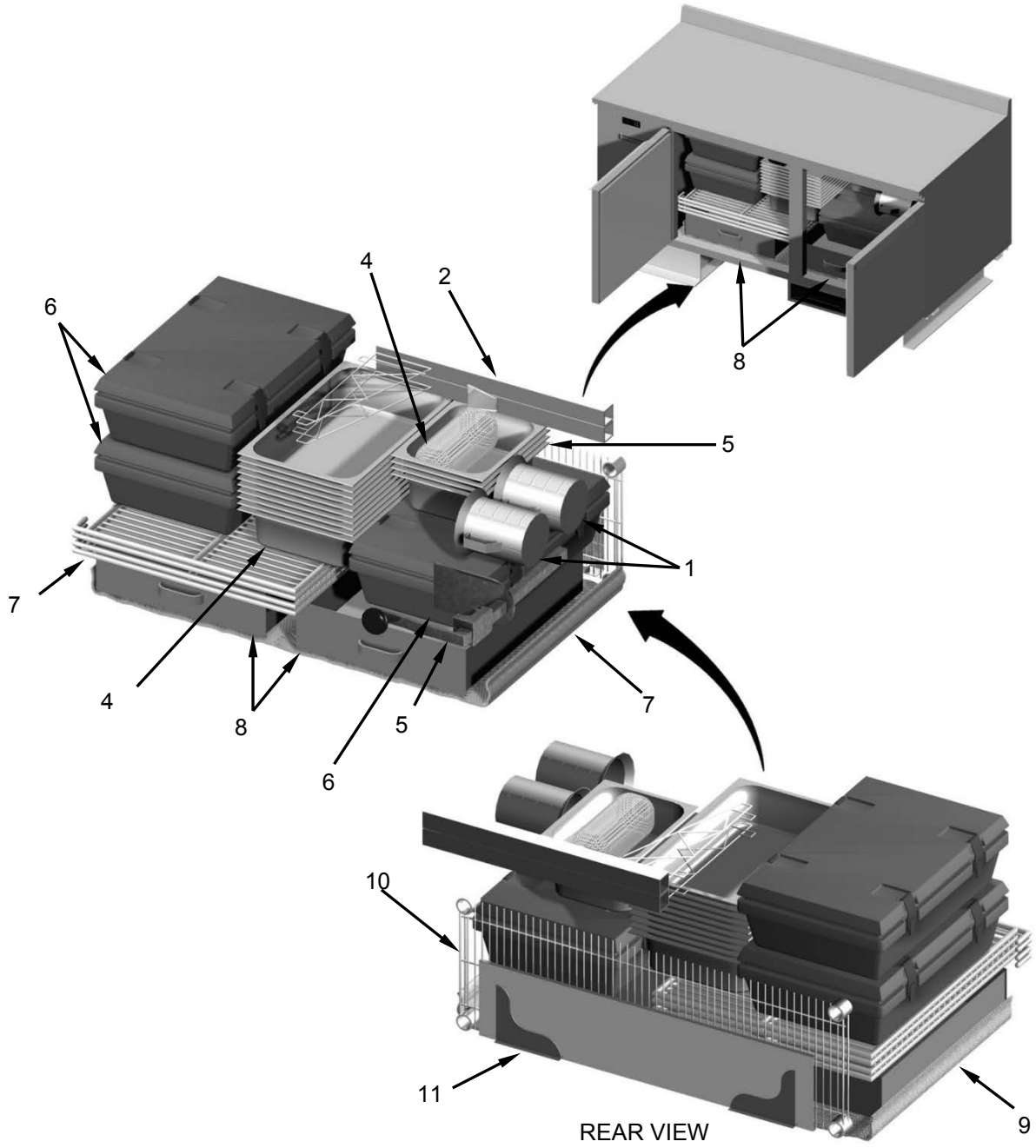


Figure 10. Refrigerator Contents.

13. Set the insulated food carriers aside for unpacking and inventory.

14. Place the shelf stands and sink rack with the sanitation sink (Figure 7, Item 2).

15. Place the refrigerator shelves back in the bottom of the refrigerator (Figure 7, Item 11) for later setup.

16. Set the table drawers aside for unpacking and inventory.

17. Remove all packing material used to protect the items taken from the refrigerator and set aside for repacking items prior to transport if possible.

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

18. One at a time, remove items packed in the sanitation sink basins following the information listed in Table 4 and Figure 11.
19. Remove all packing material used to protect the items taken from the sink basins.
20. Place the soap dispenser, sink thermometer, and the gooseneck in the left sink basin for later use.
21. Place the immersion heater guard in the right sink basin for later use.

Table 4. Sanitation Sink Basin Packout Information.

ITEM	DESCRIPTION	QTY
1	Colander, 16-qt	1
2	Gooseneck	1
3	Immersion Heater Guard	1
4	Knife Rack	1
5	Liquid Dispenser	1
6	Power Distribution Cable, 50-feet	1
7	Sink Thermometer	1
8	Soap Dispenser	1
9	Strainer, 5-1/2-qt	1
10	Furniture Pad	1

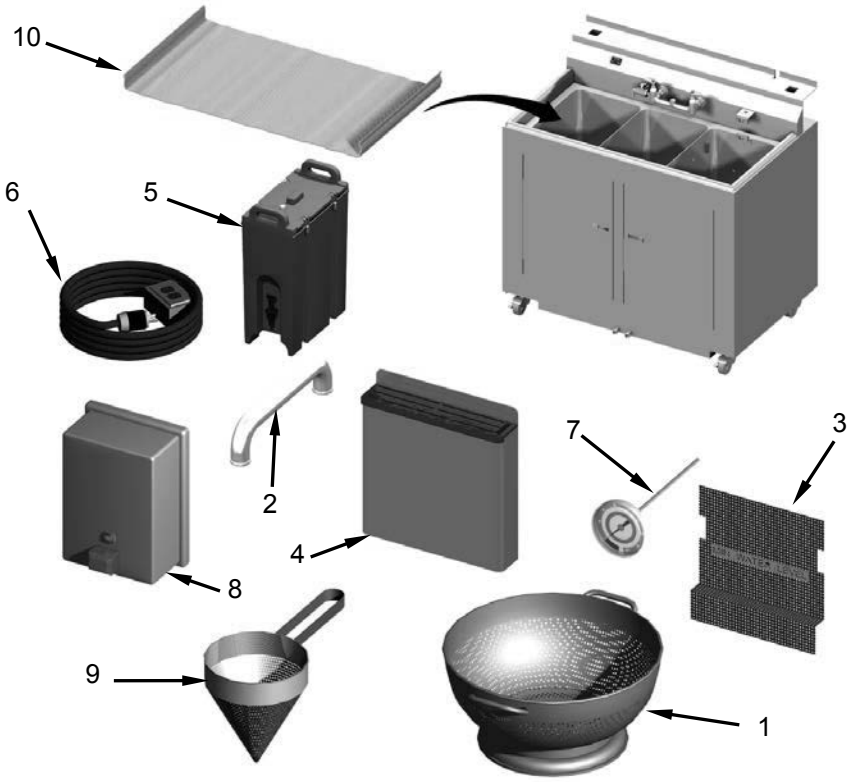


Figure 11. Sanitation Sink Basin Contents.

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

22. To access items packed in the sanitation sink cabinet (Figure 12, Item 1) open both cabinet doors (Figure 12, Item 3) by pressing in on each latch (Figure 12, Item 2).

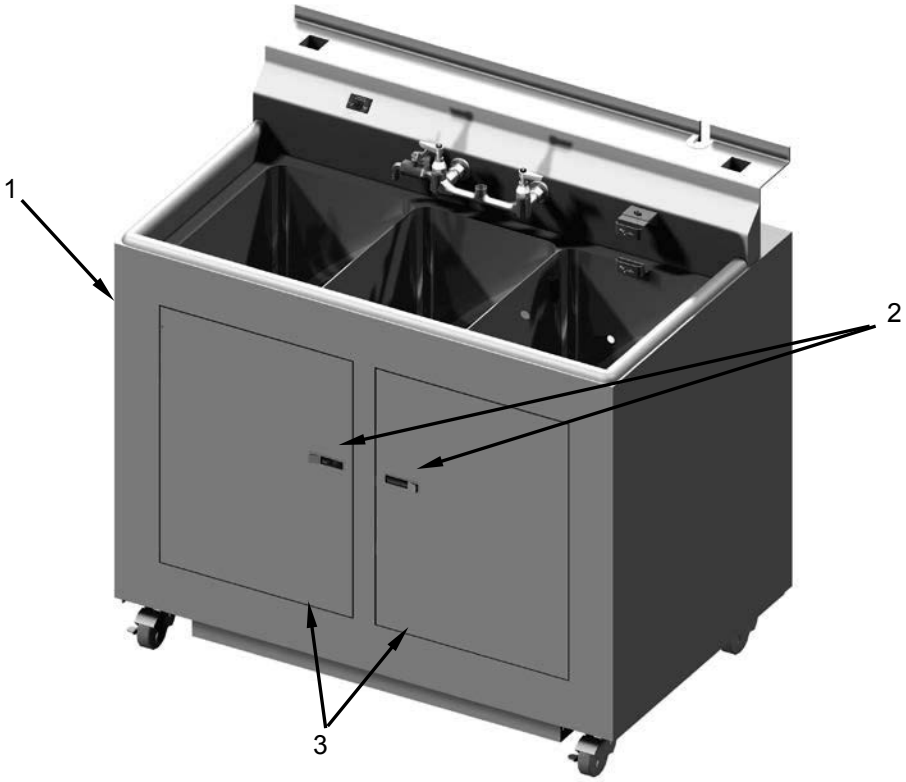


Figure 12. Sanitation Sink Cabinet.

WARNING

The interior of sanitation sink contains sharp edges. Caution is required when removing items from the sanitation sink cabinet. Failure to follow this warning may result in injury to personnel. Seek immediate medical attention if injury occurs.

23. One at a time, remove the items packed in the sanitation sink cabinet (Figure 12, Item 1) following the information listed in Table 5 and Figure 13.

Table 5. Sanitation Sink Cabinet Packout Information.

ITEM	DESCRIPTION	QTY	LIFT
1	Immersion Heater	1	1
2	Sanitation Sink Waste Hose, 1-1/2-inch	1	1
3	Sanitation Sink Supply Hose, 3/4- inch	1	1

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

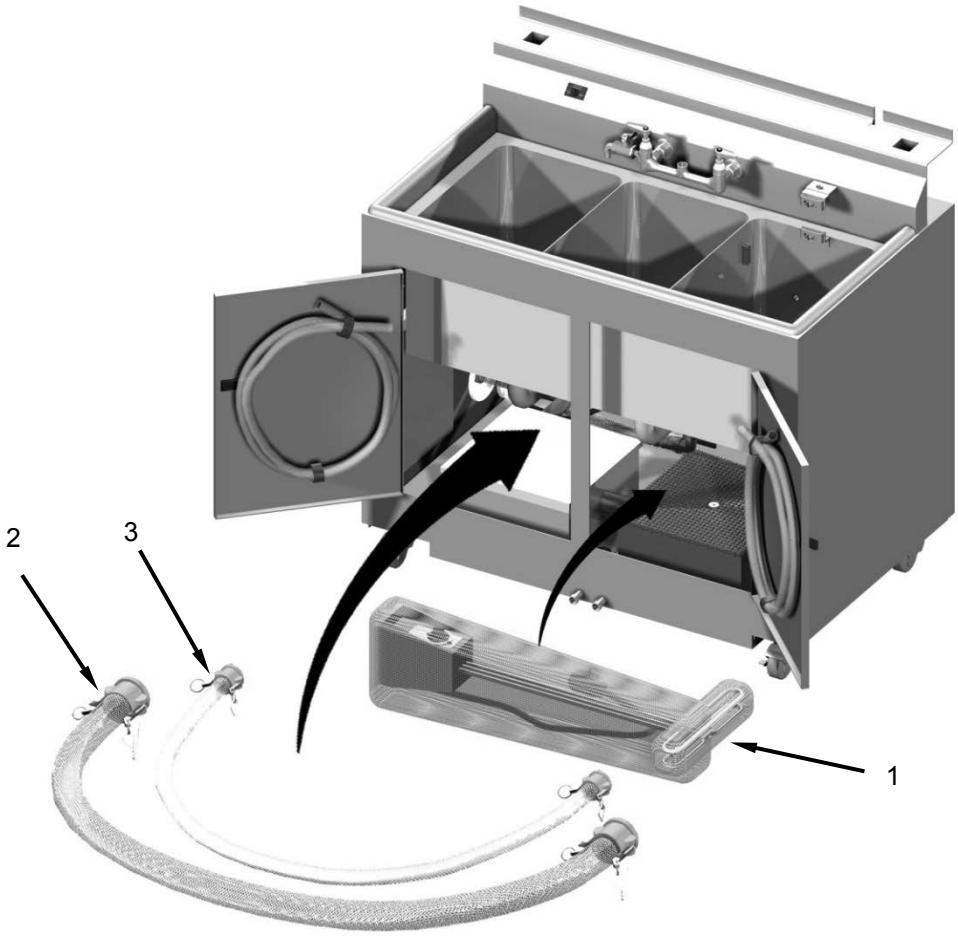


Figure 13. Sanitation Sink Cabinet Contents.

24. Remove all packing material used to protect the items taken from the sink cabinet and set aside for repacking items prior to transport if possible.

25. Place the hose assemblies on the floor to the left of the sanitation sink for later use.

26. Place the immersion heater, in the right sink basin for later use.

27. Place the sink rack supports on top of the sink cabinet for later use.

28. Remove and inventory items packed in the table drawers (Figure 14, Item 1) following the information listed in Tables 6 and 7. Note any missing items.

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

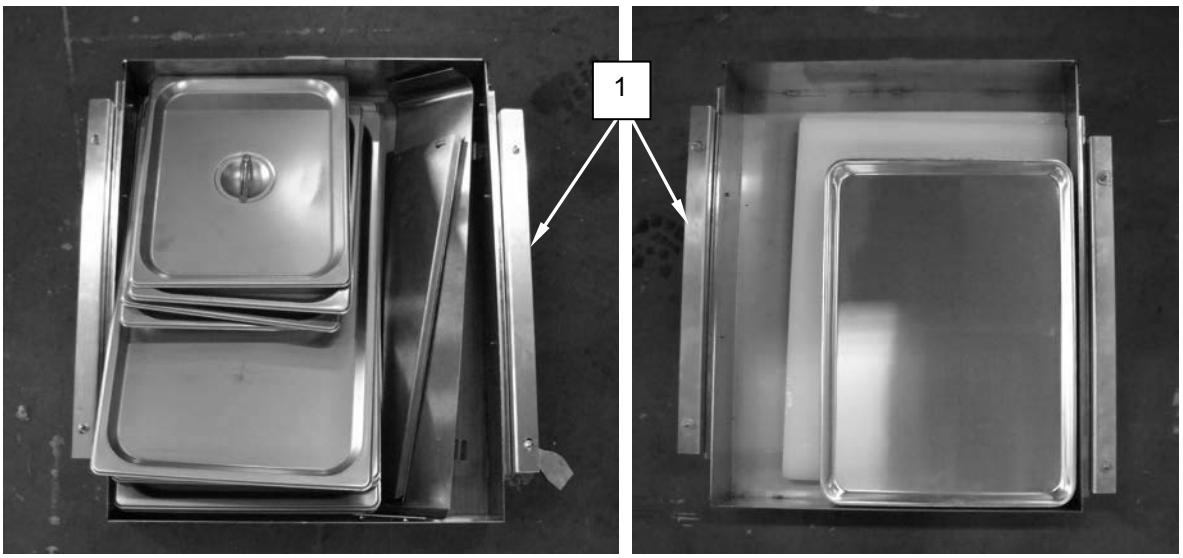


Figure 14. Table Drawer Contents.

Table 6. Table Drawer #1 Packout Information.

ITEM	DESCRIPTION	QTY
1	Baking Sheet, ½ Sheet	5
2	Chopping Board	2
3	Air Conditioner Remote	1
4	Serving Window Channel Covers	2

Table 7. Table Drawer #2 Packout Information.

ITEM	DESCRIPTION	QTY
1	Griddle Splash Guard (3 pieces)	1
2	Pan Cover, Full Size	6
3	Pan Cover, Half Size	4

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

29. Open and inventory items packed in the liquid dispensers (Figure 15, Item 1) previously removed following the information listed in Tables 8 and 9.

NOTE

Liquid Dispensers #3 and #4 are empty.

Figure 15. Liquid Dispenser Contents.

Table 8. Liquid Dispenser #1 Packout Information.

ITEM	DESCRIPTION	QTY
1	Dipper, 1-qt	1
2	Ladle, 2-oz	2
3	Ladle, 4-oz	2
4	Ladle, 8-oz	2

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

Table 9. Liquid Dispenser #2 Packout Information.

ITEM	DESCRIPTION	QTY
1	Leveling Block, 1/8 inch Thick	4
2	Leveling Block, 1/4 inch Thick	4
3	Leveling Block, 3/8 inch Thick	4
4	Leveling Block, 1/2 inch Thick	4

30. Open tool box (Figure 16, Item 1) and inventory items inside box following information listed in Table 10.

31. Remove cam-lock adapter (Figure 16, Item 2) and place with SOURCE water bag.

32. Close tool box (Figure 16, Item 1) and set aside for later use.

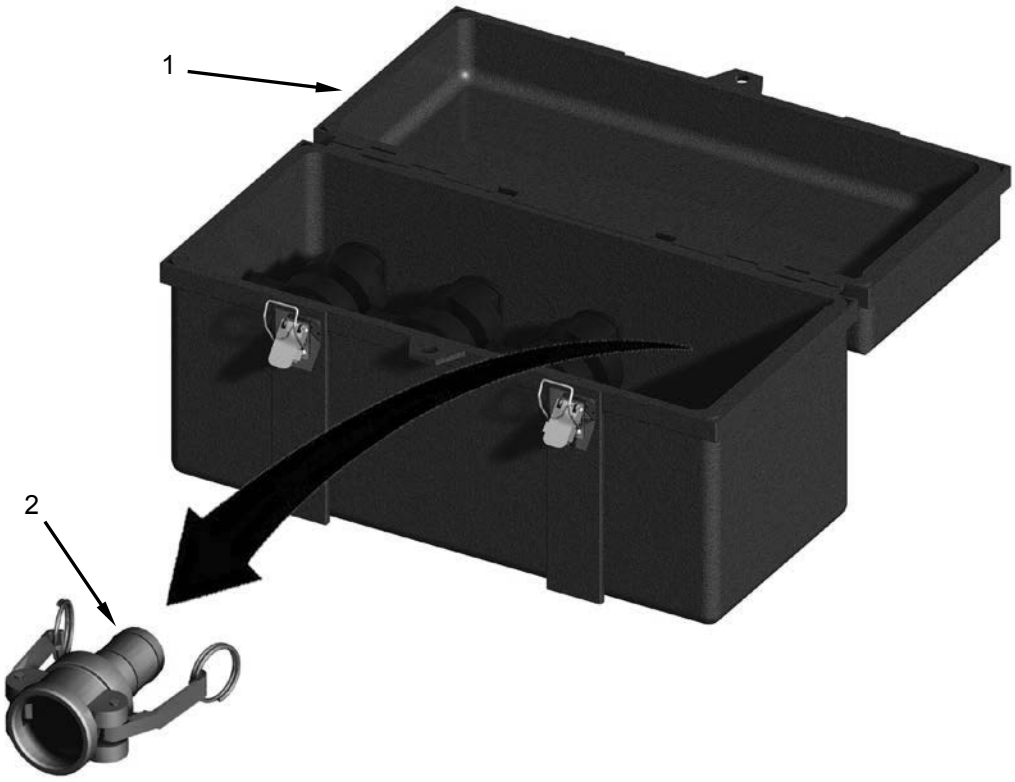


Figure 16. Kitchen Tool Box Contents.

Table 10. Kitchen Tool Box Packout Information.

ITEM	DESCRIPTION	QTY
1	Cam-Lock Adapter, 2-inch X 1-1/2 inch	1
2	Heavy Duty Neoprene Coated Glove, Large (Pair)	2
3	Spare Water Heater Elements	3
4	Tool Kit, General Mechanic's (7-Piece)	1

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

33. Open and inventory items located in four insulated food carriers (Figure 17, Item 1) following information listed in Tables 11 through 14.

Figure 17. Insulated Food Carrier Contents.

Table 11. Insulated Food Carrier #1 Packout Information.

ITEM	DESCRIPTION	QTY
1	Ice Cream Scoop	2
2	Oven Thermometer, Self-Indicating	2
3	Pocket Thermometer, Self-Indicating	3
4	Pot Holder	8
5	Rolling Pin, Wood	1
6	Sharpening Stone, Medium Grit	1

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

Table 12. Insulated Food Carrier #2 Packout Information.

ITEM	DESCRIPTION	QTY
1	Baker's Scraper	1
2	Basting Spoon, 15- inch	2
3	Can Opener, Hand	2
4	Cooks Fork, 14- inch	2
5	Egg Whip	2
6	Pie and Cake Server	1
7	Potato Peeler, Hand	2
8	Rubber Spatula	2
9	Skimmer	2
10	Slotted Spoon, 15- inch	2
11	Spoon Measuring Set	2
12	Tongs, 8- inch	4
13	Turner	2

Table 13. Insulated Food Carrier #3 Packout Information.

ITEM	DESCRIPTION	QTY
1	Blackout Curtain	5
2	Insect Screen	2

Table 14. Insulated Food Carrier #4 Packout Information.

ITEM	DESCRIPTION	QTY
1	Cutlery Roll, Canvas	1
2	First Aid Kit	1

ASSEMBLY AND PREPARATION FOR USE – UNPACK – CONTINUED

NOTE

Knives may still be in original packaging.

34. Open cutlery roll canvas and inventory contents per Table 15.

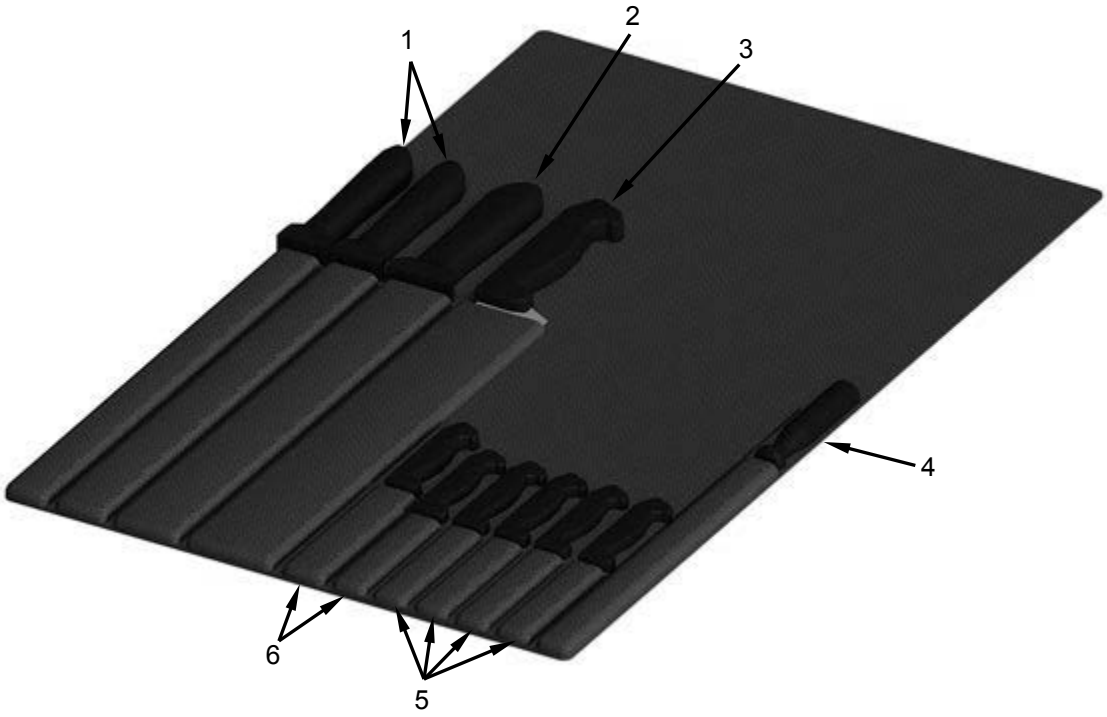


Figure 18. Cutlery Roll Packout.

Table 15. Cutlery Roll Packout Information.

ITEM	DESCRIPTION	QTY
1	Cooks Knife, 10- inch	2
2	Slicing Knife, Non-Scalloped Blade, 12- inch	1
3	Slicing Knife, Scalloped Blade, 12- inch	1
4	Butcher's Steel	1
5	Paring Knife	4
6	Boning Knife	2

35. Remove all remaining packing material used to protect packed items from inside food carriers. Set packing material aside for repacking items prior to transport if possible.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
ASSEMBLY AND PREPARATION FOR USE – SETUP

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's (7-Piece)
(WP 0071, Table 2, Item 58)

Personnel Required

92G Culinary Specialist (1)
MOS Non-Specific (1)

References

TM 3-34.46
TM 10-5430-237-12&P

Equipment Condition

ETKS Siting completed (WP 0005)
ETKS Unpack completed (WP 0006)

ASSEMBLY AND PREPARATION FOR USE – SETUP

ETKS Exterior Setup

1. Remove four drain plugs (Figure 1, Item 1) from recesses on Expeditionary TRICON Kitchen System (ETKS) corners.

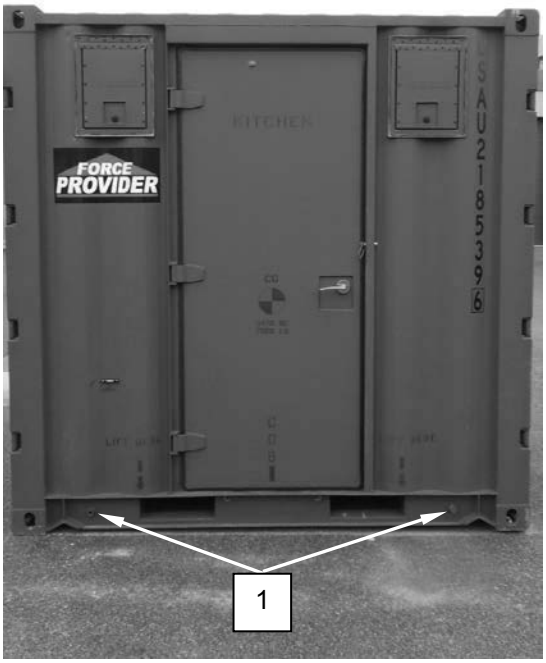


Figure 1. Remove Drain Plug.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

2. Swing left and right doors (Figure 2, Item 1) over against side walls (Figure 2, Item 8).
3. Loosen and extend the tie-down strap (Figure 2, Item 4) long enough to reach the opposite door.
4. Hook one end of tie-down strap on door handle (Figure 2, Item 6) and route the other end of the tie-down strap under the expanded wing and hook on opposite door handle.
5. Pull tie-down strap (Figure 2, Item 4) tight to remove slack then use ratcheting mechanism (Figure 2, Item 5) to apply a slight amount of tension to strap.
6. Repeat steps 3 through 5 to secure container end doors on opposite end of ETKS.
7. At each of the four vent covers (Figure 2, Item 2), rotate latch (Figure 2, Item 3) 1/4-turn and allow spring loaded cover to pop out.

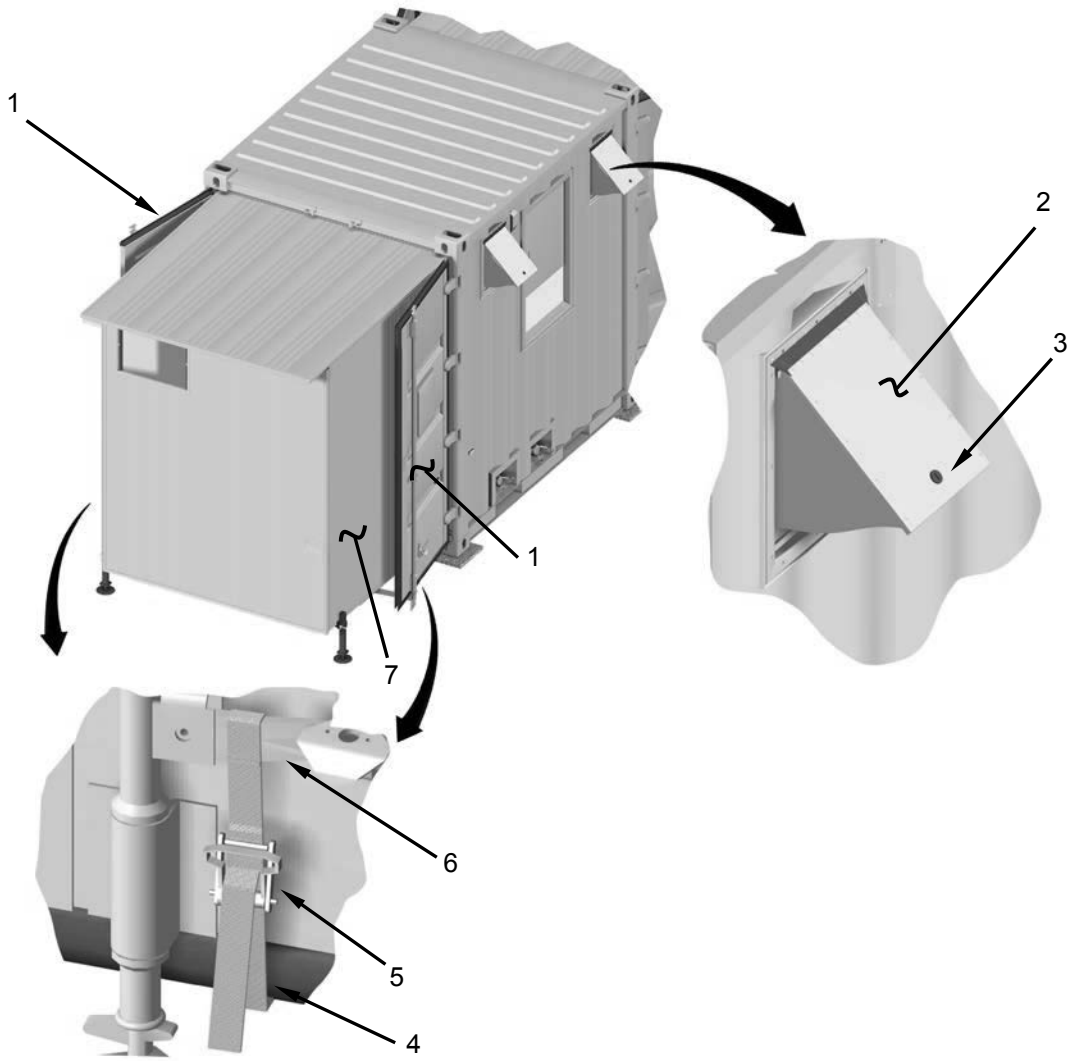


Figure 2. Secure Container Door.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

Setup Front Expanded Wing

NOTE

The front of the ETKS is the side with serving windows.

1. Open cook and hold oven door (Figure 3, Item 1) and place oven racks (Figure 3, Item 3), onto slides (Figure 3, Item 2). Remove drip tray and associated hardware (Figure 3, item 4) from oven and set aside.

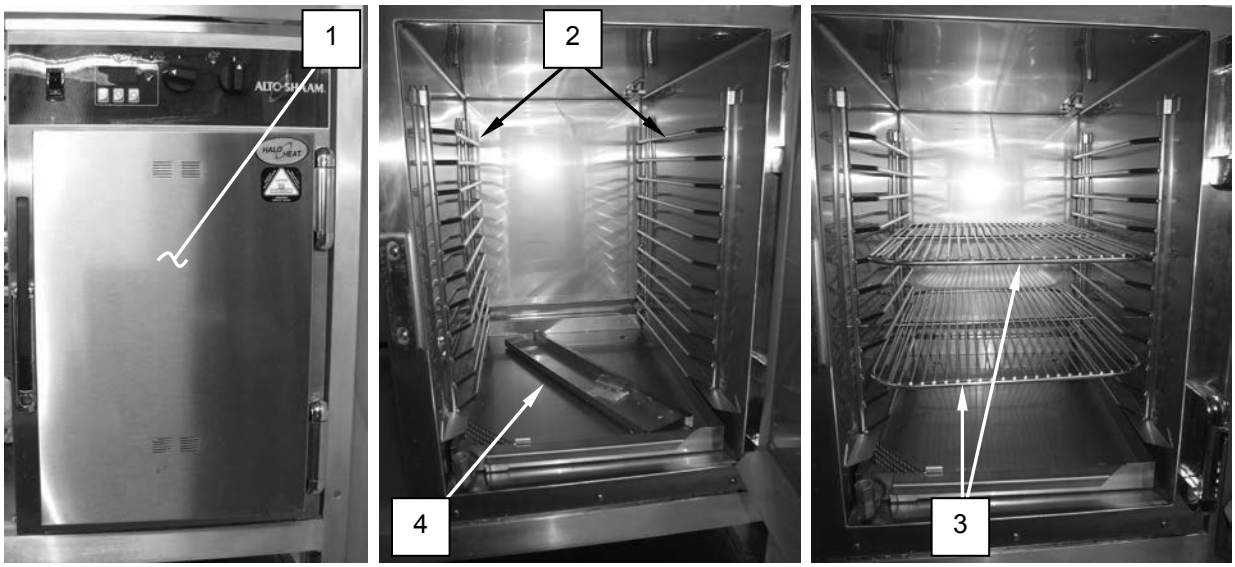


Figure 3. Cook and Hold Oven.

2. Close cook and hold oven door (Figure 3, Item 1).
3. Release locks (Figure 4, Item 2) on casters (Figure 4, Item 3) by pushing down on locks with foot.
4. Move oven rack (Figure 4, Item 1) away from side wall.
5. Secure casters by pushing down on locks with foot.

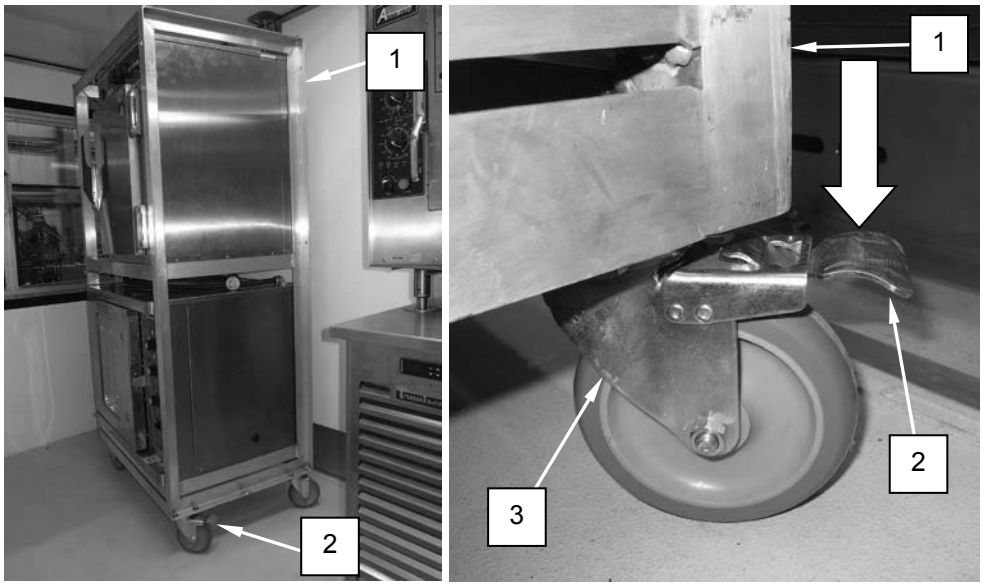


Figure 4. Release Casters.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

6. From outside the ETKS, route 50 foot power distribution cable male end through opening (Figure 5, Item 1) in end wall below the serving window (Figure 5, Item 5).

7. Route distribution cable (Figure 5, Item 3) behind oven rack (Figure 5, Item 2) and plug into dedicated receptacle (Figure 5, Item 4).

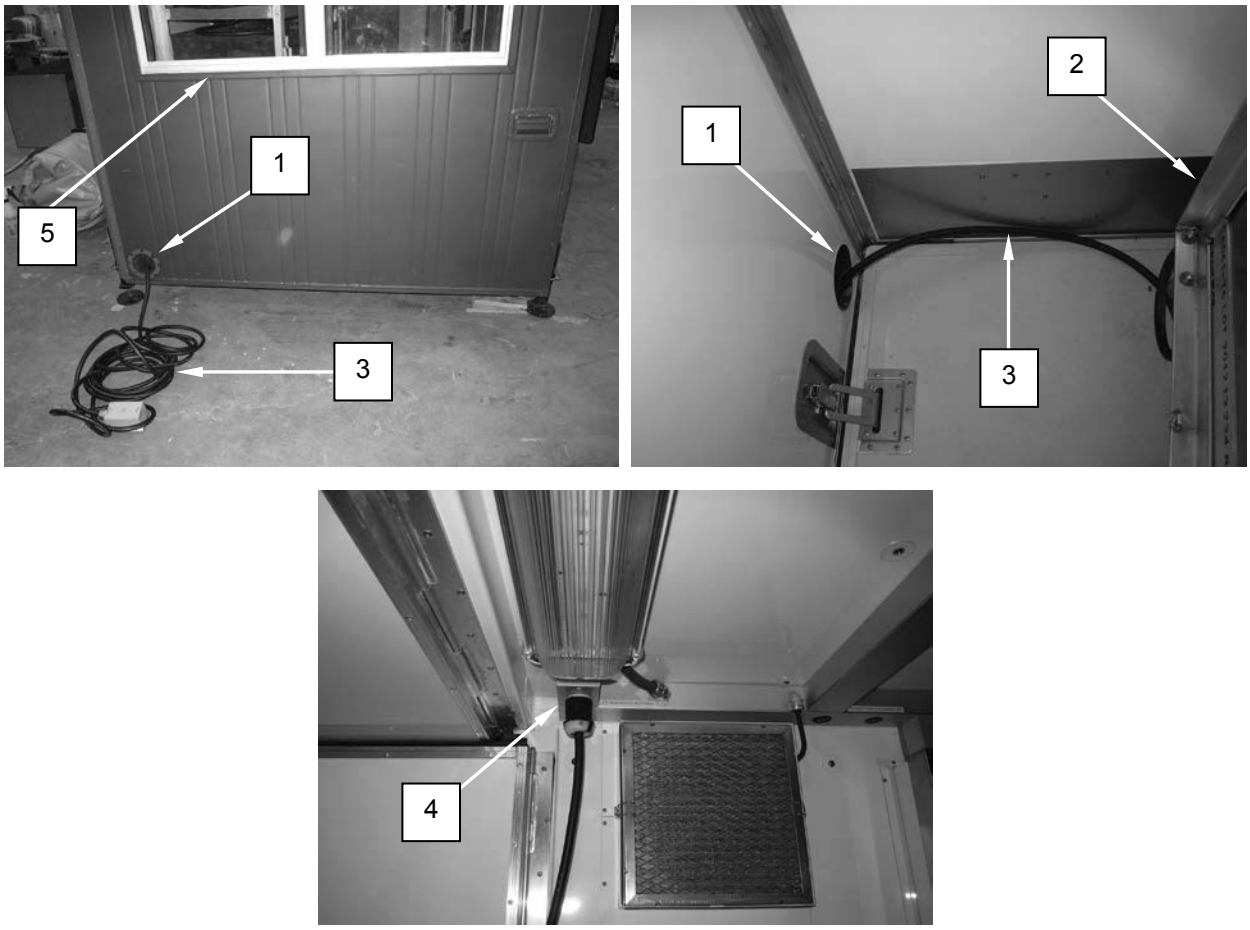


Figure 5. 50-ft Power Distribution Cable.

8. Plug convection oven power cable (Figure 6, Item 2) into dedicated receptacle (Figure 6, Item 3).

9. Plug cook and hold oven power cable into dedicated receptacle (Figure 6, Item 1).

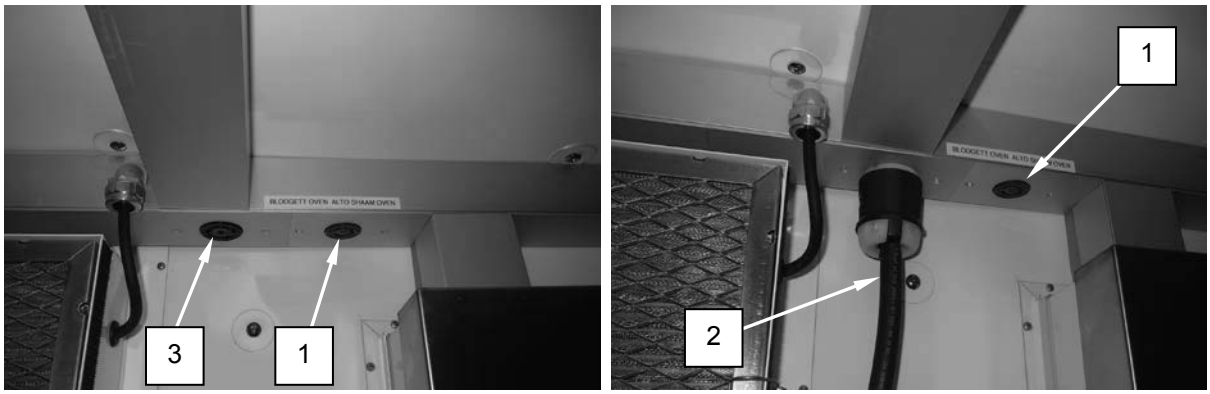


Figure 6. Connect Appliances.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

10. Release locks (Figure 7, Item 1) on casters (Figure 7, Item 3) of oven rack by lifting up on locks.

11. Carefully move oven rack (Figure 7, Item 2) back to left side of refrigerator (Figure 7, Item 4) up against refrigerator side wall.

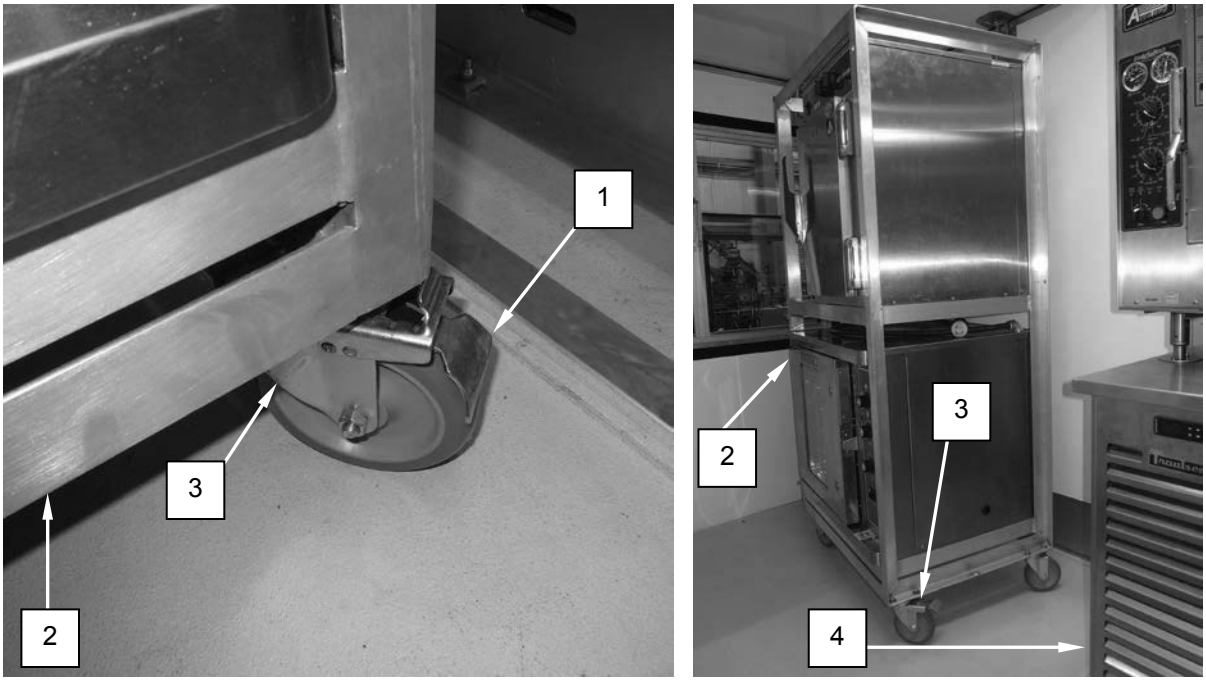


Figure 7. Move Oven Rack.

12. Secure casters by pushing down on locks with foot.

13. Verify the cook and hold oven rocker switch (Figure 8, Item 1) is in the “O” (OFF) position.

14. Verify the convection oven master switch (Figure 8, Item 2) is in the OFF position.

Figure 8. Verify Power Switches.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

15. Pull retaining pins (Figure 9, Item 2) out of serving window (Figure 9, Item 1).
16. Lift up windows and install serving window channel covers (Figure 9, Item 3).

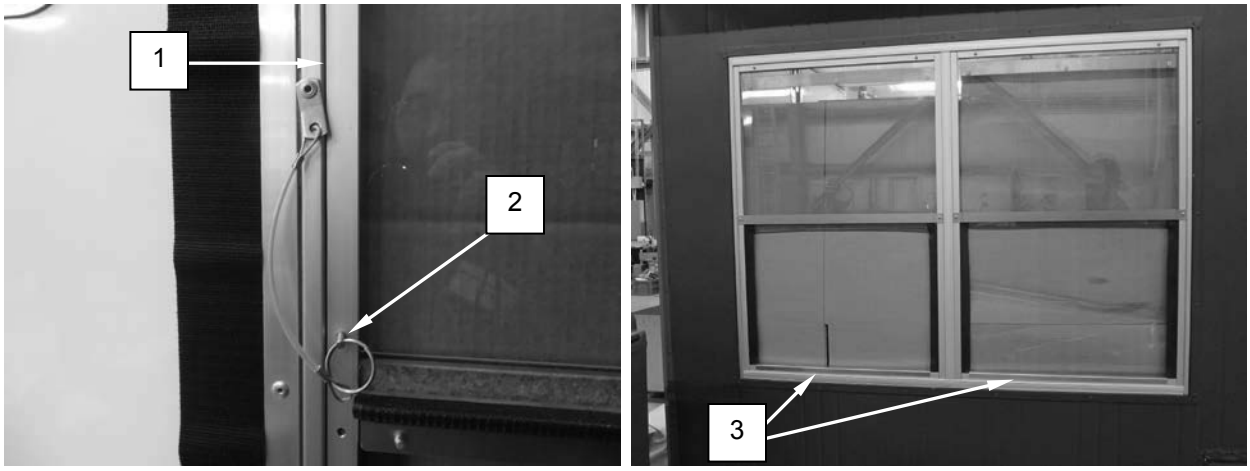


Figure 9. Serving Window.

17. Lower windows and install retaining pins.
18. Set up two serving tables (Figure 10, Item 1) as follows:
    a. Place table face down.
    b. Unfold legs (Figure 10, Item 2).
    c. Slide locking collars (Figure 10, Item 3) towards legs.

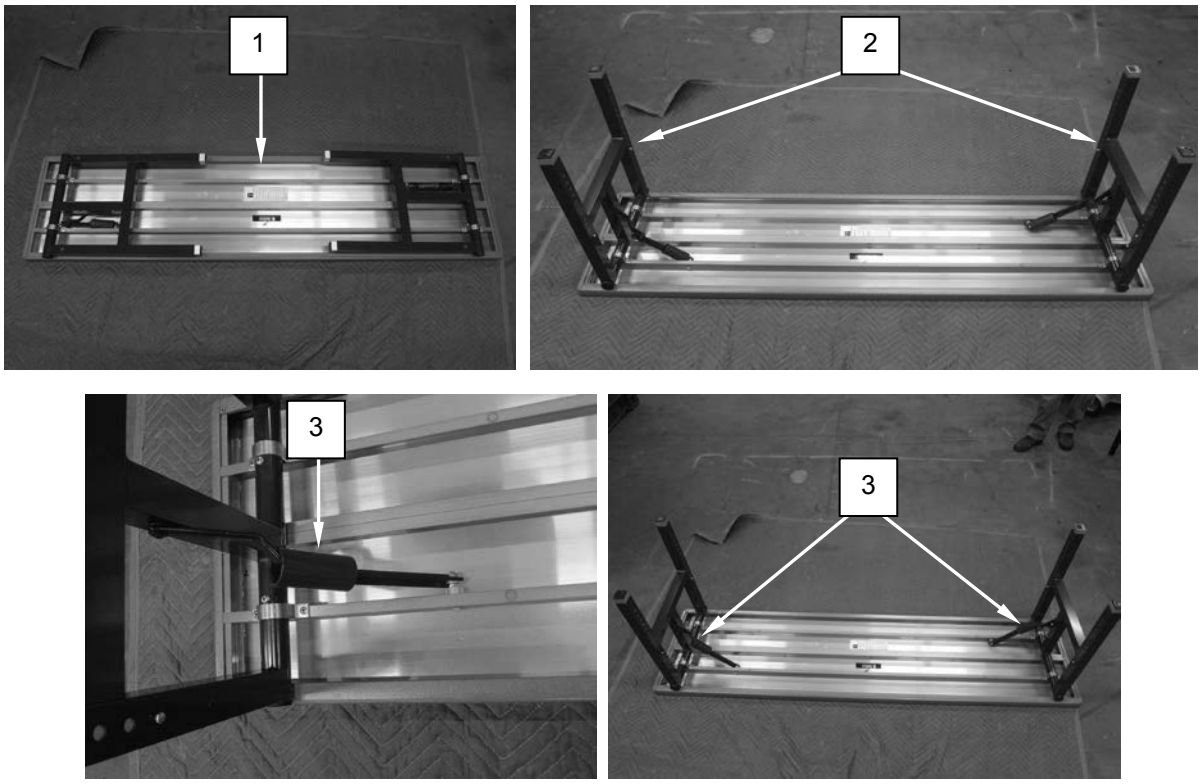


Figure 10. Unfold Table.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

d. Empty table drawers if needed.

e. Align drawer to four holes (Figure 11, item 1) on table underside.

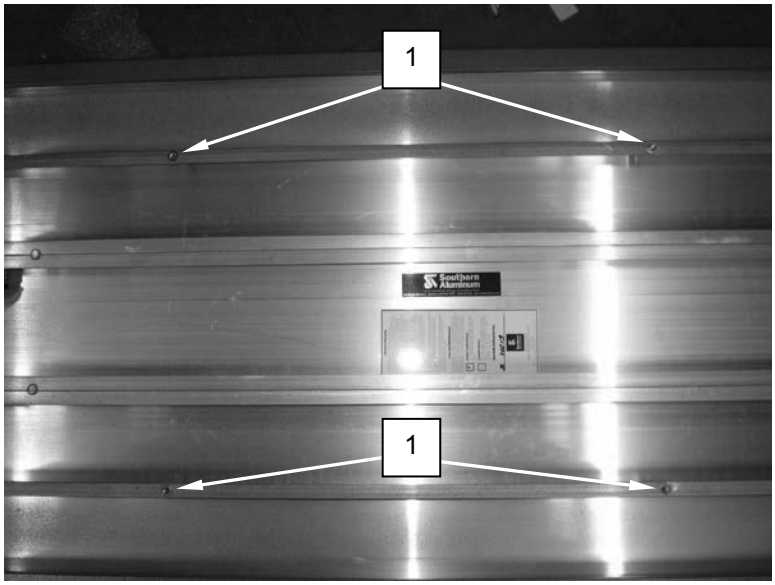


Figure 11. Table Underside.

f. Tighten four thumb screws to secure drawer (Figure 12, item 3).

g. Flip table (Figure 12, Item 2) right side up.

h. Install shelf (Figure 12, Item 4) to table.

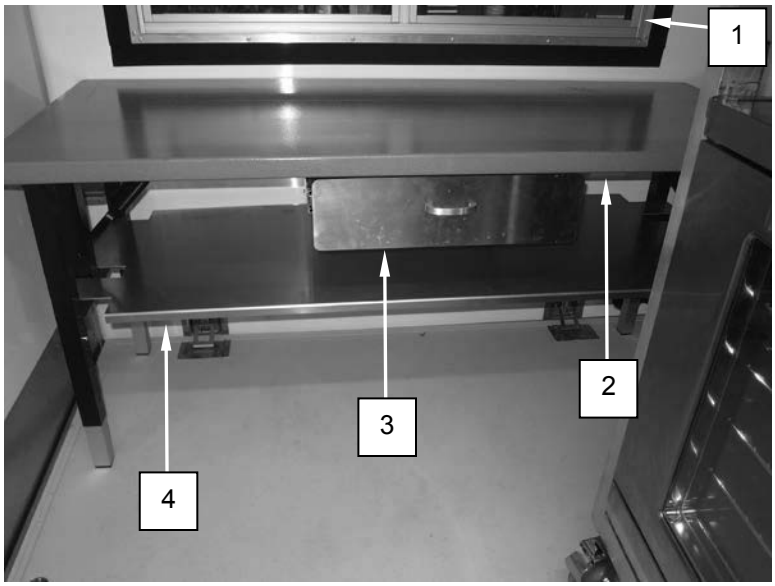


Figure 12. Install Shelf.

19. Place one serving table under serving windows (Figure 12, Item 1)

20. Place four insulated food carriers on serving table.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

21. Place one table (Figure 13, Item 2) outside ETKS near serving window (Figure 13, Item 1).

22. Place four liquid dispensers (Figure 13, Item 3) on table.

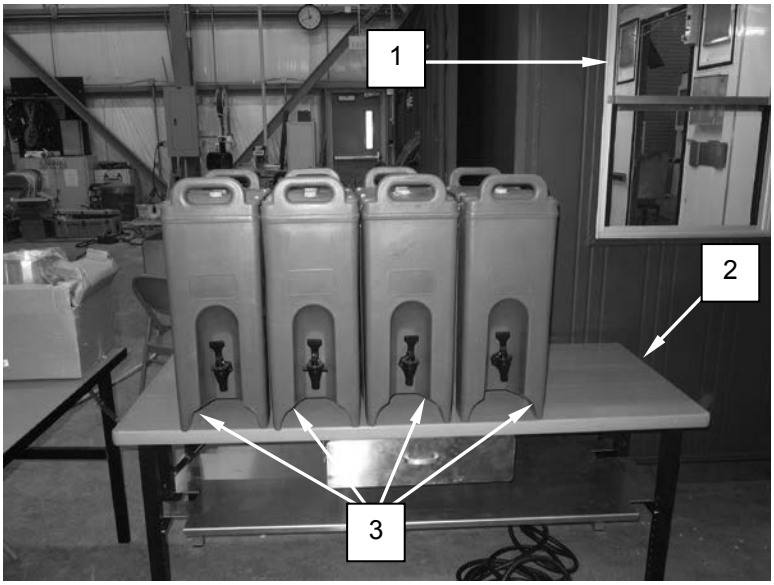


Figure 13. Beverage Table.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

Setup Rear Expanded Wing

1. Align air conditioner shelf (Figure 14, Item 3) in window (Figure 14, item 4) with lip of shelf gripping bottom of window.

2. Connect air conditioner shelf supports (Figure 14, Item 2) to screws (Figure 14, Item 1) in sides of window.

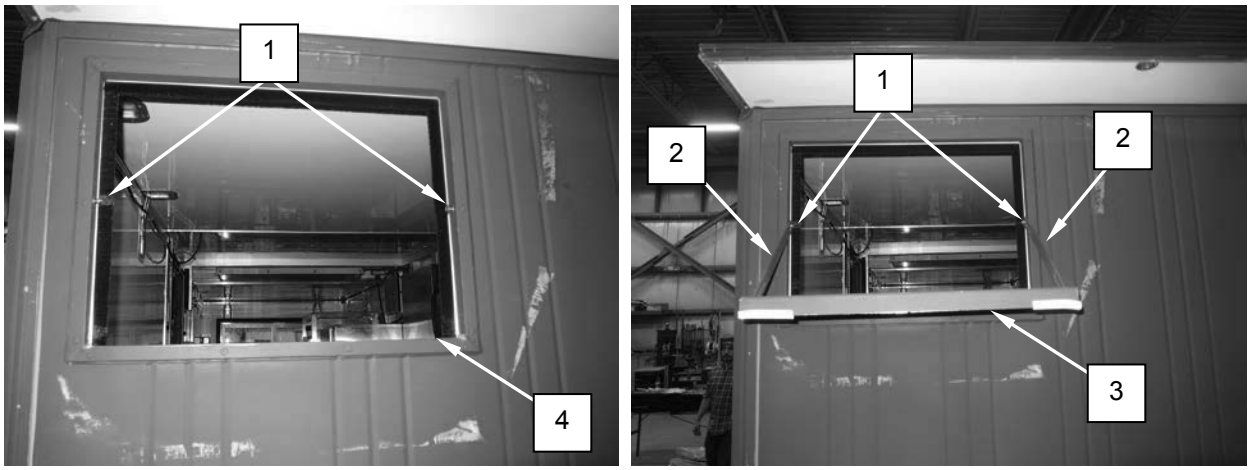


Figure 14. Install Air Conditioner Shelf.

3. Disconnect straps (Figure 15, Item 3) securing covers (Figure 15, Item 1) to air conditioner (Figure 15, Item 2).

4. Pull covers off ends of air conditioner and store in a secure location for packout.

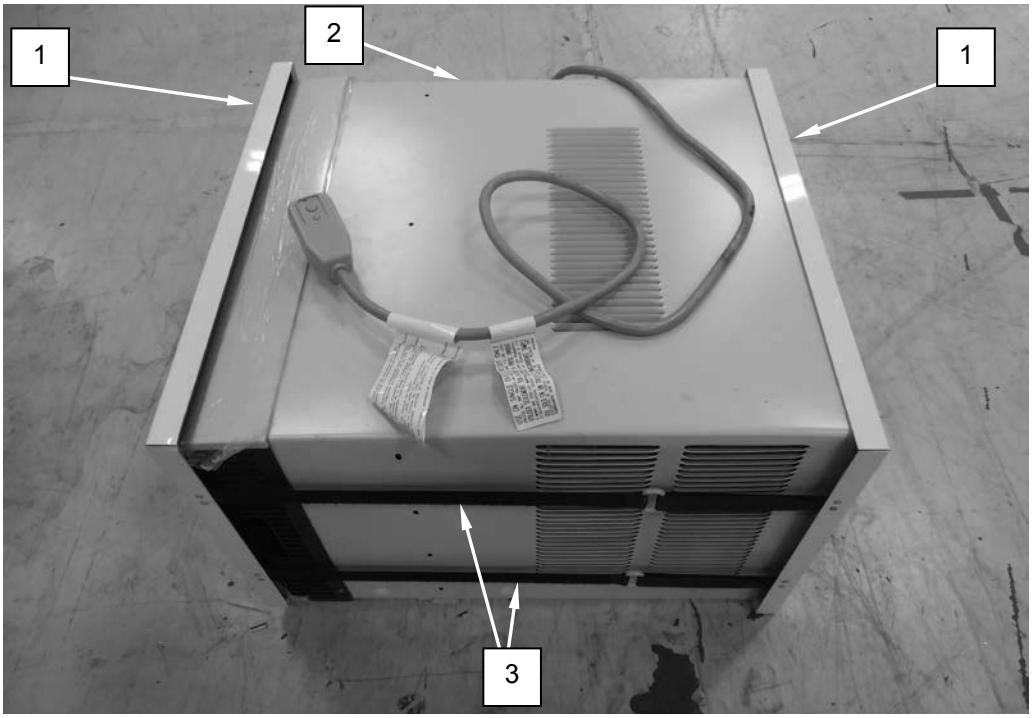


Figure 15. Air Conditioner.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

WARNING

The air conditioner is heavy and requires two personnel to lift. Exercise caution when lifting the air conditioner above shoulder level. Seek medical attention immediately if injury occurs.

5. From inside the ETKS, slide air conditioner (Figure 16, Item 2) onto shelf (Figure 16, Item 1) until back of air conditioner contacts rear lip (Figure 16, Item 1) of shelf. Remove wire tie if needed securing the cable at light fixture.

6. Plug the air conditioner power cable (Figure 16, Item 5) into the 8-ft cable assembly (Figure 16, Item 4).

7. Secure 8-ft cable assembly to the ETKS side wall with clips (Figure 16, Item 3).

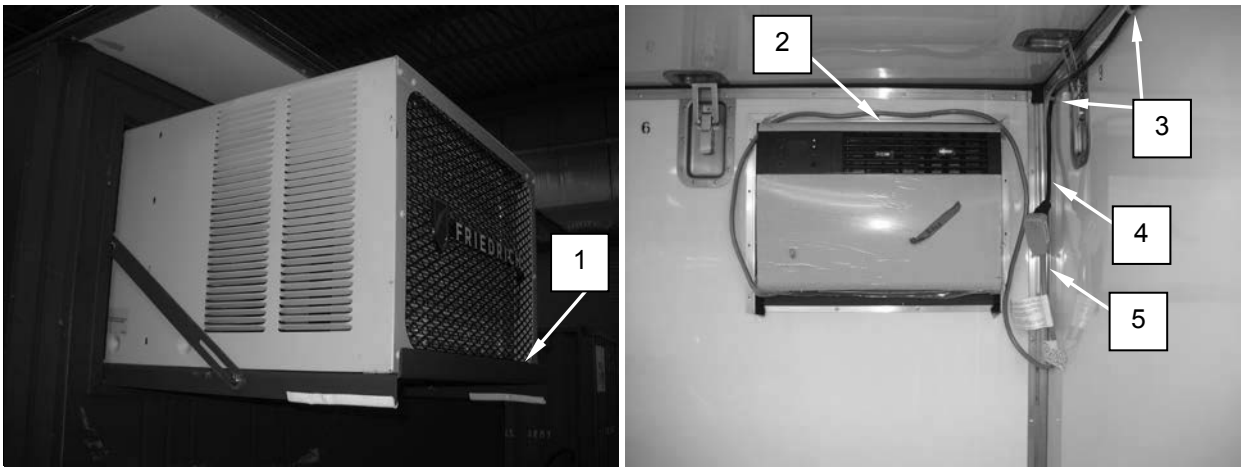


Figure 16. Install Air Conditioner.

8. Insert gooseneck (Figure 17, Item 2) into center port (Figure 17, Item 1) on faucet then tighten nut (Figure 17, Item 3).

Figure 17. Install Gooseneck.

9. Loosen thumb screws (Figure 18, Item 2) at rear of shelf stand mounting provisions (Figure 18, Item 3) of sanitation sink.

10. Insert shelf stands (Figure 18, Item 1) into mounting provisions.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

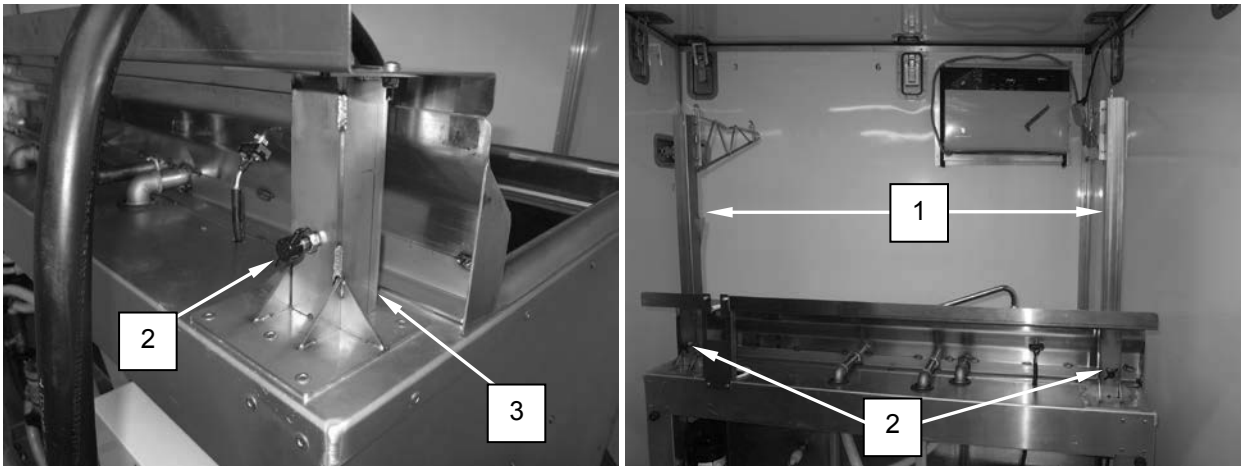


Figure 18. Install Shelf Stands.

11. Install shelf (Figure 19, Item 1) onto sanitation sink.

12. Tighten thumb screws (Figure 19, Item 2) on shelf stand mounting provision (Figure 19, Item 3).

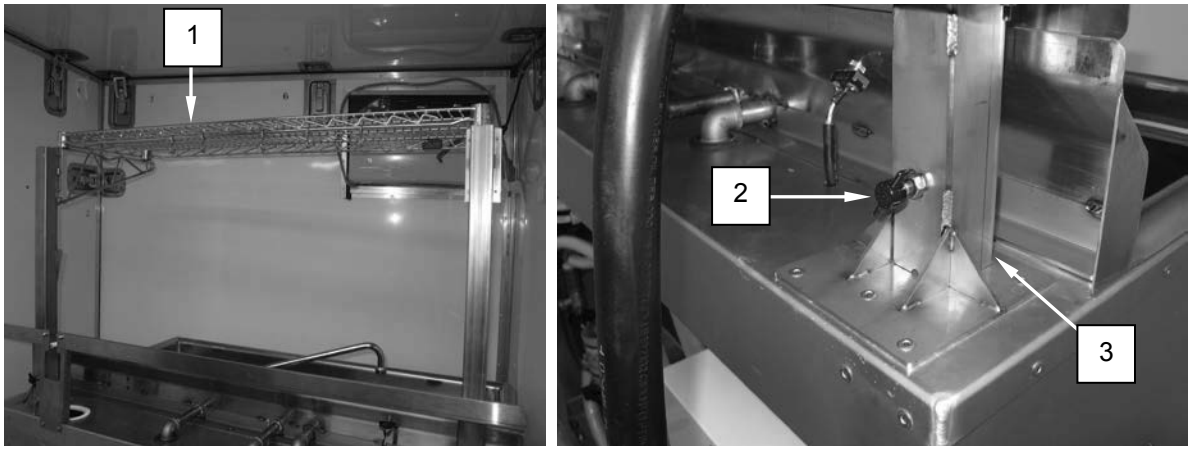


Figure 19. Secure Sink Shelf.

13. Install soap dispenser (Figure 20, Item 2) to bracket (Figure 20, Item 1) on shelf leg (Figure 20, Item 3).

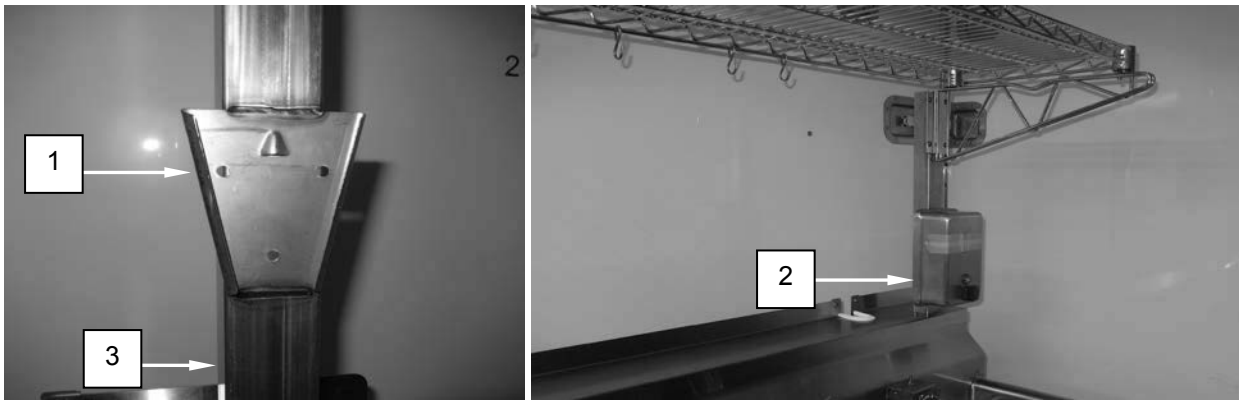


Figure 20. Install Soap Dispenser.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

14. Remove four wing nuts (Figure 21, Item 3) and two retaining clips (Figure 21, Item 2) from threaded studs (Figure 21, Item 1).

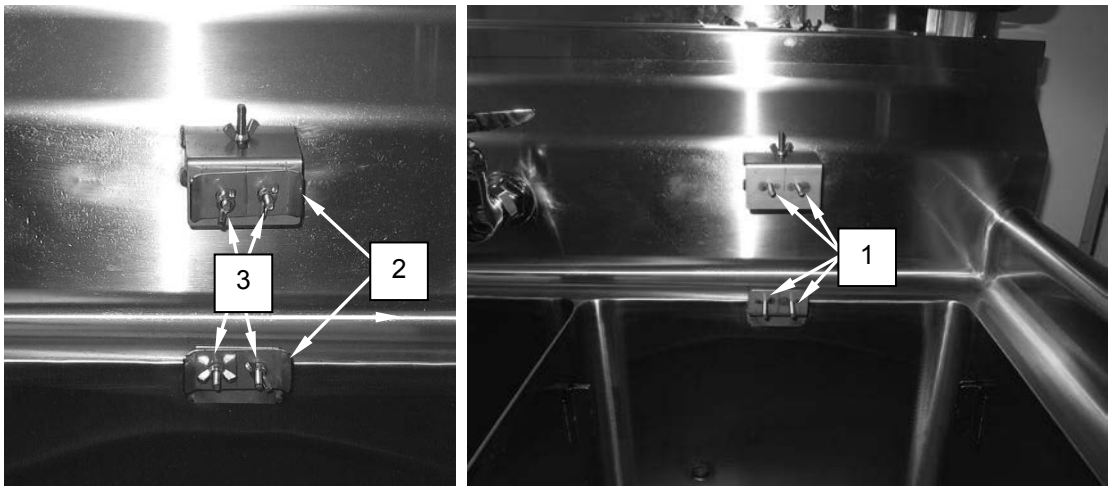


Figure 21. Remove Wing Nuts.

15. Align both pairs of threaded studs (Figure 22, Item 5) through spaces between heater elements (Figure 22, Item 4).

16. Install retaining clips (Figure 22, Item 2) and secure immersion heater (Figure 22, Item 1) with four wing nuts (Figure 22, Item 3).

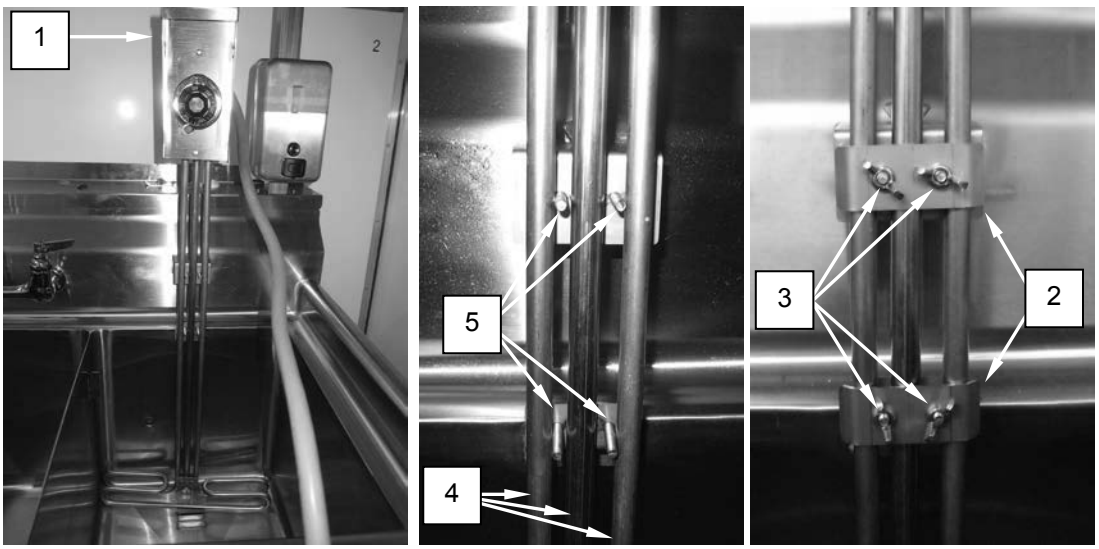


Figure 22. Install Immersion Heater.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

17. Slide immersion heater shield (Figure 23, Item 2) into clips (Figure 23, Item 1) on sides and at base of sink well.

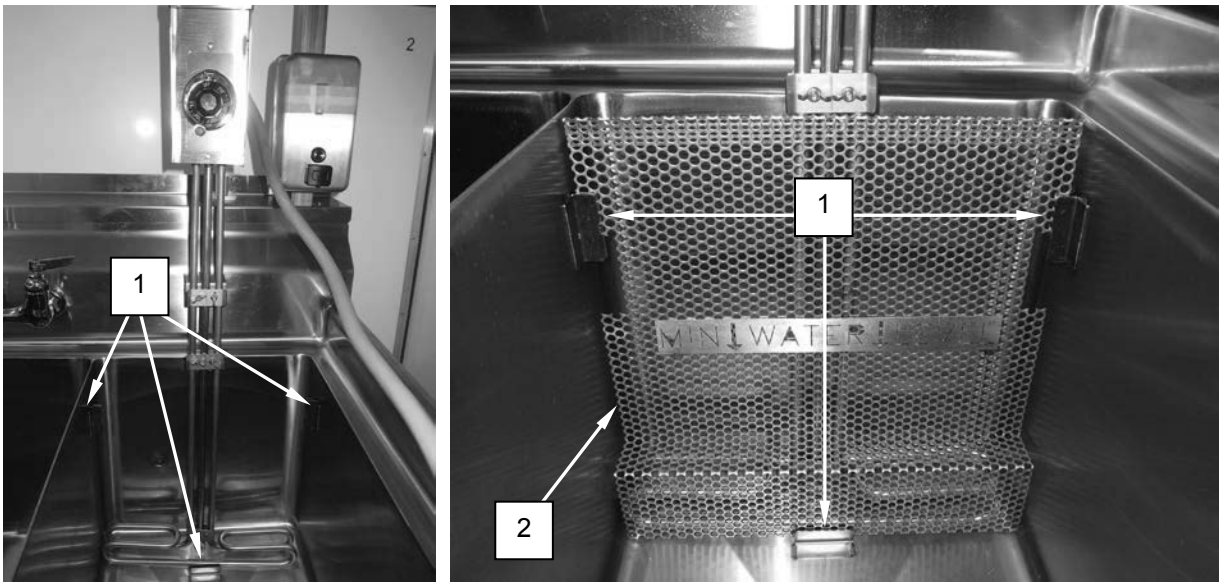


Figure 23. Install Heater Guard.

18. Pass immersion heater power cable (Figure 24, Item 1) through cutouts (Figure 24, Item 2) in sink cabinet (Figure 24, Item 3).

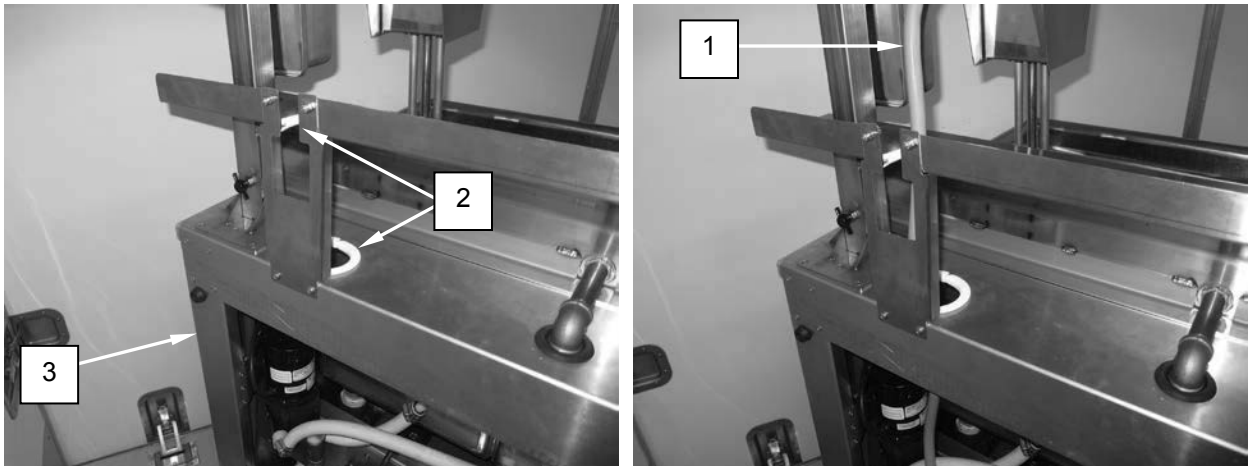


Figure 24. Immersion Heater Power Cable.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

19. Lift up cover (Figure 25, Item 1) to plug immersion heater power cable (Figure 25, Item 2) into receptacle at left rear of sanitation sink after opening.

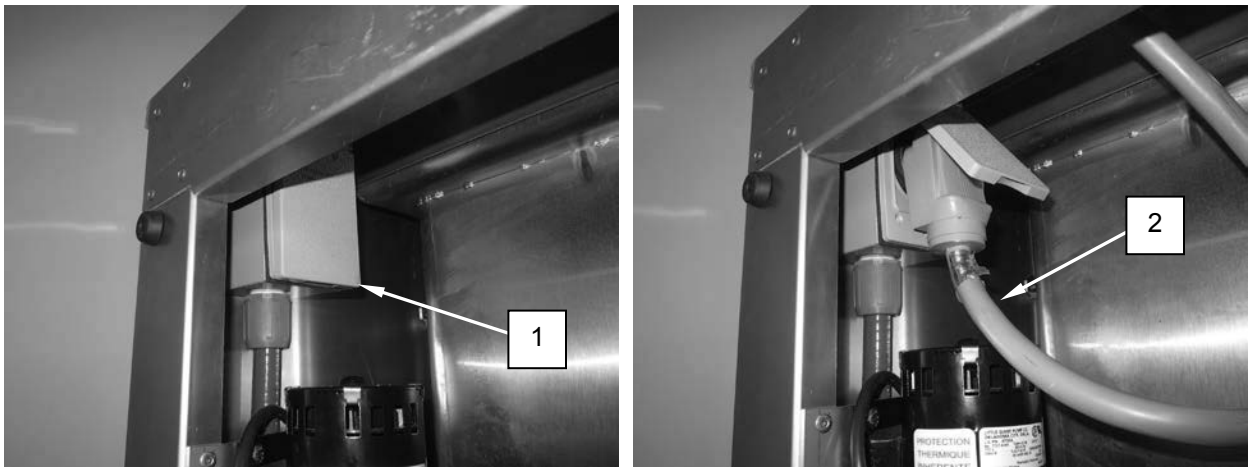


Figure 25. Plug In Immersion Heater.

20. Verify the immersion heater control knob (Figure 26, Item 1) is in the OFF position.

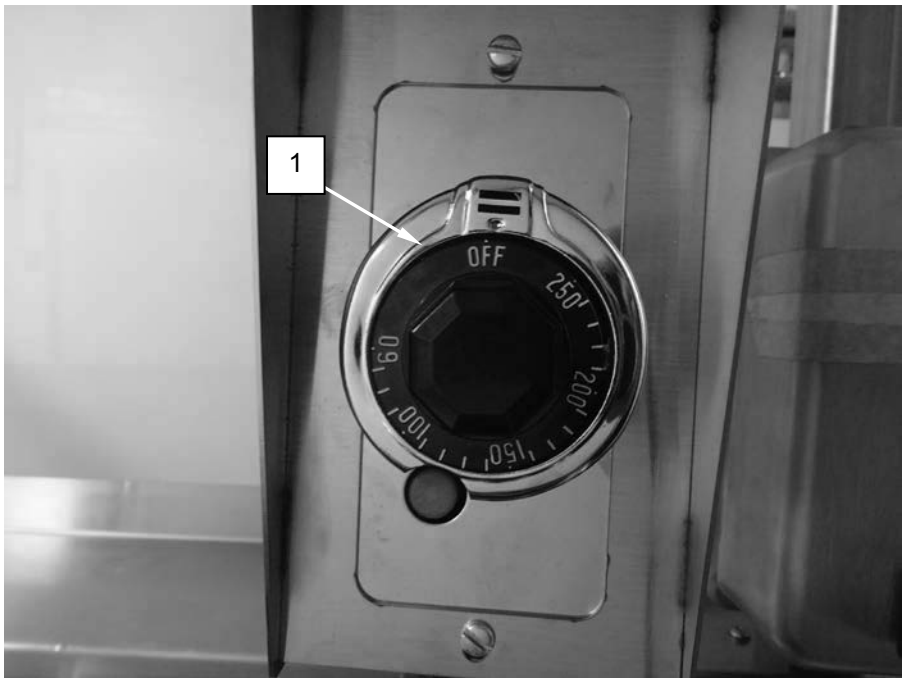


Figure 26. Immersion Heater Control Knob.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

21. Close water heater drain valve (Figure 27, Item 2) by positioning it to the right of the valve.
22. Close transfer pump drain valve (Figure 27, Item 1) by rotating clockwise until it no longer turns.
23. Close ancillary supply valve (Figure 27, Item 3) by positioning it straight up and down.
24. Close coffee pot valve (Figure 27, Item 4) by positioning it straight up and down.

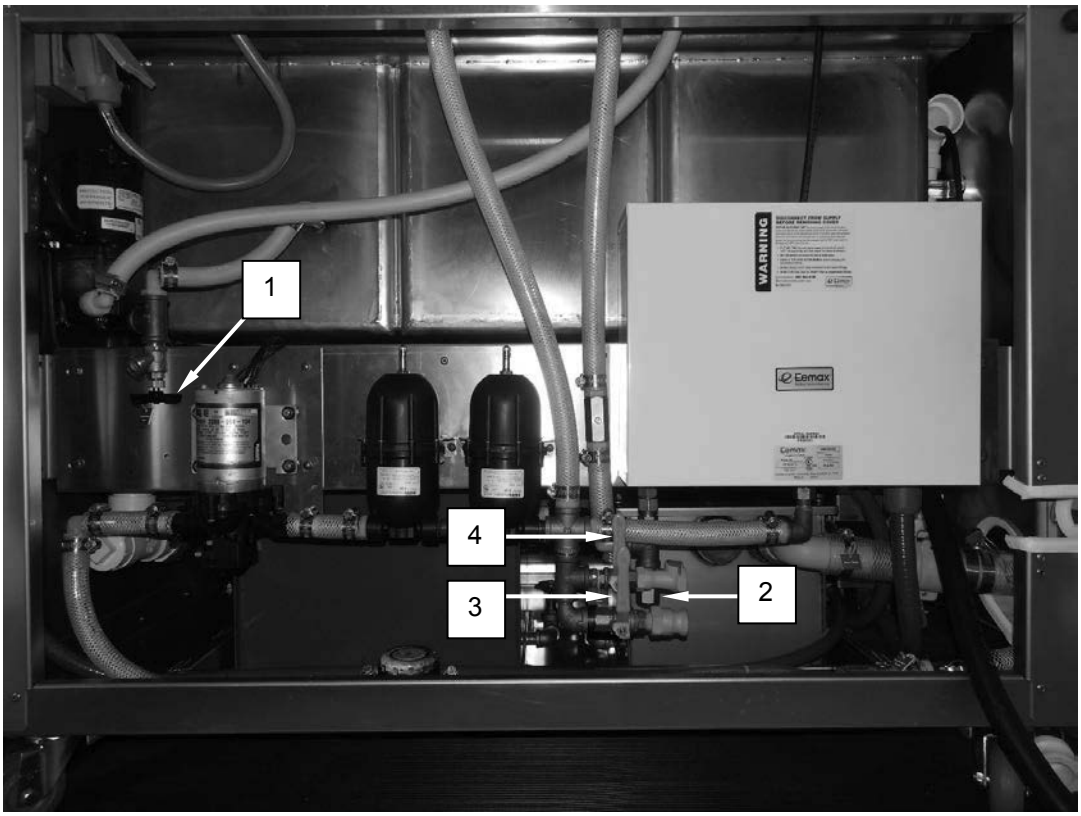


Figure 27. Rear Drain Valves.

25. Route power cable (Figure 28, Item 1) from behind sanitation sink (Figure 28, Item 3) to receptacle at lower right hand side of refrigerator (Figure 28, Item 2).

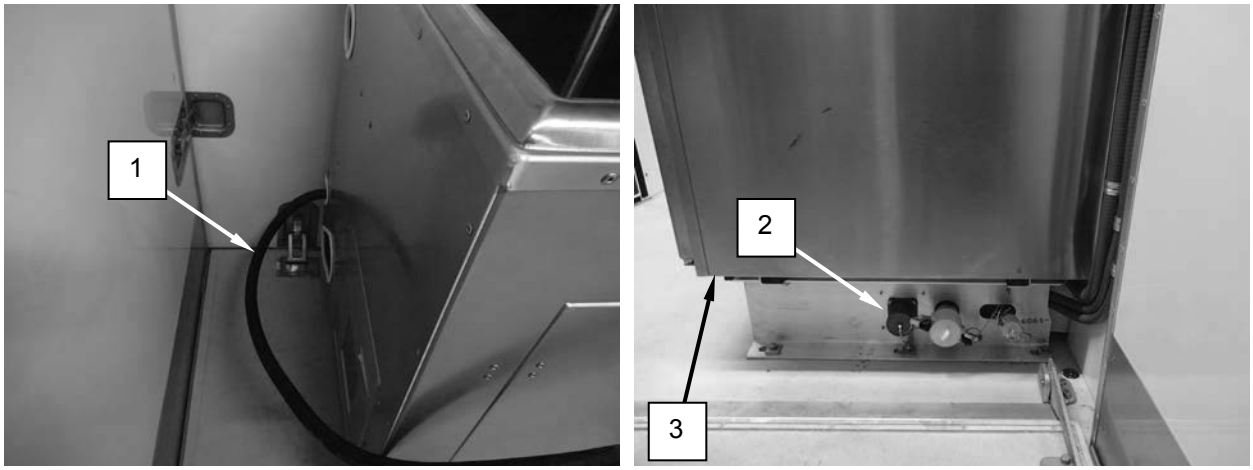


Figure 28. Position Sink Power Cable.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

26. Remove dust covers (Figure 29, Item 4) from each end of sanitation sink waste hose (Figure 29, Item 1).

27. Remove dust covers (Figure 29, Item 3) from each end of sanitation sink supply hose (Figure 9, Item 2).

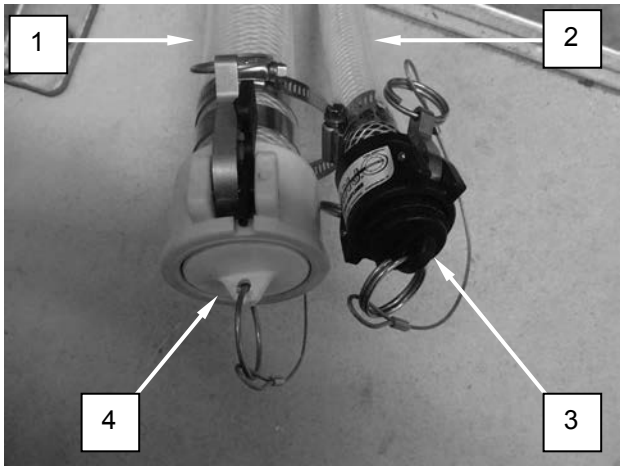


Figure 29. Remove Dust Covers.

28. Install sanitation sink supply hose to potable water supply port (Figure 30, Item 1) on sanitation sink.

29. Install sanitation sink drain hose to waste water port (Figure 30, Item 2) on sanitation sink.

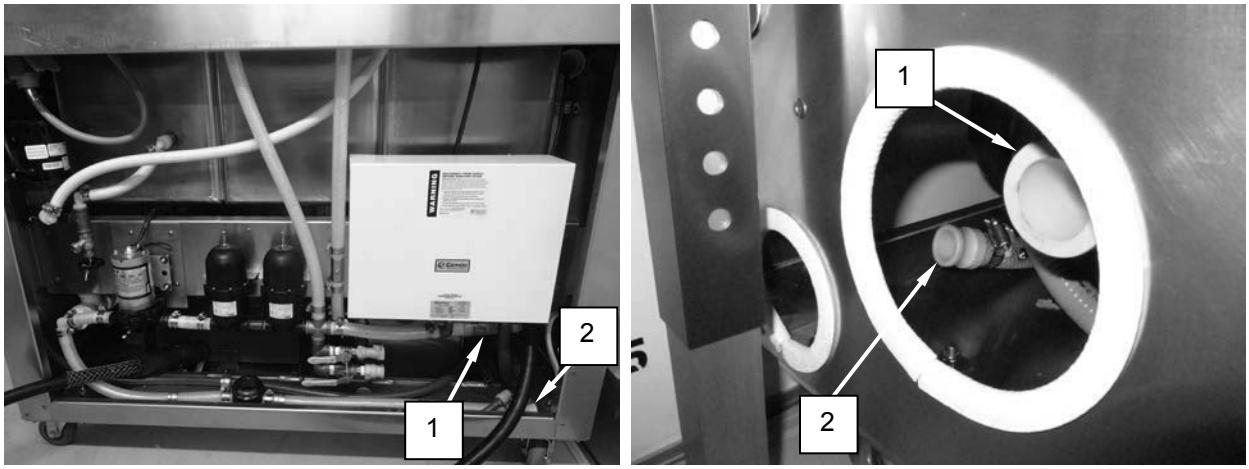


Figure 30. Attach Hoses to Sink.

30. Release locks (Figure 31, Item 2) on casters (Figure 31, Item 1) by lifting up on locks with foot.

31. Carefully maneuver sanitation sink to right corner of the rear end wall.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

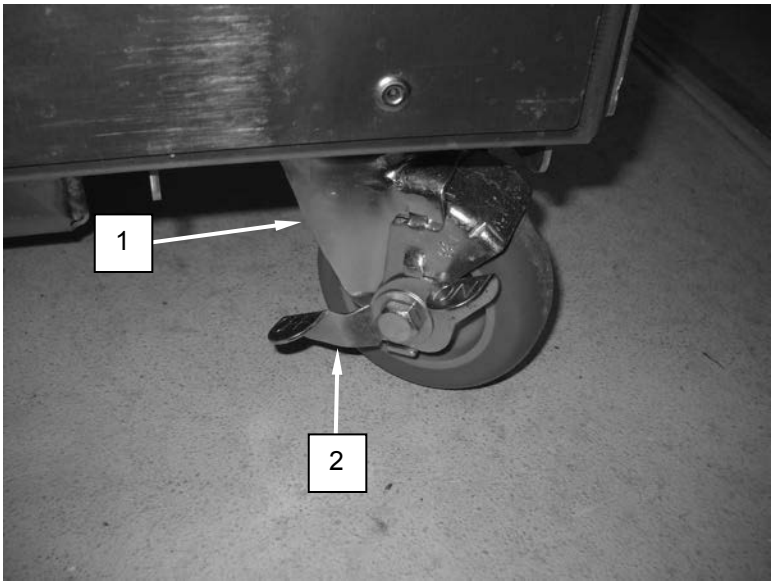


Figure 31. Move Sink.

32. Secure casters (Figure 31, Item 2) by pushing down on locks (Figure 31, Item 1) with foot.
33. Remove dust cover (Figure 32, Item 2) from receptacle (Figure 32, Item 1) on refrigerator.
34. Remove dust cover (Figure 32, Item 3) from sanitation sink power cable (Figure 32, Item 4).
35. Connect power cable to receptacle.
36. Connect dust cover to dust cover.

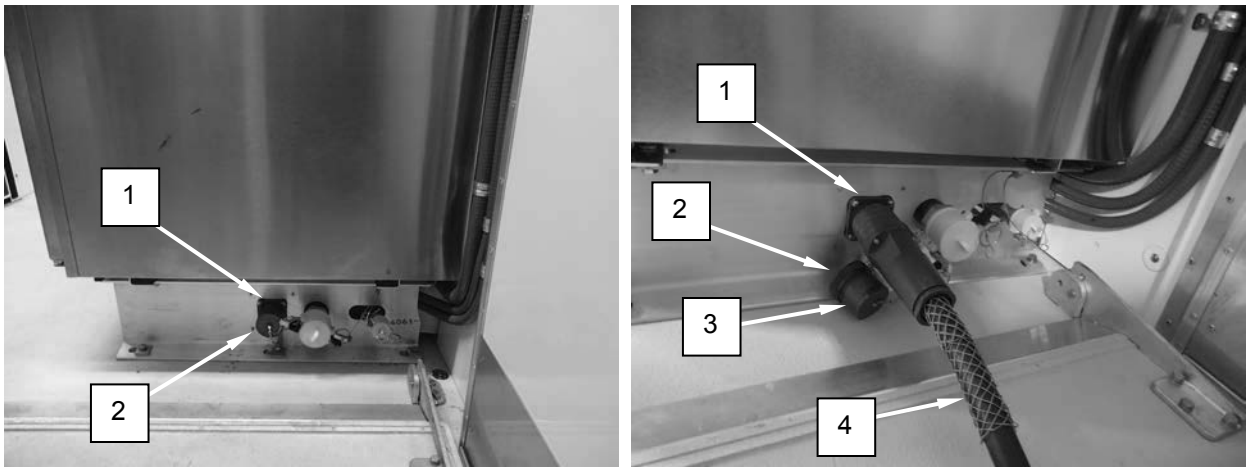


Figure 32. Connect Power Cable.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

37. Remove dust cover (Figure 33, Item 1) from waste port (Figure 33, Item 2) on refrigerator.

38. Install sanitation sink waste hose (Figure 33, Item 5) to waste port on refrigerator.

39. Connect dust cover to dust cover (Figure 33, Item 4).

40. Remove dust cover (Figure 33, Item 3) from potable water port (Figure 33, item 6) on refrigerator.

41. Install sanitation sink supply hose (Figure 33, Item 7) to potable water port on refrigerator.

42. Connect dust cover to dust cover (Figure 33, Item 8).

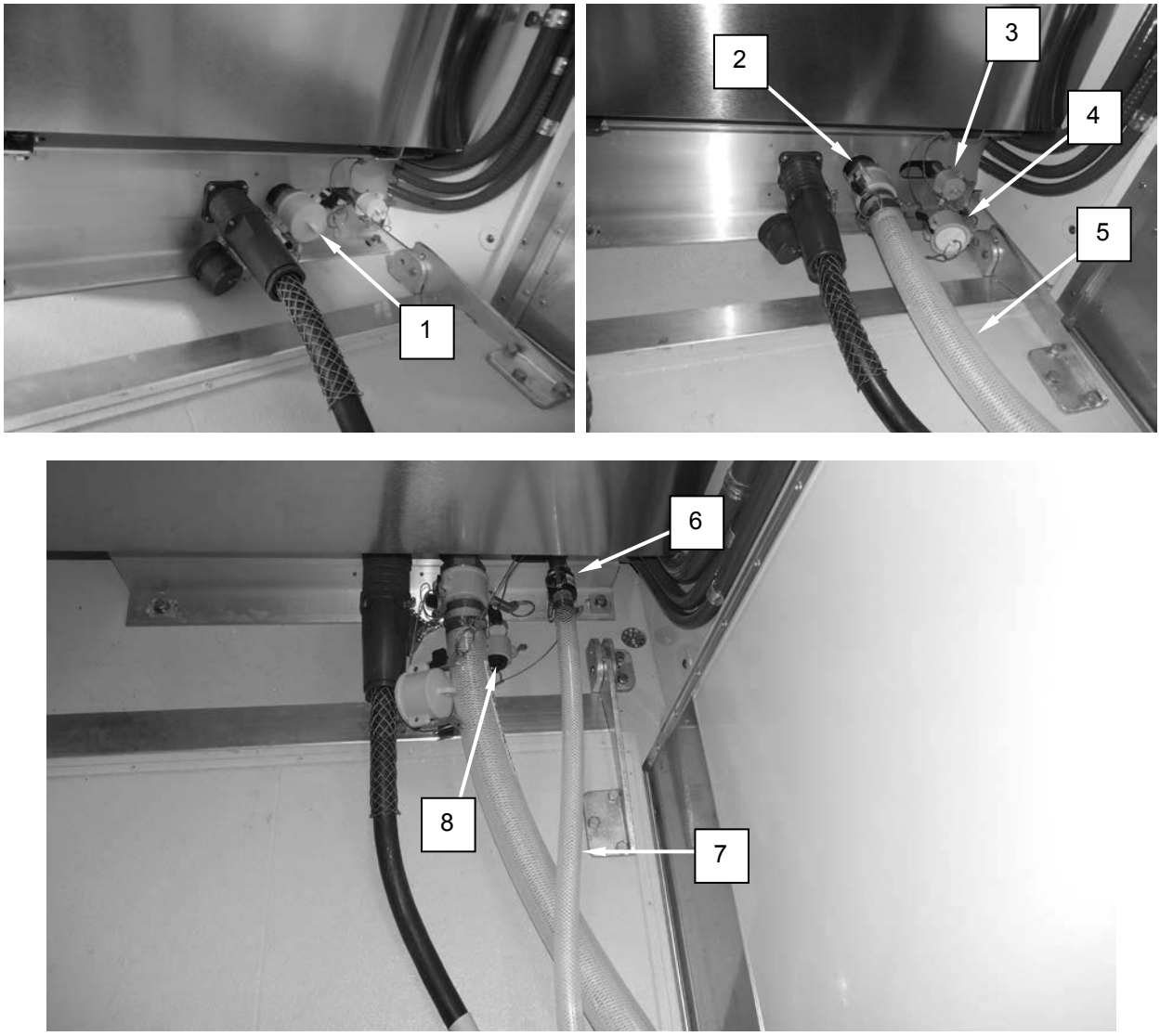


Figure 33. Sink Water Connections.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

43. Open circuit breaker access panel door (Figure 34, Item 1) on sanitation sink.

44. Verify all circuit breakers (Figure 34, Item 2) on the sanitation sink are in the OFF position.

Figure 34. Verify Sink Circuit Breakers are Off.

45. Close circuit breaker access panel door (Figure 34, Item 1).

46. Set up utility table (Figure 35, Item 1) as follows:

    a. Place table face down.

    b. Unfold legs (Figure 35, Item 2).

    c. Slide locking collars (Figure 35, Item 3) towards legs.

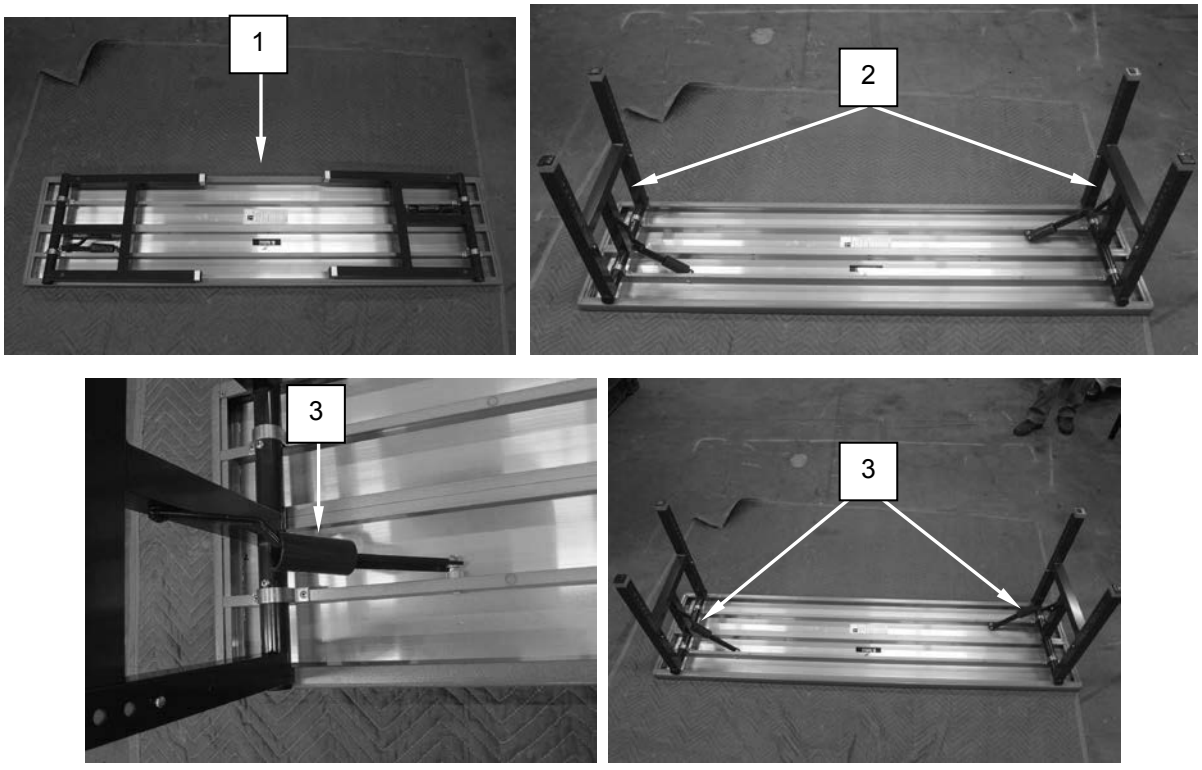


Figure 35. Unfold Table.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

d. Flip table right side up.

e. Install shelf to table.

47. Place table to the left side of the sanitation sink.

48. Align spice rack (Figure 36, Item 1) to two mounting provisions (Figure 36, Item 2) on ETKS side wall above utility table.

49. Tighten two thumb screws to secure spice rack on side wing wall.

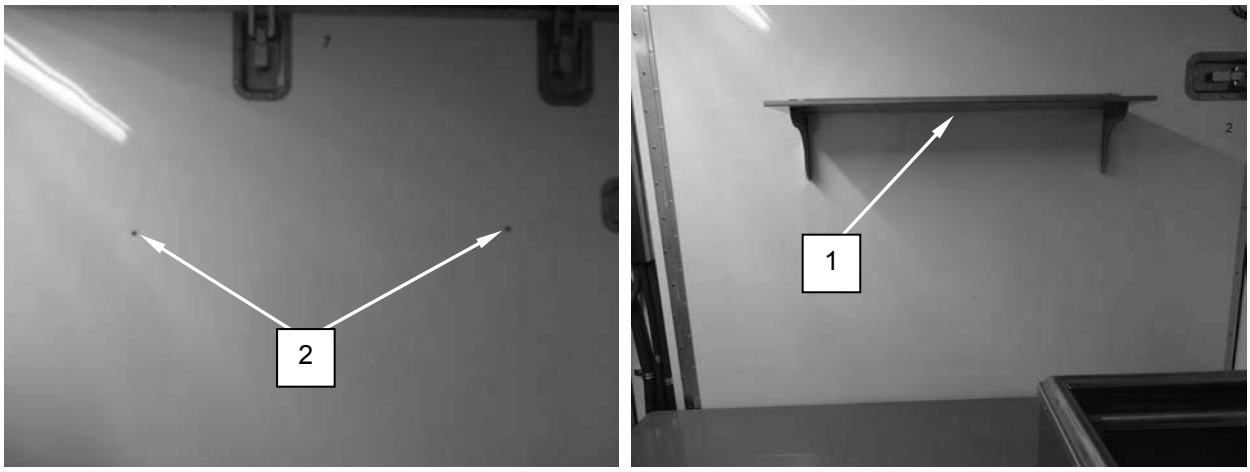


Figure 36. Install Spice Rack.

50. Install can opener base (Figure 37, Item 1) to utility table (Figure 37, Item 3).

51. Install can opener (Figure 37, Item 2) to base.

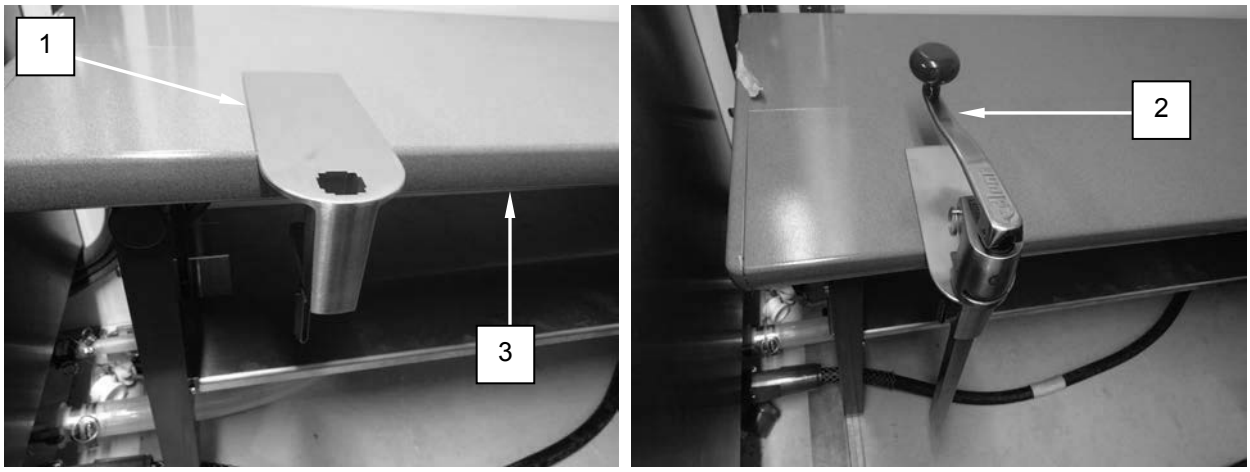


Figure 37. Install Can Opener.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

Setup Kitchen Center Area

1. Open refrigerator doors (Figure 38, Item 1).
2. Remove shelves from the bottom of the refrigerator.
3. Install two shelves (Figure 38, Item 5) on lower mounting provisions (Figure 38, Item 3).
4. Install two shelves (Figure 38, Item 4) on upper mounting provisions (Figure 38, Item 2).

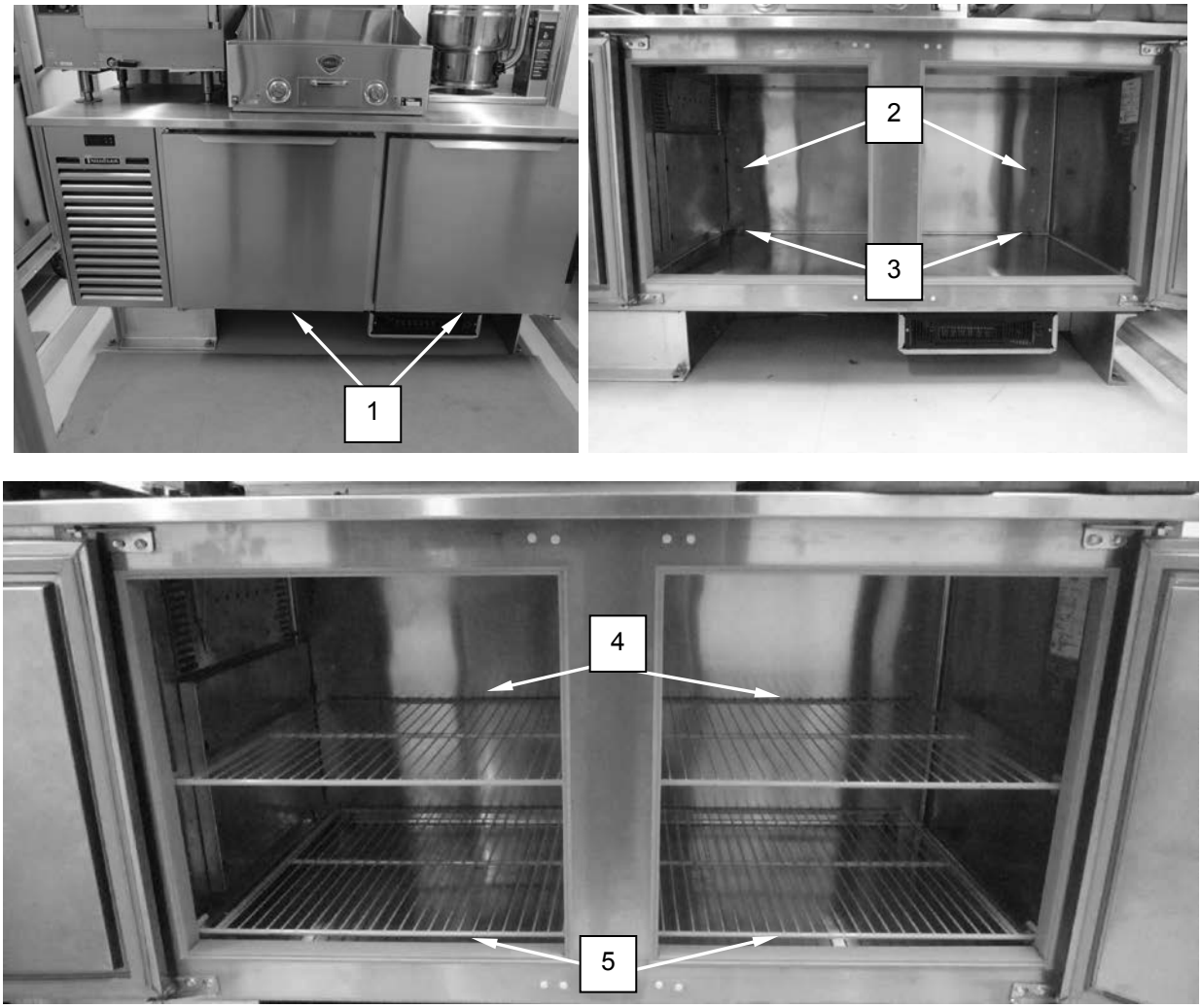


Figure 38. Install Shelves.

5. Close the refrigerator doors.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

6. Verify the space heater control knob (Figure 39, Item 1) is rotated fully counter-clockwise.

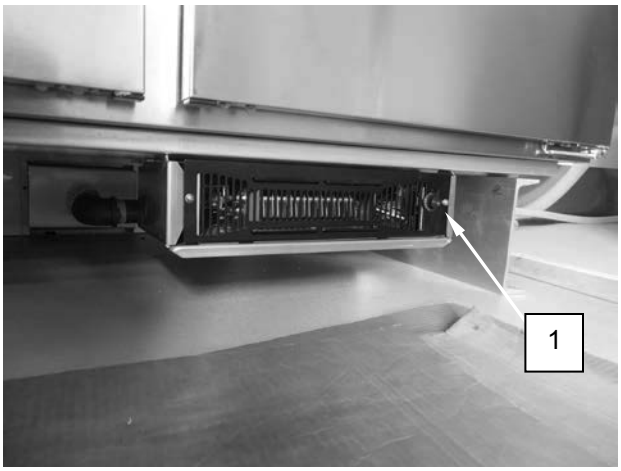


Figure 39. Space Heater.

7. Install three piece splash guard (Figure 40, Item 4) to griddle (Figure 40, Item 3).
8. Plug griddle power cable (Figure 40, Item 1) into designated receptacle.
9. Verify the griddle thermostats (Figure 40, Item 2) are set to the OFF position.

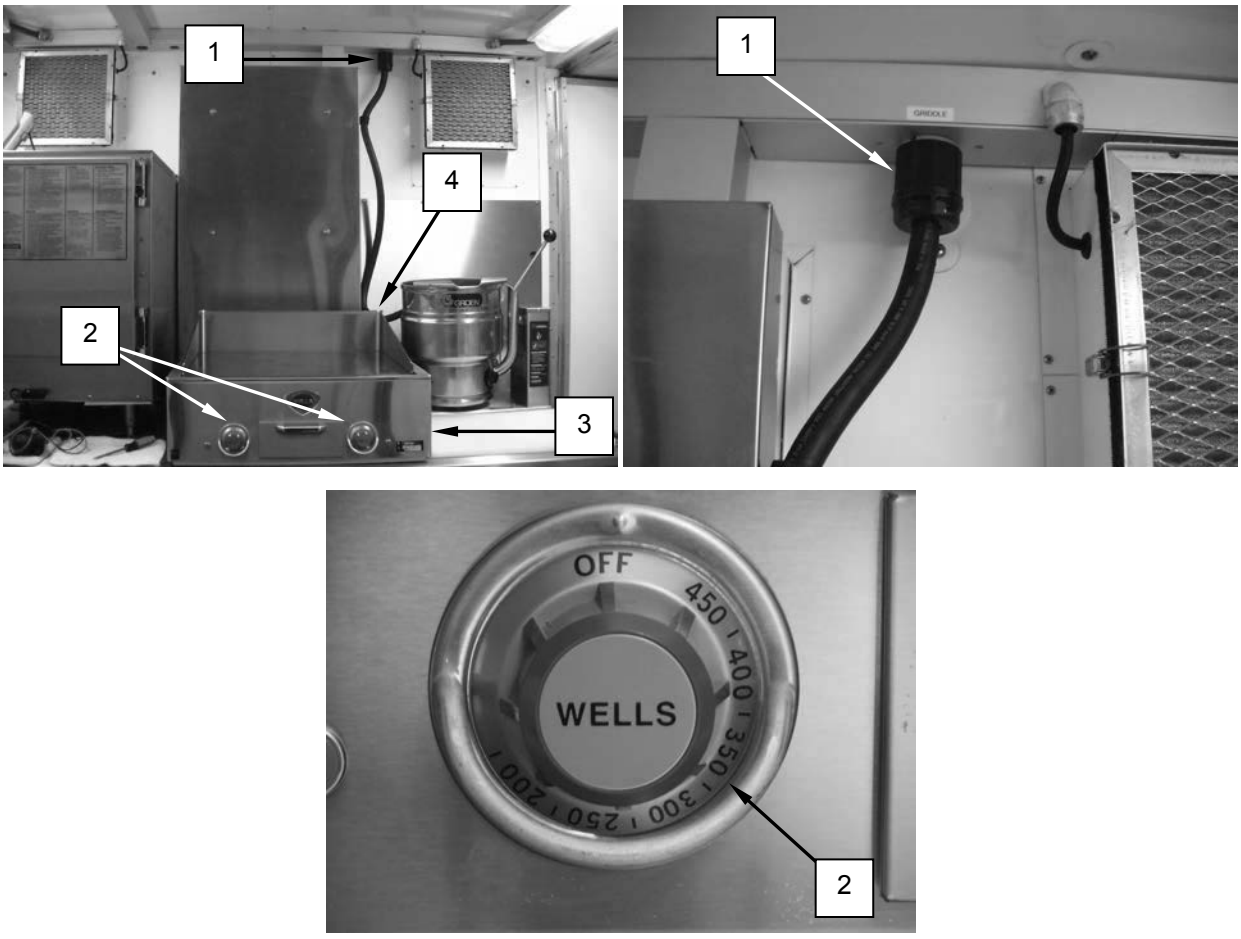


Figure 40. Griddle.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

10. Remove tilt handle (Figure 41, Item 1) from stowed position (Figure 41, Item 2) on steam kettle (Figure 41, Item 3).

11. Install handle to steam kettle.

12. Verify thermostat knob (Figure 41, Item 4) is in the OFF position.

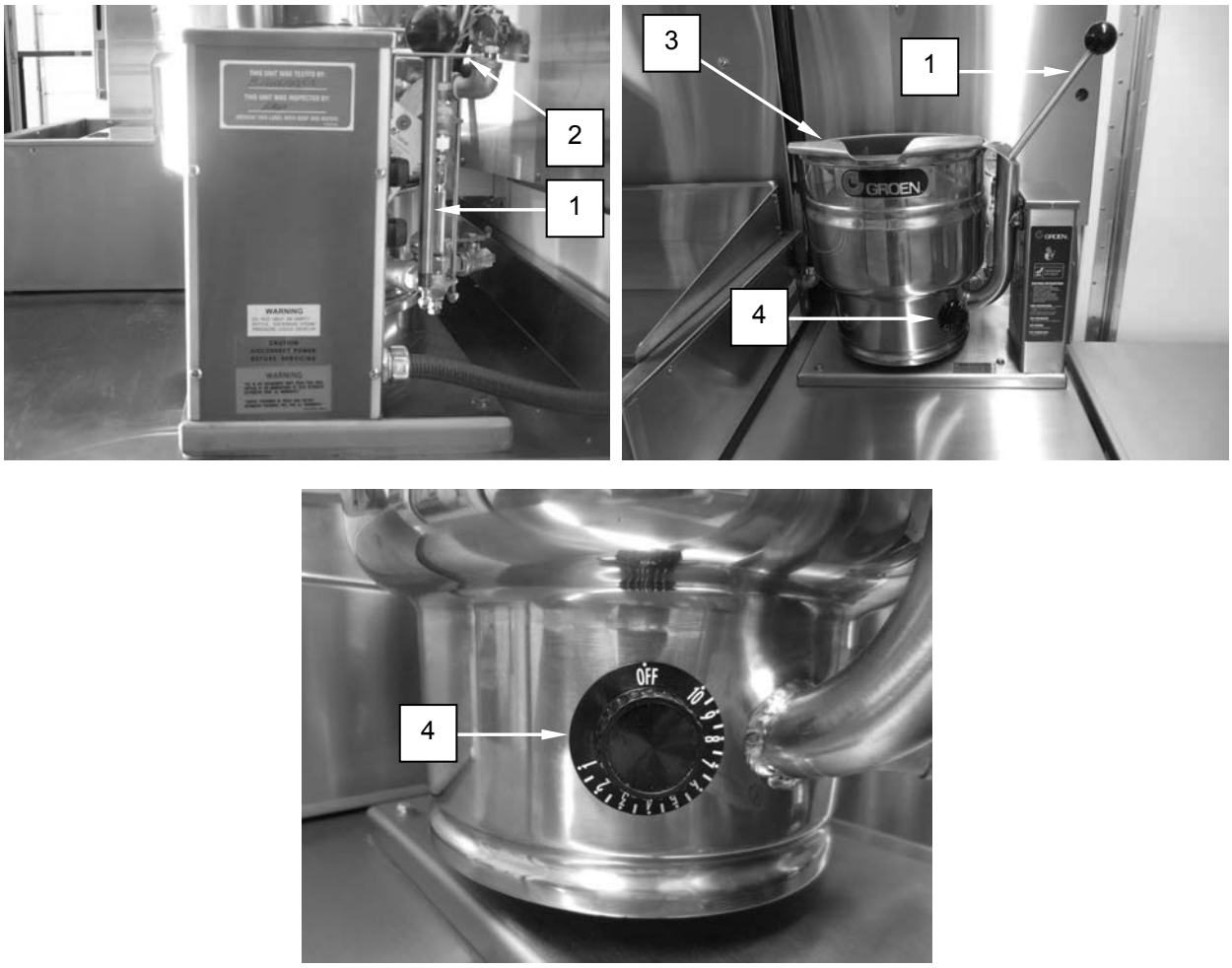


Figure 41. Steam Kettle Setup.

13. Install first aid kit (Figure 42, Item 2) on two screws (Figure 42, Item 1) to the left of personnel door.

14. Install knife rack (Figure 42, Item 3) on two screws (Figure 42, Item 4) to the right of personnel door:

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

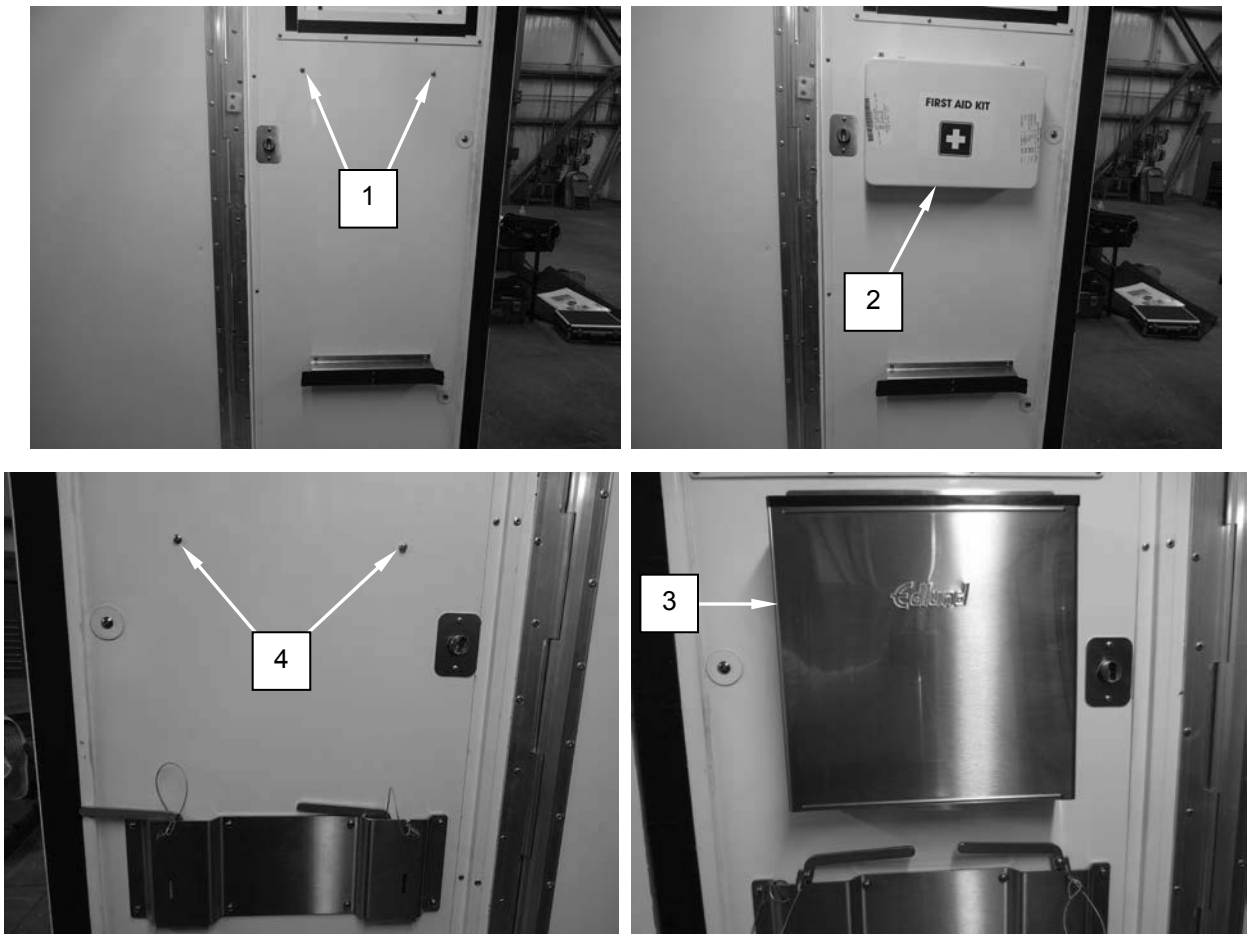


Figure 42. Install First Aid Kit and Knife Rack.

15. Place one thin floor mat (Figure 43, Item 1) in each of the ETKS expanded wing sections.

16. Place thick floor mat (Figure 43, Item 2) overlapping thin floor mats in kitchen center area.

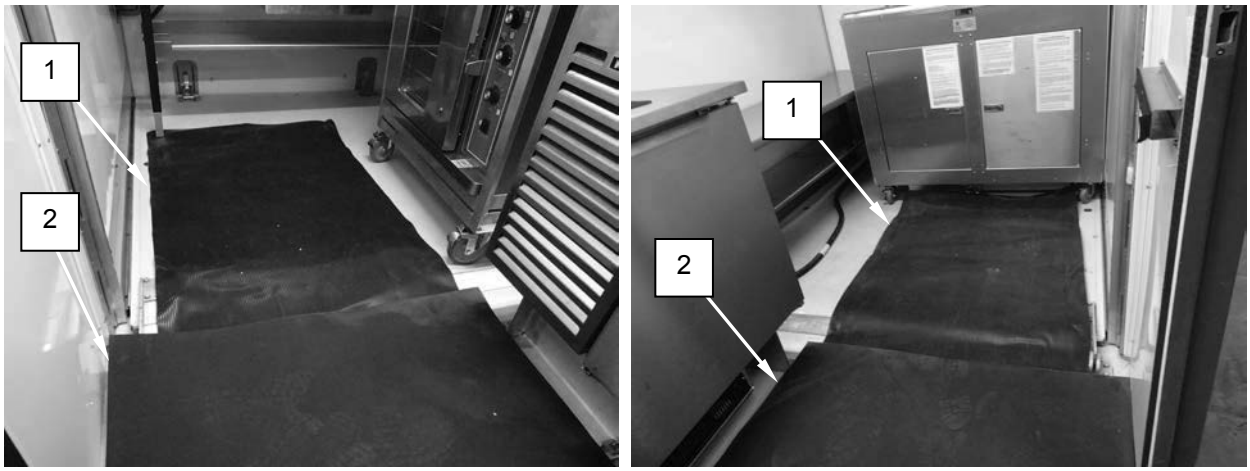


Figure 43. Floor Mats.

17. Place all utensils and cookware in ETKS or storage IAW unit SOP.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

Establish Water Supply

CAUTION

If possible, locate the SOURCE bag at a level that is equal to, or slightly higher than the potable water port. Properly locating the 3,000-gallon water bag will ensure there is adequate head pressure at the potable water port.

NOTE

When setting up the SOURCE water bag it is recommended that the bag be oriented so that there is a straight path to route the source water hose that will be connected to the potable water port. In addition, it is recommended that the shutoff valve provided with the bag be connected to the port where the water hose will be connected.

1. Set up the water bag labeled SOURCE (Figure 44, Item 1) within 25 feet of ETKS (Figure 44, Item 2) IAW TM 10-5430-237-12&P.

2. Verify water bag shutoff valve (Figure 44, Item 4) is closed. SOURCE water bag may be filled at this time.

3. Connect adapter (Figure 44, Item 3) to water bag shutoff valve.

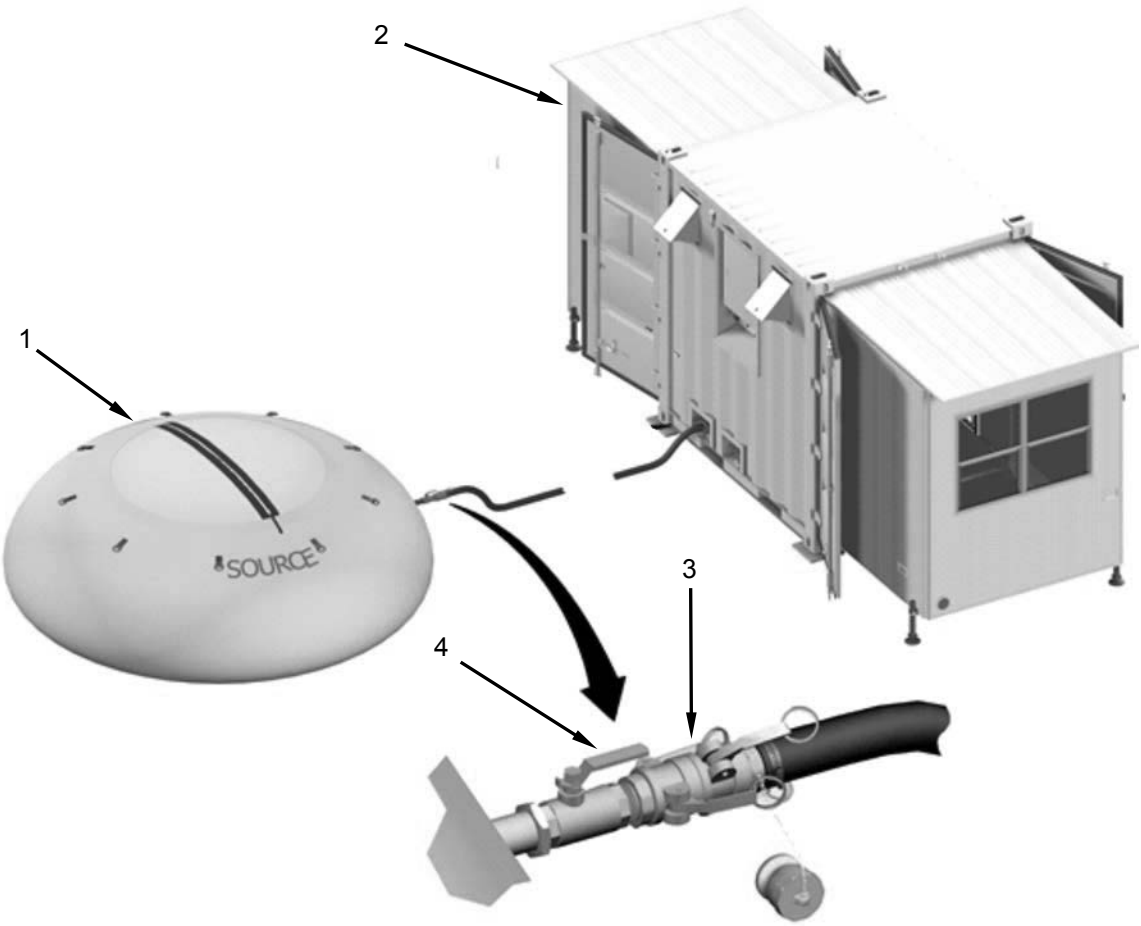


Figure 44. Water Supply Setup.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

4. Remove dust cover (Figure 45, Item 2) from each end of 25-foot source water hose (Figure 45, Item 4).
5. Connect 25-foot source water hose to adapter (Figure 44, Item 3) connected to SOURCE water bag.
6. Remove dust cover (Figure 45, Item 3) from ETKS potable water port (Figure 45, Item 1).
7. Connect 25-foot source water hose to ETKS potable water port.
8. Connect dust cover (Figure 45, Item 2) on 25-foot source water hose to dust cover (Figure 45, Item 3) on the ETKS potable water port.

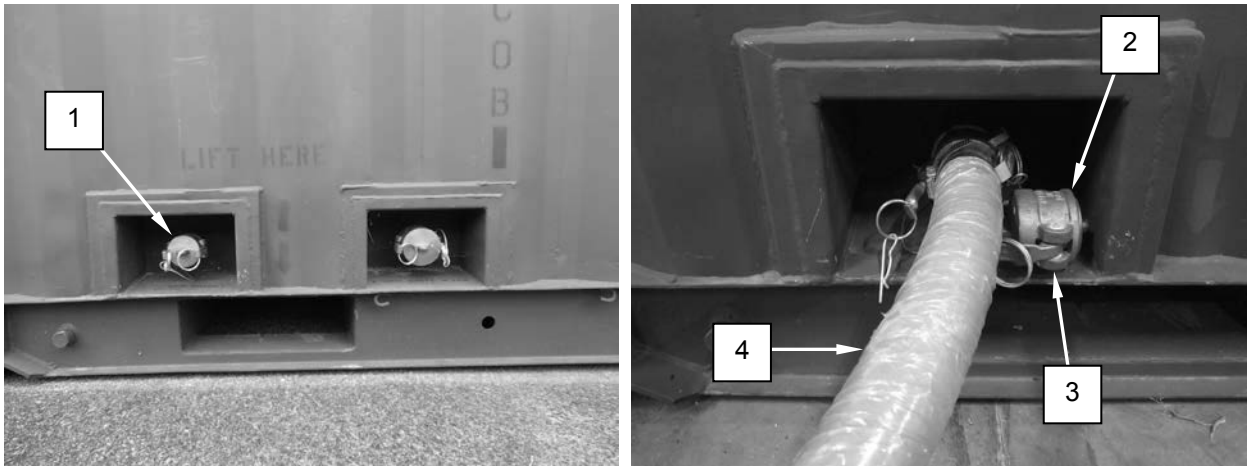


Figure 45. Source Water Hose.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

Establish Waste Collection

CAUTION

If possible, locate the WASTE water bag at a level that is equal to, or slightly below the wastewater port outlet. Properly locating the water bag will ensure that the waste removal pump empties the waste tank in the sanitation sink at the proper rate. Failure to provide the required height difference and to properly locate the WASTE water bag may cause wastewater to back up into the ETKS.

NOTE

When setting up the WASTE water bag it is recommended that the bag be oriented so that there is a straight path to route the waste hose that will be connected between the wastewater port and the water bag. In addition, it is recommended that the shutoff valve provided with the bag be connected to the port where the waste hose will be connected.

1. Set up the water bag labeled “WASTE” (Figure 46 Item 3) within 25 feet of ETKS (Figure 46, Item 1) IAW TM 10-5430-237-12&P.

2. Verify water bag shutoff valve (Figure 46, Item 2) is opened.

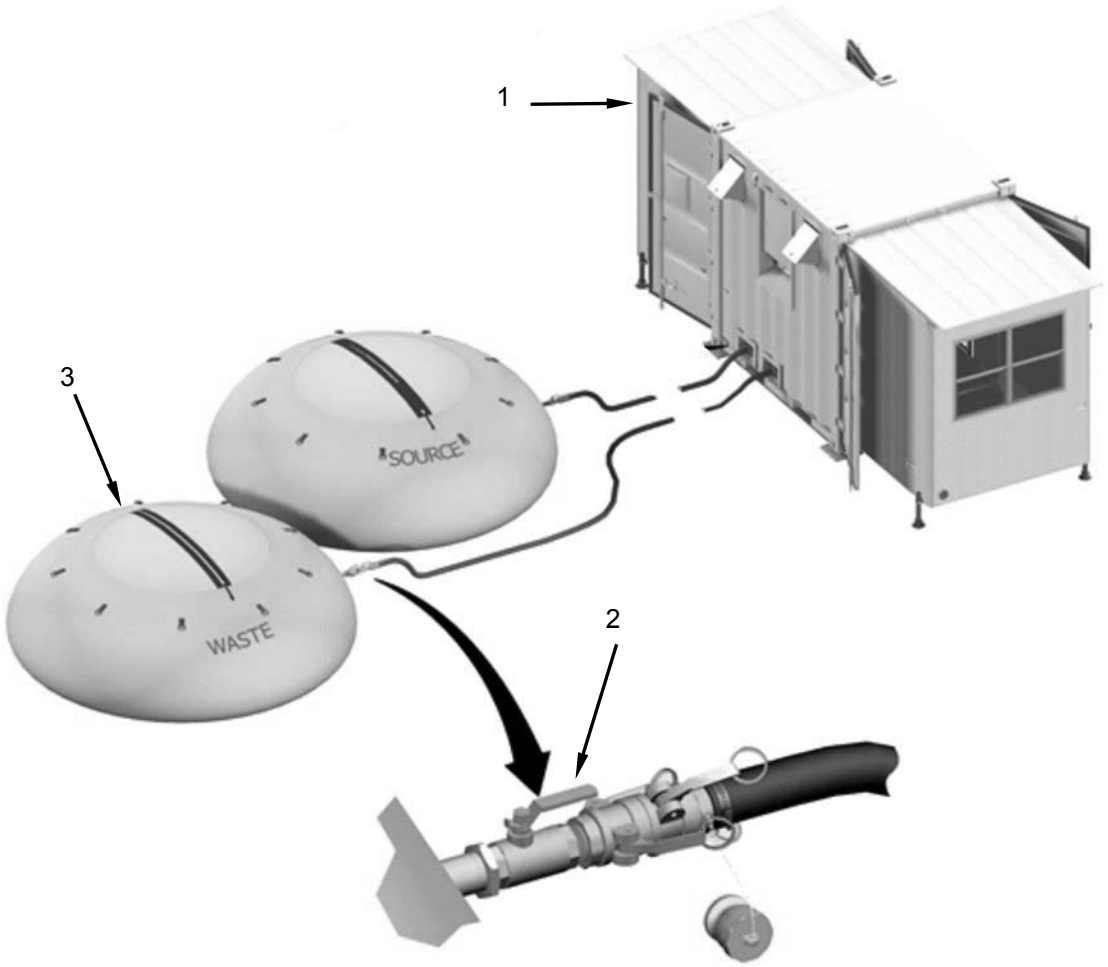


Figure 46. Waste Collection Setup.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

3. Remove dust covers (Figure 47, Item 3) from each end of 25-foot wastewater hose (Figure 47, Item 2).
4. Connect 25-foot wastewater hose to water bag shutoff valve connected to WASTE water bag.
5. Remove dust cover (Figure 47, Item 4) from ETKS wastewater port (Figure 47, Item 1).
6. Connect 25-foot waste hose to ETKS wastewater port.
7. Connect dust covers on 25-foot wastewater hose to dust cover on wastewater port.

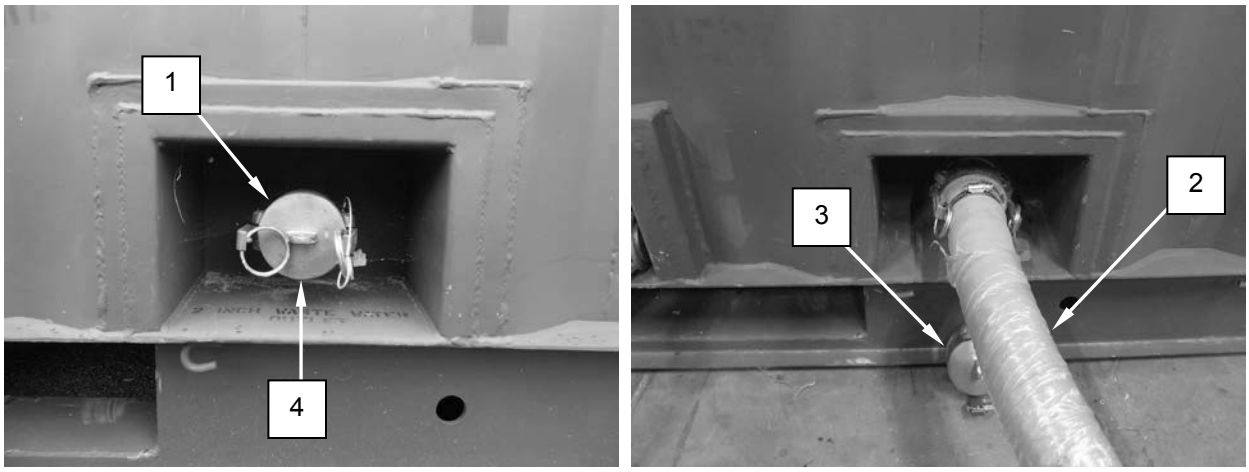


Figure 47. Wastewater Hose.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

Establish Electrical Power Connection

WARNING

Master power must be shut off before connecting ETKS power cables. Do not apply power to ETKS until a separate connection has been made with a suitable earth ground. Be careful not to come into contact with high-voltage connections. Whenever possible, keep one hand away from equipment to reduce the hazard of current flowing through the body's vital organs. Failure to follow this precaution may result in personnel injury or death. Seek immediate medical attention if injury occurs.

1. Ensure the generator set or external power source is turned off.
2. Open circuit breaker panel door (Figure 48, Item 1) on ETKS.
3. Verify all circuit breakers (Figure 48, Item 2) are in the OFF position then close and secure door.

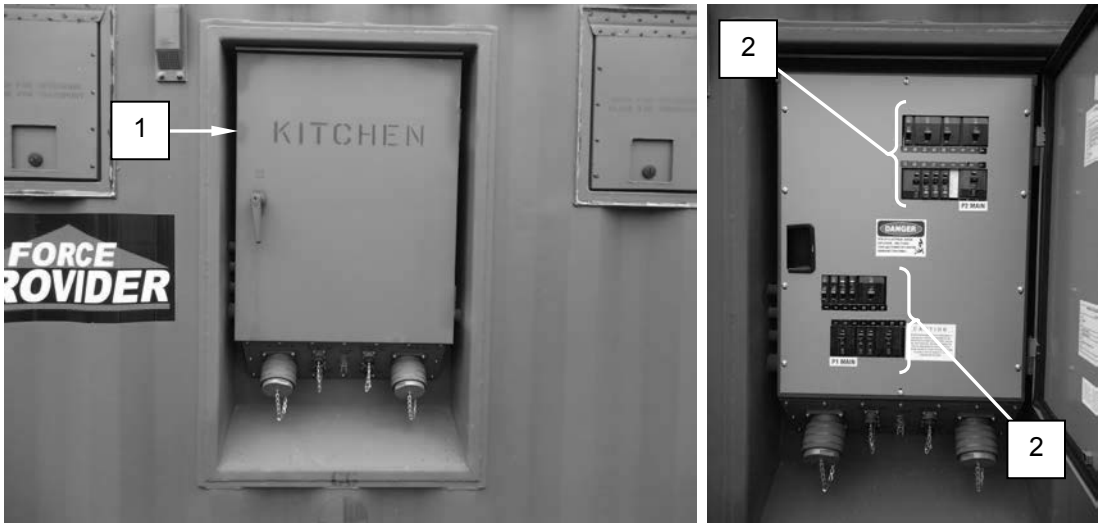


Figure 48. Circuit Breaker Panel.

ASSEMBLY AND PREPARATION FOR USE – SETUP – CONTINUED

NOTE

The grounding rod consists of three pieces. It must be assembled as it is being driven into the ground.

4. Drive a grounding rod IAW TM 3-34.46.
5. Attach ground wire (Figure 49, Item 7) to ground stud (Figure 49, Item 2) on ETKS.
6. Remove dust covers (Figure 49, Item 6) from power cables (Figure 49, Items 4 and 8).
7. Connect power cables to power source.
8. Remove dust covers (Figure 49, Item 5) from ETKS power input receptacles (Figure 49, Items 1 and 3).
9. Connect power cables to receptacles.

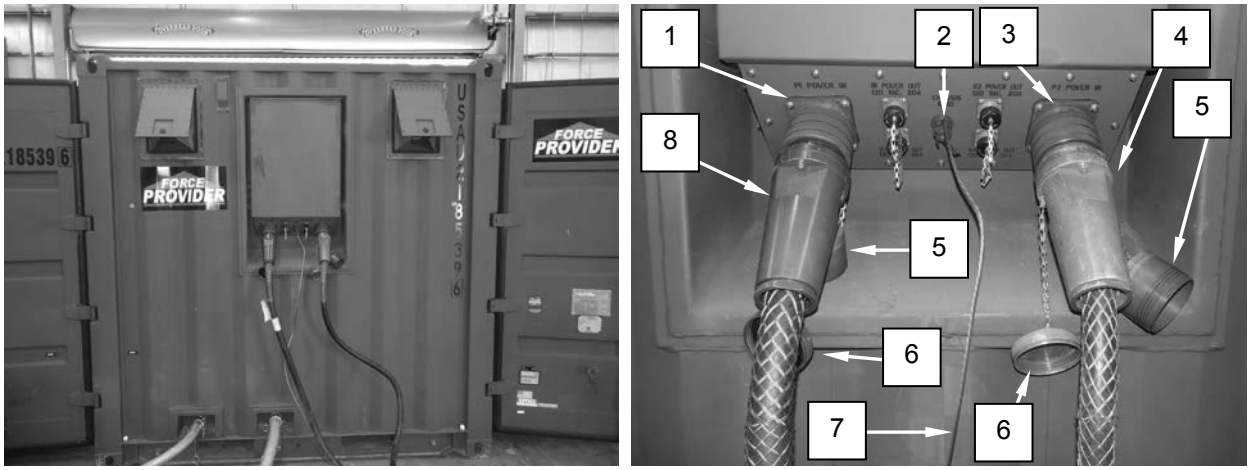


Figure 49. Electrical Setup.

10. Connect power cable dust covers to receptacle dust covers. Do not apply power at this time.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P
WP 0052

Equipment Conditions

Before PMCS completed (WP 0039)

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST

WARNING

High voltage is used in the Expeditionary TRICON Kitchen System (ETKS). Ensure source power has been turned off when disconnecting power cables from source power. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside the circuit breaker panel. Seek immediate medical attention if injury occurs.

The steam and hold oven, griddle, convection oven, cook and hold oven, immersion heater, air conditioner (operating in heat mode) and space heater can have surface temperatures up to 500ºF (200°C). Avoid contact with these hot surfaces. Failure to follow this warning may result in serious burn injury to personnel. Seek immediate medical attention if injury occurs.

Establish ETKS Power

1. Open circuit breaker panel door (Figure 1, Item 1).
2. Verify circuit breakers (Figure 1, Item 2) are OFF.
3. Turn on power source.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

CAUTION

Ensure all branch circuit breakers are off prior to turning on P1 or P2 MAIN (P1, CB 1, 3, 5 or P2, 1, 3, 5). Energizing all circuits at once may cause damage to equipment.

4. Turn main circuit breakers (Figure 1, Item 3) to the ON position.

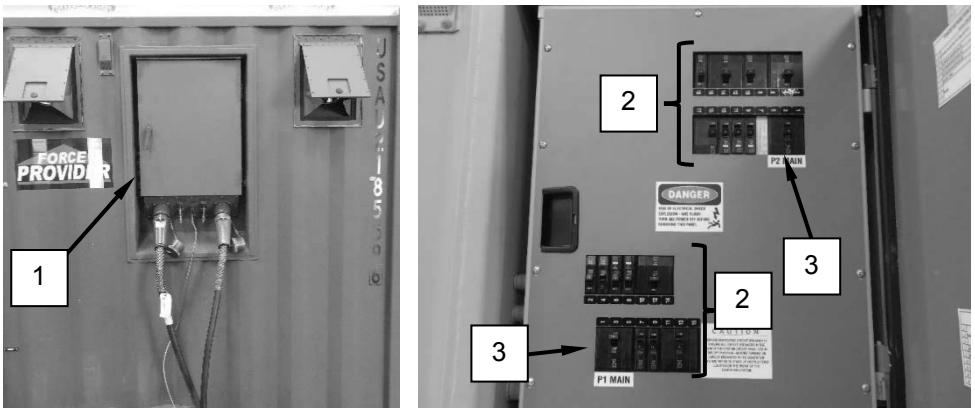


Figure 1. ETKS Circuit Breaker Panel.

NOTE

Unless ETKS is equipped with Cold Weather Equipment (CWE), circuit breaker (P1, CB 6) and circuit breakers (P2, CB 9, 11, and 13) do not need to be turned on.

5. Turn on remaining circuit breakers one at a time.
6. Verify circuit breakers do not trip. Reset any tripped circuit breakers by positioning to OFF and then ON again.
7. Inside ETKS, position light switch (Figure 2, Item 6) to BLACKOUT. Verify blackout lights (Figure 2, Item 4) turn on.
8. Position light switch to NORMAL. Verify blackout lights turn off and normal lights (Figure 2, Item 3) turn on.
9. Rotate fan switch (Figure 2, Item 1) fully clockwise and verify ventilation fans (Figure 2, Item 2) turn on.
10. Rotate fan switch counter clockwise slowly and verify fans speed up.
11. Position fan switch to OFF.
12. Press in on emergency stop switch (Figure 2, Item 5) and verify all power shuts off and MAIN circuit breakers trip.
13. Pull emergency stop switch out (Figure 2, Item 5).
14. Reset MAIN circuit breakers (Figure 1, Item 3) by positioning to OFF and back to ON again.
15. Close and secure circuit breaker panel door (Figure 1, Item 1).

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

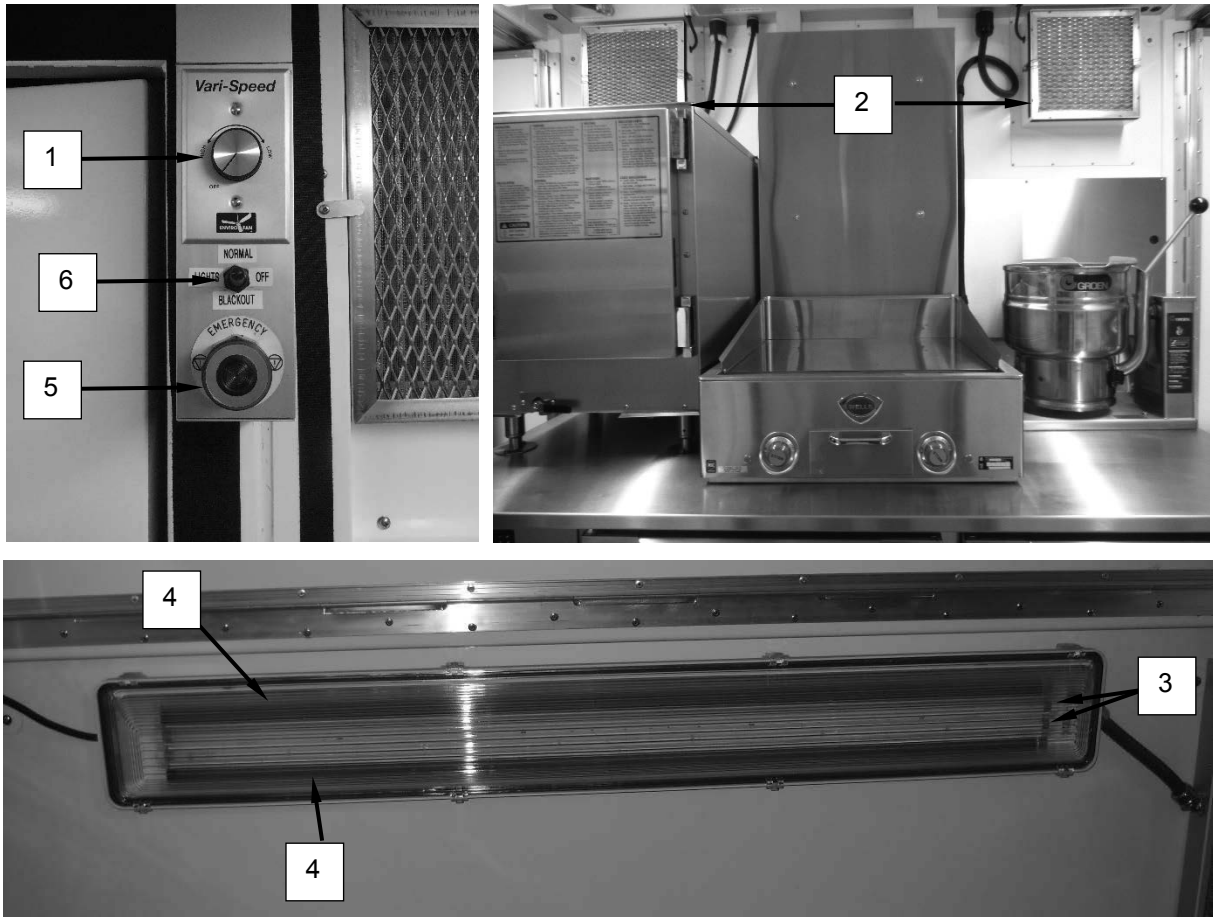


Figure 2. ETKS Lights, Fans, and Emergency Stop.

Air Conditioner Checkout

NOTE

Refer to Figure 3 for air conditioner controls.

1. Press power button.
2. Press SYSTEM button to alternate between Cool, Heat, and Fan Only modes. Verify air conditioner turns on and is cooling or heating as selected.
3. Press FAN SPEED button to alternate between fan speeds.
4. Set air conditioner to desired setting.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

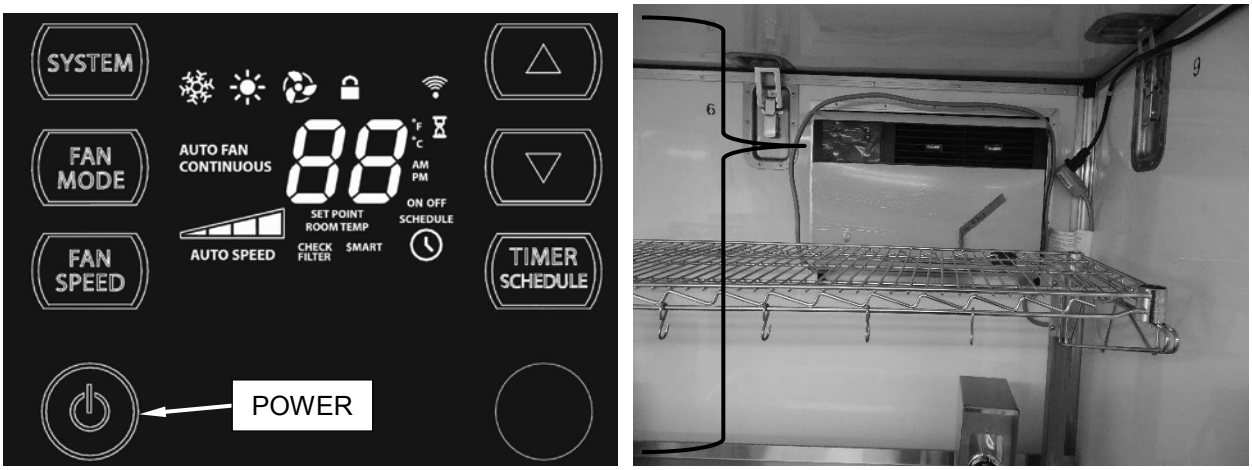


Figure 3. Air Conditioner Controls.

Space Heater Checkout

1. Rotate control knob (Figure 4, Item 2) fully clockwise. Verify space heater (Figure 4, Item 1) starts heating.

2. Rotate control knob fully counter-clockwise to turn off space heater.

Figure 4. Space Heater.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

Prime Water System

CAUTION

Never operate the sanitation sink unless there is enough water in the water bag to maintain proper water flow to the unit. Failure to follow this precaution will result in premature failure of the hot water heating elements from running the unit dry.

Always ensure the hot water circuit is free of air pockets before turning power on to the sanitation sink hot water heater. Failure to follow this precaution will cause premature failure of the heating elements.

1. Verify SOURCE water bag (Figure 5, Item 1) is filled with potable water prior to proceeding.

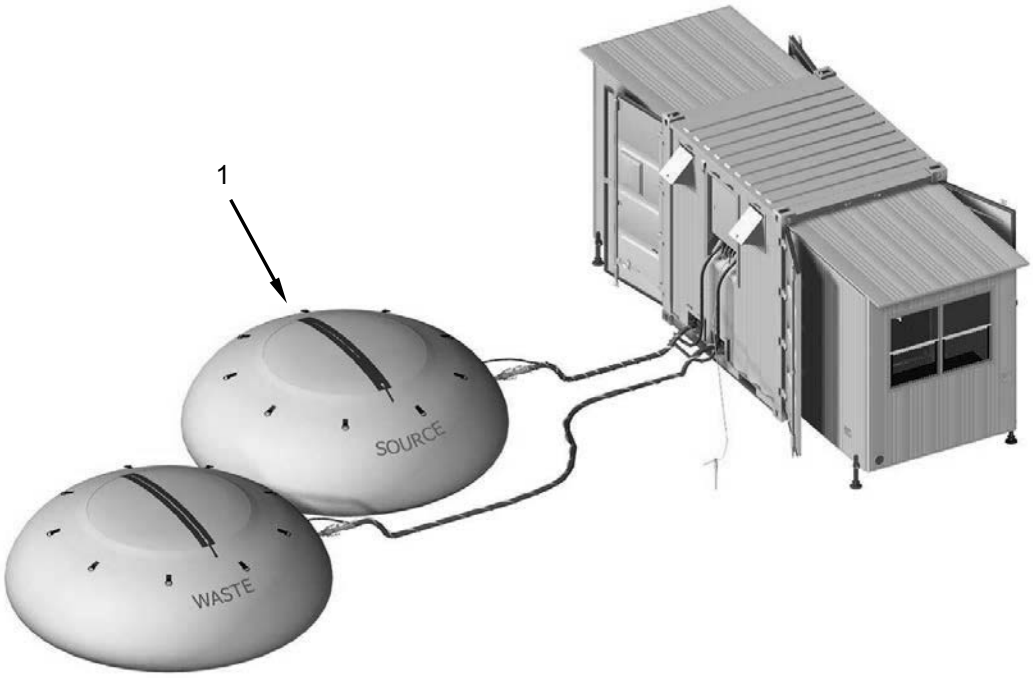


Figure 5. SOURCE Water Bag.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

2. Open left door (Figure 6, Item 1) on sanitation sink (Figure 6, Item 2) by pushing in on latches (Figure 6, Item 3).

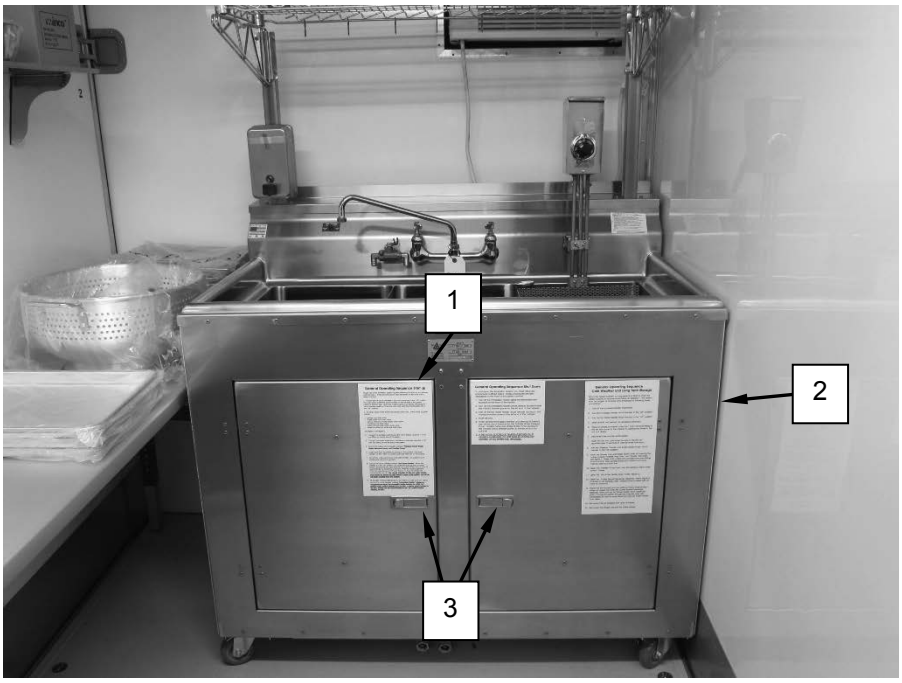


Figure 6. Sanitation Sink.

3. Verify grease trap drain valve (Figure 7, Item 2) on sanitation sink is closed by rotating the valve clockwise until it stops.

4. Verify waste tank drain valve (Figure 7, Item 1) on sanitation sink is closed by rotating the valve clockwise until it stops.

5. Close door on sanitation sink.

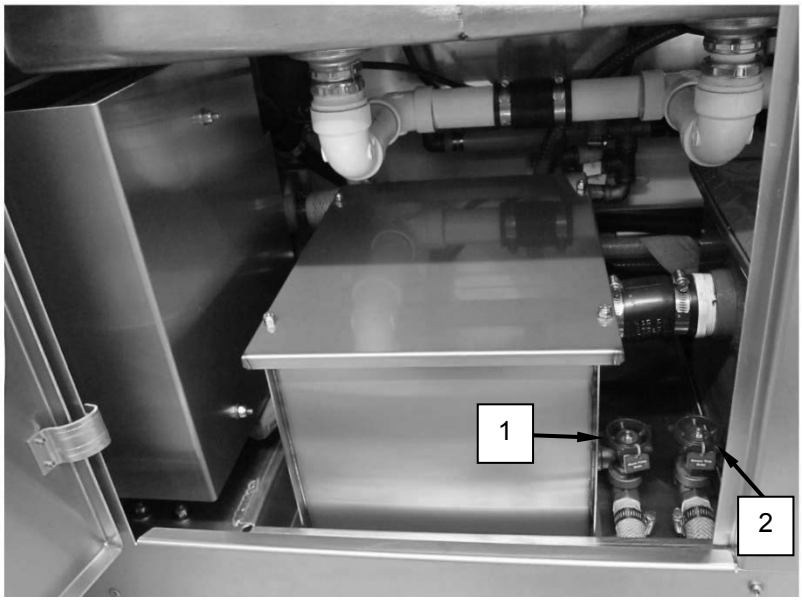


Figure 7. Grease Trap and Waste Tank Drain Valves.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

6. Verify SOURCE water bag shutoff valve (Figure 8, Item 1) is open.

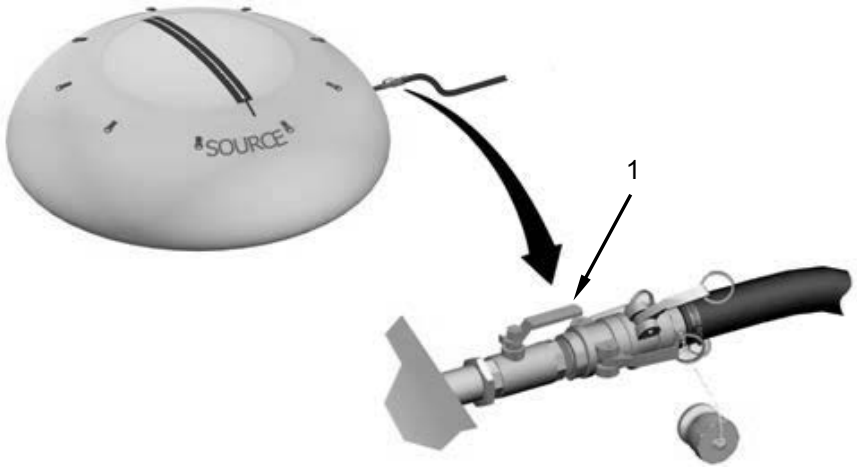


Figure 8. SOURCE Shutoff Valve.

NOTE

Access to the sanitation sink circuit breakers may be easier if the utility table shelf is removed.

7. Open circuit breaker access door (Figure 9, Item 2) on sanitation sink by pushing in on latch (Figure 9, Item 1).

8. Position pressure pump/waste removal pump/ transfer pump circuit breaker (Figure 9, Item 4) to ON.

9. Position immersion heater circuit breaker (Figure 9, Item 3) to ON.

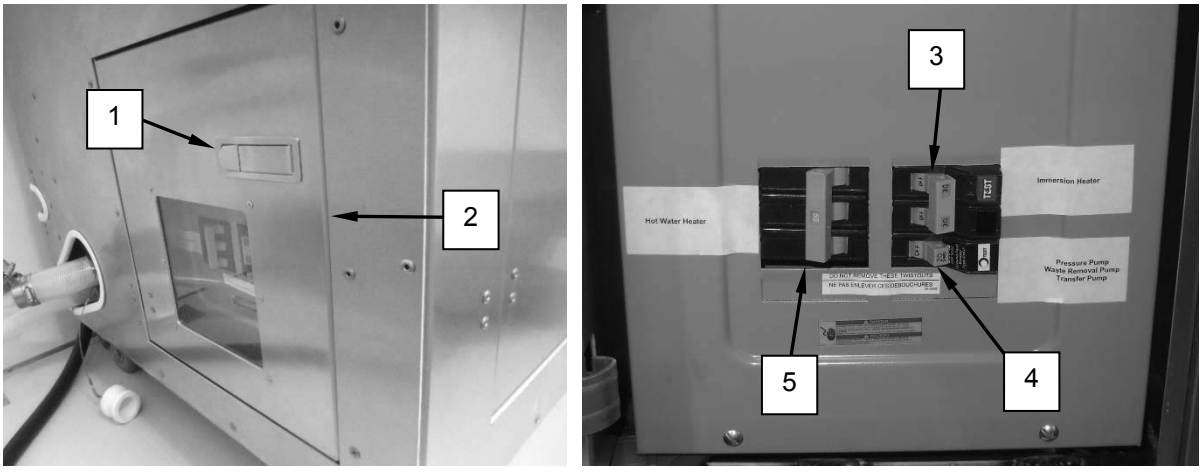


Figure 9. Sanitation Sink Circuit Breaker Panel.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

10. Open both hot and cold water levers (Figure 10, Items 2 and 3) on sanitation sink.
11. Let water run out of faucet (Figure 10, Item 1) then verify flow of water out of faucet is continuous with no air pockets.
12. Close cold water lever then verify flow out of the faucet is continuous with no air pockets.
13. Position hot water heater circuit breaker (Figure 9, Item 5) to ON.
14. Listen for an audible click to indicate the hot water heater has turned on.
15. Verify water flowing out of faucet is heating up.
16. Close circuit breaker access door (Figure 9, Item 2) on sanitation sink.

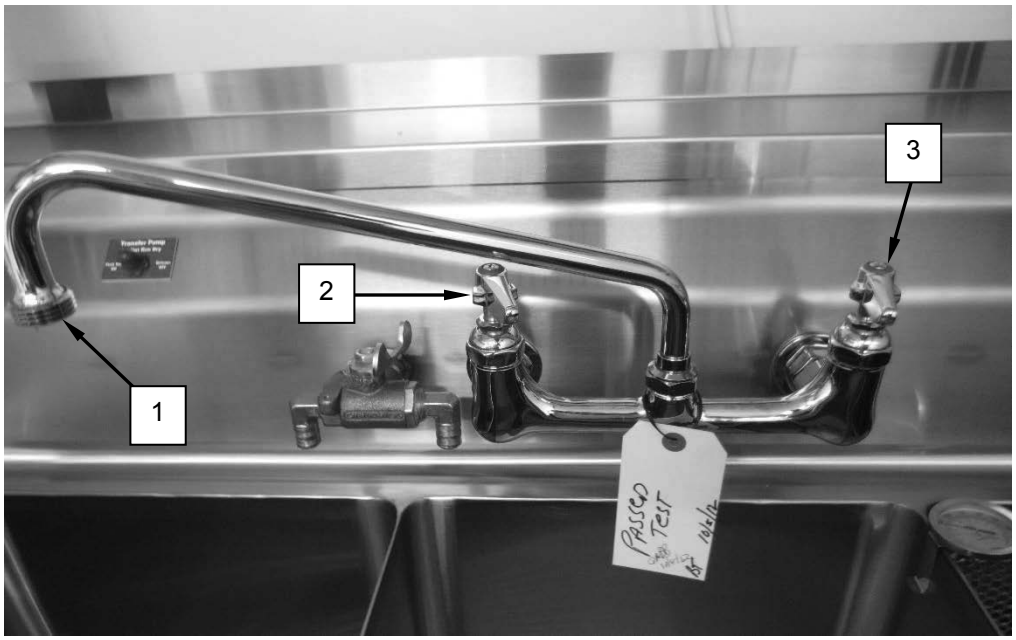


Figure 10. Sanitation Sink Faucet.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

Sanitation Sink Checkout

1. Fill the right sink basin (Figure 11, Item 5) with water to the minimum level water mark on the immersion heater guard (Figure 11, Item 4).

CAUTION

The immersion heater elements must always be submerged in water while the unit is heating. Observe the minimum water level indictor on the immersion heater guard. Failure to follow this precaution will cause premature failure of the immersion heater.

2. Rotate temperature control knob (Figure 11, Item 3) on immersion heater (Figure 11, Item 1) to desired setting.
3. Press the reset button (Figure 11, Item 6) on immersion heater.
4. Verify immersion heater pilot light (Figure 11, Item 2) comes on and water in sink basin begins to heat up.
5. Rotate temperature control knob (Figure 11, Item 3) to OFF.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

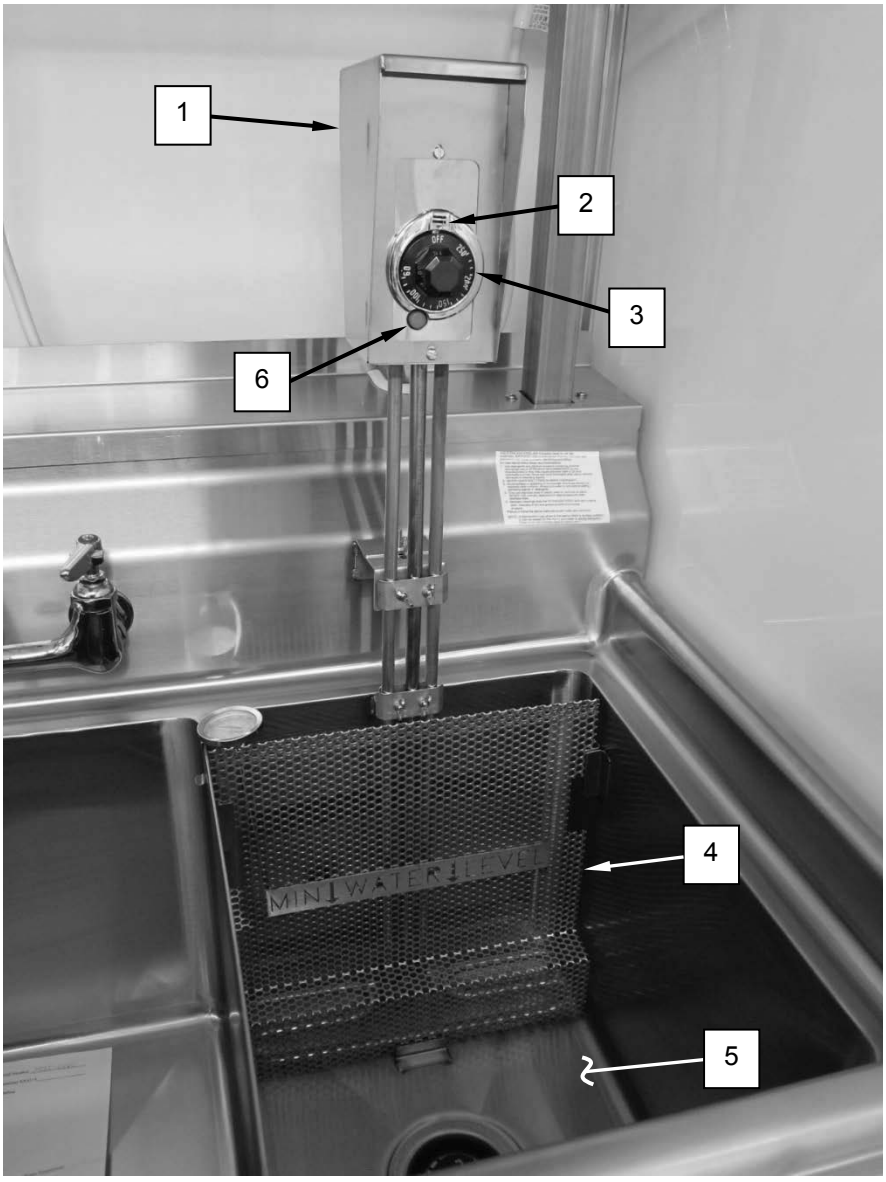


Figure 11. Immersion Heater.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

CAUTION

The transfer pump must not be allowed to run dry. Observe the minimum water level indictor on the immersion heater guard (Figure 11, Item 4) and ensure that there is an adequate supply of water before operating the transfer pump. Failure to follow this precaution will cause premature failure of the transfer pump.

6. Rotate transfer valve (Figure 12, Item 2) to transfer water from the right sink basin to either the center or left sink basin.

7. Push in on transfer switch (Figure 12, Item 1) and verify water flows into either sink.

8. Allow water to cool, then remove strainer(s) (Figure 12, Item 3) to drain sink basins.

NOTE

Running additional water may be required to fill the waste tank enough to turn on the waste transfer pump.

9. Verify sink drains completely and listen for waste transfer pump to turn on.

Figure 12. Transfer Pump Operation.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

Steam Kettle Checkout

1. Verify steam kettle (Figure 13, Item 2) jacket water level is between the MIN and MAX marks on sight glass (Figure 13, Item 4). If jacket water level is not between sight glass marks, do not use steam kettle. Notify maintainer to replace water IAW TM 10-5419-207-23&P.
2. Verify vacuum reading on water pressure gauge (Figure 13, Item 3) is between 20 and 30 inHg. If vacuum reading is not between 20 and 30 inHg, adjust steam kettle jacket vacuum IAW WP 0052.
3. Pour two quarts of water into the steam kettle.
4. Rotate temperature control knob (Figure 13, Item 1) to ‘5’.
5. Verify water in steam kettle heats up.
6. Rotate temperature control knob to OFF.

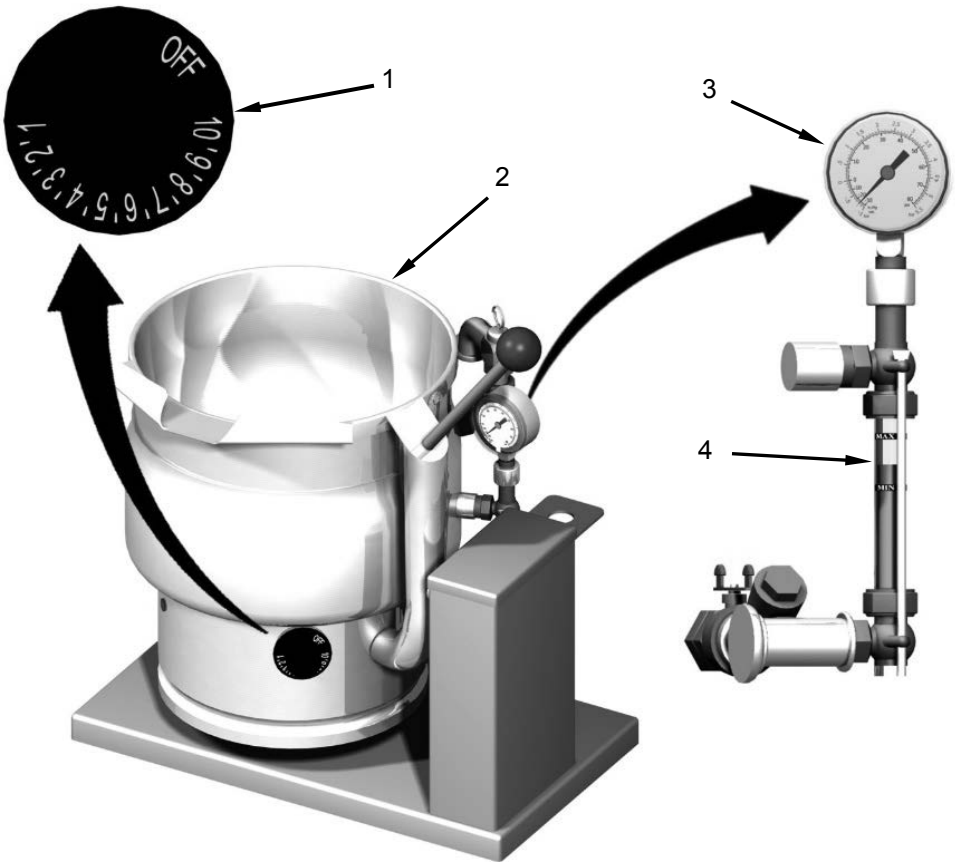


Figure 13. Steam Kettle.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

Steam and Hold Oven Checkout

1. Close the drain valve (Figure 14, Item 3) by rotating the lever to horizontal position.
2. Open the oven door (Figure 14, Item 2) then add 3-gallons of water to the cooking compartment.
3. Lift up on magnetic door stop to enable door to fully close.
4. Shut the oven door (Figure 14, Item 2).
5. Rotate the toggle switch (Figure 14, Item 5) to the right to turn on steam and hold oven.
6. Verify HEAT indicator light (Figure 14, Item 6) turns on and the reading on the vacuum gauge (Figure 14, Item 1) begins to rise.
7. Press the power switch (Figure 14, Item 4) to turn the steam and hold oven off. Allow the oven to cool.
8. Place a suitable container under the drain valve and open the drain valve to drain the cooking compartment.

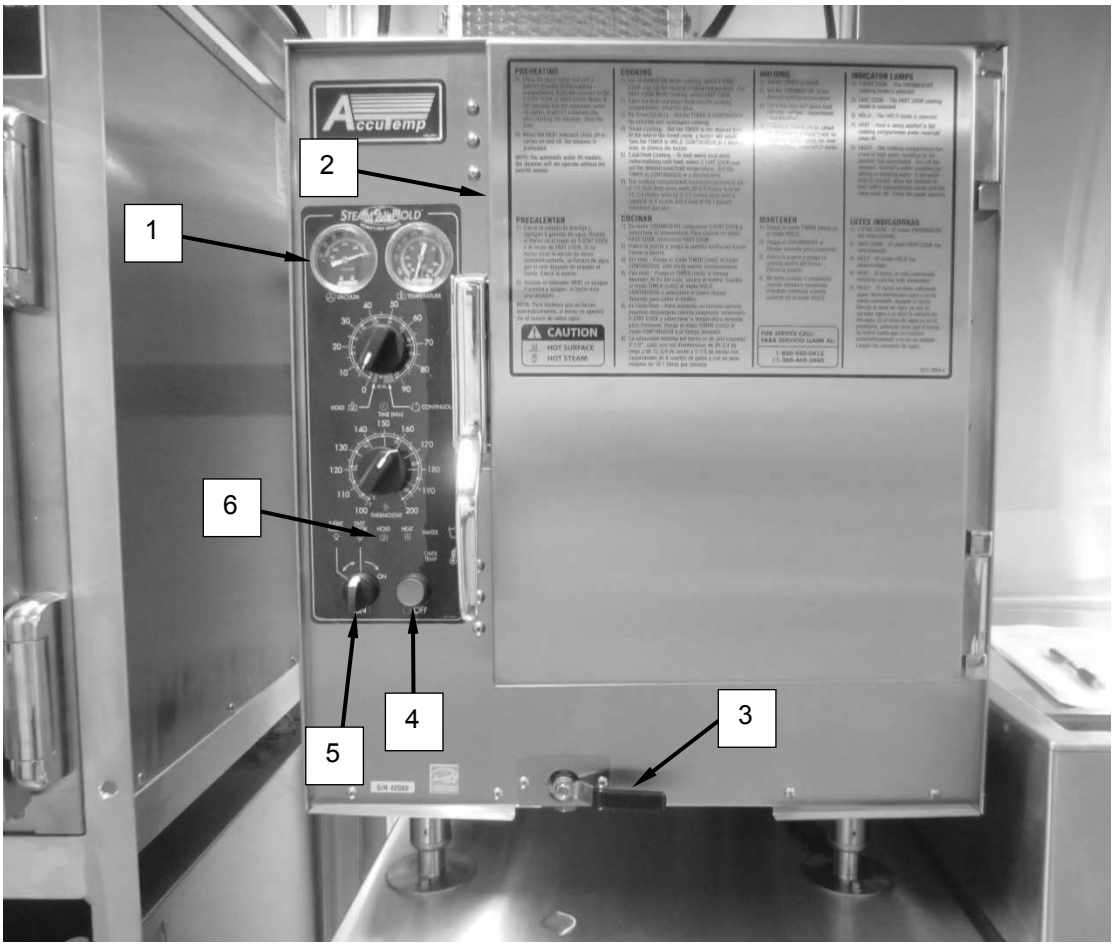


Figure 14. Steam and Hold Oven.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

Refrigerator Checkout

1. Remove louver (Figure 15, Item 2) from front of refrigerator.
2. Position power switch (Figure 15, Item 3) to ON. The display (Figure 15, Item 1) should light up and indicate the internal temperature of the refrigerator. The temperature should decrease over time.
3. Position power switch to OFF.
4. Install louver to front of refrigerator.

Figure 15. Refrigerator.

Griddle Checkout

1. Position griddle thermostat knobs (Figure 16, Item 2) to 200.
2. Verify that indicator lights (Figure 16, Item 1) turn on and griddle starts to warm.
3. Once the griddle warms up, verify indicator lights turn off.
4. Position griddle thermostat knobs to OFF.

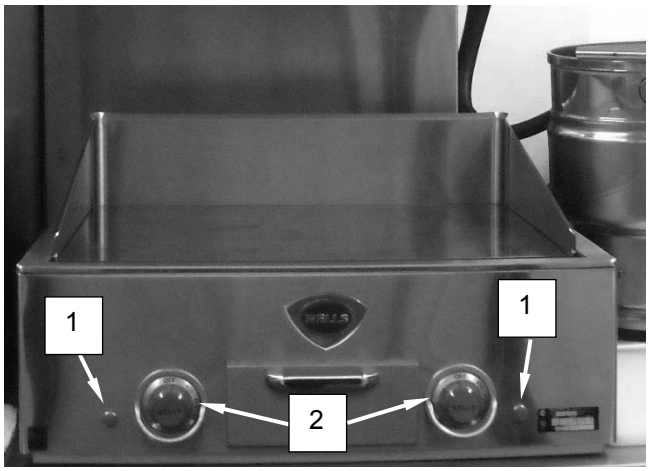


Figure 16. Griddle.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

Convection Oven Checkout

1. Ensure convection oven door (Figure 17, Item 1) is closed.
2. Position master switch (Figure 17, Item 3) to ON.
3. Position mode select switch (Figure 17, Item 2) to COOK HIGH and verify blower wheel spins.
4. Position mode select switch to COOK LOW and verify blower wheel slows down.
5. Wait five minutes and open convection oven door to verify convection oven has warmed up.
6. Close door and position mode select switch to COOL DOWN and verify blower wheel spins at full speed.
7. Position mode select switch to OVEN OFF.
8. Position master switch to OFF.

Figure 17. Convection Oven.

INITIAL ADJUSTMENTS, BEFORE USE AND SELF TEST – CONTINUED

Cook and Hold Oven Checkout

1. Ensure door (Figure 18, Item 1) on cook and hold oven is closed.
2. Position rocker switch (Figure 18, Item 8) to ON (|).
3. Rotate hold knob (Figure 18, Item 4) until 60°F (15.56ºC) is displayed. Verify hold indicator light (Figure 18, Item 3) and heat indicator light (Figure 18, Item 2) turn on.
4. Rotate cook knob (Figure 18, Item 6) until 200°F (93.33ºC) is displayed.
5. Press the up and down buttons (Figure 18, Item 7) to set the timer. Verify hold indicator light turns off and cook indicator light (Figure 18, Item 5) turns on.
6. Wait five minutes and open cook and hold oven door to verify oven has warmed up.
7. Position rocker switch (Figure 18, Item 8) to OFF (O).

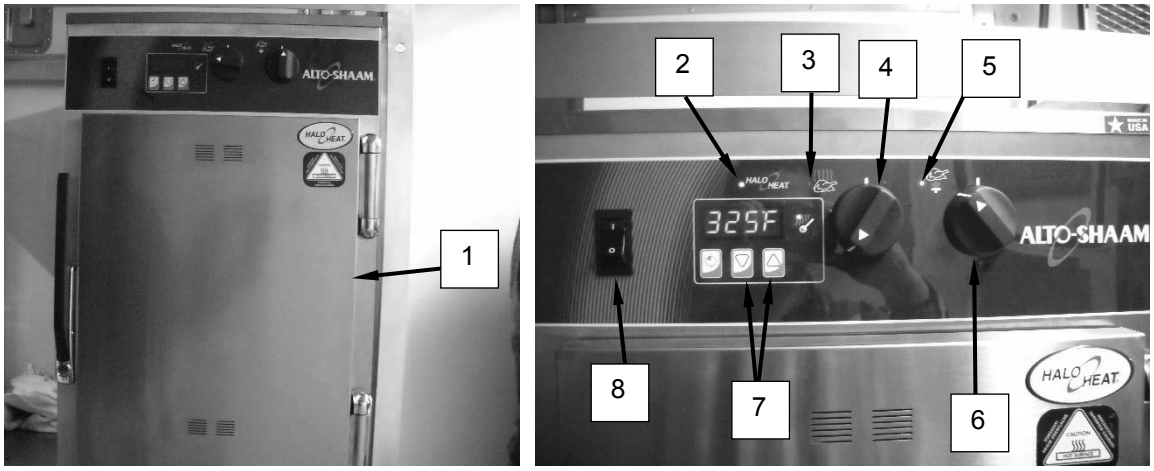


Figure 18. Cook and Hold Oven.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
OPERATING PROCEDURES

INITIAL SETUP:

Material/Parts

Gloves, Disposable (WP 0073, Item 6)
Goggles, Industrial (WP 0073, Item 7)

Personnel Required

92G Culinary Specialist (1)

References

WP 0008, WP 0009, WP 0010, WP 0011, WP 0012, WP 0013, WP 0014, WP 0015, WP 0016, WP 0017, WP 0040

Equipment Condition

Before and daily PMCS completed (WP 0039)

OPERATING PROCEDURES

NOTE

Determine if the ETKS was drained due to cold weather operation. If the ETKS was drained perform “Prime Water System” IAW WP 0008.

Daily Startup

1. Verify emergency stop switch (Figure 1, Item 4) is pulled out.
   a. If emergency stop switch is engaged, pull switch out.
   b. Open circuit breaker panel door.
   c. Reset P1 CB 1, 3, 5 (Figure 1, Item 2) and P2 CB 1, 3, 5 (Figure 1, Item 3) MAIN circuit breakers by positioning breakers to OFF and back to ON again.
   d. Close and secure circuit breaker panel door.
2. Position light switch (Figure 1, Item 5) to NORMAL or BLACKOUT as desired. Verify normal or blackout lights turn on as selected.

OPERATING PROCEDURES – CONTINUED

3. Position fan switch (Figure 1, Item 1) to desired setting. Verify ventilation fans turn on.

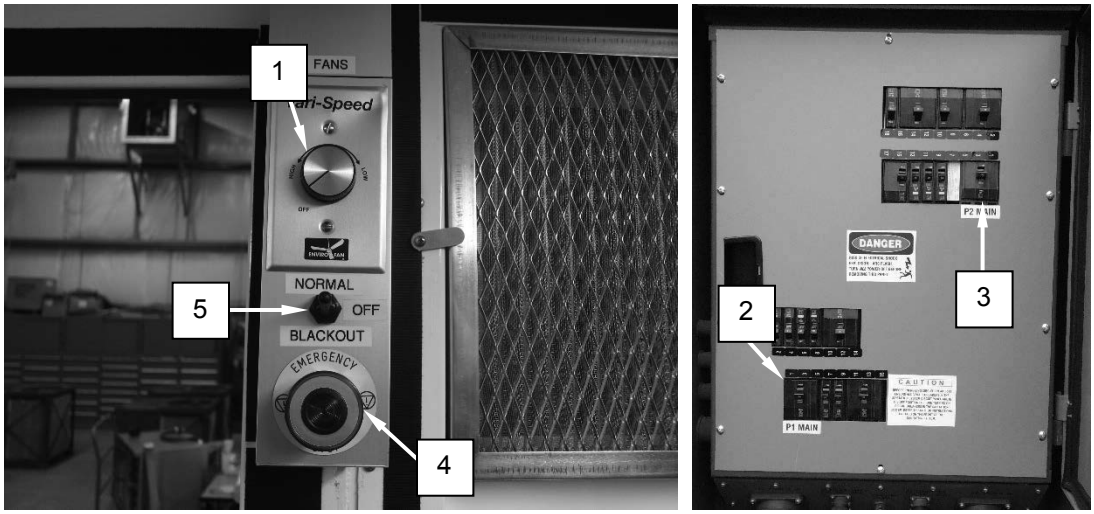


Figure 1. Daily Startup.

WARNING

The ETKS protective gear rack must only be set up when a helmet is to be placed on it. Failure to comply with this warning poses an impalement risk to personnel. Seek immediate medical attention if any injury occurs.

NOTE

The ETKS is equipped with storage provisions for weapons and protective gear. The usage of these provisions is optional.

4. Lift up on hook and loop strap (Figure 2, Item 1) on weapon rack (Figure 2, Item 2).
5. Place butt of weapon on the floor.
6. Secure weapon to weapon rack (Figure 2, Item 2) with hook and loop strap (Figure 2, Item 1).

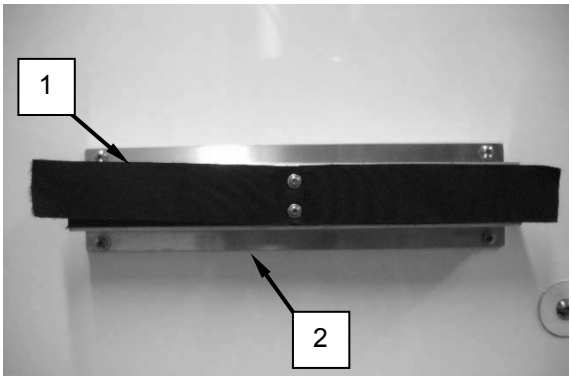


Figure 2. Weapon Rack.

OPERATING PROCEDURES – CONTINUED

7. Lift helmet hooks (Figure 3, Item 1) out of stowed position.
8. Align helmet hooks to slots (Figure 3, Item 2) in protective gear rack (Figure 3, Item 3) and push down to secure hooks.
9. Place protective gear on hooks.

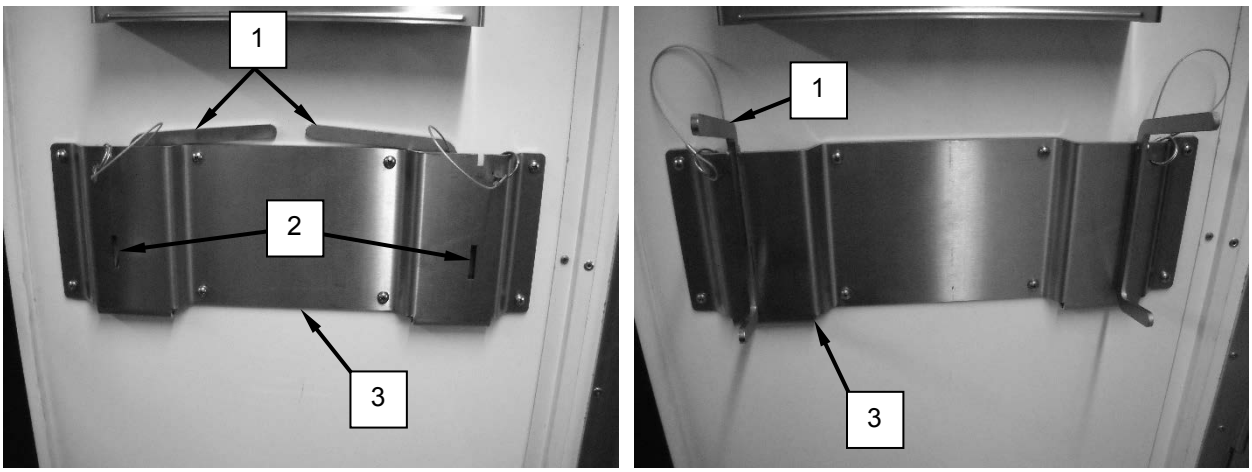


Figure 3. Protective Gear Rack.

OPERATING PROCEDURES – CONTINUED

NOTE

Use of air conditioning unit and space heater is optional and dependent on the ambient temperature. If the daytime temperature is expected to rise or the nighttime temperature is expected to drop drastically it is better to place these items in operation before the temperature change occurs.

10. If desired, turn on air conditioning unit (Figure 4, Item 1) as follows:

    a. Press power button (Figure 4, Item 4).

    b. Press SYSTEM button (Figure 4, Item 2) to alternate between Cool, Heat, and Fan Only mode as desired.

    c. Verify air conditioner (Figure 4, Item 1) comes on and is cooling or heating as selected.

    d. Press FAN SPEED button (Figure 4, Item 3) to select fan speed.

11. If desired, turn on space heater (Figure 4, Item 6) as follows:

    a. Position output control (Figure 4, Item 5) to desired heat setting.

    b. Verify space heater (Figure 4, Item 6) starts heating.

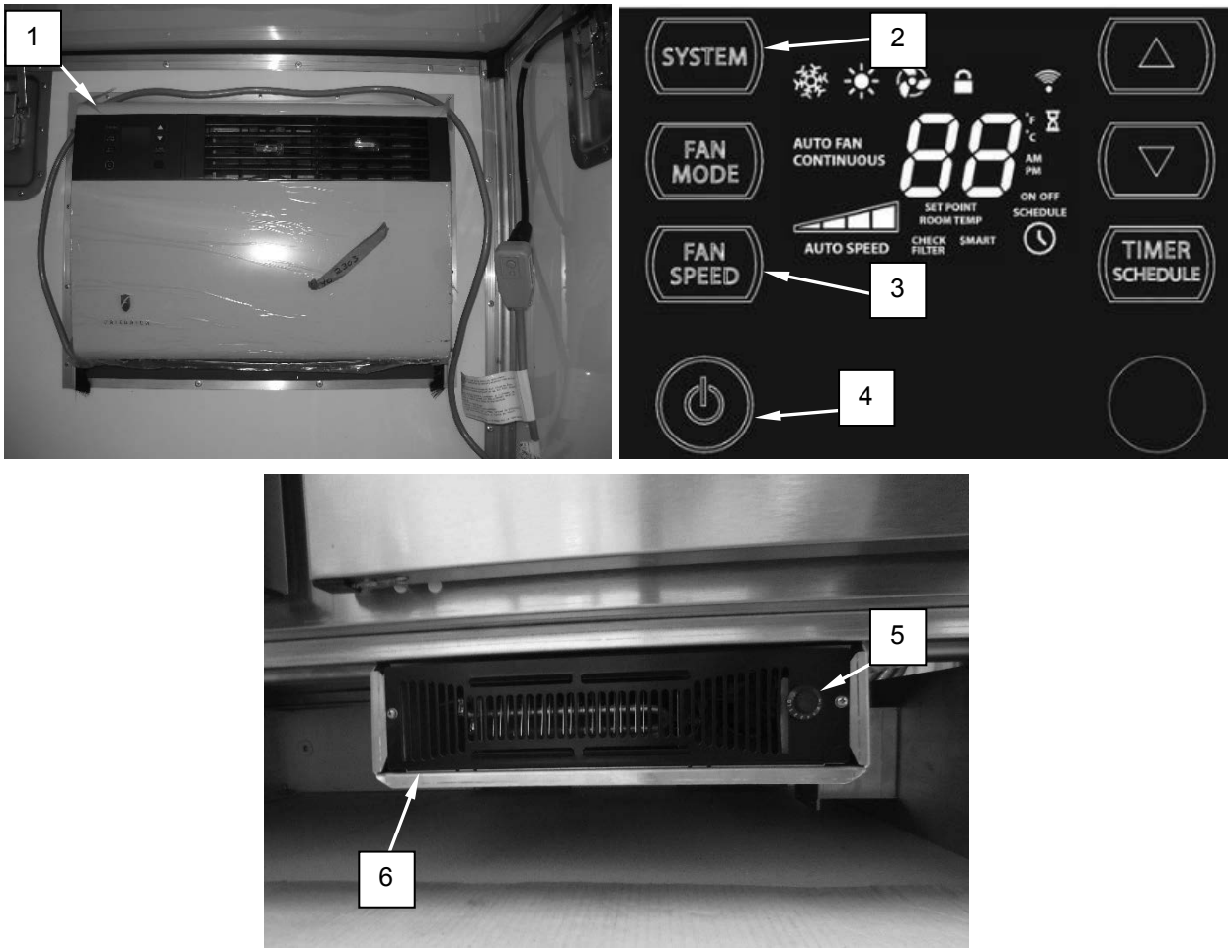


Figure 4. Air Conditioner and Space Heater Start-Up.

OPERATING PROCEDURES – CONTINUED

Table Mounted Can Opener Operation

1. Lift handle (Figure 5, Item 1) to the up position and raise above height of can.
2. Place can on base (Figure 5, Item 2) of can opener.
3. Lower handle (Figure 5, Item 1) to puncture can.
4. Rotate handle (Figure 5, Item 1) clockwise to open can.
5. Raise handle (Figure 5, Item 1) to upright position and lift to remove can.

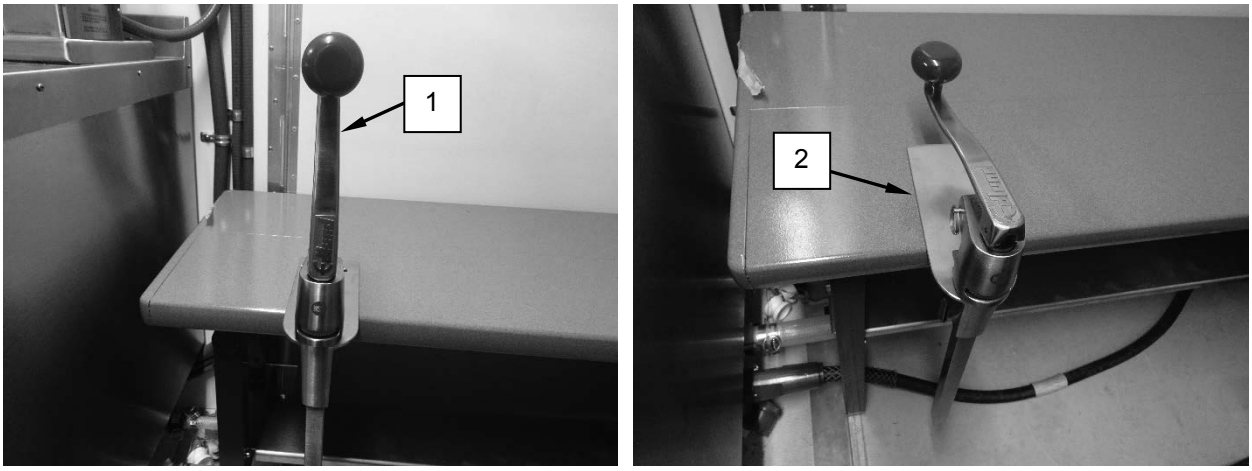


Figure 5. Can Opener.

Meal Preparation and Serving

WARNING

Use of ovens, griddle, steam kettle and sanitation sink generate hot surfaces and liquids reaching temperatures above 170°F (76.67°C). Avoid contact with these surfaces. Failure to follow this warning may result in serious burn injury to personnel. Seek immediate medical attention if injury occurs.

1. Determine which kitchen appliances will be required to prepare meals and operate each appliance IAW the Operations WP listed in Table 1.

Table 1. ETKS Appliance Operation.

Appliance	Operations WP
Steam Kettle	WP 0010
Steam and Hold Oven	WP 0011
Refrigerator	WP 0012
Griddle	WP 0013
Convection Oven	WP 0014
Cook and Hold Oven	WP 0015
Sanitation Sink	WP 0016

OPERATING PROCEDURES – CONTINUED

2. Open serving window (Figure 6, Item 1) as follows:

   a. Remove four pins (Figure 6, Item 3) from upper holes (Figure 6, Item 2) on window frame (Figure 6, Item 5).

   b. Raise window (Figure 6, Item 1) then install pins (Figure 6, Item 3) in lower holes (Figure 6, Item 4) on window frame (Figure 6, Item 5).

   c. Ensure pins (Figure 6, Item 3) are fully engaged in lower holes (Figure 6, Item 4).

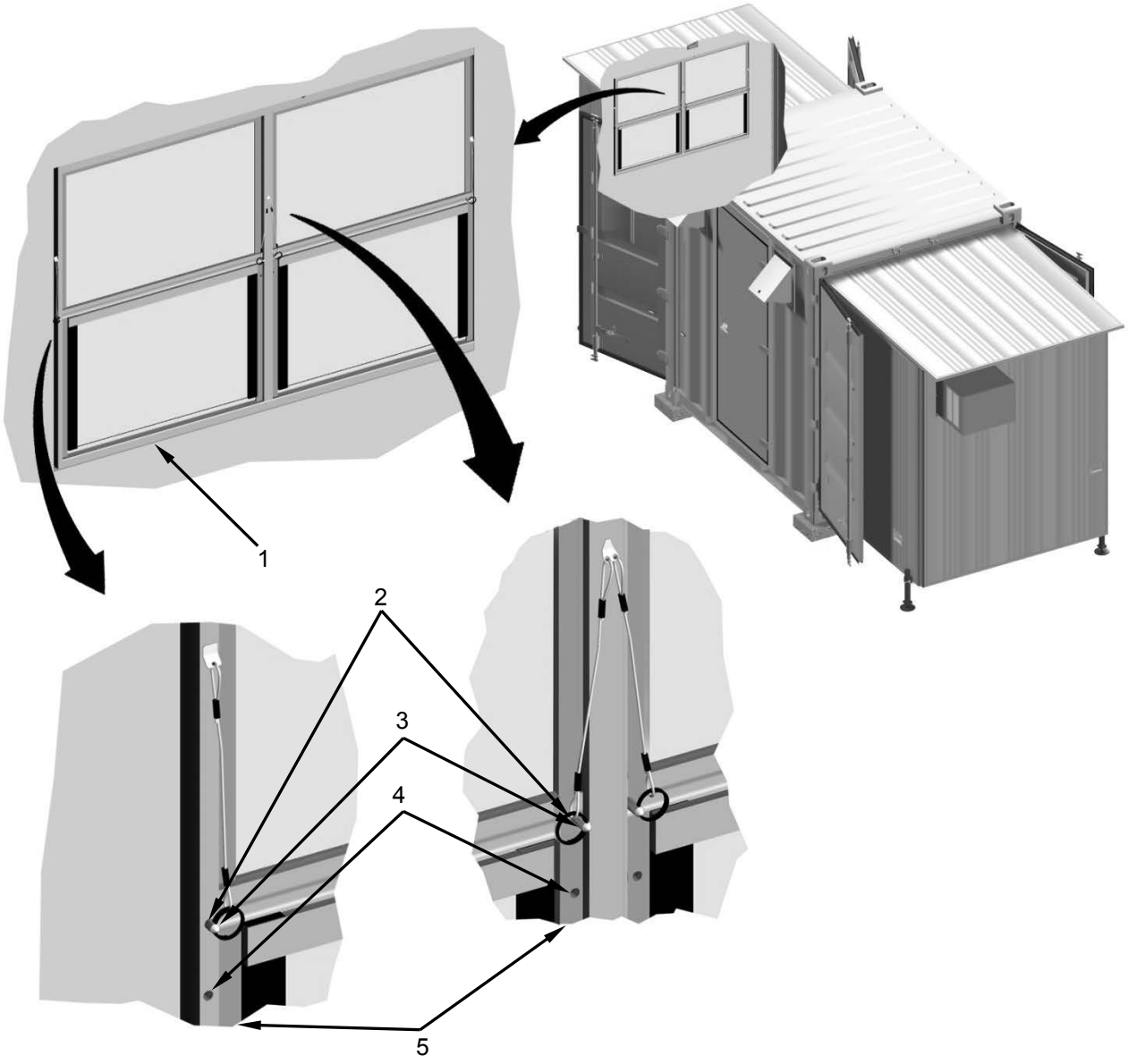


Figure 6. Serving Window Use.

OPERATING PROCEDURES – CONTINUED

Daily Shutdown

NOTE

If the ETKS is not equipped with Cold Weather Equipment and the temperature will reach below 32°F (0°C), the ETKS must be shut down IAW WP 0017.

In cases of extreme high or low temperatures, it is recommended to leave air conditioner or space heater on overnight to maintain desired container temperature.

1. Close serving window (Figure 6, Item 1) as follows:

   a. Remove four pins (Figure 6, Item 3) from lower mounting provisions (Figure 6, Item 4) on window frame (Figure 6, Item 5).

   b. Lower window (Figure 6, Item 1) then install pins (Figure 6, Item 3) in upper mounting provisions (Figure 6, Item 2) on window frame (Figure 6, Item 5).

   c. Ensure pins (Figure 6, Item 3) are fully engaged in upper mounting provisions (Figure 6, Item 2).

2. Perform Daily ETKS Interior Cleaning IAW WP 0040.

3. If air conditioner (Figure 7, Item 1) is operating, press power button (Figure 7, Item 2) to turn it off.

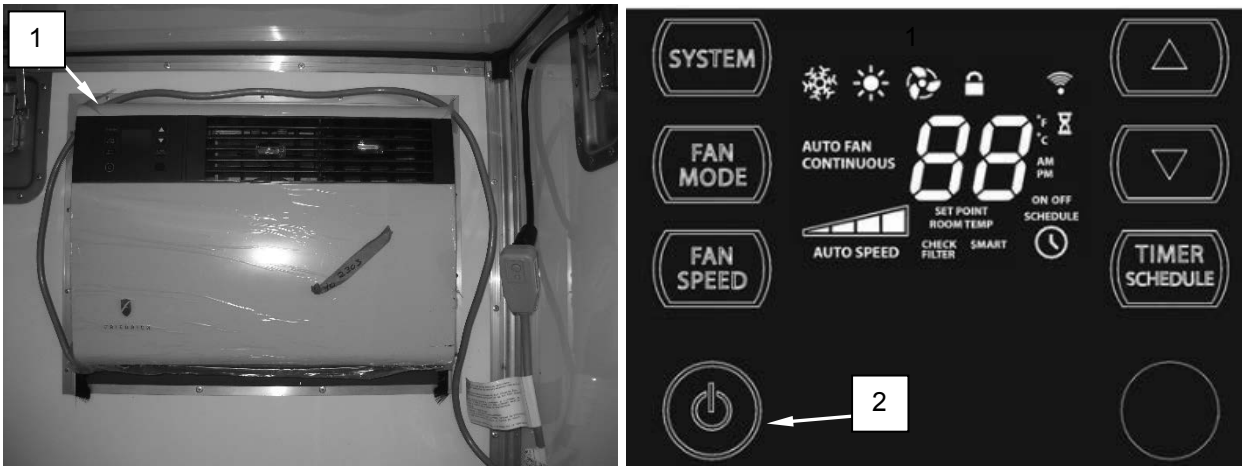


Figure 7. Air Conditioner Shutdown.

OPERATING PROCEDURES – CONTINUED

4. If space heater (Figure 8, Item 1) is operating, rotate the output control knob (Figure 8, Item 2) fully counter-clockwise.

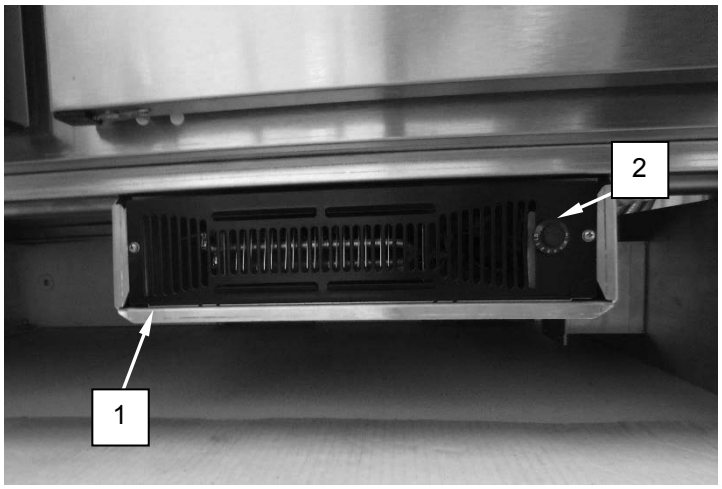


Figure 8. Space Heater Shutdown.

5. If protective gear rack (Figure 9, Item 3) was used, lift helmet hooks (Figure 9, Item 1) out of slots (Figure 9, Item 2) in rack and place in stowed position with hooks facing inward.

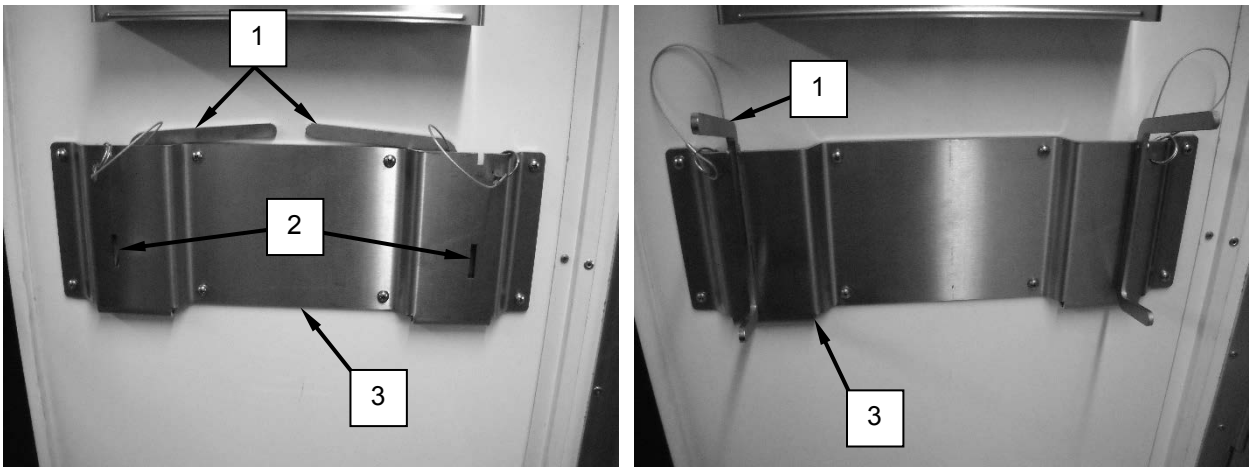


Figure 9. Protective Gear Rack Shutdown.

OPERATING PROCEDURES – CONTINUED

6. If weapon rack (Figure 10, Item 2) was used, lift up on hook and loop strip (Figure 10, Item 1) to remove weapon.
7. Secure hook and loop strip (Figure 10, Item 1) to weapon rack (Figure 10, Item 2).

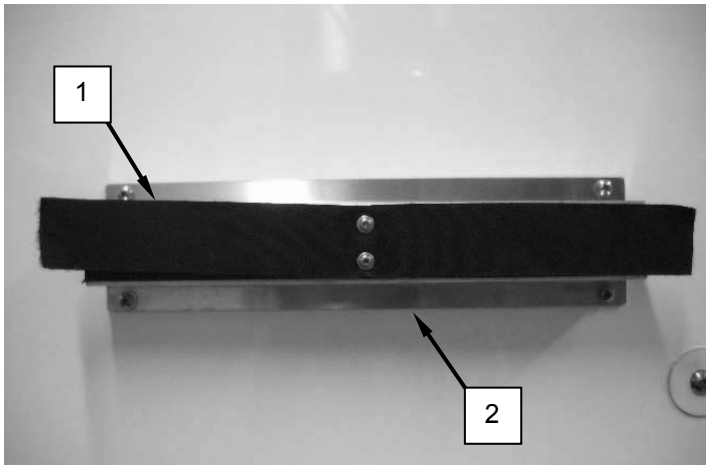


Figure 10. Weapon Rack Shutdown.

8. Position ventilation fan control knob (Figure 11, Item 1) to OFF. Verify fans (Figure 11, Item 2) turn off.
9. Position light switch (Figure 11, Item 4) to OFF. Verify lights (Figure 11, Item 3) turn off.

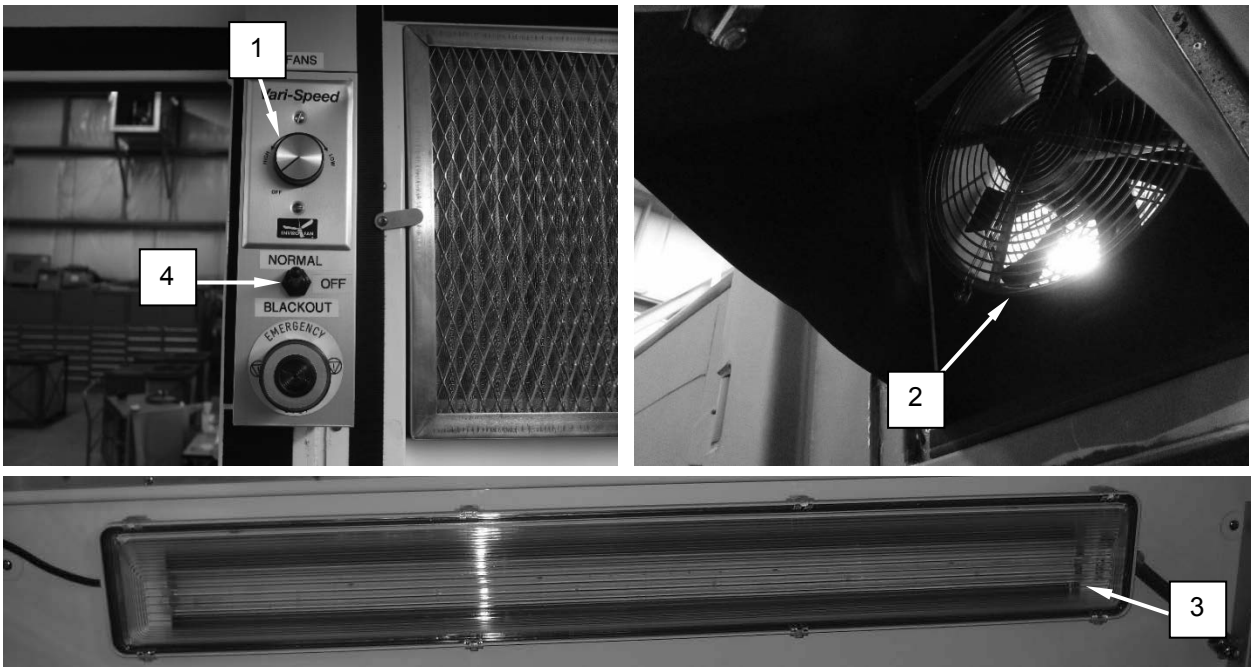


Figure 11. Daily Shutdown.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
STEAM KETTLE OPERATING PROCEDURES

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P,
WP 0029, WP 0052

Equipment Condition

Daily startup complete (WP 0009)

STEAM KETTLE OPERATING PROCEDURES

Operate Steam Kettle

1. Verify steam kettle (Figure 1, Item 3) jacket water level is between the MIN and MAX marks on glass tube below gauge (Figure 1, Item 2). If jacket water level is not between gauge glass marks, do not use steam kettle. Notify maintainer to replace water IAW TM 10-5419-207-23&P.
2. Verify vacuum reading on water pressure gauge (Figure 1, Item 1) is between 20 and 30 inHg. If vacuum reading is not between 20 and 30 inHg refer to WP 0052 to adjust steam kettle jacket vacuum.
3. Pour two cups of water into the steam kettle.
4. Rotate thermostat (Figure 1, Item 4) to desired setting.
5. Verify water in steam kettle heats up. If steam kettle will not heat up refer to troubleshooting (WP 0029).

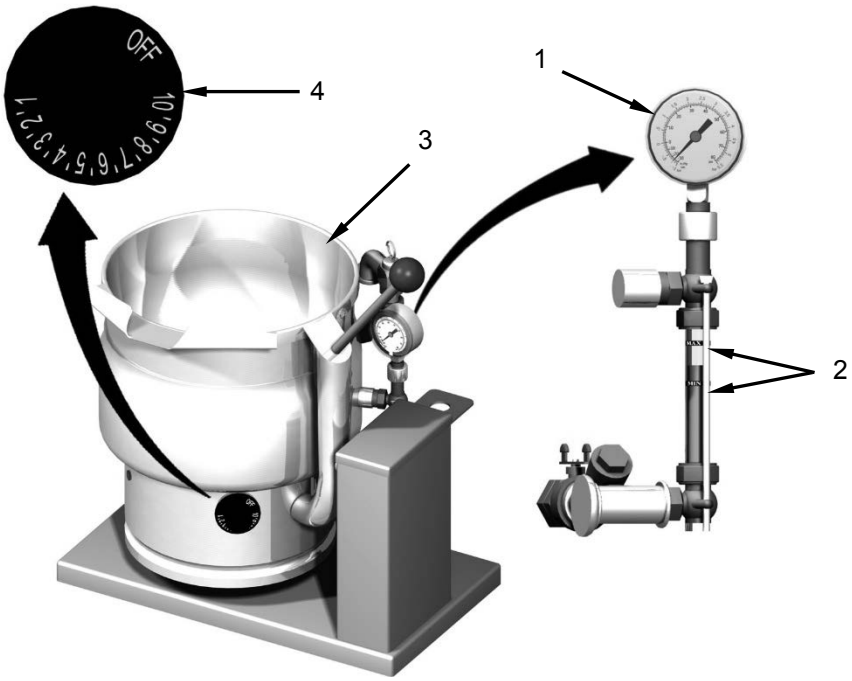


Figure 1. Steam Kettle Start-Up.

STEAM KETTLE OPERATING PROCEDURES – CONTINUED

6. Cook meal following preparation instructions provided on food package.

7. Dispense food by tilting kettle in a controlled manner. Maintain a firm grip on the insulated handle (Figure 2, Item 3).

Turn OFF Steam Kettle

1. Rotate thermostat (Figure 2, Item 1) fully counter-clockwise to OFF.

2. Verify indicator light (Figure 2, Item 3) turns off.

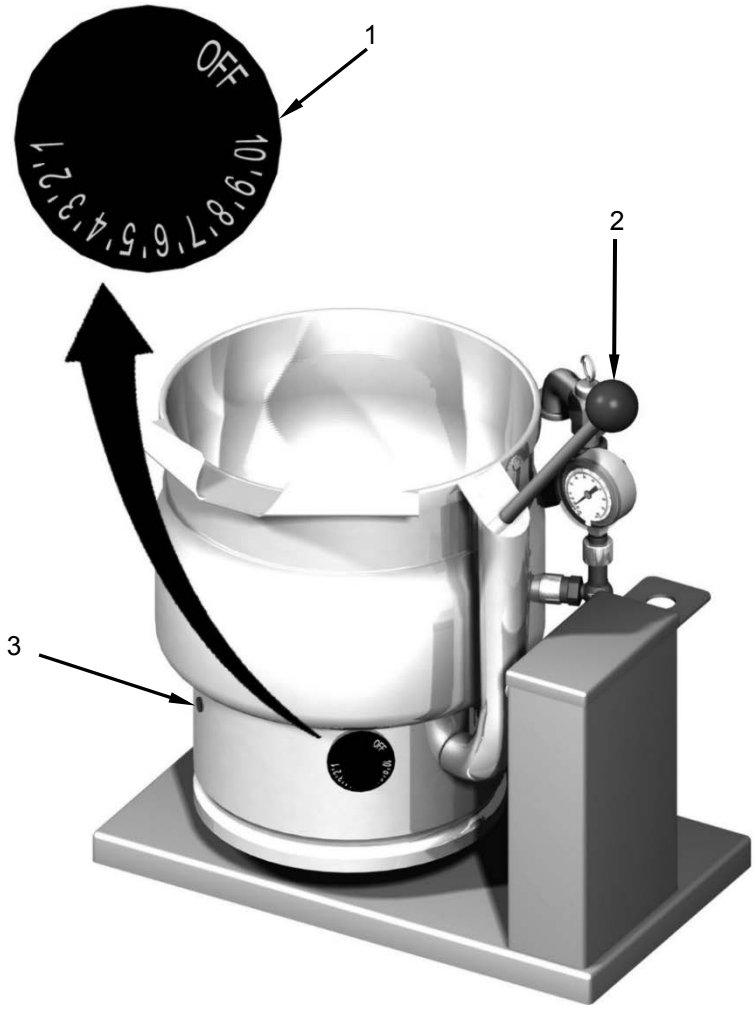


Figure 2. Steam Kettle Use.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
STEAM AND HOLD OVEN OPERATING PROCEDURES

INITIAL SETUP:

Personnel Required	Equipment Condition
92G Culinary Specialist (1)	Daily startup complete (WP 0009)

STEAM AND HOLD OVEN OPERATING PROCEDURES

Fill Steam and Hold Oven

1. Verify steam and hold drain valve (Figure 1, Item 2) is in the closed position (horizontal).
2. Position a full size pan (Figure 1, Item 1) onto rails (Figure 1, Item 3) under steam and hold oven.

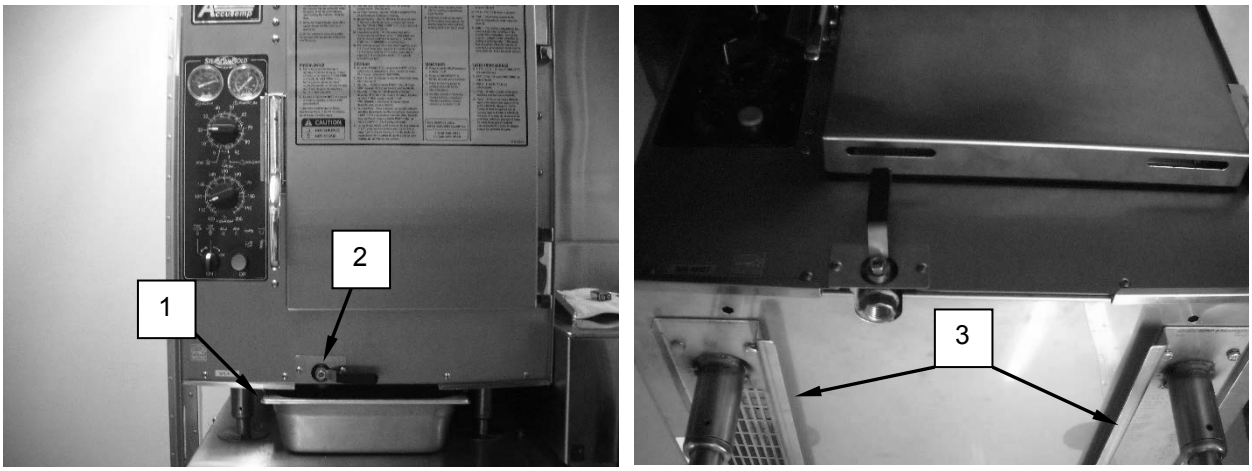


Figure 1. Steam and Hold Oven.

STEAM AND HOLD OVEN OPERATING PROCEDURES – CONTINUED

NOTE

Daily water usage will depend on several factors: cooking temperature, the products being cooked and the length of time the door is open. In most cases, three gallons (11 liters) of water will last several hours or more. If the appliance runs out of water, the “Low Water” warning indicator light and buzzer will turn on. Should this occur, turn the appliance off, refill it with water and restart the appliance. If the shutdown occurred during cooking, the cycle will resume at the point it stopped. Time adjustment may be necessary, depending on the temperature of the water the oven was re-filled with.

3. Open steam and hold oven door (Figure 2, Item 2) and pour three gallons of water into the bottom of the cooking chamber (Figure 2, Item 1).

4. Lift up on magnetic door stop (Figure 2, Item 3) as shown to enable door to fully close.

5. Shut the oven door (Figure 2, Item 2).

Figure 2. Fill Steam and Hold Oven.

STEAM AND HOLD OVEN OPERATING PROCEDURES – CONTINUED

Cooking Food in the Steam and Hold Oven

1. Rotate toggle switch (Figure 3, Item 5) to the right to turn on steam and hold oven.

   a. For temperature controlled cooking, set toggle switch (Figure 3, Item 5) to T-STAT COOK and set temperature controller (Figure 3, Item 6) to desired cooking temperature.

   b. For high temperature (212°F (100ºC)) cooking, set toggle switch (Figure 3, Item 5) to FAST COOK.

2. Observe HEAT indicator (Figure 3, Item 3) then when the indicator turns off or cycles on and off the steamer is preheated.

3. Open oven door (Figure 3, Item 1) and place food into cooking compartment.

4. Close oven door (Figure 3, Item 1).

5. Set the timer (Figure 3, Item 2) to CONTINUOUS for untimed or continuous cooking or for timed cooking set timer (Figure 3, Item 2) as desired.

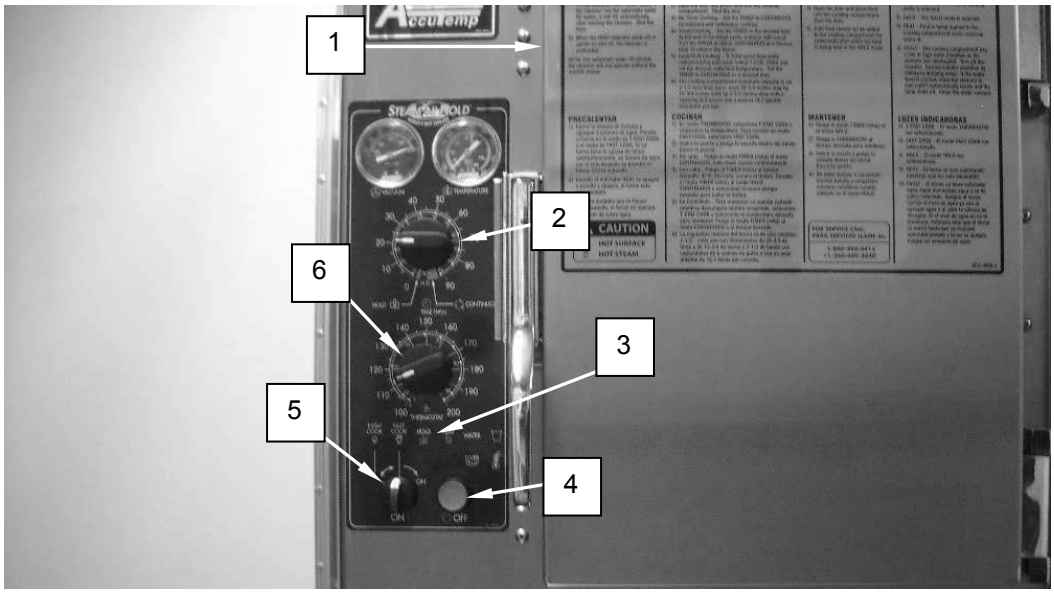


Figure 3. Cooking With Steam and Hold Oven.

NOTE

The steam and hold oven will automatically enter the HOLD mode once the set time has expired.

6. Monitor heating process. For untimed/continuous cooking, check food periodically. For timed cooking, the buzzer will sound when timer expires.

7. Move the timer (Figure 3, Item 2) counterclockwise slightly to turn off the buzzer.

8. Allow food to cook to desired temperature then open oven door (Figure 3, Item 1) and remove.

STEAM AND HOLD OVEN OPERATING PROCEDURES – CONTINUED

Holding Food at a Given Temperature in the Steam and Hold Oven

1. Open door (Figure 3, Item 1) and place food into cooking compartment.
2. Close door (Figure 3, Item 1).
3. Set the timer (Figure 3, Item 3) to HOLD.
4. Set the temperature controller (Figure 3, Item 6) to the desired holding temperature.
5. Allow food to hold at desired temperature and time then open door (Figure 3, Item 1) and remove food.

Turn Off the Steam and Hold Oven

1. Push the power switch (Figure 4, Item 1).
2. Verify indicator lights on control panel turn off.
3. Verify a full size pan (Figure 4, Item 4) is present on rails (Figure 4, Item 2) under steam and hold oven.
4. Open drain valve (Figure 4, Item 3) to drain water from chamber.
5. Discard drained water.

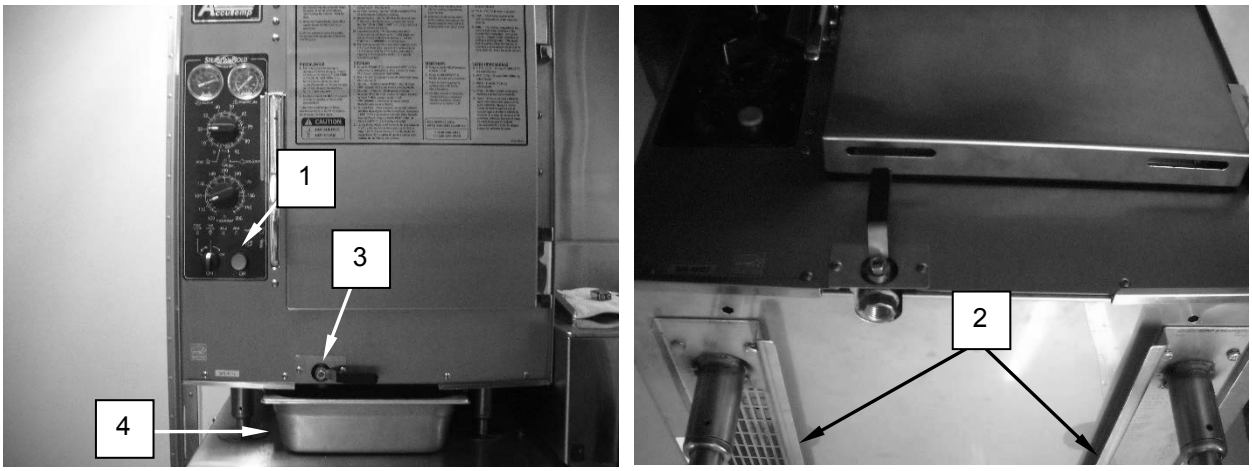


Figure 4. Drain Steam and Hold Oven.

STEAM AND HOLD OVEN OPERATING PROCEDURES – CONTINUED

6. Open steam and hold oven door (Figure 5, Item 1).

7. Position magnetic door stop (Figure 5, Item 2) as shown to relieve stress on gaskets while oven is not in use.

8. Close steam and hold oven door.

Figure 5. Magnetic Door Stop.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
REFRIGERATOR OPERATING PROCEDURES

INITIAL SETUP:

Personnel Required	Equipment Condition
92G Culinary Specialist (1)	Daily startup complete (WP 0009)

REFRIGERATOR OPERATING PROCEDURES

Refrigerator Startup

1. Remove louver (Figure 1, Item 5) from refrigerator.
2. Position power switch (Figure 1, Item 2) to ON.
3. Verify controller (Figure 1, Item 1) display turns on and listen for compressor to start running.
4. Verify condenser fan is running by placing hand in front of filter (Figure 1, Item 3) and feeling for moving air.
5. Open refrigerator door (Figure 1, Item 4).

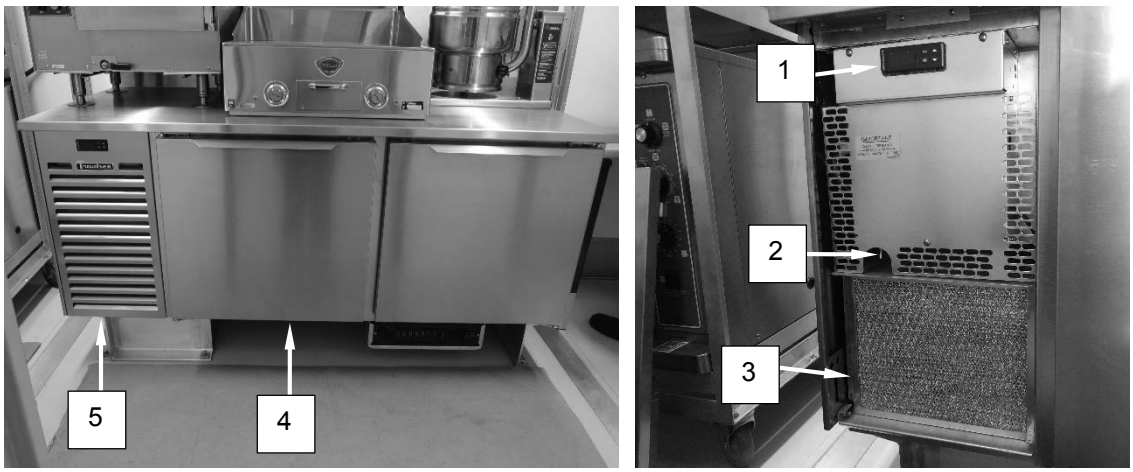


Figure 1. Refrigerator Operation.

REFRIGERATOR OPERATING PROCEDURES – CONTINUED

6. Verify both evaporator fans are running by placing hand in front of left and right louvers (Figure 2, Item 1) and feeling for moving air.

7. Close refrigerator door (Figure 1, Item 4).

8. Install louver (Figure 1, Item 5) to refrigerator.

Figure 2. Evaporator Fans.

Refrigerator Shutdown

1. Remove louver (Figure 3, Item 1) from refrigerator.

2. Position power switch (Figure 3, Item 2) to OFF.

3. Install louver to refrigerator.

Figure 3. Turn Off Refrigerator.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
GRIDDLE OPERATING PROCEDURES

INITIAL SETUP:

Personnel Required	Equipment Condition
92G Culinary Specialist (1)	Daily startup complete (WP 0009)

GRIDDLE OPERATING PROCEDURES

Turn ON Griddle

1. Position one or both thermostats (Figure 1, Item 1) to desired setting.
2. Verify one or both heating indicator lights (Figure 1, Item 2) are on.
3. Cook meal following preparation instructions provided on food package.

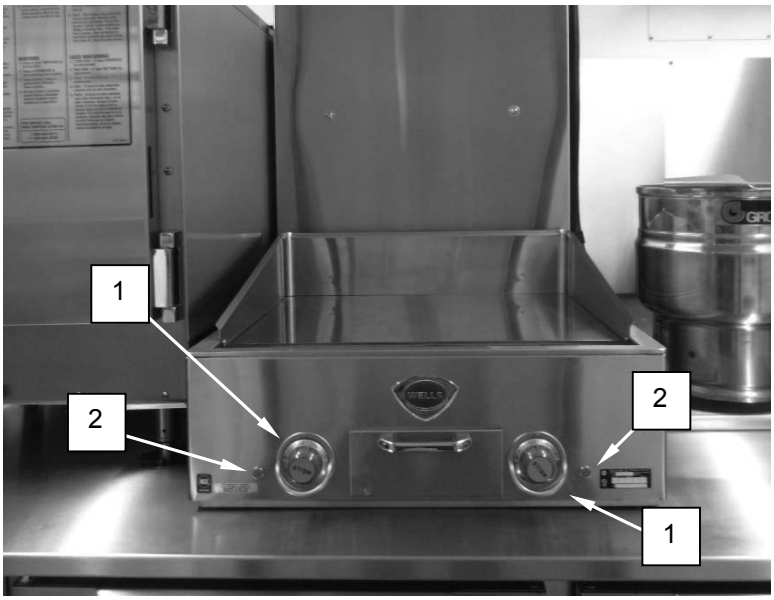


Figure 1. Turn On Griddle.

GRIDDLE OPERATING PROCEDURES – CONTINUED

Turn OFF Griddle

1. Position both temperatures (Figure 2, Item 1) to OFF.
2. Verify both heat indicator lights (Figure 2, Item 2) are off.

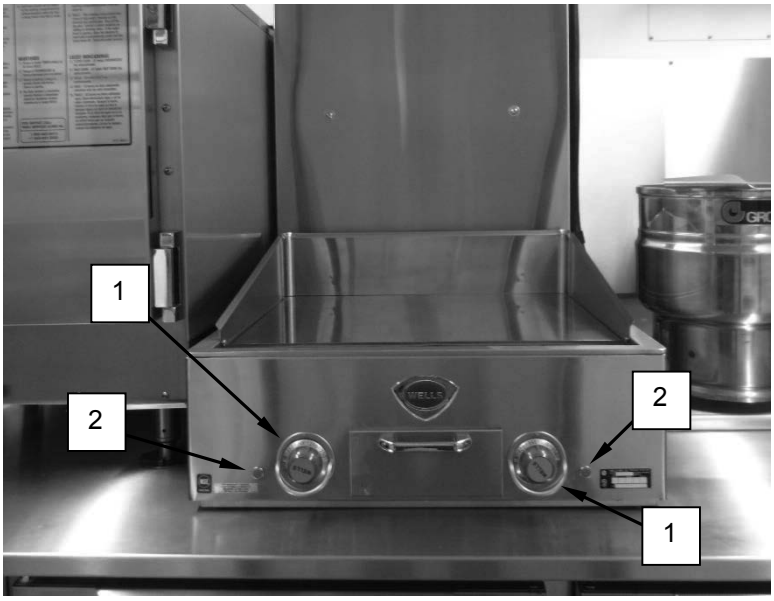


Figure 2. Turn Off Griddle.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
CONVECTION OVEN OPERATING PROCEDURES

INITIAL SETUP:

Personnel Required	Equipment Condition
92G Culinary Specialist (1)	Daily startup complete (WP 0009)

CONVECTION OVEN OPERATING PROCEDURES

Operate Convection Oven

1. Verify convection oven door (Figure 1, Item 6) is closed.
2. Position the power switch (Figure 1, Item 5) to the ON position (|).
3. Position the mode select switch (Figure 1, Item 1) to COOK HIGH for high speed fans or COOK LOW for low speed fans.

NOTE

Always preheat the convection oven before baking or roasting. It is recommended to preheat the oven 50°F (28°C) above the cook temperature to offset the drop in temperature when the doors are opened and cold food is loaded. For frozen product, preheat the oven 100°F (56°C) above the cook temperature.

4. Set the thermostat (Figure 1, Item 3) to the desired temperature.
5. Verify the indicator light (Figure 1, Item 2) turns on. Once the indicator light turns off, the oven is ready to load food.

Figure 1. Convection Oven Operation.

CONVECTION OVEN OPERATING PROCEDURES – CONTINUED

NOTE

Do not place pans on the bottom of the convection oven. Doing so will restrict air flow and cause hot spots to be present in the oven resulting in uneven cooking.

6. Load food product into the oven.
7. Set the timer (Figure 1, Item 4) to the desired cook time.
8. When the buzzer sounds, turn the timer to OFF to silence the buzzer.
9. Remove food from the oven.

Turn OFF Convection Oven

1. If desired, position the mode select switch (Figure 1, Item 1) to COOL DOWN to rapidly cool the oven.
2. Position the mode select switch (Figure 1, Item 1) to OVEN OFF.
3. Position master switch (Figure 1, Item 5) to OFF (O).
4. Verify indicator light (Figure 1, Item 2) is off.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
COOK AND HOLD OVEN OPERATING PROCEDURES

INITIAL SETUP:

Personnel Required	Equipment Condition
92G Culinary Specialist (1)	Daily startup complete (WP 0009)

COOK AND HOLD OVEN OPERATING PROCEDURES

Operate Cook and Hold Oven

1. Determine if a moist or crisp cooking and holding environment is desired.
2. Open cook and hold oven door (Figure 1, Item 1).
3. Rotate two vents (Figure 1, Item 2) closed for a moist cooking and holding environment or open for a crisp cooking and holding environment.

Figure 1. Cook and Hold Oven Vents.

COOK AND HOLD OVEN OPERATING PROCEDURES – CONTINUED

4. Position power switch (Figure 2, Item 1) to ON (|) position.

5. Rotate the hold thermostat (Figure 2, Item 7) to the desired holding temperature between 60°F to 205°F (16°C to 96°C) as indicated on the display (Figure 2, Item 2). Verify the heat indicator light (Figure 2, Item 3) and holding indicator light (Figure 2, Item 4) turn on.

NOTE

Cook mode is not active unless the timer is running.

Hold time key (Figure 2, Item 10) for three seconds while in cook mode to cancel timer. The cook and hold oven will enter holding mode as soon as the timer ends.

6. Rotate the cook thermostat (Figure 2, Item 6) to the desired temperature between 200°F to 325°F (94°C to 160°C) as indicated on the display.

7. Press the up or down arrow keys (Figure 2, Item 8 and 9) to adjust the timer. Verify cooking indicator light (Figure 2, Item 5) turns on.

8. Preheat the oven for 30 minutes or until heat indicator light turns off.

9. Load the oven with food and adjust cooking timer as needed.

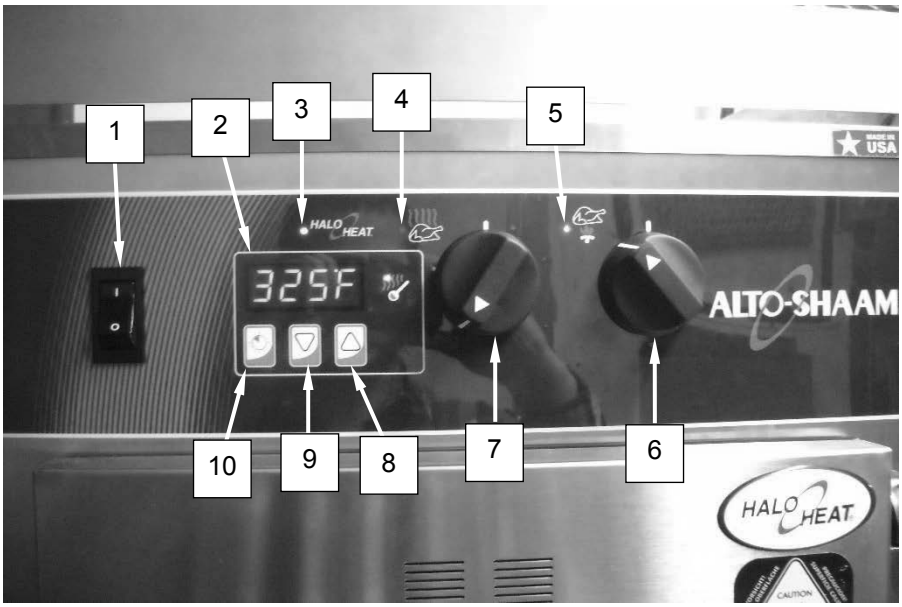


Figure 2. Cook and Hold Oven Operation.

Turn OFF Cook and Hold Oven

1. Position the arrows on the cook thermostat (Figure 2, Item 6) and hold thermostat (Figure 2, Item 7) straight up.

2. Position power switch (Figure 2, Item 1) to OFF (O) and verify display turns off.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
SANITATION SINK OPERATING PROCEDURES

INITIAL SETUP:

Materials/Parts

Pail, Utility (WP 0073, Item 10)
Rag, Wiping (WP 0073, Item 11)

Personnel Required

92G Culinary Specialist (1)

Equipment Condition

Daily startup complete (WP 0009)

SANITATION SINK OPERATING PROCEDURES

Operate Sanitation Sink

1. Verify sink drain strainers (Figure 1, Item 6) are installed in each sink basin.
2. Turn on hot and cold water valves (Figure 1, Item 2) and fill left sink (Figure 1, Item 1) with warm wash water.
3. Fill center sink (Figure 1, Item 3) with rinse water.
4. Fill right sink (Figure 1, Item 4) above minimum water level mark (Figure 1, Item 5).

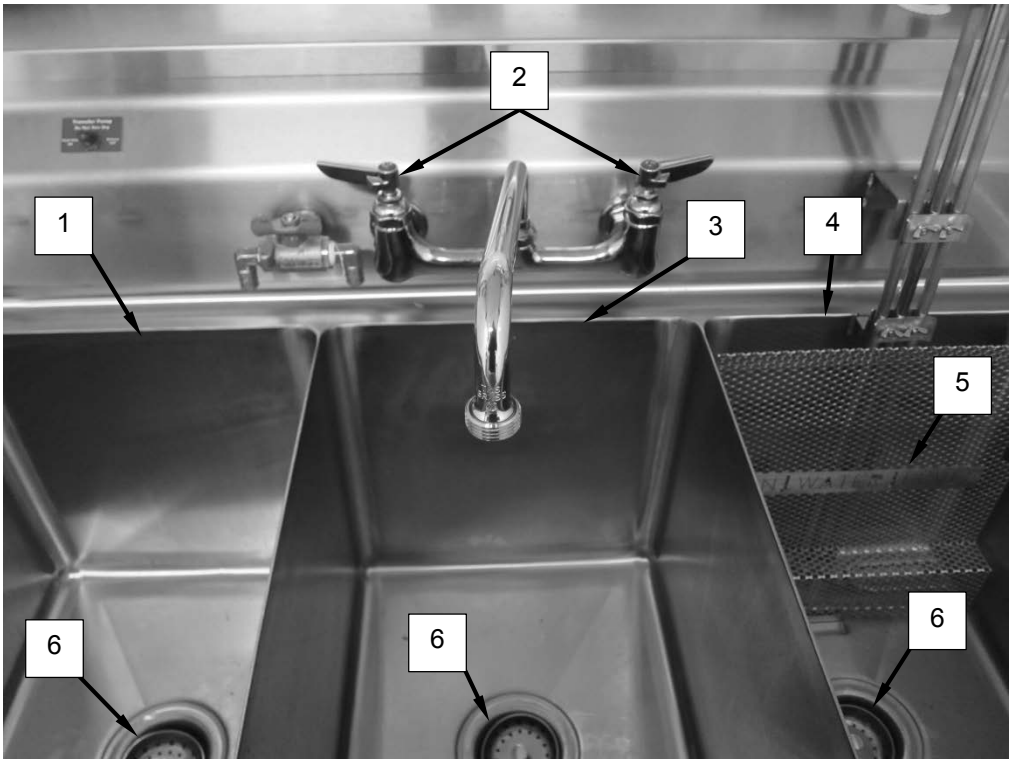


Figure 1. Fill Sink.

SANITATION SINK OPERATING PROCEDURES – CONTINUED

CAUTION

Operating the immersion heater or transfer pump with the water level below the minimum water level mark will cause premature failure of the item being used. Always ensure water level is above indicated level before use.

5. Rotate thermostat (Figure 2, Item 2) on immersion heater (Figure 2, Item 1) to desired setting.
6. Press the reset button (Figure 2, Item 4) on immersion heater.
7. Verify immersion heater indicator light (Figure 2, Item 3) comes on and water in sanitizing sink begins to heat up.

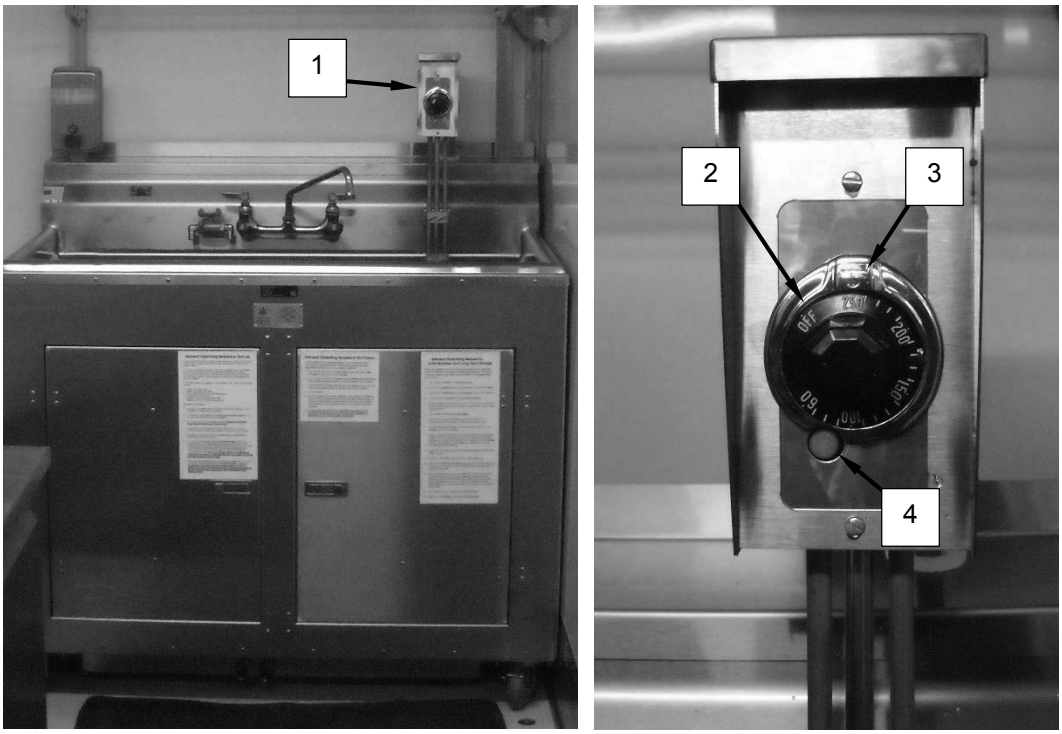


Figure 2. Immersion Heater.

8. Secure thermometer (Figure 3, Item 2) to right sink (Figure 3, Item 1) and monitor sanitation water temperature.

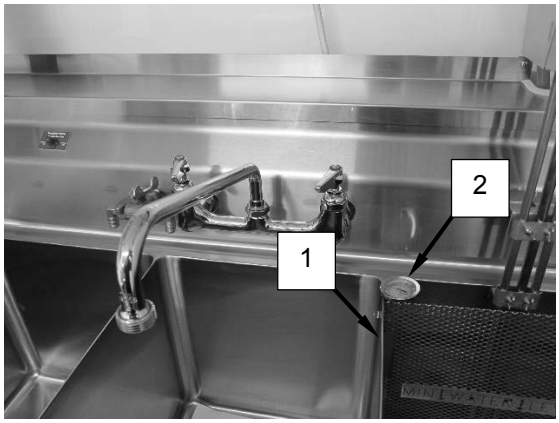


Figure 3. Sink Thermometer.

SANITATION SINK OPERATING PROCEDURES – CONTINUED

NOTE

If desired, hot water from the sanitizing sink basin (Figure 4, Item 3) can be used to adjust the water temperature in the left and center sink basins (Figure 4, Items 4 and 5).

9. Rotate transfer valve (Figure 4, Item 2) to the desired sink.

CAUTION

Operating the immersion heater or transfer pump with the water level below the minimum water level mark will cause premature failure of the item being used. Always ensure water level is above indicated level before use.

10. Push the transfer pump pushbutton (Figure 4, Item 1) to pump hot water from the sanitation sink (Figure 4, Item 3) to the desired sink.

11. Monitor wash or rinse water temperature with sink thermometer.

12. Refill right sink basin, if required.

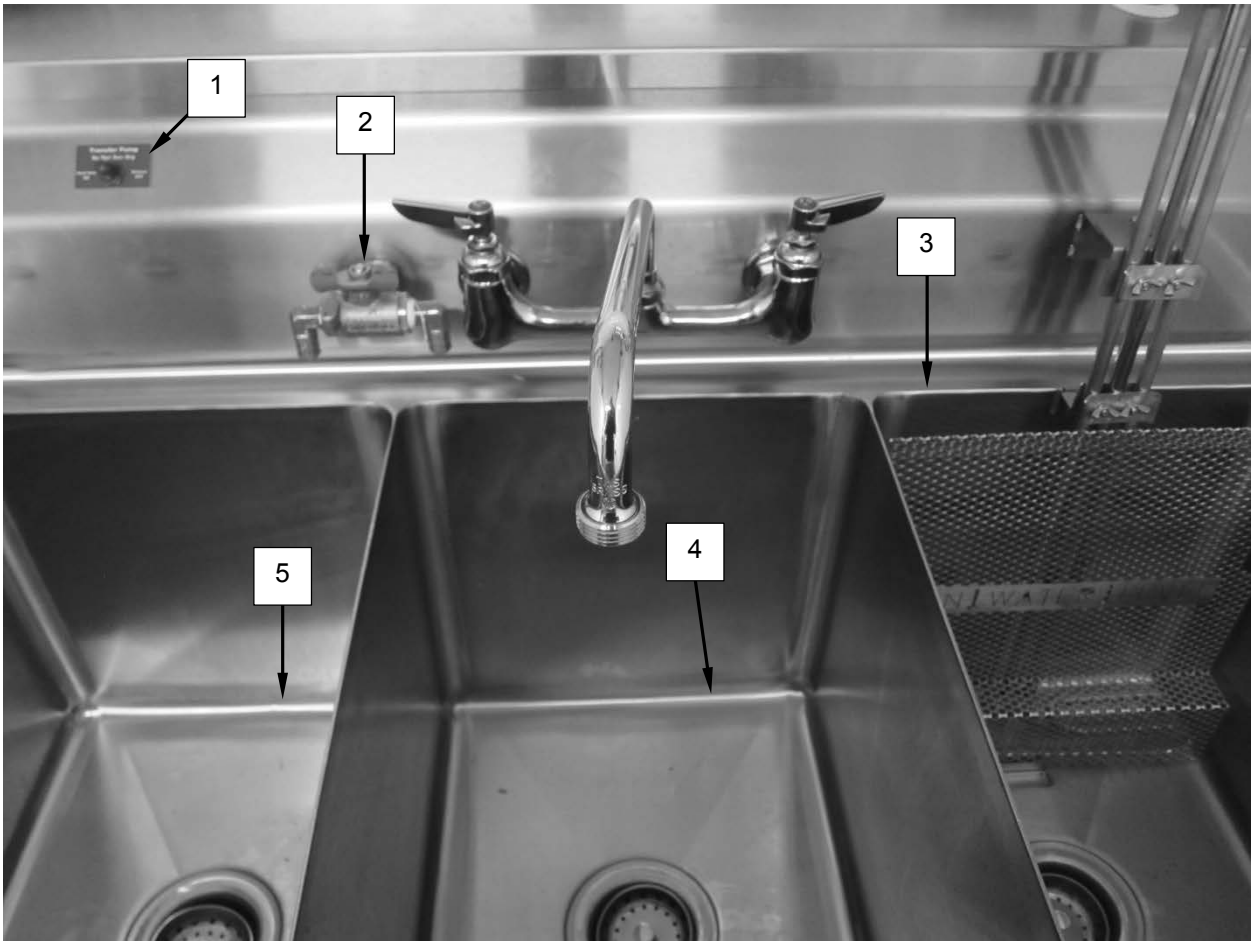


Figure 4. Transfer Valve.

SANITATION SINK OPERATING PROCEDURES – CONTINUED

Shutdown Sanitation Sink

CAUTION

Operating the immersion heater with the water level below the minimum water level mark will cause premature failure of the immersion heater. Always ensure the immersion heater is OFF before draining sinks.

1. Rotate thermostat (Figure 5, Item 2) on immersion heater (Figure 5, Item 1) to the OFF position. Verify indicator light (Figure 5, Item 3) turns off.

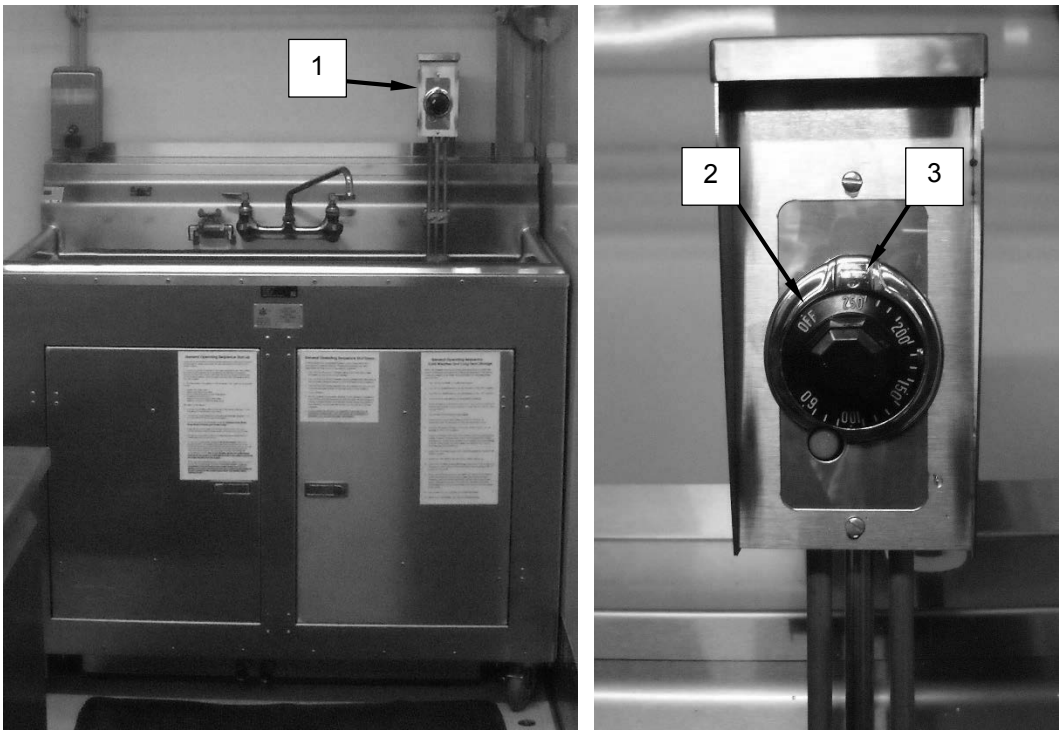


Figure 5. Immersion Heater Shutdown.

2. Remove drain strainers (Figure 6, Item 1) from sink basins to drain water. Verify water drains from sink basins and no leaks occur.

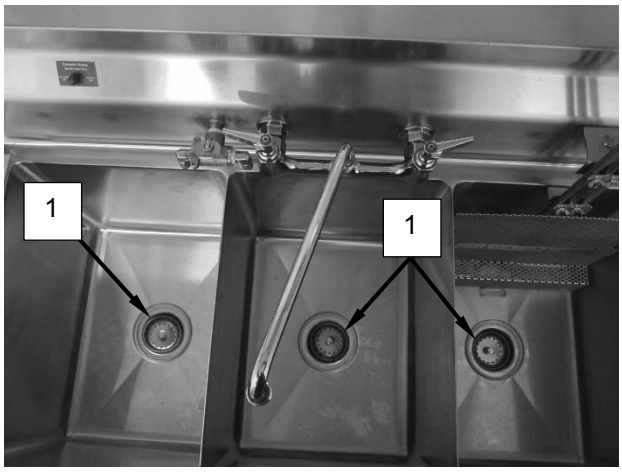


Figure 6. Drain Sink Basins.

SANITATION SINK OPERATING PROCEDURES – CONTINUED

Drain Sanitation Sink

1. Remove the drain hose (Figure 7, Item 1) from inside the right door.

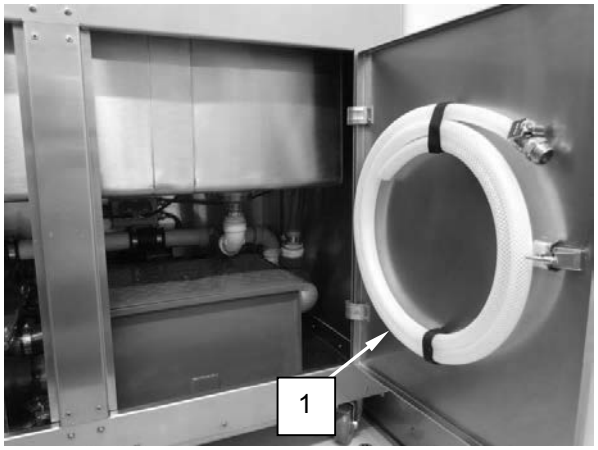


Figure 7. Waste Drain Hose.

2. Connect one end of the hose to the grease trap drain fitting (Figure 8, Item 2).

3. Rotate the grease trap drain valve (Figure 8, Item 4) counter-clockwise to open and drain the grease trap into a suitable container. Close valve.

4. Disconnect the drain hose and connect it to the waste tank drain fitting (Figure 8, Item 1).

5. Open the waste tank drain valve (Figure 8, Item 3) and drain the tank into a suitable container. Close valve.

6. Disconnect the drain hose and return it to its holder on the inside of the right door.

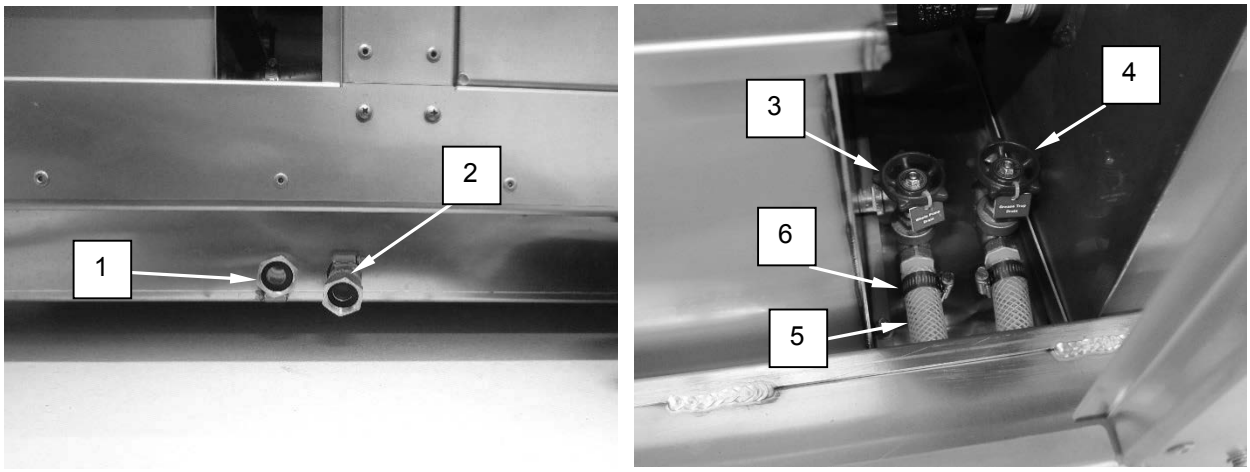


Figure 8. Drain Fittings and Valves.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
LONG TERM SHUTDOWN

INITIAL SETUP:

Tools and Special Tools

Compressor, Air, Diesel
(WP 0072, Table 1)

Material/Parts

Pail, Utility (WP 0073, Item 10)
Rag, Wiping (WP 0073, Item 11)
Strap, Line Supporting (WP 0073, Item 16)

Personnel Required

92G Culinary Specialist (1)

References

WP 0019

Equipment Condition

Daily ETKS interior cleaning complete (WP 0040)
Sanitation sink removed (WP 0063)

LONG TERM SHUTDOWN

NOTE

This work package will be used to shut down the Expeditionary TRICON Kitchen System (ETKS) due to cold weather operation or prepare the ETKS for a period of disuse. Refer to WP 0019 to shut down the ETKS for storage or shipment.

1. If air conditioner (Figure 1, Item 1) is operating, press power button (Figure 1, Item 2) to turn it off.

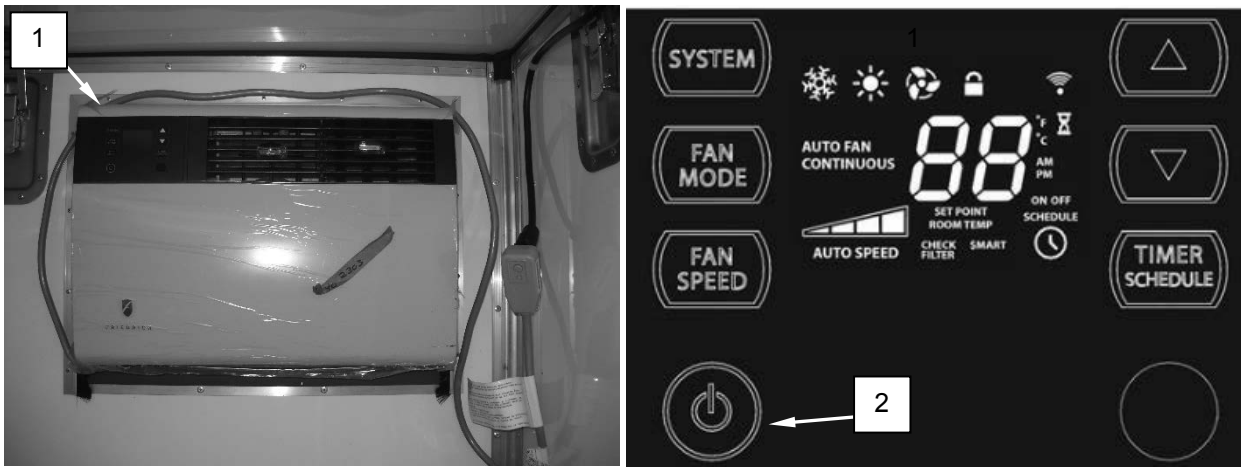


Figure 1. Air Conditioner Shutdown.

LONG TERM SHUTDOWN – CONTINUED

2. If space heater (Figure 2, Item 1) is operating, rotate the output control knob (Figure 2, Item 2) fully counter-clockwise.

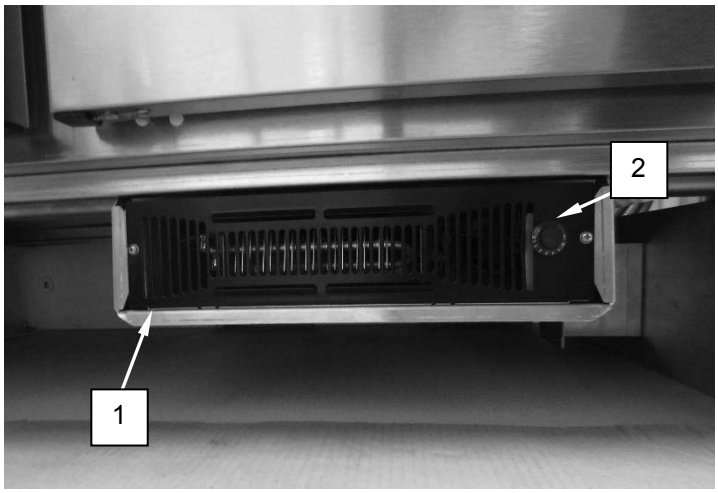


Figure 2. Space Heater Shutdown.

3. If protective gear rack (Figure 3, Item 3) was used, lift helmet hooks (Figure 3, Item 1) out of slots (Figure 3, Item 2) in rack and place in stowed position with hooks facing inward.

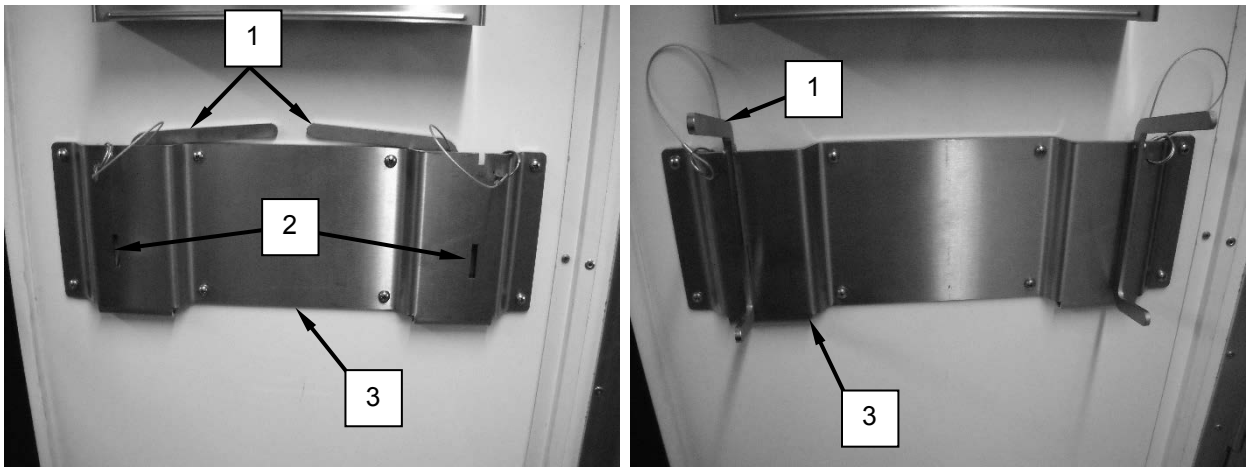


Figure 3. Protective Gear Rack Shutdown.

LONG TERM SHUTDOWN – CONTINUED

4. If weapon rack (Figure 4, Item 2) was used, lift up on hook and loop strap (Figure 4, Item 1) to remove weapon.

5. Secure hook and loop strap (Figure 4, Item 1) to weapon rack (Figure 4, Item 2).

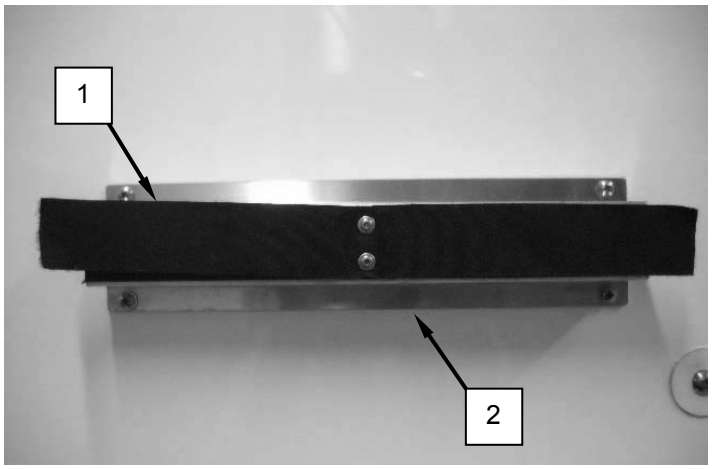


Figure 4. Weapon Rack Shutdown.

6. Position ventilation fan control knob (Figure 5, Item 1) to OFF. Verify fans (Figure 5, Item 2) turn off.

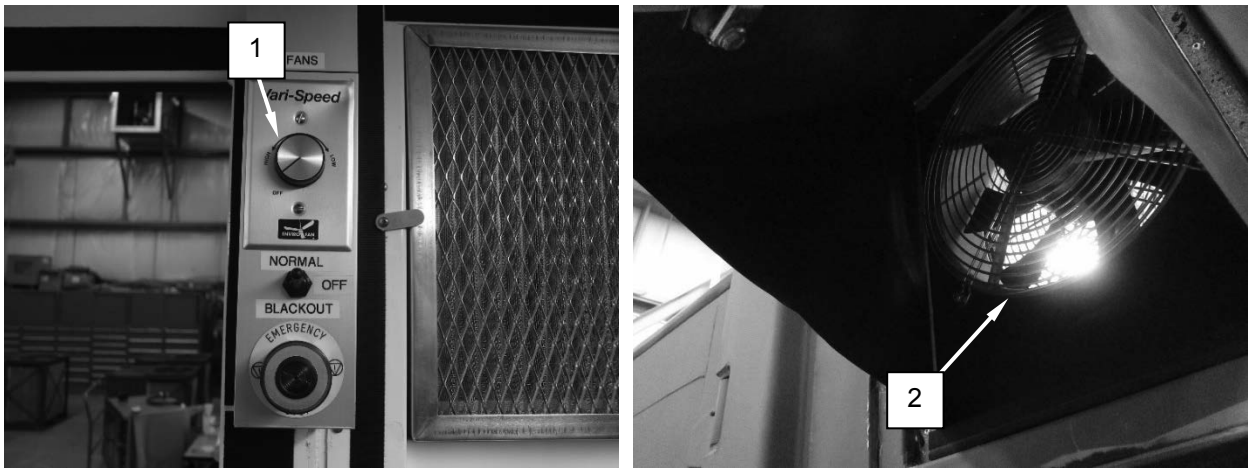


Figure 5. Turn Off Fans.

LONG TERM SHUTDOWN – CONTINUED

7. Remove the waste drain hose (Figure 6, Item 1) from inside the right door.

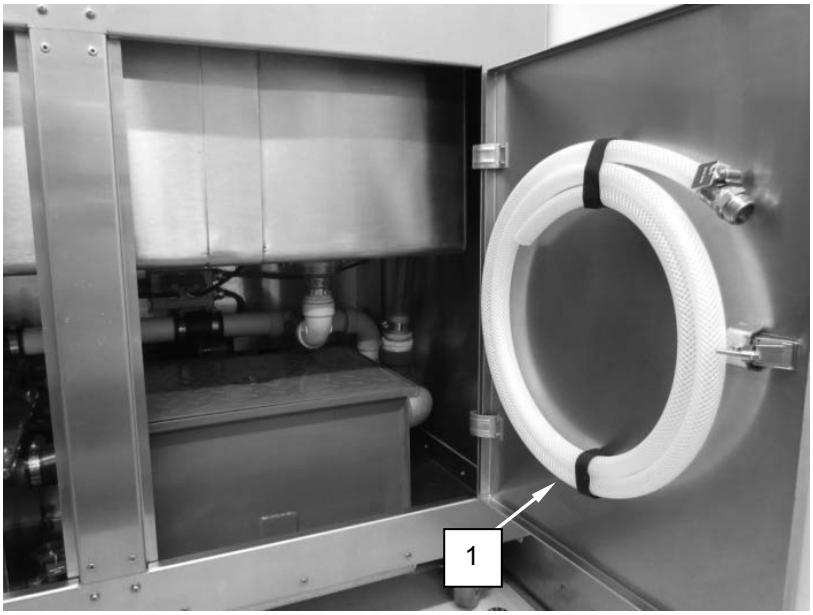


Figure 6. Waste Drain Hose.

8. Connect one end of the hose to the grease trap drain fitting (Figure 7, Item 2).
9. Rotate the grease trap drain valve (Figure 7, Item 4) counter-clockwise to open and drain the grease trap into a suitable container.
10. Disconnect the drain hose and connect it to the waste tank drain fitting (Figure 7, Item 1).
11. Open the waste tank drain valve (Figure 7, Item 3) and drain the tank into a suitable container.
12. Disconnect the drain hose and return it to its holder on the inside of the right door.
13. Close door to the sanitation sink.

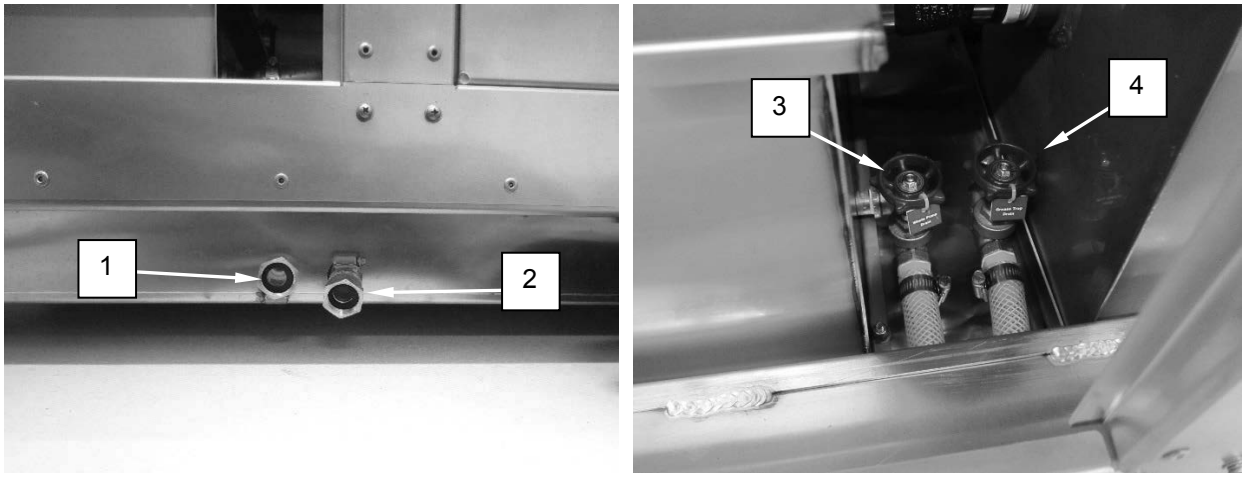


Figure 7. Drain Fittings and Valves.

LONG TERM SHUTDOWN – CONTINUED

14. Place a suitable container under the transfer pump drain valve (Figure 8, Item 1).

15. Rotate transfer pump drain valve counter-clockwise until it stops turning to drain transfer pump.

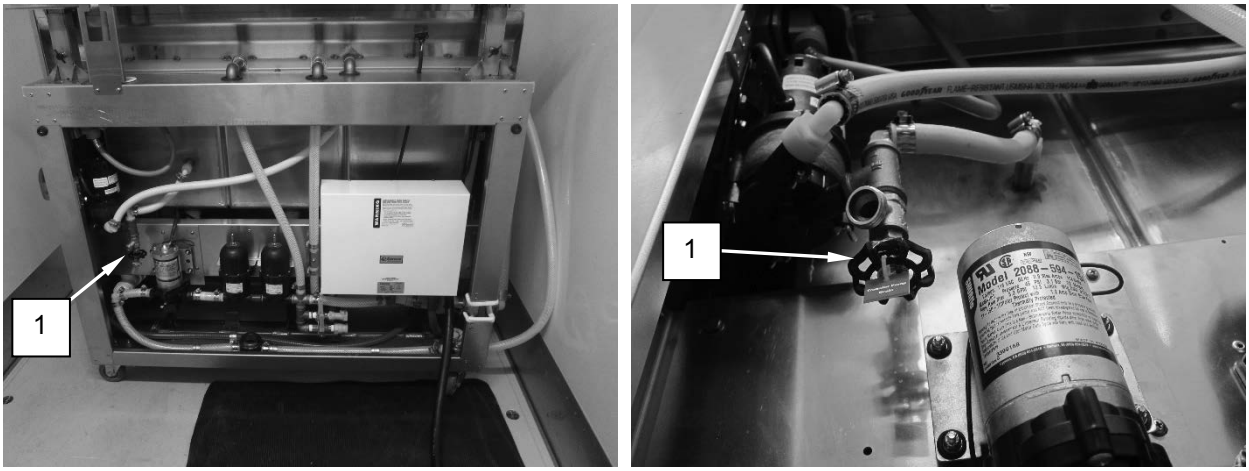


Figure 8. Open Transfer Pump Drain Valve.

16. Place a suitable container under the water heater drain valve opening (Figure 9, Item 1).

17. Rotate water heater drain valve (Figure 9, Item 2) down to open until no water comes out of valve.

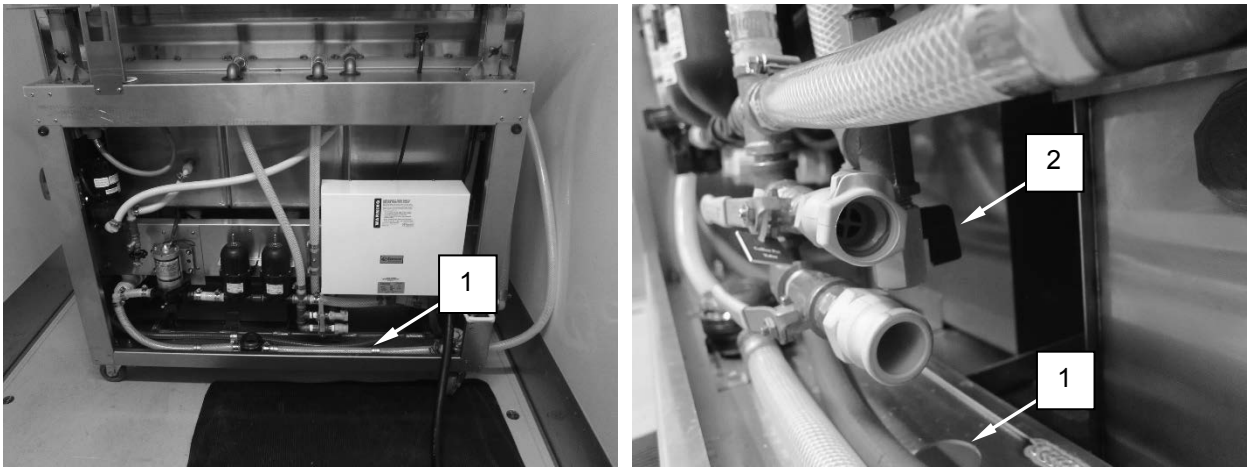


Figure 9. Open Water Heater Drain Valve.

LONG TERM SHUTDOWN – CONTINUED

18. Rotate coffee pot valve (Figure 10, Item 1) to the left (horizontal position) to open.

19. Verify ancillary supply valve (Figure 10, Item 2) is closed (vertical position).

Figure 10. Open Coffee Pot Valve.

20. Remove wire tie (Figure 11, Item 1) securing adapter hose (Figure 11, Item 2) to sanitation sink supply hose.

21. Install adapter hose into coffee pot fitting (Figure 11, Item 3).

22. Apply compressed air at 30 psi through the adapter hose until no water flows from the water heater drain valve (Figure 11, Item 4).

23. Rotate water heater drain valve (Figure 9, Item 2) to close the valve.

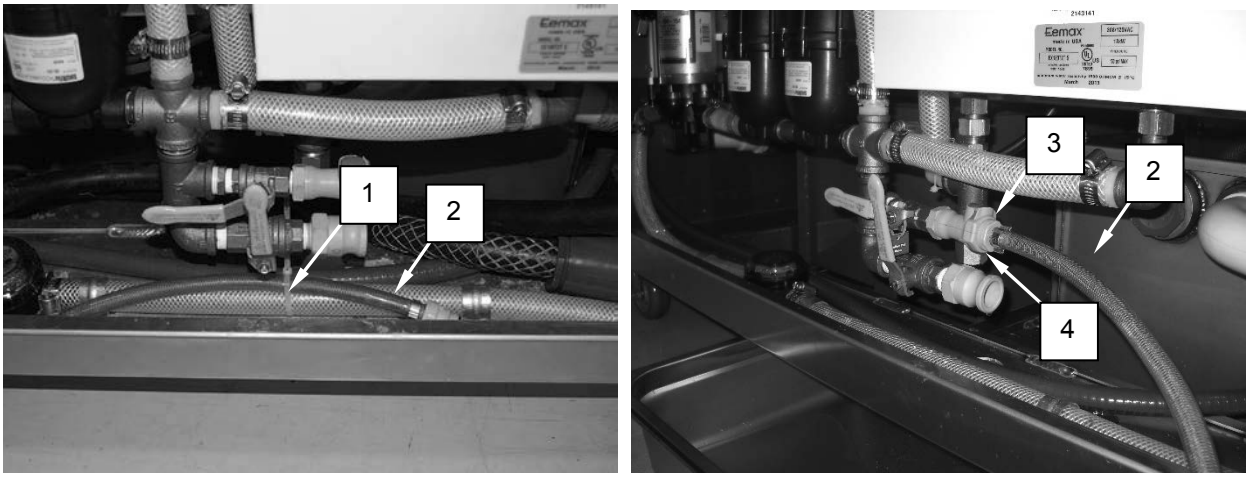


Figure 11. Install Adapter Hose.

LONG TERM SHUTDOWN – CONTINUED

24. Rotate cold water valve (Figure 12, Item 3) clockwise until it stops turning.
25. Apply compressed air at 30 psi through the adapter hose until no water flows from gooseneck (Figure 12, Item 1).
26. Rotate cold water valve (Figure 12, Item 3) fully counter-clockwise until it stops turning.
27. Rotate hot water valve (Figure 12, Item 2) counter-clockwise until it stops turning.
28. Apply compressed air at 30 psi through the adapter hose until no water flows from gooseneck (Figure 12, Item 1).
29. Rotate hot water valve clockwise until it stops turning.

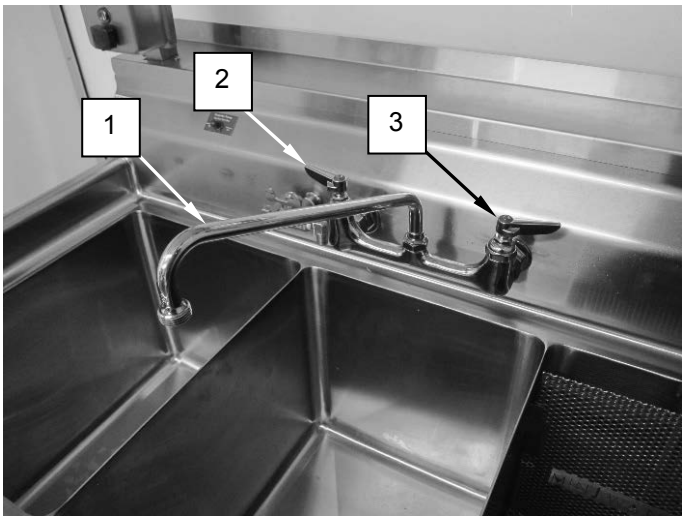


Figure 12. Open Faucet Valves.

30. Open (horizontal position) ancillary supply valve (Figure 13, Item 1).
31. Apply compressed air at 30 psi through the adapter hose until no water flows from ancillary supply valve.
32. Disconnect adapter hose (Figure 13, Item 3) from coffee pot fitting (Figure 13, Item 2).
33. Secure adapter hose to sink water hose with wire tie (Figure 13, Item 4).

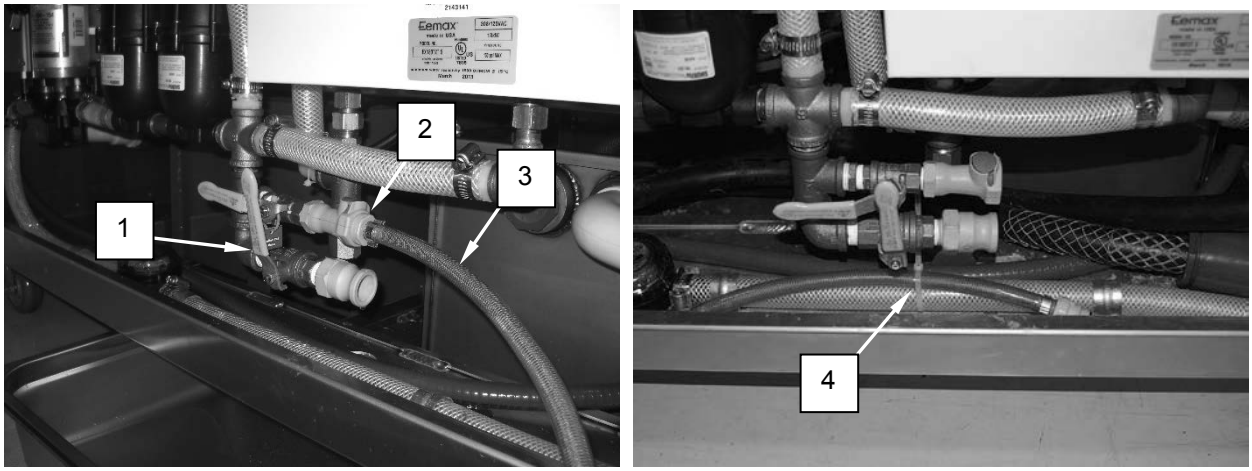


Figure 13. Disconnect Adapter Hose.

LONG TERM SHUTDOWN – CONTINUED

34. Rotate hot water valve (Figure 14, Item 1) counter-clockwise until it stops turning.

35. Rotate cold water valve (Figure 14, Item 2) clockwise until it stops turning.

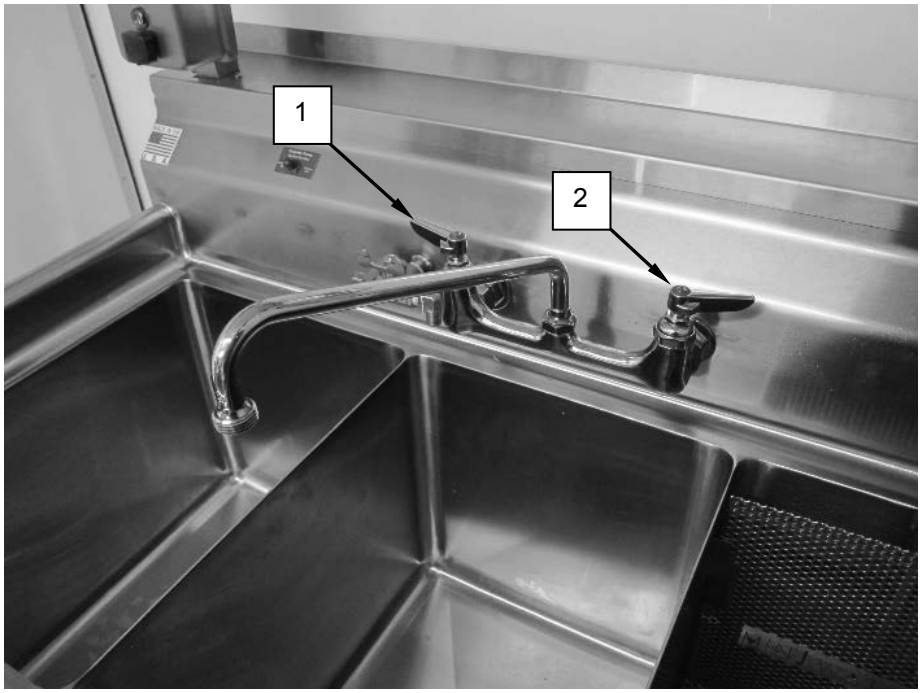


Figure 14. Open Faucet Water Valves.

36. Rotate water heater drain valve (Figure 15, Item 1) down.

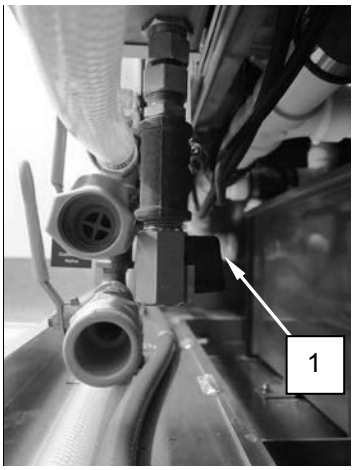


Figure 15. Open Water Heater Drain Valve.

37. Wipe up all residual water.

LONG TERM SHUTDOWN – CONTINUED

38. Close SOURCE water bag and WASTE water bag shutoff valves (Figure 16, Item 1).

39. Disconnect wastewater hose (Figure 16, Item 3) from ETKS wastewater port and allow water to drain from internal plumbing.

40. Once water has finished draining, connect wastewater hose to ETKS wastewater port.

41. Disconnect source water hose (Figure 16, Item 2) from ETKS water supply port and allow water to drain from internal plumbing.

42. Once water has finished draining, connect source water hose to ETKS supply water port.

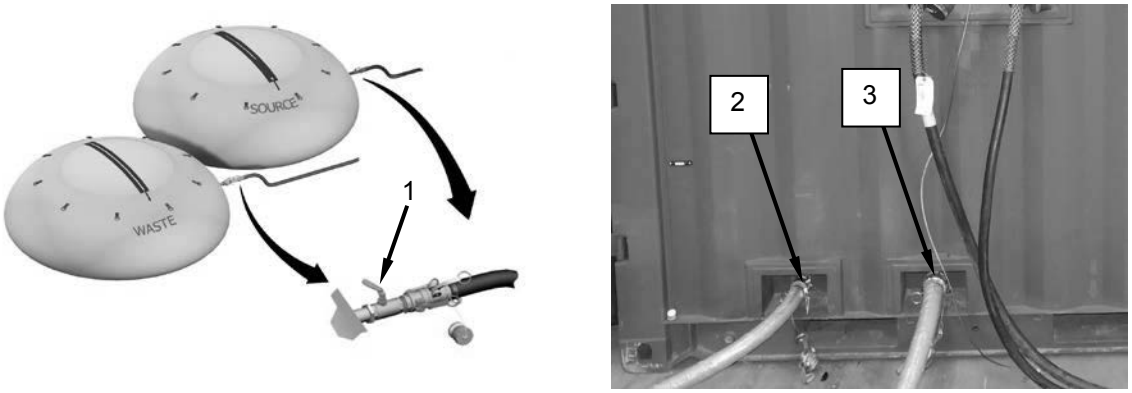


Figure 16. Source and Waste Hoses.

NOTE

All valves in Figure 17 are shown in their closed positions.

43. Close water heater drain valve (Figure 17, Item 3) by positioning it to the right of the valve.

44. Close transfer pump drain valve (Figure 17, Item 1) by rotating clockwise until it no longer turns.

45. Close ancillary supply valve (Figure 17, Item 4) by positioning it straight up and down.

46. Close coffee pot valve (Figure 17, Item 2) by positioning it straight up and down.

LONG TERM SHUTDOWN – CONTINUED

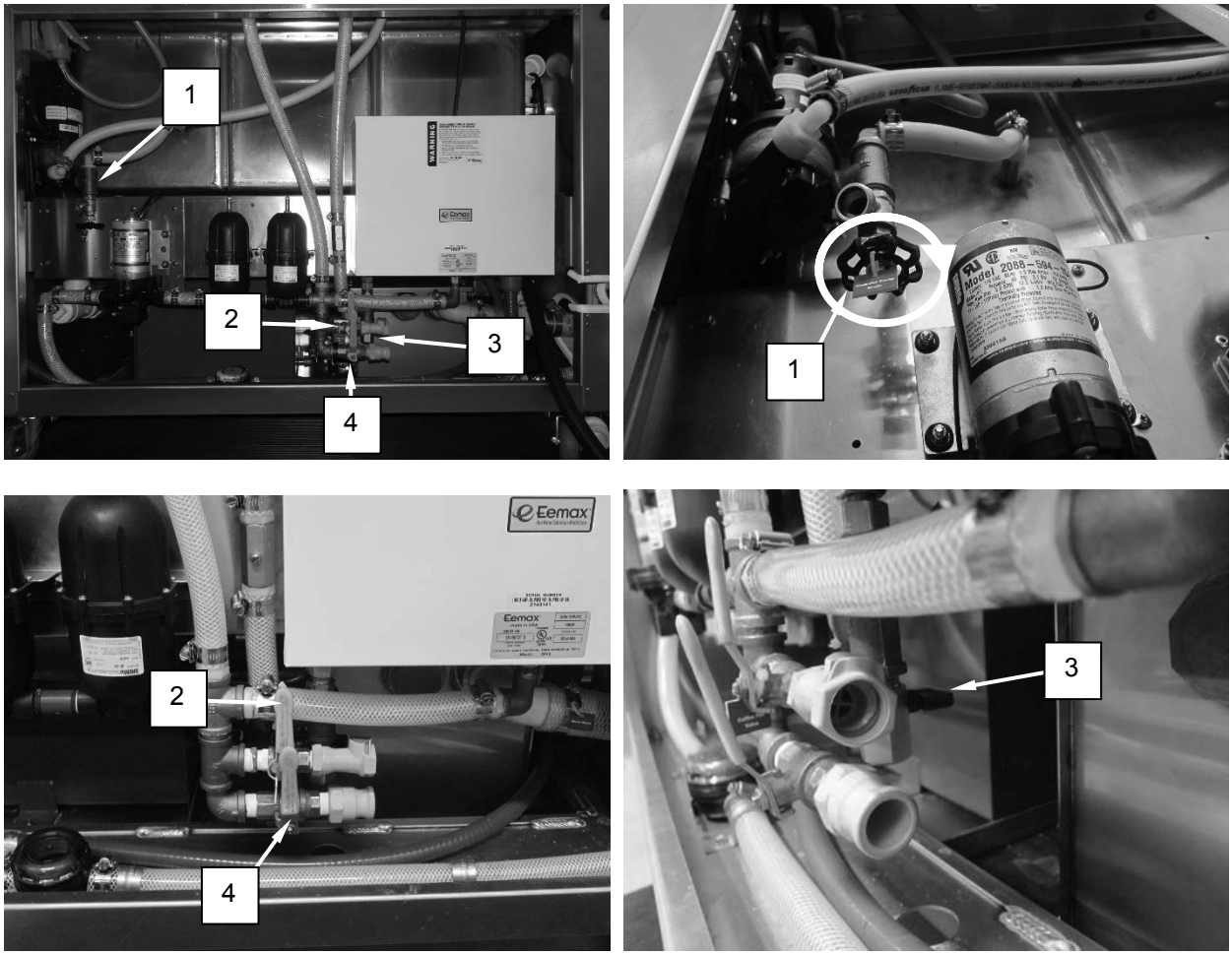


Figure 17. Sanitation Sink Valves.

47. Close grease trap drain valve (Figure 18, Item 2) by rotating clockwise until it no longer turns.

48. Close waste tank drain valve (Figure 18, Item 1) by rotating clockwise until it no longer turns.

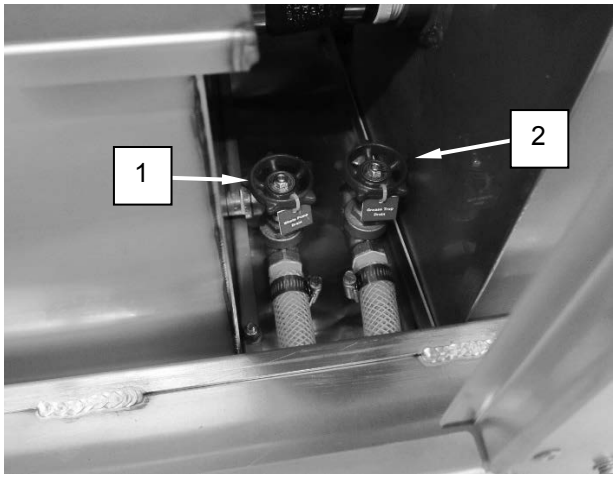


Figure 18. Front Drain Valves.

LONG TERM SHUTDOWN – CONTINUED

49. Remove dust covers (Figure 19, Item 1) from sanitation sink waste hose (Figure 19, Item 2).

50. Remove dust covers (Figure 19, Item 4) from sanitation sink supply hose (Figure 19, Item 3).

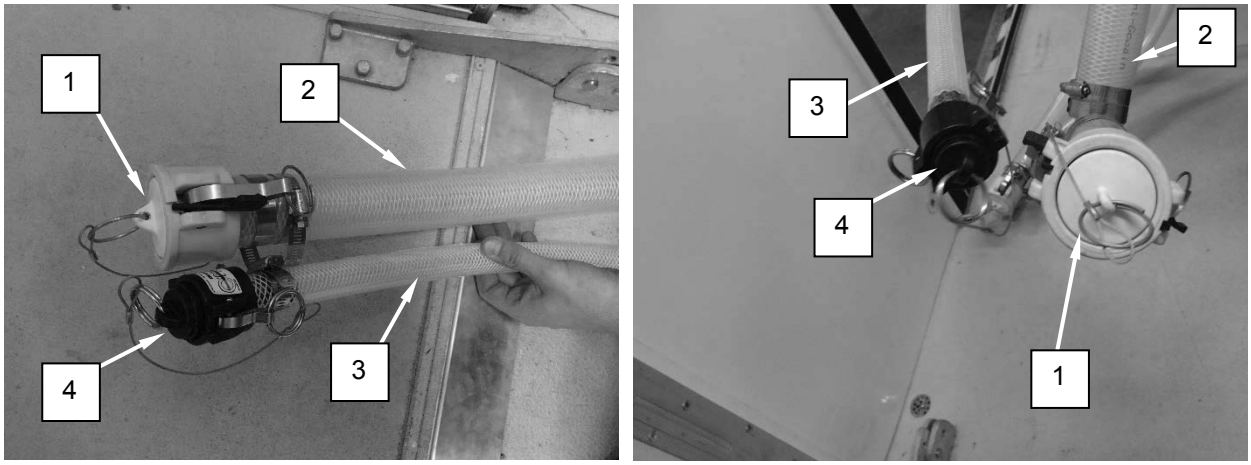


Figure 19. Remove Plugs from Hoses.

51. Install sanitation sink supply hose (Figure 20, Item 3) and sanitation sink drain hose (Figure 20, Item 1) to sanitation sink.

52. Roll sink towards the ETKS end wall.

53. Lock castors with foot locks (Figure 20, Item 2).

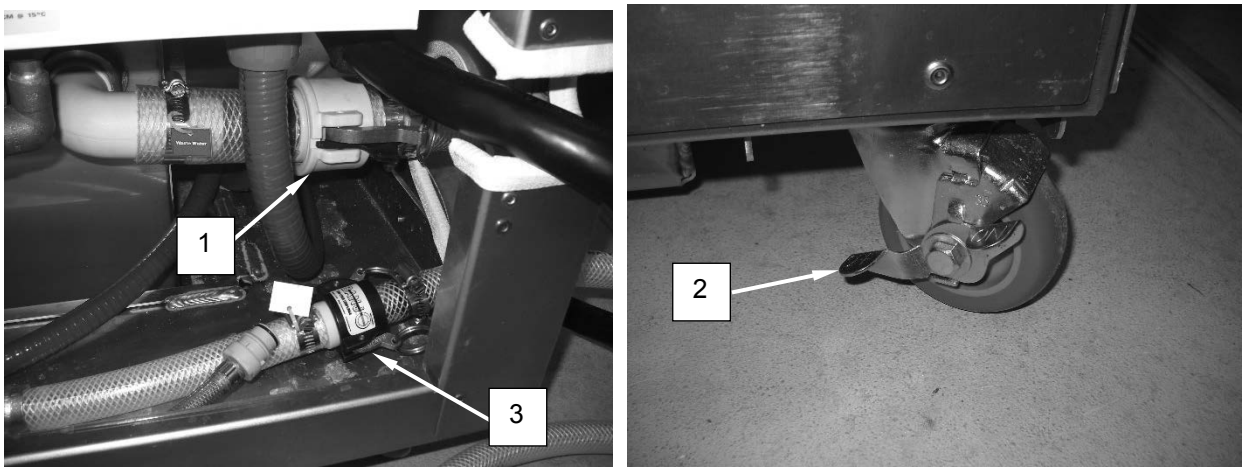


Figure 20. Install Hoses to Sanitation Sink.

LONG TERM SHUTDOWN – CONTINUED

54. Remove dust cover (Figure 21, Item 10) from receptacle (Figure 21, Item 1).
55. Remove dust cover (Figure 21, Item 9) from waste water port (Figure 21, Item 2).
56. Remove dust cover (Figure 21, Item 8) from source water port (Figure 21, Item 3).
57. Remove dust cover (Figure 21, Item 7) from power cable (Figure 21, Item 6).
58. Connect source water hose (Figure 21, Item 4) to source water port (Figure 21, Item 3).
59. Connect waste hose (Figure 21, Item 5) to wastewater port (Figure 21, Item 2).
60. Connect power cable (Figure 21, Item 6) to receptacle (Figure 21, Item 1).
61. Connect hose plugs (Figure 19, Items 1 and 4) to water port dust covers (Figure 21, Items 8 and 9).
62. Connect power cable dust cover (Figure 21, Item 7) to receptacle dust cover (Figure 21, Item 10).

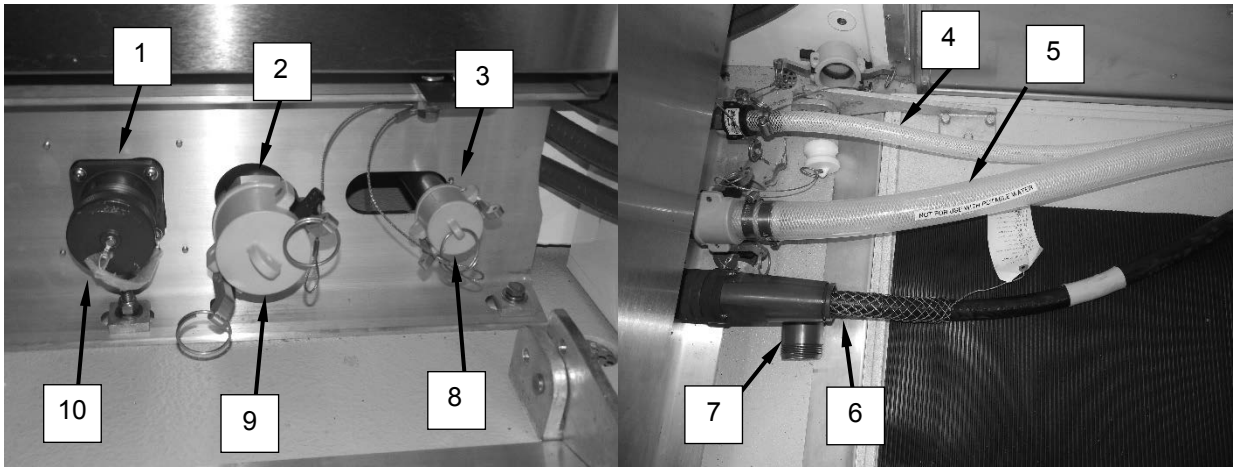


Figure 21. Install Sanitation Sink Power Cable and Hoses.

LONG TERM SHUTDOWN – CONTINUED

63. Install utility table (Figure 22, Item 1).

64. Install spice rack (Figure 22, Item 3) to ETKS wall and secure with two screws (Figure 22, Item 2).

65. Return any items to table or spice rack that were removed.

Figure 22. Install Utility Table and Spice Rack.

66. Position light switch (Figure 23, Item 1) to OFF. Verify lights (Figure 23, Item 2) turn off.

Figure 23. Turn Lights Off.

LONG TERM SHUTDOWN – CONTINUED

67. Open circuit breaker panel door (Figure 24, Item 1).
68. Position all circuit breakers (Figure 24, Item 2) to OFF.
69. Close and secure circuit breaker panel door.
70. Turn off ETKS source power.

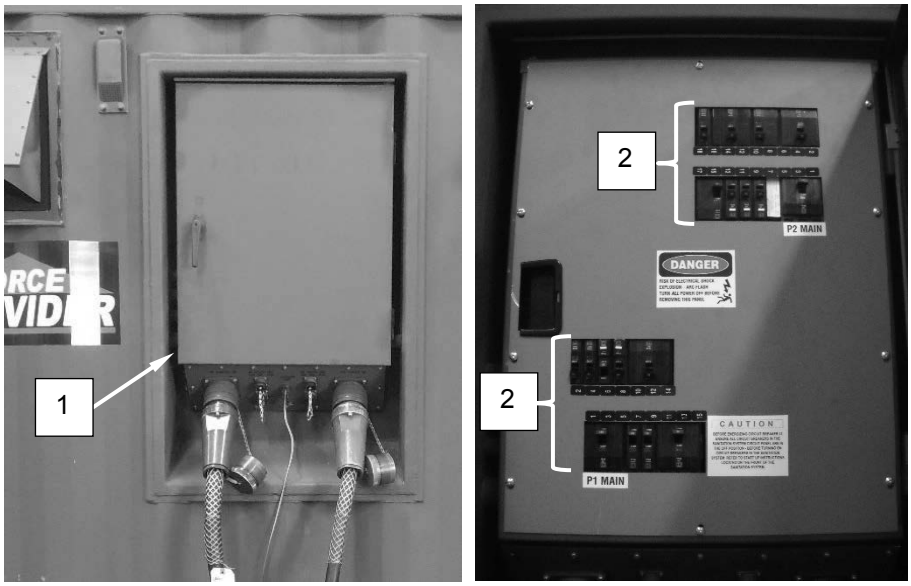


Figure 24.Turn Off Circuit Breakers.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
DECALS AND INSTRUCTION PLATES

INITIAL SETUP:

Not Applicable

See Figures 1 through 14 for locations of decals and instruction plates.

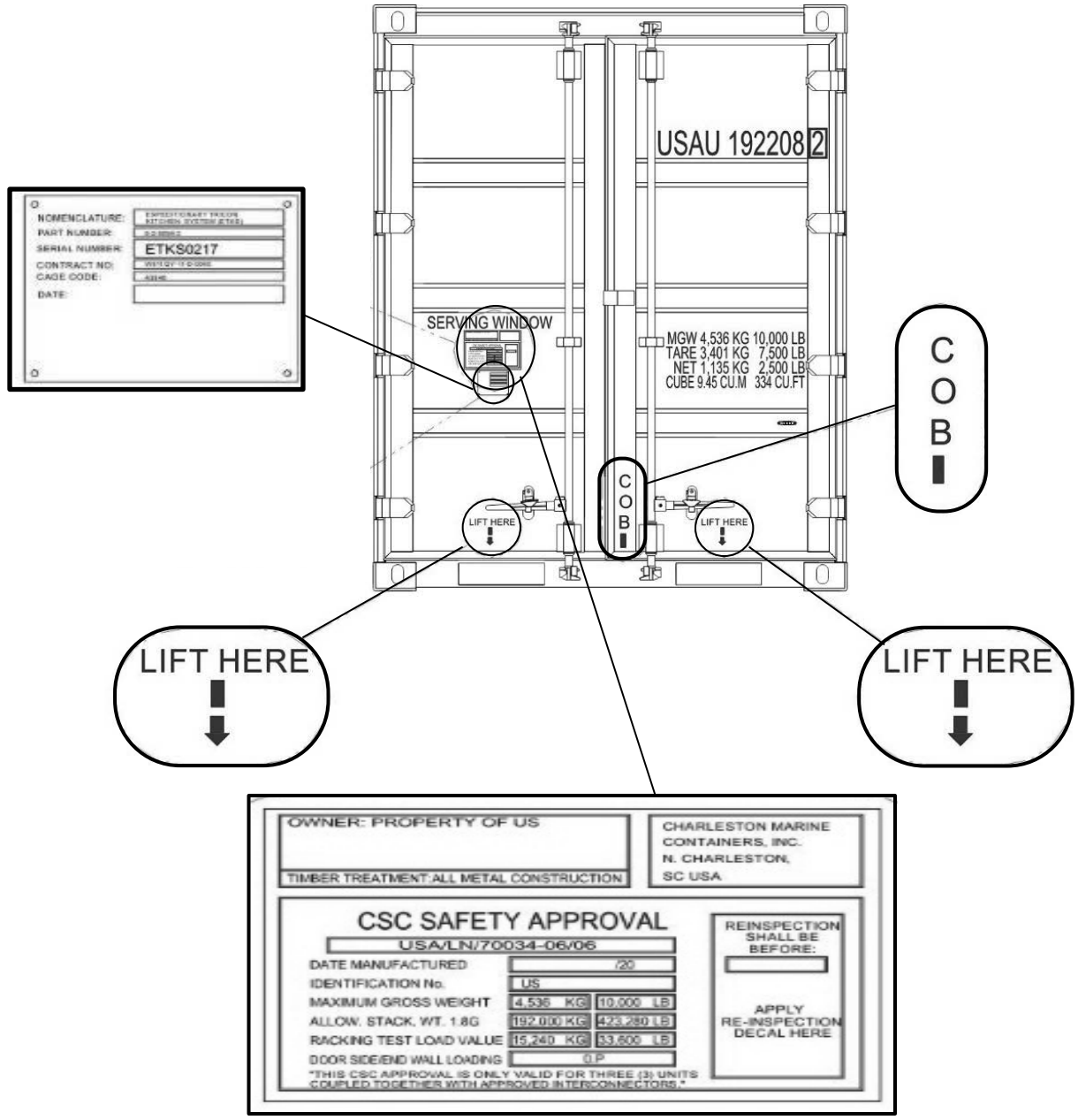


Figure 1. Exterior Front Stowed.

DECALS AND INSTRUCTION PLATES – CONTINUED

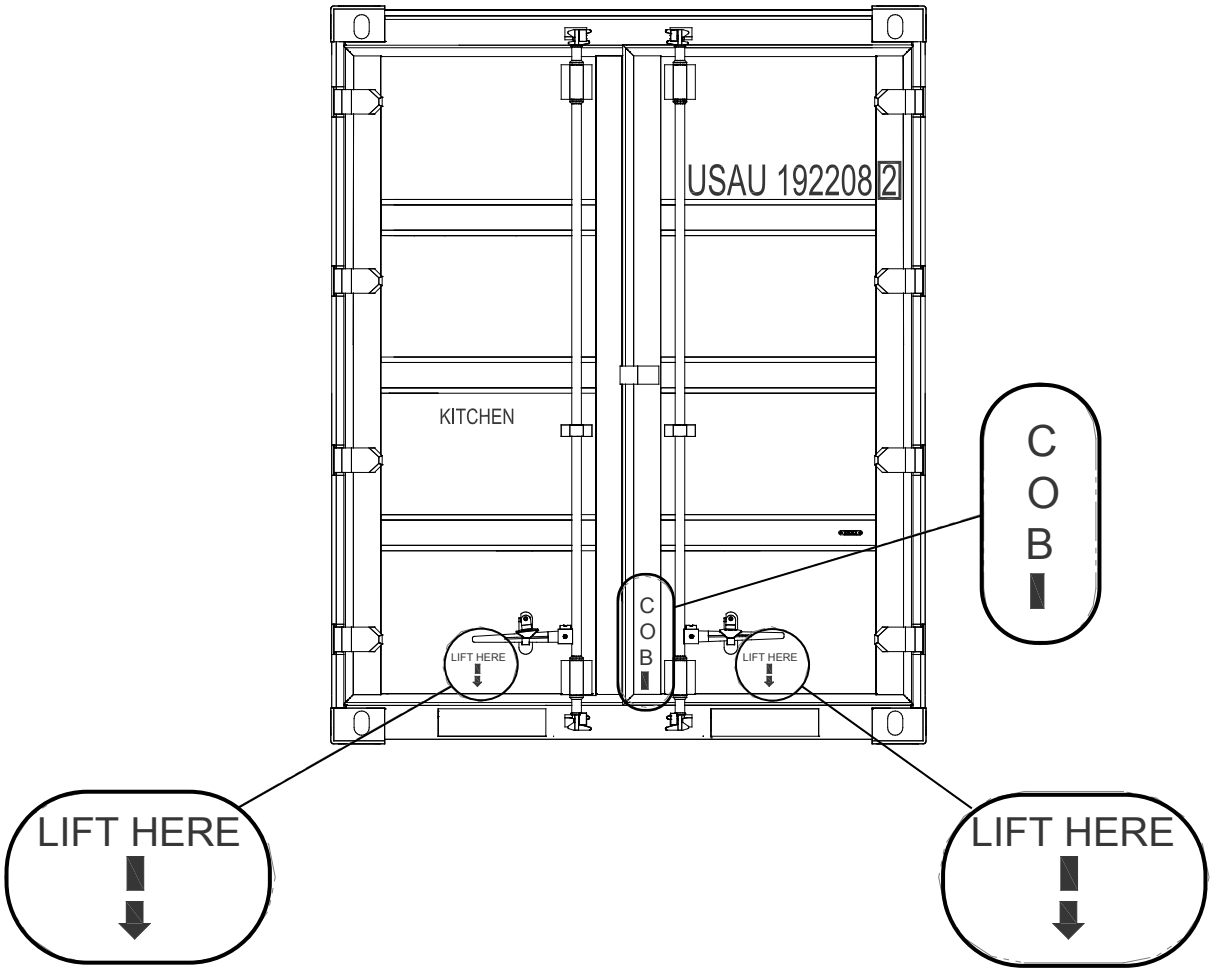


Figure 2. Exterior Rear Stowed.

DECALS AND INSTRUCTION PLATES – CONTINUED

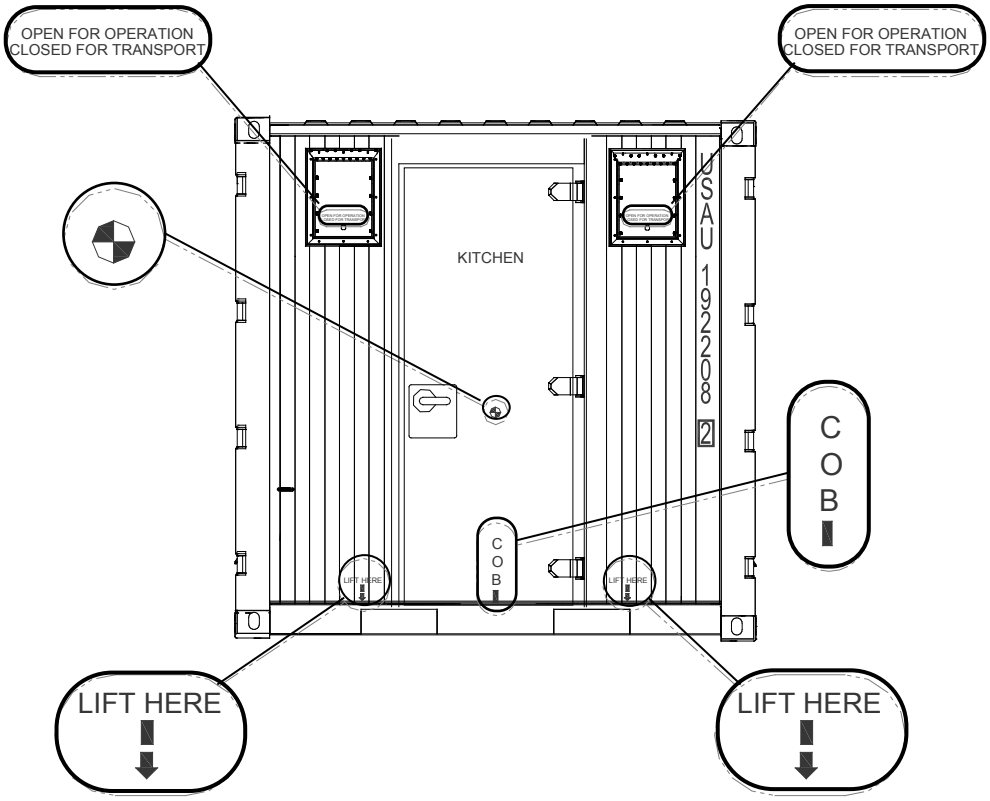


Figure 3. Exterior Right Stowed.

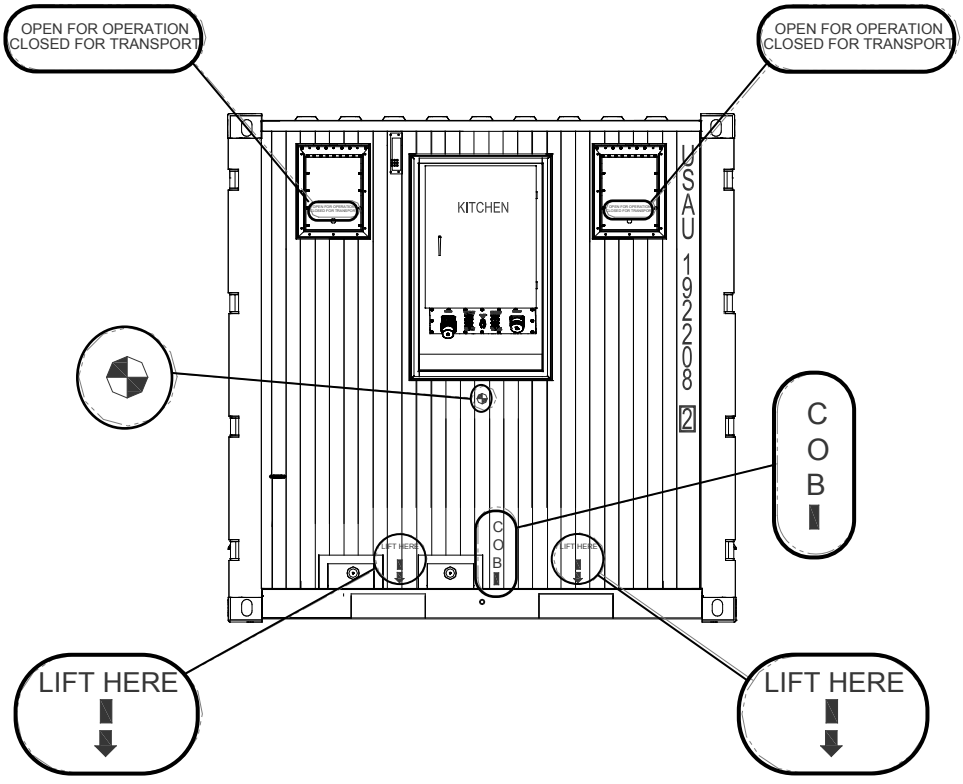


Figure 4. Exterior Left Stowed.

DECALS AND INSTRUCTION PLATES – CONTINUED

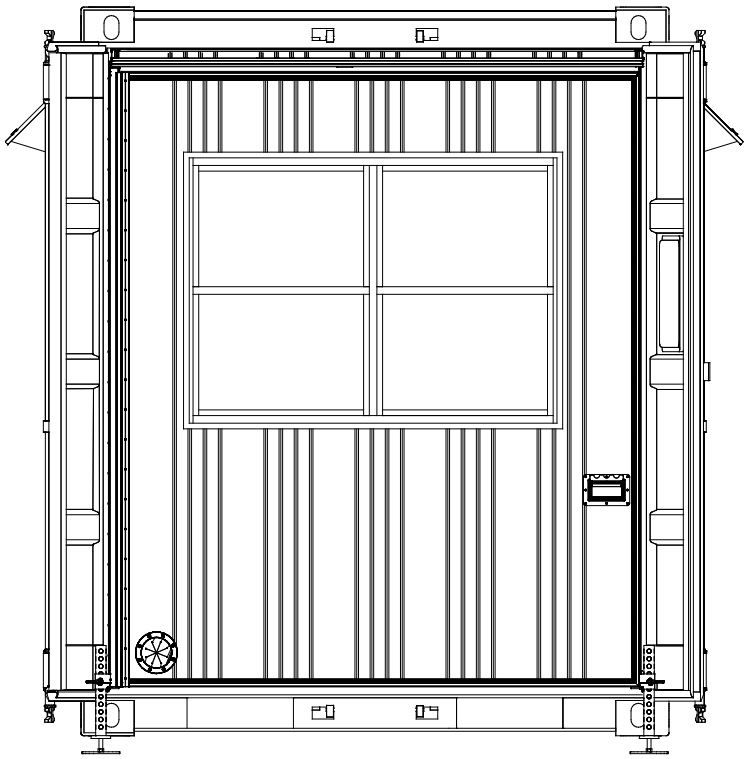


Figure 5. Exterior Front Deployed.

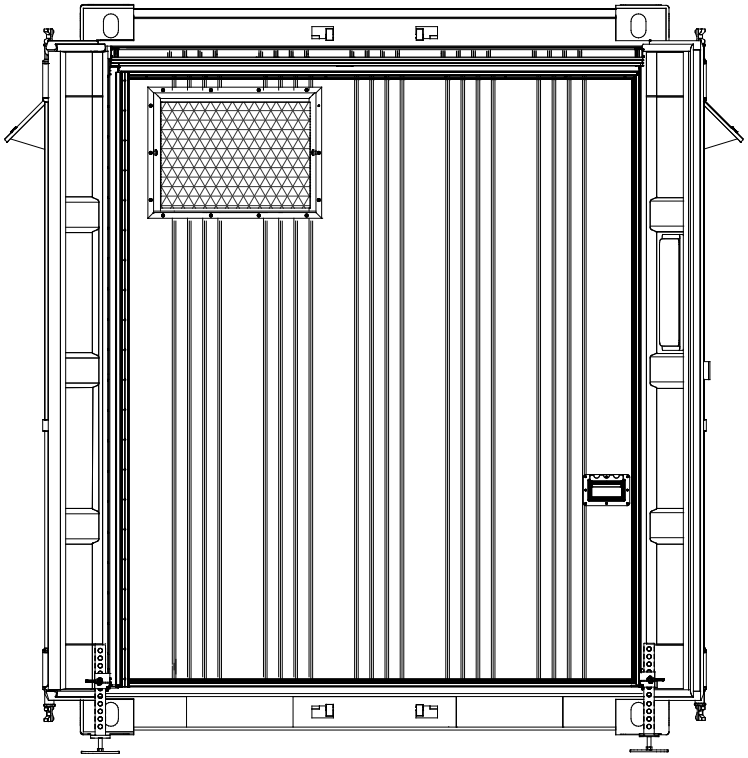


Figure 6. Exterior Rear Deployed.

DECALS AND INSTRUCTION PLATES – CONTINUED

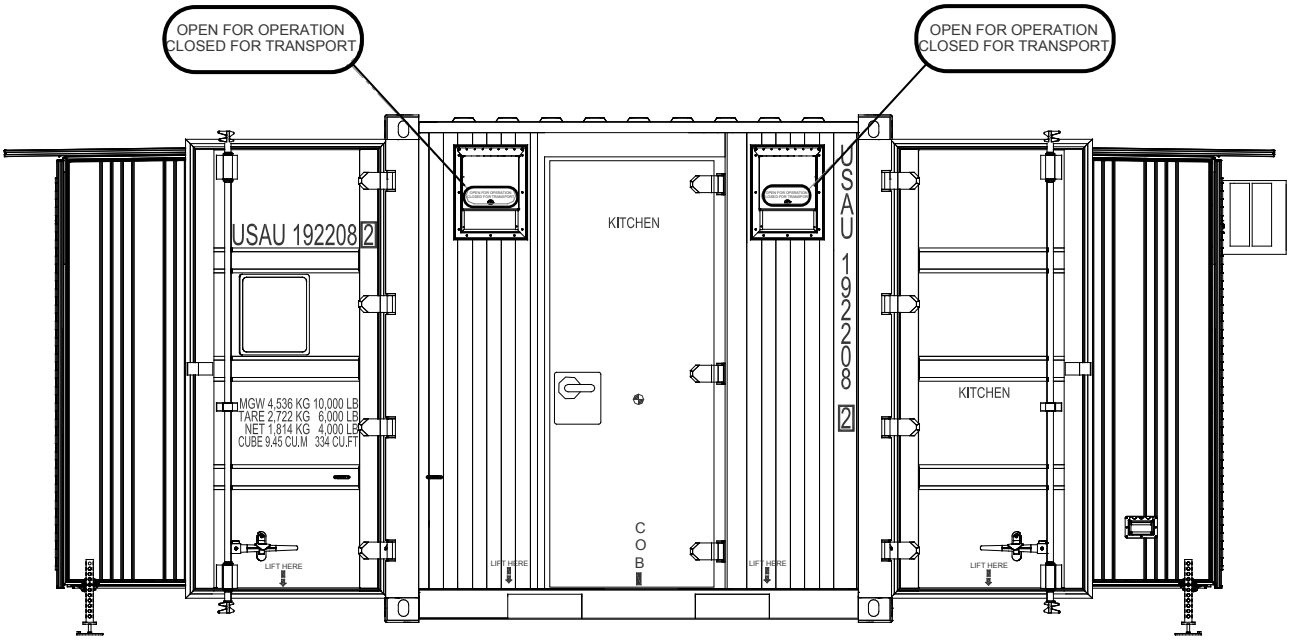


Figure 7. Exterior Right Deployed.

DECALS AND INSTRUCTION PLATES – CONTINUED

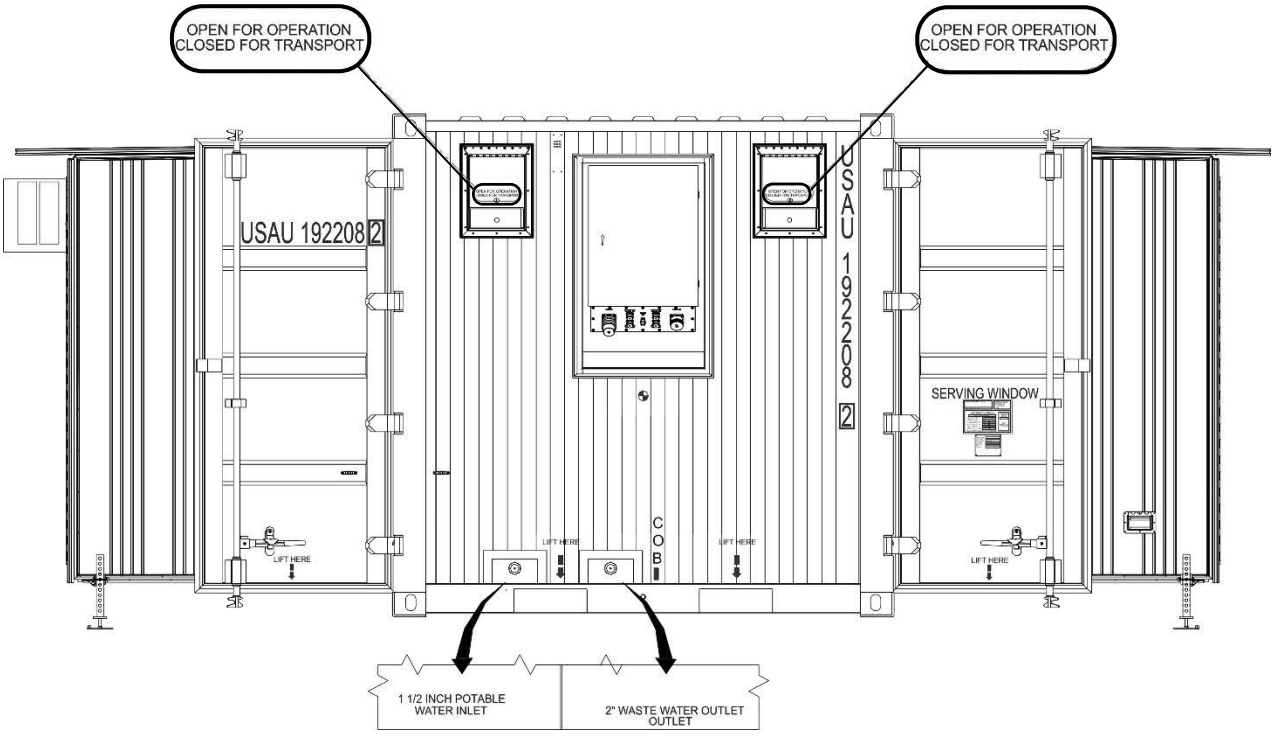


Figure 8. Exterior Left Deployed.

DECALS AND INSTRUCTION PLATES – CONTINUED

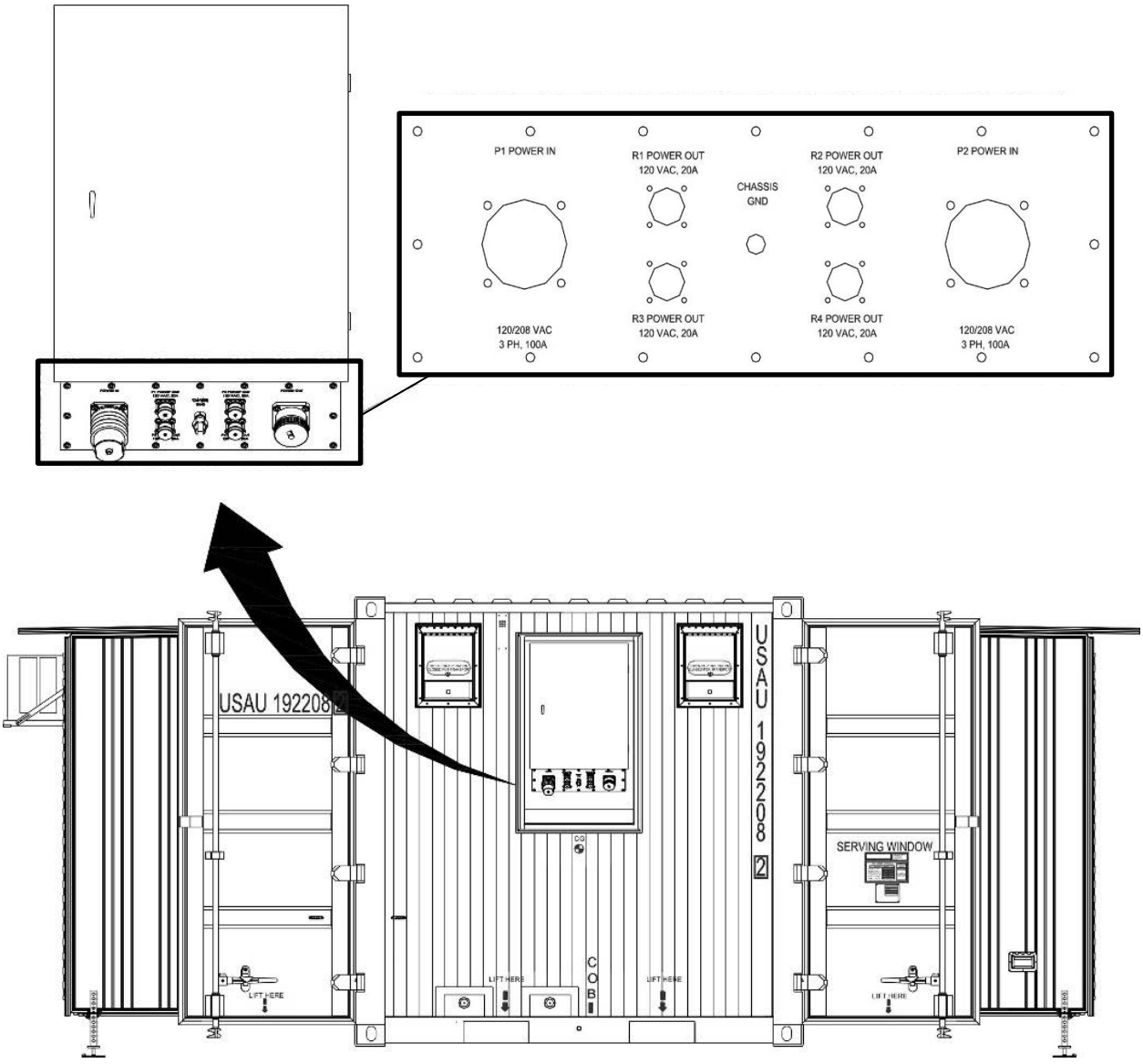


Figure 9. Power Distribution Panel.

DECALS AND INSTRUCTION PLATES – CONTINUED

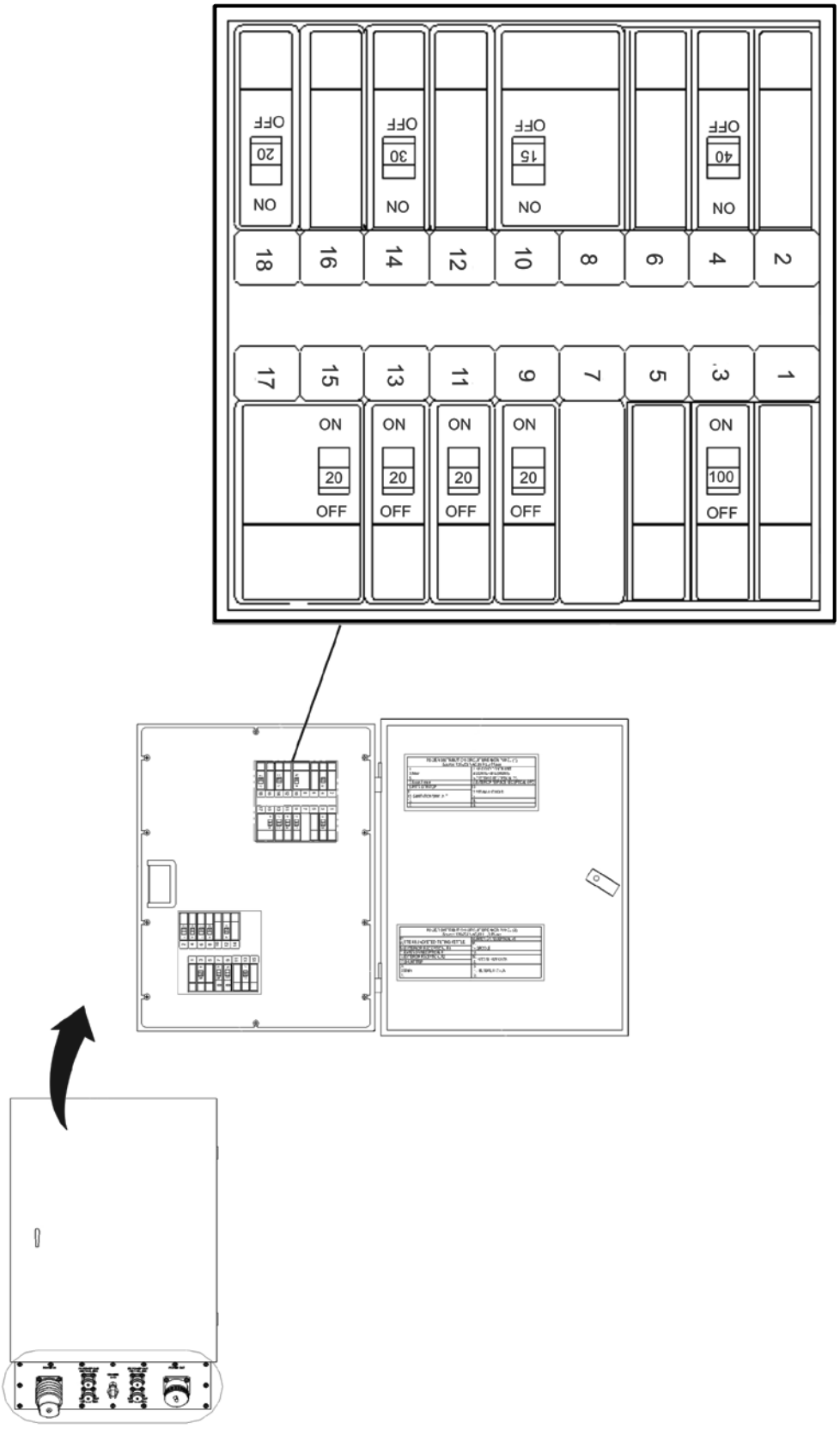


Figure 10. Power Distribution Circuit Breaker Panel (Sheet 1 of 3).

DECALS AND INSTRUCTION PLATES – CONTINUED

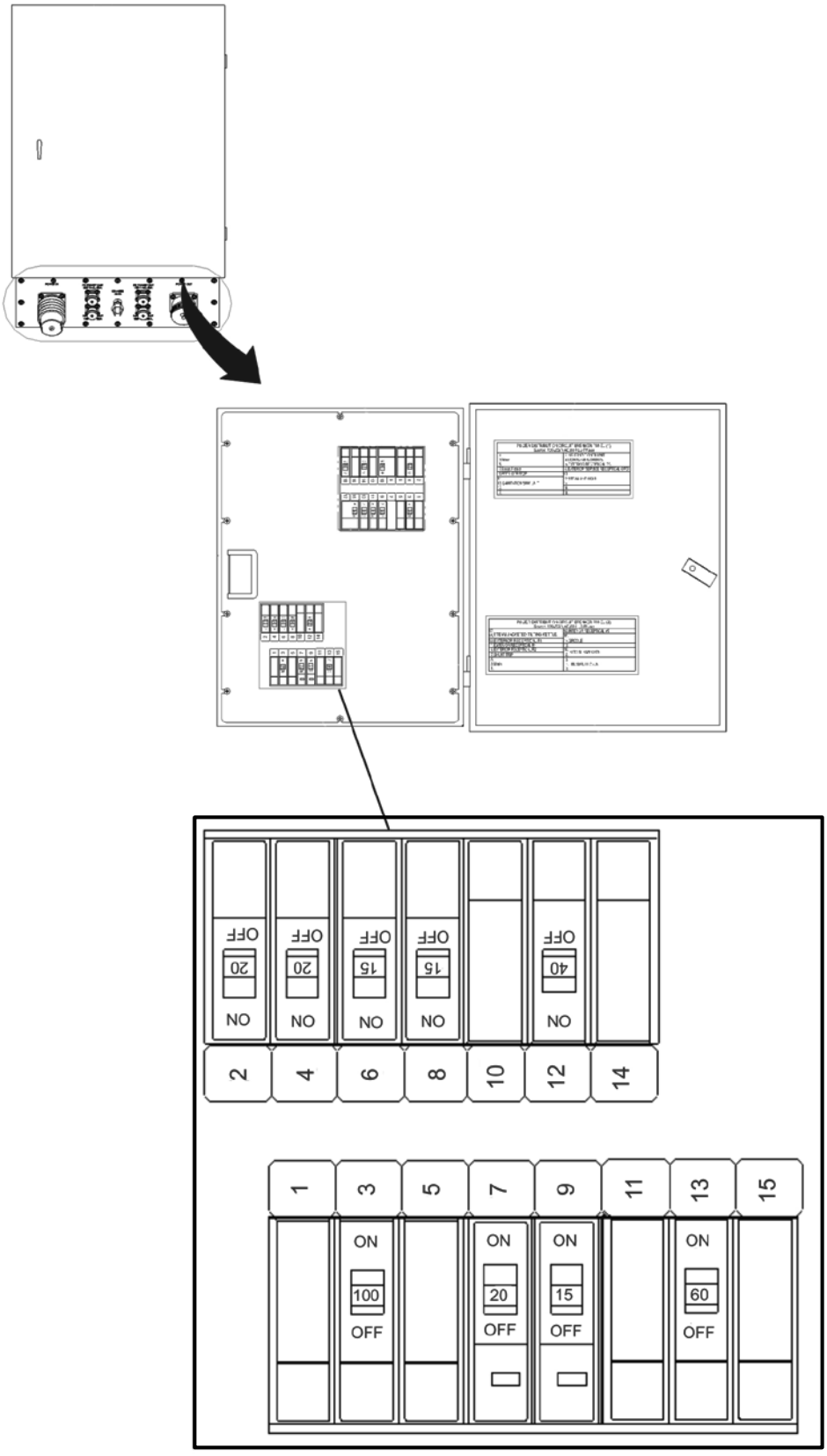


Figure 10. Power Distribution Circuit Breaker Panel (Sheet 2 of 3).

DECALS AND INSTRUCTION PLATES – CONTINUED

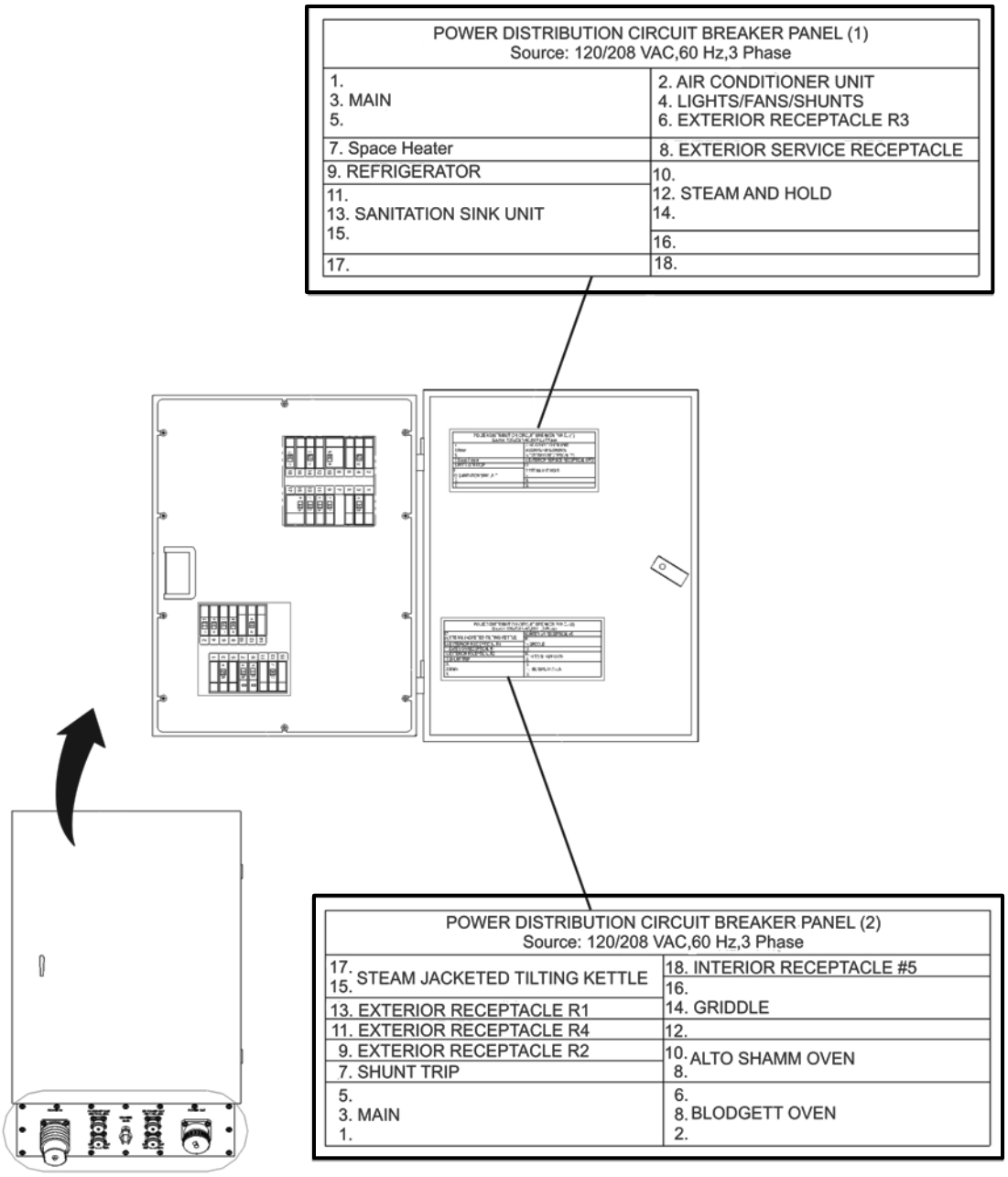


Figure 10. Power Distribution Circuit Breaker Panel (Sheet 3 of 3).

DECALS AND INSTRUCTION PLATES – CONTINUED

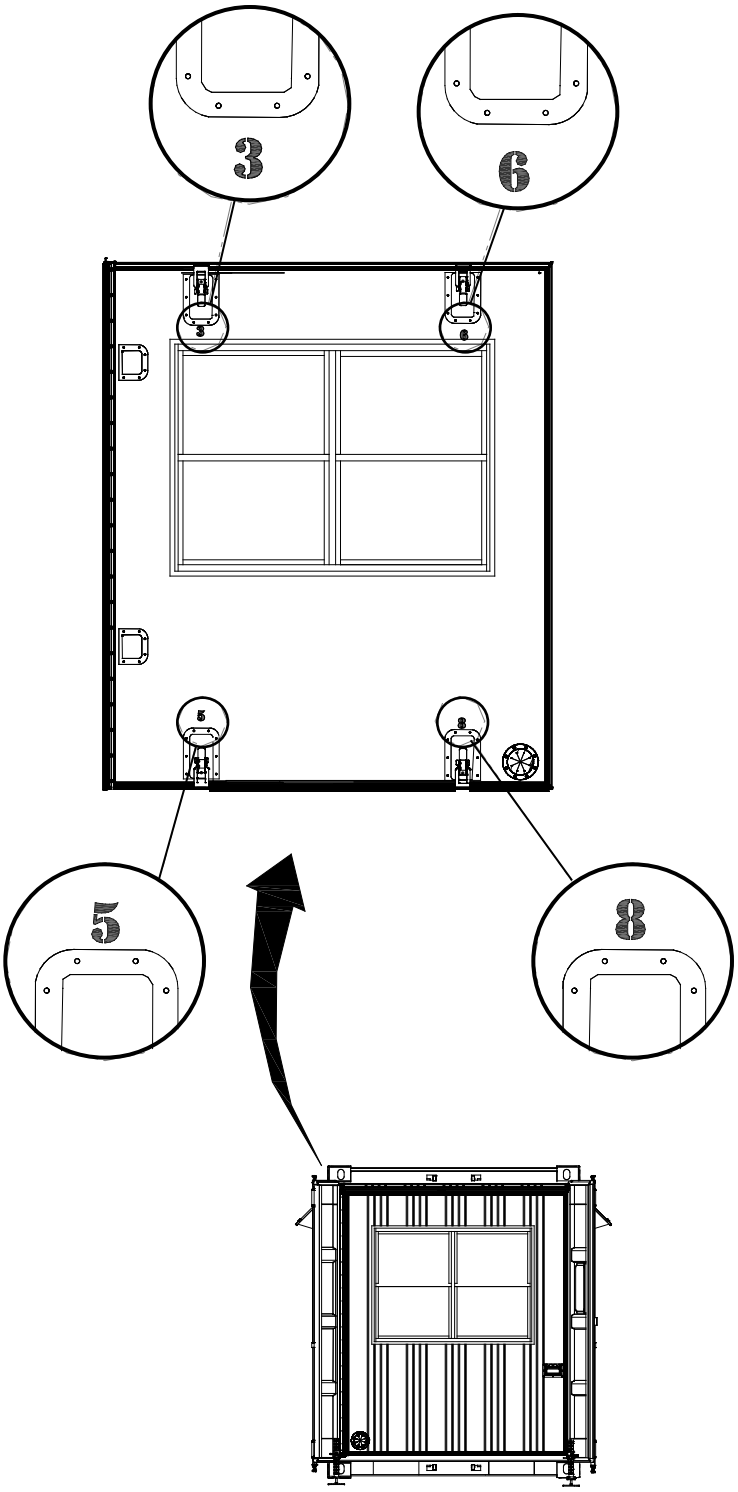


Figure 11. Interior Front Deployed.

DECALS AND INSTRUCTION PLATES – CONTINUED

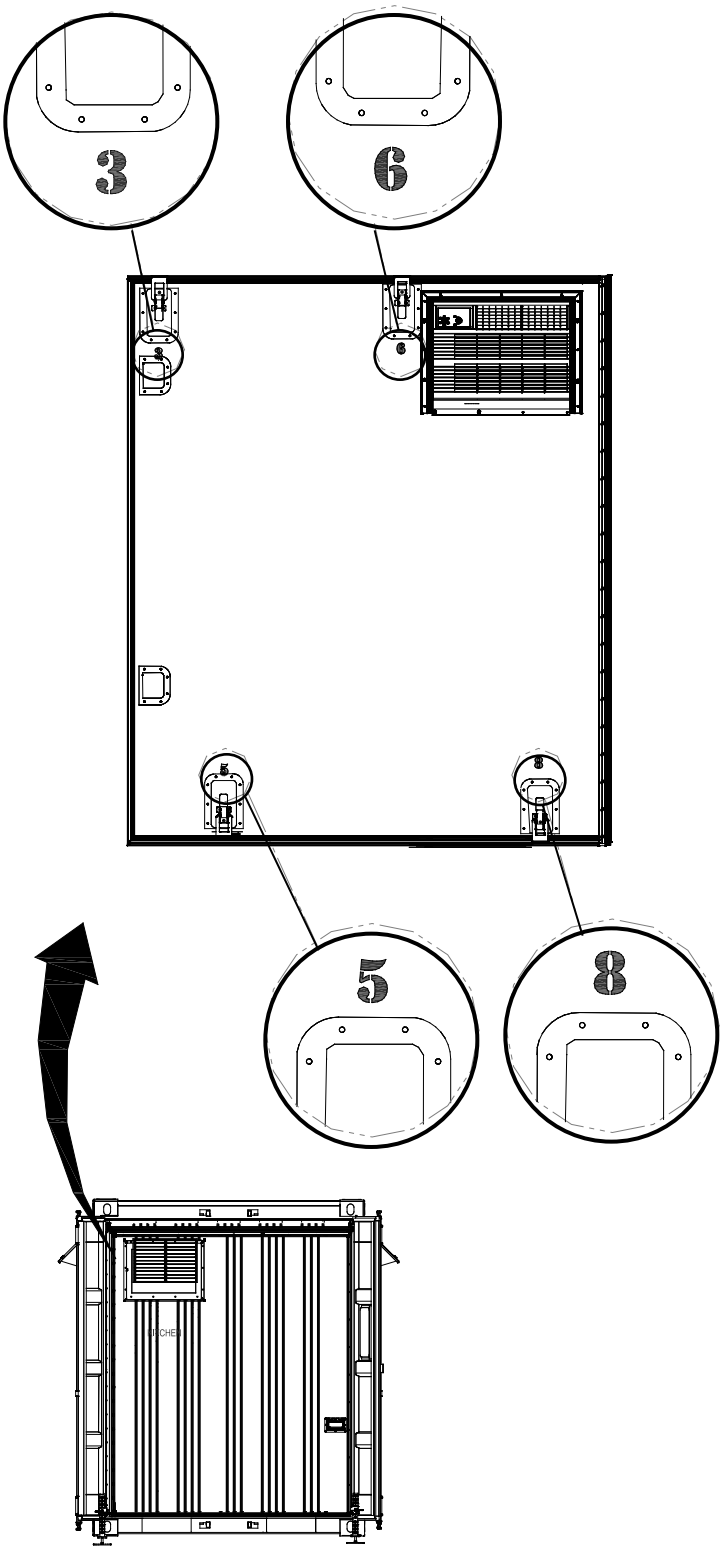


Figure 12. Interior Rear Deployed.

DECALS AND INSTRUCTION PLATES – CONTINUED

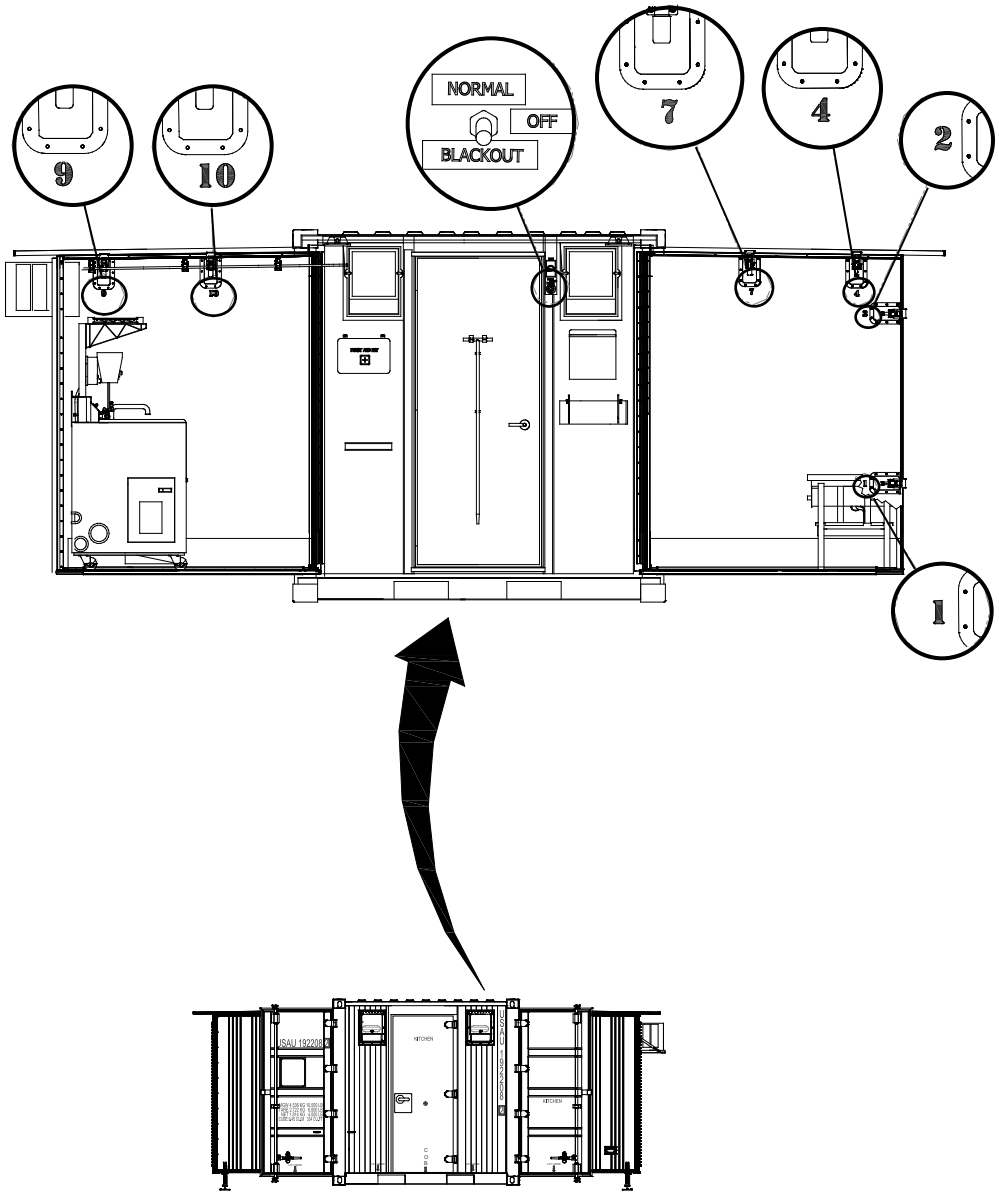


Figure 13. Interior Right Deployed.

DECALS AND INSTRUCTION PLATES – CONTINUED

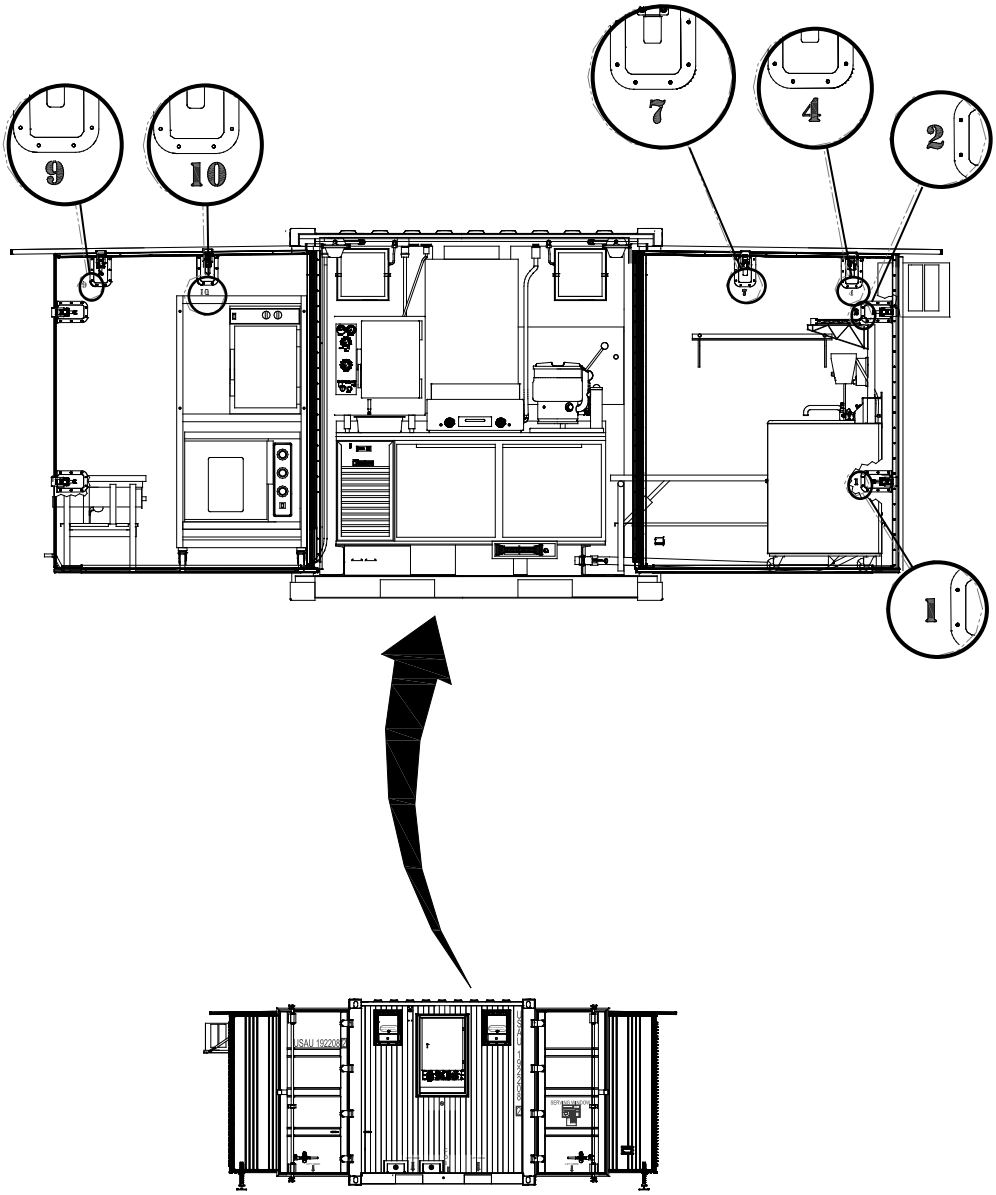


Figure 14. Interior Left Deployed.

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
PREPARATION FOR MOVEMENT – SHUTDOWN

INITIAL SETUP:

Tools and Special Tools

Compressor, Air, Diesel (WP 0072, Table 1)

Material/Parts

Pail, Utility (WP 0073, Item 10)
Rag, Wiping (WP 0073, Item 11)
Strap, Line Supporting (WP 0073, Item 16)

Personnel Required

92G Culinary Specialist (1)

References

WP 0017

Equipment Condition

Daily ETKS interior cleaning complete (WP 0040)
Sanitation sink removed (WP 0063)

PREPARATION FOR MOVEMENT – SHUTDOWN

NOTE

This work package will be used to prepare the Expeditionary TRICON Kitchen System (ETKS) for storage or shipment. Refer to WP 0017 to shut down the ETKS due to cold weather or any period of disuse.

1. If air conditioner (Figure 1, Item 1) is operating, press power button (Figure 1, Item 2) to turn it off.

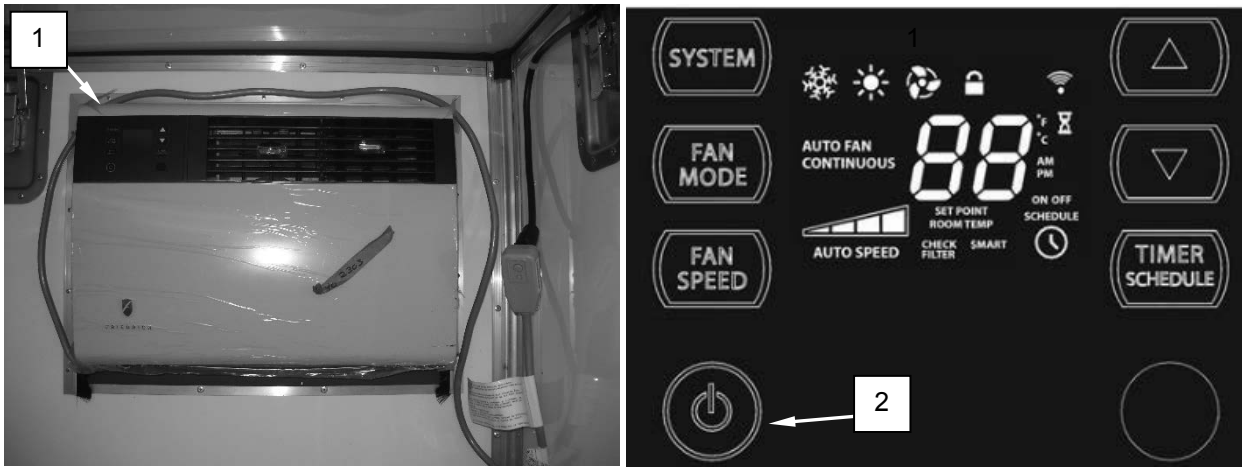


Figure 1. Air Conditioner Shutdown.

PREPARATION FOR MOVEMENT – SHUTDOWN – CONTINUED

2. If space heater (Figure 2, Item 1) is operating, rotate the output control knob (Figure 2, Item 2) fully counter-clockwise.

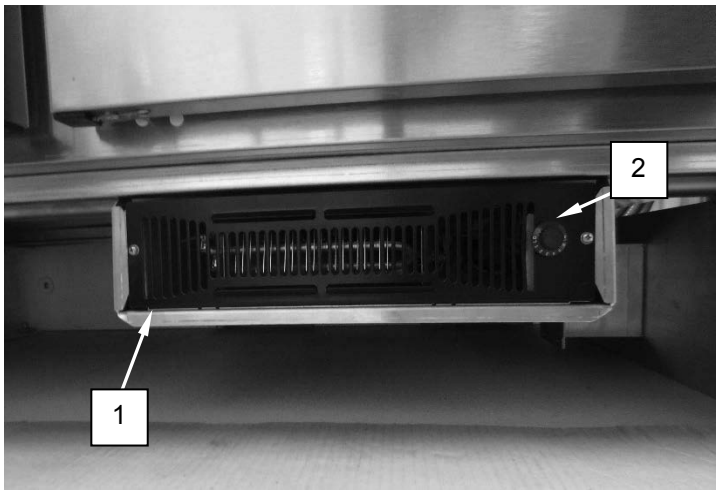


Figure 2. Space Heater Shutdown.

3. If protective gear rack (Figure 3, Item 3) was used, lift helmet hooks (Figure 3, Item 1) out of slots (Figure 3, Item 2) in rack and place in stowed position with hooks facing inward.

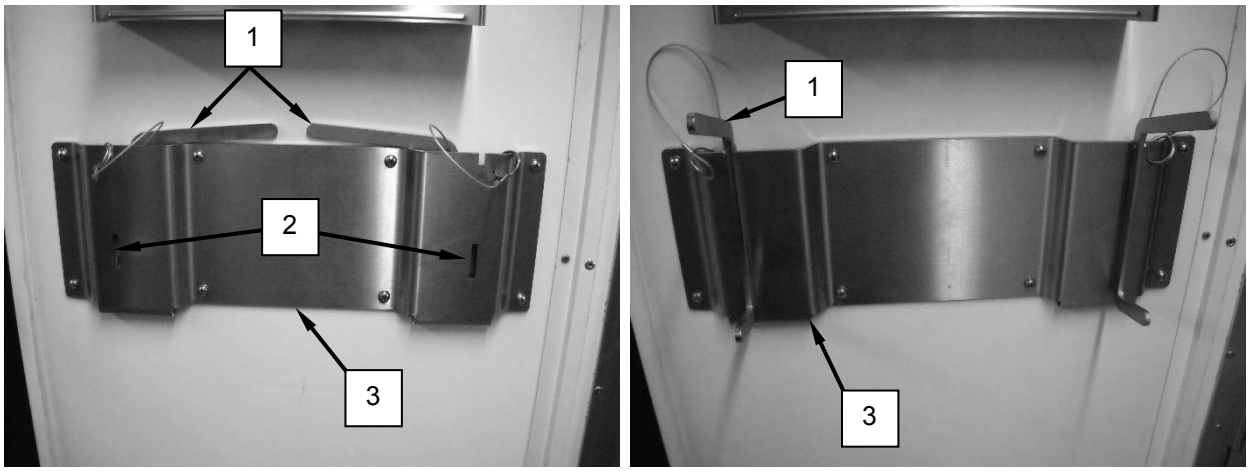


Figure 3. Protective Gear Rack Shutdown.

PREPARATION FOR MOVEMENT – SHUTDOWN – CONTINUED

4. If weapon rack (Figure 4, Item 2) was used, lift up on hook and loop strap (Figure 4, Item 1) to remove weapon.

5. Secure hook and loop strap (Figure 4, Item 1) to weapon rack (Figure 4, Item 2).

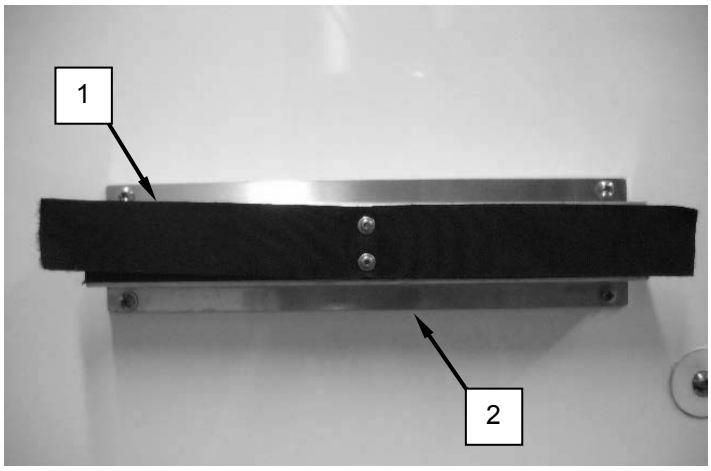


Figure 4. Weapon Rack Shutdown.

6. Position ventilation fan control knob (Figure 5, Item 1) to OFF. Verify fans (Figure 5, Item 2) turn off.

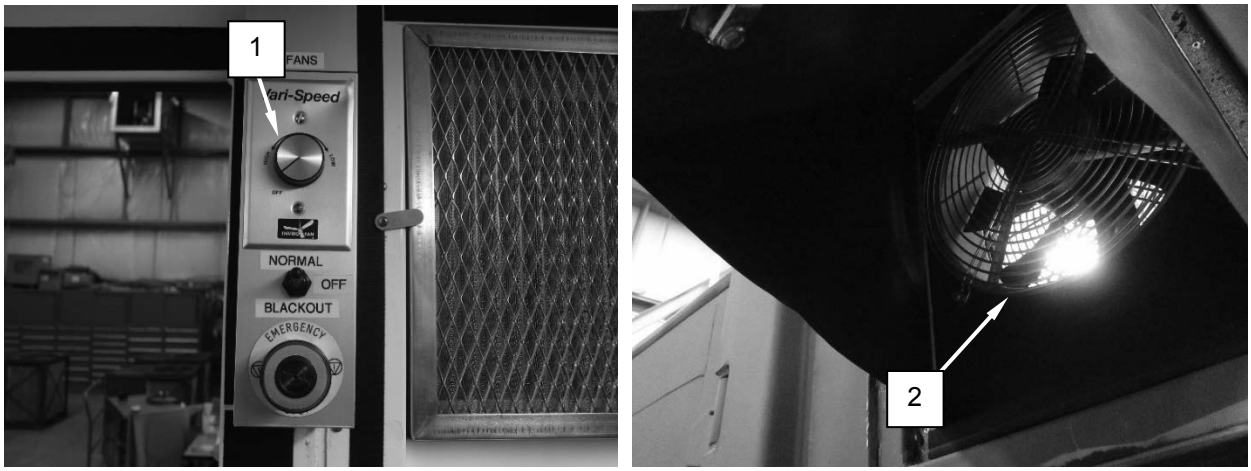


Figure 5. Turn Off Fans.

PREPARATION FOR MOVEMENT – SHUTDOWN – CONTINUED

7. Remove the waste drain hose (Figure 6, Item 1) from inside the right door.

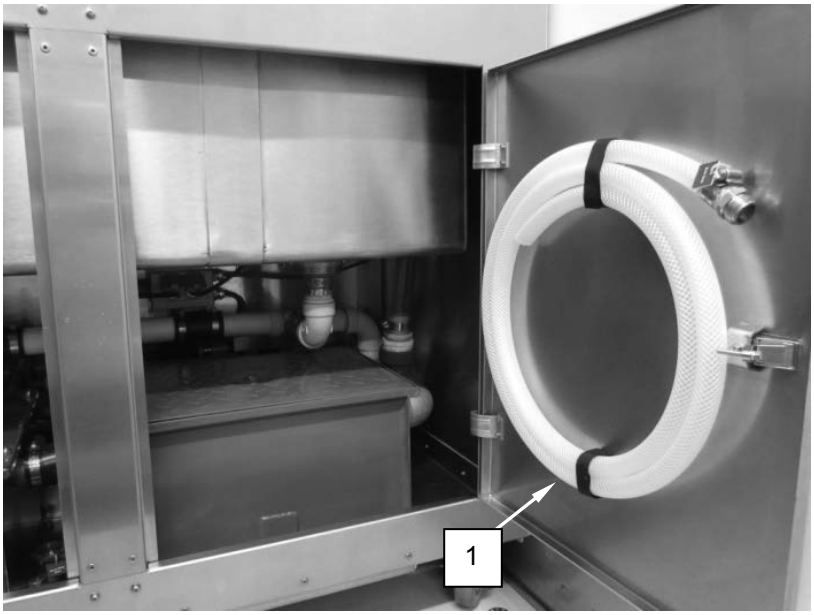


Figure 6. Waste Drain Hose.

8. Connect one end of the hose to the grease trap drain fitting (Figure 7, Item 2).
9. Rotate the grease trap drain valve (Figure 7, Item 4) counter-clockwise to open and drain the grease trap into a suitable container.
10. Disconnect the drain hose and connect it to the waste tank drain fitting (Figure 7, Item 1).
11. Open the waste tank drain valve (Figure 7, Item 3) and drain the tank into a suitable container.
12. Disconnect the drain hose and return it to its holder on the inside of the right door.
13. Close door to the sanitation sink.

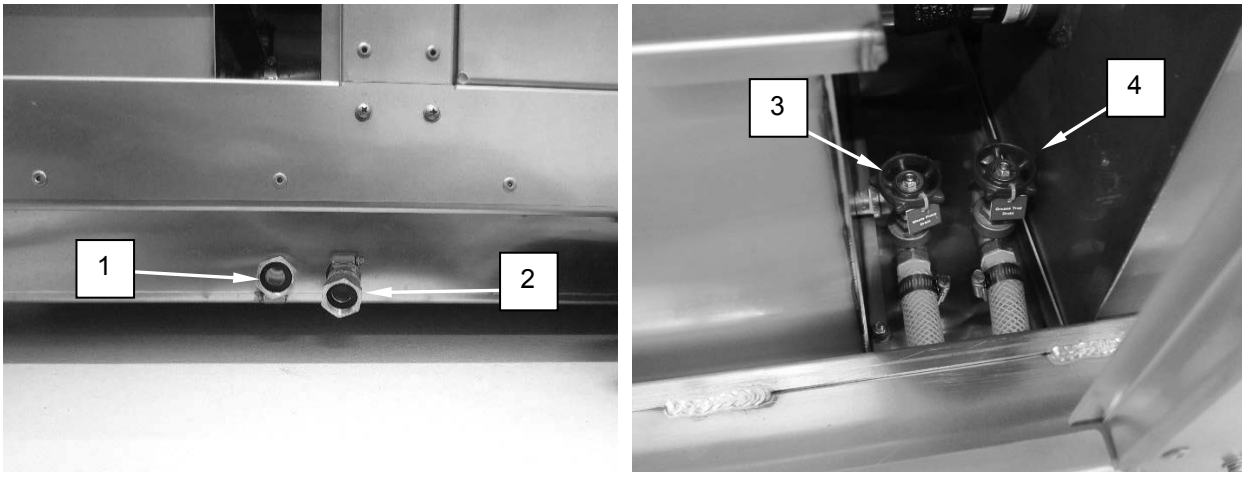


Figure 7. Drain Fittings and Valves.

PREPARATION FOR MOVEMENT – SHUTDOWN – CONTINUED

14. Place a suitable container under the transfer pump drain valve (Figure 8, Item 1).

15. Rotate transfer pump drain valve counter-clockwise until it stops turning to drain transfer pump.

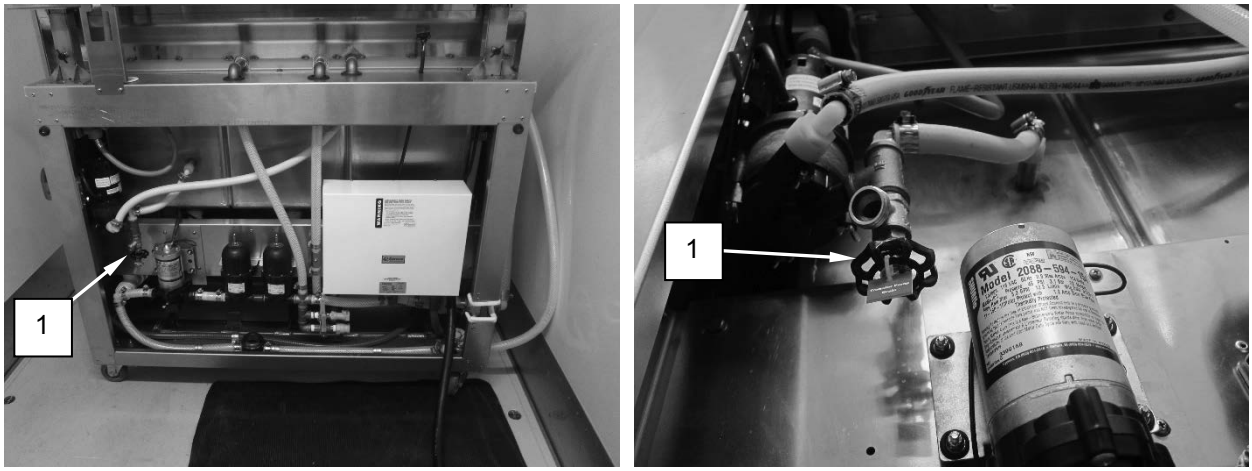


Figure 8. Open Transfer Pump Drain Valve.

16. Place a suitable container under the water heater drain valve opening (Figure 9, Item 1).

17. Rotate water heater drain valve (Figure 9, Item 2) down to open until no water comes out of valve.

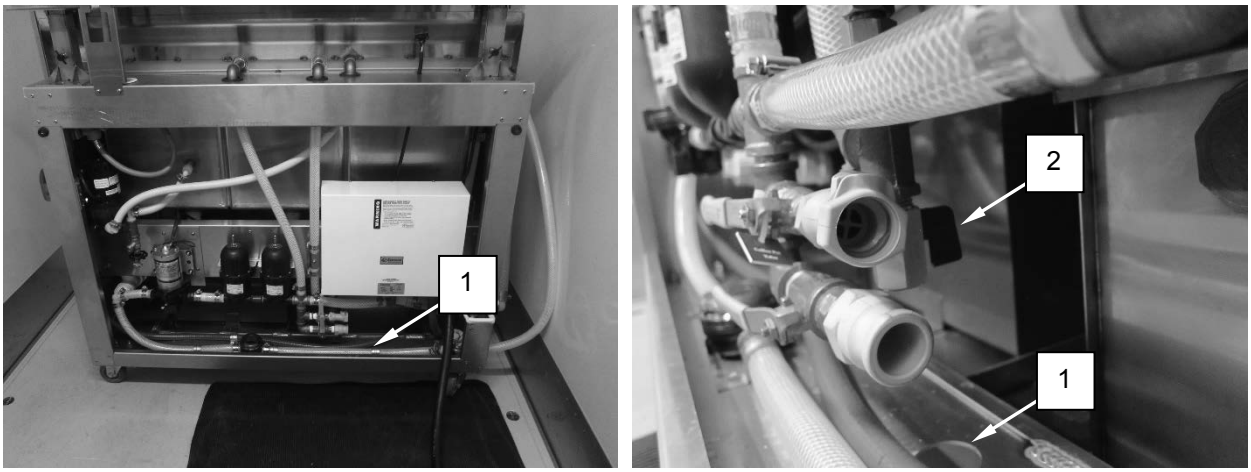


Figure 9. Open Water Heater Drain Valve.

PREPARATION FOR MOVEMENT – SHUTDOWN – CONTINUED

18. Rotate coffee pot valve (Figure 10, Item 1) to the left (horizontal position) to open.

19. Verify ancillary supply valve (Figure 10, Item 2) is closed (vertical position).

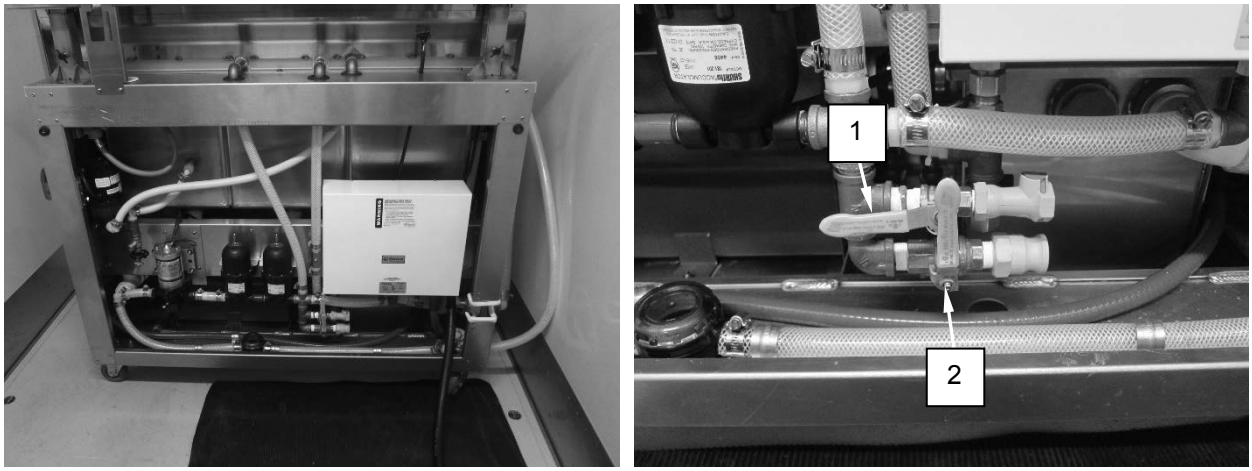


Figure 10. Open Coffee Pot Valve.

20. Remove wire tie (Figure 11, Item 1) securing adapter hose (Figure 11, Item 2) to sanitation sink supply hose.

21. Install adapter hose into coffee pot fitting (Figure 11, Item 3).

22. Apply compressed air at 30 psi through the adapter hose until no water flows from the water heater drain valve (Figure 11, Item 4).

23. Rotate water heater drain valve (Figure 9, Item 2) to close the valve.

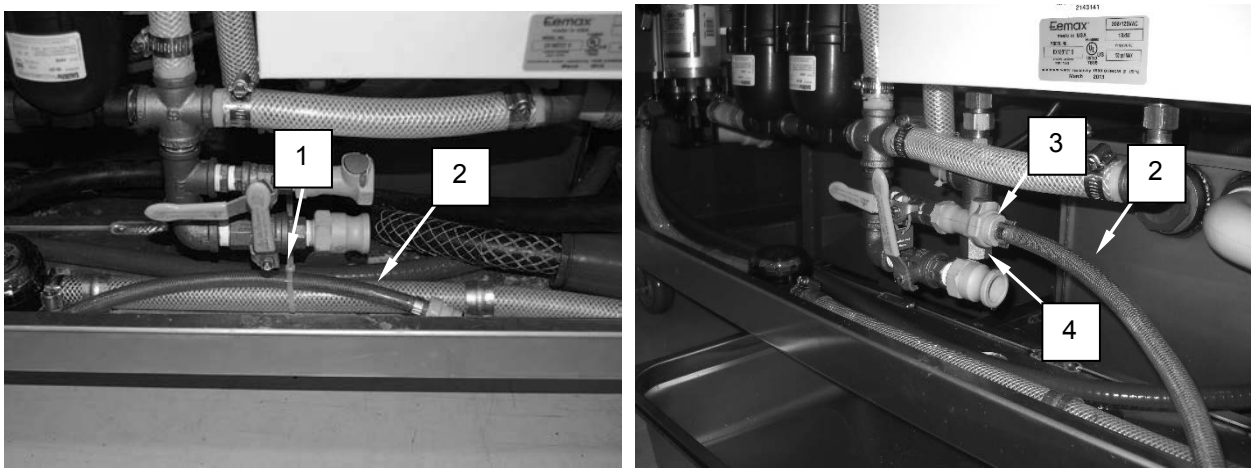


Figure 11. Install Adapter Hose.

PREPARATION FOR MOVEMENT – SHUTDOWN – CONTINUED

24. Rotate cold water valve (Figure 12, Item 3) clockwise until it stops turning.
25. Apply compressed air at 30 psi through the adapter hose until no water flows from gooseneck (Figure 12, Item 1).
26. Rotate cold water valve (Figure 12, Item 3) fully counter-clockwise until it stops turning.
27. Rotate hot water valve (Figure 12, Item 2) counter-clockwise until it stops turning.
28. Apply compressed air at 30 psi through the adapter hose until no water flows from gooseneck (Figure 12, Item 1).
29. Rotate hot water valve clockwise until it stops turning.

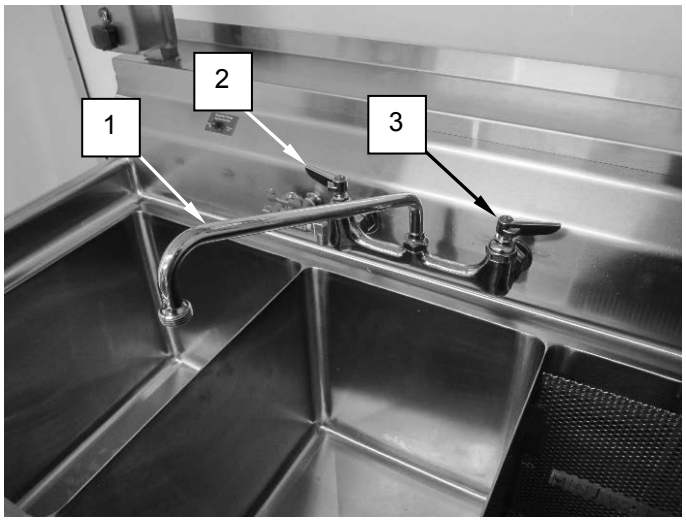


Figure 12. Open Faucet Valves.

30. Open (horizontal position) ancillary supply valve (Figure 13, Item 1).
31. Apply compressed air at 30 psi through the adapter hose until no water flows from ancillary supply valve.
32. Disconnect adapter hose (Figure 13, Item 3) from coffee pot fitting (Figure 13, Item 2).
33. Secure adapter hose to sink water hose with wire tie (Figure 13, Item 4).

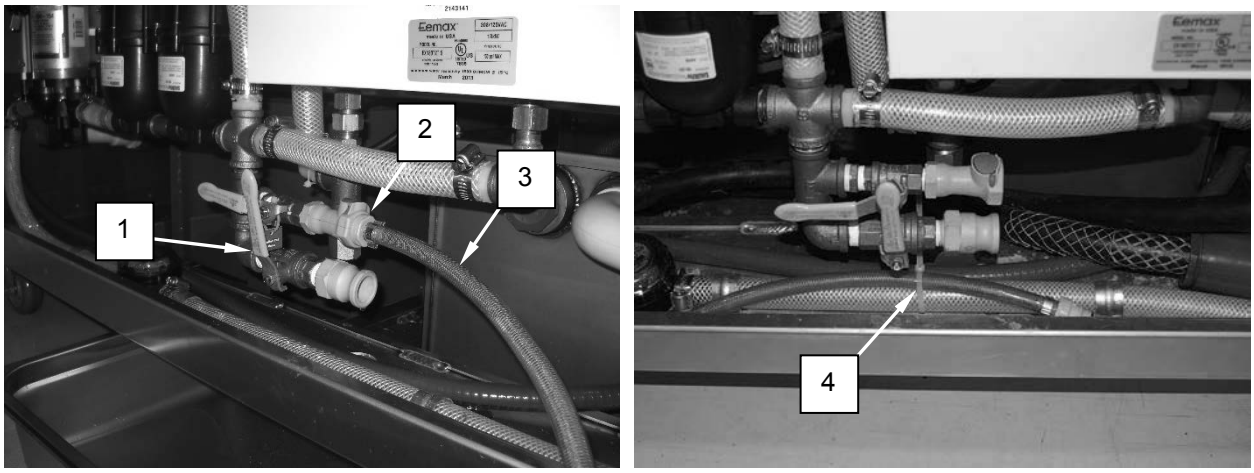


Figure 13. Disconnect Adapter Hose.

PREPARATION FOR MOVEMENT – SHUTDOWN – CONTINUED

34. Rotate hot water valve (Figure 14, Item 1) counter-clockwise until it stops turning.

35. Rotate cold water valve (Figure 14, Item 2) clockwise until it stops turning.

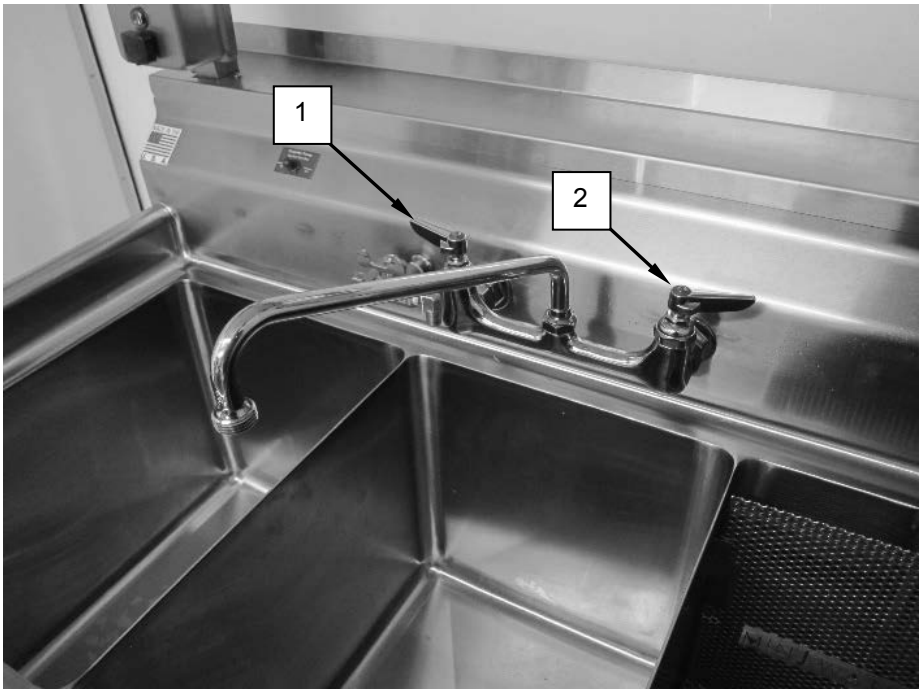


Figure 14. Open Faucet Water Valves.

36. Rotate water heater drain valve (Figure 15, Item 1) down.

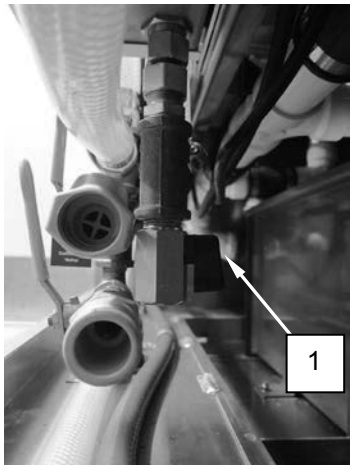


Figure 15. Open Water Heater Drain Valve.

37. Wipe up all residual water.

PREPARATION FOR MOVEMENT – SHUTDOWN – CONTINUED

38. Position light switch (Figure 16, Item 1) to OFF. Verify lights (Figure 16, Item 2) turn off.

Figure 16. Turn Lights Off.

39. Open circuit breaker panel door (Figure 17, Item 1).

40. Position all circuit breakers (Figure 17, Item 2) to OFF.

41. Close and secure circuit breaker panel door.

42. Turn off ETKS source power.

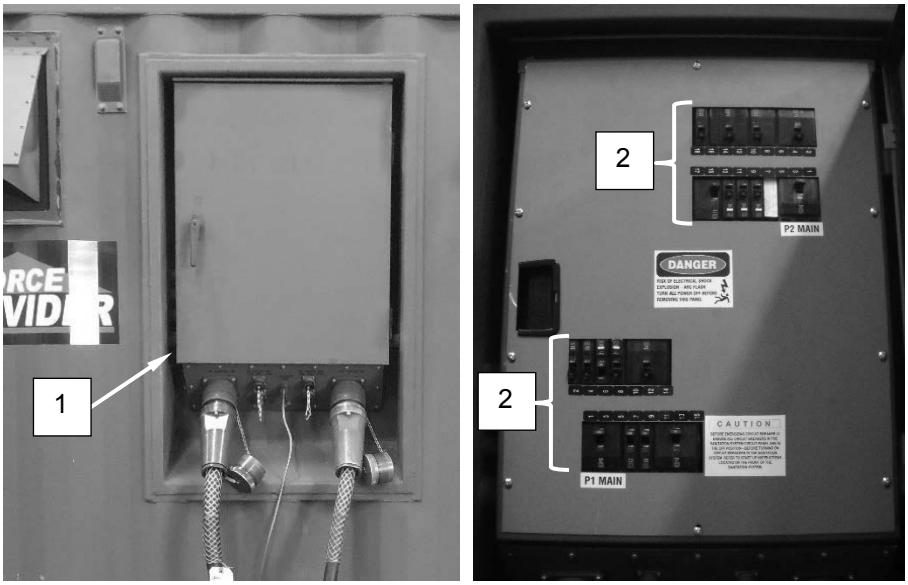


Figure 17.Turn Off Circuit Breakers.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
PREPARATION FOR MOVEMENT – TAKE DOWN ETKS

INITIAL SETUP:

Material/Parts

Gloves, Disposable (WP 0073, Item 6)
Pail, Utility (WP 0073, Item 10)
Sodium Hypochlorite Solution (WP 0073, Item 14)
Strap, Line Supporting (WP 0073, Item 16)

Personnel Required

92G Culinary Specialist (1)
MOS Non-Specific (3)

References

TM 10-5430-237-12&P

Equipment Condition

Daily ETKS interior cleaning complete (WP 0040)
Sanitation sink removed (WP 0063)
Preparation for Movement – Shutdown complete (WP 0019)

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS

Take Down ETKS Exterior

WARNING

High voltage is used in the Expeditionary TRICON Kitchen System (ETKS). Ensure source power has been turned off when disconnecting power cables from source power. Failure to heed this warning can cause serious injury or death to personnel. Seek immediate attention if any injury occurs.

1. Disconnect the power cables from source power.
2. Disconnect ground wire (Figure 1, Item 6) from ground lug (Figure 1, Item 2) and grounding rod.
3. Disconnect power cable dust covers (Figure 1, Item 5) from receptacle dust covers (Figure 1, Item 4).
4. Disconnect power cables (Figure 1, Item 3) from the input receptacles (Figure 1, Item 1).
5. Install dust covers to power cables.
6. Install dust covers to receptacles.
7. Coil power cables and secure with wire ties for packout.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

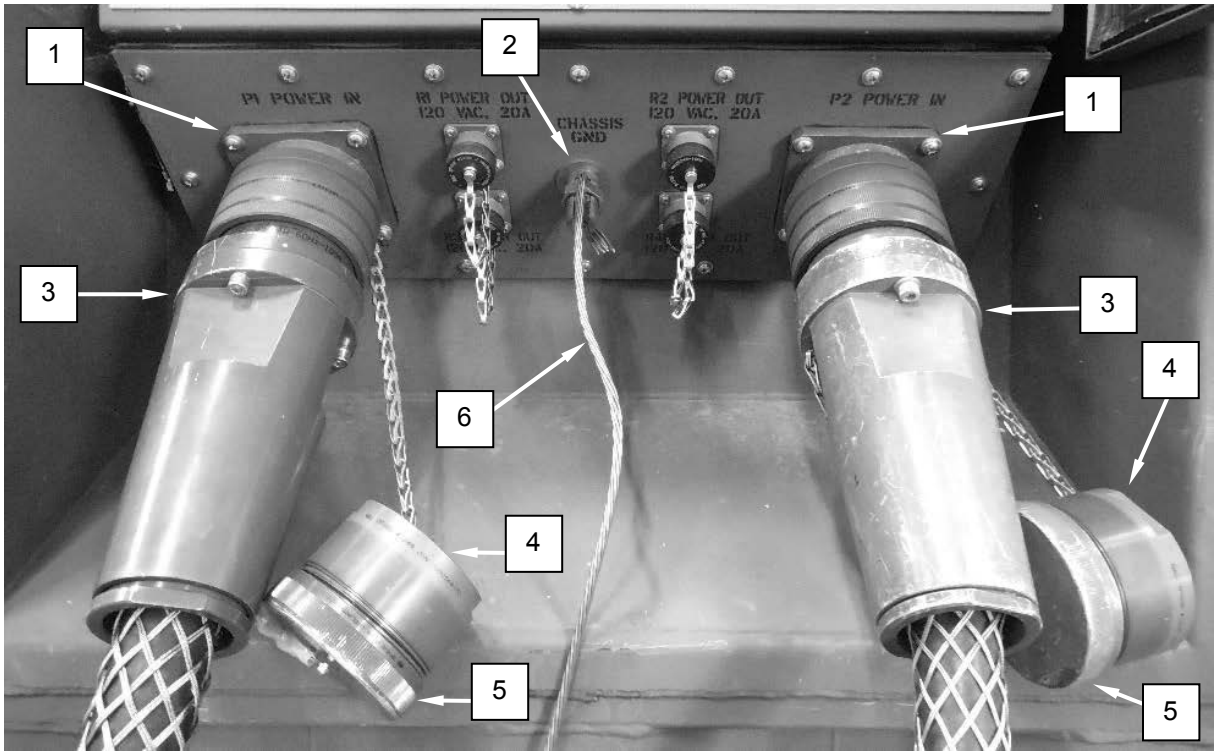


Figure 1. Power Cable and Receptacle.

WARNING

Kitchen operations generate bio-hazardous waste inside the Expeditionary TRICON Kitchen System (ETKS) and in the wastewater traveling through and into the waste/drain hoses, sanitation sink, and wastewater bag. The interior of the ETKS must be sanitized prior to preparing the unit for transport. The waste hoses and WASTE water bag must be flushed and sanitized before these items can be packed inside the ETKS. When handling waste system components personnel must wear disposable gloves for protection. Failure to follow this warning may result in serious illness or death. Seek immediate medical attention if injury occurs.

CAUTION

The water and waste systems of the ETKS including the hoses and water bags must be completely drained prior to preparing the ETKS for transport. Failure to follow this precaution may cause water to be trapped inside the ETKS components, plumbing, or ancillary equipment resulting in freeze damage.

8. Disconnect 25-foot waste hose (Figure 2, Item 1) from ETKS wastewater port (Figure 2, Item 2) and WASTE water bag (Figure 3, Item 1).

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

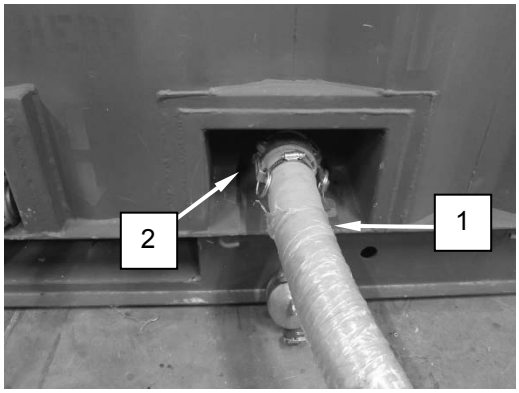


Figure 2. Disconnect Wastewater Hose.

9. Lift up on one end of hose (Figure 3, Item 4) and verify hose is completely drained.
10. Mix a solution of 1 cup bleach per gallon of water and pour solution through hose to sanitize.
11. Lift up on one end of hose and verify hose is completely drained.
12. Install dust covers (Figure 3, Item 3) on each end of hose.
13. Roll hose up as tight as possible and secure with wire ties for packout of ETKS (Figure 3, Item 2).
14. Sanitize, drain, and pack WASTE water bag (Figure 3, Item 1) for transport IAW TM 10-5430-237-12&P.

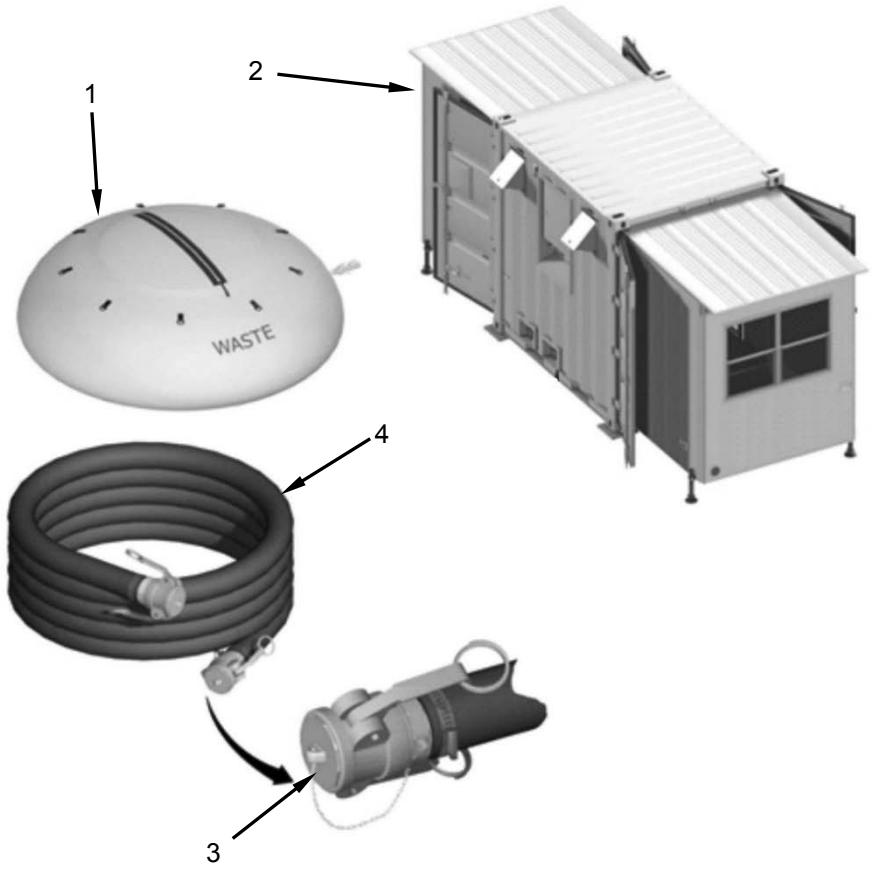


Figure 3. Waste Collection Takedown.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

NOTE

Residual water will be present in wastewater lines. If water is still present at waste port, wait until all water has finished draining from wastewater lines before installing cover to port.

15. Install dust cover (Figure 4, Item 2) onto ETKS waste port (Figure 4, Item 1).

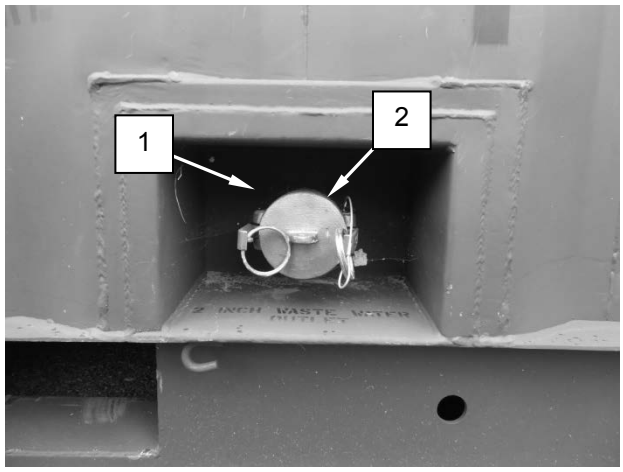


Figure 4. Install Dust cover.

16. Disconnect 25-foot source water hose (Figure 5, Item 2) from ETKS water supply port (Figure 5, Item 1) and SOURCE water bag (Figure 6, Item 1).

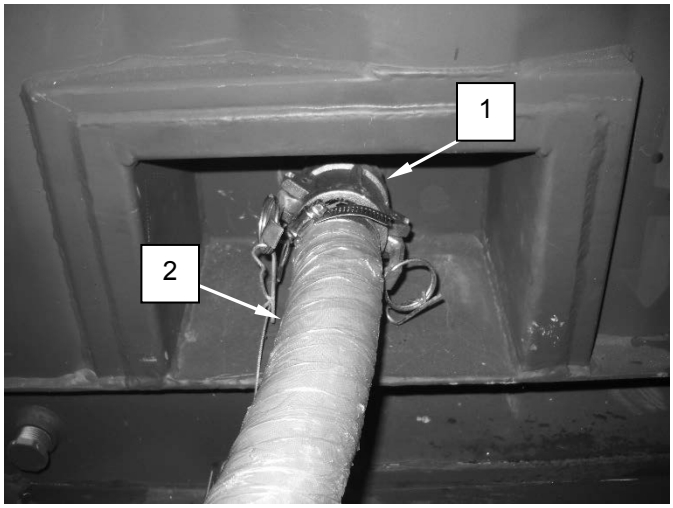


Figure 5. Disconnect Source Water Hose.

17. Lift up on one end of hose (Figure 6, Item 6) and verify hose is completely drained.
18. Mix a solution of 1 cup bleach per gallon of water and pour solution through hose to sanitize.
19. Lift up on one end of hose and verify hose is completely drained.
20. Install dust covers (Figure 6, Item 5) on each end of hose.
21. Roll hose up as tight as possible and secure with wire ties for packout of ETKS (Figure 6, item 3).

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

NOTE

Residual water will be present in source water lines. If water is still present at potable water port, wait until all water has finished draining from source water lines before installing cover to port.

22. Install dust cover (Figure 6, Item 5) onto ETKS potable water port (Figure 6, Item 4).

23. Disconnect adapter (Figure 6, Item 2) from SOURCE water bag shutoff valve (Figure 6, Item 1).

24. Sanitize, drain, and pack SOURCE water bag (Figure 6, Item 7) for transport IAW TM 10-5430-237-12&P.

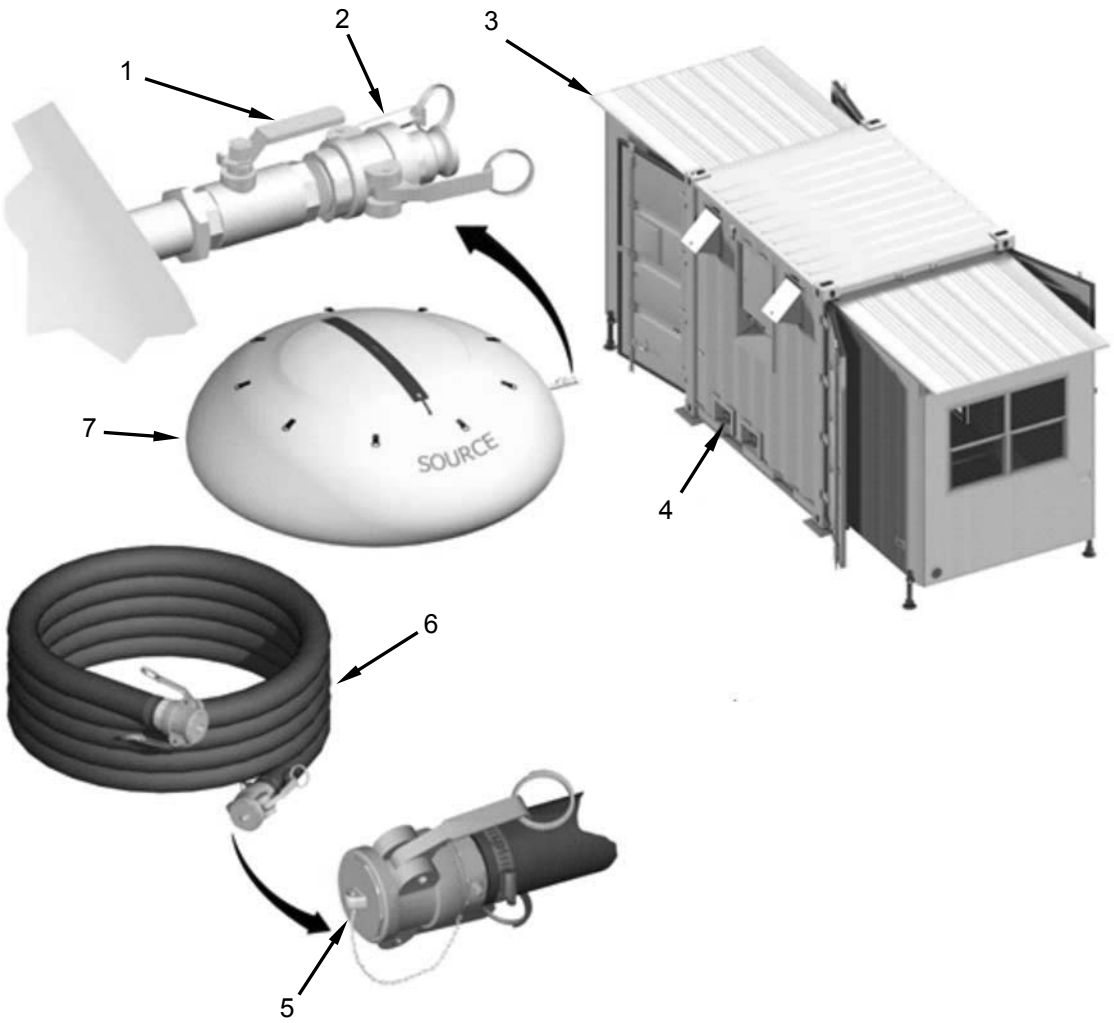


Figure 6. Water Supply Takedown.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

25. At each of the four vent covers (Figure 7, Item 2) push in on vent cover and rotate latch (Figure 7, Item 3) ¼-turn to lock cover in closed position.

26. Slide catch (Figure 7, Item 6) outward and unfold handle (Figure 7, Item 7) on tie down straps (Figure 7 Item 5) to release strap tension.

27. Unfasten tie down strap from handle (Figure 7, Item 8) next to locking bar (Figure 7, item 4) and handle on opposite door (Figure 7, Item 1).

28. Pull tie down strap (Figure 7, Item 5) out from under the expanded wing (Figure 7, Item 9).

29. Repeat steps 27 through 29 to remove tie down strap from opposite end of ETKS.

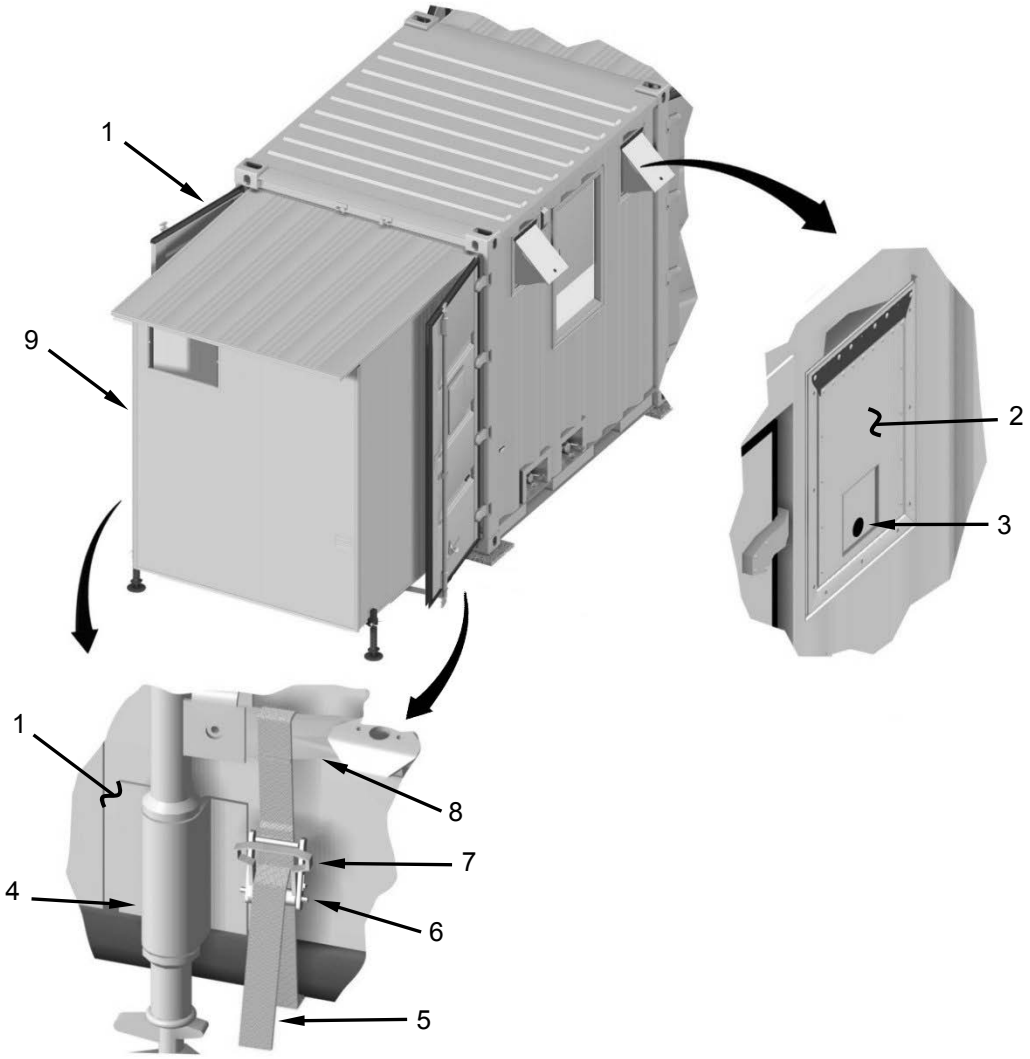


Figure 7. Exterior Takedown.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

Take Down ETKS Center Area

1. Remove and store all kitchen utensils and loose cooking items.
2. Remove first aid kit (Figure 8, Item 1) from two mounts (Figure 8, Item 2) on wall and set aside for packout.
3. Remove knife rack (Figure 8, Item 4) from two mounts (Figure 8, Item 3) on wall and set aside for packout.

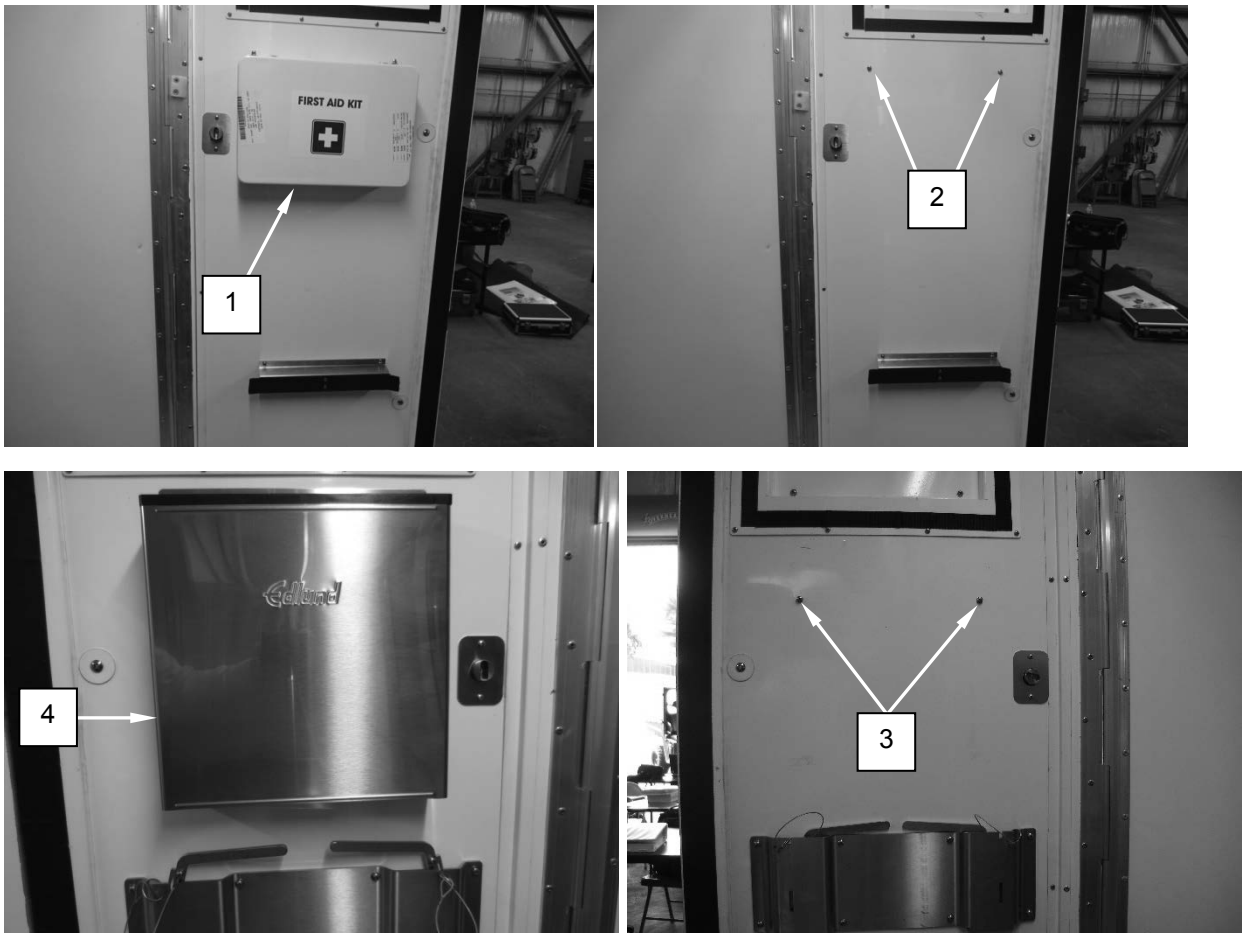


Figure 8. Remove First Aid Kit and Knife Rack.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

4. Remove two floor mats (Figure 9, Items 1 and 2) from expanded wing sections and roll up as tight as possible. Set floor mats aside for packout.

5. Remove floor mat (Figure 9, Item 3) from kitchen center area and set aside for packout.

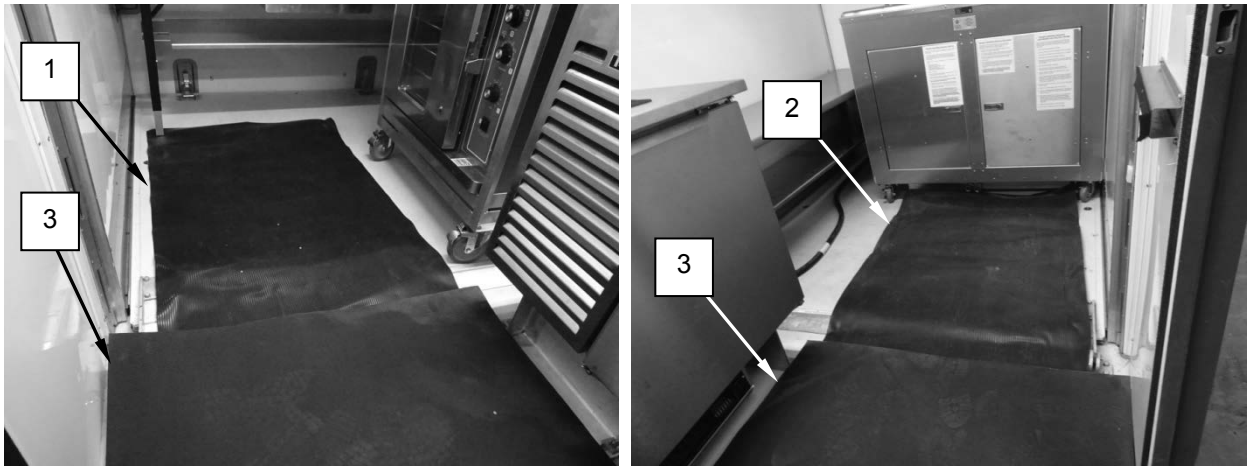


Figure 9. Remove Floor Mats.

6. Remove three piece griddle splash guard (Figure 10, Item 4) and set aside for packout.

7. Unplug griddle power cable (Figure 10, Item 1).

8. Remove griddle power cable from hook and loop straps (Figure 10, Item 2) and store behind steam kettle (Figure 10, Item 3).

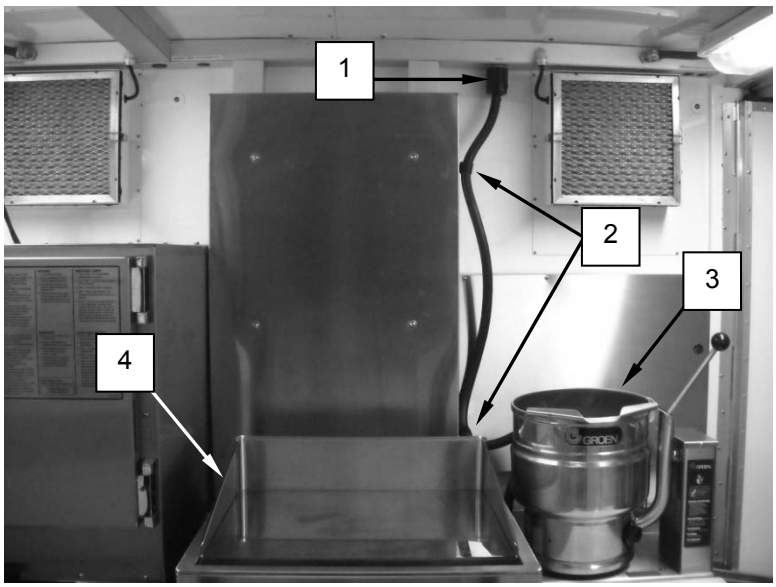


Figure 10. Griddle Disconnect.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

9. Open refrigerator doors (Figure 11, Item 1).
10. Remove two upper shelves (Figure 11, Item 2) from refrigerator.
11. Remove two lower shelves (Figure 11, Item 3) from refrigerator.
12. Set shelves aside for packout.

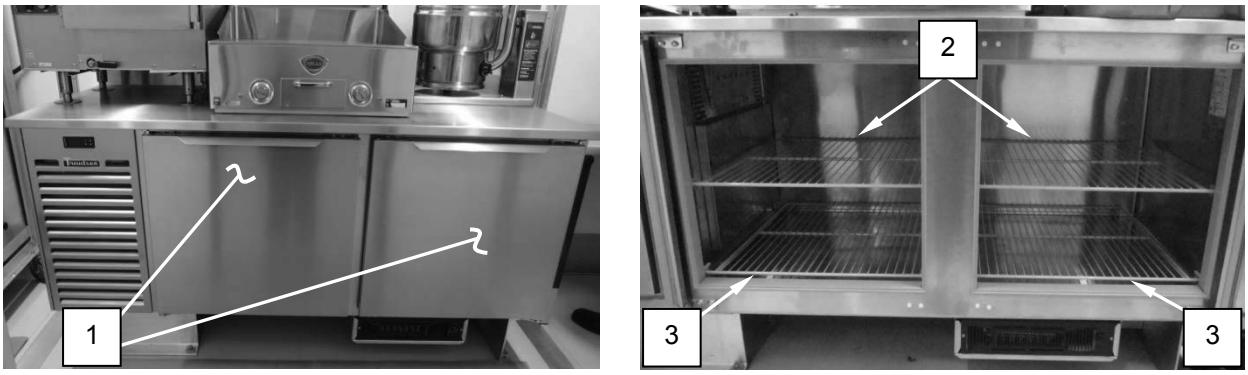


Figure 11. Remove Refrigerator Shelves.

13. Remove tilt handle (Figure 12, Item 2) from support (Figure 12, Item 3) on steam kettle (Figure 3, Item 1).
14. Place tilt handle into stow provision (Figure 12, Item 4).

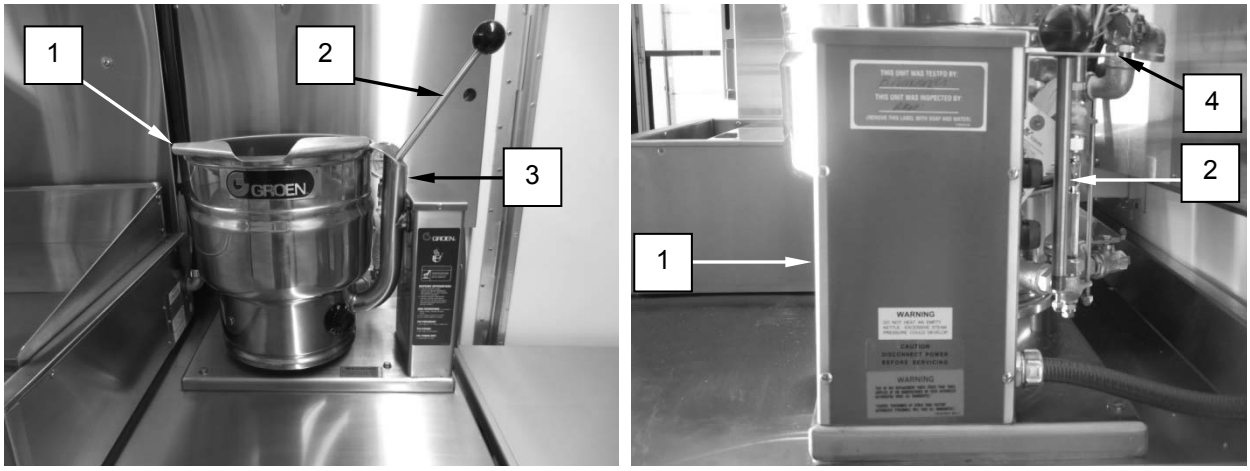


Figure 12. Steam Kettle.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

Take Down ETKS Rear Expanded Section

1. Fold two brackets (Figure 13, Item 1) into stowed position and set spice rack aside for packout.

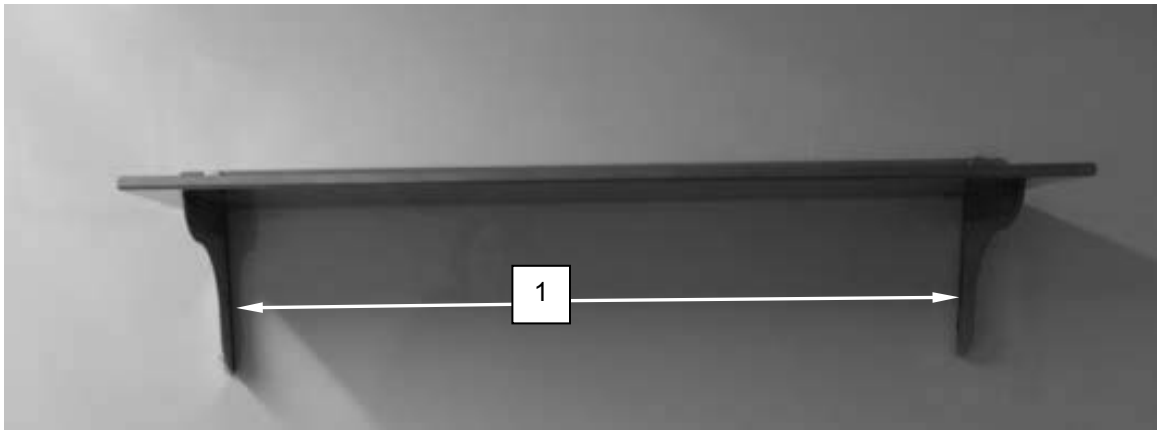


Figure 13. Remove Spice Rack.

2. Remove can opener (Figure 14, Item 1) from base (Figure 14, Item 4).
3. Remove can opener base from utility table (Figure 14, Item 2).
4. Place can opener in base and set aside for packout.
5. Remove shelf (Figure 14, Item 3) from utility table and set aside for packout.

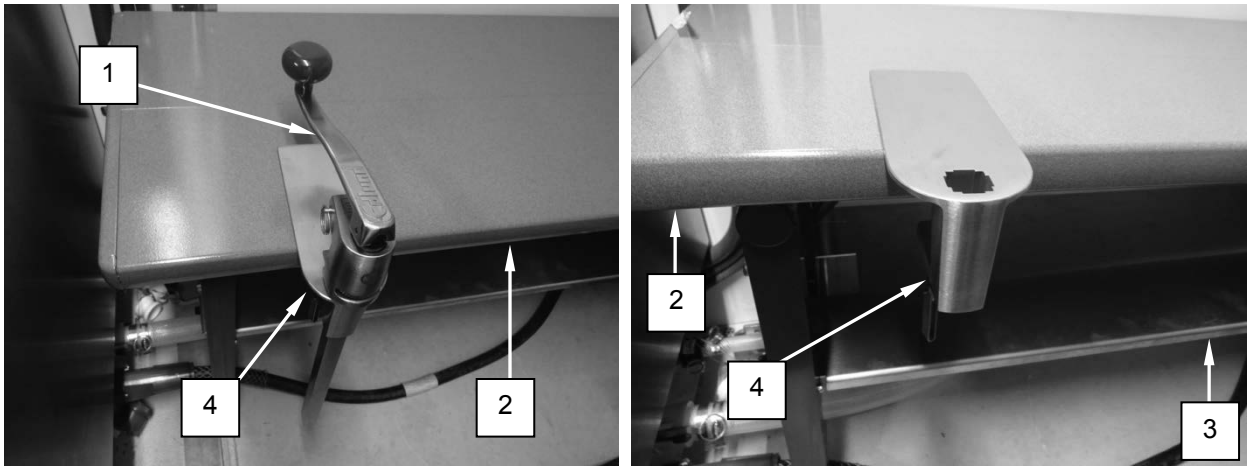


Figure 14. Remove Can Opener.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

6. Place utility table upside down.
7. Slide locking collars (Figure 15, Item 1) forward.
8. Push in on legs (Figure 15, Item 2) to close table.
9. Set table aside for packout.

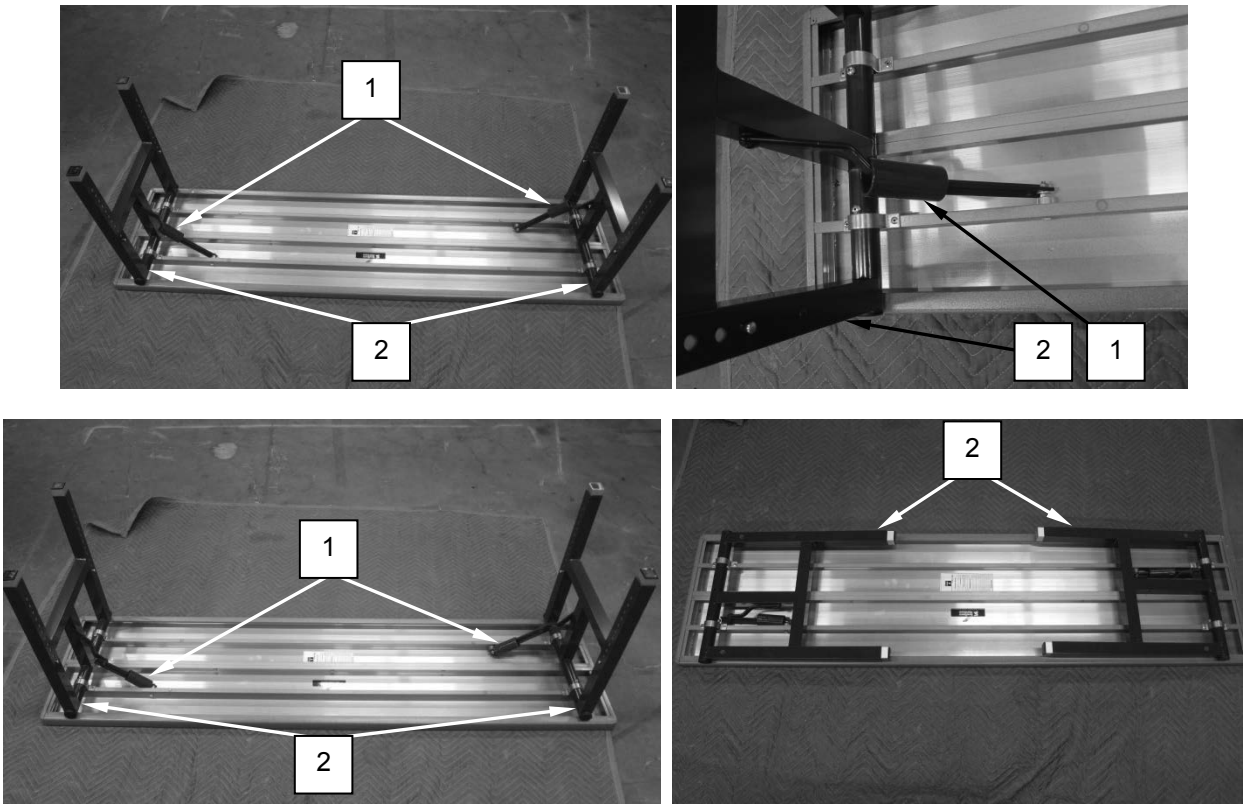


Figure 15. Utility Table.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

10. Place sanitation sink power cable (Figure 16, Item 2) in recess at the rear of the sanitation sink.

11. Unplug immersion heater power cable (Figure 16, Item 1) from receptacle (Figure 16, Item 3) at upper left rear of sanitation sink.

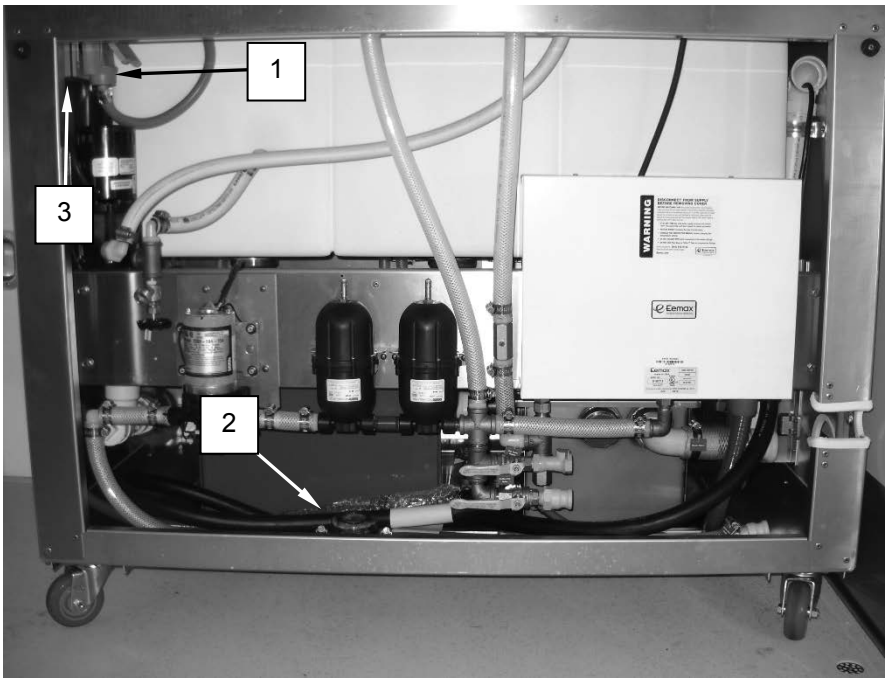


Figure 16. Sanitation Sink Power Cable and Immersion Heater Power Cable.

12. Remove water heater shield (Figure 17, Item 1) by gently pulling up on the water heat shield and dislodging it from its holders (Figure 17, Item 2). Set shield aside for packout.

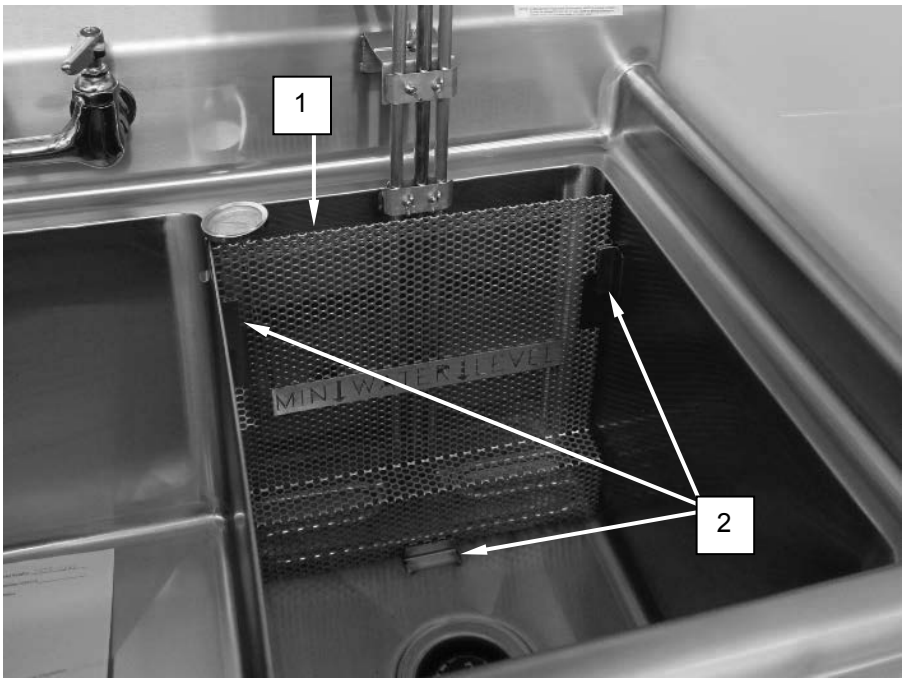


Figure 17. Remove Water Heater Shield.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

13. While holding immersion heater (Figure 18, Item 1) in place, remove four wing nuts (Figure 18, Item 24) and two brackets (Figure 18, Item 3).

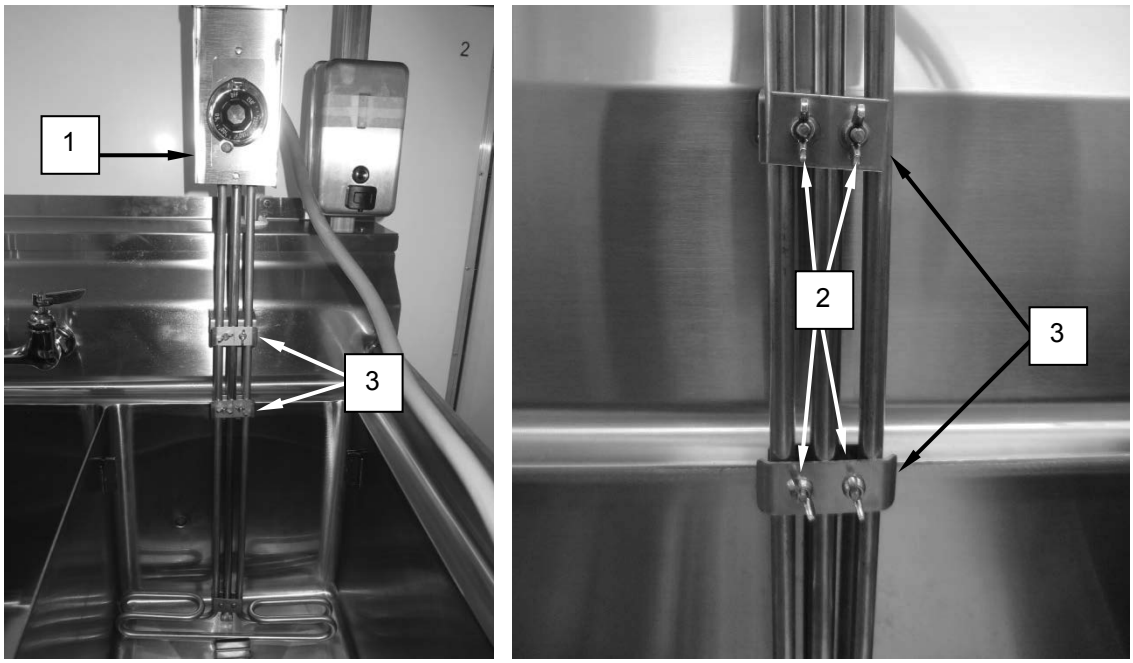


Figure 18. Remove Immersion Heater.

14. Remove the immersion heater from the sink.
15. Install the brackets and wing nuts on the sink.
16. Remove soap dispenser (Figure 19, Item 2) from shelf stand (Figure 19, Item 1).
17. Empty soap out of soap dispenser.
18. Rinse out soap dispenser and set aside for packout.

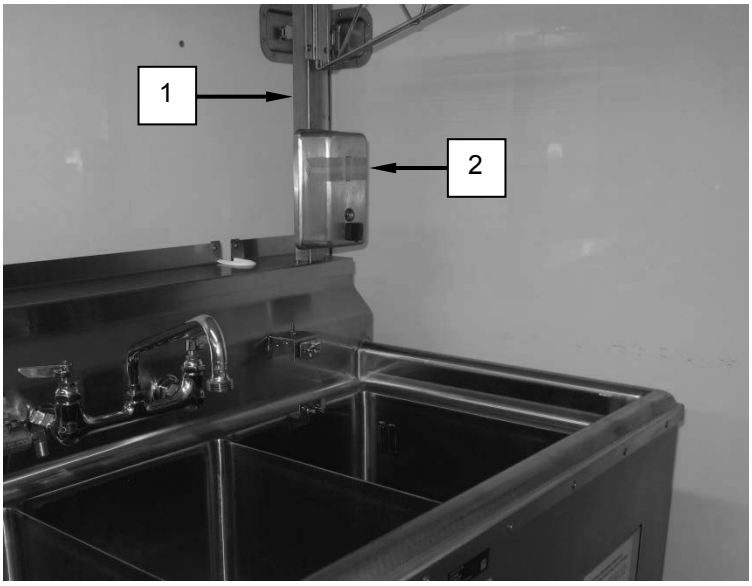


Figure 19. Remove Soap Dispenser.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

19. Lift up to remove shelf (Figure 20, Item 1) and set aside for packout.

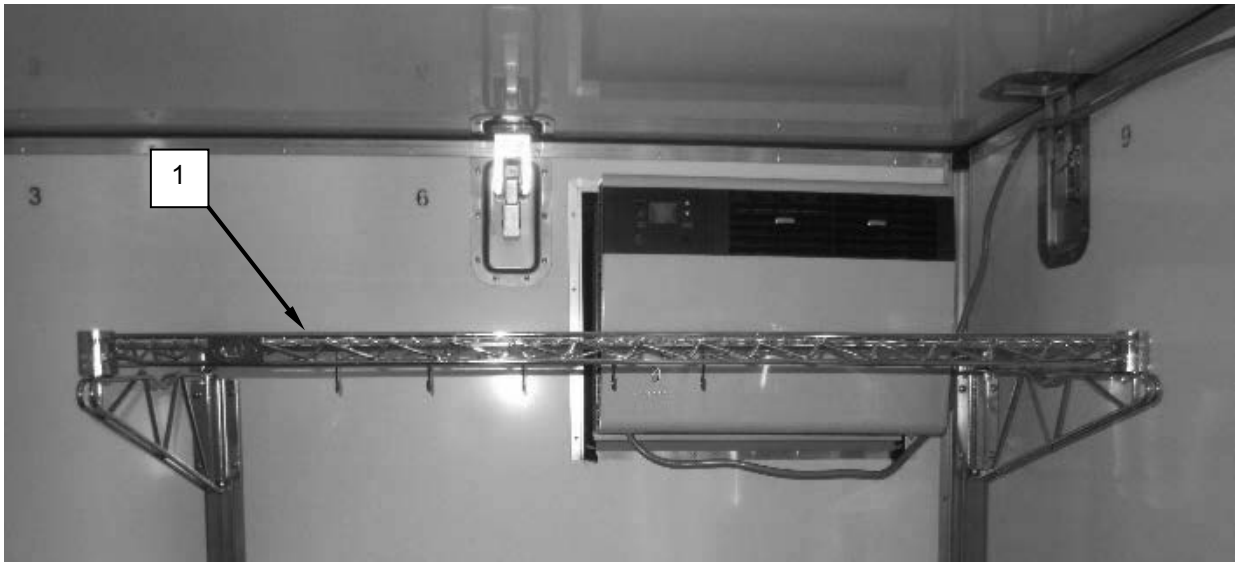


Figure 20. Remove Sink Shelf.

20. Loosen thumb screws (Figure 21, Item 2) at rear of shelf stand mounting provisions (Figure 21, Item 3).

21. Remove shelf stands (Figure 21, Item 1) from bracket mounting provision and set shelf stands aside for packout.

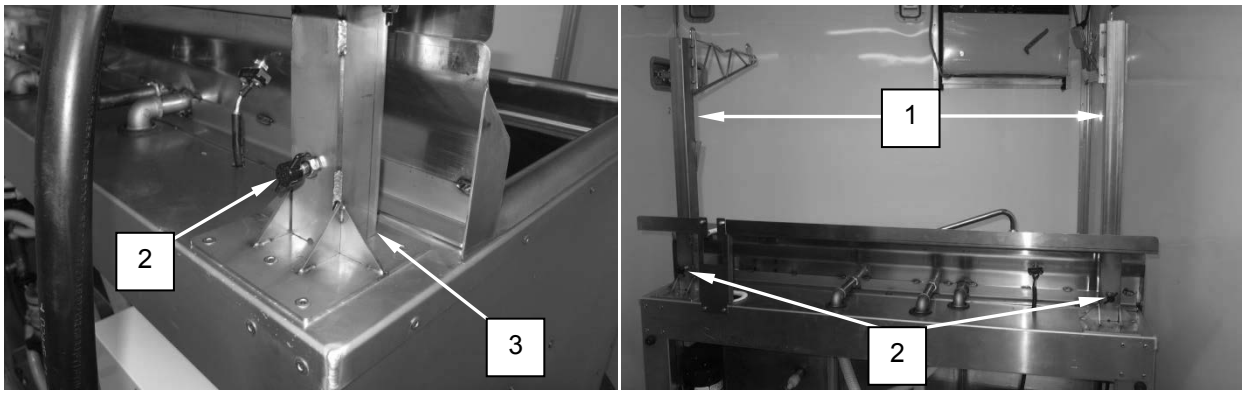


Figure 21. Remove Shelf Stands.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

22. Loosen nut (Figure 22, Item 2) on center port of faucet to remove gooseneck (Figure 22, Item 1). Set aside for packout.

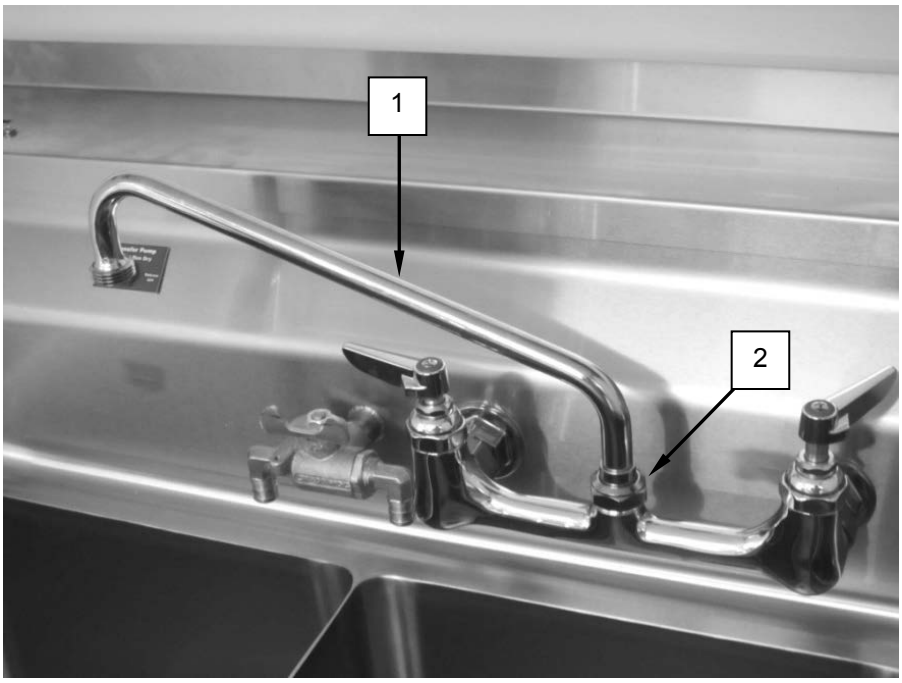


Figure 22. Install Gooseneck.

23. Move sanitation sink against side wall to allow access to air conditioner.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

24. Disconnect air conditioner power cable (Figure 23, Item 3) from 8-ft cable assembly (Figure 23, Item 1).

25. Remove 8-ft cable assembly (Figure 23, Item 1) from wall clips (Figure 23, Item 2).

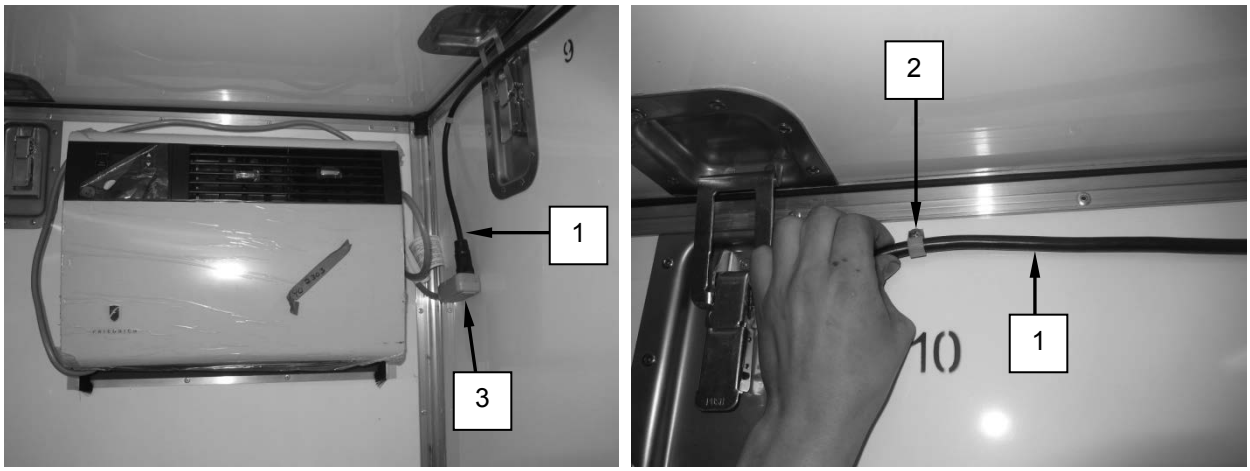


Figure 23. Disconnect Air Conditioner.

26. Wrap cable and secure with wire tie.

WARNING

The air conditioner is heavy. It requires two people to lift safely. Failure to heed this warning may cause serious injury to personnel.

27. With a person on each side of air conditioner (Figure 24, Item 1), slide air conditioner off the shelf (Figure 24, Item 2) from the inside of the ETKS and remove.

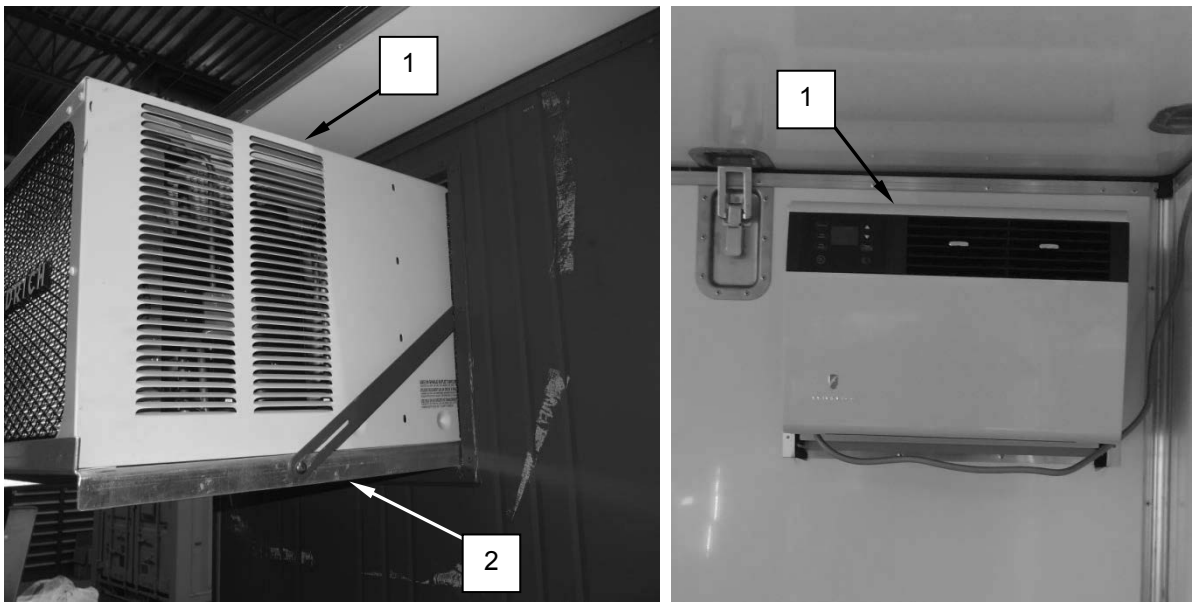


Figure 24. Remove Air Conditioner.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

28. Locate air conditioner covers (Figure 25, Item 1) and place them on the front and back end of the air conditioner (Figure 25, Item 2).

29. Connect straps (Figure 25, Item 3) around air conditioner.

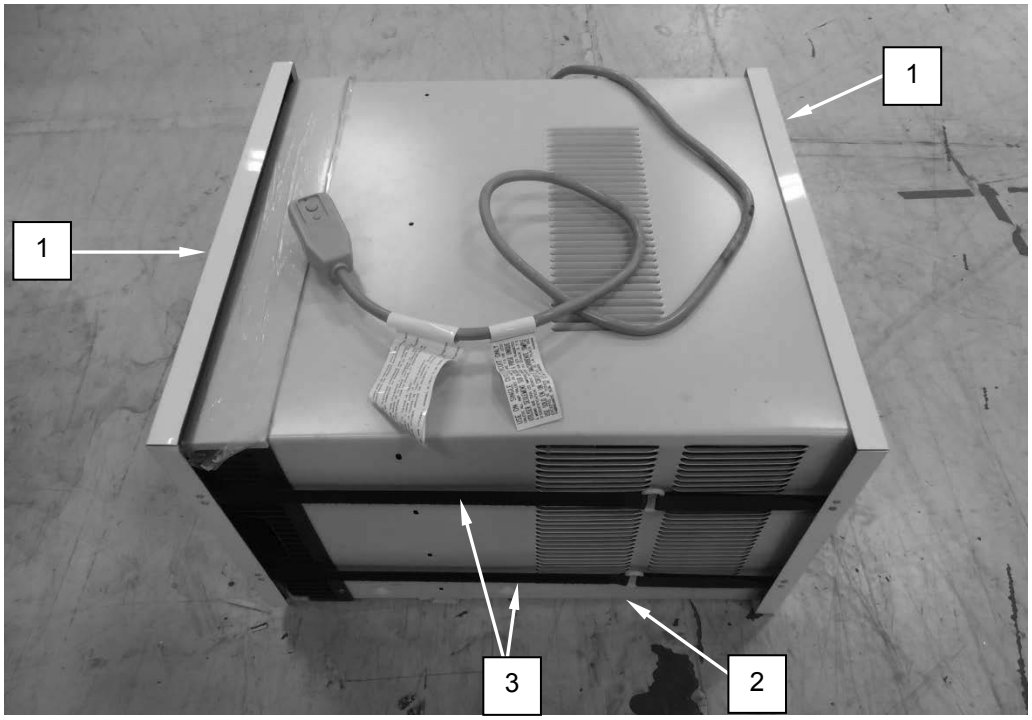


Figure 25. Air Conditioner.

30. Set air conditioner assembly aside for packout.

31. Lift up air conditioner shelf arms (Figure 26, Item 1) to release shelf from mounting provisions (Figure 26, Item 2). Remove air conditioner shelf (Figure 26, Item 3) and set aside for packout.

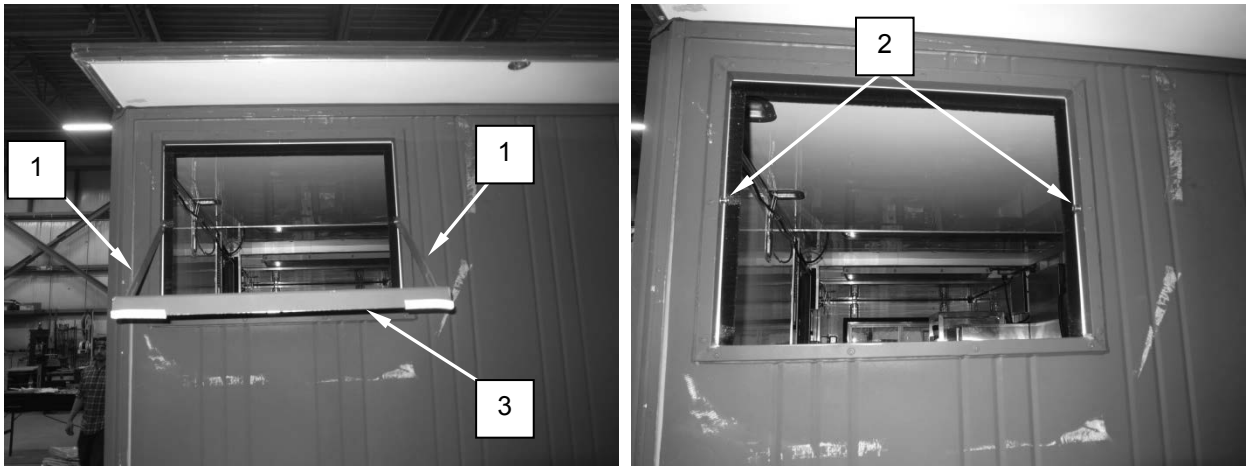


Figure 26. Remove Air Conditioner Shelf.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

Take Down ETKS Front Expanded Wing Section

1. Remove four liquid dispensers (Figure 27, Item 5) from serving table (Figure 27, Item 2) located outside of the ETKS (Figure 27, Item 1) and set aside for packout.

2. Remove four insulated food carriers (Figure 27, Item 3) from serving table (Figure 27, Item 2) located inside of the ETKS and set aside for packout.

3. Remove shelves (Figure 27, Item 4) from tables and set aside for packout.

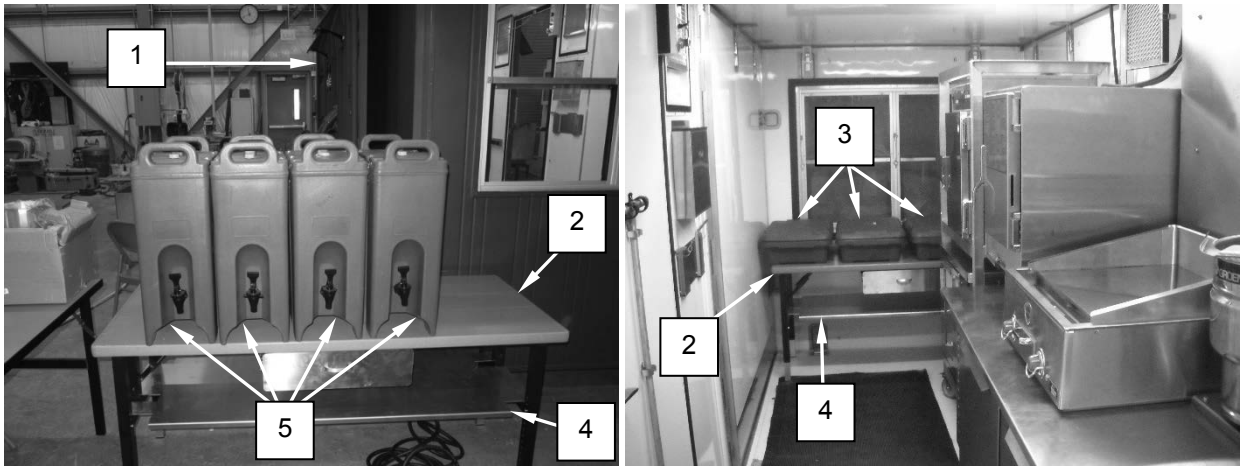


Figure 27. Beverage and Food Tables.

4. Loosen four thumbscrews (Figure 28, Item 1) securing drawers to table.

5. Remove drawers and set aside for packout.

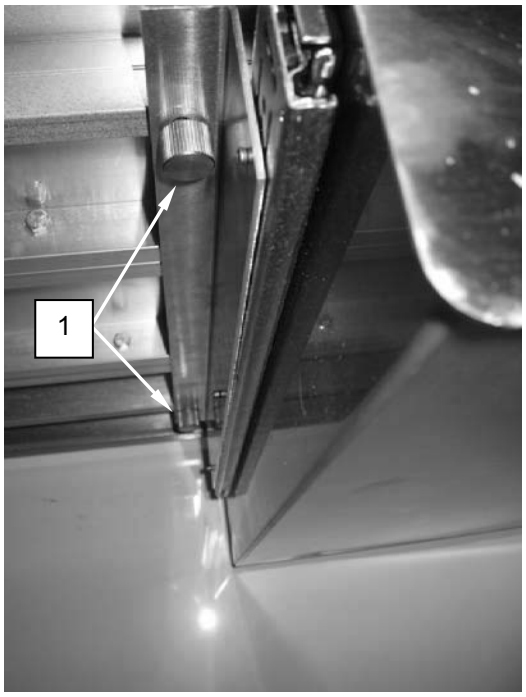


Figure 28. Remove Drawer.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

6. Turn serving tables upside down.
7. Slide locking collars (Figure 29, Item 1) away from legs (Figure 29, Item 2).
8. Fold legs towards center of table.
9. Set tables aside for packout.

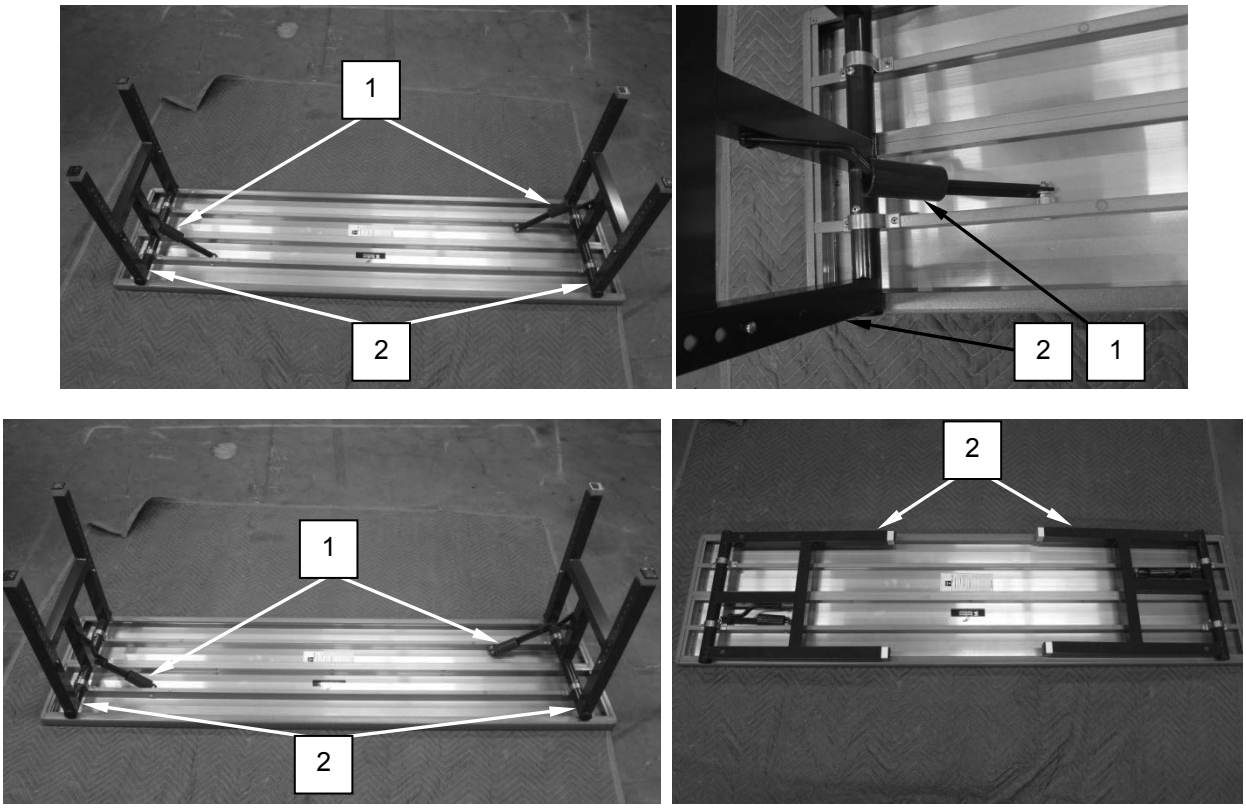


Figure 29. Fold Up Serving Tables.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

10. Remove four pins (Figure 30, Item 2) securing serving windows (Figure 30, Item 1).

11. Lift up bottom windows.

12. Remove two serving window channel covers (Figure 30, Item 3) and set aside for packout.

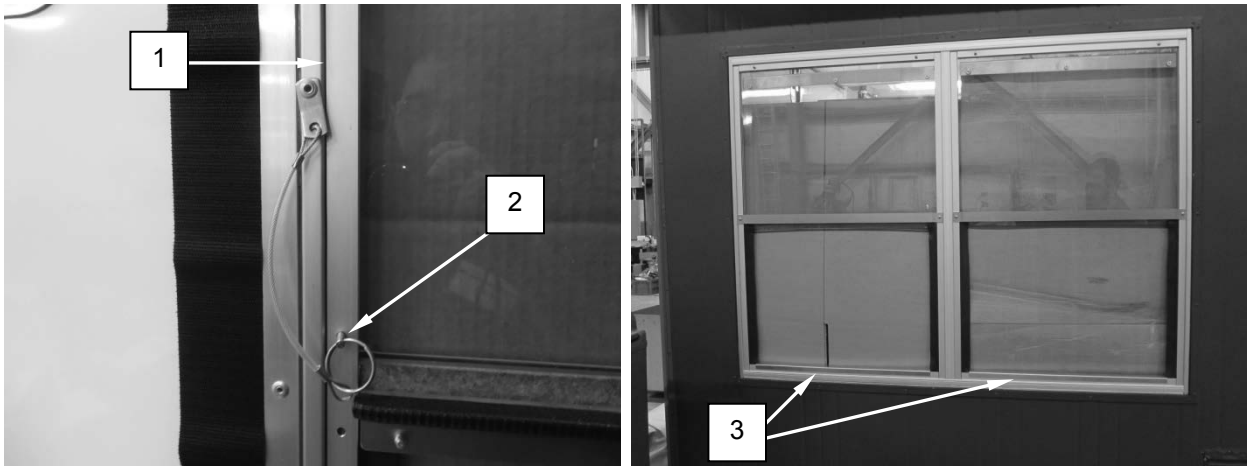


Figure 30. Serving Window.

13. Close serving windows and secure with four pins.

14. Release locks (Figure 31, Item 1) on oven rack casters (Figure 31, Item 3) by pushing down on locks with foot.

15. Move oven rack (Figure 31, Item 2) towards end wall and away from side wall.

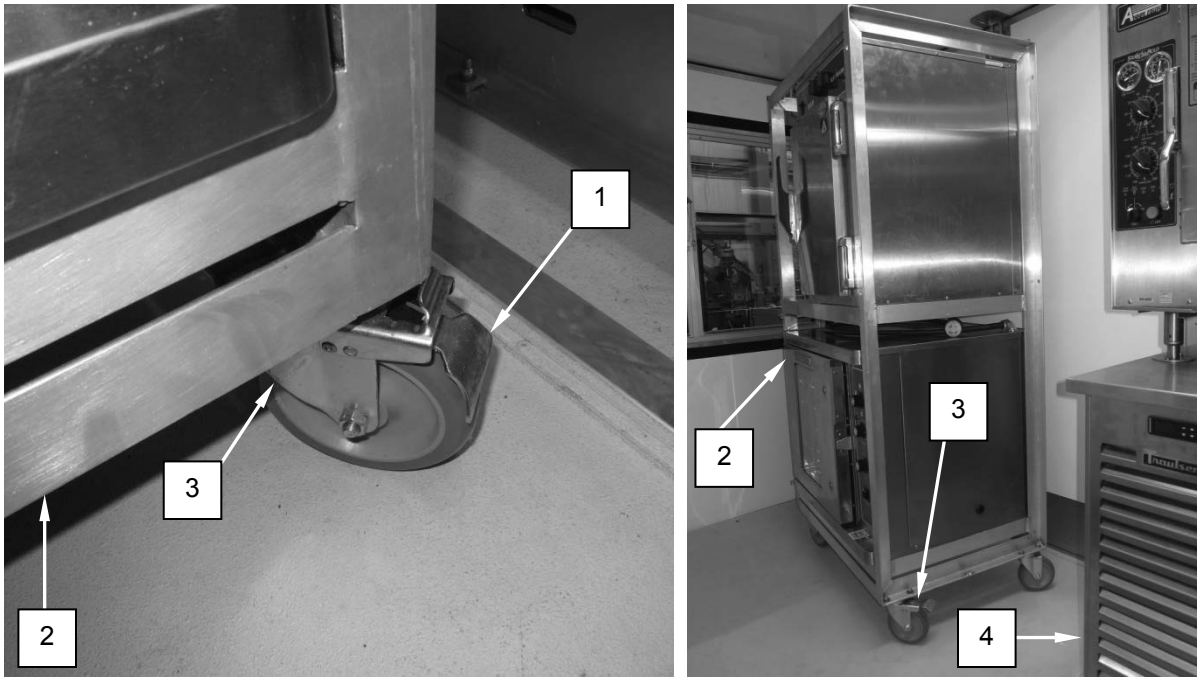


Figure 31. Move Oven Rack.

PREPARATION FOR MOVEMENT – TAKE DOWN ETKS – CONTINUED

16. Unplug cook and hold oven power cable (Figure 32, Item 2).

17. Unplug convection oven power cable (Figure 32, Item 1).

18. Coil up convection oven and cook and hold oven power cables and place on top of their respective ovens.

19. Unplug 50-ft power distribution cable (Figure 32, Item 3).

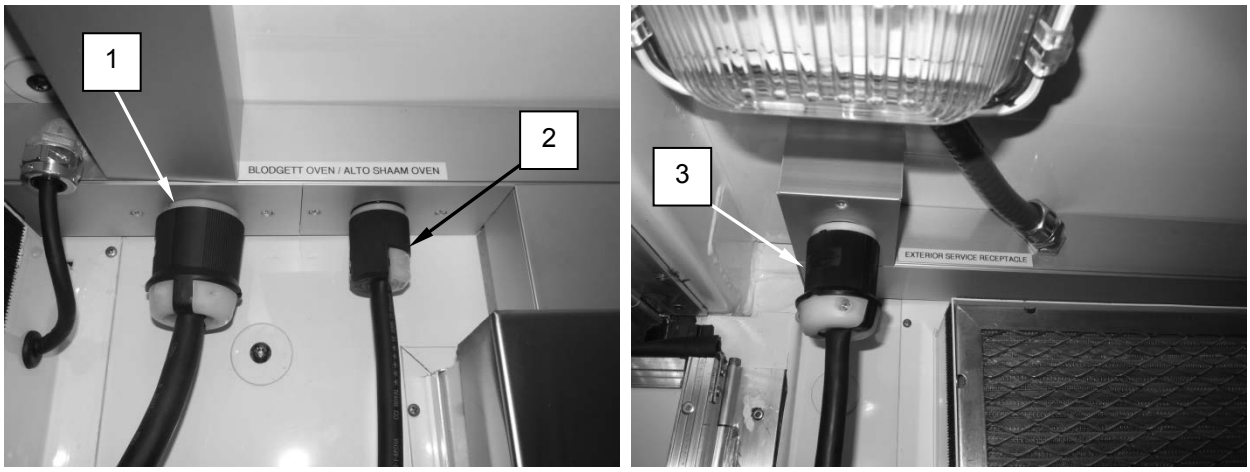


Figure 32. Disconnect Appliances.

20. Route 50-ft power distribution cable (Figure 33, Item 2) through pass-through (Figure 33, Item 1) in end wall.

21. Coil up 50-ft power distribution cable, secure with wire tie, and set aside for packout.

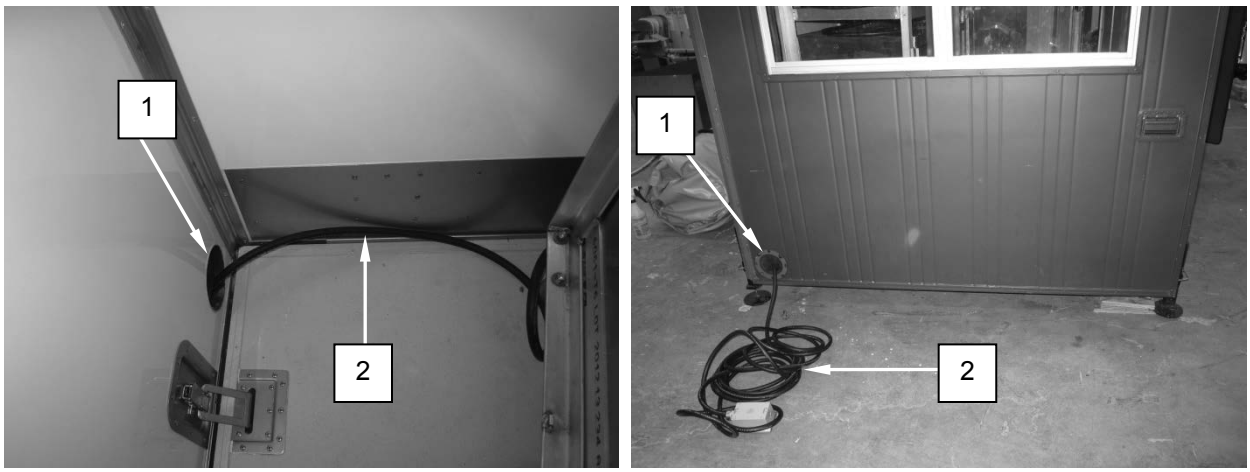


Figure 33. Remove 50-ft Power Distribution Cable.

22. Move oven rack towards side wall and refrigerator (Figure 31, Item 4).

23. Secure oven rack casters (Figure 31, Item 3) by pushing down on locks (Figure 31, Item 1) with foot.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER USUAL CONDITIONS
PREPARATION FOR MOVEMENT – PACKOUT

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)
MOS Non-Specific (3)

Equipment Condition

Daily ETKS interior cleaning (WP 0040)
Sanitation sink removed (WP 0063)
Preparation for movement – shutdown (WP 0019)
Preparation for movement – take down ETKS complete (WP 0020)

PREPARATION FOR MOVEMENT – PACKOUT

Interior Packout Preparation

WARNING

Keep area in front of personnel door and within the center of the kitchen area clear of ancillary equipment. Failure to follow this precaution can result in creating trip hazards leading to serious injury. Seek immediate medical attention if injury occurs.

CAUTION

Care must be taken when passing equipment through the personnel door opening. Seal damage can occur if this precaution is not followed. Seal damage will prevent proper closing or latching of the door and allow moisture (rain and snow) to seep into the kitchen area.

NOTE

Tables 1 through 12 provide information on the ancillary items to be packed and the quantity of each item. Tables 13 through 15 provide information on the items stored in the center area, the quantity of each item, and the number of personnel required to safely lift and carry each item.

1. Obtain moving blankets and previously used or new packing material.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

2. Locate canvas cutlery roll and pack with the items listed in Table 1.

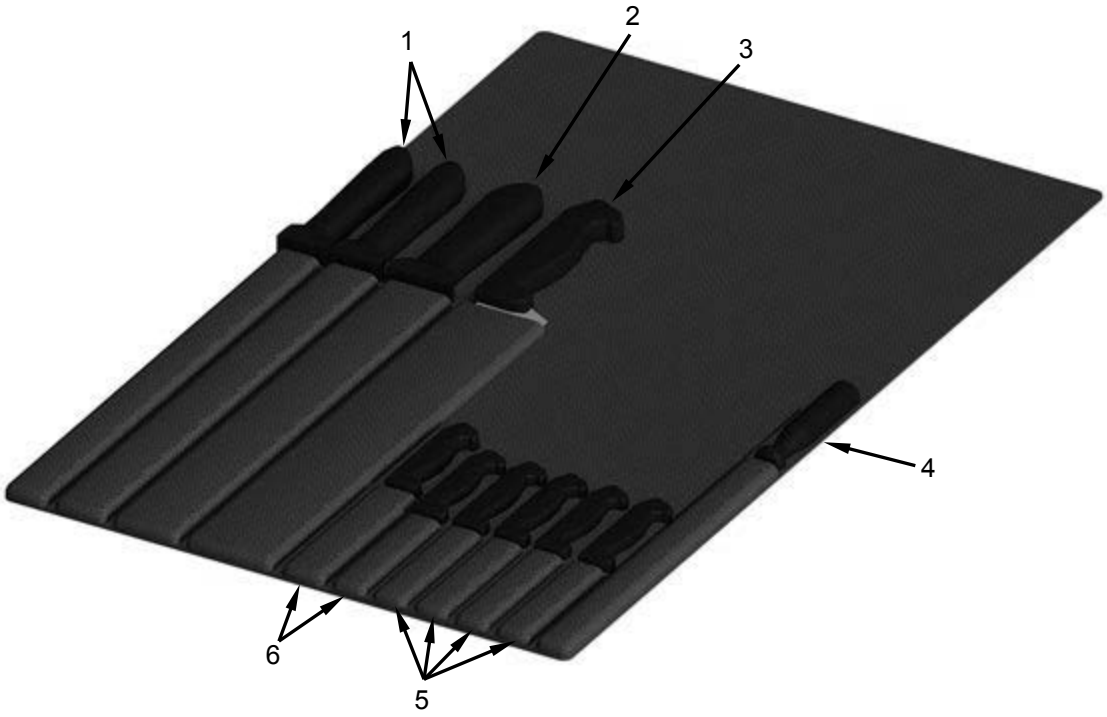


Figure 1. Cutlery Roll Packout.

Table 1. Cutlery Roll Packout Information.

ITEM	DESCRIPTION	QTY
1	Cooks Knife, 10-inch	2
2	Slicing Knife, Non-Scalloped Blade, 12-inch	1
3	Slicing Knife, Scalloped Blade, 12-inch	1
4	Butcher's Steel	1
5	Paring Knife	4
6	Boning Knife	2

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

3. Locate four insulated food carriers (Figure 2, Item 1).
4. Release four latches (Figure 2, Item 3) and remove lid (Figure 2, Item 2).
5. Pack each insulated food carrier with the items listed in Tables 2 through 5.
6. Replace lid (Figure 2, Item 2) and secure with four latches (Figure 2, Item 3).
7. Place insulated food carriers aside for packout.

Figure 2. Insulated Food Carrier Packout.

Table 2. Insulated Food Carrier #4 Packout Information.

ITEM	DESCRIPTION	QTY
1	Cutlery Roll, Canvas (with packed knives)	1
2	First Aid Kit	1

Table 3. Insulated Food Carrier #3 Packout Information.

ITEM	DESCRIPTION	QTY
1	Blackout Curtain	5
2	Insect Screen	2

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

Table 4. Insulated Food Carrier #2 Packout Information.

ITEM	DESCRIPTION	QTY
1	Baker's Scraper	1
2	Basting Spoon, 15-inch	2
3	Can Opener, Hand	2
4	Cooks Fork, 14-inch	2
5	Egg Whip	2
6	Pie and Cake Server	1
7	Potato Peeler, Hand	2
8	Rubber Spatula	2
9	Skimmer	2
10	Slotted Spoon, 15-inch	2
11	Spoon Measuring Set	2
12	Tongs, 8-inch	4
13	Turner	2

Table 5. Insulated Food Carrier #1 Packout Information.

ITEM	DESCRIPTION	QTY
1	Ice Cream Scoop	2
2	Oven Thermometer, Self-Indicating	2
3	Pocket Thermometer, Self-Indicating	3
4	Pot Holder	8
5	Rolling Pin, Wood	1
6	Sharpening Stone, Medium Grit	1

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

8. Locate tool box (Figure 3, Item 1).
9. Release latches (Figure 3, Item 3) and lift lid (Figure 3, Item 2).
10. Pack toolbox with the items listed in Table 6.
11. Close lid (Figure 3, Item 2) and secure with latches (Figure 3, Item 3).
12. Place toolbox (Figure 3, Item 1) aside for packout.

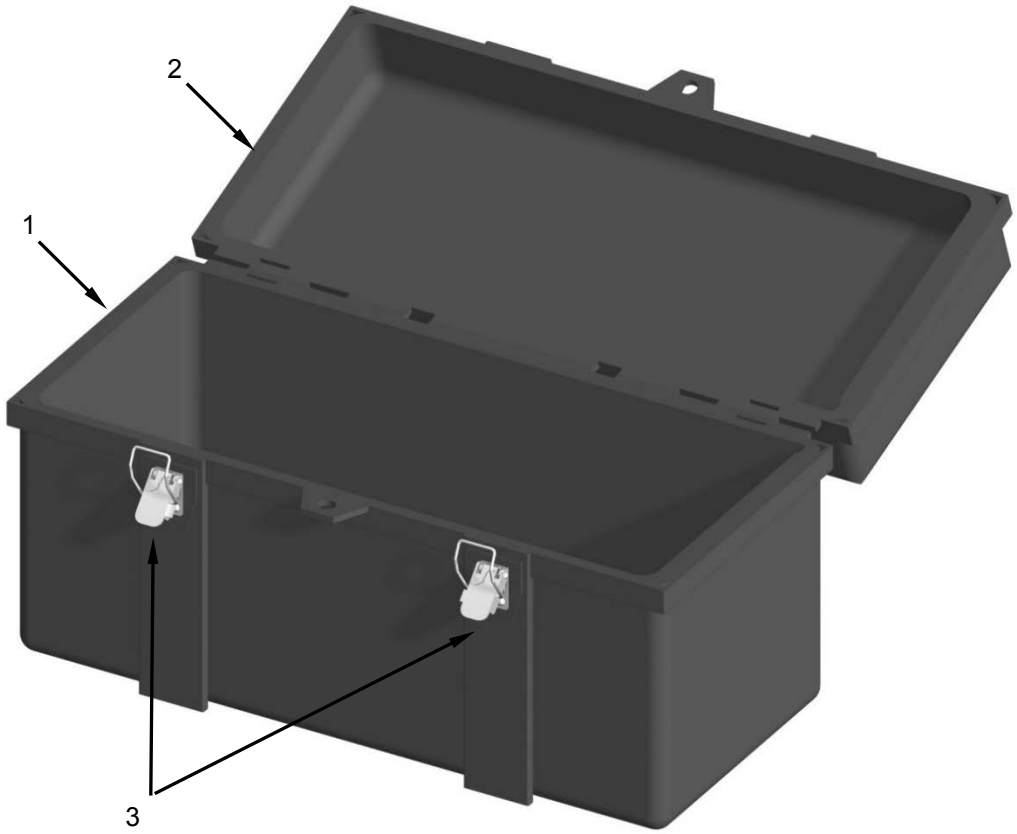


Figure 3. Kitchen Tool Box Packout.

Table 6. Kitchen Tool Box Packout Information.

ITEM	DESCRIPTION	QTY
1	Cam-Lock Adapter, 2-inch X 1-1/2-inch	1
2	Heavy Duty Neoprene Coated Glove, Large (Pair)	2
3	Spare Water Heater Elements	3
4	Tool Kit, 7 Piece	1

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

13. Locate four liquid dispensers (Figure 4, Item 3).
14. Release four latches (Figure 4, Item 2) and remove lid (Figure 4, Item 1).

NOTE

Liquid Dispensers #3 and #4 are empty.

15. Pack liquid dispensers #1 and #2 with items listed in Tables 7 and 8.
16. Replace lid (Figure 4, Item 1) and secure with four latches (Figure 4, Item 2).
17. Place liquid dispensers (Figure 4, Item 3) aside for pack out.

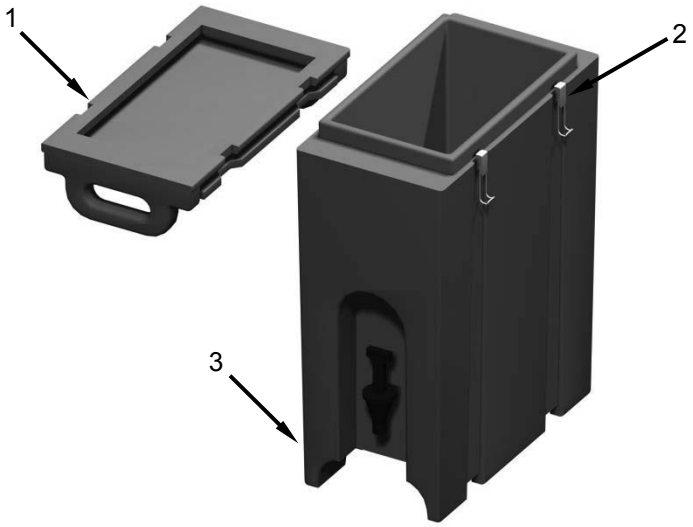


Figure 4. Liquid Dispenser Packout.

Table 7. Liquid Dispenser #2 Packout Information.

ITEM	DESCRIPTION	QTY
1	Leveling Block, 1/8 in Thick	4
2	Leveling Block, 1/4 in Thick	4
3	Leveling Block, 3/8 in Thick	4
4	Leveling Block, 1/2 in Thick	4

Table 8. Liquid Dispenser #1 Packout Information.

ITEM	DESCRIPTION	QTY
1	Dipper, 1-qt	1
2	Ladle, 2-oz	2
3	Ladle, 4-oz	2
4	Ladle, 8-oz	2

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

18. Locate two serving table drawers (Figure 5, Item 1).

19. Pack serving table drawers with the items listed in Tables 9 and 10.

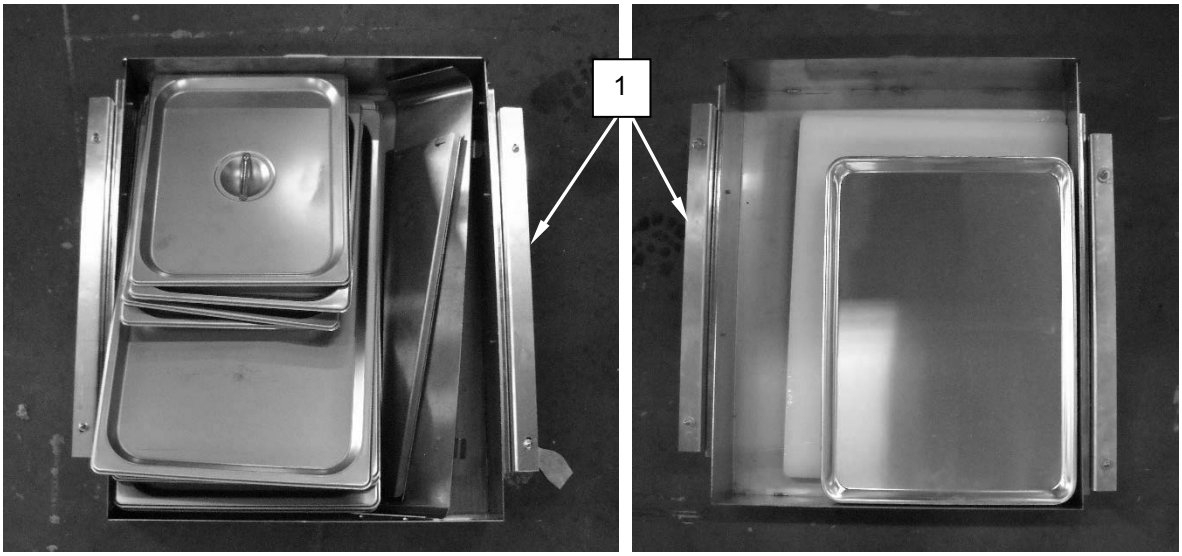


Figure 5. Table Drawer Packout.

Table 9. Table Drawer #2 Packout Information.

ITEM	DESCRIPTION	QTY
1	Griddle Splash Guard (3 pieces)	1
2	Pan Cover, Full Size	6
3	Pan Cover, Half Size	4

Table 10. Table Drawer #1 Packout Information.

ITEM	DESCRIPTION	QTY
1	Baking Sheet, ½ Sheet	5
2	Chopping Board	2
3	Air Conditioner Remote Control	1
4	Serving Window Channel Cover	2

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

Sanitation Sink Packout

1. Locate the items listed in Table 11 in the quantities specified.

Table 11. Sanitation Sink Cabinet Packout Information.

ITEM	DESCRIPTION	QTY	LIFT
1	Immersion Heater	1	1
2	Sanitation Sink Waste Hose, 1-1/2-inch	1	1
3	Sanitation Sink Supply Hose, 3/4-inch	1	1

2. Open both cabinet doors (Figure 6, Item 2) by pressing in on each latch (Figure 6, Item 1).
3. Wrap immersion heater (Figure 6, Item 3) in bubble wrap and place on top of waste tank (Figure 6, Item 7), and grease trap (Figure 6, Item 6).
4. Place the sanitation sink supply hose (Figure 6, Item 5) and the sanitation sink waste hose (Figure 6, Item 4) in the front of the sanitation cabinet.
5. Close both cabinet doors (Figure 6, Item 2).

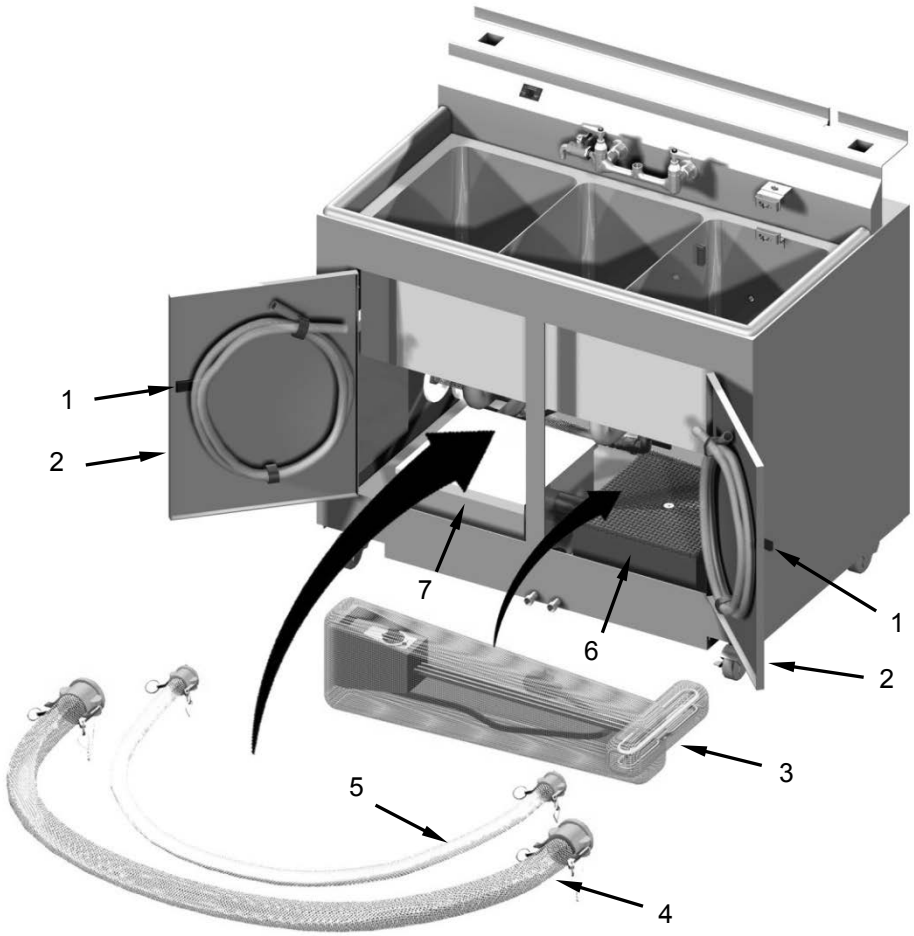


Figure 6. Sanitation Sink Cabinet Packout.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

6. Locate the items listed in Table 12 in the quantities specified.

Table 12. Sanitation Sink Well Packout Information.

ITEM	DESCRIPTION	QTY
1	Colander, 16-qt	1
2	Gooseneck	1
3	Immersion Heater Guard	1
4	Knife Rack	1
5	Liquid Dispenser #1 (packed)	1
6	Power Distribution Cable, 50-ft	1
7	Sink Thermometer	1
8	Soap Dispenser	1
9	Strainer, 5-1/2-qt	1

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

7. Place a furniture pad (Figure 7, Item 1) in the sink wells (Figure 7, Item 2) to protect the surfaces of the sanitation sink.

8. Place the liquid dispenser (Figure 7, Item 11) and the 50-ft power distribution cable (Figure 7, Item 10) in the left sink well.

9. Place the soap dispenser (Figure 7, Item 9), gooseneck (Figure 7, Item 8), knife rack (Figure 7, Item 7) and strainer (Figure 7, Item 6) in the center sink well.

10. Place the colander (Figure 7, Item 5), thermometer (Figure 7, Item 4) and the immersion heater guard (Figure 7, Item 3) in the right hand sink well.

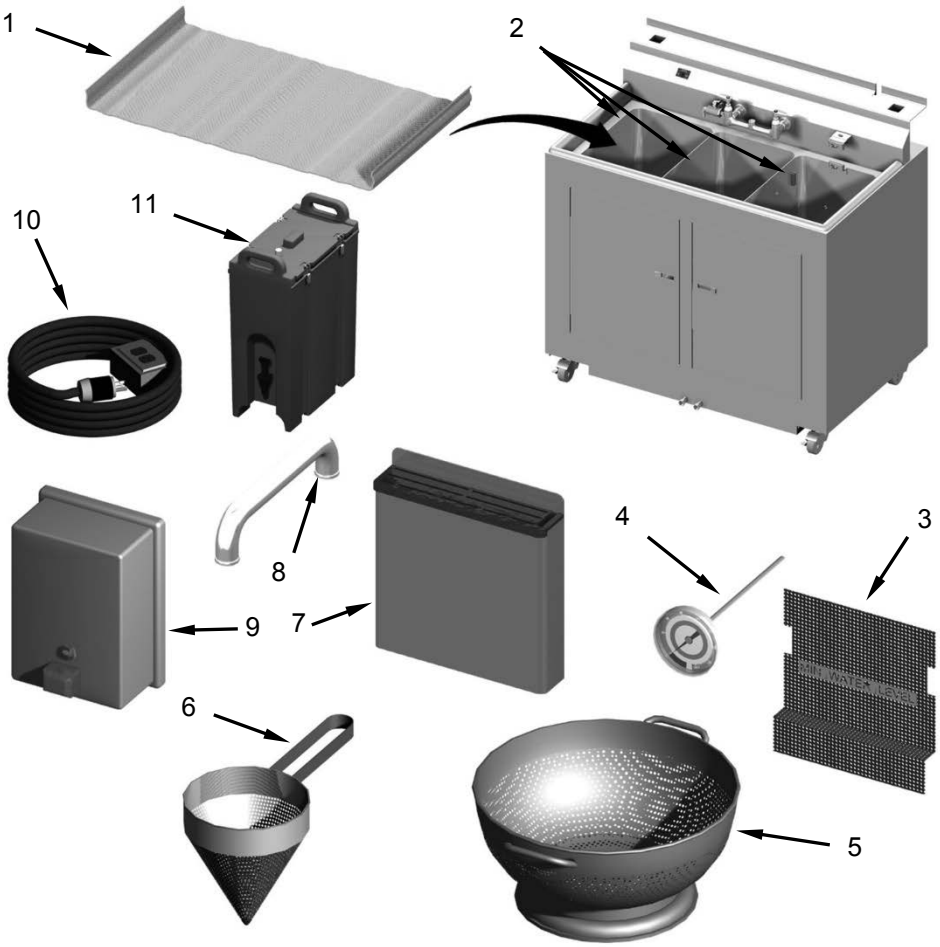


Figure 7. Sanitation Sink Well Packout.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

Refrigerator Packout

1. Obtain items listed in Table 13 in the quantities required.

Table 13. Refrigerator Packout Information.

ITEM	DESCRIPTION	QTY
1	Can Opener, Table Mounted	1
2	Furniture Pad	1
3	Insulated Food Carrier	3
4	Liquid Measure, 2-qt	2
5	Refrigerator Shelf	4
6	Serving Pan, Half-size	4
7	Serving Pan, Full-size	10
8	Serving Table Drawer (packed)	2
9	Sink Shelf Stand	2
10	Sink Rack	1
11	Spice Rack	1

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

2. Place the spice rack (Figure 8, Item 8) and the sink rack (Figure 8, Item 9) at the rear of the refrigerator compartments (Figure 8, Item 4).

3. Place a furniture pad (Figure 8, Item 7) in the base of the refrigerator compartments (Figure 8, Item 4).

4. Place two filled table drawers (Figure 8, Item 11) side by side at the left side of the refrigerator compartments (Figure 8, Item 4).

NOTE

Shelves must all be facing the same direction. The hook must be positioned in the rear left corner of the refrigerator when inserted.

5. Place the refrigerator shelves (Figure 8, Item 13) on top of the drawers (Figure 8, Item 11).

6. Place two filled insulated food carriers (Figure 8, Item 1) on top of each other and then on top of the refrigerator shelves (Figure 8, Item 13).

7. Place ten full size pans (Figure 8, Item 12) nested together on top of the shelves (Figure 8, Item 13) and to the right of the insulated food carriers (Figure 8, Item 1).

8. Place the table mounted can opener (Figure 8, Item 10) laying against the right hand refrigerator compartment wall.

9. Place one insulated food carrier (Figure 8, Item 1) between the full size pans (Figure 8, Item 12) and the can opener (Figure 8, Item 10).

10. Place four half size pans (Figure 8, Item 5) nested together on top of the insulated food carrier (Figure 8, Item 1).

11. Place two sink shelf stands (Figure 8, Item 3) at the back of the refrigerator compartments (Figure 8, Item 4) and on top of the pans (Figure 8, Item 12).

12. Place two measuring cups (Figure 8, Item 6) on top of the insulated food carrier (Figure 8, Item 1) at the right of the refrigerator compartment.

13. Tuck any excess furniture pad (Figure 8, Item 7) into the refrigerator and close the refrigerator doors.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

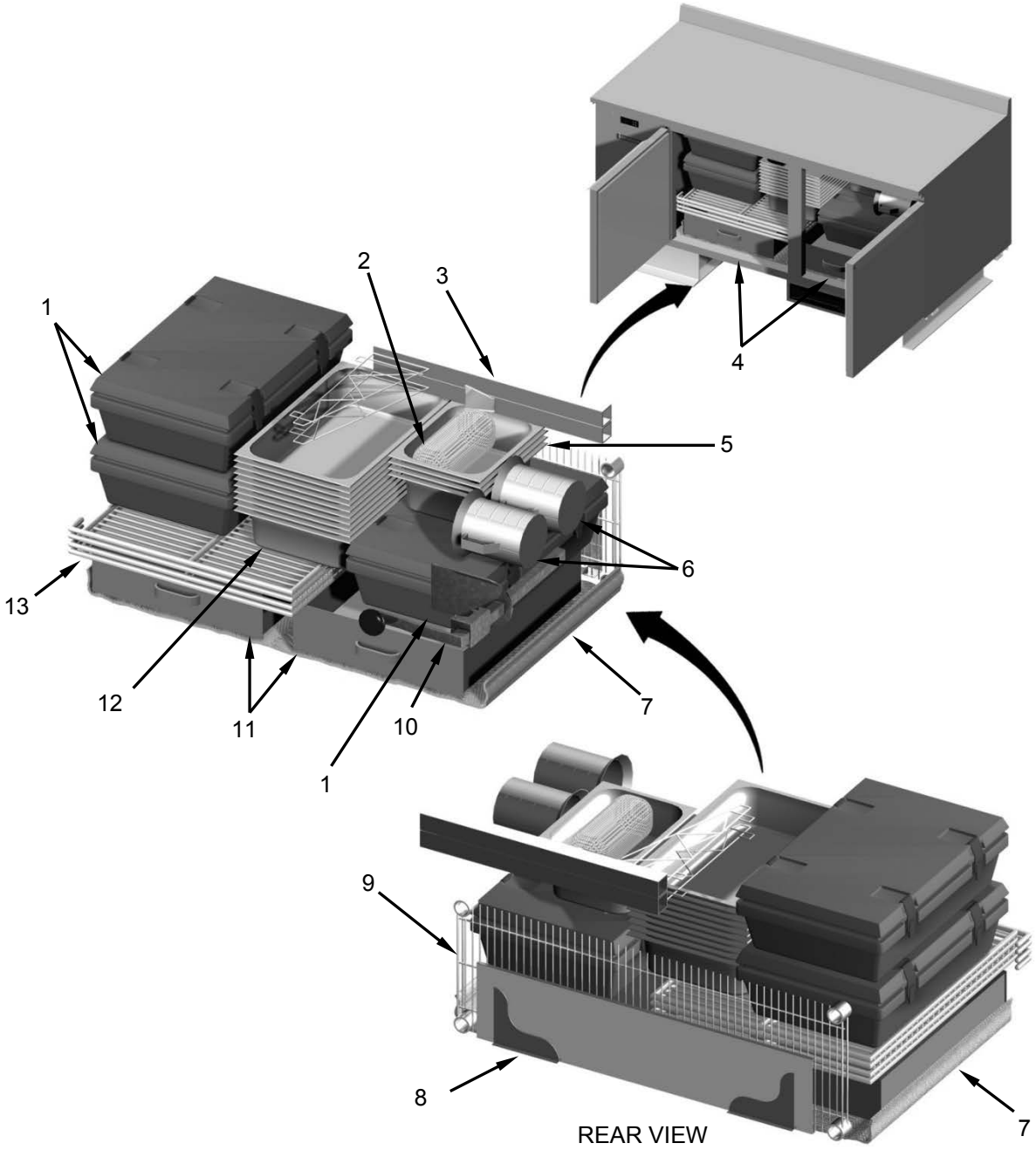


Figure 8. Refrigerator Packout.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

Kitchen Center Area Packout

WARNING

The source water and wastewater 3K bags require three person lift. The air conditioner and power cables require two person lift. Hoses and other heavy items should be carried by more than one person when possible. Exercise safe lifting techniques when handling wing sections. Ensure you lift with your legs and not with your back to avoid injury. Seek immediate medical attention if injury occurs.

1. Wrap grounding rod assembly (Figure 9, Item 13) in packing material and place under refrigerator (Figure 9, Item 11).
2. Place two pigtail cables (Figure 9, Item 14) next to grounding rod assembly (Figure 9, Item 13) under refrigerator (Figure 9, Item 11).
3. Locate the items listed in Table 14 following lifting requirements and in the quantities specified.

Table 14. Packout Items Above Refrigerator.

ITEM	DESCRIPTION	QTY	LIFT
1	Air Conditioner (with covers)	1	2
2	A/C Shelf	1	1
3	Folding Chair, Steel	2	1
4	Insulated Food Carrier	1	1
5	Liquid Dispenser #2 (packed)	3	1
6	SOURCE Water Bag, 3000-Gallon	1	3
7	Steam Kettle Rack	1	1
8	Source Water Hose, 1-1/2in X 25ft	1	2

4. Place the steam kettle rack (Figure 9, Item 9) over the top of the steam kettle (Figure 9, Item 7).
5. Place cardboard on top of the griddle (Figure 9, Item 12).
6. Place the air conditioner (Figure 9, Item 6) on top of the griddle with the controls facing the personnel door.
7. Place cardboard between the air conditioner (Figure 9, Item 15) and the wall.
8. Place cardboard between the air conditioner and the steam and hold oven (Figure 9, Item 1).
9. Place A/C shelf (Figure 9, Item 5) between griddle and steam kettle.
10. Place cardboard on both sides of the A/C shelf.
11. Place liquid dispenser #2 (packed) (Figure 9, Item 10) in front of the steam kettle rack (Figure 9, Item 8).

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

12. Place one insulated food carrier (Figure 9, Item 12) on top of the steam kettle rack (Figure 9, Item 11).
13. Place cardboard on top of the air conditioner (Figure 9, Item 6).
14. Place the source water hose (Figure 9, Item 3) on top of the cardboard.
15. Place the two folding chairs (Figure 9, Item 9) on top of the source water hose (Figure 9, Item 3) with the legs facing right.
16. Place the SOURCE water bag (Figure 9, Item 4) on top of the folding chairs (Figure 9, Item 6).
17. Place two empty liquid dispensers (Figure 9, Item 2) on top of the steam and hold oven (Figure 9, Item 1).

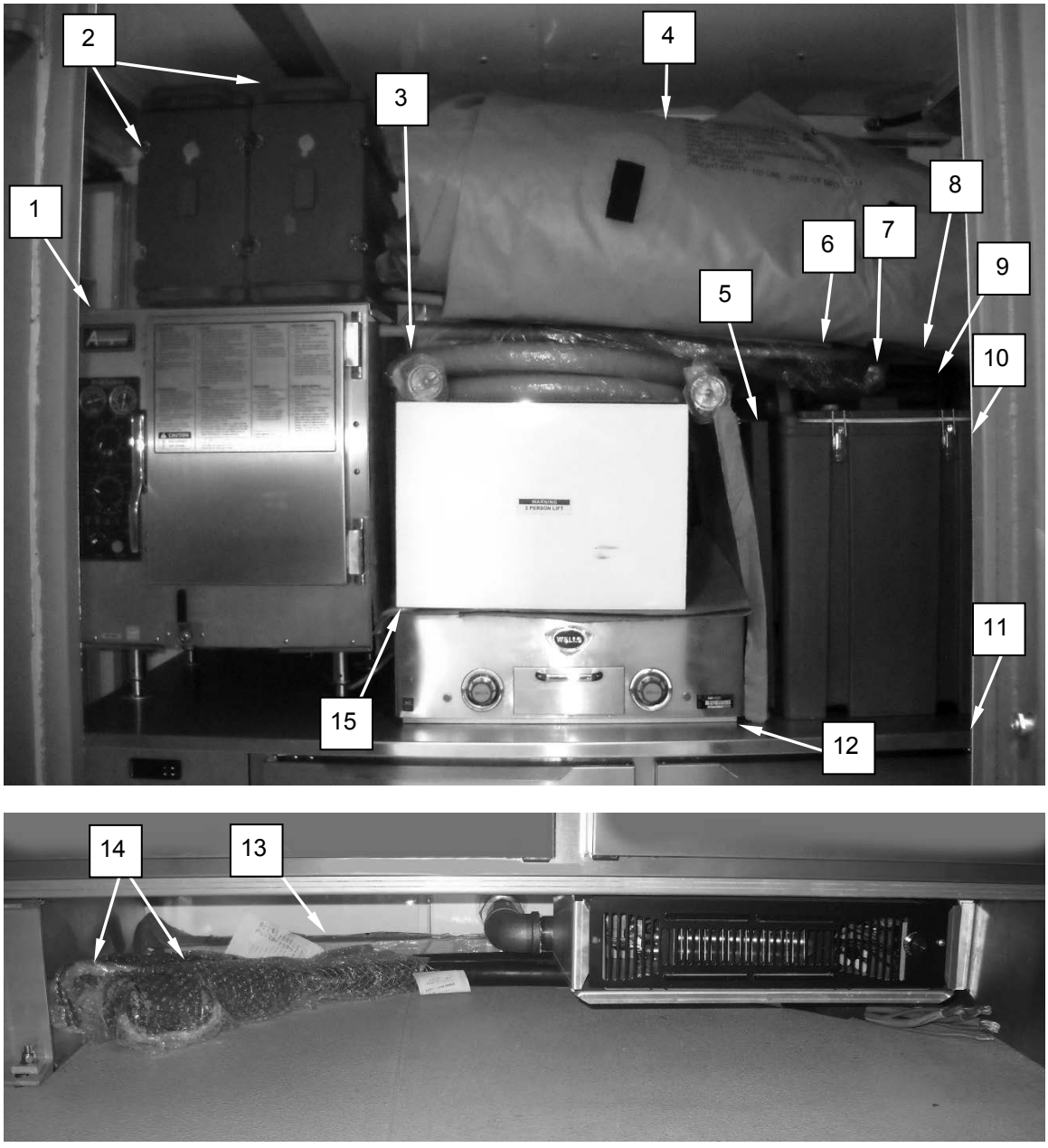


Figure 9. Packout Items Above and Below Refrigerator.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

18. Connect two straps together to secure items packed above refrigerator and steam and hold oven.

19. Slide catches outward and unfold handles.

20. Slide straps out of ratcheting mechanisms far enough to place straps over the ancillary equipment.

21. Attach hook (Figure 10, Item 3) on ratcheting mechanism end of first strap (Figure 10, Item 1) to lower left refrigerator support then route strap over the top of the liquid dispensers and SOURCE water bag. Attach hook (Figure 10, Item 2) to lower right refrigerator support.

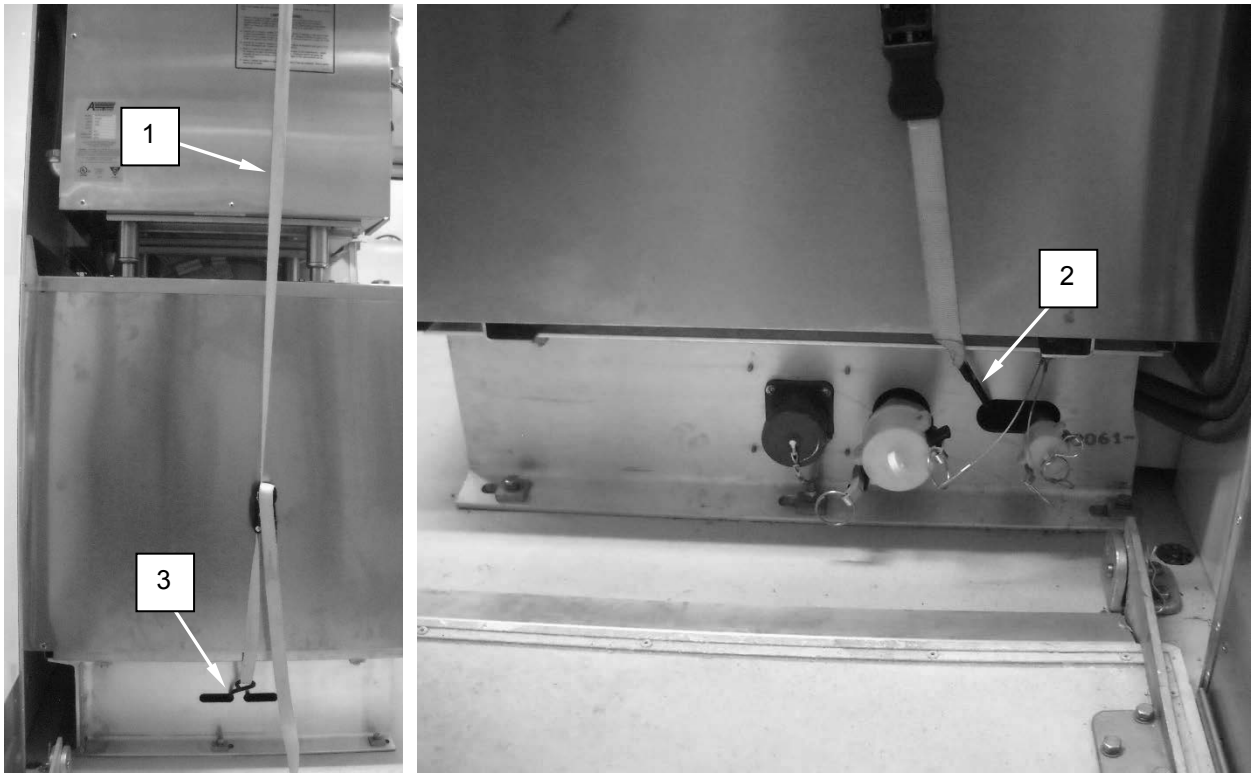


Figure 10. Strap One.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

22. Connect two straps together.

23. Attach hook (Figure 11, Item 4) on ratcheting mechanism end of second strap to steam and hold oven leg (Figure 11, Item 3) then route strap through liquid dispenser handles (Figure 11, Item 1) and SOURCE water bag straps (Figure 11, Item 2) and attach to hook from the first strap.

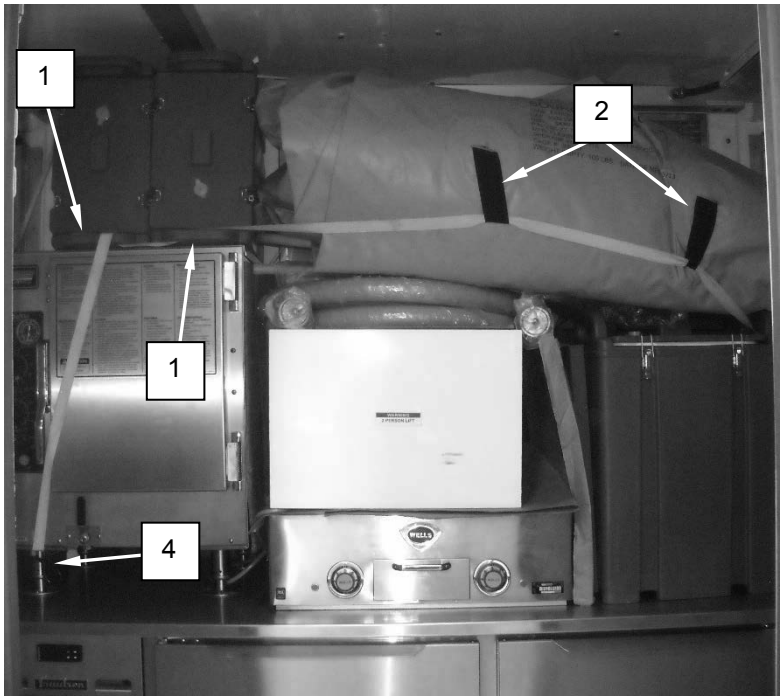


Figure 11. Strap Two.

24. Place cardboard (Figure 12, Items 1 and 2) on the left side of the steam and hold oven (Figure 12, Item 1) and left and right sides of the refrigerator (Figure 12, Item 3).

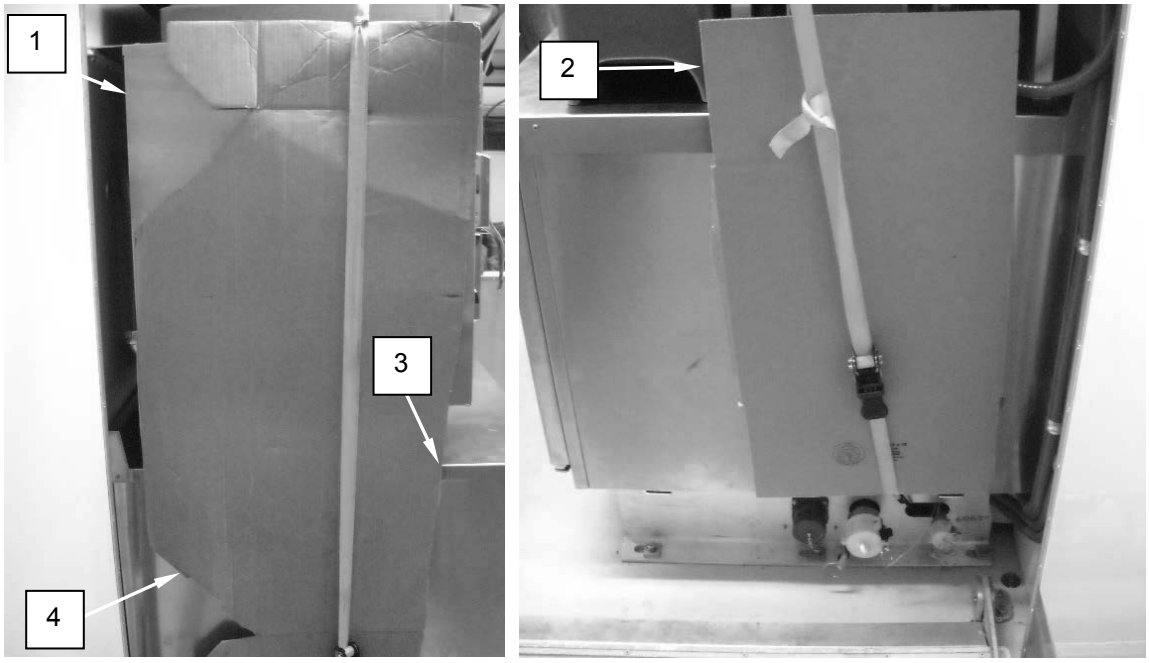


Figure 12. Insert Cardboard.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

25. Pull straps tight to remove slack then use ratcheting mechanisms to apply a slight amount of tension to straps.

26. Release wall latches labelled 8, 6, 5, 3, 2, and 1 securing front ETKS end wall.

27. Swing end wall (Figure 13, Item 1) out slightly to allow personnel access to the interior.

NOTE

Securing the table shelves to the oven rack requires two people. Oven rack may be moved to allow easier access.

28. Locate two serving table shelves (Figure 13, Items 13 and 14) and utility table shelf (Figure 13, Item 6).

29. Orient one serving table shelf vertically and place lower lip of shelf (Figure 13, Item 12) on lower edge of oven rack (Figure 13, Item 11) frame.

30. Hang upper lip of second serving table shelf (Figure 13, Item 2) on the top edge of oven cart (Figure 13, Item 15) frame.

31. Hang upper lip of utility shelf (Figure 13, Item 5) on the top edge of oven cart (Figure 13, Item 4) frame.

32. Route a strap (Figure 13, Item 7) around both serving shelves and utility shelf (Figure 13, Item 6) then attach hook (Figure 13, Item 8) on ratcheting mechanism end of strap to hook on other end of strap (Figure 13, Item 9).

33. Position ratcheting mechanism (Figure 13, Item 10) at front of oven rack.

34. Pull strap tight to remove slack then use ratcheting mechanism to apply a slight amount of tension to strap.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

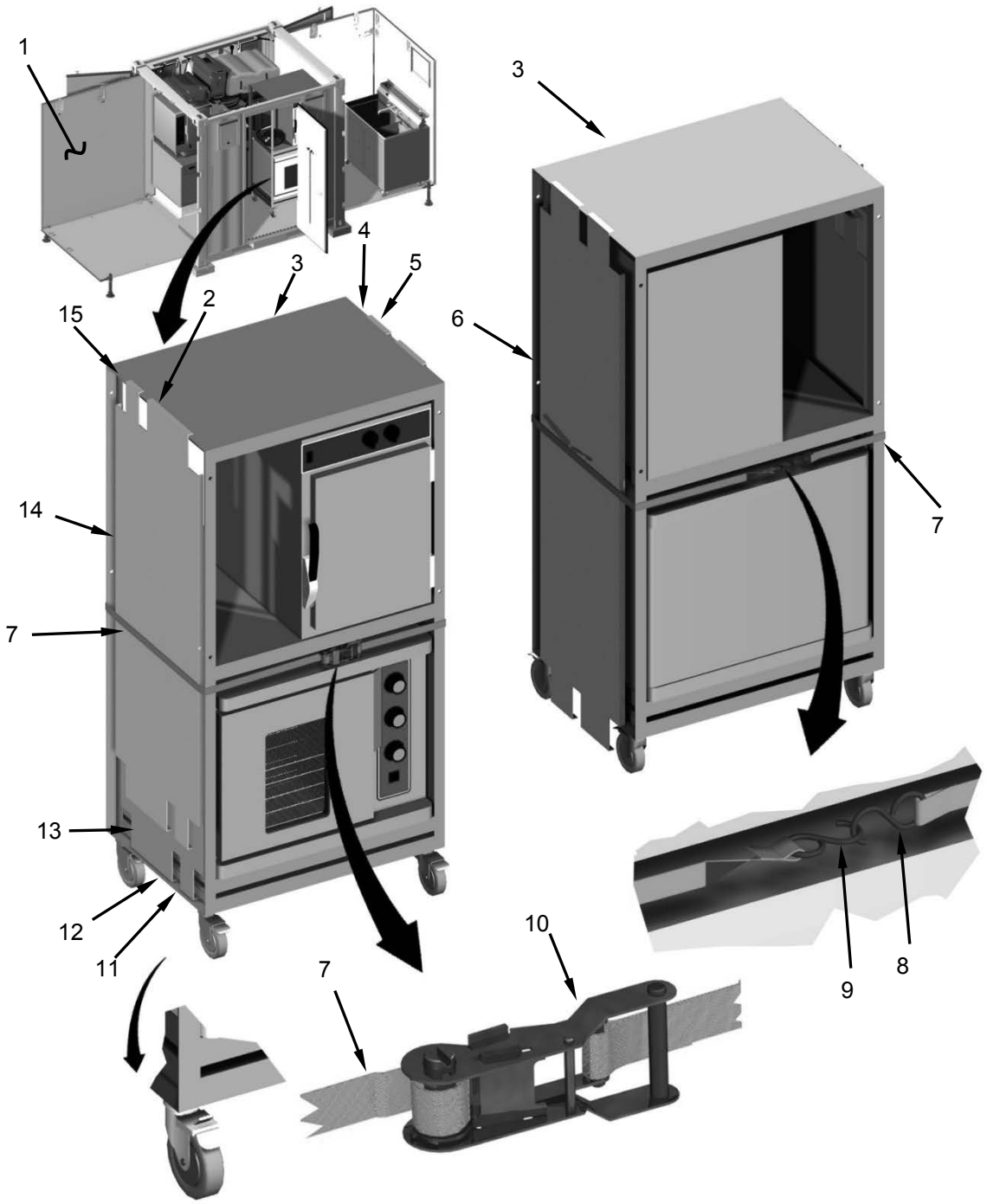


Figure 13. Securing Shelving to Oven Rack.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

35. Place cardboard (Figure 14, Item 3) in front of refrigerator (Figure 14, Item 4).

36. Release locks on oven rack casters by pushing down on locks with foot.

37. Rotate oven rack (Figure 14, Item 1) so that oven rack storage space (Figure 14, Item 2) faces the personnel door.

38. Carefully move oven rack up against the front left side of the refrigerator.

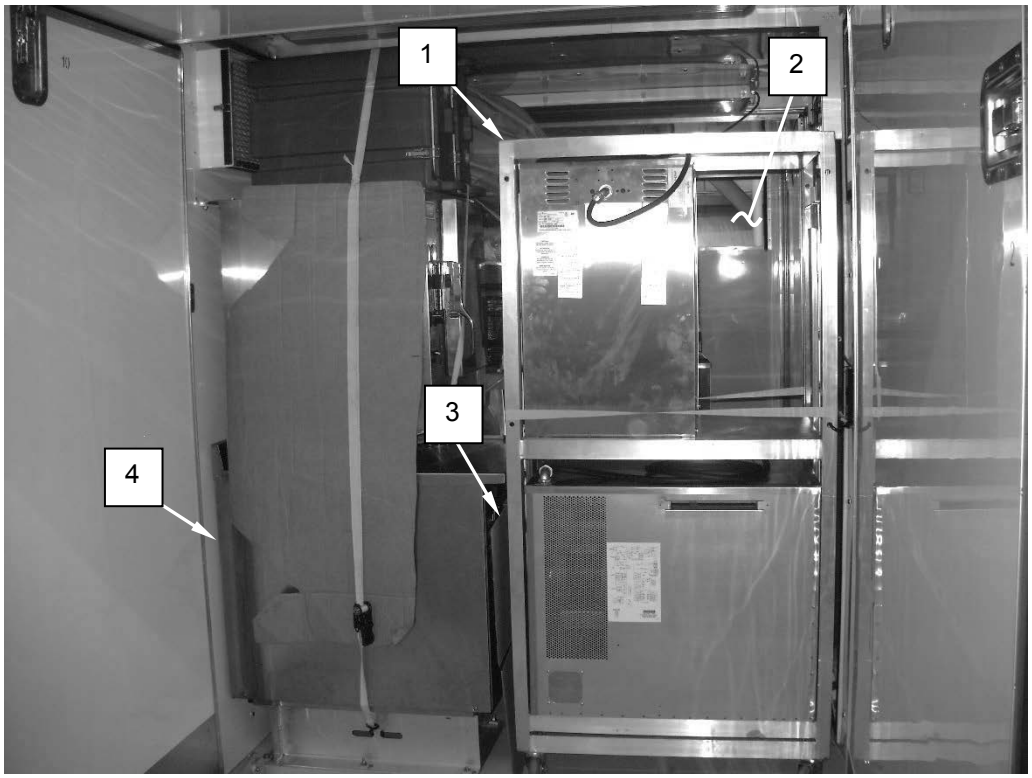


Figure 14. Position Oven Rack.

39. Secure casters (Figure 15, Item 1) by pushing down on locks (Figure 15, Item 2) with foot.

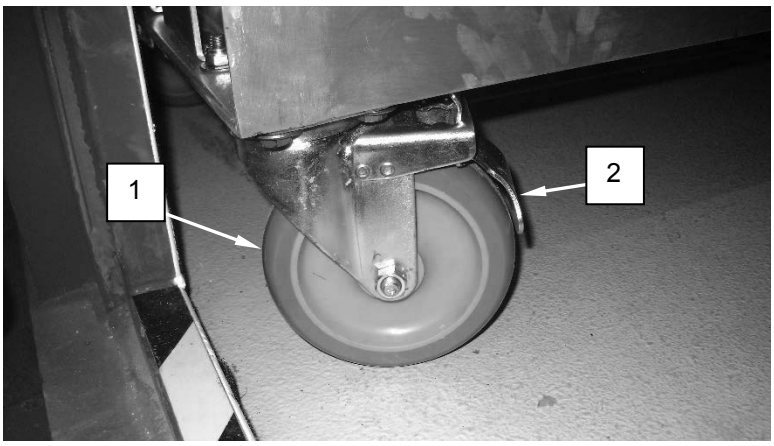


Figure 15. Locked Caster.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

40. Place two rolled floor mats (Figure 16, Item 3) in between the oven rack (Figure 16, Item 2) and steam and hold oven (Figure 16, Item 4).

41. Place wastewater hose (Figure 16, Item 1) on top of floor mats.

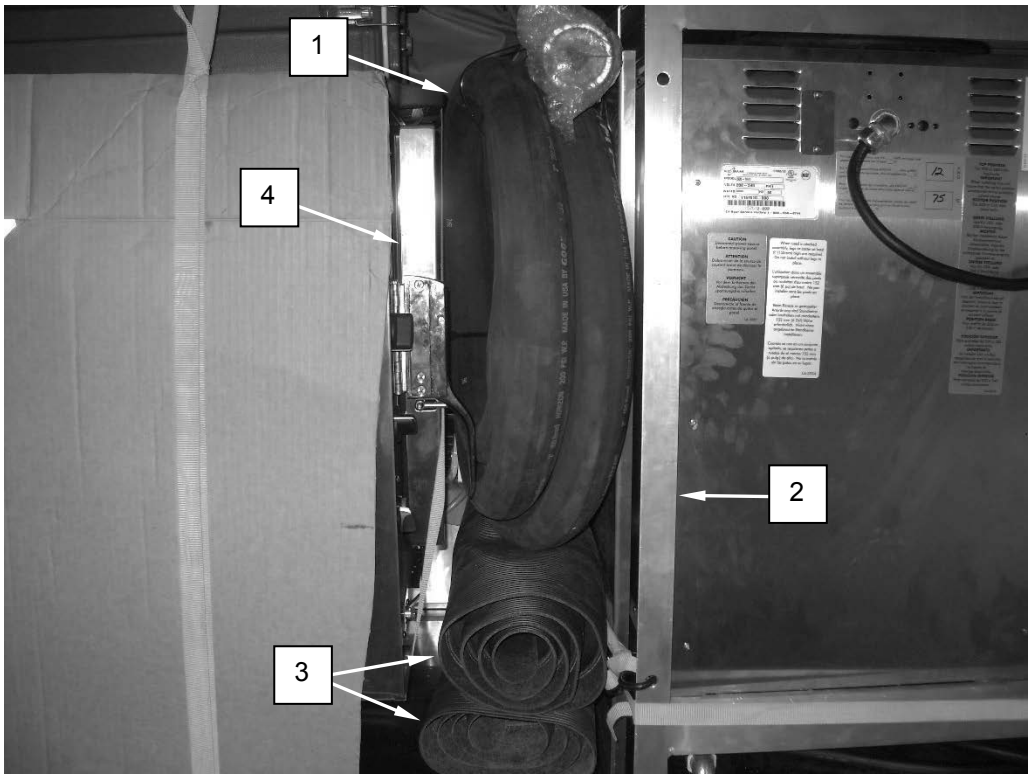


Figure 16. Store Floor Mats and Wastewater Hose.

42. Place cardboard at side of oven rack facing rear of unit.

43. Release wall latches labelled 8, 6, 5, 3, 2, and 1 (Figure 17, Item 1) securing rear ETKS end wall (Figure 17, Item 2).

44. Swing end wall out slightly to allow personnel access to the interior.

45. Release locks (Figure 17, Item 4) on sanitation sink casters (Figure 17, Item 3) by pushing down on locks with foot.

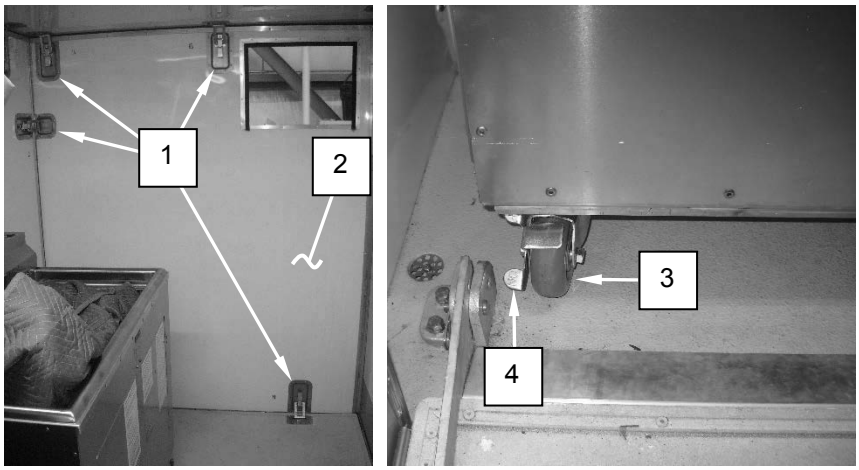


Figure 17. Move Sink and Take Down End Wall.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

46. Carefully maneuver sanitation sink into center section of ETKS so the rear of the sink is up against the refrigerator and left side of the sink is up against the oven rack.

47. Secure casters by pushing down on locks with foot.

48. Locate the items listed in Table 15.

Table 15. Packout Items Above Sanitation Sink.

ITEM	DESCRIPTION	QTY	LIFT
1	Floor Mat, 42 In X 72 In	1	1
2	Furniture Pad	4	1
3	Power Input Cable, 50ft	2	2
4	WASTE Water Bag, 3000-Gallon	1	3
5	Tool Box	1	1

49. Place furniture pads (Figure 18, Item 4) over sanitation sink (Figure 18, Item 3).

50. Place two power cables (Figure 18, Item 5) on top of furniture pad.

51. Place floor mat (Figure 18, Item 1) over top of power cables and furniture pad.

52. Place WASTE water bag (Figure 18, Item 2) on floor mat.

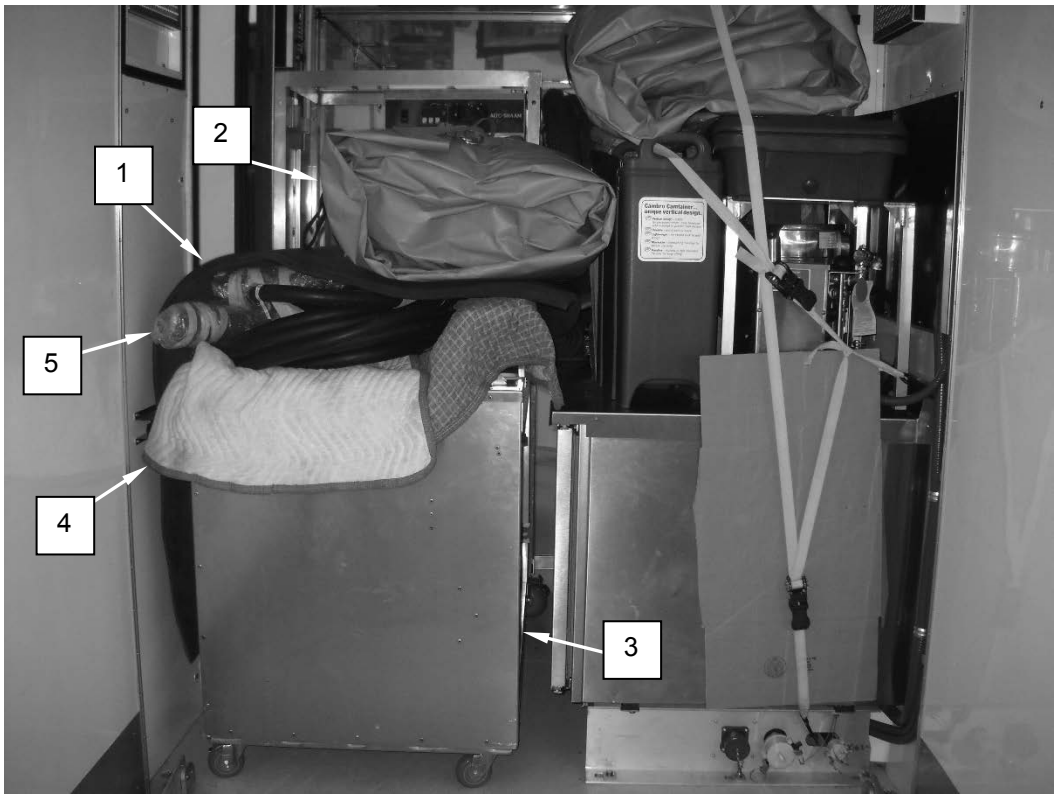


Figure 18. Stack Items on Sink.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

53. Place toolbox (Figure 19, Item 1) up against WASTE water bag (Figure 19, Item 2).

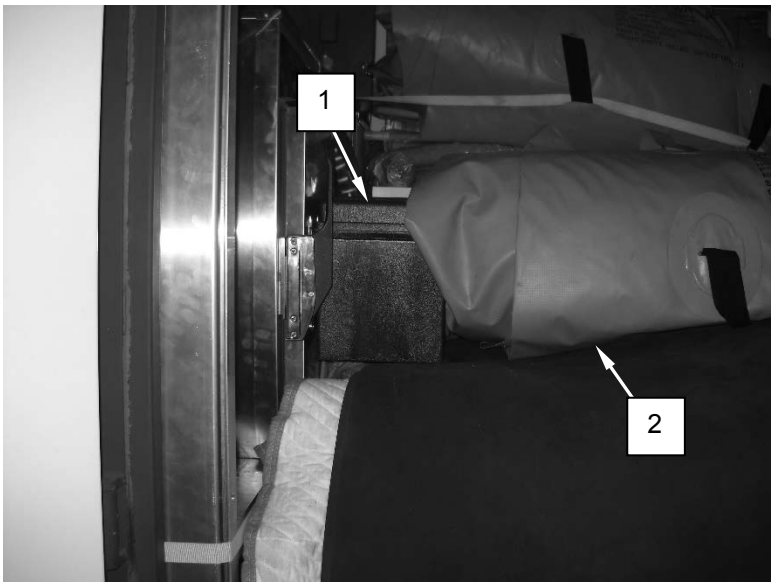


Figure 19. Place Toolbox.

54. Wrap two serving tables (Figure 20, Item 2) in furniture pads and place tables through oven rack (Figure 20, Item 1) and on top of sanitation sink and in front of WASTE water bag.

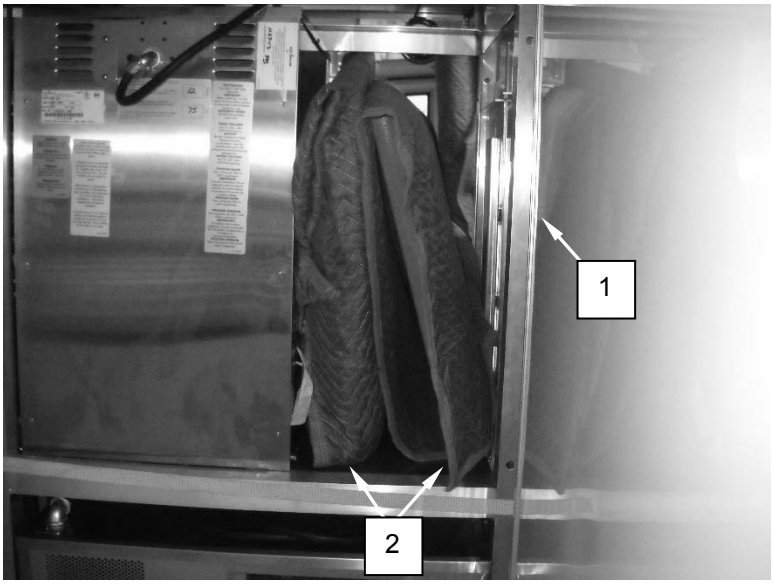


Figure 20. Serving Tables.

55. Wrap utility table in a furniture pad and place in between sanitation sink and container wall.

56. Place container couplings in a cardboard box or other protective material and operating manual in personnel door opening.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

57. Place cardboard on right wall of sanitation sink.

58. Slide catches outward and unfold handles.

59. Slide straps out of ratcheting mechanisms far enough to place straps over the ancillary equipment.

60. Attach hook on ratcheting mechanism end of first strap to leg of steam and hold oven (Figure 21, Item 4) then route strap (Figure 21, Item 3) between oven rack and container wall.

61. Attach hook on ratcheting mechanism end of second strap to hook of first strap then route strap (Figure 21, Item 2) between sanitation sink and container wall and attach strap to opening (Figure 21, Item 1) at lower right refrigeration frame.

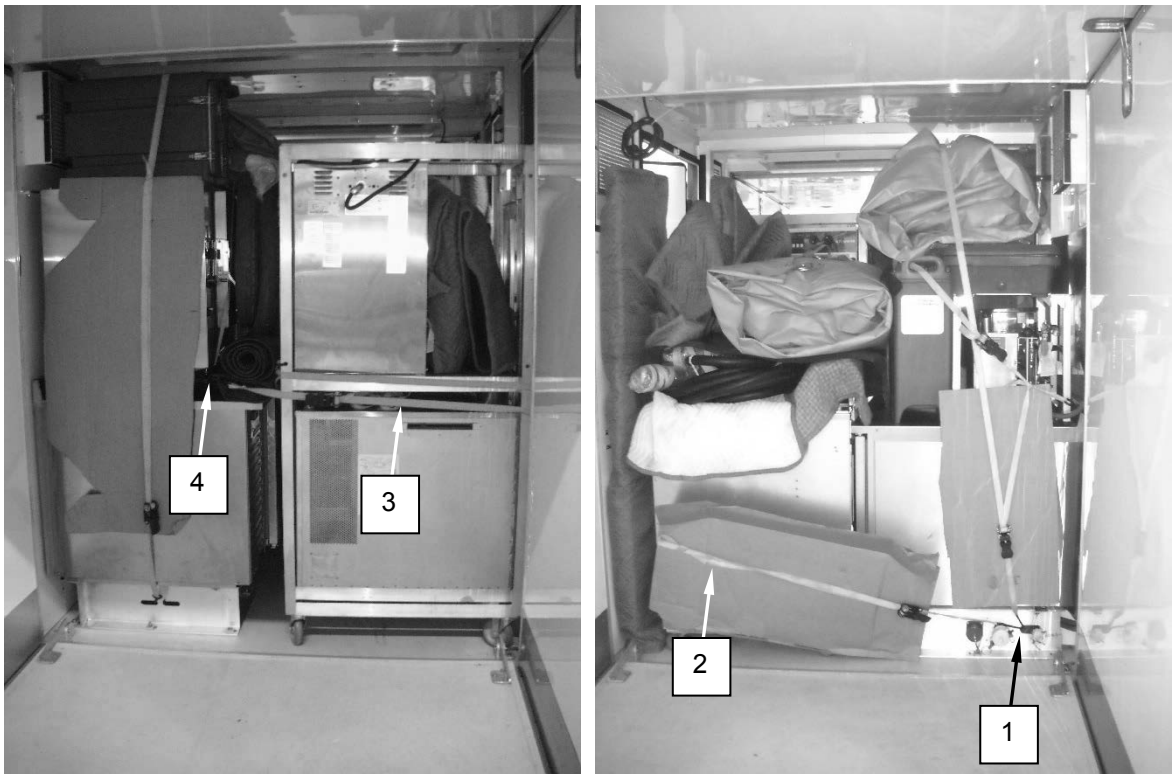


Figure 21. Straps.

62. At first tie down strap (Figure 14, Item 9) pull strap tight to remove slack then use ratcheting mechanism (Figure 14, Item 8) to apply a slight amount of tension to strap.

63. Repeat step 62 for the other two straps.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

Take Down ETKS Wing Sections

WARNING

Do not walk on floor of expanded wing once the wing jacks have been removed. Walking on the floor could cause the floor and roof sections to shift and separate from the side and end walls causing the entire wing to collapse. Failure to follow this precaution may result in severe injury from falling through floor or by being contacted by a swinging wall or roof section. Seek immediate medical attention if injury occurs.

Use extreme care when folding wing sections to avoid pinching fingers in hinges and where sections connected fold together. Failure to do so could result in serious injury. Seek immediate medical attention if injury occurs.

Exercise safe lifting techniques when handling wing sections. Ensure you lift with your legs and not with your back to avoid injury. Seek immediate medical attention if injury occurs.

CAUTION

Care must be used, when stowing roof and wall sections, not to damage seals at edges of each section. Seal damage can occur if each section is not properly supported as it is being pivoted into container. Seal damage will prevent proper latching of the sections to each other and allow moisture (rain and snow) to seep into kitchen area on subsequent deployments.

When disengaging floor section from side walls the floor must be supported so that it does not go past horizontal. If the floor is allowed to drop too far, damage to the hinge and structure will occur.

After latches are released from catches they must be pushed down into recess to prevent causing surface damage to the adjacent panel when the panels are folded and stowed.

NOTE

During wing take down a minimum of two people are required to separate, handle, and stow the wing sections. A step aid may also be required to perform these steps. Both wings can be stowed at the same time if enough personnel are available.

1. Install drain plugs to four corners of ETKS.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

2. Rotate wing jack foot pad (Figure 22, Item 7) until pad is no longer contacting the ground.
3. Flip keeper pin (Figure 22, Item 4) off of clevis pin (Figure 22, Item 5).
4. Remove clevis pin (Figure 22, Item 5) then remove leg (Figure 22, Item 6) from bracket (Figure 22, Item 2).
5. Remove screw (Figure 22, Item 3) then remove bracket (Figure 22, Item 2) from side wall (Figure 22, Item 8).
6. Install screw (Figure 22, Item 3) back into bracket (Figure 22, Item 2).
7. Mate leg (Figure 22, Item 6) with bracket (Figure 22, Item 2) then secure by sliding clevis pin (Figure 22, Item 5) through bracket and leg.
8. Flip keeper pin (Figure 22, Item 4) over to secure clevis pin (Figure 22, Item 5) to bracket (Figure 22, Item 2).
9. Repeat steps 2 through 8 at three other wing jack locations.
10. Open personnel door (Figure 22, Item 9) and place four wing jacks (Figure 22, Item 1) in door opening.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

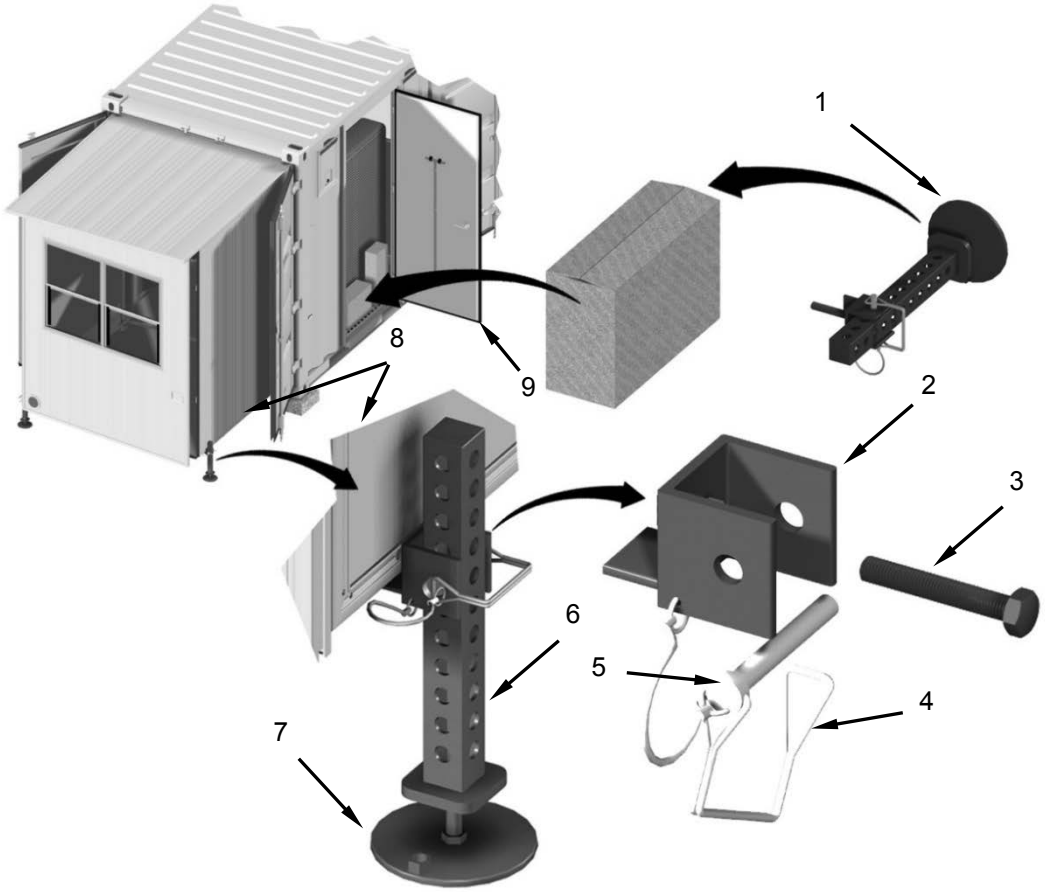


Figure 22. Removing Wing Jacks.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

11. In one expanded wing, unlatch remaining floor and wall latches securing ETKS side panels.

12. Obtain T-handle (Figure 23, Item 3) from stowed location.

NOTE

The roof section must be held in the air for up to a minute while the remaining wings sections are stowed. Make sure person lifting up on roof is prepared to properly hold roof for this duration.

13. Position tip of T-handle (Figure 23, Item 3) into receptacle (Figure 23, Item 2) at outboard edge of roof section (Figure 23, Item 1).

14. Use T-handle (Figure 23, Item 3) to lift up on roof section (Figure 23, Item 1).

15. Raise and hold floor section (Figure 23, Item 4) in stowed position.

16. While supporting weight of floor section, rotate handle (Figure 23, Item 5) on either locking pin (Figure 23, Item 6) then slide pin into receiver (Figure 23, Item 7).

17. Repeat step 16 to latch second locking pin (Figure 23, Item 6).

18. Lift up on handle (Figure 23, Item 10) then fold end wall section (Figure 23, Item 13) against side wall section (Figure 23, Item 11).

19. Lift up on handle (Figure 23, Item 12) then fold wall section (Figure 23, Item 11) into stowed position.

20. Fold second wall section (Figure 23, Item 8) into stowed position.

21. While one person holds roof section (Figure 23, Item 1) remove T-handle (Figure 23, Item 3) from receptacle (Figure 23, Item 2) at outboard edge of roof section.

22. With a person on each side of roof section (Figure 23, Item 1) slowly lower roof section and fold into stowed position.

23. Stow T-handle (Figure 23, Item 3) on personnel door (Figure 23, Item 9).

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

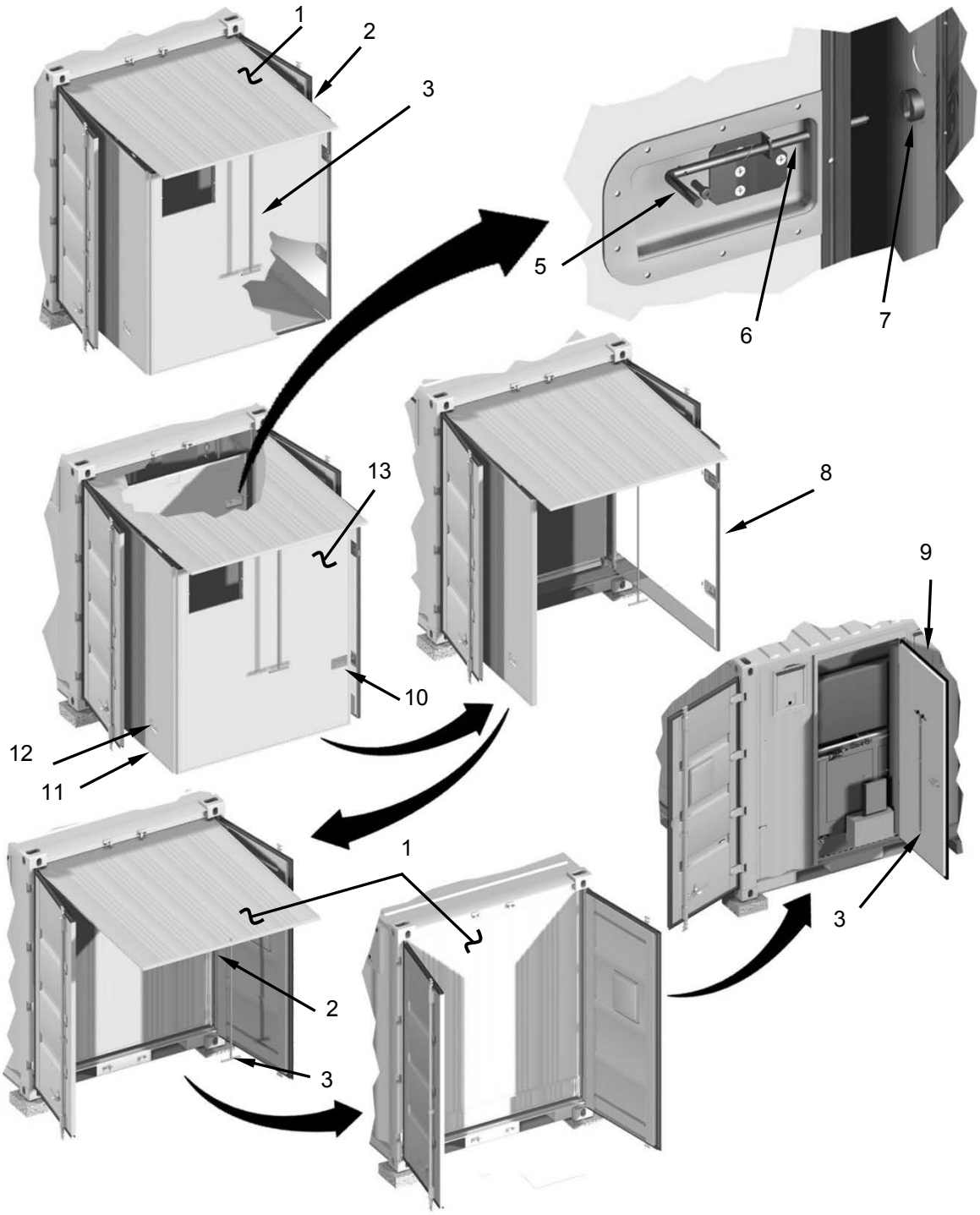


Figure 23. Stowing Floor, Walls, and Roof.

PREPARATION FOR MOVEMENT – PACKOUT – CONTINUED

NOTE

If terrain is uneven, the slope may prevent the doors from being closed one at a time. If this condition exists it is easier to close both doors together.

24. Close container doors (Figure 24, Items 1 and 6):

    a. Pivot hasp (Figure 24, Item 5) upward then lift handle (Figure 24, Item 4) out of hasp (Figure 24, Item 5).

    b. Fully close left door.

    c. Turn handle (Figure 24, Item 4) inward until locking rod (Figure 24, Item 2) engages holders (Figure 17, Item 3).

    d. Place handle (Figure 24, Item 4) back into hasp (Figure 24, Item 5) then flip upper part of hasp over handle.

25. Install seal or lock through hasp (Figure 24, Item 5) of right door (Figure 24, Item 1).

26. Repeat steps 11 through 25 to take down opposite wing section.

27. Close and secure personnel door.

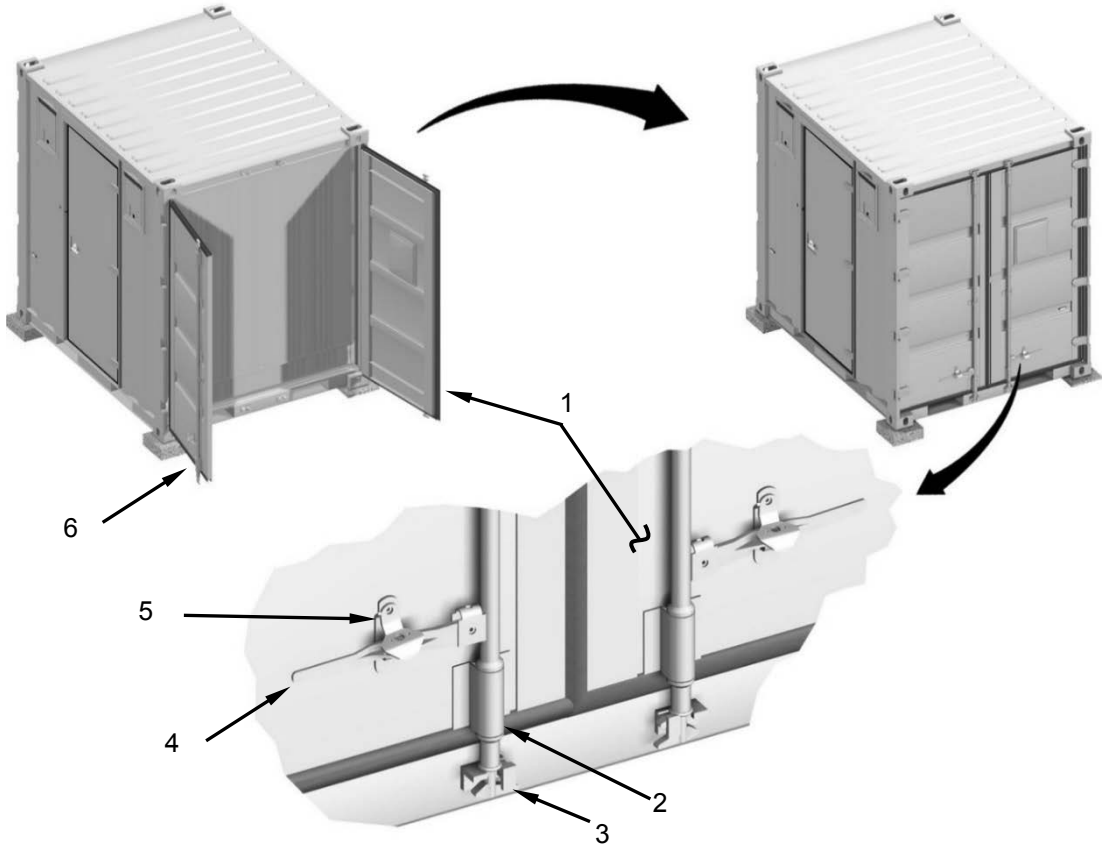


Figure 24. Closing Container Doors.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

OPERATION UNDER UNUSUAL CONDITIONS

UNUSUAL ENVIRONMENT/WEATHER

INITIAL SETUP

References	Equipment Condition
WP 0005, WP 0006, WP 0017	Daily startup complete (WP 0009)

GENERAL

This work package contains instructions for safely operating the Expeditionary TRICON Kitchen System (ETKS) under unusual conditions. In addition to normal preventive maintenance service, special care must be taken to keep the ETKS operational in extreme weather conditions.

OPERATION ON SLOPED TERRAIN

The ETKS must be operated on firm ground with a 5º slope or less. If the terrain requires that the ETKS be set up on un-level ground, extra steps are required to ensure the unit will be stable during use. Follow the guidance in Siting Requirements (WP 0005) and Assembly and Preparation for Use (WP 0006) to properly orient and support the ETKS for deployment and operation.

OPERATION IN COLD

The ETKS can be operated in conditions down to 33ºF (1ºC) with no special precautions. If the ETKS is deployed when temperatures are expected to drop below 33ºF (1ºC), special care must be taken to prevent freeze damage to the water system and waste system. This will include either draining the water supply and waste collection systems daily IAW WP 0017 or the use of Cold Weather Equipment (CWE) on the ETKS hoses and water bags. The CWE is not included in the ETKS and must be acquired separately.

OPERATION IN EXTREME COLD

Care must be taken when handling electrical cables. Extreme cold weather can cause insulation material on electrical wire to crack, causing short circuits. Water hoses and other materials can also become hard, brittle, and easily damaged. Do not allow ice and snow to build-up on the TRICON roof (Figure 1, Item 1) or expanded section roofs (Figure 1, Item 2). Place a footing of planks under wing jacks (Figure 1, Item 3) to keep them from freezing to the ground.

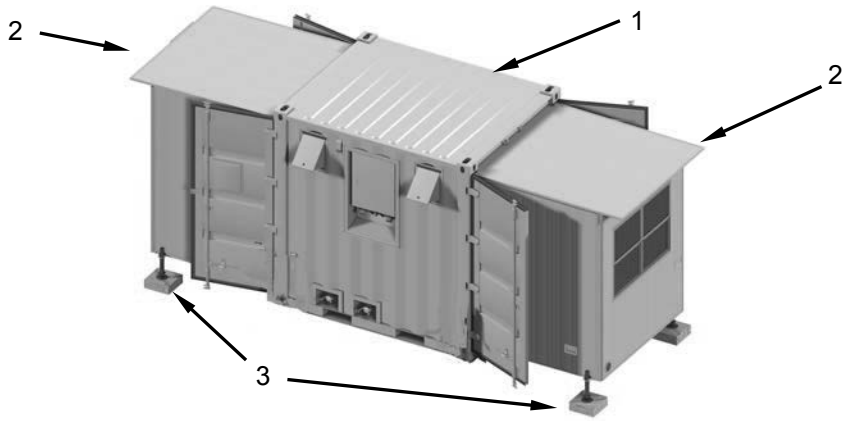


Figure 1. ETKS Operation in Extreme Cold.

OPERATION IN EXTREME HEAT

Use of personnel door should be kept to a minimum.

The water system does not cool. The minimum water temperature will be at or slightly below the water temperature at the source.

OPERATION IN SANDY OR DUSTY AREAS

When operating in sandy or dusty areas perform Monthly PMCS Weekly. Keep use of personnel door and serving window to a minimum. Make sure power distribution panel access door (Figure 2, Item 1) is kept closed.

OPERATION IN HIGH WIND

Keep all loose objects secured or stowed.

OPERATION IN RAIN

When rain is expected, a drain trench should be dug around the ETKS outside perimeter to collect and drain the water away. Make sure circuit breaker panel door (Figure 2, Item 1) is kept closed.

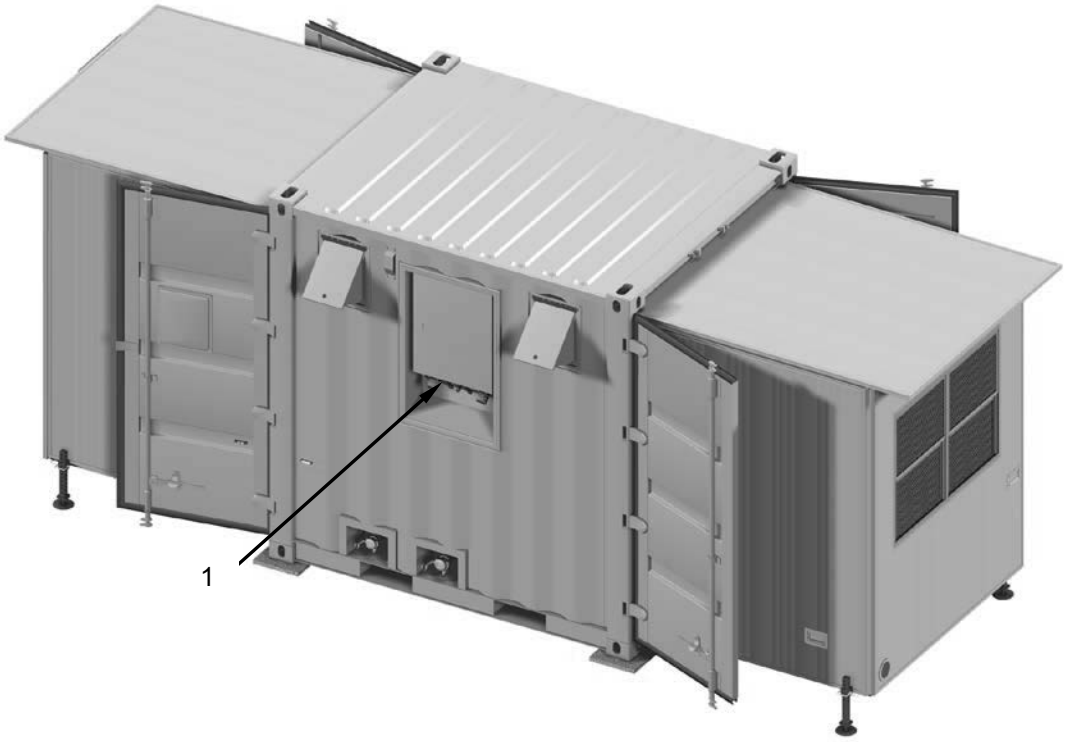


Figure 2. ETKS Operation in Sandy or Dusty Areas and Rain.

OPERATION IN FREEZING RAIN AND SNOW

Do not allow ice and snow to build-up on the TRICON roof (Figure 1, Item 1) or expanded section roofs (Figure 1, Item 2). Place a footing of planks under and wing support jacks (Figure 1, Item 4) to keep them from freezing to the ground.

OPERATION AT DIFFERENT ALTITUDES

ETKS operation is not affected by altitude. If the ETKS is being powered by a generator, the generator may suffer engine performance and output power degradation at altitudes above 7,500 ft. (2,286 m). In this instance verify that all devices being powered by the generator do not collectively exceed the generator's de-rated output level.

OPERATION IN AREAS WITH HIGH INSECT POPULATIONS

When operating in areas with high insect populations, the supplied insect screens (Figure 3, Items 1 and 4) should be installed over the personnel door opening (Figure 3, Item 2) and the serving windows (Figure 3, Item 3).

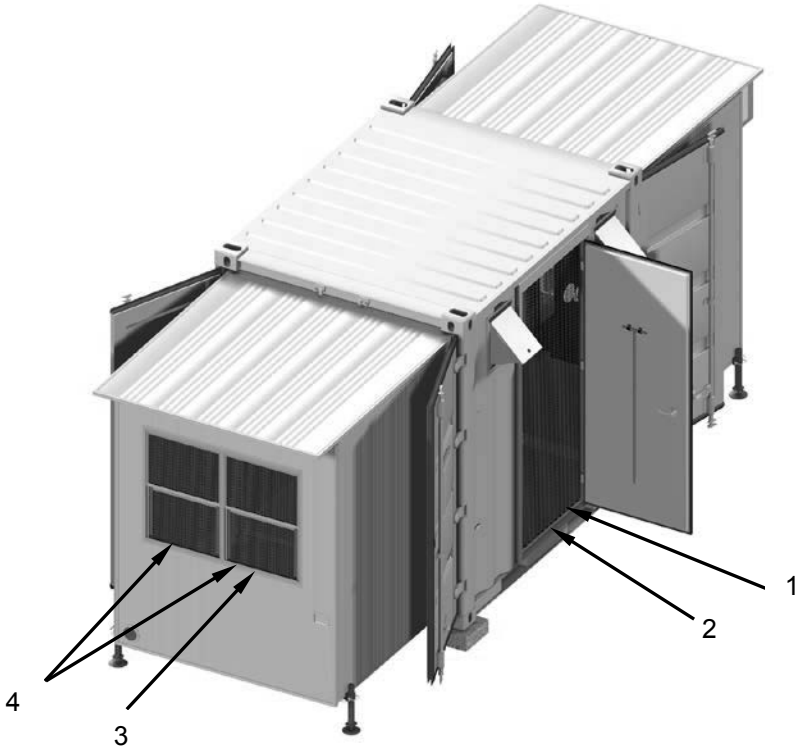


Figure 3. ETKS Operation Areas with High Insect Populations.

OPERATION IN BLACKOUT CONDITIONS

When operating under blackout conditions, the supplied blackout covers should be installed over the serving windows (Figure 4, Item 1), the grease filters (Figure 4, Item 2), and air intake filters (Figure 4, Item 3) with hook and loop strip.

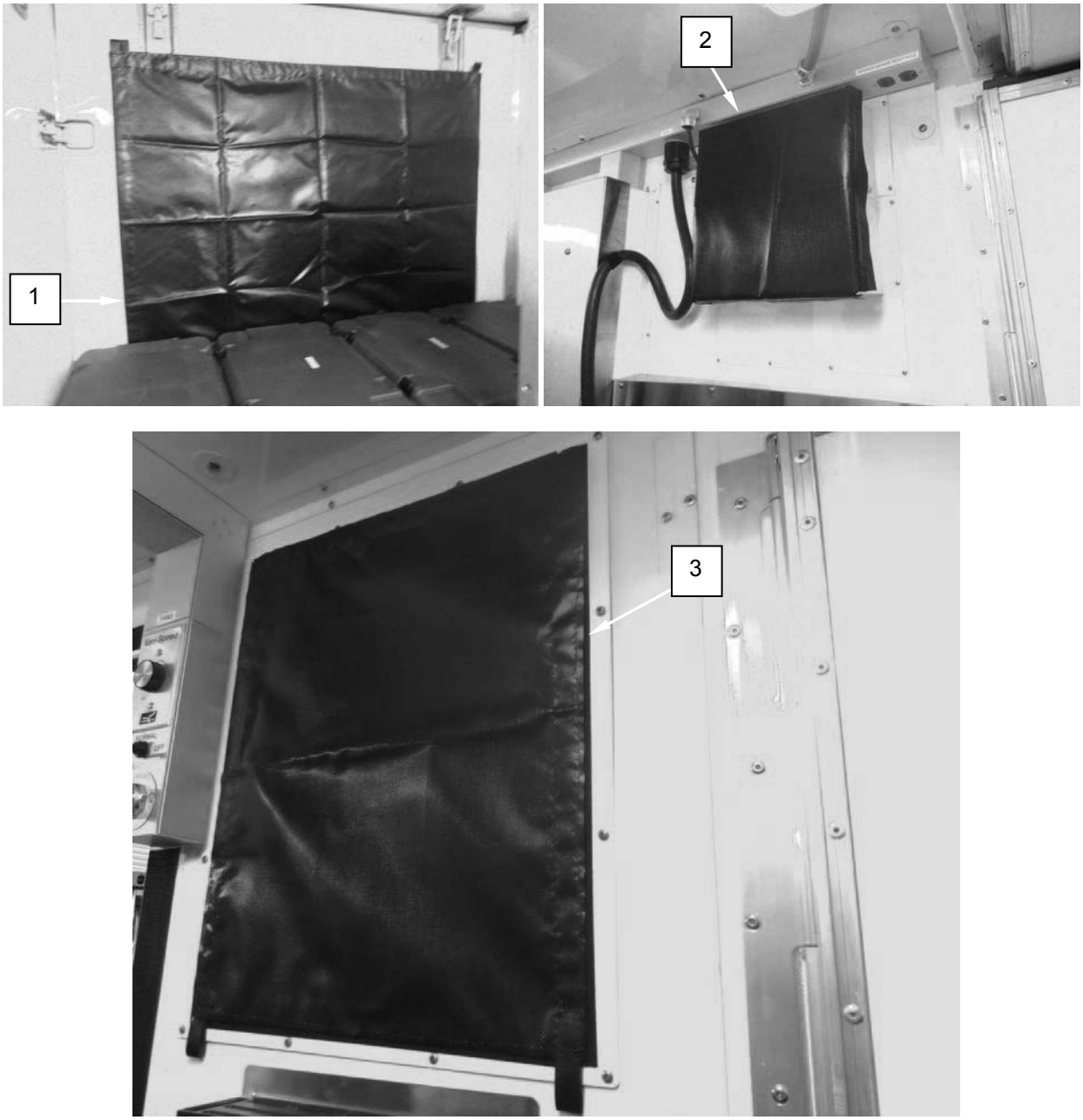


Figure 4. ETKS Operation Under Blackout Conditions.

END OF TASK

END OF WORK PACKAGE

CHAPTER 3

TROUBLESHOOTING INSTRUCTIONS FOR EXPEDITIONARY TRICON KITCHEN SYSTEM (ETKS)

CREW MAINTENANCE

TROUBLESHOOTING INDEX

GENERAL

This chapter provides operator maintenance information and includes troubleshooting maintenance procedures. Troubleshooting instructions covered in this section are unique to the ETKS Module.

TROUBLESHOOTING INDEX

The troubleshooting index lists common malfunctions that may occur during ETKS inspection and operation. Find the malfunction to be eliminated and go to the indicated troubleshooting work package that follows. The index cannot list all malfunctions that may occur, all tests or inspections needed to find the fault, nor all actions required to correct the fault. If the existing malfunction is not listed, or cannot be corrected through this troubleshooting index, notify your supervisor.

Symptom	Work Package
AIR CONDITIONER	
Air conditioner does not cool or heat room well, cycles on and off too frequently, or runs too much.	WP 0027
Air conditioner does not turn on.	WP 0027
CONVECTION OVEN	
Blower motor does not turn on.	WP 0033
Buzzer does not sound at end of cook cycle.	WP 0033
Convection oven will not turn on.	WP 0033
Cooling fan does not turn on.	WP 0033
Oven does not heat up to the desired temperature.	WP 0033
Oven turns on, but indicator light does not turn on.	WP 0033
COOK AND HOLD OVEN	
Box fan does not turn on.	WP 0034
Cook and hold oven will not turn on.	WP 0034
Error code E-10 is shown on the cook and hold digital display.	WP 0034
Error code E-11 is shown on the cook and hold digital display.	WP 0034
Error code E-30 is shown on the cook and hold digital display.	WP 0034
Error code E-31 is shown on the cook and hold digital display.	WP 0034
Error code E-70 is shown on the cook and hold digital display.	WP 0034
Error code E-78 is shown on the cook and hold digital display.	WP 0034
Error code E-79 is shown on the cook and hold oven digital display.	WP 0034
Error code E-80, E-81, E-82, E-83, E-85, E-86, E-87, or E-88 is shown on the cook and hold digital display.	WP 0034
Error code E-90 is displayed on the cook and hold digital display.	WP 0034

TROUBLESHOOTING INDEX – CONTINUED

Symptom	Work Package
GRIDDLE	
Grease does not drain properly.	WP 0032
Griddle does not turn on.	WP 0032
Indicator light does not turn on but griddle heats up.	WP 0032
One side of griddle does not heat.	WP 0032
LIGHTING SYSTEM	
All lights and fans do not turn on.	WP 0026
All lights do not turn on, but fans turn on.	WP 0026
Blackout lights in both fixtures do not turn on.	WP 0026
Blackout lights in one fixture do not turn on.	WP 0026
Normal lights in both fixtures do not turn on.	WP 0026
Normal lights in one fixture do not turn on.	WP 0026
POWER DISTRIBUTION	
No power available at 50-ft power distribution cable.	WP 0024
No power available at external service receptacle (R1–R4).	WP 0024
No power available at interior service receptacle.	WP 0024
No power available to any components on individual main breaker and power to all components on other main breaker.	WP 0024
No power in ETKS.	WP 0024
REFRIGERATOR	
Compressor runs continuously.	WP 0031
Compressor short cycles.	WP 0031
Condensation on exterior surface.	WP 0031
Controller display reads "CHI".	WP 0031
Controller display reads "CLn" then "FIL".	WP 0031
Controller display reads "CLo".	WP 0031
Controller display reads "ELE" then "LOS".	WP 0031
Controller display reads "Sn1".	WP 0031
Controller display reads "Sn2".	WP 0031
Controller display reads "Sn3".	WP 0031
Refrigerator does not turn on.	WP 0031

TROUBLESHOOTING INDEX – CONTINUED

Symptom	Work Package
SANITATION SINK	
Immersion heater does not turn on or does not heat up.	WP 0036
No power to sanitation sink.	WP 0036
No water transfer between sink basins.	WP 0036
Sanitation sink leaks.	WP 0036
Water does not transfer to one basin.	WP 0036
SANITATION SINK SOURCE WATER	
Low water pressure at faucet.	WP 0035
No hot water is available at faucet.	WP 0035
No water is available at faucet and pressure pump does not run.	WP 0035
Pressure pump runs continuously.	WP 0035
Pressure pump short cycles or water hammering occurs.	WP 0035
SANITATION SINK WASTE WATER	
No waste flow from sink.	WP 0037
SPACE HEATER	
Space heater shuts off during use.	WP 0028
Space heater will not turn on.	WP 0028
STEAM AND HOLD OVEN	
Food is consistently overcooked and OVER TEMP indicator is not on.	WP 0030
Food is consistently undercooked.	WP 0030
Indicator light does not turn on.	WP 0030
Steam and hold oven OVER TEMP indicator illuminates constantly.	WP 0030
Steam and hold oven does not come up to proper temperature.	WP 0030
Steam and hold oven is cooking slowly.	WP 0030
Steam and hold oven turns off during operation.	WP 0030
Steam and hold oven will not turn off.	WP 0030
Steam and hold oven will not turn on, no alarm sounding or lights illuminated.	WP 0030
STEAM KETTLE	
Safety relief valve pops.	WP 0029
Steam kettle continues heating after it reaches the desired temperature.	WP 0029
Steam kettle heats up slowly.	WP 0029
Steam kettle indicator light does not turn on, but kettle heats.	WP 0029
Steam kettle stops heating before it reaches the desired temperature.	WP 0029
Steam kettle will not heat up and heating indicator light does not turn on.	WP 0029
Steam kettle will not heat up, but heating indicator light turns on.	WP 0029

TROUBLESHOOTING INDEX – CONTINUED

Symptom	Work Package
VENTILATION FAN	
All fans and lights do not turn on.	WP 0025
Both ventilation fans will not turn on, but lights turn on.	WP 0025
One ventilation fan will not turn on, lights turn on.	WP 0025
Ventilation fan is noisy or runs rough.	WP 0025

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING INSTRUCTIONS
POWER DISTRIBUTION FAULTS

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to plug in and use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
No power available at 50-ft power distribution cable.

MALFUNCTION
Power cable unplugged.

CORRECTIVE ACTION
Plug 50-ft power distribution cable (Figure 1, Item 1) to exterior service receptacle and twist clockwise to verify cable is locked in place.

Figure 1. 50-ft Power Distribution Cable.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Circuit breaker tripped.

CORRECTIVE ACTION

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open circuit breaker panel door (Figure 2, Item 1).

STEP 2. Set the tripped service receptacle circuit breaker (P1, CB 8) (Figure 2, Item 2) to the OFF position and back to the ON position. If circuit breaker trips immediately after being reset, notify maintainer.

STEP 3. Close and secure circuit breaker panel door.

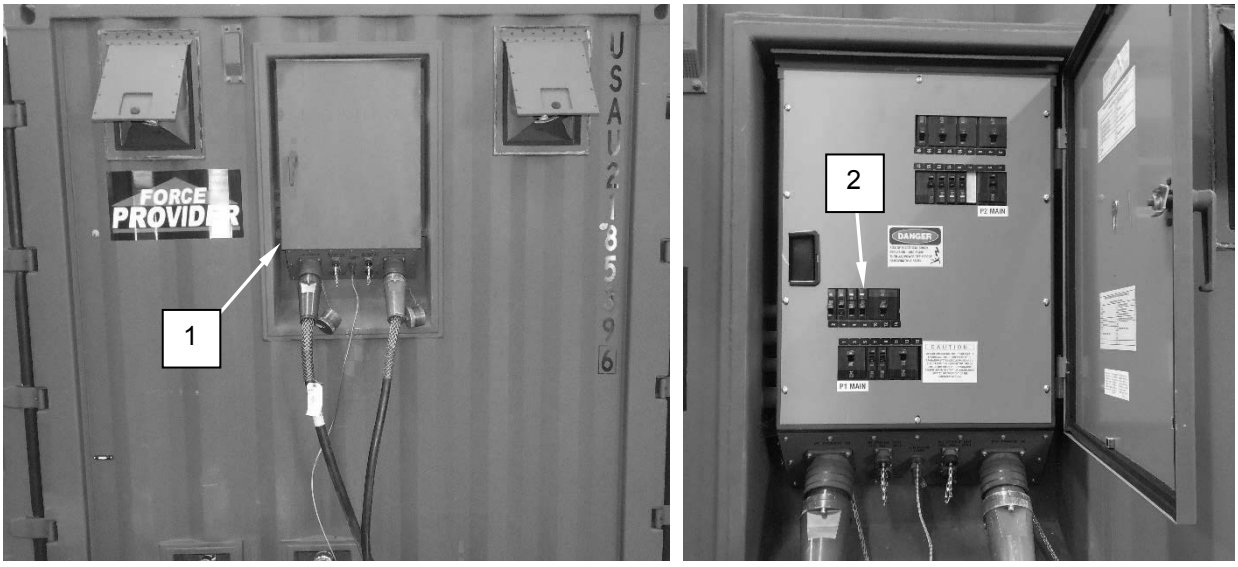


Figure 2. Access Circuit Breaker Panel.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
No power available at external service receptacle (R1–R4) (Figure 3, Item 1).

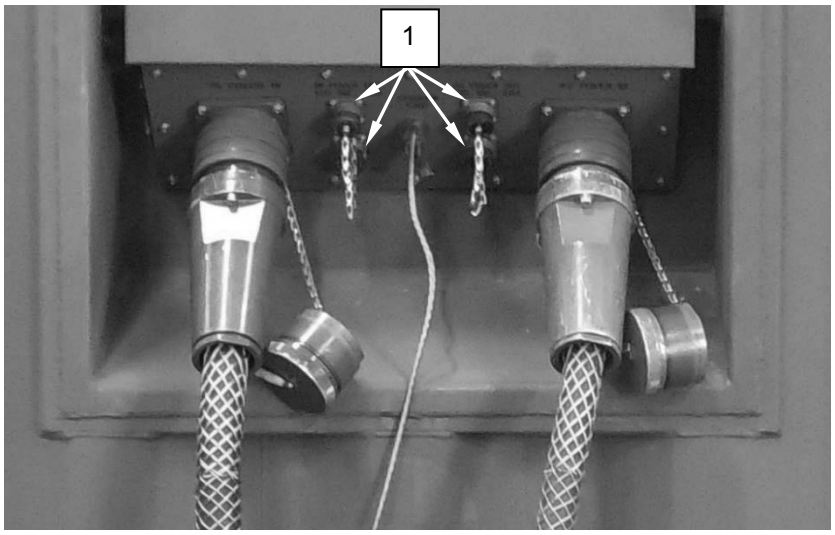


Figure 3. R1–R4 Receptacles.

MALFUNCTION
Circuit breaker tripped.

CORRECTIVE ACTION

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open circuit breaker panel door (Figure 4, Item 1).

STEP 2. Set the tripped service receptacle circuit breaker (R1=P2, CB13; R2=P2, CB9; R3=P1, CB6; R4=P2, CB11) (Figure 4, Item 2) to the OFF position and back to the ON position. If circuit breaker trips immediately after being reset, notify maintainer.

STEP 3. Close and secure circuit breaker panel door.

TROUBLESHOOTING PROCEDURES – CONTINUED

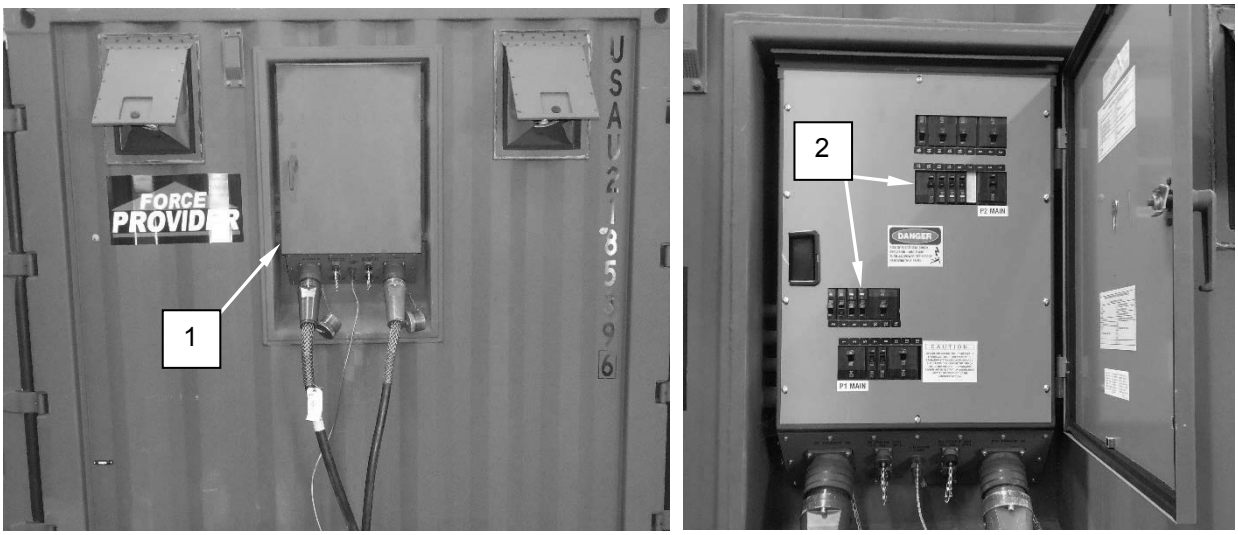


Figure 4. Circuit Breaker Panel.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
No power available at interior service receptacle.

MALFUNCTION
Circuit breaker tripped.

CORRECTIVE ACTION

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open circuit breaker panel door (Figure 4, Item 1).

STEP 2. Set the tripped service receptacle circuit breaker (P2, CB 18) (Figure 5) to the OFF position and back to the ON position. If circuit breaker trips immediately after being reset, notify maintainer.

STEP 3. Close and secure circuit breaker panel door.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
No power available to any components on individual main breaker and power to all components on other main breaker.

MALFUNCTION
Tripped MAIN circuit breaker.

CORRECTIVE ACTION

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open door (Figure 4, Item 1) on circuit breaker panel.

NOTE

Tables 1 and 2 list all components connected to each MAIN circuit breaker. Refer to each table as needed.

STEP 2. Turn off all branch circuit breakers listed in either Table 1 or Table 2.

CAUTION

Ensure all branch circuit breakers are OFF prior to resetting P1 or P2 MAIN (P1, CB 1, 3, 5 or P2, 1, 3, 5). Energizing all circuits at once may cause damage to equipment.

STEP 3. Reset the tripped MAIN circuit breaker (Figure 5) by positioning to the OFF position and back to the ON position. If circuit breaker trips immediately after being reset, notify maintainer.

STEP 4. One at a time, turn on branch circuit breakers. If MAIN circuit breaker trips again during this process, notify maintainer.

STEP 5. Close and secure circuit breaker panel door.

Table 1. Circuit Breaker Panel (P1).

Component	CB Number	Component	CB Number
Air Conditioner Unit	2	Refrigerator	9
Exterior Service Receptacle GFCI	8	Sanitation Sink Unit	11, 13, 15
Exterior Service Receptacle R3	6	Space Heater	7
Lights/ Fans	4	Steam and Hold Oven	10, 12, 14
P1 Main	1, 3, 5		

Table 2. Circuit Breaker Panel (P2).

Component	CB Number	Component	CB Number
Convection (Blodgett) Oven	2,4,6	Griddle	12,14,16
Cook and Hold (Alto Shaam) Oven	8,10	Interior Receptacle #5	18
Exterior Service Receptacle R1	13	P2 Main	1,3,5
Exterior Service Receptacle R2	9	Steam Jacket Tilting Kettle	15,17
Exterior Service Receptacle R4	11		

TROUBLESHOOTING PROCEDURES – CONTINUED

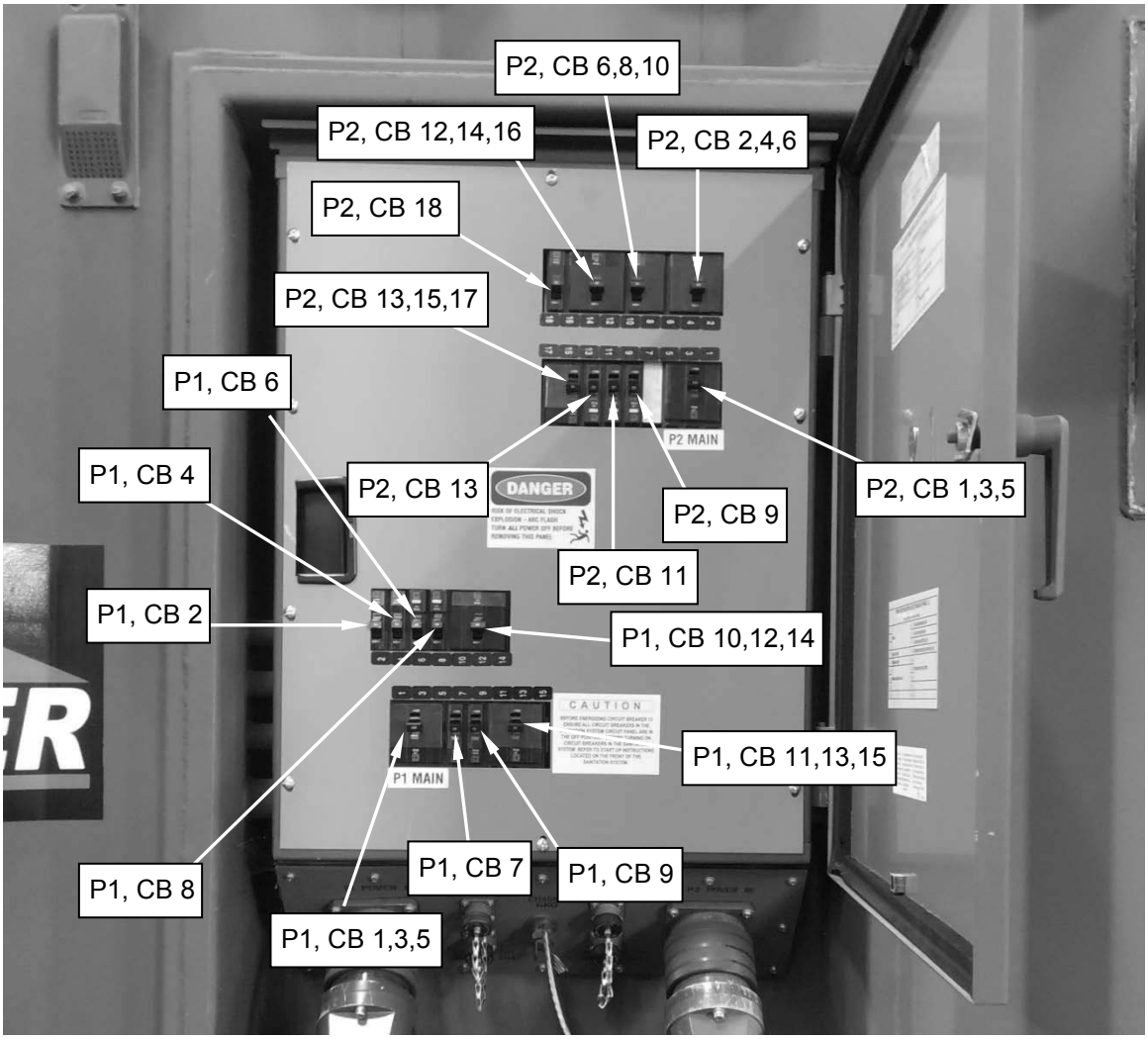


Figure 5. Circuit Breaker Panel Identification.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Power cables not properly connected.

CORRECTIVE ACTION
Verify ETKS power cables (Figure 6, Item 2) are properly connected at power source, intermediate connections (power distribution boxes and/or pigtail cables), and power distribution panel (Figure 6, Item 1).

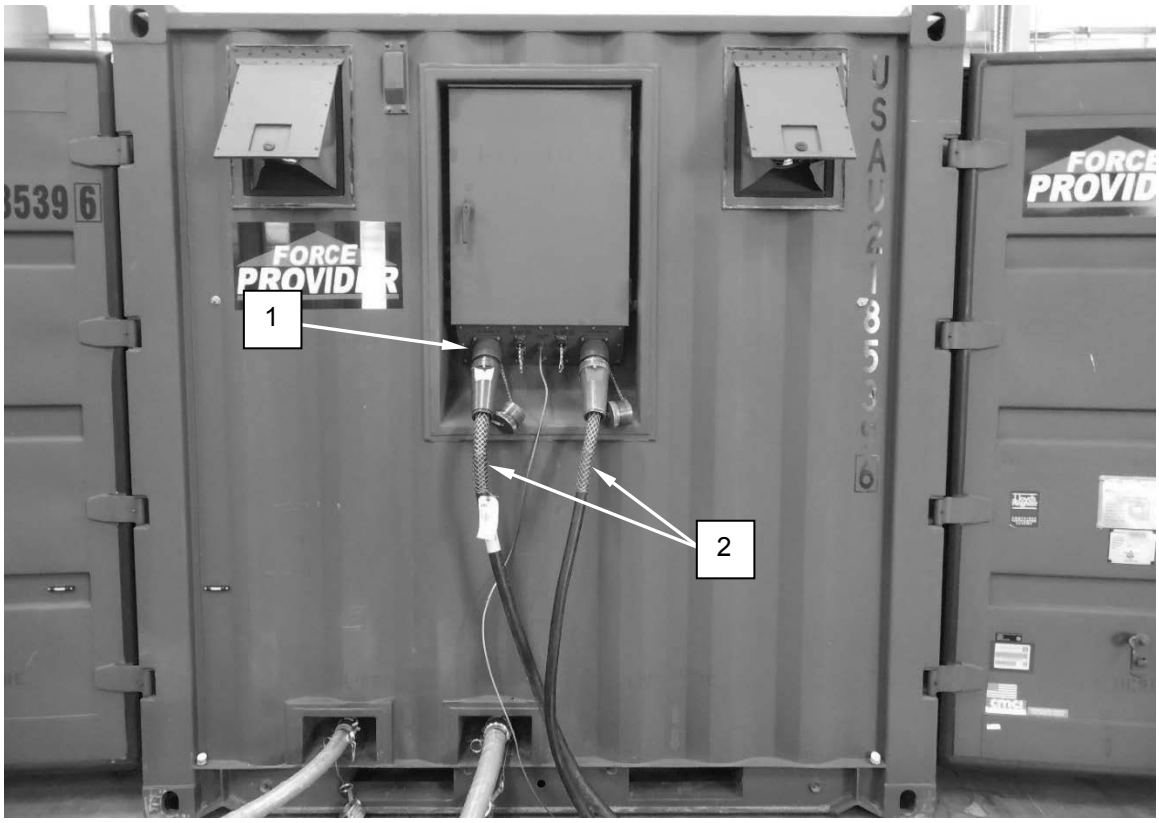


Figure 6. Power Distribution Panel.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
No power in ETKS.

MALFUNCTION
Emergency stop switch engaged.

CORRECTIVE ACTION
STEP 1. Pull out emergency stop switch (Figure 7, Item 1).

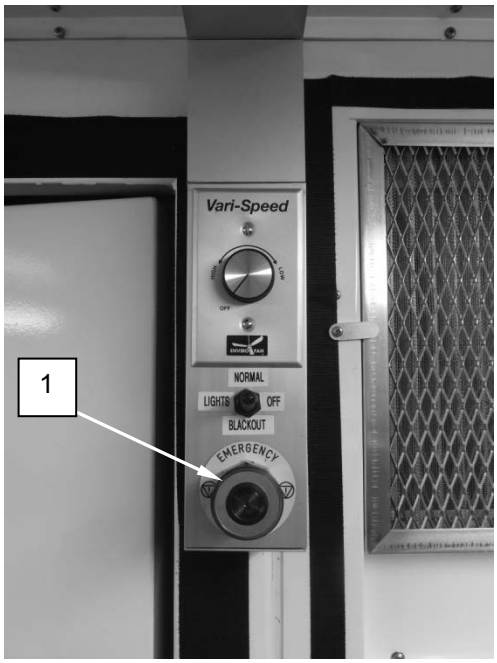


Figure 7. Emergency Stop Switch.

TROUBLESHOOTING PROCEDURES – CONTINUED

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 2. Open door (Figure 8, Item 1) on circuit breaker panel.

STEP 3. Reset main circuit breakers (Figure 8, Item 2).

STEP 4. Close and secure circuit breaker panel door.

Figure 8. Reset Main Circuit Breakers.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Power cables not properly connected.

CORRECTIVE ACTION
Verify ETKS power cables (Figure 9, Item 2) are properly connected at power source and power distribution panel (Figure 9, Item 1).

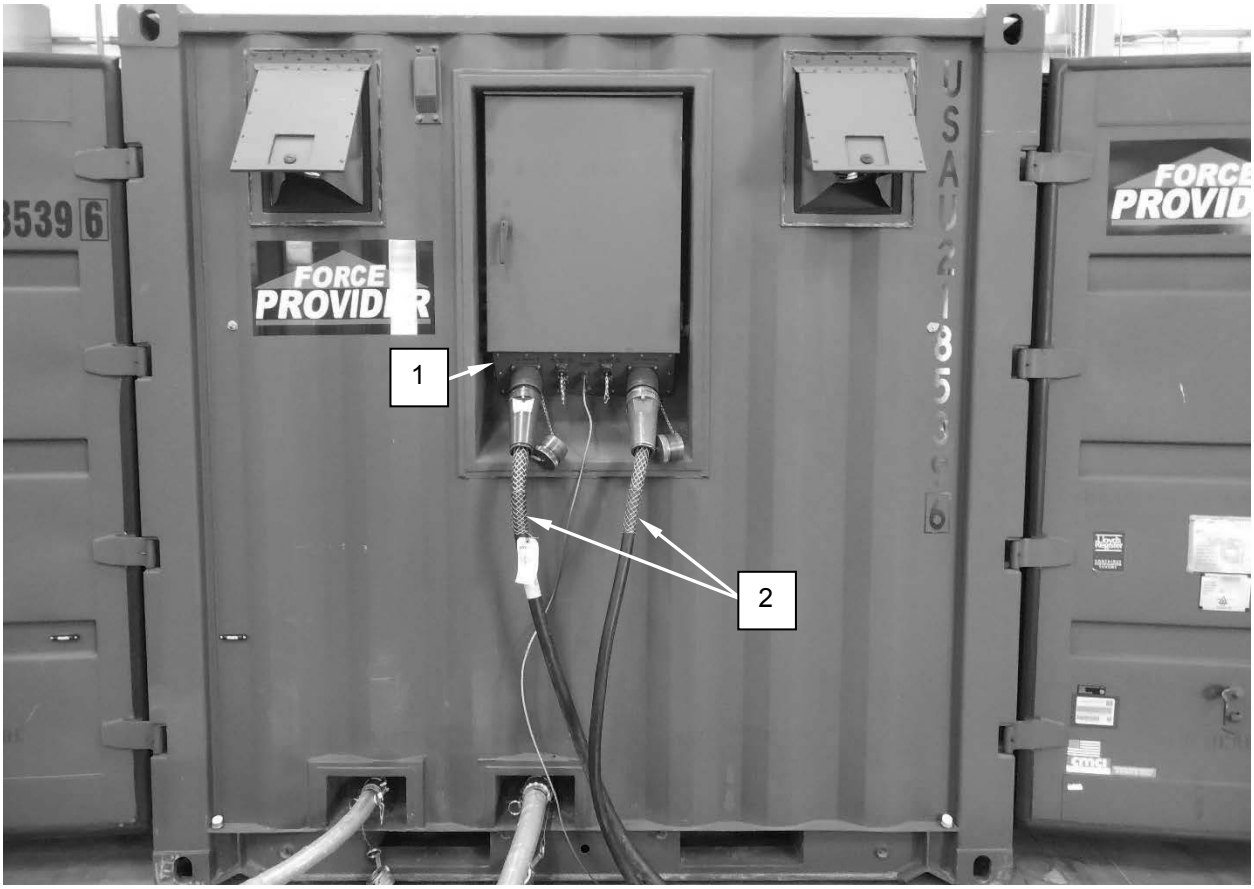


Figure 9. Power Distribution Panel.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING INSTRUCTIONS
VENTILATION FAN FAULTS

INITIAL SETUP:

Materials/Parts

Goggles, Industrial (WP 0073, Item 7)
Rag, Wiping (WP 0073, Item 11)

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P
WP 0024, WP 0026

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to plug in and/or use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
All fans and lights do not turn on.

NOTE

A larger malfunction may cause both the fans and lights to not turn on. Attempt to use other components of the ETKS to determine if power is present prior to troubleshooting. Refer to WP 0024 to troubleshoot any “No power” symptoms.

The fans and lights are controlled by the same circuit breaker. If lights work, but fans do not, refer to appropriate symptom.

MALFUNCTION
Circuit breaker tripped or off.

WARNING

High voltage is present at circuit breaker panel. Use extreme caution when working inside. Contact with energized connections will result in serious personal injury or death. Seek immediate medical attention if injury occurs.

CORRECTIVE ACTION

STEP 1. Open the circuit breaker panel door (Figure 1, Item 1). Ensure the circuit breaker (Figure 1, Item 2) for the fans and lights (P1, CB 4) is in the ON position.

STEP 2. Reset circuit breaker (P1, CB 4) by positioning to OFF and back to ON.

TROUBLESHOOTING PROCEDURES – CONTINUED

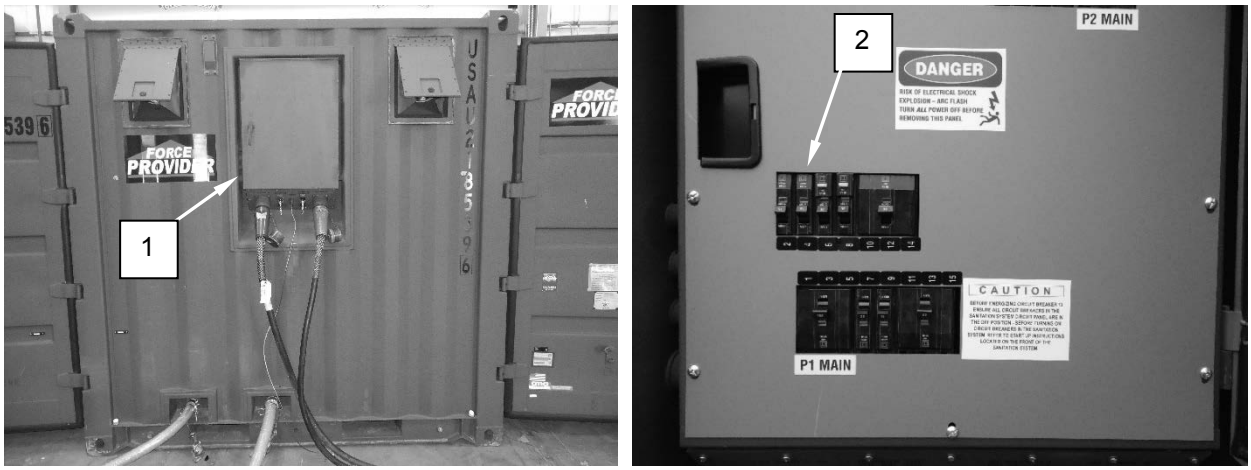


Figure 1. Circuit Breaker.

STEP 3. Turn fan switch (Figure 2, Item 1) to HIGHEST setting and verify fans turn on and circuit breaker (P1, CB 4) does not trip. If it does, notify maintainer.

STEP 4. Alternate light switch (Figure 2, Item 2) between NORMAL (up) and BLACKOUT (down) settings and verify lights turn on and circuit breaker (P1, CB 4) does not trip. If it does, troubleshoot lighting symptoms IAW WP 0026.

STEP 5. Close and secure circuit breaker panel door.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

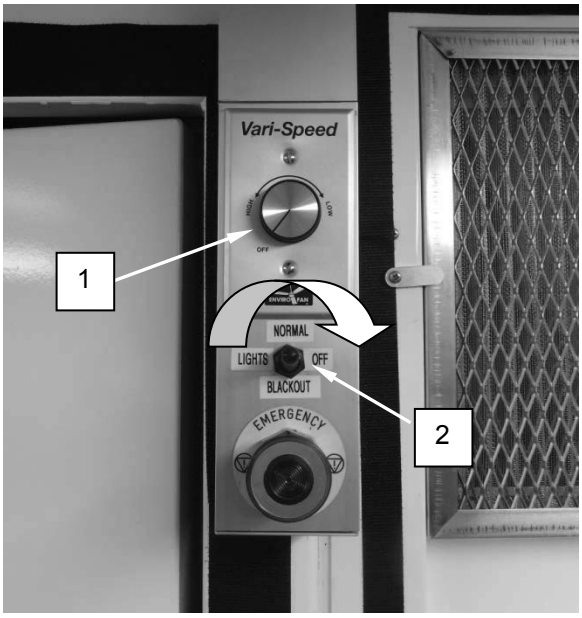


Figure 2. Fan Switch and Light Switch.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Both ventilation fans (Figure 3, Item 2) will not turn on, but lights (Figure 3, Item 1) turn on.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

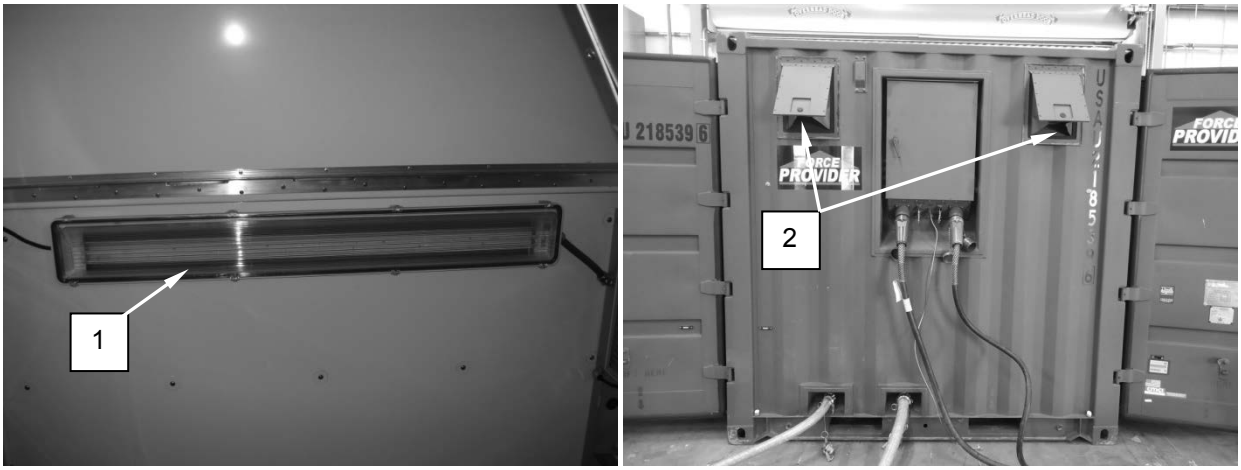
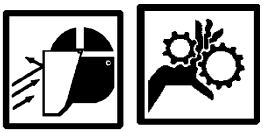


Figure 3. Fans and Lights.

SYMPTOM
One ventilation (Figure 3, Item 2) fan will not turn on, lights turn on.

MALFUNCTION
No power is being supplied to the vent fan or fan is damaged.

WARNING



The vent fan blade is sharp and cause serious bodily injury if impacted while rotating.
Use caution when inspecting vent fan and removing debris from blade or housing.

CORRECTIVE ACTION
Check the fan for damage or obstructions to fan blade (Figure 4, Item 1) or housing (Figure 4, Item 2).

a. If fan is blocked, clear blockage and attempt to operate fan.

b. If damaged, notify maintainer to replace fan.

TROUBLESHOOTING PROCEDURES – CONTINUED

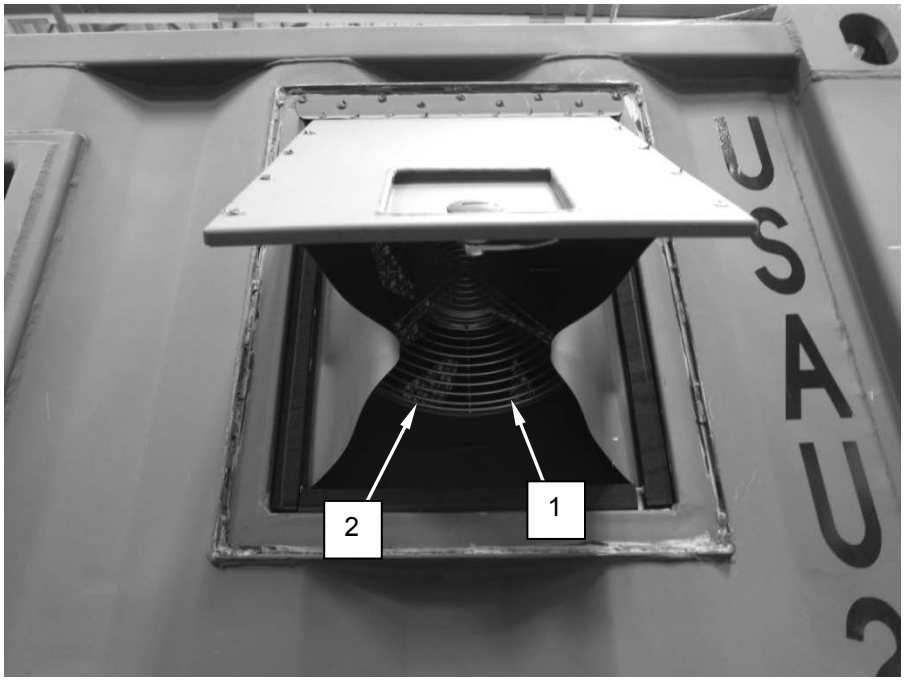


Figure 4. Vent Fan.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Ventilation fan is noisy or runs rough.

MALFUNCTION
Fan is dirty, damaged, or obstructed.

CORRECTIVE ACTION
STEP 1. Turn fan switch to OFF position.

STEP 2. Remove grease filter (Figure 5, Item 1) over fan and clean the fan (Figure 5 Item 2) by wiping the grille using a dry cloth or remove obstruction.

STEP 3. If damaged, notify maintainer.

STEP 4. Install grease filter and turn fan switch to HIGH. If fan remains noisy, notify maintainer.

TROUBLESHOOTING PROCEDURES – CONTINUED

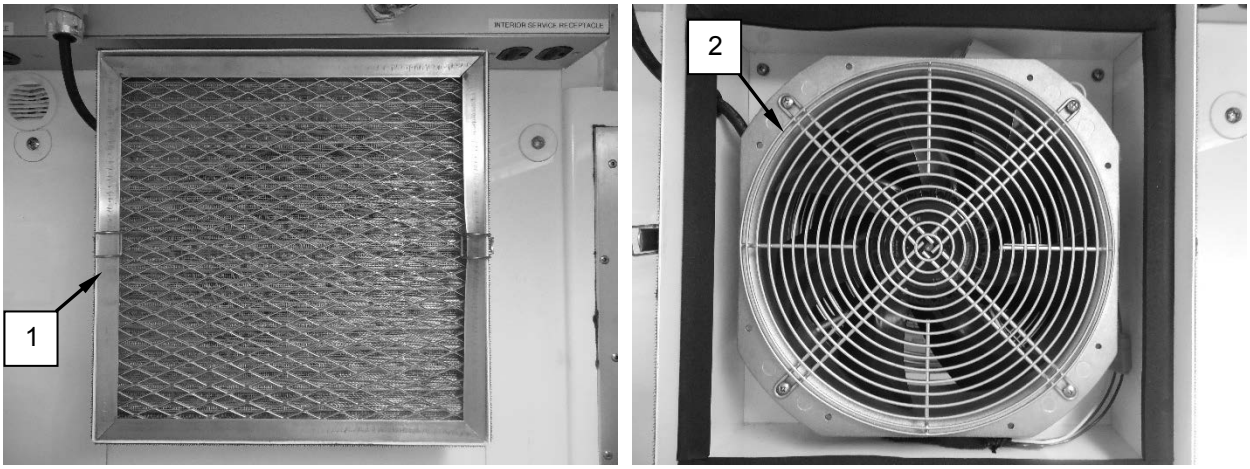


Figure 5. Fan.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING INSTRUCTIONS
LIGHTING SYSTEM FAULTS

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P
WP 0024, WP 0025, WP 0044

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
All lights and fans do not turn on.

NOTE

A larger malfunction may cause both the lights and fans to not turn on. Attempt to use other components of the Expeditionary TRICON Kitchen System (ETKS) to determine if power is present prior to troubleshooting. Refer to WP 0024 to troubleshoot any “No power” symptoms.

The lights and fans are controlled by the same circuit breaker. If fans work, but lights do not, refer to appropriate symptom.

MALFUNCTION
Circuit breaker tripped or off.

CORRECTIVE ACTION

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open the circuit breaker panel door (Figure 1, Item 1).

STEP 2. Reset circuit breaker (P1, CB 4) (Figure 1, Item 2) for the lights and fan by positioning to OFF and then back to ON.

TROUBLESHOOTING PROCEDURES – CONTINUED

Figure 1. Circuit Breaker.

STEP 3. Flip light switch (Figure 2, Item 2) between NORMAL (up) and BLACKOUT (down) settings and verify lamps (Figure 2, Item 4) turn on and circuit breaker (P1, CB 4) does not trip. If it does, notify maintainer.

STEP 4. Turn fan switch (Figure 2, Item 1) to HIGH setting and verify fans (Figure 2, Item 3) turn on and circuit breaker (P1, CB 4) does not trip. If it does, troubleshoot ventilation symptoms IAW WP 0025.

STEP 5. Close and secure circuit breaker panel door.

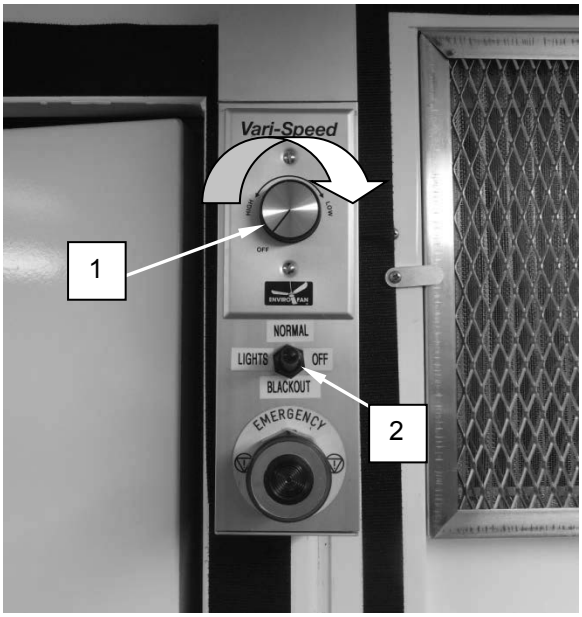


Figure 2. Fans, Lamps, and Switches (Sheet 1 of 2).

TROUBLESHOOTING PROCEDURES – CONTINUED

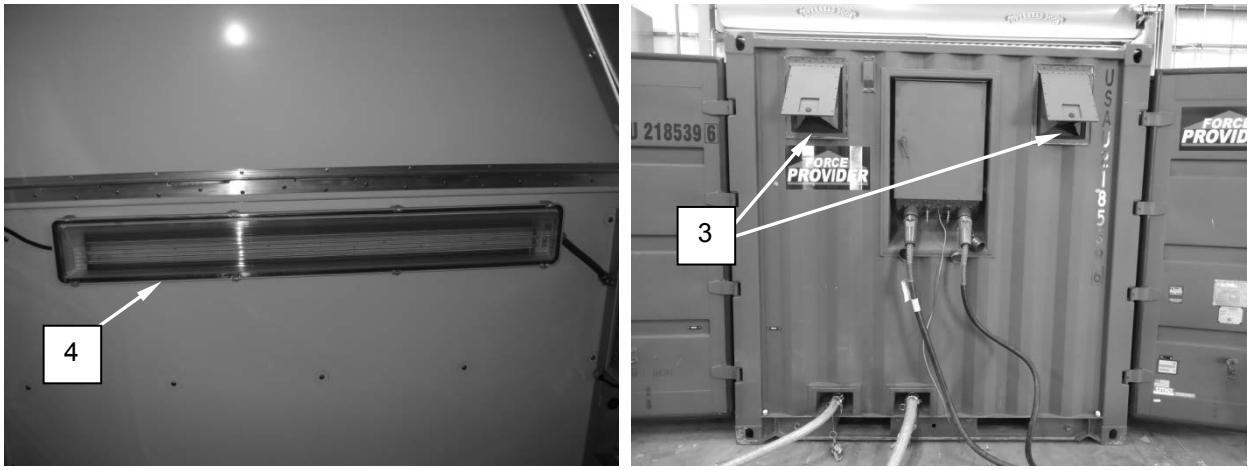


Figure 2. Fans, Lamps, and Switches (Sheet 2 of 2).

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
All lights (Figure 2, Item 4) do not turn on, but fans (Figure 2, Item 3) turn on.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Blackout lights (Figure 3, Item 2) in both fixtures do not turn on.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Blackout lights (Figure 3, Item 2) in one fixture do not turn on.

NOTE

Only one fixture is pictured in Figure 3. The following troubleshooting procedures apply to both light fixtures. Any procedures or references are identical for both light fixtures.

MALFUNCTION
Loose fluorescent lamp.

CORRECTIVE ACTION
STEP 1. Unlatch eight clips (Figure 3, Item 1) securing diffuser (Figure 3, Item 4).

STEP 2. Remove diffuser from light fixture.

STEP 3. Twist ends of blackout lamps to ensure proper seating in tombstones (Figure 3, Item 3).

STEP 4. Install diffuser and secure with eight clips.

TROUBLESHOOTING PROCEDURES – CONTINUED

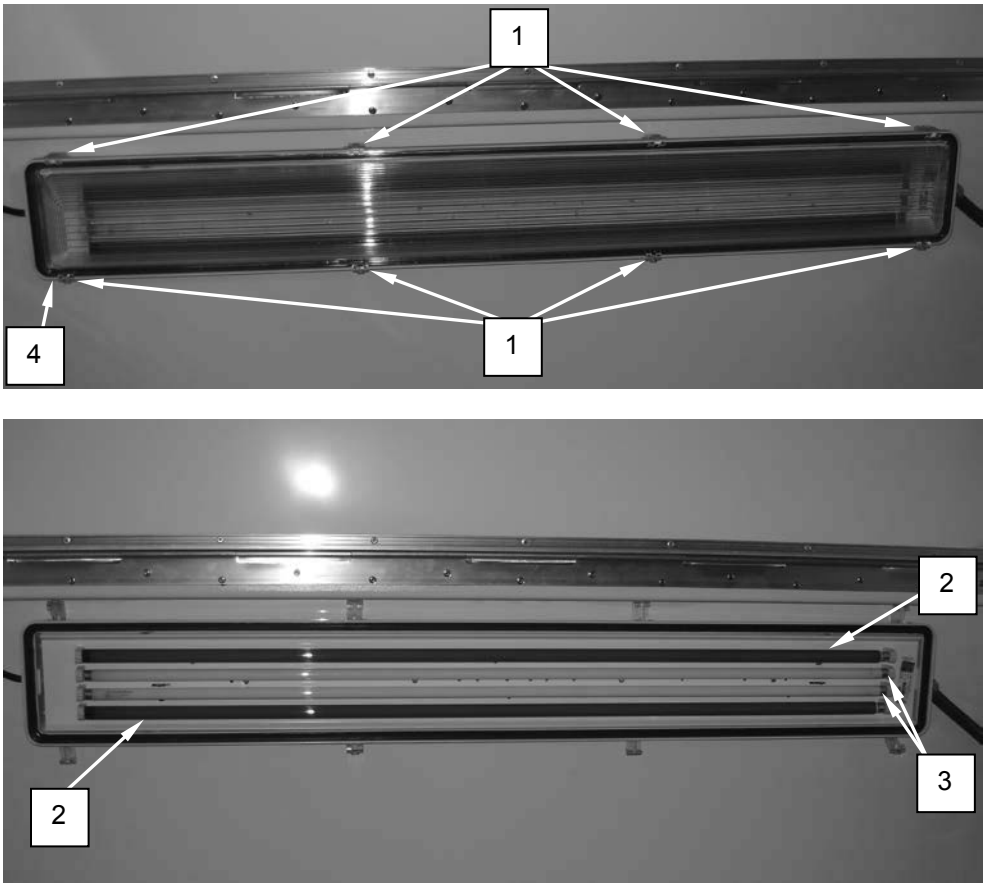


Figure 3. Light Fixture.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Defective ballast or fluorescent lamp.

CORRECTIVE ACTION
STEP 1. Toggle light switch (Figure 4, Item 1) to NORMAL (up) setting to determine if normal lamps are functional.

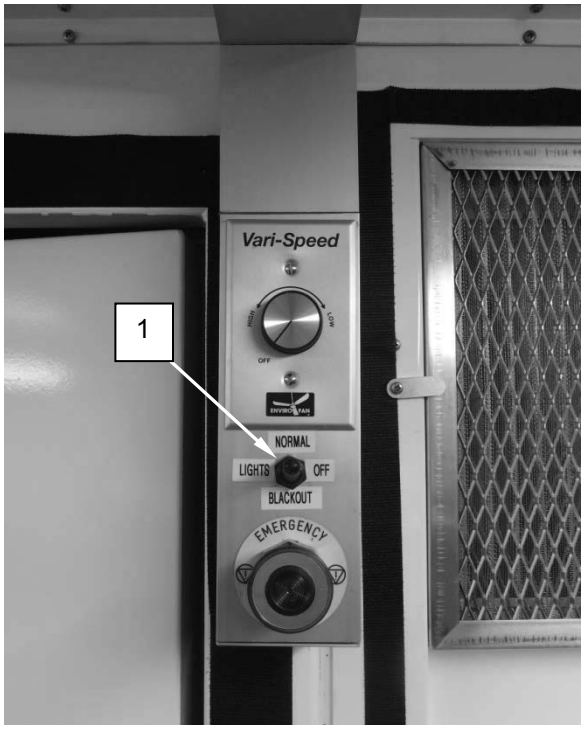


Figure 4. Light Switch.

a. If normal lamps do not turn on, this indicates an issue with the light fixture. Notify maintainer.

b. If normal lamps turn on, proceed to STEP 2.

STEP 2. Swap normal and blackout lamp positions as follows:

a. Turn light switch to OFF (middle position).

b. Unlatch eight clips (Figure 5, Item 1) securing diffuser (Figure 5, Item 5).

c. Remove diffuser.

d. Twist normal lamps (Figure 5, Item 4) and remove from light fixture.

e. Twist blackout lamps (Figure 5, Item 2) and remove from light fixture.

NOTE

The orientation of the lamps in the light fixtures are as follows: the blackout lamps are normally located in the outside positions on the light fixture and the normal lamps are normally located in the inside positions (Figure 5).

f. Align normal lamps on tombstones (Figure 5, Item 3) designated for blackout lamps and twist into place.

TROUBLESHOOTING PROCEDURES – CONTINUED

g. Align blackout lamps on tombstones designated for normal lamps and twist into place.

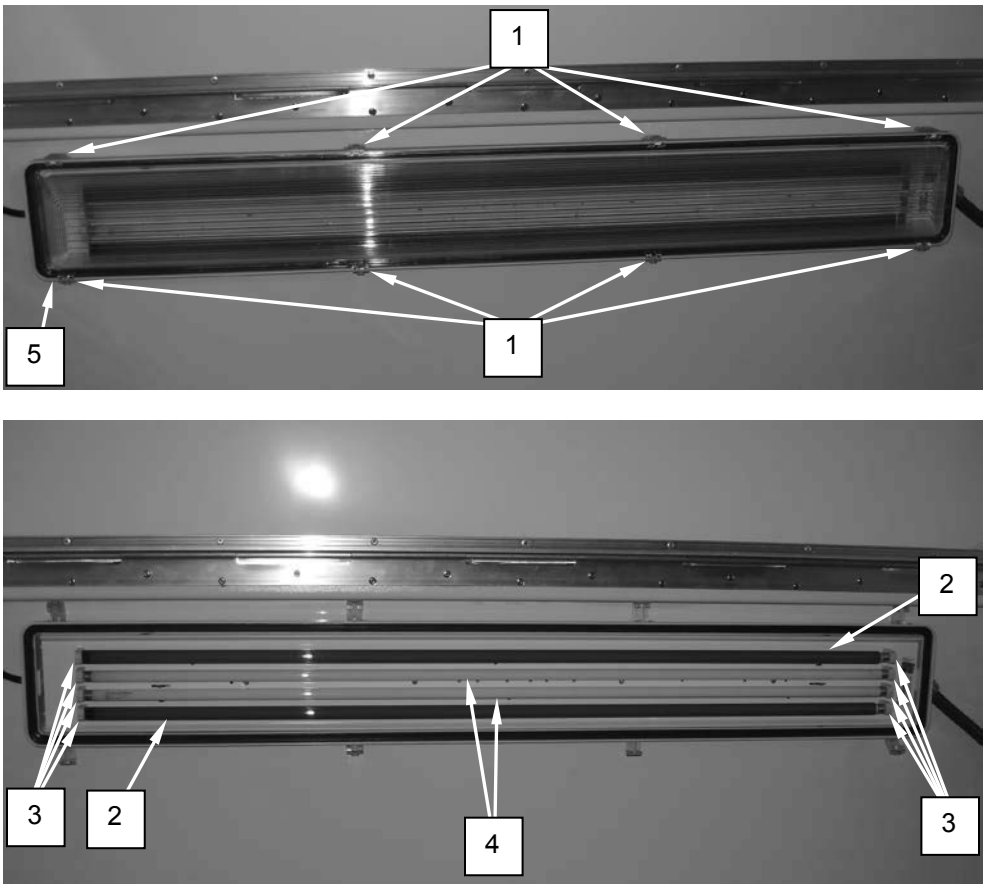


Figure 5. Light Fixture.

STEP 3. Toggle light switch (Figure 4, Item 1) between NORMAL (up) and BLACKOUT (down) settings.

a. If blackout lamps turn on, this indicates an issue with the ballast. Notify maintainer.

b. If normal lamps turn on, proceed to STEP 4.

STEP 4. Turn light switch to OFF (middle position).

STEP 5. Swap one normal lamp with one blackout lamp.

STEP 6.Toggle light switch between NORMAL (up) and BLACKOUT (down) setting.

STEP 7. Replace blackout lamp that does not turn on IAW WP 0044.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Normal lights in both fixtures do not turn on.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Normal lights in one fixture do not turn on.

NOTE

Only one fixture is pictured in Figure 6. The following troubleshooting procedures apply to both light fixtures. Any procedures or references are identical for both light fixtures.

MALFUNCTION
Loose fluorescent lamp.

CORRECTIVE ACTION
STEP 1. Unlatch eight clips (Figure 6, Item 1) securing diffuser (Figure 6, Item 4).

STEP 2. Remove diffuser from light fixture.

STEP 3. Twist ends of normal lamps to ensure proper seating in tombstones (Figure 6, Item 3).

STEP 4. Install diffuser and secure with eight clips.

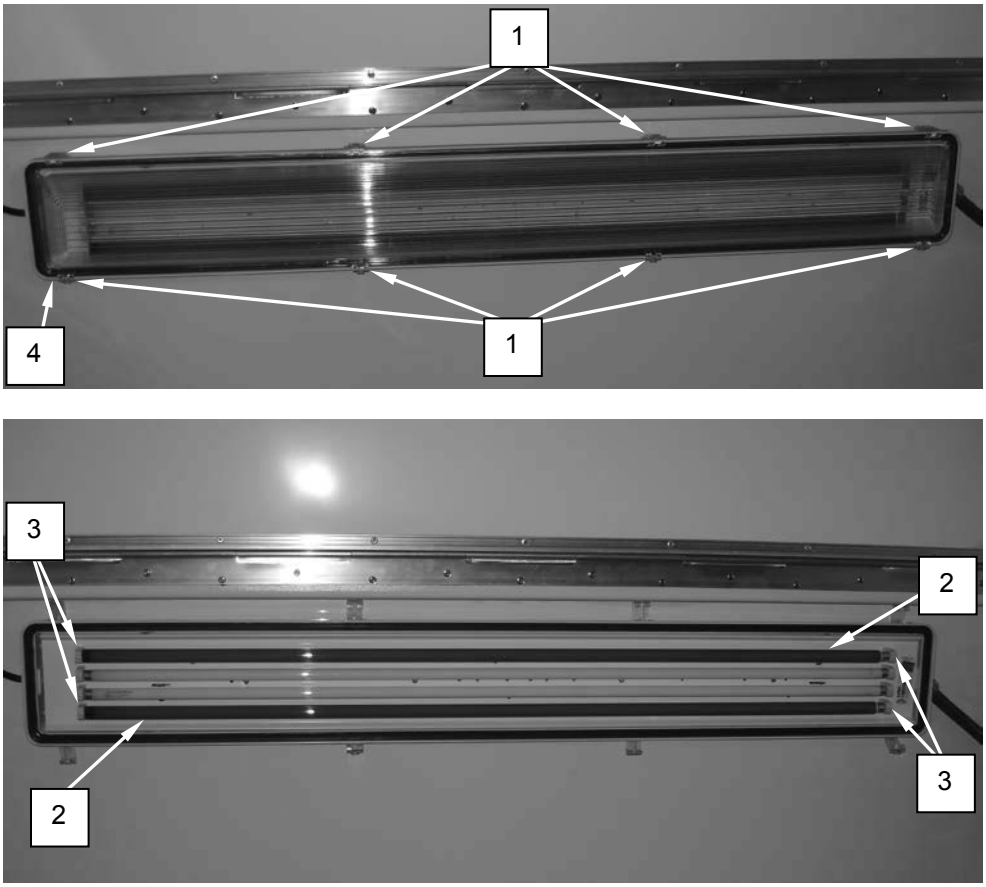


Figure 6. Light Fixture.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Defective ballast or fluorescent lamp.

CORRECTIVE ACTION
STEP 1. Toggle light switch (Figure 7, Item 1) to BLACKOUT (down) setting to determine if blackout lamps are functional.

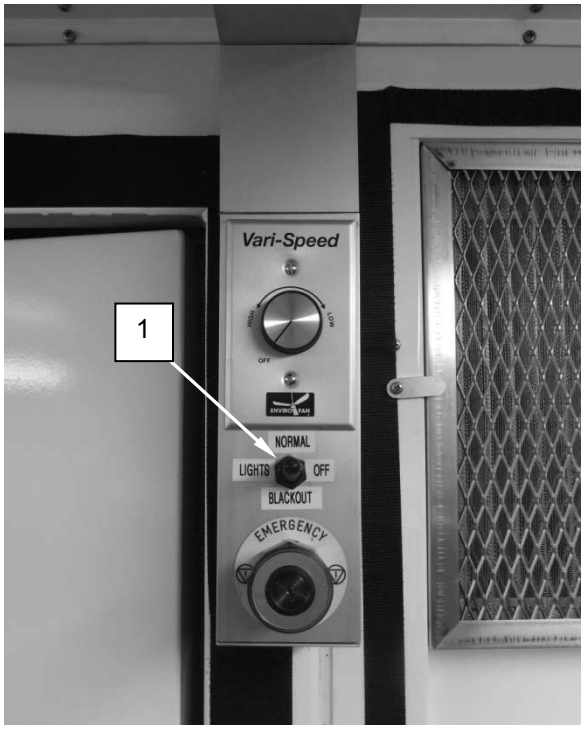


Figure 7. Light Switch.

a. If blackout lamps do not turn on, this indicates an issue with the light fixture. Notify maintainer.

b. If blackout lamps turn on, proceed to STEP 2.

STEP 2. Swap normal and blackout lamp positions as follows

a. Turn light switch to OFF (middle position).

b. Unlatch eight clips (Figure 8, Item 1) securing diffuser (Figure 8, Item 5).

c. Remove diffuser.

d. Twist normal lamps (Figure 8, Item 4) and remove from light fixture.

e. Twist blackout lamps (Figure 8, Item 2) and remove from light fixture.

NOTE

The orientation of the lamps in the light fixtures are as follows: the blackout lamps are normally located in the outside positions on the light fixture and the normal lamps are normally located in the inside positions (Figure 8).

f. Align normal lamps on tombstones (Figure 8, Item 3) designated for blackout lamps and twist into place.

TROUBLESHOOTING PROCEDURES – CONTINUED

g. Align blackout lamps on tombstones designated for normal lamps and twist into place.

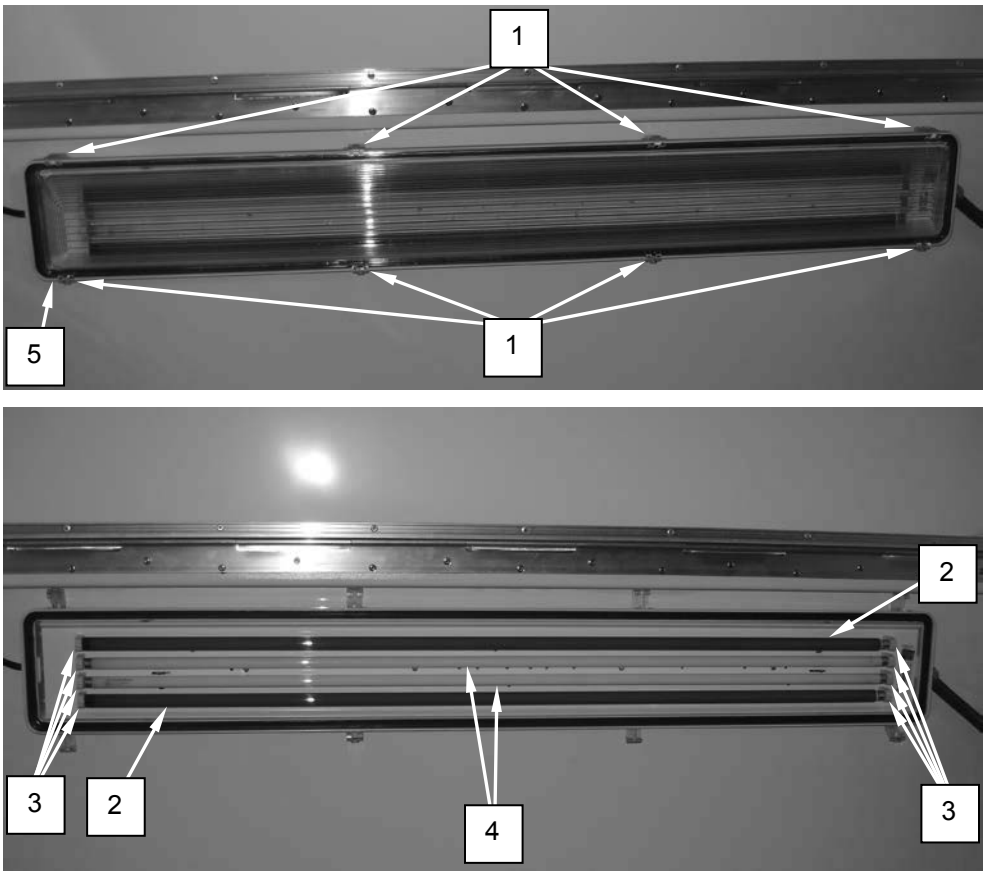


Figure 8. Light Fixture.

STEP 3. Toggle light switch (Figure 7, Item 1) between NORMAL (up) and BLACKOUT (down) settings.

a. If normal lamps turn on, this indicates an issue with the ballast. Notify maintainer.

b. If blackout lamps turn on, proceed to STEP 4.

STEP 4. Turn light switch to OFF (middle position).

STEP 5. Swap one normal lamp with one blackout lamp.

STEP 6.Toggle light switch between NORMAL (up) and BLACKOUT (down) setting.

STEP 7. Replace normal lamp that does not turn on IAW WP 0044.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING INSTRUCTIONS
AIR CONDITIONING FAULTS

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P,
WP 0045

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to plug in and use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
Air conditioner does not cool or heat room well, cycles on and off too frequently, or runs too much.

MALFUNCTION
Debris is blocking air conditioner exhaust (Figure 1, Items 1 and 3) or vents (Figure 1, Item 2)

CORRECTIVE ACTION
Service air conditioner IAW WP 0045.

Figure 1. Air Conditioner Vents and Exhaust.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Windows or doors are open or environment is too hot or humid.

CORRECTIVE ACTION
STEP 1. Close windows (Figure 2, Item 4) and door (Figure 2, Item 2).

STEP 2. Be sure to use vent fans (Figure 2, Item 1) while operating kitchen equipment.

a. To operate vent fan, turn vent fan knob (Figure 2, Item 3) clockwise.

b. Make sure vent fans turn on.

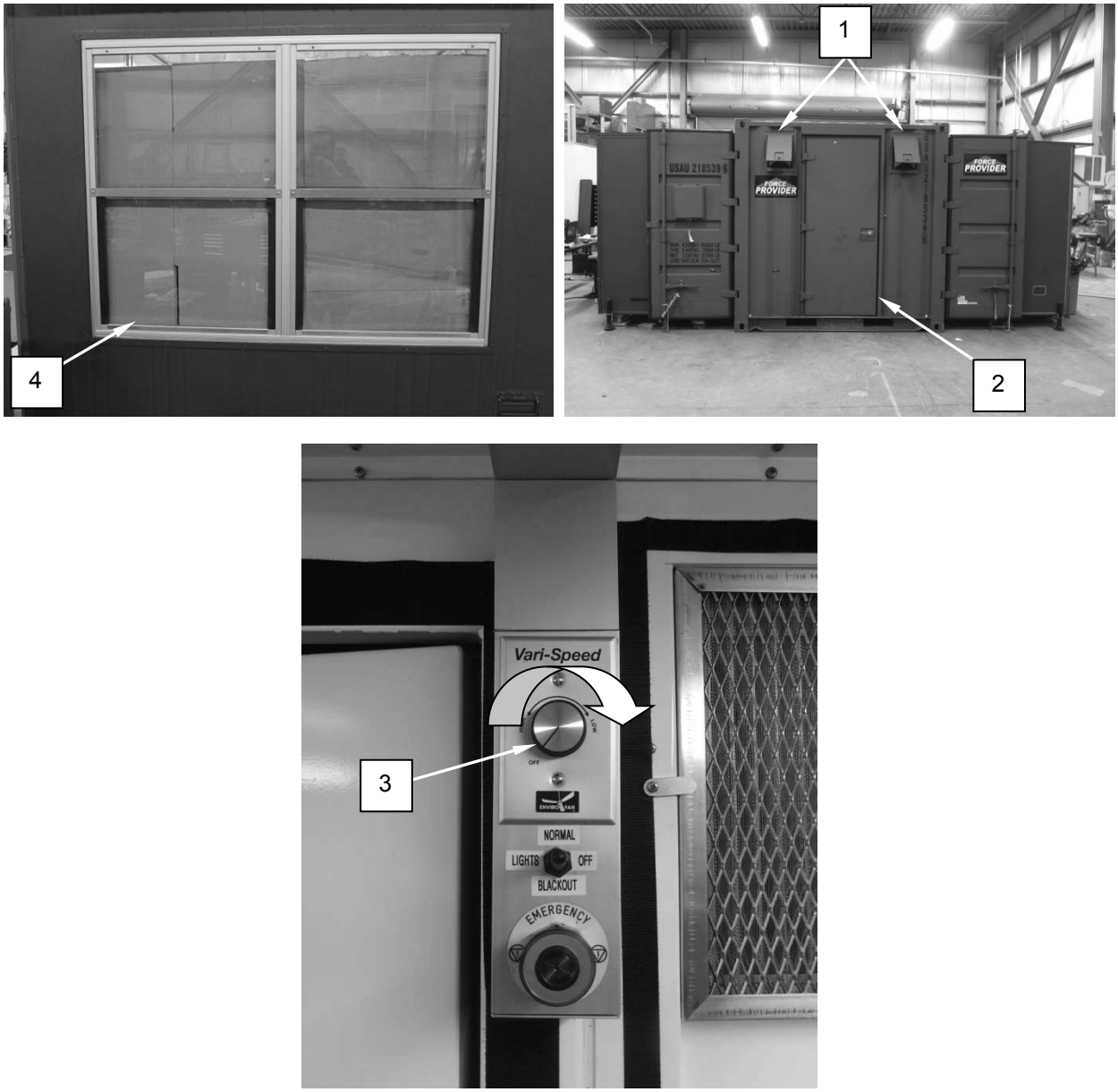


Figure 2. Environment Control.

TROUBLESHOOTING PROCEDURES – CONTINUED

CAUTION

Do not obstruct air conditioner exterior air flow screen when blocking sunlight. Blocking exterior air flow will restrict air conditioner operations and may cause damage to equipment.

STEP 3. Block direct sunlight to air conditioner from outside to lower cycle frequency.

STEP 4. Allow additional time for the air conditioner to cool the container.

MALFUNCTION
Temperature is not set properly.

CORRECTIVE ACTION
Press the up or down arrow (Figure 3, Item 2) next to the temperature display (Figure 3, Item 1) to select the proper temperature.

Figure 3. Turn the Air Conditioner On or Down.

MALFUNCTION
The digital control is set to fan cycling mode.

NOTE

The fan does not circulate the air continuously in this setting. Air does not mix as well at this setting and some hot (or cold) spots may be present.

CORRECTIVE ACTION
STEP 1. Locate the FAN MODE (Figure 4, Item 1) button next to the digital temperature display (Figure 4, Item 2).

STEP 2. Ensure the fan power is ON (the power button (Figure 4, Item 3) will be lit).

STEP 3. Press the FAN MODE button until the digital display read CONTINIOUS on the left side of the display.

TROUBLESHOOTING PROCEDURES – CONTINUED

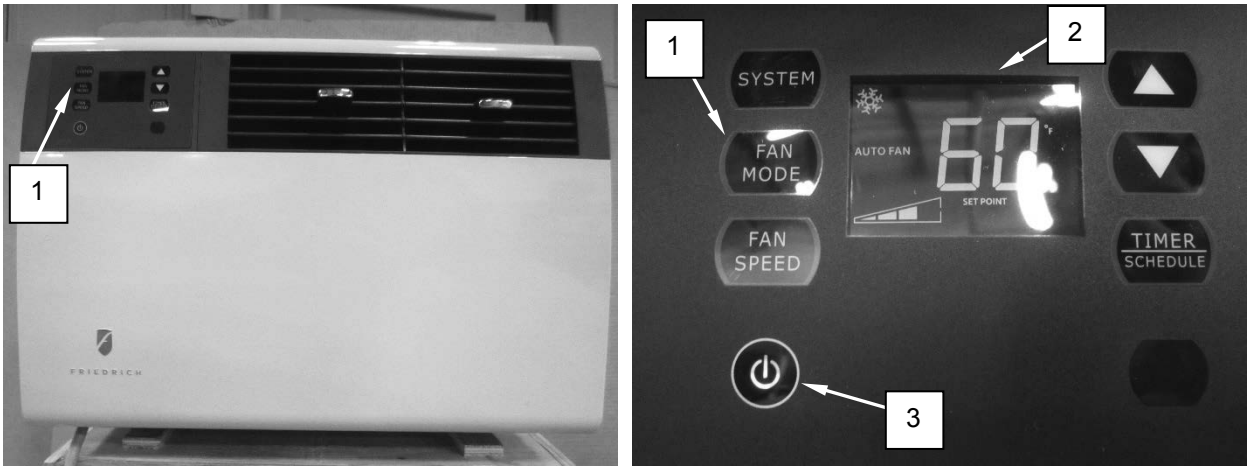


Figure 4. Air Conditioner Controls.

MALFUNCTION
Outside temperature is below 60 °F (16 °C).

CAUTION

Do not operate air conditioner in cooling mode when outside temperature is below 60° F (16° C). Operating air conditioner at lower temperature will degrade operations and may cause damage to equipment.

CORRECTIVE ACTION
Press power button (Figure 5, Item 2) to turn off air conditioner or press SYSTEM button (Figure 5. Item 1) to set air conditioner to HEATING or FAN ONLY mode.

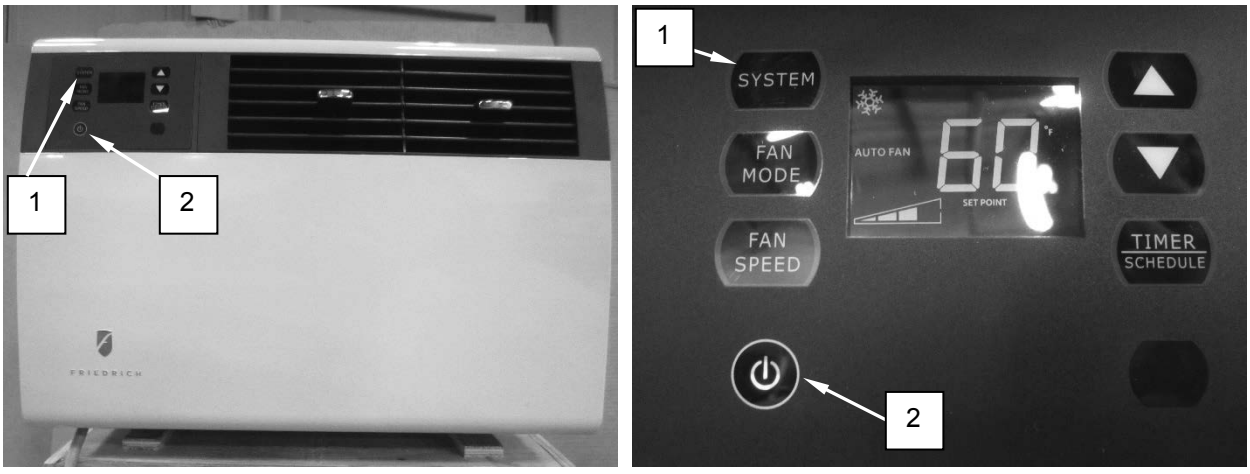


Figure 5. Turn Air Conditioner On.

MALFUNCTION
Clogged air filter.

CORRECTIVE ACTION
Replace filter IAW WP 0045.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Defective air conditioner.

CORRECTIVE ACTION
Replace air conditioner IAW WP 0045.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify supervisor.

SYMPTOM
Air conditioner does not turn on.

MALFUNCTION
The thermostat temperature has been reached.

CORRECTIVE ACTION
Lower the temperature setting by pressing the down arrow (Figure 6, Item 1) next to the temperature dispaly.

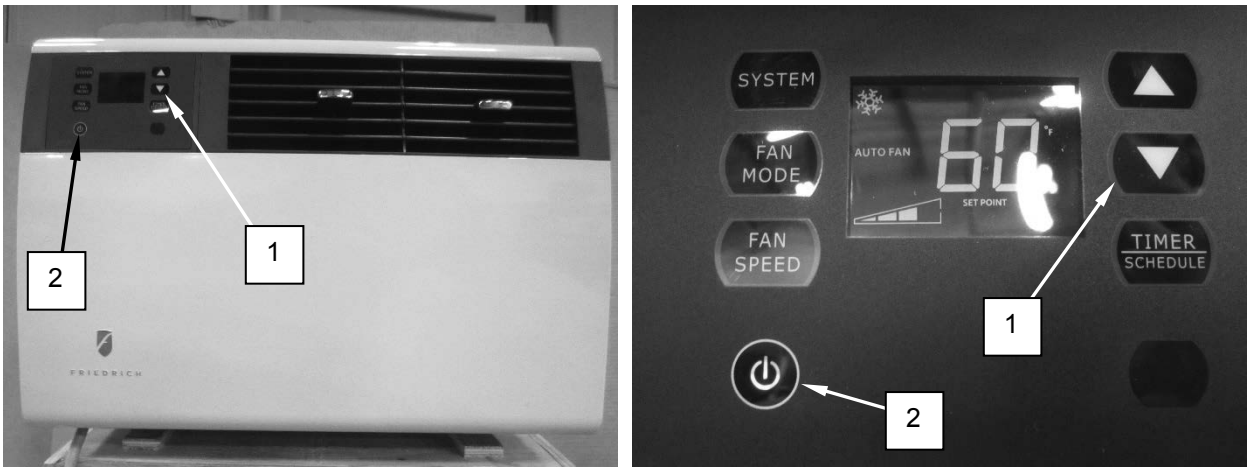


Figure 6. Turn the Air Conditioner On or Down.

MALFUNCTION
Air conditioner power cable is unplugged.

CORRECTIVE ACTION
Connect air conditioner power cable (Figure 7, Item 2) to 8-ft cable assembly (Figure 7, Item 1).

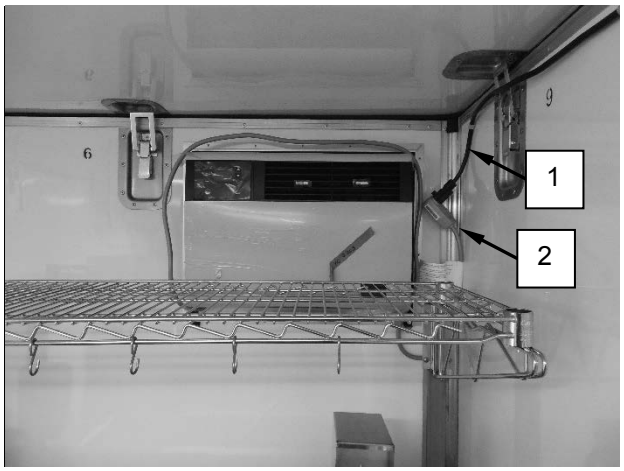


Figure 7. Plug in Air Conditioner.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Air conditioner circuit breaker has tripped.

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open the circuit breaker panel door (Figure 8, Item 1).

STEP 2. Reset the circuit breaker for the air conditioner (P1, CB 2) (Figure 8, Item 2) to the OFF position and back to the ON position.

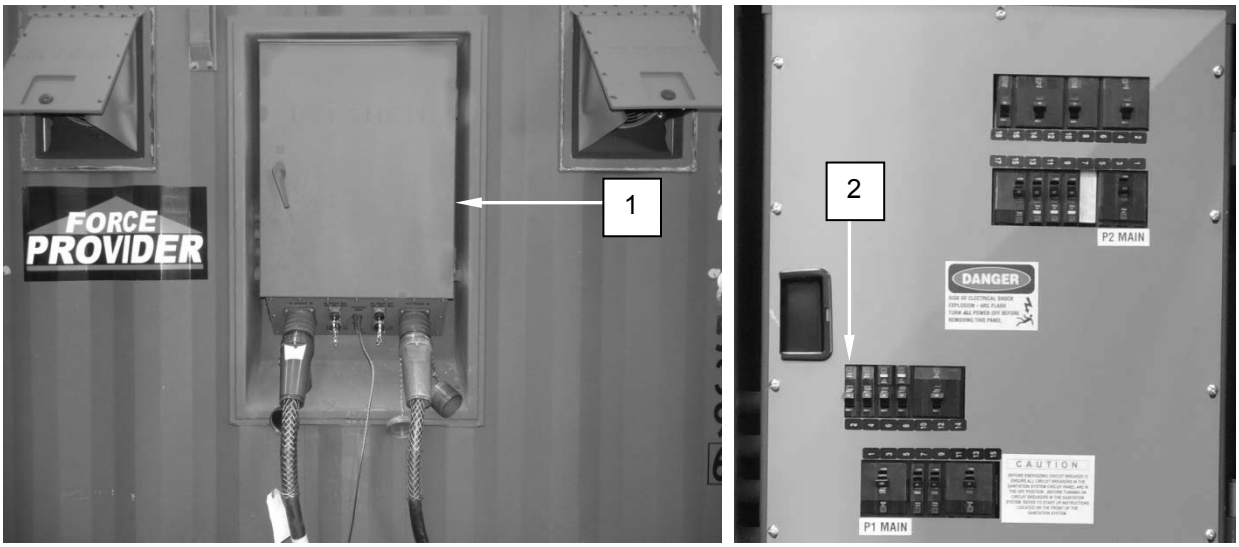


Figure 8. Air Conditioner Circuit Breaker.

STEP 3. Verify air conditioner is on and circuit breaker (P1, CB 2) does not trip again. If it does, notify maintainer.

STEP 4. Close and secure circuit breaker panel door.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Air conditioner power cable has tripped.

NOTE

The reset button on the air conditioner power cable makes a click sound when pressed and will remain pressed in when working correctly.

CORRECTIVE ACTION
STEP 1. Press RESET (Figure 9, Item 1) button on cable.

STEP 2. Press TEST button (Figure 9, Item 2) and listen for a click. The RESET button should pop out.

STEP 3. Press and release the RESET button. RESET button should latch and remain depressed.

a. If test fails, notify maintainer.

b. If reset button starts air conditioner, monitor for normal operation.

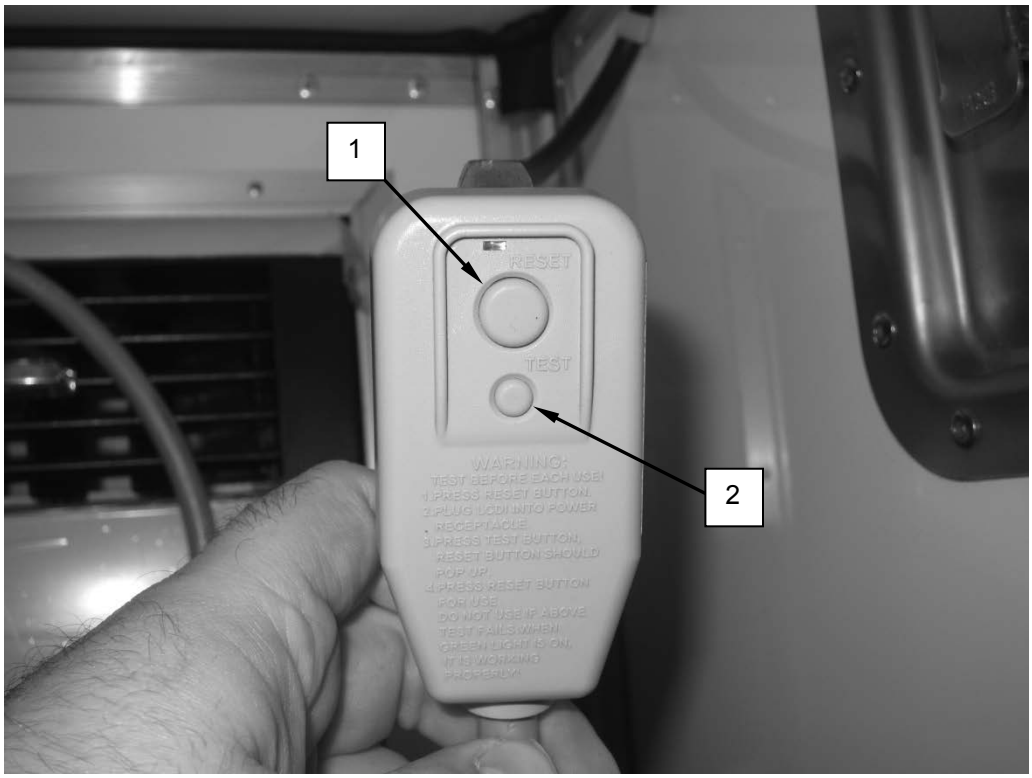


Figure 9. Air Conditioner Cable.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING INSTRUCTIONS
SPACE HEATER FAULTS

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419207-23&P

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to plug in and use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
Space heater (Figure 1, Item 1) shuts off during use.

MALFUNCTION
Temperature setting has been reached.

CORRECTIVE ACTION
Turn heater control knob (Figure 1, Item 2) clockwise to a higher setting.

MALFUNCTION
Debris is blocking vents.

CORRECTIVE ACTION

WARNING

The space heater may be hot if it was recently used. Ensure that the space heater is off and cool before performing maintenance. Failure to observe this warning may cause burns or other injury to personnel. Seek medical attention if any burns or other injury should occur.

Ensure space heater has cooled then clear debris from space heater.

TROUBLESHOOTING PROCEDURES – CONTINUED

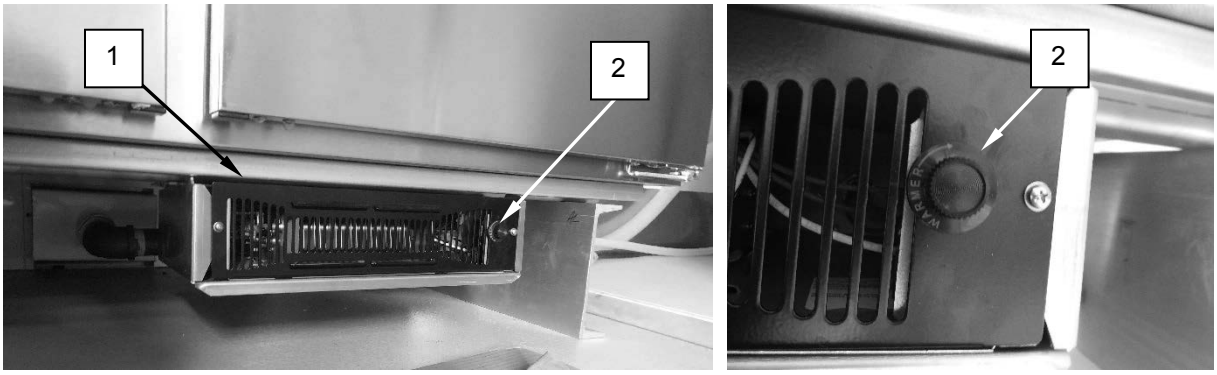


Figure 1. Remove Debris from Space Heater.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Space heater (Figure 1, Item 1) will not turn on.

MALFUNCTION
Circuit breaker (P1, CB 7) is tripped or off.

CORRECTIVE ACTION

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open circuit breaker panel door (Figure 2, Item 1).

STEP 2. Rest circuit breaker (P1, CB 7) (Figure 2, Item 2) by positioning to OFF and back to ON.

STEP 3. Close and secure circuit breaker panel door.

SYMPTOM
Space heater is defective.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

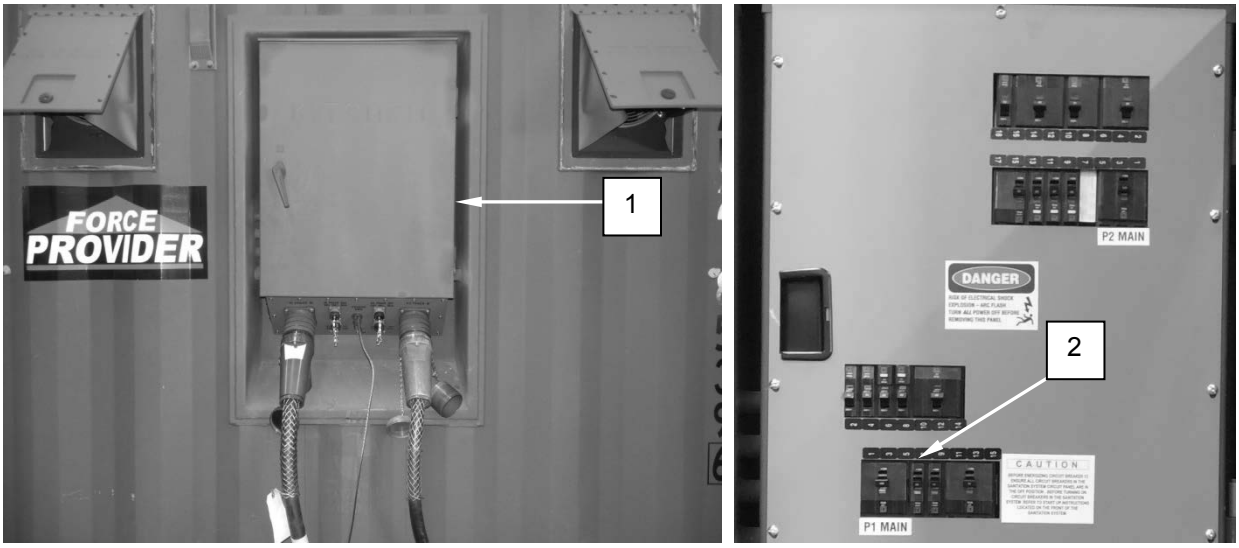


Figure 2. Space Heater Circuit Breaker.

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING INSTRUCTIONS
STEAM KETTLE FAULTS

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P,
WP 0052

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to plug in and use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
Safety relief valve (Figure 1, Item 1) pops.

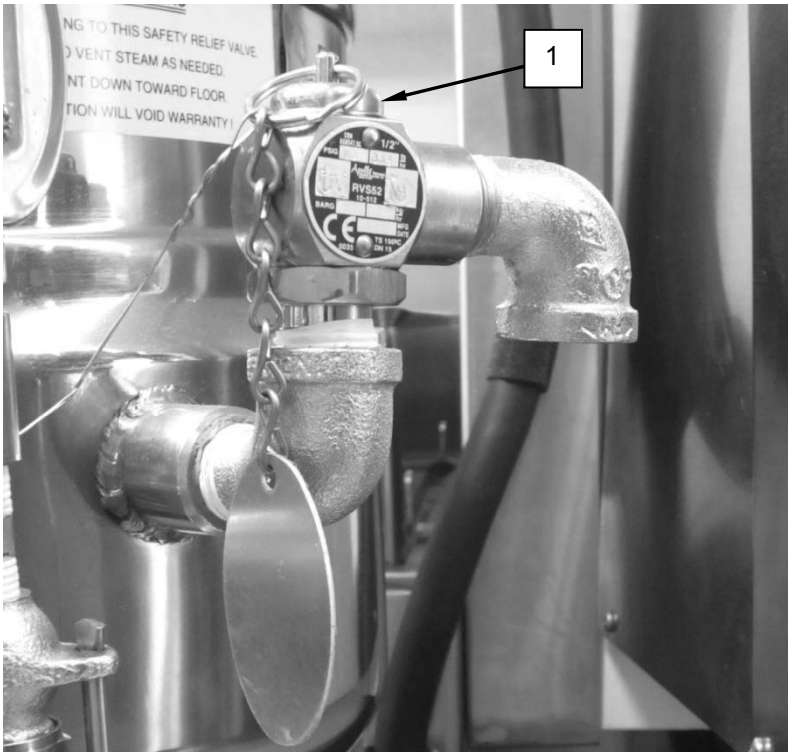


Figure 1. Safety Valve.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Air is in the jacket of the kettle.

CORRECTIVE ACTION
Adjust Steam Kettle Jacket Vacuum IAW WP 0052.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Steam kettle continues heating after it reaches the desired temperature.

MALFUNCTION
The thermostat (Figure 2, Item 1) is in the incorrect position.

CORRECTIVE ACTION
Verify the thermostat is in the correct position following preparation instructions on food packaging.

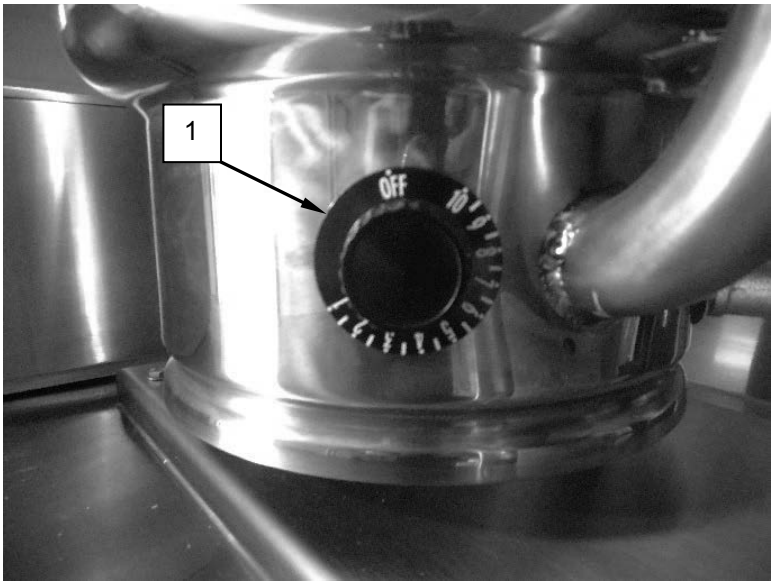


Figure 2. Thermostat.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Steam kettle heats up slowly.

MALFUNCTION
Air is in the jacket of the kettle.

CORRECTIVE ACTION
Adjust Steam Kettle Jacket Vacuum IAW WP 0052.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Steam kettle indicator light (Figure 3, Item 1) does not turn on, but kettle heats.

Figure 3. Indicator Light.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Steam kettle stops heating before it reaches the desired temperature.

MALFUNCTION
The thermostat (Figure 2, Item 1) is in the incorrect position.

CORRECTIVE ACTION
Verify the thermostat is in the correct position following preparation instructions on food packaging.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Steam kettle will not heat up and heating indicator light does not turn on.

MALFUNCTION
No power to steam kettle.

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

CORRECTIVE ACTION
STEP 1. Open circuit breaker panel door (Figure 4, Item 1).

STEP 2. Ensure circuit breaker (P2, CB 15, 17) (Figure 4, Item 2) is in the ON position and not tripped.

STEP 3. If tripped, reset the breaker by turning it OFF and back to the ON position.

STEP 4. Close and secure circuit breaker panel door.

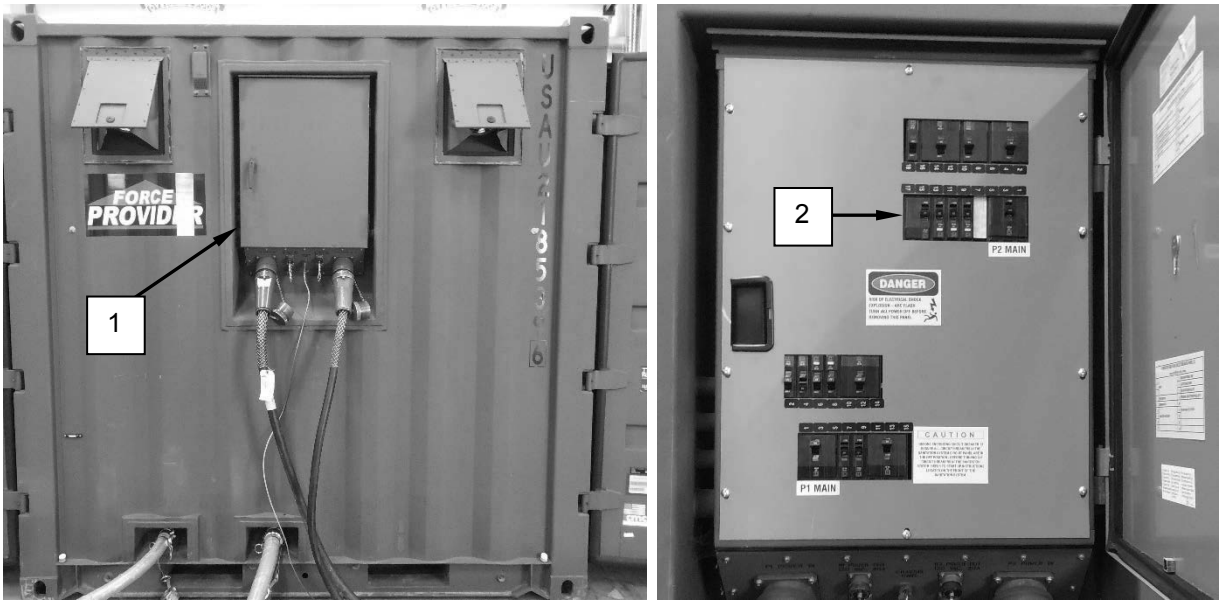


Figure 4. Circuit Breaker Panel.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Steam kettle will not heat up, but heating indicator light turns on.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING INSTRUCTIONS
STEAM AND HOLD OVEN FAULTS

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P

Material/Parts

Pad, Scouring (WP 0073, Item 9)
Rag, Wiping (WP 0073, Item 11)
Soap, Antibacterial (WP 0073, Item 13)

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to plug in and use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
Food is consistently overcooked and OVER TEMP indicator (Figure 1, Item 1) is not on.

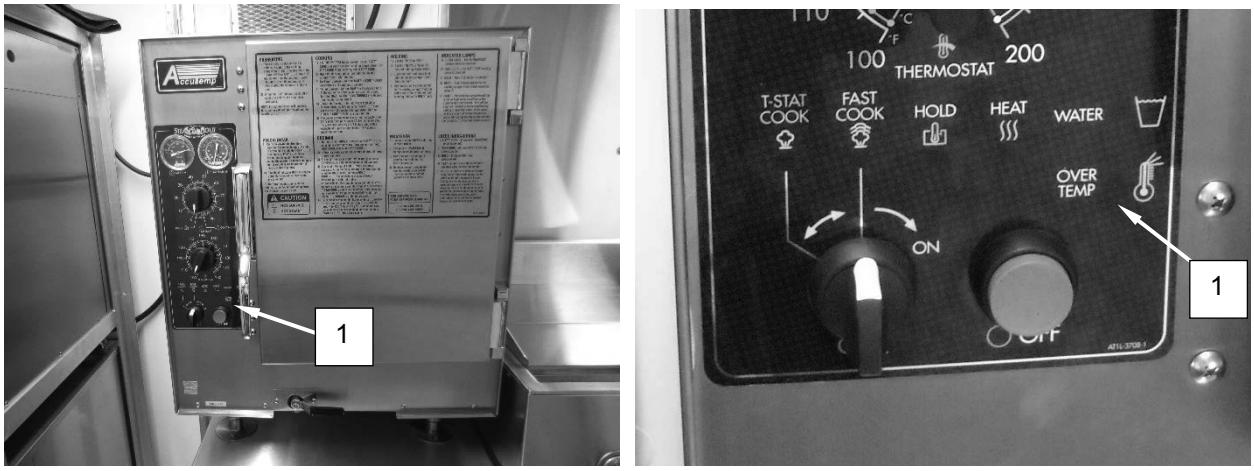


Figure 1. OVER TEMP Indicator.

MALFUNCTION
Improper time and temperature settings.

CORRECTIVE ACTION
STEP 1. Ensure proper time and temperature settings according to food packaging are used.

STEP 2. Distribute food evenly within the steamer or pans.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
The oven will not maintain a consistent temperature.

CORRECTIVE ACTION
STEP 1. Set the steam and hold oven to a low setting and wait until the HEAT indicator light (Figure 2, Item 1) turns off.

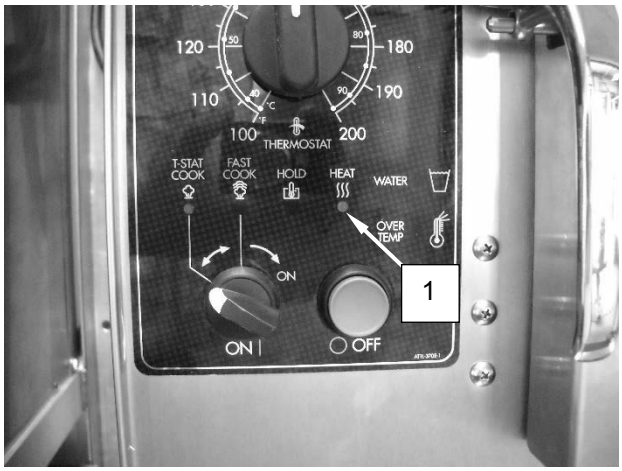


Figure 2. HEAT Indicator Light.

STEP 2. Insert a calibrated thermometer and check the reading on the thermometer against the temperature setting of the oven. If they are not equal, notify maintainer.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Food is consistently undercooked.

MALFUNCTION
Magnetic door stop hinge (Figure 3, Item 1) is closed.

CORRECTIVE ACTION
Open magnetic door stop.

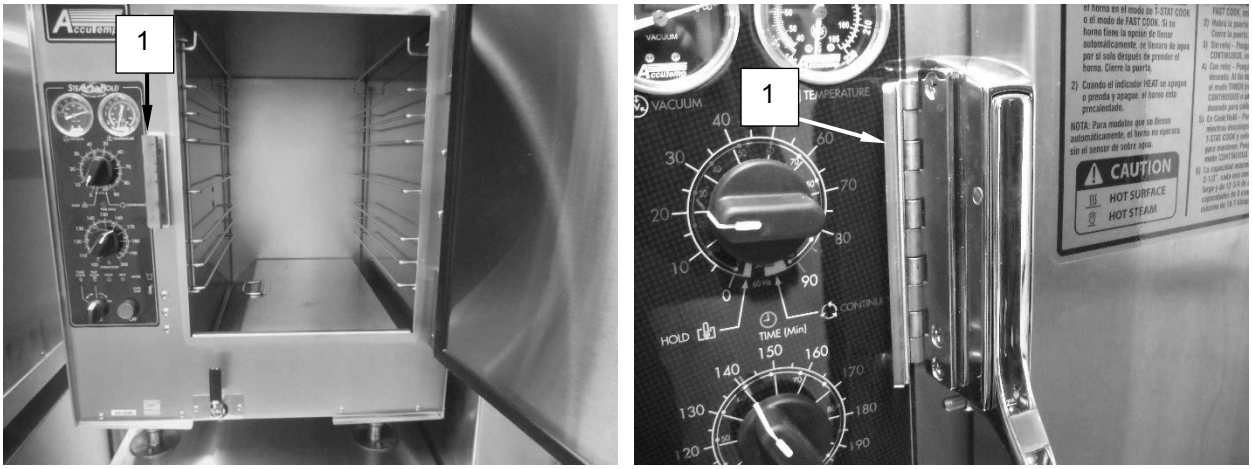


Figure 3. Magnetic Door Stop.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Improper time and temperature settings.

CORRECTIVE ACTION
STEP 1. Ensure proper time and temperature settings are used. Extra time may be required if pans are covered or if product is left in plastic bags or similar packaging.

STEP 2. Distribute food evenly within the steamer or pans.

MALFUNCTION
Drain valve is open slightly or leaking.

CORRECTIVE ACTION
Ensure the drain valve (Figure 4, Item 1) is tightly closed. If leaks are present, notify maintainer.

MALFUNCTION
Food debris on door.

CORRECTIVE ACTION
Clean food debris from face of door (Figure 4, Item 3) and under gasket (Figure 4, Item 2).

MALFUNCTION
Torn door gasket or damaged door.

CORRECTIVE ACTION
Inspect door gasket (Figure 4, Item 2) and door for damage. If damage is found, notify maintainer.

Figure 4. Door Gasket.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

NOTE

There are six different indicator lights.

SYMPTOM
Indicator light does not turn on.

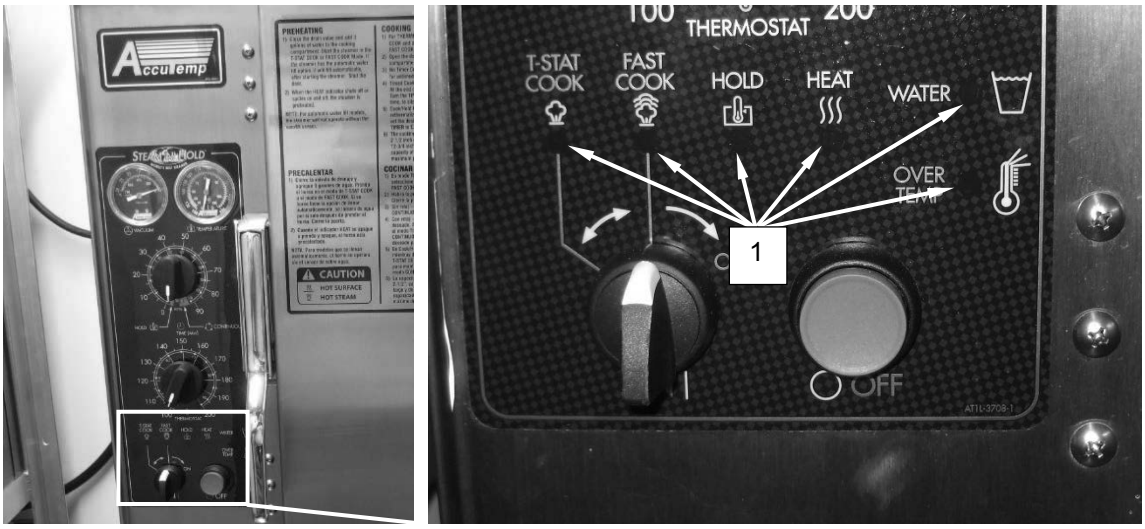


Figure 5. Indicator Lights.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Steam and hold oven OVER TEMP indicator illuminates constantly.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Steam and hold oven does not come up to proper temperature.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Steam and hold oven is cooking slowly.

MALFUNCTION
Torn door gasket or damaged door.

CORRECTIVE ACTION
STEP 1. Inspect door gasket (Figure 6, Item 1) and door for damage.

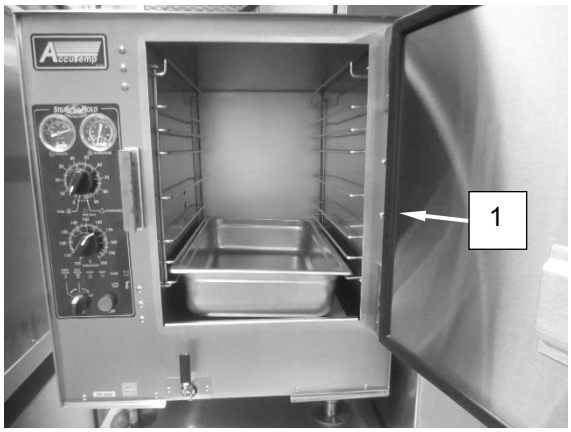


Figure 6. Door Gasket.

STEP 2. If damage is found, notify maintainer.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Steam and hold oven turns off during operation.

MALFUNCTION
The circuit breaker has tripped.

CORRECTIVE ACTION

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open circuit breaker panel door (Figure 7, Item 1).

STEP 2. Reset tripped circuit breaker (P1, CB 10, 12, and 14) (Figure 7, Item 2) by positioning circuit breaker to OFF, then ON. Notify maintainer if circuit breaker trips again shortly after reset.

STEP 3. Close and secure circuit breaker panel door.

TROUBLESHOOTING PROCEDURES – CONTINUED

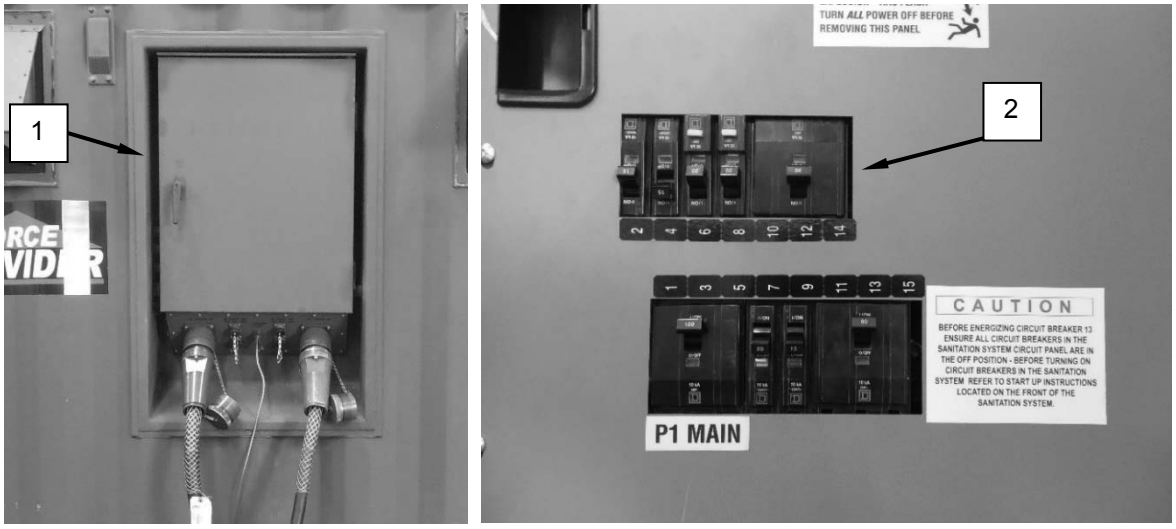


Figure 7. Circuit Breaker.

MALFUNCTION
Low water.

CORRECTIVE ACTION
STEP 1. Ensure water level is above sensors (Figure 8, Item 1) and drain valve (Figure 8, Item 3) is closed.

STEP 2. Fill the steam and hold oven with water up to –WATER– line (Figure 8, Item 2) if water is low.

MALFUNCTION
Water sensors are dirty.

CORRECTIVE ACTION
Use a damp cloth with a cleaning solution of warm water and mild dish detergent to clean water sensors. For heavily soiled areas allow cleaning solution to soak and soften dried food deposits then use a plastic scouring pad if necessary.

Figure 8. Water Sensors.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Steam and hold oven will not turn off.

MALFUNCTION
The electrical components of the steam and hold oven are dysfunctional.

CORRECTIVE ACTION

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open circuit breaker panel door (Figure 7, Item 1).

STEP 2. Turn circuit breaker (P1, CB 10, 12, 14) (Figure 7, Item 2) to the OFF position.

STEP 3. Close and secure circuit breaker panel door.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Steam and hold oven will not turn on, no alarm sounding or lights illuminated.

MALFUNCTION
The circuit breaker has tripped.

CORRECTIVE ACTION

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open circuit breaker panel door (Figure 7, Item 1).

STEP 2. Reset tripped circuit breaker (P1, CB 10, 12, and 14) (Figure 7, Item 2) by positioning circuit breaker to OFF, then ON. Notify maintainer if circuit breaker trips again shortly after reset.

STEP 3. Close and secure circuit breaker panel door.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING PROCEDURES
REFRIGERATOR FAULTS

INITIAL SETUP:

References

TM 10-5419-207-23&P
WP 0054, WP 0055, WP 0056, WP 0057,
WP 0058

Personnel Required

92G Culinary Specialist (1)

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to plug in and use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
Compressor runs continuously.

MALFUNCTION
Dirty condenser coil or air filter.

CORRECTIVE ACTION
STEP 1. Clean air filter (Figure 1, Item 1) IAW WP 0057.

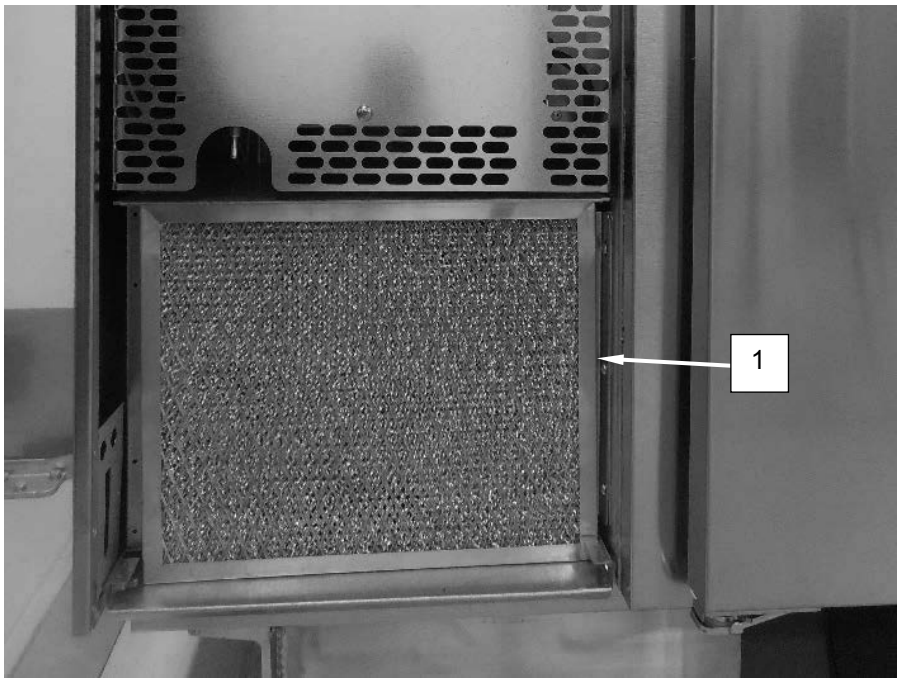


Figure 1. Air Filter.

TROUBLESHOOTING PROCEDURES – CONTINUED

STEP 2. Clean condenser coil (Figure 2, Item 1) IAW WP 0058.

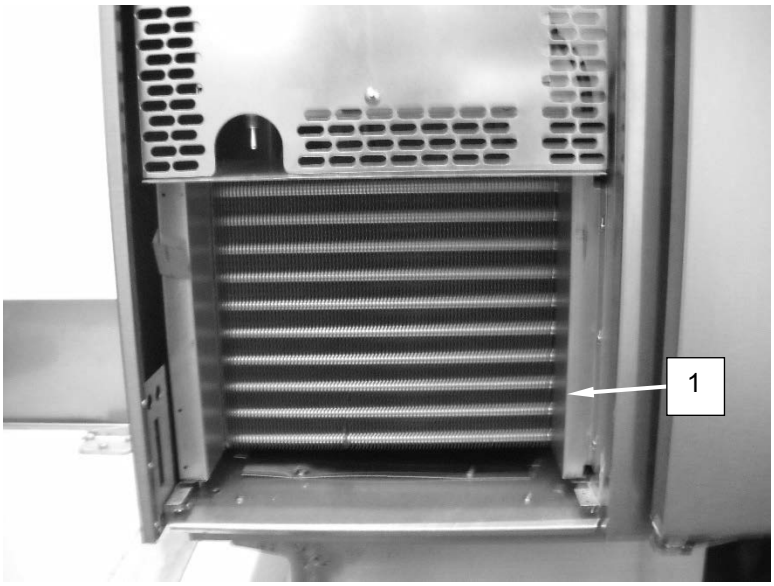


Figure 2. Condenser Coil.

MALFUNCTION
Improper thermostat settings.

CORRECTIVE ACTION
Adjust thermostat set points IAW WP 0055.

MALFUNCTION
Evaporator coils iced.

CORRECTIVE ACTION
Start a manual defrost IAW WP 0054.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Compressor short cycles.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Condensation on exterior surface.

NOTE

Some condensation on the exterior surface of the unit is perfectly normal during periods of high humidity.

MALFUNCTION
Damaged door gasket (Figure 3, Item 1) or door (Figure 3, Item 2).

CORRECTIVE ACTION
STEP 1. Inspect door gasket for damage. If damage is found, replace door gasket IAW WP 0056.

STEP 2. Inspect door for damage. If damage is found, notify maintainer.

Figure 3. Refrigerator Door.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Controller display reads "CHI" (Figure 4).

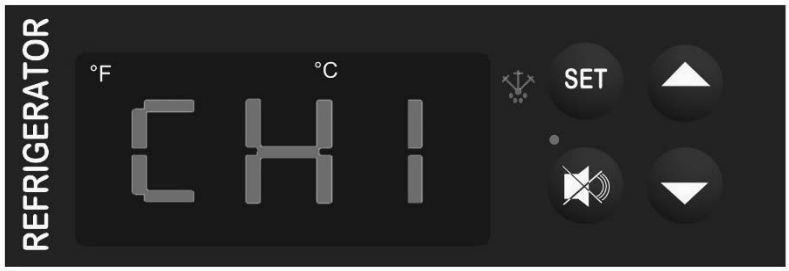


Figure 4. Controller Display Reads "CHI".

MALFUNCTION
Large amount of warm food in refrigerator.

CORRECTIVE ACTION
Remove some of the warm food to allow the refrigerator to return to normal temperature before reinserting.

MALFUNCTION
Doors open for long periods of time.

CORRECTIVE ACTION
Close doors.

MALFUNCTION
Doors or door gasket damaged.

CORRECTIVE ACTION
STEP 1. Inspect door gasket for damage. Replace door gasket IAW WP 0056 if any damage is found.

STEP 2. Inspect doors for damage. Notify maintainer if damage is found.

MALFUNCTION
Dirty condenser coil or air filter.

CORRECTIVE ACTION
STEP 1. Clean air filter IAW WP 0057.

STEP 2. Clean condenser coil IAW WP 0058.

MALFUNCTION
Incorrect thermostat setting.

CORRECTIVE ACTION
Adjust thermostat set points IAW WP 0055.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Evaporator coil iced.

CORRECTIVE ACTION
Start a manual defrost cycle IAW WP 0054.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Controller display reads "CLn” then “FIL" (Figure 5).

Figure 5. Controller Display Reads "CLn” then “FIL".

MALFUNCTION
Dirty condenser coil or air filter.

CORRECTIVE ACTION
STEP 1. Clean air filter (Figure 6, Item 1) IAW WP 0057.

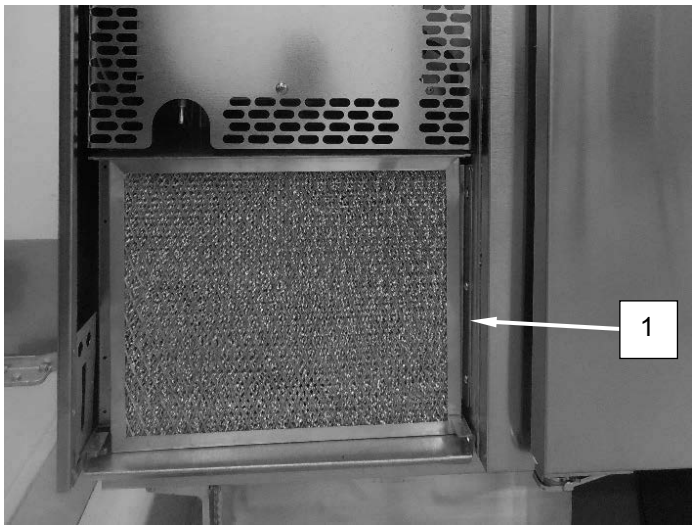


Figure 6. Air Filter.

TROUBLESHOOTING PROCEDURES – CONTINUED

STEP 2. Clean condenser coil (Figure 7, Item 1) IAW WP 0058.

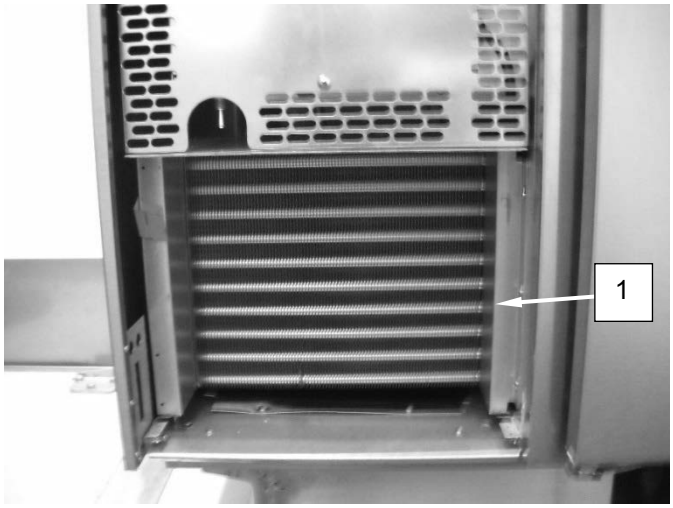


Figure 7. Condenser Coil.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Controller display reads "CLo" (Figure 8).

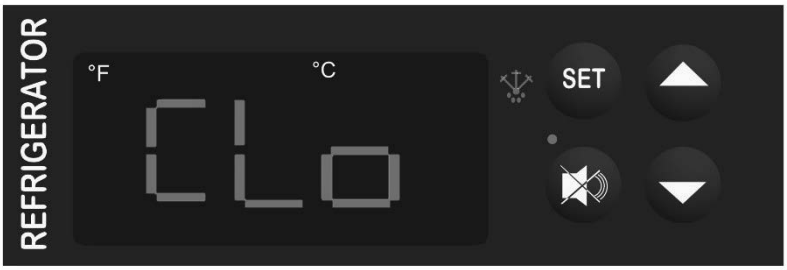


Figure 8. Controller Display Reads "CLo".

MALFUNCTION
Incorrect thermostat setting.

CORRECTIVE ACTION
Adjust thermostat set points IAW WP 0055.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Controller display reads "ELE" then “LOS" (Figure 9).

NOTE

The display will read “ELE” then “LOS” each time the refrigerator is turned on. This is not a malfunction of the refrigerator.

Figure 9. Controller Display Reads "ELE” then “LOS".

MALFUNCTION
Refrigerator lost power.

CORRECTIVE ACTION
Press alarm cancel key (Figure 10, Item 1).

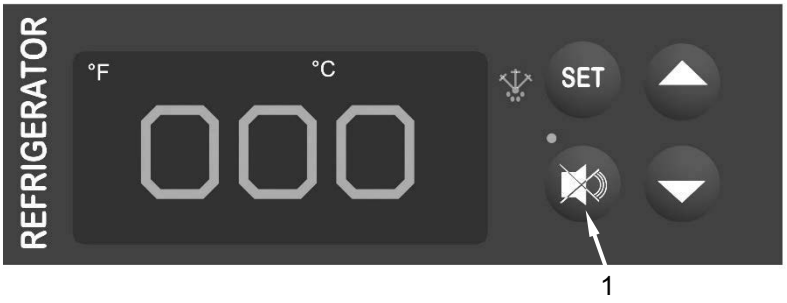


Figure 10. Alarm Cancel Key.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify supervisor.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Controller display reads "Sn1" (Figure 11).

Figure 11. Controller Display Reads "Sn1".

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Controller display reads "Sn2" (Figure 12).

Figure 12. Controller Display Reads "Sn2".

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Controller display reads "Sn3" (Figure 13).

Figure 13. Controller Display Reads "Sn3".

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Refrigerator does not turn on.

MALFUNCTION
Power switch off.

CORRECTIVE ACTION
STEP 1. Remove louver (Figure 14, Item 1).

STEP 2. Position power switch (Figure 14, Item 2) to ON.

STEP 3. Install louver.

Figure 14. Remove Louver.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Circuit breaker (P1, CB9) tripped or off.

CORRECTIVE ACTION

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open circuit breaker panel door (Figure 15, Item 1).

STEP 2. Reset circuit breaker (P1, CB9) (Figure 15, Item 2) by positioning it to OFF and then ON again.

STEP 3. Close and secure circuit breaker panel door.

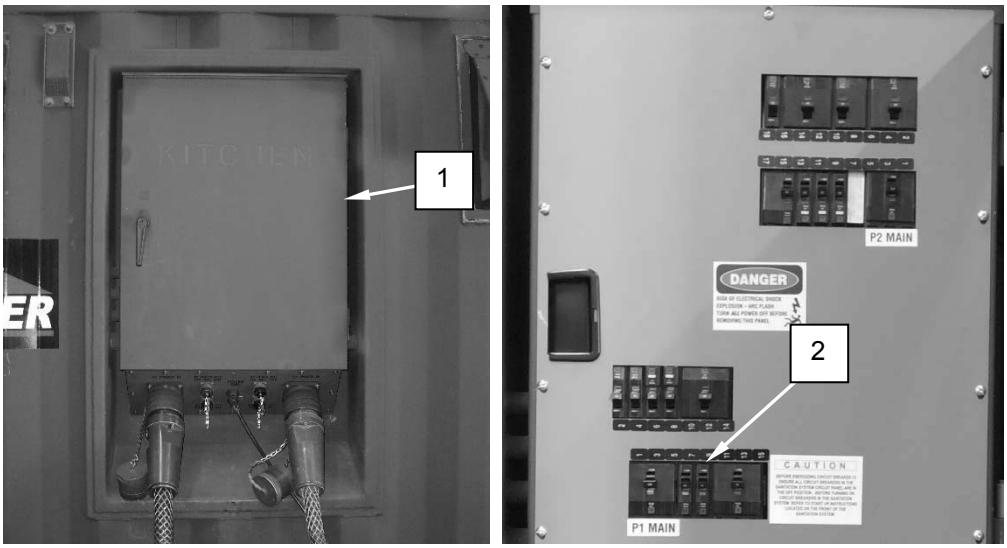


Figure 15. Circuit Breaker Panel.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING PROCEDURES
GRIDDLE FAULTS

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P, WP 0059

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to plug in and use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
Grease does not drain properly.

MALFUNCTION
Grease drawer is full, damaged or defective.

CORRECTIVE ACTION

WARNING

If griddle has been used recently, it may be hot to the touch. Allow griddle to cool completely before performing maintenance. Failure to comply may result in burns to personnel. Seek medical attention immediately.

STEP 1. Empty and clean grease drawer IAW WP 0059.

STEP 2. Install the grease drawer (Figure 1, Item 1).

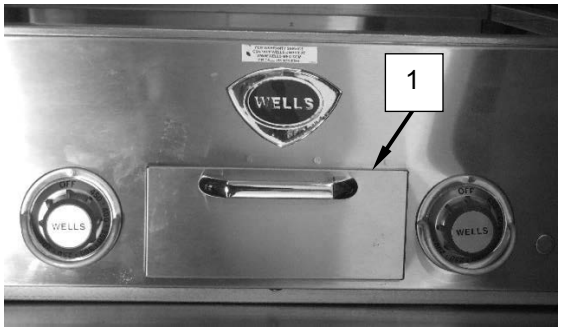


Figure 1. Grease Drawer.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Griddle does not turn on.

MALFUNCTION
Griddle power cable unplugged.

CORRECTIVE ACTION
Plug in power cable (Figure 2, Item 1) and rotate clockwise to ensure power cable is locked in place.

Figure 2. Griddle Power Cable.

MALFUNCTION
Tripped circuit breaker.

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

CORRECTIVE ACTION
STEP 1. Open the circuit breaker panel door (Figure 3, Item 1).

STEP 2. Position circuit breaker (P2, CB 12, 14, 16) (Figure 3, Item 2) to OFF then ON.

TROUBLESHOOTING PROCEDURES – CONTINUED

STEP 3. Close and secure circuit breaker panel door.

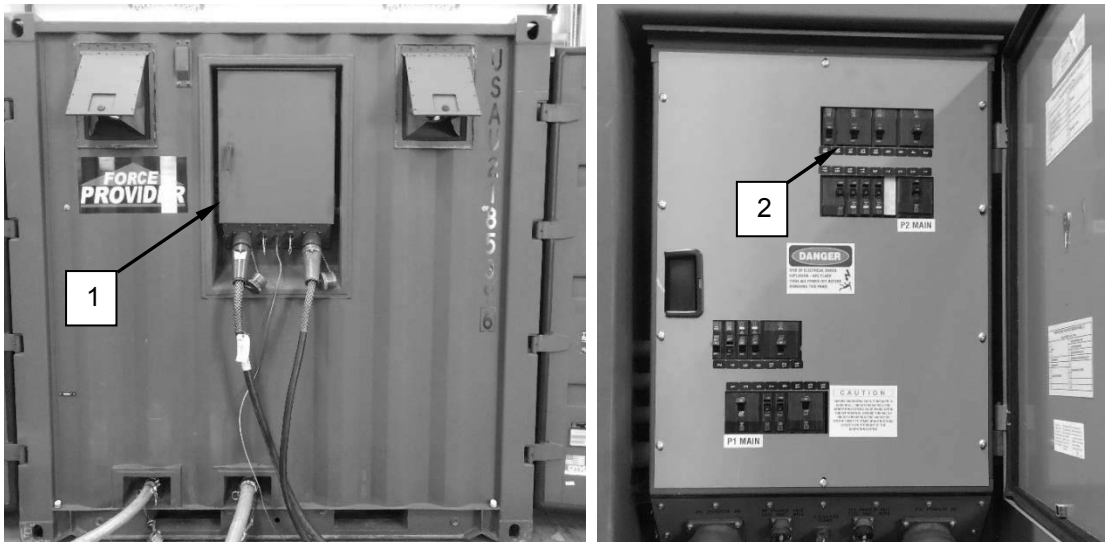


Figure 3. Reset Griddle Circuit Breaker.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Indicator light does not turn on but griddle heats up.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
One side of griddle does not heat.

MALFUNCTION
Improper thermostat setting.

CORRECTIVE ACTION
Verify that the thermostat (Figure 4, Item 1) to the corresponding side that will not heat up is turned to the correct setting.

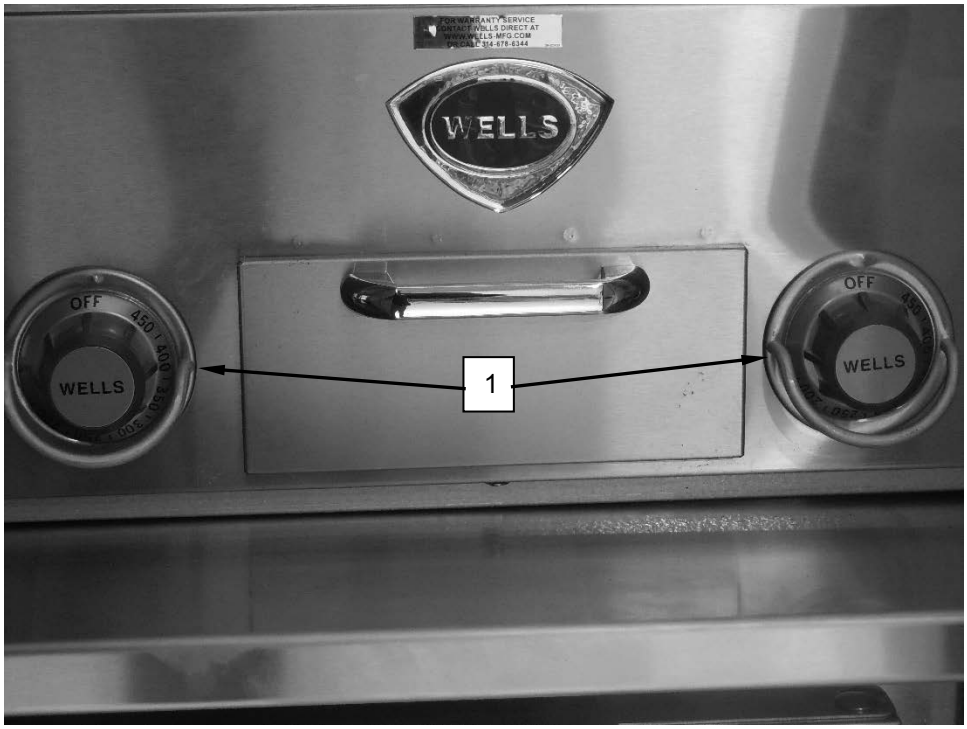


Figure 4. Thermostat.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING PROCEDURES
CONVECTION OVEN FAULTS

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to plug in and use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
Blower motor does not turn on.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Buzzer does not sound at end of cook cycle.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Convection oven will not turn on.

MALFUNCTION
Cable not plugged in.

CORRECTIVE ACTION
Verify that the convection oven power cable (Figure 1, Item 1) is connected to the convection oven receptacle. Twist the power cable clockwise to ensure it is locked in place.

TROUBLESHOOTING PROCEDURES – CONTINUED

Figure 1. Convection Oven Power Cable.

MALFUNCTION
Circuit breaker tripped.

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open the circuit breaker panel door (Figure 2, Item 1).

STEP 2. Reset circuit breaker (P1, CB 2, 4, and 6) (Figure 2, Item 2) by positioning it to the OFF position and back to the ON position.

STEP 3. Close circuit breaker panel.

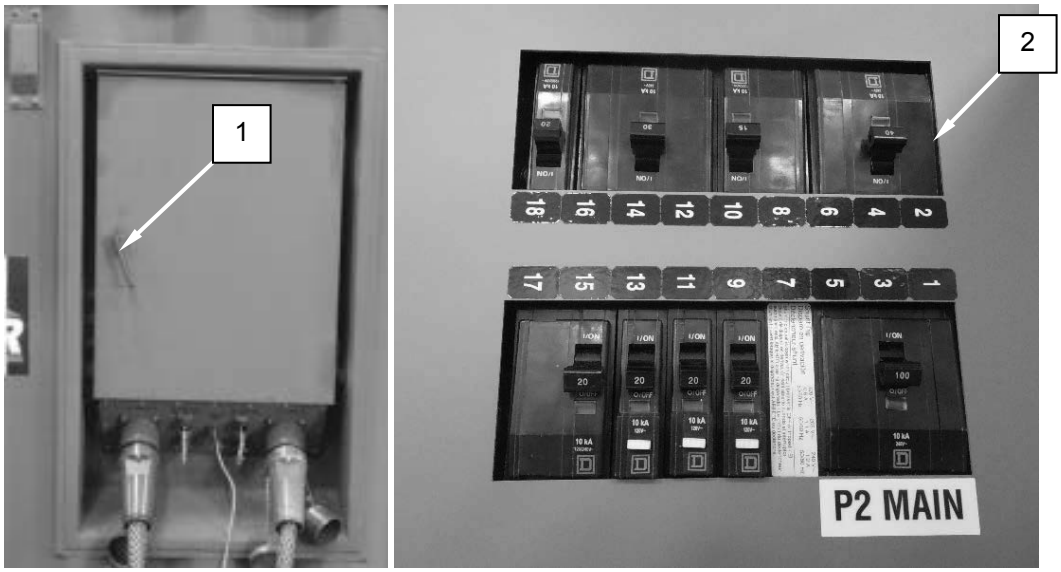


Figure 2. Circuit Breaker.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Incorrect mode select switch setting.

CORRECTIVE ACTION
Verify the mode select switch (Figure 3, Item 1) is not in the OVEN OFF position.

MALFUNCTION
Door open.

CORRECTIVE ACTION
Verify the door (Figure 3, Item 2) is firmly shut.

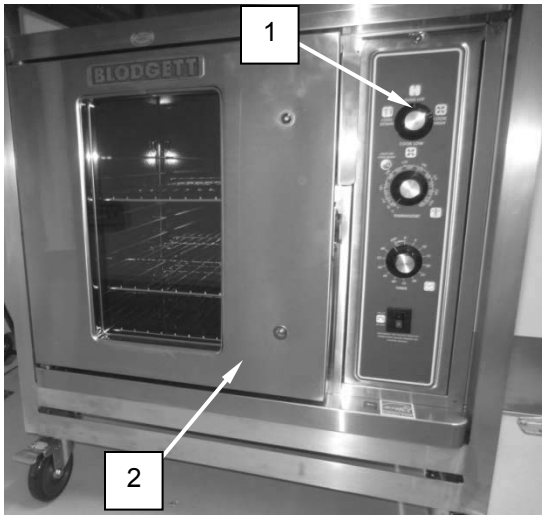


Figure 3. Mode Select Switch and Door.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Cooling fan does not turn on.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Oven does not heat up to the desired temperature.

MALFUNCTION
The oven door does not function properly.

CORRECTIVE ACTION
STEP 1. Wait until the oven is completely cooled down.

STEP 2. Inspect the door (Figure 4, Item 1) for damage. If any is found, notify maintainer.

STEP 3. Turn the oven on a low temperature setting.

STEP 4. Feel around the seal of the oven door (Figure 4, Item 2) and take note of any perceived heat escaping from the oven. If any heat is found to be escaping, notify maintainer.

Figure 4. Inspect Convection Oven Door.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Incorrect mode select switch setting.

CORRECTIVE ACTION
Verify the mode select switch (Figure 5, Item 1) is not in the OVEN OFF position.

MALFUNCTION
Door open.

CORRECTIVE ACTION
Verify the door (Figure 5, Item 2) is firmly shut.

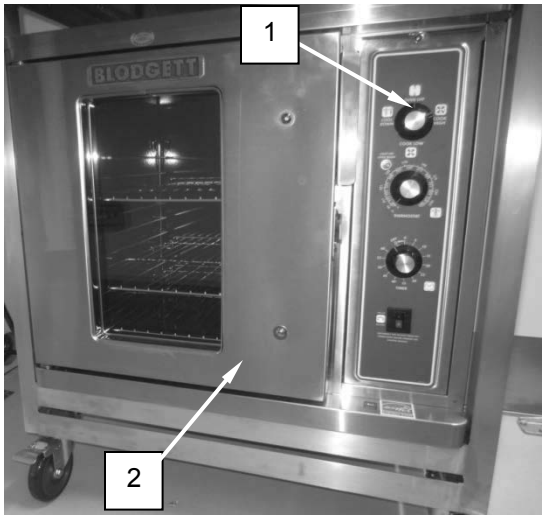


Figure 5. Convection Oven.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Oven turns on, but indicator light does not turn on.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING PROCEDURES
COOK AND HOLD OVEN FAULTS

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to plug in and use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
Box fan does not turn on.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Cook and hold oven will not turn on.

MALFUNCTION
Power cable not plugged in.

CORRECTIVE ACTION
STEP 1. Verify that the cook and hold oven power cable (Figure 1, Item 1) is connected to the cook and hold oven receptacle. Twist the power cable clockwise to ensure it is locked in place.

STEP 2. Verify the power switch (Figure 1, Item 2) on the cook and hold oven is in the ON position (|).

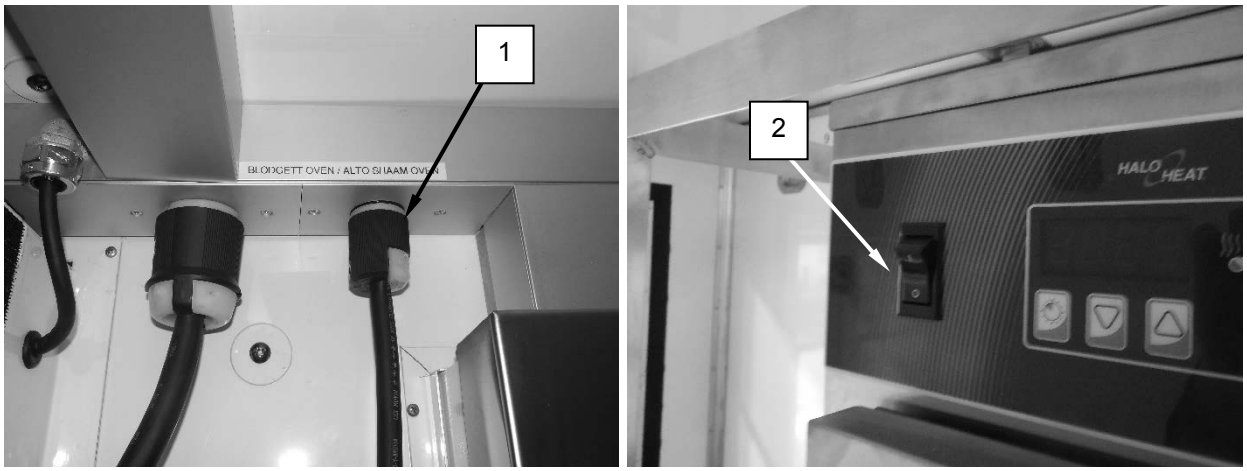


Figure 1. Cook and Hold Oven Power Cable.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Circuit breaker tripped.

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open circuit breaker panel door (Figure 2, Item 1).

STEP 2. Rest circuit breaker (P2, CB 8 and 10) (Figure 2, Item 2) to the OFF position and back to the ON position.

STEP 3. Close circuit breaker panel.

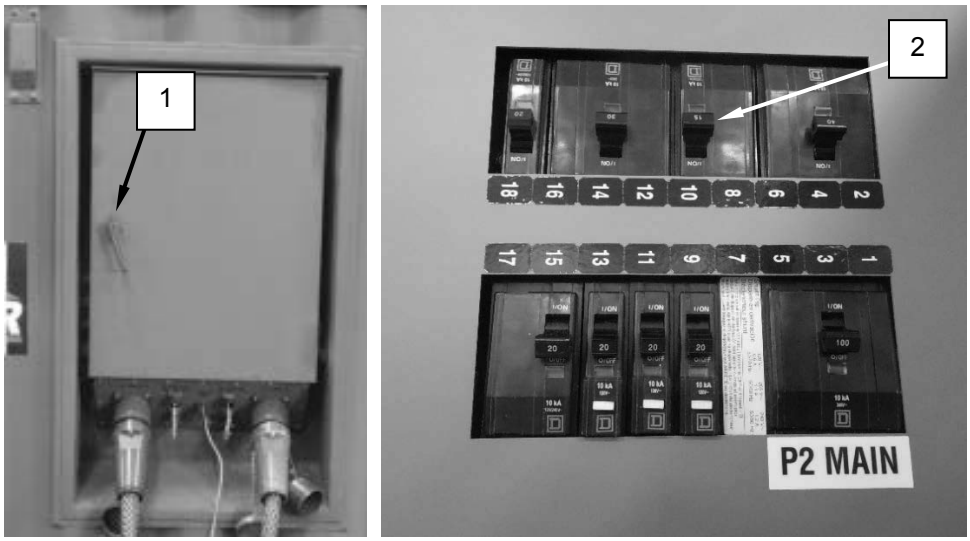


Figure 2. Circuit Breaker Panel.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Error code E-10 is shown on the cook and hold digital display (Figure 3, Item 1).

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Error code E-11 is shown on the cook and hold digital display (Figure 3, Item 1).

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

Figure 3. Cook and Hold Oven Display.

SYMPTOM
Error code E-30 is shown on the cook and hold digital display (Figure 3, Item 1).

MALFUNCTION
Door or gasket damaged.

CORRECTIVE ACTION
Inspect door and gasket for damage. If any damage is found, notify maintainer.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Error code E-31 is shown on the cook and hold digital display (Figure 3, Item 1).

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Error code E-70 is shown on the cook and hold digital display (Figure 3, Item 1).

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Error code E-78 is shown on the cook and hold digital display (Figure 3, Item 1).

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
Error code E-79 is shown on the cook and hold oven digital display (Figure 4, Item 1).

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Error code E-80, E-81, E-82, E-83, E-85, E-86, E-87, or E-88 is shown on the cook and hold digital display (Figure 4, Item 1).

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

SYMPTOM
Error code E-90 is displayed on the cook and hold digital display (Figure 4, Item 1).

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

Figure 4. Cook and Hold Oven Display.

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING INSTRUCTIONS
SANITATION SINK SOURCE WATER FAULTS

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P
WP 0067

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
Low water pressure at faucet.

MALFUNCTION
Hoses kinked or blocked.

CORRECTIVE ACTION
Check interior and exterior supply hoses for kinks or blockages. Remove any kinks or blockages found.

MALFUNCTION
Pressure pump strainer clogged.

CORRECTIVE ACTION
Clean pressure pump strainer (Figure 1, Item 1) IAW WP 0067.

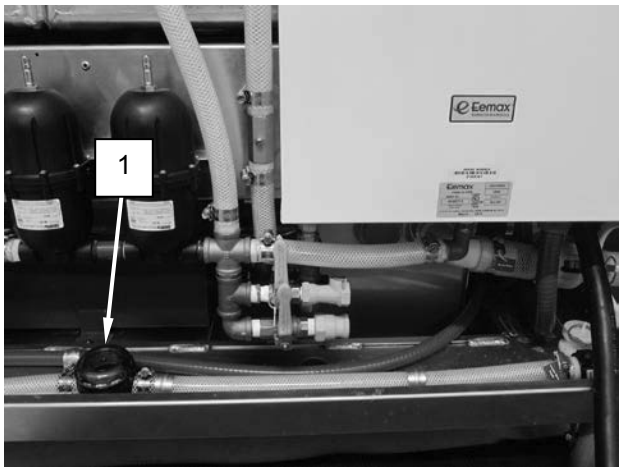


Figure 1. Pressure Pump Strainer.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify supervisor.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
No hot water is available at faucet.

MALFUNCTION
Water heater circuit breaker is tripped or off.

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

CORRECTIVE ACTION
STEP 1. Open sanitation sink circuit breaker panel door (Figure 2, Item 1).

STEP 2. Reset water heater circuit breaker (Figure 2, Item 2) by positioning it OFF and then ON again.

Figure 2. Resetting the Water Heater Circuit Breaker.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
No water is available at faucet and pressure pump does not run.

MALFUNCTION
Pressure pump or sanitation sink power cable unplugged.

CORRECTIVE ACTION
STEP 1. Open sanitation sink doors and verify pressure pump power cable (Figure 3, Item 1) is plugged into receptacle.

STEP 2. Verify sanitation sink power cable (Figure 3, item 2) is plugged into receptacle on refrigerator.

TROUBLESHOOTING PROCEDURES – CONTINUED

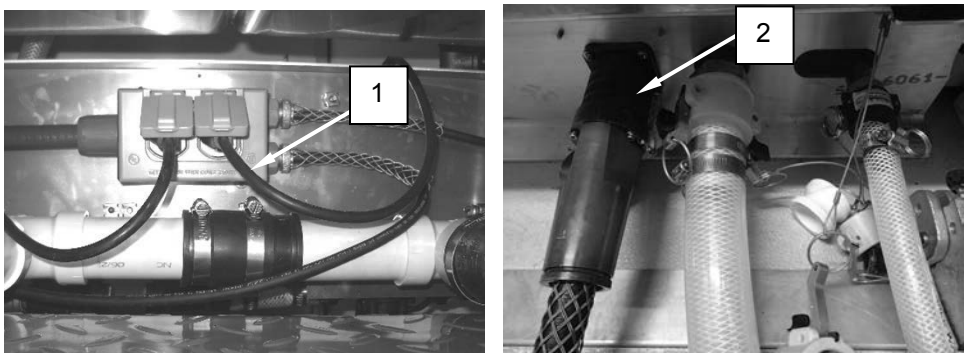


Figure 3. Sanitation Sink Hose Connections.

MALFUNCTION
Pressure pump circuit breaker tripped or off.

CORRECTIVE ACTION

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open sanitation sink circuit breaker panel door (Figure 4, Item 1).

STEP 2. Reset pressure pump / waste removal pump / transfer pump circuit breaker (Figure 4, Item 2) by positioning it to OFF and then ON again.

STEP 3. Close the sanitation sink circuit breaker panel door.

Figure 4. Resetting the Pressure Pump Circuit Breaker.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Sanitation sink circuit breaker tripped or off.

CORRECTIVE ACTION

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open ETKS circuit breaker panel door (Figure 5, Item 1).

STEP 2. Reset sanitation sink circuit breaker (P1, CB 11, 13, 15) (Figure 5, Item 2) by positioning it to OFF and then ON again.

STEP 3. Close the sanitation sink circuit breaker panel door.

Figure 5. Sanitation Sink Circuit Breaker.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Pressure pump runs continuously.

MALFUNCTION
Pressure pump strainer clogged.

CORRECTIVE ACTION

CAUTION

Running the pressure pump with no water in the system can cause damage or premature failure to the pump. Ensure power is disconnected from the sanitation sink if no water is available.

Clean pressure pump strainer IAW WP 0067.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Source water hose (Figure 6, Item 3) disconnected or kinked.

CORRECTIVE ACTION
STEP 1. Visually check the source water hose connection between the ETKS and the source water bag. Reconnect hose if necessary.

STEP 2. Inspect and clear source water hose of kinks or obstruction.

MALFUNCTION
Source water bag valve (Figure 6, Item 1) closed.

CORRECTIVE ACTION
Open valve (Figure 6, Item 2). (Valve is open when handle is in line with the valve).

MALFUNCTION
Source water bag (Figure 6, Item 1) is low or empty.

CORRECTIVE ACTION
Visually check the source bag. If the bag is less than one third full, notify supervisor to schedule replenishment.

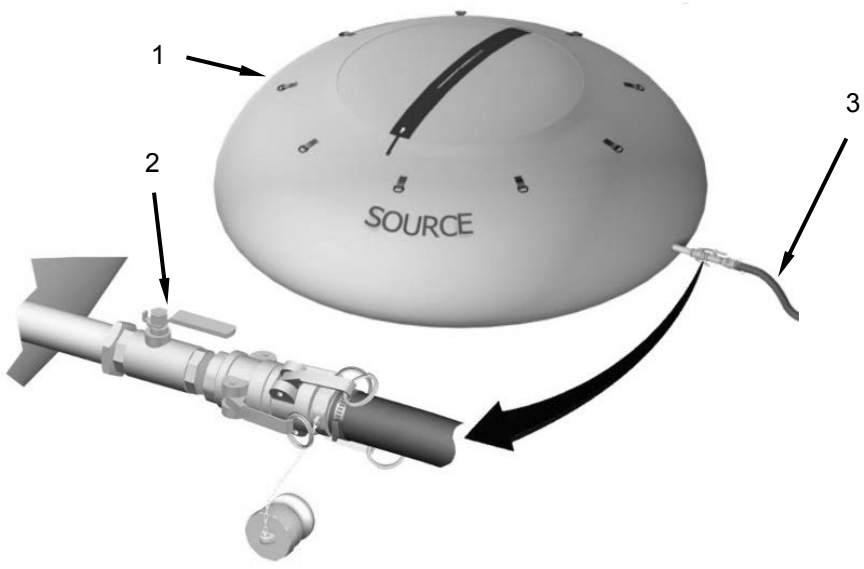


Figure 6. SOURCE Water Bag.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Pressure pump short cycles or water hammering occurs.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING INSTRUCTIONS
SANITATION SINK FAULTS

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's (7-Piece)
(WP 0071, Table 2, Item 58)

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P,
WP 0063

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to plug in and use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
Immersion heater does not turn on or does not heat up.

MALFUNCTION
Improper thermostat setting.

NOTE

The unit will not turn on if the water temperature is over the thermostat setting, and the water temperature must be 15 degrees below the thermostat setting in order for the reset button to work.

CORRECTIVE ACTION
Check that the unit thermostat (Figure 1, Item 1) is set for 180°F and push the reset button (Figure 1, Item 2) and monitor for normal operation.

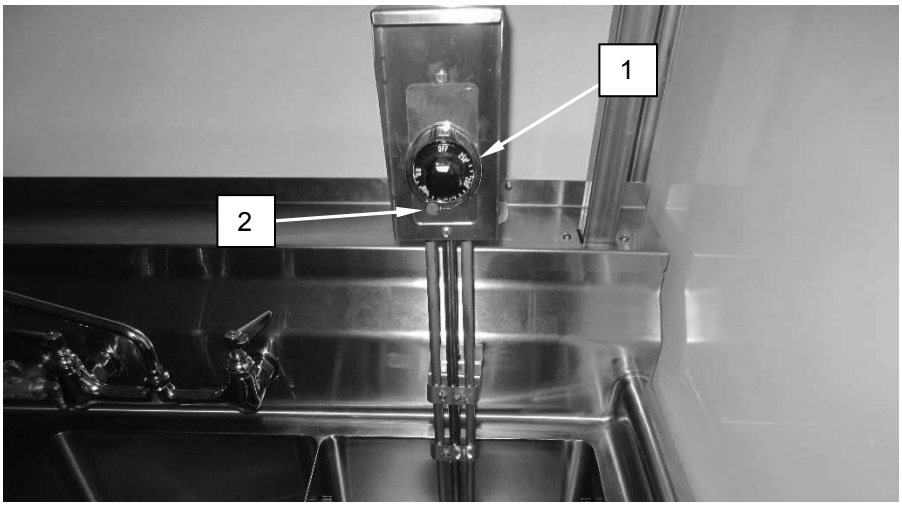


Figure 1. Check Immersion Heater Thermostat.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Circuit breaker off or tripped.

STEP 1. Remove items on spice rack (Figure 2, Item 2) and utility table (Figure 2, Item 3).

STEP 2. Loosen two screws (Figure 2, Item 1) securing spice rack to ETKS wall and remove spice rack.

STEP 3. Remove utility table.

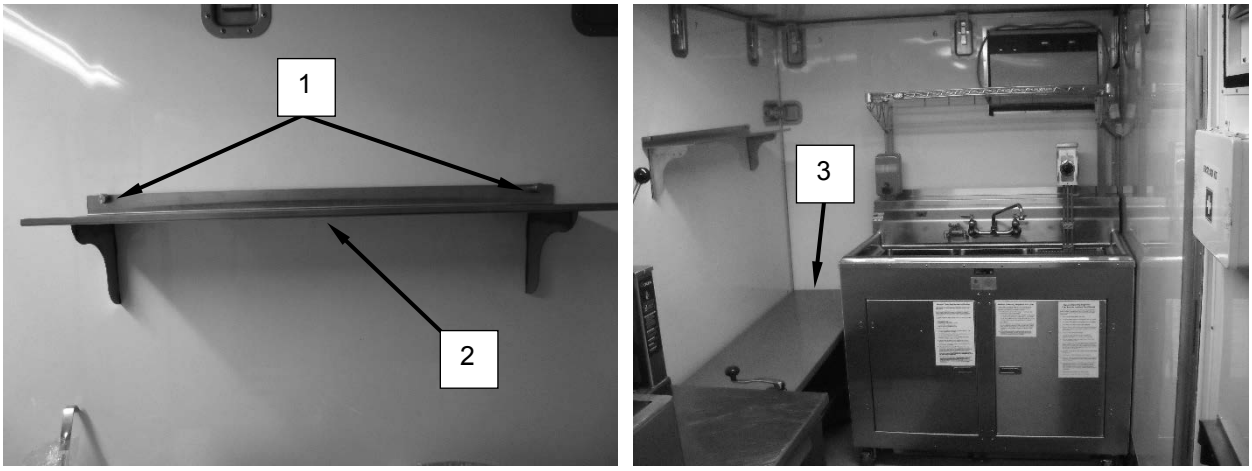


Figure 2. Spice Rack and Utility Table.

STEP 4. Open the circuit breaker panel door (Figure 3, Item 1) on the sanitation sink.

STEP 5. Reset that the immersion heater circuit breaker (Figure 3, Item 2) by positioning it to OFF and then back to ON.

STEP 6. Close circuit breaker panel door (Figure 3, Item 1).

STEP 7. Install utility table.

STEP 8. Install spice rack and secure with two screws.

STEP 9. Return items to table and spice rack.

Figure 3. Resetting the Immersion Heater Circuit Breaker.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Immersion heater unplugged.

CORRECTIVE ACTION
STEP 1. Remove sanitation sink IAW WP 0063.

STEP 2. Check that the immersion heater cable (Figure 4, Item 1) is plugged in.

STEP 3. Install sanitation sink IAW WP 0063.

Figure 4. Immersion Heater Power Cable.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
No power to sanitation sink.

MALFUNCTION
Circuit breaker is tripped or off.

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 1. Open the circuit breaker panel door (Figure 5 Item 1).

STEP 2. Reset the circuit breaker (P1, CB 11, 13, 15) (Figure 5, Item 2) to the OFF position and back to the ON position.

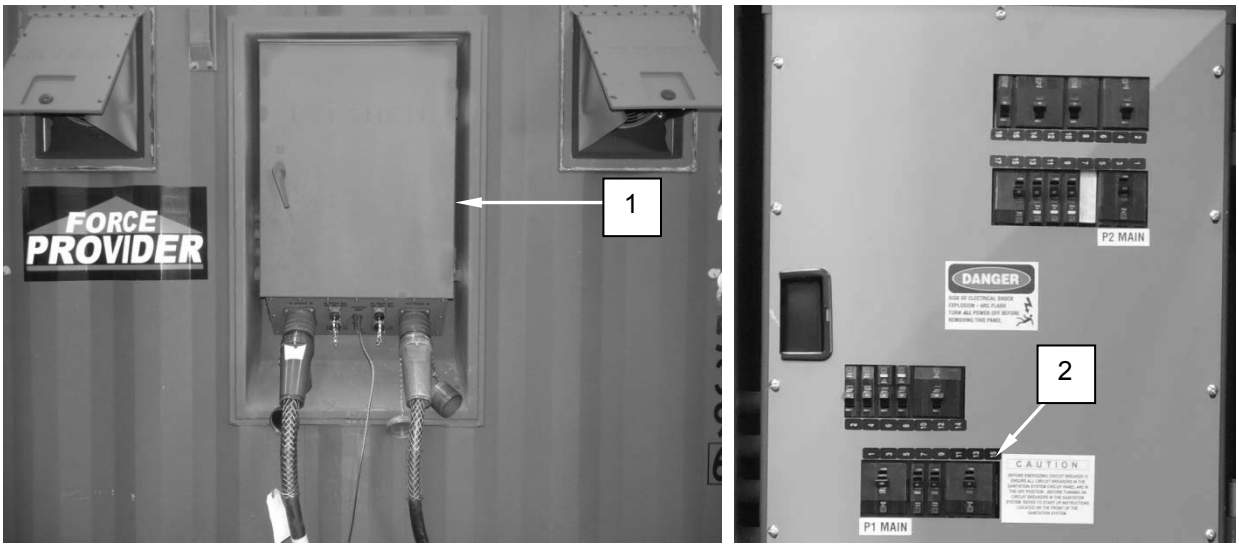


Figure 5. Circuit Breaker.

STEP 3. Verify sanitation sink is on and circuit breaker (P1, CB 11, 13, 15) does not trip again.

STEP 4. Close and secure circuit breaker panel door.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

TROUBLESHOOTING PROCEDURES – CONTINUED

SYMPTOM
No water transfer between sink basins.

MALFUNCTION
Low water level in right sink basin.

CAUTION

The transfer pump must not be operated when the water level in the right sink basin is below the minimum water level mark. This will cause damage to the pump from running dry and cause premature failure of the pump.

CORRECTIVE ACTION
Fill right sink basin above the minimum water level mark (Figure 6, Item 1) on the immersion heating guard.

Figure 6. Minimum Water Level for Immersion Heater.

MALFUNCTION
Transfer pump circuit breaker tripped or off.

CORRECTIVE ACTION
STEP 1. Remove items on spice rack (Figure 7, Item 2) and utility table (Figure 7, Item 3).

STEP 2. Loosen two screws (Figure 7, Item 1) securing spice rack to ETKS wall and remove spice rack.

STEP 3. Remove utility table.

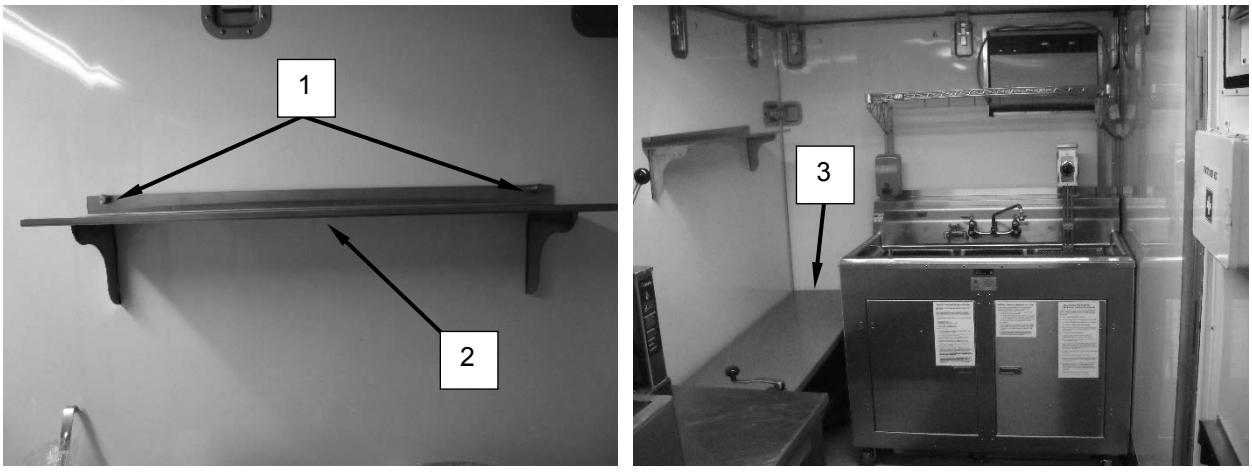


Figure 7. Spice Rack and Utility Table.

TROUBLESHOOTING PROCEDURES – CONTINUED

STEP 4. Open sanitation sink circuit breaker panel door (Figure 8, Item 1).

STEP 5. Reset pressure pump / waste removal pump / transfer pump circuit breaker (Figure 8, Item 2) by positioning it to OFF and then ON again.

STEP 6. Close circuit breaker panel door.

STEP 7. Install utility table.

STEP 8. Install spice rack and secure with two screws.

STEP 9. Return items to table and spice rack.

Figure 8. Sanitation Sink Circuit Breakers.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Sanitation sink leaks.

MALFUNCTION
Open valve or loose hose clamps.

CORRECTIVE ACTION
STEP 1. Determine the source of the leak. Remove sanitation sink IAW WP 0063 if required.

a. If an open valve is found, continue to step 2.

b. If no open valves are found, continue to step 6.

NOTE

All valves in Figure 8 are shown in their closed positions.

STEP 2. Close hot water heater drain valve (Figure 9, Item 3) by positioning it to the right of the valve.

STEP 3. Close transfer pump drain valve (Figure 9, Item 1) by rotating clockwise until it no longer turns.

STEP 4. Close ancillary supply valve (Figure 9, Item 4) by positioning it straight up and down.

TROUBLESHOOTING PROCEDURES – CONTINUED

STEP 5. Close coffee pot valve (Figure 9, Item 2) by positioning it straight up and down.

STEP 6. Tighten any hose clamps surrounding leaking component.

STEP 7. Inspect leaking component for any signs of damage. If any damage is found, notify maintainer.

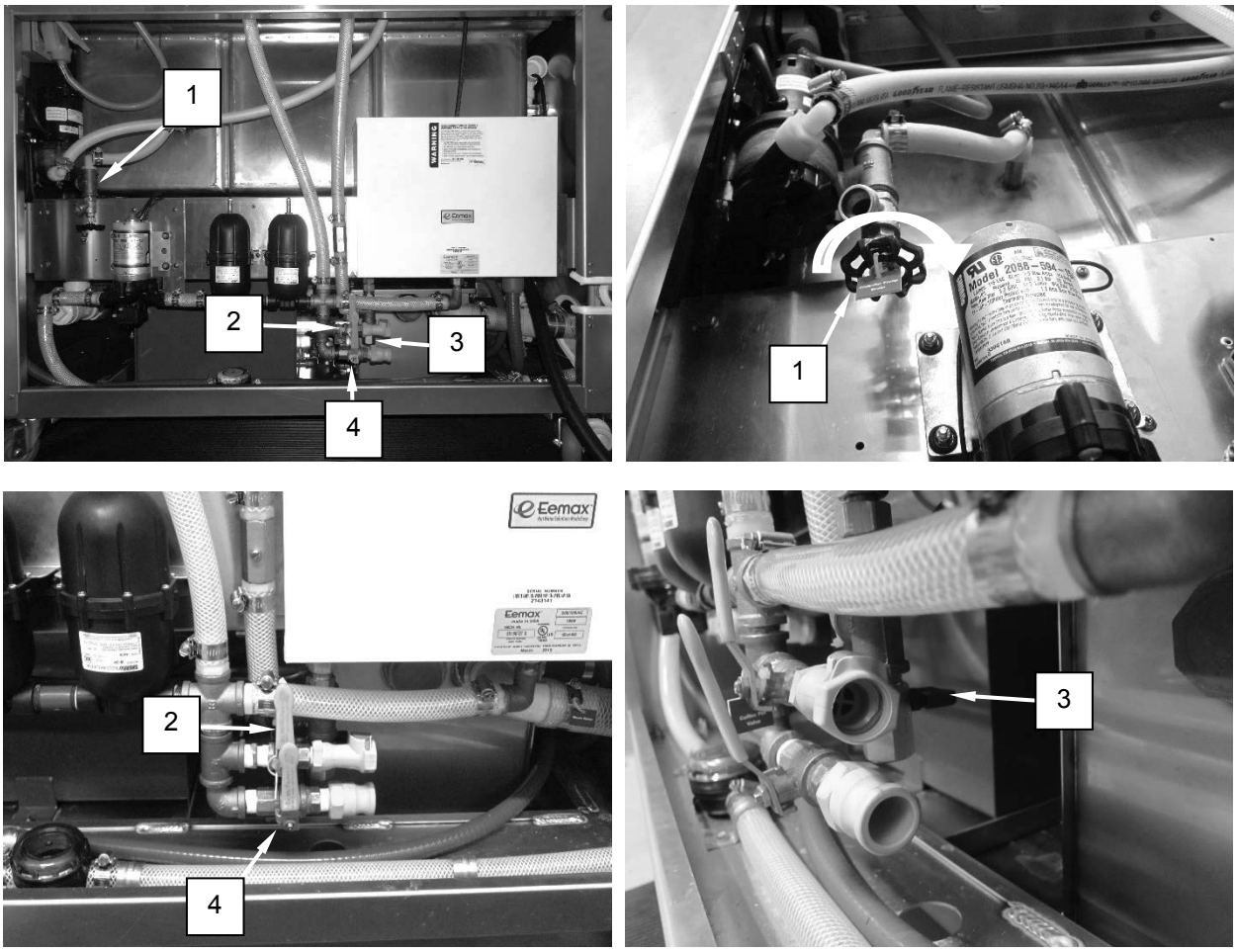


Figure 9. Sanitation Sink Valves.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

SYMPTOM
Water does not transfer to one basin.

There are no operator troubleshooting instructions for this fault. Notify maintainer to troubleshoot symptom IAW TM 10-5419-207-23&P.

END OF WORK PACKAGE

CREW MAINTENANCE

TROUBLESHOOTING INSTRUCTIONS
SANITATION SINK WASTEWATER FAULTS

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P
WP 0008

Equipment Condition

Daily startup complete (WP 0009)

TROUBLESHOOTING PROCEDURES

NOTE

After a corrective action is performed, attempt to plug in and use component before moving on to the next corrective action. This will help determine if the fault has been corrected or if more corrective action is required.

SYMPTOM
No waste flow from sink.

MALFUNCTION
Sink drain (Figure 1, Item 1) blocked with debris.

CORRECTIVE ACTION
Clear blockage as required.

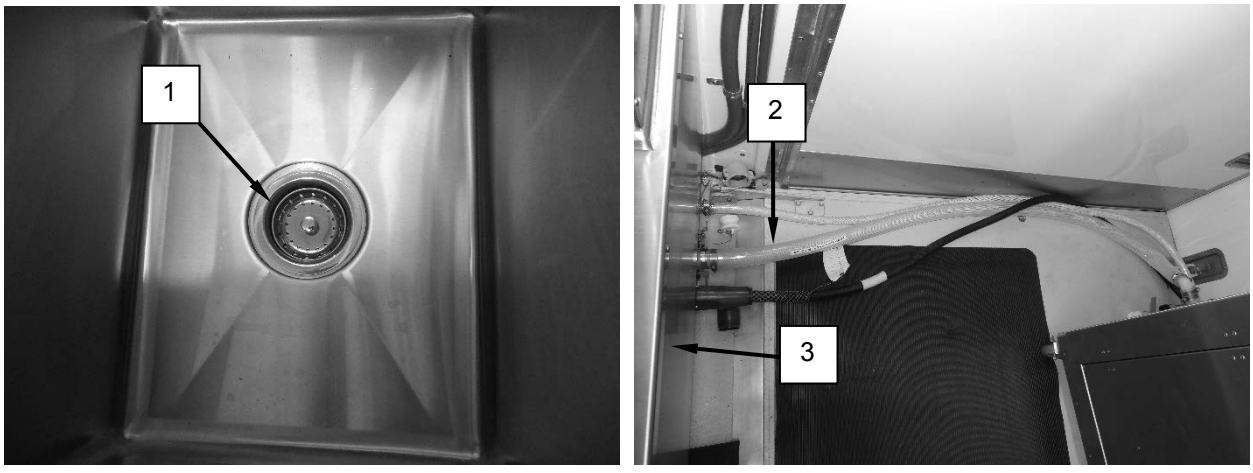


Figure 1. Sink Drain and Waste Hose.

MALFUNCTION
Waste hose blocked with debris.

TROUBLESHOOTING PROCEDURES – CONTINUED

CORRECTIVE ACTION

STEP 1. Remove items on spice rack (Figure 2, Item 2) and utility table (Figure 2, Item 3).

STEP 2. Loosen two screws (Figure 2, Item 1) securing spice rack to ETKS wall and remove spice rack.

STEP 3. Remove utility table.

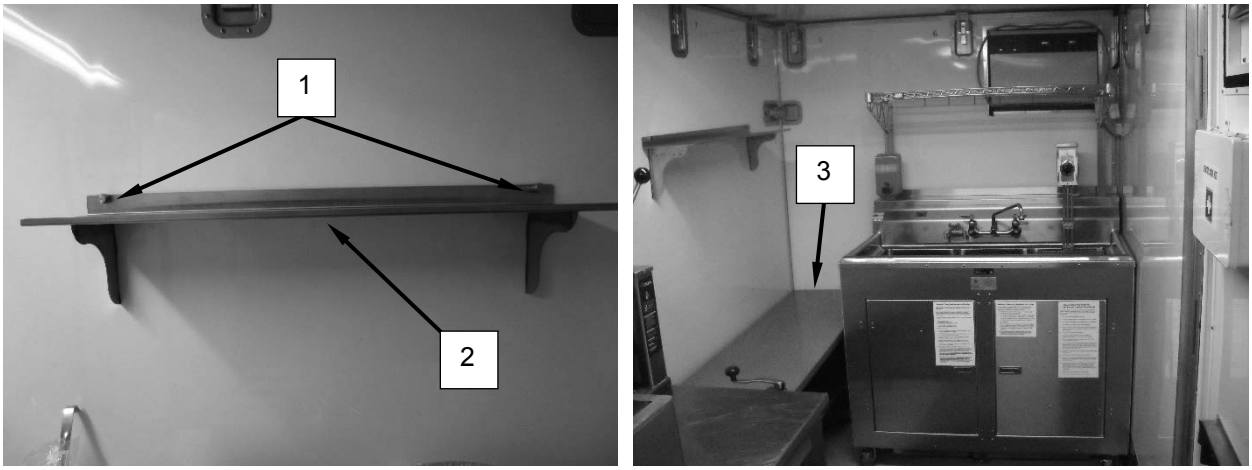


Figure 2. Spice Rack and Utility Table.

STEP 4. Visibly check the waste hose (Figure 1, Item 2) for blockage. If no blockage is found, proceed to step 12.

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 5. Open circuit breaker panel door on sanitation sink by pushing in on latch (Figure 3, Item 1).

STEP 6. Position pressure pump/waste removal pump/transfer pump circuit breaker (Figure 3, Item 2) to OFF.

STEP 7. Disconnect waste hose (Figure 1, Item 2) from refrigerator (Figure 1, Item 3) and clear blockage as required.

STEP 8. Reconnect waste hose (Figure 1, Item 2) to refrigerator (Figure 1, Item 3).

STEP 9. Position pressure pump/waste removal pump/transfer pump circuit breaker (Figure 3, Item 2) to ON.

STEP 10. Close and secure circuit breaker panel door.

STEP 11. Perform Prime water system IAW WP 0008.

STEP 12. Install table and spice rack.

TROUBLESHOOTING PROCEDURES – CONTINUED

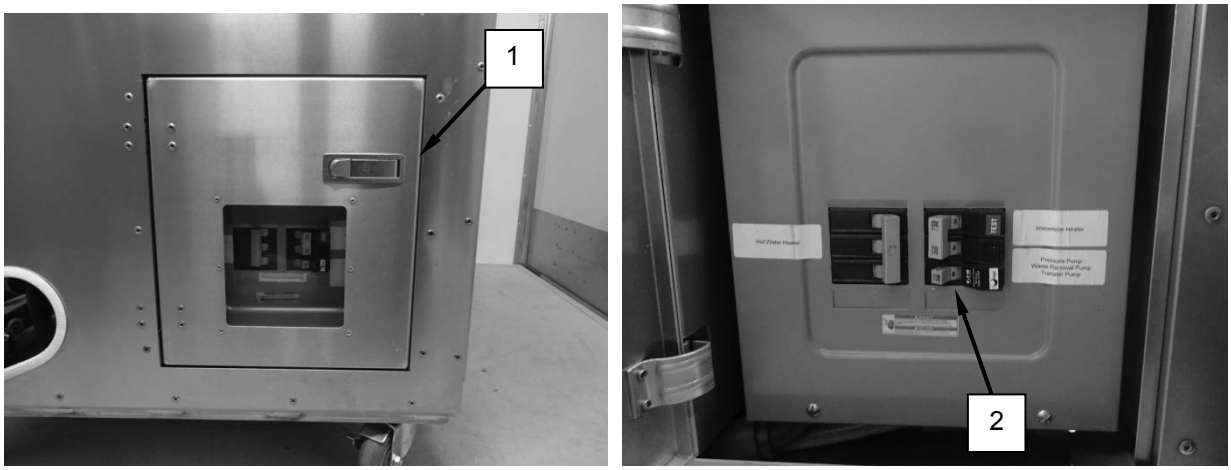


Figure 3. Sanitation Sink Circuit Breaker Panel.

MALFUNCTION
Waste removal pump power cable not plugged in.

CORRECTIVE ACTION
Connect power cable (Figure 4, Item 1) to receptacle.

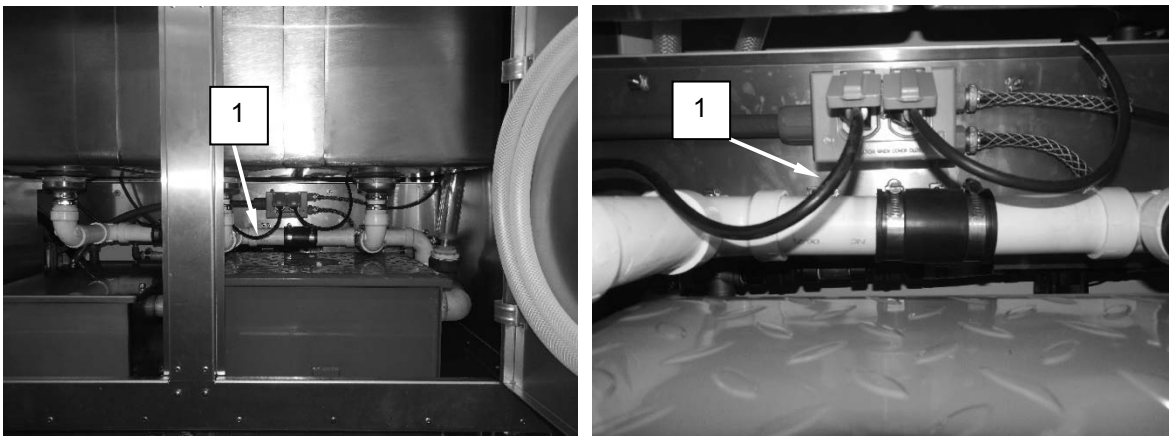


Figure 4. Waste Removal Pump Power Cable.

TROUBLESHOOTING PROCEDURES – CONTINUED

MALFUNCTION
Pressure / Waste Removal / Transfer Pump circuit breaker is tripped or OFF.

CORRECTIVE ACTION
STEP 1. Remove items on spice rack (Figure 5, Item 2) and utility table (Figure 5, Item 3).

STEP 2. Loosen two screws (Figure 5, Item 1) securing spice rack to ETKS wall and remove spice rack.

STEP 3. Remove utility table.

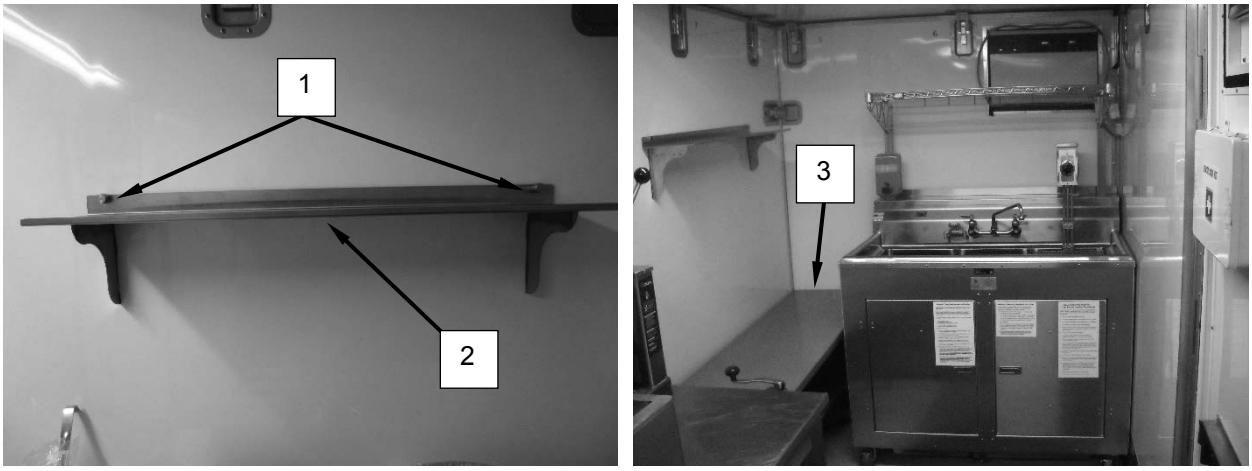


Figure 5. Spice Rack and Utility Table.

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

STEP 4. Open sanitation sink circuit breaker panel door (Figure 6, Item 1).

STEP 5. Reset pressure pump/waste removal pump/transfer pump circuit breaker (Figure 6, Item 2) by positioning it OFF and then ON again.

Figure 6. Sink Power Cable and Pump Circuit Breaker.

TROUBLESHOOTING PROCEDURES – CONTINUED

STEP 6. Close sanitation sink circuit breaker panel door (Figure 6, Item 1).

STEP 7. Perform Prime water system IAW WP 0008.

STEP 8. Install table and spice rack.

MALFUNCTION
WASTE water bag shut-off valve (Figure 7, Item 2) is closed.

CORRECTIVE ACTION
Open shut-off valve (valve should be in line with hose as shown in Figure 7).

MALFUNCTION
WASTE water bag (Figure 7, Item 1) is full.

CORRECTIVE ACTION
Notify supervisor.

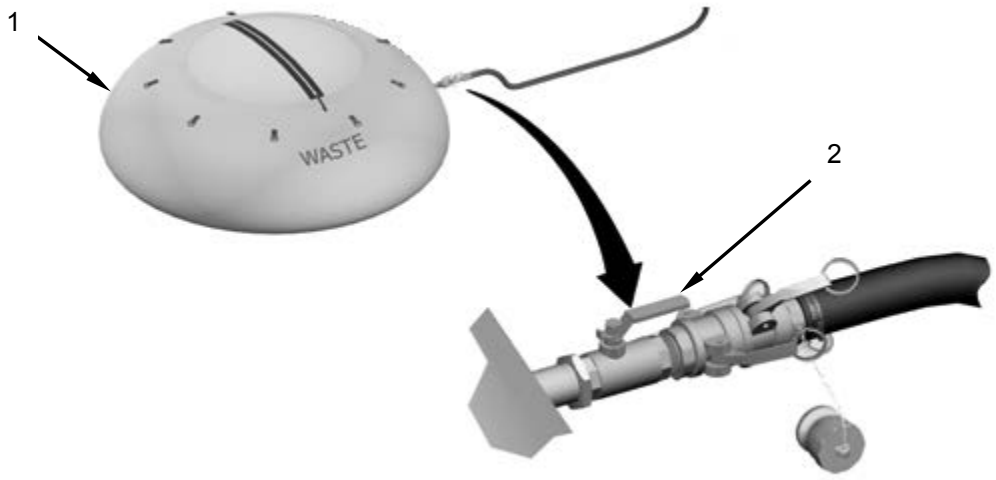


Figure 7. WASTE Water Bag.

If you have reached this point in the troubleshooting instructions and the fault is still not corrected, notify maintainer to continue the troubleshooting process IAW TM 10-5419-207-23&P.

END OF WORK PACKAGE

CHAPTER 4

PMCS MAINTENANCE INSTRUCTIONS FOR EXPEDITIONARY TRICON KITCHEN SYSTEM (ETKS)

CREW MAINTENANCE

PMCS INTRODUCTION

GENERAL

The following information describes PMCS procedures on the operator level. PMCS is performed to keep the Expeditionary TRICON Kitchen System (ETKS) in good operating condition and ready for its primary mission.

Always observe the WARNING, CAUTION, and NOTE statements in the PMCS table. A WARNING indicates that someone could be hurt or killed. A CAUTION indicates that equipment could be damaged. A NOTE may make your maintenance or repair task easier. You must observe these WARNINGS and CAUTIONS to prevent serious injury to yourself and others or to prevent the ETKS from being damaged.

Explanation of PMCS Table

Item No. Indicates the reference number. When completing DA Form 2404/5988E, Equipment Inspection and Maintenance Worksheet, include the item number for the item to check/service indicating a fault. Item numbers appear in the order you must perform the checks/services listed.

Interval. This column identifies when you must perform the procedure in the procedure column.

Item to be checked or serviced. Indicates the item to be checked or serviced.

Procedure. Indicates the procedure be performed on the item listed.

Equipment Not Ready/Available If. Indicates faults which will prevent the equipment from performing its primary mission. If you perform procedures listed in Procedure column which show faults listed in this column, do not operate the equipment. Follow standard procedures for maintaining the equipment or reporting equipment failure.

Corrosion Prevention and Control (CPC)

Corrosion Prevention and Control (CPC) of Army material is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

Corrosion specifically occurs with metals. It is an electrochemical process that causes the degradation of metals. It is commonly caused by exposure to moisture, acids, bases, or salts. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking.

Plastics, composites, and rubbers can also degrade. Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically UV) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking.

SF Form 368, Product Quality Deficiency Report, should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS).

Inspection

Before, during, and after operation of the ETKS, perform inspections to make sure all items are in good working condition. Maintain an awareness to make sure items are correctly assembled, stowed properly, and secure. Look for items that may be indicating excessive wear, corrosion, or improper lubrication. Report or correct any problems you find.

END OF WORK PACKAGE

CREW MAINTENANCE

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

INITIAL SETUP:

Material/Parts

Gloves, Disposable (WP 0073, Item 6)

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5430-237-12&P,
TM 55-8145-232-13&P
WP 0018, WP 0040, WP 0042, WP 0043, WP 0045, WP 0051, WP 0053, WP 0054, WP 0057, WP 0058, WP 0059, WP 0060, WP 0061, WP 0062, WP 0065, WP 0066, WP 0068, WP 0071

Equipment Condition

ETKS setup completed (WP 0007)

PREVENTIVE MAINTENANCE CHECKS AND SERVICES

Table 1. Preventive Maintenance Checks and Services.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
1	Before	BII and COEI	BII and COEI (WP 0071). Ensure they are serviceable, clean, accounted for and in the correct location.	Any BII and COEI missing or damaged that would impair operations.
2	Before	SOURCE and WASTE Water Bags	Perform before PMCS IAW TM 10-5430-237-12&P.	SOURCE and WASTE water bags are damaged or missing.
3	Before	Expandable TRICON	Perform before PMCS IAW TM 55-8145-232-13&P.	TRICON is damaged.
4	Before	Decals and Instruction Plates	Inspect all decals and instruction plates and verify if missing or damaged IAW WP 0018.	

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
5	Before	ISO Container	Ensure four drains (Figure 1, Item 1) on each corner of the ISO container are not clogged. Inspect tubular levels (Figure 1, Item 4) to ensure container (Figure 1, Item 2) is level. If container is on leveling blocks (Figure 1, Item 5) ensure container is resting squarely on leveling block.	Container cannot be leveled.
6	Before	Container Doors	Inspect container doors (Figure 1, Item 3) are not damaged, resting against expandable side walls, and are secured to opposite door with tie down straps (Figure 1, Item 6).	Doors are damaged.
7	Before	Wing Jacks	Inspect wing jacks (Figure 1, Item 8) are not damaged or missing, are secured to the wing panel (Figure 1, Item 10) and keeper pins (Figure 1, Item 9) are installed to secure clevis pins. Verify foot pads (Figure 1, Item 7) are firmly contacting the ground.	Supports are damaged or missing.

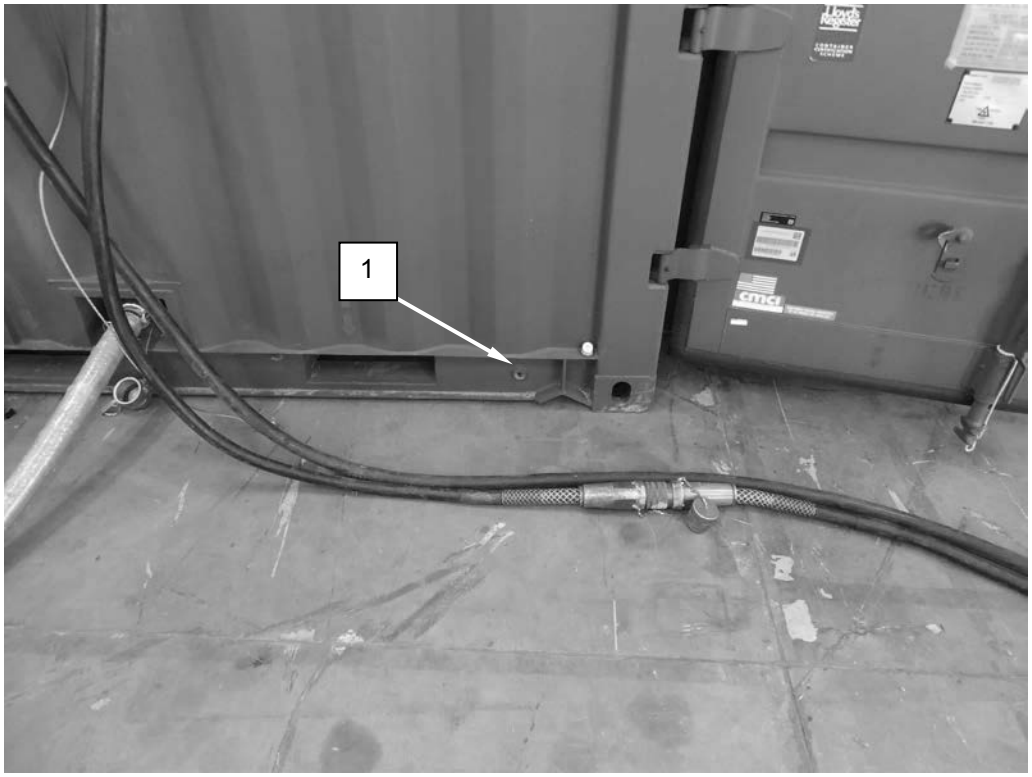


Figure 1. PMCS Items 5–7 (Sheet 1 of 2).

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

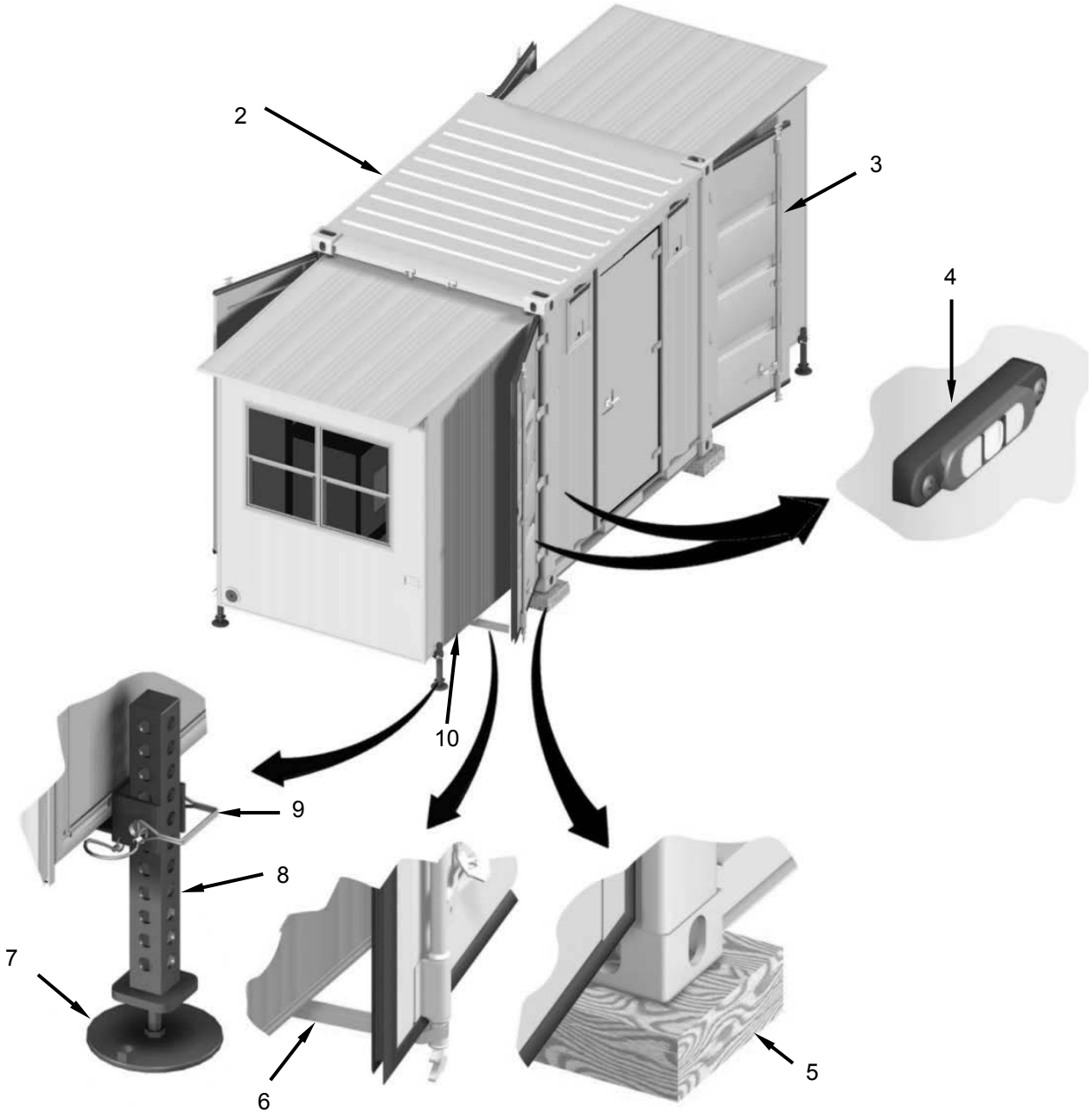


Figure 1. PMCS Items 5–7 (Sheet 2 of 2).

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
8	Before	Electrical Supply	**WARNING**  High voltage is present in the ETKS. Use extreme caution when working inside. Contact with energized connections will result in serious personal injury or death. Seek immediate medical attention if injury occurs. Open the circuit breaker panel door and inspect circuit breakers (Figure 2, Item 1) for damage or tripped breakers. Inspect power cables (Figure 2, Items 8 and 10) for damage and proper connections at source and power distribution panel (Figure 2, Item 6). Inspect ground wire (Figure 2, Item 7) for proper connection at power distribution panel (Figure 2, Item 6) and ground rod (Figure 2, Item 9).	Power cables are damaged or missing. Ground wire damaged, missing, or not properly connected.
9	Before	Vent Covers / Air Intake Filters	Inspect all four vent covers (Figure 2, Item 4) for damage. Verify the covers are open. Inspect two air intake filters (Figure 2, Item 5) to ensure they are installed and not blocked with debris. Inspect finger guards (Figure 2, Item 2) on two exhaust fans (Figure 2, Item 3) to ensure they are not blocked with debris.	Covers are not open. Filters are missing or blocked. Finger guards are missing.
10	Before	Air Conditioner (Outdoor)	Inspect air conditioner (Figure 2, Item 12) is resting firmly on shelf. Inspect external air screens (Figure 2, Item 11) for debris, blockage, or excess dust buildup.	Air conditioner is missing.

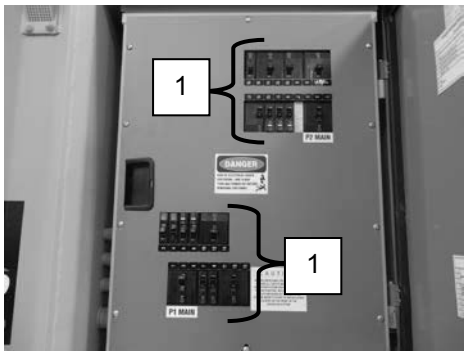


Figure 2. PMCS Items 8–10 (Sheet 1 of 2).

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

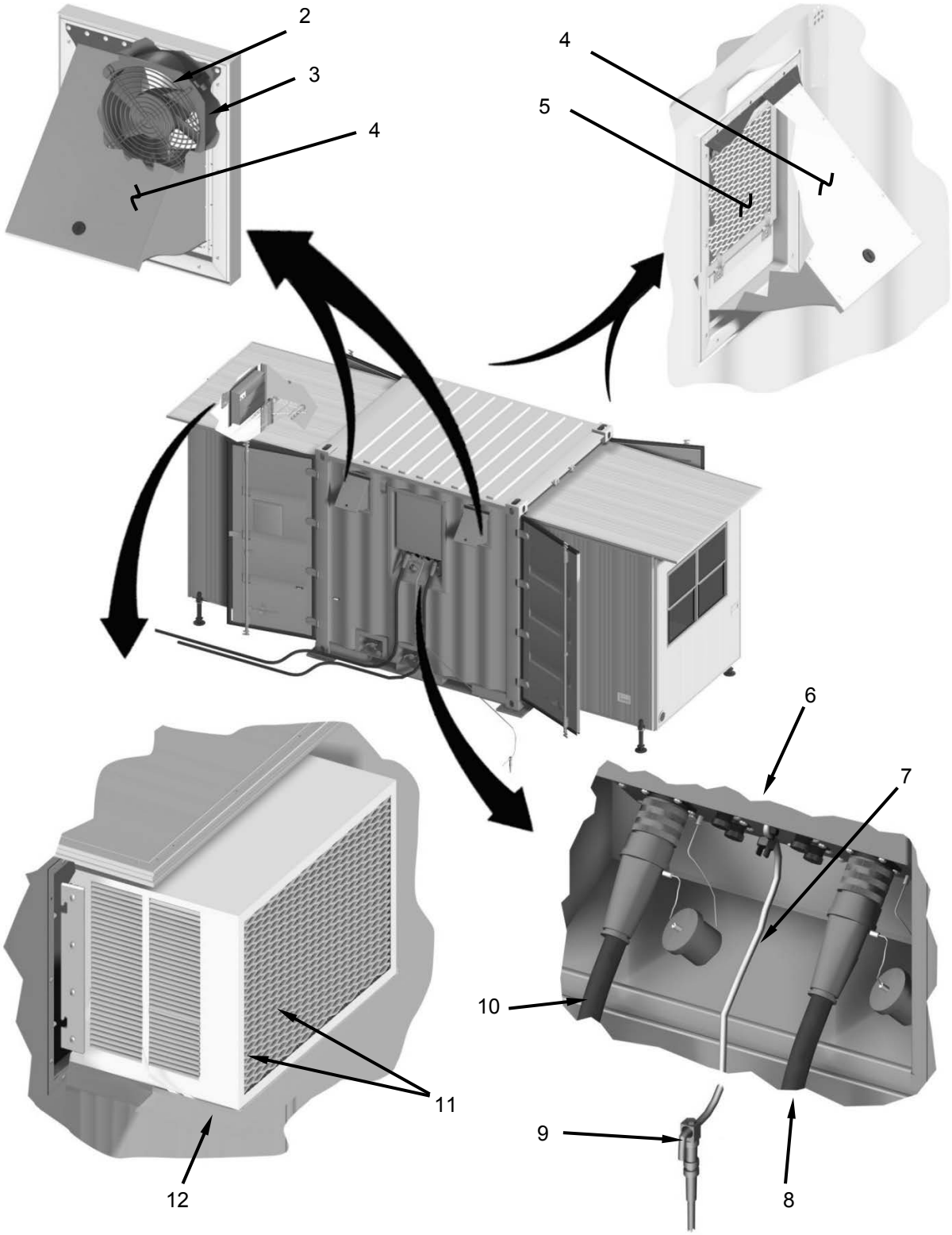


Figure 2. PMCS Items 8–10 (Sheet 2 of 2).

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
11	Before	Water Supply	Inspect SOURCE water bag (Figure 3, Item 7) for damage and to ensure there is an adequate supply of potable water. Inspect source water hose (Figure 3, Item 1) is not damaged and is connected at SOURCE water bag (Figure 3, Item 7) and ETKS water inlet port (Figure 3, Item 2). Verify shut off valve (Figure 3, Item 8) on SOURCE water bag is open.	Source water bag is damaged or water supply is less than 1/3 full. Source water hose is damaged or missing.
12	Before	Waste Collection	Inspect WASTE water bag (Figure 3, Item 6) for damage and ensure it is not over-filled. Inspect wastewater hose (Figure 3, Item 4) is not damaged and is connected at WASTE water bag (Figure 3, Item 6) and ETKS waste outlet port (Figure 3, Item 3). Inspect shut off valve (Figure 3, Item 5) on WASTE water bag to verify it is open.	WASTE water bag is damaged or bag is over 2/3 full. Wastewater hose is damaged or missing.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

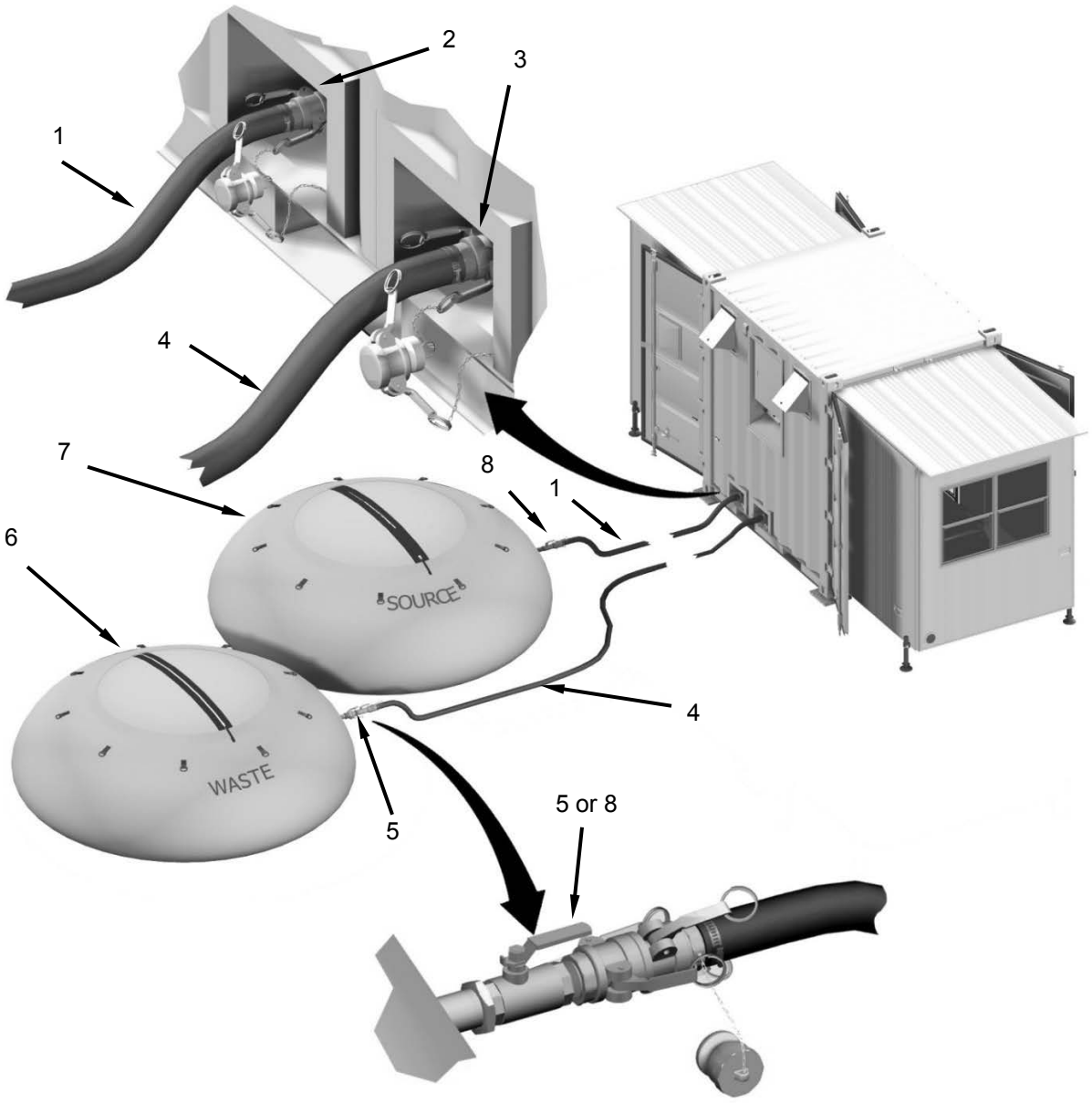


Figure 3. PMCS Items 11–12.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
13	Before	Expandable Panels	Inspect expandable panels (Figure 4, Item 1) for damage and ensure there are no gaps along the interior/exterior joints between the roof (Figure 4, Item 12), wall (Figure 4, Item 11), and floor panels (Figure 4, Item 13). Inspect expandable panel latches (Figure 4, Item 2) for damage and proper connection.	Panels are damaged or gaps are visible or hazardous to personnel. Latches are damaged.
14	Before	Personnel Door	Verify personnel door (Figure 4, Item 5) opens and closes without binding. Inspect door latch (Figure 4, Item 8) does not bind and keeps door (Figure 4, Item 5) closed when engaged.	Door binds and cannot close. Door latch sticks or does not keep door closed.
15	Before	50-ft Power Distribution Cable (Exterior)	Inspect junction box (Figure 4, Item 14) to ensure it is not damaged.	
16	Before	Serving Window	Inspect both serving windows (Figure 4, Item 10) for damage and ensure they open and close without binding. Verify window pins (Figure 4, Item 9) are present and secured.	Serving windows are damaged or do not open and close. Window pins are missing.
17	Before	Air Conditioner (Indoor)	Inspect air conditioner (Figure 4, Item 3) for damage or debris blocking air outlet louver (Figure 4, Item 4). Inspect electrical cable (Figure 4, Item 7) is not damaged, is properly connected, and secured with straps (Figure 4, Item 6).	Air conditioner is damaged. Cable is damaged.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

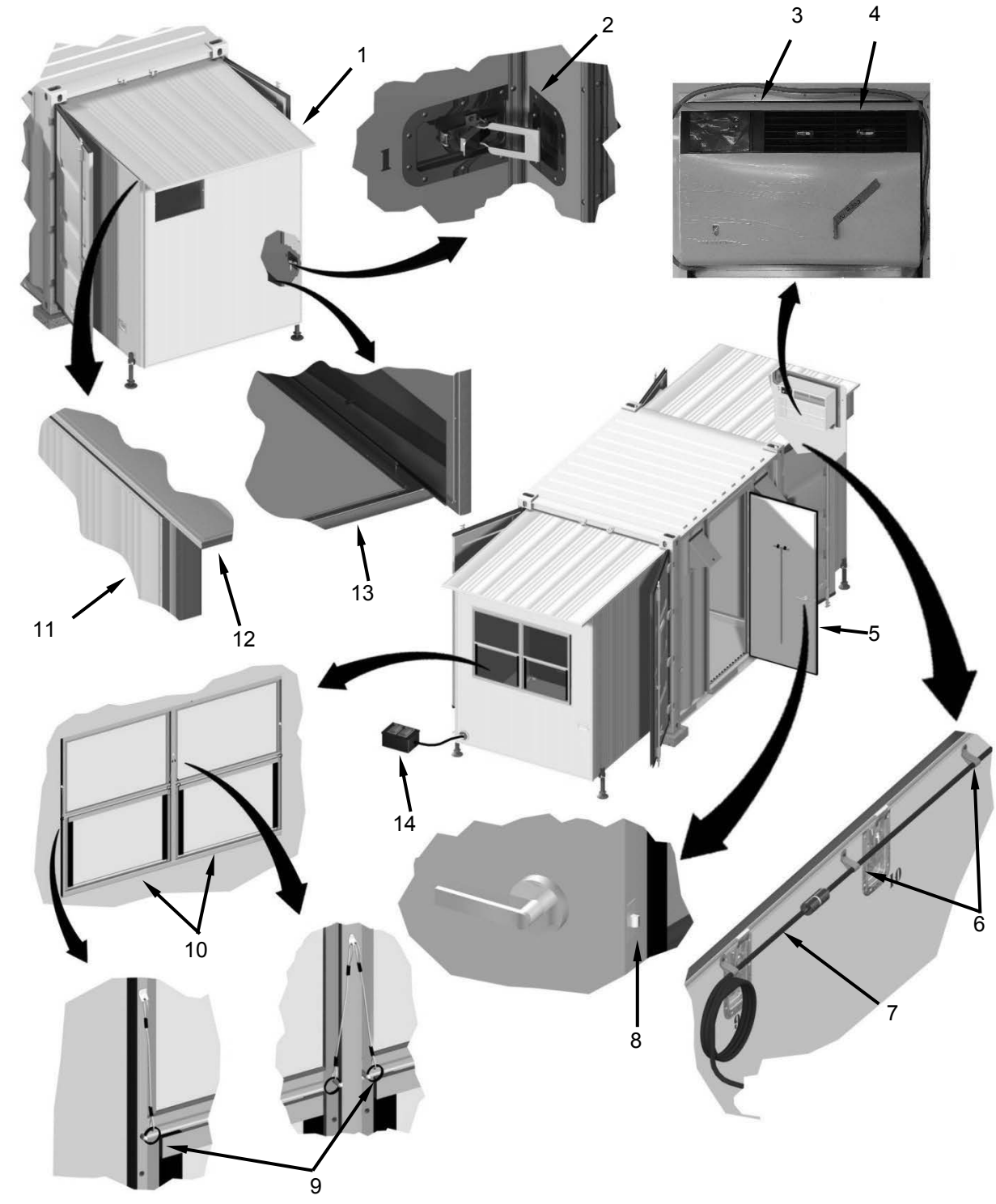


Figure 4. PMCS Items 13–17.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
18	Before	Oven Rack	Inspect foot brakes (Figure 5, Item 10) on casters (Figure 5, Item 9) are set to prevent movement of oven rack (Figure 5, Item 11). Inspect electrical cable on convection oven (Figure 5, Item 12) is not damaged and is connected at receptacle (Figure 5, Item 2). Inspect electrical cable on cook and hold oven (Figure 5, Item 13) is not damaged and is connected at receptacle (Figure 5, Item 3).	Foot brakes cannot be set. Cable is damaged. Cable is damaged.
19	Before	Vent Fan Grease Filters	Inspect grease filters (Figure 5, Item 1) on two exhaust fans for damage or blockage from debris or grease.	Filters are not installed or blocked with debris/grease.
20	Before	Refrigerator	Verify there is no debris blocking louver panel and condenser filter (Figure 5, Item 8).	
21	Before	Space Heater	Inspect there is no debris blocking air inlet screen (Figure 5, Item 7).	
22	Before	Griddle	Inspect electrical cable (Figure 5, Item 5) on griddle (Figure 5, Item 6) to ensure it is not damaged and is connected at receptacle (Figure 5, Item 4).	Cable is damaged.
23	Before	50-ft Power Distribution Cable (Interior)	Inspect electrical cable is not damaged and is connected at receptacle (Figure 5, Item 14).	
24	Before	Folding Tables	Inspect table for any damaged or defective components.	

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

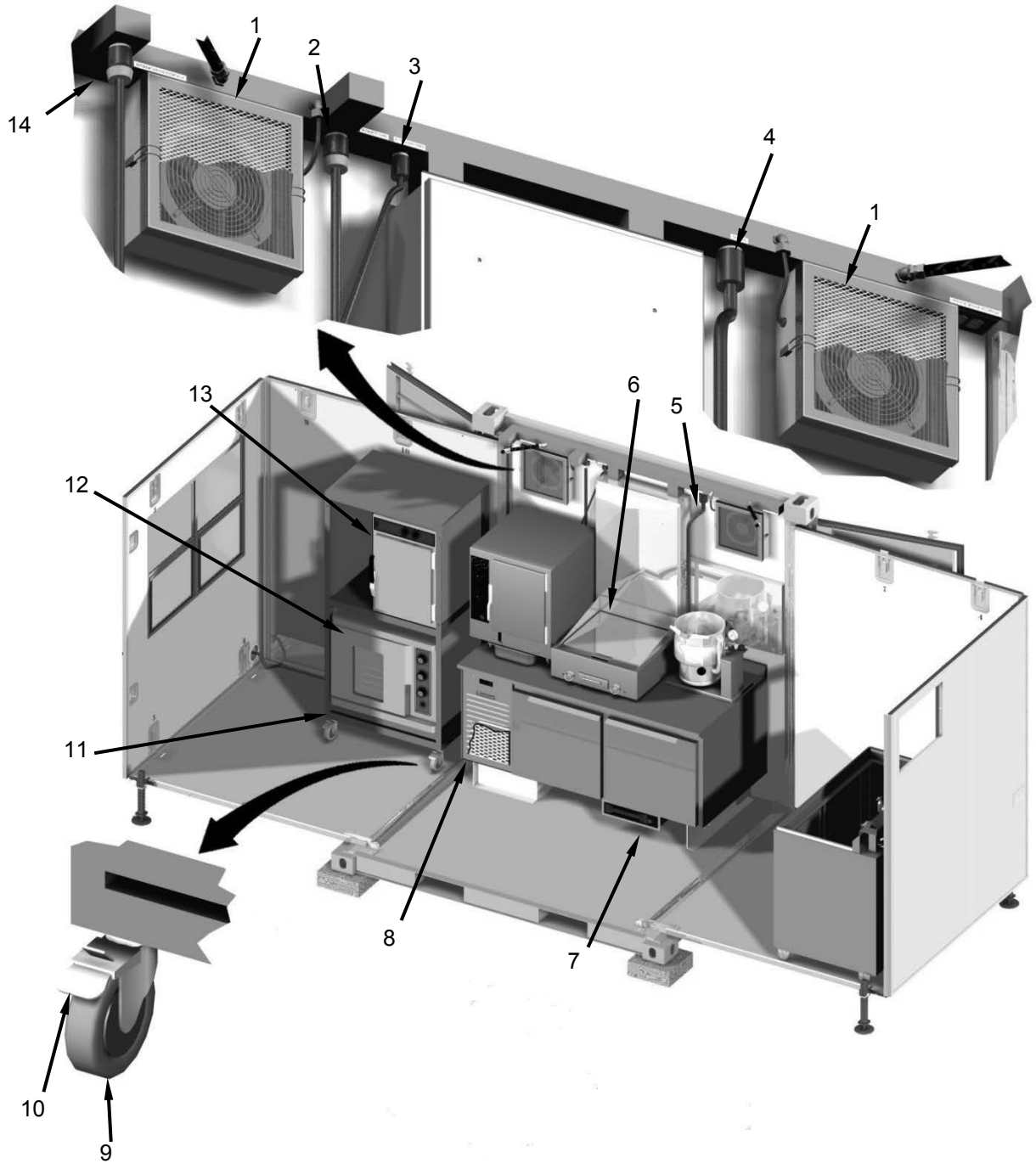


Figure 5. PMCS Items 18–24.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
25	Before	Spice Rack	Inspect spice rack (Figure 6, Item 1) for damage and ensure it is completely engaged with mounting provisions and thumbscrews (Figure 6, Item 6) are tight.	
26	Before	Knife Rack	Inspect knife rack (Figure 6, Item 3) for damage and ensure it is completely engaged with mounting screws (Figure 6, Item 2).	
27	Before	First Aid Kit	Inspect first aid kit (Figure 6, Item 4) for damage and ensure it is completely engaged with mounting screws (Figure 6, Item 5).	

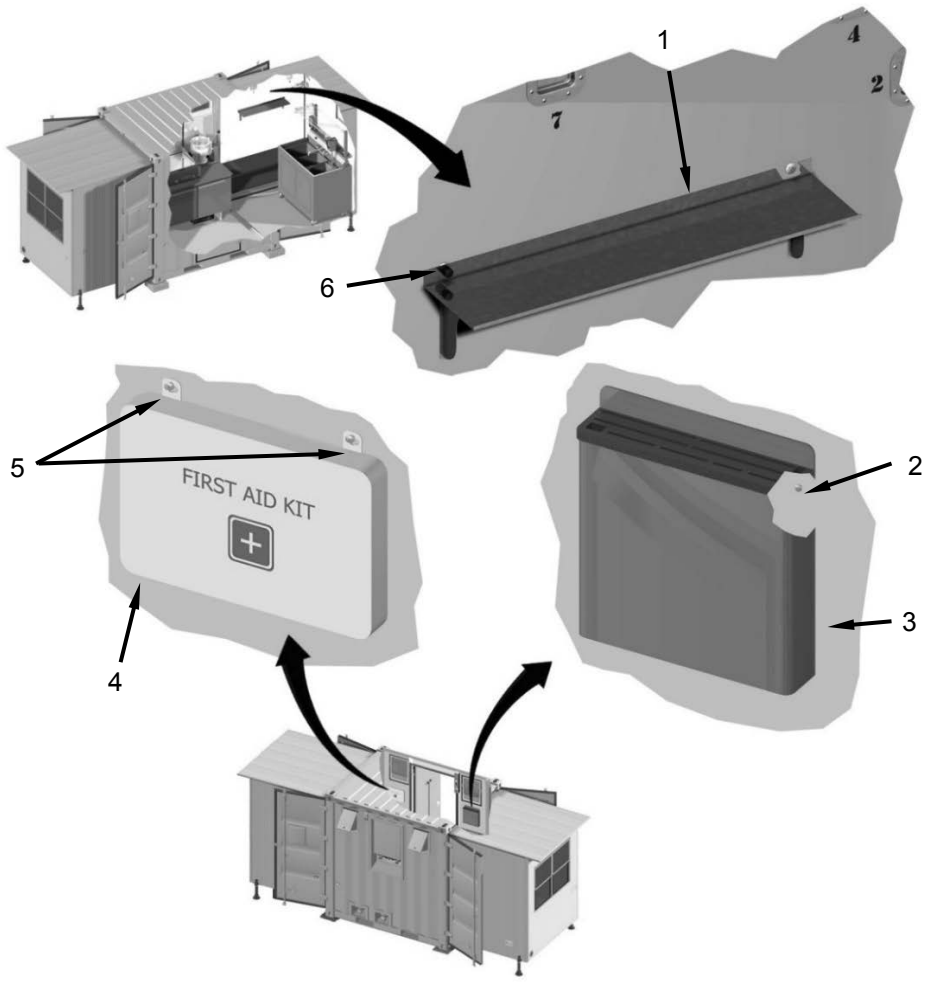


Figure 6. PMCS Items 25–27.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
28	Before	Sanitation Sink	Inspect electrical cable (Figure 7, Item 1) to ensure it is not damaged and is connected at refrigerator (Figure 7, Item 5). Inspect sanitation sink water supply hose (Figure 7, Item 3) and sanitation sink waste hose (Figure 7, Item 2) are not damaged and are connected at sanitation sink (Figure 7, Item 4) and refrigerator (Figure 7, Item 5).	Cable is damaged. Hoses are damaged.

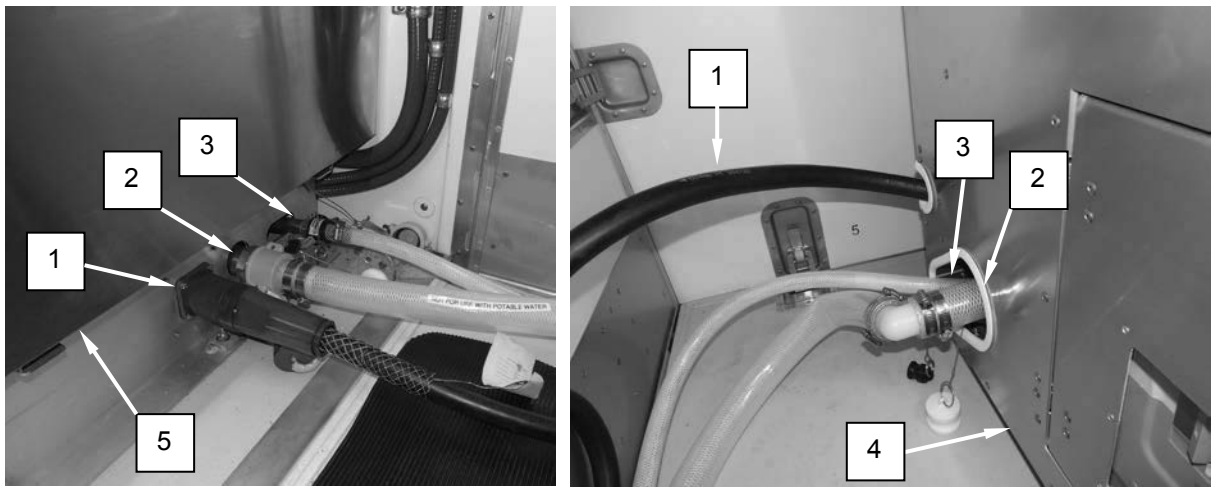


Figure 7. PMCS Item 28.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
28 (Cont.)	Before (Continued)	Sanitation Sink (Continued)	Verify foot brakes (Figure 8, Item 10) on four casters (Figure 8, Item 11) are set to prevent movement of sanitation sink. Verify shelf stands (Figure 8, Item 6) are secured in supports and thumbscrews (Figure 8, Item 1) are hand tight. Ensure electrical cables for pressure pump and waste removal pump are not damaged and are plugged into duplex receptacle (Figure 8, Item 8). Verify grease trap and waste tank drain valves (Figure 8, Items 9) are closed (clockwise). Verify immersion heater (Figure 8, Item 5) is secured to right sink basin. Verify immersion heater guard (Figure 8, Item 7) is installed and pushed down all the way into the right sink basin. Verify each sink basin has a strainer (Figure 8, Item 4) installed. Verify soap dispenser (Figure 8, Item 3) is completely engaged with mounting provision (Figure 8, Item 2). Verify soap dispenser (Figure 8, Item 3) is filled. If the soap level is low, replenish it (WP 0065).	Cables are damaged.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

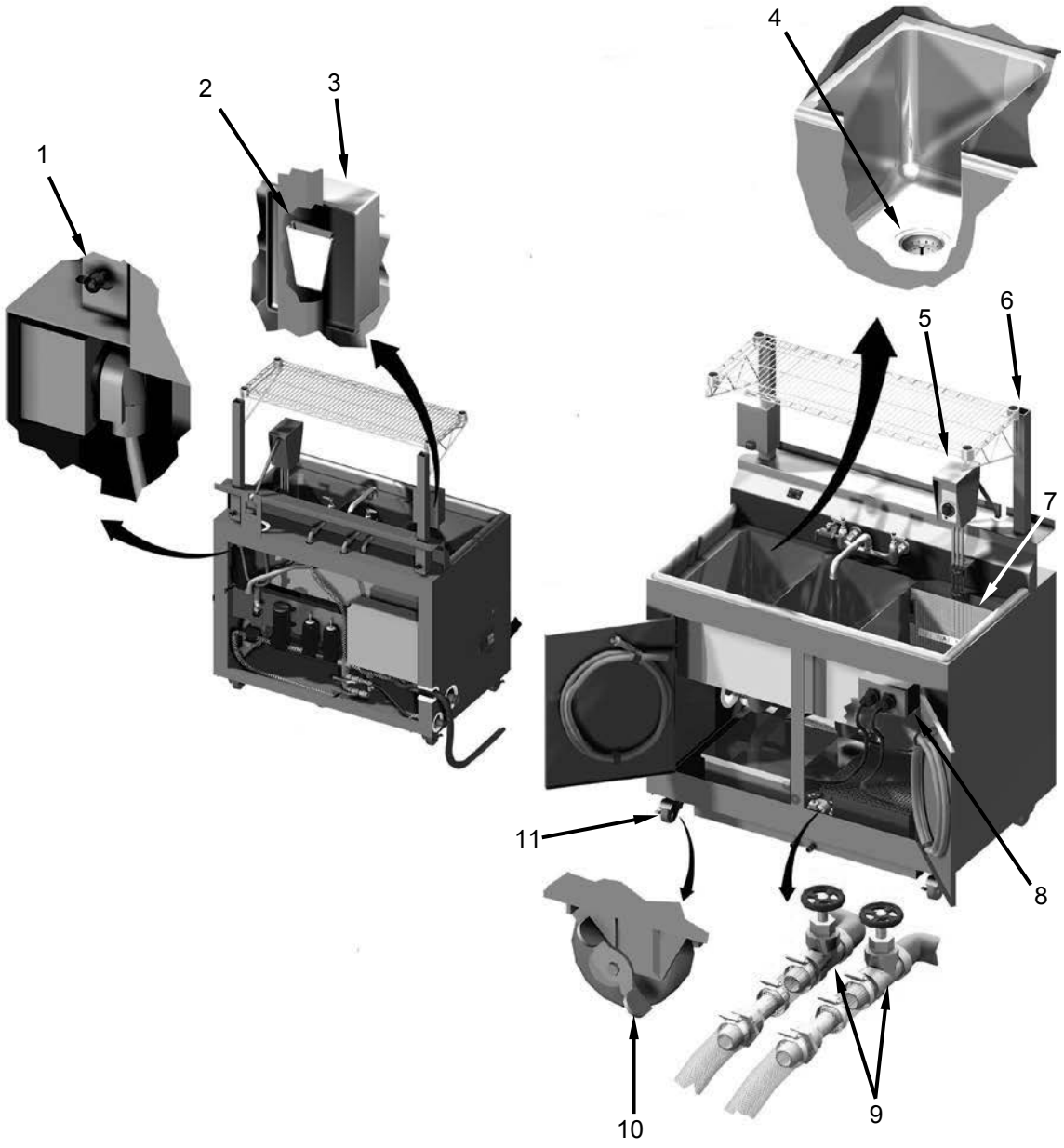


Figure 8. PMCS Item 28 Continued.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
29	Daily	ISO Container	Ensure four drains (Figure 9, Item 1) on each corner of the ISO container is not clogged. Inspect tubular levels (Figure 9, Item 4) to ensure container (Figure 9, Item 2) is level. If container is on leveling blocks (Figure 9, Item 5) ensure container is resting squarely on leveling block.	Container is not leveled.
30	Daily	Container Doors	Inspect container doors (Figure 9, Item 3) are not damaged, resting against expandable side walls, and are secured to opposite door with tie down straps (Figure 9, Item 6).	Doors are damaged.
31	Daily	Wing Jacks	Inspect wing jacks (Figure 9, Item 8) are not damaged or missing, are secured to the wing panel (Figure 9, Item 10) and keeper pins (Figure 9, Item 9) are installed to secure clevis pins. Verify foot pads (Figure 9, Item 7) are firmly contacting the ground.	Supports are damaged or missing.

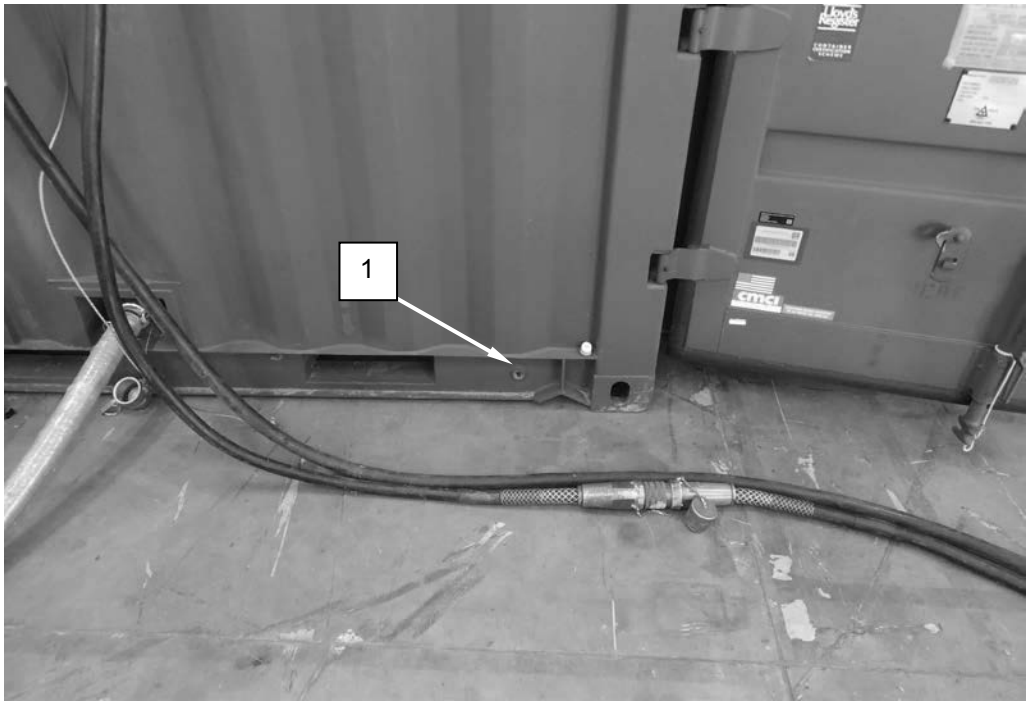


Figure 9. PMCS Items 29–31 (Sheet 1 of 2).

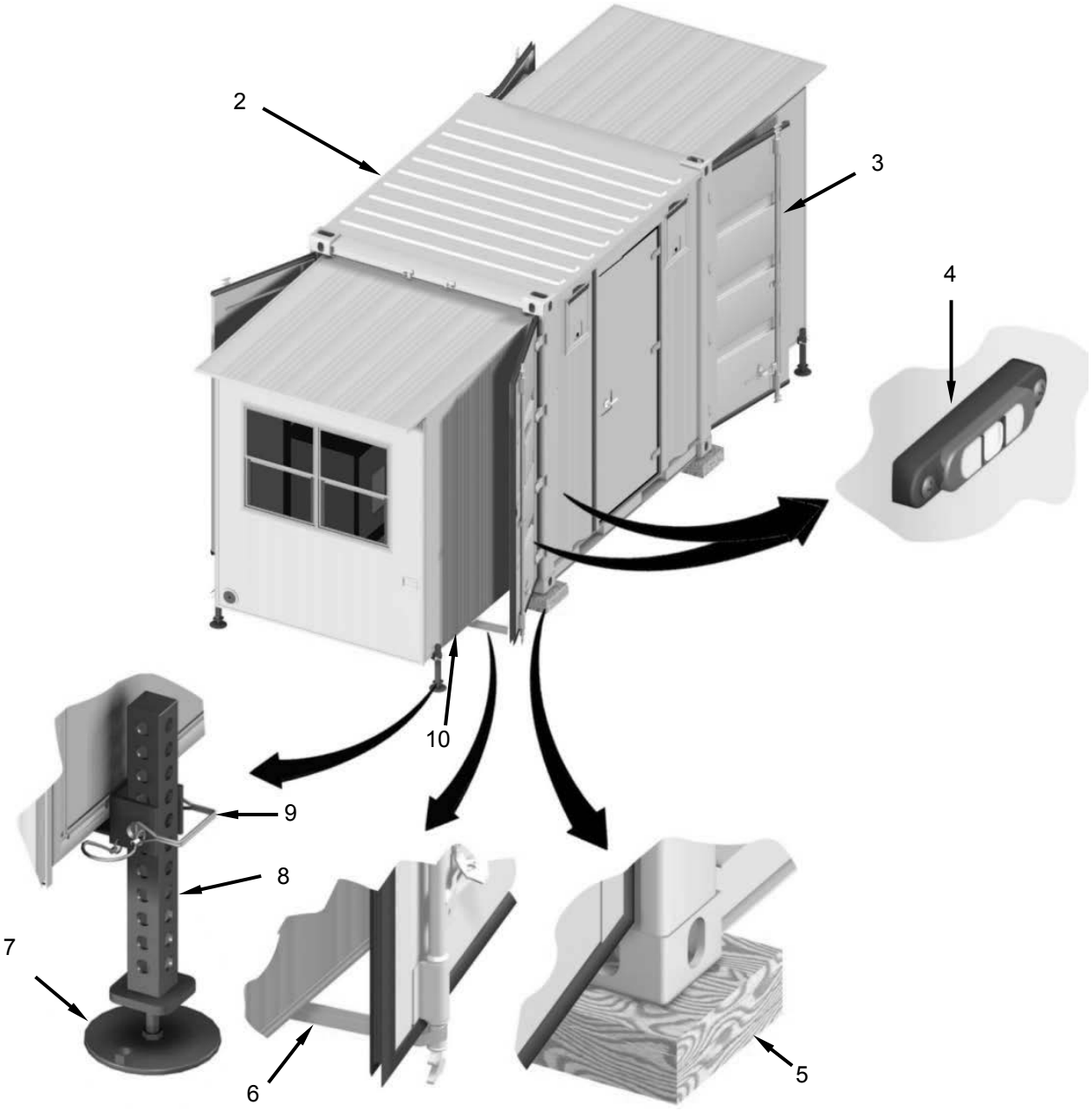


Figure 9. PMCS Items 29–31 (Sheet 2 of 2).

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
32	Daily	Electrical Supply	**WARNING**  High voltage is present in the ETKS. Use extreme caution when working inside. Contact with energized connections will result in serious personal injury or death. Seek immediate medical attention if injury occurs. Open the circuit breaker panel door and inspect circuit breakers (Figure 10, Item 1) are not tripped or damaged. Inspect power cables (Figure 10, Items 8 and 10) for damage and proper connections at source and power distribution panel (Figure 10, Item 6). Inspect ground wire (Figure 10, Item 7) for proper connection at power distribution panel (Figure 10, Item 6) and ground rod (Figure 10, Item 9).	Power cables are damaged or missing. Ground wire damaged or missing.
33	Daily	Vent Covers / Air Intake Filters	Inspect all four vent covers (Figure 10, Item 4) for damage. Verify the covers are open. Inspect two air intake filters (Figure 10, Item 5) to ensure they are installed and not blocked with debris. Inspect finger guards (Figure 10, Item 2) on two exhaust fans (Figure 10, Item 3) to ensure are not blocked with debris.	Covers are not open. Filters are missing or blocked. Finger guards are missing.
34	Daily	Air Conditioner (Outdoor)	Inspect air conditioner (Figure 10, Item 12) is resting firmly on shelf. Inspect external air screens (Figure 10, Item 11) for debris, blockage, or excess dust buildup.	Air conditioner is missing.

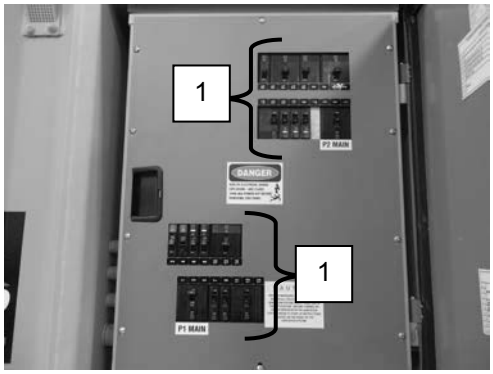


Figure 10. PMCS Items 32–34 (Sheet 1 of 2).

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

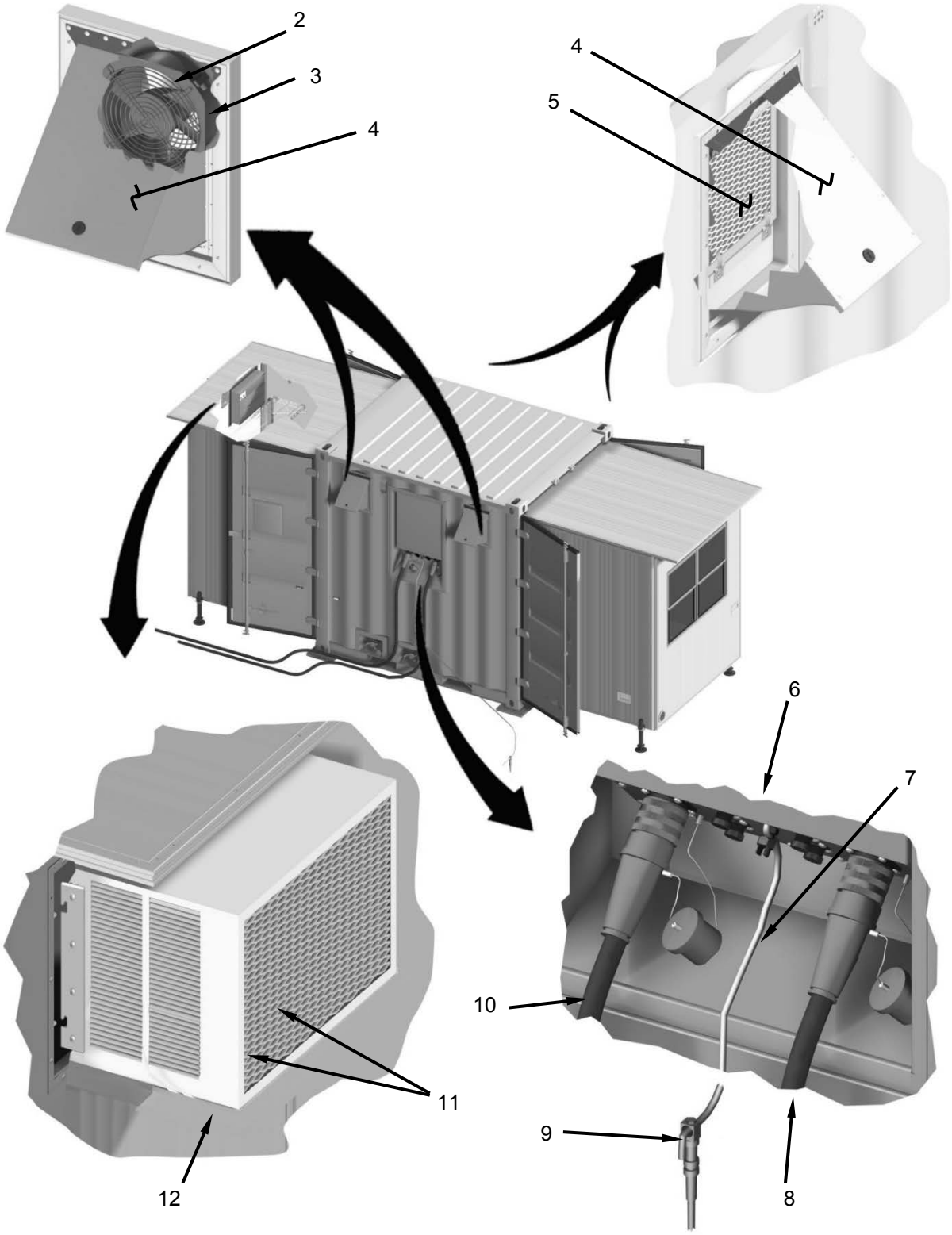


Figure 10. PMCS Items 32–34 (Sheet 2 of 2).

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
35	Daily	Water Supply	Inspect SOURCE water bag (Figure 11, Item 7) for damage and to ensure there is an adequate supply of potable water. Inspect source water hose (Figure 11, Item 1) is not damaged and is connected at SOURCE water bag (Figure 11, Item 7) and ETKS water inlet port (Figure 11, Item 2). Verify shut off valve (Figure 11, Item 8) on SOURCE water bag is open.	SOURCE water bag is damaged or water supply is less than 1/3 full. Source water hose is damaged or missing.
36	Daily	Waste Collection	Inspect WASTE water bag (Figure 11, Item 6) for damage and ensure it is not over-filled. Inspect wastewater hose (Figure 11, Item 4) is not damaged and is connected at WASTE water bag (Figure 11, Item 6) and ETKS waste outlet port (Figure 11, Item 3). Inspect shut off valve (Figure 11, Item 5) on WASTE water bag to verify it is open.	WASTE water bag is damaged or bag is over 2/3 full. Wastewater hose is damaged or missing.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

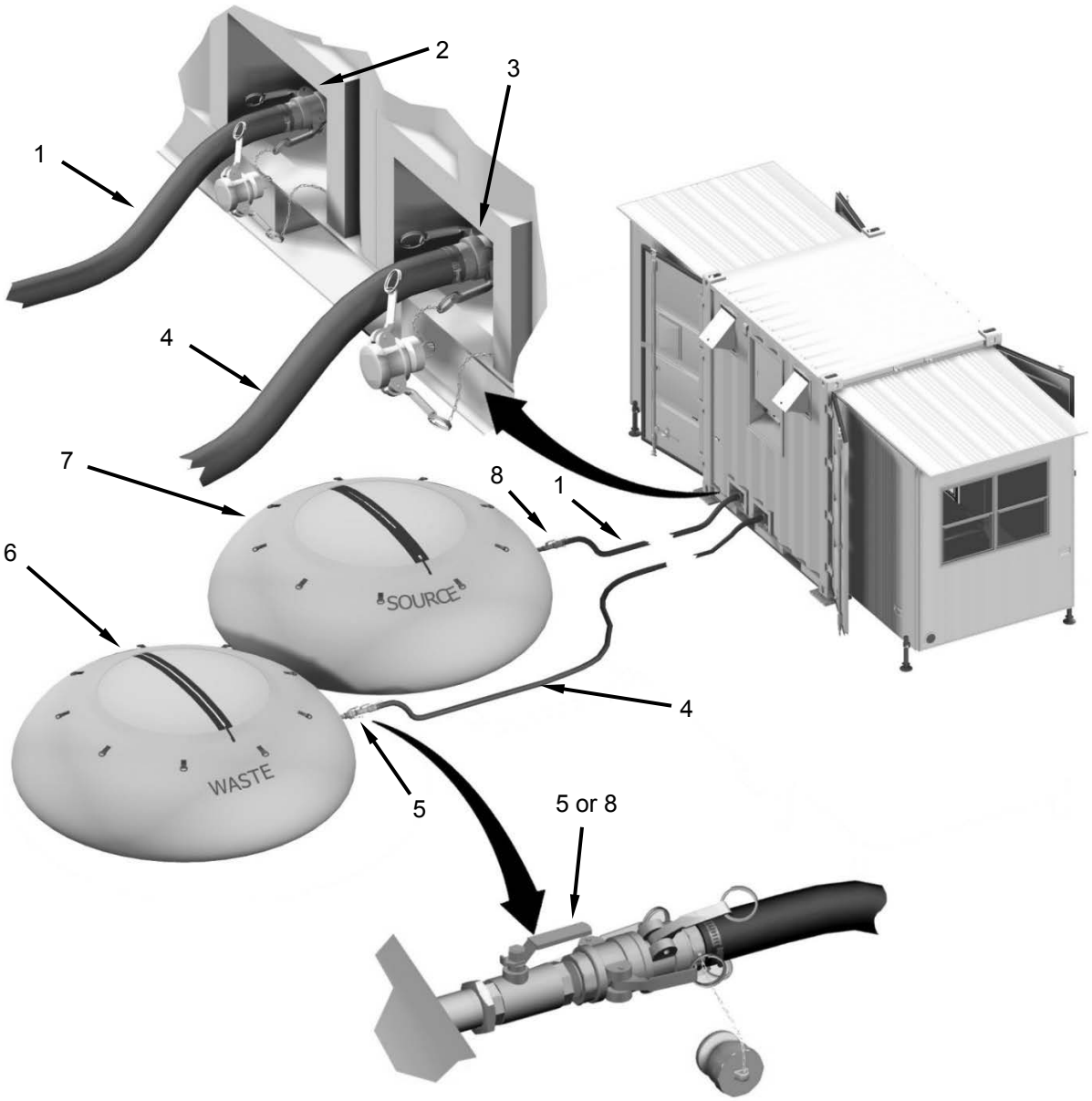


Figure 11. PMCS Items 35–36.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
37	Daily	Expandable Panels	Inspect expandable panels (Figure 12, Item 1) for damage and ensure there are no gaps along the interior/exterior joints between the roof (Figure 12, Item 12), wall (Figure 12, Item 11), and floor panels (Figure 12, Item 13). Inspect expandable panel latches (Figure 12, Item 2) for damage and proper connection.	Panels are damaged or gaps are visible or hazardous to personnel. Latches are damaged.
38	Daily	Personnel Door	Verify personnel door (Figure 12, Item 5) opens and closes without binding. Inspect door latch (Figure 12, Item 8) does not bind and keeps door (Figure 12, Item 5) closed when engaged.	Door binds and cannot close. Door latch sticks or does not keep door closed.
39	Daily	50-ft Power Distribution Cable (Exterior)	Inspect junction box (Figure 12, Item 14) to ensure it is not damaged.	
40	Daily	Serving Window	Inspect both serving windows (Figure 12, Item 10) for damage and ensure they open and close without binding. Verify window pins (Figure 12, Item 9) are present and secured.	Serving windows are damaged or do not open and close. Window pins are missing.
41	Daily	Air Conditioner (Indoor)	Inspect air conditioner (Figure 12, Item 3) for damage or debris blocking air outlet louver (Figure 12, Item 4). Inspect electrical cable (Figure 12, Item 7) is not damaged, is properly connected, and secured with straps (Figure 12, Item 6).	Air conditioner is damaged. Cable is damaged.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

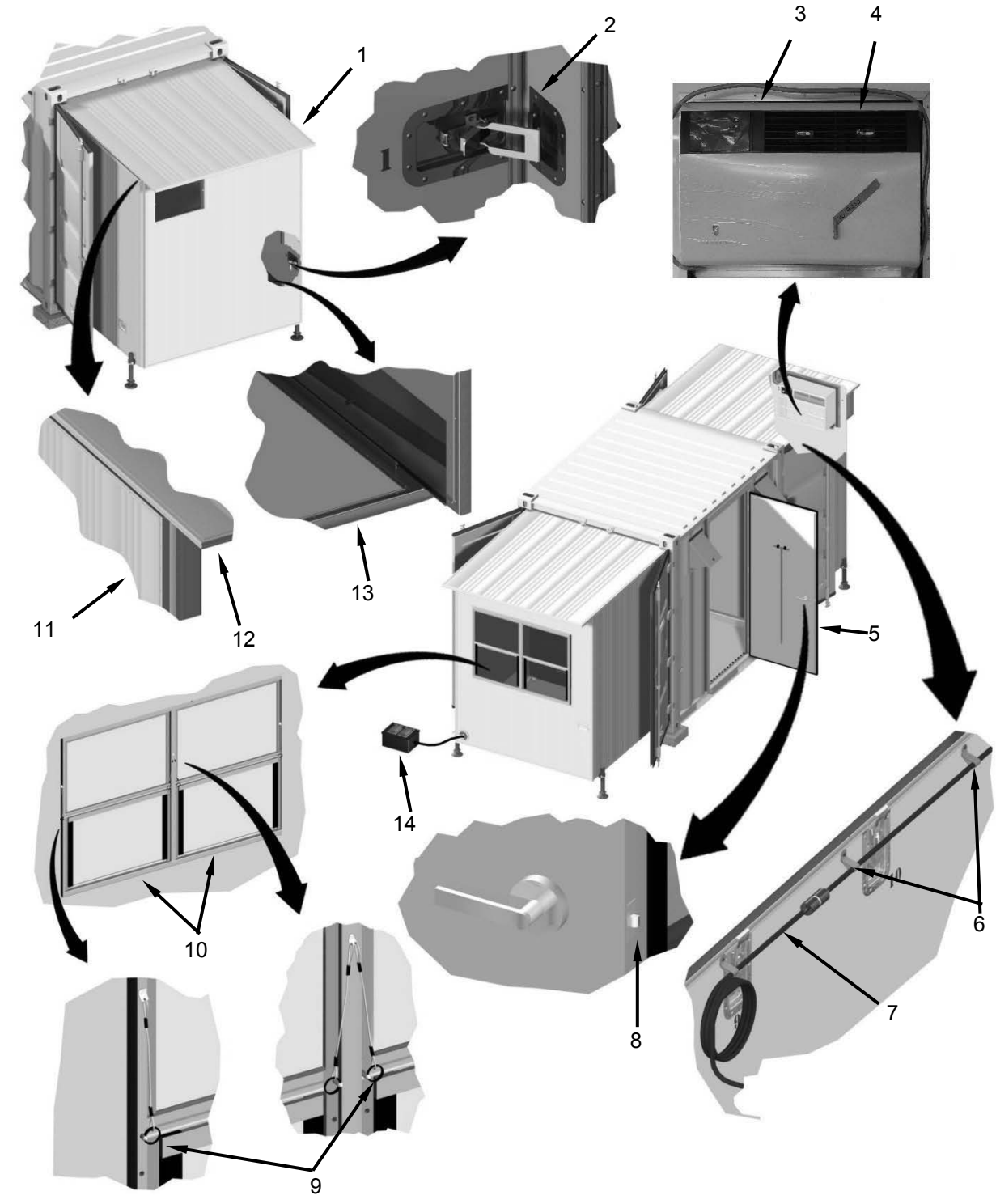


Figure 12. PMCS Items 37–41.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
42	Daily	Oven Rack	Inspect foot brakes (Figure 13, Item 10) on casters (Figure 13, Item 9) are set to prevent movement of oven rack (Figure 13, Item 11). Inspect electrical cable on convection oven (Figure 13, Item 12) is not damaged and is connected at receptacle (Figure 13, Item 2). Inspect electrical cable on cook and hold oven (Figure 13, Item 13) is not damaged and is connected at receptacle (Figure 13, Item 3).	Foot brakes cannot be set. Cable is damaged. Cable is damaged.
43	Daily	Vent Fan Grease Filters	Inspect grease filters (Figure 13, Item 1) on two exhaust fans for damage or blockage from debris or grease. Service or Replace IAW WP 0042.	Filters are not installed or blocked with debris/grease.
44	Daily	Refrigerator	Verify there is no debris blocking louver panel and condenser filter (Figure 13, Item 8).	
41	Daily	Space Heater	Inspect there is no debris blocking air inlet screen (Figure 13, Item 7).	
45	Daily	Griddle	Inspect electrical cable (Figure 13, Item 5) on griddle (Figure 13, Item 6) to ensure it is not damaged and is connected at receptacle (Figure 13, Item 4).	Cable is damaged.
46	Daily	50-ft Power Distribution Cable (Interior)	Inspect electrical cable is not damaged and is connected at receptacle (Figure 13, Item 14).	
47	Daily	Folding Tables	Inspect tables for any damaged or defective components.	

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

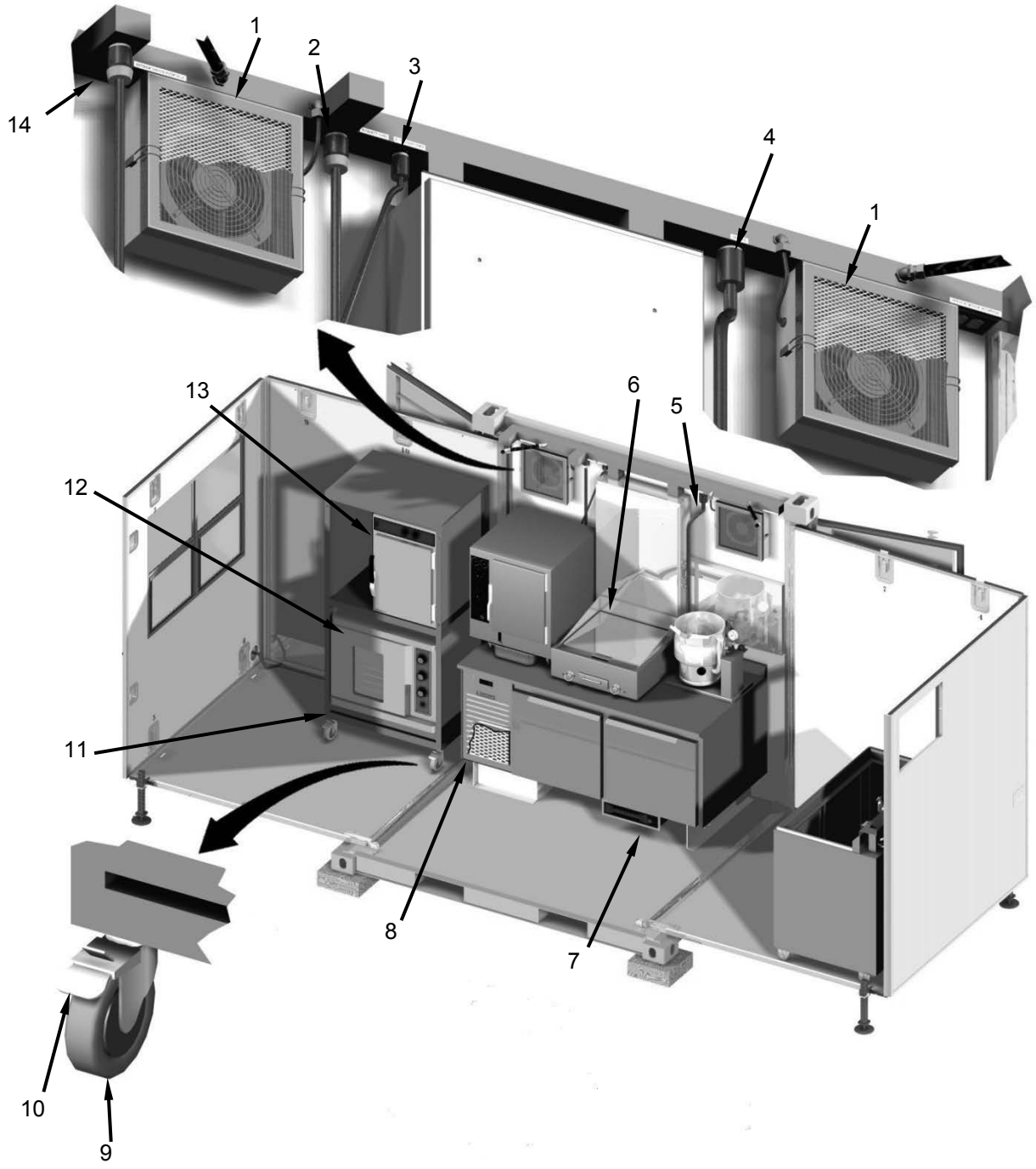


Figure 13. PMCS Items 42–47.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
48	Daily	Spice Rack	Inspect spice rack (Figure 14, Item 1) for damage and ensure it is completely engaged with mounting provisions and thumbscrews (Figure 14, Item 6) are tight.	
49	Daily	Knife Rack	Inspect knife rack (Figure 14, Item 3) for damage and ensure it is completely engaged with mounting screws (Figure 14, Item 2).	
50	Daily	First Aid Kit	Inspect first aid kit (Figure 14, Item 4) for damage and ensure it is completely engaged with mounting screws (Figure 14, Item 5).	

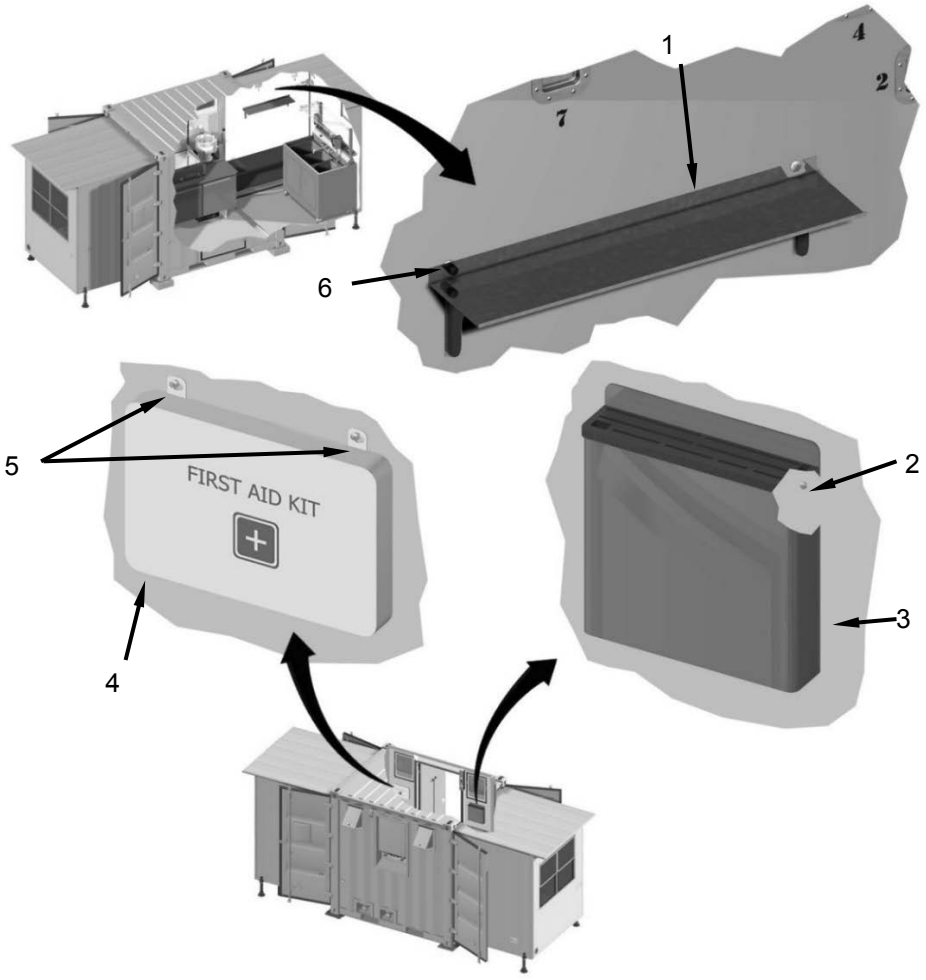


Figure 14. PMCS Items 48–50.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
51	Daily	Sanitation Sink	Inspect electrical cable (Figure 15, Item 1) to ensure it is not damaged and is connected at refrigerator (Figure 15, Item 5). Inspect sanitation sink supply hose (Figure 15, Item 3) and sanitation sink drain hose (Figure 15, Item 2) are not damaged and are connected at sanitation sink (Figure 15, Item 4) and refrigerator (Figure 15, Item 5).	Cable is damaged. Hoses are damaged.

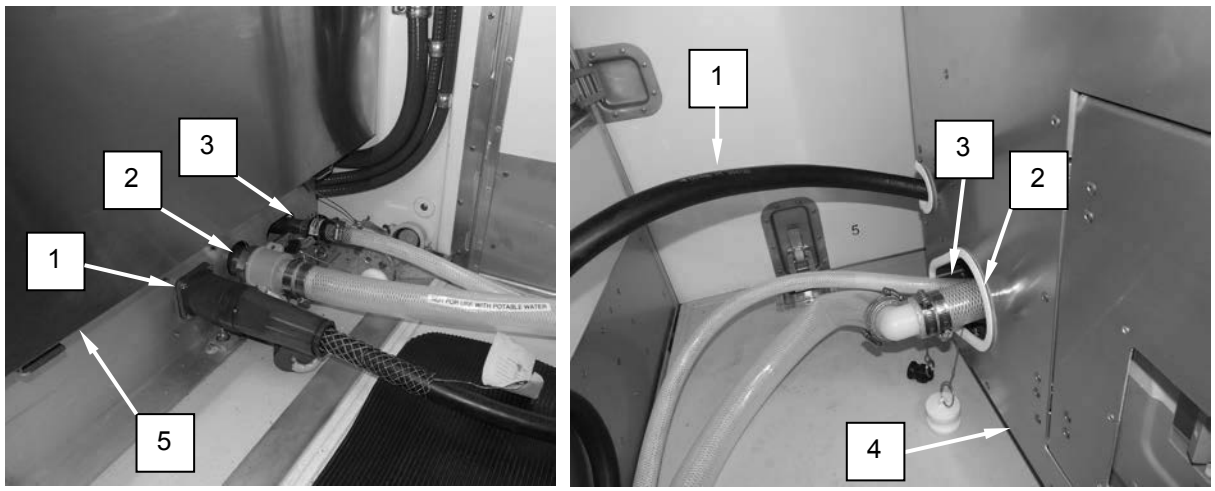


Figure 15. PMCS Item 51.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
51 (Cont.)	Daily (Continued)	Sanitation Sink (Continued)	Verify foot brakes (Figure 16, Item 10) on four casters (Figure 16, Item 14) are set to prevent movement of sanitation sink. Verify shelf stands (Figure 16, Item 6) are secured in supports and thumbscrews (Figure 16, Item 1) are hand tight. Ensure electrical cables for pressure pump and waste removal pump are not damaged and are plugged into duplex receptacle (Figure 16, Item 8). Verify grease trap and waste tank drain valves (Figure 16, Items 9) are closed (clockwise). Verify immersion heater (Figure 16, Item 5) is secured to right sink basin. Verify immersion heater guard (Figure 16, Item 7) is installed and pushed down all the way into the right sink basin. Verify each sink basin has a strainer (Figure 16, Item 4) installed. Verify soap dispenser (Figure 16, Item 3) is completely engaged with mounting provisions (Figure 16, Item 2). Verify soap dispenser (Figure 16, Item 3) is filled. If the soap level is low replenish it (WP 0065).	Cables are damaged.

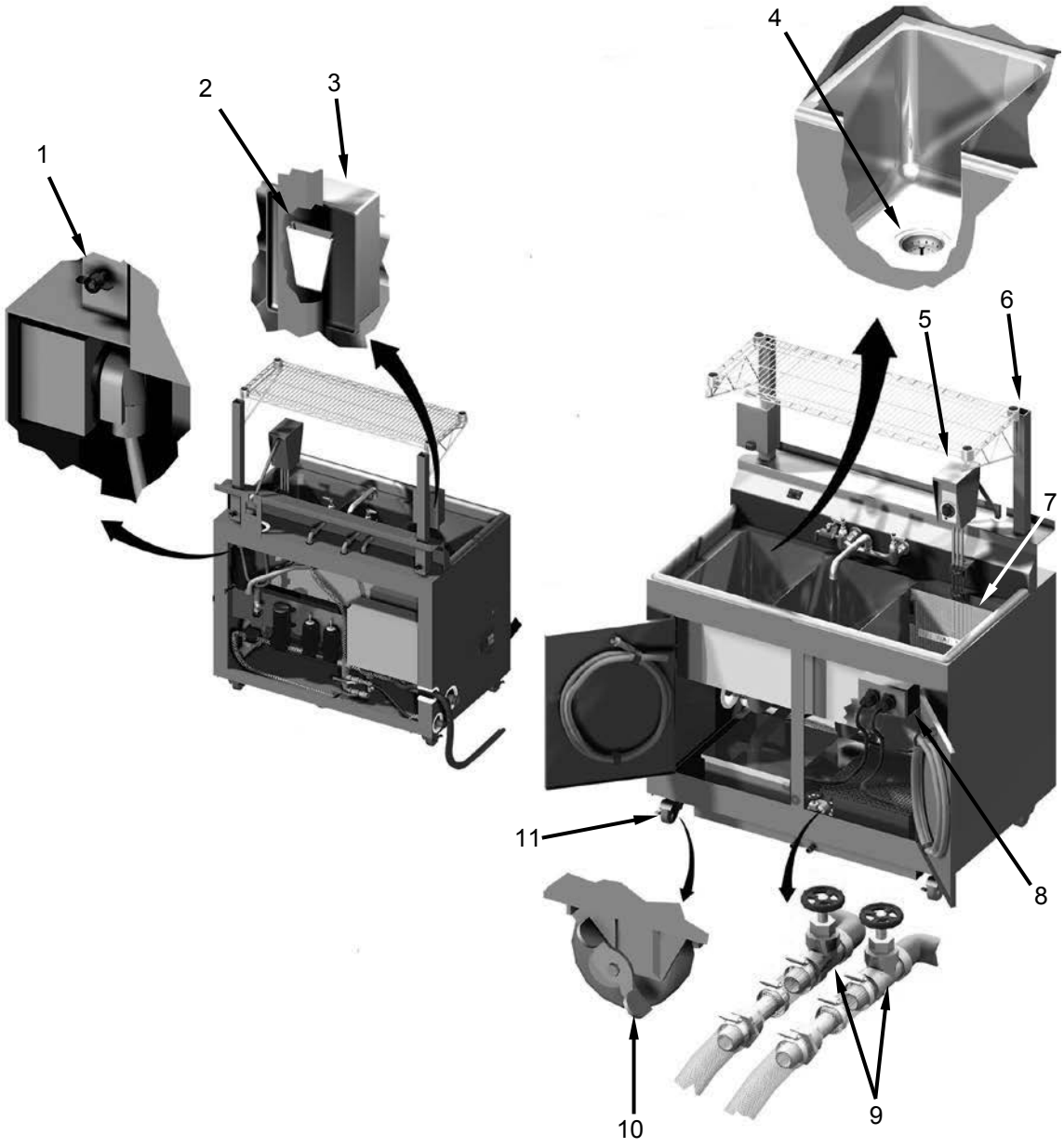


Figure 16. PMCS Item 51 Continued.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES – CONTINUED

Table 1. Preventive Maintenance Checks and Services – Continued.

Item No.	Interval	Item To Be Checked Or Serviced	Procedures	Equipment Not Ready/ Available If:
52	During (After Each Meal)	Convection Oven	Sanitize convection oven (WP 0060).	
53	During (After Each Meal)	Cook and Hold Oven	Sanitize cook and hold oven (WP 0061).	
54	During (After Each Meal)	Griddle	Sanitize griddle and empty grease trap (WP 0059).	
55	During (After Each Meal)	Refrigerator	Sanitize refrigerator (WP 0054).	
56	During (After Each Meal)	Steam and Hold Oven	Sanitize steam and hold oven (WP 0053).	
57	During (After Each Meal)	Steam Kettle	Sanitize steam kettle (WP 0051).	
58	During (After Each Meal)	Sanitation Sink	Sanitize sanitation sink (WP 0062). Clean grease trap (WP 0066).	
59	During (After Each Meal)	Can Opener	Sanitize can opener (WP 0068).	
60	During (After Each Meal)	Kitchen Interior	Sanitize work area, oven rack, spice rack, knife rack, serving table, and utility table (WP 0040).	
61	Monthly	Air Intake Filters	Service air intake filters (WP 0043).	
62	Monthly	Vent Fan Grease Filters	Service or replace grease filters (WP 0042).	
63	Quarterly	Refrigerator	Service / replace air filter (WP 0057). Service condenser coil (WP 0058).	
64	Quarterly	Air Conditioner Filter	Replace filter (WP 0045).	

END OF TASK

END OF WORK PACKAGE

CHAPTER 5

CREW MAINTENANCE INSTRUCTIONS FOR EXPEDITIONARY TRICON KITCHEN SYSTEM (ETKS)

CREW MAINTENANCE

EXPANDABLE TRICON
SERVICE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's (7-Piece) (WP 0071, Table 2, Item 58)

Material/Parts

Cleaning Compound, Solvent-Detergent (WP 0073, Item 3)
Cleaning Compound, Solvent-Detergent (WP 0073, Item 4)
Glass Cleaner (WP 0073, Item 5)
Gloves, Disposable (WP 0073, Item 6)
Goggles, Industrial (WP 0073, Item 7)
Rag, Wiping (WP 0073, Item 11)

Personnel Required

92G Culinary Specialist (1)

References

TB MED 530

Equipment Condition

Daily startup complete (WP 0009)

SERVICE

After Meal ETKS Interior Cleaning

WARNING

During sanitizing operations personnel may be exposed to chemical and/or bio-hazardous materials. When performing this procedure personnel must wear impermeable gloves and goggles for protection. Failure to follow this warning may result in serious illness or death.

CAUTION

The ETKS interior must not be cleaned with a pressurized cleaning device. High pressure water spray can get into seams causing panels to delaminate and insulation to get wet. Never spray water directly at electrical connections, on appliances, space heater, or air conditioner. Water can cause damage to electrical components and cause short circuits in wiring.

Do not use abrasive cleaning compounds or solutions containing chloride, salts or acids on stainless steel surfaces. Never use abrasive scouring pads, wire brushes, or scrapers to remove food residue. These items can cause damage the finished surfaces of the appliance and cause premature corrosion of surfaces.

1. Remove any residual packaging left over from meal preparation from inside of ovens and interior ETKS and dispose of per local regulations.

2. Clean all utensils and other equipment used to prepare the meal in the sanitation sink (Figure 1, Item 7).

3. Sanitize all work areas IAW TB MED 530.

SERVICE – CONTINUED

Daily ETKS Interior Cleaning

WARNING

During sanitizing operations personnel may be exposed to chemical and/or bio-hazardous materials. When performing this procedure personnel must wear impermeable gloves and goggles for protection. Failure to follow this warning may result in serious illness or death.

CAUTION

The ETKS interior must not be cleaned with a pressurized cleaning device. High pressure water spray can get into seams causing panels to delaminate and insulation to get wet. Never spray water directly at electrical connections, on appliances, space heater, or air conditioner. Water can cause damage to electrical components and cause short circuits in wiring.

Do not use abrasive cleaning compounds or solutions containing chloride, salts or acids on stainless steel surfaces. Never use abrasive scouring pads, wire brushes, or scrapers to remove food residue. These items can cause damage the finished surfaces of the appliance and cause premature corrosion of surfaces.

NOTE

Refer to TB MED 530 for sanitation guidelines as required.

1. Remove three floor mats from ETKS.
2. Release locks (Figure 1, Item 14) on casters (Figure 1, Item 13) of oven rack (Figure 1, Item 16) then move oven rack away from side wall (Figure 1, Item 18).
3. Use a damp cloth with a cleaning solution of warm water and mild dish detergent to clean ceiling (Figure 1, Item 1), light fixtures (Figure 1, Item 2), end walls (Figure 1, Item 6), side walls (Figure 1, Items 4 and 18), serving table (Figure 1, Item 15), utility table (Figure 1, Item 5), and spice rack (Figure 1, Item 3).
4. After all interior surfaces have been cleaned, use a clean damp cloth and warm water to rinse and wipe down all surfaces. Allow all surfaces to air dry.
5. Clean serving window (Figure 1, Item 15) with glass cleaner.
6. Use a mop with a cleaning solution of warm water and mild dish detergent to clean interior floor surfaces (Figure 1, Item 11). Rinse floor with water then allow to air dry.
7. Place oven rack (Figure 1, Item 16) back into operating position then engage locks (Figure 1, Item 14) on casters (Figure 1, Item 16).

SERVICE – CONTINUED

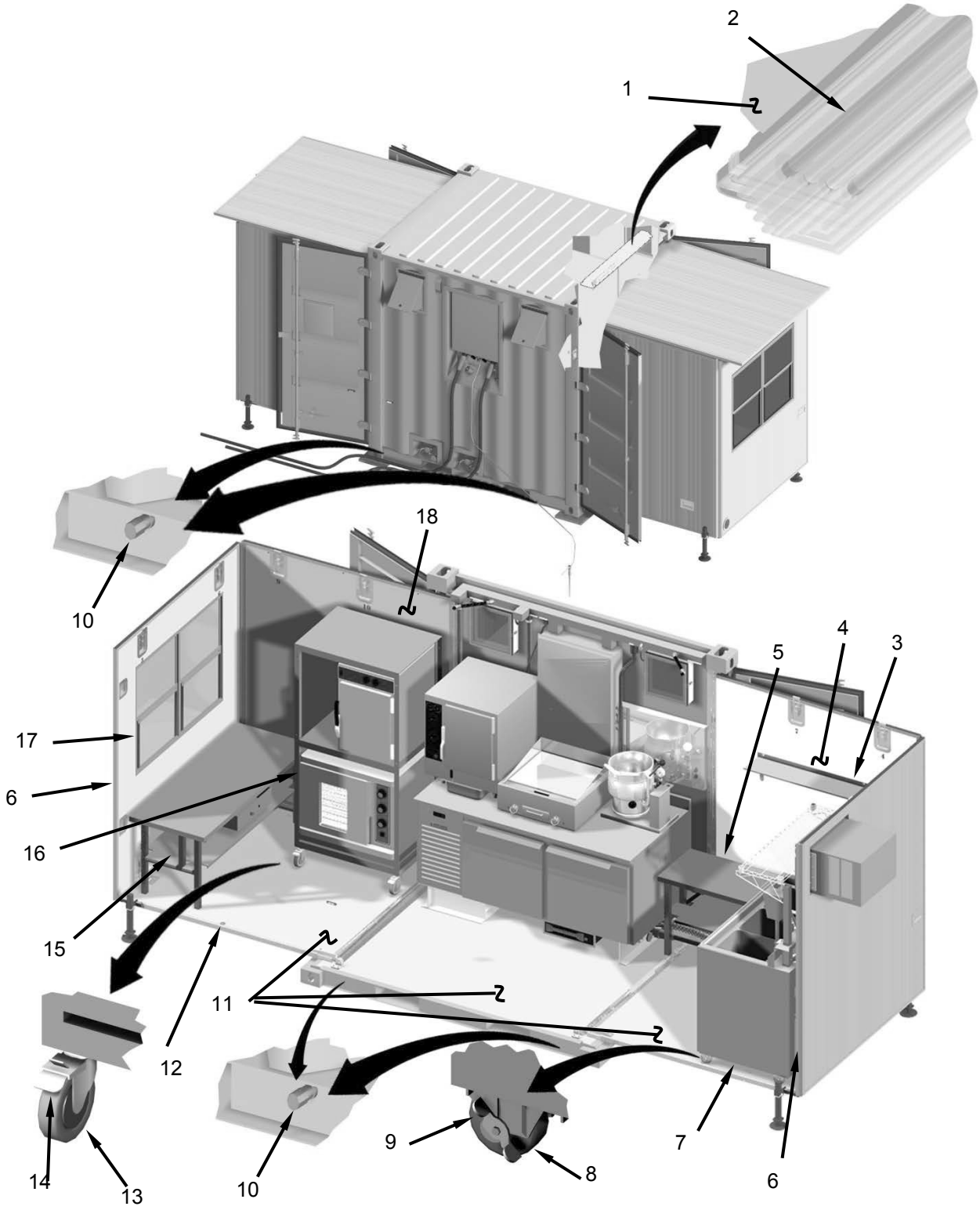


Figure 1. Daily ETKS Interior Cleaning (Sheet 1 of 2).

SERVICE – CONTINUED

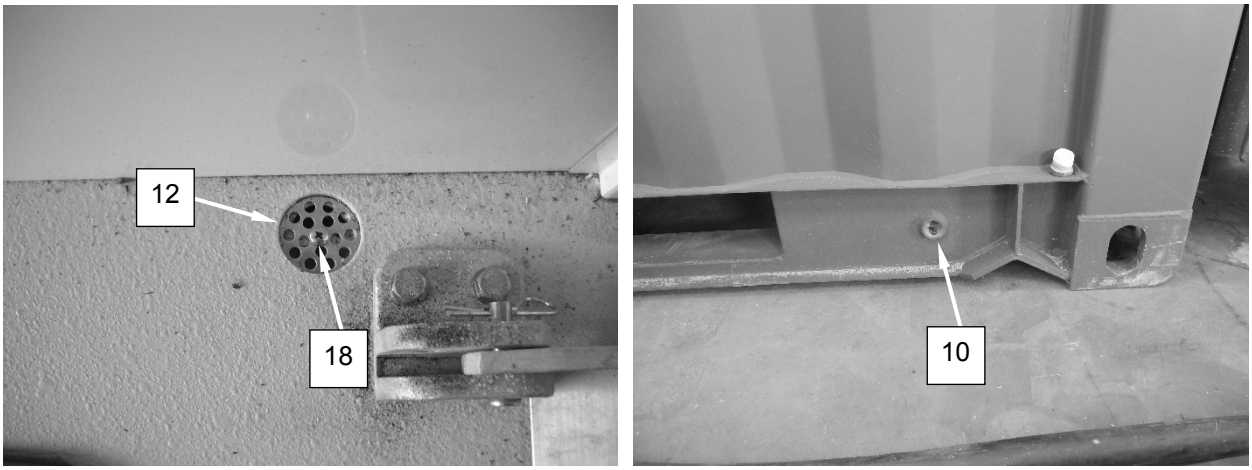


Figure 1. Daily ETKS Interior Cleaning (Sheet 2 of 2).

NOTE

There are eight floor drains in the ETKS. Four are located in the center kitchen area and have drains leading outside the container. Two are located in each expanded wing section and drain directly through the floor.

8. Verify eight drain strainers (Figure 1, Item 12) are clear of debris and four drains (Figure 1, Item 10) are unblocked. If blockage is present, remove blockage as follows:
   a. Remove screw (Figure 1, Item 18) securing drain strainer (Figure 1, Item 12).
   b. Remove strainer.
   c. Clear blockage as required.
   d. Install strainer and secure with screw.
9. Place three floor mats into ETKS.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

EXPANDABLE TRICON
REPAIR

INITIAL SETUP:

Tools And Special Tools

Tool Kit, General Mechanic's (7-Piece)
(WP 0071, Table 2, Item 58)

Personnel Required

92G Culinary Specialist (1)

Equipment Condition

ETKS Setup (WP 0007)

REPAIR

Replace Inner Wall and Floor Latch

1. Open the defective latch (Figure 1, Item 1) to gain access to the mounting screws.
2. Remove five screws (Figure 1, Item 2) and latch. Retain screws for reuse.
3. Align replacement latch and secure with five screws (Figure 1, Item 2).
4. Operate latch to ensure proper function.

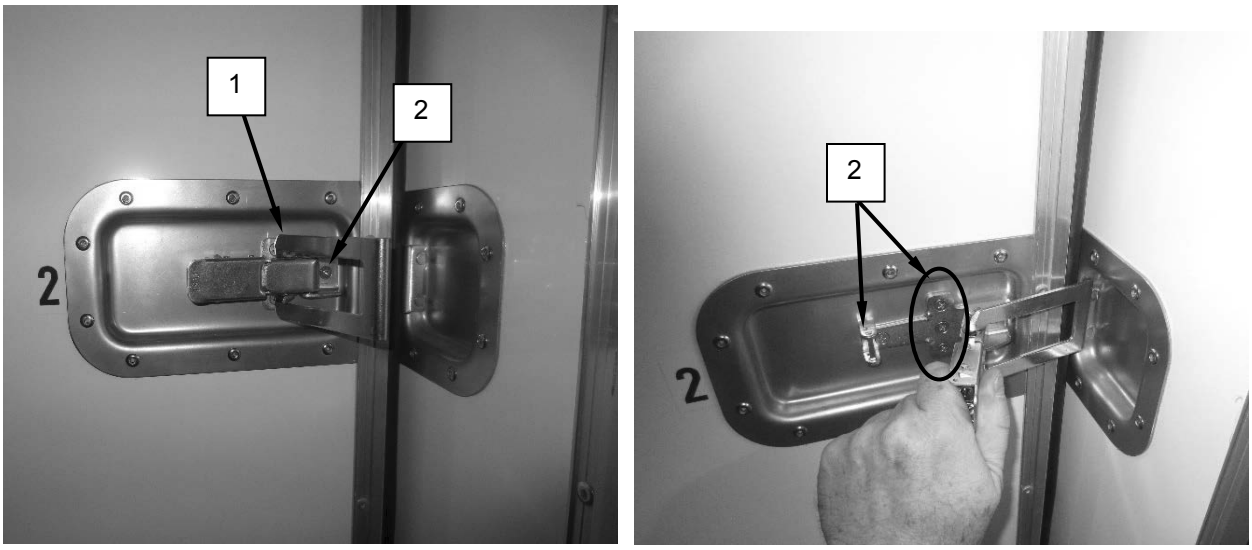


Figure 1. Replace Inner Wall or Floor Latch.

REPAIR – CONTINUED

Replace 8-ft Cable Assembly Clips

1. Remove cable (Figure 2, Item 1) from defective clip (Figure 2, Item 3).
2. Remove screw (Figure 2, Item 2) and clip (Figure 2, Item 3).
3. Align clip (Figure 2, Item 3) and secure with screw (Figure 2, Item 2).
4. Secure cable (Figure 2, Item 1) in clip (Figure 2, Item 3).

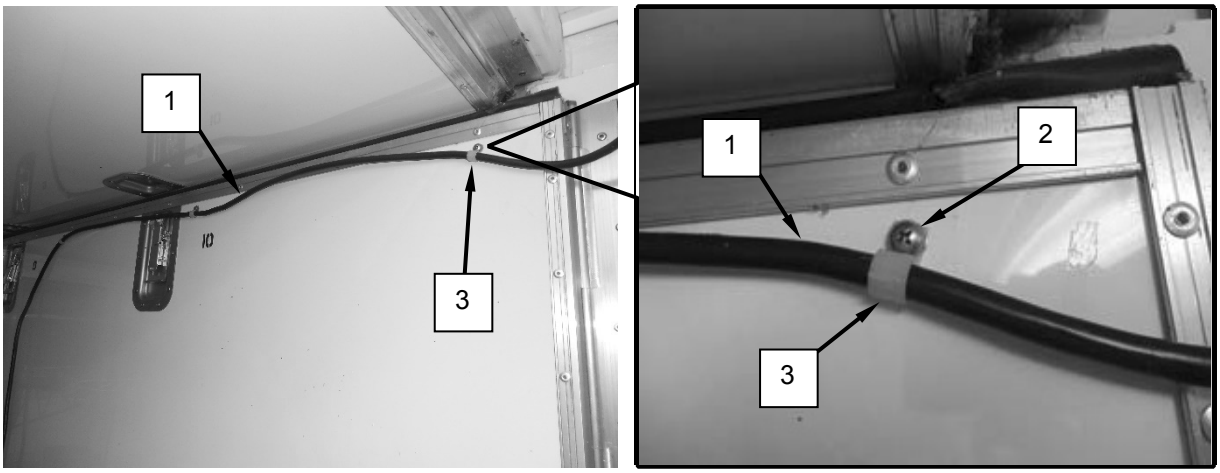


Figure 2. Replace Clips.

Replace Tubular Level

1. Remove screws (Figure 3, Item 1) securing tubular level (Figure 3, Item 2).
2. Remove defective tubular level.
3. Install tubular level in position on container.
4. Secure tubular level with screws.

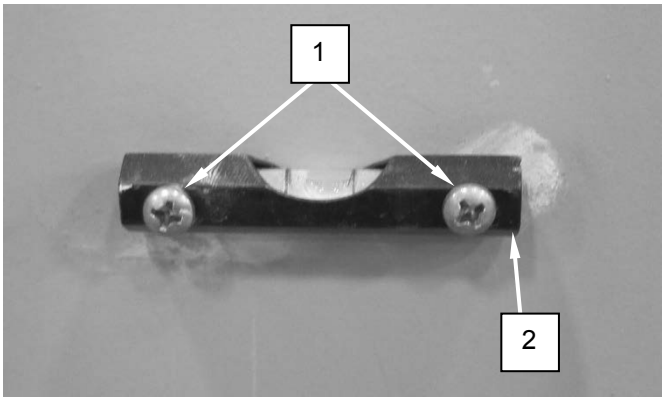


Figure 3. Replace Tubular Level.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

VENT FAN GREASE FILTER SERVICE, REPLACE

INITIAL SETUP:

Material/Parts

Brush, Scrub (WP 0073, Item 2)
Cleaning Compound, Solvent-Detergent (WP 0073, Item 3)
Rag, Wiping (WP 0073, Item 11)

Personnel Required

92G Culinary Specialist (1)

Equipment Condition

Daily startup complete (WP 0009)

SERVICE

Clean Grease Filter

1. Ensure ventilation fan control knob is set to OFF.
2. Flip two latches (Figure 1, Item 1) over on frame.
3. Pull filter (Figure 1, Item 2) out of the frame.

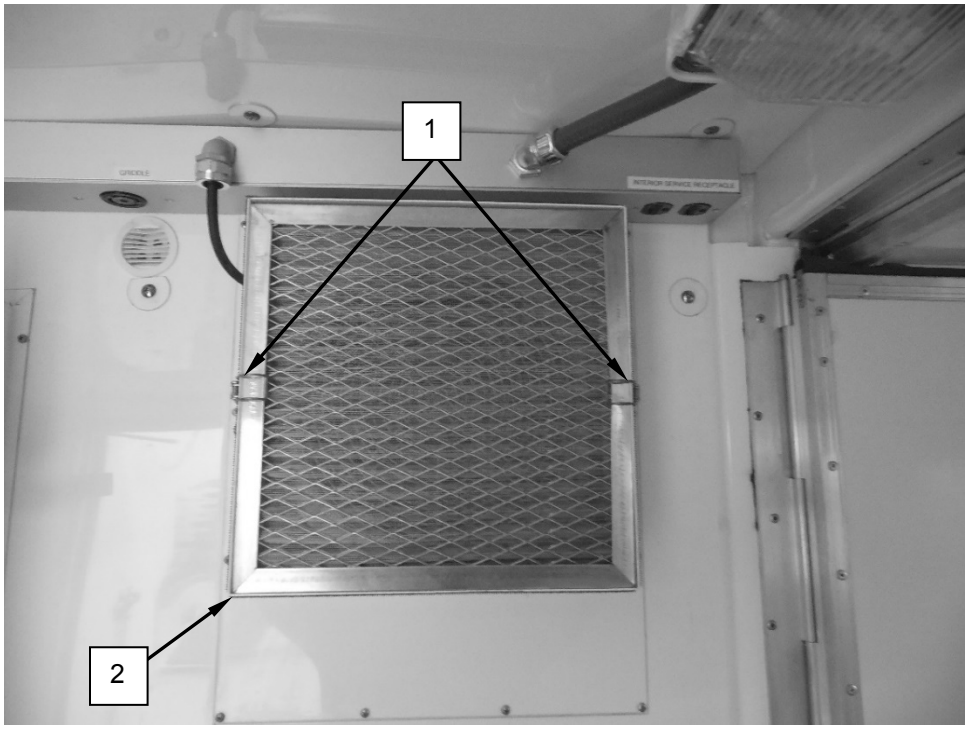


Figure 1. Clean Grease Filter.

4. Soak filter in hot water/detergent solution.
5. Rinse filter with water until all grease is removed.
6. Shake filter to remove as much residual water as possible then let filter air dry.
7. Remove any remaining dirt or debris using brush or rags.

SERVICE – CONTINUED

8. Inspect filter for tears. If filter is damaged replace IAW this WP.
9. Insert filter into frame.
10. Flip two latches (Figure 1, Item 1) over to secure filter frame.
11. Rotate ventilation fan control knob (Figure 3, Item 1) clockwise. Verify both ventilation fans come on then adjust fan speed as desired.

END OF TASK

REPLACE

1. Ensure ventilation fan control knob is set to OFF.
2. Flip two latches (Figure 2, Item 1) over on frame.
3. Pull filter (Figure 2, Item 2) out of the frame.
4. Insert replacement filter into frame.
5. Flip two latches (Figure 2, Item 1) over to secure filter to frame.

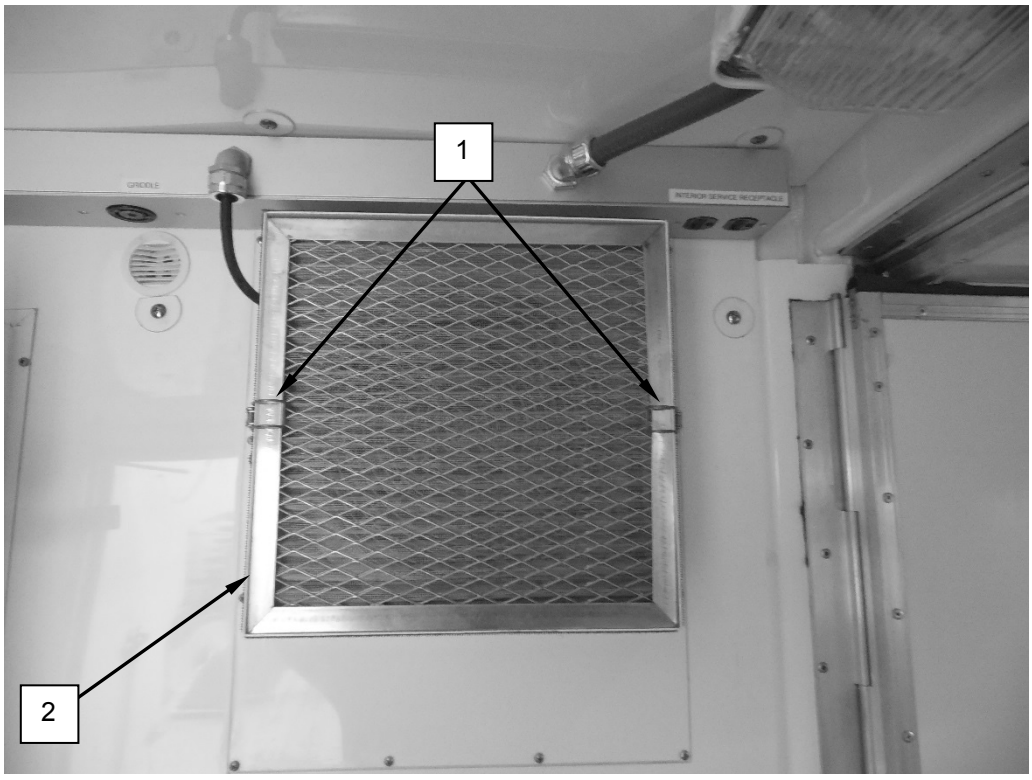


Figure 2. Replace Grease Filter.

REPLACE – CONTINUED

6. Rotate ventilation fan control knob (Figure 3, Item 1) clockwise. Verify both ventilation fans come on then adjust fan speed as desired.

Figure 3. Ventilation Control Knob.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

AIR INTAKE FILTER SERVICE, REPLACE

INITIAL SETUP:

Material/Parts

Brush, Scrub (WP 0073, Item 2)
Cleaning Compound, Solvent-Detergent (WP 0073, Item 3)
Rag, Wiping (WP 0073, Item 11)

Personnel Required

92G Culinary Specialist

Equipment Condition

Daily Startup complete (WP 0009)

SERVICE

1. Rotate two turn buttons (Figure 1, Item 1) and remove filter (Figure 1, Item 2).
2. Wash filter with warm, soapy water.
3. Remove any remaining dirt or debris using brush and rags.
4. Rinse filter with fresh water to remove soap and any remaining particles.
5. Air dry filter.
6. Align filter inside opening and secure with two turn buttons (Figure 1, Item 1).

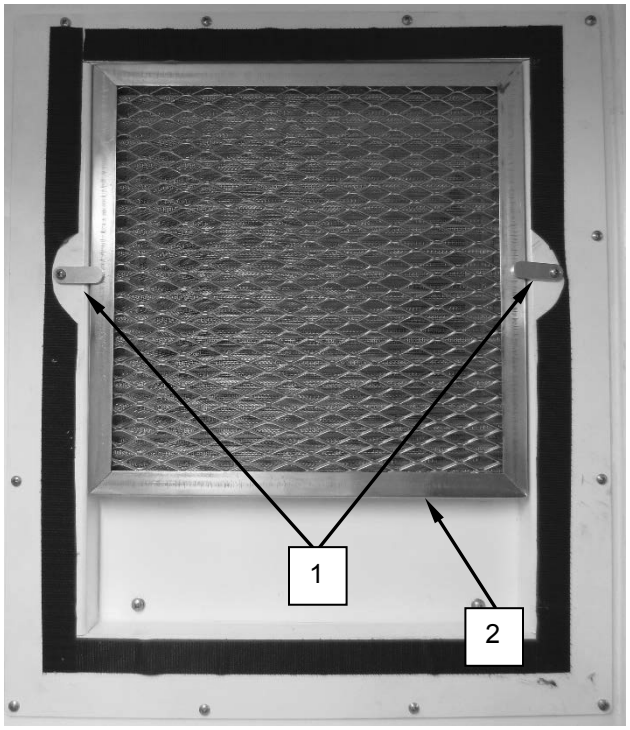


Figure 1. Air Intake Filter Service.

END OF TASK

REPLACE

1. Rotate two turn buttons (Figure 2, Item 1) and remove filter (Figure 2, Item 2).
2. Align replacement filter inside opening and secure with two turn buttons.

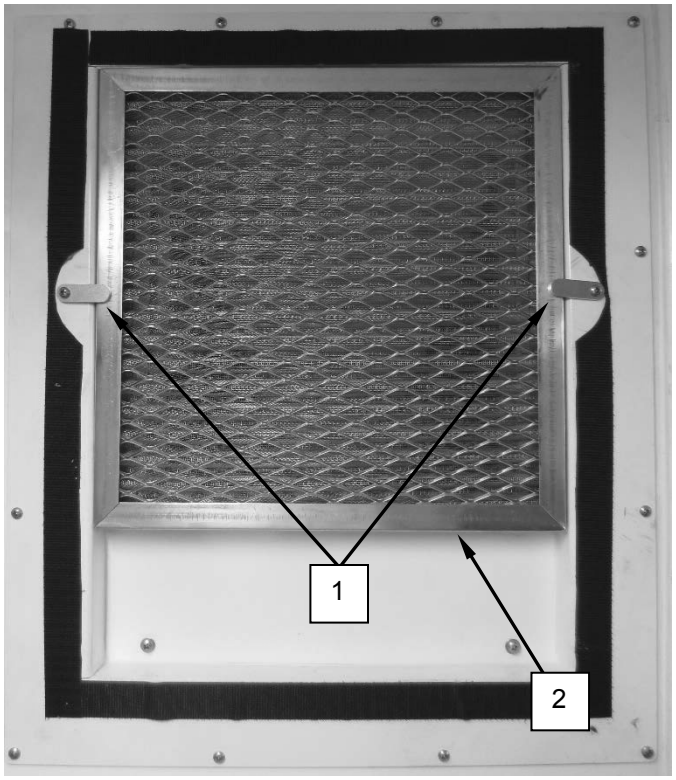


Figure 2. Air Intake Filter Replacement.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

LIGHT ASSEMBLY
REPAIR

INITIAL SETUP:

Personnel Required	Equipment Condition
92G Culinary Specialist (1)	Daily startup complete (WP 0009)

REPAIR

Replace Fluorescent Lamp

WARNING

High voltage is present at light assembly. Always remove electrical power when replacing lamps. Contact with energized connections will result in serious personnel injury or death. Seek immediate medical attention if injury occurs.

1. Ensure light switch is OFF.
2. Open circuit breaker panel door (Figure 1, Item 1).
3. Position circuit breaker P1, CB 4 (Figure 1, Item 2) to OFF.
4. Close circuit breaker panel door.

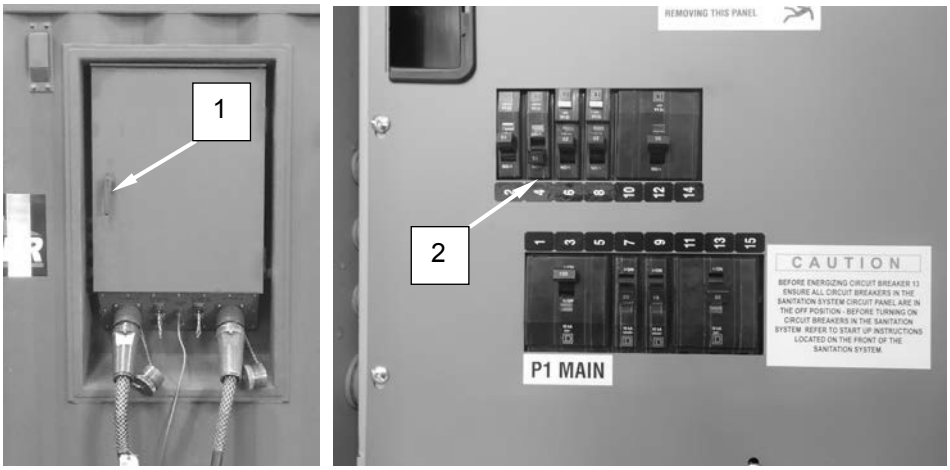


Figure 1. Turn Off Circuit Breaker.

REPAIR – CONTINUED

5. Flip eight latches (Figure 2, Item 1) over then remove diffuser (Figure 2, Item 2) from light assembly.

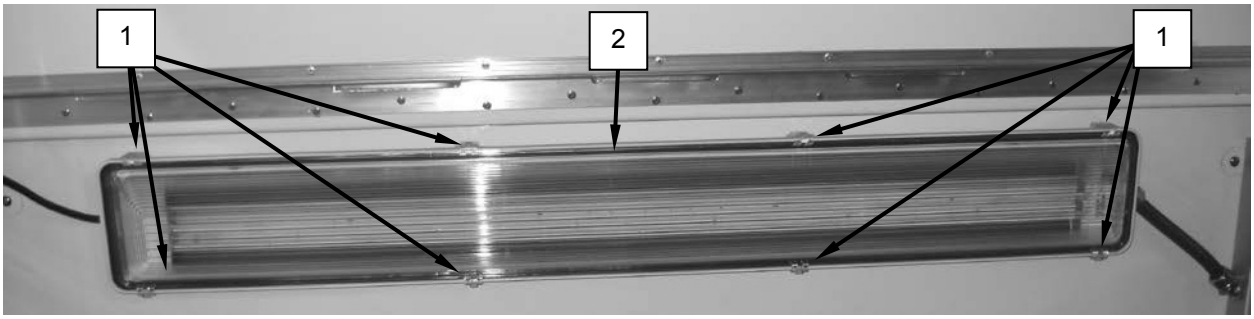


Figure 2. Remove the Diffuser.

WARNING

Fluorescent lamps may be hot to the touch. Exercise caution when handling lamps that have been on for long periods of time. Failure to do so may result in injury to personnel.

6. At both ends, carefully rotate and pull down on lamp (Figure 3, Item 2) to remove it from the lampholder (Figure 3, Item 1).

7. If blackout lamp is being replaced, slide blackout sleeve (Figure 3, Item 3) off of lamp.

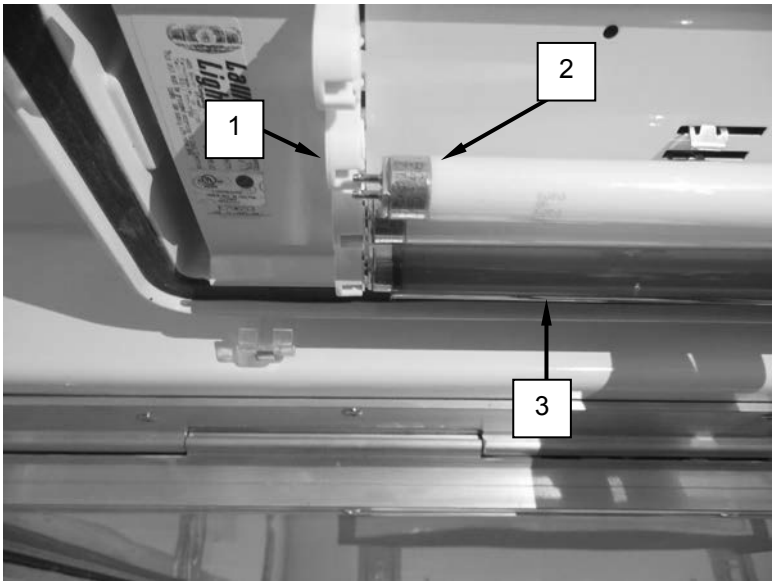


Figure 3. Remove the Lamp.

8. Dispose of lamp IAW unit SOP.

9. If blackout lamp is being replaced, slide blackout sleeve (Figure 3, Item 3) onto new lamp.

10. Align pins with lampholders (Figure 3, Item 1) then carefully push lamp into light assembly and rotate to secure.

REPAIR – CONTINUED

11. Place diffuser over light assembly then secure by engaging eight latches (Figure 2, Item 1).
12. Open circuit breaker panel door (Figure 4, Item 1).
13. Position circuit breaker P1, CB 4 (Figure 4, Item 2) to ON.
14. Close and secure door to breaker panel.

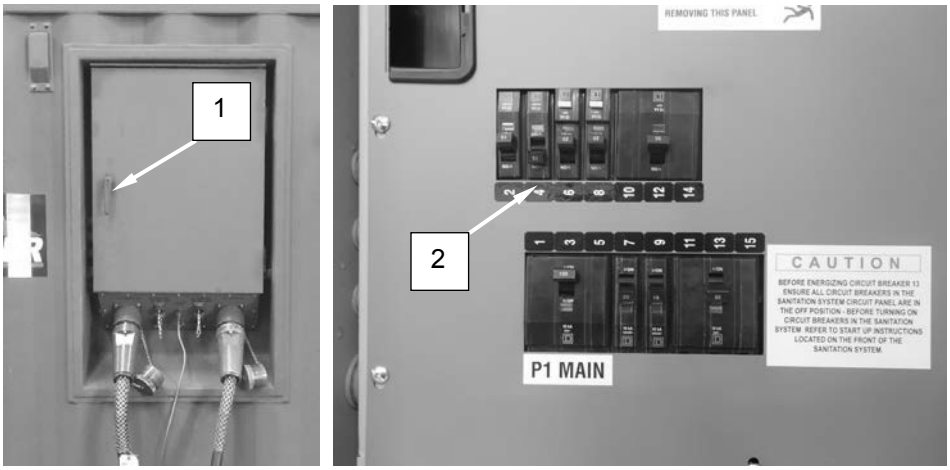


Figure 4. Turn On Circuit Breaker.

15. Position light switch (Figure 5, Item 1) to BLACKOUT.
16. Verify blackout lights in both light assemblies are on.
17. Position light switch (Figure 5, Item 1) to NORMAL.
18. Verify white lights in both light assemblies come on.

Figure 5. Light Switch.

19. Once white light operation is verified, position light switch to desired mode of operation and monitor for normal operation.

REPAIR – CONTINUED

Replace Diffuser

1. Release eight latches (Figure 6, Item 2) and remove defective diffuser (Figure 6, Item 1).
2. Align replacement diffuser to light assembly and secure with eight latches.

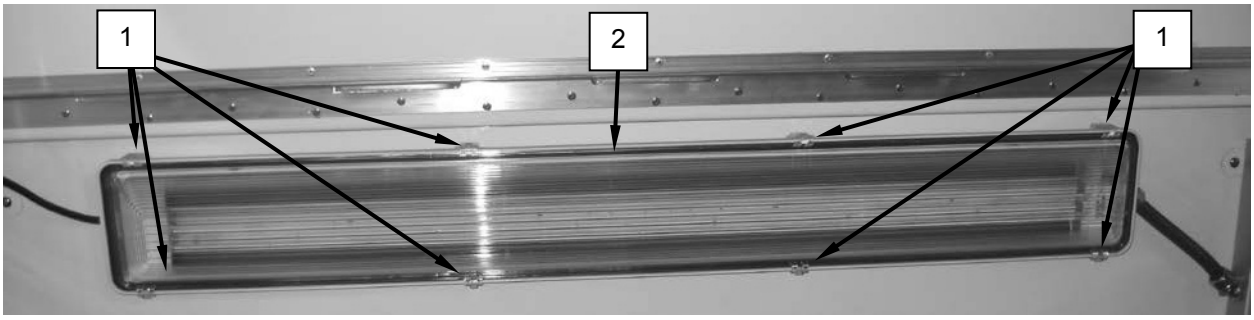


Figure 6. Replace Diffuser.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

AIR CONDITIONER
SERVICE, REPAIR, REPLACE

INITIAL SETUP:

Material/Parts

Brush, Scrub (WP 0072, Item 2)
Rag, Wiping (WP 0072, Item 11)

Personnel Required

92G Culinary Specialist (1)
MOS Non-Specific (1)

References

WP 0063

Equipment Condition

Daily startup complete (WP 0009)

SERVICE

Air Conditioner

1. Press air conditioner power ON/OFF button (Figure 1, Item 1) to turn air conditioner off.
2. Remove dirt and debris from vents (Figure 1, Item 2) using a brush or rag.
3. Remove dirt and debris from exhaust (Figure 1, Item 3) using a brush or rag.
4. Press air conditioner power ON/OFF button (Figure 1, Item 1) to turn air conditioner on.
5. Monitor air conditioner for normal operation.

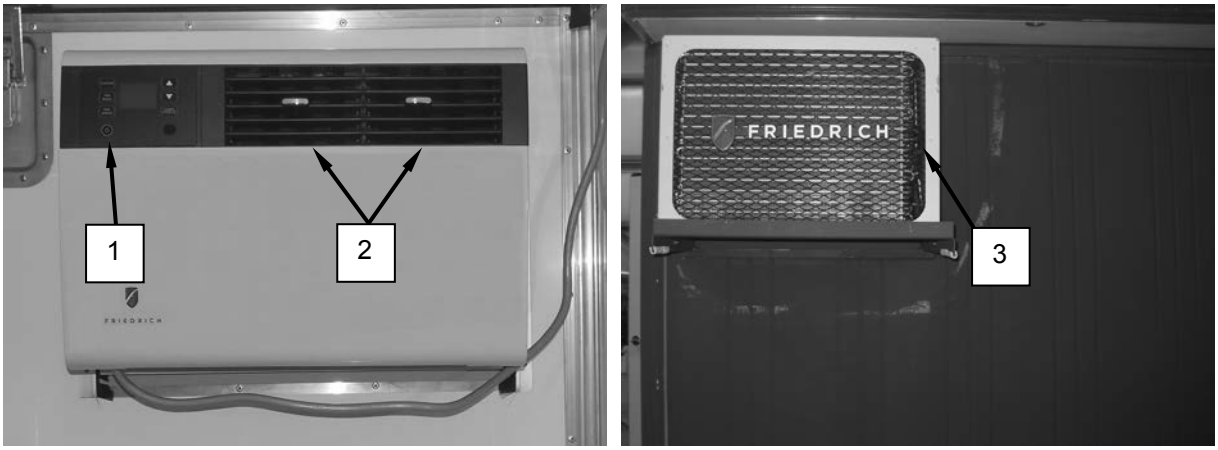


Figure 1. A/C Service.

END OF TASK

REPAIR

Replace Air Conditioner Filter

1. Remove sanitation sink rack (Figure 2, Item 1).

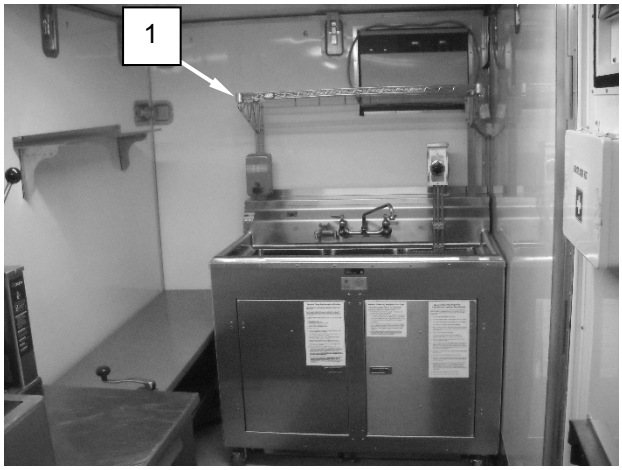


Figure 2. Sanitation Sink Rack.

2. Press air conditioner power ON/OFF button (Figure 3, Item 1) to turn air conditioner off.
3. Open the filter door (Figure 3, Item 2).
4. Remove the filter-mounting frame (Figure 3, Item 3) from the air conditioner.
5. Remove the carbon filter pad (Figure 3, Item 4) from the filter-mounting frame (Figure 3, Item 3) and dispose of pad.

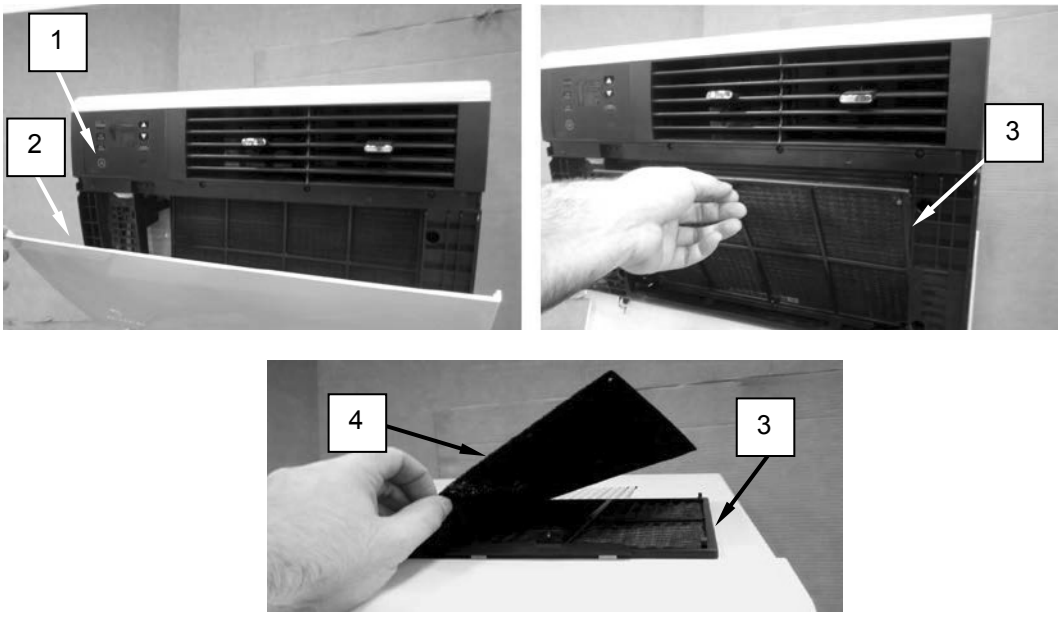


Figure 3. Air Conditioner Filter Door and Filter Mounting Frame.

6. Install a replacement carbon filter pad on the frame by aligning the six pegs with the installation holes on the filter pad.

REPAIR – CONTINUED

7. Install the replacement filter pad and frame in the unit, and close the filter door.
8. Press air conditioner power ON/OFF button (Figure 3, Item 1) to turn air conditioner on.
9. Install sanitation sink rack (Figure 2, Item 1).

Replace Air Conditioner Shelf

1. Remove sanitation sink IAW WP 0063.
2. Move sanitation sink to allow access to air conditioner.
3. Press air conditioner ON/OFF button (Figure 4, Item 1) to turn air conditioner off.
4. Disconnect the air conditioner power cable (Figure 4, Item 4) from 8-ft cable assembly (Figure 4, Item 2).

WARNING

The air conditioner is heavy. It requires two people to lift out of and into place. Failure to comply could result in serious personal injury or death. Seek medical attention if any injury occurs.

5. From inside the ETKS, slide the air conditioner (Figure 4, Item 5) off shelf (Figure 4, Item 3) and set aside.

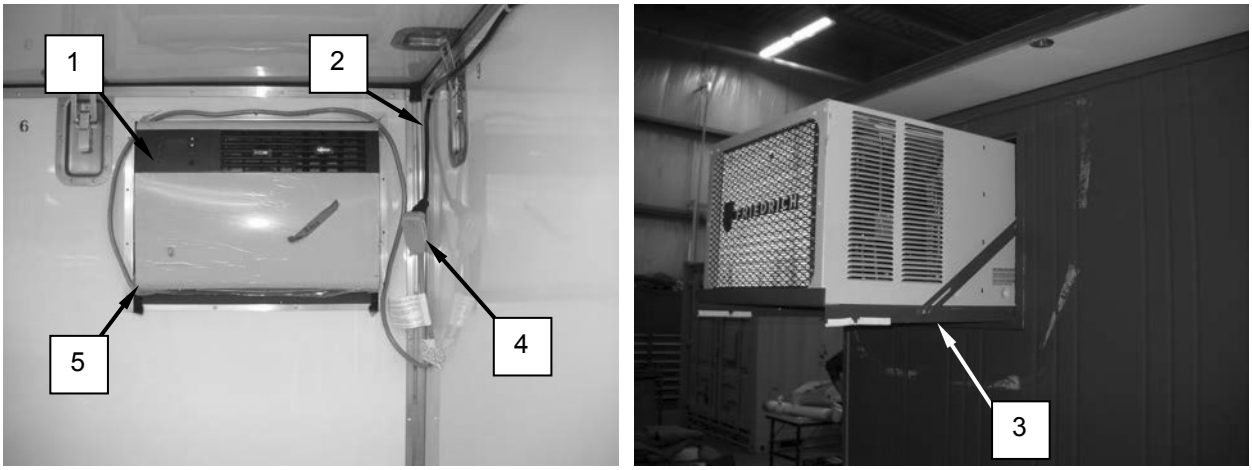


Figure 4. Remove Air Conditioner.

6. From outside of the ETKS, push upwards on air conditioner shelf (Figure 5, Item 1) until arms slide forward and mounting screw (Figure 5, Item 2) is positioned at the larger hole (Figure 5, Item 3) in the arm.
7. Remove defective shelf.
8. Align replacement shelf and secure to wall opening by pulling down on shelf until mounting screw is securely positioned at smaller hole in the arm.

REPAIR – CONTINUED

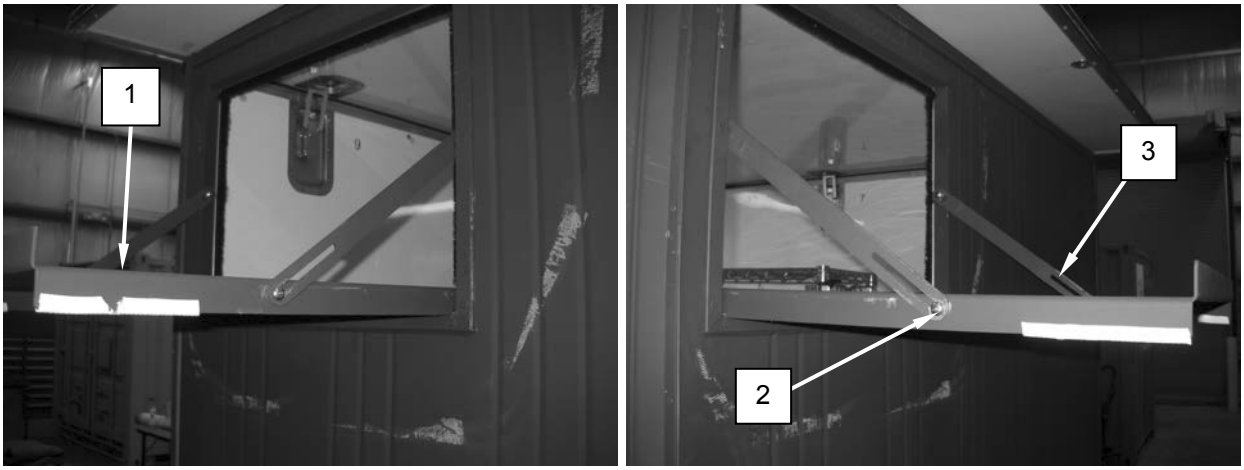


Figure 5. Replace Air Conditioner Shelf.

WARNING

The air conditioner is heavy. It requires two people to lift out of and into place. Failure to comply could result in serious personal injury or death. Seek medical attention if any injury occurs.

9. From inside the ETKS, slide air conditioner (Figure 6, Item 6) onto shelf until back of air conditioner contacts rear lip (Figure 6, Item 3) of shelf.

10. Connect the air conditioner power cable (Figure 6, Item 5) to 8-ft cable assembly (Figure 6, Item 2).

11. Press air conditioner ON/OFF button (Figure 6, Item 1) to turn air conditioner on.

12. Move sanitation sink back to its original position.

13. Install sanitation sink IAW WP 0063.

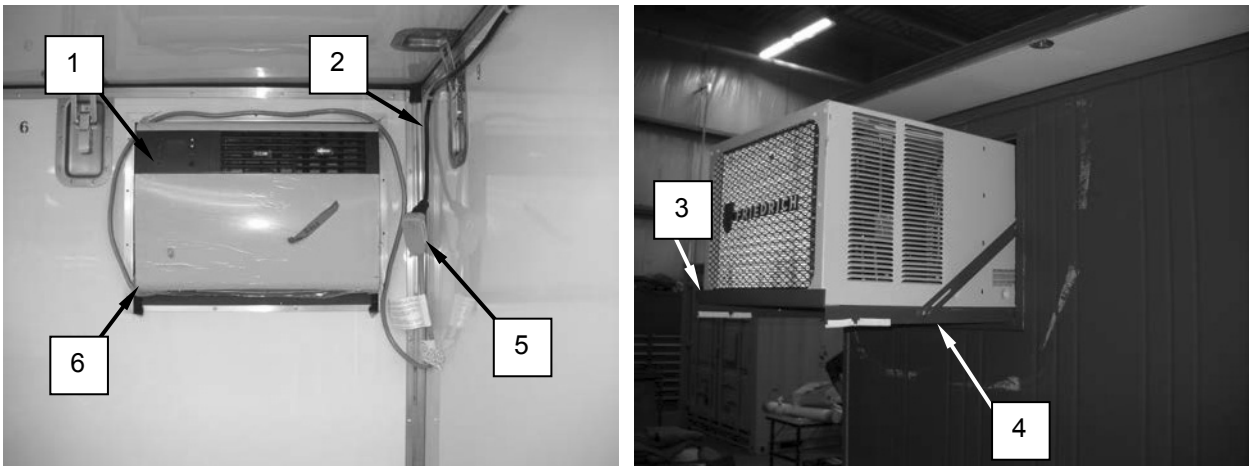


Figure 6. Install Air Conditioner.

END OF TASK

REPLACE

1. Remove sanitation sink IAW WP 0063.
2. Move sanitation sink to allow access to air conditioner.
3. Press air conditioner ON/OFF button (Figure 7, Item 1) to turn air conditioner off.
4. Disconnect the air conditioner power cable (Figure 7, Item 5) from 8-ft cable assembly (Figure 7, Item 2).

WARNING

The air conditioner is heavy. It requires two people to lift out of and into place. Failure to comply could result in serious personal injury or death.

5. From inside the ETKS, slide the defective air conditioner (Figure 7, Item 6) off shelf (Figure 7, Item 4).
6. From inside the ETKS, slide replacement air conditioner onto shelf until back of air conditioner contacts rear lip (Figure 7, Item 3) of shelf.
7. Connect the air conditioner power cable (Figure 7, Item 5) to 8-ft cable assembly (Figure 7, Item 2).
8. Press air conditioner ON/OFF button (Figure 7, Item 1) to turn air conditioner on.
9. Install sanitation sink IAW WP 0063.

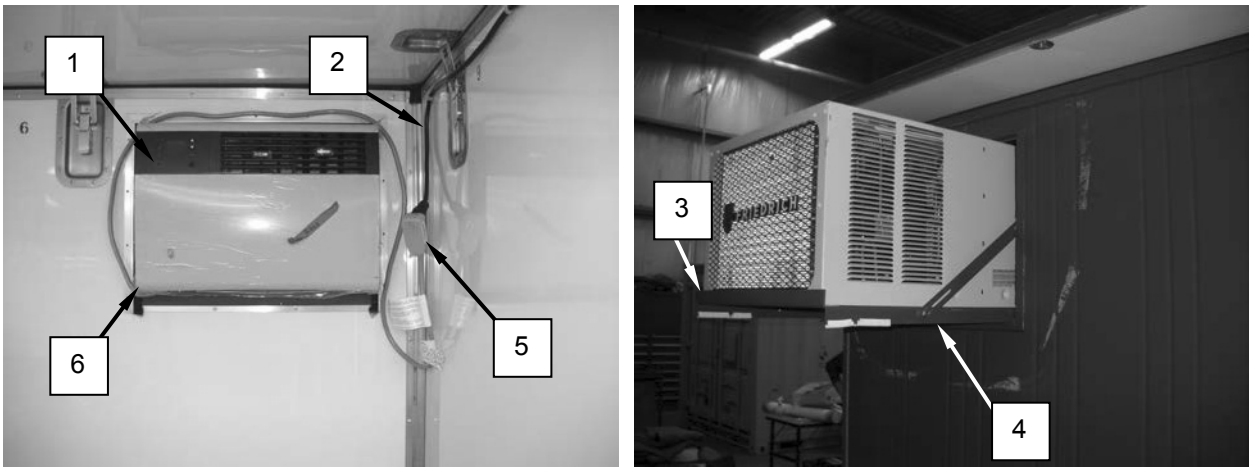


Figure 7. Replace Air Conditioner.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

HOSE ASSEMBLY REPAIR, REPLACE

INITIAL SETUP:

Material/Parts

Gloves, Disposable (WP 0073, Item 6)
Goggles, Industrial (WP 0073, Item 7)
Rag, Wiping (WP 0073, Item 11)

Personnel Required

92G Culinary Specialist (1)

Equipment Condition

Daily startup complete (WP 0009)

REPAIR

WARNING

Wastewater generated during operation may contain bio-hazardous materials. Personnel must wear impermeable gloves and goggles for protection. Failure to follow this warning may result in serious illness or death to personnel.

NOTE

The dust cover is the same for the water hose and waste hose. The procedures apply to both.

Replace Dust Cover

1. Locate defective or missing dust cover on water hose or wastewater hose.
2. Disconnect water hose dust cover from the respective water outlet dust cover.
3. Remove dust cover (Figure 1, Item 1) from hose by removing the dust cover ring (Figure 1, Item 2) from the lanyard (Figure 1, Item 3).
4. Attach a replacement dust cover and secure to lanyard with ring.

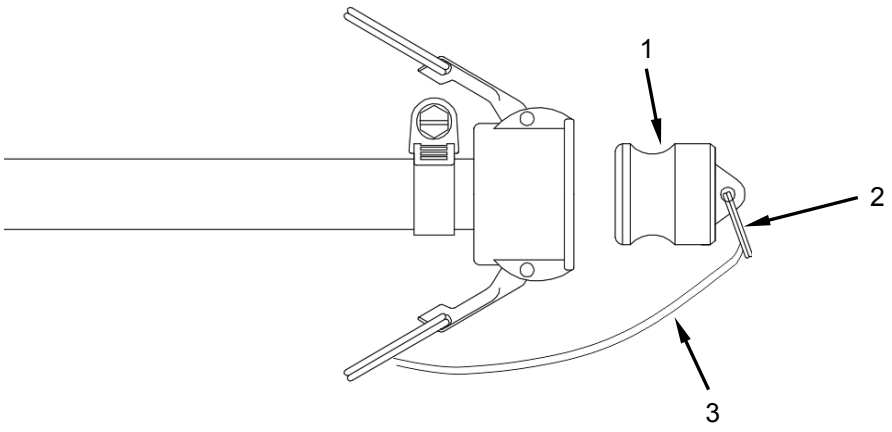


Figure 1. Replace Dust Cover.

REPAIR – CONTINUED

NOTE

Photo is shown with the water hose disconnected for clarity. The hose does not need to be removed to perform the procedure.

Replace Lanyard

1. Remove lanyard (Figure 2, Item 3) from the split ring (Figure 2, Item 2) attached to dust cover (Figure 2, Item 1).
2. Remove lanyard (Figure 2, Item 3) from the split ring (Figure 2, Item 4) attached to hose fitting (Figure 2, Item 5).
3. Attach replacement lanyard to split ring (Figure 2, Item 4) on hose fitting.
4. Attach opposite end of lanyard to split ring (Figure 2, Item 2) on dust cover.

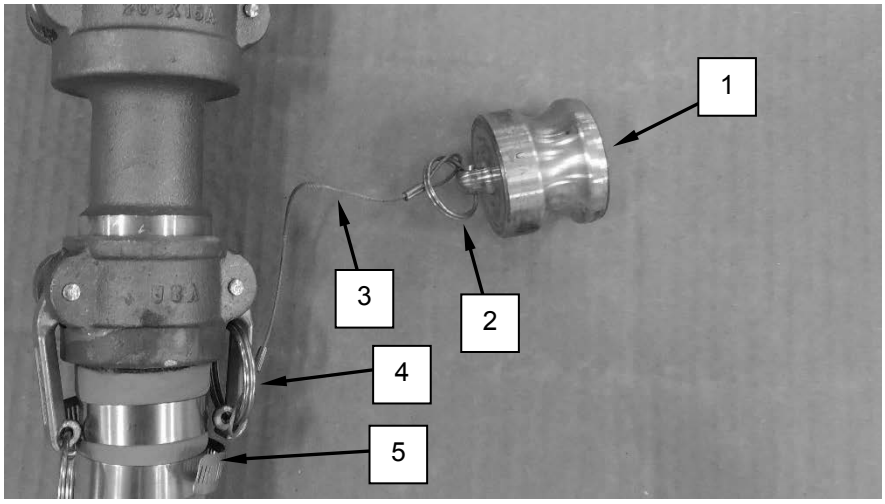


Figure 2. Replace Lanyard.

REPAIR – CONTINUED

Replace Split Ring

NOTE

The following procedures apply to both the split ring attached to the dust cover and the split ring attached to the hose fittings.

Photo is shown with the water hose disconnected for clarity. The hose does not need to be removed to perform the procedure.

1. Remove lanyard (Figure 3, Item 1) from defective split ring (Figure 3, Item 2).
2. Remove defective split ring from either the dust cover or hose fitting.
3. Attach replacement split ring to either the dust cover or hose fitting.
4. Attach lanyard to replacement split ring.

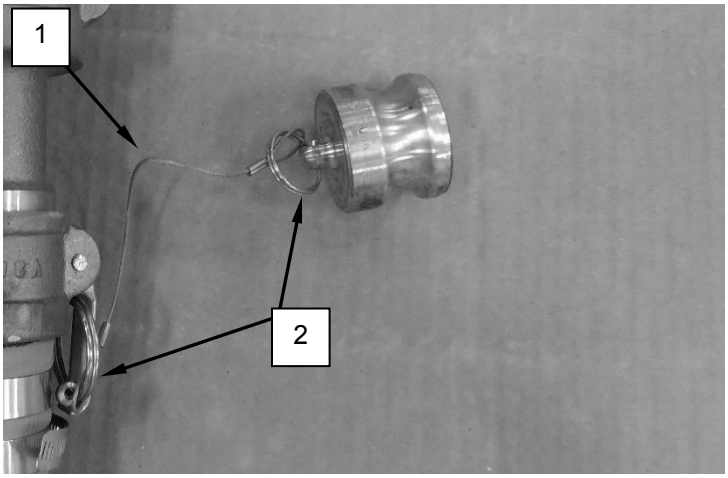


Figure 3. Replace Split Ring.

REPAIR – CONTINUED

Replace Hose Gaskets

1. Close valve on water bag connected to hose being replaced.
2. Disconnect hose from ETKS and water bag.
3. Replace gaskets (Figure 4, Item 1) in QD fittings by carefully prying the damaged gaskets out of the groove in the fitting.
4. Use a rag to wipe the gasket groove clean of any dirt or residue, and fit the replacement gasket into the groove.
5. Reconnect hose to ETKS and water bag.
6. Open the appropriate water bag inlet valve.

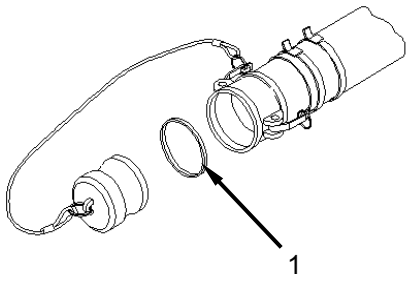


Figure 4. Replace Gasket.

END OF TASK

REPLACE

NOTE

The replacement procedures for both hose assemblies are identical.

1. Turn off the water bag inlet valve for the hose being replaced (source or wastewater) (Figure 5, Item 2).
2. Disconnect the applicable 25-foot hose (Figure 5, Item 5) to ETKS port.
3. Disconnect the applicable 25-foot hose to the applicable water bag.

WARNING

Wastewater generated during operation may contain bio-hazardous materials. Personnel must wear impermeable gloves and goggles for protection. Failure to follow this warning may result in serious illness or death to personnel.

4. Obtain a new water hose.
5. Remove the dust cover from one end of the replacement hose (Figure 5, Item 3).
6. Connect the 25-foot hose to adapter at the water bag (Figure 5, Item 4).
7. Remove the dust cover from the other end of the replacement hose (Figure 5, Item 1) and connect it to the dust cover on the ETKS inlet connection.
8. Connect the other end of the 25-foot hose to ETKS port.
9. Open the appropriate water bag inlet valve.

REPLACE – CONTINUED

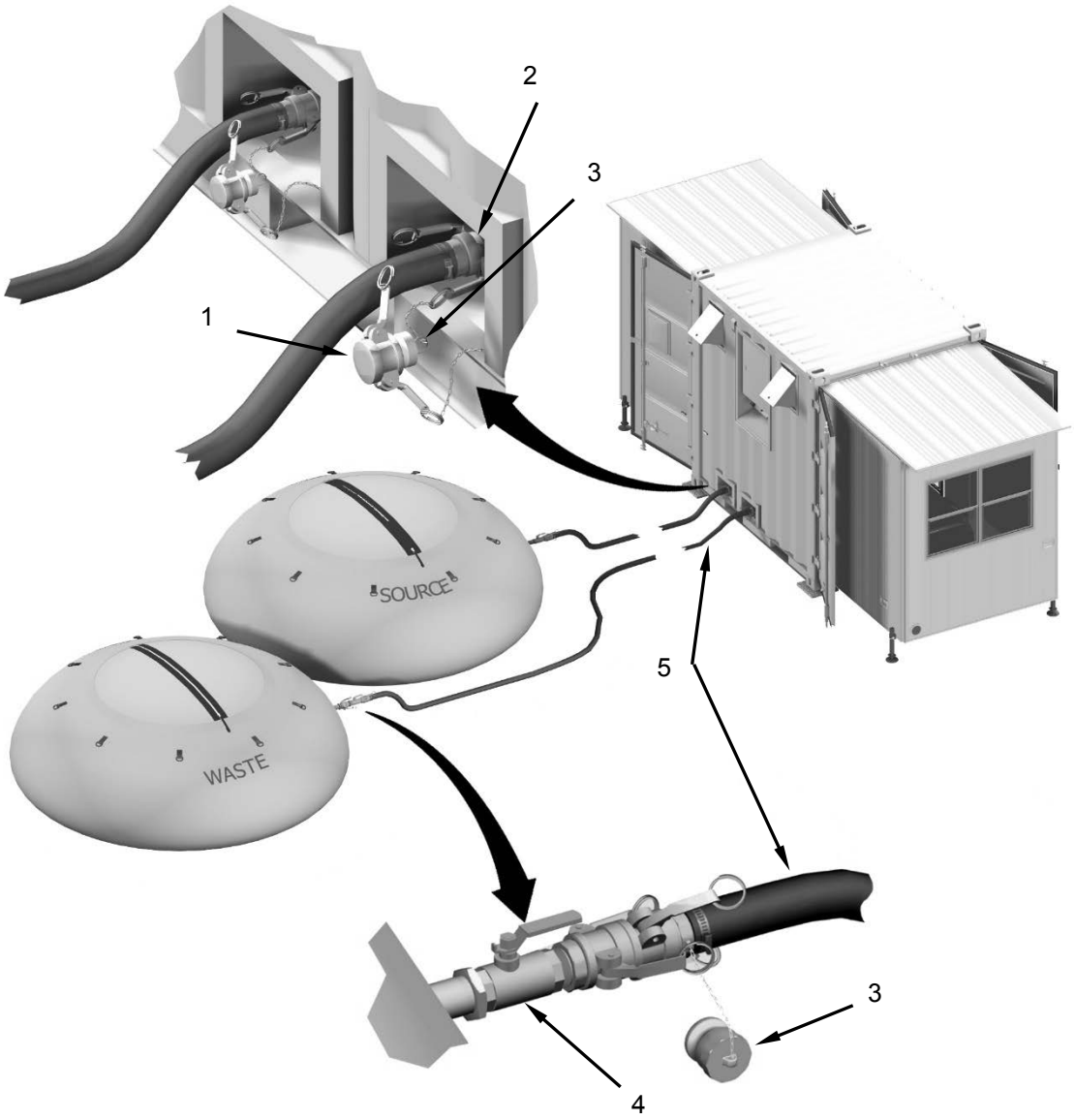


Figure 5. Hose Assembly.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

EXTERNAL PLUMBING INSTALLATION
REPAIR

INITIAL SETUP:

Material/Parts

Rag, Wiping (WP 0073, Item 11)

Personnel Required

92G Culinary Specialist (1)

Equipment Condition

Daily startup complete (WP 0009)

REPAIR

Replace Exterior Water Port Dust Cover

NOTE

The replacement procedures for the potable water inlet and wastewater outlet port dust covers are identical.

Figure 1 shows the potable water inlet dust cover.

1. Remove the dust cover from the hose dust plug (Figure 1, Item 1) by unlatching the two quick disconnect (QD) fasteners and pulling them apart.
2. Remove the retaining ring (Figure 1, Item 2) from the potable water inlet port or wastewater outlet port dust cover.
3. Thread the retaining ring onto a replacement dust cover.
4. Connect the hose dust plug to the dust cover using the QD latches.

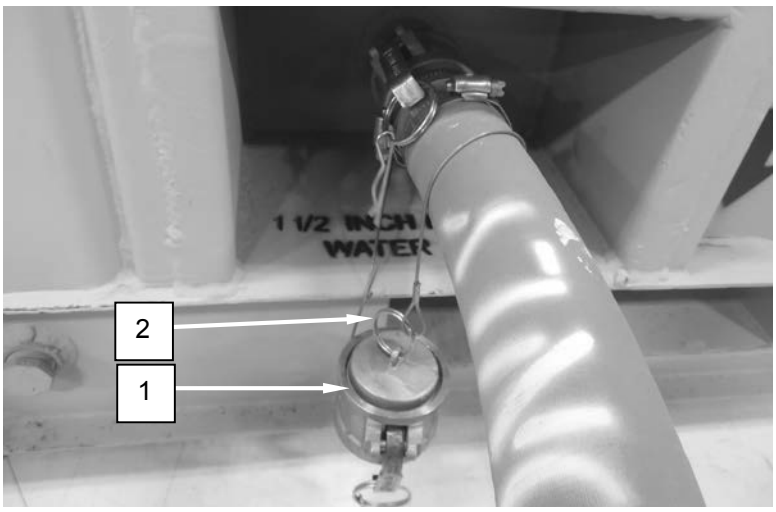


Figure 1. Replace Exterior Water Port Dust Cover.

REPAIR – CONTINUED

Replace Split Ring and Lanyard

1. Remove lanyard (Figure 2, Item 3) from the split ring (Figure 2, Item 5) attached to dust cover (Figure 2, Item 4).

2. Remove lanyard (Figure 2, Item 6) from the split ring (Figure 2, Item 2) attached to inlet or outlet (Figure 2, Item 1).

3. Attach replacement lanyard to split ring on inlet or outlet.

4. Attach opposite end of lanyard to split ring on dust cover.

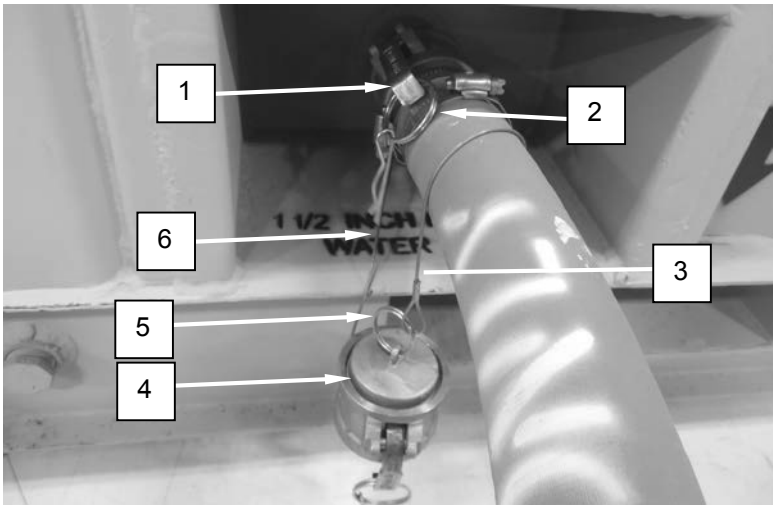


Figure 2. Replace Split Ring and Lanyard.

Replace Dust Cover Gaskets

1. Replace gasket (Figure 3, Item 1) in QD fittings by carefully prying the damaged gaskets out of the groove in the fitting.

2. Use a rag to wipe the gasket groove clean of any dirt or residue, and fit the replacement gasket into the groove.

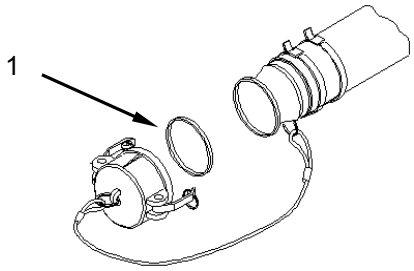


Figure 3. Replace Gasket.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

INTERNAL PLUMBING INSTALLATION
REPAIR

INITIAL SETUP:

Material/Parts

Rag, Wiping (WP 0073, Item 11)

Personnel Required

92G Culinary Specialist (1)

Equipment Condition

Daily startup complete (WP 0009)

REPAIR

Replace Interior Water Port Dust Cover

NOTE

The procedures to replace the dust cover on the potable water inlet port and wastewater outlet port are identical.

1. Remove the water port dust cover from the hose dust cover (Figure 1, Item 2) by unlatching the two quick disconnect (QD) fasteners and pulling them apart.
2. Remove the retaining ring (Figure 1, Item 1) from the dust cover.
3. Discard defective dust cover.
4. Thread the retaining ring onto a replacement potable water port dust cover.
5. Connect the hose dust cover to the port dust cover using the QD fasteners.

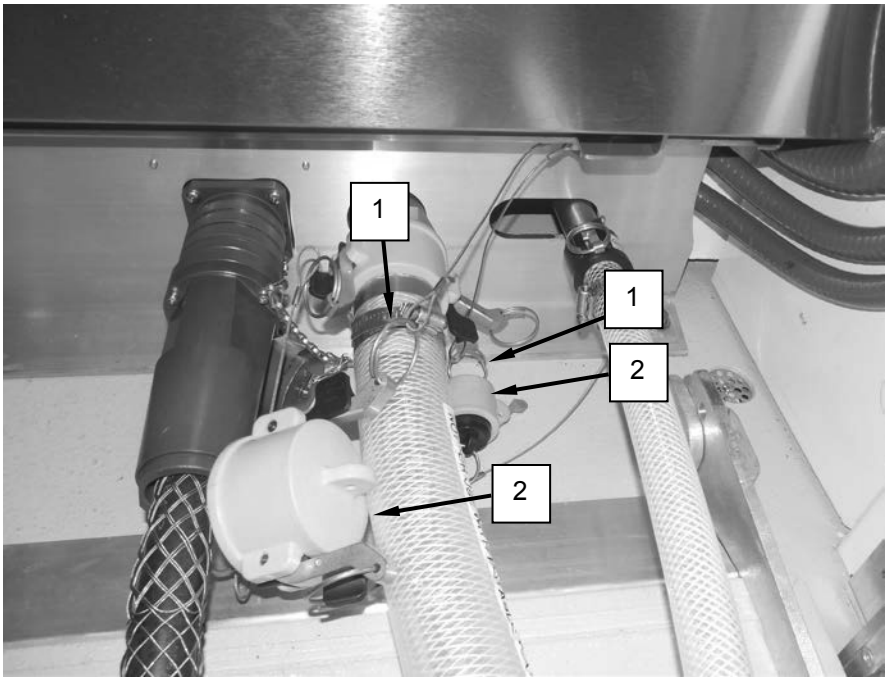


Figure 1. Replace Interior Water Port Dust Cover.

REPAIR – CONTINUED

Replace Dust Cover Gaskets

1. Replace gaskets (Figure 2, Item 1) in QD fittings by carefully prying the damaged gaskets out of the groove in the fitting.

2. Use a rag to wipe the gasket groove clean of any dirt or residue, and fit the replacement gasket into the groove.

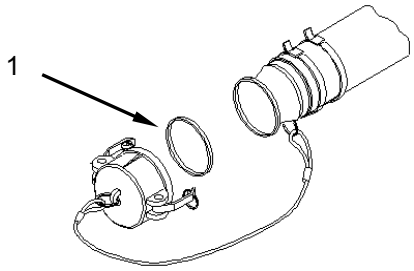


Figure 2. Replace Gasket.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

COLLAPSIBLE WATER TANK
REPLACE

INITIAL SETUP:

Personnel Required

92G Culinary Specialist (1)

Reference

TM 10-5430-237-12&P

Equipment Condition

Daily startup complete (WP 0009)

REPLACE

WARNING

Waste water generated during operation may contain bio-hazardous materials. SOURCE and WASTE bags are not interchangeable. Failure to follow this warning may result in serious illness or death to personnel.

1. Close the ball valve (Figure 1, Item 1) to the water bag.

NOTE

If replacing the SOURCE water bag, the hose adapter (Figure 1, Item 2) must also be removed.

2. Remove the hose (Figure 1, Item 3) from the input valve.

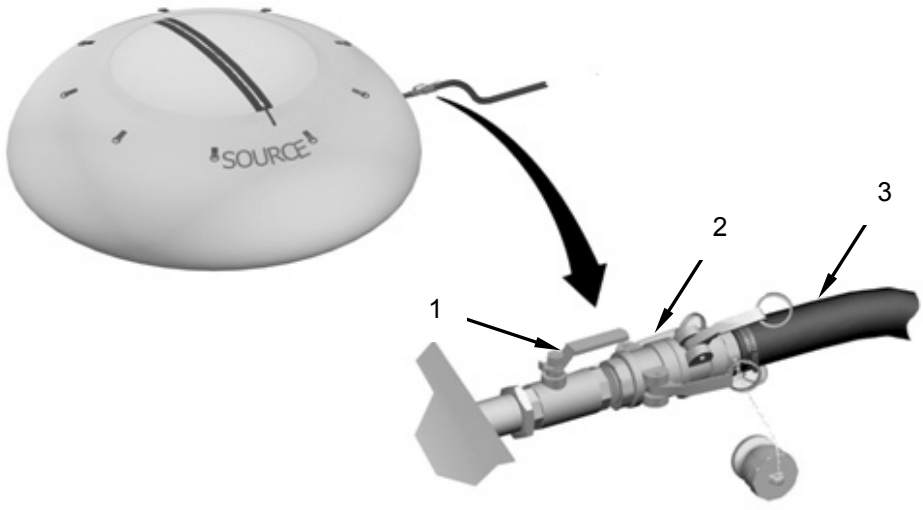


Figure 1. Replace Water Bag.

REPLACE – CONTINUED

3. Drain and collapse the water bag IAW TM 10-5430-237-12&P.

4. Install the replacement water bag IAW TM 10-5430-237-12&P.

5. Attach the hose (Figure 1, Item 3), and adapter (Figure 1, Item 2) if necessary, to the ball valve (Figure 1, Item 1).

6. Open the valve to the water bag and monitor for normal operation.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

SERVING WINDOW REPAIR

INITIAL SETUP:

Personnel Required	Equipment Condition
92G Culinary Specialist (1)	Daily startup complete (WP 0009)

REPAIR

Replace Retaining Ring and Pin

NOTE

There are four retaining rings on the serving window. The procedures to replace them are all the same.

1. Remove the pin (Figure 1, Item 3) from its designated receptacle (Figure 1, Item 2).
2. Unthread defective retaining ring (Figure 1, Item 1) and pin from lanyard.
3. Thread a replacement retaining ring and pin onto lanyard.

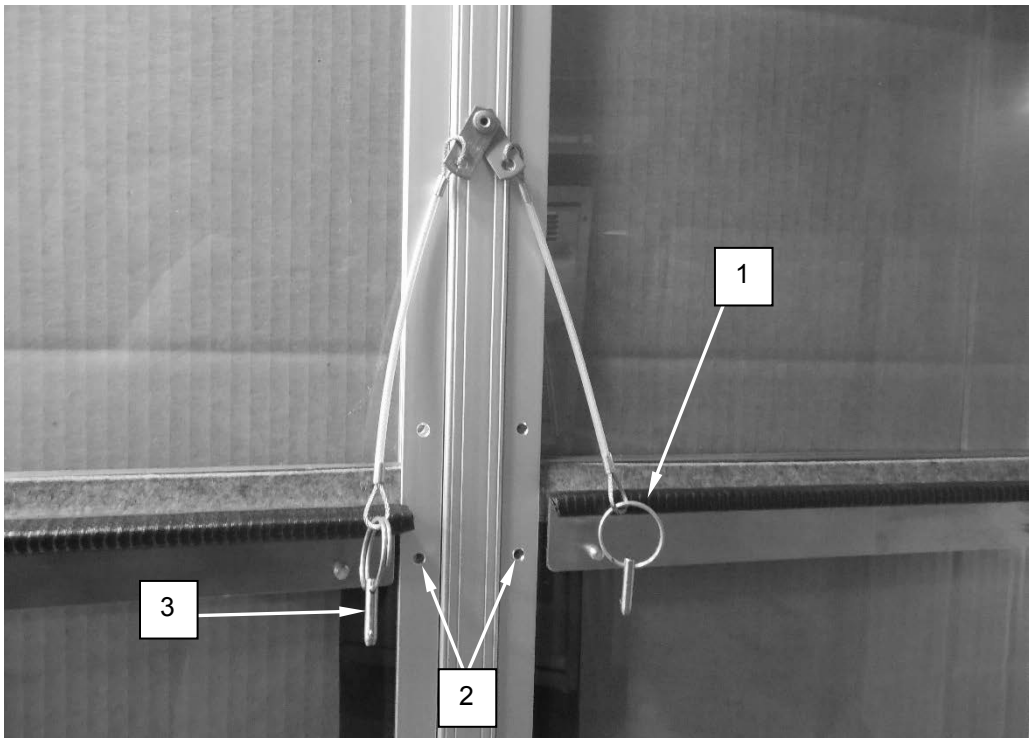


Figure 1. Replace the Retaining Ring and Pin.

4. Push pin into designated receptacle.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

STEAM KETTLE
SERVICE

INITIAL SETUP:

Material/Parts

Cleaning Compound, Solvent-Detergent (WP 0073, Item 3)
Cleaning Compound, Solvent-Detergent (WP 0073, Item 4)
Gloves, Disposable (WP 0073, Item 6)
Goggles, Industrial (WP 0073, Item 7)
Mask, Air Filtering (WP 0073, Item 8)
Pad, Scouring (WP 0073, Items 9)
Pail, Utility (WP 0073, Item 10)
Rag, Wiping (WP 0073, Item 11)
Towelette, Cleaning(WP 0073, Item 17)

Personnel Required

92G Culinary Specialist (1)

References

TB MED 530

Equipment Condition

Daily Startup complete (WP 0009)

SERVICE

Steam Kettle Cleaning

WARNING

The steam kettle may be hot if it was recently used. Ensure that the steam kettle is off and cool before performing maintenance. Failure to observe this warning may cause burns or other injury to personnel. Seek medical attention if any burns or other injury should occur.

During cleaning operations personnel may be exposed to chemicals or other hazardous materials. When performing this procedure personnel must wear mask, gloves, and goggles for protection. Failure to follow this warning may result in serious illness or death.

1. Verify thermostat knob (Figure 1, Item 2) is in the OFF position.
2. Remove any food residue from steam kettle (Figure 1, Item 1).

NOTE

Refer to TB MED 530 for sanitation guidelines.

3. Fill kettle with a solution of hot water mixed with mild dish detergent about ¼ full then use a cloth with the cleaning solution to clean interior of kettle. For heavily soiled areas allow cleaning solution to soak and soften dried food deposits then use a plastic scouring pad if necessary.
4. After kettle interior is clean dump out cleaning solution and rinse kettle interior with warm water.

SERVICE – CONTINUED

CAUTION

Do not use abrasive cleaning compounds or solutions containing chloride, salts or acids on stainless steel surfaces. Never use wire brushes or scrapers to remove food residue. These items can damage the finished surfaces of the appliance and cause premature corrosion.

5. Use a damp cloth with a cleaning solution of warm water and mild dish detergent to clean exterior of steam kettle. For heavily soiled areas allow cleaning solution to soak and soften dried food deposits then use a plastic scouring pad if necessary.

CAUTION

Never submerge in or hose off appliance with water. Water can cause damage to electrical components and cause short circuits in wiring.

6. After kettle is clean, use a clean damp cloth and warm water to rinse and wipe down kettle interior and exterior. Allow kettle to air dry.

CAUTION

Do not use stainless steel cleaner on the steam kettle interior or controls.

7. Use stainless steel cleaner and a clean cloth to protect kettle exterior surfaces if desired.

Figure 1. Steam Kettle Cleaning.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

STEAM KETTLE
JACKET PRESSURE SYSTEM
ADJUST

INITIAL SETUP:

Material/Parts

Gloves, Disposable (WP 0073, Item 6)

Personnel Required

92G Culinary Specialist (1)

References

TM 10-5419-207-23&P

Equipment Condition

Daily startup complete (WP 0009)

ADJUST

Adjust Steam Kettle Jacket Vacuum

WARNING

The steam kettle may be hot if it was recently used. Ensure that the steam kettle is off and cool before performing maintenance. Failure to observe this warning may cause burns or other injury to personnel. Seek medical attention if any burns or other injury should occur.

NOTE

When the kettle is cold, a positive pressure reading or a reading near zero on the pressure/vacuum gauge indicates air in the jacket. This will slow down heating of the kettle and must be corrected using the following procedures.

1. Pour 1-2 quarts of cold water into kettle (Figure 1, Item 2).
2. Rotate thermostat (Figure 1, Item 4) to position 5.

WARNING

Steam kettle may have hot surfaces. Avoid exposure to steam blowing out of the safety valve. Direct contact with steam could result in severe burns. Failure to follow these precautions can result in burn injury. Seek immediate medical attention if injury occurs.

3. Observe pressure/vacuum gauge (Figure 1, Item 3). When gauge reaches a positive pressure reading of 5 psi pull up on safety valve ring (Figure 1, Item 1) for one second to release trapped air.
4. Release safety valve ring to allow it to return to the closed position.

ADJUST – CONTINUED

5. Rotate thermostat to OFF position.

6. Allow steam kettle to cool down.

7. Verify gauge shows a vacuum of 20 to 30 inHg when kettle is cool.

   a. Repeat steps 2 - 7 once if gauge does not show 20 to 30 inHg vacuum when the kettle is cool.

   b. Notify maintainer to replace steam kettle IAW TM 10-5419-207-23&P if vacuum cannot be maintained.

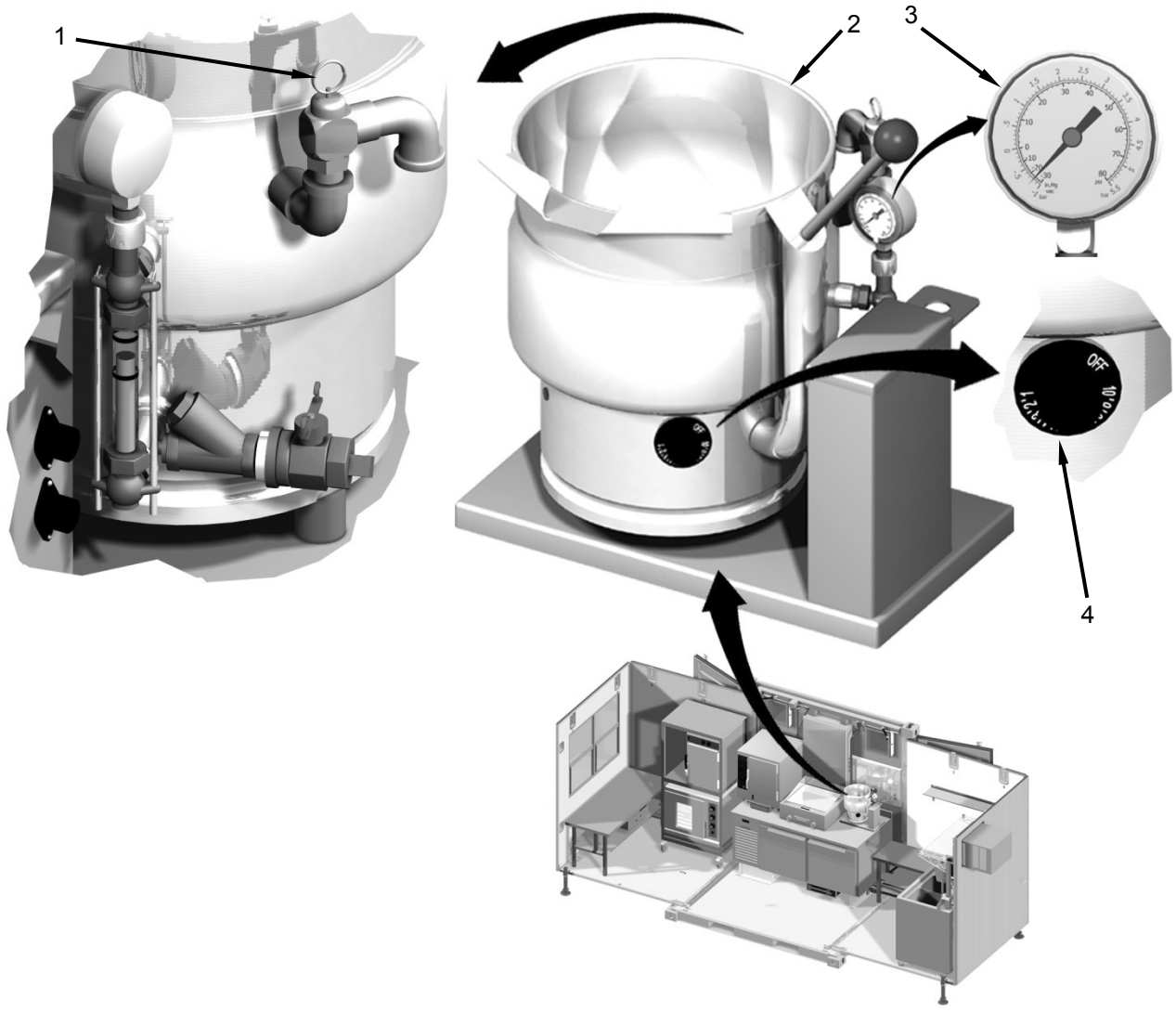


Figure 1. Adjust Jacket Pressure System.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

STEAM AND HOLD OVEN SERVICE

INITIAL SETUP:

Material/Parts

Cleaning Compound, Solvent-Detergent (WP 0073, Item 3)
Cleaning Compound, Solvent-Detergent (WP 0073, Item 4)
Gloves, Disposable (WP 0073, Item 6)
Goggles, Industrial (WP 0073, Item 7)
Mask, Air Filtering (WP 0073, Item 8)
Pad, Scouring (WP 0073, Item 9)
Pail, Utility (WP 0073, Item 10)
Rag, Wiping (WP 0073, Item 11)
Towelette, Cleaning (WP 0073, Item 17)
Vinegar (WP 0073, Item 19)

Personnel Required

92G Culinary Specialist (1)

References

TB MED 530

Equipment Condition

Daily startup complete (WP 0009)

SERVICE

Daily Oven Cleaning

WARNING

The steam and hold oven may be hot if it was recently used. Ensure that the steam and hold oven is off and cool before performing maintenance. Failure to observe this warning may cause burns or other injury to personnel. Seek medical attention if any burns or other injury should occur.

During cleaning operations personnel may be exposed to chemicals or other hazardous materials. When performing this procedure personnel must wear mask, gloves, and goggles for protection. Failure to follow this warning may result in serious illness or death.

NOTE

The interior of the oven should be steam cleaned weekly. Refer to “Weekly Oven Cleaning” IAW this WP.

1. Place a pan (Figure 1, Item 5) under oven then open drain valve (Figure 1, Item 3).
2. Wait for all residual water to drain then close valve.
3. Open oven door (Figure 1, Item 1).
4. Remove all detachable items including cooking pan(s) (Figure 2, Item 2), steam director (Figure 2, Item 3) and removable rails (Figure 2, Item 1).

SERVICE – CONTINUED

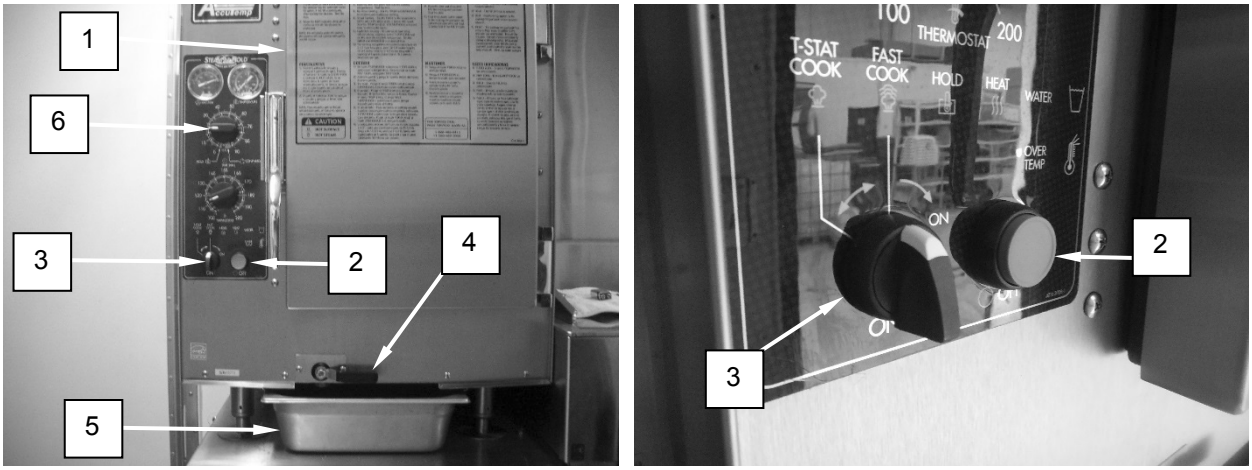


Figure 1. Ensure Drain Valve is Closed.

CAUTION

Do not use abrasive cleaning compounds or solutions containing chloride, salts or acids on stainless steel surfaces. Never use wire brushes or scrapers to remove food residue. These items can damage the finished surfaces of the appliance and cause premature corrosion.

NOTE

Refer to TB MED 530 for sanitation guidelines.

5. Use a damp cloth with a cleaning solution of warm water and mild dish detergent to clean interior of oven. For heavily soiled areas allow cleaning solution to soak and soften dried food deposits then use a plastic scouring pad if necessary.

SERVICE – CONTINUED

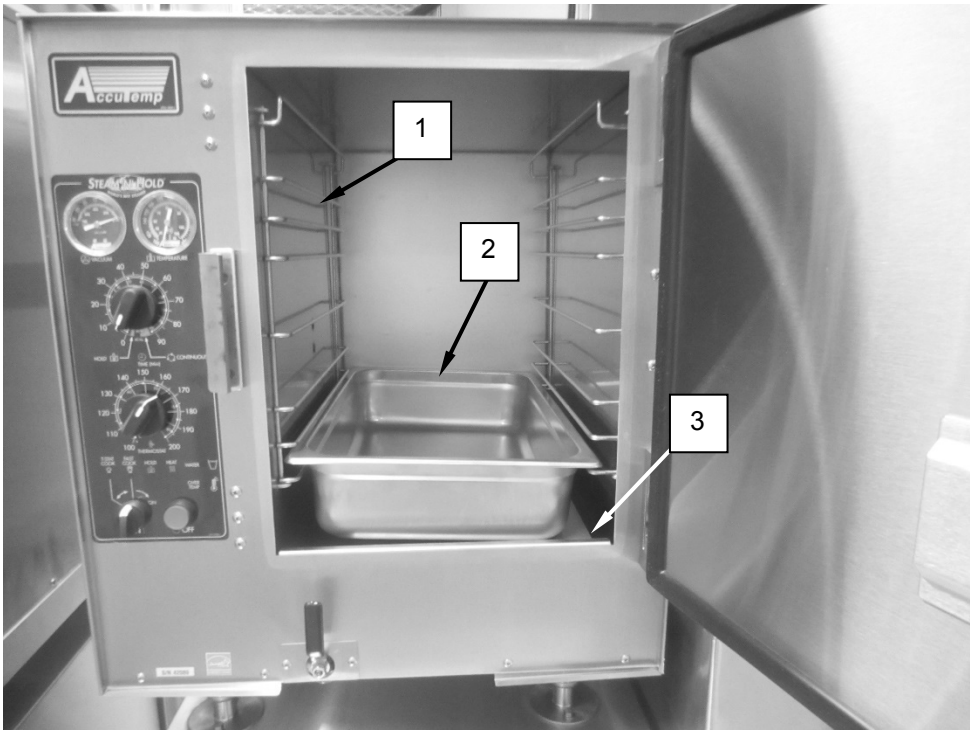


Figure 2. Remove Steam Director and Rails.

6. Verify water level sensors (Figure 3, Item 1) are clean. If necessary repeat step 5.

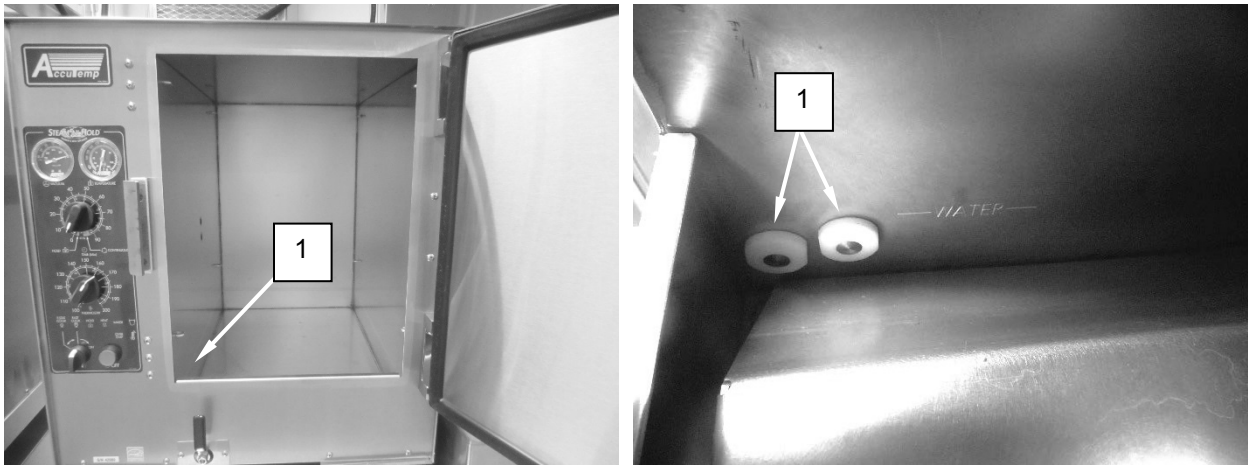


Figure 3. Verify Water Sensors are Clean.

CAUTION

Never submerge in or hose off appliance with water. Water can cause damage to electrical components and cause short circuits in wiring.

7. After oven is clean, use a clean damp cloth and warm water to rinse and wipe down oven interior and exterior. Allow oven to air dry.

SERVICE – CONTINUED

CAUTION

Do not use stainless steel cleaner on the oven interior, display, or controls.

8. Use stainless steel cleaner and a clean cloth to protect oven exterior surfaces if desired.

9. Clean pan(s), steam director, and rails in sanitation sink with hot water and mild dish detergent. Rinse these items with water and allow to air dry.

10. Reinstall steam director (Figure 4, Item 3), drain pan (Figure 4, Item 2) and rails (Figure 4, Item 1).

11. Close steam and hold oven door (Figure 4, Item 4).

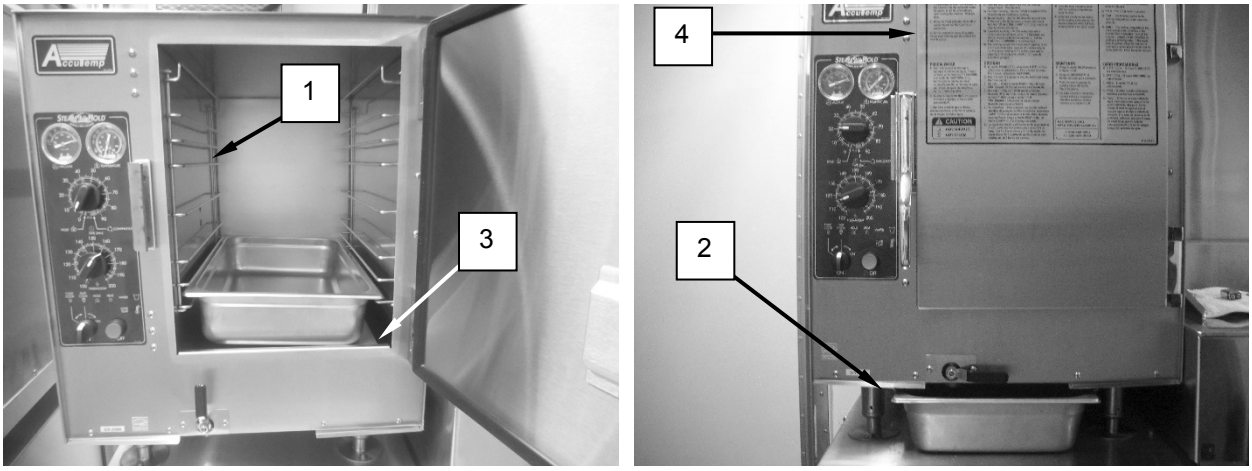


Figure 4. Install Racks, Steam Director, and Cooking Pans.

SERVICE – CONTINUED

Weekly Oven Cleaning

WARNING

Weekly cleaning of the steam and hold oven interior will be done with the oven on. Be careful not to touch hot surfaces during this portion of the cleaning operation. After the initial cleaning is completed, make sure oven is off and surfaces are allowed to cool down prior to performing the final cleaning. Failure to follow this precaution can result in burn injury. Seek immediate medical attention if injury occurs.

During cleaning operations personnel may be exposed to chemicals or other hazardous materials. When performing this procedure personnel must wear mask, gloves, and goggles for protection. Failure to follow this warning may result in serious illness or death.

1. Verify that oven contains water and the drain valve (Figure 5, Item 4) is closed.
2. Fill a cooking pan with 2 gallons of water and one cup of white vinegar and place pan in oven.
3. Close oven door (Figure 5, Item 1).
4. Rotate toggle switch (Figure 5, Item 3) and select FAST COOK.
5. Set timer knob (Figure 5, Item 6) to 30 minutes.
6. Once buzzer sounds, press the OFF button (Figure 5, Item 2).

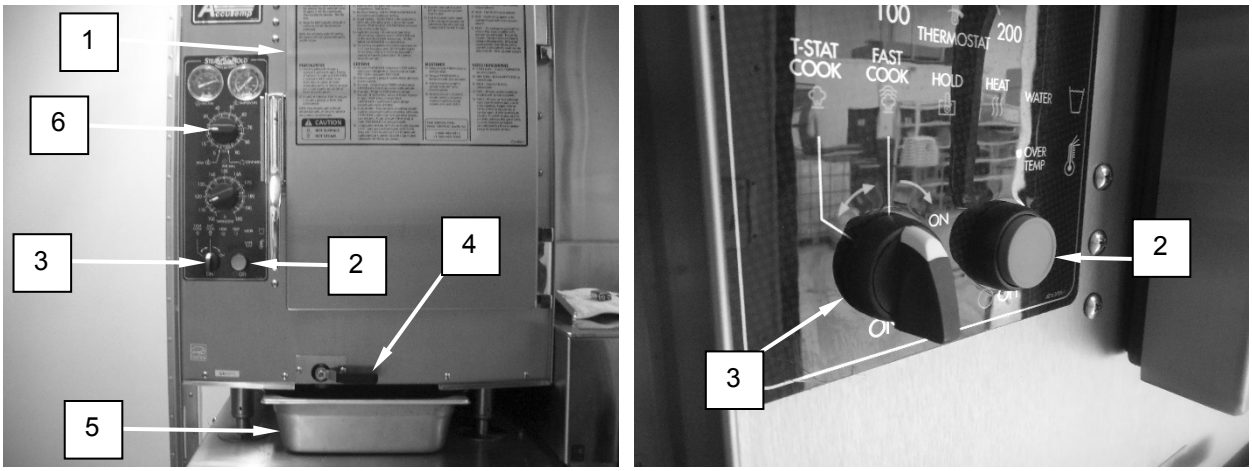


Figure 5. Ensure Drain Valve is Closed.

7. Place a pan (Figure 5, Item 5) under oven then open drain valve (Figure 5, Item 3).
8. Wait for all residual water to drain then close valve.
9. Open oven door (Figure 5, Item 1).
10. Remove all detachable items including cooking pan(s) (Figure 6, Item 2), steam director (Figure 6, Item 3) and removable rails (Figure 6, Item 1).

SERVICE – CONTINUED

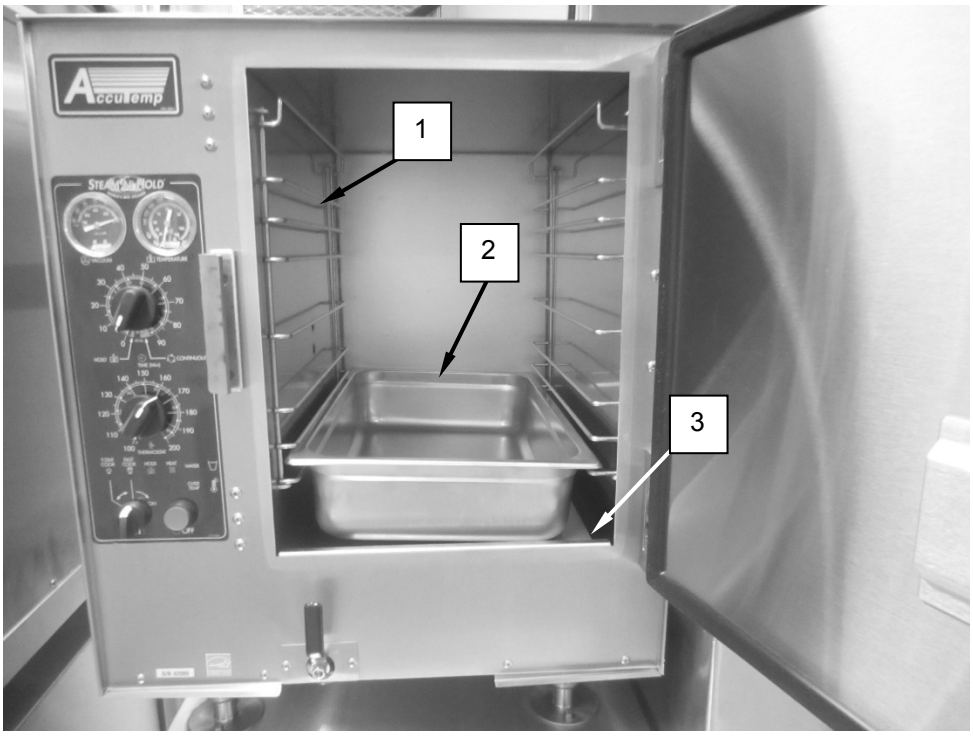


Figure 6. Remove Steam Director and Rails.

NOTE

Refer to TB MED 530 for sanitation guidelines.

11. Use a damp cloth with a cleaning solution of warm water and mild dish detergent to clean interior of oven. For heavily soiled areas allow cleaning solution to soak and soften dried food deposits then use a plastic scouring pad if necessary.

12. Verify water level sensors (Figure 7, Item 1) are clean. If necessary repeat step 11.

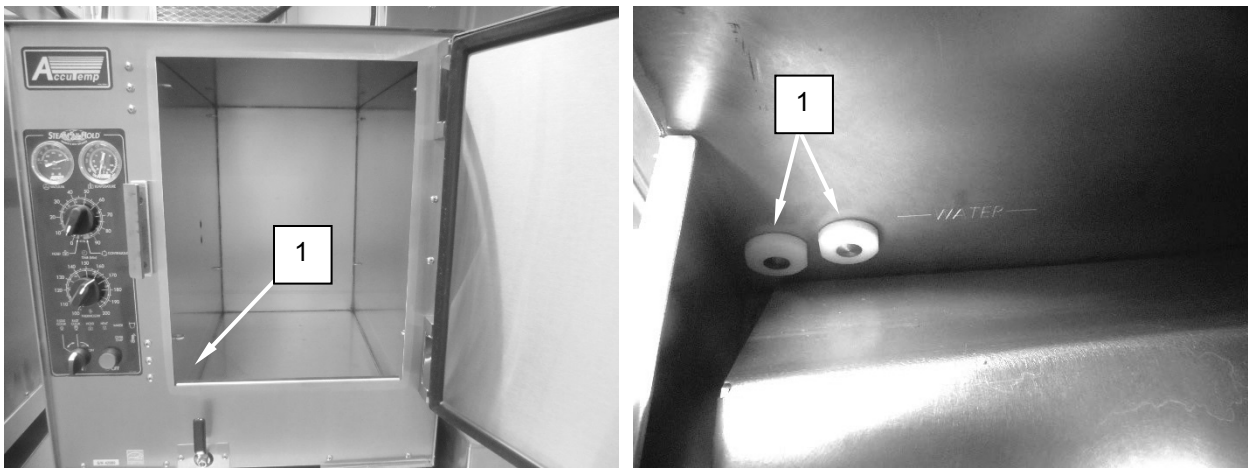


Figure 7. Verify Water Sensors are Clean.

SERVICE – CONTINUED

CAUTION

Never submerge in or hose off appliance with water. Water can cause damage to electrical components and cause short circuits in wiring.

13. After oven is clean, use a clean damp cloth and warm water to rinse and wipe down oven interior and exterior. Allow oven to air dry.

CAUTION

Do not use stainless steel cleaner on the oven interior, display, or controls.

14. Use stainless steel cleaner and a clean cloth to protect oven exterior surfaces if desired.

15. Clean pan(s), steam director, and rails in sanitation sink with hot water and mild dish detergent. Rinse these items with water and allow to air dry.

16. Reinstall steam director (Figure 8, Item 3), drain pan (Figure 8, Item 2) and rails (Figure 8, Item 1).

17. Close steam and hold oven door (Figure 8, Item 4).

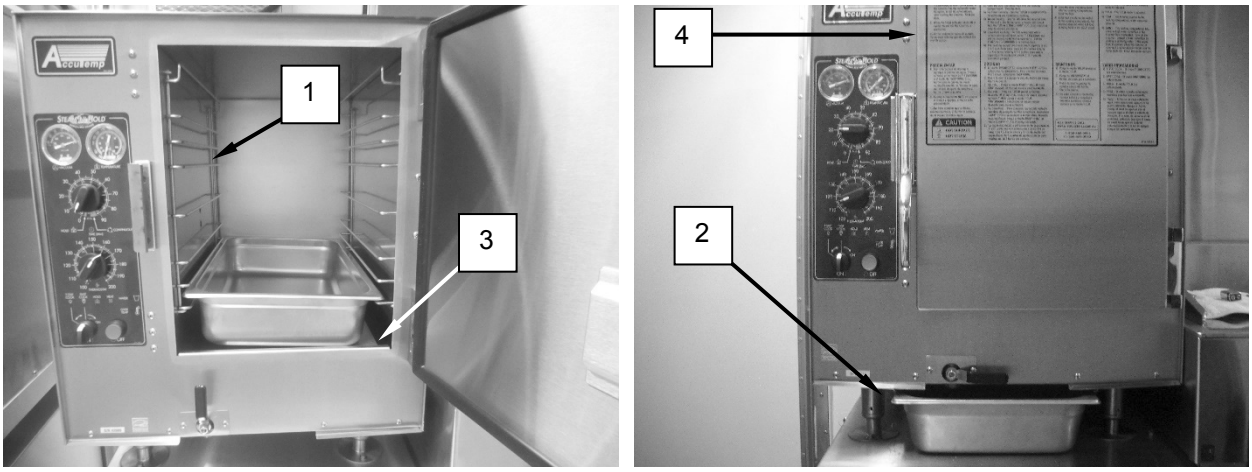


Figure 8. Install Racks, Steam Director, and Cooking Pans.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

REFRIGERATOR SERVICE

INITIAL SETUP:

Material/Parts

Cleaning Compound, Solvent-Detergent (WP 0073, Item 3)
Cleaning Compound, Solvent-Detergent (WP 0073, Item 4)
Gloves, Disposable (WP 0073, Item 6)
Goggles, Industrial (WP 0073, Item 7)
Mask, Air Filtering (WP 0073, Item 8)
Pad, Scouring (WP 0073, Item 9)
Pail, Utility (WP 0073, Item 10)
Rag, Wiping (WP 0073, Item 11)
Towelette, Cleaning (WP 0073, Item 17)

Personnel Required

92G Culinary Specialist (1)

References

TB MED 530

Equipment Condition

Daily Startup complete (WP 0009)

SERVICE

Refrigerator Cleaning

WARNING

During cleaning operations personnel may be exposed to chemicals or other hazardous materials. When performing this procedure personnel must wear mask, gloves, and goggles for protection. Failure to follow this warning may result in serious illness or death.

CAUTION

Never submerge in or hose off appliance with water. Water can cause damage to electrical components and cause short circuits in wiring.

Do not use abrasive cleaning compounds or solutions containing chloride, salts or acids on stainless steel surfaces. Never use wire brushes or scrapers to remove food residue. These items can damage the finished surfaces of the appliance and cause premature corrosion.

NOTE

Refer to TB MED 530 for sanitation guidelines.

1. Remove louver (Figure 1, Item 1).
2. Turn power switch (Figure 1, Item 2) to OFF.
3. Install louver back onto refrigerator.
4. Open door (Figure 1, Item 4) and remove all racks (Figure 1, Item 3) from inside refrigerator.

SERVICE – CONTINUED

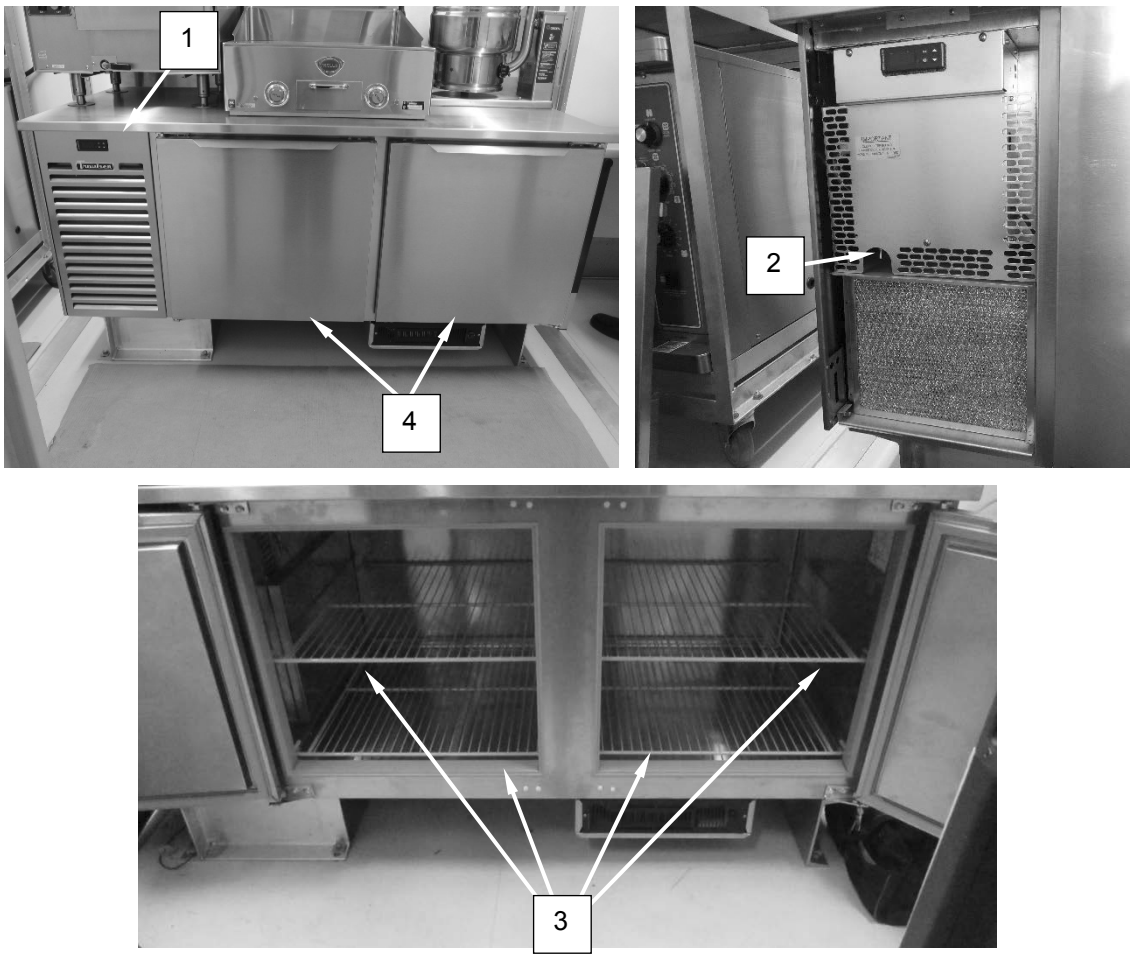


Figure 1. Turn Off Refrigerator.

5. Use a dry cloth to remove any loose debris from inside refrigerator.

6. Use a damp cloth with a cleaning solution of warm water and mild dish detergent to clean interior and exterior of refrigerator. For heavily soiled areas allow cleaning solution to soak and soften deposits then use a plastic scouring pad if necessary.

7. After refrigerator is clean use a clean damp cloth and warm water to rinse and wipe down oven interior and exterior. Allow refrigerator to air dry.

CAUTION

Do not use stainless steel cleaner on the refrigerator interior, display, or controls.

8. Use stainless steel cleaner and a clean cloth to protect refrigerator exterior surfaces if desired. Do not use this cleaner on the refrigerator interior, display, or controls.

9. Removed racks from refrigerator and clean with hot water and mild dish detergent. Rinse these items with water and allow to air dry.

10. Reinstall racks (Figure 1, Item 3) into refrigerator and close door (Figure 1, Item 4).

SERVICE – CONTINUED

11. Remove louver (Figure 2, Item 1).
12. Position power switch to ON (Figure 2, Item 3).
13. Install louver onto refrigerator.
14. Verify display (Figure 2, Item 2) on refrigerator (Figure 2, Item 4) is on.

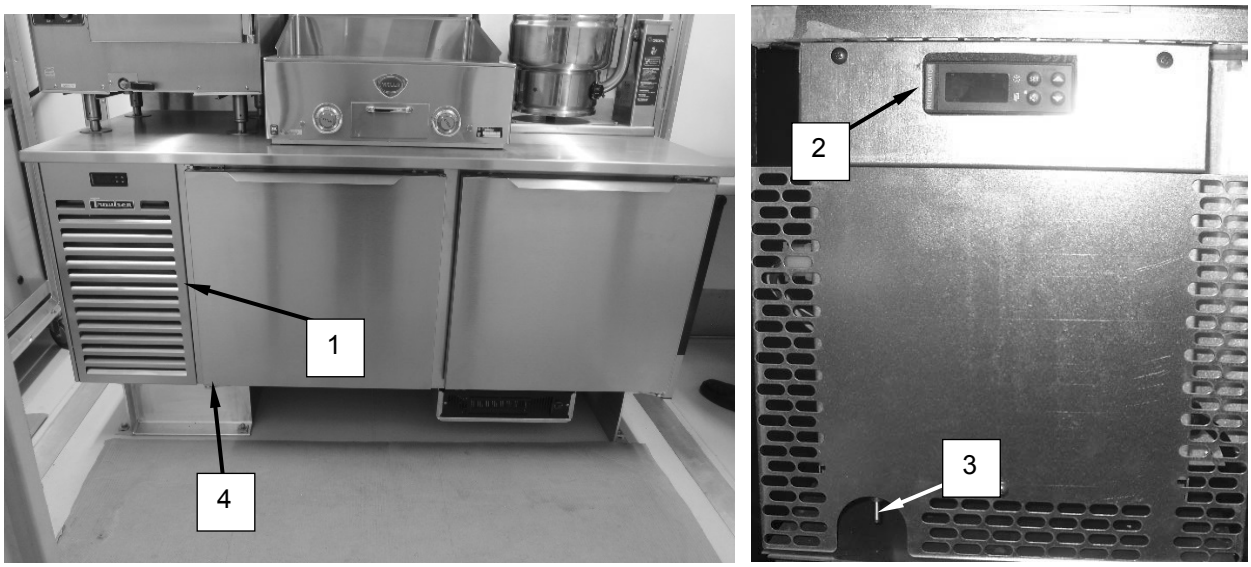


Figure 2. Turn On Refrigerator.

SERVICE – CONTINUED

Start a Manual Defrost Cycle

NOTE

Each input must be made quickly. After 30 seconds without input, the controller will revert to displaying the current temperature of the refrigerator.

1. Press the SET key (Figure 3, Item 2). The display (Figure 3, Item 1) will read “CUS”.
2. Press the SET key. The display will read “000” with the left zero flashing.
3. Press the SET key. The display will read “000” with the center zero flashing.
4. Press the down arrow key (Figure 3, Item 4) until the center digit changes to “A”.
5. Press the SET key. The display will read “0A0” with the right digit flashing.
6. Press the up arrow key (Figure 3, Item 3) until the right digit changes to a “1”.
7. Press the SET key. The display will read “SP” for Thermostat Set Point.

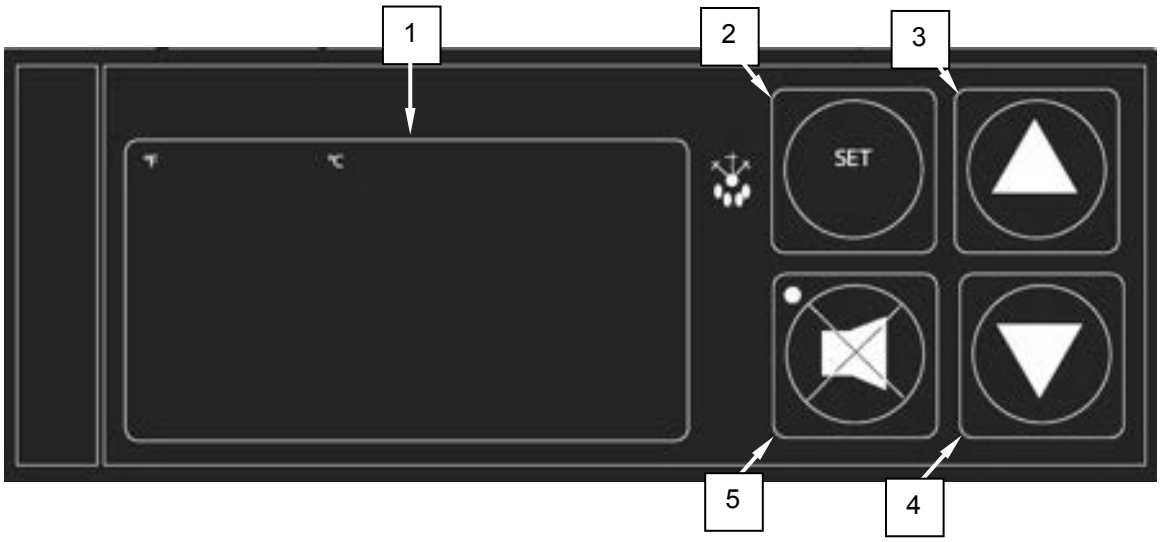


Figure 3. Refrigerator Control Panel.

8. Press the down arrow until display reads “Sd”.
9. Press the SET key. The display will show “OFF”.
10. Press the up arrow key until display shows “On”.
11. Press the SET key. The display will show “DEF”.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

REFRIGERATOR
ADJUST

INITIAL SETUP:

Personnel Required	Equipment Condition
92G Culinary Specialist (1)	Refrigerator startup complete (WP 0012)

ADJUST

Adjust the Thermostat Set Point

NOTE

Each input must be made quickly. After 30 seconds without input, the controller will revert to displaying the current temperature of the refrigerator. At any point, the Alarm Cancel key (Figure 1, Item 5) may be pressed to exit the process.

1. Press the SET key (Figure 1, Item 2). The display (Figure1, Item 1) will read “CUS”.
2. Press the SET key. The display will read “000” with the left zero flashing.
3. Press the SET key. The display will read “000” with the center zero flashing.
4. Press the down arrow key (Figure 1, Item 4) until the center digit changes to “A”.
5. Press the SET key. The display will read “0A0” with the right digit flashing.
6. Press the up arrow key (Figure 1, Item 3) until the right digit changes to a “1”.
7. Press the SET key. The display will read “SP” for Thermostat Set Point.
8. Press the SET key.

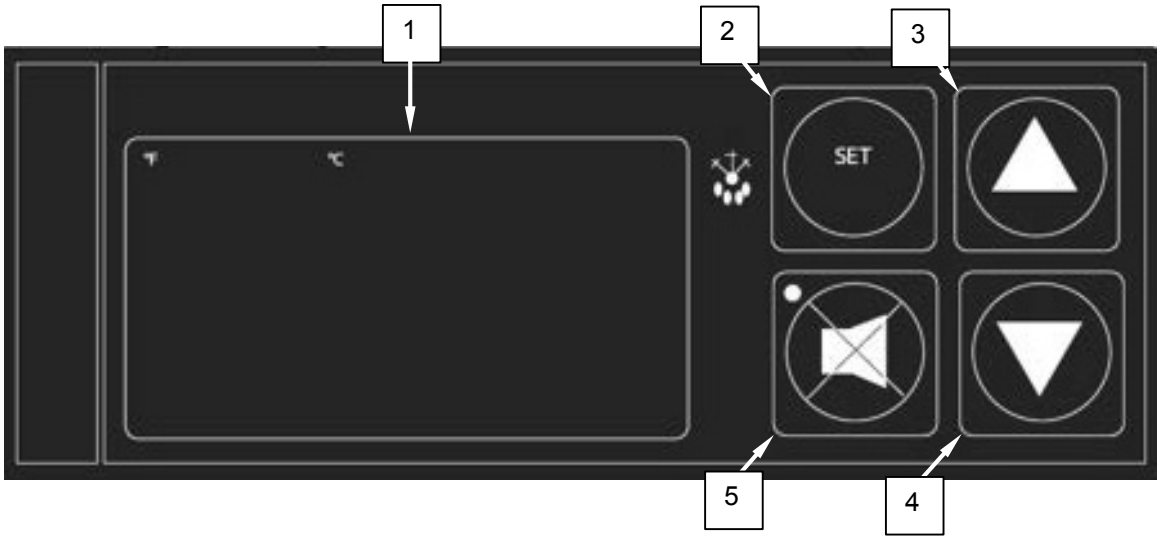


Figure 1. Refrigerator Control Panel.

ADJUST – CONTINUED

9. Press the up or down arrows to adjust temperature to the desired setting of 38°F to 40°F (3.33ºC to 4.44ºC).

10. When display reads the desired temperature, press the SET key. The display will read “SP”.

11. Press the down arrow until display reads “SPd” for Thermostat Set Point Differential.

12. Press the SET key.

13. Press the up or down arrows to adjust temperature to 34°F (1.11°C).

14. Press the up or down arrows to adjust the set point differential. Refer to Table 1 for correct value based on the chosen SPH setting.

Table 1. Set Point Differential.

Chosen SPH Setting	SPd Setting
38	4.0
39	5.0
40	6.0

15. When the display reads the desired value, press the SET key.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

REFRIGERATOR DOOR REPAIR

INITIAL SETUP:

Personnel Required	Equipment Condition
92G Culinary Specialist (1)	Daily startup complete (WP 0009)

REPAIR

Replace Door Gasket

1. Remove louver (Figure 1, Item 1) from refrigerator.
2. Position power switch (Figure 1, Item 2) to OFF.

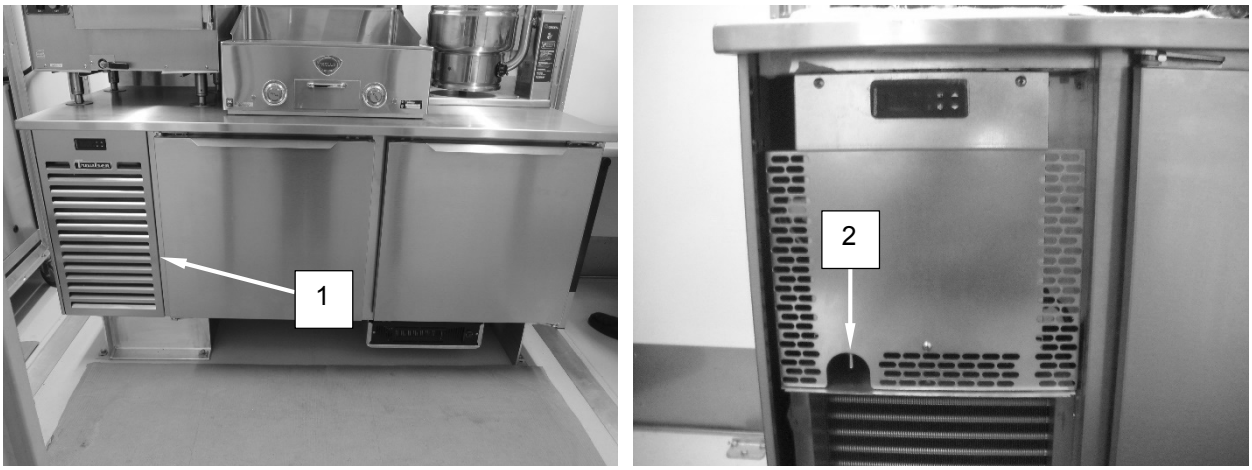


Figure 1. Refrigerator Power Switch.

REPAIR – CONTINUED

3. Open refrigerator door (Figure 2, Item 1).
4. Remove defective refrigerator door gasket (Figure 2, Item 2) from the door gasket track.
5. Press replacement door gasket (Figure 2, Item 2) into refrigerator door gasket track.
6. Close refrigerator door (Figure 2, Item 1). Ensure a tight seal is made with replacement gasket.

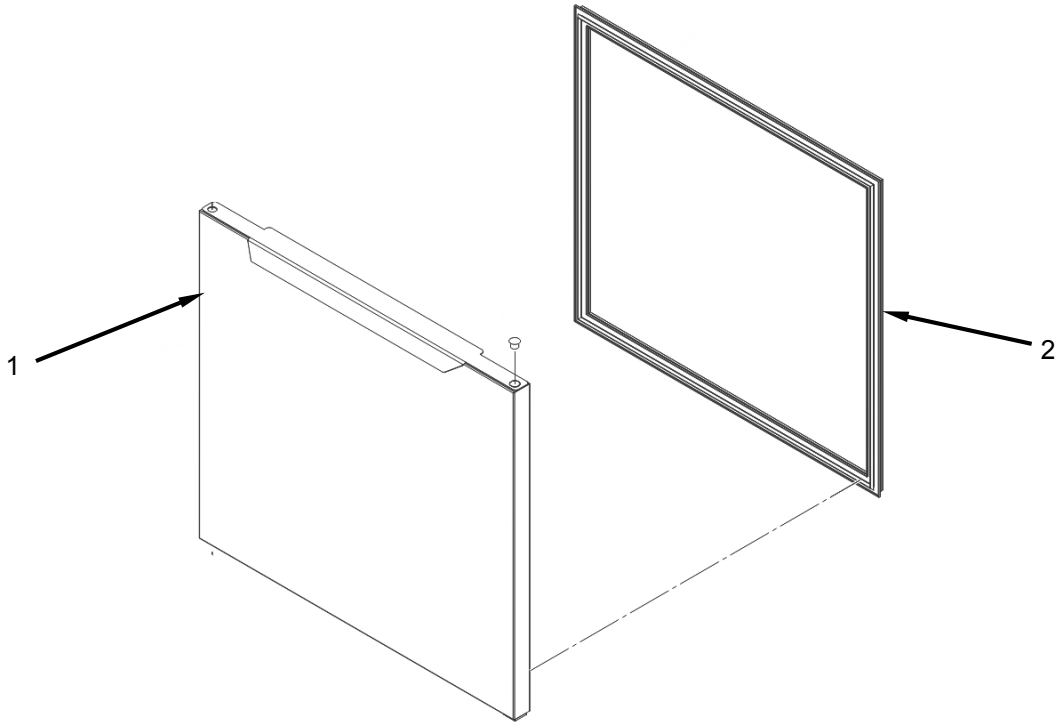


Figure 2. Replace Refrigerator Door Gasket.

7. Position power switch (Figure 1, Item 2) to ON.
8. Install louver (Figure 1, Item 1) to refrigerator.
9. Monitor refrigerator for normal operation.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

REFRIGERATOR AIR FILTER SERVICE, REPLACE

INITIAL SETUP:

Material/Parts

Brush, Scrub (WP 0073, Item 2)
Cleaning Compound, Solvent-Detergent (WP 0073, Item 3)
Rag, Wiping (WP 0073, Item 11)

Personnel Required

92G Culinary Specialist (1)

Equipment Condition

Daily startup complete (WP 0009)

SERVICE

Clean Filter

1. Remove front louver (Figure 1, Item 1).
2. Position power switch (Figure 1, Item 2) to OFF.
3. Remove air filter (Figure 1, Item 3).
4. Wash filter with warm, soapy water. Remove any remaining dirt or debris using brush and rags and rinse filter with fresh water to remove soap and any remaining particles.
5. Air dry filter.
6. Install air filter.
7. Position power switch (Figure 1, Item 2) to ON.
8. Install front louver (Figure 1, Item 1).

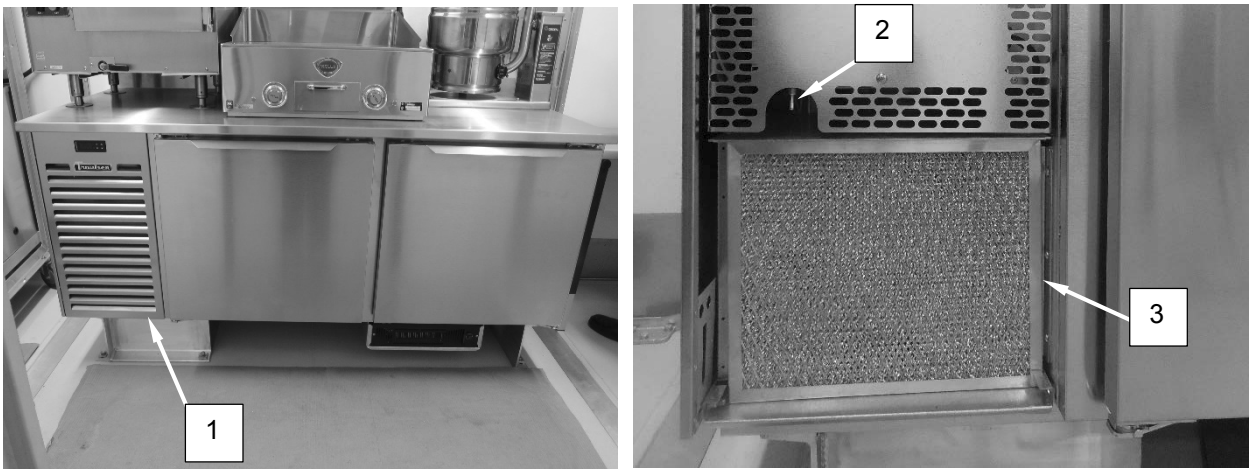


Figure 1. Clean Air Filter.

END OF TASK

REPLACE

1. Remove front louver (Figure 2, Item 1).
2. Position power switch to OFF.
3. Remove air filter (Figure 2, Item 2).
4. Install replacement air filter.
5. Position power switch to ON.
6. Install front louver (Figure 2, Item 1).

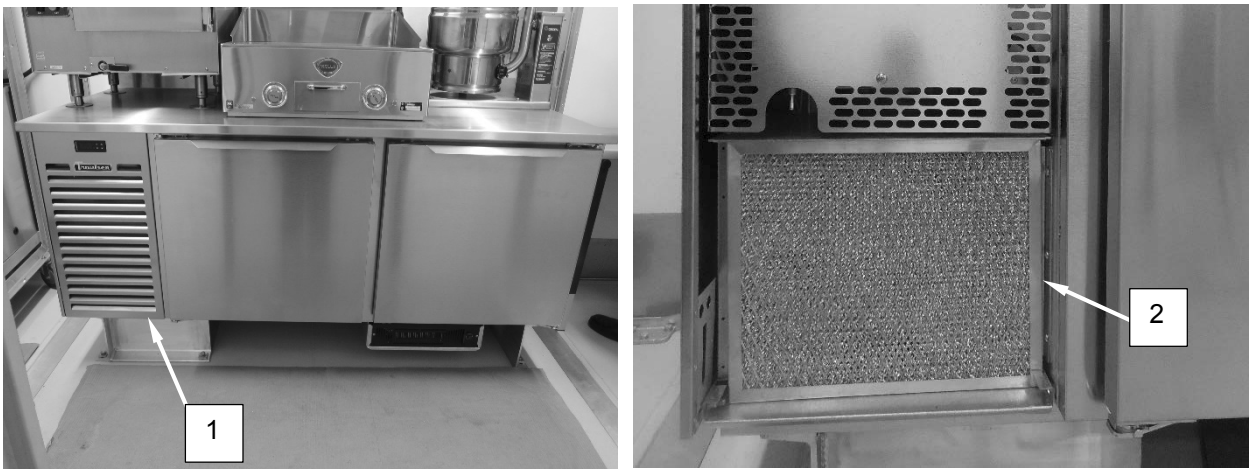


Figure 2. Replace Air Filter.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

REFRIGERATOR CONDENSER SERVICE

INITIAL SETUP:

Material/Parts

Brush, Scrub (WP 0073, Item 2)
Rag, Wiping (WP 0073, Item 11)

Personnel Required

92G Culinary Specialist (1)

Equipment Condition

Daily startup complete (WP 0009)

SERVICE

Condenser Cleaning

1. Remove louver (Figure 1, Item 1).
2. Position power switch (Figure 1, Item 2) to OFF.
3. Remove filter (Figure 1, Item 3).

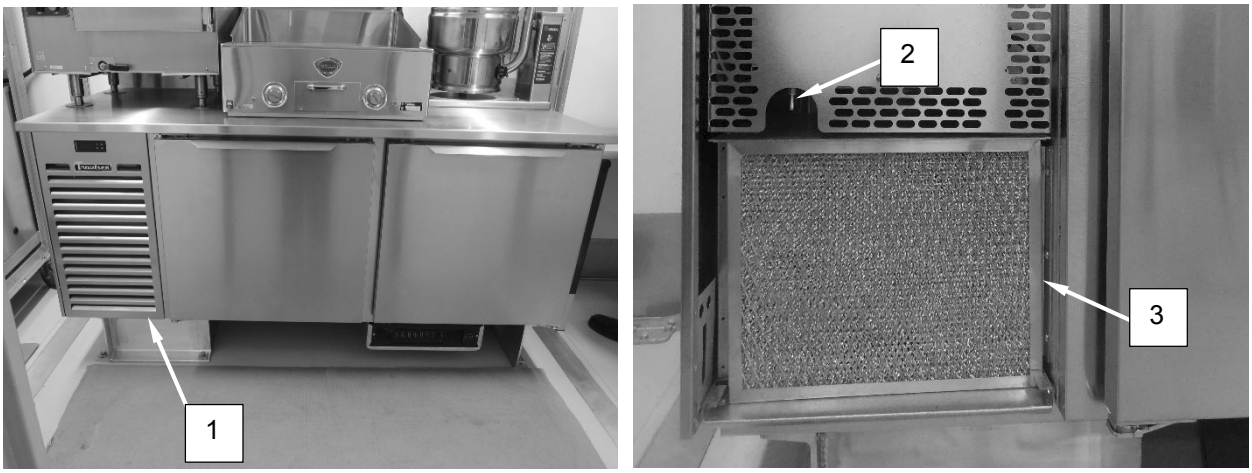


Figure 1. Air Filter.

SERVICE – CONTINUED

WARNING

The fins of the condenser coil are extremely sharp. Exercise caution when working near fins to ensure injury does not occur.

CAUTION

Never push lint or other debris in between coil fins. Use care not to bend fins during cleaning. Failure to follow this precaution will cause condenser to run hot and keep the refrigerator from properly cooling product during operation.

4. Clean the coils (Figure 2, Item 1) of the refrigerator condenser with a brush or rag.

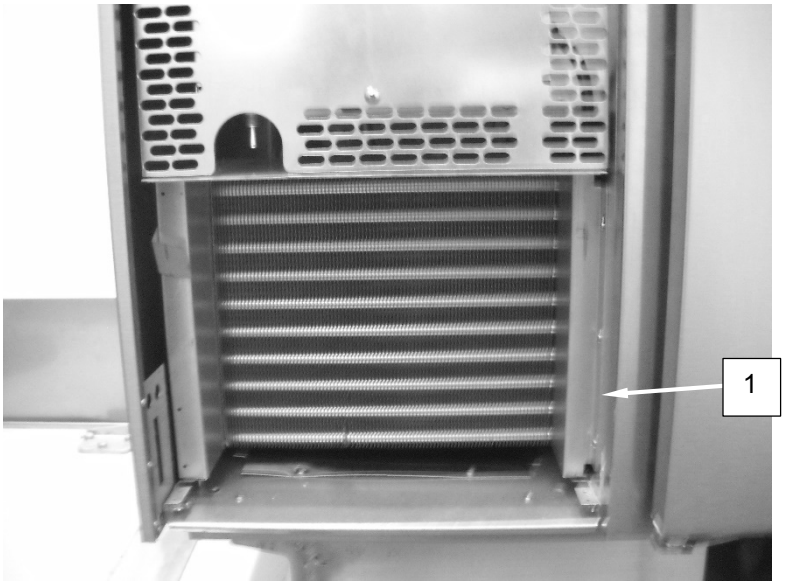


Figure 2. Condenser Coil.

5. Install filter (Figure 1, Item 3).

6. Position power switch (Figure 1, Item 2) to ON.

7. Install louver (Figure 1, Item 1) and monitor refrigerator for normal operation.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

GRIDDLE
SERVICE

INITIAL SETUP:

Material/Parts

Cleaning Compound, Solvent-Detergent (WP 0073, Item 3)
Cleaning Compound, Solvent-Detergent (WP 0073, Item 4)
Gloves, Disposable (WP 0073, Item 6)
Goggles, Industrial (WP 0073, Item 7)
Mask, Air Filtering (WP 0073, Item 8)
Pail, Utility (WP 0073, Item 10)
Rag, Wiping (WP 0073, Item 11)
Scraper, Baker's (WP 0073, Item 12)
Towelette, Cleaning (WP 0073, Item 17)

Personnel Required

92G Culinary Specialist (1)

References

TB MED 530

Equipment Condition

Daily startup complete (WP 0009)

SERVICE

Griddle Cleaning

WARNING

The initial cleaning of the griddle cooking surface should be done with the griddle on. Be careful not to touch hot surfaces during this portion of the cleaning operation. After the initial cleaning is completed, make sure griddle is off and surfaces are allowed to cool down prior to performing the final cleaning. Failure to follow this precaution can result in burn injury. Seek immediate medical attention if injury occurs.

During cleaning operations personnel may be exposed to chemicals or other hazardous materials. When performing this procedure personnel must wear mask, gloves, and goggles for protection. Failure to follow this warning may result in serious illness or death.

1. Empty grease drawer (Figure 1, Item 2) IAW unit SOP.
2. Position both griddle thermostats (Figure 1, Item 1) to 220°F (104.4ºC).
3. Wait for griddle to warm up then pour a small amount of water on the cooking surface to soften up any food debris.

CAUTION

Use a sharp scraper on the griddle cooking surface to remove food residue. Use care not to cut or scratch into the cooking surface with the scraper.

4. Use a scraper to clean the cooking surface.
5. When all food debris has been removed from the griddle cooking surface rotate both thermostat controls to the OFF position.

SERVICE – CONTINUED

CAUTION

Do not use abrasive cleaning compounds or solutions containing chloride, salts or acids on stainless steel surfaces. Never use abrasive scouring pads or wire brushes to remove food residue. These items can damage the finished surfaces of the appliance and cause premature corrosion.

NOTE

Refer to TB MED 530 for sanitation guidelines.

6. After griddle has cooled down use a damp cloth with a cleaning solution of warm water and mild dish detergent to clean griddle. For heavily soiled areas allow cleaning solution to soak and soften dried food deposits then use a plastic scouring pad if necessary.

CAUTION

Never submerge in or hose off appliance with water. Water can cause damage to electrical components and cause short circuits in wiring.

7. After griddle is clean use a clean damp cloth and warm water to rinse and wipe down griddle. Allow griddle to air dry.

8. Empty grease drawer IAW unit SOP and wash grease drawer in sanitation sink.

9. Install grease drawer.

CAUTION

Do not use stainless steel cleaner on the griddle cooking surface or controls.

10. Use stainless steel cleaner and a clean cloth to protect griddle exterior surfaces if desired.

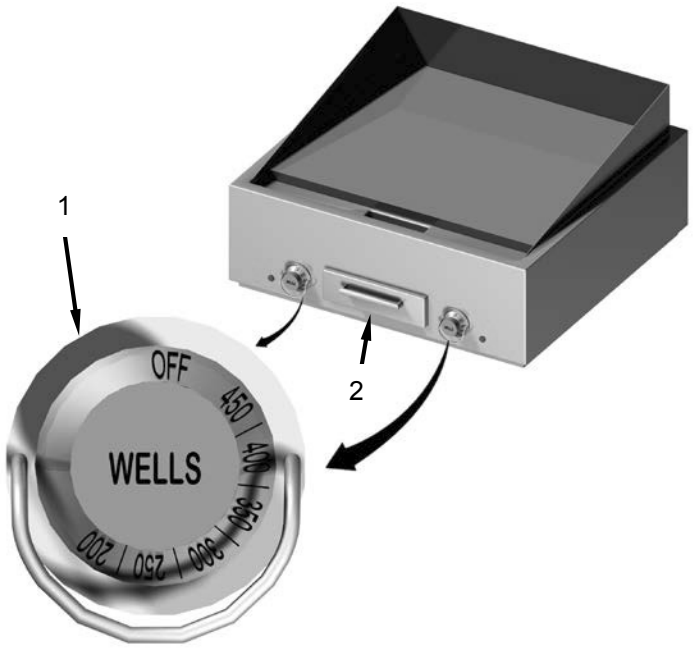


Figure 1. Griddle Cleaning.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

CONVECTION OVEN SERVICE

INITIAL SETUP:

Material/Parts

Cleaning Compound, Solvent-Detergent (WP 0073, Item 3)
Cleaning Compound, Solvent-Detergent (WP 0073, Item 4)
Cleaning Wipes, Stainless Steel (WP 0073, Item 17)
Gloves, Disposable (WP 0073, Item 6)
Goggles, Industrial (WP 0073, Item 7)
Mask, Air Filtering (WP 0073, Item 8)
Pad, Scouring (WP 0073Item 9)
Pail, Utility (WP 0073, Item 10)
Rag, Wiping (WP 0073, Item 11)
Towelette, Cleaning (WP 0073, Item 17)

Personnel Required

92G Culinary Specialist (1)

References

TB MED 530

Equipment Condition

Daily startup complete (WP 0009)

SERVICE

Convection Oven Cleaning

WARNING

The convection oven may be hot if it was recently used. Ensure that the convection oven is off and cool before performing maintenance. Failure to observe this warning may cause burns or other injury to personnel. Seek medical attention if any burns or other injury should occur.

1. Verify power switch (Figure 1, Item 3) is in OFF position and oven is cool.
2. Open door (Figure 1, Item 1) and remove all racks (Figure 1, Item 2) or pans from inside oven.
3. Use a dry cloth to remove any loose food debris from inside oven.

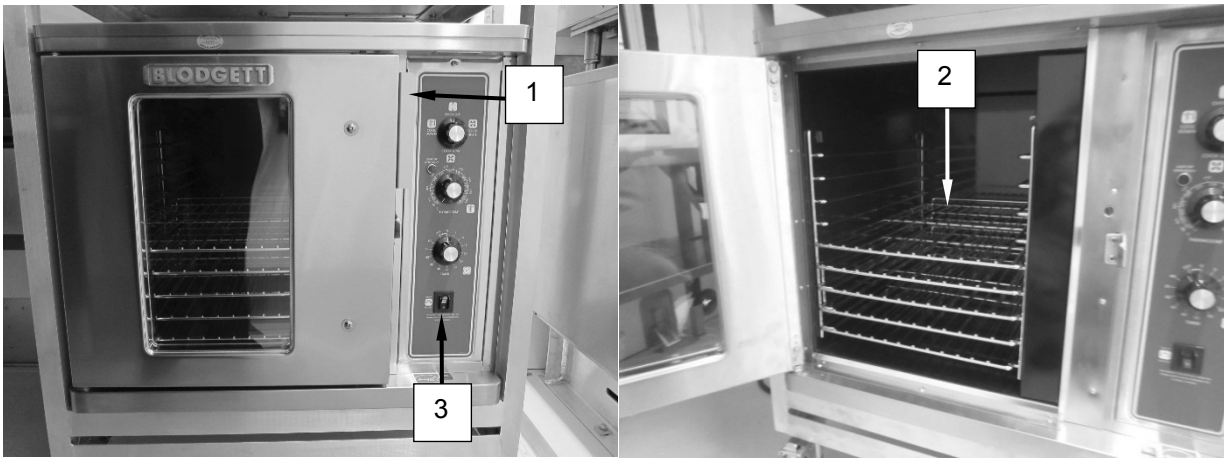


Figure 1. Convection Oven Cleaning.

SERVICE – CONTINUED

WARNING

During cleaning operations personnel may be exposed to chemicals or other hazardous materials. When performing this procedure personnel must wear mask, gloves, and goggles for protection. Failure to follow this warning may result in serious illness or death.

CAUTION

Do not use abrasive cleaning compounds or solutions containing chloride, salts or acids on stainless steel surfaces. Never use wire brushes or scrapers to remove food residue. These items can damage the finished surfaces of the appliance and cause premature corrosion.

NOTE

Refer to TB MED 530 for sanitation guidelines.

4. Use a damp cloth with a cleaning solution of warm water and mild dish detergent to clean interior and exterior of oven. For heavily soiled areas allow cleaning solution to soak and soften dried food deposits then use a plastic scouring pad if necessary.

CAUTION

Never submerge in or hose off appliance with water. Water can cause damage to electrical components and cause short circuits in wiring.

Do not use stainless steel cleaner on the oven interior, display, or controls.

5. After oven is clean use a clean damp cloth and warm water to rinse and wipe down oven interior and exterior. Allow oven to air dry.
6. Use stainless steel cleaner and a clean cloth to protect oven exterior surfaces if desired.
7. Clean racks or pans removed from oven in sanitization station with hot water and mild dish detergent. Rinse these items with water and allow to air dry.
8. Reinstall racks or pans into oven and close door.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

COOK AND HOLD OVEN SERVICE

INITIAL SETUP:

Material/Parts

Cleaning Compound, Solvent-Detergent (WP 0073, Item 3)
Cleaning Compound, Solvent-Detergent (WP 0073, Item 4)
Gloves, Disposable (WP 0073, Item 6)
Goggles, Industrial (WP 0073, Item 7)
Mask, Air Filtering (WP 0073, Item 8)
Pad, Scouring (WP 0073, Item 9)
Pail, Utility (WP 0073, Item 10)
Rag, Wiping (WP 0073, Item 11)
Towelette, Cleaning (WP 0073, Item 17)

Personnel Required

92G Culinary Specialist (1)

References

TB MED 530

Equipment Condition

Daily startup complete (WP 0009)

SERVICE

Cook and Hold Oven Cleaning

WARNING

The cook and hold oven may be hot if it was recently used. Ensure that the cook and hold oven is off and cool before performing maintenance. Failure to observe this warning may cause burns or other injury to personnel. Seek medical attention if any burns or other injury should occur.

CAUTION

Never submerge or hose off appliance with water. Water can cause damage to electrical components and cause short circuits in wiring.

Do not use abrasive cleaning compounds or solutions containing chloride, salts or acids on stainless steel surfaces. Never use wire brushes or scrapers to remove food residue. These items can damage the finished surfaces of the appliance and cause premature corrosion.

1. Verify power switch (Figure 1, Item 1) is in the OFF (O) position.
2. Open cook and hold oven door (Figure 1, Item 4).
3. Remove all shelves Figure 1, Item 2) and side racks (Figure 1, Item 3).
4. Use a dry cloth to remove any loose food debris from inside oven.

SERVICE – CONTINUED

WARNING

During cleaning operations personnel may be exposed to chemicals or other hazardous materials. When performing this procedure personnel must wear mask, gloves, and goggles for protection. Failure to follow this warning may result in serious illness or death.

CAUTION

Do not use abrasive cleaning compounds or solutions containing chloride, salts or acids on stainless steel surfaces. Never use wire brushes or scrapers to remove food residue. These items can damage the finished surfaces of the appliance and cause premature corrosion.

NOTE

Refer to TB MED 530 for sanitation guidelines.

5. Use a damp cloth with a cleaning solution of warm water and mild dish detergent to clean interior and exterior of oven. For heavily soiled areas allow cleaning solution to soak and soften dried food deposits then use a plastic scouring pad if necessary.

CAUTION

Never submerge in or hose off appliance with water. Water can cause damage to electrical components and cause short circuits in wiring.

Do not use stainless steel cleaner on the oven interior, display, or controls.

6. After oven is clean use a clean damp cloth and warm water to rinse and wipe down oven interior and exterior. Allow oven to air dry.
7. Use stainless steel cleaner and a clean cloth to protect oven exterior surfaces if desired.
8. Clean shelves and side racks with hot water and mild dish detergent. Rinse these items with water and allow to air dry.
9. Reinstall side racks, and shelves into cook and hold oven and close door.

Figure 1. Cook and Hold Oven Cleaning.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

SANITATION SINK
SERVICE

INITIAL SETUP:

Material/Parts

Cleaning Compound, Solvent-Detergent (WP 0073, Item 3)
Cleaning Compound, Solvent-Detergent (WP 0073, Item 4)
Gloves, Disposable (WP 0073, Item 6)
Goggles, Industrial (WP 0073, Item 7)
Mask, Air Filtering (WP 0073, Item 8)
Pad, Scouring (WP 0073, Item 9)
Pail, Utility (WP 0073, Item 10)
Rag, Wiping (WP 0073, Item 11)
Towelette, Cleaning (WP 0073, Item 17)

Personnel Required

92G Culinary Specialist (1)

References

TB MED 530

Equipment Condition

Daily startup complete (WP 0009)

SERVICE

Sanitation Sink Cleaning

1. Verify immersion heater control (Figure 1, Item 7) is in OFF position.

CAUTION

Do not allow large pieces of food or other debris to go down sink drains. Debris will clog flow restrictor at inlet of grease trap and prevent water from draining out of sinks.

2. Verify any large food debris is removed from all three sink strainers (Figure 1, Item 8).

WARNING

Water temperature in sanitation sinks can exceed 170°F (76.67ºC). Before draining water, monitor temperature with sink thermometer to determine if cold water should be added prior to opening sink drains. Failure to follow this warning may result in serious burn injury to personnel. Seek immediate medical attention if injury occurs.

3. Remove strainers from all three sinks (Figure 1, Item 2) and allow all residual water to drain.

SERVICE – CONTINUED

WARNING

During cleaning operations personnel may be exposed to chemicals or other hazardous materials. When performing this procedure personnel must wear mask, gloves, and goggles for protection. Failure to follow this warning may result in serious illness or death.

CAUTION

Never hose electrical panel on sanitation sink off with water. Water can cause damage to electrical components and cause short circuits in wiring.

Do not use abrasive cleaning compounds or solutions containing chloride, salts or acids on stainless steel surfaces. Never use wire brushes or scrapers to remove food residue. These items can damage the finished surfaces of the sink and cause premature corrosion.

NOTE

Refer to TB MED 530 for sanitation guidelines.

4. Use a damp cloth with a cleaning solution of warm water and mild dish detergent to clean sink rack (Figure 1, Item 3), backsplash (Figure 1, Item 4), exterior sides (Figure 1, Item 5), and exterior front doors, (Figure 1, Item 6). For heavily soiled areas allow cleaning solution to soak and soften dried food deposits then use a plastic scouring pad if necessary.

5. Use a damp cloth with a cleaning solution of warm water and mild dish detergent to clean inside and tops of sinks. For heavily soiled areas allow cleaning solution to soak and soften dried food deposits then use a plastic scouring pad if necessary.

6. Use water from faucet (Figure 1, Item 1) as necessary to rinse out sinks.

7. After sanitation sink is clean use a clean damp cloth and warm water to rinse and wipe down sink exterior. Allow to air dry.

8. Use stainless steel cleaner and a clean cloth to protect sanitation sink exterior surfaces if desired. Do not use this cleaner on the sink basins or controls.

9. Install strainers.

SERVICE – CONTINUED

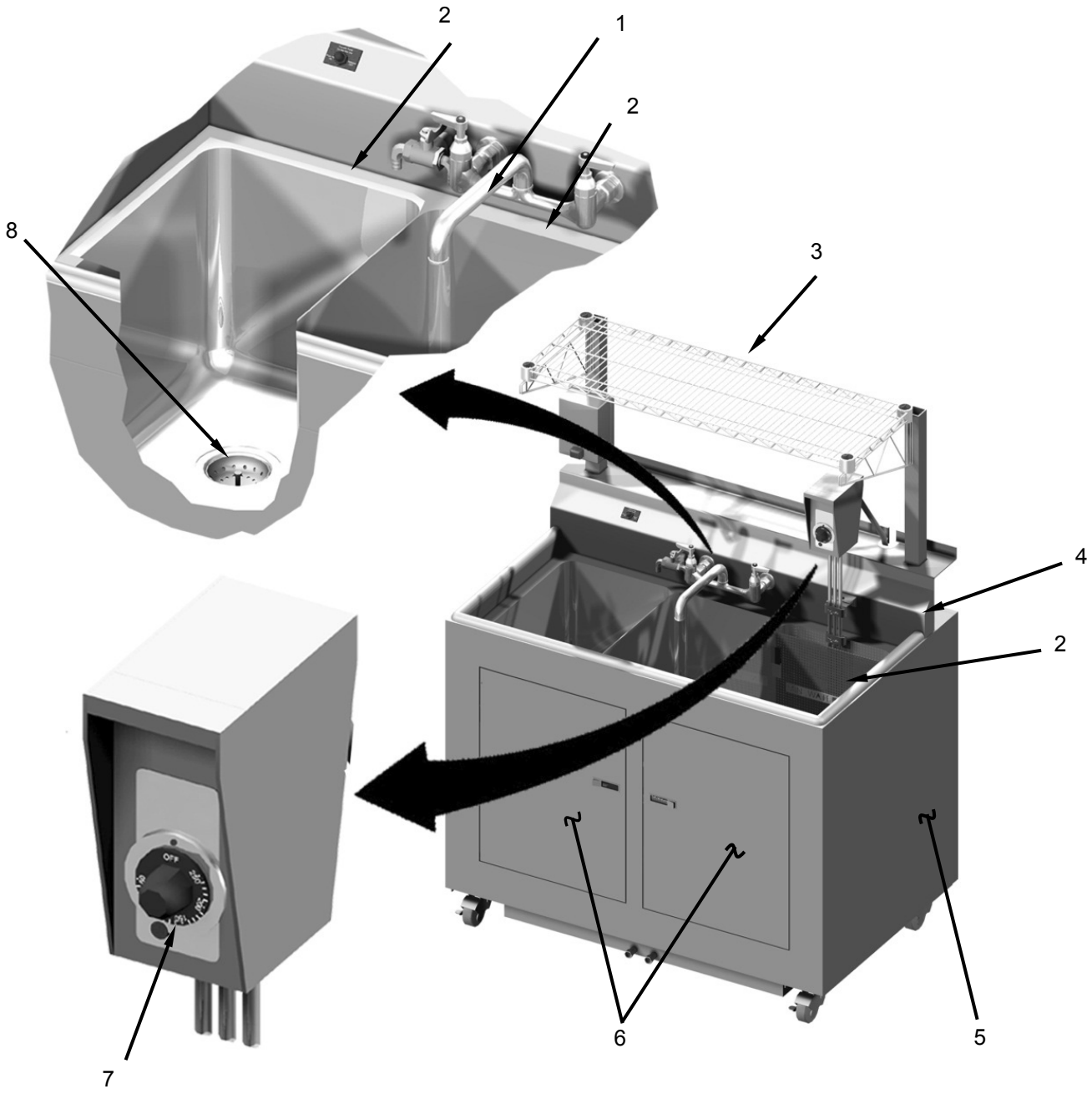


Figure 1. Sanitation Sink Cleaning.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

SANITATION SINK
REMOVE/INSTALL

INITIAL SETUP:

Material/Parts

Goggles, Industrial (WP 0073, Item 7)
Rag, Wiping (WP 0073, Item 11)
Storage Container (WP 0073, Item 15)

Personnel Required

92G Culinary Specialist (1)

References

WP 0008

Equipment Condition

Daily startup complete (WP 0009)

REMOVE

WARNING

Precautions must be taken when working with pressurized water systems. Residual pressure must be vented or isolated to prevent release before hoses, fittings, or equipment are connected or disconnected. Failure to follow this warning may result in personal injury. Seek immediate medical attention if injury occurs.

1. Remove items on spice rack (Figure 1, Item 2) and utility table (Figure 1, Item 3).
2. Loosen two screws (Figure 1, Item 1) securing spice rack to ETKS wall and remove spice rack.
3. Remove utility table.

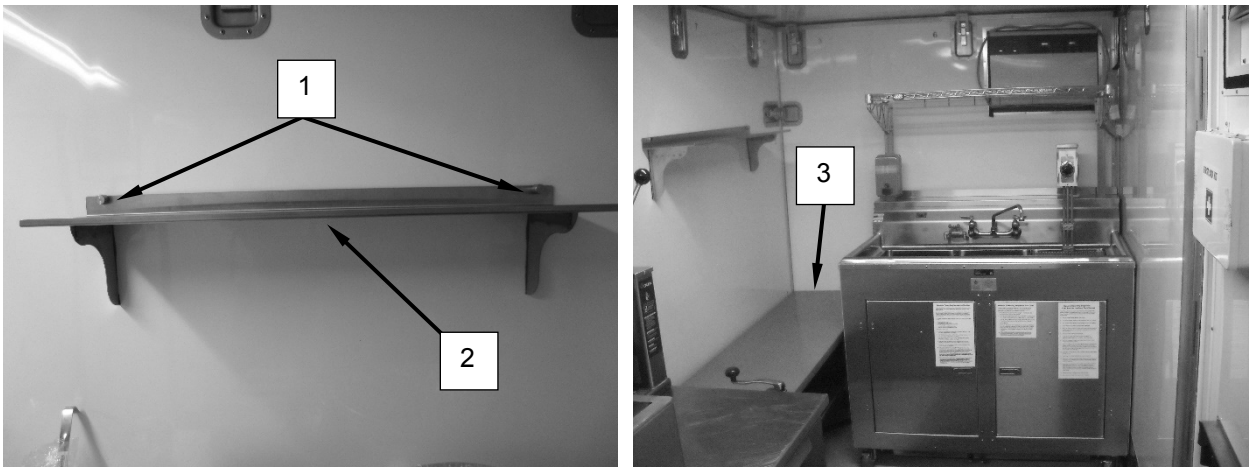


Figure 1. Spice Rack and Utility Table.

REMOVE – CONTINUED

4. Close water valve (Figure 2, Item 3) on SOURCE water bag (Figure 2, Item 2).

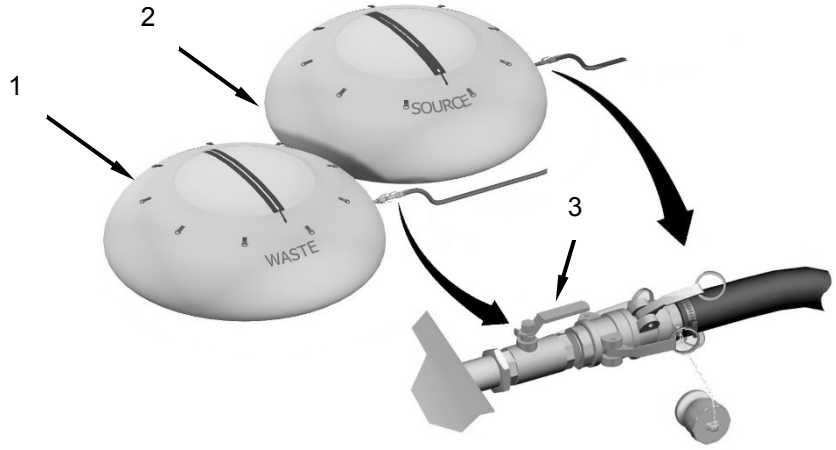


Figure 2. SOURCE and WASTE Water Bags.

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

5. Push in on latch (Figure 3, Item 1) to open sanitation sink circuit breaker panel door.

6. Turn off immersion heater circuit breaker (Figure 3, Item 3) and hot water heater circuit breaker (Figure 3, Item 2).

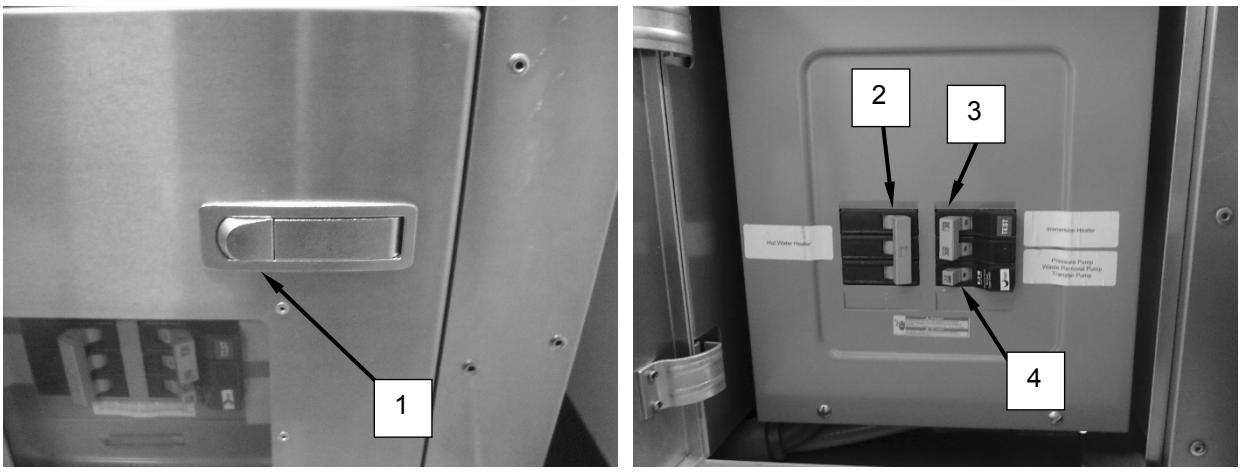


Figure 3. Sanitation Sink Circuit Breakers.

REMOVE – CONTINUED

CAUTION

Emptying the hot water heater of water with the elements energized may cause damage. Always ensure the hot water heater circuit breaker is off before draining the heater.

Operating the pressure pump with no water in the lines may cause premature failure of the pump. Do not run the pressure pump for any period of time without water.

7. Open the hot and cold water valves (Figure 4, Items 2 and 3) on the sanitation sink until no water flows from faucet (Figure 4, Item 1) then close valves.

8. Immediately turn off pump circuit breaker (Figure 3, Item 4).

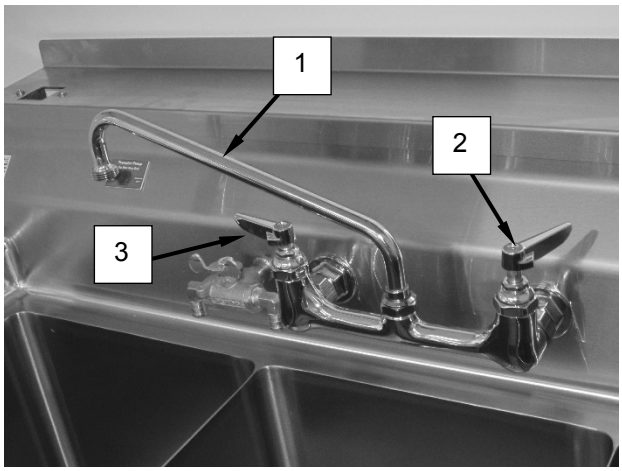


Figure 4. Hot and Cold Water Valves.

9. Close water valve (Figure 2, Item 3) on WASTE water bag (Figure 2, item 1).

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

10. Open ETKS circuit breaker panel door (Figure 5, Item 1).

11. Position sanitation sink circuit breaker (P1, CB 11, 13, 15) (Figure 5, Item 2) to OFF.

REMOVE – CONTINUED

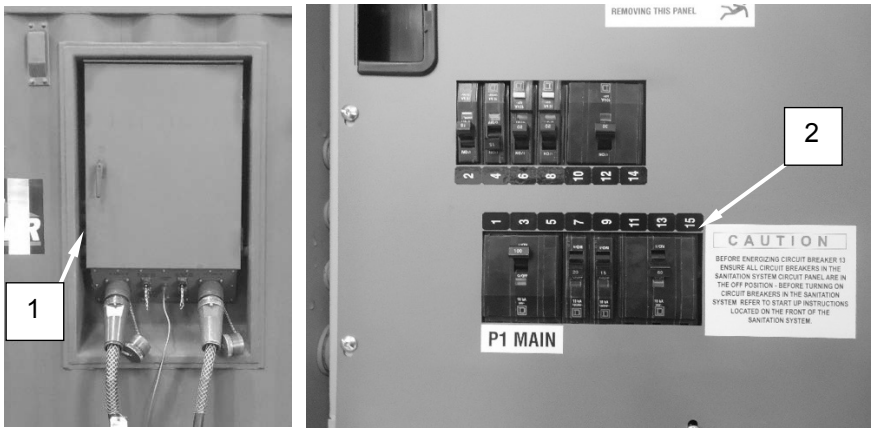


Figure 5. Sanitation Sink Circuit Breaker.

NOTE

A container may be placed under the water hoses to reduce the amount of water that needs to be cleaned up.

12. Disconnect power cable dust cover (Figure 6, Item 11) from receptacle dust cover (Figure 6, Item 9).
13. Disconnect hose plugs (Figure 6, Item 1) from water port dust covers (Figure 6, Items 7 and 8).
14. Disconnect power cable (Figure 6, Item 10), waste hose (Figure 6, Item 3), and source water hose (Figure 6, Item 2) from right side of the refrigerator.
15. Install dust cover (Figure 6, Item 11) to power cable.
16. Place power cable over the sanitation sink so that it is out of the way.
17. Install plugs (Figure 6, Item 1) to source water hose and waste hose.
18. Install dust cover (Figure 6, Item 9) to receptacle (Figure 6, Item 4).
19. Install dust cover (Figure 6, Item 8) to waste water port (Figure 6, Item 5).
20. Install dust cover (Figure 6, Item 7) to source water port (Figure 6, Item 6).

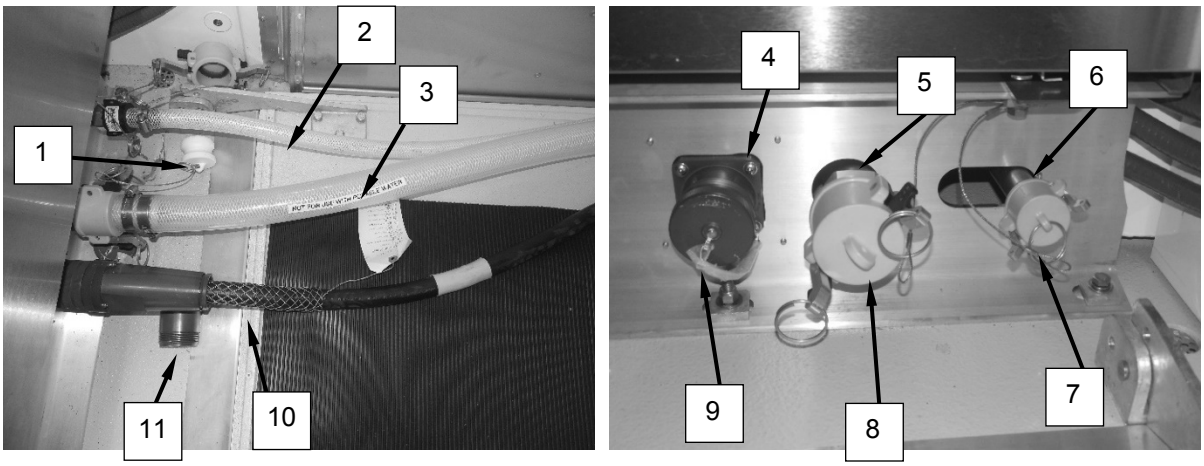


Figure 6. Sanitation Sink Power Cable and Hoses.

REMOVE – CONTINUED

21. Release foot locks (Figure 7, Item 1) on sanitation sink castors.
22. Roll sink away from the ETKS wall to access the rear hose connections.
23. Disconnect source hose (Figure 7, Item 3) and waste hose (Figure 7, Item 2).
24. Drain hoses outside of ETKS.
25. Install plugs to hoses and store in a suitable area.
26. Wipe up any residual water.

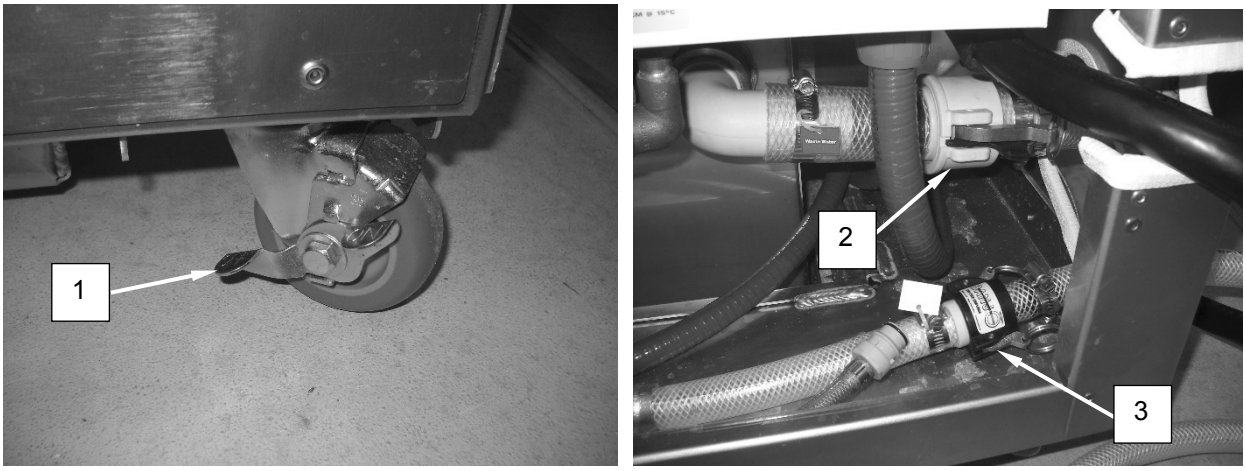


Figure 7. Remove Sanitation Sink Hoses.

END OF TASK

INSTALL

NOTE

All valves in Figure 8 are shown in their closed positions.

1. Verify hot water heater drain valve (Figure 8, Item 3) is closed by positioning it to the right of the valve.
2. Verify transfer pump drain valve (Figure 8, Item 1) is closed by rotating clockwise until it no longer turns.
3. Verify ancillary supply valve (Figure 8, Item 4) is closed by positioning it straight up and down.
4. Verify coffee pot valve (Figure 8, Item 2) is closed by positioning it straight up and down.

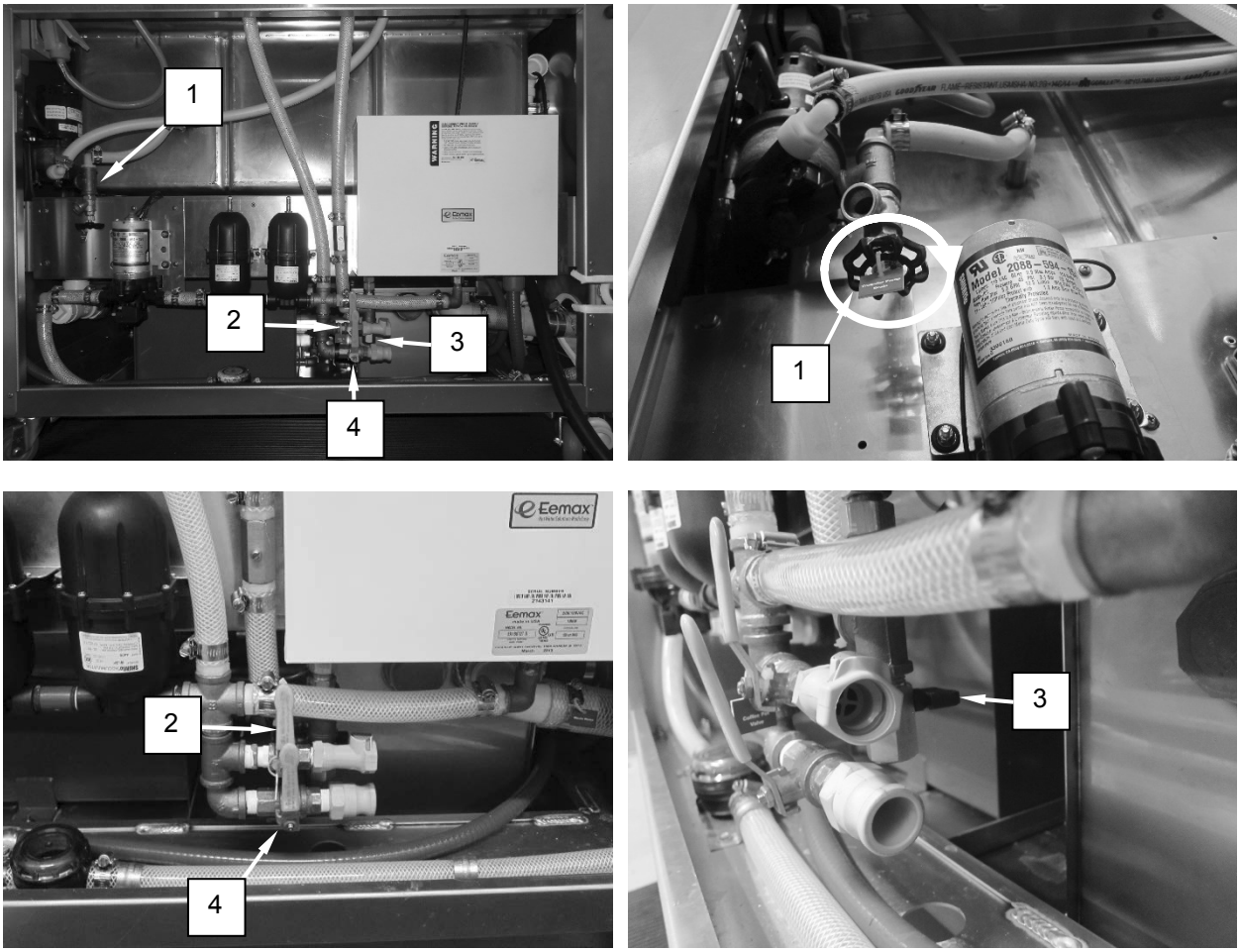


Figure 8. Sanitation Sink Valves.

5. Remove plugs from waste hose and source hose.

INSTALL – CONTINUED

6. Install source hose (Figure 9, Item 3) and waste hose (Figure 9, Item 1) to sanitation sink.
7. Roll sink towards the ETKS end wall.
8. Lock castors with foot locks (Figure 9, Item 2).

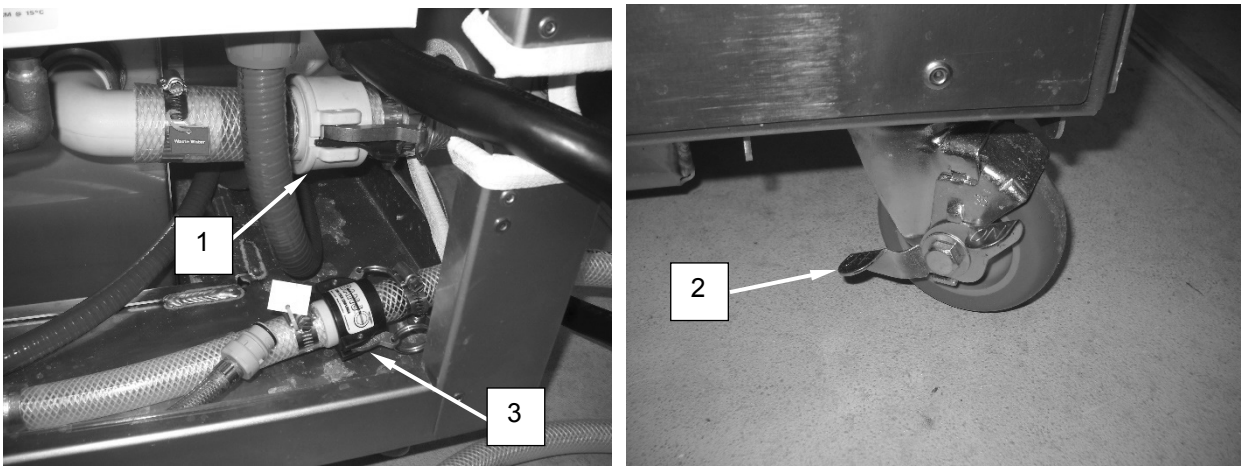


Figure 9. Install Hoses to Sanitation Sink.

9. Remove dust cover (Figure 10, Item 11) from receptacle (Figure 10, Item 1).
10. Remove dust cover (Figure 10, Item 10) from waste water port (Figure 10, Item 2).
11. Remove dust cover (Figure 10, Item 9) from source water port (Figure 10, Item 3).
12. Remove dust cover (Figure 10, Item 8) from power cable (Figure 10, Item 7).
13. Connect source water hose (Figure 10, Item 5) to source water port (Figure 10, Item 3).
14. Connect waste hose (Figure 10, Item 6) to waste water port (Figure 10, Item 2).
15. Connect power cable (Figure 10, Item 7) to receptacle (Figure 10, Item 1).
16. Connect hose plugs (Figure 10, Item 4) to water port dust covers (Figure 10, Items 9 and 10).
17. Connect power cable dust cover (Figure 10, Item 8) to receptacle dust cover (Figure 10, Item 11).

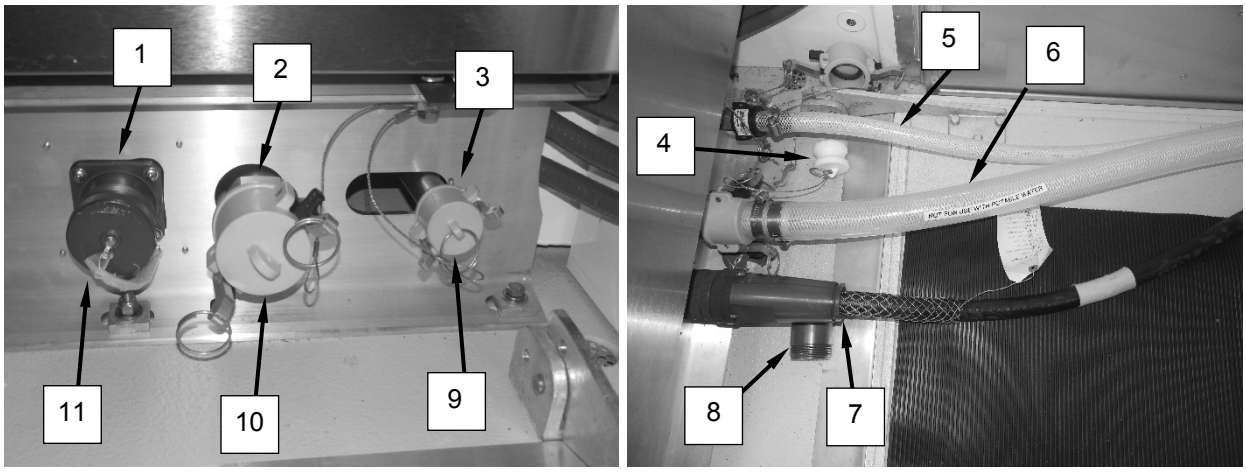


Figure 10. Install Sanitation Sink Power Cable and Hoses.

INSTALL – CONTINUED

18. Install utility table (Figure 11, Item 1).

19. Install spice rack (Figure 11, Item 3) to ETKS wall and secure with two screws (Figure 11, Item 2).

20. Return any items to utility table or spice rack that were removed.

Figure 11. Install Utility Table and Spice Rack.

WARNING

High voltage is present at the circuit breaker panel. Contact with energized connections may result in serious personal injury or death. Use extreme caution when working inside and seek immediate medical attention if injury occurs.

21. Open circuit breaker panel door (Figure 12, Item 1).

22. Position sanitation sink circuit breaker (P1, CB 11, 13, 15) (Figure 12, Item 2) to ON.

23. Close and secure circuit breaker panel door.

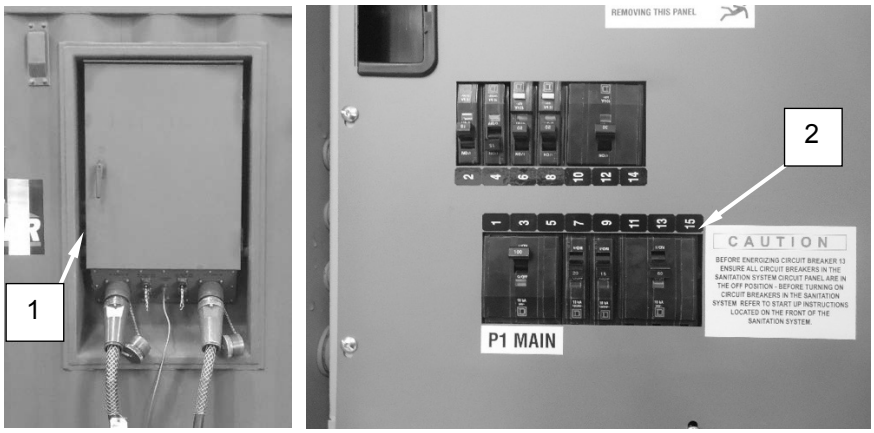


Figure 12. Sanitation Sink Circuit Breaker.

INSTALL – CONTINUED

24. Open water valve (Figure 13, Item 3) on WASTE water bag (Figure 13, item 1).
25. Open water valve (Figure 13, Item 3) on SOURCE water bag (Figure 13, Item 2).
26. Perform “Prime Water System” IAW WP 0008.

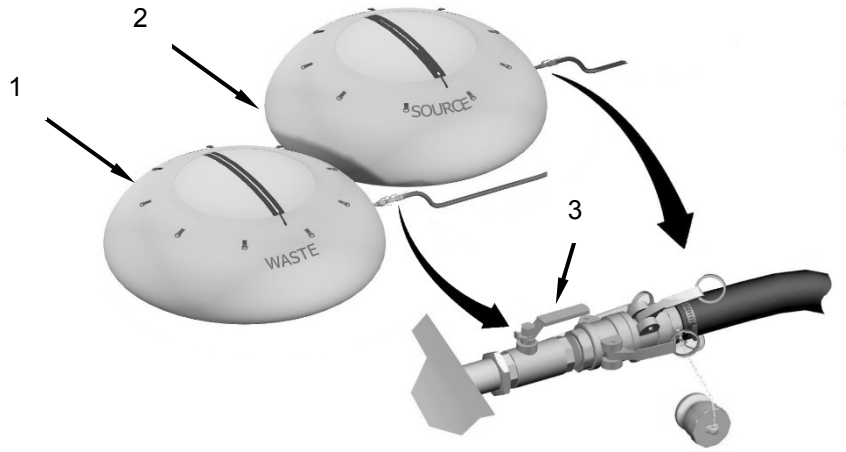


Figure 13. SOURCE and WASTE Water Bags.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

SANITATION SINK
REPAIR

INITIAL SETUP:

Personnel Required	Equipment Condition
92G Culinary Specialist (1)	Sanitation sink removed (WP 0063)

REPAIR

Replace Immersion Heater

1. Unplug immersion heater power cable (Figure 1, Item 2) from immersion heater receptacle (Figure 1, Item 1).

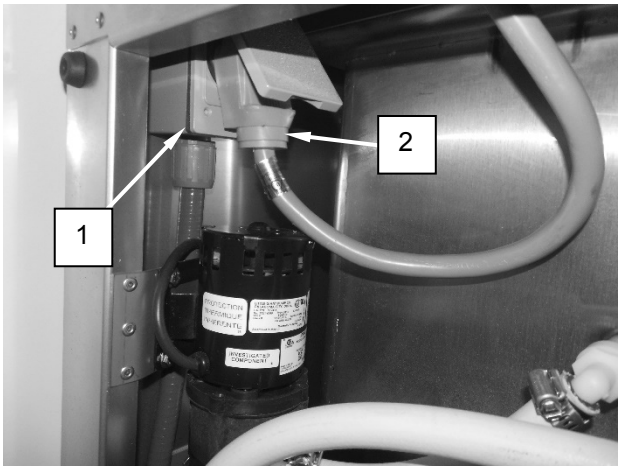


Figure 1. Immersion Heater Receptacle.

2. Remove immersion heater shield (Figure 2, Item 1) by gently pulling up on the water heat shield and dislodging it from its holder (Figure 2, Item 2).

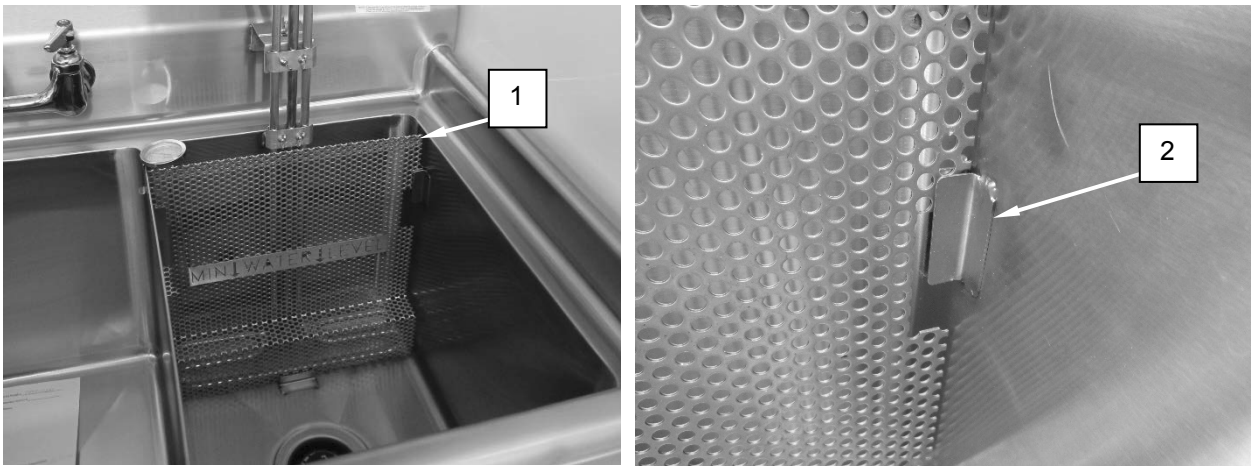


Figure 2. Water Heater Shield.

REPAIR – CONTINUED

3. While holding immersion heater in place, remove four wing nuts (Figure 3, Item 1) and two brackets (Figure 3, Item 2).

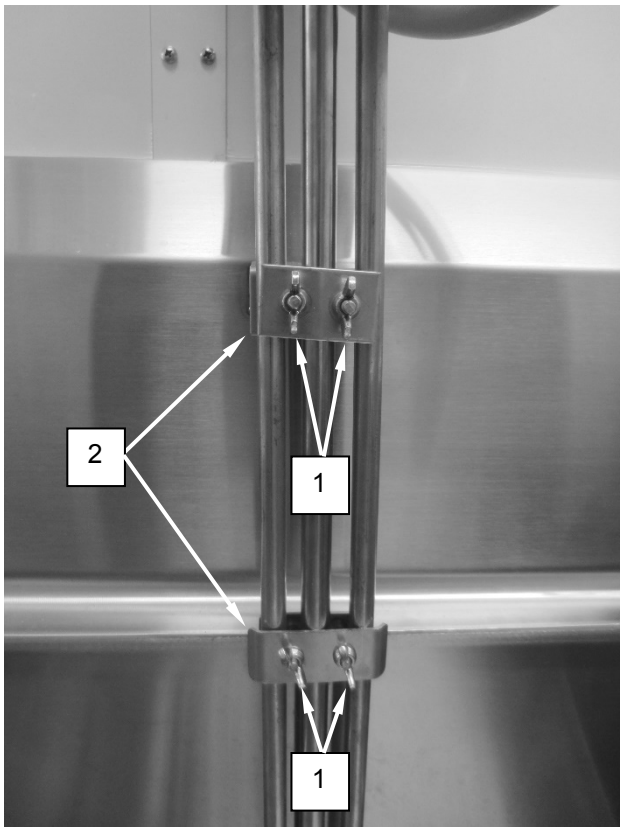


Figure 3. Immersion Heater Hardware.

4. Remove defective immersion heater.

5. Align replacement immersion heater and secure with four wing nuts (Figure 3, Item 1) and two brackets (Figure 3, Item 2).

6. Install immersion heat shield (Figure 2, Item 1).

7. Life cover from receptacle (Figure 1, Item 1) and plug in immersion heater power cable.

8. Install sanitation sink IAW WP 0063.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

SANITATION SINK SOAP DISPENSER SERVICE

INITIAL SETUP:

Material/Parts

Soap, Antibacterial (WP 0073, Item 13)

Personnel Required

92G Culinary Specialist (1)

Equipment Condition

Daily startup complete (WP 0009)

SERVICE

Fill Soap Dispenser

1. Remove soap dispenser (Figure 1, Item 4) from sanitation sink mounting provision (Figure 1, Item 2).
2. Insert key (Figure 1, Item 1) into slot (Figure 1, Item 5) then raise lid (Figure 1, Item 3).
3. Fill container with soap.
4. Close lid on top of container by pressing down on lid until a click is heard.
5. Install soap dispenser on sanitation sink mounting provision.

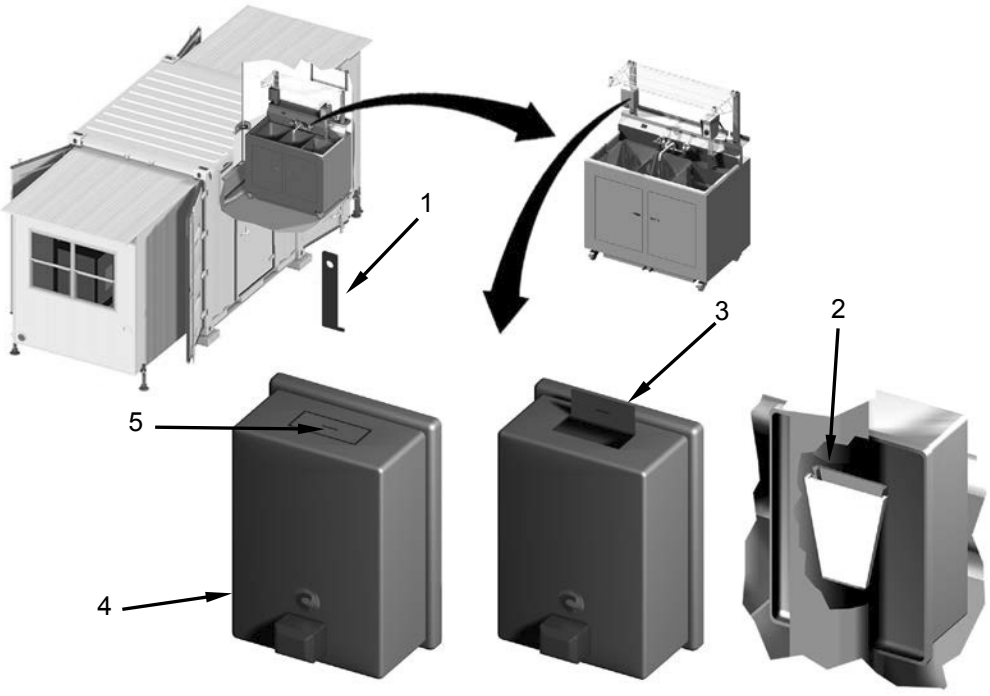


Figure 1. Soap Dispenser Servicing.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

SANITATION SINK GREASE TRAP SERVICE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's (7-Piece) (WP 0071, Table 2, Item 58)

Material/Parts

Absorbent Material, Oil and Water (WP 0073, Item 1)
Cleaning Compound, Solvent-Detergent (WP 0073, Item 4)
Gloves, Disposable (WP 0073, Item 6)
Pail, Utility (WP 0073, Item 10)
Scraper, Baker's (WP 0073, Item 12)
Storage Container (WP 0073, Item 15)

Personnel Required

92G Culinary Specialist (1)

Equipment Condition

Daily startup complete (WP 0009)

SERVICE

Clean Grease Trap

1. Ensure each sink basin on the sanitation sink is either empty or stopped with a drain plug.
2. Open the sanitation sink right door and locate the grease trap (Figure 1, Item 1).
3. Remove the bolt (Figure 1, Item 2) securing the grease trap lid and remove the lid.

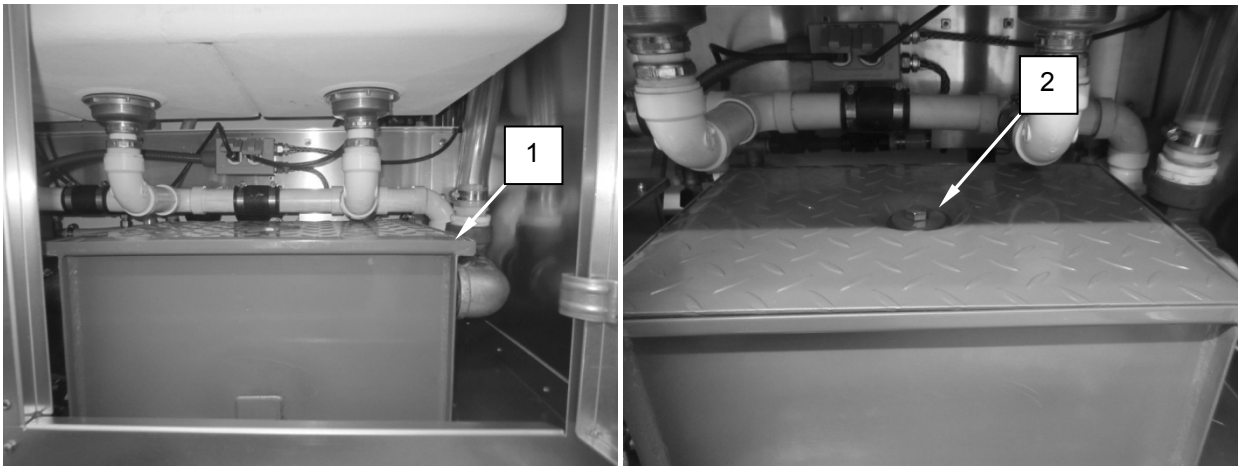


Figure 1. Sanitation Sink Grease Trap.

SERVICE – CONTINUED

4. Place absorbent mats around grease trap to soak up any spilled water, oils, grease, or food particles.

5. Place absorbent mats in a container to soak up grease, oil, or water that will be removed from the grease trap. The mats will function as a stabilizer for the bag.

6. Using a scraper, remove residual grease or food particles from the lid.

7. Using a small container, scoop out any water from the grease trap.

8. Using a small container and a scraper, remove any grease, oils, or food particles from the grease trap.

9. Once the bulk of the foreign material has been removed from the grease trap, clean the interior of the grease trap and lid with a solvent cleaning compound.

10. Align the grease trap lid to the grease trap and secure with bolt (Figure 1, Item 2).

11. Close sanitation sink right door.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

SANITATION SINK PRESSURE PUMP STRAINER SERVICE

INITIAL SETUP:

Personnel Required	Equipment Condition
92G Culinary Specialist (1)	Sanitation sink removed (WP 0063)

SERVICE

Clean Strainer

1. Rotate cap (Figure 1, Item 1) on pressure pump strainer counter-clockwise and remove cap.
2. Remove mesh screen (Figure 1, Item 2) from strainer.
3. Rinse mesh screen with potable water until all debris has been removed.
4. Install mesh screen into strainer.
5. Rotate pressure pump strainer cap clockwise to secure cap.
6. Install sanitation sink IAW WP 0063.

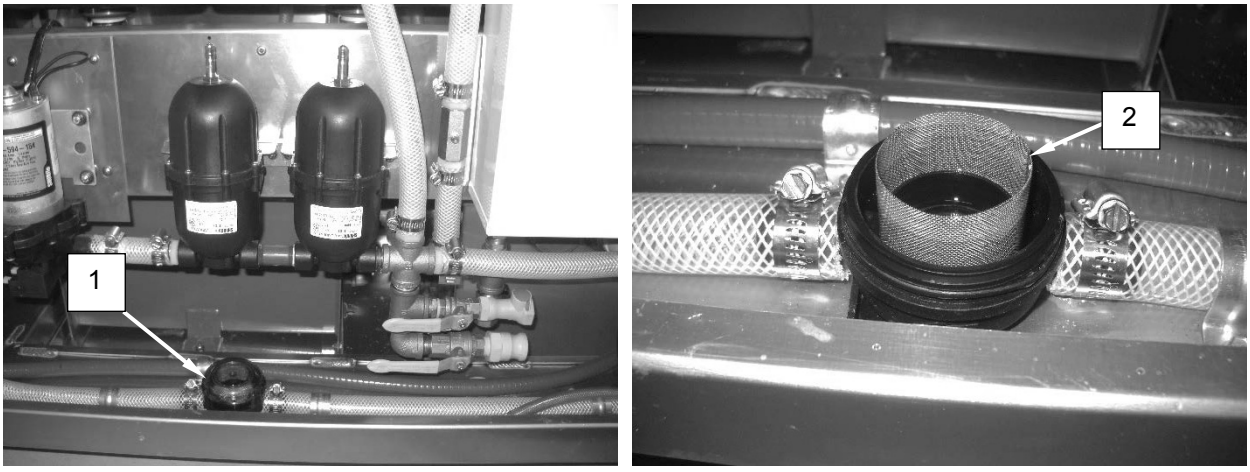


Figure 1. Clean Strainer.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

CAN OPENER
SERVICE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's (7-Piece) (WP 0071, Table 2, Item 58)

Material/Parts

Gloves, Disposable (WP 0073, Item 6)
Rag, Wiping (WP 0073, Item 11)
Soap, Antibacterial (WP 0073, Item 13)
Vegetable Oil (WP 0073, Item 18)
Wool, Metallic (WP 0073, Item 20)

Personnel Required

92G Culinary Specialist (1)

Reference

TB MED 530

Equipment Condition

Daily startup complete (WP 0009)

SERVICE

Clean Can Opener

1. Ensure can opener assembly (Figure 1, Item 3) is secured in can opener base (Figure 1, Item 2).
2. Lift handle (Figure 1, Item 1) to vertical position.

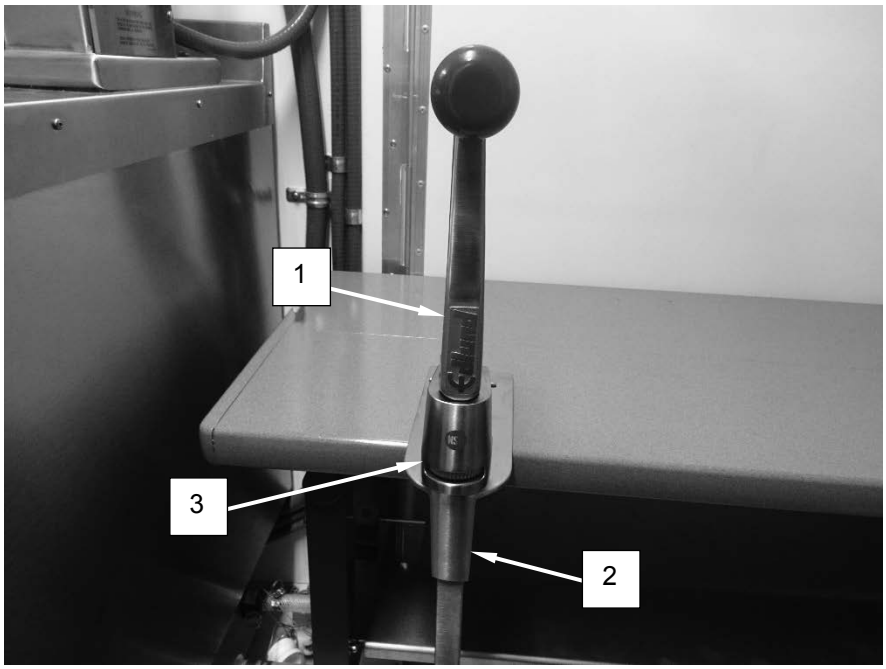


Figure 1. Lift Handle.

SERVICE – CONTINUED

3. Pull pin (Figure 2, Item 1) and remove knife holder assembly (Figure 2, Item 2).

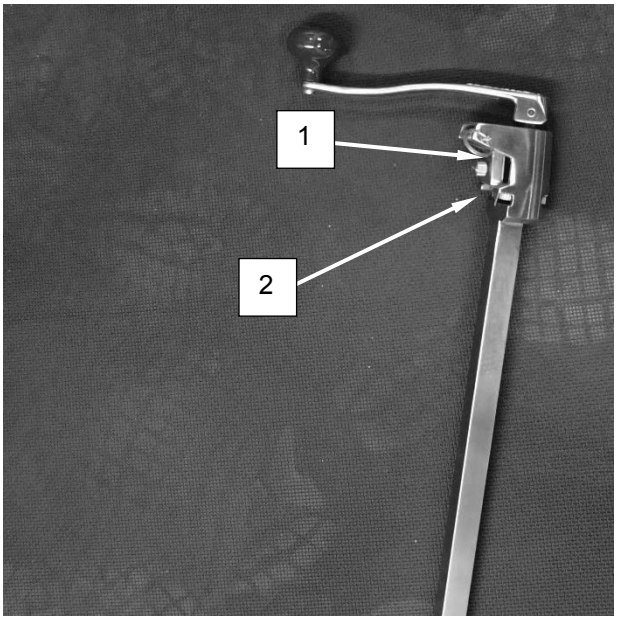


Figure 2. Remove Knife Holder Assembly.

4. Remove knurled screw (Figure 3, Item 2) securing knife (Figure 3, Item 1) to knife holder assembly.

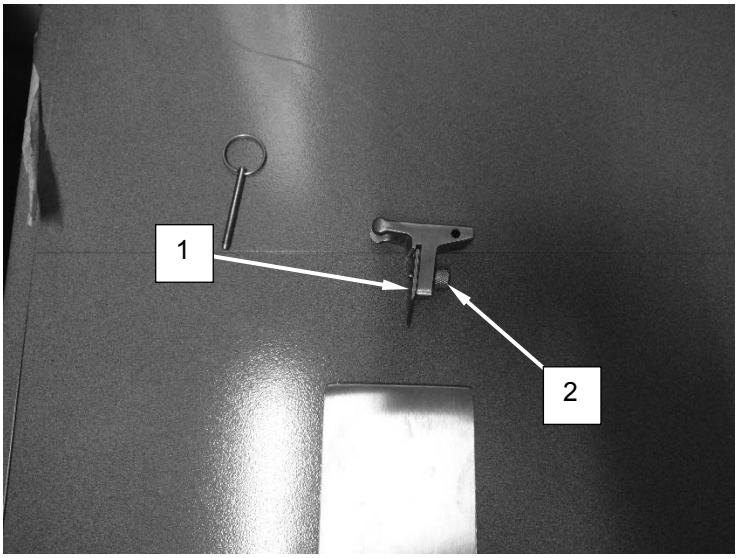


Figure 3. Remove Knife.

SERVICE – CONTINUED

5. Lower handle (Figure 4, Item 1) to horizontal position.

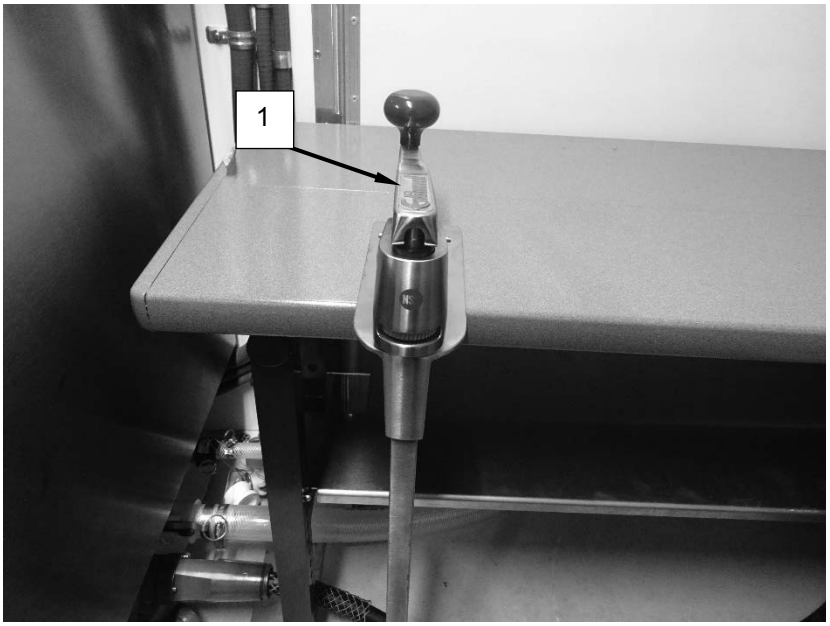


Figure 4. Lower Handle.

6. From the front, wedge the gear (Figure 5, Item 1) and turn handle counter-clockwise and remove handle and arbor.

7. Remove gear (Figure 5, Item 1), spring (Figure 5, Item 3) and bushing (Figure 5, Item 2).

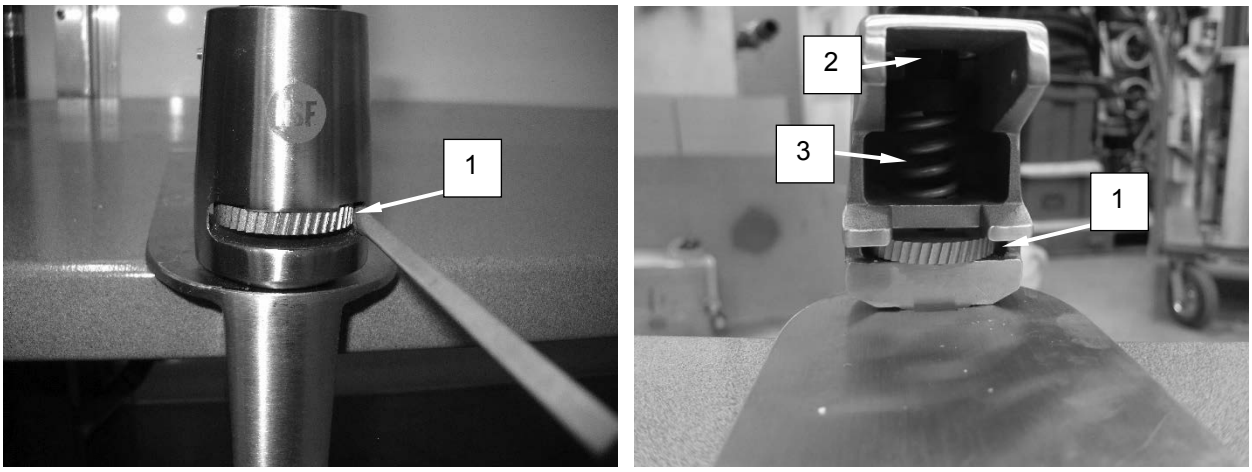


Figure 5. Remove Spring, Gear, and Bushing.

SERVICE – CONTINUED

8. Loosen can opener base screw (Figure 6, Item 1) and remove the base from mounting location.

NOTE

Refer to TB MED 530 for sanitation guidelines.

9. Clean all components in soap and water, using steel wool as necessary to remove any remaining food from components.

10. Dry all components with clean rags.

11. Coat the gear and knife with vegetable oil.

12. Mount base to table and tighten can opener base screw (Figure 6, Item 1).

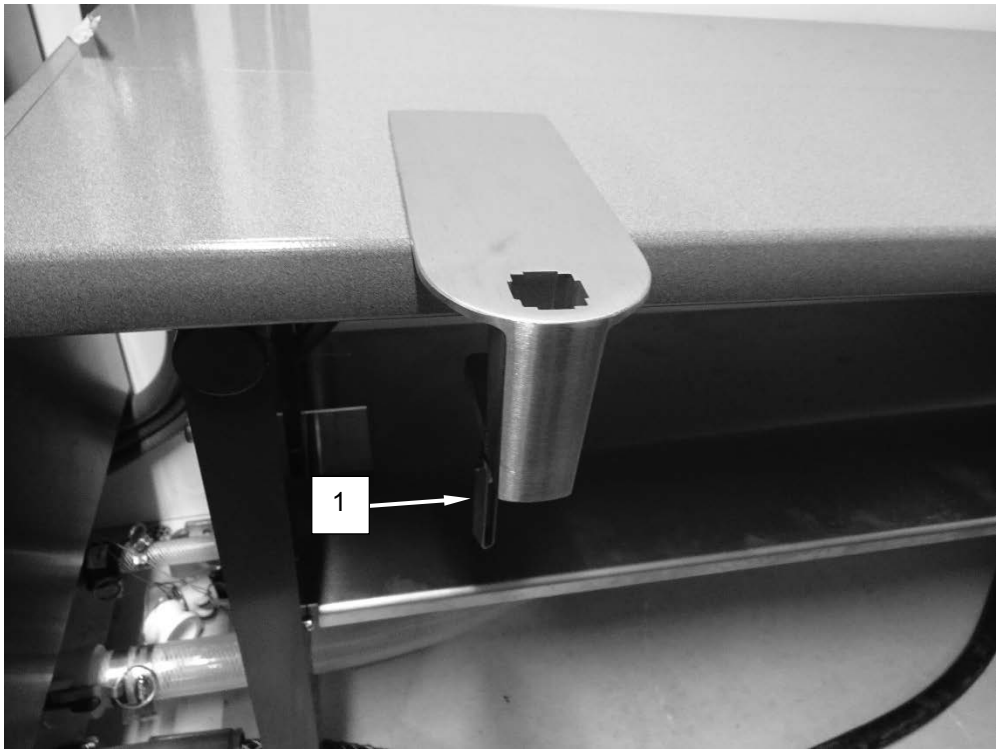


Figure 6. Can Opener Base.

SERVICE – CONTINUED

13. Slide can opener into base.

NOTE

When installing gear, ensure the “UP” stamp on the gear is facing the handle of the can opener.

14. Align gear (Figure 7, Item 2), spring (Figure 7, Item 3) and bushing (Figure 7, Item 1).

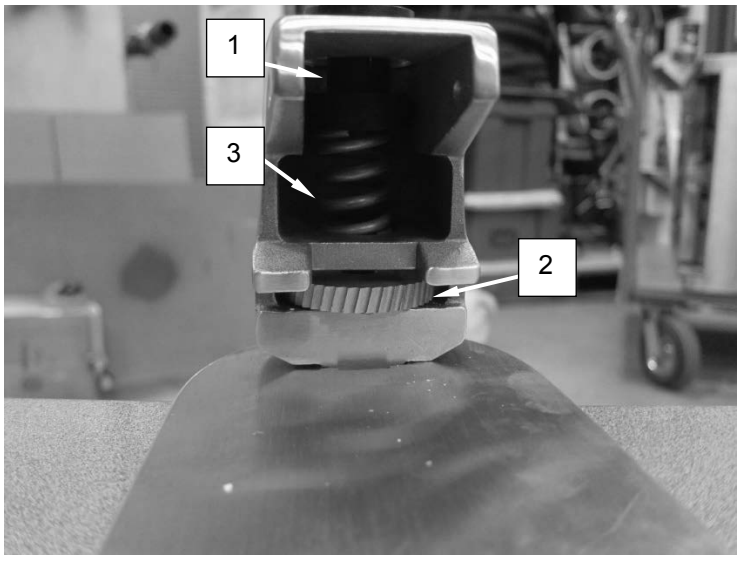


Figure 7. Align Gear, Spring and Bushing.

15. Insert handle and arbor (Figure 8, Item 1) through center of bushing (Figure 8, Item 2) and spring (Figure 8, Item 3). Hold the gear (Figure 8, Item 4) and thread the handle and arbor (Figure 8, Item 1) assembly into the gear (Figure 8, Item 4).

16. Wedge the gear (Figure 8, Item 4) and turn handle (Figure 8, Item 1) clockwise to secure the handle and arbor to the can opener.

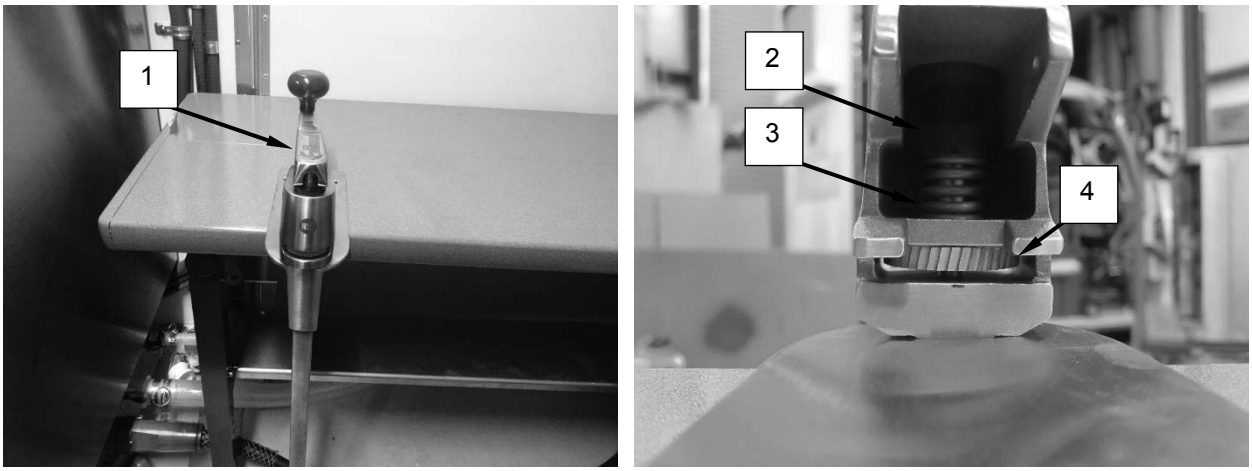


Figure 8. Secure Handle and Arbor.

SERVICE – CONTINUED

17. Lift handle (Figure 9, Item 1) to vertical position.

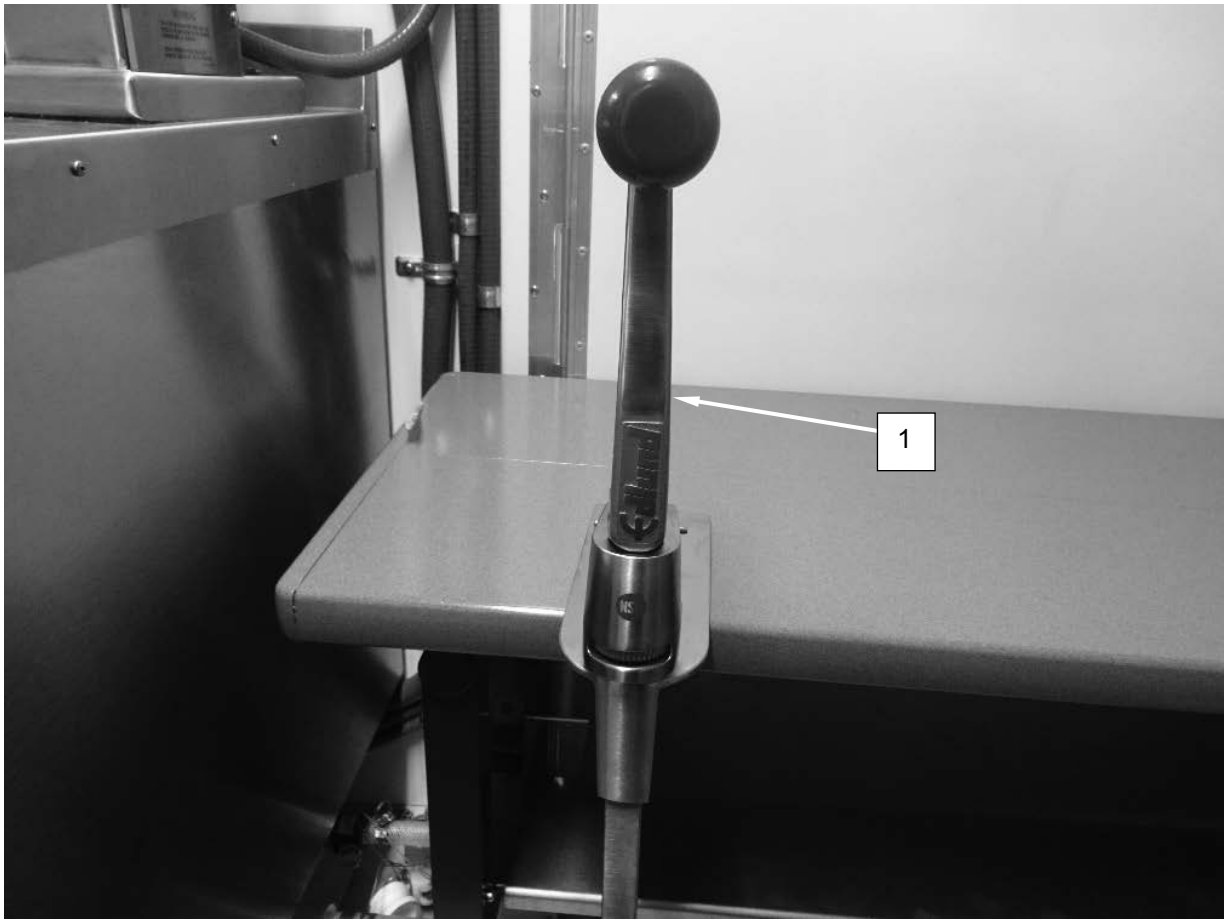


Figure 9. Lift Handle.

SERVICE – CONTINUED

18. Secure knife (Figure 10, Item 1) to knife holder and secure with knurled screw (Figure 10, Item 2).

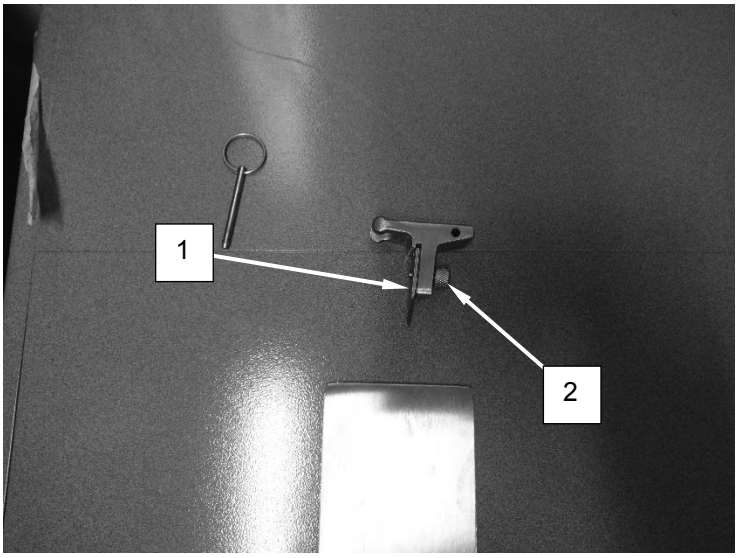


Figure 10. Install Knife.

19. Slide knife holder (Figure 11, Item 2) into position and secure with pin (Figure 11, Item 1).

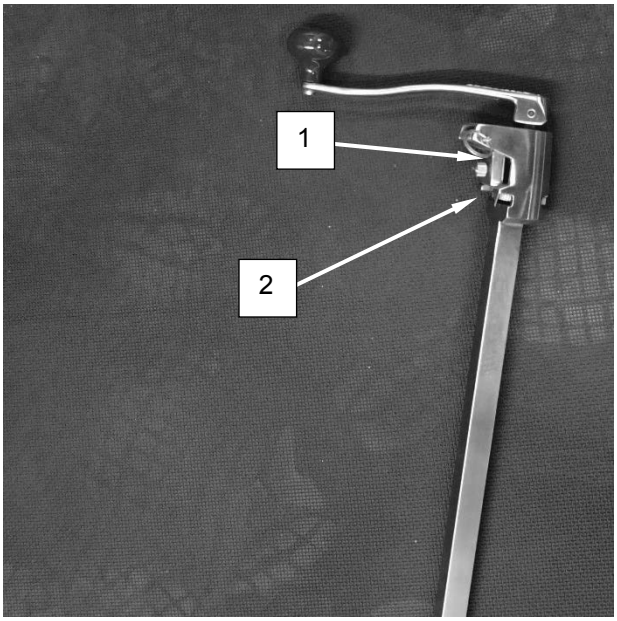


Figure 11. Install Knife Holder Assembly.

SERVICE – CONTINUED

20. Lower handle (Figure 12, Item 1) to horizontal position.

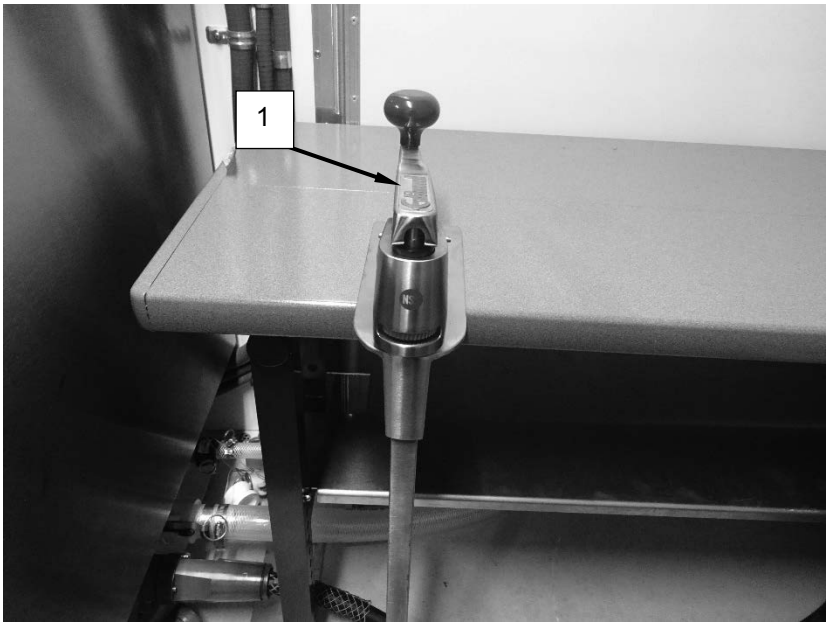


Figure 12. Lower Handle.

21. Monitor for proper operation.

END OF TASK

END OF WORK PACKAGE

CREW MAINTENANCE

CAN OPENER REPAIR

INITIAL SETUP:

Personnel Required	Equipment Condition
92G Culinary Specialist (1)	Daily startup complete (WP 0009)

REPAIR

Replace Can Opener Knife

1. Ensure can opener assembly (Figure 1, Item 3) is secured in can opener base (Figure 1, Item 2).
2. Lift handle (Figure 1, Item 1) to vertical position.

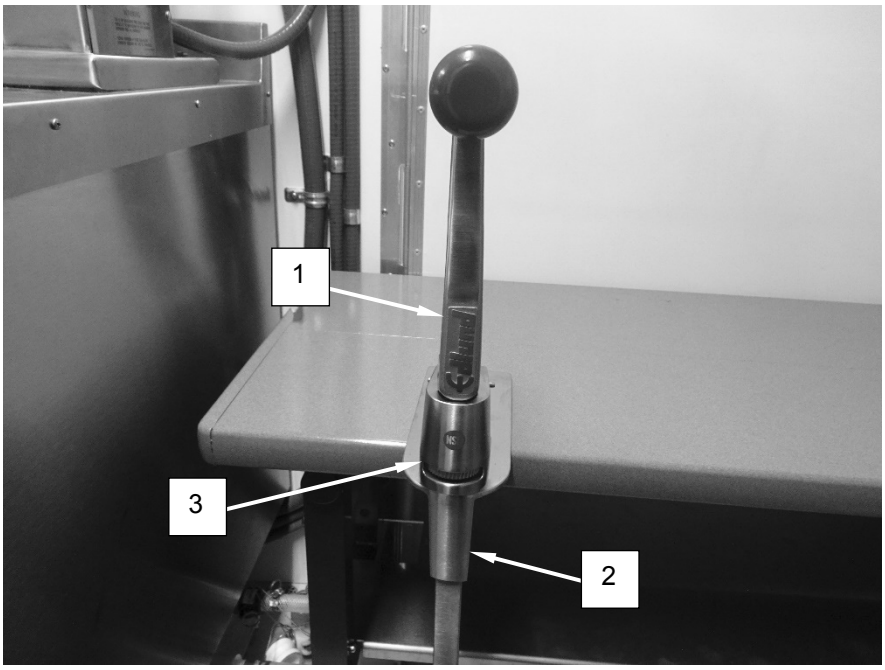


Figure 1. Lift Handle.

REPAIR – CONTINUED

3. Pull pin (Figure 2, Item 1) and remove knife holder assembly (Figure 2, Item 2).

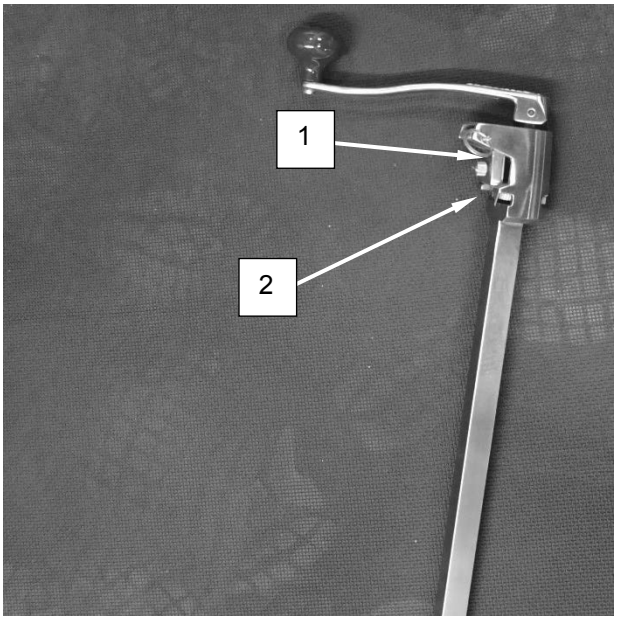


Figure 2. Remove Knife Holder Assembly.

4. Remove knurled screw (Figure 3, Item 2) securing knife (Figure 3, Item 1) to knife holder assembly.

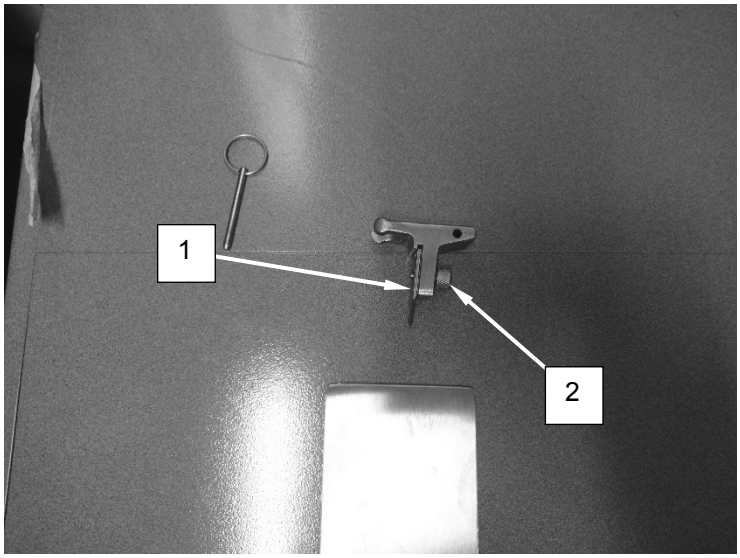


Figure 3. Knife.

5. Secure replacement knife (Figure 3, Item 1) to knife holder assembly and secure with knurled screw (Figure 3, Item 2).

REPAIR – CONTINUED

6. Slide knife holder (Figure 4, Item 2) into position and secure with pin (Figure 4, Item 1).

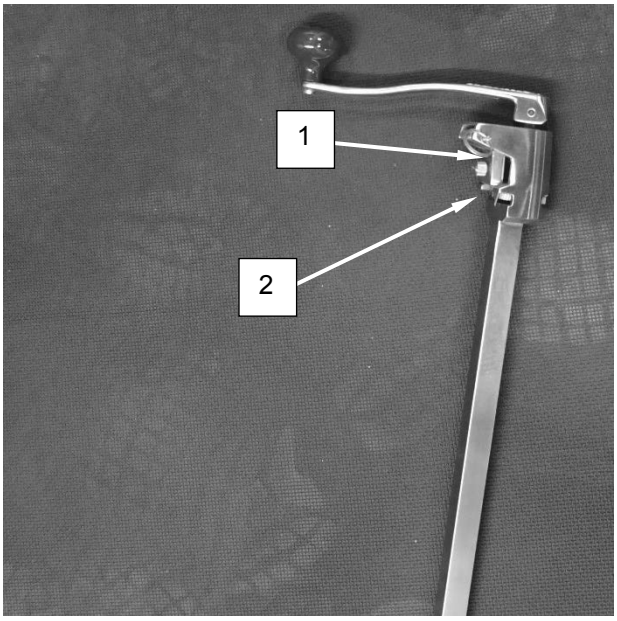


Figure 4. Install Knife Holder Assembly.

7. Lower handle (Figure 5, Item 1) to horizontal position.

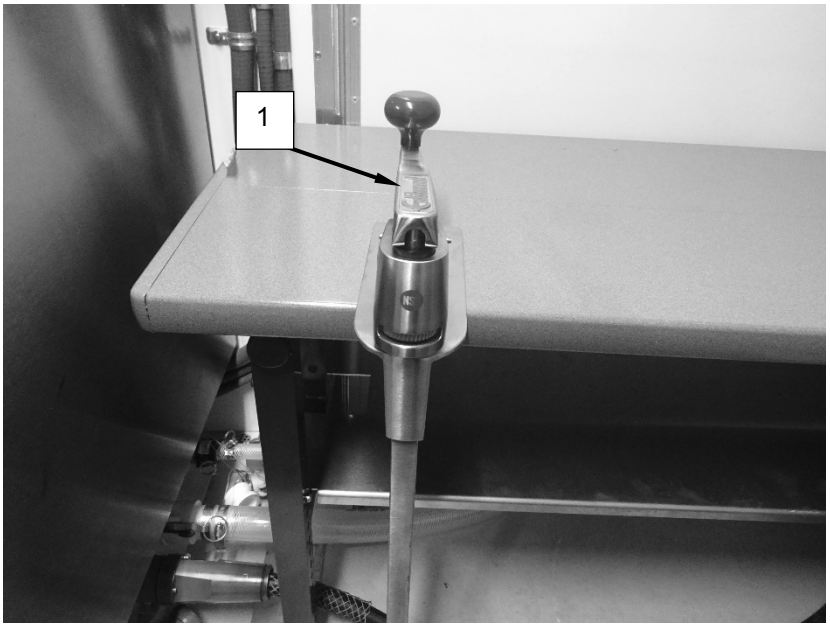


Figure 5. Lower Handle.

8. Monitor for proper operation.

END OF TASK

END OF WORK PACKAGE

CHAPTER 6

SUPPORTING INFORMATION
FOR
EXPEDITIONARY TRICON KITCHEN SYSTEM (ETKS)

CREW MAINTENANCE

REFERENCES

SCOPE

This work package lists all Forms, Field Manuals, and Technical Manuals referenced in this manual.

ARMY REGULATIONS

AR 700-138	Army Logistics Readiness and Sustainability

FORMS

DA Form 12-R	Request for Establishment of a Publications Account
DA Form 2404/DA Form 5988E	Equipment Inspection and Maintenance Worksheet
DA Form 2028	Recommended Changes to Publications and Blank Forms
SF 368	Product Quality Deficiency Report

PAMPHLETS

DA PAM 25-40	Army Publishing Program Procedures
DA PAM 738-751	Functional Users Manual for the Army Maintenance Management System-Aviation
DA PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual

TECHNICAL BULLETINS

TB MED 530	Tri-Service Food Code

TECHNICAL MANUALS

TM 3-34.46	THEATER OF OPERATIONS ELECTRICAL SYSTEMS
TM 9-247	MATERIALS USED FOR CLEANING, PRESERVING, ABRADING, AND CEMENTING ORDNANCE MATERIAL AND RELATED MATERIALS INCLUDING CHEMICALS
TM 10-5419-207-23&P	FIELD MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) FOR EXPEDITIONARY TRICON KITCHEN SYSTEM (ETKS) NSN 5419-01-571-4107 (Green) NSN 5419-01-571-4108 (Tan)
TM 10-5430-237-12&P	OPERATOR'S AND UNIT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST) FOR TANK, FABRIC, COLLAPSIBLE; AIR COLUMN SUPPORTED, OPEN TOP, WATER STORAGE, 3,000 GALLONS MODEL 90074 (EIC=ZFV)/MODEL 91038/ MODEL WT2008 (EIC=ZIZ) (NSN 5430-01-359-4774)/(NSN 5430-01-318-9434)/ (NSN 5430-01-170-6984) TANK, FABRIC, COLLAPSIBLE, SELF-SUPPORTING, SEALED TOP, WATER STORAGE, 3,000 GALLONS MODEL GTA-Z60TPW/MODEL 3-K-W-O-A/Z (NSN 5430-01-469-8744)/(NSN 5430-01-470-7380)

REFERENCES – CONTINUED

TM 10-8340-244-13&P	OPERATOR AND FIELD MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST FOR TENT, EXTENDABLE, MODULAR, PERSONNEL (TEMPER), AIR SUPPORTED, TYPE XXXVII (NSN: 8340-01-558-4702 Tan, NSN: 8340-01-558-8701, Green)
TM 55-8145-232-13&P	OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) FOR TRICON CONTAINER, TYPE I (NSN: 8145-01-527-2506, NSN: 8145-01-528-7531) TYPE II (NSN: 8145-01-526-4642, NSN: 8145-01-528-7533)
TM 750-244-3	PROCEDURES FOR DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE (MOBILITY EQUIPMENT COMMAND)

TRAINING CIRCULAR

TC 4-02.1	First Aid

END OF WORK PACKAGE

CREW MAINTENANCE

COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS

INTRODUCTION

Scope

This work package lists COEI and BII for the Expeditionary TRICON Kitchen System (ETKS) to help you inventory items for safe and efficient operation of the equipment.

General

The COEI and BII information is divided into the following lists:

Components of End Item (COEI). This list is for information purposes only and is not authority to requisition replacements. These items are part of the ETKS. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items.

Basic Issue Items (BII). These essential items are required to place the ETKS in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the ETKS during operation and when it is transferred between property accounts. Listing these items is your authority to request/requisition them for replacement based on authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

Explanation of Columns in the COEI List and BII List

Column (1) Illus Number. Gives you the number of the item illustrated.

Column (2) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

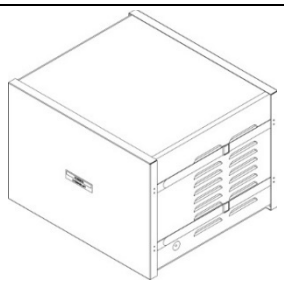
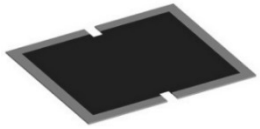
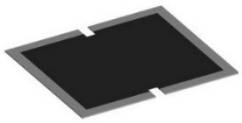
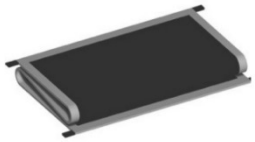
Column (3) Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI and BII is also included in this column. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (4) Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment.

Column (5) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

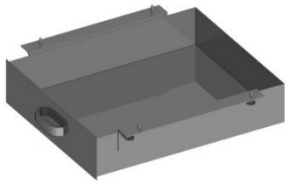
Column (6) Qty Rqr. Indicates the quantity required.

Table 1. Components of End Item (COEI) List.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
1		AIR CONDITIONER ASSEMBLY 9-2-9174/(81337)	GEJ,GEK	EA	1
2	6150-01-644-5078 	CABLE ASSEMBLY,SPECIAL PURPOSE,ELECTRICAL 9-2-5023/(81337)	GEJ,GEK	EA	2
3		COVER,FAN BOX,BLACK OUT T-2-5411/(43948)	GEJ,GEK	EA	2
4		COVER,VENT,BLACKOUT T-2-5412/(43948)	GEJ,GEK	EA	2
5		COVER,WINDOW,BLACKOUT T-2-5408/(43948)	GEJ,GEK	EA	1
6		CURTAIN,DOOR SCREEN T-2-5317/(43948)	GEJ,GEK	EA	1
7		CURTAIN,WINDOW SCREEN T-2-5403/(43948)	GEJ,GEK	EA	1

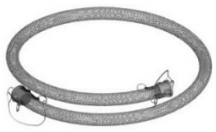
COMPONENTS OF END ITEM (COEI) LIST – CONTINUED

Table 1. Components of End Item (COEI) List – Continued.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
8		DRAWER ASSEMBLY 9-2-5055/(81337)	GEJ,GEK	EA	2
9		EXPANDABLE TRICON,KITCHEN 9-2-5067-1/(81337)	GEJ	EA	1
9		EXPANDABLE TRICON,KITCHEN 9-2-5067-2/(81337)	GEK	EA	1
10	7310-01-643-2164 	GRIDDLE, SELF-HEATING 9-2-5037/(43948)	GEJ,GEK	EA	1
11	4720-01-640-9927 	HOSE ASSEMBLY, NONMETALLIC, 1-1/2 INCH (SOURCE WATER) 9-2-5019/(81337)	GEJ,GEK	EA	1
12	4720-01-643-7471 	HOSE ASSEMBLY, NONMETALLLIC, 2-INCH (WASTE WATER) 9-2-5020/(81337)	GEJ,GEK	EA	1

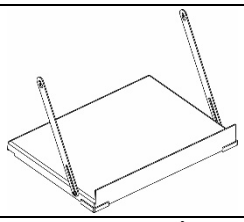
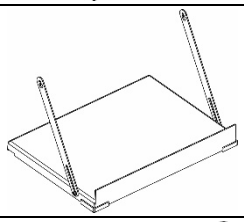
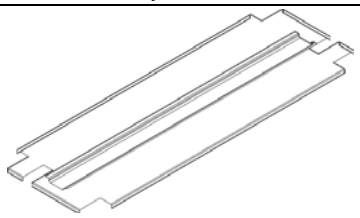
COMPONENTS OF END ITEM (COEI) LIST – CONTINUED

Table 1. Components of End Item (COEI) List – Continued.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
13		HOSE ASSEMBLY,SUPPLY 9-2-5021-1/(81337)	GEJ,GEK	EA	1
14		HOSE ASSEMBLY,WASTE 9-2-5191-1/(81337)	GEJ,GEK	EA	1
15	5120-01-641-9158 	JACK,LEVELING-SUPPORT 0200384/(4JKJ9)	GEJ,GEK	EA	4
16		OVEN RACK 9-2-5240/(81337)	GEJ,GEK	EA	1
17	6150-01-256-6300 	PIGTAIL CABLE, 13226E7020/(97403)	GEJ,GEK	EA	1
18		RACK ASSEMBLY, PACKOUT 9-2-5026/(81337)	GEJ,GEK	EA	1

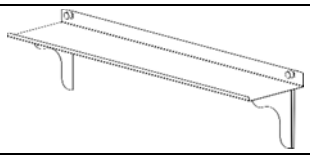
COMPONENTS OF END ITEM (COEI) LIST – CONTINUED

Table 1. Components of End Item (COEI) List – Continued.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
19	5975-00-878-3791 	ROD,GROUND AA55804-3B 9FT/(58536)	GEJ,GEK	EA	1
20	7320-01-582-7614 	SANITATION SYSTEM,SINK, W/3 COVERS TSSG-1006/(43948)	GEJ,GEK	EA	1
21	6150-01-256-6304 	SERVICE FEEDER (100A, 50FT) 13226E7024/(97403)	GEJ,GEK	EA	1
22		SHELF ASSEMBLY, AIR CONDITIONER 9-2-9170-1/(81337)	GEJ	EA	1
22		SHELF ASSEMBLY, AIR CONDITIONER 9-2-9170-2/(81337)	GEK	EA	1
23		SHELF ASSEMBLY, SERVING TABLE, 9-2-5064/(81337)	GEJ,GEK	EA	2

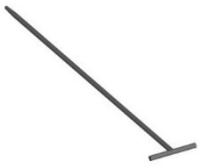
COMPONENTS OF END ITEM (COEI) LIST – CONTINUED

Table 1. Components of End Item (COEI) List – Continued.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
24		SHELF ASSEMBLY, UTILITY TABLE, 9-2-5061/(81337)	GEJ,GEK	EA	1
25		SHELF ASSEMBLY, SPICE, 9-2-5253-2/(81337)	GEJ,GEK	EA	1
26		TABLE, FOLDING, (UTILITY) 18" X 72", A1872HA-S/(OC561)	GEJ,GEK	EA	1
27		TABLE, FOLDING, (SERVING) 24" X 60", A2460HA-S/(1NP08)	GEJ,GEK	EA	2
28	5430-01-470-7380 	TANK, FABRIC, COLLAPSIBLE, 3000 GALLON, (SOURCE) RCF-3K-W-OT/(05YK6)	GEJ,GEK	EA	1
29	5430-01-470-7380 	TANK, FABRIC, COLLAPSIBLE, 3000 GALLON, (WASTE) RCF-3K-W-OT/(05YK6)	GEJ,GEK	EA	1

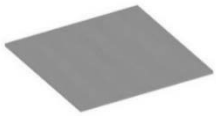
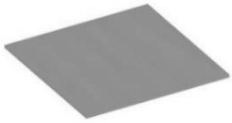
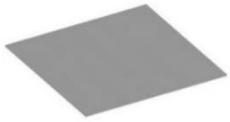
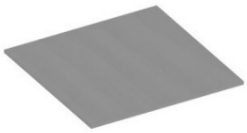
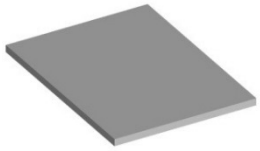
COMPONENTS OF END ITEM (COEI) LIST – CONTINUED

Table 1. Components of End Item (COEI) List – Continued.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
30	5340-01-641-0974 	HANDLE, EXTENSION 3105-002651/(4JKJ9)	GEJ,GEK	EA	1
31		TOOLBOX, 9-2-5035/(81337)	GEJ,GEK	EA	1

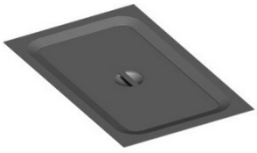
BASIC ISSUE ITEMS (BII) LIST

Table 2. Basic Issue Items (BII) List.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
1		BAKING SHEET, 1/2 SHEET 34395/(58536)	GEJ,GEK	EA	5
2		BLOCK, LEVELING, POLYETHYLENE, 1/2 IN THICK, 9-2-5066-4/(81337)	GEJ,GEK	EA	4
3		BLOCK, LEVELING, POLYETHYLENE, 1/4 IN THICK, 9-2-5066-2/(81337)	GEJ,GEK	EA	4
4		BLOCK, LEVELING, POLYETHYLENE, 1/8 IN THICK, 9-2-5066-1/(81337)	GEJ,GEK	EA	4
5		BLOCK, LEVELING, POLYETHYLENE, 3/8 IN THICK, 9-2-5066-3/(81337)	GEJ,GEK	EA	4
6	7330-00-078-5706 	BOARD, FOOD CHOPPING AND SLICING 7330-00-078-5706/(80244)	GEJ,GEK	EA	2
7		CHAIR, FOLDING, STEEL 4809T1/(39428)	GEJ,GEK	EA	2

BASIC ISSUE ITEMS (BII) LIST – CONTINUED

Table 2. Basic Issue Items (BII) List – Continued.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
8	7330-00-266-7453 	COLANDER 6921793900/(80244)	GEJ,GEK	EA	1
9	3040-01-387-4048 	CONNECTING LINK, RIGID D1046-03-G/(09PD1)	GEJ,GEK	EA	3
10	7310-00-834-4480 	COVER, STEAM TABLE PAN (FULL SIZE) A-A-50179/(58536)	GEJ,GEK	EA	6
11	7310-01-107-1281 	COVER, STEAM, TABLE PAN (HALF SIZE) 75120/(63277)	GEJ,GEK	EA	4
12	7330-00-272-2489 	DIPPER, KITCHEN A-A-1752 TY2SZ1/(80244)	GEJ,GEK	EA	1
13	7310-01-245-6937 	DISPENSER, LIQUID, INSULATED A52190-2-2/(58536)	GEJ,GEK	EA	4

BASIC ISSUE ITEMS (BII) LIST– CONTINUED

Table 2. Basic Issue Items (BII) List – Continued.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
14	7330-00-815-1458 	EGG WHIP A-A-394 SZ2/(80244)	GEJ,GEK	EA	2
15	6545-00-656-1094 	FIRST AID KIT, GENERAL PURPOSE 2114011/(0FTT5)	GEJ,GEK	EA	1
16	7330-01-644-7585 	FOOD CONTAINER, INSULATED PC140N01/(1M2P6)	GEJ,GEK	EA	4
17	7340-00-292-9487 	FORK, FOOD PREPARATION A-A-2733/(58536)	GEJ,GEK	EA	2
18	5415-01-645-5258 	GLOVES, CHEMICAL PROTECTION, LARGE (PAIR) 4AD10/(25795)	GEJ,GEK	EA	2
19	4520-01-644-9645 	HEATER, FLUID, ELECTRIC, EX770/(02HV8)	GEJ,GEK	EA	3

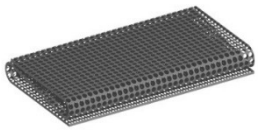
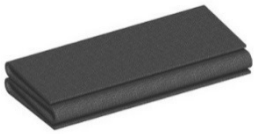
BASIC ISSUE ITEMS (BII) LIST– CONTINUED

Table 2. Basic Issue Items (BII) List – Continued.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
20	7320-01-425-5994 	RACK, KNIFE KR-99/(83190)	GEJ,GEK	EA	1
21	7340-00-197-1271 	KNIFE, BONING, A-A-2733 TY3GRDCL3/(80244)	GEJ,GEK	EA	2
22	7340-00-488-7950 	KNIFE, COOKS, A-A-2733 TY20GRD/(80244)	GEJ,GEK	EA	2
23	7340-00-488-7939 	KNIFE, PARING, A-A-2733 TY5GRD/(80244)	GEJ,GEK	EA	4
24	7340-00-406-6531 	KNIFE, SLICING, A-A-2733 TY6GRD/(80244)	GEJ,GEK	EA	1
25	7340-00-680-0863 	KNIFE, SLICING, A-A-2733 TY17GRD/(80244)	GEJ,GEK	EA	1
26	7330-00-254-4793 	LADLE, KITCHEN, 7330-00-254-4793/(80244)	GEJ,GEK	EA	2

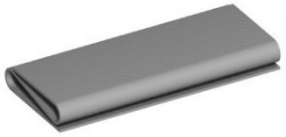
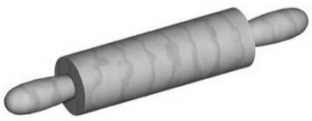
BASIC ISSUE ITEMS (BII) LIST– CONTINUED

Table 2. Basic Issue Items (BII) List – Continued.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
27	7330-00-680-0865 	LADLE, KITCHEN, 7330-00-680-0865/(80244)	GEJ,GEK	EA	2
28	7330-00-248-1153 	LADLE, KITCHEN, 7330-00-248-1153/(80244)	GEJ,GEK	EA	2
29	7220-01-644-6588 	MAT, FLOOR, ANTI-FATIGUE, 3 FT X 5 FT, 433.12X3X5BK/(59648)	GEJ,GEK	EA	2
30		MAT, FLOOR, ANTI-FATIGUE, 42 IN X 72 IN, PTMA427234/(43948)	GEJ,GEK	EA	1
31	7330-00-205-3096 	MEASURE, LIQUID, 2 QT, A-A-1751 SZ1/(80244)	GEJ,GEK	EA	2
32	7330-00-272-7876 	MEASURING SET, SPOON, 7330-00-272-7876/(80244)	GEJ,GEK	EA	2
33	7330-01-245-0201 	OPENER, CAN, HAND, 5-13-3971/(81337)	GEJ,GEK	EA	2

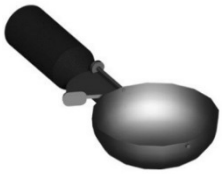
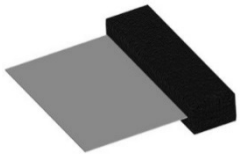
BASIC ISSUE ITEMS (BII) LIST– CONTINUED

Table 2. Basic Issue Items (BII) List – Continued.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
34	7330-01-411-9789 	OPENER, CAN, MOUNTED, AA52206-4BB/(58536)	GEJ,GEK	EA	1
35	5340-01-516-5289 	PAD, CUSHIONING, 2256T3/(39428)	GEJ,GEK	EA	5
36	7310-00-238-5164 	PAN, STEAM TABLE, FULL-SIZE, 4 IN DEEP, 7310-00-238-5164/(80244)	GEJ,GEK	EA	10
37	7310-00-576-4614 	PAN, STEAM TABLE, HALF-SIZE, 4 IN DEEP, 12324/(19677)	GEJ,GEK	EA	4
38	7330-00-238-8316 	PEELER, POTATO, HAND, W8079/(85812)	GEJ,GEK	EA	2
39	7330-00-153-9749 	PIN, ROLLING, WOOD, 7330-00-153-9749/(80244)	GEJ,GEK	EA	1
40	7330-00-379-4439 	POT HOLDER, RECTANGULAR, 8-1/2 IN X 11 IN, 7330-00-379-4439/(80244)	GEJ,GEK	EA	8

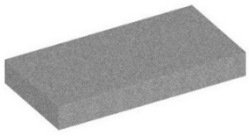
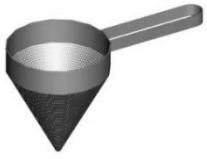
BASIC ISSUE ITEMS (BII) LIST– CONTINUED

Table 2. Basic Issue Items (BII) List – Continued.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
41	4730-01-625-5274 	REDUCER, QUICK DISCONNECT, 62262015/(09PD1)	GEJ,GEK	EA	1
42	7360-00-274-7088 	ROLL, CUTLERY, CANVAS, MIL-R-1982/(81349)	GEJ,GEK	EA	1
43	7330-00-197-1280 	SCOOP, ICE CREAM, 7330-00-197-1280/(80244)	GEJ,GEK	EA	2
44	7330-00-205-1950 	SCRAPER, BAKERS, 7330-00-205-1950/(80244)	GEJ,GEK	EA	1
45	7340-00-272-9586 	SERVER, PIE AND CAKE, AA-A-2733 TY21GRD/(80244)	GEJ,GEK	EA	1
46		SERVING WINDOW CHANNEL COVER 9-2-5447/(43948)	GEJ,GEK	EA	2
47	7330-00-680-2635 	SKIMMER, KITCHEN, A-A-1072/(58536)	GEJ,GEK	EA	2

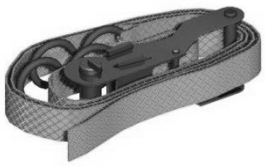
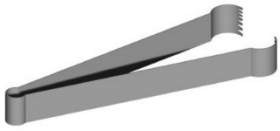
BASIC ISSUE ITEMS (BII) LIST– CONTINUED

Table 2. Basic Issue Items (BII) List – Continued.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
48	7330-00-849-5194 	SPATULA, RUBBER, 2 IN X 3-1/2 IN BLADE 7330-00-849-5194/(80244)	GEJ,GEK	EA	2
49	7340-00-240-7080 	SPOON, FOOD SERVICE, BASTING, 15 IN, A-A-1082 TY1SZ2/(80244)	GEJ,GEK	EA	2
50	7340-00-205-1421 	SPOON, FOOD SERVICE, SLOTTED, 15 IN, A-A-1082 TY3SZ2/(80244)	GEJ,GEK	EA	2
51	7330-00-550-7592 	STEEL, BUTCHER'S, A-A-2733 TY12GRC/(80244)	GEJ,GEK	EA	1
52 		STONE, SHARPENING, MEDIUM GRIT, 05179114/(4J007)	GEJ,GEK	EA	1
53	7330-00-815-1456 	STRAINER, CHINA CAP, 5-1/2 QT, 7330-00-815-1456/(80244)	GEJ,GEK	EA	1
54	6685-01-092-3911 	THERMOMETER, SELF-INDICATING, OVEN, 3506/(0YZF7)	GEJ,GEK	EA	2

BASIC ISSUE ITEMS (BII) LIST– CONTINUED

Table 2. Basic Issue Items (BII) List – Continued.

(1) Item Number	(2) National Stock Number (NSN) and Illustration	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
55		THERMOMETER, SELF-INDICATING, POCKET, 0440-0004/(1LQK8)	GEJ,GEK	EA	3
56		TIE DOWN, CARGO, VEHICLE, 1 IN X 12 FT, 1500 LB TEST, FH-8383/(1MX07)	GEJ,GEK	EA	6
57	7330-00-616-0998 	TONGS, FOOD SERVING, 9 IN, 47049/(63277)	GEJ,GEK	EA	4
58	5180-01-648-7871 	TOOL KIT, GENERAL MECHANIC'S (7-PIECE), 06617559/(4J007)	GEJ,GEK	EA	1
59	7330-00-205-0617 	FOOD TURNER A-A-1640 TY1STA/(80244)	GEJ,GEK	EA	2

END OF WORK PACKAGE

CREW MAINTENANCE

ADDITIONAL AUTHORIZATION LIST (AAL)

INTRODUCTION

Scope

This work package lists additional items you are authorized for the support of the ETKS.

General

This list identifies items that do not have to accompany the ETKS and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

Explanation of Columns in the AAL

Column (1) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Column (2) Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (3) Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment.

Column (4) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (1).

Column (5) Qty Recm. Indicates the quantity recommended.

Table 1. Additional Authorization List.

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION, PART NUMBER, AND (CAGEC)	(3) USABLE ON CODE	(4) U/I	(5) QTY RECM
5419-01-580-6932	COLD WEATHER KIT, GREEN, 9-2-0046-1 / (81337)		EA	1
5419-01-581-2258	COLD WEATHER KIT, TAN, 9-2-0046-2 / (81337)		EA	1
	COMPRESSOR, AIR, DIESEL (Part of Force Provider Expeditionary) 9-2-0146-1 / (81337)		EA	1

END OF WORK PACKAGE

CREW MAINTENANCE

EXPENDABLE AND DURABLE ITEMS LIST

INTRODUCTION

Scope

This work package lists expendable and durable items that you will need to operate and maintain the Expeditionary TRICON Kitchen System (ETKS). This list is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanations of Columns in Expendable/Durable Items List

Column (1) Item No. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item (e.g., Use brake fluid (WP 0098, item 5)).

Column (2) Level. This column identifies the lowest level of maintenance that requires the listed item (*include as applicable: C = Crew, O = AMC, F = Maintainer or ASB, H = BelowDepot or TASMG, D = Depot*).

Column (3) National Stock Number (NSN). This is the NSN assigned to the item which you can use to requisition it.

Column (4) Item Name, Description, Part Number/(CAGEC). This column provides the other information you need to identify the item. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (5) U/I. Unit of Issue (U/I) code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

Table 1. Expendable and Durable Items List.

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER/(CAGEC)	(5) U/I
1	C	7930-01-363-8631	ABSORBENT MATERIAL, OIL AND WATER MAT203 / (1JA49)	BG
2	C	7920-00-282-2470	BRUSH, SCRUB, 7920-00-282-2470 / (83421)	EA
3	C	7930-01-294-5523	CLEANING COMPOUND, SOLVENT-DETERGENT, 009801 / (27674)	DZ
4	C	7930-01-373-8848	CLEANING COMPOUND, SOLVENT-DETERGENT, 1064092 / (83421)	BX
5	C	7930-01-381-3499	GLASS CLEANER, BIO-GLASS CLEANER W/AMMONIA / (59DB3)	BX

Table 1. Expendable and Durable Items List-Continued.

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER/(CAGEC)	(5) U/I
6	C	8415-01-492-0178	GLOVES, DISPOSABLE, 6005PF LG / (0YSA1)	BX
7	C	4240-00-052-3776	GOGGLES, INDUSTRIAL, ANSI Z87.1 / (80204)	PR
8	C	4240-01-527-0105	MASK, AIR FILTERING, 2250 (0FA00)	PG
9	C	7920-00-655-5290	PAD, SCOURING, 7920-00-655-5290 / (80244)	DZ
10	C	7240-01-554-7402	PAIL, UTILITY 34A216/ (2V507)	EA
11	C	7920-00-205-3570	RAG, WIPING, 7920-00-205-3570 / (80244)	BE
12	C	7330-00-205-1950	SCRAPER, BAKER'S, 7330-00-205-1950 / (80244)	EA
13	C	8520-01-490-7367	SOAP, ANTIBACTERIAL, 9755-04 / (02905)	BX
14	C	6810-00-598-7316	SODIUM HYPOCHLORITE SOLUTION (BLEACH), 6810-00-598-7316 / (80244)	BX
15	C	8115-01-562-0851	STORAGE CONTAINER 8993T54 / (39428)	EA
16	C	5975-00-899-4606	STRAP, LINE SUPPORTING, MS3367-2-0 / (81343)	HD
17	C	7930-01-646-1094	TOWELETTE, CLEANING 91930 / (1QZC4)	PG
18	C	8945-01-529-6771	VEGETABLE OIL A-A20091D / (63298)	GL
19	C	8950-01-451-4135	VINEGAR, 849695 / (08FW1)	GL
20	C	5350-00-271-5946	WOOL, METALLIC 5350-00-271-5946 / (80244)	RO

END OF WORK PACKAGE

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INDEX

END OF WORK PACKAGE

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS

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DATE: 20150728

INSTRUCTIONS FOR SUBMITTING THE DA FORM 2028

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Part II *(page 2)* is for changes to Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).

DETERMINING AND SELECTING THE PROPER PROPONENT

You can identify the proper proponent for any publication or form by searching for the title using DA Pam 25-30, which can be accessed at: http://www.apd.army.mil/pamdocs/APD_Search.asp

TO: *(Forward to proponent of publication or form) (Include ZIP Code)*

U.S. Army TACOM Life Cycle Management Command
ATTN: AMSTA-LCL-IM / TECH PUBS MS 727 6501 E.
11 Mile Road
Warren, MI 48397-5000

FROM: *(Activity and location) (Include ZIP Code)*

PFC JANE DOE Co A 3RD Engineer Br.
Ft Leonard Wood, MO 63108

PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 10-1670-296-20&P	20021030	Unit Manual for Ancillary Equipment for Low Velocity Air Drop Systems

ITEM	PAGE NO.	PARA-GRAPH	LINE NO.*	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Provide exact wording of recommended changes, if possible).
	0036-2				1	In Table 1, Sewing Machine Code Symbols, the second sewing machine code symbol should be MDZZ not MD22. Change the manual to show Sewing Machine, Industrial: Zig-Zag; 308 stitch; medium-duty; NSN 3530-01-181-1421 as a MDZZ code symbol.

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/ AUTOVON, PLUS EXTENSION	SIGNATURE
Jane Doe, PFC	(508) 233-4141 DSN 256-4141	Jane Doe

TO: *(Forward direct to addressee listed in publication)*	**FROM:** *Activity and location) (Include ZIP Code)*	**DATE**
U.S. Army TACOM Life Cycle Management Command, ATTN: AMSTA-LCL-IM / TECH PUBS MS 727, 6501 E. 11 Mile Road, Warren, MI 48397-5000	PFC JANE DOE Co A 3RD Engineer Br. Ft Leonard Wood, MO 63108	20150728

PART II - REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER	DATE	TITLE
TM 10-1670-296-20&P	20021030	Unit Manual for Ancillary Equipment for Low Velocity Air Drop Systems

PAGE NO.	COL. NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION
0066-1					4			Callout 16 in figure 4 is pointed to a D-Ring. In the Repair Part List key for Figure 4, item 16 is called a Snap Hook. Please correct one or the other.

PART III - REMARKS *(Any general remarks or recommend... sug...ion... or improvement of publications and blank forms. Additional blank sheets m...e use... more ... is needed.)*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS

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U.S. Postal Service to the proponent using the address found on the publication's title page, under the heading, "Suggested improvements."
Part II *(page 2)* is for changes to Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).

DETERMINING AND SELECTING THE PROPER PROPONENT

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http://www.apd.army.mil/pamdocs/APD_Search.asp

TO: *(Forward to proponent of publication or form) (Include ZIP Code)*	**FROM:** *(Activity and location) (Include ZIP Code)*
U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-IM/TECH PUBS MS 727 6501 E. 11 Mile Road, Warren, MI 48397-5000	

PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 10-5419-207-10	7 November 2016	Operator's Manual for Expeditionary TRICON Kitchen System

ITEM	PAGE NO.	PARA-GRAPH	LINE NO.*	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Provide exact wording of recommended changes, if possible).

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/ AUTOVON, PLUS EXTENSION	SIGNATURE

TO: *(Forward direct to addressee listed in publication)*	**FROM:** *Activity and location) (Include ZIP Code)*	**DATE**
U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-IM/TECH PUBS MS 727 6501 E. 11 Mile Road, Warren, MI 48397-5000		

PART II - REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER	DATE	TITLE
TM 10-5419-207-10	7 November 2016	Operator's Manual for Expeditionary TRICON Kitchen System

PAGE NO.	COL. NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS

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PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 10-5419-207-10	7 November 2016	Operator's Manual for Expeditionary TRICON Kitchen System

ITEM	PAGE NO.	PARA-GRAPH	LINE NO.*	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Provide exact wording of recommended changes, if possible).

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/ AUTOVON, PLUS EXTENSION	SIGNATURE

TO: *(Forward direct to addressee listed in publication)*	**FROM:** *Activity and location) (Include ZIP Code)*	**DATE**
U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-IM/TECH PUBS MS 727 6501 E. 11 Mile Road, Warren, MI 48397-5000		

PART II - REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER	DATE	TITLE
TM 10-5419-207-10	7 November 2016	Operator's Manual for Expeditionary TRICON Kitchen System

PAGE NO.	COL. NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

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RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS

For use of this form, see AR 25-30; the proponent agency is OAASA.

DATE

INSTRUCTIONS FOR SUBMITTING THE DA FORM 2028

After completing the DA Form 2028 (Recommended Changes to Publications and Blank Forms), you may send it via Email directly to the proponent publication control officer (PCO) for publications or the Forms Management Officer (FMO) for forms, as appropriate. You may obtain proponent PCO/FMO Email addresses at https://armypubs.us.army.mil/corporate/directory_1.html *(CAC access only)*. As an alternative, you may mail the DA Form 2028 via the
U.S. Postal Service to the proponent using the address found on the publication's title page, under the heading, "Suggested improvements."
Part II *(page 2)* is for changes to Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).

DETERMINING AND SELECTING THE PROPER PROPONENT

You can identify the proper proponent for any publication or form by searching for the its title using DA Pam 25-30, which can be accessed at:
http://www.apd.army.mil/pamdocs/APD_Search.asp

TO: *(Forward to proponent of publication or form) (Include ZIP Code)*	**FROM:** *(Activity and location) (Include ZIP Code)*
U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-IM/TECH PUBS MS 727 6501 E. 11 Mile Road, Warren, MI 48397-5000	

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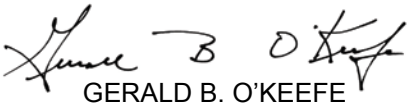
By Order of the Secretary of the Army:

MARK A. MILLEY
General, United States Army
Chief of Staff

Official:



GERALD B. O'KEEFE
Administrative Assistant to the
Secretary of the Army

1609704

Distribution:
Initially published in electronic media only. When funds become available, this publication will be distributed in accordance with the initial distribution number (IDN) 258089 requirements for TM 10-5419-207-10.

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 3 2.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Weights

1 centigram = 10 milligrams = .15 grain
1 decigrarn = 10 centigrams = 1.54 grains
1 gram = 10 decigrams = .035 ounce
1 dekagrarn = 10 grams = .35 ounce
1 hectogram = 10 dekagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .15 5 sq. inch
1 sq. decimeter =100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	Iiters	.473	milliliters	fluid ounces	.034
quarts	Iiters	.946	liters	pints	2.113
gallons	Iiters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

Temperature (Exact)

_F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	_C

PIN: 106332-000