

TM 10-4510-209-13&P

TECHNICAL MANUAL

OPERATOR'S, UNIT AND DIRECT SUPPORT MAINTENANCE MANUAL
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

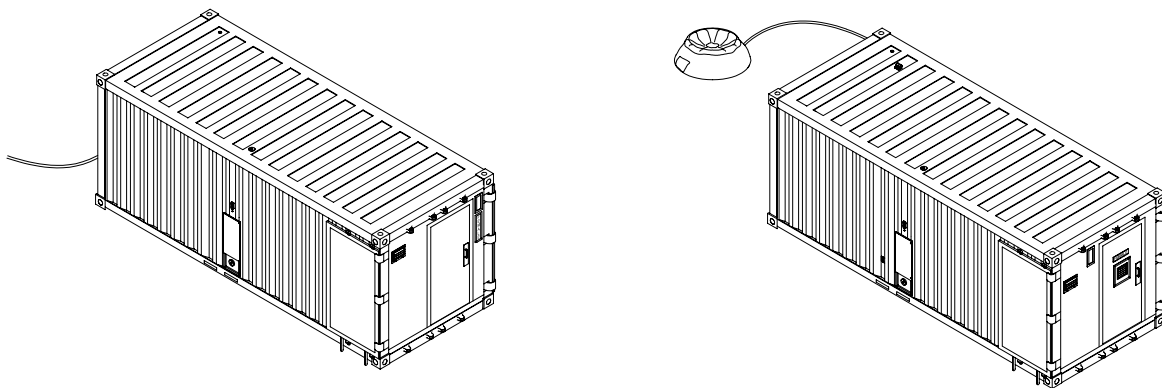
CONTAINERIZED LATRINE (CL)

NSN: 4510-01-453-4012

CONTAINERIZED LATRINE SYSTEM (CLS)

NSN: 4510-01-477-7764

NSN: 4510-01-521-1860



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

HEADQUARTERS, DEPARTMENT OF THE ARMY
30 NOVEMBER 2004

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.

EXPLANATION OF SAFETY WARNING ICONS



BIOLOGICAL – abstract symbol bug shows that a material may contain bacteria or viruses that present a danger to life or health.



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



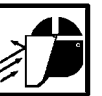
HEAVY PARTS – heavy object on human figure shows that heavy parts present a danger to life or limb.



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



CARBON MONOXIDE – human figure showing gaseous substance being inhaled into respiratory system, demonstrating potential hazard.



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



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



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



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



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



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



WARNING

Carbon monoxide is without color or smell, but can kill you. Breathing carbon monoxide produces symptoms of headache, dizziness, loss of muscular control, a sleepy feeling, and coma. Brain damage or death can result from heavy exposure. Carbon monoxide occurs in the exhaust fumes of fuel-burning heaters and internal combustion engines. Carbon monoxide can become dangerously concentrated under conditions of no ventilation.

Precautions must be followed to ensure operator's safety when the Containerized Latrine or Containerized Latrine System is in operation.

BE ALERT at all times during operating procedures for carbon monoxide poisoning. If symptoms are present, IMMEDIATELY evacuate personnel to fresh air.

BE AWARE the field protection mask used for nuclear-biological-chemical attack WILL NOT protect you from carbon monoxide poisoning.

THE BEST DEFENSE AGAINST CARBON MONOXIDE POISONING IS GOOD VENTILATION.



WARNING

The Containerized Latrine or Containerized Latrine System must be electrically grounded. Failure to ground Containerized Latrine or Containerized Latrine System may result in serious injury or death to personnel from electrical malfunction.



WARNING

Repair of plumbing requires the use of tools in confined spaces. Slipping wrenches may cause serious injury to personnel.



WARNING

Do not touch cold metal parts with bare hands. Cold metal parts can cause frostbite and injury to personnel.



WARNING

The container weighs approximately 10,000 lbs when fully loaded. Never attempt to lift the container with equipment not rated for this weight. Never stand beneath the container when it is being moved. Serious injury or death could result to personnel.



WARNING

Leather gloves and eye protection must be worn when installing the grounding rod. Failure to do so could result in serious injury to eyes or hands.



WARNING

Containerized Latrine or Containerized Latrine System hot water operates at approximately 140° (F). Allow water to cool before performing any type of work on the system. Failure to follow this warning could result in serious injury to personnel from scalding.



WARNING

Some items associated with or contained inside of the Containerized Latrine or Containerized Latrine System require two to four people to move/lift. Use appropriate number of personnel when moving large, bulky, heavy items. Never individually attempt to lift an item if it requires more than a single individual. Serious injury to personnel could result from improper lifting.



WARNING

Avoid skin contact with blackwater. Blackwater is to be considered hazardous at all times. Rubber gloves and safety glasses should be used when performing any type of maintenance that involves blackwater. Failure to follow this warning could result in serious illness or death to personnel.



WARNING

Both the Containerized Latrine and the Containerized Latrine System ship with an antifreeze solution pumped into the freshwater lines. The antifreeze solution is nontoxic, but unsuitable for drinking or washing. DO NOT OPERATE THE LATRINE until the freshwater lines have been flushed.



WARNING

Electrical high voltage cannot be seen but it can kill you. Electricity is unlike most other dangerous things you can come in contact with because it gives no warning and no symptoms to be wary of. Its effect is immediate. It can kill you, render you unconscious, or severely burn you. To ensure your safety and that of other maintenance personnel, always observe the following precautions:

DO NOT perform any maintenance on electrical equipment (i.e. exhaust fan, ECU, sump pump, water heater, lighting, etc) unless all power is removed.

DO NOT disconnect cables unless all power is removed.

BE CERTAIN that there is someone assisting you who can remove power immediately.

ALWAYS place POWER OFF warning tags on power supply switches so that no one can apply power while you are performing maintenance.

FOR ARTIFICIAL RESPIRATION, REFER TO FM 21 –11.

CHANGE
NO. 1

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 15 MARCH 2007

TECHNICAL MANUAL

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE MANUAL
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

CONTAINERIZED LATRINE (CL)
NSN: 4510-01-453-4012

CONTAINERIZED LATRINE SYSTEM (CLS)
NSN: 4510-01-477-7764
NSN: 4510-01-521-1860

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

TM 10-4510-209-13&P, 30 November 2004, is updated as follows:

1. File this sheet in the front of the manual for reference.
2. This change implements the Army Maintenance Transformation and changes the Maintenance Allocation Chart (MAC) to support Field and Sustainment maintenance. The technical manual references have changed. Several part numbers and national stock numbers have been incorporated in the RPSTL.
3. New or updated text is indicated by a vertical bar in the outer margin of the page.
4. Added illustrations are indicated by a vertical bar adjacent to the figure number. Changed illustrations are indicated by a miniature hand adjacent to the updated area and a vertical bar adjacent to the figure number.
5. Remove old pages and insert new pages as indicated below:

Remove Pages

A/(B Blank)
i through ii
Sample 2028
DA 2028
DA 2028

Insert Pages

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i through ii
Sample 2028
DA 2028
DA 2028

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

| <u>Work Package Number</u> | <u>Work Package Number</u> | <u>Work Package Number</u> | <u>Work Package Number</u> |
|----------------------------|----------------------------|----------------------------|----------------------------|
| WP 0001 00 | WP 0075 00 | WP 0088 00 | WP 0106 00 |
| WP 0012 00 | WP 0076 00 | WP 0089 00 | WP 0108 00 |
| WP 0013 00 | WP 0077 00 | WP 0091 00 | WP 0109 00 |
| WP 0015 00 | WP 0079 00 | WP 0092 00 | WP 0110 00 |
| WP 0029 00 | WP 0081 00 | WP 0093 00 | WP 0111 00 |
| WP 0030 00 | WP 0082 00 | WP 0095 00 | WP 0112 00 |
| WP 0032 00 | WP 0083 00 | WP 0096 00 | WP 0114 00 |
| WP 0070 00 | WP 0084 00 | WP 0099 00 | WP 0115 00 |
| WP 0071 00 | WP 0085 00 | WP 0101 00 | WP 0116 00 |
| WP 0072 00 | WP 0086 00 | WP 0102 00 | |
| WP 0074 00 | WP 0087 00 | WP 0104 00 | |

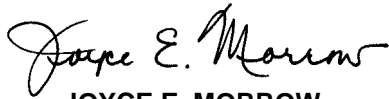
7. Add the following new work packages.

Work Package Number

By Order of the Secretary of the Army:

PETER J. SCHOOMAKER
General, United States Army
Chief of Staff

Official:



JOYCE E. MORROW
*Administrative Assistant to the
Secretary of the Army*
0706101

DISTRIBUTION: To be distributed in accordance with initial distribution number (IDN) 256824 requirements for TM 10-4510-209-13&P.

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

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE: The portion of text affected by the changes is indicated by a vertical bar in the outer margins of the page. Changes to illustrations are indicated by a vertical bar adjacent to the title. Zero in the "Change No." column indicates an original page or work package.

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

Original 30 November 2004

Change 1 15 March 2007

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 44 AND TOTAL NUMBER OF WORK PACKAGES IS 118, CONSISTING OF THE FOLLOWING:

| Page/WP No. | Change No. | Page/WP No. | Change No. | Page/WP No. | Change No. |
|---------------------|------------|---------------------|------------|---------------------|------------|
| Title | 0 | WP 0036 00 (6 pgs) | 0 | WP 0079 00 (2 pgs) | 1 |
| Warning | 0 | WP 0037 00 (2 pgs) | 0 | WP 0080 00 (2 pgs) | 0 |
| i-ii | 1 | WP 0038 00 (2 pgs) | 0 | WP 0081 00 (4 pgs) | 1 |
| iii-viii | 0 | WP 0039 00 (2 pgs) | 0 | WP 0082 00 (2 pgs) | 1 |
| WP 0001 00 (6 pgs) | 1 | WP 0040 00 (4 pgs) | 0 | WP 0083 00 (4 pgs) | 1 |
| Chp 1 title page | 0 | WP 0041 00 (4 pgs) | 0 | WP 0084 00 (2 pgs) | 1 |
| WP 0002 00 (8 pgs) | 0 | WP 0042 00 (4 pgs) | 0 | WP 0085 00 (2 pgs) | 1 |
| WP 0003 00 (6 pgs) | 0 | WP 0043 00 (8 pgs) | 0 | WP 0086 00 (2 pgs) | 1 |
| Chp 2 title page | 0 | WP 0044 00 (12 pgs) | 0 | WP 0087 00 (4 pgs) | 1 |
| WP 0004 00 (24 pgs) | 0 | WP 0045 00 (4 pgs) | 0 | WP 0088 00 (4 pgs) | 1 |
| WP 0005 00 (20 pgs) | 0 | WP 0046 00 (6 pgs) | 0 | WP 0089 00 (4 pgs) | 1 |
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| WP 0007 00 (20 pgs) | 0 | WP 0048 00 (4 pgs) | 0 | WP 0091 00 (4 pgs) | 1 |
| WP 0008 00 (22 pgs) | 0 | WP 0049 00 (2 pgs) | 0 | WP 0092 00 (4 pgs) | 1 |
| WP 0009 00 (10 pgs) | 0 | WP 0050 00 (2 pgs) | 0 | WP 0093 00 (2 pgs) | 1 |
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| WP 0025 00 (4 pgs) | 0 | WP 0067 00 (10 pgs) | 0 | WP 0111 00 (4 pgs) | 1 |
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| WP 0027 00 (2 pgs) | 0 | WP 0069 00 (6 pgs) | 0 | WP 0113 00 (2 pgs) | 0 |
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**HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 30 NOVEMBER 2004**

TECHNICAL MANUAL

**OPERATOR'S, UNIT, AND DIRECT SUPPORT
MAINTENANCE MANUAL
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)**

**CONTAINERIZED LATRINE (CL)
NSN 4510-01-453-4012**

**CONTAINERIZED LATRINE SYSTEM (CLS)
NSN 4510-01-477-7764
NSN: 4510-01-521-1860**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), located in the back of this manual directly to: Commander, U.S. Army Tank-automotive & Armament Command, ATTN: AMSTA-LC-SECT, Kansas St., Natick, MA 01760-5052. You may also send in your recommended changes via electronic mail or by fax. Our fax number is DSN 256-5205 and Commercial 508-233-5205. Our e-mail address is amssbriml@natick.army.mil. A

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HOW TO USE THIS MANUAL

In this manual, primary chapters appear in upper case/capital letter; work packages are presented in numeric sequence, e.g., 0001 00; paragraphs within a work package are not numbered and are presented in a titles format. For a first level paragraph, title all upper case/capital letters, e.g., FRONT MATTER subordinate paragraph title 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.

This manual contains General Information, Operator Instructions, Operator Preventive Maintenance Checks and Services (PMCS) for the Containerized Latrine (CL) (Force Provider configuration) and the Containerized Latrine System (CLS) (the stand-alone configuration).

FRONT MATTER

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

CHAPTER 1 – INTRODUCTION

Chapter 1 contains introductory information on the Containerized Latrine or Containerized Latrine System and its associated equipment as well as a Theory of Operation.

CHAPTER 2 – OPERATOR INSTRUCTIONS

Chapter 2 includes operating instructions under usual and unusual conditions.

CHAPTER 3 – OPERATOR TROUBLESHOOTING PROCEDURES

Chapter 3 contains operator troubleshooting.

CHAPTER 4 – OPERATOR MAINTENANCE INSTRUCTIONS

Chapter 4 contains operator maintenance instructions, PMCS, and service procedures.

CHAPTER 5 – UNIT TROUBLESHOOTING PROCEDURES

Chapter 5 contains unit troubleshooting procedures.

CHAPTER 6 – UNIT MAINTENANCE INSTRUCTIONS

Chapter 6 contains service upon receipt, maintenance and service procedures authorized at the unit level.

CHAPTER 7 – DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

Chapter 7 contains maintenance instructions and service procedures authorized at the direct/general support level.

CHAPTER 8 – SUPPORTING INFORMATION

Chapter 8 contains references and other supporting information.

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-ZZ where XXXX is the work package number (e.g. 0010 00 is work package 10) and YY is the revision number for that work package and ZZ represents the number of the page within that work package. A page number, such as 0010 00-1/(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 contained within each chapter and the work package sequence number where it can be found.

Example: If the reader were looking for instructions on “Preventive Maintenance Checks and Services”, which is an operator maintenance topic, the table of contents indicates that operator maintenance information can be found in Chapter 4. Scanning down the listings for Chapter 4, “Preventive Maintenance Checks and Services” information can be found in WP 0015 00 and 0016 00 (i.e. Work Package 15 and 16).

An alphabetical index can be found at the back of the manual. It lists specific topics with the corresponding work package.

**OPERATOR'S, UNIT AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
GENERAL INFORMATION**

SCOPE

This technical manual contains equipment description, operating procedures and maintenance procedures for both the Containerized Latrine (CL) and the Containerized Latrine System (CLS).

The CL was designed as an integral part of the Force Provider system. This manual also includes references to publications that contain information on separately documented components of the CL and CLS. Refer to TM 10-5419-206-13 for information about Force Provider.

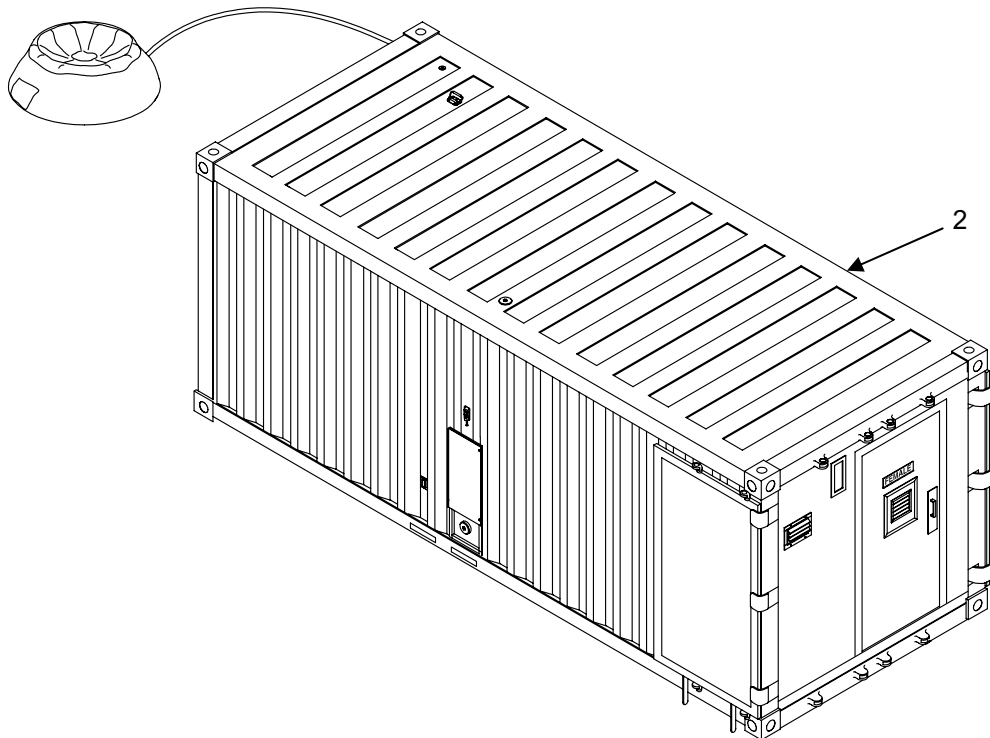
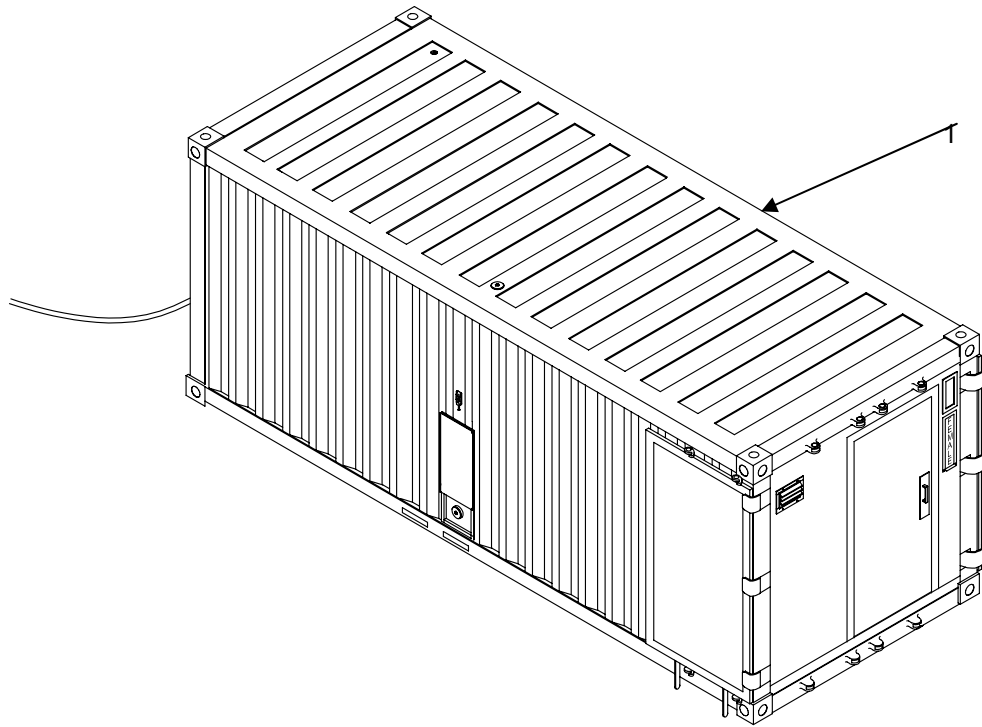
The CLS is deployed separately and requires a 3,000-gallon fresh-water tank or other reliable source of fresh water, availability of a power source supplying 208VAC, 3 phase, 60 Hz power, and wastewater removal. The Containerized Latrine System (CLS) was designed to operate in ambient temperatures between -15° to 120° Fahrenheit (-26° to 49° Celsius).

To operate the CL in temperatures below 32° Fahrenheit, refer to TM 10-5419-206-13 (Force Provider) for Modification System Cold Weather procedures. To operate the CLS in temperatures below 32° Fahrenheit, refer to WP 0007 00 for Cold Weather Kit procedures.

Type of Manual: Operator's, Unit and Direct Support Maintenance

| | | |
|----------------------------------|-----------------------------------------------|----------------------|
| Model Number and Equipment Name: | Containerized Latrine (CL) (1) | NSN 4510-01-453-4012 |
| | Containerized Latrine System (CLS) (2) | NSN 4510-01-477-7764 |

Purpose of Equipment: Both Latrine models provide troop units and field hospitals with on-site containerized latrines. Each unit is designed to support 150 personnel on a continual basis.



MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your Containerized Latrine (CL) or Containerized Latrine System (CLS) 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. Put it on a Standard Form (SF) 368 Product Quality Deficiency Report (PQDR). Mail it to: Commander U.S. Army Tank-automotive and Armament Command: ATTN: AMSTA-LC-SECT, Kansas St., Natick MA 01760-5052. 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 problems with this item are reported so the problem can be corrected and improvements can be made to prevent the problem in future items.

While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

If a corrosion problem is identified, it can be reported using SF 368, PQDR. Check the box to indicate that the problem may be corrosion-related. Using key words such as "rust", "deterioration," "pitting", "cracking," or even including color photos of the corroded area will aid problem diagnosis and solution and ensure the information is identified as a CPC problem.

Submit completed SF 368 specifying a corrosion problem to the address specified in DA PAM 750-8.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Methods and procedures for destruction of Army materiel to prevent enemy use are covered in TM 750-244-7, Procedures for Destruction of Equipment to Prevent Enemy Use.

NBC CONTAMINATION

The Containerized Latrine System has not been designed to withstand the effects of NBC events. The CLS will require thorough decontamination IAW FM 3-5 if exposed to NBC contaminants, because it is not Chemical Agent Resistant Coating (CARC) painted.

PREPARATION FOR STORAGE OR SHIPMENT

Before placing the CL or CLS in administrative storage or preparing the system for shipment, current maintenance services must be applied; defects and failures corrected; and Modification Work Orders (MWOs) applied. Prepare the system for storage and shipment as described in WP 0007 00 or WP 0010 00, as applicable.

Placement of equipment in storage

Equipment should be placed in storage for limited periods only when a shortage of maintenance capability exists. Items should be mission ready within 24 hours or within a time factor set by directing authority. During storage periods, maintenance records must be kept current.

Storage site selection

Covered space is preferred. When covered space is not available, priority should be given to items that are most susceptible to deterioration from the elements. Open sites should be improved hardstand, if available. Unimproved sites should be firm, well-drained locations, free of excessive vegetation.

WARRANTY INFORMATION

Warranty information for the CL/CLS components is contained in the commercial literature accompanying the components.

NOMENCLATURE CROSS-REFERENCE LIST

| Common Name | Official Nomenclature |
|-------------------------|-------------------------------|
| 3,000 Gallon Water Tank | Collapsible Fabric Water Tank |
| CL | Containerized Latrine |
| CLS | Containerized Latrine System |
| Container | Modified Cargo Container |
| ECU | Environmental Control Unit |
| Spigot | Boiler Drain Valve |
| Sump Pump | Pump |
| TRICON | Triple Container |
| Water Heater | 6 Gallon Water Heater |
| Water Pump | 30 GPM water pump |

LIST OF ABBREVIATIONS/ACRONYMS

| | | | |
|--------|---------------------------------------------------|-------|-------------------------------------------------------|
| AAL | Additional Authorization List | MWO | Modification Work Order |
| AC | Alternating Current | N/A | Not Applicable |
| AMP, A | Ampere | NBC | Nuclear, Biological, Chemical |
| AR | Army Regulation | NIIN | National Item Identification Number |
| AVIM | Aviation Intermediate Maintenance | NSN | National Stock Number |
| AVUM | Aviation Unit Maintenance | ORD | Operational Requirements Document |
| BII | Basic Issue Item | PAM | Pamphlet |
| BOI | Basis of Issue | PDISE | Power Distribution Illumination System, Electrical |
| °C | Degrees Celsius (Centigrade) | PMCS | Preventive Maintenance Checks and Services |
| CAGEC | Commercial And Government Entity Code | P/N | Part Number |
| CARC | Chemical Agent Resistant Coating | POL | Petroleum, Oil and Lubricant |
| CB | Circuit Breaker | PR | Pair |
| CCW | Counterclockwise | psi | Pounds per Square Inch |
| CL | Containerized Latrine | PVC | Polyvinyl Chloride |
| CLS | Containerized Latrine System | QDC | Quick Disconnect |
| cm | Centimeter | qt | Quart |
| COEI | Components of End Item | Qty | Quantity |
| CPC | Corrosion Prevention Control | rpm | Revolutions per Minute |
| CTA | Common Table of Allowances | RPSTL | Repair Parts and Special Tools List |
| CW | Clockwise | RTV | Room Temperature Vulcanized |
| DA | Department of the Army | SF | Standard Form |
| DISE | Distribution Illumination Systems, Electrical | SMR | Source, Maintenance and Recoverability |
| DMWR | Depot Maintenance Work Requirement | SOP | Standard Operating Procedure |
| DS | Direct Support | SRA | Specialized Repair Activity |
| ea | Each | TAMMS | The Army Maintenance Management System |
| ECU | Environmental Control Unit | TM | Technical Manual |
| EIR | Equipment Improvement Recommendation | TMDE | Test, Measurement, and Diagnostic Equipment |
| EMP | Electromagnetic Pulse | TOE | Table of Organization and Equipment |
| °F | Degrees Fahrenheit | U/M | Unit of Measure |
| FC | Female Connection | UOC | Usable On Code |
| ft | Foot | UUT | Unit Under Test |
| FM | Field Manual | UV | Ultra Violet |
| GFCI | Ground Fault Circuit Interrupt | V | Volt |
| GPM | Gallons per Minute | VAC | Volt Alternating Current |
| HCI | Hardness Critical Item | W | Watt(s) |
| hp | Horsepower | WP | Work Package |
| hr | Hour | wt | Weight |
| Hz | Hertz | | |
| IAW | In Accordance With | | |
| in | Inches | | |
| ISO | International Organization for Standardization | | |
| JTA | Joint Table of Allowance | | |
| Kg | Kilogram | | |
| kPa | Kilopascal(s) | | |
| kW | Kilowatt | | |
| Lbs | Pounds | | |
| lt | Liter | | |
| MAC | Maintenance Allocation Chart | | |
| m | Meter | | |
| MC | Male Connection | | |
| MSDS | Material Safety Data Sheet | | |
| MTD | Munitions Technologies Division | | |
| MTOE | Modified Table of Organization and Equipment | | |

SAFETY, CARE, AND HANDLING

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. A summary of warnings appears at the front of this manual.

SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

No special tools or support equipment are required.

REPAIR PARTS

Repair parts are listed and illustrated in WP 0074 00 to WP 0112 00 of this manual.

CHAPTER 1

**DESCRIPTION AND
THEORY OF OPERATION**

**CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)**

**OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
EQUIPMENT DESCRIPTION AND DATA**

EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES

A summary of the characteristics, capabilities and features of the equipment is contained in the following subparagraphs:

Characteristics

The CL is an integral component of the Force Provider system, and relies on Force Provider facilities to provide the power, potable water, and blackwater disposal necessary to operate the latrine. The CLS is a standalone system that, in stowed or deployed configuration, includes additional equipment necessary to operate the facility, including a 3,000-Gallon water tank. The CLS requires connection to a power source and onsite waste disposal or wastewater evacuation tank/trailer (WWET/T). The CLS may be deployed as part of the Force Provider system or separately as required.

Either system can be assembled or disassembled within two hours. The CL and CLS are assembled, operated, and disassembled by four non-specific MOS personnel; however, power supply connections must be made by MOS 51R, 52C, 52D, or 52G qualified personnel, and the reduced pressure backflow prevention device must be maintained by MOS 51K20 qualified personnel.

The CL and CLS normally operate in temperatures above 32° F. To operate CLS in temperatures below 32° F, cold weather components may be used, as described in WP 0011 00. To operate CL in temperatures below 32° F, refer to Force Provider TM 10-5419-206-13 for Modification System Cold Weather procedures.

Capabilities and Features

The CL and CLS are each capable of supporting 150 personnel on a continual basis. The container uses utility panels for easy connection and control of freshwater, blackwater, and electrical power. The CLS has a water pump mounted internally.

Both systems feature internal fluorescent lighting, an Environmental Control Unit (ECU), an exhaust fan, a waste holding tank ventilation or draft inducer fan, one double sink which provides hot and cold water for hand washing, one urinal trough, and six toilets. A waste container is provided for trash disposal. A broom, mop, and mop bucket are supplied for routine cleaning of the container interior. For the CLS, a shovel is also provided.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS**Container**

Both models are housed in modified ISO type 8-ft x 8-ft x 20-ft containers. The latrine modifications do not affect the container's external dimensions or transportation characteristics. In a shipping configuration the total weight is less than 10,000 lbs.

Cargo Doors

The cargo doors **(1)** provide access to the main entrance door **(2)**.

Main Entrance Door

The main entrance door **(2)** provides access to the latrine facilities.

Exhaust Fan and Draft Inducer Fan

The exhaust fan **(3)** ventilates the container. The draft inducer fan **(4)** removes sewage gases from the waste holding tank #2 **(5)**.

Environmental Control Unit (ECU)

The ECU (6) heats and cools the interior of the latrine container.

Utility Panels

The utility panels are inlet into the exterior walls of the container for power, water supply, and blackwater drain. The panels contain connections as follows:

- **Electrical Panel (7):**
 - One 60A, 208VAC, 3-phase main power input socket
 - One grounding terminal
 - One 20A 208VAC single phase output receptacle (CL only)
 - Two 20A 110VAC single phase power outlet receptacles (CLS only)
- **Water Supply Panel (8):**
 - One fresh water connection
 - One freshwater connection to flush tank #2 (CL only)
 - One recirculation connection (CLS only)
- **Blackwater Drain Panel (9):**
 - One blackwater connection

Fresh Water System Components

Inside the latrine the fresh water supply is distributed to the interior water pump (10) with expansion tank (11) (CLS only), water heater (12), sinks (13), urinal (14), spigot (15), toilets (16), and recirculation outlet, (CLS only when cold weather kit is in use as described in WP 0007 00).

Blackwater System Components

Blackwater connections drain wastewater from sinks (13) and urinal (14) to waste holding tank #1 (17). Toilets (16) are drained to waste holding tank #2 (5).

Lights

Two interior fluorescent lights (18) and one exterior light (19) are controlled by switches on the side of the circuit breaker panel (20).

Water Pump (CLS only)

An interior water pump (10) is mounted on a shelf located above waste holding tank #1. The water pump (10) is used with the 3,000-gallon water tank (21), which is stored inside the container when not in use.

Recirculation Valve (CLS only)

A recirculation valve (22) is located above the water pump (10). The recirculation valve (22) is used when cold weather components are in use as described in WP 0007 00.

Reduced Pressure Backflow Prevention Device

A reduced pressure backflow prevention device (23) is installed on the end-wall of the container in stall number six. The backflow preventer is installed as part of the permanent CL/CLS plumbing. Its purpose is to prevent contamination of the fresh water supply by the black and gray water associated with the CL/CLS.

Sinks

The sinks (13) are mounted to the container floor. Fresh-water line connects to the water supply panel (8). The blackwater PVC pipe connects to waste holding tank #1 (17). A spigot (15) is mounted to the sink (13).

Urinal

The urinal (14) is mounted to the latrine and waste holding tank #1 (17). PVC fresh-water pipes connect to the water supply panel (8) and water pump (10) (CLS only), and waste holding tank #1 (17).

Toilets

The toilets (16) are mounted to waste holding tank #2 (5).

Water Heater

The water heater (12) provides hot water to the sinks (13).

Sump Pump

The sump pump (24) transfers blackwater from waste tank #1 (17) to waste tank #2 (5).

Waste Holding Tanks

Waste holding tanks #1 (17) and #2 (5) hold blackwater for disposal.

Documentation Holder

The documentation holder (25) holds documentation related to the CL and the CLS.

Storage Area

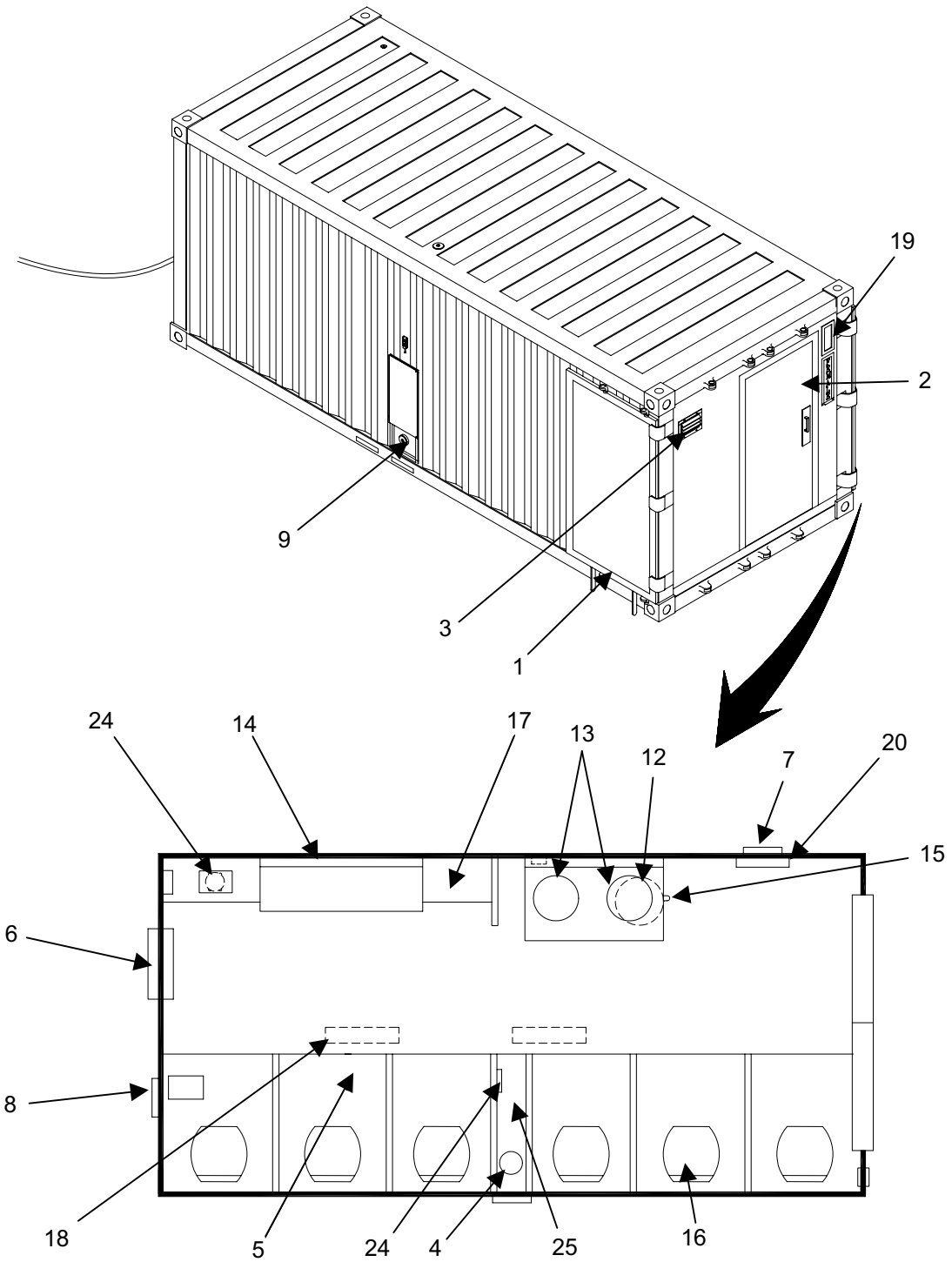
Both CL and CLS have a storage area (26) to hold various components. Holding clamps (27) (CLS only) hold the shovel, broom, mop, and mop bucket in place.

Circuit Breaker Panel

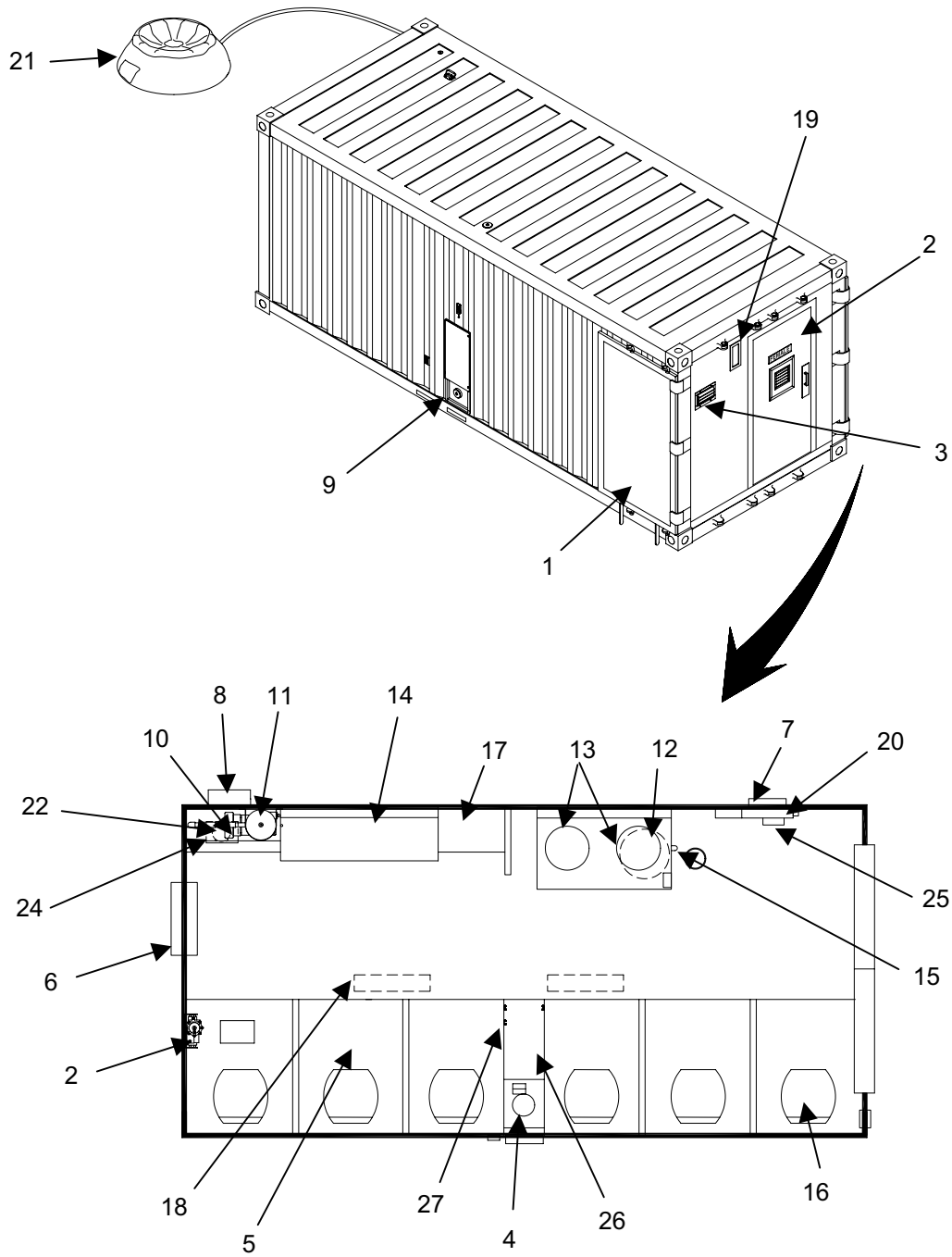
The circuit breaker panel (20) is located internally above the electrical panel (7). The standard commercial panel contains breakers protecting the internal and external circuits of the CL and CLS. Refer to WP 0004 00 for specific circuit breaker numbers and capacities as applicable to the CL and the CLS.

Water Hoses and Miscellaneous Fittings (Not illustrated)

The water hoses and miscellaneous fittings provide fresh-water to, and transports blackwater from, sinks, urinal, and toilets during CL/CLS operation.



CONTAINERIZED LATRINE (CL)



CONTAINERIZED LATRINE SYSTEM (CLS)

DIFFERENCES BETWEEN MODELS

Internally both latrine models are the same, except that the CLS is equipped with an internal mounted water pump, and differences in external fresh water and electrical panels to accommodate the internal water pump and 3000-gallon water tank.

The CL is used in conjunction with the Force Provider water distribution system (See Force Provider TM 10-5419-206-13 for water distribution information). For power distribution, the CL requires connection to a PDISE in the Force Provider power grid (See Force Provider TM 10-5419-206-13 for power distribution information).

The CLS includes a 3,000-gallon water tank for potable water supply. The CLS may also be supplied from other approved sources, such as a municipal water supply or other onsite water tanks. CLS power may be supplied by either a generator or a municipal power source.

For the Containerized Latrine System, all items are stored inside the CLS container. For the Containerized Latrine, some items are packed in Force Provider System TRICONS. Refer to WP 0005 00 and WP 0008 00 for packing lists. CL's are packed in two configurations – packing plan A and packing plan B. CL's are always deployed with equal numbers of A and B packed units – two A's and two B's are standard with a Force Provider deployment.

EQUIPMENT DATA

The following data pertains to CL and the CLS:

External dimensions:

Length: 19 feet, 10 ½ inches (6.06 meters)

Width: 8 feet (2.44 meters)

Height: 8 feet (2.44 meters)

Internal dimensions:

Length: 19 feet, 4 inches (5.89 meters)

Width: 7 feet, 6 inches (2.29 meters)

Height: 7 feet, 3 ⅜ inches (2.22 meters)

Door dimensions:

Main Entrance Door

Height: 6 feet, 8 inches (2.03 meters)

Width: 3 feet (91.44 centimeters)

Cargo doors

Height: 6 feet, 11 ⅝ inches (2.12 meters)

Width: 7 feet, 7 inches (2.31 meters)

Weight:

CLS

Empty 9,478 pounds (4299 kilograms)

Fully Packed 9,999 pounds (4535 kilograms)

EQUIPMENT DATA (Continued)**CL- Packing Plan A**

| | |
|--------------|-------------------------------|
| Empty | 8,797 pounds (3990 kilograms) |
| Fully Packed | 9,241 pounds (4273 kilograms) |

CL- Packing Plan B

| | |
|--------------|-------------------------------|
| Empty | 8,797 pounds (3990 kilograms) |
| Fully Packed | 9,001 pounds (4083 kilograms) |

Required electrical input:

| | |
|--------------------|---------------------------------------|
| CL | 60A, 208VAC, 3 phase |
| ECU | 24A, 208VAC, single phase |
| Fan, Draft Inducer | 0.43A, 35 Watt, 110 VAC, single phase |
| Fan, Exhaust | 1.0A, 110VAC, single phase |
| Light, Fluorescent | 1.5A, 110VAC, single phase |
| Sump Pump | 8A, 115VAC, single phase |
| Water Heater | 15A, 1500 Watts, 110VAC, single phase |

Required fresh water flow rate:

30 gpm minimum

Environmental:

Operating temperature range: -15° to 120° Fahrenheit (-26° to 49° centigrade)

EQUIPMENT CONFIGURATION

The latrine is deployed in two configurations. The CLS functions as a stand-alone system. The CL has been designed as a component of Force Provider. Similarities and differences are noted throughout this manual.

COMMON TOOLS AND EQUIPMENT

For authorized common tools and equipment, refer to the applicable Modified Table of Organization and Equipment (MTOE); CTA 50-970; Expendable/Durable Items (Except: Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items, as applicable to your unit.

**OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
THEORY OF OPERATION**

GENERAL

The CL and CLS are designed for operation in temperature zones above 32° F (0° C). To operate the CL in temperatures below 32° F, refer to Force Provider TM 10-5419-206-13 for Modification System Cold Weather procedures. To operate the CLS in temperatures below 32° F, cold weather components may be used as described in WP 0011 00. Both models can be operated on a continuous basis, provided the water supply and blackwater discharge can be sustained on the same basis. The latrine operation consists of seven functional systems:

- Modified general cargo container
- Power distribution system
- Fresh-water system
- Blackwater system
- Water Heater System
- Water Pumping System
- Waste Tank Ventilation System

Modified General Cargo Container

Both latrine facilities are housed in a cargo container **(1)** modified to accommodate the electrically operated, hot/cold-water service latrine facility. Main access to the latrine facility is through the cargo doors **(2)** and then the main entrance **(3)**. The latrine facility houses two sinks **(4)**, one urinal trough **(5)**, six toilets **(6)**, a water heater **(7)**, utility connectors (fresh water, blackwater, and electrical) and a circuit breaker panel. An ECU and an exhaust fan allow climate control as needed. The latrine is illuminated with two double fluorescent light assemblies and an exterior light.

Power Distribution System

Both models operate on 60A, 208VAC, 3-phase power. The CL is part of the Force Provider power distribution system. The CLS requires a power source, either commercial or generator power system of 10kw or greater. A 60A cable, connects to the external electrical panel, which in turn powers the circuit breaker panel. The circuit breaker panel provides power to the water heater, the sump pump, the ECU, the exhaust fans, overhead light, an exterior light, and a 110VAC convenience outlet. The CLS circuit breaker panel also provides power to an internal water pump, and three exterior GFCI outlets used for the cold weather kit as described in WP 0011 00.

Fresh Water System

Freshwater for the sinks, spigot, urinal, and toilets (through connection to the service entry panel inside the latrine facility) is provided from a main supply hookup. The CLS uses either a municipal system or a 3000-gallon water tank. A recirculation hose is used in cold weather conditions as part of the cold weather kit as described in WP 0011 00. The CL is connected to the Force Provider water distribution system (see TM 10-5419-206-13 for Force Provider configuration). A reduced pressure backflow prevention device is installed on the end-wall of the container in stall number six. The backflow preventer is installed as part of the permanent plumbing. Its purpose is to prevent contamination of the fresh water supply by the black and gray water associated with the CL/CLS.

Water Heating System

A 6-gallon water heater **(7)** heats the fresh-water and distributes the heated water to the sinks.

Blackwater System

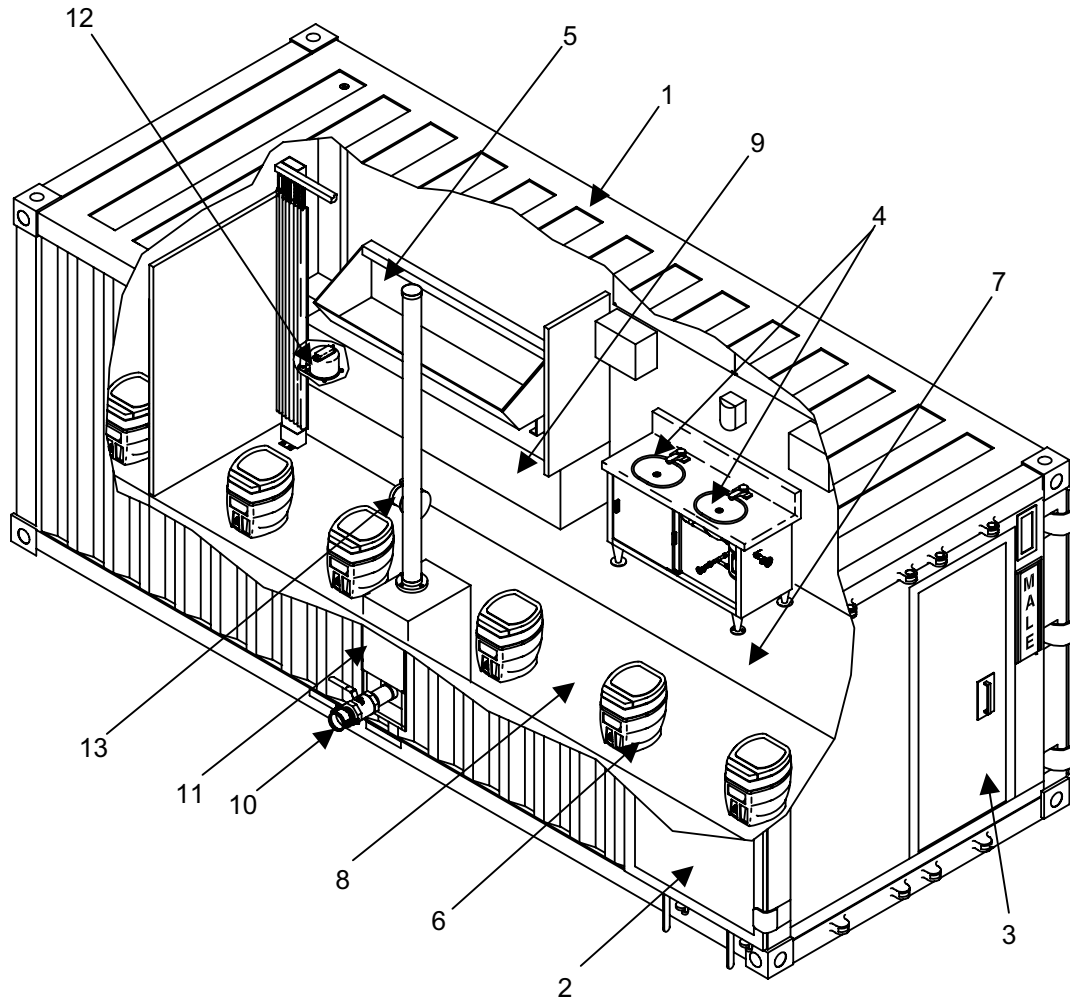
Blackwater from the waste tanks **(8)** and **(9)** is either gravity fed through a hose that is connected to the 4-inch valve **(10)** connected to the blackwater access panel **(11)**, and then to a sewer or the blackwater is emptied from the tanks and taken to a wastewater collection facility (via the blackwater access panel **(11)** and 4-inch valve, if fitted **(10)**).

Water Pumping System

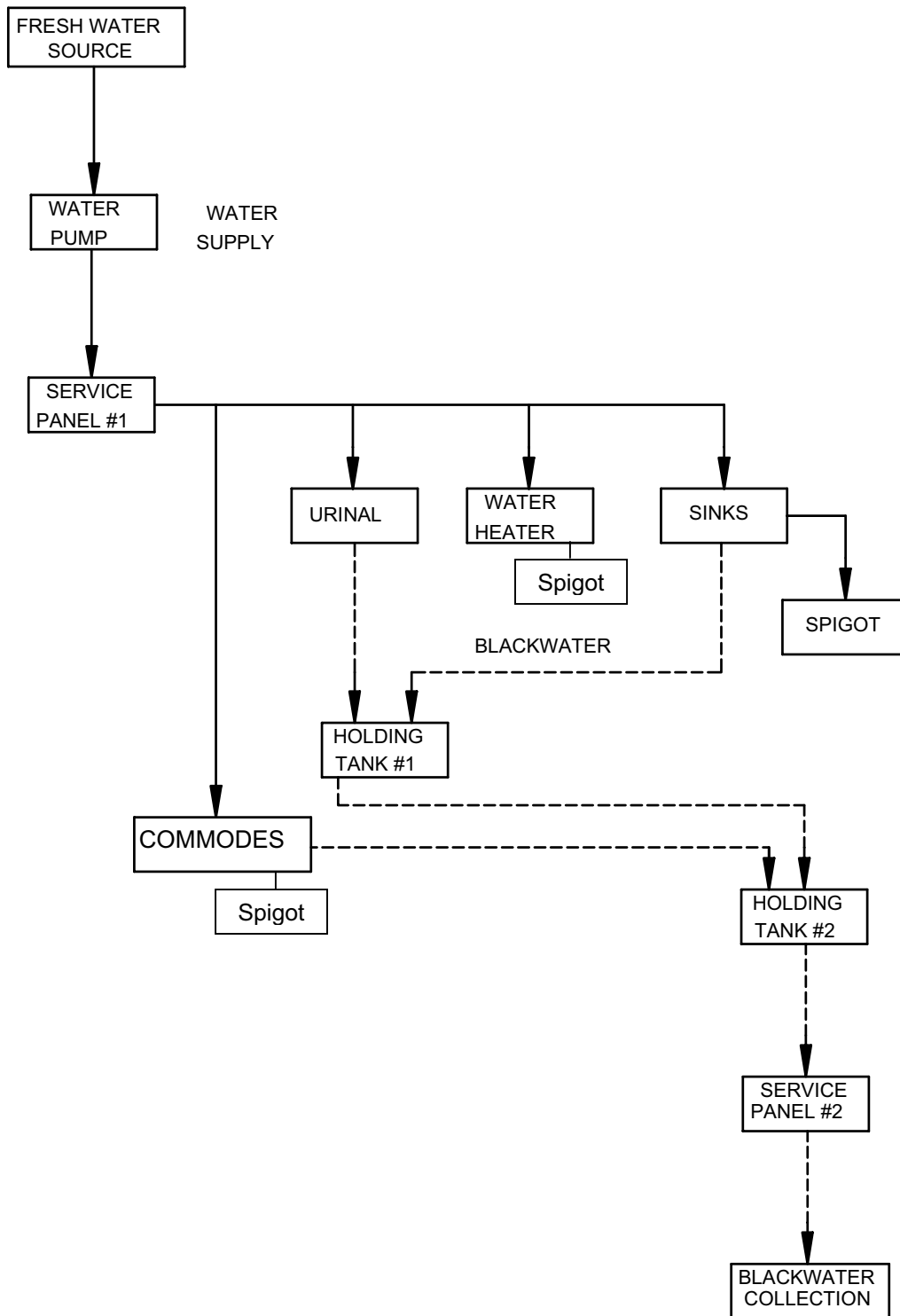
A sump pump (12) transfers blackwater from the smaller waste holding tank #1 (9) to the main waste holding tank #2 (8). The sump pump (12) is on the floor inside the small waste holding tank #1 (9).

Waste Tank Ventilation System

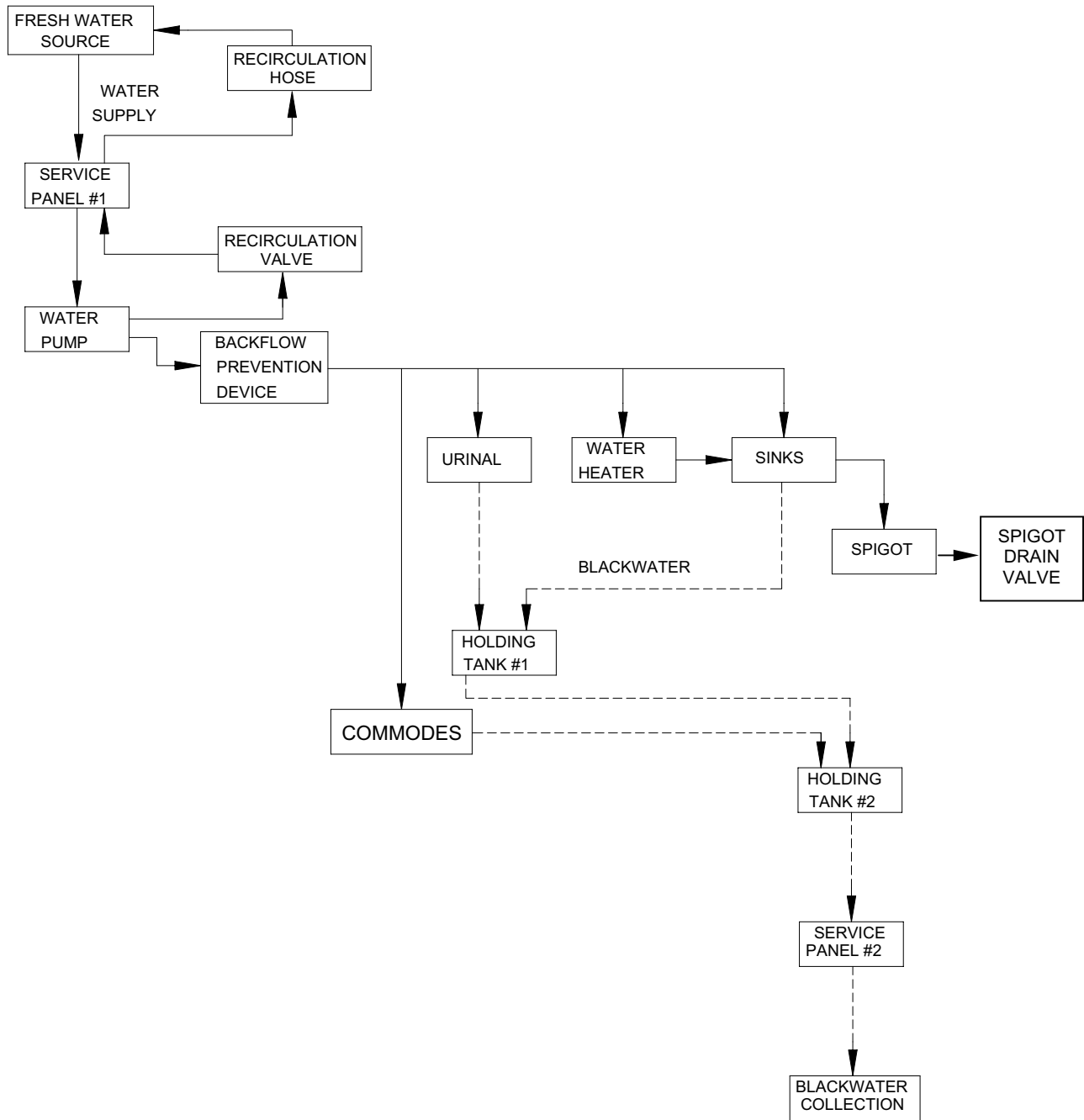
A draft inducer fan (13) exhausts sewer gases from waste holding tank #2 (8). An exhaust pipe is also installed on waste holding tank #1 (9) to provide ventilation.



CONTAINERIZED LATRINE (CL)



CL WATER SYSTEM DISTRIBUTION DIAGRAM



CLS WATER SYSTEM DISTRIBUTION DIAGRAM

CHAPTER 2

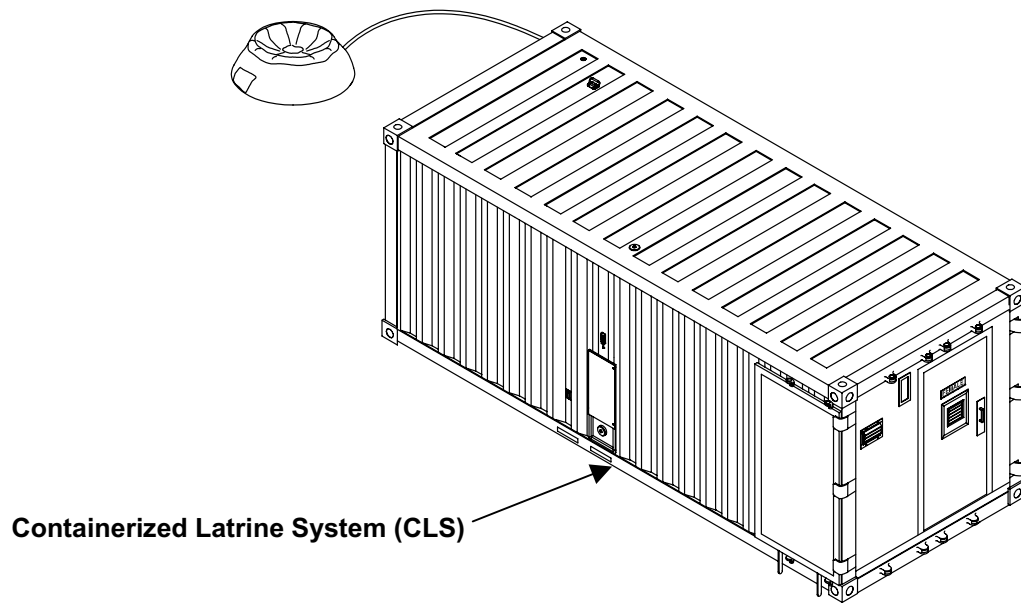
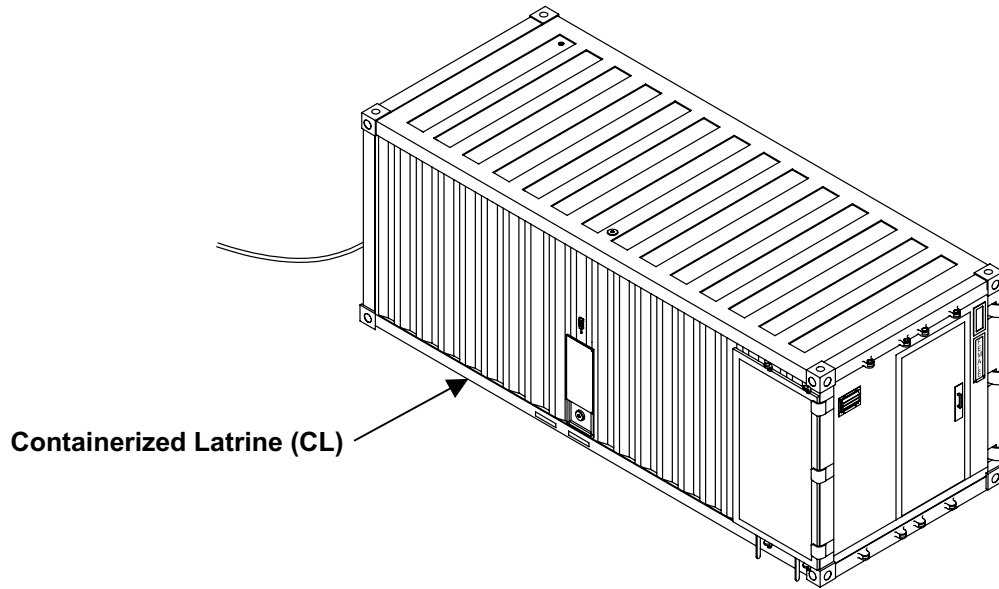
OPERATOR INSTRUCTIONS

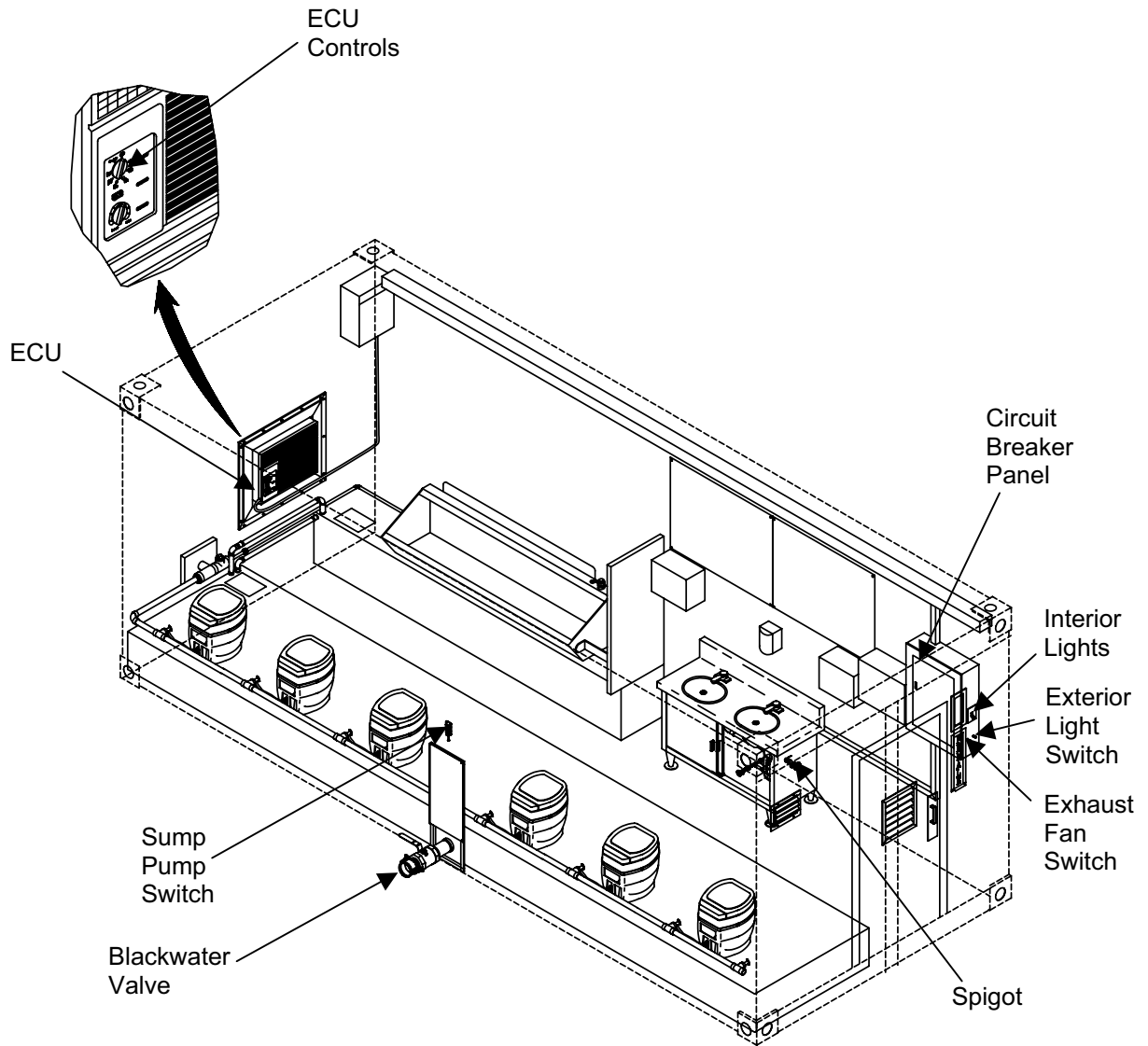
CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

**OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS**

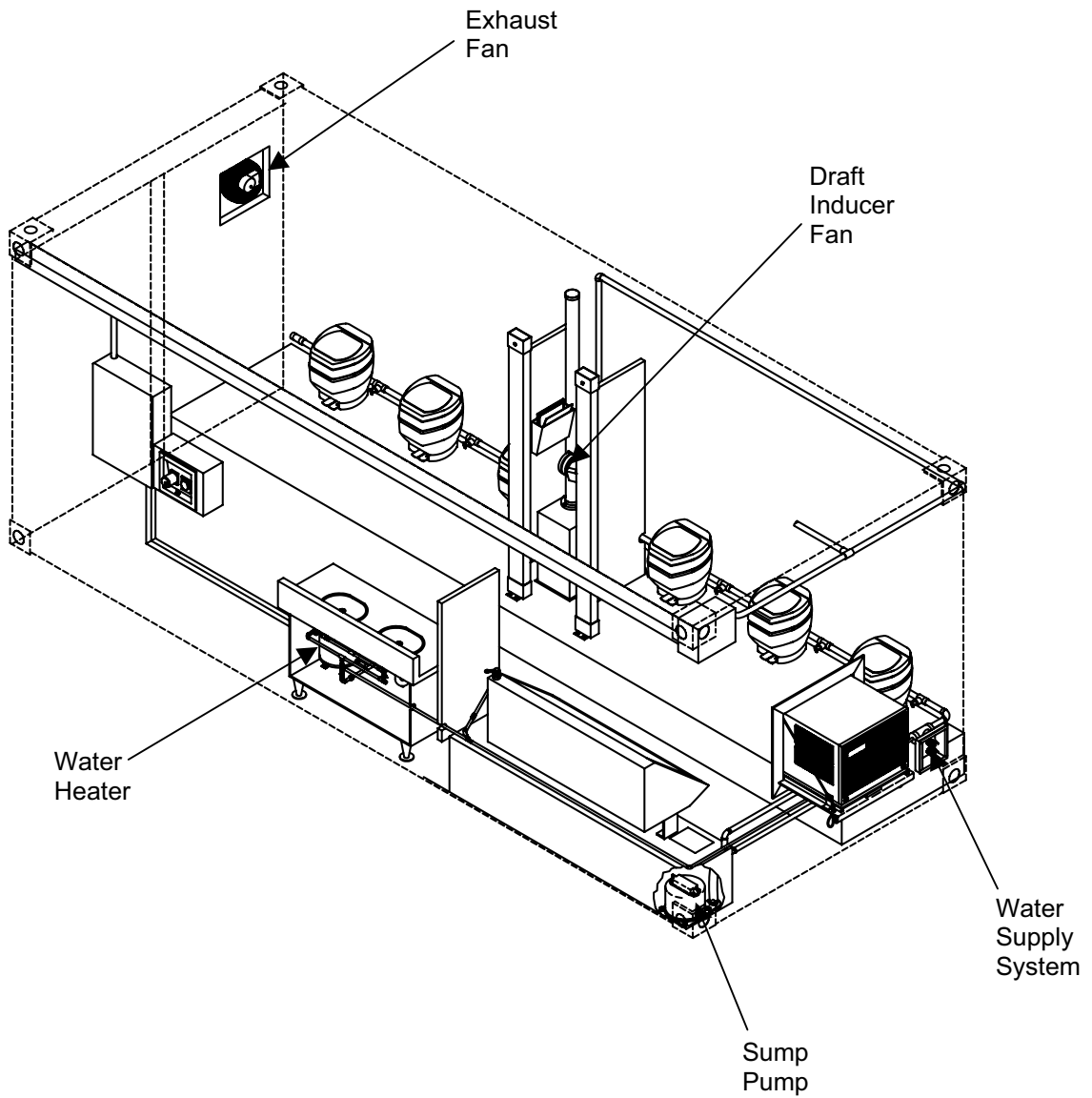
GENERAL

This work package contains information on the controls and indicators of the CL and CLS. The illustration follow shows the location and function of each control and indicator on the CL and CLS and its associated equipment. Subsequent illustrations and tables explain the specific function of each control and indicator.

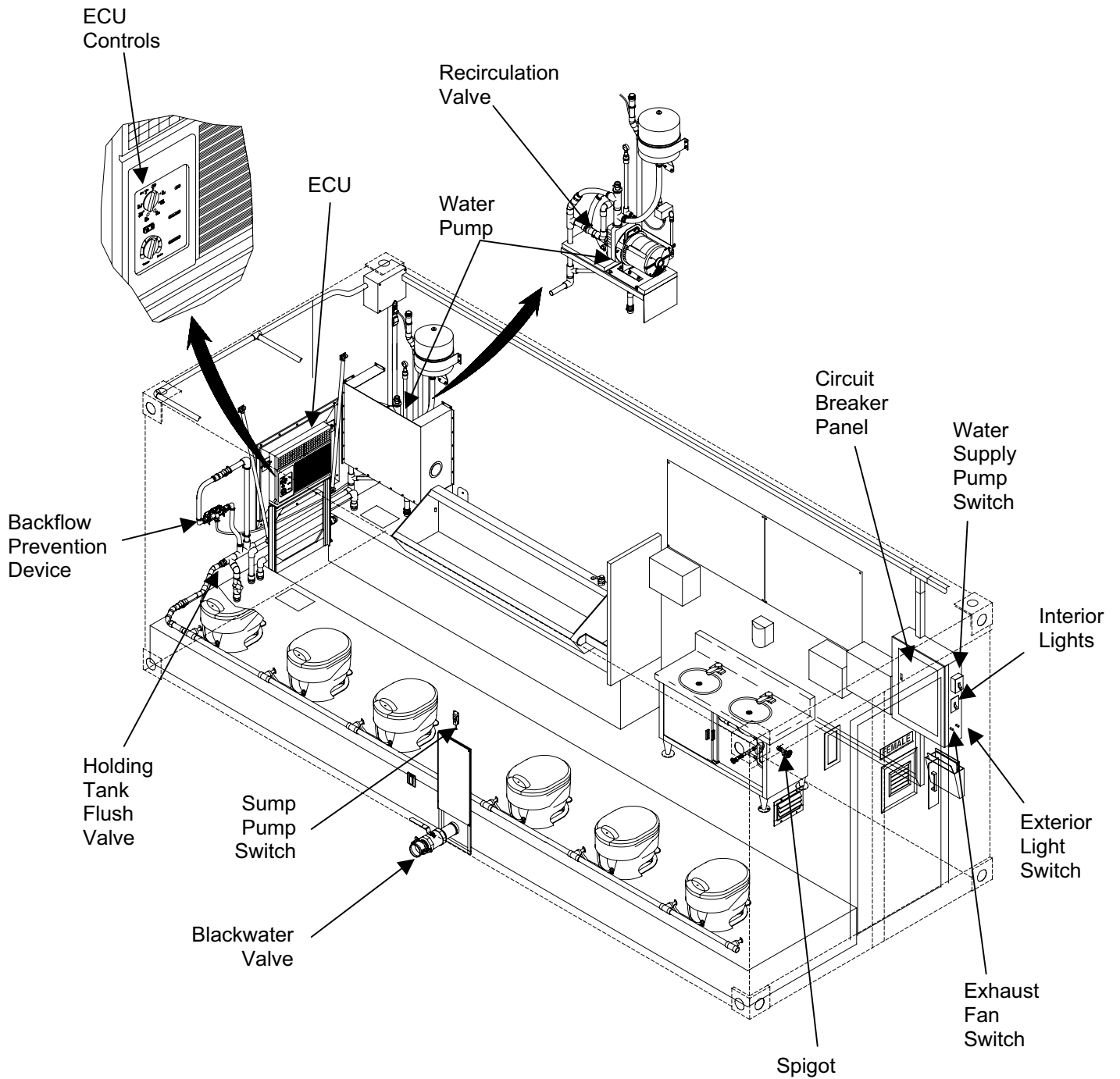




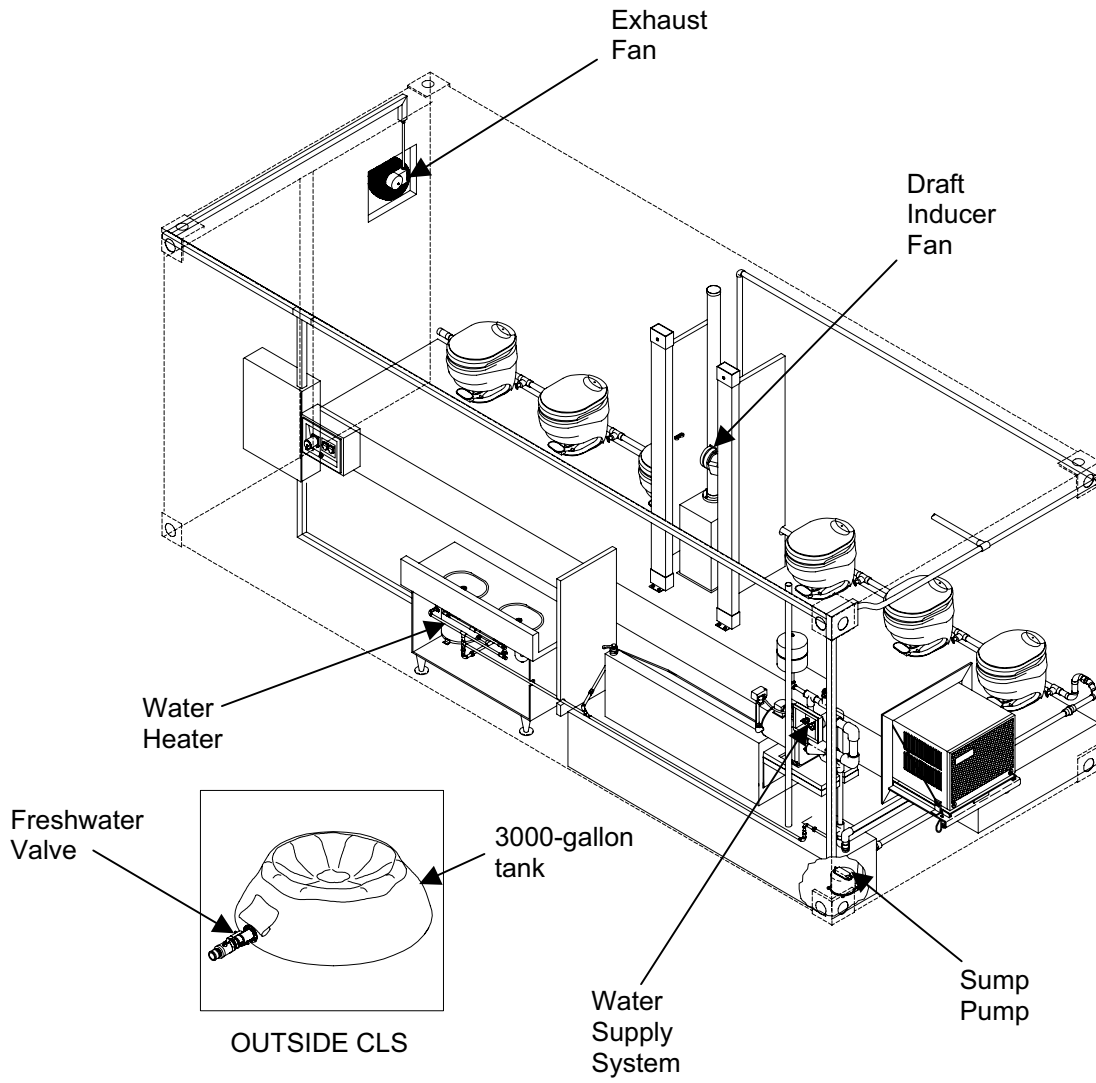
FRONT VIEW OF CL



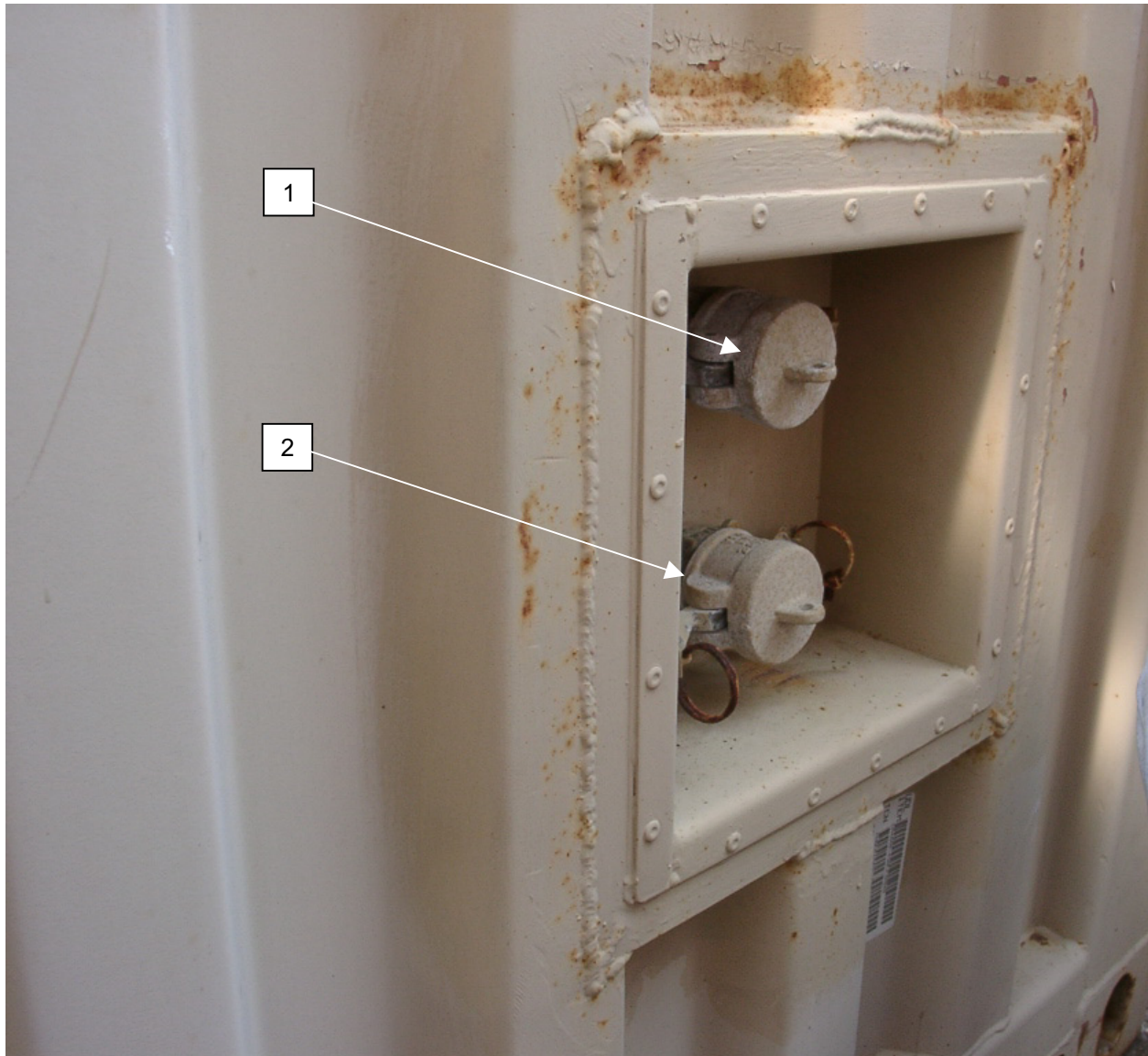
REAR VIEW OF CL



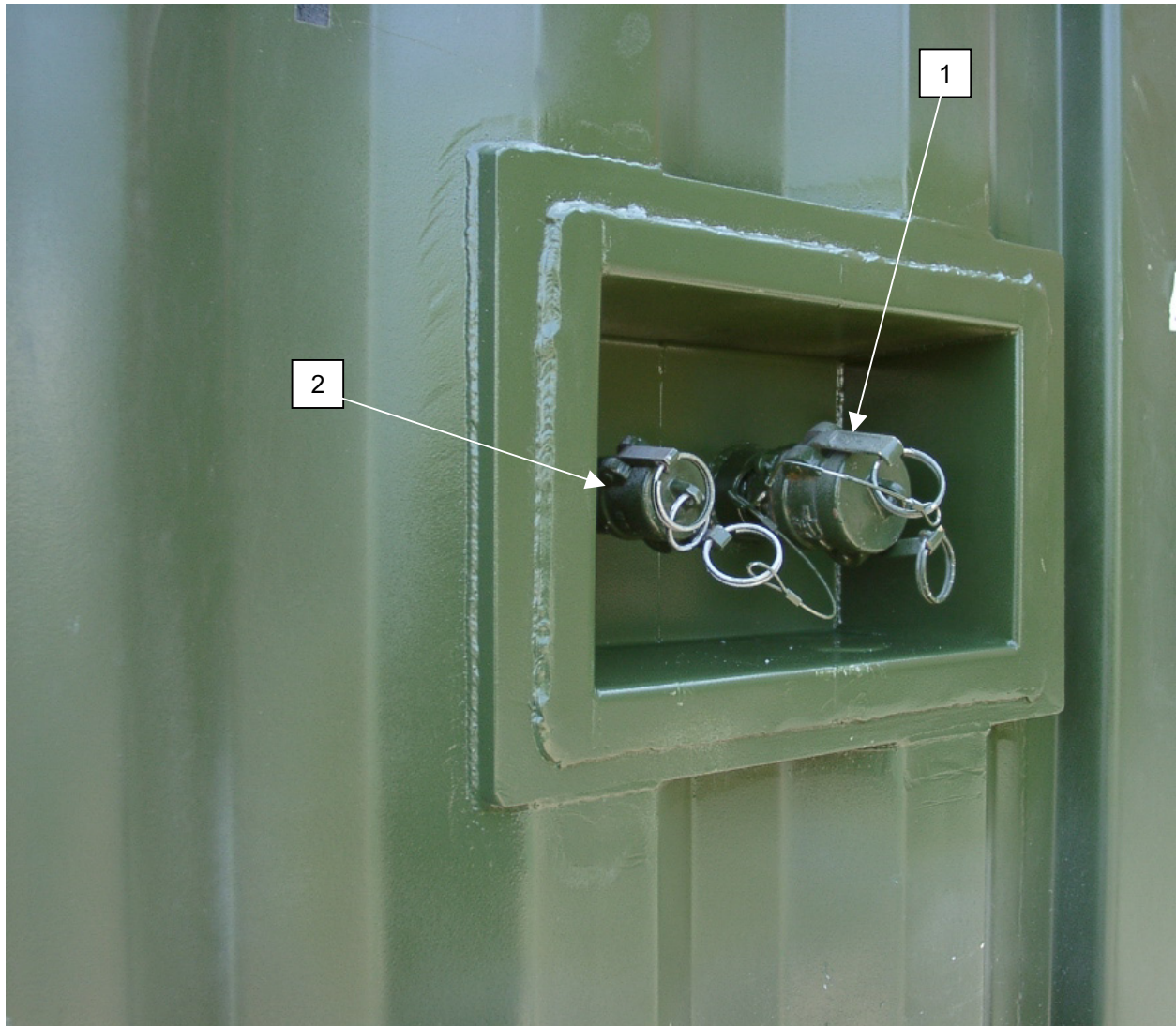
FRONT VIEW OF CLS



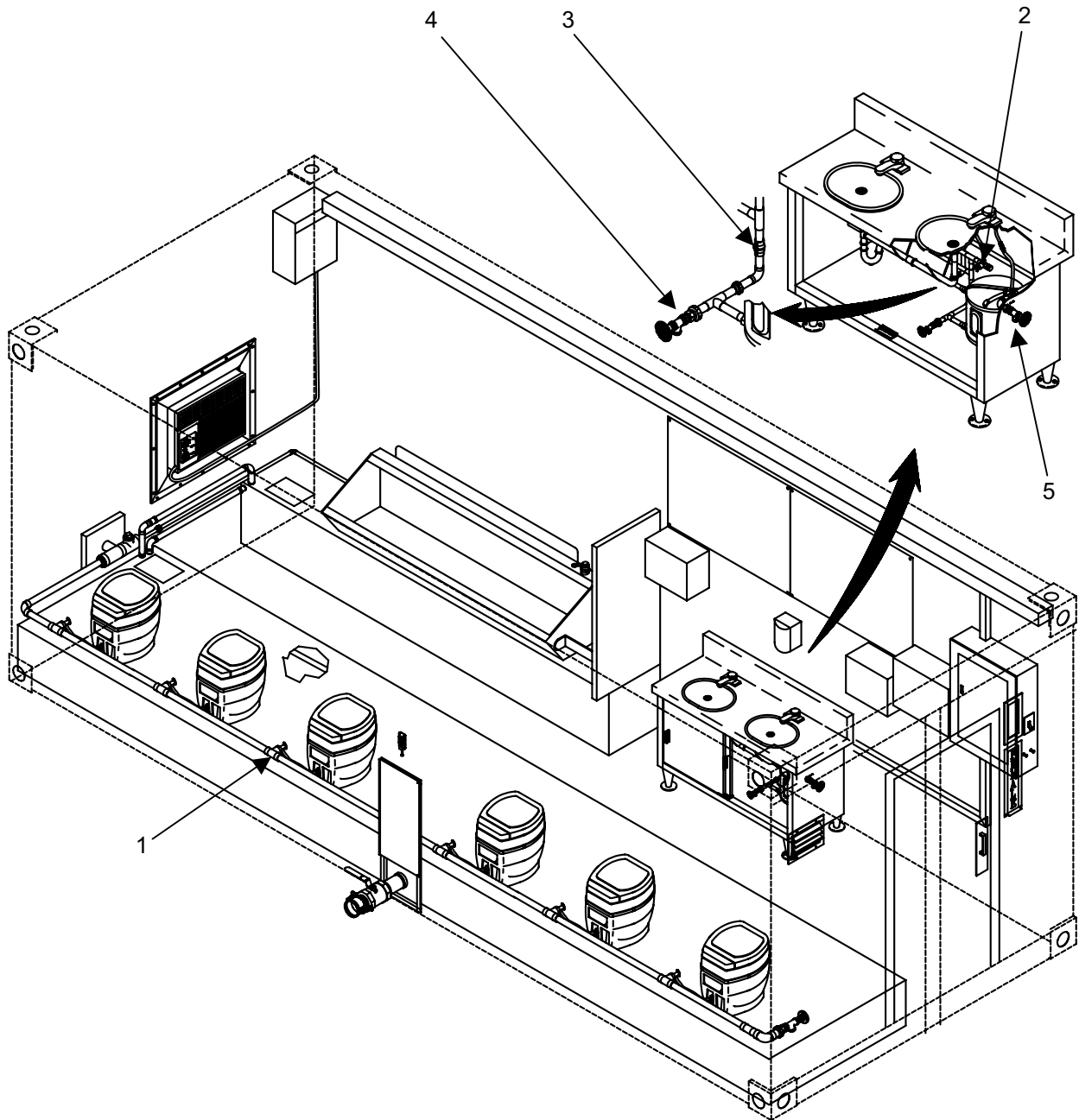
REAR VIEW OF CLS



| Water Supply Panel (CL) | | |
|-------------------------|-------------------------|--------------------------------------------------------------------|
| KEY | ITEM | FUNCTION |
| 1 | Water Supply Connection | Provides a connection from the potable water supply to the CL. |
| 2 | Tank Rinse Connection | Provides a connection to rinse out the #2 blackwater holding tank. |

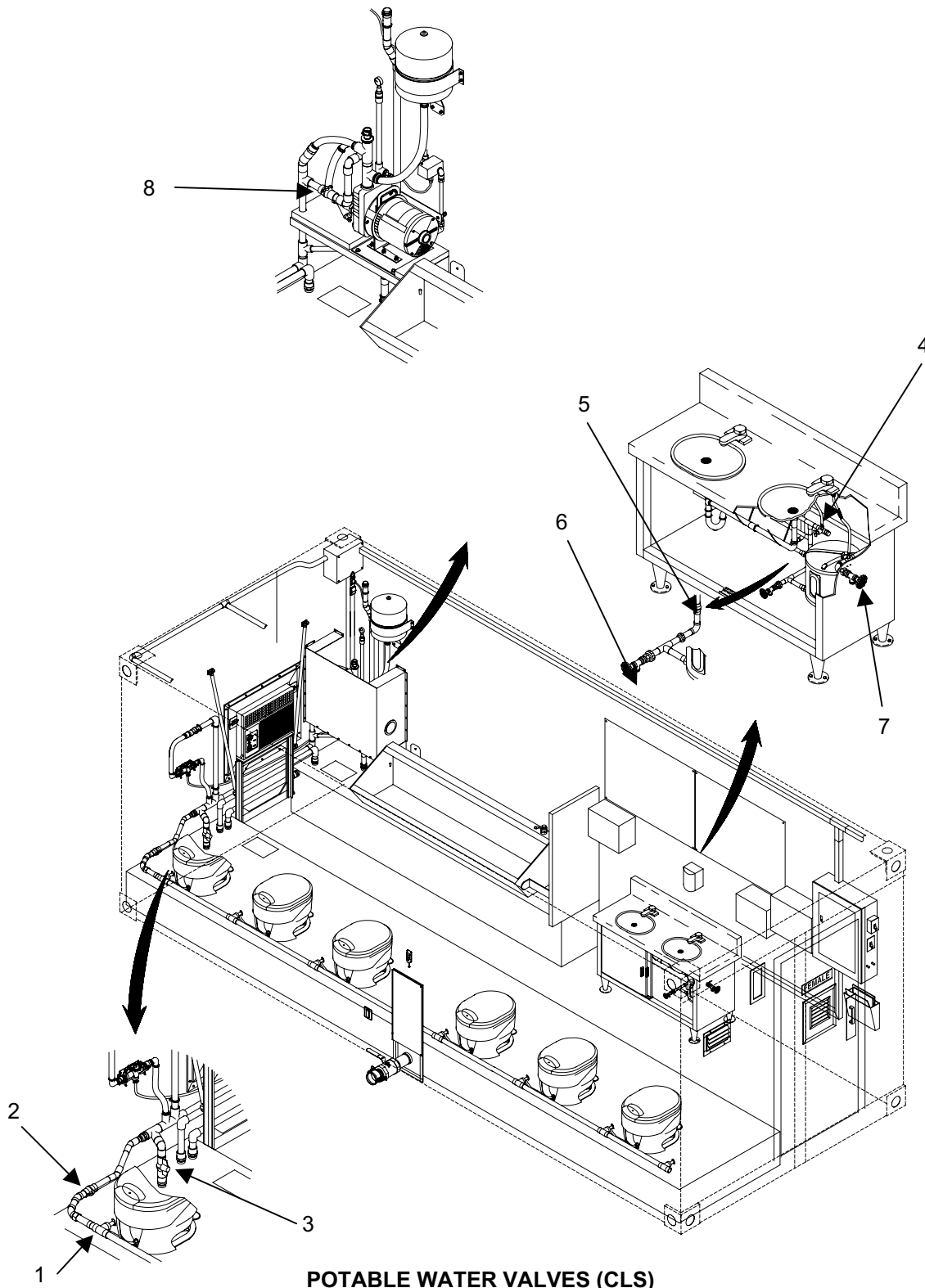


| Water Supply Panel (CLS) | | |
|--------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KEY | ITEM | FUNCTION |
| 1 | Water Supply Connection | Provides a connection from the potable water supply to the CLS. |
| 2 | Water Recirculation Connection | Provides a connection from the fresh water pump to the 3000 gallon water tank. This connection allows the recirculation of water in cold weather, protecting the 3000 gallon water tank from freezing. |



POTABLE WATER VALVES (CL)

| Potable Water Valves (CL) | | |
|----------------------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| KEY | ITEM | FUNCTION |
| 1 | Toilet Valve (1 per toilet) | The toilet valves control the flow of fresh water to each toilet. |
| 2 | Sink Valve (1 per sink) | The sink valve controls the input of cold water to the sinks and spigot; and the hot water coming from the water heater to the sinks. |
| 3 | Water Heater With Input/Output Valves | The water heater with input/output valves control the input and output of the water flow to the water heater. |
| 4 | Water Heater Drain Valve | The water heater drain valve allows drainage of the water heater for service and storage. |
| 5 | Spigot | The spigot allows water to be dispensed into a container or through a connected hose and provides water for wash down of interior and waste tanks. |

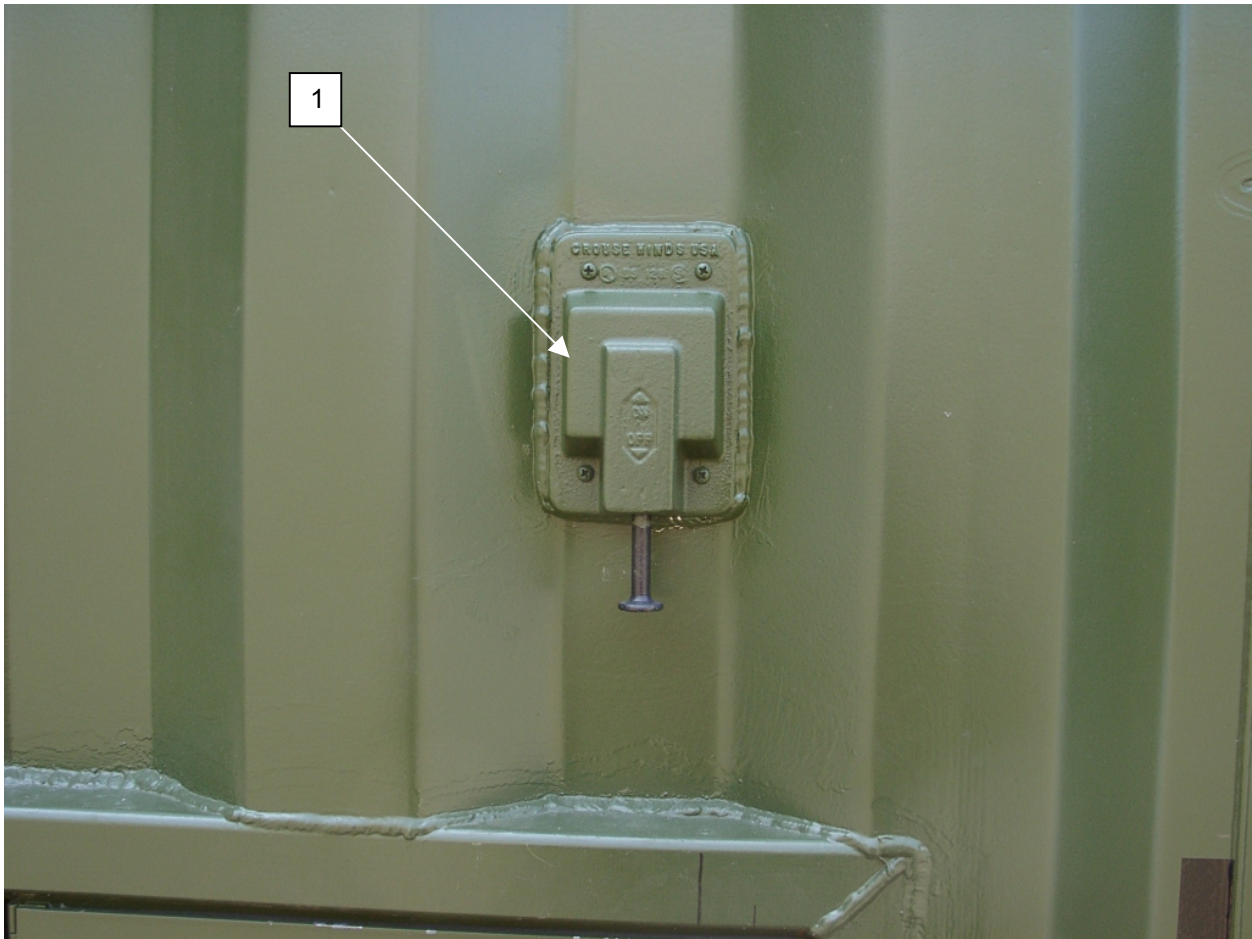


POTABLE WATER VALVES (CLS)

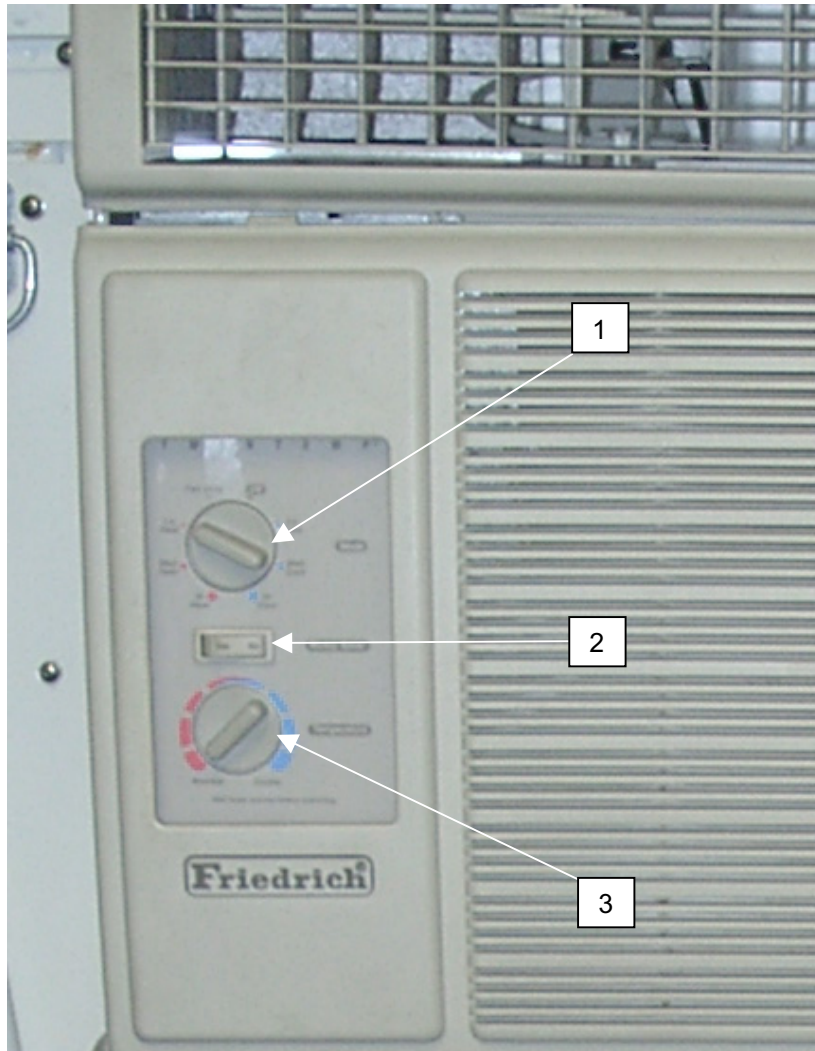
| Potable Water Valves (CLS) | | |
|----------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KEY | ITEM | FUNCTION |
| 1 | Toilet Valve (1 per toilet) | The toilet valves control the flow of fresh water to each toilet. |
| 2 | Main Toilet Valve | The main toilet valve controls the flow of fresh water to the main PVC pipe that distributes water to the toilets. |
| 3 | Waste Tank Valve | The waste tank valve controls the input of water to clean waste holding tank #2. |
| 4 | Sink Valve (1 per sink) | The sink valve controls the input of cold water to the sinks and spigot; and the hot water coming from the water heater to the sinks. |
| 5 | Water Heater With Input/Output Valves | The water heater with input/output valves control the input and output of the water flow to the water heater. |
| 6 | Water Heater Drain Valve | The water heater drain valve allows drainage of the water heater for service and storage. |
| 7 | Spigot & Spigot Check Valve | The spigot allows water to be dispensed into a container or through a connected hose and provides water for wash down of interior and waste tanks. |
| 8 | Recirculation Valve | The recirculation valve allows water to be pumped back into the 3000-gallon water tank during cold weather conditions. |
| 9 | Reduced Pressure Backflow Prevention Device | The backflow prevention device is a piece of plumbing safety equipment which prevents the black and gray water associated with the latrine from contaminating the fresh water supply. |



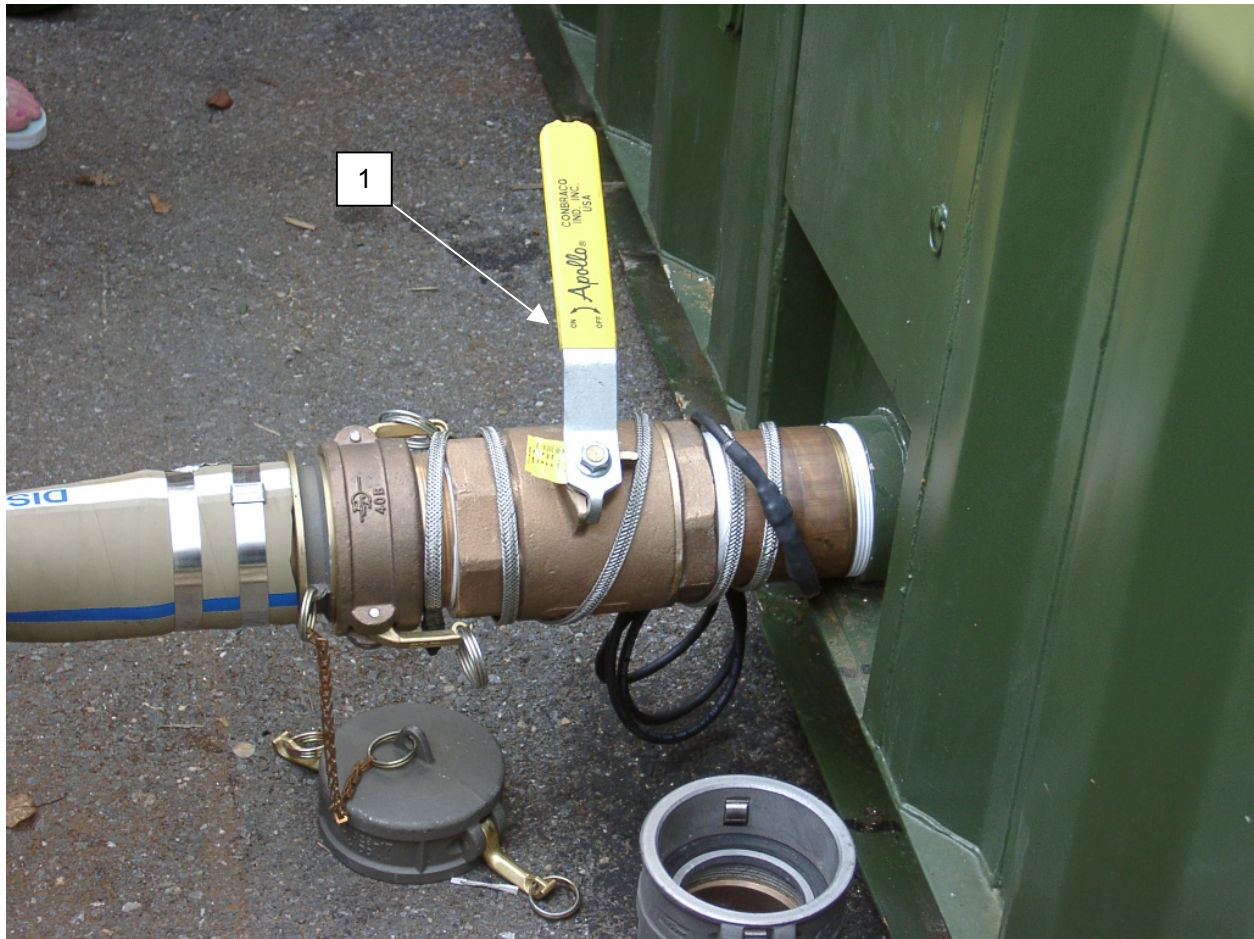
| Switches | | |
|----------|--------------------------------------------|---------------------------------------------------------|
| KEY | ITEM | FUNCTION |
| 1 | Water Supply Pump ON/OFF Switch (CLS only) | Controls operation of the water supply pump (CLS only). |
| 2 | Interior Lights ON/OFF Switch | Controls operation of the interior lights. |
| 3 | Exterior Light ON/OFF Switch | Controls operation of the exterior light. |
| 4 | Exhaust Fan ON/OFF Switch | Controls operation of the exhaust fan. |



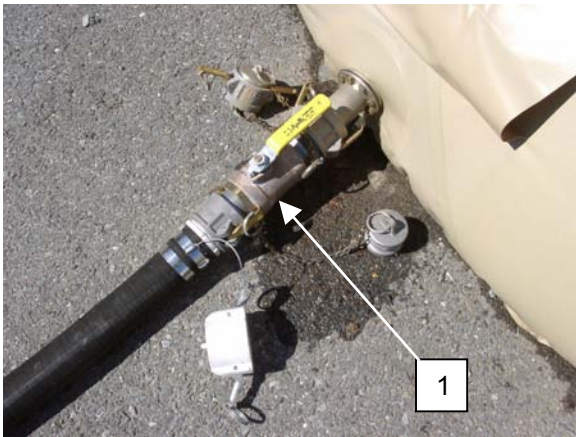
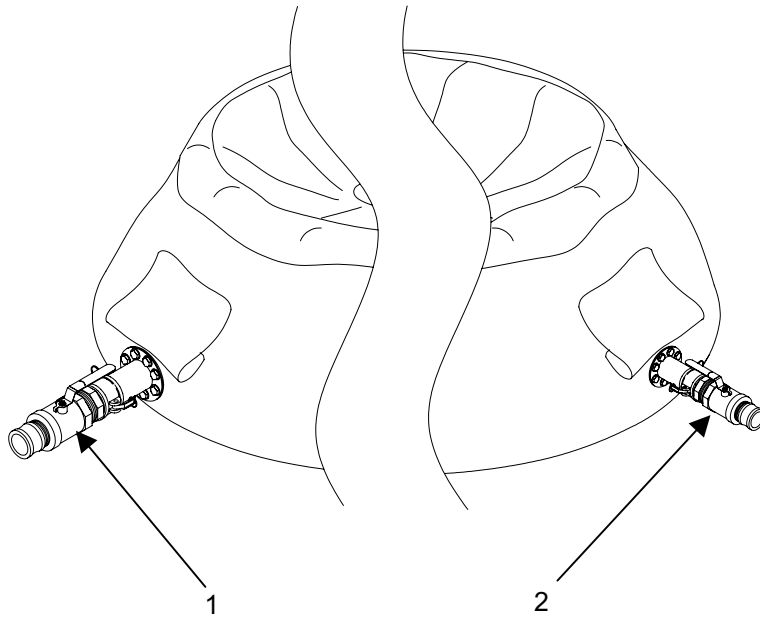
| Sump Pump Switch | | |
|------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| KEY | ITEM | FUNCTION |
| 1 | Sump Pump ON/OFF Switch | The sump pump ON/OFF switch turns the sump pump ON or OFF to pump waste water from waste holding tank #1 to the main waste holding tank #2. |



| Environmental Control Unit (CL/CLS) | | |
|-------------------------------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| KEY | ITEM | FUNCTION |
| 1 | Function Control | The function control allows personnel to select the function of the ECU. |
| 2 | “Money Saver” ON/OFF Switch | With this switch in the OFF position, the fan switches ON and OFF with the compressor. In the ON position, the fan runs at all times. |
| 3 | Temperature Control | The temperature control allows personnel to control the temperature inside the latrine. |



| Blackwater Valve (CLS only) | | |
|-----------------------------|-------------------------|------------------------------------------------------------------------------|
| KEY | ITEM | FUNCTION |
| 1 | 4-inch Blackwater Valve | The blackwater valve controls flow of blackwater from waste holding tank #2. |



| Freshwater Valve (CLS only) | | |
|-----------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| KEY | ITEM | FUNCTION |
| 1 | Freshwater Valve | The Freshwater valve controls flow of freshwater from the 3000-gallon tank. |
| 2 | Freshwater Recirculation Valve | The freshwater recirculation valve controls flow of recirculated water from inside the CLS to the 3000-gallon tank during cold weather conditions. |

CIRCUIT BREAKERS**WARNING**

Electricity is present on this equipment. Do not operate any circuit breaks that are tagged either with lockout tags or with tape. Do not operate any circuit breakers unless you have reference information (such as the reference card in the breaker box door, or this work package) about the circuit and breaker. Serious injury or death to personnel may result if safety precautions are not observed.

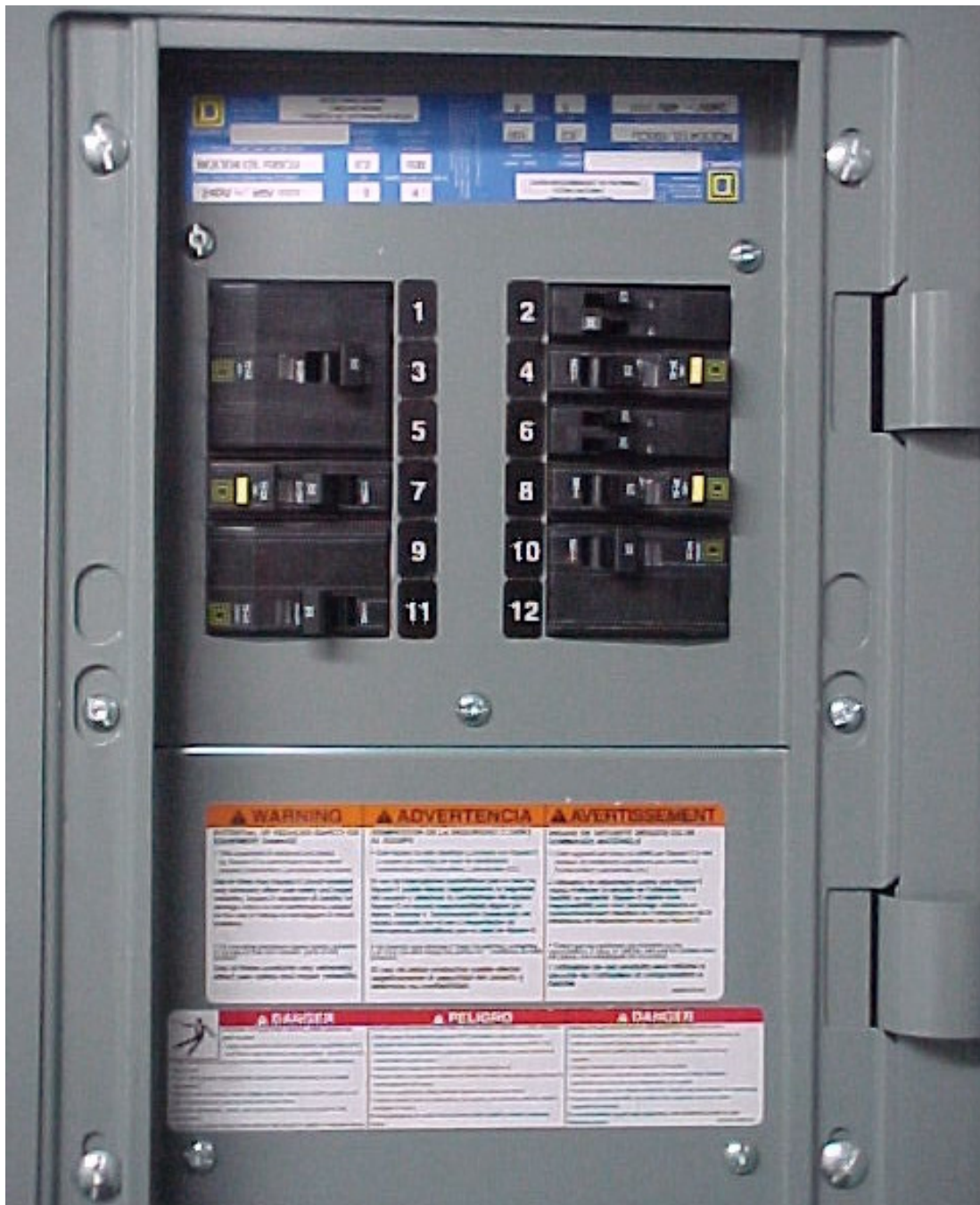
NOTE

The illustrations of the circuit breaker panels which follow use the actual circuit breaker number as reference, instead of an arbitrary callout key. Circuit breakers with more than one listed position (such as 1, 3, 5) refer to multiple phase breakers, and are operated as a single circuit breaker.



Circuit Breaker Panel (CL)

| Circuit Breaker Panel (CL only) | | |
|---------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------|
| CIRCUIT BREAKER NUMBER | ITEM | FUNCTION |
| 1/3/5 | Main Breaker | The main breaker controls the power to the CL. |
| 2 | Lights and Exhaust Fan | The breaker for the lights and exhaust fan controls power to the interior and exterior lighting and exhaust fan. |
| 4 | GFCI Convenience Outlet (under sink) | The breaker for the GFCI convenience outlet controls power to the convenience outlet located under the sink. |
| 6A | Sump Pump | The breaker for the sump pump controls power to the sump pump. |
| 6B | Draft Inducer Fan | The breaker for the draft inducer fan controls power to the draft inducer fan. |
| 7/9/11 | Auxiliary Water Pump | The auxiliary water pump breaker controls power to an outside GFCI outlet used for the auxiliary water pump. |
| 8 | Water Heater | The breaker for the water heater controls power to the water heater. |
| 10/12 | Environmental Control Unit | The breaker for the environmental control unit controls power to the environmental control unit. |

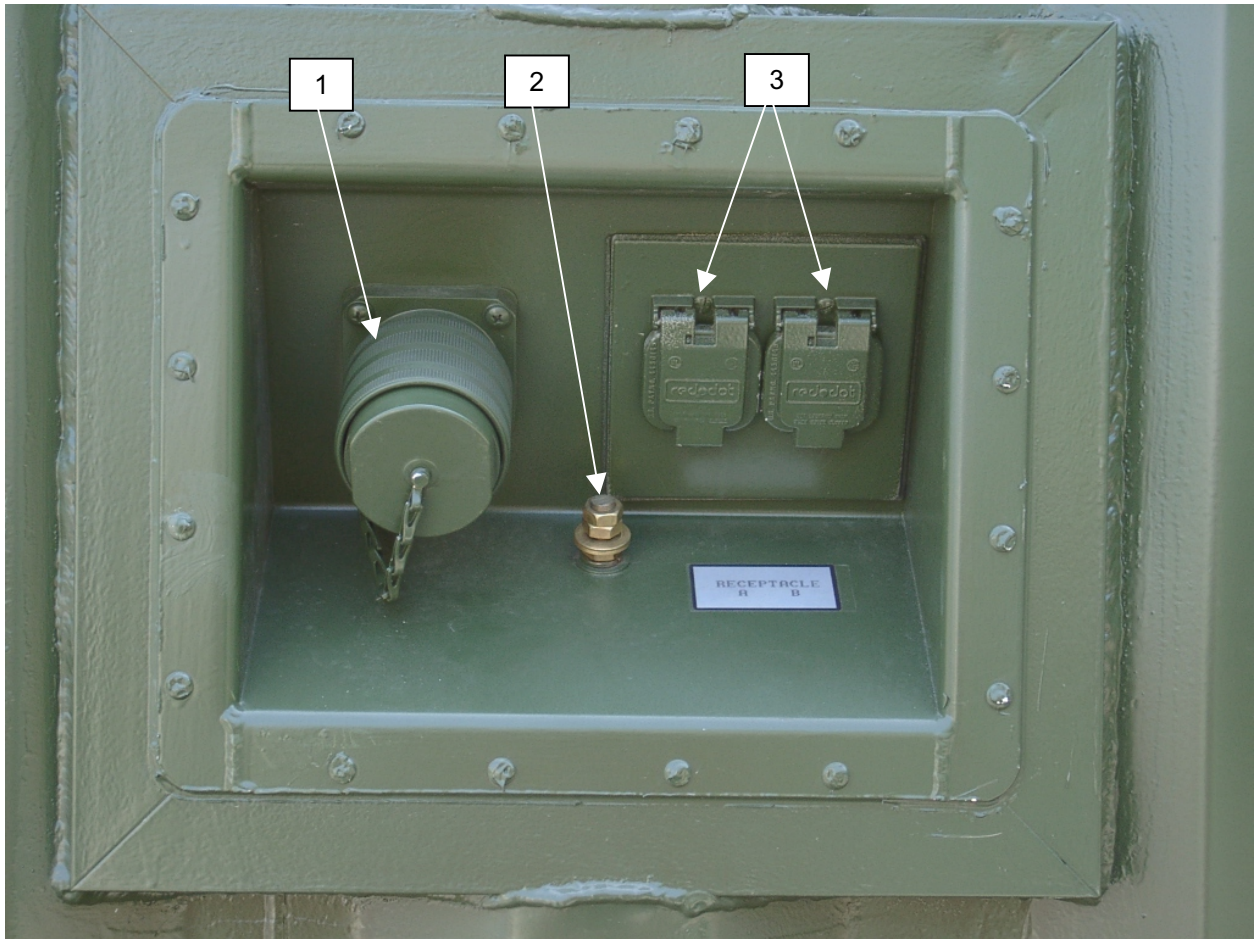


Circuit Breaker Panel (CLS)

| Circuit Breaker Panel (CLS only) | | |
|----------------------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------|
| CIRCUIT BREAKER NUMBER | ITEM | FUNCTION |
| 1/3/5 | Main Breaker | The main breaker controls the power to the CLS. |
| 2A | Lights and Exhaust Fan | The breaker for the lights and exhaust fan controls power to the lights and exhaust fan. |
| 2B | Water Heater | The breaker for the water heater controls power to the water heater. |
| 4 | GFCI Convenience Outlet (under sink) | The breaker for the GFCI convenience outlet controls power to the convenience outlet located under the sink. |
| 6A | Sump Pump | The breaker for the sump pump controls power to the sump pump. |
| 6B | Draft Inducer Fan | The breaker for the draft inducer fan controls power to the draft inducer fan. |
| 7 | GFCI Outside Outlet "B" | The GFCI outside outlet "B" breaker controls power to an outside outlet used for the cold weather kit. |
| 8 | GFCI Outside Outlet "A" | The GFCI outside outlet "A" breaker controls power to an outside outlet used for the cold weather kit. |
| 9/11 | Water Pump | The breaker for the water pump controls power to the water pump. |
| 10/12 | Environmental Control Unit | The breaker for the environmental control unit controls power to the environmental control unit. |



| Electrical Panel (CL only) | | |
|----------------------------|-------------------------|------------------------------------------------------------------------|
| KEY | ITEM | FUNCTION |
| 1 | Power Input Receptacle | Provides a 60A connection to the Force Provider Power grid. |
| 2 | Grounding Terminal | Attachment point to connect a grounding rod assembly to the container. |
| 3 | Power Output Receptacle | Provides 20A connection for external 30 GPM water pump, if necessary. |



| Electrical Panel (CLS only) | | |
|-----------------------------|--------------------------|----------------------------------------------------------------------------------|
| KEY | ITEM | FUNCTION |
| 1 | Power Input Receptacle | Provides a 60A connection for the power supply. |
| 2 | Grounding Terminal | Attachment point to connect a grounding rod assembly to the container. |
| 3 | Power Output Receptacles | Provides 115VAC, 20A connections for heat trace hose and tank heater, if fitted. |

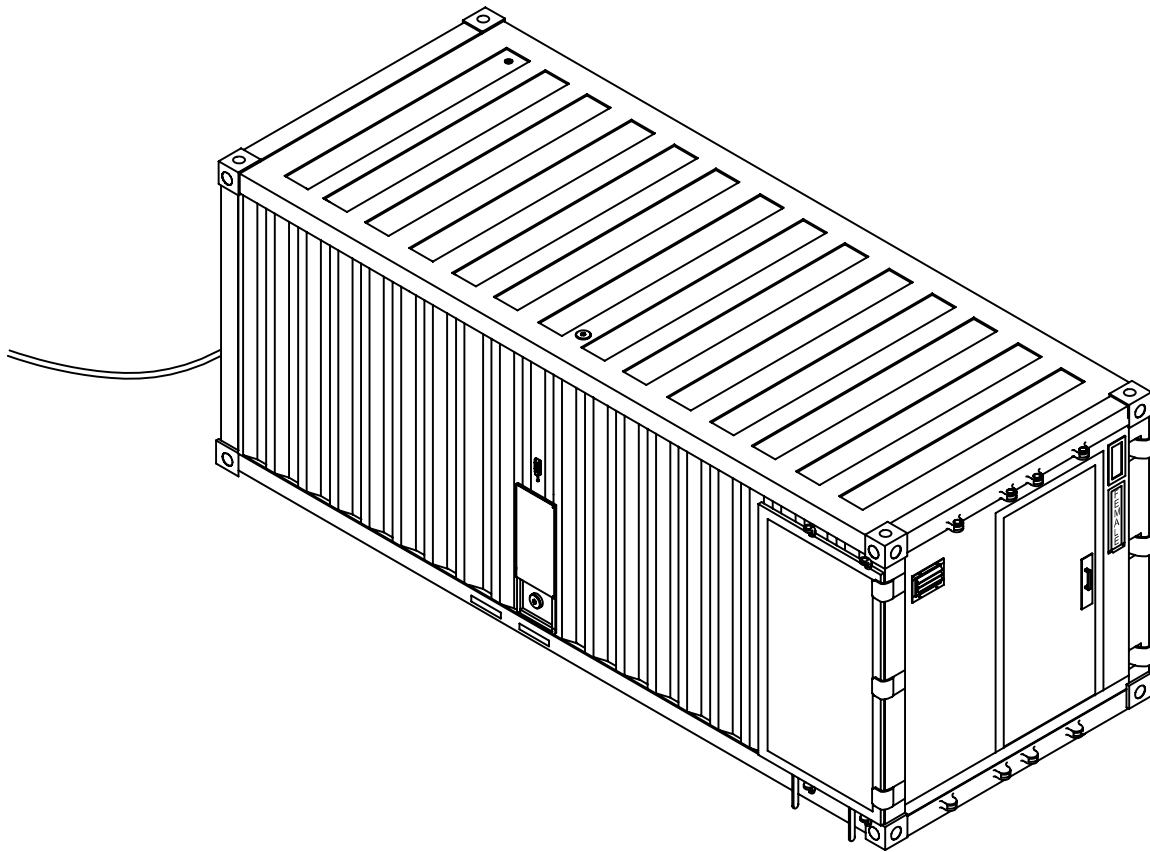
**OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE (CL)
OPERATION UNDER USUAL CONDITIONS – PREPARATION FOR USE**

GENERAL

This work package contains the site selection, preparation for use, and the operation procedures for the CL (Force Provider configuration).

Read all warnings, cautions, and notes within this section and follow procedures outlined herein to ensure safe operation of the latrine and associated equipment.

Familiarize yourself with the location of the 60A main circuit breaker on the power distribution panel before operating the latrine.



SITING REQUIREMENTS

This section outlines the siting requirements of the CL, as well as the installation, preparation, and operation of the latrine under usual conditions.

When the CL is deployed, it will be staked as part of Force Provider site preparation as described in TM 10-5419-206-13.

Site must be:

- Easily defensible, as dictated by unit Standard Operating Procedure (SOP) .
- Hardstand or other improved areas; however, any area that is level, free of large holes, trees, debris; properly drained in event of bad weather, and within the guidelines of the unit Standard Operating Procedure (SOP) is acceptable.
- Positioned to allow unobstructed utility hookups (potable water, electrical, and black water) to CL.
- Positioned to allow clearance for Waste Water Vacuum Tank/Trailer (WWVT/T) to service CL through blackwater drain connection door.



UNPACKING

As part of the Force Provider System, there are two CL sites. Each site consists of two CL containers. Each CL may arrive packed in one of two packing plans, "A" and "B". Normally there will be an equal number of CLs packed with each packing plan.

At least four soldiers are required to unpack a CL.

Lift and Move the Latrine Container

The following are general guidelines for lifting the latrine. Refer to TM 55-8115-204-23&P, Unit and Direct Support Maintenance Manual (including Repair Parts and Special Tools List), General Cargo Container, for detailed lifting and moving instructions.



WARNING

The Containerized Latrine (CL) weighs approximately 10,000 lbs when fully loaded. Never stand beneath container when it is being moved. Failure to do so may result in serious injury or death to personnel.

CAUTION

The Containerized Latrine (CL) weighs approximately 10,000 lbs when fully loaded. Never attempt to move the latrine with equipment not rated for this weight. Damage to equipment may result.

Lifting

NOTE

Movement of CL requires a minimum of a 5-ton (10,000-lb) capacity forklift.

1. Use built-in forklift pockets **(1)** to move and lift the CL.

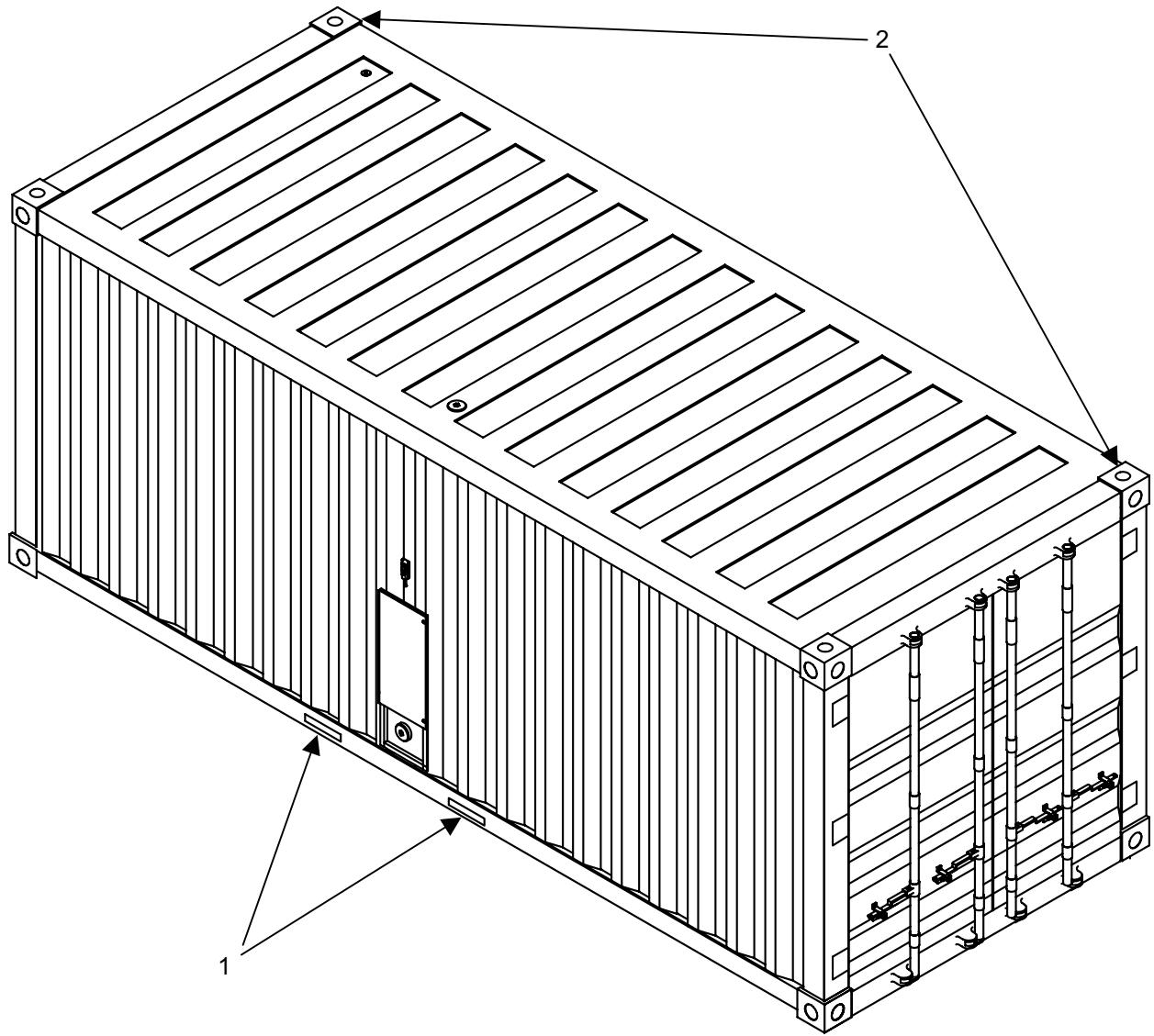
CAUTION

Latrine must be level for proper operation and to prevent damage to equipment.

2. Place CL container in staked location
3. Level CL by shimming tightly with wood scraps, stones, or bricks tapped into place with mallet.

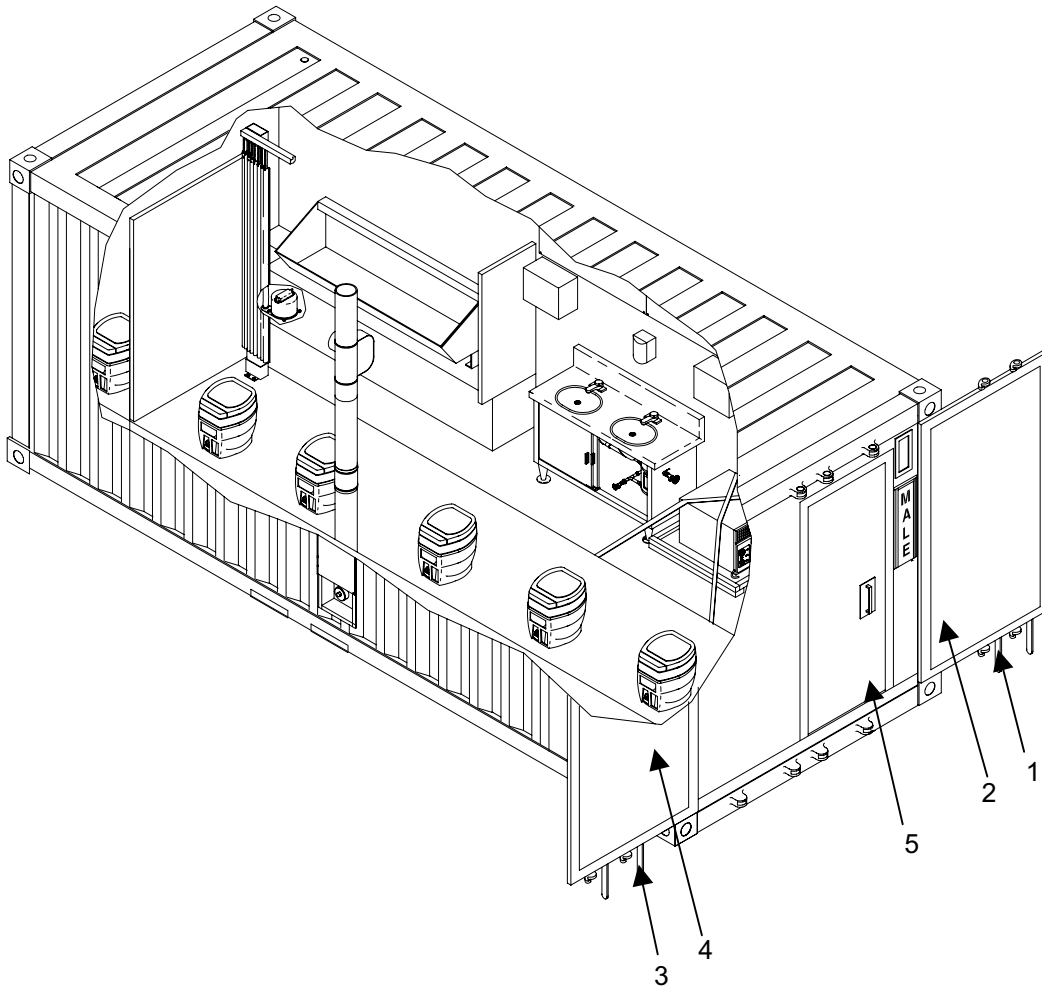
Hoisting

Packed latrines may be stacked six-high, as long as the bottom unit is positioned on a firm level surface. Hoisting requires 10,000-pound minimum capacity hoist and slings connected to the corner ISO fittings **(2)**.



Open Cargo Doors

1. Release latching mechanism (1) of right-handed door (2), and open right-handed door (2).
2. Release latching mechanism (3) of left-handed door (4), and open left-handed door (4).
3. Open personnel door (5).



Unpack Latrine**NOTE**

There may be no markings or labels distinguishing a CL packed with Packing Plan A or B. The items packed in the latrine are intended to be used in common at a CL site. Inventory all CL's supplied to the module, and then distribute the equipment as necessary.

1. Remove items stored inside CL for shipment.
2. Inventory latrine using the following packing lists.

Table 1. CL Packing Plan A.

| Description of item | Quantity |
|------------------------------------------------------|-----------------|
| Adjustable Wrench | 1 |
| Broom | 1 |
| Brush, Sanitary | 1 |
| Cable Assembly, Power, 60A, 100-Ft | 2 |
| Can, Ash and Garbage, 32-Gallon, Steel | 1 |
| CL/CLS TM 10-4510-209-13&P | 1 |
| Clean Out Plug Wrench | 1 |
| Debris Screen, Air Conditioner Duct | 1 |
| DISE/PDISE TM 916150-226-13 | 1 |
| Electrical Feeder System PDISE-M100, including: | 1 |
| Cable Assembly, 50-Ft/100A | 2 |
| Electrical Feeder Center | 1 |
| Pigtail, 4-Ft/100A | 1 |
| Strap, Cable Carrying | 8 |
| Fire Extinguisher, ABC, 10-Lb | 1 |
| Ground Rod, Sect, Type III, Class B | 1 |
| Hose Assembly, Rubber, Potable Water, 1½ -In X 20-Ft | 2 |
| Paddle | 1 |
| Strap Wrench | 1 |
| Tiedown Special Purpose Web | 7 |
| Trunk | 1 |

Unpack Latrine (Continued)**Table 2. CL Packing Plan B.**

| Description of item | Quantity |
|------------------------------------------|-----------------|
| Broom | 1 |
| Brush, Sanitary | 1 |
| Bucket, Mop, Steel, 16-Quart | 1 |
| Cable PDISE Assembly, Power, 60A, 100-Ft | 2 |
| Can, Ash and Garbage, 32-Gallon, Steel | 1 |
| CL/CLS TM 10-4510-209-13&P | 1 |
| Debris Screen, Air Conditioner Duct | 1 |
| DISE/PDISE TM 916150-226-13 | 1 |
| Extension Cable, 25-Ft, 120 V | 3 |
| Fire Extinguisher, ABC, 10-Lb | 1 |
| Ground Rod, Sect, Type III, Class B | 1 |
| Hose Assembly, Nonmetallic | 1 |
| Ladder, Aluminum, 10-Ft | 1 |
| Mop Handle | 1 |
| Mop Head | 2 |
| Nozzle, Garden Hose | 1 |
| Paddle | 1 |
| Tee Assembly, 1½ -In FC X FC X FC, Water | 1 |
| Tiedown Special Purpose Web | 7 |
| Trunk | 1 |
| Wringer | 1 |

Remove Vent Countersunk Plugs



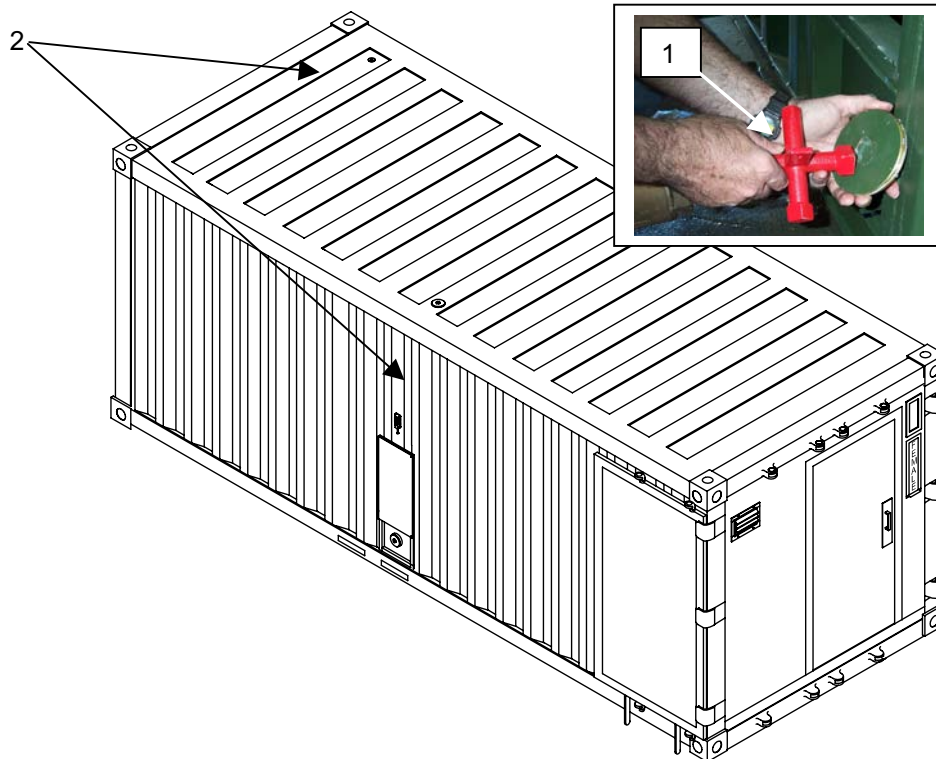
WARNING

Pass tools down before climbing down from roof of latrine container. Use both hands to climb off of latrine container. Serious injury or death to personnel could result due to fall.

WARNING

Ensure ladder is resting on and supported by firm ground. Ensure ladder rungs are dry and free of debris. Do not attempt to over-reach when using the ladder; move the ladder instead. Keep body centered between side rails and never allow more than one person on the ladder at a time. Failure to observe these precautions may result in severe injury to personnel.

1. Using the 10-ft ladder provided, climb to top of container.
2. Using the clean out plug wrench (1), remove countersunk vent plugs (2).
3. Retain countersunk vent plugs (2) and store under the sink.



Ground Latrine



WARNING

The Containerized Latrine must be electrically grounded. Failure to ground the Containerized Latrine may result in serious injury or death to personnel from electrical malfunction.



WARNING

ELECTRICITY CAN KILL YOU. Electricity cannot be seen but it can kill you. Electricity is unlike most dangerous things you can come in contact with because it gives no warning and no symptoms to be wary of. Its effect is immediate. It can kill you, render you unconscious, or severely burn you.



WARNING

Leather gloves and eye protection must be worn when installing the grounding rod. Failure to do so could result in serious injury to eyes or hands. Do not place hands between the driving stud and the coupling. Be sure all connections are tight so as to avoid spark between the units and ground rod.

CAUTION

Ensure all circuit breakers on circuit breaker panel are set to the OFF position to prevent shorting of equipment when power is initially established.

NOTE

Drive grounding rod next to the power panel to a depth of 8 to 9 feet.

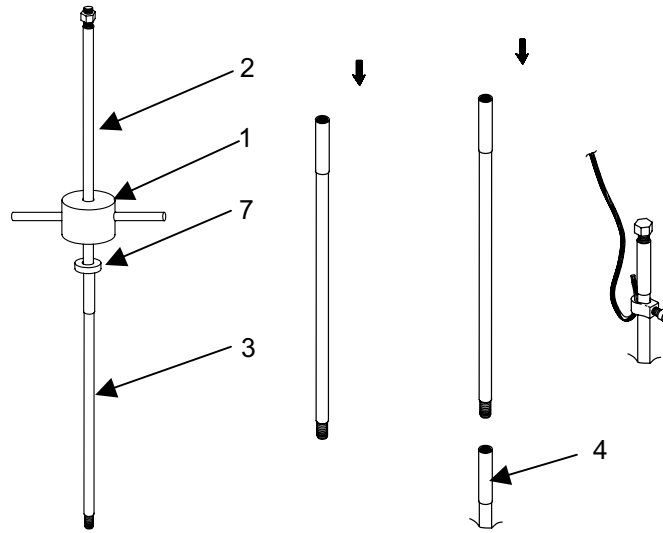
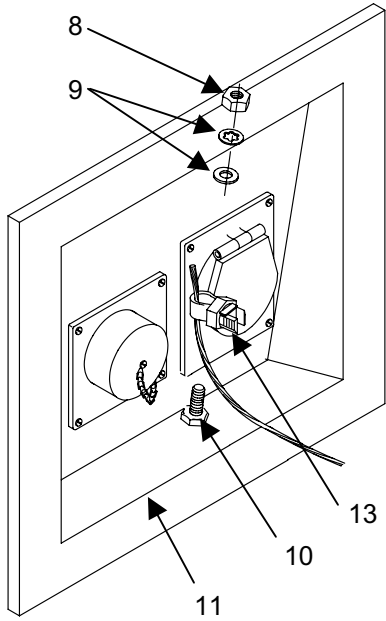
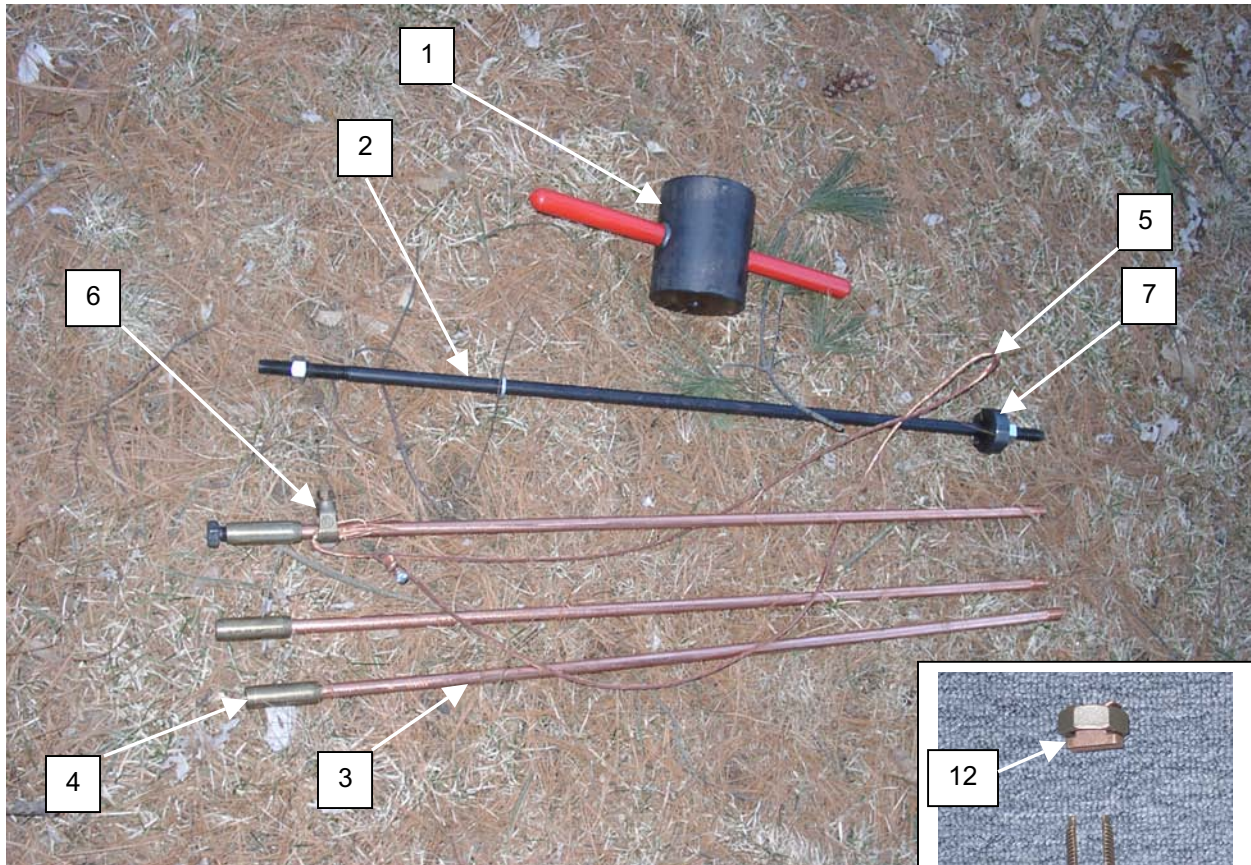
1. Identify the following components: slide hammer **(1)**, driving rod **(2)**, three ground rod sections **(3)**, three couplings **(4)**, and ground cable **(5)** with clamp **(6)** and connector.
2. Screw coupling **(4)** onto the flat end of rod section **(3)**.
3. Install slide hammer **(1)** onto driving rod **(2)**.
4. Install driving rod **(2)** onto coupling **(4)**. Turn the nut and anvil **(7)** down towards the coupling until both are tight.
5. Drive the section **(3)** into the ground with a slide hammer **(1)** until only six inches of the ground rod section remains above ground. Remove the driving rod **(2)** from the coupling.
6. Screw the pointed end of a second ground rod section **(3)** into the first ground rod coupling **(4)**; screw the second ground rod coupling onto the second ground rod section.
7. Install driving rod **(2)** onto coupling **(4)**.

8. Resume hammering until only six inches of the second grounding rod section **(3)** remains above the ground. Remove the driving rod **(2)** from the coupling **(4)**.
9. Screw the pointed end of the third ground rod section **(3)** into the second ground rod coupling **(4)**; screw the third ground rod coupling onto the third ground rod section.
10. Install driving rod **(2)** onto coupling **(4)**.
11. Resume driving the rod into the ground with the slide hammer **(1)** until only one foot of the ground rod assembly remains above ground. Remove the driving rod **(2)** and slide hammer from the coupling **(4)**.

NOTE

An electrical connector is fitted to the free end of the grounding cable. The connector is not used in this installation. Do not remove the connector – the connector is necessary for use in other installations.

12. Attach grounding cable **(5)** to the electrical clamp **(6)**. Tighten the electrical clamp.
13. Remove nut **(8)**, washers **(9)** from stud **(10)** on panel **(11)**.
14. Remove splice connector nut **(12)** from splice connector **(13)**.
15. Place splice connector **(13)** over grounding stud **(10)**.
16. Install nut **(8)**, washers **(9)** onto stud **(10)**. Do not tighten at this time.
17. Slip grounding cable **(5)** through the splice connector **(13)**.
18. Install and tighten splice connector nut **(12)** until grounding cable **(5)** is securely fastened to grounding stud **(10)** using adjustable wrench provided.
19. Tighten washers **(9)** and nut **(8)** securely.



Layout and Connect Cables

This procedure must be performed by MOS 52C or 52D qualified personnel. When setting up the CL as part of the Force Provider system, refer to Force Provider TM 10-5419-206-13 for further instructions.

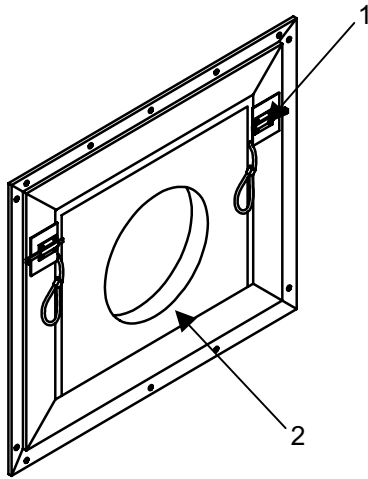
CAUTION

Ensure all circuit breakers on circuit breaker panel are set to the OFF position to prevent shorting of equipment when power is initially established.

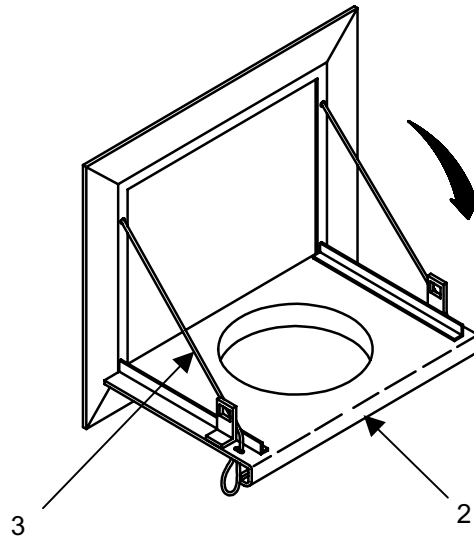


Install ECU

1. Inside container, unstrap ECU and remove faceplate. Unlatch two latches (1) securing ECU access panel (2).
2. At outside rear of the container, pull ECU access panel (2) down until support cables (3) are fully extended.



INSIDE CL



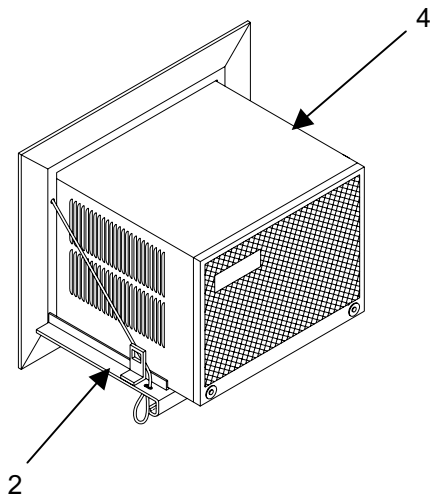
OUTSIDE CL



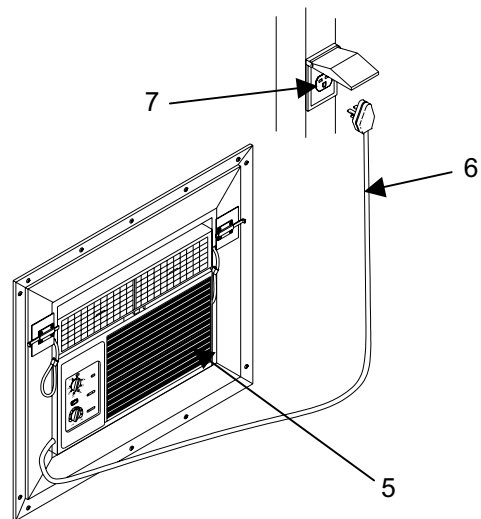
WARNING

Four people are required to lift the ECU. Serious injury to personnel could result from improper lifting. A forklift should be used, if available.

3. Pick up ECU (4) and carry to rear of container. Carefully place ECU (4) on the ECU panel (2), ensuring that power cord is not damaged and that the cord is placed inside the container through the opening.
4. Slide ECU (4) onto panel (2) until four or five inches of the ECU (4) overhangs the end of the panel (2).
5. Have person inside container adjust ECU (4) forward or backward until front of ECU (4) is flush with the opening.
6. Inside the container, install the faceplate (5) and plug the ECU power cord (6) into the marked outlet (7).



OUTSIDE CL



INSIDE CL

Connect Blackwater Disposal

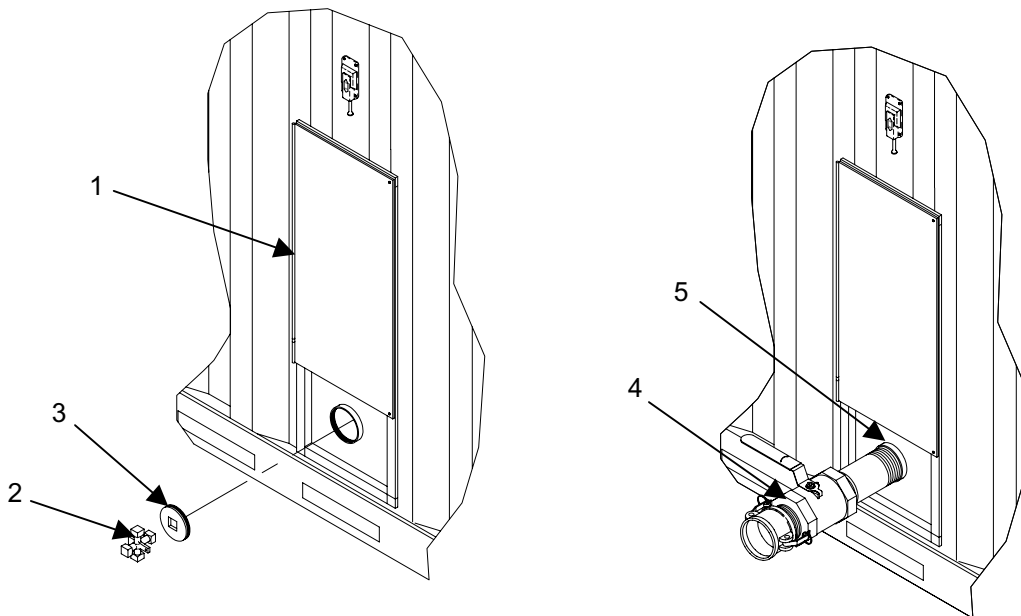
1. Open the blackwater drain connection door **(1)** and check wastewater holding tank #2 for presence of waste. If waste is present refer to WP 0007 00 for sanitization procedures. Otherwise proceed to step two.



WARNING

Protective clothing must be worn. Material may contain bacteria or viruses that present a danger to life or health. Failure to observe safety precautions may result in serious illness or death.

2. Use a clean out plug wrench **(2)** to remove the blackwater drain connection countersunk plug **(3)**.
3. Ensure valve is in the OFF position and connect the 4-inch valve assembly **(4)** to blackwater drain connection countersunk **(5)**. Ensure anti-seize tape is wrapped around valve assembly threads; rewrap if necessary. Ensure the valve is in the OFF position.
4. Connect hose to the 4-inch valve assembly **(4)** if waste is going to be gravity fed directly into a sewer. Otherwise, schedule regular pickup by vacuum trailer or truck.
5. Sanitize (refer to WP 0007 00 for sanitization procedures or TB MED 577) the blackwater drain connection countersunk plug **(3)** and clean out plug wrench **(2)**, and store them under the sink.



Connect Freshwater Hose

After receiving authorization from Force Provider water distribution personnel, lay out the water supply as follows:

NOTE

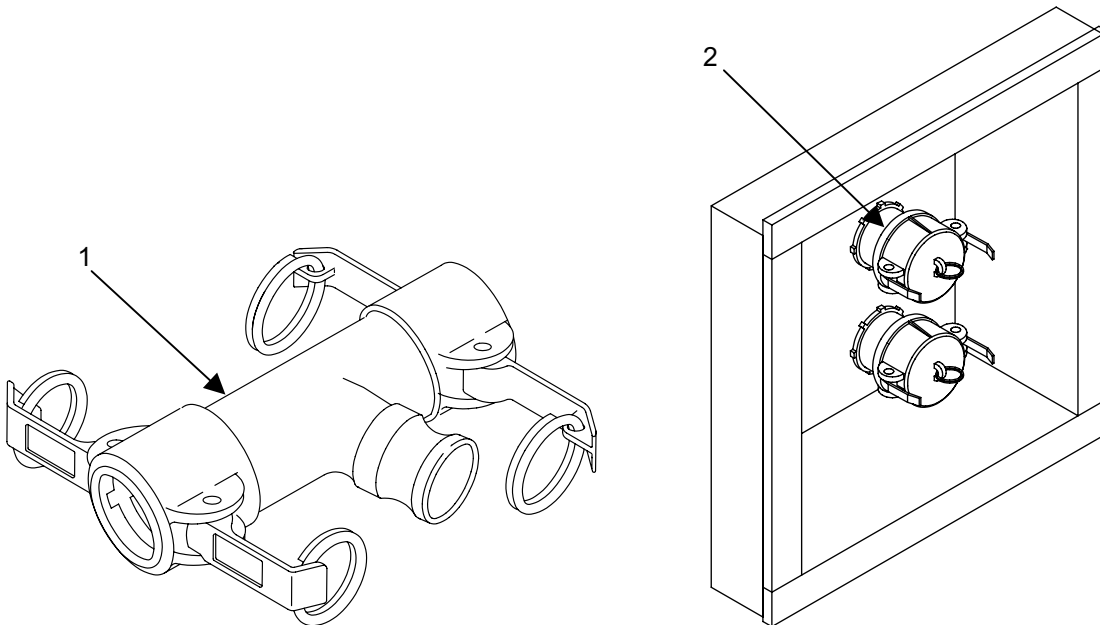
Position the hose away from areas where it may sustain damage from foot or vehicular traffic.

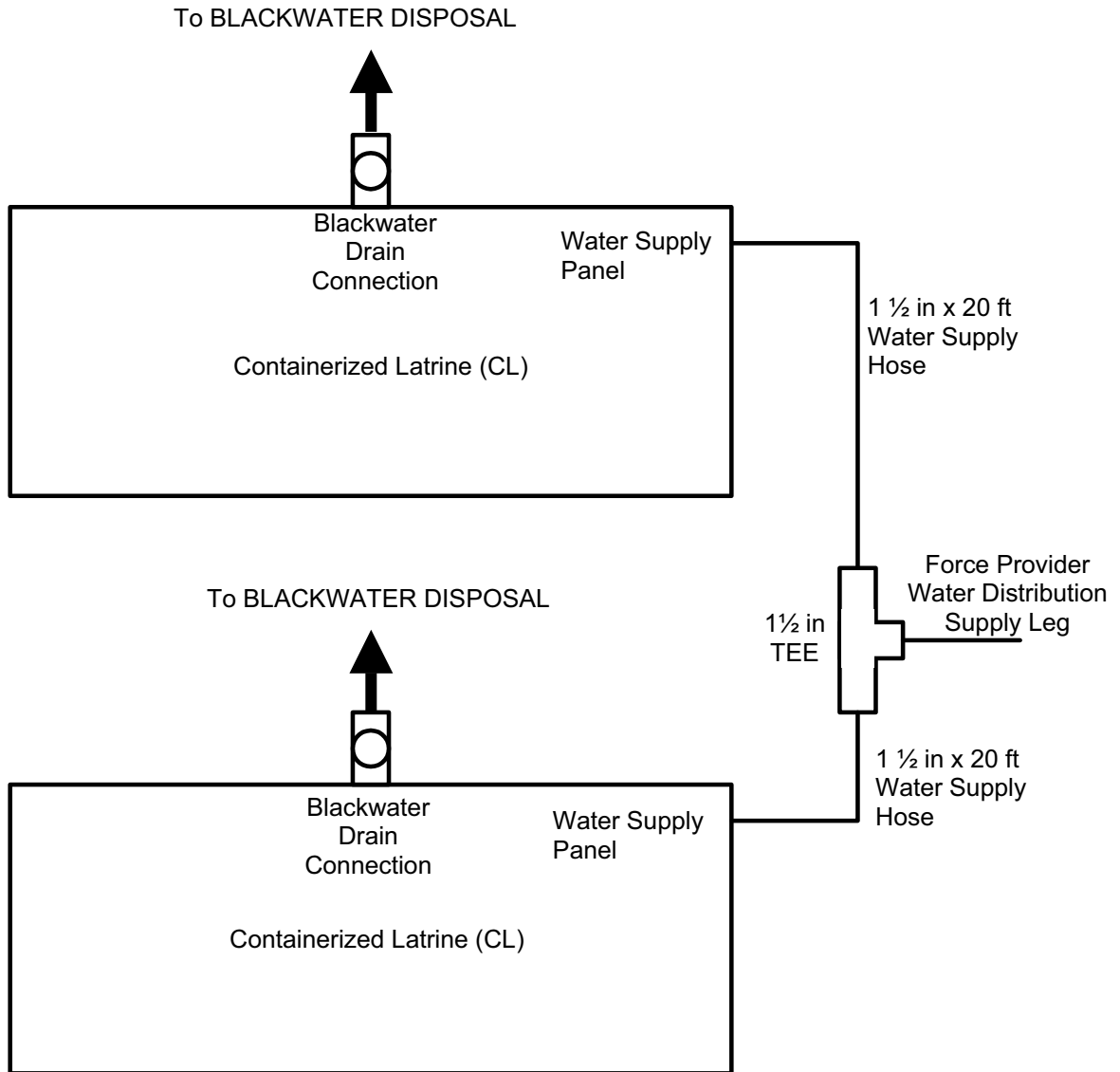
1. Connect the 1½-inch Tee assembly (1) to the Force Provider water distribution leg.

NOTE

Do not connect the hose to the lower freshwater inlet fitting at this time. This fitting is used to flush the wastewater holding tank prior to maintenance, movement, or storage.

2. Connect one end of a 1½-inch x 20-foot hose to the upper freshwater input fitting (2) located at the rear of one CL and the other end of the hose to the 1½-inch Tee assembly (1).
3. Connect one end of another 1½-inch x 20-foot hose to the upper freshwater input fitting (2) located at the rear of the other CL and the other end of the hose to the 1½-inch Tee assembly (1).





Installation of Sink Stand Doors

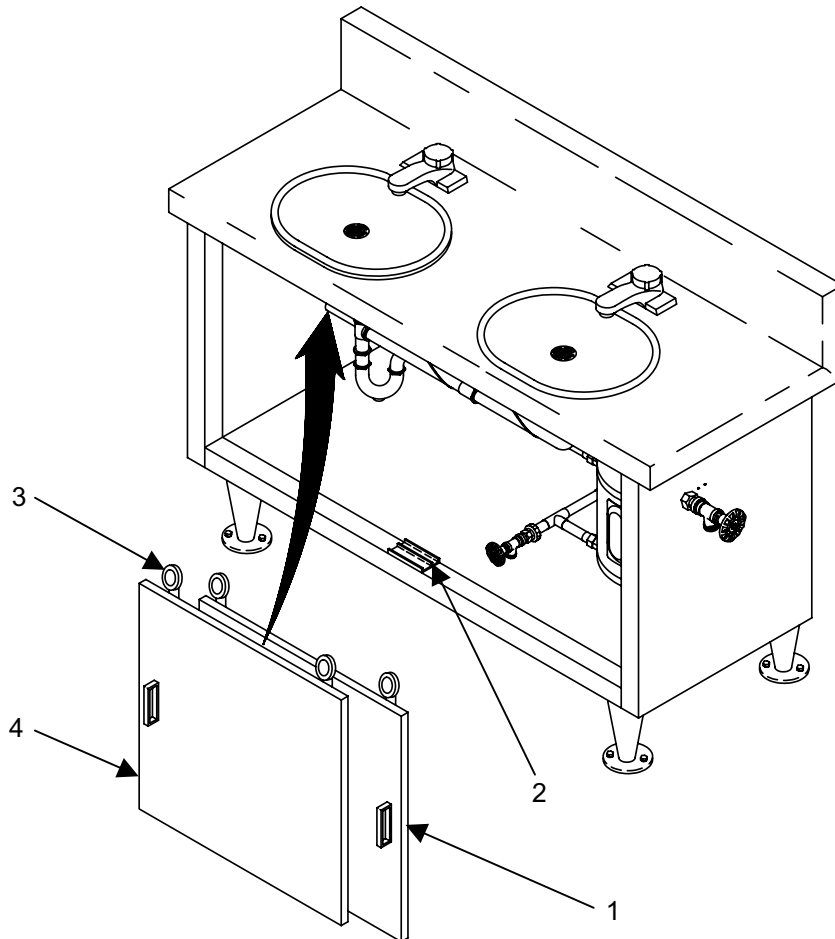
NOTE

The sink stand doors hang from a track formed into the underside of the sink counter.

NOTE

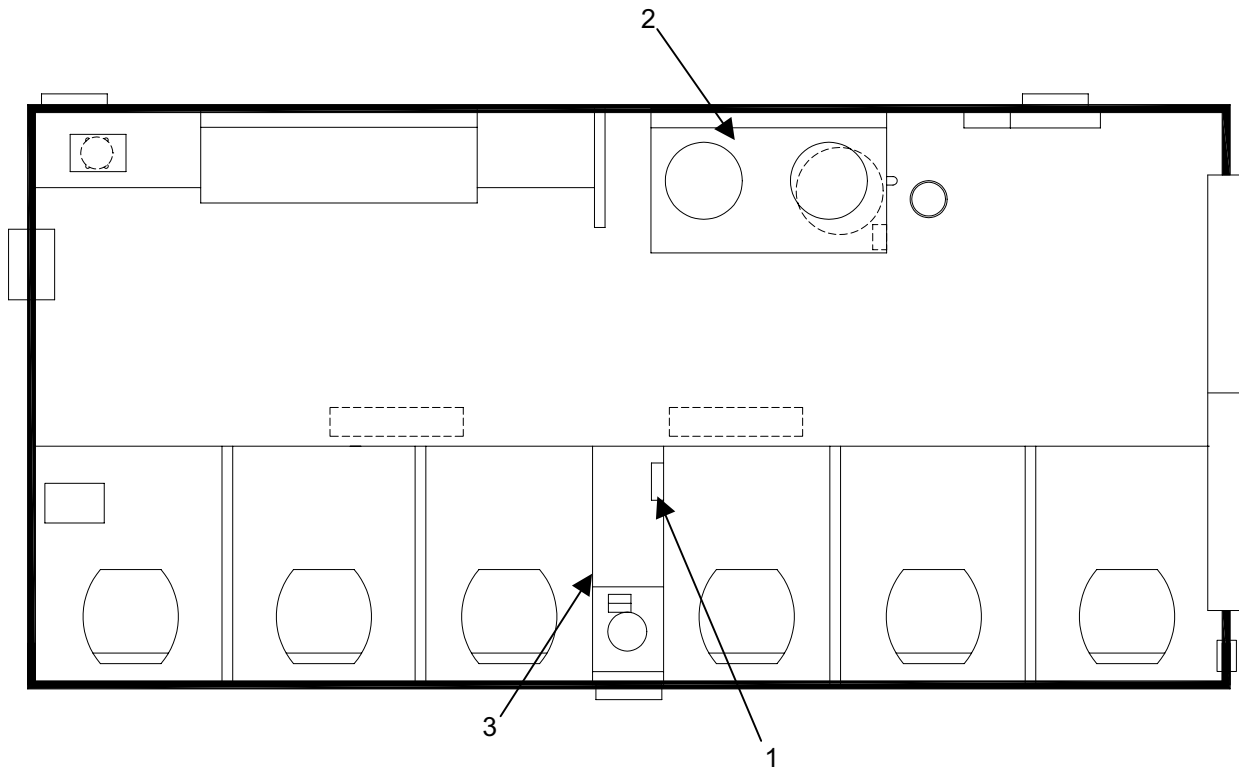
Install the doors with the handles opposite each other. If not, the doors cannot be installed.

1. Lift door **(1)** into rear section of guide **(2)**.
2. Lift door up and drop door rollers **(3)** into place in rear upper track.
3. Lift second door **(4)** into front section of guide **(2)** in front of first door **(1)**.
4. Lift door up and drop door rollers **(3)** into front upper track.



Loose Component Placement

1. Ensure the fire extinguisher is present in the fire extinguisher bracket. Place this technical manual and any additional literature in the documentation holder (1).
2. Place the countersunk plugs and clean out plug wrench under the sink (2).
3. In the storage area (3), place the shovel, broom, mop head and handle on the shovel, broom, and mop head and handle brackets. Neatly store the mop bucket, wringer, and sanitary brush in the storage area (3).
4. Retain and secure unused equipment in a secure safe location, for use when needed or for repack.



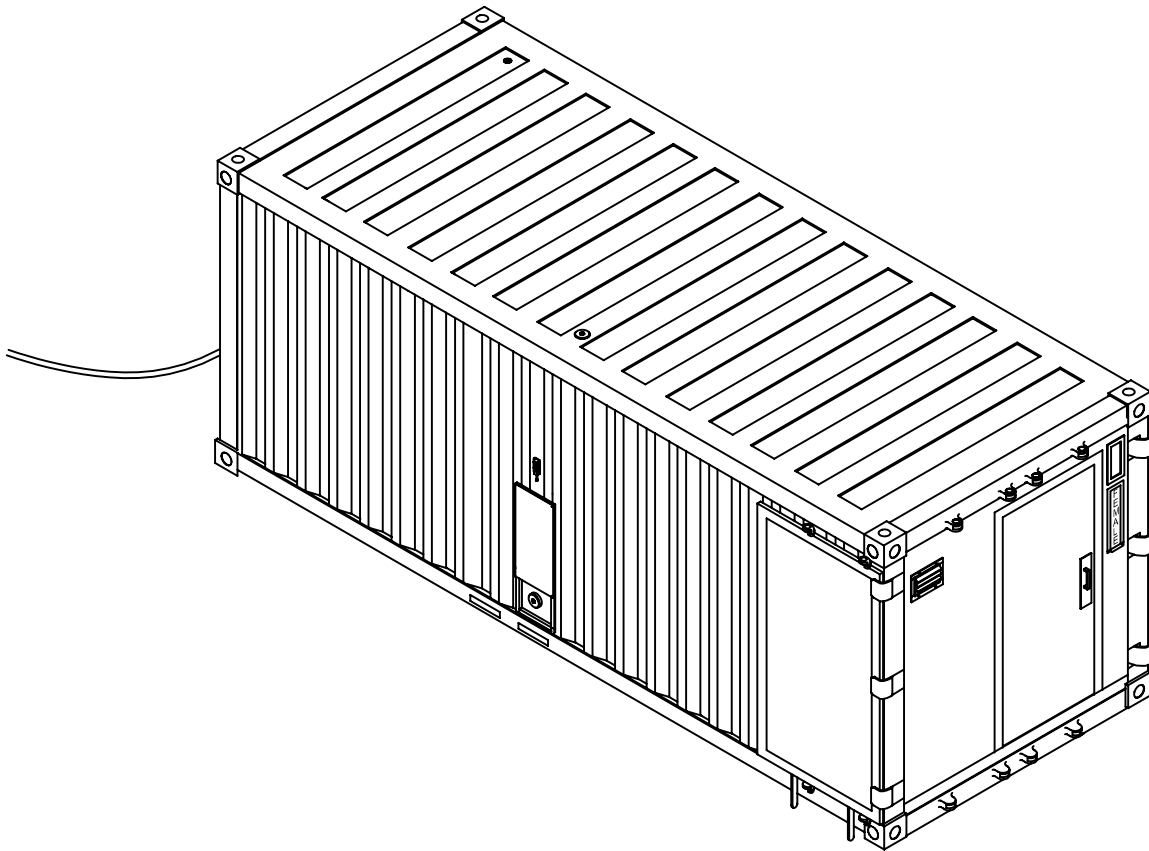
**OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE (CL)
OPERATION UNDER USUAL CONDITIONS - OPERATION**

GENERAL

This work package contains the operation procedures for the CL (Force Provider configuration).

Read all warnings, cautions, and notes within this section and follow procedures outlined herein to ensure safe operation of the latrine and associated equipment.

Familiarize yourself with the location of the 60A main circuit breaker on the power distribution panel before operating the latrine.



OPERATING PROCEDURES

Prior to operating latrine components, ensure that:

1. All circuit breakers in the circuit breaker (CB) panel are in the ON position except water heater circuit breaker #8, and waste holding tank draft inducer fan circuit breaker #6B, which must be set to the OFF position.
2. Freshwater supply has been turned on and is supplying water to the CL.
3. All internal water distribution system shutoff valves are in the open position.
4. Power has been connected from the Force Provider power grid, and that the PDISE circuit breakers are ON.
5. Handles of the backflow prevention device are removed, to discourage tampering, and stored under the sink.

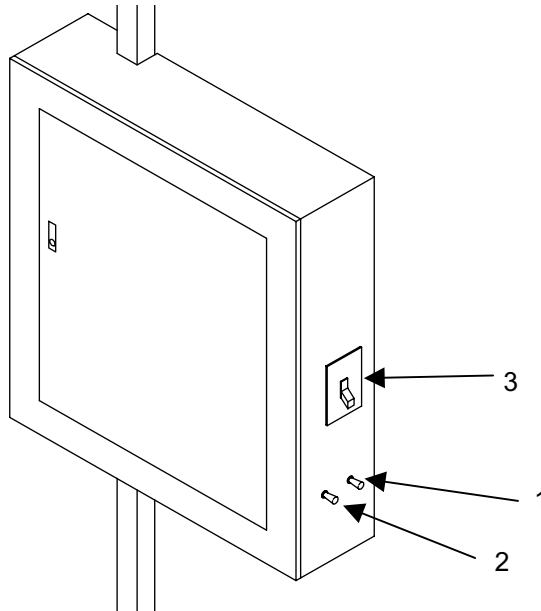
To operate the latrine components, proceed as follows:

Operation of Container

Refer to TM 55-8115-204-23&P, Unit and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) for The General Cargo Container.

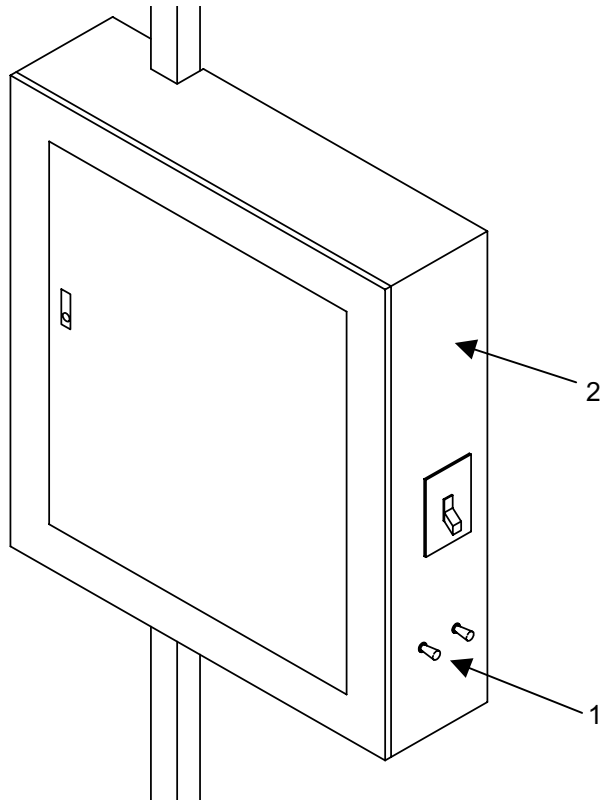
Operation of Lighting

Turn the interior and exterior lights on by using the interior light switch (1) and the exterior light switch (2) located on the circuit breaker panel (3).



Operation of Exhaust Fan

Turn the exhaust fan on with the exhaust fan switch (1) located on the circuit breaker panel (2).

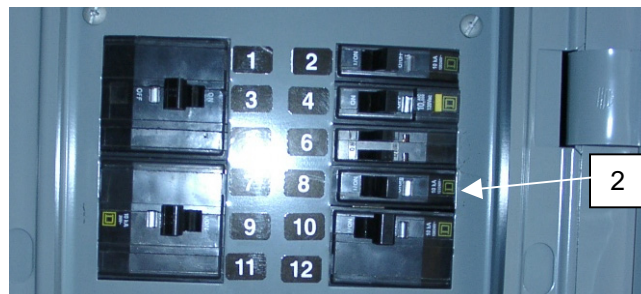
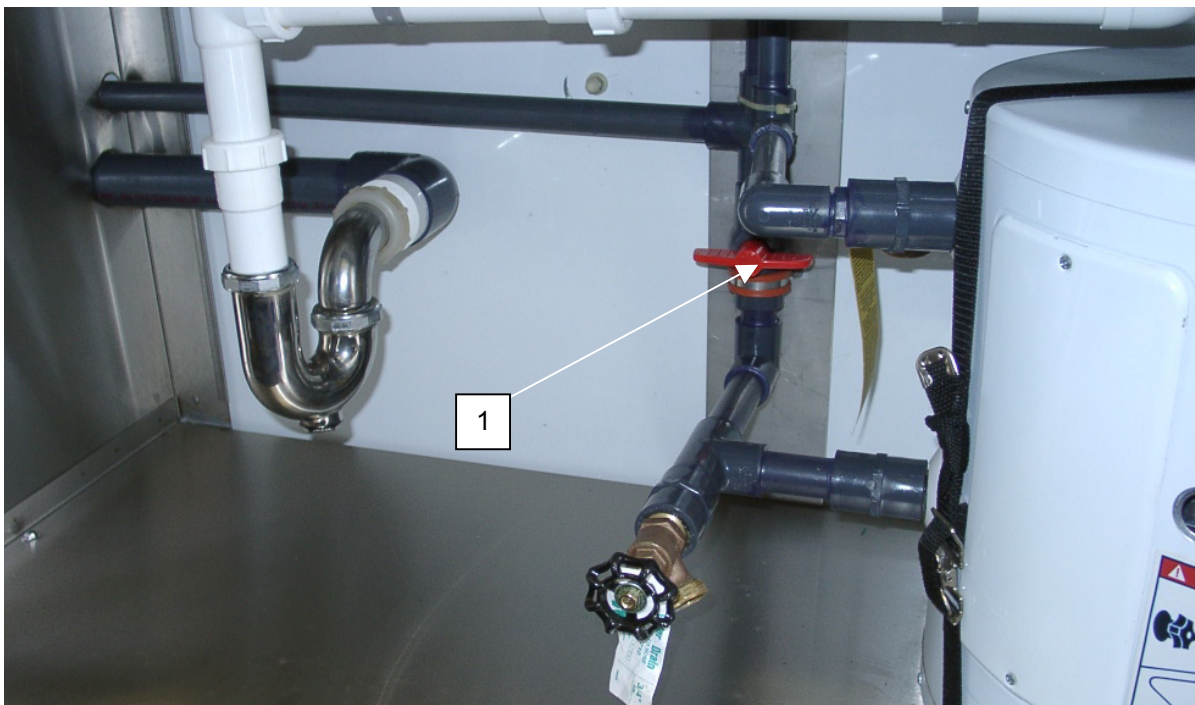


Operation of Water Heater

CAUTION

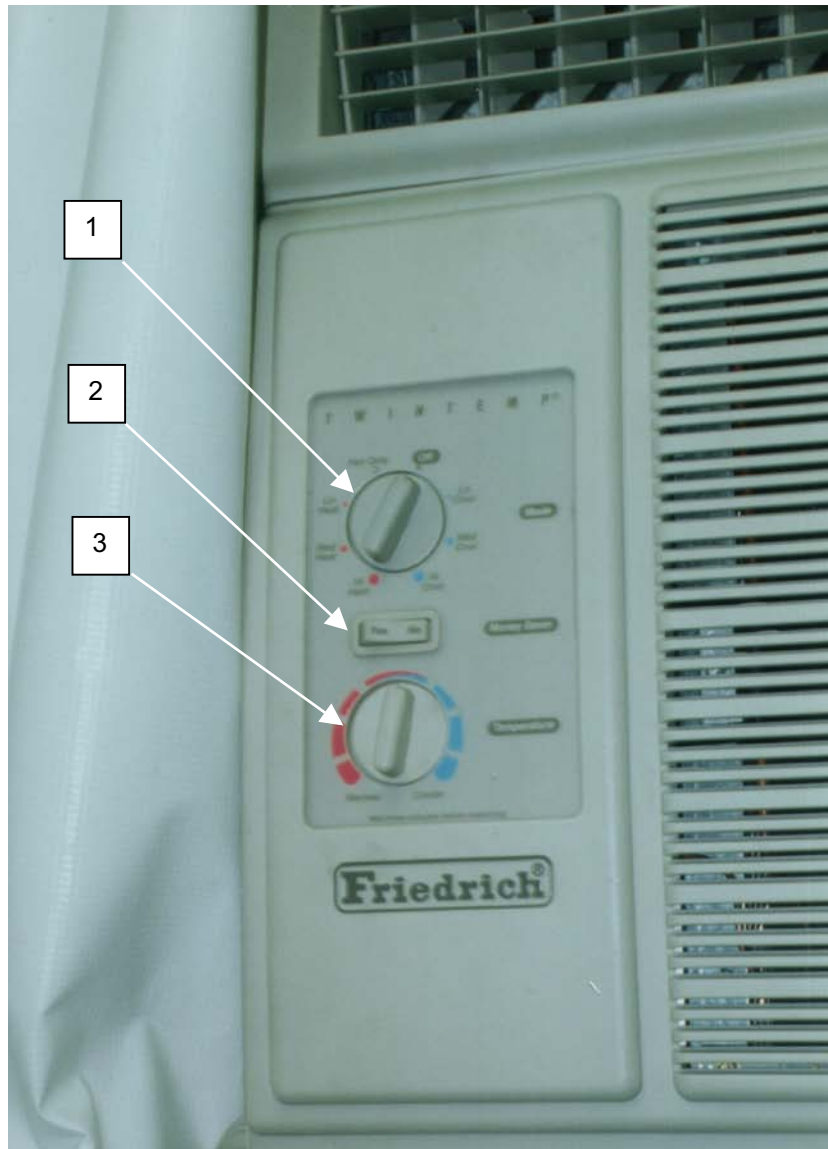
Water heater circuit breaker must be set to the OFF position until the water heater has been filled with water. Ensure there is no air in the line. Failure to do so will result in failure of water heater heating unit and damage to equipment.

1. Remove sink stoppers.
2. Ensure commode, urinal, and faucet supply lines are open.
3. Fill water heater with water by opening the filling valve (1). Turn on the hot water faucets to ensure heater is full and no air is trapped in the lines.
4. Set water heater circuit breaker # 8 (2) in breaker panel to ON position.



Operation of ECU

1. The function control **(1)** turns the ECU on and allows personnel to select the function of the ECU. These functions include cooling, heating, and fan speed.
2. The money saver ON/OFF switch **(2)** turns the fan ON and OFF with the compressor.
3. The temperature control **(3)** allows personnel to control the temperature inside the latrine.

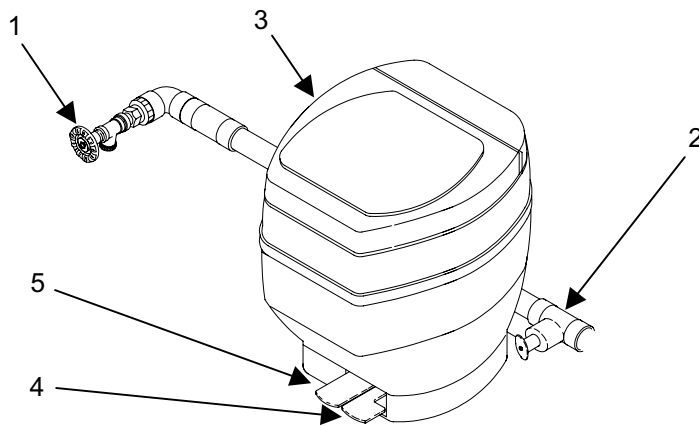


Operation of Commode

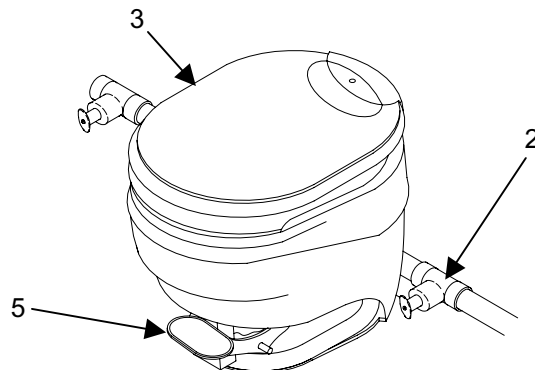
NOTE

Replacement commodes are of the single pedal type fitted to the CLS. Operating procedures for both are included here, as one may find a CL equipped with both two pedal and single pedal commodes.

1. Ensure water drain valve **(1)** closest to door is closed.
2. Open all commode valves **(2)**.
3. For two pedal commodes, lift lid **(3)** and push fill pedal **(4)** to fill commode and the flush pedal **(5)** to flush the commode. On first use, fill and flush each commode twice to clear antifreeze and ensure proper operation.



4. For single pedal commodes, lift lid **(3)** and press flush pedal **(5)** to rinse and flush the commode. Fill and flush each commode twice on first use to clear antifreeze and ensure proper operation.



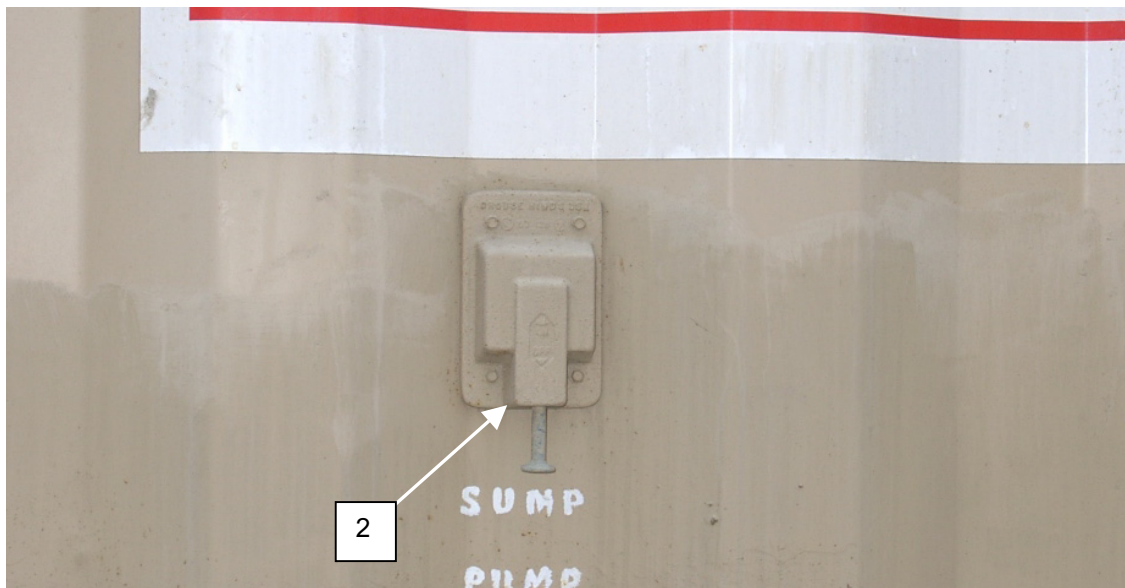
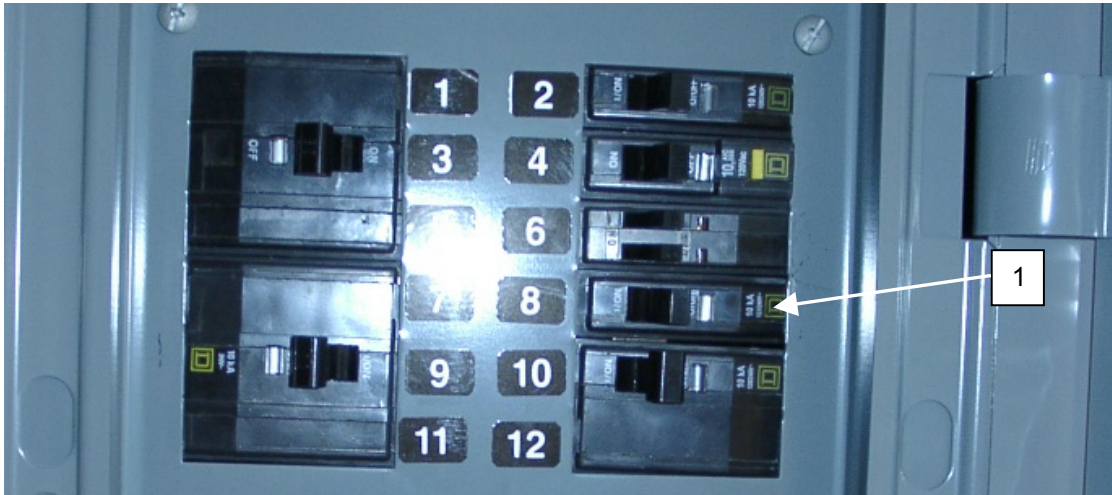
Operation of Sump Pump

1. Set circuit breaker # 6A (1) in breaker panel to ON position.
2. Press plunger on sump pump switch (2) to turn sump pump ON.

NOTE

The sump pump may also be operated by reversing steps 1 and 2.

3. Monitor sump pump operation, and shut the pump OFF when the pump begins sucking air. This will be indicated by a sucking sound coming from vicinity of the sump pump.



Operation of Waste Holding Tank Draft Inducer Fan

Set circuit breaker #6B (1) in breaker panel to ON position.



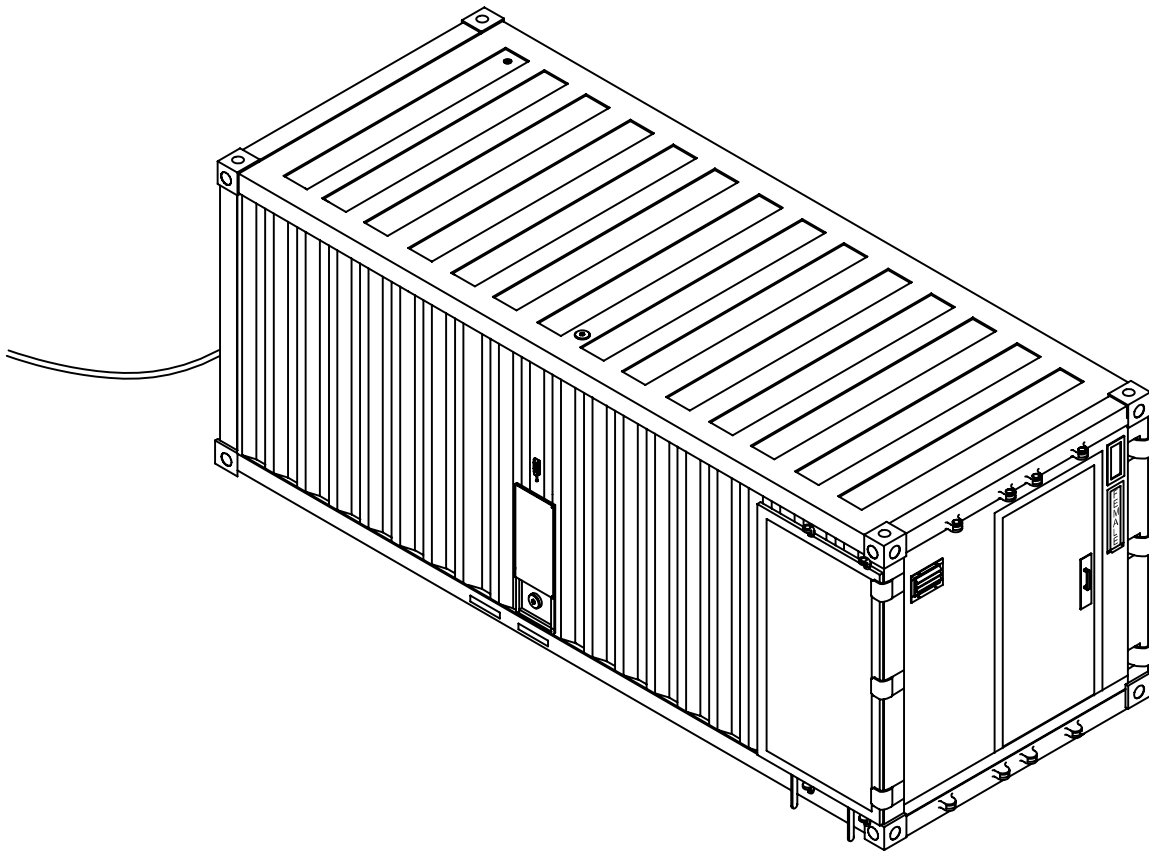
**OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE (CL)
OPERATION UNDER USUAL CONDITIONS – PREPARATION FOR MOVEMENT**

GENERAL

This work package contains the procedures to prepare the CL (Force Provider configuration) for movement.

Read all warnings, cautions, and notes within this section and follow procedures outlined herein to ensure safe operation of the latrine and associated equipment.

Familiarize yourself with the location of the 60A main circuit breaker on the power distribution panel before operating the latrine.



PREPARATION FOR ADMINISTRATIVE STORAGE

To prepare the CL for storage, refer to FM 38-701.

PREPARE LATRINE FOR MOVEMENT



WARNING

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death.



WARNING

Never mix chemicals or detergent and sanitizing solutions. This may produce highly toxic or poisonous gas that can cause serious illness or death to personnel.

Cleaning and Sanitation of the Latrine

1. Prepare a fresh 100 ppm chlorine solution IAW TB MED 577. This may be prepared in one of four approved methods:
 - a. One (1) ampule of calcium hypochlorite to one gallon (3.8 liters) of potable water.
 - b. Five (5) level mess kit spoonfuls of calcium hypochlorite to 100 gallons (380 liters) of potable water.
 - c. One (1) mess kit spoonful of liquid bleach to one gallon (3.8 liters) of potable water.
 - d. One (1) gallon of liquid bleach to 100 gallons (380 liters) of potable water.
2. Clean the latrine starting from the top to bottom; clean the commodes, urinal, floor mat, aisle floor, and sink stand with fresh batch of 100 ppm chlorine solution. Clean waste contact surfaces of urinal trough and commodes last. Refer to WP 0017 00 for cleaning procedures.
3. Rinse surfaces from top to bottom with clear water. Use of a sprayer or hose rinsing is recommended. Spray the sink, commodes, urinal trough, and walls.
4. Rinse the floor.
5. Repeat steps 4 and 5, and allow to air dry.

Blackwater System**WARNING**

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death.

NOTE

If CL is not connected to any blackwater system, have contents pumped out by Waste Water Vacuum Tank/Trailer (WWVT/T), and disregard step 1.

1. Ensure 4-inch valve assembly **(1)** is open.
2. Flush all commodes **(2)**, urinal **(3)**, and open all faucets for several minutes to hypochlorinate the system.
3. Set sump pump switch **(4)** to ON position until contents of tank #1 **(5)** are emptied into tank #2 **(6)**. This can be verified by observing the blackwater motion in the #2 tank, or by monitoring the sound of the sump pump. A sucking sound from the vicinity of the sump pump indicates the #1 tank is empty.

**WARNING**

Ensure all personnel performing this procedure are equipped with safety goggles or face shield, rubber apron or suit, rubber gloves, and a respirator. Failure to observe safety precautions may result in serious illness or death to personnel.

4. Remove the screws retaining each tank access panel **(7)**, and remove the panels. Attach a garden hose with nozzle to the spigot **(8)** on the sink stand, open the spigot, and spray the tank interior to remove any solids retained in the tank. Install access panels and retain with screws immediately after spraying tank.
5. Close potable water supply branch line gate valve servicing the CLs. Refer to TM 10-5419-206-13 (Force Provider) for information regarding the location and operation of the branch line gate valve.
6. At the service entry panel **(9)**, change input connection from top location **(10)** to bottom connection **(11)**, install dust cap at top location.
7. Open the branch line gate valve to flush holding tank #2 **(6)**.
8. Open access panel door and, using a paddle, direct all solids towards drain. Continue until all visible solids are drained.
9. Clean tools and/or personal protective clothing and individual's equipment using a general purpose detergent solution, then sanitize using a ten-to-one solution of household bleach in warm water (i.e. 6-ounces in 2-quarts of water) and allow to air dry.

10. Close branch line gate valve and reconnect 1½-inch hose to top input connection **(10)** on the service entry panel **(9)**. Install dust cap on bottom input connection.
11. When notified by water distribution system personnel, open branch line.
12. Close 4-inch valve assembly **(1)**.
13. Fill tank #1 **(5)** by pouring 5-gallons of chlorine solution into urinal **(3)**. Fill tank #2 **(6)** with solution by pouring 2-gallons of sterilizing agent into each commode **(2)** until agent is level with bottom of commodes **(2)**. Allow the sterilizing agent sit in tanks for at least 8-hours.
14. Empty tanks #1 **(5)** and #2 **(6)**. Allow tanks to completely drain.

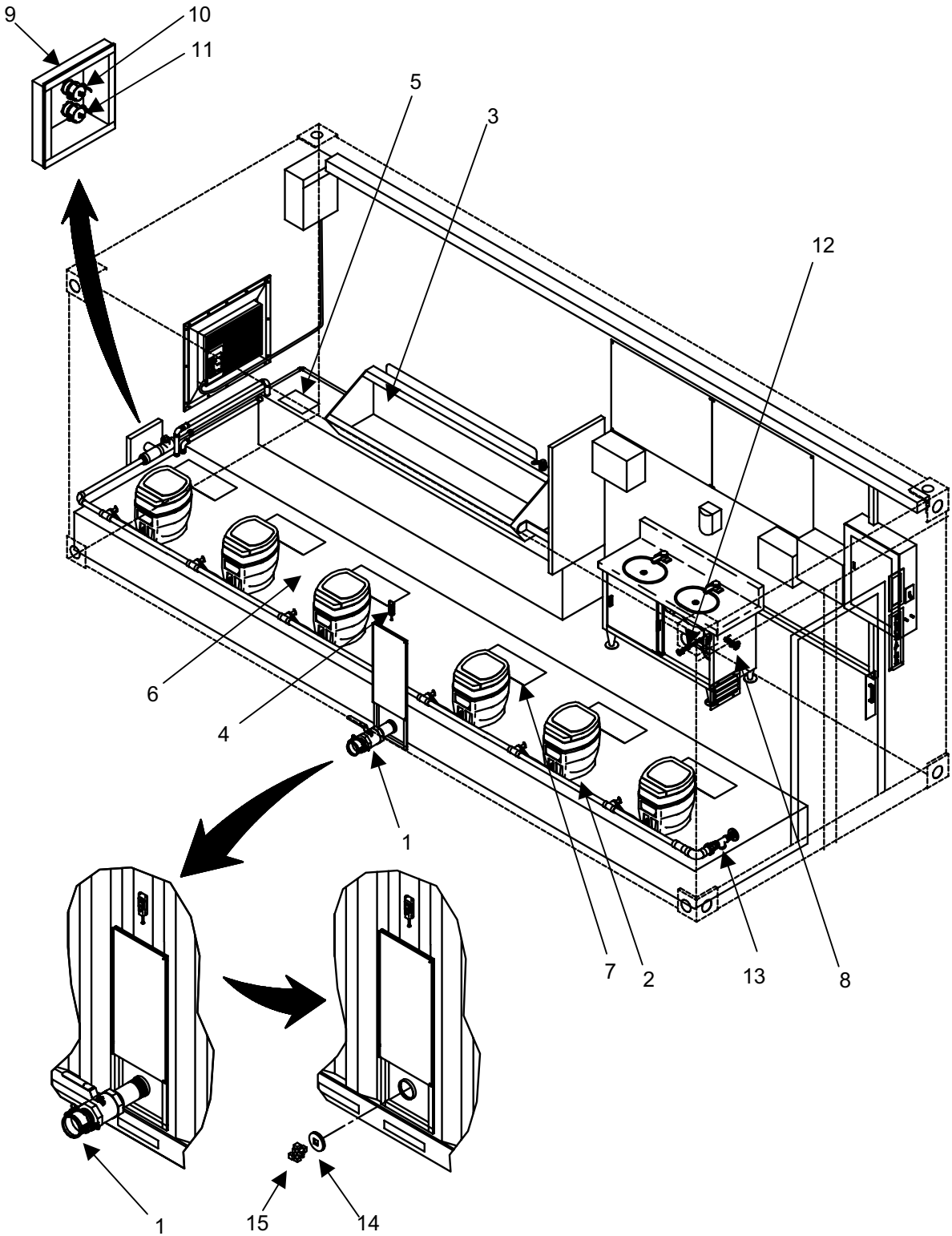
Freshwater System

1. Close the branch line gate valve.
2. Disconnect 1½-inch x 20-foot hoses from service entry panels **(9)** of both containers and the 1½ -inch Tee. Drain water from hoses. Install dust caps. Clean and coil water hoses.

CAUTION

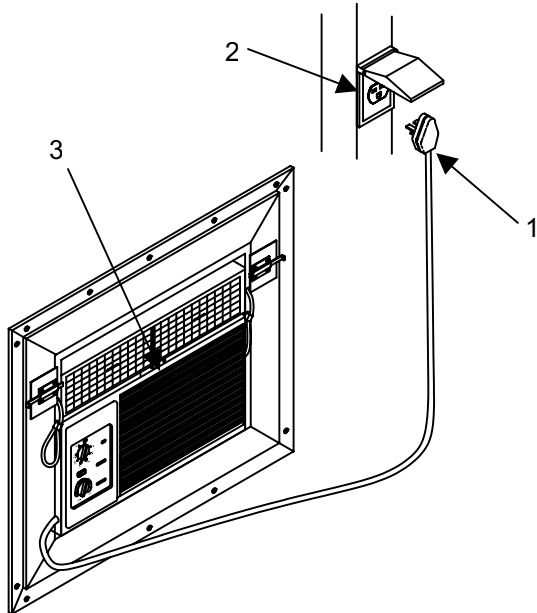
Ensure power to water heater is turned off before draining system. This will prevent heating unit from being damaged.

3. Turn circuit breaker #8 to OFF position.
4. Attach garden hose to hot water drain spigot **(12)**. Open drain spigot and drain outside CL. Close spigot **(12)** and remove hose.
5. Attach hose to commode supply line drain spigot **(13)** located in stall nearest personnel doors.
6. Open drain spigot and drain excess water outside of the CL. After hose is drained, close supply line spigot **(13)**.
7. Disconnect, drain, clean, and coil water hose.
8. Clean and disinfect paddle and 4-inch valve assembly, by pouring chlorine solution over paddle and 4-inch valve assembly inside tank #2 **(6)**.
9. Close 4-inch valve **(1)** and disconnect 4-inch hose. Drain completely until dry and install dust caps.
10. Remove 4-inch valve assembly **(1)**. Reinstall the drain plug **(14)** retained under sink with clean out plug wrench **(15)**.
11. Close access panel.



Prepare ECU for Movement

1. Set ECU circuit breaker #10/12 to OFF position.
2. Unplug power cord (1) from the power box outlet (2).
3. Remove ECU faceplate (3) and place in storage area.



4. Drain accumulated condensation from ECU (4) by depressing the drain plug (5).



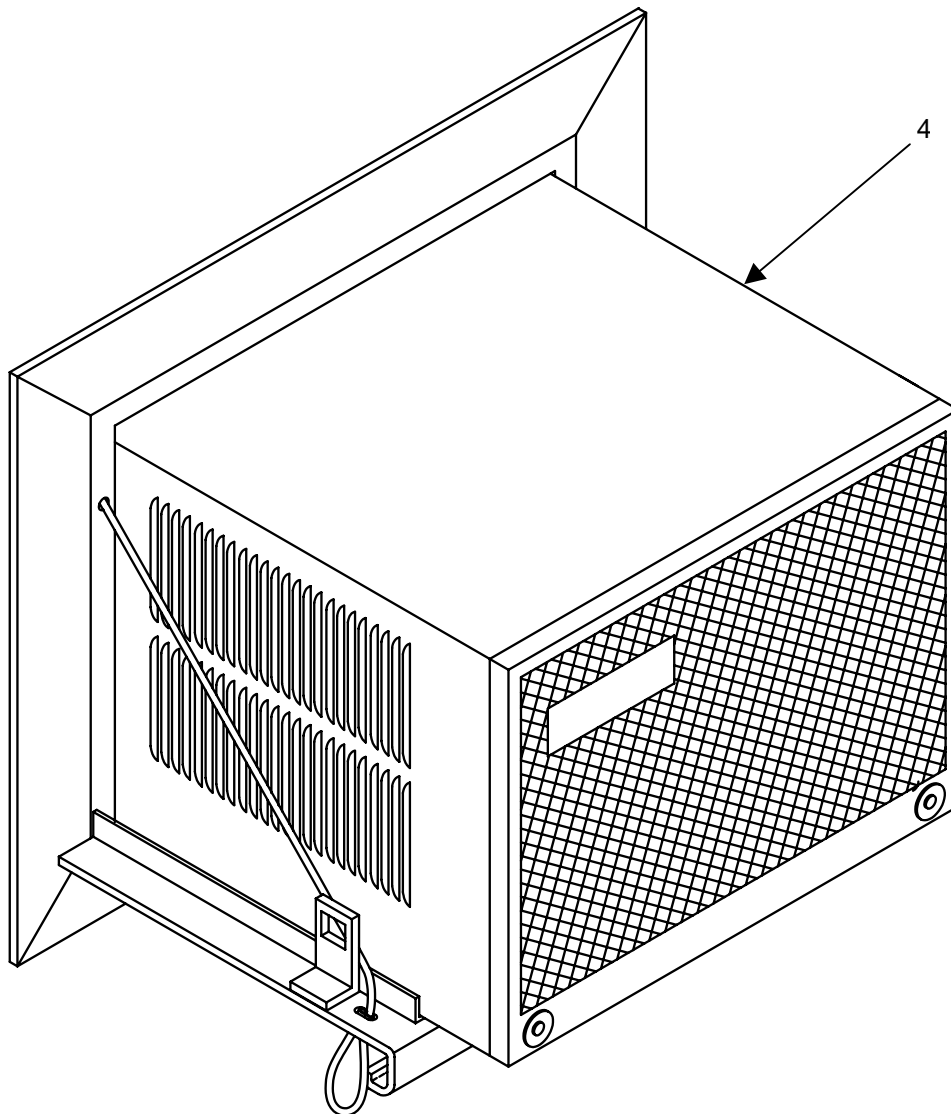
**WARNING**

Four people are required to lift the ECU. Serious injury to personnel could result from improper lifting. Forklift should be used, if available.

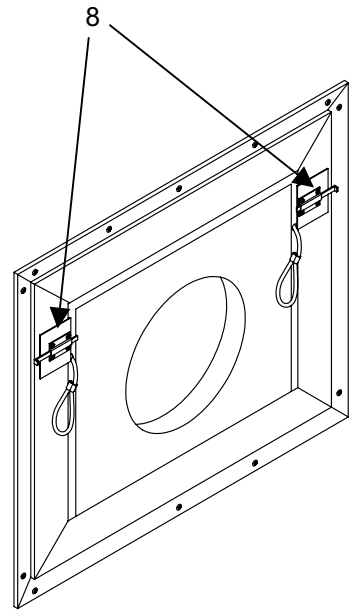
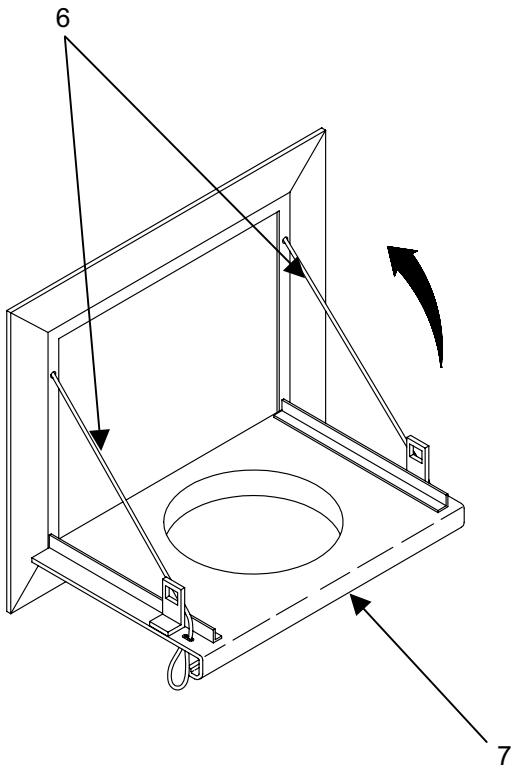
NOTE

Prior to moving the ECU, roll up floor mat and place inside rear of container.

5. At outside rear of container, pick up ECU (4) and carry to front of container and place ECU on floor.



6. From inside the container, pull support cables (6), while personnel on outside of container closes ECU cover (7).
7. Ensure internal cover latches (8) lock.



Prepare Power Distribution System for Movement

For CL power distribution procedures refer to Force Provider TM 10-5419-206-13.



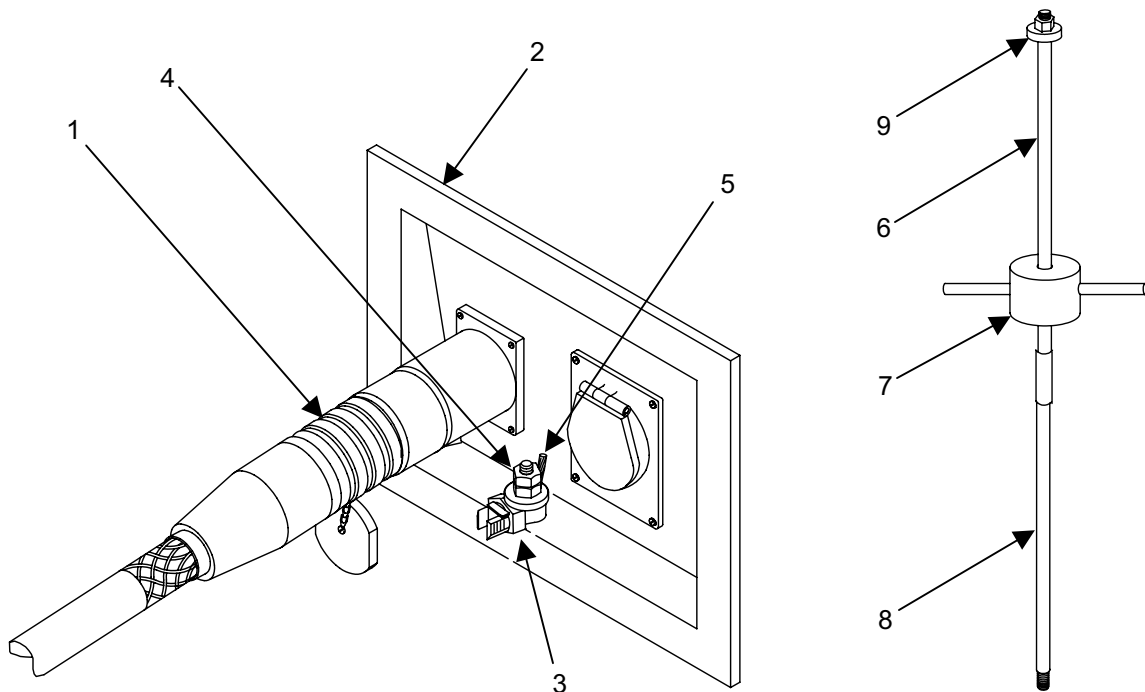
WARNING

Power source must be shut down before disassembling any cables. Failure to follow this warning could result in serious injury or death to personnel by electrocution.

NOTE

This procedure must be performed by MOS 52C, 52D or qualified personnel.

1. Disconnect main power supply.
2. Disconnect 60A pigtail cable (1) from power source.
3. Disconnect 60A pigtail cable (1) from power entry panel (2) and install dust cover.
4. Disconnect the splice connector nut (3) from the ground terminal (4), and remove the nut and ground wire (5).
5. Install the driving rod (6) and slide hammer (7) onto the ground rod assembly (8). Ensure the anvil (9) is on the uppermost end of the driving rod. Use the slide hammer to retrieve the ground rod assembly.
6. Disassemble and clean the ground rod assembly (8) and prepare for packing.



Install Vent Countersunk Plugs



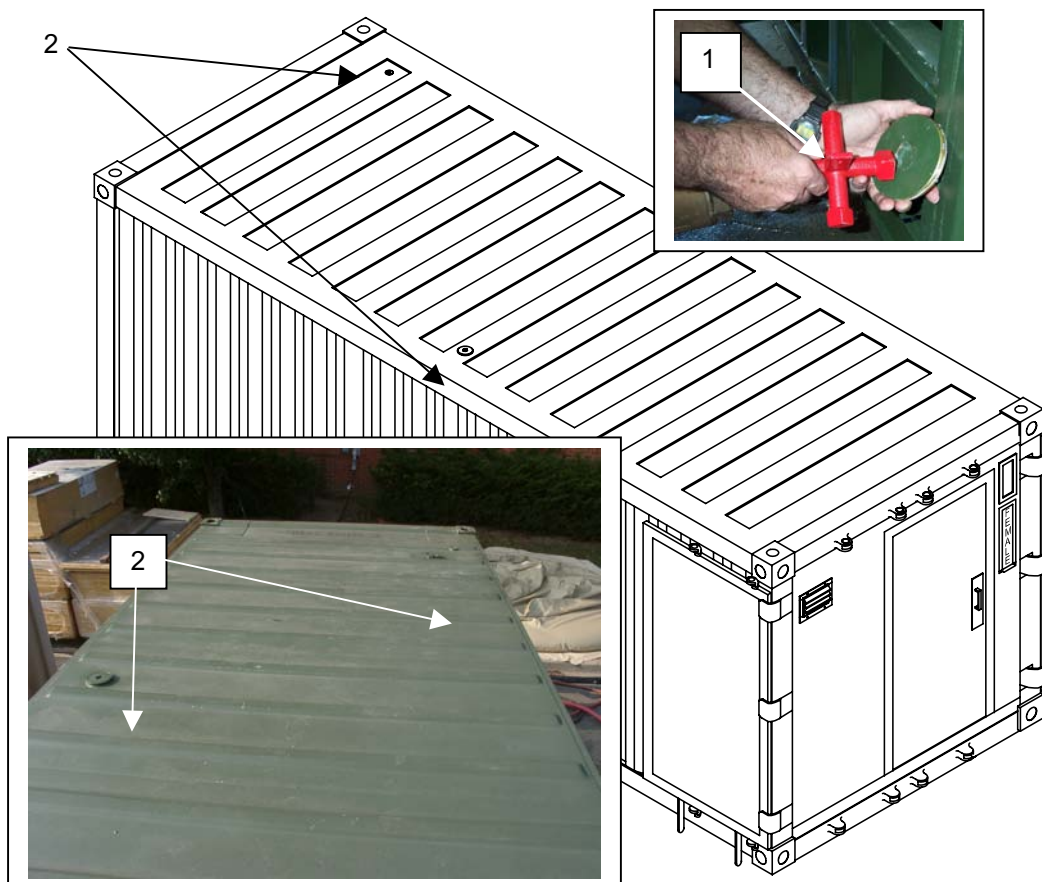
WARNING

Pass tools down before climbing down from roof of latrine container. Use both hands to climb off of latrine container. Serious injury or death to personnel could result due to fall.

WARNING

Ensure the ladder is resting on and supported by firm ground. Always keep ladder rungs dry and free of debris. Do not over-reach; move the ladder instead. Keep body centered between side rails and never allow more than one person on the ladder at a time. Failure to observe these precautions may cause serious injury to personnel.

1. Use the 10-foot aluminum ladder to climb to top of container **(1)**.
2. Use the clean out plug wrench **(2)** to install the vent countersunk plugs **(3)**.



Inventory and Pack Latrine

1. Verify all components have been prepared for movement and storage.
2. Verify that all circuit breakers are set to the OFF position.
3. Verify that all components are clean and ready to be packed into the cargo container(s).
4. Ensure ECU cover has been stored in storage area.
5. Remove sink stand doors (refer to WP 0027 00).
6. Ensure countersunk plugs are installed.
7. Pack container using the following packing list and the packing plan as a reference of required contents. Items such as unserviceable brooms, mop head, and sanitary brush do not need to be sent back.
8. Close container doors and secure locking mechanism.

Inventory and Pack Containerized Latrine (CL)

The Force Provider system contains two CL sites. Each site has two CL containers. Inventory equipment and ensure the following items are available, clean and ready to be packed into each latrine ISO container. Items such as unserviceable brooms, mops, and shovels do not need to be sent back.

Table 3. CL Packing Plan A, Packing Inventory.

| Description of item | Quantity |
|------------------------------------------------------|----------|
| Adjustable Wrench | 1 |
| Broom | 1 |
| Brush, Sanitary | 1 |
| Cable Assembly, Power, 60A, 100-Ft | 2 |
| Can, Ash and Garbage, 32-Gallon, Steel | 1 |
| CL/CLS TM 10-4510-209-13&P | 1 |
| Clean Out Plug Wrench | 1 |
| Debris Screen, Air Conditioner Duct | 1 |
| DISE/PDISE TM 916150-226-13 | 1 |
| Electrical Feeder System PDISE-M100, including: | 1 |
| Cable Assembly, 50-Ft/100A | 2 |
| Electrical Feeder Center | 1 |
| Pigtail, 4-Ft/100A | 1 |
| Strap, Cable Carrying | 8 |
| Fire Extinguisher, ABC, 10-Lb | 1 |
| Ground Rod, Sect, Type III, Class B | 1 |
| Hose Assembly, Rubber, Potable Water, 1½ -In X 25-Ft | 2 |
| Paddle | 1 |
| Strap Wrench | 1 |
| Tiedown Special Purpose Web | 7 |
| Trunk | 1 |

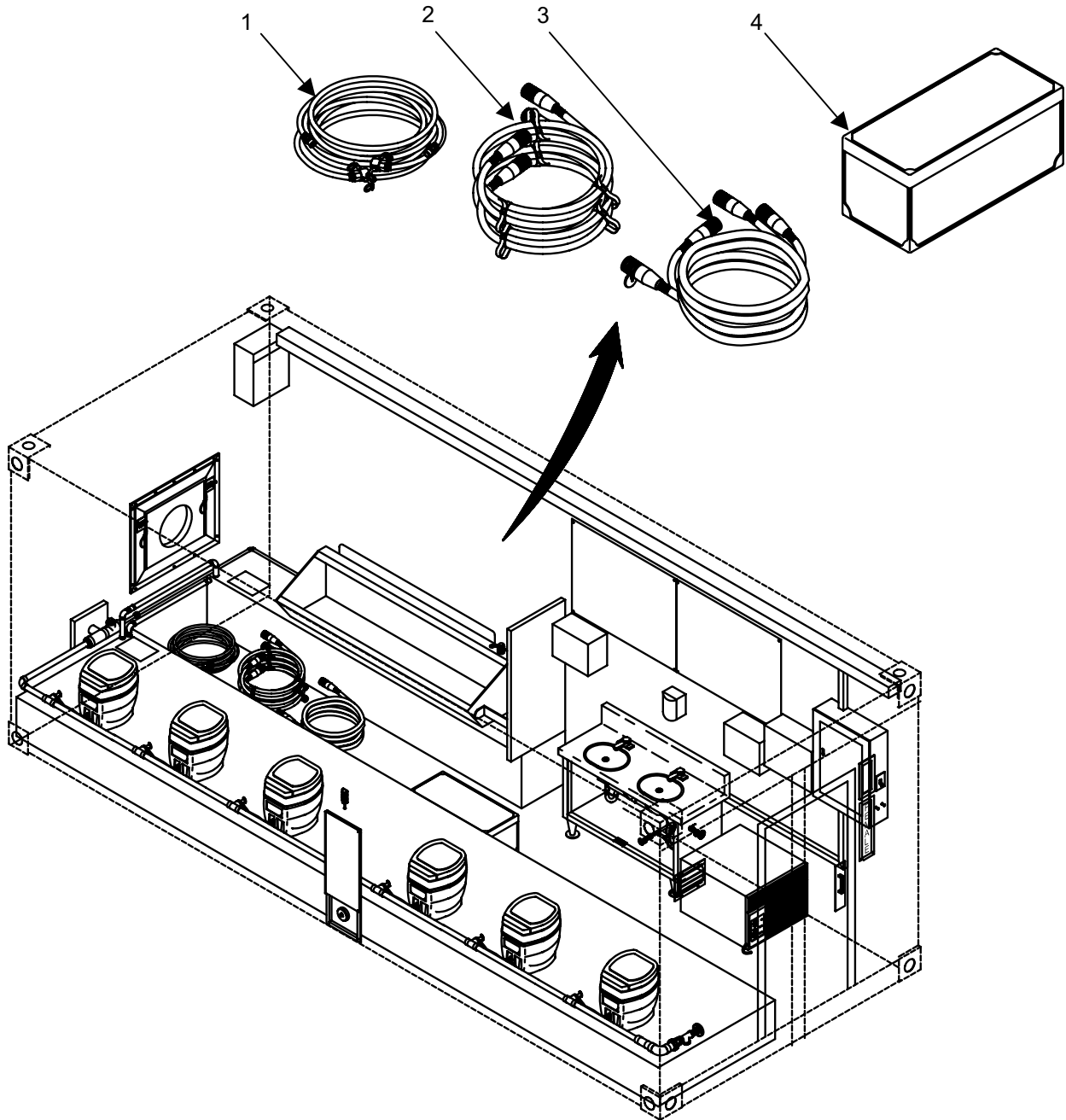
Inventory List (continued)

Table 4. CL Packing Plan B, Packing Inventory.

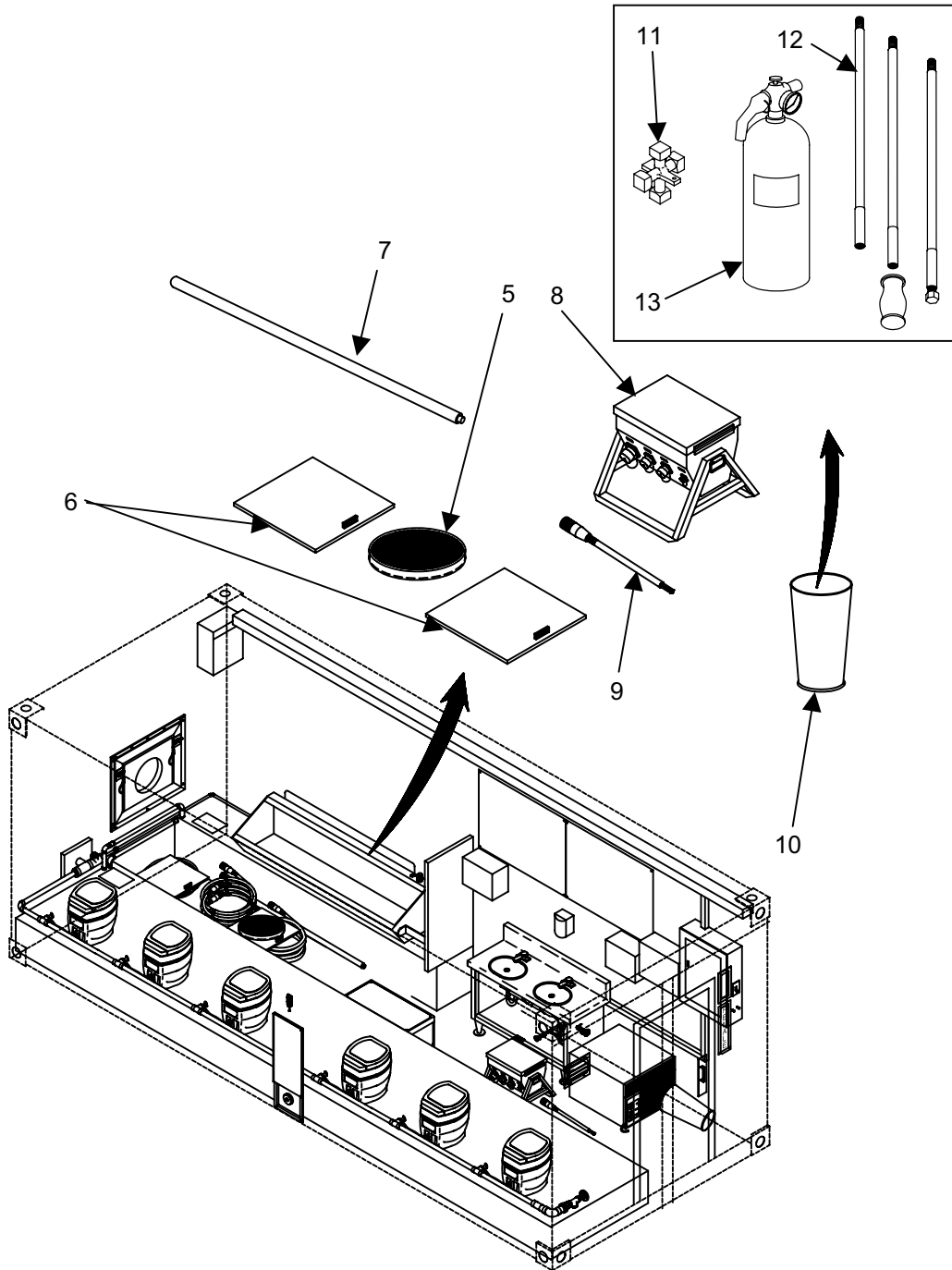
| Description of item | Quantity |
|------------------------------------------|----------|
| Broom | 1 |
| Brush, Sanitary | 1 |
| Bucket, Mop, Steel, 16-Quart | 1 |
| Cable PDISE Assembly, Power, 60A, 100-Ft | 2 |
| Can, Ash and Garbage, 32-Gallon, Steel | 1 |
| CL TM 10-4510-209-13&P | 1 |
| Debris Screen, Air Conditioner Duct | 1 |
| DISE/PDISE TM 916150-226-13 | 1 |
| Extension Cable, 25-Ft, 120 V | 3 |
| Fire Extinguisher, ABC, 10-Lb | 1 |
| Ground Rod, Sect, Type III, Class B | 1 |
| Hose Assembly, Nonmetallic | 1 |
| Ladder, Aluminum, 10-Ft | 1 |
| Mop Handle | 1 |
| Mop Head | 2 |
| Nozzle, Garden Hose | 1 |
| Paddle | 1 |
| Tee Assembly, 1½ -In FC X FC X FC, Water | 1 |
| Tiedown Special Purpose Web | 7 |
| Trunk | 1 |
| Wringer | 1 |

Pack Containerized Latrine Packing Plan A

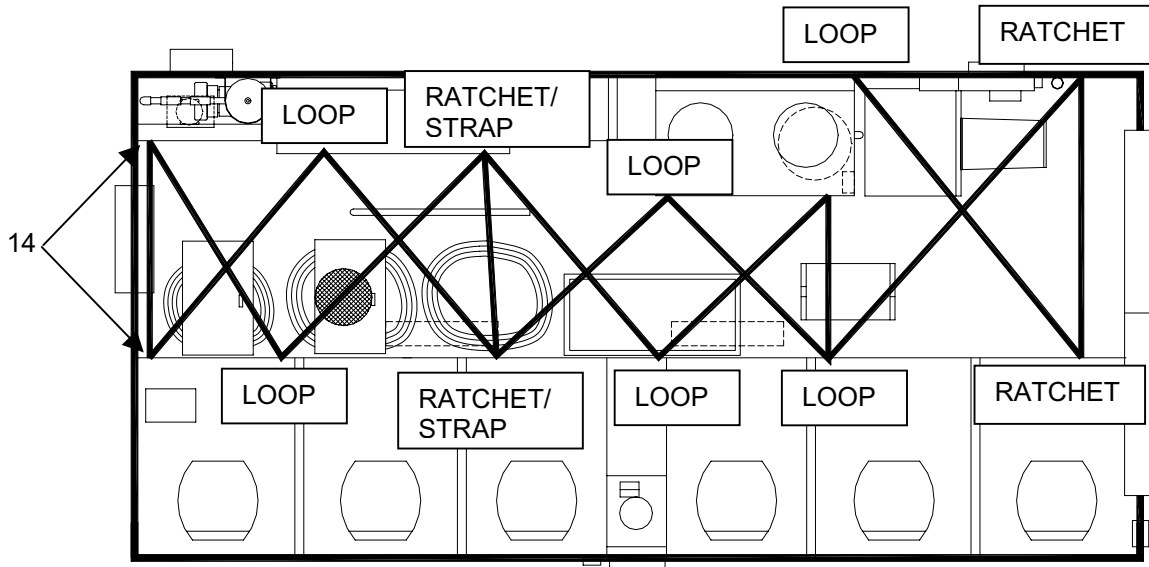
1. Retrieve and pack 1½-inch x 20-foot freshwater hoses (1), 60A, 100-foot cable assemblies (2), 100A, 50-foot cable assemblies (3), and trunk locker (4).



2. Retrieve and pack debris screen (5), sink cabinet doors (6), broom handle (7) PDISE electrical feeder center (8), and 100A 4-foot pigtail (9).
3. Pack the following items in the garbage can (10): clean out plug wrench (11), ground rod assembly (12) and slide hammer, fire extinguisher (13), and any additional loose items.

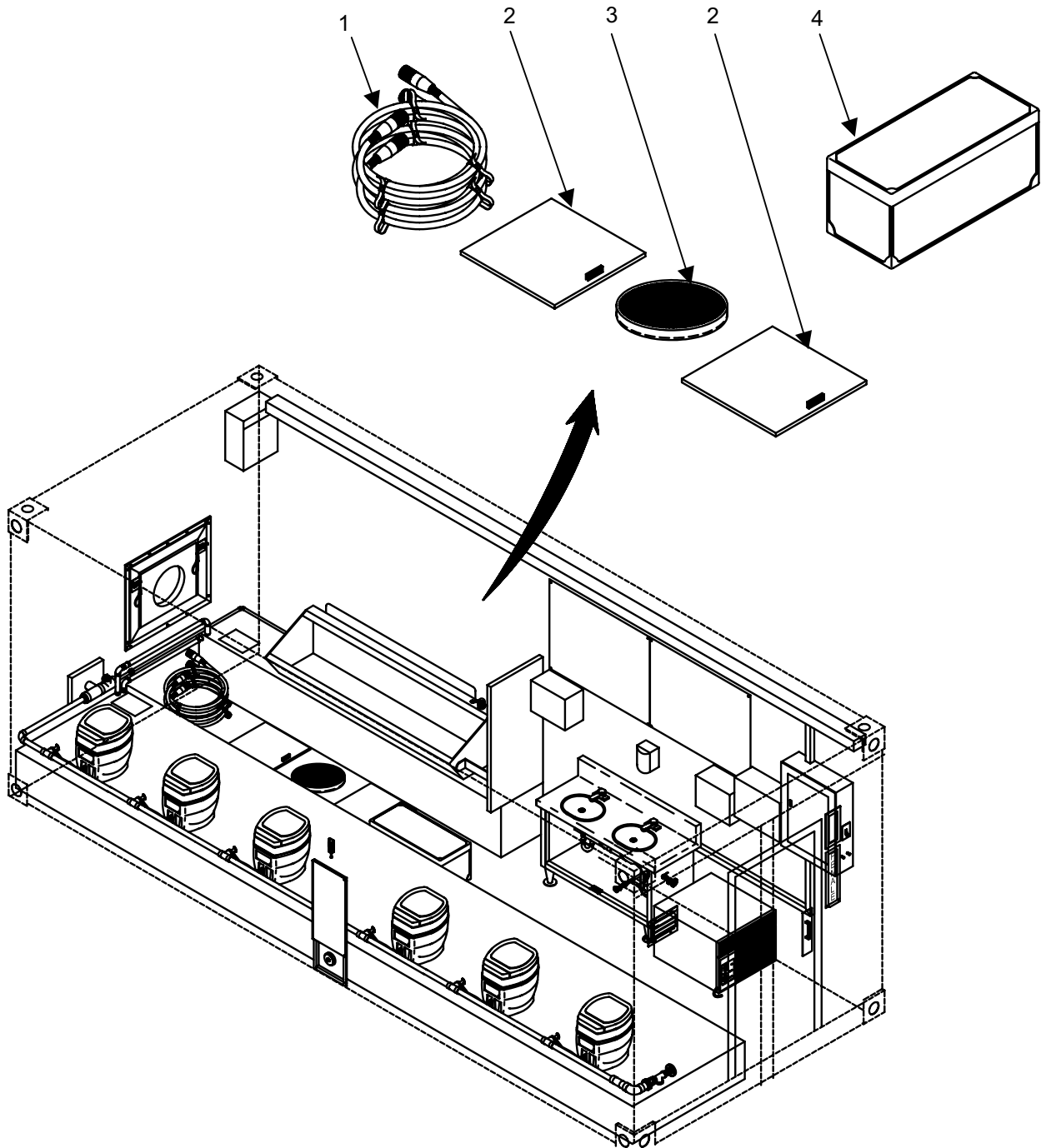


4. Install strapping (14) as shown.

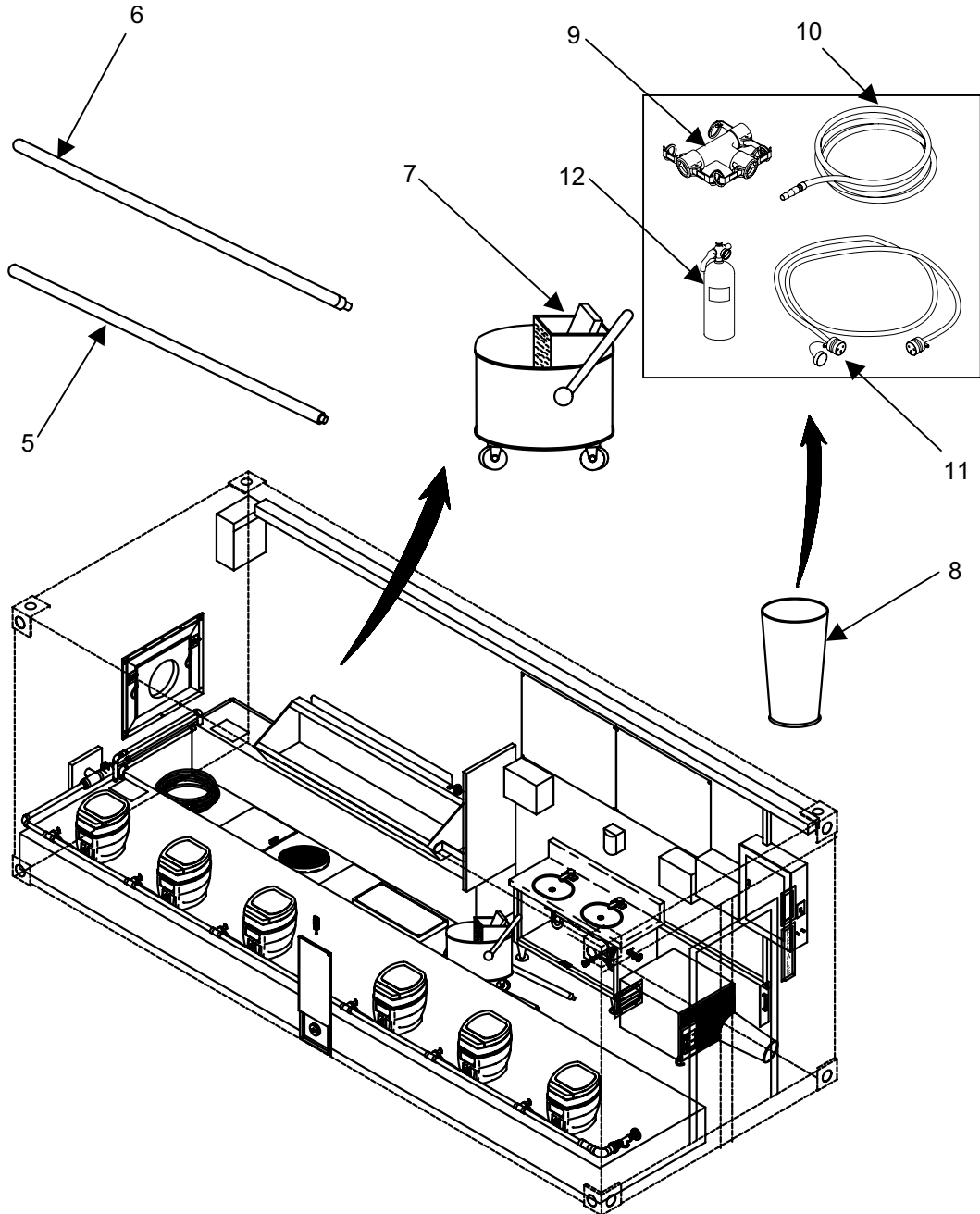


Pack Containerized Latrine Packing Plan B

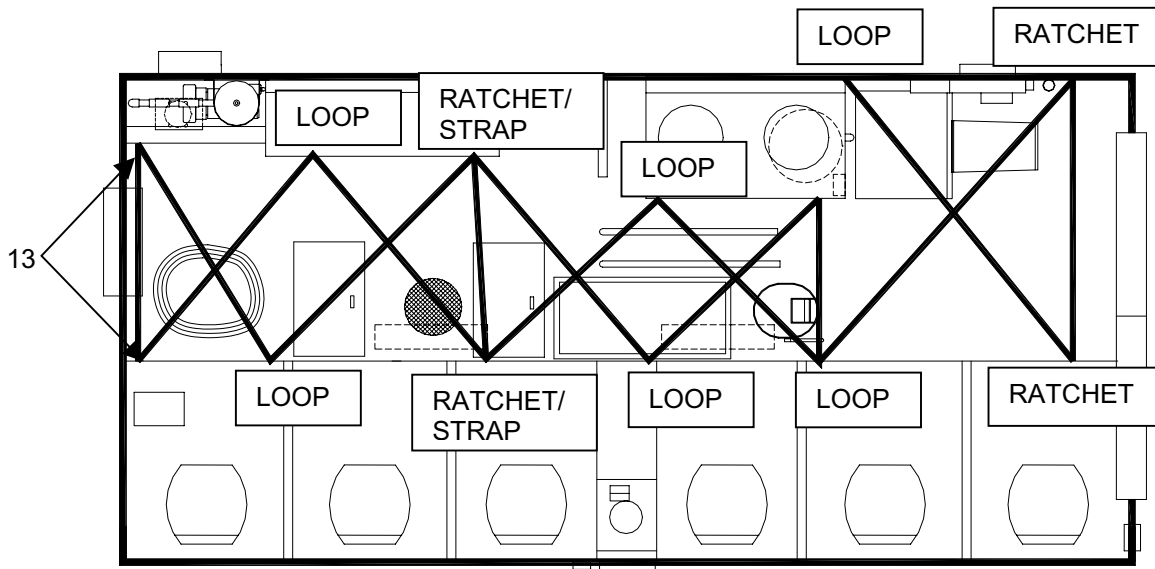
1. Retrieve and pack 60A, 100-foot cable assemblies (1), sink cabinet doors (2), debris screen (3) and trunk locker (4).



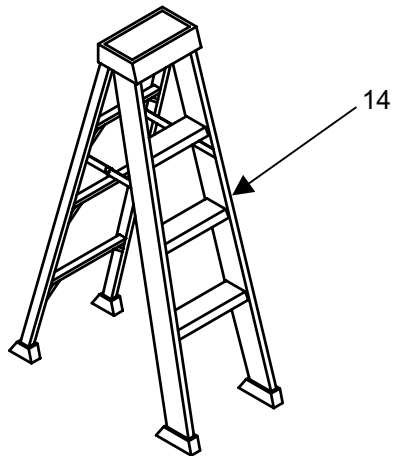
2. Retrieve and pack a broom handle (5) and mop handle (6), and mop bucket with wringer (7).
3. Pack the following items in the garbage can (8): Tee assembly (9), hose assembly (10), 25-foot 120V extension cable (11), fire extinguisher (12), and any additional loose items.



4. Install strapping (13) as shown.



5. Place the folded 10-foot stepladder (14) on top of the strapped equipment, behind the ECU.

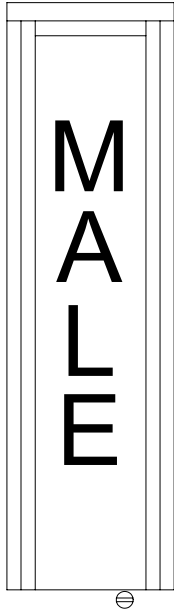


LABELS AND INSTRUCTION PLATES

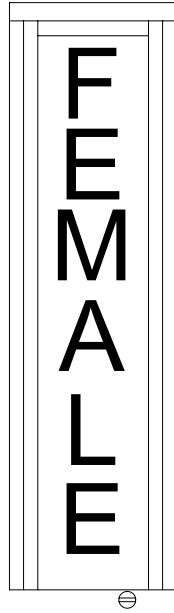
The following labels and instruction plates are found on the CL components as indicated.

Personnel Entrance

The following instruction plate is located at the personnel entrance of the container:



Original Instruction Plate



Replacement Instruction Plate

Customs Data Plate

The Customs Data Plate is located on the left side service door.

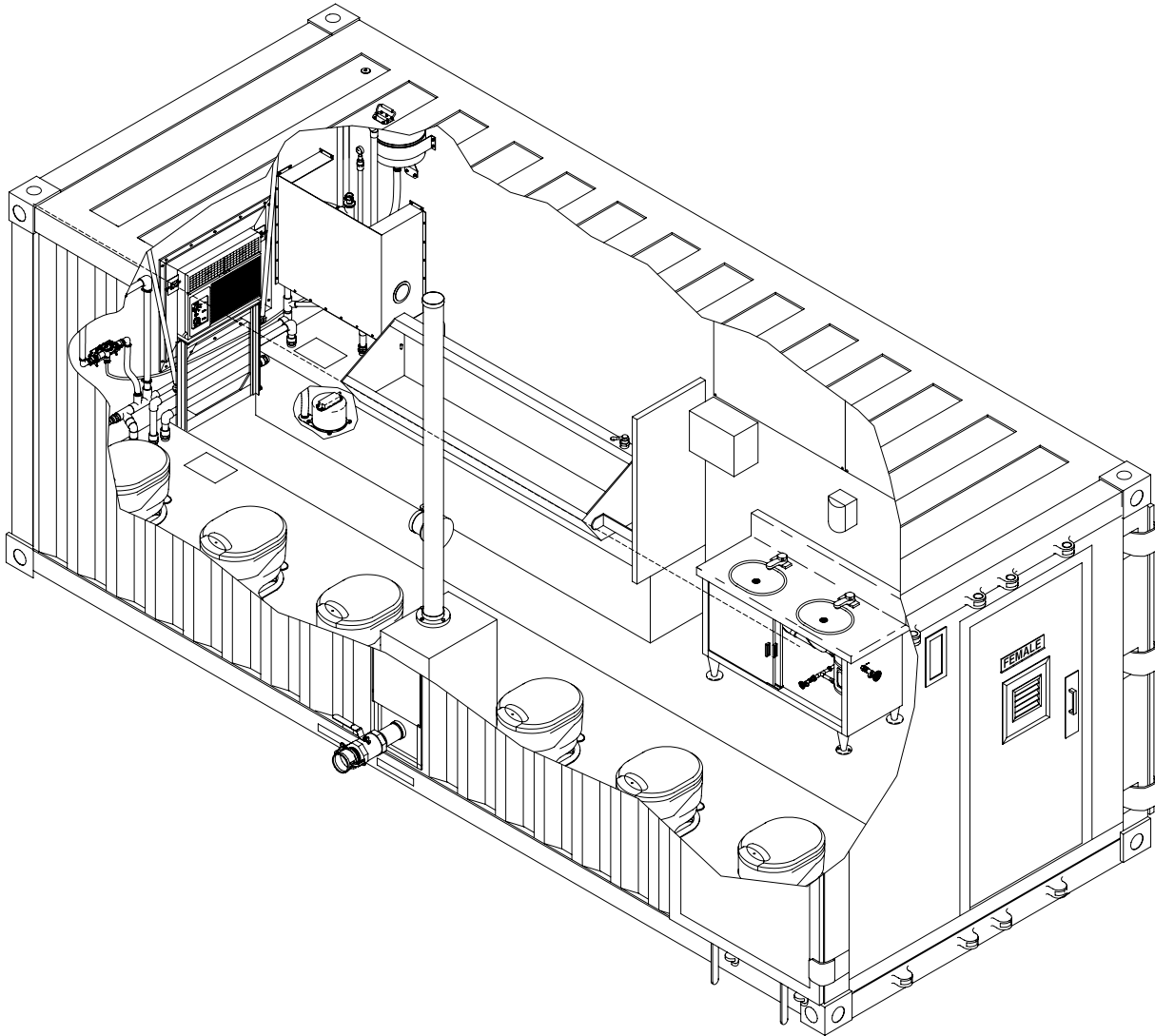
| | | | |
|------------------------------------------------|-----------------------|---------------------------------------------------|--|
| APPROVED FOR TRANSPORT UNDER CUSTOMS SEAL | | | |
| TR / 03 / 91 | | | |
| TYPE 20C-GA-1 | | MANUFACTURER'S SERIAL NO 008 347 | |
| MANUFACTURED BY ESKISEHIR TURKEY | | OWNED BY U.S. ARMY | |
| TIMBER COMPONENT TREATMENT IM / PHOXIM / 99 | | APPROVED BY BUREAU VERITAS | |
| CSC SAFETY APPROVAL F / BV / 7259 / 99 | | | |
| DATE MANUFACTURED | JANUARY 2000 | INSPECTION SHALL BE BEFORE DECEMBER 2005 | |
| IDENTIFICATION NO | USAU 021 130 14 | | |
| MAXIMUM GROSS WEIGHT | 24000 KGS 52910 LBS | | |
| ALLOWABLE STACK WEIGHT 1 BG | 19200 KGS 42320 LBS | | |
| PACKING TEST LOAD VALUE | 15000 KGS 33070 LBS | | |

**OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)
OPERATION UNDER USUAL CONDITIONS – PREPARATION FOR USE**

GENERAL

This work package contains the procedures for site selection and preparation for use of the CLS.

Read all warnings, cautions, and notes within this section and follow procedures outlined herein to ensure safe operation of the latrine and associated equipment.



SITING REQUIREMENTS

This section outlines the siting requirements of the CLS, as well as the installation, preparation, and operation of the latrine under usual conditions.

Refer to FM 21-10 for further information on placement.

Familiarize yourself with the location of all controls and indicators as described in WP 0004 00 before operating the latrine.

The site for the installation of the Containerized Latrine System (CLS) should meet the following requirements:

CAUTION

The latrine container must be level for proper operation and to prevent damage to the equipment.

- Must be level, with no greater than a 5-degree slope.
- Must be clear of large rocks and trees.
- Must be located on firm ground with good water drainage.
- Must conform to the guidelines of the Unit Standard Operating Procedure (SOP).
- Latrines should be placed as far from food operations as possible (100 meters or more), downwind and down slope if possible.
- The CLS must be positioned to allow utility hookups (fresh water, electrical) to the CLS and have waste removal support. Waste should be transported daily.



CLS TOP-DOWN DIAGRAM

PREPARING THE LATRINE FOR OPERATION

UNPACKING

The CLS is shipped with a 3,000-gallon tank, and all necessary water hoses and power cables inside the ISO container.

At least four soldiers are required to unpack the CLS.

Lift and Move the Latrine Container

The following are general guidelines for lifting the latrine. Refer to TM 55-8115-204-23&P, Unit and Direct Support Maintenance Manual (including Repair Parts and Special Tools List), General Cargo Container, for more specific lifting and moving instructions.

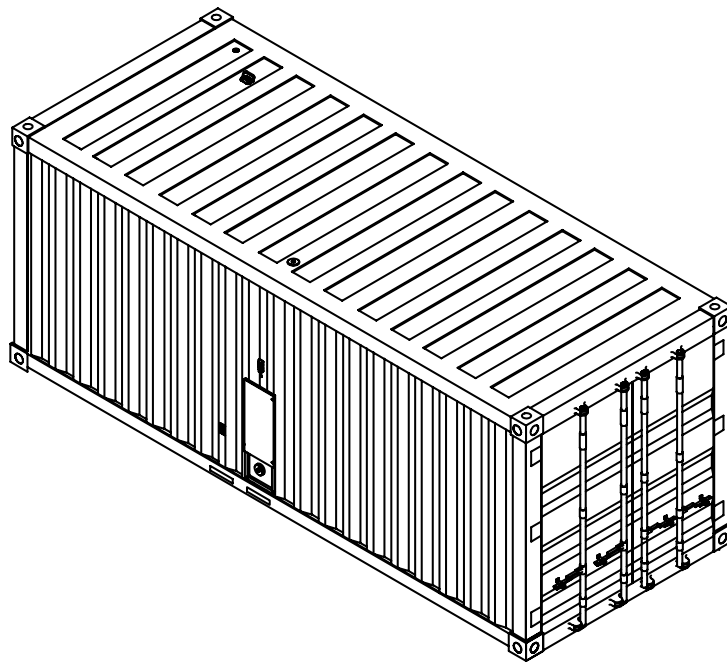


WARNING

The Containerized Latrine or Containerized Latrine System weighs approximately 10,000 pounds when fully loaded. Never stand beneath container when it is being moved. Serious injury or death could result to personnel.

CAUTION

The Containerized Latrine or Containerized Latrine System weighs approximately 10,000 pounds when fully loaded. Never attempt to lift or move the Containerized Latrine or the Containerized Latrine System with equipment not rated for this weight. Equipment damage may result from improper movement of container.



Lifting

Movement of latrine requires a minimum of a 10,000-pound capacity forklift. Use built-in pockets to move latrine.

Hoisting

Latrine may be stacked six-high, as long as the bottom unit is positioned on a firm level surface. Hoisting requires 10,000-pound minimum capacity hoist and slings connected to the corner ISO fittings.

CAUTION

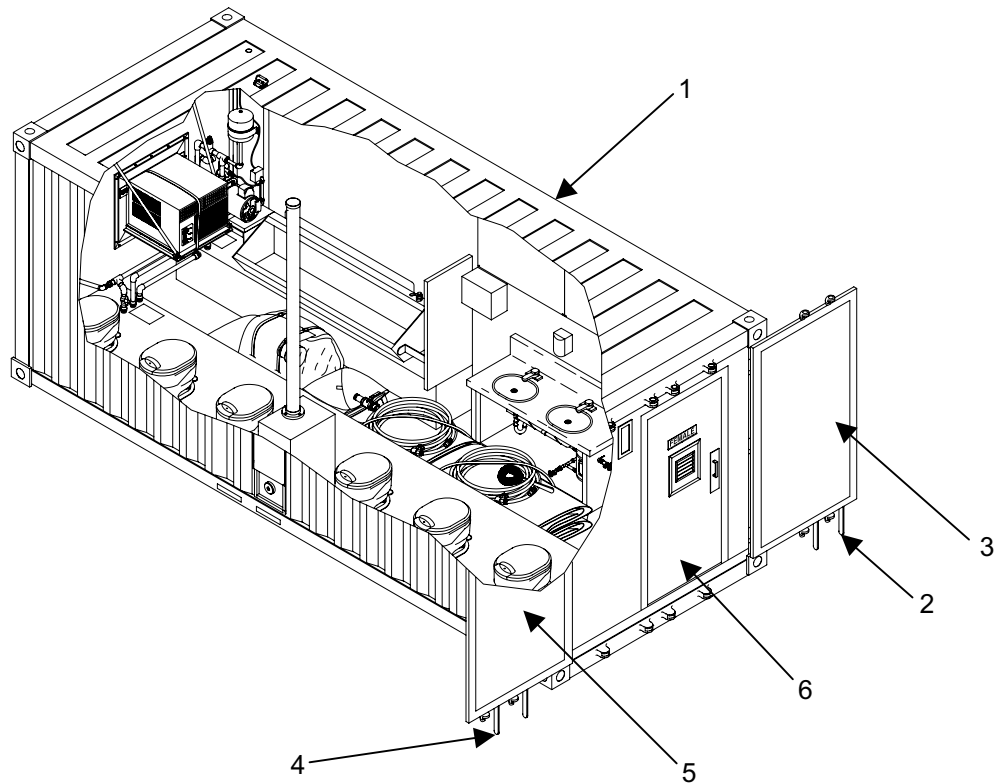
Latrine must be level for proper operation and to prevent damage to equipment.

Position Latrine

Level latrine (1) with wood scraps, stones, or bricks placed at the corners.

Open Cargo Doors

1. Unlatch latching mechanism (2) of right-handed door (3) and open right-handed door.
2. Unlatch latching mechanism (4) of left-handed door (5) and open left-handed door.
3. Open personnel door (6).



Unpack Latrine

1. Remove items stored inside the latrine for shipment.
2. Inventory latrine using the following packing list.



WARNING

Three people are required to lift the packed 3000-gallon water tank. Serious injury to personnel could result from improper lifting.



Table 1. Inventory List for CLS.

| Description of Item | Quantity |
|---------------------------------------------------------------|----------|
| Broom (mounted inside) | 1 |
| Cable Assembly, Power, 60A, 50-ft, Pigtail | 1 |
| Clean Out Plug Wrench | 1 |
| Commode Straps | 6 |
| Dark Cover | 1 |
| Extension Cable, 25-ft, 120VAC, GFCI | 3 |
| Fire Extinguisher, ABC, Dry Chemical, 10-lbs (mounted inside) | 1 |
| Funnel | 1 |
| Ground Rod Assembly | 1 |
| Heat Trace Assembly, 6-ft | 1 |
| Heat Trace Hose, 20-ft | 1 |
| Hose Assembly, Non-metallic, Garden | 1 |
| Hose Assembly, Rubber Discharge, 4-in x 20-ft | 3 |
| Hose, 1-in Recirculating , 20-ft | 1 |
| Hose, 1½-in x 20-ft with caps, plugs and chains | 2 |
| Mop Bucket | 1 |
| Mop Handle (mounted inside) | 1 |
| Mop Head (mounted inside) | 2 |
| Nozzle, Garden Hose | 1 |
| Paddle | 1 |
| Reducer, 1½ -in x 2-in | 1 |
| Reducer, 2-in x 1-in | 1 |
| Reflective Insulation Rolls, Folded | 8 |
| Reflective Insulation Tape, Rolls | 8 |
| Sanitary Brush | 1 |
| Shovel (mounted inside) | 1 |
| Sink Cabinet Doors | 2 |
| Slide Hammer | 1 |
| Strap Wrench | 1 |
| Submersible Heater, 1½ kW | 1 |
| Tank, Fabric, Collapsible, 3000-Gallon & associated TM | 1/1 |
| Tape, Antisieze | 2 |
| TM 10-4510-209-13&P | 1 |
| Tiedown Special Purpose Web | 4 |
| Tiedown Straps, 1-in | 3 |
| Valve Assembly, 4-inch | 1 |
| Waste Paper Basket | 1 |
| Wringer | 1 |

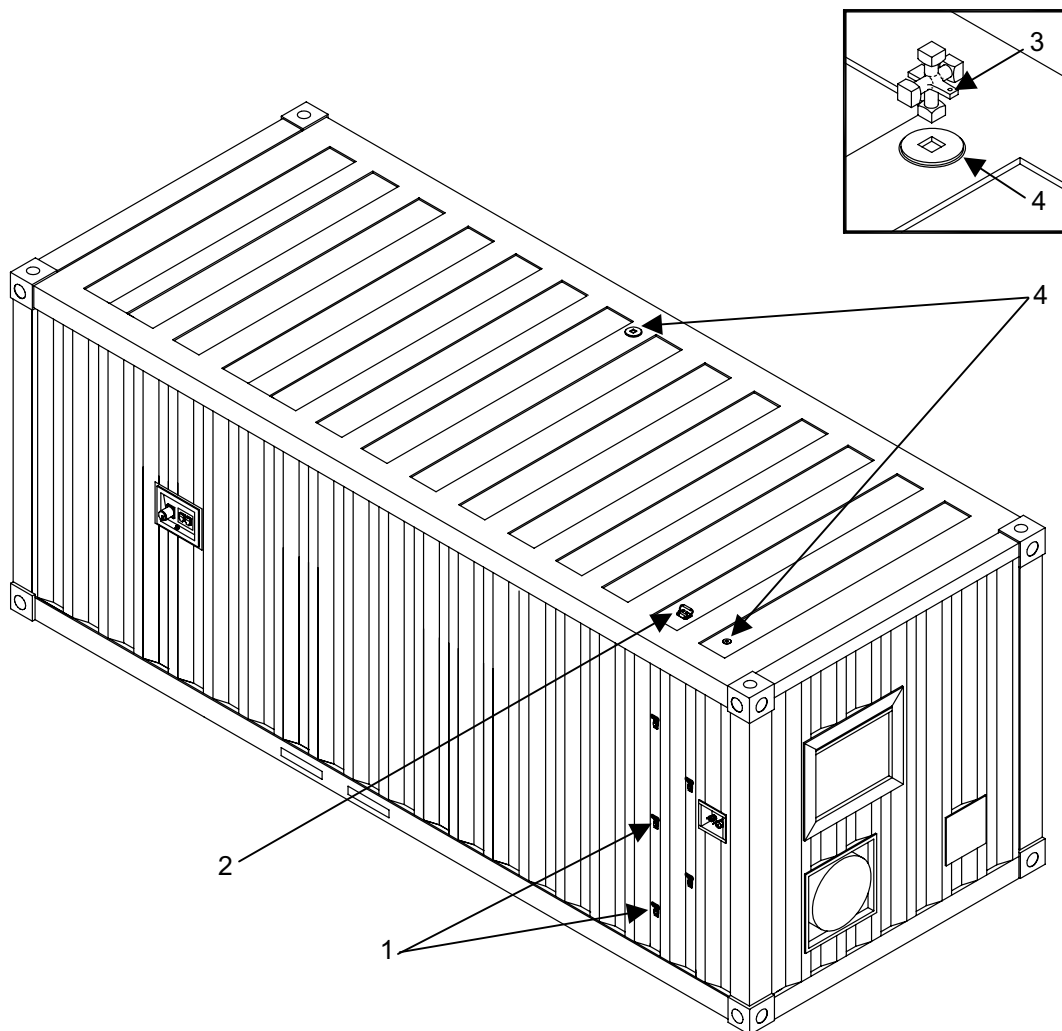
Remove Vent Countersunk Plugs



WARNING

Pass tools down before climbing down from roof of latrine container. Use both hands to climb off of latrine container. Serious injury or death to personnel could result due to fall.

1. Fold down container steps (1).
2. Climb to top of container using the steps (1) and handle (2).
3. Use the clean out plug wrench (3) to remove vent countersunk plugs (4).
4. Retain vent countersunk plugs (4) and store under the sink.

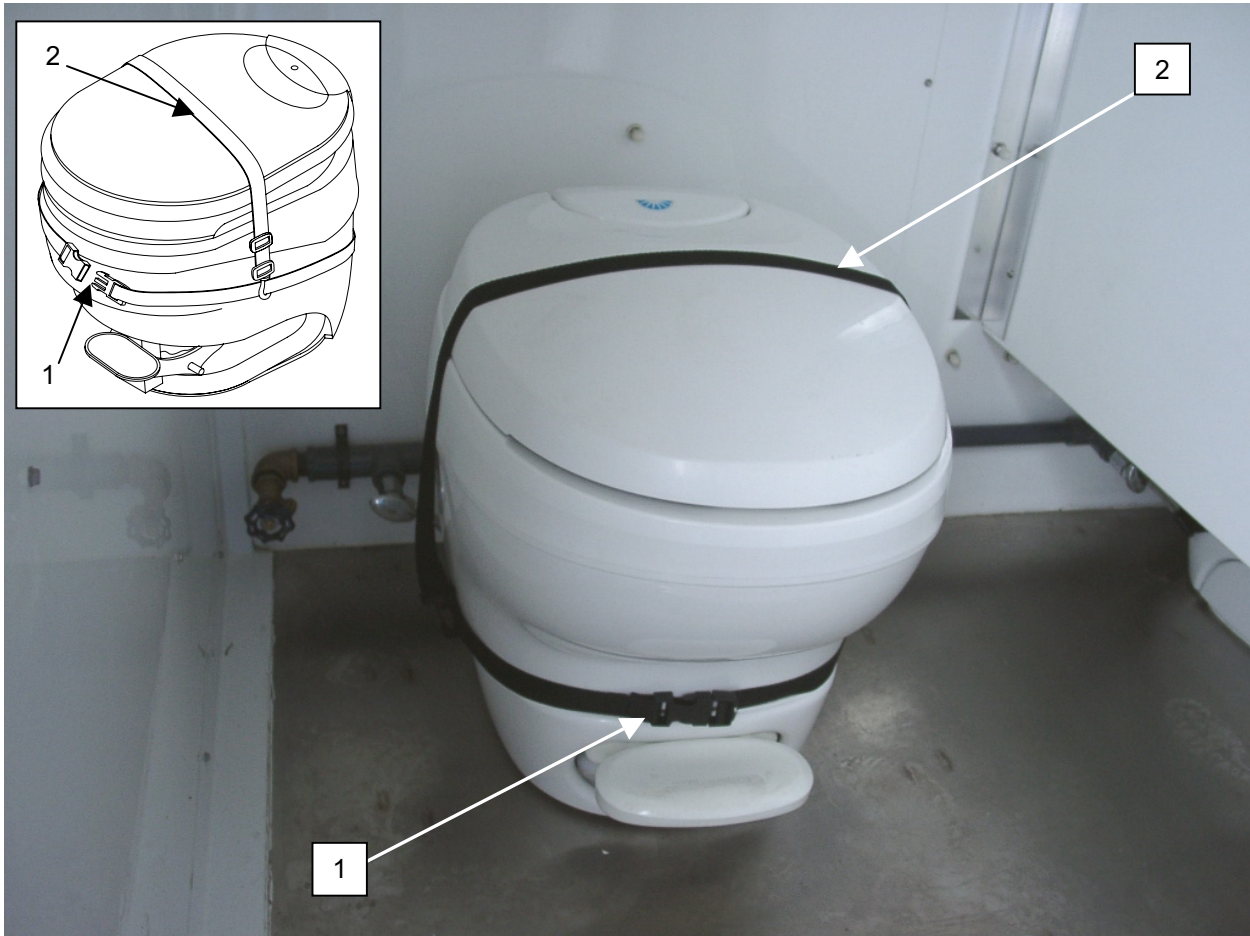


PREPARE LATRINE FOR USE

Remove Toilet Straps

1. Open buckle fastener (1).

2. Remove strap (2). Store under sink.



Prepare Power Distribution System for Use

To prepare the power distribution system for use, proceed as follows:

Ground Latrine



WARNING

The Containerized Latrine System must be electrically grounded. Failure to ground the Containerized Latrine System may result in damage to the equipment and serious injury or death to personnel from electrical malfunction.



WARNING

ELECTRICITY CAN KILL YOU. Electricity cannot be seen but it can kill you. Electricity is unlike most dangerous things you can come in contact with because it gives no warning and no symptoms to be wary of. Its effect is immediate. It can kill you, render you unconscious, or severely burn you.



WARNING

Leather gloves and eye protection must be worn when installing the grounding rod. Failure to do so could result in serious injury to eyes or hands. Do not place hands between the driving stud and the coupling. Be sure all connections are tight so as to avoid spark between the units and ground rod.

CAUTION

Ensure all circuit breakers on circuit breaker panel are set to the OFF position to prevent shorting of equipment when power is initially established.

NOTE

Drive grounding rod next to the power panel approximately 8 to 9 feet deep.

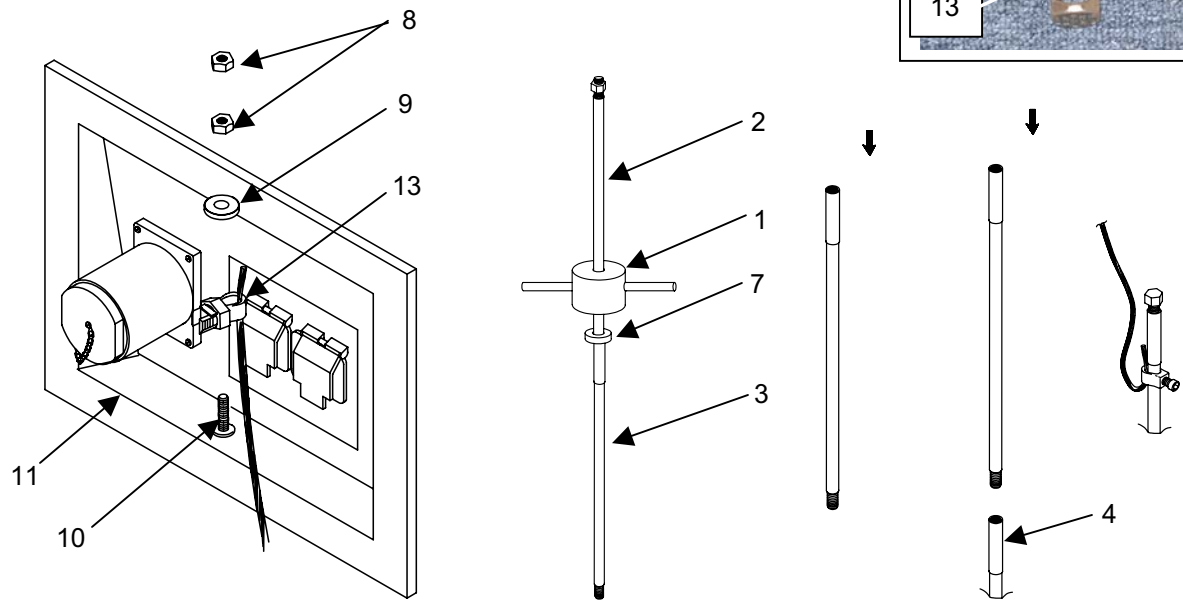
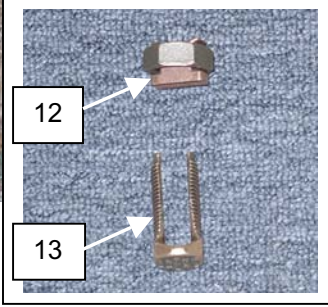
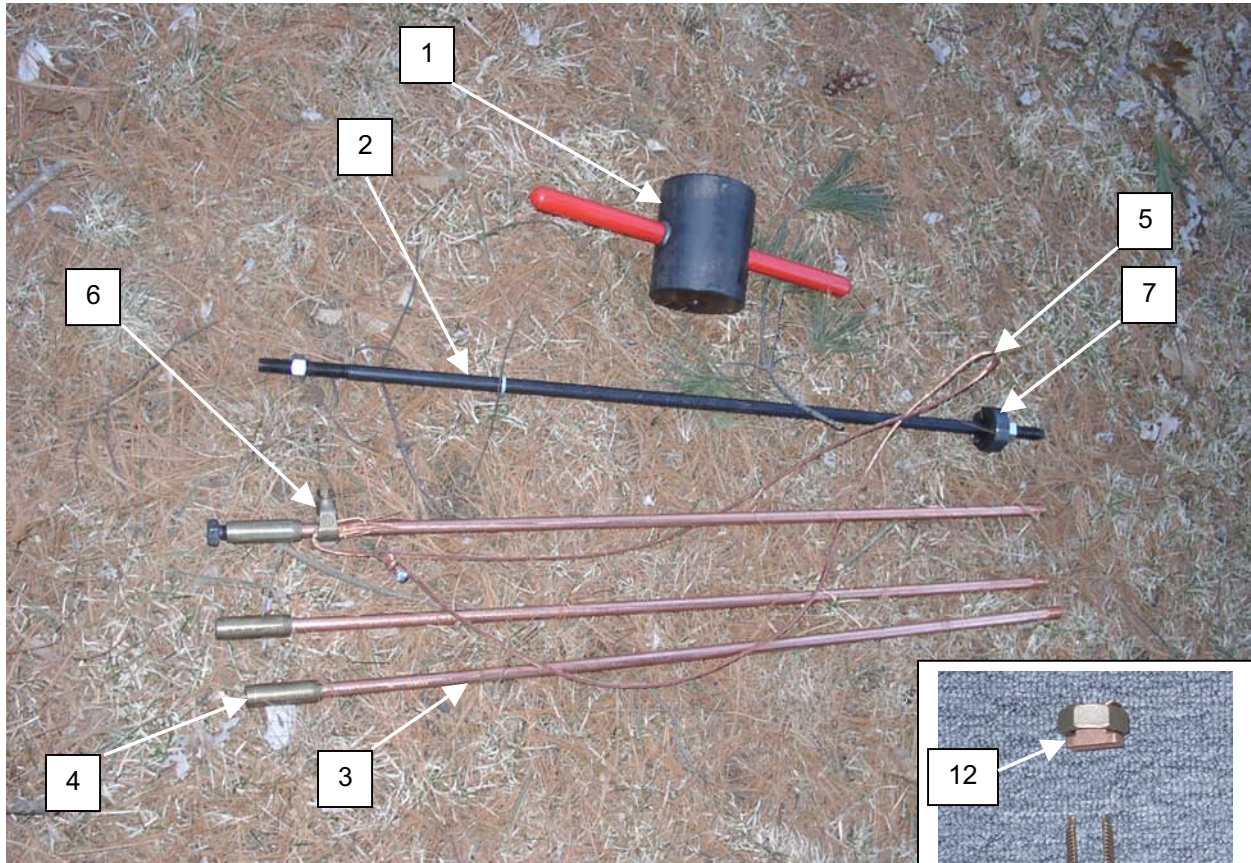
1. Identify the following components: slide hammer **(1)**, driving rod **(2)**, three ground rod sections **(3)**, three couplings **(4)**, and ground cable **(5)** with clamp **(6)** and connector.
2. Screw coupling **(4)** onto the flat end of rod section **(3)**.
3. Install slide hammer **(1)** onto driving rod **(2)**.

4. Install driving rod **(2)** onto coupling **(4)**. Turn the nut and anvil **(7)** down towards the coupling until both are tight.
5. Drive the section **(3)** into the ground with a slide hammer **(1)** until only six inches of the ground rod section remains above ground. Remove the driving rod **(2)** from the coupling.
6. Screw the pointed end of a second ground rod section **(3)** into the first ground rod coupling **(4)**; screw the second ground rod coupling onto the second ground rod section.
7. Install driving rod **(2)** onto coupling **(4)**.
8. Resume hammering until only six inches of the second grounding rod section **(3)** remains above the ground. Remove the driving rod **(2)** from the coupling **(4)**.
9. Screw the pointed end of the third ground rod section **(3)** into the second ground rod coupling **(4)**; screw the third ground rod coupling onto the third ground rod section.
10. Install driving rod **(2)** onto coupling **(4)**.
11. Resume driving the rod into the ground with the slide hammer **(1)** until only one foot of the ground rod assembly remains above ground. Remove the driving rod **(2)** and slide hammer from the coupling **(4)**.

NOTE

An electrical connector is fitted to the free end of the grounding cable. The connector is not used in this installation. Do not remove the connector – the connector is necessary for use in other installations.

12. Attach grounding cable **(5)** to the electrical clamp **(6)**. Tighten the electrical clamp.
13. Remove nut(s) **(8)**, washer(s) **(9)** from stud **(10)** on panel **(11)**.
14. Remove splice connector nut **(12)** from splice connector **(13)**.
15. Place splice connector **(13)** over grounding stud **(10)**.
16. Install nut **(8)**, washers **(9)** onto stud **(10)**. Do not tighten at this time.
17. Slip grounding cable **(5)** through the splice connector **(13)**.
18. Install and tighten splice connector nut **(12)** until grounding cable **(5)** is securely fastened to grounding stud **(10)** using adjustable wrench provided.
19. Tighten washer(s) **(9)** and nut(s) **(8)** securely.



Connect Cables**CAUTION**

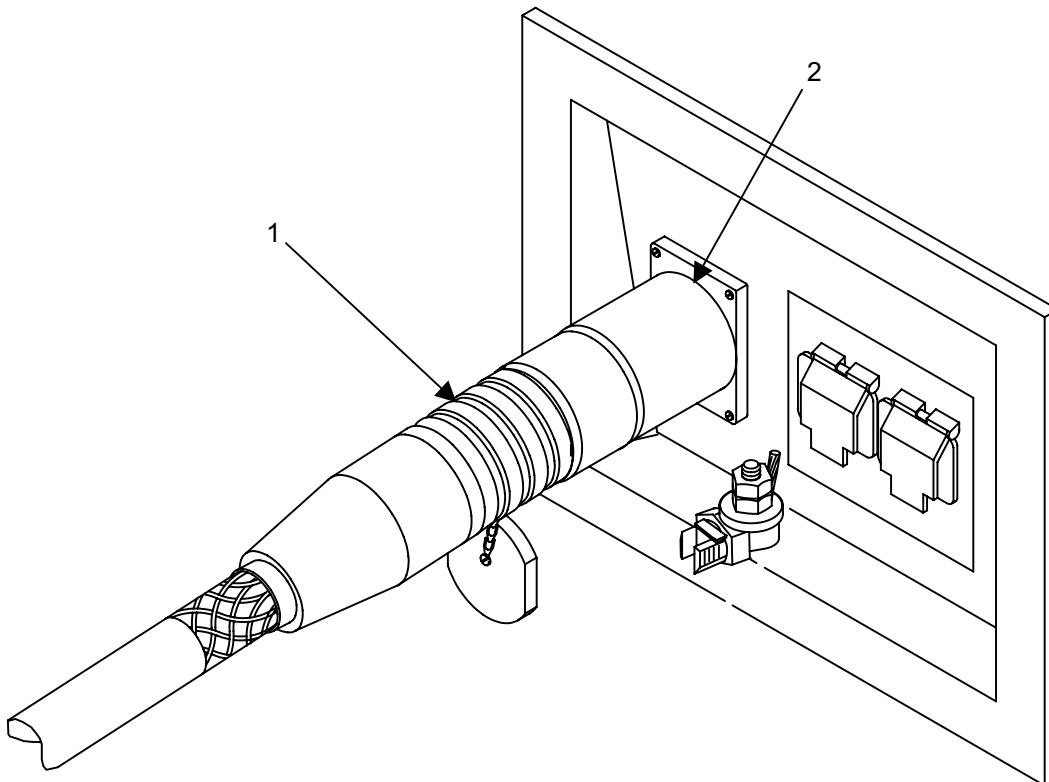
Ensure all circuit breakers on circuit breaker panel are set to the OFF position to prevent shorting of equipment when power is initially established.

1. Lay out one 60A, 50-foot cable pigtail (1) in front of the electrical panel to the power source.
2. Connect pigtail (1) to the 60A power supply receptacle (2).

**WARNING**

The following step must be performed by MOS 52C or 52D qualified personnel. Failure to observe safety precautions may result in injury or death from electrocution.

3. Connect pigtail (1) to power source (e.g., generator, municipal power supply, etc.).



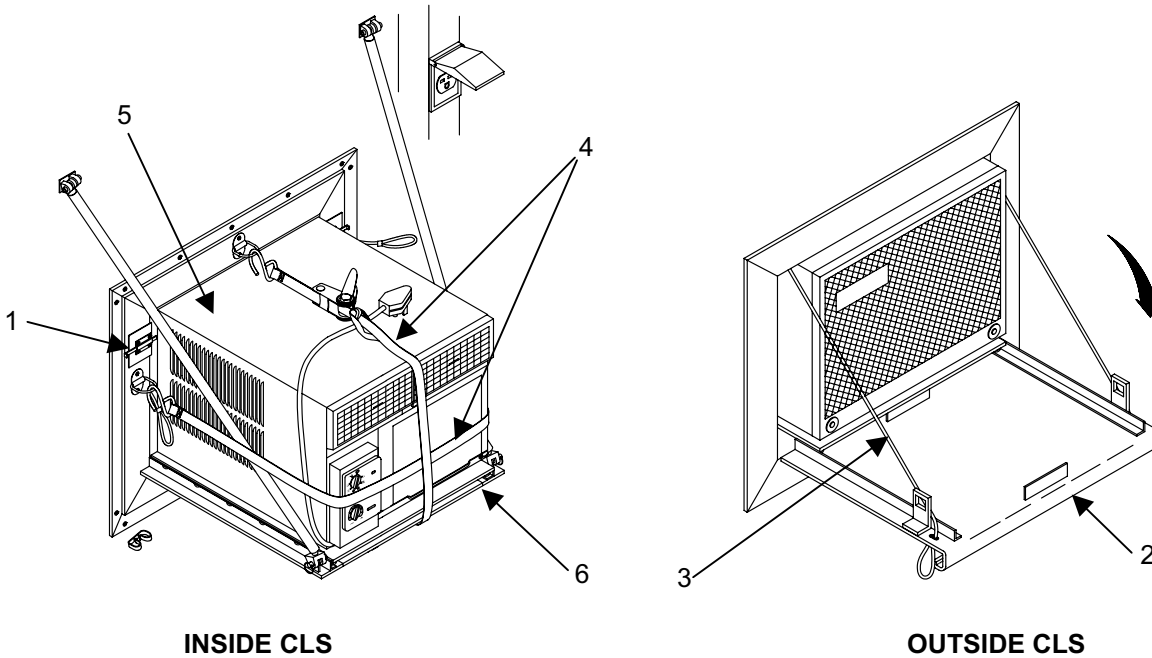
Install ECU



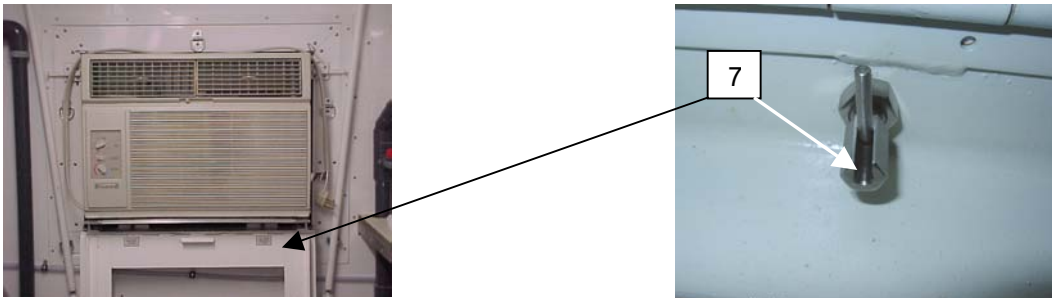
WARNING

Watch for water pump while moving the ECU. Head injury to personnel could result if safety precautions are not observed.

1. With two personnel inside the rear of the container and one outside the rear of the container, unlatch two spring-loaded latches (1) at the same time on the inside, while a person on the outside of the container pulls ECU cover (2) down until support cables (3) are fully extended.
2. From inside of the container, remove tiedown straps (4) securing ECU (5) to ECU tray (6).



3. On the inside of the container, pull and lock the release latches (7) below the ECU (5).

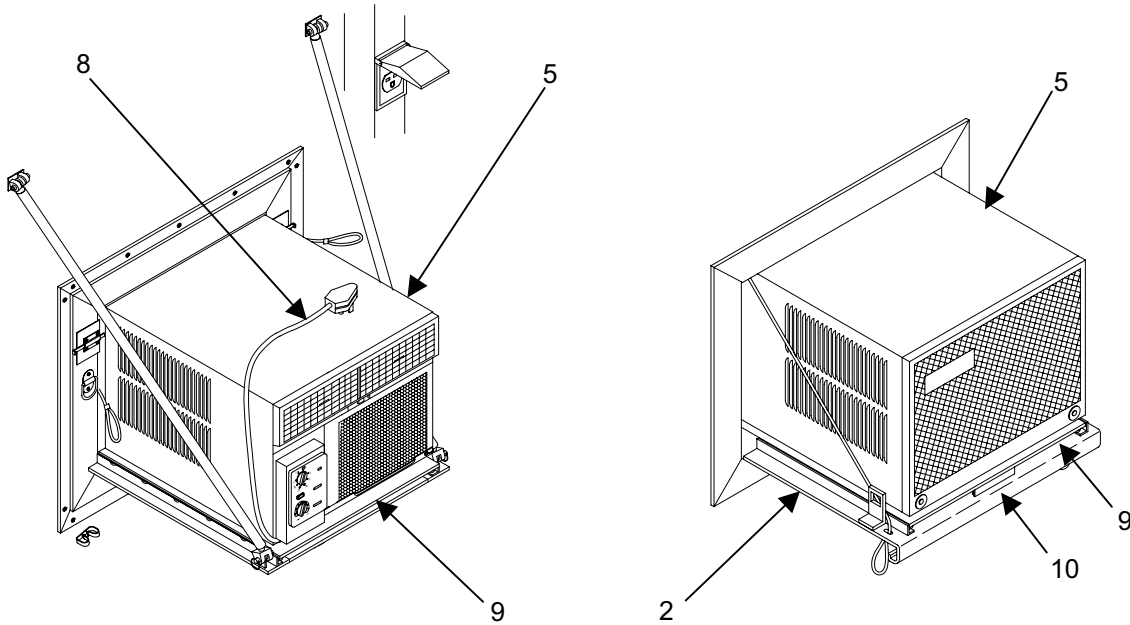




WARNING

Pinching injury to personnel could result from moving ECU and ECU tray if safety precautions are not observed.

- On the inside of the container, hold power cord (8) out of the way while pushing ECU (5) and the ECU carrier (9) outside onto ECU cover (2), until the stop on the ECU carrier contacts the stop (10) on the ECU cover (2).



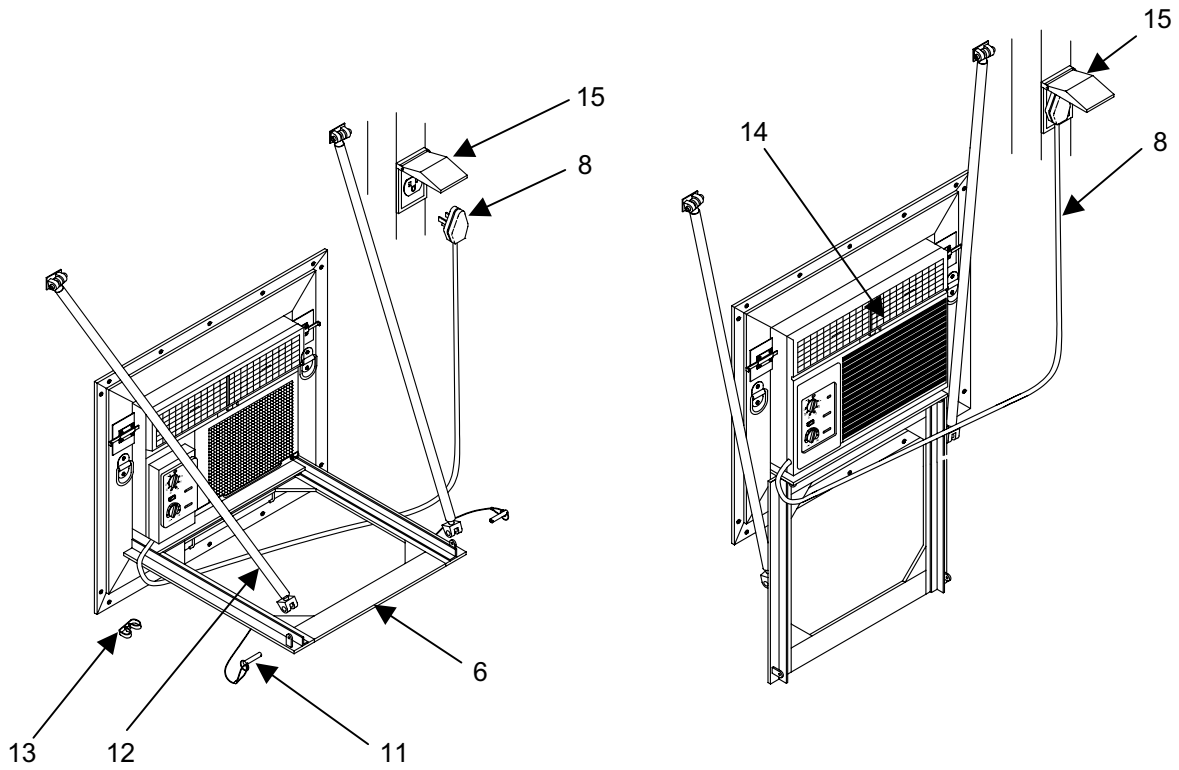
INSIDE CLS

- On the inside of the container, pull up on ECU tray (6) while removing pins (11) holding support braces (12) on the support bracket.
- Pull support braces (12) out of holes in ECU tray (6). Allow braces and the tray to hang.



OUTSIDE CLS

7. Push support braces (12) into the mounted retaining clips (13).
8. Obtain ECU face plate (14) from the storage area and snap the ECU face plate into place.
9. Unlock the release latch (7).
10. Plug power cord (8) into the power box outlet (15).



Blackwater Disposal

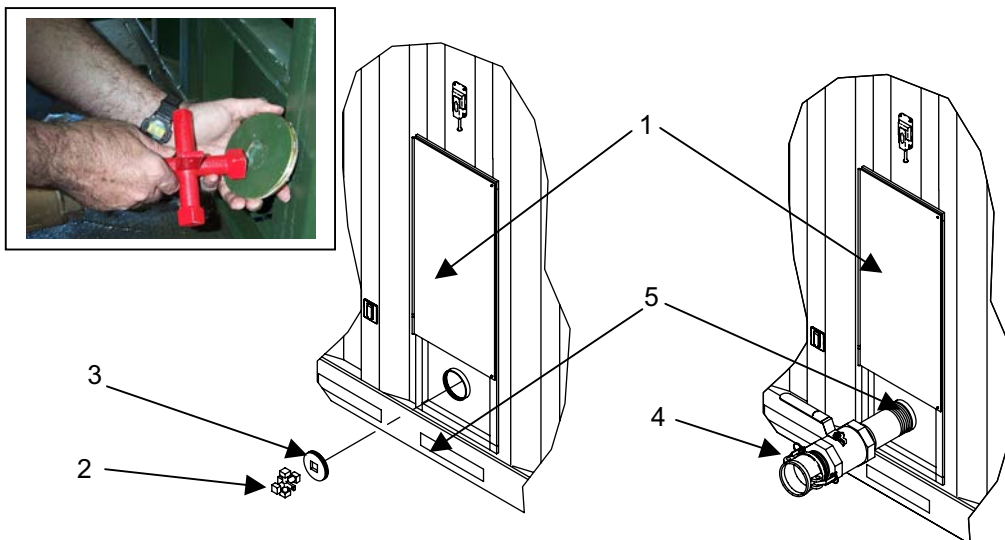
1. Open the blackwater drain connection door (1) and check wastewater holding tank #2 for presence of waste. If waste is present refer to WP 0010 00 for sanitization procedures. Otherwise proceed to step 2.



WARNING

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

2. Use a clean out plug wrench (2) to remove the blackwater drain connection countersunk plug (3).
3. Ensure antisieze tape is wrapped around the threads on the 4-inch valve assembly (4); rewrap if necessary.
4. Ensure the valve handle is in the OFF position, and connect the 4-inch valve assembly (4) to blackwater drain connection countersunk (5). Tighten with strap wrench, and ensure that the handle can be operated.
5. Connect hose to the 4-inch valve assembly (4) if waste is going to be gravity fed directly into a sewer or a field hygiene sanitation system, IAW FM 21-10. Otherwise, schedule regular pickup by vacuum trailer or truck.
6. Sanitize the blackwater drain connection countersunk plug (3) and clean out plug wrench (2) and store them under the sink. Refer to WP 0010 00 and TB MED 577 for sanitization procedures.



Set up 3,000-Gallon Water Tank



WARNING

Three people are required to lift the 3000-gallon water tank. Serious injury to personnel could result from improper lifting.

NOTE

In climates where the temperature could drop below 32° F, place a piece of insulation sheeting under the water tank before filling. If in doubt, always install the insulation, as the insulation cannot be fitted under a filled tank.

NOTE

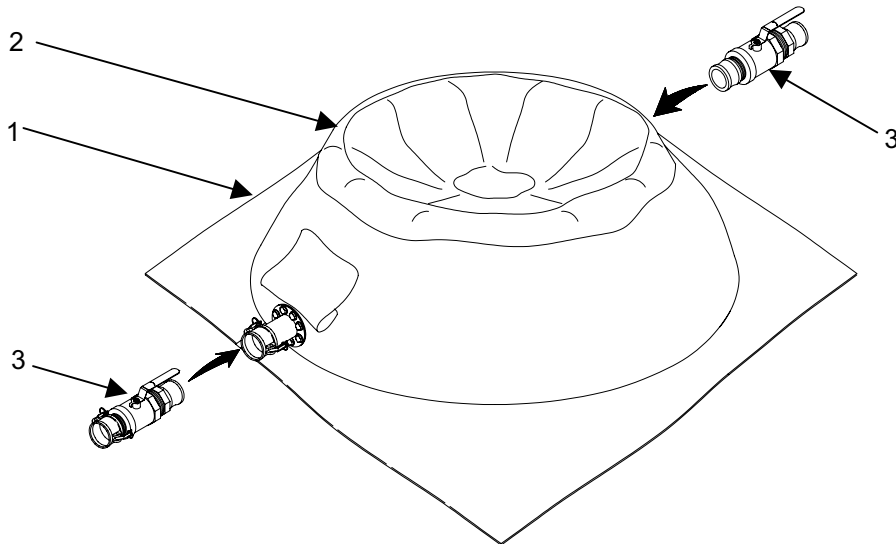
Position 3000-gallon water tank within 15 feet of the container.

1. Place a piece of 16-foot x 16-foot insulation sheeting **(1)** under in position of water tank **(2)**.
2. Set up 3000-gallon water tank on the 16-foot x 16-foot insulation sheeting **(1)** IAW TM 5-5430-237-12&P.
3. Install both 2-inch valve assemblies **(3)**. Ensure hoses can connect to both valves without straining.

CAUTION

Both 2-inch valve assemblies must be fitted before the tank is filled. Attempting to fit valves on a filled tank will result in loss of potable water.

4. Fill tank **(2)** with Army Medical Department (AMEDD) approved potable water.



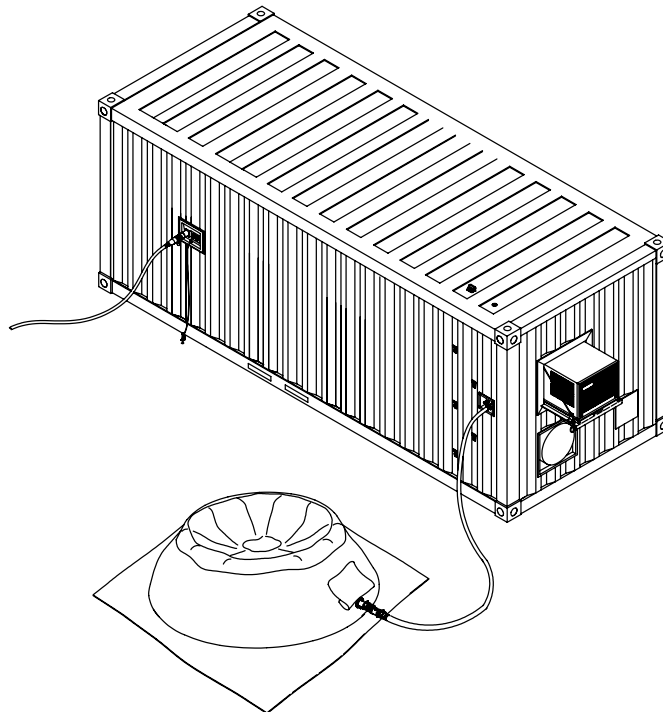
Connect Freshwater Hose

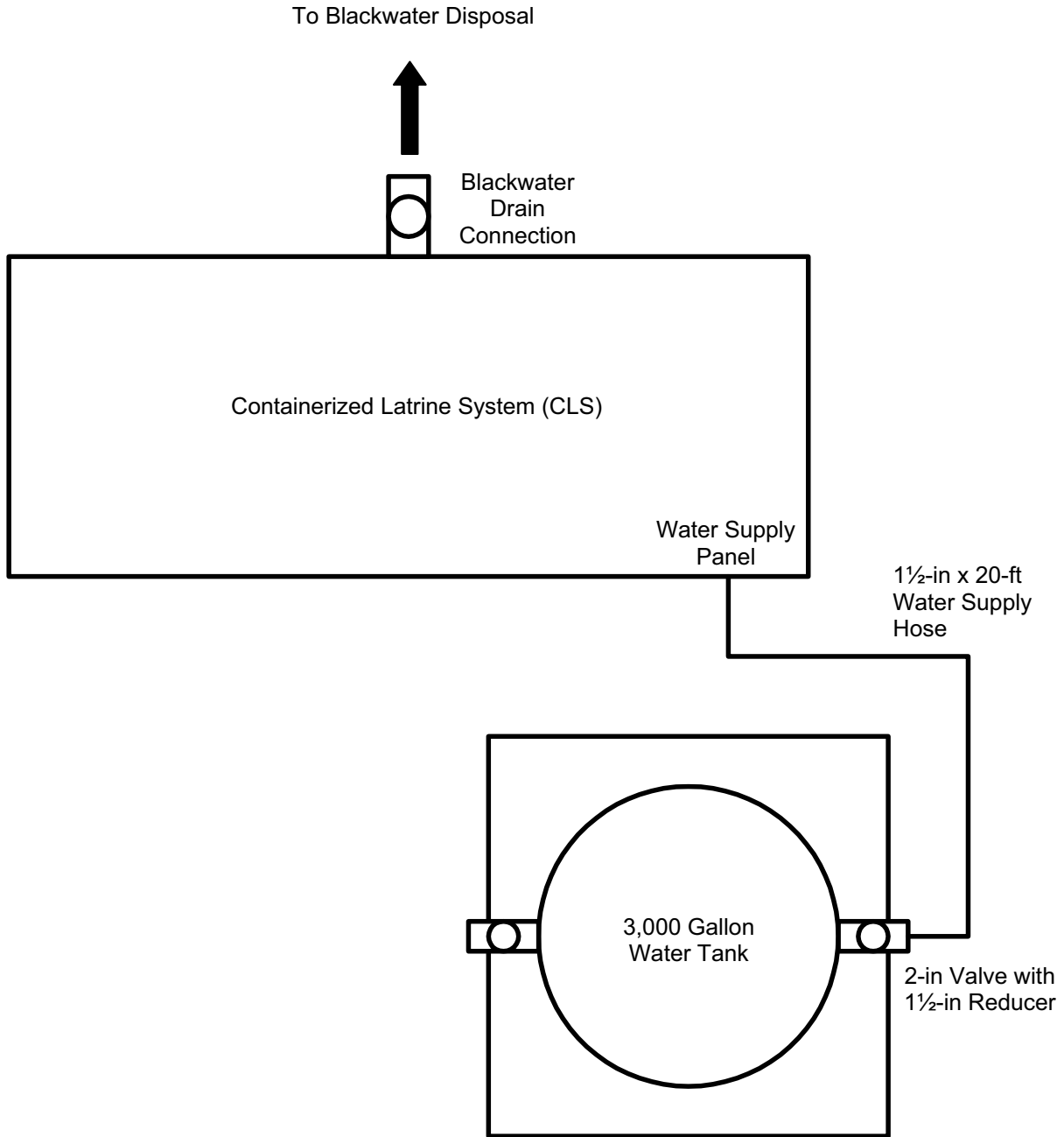
Layout components as shown in the suggested layout configuration below, or in a modified version to fit local conditions, when approved municipal water source is not available:

NOTE

Position the hose away from areas where it may sustain damage from foot or vehicular traffic.

1. Connect the 2-inch x 1½-inch reducer to a 2-inch valve from the 3,000-gallon water tank.
2. Connect the 1½-inch x 20-foot hose to the reducer.
3. Prime the 20-foot hose by holding the hose at water level and opening the supply line on the 3,000-gallon water tank, until water starts to flow out of the hose.
4. Fill a 2-gallon container approximately $\frac{3}{4}$ full with the overflowing water. Set aside; this water will be used to prime the water pump.
5. Close the water supply valve.
6. Connect the 1½-inch x 20-foot hose to the fresh-water input fitting located at the outside rear of the latrine.
7. Open the 2-inch valve connected to the supply hose.





Freshwater Hose Connections

Installation of Sink Stand Doors

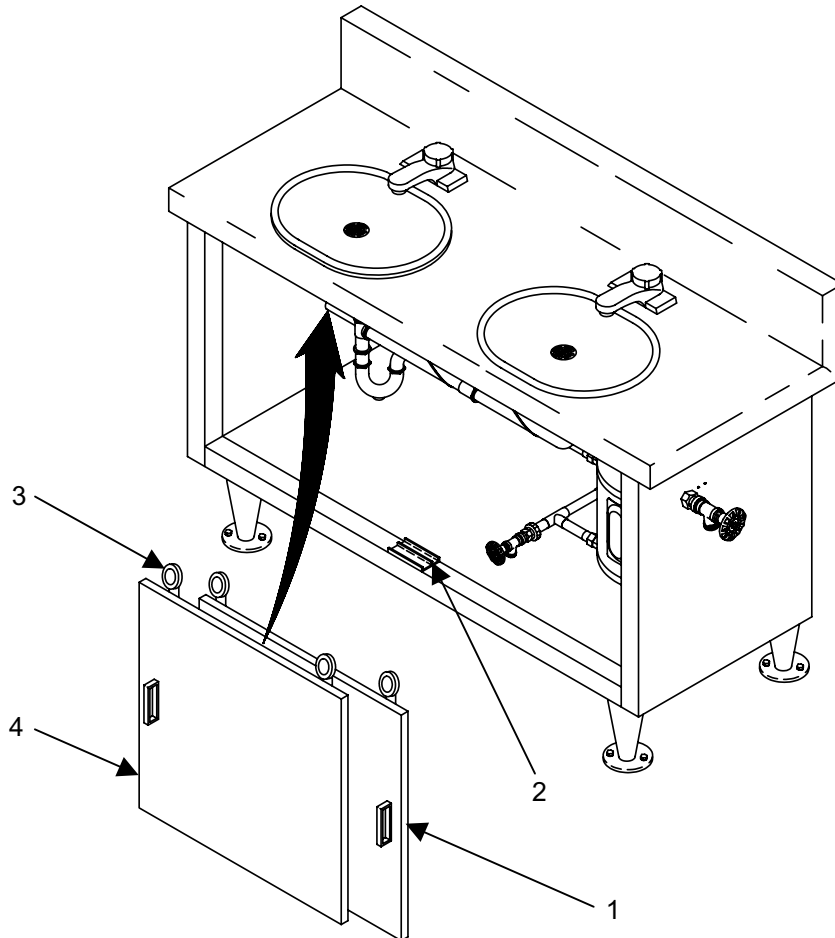
NOTE

The sink stand doors hang from a track formed into the underside of the sink counter.

NOTE

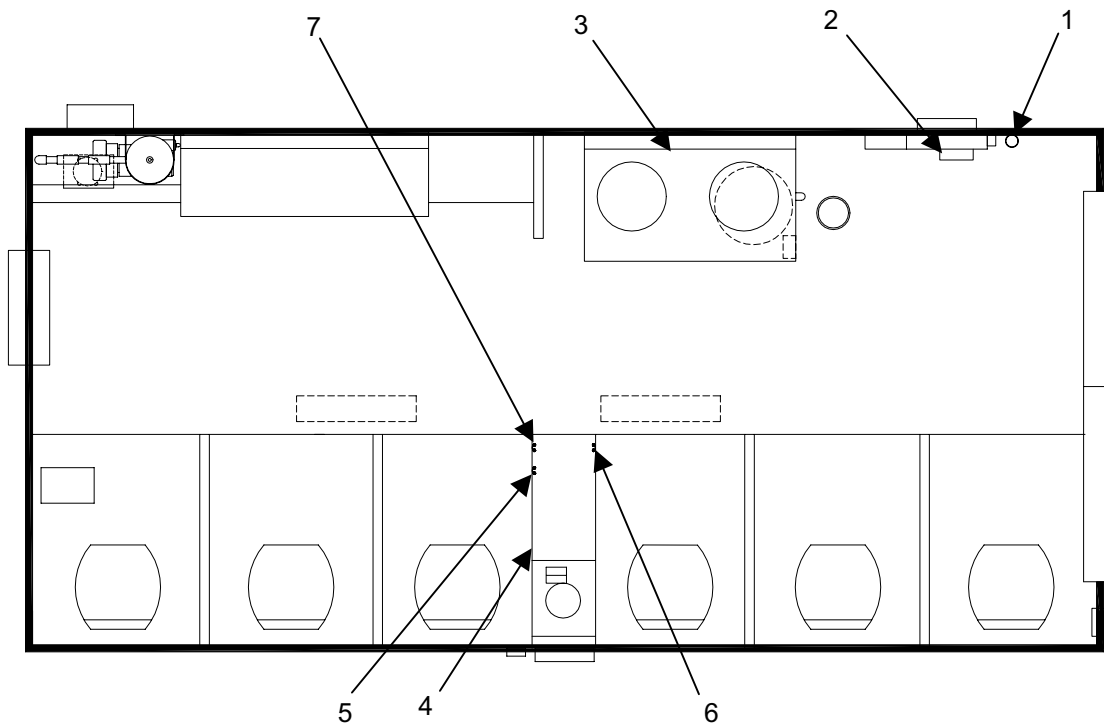
Install the doors with the handles opposite each other. If not, the doors cannot be installed.

1. Lift door **(1)** into rear section of guide **(2)**.
2. Lift door up and drop door rollers **(3)** into place in rear upper track.
3. Lift second door **(4)** into front section of guide **(2)** in front of first door **(1)**.
4. Lift door up and drop door rollers **(3)** into front upper track.



Loose Component Placement

1. Ensure the fire extinguisher is present in the fire extinguisher bracket (1), and the technical manual in documentation holder (2).
2. Place the countersunk plugs, clean out plug wrench, and toilet straps under the sink (3).
3. In the storage area (4), place the shovel, broom, mop head and handle on the shovel (5), broom (6), and mop head and handle (7) brackets. Neatly store the mop bucket, wringer, sanitary brush, and webbing in the storage area (4).
4. Retain and secure unused equipment in a secure safe location, for use when needed or for repack.

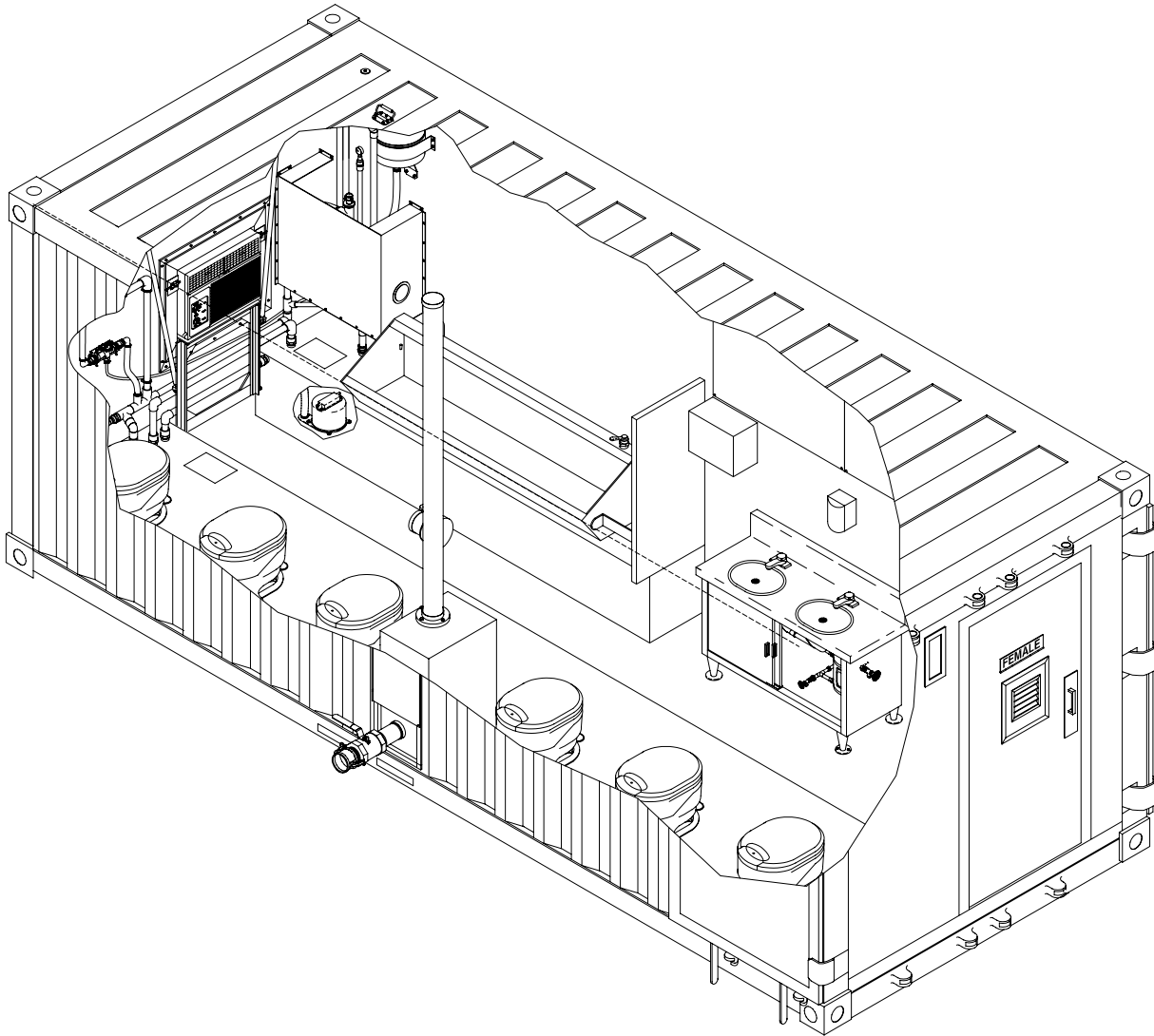


**OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)
OPERATION UNDER USUAL CONDITIONS - OPERATION**

GENERAL

This work package contains the operating procedures for the CLS.

Read all warnings, cautions, and notes within this section and follow procedures outlined herein to ensure safe operation of the latrine and associated equipment.



OPERATING PROCEDURES

Before operating any equipment in the CLS, ensure the following:

1. Ensure all circuit breakers in the circuit breaker (CB) panel are in the ON position except water heater circuit breaker # 2B, and waste holding tank draft inducer fan circuit breaker #6B, which must be set in the OFF position.
2. Potable water supply from an approved source is connected to the CLS.
3. The CLS is connected to an approved power supply.
4. The main breaker in the circuit breaker panel is set to the ON position.
5. All other circuit breakers are set to the OFF position.

Operation of Container

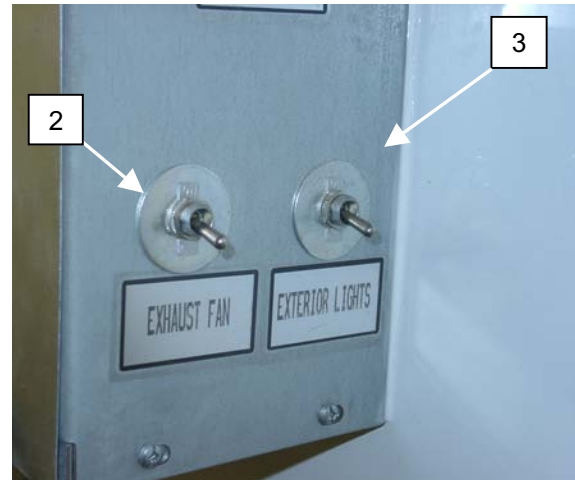
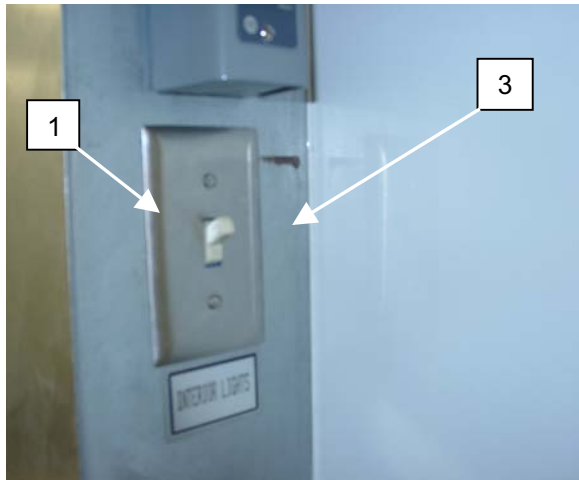
Refer to TM 55-8115-204-23&P, Unit and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) for the General Cargo Container.

Operation of 3,000-Gallon Water Tank

Refer to TM 5-5430-237-12&P.

Operation of Lighting

Turn the interior and exterior lights on by using the interior light switch (1) and the exterior light switch (2) located on the circuit breaker panel (3).



Operation of Water Pump

WARNING

The Containerized Latrine System ships with an antifreeze solution pumped into the freshwater lines. The antifreeze solution is nontoxic, but unsuitable for drinking or washing. DO NOT OPERATE THE LATRINE until the freshwater lines have been flushed.

NOTE

The use of a step aid may be required.

1. Remove priming cap **(1)** from the QDC fitting **(2)** on the pump **(3)**.
2. Open the waste tank valve **(4)** and allow antifreeze to drain into the holding tank **(5)**.
3. Close the sink valve **(6)**, the waste tank valve **(4)**, and the main commode valve **(7)**.

NOTE

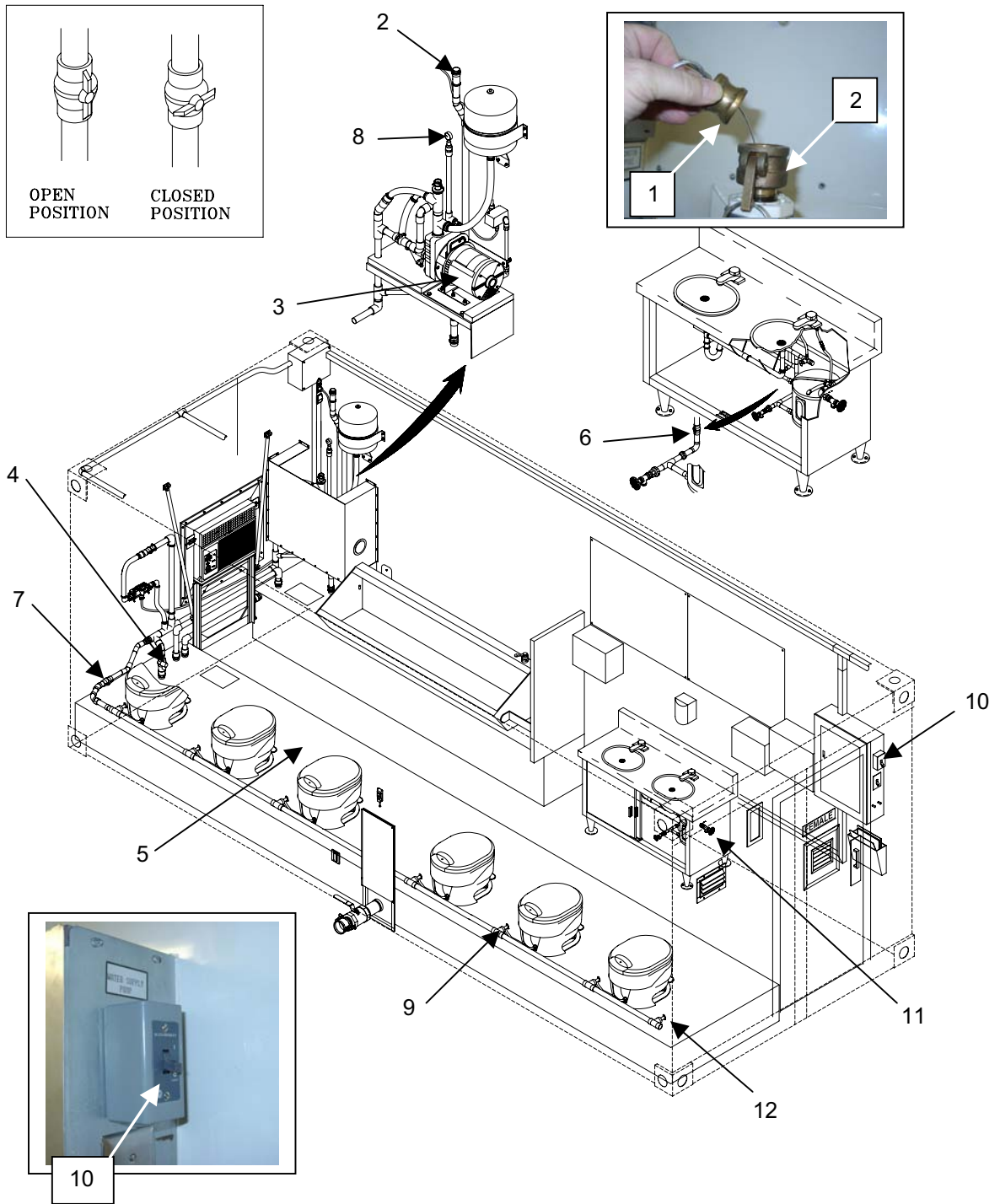
The use of a step aid may be required.

4. Using a clear funnel, fill the 1-inch QDC fitting **(2)** with the water obtained from priming the water line; fill pump **(3)** until water begins to overflow out of the QDC fitting (approximately 1 $\frac{1}{3}$ gallons).
5. Recap QDC fitting **(2)**.
6. Locate water pressure gage **(8)**.

CAUTION

Do not turn on the circuit breaker (#2B) for the water heater. Applying power to a dry water heater will burn out the heating element, making the water heater inoperative.

7. Set circuit breakers #9/11 in the breaker panel to the ON position.
8. Open the sink valve **(6)**, the main commode valve **(7)**, and the six commode supply valves **(9)**.
9. Set water supply pump switch **(10)** to the ON position. Pump should operate immediately. Pump will automatically operate when pressure drops below 20-psi, and will shut off between 32-psi and 40-psi.
10. To bleed air from the system, open the spigot **(11)** on the side of the sink stand. Close the spigot when a steady stream of water is discharged. Then, open the spigot **(12)** at the end of the commode supply pipe, in the stall closest to the door. Close this spigot when a steady stream of water is discharged.
11. Open the faucets and flush each toilet to release any remaining air in the system.
12. The pump may be shut down by turning the water supply pump switch OFF.

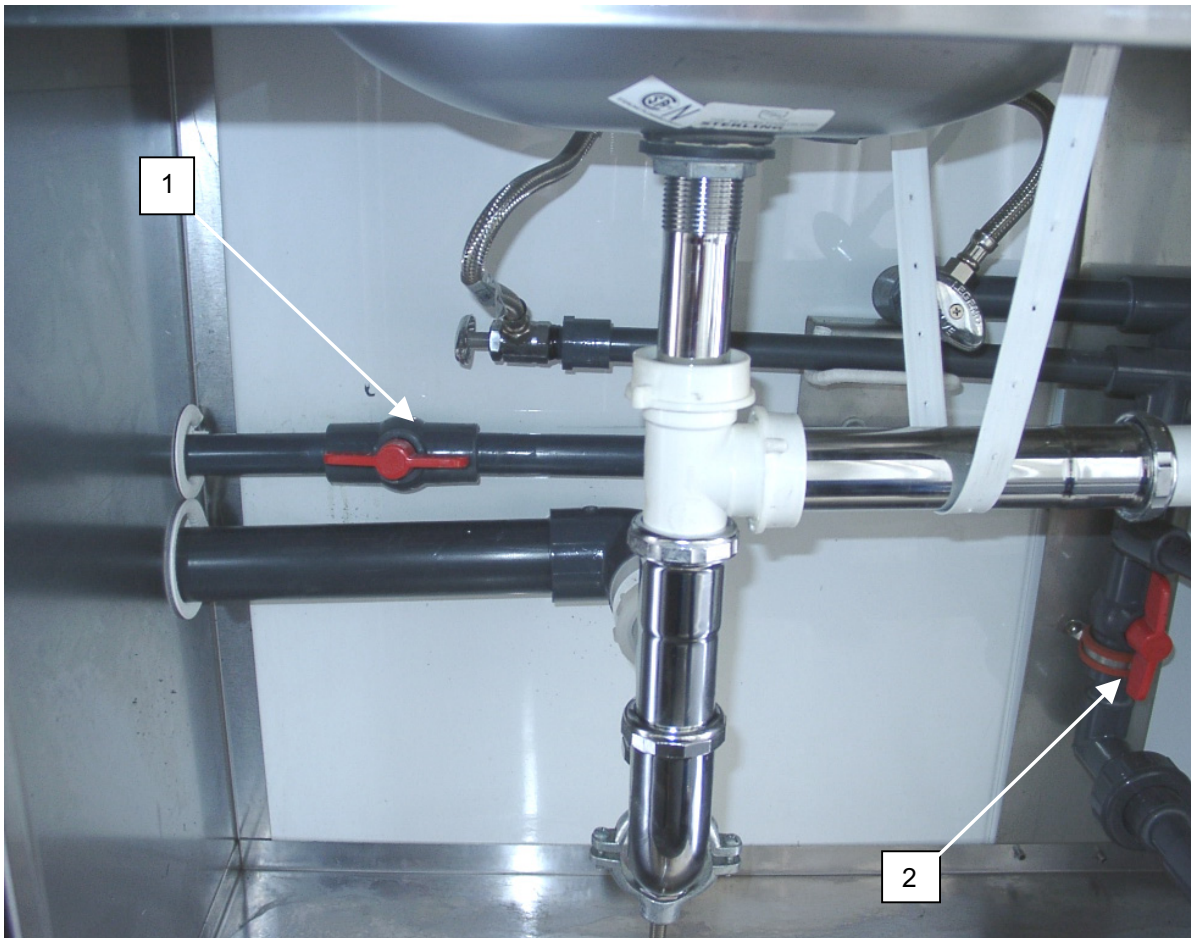


Operation of Water Heater

CAUTION

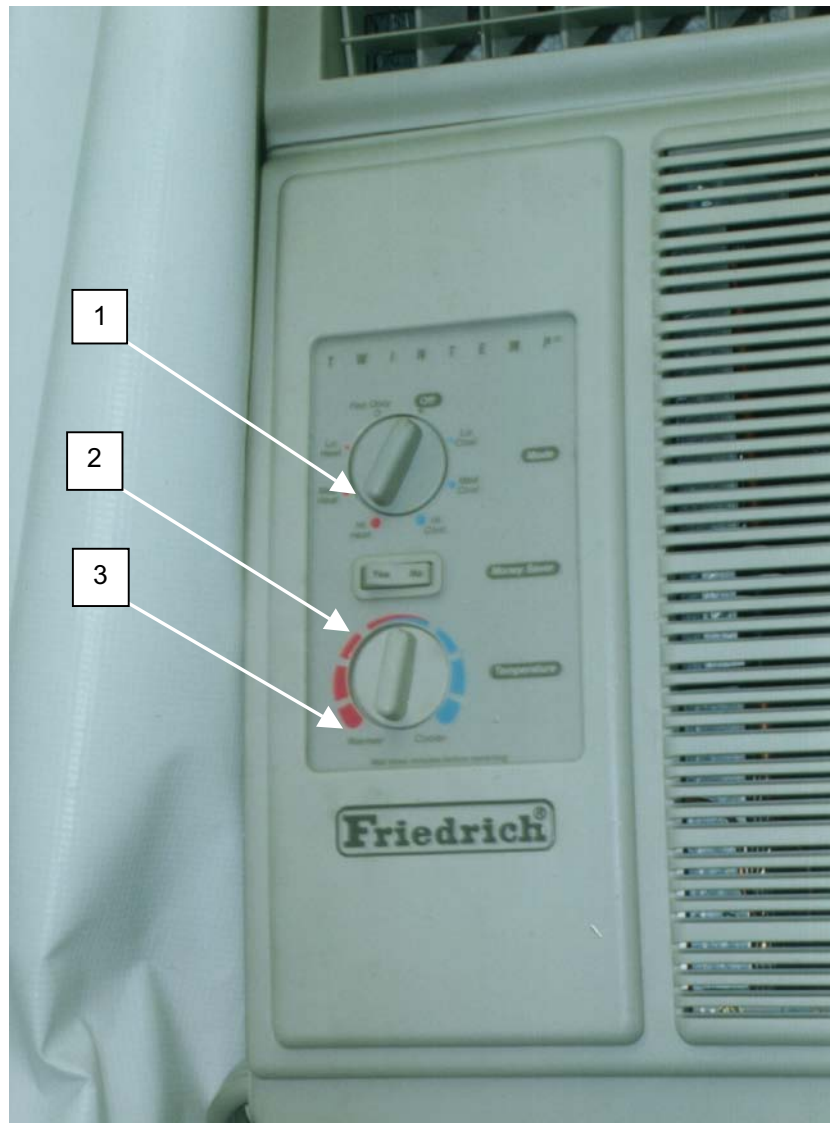
Water heater must not be turned on until it has been filled with water. Ensure there is no air in the line. Failure to do so will result in failure of water heater heating unit and damage to equipment.

1. Remove sink plugs.
2. Ensure toilet, urinal, and faucet supply (1) lines are open.
3. Fill water heater with water by opening the filling valve (2). Turn on the hot water faucets to ensure heater is full and no air is trapped in the lines.
4. Set water heater circuit breaker # 2B in breaker panel to the ON position.



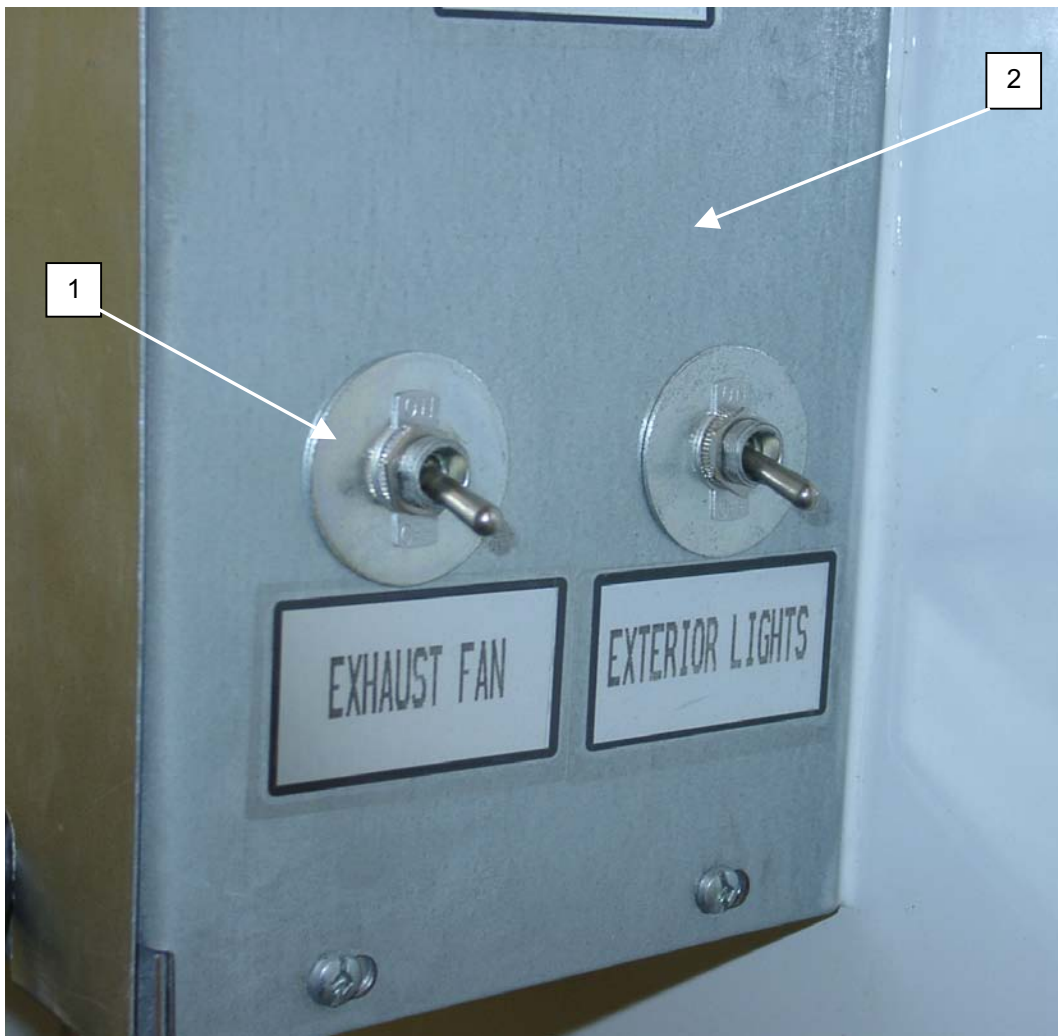
Operation of ECU

1. The function control **(1)** turns the ECU on and allows personnel to select the function of the ECU. These functions include cooling, heating, and fan speed.
2. The “money saver” ON/OFF switch **(2)** turns the fan ON and OFF with the compressor.
3. The temperature control **(3)** allows personnel to control the temperature inside the latrine.



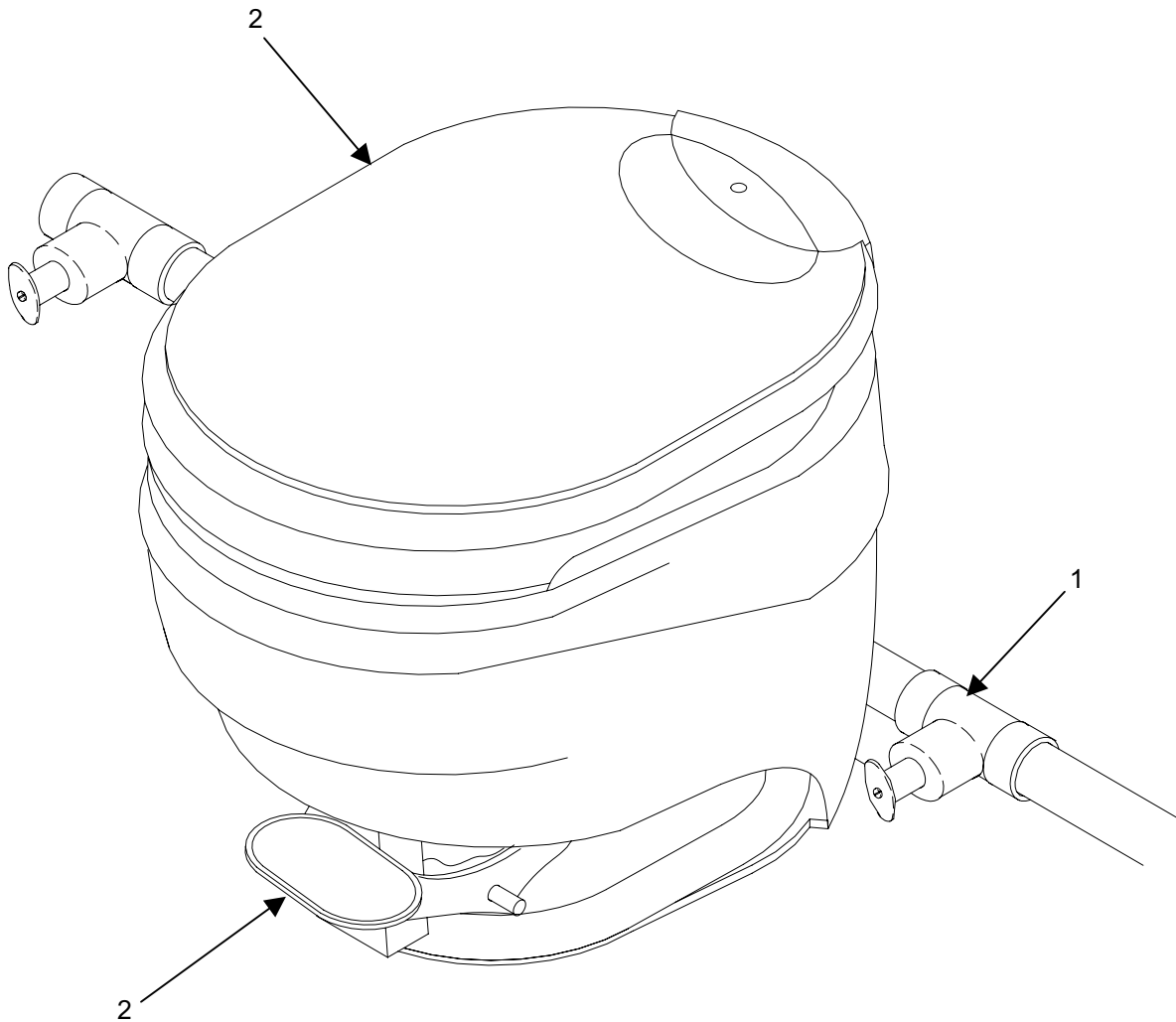
Operation of Exhaust Fan

Turn the exhaust fan on with the exhaust fan switch (1) located on the circuit breaker panel (2).



Operation of Commodes

1. Ensure spigot drain valve in stall closest to door is closed.
2. Open all commode valves (1).
3. Lift lid (2) and step on pedal (3) to flush. Flush each commode twice on initial use to clear antifreeze and ensure proper operation.

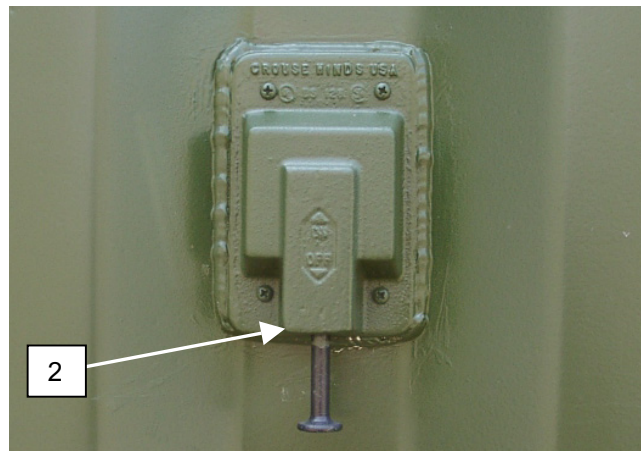
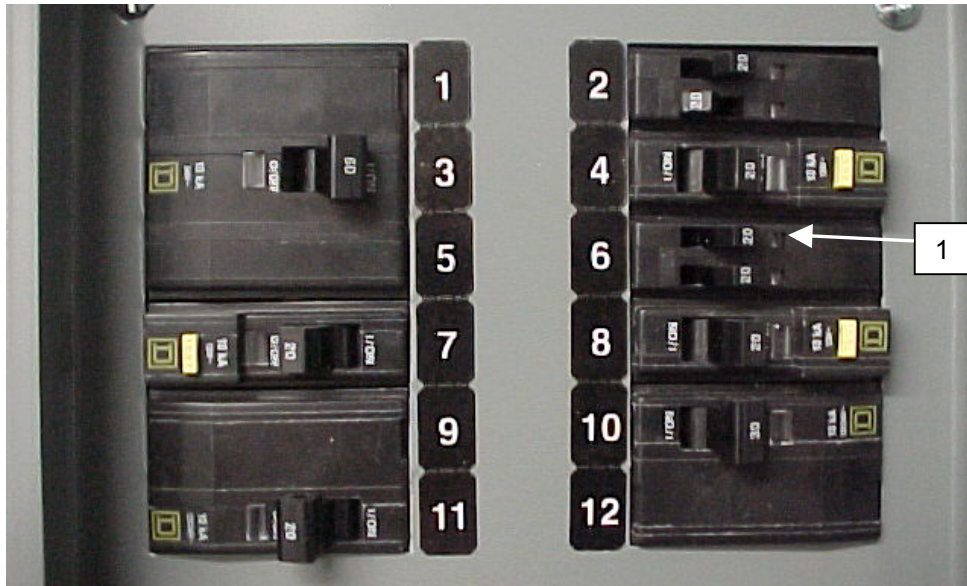


Operation of Sump Pump Switch

NOTE

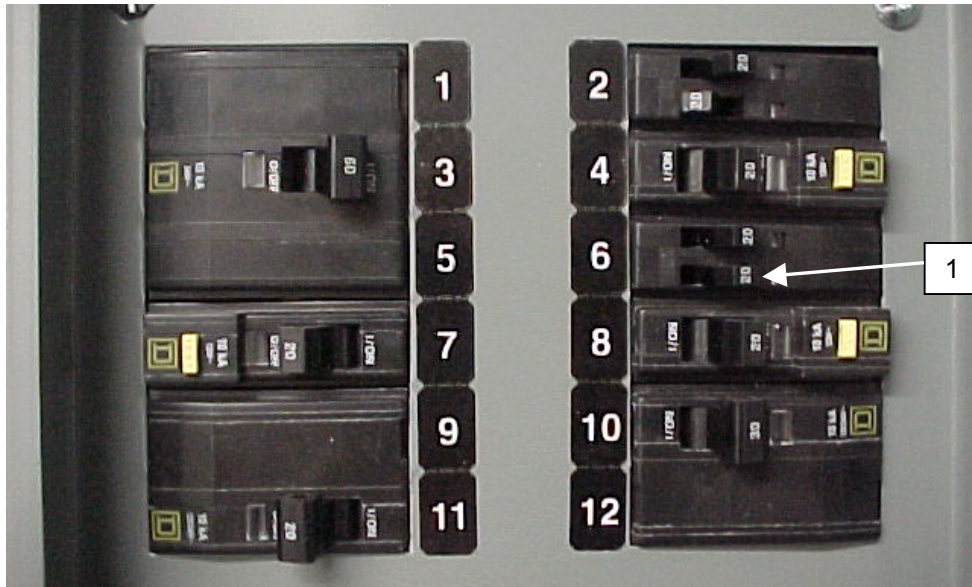
Steps 1 and 2 may be switched if it is desirable to stay inside the container.

1. Set sump pump circuit breaker # 6A (1) in breaker panel to the ON position.
2. Press pump switch plunger (2) to turn pump ON.
3. Monitor sump pump operation, and pull plunger on sump pump switch to shut the pump OFF when the pump begins sucking air. This will be indicated by a sucking sound coming from the vicinity of the sump pump.



Operation of Waste Holding Draft Inducer Fan

Set the draft inducer fan circuit breaker (#6B) in breaker panel to the ON position.

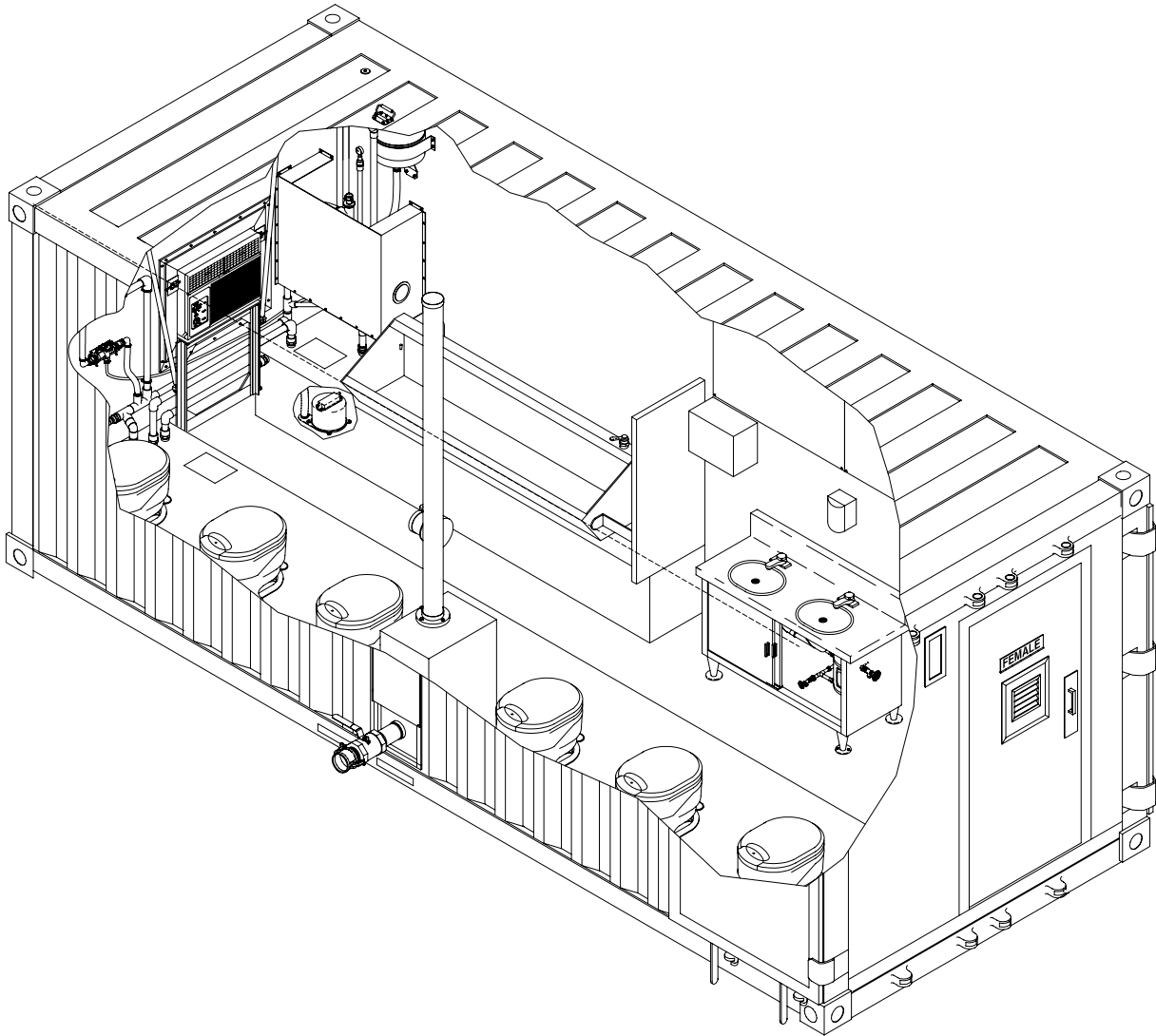


**OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)
OPERATION UNDER USUAL CONDITIONS – PREPARE FOR MOVEMENT**

GENERAL

This work package contains procedures to prepare the CLS for movement.

Read all warnings, cautions, and notes within this section and follow procedures outlined herein to ensure safe operation of the latrine and associated equipment.



PREPARATION FOR ADMINISTRATIVE STORAGE

To prepare either latrine model for storage, refer to FM 38-701.

PREPARE LATRINE FOR MOVEMENT**WARNING**

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

**WARNING**

Never mix chemicals or detergent and sanitizing solutions. This may produce highly toxic or poisonous gas that can cause serious illness or death to personnel.

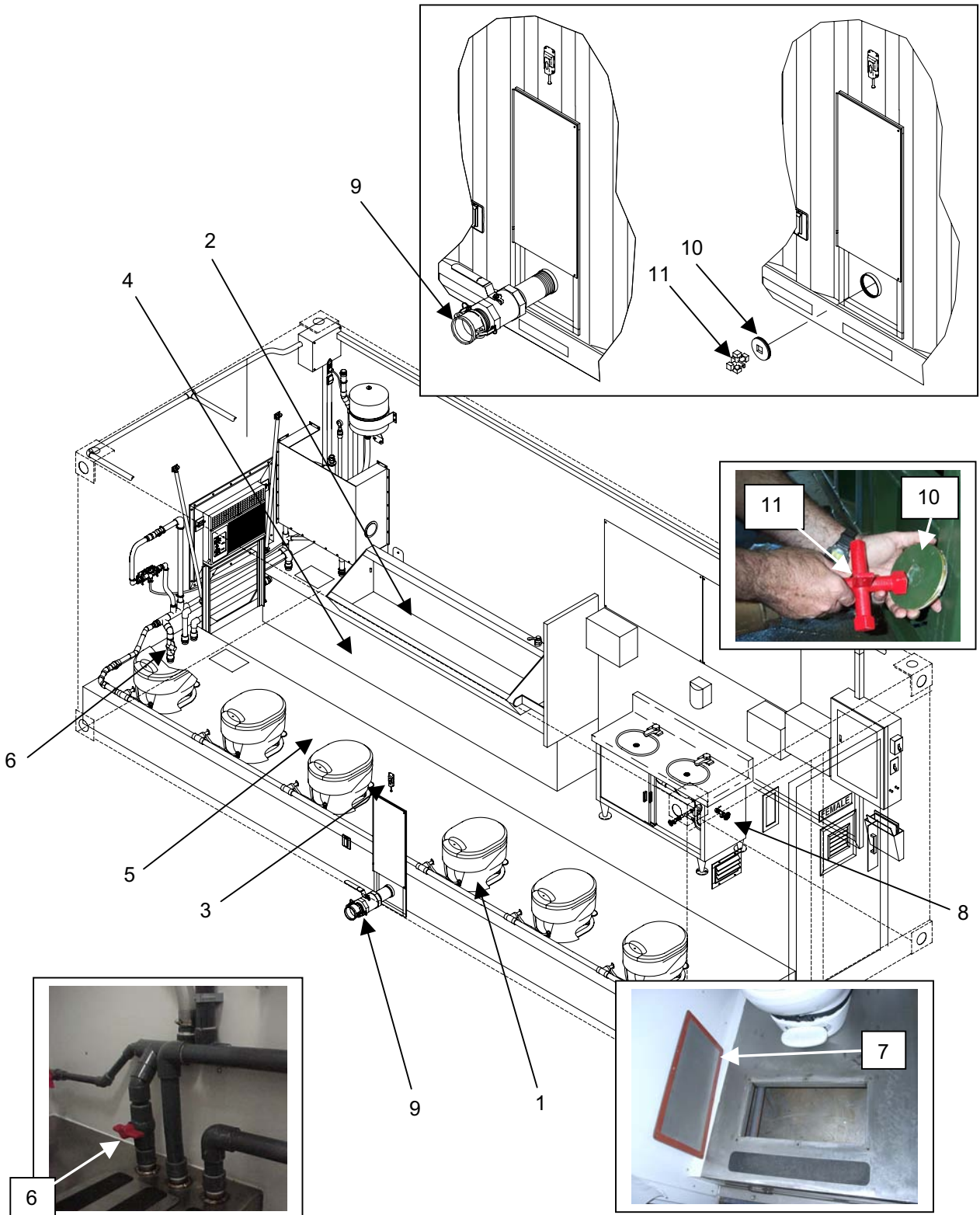
Cleaning and Sanitation of the Latrine

1. Prepare a fresh 100 ppm chlorine solution IAW TB MED 577. This may be prepared in one of four approved methods:
 - a. One (1) ampule of calcium hypochlorite to one gallon (3.8 liters) of potable water.
 - b. Five (5) level mess kit spoonfuls of calcium hypochlorite to 100 gallons (380 liters) of potable water.
 - c. One (1) mess kit spoonful of liquid bleach to one gallon (3.8 liters) of potable water.
 - d. One (1) gallon of liquid bleach to 100 gallons (380 liters) of potable water.
2. Clean the latrine starting from the top to bottom (refer to cleaning procedures in WP 0007 00); clean the commodes, urinal, floor mat, aisle floor, and sink stand with fresh 100-ppm chlorine solution. Clean waste contact surfaces of urinal trough and commodes last.
3. Rinse surfaces from top to bottom with clear water. Use of a sprayer or hose for rinsing is recommended. Spray the sink, commodes, urinal trough, and walls.
4. Rinse the floor.
5. Repeat steps 4 and 5, and allow to air dry.

Blackwater**WARNING**

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

1. Flush all toilets **(1)**, urinal **(2)**, and open all faucets for several minutes to hypochlorinate the system.
2. Set sump pump switch **(3)** to ON position until contents of tank #1 **(4)** are emptied into tank #2 **(5)**. This will be indicated by diminished water movement in tank #2, and by a sucking sound from tank #1.
3. Open waste tank valve **(6)** to flush holding tank #2 **(5)**.
4. Remove the screws retaining the six access panels **(7)** to the holding tank, and remove the panels. Attach a garden hose with nozzle to the spigot **(8)**, and rinse the holding tank of any solids. Immediately after rinsing, reinstall the panels and retain with screws.
5. Using a paddle, direct all solids towards drain. If the 4-inch valve assembly **(9)** and 4-inch hose are used, allow the last of the contents of tank #2 **(5)** to drain. Otherwise, have blackwater pumped out of tank #2.
6. Clean paddle and personal protective clothing using a general purpose detergent solution, then sanitize using a ten-to-one solution of household bleach in warm water (i.e. 6-ounces in 2-quarts of water) and allow to air dry.
7. After complete evacuation of the waste, close waste tank valve **(6)**.
8. Have blackwater pumped out of tank #2 **(5)** and delivered to disposal site.
9. Fill tank #1 **(4)** with chlorine solution by pouring agent into urinal **(2)**. Fill tank #2 **(5)** with solution by pouring cleaning agent into toilets **(1)** until agent is level with bottom of toilets. Allow the cleaning agent to sit in tanks for at least 8-hours.
10. Empty tanks #1 **(4)** and #2 **(5)**. Allow tanks to completely drain.
11. Turn 4-inch valve assembly **(9)** off and disconnect 4-inch hose (if used). Drain hose completely until dry and install dust caps.
12. Remove 4-inch valve assembly **(9)**. Reinstall the drain plug **(10)** retained under sink with clean out plug wrench **(11)**.
13. Clean and disinfect paddle and 4-inch valve assembly, by pouring chlorine solution over paddle inside tank #2 **(2)**.

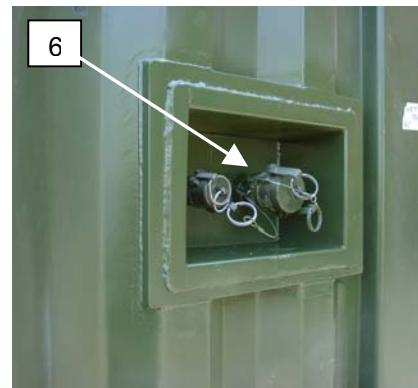
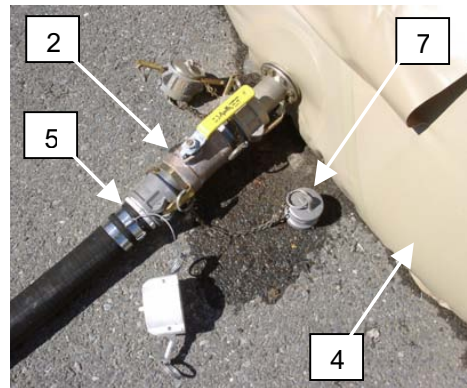


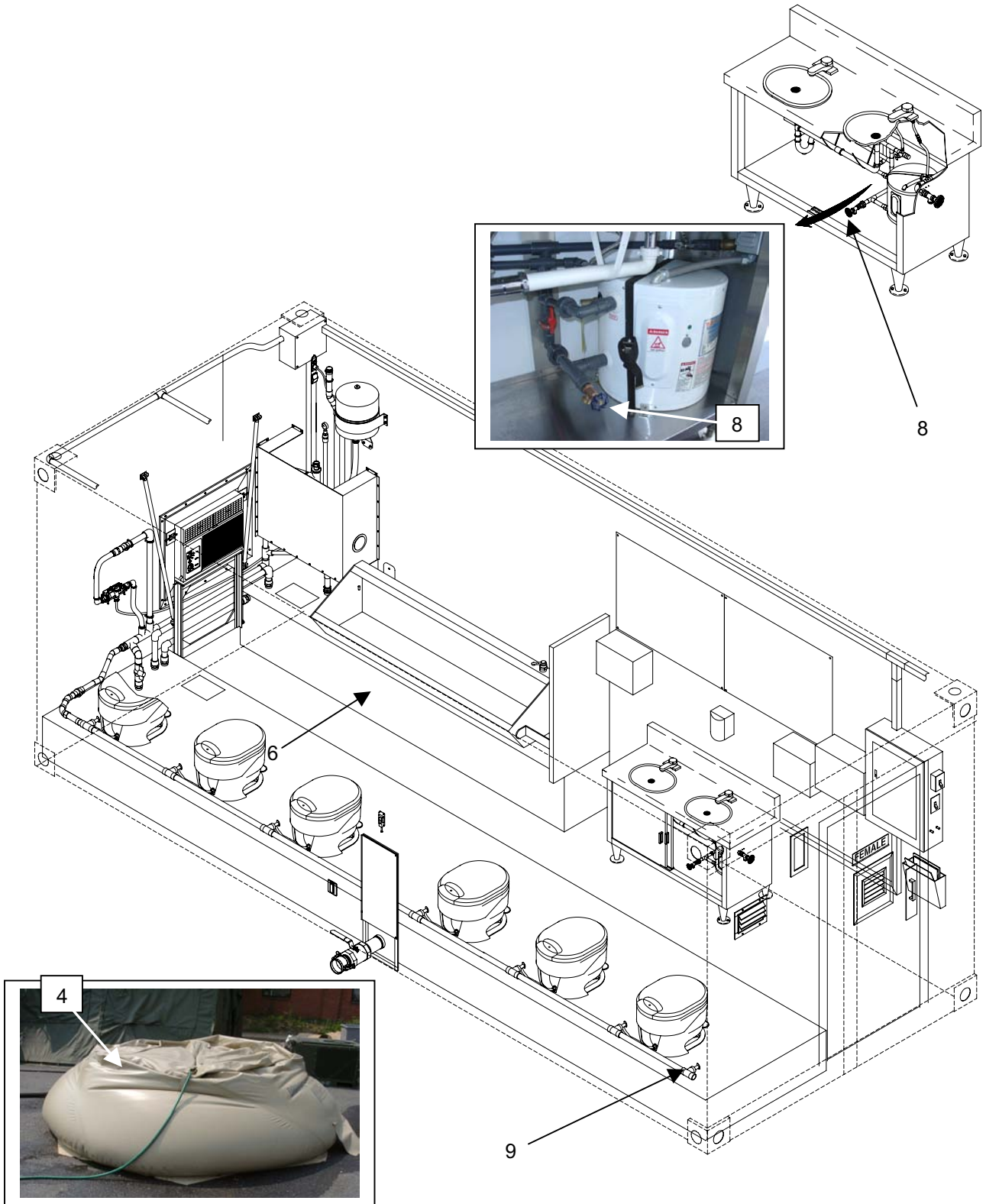
Freshwater

CAUTION

Ensure power to water heater is turned off before draining system. This will prevent heating unit from being damaged.

1. After the interior and all components of the latrine have been cleaned, turn off the 30 GPM water pump at the switch **(1)** and close water supply **(2)**.
2. Switch water pump (#9/11) and hot water heater (#2B) circuit breakers in the circuit breaker panel **(3)** to the OFF position.
3. Close valve **(2)** at 3,000-gallon water tank **(4)**. Disconnect 1½-inch x 20-foot hose **(5)** from service entry panel **(6)** and the 3,000-gallon water tank. Drain water from hose and install dust caps **(7)**. Clean and coil hose.
4. Drain 3,000-gallon water tank **(4)**.
5. Attach garden hose to hot water drain spigot **(8)**.
6. Attach hose to supply line drain spigot **(9)**. Open spigot and allow water to drain outside. Close spigot and remove hose.
7. Disconnect, drain, clean, and coil garden hose.





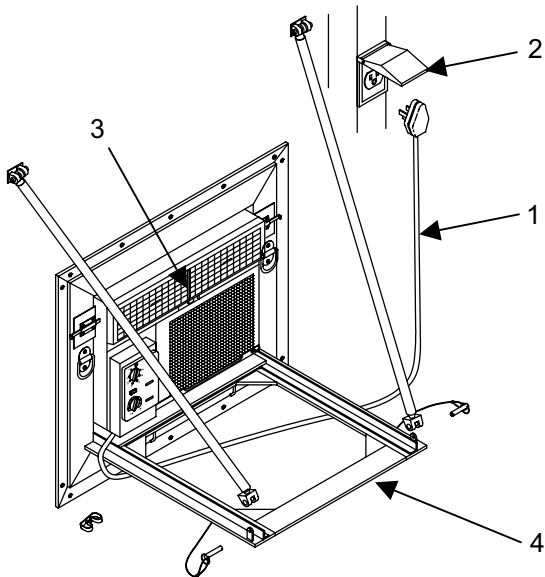
Prepare 3,000-Gallon Water Tank for Movement (if applicable)

Refer to TM 5-5430-237-12&P.

Prepare ECU for Movement**WARNING**

Watch for water pump while moving the ECU. Head injury to personnel could result if safety precautions are not observed.

1. Set ECU breaker #10/12 to the OFF position.
2. Unplug power cord (1) from the power box outlet (2).
3. Remove ECU faceplate (3) and place in storage area.
4. Lift ECU tray (4) and install braces (5) into holes in tray. Install pins (6) into holes in tray.

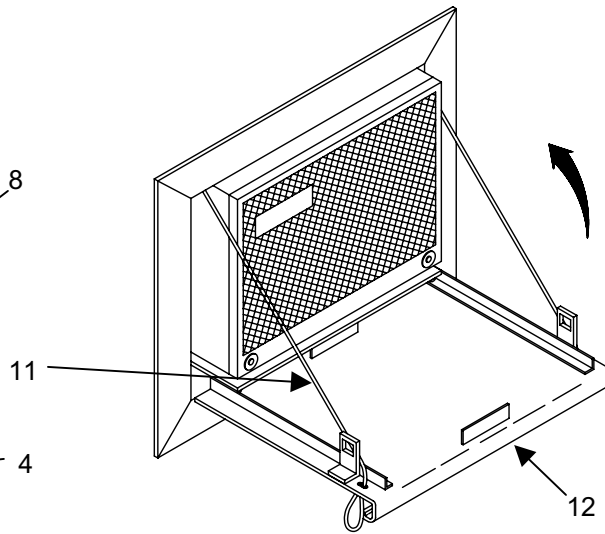
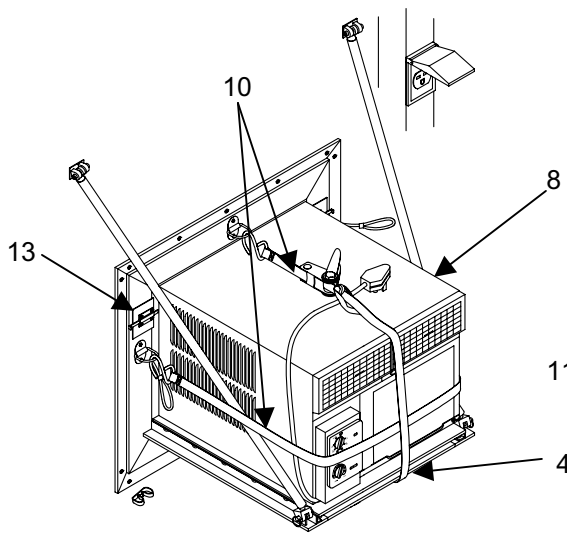
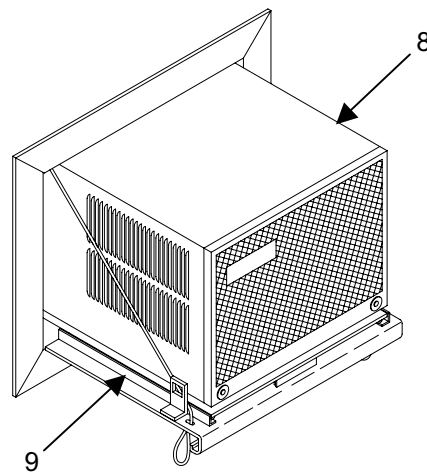
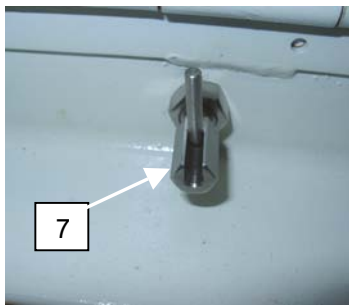




WARNING

Pinching injury to personnel could result from moving ECU and ECU tray if safety precautions are not observed.

5. Have one person on the inside rear of the container, disengage A/C lock/release latches (7) while two personnel on the outside of the container push ECU (8) and ECU carrier (9) onto ECU tray (4).
6. From inside the container, secure tiedown straps (10) to secure ECU (8) to ECU tray (4).
7. From inside the container, pull support cables (11), while personnel on outside of container closes ECU cover (12).
8. Ensure slam latches (13) lock.



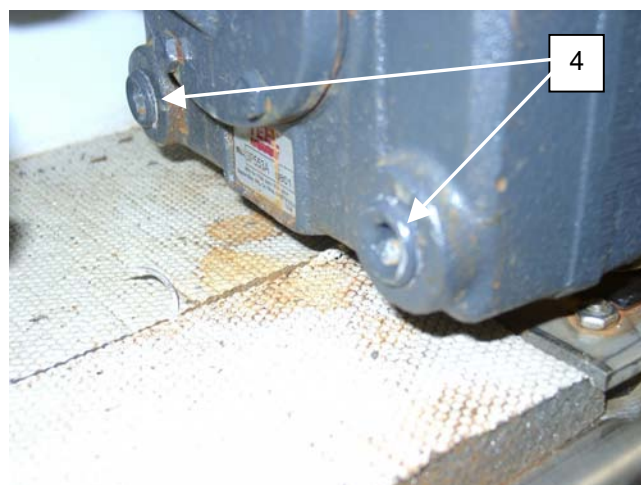
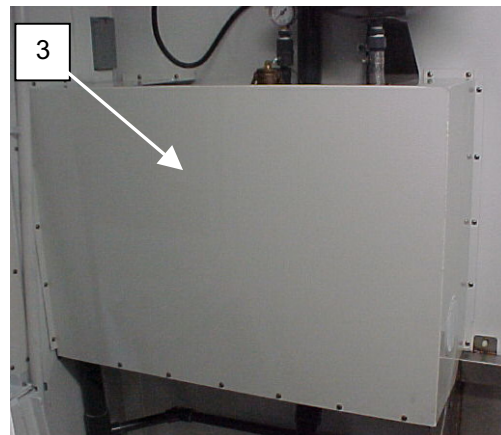
Prepare 30 GPM Water Pump for Movement

1. Ensure water pump circuit breaker (#9/11) in breaker panel is set to the OFF position.
2. Unplug power cord (1) from outlet (2).

NOTE

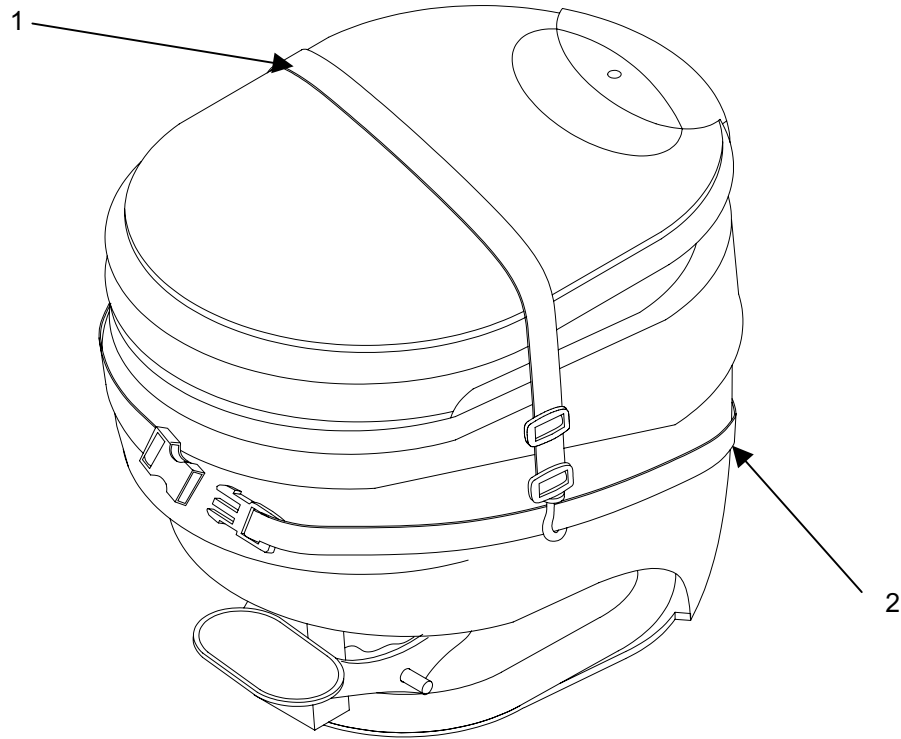
The pump housing drain plugs may either have hex sockets, square sockets, hex heads, or square heads. Two plugs are fitted; either may be used to drain the pump. If the plug is damaged or is lost, replace it only with another iron plug or a PVC plug – do not use brass.

3. Have unit maintenance remove the cover (3) from the water pump. Remove a drain plug (4) from the pump housing and drain excess water from pump.
4. Reinstall and tighten drain plug (4) after draining pump.
5. Ensure any spilled water is cleaned up, and install cover (3).

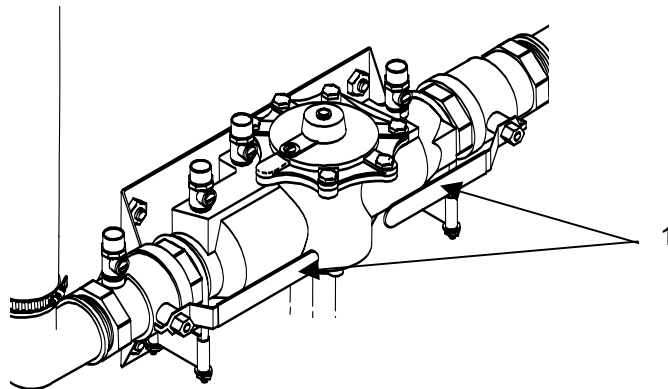


Install Toilet Straps

1. Retrieve toilet strap (1) from under sink.
2. Connect buckle fastener (2).

**Install Backflow Prevention Device Handles**

1. Retrieve handles from under sink.
2. Install handles (1).



Prepare Power Distribution System for Movement



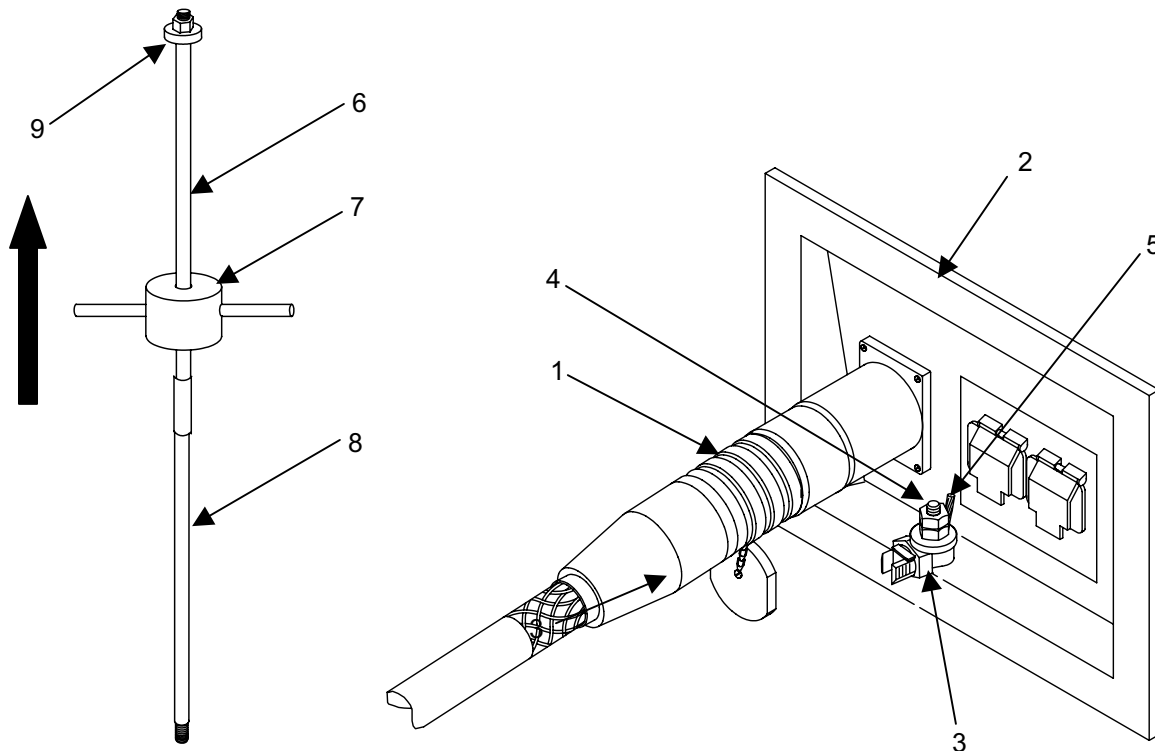
WARNING

Power source must be shut down before disassembling any cables. Failure to follow this warning could result in serious injury or death to personnel by electrocution.

NOTE

This procedure must be performed by MOS 52C, 52D or qualified personnel.

1. Ensure all breakers on circuit breaker panel are set to the OFF position.
2. Disconnect 60A pigtail cable (1) from power source.
3. Disconnect 60A pigtail cable (1) from power entry panel (2) and install dust cover.
4. Disconnect the splice connector nut (3) from the ground terminal (4), and remove the nut and ground wire (5).
5. Install the driving rod (6) and slide hammer (7) onto the ground rod assembly (8). Ensure the anvil (9) is on the uppermost end of the driving rod. Use the slide hammer to retrieve the ground rod assembly.
6. Disassemble and clean the ground rod assembly (8) and prepare for packing.



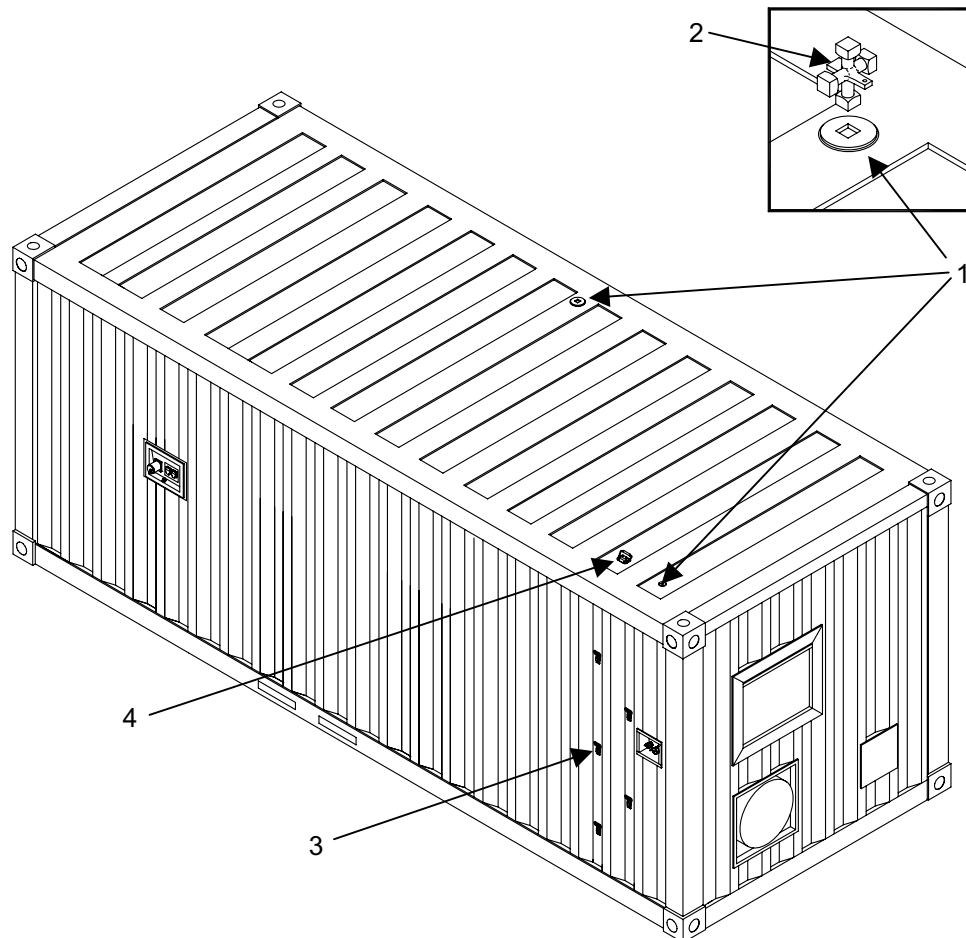
Install Vent Countersunk Plugs



WARNING

Pass tools down before climbing down from roof of latrine container. Use both hands to climb off of latrine container. Serious injury or death to personnel could result due to fall.

1. Collect vent countersunk plugs **(1)** from sink cabinet.
2. Fold down container steps **(3)**.
3. Climb to top of container using the steps **(3)** and handle **(4)**.
4. Install vent countersunk plugs **(1)**, and tighten with clean out plug wrench **(2)**. Do not overtighten. Ensure clean out plug wrench is returned to storage in sink cabinet



Inventory and Pack Latrine

1. Verify all components have been prepared for movement and storage.
2. Verify that all circuit breakers are set to the OFF position.
3. Verify that all components are reasonably clean and ready to be packed into the cargo container(s).
4. Mop up excess water.
5. Ensure ECU cover has been stored in storage area.
6. Ensure toilet straps are in place.
7. Remove sink stand doors (refer to WP 0027 00).
8. Ensure vent countersunk plugs are installed.
9. Ensure the handle on top of the roof is down and steps are folded up.
10. Pack container using the following packing list and the packing plan as a reference of required contents. Items such as unserviceable brooms, mop head, and sanitary brush do not need to be sent back.
11. Close container doors and secure locking mechanism.

Inventory Containerized Latrine System

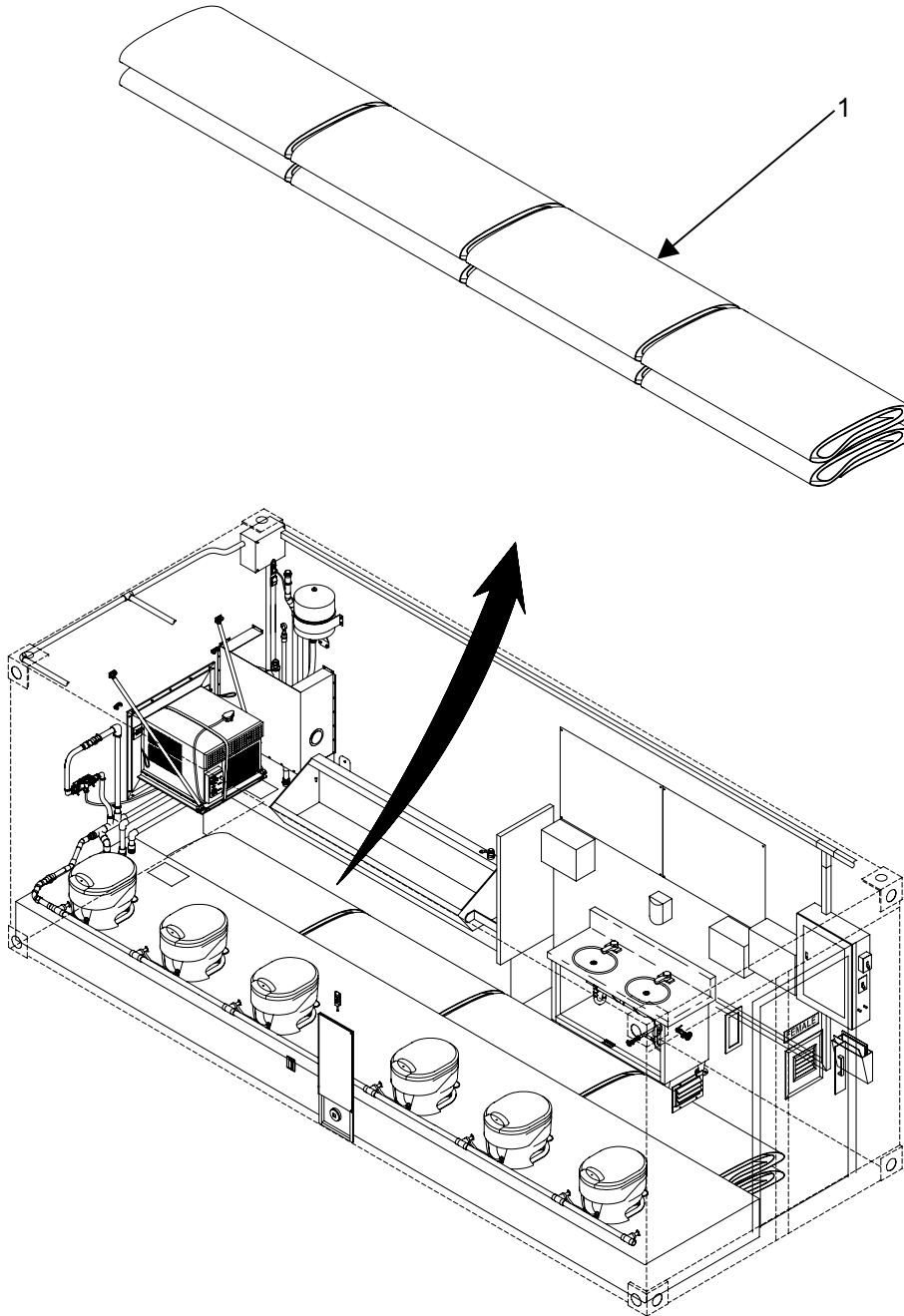
Inventory equipment and ensure the following items are available, clean and ready to be packed into the latrine container. Items such as unserviceable brooms and mops do not need to be sent back.

Table 2. Packing Inventory.

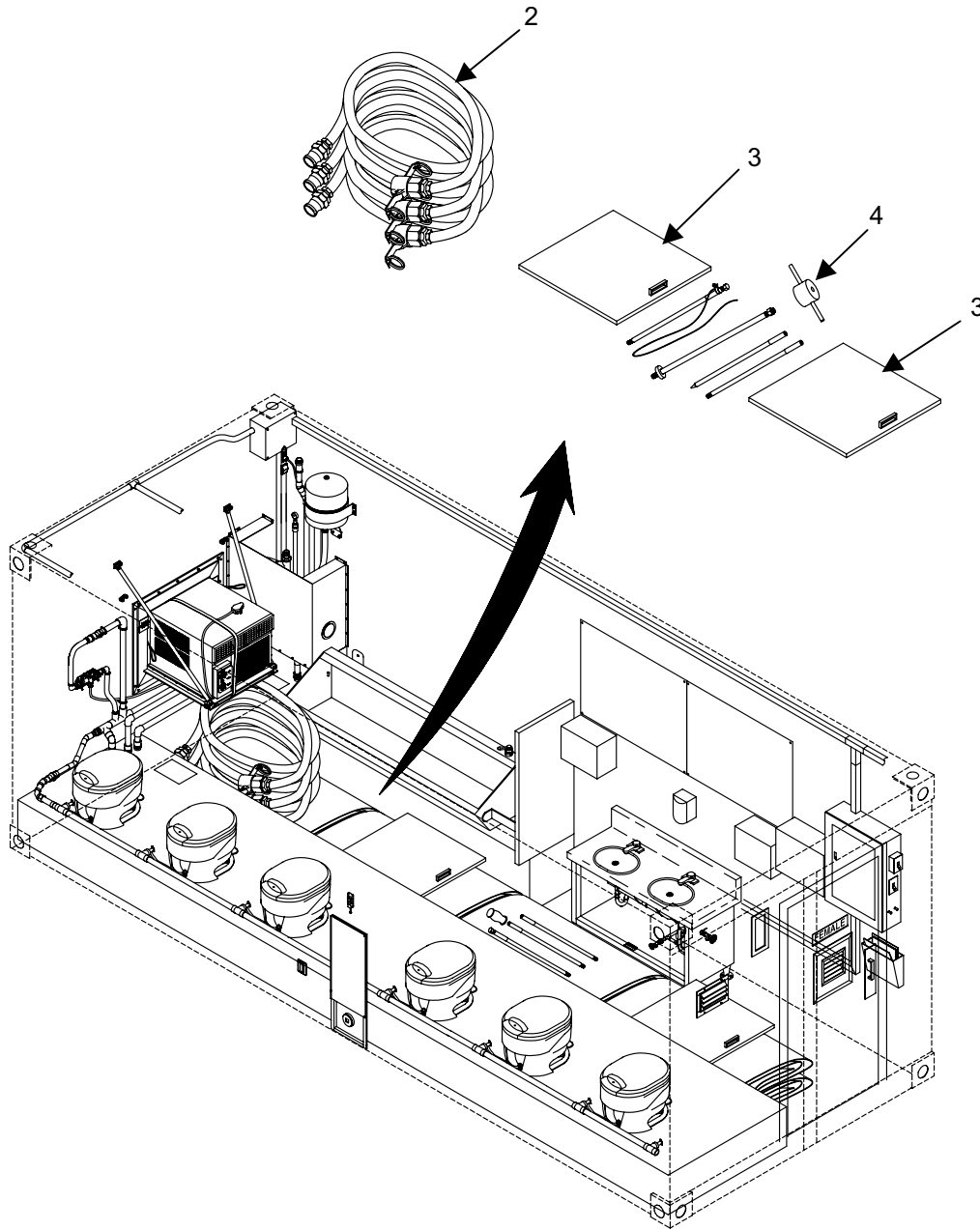
| Description of Item | Quantity |
|---------------------------------------------------------------|----------|
| Cable Assembly, Power, 60A, 50-ft, Pigtail | 1 |
| Clean Out Plug Wrench | 1 |
| Commode Straps | 6 |
| Dark Cover | 1 |
| Extension Cable, 25-ft, 120VAC, GFCI | 3 |
| Fire Extinguisher, ABC, Dry Chemical, 10-lbs (mounted inside) | 1 |
| Funnel | 1 |
| Ground Rod Assembly | 1 |
| Heat Trace Assembly, 6-ft | 1 |
| Heat Trace Hose, 20-ft | 1 |
| Hose Assembly, Non-metallic, Garden | 1 |
| Hose Assembly, Rubber Discharge, 4-in x 20-ft | 3 |
| Hose, 1-in Re-circulating, 20-ft | 1 |
| Hose, 1½-in x 20-ft with caps, plugs and chains | 2 |
| Mop Bucket | 1 |
| Mop Handle (mounted inside) | 1 |
| Nozzle, Garden Hose | 1 |
| Reducer, 1½ -in x 2-in | 1 |
| Reducer, 2-in x 1-in | 1 |
| Sanitary Brush | 1 |
| Shovel (mounted inside) | 1 |
| Sink Cabinet Doors | 2 |
| Slide Hammer | 1 |
| Strap Wrench | 1 |
| Submersible Heater, 1½ kW | 1 |
| Tank, Fabric, Collapsible, 3000-Gallon | 1 |
| Technical Manual | 1 |
| Tiedown Special Purpose Web | 4 |
| Tiedown Straps, 1-in | 3 |
| Valve Assembly, 4-inch | 1 |
| Waste Paper Basket | 1 |
| Wringer | 1 |

Pack Containerized Latrine System (CLS)

1. Retrieve and pack reflective insulation rolls (1). Fold each roll to approximately 34-inch x 48-inch squares and stack in center aisle two deep.



- Retrieve and pack wastewater hoses (2), sink cabinet doors (3), grounding rod assembly and slide hammer (4).

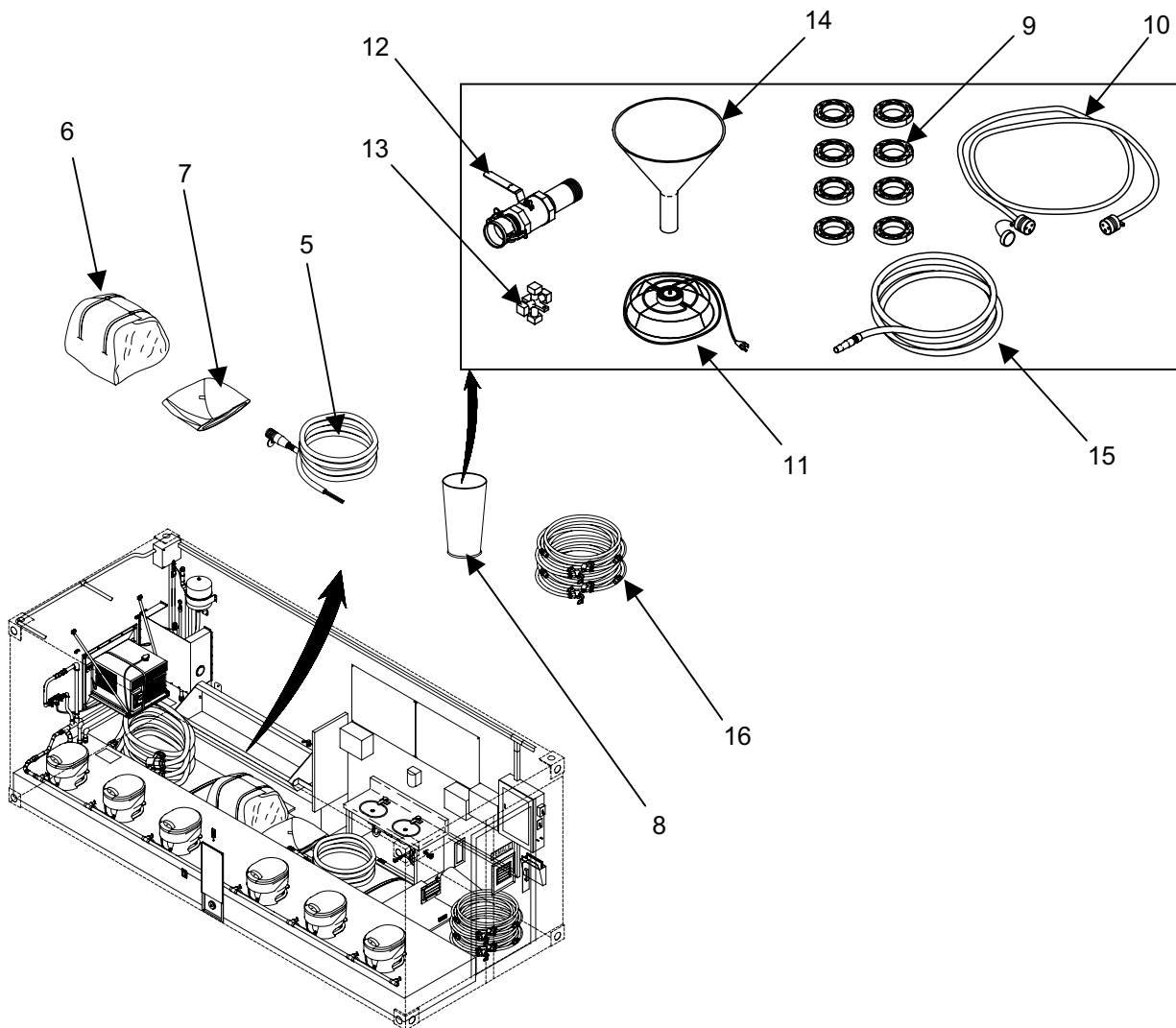




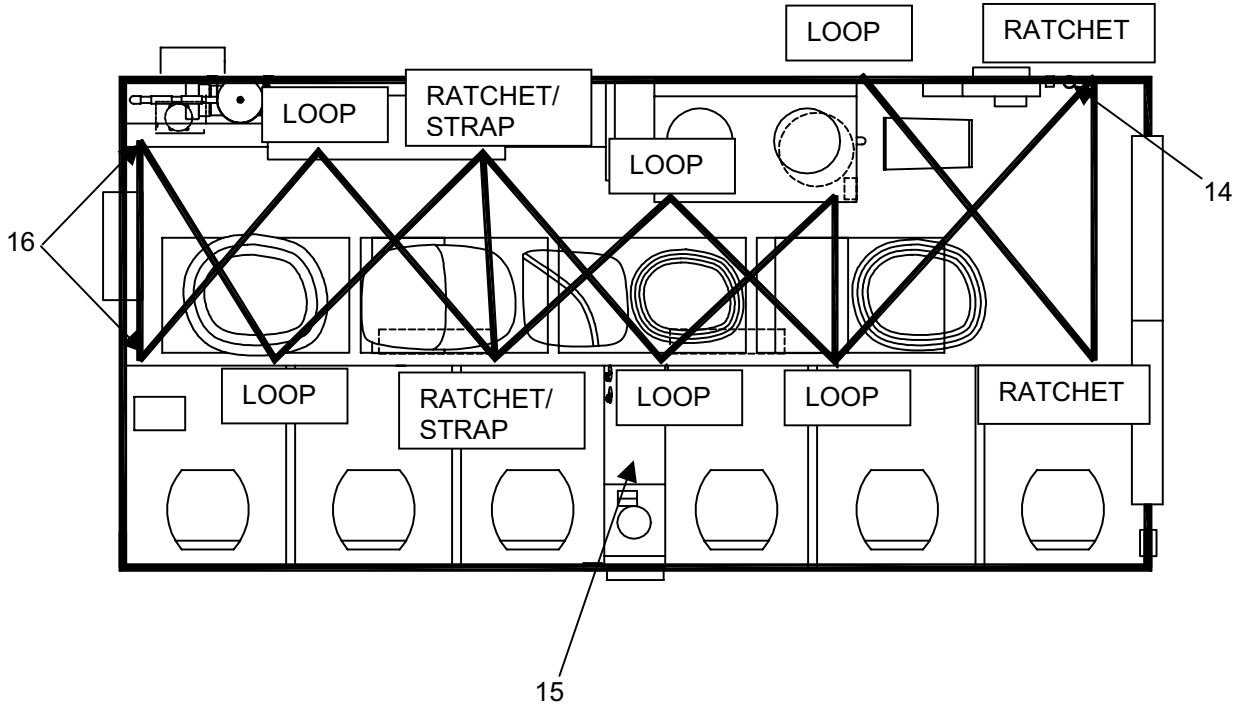
WARNING

Three people are required to lift the 3000-gallon water tank. Serious injury to personnel could result from improper lifting.

3. Retrieve and pack 60A pigtail cable (5), 3,000-gallon water tank (6) and dark cover (7).
4. Pack the following items in the wastepaper basket (8): any left over insulation tape (9) and extension cables (10), submersible heater (11), 4-inch valve assembly (12), clean out plug wrench (13), funnel (14), garden hose (15), and freshwater hoses (16).



5. Ensure the fire extinguisher (14) is mounted on the wall. Ensure serviceable broom, mop, and shovel are mounted in the storage area (15).
6. Install strapping (16) as shown.

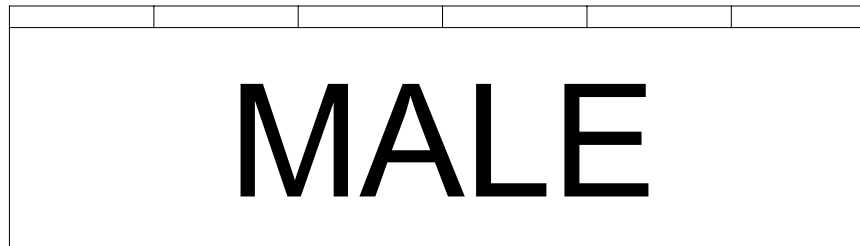
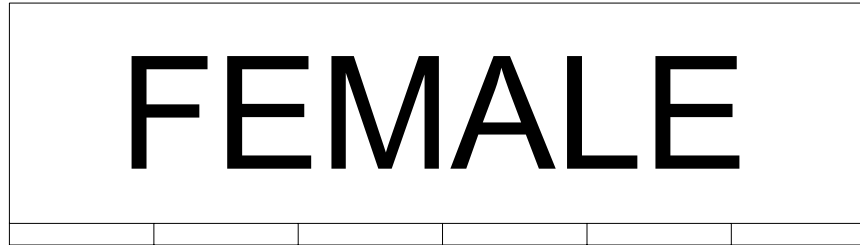


LABELS AND INSTRUCTION PLATES

The following labels and instruction plates are found on the CLS components as indicated.

Personnel Entrance

The following instruction plate is located at the personnel entrance of the container:



Customs Plate

The Customs Plate is affixed to the left service door of the container.



Identification Plate

The Identification Plate is affixed to the left service door of the container.



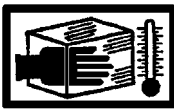
**OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
OPERATION UNDER UNUSUAL CONDITIONS**

GENERAL

This work package contains special procedures for operating the latrine under unusual weather and environmental conditions. Unusual conditions include severe weather, such as 90 to 100 percent humidity for a week or more; anticipated temperatures of 32° F (0° C) or below for a day or more, or overnight; blowing sand or dust; heavy rain or snow. Refer to TM 55-8115-204-23&P on the General Cargo Container and commercial publications listed in WP 0002 00 of this manual for similar information. For the Containerized Latrine (CL) (Force Provider Configuration), refer to TM 10-5419-206-13 for Force Provider related procedures.

EXTREME HEAT (MOIST AND DRY) CONDITIONS

- Operate ECU. Set ECU circuit breaker (#10/12) to the ON position. On ECU, adjust function control to "high cool" and adjust temperature control to comfortable level.
- Turn exhaust fans to ON. Turn on exhaust fan breaker # 2A (breaker # 2 for CL) and turn on switch located on side of breaker box.



WARNING

Do not touch cold metal parts with bare hands. Exposed skin will stick to cold metal parts and injury to personnel.

SNOW OR MUD

- Keep floor free of mud.

SALT-WATER AREAS

- Inspect the latrine frequently for rust and corrosion.
- Frequently wash the equipment with fresh water to prevent a buildup of salt deposits. Rusted or corroded condition must be corrected as soon as possible.

DUSTY OR SANDY CONDITIONS

- Keep latrine circuit breaker panel box closed and secured.
- Ensure that fuel and water service is protected from sand, dust, and grit.
- Use field expedient methods to cover door vent (CLS only).

RAINY AND/OR HUMID CONDITIONS

- Keep latrine circuit breaker panel box closed and secured.
- Towel dry wet surfaces and components as necessary.
- Ensure floor is clean and dry at all times.

HIGH ALTITUDE CONDITIONS

No applicable information.

NBC CONTAMINATION

The Containerized Latrine System has not been designated to withstand the effects of NBC events and, because it is not CARC painted, will require thorough decontamination in accordance with FM 3-5 if exposed to NBC contaminants.

EMERGENCY PROCEDURES

In an emergency, turn OFF 60A main circuit breaker on power distribution panel to shut down all electrical power to the latrine.

EXTREME COLD CONDITIONS**Containerized Latrine (CL)**

Refer to TM 10-5419-206-13 (Force Provider) for instructions on fitting the Modification System, Cold Weather components.

Containerized Latrine System (CLS) (Using Cold Weather Equipment)

Assemble Base Insulation Sheeting

1. Find a clean, clear, level area for set-up of the 3,000-gallon water tank.
2. Roll out and cut insulation sheeting **(1)** to form a 16-foot X 16-foot base.
3. Using foil tape, tape insulation sheeting to form on 16-foot X 16-foot base sheet.

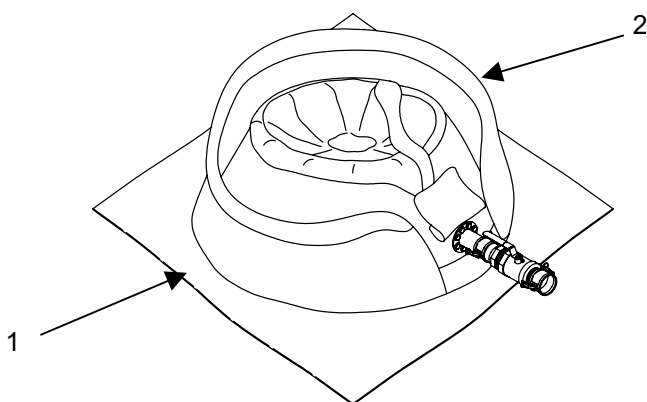


WARNING

A three person lift is required when lifting, moving, or positioning the empty 3,000-gallon water tank. Failure to do so may cause injury to personnel.

Position the 3,000-Gallon Water Tank

1. Center the empty 3,000-gallon water tank (wrapped in cover) **(2)** on the 16-foot X16-foot base insulation sheeting.
2. Unhook the two D-buckles on the water tank cover.
3. Unfold the cover to expose the water tank.
4. Reposition the cover and tank to ensure there is at least 1-foot of insulation sheeting surrounding the centered cover and water tank.
5. Ensure the input valve on the water tank is placed to facilitate filling.
6. Set-up the 3,000-gallon water tank IAW TM 5-5430-237-12&P.



Connecting the Heater and Heat Trace Hoses to the 3,000-Gallon Water Tank**NOTE**

Ensure there are no kinks in the hoses.

1. If water tank has been set up for usual conditions, set the water supply pump circuit breaker (#9/11) and water heater circuit breaker (#2B) to the OFF position.
2. Close the main toilet/urinal valves.
3. Close water tank water supply valves and remove disconnect hose from water tank and container.

**WARNING**

The heat trace hose will be hot and can cause serious burns if handled when connected to the receptacle. Do not connect to receptacle until installation is completed, failure to do so may cause serious burn injury to personnel.

4. Drain hoses, coil and store.
5. Uncoil the heat trace hose **(1)**. Ensure the end with electrical power connector is positioned closest to the container and the other end is positioned close to tank.
6. Connect the 2-inch X 1½-inch reducer **(2)** to the heat trace hose **(1)**.
7. Connect the heat trace hose **(1)** to the output on the water tank.
8. Prime the heat trace hose **(1)** by holding the hose at water level and opening the supply line on the 3,000-gallon water tank. Until water starts to flow out of the hose.
9. Connect the free end of the heat trace hose to the water input output panel at the rear of the CL or side-rear of the CLS container.
10. Use an extension cord to connect the heat trace hose into the GFCI outlet mounted on the power entry panel (receptacle A or B).
11. Insert the 1500-watt submersible heater **(3)** into the center of the water tank. Ensure the electrical cord is sticking out the top of the water tank.
12. Zip up the 3,000-gallon water tank.
13. Using an extension cord, plug the heater cord into the GFCI outlet mounted on the power entry panel (receptacle A or B).

NOTE

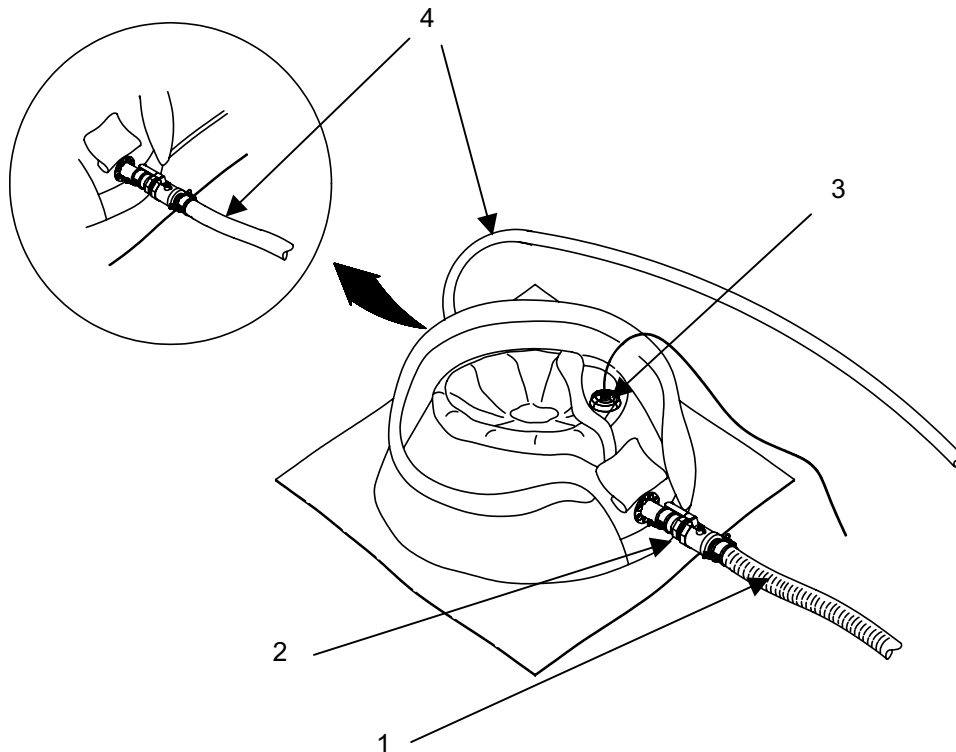
Ensure there are no kinks in the hoses.

14. Uncoil the return hose (4).
15. Ensure valve on tank is closed.
16. Connect the 2-inch x 1-inch reducer to the return hose.
17. Connect the return hose to the water tank.
18. Prime return hose (4).
19. Connect the free end of the return hose to the water input/output panel at the rear of the ISO container.

NOTE

Do not fill 3,000-gallon water tank to the top.

20. Fill 3,000-gallon water tank. Refer to TM 5-5430-237-12&P for filling and set-up procedures for the 3,000-gallon water tank.



Insulate Hoses With Cold Weather Equipment

1. Cut two 24-inch X 16-inch pieces of insulation sheeting.
2. Using one piece of the cut sheeting, in the lengthwise direction, wrap the control valve and reducer fitting (which connect the circulating hose to the water tank) with the insulation sheeting. Use foil tape to secure the sheeting edges together; ensure the valve handle is visible and accessible.
3. Repeat step 2. above, to insulate the valve and reducer at the heat trace hose connection point.

Insulate 3,000 Gallon Water Tank With Cold Weather Equipment

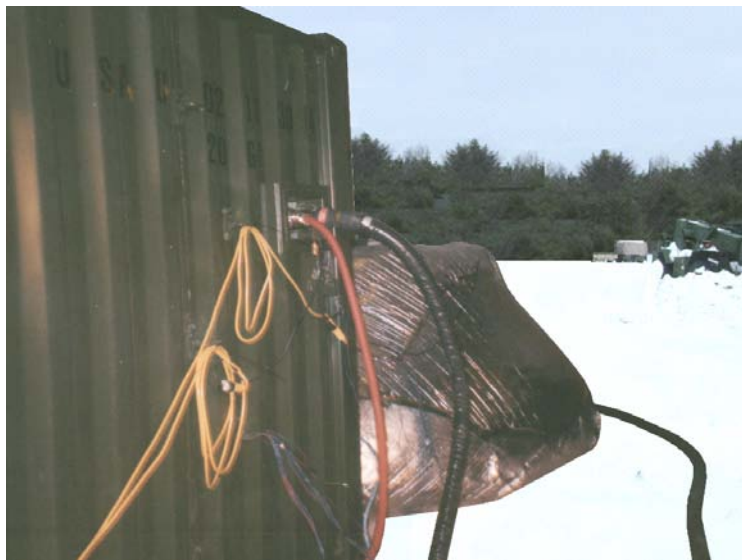
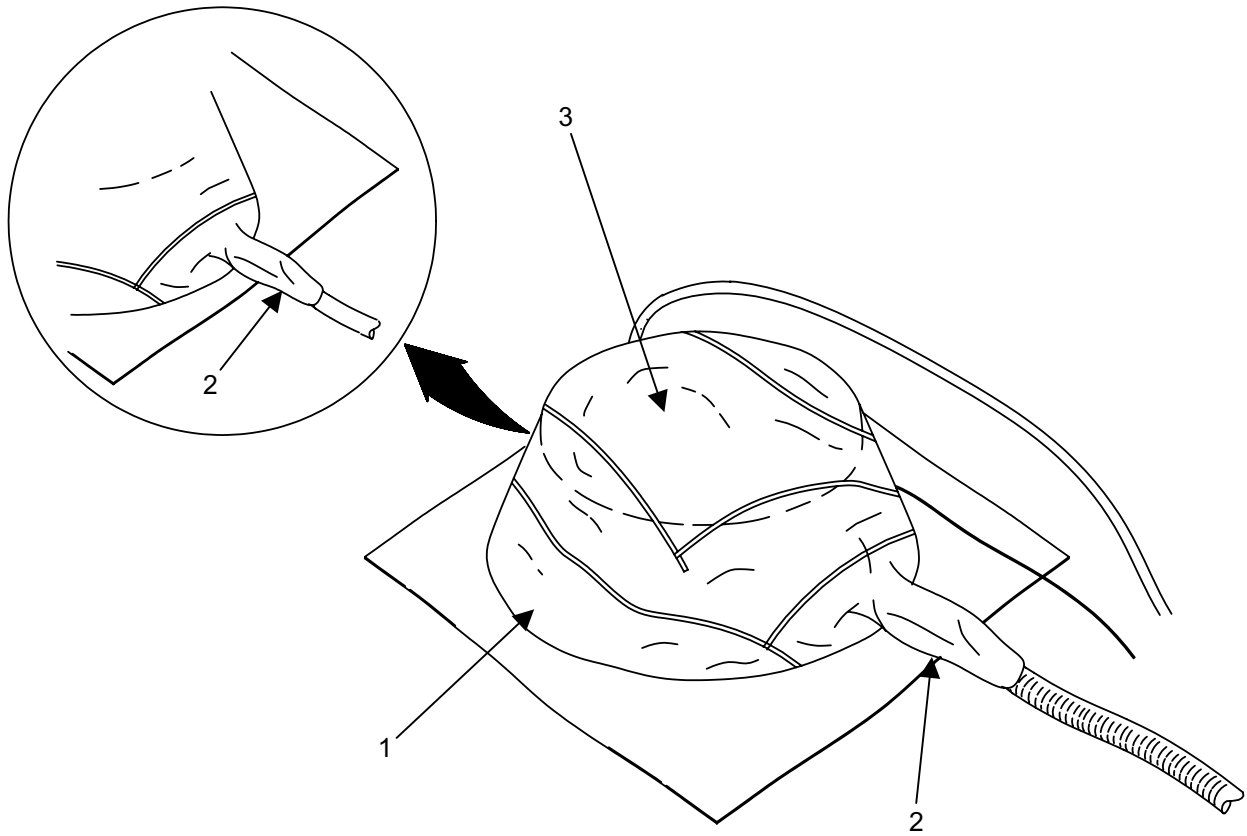
1. Wrap bottom of water tank with base sheeting **(1)**.
 - a. On the base sheeting, cut the sheeting on both sides of the protruding hoses so the base sheeting can be folded up around the valve, and taped to, the water tank.
 - b. Using foil tape to secure sheeting, continue moving around the 3,000-gallon water tank, folding and creasing the base sheeting up, and securing with foil tape to the foil sheeting.
 - c. When this process is complete, the base of the 3,000-gallon water tank will be wrapped in the 16-foot X16-foot base insulation sheeting.
2. Wrap water tank.
 - a. Using a bolt of insulation sheeting, wrap the exterior of the water tank; ensure there is an overlap between the base insulation sheeting and what is currently being wrapped.
 - b. Use foil tape as you go to secure the new sheeting to the existing sheeting.
 - c. When sheeting comes in contact with protruding hoses **(2)**, slice sheeting to fit down and around hose. Secure all incisions with foil tape.

NOTE

Ensure that no part of the water tank is exposed to the elements. All seams must be covered by foil tape to ensure proper insulation of water tank. Failure to do so may cause air infiltration and reduce the insulating effectiveness of the thermal blanket.

3. Tucking and folding puckered edges of insulation sheeting.
 - a. After wrapping the entire 3,000-gallon water tank with insulation sheeting, fold in puckered edges to form a tight blanket of insulation around the water tank.
 - b. Secure the folded edges with foil tape. Ensure the foil tape is taped to existing sheeting rather than taping to the water tank, this will ensure a more secure hold.

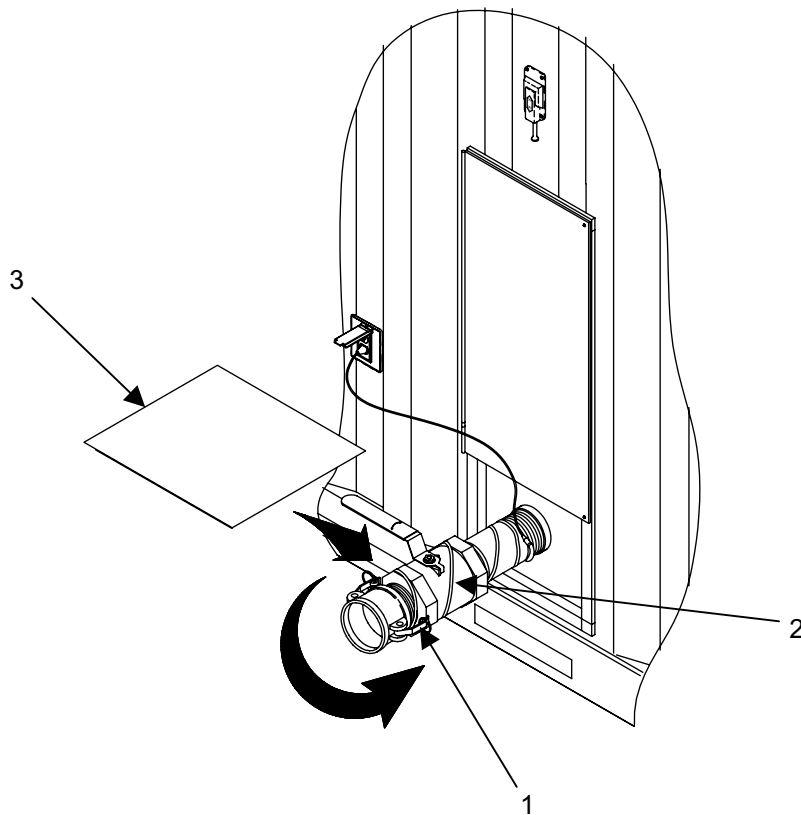
4. Create cover.
 - a. Roll out and cut insulation sheeting to form a 12-foot x 12-foot cover.
 - b. Overlap raw edges of sheeting about 1-inch before taping.
 - c. Using foil tape, secure pieces of sheeting together along the entire seam.
 - d. Flip cover blanket over and secure seams with foil tape.
5. Cover water tank.
 - a. Place the 12-foot x 12-foot blanket **(3)** on top of the 3,000-gallon water tank. Center blanket.
 - b. Using foil tape, first secure the corners of the blanket **(3)** to the insulation previously applied.
 - c. Secure the remaining portions of the insulation blanket **(3)** by folding the sheeting flaps. Fold flaps as follows:
 - (1) Starting with the right flap, with left hand, pull the corner out while sliding right hand (on top of the insulation) towards the center arc of the flap.
 - (2) While still holding the insulation with left hand, remove right hand from under insulation, grasp insulation with right hand and reinforce crease with left hand.
 - (3) Secure folded flap with generous amounts of foil tape. Ensure flaps are secured to ensure proper insulation of water tank. Ensure seams are secured to ensure proper insulation of water tank.
 - (4) Repeat process around entire water tank until all flaps of insulation sheeting are folded and secured. Hand positions may change, however, the process will remain the same.
 - d. Inspect insulated water tank and, using foil tape, seal all remaining seams to ensure proper insulation of the water tank.
 - e. Obtain a 20-foot x 20-foot tarp of dark color and cover the insulated water tank.
 - f. Tuck excess tarp under water tank edge and use sandbags to secure the tarp.



Wrap 4-inch Valve With Heat Trace**WARNING**

The heat trace assembly will be hot and may cause serious burns if handled when connected to a receptacle. Do not connect to the receptacle until installation is completed, failure to do so may cause serious burn injury] to personnel.

1. Using the heat trace assembly, wrap the blackwater valve **(1)** with the heat trace coil **(2)**, ensure the plug end is tight and close to the GFCI receptacle so the coil does not unwrap.
2. Ensure coil end is tucked under the cam lock arm on the discharge valve.
3. Secure coil end with foil tape.
4. Wrap installed heat trace with reflective insulation **(3)** and secure with foil tape.
5. Plug in heat trace assembly. Readjust cord as necessary to ensure connection is tight.

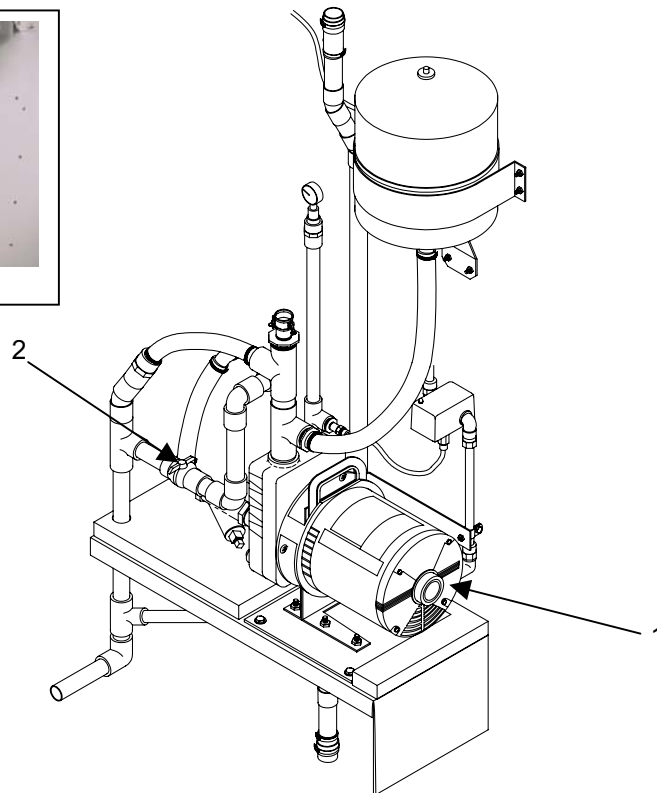
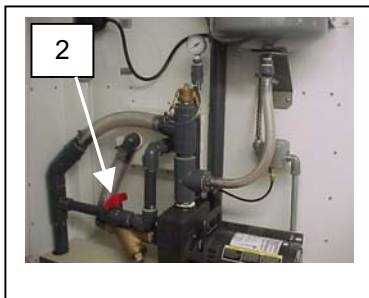


Operate the Cold Weather Equipment

NOTE

The pump assembly cover must be removed before operating the Cold Weather Equipment.

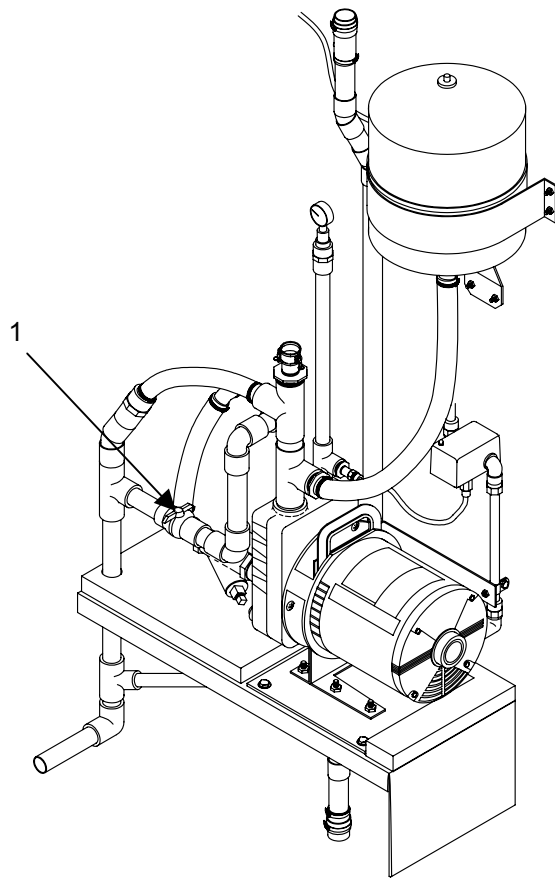
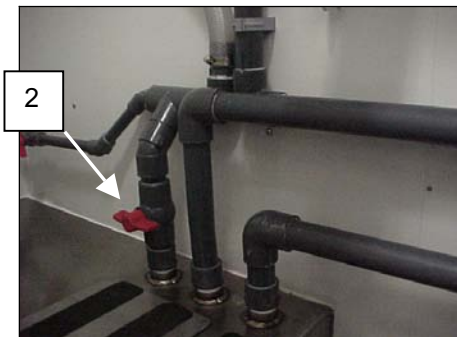
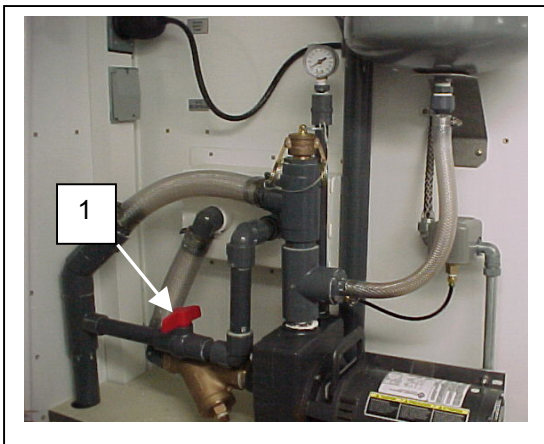
1. Open output valve on 3000-gallon water tank.
2. Fill the output water hose by briefly disconnecting the hose from the water panel and lowering the disconnected hose end until water discharges. Quickly reconnect hose to water panel.
3. Operate water pump **(1)** as described in WP 0009 00.
4. Set water supply pump circuit breaker (#9/11) and water heater circuit breaker (#2B) to the ON position.
5. Open main toilet/urinal valves.
6. Open recirculation valve **(2)**.
7. Open valve connected to return hose at 3,000-gallon water tank.



DISASSEMBLE**Shut Down the Cold Weather Equipment****NOTE**

The pump assembly cover must be removed before operating the Cold Weather Equipment.

1. Set water pump circuit breaker (#9/11) and water heater circuit breaker (#2B) to the OFF position.
2. Close recirculation valve **(1)**.
3. Close valve connected to return hose at 3,000-gallon water tank.
4. Close the main toilet/urinal valve **(2)** and the sink valve.
5. Close supply valve on 3000-gallon water tank.



Disassemble 3,000 Gallon Water Tank With Cold Weather Equipment**WARNING**

Before removing heat trace hoses, ensure the heat trace hose has had at least 15 minutes to cool off from the time it was unplugged/turned-off. Failure to do so may cause serious burn injury to personnel.

1. Unplug heat trace hose and heater from ISO container.
2. Remove extension cords, coil cords and store.
3. Close (OFF position) all valves on the 3,000-gallon water tank.
4. Disconnect hoses from the ISO container.
5. Remove dark cover from water tank.
6. Fold cover and set aside.

CAUTION

When draining, water may backwash and freezing will occur if hoses are not extended far enough from water tank.

7. Drain water tank IAW TM 5-5430-237-12&P.
8. While the water tank is draining, remove the insulation sheeting from the entire water tank. Untape the base sheeting from the water tank at this time. (The base sheeting will be removed after folding the water tank.)
9. Dispose of used sheeting IAW field standard procedures.
10. Disconnect all hoses from the 3,000-gallon water tank.
11. Disconnect the 2-inch x 1-inch reducer from the return hose and stow reducer.
12. Disconnect the 2-inch x 1½-inch reducer from the heat trace hose and stow reducer.

NOTE

Hoses without dust caps should have the male and female QD fittings connected to prevent contamination.

13. Drain all hoses of excess water; coil hoses, fit dust caps, and store.

**WARNING**

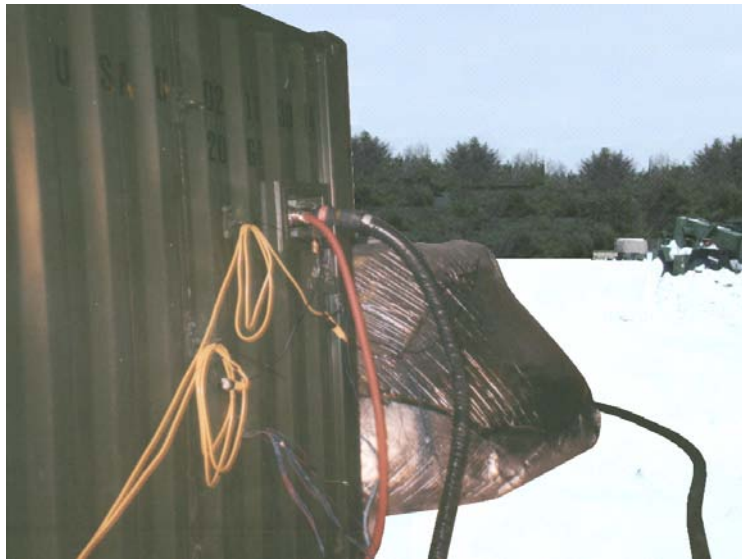
The heater is hot and may cause serious burns if handled before it has time to cool. Ensure the heating element has had at least 15 minutes to cool off from the time it was unplugged/turned-off before removing heater from water tank. Failure to do so may cause serious burn injury to personnel.

14. Remove submersible emersion heater from 3,000-gallon water tank. Coil cord and set heater aside.
15. Fold water tank IAW TM 5-5430-237-12&P.
16. Dispose of remaining base sheeting IAW field standard operating procedure.

**WARNING**

A three person lift is required when lifting, moving, or positioning the empty 3,000-gallon water tank. Failure to do so may cause injury to personnel.

17. Collect tarp, heater, hoses and 3,000-gallon water tank, and store.



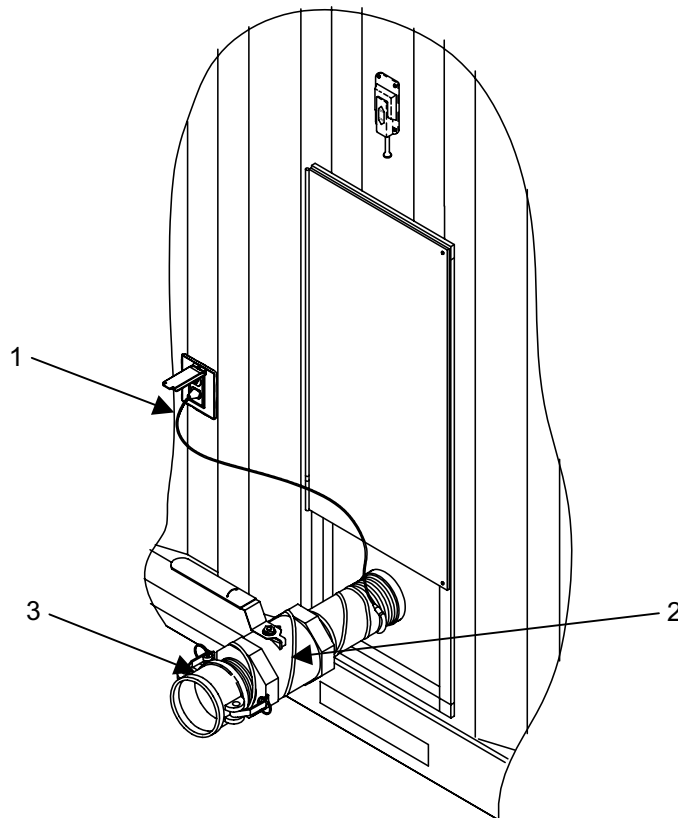
Disassemble Heat Trace Assembly



WARNING

The heat trace assembly is hot and may cause serious burns if handled before it has time to completely cool off. Ensure the heat trace has had at least 15 minutes to cool off from the time it was unplugged/turned-off before removing it. Failure to do so may cause serious burn injury to personnel.

1. Unplug the power cord **(1)** to the heat trace assembly **(2)**.
2. Remove foil tape securing insulation, and dispose of insulation and tape IAW Unit SOP.
3. Remove foil tape from end of heat trace assembly **(2)**. Dispose of tape IAW Unit SOP.
4. Unwrap coil from blackwater valve **(3)**.
5. Coil cord.
6. Collect heat trace assembly and store.



CHAPTER 3

OPERATOR TROUBLESHOOTING PROCEDURES

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

**OPERATOR MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
MALFUNCTION SYMPTOM INDEX**

GENERAL

This manual cannot list all malfunctions, tests, inspections or corrective actions that may occur. If a malfunction is not listed or is not corrected by listed corrective actions, notify unit maintenance. There are no lubrication requirements for either latrine model.

MALFUNCTION SYMPTOM INDEX

The malfunction symptom index is a quick-reference index for finding troubleshooting procedures. Associated with each symptom name is a procedure sequence number representing the starting point in a troubleshooting sequence. Should any one symptom require more than one troubleshooting sequence to arrive at the most likely area of investigation, the additional starting point numbers are also provided.

NOTE

Be sure to read all WARNINGS in front of this manual before troubleshooting. Before using the troubleshooting tables, be sure you have performed all applicable operating checks and verified that a malfunction exists. When a corrective action is performed, verify that the action has corrected the malfunction. All malfunctions deferred to the next higher level of maintenance must be reported according to the instructions given in DA PAM 750-8.

Table 1. Operator Malfunction Symptom Index.

| Malfunction or Symptom | Refer to Operator Troubleshooting Table: |
|-----------------------------------------|------------------------------------------|
| Loss Of Power | 1 |
| Interior Lights Inoperative | 2 |
| Exterior Light Inoperative | 3 |
| No Hot Water | 4 |
| No Water Pressure Or Low Water Pressure | 5 |
| Blackwater Is Overflowing | 6 |
| Sump Pump Does Not Operate | 7 |
| ECU Does Not Operate | 8 |
| Draft Inducer Fan Does Not Operate | 9 |
| Exhaust Fan Inoperative Or Ineffective | 10 |
| Commode Inoperative Or Malfunctioning | 11 |

**OPERATOR MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
TROUBLESHOOTING PROCEDURES**

GENERAL

This manual cannot list all malfunctions, tests, inspections, or corrective actions that may occur. If a malfunction is not listed or is not corrected by listed corrective actions, notify unit maintenance. There are no lubrication requirements for either latrine model.

NOTE

Be sure to read all WARNINGS in front of this manual before troubleshooting. Before using the troubleshooting tables, be sure you have performed all applicable operating checks and verified that a malfunction exists. When a corrective action is performed, verify that the action has corrected the malfunction. All malfunctions deferred to the next higher level of maintenance must be reported according to the instructions given in DA PAM 750-8.

TROUBLESHOOTING PROCEDURES

The troubleshooting procedures contain tables listing the malfunctions, tests or inspections, and corrective action required to return the shower to normal operation. Perform the steps in the order they appear in the tables.

Each procedure is headed by an initial setup. This setup outlines what is needed, as well as certain conditions which must be met before starting the task. **DO NOT START THE TASK UNTIL:**

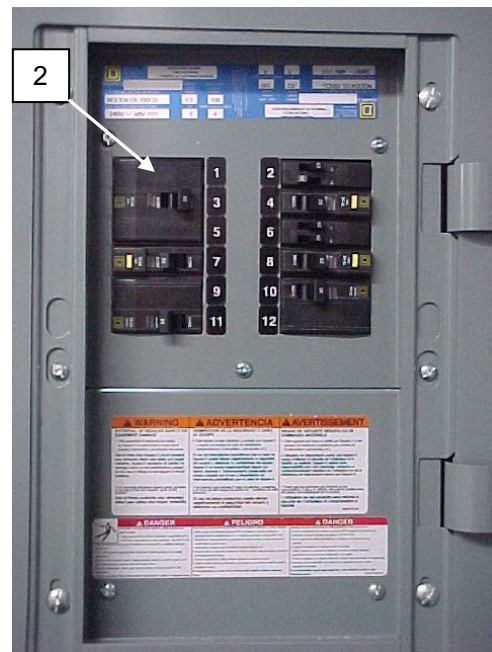
- ✓ You understand the task
- ✓ You understand what you are to do
- ✓ You understand what is needed to do the work
- ✓ You have the things you need

Table 1. Main Power Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. LOSS OF POWER</p> | <p>Step 1. Check that main breaker (2) #1/3/5 is set to the ON position and has not tripped.</p> <p>Step 2. Check that circuit breakers on DISE box (3) are set to the ON position and have not tripped. (For CL only)</p> <p>Step 3. Ensure the 60A power cable is connected to the power panel.</p> | <p>Reset breaker by setting the main breaker (#1/3/5) to the OFF position and then back to the ON position.</p> <p>Reset breaker by setting the breaker to the OFF position and then back to the ON position.</p> <p>Notify Unit Maintenance.</p> |



Containerized Latrine



Containerized Latrine System



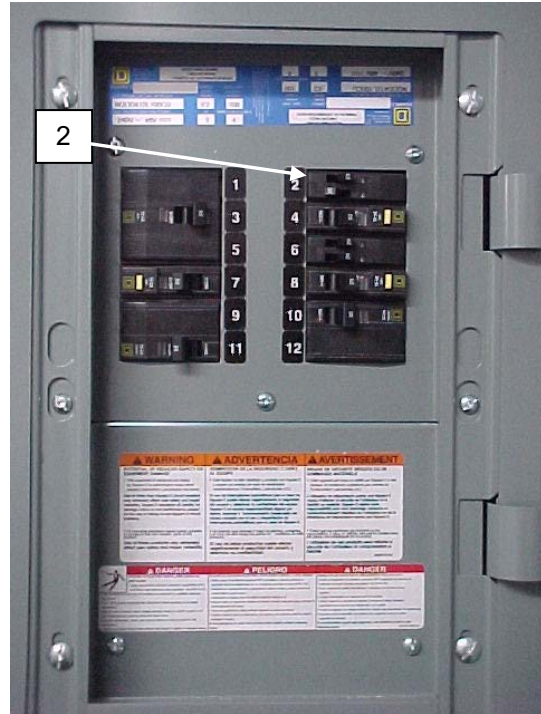
Table 2. Interior Lighting Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. INTERIOR LIGHTS INOPERATIVE</p> | <p>Step 1. Check that light switch (1) is in the ON position.</p> <p>Step 2. Check that circuit breaker (2) is in the ON position and has not tripped.</p> <p>Step 3. Ensure light bulbs (3) are securely installed and are operative.</p> | <p>Turn switch ON.</p> <p>Reset circuit breaker by setting to the OFF position, then to the ON position.</p> <p>Remove lens and reseal or replace light bulb (refer to WP 0020 00).</p> <p>Notify Unit Maintenance.</p> |





Containerized Latrine



Containerized Latrine System



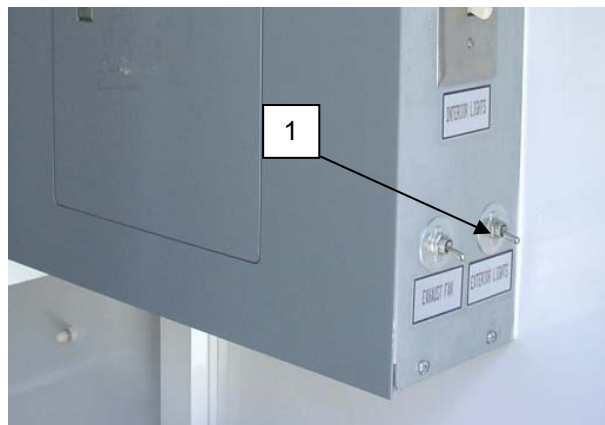
Containerized Latrine



Containerized Latrine System

Table 3. Exterior Lighting Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1. EXTERIOR LIGHT INOPERATIVE | <p>Step 1. Check that light switch (1) is in the ON position.</p> <p>Step 2. Check that circuit breaker (2) is in the ON position and has not tripped.</p> | <p>Turn switch ON.</p> <p>Reset breaker by setting to the OFF position, then to the ON position.</p> <p>Notify Unit Maintenance.</p> |



Containerized Latrine



Containerized Latrine System

Table 4. Hot Water Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. NO HOT WATER</p> | <p>Step 1. Check water heater circuit breaker (#8, CL or #2B CLS) (1) and ensure it has not tripped.</p> <p>Step 2. Check water valve (2).</p> | <p style="text-align: center;">CAUTION</p> <p>Ensure that water heater is full of water prior to turning power ON. Failure to do so will damage the heating element.</p> <p>Reset breaker by setting to the OFF position, then to the ON position.</p> <p>Turn valve ON (inline).</p> <p>If water valve is closed or pump has been left on with no water in system, notify Unit Maintenance.</p> <p>Notify Unit Maintenance.</p> |



Containerized Latrine



Containerized Latrine System

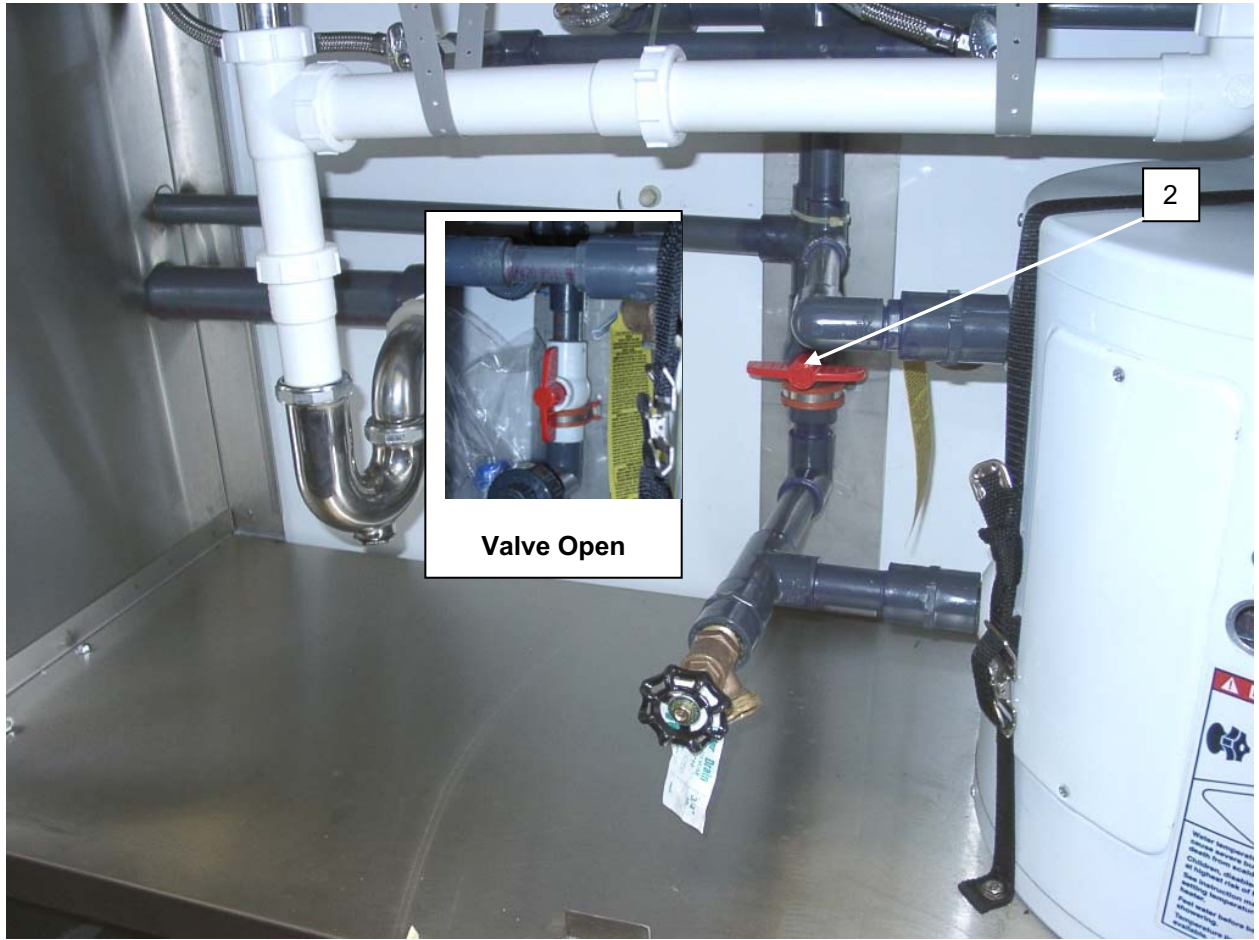
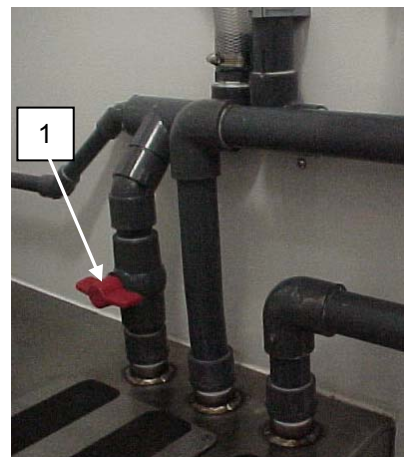
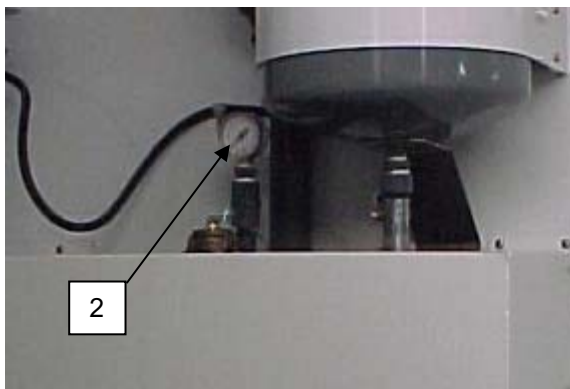
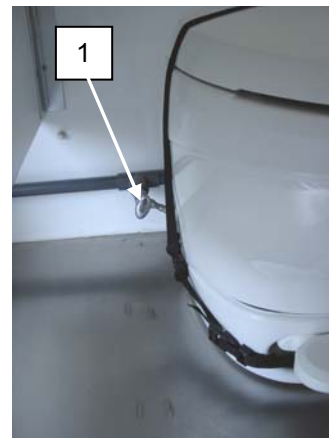
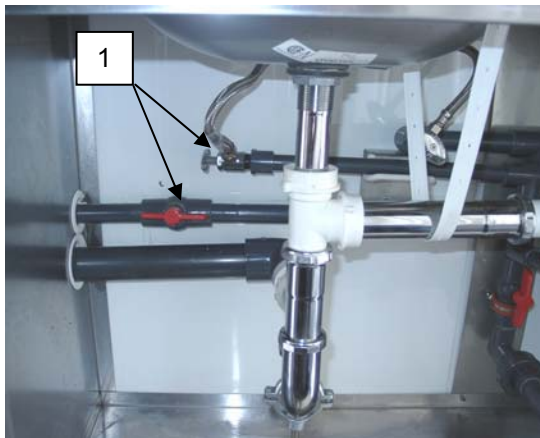
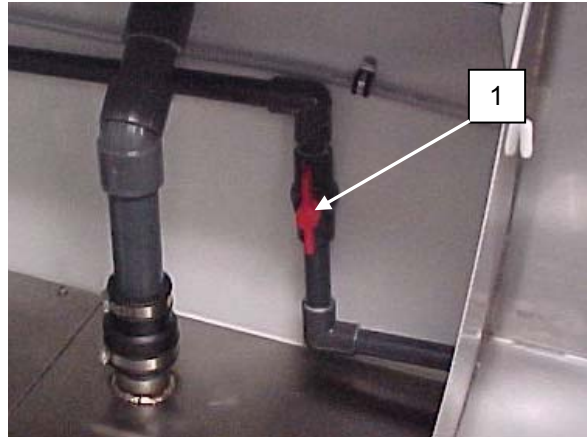


Table 5. Potable Water System Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. NO WATER PRESSURE OR LOW WATER PRESSURE</p> | <p>Step 1. Check main water valves.</p> <p>Step 2. Check valves (1) at sinks, urinal, and toilets.</p> <p>Step 3. Check pressure gauge (2). Ensure that water pressure reads between 20 psi and 32 psi (CLS only).</p> <p>Step 4. Check water pump. Ensure that water pump circuit breaker (# 9/11) (3) is set to the ON position.</p> <p>Ensure water pump supply switch (4) is set to ON position.</p> <p>Ensure that water pump power cord (5) is plugged into the outlet. (CLS only).</p> <p>Ensure water pump has been primed.</p> <p>Step 5. Check main water supply connection. For CL, see Force Provider TM 10-5419-206-14 for water distribution system information.</p> <p>Check all hoses for kinks and obstructions.</p> <p>Ensure that freshwater hose is connected to top inlet connection.</p> | <p>Open any closed main water valves.</p> <p>Open any closed valves at sinks, urinal, and toilets.</p> <p>Notify Unit Maintenance if the water pressure does not read between 20 psi and 32 psi.</p> <p>Set water pump breaker (# 9/11) to the ON position.</p> <p>Turn water pump supply switch to the ON position.</p> <p>Plug water pump power cord into the outlet.</p> <p>Prime pump.</p> <p>Connect water supply to water panel.</p> <p>NOTE For CL, get authorization from Force Provider water distribution personnel prior to connecting to water distribution leg.</p> <p>Unkink all hoses and remove obstructions.</p> <p>Connect freshwater hose. (CL only)</p> <p>Notify Unit Maintenance.</p> |



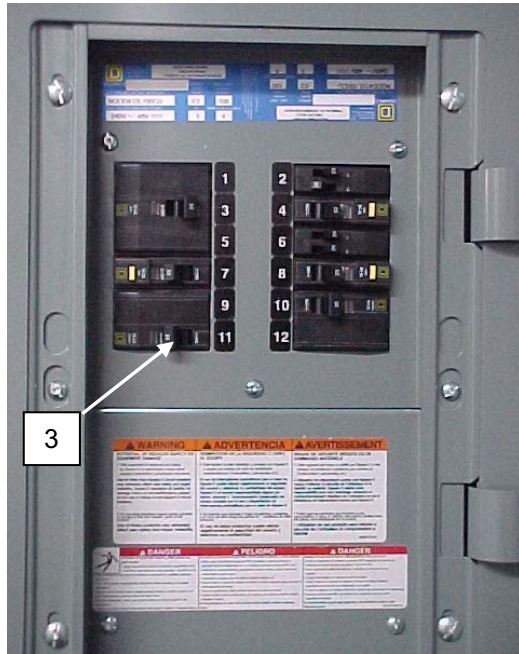



Table 6. Blackwater System Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. BLACKWATER IS OVERFLOWING</p> | <div style="display: flex; align-items: center;">  <div> <p>WARNING</p> <p>Operators must wear protective clothing and equipment. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.</p> <p>Step 1. Check blackwater valve is open (1), if fitted.</p> <p>Step 2. Check blackwater hose (2) for obstructions, such as kinks or vehicle parked on top of hose.</p> </div> </div> | <p>Open blackwater valve if closed. Have tank pumped, if necessary.</p> <p>Remove external obstructions.</p> <p>Notify Unit Maintenance.</p> |

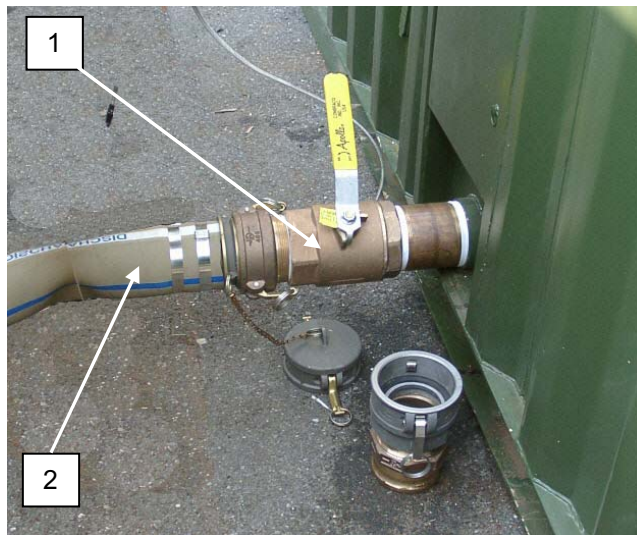


Table 7. Sump Pump Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. SUMP PUMP DOES NOT OPERATE</p> | <p>Step 1. Check sump pump circuit breaker #6A (CL/CLS) and ensure it is in the ON position.</p> <p>Step 2. Turn sump pump ON at switch (1), go inside CL/CLS, and listen for pump operation.</p> | <p>Reset sump pump circuit breaker (#6A) (2) by setting it to the OFF position and then back to the ON position.</p> <p>Notify Unit Maintenance.</p> |



Containerized Latrine



Containerized Latrine System

Table 8. ECU Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. ECU DOES NOT OPERATE | <p>Step 1. Ensure ECU is connected to receptacle (1).</p> <p>Step 2. Ensure ECU circuit breaker #10/12 (2) is in the ON position and has not tripped.</p> <p>Step 3. Ensure switches (3) and thermostat (4) are set to desired function.</p> | <p>Connect ECU power cord.</p> <p>Reset breakers by setting circuit breaker to the OFF position and then back to the ON position.</p> <p>Reset controls.</p> <p>Notify Unit Maintenance.</p> |





Containerized Latrine



Containerized Latrine System



Table 9. Draft Inducer Fan Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. DRAFT INDUCER FAN DOES NOT OPERATE OR IS INEFFECTIVE</p> | <p>Step 1. Check for odor in CL/CLS.</p> <p>Step 2. Ensure circuit breaker #6B (2) for draft inducer is set to the ON position and has not tripped.</p> | <p>If vent countersunk plug (1) is present, remove countersunk plug and store under sink. See WP 0008 00, Remove Vent Countersunk Plugs.</p> <p>Reset circuit breaker by turning to the OFF position then to the ON position.</p> <p>Notify Unit Maintenance.</p> |



Countersunk Plug



Containerized Latrine



Containerized Latrine System

Table 10. Exhaust Fan Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. EXHAUST FAN INOPERATIVE OR INEFFECTIVE</p> | <p>Step 1. Ensure switch (1) is ON.</p> <p>Step 2. Ensure circuit breaker #2 (CL) or #2A (CLS) (2) has not tripped.</p> <p>Step 3. Ensure there are no obstructions in vent (3), or that personnel door is not closed (4).</p> | <p>Turn switch ON.</p> <p>Reset the breaker by setting to the OFF position and then back to the ON position.</p> <p>Clear obstructions from vent. Open personnel door when exhaust fan is in operation.</p> <p>Notify Unit Maintenance.</p> |



Containerized Latrine

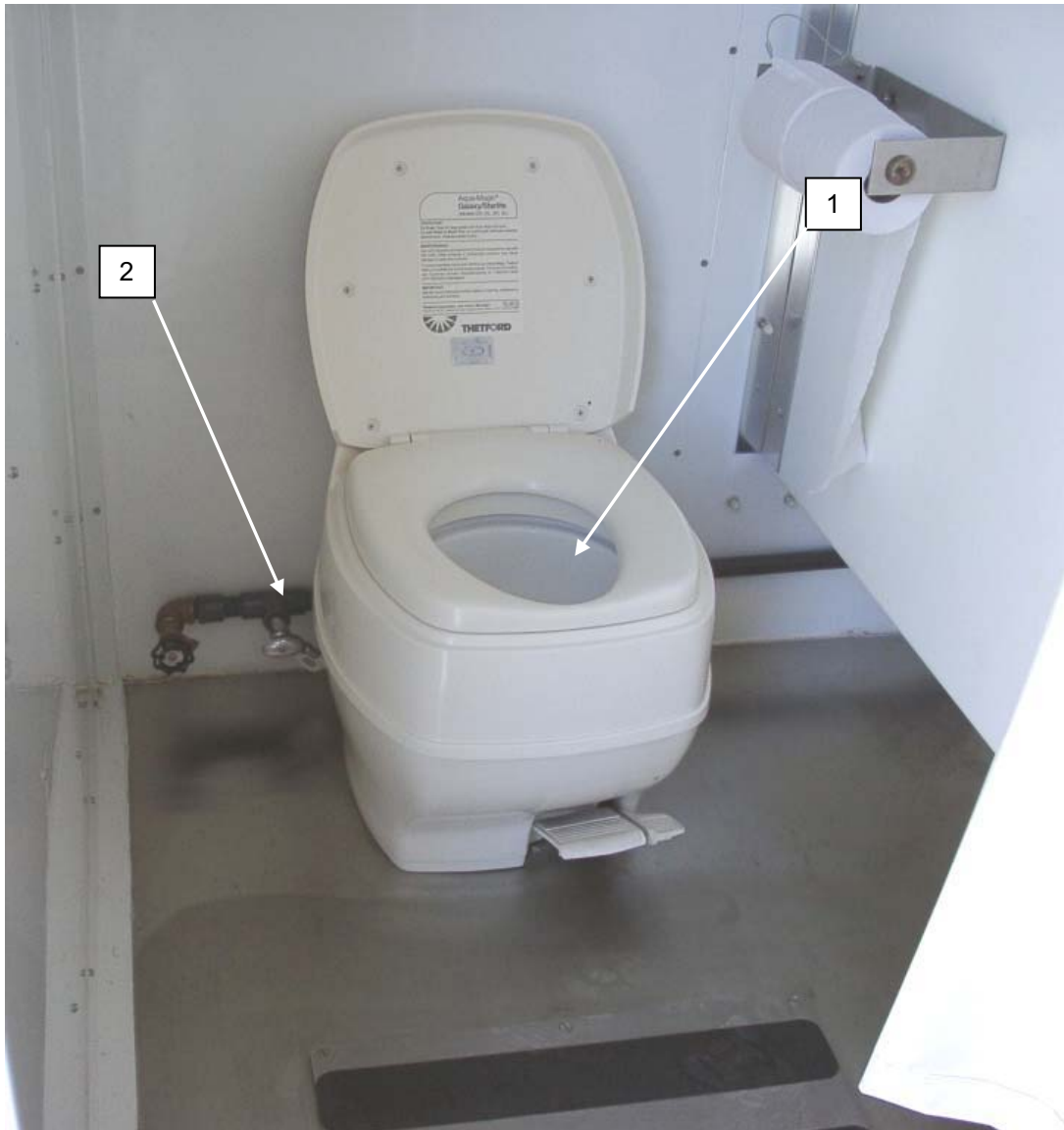


Containerized Latrine System



Table 11. Commode Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| 1. COMMODE INOPERATIVE OR MALFUNCTIONING | Step 1. Ensure commode (1) is not blocked. Step 2. Ensure water is present at flush. | Clear obstruction IAW WP 0026 00. Open water supply valve (2) to commode. Notify Unit Maintenance. |



CHAPTER 4

OPERATOR MAINTENANCE INSTRUCTIONS

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

**OPERATOR MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
SERVICE UPON RECEIPT**

SERVICE UPON RECEIPT

Inspect equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 364, Report of Discrepancy.

Check the equipment against the packing list in WP 0005 00 for CL or WP 0008 00 for CLS, to see if the shipment is complete. Report all discrepancies in accordance with the instructions of DA PAM 738-751.

Check to see whether the equipment has been modified.

After equipment has been positioned, check all items requiring service and perform Preventive Maintenance Checks and Services (PMCS).

**OPERATOR MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
INTRODUCTION TO PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)**

THIS SECTION COVERS:

PMCS Procedures

INITIAL SETUP:**Maintenance Level**

Operator

Equipment ConditionLatrine set up but not in operation.
Power and water connected.**NOTE**

PMCS requirements for some components are described in separate publications. Refer to these publications listed in WP 0069 00 and perform PMCS as prescribed therein.

INTRODUCTION

Preventive Maintenance Checks and Services (PMCS) are performed to keep the Containerized Latrine (CL) and Containerized Latrine System (CLS) and its associated equipment in good operating condition. The checks are used to find, correct, or report problems. Unit personnel are to do the PMCS jobs as shown in the PMCS table. PMCS are done every day the latrine is operated, using the PMCS table. Pay attention to **WARNING** and **CAUTION** statements. A **WARNING** means someone could be hurt. A **CAUTION** means equipment could be damaged.

Before you begin using the latrine, do **Before** PMCS.

During use of the latrine, do **During** PMCS.

After using the latrine, do **After** PMCS.

Once a week, do **Weekly** PMCS if the latrine has been in use.

Do **Monthly** PMCS once a month if the latrine has been in use.

If you find something wrong when performing PMCS, fix it using troubleshooting and/or maintenance procedures.

Be prepared to assist organizational maintenance when they lubricate the latrine. Perform any other services when required by organizational maintenance.

The right-hand column of the PMCS table lists conditions that make the latrine not fully mission capable. Write up the faults that cannot be repaired on DA Form 2404 for Direct Support maintenance. For further information on how to use this form, see DA PAM 750-8.

If tools that are required to perform PMCS are not listed in procedures, notify your supervisor.

CLEANING**WARNING**

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

**WARNING**

Never mix chemicals or detergent and sanitizing solutions. This may produce highly toxic or poisonous gas that can cause serious illness or death to personnel.

Proper cleaning of the latrine components is an integral part of maintenance. It can help prevent possible problems in the future, so make it a habit to clean all latrine components on a daily basis. Clean the commodes, urinal, floor mat, aisle floor, and sink stand with general-purpose detergent or a chlorine-cleaning agent periodically. Clean latrine components as described in the separate technical manuals listed above.

Routine Cleaning and Sanitation of the Latrine

1. Prepare a fresh 100-ppm chlorine solution IAW TB MED 577. This may be prepared in one of four approved methods:
 - a. One (1) ampule of calcium hypochlorite to one gallon (3.8 liters) of potable water.
 - b. Five (5) level mess kit spoonfuls of calcium hypochlorite to 100 gallons (380 liters) of potable water.
 - c. One (1) mess kit spoonful of liquid bleach to one gallon (3.8 liters) of potable water.
 - d. One (1) gallon of liquid bleach to 100 gallons (380 liters) of potable water.
2. Dig a seepage pit or sump outside the latrine door to receive waste chlorine solution and rinse water.
3. Clean the latrine starting from the top to bottom; clean the commodes **(1)**, urinal **(2)**, floor mat, aisle floor **(3)**, and sink stand **(4)** with fresh 100 ppm chlorine solution. Clean waste contact surfaces of urinal trough and commodes last.
4. Rinse surfaces from top to bottom with clear water. Use of a sprayer or hose rinsing is recommended. Spray the sink **(4)**, commodes **(1)**, urinal trough **(2)**, and walls.
5. Rinse the floor.
6. Repeat steps 4 and 5, and allow to air dry.

Waste Holding Tank

After complete evacuation of the waste, insert a hose into opposite end of the tank from the blackwater drain connection. The hose should have enough pressure to dislodge any waste material clinging to internal tank surfaces.

After cleaning, disinfect the waste tank using the chlorine-cleaning agent. First, pour five gallons of the solution through the urinal piping. Then flush at least two gallons of the chlorine solution through each commode. Completely fill the waste tanks with the solution and allow to sit overnight; repeat the procedure, and finally flush each commode and urinal; completely drain the wastewater tanks; allow the tanks to dry before packing.

Shutdown and Storage

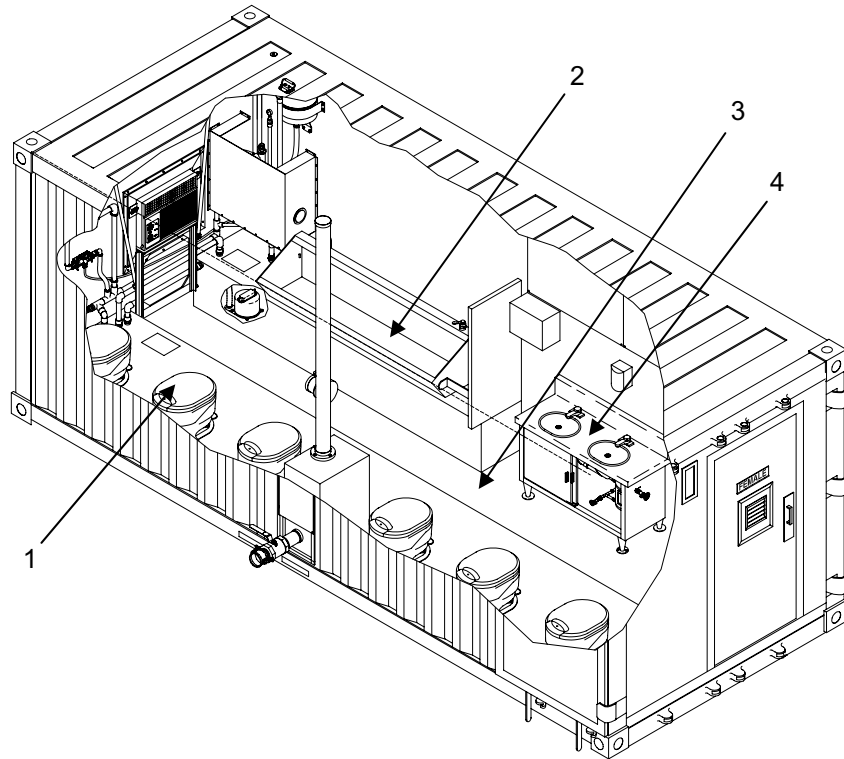
Using general-purpose detergent, first thoroughly wash the inside of the CL/CLS, from ceiling to floor. Empty and rinse the waste tank. Second, using a double-strength of the chlorine solution, sanitize the CL/CLS from ceiling to floor, including the inside of commodes (1) and the urinal trough (2). Allow the CL/CLS to air dry.

Daily

Clean and sanitize CL/CLS at least each shift and at the end of each morning (or other rush).

Weekly

Using general-purpose detergent, thoroughly wash the CL/CLS from ceiling to floor and then sanitize with single-strength sanitizing solution.



Cleaning (CLS shown)

LEAKAGE DEFINITIONS FOR OPERATOR PMCS

It is necessary for you to know how fluid leakage affects the status of the equipment. Following are types/ classes of leakage an operator needs to know to be able to determine the status of the latrine. Learn these leakage definitions; when in doubt, notify your supervisor.

CAUTION

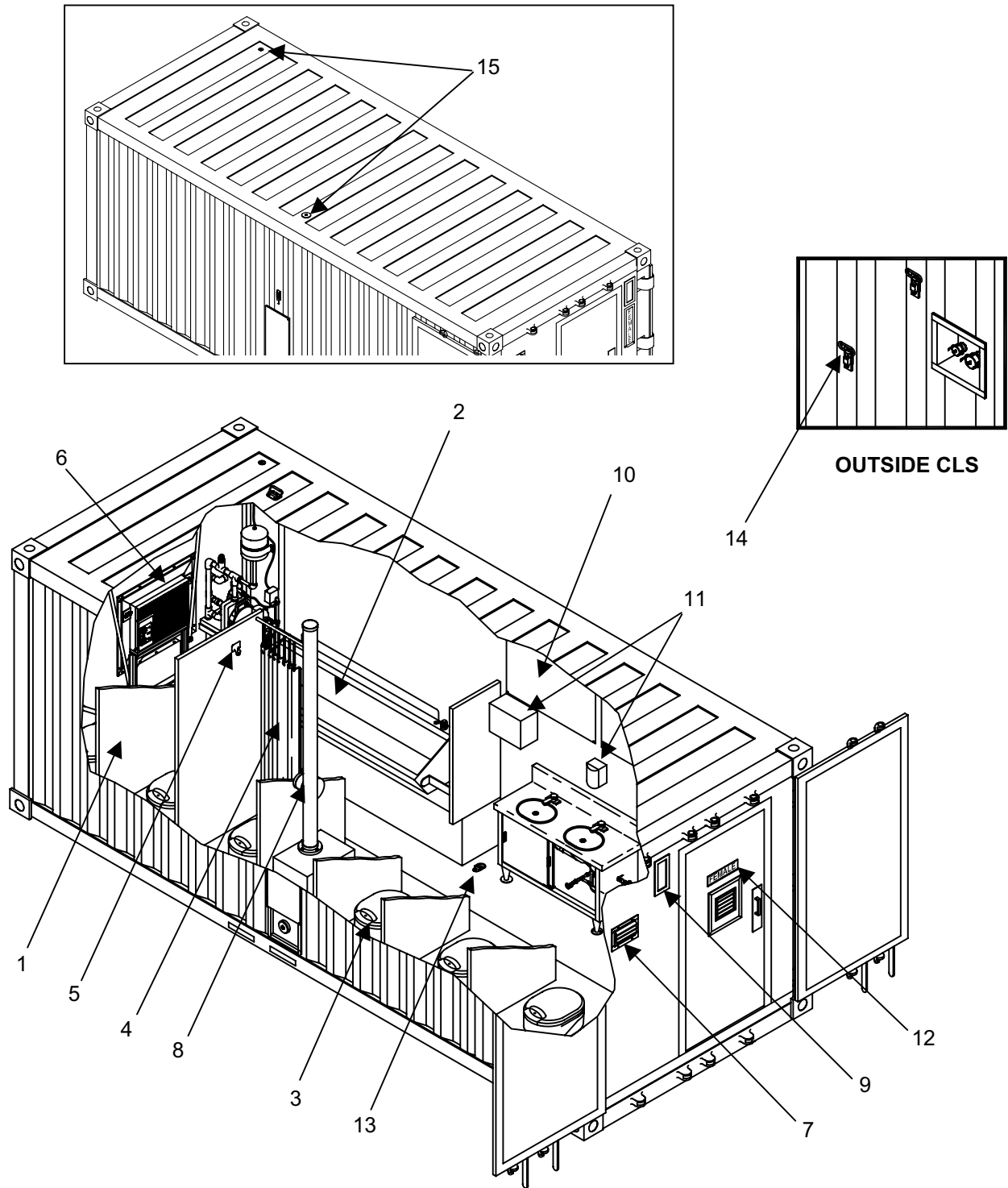
Equipment operation is allowable with minor leakages (Class I or Class II). Of course, consideration must be given to fluid capacity in the item/system being checked/inspected. When in doubt, notify your supervisor. When operating with Class I or II leaks, continue to check fluid levels as required in your PMCS. Class III leaks should be reported immediately to your supervisor.

- CLASS I - Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.
- CLASS II - Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked/ inspected.
- CLASS III - Leakage of fluid great enough to form drops that fall from item being checked/ inspected.

**OPERATOR MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)**

Table 1. Preventive Maintenance Checks and Services for Containerized Latrine (CL) & Containerized Latrine System (CLS).

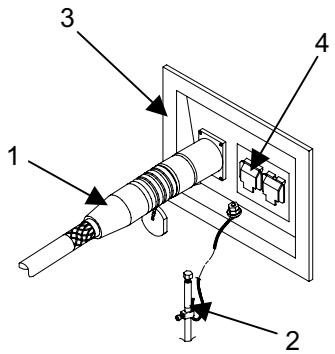
| Item No. | Interval | Item To Be Checked Or Serviced | Procedure | Equipment Not Ready/ Available If: |
|----------|----------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Before/During/ After | Latrine Interior/Exterior | Inspect for physical damage to interior walls and partitions (1) . Check condition of urinal (2) and toilets (3) . Ensure that toilets (3) are secured. Inspect for cracked or leaking basins. Check privacy curtains (4) for serviceability. Inspect clothing hooks (5) for damage. Check ECU (6) , exhaust fan (7) , and waste tank draft inducer fan (8) for damage. Check interior and exterior lights (9) for damage and serviceability. Check condition of mirrors (10) and dispensers (11) . Check aisle floor mat for damage and serviceability. Ensure gender signs (12) are legible and secure. Inspect recessed tie downs (13) for serviceability. Inspect container interior for general cleanliness. Check exterior folding steps (14) for proper operation, cracked, bent, rusted, missing or damaged hardware. Inspect vents (15) for obstructions. | Wall and partitions are damaged. Urinal and toilets are damaged or inoperative. Urinal strainer missing. Privacy curtains missing. Clothing hooks missing or broken. Lights, ECU, exhaust fan, or waste tank draft inducer fan inoperative. Latrine interior dirty. Gender signs illegible. Steps have cracked, bent, rusted, missing or damaged hardware and are inoperative. Countersinks obstructed or vent countersink plugs in place. |



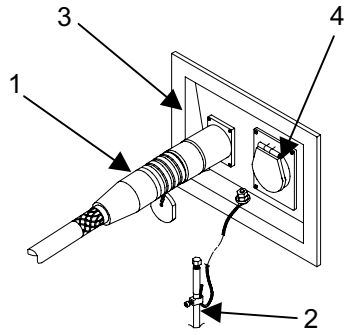
PMCS (CLS shown)

Table 1. Preventive Maintenance Checks and Services for Containerized Latrine (CL) & Containerized Latrine System (CLS) – Continued.

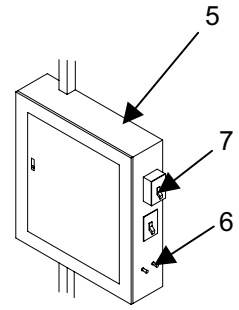
| Item No. | Interval | Item To Be Checked Or Serviced | Procedure | Equipment Not Ready/ Available If: |
|----------|----------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Before/During/ After | Electrical | Inspect cables (1) for visible damage. Check for frayed insulation, loose connections, or cables lying in water. Ensure that grounding rod (2) is connected to the power entry panel (3) and it is firmly inserted into the ground. Check power entry panel (3) and receptacles (4) for physical damage. Check circuit breaker panel (5) and switches (6) for physical damage. Check water supply pump switch (7) for physical damage. Check electrical internal/external outlets for physical damage. Check fluorescent light fixtures (8) for broken or missing safety covers (9) , burnt or darkened fluorescent tubes (10) , missing retaining clips (11) , loose or missing conduit and frayed or exposed wires. | Frayed or otherwise damaged power supply cable. Improper connections on power service panel. Power entry panel or circuit breaker panel damaged. Switches damaged or inoperative. Interior fluorescent light fixtures have broken or missing safety covers, burnt or darkened fluorescent tubes, loose or missing conduit and frayed or exposed wires. Container not properly grounded. |
| | Monthly | GFCI Outlets | Press TEST button on GFCI outlets, and reset if outlet test button “pops”. | Outlet test button does not “pop”. |



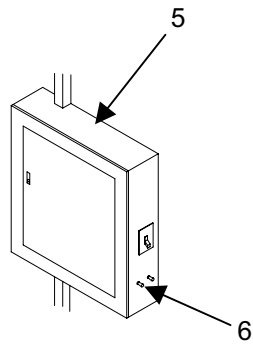
CLS



CL



CLS



CL

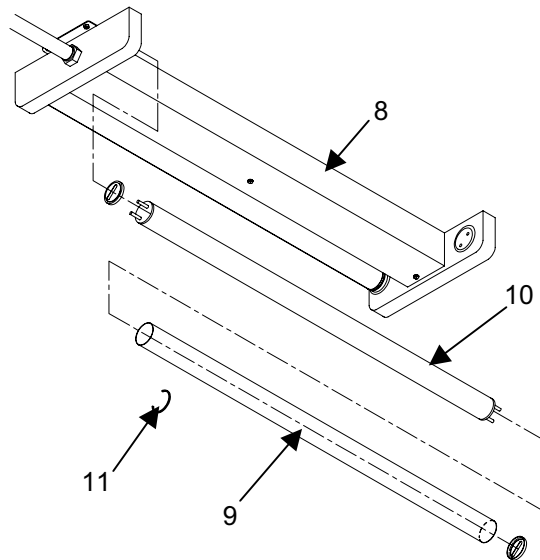

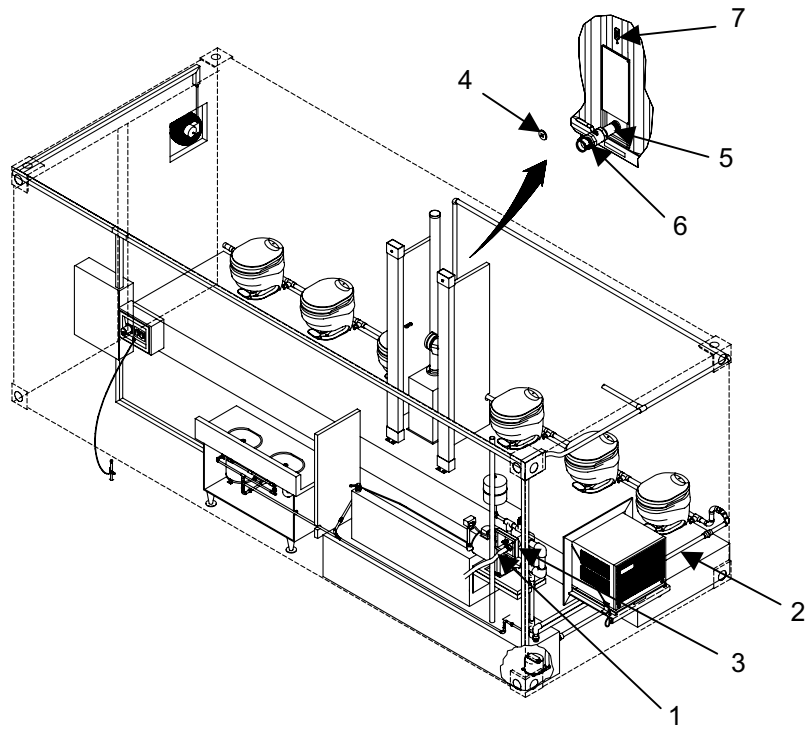
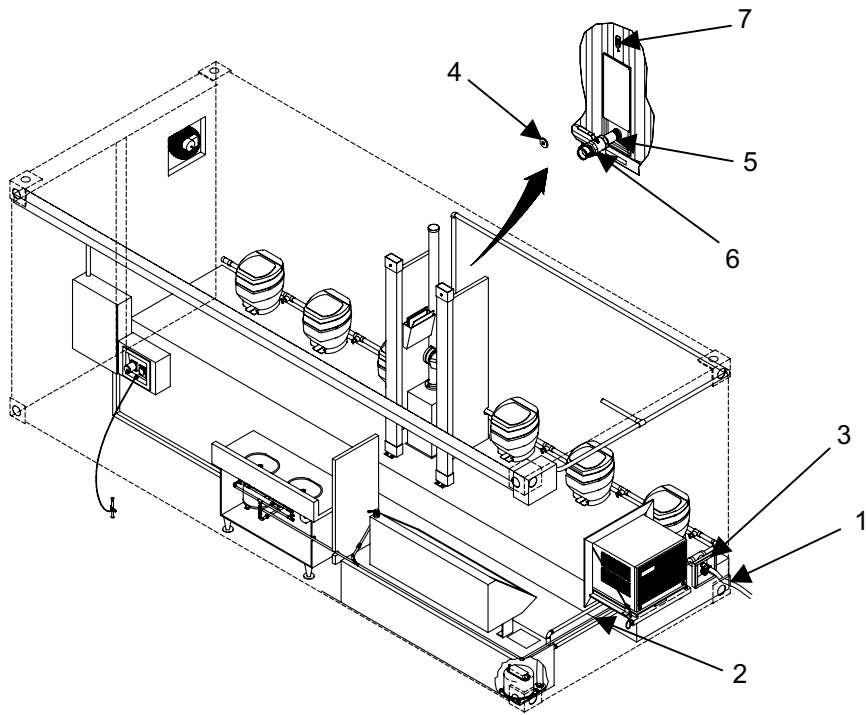


Table 1. Preventive Maintenance Checks and Services for Containerized Latrine (CL) & Containerized Latrine System (CLS) – Continued.

| Item No. | Interval | Item To Be Checked Or Serviced | Procedure | Equipment Not Ready/ Available If: |
|----------|------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | Before/After | Plumbing |  <p style="text-align: center;">WARNING</p> <p>Operators must wear heavy-duty plastic or rubber aprons, rubber gloves, safety goggles and/or face shield when cleaning wastewater contaminated surfaces. Material may contain bacteria or viruses that present a danger to life or health.</p> <p>Inspect all interior and exterior hoses (1) and piping (2) for visible damage. Check for loose fittings. Check for presence and serviceability of gaskets. Check water service panel (3) for damage. Check to ensure blackwater outlet plug (4), nipple (5), and ball valve (6) are present and not damaged. Inspect the 4-inch valve assembly (6) for physical damage, such cracks or corrosion. Ensure the handle is in place, and that the valve operates easily. Ensure the QD locking arms are free of physical damage. Ensure the QD gasket is in place and is serviceable. Ensure there is no leakage. Check sump pump switch (7) for damage.</p> | <p>Hose or piping damaged. Water service panel leaking or damaged. Outlet plug (stored under sink), nipple, and/or ball valve leaking, missing or damaged. Handle inoperative. QD locking arms damaged, missing, or inoperative. QD gasket missing or damaged. Sump pump switch is damaged.</p> |
| | During | | <p>Inspect all interior and exterior hoses (1) and piping (2) for visible damage and leaks. Check for loose fittings. Check for presence and serviceability of gaskets. Check all hoses for proper connections to the water service panel (3). Check to ensure nipple (5), and ball valve (6) are present and not leaking or damaged. Check to ensure blackwater outlet plug (4) is stored under sink. Check sump pump switch (7) for damage.</p> | <p>Hose or piping damaged. Water service panel leaking or damaged. Outlet plug (stored under sink), nipple, and/or ball valve leaking, missing or damaged. Sump pump switch is damaged.</p> |
| | During (every 4 hours) | | <p>Move solid waste with a paddle.</p> | |



CLS



CL

Table 1. Preventive Maintenance Checks and Services for Containerized Latrine (CL) & Containerized Latrine System (CLS) – Continued.

| Item No. | Interval | Item To Be Checked Or Serviced | Procedure | Equipment Not Ready/ Available If: |
|----------|------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 4 | During | 30 GPM Water Pump Assembly (CLS only) | Check all visible pipe connections on pump assembly for leaks. Inspect water pump priming plug (1) for leaks. | Visible water leaks from any component. |
| | During (every 4 hours) | | Monitor pump operation. Check water pressure gauge (2) to ensure that pump cycles on at 20 psi and off at 32 psi. Check for leaks on all pump assembly components. | Pump not operating between 20 psi and 32 psi for pressure. Class III water leaks. |

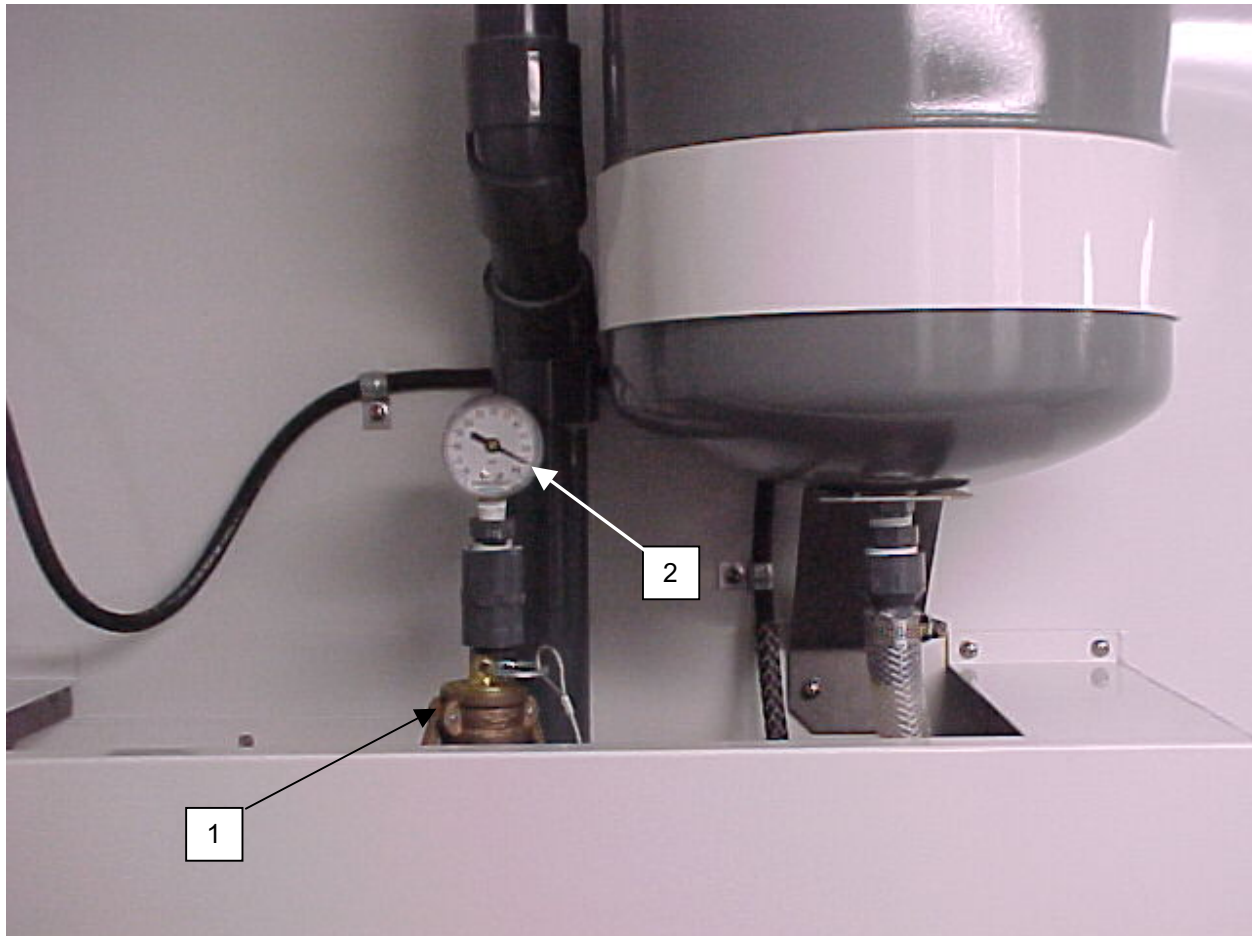
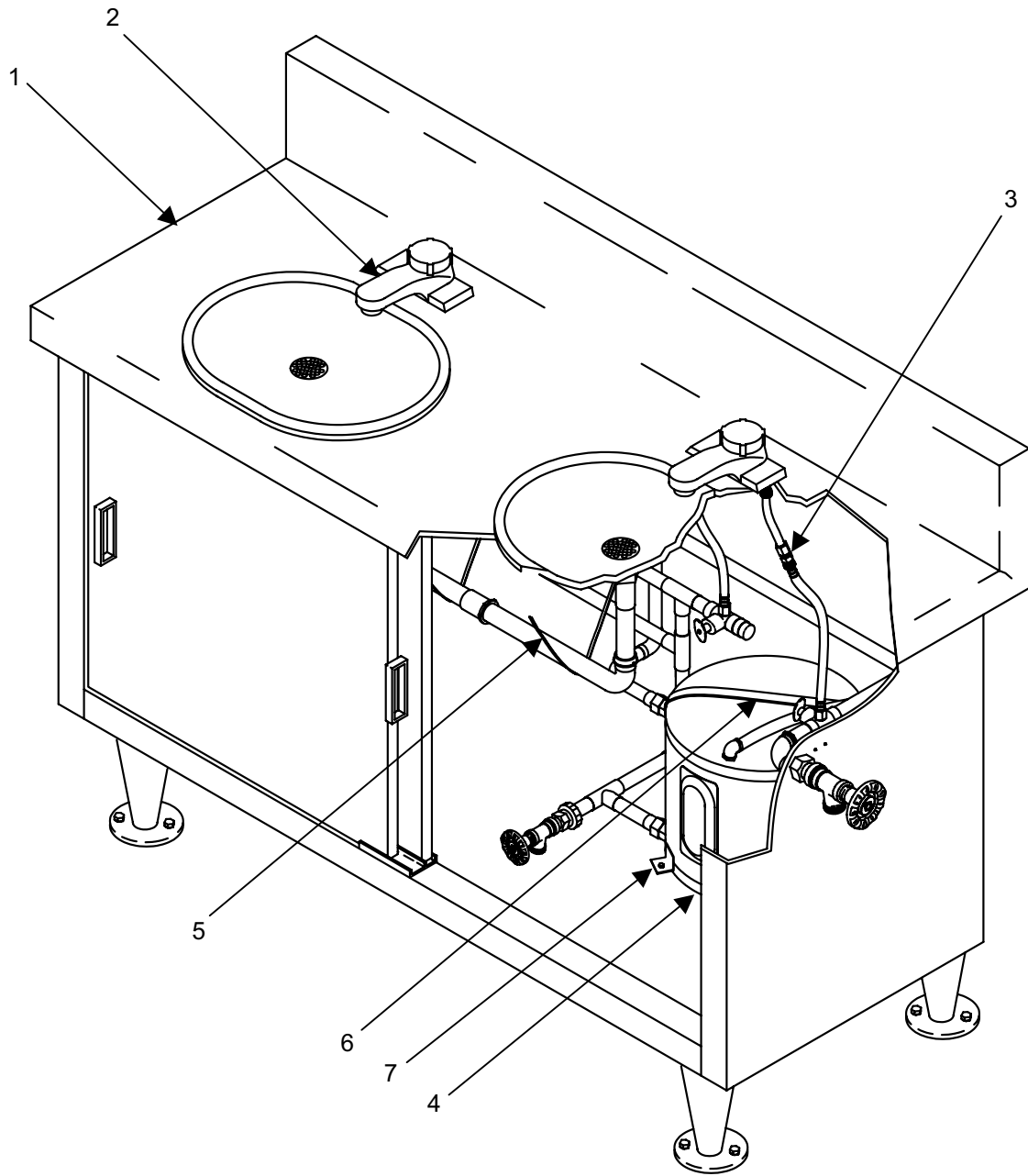


Table 1. Preventive Maintenance Checks and Services for Containerized Latrine (CL) & Containerized Latrine System (CLS) – Continued.

| Item No. | Interval | Item To Be Checked Or Serviced | Procedure | Equipment Not Ready/ Available If: |
|----------|--------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Before/After | Sink stand | <p style="text-align: center;">CAUTION</p> <p>Water heater must not be turned on until it has been filled with water. Ensure there is no air in the line. Failure to do so will result in failure of water heater heating unit and damage to equipment.</p> <p>Visually inspect sink stand (1) for damage. Check for loose fittings. Check for operation of faucets (2). Check piping and supply hoses (3) for leaks and damage. Check drain for clogging. Check water heater (4) for damage and check for proper operation by turning on hot water. Check for loose or missing strapping (5). Check water heater straps (6) for tension and material condition. Check water heater mounting brackets (7) for loose fit.</p> | <p>Sink damaged. Fittings are loose. Faucets not working. Plumbing leaking or clogged. Water heater damaged or inoperative. Strapping loose or missing. Water heater straps loose (operator can slide a finger under strap without difficulty), damaged, or missing.</p> <p style="text-align: center;">NOTE</p> <p>If the water heater has been replaced, the brackets will not be screwed into the replacement heater.</p> <p>Water heater mounting brackets loose or missing.</p> |
| | During | | <p>Check for operation of faucets (2). Check piping and supply hoses (3) for leaks and damage. Check drain for clogging. Check water heater (4) for damage and check for proper operation by turning on hot water.</p> | <p>Plumbing leaking or clogged. Water heater damaged or inoperative.</p> |



LUBRICATION INTERVALS

Refer to TM 55-8115-204-23&P for General Cargo Container lubrication instruction.

MANDATORY REPLACEMENT PARTS

There are no mandatory replacement parts required for the Operator PMCS procedures.

OPERATOR MAINTENANCE
CONTAINERIZED LATRINE (CL)
(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM (CLS)
(NSN 4510-01-477-7764)

CL/CLS MODIFIED CARGO CONTAINER
SERVICE, REPLACE

INITIAL SETUP

Tools

Personnel Required

One (1)

Materials/Parts

Bleach (Item 4, WP 0118 00)
Face Shield (Item 19, WP 0118 00)
General Purpose Detergent Spray Bottle (Item 18, WP 0118 00)
Heavy-duty Rubber Apron (Item 2, WP 0118 00)
Rubber Gloves (Item 25, WP 0118 00)
Safety Goggles (Item 39, WP 0118 00)

Equipment Condition

CL/CLS set up and operating.

SERVICE

Clean Interior



WARNING

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.



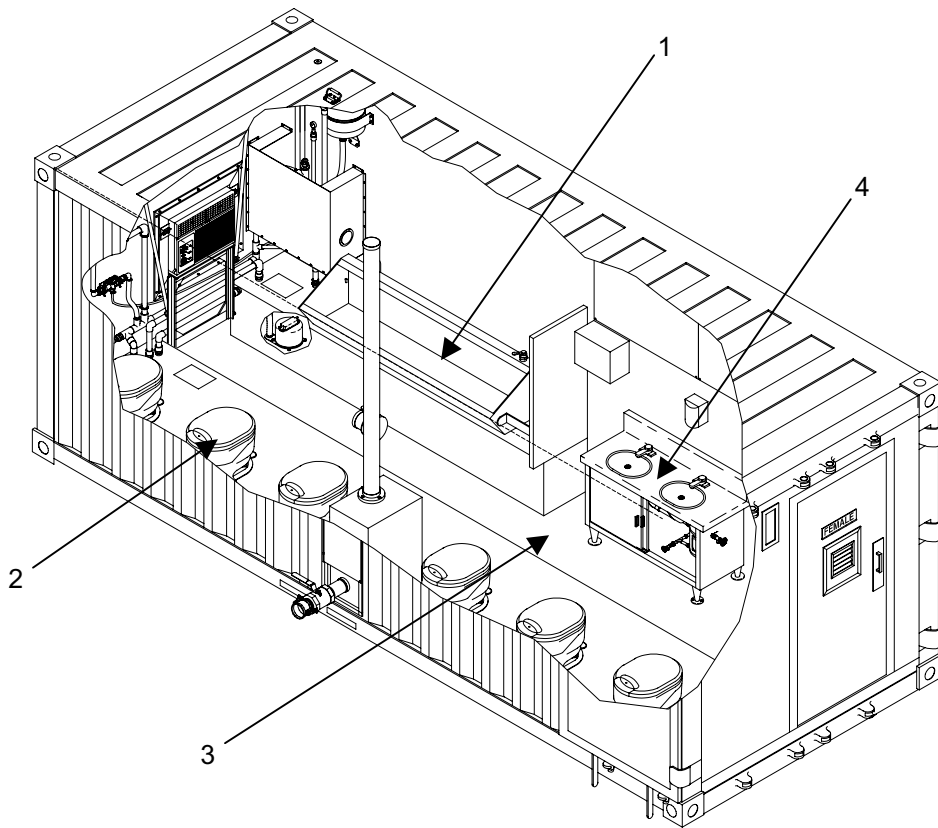
WARNING

Never mix chemicals or detergent and sanitizing solutions. This may produce highly toxic or poisonous gas that can cause serious illness or death to personnel.

NOTE

Proper cleaning of the latrine components is an integral part of maintenance. It can help prevent possible problems in the future, clean all latrine components on a daily basis. Clean the toilets, urinal, floor mat, aisle floor, and sink stand with hot water and general-purpose detergent.

1. First, clean the latrine starting from the top to bottom. Use general-purpose detergent using a clean multipurpose or disposable cloth. Clean the floor, the waste contact surfaces of urinal trough (1) and commodes (2) last.
2. Rinse surfaces with clear water. Use of sprayer or hose rinsing (from top to bottom) is recommended.
3. For routine sanitizing, use a 2-gallon container, mix 2-ounces of household bleach in 2-gallons of warm water. Refer to WP 0007 00 (CL) or WP 0010 00 (CLS) for sanitization procedures. Refer to TB MED 577 as necessary for additional information on sanitization. Spray the sink (4), commodes (2), urinal trough (1), walls and floors (3). Surfaces should be thoroughly wetted and allowed to air dry.

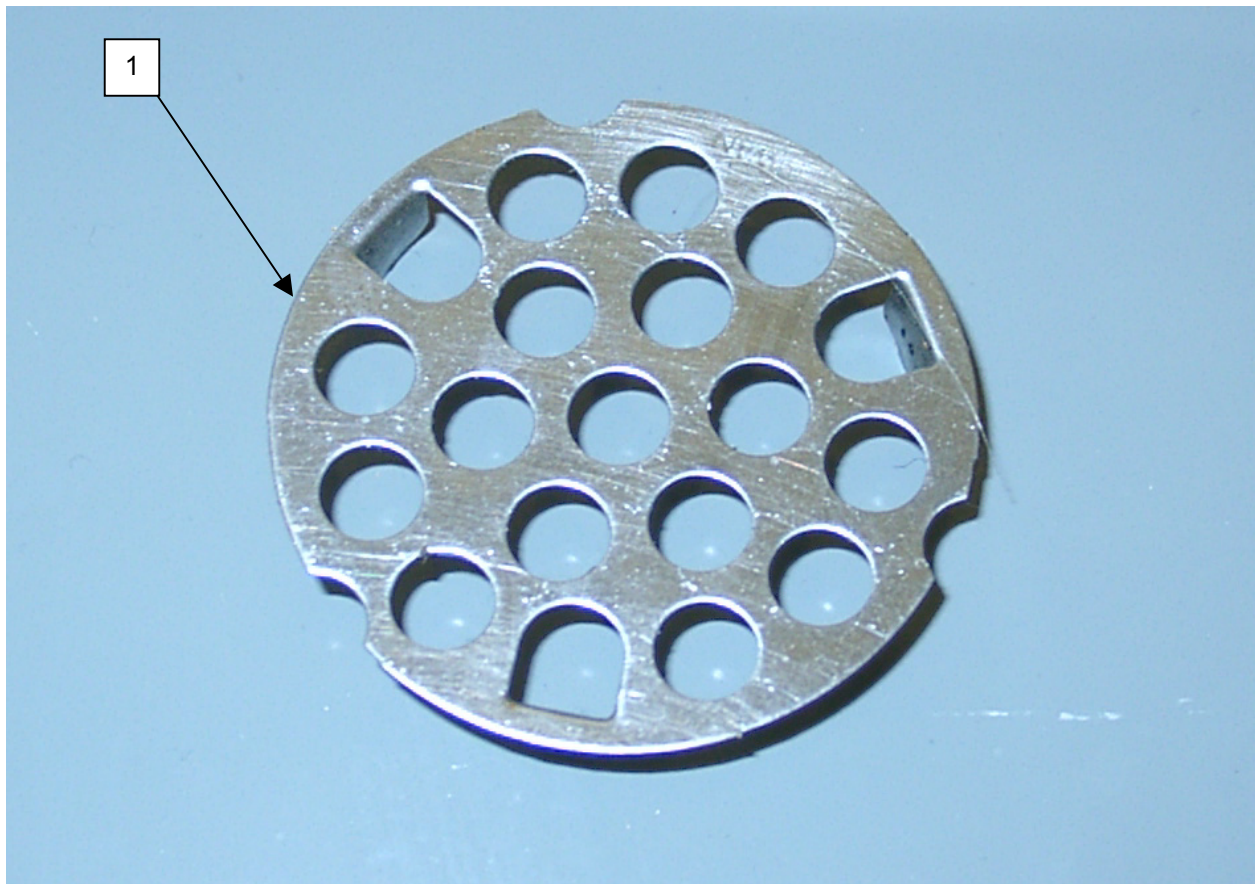


CLS Shown

Replace the Urinal Strainer**WARNING**

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

Remove the damaged strainer (1), if present, and install the replacement strainer.



END OF WORK PACKAGE

OPERATOR MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****INTERIOR WALLS AND PANELS
REPAIR****INITIAL SETUP****Tools****Personnel Required**

One (1)

Materials/Parts

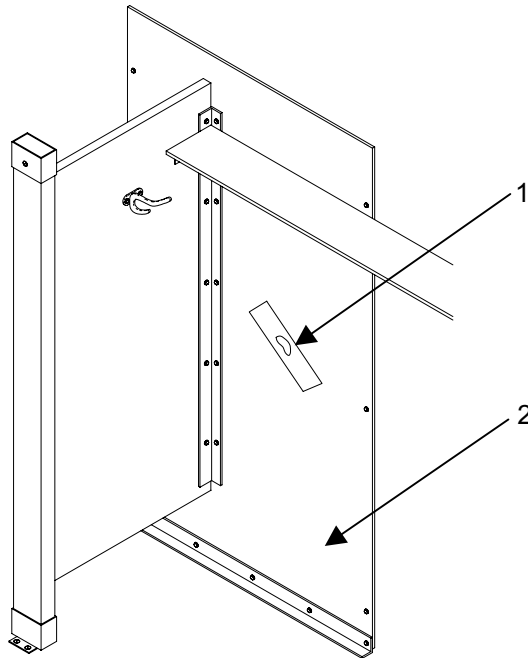
Tape, Pressure Sensitive (Item 46, WP 0118 00)

Equipment Condition

CL/CLS set up and operating.

REPAIR**Repair Interior Wall or Ceiling Panel**

Place tape **(1)** over cracked or torn area to prevent further damage to wall or panel **(2)** and to keep loose panel sections from separating.

**END OF WORK PACKAGE**

OPERATOR MAINTENANCE
CONTAINERIZED LATRINE (CL)

(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM (CLS)

(NSN 4510-01-477-7764)

CURTAINS
REPLACE

INITIAL SETUP

Tools

Personnel Required

One (1)

Materials/Parts

Equipment Condition

CL/CLS set up and operating.

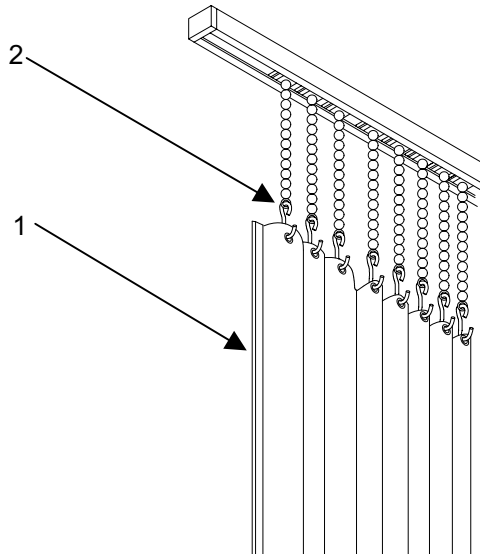
REPLACE

Replace Curtains

NOTE

The use of a step aid may be required.

1. To replace curtain, unclip curtain (1) from hooks (2).
2. Install replacement curtain (1) on hooks (2).

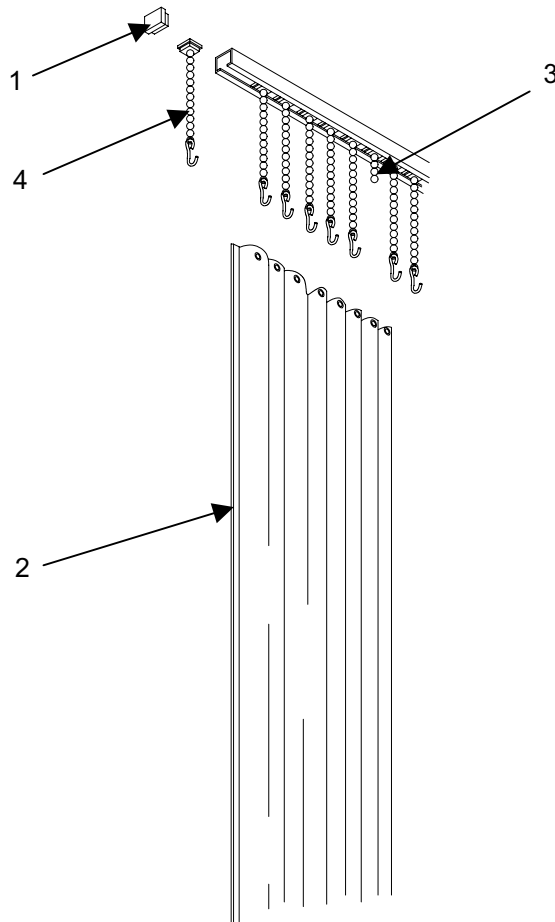


Replace Chains

NOTE

There is no need to remove the broken chain from the channel.

1. Remove clip **(1)** from end of channel nearest personnel door.
2. Remove curtains **(2)** up to chain to be replaced **(3)**.
3. Insert replacement chains **(4)** into channel.
4. Slide chains over to chain to be replaced **(3)**.
5. Install shower curtains **(2)**.
6. Install clip **(1)** on channel.



END OF WORK PACKAGE

OPERATOR MAINTENANCE
CONTAINERIZED LATRINE (CL)
(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM (CLS)
(NSN 4510-01-477-7764)

FLUORESCENT LIGHT BULBS
REPLACE

INITIAL SETUP**Tools****Personnel Required**

One (1)

Materials/Parts

Leather Gloves
 Safety Goggles (Item 39, WP 0118 00)

Equipment Condition

CL/CLS set up and operating.
 Circuit Breaker OFF.

REPLACE**Replace Fluorescent Light Bulbs (Containerized Latrine (CL))****WARNING**

Power must be shut down at the light switch and circuit breaker (#2) before replacing fluorescent lights. Failure to follow this warning could result in serious injury or death to personnel by electrocution. Always secure and tag circuit breakers and switches OFF before attempting any electrical repairs, even minor tasks such as replacing a bulb. Remember that the latrine is a wet environment, and capable of posing a shock hazard even when personnel are not in direct contact with metal parts.

**WARNING**

Fluorescent bulbs can shatter during changing. Gloves and eye protection are required. Serious injury could result to personnel if safety precautions are not observed.

NOTE

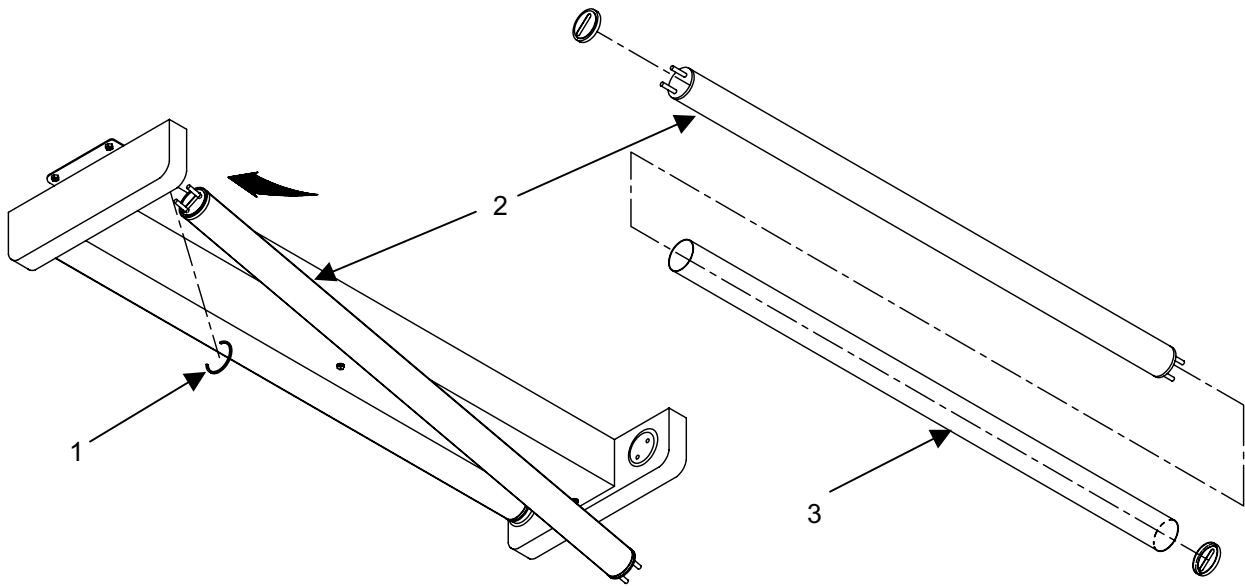
A step aid may be required to change fluorescent bulb.

1. Remove the bulb retaining clips **(1)**, if fitted (two per bulb).
2. Support fluorescent bulb **(2)** firmly and twist to remove.
3. Remove transparent bulb sleeve **(3)** from bulb **(2)** and install onto replacement bulb.

CAUTION

Replace with a new fluorescent bulb of equal size and wattage. Installment of incorrect bulb will result in reduced performance and bulb life.

4. Insert new bulb (2) in sockets and twist to lock.
5. Install the bulb retaining clips (1), if fitted (two per bulb).



Containerized Latrine

Replace Fluorescent Light Bulbs (Containerized Latrine System (CLS))**WARNING**

Power must be shut down at the light switch and circuit breaker (#2A) before replacing fluorescent lights. Failure to follow this warning could result in serious injury or death to personnel by electrocution. Always secure and tag circuit breakers and switches OFF before attempting any electrical repairs, even minor tasks such as replacing a bulb. Remember that the latrine is a wet environment, and capable of posing a shock hazard even when personnel are not in direct contact with metal parts.

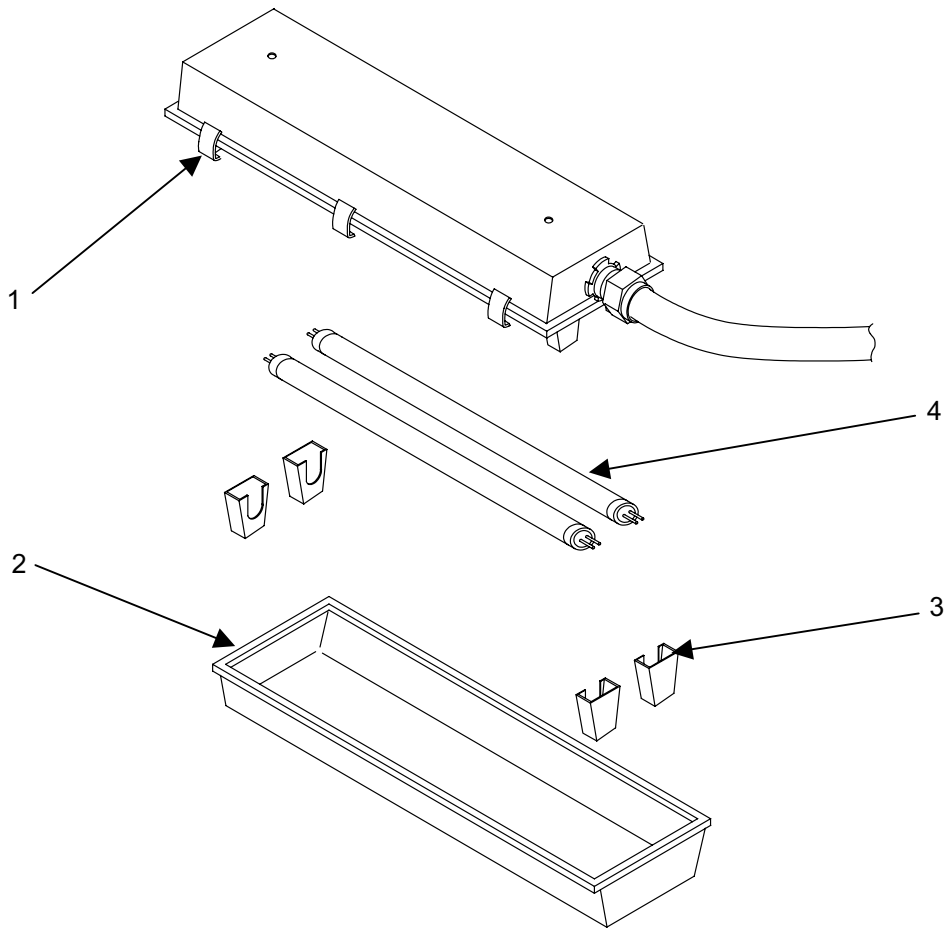
**WARNING**

Fluorescent bulbs can shatter during changing. Gloves and eye protection are required. Serious injury could result to personnel if safety precautions are not observed.

NOTE

A step aid may be required to change fluorescent bulb.

1. Unclip the six retaining clips **(1)** and remove plastic lens cover **(2)**.
2. Remove the bulb retaining clips **(3)**, if fitted (two per bulb).
3. Support fluorescent bulb **(4)** firmly and twist.
4. Remove old bulb and replace with a new fluorescent bulb of equal size and wattage.
5. Insert new bulb **(4)** in sockets and twist to lock.
6. Install the bulb retaining clips **(3)**, if fitted (two per bulb).
7. Install the plastic lens cover **(2)**, and secure with the six retaining clips **(1)**.



END OF WORK PACKAGE

OPERATOR MAINTENANCE
CONTAINERIZED LATRINE (CL)
(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM (CLS)
(NSN 4510-01-477-7764)

GROUNDING ROD ASSEMBLY
INSPECT, REPLACE

INITIAL SETUP**Tools****Personnel Required**

One (1)

Materials/Parts

Leather Gloves

Safety Goggles (Item 39, WP 0118 00)

Equipment Condition

CL/CLS set up and operating.

INSPECT**Inspect the Grounding Rod Assembly**

WARNING

Power must be shut down and the power cable disconnected from the Containerized Latrine/Containerized Latrine System before servicing the grounding rod. Failure to follow this warning could result in serious injury or death to personnel by electrocution.

1. Disconnect main power supply.
2. Disconnect 60A pigtail cable **(1)** from power entry panel **(2)** and install dust cover.
3. Disconnect the splice connector **(3)** from the ground terminal **(4)**, and remove the connector and ground wire **(5)**.
4. Inspect the splice connector **(3)** and ground terminal **(4)** for material damage and corrosion. Replace an unserviceable splice connector.
5. Inspect the ground wire **(5)** for corrosion or physical damage, such as broken strands. Replace a damaged ground wire.
6. Install the driving rod **(6)** and slide hammer **(7)** onto the ground rod assembly **(8)**. Ensure the anvil **(9)** is on the uppermost end of the driving rod. Use the slide hammer to retrieve the ground rod assembly.
7. Disassemble and clean the ground rod assembly **(8)**.

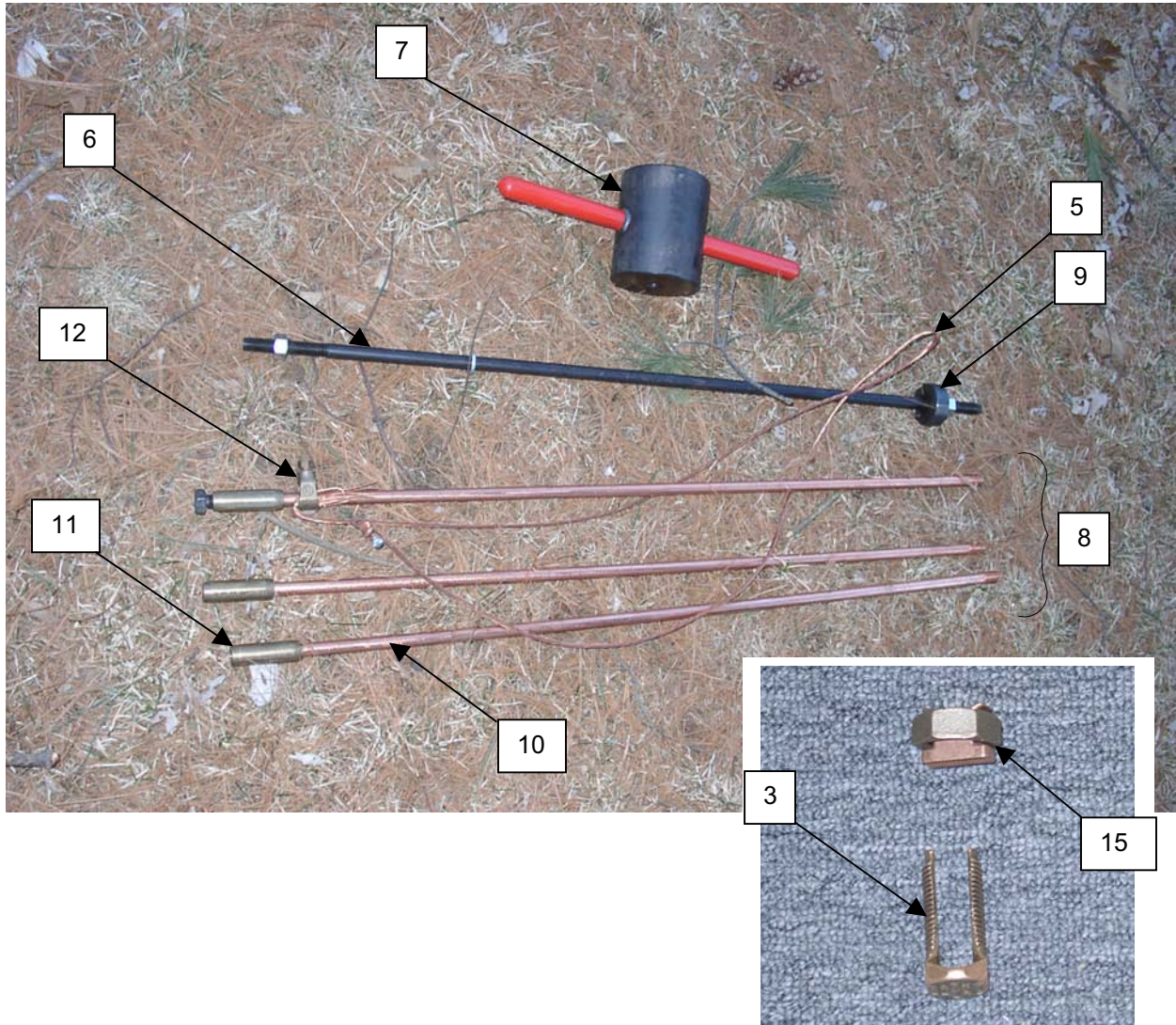
8. Inspect the grounding rod sections **(10)** for material damage and corrosion. Inspect the threads for damage. Replace a grounding rod assembly **(8)** with any unserviceable grounding rod sections.
9. Inspect the couplings **(11)**. Ensure the threads are clean and undamaged. Replace a grounding rod assembly **(8)** with any unserviceable couplings.
10. Assemble the grounding rod **(8)**. The grounding rod sections **(10)** and couplings **(11)** should assemble without the use of any tools.
11. Disassemble the grounding rod **(8)**.
12. Screw coupling **(11)** onto the flat end of rod section **(10)**.
13. Install slide hammer **(7)** onto driving rod **(6)**.
14. Install driving rod **(6)** onto coupling **(11)**. Turn the nut and anvil **(9)** down towards the coupling until both are tight.
15. Drive the section **(10)** into the ground with the slide hammer **(7)** until only six inches of the ground rod section remains above ground. Remove the driving rod **(6)** from the coupling **(11)**.
14. Screw the pointed end of a second ground rod section **(10)** into the first ground rod coupling **(11)**; screw the second ground rod coupling onto the second ground rod section.
15. Install driving rod **(6)** onto coupling **(11)**.
16. Resume hammering until only six inches of the second grounding rod section **(10)** remains above the ground. Remove the driving rod **(6)** from the coupling **(11)**.
17. Screw the pointed end of the third ground rod section **(10)** into the second ground rod coupling **(11)**; screw the third ground rod coupling onto the third ground rod section.
18. Install driving rod **(6)** onto coupling **(11)**.
19. Resume driving the rod into the ground with the slide hammer **(7)** until only one foot of the ground rod assembly remains above ground. Remove the driving rod **(6)** and slide hammer from the coupling **(11)**.

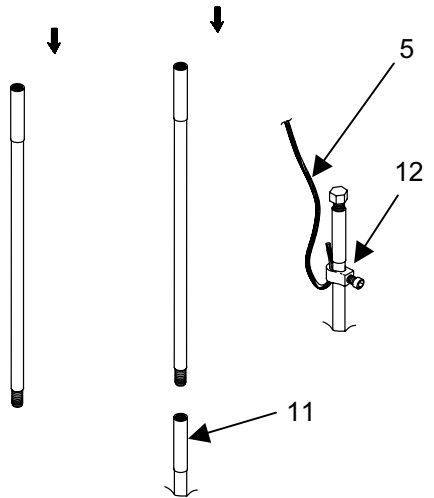
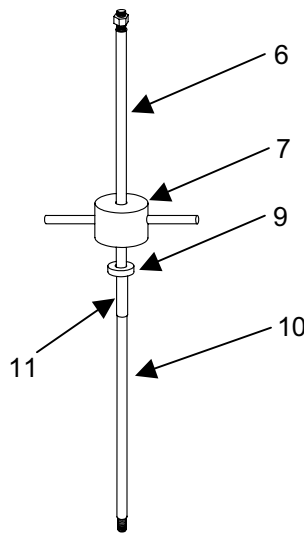
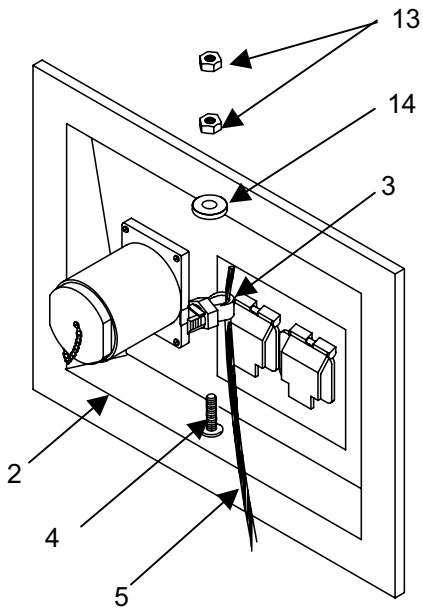
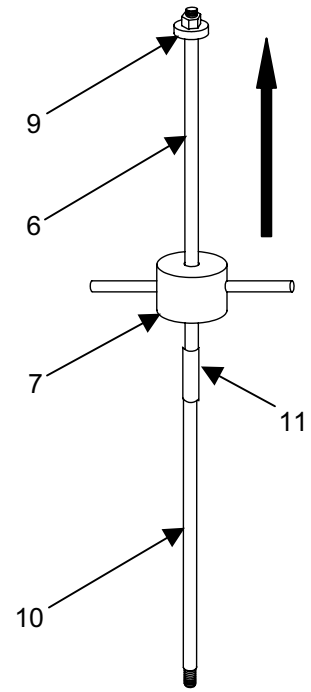
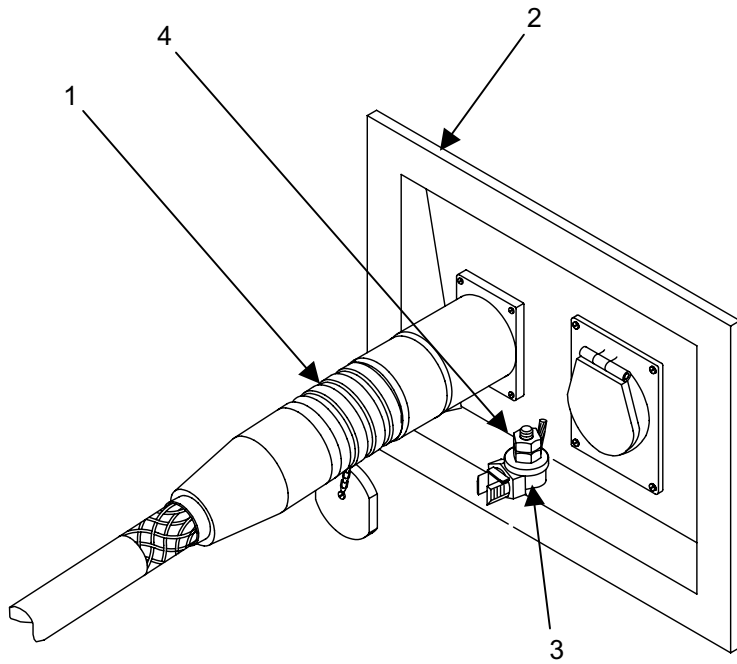
NOTE

An electrical connector is fitted to the free end of the grounding cable. The connector is not used in this installation. Do not remove the connector – the connector is necessary for use in other installations.

20. Attach grounding cable **(5)** to the electrical clamp **(12)**. Tighten the electrical clamp.
21. Remove nut(s) **(13)**, washer(s) **(14)** from stud **(4)** on panel **(2)**.
22. Remove splice connector nut **(15)** from splice connector **(3)**.
23. Place splice connector **(3)** over grounding stud **(4)**.
24. Install washers **(14)** and nut **(13)** onto stud **(4)**. Do not tighten at this time.
25. Slip grounding cable **(5)** through the splice connector **(3)**.

26. Install and tighten splice connector nut (15) until grounding cable (5) is securely fastened to grounding stud (4) using adjustable wrench provided.
27. Tighten washer(s) (14) and nut(s) (13) securely.
28. Reconnect 60A pigtail cable (1) to power entry panel (2).
29. Reconnect main power supply, and operate CL/CLS IAW operating procedures given in WP 0006 00 (CL) or 0009 00 (CLS).





REPLACE**Replace the Grounding Rod Assembly****WARNING**

Power must be shut down and the power cable disconnected from the Containerized Latrine/Containerized Latrine System before servicing the grounding rod. Failure to follow this warning could result in serious injury or death to personnel by electrocution.

NOTE

The grounding rod assembly must be replaced as an assembly; individual components cannot be replaced. The splice connector is not shipped as a component of the grounding rod assembly, and may be ordered and replaced separately.

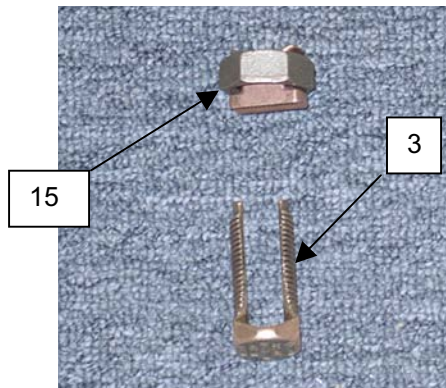
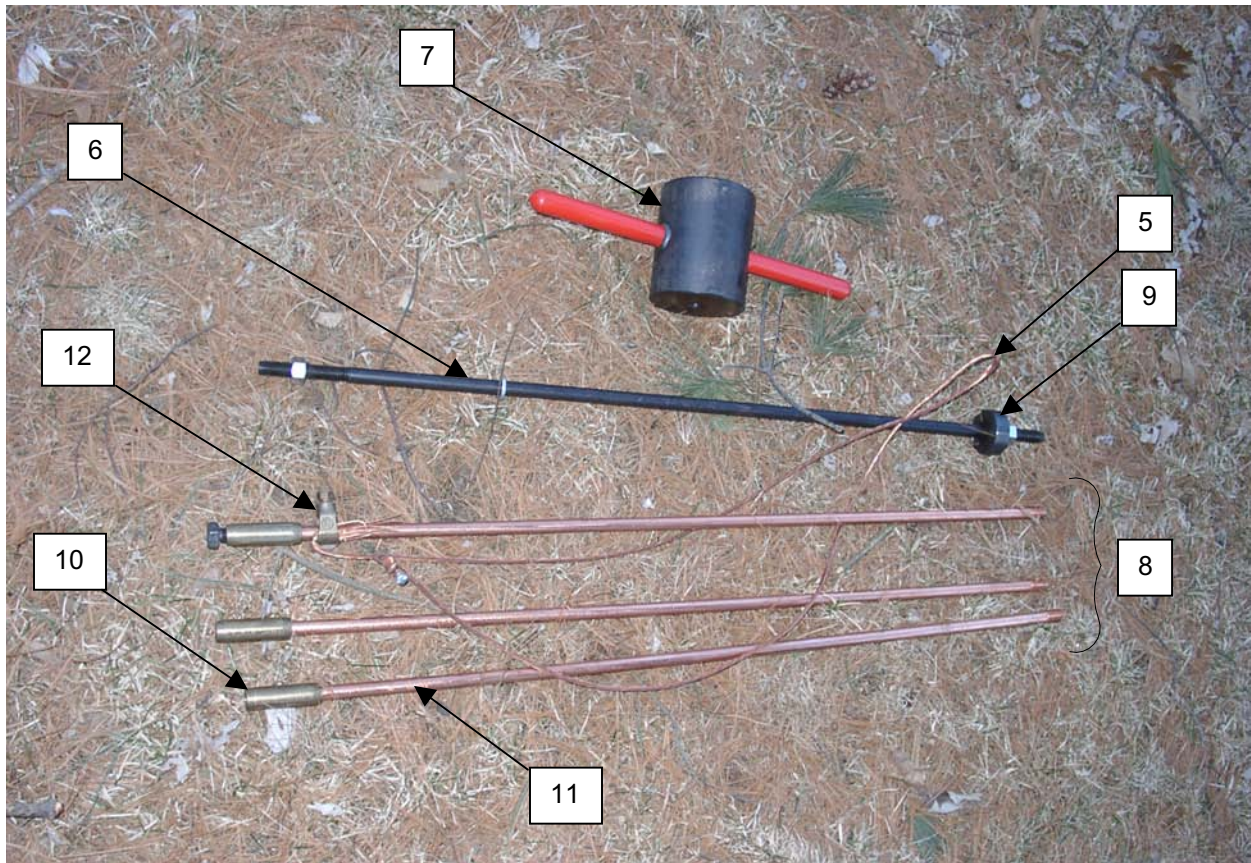
1. Disconnect main power supply.
2. Disconnect 60A pigtail cable **(1)** from power entry panel **(2)** and install dust cover.
3. Disconnect the splice connector **(3)** from the ground terminal **(4)**, and remove the connector and ground wire **(5)**.
4. Install the driving rod **(6)** and slide hammer **(7)** onto the ground rod assembly **(8)**. Ensure the anvil **(9)** is on the uppermost end of the driving rod. Use the slide hammer to retrieve the ground rod assembly.
5. Using replacement components, screw coupling **(10)** onto the flat end of rod section **(11)**.
6. Install slide hammer **(7)** onto driving rod **(6)**.
7. Install driving rod **(6)** onto coupling **(10)**. Turn the nut and anvil **(9)** down towards the coupling until both are tight.
8. Drive the section **(11)** into the ground with the slide hammer **(7)** until only six inches of the ground rod section remains above ground. Remove the driving rod **(6)** from the coupling **(10)**.
9. Screw the pointed end of a second ground rod section **(11)** into the first ground rod coupling **(10)**; screw the second ground rod coupling onto the second ground rod section.
10. Install driving rod **(6)** onto coupling **(10)**.
11. Resume hammering until only six inches of the second grounding rod section **(11)** remains above the ground. Remove the driving rod **(6)** from the coupling **(10)**.
12. Screw the pointed end of the third ground rod section **(11)** into the second ground rod coupling **(10)**; screw the third ground rod coupling onto the third ground rod section.
13. Install driving rod **(6)** onto coupling **(10)**.

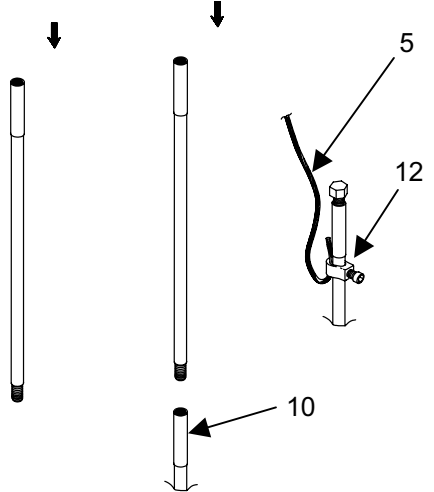
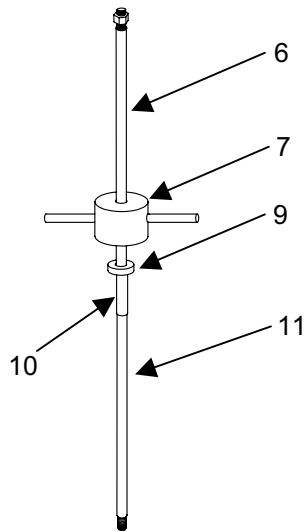
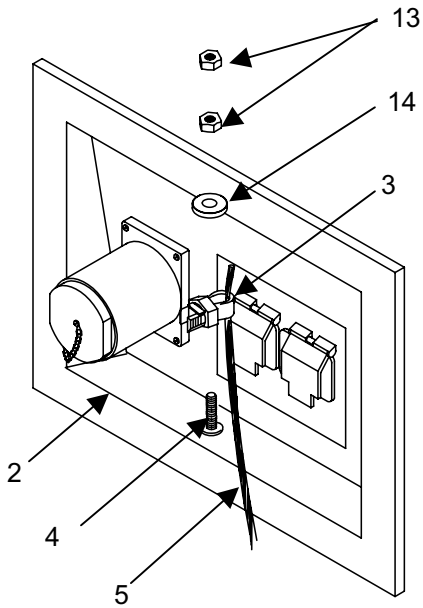
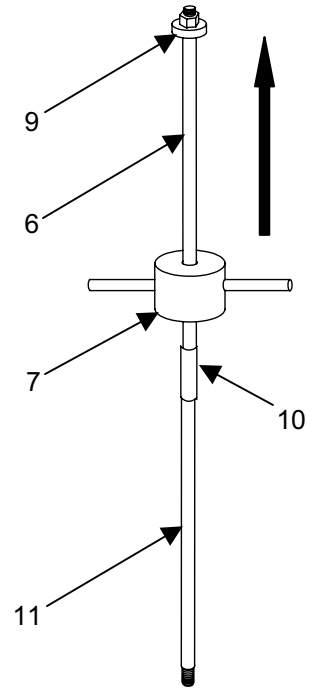
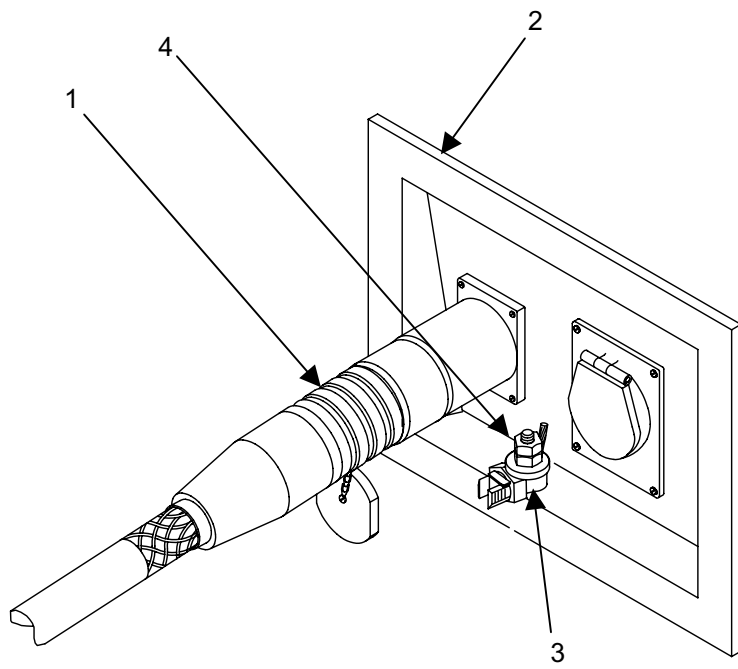
14. Resume driving the rod into the ground with the slide hammer **(7)** until only one foot of the ground rod assembly remains above ground. Remove the driving rod **(6)** and slide hammer from the coupling **(10)**.

NOTE

An electrical connector is fitted to the free end of the grounding cable. The connector is not used in this installation. Do not remove the connector – the connector is necessary for use in other installations.

15. Attach grounding cable **(5)** to the electrical clamp **(12)**. Tighten the electrical clamp.
16. Remove nut(s) **(13)**, washer(s) **(14)** from stud **(4)** on panel **(2)**.
17. Remove splice connector nut **(15)** from splice connector **(3)**.
18. Place splice connector **(3)** over grounding stud **(4)**.
19. Install washers **(14)** and nut **(13)** onto stud **(4)**. Do not tighten at this time.
20. Slip grounding cable **(5)** through the splice connector **(3)**.
21. Install and tighten splice connector nut **(15)** until grounding cable **(5)** is securely fastened to grounding stud **(4)** using adjustable wrench provided.
22. Tighten washer(s) **(14)** and nut(s) **(13)** securely.
23. Reconnect 60A pigtail cable **(1)** to power entry panel **(2)**.
24. Reconnect main power supply, and operate CL/CLS IAW operating procedures given in WP 0006 00 (CL) or 0009 00 (CLS).





END OF WORK PACKAGE

OPERATOR MAINTENANCE
CONTAINERIZED LATRINE (CL)
(NSN 4510-01-453-4012)

WASTEWATER TANK
SERVICE

INITIAL SETUP**Materials/Parts**

Bleach (Item 4, WP 0118 00)
 Face Shield (Item 19, WP 0118 00)
 General Purpose Detergent Spray Bottle (Item 18, WP 0118 00)
 Heavy-duty Rubber Apron (Item 2, WP 0118 00)
 Rubber Gloves (Item 25, WP 0118 00)
 Safety Splash Goggles (Item 39, WP 0118 00)

Tools

Paddle

Personnel Required

One (1)

Equipment Condition

CL set up.

SERVICE**Clean Waste Holding Tank #2**

WARNING

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

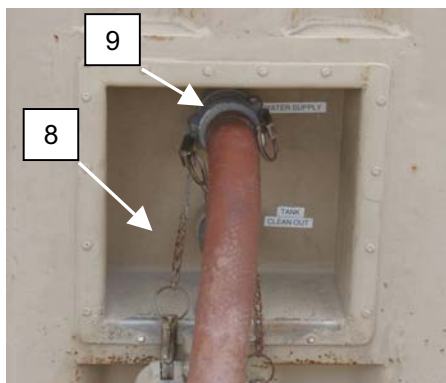
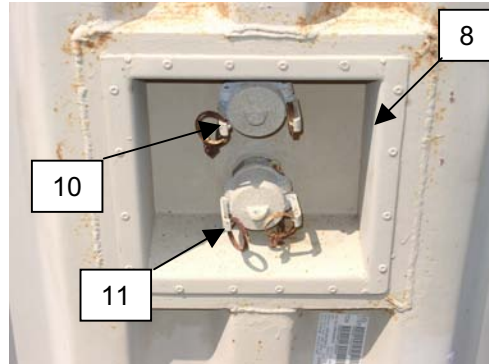


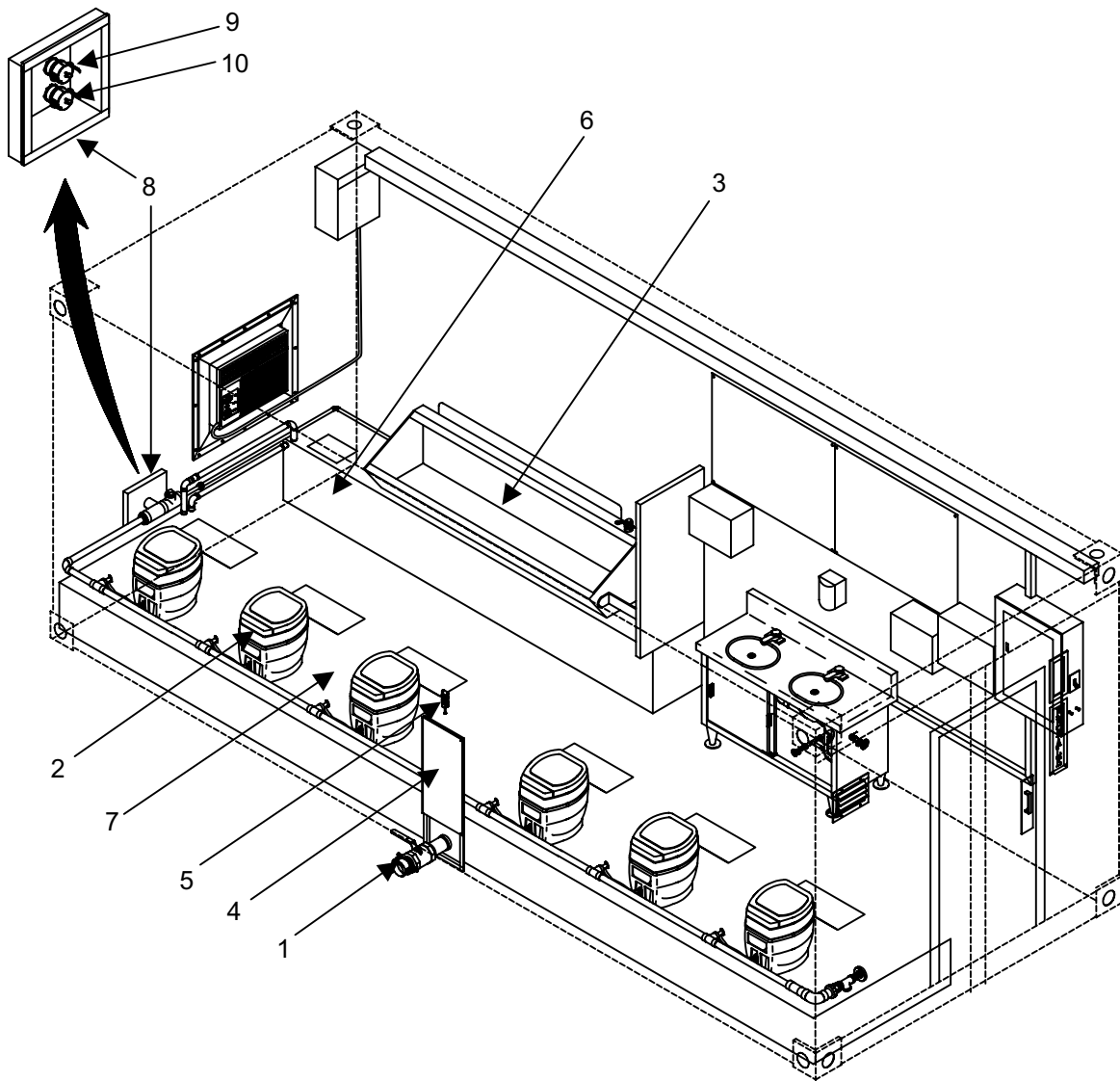
WARNING

Never mix chemicals or detergent and sanitizing solutions. This may produce highly toxic or poisonous gas that can cause serious illness or death to personnel.

1. Ensure 4-inch valve assembly **(1)**, if fitted, is open (if CL is not connected to any blackwater system, have contents pumped out by WWVT/T).
2. Flush all toilets **(2)**, urinal **(3)**, and open all faucets for several minutes to flush the system.
3. Open the access panel **(4)**.
4. Set sump pump switch **(5)** to ON position until contents of tank #1 **(6)** are emptied into tank #2 **(7)**. When tank #1 is empty, the pump will start picking up air, creating a sucking sound from the sump pump, and blackwater movement in tank #2 will slow or stop.
5. Close the fresh water branch line gate valve servicing the CL. Refer to TM 10-5419-206-13 (Force Provider) for additional information.

6. At the service entry panel (8), change 1½-inch input hose (9) connection from top location (10) to bottom connection (11), install dust cap at top location.
7. Open the branch line gate valve to flush holding tank #2 (7).
8. Using a paddle (12), direct all solids towards drain. Continue until all visible solids are removed.
9. Close branch line gate valve and reconnect 1½-inch hose (9) to top input connection (10) on the service entry panel (8). Install dust cap on bottom input connection.
10. When notified by water distribution system personnel, open branch line valve and repeat steps 2 through 4 for potable water.
11. Close 4-inch valve assembly (1) and access panel (4).
12. Clean and disinfect paddle (12) and all other tools and/or personal protective clothing and individual equipment using a general purpose detergent solution, then sanitize using a ten-to-one solution of household bleach in warm water (i.e. 6-ounces in 2-quarts of water) and allow to air dry.





END OF WORK PACKAGE

OPERATOR MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)
(NSN 4510-01-477-7764)

**WASTEWATER TANK
SERVICE**

INITIAL SETUP**Tools**

Paddle

Personnel Required

One (1)

Equipment Condition

CLS set up.

Materials/Parts

Bleach (Item 4, WP 0118 00)

Face Shield (Item 19, WP 0118 00)

General Purpose Detergent Spray Bottle (Item 18, WP 0118 00)

Heavy-duty Rubber Apron (Item 2, WP 0118 00)

Rubber Gloves (Item 25, WP 0118 00)

Safety Splash Goggles (Item 39, WP 0118 00)

SERVICE**Clean Waste Holding Tank #2 During Waste Evacuation**

WARNING

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

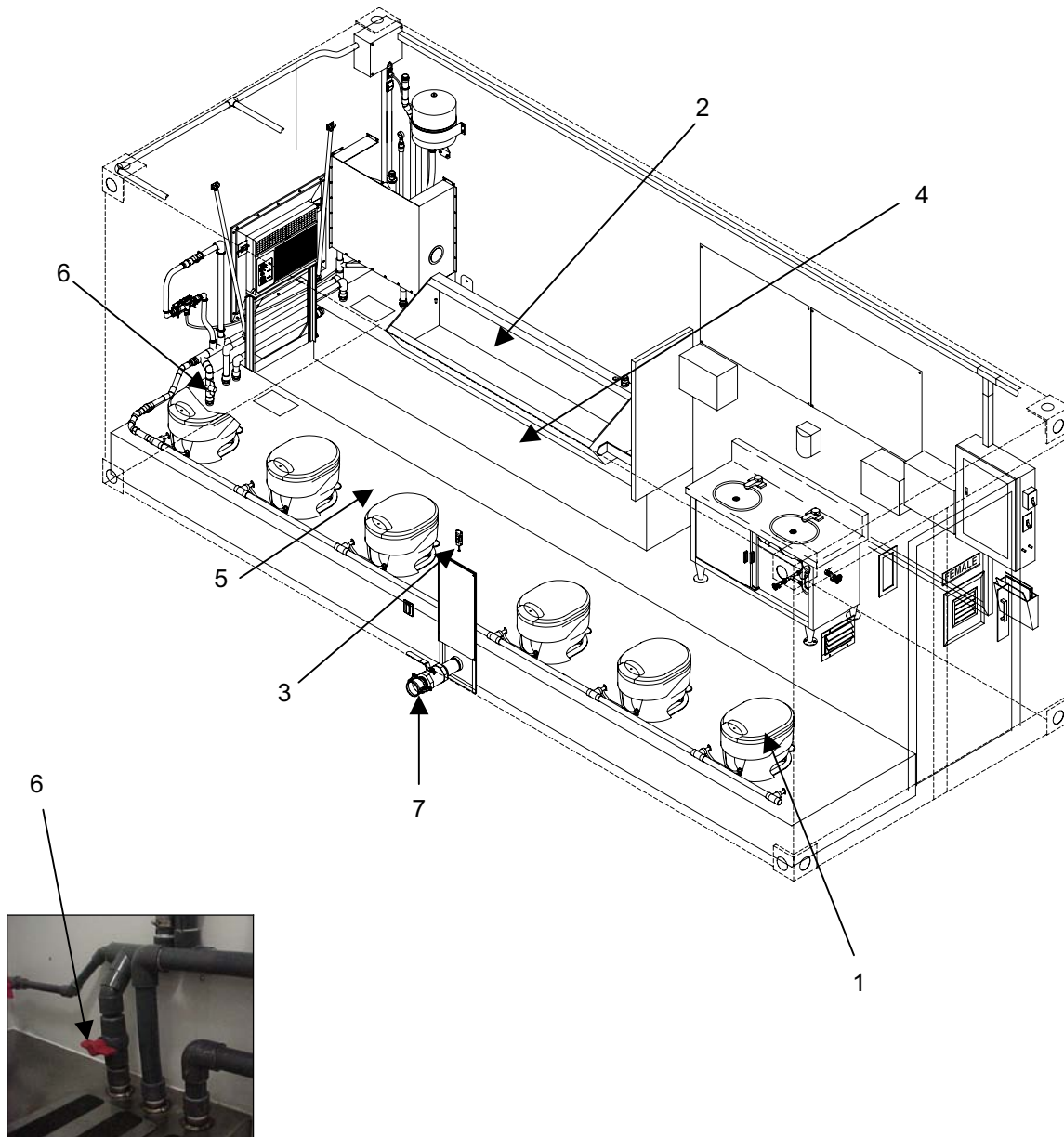


WARNING

Never mix chemicals or detergent and sanitizing solutions. This may produce highly toxic or poisonous gas that can cause serious illness or death to personnel.

1. Flush all toilets **(1)**, urinal **(2)**, and open all faucets for several minutes to flush the system.
2. Set sump pump switch **(3)** to ON position until contents of tank #1 **(4)** are emptied into tank #2 **(5)**. When tank #1 is empty, the pump will start picking up air, creating a sucking sound from the sump pump, and blackwater movement in tank #2 will slow or stop.
3. Open waste tank valve **(6)** to flush solids to center of holding tank #2 **(5)**.
4. Open the access panel **(7)**, and using a paddle, direct all solids towards drain. If 4-inch valve assembly **(8)** and 4-inch hose are used, allow the last of the contents of tank #2 **(5)** to drain. Otherwise, have blackwater pumped out of tank #2 **(5)**.
5. After complete evacuation of the wastewater and solid waste, close waste tank valve **(6)**.
6. Have blackwater pumped out of tank #2 **(5)** and delivered to disposal site.

7. Clean and disinfect paddle, 4-inch valve assembly (8) and any tools or personal protective clothing using a general purpose detergent solution, then sanitize using a ten-to-one solution of household bleach in warm water (i.e. 6-ounces in 2-quarts of water) and allow to air dry.



END OF WORK PACKAGE

OPERATOR MAINTENANCE
CONTAINERIZED LATRINE (CL)
(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM (CLS)
(NSN 4510-01-477-7764)

HOSE ASSEMBLY
INSPECT

INITIAL SETUP

Tools

Personnel Required

One (1)

Materials/Parts

Bleach (Item 4, WP 0118 00)
Face Shield (Item 19, WP 0118 00)
General Purpose Detergent Spray Bottle (Item 18, WP 0118 00)
Heavy-duty Rubber Apron (Item 2, WP 0118 00)
Rubber Gloves (Item 25, WP 0118 00)
Safety Goggles (Item 39, WP 0118 00)

Equipment Condition

CL/CLS set up.
Water supply shut down.
Blackwater discharge connection
shut down.
Blackwater 4-inch valve OFF.

INSPECT

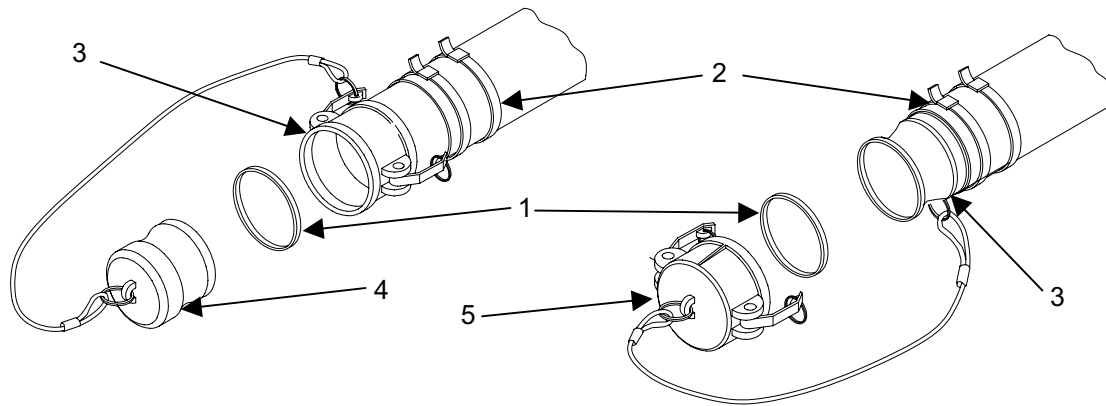
Inspect Hoses



WARNING

When inspecting or servicing the hoses for the CL or CLS, always perform the required maintenance on the freshwater hoses first. Do not handle freshwater hoses or fittings directly after performing maintenance on blackwater hoses or fittings. Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

1. Inspect the hoses for the serviceability of gaskets **(1)**. A Class III leak out from the fitting indicates an unserviceable or missing gasket.
2. Inspect the hoses for loose or missing banding **(2)**, and any signs of physical damage, such as holes, chafing, or rips.
3. Inspect the QDC hose fittings **(3)** for corrosion and material damage, such as cracks and chips.
4. Inspect the dust plugs **(4)** and dust caps **(5)** for damage.
5. Notify Unit Maintenance of any discrepancies.



END OF WORK PACKAGE

OPERATOR MAINTENANCE
CONTAINERIZED LATRINE (CL)

(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM (CLS)

(NSN 4510-01-477-7764)

ENVIRONMENTAL CONTROL UNIT (ECU)
INSPECT, SERVICE, REPLACE

INITIAL SETUP

Tools

Personnel Required

One (1)

Materials/Parts

Detergent (Item 17, WP 0118 00)
Filter Foam (Item 22, WP 0118 00)

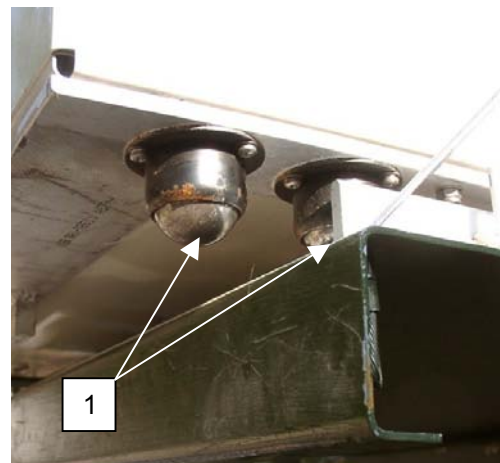
Equipment Condition

CL/CLS set up and operating.

INSPECT

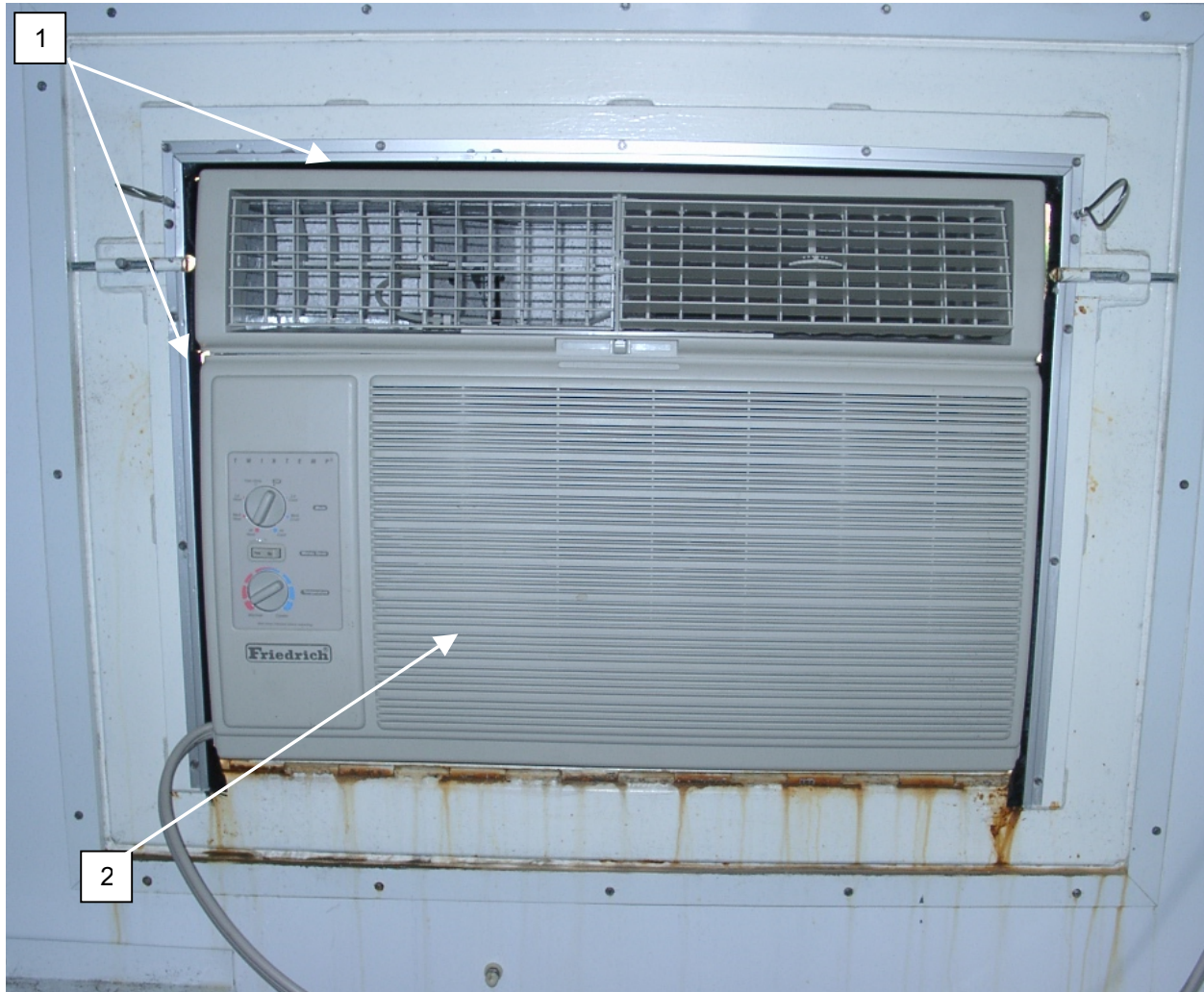
Inspect The Ball Transfer (CLS only)

1. Inspect the balls **(1)** for corrosion or pitting.
2. Disconnect power to the ECU, and move the ECU onto the inside tray, and inspect the balls **(1)** for ease of movement. Refer to WP 0008 00 as necessary.
3. Move the ECU back into operating position, and operate as described in WP 0009 00.



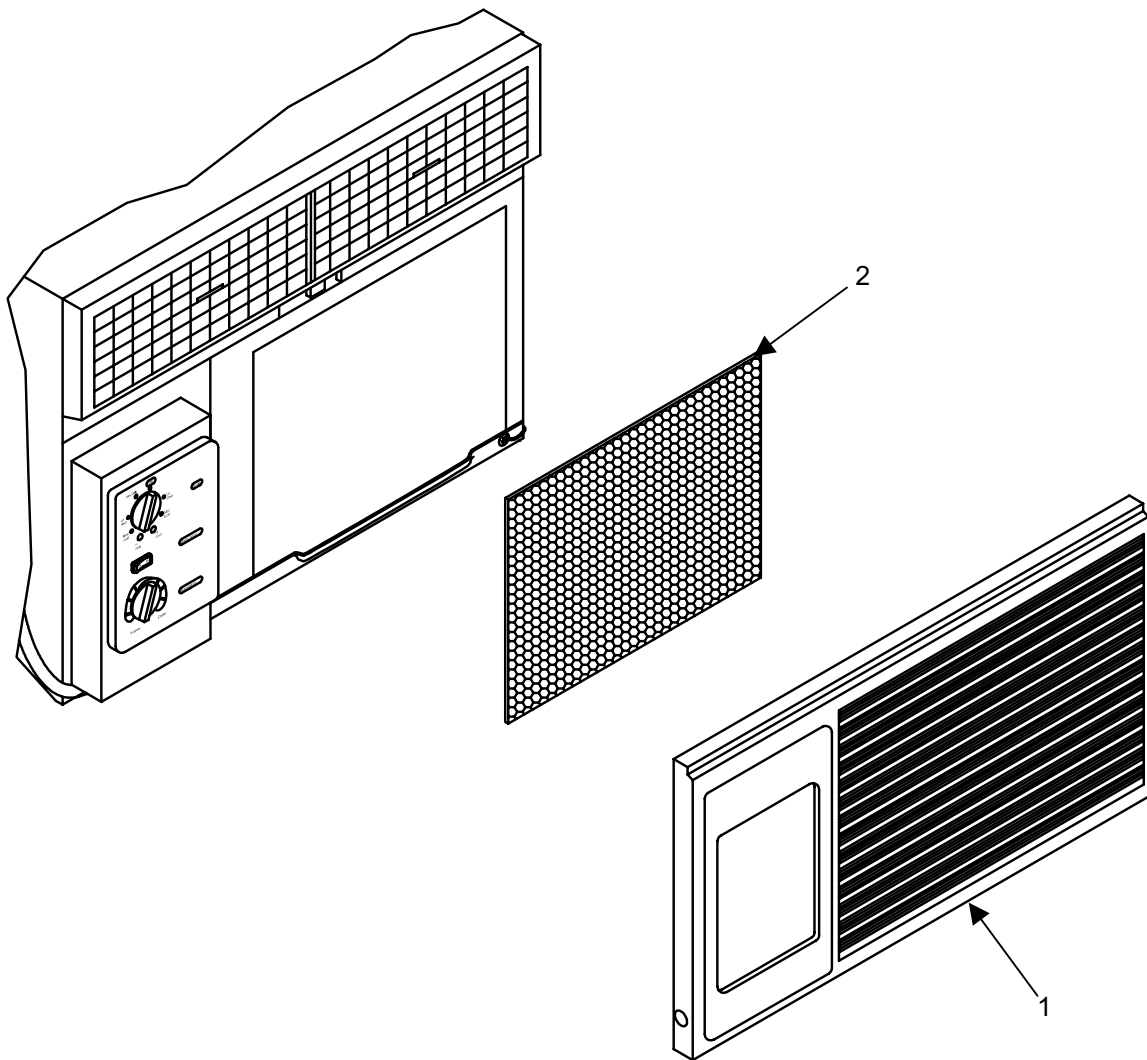
Inspect the Sealeze Brushes

1. Inspect the brushes (1) for gaps, matting, and other physical damage.
2. Use field expedient methods for sealing gaps around the ECU (2) in the event of brush failure. This may be accomplished with clean rags, duct tape, or plastic sheeting.



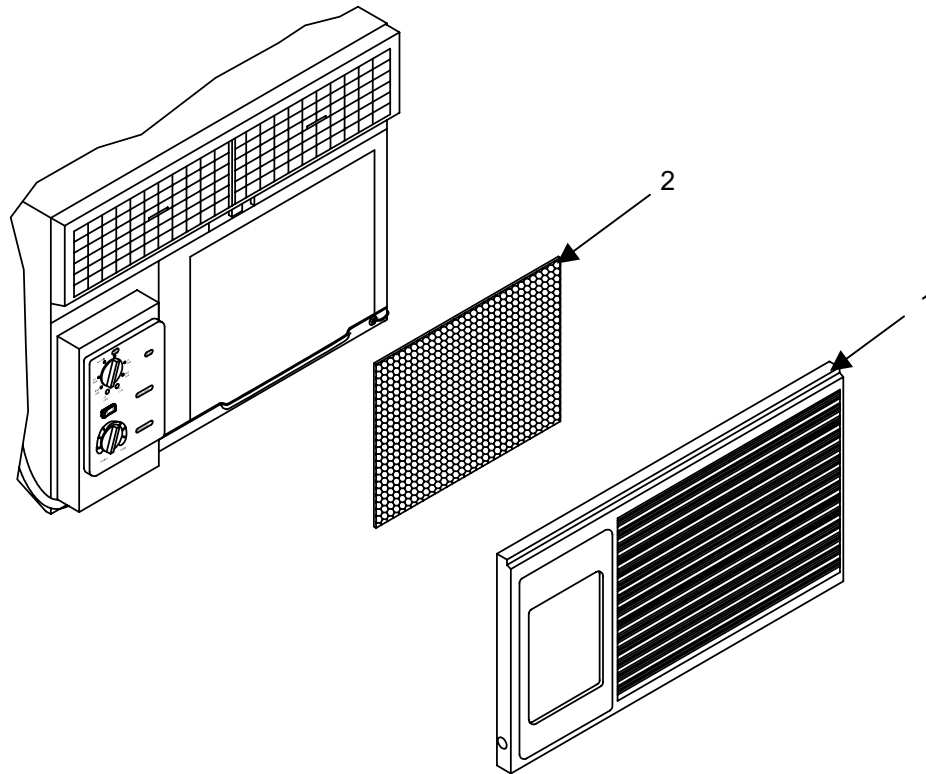
SERVICE**Clean ECU Filter**

1. Remove ECU faceplate (1).
2. Pull out filter (2) and wash with a mild detergent based cleaning solution (no chlorine).
3. Rinse filter (2) with clear, clean water.
4. Pat filter (2) dry and replace.
5. Install ECU faceplate (1).



REPLACE**Replace ECU Filter**

1. Remove ECU faceplate (1).
2. Pull out filter (2) and dispose of according to unit SOP.
3. If replacement filter is not available, cut filter (2) to fit from filter foam.
4. Install new filter (2).
5. Reinstall ECU faceplate (1).

**END OF WORK PACKAGE**

OPERATOR MAINTENANCE
CONTAINERIZED LATRINE (CL)
(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM (CLS)
(NSN 4510-01-477-7764)

COMMUNE ASSEMBLY
SERVICE

INITIAL SETUP

Tools

Sanitary Brush (Item 3, WP 0116 00)

Personnel Required

One (1)

Materials/Parts

Bleach (Item 4, WP 0118 00)

Face Shield (Item 19, WP 0118 00)

General Purpose Detergent Spray Bottle (Item 18, WP 0118 00)

Heavy-duty Rubber Apron (Item 2, WP 0118 00)

Rubber Gloves (Item 25, WP 0118 00)

Equipment Condition

CL/CLS set up and operating.

SERVICE

Clear Blockage In Commode



WARNING

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

1. Step on the flush pedal **(1)**.

CAUTION

Use caution when clearing obstructions from commode. The commode may be damaged if excessive force is applied to clear obstructions.

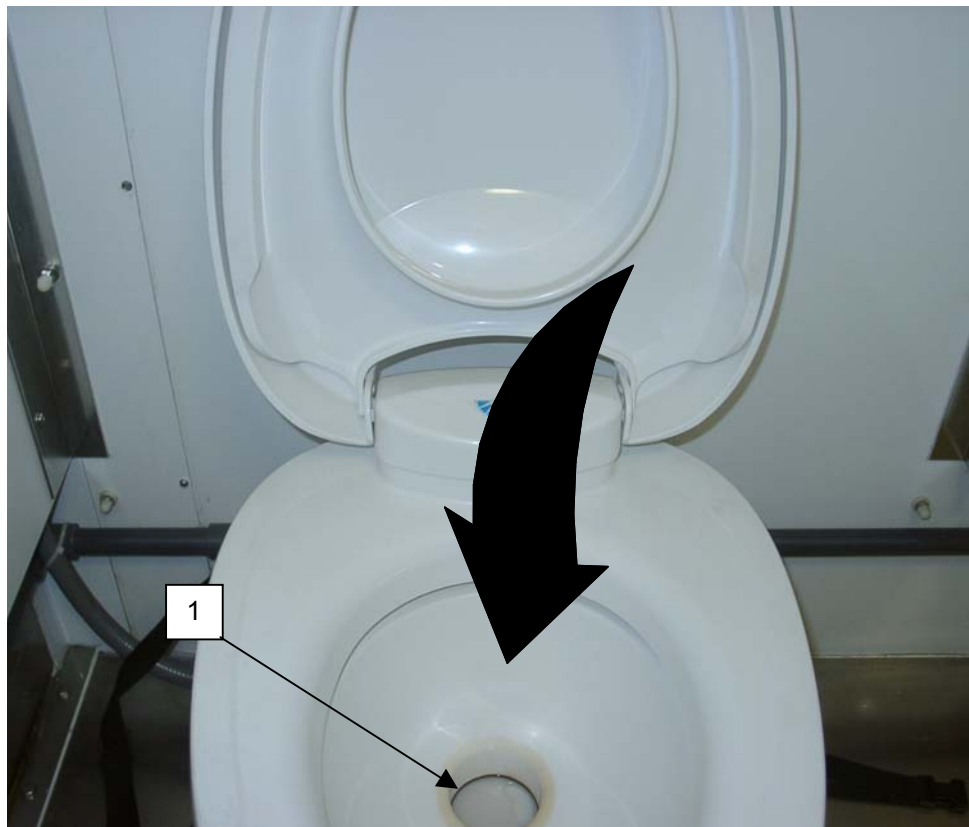
2. Use the sanitary brush to clear obstructions from commode throat **(2)**.
3. Sanitize sanitary brush after use. Refer to WP 0007 00 or WP 0010 00 as necessary for sanitization procedures.



CL



CL and CLS



END OF WORK PACKAGE

OPERATOR MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****CABINET DOORS
REPLACE****INITIAL SETUP****Tools****Personnel Required**

One

Materials/Parts**Equipment Condition**

CL/CLS set up and operating.

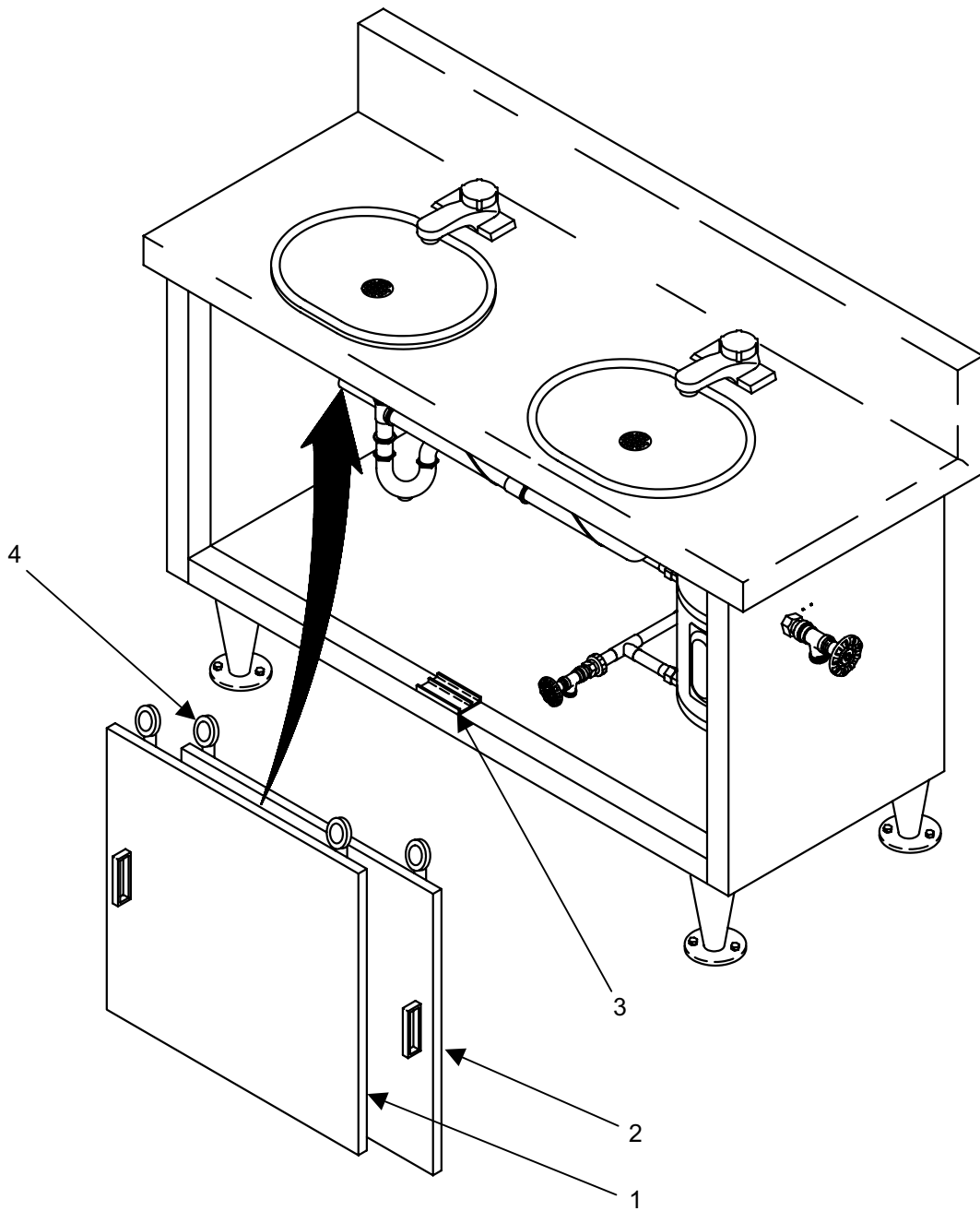
REPLACE**Replace the Sink Stand Doors**

1. Remove the outer door **(1)** by lifting the door up and then out of the overhead track.
2. Remove the inner door **(2)** first by lifting the door up and then out of the overhead tracks.

NOTE

Install the doors with the handles opposite each other. If not, the doors cannot be installed.

3. Install the inner **(2)** door by first placing the bottom edge of the door in the front section of the guide **(3)**.
4. Insert the wheels **(4)** into the track, and then swing the door down straight.
5. Install the outer door **(1)** first by first placing the bottom edge of the door in the rear section of the guide **(3)**.
6. Insert the door wheels **(4)** in to the overhead track then swing the door down straight.



END OF WORK PACKAGE

OPERATOR MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)
(NSN 4510-01-477-7764)

COLD WEATHER EQUIPMENT
INSPECT, REPLACE

INITIAL SETUP**Tools****Personnel Required**

One (1)

Materials/Parts

Reflective Insulation Tape (Item 48, WP 0118 00)

Equipment Condition

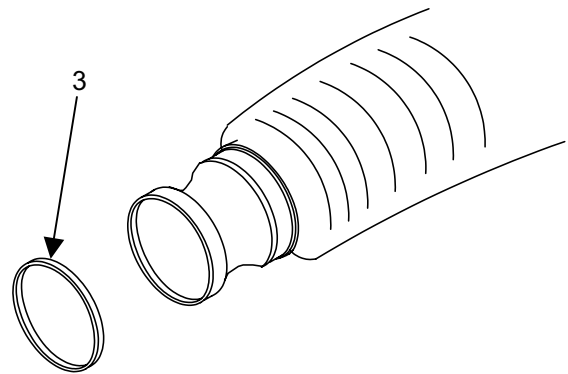
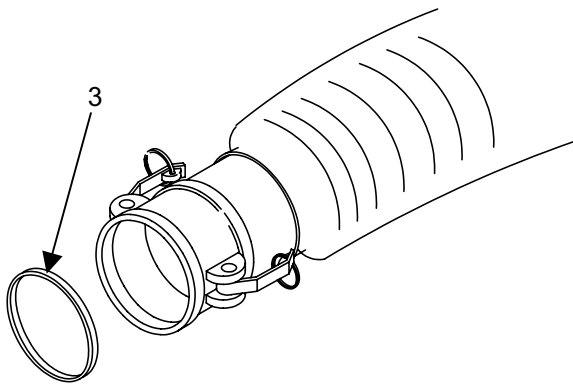
CL set up and operating.

INSPECT**Inspect the Heat Trace Hose Assembly**

WARNING

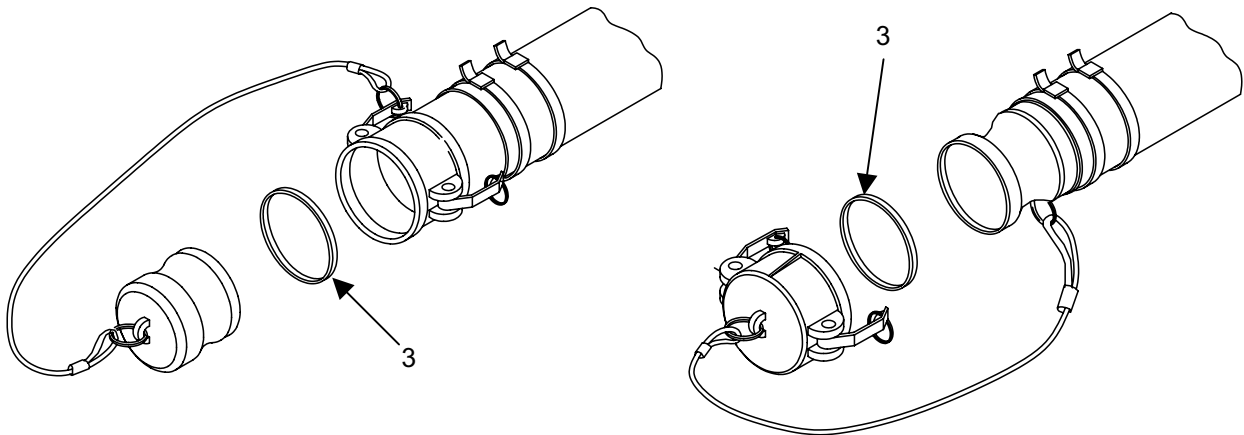
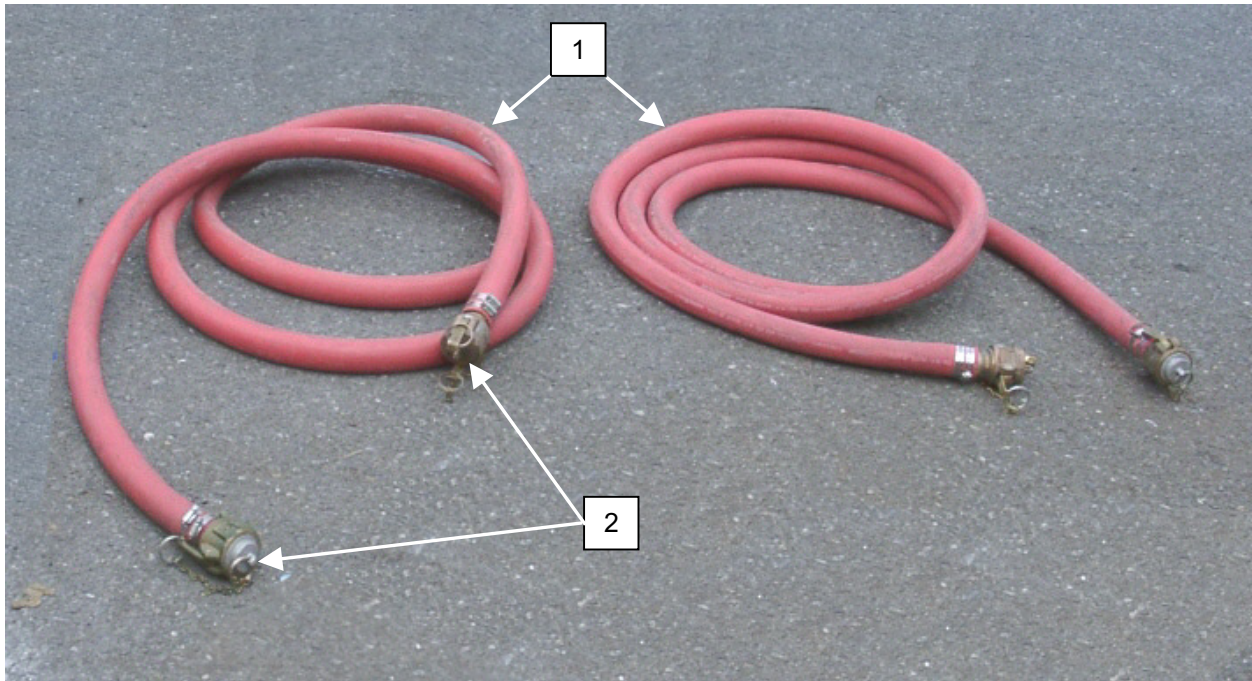
Use caution when performing maintenance on heat traced components. Allow heat-traced components to cool at least 15 minutes before attempting any maintenance. Severe burns to personnel may result if equipment is improperly handled.

1. Ensure heat trace hose is unplugged.
2. Inspect hose assembly **(1)** for cuts, holes, chafing, and exposed wiring.
3. Ensure hose assembly **(1)** is not frozen over.
4. Inspect hose connections **(2)** for deformation and cracks.
5. Ensure hose gaskets **(3)** are serviceable and in place.
6. Inspect the extension cord **(4)** for physical damage, such as bent or missing male prongs (hot, neutral, ground), cut or chafed insulation, loose plug connections, or exposed wiring.
7. Ensure the plug ends **(5)** are serviceable, with no signs of damage or burns, and secure.



Inspect Re-circulating Hoses

1. Inspect hose assembly (1) for cuts, holes, chafing, and exposed braiding.
2. Ensure hose assembly (1) is not frozen over.
3. Inspect hose QD fittings (2) for deformation and cracks.
4. Ensure hose gaskets (3) are serviceable and in place.



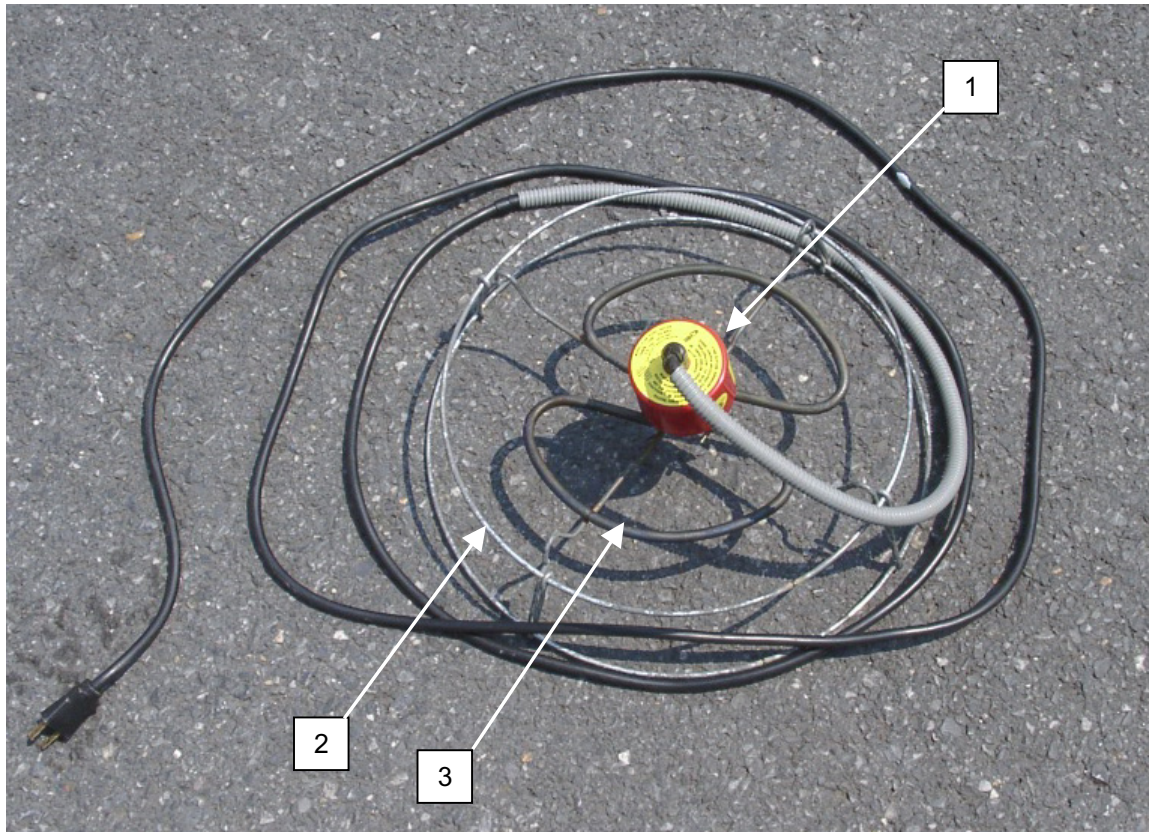
Inspect the Bag Heater Assembly



WARNING

Before removing heater from water tank, ensure the heating element has had at least 15 minutes to cool off from the time it was unplugged. Failure to do so may cause serious injury to personnel.

1. Ensure bag heater assembly is unplugged.
2. Inspect the bag heater assembly **(1)** for physical damage such as cut insulation, exposed wiring, bent/missing prongs (hot, neutral, ground) or broken guard wires **(2)**, or visible signs of electrical malfunction, such as pitting on the element **(3)**.
3. Replace an unserviceable bag heater assembly **(1)**.



Inspect the Heat Trace Cable



WARNING

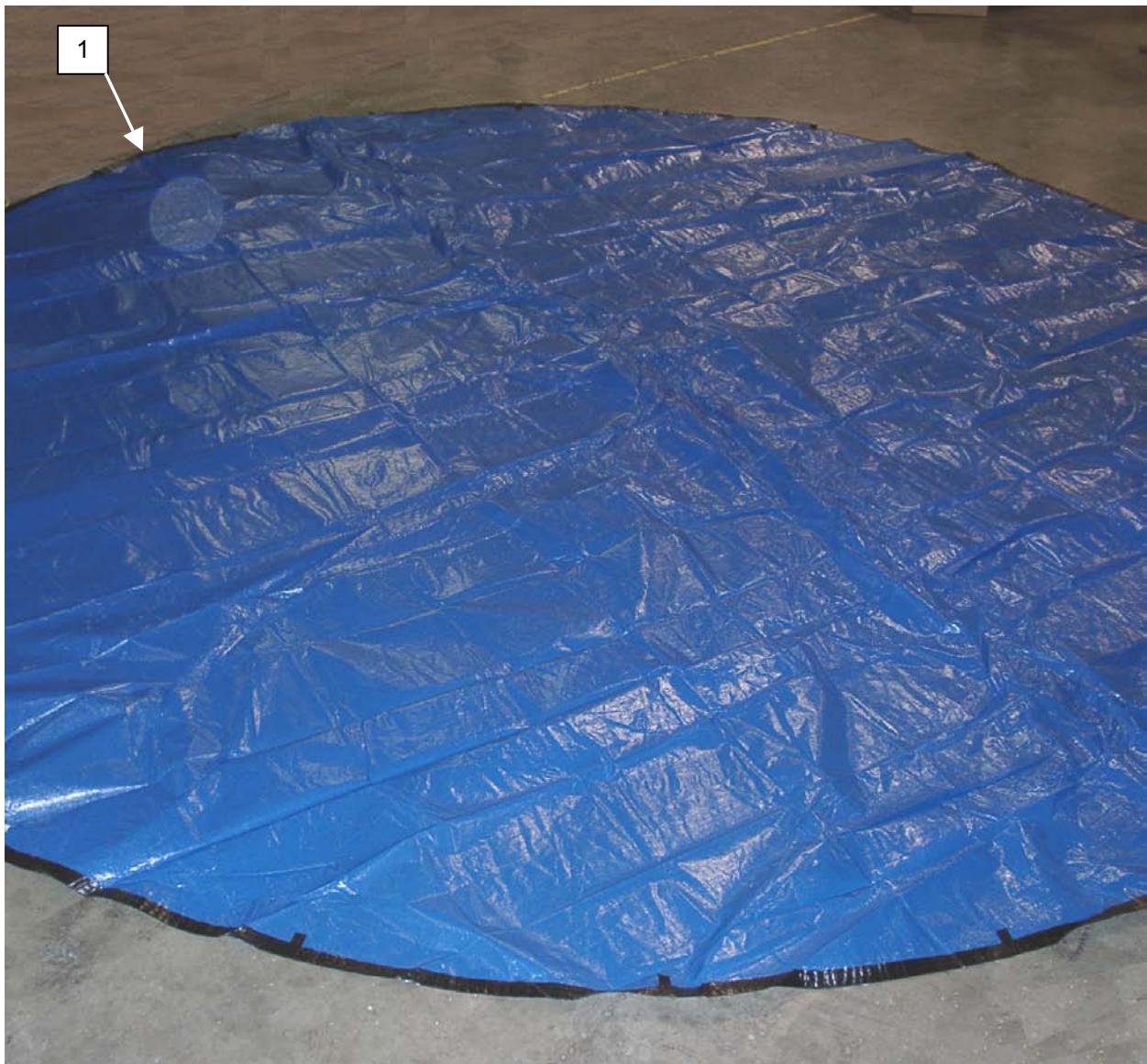
Use caution when performing maintenance on heat traced components. Allow heat-traced components to cool at least 15 minutes before attempting any maintenance. Severe burns to personnel may result if equipment is improperly handled.

1. Ensure heat trace cable is unplugged.
2. Inspect heat trace **(1)** for physical damage, such as cuts, chafing, bent or missing prongs and exposed wiring.
3. Inspect plug end **(2)** of heat trace for damage such as burning. Ensure that plug is tight on the heat trace cord.
4. Replace an unserviceable heat trace.



Inspect the Dark Cover

Inspect the dark cover (1) for holes, tears, or other physical damage.

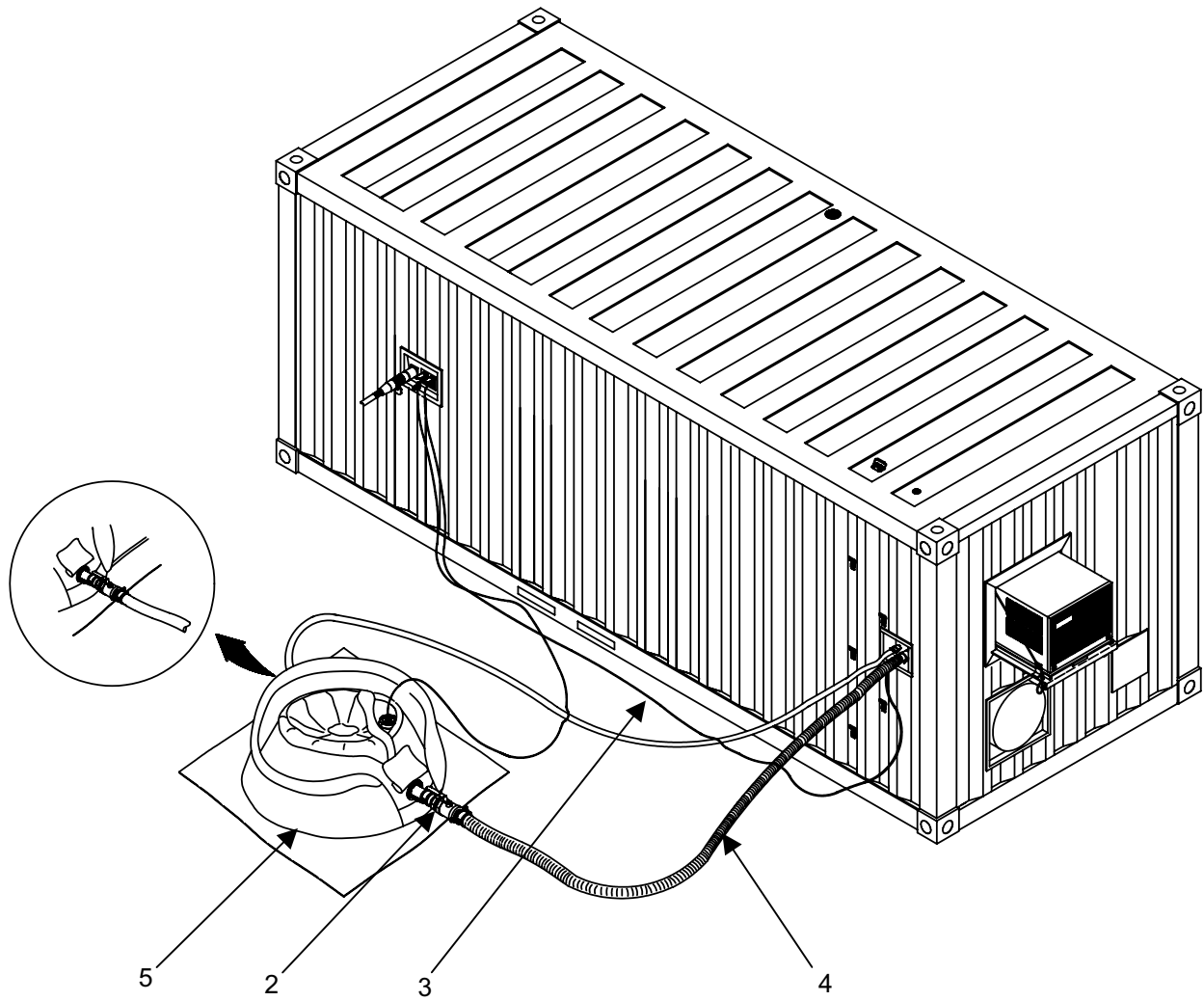


REPLACE**Replace the Heat Trace Hose Assembly****WARNING**

Use caution when performing maintenance on heat traced components. Allow heat-traced components to cool at least 15 minutes before attempting any maintenance. Severe burns to personnel may result if equipment is improperly handled.

1. Switch the water supply pump OFF at the control switch **(1)**.
2. Close the water supply valve **(2)** to the CLS.
3. Disconnect the hose heat trace connection from the extension cord **(3)**.
4. Disconnect the hose **(4)** from the CLS and from the water supply valve **(2)** on the 3000-gallon tank **(5)**.
5. Install the replacement hose **(4)** onto the water supply valve **(2)** on the 3000-gallon tank **(5)**.
6. Open the water supply valve **(2)** briefly to allow the hose to fill.
7. Connect the filled hose **(4)** to the CLS.
8. Connect the hose heat trace connection to the extension cord **(3)**.
9. Open the water supply valve **(2)** on the 3000-gallon tank **(5)**.
10. Switch the pump ON at the switch **(1)**, bleed air from the system, and check for leaks.





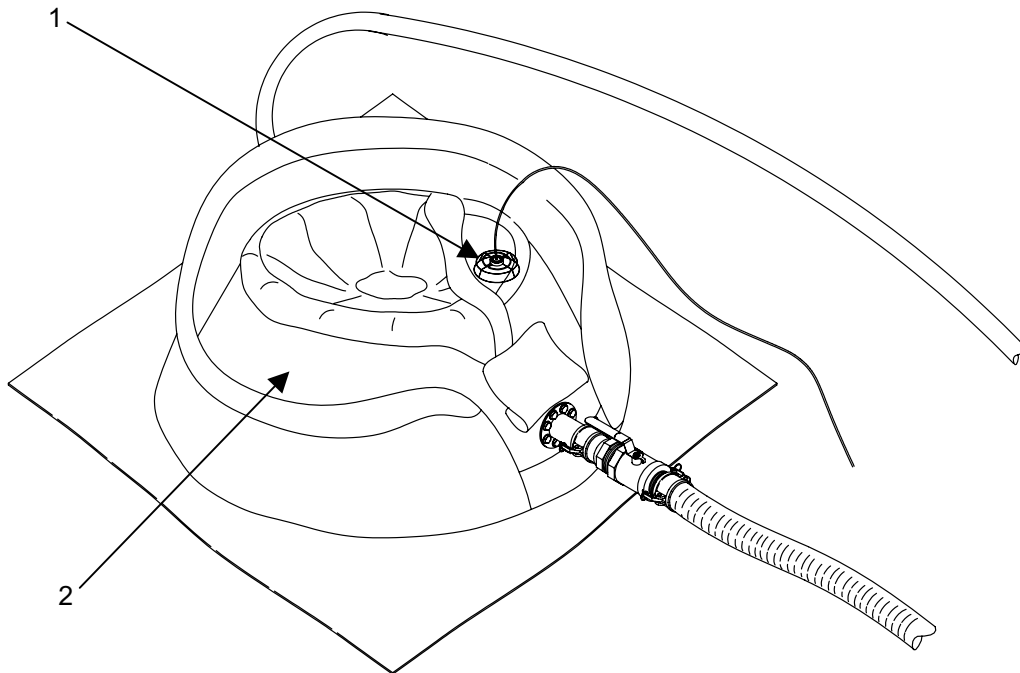
Replace the Bag Heater Assembly



WARNING

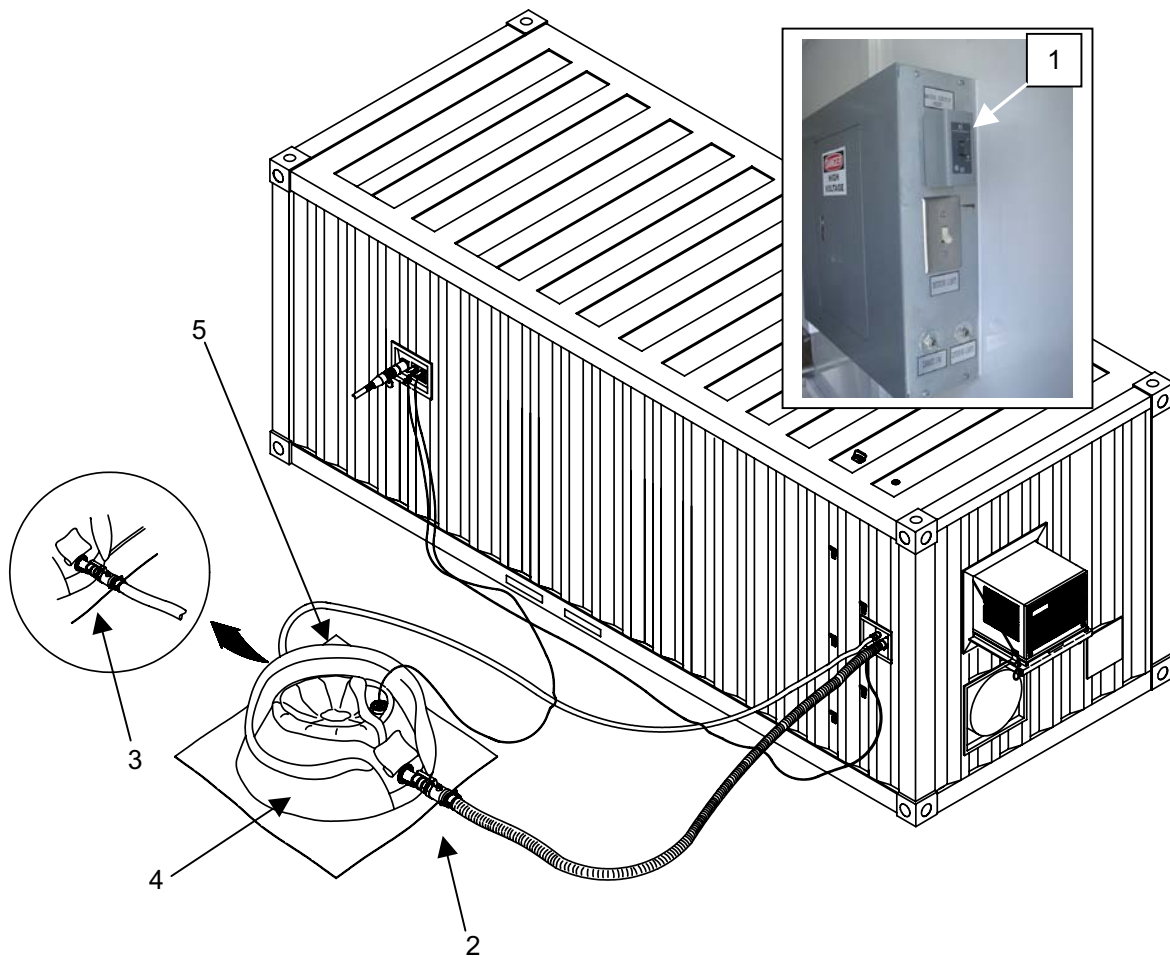
Before removing heater from water tank, ensure the heating element has had at least 15 minutes to cool off from the time it was unplugged. Failure to do so may cause serious injury to personnel.

1. Disconnect the bag heater **(1)** from the extension cord.
2. Remove the bag heater **(1)** from the 3000-gallon tank **(2)**.
3. Install the replacement bag heater **(1)** in the 3000-gallon tank **(2)** (IAW WP 0011 00).
4. Connect the replacement bag heater **(1)** to the extension cord.
5. Ensure the 3000-gallon tank **(1)** has be correctly reinsulated IAW procedures given in WP 0011 00.



Replace Re-circulating Hose

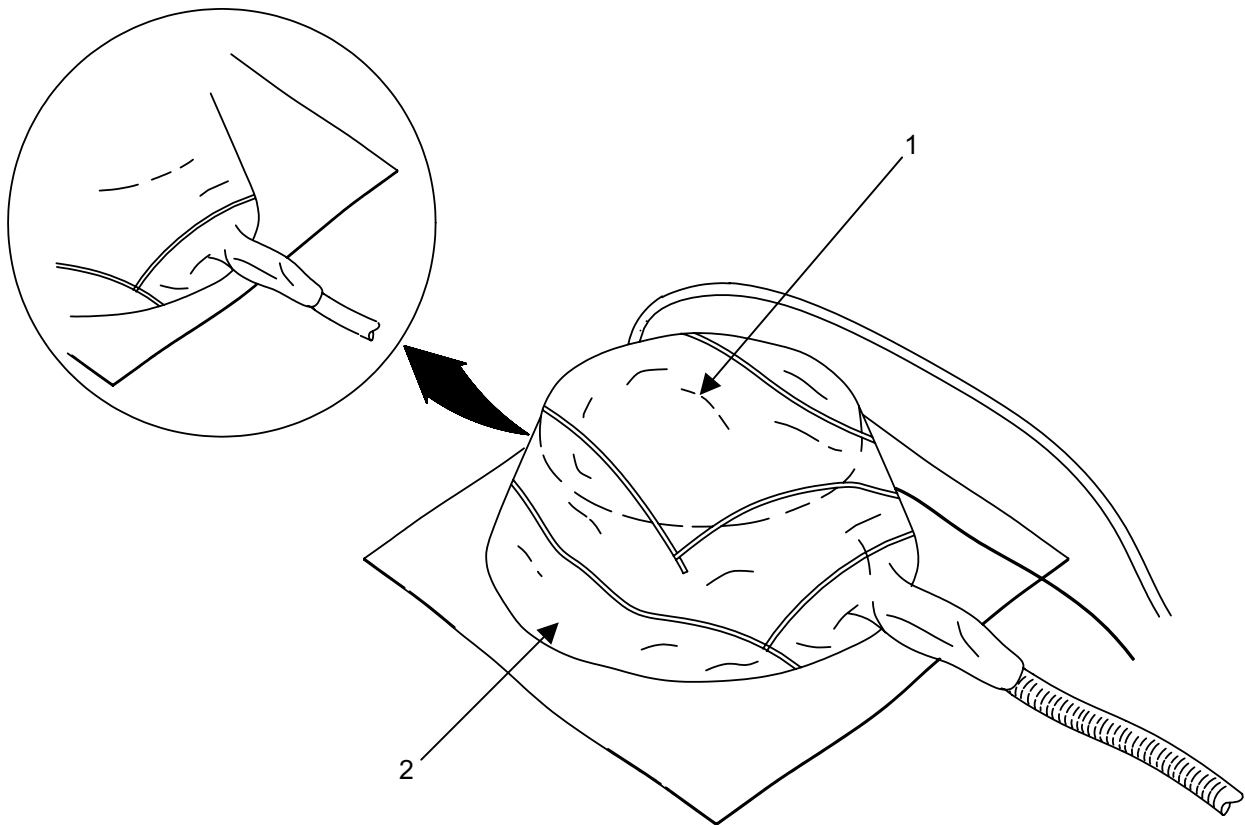
1. Switch the water supply pump OFF at the control switch (1).
2. Switch the water supply pump and water heater circuit breakers to the OFF position.
3. Close the water supply valve (2) and the recirculating return valve (3) on the 3000-gallon tank (4).
4. Disconnect the recirculating hose (5) from the CLS and from the recirculating return valve (3) on 3000-gallon tank.
5. Install the replacement recirculating hose (5) onto the recirculating return valve (3) on the 3000-gallon tank.
6. Open the recirculating return valve (3) briefly to allow the replacement recirculating hose (5) to fill.
7. Connect the filled hose (5) to the CLS.
8. Open the recirculating return valve (3) and the water supply valve (2) on the 3000-gallon tank.
9. Switch the water supply pump ON at the switch (1), bleed air from the system, and check for leaks.



Replace a Dark Cover**NOTE**

An unserviceable dark cover should be overlaid with a replacement. It is not necessary to remove the unserviceable cover until the 3000-gallon tank is prepared for movement.

1. Install the replacement dark cover (20-foot X 20-foot tarp of dark color) **(1)** by draping the cover, black side up, over the 3000-gallon tank **(2)** and tuck the excess material under the edge of the bag.
2. Anchor the cover to the 3000-gallon tank **(2)** by placing sandbags up against the bag.

**END OF WORK PACKAGE**

CHAPTER 5

UNIT MAINTENANCE TROUBLESHOOTING PROCEDURES

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

**UNIT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
MALFUNCTION SYMPTOM INDEX**

GENERAL

This manual cannot list all malfunctions, tests, inspections, or corrective actions that may occur. If a malfunction is not listed or is not corrected by listed corrective actions, notify direct support maintenance.

NOTE

Be sure to read all **WARNINGS** in front of this manual before troubleshooting. Before you use the troubleshooting tables, be sure you have performed all applicable operating checks and verified that a malfunction exists. When a corrective action is performed, verify that the action has corrected the malfunction. All malfunctions deferred to the next higher level of maintenance must be reported according to the instructions given in DA PAM 750-8.

MALFUNCTION SYMPTOM INDEX

The malfunction symptom index is a quick reference index for finding troubleshooting procedures. Associated with each symptom name is a procedure sequence number representing the starting point in a troubleshooting sequence. Should any one symptom require more than one troubleshooting sequence to arrive at the most likely area of investigation, the additional starting point numbers are also provided.

Table 1. Unit Maintenance Malfunction Symptom Index.

| Malfunction or Symptom | Refer to Unit Maintenance Troubleshooting Table: |
|---------------------------------------|---------------------------------------------------------|
| No Power | 1 |
| No Water | 2 |
| No Hot Water | 3 |
| Pump Short Cycling | 4 |
| ECU Does Not Operate | 5 |
| Sump Pump Does Not Operate | 6 |
| Sink Or Urinal Not Draining | 7 |
| Commode Inoperative Or Malfunctioning | 8 |

**UNIT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
TROUBLESHOOTING PROCEDURES**

GENERAL INFORMATION

This manual cannot list all malfunctions, tests, inspections, or corrective actions that may occur. If a malfunction is not listed or is not corrected by listed corrective actions, notify direct support maintenance.

NOTE

Be sure to read all WARNINGS in front of this manual before troubleshooting. Before you use the troubleshooting tables, be sure you have performed all applicable operating checks and verified that a malfunction exists. When a corrective action is performed, verify that the action has corrected the malfunction. All malfunctions deferred to the next higher level of maintenance must be reported according to the instructions given in DA PAM 750-8.

TROUBLESHOOTING PROCEDURES

The troubleshooting procedures contain tables listing the malfunctions, tests or inspections, and corrective action required to return the shower to normal operation. Perform the steps in the order they appear in the tables.

Each procedure is headed by an initial setup. This setup outlines what is needed as well as certain conditions, which must be met before starting the task. **DO NOT START THE TASK UNTIL:**

- ✓ You understand the task
- ✓ You understand what you are to do
- ✓ You understand what is needed to do the work
- ✓ You have the things you need

Table 1. Main Power Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. NO POWER | <p>Step 1. Check power supply to CL/CLS.</p> <p>Step 2. Check power cable (1) connections.</p> | <p>Ensure power supply from generator or PDISE box is supplied.</p> <p>Reconnect power cable (1). Replace an inoperative power cable.</p> <p>Notify Direct Support.</p> |



Table 2. Water Supply Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. NO WATER</p> | <p>Step 1. Check for voltage at water supply pump outlet (3) (CLS only).</p> <p>Step 2. Disconnect power cord (4) and check for continuity (CLS only). Refer to WP 0057 00 for testing procedures.</p> <p>Step 3. Check continuity at pressure switch (1). (CLS only). Refer to WP 0057 00 for testing procedures.</p> <p>Step 4. Check continuity at water pump (2). (CLS only). Refer to WP 0057 00 for testing procedures.</p> | <p>If no voltage, notify Direct Support.</p> <p>Replace an open power cord IAW WP 0057 00.</p> <p>Replace pressure switch IAW WP 0057 00.</p> <p>If water pump shows an open winding, notify Direct Support.</p> <p>Notify Direct Support.</p> |

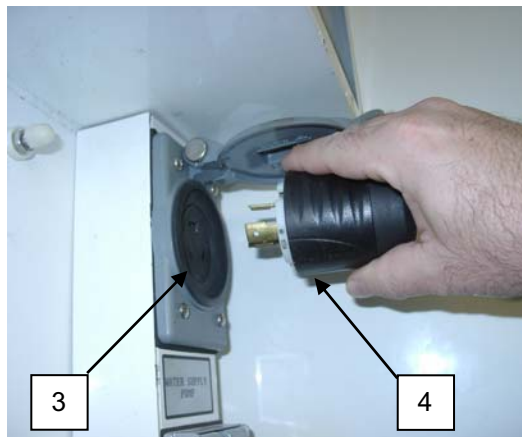


Table 3. Hot Water Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. NO HOT WATER</p> | <p>Step 1. Check continuity at heating element (1). Refer to WP 0056 00 for testing procedures.</p> | <p style="text-align: center;">CAUTION</p> <p>Ensure that water heater is full of water prior to turning power ON. Failure to do so will damage the heating element.</p> <p>If there is no continuity, replace heating element IAW WP 0056 00.</p> <p>If there is continuity, replace water heater IAW WP 0056 00.</p> <p>Notify Direct Support.</p> |



Table 4. Water Pump Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. PUMP SHORT CYCLING</p> | <p>Monitor pump pressure for pump on and pump off. Pump should be cycling ON and OFF between 20 to 40 psi.</p> <p>Check pressure in pressure tank (1). Refer to WP 0057 00 for testing procedures.</p> | <p>Service, adjust, or replace pressure switch IAW WP 0057 00.</p> <p>Check pressure and service IAW WP 0057 00.</p> <p>A tank that cannot be serviced, or has water coming out of Schrader valve (2), must be replaced IAW WP 0057 00.</p> <p>Notify Direct Support.</p> |

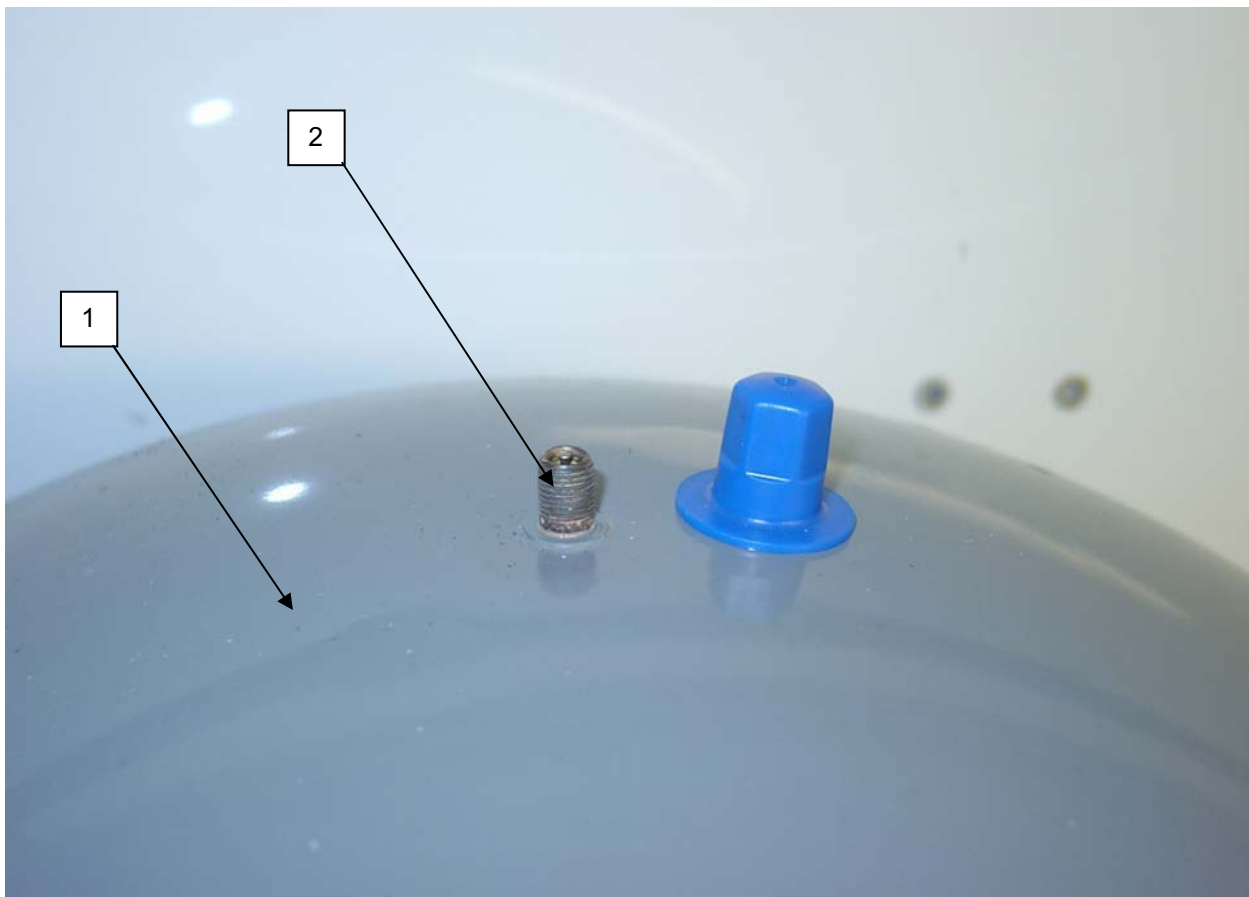


Table 5. ECU Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. ECU DOES NOT OPERATE</p> | <p>Step 1. Test ECU voltage at outlet (1). Refer to WP 0051 00 for testing procedures.</p> <p>Step 2. Test ECU outlet (1) for continuity. Refer to WP 0047 00 for testing procedures.</p> | <p>If correct voltage is supplied at ECU outlet, replace ECU. Refer to WP 0052 00 and WP 0066 00 for removal and installation procedures for the CL. Refer to Direct Support for the CLS.</p> <p>Replace a malfunctioning ECU outlet IAW procedures given in WP 0047 00.</p> <p>Notify Direct Support.</p> |

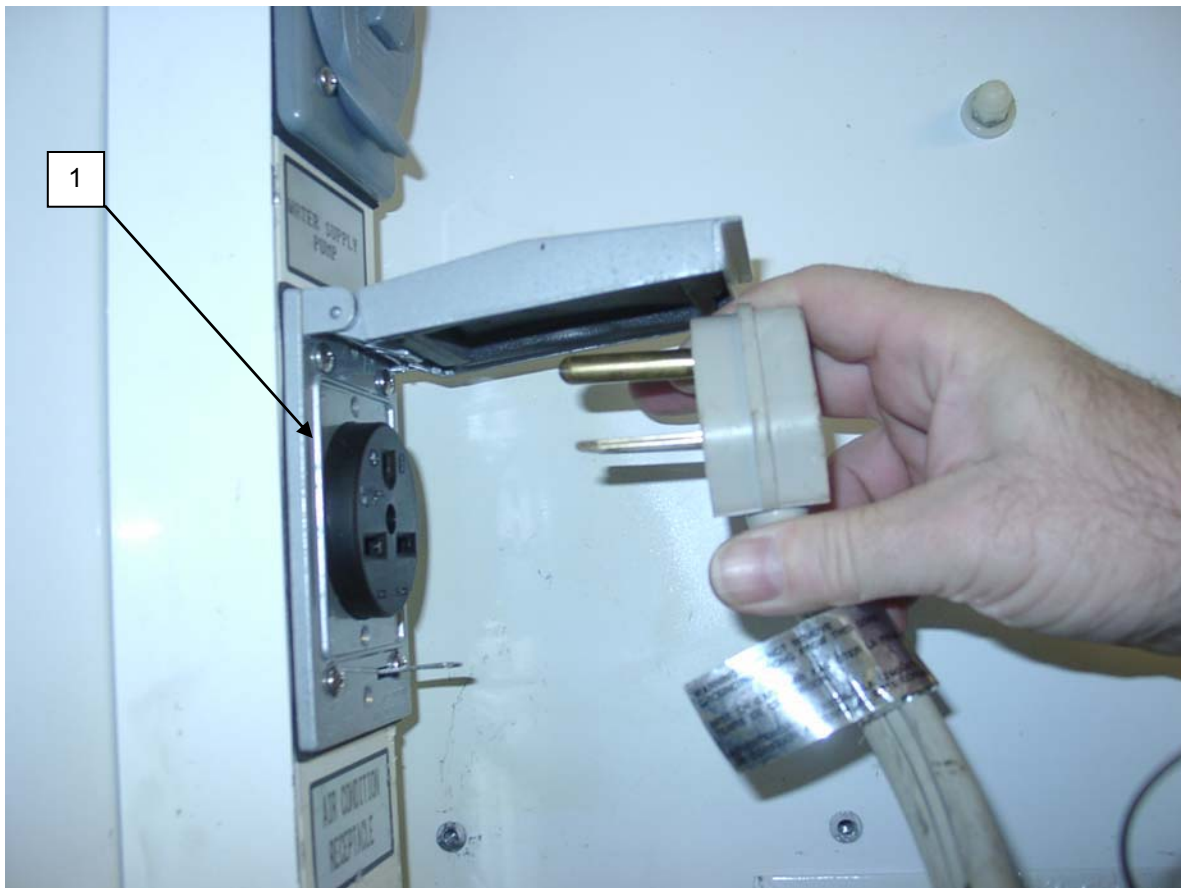



Table 6. Sump Pump Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. SUMP PUMP DOES NOT OPERATE</p> | <p>Step 1. Check sump pump cord (2) connection.</p> <p>Step 2. Test pump receptacle (3) IAW WP 0047 00.</p> <p>Step 3. Check pump switch (1) IAW procedures given in WP 0044 00.</p> <p>Step 4. Inspect pump (4) suction.</p> | <p>Remove access panel and reinsert pump plug into pump receptacle.</p> <p>Replace a defective receptacle. Refer to WP 0047 00.</p> <p>Replace a defective switch. Refer to WP 0044 00.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">  WARNING </div> <p>Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.</p> <p>Remove access panel, lift pump, and clear pump suction for obstructions. Replace sump pump IAW procedures given in WP 0058 00.</p> <p>Notify Direct Support.</p> |

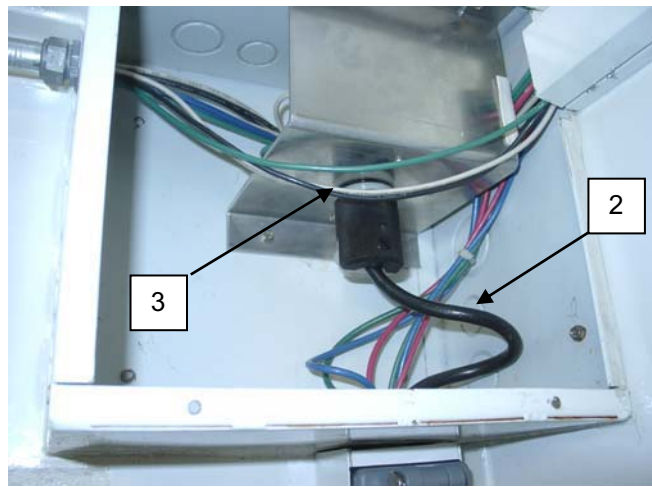
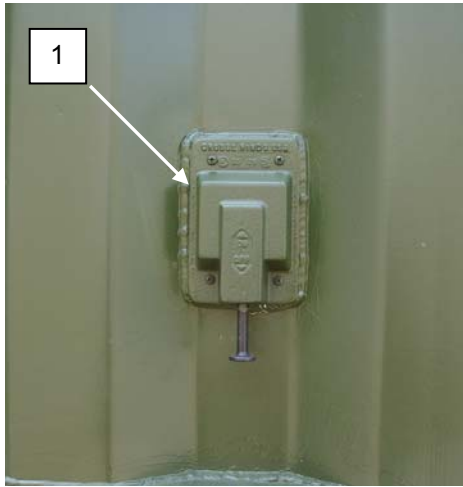



Table 7. Drainage Plumbing Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|---------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. SINK OR URINAL NOT DRAINING</p> | <p>Step 1. Ensure P-trap (1) is unobstructed.</p> | <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;">  </div> <div> <p>WARNING</p> <p>Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria, or viruses, which present a risk of serious illness or death to personnel.</p> <p>Service P-trap IAW WP 0048 00. Notify Direct Support.</p> </div> </div> |

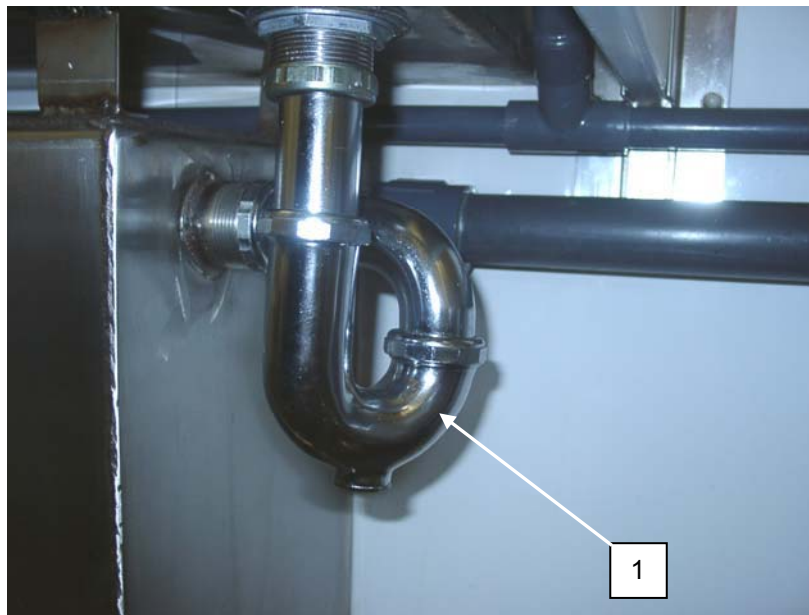
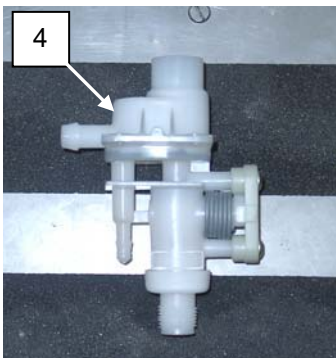
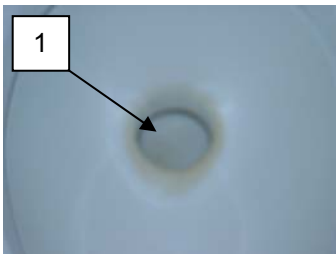


Table 8. Commode Troubleshooting Procedures.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. COMMUNE INOPERATIVE OR MALFUNCTIONING</p> | <p>Step 1. Ensure water is supplied to bowl.</p> <p>Step 2. Ensure flush valve (1) is operating correctly.</p> | <p>Open a closed valve. Replace water valve (4). Refer to WP 0054 00. Replace commode (3). Refer to WP 0054 00.</p> <p>Replace pedal assembly (2). Refer to WP 0054 00. Replace commode (3). Refer to WP 0054 00.</p> <p>Notify Direct Support.</p> |



CHAPTER 6

UNIT MAINTENANCE INSTRUCTIONS

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

**UNIT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
SERVICE UPON RECEIPT**

SERVICE UPON RECEIPT

Inspect equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 364, Report of Discrepancy.

Check the equipment against the packing list in WP 0005 00 for the CL or WP 0008 00 for the CLS to see if the shipment is complete. Report all discrepancies in accordance with the instructions of DA PAM 738-751.

Check to see whether the equipment has been modified.

After equipment has been positioned, check all items requiring service and perform Preventive Maintenance Checks and Services (PMCS).

**UNIT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
INTRODUCTION TO PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)**

THIS SECTION COVERS:

PMCS Procedures

INITIAL SETUP:

Maintenance Level
Unit

Equipment Condition
Latrine set up but not in operation.
Power and water connected.

NOTE

PMCS requirements for some components are described in separate publications. Refer to these publications listed in WP 0069 00 and perform PMCS as prescribed therein.

INTRODUCTION

Preventive Maintenance Checks and Services (PMCS) are performed to keep the Containerized Latrine (CL) and Containerized Latrine System (CLS) and its associated equipment in good operating condition. The checks are used to find, correct, or report problems. Unit personnel are to do the PMCS jobs as shown in the PMCS table. PMCS are done every day the latrine is operated, using the PMCS table. Pay attention to **WARNING** and **CAUTION** statements. A **WARNING** means someone could be hurt. A **CAUTION** means equipment could be damaged.

Before you begin using the latrine, do **Before** PMCS.

During use of the latrine, do **During** PMCS.

After using the latrine, do **After** PMCS.

Once a week, do **Weekly** PMCS if the latrine has been in use.

Do **Monthly** PMCS once a month if the latrine has been in use.

If you find something wrong when performing PMCS, fix it using troubleshooting and/or maintenance procedures.

Be prepared to assist organizational maintenance when they lubricate the latrine. Perform any other services when required by organizational maintenance.

The right-hand column of the PMCS table lists conditions that make the latrine not fully mission capable. Write up the faults that cannot be repaired on DA Form 2404 for Direct Support maintenance. For further information on how to use this form, see DA PAM 750-8.

If tools that are required to perform PMCS are not listed in procedures, notify your supervisor.

LEAKAGE DEFINITIONS FOR UNIT PMCS

It is necessary for you to know how fluid leakage affects the status of the equipment. Following are types/ classes of leakage an operator needs to know to be able to determine the status of the latrine. Learn these leakage definitions; when in doubt, notify your supervisor.

CAUTION

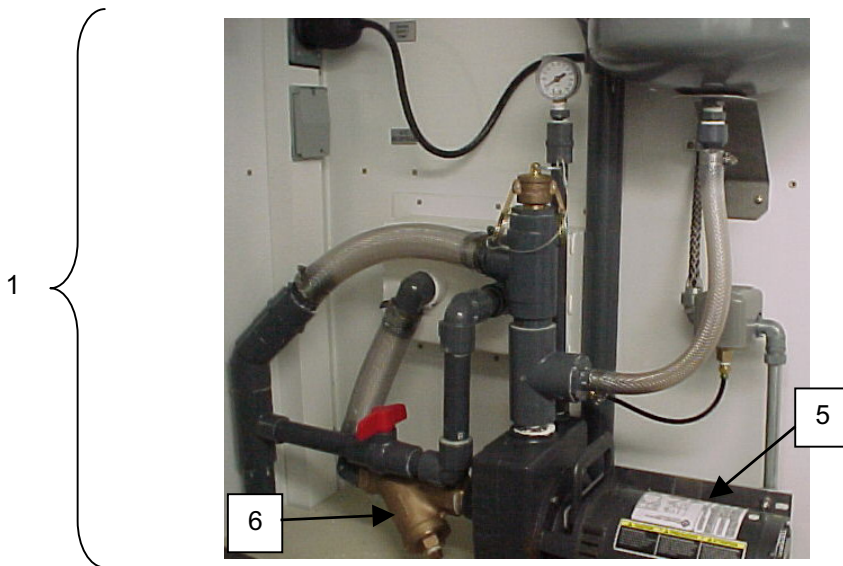
Equipment operation is allowable with minor leakages (Class I or Class II). Of course, consideration must be given to fluid capacity in the item/system being checked/inspected. When in doubt, notify your supervisor. When operating with Class I or II leaks, continue to check fluid levels as required in your PMCS. Class III leaks should be reported immediately to your supervisor.

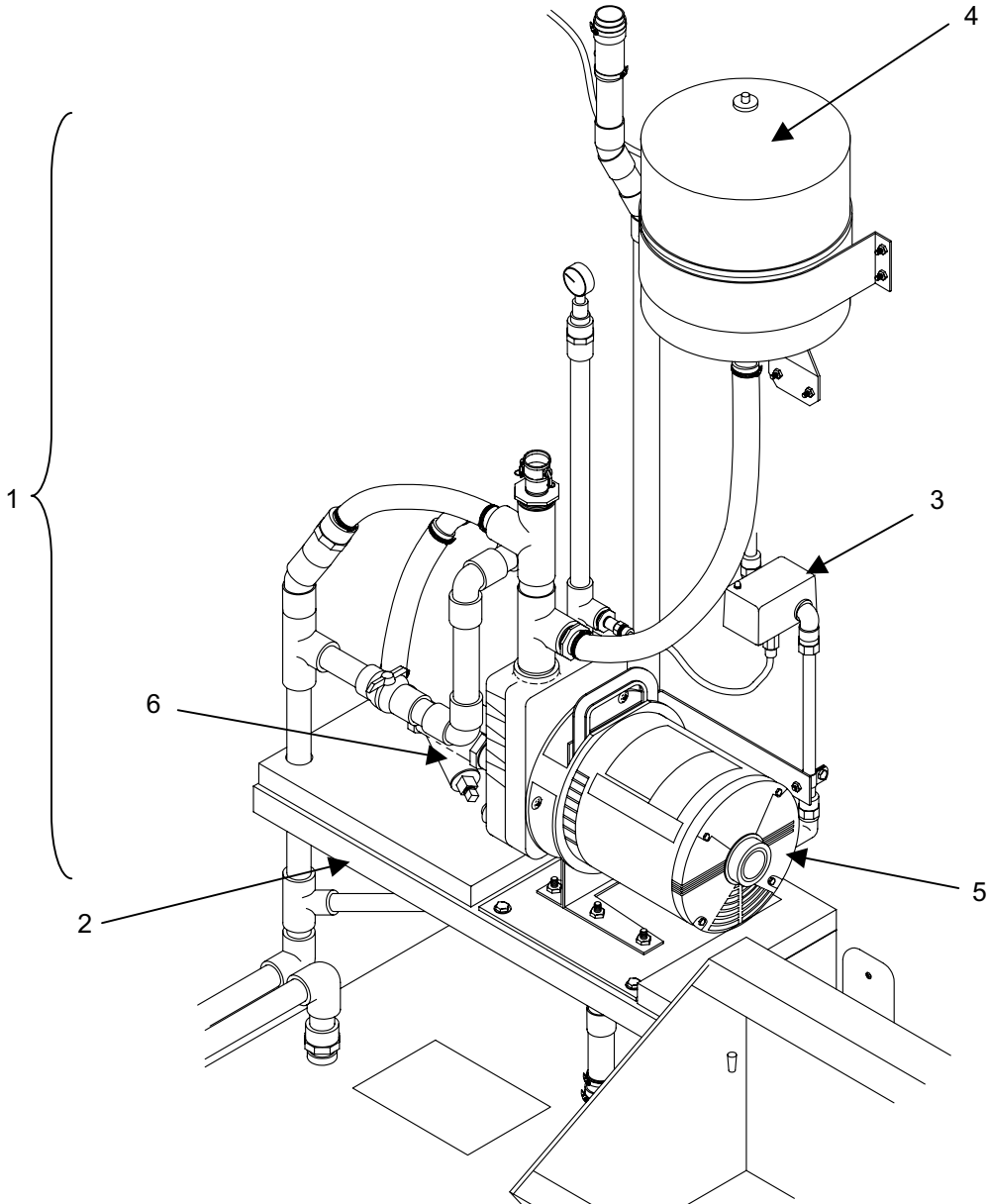
- CLASS I - Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.
- CLASS II - Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked/ inspected.
- CLASS III - Leakage of fluid great enough to form drops that fall from item being checked/ inspected.

**UNIT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)**

Table 1. Preventive Maintenance Checks and Services for Containerized Latrine (CL) & Containerized Latrine System (CLS).

| Item No. | Interval | Item To Be Checked Or Serviced | Procedure | Equipment Not Ready/ Available If: |
|----------|---------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Before/After/Weekly | 30 GPM Water Pump Assembly (CLS only) | <p align="center">NOTE</p> <p>Use of a step aid may be required.</p> <p>Remove pump cover and inspect pump assembly (1) and components for material damage. Check mounting (2) for bends and cracks. Check all pipe connections on pump assembly for damage. Ensure that all components are secured to shelving (2).</p> <p>Remove pump cover and check for leaks on all pump assembly (1) components.</p> | <p>Pump assembly or any component damaged. Pressure switch (3) damaged or wiring exposed. Expansion tank (4) or pump motor (5) loose in pump mounting. Visible damage on any component.</p> <p>Class III water leaks.</p> |
| | Weekly | | Remove pump cover and clean pump inlet Y strainer (6). Refer to WP 0057 00 for maintenance procedures. | Y strainer clogged. |





LUBRICATION INTERVALS

Refer to TM 55-8115-204-23&P for General Cargo Container lubrication instruction.

MANDATORY REPLACEMENT PARTS

There are no replacement parts required for these PMCS procedures.

UNIT MAINTENANCE
CONTAINERIZED LATRINE (CL)
(NSN 4510-01-453-4012)
4-INCH COUNTERSUNK PLUG
REPLACE

INITIAL SETUP**Tools**

Waste Water Vacuum Tank Trailer or other suitable equipment for evacuating sewage.
 (Item 5, WP 0071 00)

Materials/Parts

Bleach (Item 4, WP 0118 00)
 Face Shield (Item 19, WP 0118 00)
 General Purpose Detergent Spray Bottle
 (Item 18, WP 0118 00)
 Safety Splash Goggles (Item 39, WP 0118 00)

Materials/Parts - Continued

Anti-seize Tape (Item 42, WP 0118 00)
 Heavy-duty Rubber Apron (Item 2, WP 0118 00)
 Rubber Gloves (Item 25, WP 0118 00)

Personnel Required

One

Equipment Condition

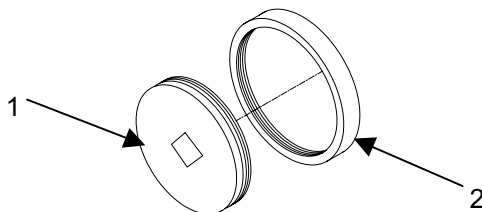
Holding tanks empty and sanitized.

REPLACE**Replace Blackwater Countersunk Plug**

WARNING

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

1. Verify the holding tank is empty (refer to WP 0007 00). Loosen outlet plug cover **(1)**.
2. Apply anti-seize tape or pipe sealant to the outlet plug **(1)** threads.
3. Install outlet plug cover **(1)** as required, into the outlet plug **(2)**.



END OF WORK PACKAGE

UNIT MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)
(NSN 4510-01-477-7764)

MODIFIED FOLDING STEPS
REPLACE

INITIAL SETUP**Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

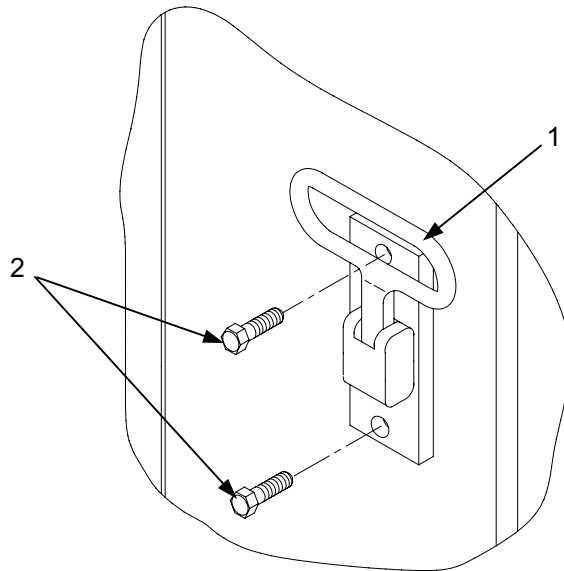
One (1)

Materials/Parts**Equipment Condition**

CLS not stacked.

REPLACE**Replace a Modified Folding Step**

1. To replace a modified folding step **(1)**, remove two hex head mounting bolts **(2)**.
2. Replace with a new step and install the mounting bolts as removed.



END OF WORK PACKAGE

UNIT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****DISPENSERS
REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One (1)

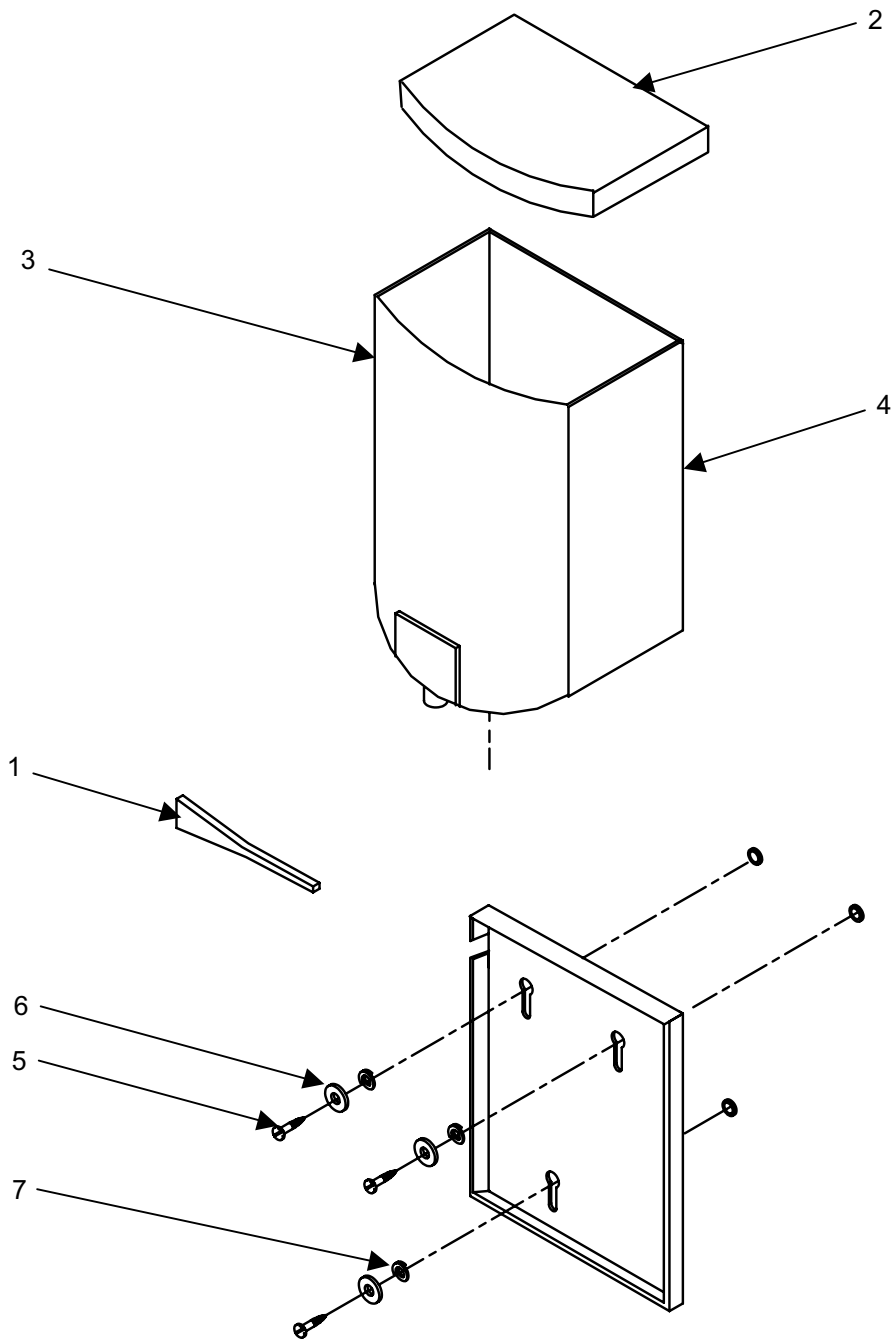
Materials/Parts**Equipment Condition**

CL/CLS operating.

REPLACE**Replace Soap Dispenser****NOTE**

Plug sink drains to ensure hardware is not lost.

1. Using attached key **(1)**, insert key into side hole to unlock lid **(2)**.
2. Lift the lid **(2)** on the dispenser **(3)**.
3. Slide the dispenser **(3)** up and off of the mounting plate **(4)**.
4. Remove lid **(2)** from dispenser **(3)**.
5. Remove the screws **(5)**, flat washers **(6)**, and lock washers **(7)** from the mounting plate **(4)**.
6. Remove mounting plate **(4)**.
7. Install replacement mounting plate **(4)** to the wall. Do not over tighten hardware.
8. Replace the lid **(2)**.
9. Slide the replacement soap dispenser **(3)** onto the wall mounting plate **(4)**.



Replace Paper Towel Dispenser**NOTE**

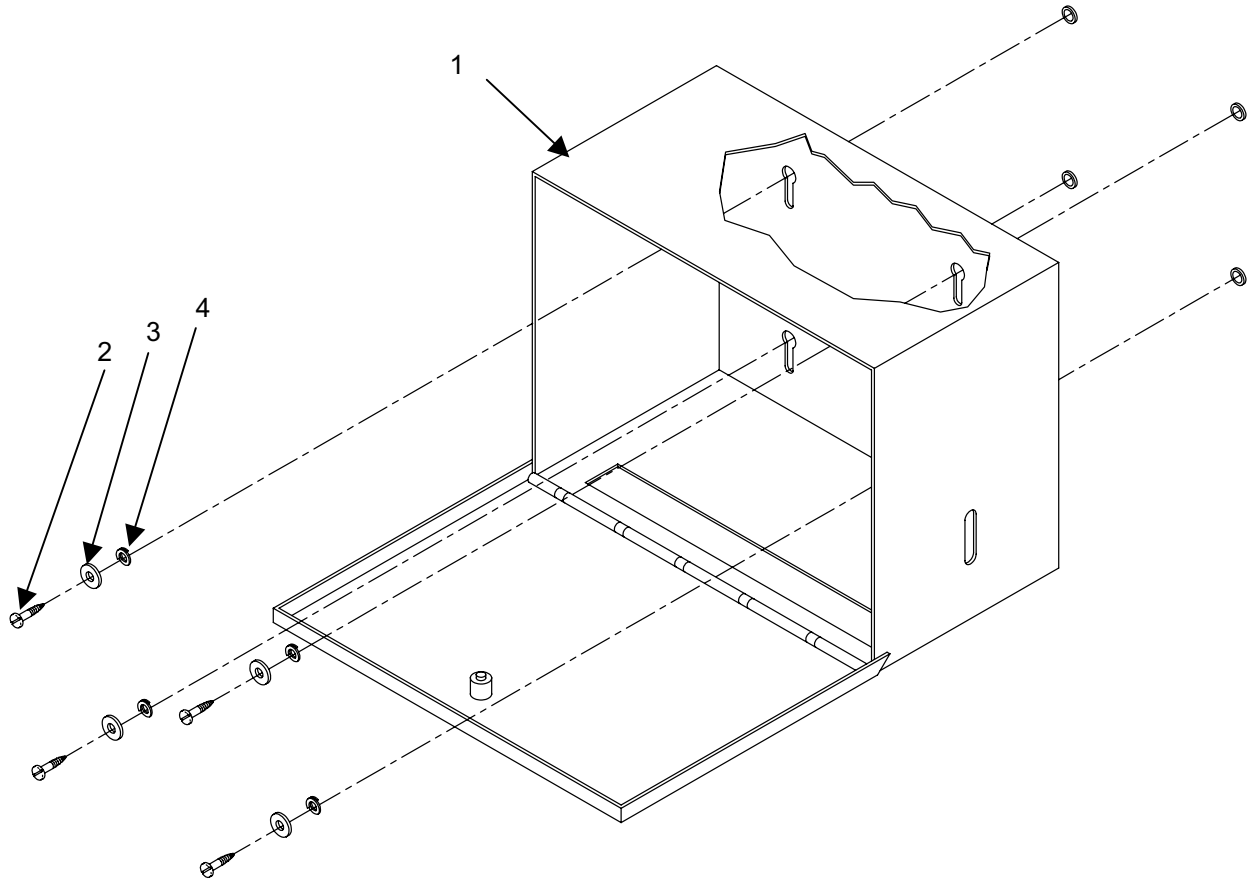
Plug sink drains to ensure hardware is not lost.

1. Open dispenser **(1)**.
2. Remove screws **(2)**, flat washers **(3)**, and lock washers **(4)**, securing dispenser **(1)** to wall.

NOTE

Plug sink drains to ensure hardware is not lost.

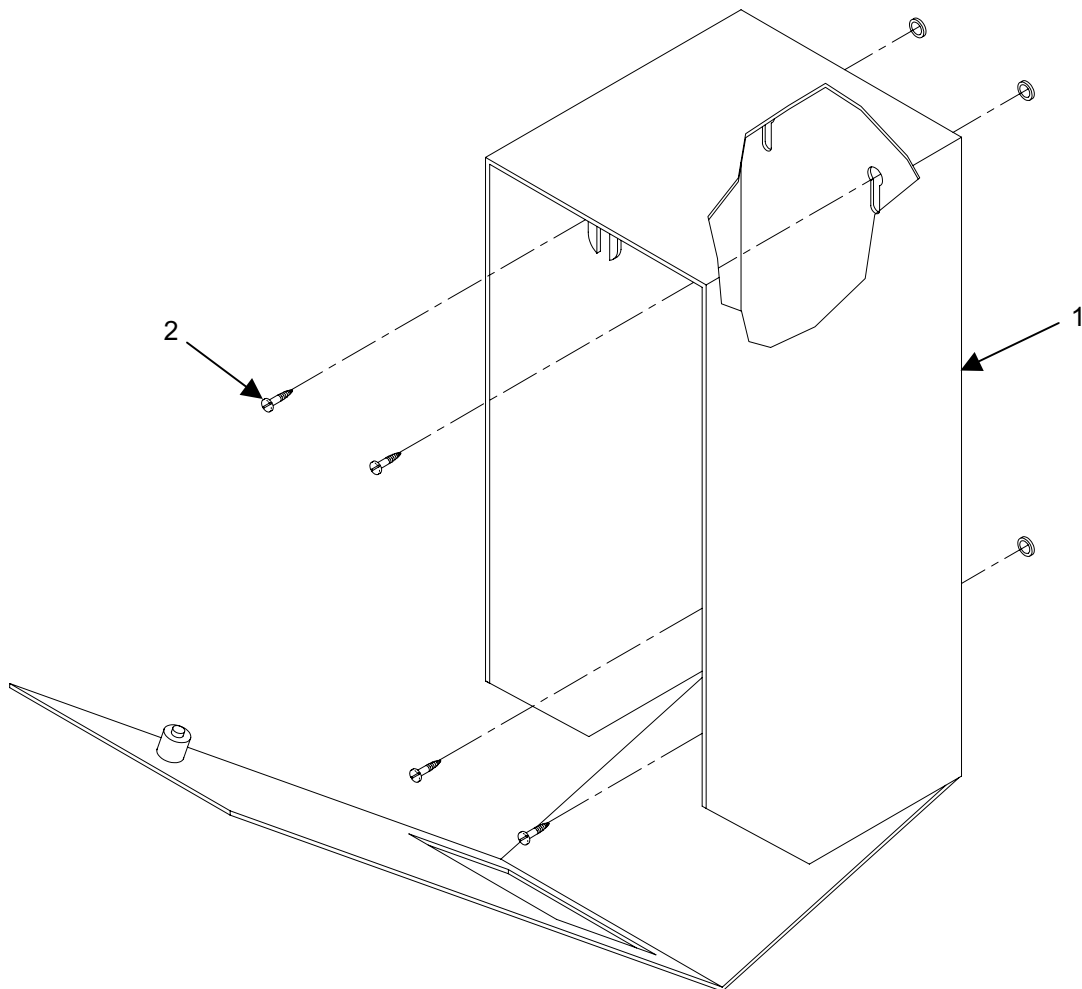
3. Secure replacement dispenser **(1)** to wall with screws **(2)** lock washers **(4)**, and flat washers **(3)**.
4. Close dispenser **(1)**.



Replace Toilet Paper Dispenser (CL only)**NOTE**

Close toilet seat cover to ensure hardware is not lost.

1. Open dispenser **(1)**.
2. Remove sheet metal screws **(2)** securing dispenser **(1)** to wall.
3. Remove dispenser.
4. Secure replacement dispenser **(1)** to wall with sheet metal screws **(2)**. Do not over tighten hardware.
5. Close dispenser **(1)**.



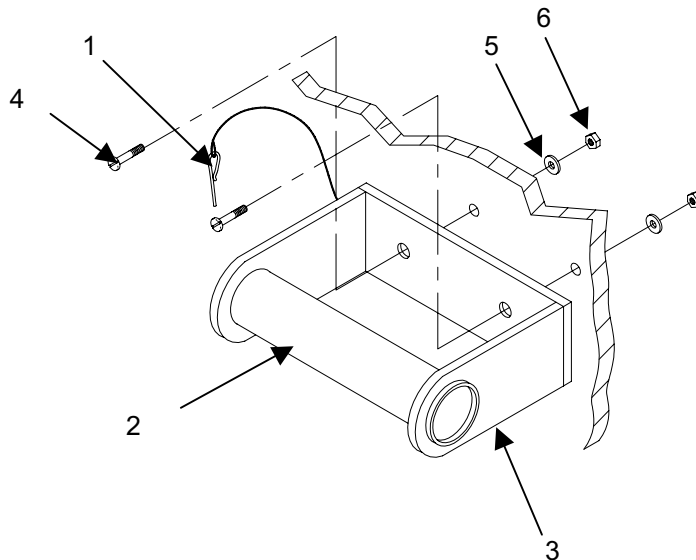
Replace Toilet Paper Dispenser (CLS only)**NOTE**

Close toilet seat cover to ensure hardware is not lost.

NOTE

Two personnel are required to accomplish these procedures. Dispensers in stalls 1 and 2, 5 and 6 are mounted together.

1. Remove cotter pin (1) and roll holder (2) from dispenser (3). Retain roll holder (2).
2. Using a ratchet and screwdriver, remove screws (4), flat washers (5), and nuts (6) securing dispenser (3) to partition.
3. Using a ratchet and screwdriver, secure new dispenser (3) to partition with screws (4), flat washers (5), and nuts (6). Do not over tighten hardware.
4. Reinstall toilet paper, roll holder (2) and cotter pin (1).



END OF WORK PACKAGE

UNIT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****FLOOR MAT
REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One (1)

Materials/Parts

Rubber Mat (Item 9, WP 0112 00)

Equipment Condition

CL/CLS operating.

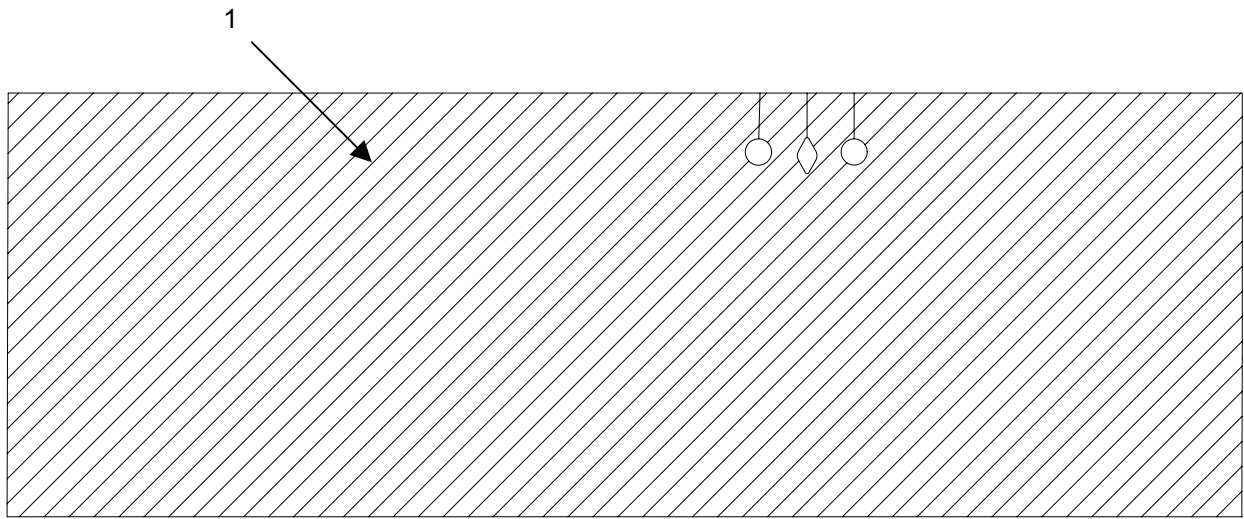
REPLACE**Replace the Floor Mat****WARNING**

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

NOTE

Do not remove any fixed equipment, such as the sink stand, in order to remove or install the floor mat. Make clearance cuts to allow the mat to fit around items such as sink stand legs.

1. Remove the damaged or otherwise unserviceable floor mat **(1)**.
2. Use the old floor mat as a template to cut the new floor mat **(1)** from bulk rubber matting.
3. Install the replacement rubber mat **(1)** in the CL/CLS.



END OF WORK PACKAGE

UNIT MAINTENANCE**CONTAINERIZED LATRINE (CL)**

(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM (CLS)

(NSN 4510-01-477-7764)

**TIEDOWN PROVISIONS
REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

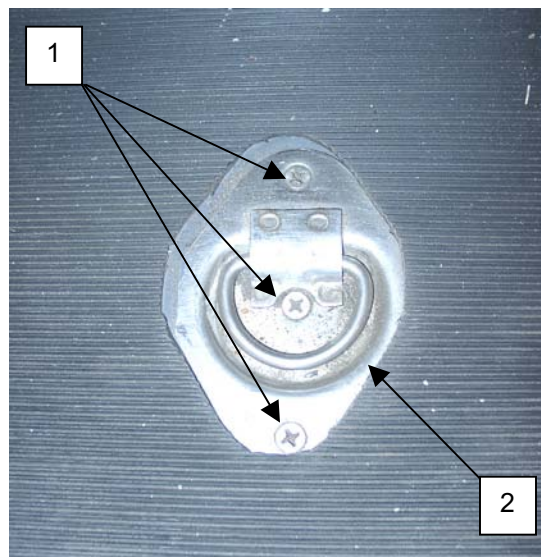
One (1)

Materials/Parts**Equipment Condition**

CLS not stacked.

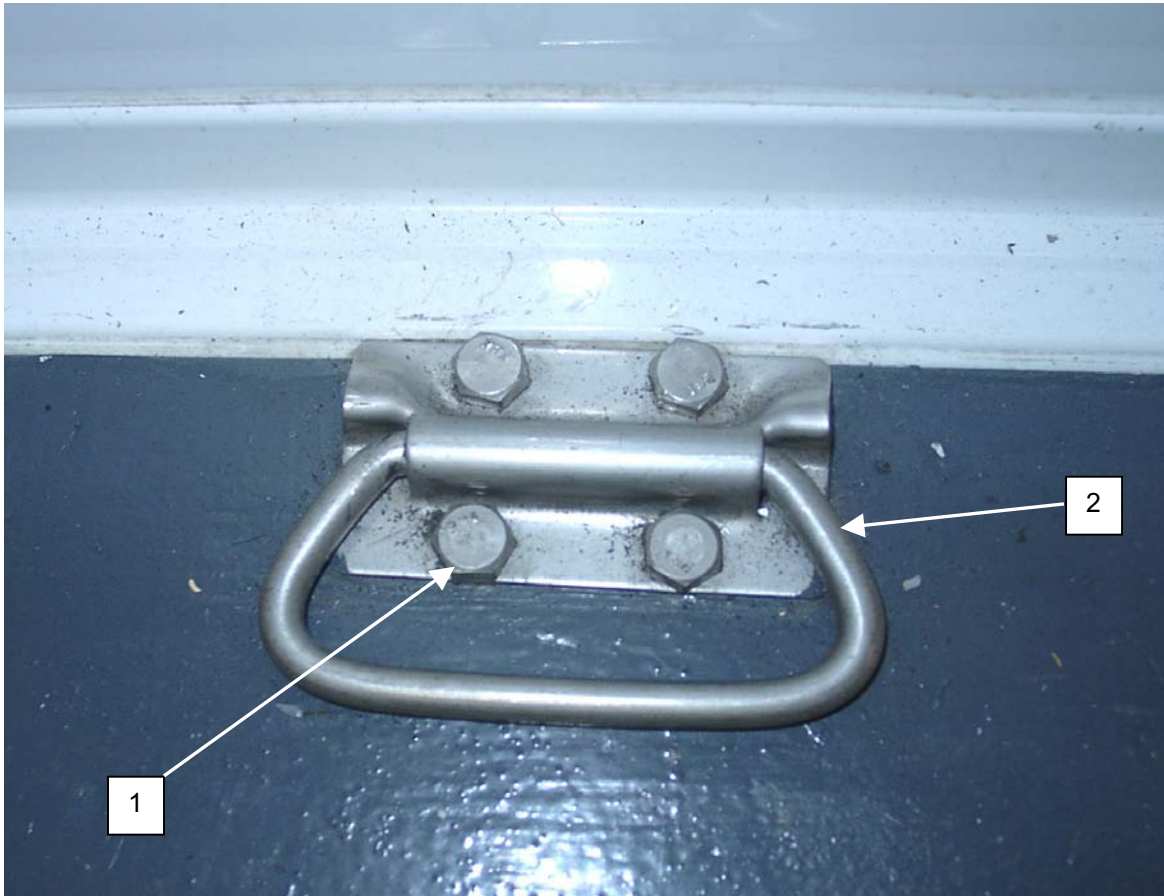
REPLACE**Replace Recessed Deck Tie Downs**

1. Remove three screws **(1)** retaining the recessed tie down **(2)**.
2. Pry the tie down **(2)** from the CLS deck.
3. Install the replacement tie down **(2)** into the CLS deck.
4. Retain the tie down **(2)** with three screws **(1)**.



Replace Deck Tie Downs (CL only)

1. Remove the four ½-inch cap screws (1) retaining the tie down (2).
2. Remove the tie down (2).
3. Install the replacement tie down (2), and retain with four ½-inch cap screws (1).

**END OF WORK PACKAGE**

UNIT MAINTENANCE
CONTAINERIZED LATRINE (CL)
(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM (CLS)
(NSN 4510-01-477-7764)

HOOKS AND BRACKETS
REPLACE

INITIAL SETUP

Tools

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One (1)

Materials/Parts

Equipment Condition

CL/CLS operating.

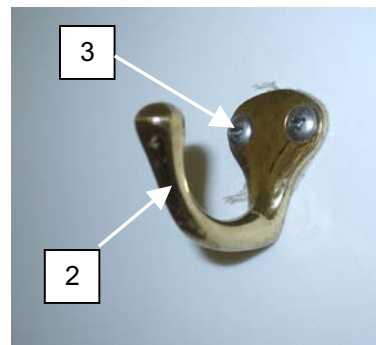
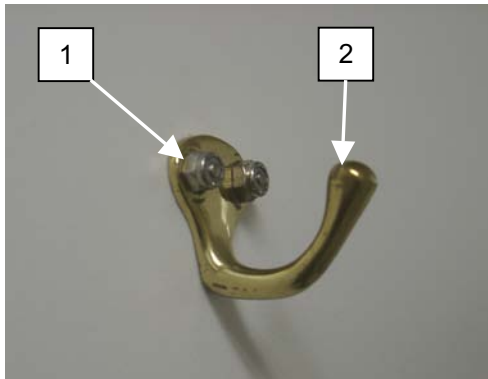
REPLACE

Replace Hooks

NOTE

Hooks may be mounted singly or back to back.

1. Place a wrench on the nuts **(1)** retaining the hook(s) **(2)**, and unscrew the screws **(3)** retaining the hooks.
2. Remove the hook(s) **(2)**.
3. Install the replacement hook(s) **(2)**, and retain with screws **(3)** and nuts **(1)**.



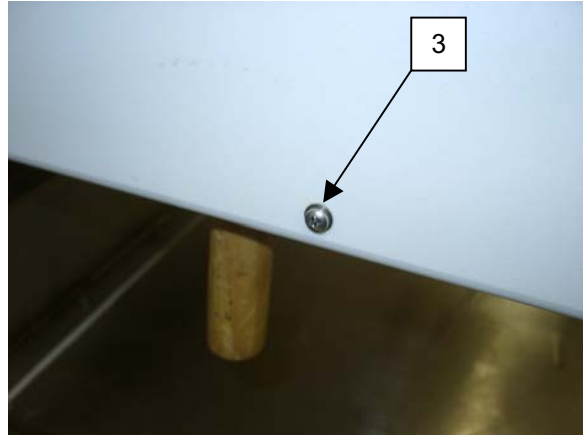
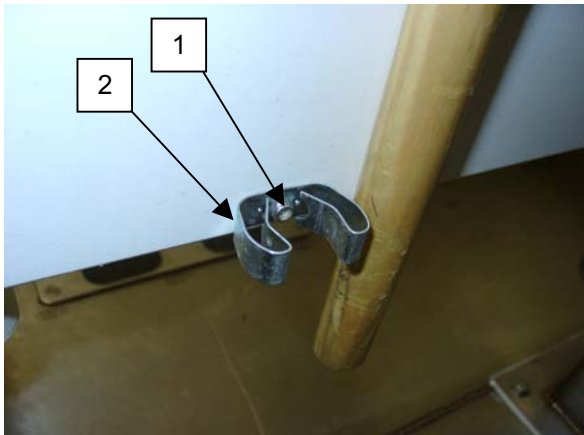
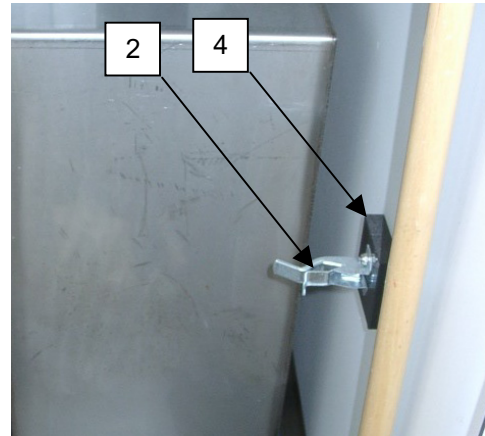
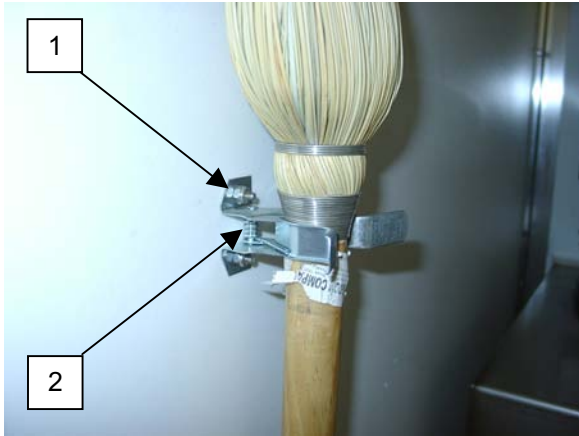
Replace Brackets

1. Place a wrench on the nuts **(1)** retaining the bracket **(2)**, and unscrew the screws **(3)** retaining the bracket.

NOTE

The shovel brackets are screwed into a spacer **(4)**, which must be removed first.

2. Remove the bracket **(2)**.
3. Install the replacement bracket **(2)**, and retain with screws **(3)** and nuts **(1)**.



END OF WORK PACKAGE

UNIT MAINTENANCE

CONTAINERIZED LATRINE (CL)

(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM (CLS)

(NSN 4510-01-477-7764)

GENDER SIGNS
INSPECT, REPLACE

INITIAL SETUP

Tools

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One (1)

Materials/Parts

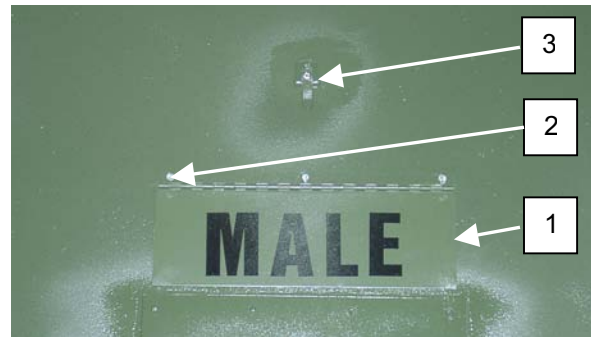
Equipment Condition

CLS not stacked.

INSPECT

Inspect the Gender Sign

1. Ensure the sign **(1)** is clean and legible.
2. Ensure the sign **(1)** can be changed easily, without forcing.
3. Ensure rivets **(2)** are in place, and sign **(1)** is tight.
4. Ensure retainer **(3)** is in place, and operates correctly.



Replace the Gender Sign

NOTE

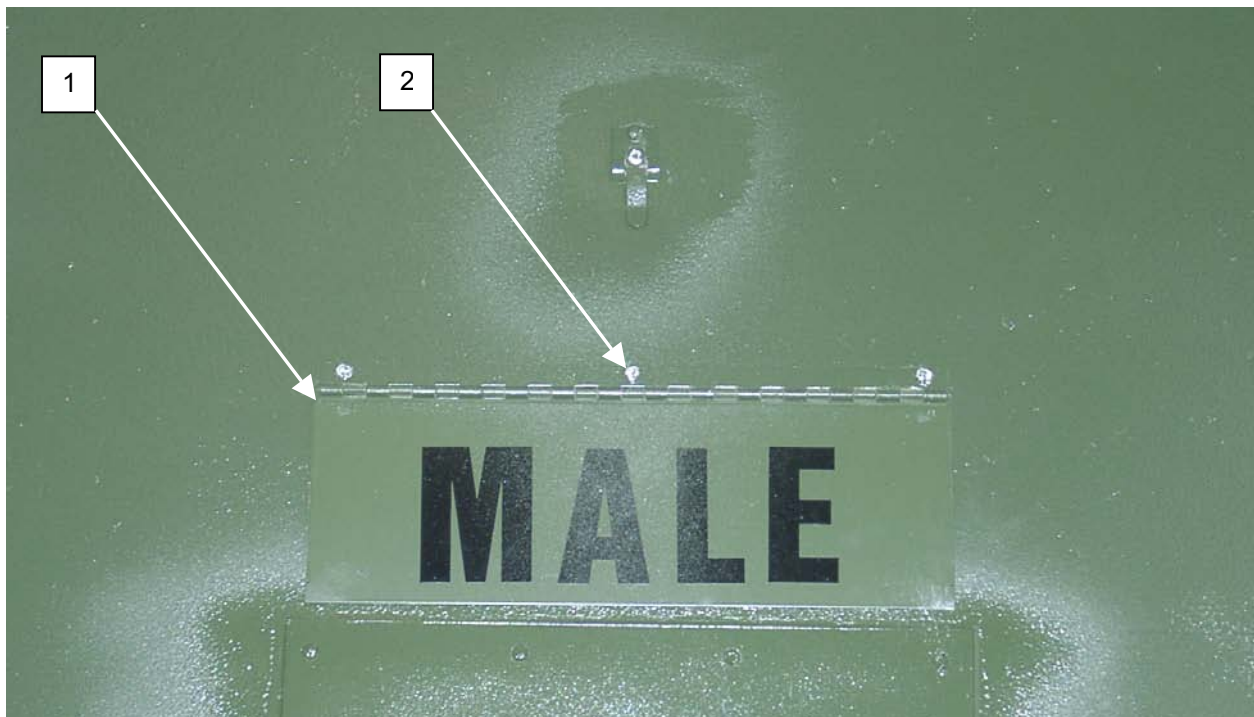
When gender signs and retainers for the CL are no longer serviceable and must be replaced, the signs and retainers are to be replaced with those used on the CLS, as pictured in this work package.

1. Place sign **(1)** in MALE position.

NOTE

Gender sign retainers may have been fastened with rivets. If so, the rivets must be drilled out, and sheet metal screws procured to fasten the replacement sign.

2. Remove screws **(2)** retaining sign **(1)**.
3. Remove sign **(1)**.
4. Place replacement sign **(1)** in position, and retain with screws **(2)**.



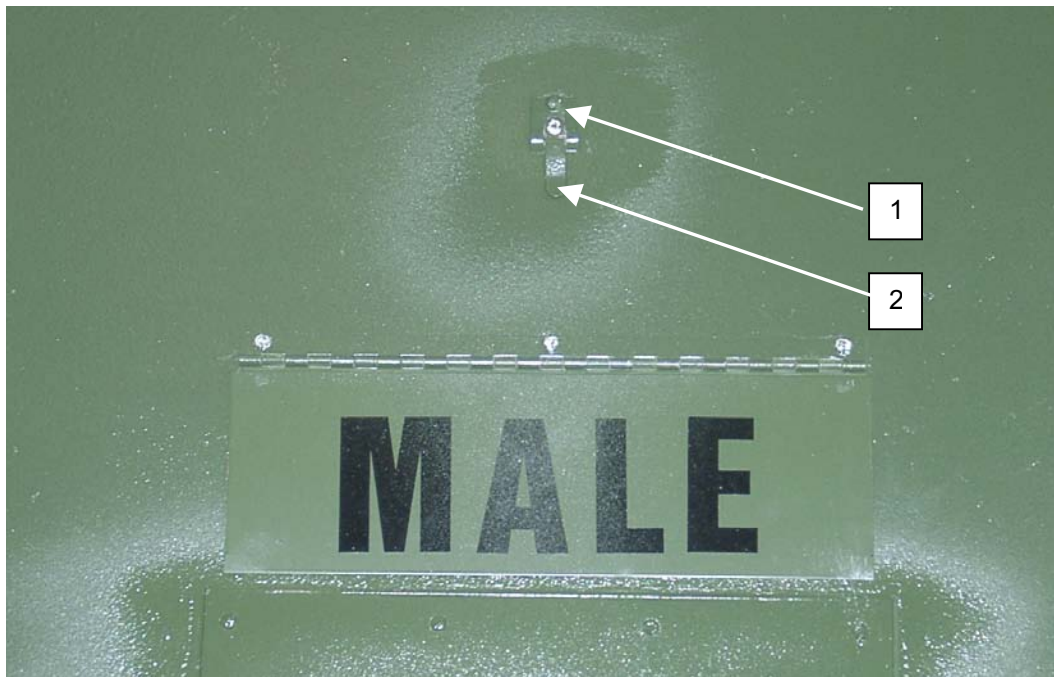
Replace the Gender Sign Snap Tight Fastener**NOTE**

When gender signs and retainers for the CL are no longer serviceable and must be replaced, the signs and retainers are to be replaced with those used on the CLS, as pictured in this work package.

NOTE

Gender sign retainers may have been fastened with rivets. If so, the rivets must be drilled out, and sheet metal screws procured to fasten the replacement sign.

1. Remove the screws (1) securing the sign retainer (2), and remove the retainer.
2. Install the retainer (2), and secure with screws (1).

**END OF WORK PACKAGE**

UNIT MAINTENANCE

CONTAINERIZED LATRINE (CL)

(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM (CLS)

(NSN 4510-01-477-7764)

DRAFT INDUCER FAN
TEST, REPLACE**INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts

Wire Tags (Item 56, WP 0118 00)

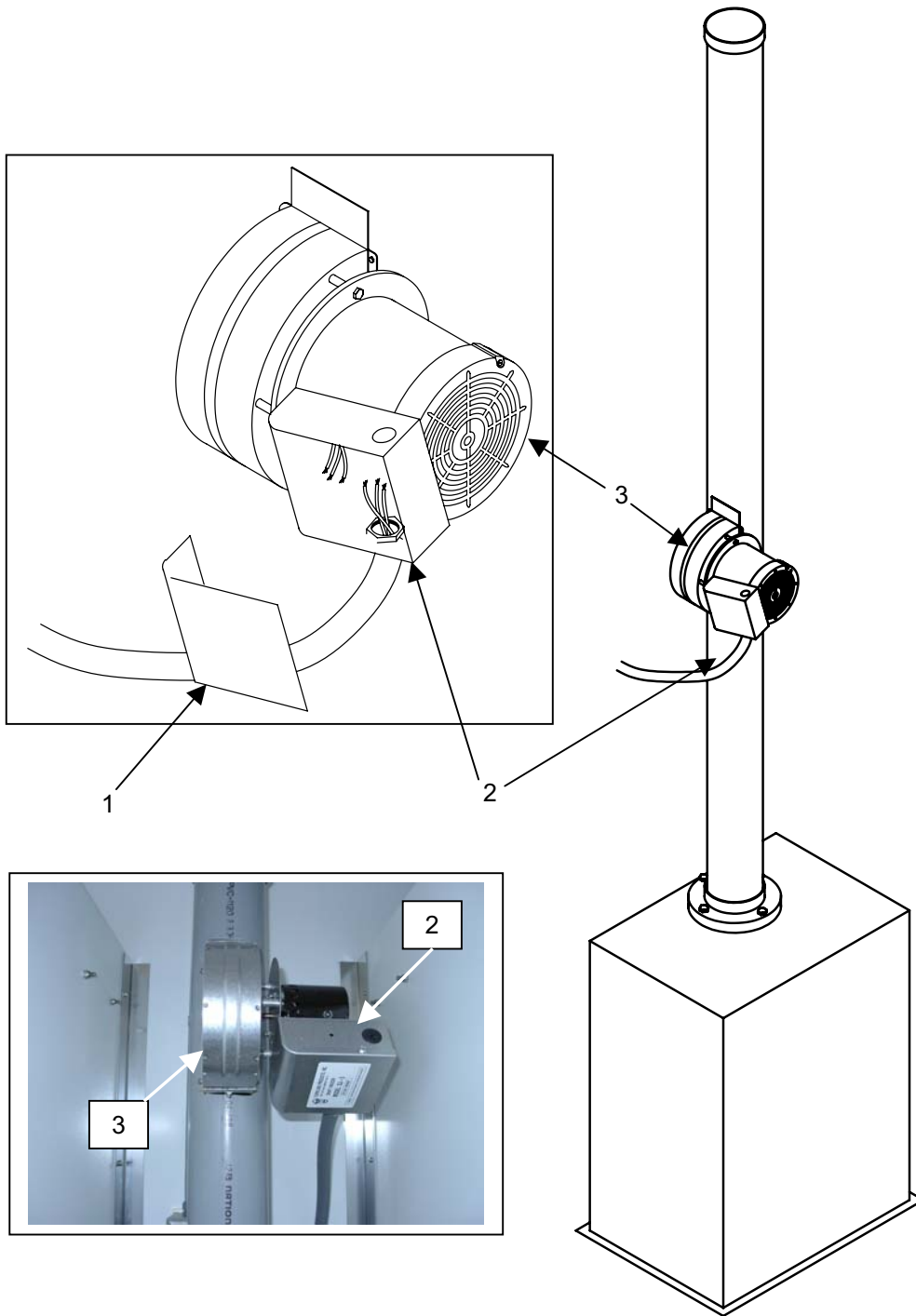
Equipment Condition

Power disconnected.

TEST**Test the Draft Inducer Fan****WARNING**

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs (or tests) such as replacing a light bulb. Remember that the latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

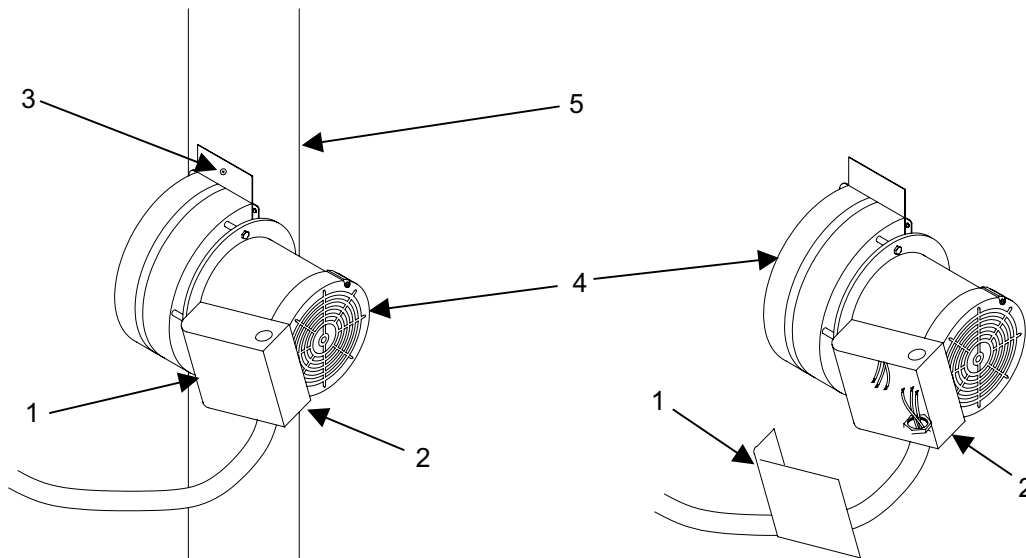
1. Remove the cover **(1)** from junction box **(2)**.
2. Tag and disconnect the wiring in the junction box **(2)**.
3. Use a multimeter set to read resistance (ohms Ω) to test for continuity between the black (hot) and white (neutral) wires coming from the motor. There should be continuity between the two wires (0 – 1 ohms Ω). If there is no continuity, replace the draft inducer fan **(3)**.
4. Use a multimeter set to read resistance (ohms Ω) to test for continuity between the black and green (ground) wires coming from the motor, and then the white and green wires. There should be no continuity between the two wires (infinite ohms Ω). If there is continuity, replace the draft inducer fan **(3)**.
5. Reconnect the draft inducer fan motor wiring as tagged.
6. Install the cover **(1)** onto the junction box **(2)**.



REPLACE**Replace the Draft Inducer Fan****WARNING**

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs (or tests) such as replacing a light bulb. Remember that the latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Remove the cover (1) from junction box (2).
2. Tag and disconnect the wiring in the junction box (2).
3. Remove screws (3) securing vent fan assembly (4) to 4 inch PVC pipe (5).
4. Pull the fan assembly (4) away from the hole that has been cut in the 4-inch PVC pipe (5).
5. Place the fan assembly (4) into the hole cut into the 4 inch PVC pipe (5).
6. Secure the fan assembly (4) with mounting screws (3).
7. Reconnect the draft inducer fan motor wiring as tagged.
8. Install the cover (1) onto the junction box (2).

**END OF WORK PACKAGE**

UNIT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****EXHAUST FAN
TEST, REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts

Wire Markers (Item 55, WP 0118 00)

Equipment Condition

Set circuit breaker (CL #2/CLS #2A) to the OFF position.

TEST**Test the Exhaust Fan****WARNING**

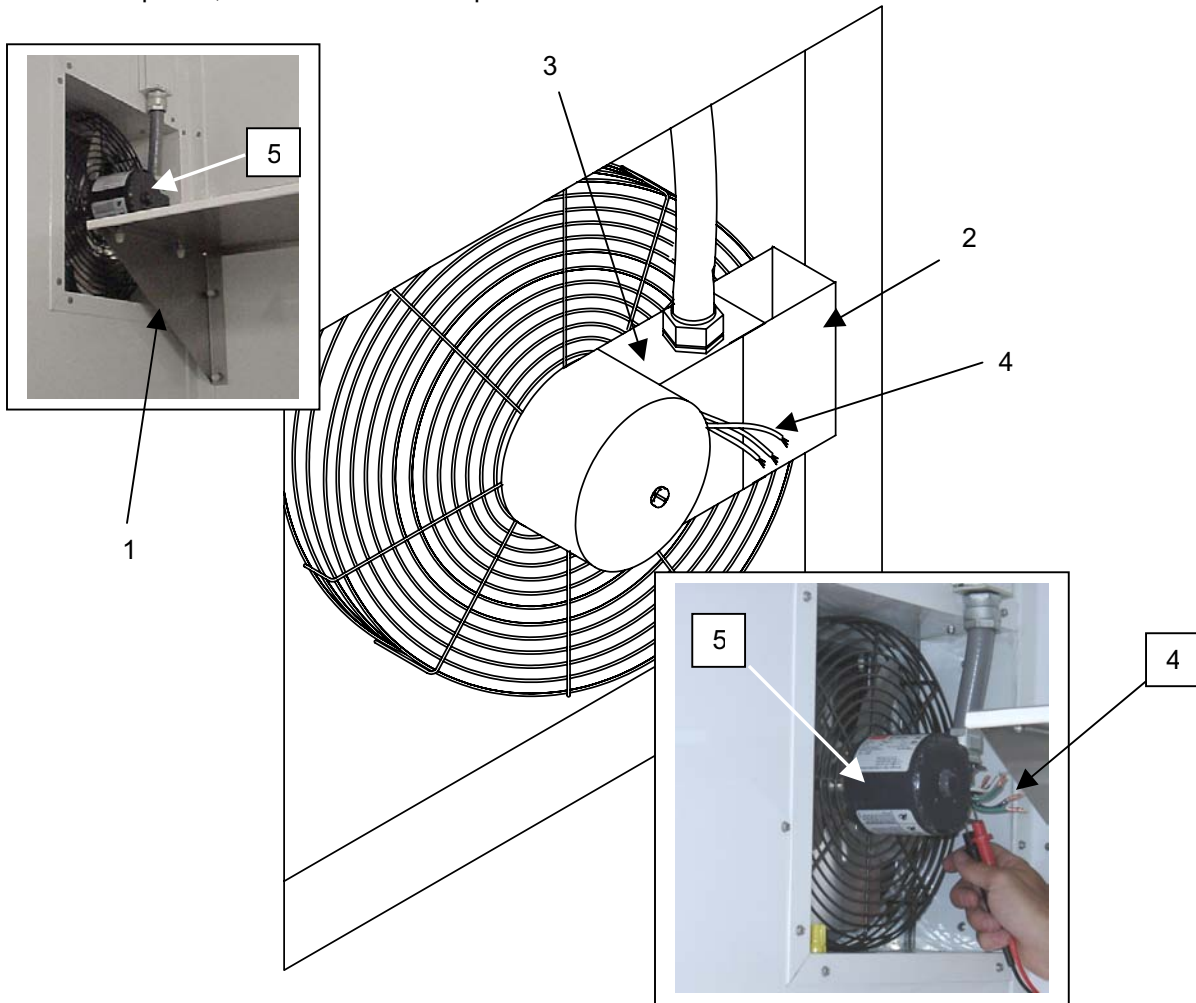
Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs (or tests) such as replacing a light bulb. Remember that the latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

CAUTION

Do not stand on commode while performing this maintenance task. The commode may be damaged.

1. Ensure power is disconnected.
2. Remove shelf **(1)**.
3. Remove the cover **(2)** from the exhaust fan junction box **(3)**.
4. Tag and disconnect the wiring **(4)** from the fan **(5)**.
5. Use a multimeter set to read ohms (Ω), and check for continuity between the black and white wires. There should be a low reading, but not 0 ohms. Replace a shorted fan (0 ohms) or open fan (∞ ohms).

6. Use a multimeter set to read ohms (Ω), and check for continuity between the black and white wires and the green (ground) wire. There should be a reading of ∞ ohms. Replace a fan with any other reading.
7. Reconnect the wires **(4)** as tagged.
8. Install the junction box cover **(2)**.
9. Install shelf **(1)**.
10. Reconnect power, and test for normal operation.



REPLACE**Replace Exhaust Fan****WARNING**

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs (or tests) such as replacing a light bulb. Remember that the latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

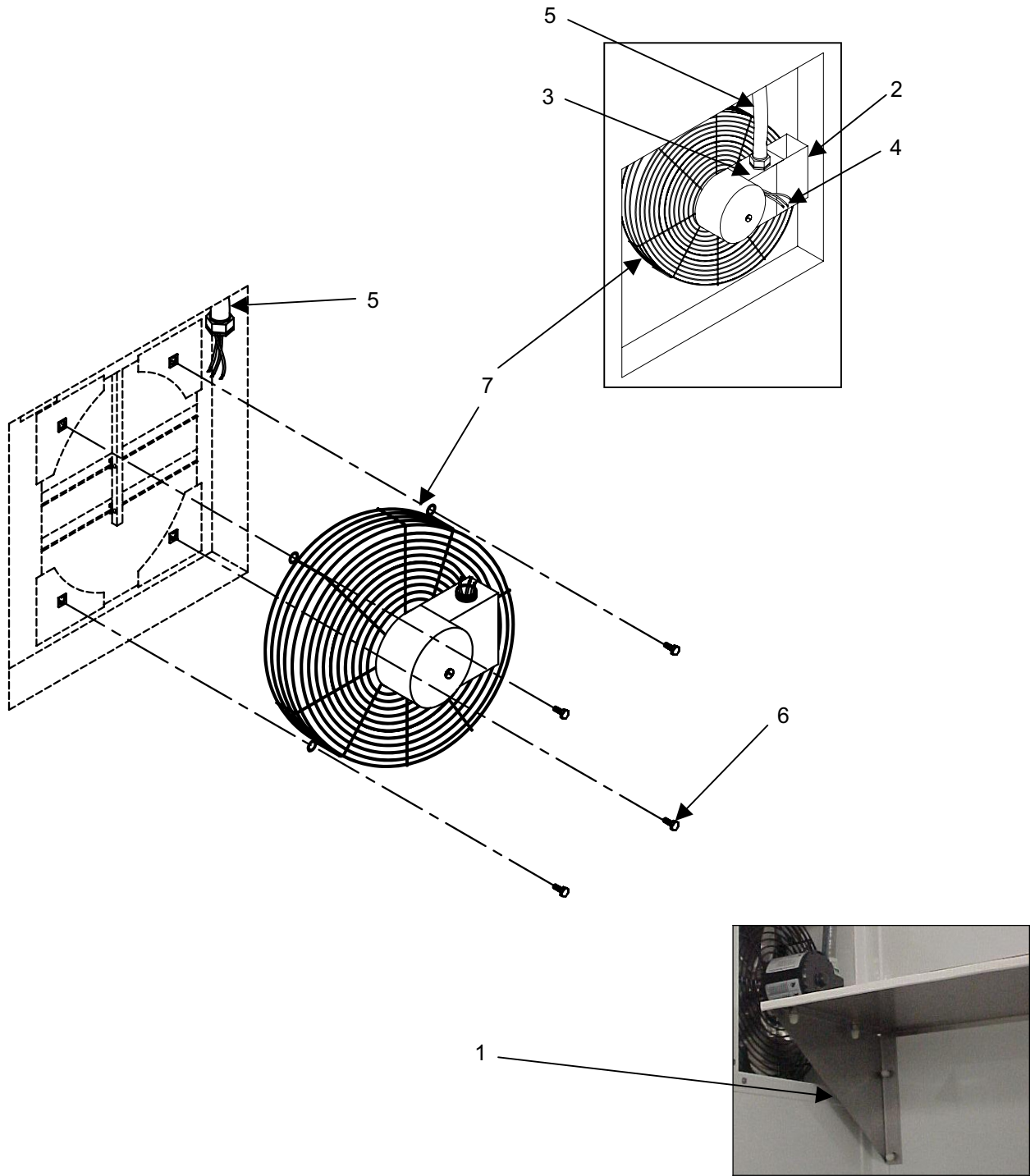
CAUTION

Do not stand on commode while performing this maintenance task. The commode may be damaged.

NOTE

Removal of the shelf adjacent to the exhaust fan may ease replacement of the exhaust fan.

1. Ensure power is disconnected.
2. Remove shelf **(1)**.
3. Remove the cover **(2)** from the exhaust fan junction box **(3)**.
4. Tag and disconnect the wiring **(4)**.
5. Remove conduit locknut and disconnect exhaust fan conduit **(5)** from fan junction box **(3)**.
6. Remove fan mounting screws **(6)**.
7. Remove exhaust fan **(7)**.
8. Place new exhaust fan **(7)** into position.
9. Connect exhaust fan conduit **(5)** into fan junction box **(3)** and secure with locknut.
10. Install fan mounting screws **(6)**. Do not overtighten.
11. Connect wiring **(4)** to the replacement fan **(7)** as tagged.
12. Install junction box cover **(2)**.
13. Install shelf **(1)**.
14. Reconnect power and test for normal operation.



END OF WORK PACKAGE

UNIT MAINTENANCE
CONTAINERIZED LATRINE (CL)

(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM (CLS)

(NSN 4510-01-477-7764)

**DOOR HINGE AUTO CLOSE
ADJUST, REPLACE**

INITIAL SETUP

Tools

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One (1)

Materials/Parts

Equipment Condition

CLS not stacked.
Lights ON.

ADJUST

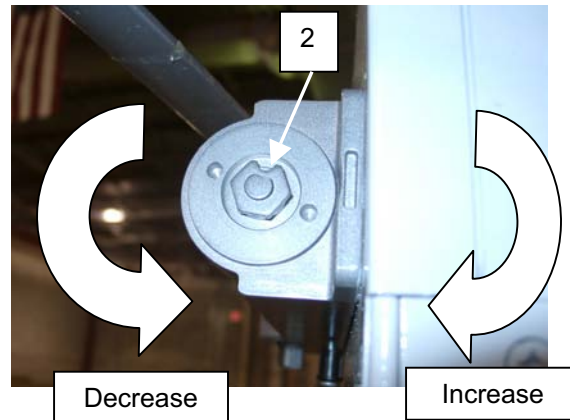
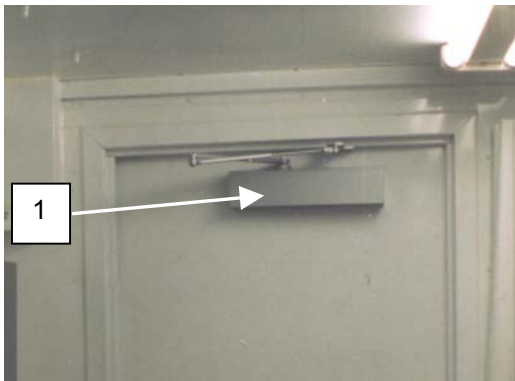
Adjust Spring Tension

1. Remove cover (1).

NOTE

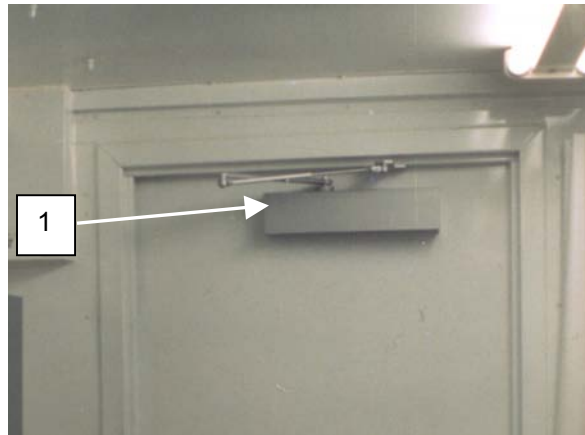
The factory setting has the adjuster screwed all the way out, then three turns clockwise; alternately, all the way in, then ten turns counterclockwise.

2. Turn spring adjusting screw (2) counter clockwise to decrease spring tension.
3. Turn spring adjusting screw (2) clockwise to increase spring tension.
4. Install cover (1).



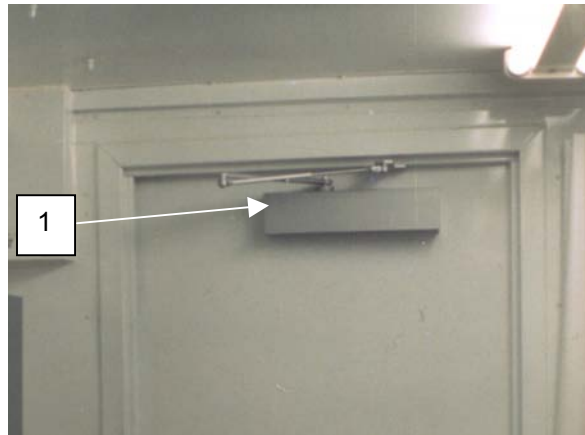
Adjust Door Closing Speed

1. Remove cover (1).
2. Locate the door closing speed adjusting screw (2).
3. Use a $\frac{1}{8}$ -inch Allen wrench to turn the adjusting screw (2). Turn the adjusting screw clockwise to slow the door, counterclockwise to increase the door closing speed.
4. Install cover (1).



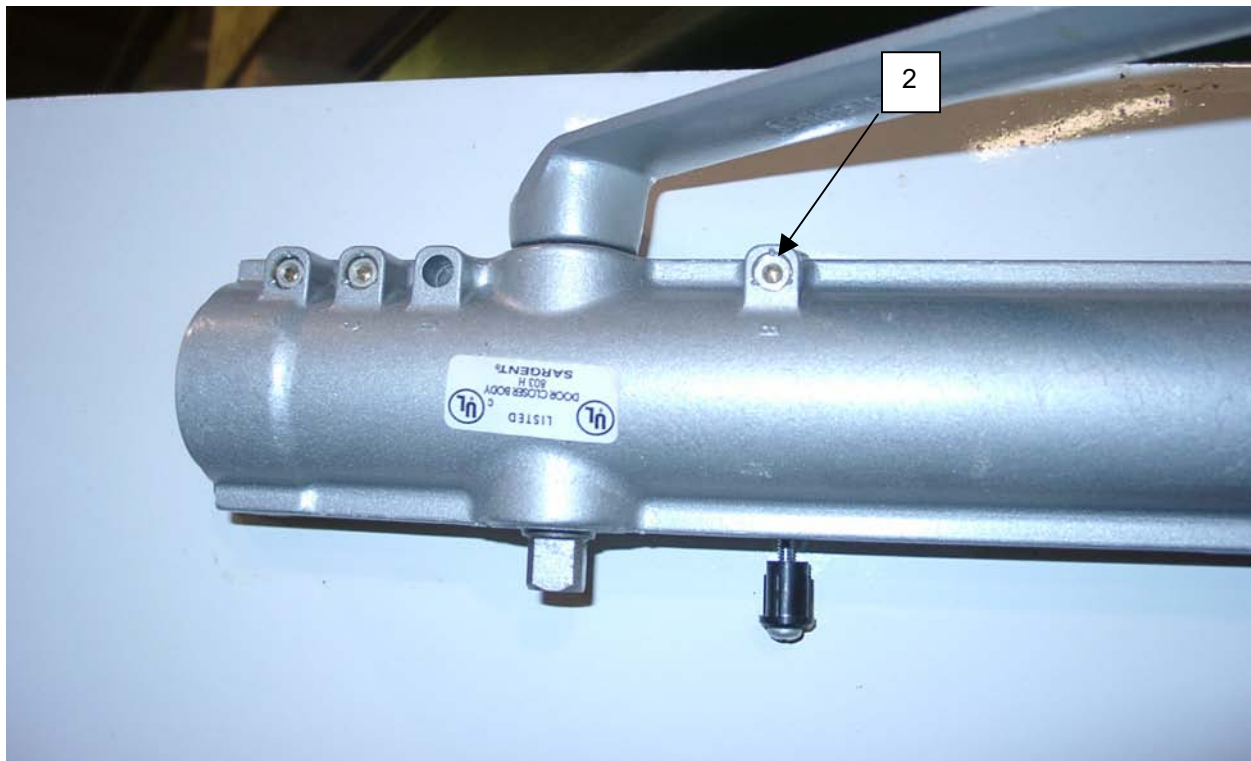
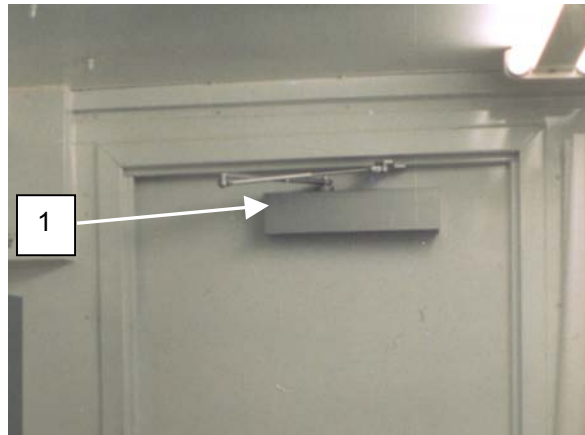
Adjust Door Latching Speed

1. Remove cover (1).
2. Locate the door latching speed adjusting screw (2).
3. Use a $\frac{1}{8}$ -inch Allen wrench to turn the adjusting screw (2). Turn the adjusting screw clockwise to decrease the latching speed, counterclockwise to increase the latching speed.
4. Install cover (1).



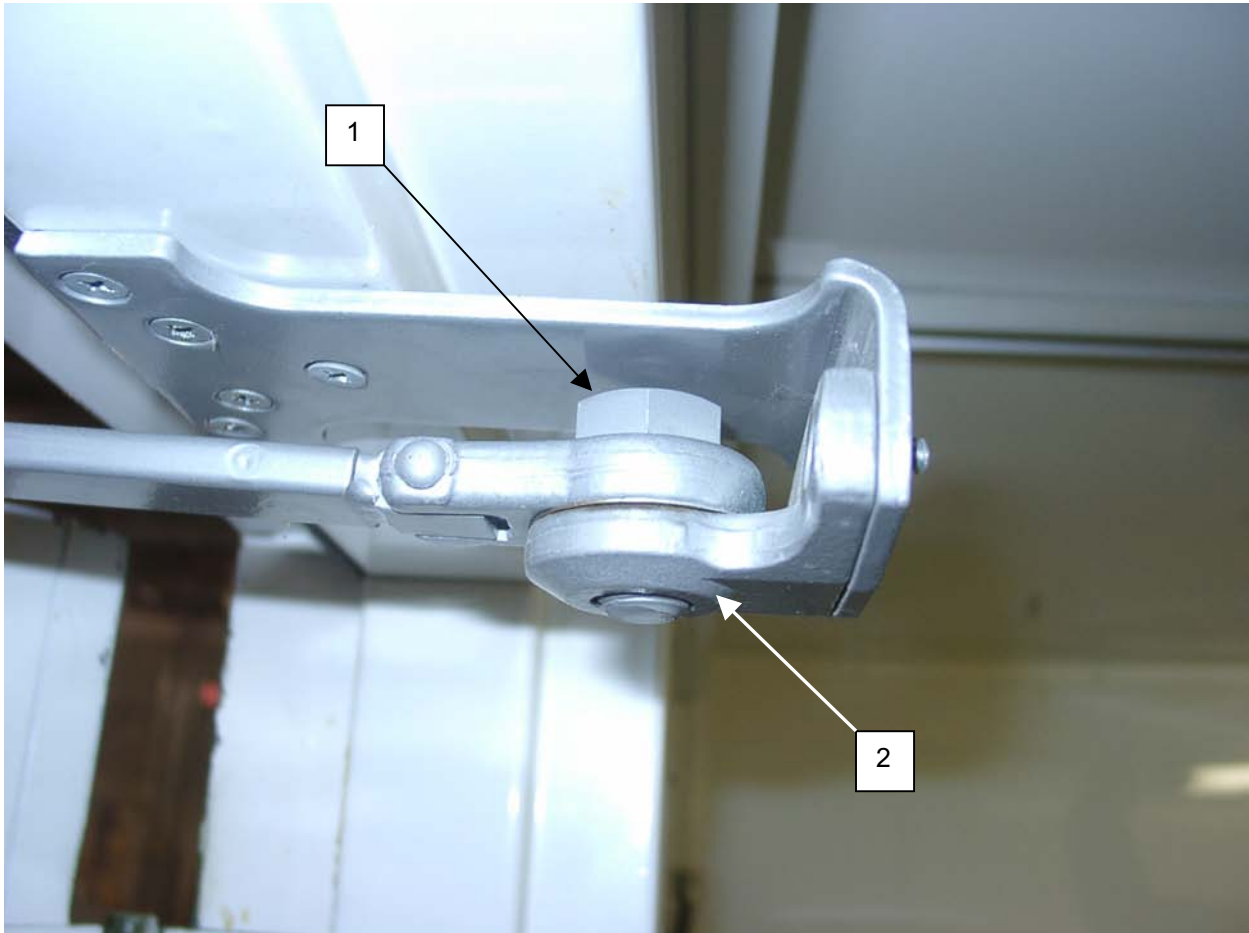
Adjust Backcheck

1. Remove cover (1).
2. Locate the latching speed adjusting screw (2).
3. Use a $\frac{1}{8}$ -inch Allen wrench to turn the adjusting screw (2). Turn the adjusting screw clockwise to decrease the backcheck speed, counterclockwise to increase the backcheck speed.
4. Install cover (1).



Adjust Hold Open Arm

Adjust nut (1) on swivel arm pivot (2). Slightly tightening or loosening the hold open nut will change the hold open position of the door.



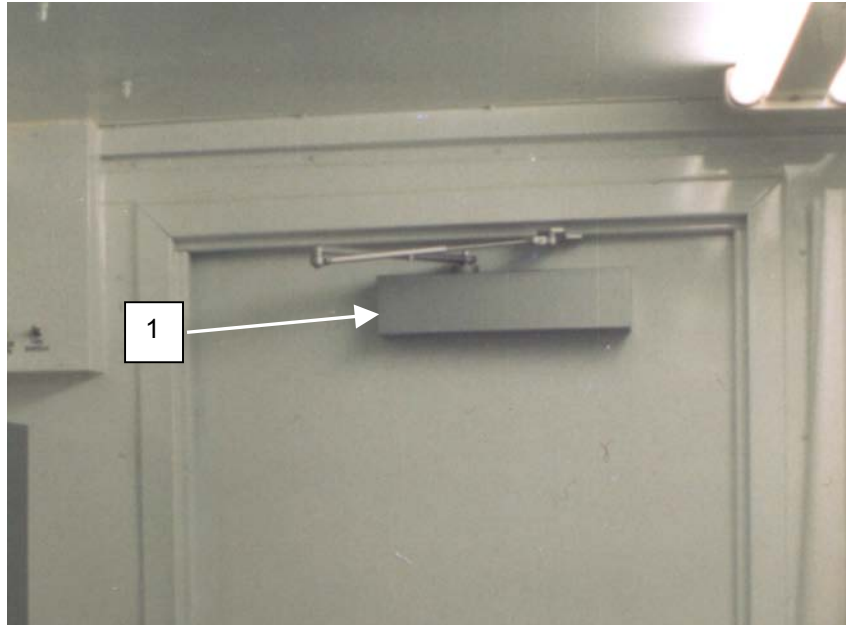
REPLACE**Replace Door Closing Mechanism**

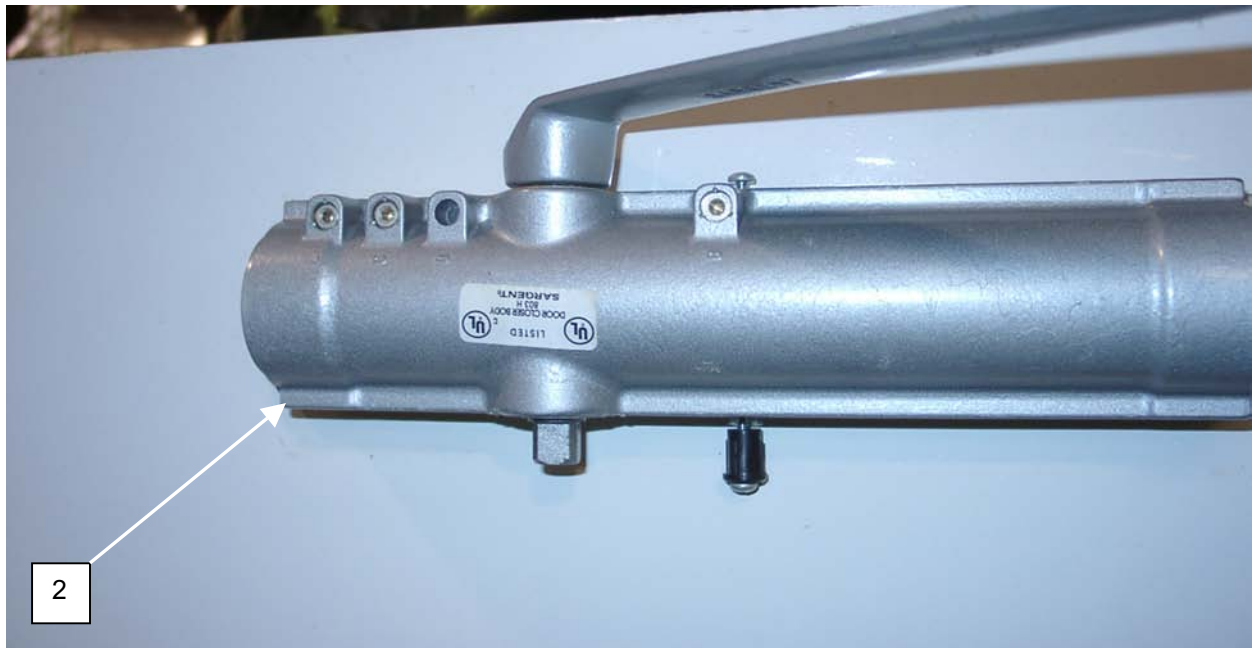
1. Remove cover **(1)**.
2. Remove the screws retaining the regulator **(2)**, and remove the regulator.
3. Remove the screws retaining the closer arm bracket **(3)**, and remove the closer arm bracket.
4. Remove the cover **(1)** from the replacement door closer regulator **(2)**.
5. Install the replacement regulator **(2)**, and retain with screws.

NOTE

Installation of the closer arm bracket may require repositioning on the door.

6. Install the replacement closer arm bracket **(3)**, and retain with screws.
7. Operate the door throughout its range.
8. Adjust as necessary. Use the instructions given in WP 0043 00.
9. Install the cover **(1)**.





END OF WORK PACKAGE

UNIT MAINTENANCE

CONTAINERIZED LATRINE (CL)

(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM (CLS)

(NSN 4510-01-477-7764)

ELECTRICAL SYSTEM
TEST, REPLACE

INITIAL SETUP

Tools

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

52C

Materials/Parts

Electrical Tape (Item 43, WP 0118 00)

Wire Markers (Item 55, WP 0118 00)

Equipment Condition

Disconnect power from CL/CLS.

Set all circuit breakers and switches to OFF position.

TEST

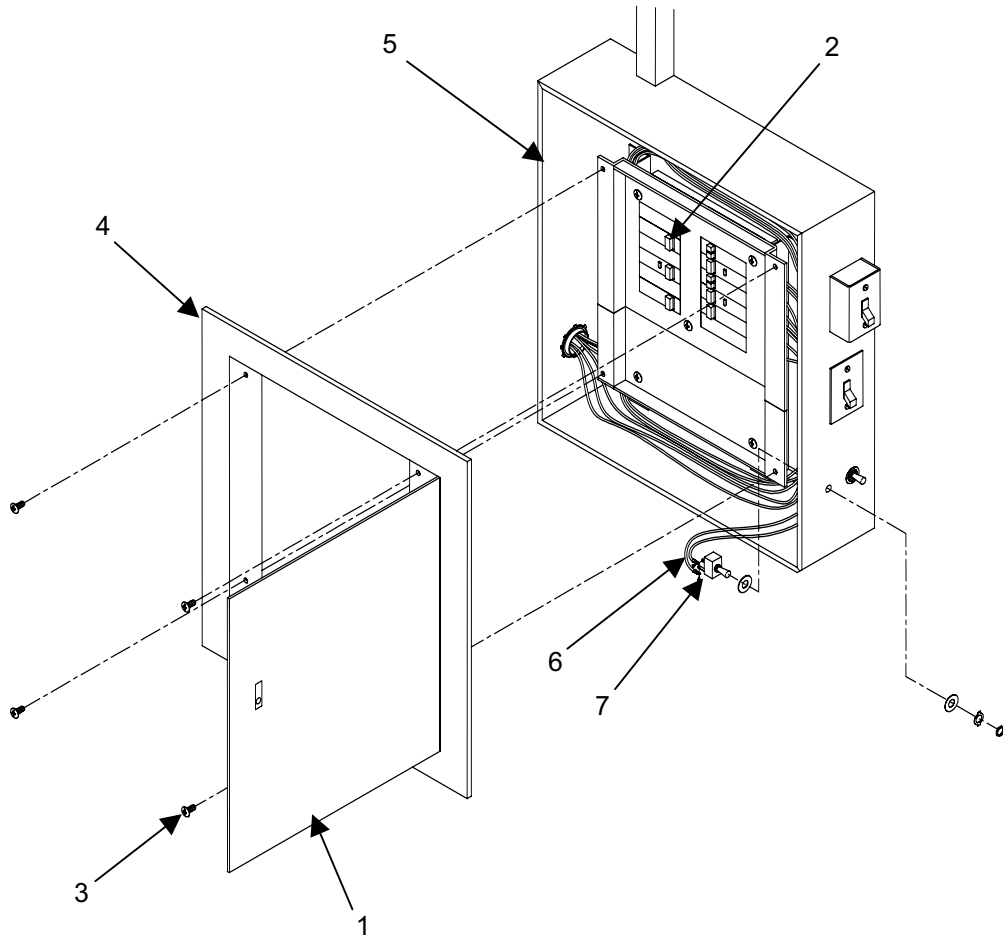
Test Toggle Switch

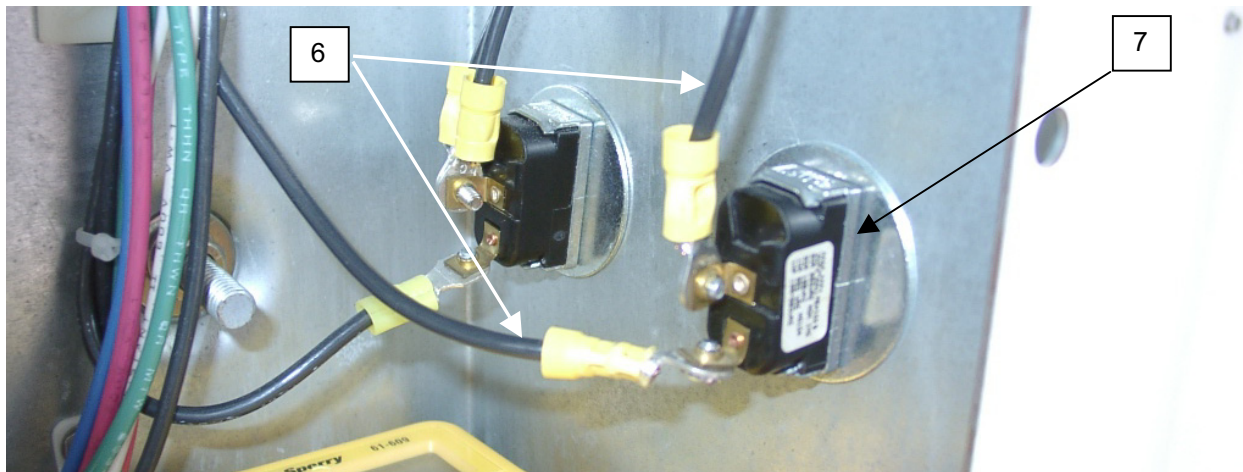
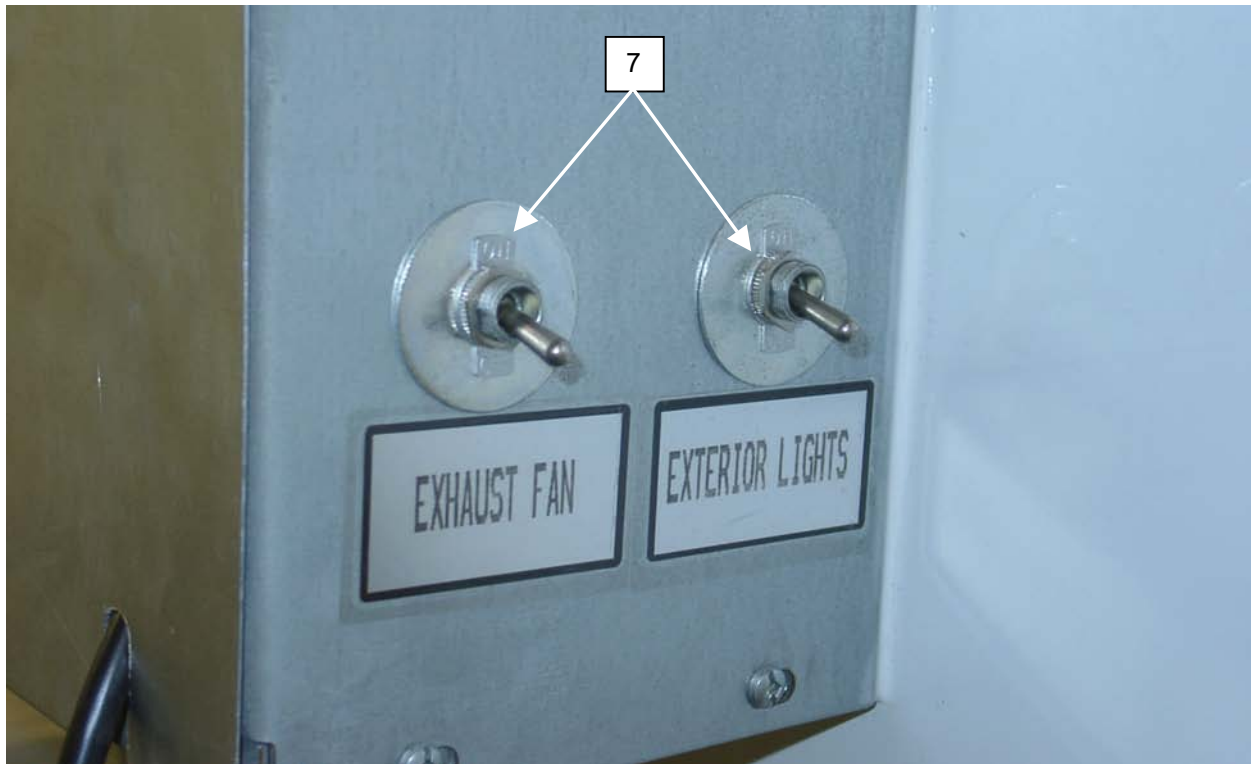
**WARNING**

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs (or tests) such as replacing a light bulb. Remember that the latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Open circuit breaker panel door **(1)**.
2. Ensure all circuit breakers **(2)** and switches are set to the OFF position.
3. Remove four captive screws **(3)** securing circuit breaker panel cover **(4)** to breaker box **(5)**, and remove circuit breaker panel cover.
4. Tag and disconnect wiring **(6)** from toggle switch **(7)**.
5. Using a multimeter set to read ohms, check for continuity at toggle switch **(7)** with switch set to the ON position. If no continuity exists, replace toggle switch.
6. Using a multimeter set to read ohms, check for continuity at toggle switch **(7)** with switch set to the OFF position. If continuity exists, replace toggle switch.
7. Using a multimeter set to read ohms, check for continuity at toggle switch **(7)** between each pole **(8)** and the switch case. If continuity exists, replace toggle switch.
8. Install circuit breaker panel cover **(4)** onto breaker box **(5)**, and retain with four captive screws **(3)**.

9. Ensure power is connected, switch circuit breakers **(2)** to the ON position, and check for normal operation.
10. Close door **(1)**.





Test Water Pump Switch (CLS only) and Interior Light Switch**WARNING**

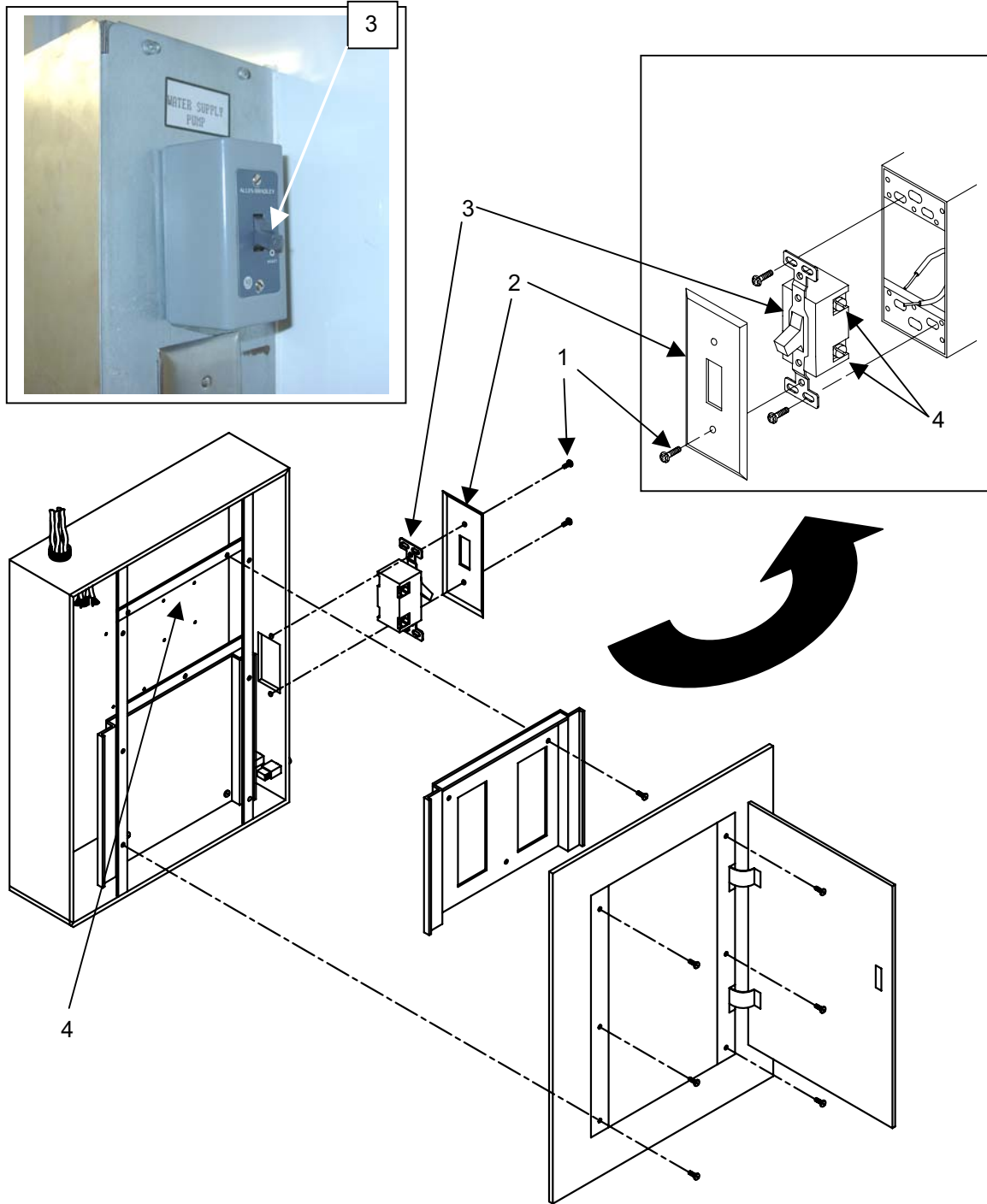
Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs (or tests) such as replacing a light bulb. Remember that the latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Remove the two switch cover screws **(1)**.
2. Remove the switch cover **(2)**.
3. Remove screws retaining the switch **(3)**, and remove the switch.
4. Disconnect and tag the wiring at the switch **(3)**.

NOTE

Do not attempt to test continuity with the switch in place. Electrical components still in line with the switch may give a false reading.

5. Place the switch **(3)** in the ON position.
6. Use a multimeter set to read resistance (ohms Ω) to test for continuity across the two poles **(4)** of the switch **(3)**.
7. If there is no continuity, replace the switch **(3)**.
8. Place the switch **(3)** in the OFF position.
9. Use a multimeter set to read resistance (ohms Ω) to test for continuity across the two poles **(4)** of the switch **(3)**.
10. If there is continuity, replace the switch **(3)**.
11. Connect wiring to the switch **(3)** as tagged.
12. Install switch **(3)**.
13. Install the switch cover **(2)**.
14. Install the two switch cover screws **(1)**.



Test Sump Pump Switch



WARNING

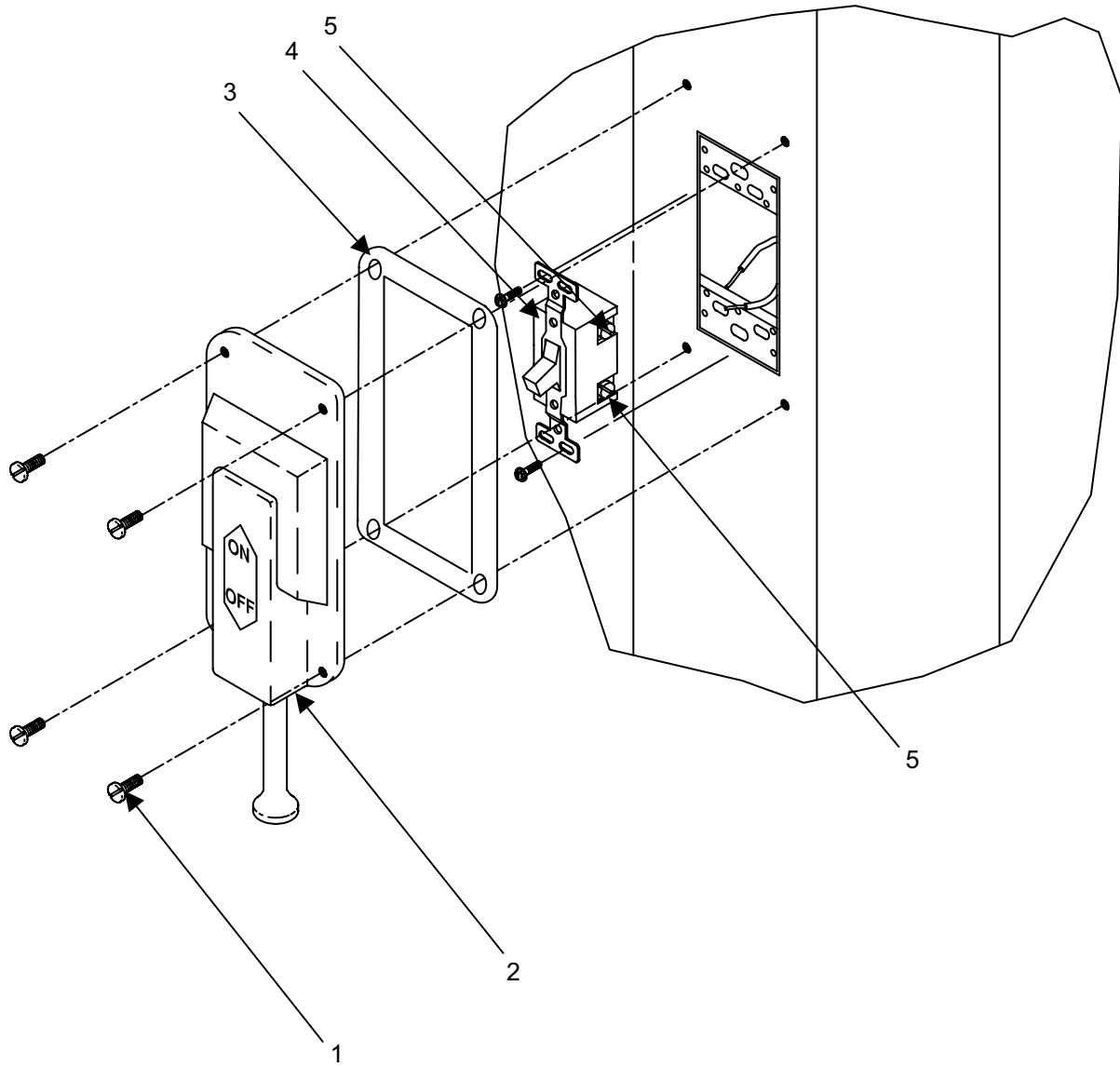
Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs (or tests) such as replacing a light bulb. Remember that the latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Remove the four switch cover screws **(1)**.
2. Remove the switch cover **(2)** and gasket **(3)**.
3. Remove screws retaining the switch **(4)**, and remove the switch.
4. Disconnect and tag the wiring at the switch **(4)**.

NOTE

Do not attempt to test continuity with the switch in place. Electrical components still in line with the switch may give a false reading.

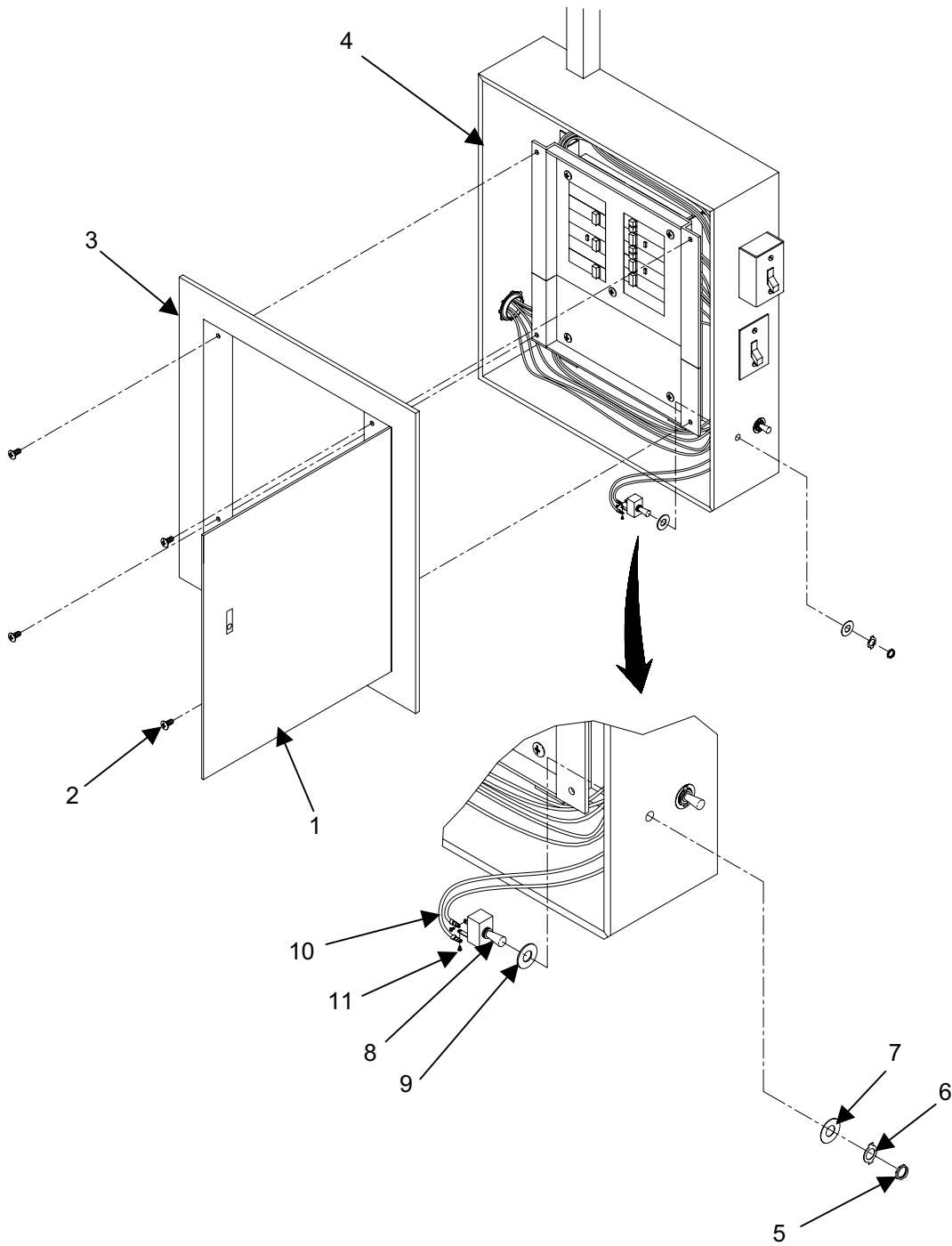
5. Place the switch **(4)** in the ON position.
6. Use a multimeter set to read resistance (ohms Ω) to test for continuity across the two poles **(5)** of the switch **(4)**.
7. If there is no continuity, replace the switch **(4)**.
8. Place the switch **(4)** in the OFF position.
9. Use a multimeter set to read resistance (ohms Ω) to test for continuity across the two poles **(5)** of the switch **(4)**.
10. If there is continuity, replace the switch **(4)**.
11. Connect wiring to the switch **(4)** as tagged.
12. Install switch **(4)** and retain with two screws.
13. Install the switch cover **(2)** and gasket **(3)**, and retain with four screws **(1)**.



REPLACE**Replace Toggle Switch****WARNING**

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs (or tests) such as replacing a light bulb. Remember that the latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Open circuit breaker panel door **(1)**.
2. Ensure all circuit breakers and switches are set to the OFF position.
3. Remove four captive screws **(2)** securing circuit breaker panel cover **(3)** to breaker box **(4)**, and remove circuit breaker panel cover.
4. Remove installation nut **(5)**, ON/OFF tag **(6)**, outside washer **(7)** from side of circuit breaker box **(4)**.
5. Pull switch **(8)** into circuit breaker box **(4)**.
6. Remove inside washer **(9)**.
7. Tag and disconnect wires **(10)** from terminal screws **(11)**.
8. Remove toggle switch **(8)**.
9. Re-connect wires **(10)** and terminal screws **(11)** to new toggle switch.
10. Install inside washer **(9)** to switch **(8)** and place new toggle switch **(8)** into position.
11. Install second washer **(7)** ON/OFF tag **(6)** and nut **(5)** and secure switch **(8)** to circuit breaker box **(4)**.
12. Install circuit breaker panel cover **(3)** onto breaker box **(4)**, and retain with four captive screws **(2)**.
Close door **(1)**.
13. Reconnect site power.
14. Turn breakers set to the ON position.
15. Test equipment for proper operation.



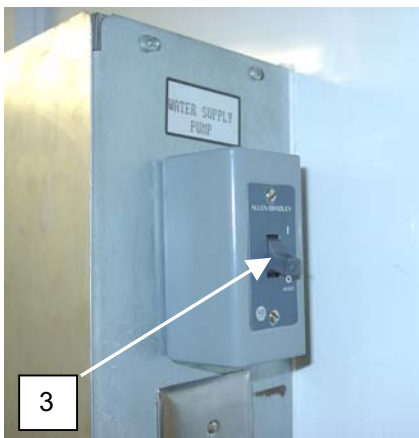
Replace Water Pump Switch (CLS only) and Interior Light Switch**WARNING**

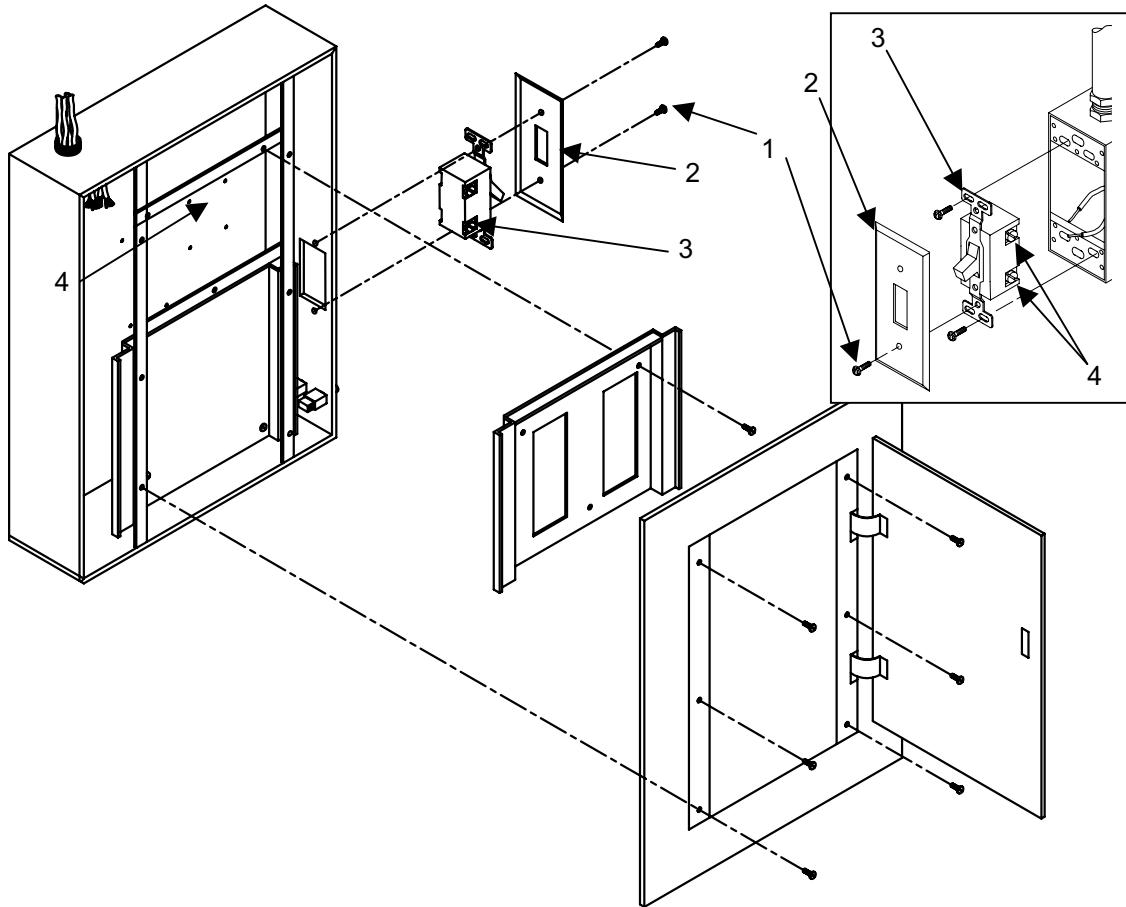
Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs (or tests) such as replacing a light bulb. Remember that the latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

NOTE

When replacing electrical components, wire for wire connection is recommended. In wire for wire replacement, wires are disconnected one at a time from the component and immediately connected to the replacement component.

1. Remove the two switch cover screws **(1)**.
2. Remove the switch cover **(2)**.
3. Remove the screws retaining the switch **(3)**, and remove the switch.
4. Disconnect and tag the wiring at the switch poles **(4)**.
5. Connect the wires as tagged to the new switch **(3)** at the switch poles **(4)**.
6. Wrap electrical tape around the switch **(3)** to insulate wire connections.
7. Install the new switch **(3)** and retain with two screws.
8. Replace the switch cover **(2)**, and secure with two screws **(1)**.





Replace Sump Pump Switch



WARNING

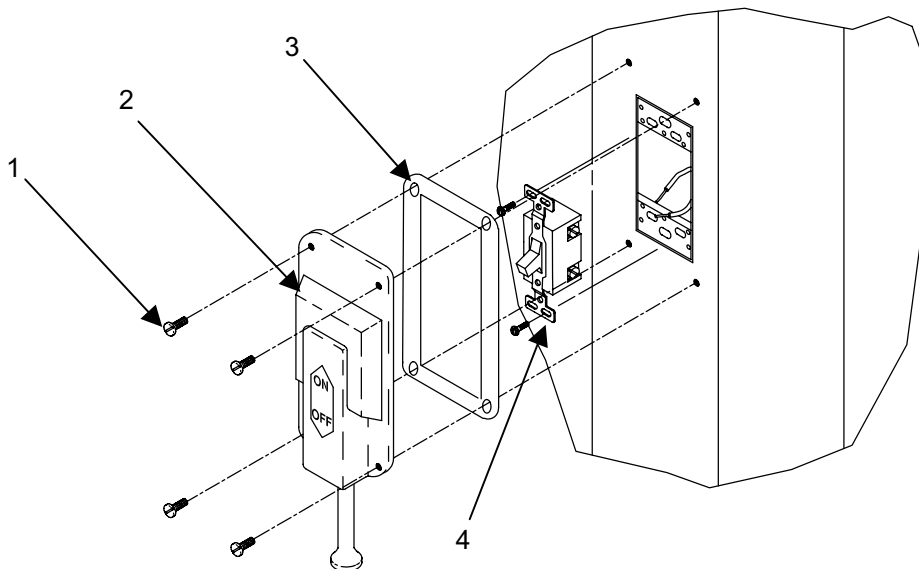
Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs (or tests) such as replacing a light bulb. Remember that the latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Remove the four switch cover screws (1).
2. Remove the switch cover (2) and switch cover gasket (3).

NOTE

If only the switch cover or gasket requires replacement, proceed to step 7.

3. Remove screws retaining the switch (4), and remove the switch.
4. Disconnect and tag the wiring at the switch (4).
5. Connect wiring to the replacement switch (4) as tagged.
6. Install switch (4) and retain with two screws.
7. Install the switch cover (2) with gasket (3) and retain with four screws (1).



END OF WORK PACKAGE

UNIT MAINTENANCE
CONTAINERIZED LATRINE

(NSN 4510-01-453-4012)

CONTAINERIZED LATRINE SYSTEM

(NSN 4510-01-477-7764)

**BALLAST
REPLACE**

INITIAL SETUP

Tools

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts

Electrical Tape (Item 43, WP 0118 00)

Wire Markers (Item 55, WP 0118 00)

Wire Tags (Item 56, WP 0118 00)

Equipment Condition

Set CB #2A (CLS) or CB #2 (CL) to OFF position. Set light switch to OFF position.

REPLACE

Replace Ballast

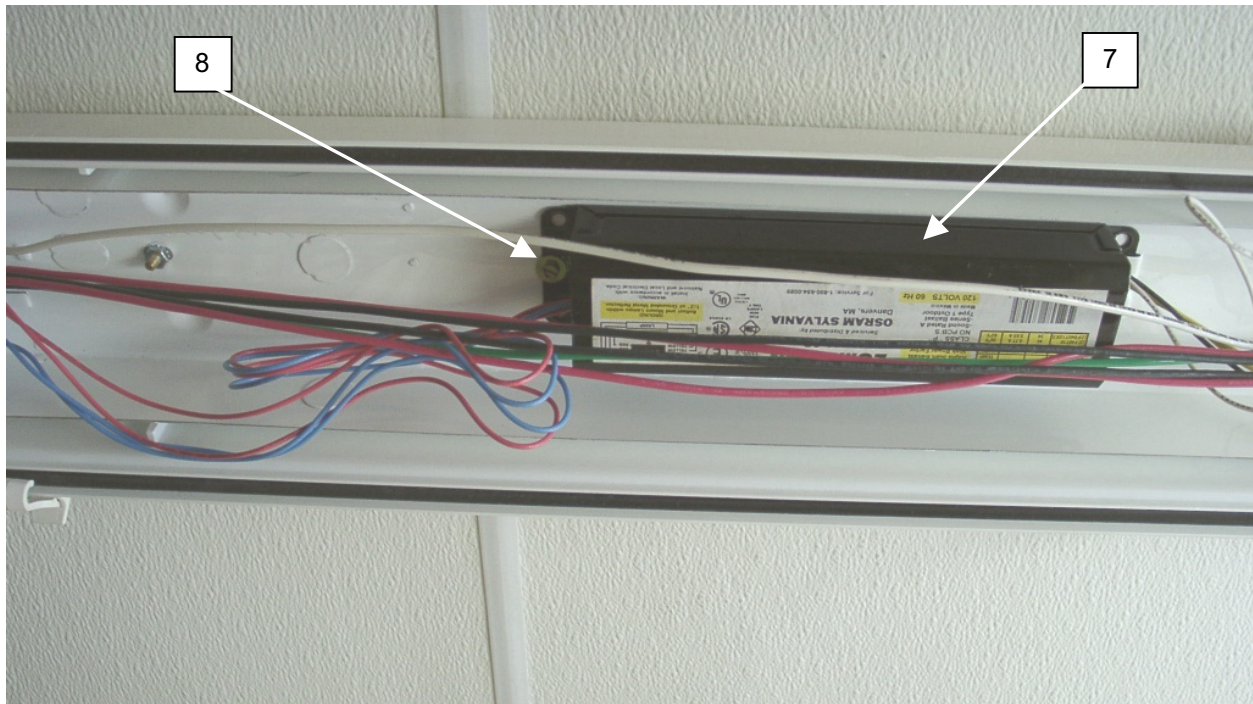


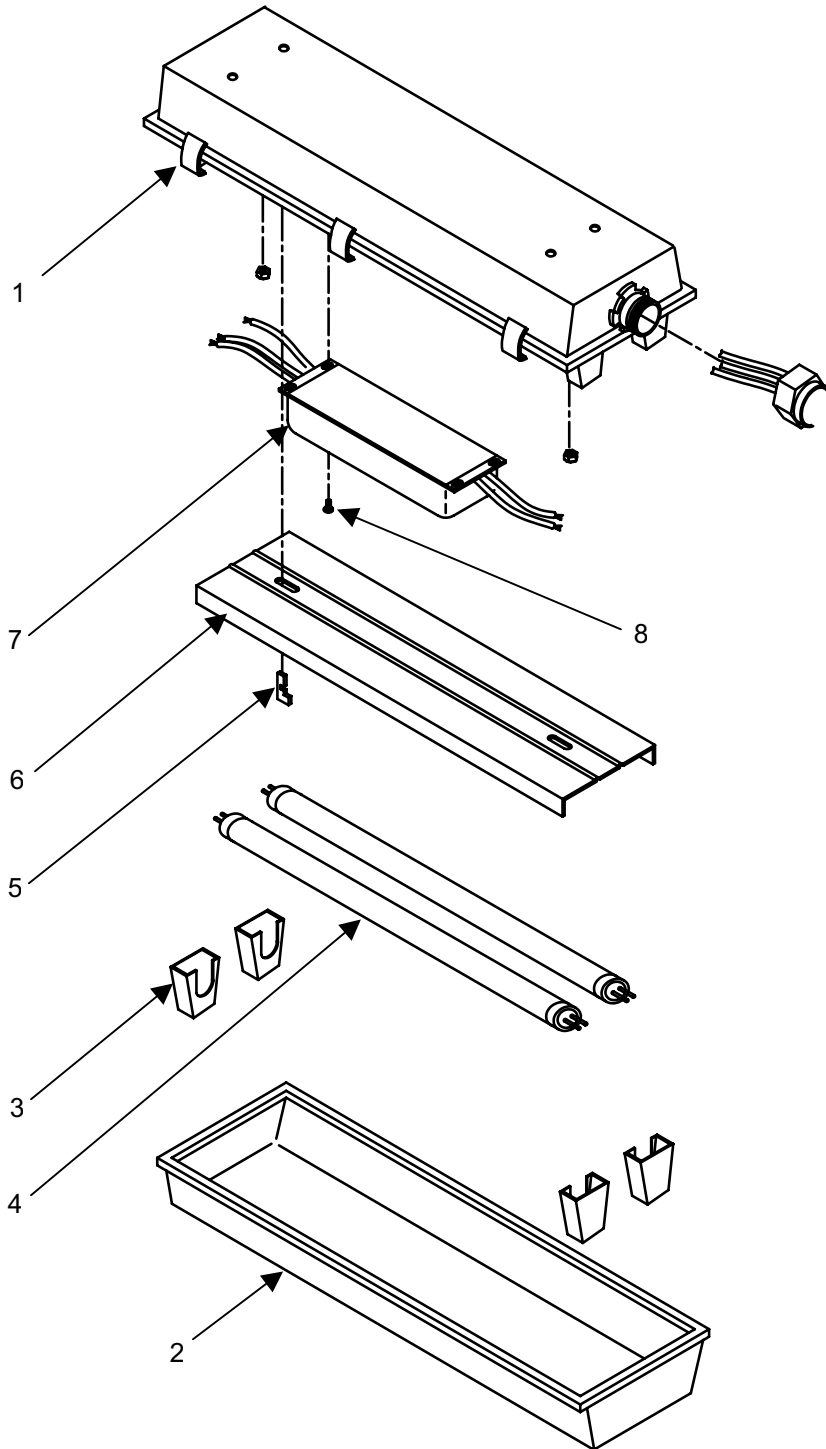
WARNING

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs (or tests) such as replacing a light bulb. Remember that the latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Unclip the six retaining clips **(1)** and remove plastic lens cover **(2)**.
2. Remove the bulb retaining clips **(3)**, if fitted (two per bulb).
3. Support fluorescent bulb **(4)** firmly and twist.
4. Remove fluorescent light bulbs **(4)** from light assembly.
5. Remove the twist fastener **(5)**.
6. Remove the reflector **(6)**.
7. Disconnect wire nuts and tag wires from ballast **(7)**.
8. Remove ballast retaining screw **(8)**.
9. Remove ballast **(7)**.
10. Install replacement ballast **(7)**, and secure with ballast retaining screw **(8)**.

11. Connect wires with wire nuts and tape wire nuts with electrical tape.
12. Install reflector (6) and secure with twist fastener (5).
13. Install fluorescent light bulbs (4). Ensure each bulb is secure.
14. Install bulb retaining clips, if fitted (3) (two per bulb).
15. Position lens cover (2) and secure with the six retaining clips (1).





END OF WORK PACKAGE

UNIT MAINTENANCE
CONTAINERIZED LATRINE
(NSN 4510-01-453-4012)
CONTAINERIZED LATRINE SYSTEM
(NSN 4510-01-477-7764)
EXTERIOR INCANDESCENT LIGHT ASSEMBLY
TEST, REPLACE

INITIAL SETUP**Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required**Materials/Parts**

50 Watt Incandescent Light Bulb (Item 32, WP 0118 00)

Wire Markers (Item 55, WP 0118 00)

Equipment Condition

CL/CLS operating. Set CB (#2 CL/2A CLS) to OFF position.

TEST**Test the Exterior Light Fixture**

WARNING

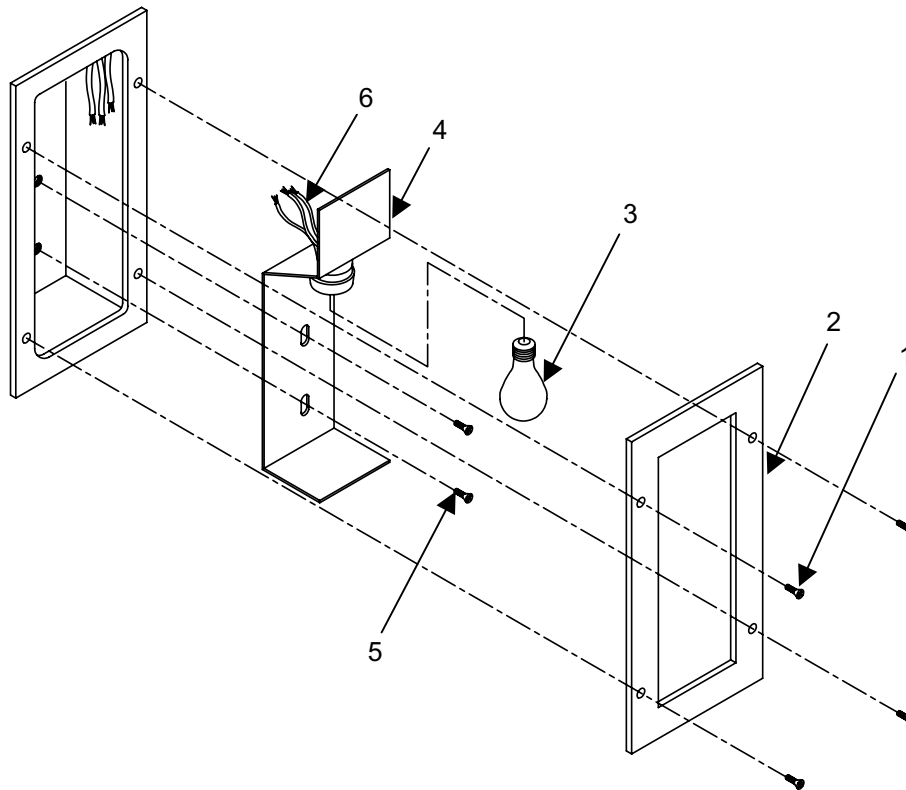
Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs (or tests) such as replacing a light bulb. Remember that the latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

NOTE

Ensure that all circuit breakers are ON before performing this test.

1. Remove four screws **(1)** and cover **(2)**.
2. Replace light bulb **(3)**.
3. If bulb doesn't operate, remove bulb and use a multimeter set to read at least 250VAC to check for power at light fixture socket **(4)**.
4. If no power is present, switch all circuit breakers to the OFF position.
5. Remove screws **(5)** retaining light fixture socket **(4)**, and remove light fixture socket.
6. Tag and disconnect wiring **(6)**.

7. Use a multimeter set to read ohms (Ω) to test for continuity between the black and white wires and their contacts in the socket (4), and between the black and white wires and ground (green wire). If no continuity exists between wires and socket contacts, replace light fixture socket. If continuity exists between either the white or black wire and ground replace light fixture socket.
8. Reconnect wiring (6) as tagged.
9. Install light fixture socket (4), and retain with screws (5).
10. Install light bulb (3) in socket (5).
11. Install cover (2), and retain with screws (1).



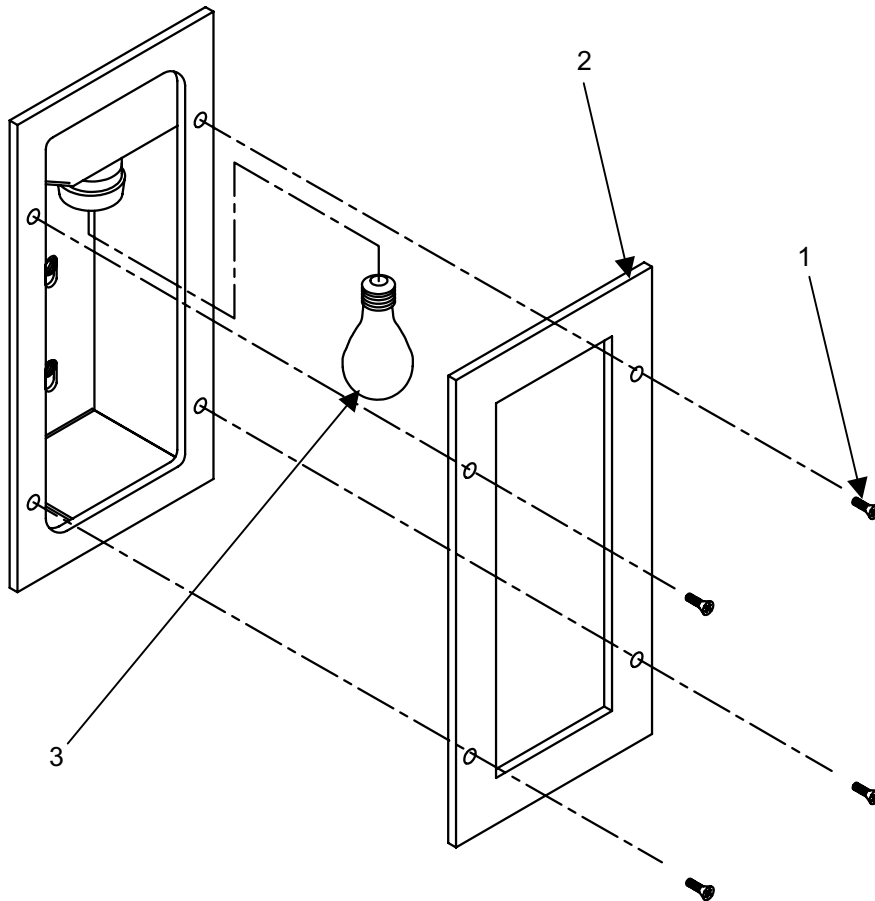
REPLACE**Replace Light Bulb**

1. Remove four screws **(1)** and cover **(2)**.
2. Unscrew light bulb **(3)**.

CAUTION

Use a light bulb rated at 50 Watts or less. Using a higher rated bulb will overheat the bulb, decreasing bulb life and damaging the fixture.

3. Screw in replacement light bulb **(3)**.
4. Install cover **(2)** and retain with screws **(1)**.



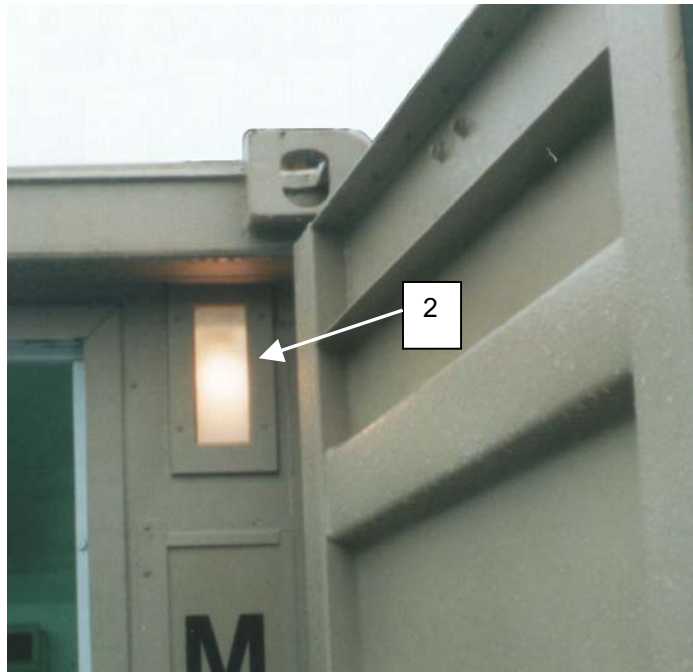
Replace Light Fixture

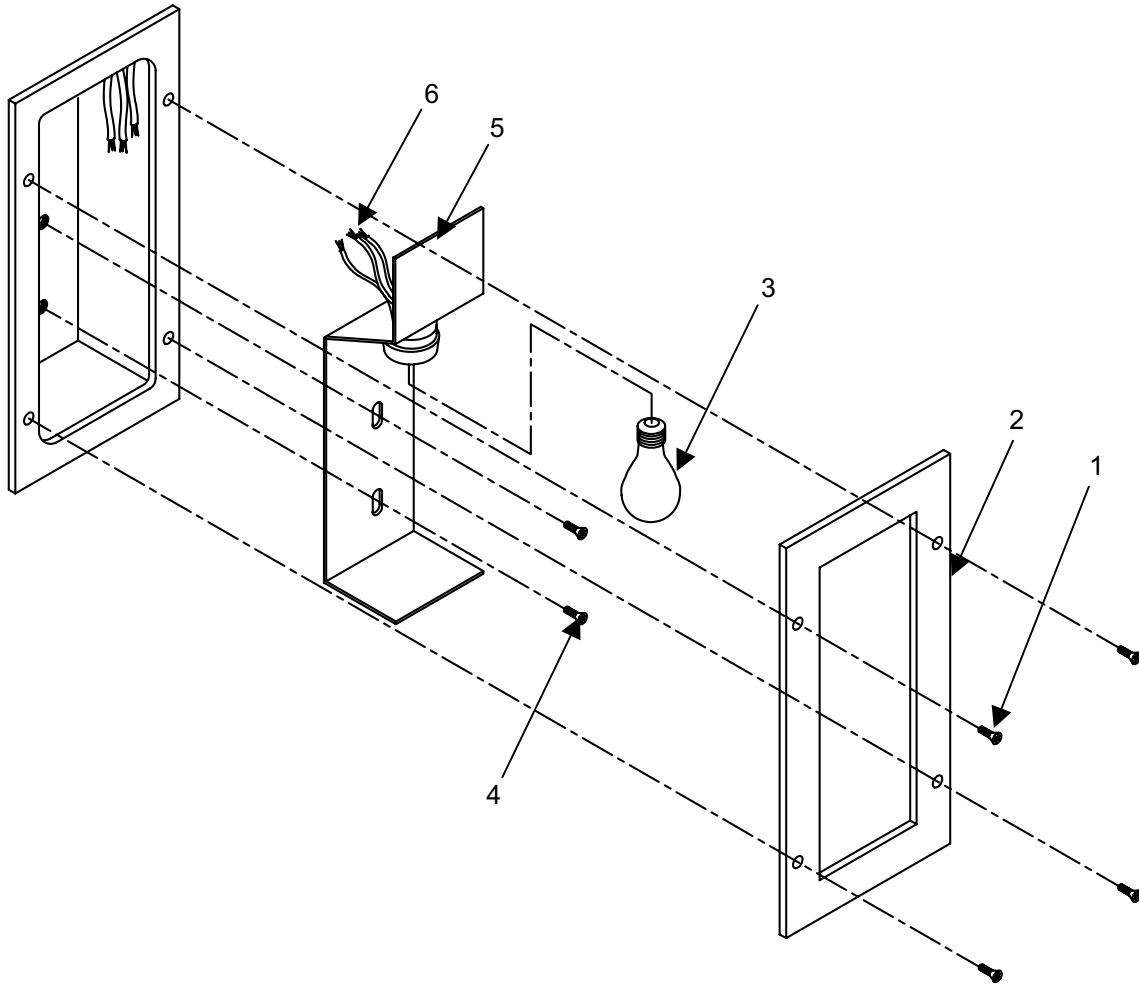


WARNING

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs (or tests) such as replacing a light bulb. Remember that the latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Remove four screws **(1)** and cover **(2)**.
2. Remove light bulb **(3)**.
3. Remove screws **(4)** retaining light fixture socket **(5)**, and remove light fixture socket.
4. Tag and disconnect wiring **(6)**.
5. Connect wiring **(6)** to the replacement light fixture socket **(5)** as tagged.
6. Install light fixture socket **(5)**, and retain with screws **(4)**.
7. Install light bulb **(3)** in socket **(5)**.
8. Install cover **(2)**, and retain with screws **(1)**.





END OF WORK PACKAGE

UNIT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****ELECTRICAL OUTLETS
TEST, REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 00726 00)

Personnel Required

One

Materials/Parts

Electrical Tape (Item 43, WP 0118 00)

Marine Caulking, RTV (Item 40, WP 0118 00)

Wire Markers (Item 55, WP 0118 00)

Equipment Condition

CL/CLS operating with power and water connected.

TEST**Test Exterior GFCI Outlet (CLS only)****WARNING**

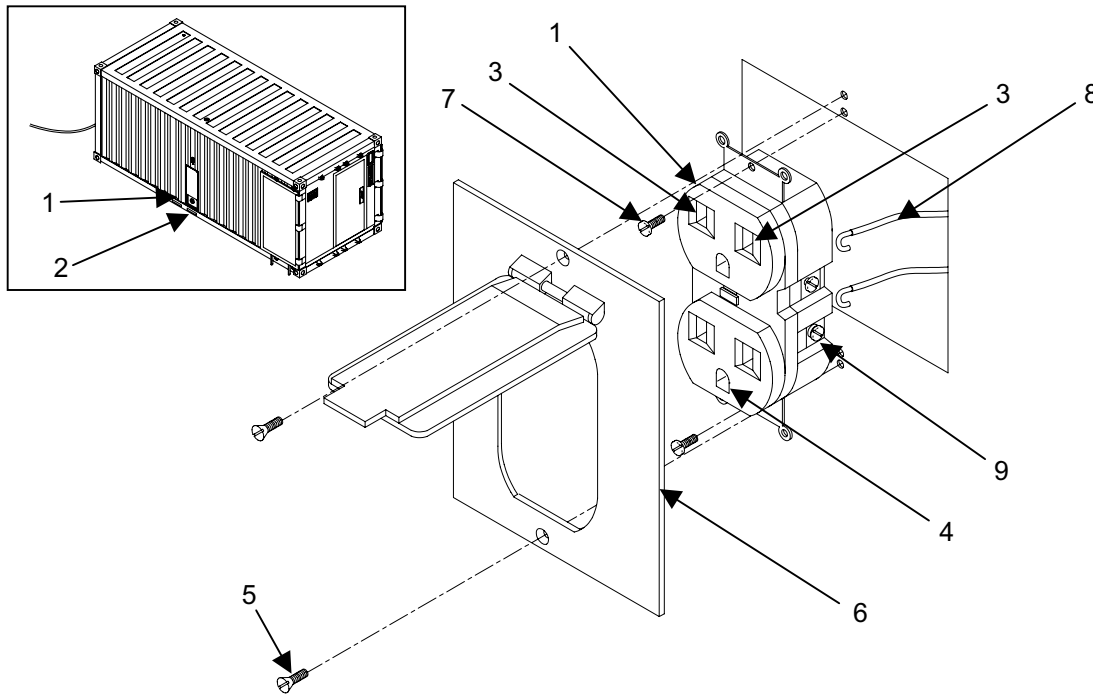
ELECTRICITY CAN KILL YOU. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Electricity is unlike most hazards; its effect is immediate. Failure to use extreme caution may result in serious injury or death to personnel.

NOTE

Ensure that the RESET button has been pushed before proceeding further.

1. Locate the GFCI convenience outlet **(1)** to the left of the 4-inch blackwater discharge **(2)**.
2. Press the TEST button on the GFCI, and then reset the test button.
3. Using a multimeter set to read at least 250VAC, check for power between each receptacle inlet **(3)**. There should be approximately 115VAC between the two receptacle inlets.
4. Use a multimeter set to read at least 250VAC to check for power at ground inlet **(4)**. There should be no power reading between either receptacle inlet **(3)** and the ground inlet. If power exists, turn main breaker to OFF.
5. If the GFCI convenience outlet **(1)** passes steps 2., 3., and 4. successfully, no further testing is required. If not, disconnect power and proceed to the next step.
6. Remove marine caulking from around outlet.
7. Remove screws **(5)** from faceplate **(6)** and remove faceplate.

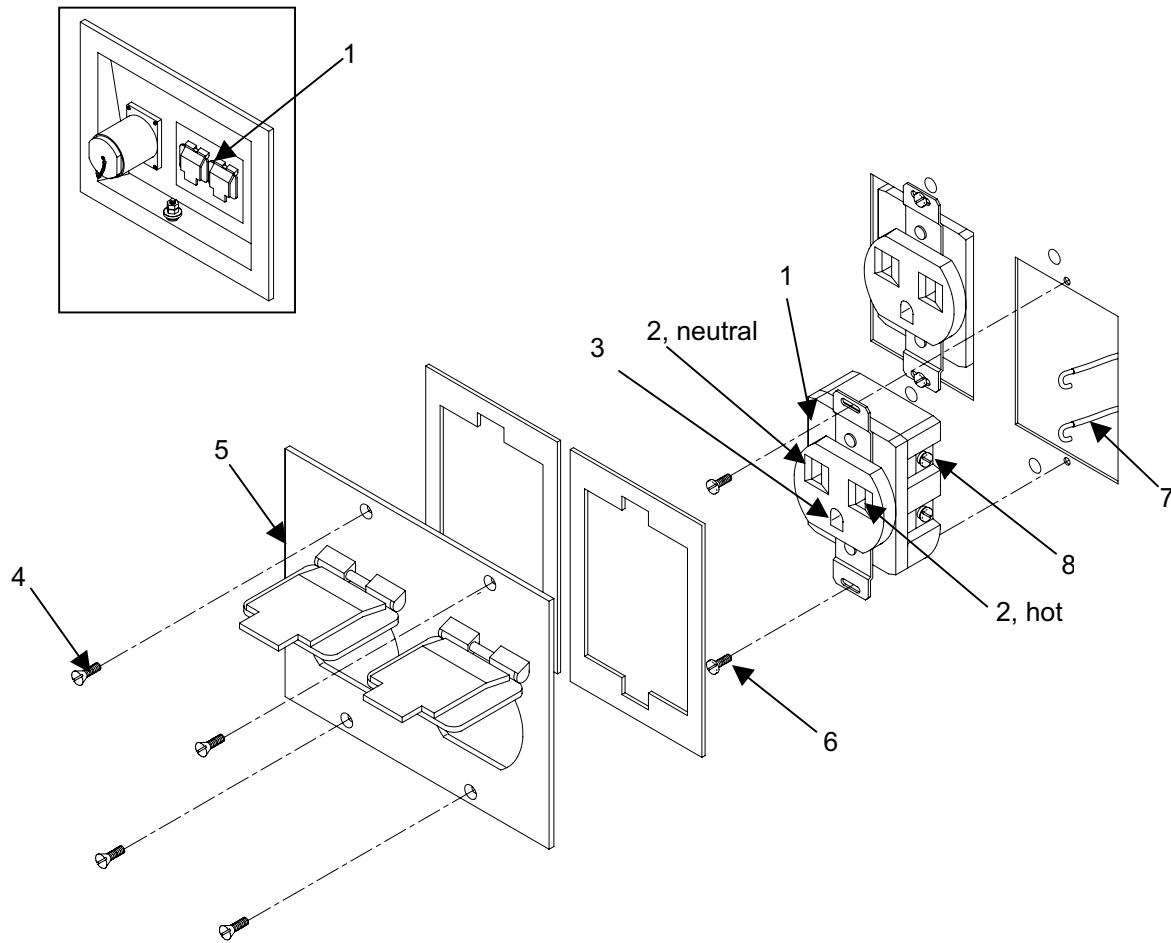
8. Remove two screws (7) holding outlet (1) to container.
9. Pull outlet (1) out enough to provide access to wire connections.
10. Tag and disconnect wires (8), and remove outlet (1).
11. Use a multimeter set to read ohms (Ω) to test for continuity in each outlet (1). If no continuity exists between poles (9), replace outlet. If continuity exists between any pole and ground, replace outlet.
12. Reconnect wires (8) as tagged.
13. Install and tighten two screws (7) holding outlet (1) to container.
14. Place faceplate (6) into position and retain with screw (5).
15. Install marine caulking around faceplate (6).
16. Reconnect power, and repeat steps 2., 3., and 4.



Test Electrical Panel Convenience Outlets (CLS only)**WARNING**

ELECTRICITY CAN KILL YOU. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Electricity is unlike most hazards; its effect is immediate. Failure to use extreme caution may result in serious injury or death to personnel.

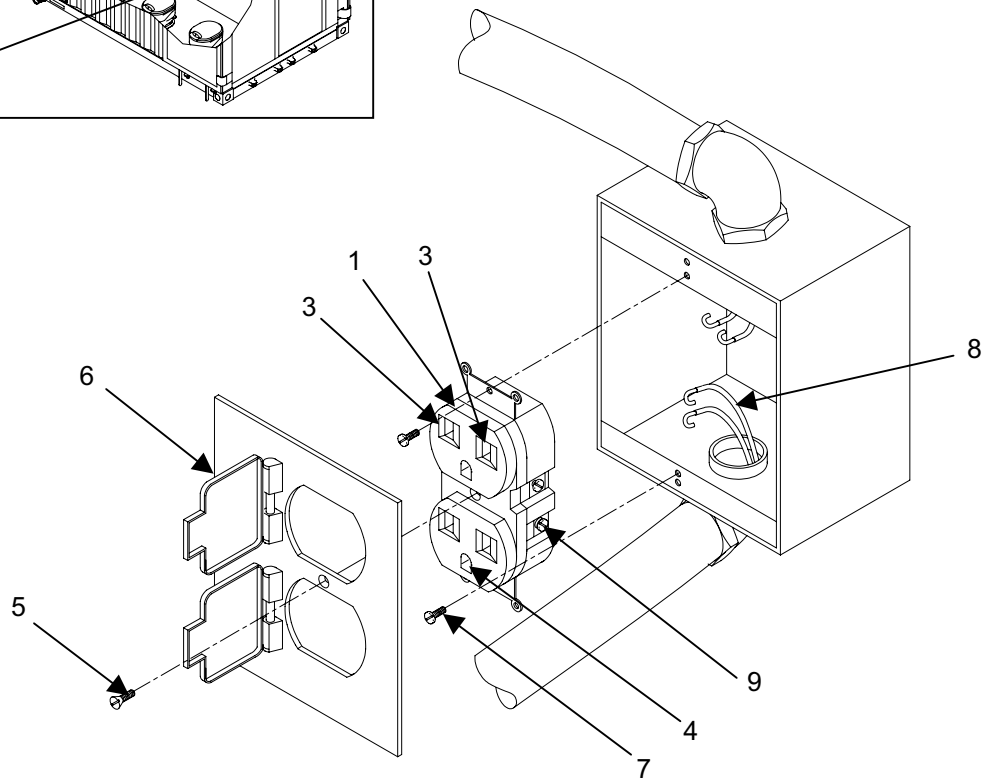
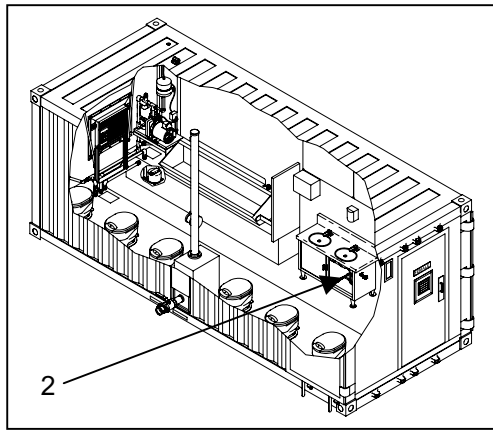
1. Locate convenience outlets A/B **(1)**.
2. Using a multimeter set to read at least 250VAC, check for power between the neutral and hot receptacle inlet **(2)**. There should be approximately 115VAC between the two receptacle inlets.
3. Use a multimeter set to read at least 250VAC to check for power at ground inlet **(3)**. There should be no power reading between neutral receptacle inlet **(2)** and the ground inlet.
4. If convenience outlets A/B **(1)** pass steps 2. and 3. successfully, no further testing is required. If not, disconnect power at circuit breakers #7 and #8 by setting the breakers to the OFF position and proceed to the next step.
5. Remove screws **(4)** from faceplate **(5)** and remove gasket and faceplate.
6. Remove two screws **(6)** holding outlet **(1)** to container.
7. Pull outlet **(1)** out enough to provide access to the wires **(7)**.
8. Reset circuit breaker #7 or #8, as appropriate, to the ON position.
9. Tag and disconnect wires **(7)**, and remove outlet **(4)**.
10. Use a multimeter set to read at least 250VAC, check for power between each pole **(8)**. If no power exists between poles **(8)**, contact Direct Support. If power exists between poles, replace outlet.
11. Place outlet **(1)** into position.
12. Reconnect wires **(7)** as tagged.
13. Install and tighten two screws **(6)** holding outlet **(1)** to container.
14. Place gasket and faceplate **(5)** into position and retaining with screws **(4)**.
15. Turn breakers #8 and #7 to ON.
16. Turn main breaker to ON.
17. Repeat steps 2. and 3.



Test Interior GFCI**WARNING**

High voltage is present on this equipment. Serious injury or death to personnel may result if safety precautions are not observed.

1. Locate the GFCI convenience outlet **(1)** under the sink **(2)**.
2. Using a multimeter set to read at least 250VAC, check for power between each receptacle inlet **(3)**. There should be approximately 115VAC between the two receptacle inlets.
3. Use a multimeter set to read at least 250VAC to check for power at ground inlet **(4)**. There should be no power reading between either receptacle inlet **(3)** and the ground inlet. If power exists, turn main breaker to OFF.
4. Press the TEST button on the GFCI, and repeat steps 2. and 3.
5. If the GFCI convenience outlet **(1)** passes steps 2., 3., and 4. successfully, no further testing is required. If not, disconnect power and proceed to the next step.
6. Remove screws **(5)** from faceplate **(6)** and remove faceplate.
7. Remove two screws **(7)** securing outlet **(1)**.
8. Pull outlet **(1)** out enough to provide access to wire connections.
9. Tag and disconnect wires **(8)**, and remove outlet **(1)**.
10. Use a multimeter set to read ohms (Ω) to test for continuity in each outlet **(1)**. If no continuity exists between poles **(9)**, replace outlet. If continuity exists between any pole and ground, replace outlet.
11. Reconnect wires **(8)** as tagged.
12. Install outlet **(1)** and retain with screws **(7)**.
13. Place faceplate **(6)** into position and retain with screw **(5)**.
14. Reconnect power, and repeat steps 2., 3., and 4.



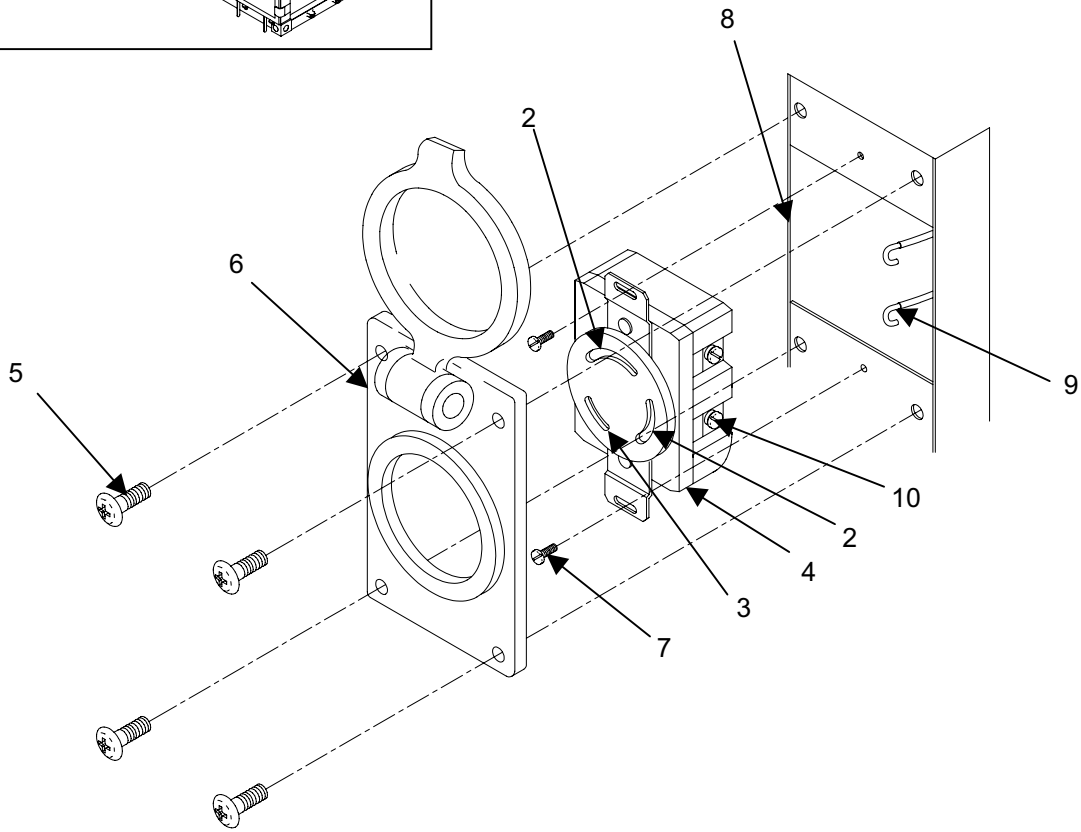
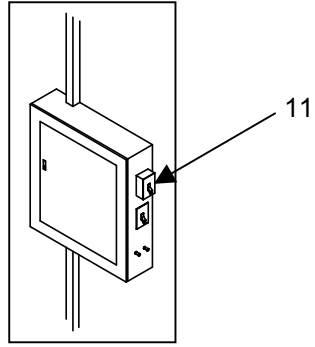
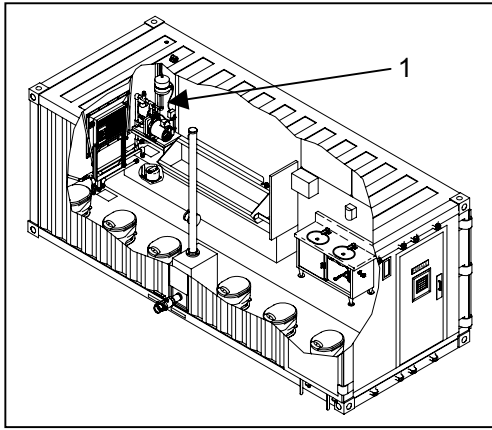
Test Water Supply Pump Outlet (CLS only)**WARNING**

High voltage is present on this equipment. Serious injury or death to personnel may result if safety precautions are not observed.

NOTE

A step aid may be required to perform this maintenance task.

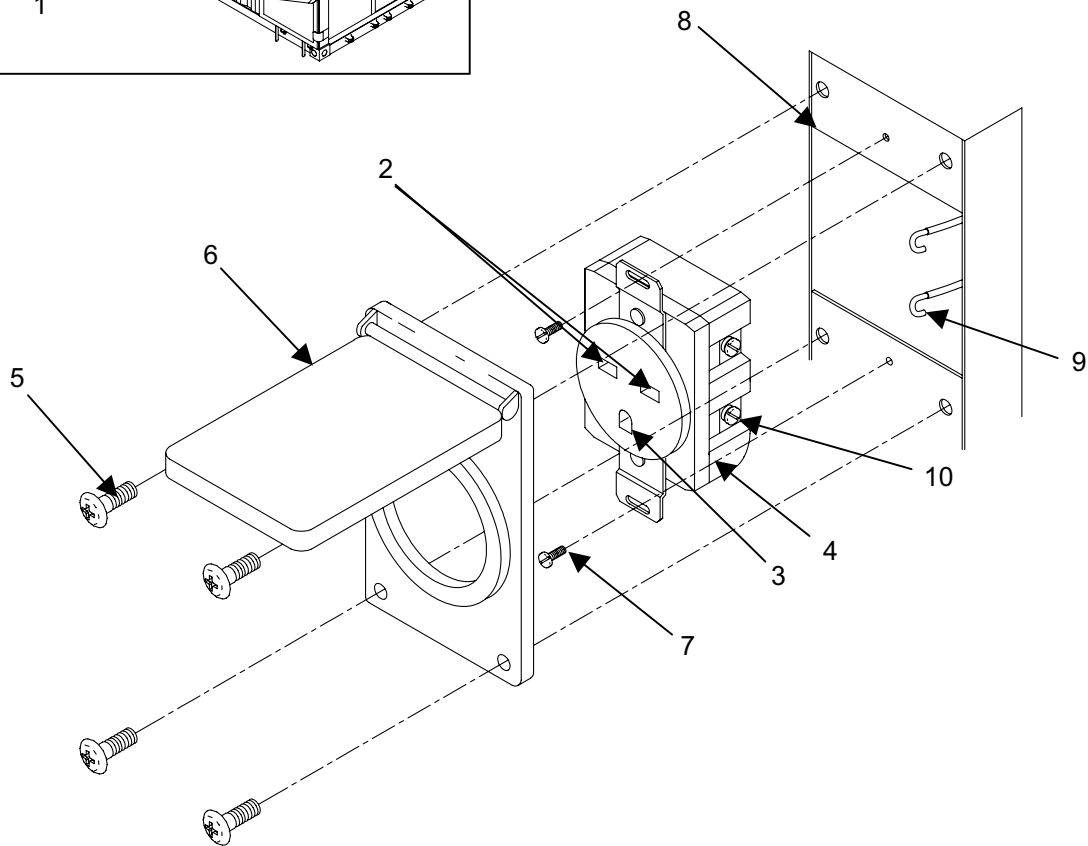
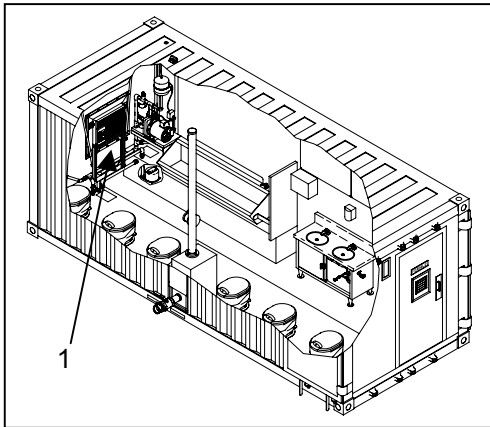
1. Unplug water pump **(1)**.
2. Using a multimeter set to read at least 250VAC, check for power between each receptacle inlet **(2)**. There should be approximately 208VAC between any two receptacle inlets.
3. Use a multimeter set to read at least 250VAC to check for power at ground inlet **(3)**. There should be no power reading between either receptacle inlet **(2)** and the ground inlet. If power exists, turn main breaker to OFF.
4. If the water supply outlet **(4)** passes steps 2. and 3. successfully, no further testing is required. If not, disconnect power and proceed to the next step.
5. Remove four retaining screws **(5)** from faceplate **(6)** and remove faceplate.
6. Remove two screws **(7)** holding outlet **(4)** to wire raceway **(8)**.
7. Pull outlet **(4)** out enough to provide access to the wire connections.
8. Tag wires **(9)** and remove outlet **(4)**.
9. Use a multimeter set to read ohms (Ω) to test for continuity in each outlet **(4)**. If no continuity exists between inlets **(2)** and terminals **(10)**, replace outlet. If continuity exists between any terminals and ground, replace outlet.
10. Reconnect wires **(9)** to terminals **(10)** as tagged.
11. Install outlet **(4)** and retain with screws **(7)**.
12. Install faceplate **(6)** and retain with screws **(5)**.
13. Reconnect power.
14. Turn main breaker to ON. Turn breaker #9 and #11 to ON. Ensure that water pump switch **(11)** is ON.
15. Repeat steps 2. and 3.



Test ECU Outlet**WARNING**

High voltage is present on this equipment. Serious injury or death to personnel may result if safety precautions are not observed.

1. Unplug ECU **(1)**.
2. Using a multimeter set to read at least 250VAC, check for power between each receptacle inlet **(2)**. There should be approximately 208VAC between the two receptacle inlets.
3. Use a multimeter set to read at least 250VAC to check for power at ground inlet **(3)**. There should be no power reading between either receptacle inlet **(2)** and the ground inlet. If power exists, turn main breaker to OFF.
4. If the outlet **(4)** passes steps 2. and 3. successfully, no further testing is required. If not, proceed to the next step.
5. Disconnect power.
6. Remove four retaining screws **(5)** from faceplate **(6)** and remove faceplate.
7. Remove two screws **(7)** holding outlet **(4)** to wire raceway **(8)**.
8. Pull outlet **(4)** out enough to provide access to wire connections.
9. Tag wires **(9)** and remove outlet **(4)**.
10. Use a multimeter set to read ohms (Ω) to test for continuity. If no continuity exists between inlets **(2)** and terminals **(10)**, replace outlet **(4)**. If continuity exists between any terminals and ground, replace outlet.
11. Place outlet **(4)** into position.
12. Reconnect wires **(9)** to terminals **(10)** as tagged.
13. Install outlet **(4)** and retain with screws **(7)**.
14. Place faceplate **(5)** into position and retain with screws **(6)**.
15. Reconnect power.
16. Turn main breaker to ON. Turn breaker #10 and #12 to ON.
17. Repeat steps 2. and 3.



Test Sump Pump Outlet



WARNING

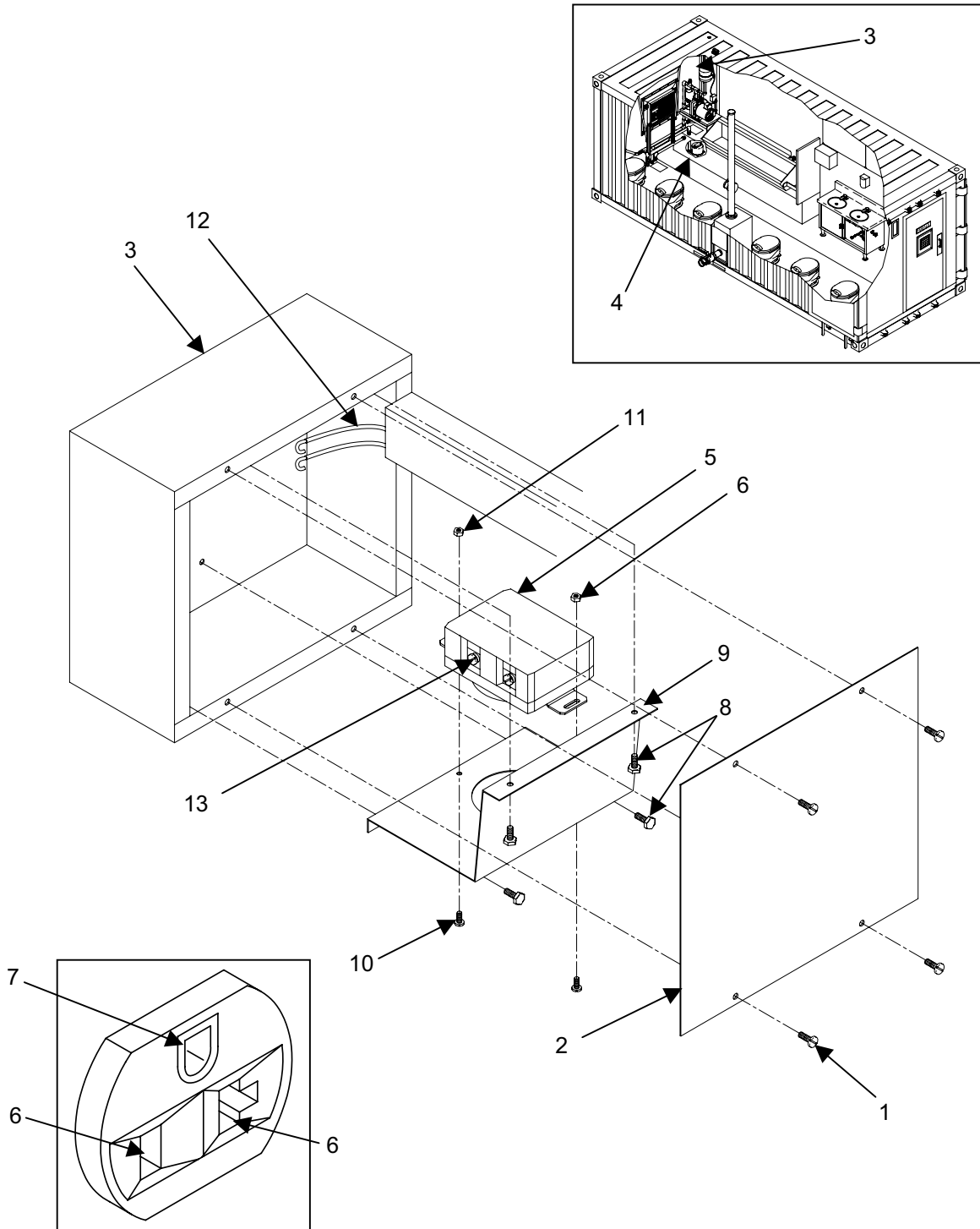
High voltage is present on this equipment. Serious injury or death to personnel may result if safety precautions are not observed.

NOTE

A step aid may be required to perform this maintenance task.

1. Remove four screws **(1)** and cover **(2)** to junction box **(3)**.
2. Unplug sump pump **(4)** from outlet **(5)**.
3. Using a multimeter set to read at least 250VAC, check for power between each receptacle inlet **(6)**. There should be approximately 115VAC between the two receptacle inlets.
4. Use a multimeter set to read at least 250VAC to check for power at ground inlet **(7)**. There should be no power reading between either receptacle inlet **(6)** and the ground inlet. If power exists, turn main breaker to OFF.
5. If sump pump outlet **(5)** passes steps 1. and 2. successfully, no further testing is required. If not, disconnect power and proceed to the next step.
6. Remove four screws **(8)** from outlet bracket **(9)** and remove outlet bracket.
7. Remove two screws **(10)** and nuts **(11)** holding outlet **(5)** to outlet bracket **(9)**.
8. Pull outlet **(5)** out enough to provide access to the wires **(12)**.
9. Tag wires **(12)** and remove outlet **(5)**.
10. Use a multimeter set to read ohms (Ω) to test for continuity. If no continuity exists between inlets **(6)** and terminals **(13)**, replace outlet **(5)**. If continuity exists between any terminals and ground, replace outlet.
11. Reconnect wires **(12)** to terminals **(13)** as tagged.
12. Install outlet **(5)** in outlet bracket **(9)** and retain with screws **(10)** and nuts **(11)**.
13. Install outlet bracket **(9)** and retain with screws **(8)**.
14. Reconnect power, and turn the main breaker and breaker #6A to ON.
15. Repeat steps 3. and 4.
16. Plug in sump pump plug.

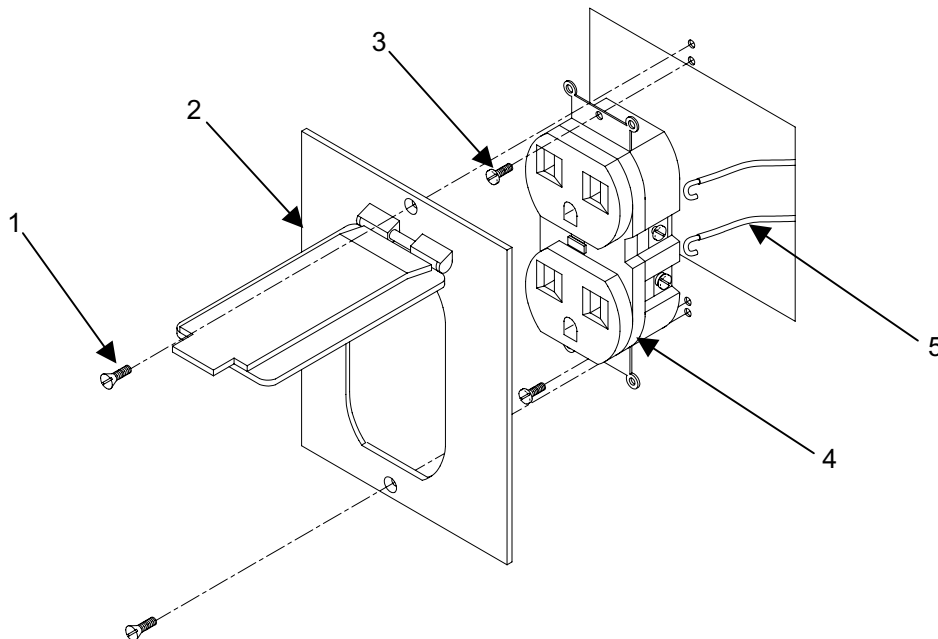
17. Reinstall cover (2) and retain with screws (1).



REPLACE**Replace Exterior GFCI Convenience Outlet (CLS only)****WARNING**

ELECTRICITY CAN KILL YOU. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Electricity is unlike most hazards; its effect is immediate. Failure to use extreme caution may result in serious injury or death to personnel.

1. Remove screws **(1)** from faceplate **(2)** and remove faceplate.
2. Remove two screws **(3)** holding outlet **(4)** to container.
3. Pull outlet **(4)** out enough to provide access to wire connections.
4. Tag and disconnect wires **(5)**, and remove outlet **(4)**.
5. Connect wires **(5)** to the replacement outlet **(4)** as tagged.
6. Install outlet **(4)** and retain with two screws **(3)**.
7. Place faceplate **(2)** into position and retain with screws **(1)**.
8. Install marine caulking around faceplate **(2)**.
9. Reconnect power, and test for normal operation.



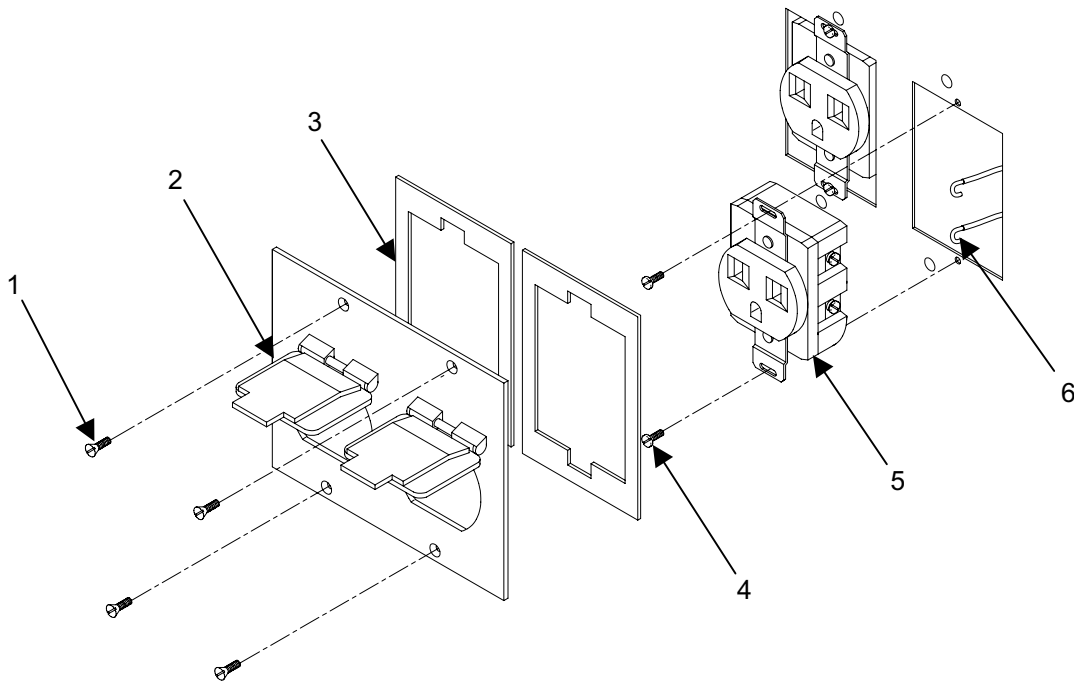
Replace Electrical Panel Convenience Outlet (CLS only)



WARNING

ELECTRICITY CAN KILL YOU. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Electricity is unlike most hazards; its effect is immediate. Failure to use extreme caution may result in serious injury or death to personnel.

1. Disconnect power.
2. Remove screws **(1)** from faceplate **(2)** and remove gasket **(3)** and faceplate.
3. Remove two screws **(4)** holding outlet **(5)** to container.
4. Pull outlet **(5)** out enough to provide access to the wires **(6)**.
5. Tag and disconnect wires **(6)**, and remove outlet **(5)**.
6. Connect wires **(6)** to the replacement outlet **(5)** as tagged.
7. Install new outlet **(5)** and retain with screws.
8. Place gasket **(3)** and faceplate **(2)** into position and retain with screws **(4)**.
9. Reconnect power, and test for normal operation.



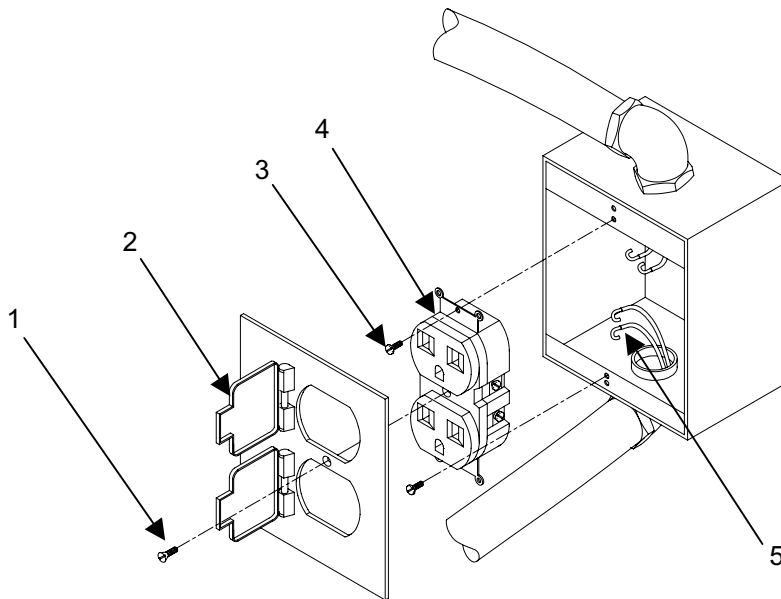
Replace Interior GFCI



WARNING

ELECTRICITY CAN KILL YOU. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Electricity is unlike most hazards; its effect is immediate. Failure to use extreme caution may result in serious injury or death to personnel.

1. Disconnect power.
2. Remove screws **(1)** from faceplate **(2)** and remove faceplate.
3. Remove two screws **(3)** securing outlet **(4)**.
4. Pull outlet **(4)** out enough to provide access to wire connections.
5. Tag and disconnect wires **(5)**, and remove outlet **(4)**.
6. Connect wires **(5)** to the replacement outlet **(4)** as tagged.
7. Install outlet **(4)** and retain with screws **(3)**.
8. Place faceplate **(2)** into position and retain with screw **(1)**.
9. Reconnect power and test for normal operation.



Replace Water Supply Pump Outlet (CLS only)



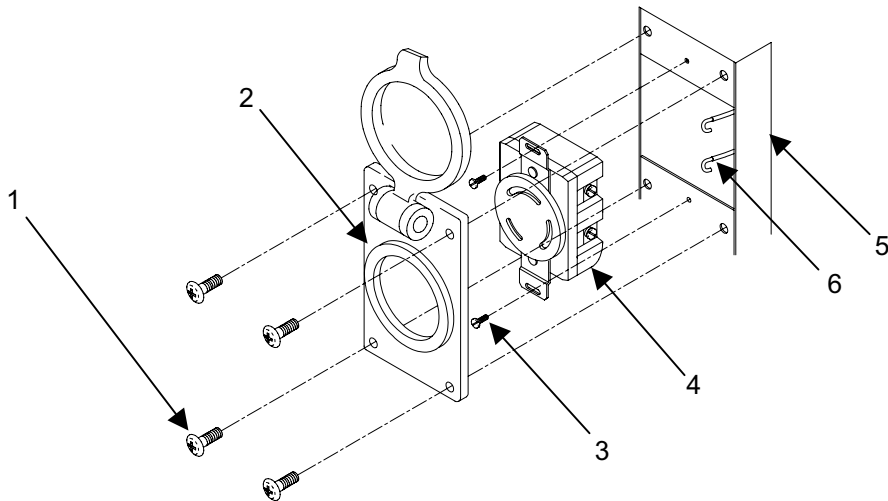
WARNING

ELECTRICITY CAN KILL YOU. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Electricity is unlike most hazards; its effect is immediate. Failure to use extreme caution may result in serious injury or death to personnel.

NOTE

A step aid may be required to perform this maintenance task.

1. Disconnect power.
2. Remove four retaining screws (1) from faceplate (2) and remove faceplate.
3. Remove two screws (3) holding outlet (4) to wire raceway (5).
4. Pull outlet (4) out enough to provide access to the wire connections.
5. Tag wires (6) and remove outlet (4).
6. Reconnect wires (6) to replacement outlet (4) as tagged.
7. Install outlet (4) and retain with screws (3).
8. Install faceplate (2) and retain with screws (1).
9. Reconnect power and test for normal operation.



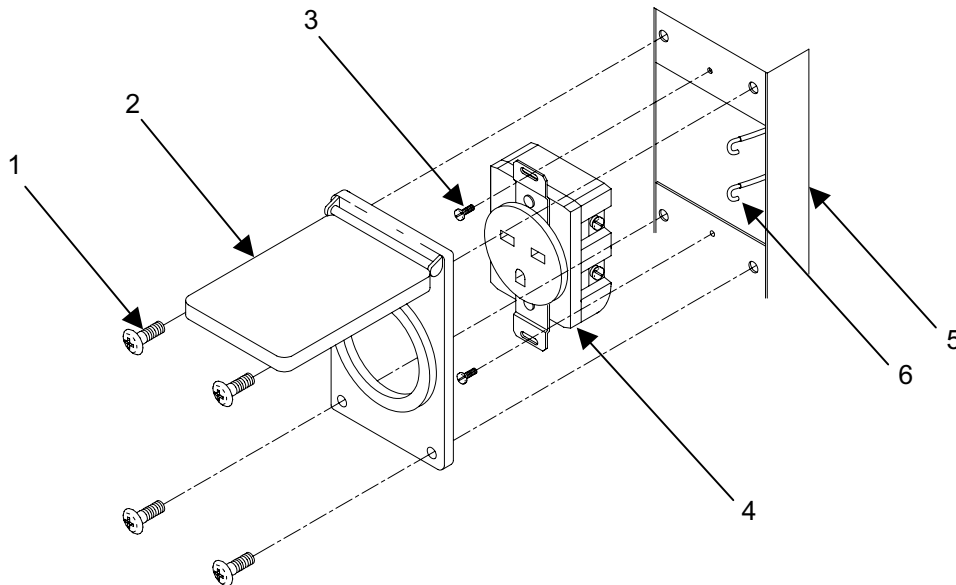
Replace ECU Outlet



WARNING

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Disconnect power.
2. Remove four retaining screws (1) from faceplate (2) and remove faceplate.
3. Remove two screws (3) holding outlet (4) to wire raceway (5).
4. Pull outlet (4) out enough to provide access to wire connections.
5. Tag wires (6) and remove outlet (4).
6. Reconnect wires (6) to replacement outlet (4) as tagged.
7. Install outlet (4) and retain with screws (3).
8. Place faceplate (2) into position and retain with screws (1).
9. Reconnect power and test for normal operation.



Replace Sump Pump Outlet



WARNING

ELECTRICITY CAN KILL YOU. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Electricity is unlike most hazards; its effect is immediate. Failure to use extreme caution may result in serious injury or death to personnel.

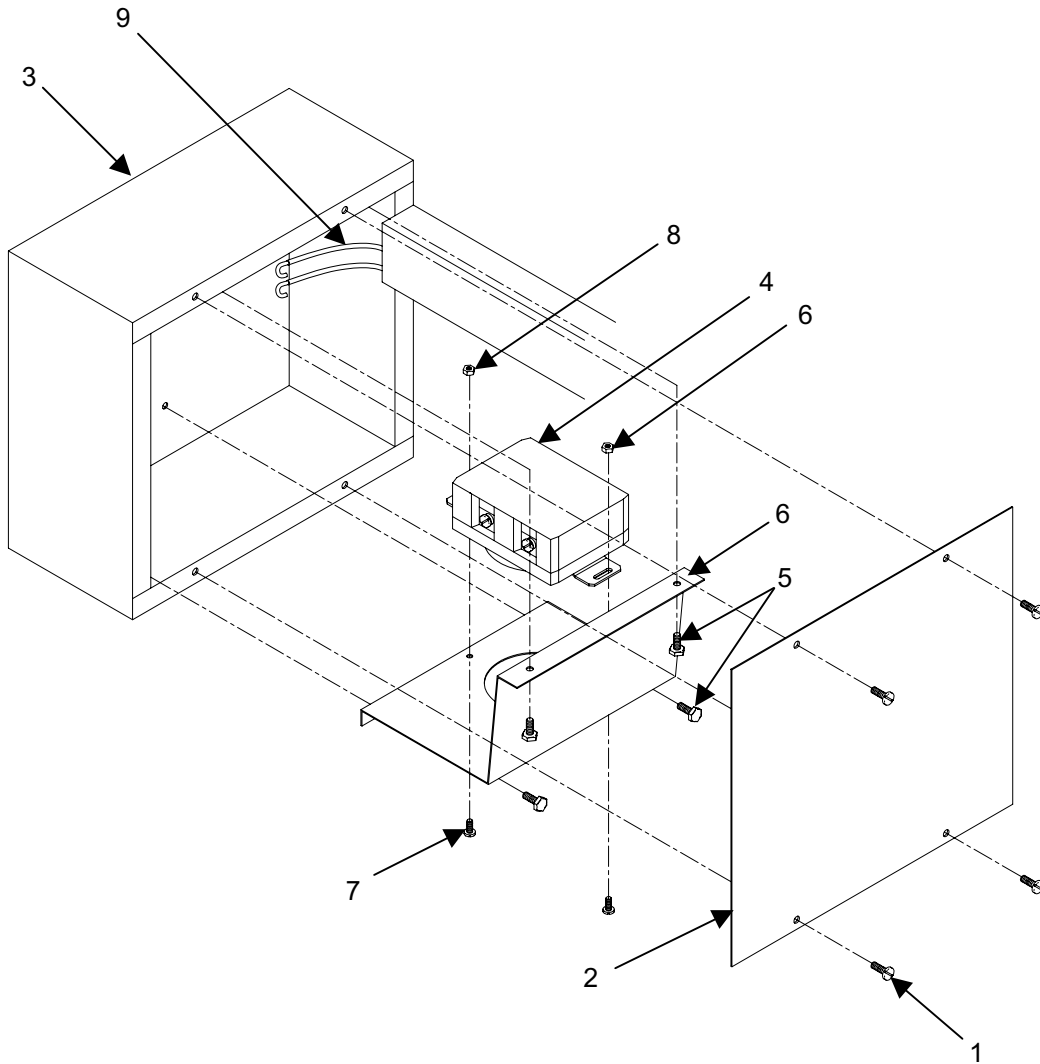
NOTE

A step aid may be required to perform this maintenance task.

NOTE

When replacing electrical components, wire for wire connection is recommended. In wire for wire replacement, wires are disconnected one at a time from the component and immediately connected to the replacement component.

1. Disconnect power.
2. Remove four screws **(1)** and cover **(2)** to junction box **(3)**.
3. Unplug sump pump from outlet **(4)**.
4. Remove four screws **(5)** from outlet bracket **(6)** and remove outlet bracket.
5. Remove two screws **(7)** and nuts **(8)** holding outlet **(4)** to outlet bracket **(6)**.
6. Pull outlet **(4)** out enough to provide access to the wires **(9)**.
7. Tag wires **(9)** and remove outlet **(4)**.
8. Connect wires **(9)** to replacement outlet **(4)** as tagged.
9. Install outlet **(4)** in outlet bracket **(6)** and retain with screws **(7)** and nuts **(8)**.
10. Install outlet bracket **(6)** and retain with screws **(5)**.
11. Reconnect power, plug in sump pump, and test for normal operation.
12. Reinstall cover **(2)** and retain with screws **(1)**.



END OF WORK PACKAGE

UNIT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****P-TRAP
SERVICE, REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)
Pipe Wrench (Item 2, WP 0072 00)

Personnel Required

One

Materials/Parts

Bleach (Item 4, WP 0118 00)
Face Shield (Item 19, WP 0118 00)
General Purpose Detergent Spray Bottle (Item 18, WP 0118 00)
Heavy-duty Rubber Apron (Item 2, WP 0118 00)
Rubber Gloves (Item 25, WP 0118 00)
Safety Splash Goggles (Item 39, WP 0118 00)

Equipment Condition

Turn water supply valves OFF.

SERVICE**Service the P-Traps****WARNING**

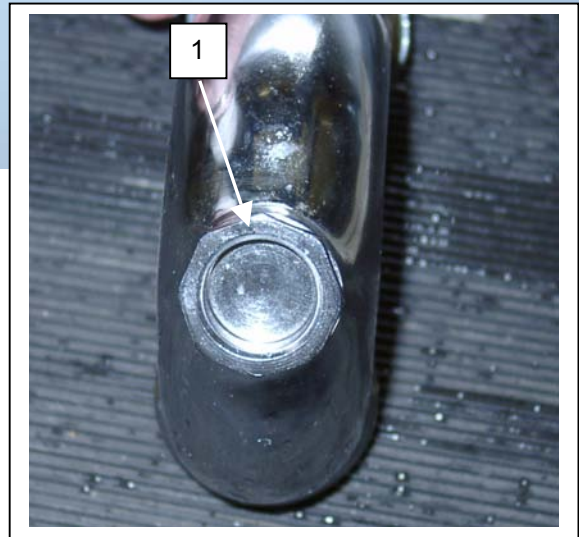
Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

1. Ensure urinal or sink(s) being serviced have been emptied.

NOTE

P-trap being serviced may drip/drain once the drain plug is removed. A bucket or absorbent material may be required to absorb liquid.

2. Unscrew the drain plug **(1)**, and allow P-trap to drain. Remove any obstructions.
3. Install the drain plug **(1)**.



REPLACE
Replace the P-Traps**WARNING**

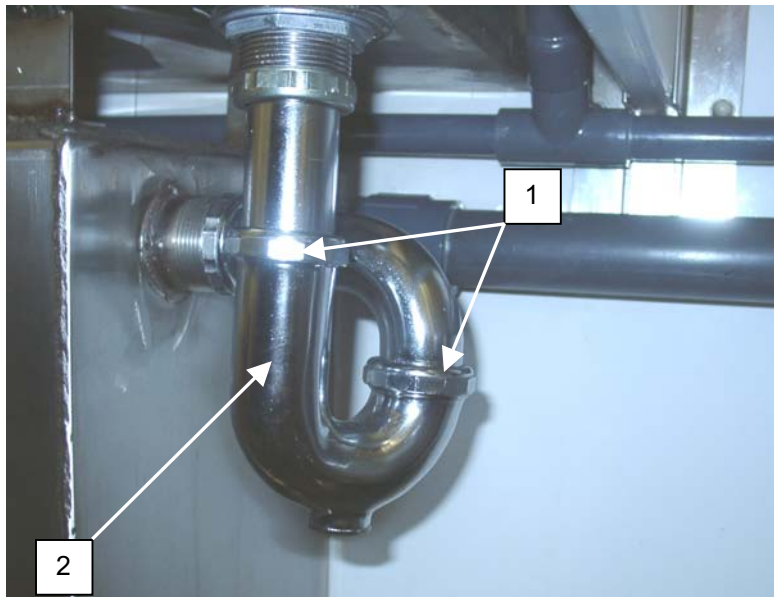
Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

1. Unscrew the drain plug **(1)**, and allow P-trap to drain. Remove any obstructions.
2. Ensure urinal or sink(s) being serviced have been emptied.
3. Unscrew the two union fittings **(1)** retaining the P-trap **(2)**.

NOTE

P-trap being serviced may drip/drain once the drain plug is removed. A bucket or absorbent material may be required to absorb liquid.

4. Remove the P-trap **(2)**.
5. Install the replacement P-trap **(2)**, and retain with two unions **(1)**. Do not overtighten.

**END OF WORK PACKAGE**

UNIT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****WASTEWATER TANK
SERVICE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts

Bleach (Item 4, WP 0118 00)

Face Shield (Item 19, WP 0118 00)

General Purpose Detergent Spray Bottle (Item 18, WP 0118 00)

Heavy-duty Rubber Apron (Item 2, WP 0118 00)

Rubber Gloves (Item 25, WP 0118 00)

Safety Splash Goggles (Item 39, WP 0118 00)

Equipment Condition

CL/CLS set up and operating.

CL/CLS placed out of service.

SERVICE**Clean the Waste Water Tank Interior****WARNING**

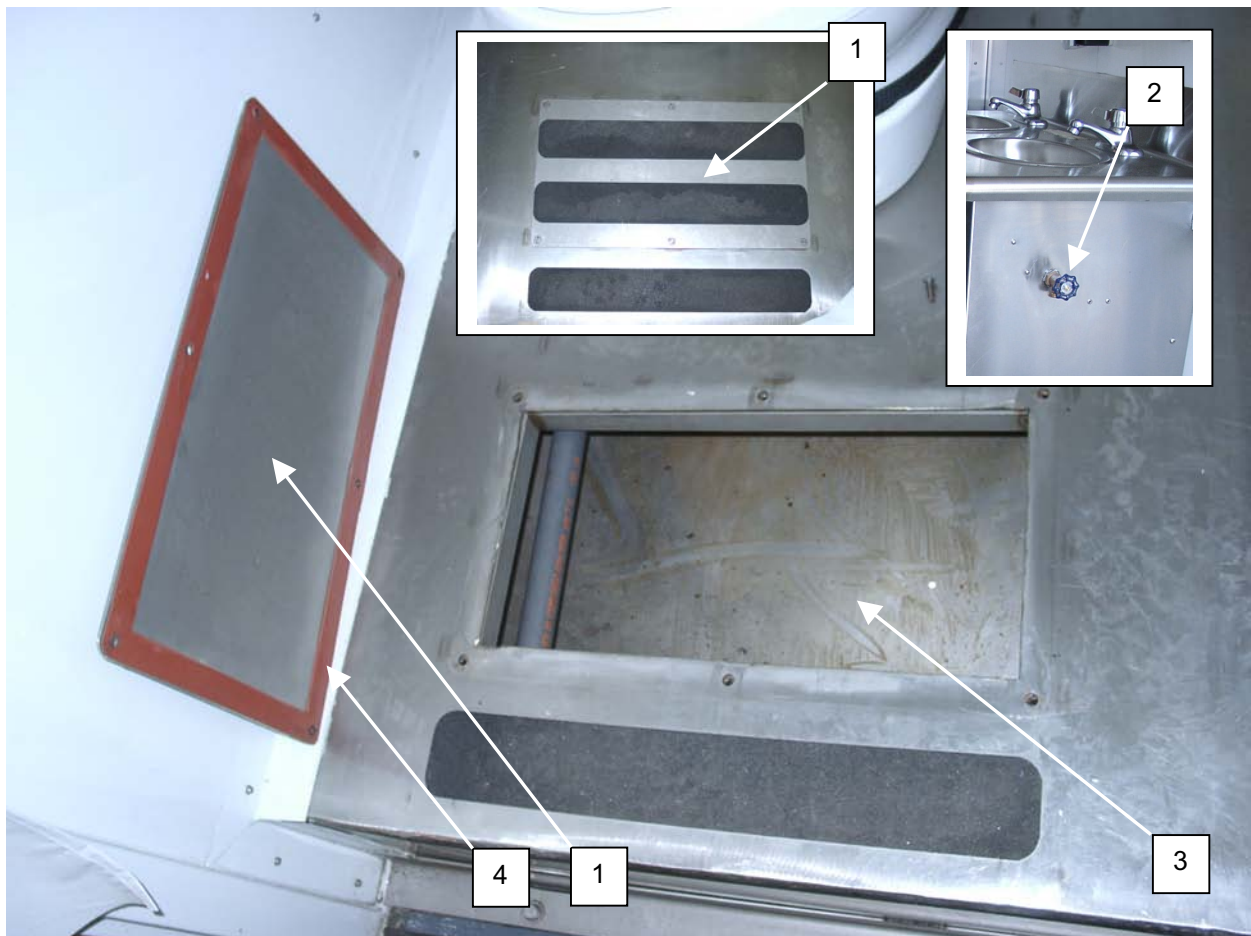
Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

1. Verify that the tank has been emptied IAW procedures given in WP 0007 00 (CL) or WP 0010 00 (CLS).
2. Use a screwdriver to remove the screws retaining the six tank access panels **(1)**, and remove the panels.
3. Attach a garden hose with nozzle to the spigot **(2)** on the side of the sink stand, and open the spigot.

**WARNING**

Use caution when spraying water into the tank. Do not allow water to spray back or out of adjacent access openings. Contaminated water may contain bacteria or viruses that present a danger to life or health.

4. Use the water spray to loosen solid waste from the tank interior **(3)**. Pay special attention to the sides and corners.
5. Ensure the panel gaskets **(4)** are in place, install the access panels **(1)**, and retain with screws.
6. Clean and sanitize access panels and any tools used, including the garden hose and nozzle, IAW with procedures given WP 0007 00, WP 0010 00, and TB MED 577.



END OF WORK PACKAGE

UNIT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****HOSE ASSEMBLY
REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One (1)

Materials/Parts

Bleach (Item 4, WP 0118 00)

Face Shield (Item 19, WP 0118 00)

General Purpose Detergent Spray Bottle (Item 18, WP 0118 00)

Heavy-duty Rubber Apron (Item 2, WP 0118 00)

Rubber Gloves (Item 25, WP 0118 00)

Safety Splash Goggles (Item 39, WP 0118 00)

Equipment Condition

CL/CLS set up.

Water supply shut down.

Blackwater 4-inch valve OFF.

Blackwater discharge connection shut down.

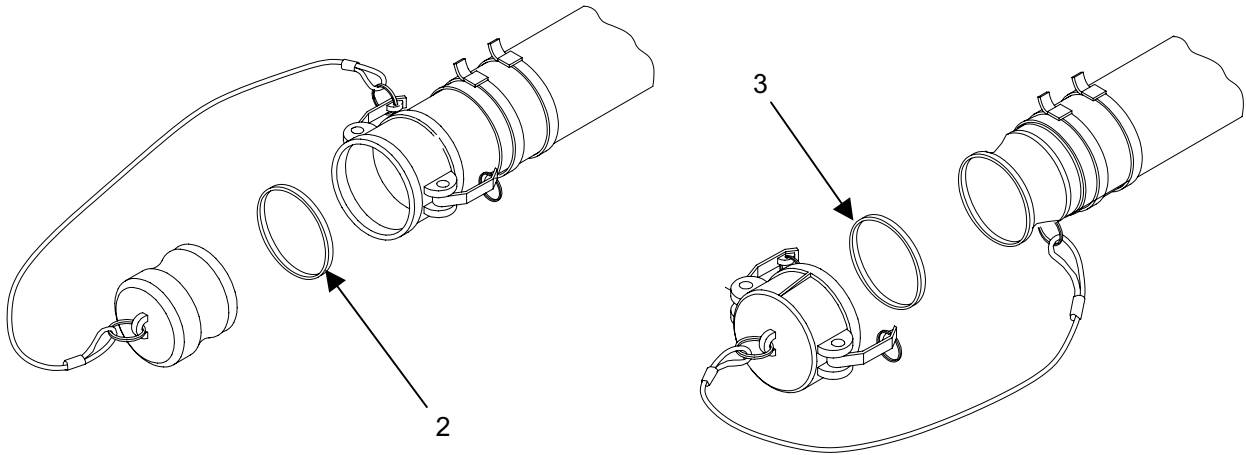
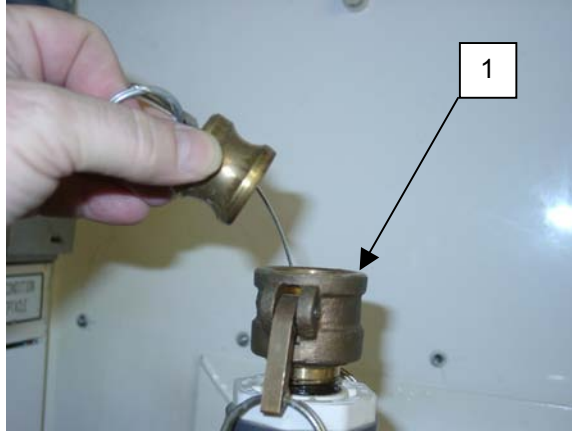
REPLACE**Replace Damaged QD Hose Gasket****WARNING**

When inspecting or servicing the hoses for the CL or CLS, always perform the required maintenance on the freshwater hoses first. Do not handle freshwater hoses or fittings directly after performing maintenance on blackwater hoses or fittings. Heavy-duty rubber aprons, rubber gloves, safety goggles (chemical protection), and/or face shields (chemical/biological protection) are required when in contact with wastewater or contaminated surfaces. Material may contain bacteria or viruses that present a danger to life or health.

NOTE

Replace the gasket on the pump priming QD fitting **(1)** as described in step 2. (CLS only).

1. Replace damaged gaskets **(2)** and **(3)**. A small screwdriver or knife may be necessary to remove the gaskets.



Replace Damaged Hoses

Refer to WP 0005 00 or WP 0008 00 as applicable to replace hoses.

END OF WORK PACKAGE

UNIT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****ENVIRONMENTAL CONTROL UNIT (ECU)
TEST****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts**Equipment Condition**

CL/CLS in operation.

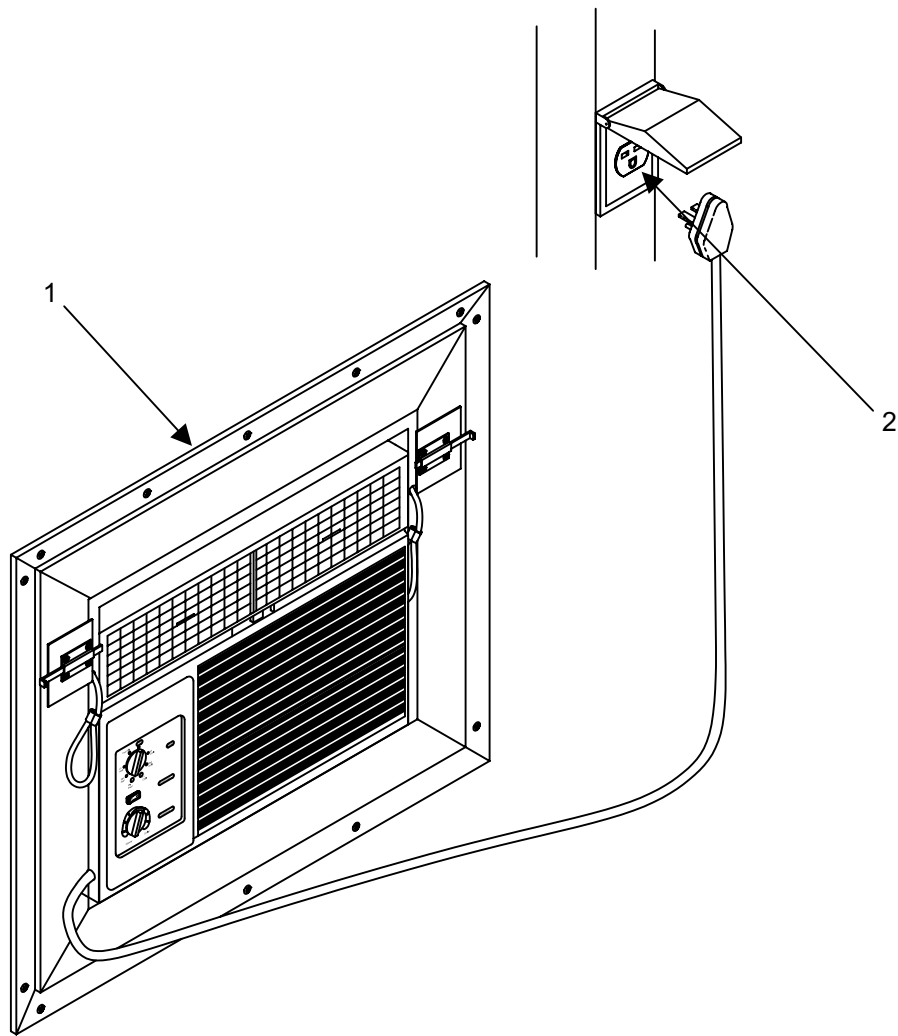
TEST**Test the ECU****WARNING**

ELECTRICITY CAN KILL YOU. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Electricity is unlike most hazards; its effect is immediate. Failure to use extreme caution may result in serious injury or death to personnel.

NOTE

No tests are performed on the ECU directly. The test performed here is done to isolate the ECU from other problems that may occur.

1. Unplug ECU **(1)** from receptacle **(2)**.
2. Using a multimeter, test for power at ECU outlet **(2)** as described in WP 0047 00.
3. If power is present at ECU outlet **(2)**, replace ECU **(1)** as described in WP 0052 00 (CL) or WP 0066 00 (CLS).



END OF WORK PACKAGE

UNIT MAINTENANCE
CONTAINERIZED LATRINE (CL)
(NSN 4510-01-453-4012)

ENVIRONMENTAL CONTROL UNIT (ECU)
REPLACE

INITIAL SETUP**Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts**Equipment Condition**

REPLACE**Replace ECU**

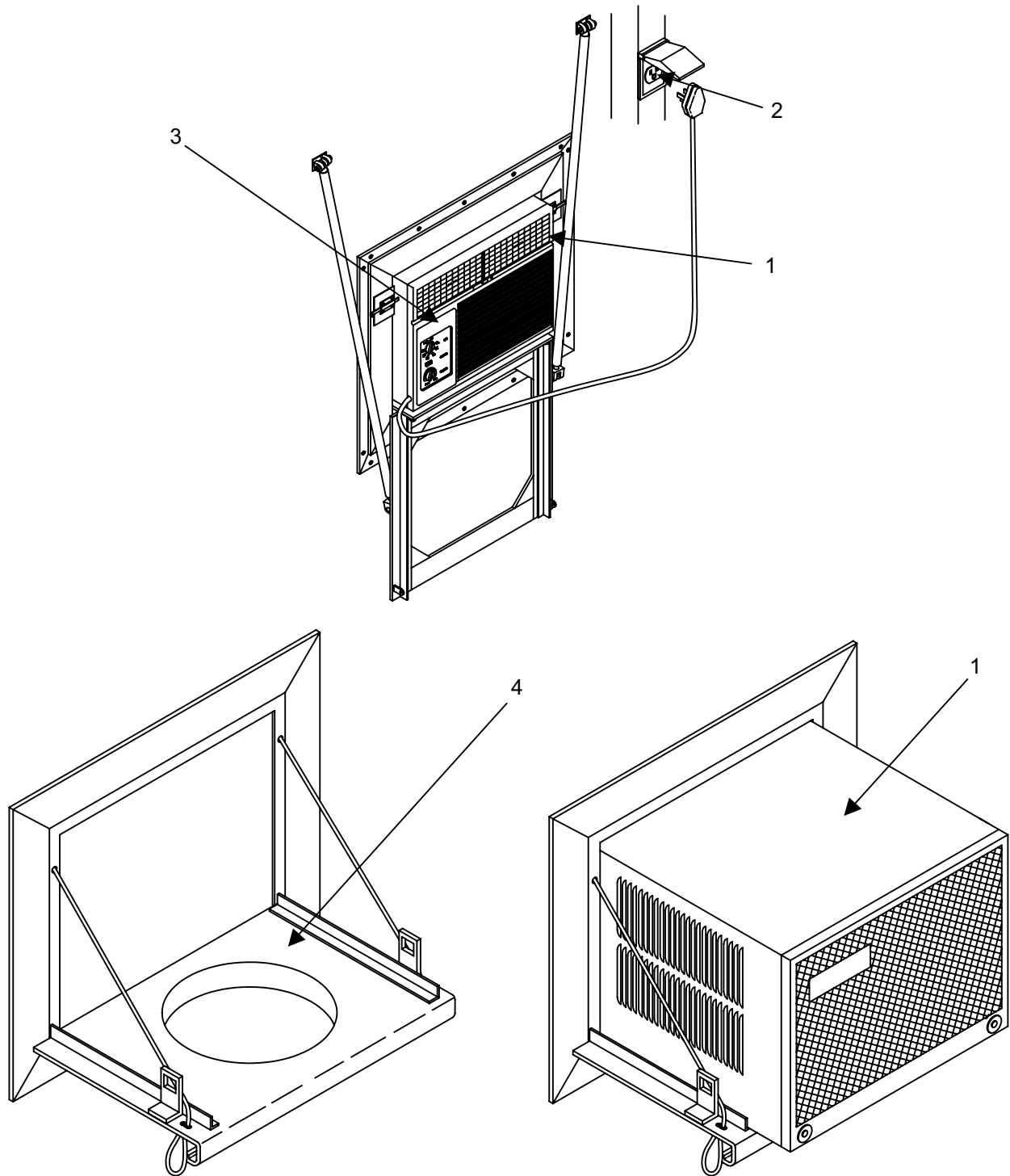
WARNING

Four people are required to lift the ECU. Serious injury to personnel could result from improper lifting.

NOTE

Removal and installation of the ECU is also outlined in WPs 0005 00 and 0007 00 respectively.

1. Disconnect ECU **(1)** from outlet **(2)**.
2. Remove panel **(3)** from ECU **(1)**.
3. Drain condensation (refer to WP 0007 00).
4. Remove ECU **(1)** from ECU tray **(4)**.
5. Place new ECU **(1)** into position on ECU tray **(4)**.
6. Install panel **(3)**.
7. Connect ECU **(1)** into supply outlet **(2)**.
8. Operate as described in WP 0006 00. Monitor for normal operation.



END OF WORK PACKAGE

UNIT MAINTENANCE

CONTAINERIZED LATRINE SYSTEM (CLS)

(NSN 4510-01-477-7764)

ENVIRONMENTAL CONTROL UNIT (ECU) OPENING
REPLACE

INITIAL SETUP

Tools

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts

Equipment Condition

REPLACE

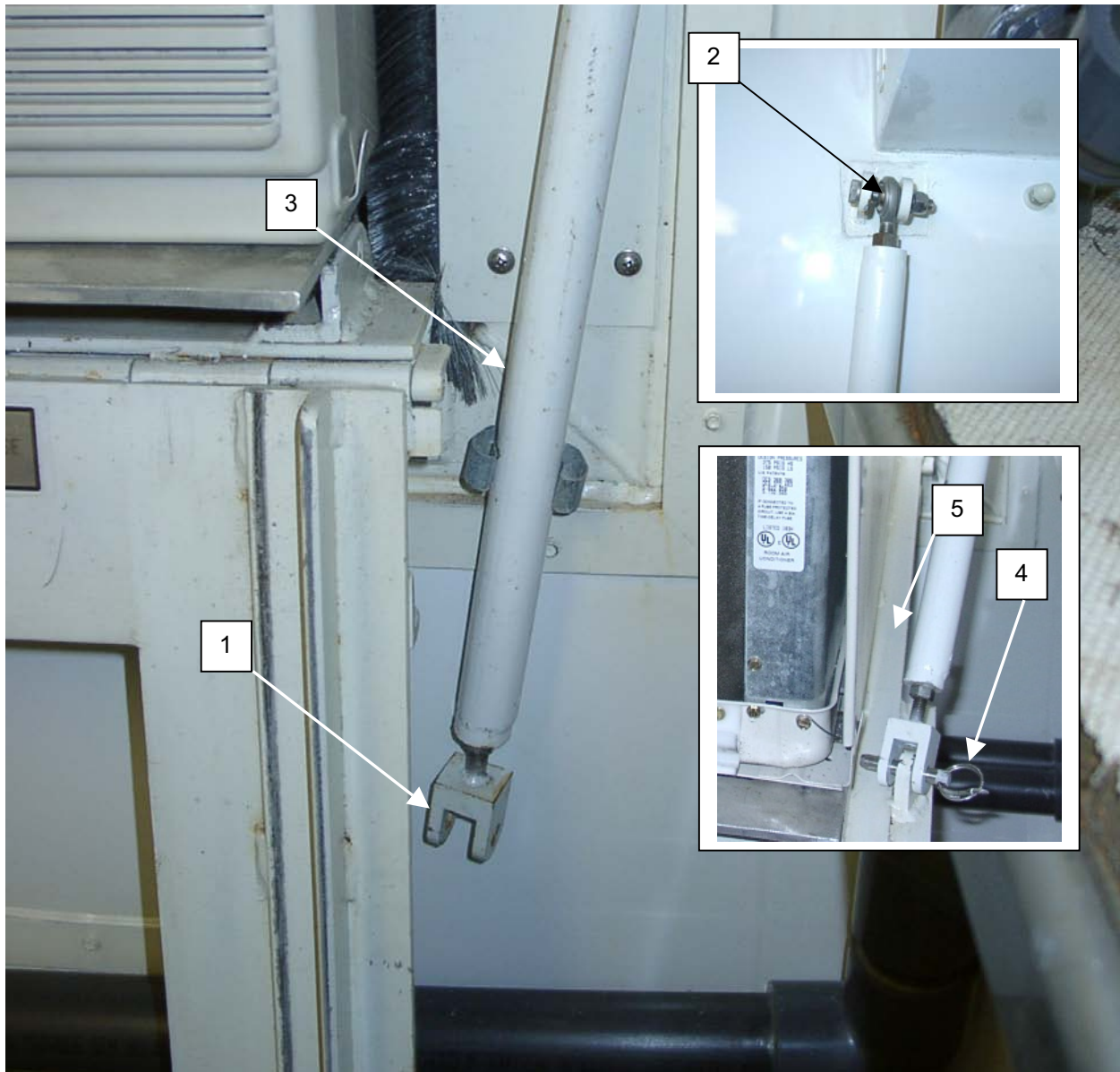
Replace Tie Downs

1. Remove the two screws retaining the tie down (1), and remove the tie down.
2. Assemble the replacement tie down (1), and retain with two screws.



Door Assembly Brace

1. The door assembly brace is made up of three parts – clevis (1), rod end (2), and support weldment (3). A quick release pin (4) is provided for the clevis.
2. The clevis (1), rod end (2), and support weldment (3) may be unscrewed from each other and replaced individually.
3. When a component has been replaced, the door assembly braces must be adjusted. Adjust by screwing the clevis (1) in or out to ensure the tray is level (5) when connected to the brace.



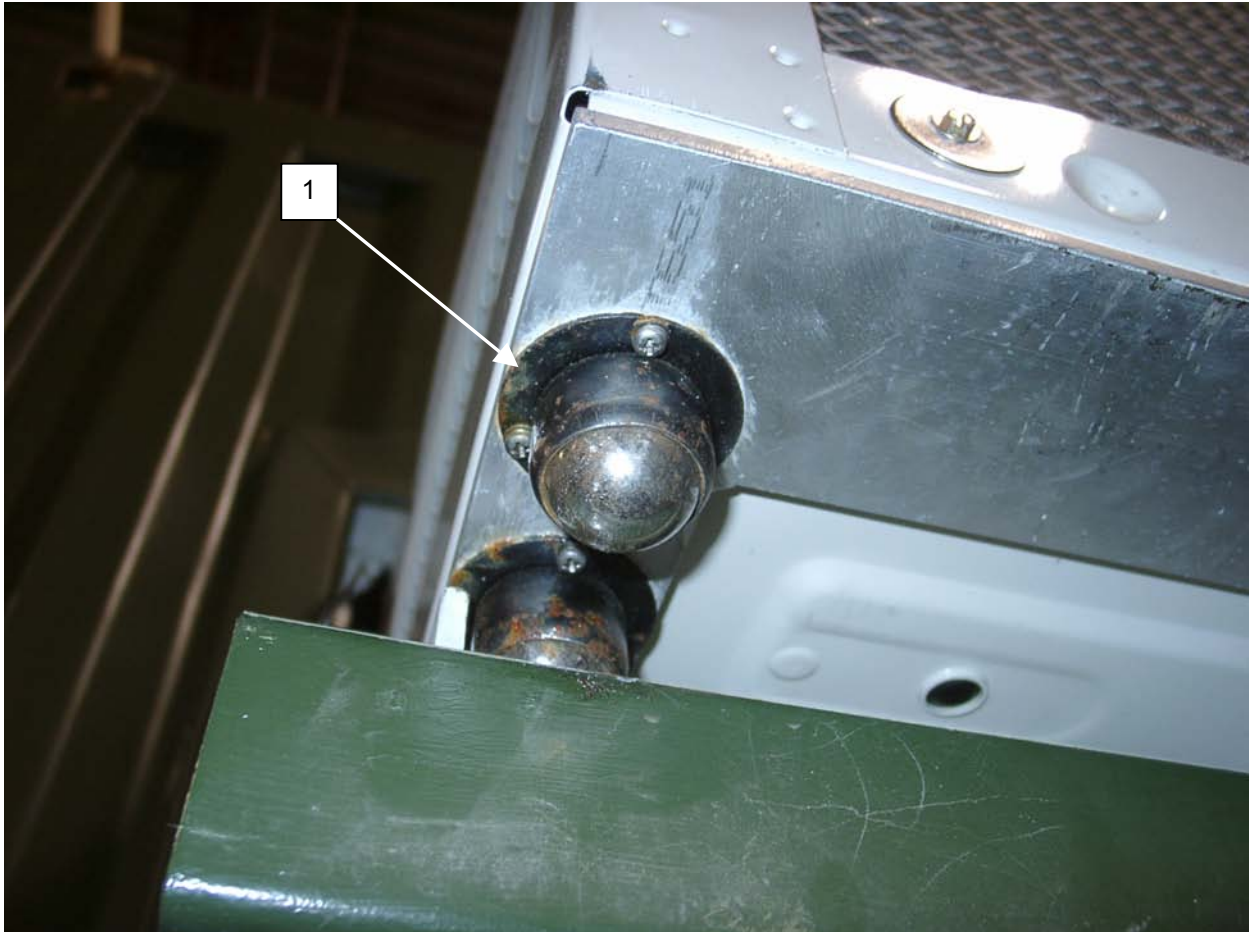
Replace the Slam Latch

1. Remove the four screws retaining the slam latch (1), and remove the slam latch.
2. Install the replacement slam latch (1), and retain with screws.



Replace the Ball Transfer

1. Position the ECU to provide access to the ball transfer (1).
2. Remove the three screws retaining the ball transfer (1).
3. Install the replacement ball transfer (1), and retain with three screws.



END OF WORK PACKAGE

UNIT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****COMMODOE ASSEMBLY
REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts

Closet Flange Seal (Item 5, WP 0103 00)

Equipment Condition

Water supply valve closed.

REPLACE**Replace Commode Operating Pedal****NOTE**

Pedal repair package comes with pedal and link retainer clips.

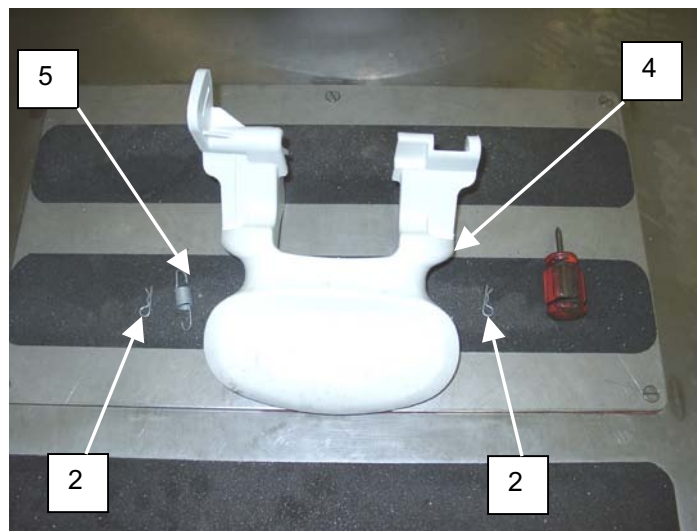
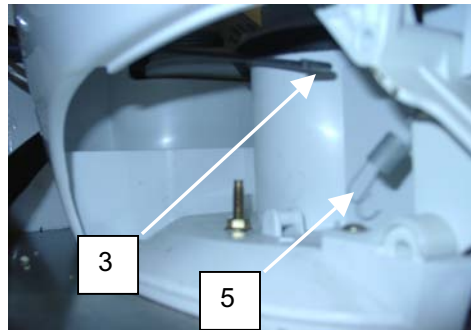
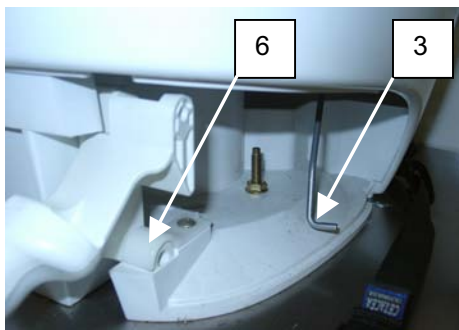
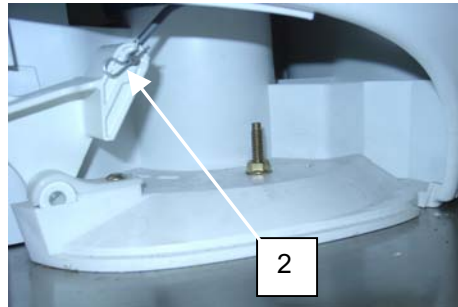
NOTE

Procedure is for Thetford Bravura model commode. Other models have similar procedures.

1. Remove shroud **(1)**.
2. Remove clips **(2)** retaining links **(3)** on both sides of commode.
3. Release links **(3)** from pedal **(4)**.
4. Release pedal spring **(5)** from commode.
5. Loosen the clamps **(6)** retaining the pedal **(4)**.
6. Remove the pedal **(4)**.
7. Remove the spring **(5)** from the pedal **(4)**.
8. Install the spring **(5)** on the replacement pedal **(4)**.
9. Install the pedal **(4)** onto the commode.
10. Tighten the clamps **(6)** on the pedal **(4)**.
11. Connect the spring **(5)** to the commode.
12. Insert the links **(3)** into the pedal **(4)**, and retain with clips **(2)**.

13. Install the shroud (1).

14. Clean tools and/or personal protective clothing and individual's equipment using a general purpose detergent solution, then sanitize using a ten-to-one solution of household bleach in warm water (i.e. 6-ounces in 2-quarts of water) and allow to air dry.

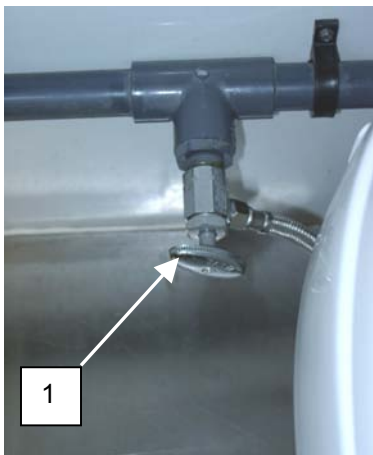


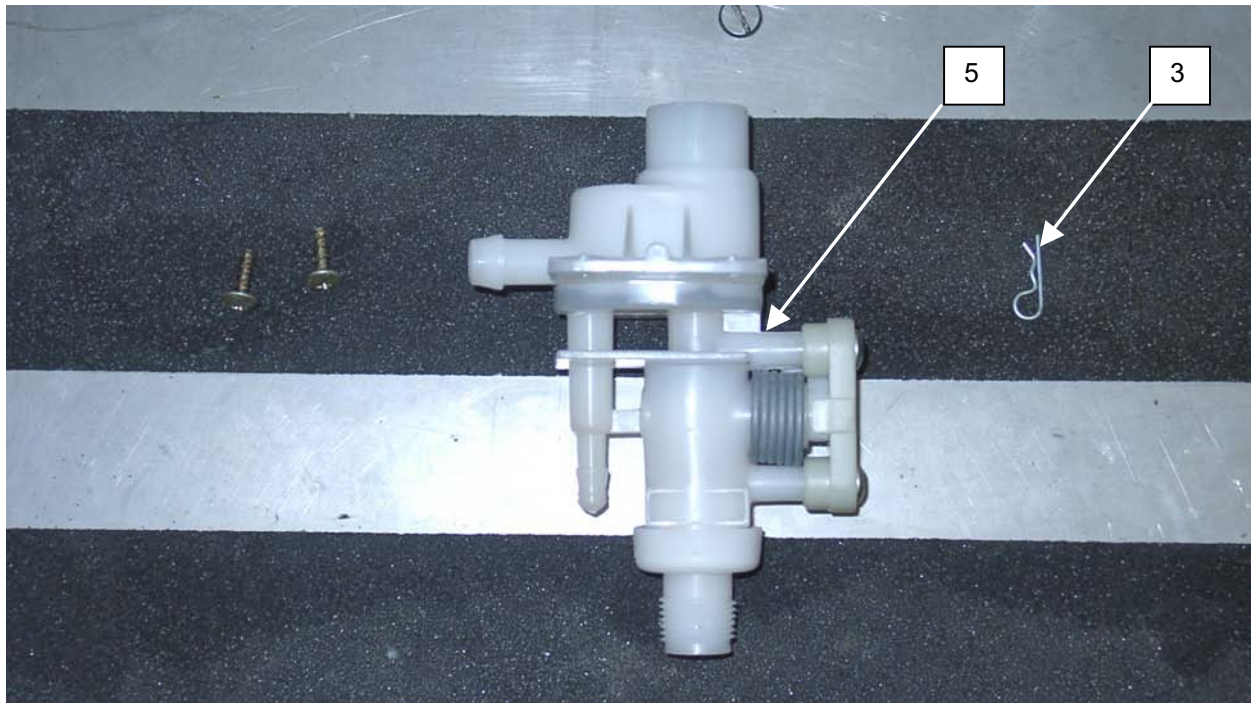
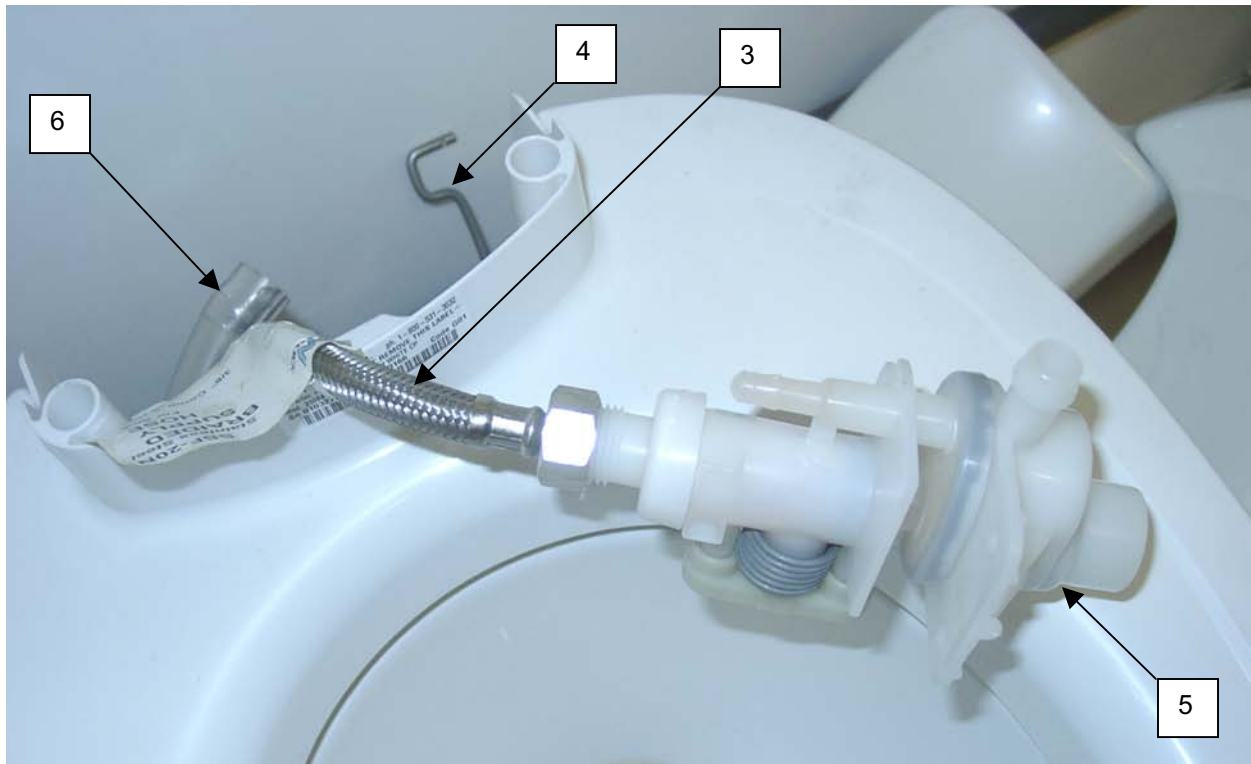
Replace the Water Module

NOTE

Procedure is for Thetford Bravura model commode. Other models have similar procedures.

1. Ensure the water supply valve **(1)** to the commode is closed.
2. Remove the seat and cover assembly **(2)** by pulling straight up.
3. Remove the clip **(3)** retaining the link **(4)**.
4. Disconnect the link **(4)** from the water module **(5)**.
5. Remove the two screws retaining the water module **(5)**.
6. Disconnect the clear water hose **(6)** from the water module **(5)**.
7. Disconnect the water supply hose **(7)** from the water module **(5)**.
8. Install the water supply hose **(7)** onto the replacement water module **(5)**.
9. Connect the clear water hose **(6)** to the water module **(5)**.
10. Install the water module **(5)** onto the commode, and retain with screws.
11. Connect the link **(4)**, and retain with clip **(3)**.
12. Open water supply valve **(1)**, and check for leakage.
13. Install the seat assembly **(2)**.
14. Clean tools and/or personal protective clothing and individual's equipment using a general purpose detergent solution, then sanitize using a ten-to-one solution of household bleach in warm water (i.e. 6-ounces in 2-quarts of water) and allow to air dry.





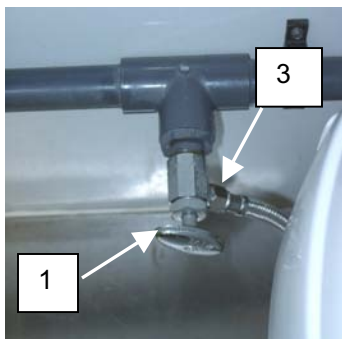
Replace the Flange Seal

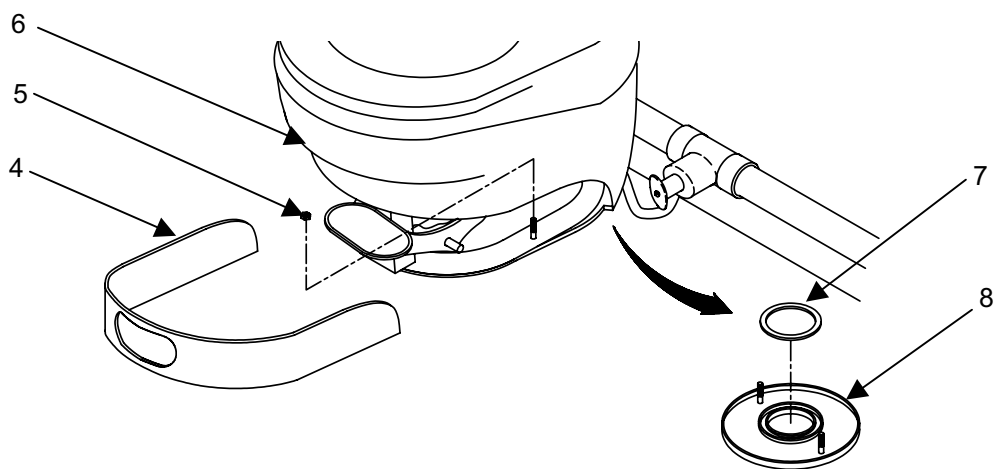
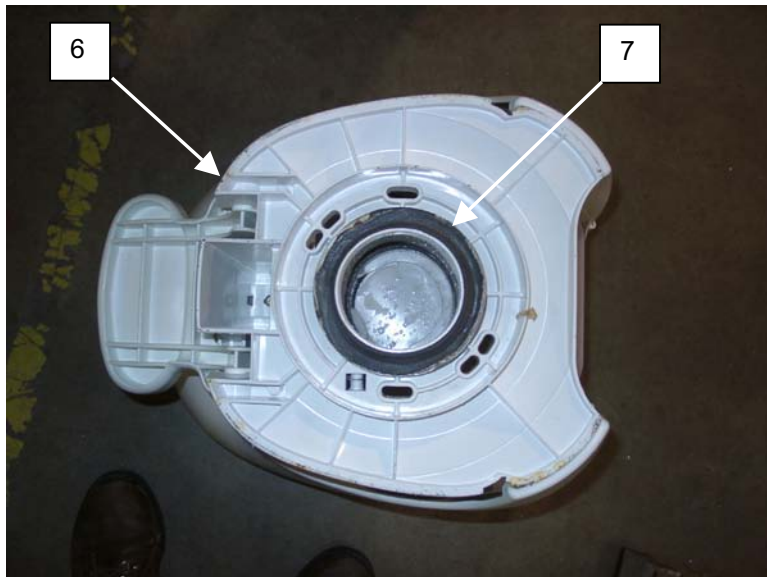
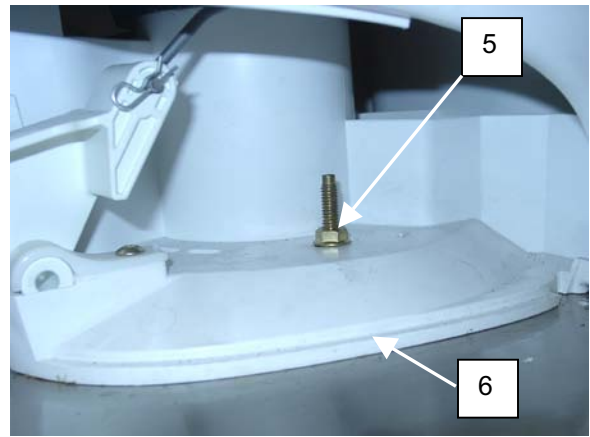
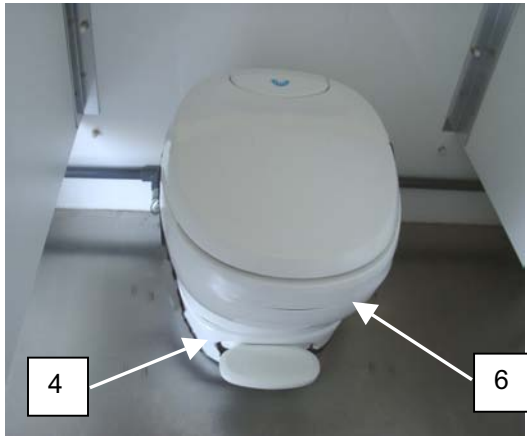


WARNING

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

1. Ensure the water supply to the commode at the water supply valve **(1)** is closed.
2. Remove the seat assembly **(2)** by pulling straight up.
3. Disconnect the water supply hose **(3)**.
4. Remove the shroud **(4)**.
5. Remove the two nuts **(5)** retaining the commode **(6)**, and remove the commode.
6. Turn the commode **(6)** upside down, and remove the seal **(7)** from the commode.
7. Install the replacement seal **(7)** onto the commode **(6)**. The seal is directional – place the flat side to the commode.
8. Install the commode **(6)** onto the closet flange **(8)**, and secure with two nuts **(5)**.
9. Install the water supply hose **(3)** to the commode **(6)**.
10. Open water supply valve **(1)**, and check for leaks.
11. Install the shroud **(4)**.
12. Install the seat assembly **(2)**.
13. Clean tools and/or personal protective clothing and individual's equipment using a general purpose detergent solution, then sanitize using a ten-to-one solution of household bleach in warm water (i.e. 6-ounces in 2-quarts of water) and allow to air dry.





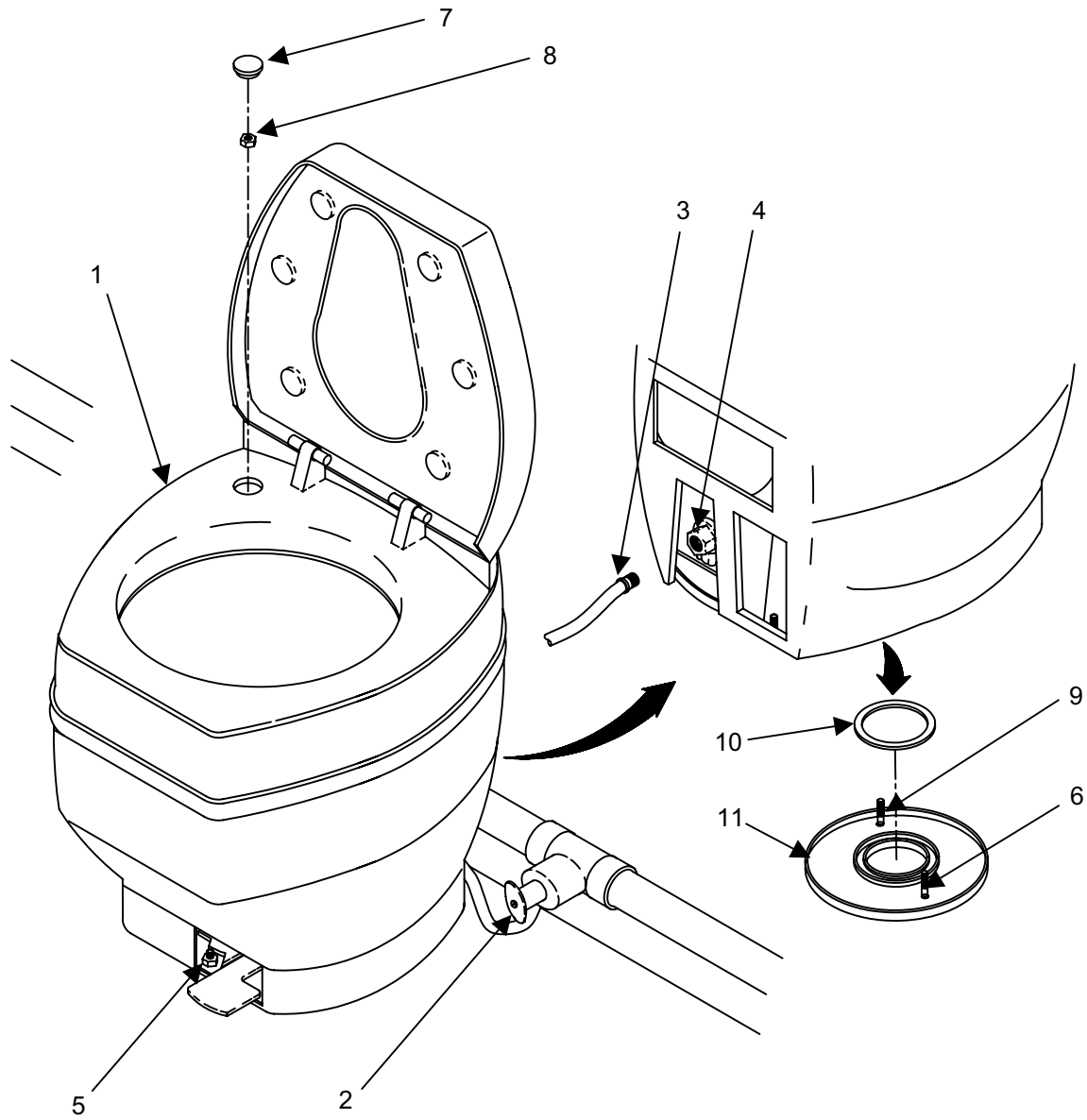
Replace Commode, Thetford Aqua Magic Galaxy Model (CL only)**WARNING**

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

NOTE

Unserviceable Thetford Aqua Magic Galaxy commodes may be replaced by Bravura models, if available.

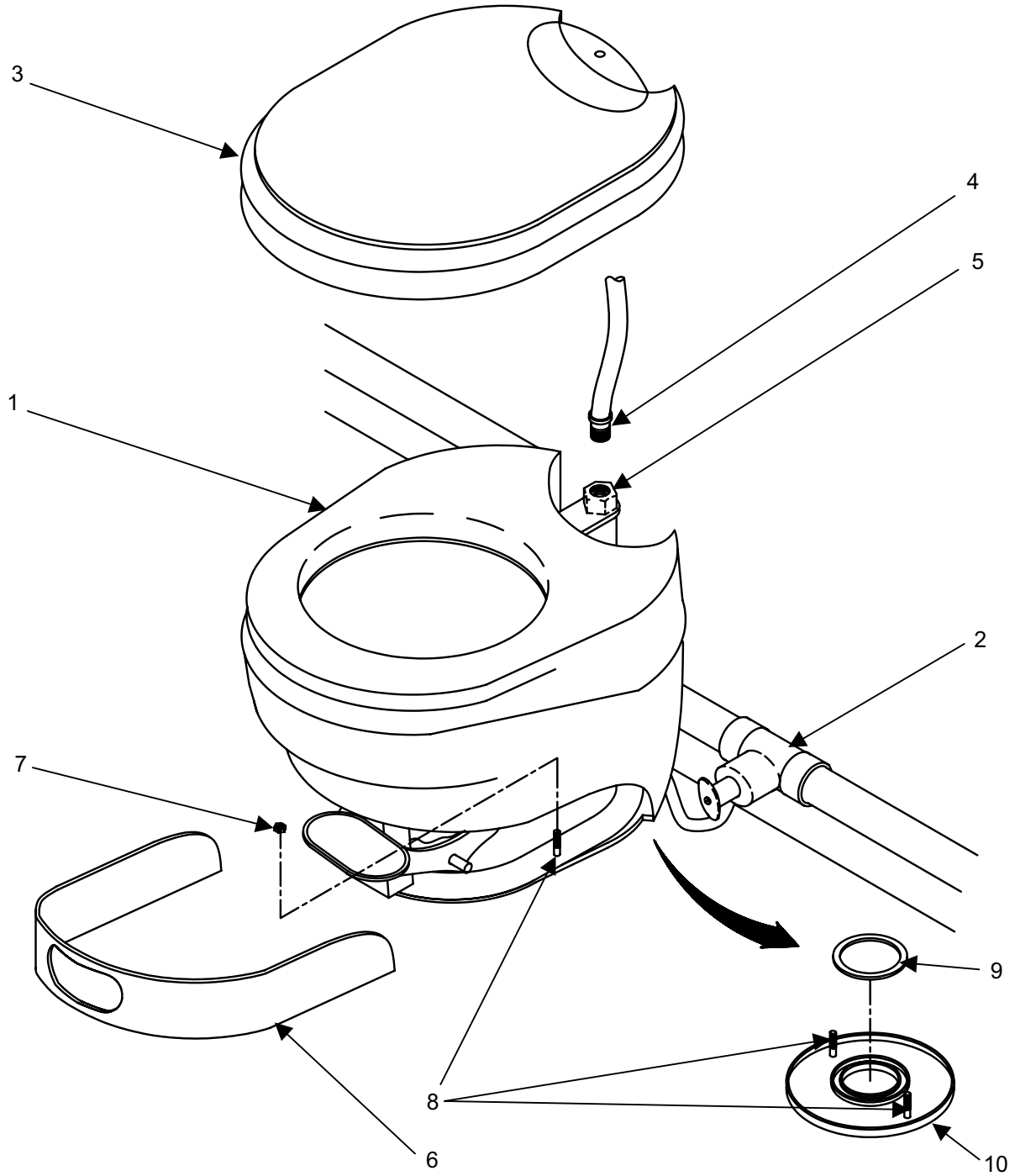
1. Ensure water supply to the commode **(1)** from freshwater line valve **(2)** is closed.
2. Disconnect water line **(3)** from commode water valve elbow **(4)** with wrench.
3. Remove front mounting nut **(5)** from bolt **(6)**.
4. Remove mounting hold access plug **(7)** and remove rear mounting nut **(8)** and bolt **(9)**.
5. Lift and remove commode **(1)**.
6. Install new closet flange seal **(10)** into closet flange groove **(11)**.
7. Place new commode **(1)** into position.
8. Install rear bolt **(9)** and rear mounting nut **(8)**, hand tighten.
9. Install front mounting bolt **(6)** and nut **(5)**, hand tighten.
10. Secure mounting nuts **(5)** and **(8)** to mounting bolts **(6)** and **(9)**.
11. Reconnect water line **(3)** to water valve elbow **(4)**.
12. Open water supply to the commode **(1)** from fresh-water line valve **(2)** and check for leaks.
13. Clean tools and/or personal protective clothing and individual's equipment using a general purpose detergent solution, then sanitize using a ten-to-one solution of household bleach in warm water (i.e. 6-ounces in 2-quarts of water) and allow to air dry.



Replace Commode, Thetford Bravura Model**WARNING**

Heavy-duty rubber aprons, rubber gloves, safety goggles (chemical protection), and/or face shields (chemical/biological protection) are required when in contact with wastewater or contaminated surfaces. Material may contain bacteria or viruses that present a danger to life or health.

1. Close water supply to the commode **(1)** from freshwater line valve **(2)**.
2. Lift seat assembly **(3)** from commode **(1)**.
3. Disconnect water line **(4)** from commode water valve elbow **(5)** with wrench.
4. Remove front shroud **(6)**.
5. Remove mounting nut **(7)** and bolt **(8)**.
6. Lift and remove commode **(1)**.
7. Install new closet flange seal **(9)** into closet flange groove **(10)**.
8. Place new commode **(1)** into position.
9. Install mounting bolt **(8)** and nut **(7)**, hand tight.
10. Secure mounting nut **(7)** to mounting bolt **(8)**.
11. Reconnect water line **(4)** to water valve elbow **(5)**.
12. Install seat assembly **(3)** and front shroud **(6)**.
13. Open water supply to the commode **(1)** from fresh-water line valve **(2)**.
14. Clean tools and/or personal protective clothing and individual's equipment using a general purpose detergent solution, then sanitize using a ten-to-one solution of household bleach in warm water (i.e. 6-ounces in 2-quarts of water) and allow to air dry.



END OF WORK PACKAGE

UNIT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****FAUCETS
SERVICE, REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

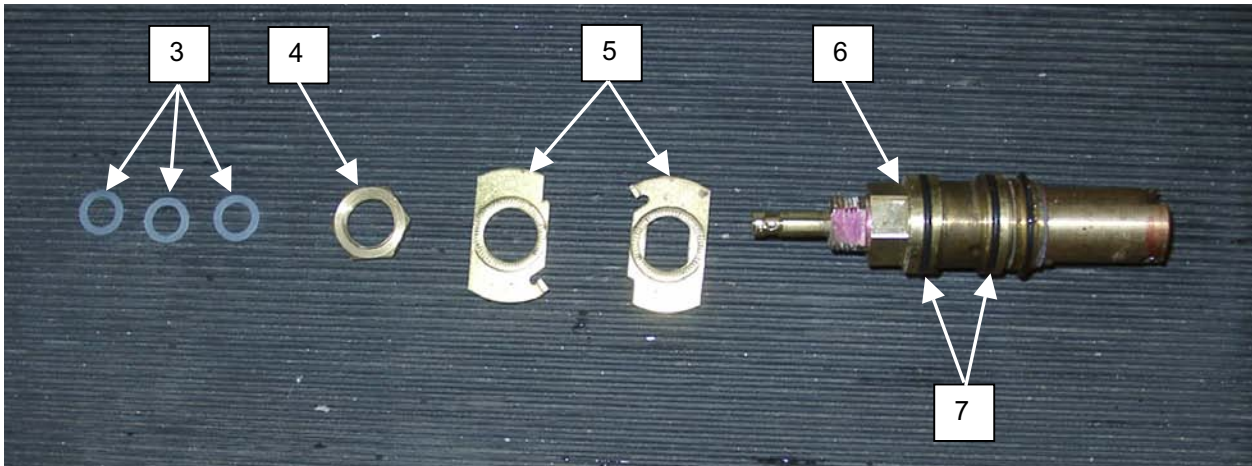
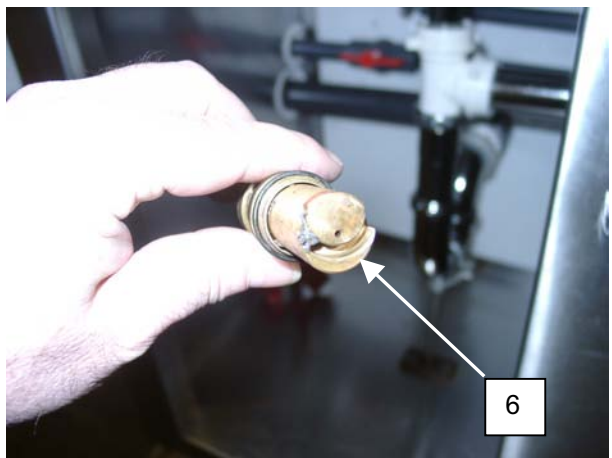
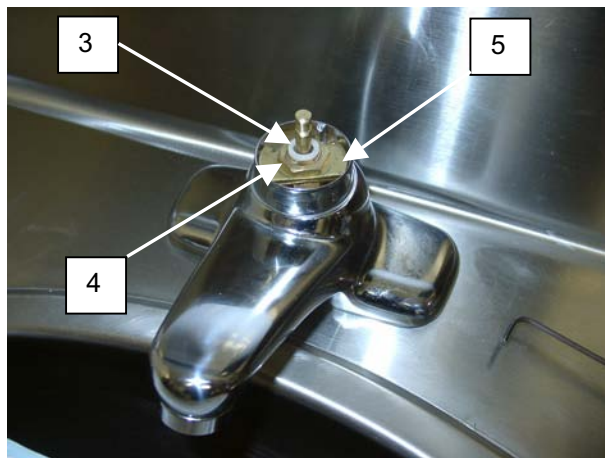
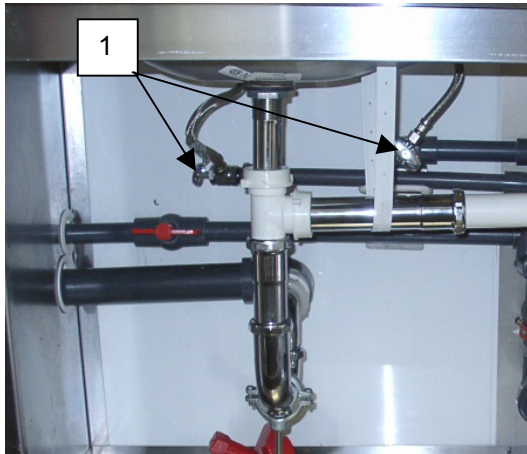
One

Materials/Parts**Equipment Condition**

Water inlet valves closed.

SERVICE**Clean Faucet Valve Assembly**

1. Ensure water supply valves **(1)** to faucet are closed.
2. Loosen the Allen screw retaining the faucet handle **(2)**, and remove the handle.
3. Remove and retain the adjustment washers **(3)**.
4. Remove the nut **(4)** retaining the limit plates **(5)**.
5. Remove the limit plates **(5)**.
6. Remove the valve assembly **(6)**.
7. Clean the valve assembly **(6)** of obstructions and dirt.
8. Ensure the O-rings **(7)** are in place and are in serviceable condition.
9. Install the valve assembly **(6)**.
10. Install the limit plates **(5)**, and retain with nut **(4)**.
11. Install the adjustment washers **(3)**.
12. Install the faucet handle **(2)**, and retain with Allen screw.
13. Open water supply valves **(1)**, and check for leaks.



REPLACE**Replace Faucet**

1. Close water at sink supply valves **(1)**.

NOTE

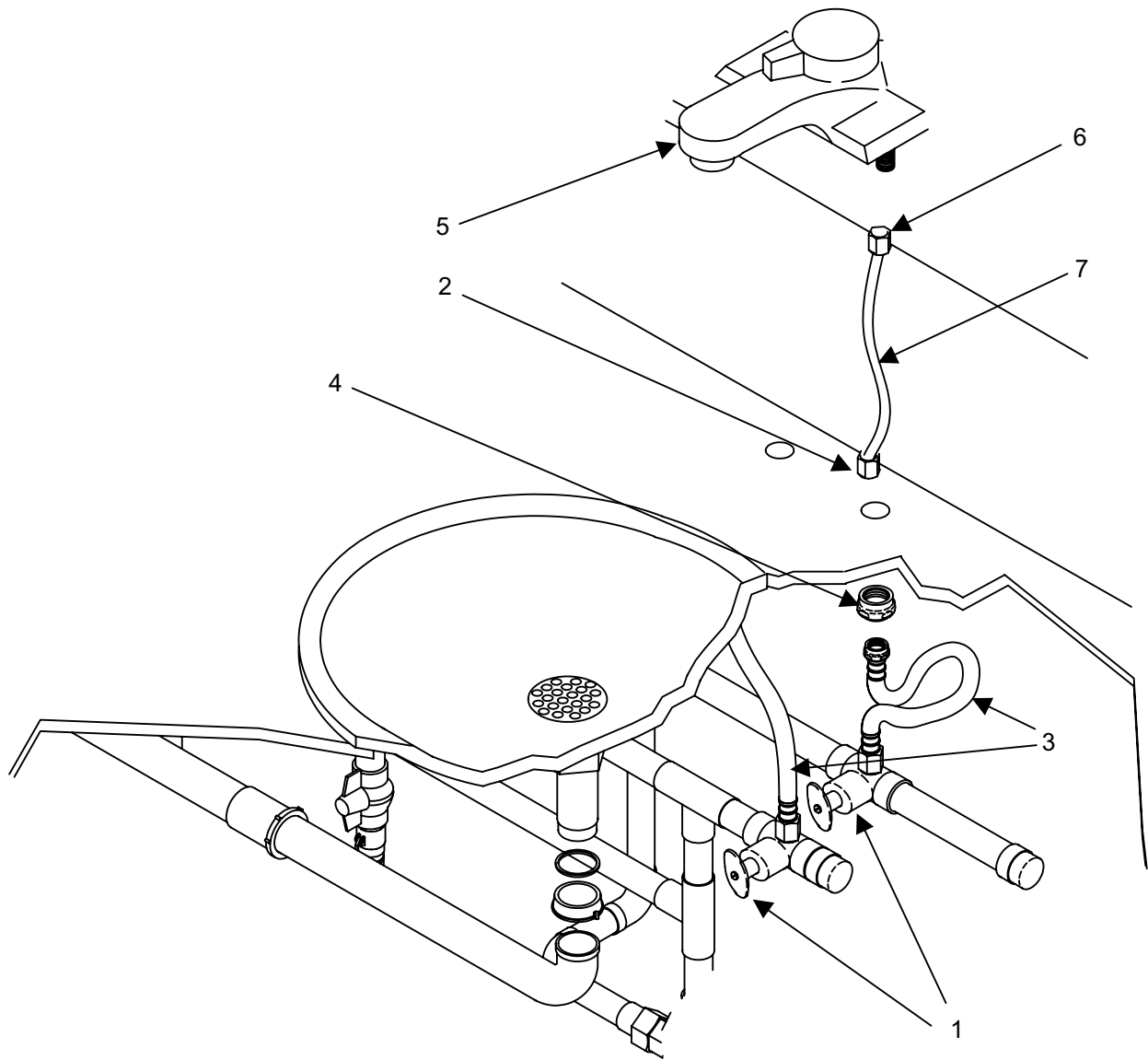
Use two wrenches when disconnecting the hose from the tubing – one to steady the hose, and one to loosen the compression fitting.

2. Disconnect the water supply tubing lower compression fittings **(2)** from the water supply hoses **(3)**.
3. Remove the faucet retaining nuts **(4)** from the faucet **(5)**.
4. Remove the faucet **(5)** and base gasket.
5. Loosen the water supply tubing upper compression fittings **(6)**, and remove the tubing **(7)** from the faucet **(5)**.
6. Install the water supply tubing **(7)** onto the replacement faucet, and tighten the upper compression fittings **(6)**.
7. Install the replacement faucet **(5)** with base gasket.
8. Install and tighten the faucet retaining nuts **(4)**.

NOTE

Use two wrenches when connecting the hose to the tubing – one to steady the hose, and one to tighten the compression fitting.

9. Connect the water supply tubing lower compression fittings **(2)** to the water supply hoses **(3)**.
10. Open water supply valves **(1)** and check for leaks.



END OF WORK PACKAGE

UNIT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****WATER HEATER ASSEMBLY
TEST, REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts

Wire Markers (Item 55, WP 0118 00)

Equipment ConditionCircuit breaker in OFF position.
Water supply valve in OFF position.**TEST****Test the Heater Element****WARNING**

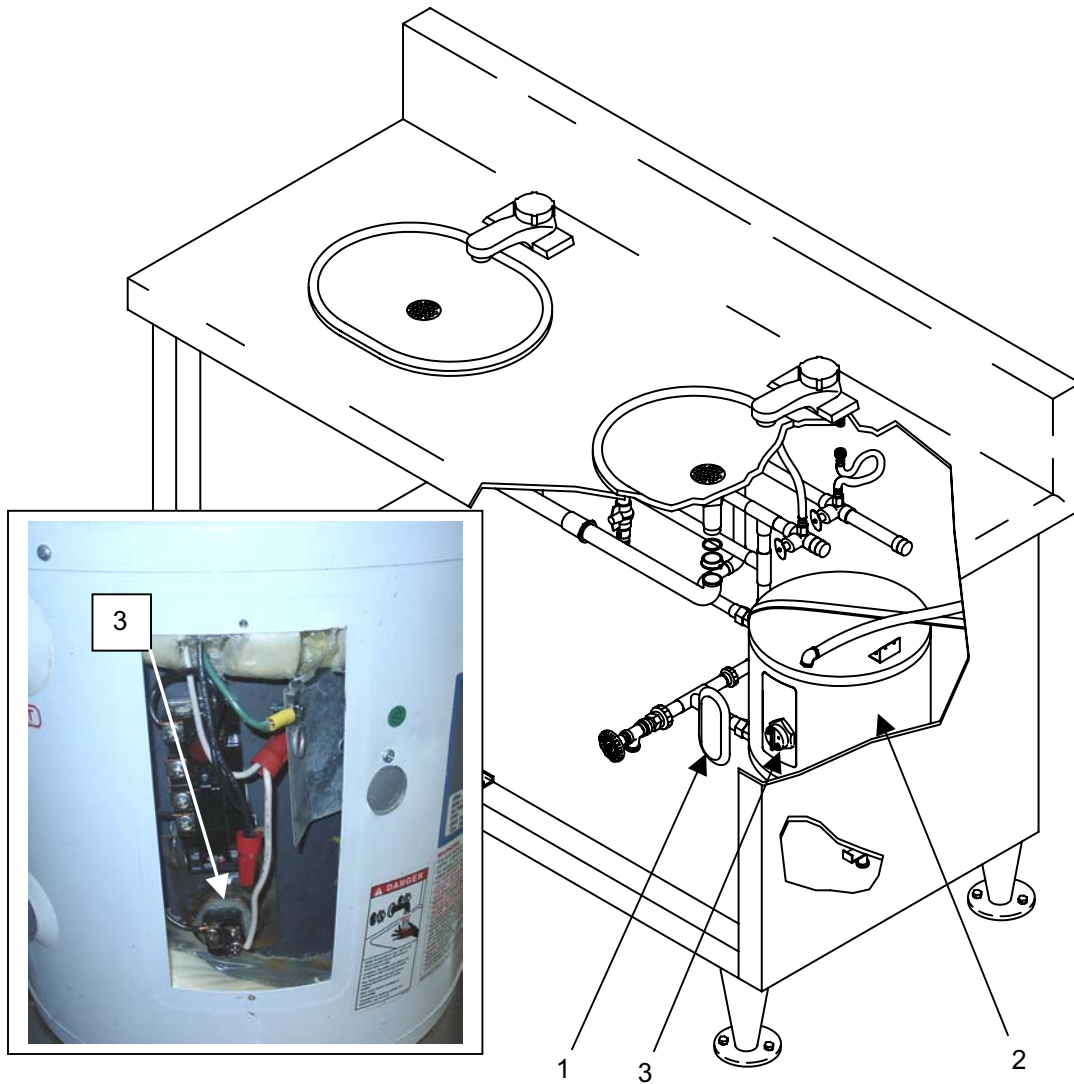
High voltage is present on this equipment. Do not perform maintenance function with power on. Disconnect power input to the CL/CLS and place the power cable end where it can be directly observed while performing this task. Serious injury or death to personnel may result if safety precautions are not observed.

**WARNING**

Containerized Latrine or Containerized Latrine System hot water operates at approximately 110°F to 120°F (43.3°C to 48.8°C). If you are performing a routine test on the heater element, allow water to cool off before performing any type of work on the system. Failure to follow this warning could result in serious injury to personnel from scalding.

1. Disconnect power.
2. Remove service panel **(1)** and insulation from water heater **(2)**.
3. Tag and disconnect electrical wiring from element **(3)**.
4. With a multimeter set to read ohms, check the continuity at the connections to the element **(3)**.
5. If continuity is not present (infinite ohms), replace element **(3)**.
6. If continuity exists (5 to 25 ohms), replace water heater **(2)**.

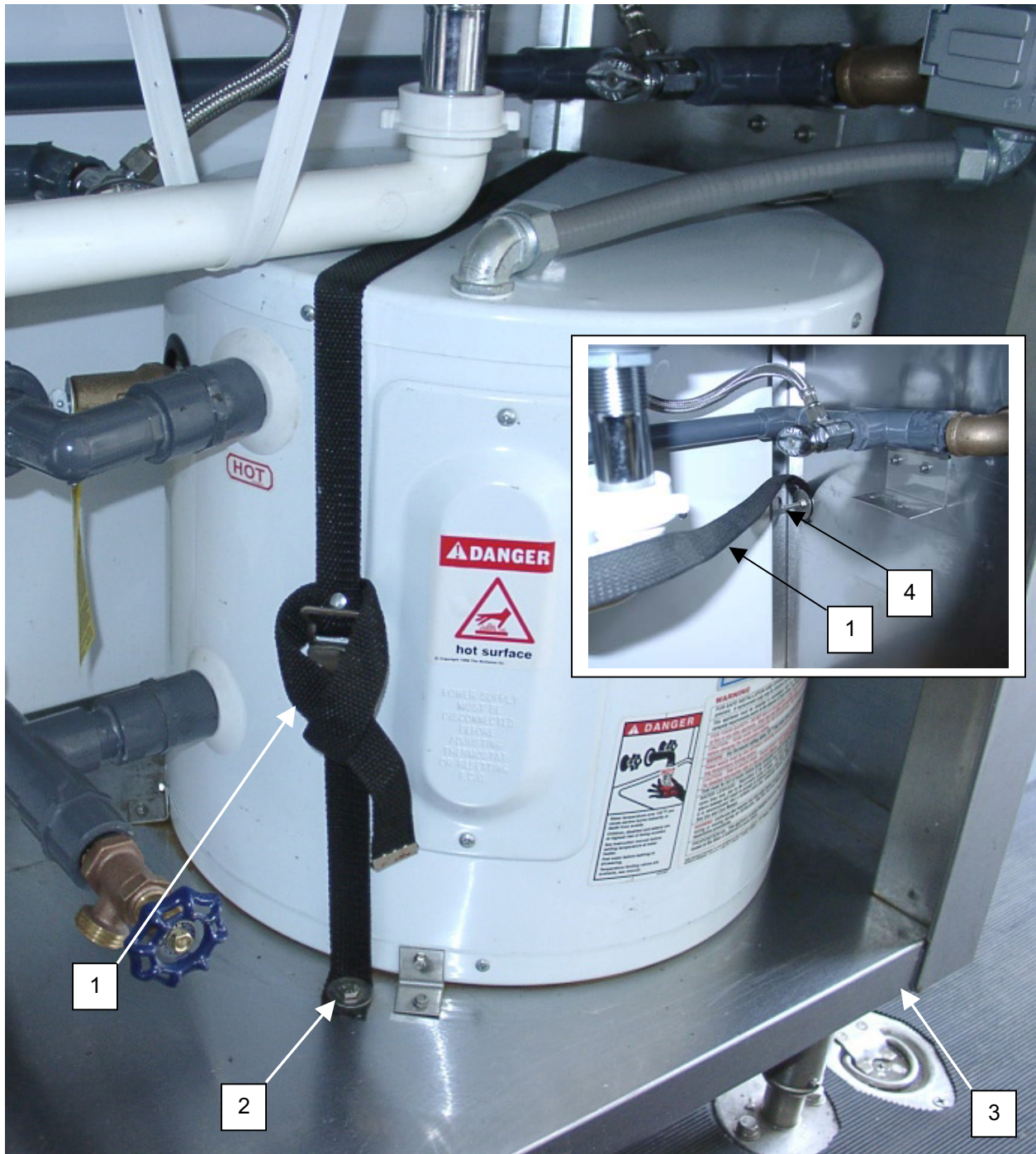
7. Reconnect wiring to element (3).
8. Install insulation and service panel (1) onto water heater, and retain with screw.
9. Reconnect power, and operate in accordance with the operating instructions given in WP 0006 00 (CL) and WP 0009 00 (CLS).
10. Monitor for normal operation.



REPLACE**Replace Strap****NOTE**

Procedure may be easier if the cabinet doors are removed.

1. Disconnect the strap **(1)**.
2. Remove the screw **(2)**, nut, and washer retaining the strap **(1)** to the bottom of the sink stand cabinet **(3)**. The nut is located underneath the cabinet.
3. Remove the screw **(4)**, nut and washer retaining the strap **(1)** to the side of the sink stand cabinet.
4. Cut the replacement strap **(1)** to length to fit the water heater as necessary. If practical, use the old strap as a guide.
5. Cut a small hole in the end of the straps **(1)** to accommodate the mounting screws **(2)**.
6. Insert the bottom mounting screw **(2)** into the mounting washer, and then into the hole made into the strap **(1)**.
7. Install the strap **(1)** to the bottom of the sink stand cabinet **(3)** using the hole provided, and secure with nut from underneath.
8. Insert the remaining screw **(4)** into the side of the cabinet **(3)**, from the outside.
9. Insert the strap **(1)** onto the screw, and then follow with the washer and nut. Ensure the nut is tight.
10. Connect the strap **(1)**, and tighten.



Replace the Heater Element



WARNING

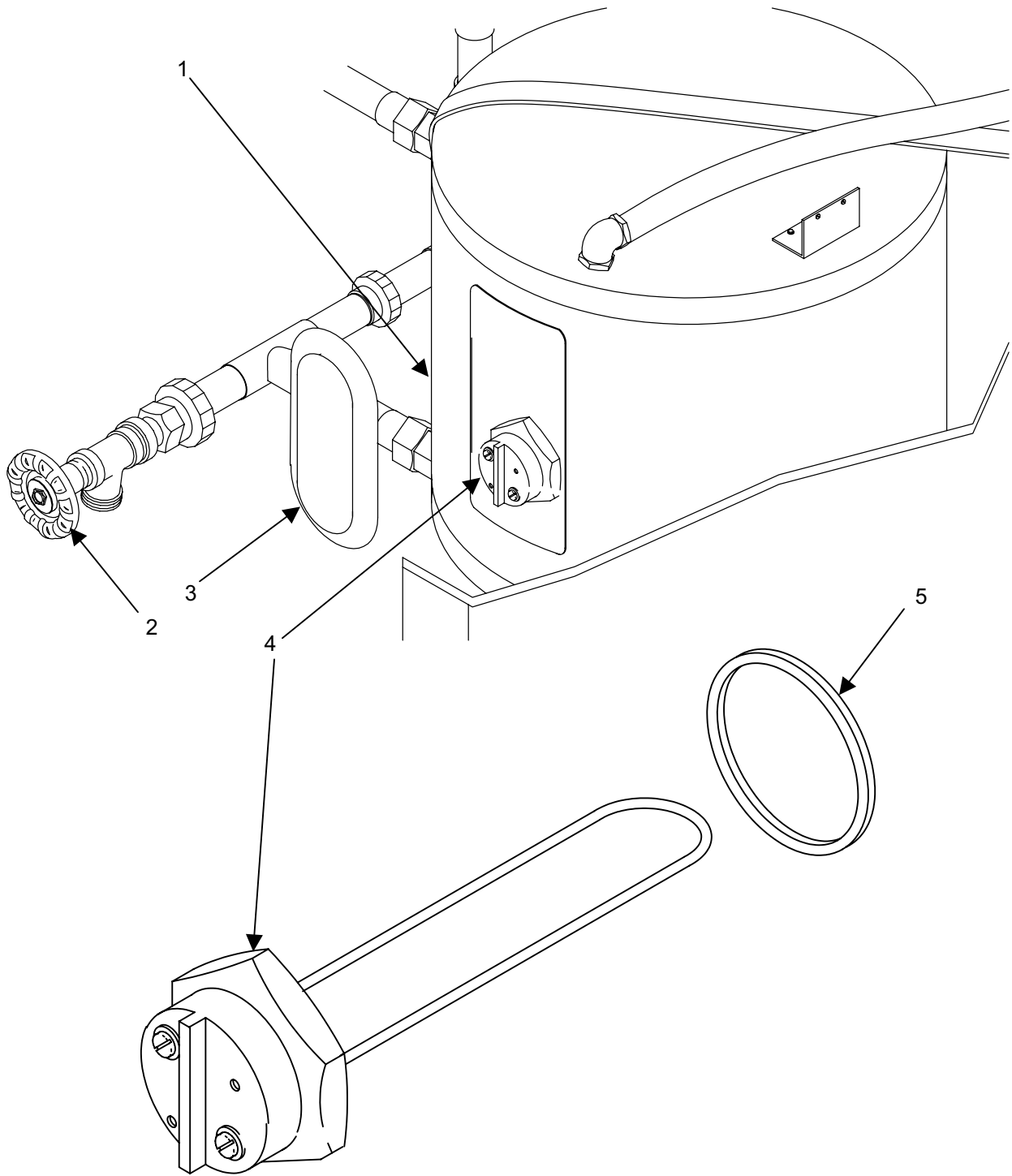
High voltage is present on this equipment. Do not perform maintenance function with power on. Disconnect power input to the CL/CLS and place the power cable end where it can be directly observed while performing this task. Serious injury or death to personnel may result if safety precautions are not observed.



WARNING

Containerized Latrine or Containerized Latrine System hot water operates at approximately 110°F to 120°F (43.3°C to 48.8°C). Ensure the water has cooled off before performing any type of work on the system. Failure to follow this warning could result in serious injury to personnel from scalding.

1. Disconnect electrical power and fresh water supply.
2. Drain the water heater **(1)** by opening drain valve **(2)** under sink stand.
3. Remove service panel **(3)** and insulation from water heater **(1)**.
4. Tag and disconnect electrical wiring from element **(4)**.
5. Unscrew element **(4)** from water heater **(1)**.
6. Install replacement element **(4)** with new gasket **(5)**.
7. Connect wiring to element **(4)** as tagged.
8. Install insulation and service panel **(1)** onto water heater **(1)**, and retain with screw.
9. Close drain valve **(2)**.
10. Reconnect water supply and fill water heater. (While water heater is filling, open hot water faucets on sinks to let air escape.) When water begins to flow from faucets, close them.
11. Reconnect power, and turn circuit breaker ON.



Replace the Hot Water Heater



WARNING

High voltage is present on this equipment. Do not perform maintenance function with power on. Disconnect power input to the CL/CLS and place the power cable end where it can be directly observed while performing this task. Serious injury or death to personnel may result if safety precautions are not observed.



WARNING

Containerized Latrine or Containerized Latrine System hot water operates at approximately 110°F to 120°F (43.3°C to 48.8°C). Allow water to cool off before performing any type of work on the system. Failure to follow this warning could result in serious injury to personnel from scalding.

1. Disconnect electrical power and fresh water supply.
2. Drain the water heater **(1)** by opening drain valve **(2)** under sink stand.

NOTE

CL/CLS may be fitted with PVC pipe unions, which may be disconnected with slip joint pliers. If not, PVC pipe must be cut and reconnected with couplings. If a CL/CLS is not fitted with pipe unions, this task must be carried out by Direct Support maintenance personnel. Refer to WP 0065 00 for instructions to install PVC couplings onto PVC pipe.

3. Disconnect PVC supply **(3)** from water heater **(1)**.
4. Disconnect PVC discharge **(4)** from water heater **(1)**.
5. Remove the service panel **(5)** and insulation from water heater **(1)**.
6. Tag and disconnect the wiring from the power supply conduit **(6)**.
7. Remove the power supply conduit locknut **(7)**, and remove the power supply conduit **(6)**.
8. Remove strap **(8)** securing water heater **(1)** to sink stand.

NOTE

The water heater ships with screws attaching it to the mounting brackets. The screws may be discarded if the water heater has been replaced.

9. Remove the screws retaining the water heater **(1)** to the mounting brackets **(9)**.
10. Remove water heater **(1)** from sink stand.

NOTE

Note position of PVC water supply and discharge.

11. Remove PVC supply **(3)** and discharge **(4)** pipe and fittings from water heater **(1)**.
12. Install PVC supply **(3)** and discharge **(4)** pipe and fittings onto replacement water heater **(1)**. Ensure that PVC pipe and fittings are aligned correctly.

NOTE

The replacement hot water heater should be fitted with a pressure relief valve. If the replacement hot water heater is not fitted with a pressure relief valve, remove the pressure relief valve from the damaged water heater and install on the replacement water heater.

NOTE

The water heater ships with screws attaching it to the mounting brackets. The screws may be discarded if the water heater has been replaced.

13. Install replacement water heater **(1)** under sink and into the mounting brackets **(9)**, and align the water heater to match the water supply **(3)** and discharge **(4)** connections.

NOTE

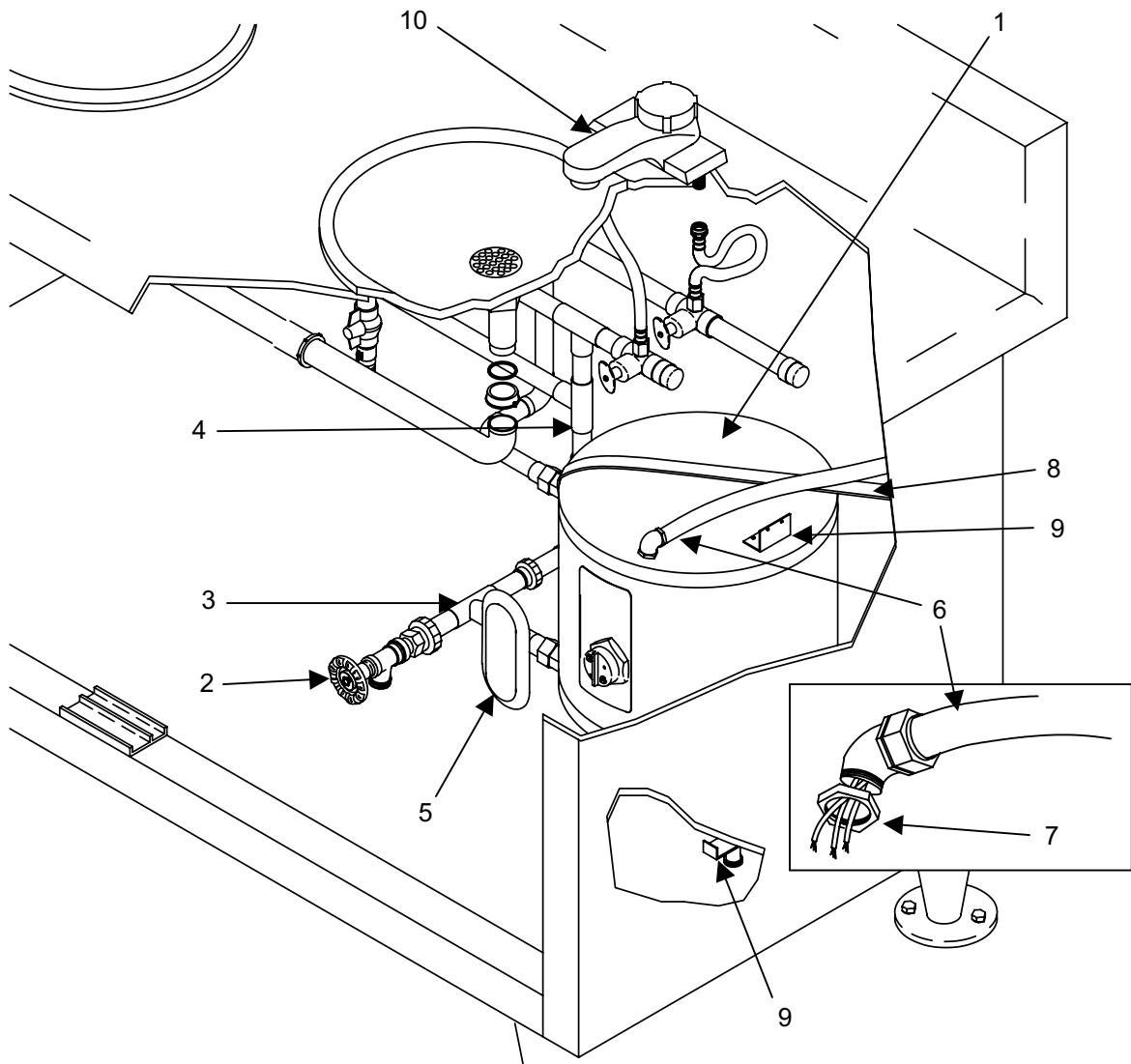
CL/CLS may be fitted with PVC pipe unions, which may be disconnected with slip joint pliers. If not, PVC pipe must be cut and reconnected with couplings. If a CL/CLS is not fitted with pipe unions, this task must be carried out by Direct Support maintenance personnel. Refer to WP 0065 00 for instructions to install PVC couplings onto PVC pipe.

14. Connect the water supply **(3)** and discharge **(4)** PVC pipes.
15. Install the strap **(8)** securing the water heater **(1)** to the sink assembly.
16. Remove the service panel **(5)** and insulation from the replacement water heater **(1)**.
17. Install the power supply conduit **(6)** into the replacement water heater, and secure with locknut **(7)**.
18. Connect the power supply wiring to the replacement water heater **(1)** as tagged.
19. Install the insulation and service panel **(5)**, and retain with screw.
20. Close the water heater drain valve **(2)**.

CAUTION

Do not turn the water heater circuit breaker ON until the water heater has been bled of all air. Failure to bleed air from the water heater may damage the heater element.

21. Reconnect power and water to the CL/CLS.
22. Open the faucet (10) on the hot setting to bleed all air from the water heater.
23. Operate the water heater in accordance with the operating instruction given in WP 0006 00 (CL) and WP 0009 00 (CLS).



END OF WORK PACKAGE

UNIT MAINTENANCE

CONTAINERIZED LATRINE SYSTEM (CLS)

(NSN 4510-01-477-7764)

30 GPM INTERNAL WATER PUMP ASSEMBLY
TEST, SERVICE, ADJUST, REPLACE

INITIAL SETUP**Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/PartsPipe Sealant (Item 6, WP 0118 00)
Tape, Anti-seize (Item 42, WP 0118 00)
Wire Markers (Item 55, WP 0118 00)**Equipment Condition**CLS operating.
Set water heater circuit breaker (2B) and water pump circuit breaker (#9/11) to the OFF position.

TEST**Test the Water Pump Pressure Switch**

WARNING

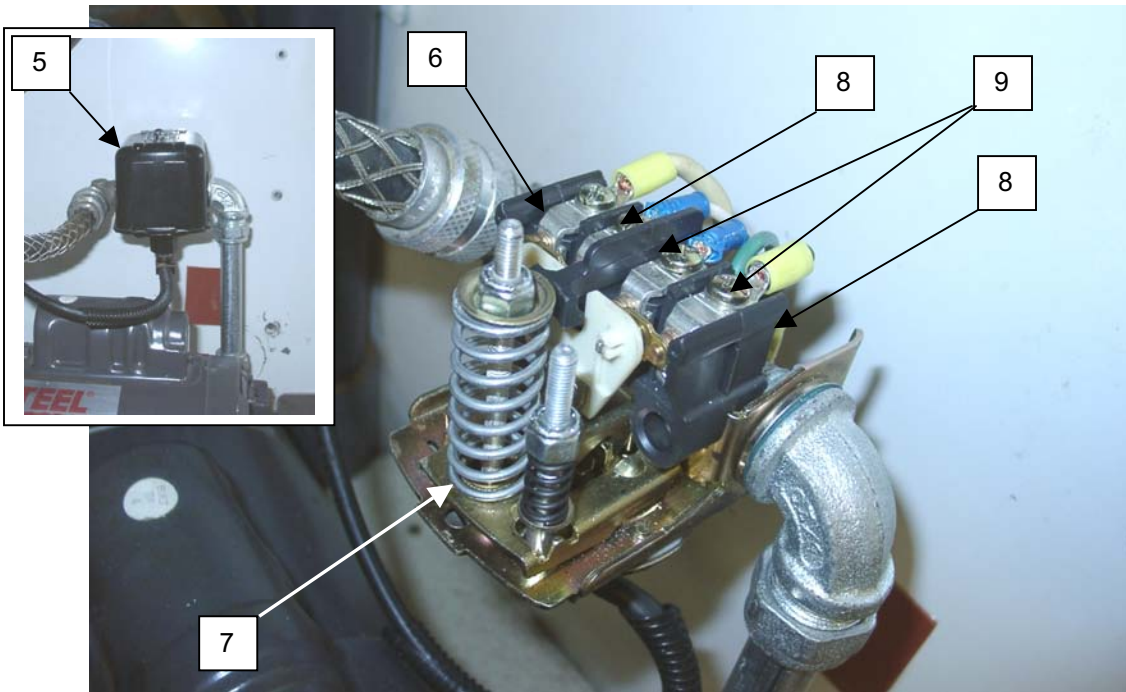
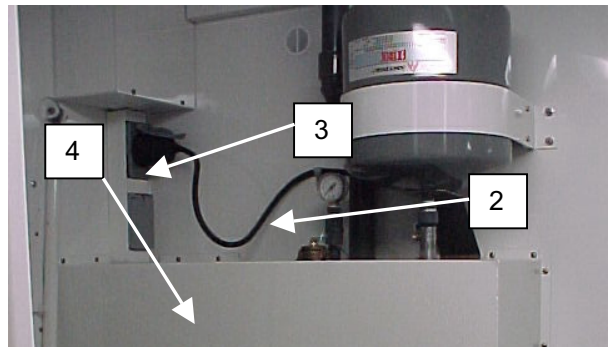
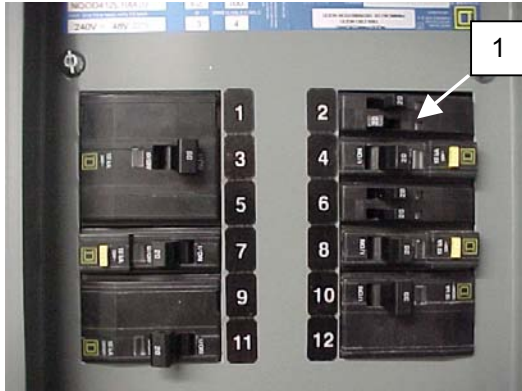
Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

CAUTION

Failure to disconnect power from the water heater may result in a burnt-out element.

1. Ensure water heater circuit breaker #2B (1) and water pump circuit breaker #9/11 are set to the OFF position.
2. Unplug the water pump power cord (2) from the receptacle (3).
3. Remove the screws retaining the pump cover (4), and remove the cover.
4. Remove the cover (5) from the pressure switch (6).
5. Press down the operating plate (7), and, using a multi-meter set to read ohms, check for continuity between the line terminals (8) and the load terminals (9). Each line terminal should have continuity to one load terminal.
6. Check for continuity between each line terminal (8). There should be no continuity.
7. Tag and disconnect the load terminals (9).

8. Check for continuity between the load terminals (9). There should be no continuity.
9. Replace a pressure switch (6) that fails these tests.
10. Install the switch cover (5).
11. Install the pump cover (4), and retain with screws.
12. Connect the water pump power cord (2) to the receptacle (3), set the water heater circuit breaker (1) to ON position, and operate IAW instructions given in WP 0009 00. Monitor for normal operation.



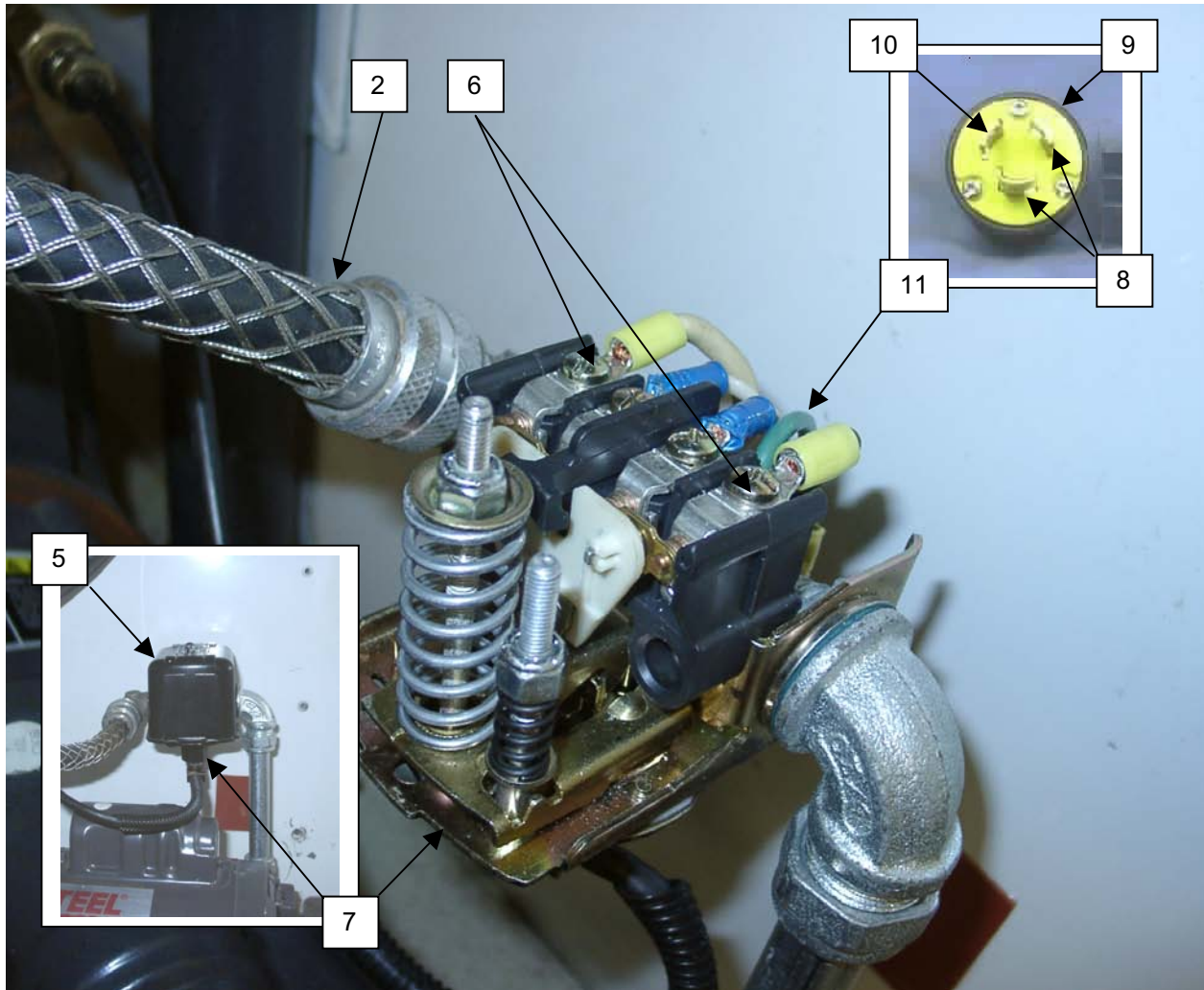
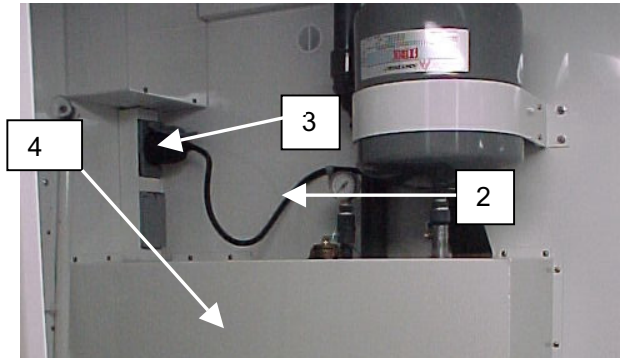
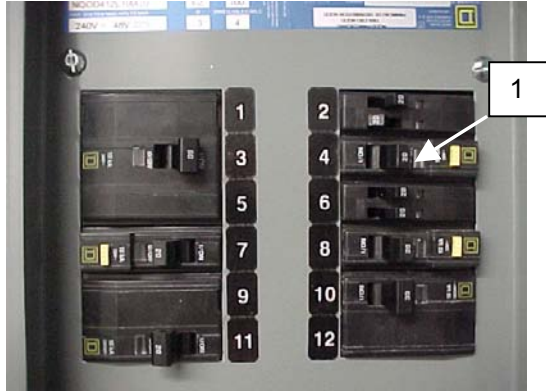
Test Power Cord**WARNING**

High voltage is present on this equipment. Do not perform maintenance function with power on. Disconnect power input to the latrine and place the power cable end where it can be directly observed while performing this task. Serious injury or death to personnel may result if safety precautions are not observed.

CAUTION

Failure to disconnect power from the water heater may result in a burnt out element.

1. Ensure the water heater circuit breaker #2B **(1)** and the water pump circuit breaker #9/11 are set to OFF position.
2. Disconnect the water pump power cord **(2)** from the water pump outlet **(3)**.
3. Remove the screws retaining the pump cover **(4)**, and remove the cover.
4. Remove the pressure switch cover **(5)**.
5. Tag and disconnect the power cord wires **(6)** in the pressure switch **(7)**.
6. Using an ohmmeter or multi-meter set to read ohms, connect one lead from the multimeter to one of two large power prongs **(8)** on the male plug **(9)**.
7. Connect the other lead first to one wire **(6)** on the pressure switch end of the cord, then the other. One side should have continuity, one side should not.
8. Connect the lead to the other large power prong **(8)** on the male plug **(9)**, and repeat step 2.
9. Connect one lead of the multimeter to the smaller ground prong **(10)**, and the other lead to the green ground wire **(11)**. There should be continuity.
10. Connect one lead to the male ground prong **(10)**, and then check first one, then the other large male prong **(8)**. There should be no continuity between the ground and the other prongs.
11. Replace a power cord **(2)** that does not pass these tests.
12. Install pressure switch cover **(5)**, and retain with cap nut.
13. Install the pump cover **(4)**, and retain with screws.
14. Reconnect power cord **(2)** to outlet **(3)**.
15. Prime water pump, and operate in accordance with procedures outlined in WP 0009 00.
16. Set water heater circuit breaker **(1)** and water pump circuit breaker to the ON position, and monitor for normal operation.

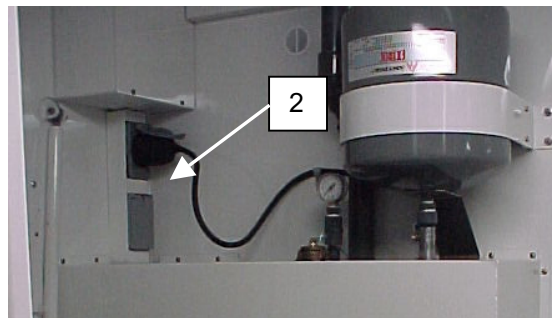
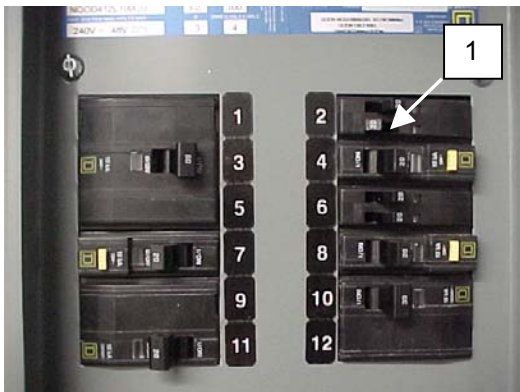


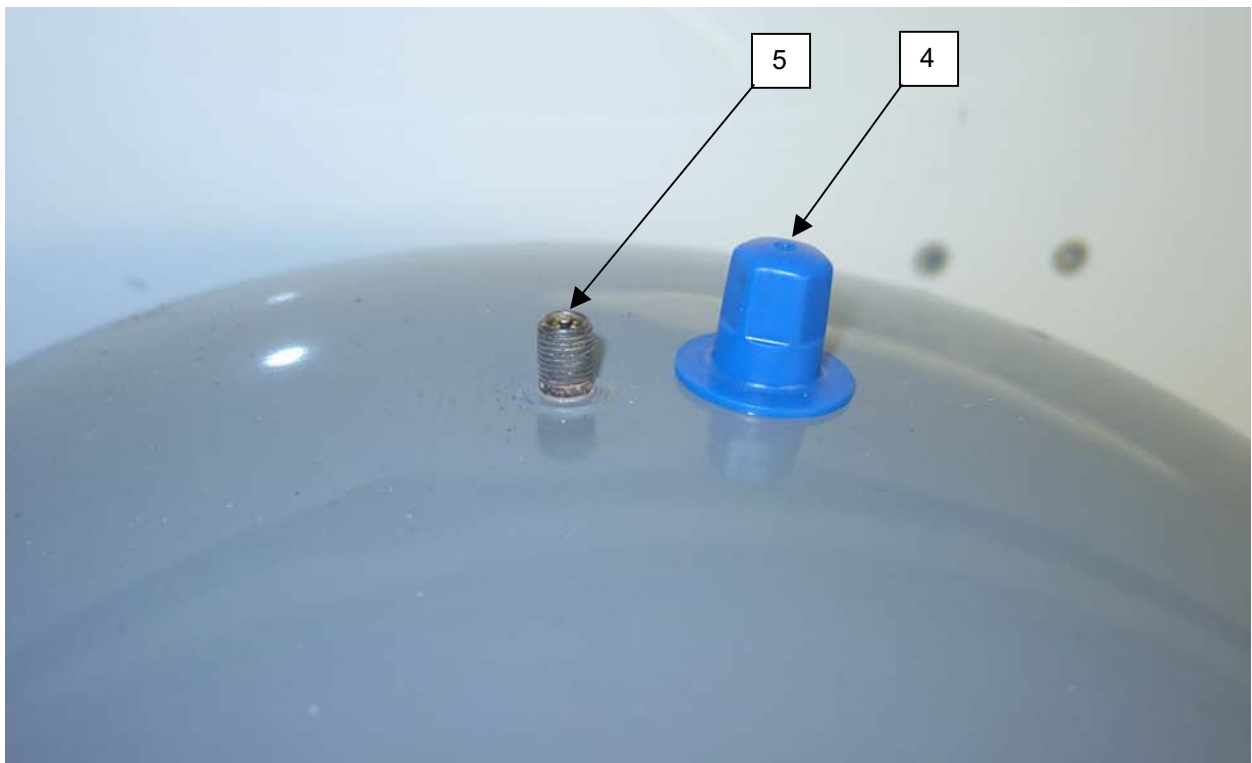
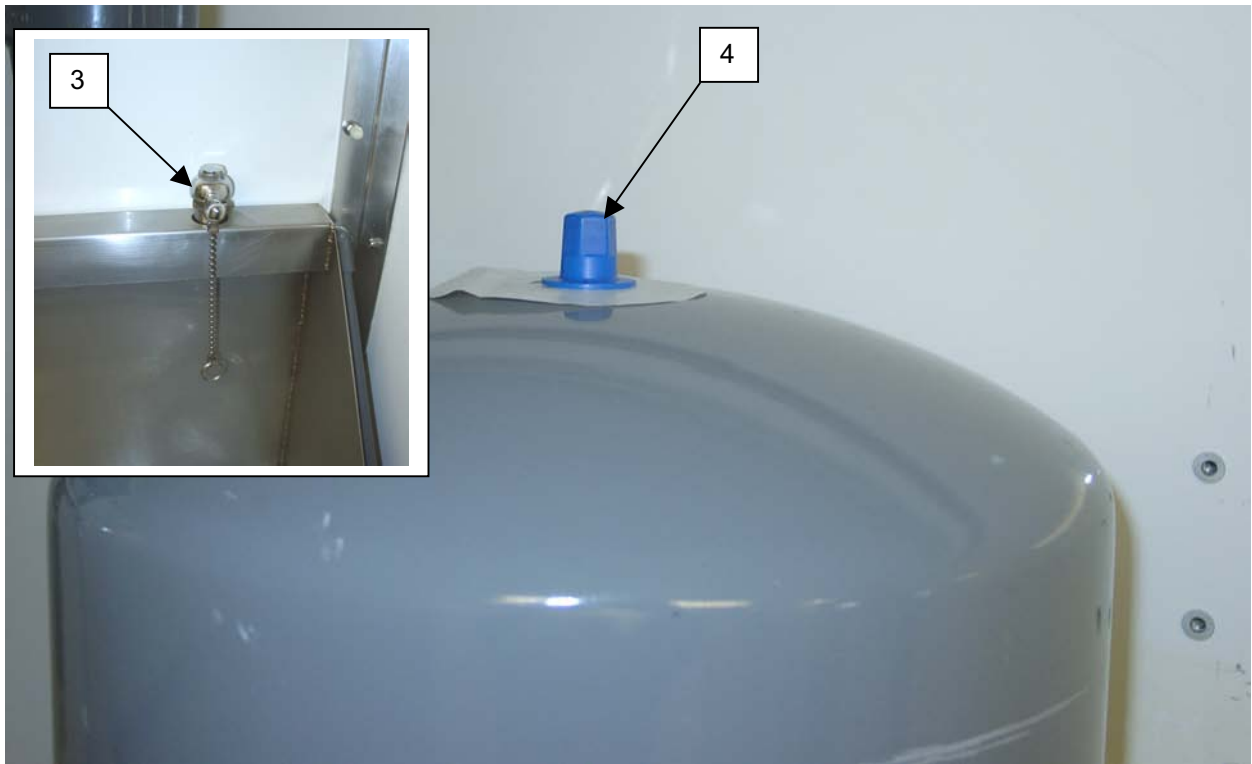
Test Water Pump Pressure Tank

CAUTION

Failure to disconnect power from the water heater may result in a burnt out element.

1. Ensure water heater circuit breaker #2B and water pump circuit breaker #9/11 **(1)** are set to the OFF position.
2. Unplug **(2)** water pump.
3. Release pressure from the system by opening the urinal flush valve **(3)**.
4. Remove the cap **(4)** from the tank Schrader valve **(5)**.
5. Use a tire pressure gauge to check tank pressure. Pressure should be between 12 and 20 psi.
6. Install cap **(4)** on tank Schrader valve **(5)**.
7. Connect the water pump power cord to the receptacle, switch the water heater circuit breaker and the water pump circuit breaker to the ON position, and operate IAW instructions given in WP 0009 00. Monitor for normal operation.





Test the Water Pump Motor



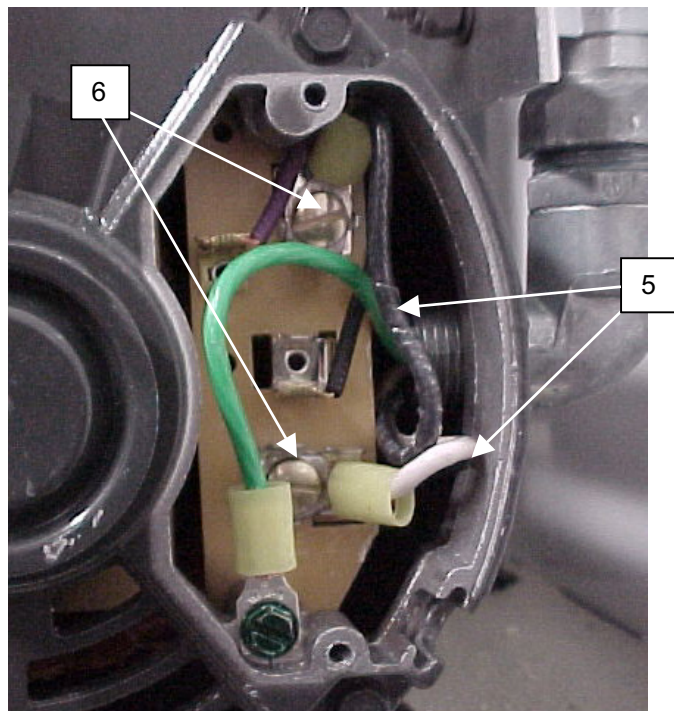
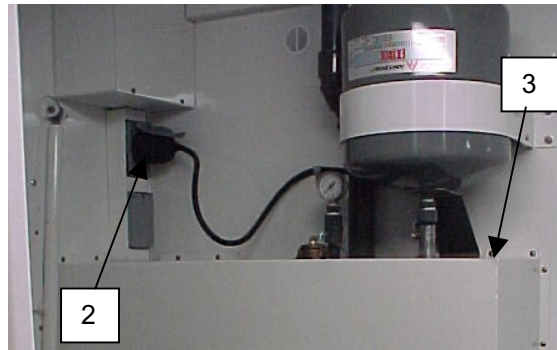
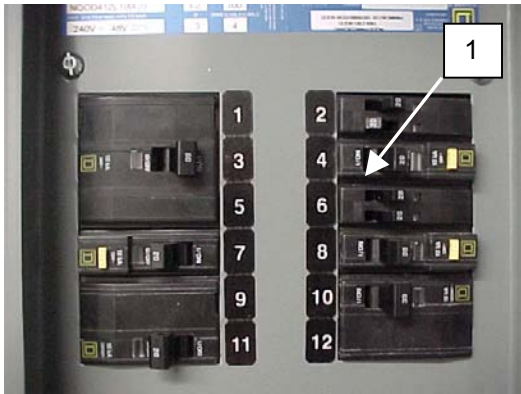
WARNING

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

CAUTION

Failure to disconnect power from the water heater may result in a burnt out element.

1. Switch water heater circuit breaker #2B **(1)** and water pump circuit breaker #9/11 to the OFF position.
2. Unplug water pump power cord **(2)**.
3. Remove the screws retaining the pump cover **(3)**, and remove the pump cover.
4. Remove the screws retaining the motor junction box cover and remove the motor junction box cover **(4)**.
5. Tag and disconnect the wires **(5)** from the pressure switch conduit.
6. Use a multimeter set to read ohms (Ω), and test for continuity between the two motor terminals **(6)**. If the motor is open (∞ ohms), notify Direct Support maintenance.
7. Use a multi-meter set to read ohms (Ω), and test for continuity between the each motor terminal **(6)** and ground. If the motor is shorted, ground to the "hot" terminal (0 ohms), notify Direct Support maintenance.
8. Connect the wiring **(5)** to the terminals **(6)** as tagged.
9. Install the junction box cover **(4)**.
10. Install the pump cover **(3)**, and retain with screws.
11. Connect the water pump power cord **(2)** to the receptacle.
12. Set the water heater circuit breaker **(1)** and the water pump circuit breaker to the ON position.
13. Operate the water pump IAW procedures given in WP 0009 00, and monitor for normal operation.



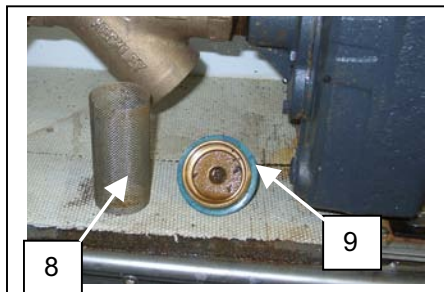
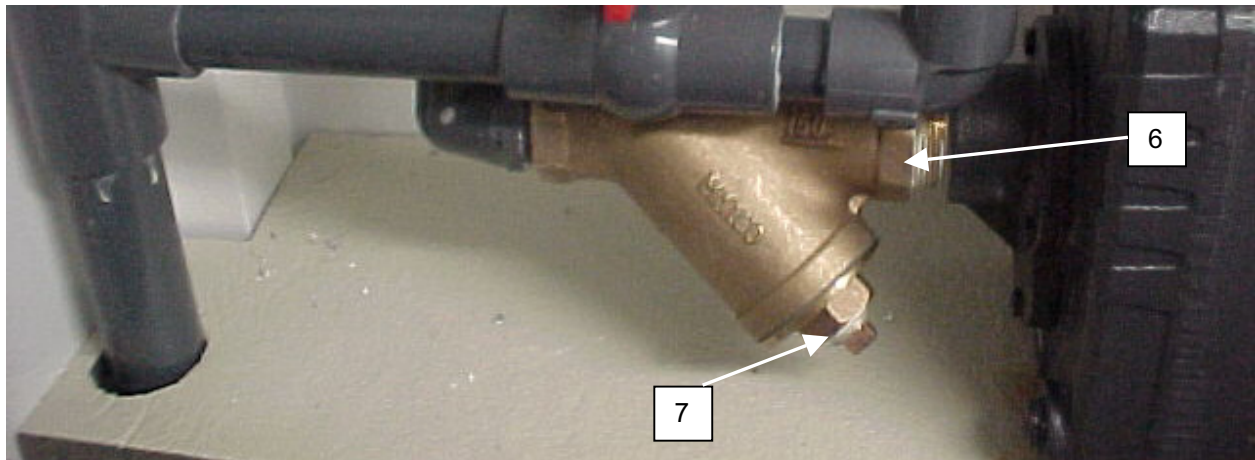
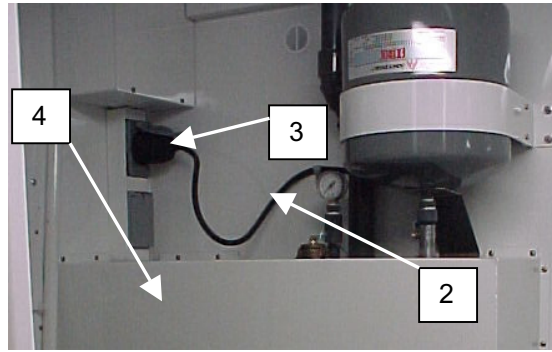
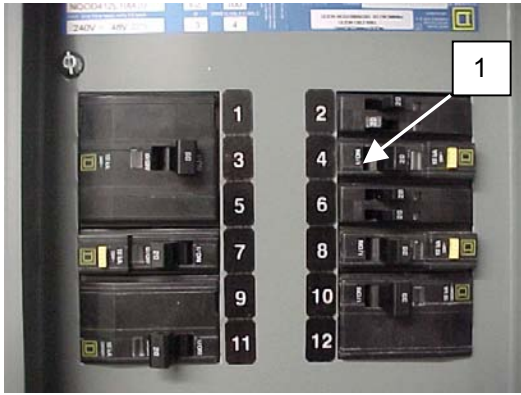
SERVICE**Service the 1 ½-inch Y Strainer****WARNING**

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

CAUTION

Failure to disconnect power from the water heater may result in a burnt out element.

1. Ensure water heater circuit breaker #2B **(1)** and water pump circuit breaker are set to the OFF position.
2. Unplug the water pump power cord **(2)** from the receptacle **(3)**.
3. Remove the screws retaining the pump cover **(4)**, and remove the cover.
4. Relieve pressure for the water system by opening the urinal flush valve **(5)**.
5. Place a pipe wrench on the body of the Y strainer **(6)** to prevent it from turning.
6. Use an adjustable wrench to remove the strainer element cap **(7)**.
7. Clean the strainer element **(8)** of visible sediment and debris.
8. Ensure the gasket **(9)** is in place and is serviceable.
9. Install the strainer element **(8)** and cap **(9)**. Do not overtighten.
10. Reconnect power to the water pump by plugging the pump power cord **(2)** into the receptacle **(3)** and set the water pump circuit breaker to the ON position.
11. Open the urinal flush valve **(5)** to remove any air from the system.
12. Check for leakage.
13. Install the pump cover **(4)**, and retain with screws.
14. Switch the water heater circuit breaker **(1)** to ON, and operate IAW instructions given in WP 0009 00. Monitor for normal operation.



Service Water Pump Pressure Tank



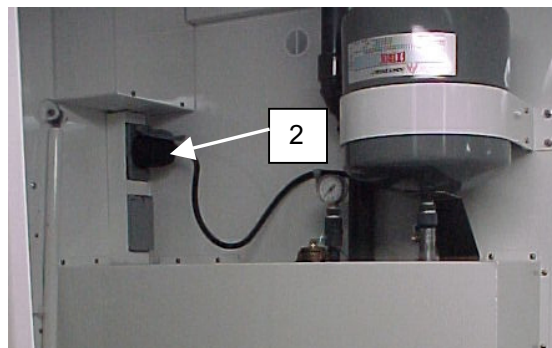
WARNING

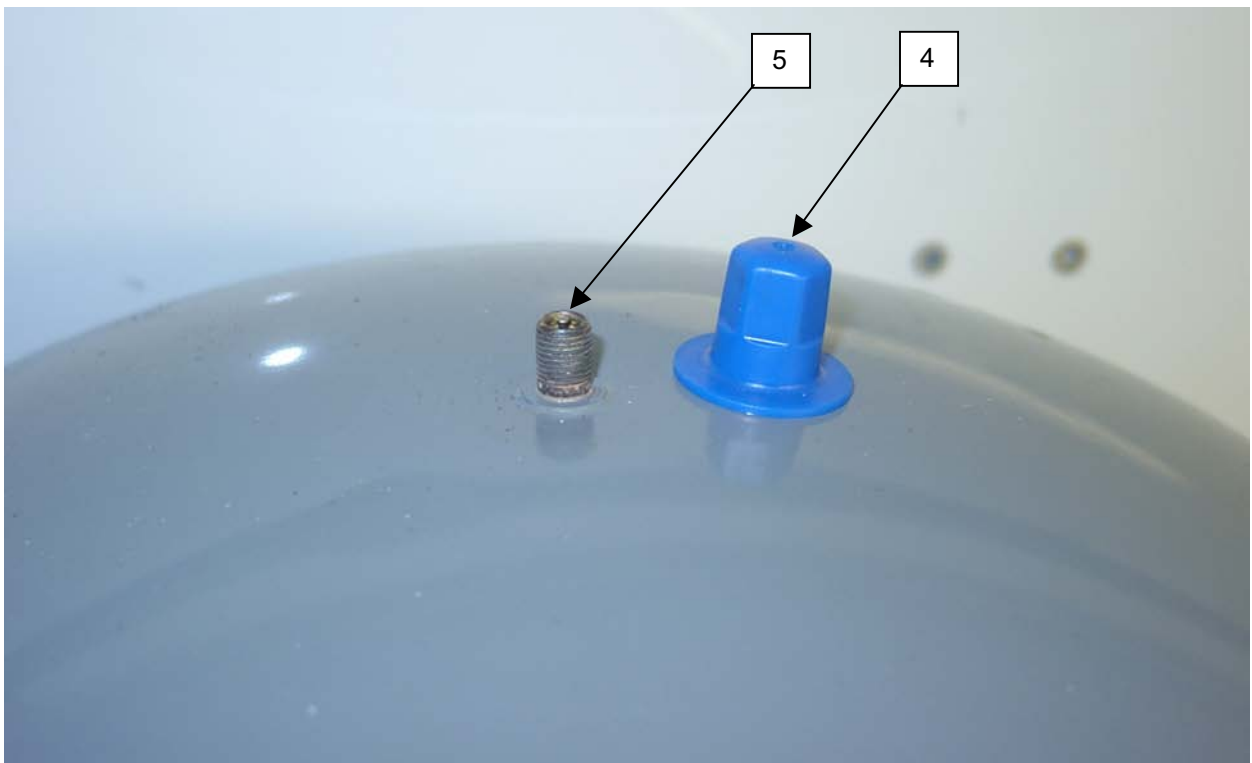
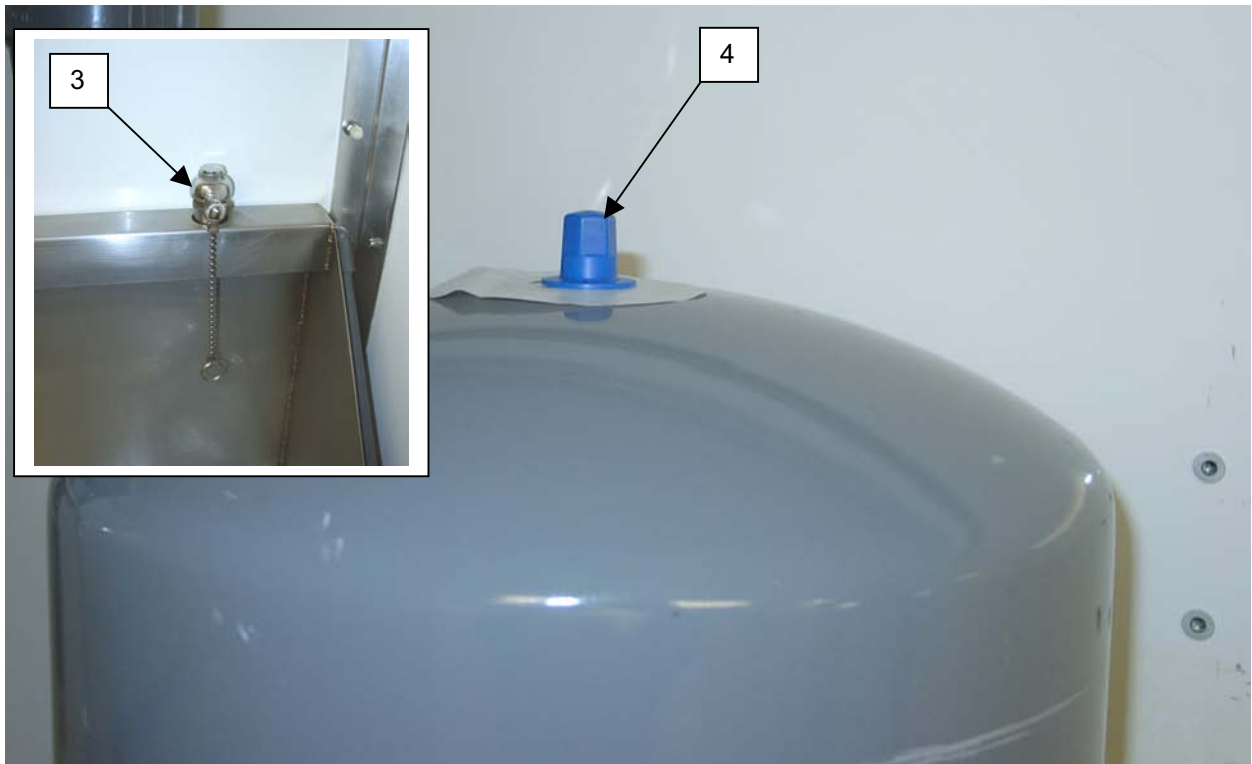
Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

CAUTION

Failure to disconnect power from the water heater may result in a burnt out element.

1. Ensure water heater circuit breaker #2B **(1)** and water pump circuit breaker #9/11 are set to the OFF position.
2. Unplug **(2)** water pump.
3. Release pressure from the system by opening the urinal flush valve **(3)**.
4. Remove the cap **(4)** from the tank Schrader valve **(5)**.
5. If necessary, use a hand pump or compressed air to add air to tank through the Schrader valve **(5)**. Pressure should be between 12 and 20 psi.
6. If necessary, release excess pressure from tank.
7. Install cap **(4)** on tank Schrader valve **(5)**.
8. Connect the water pump power cord **(2)**, set the water heater circuit breaker **(1)** and the water pump circuit breaker to the ON position, and operate IAW instructions given in WP 0009 00. Monitor for normal operation.

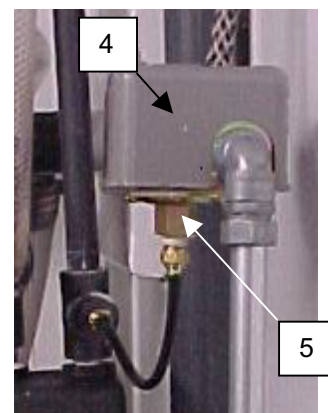
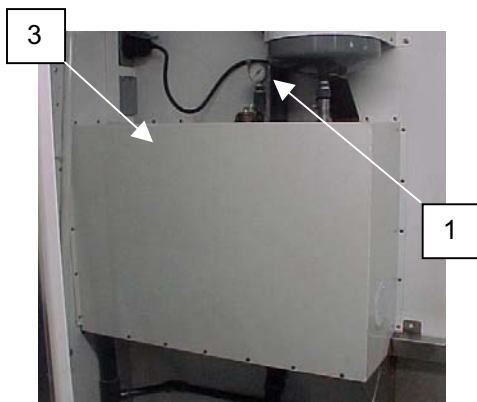


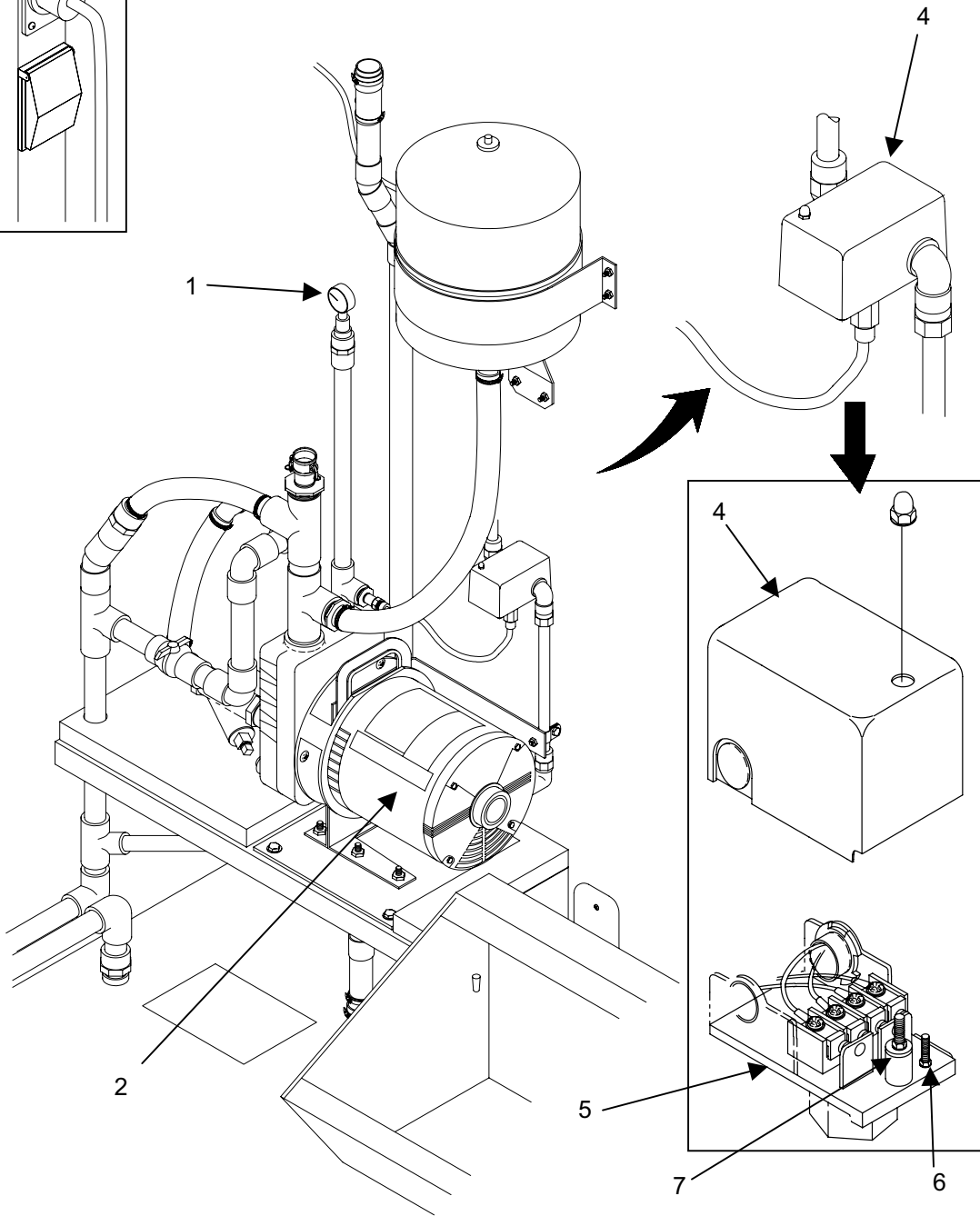
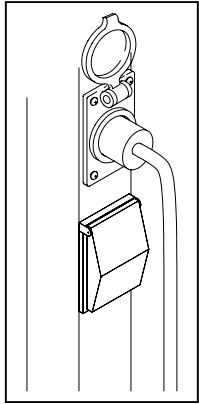


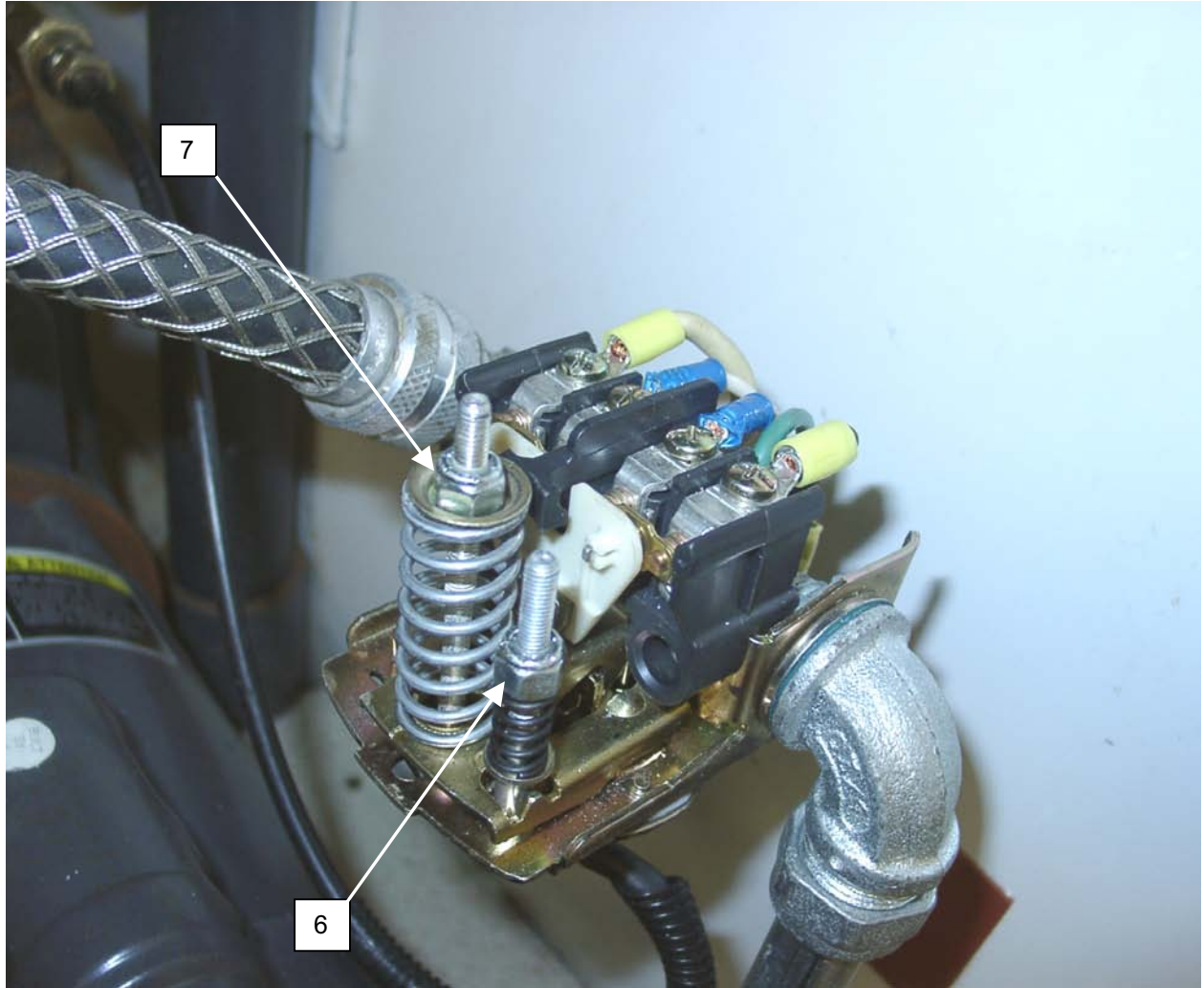
ADJUST**Adjust Pressure Switch****WARNING**

ELECTRICITY CAN KILL YOU. The latrine is a wet environment capable of poisoning an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Electricity is unlike most hazards; its effect is immediate. Failure to use extreme caution may result in serious injury or death to personnel.

1. Monitor the water pump pressure gauge **(1)** through a complete pumping cycle. The water pump **(2)** should come ON at approximately 20 psi and shut OFF at approximately 32 psi.
2. Remove the screws retaining the pump cover **(3)**, and remove the cover.
3. Remove the cover **(4)** from the pressure switch **(5)**.
4. Locate the cut-in **(6)** and cut-out **(7)** adjusting screws.
5. To adjust the pressure that the pump turns ON, turn the cut-in adjusting screw **(6)** clockwise to increase the setting, counterclockwise to decrease.
6. To adjust the pressure that the pump turns OFF, turn the cut-out adjusting screw **(7)** clockwise to increase the setting, counterclockwise to decrease.
7. Monitor the operation of the pump throughout a complete pumping cycle.
8. Repeat this procedure as often as necessary to adjust the operating pressures to approximately 20 psi cut-in and 32 psi cut-out.
9. Install the cover **(4)** on the pressure switch **(5)**.
10. Install the pump cover **(4)**, and retain with screws.







REPLACE**Replace Brass Fittings****NOTE**

To replace PVC pipe and fittings, refer to WP 0065 00.

1. Ensure water heater and water pump circuit breakers are set to the OFF position.
2. Release pressure from the system by opening the urinal flush valve.
3. Use a pipe wrench or slip joint pliers to prevent attached brass plumbing from turning.
4. Use a pipe wrench to unscrew brass fitting **(1)** from attached plumbing.
5. Coat the threads of the replacement fitting **(1)** with pipe sealant or antisieze tape.
6. Screw the replacement fitting **(1)** into position. Ensure it is tight.

Replace Flex Hose

1. Ensure water heater and water pump circuit breakers are set to the OFF position.
2. Release pressure from the system by opening the urinal flush valve.
3. Use a screw drive to loosen the screw on the hose clamp **(2)** and loosen the clamp from the flex hose **(3)**.
4. Remove damaged hose **(3)** from pipe nipple.
5. Cut replacement hose to appropriate length.
6. Remove hose clamp **(2)** from damaged hose and place on replacement hose.
7. Attach replacement hose on pipe nipple and secure to nipple with hose clamp. Tighten hose clamp.



Replace Pressure Gauge

CAUTION

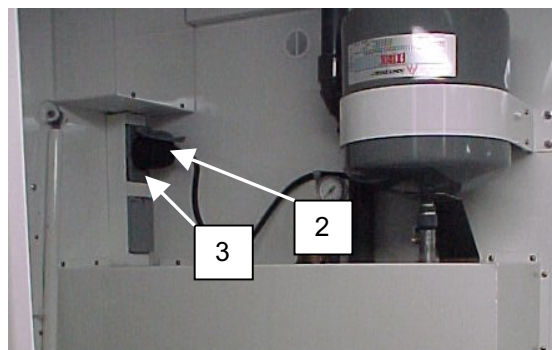
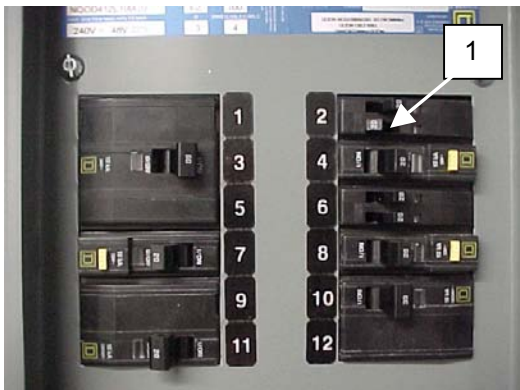
Failure to disconnect power from the water heater may result in a burnt out element.

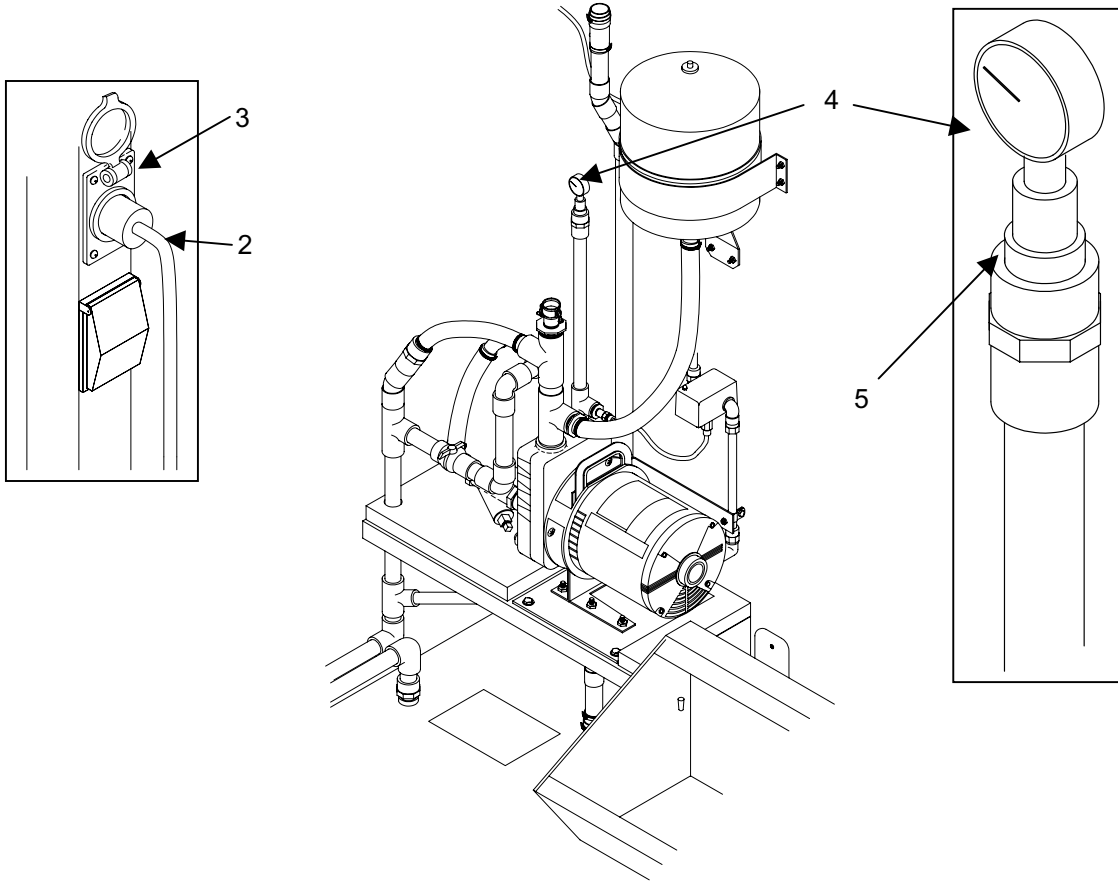
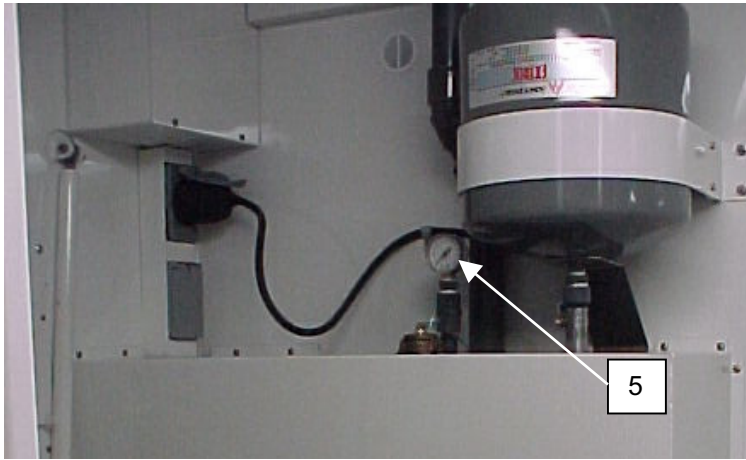
1. Ensure the water heater circuit breaker #2B **(1)** and water pump circuit breaker #9/11 are set to the OFF position.
2. Disconnect the water pump power cord **(2)** from the water pump outlet **(3)**, and relieve pressure on the system by opening the faucets until there is no water flow.
3. Remove an unserviceable pressure gauge **(4)** from the reducer **(5)**.

NOTE

Do not use pipe sealant, as this may clog the opening for the pressure gauge.

4. Wrap 3 to 5 turns of antisieze tape around the threads of the new pressure gauge **(4)**.
5. Thread new pressure gauge **(4)** into the reducer **(5)** and tighten.
6. Reconnect the power cord **(2)**, switch the water heater circuit breaker **(1)** ON, and operate the system in accordance with the operating instructions given in WP 0009 00.
7. Monitor for normal operation.





Replace Power Cord



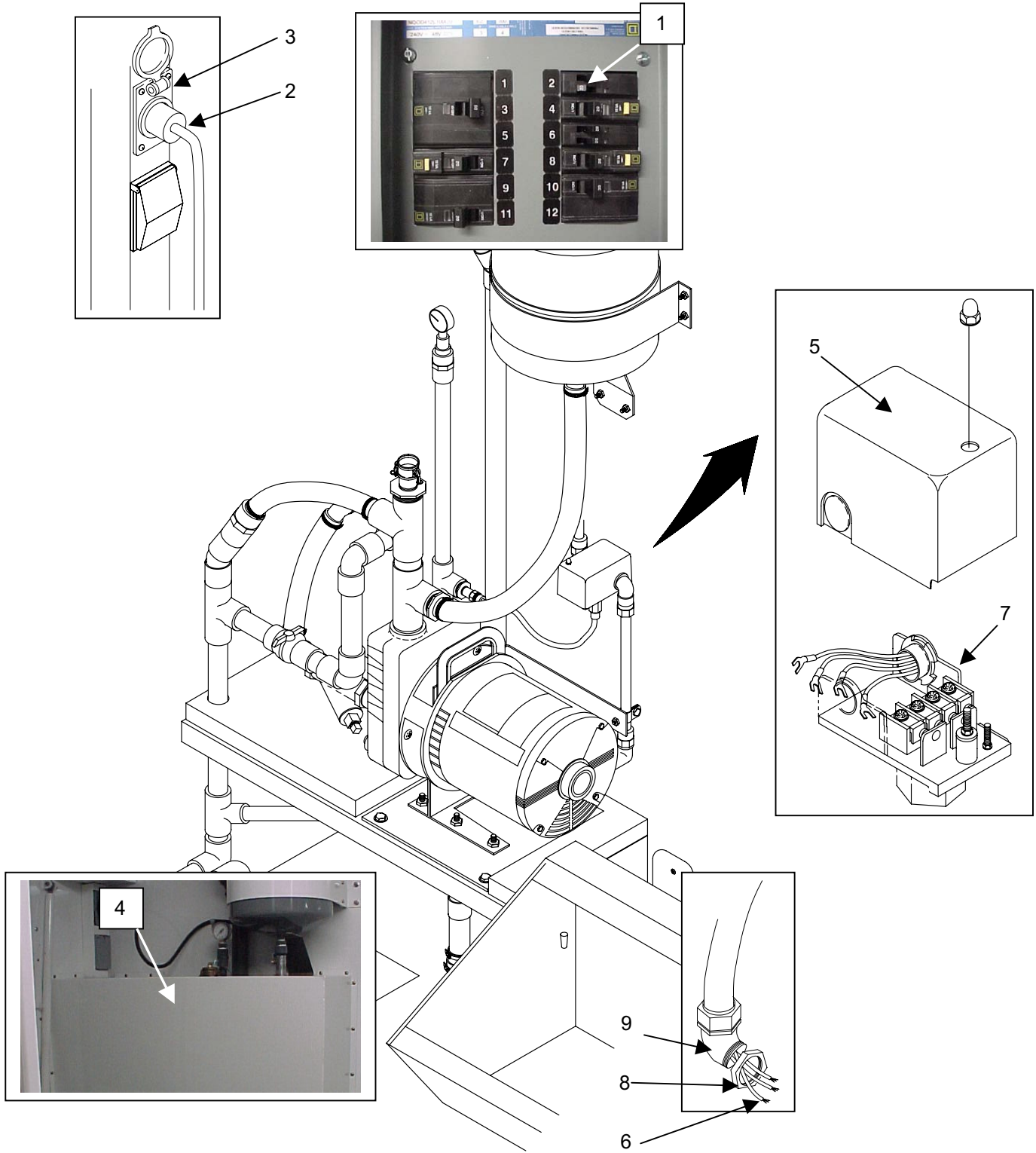
WARNING

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

CAUTION

Failure to disconnect power from the water heater may result in a burnt out element.

1. Ensure the water heater circuit breaker #2B **(1)** and water pump circuit breaker #9/11 are set to the OFF position.
2. Disconnect the water pump power cord **(2)** from the water pump outlet **(3)**.
3. Remove the screws retaining the pump cover **(4)**, and remove the cover.
4. Remove the pressure switch cover **(5)**.
5. Tag and disconnect the power cord wires **(6)** in the pressure switch **(7)**.
6. Remove the locknut **(8)** on the conduit **(9)** for the power cord **(2)**, and remove the power cord.
7. Disassemble the conduit elbow **(9)**, and remove the damaged power cord **(2)** from the elbow.
8. Install the replacement power cord **(2)** in the conduit elbow **(9)**, and reassemble the elbow.
9. Install the power cord conduit **(9)** onto the pressure switch **(7)**, and retain with locknut **(8)**.
10. Connect power cord wires **(6)** to the pressure switch **(7)** as tagged.
11. Install pressure switch cover **(5)**, and retain with cap nut.
12. Install the pump cover **(4)**, and retain with screws.
13. Reconnect power cord **(2)** to outlet **(3)**.
14. Prime water pump, and operate in accordance with procedures outlined in WP 0009 00.
15. Switch water heater circuit breaker **(1)** and water pump circuit breaker are set to the ON position, and monitor for normal operation.



Replace the Pressure Tank



WARNING

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

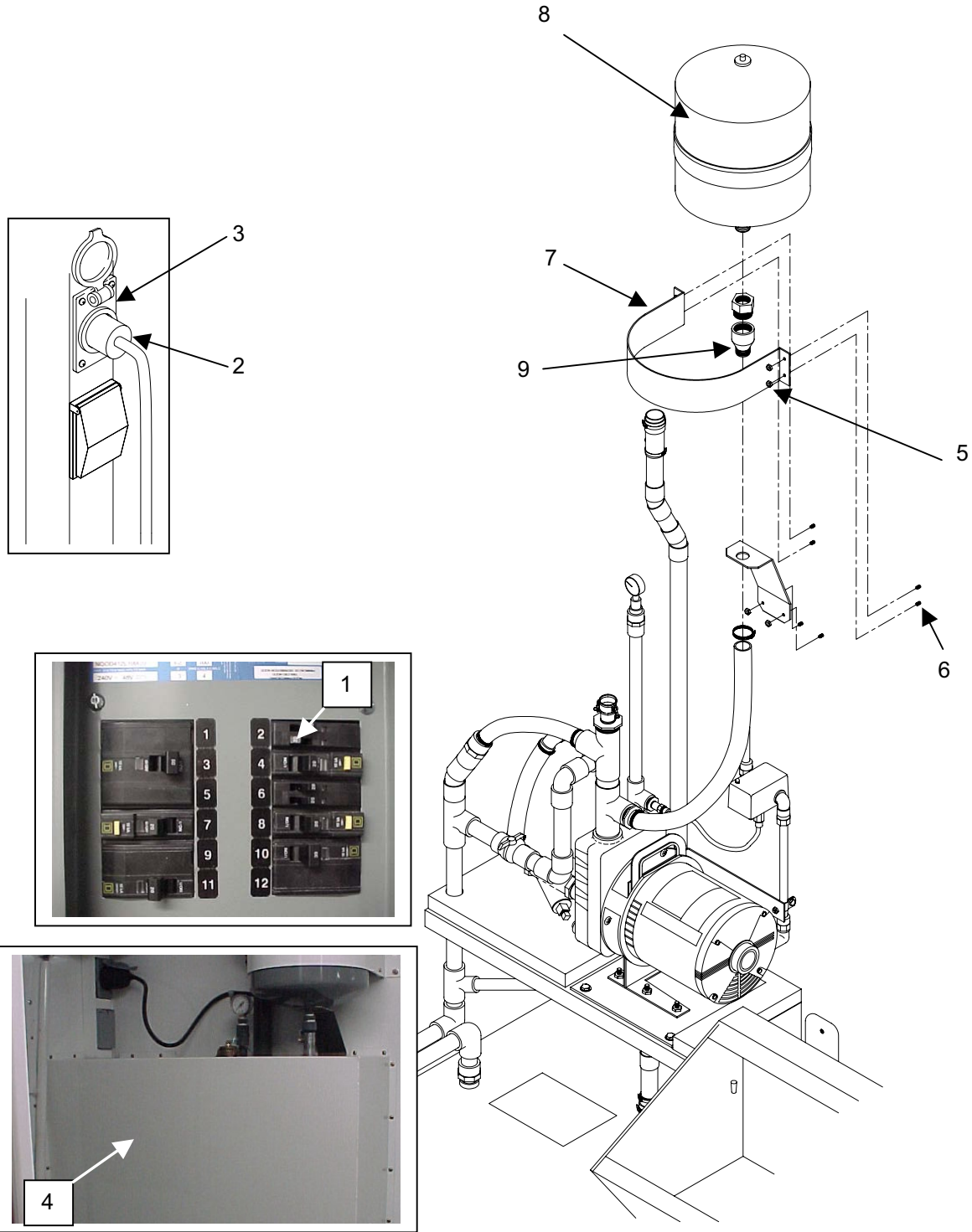
CAUTION

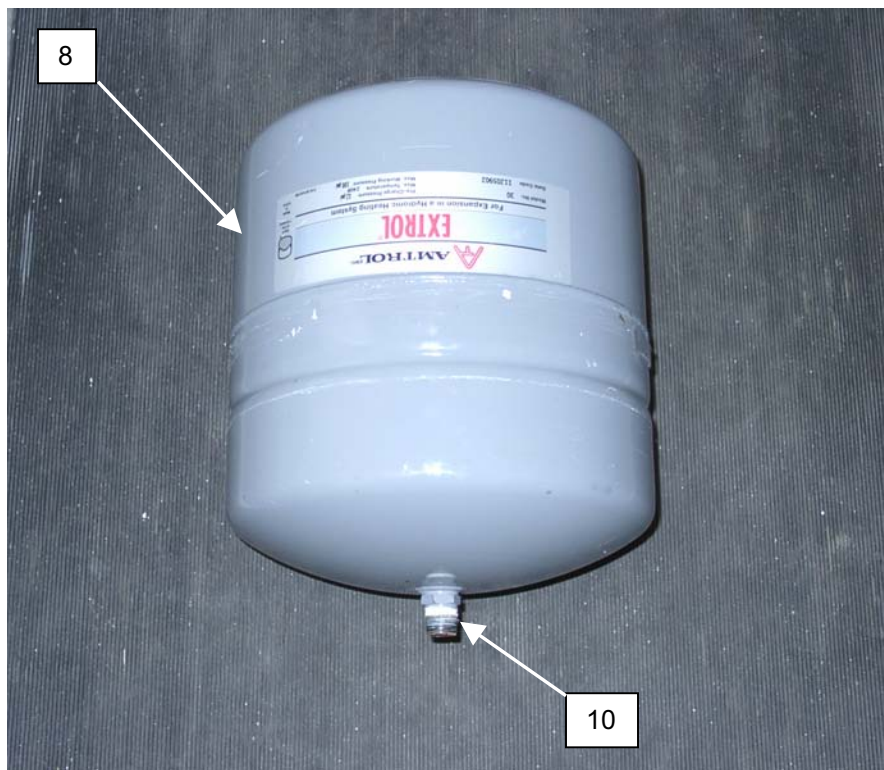
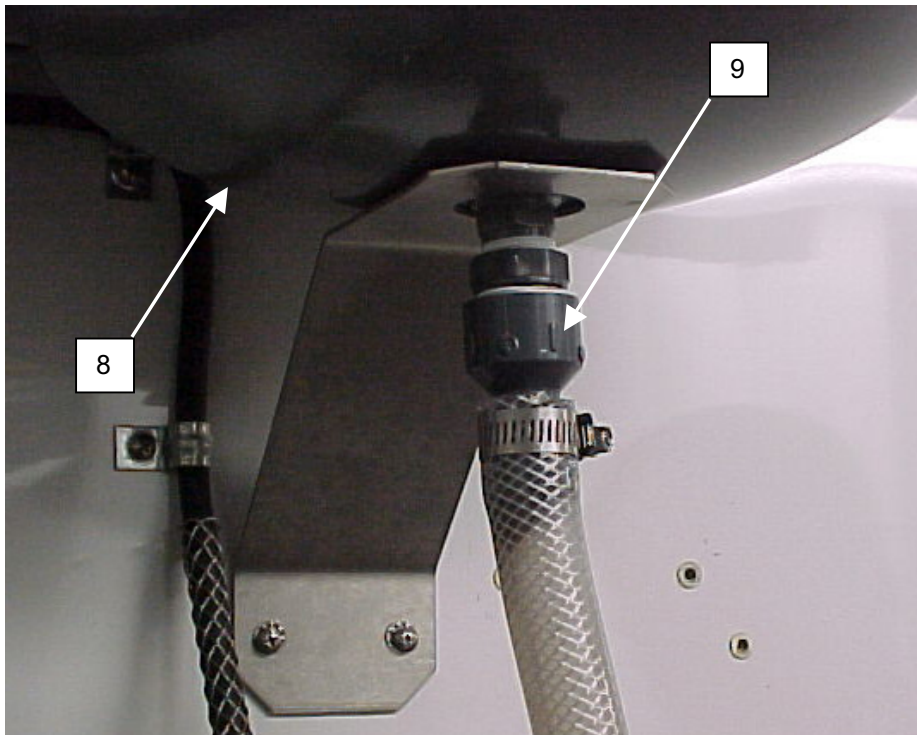
Failure to disconnect power from the water heater may result in a burnt out element.

NOTE

A step aid may be required to perform this maintenance task.

1. Ensure the water heater circuit breaker #2B **(1)** and water pump circuit breaker #9/11 are set to the OFF position.
2. Disconnect the water pump power cord **(2)** from the water pump outlet **(3)**, and relieve pressure on the system by opening the faucets until there is no water flow.
3. Remove the screws retaining the pump cover **(4)**, and remove the cover.
4. Remove the four mounting bolts **(5)** from wall studs **(6)**. Remove mounting bracket **(7)**.
5. Unscrew the pressure tank **(8)** from the pipe bushing **(9)**.
6. Coat the new pressure tank fitting **(10)** with pipe sealant.
7. Install new pressure tank **(8)** on the pipe bushing **(9)**.
8. Secure new pressure tank **(8)** with mounting bracket **(7)** to wall studs **(6)** with four mounting bolts **(5)**.
9. Install the pump cover **(4)**, and retain with screws.
10. Prime pump IAW WP 0009 00, reconnect the power cord **(2)**, switch the water heater circuit breaker **(1)** and water pump circuit breaker to the ON position, and operate as described in WP 0009 00.
11. Monitor for normal operation.





Replace the Pressure Switch



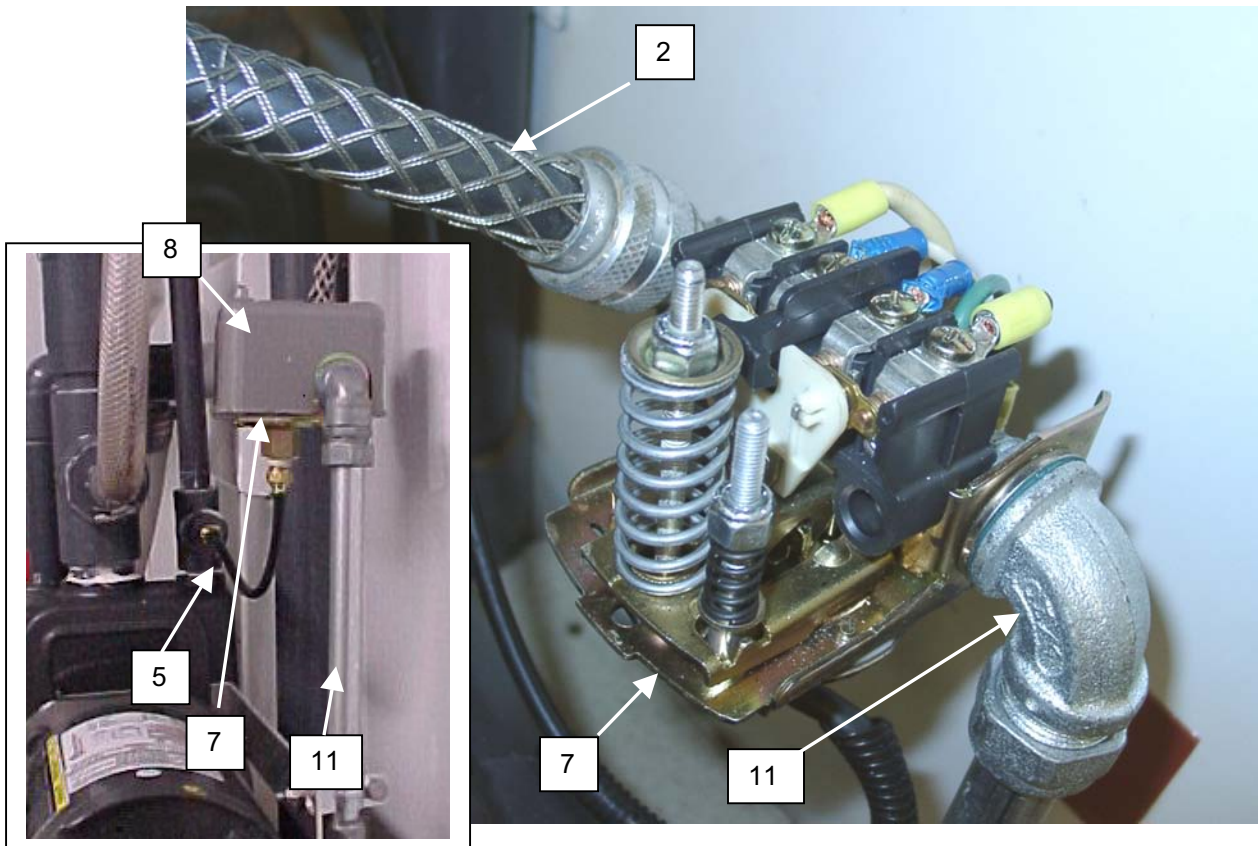
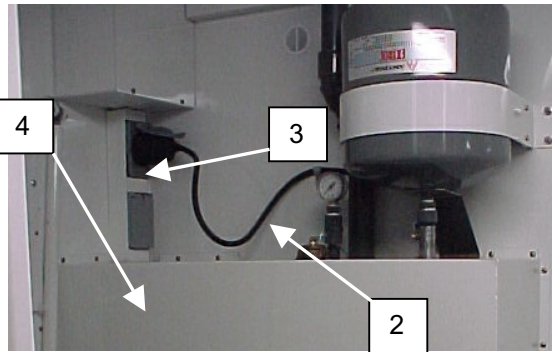
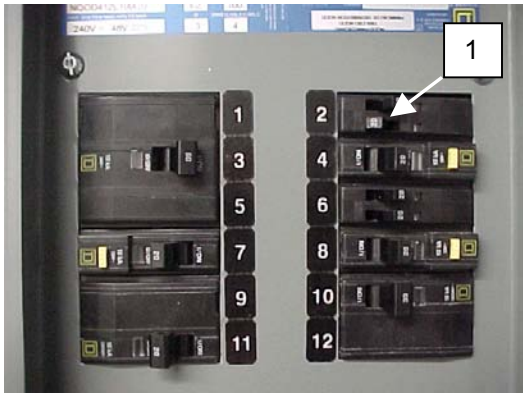
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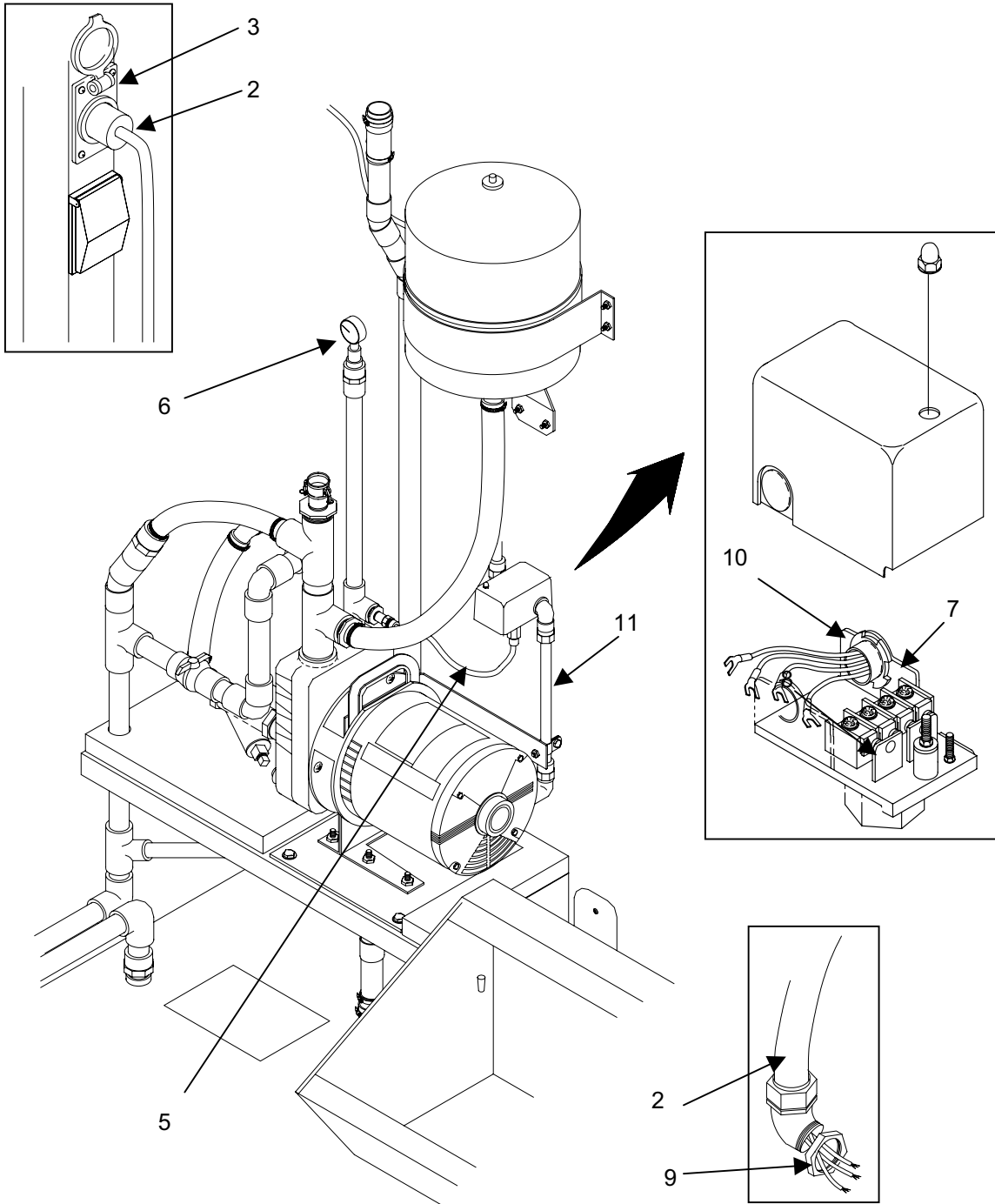
Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

CAUTION

Failure to disconnect power from the water heater may result in a burnt out element.

1. Ensure the water heater circuit breaker #2B (1) and water pump circuit breaker #9/11 are set to the OFF position.
2. Disconnect the water pump cord (2) from the water pump outlet (3), and relieve pressure on the system by opening the faucets until there is no water flow.
3. Remove the screws retaining the pump cover (4), and remove the cover.
4. Remove the pressure switch hose (5) from the TEE (6).
5. Remove the pressure switch hose (5) from the pressure switch (7).
6. Remove the pressure switch cover (8).
7. Tag and disconnect all wires in the pressure switch (7).
8. Remove the locknut (9) on the conduit for the power cord (2), and remove the power cord.
9. Remove the locknut (10) on the conduit for the pump motor (11), and remove the pressure switch (7) from the conduit.
10. Install the replacement pressure switch (7) onto the conduit leading to the pump motor (11), and retain with conduit locknut (10).
11. Install the power cord conduit (2) onto the pressure switch (7), and retain with locknut (9).
12. Wrap the male end of the pressure switch hose (5) with three turns of antisieze tape, and install on pressure switch (7).
13. Reconnect the female end of the pressure switch hose (5) onto the pipe TEE (6).
14. Install pressure switch cover (8), and retain with cap nut.
15. Install the pump cover (4), and retain with screws.
16. Prime water pump, and operate in accordance with procedures outlined in WP 0009 00, and monitor for normal operation.
17. Reconnect power cord (2) to outlet (3), set water heater and water pump circuit breakers to the ON position, and restore electrical power and water supply to CLS.





END OF WORK PACKAGE

UNIT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****SUMP PUMP ASSEMBLY
TEST, REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts

Bleach (Item 4, WP 0118 00)

Face Shield (Item 19, WP 0118 00)

General Purpose Detergent Spray Bottle (Item 18, WP 0118 00)

Heavy-duty Rubber Apron (Item 2, WP 0118 00)

Rubber Gloves (Item 25, WP 0118 00)

Wire Markers (Item 55, WP 0118 00)

Equipment Condition

CL/CLS set up and operating.

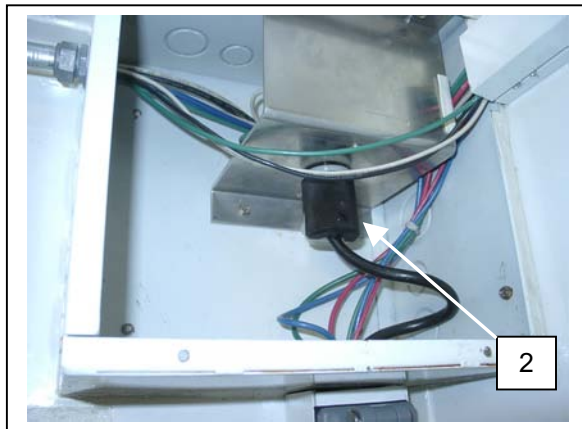
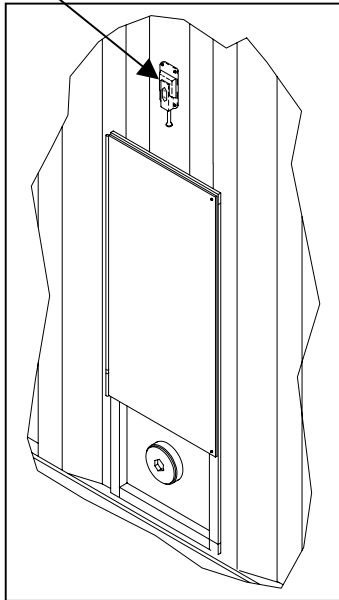
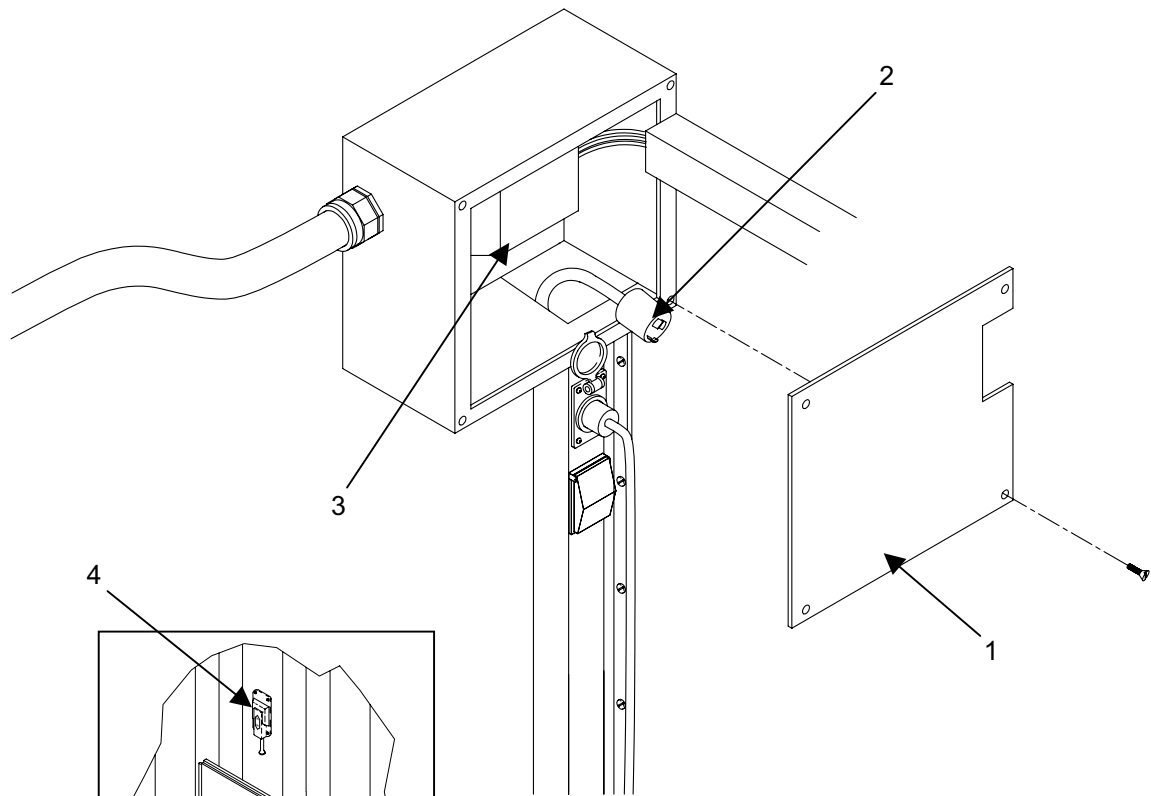
TEST**Test the Sump Pump****WARNING**

ELECTRICITY CAN KILL YOU. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Electricity is unlike most hazards; its effect is immediate. Failure to use extreme caution may result in serious injury or death to personnel.

NOTE

No tests are performed on the sump pump directly. The test performed here is done to isolate the sump pump from other problems that may occur.

1. Remove screws retaining junction box cover **(1)**, and remove junction box cover.
2. Disconnect sump pump twistlock plug **(2)** from sump pump outlet **(3)**.
3. Turn sump pump switch **(4)** ON.
4. Using multimeter set to read at least 250VAC, test for power at sump pump outlet **(3)** as described in WP 0047 00.
5. If power is present at outlet, replace an inoperative sump pump.
6. Switch pump OFF at switch **(4)**. Reconnect sump pump twistlock plug **(2)** to sump pump outlet **(3)**, and reinstall junction box cover **(1)**.



REPLACE**Replace Sump Pump****WARNING**

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

**WARNING**

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

NOTE

The sump pump is only necessary to pump No. 1 holding tank prior to service or movement. No. 1 holding tank will overflow into No. 2 holding tank with or without an operable pump. Do not proceed with this maintenance task unless all replacement parts are available and the CL/CLS can be shut down without undue inconvenience to the unit.

NOTE

The tank must be pumped to allow easier access to the sump pump. If the tank is full, use an extension cord from the interior GFCI convenience outlet to the replacement sump pump, and connect it using the factory installed sump pump plug.

1. Remove the screws retaining the junction box cover **(1)**, and remove the junction box cover.
2. Disconnect the sump pump twistlock plug **(2)** from the sump pump receptacle.
3. Disconnect the ECU **(3)** from the ECU receptacle **(4)**.
4. Disconnect the water supply pump **(5)** from the water supply pump outlet **(6)** (CLS only).
5. Use a putty knife to free the wire raceway cover **(7)**, and place the cover out of the way.
6. Remove the screws retaining the sump pump cover **(8)**, and remove the cover with gasket.
7. Loosen pump discharge hose clamp **(9)**.
8. Loosen wire conduit strain relief/seal **(10)**.

NOTE

Make note of the connection of the wires in the plug, specifically the placement of the ground (green) wire.

9. Disassemble the sump pump twistlock plug **(2)**.
10. Pull the sump pump cord **(11)** down through the wire raceway and the strain relief/seal **(10)**.
11. Remove the sump pump **(12)** with cord and dispose of in accordance with unit SOP.
12. Install the replacement sump pump **(12)**, and connect the pump discharge to the discharge hose **(13)**.

NOTE

The tank must be pumped to allow easier access to the sump pump. If the tank is full, use an extension cord from the interior GFCI convenience outlet to the replacement sump pump, and connect it using the factory installed sump pump plug.

13. Tighten discharge hose clamp **(9)**.

**WARNING**

If the sump was connect temporarily to pump the tank, disconnect it at this time. Cutting a live wire may cause serious injury or death to personnel.

14. Cut the plug from the replacement sump pump cord **(11)**.
15. Feed the cord **(11)** through the strain relief/seal **(10)**, up through the wire raceway, and into the junction box **(14)**.

NOTE

Examine the twistlock plug retained from the cord of the malfunctioning pump. There may be wire stripping gauges molded into the plug. If so, cut insulation to the gauged lengths.

16. Strip approximately two-inches of the exterior insulation from the cord **(11)**, and ½-inch of insulation from each individual wire.
17. Assemble the twistlock plug **(2)** onto the sump pump cord **(11)**.
18. Install the twistlock plug **(2)** into the sump pump receptacle.
19. Tighten the sump pump cord strain relief/seal **(10)**.
20. Install the wire raceway cover **(7)**.

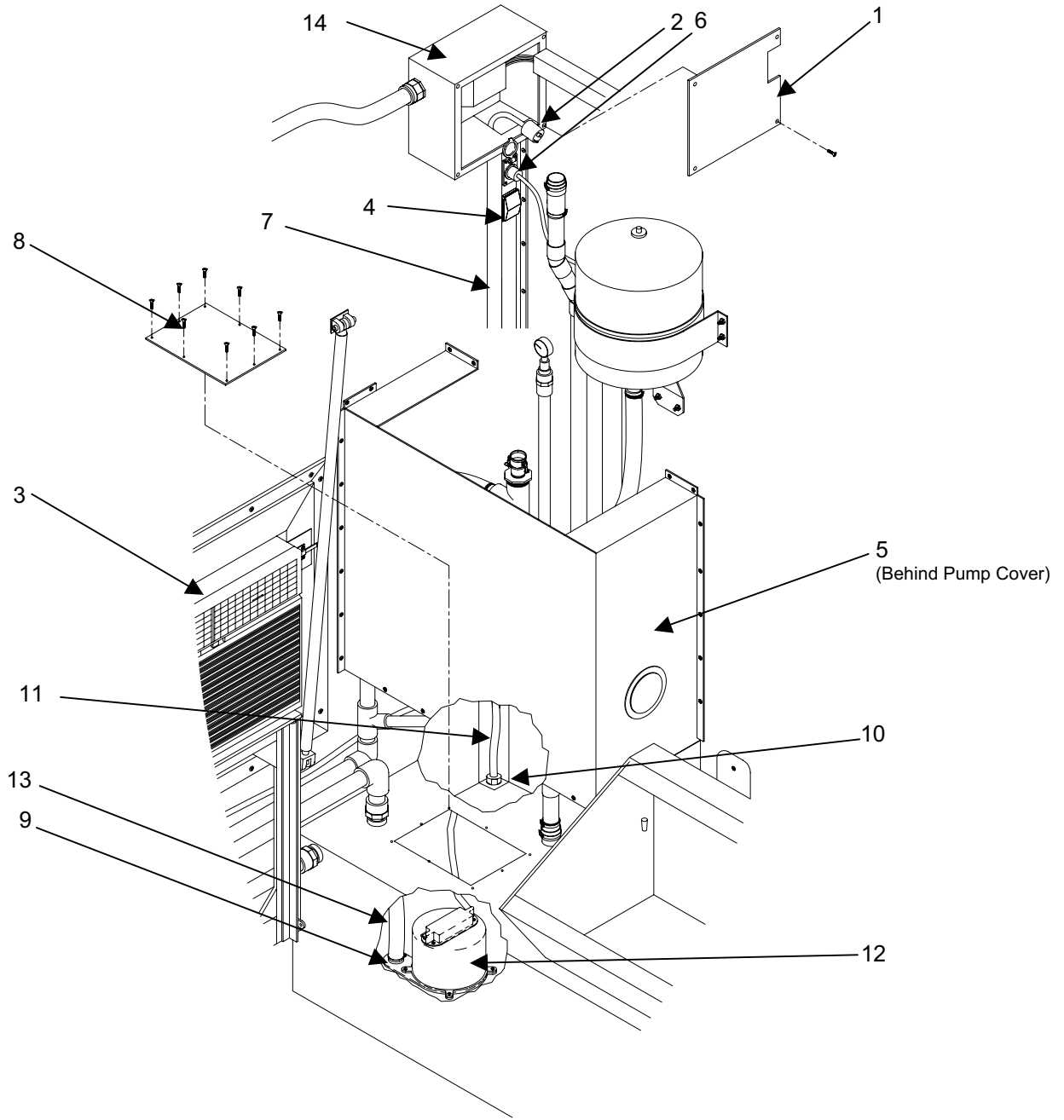
21. Install the sump pump cover **(8)** with gasket, and retain with screws.
22. Install the junction box cover **(1)**, and retain with screws.
23. Install ECU **(3)** plug (CL and CLS) and water supply pump **(5)** plug (CLS only).
24. Operate sump pump in accordance with operating instructions in WP 0006 00 (CL) or WP 0009 00 (CLS), and monitor for normal operation.



WARNING

Never mix chemicals or detergent and sanitizing solutions, this may produce highly toxic or poisonous gas that can cause serious illness or death to personnel.

25. Clean tools and/or personal protective clothing and individual's equipment using a general purpose detergent solution, then sanitize using a ten-to-one solution of household bleach in warm water (i.e. 6-ounces in 2-quarts of water) and allow to air dry.



END OF WORK PACKAGE

UNIT MAINTENANCE

CONTAINERIZED LATRINE SYSTEM (CLS)

(NSN 4540-01-477-7764)

COLD WEATHER EQUIPMENT
TEST

INITIAL SETUP**Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts

Reflective Insulation Tape (Item 48, WP 0118 00)

Wire Markers (Item 55, WP 0118 00)

Equipment Condition

CLS set up and operating.

TEST**Test the Heat Trace Hose****NOTE**

The heat trace hose is fitted with an integral thermostat that activates the heat trace element at approximately 45°F (7.2°C). The hose temperature must be well below the activation temperature before any test is performed.

1. Unplug the heat trace plug **(1)**.
2. Use an ohmmeter or multimeter set to read ohms to check for continuity (resistance) at the between the two flat prongs **(2)** of the plug **(1)**. There should be continuity between the two flat prongs. Replace a heat trace hose **(3)** with an open element. Refer to WP 0011 00 for installation procedures.
3. Use an ohmmeter or multimeter set to read ohms to check for continuity (resistance) at the between the each of the flat prongs **(2)** and the U-shaped ground prong **(4)**. There should be no continuity between the each flat prongs and the U-shaped ground prong. Replace a heat trace hose **(3)** with a shorted element. Refer to WP 0011 00 for installation procedures.
4. If facilities are available to provide an ambient temperature greater than 60°F (15.5°C), allow the hose to warm, then use an ohmmeter or multimeter to check for continuity (resistance) at the between the two flat prongs **(2)** of the plug **(1)**. There should be no continuity between the two flat prongs at temperatures greater than 60°F (15.5°C). Replace a heat trace hose **(3)** with a shorted thermostat. Refer to WP 0011 00 for installation procedures.



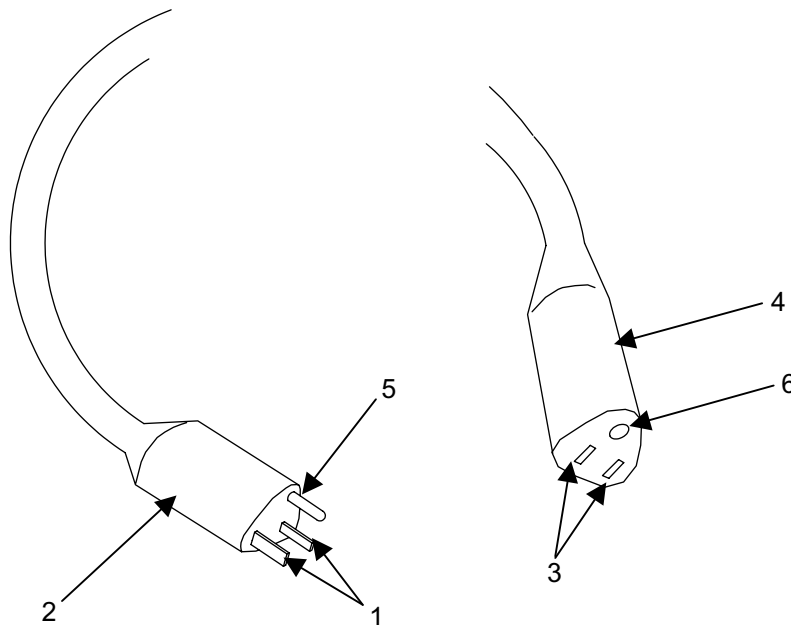
Test the Extension Cord



WARNING

High voltage is present on this equipment. Do not perform maintenance function with power connected. Serious injury or death to personnel may result if safety precautions are not observed.

1. Press the TEST button on the GFCI, reset, and unplug.
2. Replace an extension cord which does not pass this test.
3. Using an ohmmeter or multimeter set to read ohms, connect one lead from the multimeter to a flat prong **(1)** on the male plug **(2)**.
4. Connect the other lead first to one inlet **(3)** on the female end **(4)** of the cord, then the other. One side should have continuity, one side should not.
5. Connect the lead to the other flat prong **(1)** on the male plug **(2)**, and repeat step 2.
6. Connect one lead of the multimeter to the ground prong **(5)**, and the other lead to the ground inlet **(6)**. There should be continuity.
7. Connect one lead to the male ground prong **(5)**, and then check first one, then the other male flat prong **(1)**. There should be no continuity between the ground and the other prongs.
8. Replace an extension cord that does not pass these tests.



Test the Heat Trace Cable

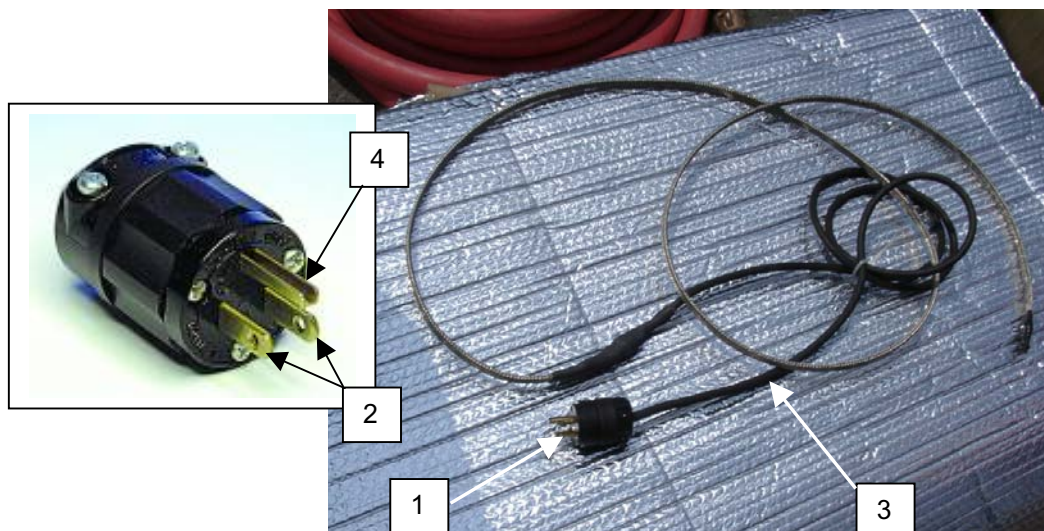
WARNING

Do not handle heat trace while it's connected to a receptacle. Ensure it has been disconnected from receptacle and allowed to cool for at least 15 minutes before handling, failure to do so may cause serious burn injury to personnel.

NOTE

The hose temperature must be well below the activation temperature before any test is performed. The heat trace is fitted with an integral thermostat that activates the heat trace element at approximately 45°F (7.2°C).

1. Unplug the heat trace plug **(1)**.
2. Use an ohmmeter or multimeter set to read ohms to check for continuity (resistance) at the between the two flat prongs **(2)** of the plug **(1)**. There should be continuity between the two flat prongs. Replace a heat trace **(3)** with an open element. Refer to WP 0011 00 for installation procedures.
3. Use an ohmmeter or multimeter set to read ohms to check for continuity (resistance) at the between the each of the flat prongs **(2)** and the U-shaped ground prong **(4)**. There should be no continuity between the each flat prongs and the U-shaped ground prong. Replace a heat trace **(3)** with a shorted element. Refer to WP 0011 00 for installation procedures.
4. If facilities are available to provide an ambient temperature greater than 60°F (15.5°C), allow the heat trace to warm, then use an ohmmeter or multimeter set to read ohms to check for continuity (resistance) at the between the two flat prongs **(2)** of the plug **(1)**. There should be no continuity between the two flat prongs at temperatures greater than 60°F (15.5°C). Replace a heat trace **(3)** with a shorted thermostat. Refer to WP 0011 00 for installation procedures.



Test the Bag Heater Assembly

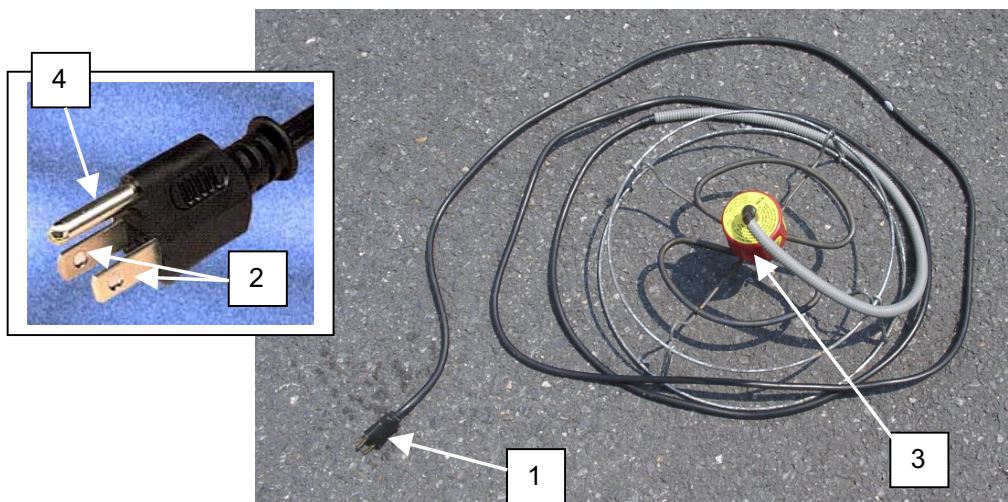
WARNING

Do not handle the bag heater assembly while it's connected to a receptacle. Ensure it has been disconnected from receptacle and allowed to cool for at least 15 minutes before handling, failure to do so may cause serious burn injury to personnel.

NOTE

The heater is fitted with an integral thermostat that activates the heat trace element at approximately 45°F (7.2°C). The heater temperature must be well below the activation temperature before any test is performed.

1. Unplug the bag heater plug **(1)**.
2. Use an ohmmeter or multimeter set to read ohms to check for continuity (resistance) at the between the two flat prongs **(2)** of the plug **(1)**. There should be continuity between the two flat prongs. Replace a bag heater **(3)** with an open element. Refer to WP 0011 00 for installation procedures.
3. Use an ohmmeter or multimeter set to read ohms to check for continuity (resistance) at the between the each of the flat prongs **(2)** and the U-shaped ground prong **(4)**. There should be no continuity between the each flat prongs and the U-shaped ground prong. Replace a bag heater **(3)** with a shorted element. Refer to WP 0011 00 for installation procedures.
4. If facilities are available to provide an ambient temperature greater than 60°F (15.5°C), allow the heat trace to warm, then use an ohmmeter or multimeter set to read ohms to check for continuity (resistance) at the between the two flat prongs **(2)** of the plug **(1)**. There should be no continuity between the two flat prongs at temperatures greater than 60°F (15.5°C). Replace a bag heater **(3)** with a shorted thermostat. Refer to WP 0011 00 for installation procedures.



END OF WORK PACKAGE

CHAPTER 7

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

**DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
MAINTENANCE PROCEDURES**

GENERAL

Refer to appropriate technical manuals for associated equipment maintenance instructions. Maintenance instructions covered in this section are unique to the Containerized Latrine (CL) and the Containerized Latrine System (CLS).

INTRODUCTION TO DIRECT SUPPORT MAINTENANCE

This section contains Direct Support maintenance applicable to the Containerized Latrine (CL) and the Containerized Latrine System (CLS) as authorized by the Maintenance Allocation Chart (MAC), WP 0071 00, of this manual. Direct Support maintenance personnel may also perform all functions allocated in Operator Maintenance and Unit Maintenance.

All maintenance procedures in this section can be performed by one person unless otherwise indicated. Read all **WARNINGS, CAUTIONS, NOTES**, and instructions carefully before attempting any procedures. Read and understand all warnings at the front of this manual.

Each maintenance action will include a heading which lists the actions to be taken, the tools and parts/materials required, and the condition in which the equipment must be in to perform the action.

DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)
(NSN 4510-01-477-7764)

4-INCH COUNTERSUNK PLUG
REPLACE

INITIAL SETUP**Tools**

Suitable equipment for evacuating sewage.

Personnel Required

One

Equipment Condition

Holding tanks empty and sanitized.

Materials/Parts

Anti-seize Tape (Item 42, WP 0118 00)

Bleach (Item 4, WP 0118 00)

Face Shield (Item 19, WP 0118 00)

General Purpose Detergent Spray Bottle (Item 18, WP 0118 00)

Heavy-duty Rubber Apron (Item 2, WP 0118 00)

Rubber Gloves (Item 25, WP 0118 00)

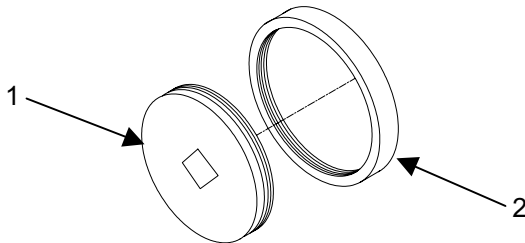
Safety Splash Goggles (Item 39, WP 0118 00)

REPLACE**Replace Blackwater Countersunk Plug**

WARNING

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

1. Verify the holding tank is empty (refer to WP 0010 00). Loosen outlet plug cover **(1)**.
2. Apply anti-seize tape or pipe sealant to the outlet plug **(1)** threads.
3. Install outlet plug cover **(1)** as required, into the outlet plug **(2)**.

**END OF WORK PACKAGE**

DIRECT SUPPORT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****CIRCUIT BREAKER ASSEMBLY
TEST, REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts

Wire Markers (Item 55, WP 0118 00)

Wire Tags (Item 56, WP 0118 00)

Equipment Condition

Disconnect site power. All circuit breakers and switches to OFF position.

TEST**Test Circuit Breaker****WARNING**

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Disconnect site power and apply tag.
2. Open circuit breaker panel door **(1)**.
3. Set all circuit breakers **(2)** and switches to the OFF position.
4. Remove six captive screws **(3)** securing breaker panel cover **(4)**.
5. Remove circuit breaker panel cover **(4)** from circuit breaker box **(5)**.
6. Remove circuit breaker panel plate **(6)**.

NOTE

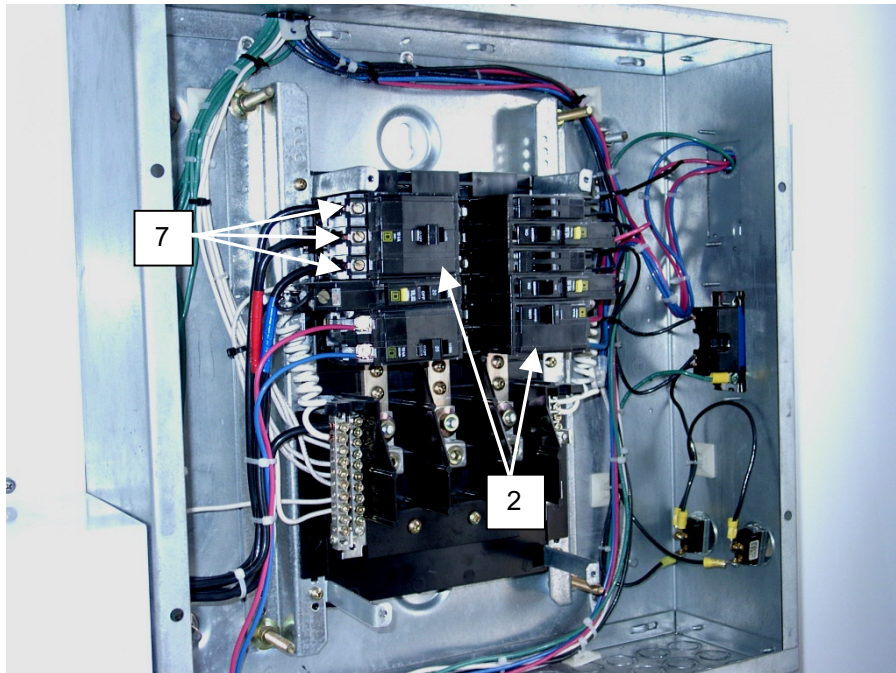
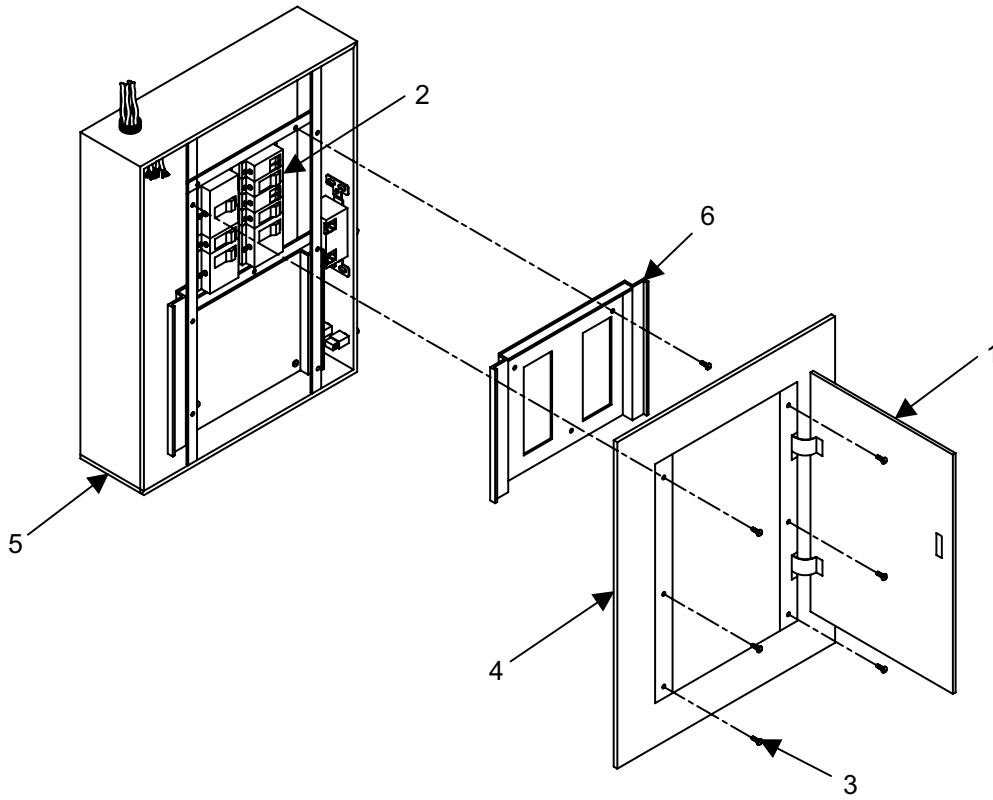
Do not attempt to test the breakers without disconnecting the wiring. Failure to disconnect the wires from the circuit breaker may give a false reading.

7. Tag and disconnect the wiring from the breaker to be tested.
8. Set breaker to be tested to the OFF position, and then test from one pole **(7)** to the opposite pole using a multimeter set to read resistance (ohms - Ω). There should be no continuity.
9. Set breaker to be tested to the ON position, and test from one pole **(7)** to the opposite pole using a multimeter set to read resistance (ohms - Ω). Continuity should be present.

NOTE

Two and three phase breakers should be tested as two or three separate single phase breakers, respectively. If any leg of the two or three phase breaker is defective, the entire breaker must be replaced.

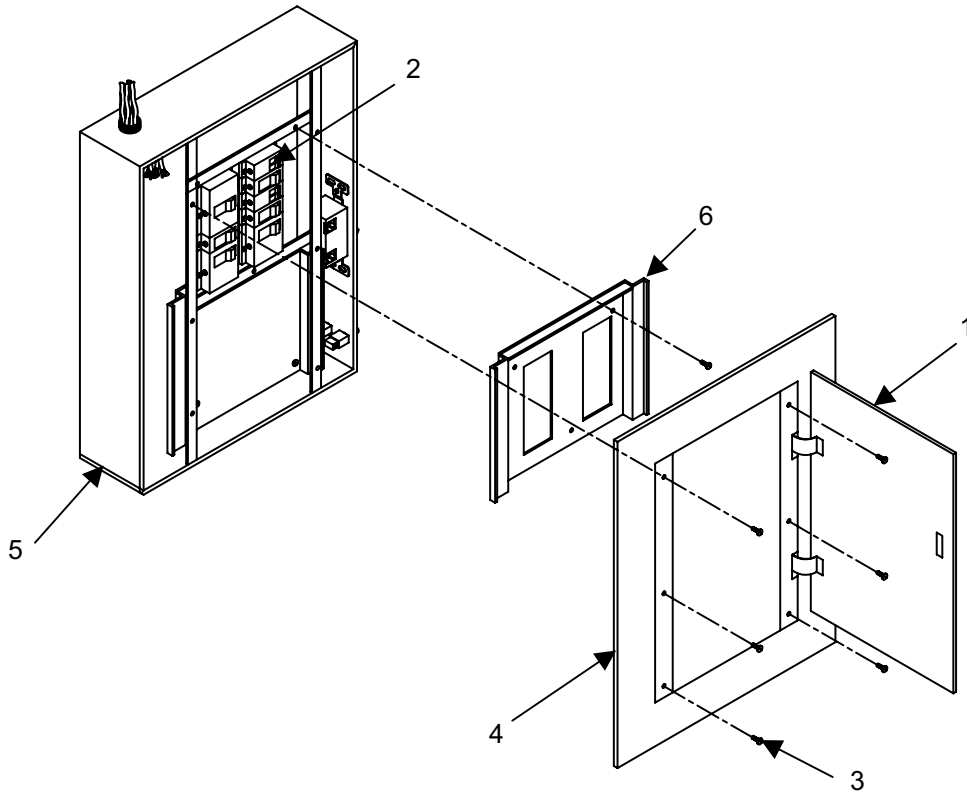
10. Test across phases on two or three phase breakers **(2)**. There should be no continuity.
11. Identify defective circuit breaker(s) **(2)** and replace. If a circuit breaker passes all tests, reconnect the wires as tagged.
12. Install the circuit breaker panel plate **(6)** and retain with screws.
13. Install the circuit breaker panel cover **(4)** and retain with captive screws.
14. Reconnect power, set breakers **(2)** to the ON position, and monitor for normal operation.



REPLACE**Replace Circuit Breaker****WARNING**

High voltage is present on this equipment. Do not perform maintenance function with power on. Disconnect power input to the CL/CLS and place the power cable end where it can be directly observed while performing this task. Serious injury or death to personnel may result if safety precautions are not observed.

1. Disconnect site power and apply tag.
2. Open circuit breaker panel door **(1)**.
3. Ensure all circuit breakers **(2)** and switches are set to the OFF position.
4. Remove six captive screws **(3)** securing breaker panel cover **(4)**.
5. Remove circuit breaker panel cover **(4)** from circuit breaker box **(5)**.
6. Remove circuit breaker panel board **(6)**.
7. Tag and disconnect wires from damaged circuit breaker **(2)**.
8. Loosen the screw retaining the damaged circuit breaker **(2)**, and remove the breaker from the bus bar.
9. Install new circuit breaker **(2)** into position on bus bar and secure.
10. Install wires onto new circuit breaker **(2)** as tagged.
11. Install the circuit breaker panel board **(6)** and retain with screws.
12. Install the circuit breaker panel cover **(4)** and retain with captive screws.
13. Reconnect power, set circuit breakers to the ON position, and monitor for normal operation.



END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****POWER ENTRY PANEL
TEST, REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts

Electrical Tape (Item 43, WP 0118 00)

Wire Markers (Item 55, WP 0118 00)

Wire Tags (Item 56, WP 0118 00)

Equipment Condition

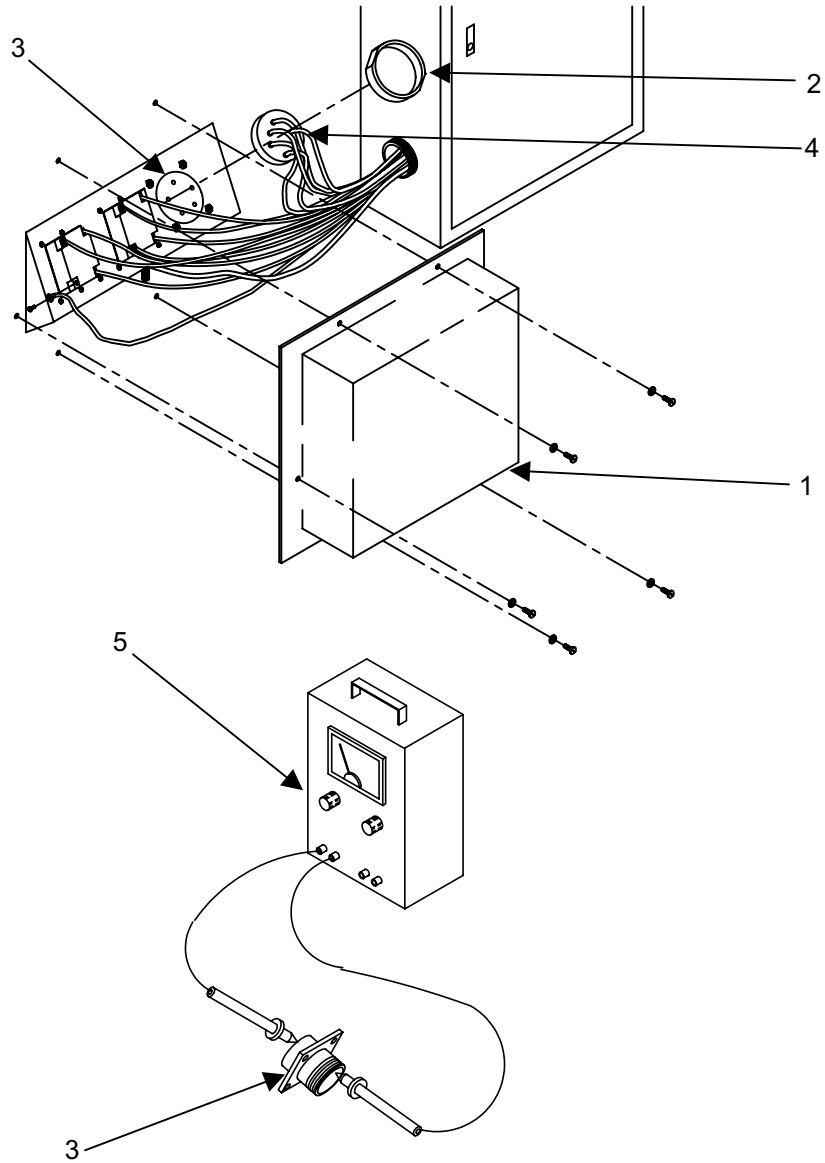
Disconnect site power. All circuit breakers and switches to OFF position.

TEST**Test Power Input Receptacle****WARNING**

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Disconnect site power and apply tag to input receptacle.
2. Remove fasteners retaining rear panel cover **(1)** and remove cover.
3. Remove retainer ring **(2)** from rear of 60A power input receptacle **(3)**.
4. Remove harness plug **(4)** from rear of 60A power input receptacle **(3)**.
5. Remove the bolts and nuts retaining the 60A power input receptacle **(3)**, and remove the receptacle.
6. Use a multimeter **(5)** set to read ohms (Ω) to test for continuity between each wire connection and the receptacle prong. There should be infinite continuity (0 ohms). Replace a receptacle that fails this test.
7. Use a multimeter **(5)** set to read ohms (Ω) to test for continuity between each wire connection. There should be no continuity (∞ ohms). Replace a receptacle that fails this test.

8. Install the receptacle (3), and retain with bolts and nuts.
9. Install the harness plug (4) onto the 60A receptacle (3), and secure with retainer ring (2).
10. Install rear panel cover (1).
11. Reconnect power, and test for normal operation.



Test Power Entry Receptacle Assembly (Wiring Harness)**WARNING**

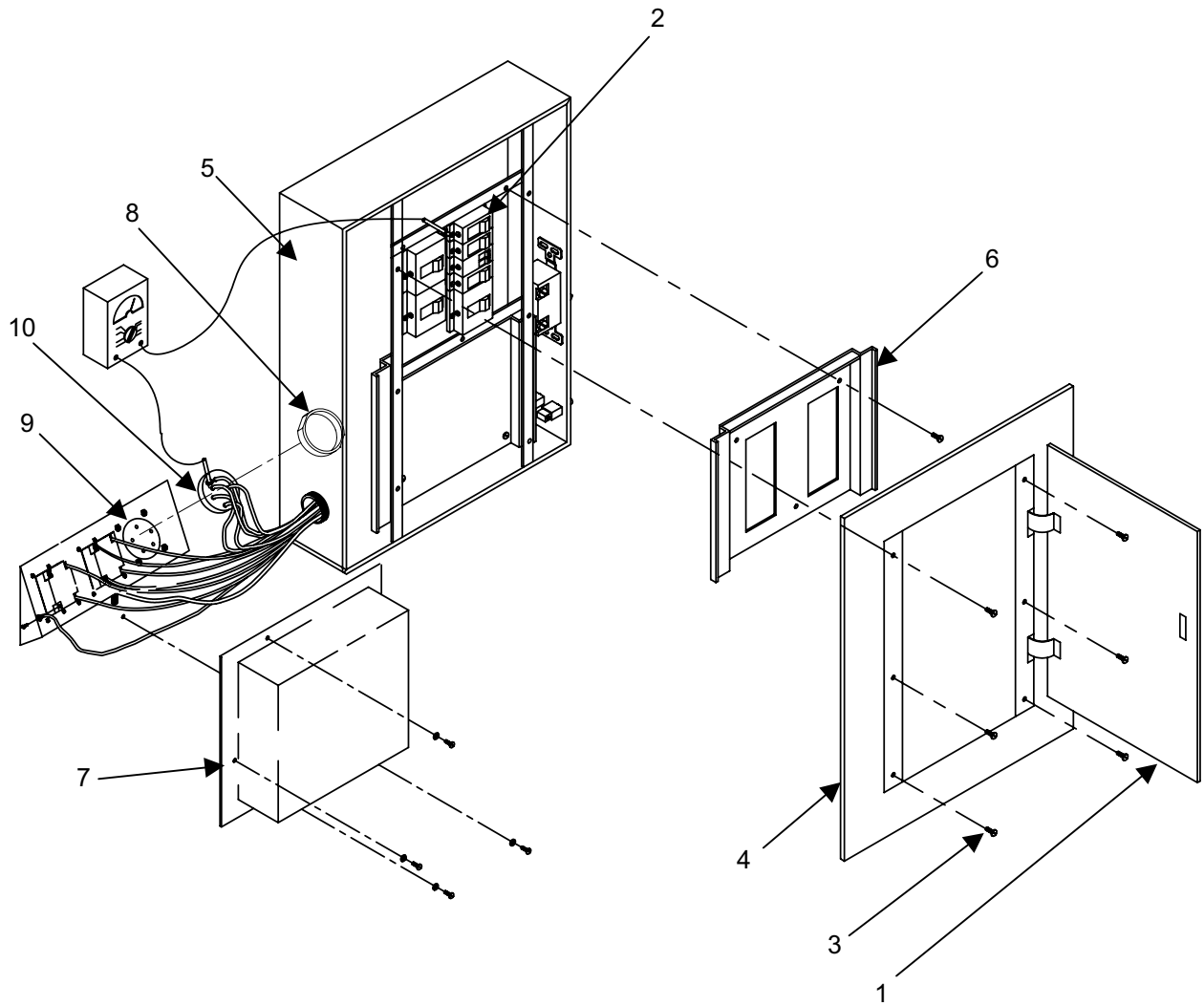
High voltage is present on this equipment. Do not perform maintenance function with power on. Disconnect power input to the CL/CLS and place the power cable end where it can be directly observed while performing this task. Serious injury or death to personnel may result if safety precautions are not observed.

1. Disconnect site power and apply tag to input receptacle.
2. Open circuit breaker panel door **(1)**.
3. Ensure all circuit breakers **(2)** and switches are set to the OFF position.
4. Remove six captive screws **(3)** securing breaker panel cover **(4)**.
5. Remove circuit breaker panel cover **(4)** from circuit breaker box **(5)**.

NOTE

It may not be necessary to remove the circuit breaker panel plate.

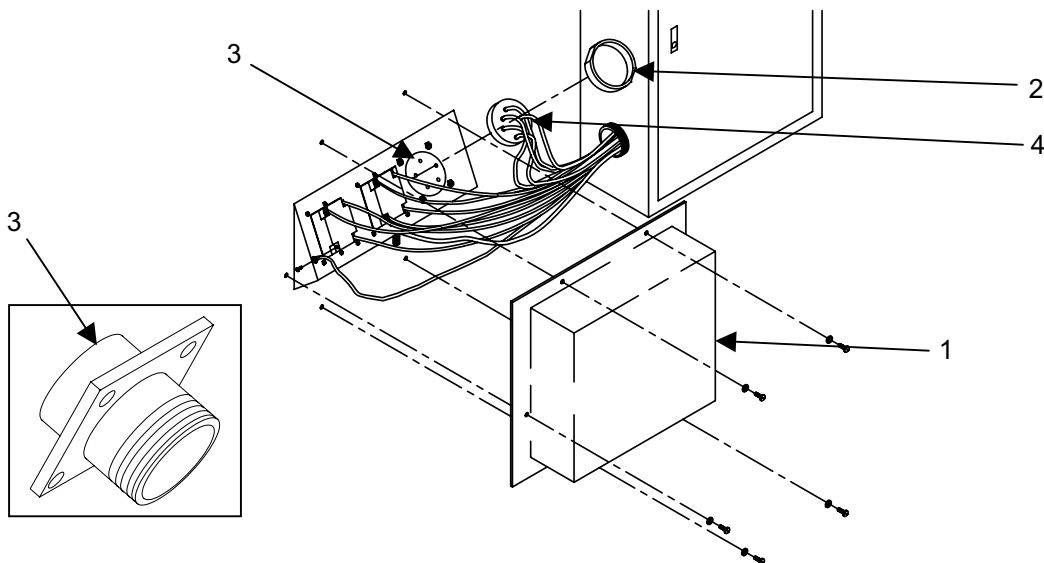
6. Remove circuit breaker panel plate **(6)**.
7. Remove fasteners retaining rear panel cover **(7)** and remove cover.
8. Remove retainer ring **(8)** from rear of 60A supply **(9)**.
9. Remove harness plug **(10)** from rear of 60A supply **(9)**.
10. Trace one wire from the harness plug **(9)** up to its connection in the circuit breaker box **(5)**.
11. Use a multimeter set to read ohms (Ω) to test for continuity between the two ends of the wire.
12. Repeat steps 10. and 11. for each remaining wire in the harness plug. Replace any wire with no continuity (∞ ohms).
13. Install the harness plug **(10)** onto the 60A receptacle **(9)**, and secure with retainer ring **(8)**.
14. Install rear panel cover **(7)**.
15. Install the circuit breaker panel plate **(6)** and retain with screws.
16. Install the circuit breaker panel cover **(4)** and retain with captive screws **(3)**.
17. Reconnect power and test for normal operation.



REPLACE**Replace Power Input Receptacle****WARNING**

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Disconnect site power and apply tag to input receptacle.
2. Remove fasteners retaining rear panel cover (1) and remove cover.
3. Remove retainer ring (2) from rear of 60A power input receptacle (3).
4. Remove harness plug (4) from rear of 60A power input receptacle (3).
5. Remove the bolts and nuts retaining the 60A power input receptacle (3), and remove the receptacle.
6. Install the replacement receptacle (3), and retain with bolts and nuts.
7. Install the harness plug (4) onto the 60A receptacle (3), and secure with retainer ring (2).
8. Install rear panel cover (1).
9. Reconnect power, and test for normal operation.



Replace Power Entry Receptacle Assembly (Wiring Harness)**WARNING**

High voltage is present on this equipment. Do not perform maintenance function with power on. Disconnect power input to the CL/CLS and place the power cable end where it can be directly observed while performing this task. Serious injury or death to personnel may result if safety precautions are not observed.

1. Disconnect site power and apply tag to input receptacle.
2. Open circuit breaker panel door **(1)**.
3. Set all circuit breakers **(2)** and switches to the OFF position.
4. Remove six captive screws **(3)** securing breaker panel cover **(4)**.
5. Remove circuit breaker panel cover **(4)** from circuit breaker box **(5)**.

NOTE

It may not be necessary to remove the circuit breaker panel plate.

6. Remove circuit breaker panel plate **(6)**.
7. Remove fasteners retaining rear panel cover **(7)** and remove cover.
8. Remove retainer ring **(8)** from rear of 60A supply **(9)**.
9. Remove harness plug **(10)** from rear of 60A supply **(9)**.

NOTE

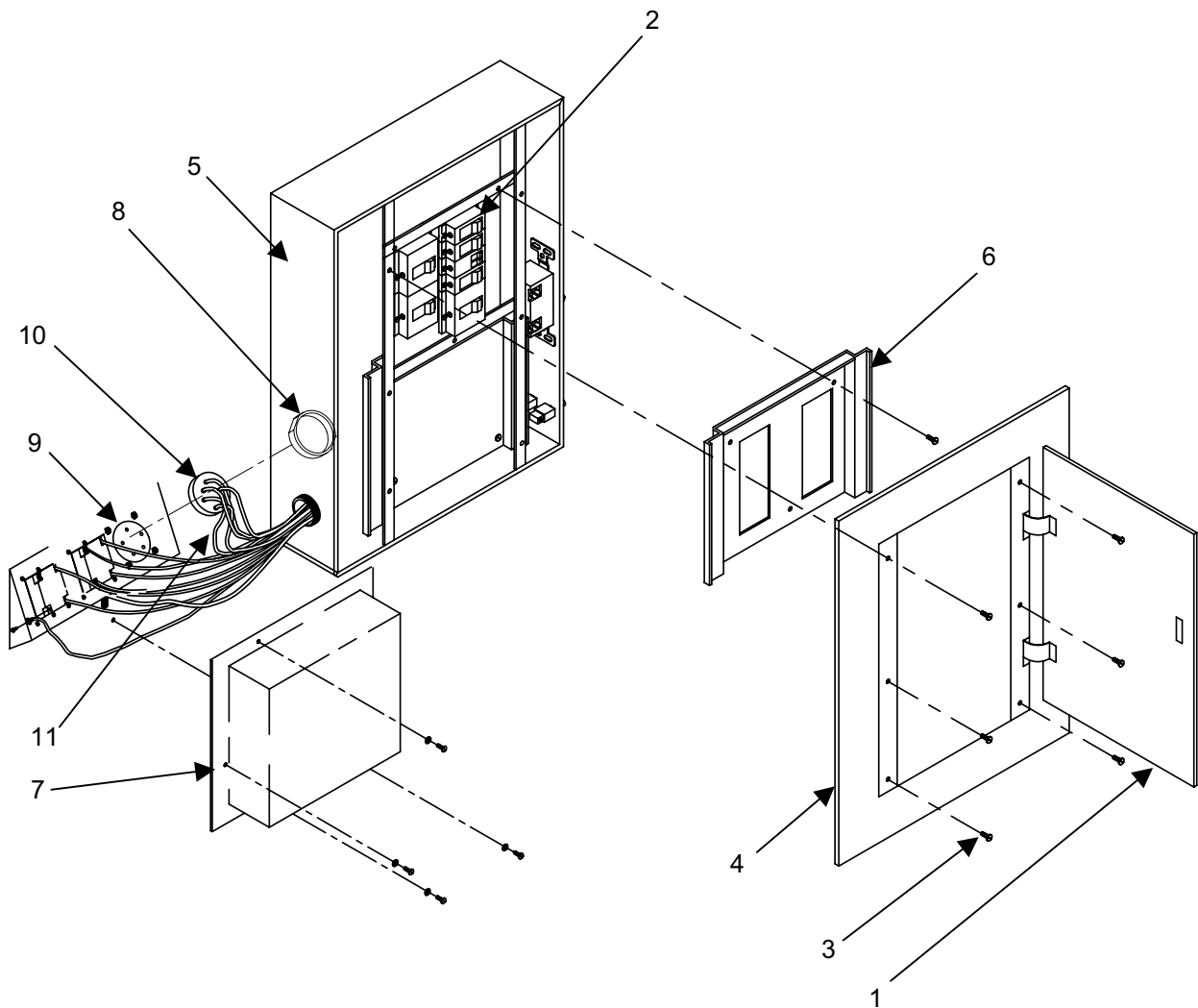
The power entry panel receptacle assembly comes with a replacement 60A receptacle.

NOTE

If there is an individual wire which can isolated and replaced, it may not be necessary to replace the entire harness.

10. Tag and disconnect both ends of the wiring harness **(11)**.
11. Remove the damaged harness **(11)**.
12. Install the replacement harness **(11)**.
13. Reconnect harness wires as tagged

14. Install the harness plug (10) onto the 60A receptacle (9), and secure with retainer ring (8).
15. Install rear panel cover (7).
16. Install the circuit breaker panel plate (6) and retain with screws.
17. Install the circuit breaker panel cover (4) and retain with captive screws (3).
18. Reconnect power and test for normal operation.



END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****POWER INPUT RECEPTACLE
TEST, REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts

Wire Markers (Item 55, WP 0118 00)

Wire Tags (Item 56, WP 0118 00)

Equipment Condition

Disconnect site power. All circuit breakers and switches to OFF position.

TEST**Test Power Panel Receptacles****WARNING**

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

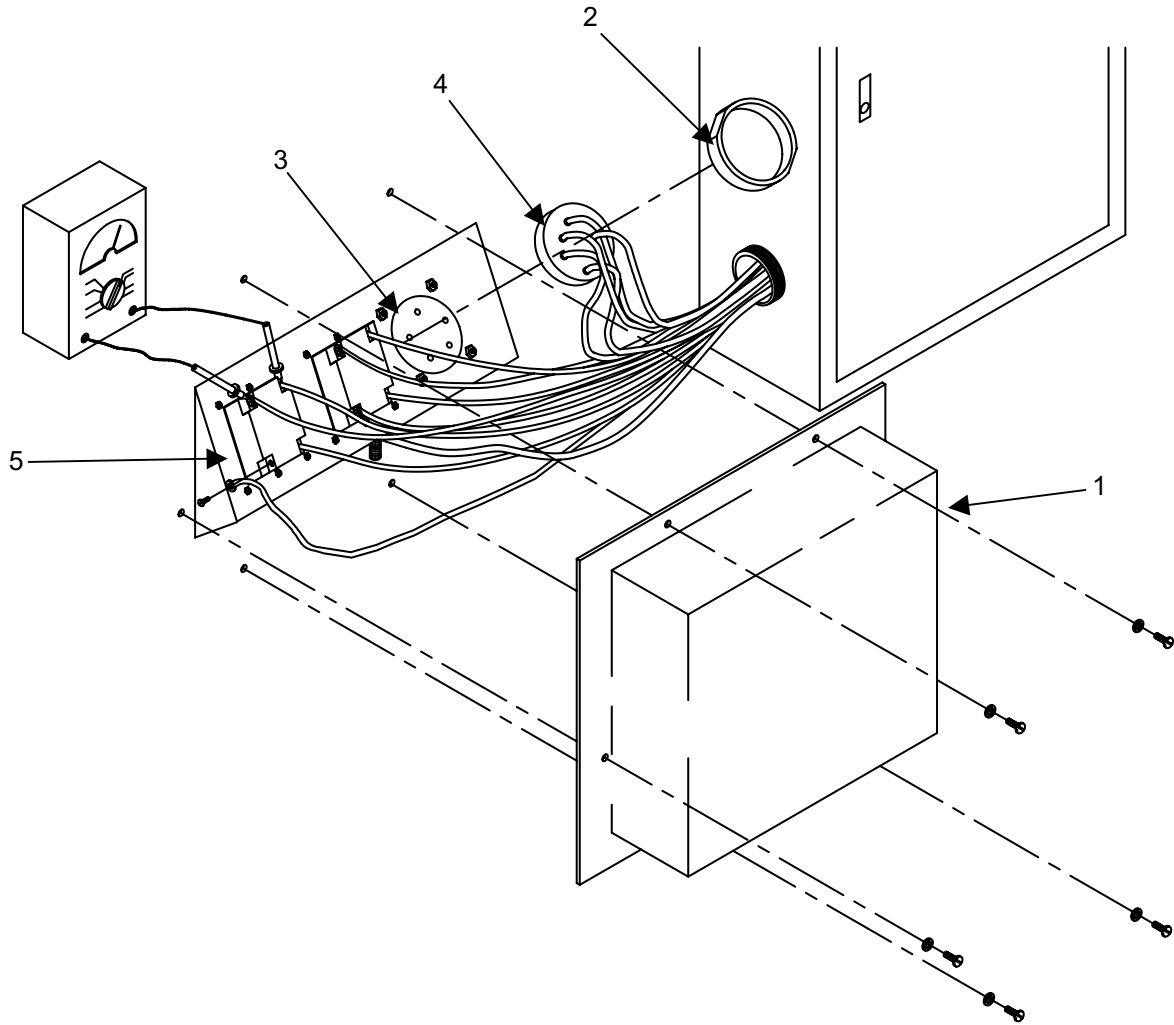
1. Disconnect site power and apply tag to input receptacle.
2. Remove fasteners retaining rear panel cover **(1)** and remove cover.
3. Remove retainer ring **(2)** from rear of 60A supply **(3)**.
4. Remove harness plug **(4)** from rear of 60A supply **(3)**.

NOTE

The CL is fitted with one 20A twist lock receptacle. The CLS is fitted with two 120V convenience receptacles. The procedure for testing and replacing either receptacle is the same.

5. Tag and disconnect wires from rear of 20A receptacle (CL) or convenience outlet receptacle (CLS) **(5)**.
6. Use a multimeter set to read ohms (Ω) to test for continuity between each wire connection and the receptacle inlet. There should be infinite continuity (0 ohms). Replace a receptacle that fails this test.

7. Use a multimeter set to read ohms (Ω) to test for continuity between each wire connection. There should be no continuity (∞ ohms). Replace a receptacle that fails this test.
8. Reconnect wires to the receptacle(s) **(5)** as tagged.
9. Install the harness plug **(4)** onto the 60A receptacle **(3)**, and secure with retainer ring **(2)**.
10. Install rear panel cover **(1)**.
11. Reconnect power, and test for normal operation.



REPLACE**Replace Receptacle****WARNING**

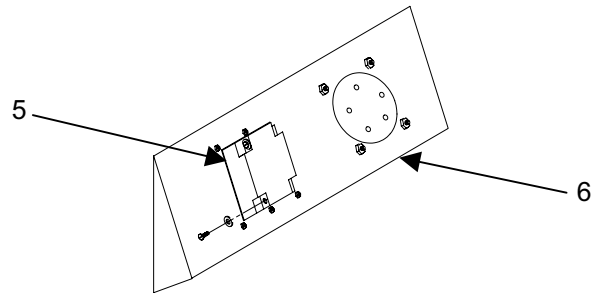
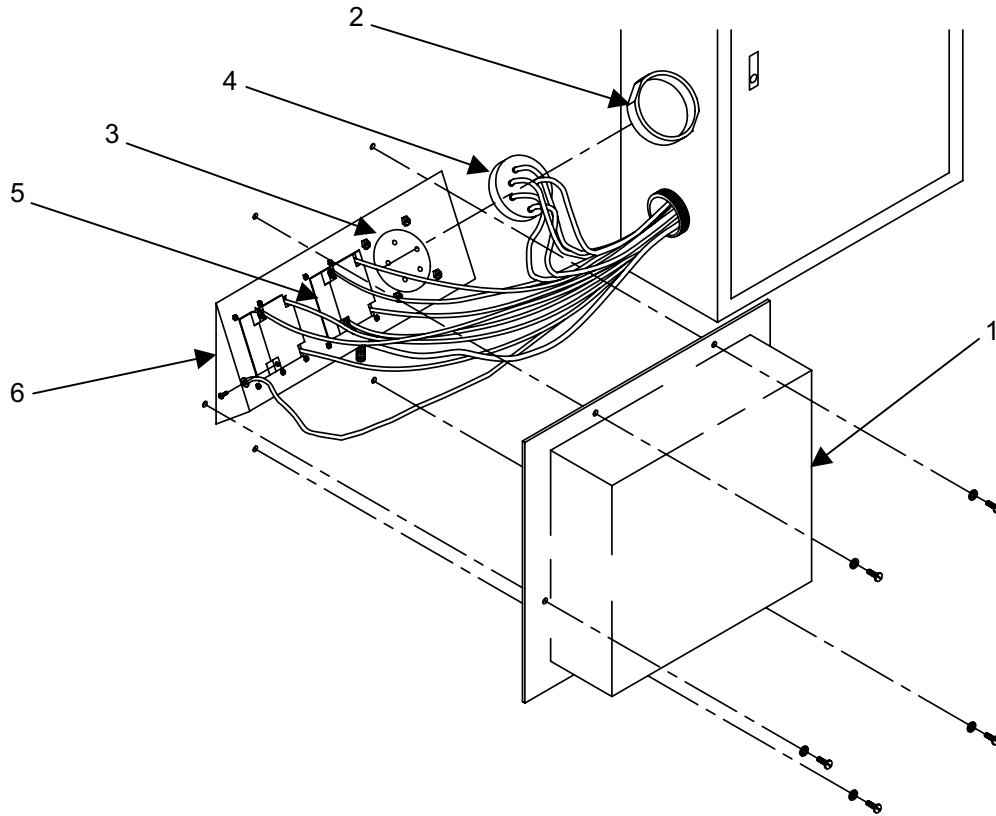
Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Disconnect site power and apply tag to input receptacle.
2. Remove fasteners retaining rear panel cover **(1)** and remove cover.
3. Remove retainer ring **(2)** from rear of 60A supply **(3)**.
4. Remove harness plug **(4)** from rear of 60A supply **(3)**.

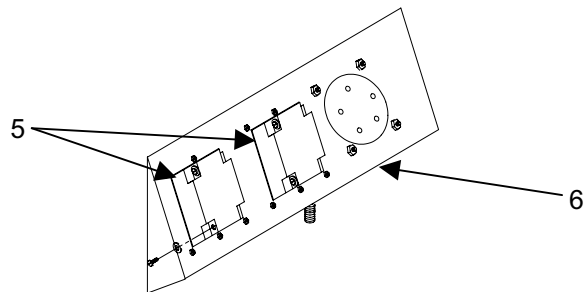
NOTE

The CL is fitted with one 20A twist lock receptacle. The CLS is fitted with two 120V convenience receptacles. The procedure for testing and replacing either receptacle is the same.

5. Tag and disconnect wires from 20A receptacle (CL) or 15A convenience outlet receptacle (CLS) **(5)**.
6. Remove screws and washers securing receptacle **(5)** to panel **(6)**. Save screws and washers removed.
7. Remove receptacle **(5)** from panel **(6)**.
8. Replace new receptacle **((3) or (5))** as applicable) into place on panel **(6)**, and secure with screws.
9. Install harness plug **(4)** into rear of 60A supply **(3)**.
10. Install retainer ring **(2)** onto rear of 60A supply **(3)**.
11. Re-connect wires to 20A receptacle (CL) or 15A convenience outlet receptacle (CLS) **(5)** as tagged.
12. Install panel cover **(1)**.
13. Reconnect site power and test for normal operation.



Containerized Latrine (CL)



Containerized Latrine System (CLS)

Replace Power Panel Wire Harness**WARNING**

Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Disconnect site power and apply tag to input receptacle.
2. Open circuit breaker panel door **(1)**.
3. Ensure all circuit breakers **(2)** and switches are set to the OFF position.
4. Remove six captive screws **(3)** securing breaker panel cover **(4)**.
5. Remove circuit breaker panel cover **(4)** from circuit breaker box **(5)**.

NOTE

It may not be necessary to remove the circuit breaker panel board.

6. Remove circuit breaker panel plate **(6)**.
7. Remove fasteners retaining rear panel cover **(7)** and remove cover.
8. Remove retainer ring **(8)** from rear of 60A supply **(9)**.
9. Remove harness plug **(10)** from rear of 60A supply **(9)**.

NOTE

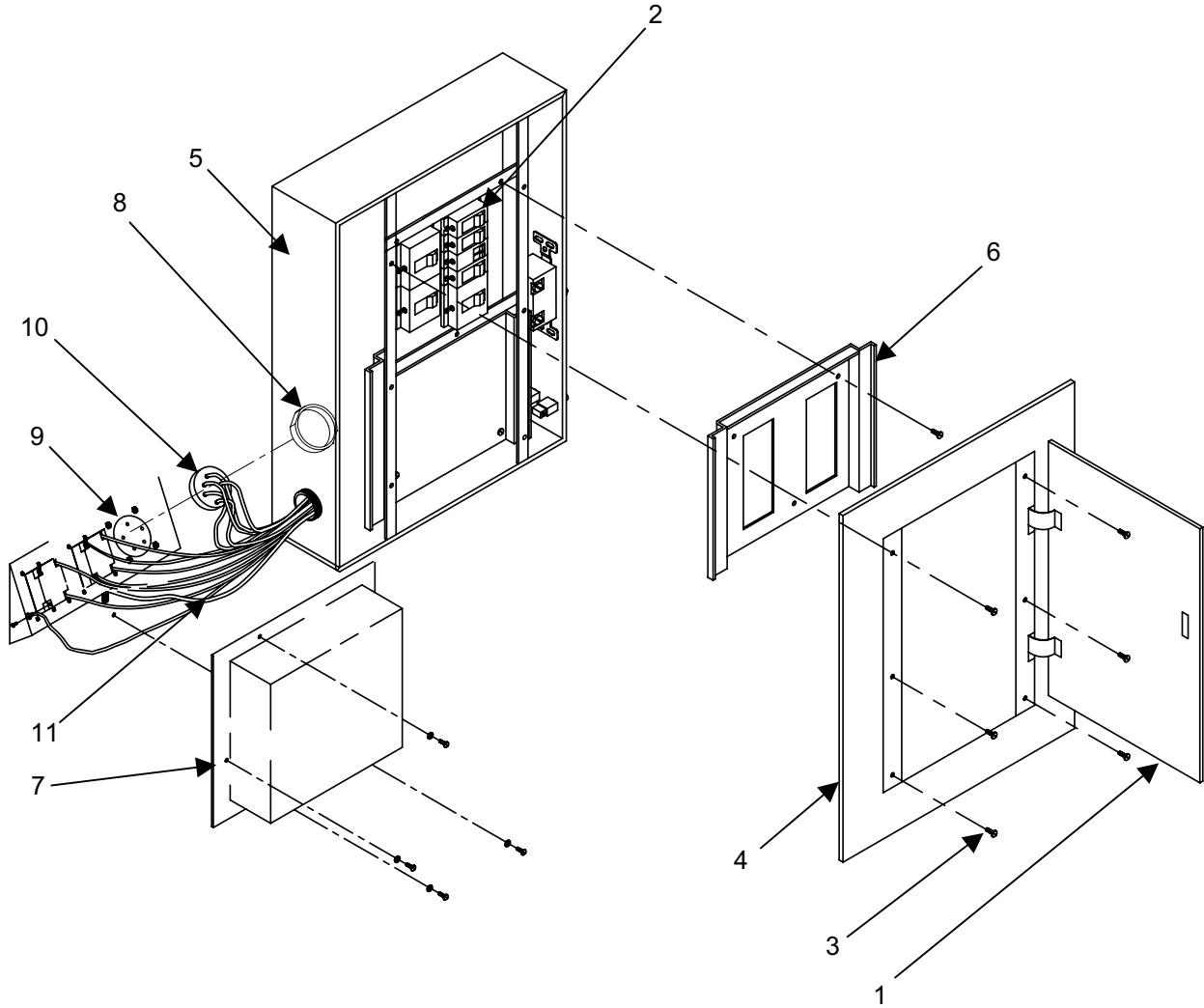
If there is an individual wire which can isolated and replaced, it may not be necessary to replace the entire harness.

NOTE

The CL is fitted with one 20A twist lock receptacle. The CLS is fitted with two 15A convenience receptacles. The procedure for testing and replacing either receptacle is the same.

10. Tag and disconnect both ends of the wiring harness **(11)**.
11. Remove the damaged harness **(11)**.
12. Install the replacement harness **(11)**.
13. Reconnect harness wires as tagged.
14. Install the harness plug **(10)** onto the 60A receptacle **(9)**, and secure with retainer ring **(8)**.
15. Install rear panel cover **(7)**.

16. Install the circuit breaker panel plate (6) and retain with screws.
17. Install the circuit breaker panel cover (4) and retain with captive screws (3).
18. Reconnect power and test for normal operation.



END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****FRESH-WATER PIPES
REPAIR, REPLACE****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)

Personnel Required

One

Materials/Parts

Pipe Sealant (Item 6, WP 0118 00)
 PVC Cement (Item 34, WP 0118 00)
 PVC Coupling ½-inch (Item 34, WP 0095 00)
 PVC Coupling ¾-inch (Item 35, WP 0095 00)
 PVC Coupling 1 ¼-inch (Item 37, WP 0095 00)
 PVC Coupling 1 ½-inch (Item 38, WP 0095 00)
 PVC Coupling 1-inch (Item 36, WP 0095 00)
 PVC Pipe, ½-inch (Items 1 and 2, WP 0112 00)
 PVC Pipe, ¾-inch (Items 3 and 4, WP 0112 00)
 PVC Pipe, 1½-inch (Items 5 and 6, WP 0112 00)
 PVC Primer (Item 35, WP 0118 00)

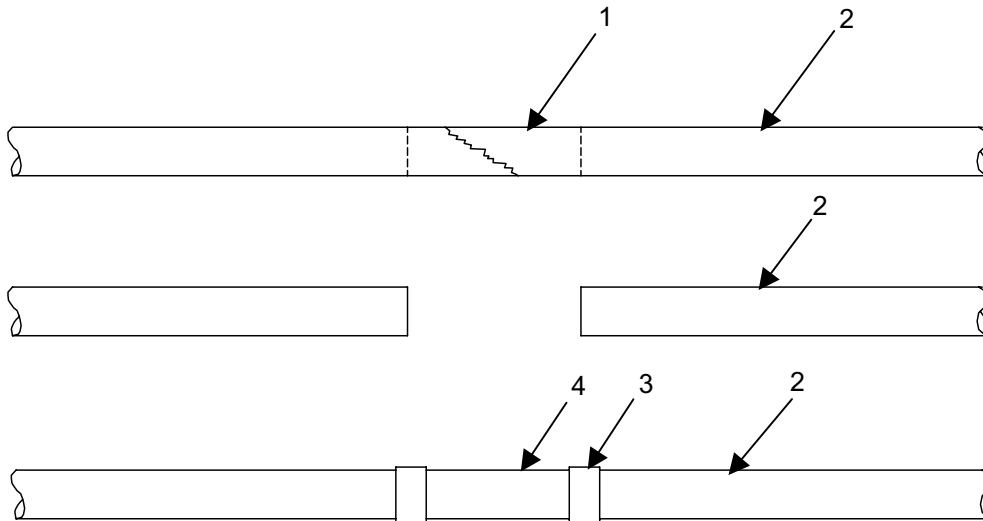
Equipment Condition

Main water valve in CLOSED position.
 Shut down water supply and drain system.
 Water heater circuit breaker (#2B CLS/ #8 CL) and water pump circuit breaker (#9/11 CLS) set to the OFF position.

REPAIR**Repair Damaged PVC Pipe**

1. Ensure that water pump (CLS only) and water heater circuit breakers are set to the OFF position.
2. Ensure water supply is disconnected, and water pressure has been relieved from the system.
3. Ensure that all valves in line with the damaged section of pipe are closed.
4. Determine the size and length of damaged pipe **(1)** to be removed.
5. Using a hacksaw remove the damaged portion **(1)**.
6. Clean and dry the two opposing ends of the remaining pipe **(2)**.
7. Measure the distance between the opposing pipe ends **(2)** and cut a new piece (allow space for the couplings) to the proper length and wipe the ends to remove debris.
8. Apply PVC primer, then cement, to both ends of the cut pipe.
9. Slide the appropriate size coupling **(3)** to one half its length over each of the opposing pipe ends.
10. Apply PVC primer, then cement, to both ends of the new pipe.

11. Slide new PVC pipe piece **(4)** into the couplings **(3)** and let the cement set for at least 45 minutes before applying water pressure.



Replace Flex Hose

1. Ensure water heater and water pump circuit breakers are set to the OFF position.
2. Release pressure from the system by opening the urinal flush valve.
3. Use a screw driver to loosen the screw on the hose clamp and loosen the clamp from the flex hose.
4. Remove damaged hose from pipe nipple.
5. Cut replacement hose to appropriate length.
6. Remove hose clamp from damaged hose and place on replacement hose.
7. Attach replacement hose on pipe nipple and secure to nipple with hose clamp. Tighten hose clamp.

REPLACE**Replace PVC Ball Valves**

1. Ensure that water pump (CLS only) and water heater circuit breakers are set to the OFF position.
2. Ensure water supply is disconnected, and water pressure has been relieved from the system.
3. Use a hacksaw to remove the damaged valve **(1)**. Cut the valve out approximately ½-inch from the pipe connections **(2)**, leaving the connections on the pipe.

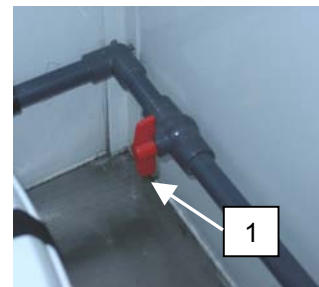
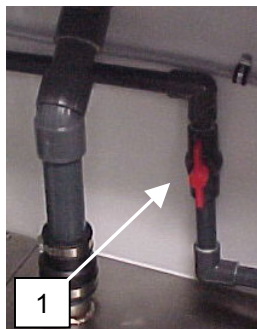
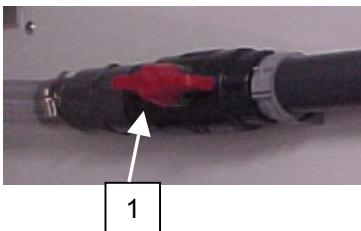
**WARNING**

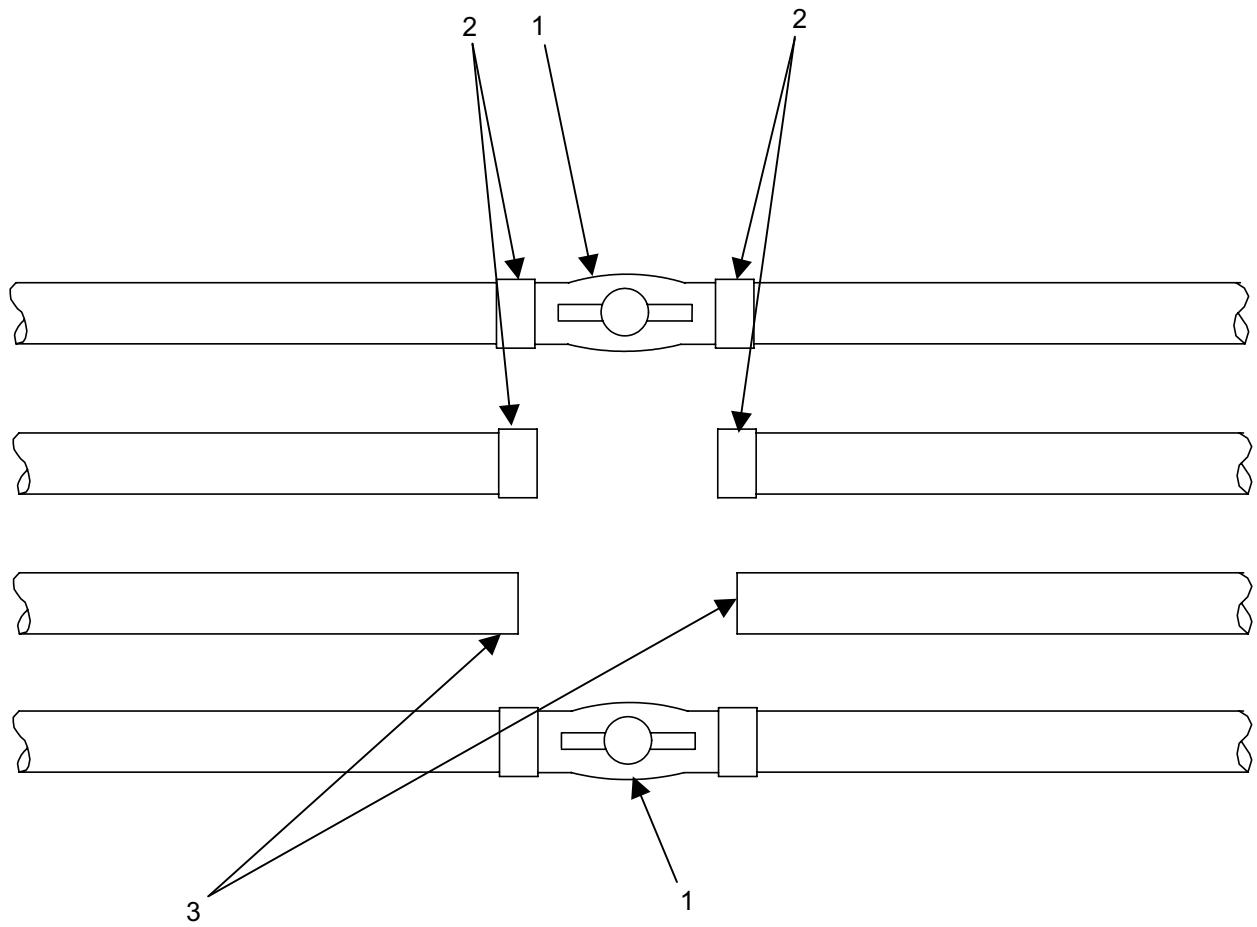
Use caution when attempting to cut the remaining valve connections from the pipe. A knife may easily slip, injuring personnel.

NOTE

If possible, use a hacksaw to make a cut into the remaining valve connections. Then, use a knife to remove the connection from the pipe.

4. Use a knife to remove the valve pipe connections **(2)** from the pipe **(3)**.
5. Clean and dry the two opposing ends of the remaining pipe **(3)**.
6. Apply PVC primer, then cement, to both ends of the new pipe **(3)**.
7. Apply PVC primer, then cement, to both ends of the new valve **(1)**.
8. Slide the replacement PVC valve **(1)** onto the pipe ends **(3)** and let the cement set for at least 45 minutes before applying water pressure.





Replace a Spigot (Boiler Drain Valve)



WARNING

Repair of plumbing requires the use of tools in confined spaces. Slipping wrenches may cause serious injury to personnel.

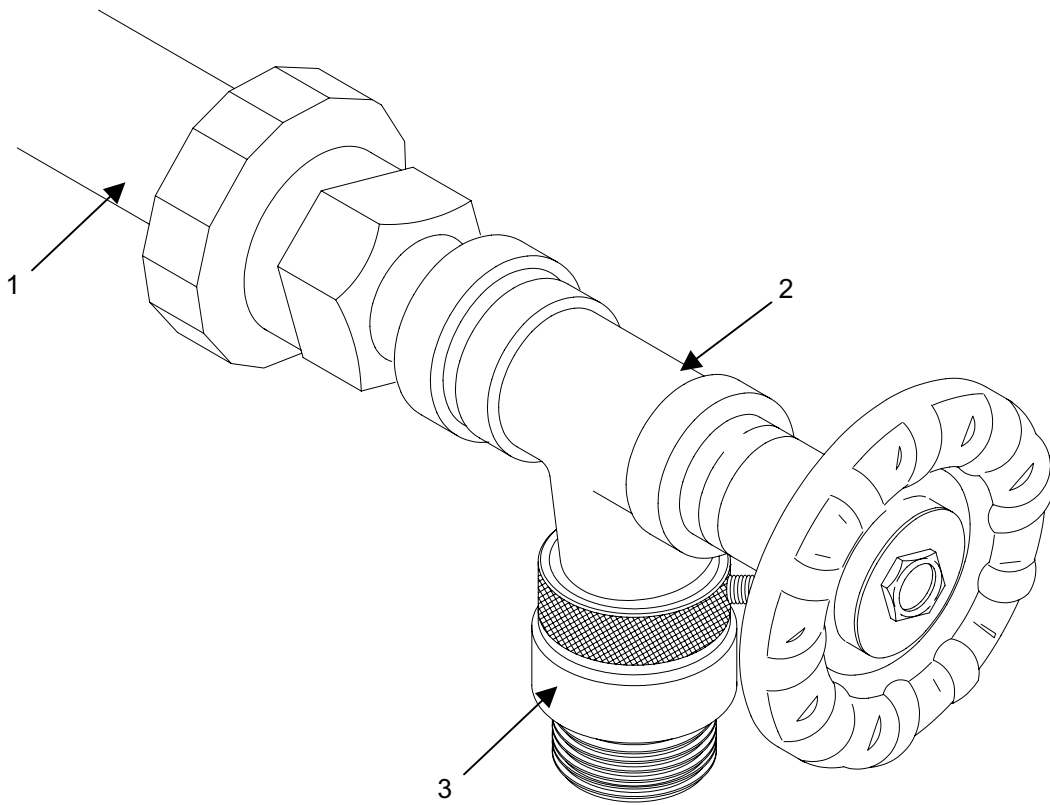
CAUTION

Do not attempt to unscrew the spigot from the pipe fitting without first ensuring that the pipe fitting is secure from turning. The PVC pipe used to plumb the CL/CLS will break unless the fitting is prevented from turning.

NOTE

There are two spigots fitted to the CL/CLS. The procedure for replacement is the same for both.

1. Ensure that water pump (CLS only) and water heater circuit breakers are set to the OFF position.
2. Ensure water supply is disconnected, and water pressure has been relieved from the system.
3. Apply a pipe wrench to the pipe fitting **(1)** to relieve strain and prevent damage.
4. Use a second pipe wrench to remove the spigot **(2)** from the pipe **(1)**.
5. Remove spigot ball valve **(3)** from spigot **(2)**.
6. Clean spigot ball valve **(3)** threads and apply pipe sealant or anti-seize tape to threads of spigot ball valve **(3)**.
7. Install spigot ball valve **(3)** onto replacement spigot **(2)**.
8. Clean threads on the pipe fitting and apply pipe sealant to threads of replacement spigot **(2)**.
9. Thread replacement spigot **(2)** on pipe fitting **(1)** and tighten.



END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)
(NSN 4510-01-477-7764)
ENVIRONMENTAL CONTROL UNIT (ECU)
REPLACE

INITIAL SETUP**Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)
Drill Set, Twist, $\frac{1}{16}$ -inch Through $\frac{1}{2}$ -inch (Item 1, WP 0072 00)

Personnel Required

One

Materials/Parts**Equipment Condition**

Circuit breaker OFF during
remove and install.

REPLACE**Replace ECU**

CAUTION

Do not allow a working ECU to remain on its side or upside down. Always store a working ECU in its normal operating position. Failure to observe this precaution may result in an inoperable ECU.

1. Disconnect ECU power cord **(1)** from supply outlet **(2)**.
2. Remove the faceplate **(3)** from the ECU **(4)**.



WARNING

Four people are required to lift and handle the ECU. Serious injury to personnel could result from improper lifting.

NOTE

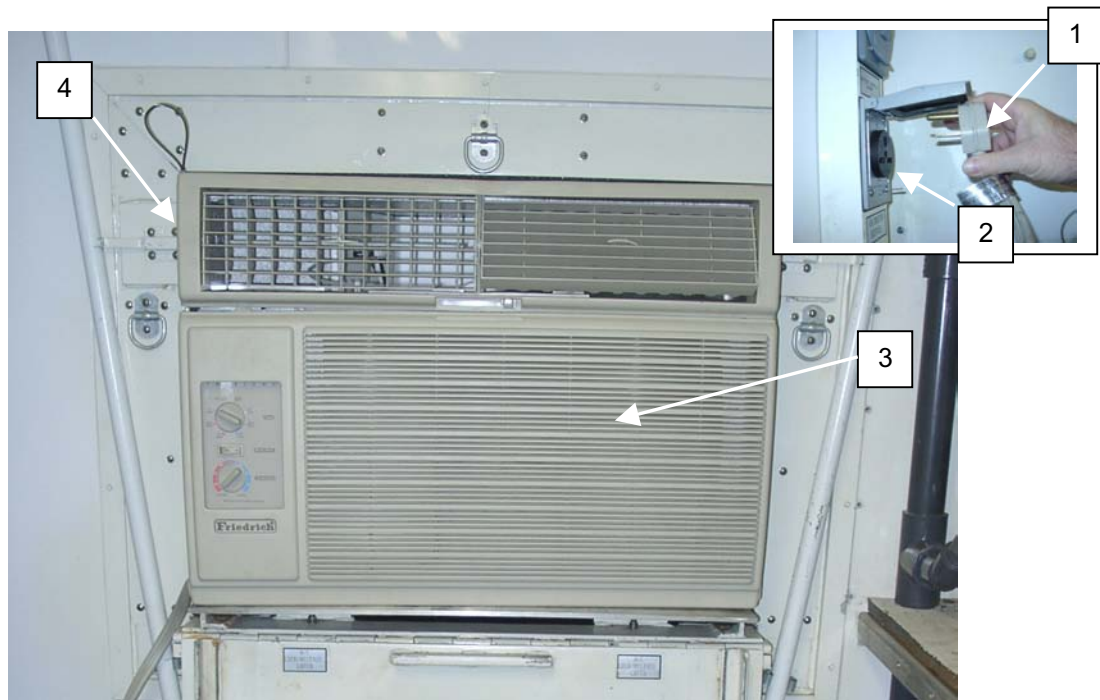
The ECU should be removed from the exterior of the CLS.

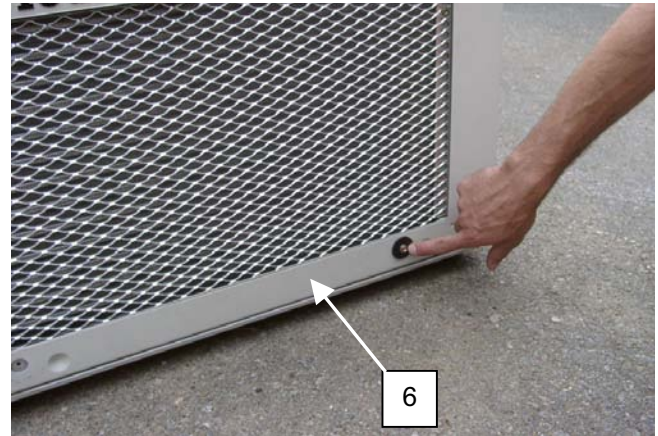
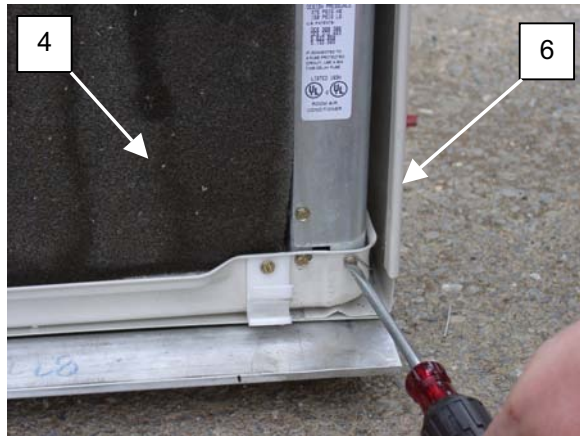
3. Remove ECU **(4)** from ECU tray **(5)**.
4. Remove the screws and washers retaining the cabinet **(6)** of the ECU **(4)**.
5. Disconnect the cabinet ground wire from the cabinet **(6)**.
6. Remove the cabinet **(6)** from the ECU **(4)**.
7. Remove the sheet metal screws retaining the ECU carrier **(7)** from the ECU cabinet **(6)**, and remove the carrier.

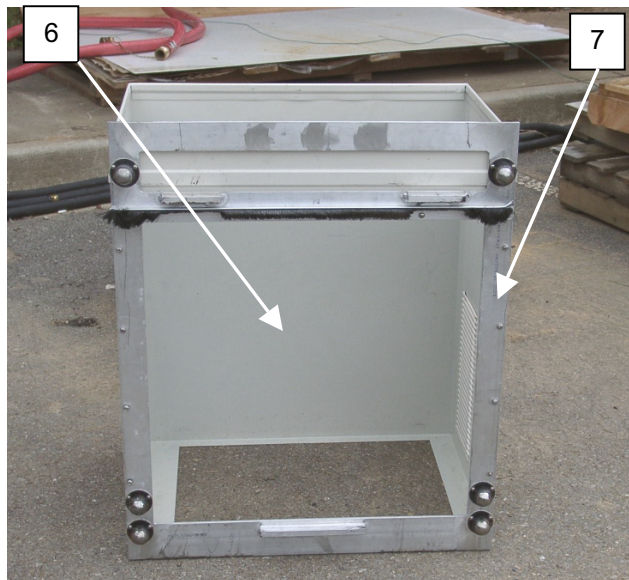
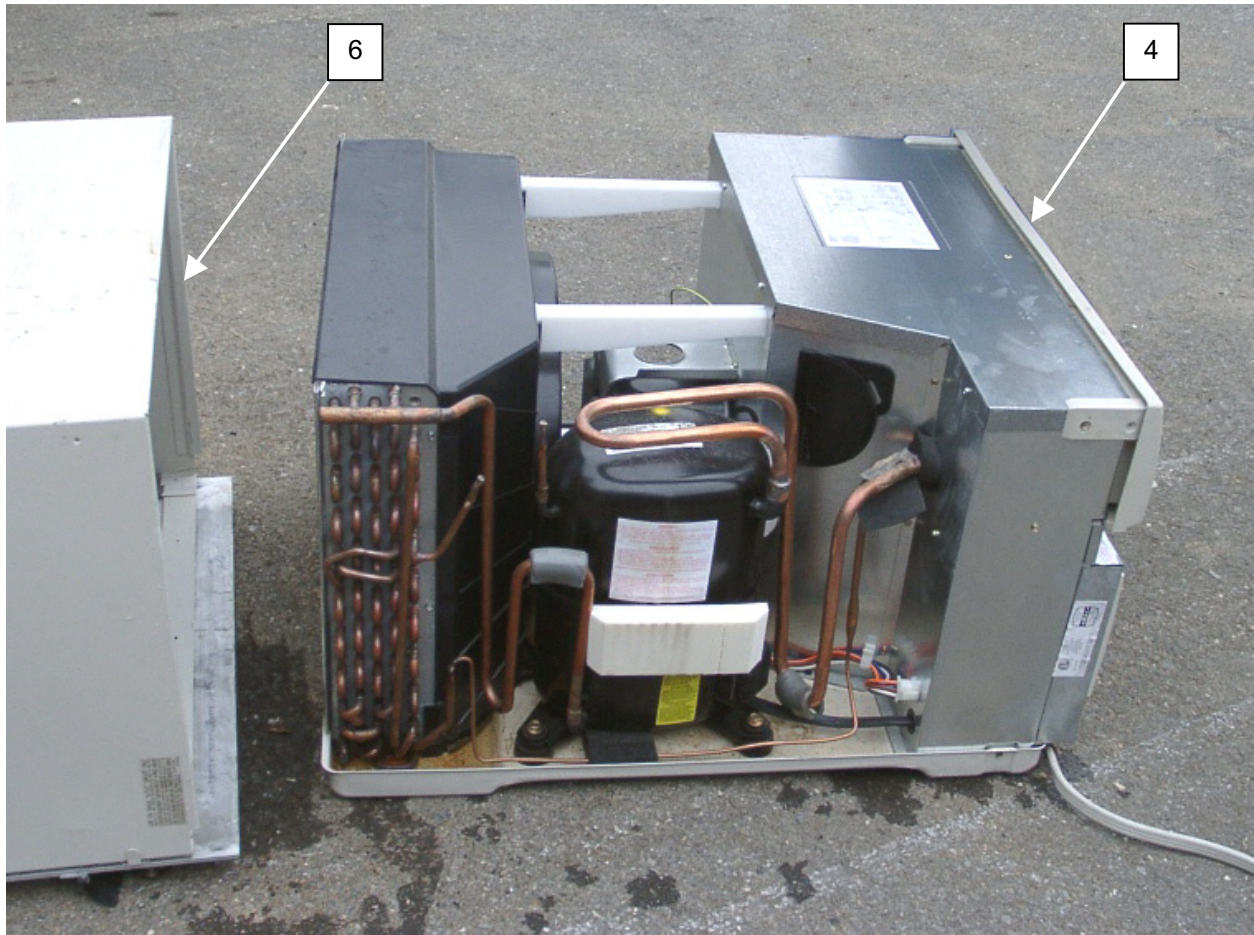
NOTE

The replacement ECU may be installed in the cabinet of the inoperative ECU, provided both are the same model, and no material damage or corrosion is present on the older cabinet.

8. Repeat steps 3. through 5. on the replacement ECU (4).
9. Drill the cabinet (6) of the replacement ECU (4) to accommodate the ECU carrier (7).
10. Install the ECU carrier (7) on the cabinet (6) of the replacement ECU (4).
11. Connect the ECU cabinet ground to the ECU cabinet (6).
12. Install the ECU cabinet (6) onto the ECU (4), and retain with screws and washers.
13. Place ECU (4) into position on ECU tray (5).
14. Install faceplate (1).
15. Connect ECU power cord (1) into supply outlet (2).
16. Switch circuit breaker to ON position. Monitor for normal operation.







END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)
(NSN 4510-01-477-7764)

30 GPM WATER PUMP ASSEMBLY
REPAIR, REPLACE

INITIAL SETUP**Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)
Pipe Wrench (Item 2, WP 0072 00)

Personnel Required

One

Materials/Parts

Anti-seize tape (Item 42, WP 0118 00)
Pipe Sealant (Item 6, WP 0118 00)
Wire Markers (Item 55, WP 0118 00)

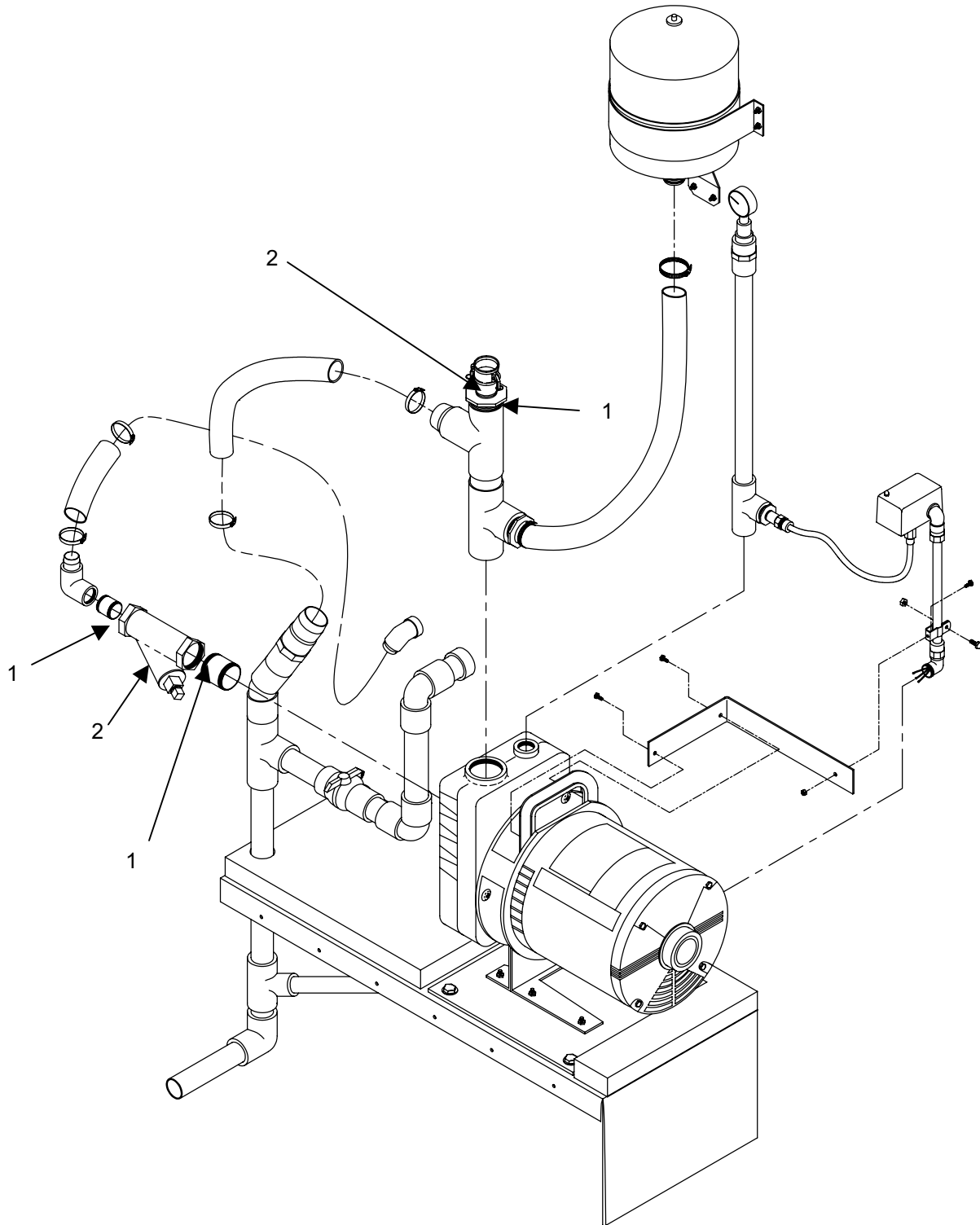
Equipment Condition

Main water valve in CLOSED position. Shut down water supply and drain system. Water heater circuit breaker (#2B CLS/ #8 CL) and water pump circuit breaker (#9/11 CLS) set to the OFF position.

REPAIR**Repair Leaks at Pipe Connections****NOTE**

It may be necessary to cut sections of PVC pipe in order to repair a leak. If PVC pipe is cut, refer to WP 0065 00 for repair procedures.

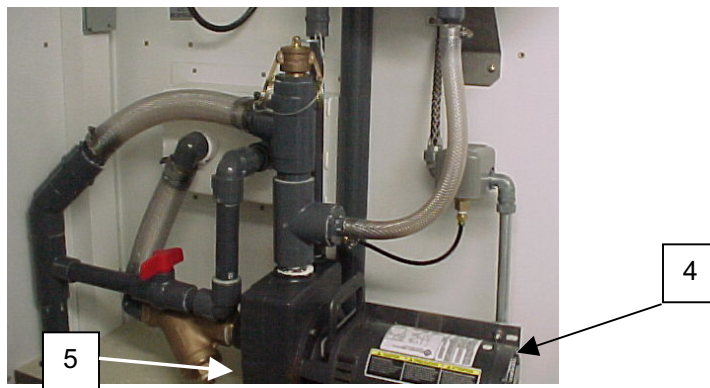
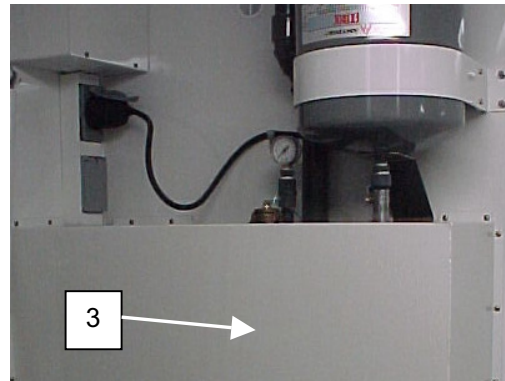
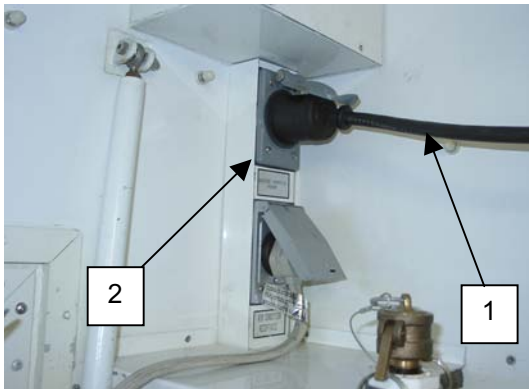
1. Use a pipe wrench to disconnect leaking pipe connections **(1)**.
2. Clean disassembled pipe fittings **(2)**.
3. Coat connections with pipe sealant.
4. Reassemble and tighten pipe connections **(1)**.
5. If leak persists, replace pipe fittings **(2)** as necessary.



REPLACE**Replace the Freshwater Pump****WARNING**

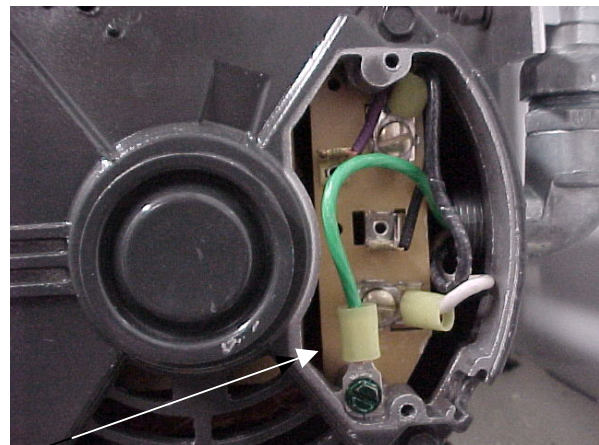
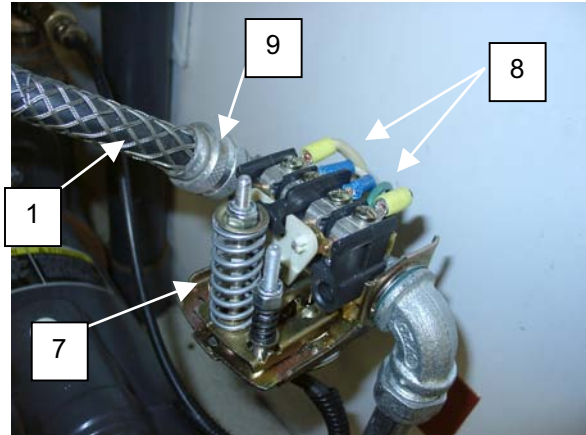
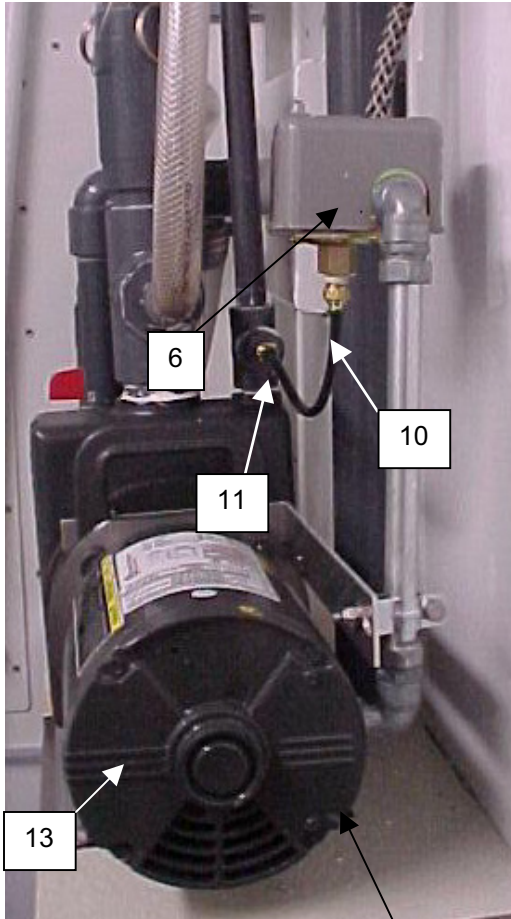
Always secure and tag circuit breakers in the OFF position or disconnect equipment's power cord from receptacle before attempting any electrical repairs, even minor repairs such as replacing a light bulb. The latrine is a wet environment capable of posing an electrical shock hazard when personnel have direct contact with energized wires or metal parts. Failure to observe this safety warning may result in serious injury or death to personnel.

1. Disconnect the power cord (1) from the water pump receptacle (2).
2. Ensure all pressure is relieved from the system by opening the urinal flush valve.
3. Remove the cover (3) from the water pump (4).
4. Remove the pump drain plug (5), and drain the pump. Do not reinstall the plug.



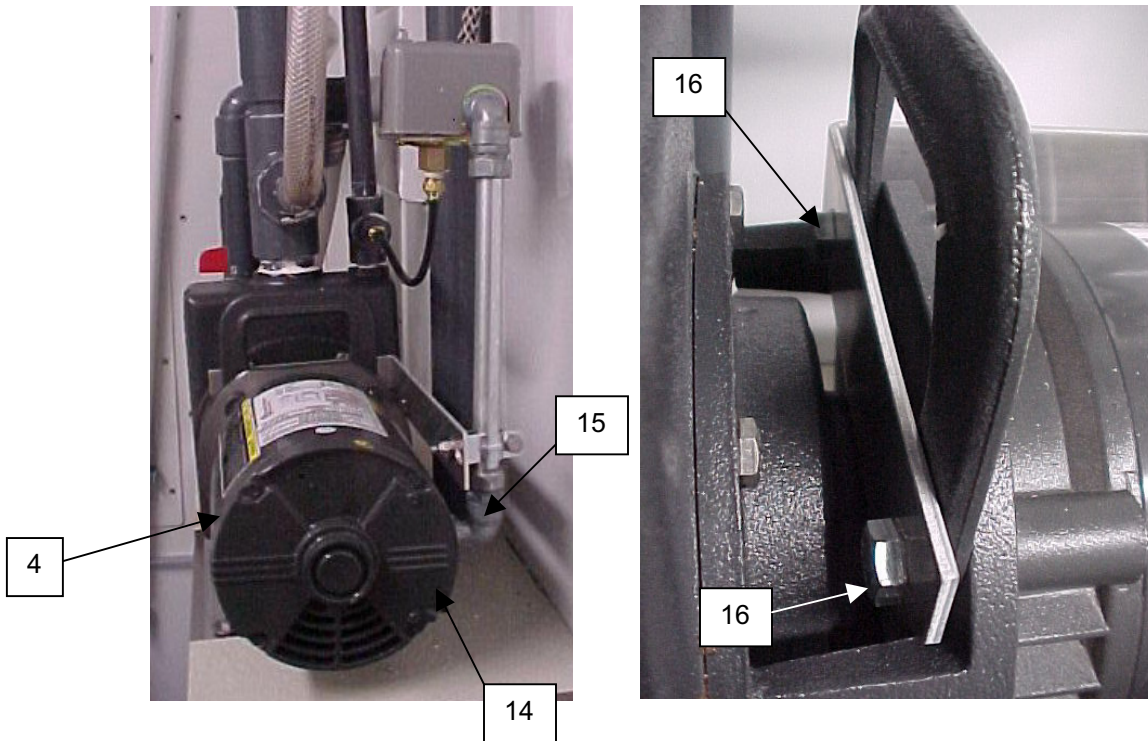
5. Remove the cover (6) from the pressure switch (7).
6. Tag and disconnect the power cord wiring connections (8) from the pressure switch (7).

7. Unscrew the power cord strain relief locknut (9), and remove the power cord (1) from the pressure switch (7).
8. Disconnect the pressure switch hose (10) by unscrewing the barb fitting on the pipe Tee (11).
9. Remove cover from fresh water pump motor junction box (12).
10. Tag and disconnect wiring from pump motor (13).

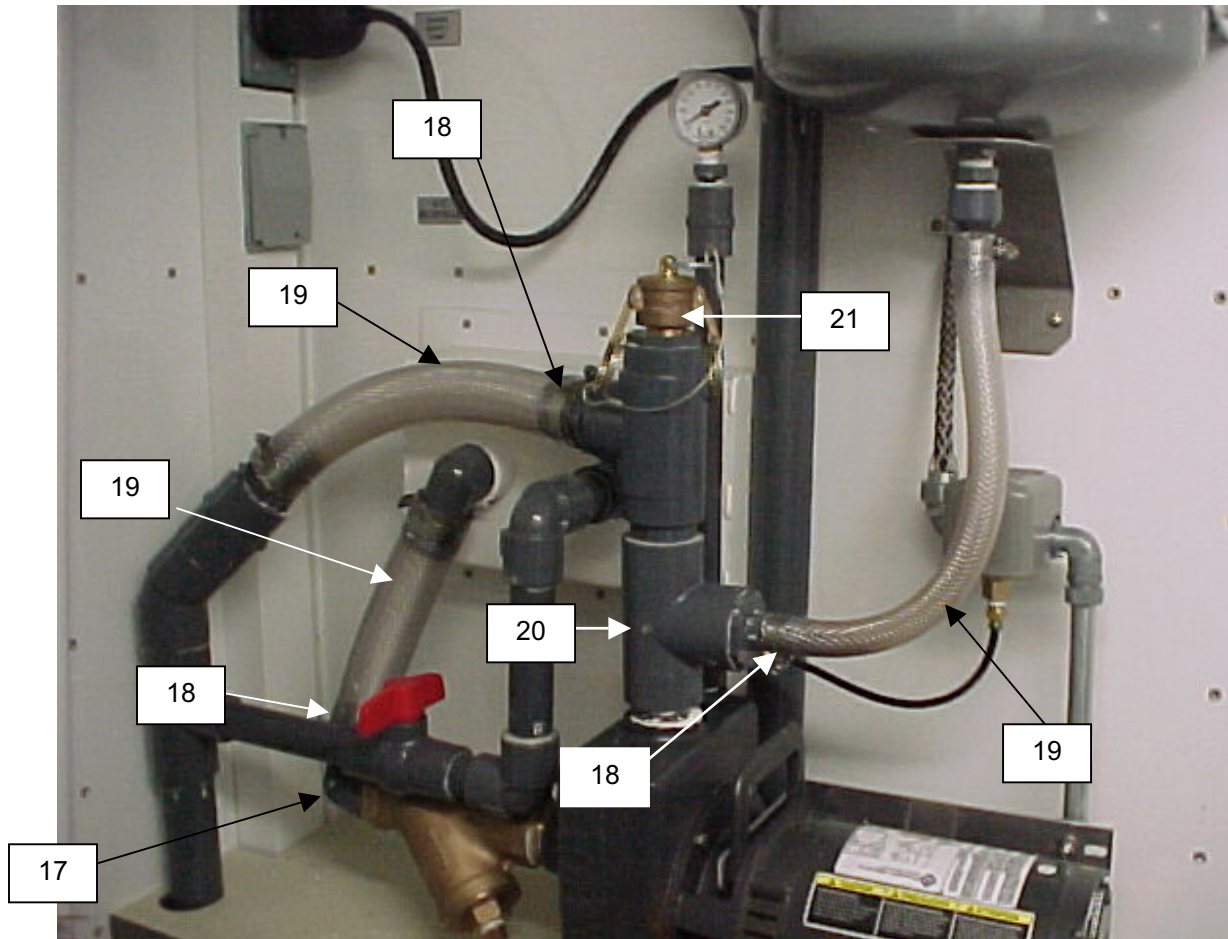


12

11. Support the pump (4), loosen the locknut (14), and unscrew the conduit elbow (15) from the pump motor (13). Leave the conduit and pressure switch (7) attached as an assembly.
12. Remove the bolts (16) holding the pump support bracket onto the pump motor.



13. At Y-strainer **(17)** location, loosen the screw holding flex hose clamp **(18)** in place.
14. Remove flex hose **(19)** from elbow. Retain flex hose clamp **(18)**.
15. At pipe Tee **(20)** on the fresh water pump **(7)**, loosen the screw holding the flex hose clamp **(18)** in place.
16. Remove flex hose **(19)** from pipe nipple. Retain flex hose clamp **(18)**.
17. At brass fitting **(21)** location, loosen the screw holding the flex hose clamp **(18)** in place.
18. Remove flex hose **(19)** from Tee. Retain flex hose clamp **(18)**.



19. Remove the nuts retaining the pump base plate (22) to the pump mount (23).

CAUTION

Use caution when removing the pump. Do not damage the pressure gauge or pressure switch when removing.

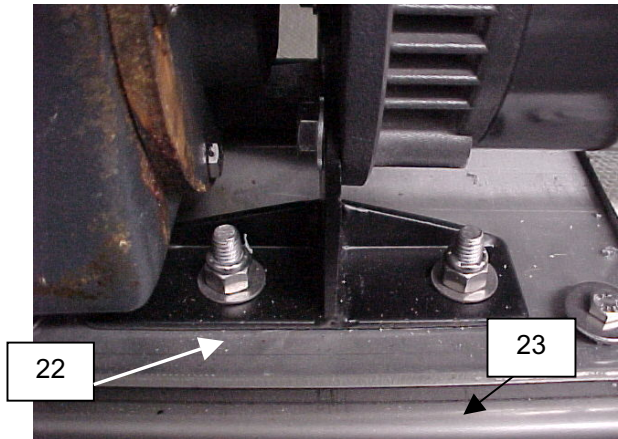
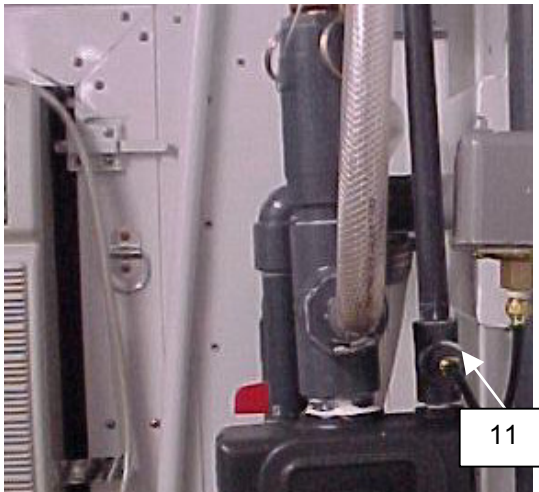
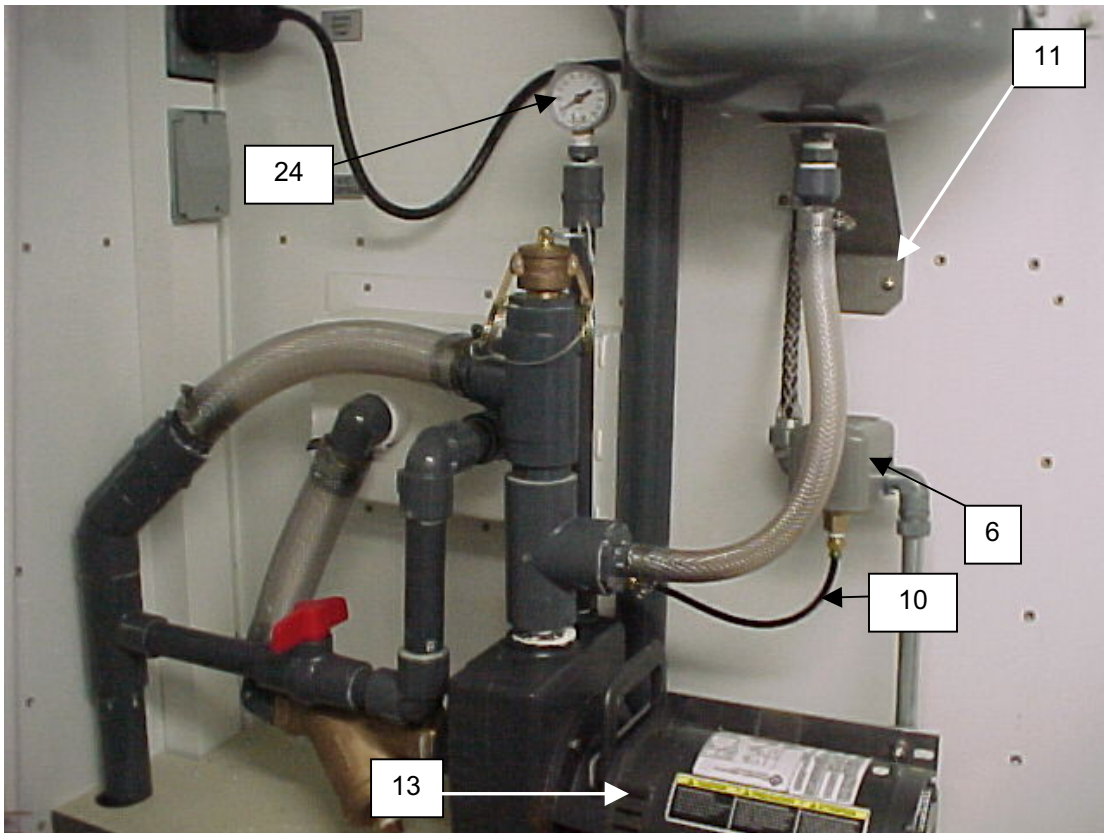
20. Remove the pump (4) and base plate (22) as an assembly from the pump mount (23).

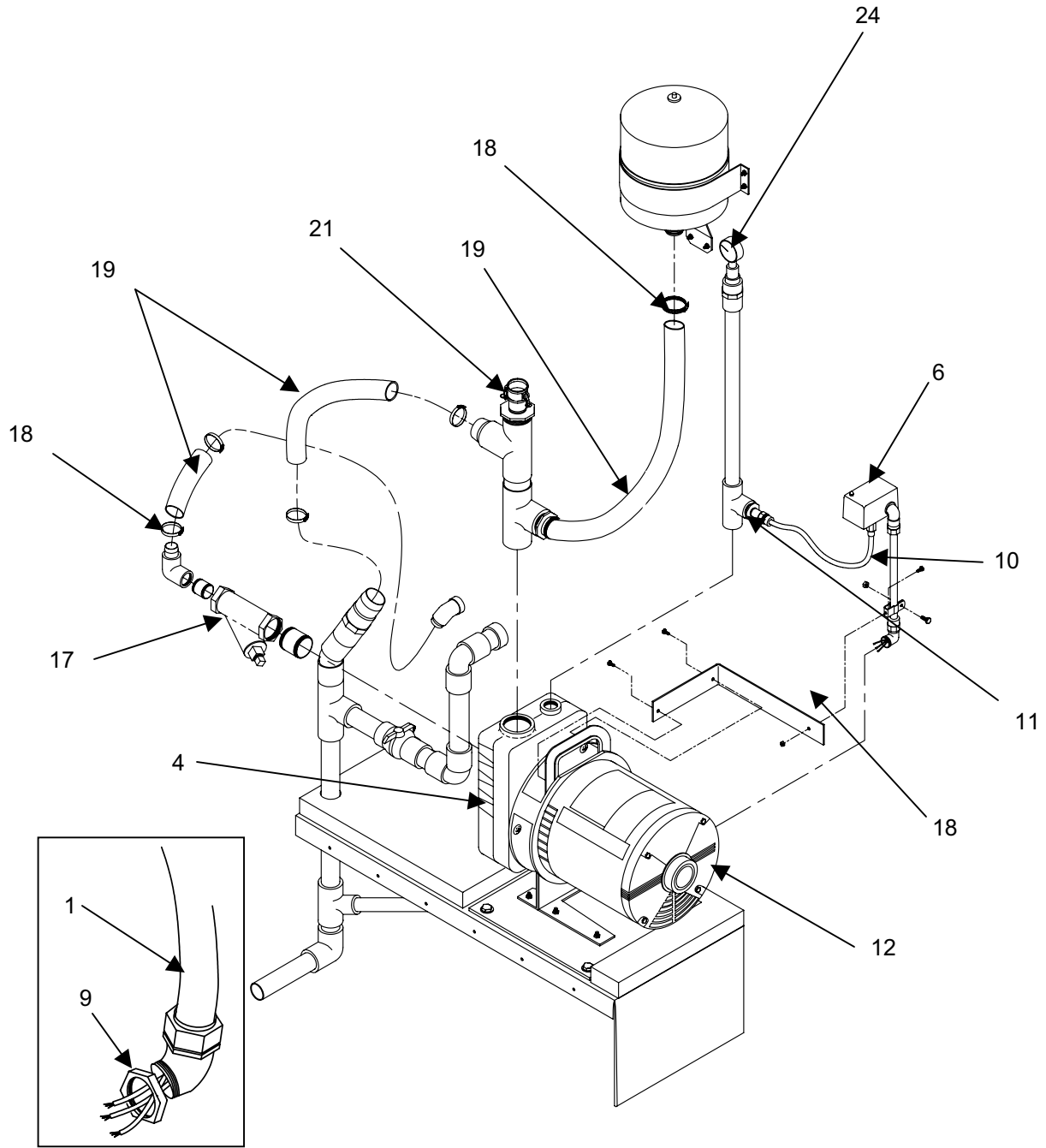
21. Note the position of the pressure gauge (24), then remove the pipe Tee (25) and pressure gauge as an assembly from the pump (4). Ensure the close nipple connecting the Tee to the pump comes out with the Tee.

22. Note the position of the brass fitting, then remove the pipe Tees and brass fitting as an assembly from the pump.

23. Remove the screws, washers, and nuts retaining the pump base plate (22) to the pump (4), and remove the pump base plate.

24. Install the pump base plate **(22)** onto the replacement pump **(4)**, and retain with screws, washers, and nuts.
25. Apply pipe sealant to the threads of the pipe Tee nipple. If pipe sealant is not available, wrap three to five turns of antisieze tape clockwise around the threads.
26. Install the pipe Tee **(25)** with pressure gauge **(24)** as an assembly onto the replacement pump **(4)**. Ensure that the pressure gauge is aligned correctly.
27. Apply pipe sealant to the threads of the pipe Tee nipple for the brass fitting assembly. If pipe sealant is not available, wrap three to five turns of antisieze tape around the threads.
28. Install the pipe Tees with brass fitting onto the replacement pump. Ensure the Tees are aligned correctly.
29. Remove the cover from the junction box **(12)** on the replacement pump **(4)**, and remove the knockout plug from the junction box.
30. Screw the pressure switch conduit elbow **(15)** with pressure switch **(7)** and bracket as an assembly onto the junction box **(12)**.
31. Install the pump **(4)** with pump base plate **(22)** onto the pump mount **(23)**.
32. Place one hose clamps on each piece of flex hose and connect flex hose to appropriate piece of pipe. Secure in place by tightening hose clamp.
33. Retain the pump mount **(23)** with nuts and tighten.
34. Connect the wiring from pressure switch **(7)** to the motor **(13)** as tagged.
35. Install the cover to the junction box **(12)**, and secure with screws.
36. Install the pressure switch hose **(10)** onto the pipe Tee **(11)**.
37. Install the drain plug **(5)**, as well as any remaining plugs.
38. Install the strain relief conduit locknut **(9)** into the pressure switch **(7)**, and secure.
39. Connect the power cord **(1)** to the pressure switch **(7)** as tagged.
40. Install the pressure switch cover **(6)**.
41. Install the pump cover **(3)**.
42. Prime pump, reconnect power, and operate in accordance with procedures outline in WP 0009 00.
43. Monitor for normal operation.





END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****WASTEWATER VALVE ASSEMBLY
REPAIR****INITIAL SETUP****Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)
Pipe Wrench (Item 2, WP 0072 00)
Strap Wrench (Item 3, WP 0072 00)
Waste Water Vacuum Tank Trailer (WWVT/T) (Item 6, WP 0072 00)

Personnel Required

One

Materials/Parts**Equipment Condition**

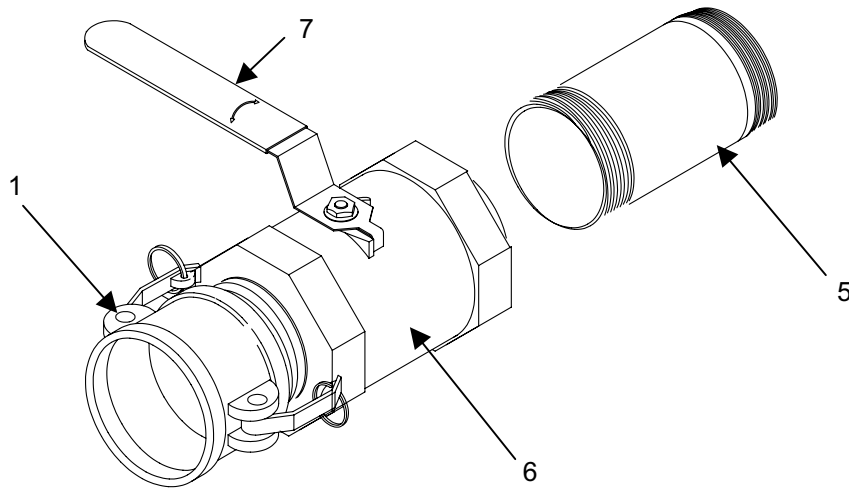
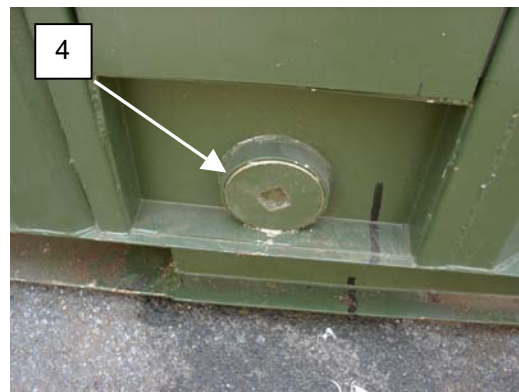
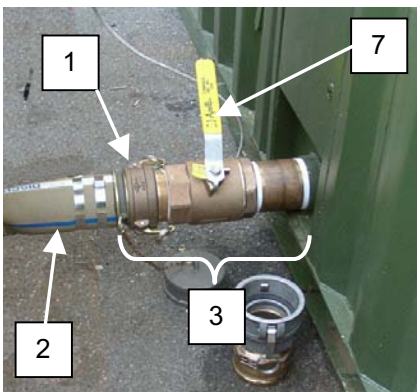
Blackwater holding tank empty.

REPAIR**Repair the Blackwater Valve Assembly****WARNING**

Protective clothing and equipment must be worn. Heavy-duty rubber apron, rubber gloves, safety splash goggles and/or face shield are required when potential exists for contact with wastewater or contaminated surfaces. Wastewater and surfaces may be contaminated with pathogenic microorganisms, bacteria or viruses, which present a risk of serious illness or death to personnel.

1. Place the CLS out of service.
2. Ensure the No. 2 tank is pumped dry of any blackwater, and has been rinsed and sanitized in accordance with WP 0007 00 or WP 0010 00, as applicable.
3. Disconnect the QD fitting **(1)** from the wastewater hose **(2)**, if fitted.
4. Unscrew the discharge valve assembly **(3)** from the container.
5. Install the plug **(4)** on the countersink.
6. Unscrew the 4-inch pipe nipple **(5)** from the valve **(6)**, and replace unserviceable parts as necessary.
7. Coat the threads of the pipe nipple **(5)** with pipe sealant or anti-seize tape.
8. Place the valve handle **(7)** in the open (inline) position.
9. Screw the nipple **(5)** into the valve **(6)**.

10. Ensure the assembly components are tight.
11. Remove the plug (4) from the countersink.
12. Install the discharge valve assembly (3) into the countersink. Ensure the valve is tight, and the handle (7) is positioned to be easily operated.
13. Install the discharge hose (2), if fitted, to the QD fitting (1).
14. Place the CL back in service.
15. Clean tools and/or personal protective clothing and individual's equipment using a general purpose detergent solution, then sanitize using a ten-to-one solution of household bleach in warm water (i.e. 6-ounces in 2-quarts of water) and allow to air dry.



END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE**CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)****BACKFLOW PREVENTION DEVICE
TEST, SERVICE, REPLACE**

INITIAL SETUP**Tools**

General Mechanics Tool Kit (Item 5, WP 0072 00)
Field Test Equipment Required

Personnel Required

One

Materials/Parts**Equipment Condition**

TEST

Reduced pressure zone assemblies must be inspected and tested periodically to ensure proper operation of check valves within the unit.

Test Set Up

1. Close valves A **(1)**, B **(2)**, and C **(3)** on the test kit.
2. Connect the high side hose (yellow) **(4)** to test cock #2 **(5)**.
3. Connect the low side hose (white or red) **(6)** to test cock #3 **(7)**. Close shutoff #2 **(8)**.
4. Open test cocks #2 **(5)** and #3 **(7)**.
5. Open vent valve C **(3)**.
6. Open high valve A **(1)** and bleed to atmosphere until all the air is expelled.
7. Close valve A **(1)**.
8. Open low valve B **(2)** and bleed to atmosphere until air is expelled.
9. Close low valve B **(2)**.
10. Close vent valve C **(3)**.
11. Connect vent hose (blue) **(9)** to test cock #4 **(10)**.

Test Operation of Pressure Differential Relief Valve**NOTE**

The pressure differential relief valve must operate to maintain the zone between the two check valves at least 2 psi less than the supply pressure.

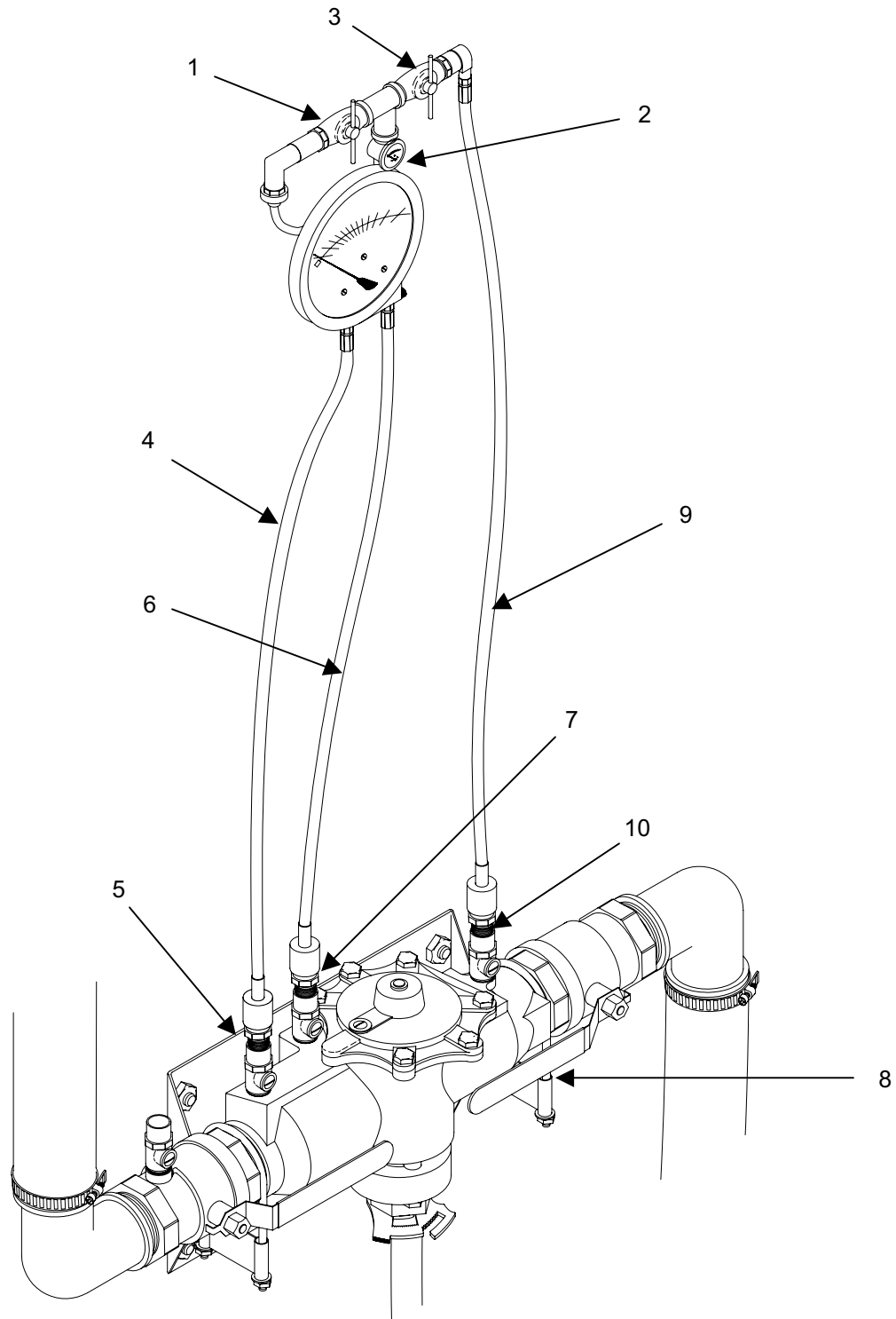
1. Close vent valve C **(3)**.
2. Open high valve A **(1)**.
3. Open the low valve B **(2)** very slowly until the differential gauge needle starts to drop.
4. Hold the valve at this position and observe the gauge reading at the moment the first discharge is noted from the relief valve.
5. Record this as the opening differential pressure of the relief valve.

NOTE

It is important that the differential gauge needle drops slowly.

To Relieve Pressure From the Test Kit

1. Close test cocks #2 **(5)** and #3 **(6)**.
2. Use vent hose (blue) to relieve pressure from the test kit by opening valves A **(1)**, B **(2)** and C **(3)**.
3. Remove all test equipment and open shutoff #2 **(8)**.

**SERVICE**

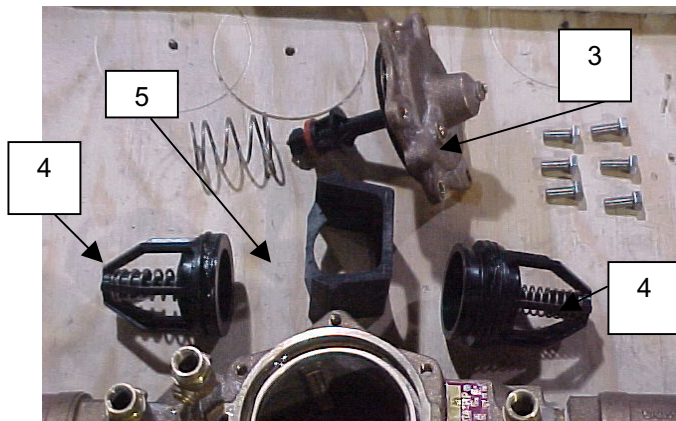
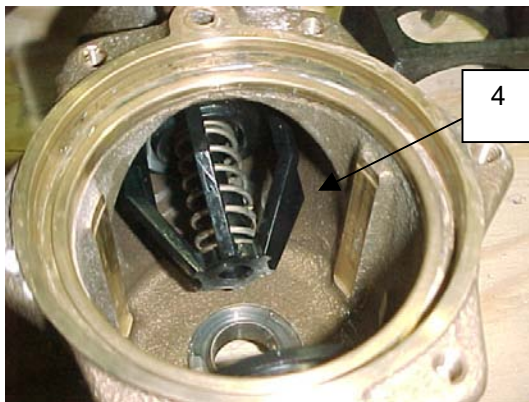
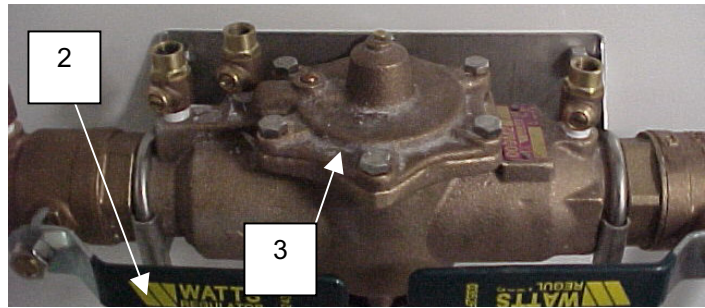
1. Open ball valve (1) to allow fluid and debris to be drained into holding tank.
2. Flush the water line clean of debris by slowly closing the inlet shut-off valve (2).

3. Remove the cover (3) and spring assemblies (4) of both check valves and open the inlet shut-off valve (2) to allow sufficient flow of water through the assembly to clear all sand and debris from the line.

CAUTION

Use caution when handling parts to avoid damaging any guiding surfaces. Do not force parts together. Damage to equipment may result.

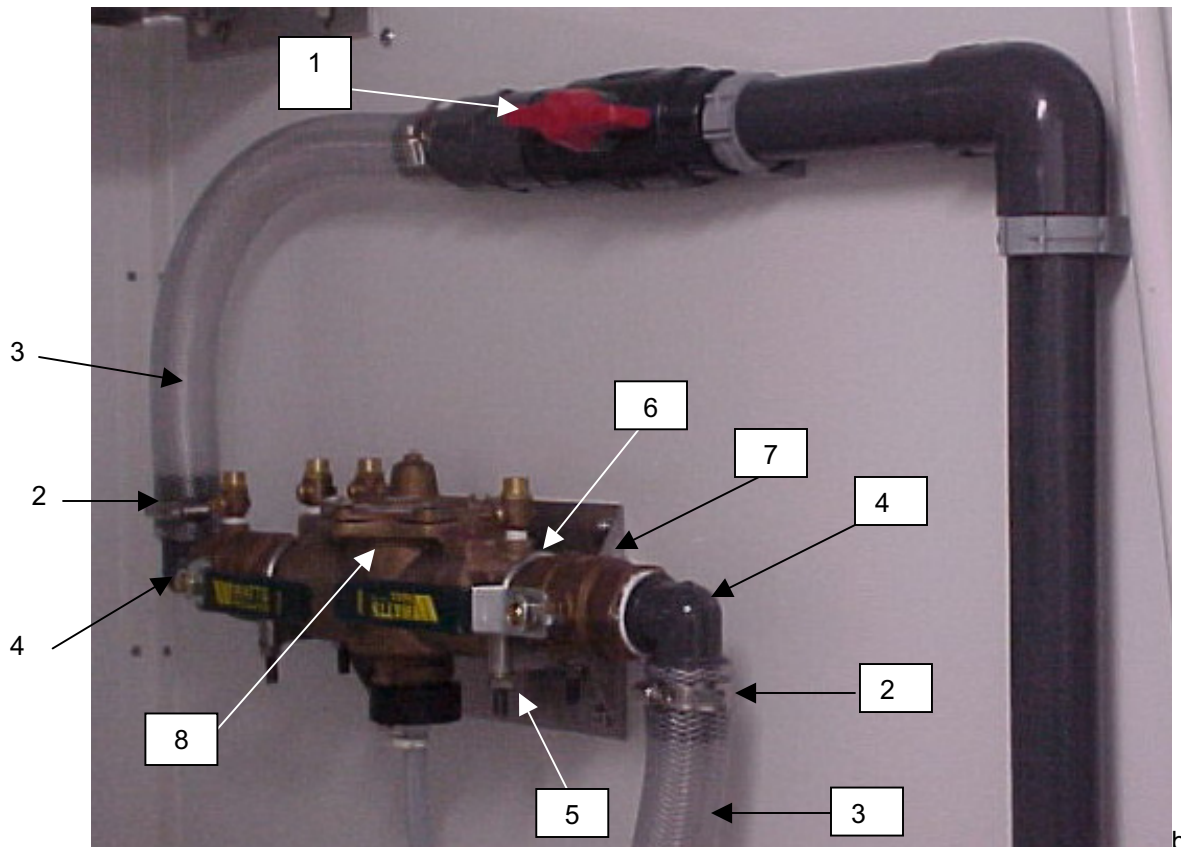
4. Rinse all parts with clean water before reassembly.
5. Carefully inspect seals and seating surfaces for debris or damage.
6. If the check valve seat disc (5) has been severely cut at the seat ring diameter, replace the backflow prevention device in accordance with the REPLACE procedures.
7. Reinstall device parts.
8. Test unit after servicing to ensure proper operation.



(Parts Removed for Clarity)

REPLACE

1. Close ball valve (1).
2. Loosen hose clamps (2).
3. Remove flex hose (3) from PVC elbow (4).
4. Remove nuts (5) from u-bolts (6). Remove u-bolts (6) from mounting bracket (7).
5. Note orientation of backflow prevention device (8) and remove device from mounting bracket (7).
6. Obtain replacement device.
7. Place replacement backflow prevention device (8) on mounting bracket (7) and secure in place with u-bolts (6).
8. Attach the flex hose (3) to appropriate PVC elbow (4) and secure in place with hose clamp (2).
9. Open ball valve (1).
10. Test unit after replacing to ensure proper operation.

**END OF WORK PACKAGE**

CHAPTER 8

SUPPORTING INFORMATION

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

**OPERATOR'S, UNIT AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
REFERENCES**

SCOPE

This section lists all field manuals, forms, technical manuals, and miscellaneous publications referenced in this manual.

Field Manuals

Chemical and Biological Contamination Avoidance FM 3-3
 Quartermaster Force Provider Company FM 42-424
 NBC Decontamination FM 3-5
 Packing of Materiel for Packing FM 38-701
 Field Hygiene and Sanitation FM 21-10

Forms

Discrepancy in Shipment Report SF 361
 Equipment Inspection and Maintenance Worksheet DA Form 2404
 Quality Deficiency Report SF 368
 Recommended Changes to Equipment Technical Publications DA Form 2028-2
 Report of Packaging and Handling Deficiencies SF 362
 Report of Discrepancy SF 364

Technical Manuals

Procedures for Destruction of Equipment to Prevent Enemy Use TM 750-244-3
 Operator's Maintenance Manual for Trailer-Mounted Laundry Unit, Model M85-100 TM 10-3510-222-10
 Operator, Unit, and Direct Support Maintenance Manual for Distribution
 Illumination Systems, Electrical (DISE), and Power Distribution Illumination
 Systems, Electrical (PDISE) Consisting of Electric Feeder System
 M200, M200 A/P, Electrical Feeder System M 100, M 100 A/P, Electrical Distribution System M40, M40
 A/P, Electrical Distribution System M60, M60 A/P
 And Electrical Utility Assembly M46 TM 9-6150-226-13
 Operator's and Unit Maintenance Manual (including RPSTL) Tank,
 Fabric, Self-supporting, 3,000 Gallon Water TM 10-5430-237-12&P
 Unit and Direct Support Maintenance Manual
 (including Repair Parts and Special Tools List), General Cargo Container TM 55-8115-204-23&P

Pamphlets

The Army Maintenance Management System (TAMMS) Users Manual DA PAM 750-8

Common Table Of Allowance

Army Medical Department Expendable/Durable Items CTA 8-100
 Expendable/Durable Items CTA 50-970

Technical Bulletins

Sanitary Control and Surveillance of Field Water Supplies TB MED 577

**OPERATOR, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION**

INTRODUCTION

The Army Maintenance System MAC

This introduction provides a general explanation of all maintenance and repair functions authorized at the two maintenance levels under the Two-Level Maintenance System concept.

The MAC (immediately following the introduction) designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component shall be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Field - includes two columns, Unit maintenance and Direct Support maintenance. The Unit maintenance column is divided again into two more subcolumns, C for Operator or Crew and O for Unit maintenance.

Sustainment – includes two subcolumns, General Support (H) and Depot (D).

The tools and test equipment requirements (immediately following the MAC) list the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from the MAC.

The remarks (immediately following the tools and test equipment requirements) contain supplemental instructions and explanatory notes for a particular maintenance function.

Maintenance Functions

Maintenance functions are limited to and defined as follows:

1. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel.) This includes scheduled inspection and gagings and evaluation of cannon tubes.
2. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e., load testing of lift devices and hydrostatic testing of pressure hoses.
3. Service. Operations required periodically to keep an item in proper operating condition, e.g., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases. This includes scheduled exercising and purging of recoil mechanisms. The following are examples of service functions:
 - a. Unpack. To remove from packing box for service or when required for the performance of maintenance operations.
 - b. Repack. To return item to packing box after service and other maintenance operations.
 - c. Clean. To rid the item of contamination.
 - d. Touch up. To spot paint scratched or blistered surfaces.
 - e. Mark. To restore obliterated identification.

4. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper or position, or by setting the operating characteristics to specified parameters.
5. Align. To adjust specified variable elements of an item to bring about optimum or desired performance
6. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments of test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
7. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.
8. Paint. To prepare and spray color coats of paint so that the ammunition can be identified and protected. The color indicating primary use is applied, preferably, to the entire exterior surface as the background color of the item. Other markings are to be repainted as original so as to retain proper ammunition identification.
9. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and assigned maintenance level is shown as the third position code of the Source, Maintenance and Recoverability (SMR) code.
10. Repair. The application of maintenance services, including fault location/troubleshooting, removal/installation, disassembly/assembly procedures and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

NOTE

The following definitions are applicable to the "repair" maintenance function:

Services. Inspect, test, service, adjust, align, calibrate, and/or replace.

Fault location/troubleshooting. The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or Unit Under Test (UUT).

Disassembly/assembly. The step-by-step breakdown (taking apart) of a spare/functional group coded item to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).

Actions. Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

11. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

12. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

Explanation of Columns in the MAC

Column (1) Group Number. Column (1) lists Functional Group Code (FGC) numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

Column (2) Component/Assembly. Column (2) contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

Column (3) Maintenance Function. Column (3) lists the functions to be performed on the item listed in column (2). (For a detailed explanation of these functions refer to "Maintenance Functions" outlined above).

Column (4) Maintenance Level. Column (4) specifies each level of maintenance authorized to perform each function listed in column (3), by indicating work time required (expressed as man-hours in whole hours or decimals) in the appropriate subcolumn. This work time figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance levels, appropriate work time figures are to be shown for each level. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the MAC. The symbol designations for the various maintenance levels are as follows:

Field:

- C Operator or Crew maintenance
- O Unit maintenance
- F Direct Support maintenance

Sustainment:

- L Specialized Repair Activity
- H General Support maintenance
- D Depot maintenance

NOTE

The "L" maintenance level is not included in column (4) of the MAC. Functions to this level of maintenance are identified by work time figure in the "H" column of column (4), and an associated reference code is used in the REMARKS column (6). This code is keyed to the remarks and the SRA complete repair application is explained there.

Column (5) Tools and Equipment Reference Code. Column (5) specifies, by code, those common tool sets (not individual tools), common Test, Measurement and Diagnostic Equipment (TMDE), and special tools, special TMDE, and support special equipment required to perform the designated function. Codes are keyed to the entries in the tools and test equipment table.

Column (6) Remarks Code. When applicable, this column contains a letter code, in alphabetic order, which is keyed to the remarks table entries.

Explanation of Columns in the Tools and Test Equipment Requirements

Column (1) – Tool or Test Equipment Reference Code. The tool or test equipment reference code correlates with a code used in column (5) of the MAC.

Column (2) – Maintenance Level. The lowest level of maintenance authorized to use the tool or test equipment.

Column (3) – Nomenclature. Name or identification of the tool or test equipment.

Column (4) – National Stock Number (NSN). The NSN of the tool or test equipment.

Column (5) – Tool Number. The manufacturer's part number.

Explanation of Columns in Remarks

Column (1) – Remarks Code. The code recorded in column (6) of the MAC.

Column (2) – Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC.

OPERATOR, UNIT, AND DIRECT SUPPORT MAINTENANCE

**CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)**

MAINTENANCE ALLOCATION CHART (MAC)

Table 1. Maintenance Allocation Chart for CL/CLS.

| (1) GROUP NUMBER | (2) COMPONENT/ ASSEMBLY | (3) MAINTENANCE FUNCTION | (4) MAINTENANCE LEVEL | | | | | (5) TOOLS AND EQUIPMENT REFERENCE CODE | (6) REMARKS CODE | |
|------------------------|--------------------------------------|--------------------------------|--------------------------|----|-------------------|--------------------|-------|----------------------------------------------------|------------------------|--|
| | | | FIELD | | SUSTAINMENT | | | | | |
| | | | UNIT | | DIRECT SUPPORT | GENERAL SUPPORT | DEPOT | | | |
| | | | C | O | F | H | D | | | |
| 00 | CONTAINERIZED LATRINE (CL/CLS) | | | | | | | | | |
| 01 | MODIFIED CARGO CONTAINER | INSPECT SERVICE REPLACE | .2 .5 .2 | | | | | A | | |
| 0101 | MODIFIED FOLDING STEPS | INSPECT REPLACE | .1 .2 | | | | 4 | B | | |
| 0102 | INTERIOR WALLS AND PANELS | INSPECT REPAIR | .1 .1 | | | | | | | |
| 0103 | DISPENSERS | INSPECT REPLACE | .1 .2 | | | | 4 | | | |
| 0104 | CURTAINS | INSPECT REPLACE | .1 .2 | | | | | | | |
| 0105 | CHAINS | REPLACE | .2 | | | | | | | |
| 0106 | FLOOR MAT | INSPECT REPLACE | .1 .5 | | | | 4 | | | |
| 0107 | TIEDOWN PROVISIONS | INSPECT REPLACE | .1 .3 | | | | 4 | | | |
| 0108 | HOOKS AND BRACKETS | INSPECT REPLACE | .1 .2 | | | | 4 | | | |
| 0109 | COUNTERSUNK | INSPECT REPLACE | .1 | | | | | | | |
| 010901 | 4-IN. COUNTERSUNK PLUG | REPLACE | .1 | .1 | | | 5 | C, D | | |
| 010902 | 1 ½-IN. COUNTERSUNK PLUG | REPLACE | .1 | | | | | | | |

Table 1. Maintenance Allocation Chart for CL/CLS – continued.

| (1) GROUP NUMBER | (2) COMPONENT/ ASSEMBLY | (3) MAINTENANCE FUNCTION | (4) MAINTENANCE LEVEL | | | | | (5) TOOLS AND EQUIPMENT REFERENCE CODE | (6) REMARKS CODE |
|------------------------|--------------------------------|--------------------------------|--------------------------|----------|-------------------|--------------------|-------|----------------------------------------------------|------------------------|
| | | | FIELD | | SUSTAINMENT | | | | |
| | | | UNIT | | DIRECT SUPPORT | GENERAL SUPPORT | DEPOT | | |
| | | | C | O | F | H | D | | |
| 0110 | GENDER SIGNS | INSPECT REPLACE | .1 | .1 .2 | | | | 4 | E |
| 011001 | SNAP TIGHT FASTENER | INSPECT REPLACE | .1 | .2 | | | | 4 | E |
| 0111 | ECU OPENING | INSPECT REPLACE | | | | | | | C |
| 011101 | BRACES | INSPECT REPLACE | .1 | .3 | | | | 4 | B |
| 011102 | TIEDOWNS | INSPECT REPLACE | .1 | .2 | | | | 4 | B |
| 011103 | SLAM LATCH | INSPECT REPLACE | .1 | .2 | | | | 4 | B |
| 011104 | BRUSHES | INSPECT | .1 | | | | | | B |
| 0112 | DRAFT INDUCER FAN | INSPECT TEST REPLACE | .1 | .3 .5 | | | | 4 4 | |
| 0113 | EXHAUST FAN | INSPECT TEST REPLACE | .1 | .5 .5 | | | | 4 4 | |
| 0114 | DOOR HINGE AUTO CLOSE | ADJUST REPLACE | | .5 .6 | | | | 4 4 | |
| 0115 | MIRRORS | INSPECT | .1 | | | | | | |
| 02 | ELECTRICAL SYSTEM | | | | | | | | |
| 0201 | POWER ENTRY PANEL | INSPECT | .2 | | | | | | |
| 020101 | POWER INPUT RECEPTACLE | TEST REPLACE | | | .8 1.0 | | | 4 4 | |
| 020102 | WIRING HARNESS | TEST REPLACE | | | .8 .8 | | | 4 4 | |
| 0202 | CIRCUIT BREAKER ASSEMBLY | INSPECT TEST REPLACE | | | | | | | |
| 020201 | PANEL BOX | INSPECT | .2 | | | | | | |

Table 1. Maintenance Allocation Chart for CL/CLS – Continued.

| (1) GROUP NUMBER | (2) COMPONENT/ ASSEMBLY | (3) MAINTENANCE FUNCTION | (4) MAINTENANCE LEVEL | | | | | (5) TOOLS AND EQUIPMENT REFERENCE CODE | (6) REMARKS CODE |
|------------------------|------------------------------------------------------|--------------------------------|--------------------------|----|-------------------|--------------------|-------|----------------------------------------------------|------------------------|
| | | | FIELD | | SUSTAINMENT | | | | |
| | | | UNIT | | DIRECT SUPPORT | GENERAL SUPPORT | DEPOT | | |
| | | | C | O | F | H | D | | |
| 020202 | BREAKERS | INSPECT | .2 | | | | | | |
| | | TEST | | | .8 | | | 4 | |
| | | REPLACE | | | .8 | | | 4 | |
| 020203 | PANEL COVER | INSPECT | .2 | | | | | | |
| 020204 | TOGGLE SWITCH (EXHAUST FAN/ EXTERIOR LIGHT) | TEST | | .5 | | | | | |
| | | REPLACE | | .5 | | | | 4 | |
| 020205 | SWITCH (WATER PUMP SWITCH/ INTERIOR LIGHT) | INSPECT | .2 | | | | | | |
| | | TEST | | .5 | | | | 4 | |
| | | REPLACE | | .5 | | | | 4 | |
| 020206 | SWITCH COVER | INSPECT | .1 | | | | | | |
| | | REPLACE | | .2 | | | | 4 | |
| 0203 | INTERIOR FLUORESCENT LIGHT ASSEMBLY | INSPECT | .2 | | | | | | |
| | | REPLACE | .4 | | | | | | |
| 020301 | FIXTURE | INSPECT | .2 | | | | | | |
| 020302 | BALLAST | INSPECT | | .2 | | | | | |
| | | REPLACE | | .4 | | | | 4 | |
| 020303 | HOUSING | INSPECT | .2 | | | | | | |
| 020304 | FLUORESCENT LIGHT BULBS | INSPECT | .2 | | | | | | |
| | | REPLACE | .3 | | | | | | |
| 020305 | RETAINER CLIPS | INSPECT | .2 | | | | | | |
| 020306 | SAFETY TUBES | INSPECT | .2 | | | | | | |
| 0204 | EXTERIOR INCANDESCENT LIGHT ASSEMBLY | INSPECT | .2 | | | | | | |
| | | TEST | | .5 | | | | 4 | |
| | | REPLACE | | .5 | | | | 4 | |
| 020401 | BULB | REPLACE | | .2 | | | | 4 | |
| 0205 | ELECTRICAL OUTLETS | INSPECT | .2 | | | | | | |
| 020501 | GFCI OUTLET 120V/20A | TEST | | .5 | | | | 4 | |
| | | REPLACE | | .5 | | | | 4 | |
| 020502 | CONVENIENCE OUTLET 120V/120A | TEST | | .5 | | | | 4 | |
| | | REPLACE | | .5 | | | | 4 | |

Table 1. Maintenance Allocation Chart for CL/CLS – continued.

| (1) GROUP NUMBER | (2) COMPONENT/ ASSEMBLY | (3) MAINTENANCE FUNCTION | (4) MAINTENANCE LEVEL | | | | | (5) TOOLS AND EQUIPMENT REFERENCE CODE | (6) REMARKS CODE |
|------------------------|----------------------------------------------------------|-----------------------------------------|--------------------------|----|-------------------|--------------------|-------|----------------------------------------------------|------------------------|
| | | | FIELD | | SUSTAINMENT | | | | |
| | | | UNIT | | DIRECT SUPPORT | GENERAL SUPPORT | DEPOT | | |
| | | | C | O | F | H | D | | |
| 020503 | 20A TWISTLOCK (SUMP OUTLET) | TEST | | .5 | | | | 4 | |
| | | REPLACE | | .5 | | | | 4 | |
| 020504 | 30A, 250V, 2 POLE 3 WIRE GROUNDING (ECU OUTLET) | TEST | | .5 | | | | 4 | |
| | | REPLACE | | .5 | | | | 4 | |
| 020505 | WATER PUMP OUTLET | TEST | | .5 | | | | 4 | |
| | | REPLACE | | .5 | | | | 4 | |
| 0206 | GROUNDING ROD ASSEMBLY | INSPECT | .2 | | | | | | |
| | | REPLACE | .4 | | | | | | |
| 020601 | 3 SECTION GROUNDING ROD | | | | | | | | |
| 020602 | SPLIT-LUG 3-0 | REPLACE | | .2 | | | | 4 | |
| 0207 | POWER CABLES | INSPECT | .2 | | | | | | |
| 03 | WATER SYSTEM | INSPECT SERVICE REPAIR REPLACE | | | | | | | |
| 0301 | FRESH-WATER PIPES | INSPECT REPAIR | .2 | | .7 | | | 2, 4 | |
| 030101 | PVC PIPES | INSPECT REPAIR | .2 | | 1.0 | | | 2, 4 | F |
| 030102 | BACKFLOW PREVENTION DEVICE | INSPECT SERVICE TEST REPLACE | .1 | | .5 .5 .5 | | | | |
| 0302 | WASTEWATER TANK | SERVICE | .3 | .5 | | | | 4 | |
| 0303 | 3K COLLAPSIBLE FABRIC TANK | | | | | | | | G |
| 0304 | 2-IN. BALL VALVE | INSPECT | .2 | | | | | | |
| | | REPLACE | .2 | | | | | | F |
| 0305 | HOSE ASSEMBLY | INSPECT | .2 | | | | | | |
| | | REPLACE | | .2 | | | | | |
| | | SERVICE | .2 | | | | | | |
| 030501 | FRESHWATER HOSES | INSPECT | .2 | | | | | | |
| | | REPLACE | .2 | | | | | | |

Table 1. Maintenance Allocation Chart for CL/CLS – Continued.

| (1) GROUP NUMBER | (2) COMPONENT/ ASSEMBLY | (3) MAINTENANCE FUNCTION | (4) MAINTENANCE LEVEL | | | | | (5) TOOLS AND EQUIPMENT REFERENCE CODE | (6) REMARKS CODE |
|------------------------|-------------------------------------------------------------------|--------------------------------|--------------------------|----|-------------------|--------------------|-------|----------------------------------------------------|------------------------|
| | | | FIELD | | SUSTAINMENT | | | | |
| | | | UNIT | | DIRECT SUPPORT | GENERAL SUPPORT | DEPOT | | |
| | | | C | O | F | H | D | | |
| 030502 | WASTEWATER HOSES | INSPECT | .2 | | | | | | |
| | | REPLACE | .2 | | | | | | |
| 030503 | 2-IN. X 1 ½-IN. REDUCER | INSPECT | .2 | | | | | | |
| | | REPLACE | .2 | | | | | | |
| 0306 | VALVE ASSEMBLY INLINE | INSPECT | | | | | | | |
| | | REPLACE | | | | | | | |
| 030601 | BALL VALVES | INSPECT | .2 | | | | | F | |
| | | REPLACE | | | 1.0 | | | | |
| 030602 | BOILER DRAIN VALVES (COMMODE, HOT WATER HEATER, SINK) | INSPECT | .2 | | | | | | |
| | | REPLACE | | .3 | .8 | | | 2, 4 | |
| 04 | ENVIRONMENTAL CONTROL UNIT (ECU) | TEST | | .5 | | | | | |
| | | REPLACE | | .6 | .8 | | | 4 | |
| 0401 | ENVIRONMENTAL CONTROL UNIT (ECU) FILTER | SERVICE | .4 | | | | | | |
| | | REPLACE | .4 | | | | | | |
| 0402 | ENVIRONMENTAL CONTROL UNIT (ECU) CARRIER | INSPECT | .2 | | | | | | |
| | | REPLACE | | .5 | 1.0 | | | 1, 4 | |
| 05 | COMMODE ASSEMBLY | INSPECT | .2 | | | | | | |
| | | SERVICE | .2 | | | | | | |
| 0501 | AQUA MAGIC COMMODE | INSPECT | .2 | | | | | | |
| | | REPLACE | | .6 | | | | 4 | |
| 0502 | BRAVURA COMMODE | INSPECT | .2 | | | | | | |
| | | REPLACE | | .6 | | | | 4 | |
| 050201 | PEDAL | REPLACE | | .6 | | | | 4 | |
| 050202 | SEAL CLOSET FLANGE | REPLACE | | .6 | | | | 4 | |
| 050203 | WATER MODULE SERVICE PACKAGE | REPLACE | | .5 | | | | 4 | |
| 06 | URINAL ASSEMBLY | | | | | | | | |

Table 1. Maintenance Allocation Chart for CL/CLS – continued.

| (1) GROUP NUMBER | (2) COMPONENT/ ASSEMBLY | (3) MAINTENANCE FUNCTION | (4) MAINTENANCE LEVEL | | | | | (5) TOOLS AND EQUIPMENT REFERENCE CODE | (6) REMARKS CODE |
|------------------------|----------------------------------------------|--------------------------------|--------------------------|-----|-------------------|--------------------|-------|----------------------------------------------------|------------------------|
| | | | FIELD | | SUSTAINMENT | | | | |
| | | | UNIT | | DIRECT SUPPORT | GENERAL SUPPORT | DEPOT | | |
| | | | C | O | F | H | D | | |
| 0601 | P-TRAP | INSPECT | .1 | | | | | | |
| | | SERVICE | | .2 | | | | 4 | |
| | | REPLACE | | .3 | | | | 4 | |
| 0602 | URINAL STRAINER | INSPECT | .1 | | | | | | |
| | | REPLACE | .1 | | | | | | |
| 07 | FAUCETS | INSPECT | .2 | | | | | | |
| | | SERVICE | | .7 | | | | 4 | |
| | | REPLACE | | 1.0 | | | | 4 | |
| 08 | SINK STAND | INSPECT | .2 | | | | | | |
| 0801 | CABINET DOORS | REPLACE | .2 | | | | | | |
| 09 | WATER HEATER | INSPECT | .2 | | | | | | |
| 0901 | 6-GALLON WATER HEATER | TEST | | .5 | | | | 4 | |
| | | REPLACE | | .7 | | | | 4 | |
| 0902 | HEATING ELEMENT | REPLACE | | .7 | | | | 4 | |
| 0903 | TIEDOWN (STRAPPING) | INSPECT | .2 | | | | | | |
| | | REPLACE | | .3 | | | | 4 | |
| 10 | 30 GPM INTERNAL WATER PUMP ASSEMBLY | INSPECT | .2 | | | | | | |
| | | REPAIR | | | .8 | | | | B |
| 1001 | 30 GPM WATER PUMP | REPLACE | | | .8 | | | 2, 4 | B |
| 100101 | PUMP MOTOR | TEST | .6 | | | | | 4 | B |
| 1002 | PRESSURE GAUGE | INSPECT | .2 | | | | | 4 | B |
| | | REPLACE | .6 | | | | | 4 | |
| 1003 | PRESSURE SWITCH | TEST | .3 | | | | | 4 | B |
| | | ADJUST | .6 | | | | | 4 | |
| | | REPLACE | .6 | | | | | 4 | |
| 100301 | POWER CORD | TEST | .6 | | | | | 4 | B |
| | | REPLACE | .6 | | | | | 4 | |
| 1004 | PRESSURE TANK | TEST | .6 | | | | | 4 | B |
| | | REPLACE | .6 | | | | | 4 | |
| | | SERVICE | .5 | | | | | | |

Table 1. Maintenance Allocation Chart for CL/CLS – Continued.

| (1) GROUP NUMBER | (2) COMPONENT/ ASSEMBLY | (3) MAINTENANCE FUNCTION | (4) MAINTENANCE LEVEL | | | | | (5) TOOLS AND EQUIPMENT REFERENCE CODE | (6) REMARKS CODE |
|------------------------|------------------------------------|--------------------------------|--------------------------|----|-------------------|--------------------|-------|----------------------------------------------------|------------------------|
| | | | FIELD | | SUSTAINMENT | | | | |
| | | | UNIT | | DIRECT SUPPORT | GENERAL SUPPORT | DEPOT | | |
| | | | C | O | F | H | D | | |
| 1005 | 1 ½-IN. Y- STRAINER | INSPECT | | .3 | | | | 4 | B |
| | | SERVICE | | .5 | | | | 2, 4 | |
| | | REPLACE | | .7 | | | | 2, 4 | |
| 1006 | QD PRIMING PLUG | INSPECT | .1 | | | | | | B |
| | | REPLACE | | .3 | | | | 2, 4 | |
| 11 | SUMP PUMP | TEST | | .6 | | | | 4 | |
| | | REPLACE | | .6 | | | | 4 | |
| 12 | WASTEWATER VALVE ASSEMBLY | INSPECT | .2 | | | | | | C, D |
| | | REPLACE | | .4 | .4 | | | 2, 3, 4, 5 | |
| 13 | COLD WEATHER EQUIPMENT | | | | | | | | B |
| 1301 | HEAT TRACE ASSEMBLY | INSPECT | .2 | | | | | | B |
| | | TEST | | .3 | | | | 4 | |
| | | REPLACE | .2 | | | | | 4 | |
| 1302 | RECIRCULATING HOSE ASSEMBLY | INSPECT | .2 | | | | | | B |
| | | REPLACE | .2 | | | | | | |
| 1303 | BAG HEATER ASSEMBLY | INSPECT | .2 | | | | | | B |
| | | TEST | | .2 | | | | 4 | |
| | | REPLACE | .2 | | | | | | |
| 1304 | EXTENSION CORD, 25-FT., 120V | INSPECT | .2 | | | | | | B |
| | | TEST | | .2 | | | | 4 | |
| | | REPLACE | .2 | | | | | | |
| 1305 | HEAT TRACE CABLE | INSPECT | .2 | | | | | | B |
| | | TEST | | .2 | | | | 4 | |
| | | REPLACE | .2 | | | | | | |
| 1306 | DARK COVER | INSPECT | .2 | | | | | | B |
| | | REPLACE | .3 | | | | | | |

Table 2. Tools and Test Equipment Requirements for CL/CLS.

| (1) TOOL OR TEST EQUIPMENT REFERENCE CODE | (2) MAINTENANCE LEVEL | (3) NOMENCLATURE | (4) NATIONAL STOCK NUMBER | (5) TOOL NUMBER |
|-------------------------------------------------------|-----------------------------|------------------------------------------|--------------------------------------|--------------------|
| 1 | F | DRILL SET, TWIST, 1/16-IN THROUGH 1/2-IN | 5133-00-293-0983 | SC 5180-90-CL-N26 |
| 2 | F | PIPE WRENCH, 10-IN | 5120-00-299-1477 | |
| 3 | O | STRAP WRENCH | 5120-00-262-8491 | |
| 4 | F | TEST KIT, BACKFLOW PREVENTER | 7320-01-177-3175 | |
| 5 | O, F | TOOL KIT, GENERAL MECHANIC'S: AUTOMOTIVE | 5180-00-177-7033 5180-00-483-0249 | |
| 6 | O, F | WASTE WATER VACUUM TANK/TRAILER (WWVT/T) | 4630-01-414-9253 | |

Table 3. Remarks for CL/CLS.

| (1) REMARKS CODE | (2) REMARKS |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A | PERFORM MAINTENANCE OF THE CONTAINER AS DIRECTED IN TM 55-8115-204-234&P. |
| B | CLS ONLY. |
| C | DIFFERENT PROCEDURES FOR CL AND CLS. |
| D | REQUIRES WASTE WATER VACUUM TANK/TRAILER (WWVT/T) OR OTHER APPROVED MEANS OF EVACUATING HOLDING TANK (CL only). |
| E | REPLACEMENT PROCEDURE IS FOR HORIZONTAL GENDER SIGNS AS EQUIPPED ON CLS. UNSERVICABLE VERTICAL GENDER SIGNS ON CL ARE TO BE REPLACED WITH HORIZONTAL TYPE. |
| F | REQUIRES PVC COUPLINGS, SOLVENT, AND CEMENT. |
| G | PERFORM MAINTENANCE OF THE 3K COLLAPSIBLE FABRIC TANK AS DIRECTED IN TM 10-5430-237-12&P. |
| H | CL ONLY. |

OPERATOR, UNIT, AND DIRECT SUPPORT MAINTENANCE**CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)**

REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) INTRODUCTION

INTRODUCTION**SCOPE**

This RPSTL lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of operator, unit and direct support maintenance of the Containerized Latrine (CL) and the Containerized Latrine System (CLS). It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the source, maintenance, and recoverability (SMR) codes.

GENERAL

In addition to the Introduction work package, this RPSTL is divided into the following work packages.

1. **Repair Parts List Work Packages.** Work packages containing lists of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. These work packages also include parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Sending units, brackets, filters, and bolts are listed with the component they mount on. Bulk materials are listed by item name in FIG. BULK at the end of the work packages. Repair parts kits are listed separately in their own functional group and work package. Repair parts for reparable special tools are also listed in a separate work package. Items listed are shown on the associated illustrations.
2. **Special Tools List Work Packages.** Work packages containing lists of special tools, special TMDE, and special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in the DESCRIPTION AND USABLE ON CODE (UOC) column). Tools that are components of common tool sets and/or Class VII are not listed.
3. **Cross-Reference Indexes Work Packages.** There are two cross-reference indexes work packages in this RPSTL: the National Stock Number (NSN) Index work package, and the Part Number (P/N) Index work package. The National Stock Number Index work package refers you to the figure and item number. The Part Number Index work package refers you to the figure and item number.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES

ITEM NO. (Column (1)). Indicates the number used to identify items called out in the illustration.

SMR CODE (Column (2)). The SMR code containing supply/requisitioning information, maintenance level authorization criteria, and disposition instruction, as shown in the following breakout:

| <u>Source Code</u> | <u>Maintenance Code</u> | <u>Recoverability Code</u> |
|-------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------|
| <u>XX</u> | <u>XX</u> | <u>X</u> |
| 1st two positions: How to get an item. | 3rd position: who can install, replace, or use the item. | 4th position: Who can do complete repair* on the item. |
| | | 5th position: Who determines disposition action on unserviceable items. |

*Complete Repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

Source Code: The source code tells you how you get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

| <u>Source Code</u> | <u>Application/Explanation</u> |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PA | Stock items; use the applicable NSN to requisition/request items with these source codes. They are authorized to the level indicated by the code entered in the 3rd position of the SMR code. |
| PB | |
| PC | |
| PD | |
| PE | |
| PF | |
| PG | |
| | NOTE |
| | Items coded PC are subject to deterioration. |
| KD | Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance level indicated in the 3rd position of the SMR code. The complete kit must be requisitioned and applied. |
| KF | |
| KB | |

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>MO-Made at unit/AVUM level MF-Made at DS/AVIM level MH-Made at GS level ML-Made at SRA MD-Made at depot</p> | <p>Items with these codes are not to be requisitioned/requested individually. They must be made from bulk material which is identified by the P/N in the DESCRIPTION AND USABLE ON CODE (UOC) column and listed in the bulk material group work package of the RPSTL. If the item is authorized to you by the 3rd position code of the SMR code, but the source code indicates it is made at higher level, order the item from the higher level of maintenance.</p> |
| <p>AO-Assembled by unit/AVUM level AF-Assembled by DS/AVIM level AH-Assembled by GS level AL-Assembled by SRA AD-Assembled by depot</p> | <p>Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the 3rd position of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.</p> |
| <p>XA</p> | <p>Do not requisition an "XA" coded item. Order the next higher assembly. (Refer to NOTE below.)</p> |
| <p>XB</p> | <p>If an item is not available from salvage, order it using the CAGEC and P/N.</p> |
| <p>XC</p> | <p>Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer's P/N.</p> |
| <p>XD</p> | <p>Item is not stocked. Order an XD-coded item through normal supply channels using the CAGEC and P/N given, if no NSN is available.</p> |

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes except for those items source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

Maintenance Code. Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

Third Position. The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to the following levels of maintenance:

| <u>Maintenance Code</u> | <u>Application/Explanation</u> |
|-------------------------|-----------------------------------------------------------------|
| C - | Crew or operator maintenance done within unit/AVUM maintenance. |

- O - Unit level/AVUM maintenance can remove, replace, and use the item.
- F - Direct support/AVIM maintenance can remove, replace, and use the item.
- H - General support maintenance can remove, replace, and use the item.
- L - Specialized repair activity can remove, replace, and use the item.
- D - Depot can remove, replace, and use the item.

Fourth Position. The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (perform all authorized repair functions).

NOTE

Some limited repair may be done on the item at a lower level of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.

| <u>Maintenance Code</u> | <u>Application/Explanation</u> |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| O - | Unit/AVUM is the lowest level that can do complete repair of the item. |
| F - | Direct support/AVIM is the lowest level that can do complete repair of the item. |
| H - | General support is the lowest level that can do complete repair of the item. |
| L - | Specialized repair activity (enter specialized repair activity designator) is the lowest level that can do complete repair of the item. |
| D - | Depot is the lowest level that can do complete repair of the item. |
| Z - | Nonreparable. No repair is authorized. |
| B - | No repair is authorized. No parts or special tools are authorized for maintenance of "B" coded item. However, the item may be reconditioned by adjusting, lubricating, etc., at the user level. |

Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is shown in the fifth position of the SMR code as follows:

| <u>Recoverability Code</u> | <u>Application/Explanation</u> |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Z - | Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code. |
| O - | Reparable item. When uneconomically repairable, condemn and dispose of the item at the unit level. |
| F - | Reparable item. When uneconomically repairable, condemn and dispose of the item at the direct support level. |
| H - | Reparable item. When uneconomically repairable, condemn and dispose of the item at the general support level. |
| D - | Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized below depot level. |
| L - | Reparable item. Condemnation and disposal not authorized below Specialized Repair Activity (SRA). |
| A - | Item requires special handling or condemnation procedures because of specific reasons (such as precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions. |

NSN (Column (3)). The NSN for the item is listed in this column.

CAGEC (Column (4)). The Commercial and Government Entity Code (CAGEC) is a five-digit code which is used to identify the manufacturer, distributor, or Government agency/activity that supplies the item.

PART NUMBER (Column (5)). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different P/N from the number listed.

DESCRIPTION AND USABLE ON CODE (UOC) (Column (6)). This column includes the following information:

1. The federal item name, and when required, a minimum description to identify the item.
2. P/Ns of bulk materials are referenced in this column in the line entry to be manufactured or fabricated.

3. Hardness Critical Item (HCI). A support item that provides the equipment with special protection from electromagnetic pulse (EMP) damage during a nuclear attack.
4. The statement END OF FIGURE appears just below the last item description in column (6) for a given figure in both the repair parts list and special tools list work packages.

QTY (Column (7)). The QTY (quantity per figure) column indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column instead of a quantity indicates that the quantity is variable and quantity may change from application to application.

EXPLANATION OF CROSS-REFERENCE INDEXES WORK PACKAGES FORMAT AND COLUMNS

1. National Stock Number (NSN) Index Work Package.

STOCK NUMBER Column. This column lists the NSN in National item identification number (NIIN) sequence. The NIIN consists of the last nine digits of the NSN.

NSN
 (e.g., 5385-01-574-1476)
 NIIN

When using this column to locate an item, ignore the first four digits of the NSN. However, the complete NSN should be used when ordering items by stock number.

FIG. Column. This column lists the number of the figure where the item is identified/located. The figures are in numerical order in the repair parts list and special tools list work packages.

ITEM Column. The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

2. Part Number (P/N) Index Work Package. P/Ns in this index are listed in ascending alphanumeric sequence (vertical arrangement of letter and number combinations which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

PART NUMBER Column. Indicates the P/N assigned to the item.

FIG. Column. This column lists the number of the figure where the item is identified/located in the repair parts list and special tools list work packages.

ITEM Column. The item number is the number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

SPECIAL INFORMATION

UOC. The UOC appears in the lower left corner of the Description Column heading. Usable on codes are shown as "UOC: ..." in the Description Column (justified left) on the first line under the applicable item/nomenclature. Uncoded items are applicable to all models. Identification of the UOCs used in the RPSTL are:

| <u>Code</u> | <u>Used On</u> |
|-------------|-------------------------------------------|
| FTA | Containerized Latrine (CL) |
| FRV | Containerized Latrine System (CLS), Green |
| FUG | Containerized Latrine System (CLS), Tan |

Fabrication Instructions. Bulk materials required to manufacture items are listed in the bulk material functional group of this RPSTL. Part numbers for bulk material are also referenced in the Description Column of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found in TM 10-4510-209-13&P.

Index Numbers. Items which have the word BULK in the figure column will have an index number shown in the item number column. This index number is a cross-reference between the NSN / P/N index work packages and the bulk material list in the repair parts list work package.

HOW TO LOCATE REPAIR PARTS

1. When NSNs or P/Ns Are Not Known.

First. Using the table of contents, determine the assembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and lists are divided into the same groups.

Second. Find the figure covering the functional group or the subfunctional group to which the item belongs.

Third. Identify the item on the figure and note the number(s).

Fourth. Look in the repair parts list work packages for the figure and item numbers. The NSNs and part numbers are on the same line as the associated item numbers.

2. When NSN Is Known.

First. If you have the NSN, look in the STOCK NUMBER column of the NSN index work package. The NSN is arranged in NIIN sequence. Note the figure and item number next to the NSN.

Second. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

3. When P/N Is Known.

First. If you have the P/N and not the NSN, look in the PART NUMBER column of the P/N index work package. Identify the figure and item number.

Second. Look up the item on the figure in the applicable repair parts list work package.

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

MODIFIED CARGO CONTAINER

REPAIR PARTS LIST

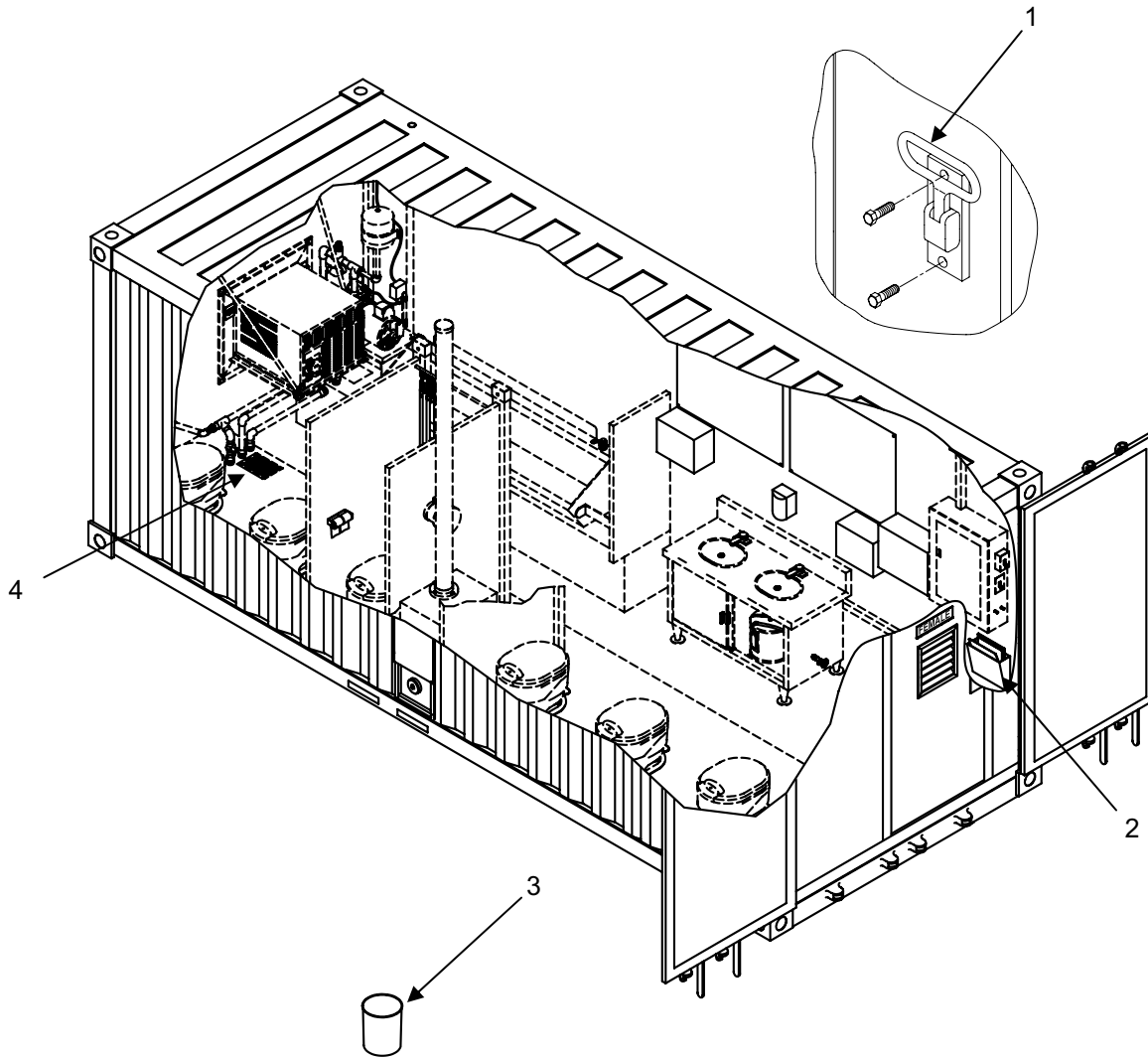


Figure 1. Modified Cargo Container

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|----------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 01 MODIFIED CARGO CONTAINER | |
| | | | | | FIG. 1 MODIFIED CARGO CONTAINER | |
| 1 | PAOZZ | 5340-01-530-5187 | 1E045 | 600-ZINC | HAND GRIP, FOLDING UOC: FRV, FUG | 6 |
| 2 | XBOZZ | | 0U5N7 | 46512040 | DOCUMENT HOLDER | 1 |
| 3 | PAOZZ | 7520-00-205-1857 | 58536 | A-A-182 | WASTE PAPER BASKET | 1 |
| 4 | PAOZZ | 7220-00-205-0389 | 88900 | 22806-000-00 | DECK COVERING, LIGHTWEIGHT | 18 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

DISPENSERS

REPAIR PARTS LIST

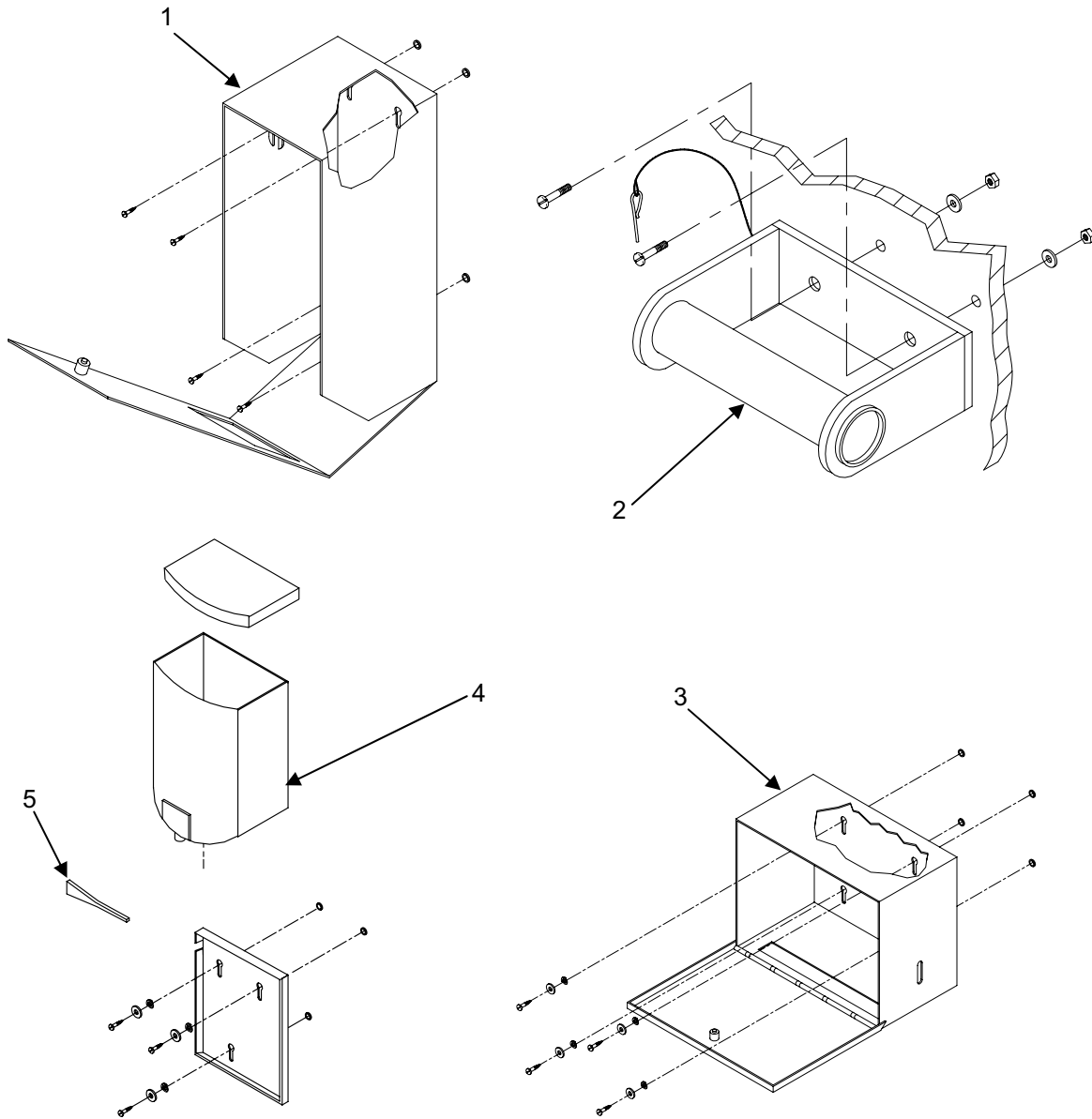


Figure 2. Dispensers

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 0103 DISPENSERS | |
| | | | | | FIG. 2 DISPENSERS | |
| 1 | XBOZZ | | 39428 | 2862K22 | DISPENSER, TOILET PAPER UOC: FTA | 6 |
| 2 | XBOZZ | | 0U5N7 | 46511013 | DISPENSER, TOILET PAPER UOC: FRV, FUG | 6 |
| 3 | PAOZZ | 4510-00-224-8549 | 1CMY5 | B-200-W | DISPENSER, PAPER TOWEL..... | 2 |
| 4 | XBOZZ | | 6W732 | B-40 | DISPENSER, SOAP | 1 |
| 5 | XBOZZ | | 6W732 | 27-17 | . KEY, SOAP DISPENSER | 1 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

CURTAINS

REPAIR PARTS LIST

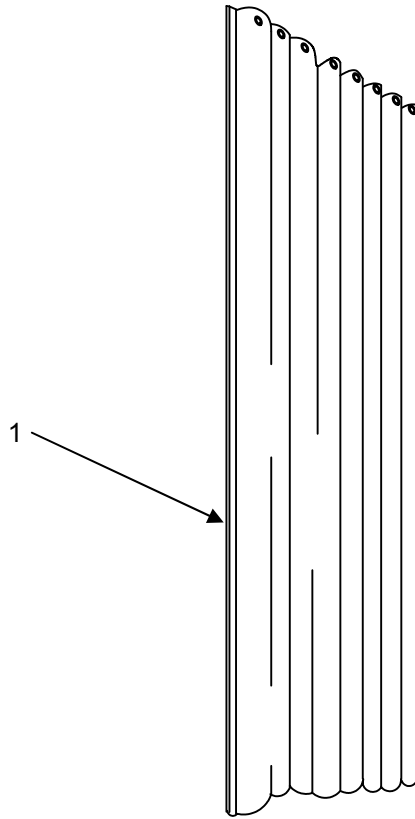


Figure 3. Curtains

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 0104 CURTAINS | |
| | | | | | FIG. 3 CURTAINS | |
| 1 | PAOZZ | 7230-01-530-5895 | 6L711 | CURTAIN45X63 | CURTAIN, LAVATORY, WHITE, 45 IN X 63 IN | 6 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

CHAINS

REPAIR PARTS LIST

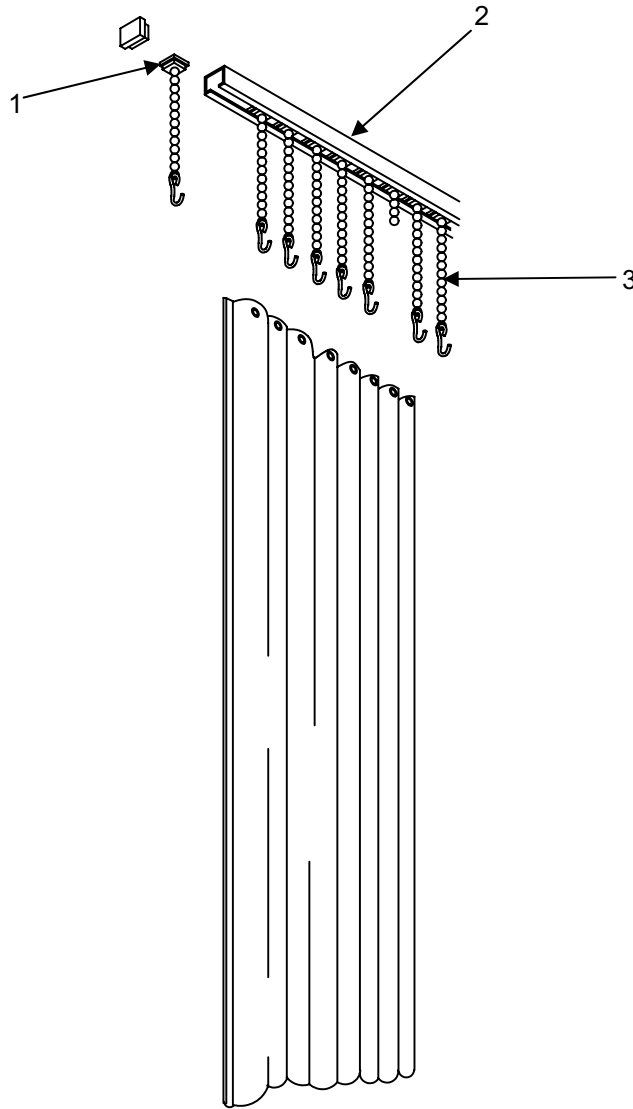


Figure 4. Chains

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 0105 CHAINS | |
| | | | | | FIG. 4 CHAINS | |
| 1 | PAOZZ | 7230-01-530-6331 | 6L711 | IFC-100 | CURTAIN CARRIERS..... | 54 |
| 2 | XBOZZ | | 6L711 | IFC-98 | CURTAIN TRACK..... | 1 |
| 3 | PAOZZ | 4010-01-530-4764 | 6L711 | IFC-006 | 6-IN DROP CHAINS | 54 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

FLOOR MAT

REPAIR PARTS LIST

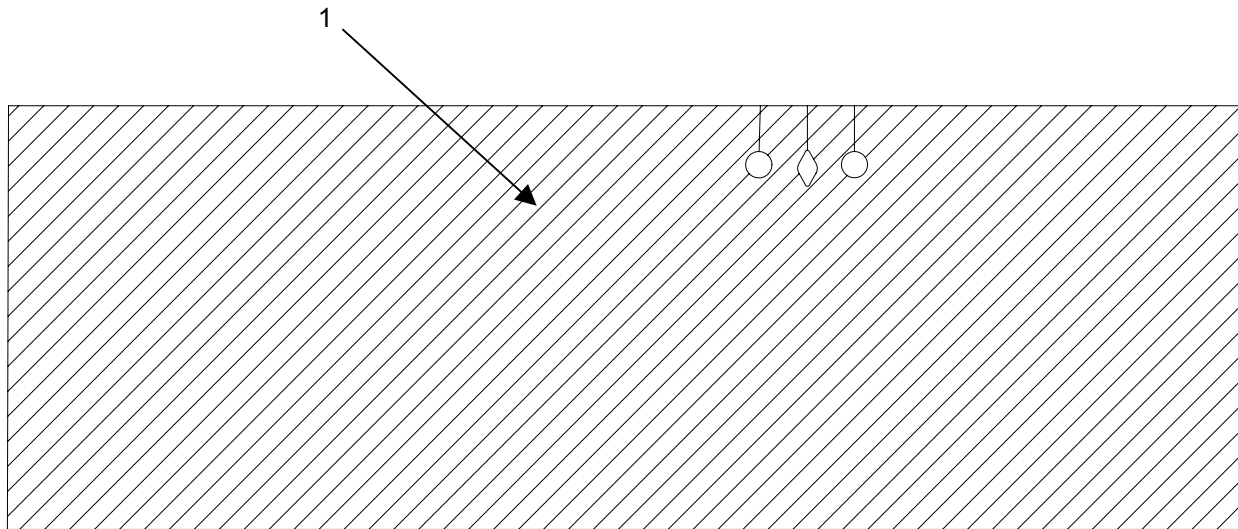


Figure 5. Floor Mat

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 0106 FLOOR MAT | |
| | | | | | FIG. 5 FLOOR MAT | |
| 1 | MOOZZ | 7220-00-254-4240 | 80063 | SC-C-539500-8 | MAT, FLOOR, MAKE FROM BULK MATERIAL..... | 1 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

TIEDOWN PROVISIONS

REPAIR PARTS LIST

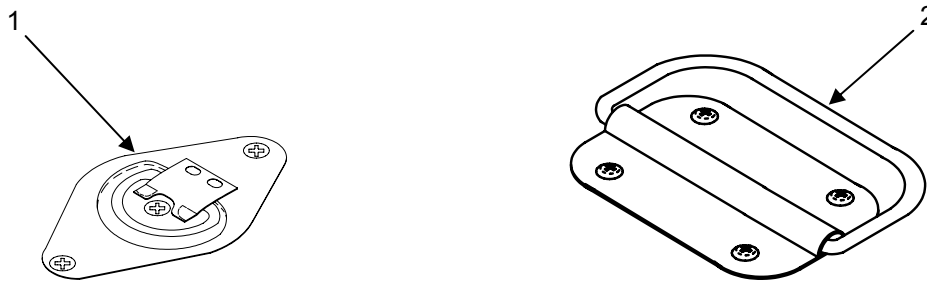


Figure 6. Tiedown Provisions

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 0107 TIEDOWN PROVISIONS | |
| | | | | | FIG. 6 TIEDOWN PROVISIONS | |
| 1 | PAOZZ | 5340-01-530-5155 | 1E045 | AH170ZN | TIE DOWN PROVISION, RECESSED..... | 3 |
| 2 | PAOZZ | 5340-01-317-0152 | 03007 | NHSS1207 | HANDLE, BAIL..... | 4 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

HOOKS AND BRACKETS

REPAIR PARTS LIST

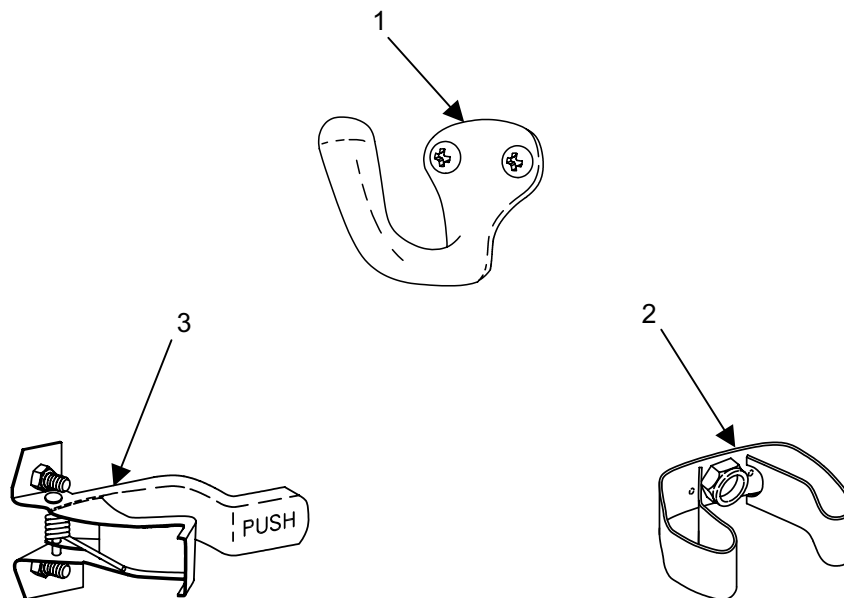


Figure 7. Hooks and Brackets

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|-------------------------------|--------------------|------------|--------------|-----------------------|------------------------------------------------|------------|
| GROUP 0108 HOOKS AND BRACKETS | | | | | | |
| FIG. 7 HOOKS AND BRACKETS | | | | | | |
| 1 | XBOZZ | | 39428 | 1760A6 | CLOTHING HOOK..... | 6 |
| 2 | XBOZZ | | 39428 | 1723A24 | TOOL HOLDER, SPRING ACTION 1 IN..... | 2 |
| 3 | XBOZZ | | 39428 | 17765A19 | TOOL HOLDER, SPRING ACTION 1 ½ IN..... | 2 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

COUNTERSUNK PLUGS

REPAIR PARTS LIST

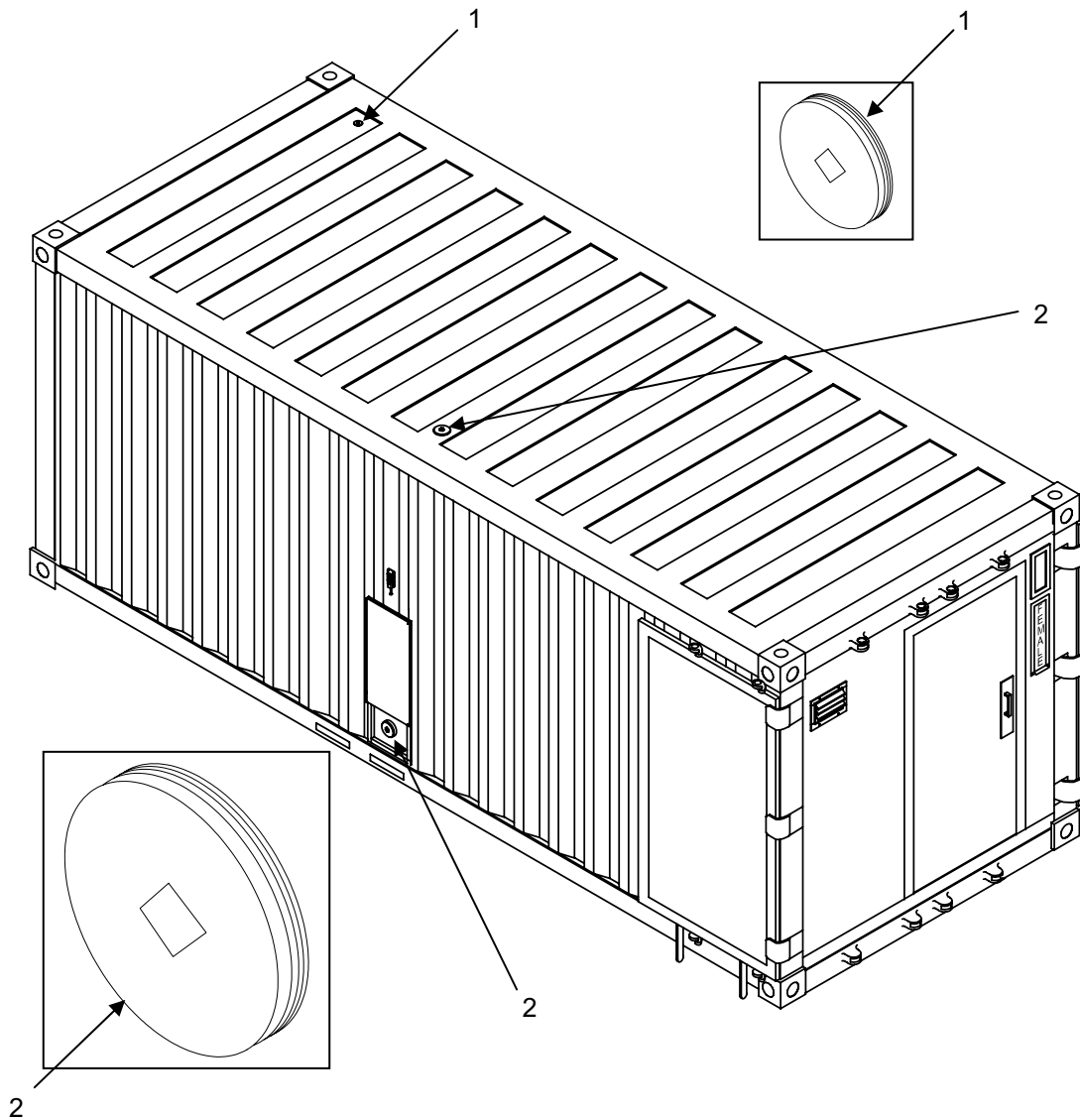


Figure 8. Countersunk Plugs

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 0109 COUNTERSUNK PLUGS | |
| | | | | | FIG. 8 COUNTERSUNK PLUGS | |
| 1 | PAOZZ | 4730-01-530-4891 | 1PTU4 | 1852 | PLUG, 1 1/2-INCH | 1 |
| 2 | PAOZZ | 4730-01-530-4814 | 1PTU4 | 4BCSP | PLUG, 4-INCH | 2 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

GENDER SIGNS

REPAIR PARTS LIST

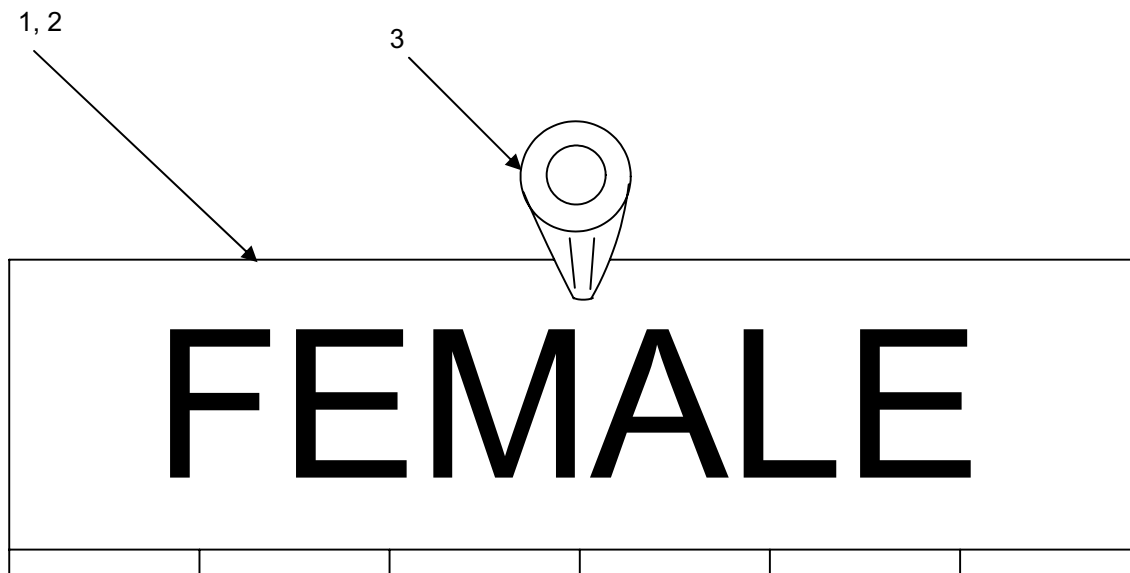


Figure 9. Gender Signs

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 0110 GENDER SIGNS | |
| | | | | | FIG. 9 GENDER SIGNS | |
| 1 | XBOZZ | | 0U5N7 | 46511010-1 | SIGN ASSEMBLY, GREEN UOC: FRV..... | 1 |
| 2 | XBOZZ | | 0U5N7 | 46511010-2 | SIGN ASSEMBLY, TAN UOC: FUG..... | 1 |
| 3 | XBOZZ | | 39428 | 13295A72 | SIGN LATCH..... | 1 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)

ECU OPENING

REPAIR PARTS LIST

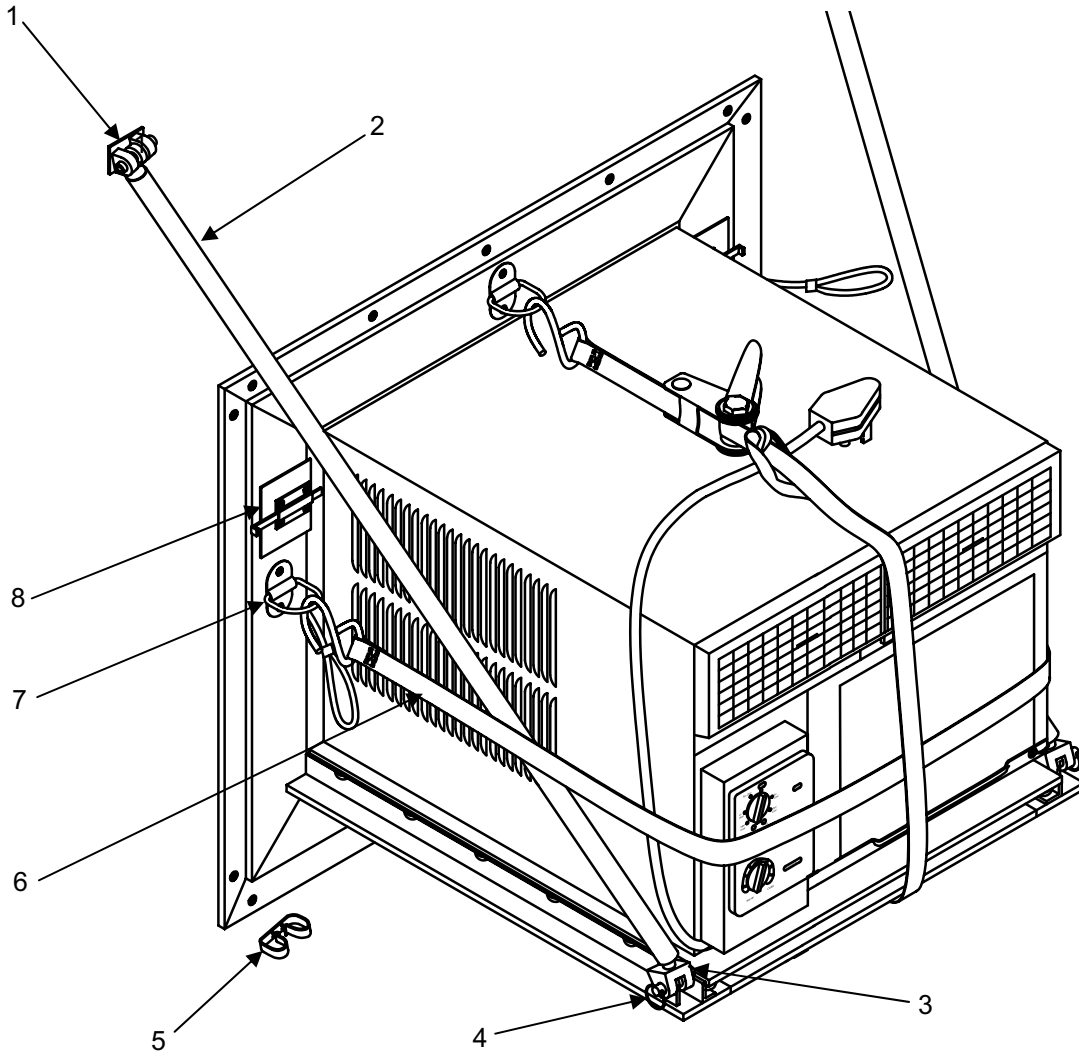


Figure 10. ECU Opening

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|--------------------------------------------------------|------------|
| | | | | | GROUP 0111 ECU OPENING | |
| | | | | | FIG. 10 ECU OPENING | |
| 1 | XB0ZZ | | 39428 | 59915K24 | ROD END UOC: FRV, FUG | 2 |
| 2 | XB0ZZ | | 0U5N7 | 46511037 | AC SUPPORT TUBE UOC: FRV, FUG | 2 |
| 3 | XB0ZZ | | 0U5N7 | 46511036 | CLEVIS WELDMENT UOC: FRV, FUG | 2 |
| 4 | PAOZZ | 5315-01-530-5063 | 39428 | 94975A235 | PIN, QUICK RELEASE, W/ LANYARD UOC: FRV, FUG | 2 |
| 5 | XB0ZZ | | 39428 | 1723A24 | TOOL HOLDER, SPRING ACTION 1 IN UOC: FRV, FUG | 2 |
| 6 | PAOZZ | 3990-01-530-4190 | 1B6P7 | 60103 | STRAP, TIEDOWN, 1-INCH UOC: FRV, FUG | 3 |
| 7 | XB0ZZ | | 39428 | 31665T3 | TIEDOWN PROVISION UOC: FRV, FUG | 3 |
| 8 | PAOZZ | 5340-01-205-9544 | 19220 | 5597 | LATCH, THUMB UOC: FRV, FUG | 2 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

DRAFT INDUCER FAN

REPAIR PARTS LIST

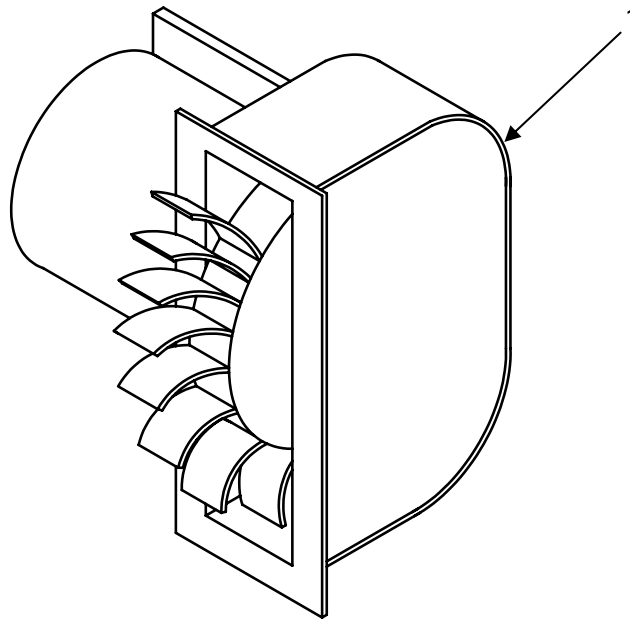


Figure 11. Draft Inducer Fan

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 0112 DRAFT INDUCER FAN | |
| | | | | | FIG. 11 DRAFT INDUCER FAN | |
| 1 | PAOZZ | 4140-01-530-5162 | 25795 | 4C730 | DRAFT INDUCER, INLINE..... | 1 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

EXHAUST FAN

REPAIR PARTS LIST

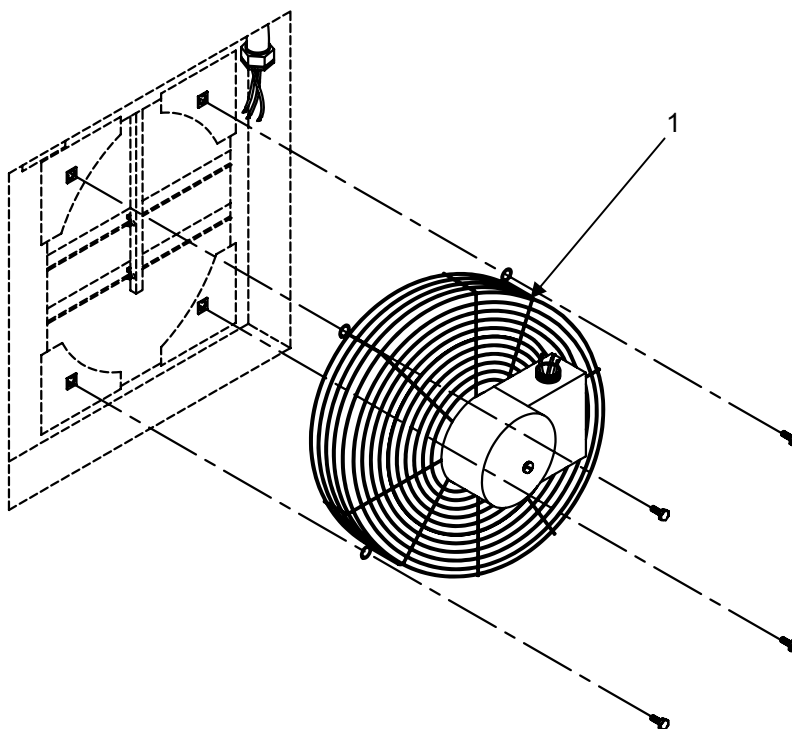


Figure 12. Exhaust Fan

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|-----------------------------------------------------------------|------------|
| | | | | | GROUP 0113 EXHAUST FAN | |
| | | | | | FIG. 12 EXHAUST FAN | |
| 1 | PAOZZ | 4140-01-530-5122 | 25795 | 5C529 | FAN VENTILATING, SHUTTER MOUNTED, 10-INCH UOC: FTA | 1 |
| 1 | PAOZZ | 4140-00-763-6527 | 25795 | 2C819 | FAN VENTILATING, SHUTTER MOUNTED, 10-INCH UOC: FRV, FUG..... | 1 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

DOOR HINGE AUTO CLOSE

REPAIR PARTS LIST

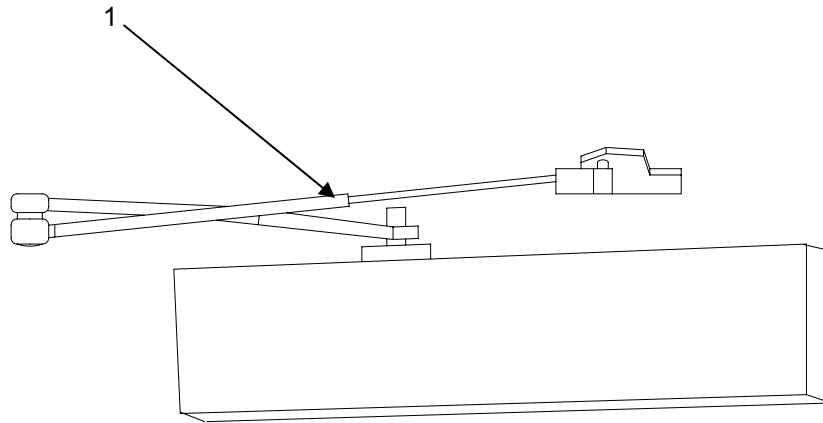


Figure 13. Door Hinge Auto Close

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 0114 DOOR HINGE AUTO CLOSE | |
| | | | | | FIG. 13 DOOR HINGE AUTO CLOSE | |
| 1 | PAOZZ | 5340-01-530-5164 | 42209 | 1430-UH-TBEN | DOOR CLOSER..... | 1 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

MIRRORS

REPAIR PARTS LIST

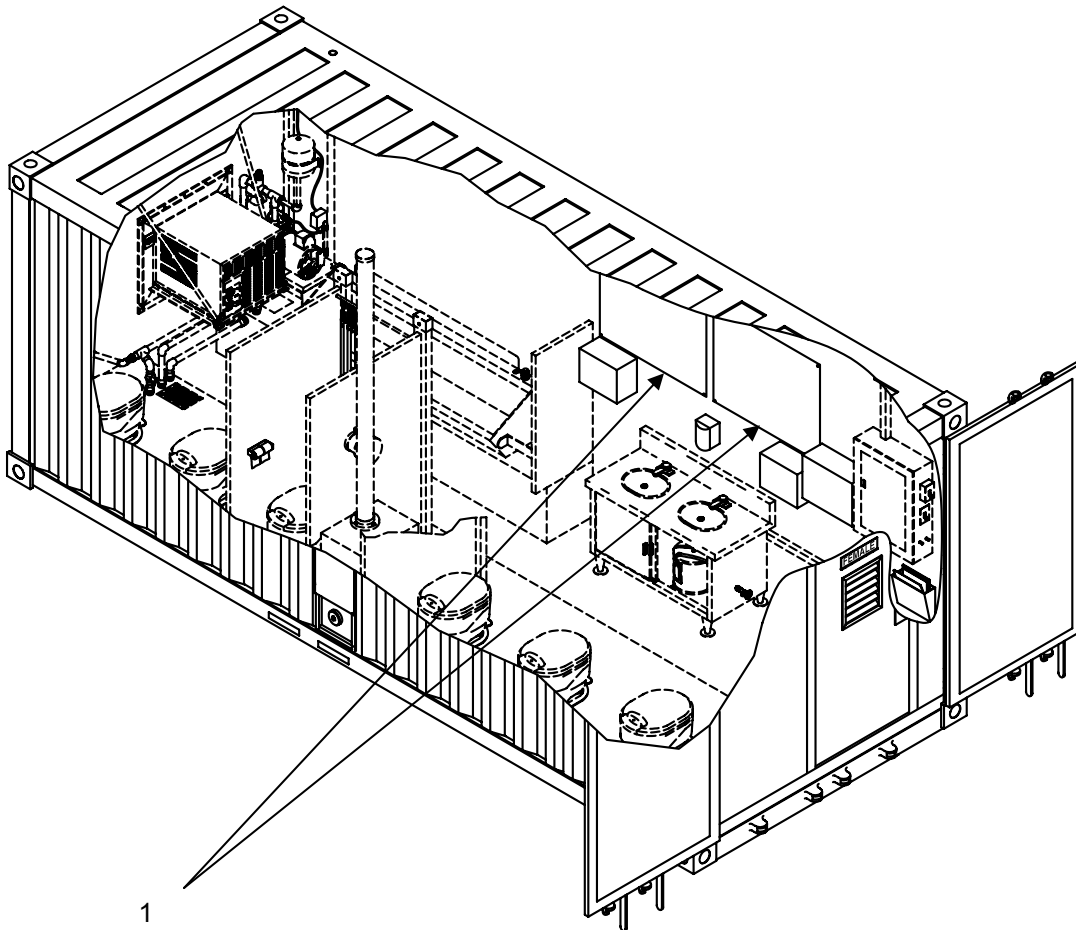


Figure 14. Mirrors

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 0115 MIRRORS | |
| | | | | | FIG. 14 MIRRORS | |
| 1 | PAOZZ | 2540-01-530-4649 | 0REX9 | U701-S-1824 | MIRROR | 2 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

POWER ENTRY PANEL

REPAIR PARTS LIST

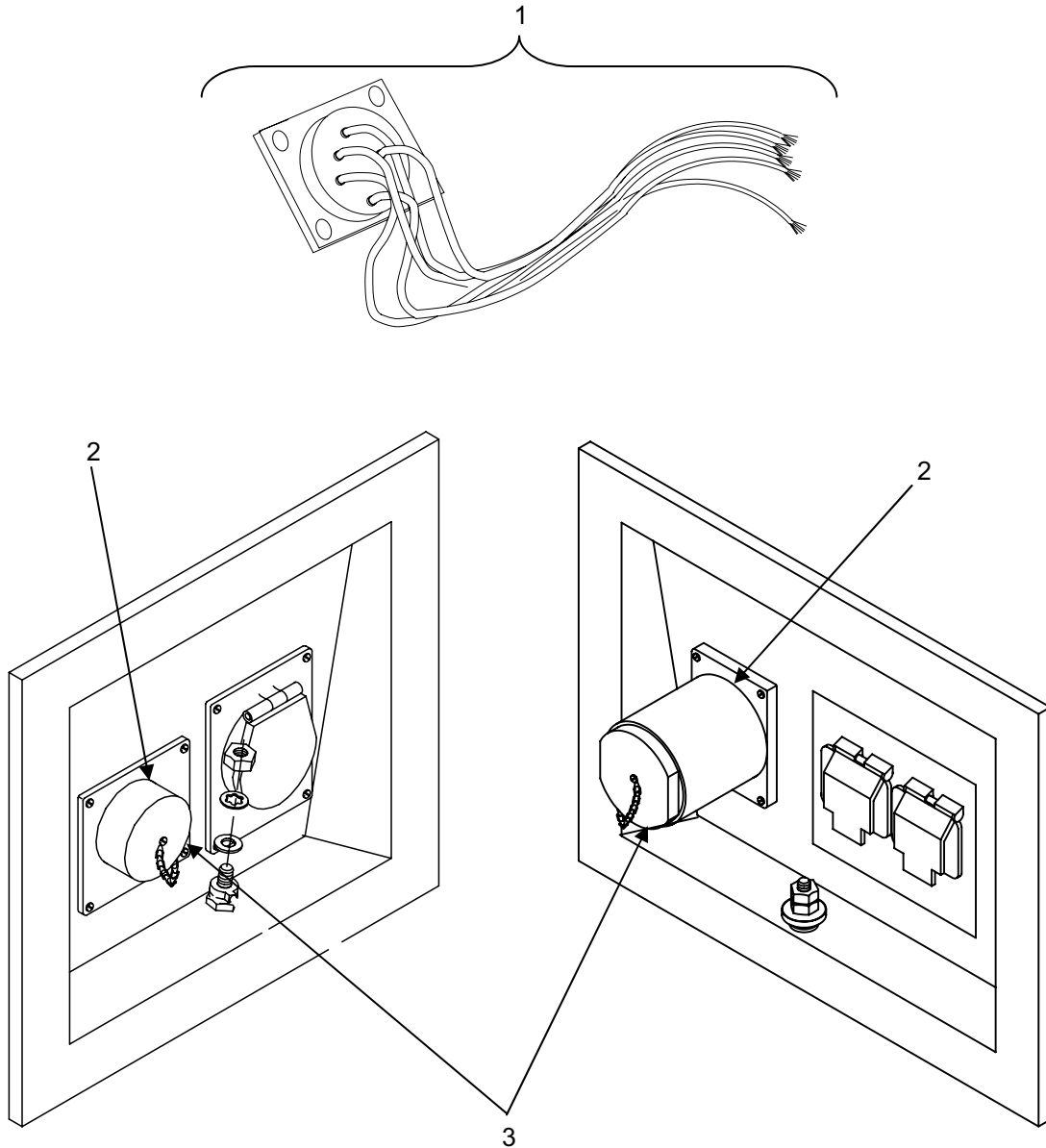


Figure 15. Power Entry Panel

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|----------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 0201 POWER ENTRY PANEL | |
| | | | | | FIG.15 POWER ENTRY PANEL | |
| 1 | PAFZZ | 5995-01-530-4517 | 0U5N7 | 46513001 | CABLE ASSEMBLY | 1 |
| 2 | PAFZZ | 5930-00-114-8708 | 96906 | MS90558C324-12P | . CONNECTOR, RECEPTACLE, ELECTRICAL | 1 |
| 3 | PAOZZ | 5935-01-147-9446 | 96906 | MS90564-7C | COVER, ELECTRICAL CONNECTOR..... | 1 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

CIRCUIT BREAKER ASSEMBLY

REPAIR PARTS LIST

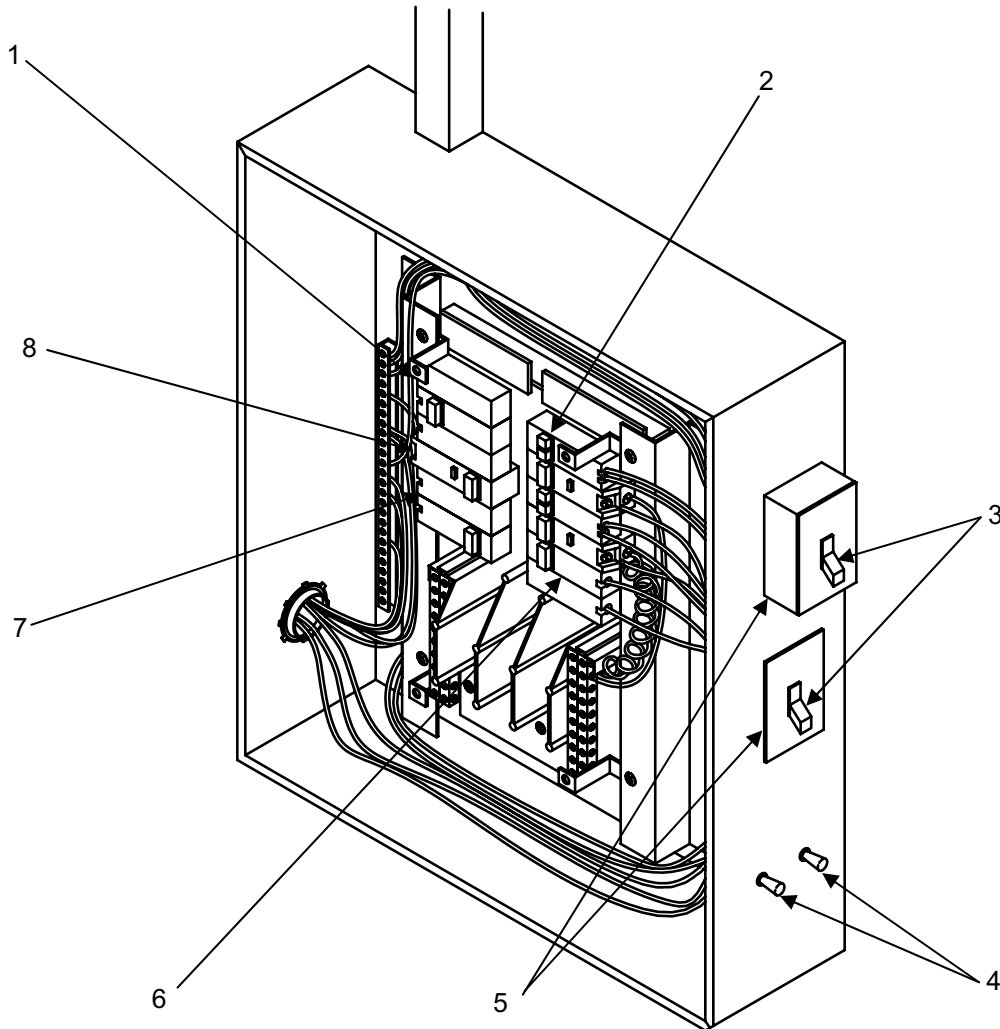


Figure 16. Circuit Breaker Assembly
Sheet 1 of 2

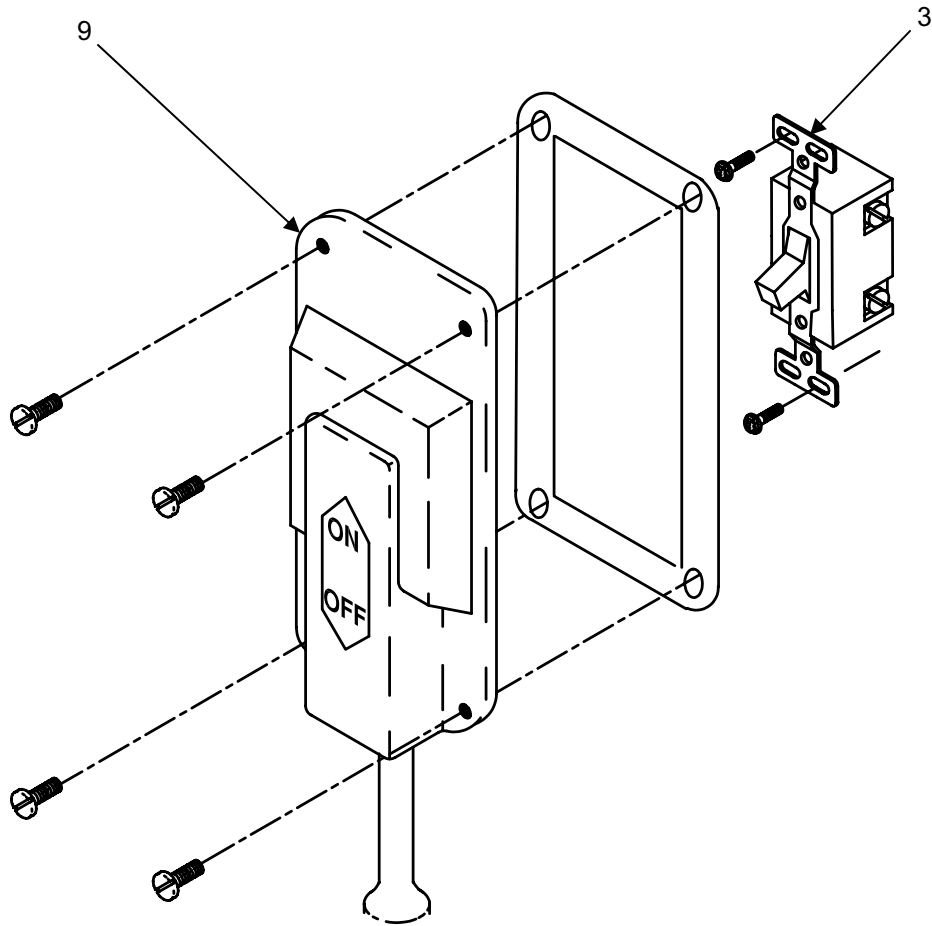


Figure 16. Circuit Breaker Assembly
Sheet 2 of 2

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|----------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------------------------------|------------|
| | | | | | GROUP 0202 CIRCUIT BREAKER ASSEMBLY | |
| | | | | | FIG.16 CIRCUIT BREAKER ASSEMBLY | |
| 1 | PAFZZ | 5925-01-408-0625 | 56365 | Q0360 | CIRCUIT BREAKER, 60A, THREE PHASE BREAKER | 1 |
| 2 | PAFZZ | 5925-00-011-2540 | 56365 | QO2020 | CIRCUIT BREAKER, 20-20 A UOC: FTA..... | 1 |
| 2 | PAFZZ | 5925-00-011-2540 | 56365 | QO2020 | CIRCUIT BREAKER, 20-20 A UOC: FRV, FUG..... | 2 |
| 3 | XBOZZ | 5930-01-230-5340 | 81091 | PS15ACI | SWITCH, TOGGLE UOC: FTA..... | 2 |
| 3 | XBOZZ | 5930-01-230-5340 | 81091 | PS15ACI | SWITCH, TOGGLE UOC: FRV, FUG..... | 3 |
| 4 | PAFZZ | 5930-00-400-6214 | 12489 | SB73 | SWITCH, TOGGLE..... | 2 |
| 5 | PAOZZ | 5975-00-682-0561 | 74545 | 97071 | COVER, SWITCH UOC: FTA..... | 1 |
| 5 | PAOZZ | 5975-00-682-0561 | 74545 | 97071 | COVER, SWITCH UOC: FRV, FUG..... | 2 |
| 6 | PAFZZ | 5925-00-062-3743 | 56303 | QOB230 | CIRCUIT BREAKER, 30A, TWO PHASE BREAKER UOC: FTA..... | 1 |
| 6 | PAFZZ | 5925-00-062-3743 | 56303 | QOB230 | CIRCUIT BREAKER, 30A, TWO PHASE BREAKER UOC: FRV, FUG..... | 2 |
| 7 | PAFZZ | 5925-01-021-5222 | 56303 | QO120GFI | CIRCUIT BREAKER, 20A, THREE PHASE GFI BREAKER UOC: FTA..... | 1 |
| 7 | PAFZZ | 5925-01-021-5222 | 56303 | QO120GFI | CIRCUIT BREAKER, 20A, THREE PHASE GFI BREAKER UOC: FRV, FUG..... | 3 |
| 8 | PAFZZ | 5925-00-728-1969 | 56365 | QOB330 | CIRCUIT BREAKER, 30A, THREE PHASE BREAKER UOC: FRV, FUG..... | 2 |
| 9 | PAOZZ | 5975-01-041-3621 | 15235 | DS-128 | COVER, CONDUIT OUTLET..... | 1 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

INTERIOR FLUORESCENT LIGHT ASSEMBLY

REPAIR PARTS LIST

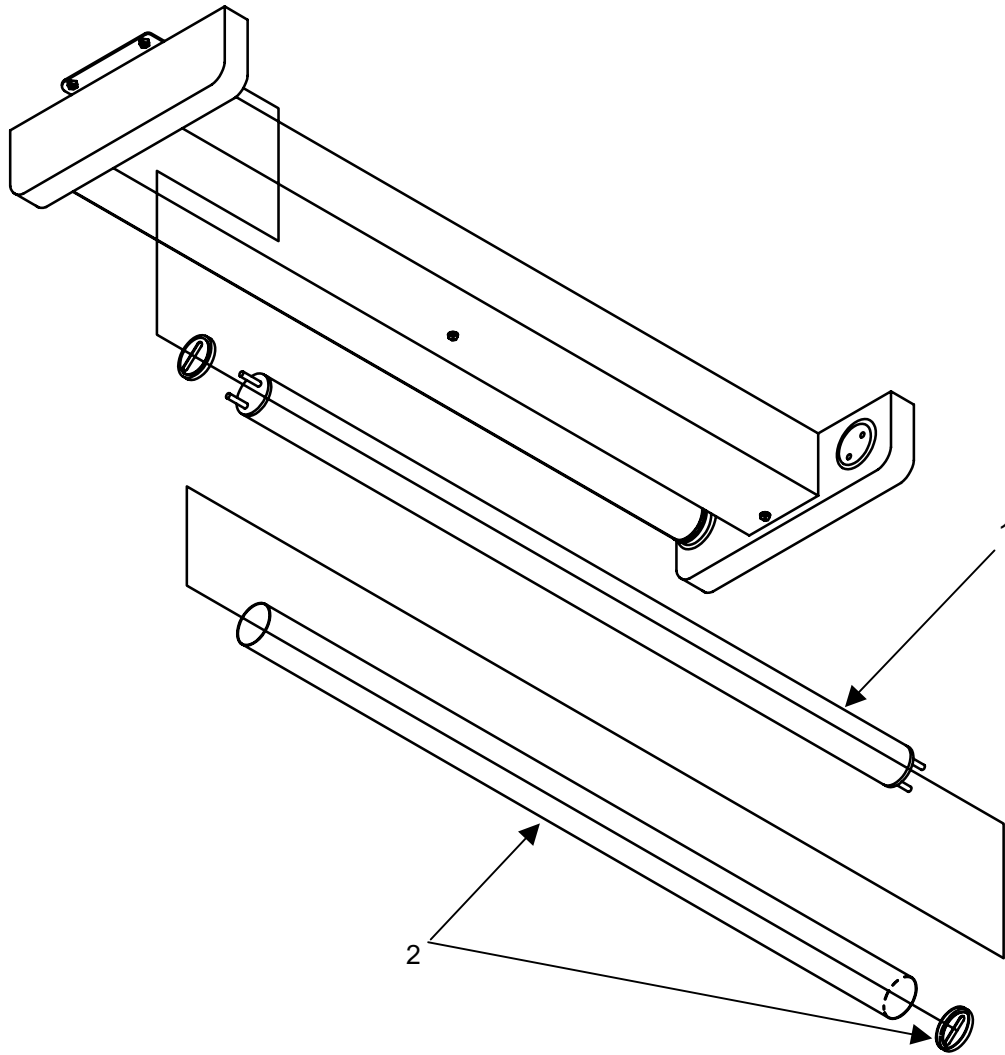


Figure 17. Interior Fluorescent Light Assembly
Sheet 1 of 2

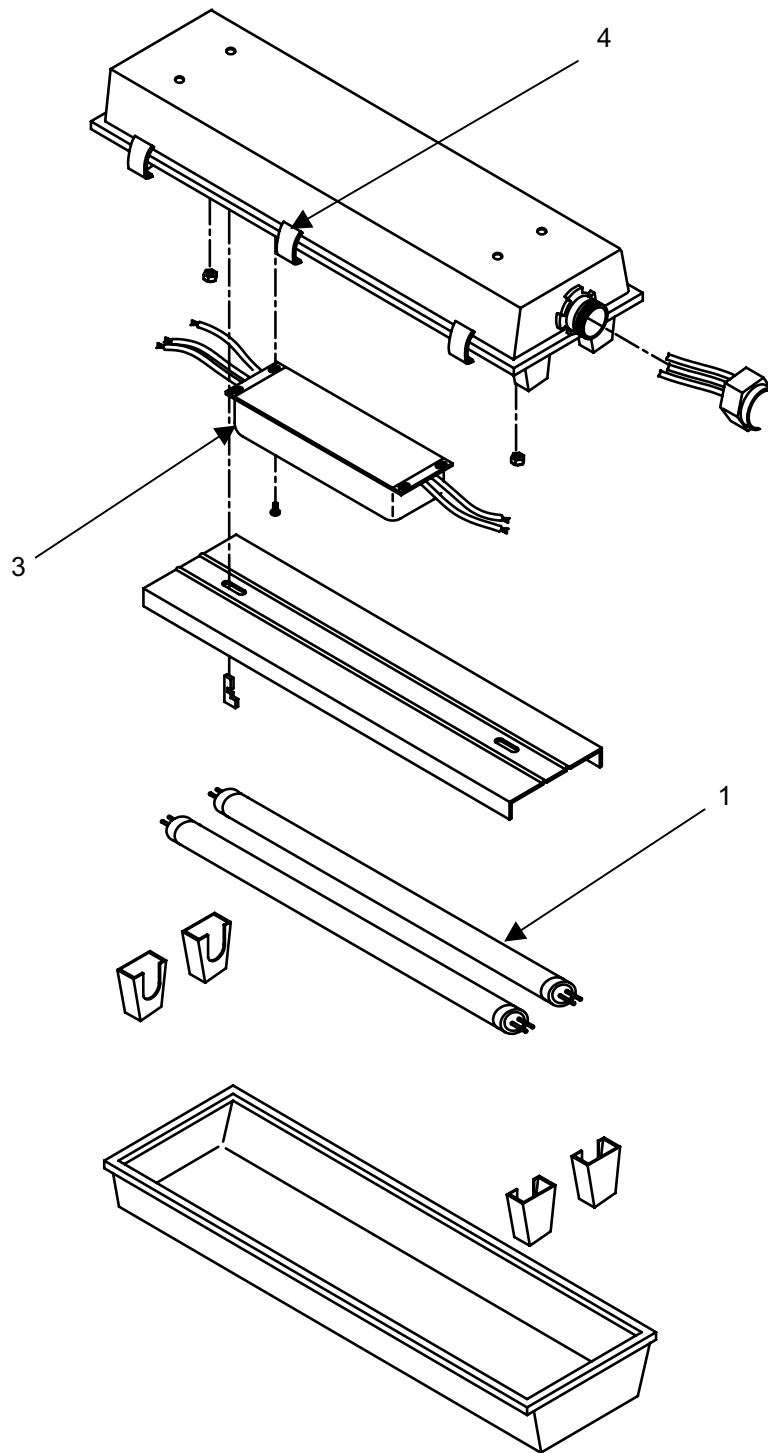


Figure 17. Interior Fluorescent Light Assembly
Sheet 2 of 2

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|---------------------------------------------------|------------|
| | | | | | GROUP 0203 INTERIOR FLUORESCENT LIGHT ASSEMBLY | |
| | | | | | FIG.17 INTERIOR FLUORESCENT LIGHT ASSEMBLY | |
| 1 | PAFZZ | 6240-00-152-2987 | 72915 | 8296975 | LAMP, FLUORESCENT | 4 |
| 2 | PAOZZ | 6210-01-032-0825 | 67181 | FG-40 | FILTER, LIGHT UOC: FTA..... | 4 |
| 3 | PAOZZ | 6250-00-892-5248 | 08595 | 8G1024WF | BALLAST, LAMP UOC: FRV, FUG..... | 2 |
| 4 | XBOZZ | | 16543 | U07531 | RETAINER CLIP UOC: FRV, FUG..... | 6 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

EXTERIOR INCANDESCENT LIGHT ASSEMBLY

REPAIR PARTS LIST

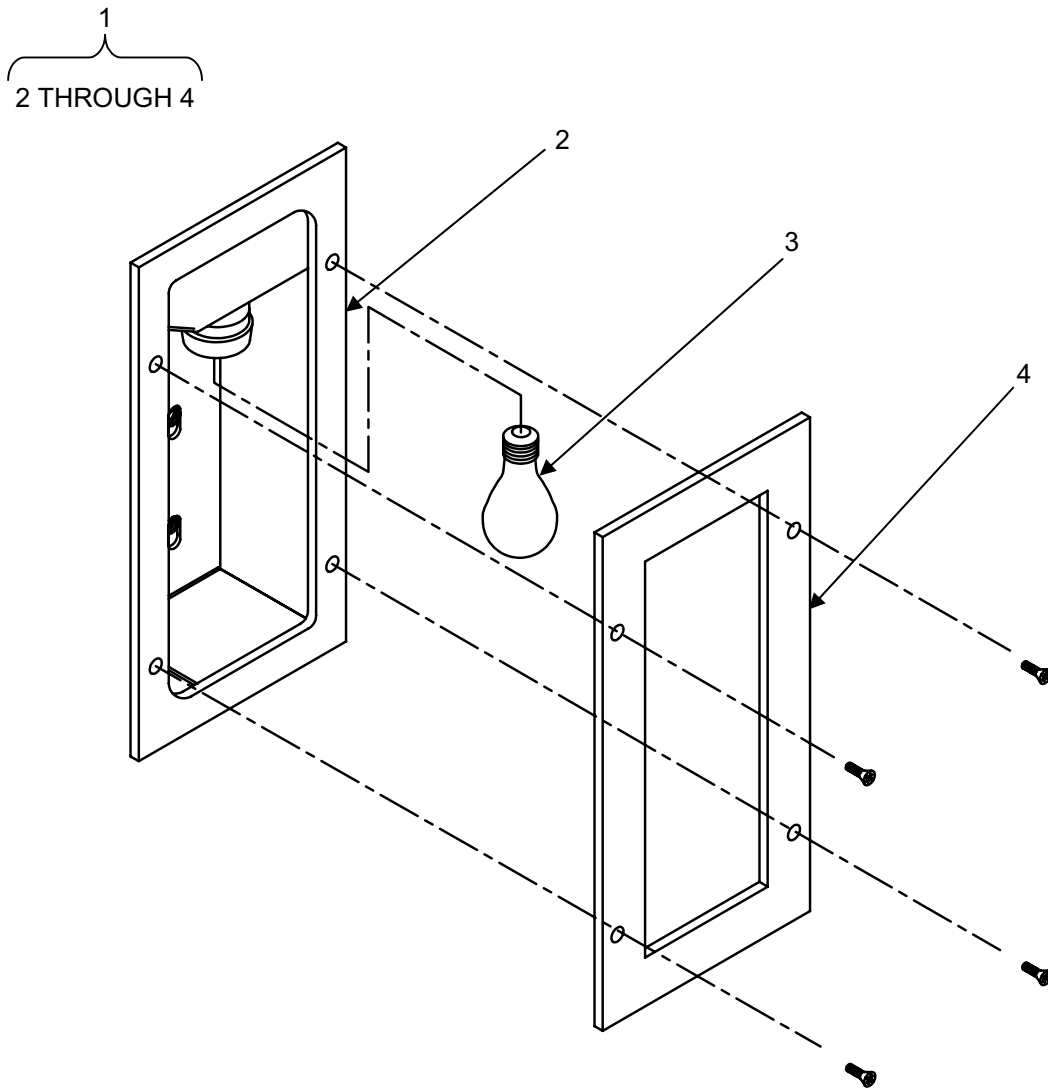


Figure 18. Exterior Incandescent Light Assembly

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|----------------------|--------------------|------------------|--------------|-----------------------|----------------------------------------------------|------------|
| | | | | | GROUP 0204 EXTERIOR INCANDESCENT LIGHT ASSEMBLY | |
| | | | | | FIG.18 EXTERIOR INCANDESCENT LIGHT ASSEMBLY | |
| 1 | XBOZZ | | 4L828 | 432 | LAMPHOLDER ASSEMBLY..... | 1 |
| 2 | PAOZZ | 4320-01-434-6057 | 4L828 | 825725 | . HOUSING..... | 1 |
| 3 | PAOZZ | 6240-00-155-8633 | 96906 | MS15586-3 | . LAMP, INCANDESCENT, 50 WATT..... | 1 |
| 4 | PAOZZ | 5975-01-449-6949 | 74545 | 7425W0A | . PLATE, WALL, ELECTRICAL..... | 1 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

ELECTRICAL OUTLETS

REPAIR PARTS LIST

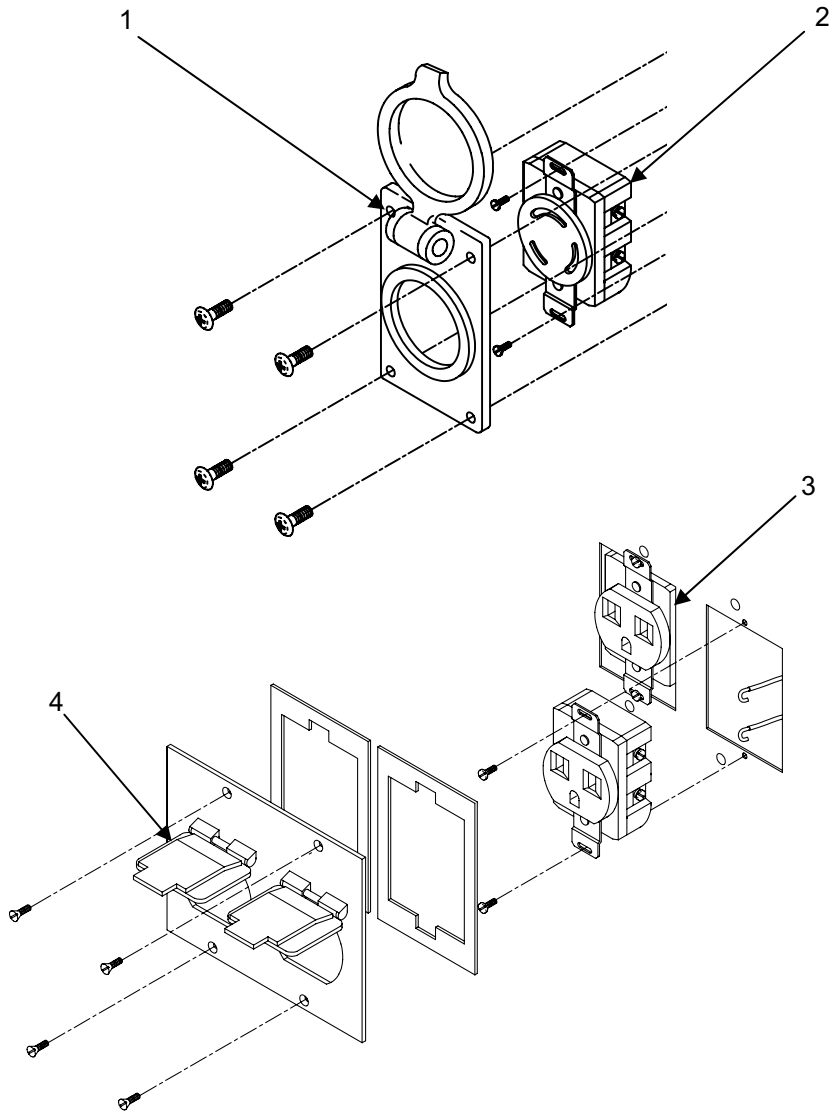


Figure 19. Electrical Outlets
Sheet 1 of 2

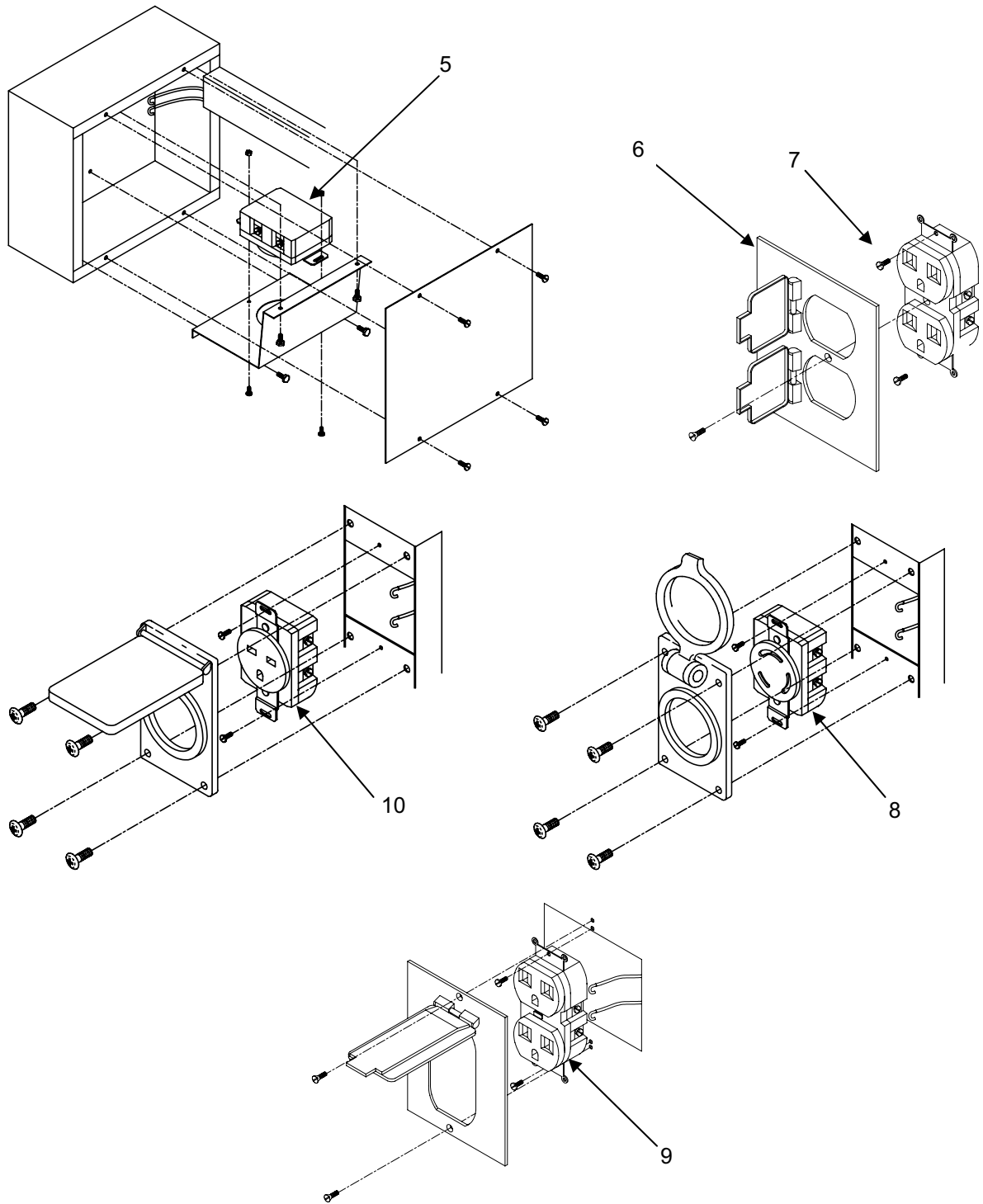


Figure 19. Electrical Outlets
Sheet 2 of 2

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|----------------------|--------------------|------------------|--------------|-----------------------|-----------------------------------------------------------------------------|------------|
| | | | | | GROUP 0205 ELECTRICAL OUTLETS | |
| | | | | | FIG.19 ELECTRICAL OUTLETS | |
| 1 | PAFZZ | 5975-01-449-6949 | 74545 | 7425WOA | PLATE, WALL, ELECTRICAL UOC: FTA..... | 1 |
| 2 | PAFZZ | 5935-01-292-6695 | 74545 | 2510-A | CONNECTOR, RECEPTACLE, ELECTRICAL UOC: FTA..... | 1 |
| 3 | PAFZZ | 5935-01-530-4510 | 81091 | 5361-I | CONNECTOR, RECEPTACLE, ELECTRICAL, SINGLE, 120VAC UOC: FRV, FUG | 2 |
| 4 | PAFZZ | 5975-01-530-4512 | 81091 | 2CCS | PLATE, WALL, ELECTRIC | 1 |
| 5 | PAOZZ | 5935-01-463-3040 | 74545 | HBL4710 | CONNECTOR, RECEPTACLE, ELECTRICAL | 1 |
| 6 | PAOZZ | 5935-01-350-4123 | 97403 | 13229E0757 | COVER, ELECTRICAL CONNECTOR UOC: FTA..... | 2 |
| 6 | PAOZZ | 5935-01-350-4123 | 97403 | 13229E0757 | COVER, ELECTRICAL CONNECTOR UOC: FRV, FUG | 3 |
| 7 | PAOZZ | 5925-01-231-5423 | 74545 | GF5352-IC | INTERRUPTER, GROUND FAULT | 2 |
| 8 | PAOZZ | 5935-01-530-4508 | 74545 | HBL2320 | CONNECTOR, RECEPTACLE, ELECTRICAL UOC: FRV, FUG | 1 |
| 9 | PAOZZ | 5925-01-231-5423 | 74545 | GF5352-IC | INTERRUPTER, GROUND FAULT UOC: FRV, FUG | 1 |
| 10 | PAOZZ | 5935-01-530-4511 | 81091 | 3801 | CONNECTOR, RECEPTACLE, ELECTRICAL | 1 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

GROUNDING ROD ASSEMBLY

REPAIR PARTS LIST

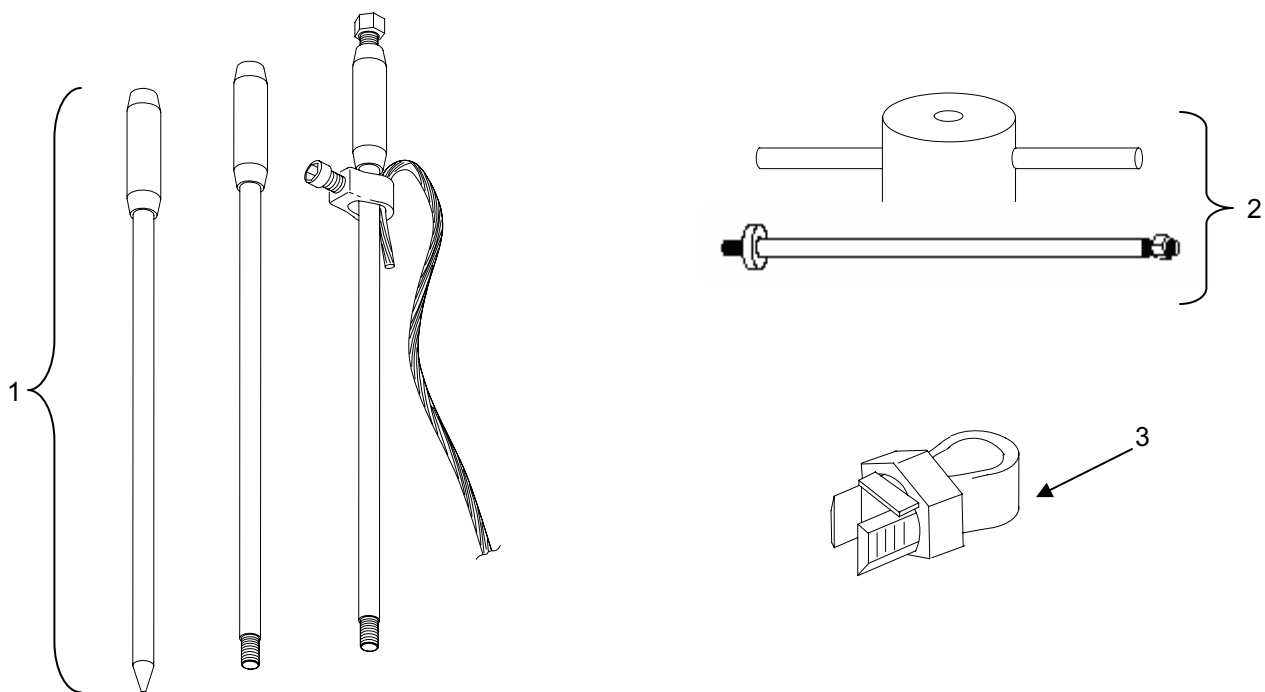


Figure 20. Grounding Rod Assembly

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|-----------------------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| GROUP 0206 GROUNDING ROD ASSEMBLY | | | | | | |
| FIG. 20 GROUNDING ROD ASSEMBLY | | | | | | |
| 1 | PAOZZ | 5975-00-878-3791 | 49956 | H293168-1 | ROD, GROUNDING, 3 SECTION..... | 1 |
| 2 | PAOZZ | 5120-01-013-1676 | 97403 | 13226E7741 | SLIDE HAMMER..... | 1 |
| 3 | PAOZZ | 5940-01-530-4259 | 70016 | IK 3/0 | SPLIT BOLT..... | 1 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

POWER CABLES

REPAIR PARTS LIST

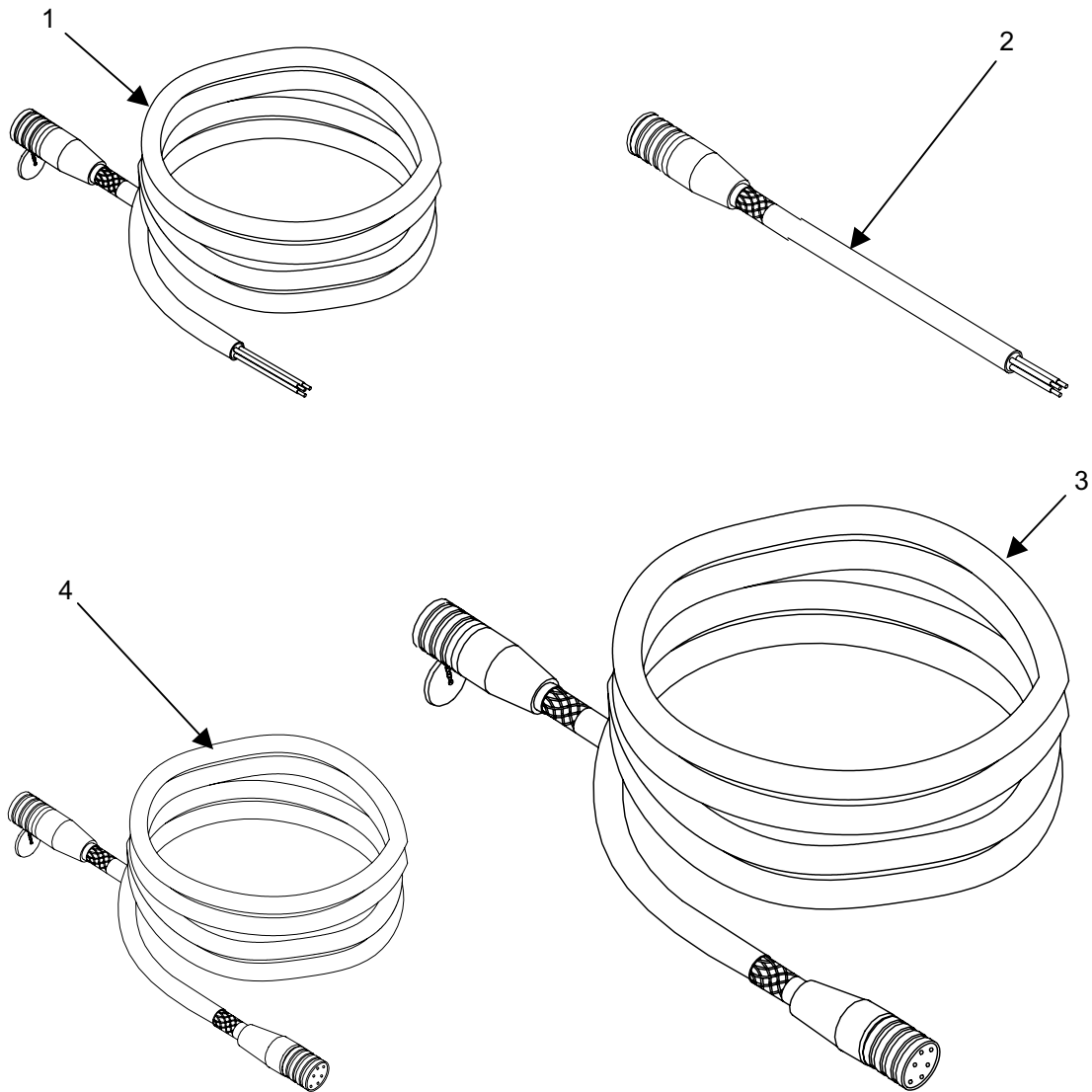


Figure 21. Power Cables

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|-------------------------------------------------------------|------------|
| | | | | | GROUP 0207 POWER CABLES | |
| | | | | | FIG.21 POWER CABLES | |
| 1 | PAOZZ | 6150-01-220-5586 | 65960 | 04-A-4201 | CABLE ASSEMBLY, POWER, 60A, 50 FEET UOC: FRV, FUG | 1 |
| 2 | PAOZZ | 6150-01-256-6300 | 97403 | 13226E7020 | PIGTAIL CABLE, 100A, 4 FEET UOC: FTA | 1 |
| 3 | PAOZZ | 6150-01-256-6304 | 97403 | 13226E7024 | SERVICE FEEDER, 100A, 50 FEET UOC: FTA | 2 |
| 4 | PAOZZ | 6150-01-220-5588 | 65960 | 04-A-4204 | CABLE ASSEMBLY, POWER, 60A, 100 FEET UOC: FRV, FUG | 2 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

FRESH-WATER PIPES

REPAIR PARTS LIST

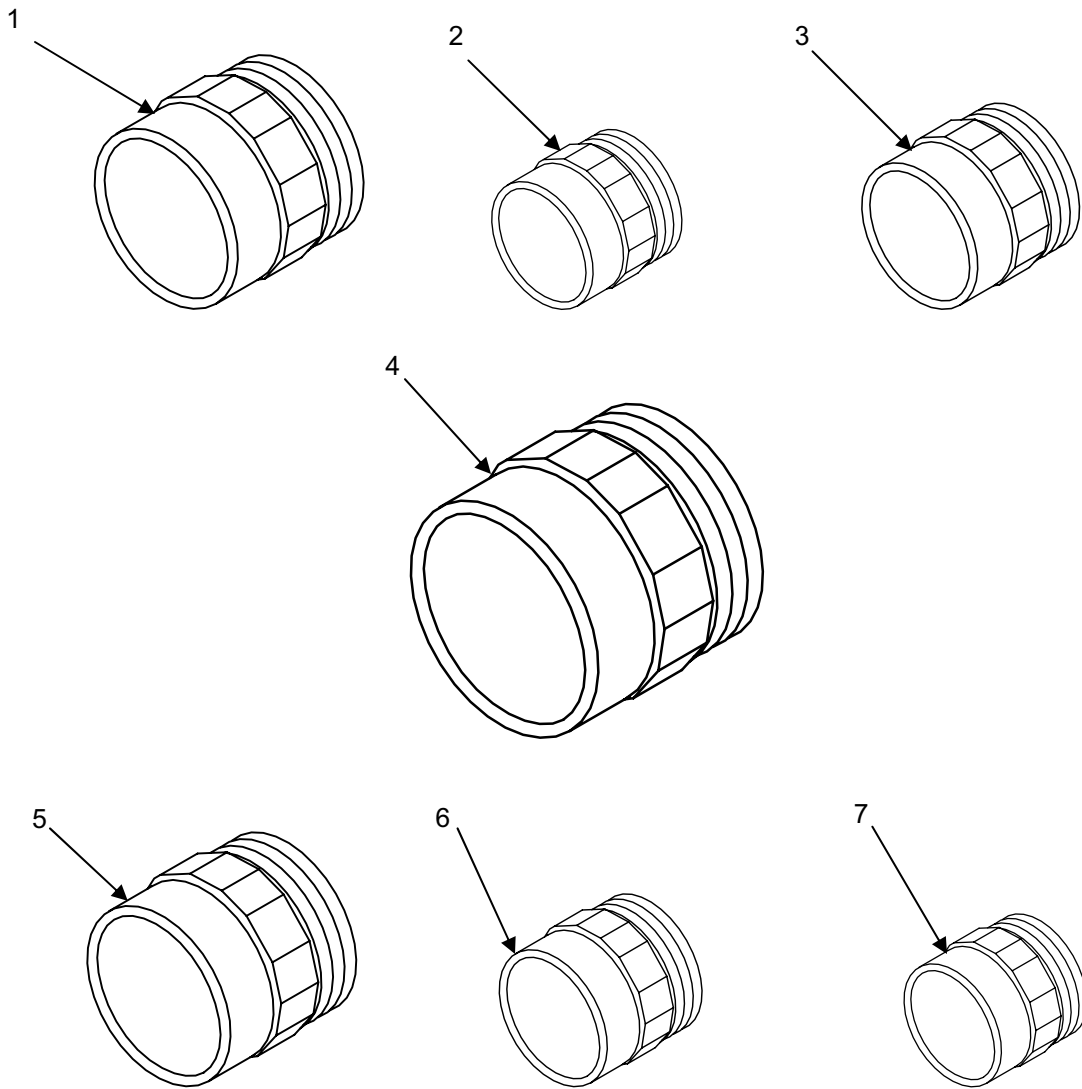


Figure 22. Fresh-water Pipes
Sheet 1 of 7

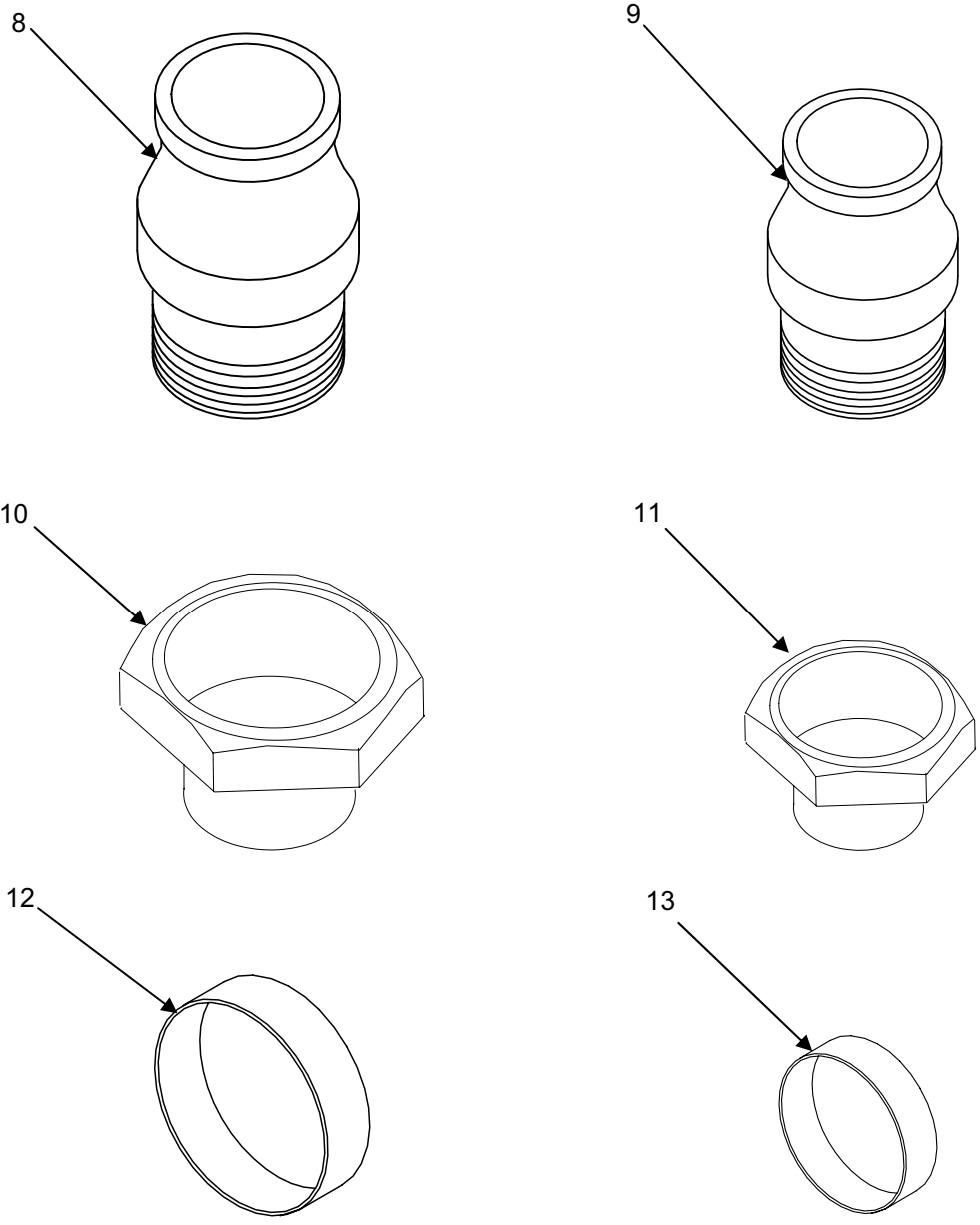


Figure 22. Fresh-water Pipes
Sheet 2 of 7

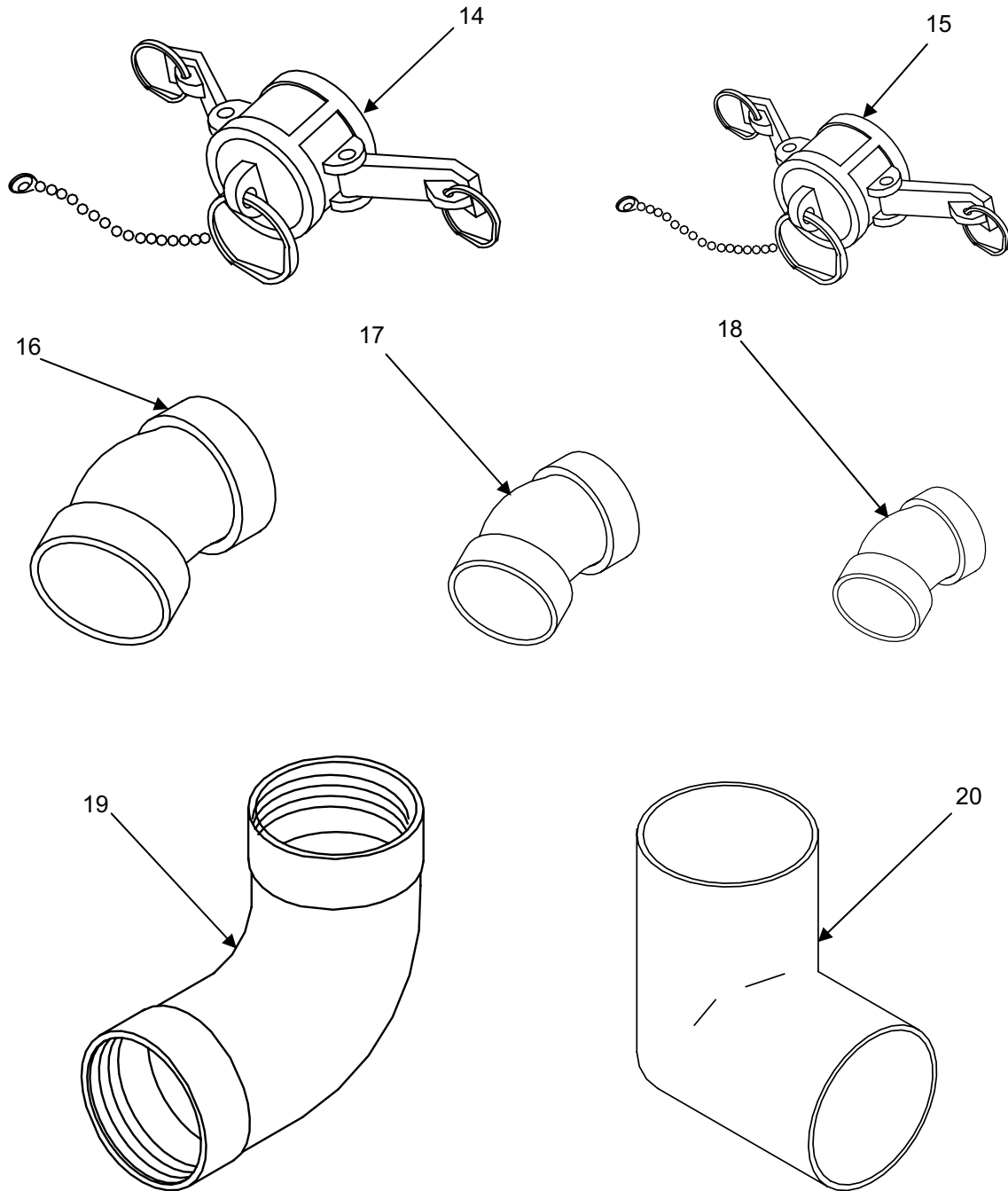


Figure 22. Fresh-water Pipes
Sheet 3 of 7

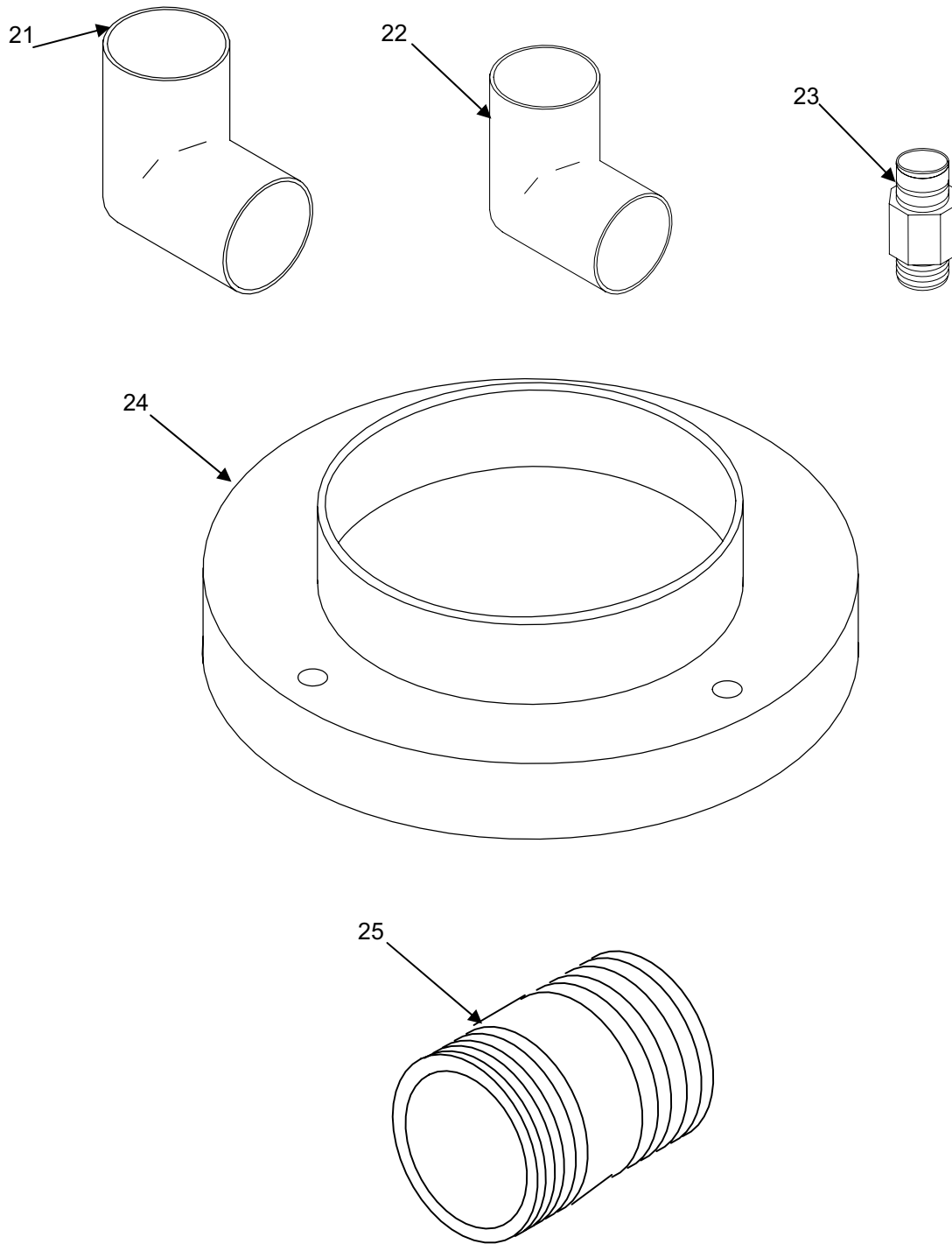


Figure 22. Fresh-water Pipes
Sheet 4 of 7

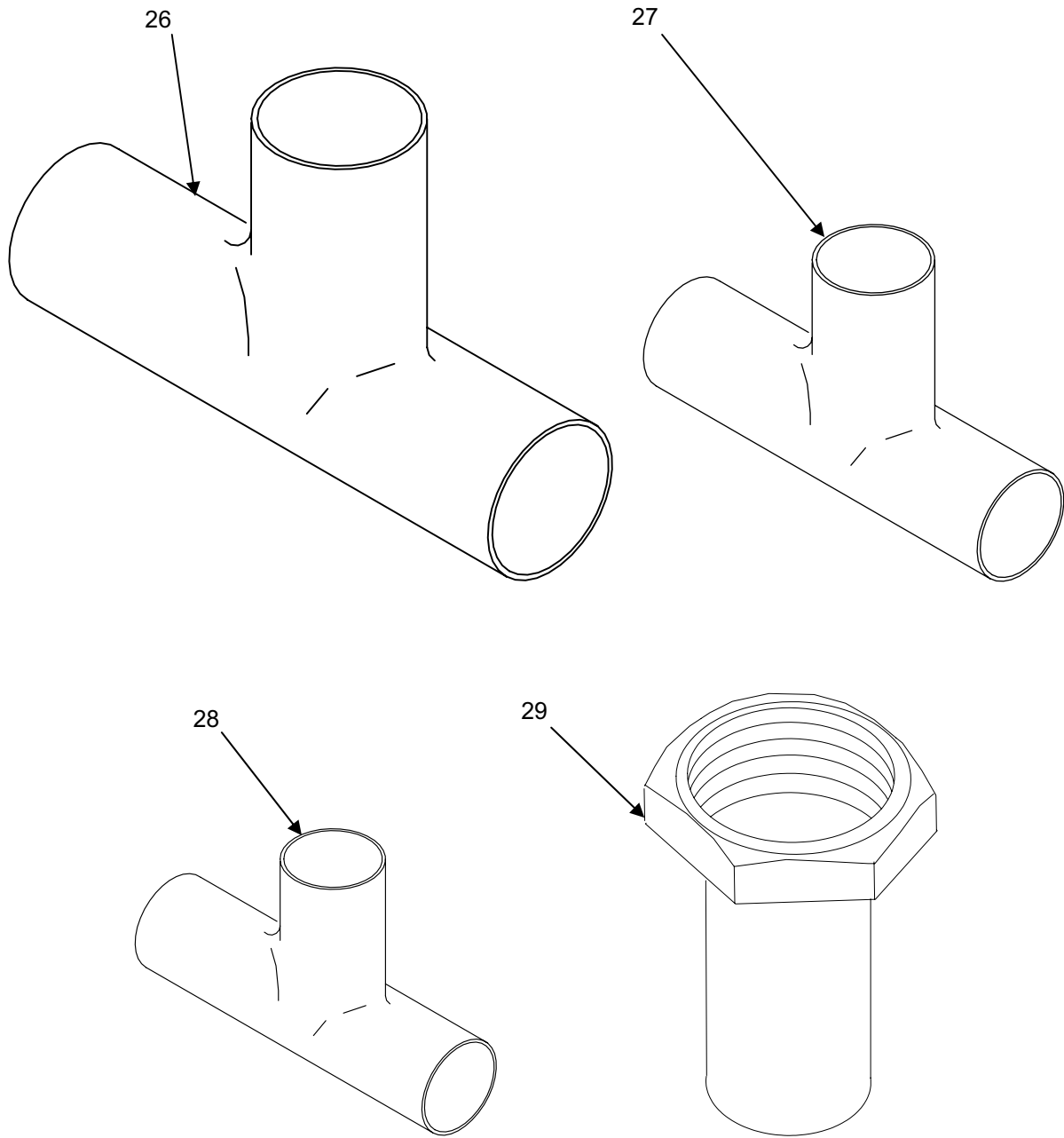


Figure 22. Fresh-water Pipes
Sheet 5 of 7

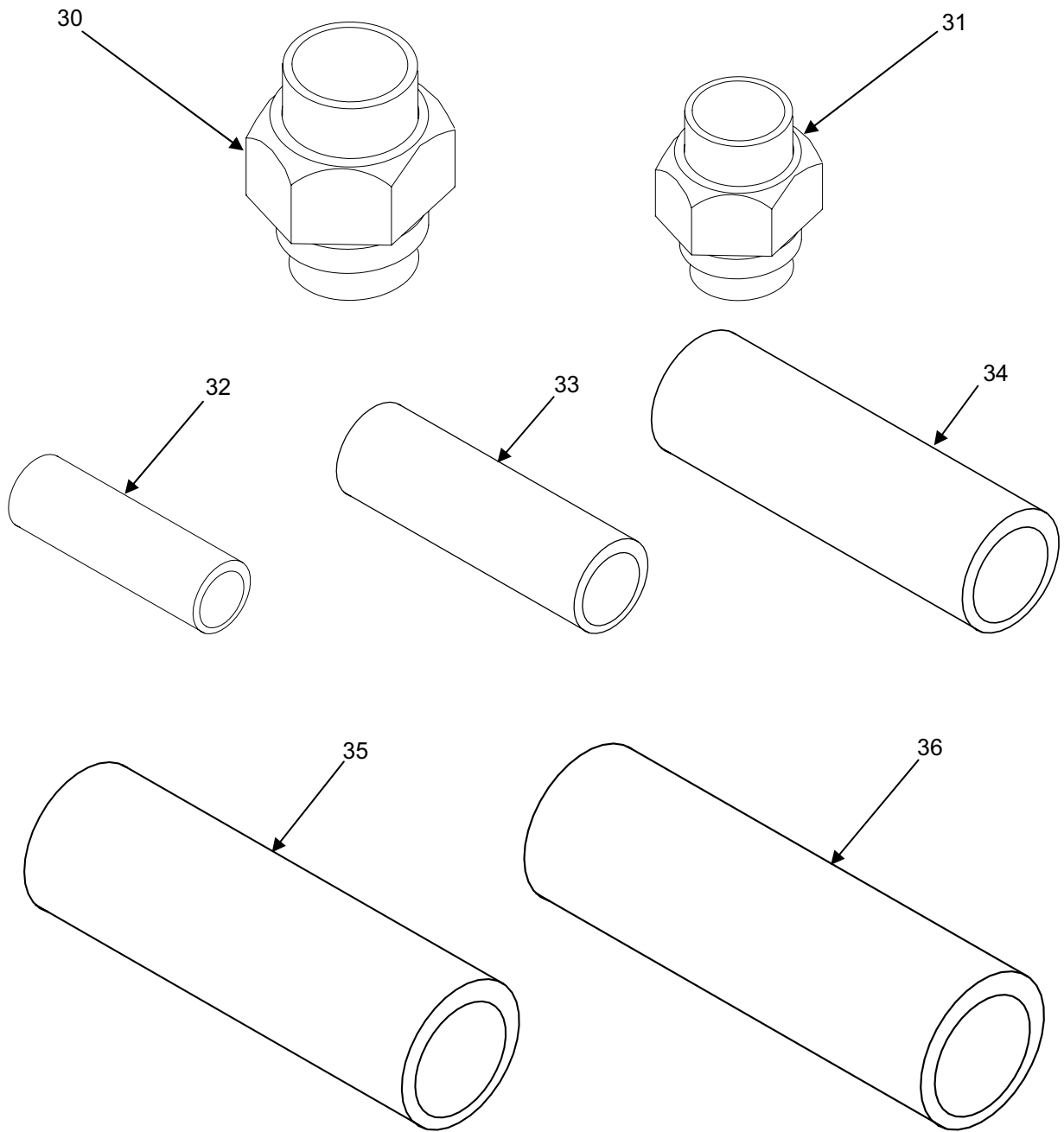


Figure 22. Fresh-water Pipes
Sheet 6 of 7

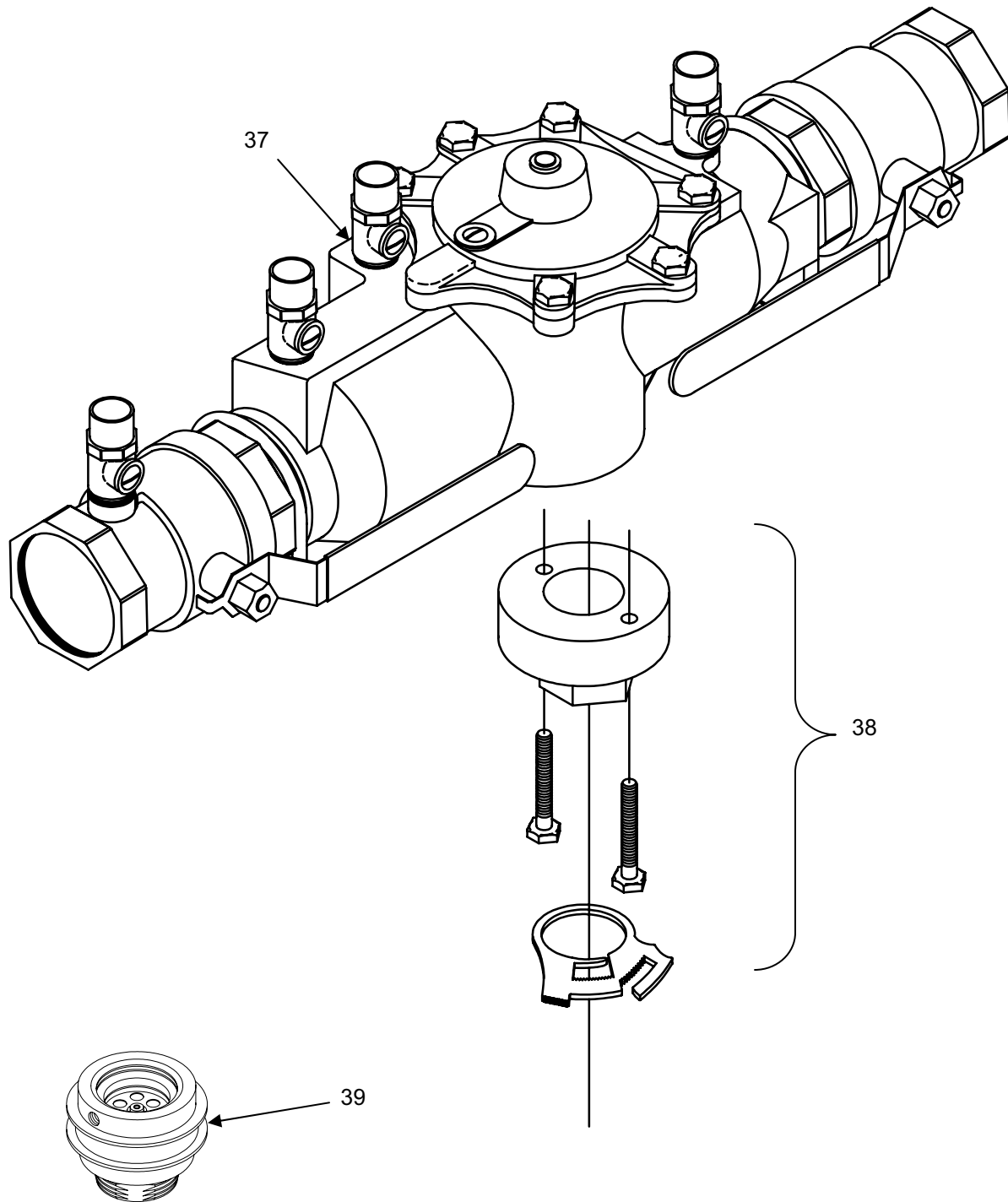


Figure 22. Fresh-water Pipes
Sheet 7 of 7

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|----------------------------------------------------------------------------------|------------|
| | | | | | GROUP 0301 FRESH-WATER PIPES | |
| | | | | | FIG. 22 FRESH-WATER PIPES | |
| 1 | PAFZZ | 4730-01-530-4822 | 0U5N7 | 46512164 | ADAPTER, PIPE 1-1/2-IN SP X 1-1/2-IN MPT, SCH 80 PVC..... | 1 |
| 2 | PAFZZ | 4730-01-530-4863 | 0U5N7 | 46512136 | ADAPTER, PIPE, MODIFIED 1/2-IN THREADED MALE PIPE ADAPTER, SCH 80 PVC..... | 2 |
| 3 | PAFZZ | 4730-00-482-5815 | 14007 | 835-007 | COUPLING, PIPE, 3/4-IN SLIP X 3/4-IN EPT, SCH 80 PVC UOC: FTA..... | 2 |
| 4 | PAFZZ | 4730-01-530-4867 | 1PTU4 | 836-040 | COUPLING, PIPE, 4-IN SLIP X 4-IN MPT, SCH 80 PVC..... | 1 |
| 5 | PAFZZ | 4730-01-301-4266 | 14007 | 836-015 | COUPLING, PIPE, 1-1/2-IN SLIP X 1-1/2-IN MPT, SCH 80 PVC..... | 1 |
| 6 | PAFZZ | 4730-01-058-7756 | 96405 | 836-007 | COUPLING, PIPE, 3/4-IN SLIP X 3/4-IN MPT, SCH 80 PVC UOC: FRV, FUG..... | 3 |
| 7 | PAFZZ | 4730-01-058-7755 | 96405 | 836-005 | COUPLING, PIPE, 1/2-IN SLIP X 1/2-IN MPT, SCH 80 PVC UOC: FTA..... | 1 |
| 7 | PAFZZ | 4730-01-058-7755 | 96405 | 836-005 | COUPLING, PIPE, 1/2-IN SLIP X 1/2-IN MPT, SCH 80 PVC UOC: FRV, FUG..... | 2 |
| 8 | PAOZZ | 4730-01-530-4888 | 33813 | 15F-BRASS | ADAPTER, TYPE F, CAM AND GROOVE, 1 1/2- INCH UOC: FRV, FUG..... | 2 |
| 8 | PAOZZ | 4730-01-530-4888 | 33813 | 15F-BRASS | ADAPTER, TYPE F, CAM AND GROOVE, 1 1/2- INCH UOC: FTA..... | 1 |
| 9 | PAOZZ | 4730-01-530-4880 | 33813 | 10F-BRASS | ADAPTER, TYPE F, CAM AND GROOVE, 1 INCH UOC: FRV, FUG..... | 1 |
| 10 | PAFZZ | 4730-00-702-6479 | 14007 | 837-211 | REDUCER, PIPE, 1-1/2-INSLIP X 1-INSLIP, SCH 80 PVC..... | 2 |
| 11 | PAFZZ | 4730-00-702-6479 | 1PTU4 | 837-101 | REDUCER, PIPE, 3/4-IN AP X 1/2-IN SLIP, SCH..... | 1 |
| 12 | PAFZZ | 4730-01-306-3119 | 14007 | 847-005 | CAP, PIPE 1/2-IN SLIP, SCH 80 PVC..... | 1 |
| 13 | PAFZZ | 4730-01-210-4250 | 14007 | 847-010 | CAP, PIPE 1-IN SLIP, SCH 80 PVC..... | 2 |
| 14 | PAOZZ | 5340-01-530-5115 | 33813 | 15V-BRASS | DUST CAP, TYPE V, CAM AND GROOVE, 1 1/2-INCH UOC: FTA..... | 2 |
| 14 | XBOZZ | 4730-01-530-4888 | 33813 | 15V-BRASS | DUST CAP, TYPE V, CAM AND GROOVE, 1 1/2-INCH UOC: FRV, FUG..... | 1 |
| 15 | XBOZZ | 4730-01-530-4880 | 33813 | 10V-BRASS | DUST CAP, TYPE V, CAM AND GROOVE, 1 INCH UOC: FRV, FUG..... | 1 |
| 16 | PAFZZ | 4730-01-058-7747 | 14889 | 817-010CPVC | ELBOW, PIPE, 45 DEG, 1-IN SLIP, SCH 80 PVC..... | 2 |

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|--------------------------------------------------------------------------|------------|
| | | | | | GROUP 0301 FRESH-WATER PIPES | |
| | | | | | FIG. 22 FRESH-WATER PIPES | |
| 17 | PAFZZ | 4730-00-861-8400 | 14889 | 817-005PVC | ELBOW, PIPE, 45 DEG, 3/4-IN SLIP, SCH 80 PVC | 2 |
| 18 | PAFZZ | 4730-00-861-8400 | 14889 | 817-005PVC | ELBOW, PIPE, 45 DEG, 1/2-IN SLIP, SCH 80 PVC | 4 |
| 19 | PAOZZ | 4730-01-530-4833 | 1PTU4 | 310-007 | ELBOW, PIPE, 90 DEG, 1-1/2-IN FPT, BRASS..... | 1 |
| 20 | PAFZZ | 4730-00-162-2560 | 14007 | 01001011 | ELBOW, PIPE, 90 DEG, 1-1/2-IN SLIP, SCH 80 PVC UOC: FTA | 2 |
| 20 | PAFZZ | 4730-00-162-2560 | 14007 | 01001011 | ELBOW, PIPE, 90 DEG, 1-1/2-IN SLIP, SCH 80 PVC UOC: FRV, FUG | 3 |
| 21 | PAFZZ | 4730-00-114-9888 | 96405 | 806-007 | ELBOW, PIPE, 90 DEG, 3/4-IN SLIP, SCH 80 PVC UOC: FTA | 4 |
| 21 | PAFZZ | 4730-00-114-9888 | 96405 | 806-007 | ELBOW, PIPE, 90 DEG, 3/4-IN SLIP, SCH 80 PVC UOC: FRV, FUG | 7 |
| 22 | PAFZZ | 4730-00-476-7155 | 14007 | 0501007 | ELBOW, PIPE, 90 DEG, 1/2-IN SLIP, SCH 80 PVC UOC: FTA | 1 |
| 22 | PAFZZ | 4730-00-476-7155 | 14007 | 0501007 | ELBOW, PIPE, 90 DEG, 1/2-IN SLIP, SCH 80 PVC UOC: FRV, FUG | 5 |
| 23 | PAOZZ | 4720-01-530-5061 | 14679 | B1-16AF | FAUCET CONNECTOR, 1/2-IN IPS X 3/8-IN COMP | 4 |
| 24 | PAFZZ | 4730-00-334-0013 | 14889 | 851-040 | FLANGE, PIPE, 4-IN, SCH 80 PVC | 1 |
| 25 | PAOZZ | 4730-01-282-1693 | 39428 | 4830K265 | NIPPLE, PIPE, 1-1/2-IN MPT X 3-IN, TYPE 304 ST STL..... | 2 |

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|-----------------------------------------------------------|------------|
| | | | | | GROUP 0301 FRESH-WATER PIPES | |
| | | | | | FIG. 22 FRESH-WATER PIPES | |
| 26 | PAFZZ | 4730-00-144-4952 | 14007 | 01013011 | TEE, PIPE 1-½-IN SLIP, SCH 80 PVC | 1 |
| 27 | PAFZZ | 4730-01-271-0954 | 14007 | 01013008 | TEE, PIPE ¾-IN SLIP, SCH 80 PVC UOC: FTA..... | 4 |
| 27 | PAFZZ | 4730-01-271-0954 | 14007 | 01013008 | TEE, PIPE ¾-IN SLIP, SCH 80 PVC UOC: FRV, FUG | 5 |
| 28 | PAFZZ | 4730-01-059-0408 | 14007 | 801-005 | TEE, PIPE ½-IN SLIP, SCH 80 PVC..... | 1 |
| 29 | PAOZZ | 4730-01-530-4850 | 75185 | D104-015 | TRAP ADAPTER 1-½-IN PVC | 1 |
| 30 | PAFZZ | 4730-00-155-7001 | 14007 | 01028008 | UNION, PIPE ¾ -IN SLIP, SCH 80 PVC..... | 1 |
| 31 | PAFZZ | 4730-00-812-3274 | 14007 | 897-005 | UNION, PIPE ½-IN SLIP, SCH 80 PVC..... | 2 |
| 32 | PAFZZ | 4730-00-114-9889 | 11321 | 01025007 | COUPLING, SLIP FIT, PVC, ½-IN | V |
| 33 | PAFZZ | 4730-00-928-2356 | 14007 | 829-007 | COUPLING, SLIP FIT, PVC, ¾-IN | V |
| 34 | PAFZZ | 4730-01-065-9352 | 11321 | 05025009 | COUPLING, SLIP FIT, PVC, 1-IN | V |
| | PAFZZ | 4730-00-935-5570 | 14007 | 829-012 | COUPLING, SLIP FIT, PVC, 1 ¼ -IN | V |
| 36 | PAFZZ | 4730-01-295-2525 | 14889 | 829-015 | COUPLING, SLIP FIT, PVC, 1 ½-IN | V |
| 37 | XBOZZ | | 79227 | 009QT-1 1/2 | BACKFLOW PREVENTER ASSEMBLY UOC: FRV, FUG..... | 1 |
| 38 | XBOZZ | | 0U5N7 | 46512175 | ADAPTER, DRIP FLANGE | 1 |
| 39 | PAOZZ | 4820-01-226-6021 | 79227 | 8A | VALVE, VACUUM REGULATING..... | 3 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE SYSTEM (CLS)

3K COLLAPSIBLE FABRIC TANK

REPAIR PARTS LIST

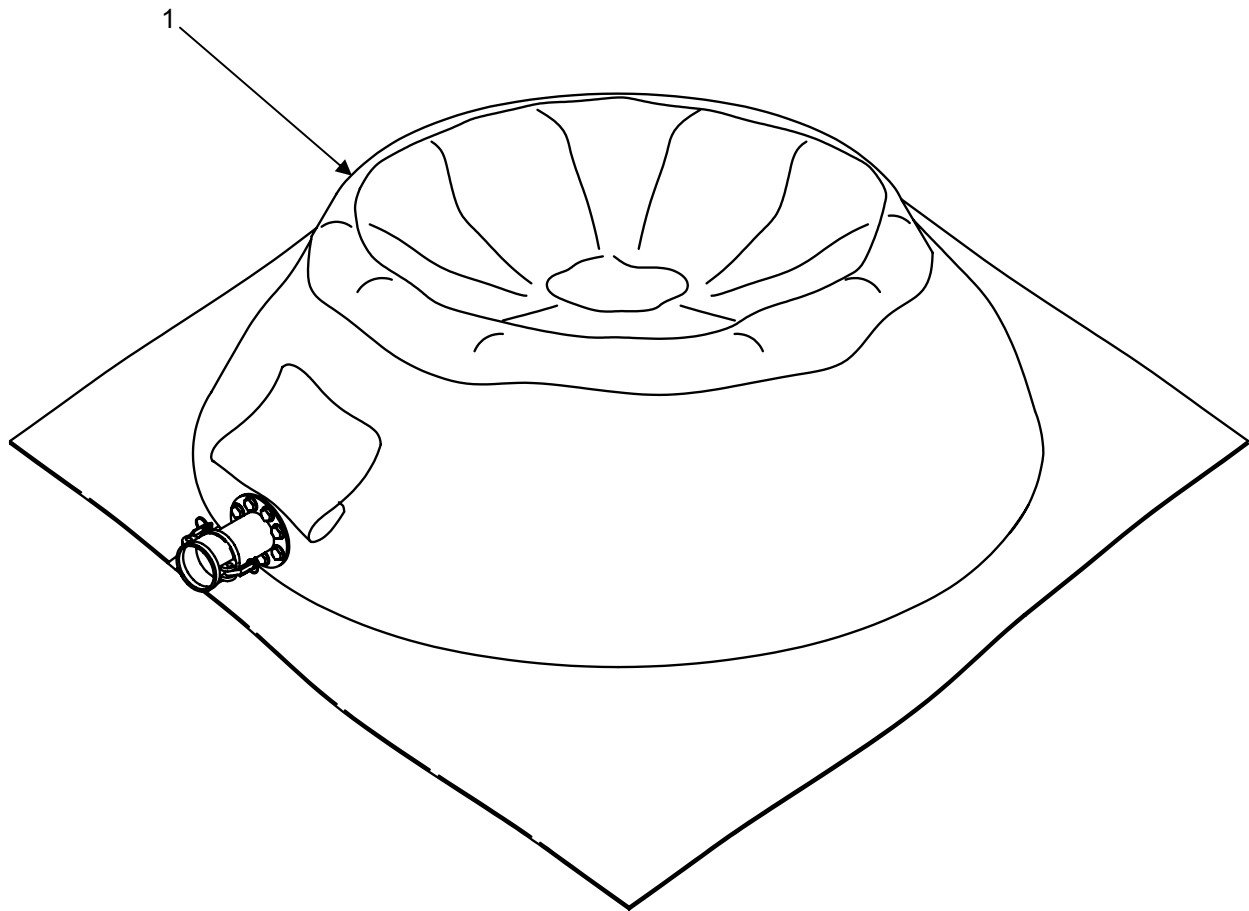


Figure 23. 3K Collapsible Fabric Tank

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 0303 3K COLLAPSIBLE FABRIC TANK | |
| | | | | | FIG. 23 3K COLLAPSIBLE FABRIC TANK | |
| 1 | PAOZZ | 5430-01-470-7380 | 05YK6 | RCF-3K-W-OT | TANK,FABRIC,COLLAPSIBLE UOC: FRV, FUG..... | 1 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)
2-IN BALL VALVE
REPAIR PARTS LIST

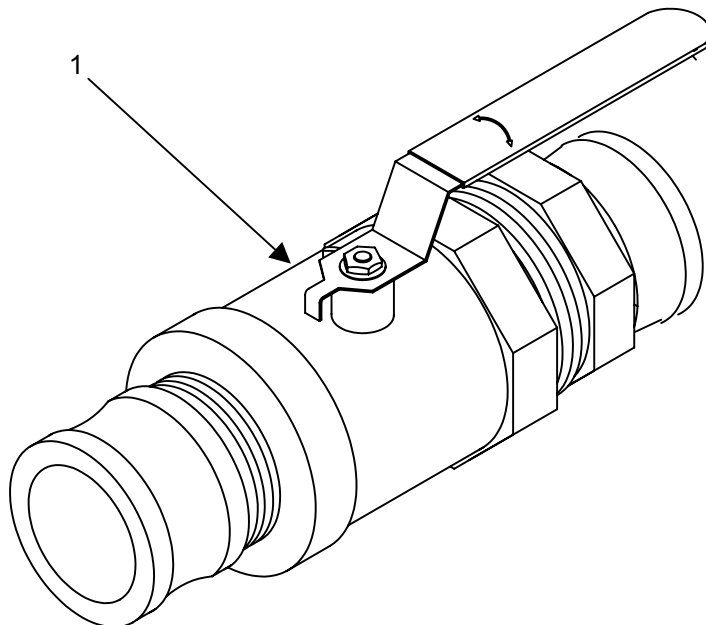


Figure 24. 2-Inch Ball Valve Assembly

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|----------------------|--------------------|------------------|--------------|-----------------------|-------------------------------------------------|------------|
| | | | | | GROUP 0304 2-IN BALL VALVE | |
| | | | | | FIG. 24 2-INCH BALL VALVE | |
| 1 | PAOZZ | 4820-01-525-0464 | 63711 | 32-108-01 | 2-IN BALL VALVE ASSEMBLY UOC: FRV, FUG | 1 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

FRESHWATER HOSES

REPAIR PARTS LIST

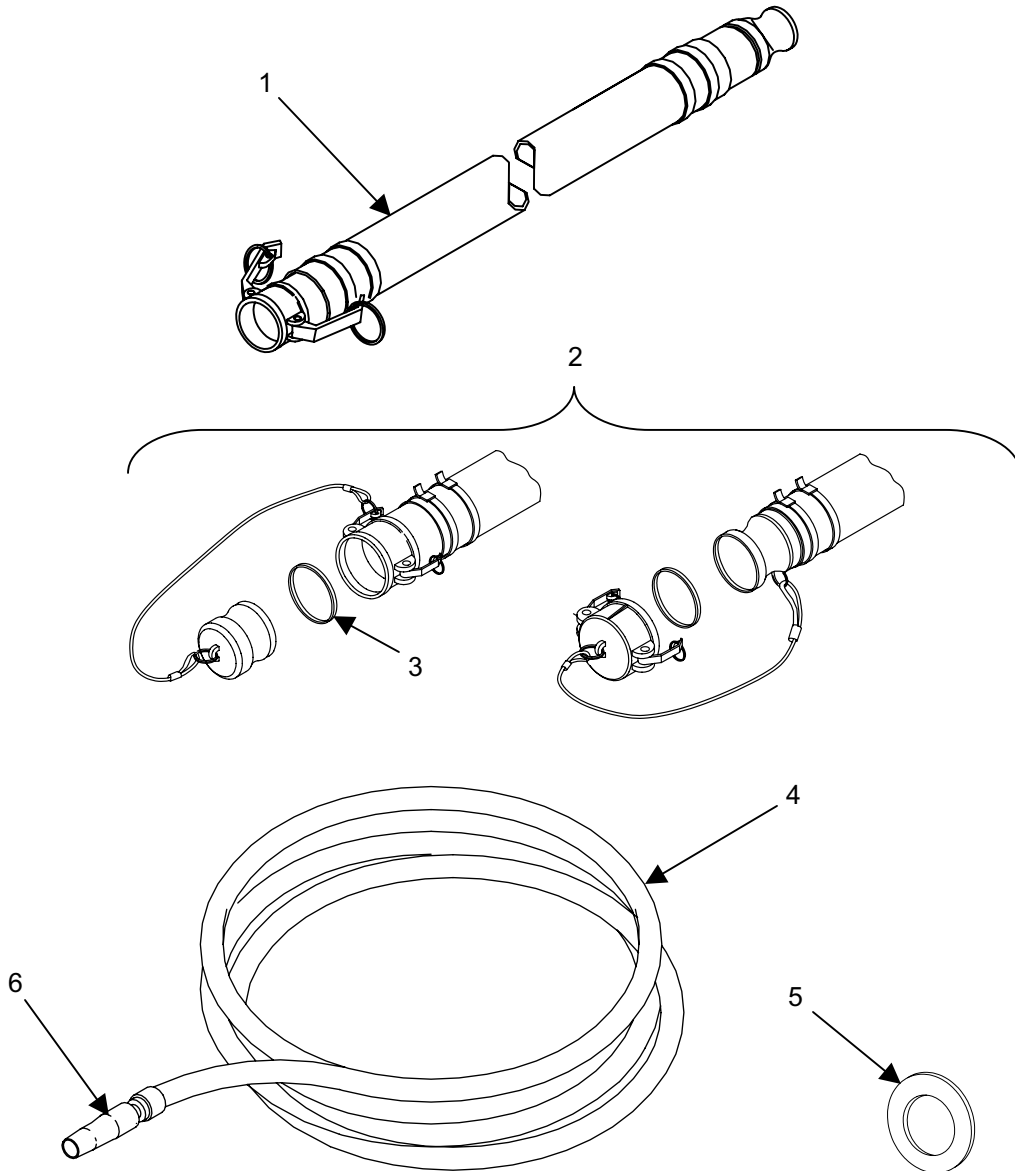


Figure 25. Freshwater Hoses

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|-----------------------------------------------------------------------------------------------------|------------|
| | | | | | GROUP 030501 FRESHWATER HOSES | |
| | | | | | FIG. 25 FRESHWATER HOSES | |
| 1 | PAOZZ | 4720-01-174-8173 | 97403 | 13225E9136-11 | HOSE ASSEMBLY, NONMETALLIC, 1 1/2-IN X 20 FT UOC: FTA | 5 |
| 2 | PAOOO | 4720-01-438-8341 | 97403 | 13225E9136-10 | HOSE ASSEMBLY, NONMETALLIC, 1 1/2-IN X 20 FT, WITH CAPS, PLUGS, AND CHAINS UOC: FRV, FUG..... | 2 |
| 3 | PAOZZ | 5330-00-360-0595 | 58536 | AA59326-G5 | . GASKET, 1 1/2-IN UOC: FRV, FUG..... | 1 |
| 4 | PAOOO | 4720-00-729-5334 | 58536 | A-A-59270 | HOSE ASSEMBLY, NONMETALLIC, 50-FT | 1 |
| 5 | PAOZZ | 5310-00-599-0776 | 80244 | 5310-00-599-0776 | . WASHER, FLAT, PACKAGE OF 10..... | 1 |
| 6 | PAOZZ | 4730-00-595-1103 | 04024 | FSS-5100-243B | NOZZLE, GARDEN HOSE..... | 1 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)
WASTEWATER HOSES
REPAIR PARTS LIST

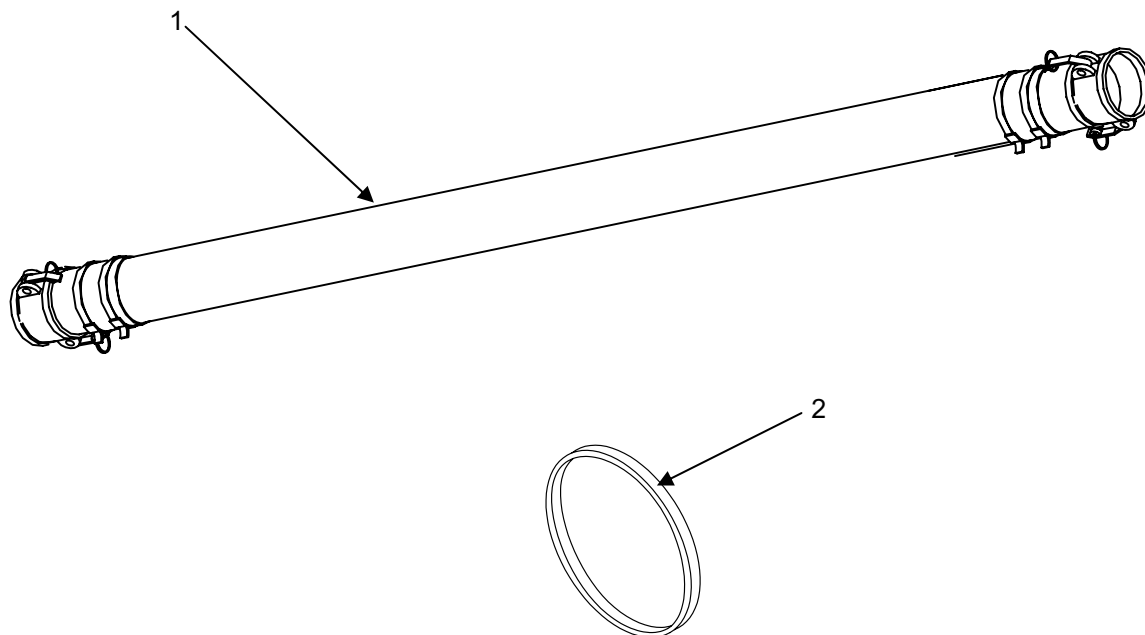


Figure 26. Wastewater Hoses

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|-------------------------------|--------------------|------------------|--------------|-----------------------|--------------------------------------------------------------------|------------|
| GROUP 030502 WASTEWATER HOSES | | | | | | |
| FIG. 26 WASTEWATER HOSES | | | | | | |
| 1 | PAOZZ | 4720-01-140-6288 | 97403 | 13225E9136-4 | HOSE ASSEMBLY, NONMETALLIC, 4-IN X 20-FT UOC: FRV, FUG | 1 |
| 2 | XBOZZ | 5330-00-899-4509 | 0U9Z1 | H6476M | GASKET, 4-IN, BLACK WATER UOC: FTA | 1 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)

2-IN X 1 1/2-IN REDUCER

REPAIR PARTS LIST

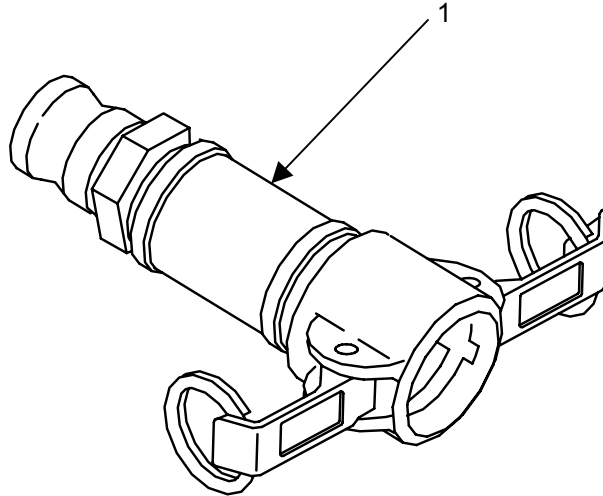


Figure 27. 2-IN X 1 1/2-IN Reducer

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|----------------------------------------------------------------------|------------|
| | | | | | GROUP 030503 2-IN X 1 1/2-IN REDUCER | |
| | | | | | FIG. 27 2-IN X 1 1/2-IN REDUCER | |
| 1 | PAOZZ | 4730-00-951-3298 | 58536 | AA59326X117 | REDUCER, QUICK DISCONNECT, 2-IN X 1 1/2-IN UOC: FRV, FUG | 1 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

VALVE ASSEMBLY INLINE

REPAIR PARTS LIST

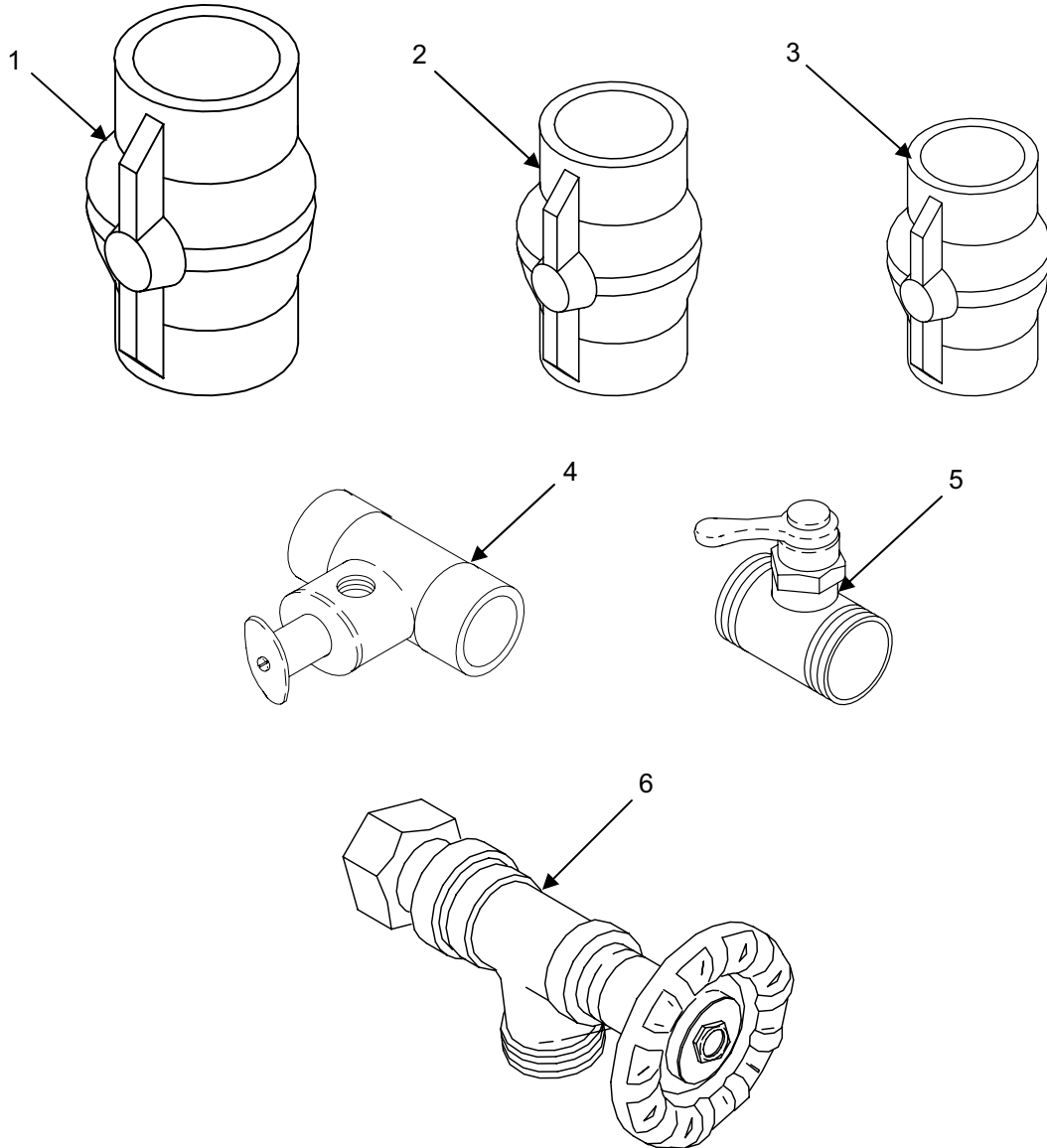


Figure 28. Valve Assembly Inline

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|----------------------|--------------------|------------------|--------------|-----------------------|----------------------------------------------------------------------------------|------------|
| | | | | | GROUP 0306 VALVE ASSEMBLY INLINE | |
| | | | | | FIG. 28 VALVE ASSEMBLY INLINE | |
| 1 | PAFZZ | 4820-01-530-5149 | 1BXJ2 | 201-437 | VALVE, BALL, PVC, 1 1/2 -INCH, SCHEDULE 80 UOC: FRV, FUG | 1 |
| 2 | PAFZZ | 4820-01-530-5142 | 1BXJ2 | 201-435 | VALVE, BALL, PVC, 1-INCH, SCHEDULE 80 UOC: FRV, FUG | 1 |
| 3 | PAFZZ | 4820-01-530-5138 | 1BXJ2 | 201-434 | VALVE, BALL 3/4-INCH SLIP, SCH 80 PVC..... | 3 |
| 4 | PAOZZ | 4820-01-623-3247 | 14679 | OR-17C | VALVE, ANGLE STOP 1/2-INCH IPS X 3/8-INCH COMP, CHROME- PLATED BRASS | 6 |
| 5 | PAOZZ | 4510-01-530-4653 | 0U5N7 | S05-100 | VALVE, SHOWER 1/2-INCH EPT, CHROME PLATED, W/ 7-INCH CHAIN..... | 1 |
| 6 | PAOZZ | 4820-01-530-5129 | 1FY43 | 34-74 | VALVE, BOILER DRAIN 3/4-INCH, BRASS..... | 2 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

ENVIRONMENTAL CONTROL UNIT (ECU)

REPAIR PARTS LIST

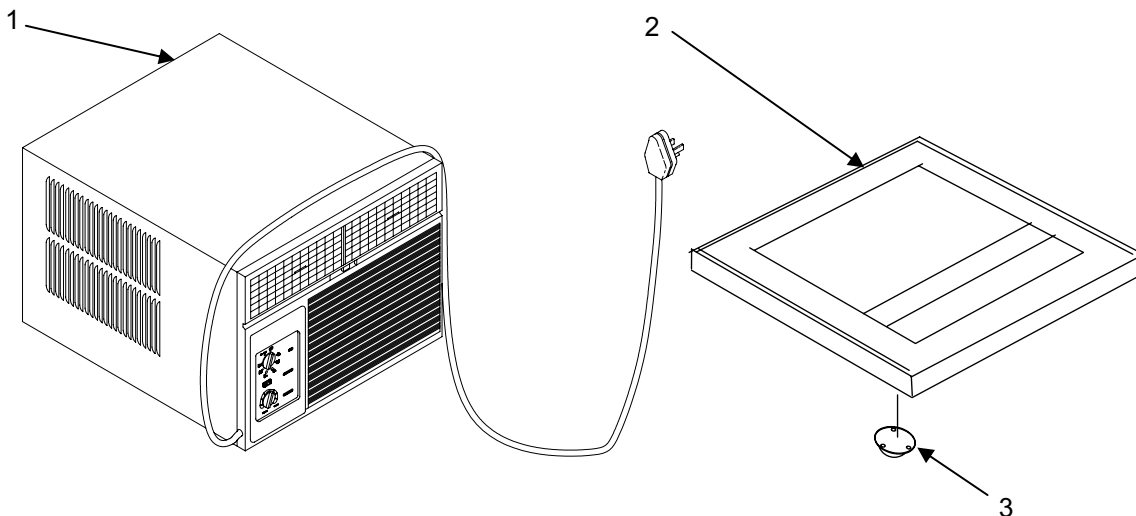


Figure 29. Environmental Control Unit (ECU)

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 04 ENVIRONMENTAL CONTROL UNIT (ECU) | |
| | | | | | FIG. 29 ENVIRONMENTAL CONTROL UNIT (ECU) | |
| 1 | PAOZZ | 4120-01-426-6219 | 89338 | EL36J35 | AIR CONDITIONER..... | 1 |
| 2 | XB0ZZ | | 0U5N7 | 46511048 | ECU CARRIER UOC: FRV, FUG | 1 |
| 3 | XB0ZZ | | 39428 | 2415T31 | BALL TRANSFER UOC: FRV, FUG | 6 |
| END OF FIGURE | | | | | | |

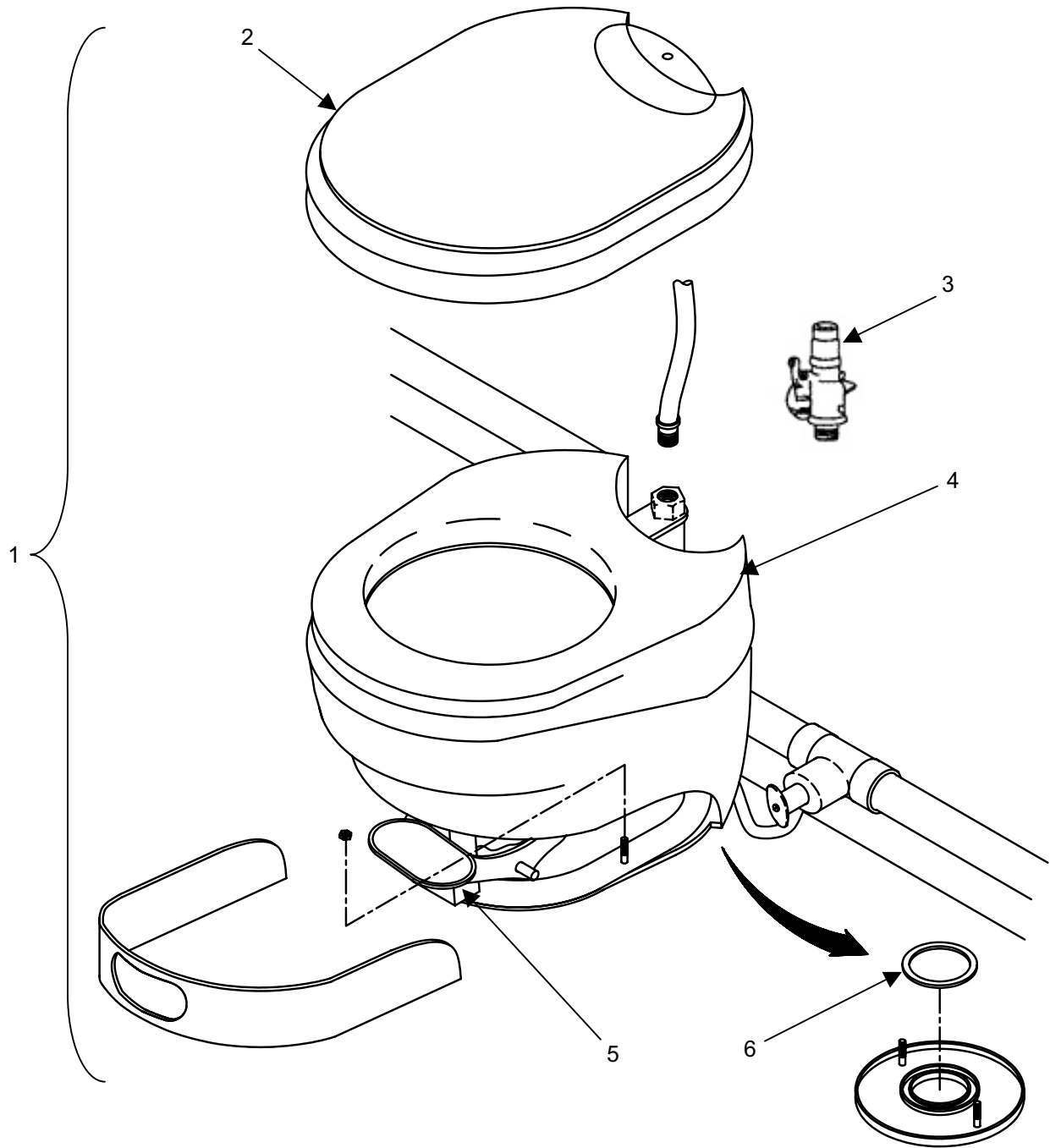


Figure 30. Commode Assembly

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------|--------------|-----------------------|----------------------------------------------------------|------------|
| | | | | | GROUP 05 COMMODE ASSEMBLY | |
| | | | | | FIG. 30 COMMODE ASSEMBLY | |
| 1 | XBOOO | | 61431 | 31084 | TOILET, PERMANENT, BRAVURA..... | 6 |
| 2 | XBOZZ | | 61431 | 31108 | . SEAT COVER FOR BRAVURA MODEL..... | 1 |
| 3 | XBOZZ | | 61431 | 31113 | . WATER MODULE SERVICE PACKAGE FOR BRAVURA MODEL..... | 1 |
| 4 | XBOZZ | | 61431 | 31109 | . SEAT FOR BRAVURA MODEL | 1 |
| 5 | XBOZZ | | 61431 | 33372 | . PEDAL SERVICE PACKAGE FOR BRAVURA MODEL | 1 |
| 6 | XBOZZ | | 61431 | 31115 | CLOSET FLANGE SEAL KIT | 6 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

URINAL ASSEMBLY

REPAIR PARTS LIST

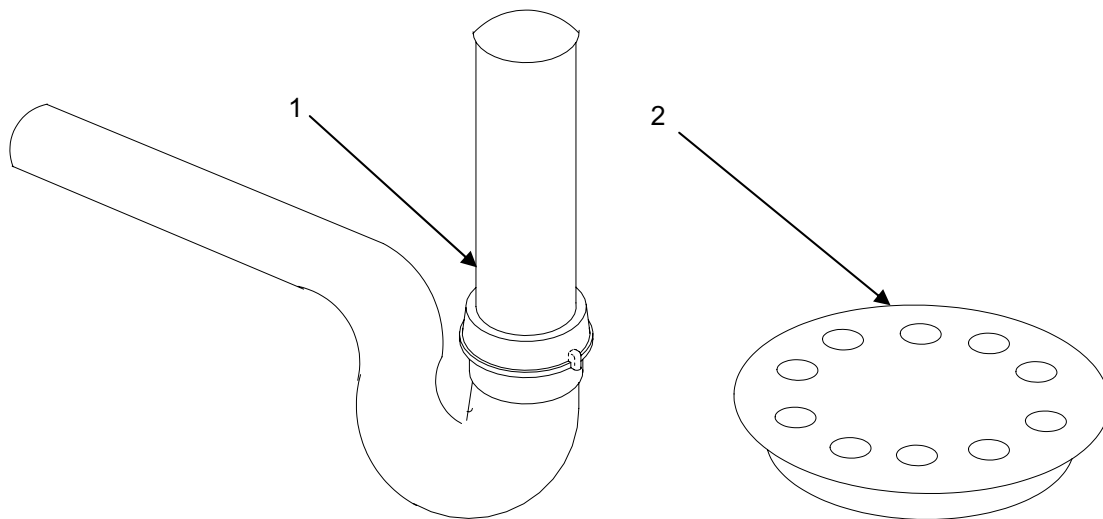


Figure 31. Urinal Assembly

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 06 URINAL ASSEMBLY | |
| | | | | | FIG. 31 URINAL ASSEMBLY | |
| 1 | PAOZZ | 4510-00-273-1104 | 1H863 | R429SW | DRAIN, SINK | 1 |
| 2 | PAOZZ | 4510-01-530-4648 | 39428 | 2674K31 | STRAINER..... | 1 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

FAUCETS

REPAIR PARTS LIST

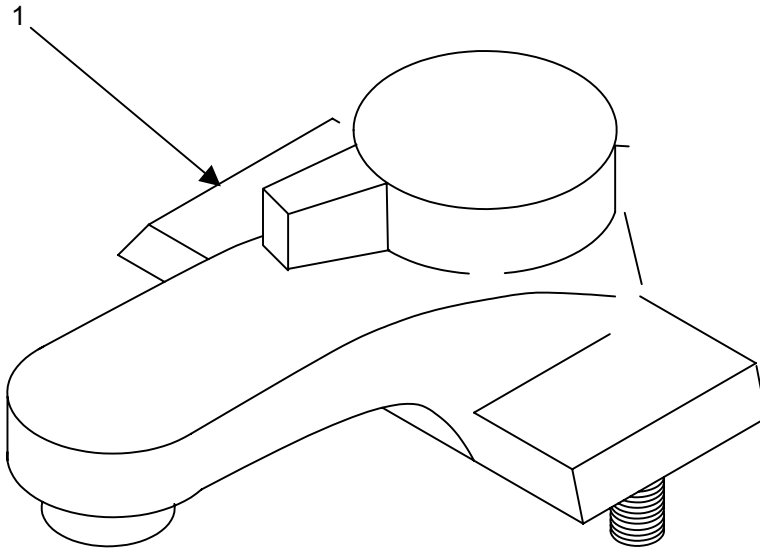


Figure 32. Faucets

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 07 FAUCETS | |
| | | | | | FIG. 32 FAUCETS | |
| 1 | XBOZZ | | 02977 | S-60-H | SELF CLOSING FAUCET..... | 2 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

SINK STAND

REPAIR PARTS LIST

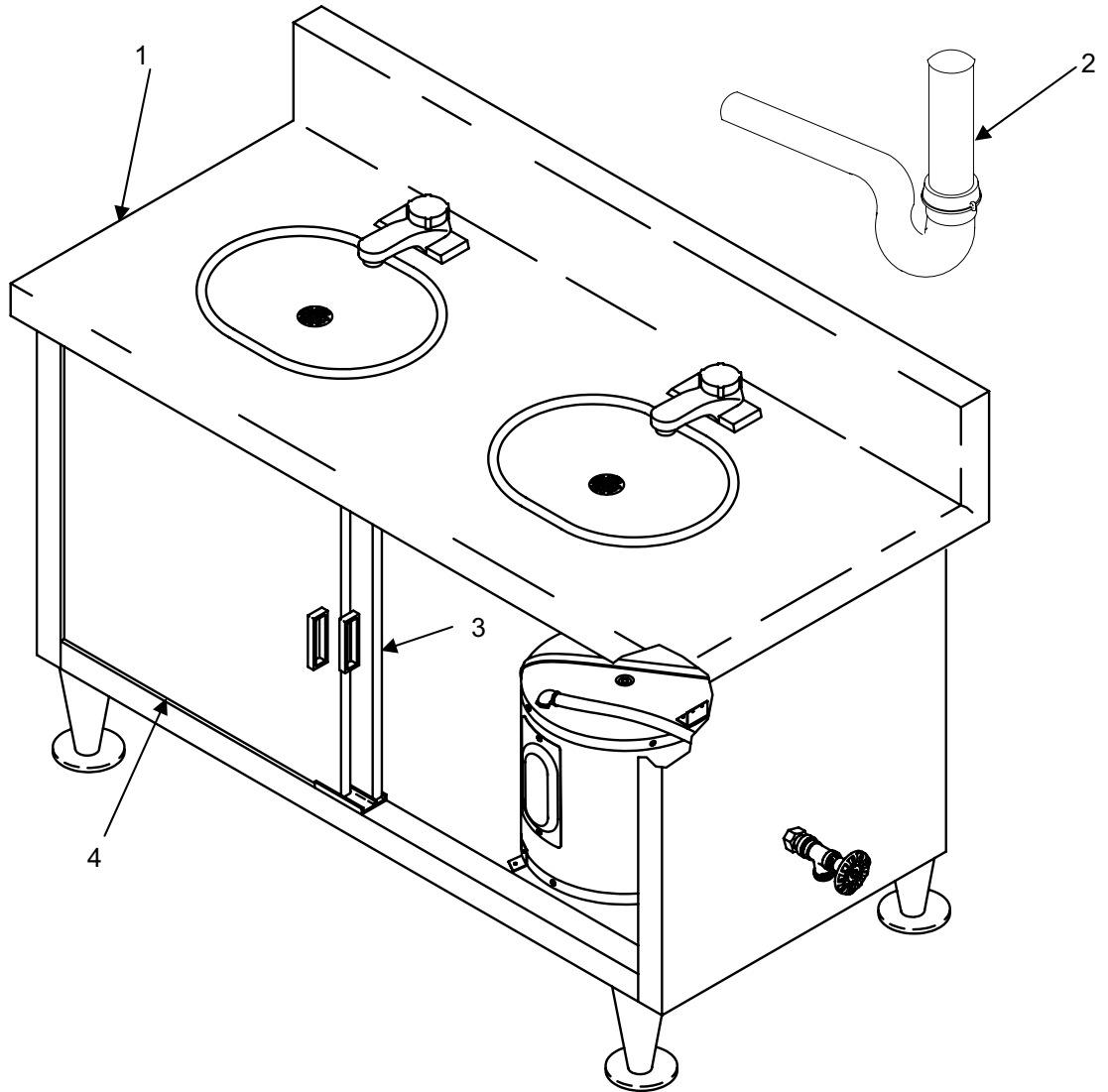


Figure 33. Sink Stand

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|----------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 08 SINK STAND | |
| | | | | | FIG. 33 SINK STAND | |
| 1 | XB0ZZ | | 0U5N7 | 46511021 | SINK ASSEMBLY | 1 |
| 2 | PAOZZ | 4510-00-273-1104 | 1H863 | R429SW | . DRAIN, SINK..... | 2 |
| 3 | XBOZZ | | 0AGG4 | WFES-48-20 -RD | . RIGHT CABINET DOOR..... | 2 |
| 4 | XBOZZ | | 0AGG4 | WFES-48-20 -LD | . LEFT CABINET DOOR | 2 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

WATER HEATER

REPAIR PARTS LIST

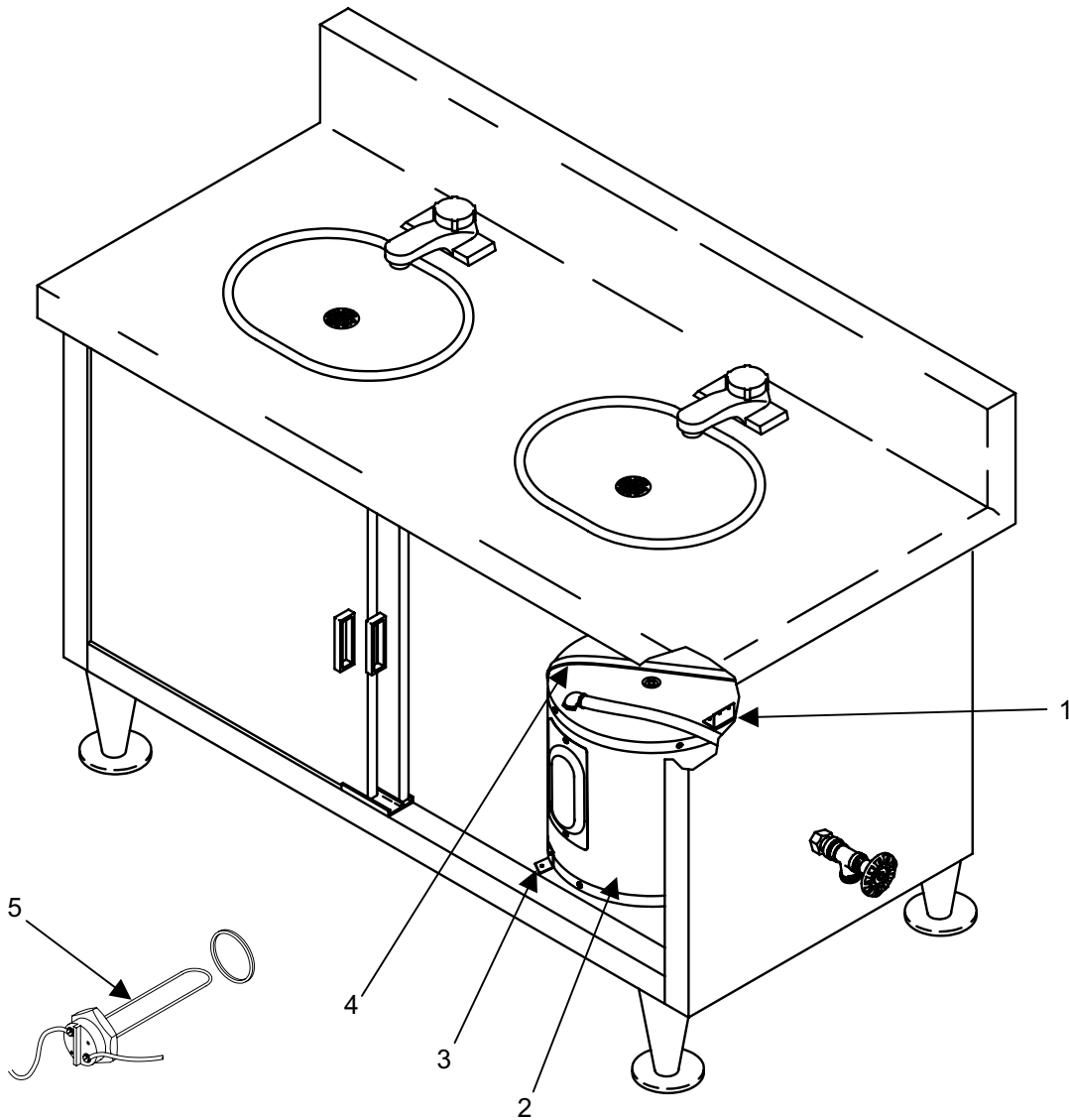


Figure 34. Water Heater

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|----------------------|--------------------|------------|--------------|-----------------------|------------------------------------------------|------------|
| | | | | | GROUP 09 WATER HEATER | |
| | | | | | FIG. 34 WATER HEATER | |
| 1 | XBOZZ | | 0U5N7 | 46512044 | HOLD DOWN BRACKET | 1 |
| 2 | XBOZZ | | 25795 | 1PZ81 | WATER HEATER..... | 1 |
| 3 | XBOZZ | | 0U5N7 | 46512045 | HOLD DOWN BRACKET | 2 |
| 4 | XBOZZ | | 39428 | 8854T739 X4 | WATER HEATER TIEDOWN | 1 |
| 5 | XBOZZ | | 50741 | SP10874GH | ELEMENT, 2000W, 7 11/16-INCH L | 1 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE SYSTEM (CLS)

30 GPM INTERNAL WATER PUMP ASSEMBLY

REPAIR PARTS LIST

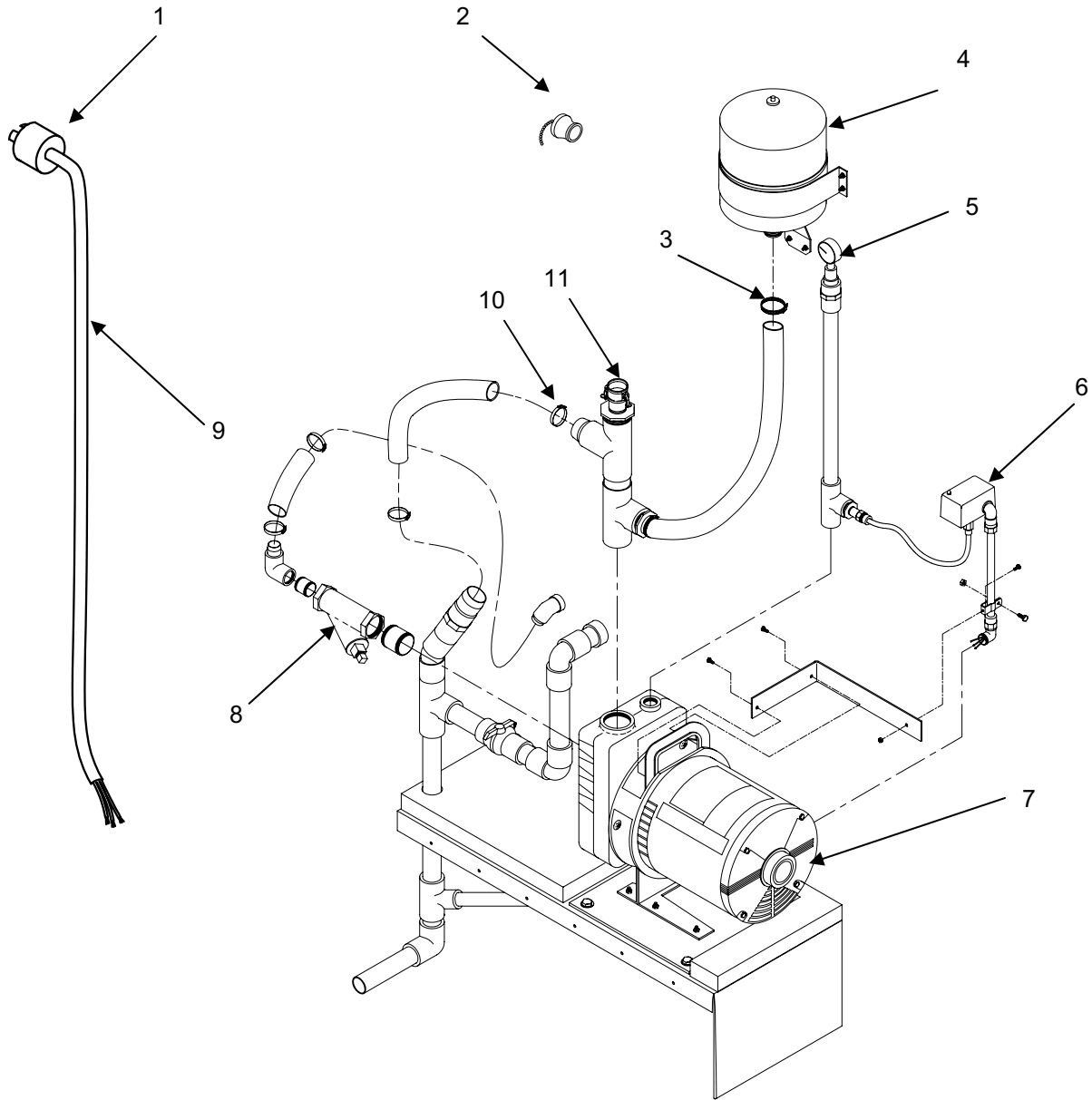


Figure 35. 30 GPM Internal Water Pump Assembly

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|----------------------|--------------------|------------------|--------------|-----------------------|-------------------------------------------------------------------------------------------------|------------|
| | | | | | GROUP 10 30 GPM INTERNAL WATER PUMP ASSEMBLY | |
| | | | | | FIG. 35 30 GPM INTERNAL WATER PUMP ASSEMBLY | |
| 1 | PAOZZ | 5935-01-043-3473 | 74545 | 2321 | CONNECTOR, PLUG, ELECTRICAL UOC: FRV, FUG..... | 1 |
| 2 | PAOZZ | 5340-01-530-5205 | 33813 | 3/4W-BRASS | DUST PLUG UOC: FRV, FUG..... | 1 |
| 3 | PAOZZ | 4730-00-908-3194 | 76599 | H12SS | CLAMP, HOSE 11/16 - 1 1/4 RANGE X 1/2 W..... | 2 |
| 4 | PAOZZ | 5340-01-530-8691 | 25795 | 4UN87 | PRESSURE TANK UOC: FRV, FUG..... | 1 |
| 5 | PAOZZ | 6685-01-391-7560 | 39428 | 3846K6 | GAUGE, PRESSURE, 0-60 PSI, 1/4 NPT, LM UOC: FRV, FUG..... | 1 |
| 6 | PAOZZ | 5340-01-530-4515 | 56365 | 9013FSW2J21 | SWITCH, PRESSURE UOC: FRV, FUG..... | 1 |
| 7 | PAFZZ | 5340-01-530-8696 | 25795 | 3P553 | PUMP ASSY, WATER, 30 GPM UOC: FRV, FUG..... | 1 |
| 8 | PAOZZ | 4730-01-530-4658 | 1PYU4 | 112BSTR | 1 1/2-INCH Y-STRAINER UOC: FRV, FUG..... | 1 |
| 9 | MOOZZ | | 00Y95 | 20780 | CABLE, POWER, ELECTRICAL, MAKE FROM BULK MATERIAL, CUT TO LENGTH 6-FT. UOC: FRV, FUG..... | 1 |
| 10 | XBOZZ | | 33813 | H24SS | CLAMP, HOSE 1 1/16 x 2 RANGE X 1/2 W..... | 4 |
| 11 | PAOZZ | 4730-01-530-4828 | 33813 | 3/4B-BRASS | 3/4-INCH CAM AND GROOVE COUPLER UOC: FRV, FUG..... | 1 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

SUMP PUMP

REPAIR PARTS LIST

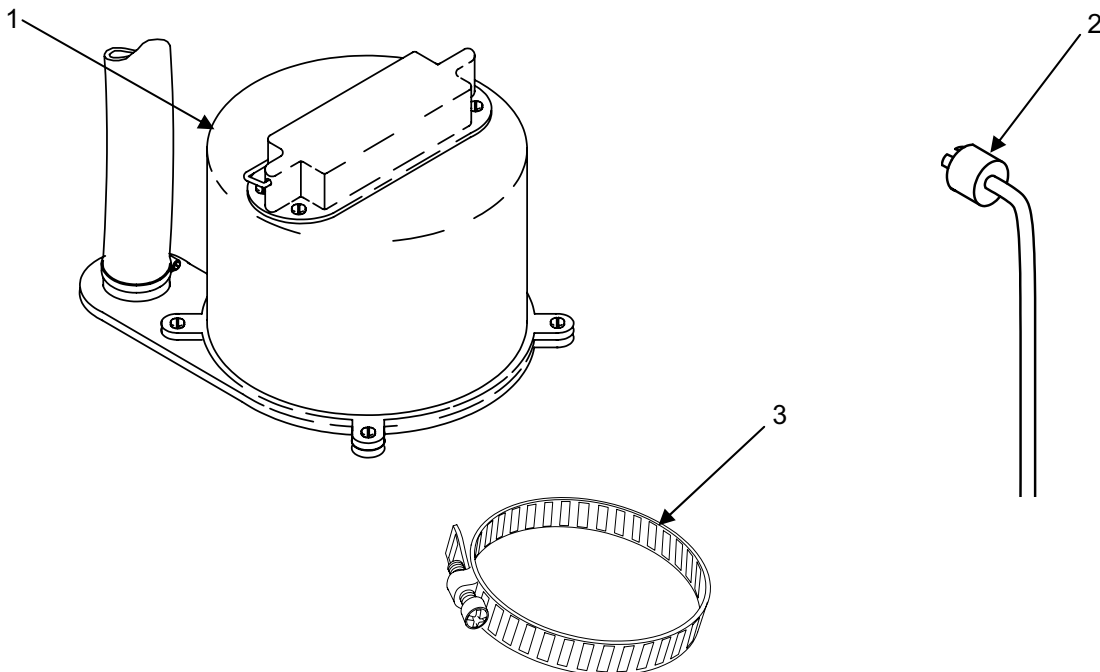


Figure 36. Sump Pump

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| GROUP 11 SUMP PUMP | | | | | | |
| FIG. 36 SUMP PUMP | | | | | | |
| 1 | PAOZZ | 4320-01-530-8692 | 3Y232 | N53 | PUMP, UNIT, CENTRIFUGAL..... | 1 |
| 2 | PAOZZ | 5935-01-025-9099 | 74545 | 47CM20C | CONNECTOR, PLUG, ELECTRICAL..... | 1 |
| 3 | PAOZZ | 4730-00-204-3491 | 35708 | HS32 | CLAMP, HOSE, 2-INCH, STAINLESS STEEL..... | 2 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

WASTEWATER VALVE ASSEMBLY

REPAIR PARTS LIST

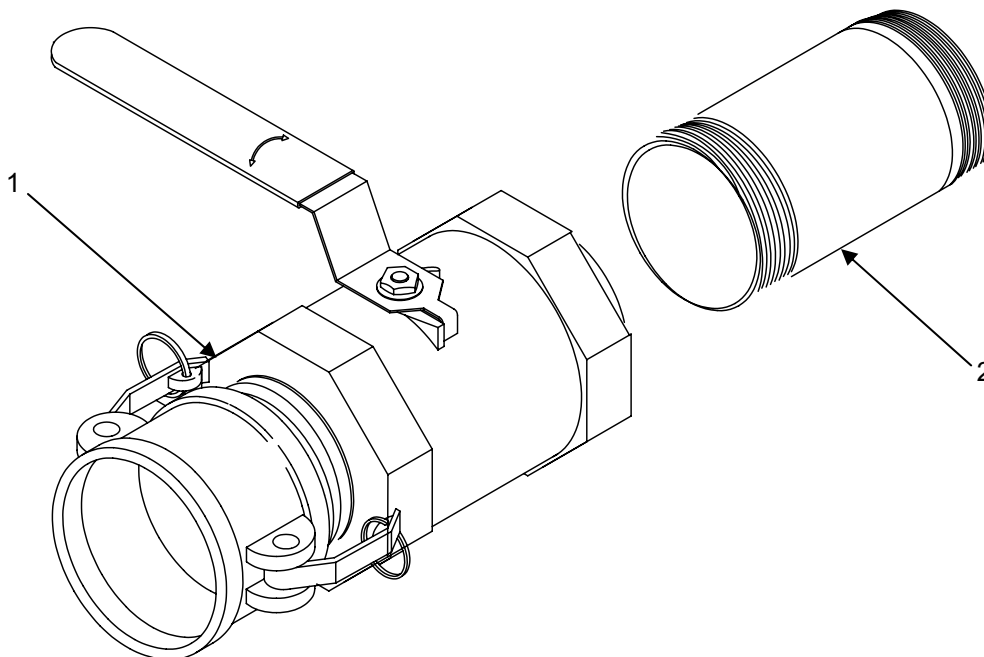


Figure 37. Wastewater Valve Assembly

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|------------------------------------|--------------------|------------------|--------------|-----------------------|------------------------------------------------|------------|
| GROUP 12 WASTEWATER VALVE ASSEMBLY | | | | | | |
| FIG. 37 WASTEWATER VALVE ASSEMBLY | | | | | | |
| 1 | PAOZZ | 4820-01-210-5605 | 97403 | 13228E3435 | VALVE ASSEMBLY, 4 INCH, QD | 1 |
| 2 | PAOZZ | 4730-01-530-5059 | 39428 | 4568K326 | NIPPLE, PIPE, BRASS, 4 INCH X 6 INCH..... | 1 |
| END OF FIGURE | | | | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE SYSTEM (CLS)
COLD WEATHER EQUIPMENT
REPAIR PARTS LIST

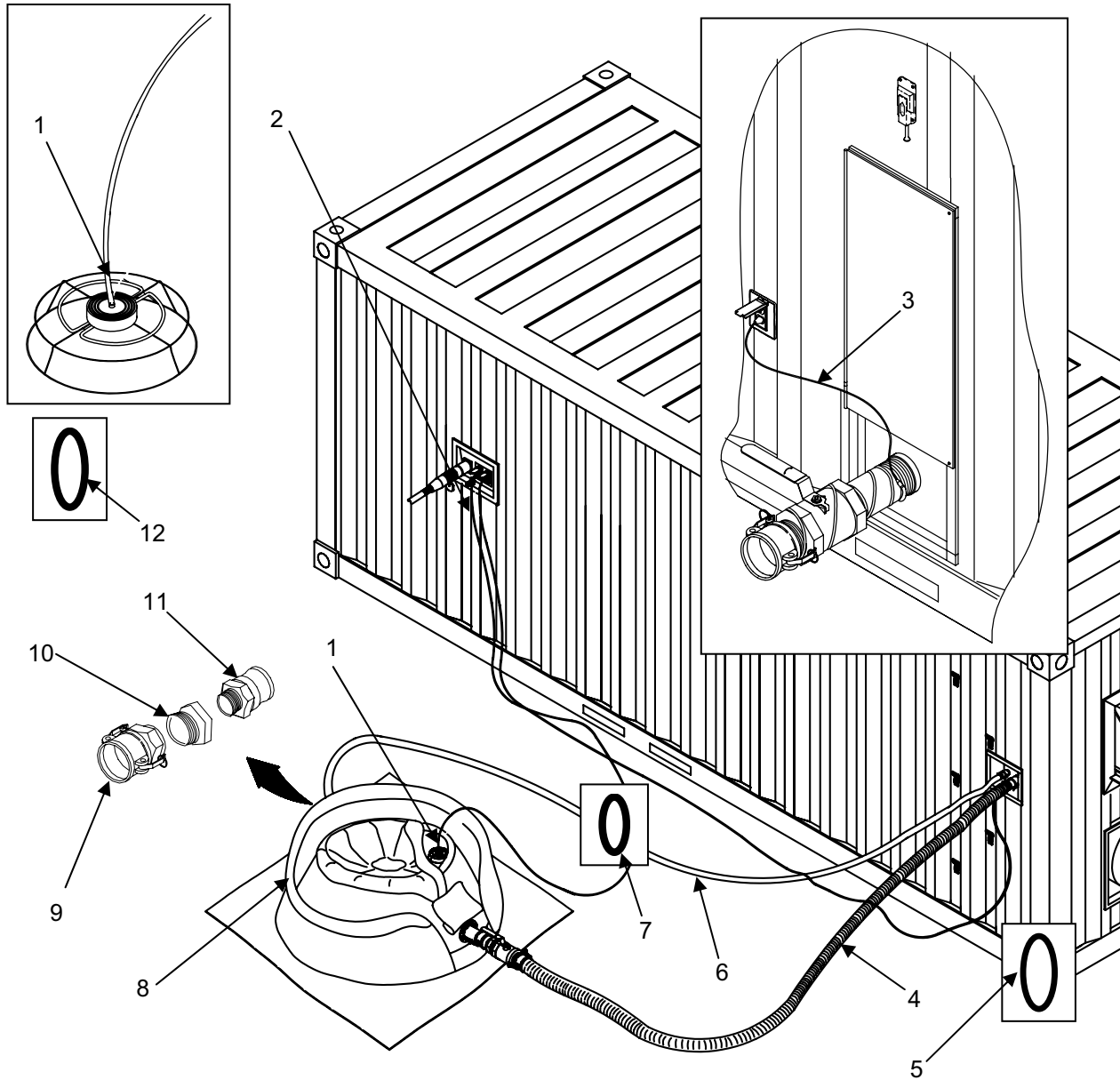


Figure 38. Cold Weather Equipment

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|----------------------------------------------------------------------|------------|
| | | | | | GROUP 13 COLD WEATHER EQUIPMENT | |
| | | | | | FIG. 38 COLD WEATHER EQUIPMENT | |
| 1 | PAOZZ | 4520-01-530-8693 | 99006 | AA1P115N | HEATING ELEMENT, ELECTRICAL, IMMER UOC: FRV, FUG..... | 1 |
| 2 | PAOZZ | 6150-01-413-9314 | 81337 | 9-1-0183 | EXTENSION CORD, 25-FT, 120VAC UOC: FRV, FUG..... | 2 |
| 3 | PAOZZ | 4520-01-530-8695 | 39428 | 3580K22 | HEAT TRACE CABLE, 6-FT UOC: FRV, FUG..... | 1 |
| 4 | PAOOO | 4520-01-530-8694 | 32446 | 600-1.5-25FT | HOSE ASSEMBLY, NONMETALLIC, 25-FT UOC: FRV, FUG..... | 1 |
| 5 | PAOZZ | 5330-00-360-0595 | 14555 | 110-5 | . HOSE GASKET, 1 1/2-IN UOC: FRV, FUG..... | 1 |
| 6 | PAOOO | 4720-01-530-4911 | 39428 | 55145K416 | HOSE ASSEMBLY, NONMETALLIC, 1-IN UOC: FRV, FUG..... | 1 |
| 7 | PAOZZ | 5330-00-088-9167 | 96906 | MS27030-3 | . GASKET, 1-IN UOC: FRV, FUG..... | 1 |
| 8 | PAOZZ | 2540-01-530-8738 | 39428 | 87995T48 | ARCTIC COVER UOC: FRV, FUG..... | 1 |
| 9 | PAOZZ | 4730-01-530-4905 | 39428 | 51415K25 | COUPLER UOC: FRV, FUG..... | 1 |
| 10 | PAOZZ | 4730-01-530-5058 | 39428 | 44705K287 | REDUCER BUSHING UOC: FRV, FUG..... | 1 |
| 11 | PAOZZ | 4730-01-530-4835 | 39428 | 51415K12 | ADAPTER, 1-IN M CAM AND GROOVE X 1-IN M NPT UOC: FRV, FUG..... | 1 |
| 12 | PAOZZ | 5330-00-612-2414 | 81718 | 5388H | . GASKET, 2-IN UOC: FRV, FUG..... | 1 |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

BULK MATERIALS

REPAIR PARTS LIST

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY |
|--------------------|--------------------|------------------|--------------|-----------------------|-----------------------------------------------------------------|------------|
| | | | | | GROUP 99 BULK | |
| | | | | | FIG. BULK | |
| 1 | XDFZZ | | 39428 | 48855K21 | PIPE, PVC, SCHEDULE 80, ½ INCH X 5 FEET..... | V |
| 2 | XDFZZ | | 39428 | 48855K11 | PIPE, PVC, SCHEDULE 80, ½ INCH X 10 FEET..... | V |
| 3 | XDFZZ | | 39428 | 48855K22 | PIPE, PVC, SCHEDULE 80, ¾ INCH X 5 FEET..... | V |
| 4 | XDFZZ | | 39428 | 48855K12 | PIPE, PVC, SCHEDULE 80, ¾ INCH X 10 FEET..... | V |
| 5 | XDFZZ | | 39428 | 48855K23 | PIPE, PVC, SCHEDULE 80, 1 INCH X 5 FEET..... | V |
| 6 | XDFZZ | | 39428 | 48855K13 | PIPE, PVC, SCHEDULE 80, 1 INCH X 10 FEET..... | V |
| 7 | XDFZZ | | 39428 | 48855K25 | PIPE, PVC, SCHEDULE 80, 1 ½ INCH X 5 FEET.... | V |
| 8 | XDFZZ | | 39428 | 48855K15 | PIPE, PVC, SCHEDULE 80, 1 ½ INCH X 10 FEET.. | V |
| 9 | PAOZZ | 7220-00-254-4240 | 80063 | SC-C-539500-8 | MATTING, FLOOR, RIBBED, 1/8 INCH X 30 FT..... | RO |
| 10 | XDFZZ | | 39428 | 5393K48 | TUBING, NONMETALLIC, PVC, CLEAR, 1 ½ INCH ID, PER FOOT | V |
| | PAOZZ | 4720-01-022-8241 | 06034 | 1020117 | TUBING, NONMETALLIC, ¾-INCH, NOM, BRAID REINFORCED | FT |
| | PAOZZ | 4720-00-080-5157 | 06034 | 1001385-100 | TUBING, NONMETALLIC, 1 ½-INCH, NOM, BRAID REINFORCED..... | FT |
| 11 | XDFZZ | | 03005 | 12/3 SJOOW | CABLE, POWER, ELECTRICAL | FT |
| | | | | | END OF FIGURE | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

**CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)**

SPECIAL TOOLS LIST

SPECIAL TOOLS LIST

No special tools are required.

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

NATIONAL STOCK NUMBER (NSN) INDEX

| STOCK NUMBER | FIG. | ITEM | STOCK NUMBER | FIG. | ITEM |
|------------------|------|------|------------------|------|------|
| 5925-00-011-2540 | 16 | 2 | 5120-01-013-1676 | 20 | 2 |
| 5925-00-062-3743 | 16 | 6 | 5925-01-021-5222 | 16 | 7 |
| 4720-00-080-5157 | BULK | 10 | 4720-01-022-8241 | BULK | 10 |
| 5330-00-088-9167 | 38 | 7 | 5935-01-025-9099 | 36 | 2 |
| 5930-00-114-8708 | 15 | 2 | 6210-01-032-0825 | 17 | 2 |
| 4730-00-114-9888 | 22 | 21 | 5975-01-041-3621 | 16 | 9 |
| 4730-00-114-9889 | 22 | 33 | 5935-01-043-3473 | 35 | 1 |
| 4730-00-144-4952 | 22 | 26 | 4730-01-058-7747 | 22 | 16 |
| 6240-00-152-2987 | 17 | 1 | 4730-01-058-7755 | 22 | 7 |
| 4730-00-155-7001 | 22 | 31 | 4730-01-058-7756 | 22 | 6 |
| 6240-00-155-8633 | 18 | 3 | 4730-01-059-0408 | 22 | 29 |
| 4730-00-162-2560 | 22 | 20 | 4730-01-065-9352 | 22 | 35 |
| 4730-00-204-3491 | 36 | 3 | 4720-01-140-6288 | 26 | 1 |
| 7220-00-205-0389 | 1 | 4 | 5935-01-147-9446 | 15 | 3 |
| 7520-00-205-1857 | 1 | 3 | 4720-01-174-8173 | 25 | 1 |
| 4510-00-224-8549 | 2 | 3 | 5340-01-202-9544 | 10 | 8 |
| 7220-00-254-4240 | 5 | 1 | 4730-01-210-4250 | 22 | 13 |
| 7220-00-254-4240 | BULK | 9 | 4820-01-210-5605 | 37 | 1 |
| 4510-00-273-1104 | 31 | 1 | 6150-01-220-5586 | 21 | 1 |
| 4510-00-273-1104 | 33 | 2 | 6150-01-220-5588 | 21 | 4 |
| 4510-00-273-1104 | 38 | 5 | 4820-01-226-6021 | 22 | 40 |
| 4730-00-334-0013 | 22 | 24 | 5930-01-230-5340 | 16 | 3 |
| 5330-00-360-0595 | 25 | 3 | 5925-01-231-5423 | 19 | 7 |
| 5930-00-400-6214 | 16 | 4 | 5925-01-231-5423 | 19 | 9 |
| 4730-00-476-7155 | 22 | 22 | 6150-01-256-6300 | 21 | 2 |
| 4730-00-482-5815 | 22 | 3 | 6150-01-256-6304 | 21 | 3 |
| 4730-00-595-1103 | 25 | 6 | 4730-01-271-0954 | 22 | 27 |
| 5310-00-599-0776 | 25 | 5 | 4730-01-271-0954 | 22 | 28 |
| 5330-00-612-2414 | 38 | 12 | 4730-01-282-1693 | 22 | 25 |
| 5975-00-682-0561 | 16 | 5 | 5935-01-292-6695 | 19 | 2 |
| 4730-00-702-6479 | 22 | 10 | 4730-01-295-2525 | 22 | 37 |
| 4730-00-702-6479 | 22 | 11 | 4730-01-301-4266 | 22 | 5 |
| 5925-00-728-1969 | 16 | 8 | 4730-01-306-3119 | 22 | 12 |
| 4720-00-729-5334 | 25 | 4 | 5935-01-350-4123 | 19 | 6 |
| 4140-00-763-6527 | 12 | 1 | 6685-01-391-7560 | 35 | 5 |
| 4730-00-812-3274 | 22 | 32 | 5925-01-408-0625 | 16 | 1 |
| 4730-00-861-8400 | 22 | 17 | 6150-01-413-9314 | 38 | 2 |
| 4730-00-861-8400 | 22 | 18 | 4120-01-426-6219 | 29 | 1 |
| 5975-00-878-3791 | 20 | 1 | 4320-01-434-6057 | 18 | 2 |
| 6250-00-892-5248 | 17 | 3 | 4720-01-438-8341 | 25 | 2 |
| 5330-00-899-4509 | 26 | 2 | 5975-01-449-6949 | 18 | 4 |
| 4730-00-908-3194 | 35 | 3 | 5975-01-449-6949 | 19 | 1 |
| 4730-00-928-2356 | 22 | 34 | 5935-01-463-3040 | 19 | 5 |
| 4730-00-935-5570 | 22 | 36 | 5430-01-470-7380 | 23 | 1 |
| 4730-00-951-3298 | 27 | 1 | | | |

| STOCK NUMBER | FIG. | ITEM | STOCK NUMBER | FIG. | ITEM |
|------------------|------|------|------------------|------|------|
| 4820-01-525-0464 | 24 | 1 | 4520-01-530-8695 | 38 | 3 |
| 3990-01-530-4190 | 10 | 6 | 5340-01-530-8696 | 35 | 7 |
| 5940-01-530-4259 | 20 | 3 | 2540-01-530-8738 | 38 | 8 |
| 5935-01-530-4508 | 19 | 8 | 4820-01-623-3247 | 28 | 4 |
| 5935-01-530-4510 | 19 | 3 | | | |
| 5935-01-530-4511 | 19 | 10 | | | |
| 5975-01-530-4512 | 19 | 4 | | | |
| 5340-01-530-4515 | 35 | 6 | | | |
| 5995-01-530-4517 | 15 | 1 | | | |
| 4510-01-530-4648 | 31 | 2 | | | |
| 2540-01-530-4649 | 14 | 1 | | | |
| 4510-01-530-4653 | 28 | 5 | | | |
| 4730-01-530-4658 | 35 | 8 | | | |
| 4010-01-530-4764 | 4 | 3 | | | |
| 4730-01-530-4814 | 8 | 2 | | | |
| 4730-01-530-4822 | 22 | 1 | | | |
| 4730-01-530-4828 | 35 | 11 | | | |
| 4730-01-530-4833 | 22 | 19 | | | |
| 4730-01-530-4835 | 38 | 11 | | | |
| 4730-01-530-4850 | 22 | 30 | | | |
| 4730-01-530-4863 | 22 | 2 | | | |
| 4730-01-530-4867 | 22 | 4 | | | |
| 4730-01-530-4880 | 22 | 9 | | | |
| 4730-01-530-4880 | 22 | 15 | | | |
| 4730-01-530-4888 | 22 | 8 | | | |
| 4730-01-530-4888 | 22 | 8 | | | |
| 4730-01-530-4888 | 22 | 14 | | | |
| 4730-01-530-4891 | 8 | 1 | | | |
| 4730-01-530-4905 | 38 | 9 | | | |
| 4720-01-530-4911 | 38 | 6 | | | |
| 4730-01-530-5058 | 38 | 10 | | | |
| 4730-01-530-5059 | 37 | 2 | | | |
| 4720-01-530-5061 | 22 | 23 | | | |
| 5315-01-530-5063 | 10 | 4 | | | |
| 5340-01-530-5115 | 22 | 14 | | | |
| 4140-01-530-5122 | 12 | 1 | | | |
| 4820-01-530-5129 | 28 | 6 | | | |
| 4820-01-530-5138 | 28 | 3 | | | |
| 4820-01-530-5142 | 28 | 2 | | | |
| 4820-01-530-5149 | 28 | 1 | | | |
| 5340-01-530-5155 | 6 | 1 | | | |
| 4140-01-530-5162 | 11 | 1 | | | |
| 5340-01-530-5164 | 13 | 1 | | | |
| 5340-01-530-5187 | 1 | 1 | | | |
| 5340-01-530-5205 | 35 | 2 | | | |
| 7230-01-530-5895 | 3 | 1 | | | |
| 7230-01-530-6331 | 4 | 1 | | | |
| 5340-01-530-8691 | 35 | 4 | | | |
| 4320-01-530-8692 | 36 | 1 | | | |
| 4520-01-530-8693 | 38 | 1 | | | |
| 4520-01-530-8694 | 38 | 4 | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE

CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)

PART NUMBER INDEX

| PART NUMBER | FIG. | ITEM | PART NUMBER | FIG. | ITEM |
|------------------|------|------|----------------|------|------|
| A-A-182 | 1 | 3 | S05-100 | 28 | 5 |
| A-A-59270 | 25 | 4 | S-60-H | 32 | 1 |
| AA59326-E5 | 25 | 3 | SB73 | 16 | 4 |
| AA59326X117 | 27 | 1 | SC-C-539500-8 | BULK | 9 |
| AA1P115N | 38 | 1 | SC-C-539500-8 | 5 | 1 |
| AH170ZN | 6 | 1 | SP10874GH | 34 | 5 |
| B1-16AF | 22 | 23 | U07531 | 17 | 4 |
| B-200-W | 2 | 3 | U701-S-1824 | 14 | 1 |
| B-40 | 2 | 4 | WFES-48-20 -LD | 33 | 4 |
| CURTAIN45" X 63" | 3 | 1 | WFES-48-20 -RD | 33 | 3 |
| D104-015 | 22 | 30 | ZZ806-000-00 | 1 | 4 |
| DS-128 | 16 | 9 | 009QT-142 | 22 | 38 |
| EL3W35 | 29 | 1 | 01001011 | 22 | 20 |
| FG-40 | 17 | 2 | 01013008 | 22 | 27 |
| FSS-5100-243B | 25 | 6 | 01013008 | 22 | 28 |
| GF5352-1C | 19 | 7 | 01013011 | 22 | 26 |
| GF5352-1C | 19 | 9 | 01028008 | 22 | 31 |
| H12SS | 35 | 3 | 04-A-4201 | 21 | 1 |
| H24SS | 35 | 10 | 04-A-4204 | 21 | 4 |
| H293168-1 | 20 | 1 | 0501007 | 22 | 22 |
| H532 | 36 | 3 | 05025009 | 22 | 35 |
| H6476M | 26 | 2 | 1001385-100 | BULK | 10 |
| HBL2320 | 19 | 8 | 1020117 | BULK | 10 |
| HBL4710 | 19 | 5 | 10F-BRASS | 22 | 9 |
| IFC-006 | 4 | 3 | 10V-BRASS | 22 | 15 |
| IFC-100 | 4 | 1 | 110-5 | 38 | 5 |
| IFC-98 | 4 | 2 | 112BSTR | 35 | 8 |
| IK 3/0 | 20 | 3 | 12/3SJ00W | BULK | 11 |
| MS15586-3 | 18 | 3 | 13225E36-10 | 25 | 2 |
| MS27030-3 | 38 | 7 | 13225E36-11 | 25 | 1 |
| MS90558C324-12P | 15 | 2 | 13225E9136-4 | 26 | 1 |
| MS90564-7C | 15 | 3 | 13226E7020 | 21 | 2 |
| N53 | 36 | 1 | 13226E7024 | 21 | 3 |
| NHSS1Z07 | 6 | 2 | 13226E7741 | 20 | 2 |
| OR-17C | 28 | 4 | 13228E3435 | 37 | 1 |
| PS15ACI | 16 | 3 | 13229E0757 | 19 | 6 |
| Q1025007 | 22 | 33 | 13295A72 | 9 | 3 |
| QO120GFI | 16 | 7 | 1430UHTBEN | 13 | 1 |
| QO2020 | 16 | 2 | 15F-BRASS | 22 | 8 |
| QO360 | 16 | 1 | 15V-BRASS | 22 | 14 |
| QOB230 | 16 | 6 | 1723A24 | 7 | 2 |
| QOB330 | 16 | 8 | 1723A24 | 10 | 5 |
| R429SW | 31 | 1 | 1760A6 | 7 | 1 |
| R429SW | 33 | 2 | 17765A19 | 7 | 3 |
| RCF-3K-W-OT | 23 | 1 | 1852 | 8 | 1 |

| PART NUMBER | FIG. | ITEM | PART NUMBER | FIG. | ITEM |
|---------------|------|------|------------------|------|------|
| 1PZ81 | 34 | 2 | 48855K15 | BULK | 8 |
| 201-434 | 28 | 3 | 48855K21 | BULK | 1 |
| 201-435 | 28 | 2 | 48855K22 | BULK | 3 |
| 201-437 | 28 | 1 | 48855K23 | BULK | 5 |
| 201-5021-0219 | 18 | 2 | 48855K25 | BULK | 7 |
| 20780 | 35 | 9 | 4BCSP | 8 | 2 |
| 2321 | 35 | 1 | 4BCSP | 8 | 3 |
| 2415T31 | 29 | 3 | 4BCSP | 8 | 3 |
| 2510-A | 19 | 2 | 4C730 | 11 | 1 |
| 264-5004-9901 | 18 | 4 | 4UN87 | 35 | 4 |
| 2674K31 | 31 | 2 | 51415K12 | 38 | 11 |
| 27-17 | 2 | 5 | 51415K25 | 38 | 9 |
| 2862K22 | 2 | 1 | 5310-00-599-0776 | 25 | 5 |
| 2C819 | 12 | 1 | 5361I | 19 | 3 |
| 2CCS | 19 | 4 | 5388H | 38 | 12 |
| 3/4W-BRASS | 35 | 2 | 5393K48 | BULK | 10 |
| 310-007 | 22 | 19 | 55145K416 | 38 | 6 |
| 31084 | 30 | 1 | 5597 | 10 | 8 |
| 31108 | 30 | 2 | 59915K24 | 10 | 1 |
| 31109 | 30 | 4 | 5C529 | 12 | 1 |
| 31113 | 30 | 3 | 600-1.5-25FT | 38 | 4 |
| 31115 | 30 | 6 | 600-ZINC | 1 | 1 |
| 314B-BRASS | 35 | 11 | 60103 | 10 | 6 |
| 31665T3 | 10 | 7 | 7425WOA | 19 | 1 |
| 32-108-01 | 24 | 1 | 801-005 | 22 | 29 |
| 33372 | 30 | 5 | 806-007 | 22 | 21 |
| 34-74 | 28 | 6 | 817-005 | 22 | 18 |
| 3580K22 | 38 | 3 | 817-007 | 22 | 17 |
| 3801 | 19 | 10 | 817-010CPVC | 22 | 16 |
| 3846K6 | 35 | 5 | 829-007 | 22 | 34 |
| 3P553 | 35 | 7 | 829-012 | 22 | 36 |
| 432 | 18 | 1 | 829-015 | 22 | 37 |
| 44705K287 | 38 | 10 | 8296975 | 17 | 1 |
| 4568K326 | 37 | 2 | 835-007 | 22 | 3 |
| 46511010-1 | 9 | 1 | 836-005 | 22 | 7 |
| 46511010-2 | 9 | 2 | 836-007 | 22 | 6 |
| 46511013 | 2 | 2 | 836-015 | 22 | 5 |
| 46511021 | 33 | 1 | 836-040 | 22 | 4 |
| 46511036 | 10 | 3 | 837-101 | 22 | 11 |
| 46511037 | 10 | 2 | 837-211 | 22 | 10 |
| 46511048 | 29 | 2 | 847-005 | 22 | 12 |
| 46512040 | 1 | 2 | 847-010 | 22 | 13 |
| 46512044 | 34 | 1 | 851-040 | 22 | 24 |
| 46512045 | 34 | 3 | 87995T48 | 38 | 8 |
| 46512136 | 22 | 2 | 8854T739 X4 | 34 | 4 |
| 46512164 | 22 | 1 | 897-005 | 22 | 32 |
| 46512175 | 22 | 39 | 8A | 22 | 40 |
| 46513001 | 15 | 1 | 8G1024WF | 17 | 3 |
| 47CM20C | 36 | 2 | 9013FSW2J21 | 35 | 6 |
| 4830KJ265 | 22 | 25 | 9-1-0183 | 38 | 2 |
| 48855K11 | BULK | 2 | 94975A235 | 10 | 4 |
| 48855K12 | BULK | 4 | 97071 | 16 | 5 |
| 48855K13 | BULK | 6 | | | |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE**CONTAINERIZED LATRINE (CL)****(NSN 4510-01-453-4012)****CONTAINERIZED LATRINE SYSTEM (CLS)****(NSN 4510-01-477-7764)**

COMPONENTS OF ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS

INTRODUCTION**Scope**

This work package lists COEI and BII for the Containerized Latrine and Containerized Latrine System 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 Containerized Latrine and Containerized Latrine System. 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 Containerized Latrine and Containerized Latrine System in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the Containerized Latrine and Containerized Latrine System 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, CAGEC, and Part Number. 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 CAGEC (commercial and Government entity code) (in parentheses) and the part number.

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.

| <u>Code</u> | <u>Used on</u> |
|-------------|------------------------------------------------------------------|
| <i>FTA</i> | <i>Containerized Latrine (CL) (Force Provider Configuration)</i> |
| <i>FRV</i> | <i>Containerized Latrine System (CLS) (Stand-alone), Green</i> |
| <i>FUG</i> | <i>Containerized Latrine System (CLS) (Stand-alone), Tan</i> |

Column (5) — Unit of Measure (U/M). 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.

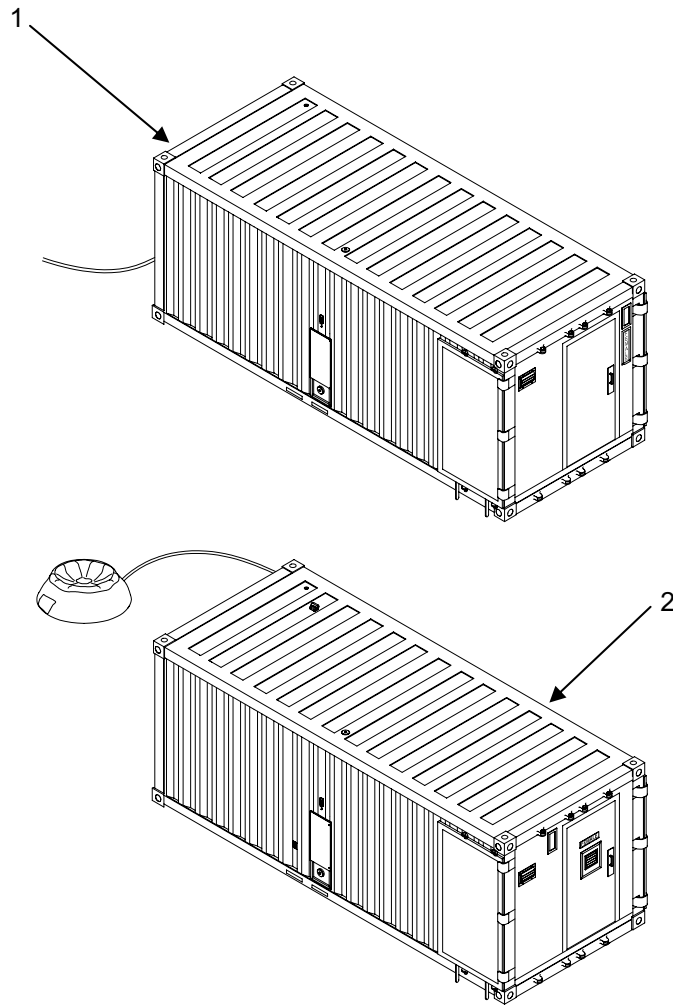


Table 1. Components of End Item List.

| (1) ILLUS NUMBER | (2) NATIONAL STOCK NUMBER | (3) DESCRIPTION, CAGEC AND PART NUMBER | (4) USABLE ON CODE | (5) U/M | (6) QTY RQR |
|------------------------|---------------------------------|-----------------------------------------------------|--------------------------|------------|-------------------|
| 1 | 4510-01-453-4012 | CONTAINERIZED LATRINE (81337) LP/P.DES1-97 | FTA | EA | 1 |
| 2 | 4510-01-477-7764 | CONTAINERIZED LATRINE SYSTEM (81337) 5-13-6737 | FRV | EA | 1 |
| 2 | 4510-01-521-1860 | CONTAINERIZED LATRINE SYSTEM (81337) 5-13-6736-1 | FUG | EA | 1 |

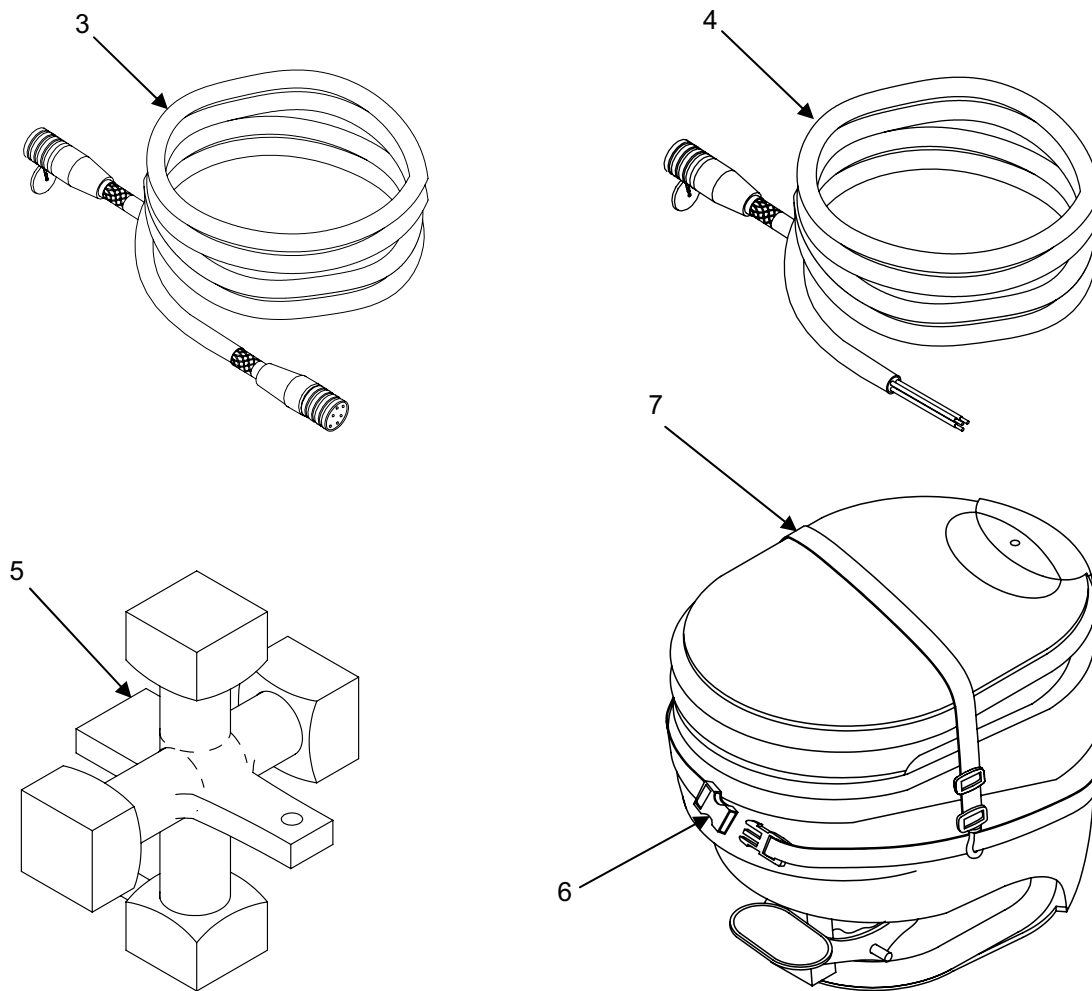


Table 1. Components of End Item List – Continued.

| (1) ILLUS NUMBER | (2) NATIONAL STOCK NUMBER | (3) DESCRIPTION, CAGEC AND PART NUMBER | (4) USABLE ON CODE | (5) U/M | (6) QTY RQR |
|------------------------|---------------------------------|-------------------------------------------------------------------|--------------------------|------------|-------------------|
| 3 | 6150-01-220-5588 | CABLE ASSEMBLY, POWER, 60A, 100-FT (81349) MIL-C-29184 | FTA | EA | 2 |
| 4 | 6150-01-220-5586 | CABLE ASSEMBLY, POWER, 60A, 50-FT, PIGTAIL (81349) MIL-C-29184 | FRV, FUG | EA | 1 |
| 5 | | CLEAN OUT PLUG WRENCH (4U870) 4567 | | EA | 1 |
| 6 | | COMMODO STRAPS W/SQUEEZE RELEASE BUCKLE (OU5N7) 29695T421 | FRV, FUG | EA | 6 |
| 7 | | COMMODO STRAPS W/SWIVEL SNAP HOOKS (OU5N7) 3090T151 | FRV, FUG | EA | 6 |

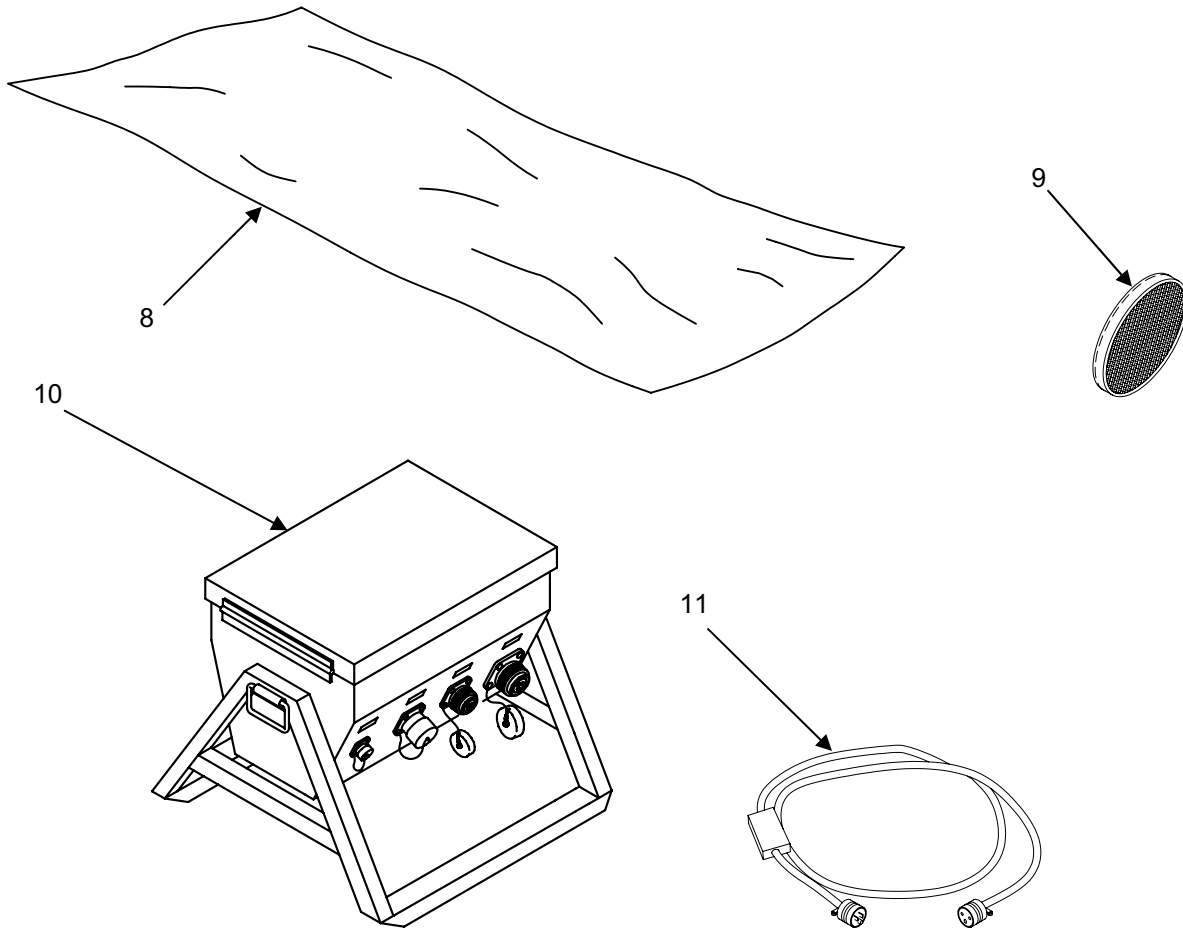


Table 1. Components of End Item List – Continued.

| (1) ILLUS NUMBER | (2) NATIONAL STOCK NUMBER | (3) DESCRIPTION, CAGEC AND PART NUMBER | (4) USABLE ON CODE | (5) U/M | (6) QTY RQR |
|------------------------|---------------------------------|-------------------------------------------------------------|--------------------------|------------|-------------------|
| 8 | 2540-01-530-8738 | DARK COVER (39428) 87995T48 | FRV, FUG | EA | 1 |
| 9 | 4130-01-415-7300 | DEBRIS SCREEN, AIR CONDITIONER DUCT (81337) 640390 | FTA | EA | 1 |
| 10 | 6150-01-308-5671 | ELECTRICAL FEEDER SYSTEM PDISE-M100 (97403) TA13229E6351 | FTA | EA | 1 |
| 11 | 6150-01-413-9314 | EXTENSION CABLE, 25-FT, 120VAC, GFCI (81337) 9-1-0183 | FRV, FUG | EA | 3 |

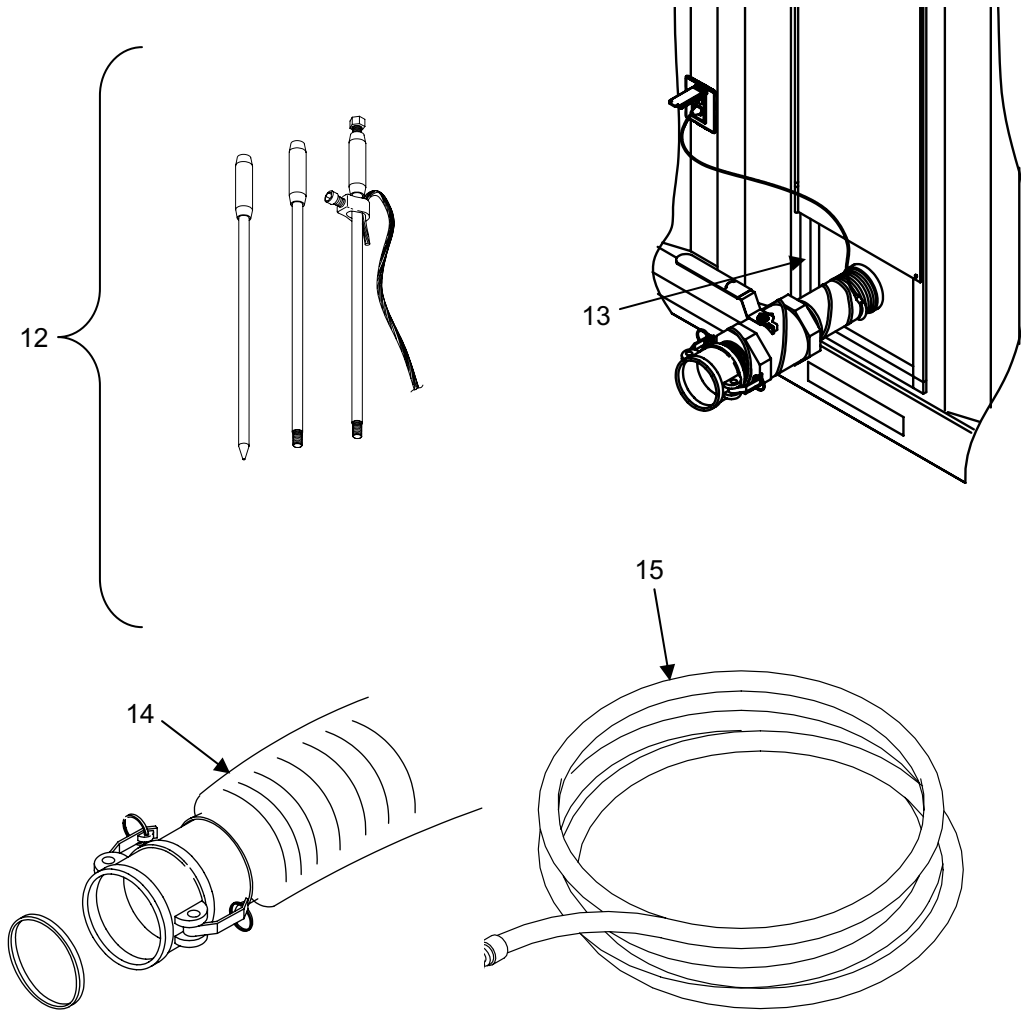


Table 1. Components of End Item List – Continued.

| (1) ILLUS NUMBER | (2) NATIONAL STOCK NUMBER | (3) DESCRIPTION, CAGEC AND PART NUMBER | (4) USABLE ON CODE | (5) U/M | (6) QTY RQR |
|------------------------|---------------------------------|----------------------------------------------------------|--------------------------|------------|-------------------|
| 12 | 5975-00-878-3791 | GROUND ROD, SECT, TYPE III, CLASS B (81348) W-R-550 | | EA | 1 |
| 13 | 4520-01-530-8695 | HEAT TRACE ASSEMBLY, 6-FT (39428) 3580K22 | FRV, FUG | EA | 1 |
| 14 | 4520-01-530-8694 | HEAT TRACE HOSE, 25-FT (32446) 600-1.5-25FT | FRV, FUG | EA | 1 |
| 15 | 4720-00-729-5334 | HOSE ASSEMBLY, NON-METALLIC, GARDEN (58536) A-A-59270 | | EA | 1 |

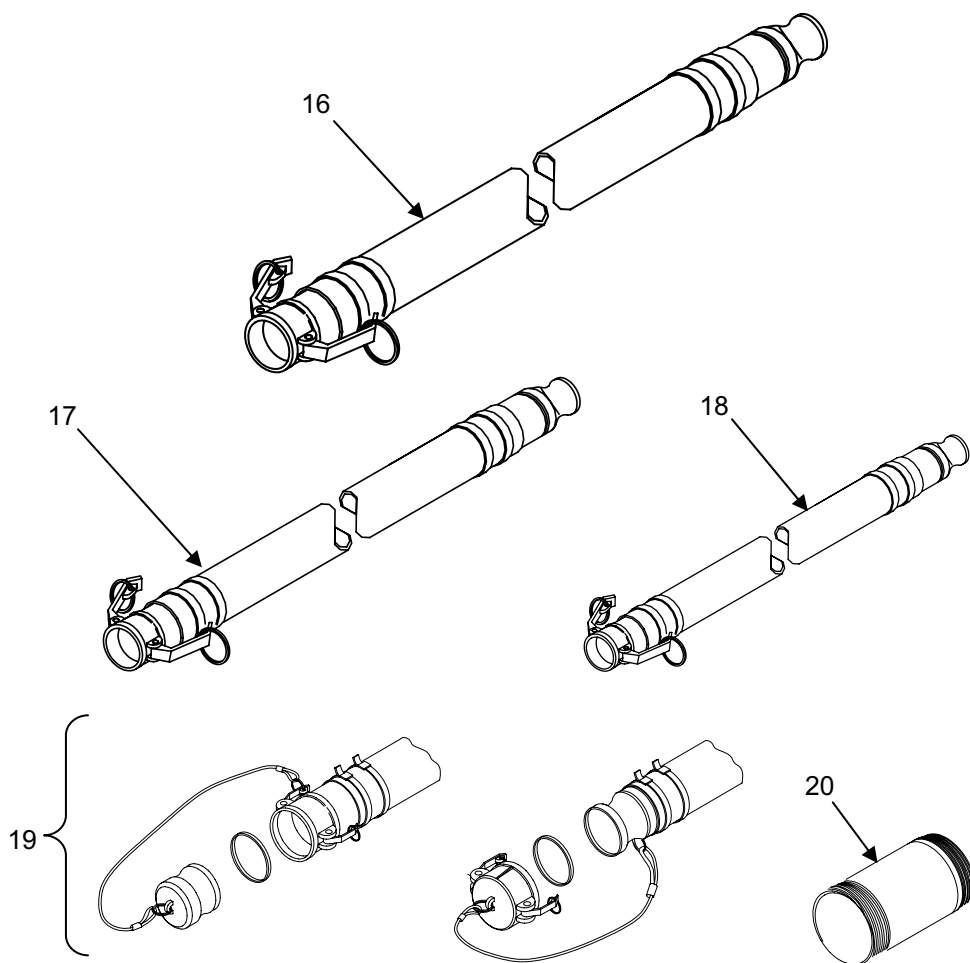


Table 1. Components of End Item List – Continued.

| (1) ILLUS NUMBER | (2) NATIONAL STOCK NUMBER | (3) DESCRIPTION, CAGEC AND PART NUMBER | (4) USABLE ON CODE | (5) U/M | (6) QTY RQR |
|------------------------|---------------------------------|------------------------------------------------------------------------------------|--------------------------|------------|-------------------|
| 16 | 4720-01-140-6288 | HOSE ASSEMBLY, RUBBER DISCHARGE 4-IN X 20-FT (97403) 13225E9136-4 | FRV, FUG | EA | 3 |
| 17 | 4720-01-174-8173 | HOSE ASSEMBLY, RUBBER, POTABLE WATER, 1½ - IN X 20-FT (97403) 1322E136-11 | FTA | EA | 2 |
| 18 | 4720-01-530-4911 | HOSE, 1-IN RECIRCULATING, 20-FT (39428) 55145K416 | FRV, FUG | EA | 1 |
| 19 | | HOSE, SUCTION, 1½-IN X 20-FT WITH CAPS, PLUGS AND CHAINS (97403) 1322E136-10 | FRV, FUG | EA | 2 |
| 20 | 4730-01-530-5059 | NIPPLE, BRASS, 4 INCH X 6 INCH (MAY BE ATTACHED TO 4-IN VALVE) (39428) 4568K326 | | EA | 1 |

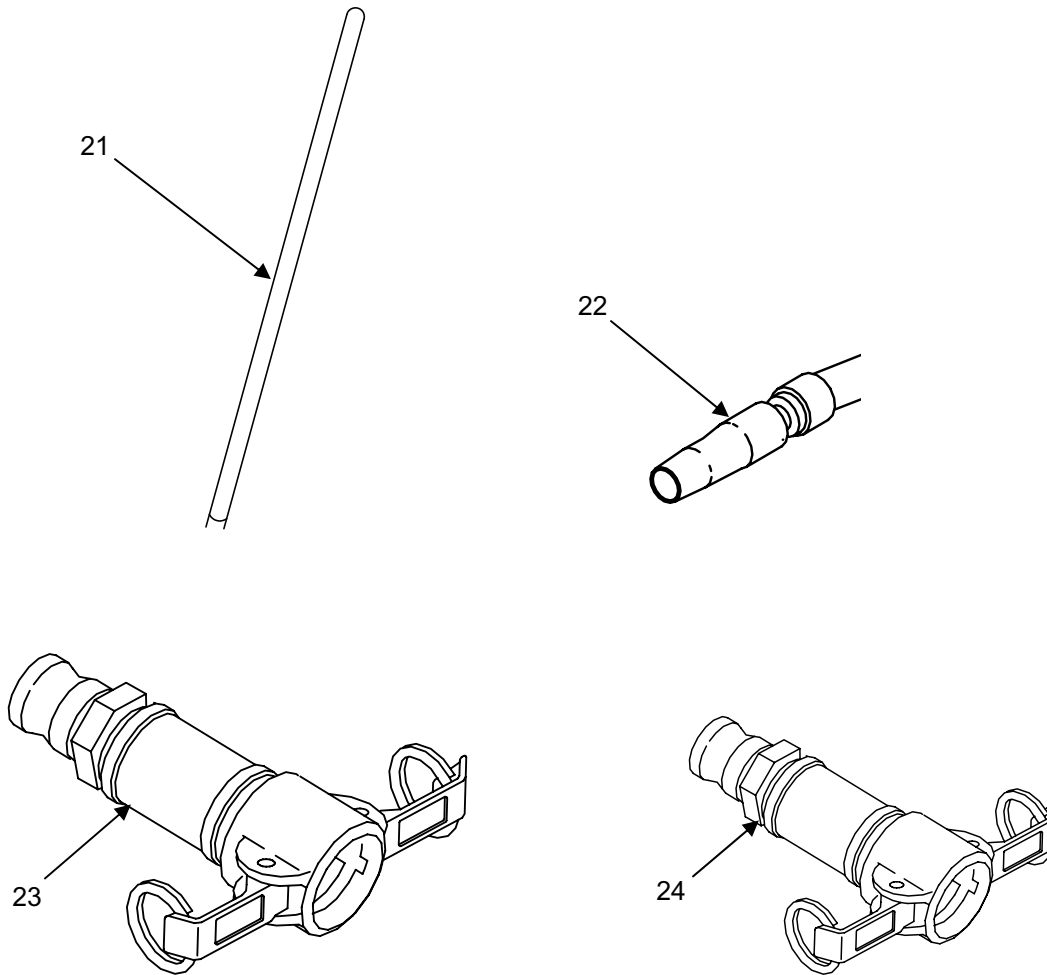


Table 1. Components of End Item List – Continued.

| (1) ILLUS NUMBER | (2) NATIONAL STOCK NUMBER | (3) DESCRIPTION, CAGEC AND PART NUMBER | (4) USABLE ON CODE | (5) U/M | (6) QTY RQR |
|------------------------|---------------------------------|---------------------------------------------------------|--------------------------|------------|-------------------|
| 21 | 7920-00-267-1218 | MOP HANDLE (80244) MM-H-101, TYPE 1, CLASS 1, SIZE B | | EA | 1 |
| 22 | 4730-00-595-1103 | NOZZLE, GARDEN HOSE (04024) FSS-5100-243B | | EA | 1 |
| 23 | 4730-00-951-3298 | REDUCER, 1½ -IN X 2-IN (58536) AA59326XI17 | FRV, FUG | EA | 1 |
| 24 | | REDUCER ASSEMBLY, 2-IN X 1-IN (81337) 5-13-7202 | FRV, FUG | EA | 1 |

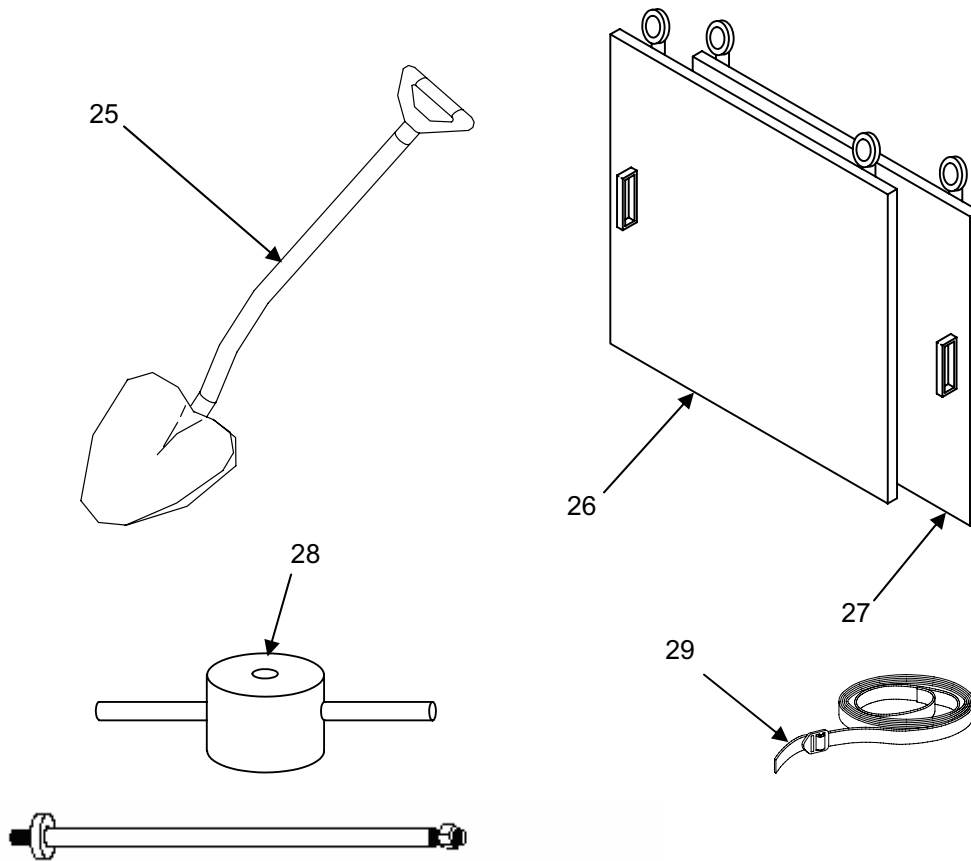


Table 1. Components of End Item List – Continued.

| (1) ILLUS NUMBER | (2) NATIONAL STOCK NUMBER | (3) DESCRIPTION, CAGEC AND PART NUMBER | (4) USABLE ON CODE | (5) U/M | (6) QTY RQR |
|------------------------|---------------------------------|-------------------------------------------------------------------------------|--------------------------|------------|-------------------|
| 25 | 5120-00-293-3336 | SHOVEL, ROUND POINT, D HANDLE (80244) GGG-S-326, TYPE IV, CLASS A, STYLE I | FRV, FUG | EA | 1 |
| 26 | | SINK CABINET DOOR, LH (0AGG4) WFES-48-20 -LD | | EA | 1 |
| 27 | | SINK CABINET DOOR, RH (0AGG4) WFES-48-20 -RD | | EA | 1 |
| 28 | 5120-01-013-1676 | SLIDE HAMMER (97403) 13226E7741 | | EA | 1 |
| 29 | 5340-01-204-3009 | SPECIAL PURPOSE WEB, TIEDOWN (98313) FDC5770-5 | FRV, FUG | EA | 4 |
| 29 | 5340-01-204-3009 | SPECIAL PURPOSE WEB, TIEDOWN (98313) FDC5770-5 | FRV, FUG | EA | 7 |

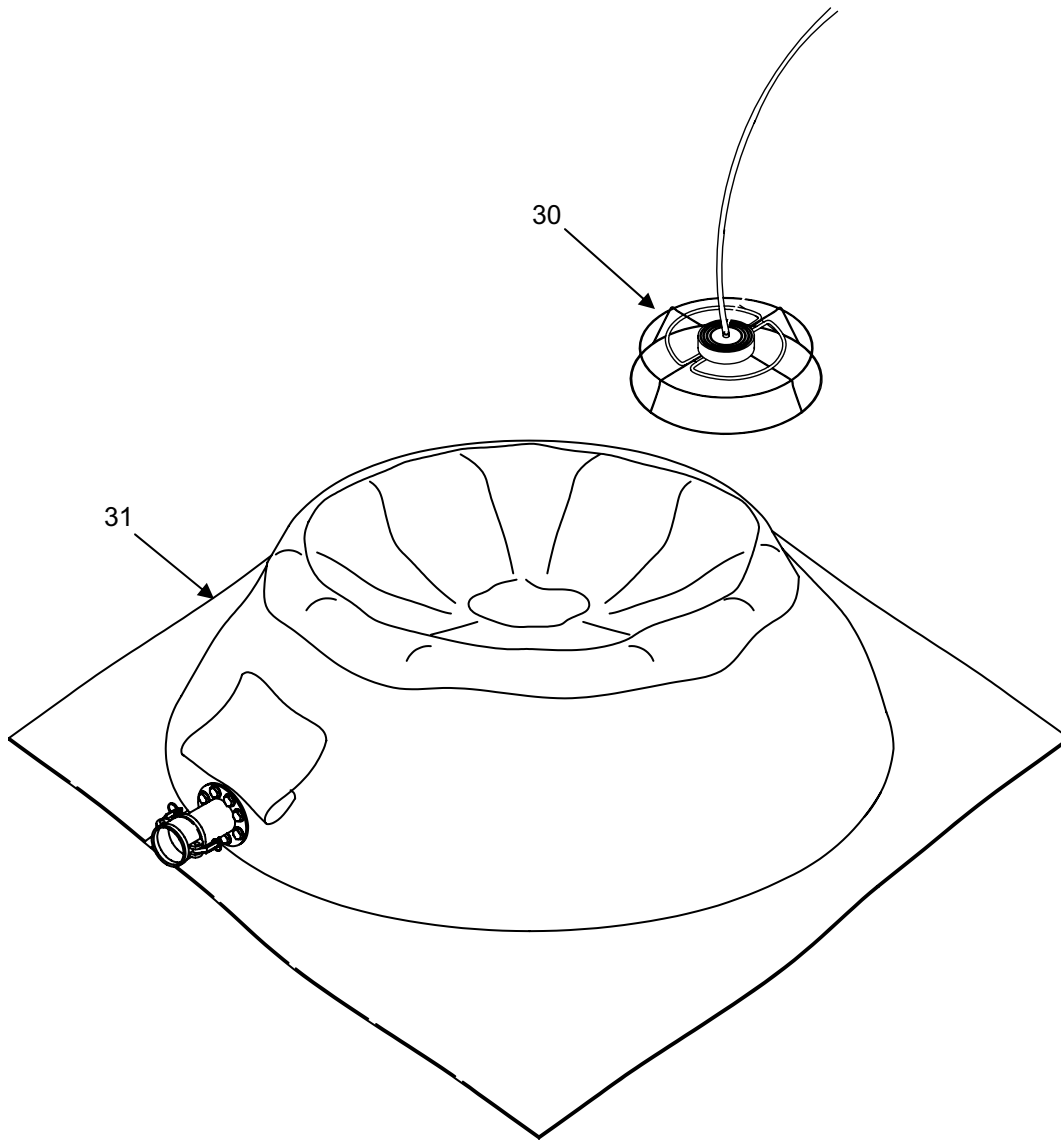


Table 1. Components of End Item List – Continued.

| (1) ILLUS NUMBER | (2) NATIONAL STOCK NUMBER | (3) DESCRIPTION, CAGEC AND PART NUMBER | (4) USABLE ON CODE | (5) U/M | (6) QTY RQR |
|------------------------|---------------------------------|---------------------------------------------------------------|--------------------------|------------|-------------------|
| 30 | | SUBMERSIBLE HEATER, 1½ KW (99006) AAIP15N | FRV, FUG | EA | 1 |
| 31 | 5430-01-470-7380 | TANK, FABRIC, COLLAPSIBLE, 3000-GALLON (05YK6) RCF-3K-W-OT | FRV, FUG | EA | 1 |

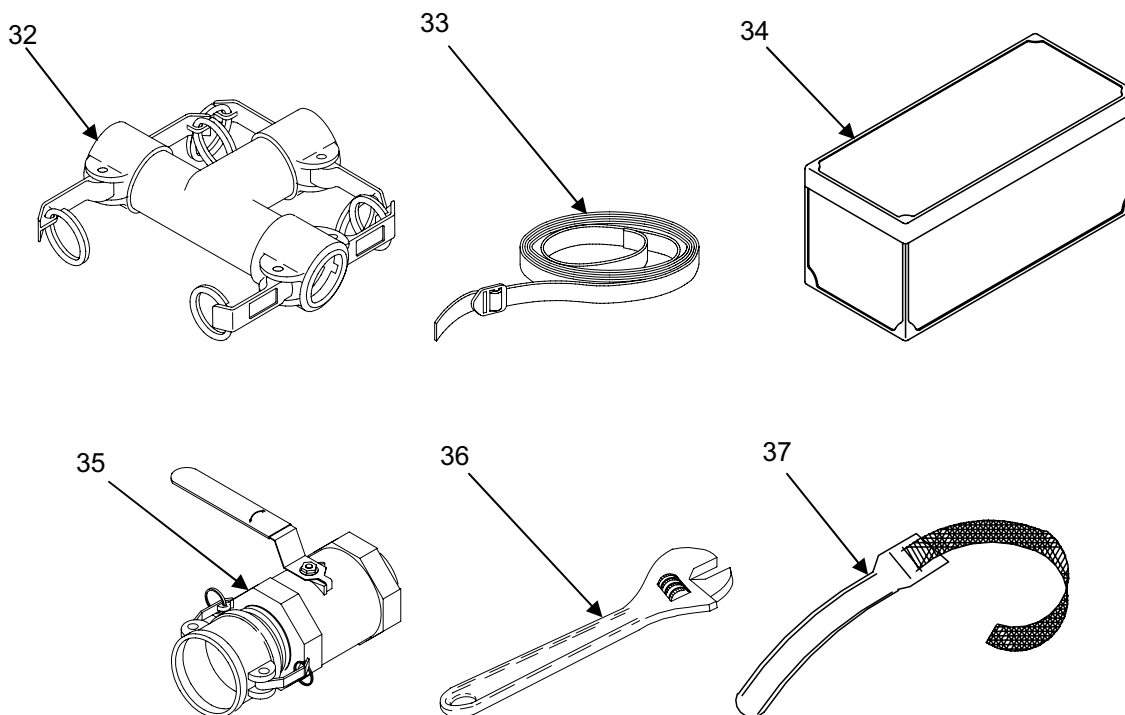


Table 1. Components of End Item List – Continued.

| (1) ILLUS NUMBER | (2) NATIONAL STOCK NUMBER | (3) DESCRIPTION, CAGEC AND PART NUMBER | (4) USABLE ON CODE | (5) U/M | (6) QTY RQR |
|------------------------|---------------------------------|------------------------------------------------------------------------------------------|--------------------------|------------|-------------------|
| 32 | 4730-01-413-3398 | TEE ASSEMBLY, 1½ -IN FC X FC X FC, WATER (81337) 9-1-0188 | FTA | EA | 1 |
| 33 | 5342-01-522-0705 | TIEDOWN STRAPS, 1IN | FRV, FUG | EA | 3 |
| 34 | 8460-00-243-3234 | TRUNK, LOCKER (81349) MIL-T-10798G | FTA | EA | 1 |
| 35 | 4820-01-210-5605 | VALVE ASSEMBLY, 4-INCH (MAY BE ATTACHED TO ITEM 20, 4-IN NIPPLE (97403) 13226E8282 | | EA | 1 |
| 36 | 5120-00-449-8083 | WRENCH, ADJUSTABLE, 10.5 IN LONG (80244) GGG-W-631 TY1CL1 | FTA | EA | 1 |
| 37 | 5120-00-262-8491 | WRENCH, STRAP (80244) GGG-W-651 TY5 | | EA | 1 |

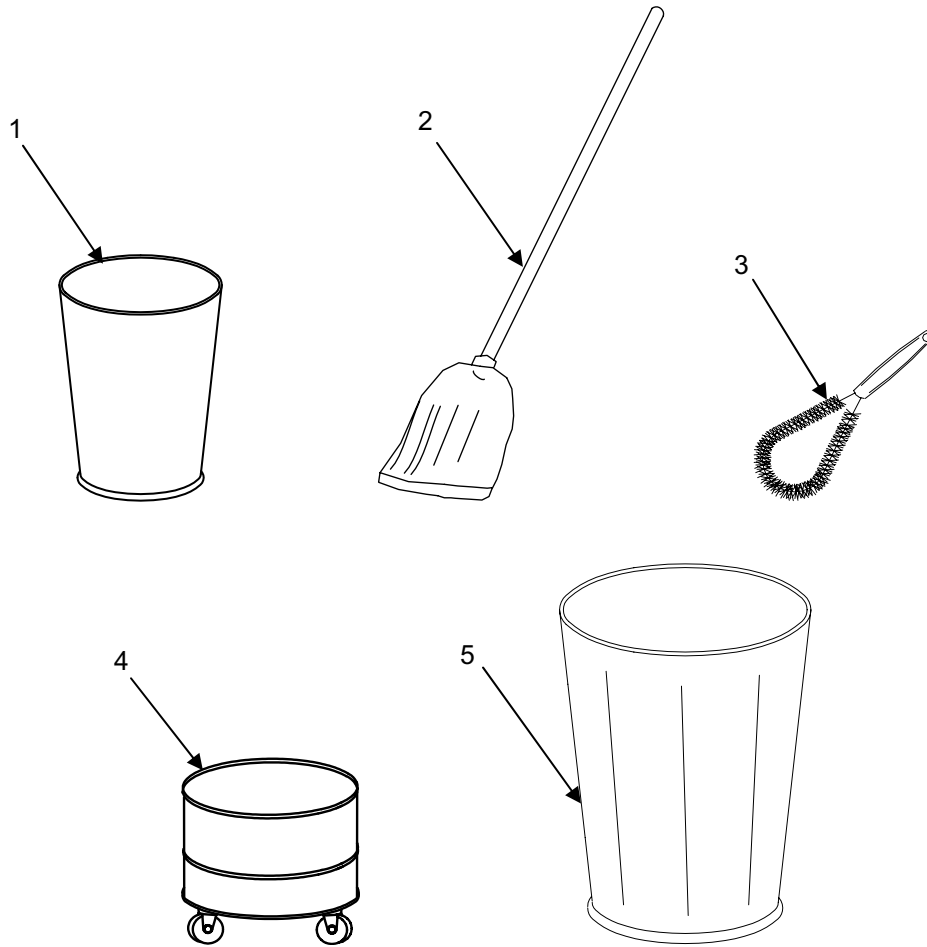


Table 2. Basic Issue Items List.

| (1) ILLUS NUMBER | (2) NATIONAL STOCK NUMBER | (3) DESCRIPTION, CAGEC AND PART NUMBER | (4) USABLE ON CODE | (5) U/M | (6) QTY RQR |
|------------------------|---------------------------------|------------------------------------------------------------------------|--------------------------|------------|-------------------|
| 1 | | BASKET, WASTE PAPER (39428) 4032T13 | FRV, FUG | EA | 1 |
| 2 | 7920-00-291-8305 | BROOM, UPRIGHT (80244) H-B-0051, TYPE 2, | | EA | 1 |
| 3 | 7920-00-772-5800 | BRUSH, SANITARY (58536) A-A-3069 | | EA | 6 |
| 4 | 7920-00-926-5243 | BUCKET, MOP, STEEL, OVAL, 16 QUART, WITH CASTERS (58536) A-A-262 | | EA | 1 |
| 5 | 7240-00-160-0440 | CAN, ASH AND GARBAGE, 32-GALLON, STEEL (58536) A-A-1069 | FTA | EA | 1 |

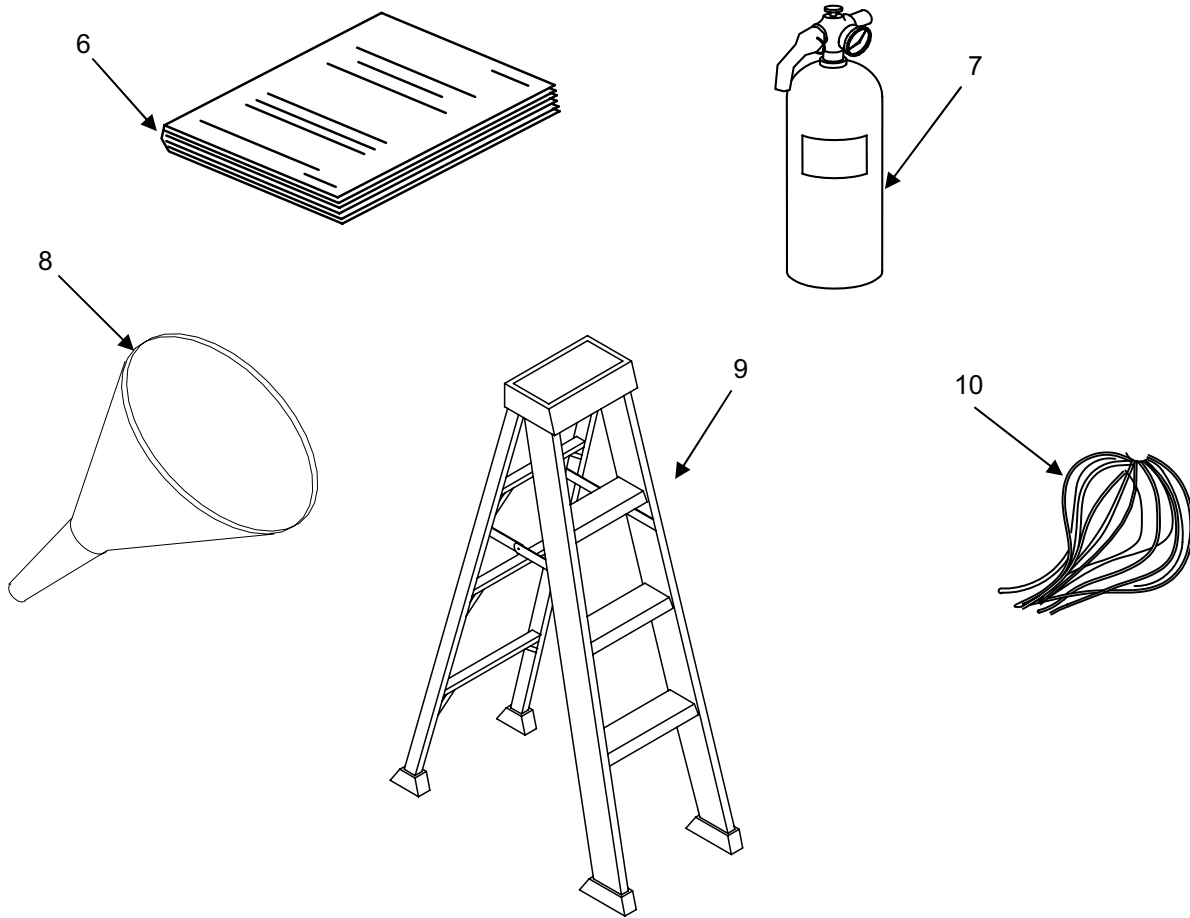


Table 2. Basic Issue Items List – Continued.

| (1) ILLUS NUMBER | (2) NATIONAL STOCK NUMBER | (3) DESCRIPTION, CAGEC AND PART NUMBER | (4) USABLE ON CODE | (5) U/M | (6) QTY RQR |
|------------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------|------------|-------------------|
| 6 | | TM 10-4510-209-13&P CONTAINERIZED LATRINE (CL) / CONTAINERIZED LATRINE SYSTEM (CLS) TECHNICAL MANUAL | | EA | 1 |
| 7 | 4210-00-889-2491 | FIRE EXTINGUISHER, ABC, 10-LB (80244) AA393, TY1, CL1, SZ10 | | EA | 1 |
| 8 | 7240-00-230-2393 | FUNNEL, 1 PINT (58536) A-A-1066 | FRV, FUG | EA | 1 |
| 9 | 5440-00-514-4489 | LADDER, 10 FT (81348) RR-S-720 | FTA | EA | 1 |
| 10 | 7520-00-141-5550 | MOP HEAD, WET (80244) T-M-561, TYPE 1, STYLE 1, CLASS 15 | | EA | 1 |

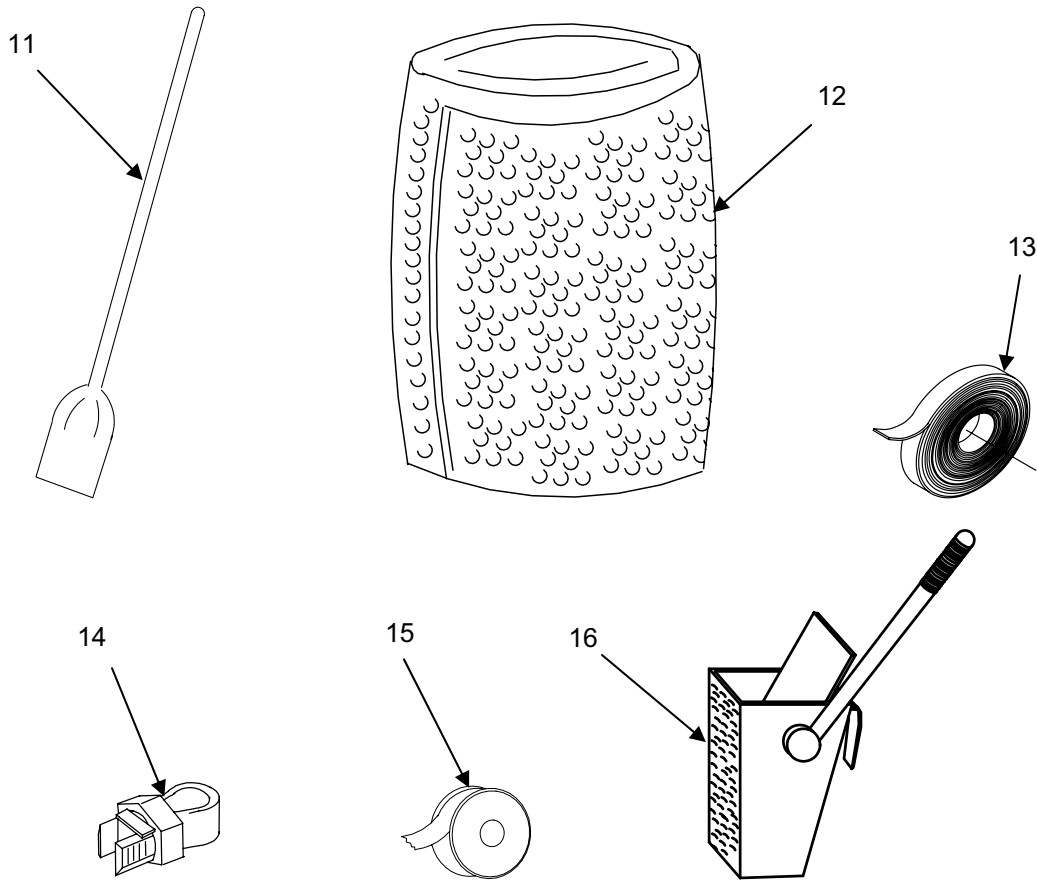


Table 2. Basic Issue Items List – Continued.

| (1) ILLUS NUMBER | (2) NATIONAL STOCK NUMBER | (3) DESCRIPTION, CAGEC AND PART NUMBER | (4) USABLE ON CODE | (5) U/M | (6) QTY RQR |
|------------------------|---------------------------------|-------------------------------------------------------------------------|--------------------------|------------|-------------------|
| 11 | 2040-00-272-2227 | PADDLE (81349) MIL-P-15737 | | EA | 1 |
| 12 | | REFLECTIVE INSULATION (39428) 9367K22 | FRV, FUG | RL | 8 |
| 13 | | REFLECTIVE INSULATION TAPE (39428) 7631A23 | FRV, FUG | RL | 8 |
| 14 | 5490-00-435-5672 | SPLIT BOLT (70016) IK 3/0 | | EA | 1 |
| 15 | 8030-00-889-3535 | TAPE, ANTISEIZE, 1/2 IN WIDE X 260 IN LONG (80244) A-A-58092, SIZE 2 | | RL | 2 |
| 16 | 7920-00-682-6861 | WRINGER, MOP, SIZE-SMALL, TYPE-GEAR AND RACK (58536) A-A-261 | | EA | 1 |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE
**CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)**
ADDITIONAL AUTHORIZATION LIST (AAL)

INTRODUCTION
Scope

This work package lists additional items you are authorized for the support of the latrine.

General

This list identifies items that do not have to accompany the latrine and that do not have to be turned in with it. These items are all authorized to you by CTA, MTD, 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, Commercial and Government Entity Code (CAGEC), and Part Number (P/N). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the CAGEC (in parentheses) and the part number.

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.

| <u>Code</u> | <u>Used on</u> |
|-------------|------------------------------------------------------------------|
| <i>FTA</i> | <i>Containerized Latrine (CL) (Force Provider configuration)</i> |
| <i>FRV</i> | <i>Containerized Latrine System (CLS) (Stand-alone), Green</i> |
| <i>FUG</i> | <i>Containerized Latrine System (CLS) (Stand-alone), Tan</i> |

Column (4) - Unit of Measure (U/M). 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, CAGEC, AND PART NUMBER | (3) USABLE ON CODE | (4) U/M | (5) QTY RECM |
|---------------------------------|--------------------------------------------|--------------------------|------------|--------------------|
| 8415-00-082-6108 | APRON, UTILITY, HEAVY-DUTY RUBBER | | EA | 2 |
| | (58536) A-A-55063 | | EA | 2 |
| 7920-00-772-5800 | BRUSH, SANITARY | | EA | 6 |
| | (58536) A-A-3069 | | | |
| 7930-00-926-5280 | DETERGENT, GENERAL PURPOSE, BOTTLE, SPRAY | | EA | 2 |
| | (0UHH5) DETERGENT, GENERAL PURPOSE (SPRAY) | | | |
| 4240-00-202-9473 | FACE SHIELD, INDUSTRIAL | | EA | 2 |
| | (81348) L-F-36 | | EA | 2 |
| 7240-00-819-7735 | GARBAGE CAN, 33 GALLON, PLASTIC | | EA | 1 |
| | (58536) A-A-235 | | EA | 1 |
| 8415-00-268-7868 | GLOVES, LEATHER WORK | | PR | 2 |
| | (58536) A-A-55060 | | PR | 2 |
| 8415-00-753-6552 | GLOVES, PROTECTIVE | | PR | 2 |
| | (81349) MIL-G-12223 | | PR | 2 |
| 4240-00-190-6432 | SAFETY GOGGLES | | EA | 2 |
| | (58536) A-A-1110 | | EA | 2 |
| 8030-00-889-3535 | TAPE, ANTISIEZE, 1/2 IN WIDE X 260 IN LONG | | RL | 2 |
| | (80244) MIL-T-27730, SIZE II | | RL | 2 |
| 7510-00-074-4955 | TAPE, PRESSURE SENSITIVE | | RL | 1 |
| | (58536) A-A-1586 | | RL | 1 |

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE**CONTAINERIZED LATRINE (CL)
AND
CONTAINERIZED LATRINE SYSTEM (CLS)****EXPENDABLE AND DURABLE ITEMS LIST**

INTRODUCTION**Scope**

This work package lists expendable and durable items that you will need to operate and maintain the latrine. 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), or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation of Columns in the Expendable/Durable Items List

Column (1) – Item Number. 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 (Item 5, WP 0098 00)).

Column (2) – Level. This column includes the lowest level of maintenance that requires the listed item (C = Operator/Crew, O = Unit, F = Direct Support).

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, Commercial and Government Entity Code (CAGEC), and Part Number (P/N). This column provides the other information you need to identify the item.

Column (5) – Unit of Measure (U/M). This 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 NUMBER | (2) LEVEL | (3) NATIONAL STOCK NUMBER | (4) ITEM NAME, DESCRIPTION, CAGE, PART NUMBER | (5) U/M |
|-----------------------|--------------|---------------------------------|--------------------------------------------------------------|------------|
| 1 | C | 7920-01-339-6928 | ABSORBENT MATERIAL, SPILL CLEANUP (66735) F91D248 | EA |
| 2 | C | 8415-00-082-6108 | APRON, UTILITY, HEAVY-DUTY RUBBER (58536) A-A-55063 | EA |
| 3 | C | 8105-01-221-3239 | BAG, PLASTIC, CONTAMINATED WASTE, SIZE 3 (58536) A-A-2299 | RL |
| 4 | C | 6810-00-598-7316 | BLEACH, SODIUM HYPOCHLORITE (96906) MILSTD1208 | GL |
| 5 | O | 7920-00-514-2417 | BRUSH, ACID SWABBING (80244) 7920-00-514-2417 | BX |
| 6 | O | 8030-01-166-0675 | COMPOUND, SEALER PIPE (05972) 56747 | TU |
| 7 | O | 5940-00-143-4780 | CONNECTOR, #10 STUD, #14-16 (81349) MIL-T-7928 | EA |
| 8 | O | 5940-00-168-3382 | CONNECTOR, BUTT, #14-16 – BLUE (60592) B4071 | EA |
| 9 | O | 5940-00-665-7317 | CONNECTOR, BUTT, #18-22 (00779) 1-34070-1 | EA |
| 10 | O | 5940-00-283-5280 | CONNECTOR, FORK, #14-16 (81349) MIL-T-7928 | EA |
| 11 | O | 5940-01-008-6728 | CONNECTOR, FORK, #18-22 (14726) SS20912 | EA |
| 12 | O | 5940-00-283-5281 | CONNECTOR, LUG, #14 (81349) MIL-T-7928 | EA |
| 13 | O | 5940-00-230-0515 | CONNECTOR, LUG, #16 (81349) MIL-T-7928 | EA |
| 14 | O | 5940-00-113-3137 | CONNECTOR, LUG, UNINSULATED (02929) A18-6 | EA |
| 15 | O | 5940-00-143-4794 | CONNECTOR, LUG, YELLOW (81349) MIL-T-7928 | EA |
| 16 | O | 5935-01-076-9464 | CONNECTOR, PLUG (81349) MIL-C-26482 | ST |

Table 1. Expendable and Durable Items List – Continued.

| (1) ITEM NUMBER | (2) LEVEL | (3) NATIONAL STOCK NUMBER | (4) ITEM NAME, DESCRIPTION, CAGE, PART NUMBER | (5) U/M |
|-----------------------|--------------|---------------------------------|-----------------------------------------------------------------------------------------|------------|
| 17 | C | 7930-00-177-5243 | DETERGENT | EA |
| 18 | C | 7930-00-926-5280 | DETERGENT, GENERAL PURPOSE, BOTTLE, SPRAY (0UHH5) DETERGENT, GENERAL PURPOSE (SPRAY) | EA |
| 19 | C | 4240-00-542-2048 | FACE SHIELD, INDUSTRIAL (58536) A-A-1770A | EA |
| 20 | C | 4240-00-202-9473 | FACE SHIELD, INDUSTRIAL (81348) L-F-36 | EA |
| 21 | C | 8465-01-467-0721 | FACE SHIELDS (01365) PD/CO-99-14 | EA |
| 22 | C | | FILTER, FOAM, AIR CONDITIONER (3FGN8) L86-041 | EA |
| 23 | C | | FILTER, FOAM, AIR CONDITIONER (3FGN8) L86-069 | RL |
| 24 | O | 3439-00-914-8390 | FLUX, BRAZING (81348) O-F-499 | EA |
| 25 | C | 8415-00-753-6552 | GLOVES, PROTECTIVE (81349) MIL-G-12223 | PR |
| 26 | O | 5970-00-815-1295 | INSULATION SLEEVING, HEAT SHRINK, 1/4 IN. (81349) MIL-I-23053/2 | PK |
| 27 | O | 5970-00-990-9912 | INSULATION SLEEVING, HEAT SHRINK, 1/8 IN. (81349) MIL-I-23053/2 | PK |
| 28 | O | 5970-00-954-1622 | INSULATION SLEEVING, HEAT SHRINK, 3/16 IN. (81349) MIL-I-23053/5 | PK |
| 29 | O | 5970-00-903-8733 | INSULATION SLEEVING, HEAT SHRINK, 3/36 IN. (81349) MIL-I-23053/5 | PK |
| 30 | O | 5970-00-954-1624 | INSULATION SLEEVING, HEAT SHRINK, 3/8 IN. (81349) MIL-I-23053/5 | PK |
| 31 | C | 6240-00-152-2987 | LAMP, FLUORESCENT, 120V, 40W (08805) F40CW | EA |
| 32 | O | | LAMP, INCANDESCENT, 50W (3FGN8) G84-997 | EA |
| 33 | C | 7920-00-659-9175 | PAD, SCOURING (80244) L-P-0050TY1SZ1 | PK |
| 34 | F | 8040-00-573-1502 | PVC CEMENT, ASTM F-656 (81349) MIL-A-22010 | EA |
| 35 | F | 8040-01-004-2705 | PVC PRIMER, ASTM D-2564 (62377) H1978 | EA |

Table 1. Expendable and Durable Items List – Continued.

| (1) ITEM NUMBER | (2) LEVEL | (3) NATIONAL STOCK NUMBER | (4) ITEM NAME, DESCRIPTION, CAGE, PART NUMBER | (5) U/M |
|-----------------------|--------------|---------------------------------|-----------------------------------------------------------------------------|------------|
| 36 | C | 7920-00-205-1711 | RAGS, WIPING (58536) A-A-2522 | LB |
| 37 | C | | REFLECTIVE INSULATION, 48-IN X 50-FT (39428) 9367K22 | RL |
| 38 | O | 7220-00-753-2982 | RUBBER MAT, RIBBED, 1/8 INCH X 30 FT (81348) ZZ-M-71 | RL |
| 39 | C | 4240-00-190-6432 | SAFETY GOGGLES (58536) A-A-1110 | EA |
| 40 | C | 8040-01-331-8047 | SEALANT, RTV | |
| 41 | C | 7930-00-965-4868 | SOAP, TOILET, CAKE, HAND (58536) A-A-1375 | PK |
| 42 | C | 8030-00-889-3535 | TAPE, ANTISEIZE, 1/2 IN WIDE X 260 IN LONG (80244) AA-58092, SIZE II | RL |
| 43 | O | 5970-00-644-3167 | TAPE, ELECTRICAL INSULATION, 3/4 INCH WIDTH (58536) A-A-2094 | RL |
| 44 | O | 5970-00-419-4291 | TAPE, ELECTRICAL, 3/4 IN. (81349) MILI631DGRDC | RL |
| 45 | O | 5970-00-681-8236 | TAPE, INSULATION, RUBBER, 2 IN. (81348) HH-I-553 | RL |
| 46 | C | 7510-00-074-4955 | TAPE, PRESSURE SENSITIVE (58536) A-A-1586 | RL |
| 47 | C | 7510-00-515-0319 | TAPE, PRESSURE SENSITIVE, WHITE, NYLON, 2 IN X 60 YDS (81349) MIL-T-4053 | RL |
| 48 | C | | TAPE, REFLECTIVE INSULATION, 4-IN X 60-YD (39428) 7631A23 | RL |
| 49 | O | 5940-00-926-0085 | TERMINAL, QUICK CONNECT, FEMALE - BLUE - 14AWG MAX (83330) 5010 | EA |
| 50 | O | 5940-00-378-7225 | TERMINAL, QUICK CONNECT, MALE - BLUE - 14AWG MAX (83330) 5014 | EA |
| 51 | O | 5975-00-727-5153 | TIE, WIRE, 2.5 IN. (81349) MIL-S-23190 | PK |
| 52 | O | 5975-00-074-2072 | TIE, WIRE, 6.3 IN. (56501) TY-25M | PK |
| 53 | O | 5975-00-838-7450 | TIE, WIRE, LARGE - 14 IN. (56501) AS40144 | PK |
| 54 | O | 5975-00-984-6582 | TIE, WIRE, MEDIUM - 6 IN. (81349) MIL-S-23190 | PK |
| 55 | O | 7690-00-689-5212 | WIRE MARKERS (56501) WM-A-33 | BK |
| 56 | O | 9905-00-537-8954 | WIRE TAGS (Tag, Marker) (64067) MIL-T 12755 | BD |

**OPERATOR, UNIT, AND DIRECT SUPPORT MAINTENANCE
CONTAINERIZED LATRINE (CL) & CONTAINERIZED LATRINE SYSTEM (CLS)
GLOSSARY**

| <u>Term</u> | <u>Definition</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alligator Clip | Spring clip on the end of a test lead used to make a temporary connection. |
| Alternating Current (AC) | A flow of electricity which reaches maximum in one direction, decreases to zero, then reverses itself and reaches maximum in the opposite direction. The cycle is repeated continuously. The number of cycles per second is equal to the frequency. |
| Ambient Temperature | The temperature of the atmosphere of surrounding environment. Typically defined by industry standards as 25° C. |
| Amp (Ampere) | A unit that measures the strength/rate of flow of electrical current. |
| Anode | The positive electrode or terminal of a device. The "P" material of a diode. |
| Armature | The portion of the magnetic structure of a DC or universal motor which rotates. |
| Backcheck | The delay at the end of when the personnel door is closing. |
| Capacitor | An electrical device used to store electrical energy, and to release it back into the power system when required. |
| Cathode | The negative terminal electrode of a device. The "N" material in a junction diode. |
| Chassis | Metal box or frame into which components are mounted. |
| Compressor | A hermetically sealed motor which pumps refrigerant throughout system. |
| Condenser | A tubing coil, which refrigerant flows through, that is designed to remove heat from the refrigerant, changing its state from a high pressure vapor to a high pressure liquid. |
| Diode | A two terminal device that conducts in only one direction. |
| Direct Current (DC) | A constant value current that flows in only on direction. |
| Double-Pole, Double-Throw (DPDT) Switch | A switch that makes or breaks the connection of two conductors to two separate circuits. This switch has six terminal screws and is available in both momentary and |

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| | maintained contact versions, and may also have a center OFF position. |
| Double-Pole, Single-Throw (DPST) Switch | A switch that makes or breaks the connection of two circuit conductors in a single branch circuit. This switch has four terminal screws and ON/OFF markings. |
| Dual Voltage | Some motors can operate on two different voltages, depending upon how it is built and connected. The voltages are either multiples of two or the 3 of one another. |
| Electrode | The terminal in electric apparatus that conducts electricity in or out. |
| Element | An electrical resistance assembly used to create heat |
| Evaporator | Part of the refrigeration system where refrigerant vaporizes and absorbs heat from water flowing over the front of the evaporator plate, turning it to ice. |
| Expansion Valve | A metering device which reduces the pressure of the liquid refrigerant flowing into the evaporator, causing it to boil and absorb heat. |
| Filter-Drier | Filters liquid refrigerant, keeping system dean. Desiccant traps small quantities of moisture, keeping the system dry. Must be replaced any time the refrigeration system is opened. |
| Force Provider | A deployable system of shelters and services which can be prepositioned and quickly set up in any theatre of operation. |
| GFCI Or GFI (Ground Fault Circuit Interrupter) | A specific type of circuit protection (commonly required in kitchens & bathrooms) that helps safeguard against shocks. GFCI protection can come from an outlet or a breaker. |
| Ground Or Grounding | Connecting one side or neutral of a circuit to the earth through low resistance or low impedance paths, to help prevent transmitting shocks to personnel. |
| Hertz (Hz) | Expression of AC frequency in cycles per second, e.g., 60 Hz. |
| Hot Gas Valve | Solenoid valve which is energized during defrost allowing hot gas refrigerant to enter the evaporator(s), warming it to break the bond of the ice slab to the evaporator. |
| Kilowatt (kW) | Real power delivered to a load (W x 1,000 VA). |
| Knockout | A removable piece of an electrical box or panel that's "knocked out" to allow cable to enter the box. |

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| Lead | The short length of a conductor that hangs free in a box or service panel. (i.e. a wire end) |
| Low-Voltage Switch | A switch rated for use on low-voltage circuits of 50 volts or less. |
| Ohm | The unit of measure for resistance. |
| Ohm's Law | Voltage (V) equals resistance (R) multiplied by current (I). ($V=R \times I$) |
| Overload Protection | Protective device such as a fuse or circuit breaker that automatically disconnects a load when current exceeds a predetermined value. |
| Phase | Classification of an ac circuit; usually single-phase, two wire or three wire; two-phase, three wire or four wire; or three-phase, three wire or four wire. |
| Potable Water | Clean, uncontaminated, treated water suitable for drinking. |
| Rotary Switch | A switch where rotating the actuator in a clockwise direction makes the circuit connection, and then rotating the actuator in either the same or opposite direction breaks the connection. |
| Single-Pole, Double-Throw (SPDT) Switch | A switch that makes or breaks the connection of a single conductor with either of two other single conductors. This switch has 3 terminal screws, and is commonly used in pairs and called a "Three-Way" switch. |
| Single-Pole, Single-Throw (SPST) Switch | A switch that makes or breaks the connection of a single conductor in a single branch circuit. This switch has two screw terminals and ON/OFF designations. It is commonly referred to as a "Single-Pole" Switch. |
| Stator | That part of an AC induction motor's magnetic structure which does not rotate. It usually contains the primary winding. The stator is made up of laminations with a large hole in the center in which the rotor can turn; there are slots in the stator in which the windings for the coils are inserted. |
| Switch, Limit | A switch that is operated by some part or motion of a power-driven machine or equipment to alter the electric circuit associated with the machine or equipment. |
| TEMPER | Tent, Expandable, Modular, PER sonnel. |

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| Thermistor | Temperature sensitive semiconductor that has a negative temperature coefficient of resistance. As temperature increases, resistance decreases. |
| Thermocouple | Temperature transducer consisting of two dissimilar metals welded together at one end to form a junction that when heated will generate a voltage. |
| Thermostat | Device that opens or closes a circuit in response to changes in temperature. |
| Three Phase Power | Three separate outputs from a single source. There is a phase difference of 120° between any two of the three voltages and currents. |
| Thrust Bearings | Special bearings used to handle higher than normal axial forces exerted on the shaft of the motor as is the case with some fan or pump blade mountings. |
| Timer | A switch with an integral mechanism or electronic circuit that can be set to switch an electrical load ON at a predetermined time. |
| Toggle Switch | A switch with a lever-type actuator that makes or breaks switch contact as its position is changed. |
| Torque | Turning force delivered by a motor or gearmotor shaft, usually expressed in lbs. ft, derived by completing $H.P. \times 5250/RPM = \text{full load torque}$. |
| Transducer | Device that converts energy from one form to another. |
| Transformer | A static electrical device which by electromagnetic induction transfers electrical energy from one circuit to another circuit usually with changed values of voltage and current in the process. |

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| TRICON | TRI ple Storage CON tainer |
| TXV | see "Expansion Valve" |
| Volt | Unit of potential difference or electromotive force. One volt is the potential difference needed to produce one ampere of current through a resistance of one ohm. |
| Volt-Amperes (VA) | The current flowing in a circuit multiplied by the voltage of that circuit. An expression of the output rating of a transformer. |
| Watt | Unit of electrical power required to do work at the rate of one joule per second. One watt of power is expended when one ampere of direct current flows through a resistance of one ohm. In an AC circuit, true power is the product of effective volts and effective amperes, multiplied by the power factor. One horsepower is equal to 746 watts. |

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AND
CONTAINERIZED LATRINE SYSTEM (CLS)
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By Order of the Secretary of the Army:

PETER J. SCHOOMAKER
General, United States Army
Chief of Staff

Official:


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*Administrative Assistant to the
Secretary of the Army*
0433406

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To: amssbriml@natick.army.mil

Subject: DA Form 2028

1. **From:** Joe Smith
2. **Unit** home
3. **Address:** 4300 Park
4. **City:** Hometown
5. **St:** MO
6. **Zip:** 77777
7. **Date Sent:** 19-OCT-93
8. **Pub no:** 55-2840-229-23
9. **Pub Title:** TM
10. **Publication Date:** 04-JUL-85
11. **Change Number:** 7
12. **Submitter Rank:** MSG
13. **Submitter FName:** Joe
14. **Submitter MName:** T
15. **Submitter LName:** Smith
16. **Submitter Phone:** 123-123-1234
17. **Problem:** 1
18. **Page:** 2
19. **Paragraph:** 3
20. **Line:** 4
21. **NSN:** 5
22. **Reference:** 6
23. **Figure:** 7
24. **Table:** 8
25. **Item:** 9
26. **Total:** 123
27. **Text:**

This is the text for the problem below line 27.

| | | | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------------|------------------------------------------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is ODISC4. | | | | | | Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM). | DATE 21 October 2003 |
| TO: (Forward to proponent of publication or form) (Include ZIP Code) US ARMY TANK AUTOMOTIVE AND ARMAMENT COMMAND ATTN: AMSTA-LC-SECT 15 KANSAS ST NATICK, MA 01760-5052 | | | | | | FROM: (Activity and location) (Include ZIP Code) PFC JANE DOE Co A 3 RD Engineer Br. Ft Leonard Wood, MO 63108 | |
| PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS | | | | | | | |
| PUBLICATION/FORM NUMBER TM 10-1670-296-23&P | | | | | | DATE 30 October 2002 | TITLE Unit Manual for Ancillary Equipment for Low Velocity Air Drop Systems |
| ITEM NO. | PAGE NO. | PARA-GRAPH | LINE NO. * | FIGURE NO. | TABLE NO. | RECOMMENDED CHANGES AND REASON (Provide exact wording of recommended changes, if possible). | |
| | 0036 00-2 | | | | 1 | <p><i>In Table 1, Sewing Machine Code Symbols, the second sewing machine code symbol should be MDZZ not MD22</i></p> <p><i>Change the manual to show Sewing Machine, Industrial: Zig-Zag; 308 stitch; medium-duty; NSN 3530-01-181-1421 as a MDZZ code symbol.</i></p> | |
| <i>*Reference to line numbers within the paragraph or subparagraph.</i> | | | | | | | |
| TYPED NAME, GRADE OR TITLE Jane Doe, PFC | | | | TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION (508) 233-4141 DSN 256-4141 | | SIGNATURE Jane Doe <i>Jane Doe</i> | |

| | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| TO: <i>(Forward direct to addressee listed in publication)</i> US ARMY TANK AUTOMOTIVE AND ARMAMENT COMMAND ATTN: AMSTA-LC-SECT 15 KANSAS ST NATICK, MA 01760-5052 | FROM: <i>(Activity and location) (Include ZIP Code)</i> PFC JANE DOE Co A 3 RD Engineer Br. Ft Leonard Wood, MO 63108 | DATE 21 October 2003 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|

PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

| | | |
|-------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|
| PUBLICATION NUMBER TM 10-1670-296-23&P | DATE 30 October 2002 | TITLE Unit Manual for Ancillary Equipment for Low Velocity Air Drop Systems |
|-------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|

| PAGE NO. | COLM NO. | LINE NO. | NATIONAL STOCK NUMBER | REFERENCE NO. | FIGURE NO. | ITEM NO. | TOTAL NO. OF MAJOR ITEMS SUPPORTED | RECOMMENDED ACTION |
|-----------|----------|----------|-----------------------|---------------|------------|----------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0066 00-1 | | | | | 4 | | | <i>Callout 16 in figure 4 is pointed to a <u>D-Ring</u>. In the Repair Part List key for Figure 4, item 16 is called a <u>Snap Hook</u>. Please correct one or the other.</i> |

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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| TYPED NAME, GRADE OR TITLE | TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION | SIGNATURE |
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| RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is ODISC4. | Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM). | DATE |
|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------|

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| TO: (Forward to proponent of publication or form) (Include ZIP Code) Commander U.S. Army Tank-automotive and Armament Command ATTN: AMSTA-LC-SECT Kansas Street, Natick, MA 01760-5052. | FROM: (Activity and location) (Include ZIP Code) |
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PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

| | | |
|------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PUBLICATION/FORM NUMBER TM 10-4510-209-13&P | DATE 30 November 2004 | TITLE Operator's, Unit and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) For Containerized Latrine (CL) Containerized Latrine System (CLS) |
|------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| ITEM NO. | PAGE NO. | PARA-GRAPH | LINE NO. * | FIGURE NO. | TABLE NO. | RECOMMENDED CHANGES AND REASON <i>(Provide exact wording of recommended changes, if possible).</i> |
|----------|----------|------------|------------|------------|-----------|-------------------------------------------------------------------------------------------------------|
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**Reference to line numbers within the paragraph or subparagraph.*

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| TYPED NAME, GRADE OR TITLE | TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION | SIGNATURE |
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| TO: <i>(Forward direct to addressee listed in publication)</i> Commander U.S. Army Tank-automotive and Armament Command ATTN: AMSTA-LC-SECT Kansas Street, Natick, MA 01760-5052. | FROM: <i>(Activity and location) (Include ZIP Code)</i> | DATE |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------|

PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

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| PUBLICATION NUMBER TM 10-4510-209-13&P | DATE 30 November 2004 | TITLE Operator's, Unit and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) For Containerized Latrine (CL) Containerized Latrine System (CLS) |
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| PAGE NO. | COLM NO. | LINE NO. | NATIONAL STOCK NUMBER | REFERENCE NO. | FIGURE NO. | ITEM NO. | TOTAL NO. OF MAJOR ITEMS SUPPORTED | RECOMMENDED ACTION |
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| | | | | | | | | |

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 ODISC4. | Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM). | DATE |
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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 = 32.8 feet
 1 hectometer = 10 dekameters = 328.08 feet
 1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
 1 decigram = 10 centigrams = 1.54 grains
 1 gram = 10 decigrams = .035 ounce
 1 dekagram = 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

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

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 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

| <i>To change</i> | <i>To</i> | <i>Multiply by</i> | <i>To change</i> | <i>To</i> | <i>Multiply by</i> |
|------------------|--------------------|--------------------|--------------------|---------------|--------------------|
| 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 | liters | .473 | milliliters | fluid ounces | .034 |
| quarts | liters | .946 | liters | pints | 2.113 |
| gallons | liters | 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)

$\frac{5}{9}$ Fahrenheit temperature $- 32$ Celsius temperature

PIN: 082045-000