

TM 1-4920-500-13&P

TECHNICAL MANUAL

OPERATOR AND FIELD MAINTENANCE MANUAL INCLUDING
REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

FOR

ARMAMENT AND ELECTRICAL SHOP

P/N 1024506

NSN 4920-01-548-2317

EIC: N/A

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

HEADQUARTERS, DEPARTMENT OF THE ARMY

10 JULY 2009

WARNING SUMMARY

Personnel performing operations, procedures and practices which are included or implied in this Technical Manual shall observe the following warnings. Disregard of these warnings and precautionary information can cause **SERIOUS INJURY or DEATH** or destruction of materiel.

WARNINGS

- A four man lift is required when moving or lifting ECUs. Each unit weighs approximately 270 pounds. Trying to move or lift an ECU without sufficient help can cause **SERIOUS INJURY** to personnel.
- Eyewash station is not for outside use. Do not install the eyewash station in an outside location.
- Fold-out floor support cables must be secured in cable housings prior to raising shelter floor from its lowered position to its level position. If support cables are not secured, support cables will remain under tension. **DO NOT** attempt to remove cables if support cables are not secured. Removing cables while under tension could cause **SERIOUS INJURY** to personnel.
- Expandable sections which consist of hinged floor and hinged sidewall, weighs 700 pounds (318 kg). **DO NOT** stand directly in front of hinged section.
- Load balancer is a spring powered mechanism. **PERSONAL INJURY OR DEATH** may result if two quick release pins are not installed in stop plates.
- Hinged floor support cables must be secured in cable housing guide prior to lowering shelter floor. If support cables are not secured, support cables will remain under tension. **DO NOT** attempt to remove cables if support cables are not secured. Removing cables while under tension could cause **SERIOUS INJURY** to personnel.
- When all equipment and materiel is stored on stationary side of shelter, limited floor space presents a safety hazard to personnel. This is most critical during raising and lowering of roof panel. Personnel inside shelter could become trapped between roof panel and equipment bolted to floor. Failure to observe warning could result in **SERIOUS INJURY** to personnel.
- The two upper lockout pins must be installed at the cable housing prior to raising the shelter floor from its lower position to its level position. If the lockout pins are not in place, the counterbalance cable will remain under tension. **DO NOT** attempt to remove these cables if the upper lockout pins are not installed. Removing cable while under tension could cause **SERIOUS INJURY** to personnel.
- **HIGH VOLTAGE** exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

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- Inhalation of phosphorous dust could cause **SERIOUS INJURY** to personnel. In an event of lamp breakage, care must be taken in removal of broken glass fragments and white phosphorous dust that may be dispersed within fixture.
- Before installing ECUs, shelter expansion must be complete (see WP 0005 00), electrical power supplied to shop (see WP 0006 00), and **COUNTERBALANCE CABLES MUST BE SECURED** (see WP 0005 00).
- Ensure compressed air supply is disconnected before attempting any work on oil/water separator or air feed-thru connector assembly. Do not direct compressed air near eyes or directly against skin. Wear eye protection; high pressure air against eyes can cause **BLINDNESS**.
- To avoid injury, be careful not to get caught between cable and sidewall panel. Do not attempt to control panel if it is accidentally dropped, trapped air acts as a cushion.
- Connecting PDB to generator is required only if power is not available. Only a qualified electrician should attempt to connect PDB to generator.
- Ensure air pressure has been relieved before disconnecting compressed air supply. Do not direct compressed air near eyes or directly against skin. Wear eye protection; high pressure air against eyes can cause **BLINDNESS**.
- Door handle must be padlocked at 12 o'clock position for shipping mode and 3 o'clock position for storage mode. Correct locking positions ensure that doors are secure and remain closed.
- It is essential that non-removable latches are pressed flat into pans.
- In extreme cold, do not touch metal parts with bare hands. Severe skin damage may result.
- To avoid injury when expanding or closing hinged sidewall in high winds, use six personnel.
- Eye protection must be worn by personnel when installing ground anchors.
- Turn **OFF** all power to shelter before proceeding with any electrical tests or repairs.
- A two person lift is required when moving or lifting the table assembly.

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Date of issue for the original manual is:

Original 10 July 2009

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**OPERATOR AND FIELD MAINTENANCE
MANUAL INCLUDING REPAIR PARTS
AND SPECIAL TOOLS LIST

FOR

ARMAMENT AND ELECTRICAL SHOP
P/N 1024506
NSN 4920-01-548-2317
EIC: N/A**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can improve this manual. If you find any mistakes or if you know of a way to improve these 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 Aviation and Missile Command, ATTN: AMSAM-MMC-MA-NP, Redstone Arsenal, AL 35898-5000. A reply will be furnished to you. You may also provide DA Form 2028 information to AMCOM via e-mail, fax, or the World Wide Web. Our fax number is: DSN 788-6546 or Commercial 256-842-6546. Our e-mail address is: 2028@redstone.army.mil. Instructions for sending an electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028. For the World Wide Web use: <https://amcom2028.redstone.army.mil>.

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HOW TO USE THIS MANUAL

Purpose and Scope

This technical manual provides Aviation Unit (AVUM) and Aviation Intermediate (AVIM) usage and maintenance information for the Pneudraulic Shop. The information includes component and assembly description, usage instructions, maintenance and supporting data including a Repair Parts and Special Tools List (RPSTL) for identifying and ordering components, assemblies, and repair parts.

Arrangement, Identification, and Location of Front Matter, Chapters and Work Packages, and Rear Matter

This manual is composed of front matter, chapters containing work packages (WP's) and rear matter.

Front Matter

The front matter includes such items as the Warning Summary, List of Effective Pages, Table of Contents and How to Use This Manual.

Chapters and Work Packages

The WP's contain information pertinent to the performance of specific tasks. Each WP is maintained as a separate entity. The WP's are grouped into Chapters based on overall content. WP's are arranged in numerical sequence regardless of chapter division. The chapter divisions and the WP's contained within the chapters are listed in the Table of Contents.

Locating a Work Package in the Table of Contents

First determine the category of the WP subject and then find the appropriate chapter in the Table of Contents. Scan the WP titles in that chapter until you find the WP subject matter. In the example below, it is desired to locate the Siting Requirements for the Pneudraulic Shop. The procedures fall into Chapter 2 Operator Instructions. Go to the Table of Contents and find the chapter titled "Operator Instructions". Scan the WP titles within that chapter until you find the WP's titled "Shelter Opening Sequence", now scan these WP's for the "Siting Requirements" statement and then follow the leader line to find the WP number.

WARNING SUMMARY

HOW TO USE THIS MANUAL

CHAPTER 1 – GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION

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Work Package Content and Presentation

The content and the presentation techniques used in the WP's vary according to the material content. The TM number and WP number are placed at the top of the page and are set off by a horizontal line as shown below.

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The page number is placed at the bottom of the page and consists of the WP number and a sequential number denoting the page within the WP as shown below.

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Finding Instructions You Need

Primary paragraph title heads in bolded upper case letters.

Secondary level paragraphs are denoted by bolded headings set in Upper and Lower Case Type. These paragraphs always relate to and are subordinate to the most recent primary paragraph heading.

Tables are titled, numbered, and listed in the table of contents under the chapter and WP they appear and if you follow the leader line the last digit is the page number of the WP where the table is shown.

Warnings, Cautions, and Notes

WARNING

- A warning denotes a condition or procedure, which when not complied with can result in injury or death to personnel and damage to equipment.

CAUTION

- A caution denotes a condition or procedure, which when not complied with can result in damage to equipment.

NOTE

- A note highlights a condition or statement, which aids the reader.

CHAPTER 1

**GENERAL INFORMATION,
EQUIPMENT DESCRIPTION AND
THEORY OF OPERATION**

ARMAMENT AND ELECTRICAL SHOP GENERAL INFORMATION

SCOPE

Type of Manual: Operator and Field Maintenance Manual including Repair Parts and Special Tools List (RPSTL)

Name: Armament and Electrical Shop, NSN 4920-01-548-2317

Purpose of Equipment: To provide armament, fire control, and electrical repair support for divisional and non-divisional aviation units. This shop is utilized in conjunction with other maintenance shops in the Aviation Unit Maintenance (AVIM) support unit.

MAINTENANCE FORMS, RECORDS, AND REPORTS

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

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs)

If your Armament and Electrical Shop needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance. If you have Internet access, the easiest and fastest way to report problems or suggestions is to go to <https://aeprs.ria.army.mil/aeprspublic.cfm> (scroll down and choose the "Submit Quality Deficiency Report" bar). The Internet form lets you choose to submit an Equipment Improvement Recommendation (EIR), a Product Quality Deficiency Report (PDQR) or a Warranty Claim Action (WCA). You may also submit your information using an SF 368 (PQDR). You can send your SF 368 via e-mail, regular mail or facsimile using the addresses/facsimile numbers specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual. We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion Prevention and Control (CPC) of Army material is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items. Corrosion specifically occurs with metals. It is an electrochemical process that causes the degradation of metals. It is commonly caused by exposure to moisture, acids, bases, or salts. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking. Plastics, composites, and rubbers can also degrade. Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically ultraviolet (UV)) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking. SF Form 368 (PQDR) should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Instructions for destruction of this equipment are contained in Technical Manual (TM) 750-244-1-4, Procedures for Destruction of Aviation Ground Support Equipment (FSC 4920), to Prevent Enemy Use.

PREPARATION FOR STORAGE OR SHIPMENT**NOTE**

Refer to TM 10-5411-201-14, Operator, Organizational, Direct Support, and General Support Maintenance for Shelter, Tactical, Expandable, One-Sided, if necessary.

1. Refer to shop equipment TMs and manufacturer supplied operating manuals for proper storage and shipment instructions.
2. Inspect the shelter for the following and ensure that:
 - a. All circuit breakers and switches are in **OFF** position.
 - b. Circuit breaker panel door is secured.
 - c. Lights and receptacle outlets are properly stowed.
 - d. Jacks are secured in the appropriate stowage position.
 - e. Roof struts are secured.
 - f. Stop plate in the load balancer is in down position and secured with pin.
 - g. Foot bolt and chain bolt are secured.
 - h. Camlock pin is engaged in hole on corner post.
 - i. All shelter components are properly secured.
 - j. Protective dust caps are secure on power entry panel receptacles and binding posts are tightened.
 - k. All doors are secured.
3. Store shelter in a dry area or a designated supply facility. If stored outside in humid conditions, perform a quarterly inspection to ensure moisture is not inside shelter.

WARRANTY INFORMATION

For warranty information, please e-mail inquiries to: https://pmskot.army.mil/SKO_Warranty.html.

LIST OF ABBREVIATIONS/ACRONYMS

Amp.....	Ampere
AVIM.....	Aviation Intermediate Maintenance
ALSS.....	Aviation Life Support Systems
AMC.....	Aviation Maintenance Company
ASB.....	Aviation Support Battalion
AVUM.....	Aviation Unit Maintenance
BDAR.....	Battle Damage Assessment and Repair
BII.....	Basic Issue Items
BNC.....	Bayonet Neil Concelman
BTU.....	British Thermal Electrical Units
cn.....	Can
cs.....	Case
cm.....	Centimeter
COEI.....	Components of End Item
ce.....	Cone
CONUS.....	Continental United States
COTS.....	Commercial Off the Shelf
CPC.....	Corrosion Prevention and Control
DA.....	Department of the Army
DISE.....	Distribution Illumination System Electrical
ea.....	Each
ECU.....	Environmental Control Unit
EIR.....	Equipment Improvement Recommendations
FM.....	Field Manual
IAW.....	In Accordance With
in.....	Inch
ISO.....	International Standards Organization
kt.....	Kit
lb.....	Pound
LRU.....	Logistical Replacement Unit
MAC.....	Maintenance Allocation Chart
MTOE.....	Modified Table of Organization and Equipment
NSN.....	National Stock Number
OCONUS.....	Outside Continental United States
P/N.....	Part Number
pt.....	Pint
PDB.....	Power Distribution Box
P DISE.....	Power Distribution Illumination System Electrical
PM.....	Preventive Maintenance
PQDR.....	Product Quality Deficiency Report
REF.....	Reference
RPSTL.....	Repair Parts and Special Tools List
SECM.....	Shop Equipment Contact Maintenance
SMR.....	Source, Maintenance, and Recoverability

LIST OF ABBREVIATIONS/ACRONYMS (CONTINUED)

SDR.....	Supply Discrepancy Report
sq.....	square
TAMMS	The Army Maintenance Management System
TAMMS-A.....	The Army Maintenance Management System – Aviation
TB.....	Technical Bulletin
TM	Technical Manual
TMDE	Test, Measurement, and Diagnostic Equipment
TASMG.....	Theater Aviation Sustainment Maintenance Group
U/I.....	Unit of Issue
UUT	Unit Under Test
UOC	Usable on Code
UV	Ultraviolet
v.....	volt
WCA.....	Warranty Claim Action
WP.....	Work Package

QUALITY OF MATERIAL

Material used for replacement, repair, or modification must meet the requirements of this TM 1-4920-500-13&P, Armament and Electrical Shop. If qualities of material requirements are not stated in this TM 1-4920-500-13&P, Armament and Electrical Shop, the material must meet the requirements of the drawings, standards, specifications, or approved engineering change proposals applicable to the subject equipment.

SAFETY, CARE, AND HANDLING

1. Use extreme caution when performing procedures that involve the electrical system of this equipment. High voltage exists and death on contact may result if personnel fail to observe safety precautions.
2. Before performing continuity checks or replacing electrical components, ensure electrical power is disconnected completely from the circuit involved.
3. In the event of a fluorescent lamp breakage, care must be taken in the removal of broken glass fragments and white phosphorous dust. Inhalation of phosphorous dust could cause serious injury.
4. Do not use handling equipment with capacity of less than gross weight of shelter system. Do not allow the shelter to swing back and forth when it is suspended. Failure to observe this warning may result in damage to equipment or severe injury or death to personnel.
5. Lock stop plate on load balancer with quick release pin before disconnecting support cable from hinged floor.
6. Expandable section (hinged floor and hinged sidewall together) weighs 700 pounds (318 kg). Do not stand directly in front of hinged section.
7. Prior to removing load balancer from fixed roof, the hinged floor must be near stowed position to remove tension from support cable. The support cable bracket on hinged floor must then be removed to permit disconnecting support cable from hinged floor. Secure hinged floor to prevent accidental release.
8. Do not attempt to disassemble or repair load balancer. This equipment contains powerful torsion springs and serious injury or death to personnel could result if disassembled.
9. In extreme cold, do not touch metal parts with bare hands because severe skin damage may result.
10. Eye protection shall be worn by personnel when installing ground anchors.
11. Prior to operating or performing procedures that involve the air compressor or degreaser refer to the manufacturer's manual provided for all warnings and cautions.

SUPPORTING INFORMATION FOR REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT**Common Tools and Equipment**

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE), CTA 50-970, Expendable/Durable Items (Except: Medical, Class V, Repair Parts, and Heraldic Items), CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 8-100, Army Medical Department Expendable/Durable Items, as applicable to your unit.

Special Tools, TMDE, and Support Equipment

There are no special tools or support equipment required to perform maintenance procedures detailed within this manual.

Repair Parts

Repair parts are listed and illustrated in parts information work package WP 0044 00 of this manual.

Expendable and Durable Items

Expendable and durable items are listed in work package WP 0048 00 of this manual.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
EQUIPMENT DESCRIPTION AND DATA**

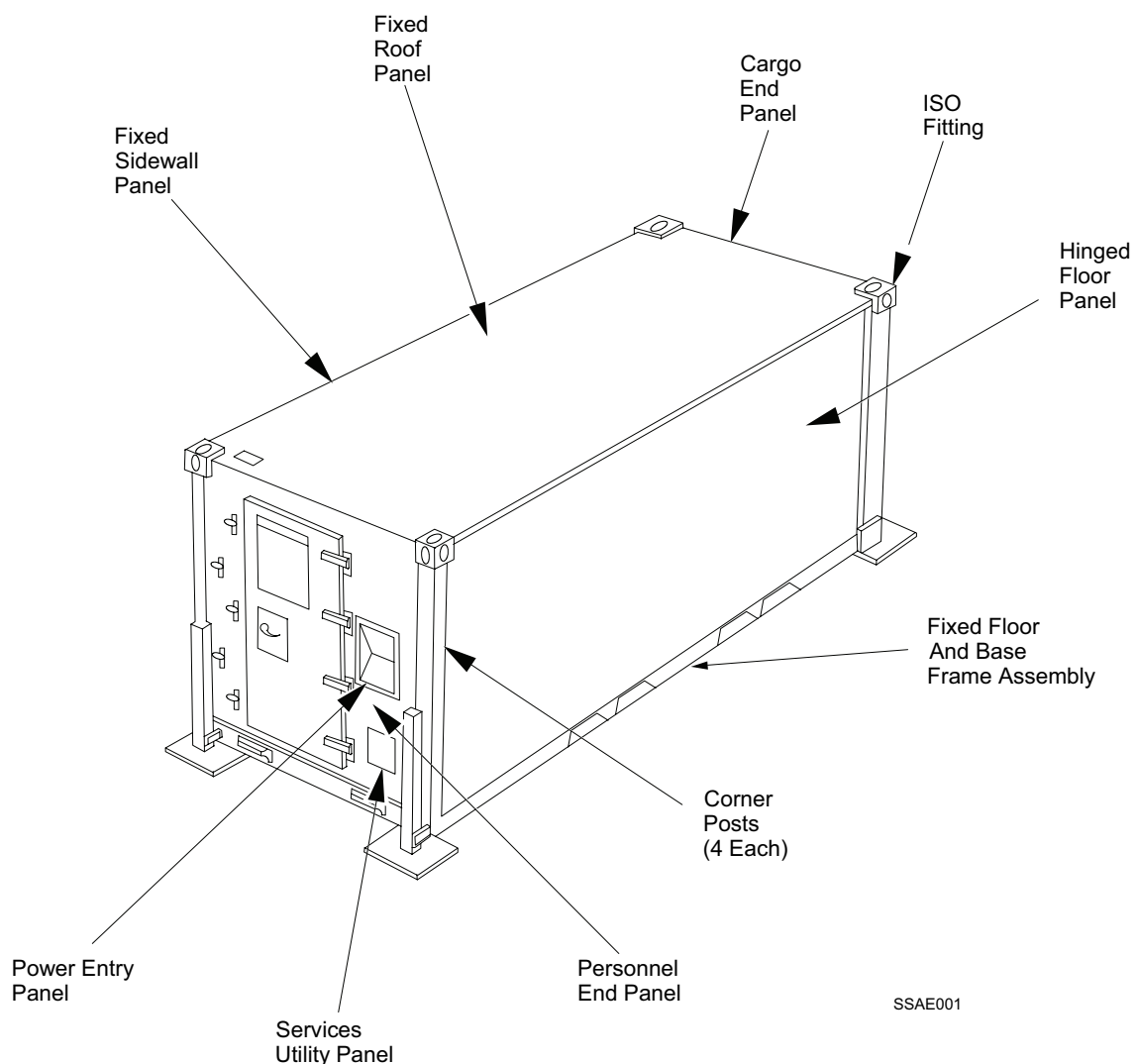
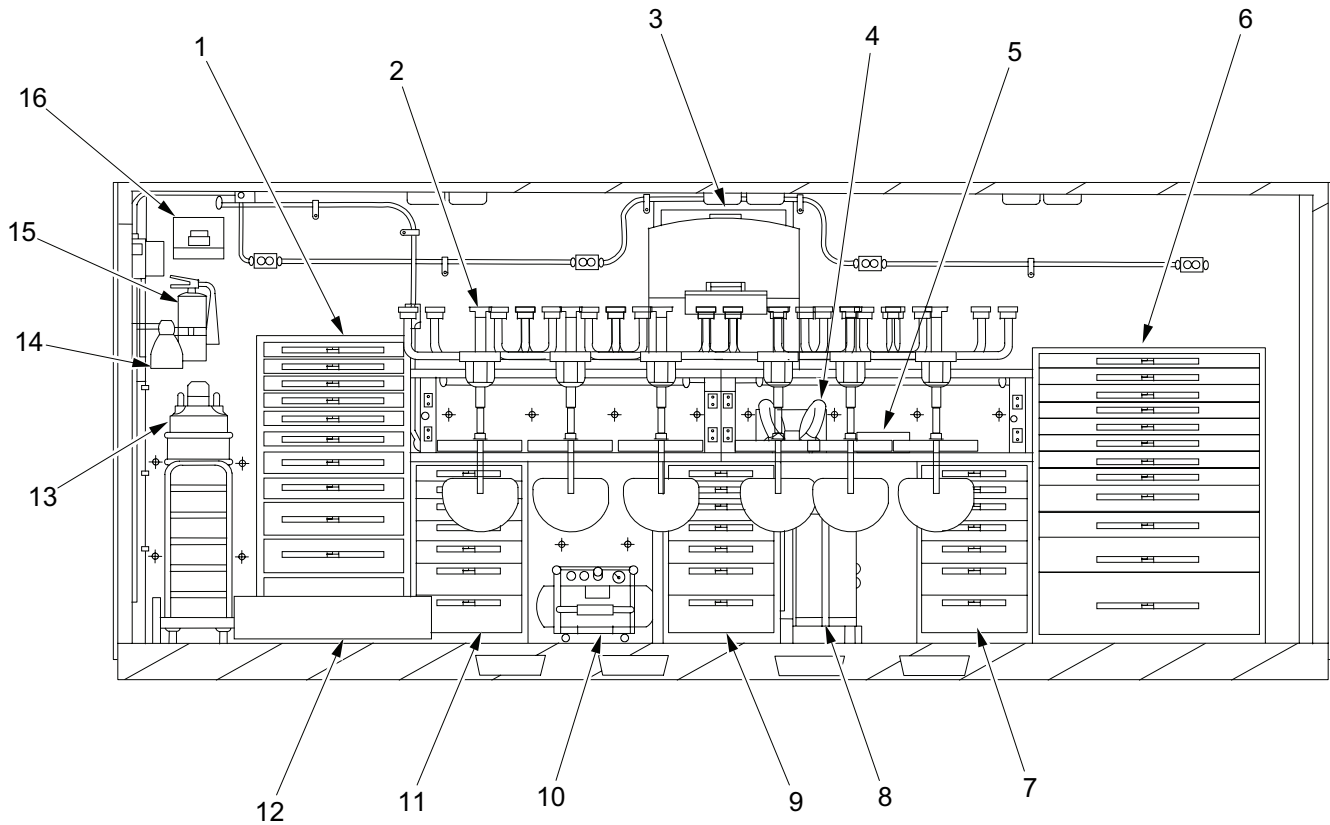
EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES


Figure 1. Armament and Electrical Shop.

- Shelter is housed in a tactical, one-sided expandable, 100 amp International Standards Organization (ISO) shelter
- Additional floor space provides a work area necessary for the shop to perform its maintenance function
- Shop is equipped with tools, machines, and equipment necessary to provide armament and electrical repair and maintenance support for the AVIM unit
- Shelter can be transported by highway, rail, marine, or air (C-130, C-141, or C-5 aircraft, Army CH-47 helicopter)
- Shop can be operated in any geographic area and under any climatic condition in support of Army divisional and non-divisional units

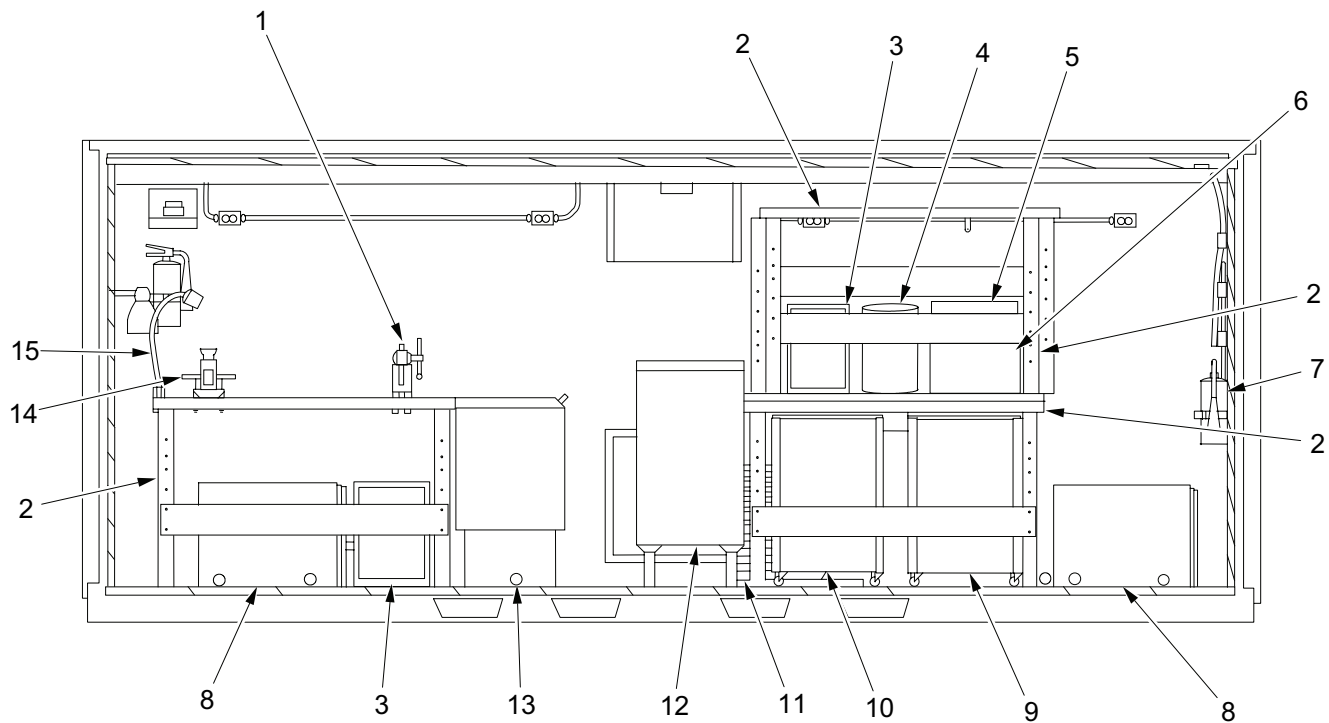
LOCATION AND DESCRIPTION OF MAJOR COMPONENTS FOR TRANSPORT MODE



SSAE002

Figure 2. Fixed Wall Transport Mode Component View.

<u>Item No. and Name</u>	<u>Item No. and Name</u>
1. 11 Drawer Cabinet (A)	9. 7 Drawer Cabinet (C)
2. Industrial Chairs (6)	10. Air Compressor
3. Eyewash Station	11. 7 Drawer Cabinet (B)
4. Waste Anesthetic Vacuum System	12. Shelter BII Box
5. Power Static Inverter	13. Explosion Proof Vacuum
6. 12 Drawer Cabinet (E)	14. Area Light
7. 7 Drawer Cabinet (D)	15. Fire Extinguisher
8. Power Supply and Mounting Frame Assembly	16. First Aid Kit



SSAE003

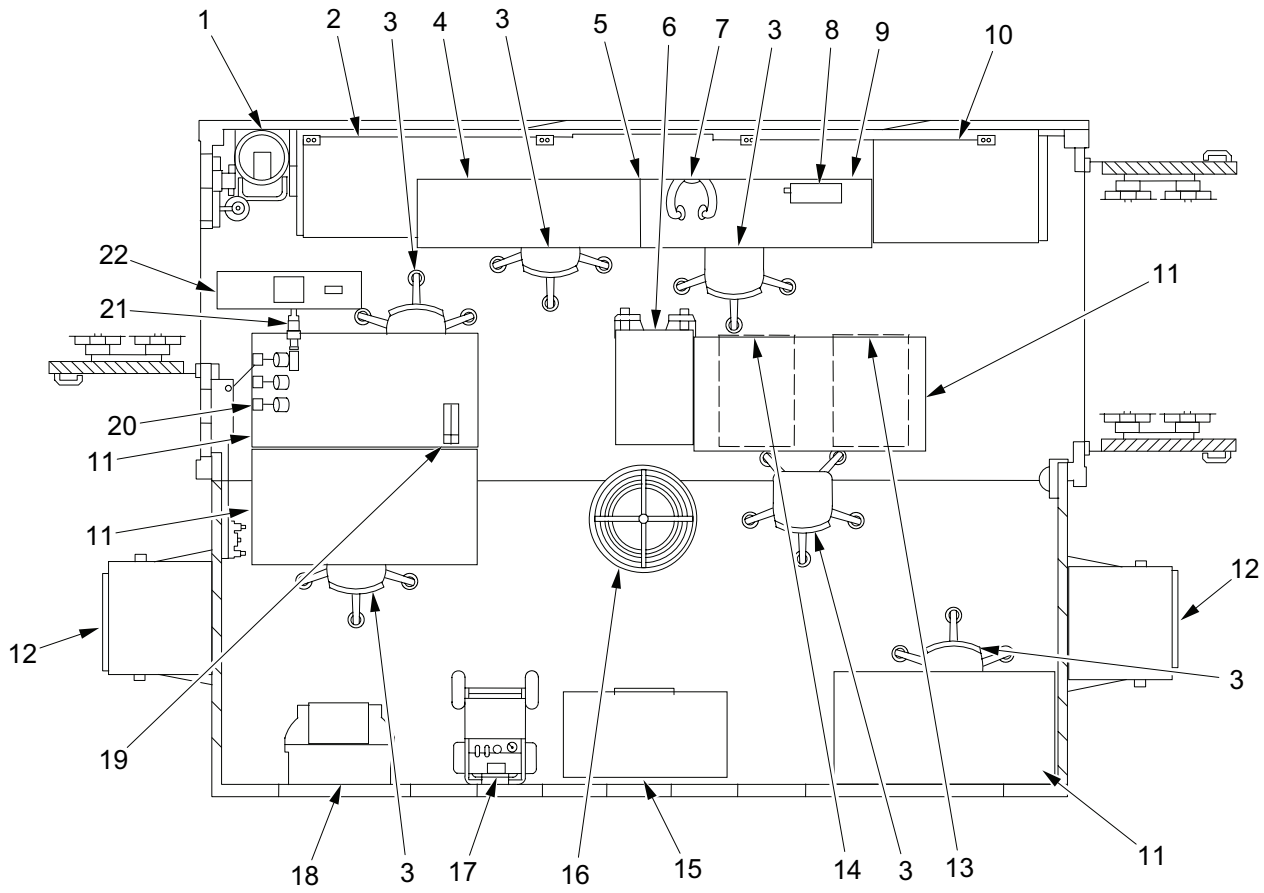
Figure 3. Expanded Wall Transport Mode Component View.

Item No. and Name

Item No. and Name

- | | |
|--|--|
| 1. Arbor Press | 9. 5 Drawer Mobile Cabinet (F) |
| 2. Table Assemblies (4) (A, B, C, and D) | 10. 5 Drawer Mobile Cabinet (G) |
| 3. Case Sets (2) | 11. Cable Reel Assemblies (100 and 60 amp) |
| 4. Waste Can | 12. 7 Drawer Mobile Cabinet (H) |
| 5. Electrical Connector Maintenance Kit | 13. Degreaser |
| 6. Thread Cutting Die and Tap Set | 14. Machinist Vise |
| 7. Fire Extinguisher | 15. Focus Light Assemblies (3) |
| 8. ECUs (2) (A and B) | |

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS FOR OPERATIONAL MODE



SSAE004

Figure 4. Operational Mode Component View.

<u>Item No. and Name</u>	<u>Item No. and Name</u>
1. Explosion Proof Vacuum	12. ECUs (2) (A and B)
2. 11 Drawer Cabinet (A)	13. 5 Drawer Mobile Cabinet (F)
3. Industrial Chairs (6)	14. 5 Drawer Mobile Cabinet (G)
4. 7 Drawer Cabinet (B)	15. Degreaser
5. 7 Drawer Cabinet (C)	16. Power Cable Reel Assemblies (100 and 60 amp)
6. 7 Drawer Mobile Cabinet (H)	17. Air Compressor
7. Waste Anesthetic Vacuum System	18. Eyewash Station
8. Power Static Inverter	19. Arbor Press
9. 7 Drawer Cabinet (D)	20. Focus Light Assemblies (3)
10. 12 Drawer Cabinet (E)	21. Machinist Vise
11. Table Assemblies (4) (A, B, C, and D)	22. Shelter BII Box

EQUIPMENT DATA**Exterior Dimensions (Transport Mode)**

- Width: 8 ft. (2.44 meters)
- Height: 8 ft. (2.44 meters)
- Length: 19 ft. 10.50 in. (6.05 meters)

Exterior Dimensions (Operational Mode)

- Width: 14 ft. 10 in. (4.52 meters)
- Height: 8 ft. (2.44 meters)
- Length: 19 ft. 10.50 in. (6.05 meters)

Interior Dimensions

- Minimum clear height: 80.29 in. (2.04 meters)
- Minimum clear width (Transport Mode): 77.78 in. (1.98 meters)
- Usable floor space: 271.75 sq. ft. (25.25 sq. meters)

Shelter Weight

- Less payload: 5,300 lbs.
- Plus payload: 11,883 lbs.

Primary Power Requirements

- NQOB Model: 120/208V, 60 Hz, 3 phase, 4 wire with 1 ground
- NQOD Model: 120/208V, 60 Hz, 3 phase, 4 wire with 4 grounds

Upper and Lower ISO Fittings are provided for transportability IAW ISO 1496/1, Series 1 Freight Containers Specification and Testing, Part 1: General Cargo Containers for General Purposes.

End of Work Package

ARMAMENT AND ELECTRICAL SHOP THEORY OF OPERATION

After the shelter has been erected, the operator personnel will unbolt selected items of equipment. (See WP 0002 00, Figure 2 and 3). These items will be relocated to pre-selected positions on the expanded side of the shelter. (See WP 0002 00, Figure 4). The selected items, when moved, will not be secured (bolted) in place. This allows the shop personnel a certain flexibility in the event long or bulky materiel must be repaired within the shelter. The recommended locations were selected for proper utilization of floor space and maximum safety for the operating personnel.

Detailed instructions for unbolting equipment and the recommended sequence for relocating equipment are contained in WP 0008 00. The procedures for striking the shelter and preparing the Armament and Electrical Shop for transport or storage are contained in WP 0011 00 through WP 0015 00.

If hardware is damaged and it is necessary to replace fixed equipment or shop components within shelter, care must be taken to remove all bolts, nuts, and other fasteners. All cabinets and racks are bolted to floor and unless isolated, are normally bolted to adjacent cabinets and/or to wall.

WARNING

A four man lift is required when moving or lifting ECUs. Each unit weighs approximately 270 pounds. Trying to move or lift an ECU without sufficient help can cause **SERIOUS INJURY** to personnel.

The ECUs are supplied by the unit. Procedures for positioning the ECUs for operation are in WP 0008 00. The two ECUs are positioned on special fold-down panels when the shop is in the operational mode. Power is provided by a 208V, 3 phase cable located inside the shelter next to each panel. Both ECUs can be easily removed for service or repair. Procedures for repositioning the ECUs for transport or storage are in WP 0013 00.

Electrical power to operate the Armament and Electrical Shop is provided by an auxiliary generator or a commercial power source. A Power Distribution Box (PDB) is used between the power source and the power entry panel of the shelter. The generator, PDB, and the pigtail used to connect the PDB to the generator are supplied by the unit. Overload protection is provided by circuit breakers. The circuit breaker panel is located inside the shelter next to the personnel entrance door. Procedures for connecting electrical power to the shop are in WP 0006 00. Procedures for disconnecting electrical power from the shop are in WP 0014 00.

End of Work Package

CHAPTER 2
OPERATOR INSTRUCTIONS
FOR
ARMAMENT AND ELECTRICAL SHOP

**ARMAMENT AND ELECTRICAL SHOP
DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS**

Operator's manuals are provided with the equipment that is located in the Armament and Electrical Shop. For operator instructions or equipment information consult the manufacturer's manual that coincides with the equipment.

End of Work Package

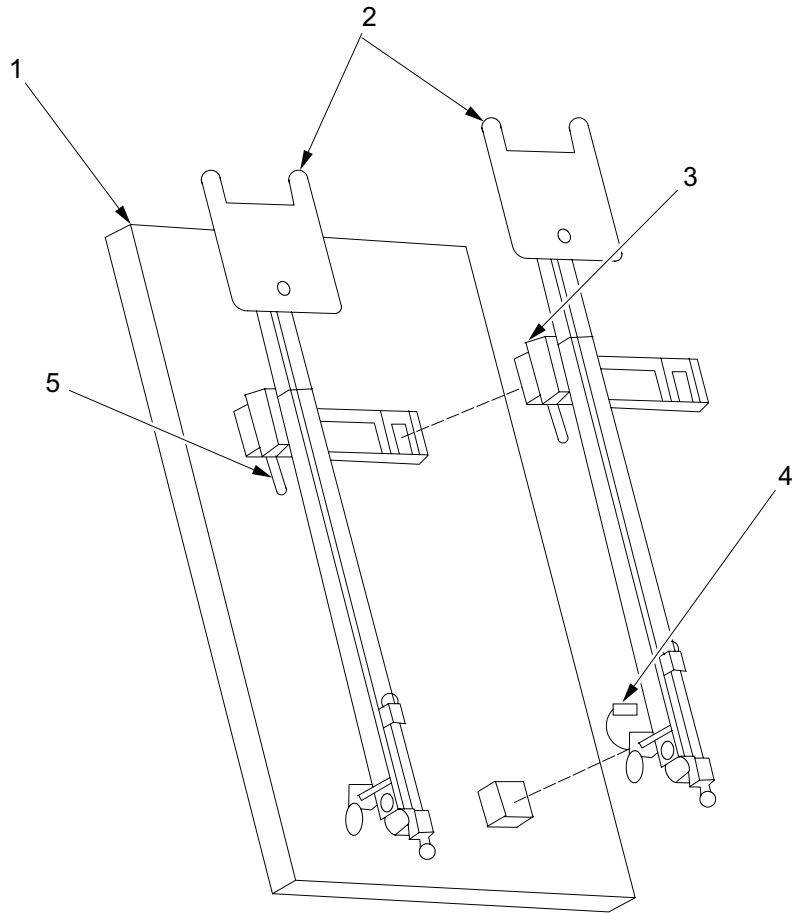
**ARMAMENT AND ELECTRICAL SHOP
OPERATION UNDER USUAL CONDITIONS**

SITING REQUIREMENTS

The Armament and Electrical Shop should be set up with power cable length, tactical deployment, exhaust/inlet of ECUs, and phasing between related shops kept in mind. The shop's power entry panel, next to personnel entrance door (see WP 0002, Figure 1), should be facing toward the power source and power distribution box (PDB).

ASSEMBLY AND PREPARATION FOR USE**NOTES**

- Each shelter is equipped with six container jacks. Four ISO jack assemblies are used on fixed side to lift and level shelter and two hinged jack assemblies are used on expanded side to level hinged floor after expansion.
- Refer to WP 0016 for unusual ground conditions.

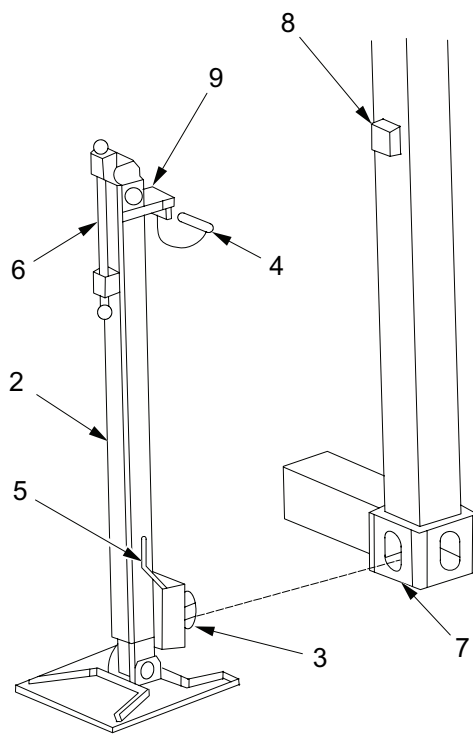


SSAE005

1. Obtain four ISO jack assemblies (2) from inside of personnel and right cargo doors (1) by turning locking handle (5) to loosen jack attachment (3) and remove safety pin (4).
2. Position ISO jack assemblies (2) at each corner of shelter.

NOTE

Stencil on ISO jack assemblies indicate handle rotation to raise or lower jack.



SSAE006

3. Ensure ISO jack assemblies (2) are lowered completely.
4. Place upper jack attachment insert (9) on upper jack support bracket (8) on corner post.
5. Insert jack attachment (3) into lower ISO fitting (7) of shelter.
6. Turn locking handle (5) to rotate jack attachment (3) on ISO jack assembly (2) to lock.
7. Rotate handle (6) counter clockwise on ISO jack assembly (2) to raise until safety pin (4) can be installed.
8. Install safety pin (4).
9. Repeat steps 3 through 8 at three remaining corners.

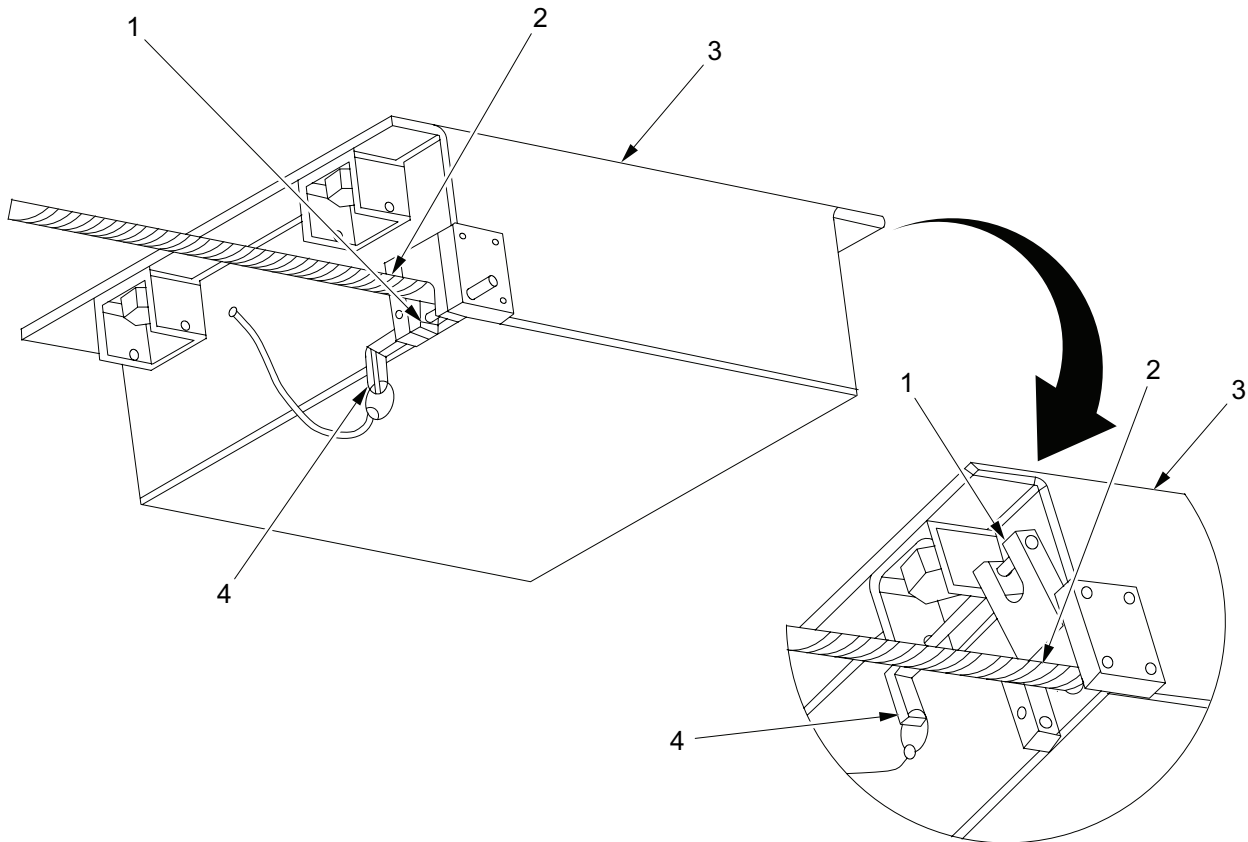
CAUTION

ISO jack assemblies must be raised simultaneously to prevent excessive strain on ISO jack assemblies or shelter. Shelter must be raised a minimum of 3 inches (7.6 cm) off ground.

10. Simultaneously raise ISO jack assemblies (2) at each corner of shelter.

INITIAL LEVELING

1. Obtain level from shelter basic issue items (BII) box. (See WP 0002, Figure 2, Item 12).
2. Level both cargo and personnel end (See WP 0002, Figure 1) from side to side, and middle of shelter from end to end by adjusting ISO jack assemblies accordingly.

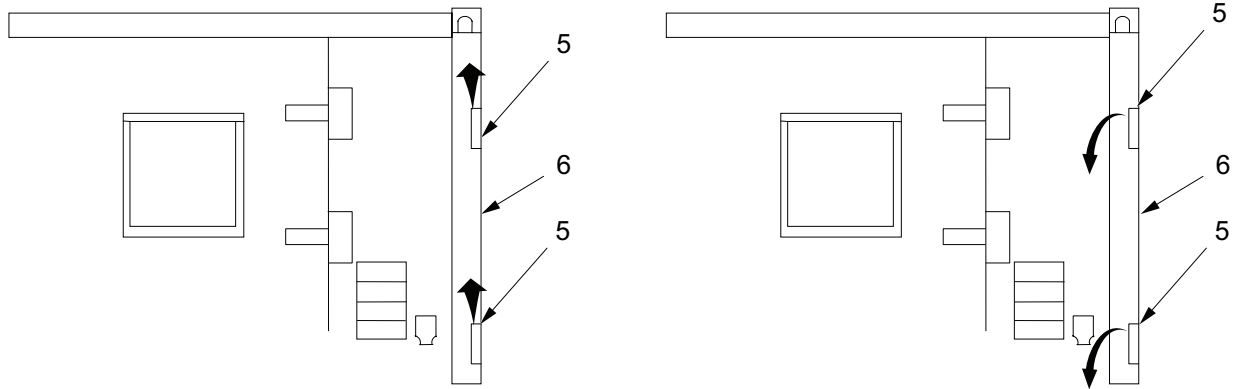
SHELTER EXPANSION

SSAE007

1. Remove lockout pins (4) from lower position on both load balancers (3).
2. Open slide stops (1) against support cables (2) on both load balancers (3).
3. Install lockout pins (4) in upper position on both load balancers (3).

WARNING

Expandable sections, which consist of hinged floor and hinged sidewall, weighs 700 pounds (318 kg). **DO NOT** stand directly in front of hinged section.

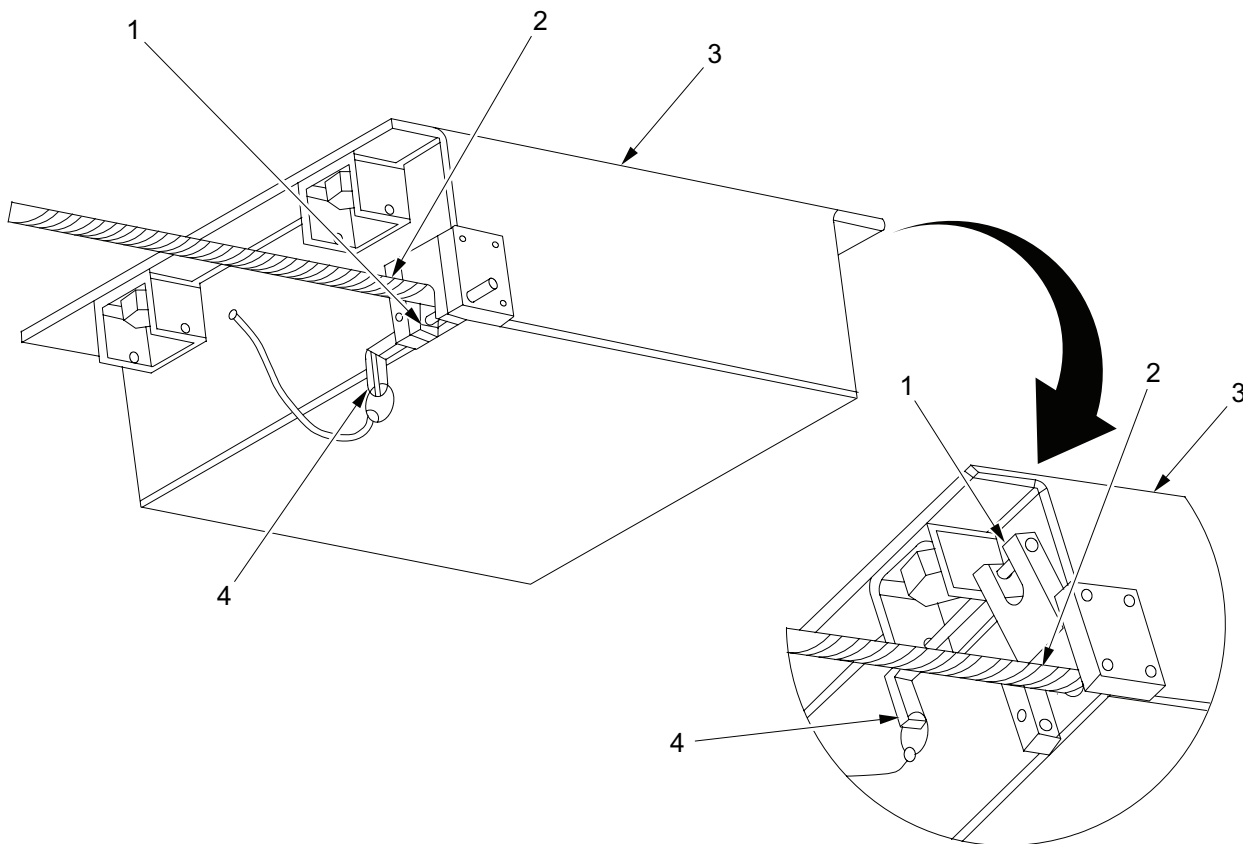


SSAE008

4. Raise cam lock handles (5) on corner posts (6) and rotate as indicated by stencil to disengage hinged floor locks.
5. Carefully lower hinged floor to extent of support cable travel (1 1/2 in. (3.8 cm) below level).

WARNINGS

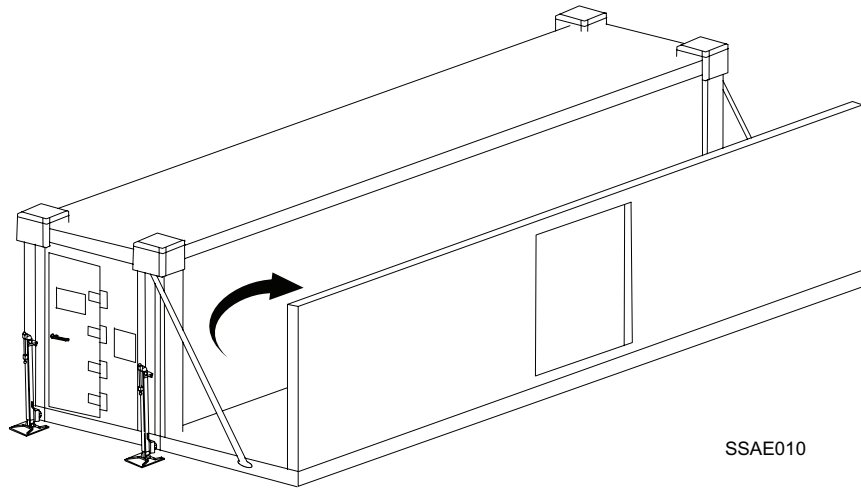
- Load balancer is a spring powered mechanism. **PERSONAL INJURY OR DEATH** may result if two quick release pins are not installed in stop plates.
- Hinged floor support cables must be secured in cable housing guide prior to lowering shelter floor. If support cables are not secured, support cables will remain under tension. **DO NOT** attempt to remove cables if support cables are not secured. Removing cables while under tension could cause **SERIOUS INJURY** to personnel.



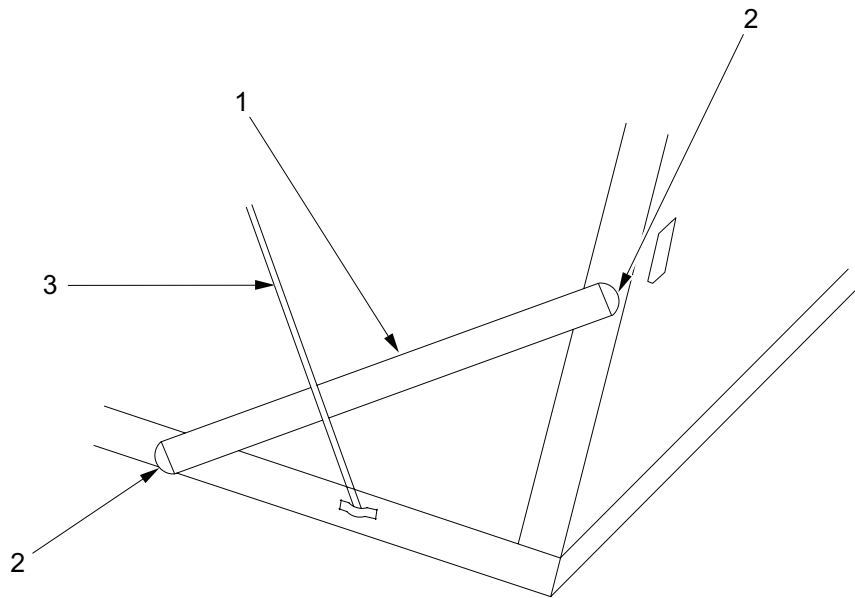
SSAE009

6. Remove lockout pins (4) from upper position on both load balancers (3).
7. Close slide stops (1) against support cables (2) on both load balancers (3).
8. Install lockout pins (4) in lower position on both load balancers (3).

POSITIONING HINGED SIDEWALL



1. Obtain two sidewall support braces from shelter BII box. (See WP 0002, Figure 2, Item 12).
2. Raise hinged sidewall and hold in position.



SSAE011

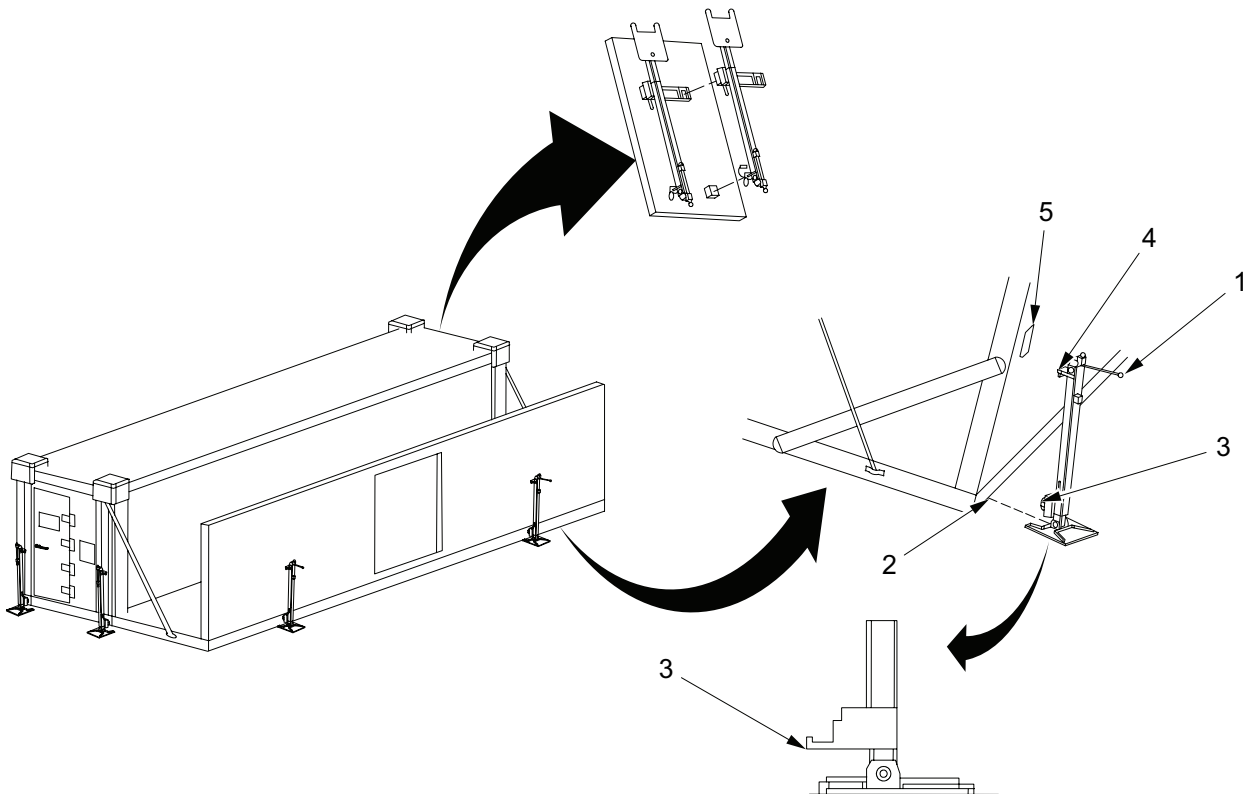
3. Install two sidewall support braces (1) in brace cups marked "A" (2) on hinged floor and sidewall behind support cable (3).

POSITIONING HINGED JACK ASSEMBLIES FOR LEVELING

1. Obtain two hinged jack assemblies from inside of left cargo door.
2. Position hinged jack assemblies at each corner of expanded side.

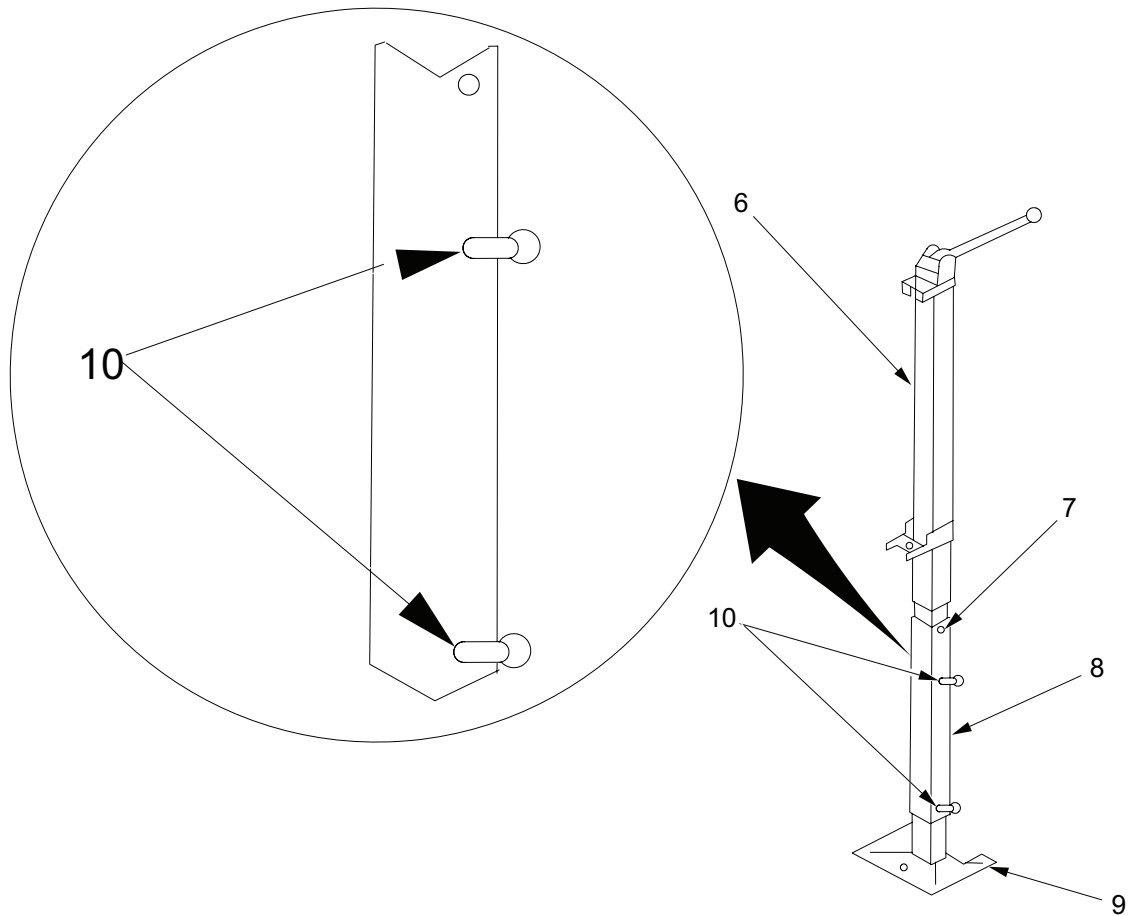
NOTES

- If step 3 cannot be successfully completed, perform Step 4 and then return to step 3. When step 3 is successfully completed, go to Step 5.
- Stencil on hinged jack assemblies indicate handle rotation to raise or lower jack.



SSAE012

3. Rotate handle (1) to raise hinged jack assembly until jack lift pin (3) engages in hinged floor socket (2) and upper jack hook (4) engages in jack support bracket (5) on hinged sidewall.

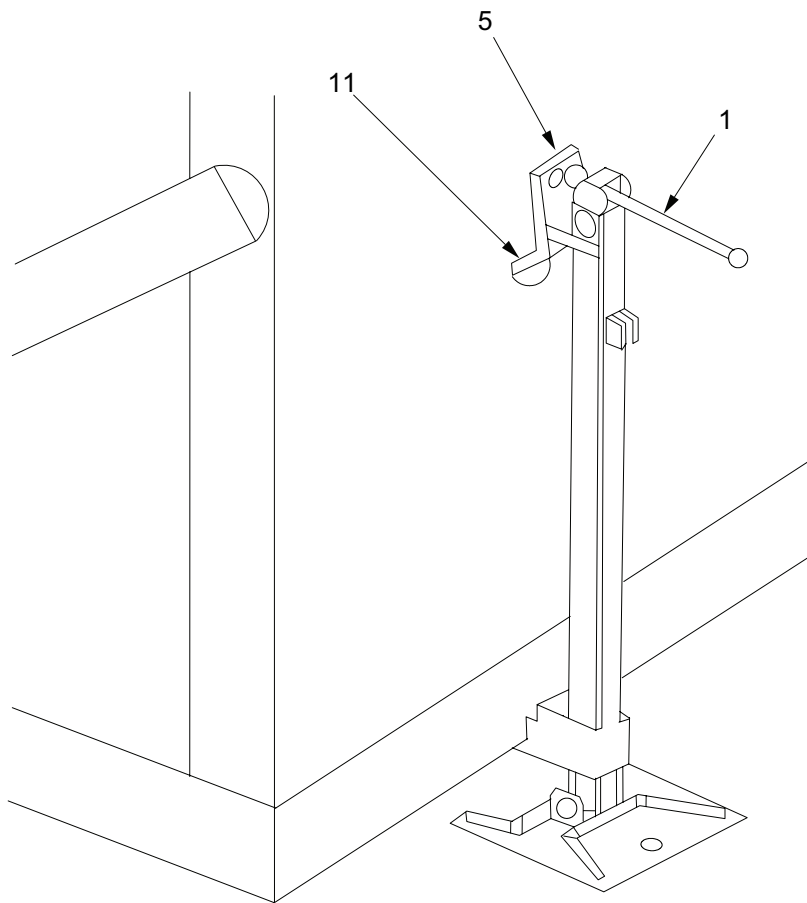


SSAE013

4. Install jack extensions (**if necessary**).
 - a. Obtain two jack extensions (8) from shelter BII box (WP 0002, Figure 2, Item 12) and install between jack base (9) and upper section of hinged jack assembly (6).
 - b. Position jack extension (8) in jack base (9) and secure by installing pin (7).
 - c. Position hinged jack assembly (6) on jack extension (8) and secure by installing two quick-disconnect pins (10) through tubes of jack extension (8) and upper section of hinged jack assembly (6).

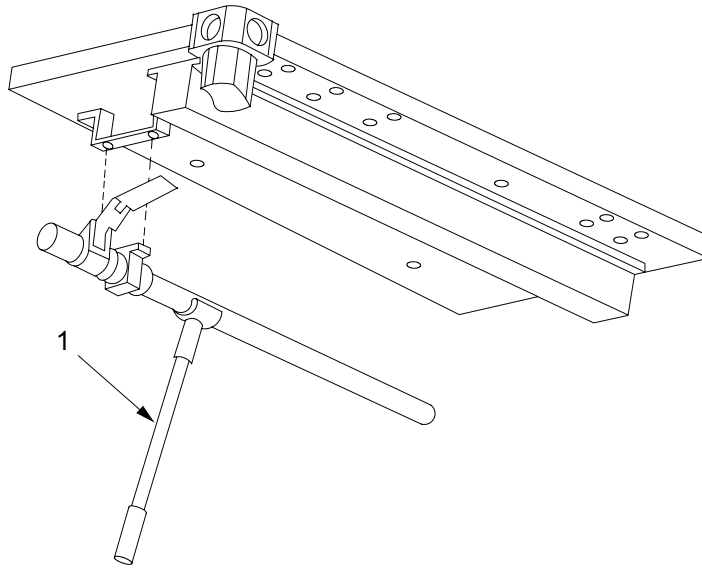
CAUTION

Do not attempt to level or raise floor at this time.



SSAE014

5. Rotate handle (1) counter clockwise to raise hinged jack assembly until safety pin (11) can be installed in jack support bracket (5).

POSITIONING ROOF AND HINGED END WALLS

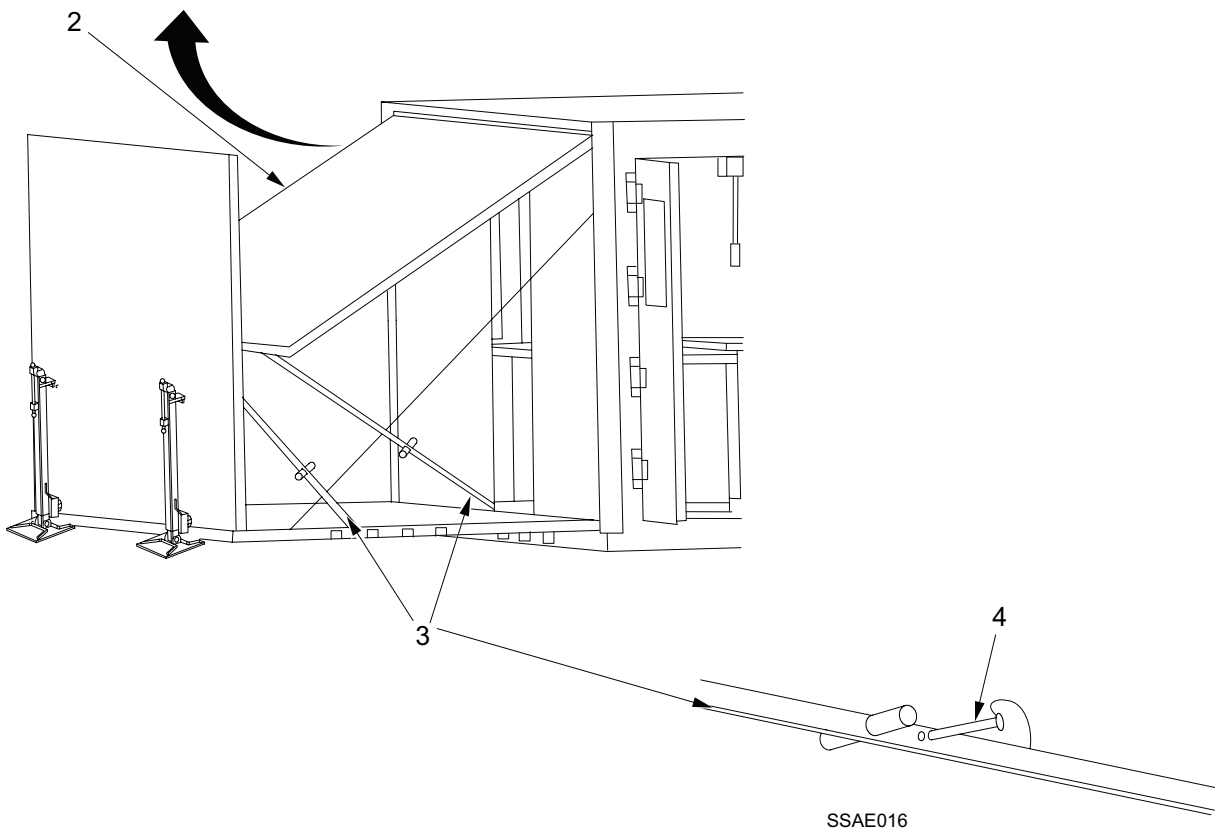
SSAE015

NOTES

- Solar bar handles are located at each end of shelter, on inside of fixed roof.
 - Rotating the solar bar handles will slide hinged roof outward.
1. Rotate two solar bar handles (1) simultaneously to their full extent.

WARNINGS

- When all equipment and materiel is stored on stationary side of shelter, limited floor space presents a safety hazard to personnel. This is most critical during raising and lowering of roof panel. Personnel inside shelter could become trapped between roof panel and equipment bolted to floor. Failure to observe warning could result in **SERIOUS INJURY** to personnel.
- A minimum of four personnel are required to perform all of the following procedures.

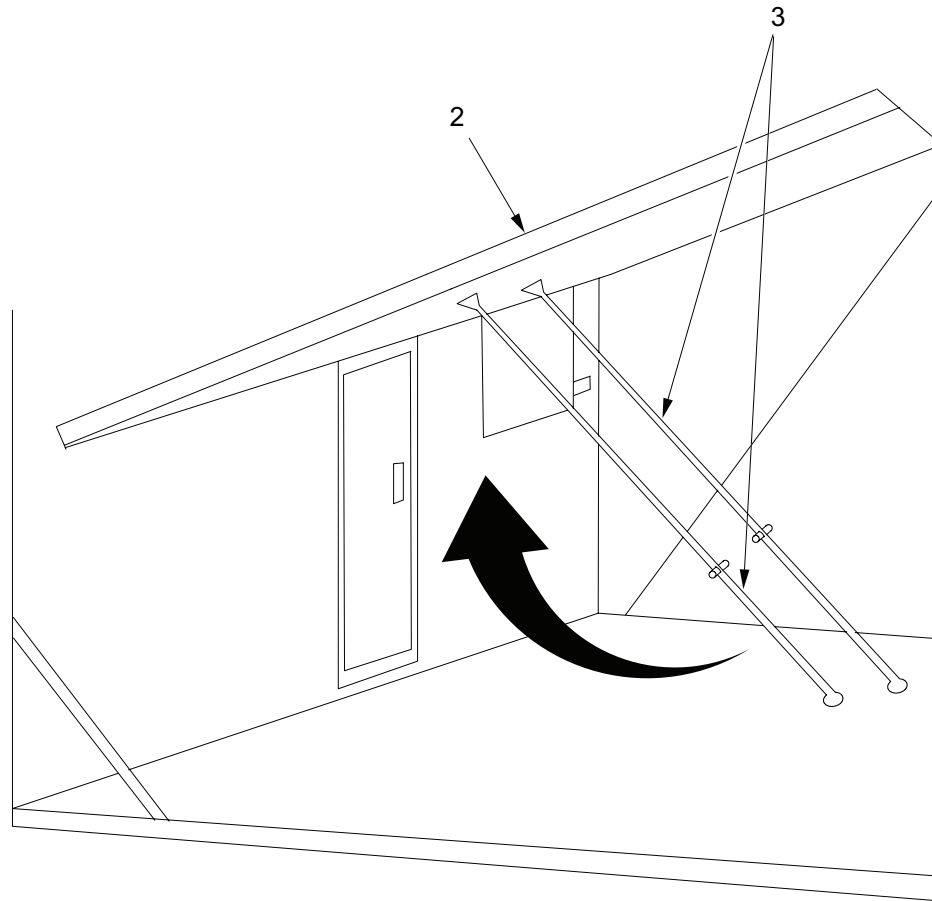
**NOTE**

Two personnel outside shelter must lift roof panel far enough to allow two people inside to perform following steps.

2. Lift roof panel (2).
3. Release two support struts (3) from roof panel (2) and extend them to full length.
4. Insert lock pin (4).

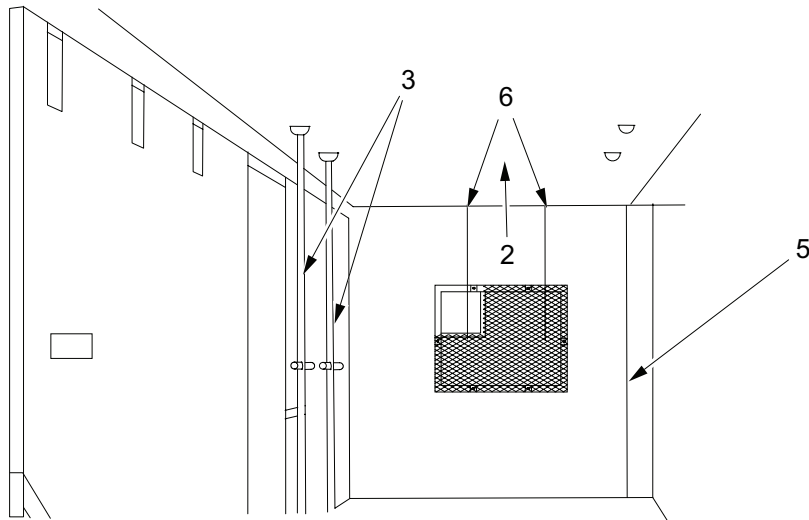
CAUTION

Do not force hinged roof to full height. This could cause damage to shelter.
Ensure that hinged roof will clear hinged sidewall prior to lifting.



SSAE017

5. Personnel inside, along with personnel outside, will move to expanded side of shelter, raising roof panel (2) with two extended support struts (3).

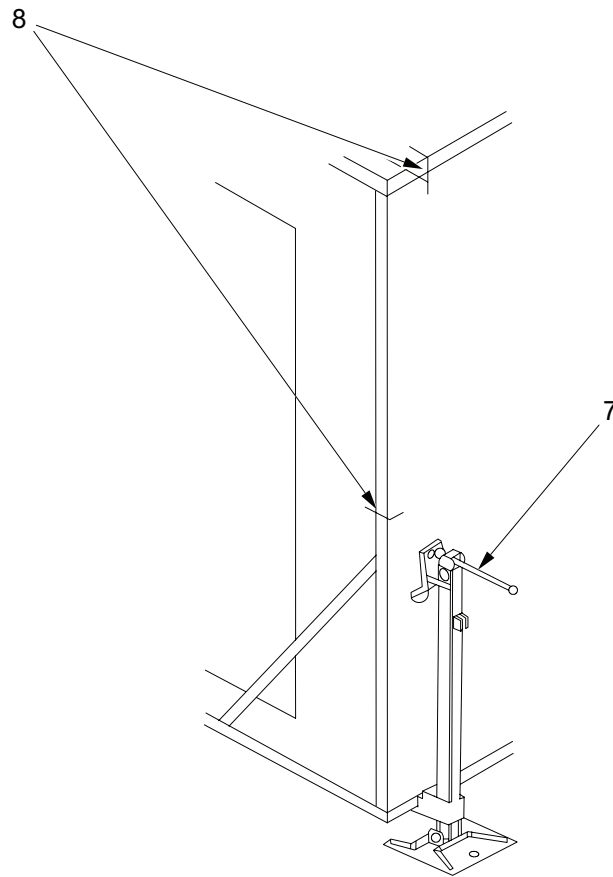


SSAE018

NOTE

Following step must not be performed unless support struts are soundly supporting roof panel.

6. With support struts (3) supporting roof panel (2), swing end walls (5) towards hinged side wall.
7. Place ECU support cables (6) over end walls to outside of shelter.



SSAE019

8. Rotate hinged jack handles (7) counter clockwise simultaneously to raise both hinged jack assemblies until positioning marks (8) on hinged end walls and hinged sidewall are in alignment.
9. Use support struts (3) to lower hinged roof to rest on hinged end walls and sidewall.
10. Remove lock pins (4) from support struts (3).
11. Retract support struts (3) and secure in support brackets on hinged roof with lock pins (4).
12. Adjust hinged jack assemblies to ensure positioning marks (8) on hinged roof and hinged sidewall are properly aligned.

SECURING SHELTER

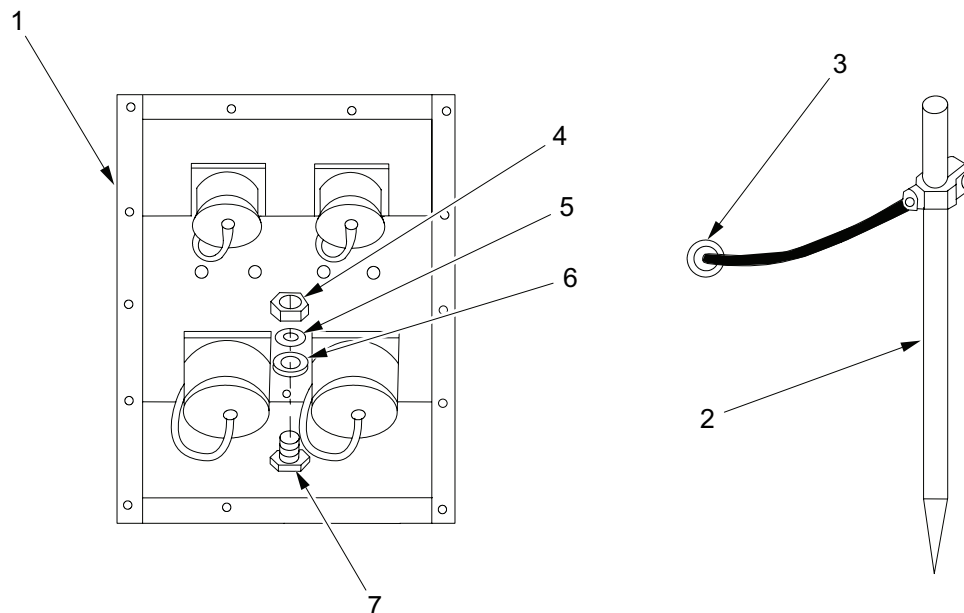
1. Obtain four removable latches from shelter BII box. (See WP 0002, Figure 2, Item 12).
2. Install two latches on hinged sidewall and one latch on each hinged end wall. Do not engage at this point.
3. Compress seals by first engaging all non-removable latches between hinged sidewall, end wall, roof, and floor.
4. Engage four removable latches.
5. Visually check to ensure all seals are properly compressed.
6. Remove sidewall support braces and store in shelter BII box. (See WP 0002, Figure 2, Item 12).

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
OPERATION UNDER USUAL CONDITIONS**

EXTERNAL GROUNDING OF SHELTER**NOTE**

Shelter is grounded through an externally connected power supply. Consult a qualified electrician for proper grounding procedures required for surrounding soil conditions.



SSAE020

1. Remove ground rod assembly (2 and 3) from shelter BII box (WP 0002, Figure 2, Item 12).
2. Obtain slide hammer from shelter BII box (WP 0002, Figure 2, Item 12).

NOTE

Ground rod location should permit ground cable lug to reach ground stud on power entry panel.

3. Drive ground rod (2) into earth using slide hammer.
4. Remove nut (4), lock washer (5), and flat washer (6) from ground stud (7) on power entry panel (1).
5. Connect ground cable lug (3) to ground stud (7).
6. Secure with flat washer (6), lock washer (5), and nut (4).
7. Ensure all connections are secure.

WARNING

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

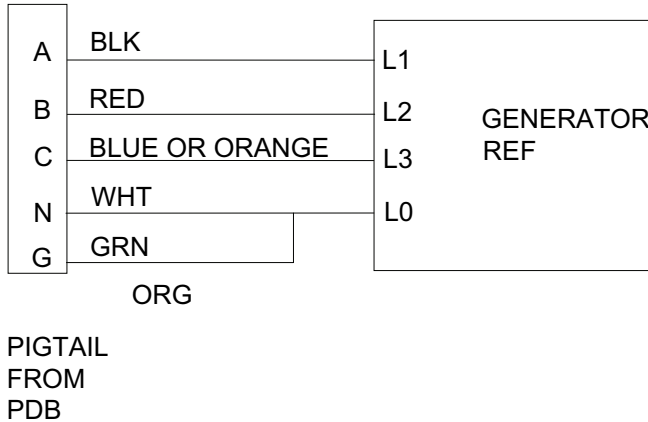
CONNECTING PDB TO GENERATOR (IF NECESSARY)

WARNING

Connecting PDB to generator is required only if power is not available. Only a qualified electrician should attempt to connect PDB to generator.

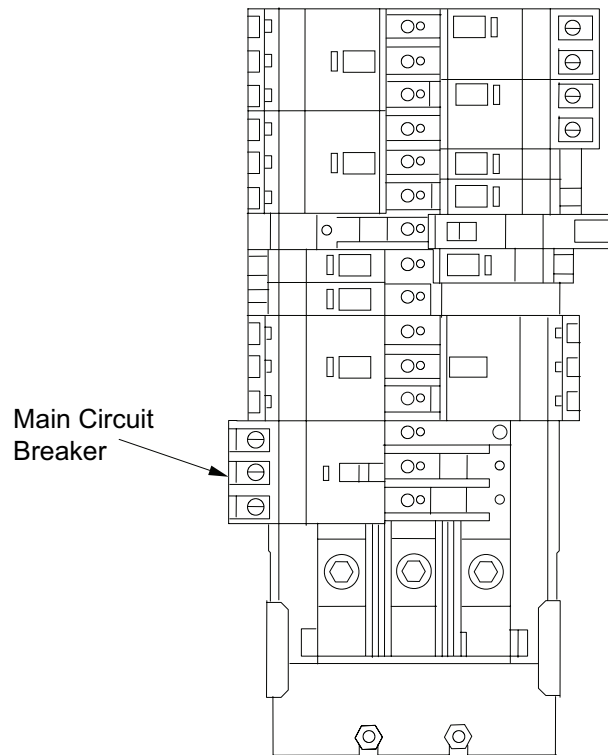
NOTE

PDB and pigtail are supplied by unit. Refer to TM 9-6150-226-13 and/or TM 9-6150-226-23P for additional information. The following figure and steps are specific to a 100 amp shelter.



SSAE021

1. Ensure all circuit breakers on PDB are in the **OFF** position.
2. Ensure pigtail is connected to PDB.
3. Connect pigtail wires to generator lugs by connecting black wire to lug L1, red wire to lug L2, blue or orange wire to lug L3, and white and green wires to lug L0 on generator.

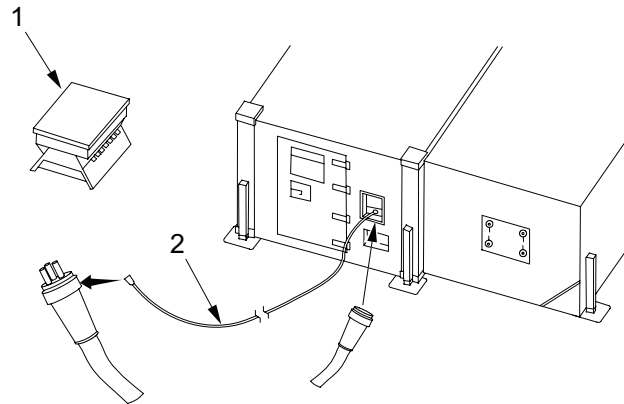
CONNECTING MAIN POWER CABLE

SSAE022

1. Before connecting the main 100 amp power cable (WP 0002, Figure 4, Item 16), ensure that all circuit breakers (including main circuit breaker) in circuit breaker panel are in the **OFF** position.
2. Ensure the circuit breaker from PDB is in the **OFF** position.
3. Remove 100 amp power cable from cable reel (WP 0002, Figure 4, Item 16).

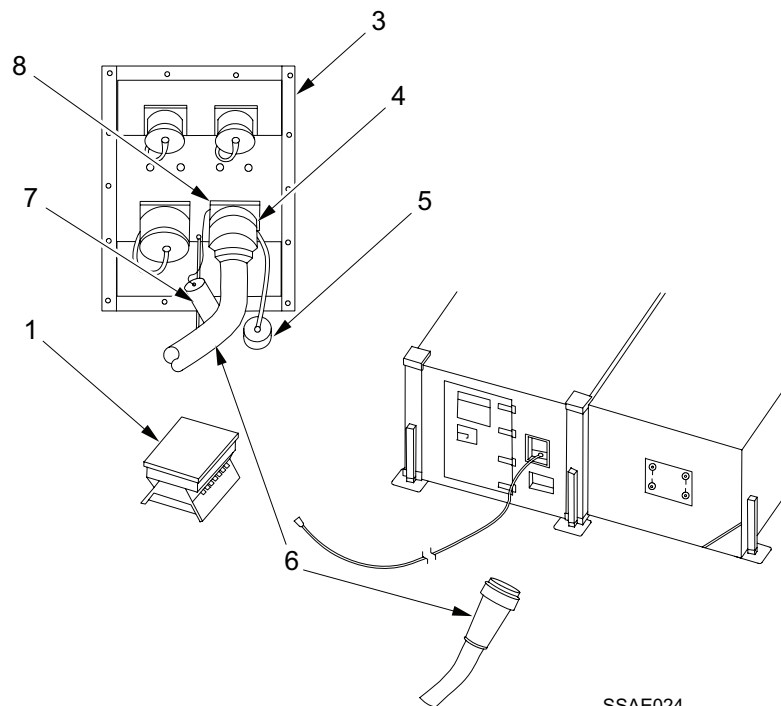
CAUTION

Ensure power cable is not twisted, kinked, or placed over sharp rocks or projections. Where possible, cable should not be routed through any deep ground depressions where water may accumulate.



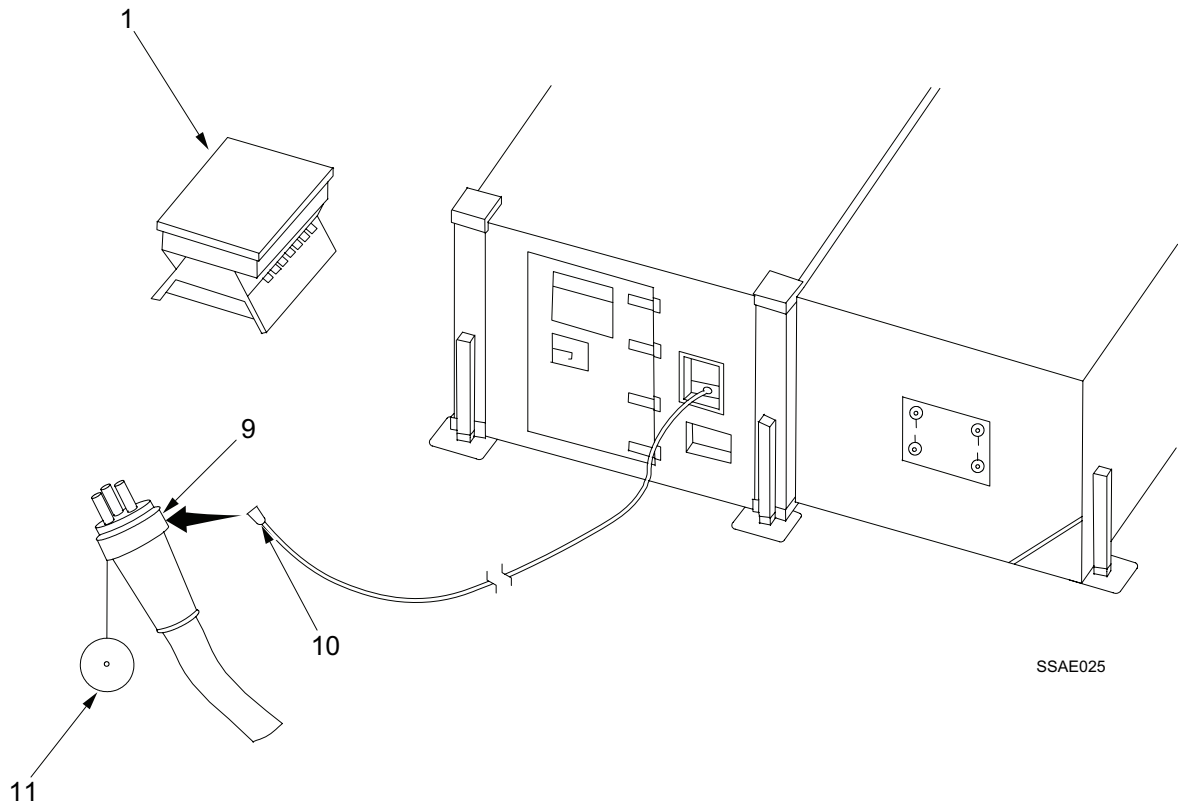
SSAE023

4. Extend power cable (2) between shop and PDB (1).



SSAE024

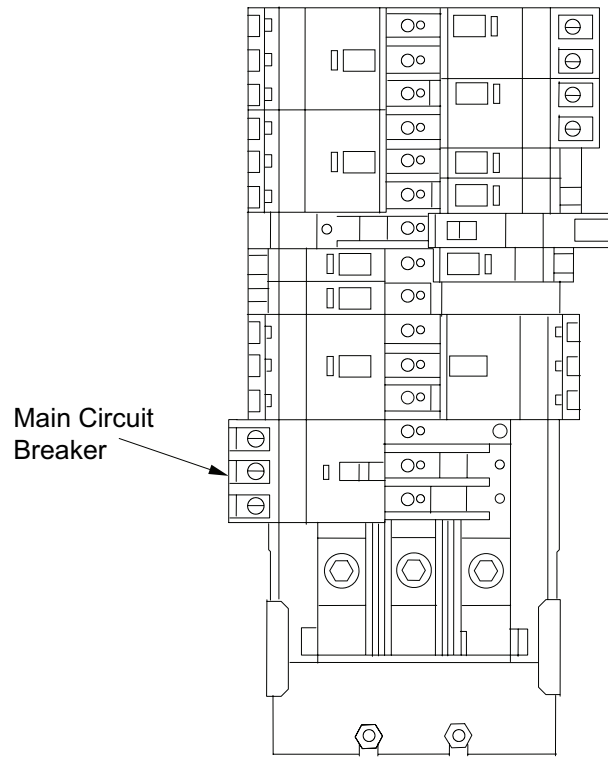
5. Remove protective dust cap (7) from "J1" receptacle (8) at power entry panel (3).
6. Remove protective dust cap (5) from female power connector (6).
7. Insert female power connector (6) into "J1" receptacle (8) and secure with lock ring (4).



8. Remove protective dust cap from receptacle at PDB (1).
9. Remove protective dust cap (11) from male power connector (10).
10. Insert male power connector (10) into receptacle at PDB (1) and secure with lock ring (9).
11. Move circuit breaker from the PDB (1) from **OFF** to **ON**.
12. Move main and other circuit breakers in circuit breaker panel from **OFF** to **ON**.

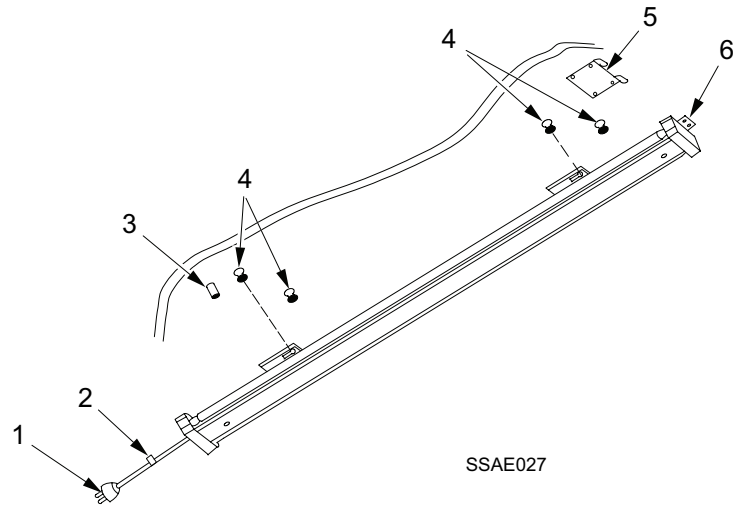
INSTALLING CEILING LIGHTS**WARNING**

Inhalation of phosphorous dust could cause **SERIOUS INJURY** to personnel. In an event of lamp breakage, care must be taken in removal of broken glass fragments and white phosphorous dust that may be dispersed within fixture.



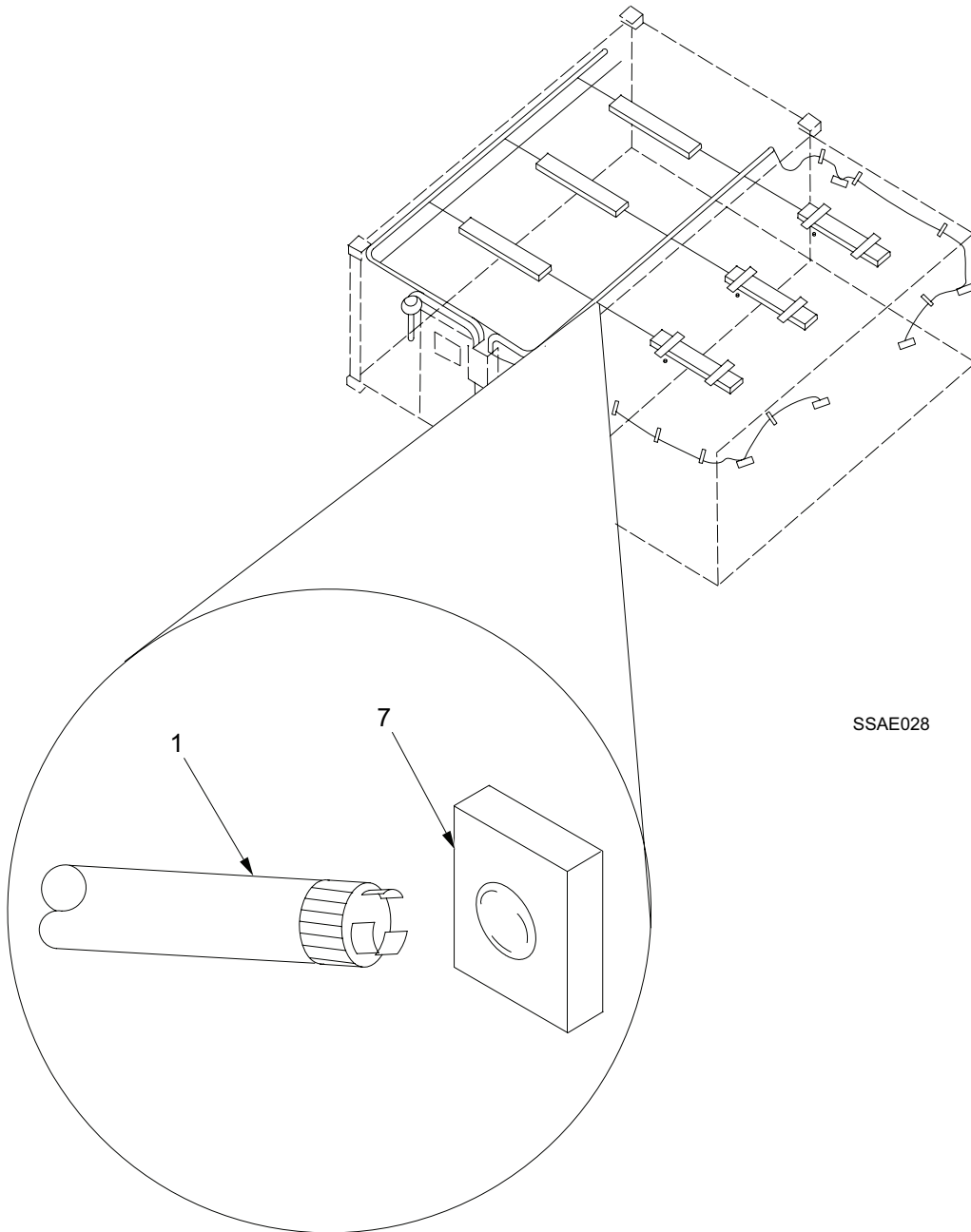
SSAE026

1. Set main circuit breaker and all other circuit breakers in breaker panel to the **OFF** position.



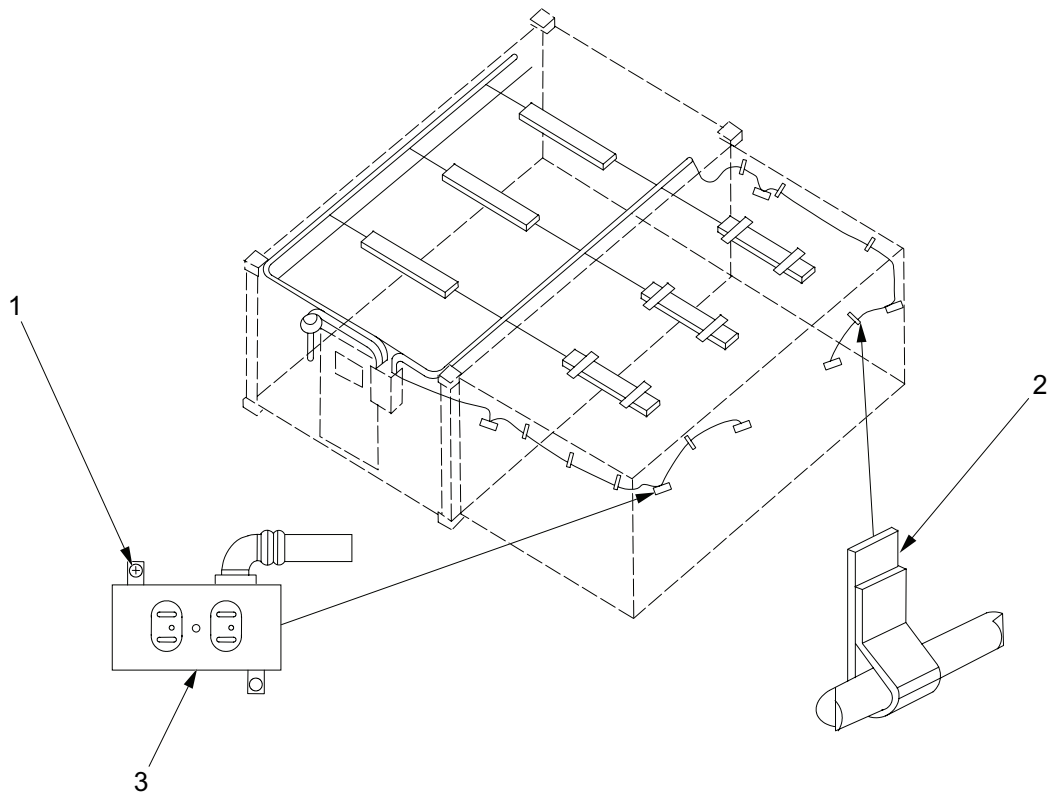
SSAE027

2. Remove power cable (1) from storage clip (2) on ceiling.
3. Press and hold plunger lock (3).
4. Move entire light fixture (6) lengthwise toward power cable (1) end to disengage light from four captive studs (4) and light storage bracket (5) in fixed roof.
5. Move light fixture (6) into expandable section and rotate 180 degrees. Mate with four captive studs (4) and light storage bracket (5) in hinged roof.
6. Secure light fixture (6) by moving until plunger lock (3) engages.



SSAE028

7. Plug power cable (1) into connector (7), and twist one-quarter turn clockwise to lock in.
8. Repeat steps 2 through 7 for two remaining ceiling lights.

INSTALLING CABLE AND RECEPTACLE ASSEMBLY

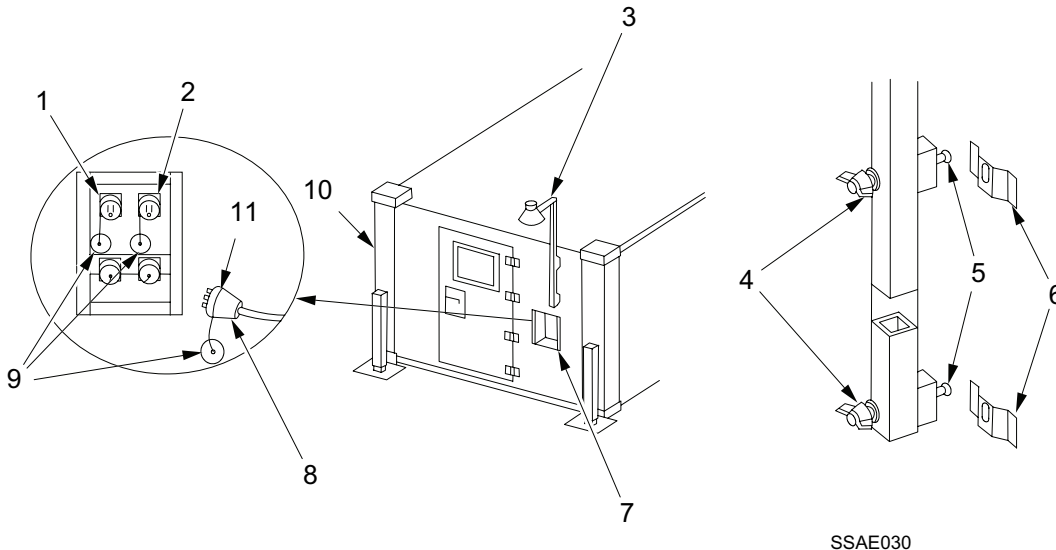
SSAE029

1. Release captive fasteners (1) from receptacles (3) on one end of shelter.
2. Remove receptacles (3) from transport location on hinged end wall to operating position on hinged sidewall.
3. Install receptacles (3) with power cables facing up and secure captive fasteners (1).
4. Secure power cable with Velcro straps (2).
5. Repeat steps 1 through 4 for receptacles (3) at other end of shelter.

INSTALLING AREA LIGHT

NOTES

- Do not remove area light wing nuts from screws.
- When area light is installed at cargo end of shelter, cable is routed over top of shelter. Excess cable slack should be neatly coiled on area light post so that it does not present a hazard to personnel.



SSAE030

1. Remove area light (3) from inside fixed personnel end wall (10) by loosening, **NOT** removing, two wing nuts (4) and sliding mounting screws (5) out of mounting brackets (6).
2. Remove bulb from shelter BII box (WP 0002, Figure 2, Item 12) and twist into light socket.
3. Unroll area light cable (8).
4. Install area light (3) on outside of fixed personnel or cargo end wall by sliding mounting screws (5) into mounting brackets (6).
5. Secure area light (3) to mounting brackets (6) by tightening two wing nuts (4) on area light (3).
6. Remove protective dust cap (9) from either "J3" or "J4" (1 or 2) connector on power entry panel (7).
7. Remove protective dust cap (9) from area light cable (8).
8. Connect area light cable (8) into "J3" or "J4" connector (1 or 2) on power entry panel (7) and secure with lock ring (11).

End of Work Package

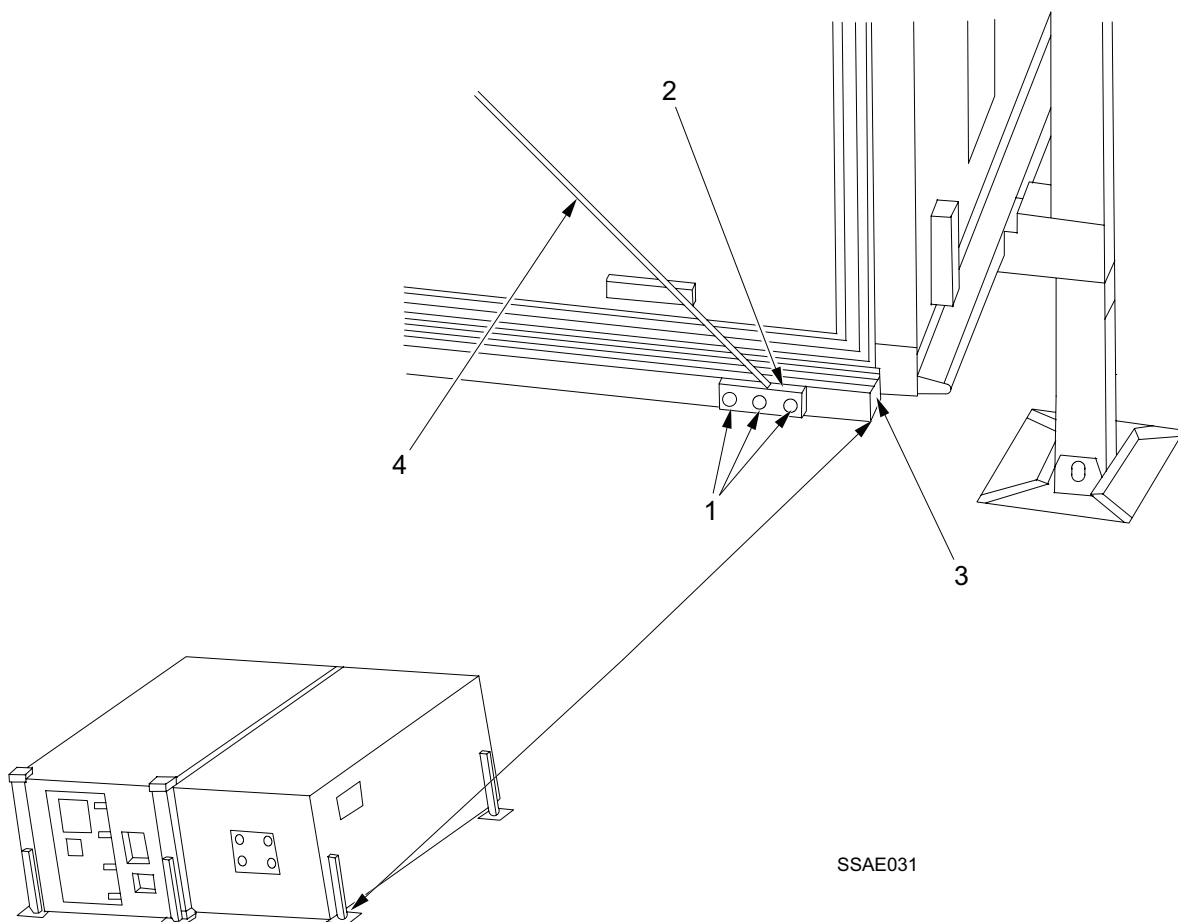
**ARMAMENT AND ELECTRICAL SHOP
OPERATION UNDER USUAL CONDITIONS**

NOTES

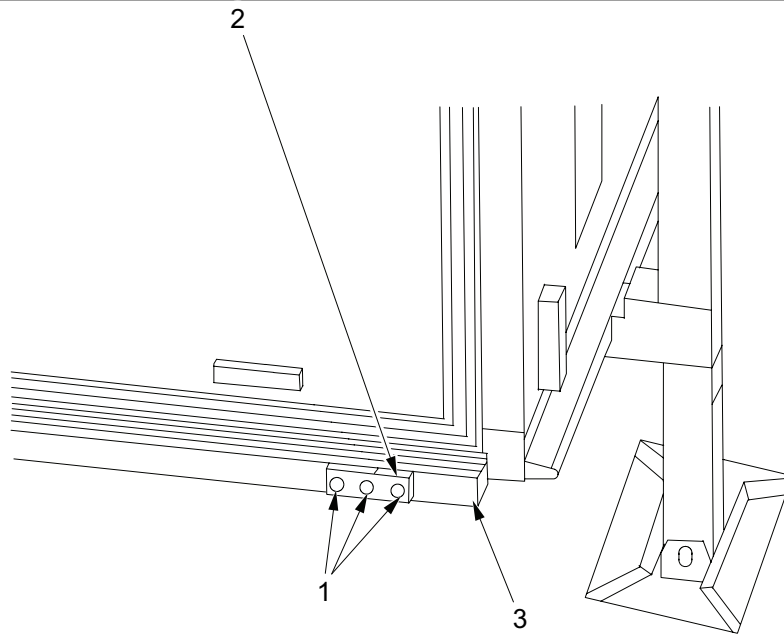
- Skip this Work Package if ECUs are not going to be installed.
- ECUs are supplied by unit.

CABLE GUIDE BLOCK REMOVAL**WARNINGS**

- **DO NOT** attempt to remove cables if support cables are not secured. Removing cables while under tension could cause **SERIOUS INJURY** or **DEATH** to personnel.
- Before installing ECUs, shelter expansion must be complete (see WP 0005 00), **SUPPORT CABLES MUST BE SECURED** (see WP 0005 00), and electrical power supplied to shop (see WP 0006 00).



1. Remove three screws (1) from cable guide block (2) located at corner of fold-out floor (3).
2. Support cable (4) shall hang freely next to shelter.

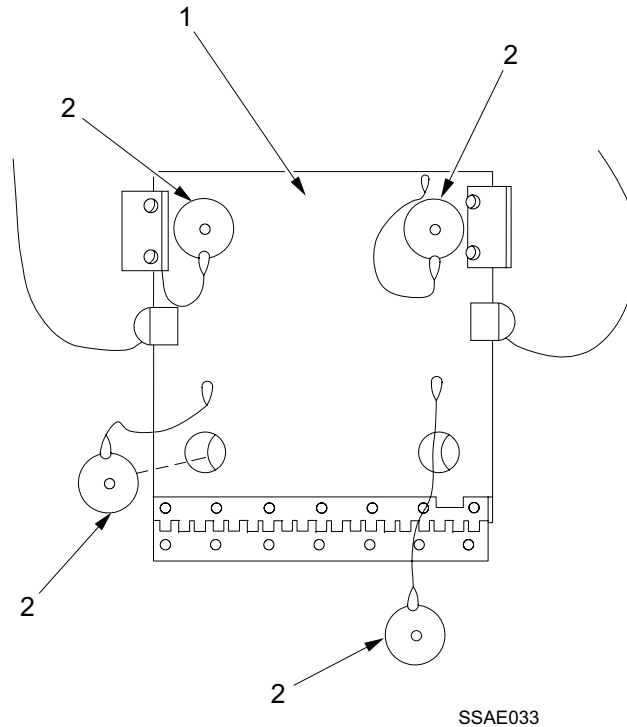


SSAE032

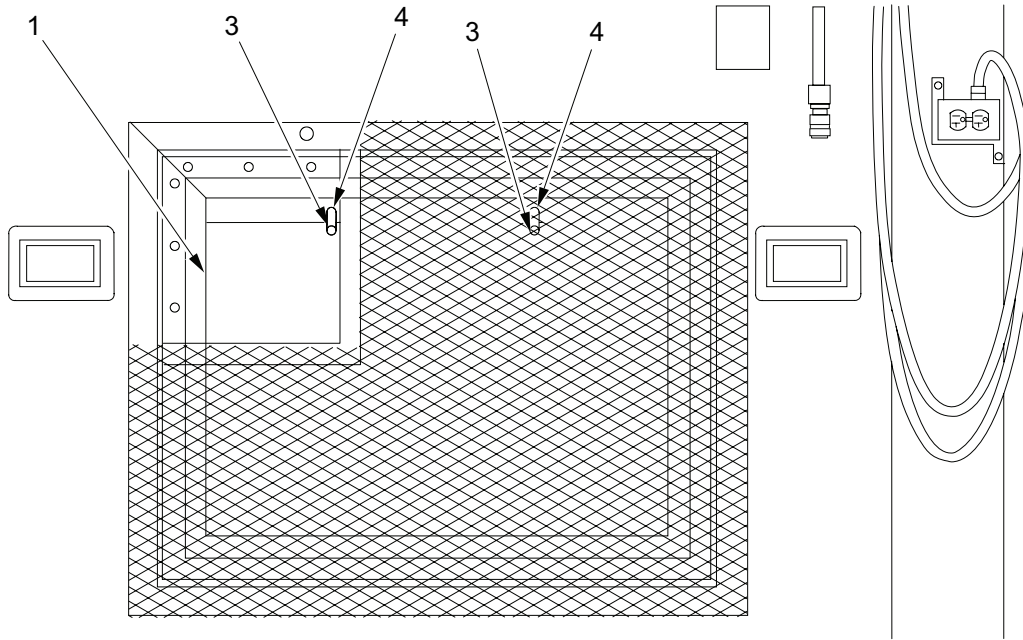
3. Reinstall cable guide block (2) by installing three screws (1) on corner of fold-out floor (3).
4. Repeat steps 1 through 3 for removing cable guide block (2) on opposite side of shelter.

OPENING ECU FOLD-DOWN PANELS**CAUTION**

Ensure one person is outside shelter to assist with lowering the ECU panel as person inside shelter is unlatching.

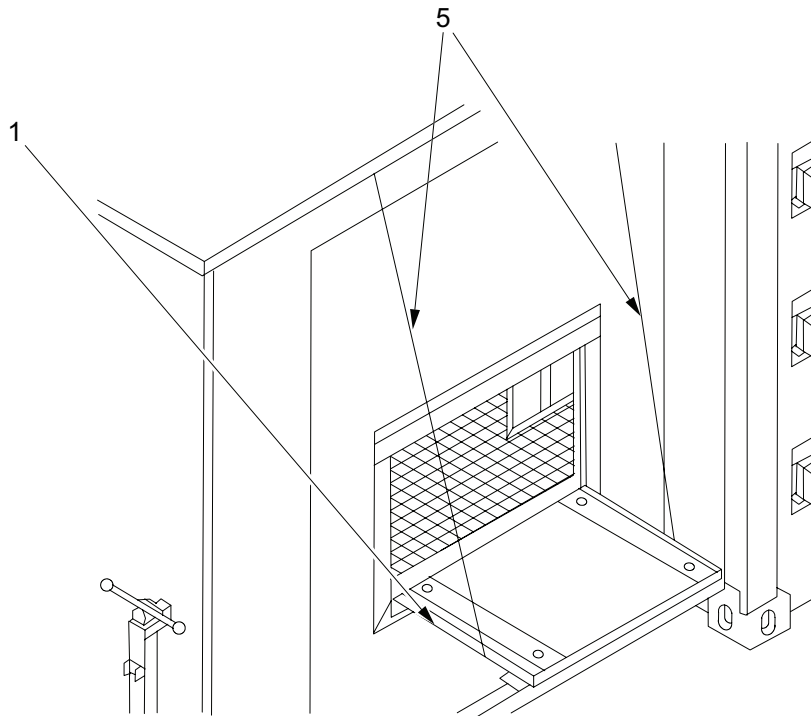


1. Remove four plugs (2) on outside of fold-down panel (1).



SSAE034

2. Loosen two latch bolts (3) on end wall from inside shelter.
3. Turn latches (4) counterclockwise a quarter turn to release fold-down panel (1).

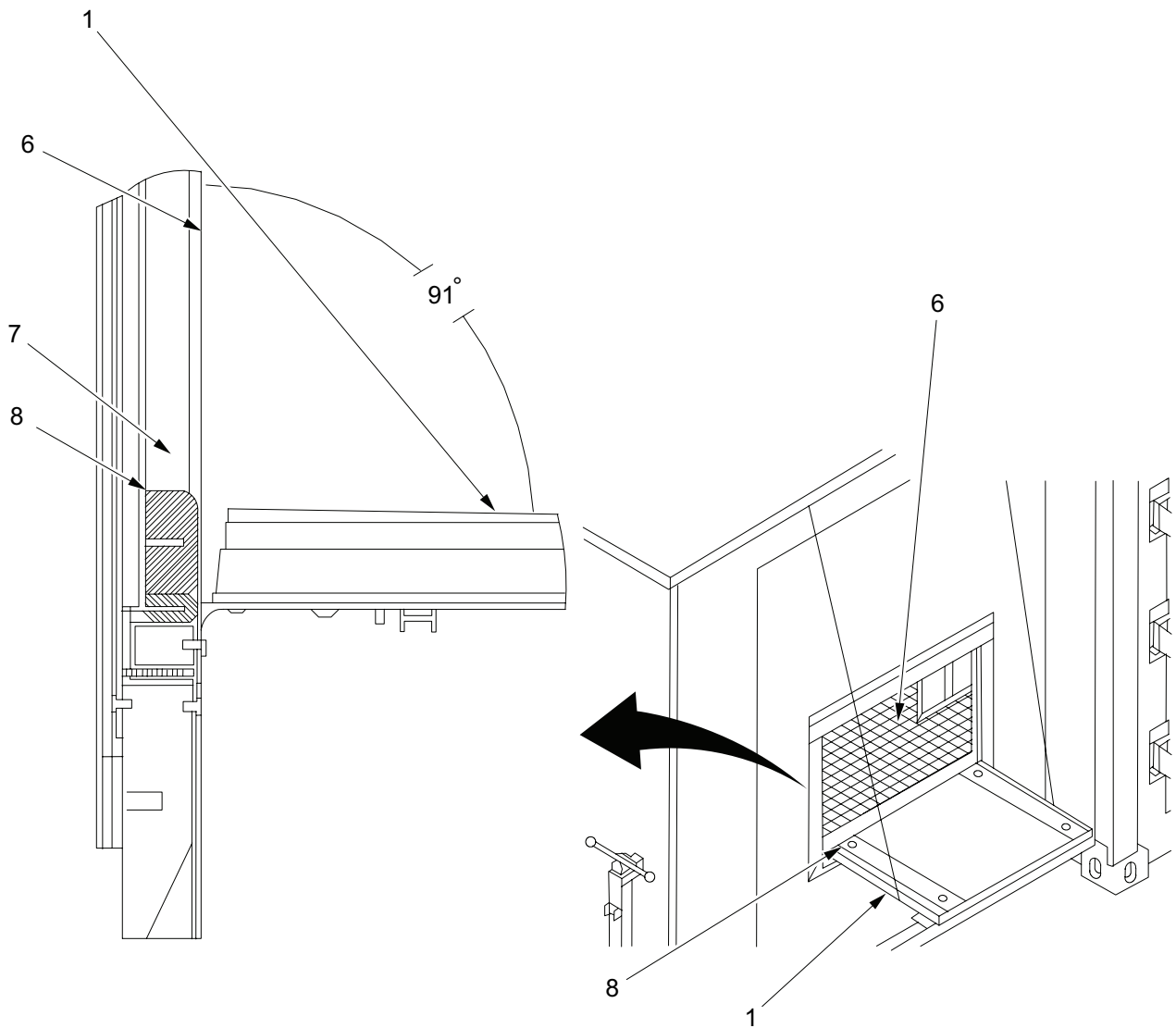


SSAE035

4. Lower fold-down panel (1) using D-rings, to limit of support cables (5) on end wall from outside shelter.

NOTE

Fold-down panel must be at an angle of approximately 91 degrees in order for water to properly drain.



SSAE036

5. Obtain t-seal (8) from shelter BII box (see WP0002 00, Figure 2, Item 12).

NOTE

T-seal must be positioned with metal strip against ECU security screen.

6. Insert t-seal (8) into gap (7) located between fold-down panel (1) and ECU security screen (6).
7. Repeat steps 1 through 6 for opposite fold-down panel.

End of Work Package

ARMAMENT AND ELECTRICAL SHOP OPERATION UNDER USUAL CONDITIONS

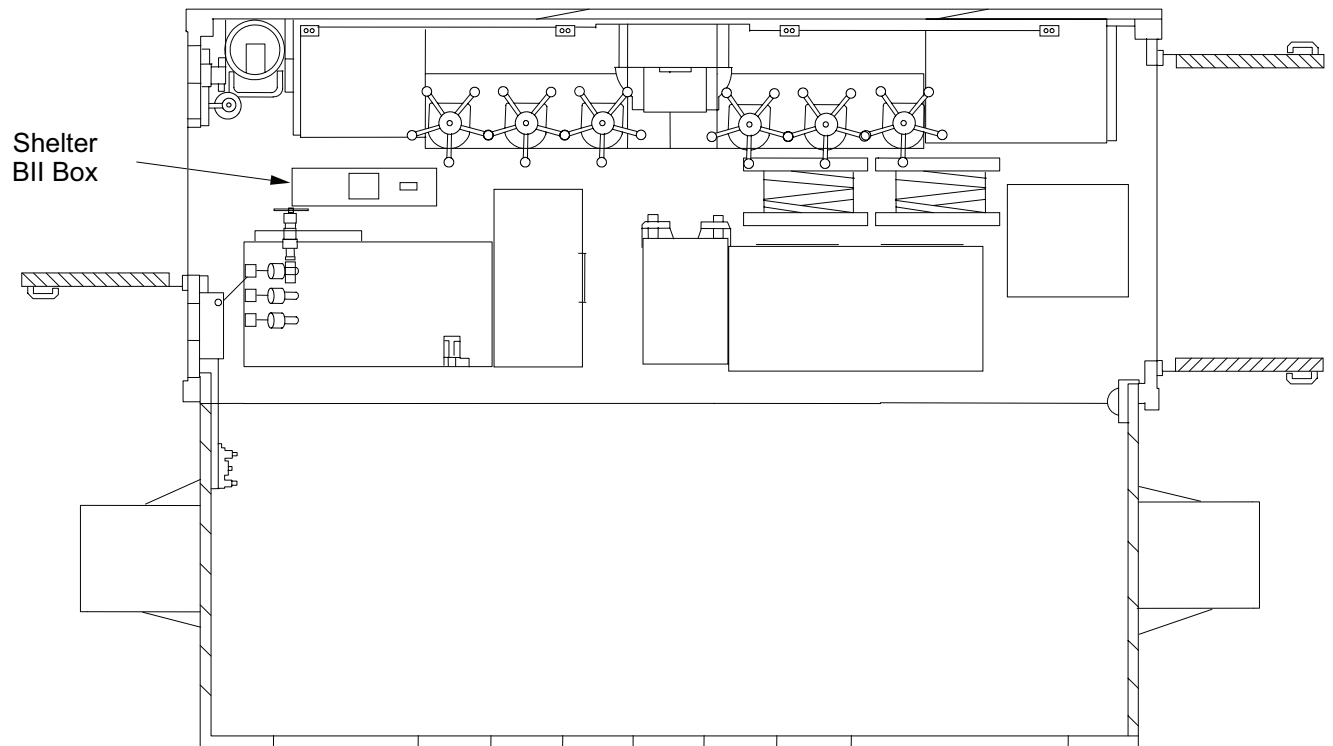
SAFEGUARDING BOLTS, WASHERS, AND NUTS

The following procedures are a recommended sequence for moving equipment. New positions in which equipment may be located on expanded half of shelter are identified.

CAUTION

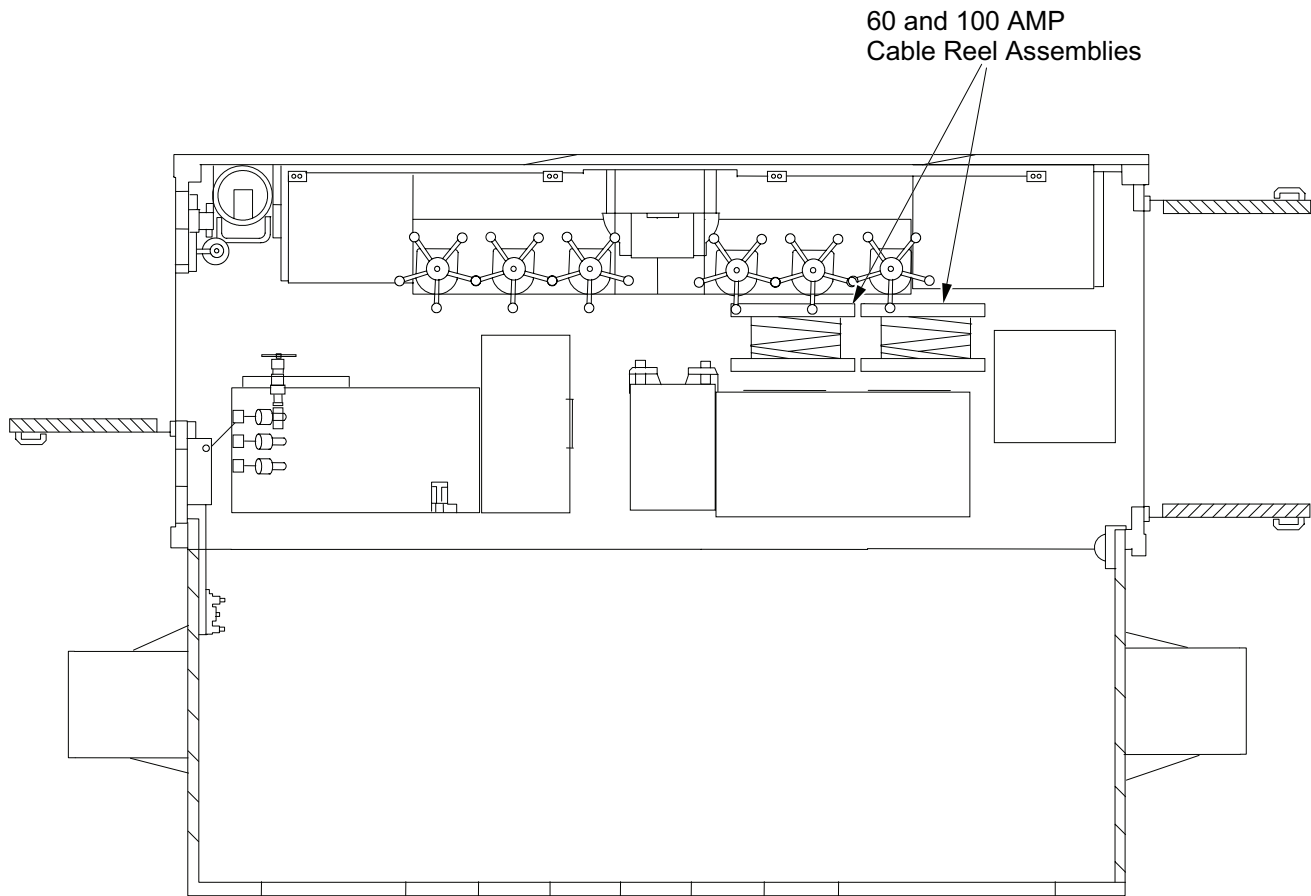
Ensure that proper bolts, washers, and nuts are available to secure equipment when shop is to be transported. Incorrect hardware could cause extensive damage to equipment or shelter when shop is moved. All bolts, washers, and nuts removed from equipment will be collected and placed in cotton mailing bag. Cotton mailing bag is stored in shelter BII box for safekeeping until equipment is to be secured for transporting.

POSITIONING SHELTER BII BOX FOR OPERATIONAL MODE



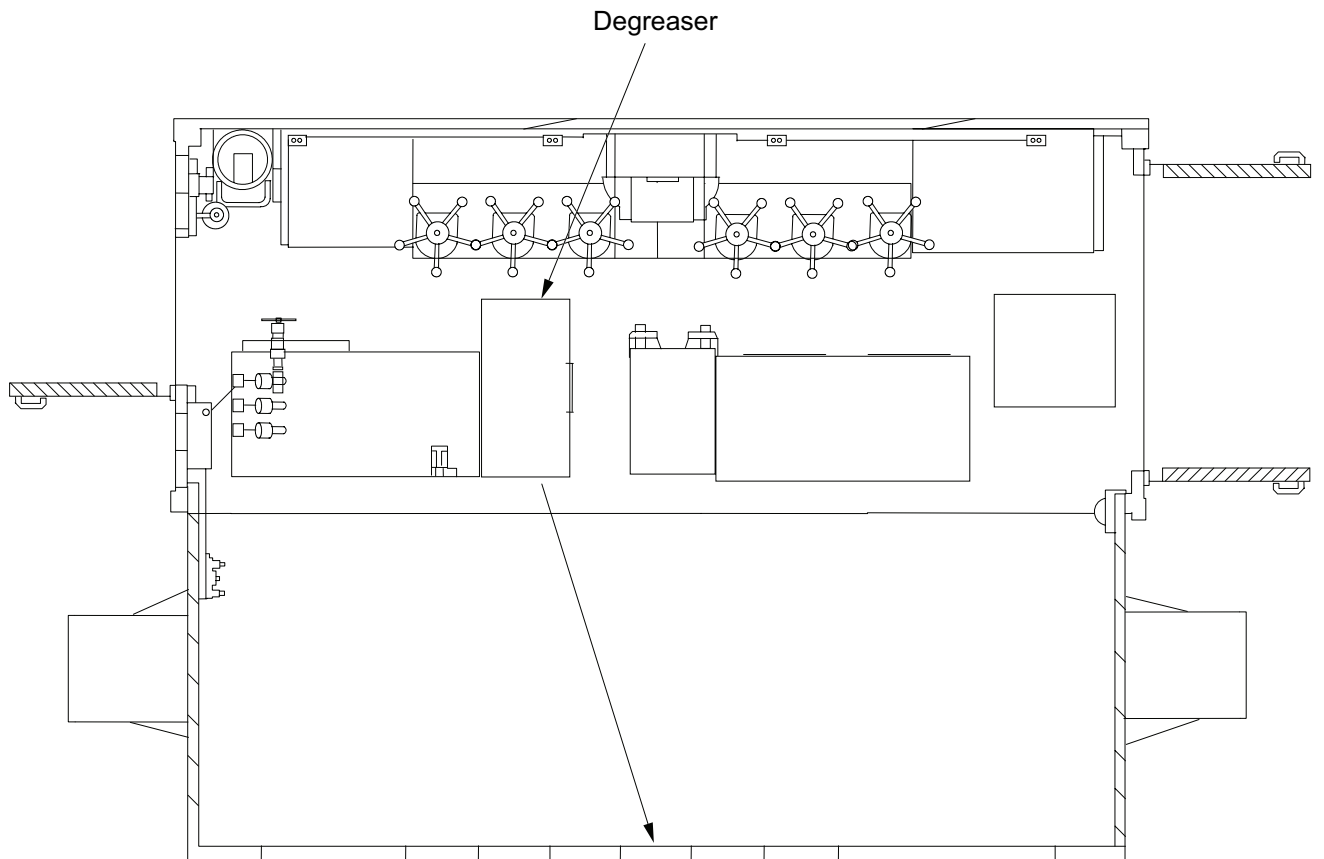
SSAE037

1. Remove webbing strap from shelter BII box.
2. Position shelter BII box in preferred location.
3. Remove two ring bolts from shelter BII box transport location.
4. Store webbing strap in secure storage location and ring bolts in shelter BII box.
5. Obtain two setscrews from storage location and insert into empty bolt holes.

POSITIONING 60 AND 100 AMP CABLE REEL ASSEMBLIES FOR OPERATIONAL MODE

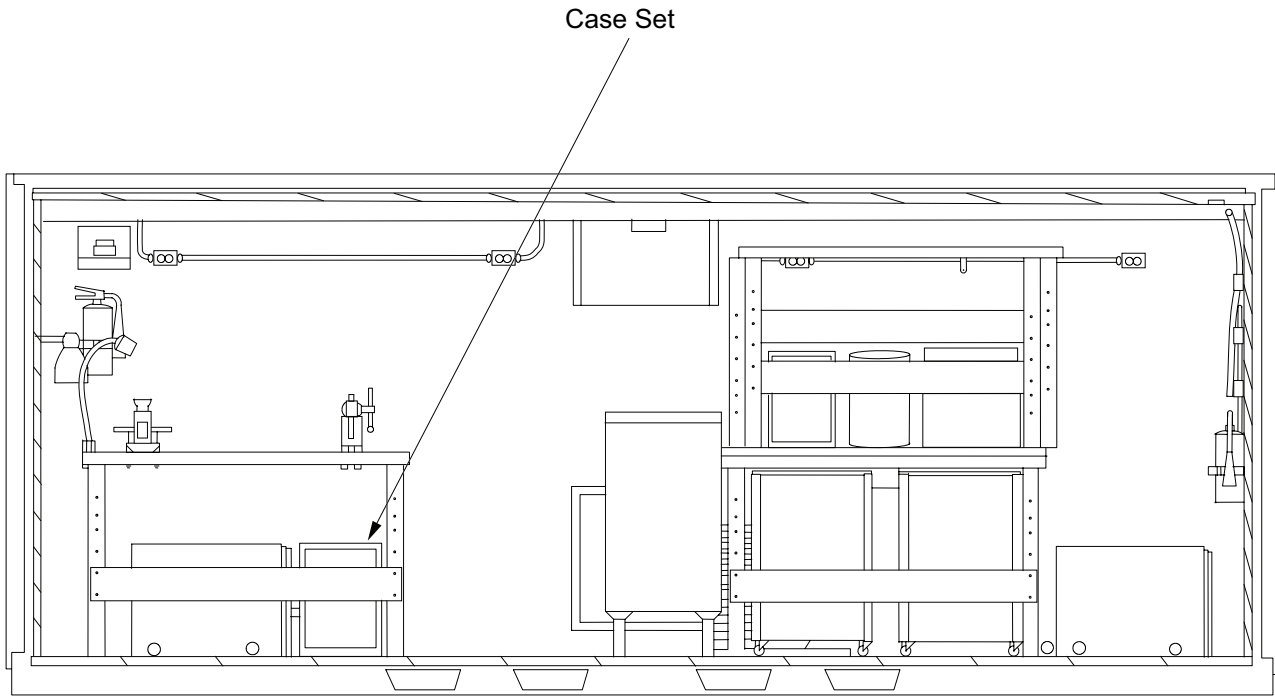
SSAE038

1. Remove cargo straps from 60 and 100 amp cable reel assemblies.
2. Position 60 and 100 amp cable reel assemblies in preferred location.
3. Remove two ring bolts from 60 and 100 amp cable reel assemblies transport location.
4. Store cargo straps in secure storage location and ring bolts in shelter BII box.
5. Obtain two setscrews from storage location and insert into empty ring bolt holes.

POSITIONING DEGREASER FOR OPERATIONAL MODE

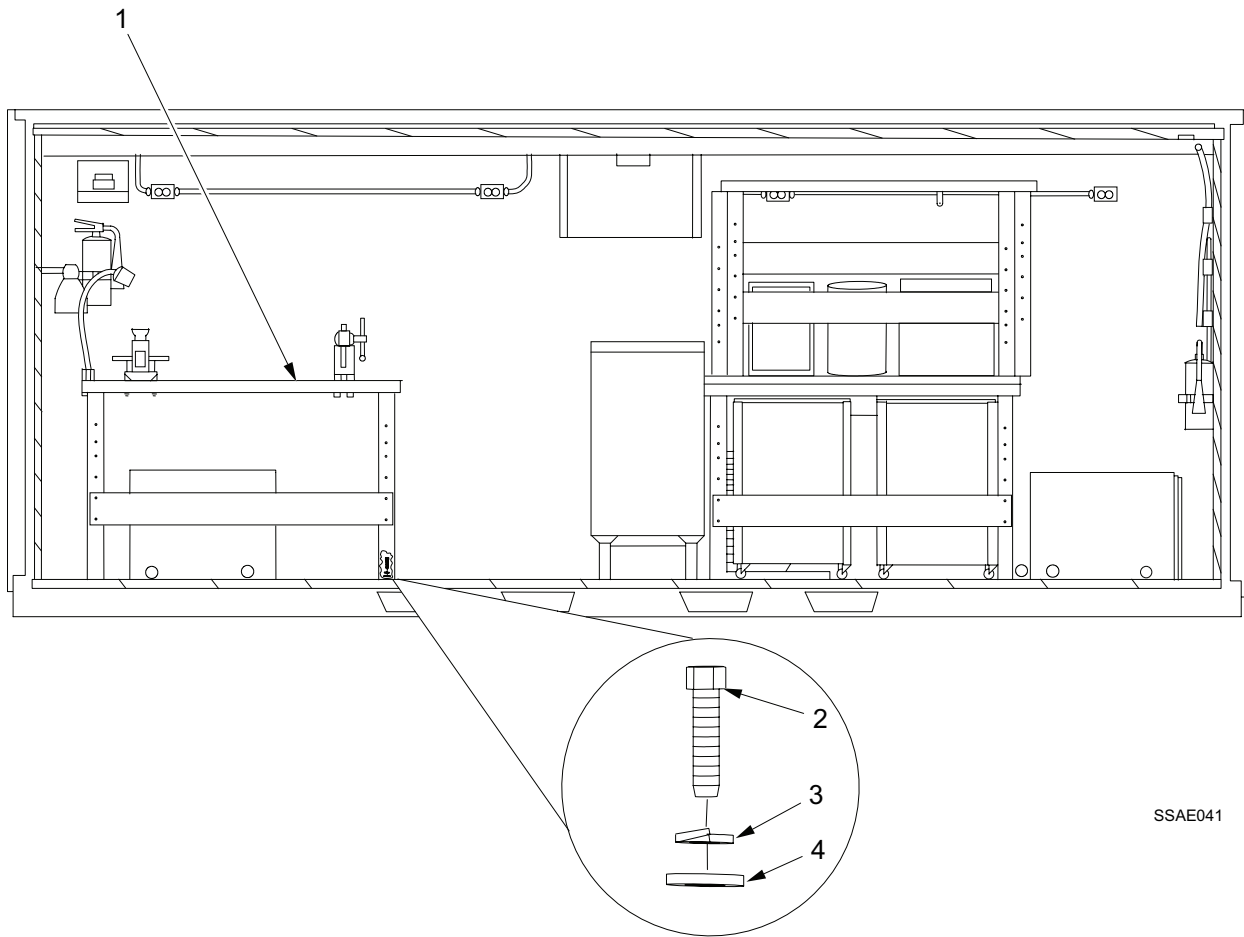
SSAE039

1. Remove cargo straps from degreaser.
2. Position degreaser at preferred location.
3. Remove two ring bolts from degreaser transport location.
4. Store cargo straps in secure storage location and ring bolts in shelter BII box.
5. Obtain two setscrews from storage location and insert into empty ring bolt holes.

POSITIONING CASE SET FOR OPERATIONAL MODE

SSAE040

1. Remove webbing strap from case set.
2. Position case set at preferred location.
3. Store webbing strap in secure storage location.

POSITIONING TABLE ASSEMBLY A FOR OPERATIONAL MODE

SSAE041

1. Remove four bolts (2), four lock washers (3) and four flat washers (4) securing table assembly A (1) to floor.
2. Place hardware in cotton mailing bag and store in shelter BII box.
3. Move table assembly A (1) to preferred location.
4. Obtain four setscrews from storage location and insert into empty bolt holes.

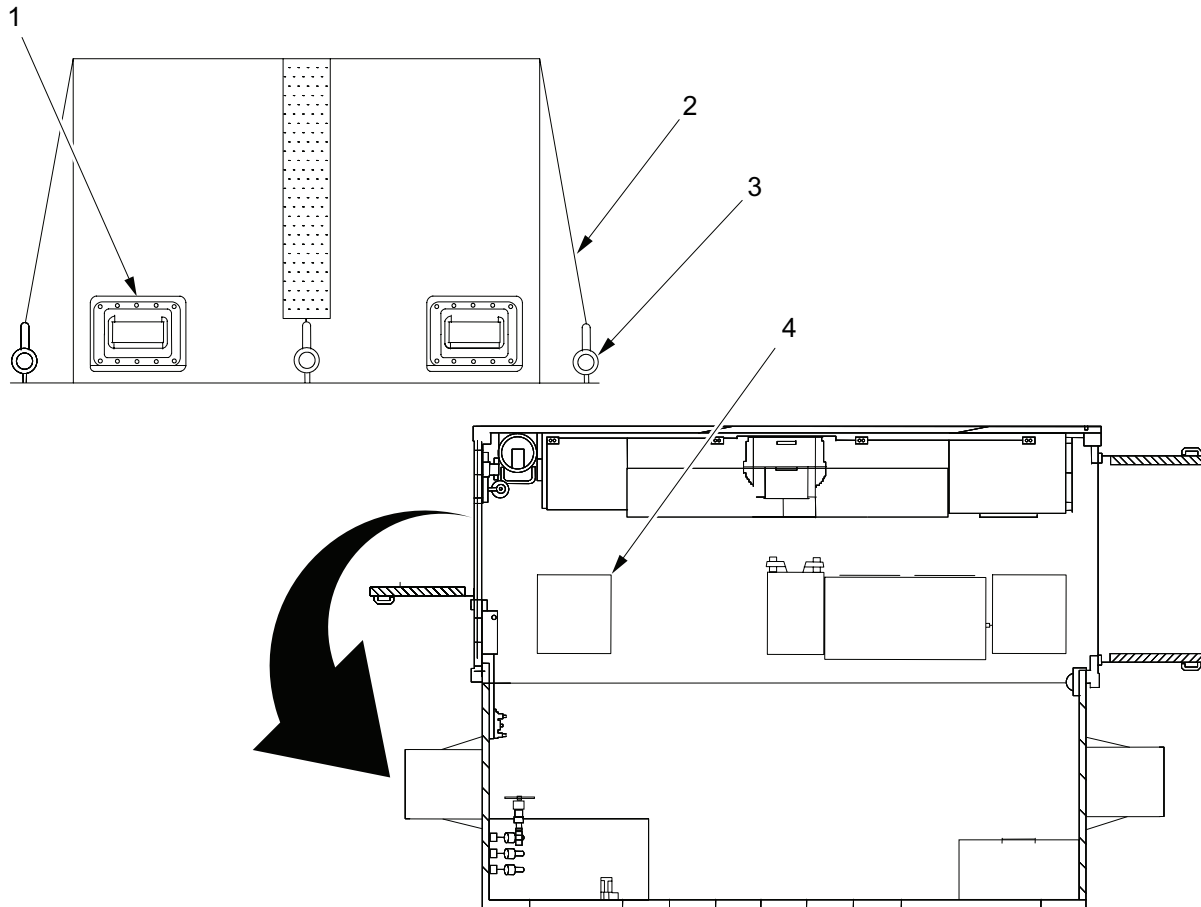
POSITIONING ECU A FOR OPERATIONAL MODE

WARNING

A four man lift is required when moving or lifting ECUs. Each unit weighs approximately 270 pounds. Trying to move or lift an ECU without sufficient help can cause **SERIOUS INJURY** to personnel.

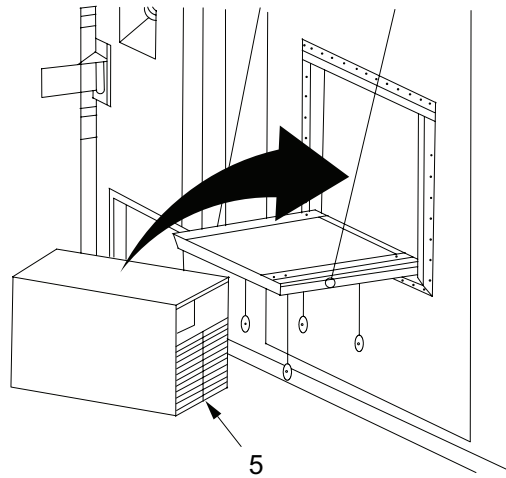
NOTE

Install ECU IAW TM 5-4120-369-14.



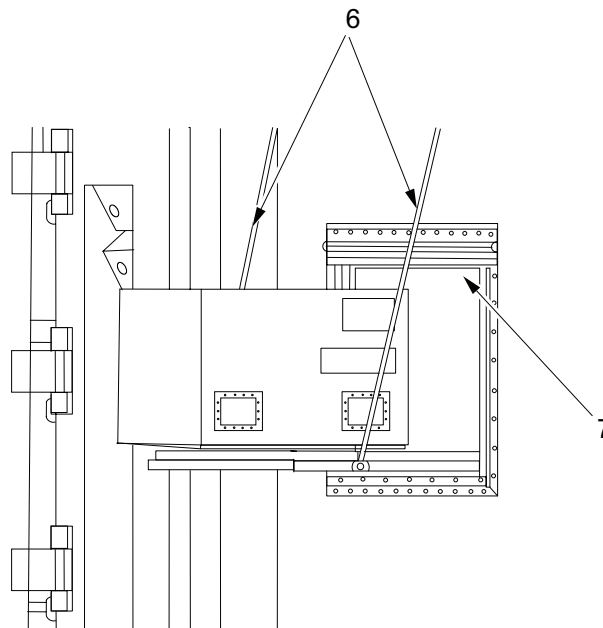
SSAE042

1. Remove cargo straps (2) from ECU A (4) ring bolts (3) and store in secure storage location.
2. Use lift handles (1) to raise ECU A (4) and carry through personnel door to fold-down panel.



SSAE043

3. Lift ECU A (4) onto fold-down panel located on personnel end of shelter and position with control panel (5) facing toward inside of shelter.

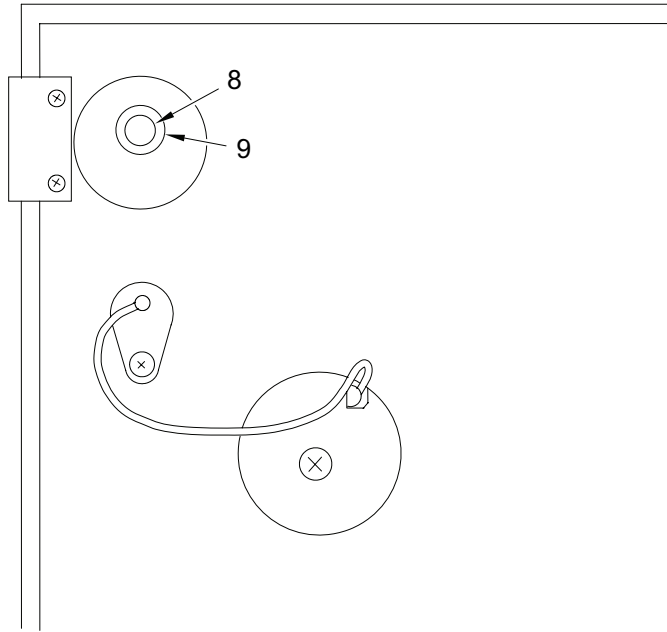


SSAE044

CAUTION

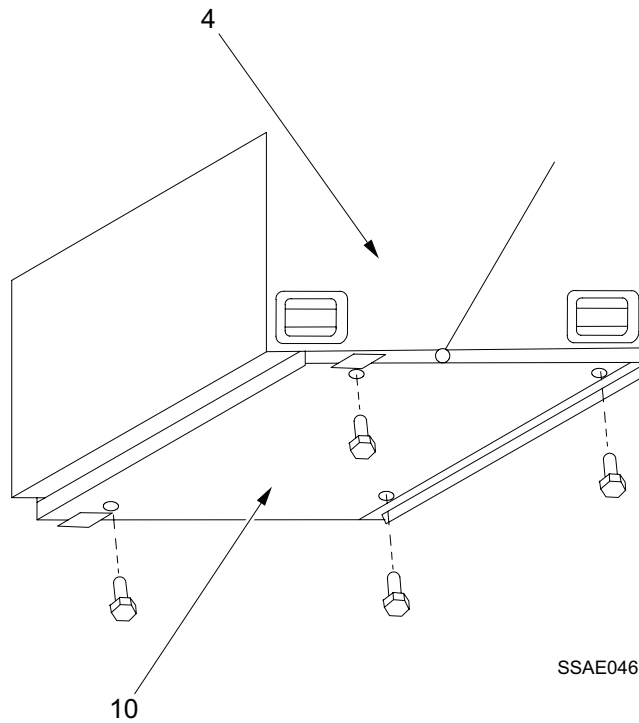
Ensure outside seal is held up while sliding ECU forward between support cables to avoid damaging seal.

4. Slide ECU A forward between support cables (6) while holding up outside seal (7).



SSAE045

- Align bolt holes (8) in base of ECU A with fold-down panel holes (9).



SSAE046

NOTE

Mounting hardware is supplied with ECU.

- Mount ECU A (4) to fold-down panel (10).
- Remove four ring bolts from ECU A (4) transport location and store in shelter BII box.
- Obtain four setscrews from storage location and insert into empty ring bolt holes.

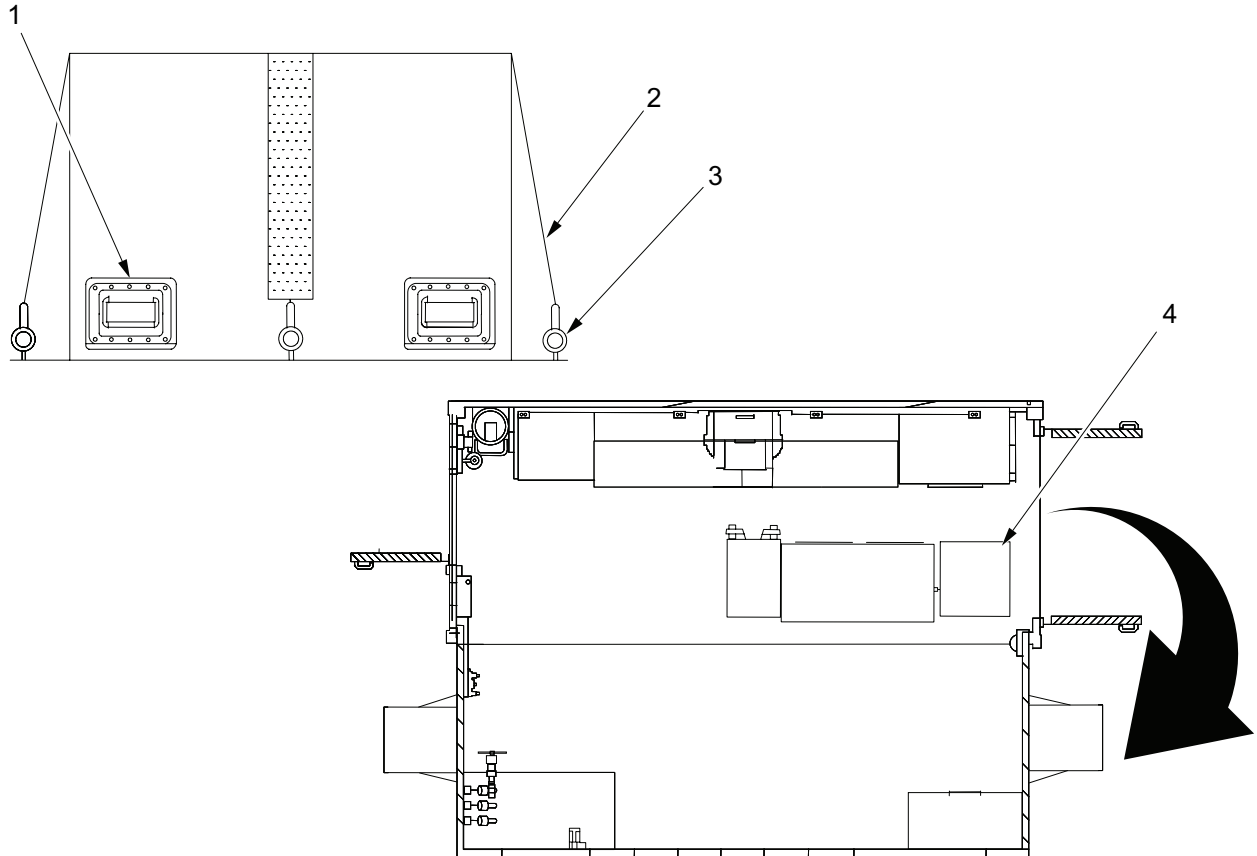
POSITIONING ECU B FOR OPERATIONAL MODE

WARNING

A four man lift is required when moving or lifting ECUs. Each unit weighs approximately 270 pounds. Trying to move or lift an ECU without sufficient help can cause **SERIOUS INJURY** to personnel.

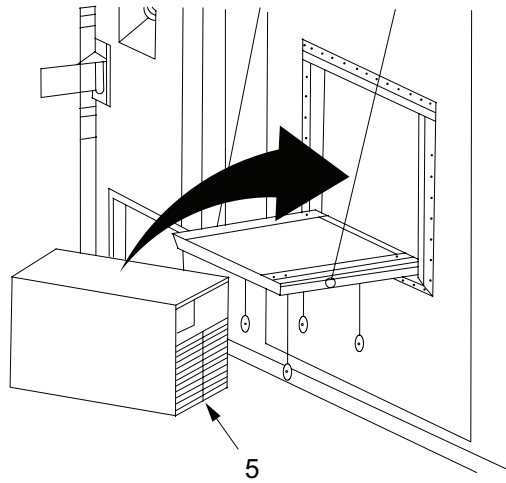
NOTE

Install ECU IAW TM 5-4120-369-14.



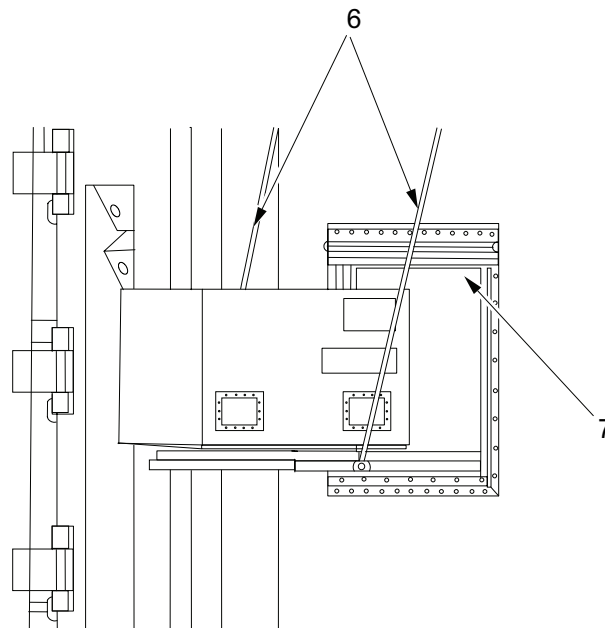
SSAE047

1. Remove cargo straps (2) from ECU B (4) ring bolts (3) and store in secure storage location.
2. Use lift handles (1) to raise ECU B (4) and carry through cargo door to fold-down panel.



SSAE048

3. Lift ECU B (4) onto fold-down panel located on cargo end of shelter and position with control panel (5) facing toward inside of shelter.

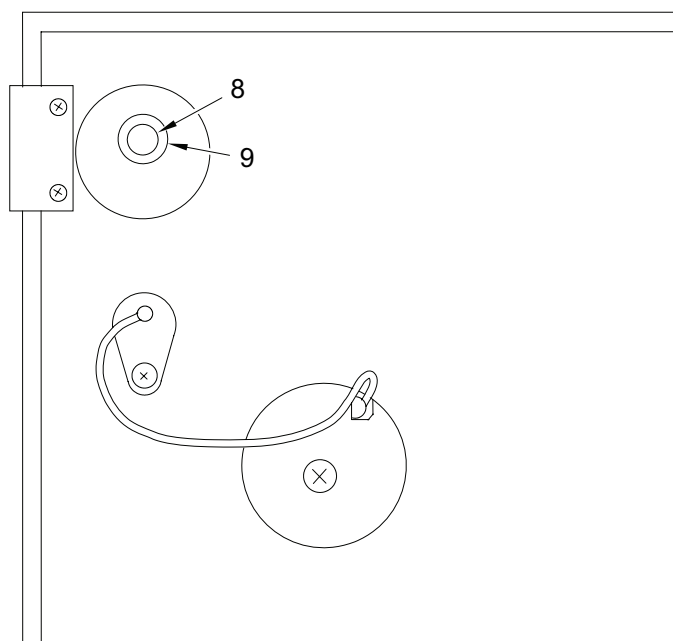


SSAE049

CAUTION

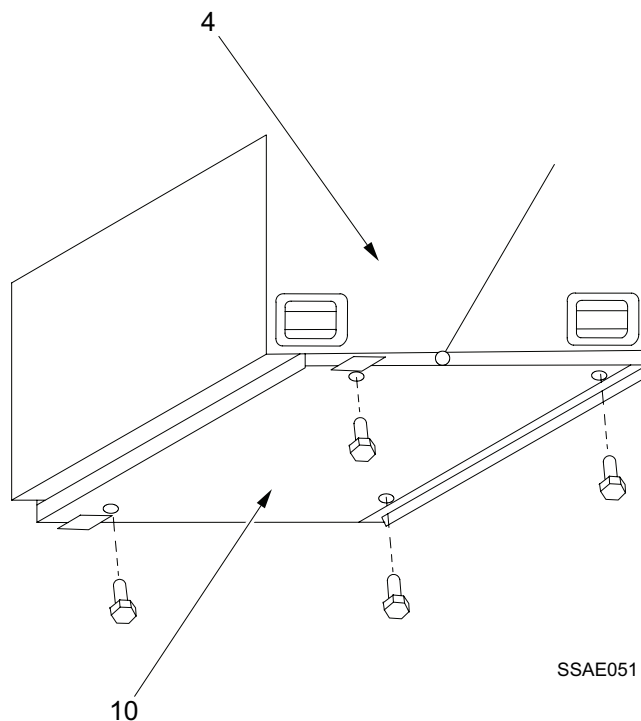
Ensure outside seal is held up while sliding ECU forward between support cables to avoid damaging seal.

4. Slide ECU B forward between support cables (6) while holding up outside seal (7).



SSAE050

5. Align bolt holes (8) in base of ECU B with fold-down panel holes (9).



SSAE051

NOTE

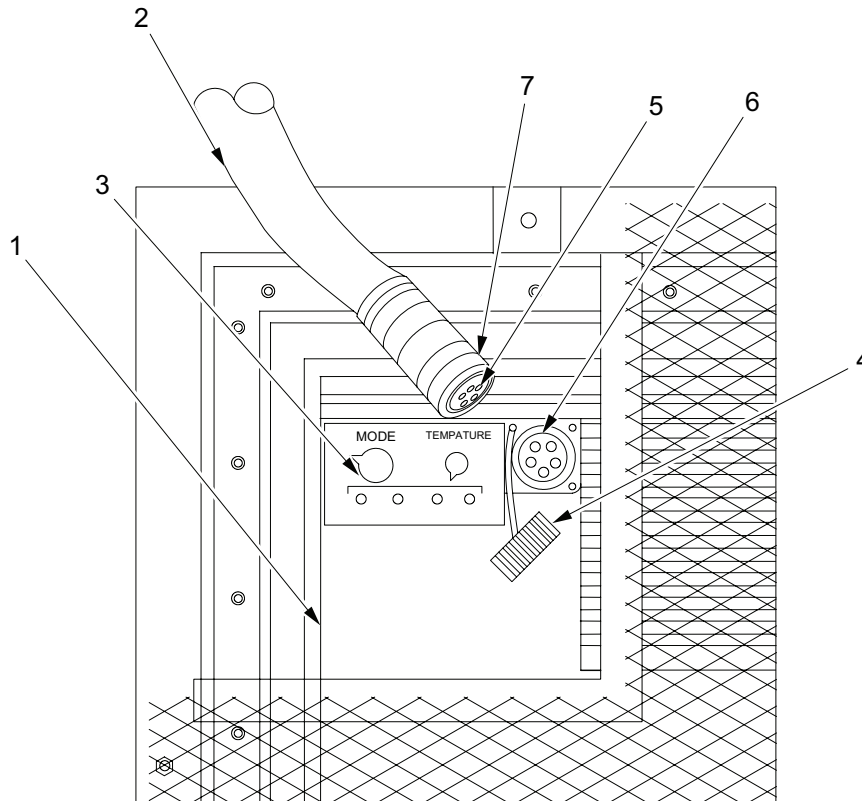
Mounting hardware is supplied with ECU.

6. Mount ECU B (4) to fold-down panel (10).
7. Remove four ring bolts from ECU B (4) transport location and store in shelter BII box.
8. Obtain four setscrews from storage location and insert into empty ring bolt holes.

CONNECTING POWER TO ECUs

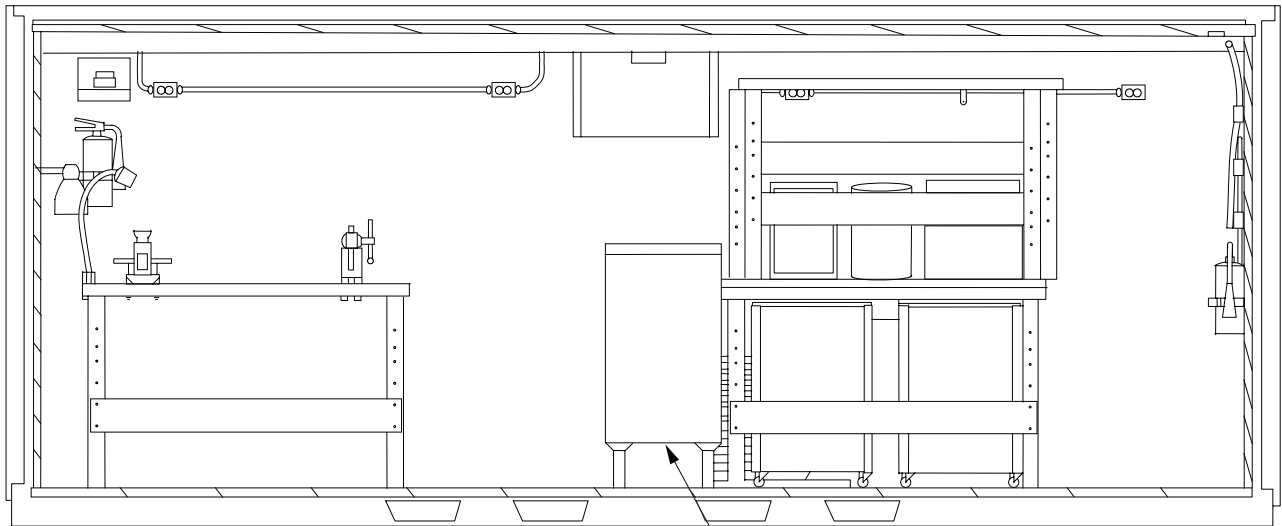
CAUTION

Refer to TM 5-4120-369-14 for specific grounding instructions of ECUs.



SSAE052

1. Inspect installation of ECU A (1) and power cable (2).
2. Position **MODE** switch (3) to **OFF** position.
3. Remove protective dust cap (4) from power input receptacle (6).
4. Push end of connector (5) into power input receptacle (6) until seated.
5. Screw connector lock ring (7) on power input receptacle (6).
6. Repeat steps 1 through 5 for ECU B.

POSITIONING 7 DRAWER MOBILE CABINET H FOR OPERATIONAL MODE

SSAE053

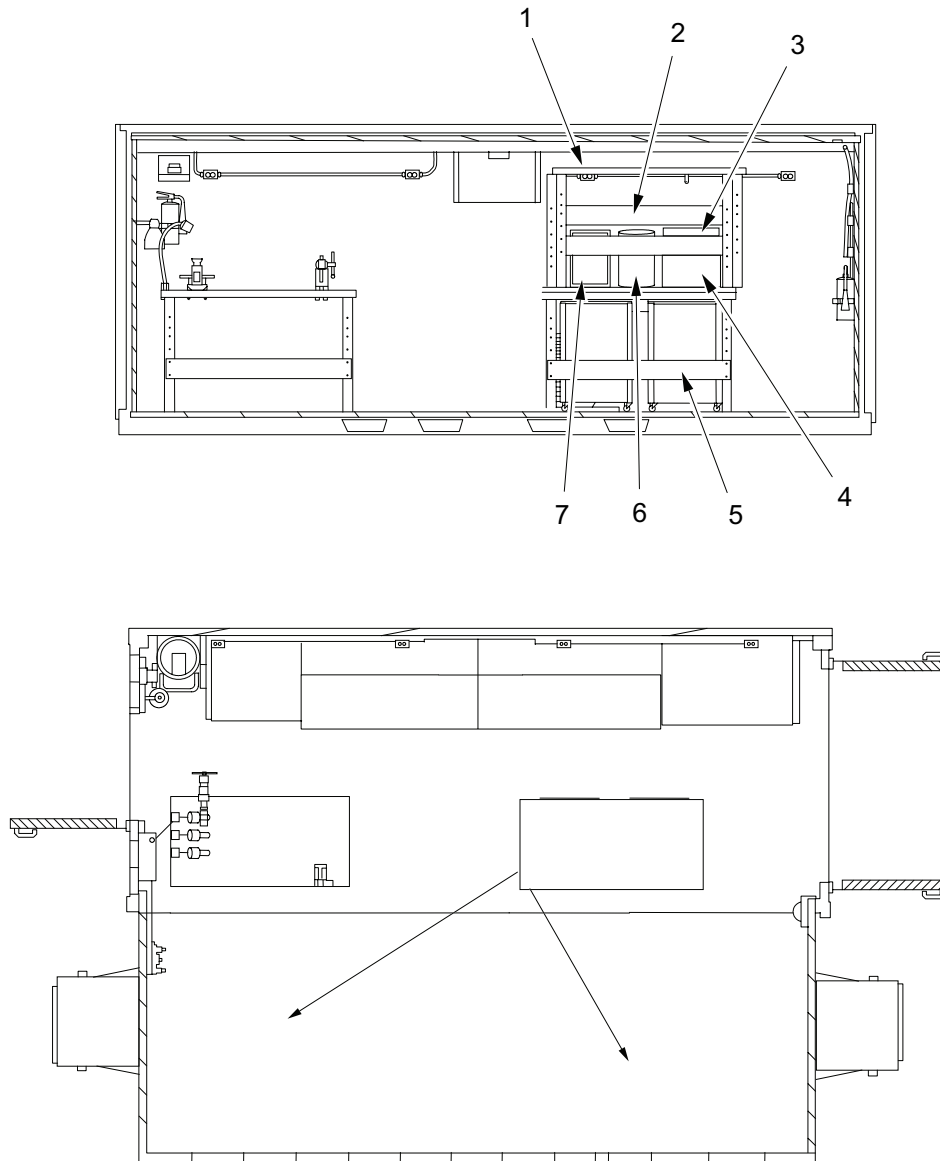
7 Drawer Mobile Cabinet H

CAUTION

To prevent damage to equipment ensure that casters for 7 drawer mobile cabinet H are unlocked prior to moving.

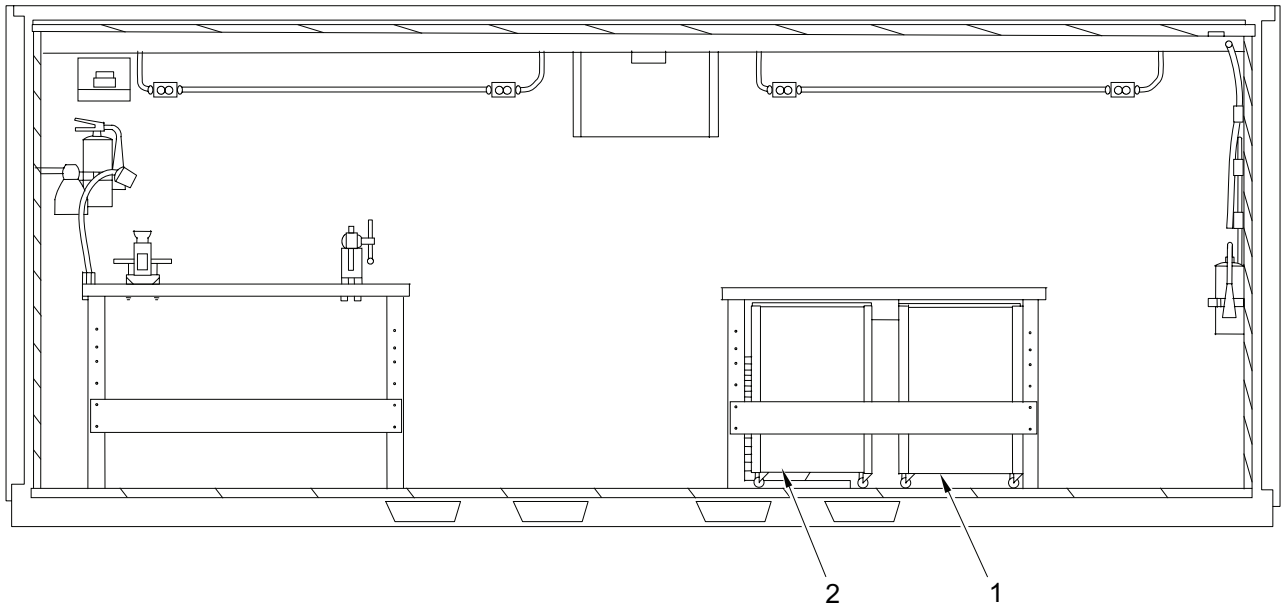
1. Remove cargo straps from 7 drawer mobile cabinet H.
2. Position 7 drawer mobile cabinet H at preferred location and lock casters.
3. Remove four ring bolts from 7 drawer mobile cabinet H transport location.
4. Store cargo straps in secure storage location and ring bolts in shelter BII box.
5. Obtain four setscrews from storage location and insert into empty ring bolt holes.

POSITIONING TABLE ASSEMBLIES B AND C, THREAD CUTTING DIE AND TAP SET, ELECTRICAL CONNECTOR MAINTENANCE KIT, WASTE CAN, AND CASE SET FOR OPERATIONAL MODE



SSAE054

1. Remove cargo straps from table assemblies B (1), C (2), and D (5).
2. Remove cargo straps from electrical connector maintenance kit (3), thread cutting die and tap set (4), and case set (7).
3. Remove webbing straps from waste can (6).
4. Position electrical connector maintenance kit (3), thread cutting die and tap set (4), waste can (6), and case set (7) at preferred location.
5. Position table assemblies B (1) and C (2) at preferred locations.
6. Store cargo and webbing straps in secure storage location.

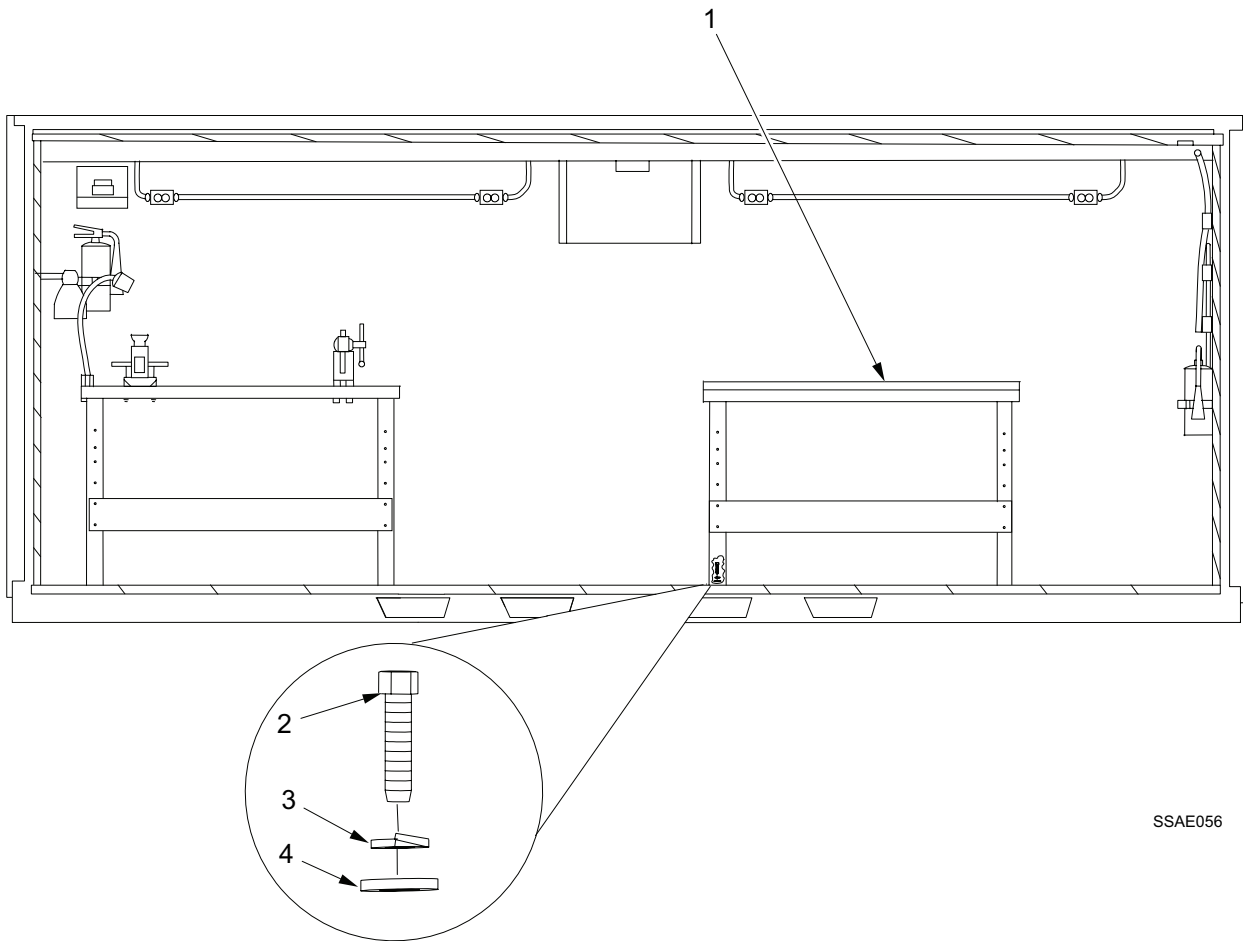
POSITIONING 5 DRAWER MOBILE CABINETS F AND G FOR OPERATIONAL MODE

SSAE055

CAUTION

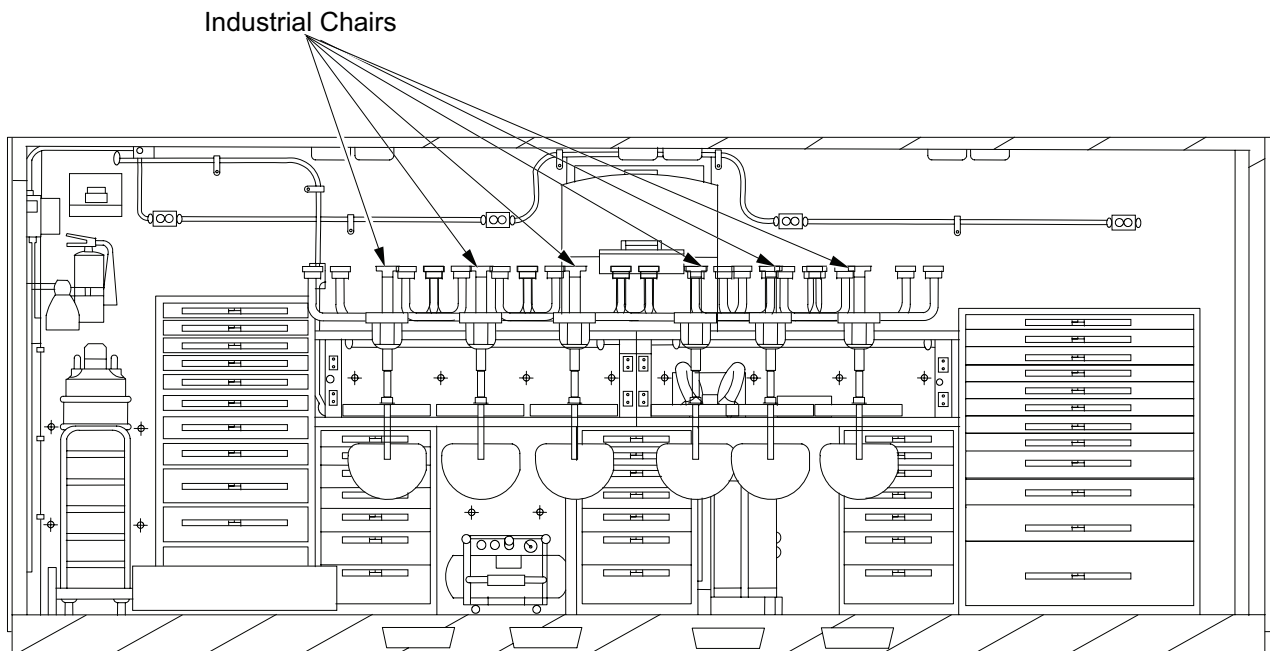
To prevent damage to equipment ensure that casters for 5 drawer mobile cabinets F and G are unlocked prior to moving.

1. Remove cargo strap from 5 drawer mobile cabinets F (1) and G (2).
2. Position 5 drawer mobile cabinets F (1) and G (2) at preferred location and lock casters.
3. Store cargo strap in secure storage location.

POSITIONING TABLE ASSEMBLY D FOR OPERATIONAL MODE

SSAE056

1. Remove four bolts (2), four lock washers (3) and four flat washers (4) securing table assembly D (1) to floor.
2. Place hardware in cotton mailing bag and store in shelter BII box.
3. Move table assembly D (1) to preferred location.
4. Obtain four setscrews from storage location and insert into empty bolt holes.

POSITIONING INDUSTRIAL CHAIRS FOR OPERATIONAL MODE

SSAE057

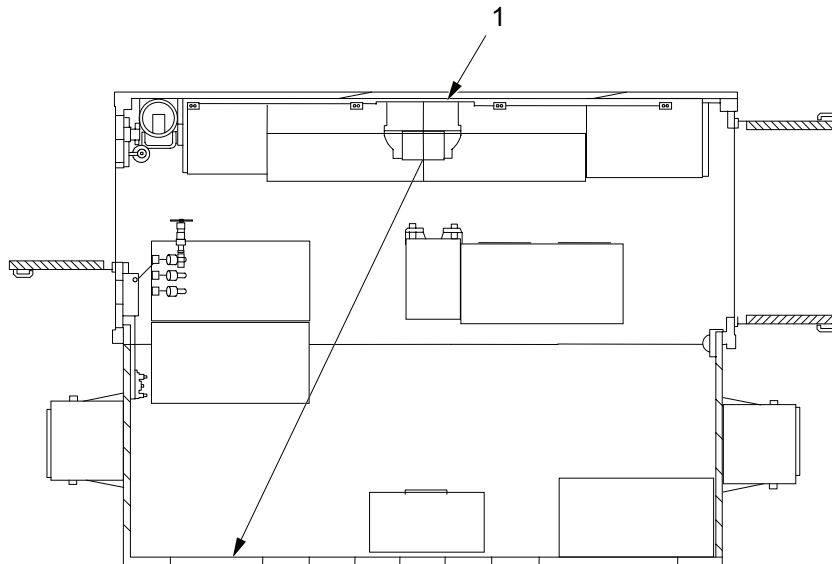
1. Remove webbing straps from six industrial chairs.
2. Position industrial chairs at preferred location.
3. Remove six ring bolts from industrial chair transport locations.
4. Store webbing straps in secure storage location and ring bolts in shelter BII box.

POSITIONING EYEWASH STATION FOR OPERATIONAL MODE**WARNING**

Eyewash station is not for outside use. Do not install the eyewash station in an outside location.

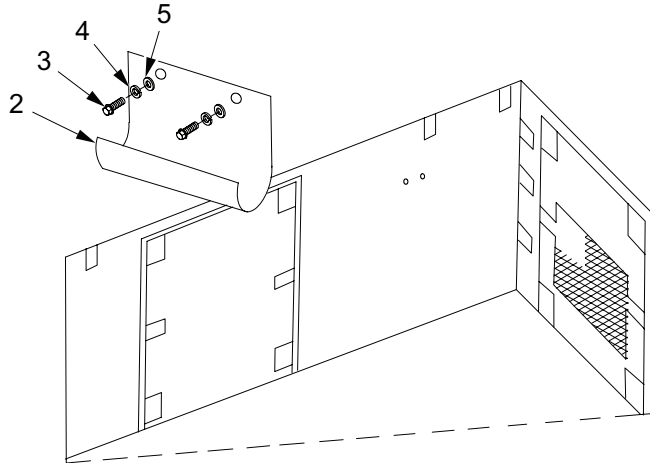
NOTES

- Bolts, washers, and nuts used during installation of eyewash station are located in cotton mailing bag in shelter BII box. Eyewash station wall bracket is located inside eyewash station. (See WP 0002 00, Figure 2, Item 3).
- Refer to eyewash station manufacturer's manual for additional instructions.



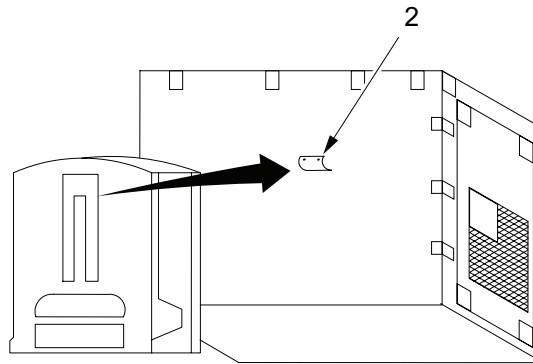
SSAE058

1. Remove webbing straps from eyewash station (1) and set eyewash station (1) aside.
2. Store webbing straps in secure storage location.



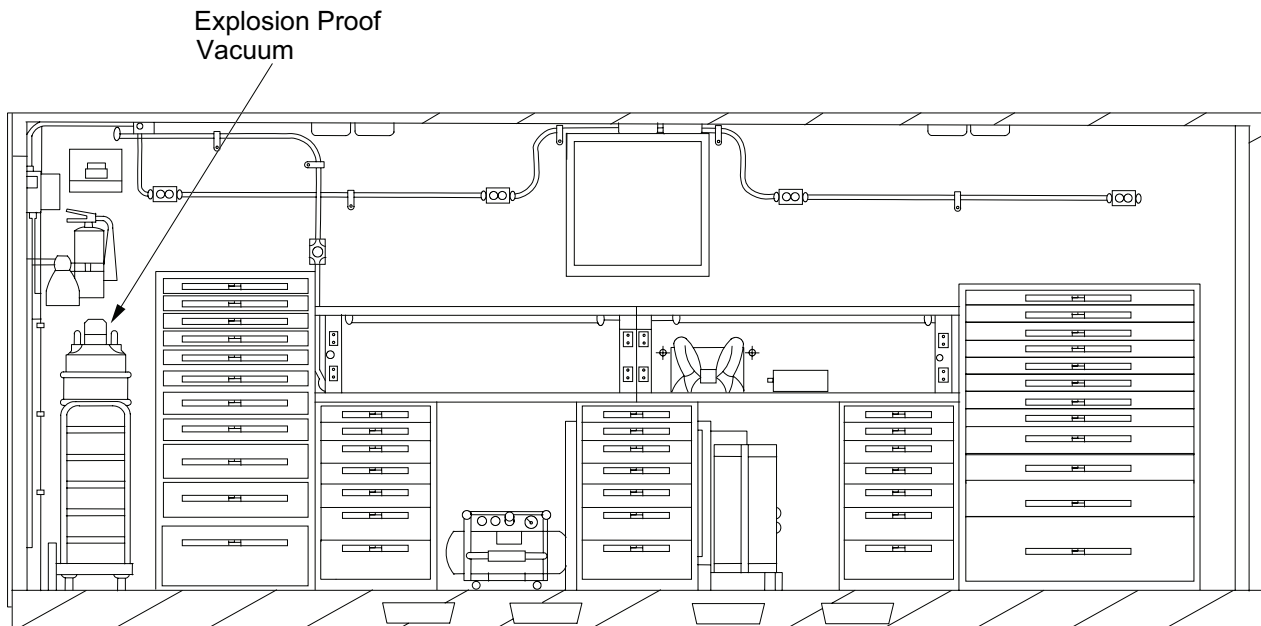
SSAE059

3. Obtain two bolts (3), two lock washers (4), and two flat washers (5) from cotton mailing bag located in shelter BII box.
4. Obtain eyewash station wall bracket (2) from inside eyewash station.
5. On expanded wall, align insert holes with eyewash station wall bracket (2).
6. Install two bolts (3), two lock washers (4), and two flat washers (5).
7. Torque bolts 160-190 in. lbs.



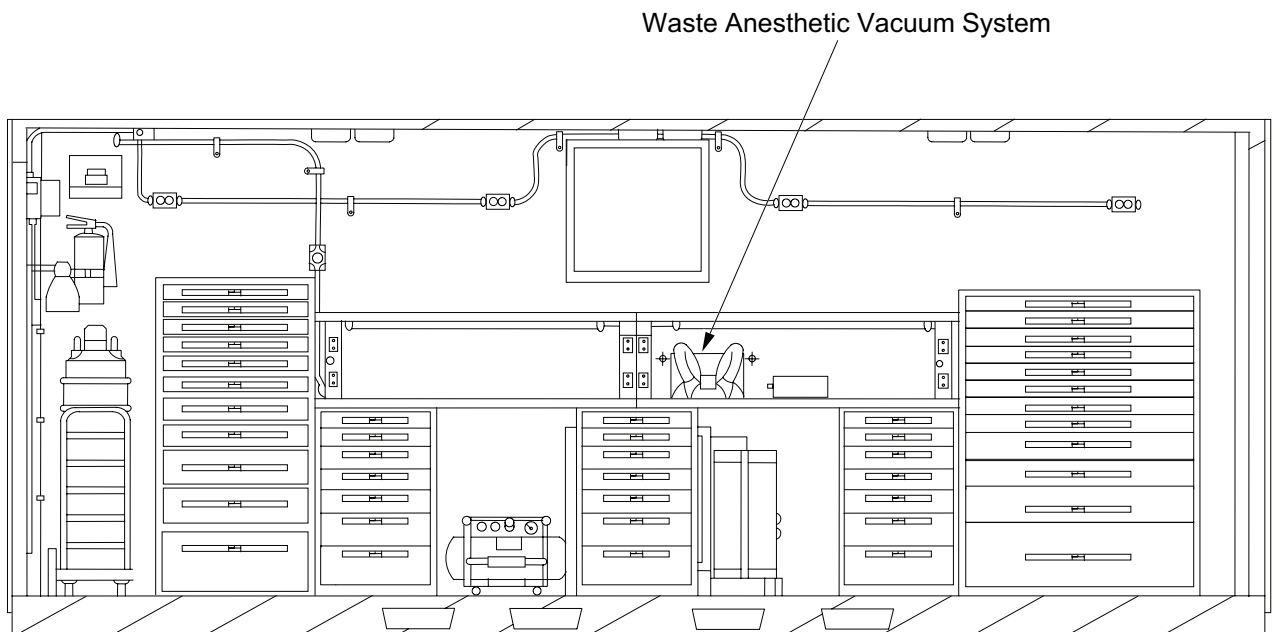
SSAE060

8. Obtain eyewash station (1) and install on eyewash station wall bracket (2).

POSITIONING EXPLOSION PROOF VACUUM FOR OPERATIONAL MODE

SSAE061

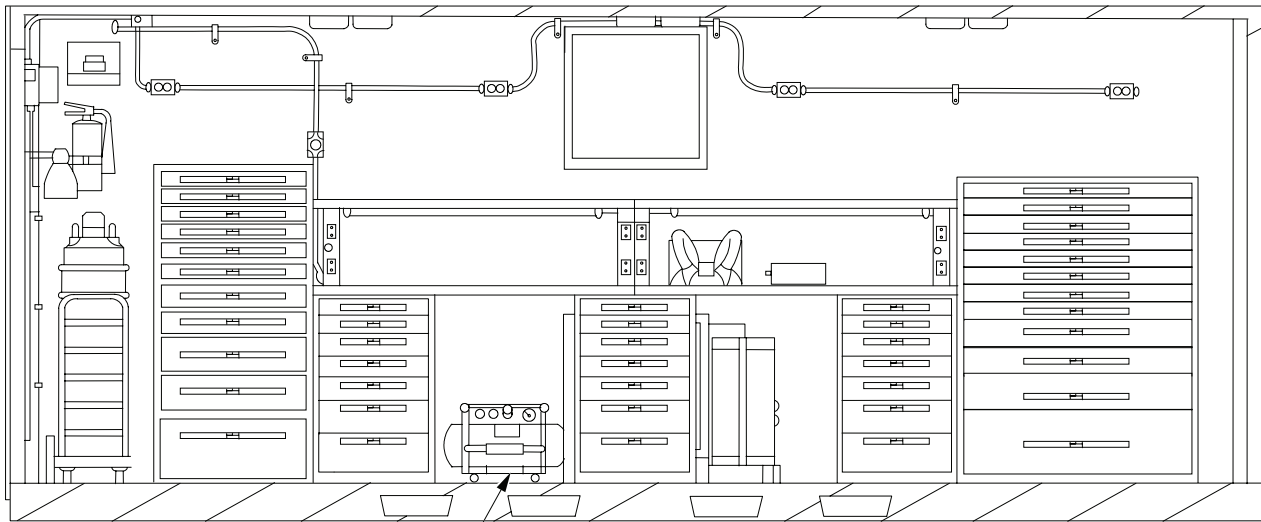
1. Remove webbing straps from explosion proof vacuum.
2. Position explosion proof vacuum at preferred location.
3. Remove four ring bolts from explosion proof vacuum transport location.
4. Store webbing straps in secure storage location and ring bolts in shelter BII box.

POSITIONING WASTE ANESTHETIC VACUUM SYSTEM FOR OPERATIONAL MODE

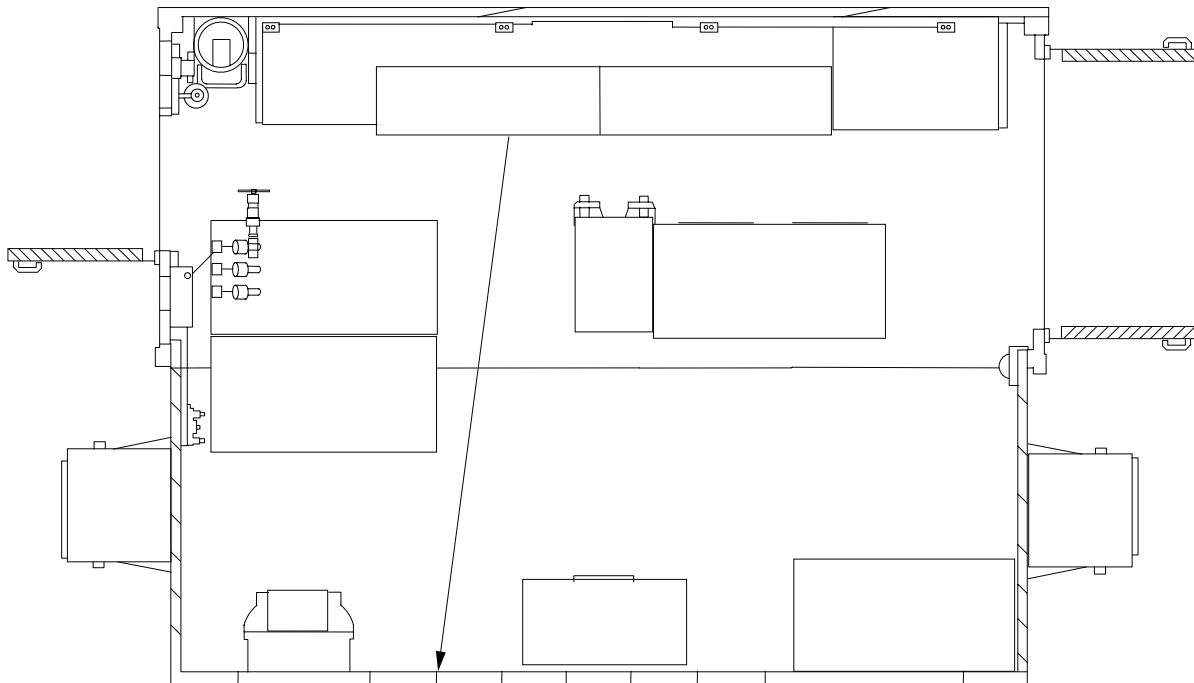
SSAE062

1. Remove webbing strap from waste anesthetic vacuum system.
2. Position waste anesthetic vacuum system at preferred location.
3. Remove two ring bolts from waste anesthetic vacuum system transport location.
4. Store webbing strap in secure storage location and ring bolts in shelter BII box.

POSITIONING AIR COMPRESSOR FOR OPERATIONAL MODE

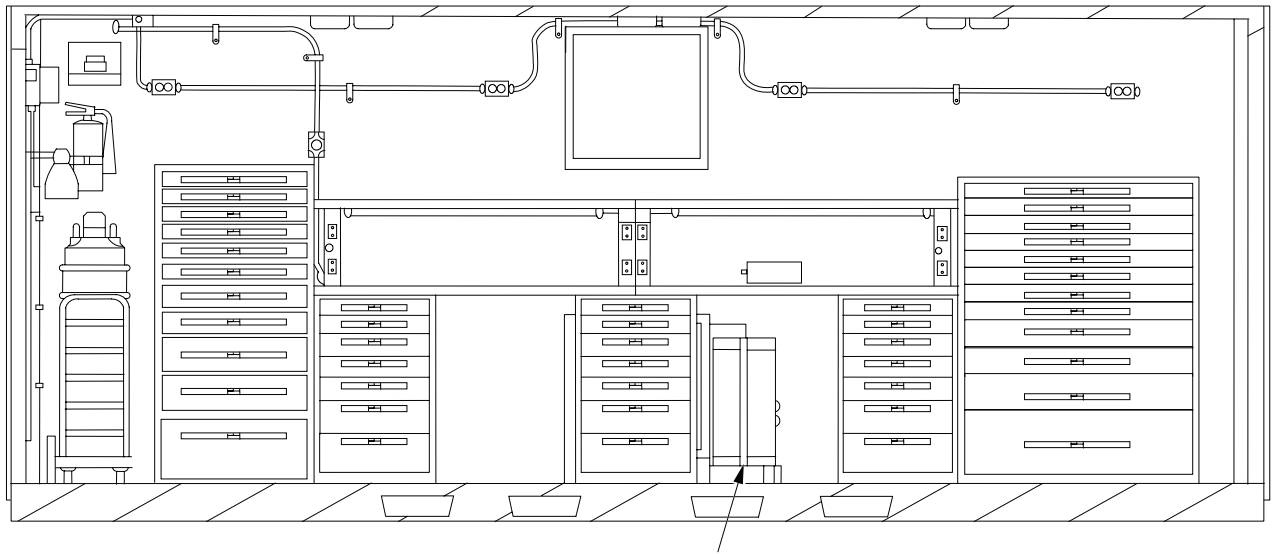


Air Compressor



SSAE063

1. Remove webbing straps from air compressor.
2. Position air compressor at preferred location.
3. Remove four ring bolts from air compressor transport location.
4. Store webbing straps in secure storage location and ring bolts in shelter BII box.
5. Obtain four setscrews from storage location and insert into empty ring bolt holes.

POSITIONING POWER SUPPLY FOR OPERATIONAL MODE

Power Supply

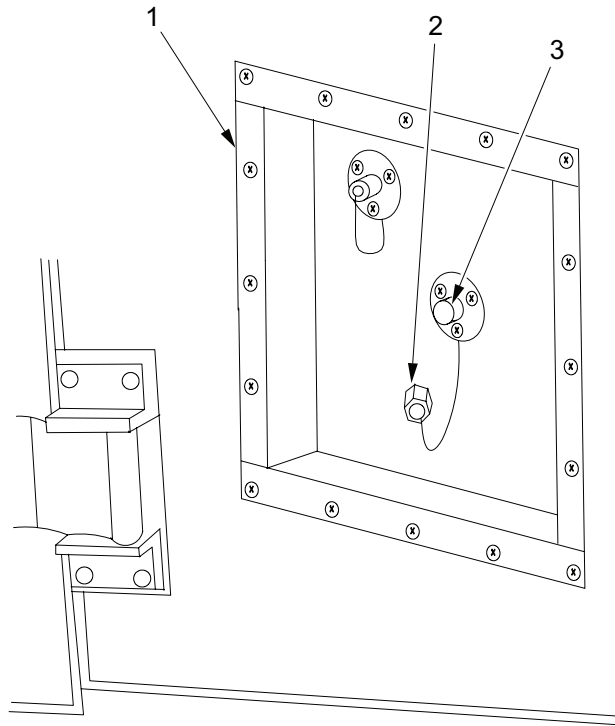
SSAE064

1. Remove two bolts and two lock washers from power supply mounting frame.
2. Place hardware in cotton mailing bag and store in shelter BII box.
3. Position power supply mounting frame at preferred location.
4. Obtain two setscrews from storage location and insert into empty bolt holes.

End of Work Package

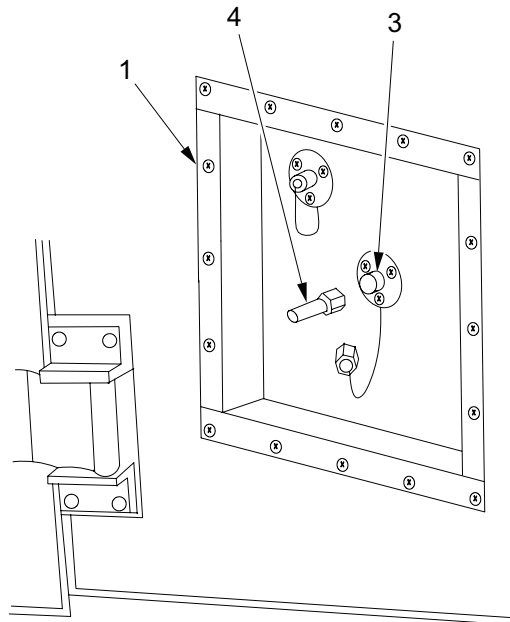
**ARMAMENT AND ELECTRICAL SHOP
OPERATION UNDER USUAL CONDITIONS**

The shop is provided with connections for compressed air and water. These connections are located on the Services Utility Panel (see WP 0002 00, Figure 1).

CONNECTING COMPRESSED AIR

SSAE065

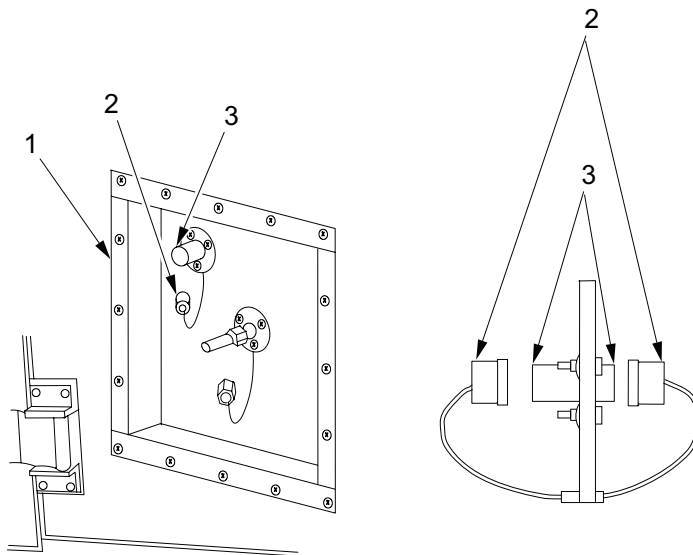
1. Remove protective dust cap (2) from air feed-thru connector assembly (3) at services utility panel (1).



SSAE066

2. Obtain a quick disconnect coupling (4) from storage location.
3. Install the quick disconnect coupling (4) on air feed-thru connector assembly (3) at services utility panel (1) and tighten securely.

CONNECTING WATER SUPPLY



SSAE067

1. Remove protective dust caps (2) from each end of water feed-thru connector assembly (3) at services utility panel (1).
2. Install adapters and fittings as required and tighten securely.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
OPERATION UNDER USUAL CONDITIONS**

CHECKING SHELTER LEVEL

After all equipment has been placed in the suggested operational position, recheck leveling of shelter. See WP 0005 00, Initial Leveling, to verify and adjust shelter level. Correct leveling adjustments are essential to ensure proper operation of equipment, tools, doors, and access panels.

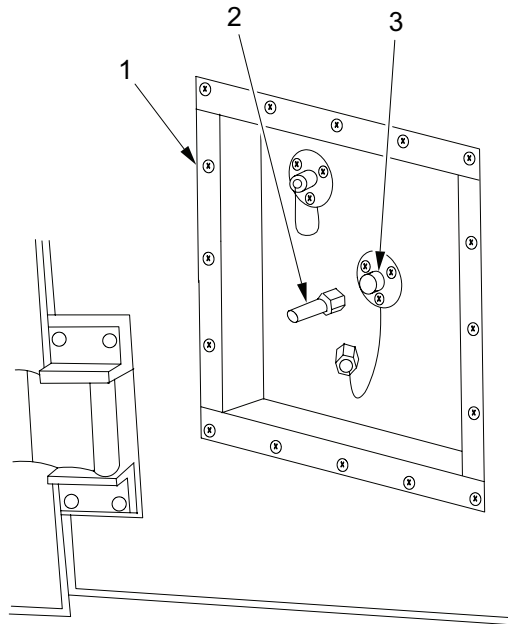
The Armament and Electrical Shop is now operational.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
OPERATION UNDER USUAL CONDITIONS**

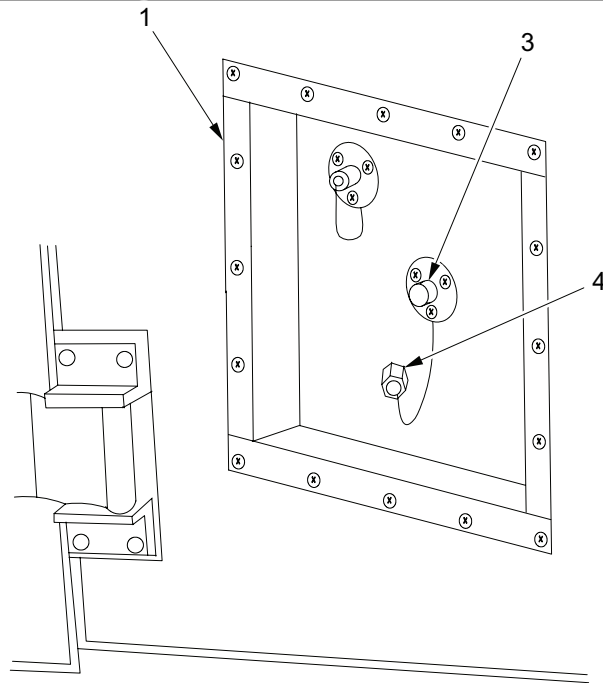
DISCONNECTING COMPRESSED AIR**WARNING**

Ensure air pressure has been relieved before disconnecting compressed air supply. Do not direct compressed air near eyes or directly against skin. Wear eye protection; high pressure air against eyes can cause **BLINDNESS**.



SSAE068

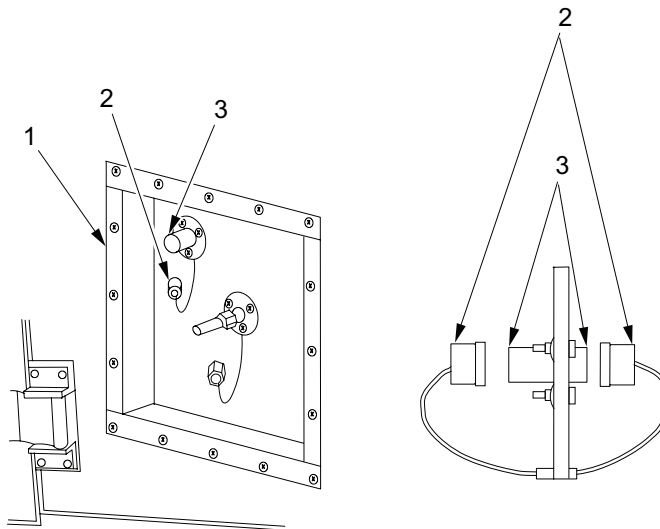
1. Remove quick disconnect coupling (2) from air feed-thru connector assembly (3) located on services utility panel (1) and store in secure storage location.



SSAE069

2. Install protective dust cap (4) on air feed-thru connector assembly (3) at services utility panel (1) and tighten securely.

DISCONNECTING WATER SUPPLY



SSAE070

1. Remove adapters and fittings from water feed-thru connector assembly (3) at services utility panel (1).
2. Install protective dust caps (2) on each end of water feed-thru connector assembly (3) at services utility panel (1) and tighten securely.

End of Work Package

ARMAMENT AND ELECTRICAL SHOP OPERATION UNDER USUAL CONDITIONS

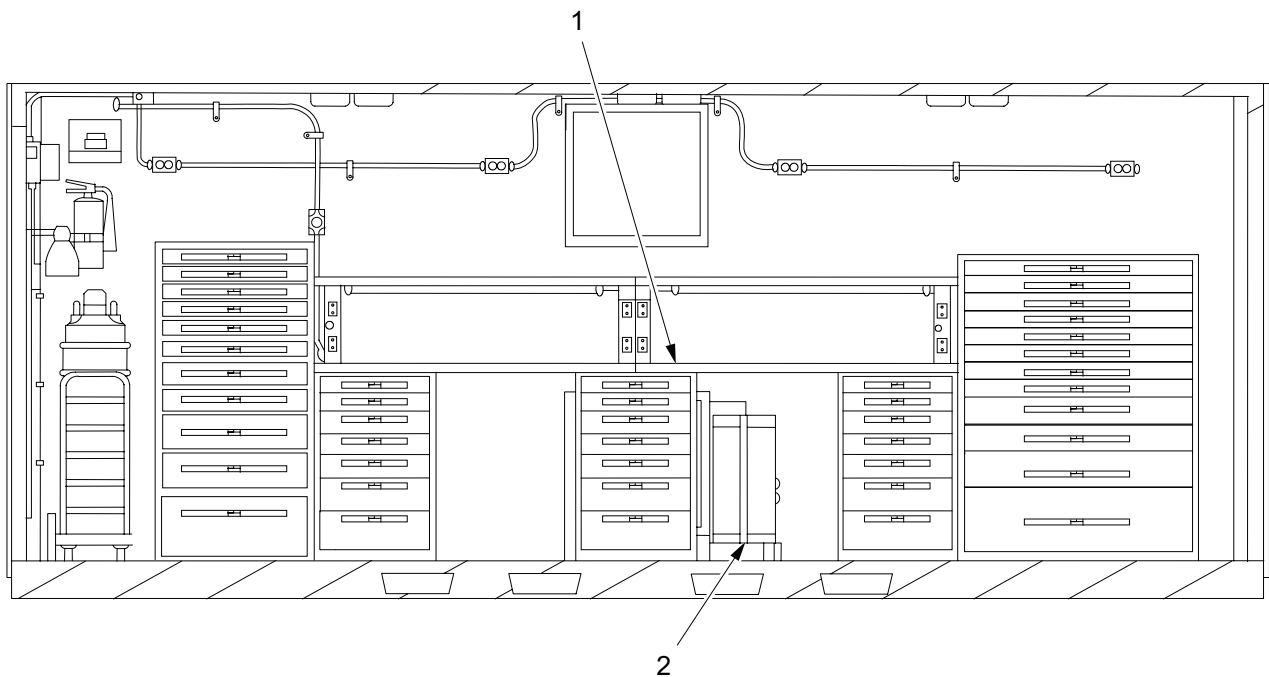
The following procedures and recommended sequence for moving equipment shall be observed. Transport positions in which equipment will be located are identified.

CAUTIONS

- Care must be taken to ensure that proper bolts, washers and nuts are used to secure equipment when shop is transported. Incorrect hardware could cause extensive damage to equipment or shelter.
- Torque values are provided and must be respected to prevent possible damage to equipment or shelter. Improper procedures could result in extensive damage to government property.

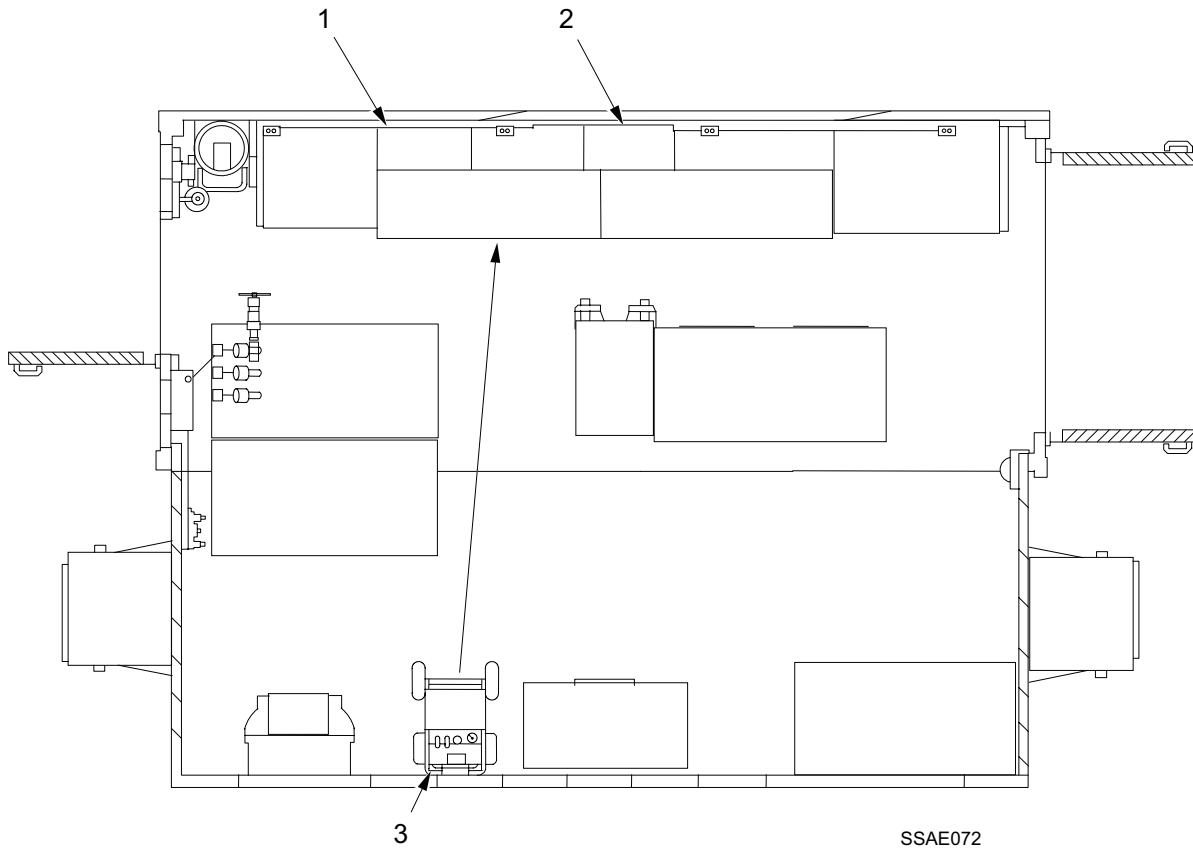
1. Remove cotton mailing bag, which contains equipment hardware, from shelter BII box.
2. Inspect hardware for damage or missing parts.

POSITIONING POWER SUPPLY FOR TRANSPORT MODE



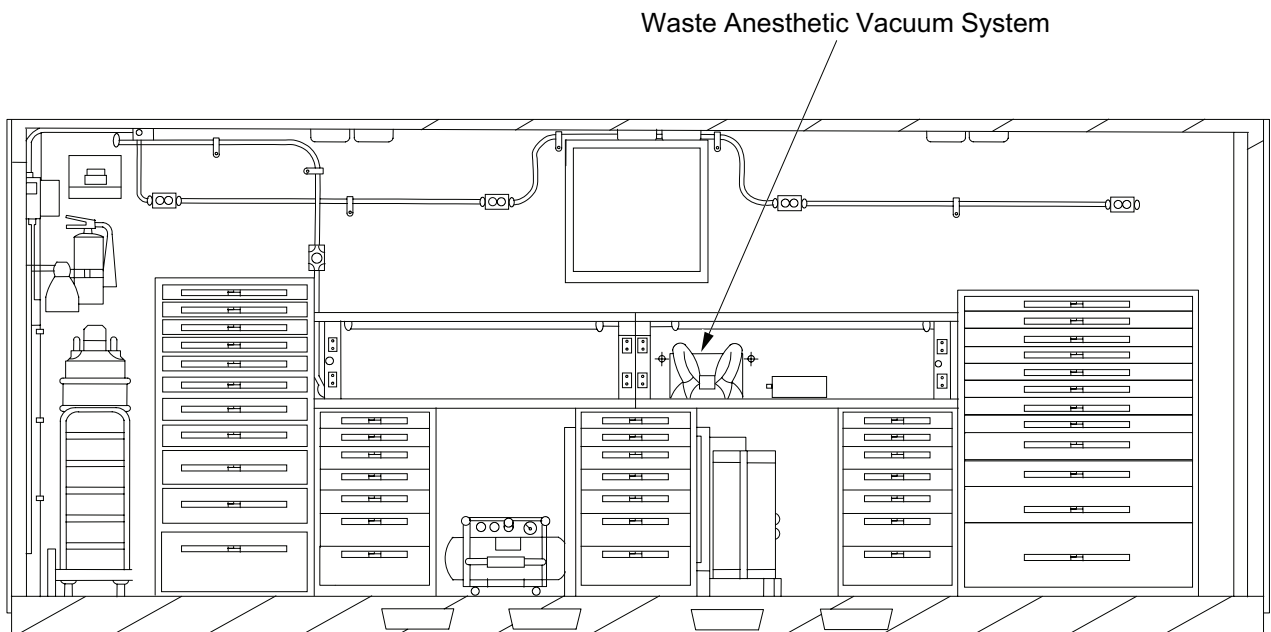
SSAE071

1. Remove two set screws from floor inserts at power supply (2) transport location.
2. Store set screws in secure storage location.
3. Obtain two bolts and two lock washers from cotton mailing bag in shelter BII box.
4. Position power supply mounting frame (2) adjacent to cabinet C (1).
5. Secure power supply mounting frame (2) by installing two bolts and two lock washers.

POSITIONING AIR COMPRESSOR FOR TRANSPORT MODE

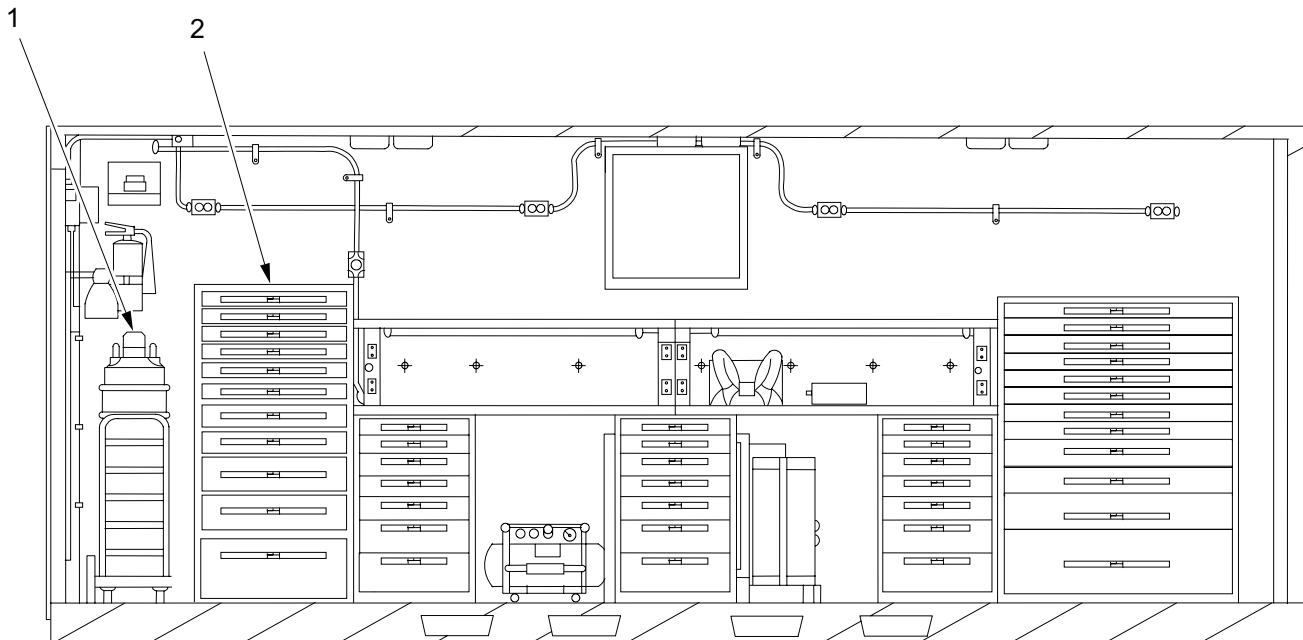
SSAE072

1. Remove four set screws from floor inserts at air compressor (3) transport location.
2. Store set screws in secure storage location.
3. Obtain webbing straps from storage location and four ring bolts from shelter BII box.
4. Insert four ring bolts into air compressor (3) transport location (3).
5. Position air compressor (3) adjacent to cabinets B (1) and C (2).
6. Secure air compressor (3) to ring bolts with webbing straps.

POSITIONING WASTE ANESTHETIC VACUUM SYSTEM FOR TRANSPORT MODE

SSAE073

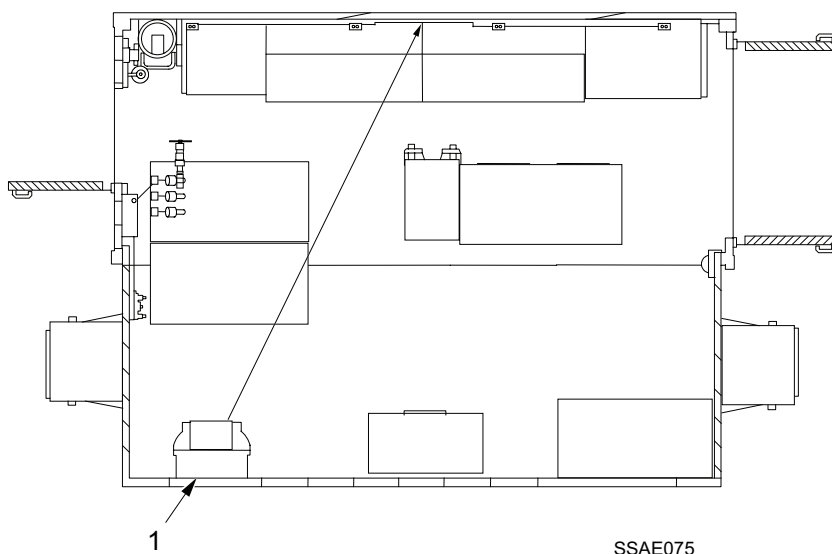
1. Obtain webbing strap from storage location and two ring bolts from shelter BII box.
2. Insert ring bolts into waste anesthetic vacuum system transport location.
3. Position waste anesthetic vacuum system on fixed wall countertop.
4. Secure waste anesthetic vacuum system to ring bolts with webbing strap.

POSITIONING EXPLOSION PROOF VACUUM FOR TRANSPORT MODE

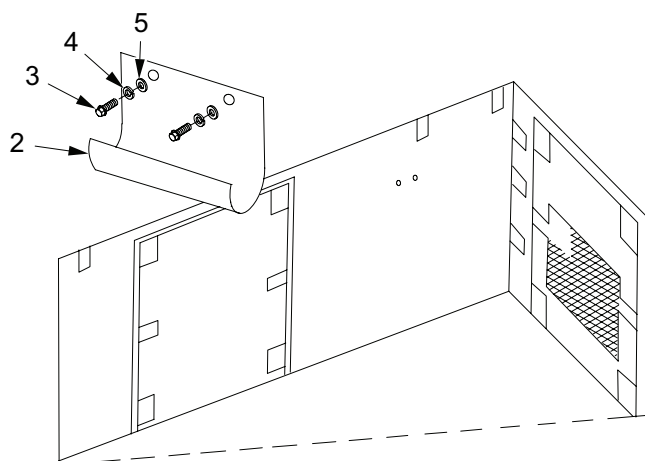
SSAE074

1. Obtain webbing straps from storage location and four ring bolts from shelter BII box.
2. Insert four ring bolts into explosion proof vacuum (1) transport location.
3. Position explosion proof vacuum (1) adjacent to cabinet A (2).
4. Secure explosion proof vacuum (1) to ring bolts with webbing straps.

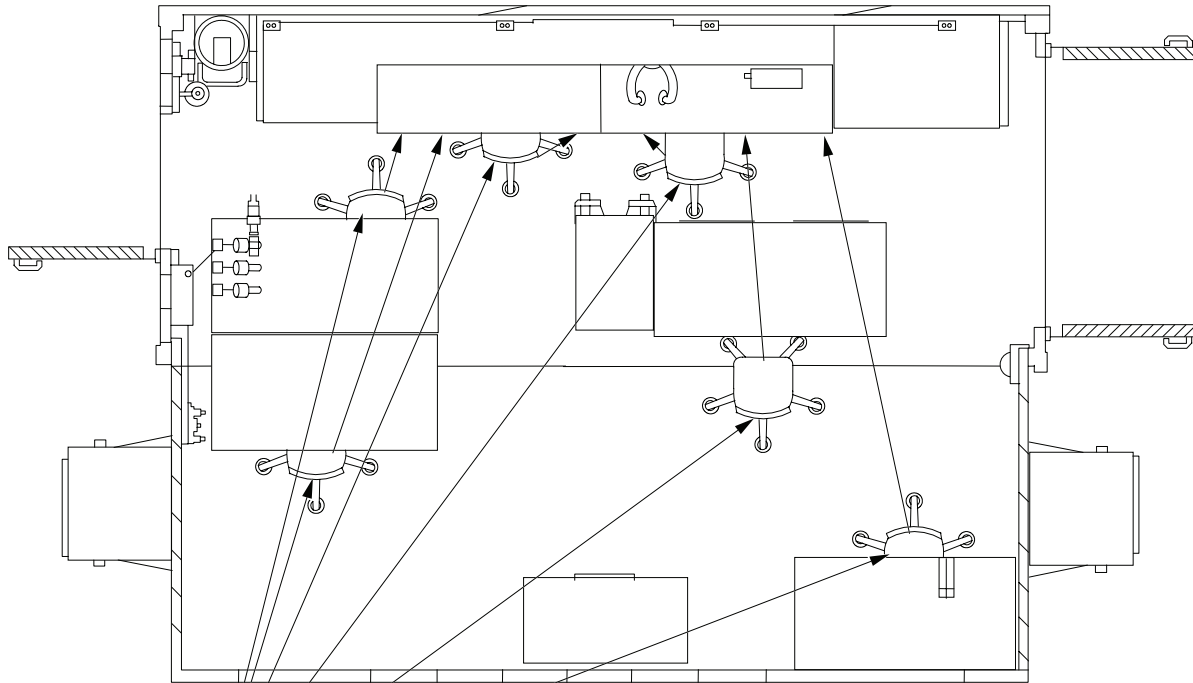
POSITIONING EYEWASH STATION FOR TRANSPORT MODE



1. Drain saline into appropriate container IAW eyewash station manufacturer's manual.



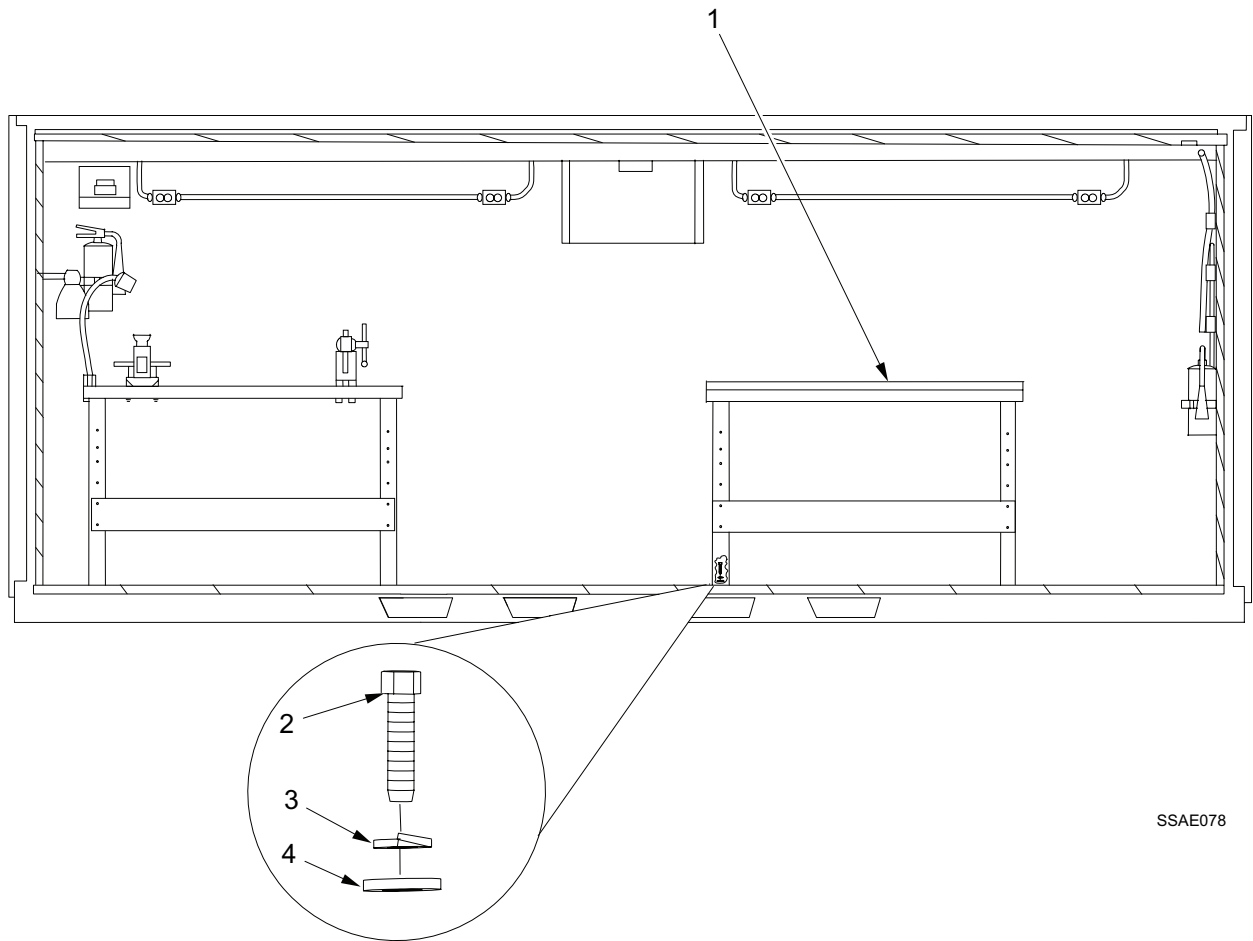
2. Remove eyewash station (1) from eyewash station wall bracket (2) and set aside.
3. Remove two bolts (3), two lock washers (4), two flat washers (5), and wall bracket (2).
4. Place hardware in cotton mailing bag and place eyewash station wall bracket in secure storage location.
5. Place eyewash station (1) at transport location.
6. Obtain webbing straps from storage location and four ring bolts from shelter BII box.
7. Secure eyewash station (1) to ring bolts with webbing straps.

POSITIONING INDUSTRIAL CHAIRS FOR TRANSPORT MODE

SSAE077

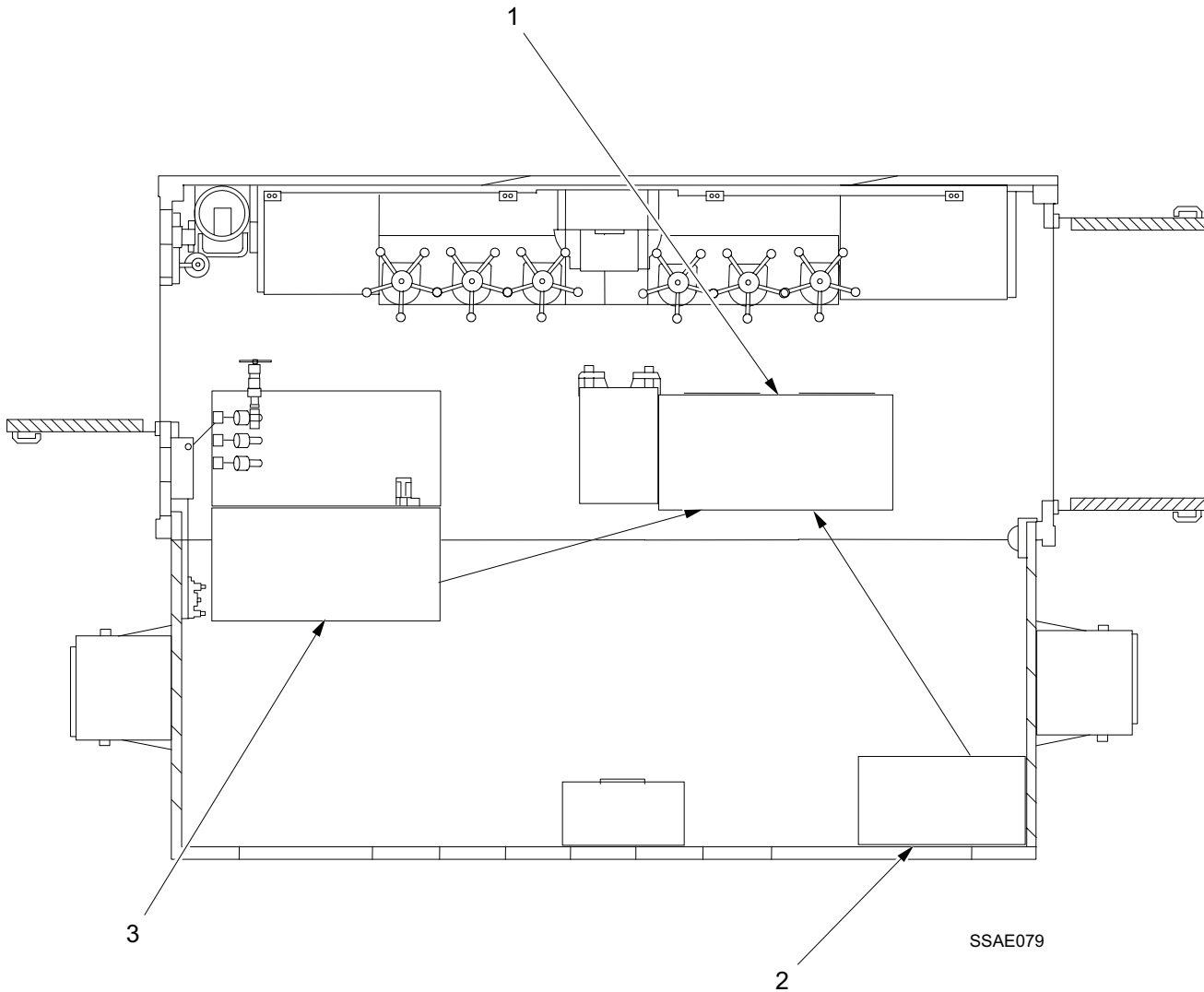
Industrial Chairs

1. Obtain webbing straps from storage location and six ring bolts from shelter BII box.
2. Insert six ring bolts into fixed wall and secure.
3. Position industrial chairs on fixed wall countertops.
4. Secure industrial chairs to ring bolts with webbing straps.

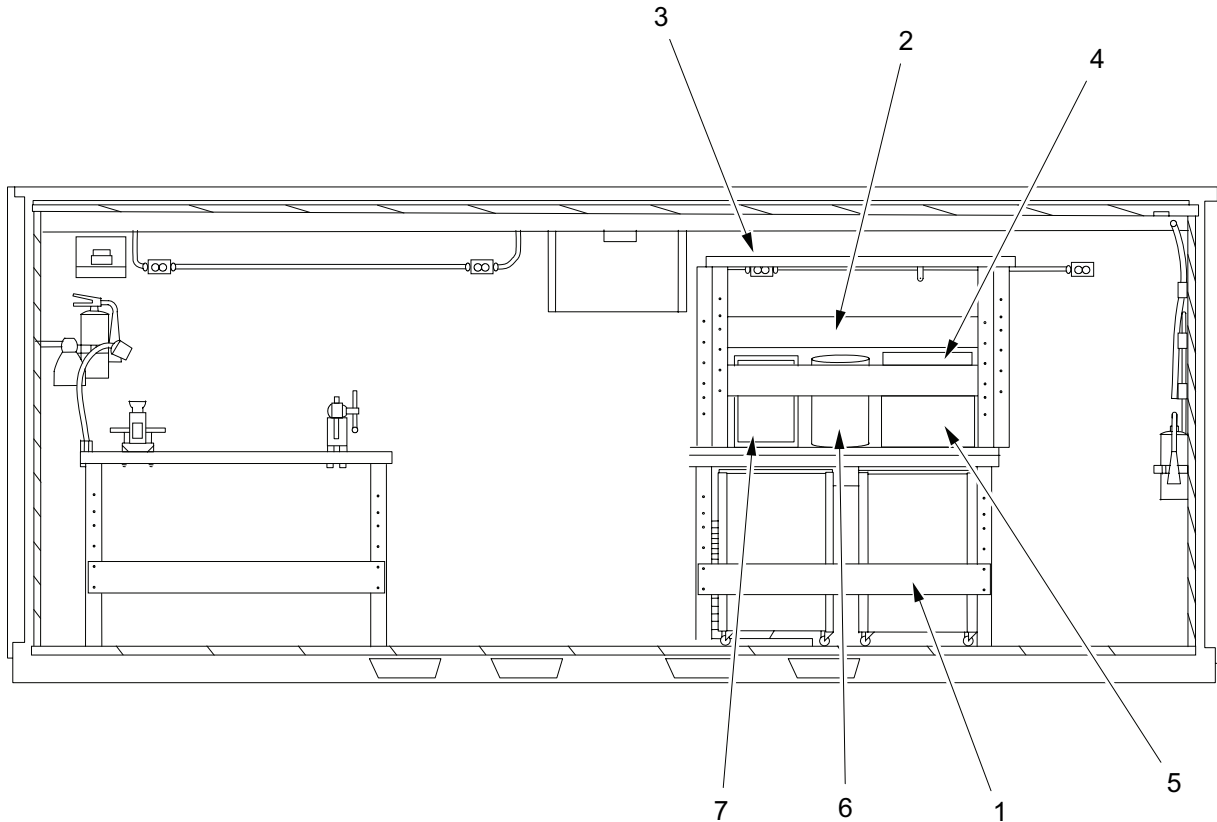
POSITIONING TABLE ASSEMBLY D FOR TRANSPORT MODE

SSAE078

1. Position table assembly D (1) at transport location.
2. Obtain four bolts (2), four lock washers (3), and four flat washers (4) from cotton mailing bag.
3. Install four bolts (2), four lock washers (3), and four flat washers (4) securing table legs to floor.
4. Torque bolts 160-190 in. lbs.

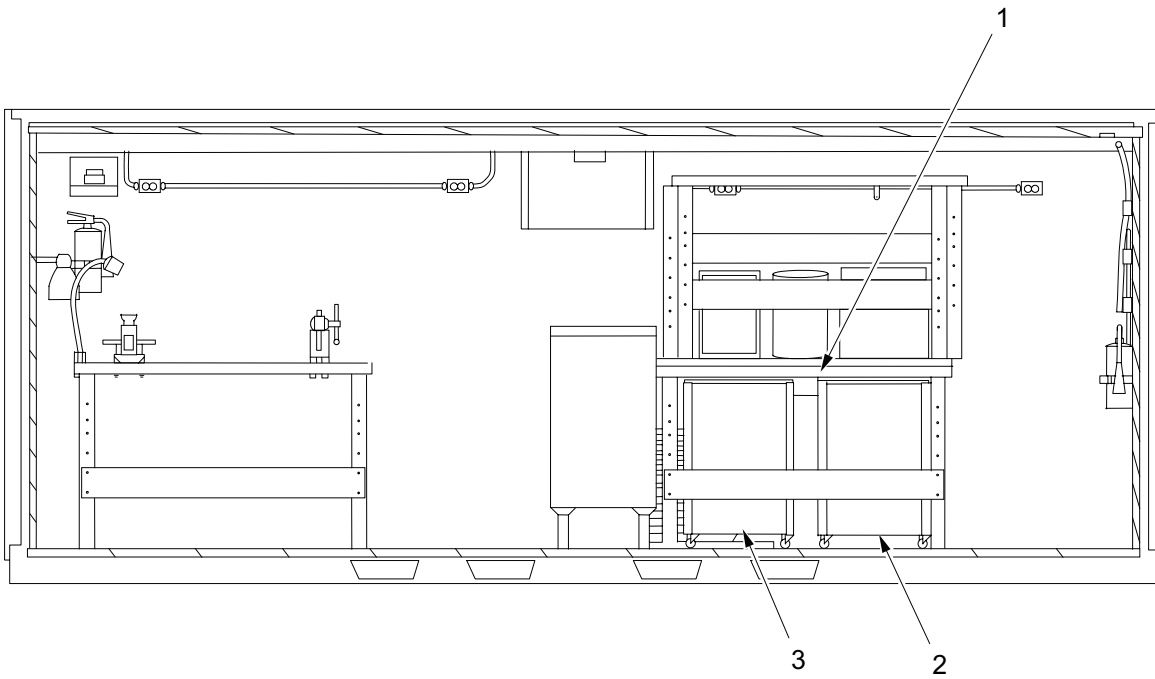
POSITIONING TABLE ASSEMBLY B AND C, THREAD CUTTING DIE AND TAP SET, ELECTRICAL CONNECTOR MAINTENANCE KIT, WASTE CAN, AND CASE SET FOR TRANSPORT MODE

1. Obtain cargo straps from storage location.
2. Nest table assemblies B (3) and C (2) on top of table assembly D (1).



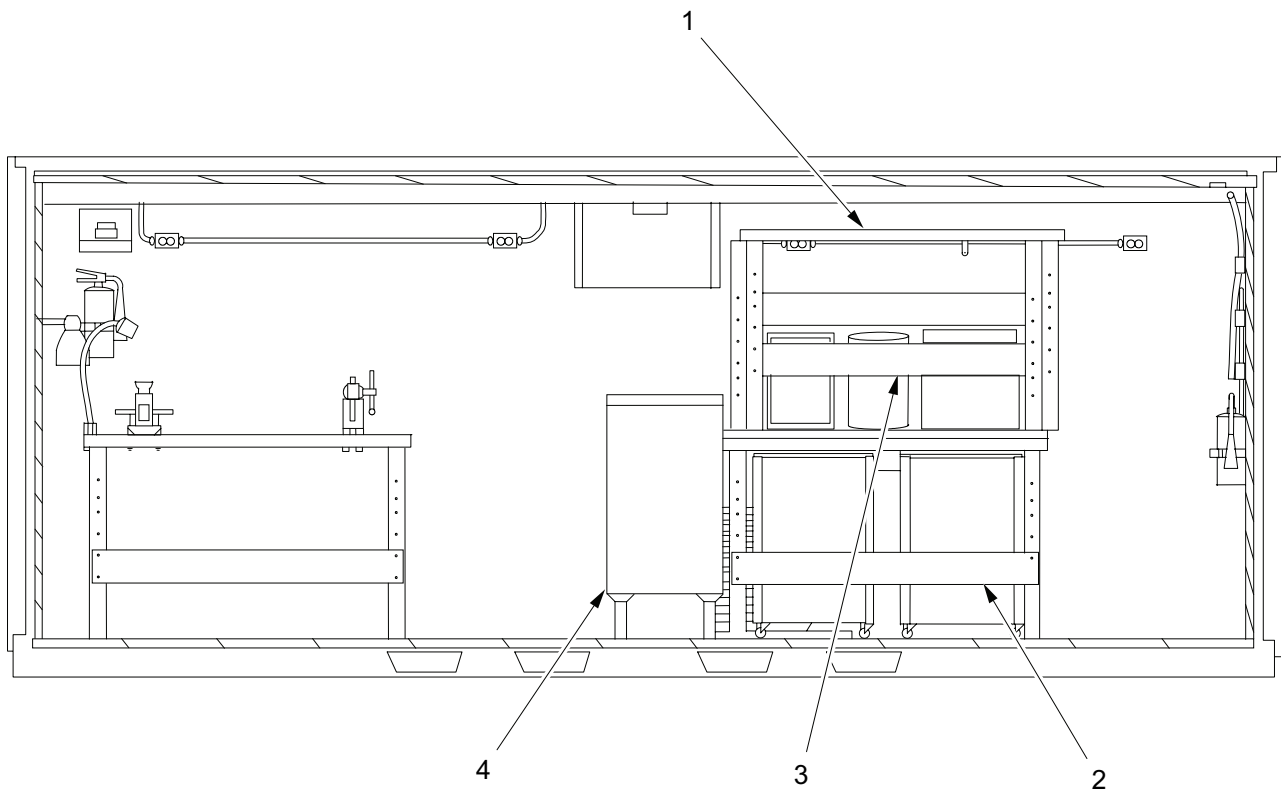
SSAE080

3. Obtain cargo strap, electrical connector maintenance kit (4), thread cutting die and tap set (5), waste can (6), and case set (7) from storage location.
4. Position thread cutting die and tap set (5) and then electrical connector maintenance kit (4).
5. On opposite side of thread cutting die and tap set (5) and electrical connector maintenance kit (4), position case set (7).
6. Position waste can (6) upright in center of table assembly C (2).
7. Secure waste can (6) with webbing strap.
8. Secure thread cutting die and tap set (5) and electrical connector maintenance kit (4) to table assemblies C (2) and D (1) with cargo strap.
9. Secure table assemblies B (3) and C (2) to table assembly D (1) with cargo straps.

POSITIONING 5 DRAWER MOBILE CABINETS F AND G FOR TRANSPORT MODE

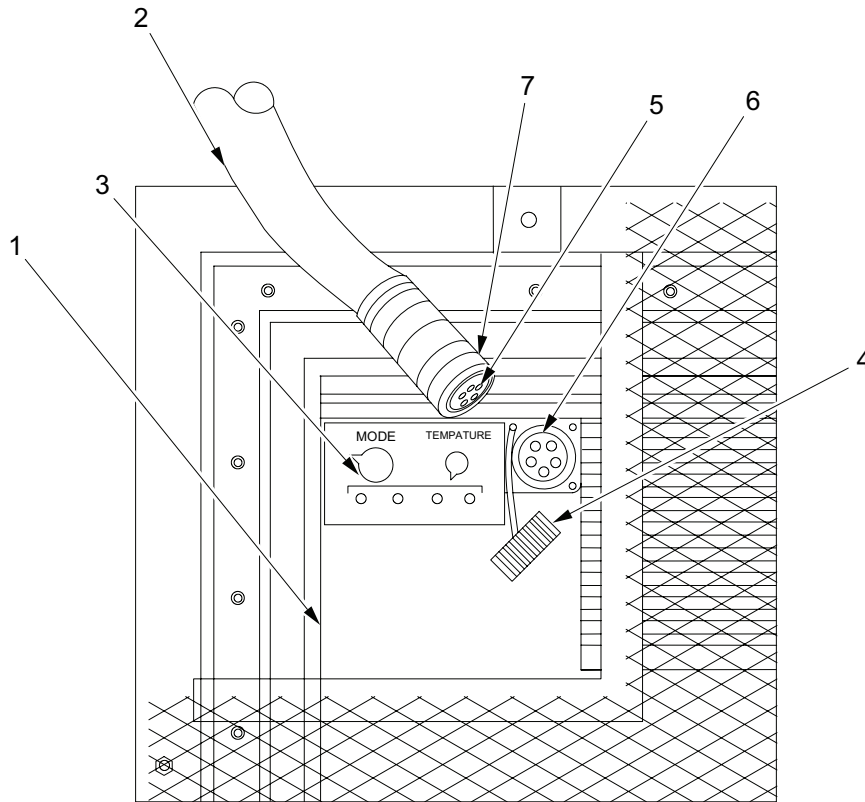
SSAE081

1. Obtain cargo strap from storage location.
2. Position 5 drawer mobile cabinet F (2) and G (3) underneath table assembly D (1).
3. Secure 5 drawer mobile cabinet F (2) and G (3) to table assembly D (1) with cargo strap.

POSITIONING 7 DRAWER MOBILE CABINET H FOR TRANSPORT MODE

SSAE082

1. Remove four set screws from floor inserts at 7 drawer mobile cabinet H (4) transport location.
2. Store set screws in secure storage location.
3. Obtain cargo straps from storage location and four ring bolts from shelter BII box.
4. Insert ring bolts into floor inserts and secure.
5. Position 7 drawer mobile cabinet H (4) beside table assemblies B (1), C (3), and D (2).
6. Secure 7 drawer mobile cabinet H (4) to ring bolts with cargo straps.

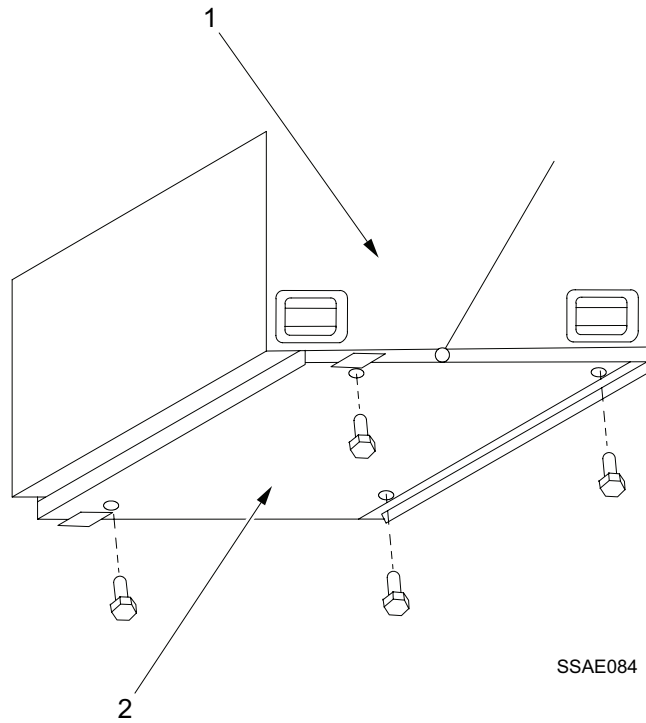
DISCONNECTING POWER FROM ECUs

SSAE083

1. Set **MODE** switch (3) on ECU B (1) to **OFF** position.
2. Unscrew connector lock ring (7) from power input receptacle (6).
3. Pull end of connector (5) from power input receptacle (6).
4. Store power cable (2) in secure storage location.
5. Install protective dust cap (4) on power input receptacle (6).
6. Repeat these procedures for ECU A.

POSITIONING ECU B FOR TRANSPORT MODE

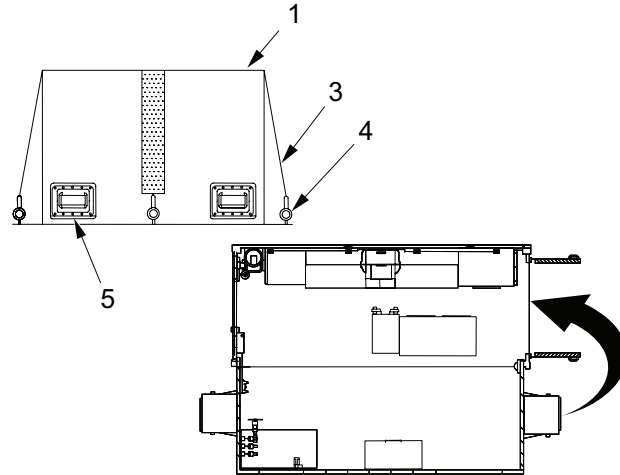
1. Remove four set screws from inserts at ECU B transport locations. (See WP 0002, Figure 3).
2. Store set screws in secure storage location.
3. Obtain cargo straps from storage location and ring bolts from the shelter BII box.
4. Install four ring bolts and secure.



5. Remove mounting hardware securing ECU B (1) to fold-down panel (2).
6. Store hardware in secure storage location.

WARNING

A four man lift is required when moving or lifting ECUs. Each unit weighs approximately 270 pounds. Trying to move or lift an ECU without sufficient help can cause **SERIOUS INJURY** to personnel.

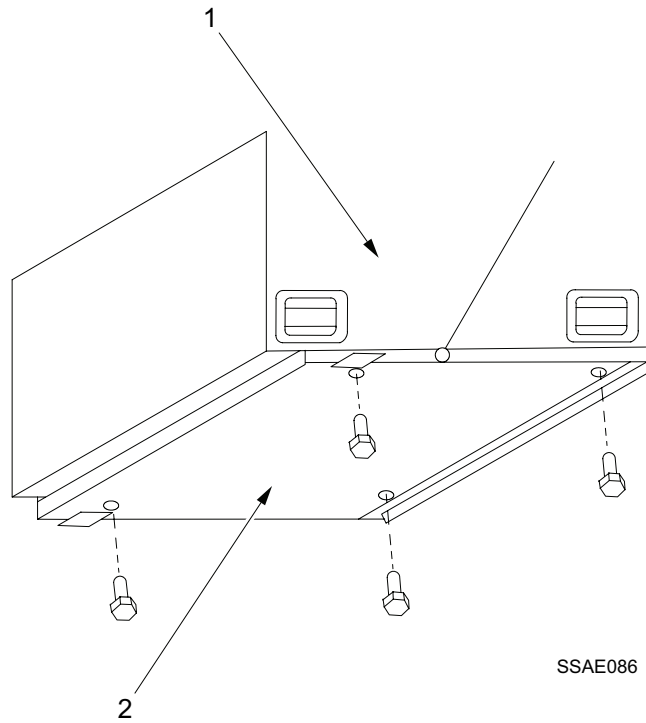


SSAE085

7. Using lift handles (5), slide ECU B (1) off fold-down panel, carry through cargo end door and position at transport location.
8. Position two cargo straps (3) on ECU B (1) and hook to ring bolts (4).
9. Tighten cargo straps (3) to secure ECU B (1).

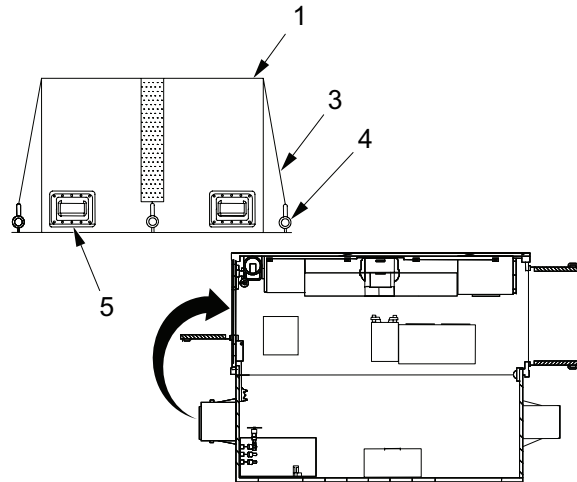
POSITIONING ECU A FOR TRANSPORT MODE

1. Remove four set screws from inserts at ECU A transport locations. (See WP 0002, Figure 3).
2. Store set screws in secure storage location.
3. Obtain cargo straps from storage location and ring bolts from the shelter BII box.
4. Install four ring bolts and secure.



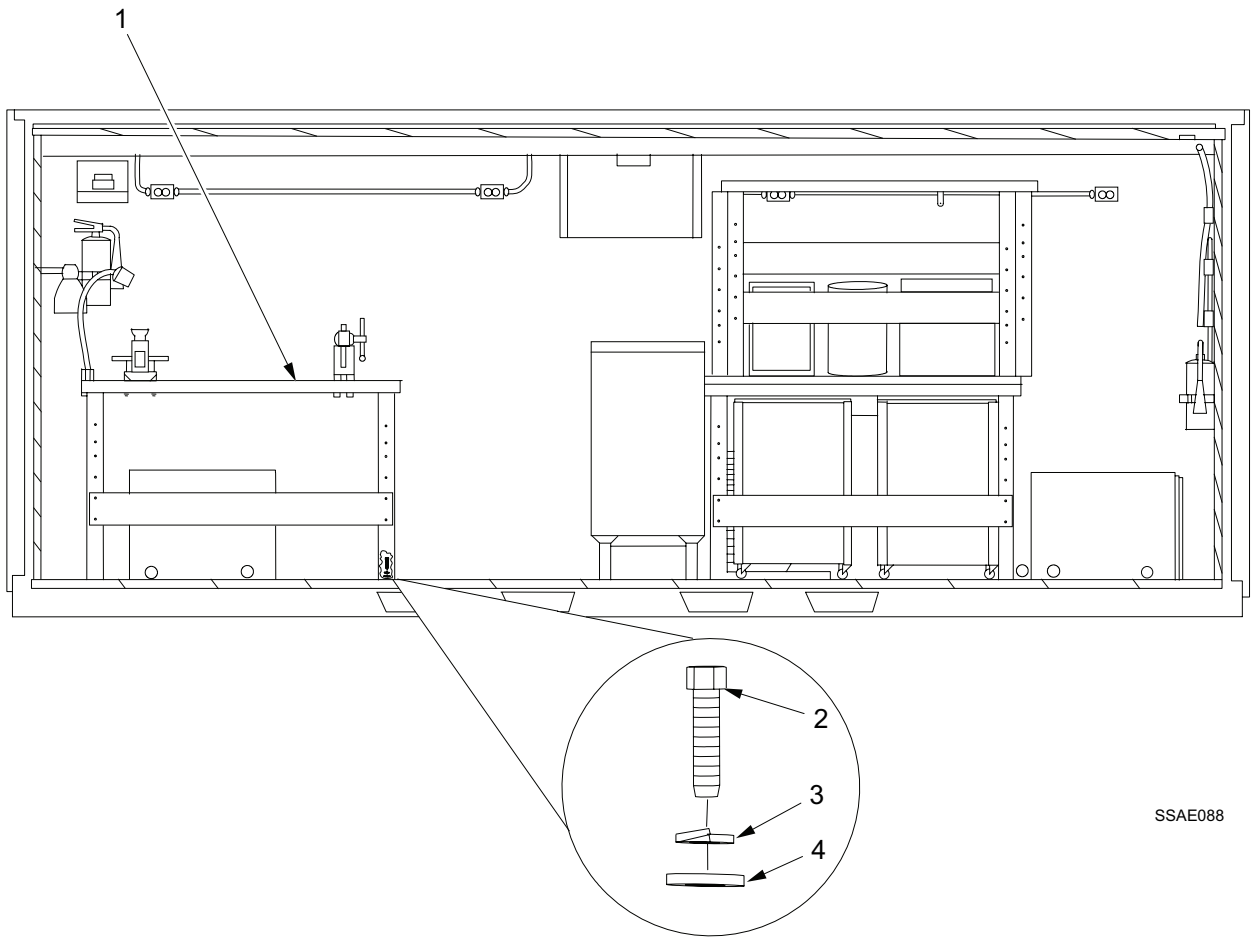
SSAE086

5. Remove mounting hardware securing ECU A (1) to fold-down panel (2).
6. Store hardware in secure storage location.



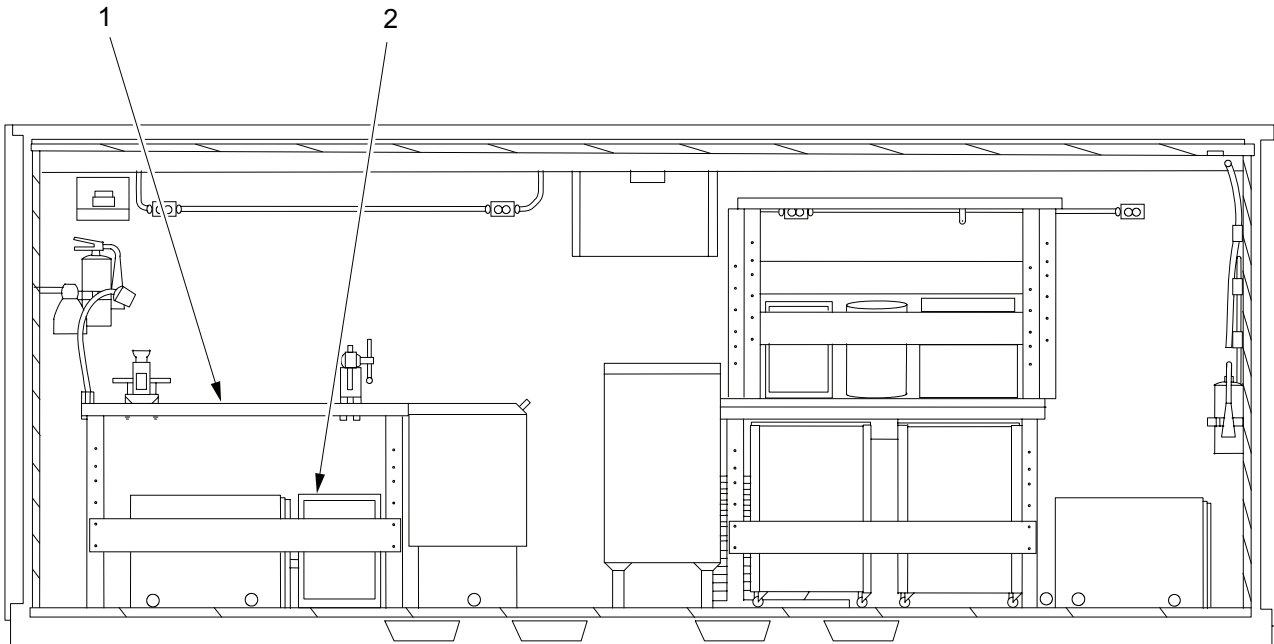
SSAE087

7. Using lift handles (5), slide ECU A (1) off fold-down panel, carry through personnel end door and position at transport location.
8. Position two cargo straps (3) on ECU A (1) and hook to ring bolts (4).
9. Tighten cargo straps (3) to secure ECU A (1).

POSITIONING TABLE ASSEMBLY A FOR TRANSPORT MODE

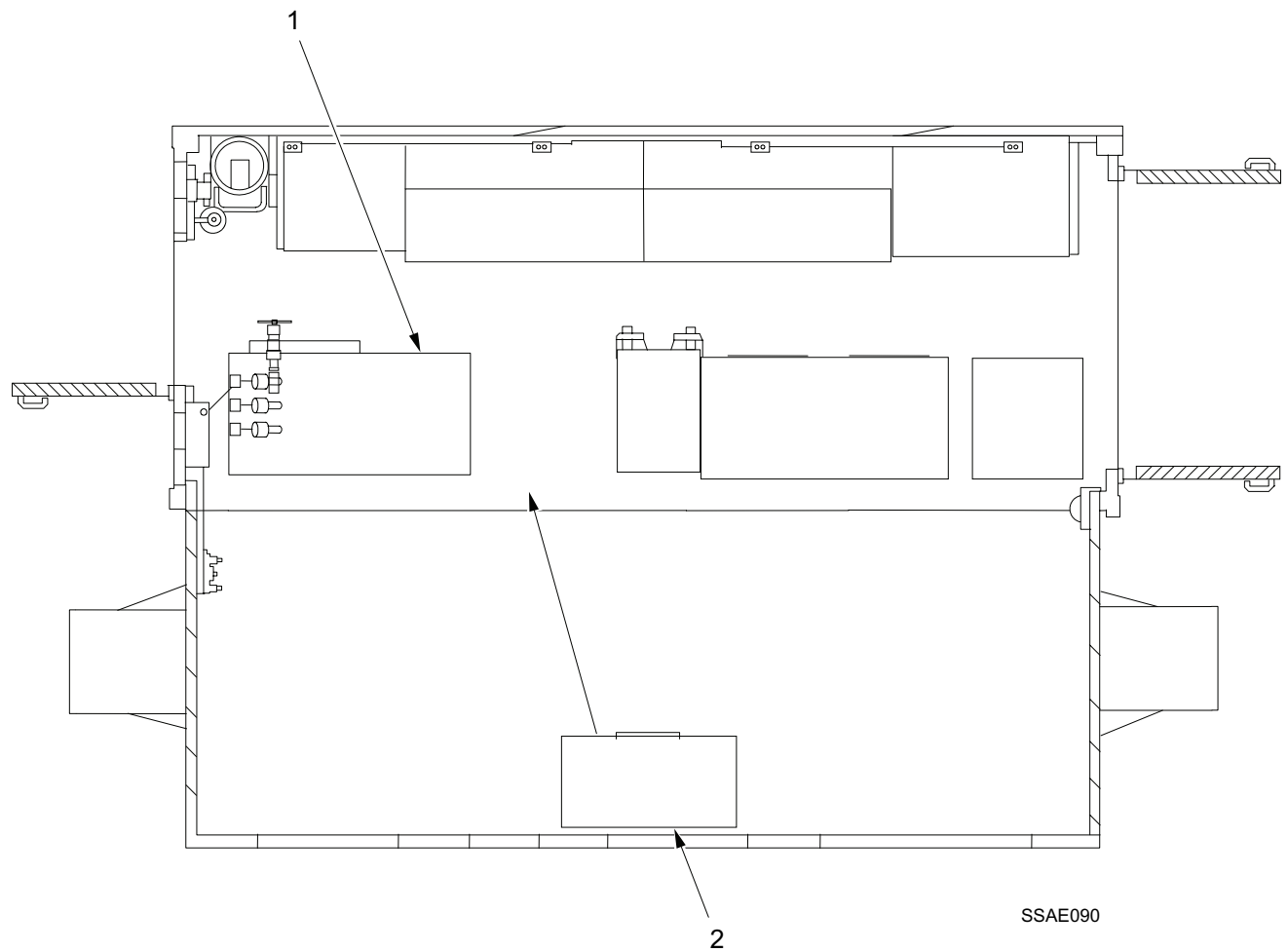
SSAE088

1. Position table assembly A (1) at transport location.
2. Obtain four bolts (2), four lock washers (3), and four flat washers (4) from cotton mailing bag.
3. Install four bolts (2), four lock washers (3), and four flat washers (4) securing table legs to floor.
4. Torque bolts 160-190 in. lbs.

POSITIONING CASE SET FOR TRANSPORT MODE

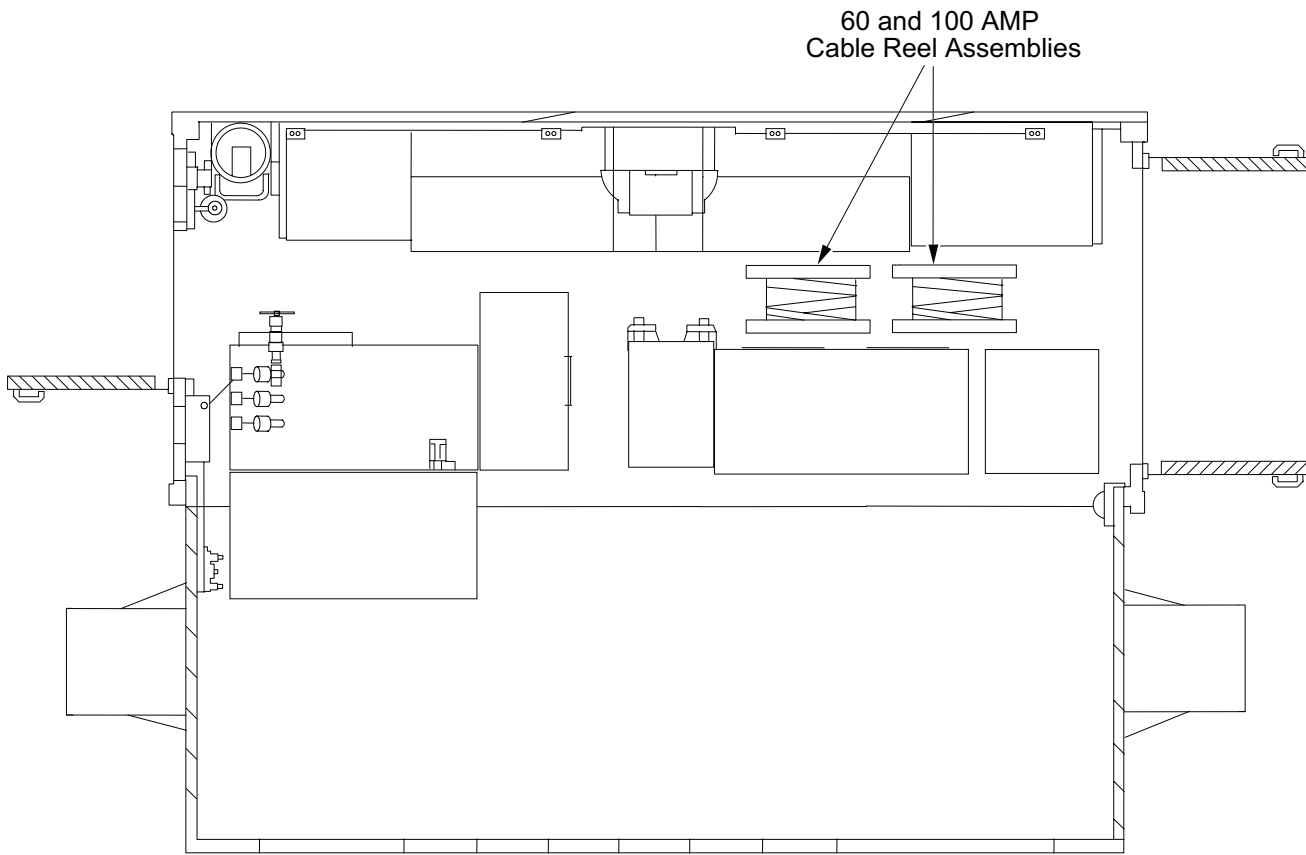
SSAE089

1. Obtain webbing strap assembly from storage location.
2. Position case set (2) underneath table assembly A (1).
3. Secure case set (2) to table leg assembly of table assembly A (1) with webbing strap assembly.

POSITIONING DEGREASER FOR TRANSPORT MODE

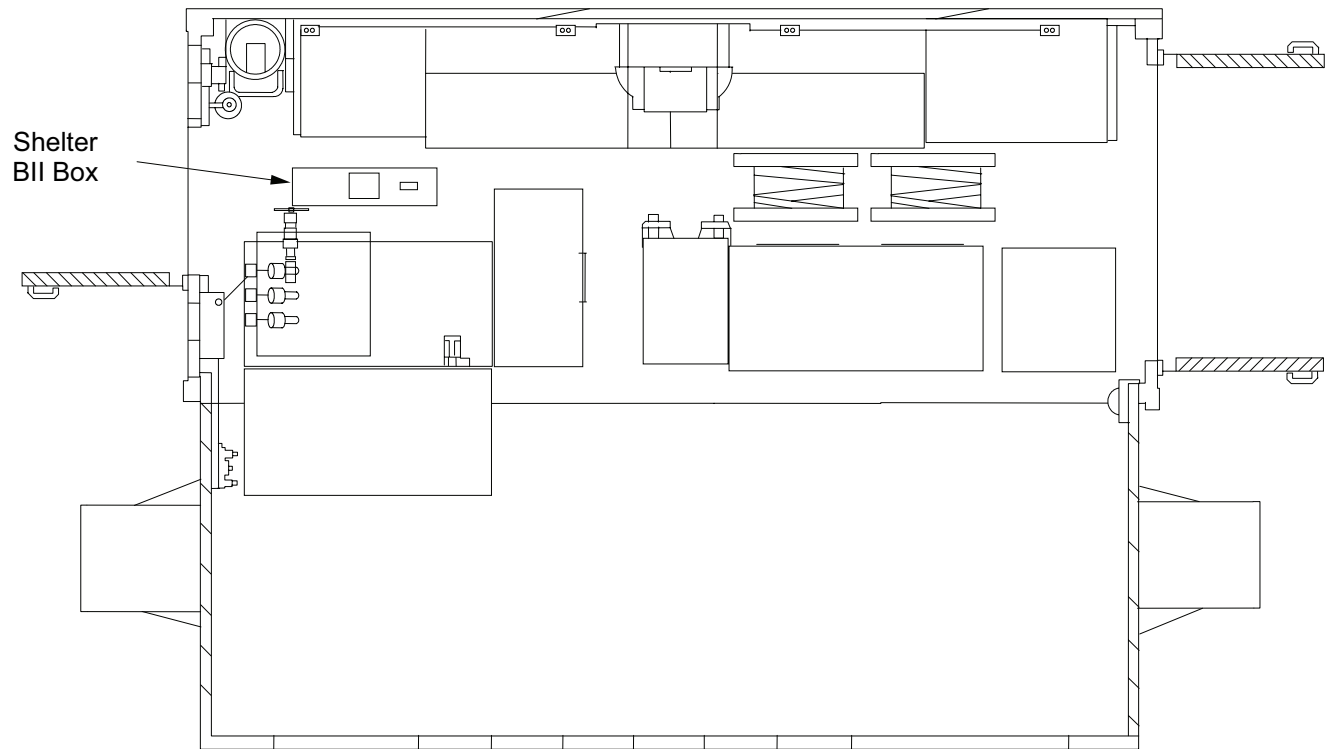
SSAE090

1. Remove two set screws from floor inserts at degreaser (2) transport location.
2. Store set screws in secure storage location.
3. Obtain cargo straps from storage location and four ring bolts from shelter BII box.
4. Insert ring bolts into floor inserts and secure.
5. Position degreaser (2) beside table assembly A (1).
6. Secure degreaser (2) to ring bolts with cargo straps.

POSITIONING 60 AND 100 AMP CABLE REEL ASSEMBLIES FOR TRANSPORT MODE

SSAE091

1. Remove four set screws from floor inserts at 60 and 100 amp cable reel assemblies transport location.
2. Store set screws in secure storage location.
3. Obtain cargo straps from storage location and two ring bolts from shelter BII box.
4. Insert ring bolts into floor inserts and secure.
5. Position 60 and 100 amp cable reel assemblies at transport location.
6. Secure 60 and 100 amp cable reel assemblies to ring bolts with cargo straps.

POSITIONING SHELTER BII BOX FOR TRANSPORT MODE

SSAE092

1. Remove two set screws from floor inserts at shelter BII box transport location.
2. Store set screws in secure storage location.
3. Obtain webbing straps from storage location and two ring bolts from shelter BII box.
4. Insert ring bolts into floor inserts and secure.
5. Position shelter BII box at transport location.
6. Secure shelter BII box to ring bolts with webbing straps.

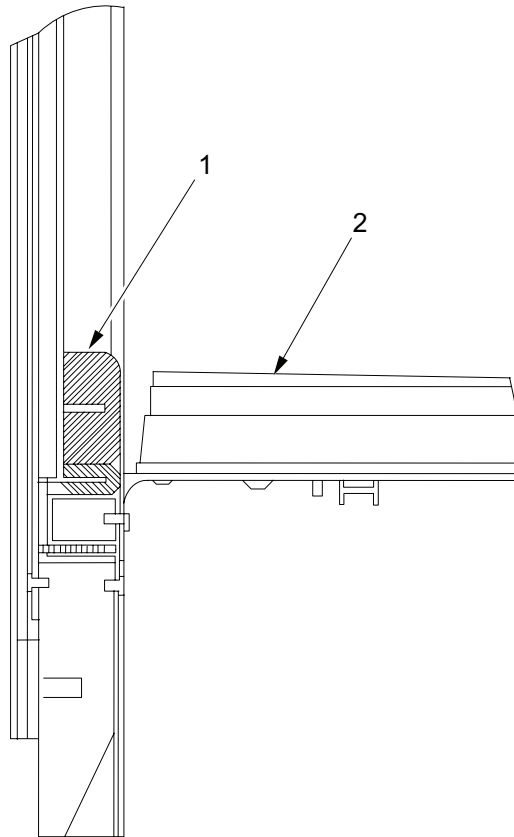
End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
OPERATION UNDER USUAL CONDITIONS**

NOTE

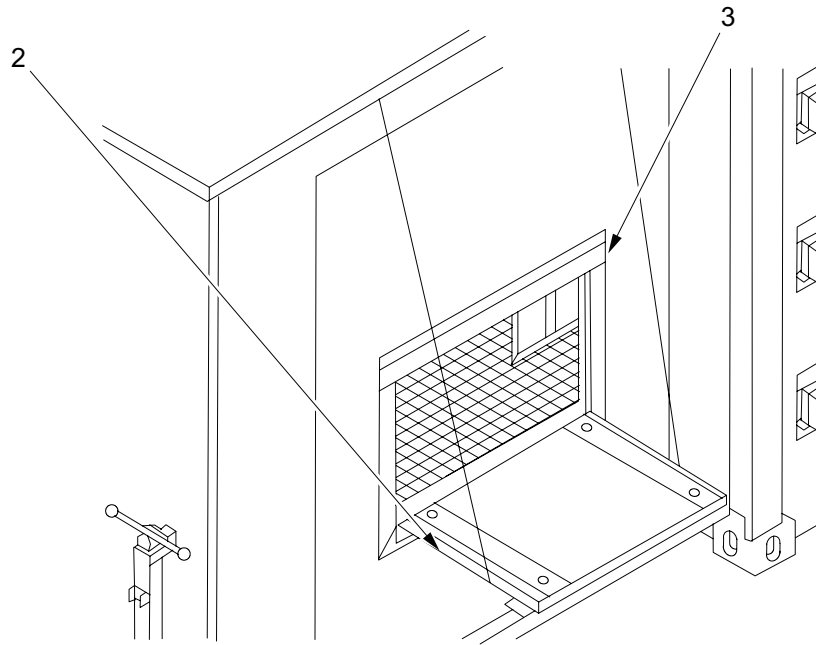
Skip this Work Package if ECUs are not installed.

CLOSING ECU FOLD-DOWN PANELS



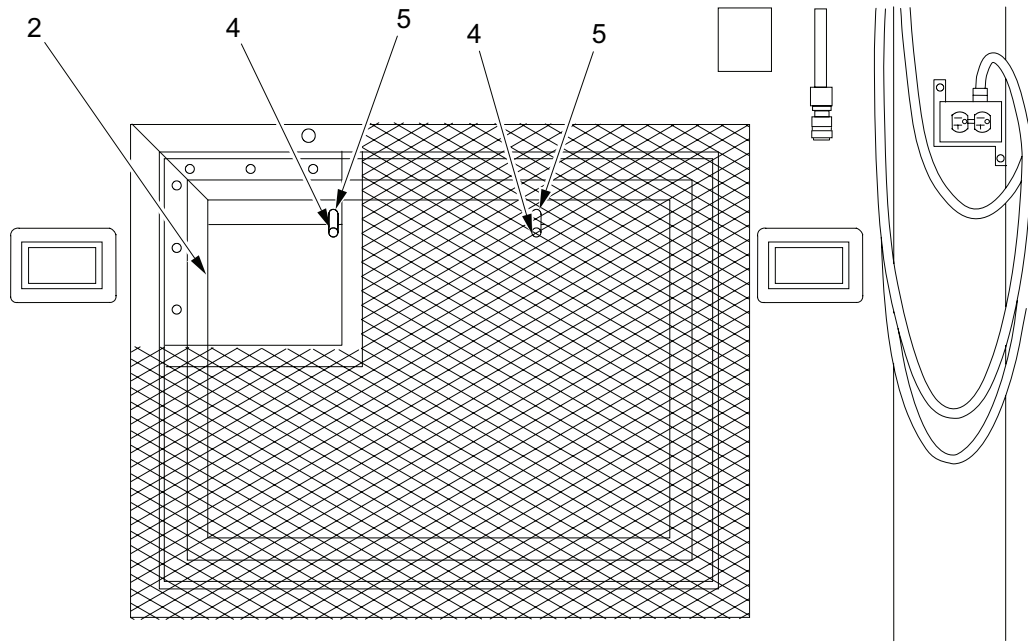
SSAE093

1. Remove T-seal (1) from gap located between ECU B fold-down panel (2) and ECU B security screen at cargo end of shelter.
2. Store T-seal (1) in shelter BII box.



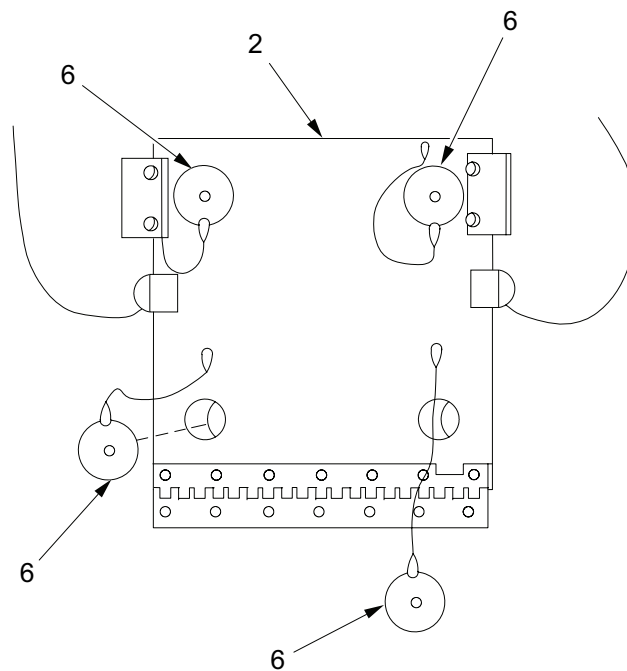
SSAE094

3. Lift outside seal (3) and close ECU B fold-down panel (2).



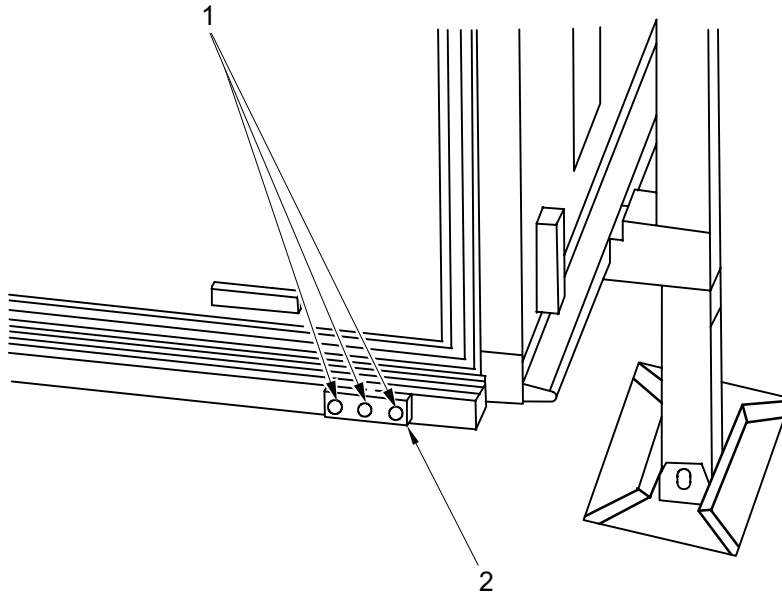
SSAE095

4. Turn latches (5) clockwise, to hold ECU B fold-down panel (2) in place, and secure latch bolts (4).



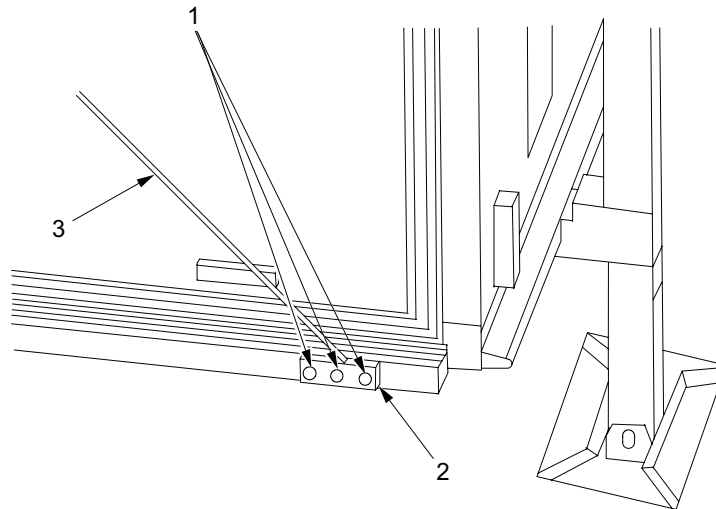
SSAE096

5. Insert four plugs (6) in ECU B fold-down panel (2).
6. Repeat these procedures for ECU A fold-down panel at personnel end of shelter.

CABLE GUIDE BLOCK INSTALLATION

SSAE097

1. Remove three screws (1) from cable guide block (2) at corner of fold-out floor.



SSAE098

2. Install support cable (3).
3. Replace cable guide block (2) with three screws (1) and tighten securely.
4. Repeat steps 1 through 3 for installing cable guide block (2) on opposite side of shelter.

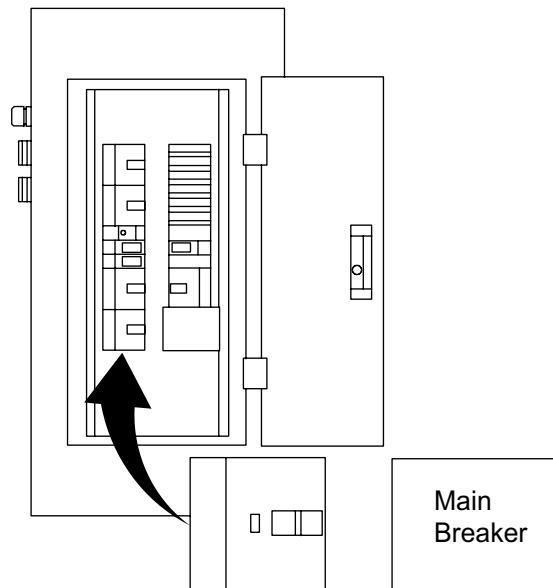
End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
OPERATION UNDER USUAL CONDITIONS**

WARNING

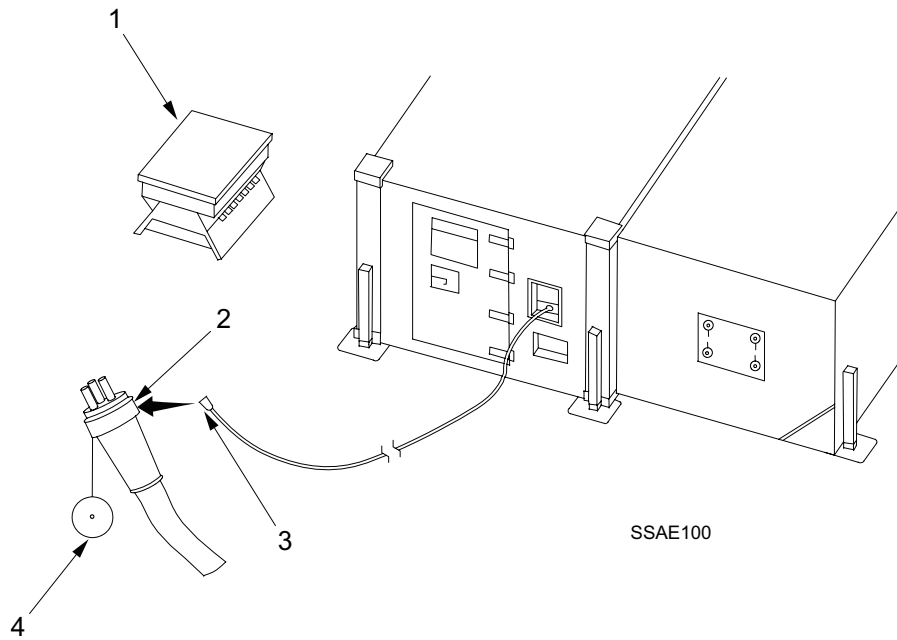
HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by qualified electricians. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

DISCONNECTING MAIN POWER CABLE

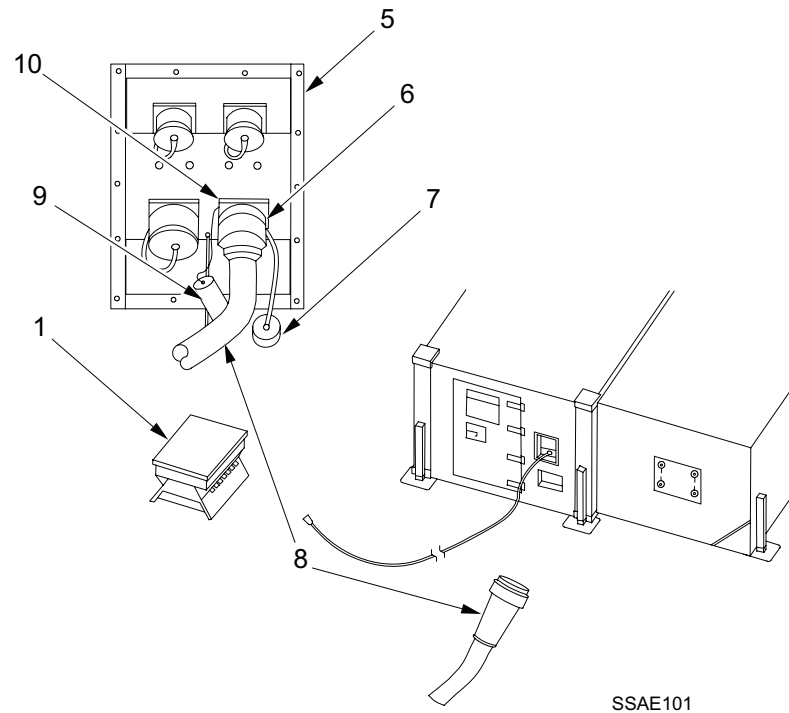


SSAE099

1. Ensure that all electrical tools and shop equipment are in the **OFF** position.
2. Before disconnecting the main 100 amp power cable, ensure that all circuit breakers (including main circuit breaker) in circuit breaker panel are in the **OFF** position.



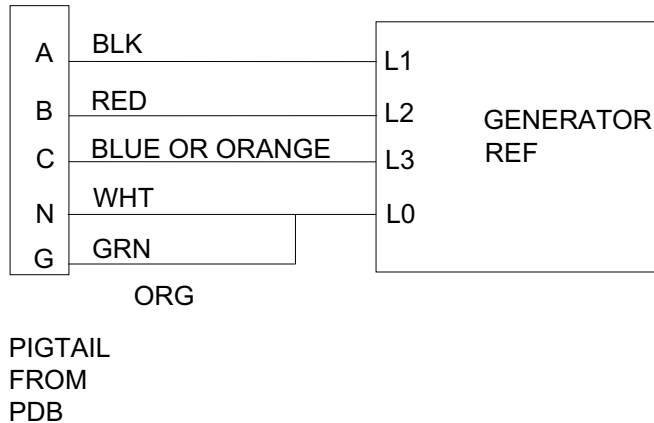
3. Ensure circuit breaker from PDB (1) is in the **OFF** position.
4. Unscrew lock ring (2) and disconnect male power connector (3) from PDB (1).
5. Install protective dust cap (4) on male power connector (3) and PDB receptacle (1).



6. Unscrew lock ring (6) and disconnect female power connector (8) from "J1" receptacle (10) at power entry panel (5).
7. Install protective dust cap (9) on the "J1" receptacle (10).
8. Install protective dust cap (7) on the female power connector (8).
9. Clean cable with rag. Store 100 amp power cable on cable reel (WP 0002, Figure 4, Item 16).

DISCONNECTING PDB FROM GENERATOR (IF NECESSARY)**WARNING**

This procedure is required only if a complete power shutdown is necessary. Only a qualified electrician should attempt to disconnect PDB from generator.

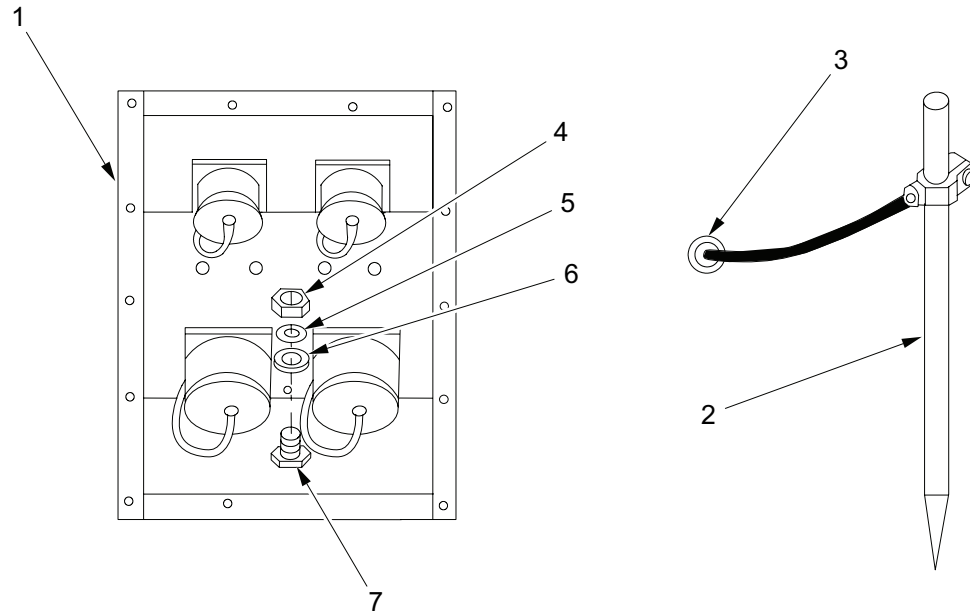


SSAE102

1. Ensure all circuit breakers on PDB are in the **OFF** position.
2. A qualified electrician will disconnect pigtail wires from generator lugs. Disconnect black wire from lug L1, red wire from lug L2, blue or orange wire from lug L3, and white and green wires from lug L0 on generator.
3. Disconnect pigtail from PDB.

REMOVING EXTERNAL GROUND ROD**NOTE**

Shelter is grounded through externally connected power supply.



SSAE103

1. On power entry panel (1) remove nut (4), lock washer (5), and flat washer (6) from ground stud (7).
2. Disconnect ground cable lug (3) from ground stud (7).
3. Replace flat washer (6), lock washer (5), and nut (4) on ground stud (7).
4. Remove grounding rod (2) from earth.
5. Store grounding rod assembly in secure storage location.

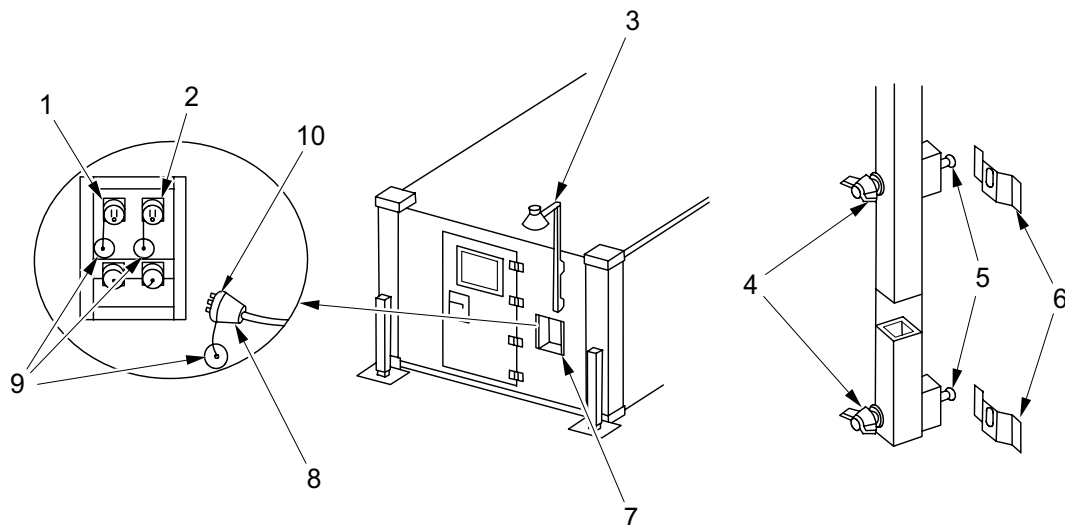
End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
OPERATION UNDER USUAL CONDITIONS**

NOTES

- Ensure hinged floor is clear of items or debris and floor hinges are clean of sand or dirt.
- Ensure top of hinged roof is clear of items, debris, snow, or ice and hinged floor extension is clear of foreign matter, snow, or ice.
- Do not attempt to remove ISO jack assemblies until after shelter has been lowered.
- When floor is lowered, (to allow roof clearance for folding) devices securing fold-out floor support cables can be disengaged.

REMOVING AREA LIGHT



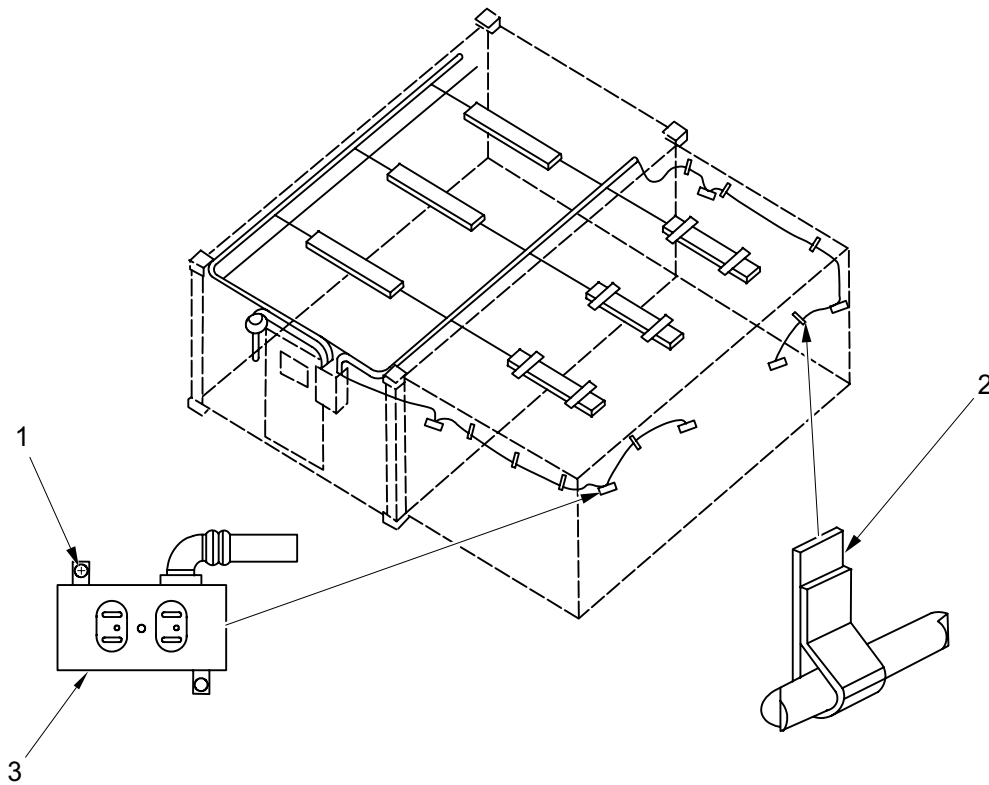
SSAE104

1. Disconnect area light cable (8) from either "J3" or "J4" connector (1 or 2) on power entry panel (7) by loosening lock ring (10).
2. Replace protective dust cap (9) on "J3" or "J4" connector (1 or 2) on power entry panel (7).
3. Replace protective dust cap (9) on area light cable (8).

NOTE

Do not remove wing nuts from screws.

4. Loosen, **NOT** removing, wing nuts (4) and remove area light (3) from location outside shelter.
5. Roll up area light cable (8).
6. Remove bulb and store in shelter BII box.
7. Install area light (3) on inside fixed personnel end wall by securing mounting screws (5) to mounting brackets (6) and tightening wing nuts (4).

REMOVING CABLE AND RECEPTACLE ASSEMBLY

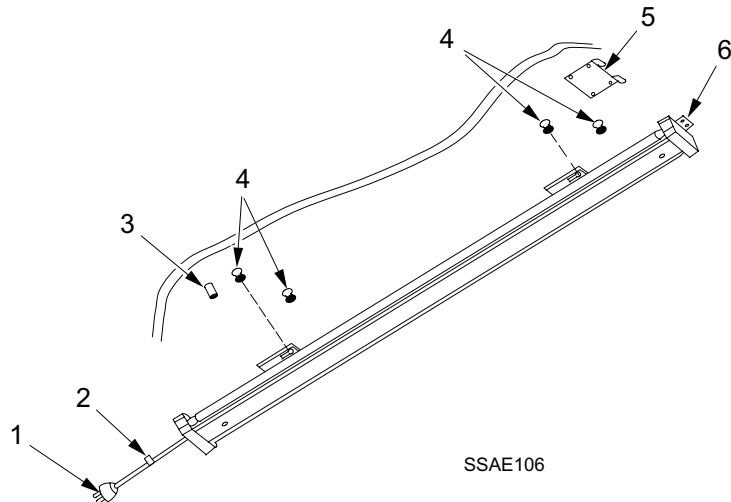
SSAE105

1. Release power cables from Velcro straps (2).
2. Release captive fasteners (1) and reposition receptacles (3) from operation mode on hinged sidewall to transport mode on hinged end walls.
3. Position receptacles (3) with power cables facing upward and secure with captive fasteners (1).
4. Repeat steps 1 through 3 at opposite end of shelter.

REMOVING CEILING LIGHTS FROM HINGED ROOF

WARNINGS

- Ensure main circuit breaker and all other circuit breakers in circuit breaker panel are in the **OFF** position.
- Inhalation of phosphorous dust could cause **SERIOUS INJURY** to personnel. In an event of lamp breakage, care must be taken in removal of broken glass fragments and white phosphorous dust that may be dispersed within fixture.



1. Twist power cable (1) one-quarter turn counterclockwise to unlock and then remove from connector.
2. Press and hold plunger lock (3).
3. Move entire light fixture (6) lengthwise away from power cable (1) to disengage light from four captive studs (4) and light storage bracket (5) in hinged roof.
4. Move light fixture (6) into fixed roof section and rotate 180 degrees. Mate with four captive studs (4) in fixed roof.
5. Secure light fixture (6) by moving until plunger lock (3) engages.
6. Place power cable (1) into storage clip (2) on ceiling.
7. Repeat steps 1 through 6 for two remaining ceiling lights.

RELEASING SHELTER LATCHES

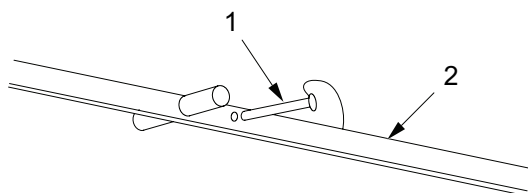
1. Remove two removable latches from hinged sidewall.
2. Remove one removable latch from each hinged end wall.
3. Place four removable latches in shelter BII box.

WARNING

It is essential that non-removable latches are pressed flat into pans.

4. Release all non-removable latches between hinged sidewall, end wall, roof, and floor and press flat in pans.

RELEASING SHELTER WALLS



SSAE107

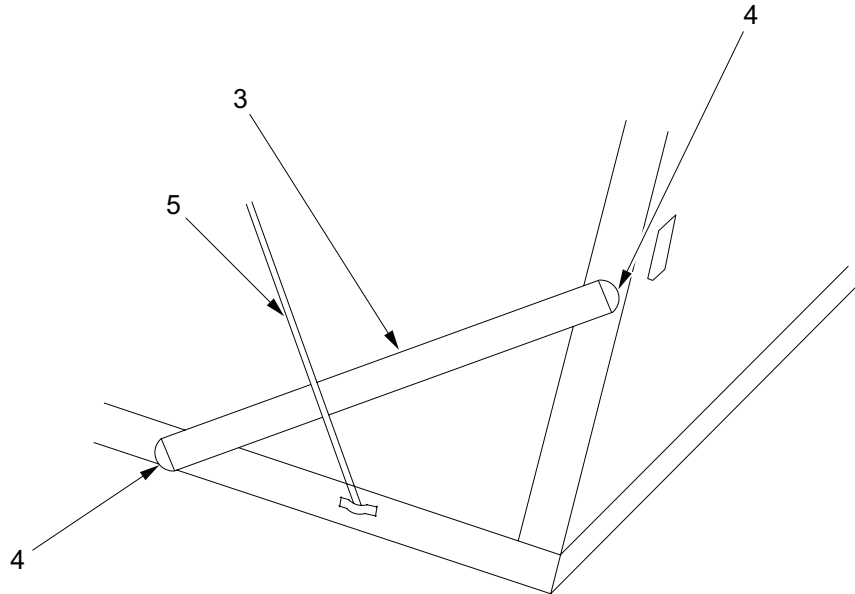
1. Lower two support struts (2) from hinged roof by removing lock pin (1).
2. Extend support struts (2) to their full length and insert lock pin (1).
3. Using two personnel raise roof with support struts (2) and set support struts (2) in place.

CAUTION

Ensure hinged end walls do not hit Velcro straps to prevent damage.

NOTE

Stencil on jack indicates handle rotation to raise or lower jack.



SSAE108

4. Simultaneously lower hinged floor with hinged jacks until hinged end walls can swing freely.
5. Remove two sidewall support braces (3) from shelter BII box.
6. Install two sidewall support braces (3) in brace cups marked "A" (4) on hinged floor and sidewall behind support cable (5).
7. Place two ECU support cables over each hinged end wall and secure cable ends to ECU screen.
8. Fold in each hinged end wall to roof beam and hold in place with Velcro straps.

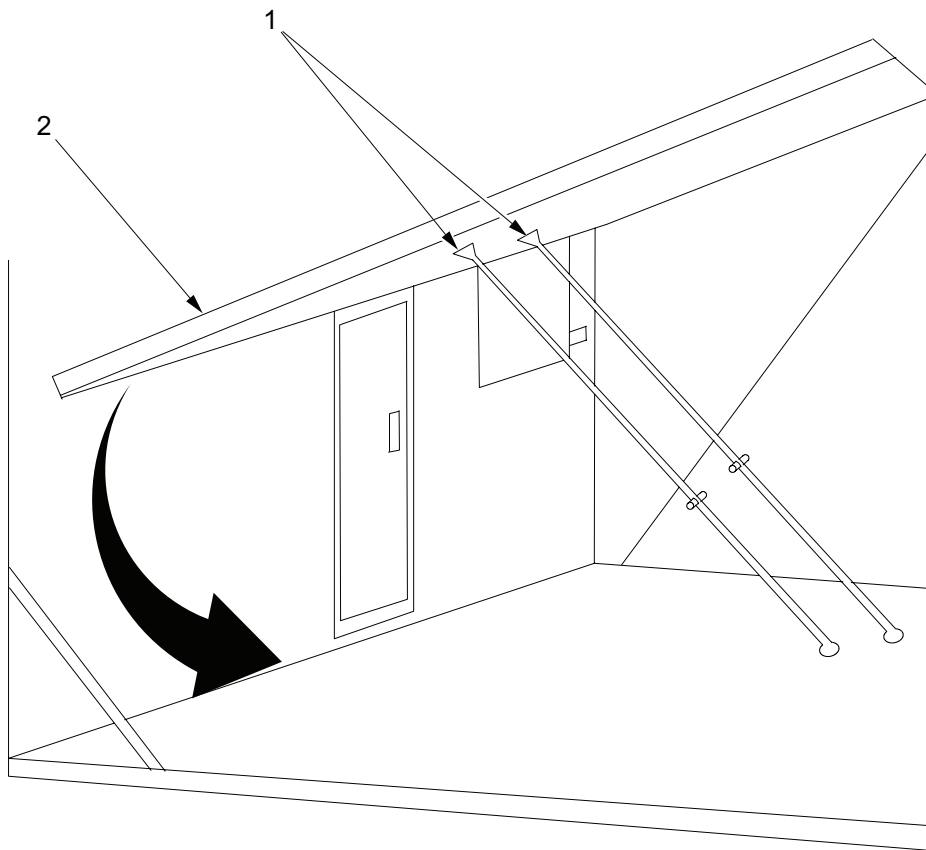
LOWERING SHELTER ROOF

WARNINGS

- When all equipment and material is stored on stationary side of shelter, limited floor space presents a safety hazard to personnel. This is most critical during raising and lowering of roof panel. Personnel inside shelter could become trapped between roof panel and equipment bolted to floor. Failure to observe warning could result in **SERIOUS INJURY** to personnel.
- A minimum of four personnel are required to perform all of the following procedures.

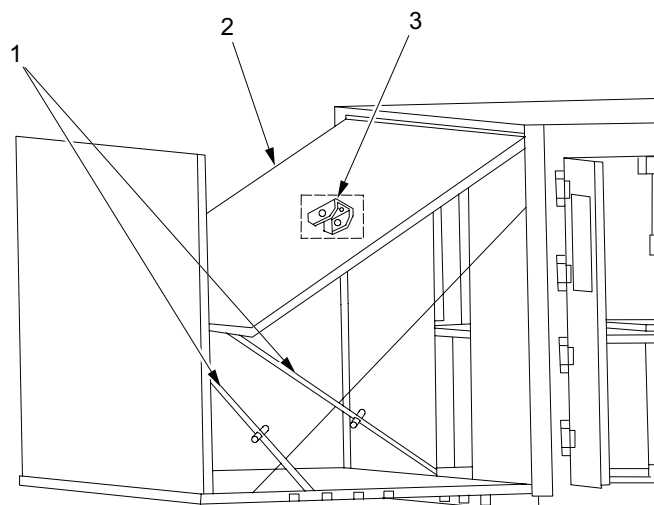
CAUTION

When swinging end wall closed, d-rings on ECU panel should be pressed flat against panel to prevent damage to hinged roof.



SSAE109

1. Two personnel inside shelter, using support struts (1), will lower roof panel (2) until two personnel outside can reach and hold weight of roof panel (2).

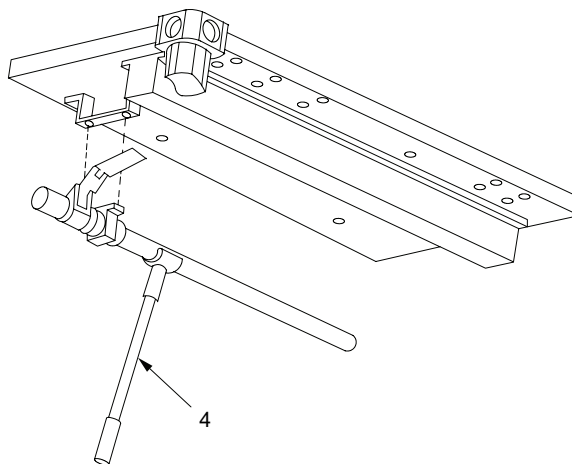


SSAE110

CAUTION

Ensure all inside personnel have moved to outside of shelter to assist personnel for following step.

2. Inside personnel will shorten two support struts (1) and secure to ceiling brackets (3).
3. Allow the roof panel (2) to close to a vertical position.



SSAE111

4. Slide hinged roof inward to storage position by rotating the solar bar handles (4) upward.

NOTE

For more information on jack extensions, refer to WP 0005 00, Positioning Hinged Jacks for Leveling.

5. Remove safety pin from hinged jack assemblies.
6. Lower and remove hinged jack assemblies (and extensions, if used) supporting hinged floor.
7. Store hinged jack assemblies on left cargo door and secure with safety pins.
8. While holding hinged sidewall, remove two sidewall support braces and store in shelter BII box.

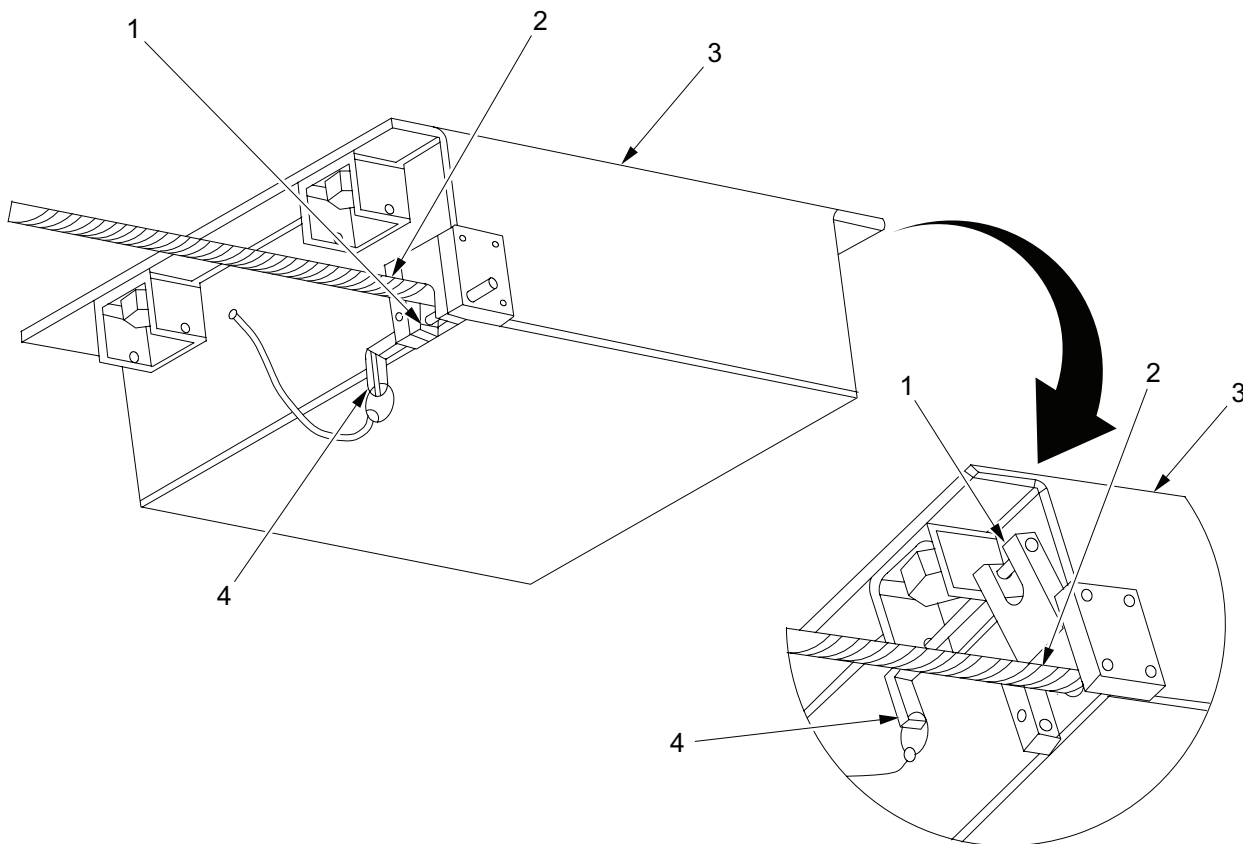
WARNING

To avoid injury, be careful not to get caught between cable and sidewall panel. Trapped air acts as a cushion so do not attempt to control panel if it is accidentally dropped.

9. Fold down hinged sidewall onto hinged floor. Allow wall to free fall before it comes to same plane as cables.

RAISING HINGED FLOOR**WARNING**

Fold-out floor support cables must be secured in cable housings prior to raising shelter floor from its lowered position to its level position. If support cables are not secured, support cables will remain under tension. **DO NOT** attempt to remove cables if support cables are not secure. Removing support cables while under tension could cause **SERIOUS INJURY** to personnel.



SSAE112

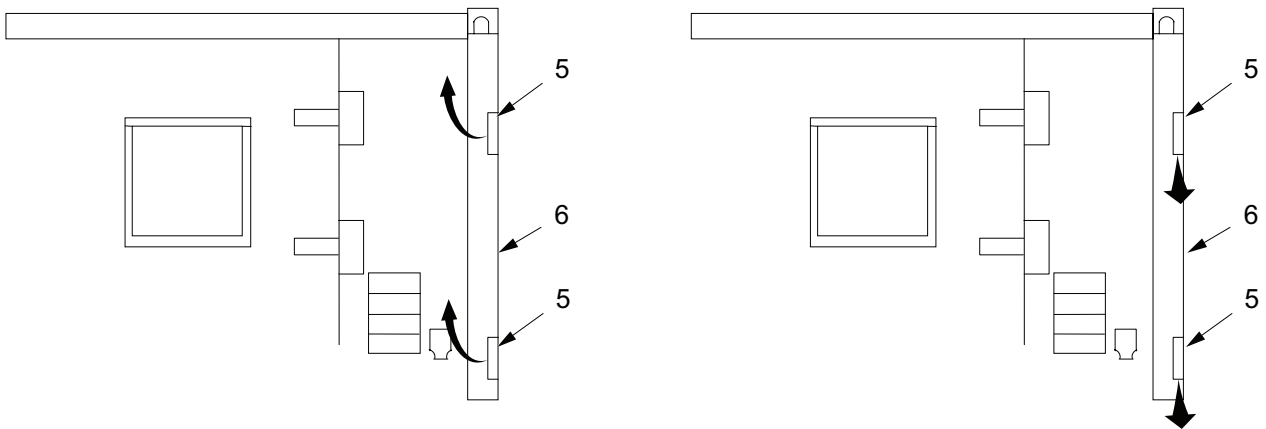
1. Remove lockout pins (4) from lower position on both load balancers (3).
2. Open slide stops (1) against support cables (2) on both load balancers (3).
3. Replace lockout pins (4) in upper position on both load balancers (3).
4. Position cam locks so handles are vertical and down for cargo end and vertical and up on personnel end of shop.

WARNING

Expandable sections, which consist of hinged floor and hinged sidewall, weighs 700 pounds (318 kg). **DO NOT** stand directly in front of hinged section.

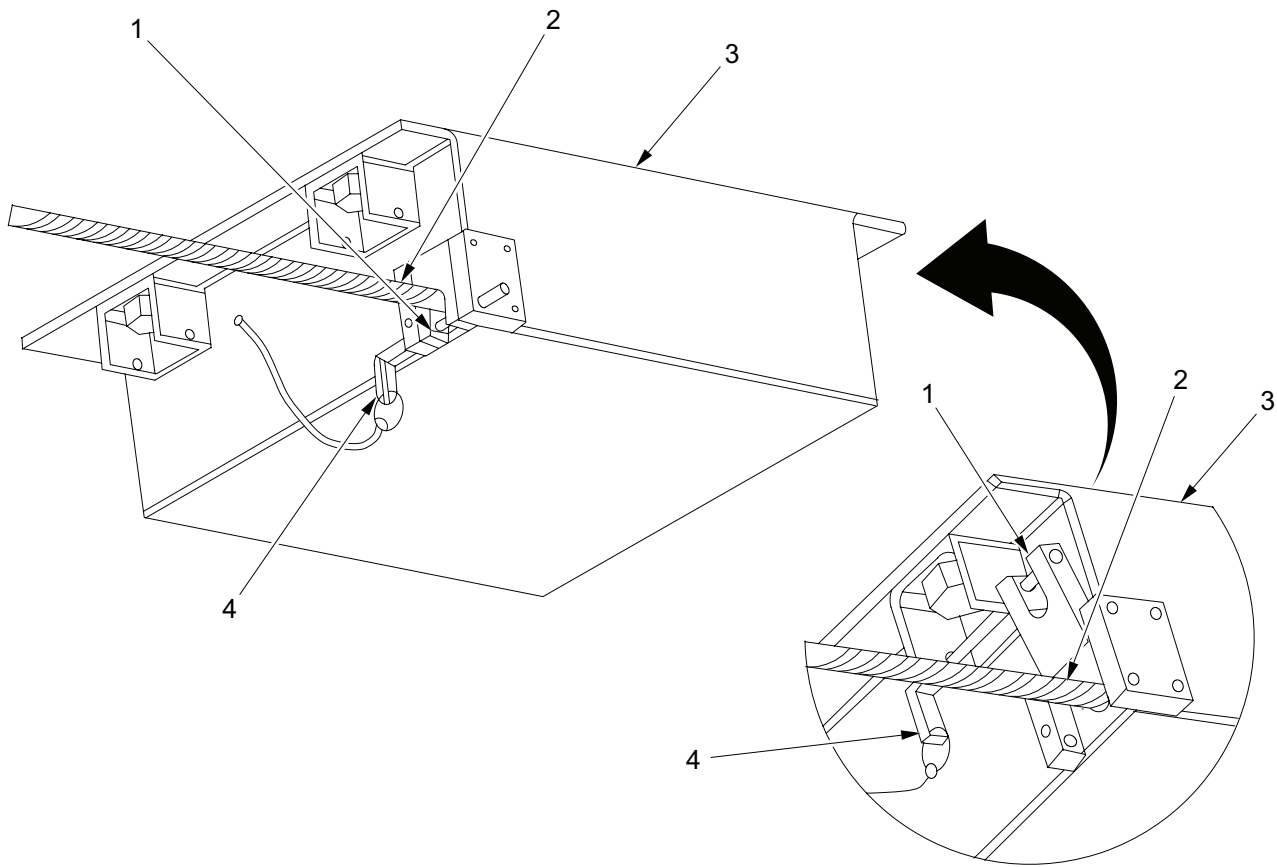
NOTE

If hinged floor and corner post bind, re-level shelter.



SSAE113

5. Raise hinged floor and secure to corner post (6) with cam locks (5).
6. Rotate cam lock handles (5) as indicated and engage lower locks first. Ensure that pins are in holes.

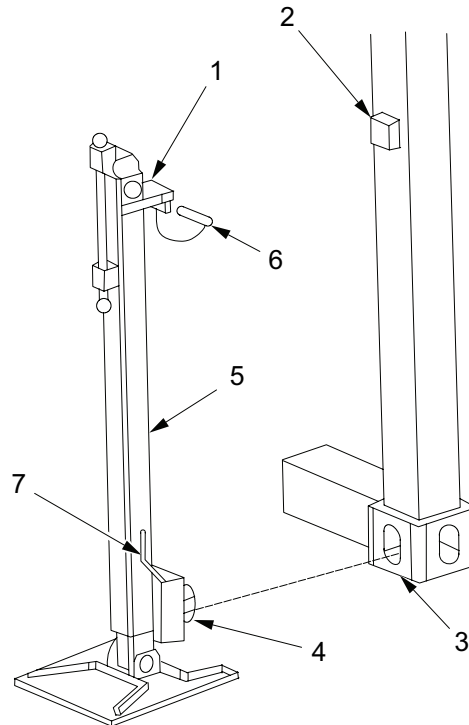


SSAE114

7. Remove lockout pins (4) from upper position on both cable reels (3).
8. Close slide stops (1) against support cables (2) on both cable reels (3).
9. Replace lockout pins (4) in lower position on both cable reels (3).

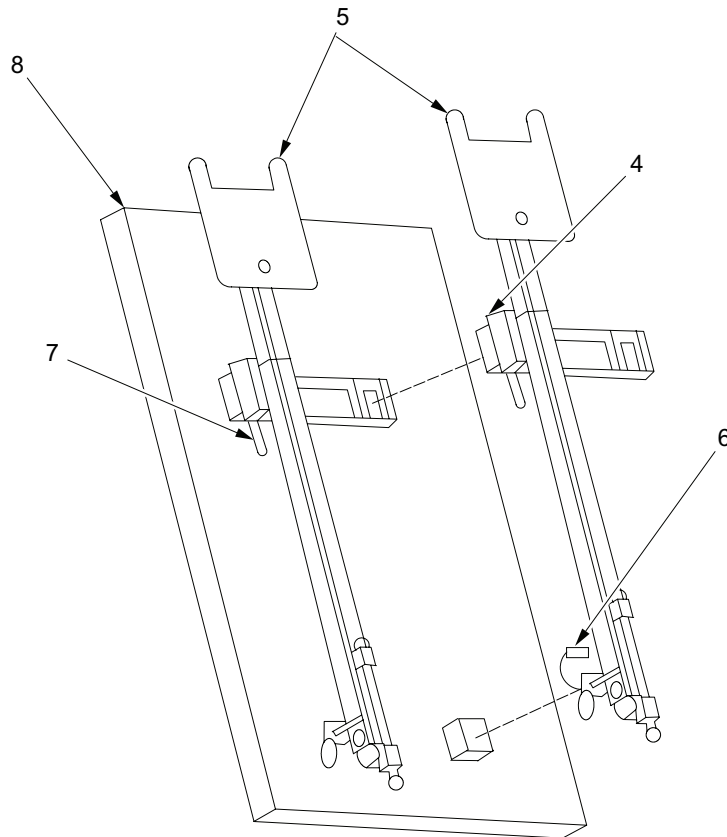
LOWERING SHELTER**NOTES**

- If it is intended to use a dolly set to move shelter, place pieces of 4x4 lumber under frame. Ensure that ISO fittings are clear to facilitate mounting of dolly set.
- Stencil on ISO jack assemblies indicate handle rotation to raise or lower jack.



SSAE115

1. Remove safety pins (6) from ISO jack assemblies (5).
2. Lower all ISO jack assemblies (5) simultaneously until shelter is completely lowered.
3. Turn locking handle (7) clockwise thus unlocking jack attachment (4) from ISO fitting (3).
4. Remove upper jack attachment insert (1) from upper jack support bracket (2).
5. Remove ISO jack assemblies (5) from four corners of shelter.



SSAE116

- Replace four ISO jack assemblies (5) inside of personnel and right cargo doors (8) by turning locking handle (7) to secure jack attachment (4) and insert safety pin (6).

SECURING THE SHELTER

CAUTION

Left cargo door has a chain latch and a spring latch. These latches must be properly engaged or door is not secure.

- Close shelter doors and check security of shelter.

WARNING

Door handle must be padlocked at 12 o'clock position for shipping mode and 3 o'clock position for storage mode. Correct locking positions ensure that doors are secure and remain closed.

- Place padlocks on outside door handles.
- The Armament and Electrical Shop is ready for transport or storage.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
OPERATION UNDER UNUSUAL CONDITIONS**

OPERATION IN RAIN AND/OR MUD

1. When setting up shelter, place wood planks or boards under each jack pad to increase bearing area.
2. Provide an adequate drainage ditch to prevent water from standing around shelter area.
3. Check ISO and hinged jack assemblies frequently for sinking and level shelter, if required, by adjusting ISO and hinged jack assemblies.
4. Close and secure all doors in shelter.
5. Check seals for proper placement and compression.

OPERATION IN SNOW, ICE, OR EXTREME COLD

WARNING

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

NOTE

Fluorescent lights have a delay time in coming on at temperatures of 0°F and below.

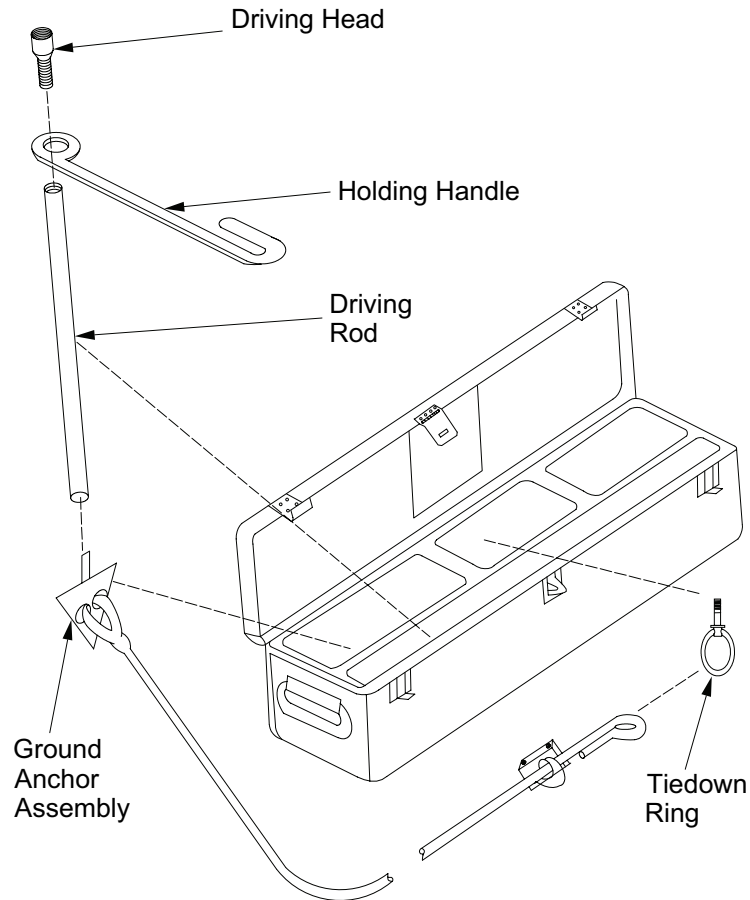
1. Frequently remove snow from roof with a soft bristle brush, broom, or equivalent.
2. Remove ice from shelter before lowering hinged panels.
3. Ensure ECUs are properly positioned.
4. Keep all doors and vents closed.

OPERATION IN HIGH WINDS**WARNING**

To avoid injury when expanding or closing hinged sidewall in high winds, use six personnel.

NOTE

Two personnel are required to perform the following procedure.

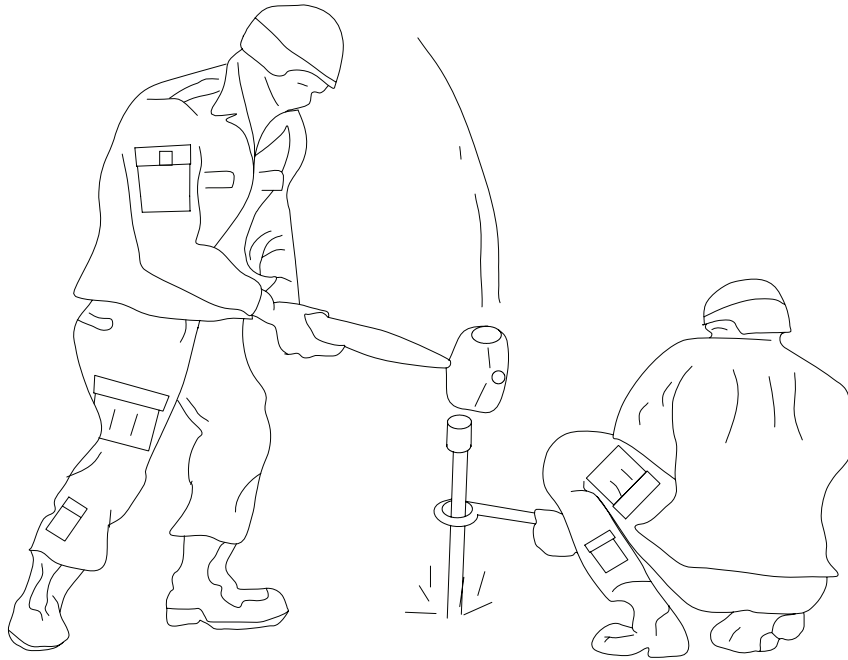


SSAE117

1. To install storm configuration (tie-down installation) kit, use the following items:
 - a. Ground anchor assembly
 - b. Driving rod
 - c. Holding handle
 - d. Driving head
 - e. Tie-down ring

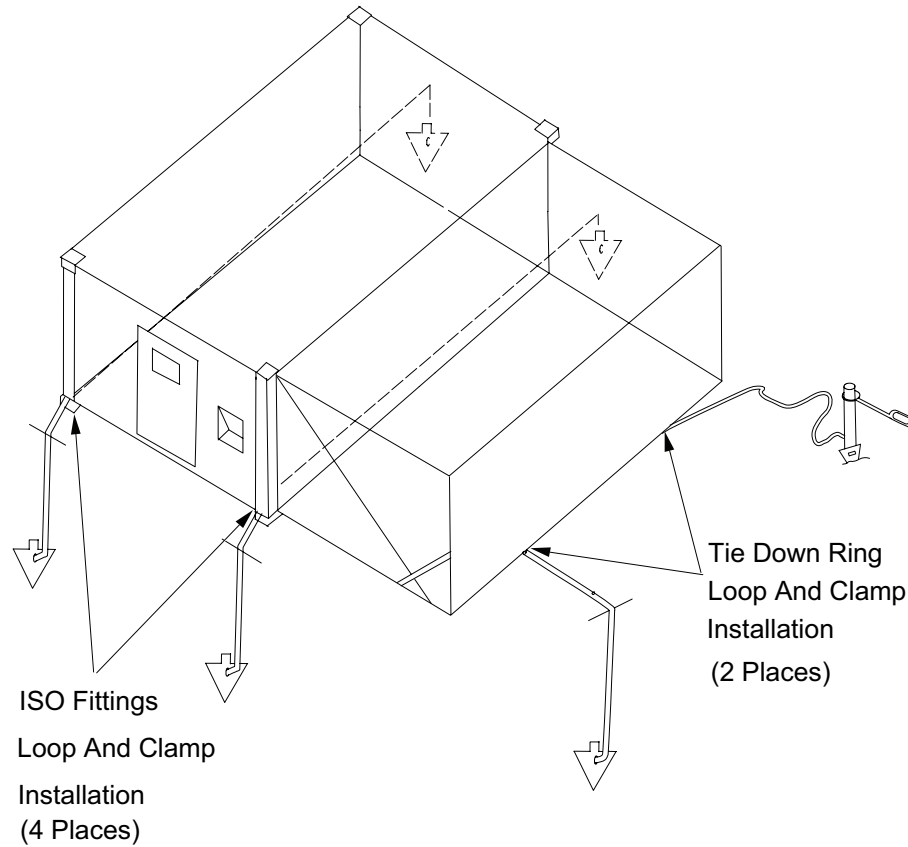
WARNING

Eye protection must be worn by personnel when installing ground anchors.



SSAE118

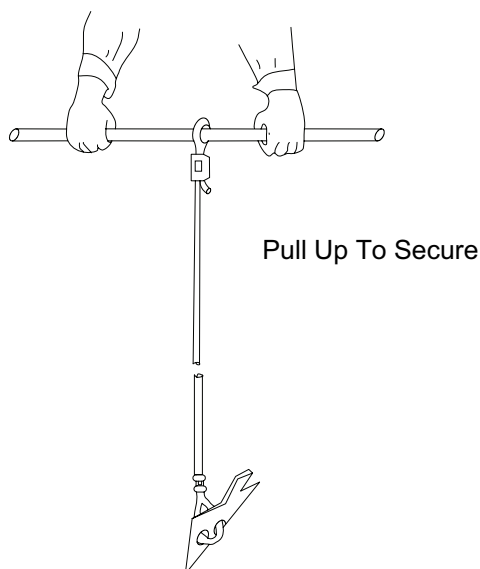
2. One person shall support driving rod with holding handle, while second person drives ground anchor into ground using a 12-pound sledge hammer.



3. Drive each of six loop and clamp ground anchors into ground approximately 3 feet (91.5 cm) deep, and as close as possible to shelter attaching points, at locations indicated.
4. Set each ground anchor by forming a loop in cable end and secure loop with clamp.

NOTE

A minimum of a quarter turn is required to obtain maximum holding power.

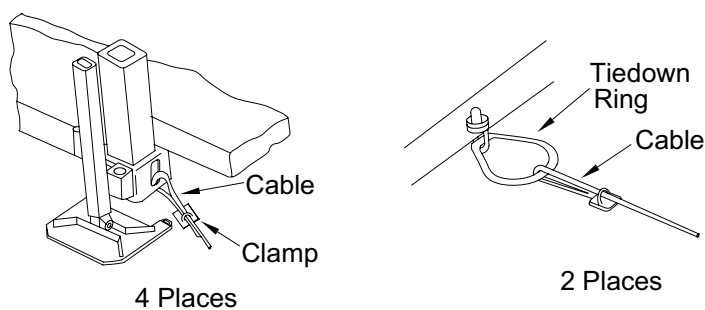


SSAE120

5. Insert driving rod through loop and pull up sharply to ensure anchor is set into ground.

NOTE

When moving shelter, disassemble storm configuration kit and cut cable as close to ground as possible. Discard cable components. Retain the two tie-down rings and store in shelter BII box.



SSAE121

6. Remove clamp, loop cable at six places (two with tie-down rings) as shown.
7. Replace clamp and tighten clamp nuts.

OPERATION DURING BLACKOUT CONDITIONS**NOTES**

- During blackout conditions, enter and leave shelter through personnel entrance door only. Do not operate exterior area light.
 - Blackout override switch must remain in **OFF** position for duration of blackout conditions.
1. Activate all interior lights and check from 25 feet (7.6 m) away to ensure light is not visible.
 2. Place blackout override switch in **OFF** position.

OPERATION FOR IMPROVING SOIL CONDUCTIVITY FOR SHELTER GROUNDING

At sites where the soil quality is very poor or very dry, special steps need to be taken to enhance the soil conductivity near the grounding rod. The first option is to drive the grounding rod deep enough to reach the moist subsoil, if possible. If there is no moist subsoil or if the soil condition will not allow for deep penetration, the second option is to drive the grounding rod as deeply as possible and apply water at regular intervals to keep the soil moist.

The best way to substantially improve the effectiveness of the grounding rod is to use a salt and water mixture. Use 1 pound of salt for each gallon of water. Dig a shallow trench at the distance of 18 inches around the grounding rod so that the liquid does not run off. To replace the salt that leaches into the soil, mix salt with the water at least once a week. Optionally, salt can be placed in the trench and then covered, which will leach into the soil whenever it rains.

End of Work Package

**CHAPTER 3
TROUBLESHOOTING PROCEDURES
FOR
ARMAMENT AND ELECTRICAL SHOP**

**ARMAMENT AND ELECTRICAL SHOP
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)

Personnel Required: (1)

CMF 15 Series

References:

TM 5-4120-369-14
TM 10-5411-201-14
Oil Free Portable Air Compressor
Explosion Proof, Dust Ignition Proof Industrial
Vaccum Cleaner System
Pure Flow 1000
Arm-EVAC 50
Jet Arbor Press

-
1. If troubleshooting procedures are required for shelter, refer to TM 10-5411-201-14.
 2. If troubleshooting procedures are required for equipment refer to:
 - a. Technical Manuals:
TM 5-4120-369-14, Air Conditioner Horizontal Compact
 - b. COTS:
 - (1) Oil Free Portable Air Compressor
 - (2) Explosion Proof, Dust Ignition Proof Industrial
 - (3) Vaccum Cleaner System
 - (4) Pure Flow 1000
 - (5) Arm-EVAC 50
 - (6) Jet Arbor Press

End of Work Package

**CHAPTER 4
MAINTENANCE INSTRUCTIONS
FOR
ARMAMENT AND ELECTRICAL SHOP**

**ARMAMENT AND ELECTRICAL SHOP
SERVICE UPON RECEIPT OF MATERIEL**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0041 00, Table 2, Item 101)

Personnel Required: (1)

CMF 15 Series

References:

WP 0019 00 – WP 0038 00
TM 5-4120-369-14
TM 10-5411-201-14
Oil Free Portable Air Compressor
Explosion Proof, Dust Ignition Proof Industrial
Vaccum Cleaner System
Pure Flow 1000
Arm-EVAC 50
Jet Arbor Press

-
1. Perform an inventory on shelter contents.
 2. Inspect cabinet assemblies and work table top assemblies to ensure that mounting hardware is firmly secured to floor, wall, cabinet and cabinet brackets (see WP 0019 00, 0021 00, 0038 00).
 3. Inspect all equipment that is installed to counter tops, wall mounts, and floor mounts to ensure that all items are firmly secured (see WPs 0020 00, 0022 00 through 0027 00, 0037 00, and 0038 00).
 4. Preventive Maintenance (PM) and preoperational services will be performed IAW applicable shelter equipment TM's or manufacturer-supplied operating manuals.
 - a. TMs:
 - (1) TM 5-4120-369-14, Air Conditioner Horizontal Compact
 - (2) TM 10-5411-201-14, Operator, Organizational, Direct Support, and General Support Maintenance for Shelter, Tactical, Expandable, One-Sided
 - b. COTS:
 - (1) Oil Free Portable Air Compressor
 - (2) Explosion Proof, Dust Ignition Proof Industrial
 - (3) Vaccum Cleaner System
 - (4) Pure Flow 1000
 - (5) Arm-EVAC 50
 - (6) Jet Arbor Press

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR CABINET BRACKET AND CABINET ASSEMBLIES**

INITIAL SETUP**Tools And Special Tools:**

- General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)
- Torque Wrench 0-600 in. lbs.
(WP 0042 00, Table 2, Item 102)
- Paint Brush
(WP 0042 00, Table 2, Item 107)

Materials/Parts:

- 11 Drawer, Cabinet A
(WP 0044 00, Figure 1, Item 1)
- Cabinet Bracket (WP 0044 00, Figure 1, Item 2)
- Flat Washer (WP 0044 00, Figure 1, Item 3)
- Lock Washer (WP 0044 00, Figure 1, Item 4)
- Hex Head Bolt (WP 0044 00, Figure 1, Item 5)
- Plain Hex Nut (WP 0044 00, Figure 1, Item 6)
- 7 Drawer, Cabinet B
(WP 0044 00, Figure 2, Item 1)
- Flat Washer (WP 0044 00, Figure 2, Item 2)
- Lock Washer (WP 0044 00, Figure 2, Item 3)
- Hex Head Bolt (WP 0044 00, Figure 2, Item 4)
- Cabinet Bracket (WP 0044 00, Figure 2, Item 5)
- Plain Hex Nut (WP 0044 00, Figure 2, Item 6)
- 7 Drawer, Cabinet C
(WP 0044 00, Figure 3, Item 1)
- Flat Washer (WP 0044 00, Figure 3, Item 2)
- Lock Washer (WP 0044 00, Figure 3, Item 3)
- Hex Head Bolt (WP 0044 00, Figure 3, Item 4)
- Cabinet Bracket (WP 0044 00, Figure 3, Item 5)
- Plain Hex Nut (WP 0044 00, Figure 3, Item 6)
- 7 Drawer, Cabinet D
(WP 0044 00, Figure 4, Item 1)
- Flat Washer (WP 0044 00, Figure 4, Item 2)
- Lock Washer (WP 0044 00, Figure 4, Item 3)
- Hex Head Bolt (WP 0044 00, Figure 4, Item 4)
- Cabinet Bracket (WP 0044 00, Figure 4, Item 5)
- Plain Hex Nut (WP 0044 00, Figure 4, Item 6)

Materials/Parts (Continued):

- 12 Drawer, Cabinet E
(WP 0044 00, Figure 5, Item 1)
- Cabinet Bracket (WP 0044 00, Figure 5, Item 2)
- Flat Washer (WP 0044 00, Figure 5, Item 3)
- Lock Washer (WP 0044 00, Figure 5, Item 4)
- Hex Head Bolt (WP 0044 00, Figure 5, Item 5)
- Plain Hex Nut (WP 0044 00, Figure 5, Item 6)
- 5 Drawer, Mobile Cabinet F and G
(WP 0044 00, Figure 6, Item 1)
- Casters (WP 0044 00, Figure 6, Item 2)
- Paint (WP 0048 00, Table 1, Item 2)
- Primer (WP 0048 00, Table 1, Item 4)
- 7 Drawer, Mobile Cabinet H
(WP 0044 00, Figure 7, Item 1)
- Casters (WP 0044 00, Figure 7, Item 2)

Personnel Required: (1)

- CMF 44B – Welder
- CMF 15 Series

References:

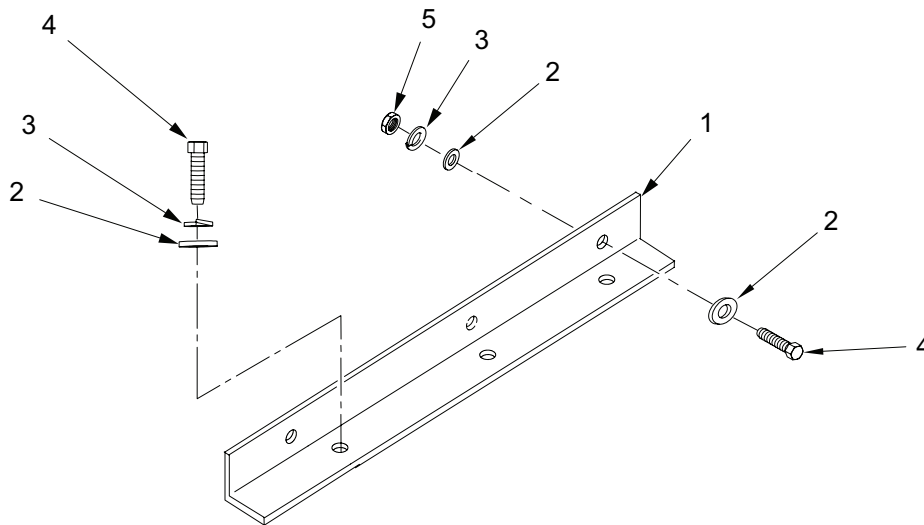
- WP 0038 00
- WP 0039 00
- TM 1-1500-204-23-8

Equipment Conditions:

- Functional

NOTE

During installation of components same hardware should be used so as to maintain original integrity of shop set.

CABINET BRACKET

SSAE122

Inspect

1. Inspect cabinet bracket (1) to ensure that mounting hardware is firmly secured to floor and cabinet.
2. If necessary, torque bolts (4) 160-190 in. lbs.
3. If bolts (4) will not tighten follow procedures in WP 0038 00.
4. Repair or replace cabinet bracket (1) if damaged.

Remove

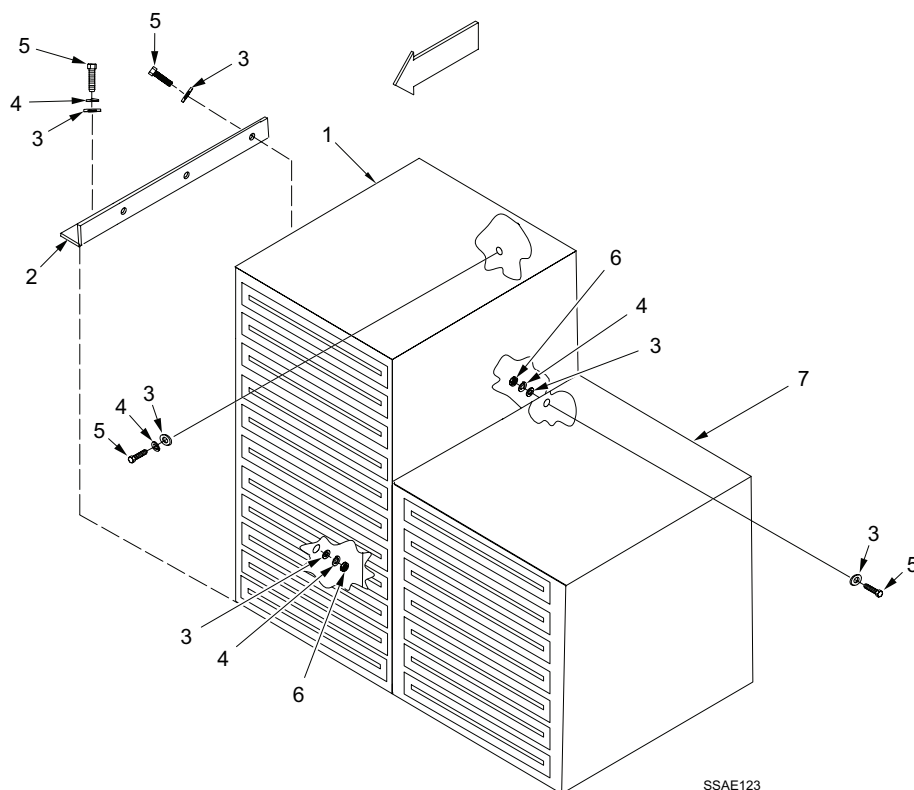
1. Remove five bolts (4), five lock washers (3), seven flat washers (2), and two nuts (5) attaching cabinet bracket (1) to cabinet and floor.
2. Remove damaged cabinet bracket (1).

Repair

1. If cabinet bracket (1) can be repaired by welding, weld damaged area IAW TM 1-1500-204-23-8. Repair must not interfere with form, fit, or function of cabinet bracket (1).
2. Paint repaired cabinet bracket (1) IAW WP 0039 00, Figure 4.

Install

1. Position new or repaired cabinet bracket (1) by aligning bolt holes with pre-drilled holes in cabinet and floor inserts.
2. Install five bolts (4), five lock washers (3), seven flat washers (2), and two nuts (5) attaching cabinet bracket (1) to cabinet and floor.
3. Torque bolts (4) 160-190 in. lbs.

11 DRAWER CABINET A

SSAE123

Inspect

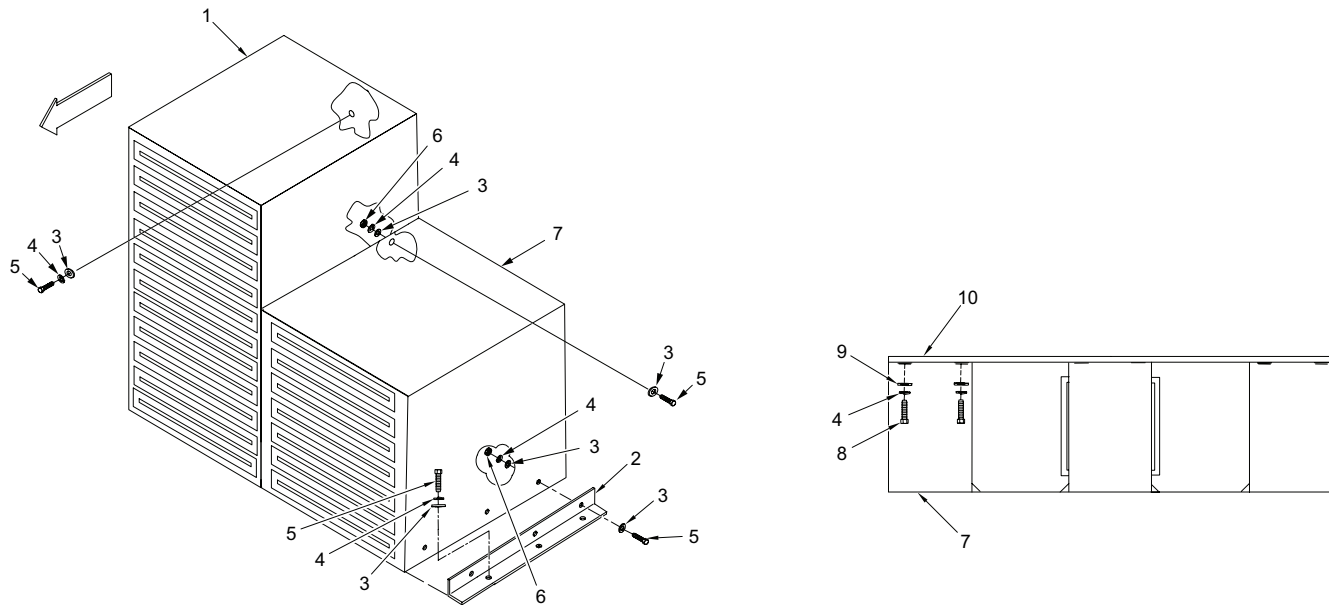
1. Inspect 11 drawer cabinet A (1) for loose bolts (5).
2. If necessary, torque bolts (4) 160-190 in. lbs.
3. If bolts (5) will not tighten follow procedures in WP 0038 00.
4. Inspect 11 drawer cabinet A (1) for damage that will deem cabinet non-operational.
5. Replace 11 drawer cabinet A (1) if deemed non-operational.

Remove

1. Remove five bolts (5), five lock washers (4), seven flat washers (3), and two nuts (6) attaching cabinet bracket (2) to 11 drawer cabinet A (1) and floor.
2. Remove four bolts (5), four lock washers (4), and four flat washers (3) attaching 11 drawer cabinet A (1) to wall.
3. Remove four bolts (5), four lock washers (4), eight flat washers (3), and four nuts (6) attaching 7 drawer cabinet B (7) to 11 drawer cabinet A (1).

Install

1. Install four bolts (5), four lock washers (4), eight flat washers (3), and four nuts (6) attaching 7 drawer cabinet B (7) to 11 drawer cabinet A (1).
2. Install four bolts (5), four lock washers (4), and four flat washers (3) attaching 11 drawer cabinet A (1) to wall.
3. Install five bolts (5), five lock washers (4), seven flat washers, and two nuts (3) attaching cabinet bracket (2) to 11 drawer cabinet A (1) and floor.
4. Torque bolts (5) installed in wall and floor 160-190 in. lbs.

7 DRAWER CABINET B

SSAE124

Inspect

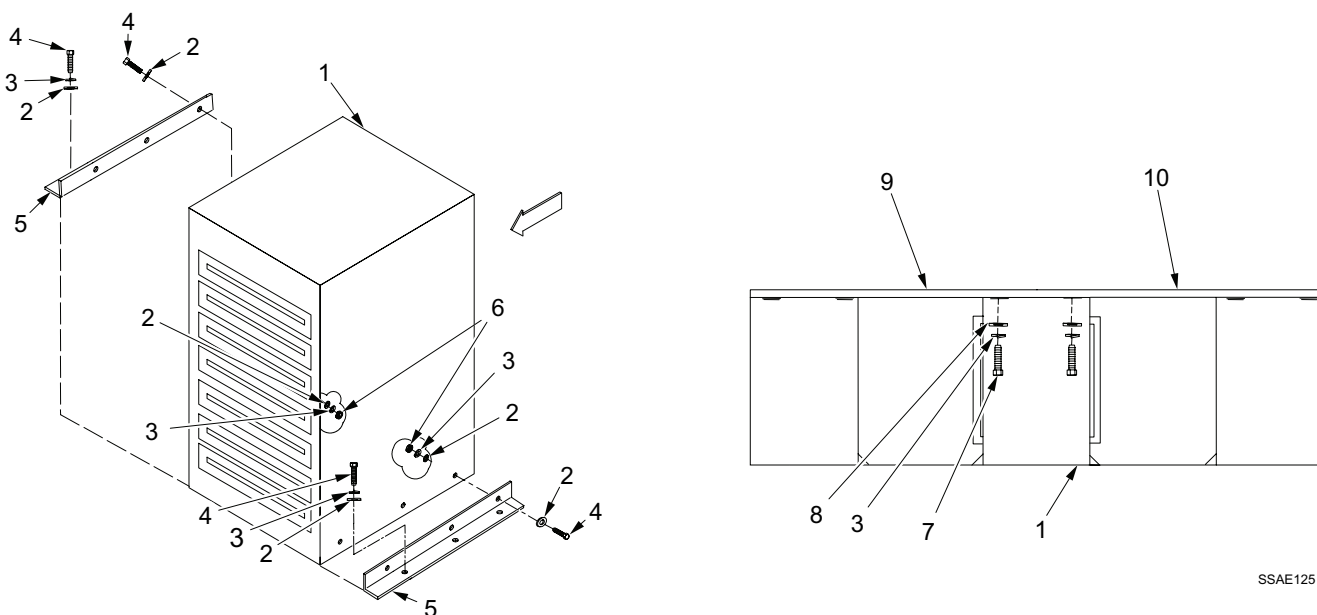
1. Inspect 7 drawer cabinet B (7) for loose bolts (5).
2. If necessary, torque bolts (4) 160-190 in. lbs.
3. If bolts (5) will not tighten follow procedures in WP 0038 00.
4. Inspect 7 drawer cabinet B (7) for damage that will deem cabinet non-operational.
5. Replace 7 drawer cabinet B (7) if deemed non-operational.

Remove

1. Remove five bolts (5), five lock washers (4), seven flat washers (3), and two nuts (6) attaching cabinet bracket (2) to 7 drawer cabinet B (7) and floor.
2. Remove four bolts (5), four lock washers (4), eight flat washers (3), and four nuts (6) attaching 7 drawer cabinet B (7) to 11 drawer cabinet A (1).
3. Remove four bolts (8), four lock washers (4), and four flat washers (9) attaching 7 drawer cabinet B (7) to work table top (10).

Install

1. Install four bolts (8), four lock washers (4), and four flat washers (9) attaching 7 drawer cabinet B (7) to work table top (10).
2. Install four bolts (5), four lock washers (4), eight flat washers (3), and four nuts (6) attaching 7 drawer cabinet B (7) to 11 drawer cabinet A (1).
3. Install five bolts (5), five lock washers (4), seven flat washers (3), and two nuts (6) attaching cabinet bracket (2) to 7 drawer cabinet B (7) and floor.
4. Torque bolts (5) installed in wall and floor 160-190 in. lbs.

7 DRAWER CABINET C

SSAE125

Inspect

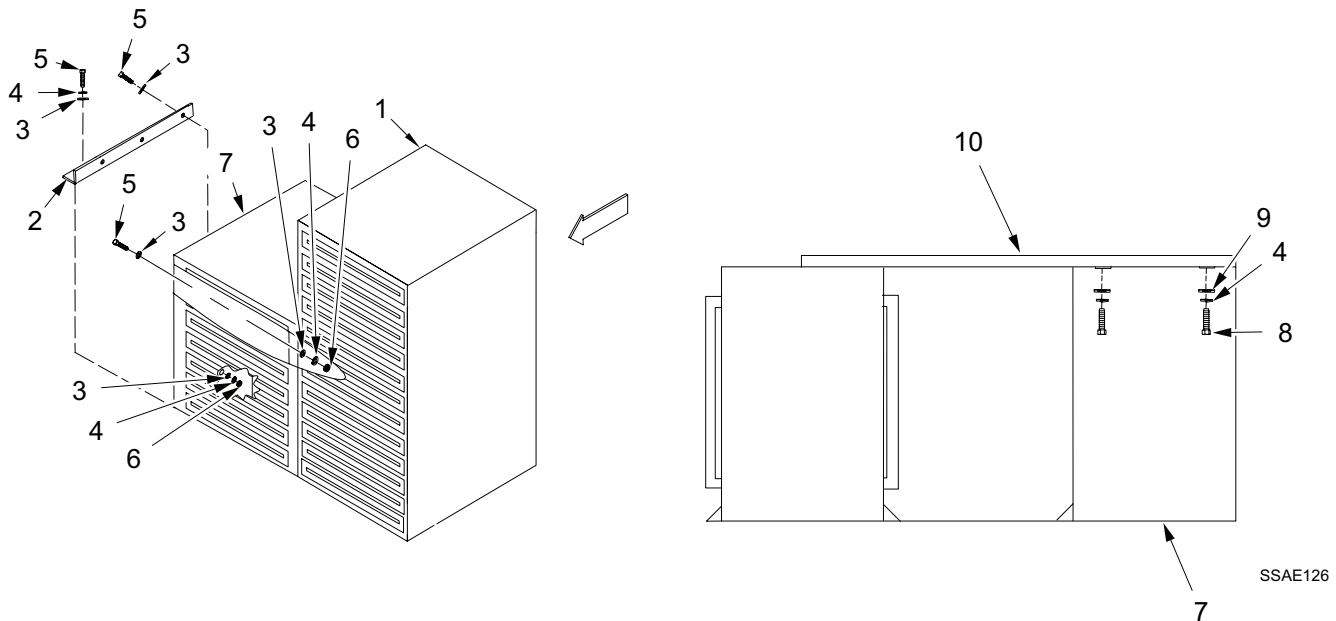
1. Inspect 7 drawer cabinet C (1) for loose bolts (4).
2. If necessary, torque bolts (4) 160-190 in. lbs.
3. If bolts (4) will not tighten follow procedures in WP 0038 00.
4. Inspect 7 drawer cabinet C (1) for damage that will deem cabinet non-operational.
5. Replace 7 drawer cabinet C (1) if deemed non-operational.

Remove

1. Remove ten bolts (4), ten lock washers (3), fourteen flat washers (2), and four nuts (6) attaching cabinet brackets (5) to 7 drawer cabinet C (1) and floor.
2. Remove two bolts (7), two lock washers (3), and two flat washers (8) from 7 drawer cabinet C (1) and work table top (10).
3. Remove two bolts (7), two lock washers (3), and two flat washers (8) from 7 drawer cabinet C (1) and work table top (9).

Install

1. Install two bolts (7), two lock washers (3), and two flat washers (8) to 7 drawer cabinet C (1) and work table top (9).
2. Install two bolts (7), two lock washers (3), and two flat washers (8) to 7 drawer cabinet C (1) and work table top (10).
3. Install ten bolts (4), ten lock washers (3), fourteen flat washers (2), and four nuts (6) attaching cabinet bracket (5) to 7 drawer cabinet C (1) and floor.
4. Torque bolts (4) installed in floor 160-190 in. lbs.

7 DRAWER CABINET D

SSAE126

Inspect

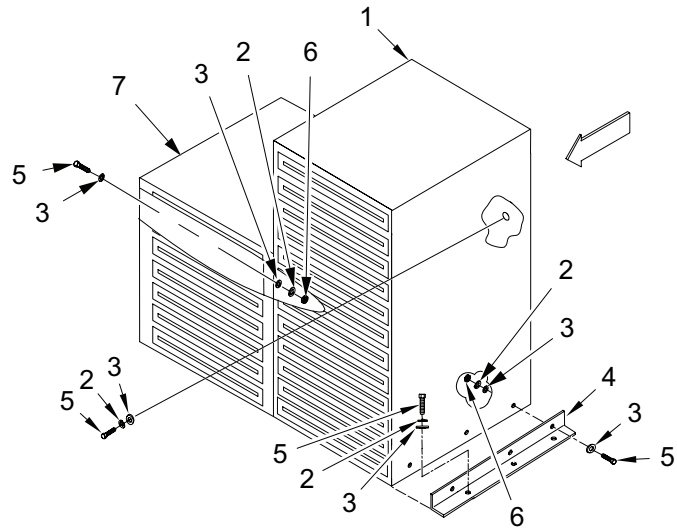
1. Inspect 7 drawer cabinet D (7) for loose bolts (5).
2. If necessary, torque bolts (4) 160-190 in. lbs.
3. If bolts (5) will not tighten follow procedures in WP 0038 00.
4. Inspect 7 drawer cabinet D (7) for damage that will deem cabinet non-operational.
5. Replace 7 drawer cabinet D (7) if deemed non-operational.

Remove

1. Remove five bolts (5), five lock washers (4), seven flat washers (3), and two nuts (6) attaching cabinet bracket (2) to 7 drawer cabinet D (7) and floor.
2. Remove four bolts (5), four lock washers (4), eight flat washers (3), and four nuts (6) attaching 7 drawer cabinet D (7) to 12 drawer cabinet E (1).
3. Remove four bolts (8), four lock washers, (4), and four flat washers (9) attaching 7 drawer cabinet D (7) to work table top (10).

Install

1. Install four bolts (8), four lock washers (4), and four flat washers (9) attaching 7 drawer cabinet D (7) to work table top (10).
2. Install four bolts (5), four lock washers (4), eight flat washers (3), and four nuts (6) attaching 7 drawer cabinet D (7) to 12 drawer cabinet E (1).
3. Install five bolts (5), five lock washers (4), seven flat washers (3), and two nuts (6) attaching cabinet bracket (2) to 7 drawer cabinet D (7) and floor.
4. Torque bolts (5) installed in wall or floor 160-190 in. lbs.

12 DRAWER CABINET E

SSAE127

Inspect

1. Inspect 12 drawer cabinet E (1) for loose bolts (5).
2. If necessary, torque bolts (5) 160-190 in. lbs.
3. If bolts (5) will not tighten follow procedures in WP 0038 00.
4. Inspect 12 drawer cabinet E (1) for damage that will deem cabinet non-operational.
5. Replace 12 drawer cabinet E (1) if deemed non-operational.

Remove

1. Remove five bolts (5), five lock washers (2), seven flat washers (3), and two nuts (6) attaching cabinet bracket (4) to 12 drawer cabinet E (1) and floor.
2. Remove five bolts (5), five lock washers (2), and five flat washers (3) attaching 12 drawer cabinet E (1) to wall.
3. Remove four bolts (5), four lock washers (2), eight flat washers (3), and four nuts (6) attaching 7 drawer cabinet D (7) to 12 drawer cabinet E (1).

Install

1. Install four bolts (5), four lock washers (2), eight flat washers (3), and four nuts (6) attaching 7 drawer cabinet D (7) to 12 drawer cabinet E (1).
2. Install five bolts (5), five lock washers (2), and five flat washers (3) attaching 12 drawer cabinet E (1) to wall.
3. Install five bolts (5), five lock washers (2), seven flat washers (3), and two nuts (6) attaching cabinet bracket (2) to 12 drawer cabinet E (1) and floor.
4. Torque bolts (5) installed in wall or floor 160-190 in. lbs.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR TABLE ASSEMBLY**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)

References:

N/A

Materials/Parts:

Table Top (WP 0044 00, Figure 8, Item 1)
Flat Washer (WP 0044 00, Figure 8, Item 2)
Lock Washer (WP 0044 00, Figure 8, Item 3)
Hex Head Lag Bolt (WP 0044 00, Figure 8, Item 4)
Table Legs (WP 0044 00, Figure 8, Item 5)
Stringer (WP 0044 00, Figure 8, Item 6)
Plain Hex Nut (WP 0044 00, Figure 8, Item 7)
Lock Washer (WP 0044 00, Figure 8, Item 8)
Flat Washer (WP 0044 00, Figure 8, Item 9)
Hex Head Bolt (WP 0044 00, Figure 8, Item 10)

Equipment Conditions:

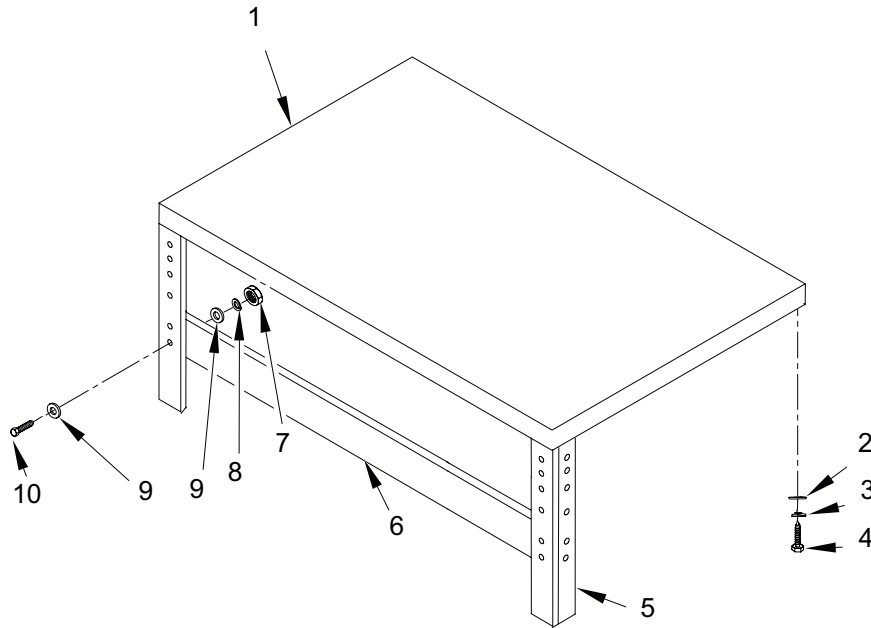
Functional

Personnel Required: (2)

CMF 15 Series

NOTE

During installation of components same hardware should be used so as to maintain original integrity of shop set.



SSAE128

INSPECT

Inspect table assembly (1) for loose bolts (4 and 10) and tighten if necessary.

REPLACE**WARNING**

A two person lift is required when moving or lifting the table assembly.

1. To remove stringer (6) from legs (5), remove four bolts (10), eight flat washers (9), four lock washers (8), and four nuts (7).
2. To remove legs (5) from table top, remove eight lag bolts (4), eight lock washers (3), and eight flat washers (2).
3. To assemble table, install legs (5) to table top by installing eight lag bolts (4), eight lock washers (3), and eight flat washers (2).
4. Install stringer (6) to legs (5) by installing four bolts (10), eight flat washers (9), four lock washers (8), and four nuts (7).

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR WORK TABLE TOPS**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)

References:

N/A

Equipment Conditions:

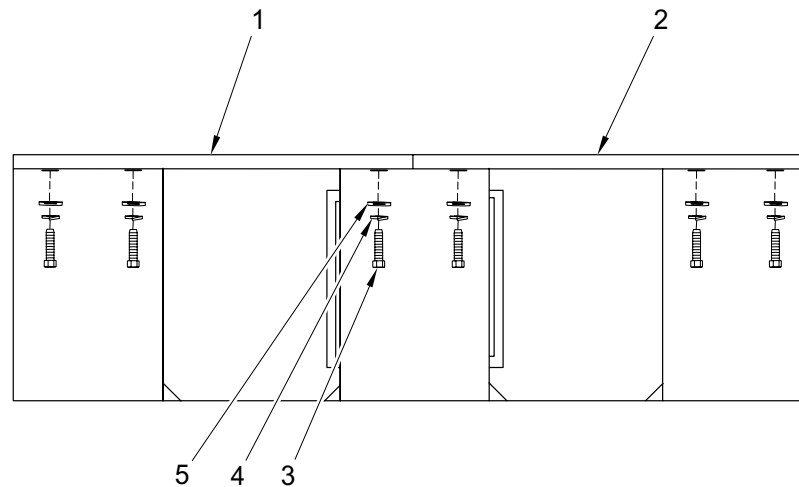
Functional

Materials/Parts:

Flat Washer (WP 0044 00, Figure 9, Item 2)
Lock Washer (WP 0044 00, Figure 9, Item 3)
Hex Head Lag Bolt (WP 0044 00, Figure 9, Item 4)

Personnel Required: (1)

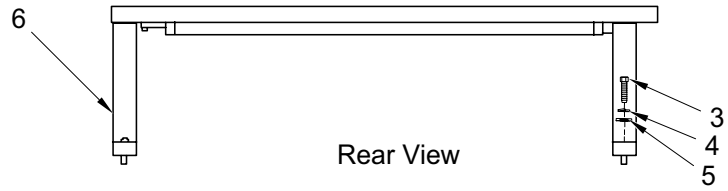
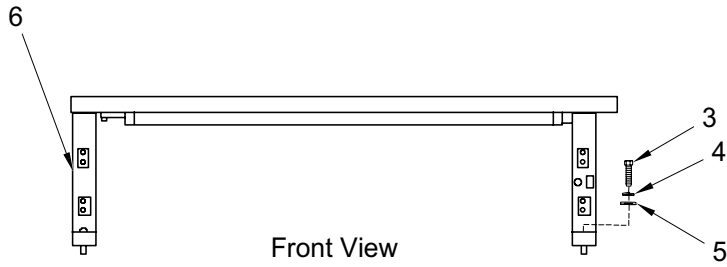
CMF 15 Series



SSAE129

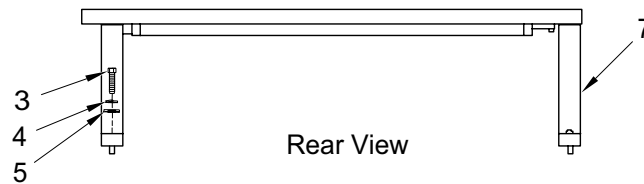
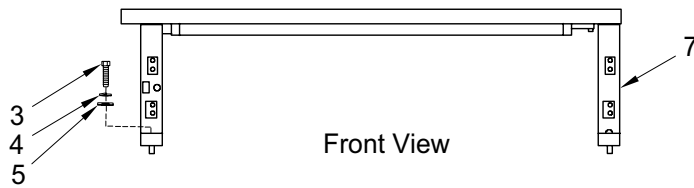
INSPECT

1. Inspect work table tops (1 and 2) to ensure that mounting hardware (3, 4, and 5) is firmly secured.



SSAE130

- 2. Inspect right hand instrument shelf (6) to ensure that mounting hardware (3, 4, and 5) is firmly secured.



SSAE131

- 3. Inspect left hand instrument shelf (7) to ensure that mounting hardware (3, 4, and 5) is firmly secured.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR MACHINIST VISE**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)

References:

N/A

Materials/Parts:

Machinist Vise (WP 0044 00, Figure 10, Item 1)
Hex Head Bolt (WP 0044 00, Figure 10, Item 2)
Flat Washer (WP 0044 00, Figure 10, Item 3)
Flat Washer (WP 0044 00, Figure 10, Item 4)
Lock Washer (WP 0044 00, Figure 10, Item 5)
Plain Hex Nut (WP 0044 00, Figure 10, Item 6)

Equipment Conditions:

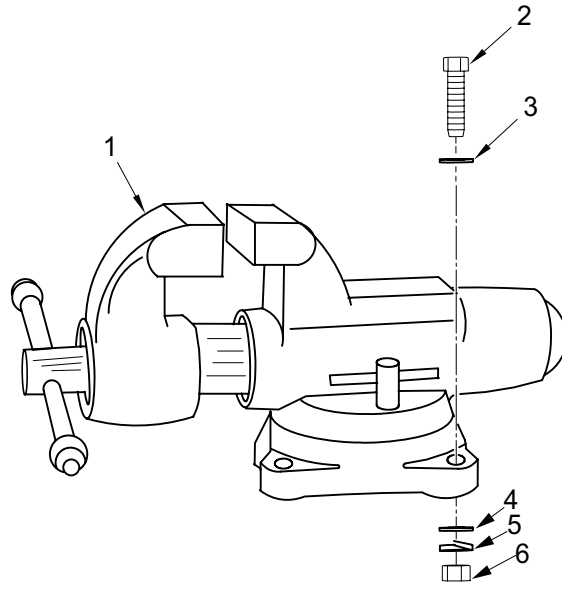
Functional

Personnel Required: (1)

CMF 15 Series

NOTE

During installation of components same hardware should be used so as to maintain original integrity of shop set.



SSAE132

INSPECT

Inspect machinist vise (1) for loose bolts (2) and tighten if necessary.

REPLACE

1. Remove three bolts (2), six flat washers (3 and 4), three lock washers (5) and three nuts (6).
2. Replace machinist vise (1) by installing three bolts (2), six flat washers (3 and 4), and three lock washers (5) and three nuts (6).

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR ARBOR PRESS**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)

References:

N/A

Materials/Parts:

Arbor Press (WP 0044 00, Figure 11, Item 1)
Hex Head Bolt (WP 0044 00, Figure 11, Item 2)
Flat Washer (WP 0044 00, Figure 11, Item 3)
Lock Washer (WP 0044 00, Figure 11, Item 4)
Plain Hex Nut (WP 0044 00, Figure 11, Item 5)

Equipment Conditions:

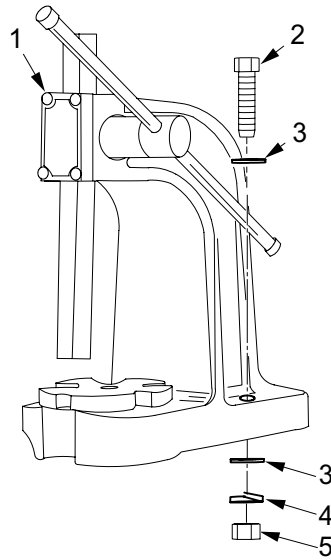
Functional

Personnel Required: (1)

CMF 15 Series

NOTE

During installation of components same hardware should be used so as to maintain original integrity of shop set.



SSAE133

INSPECT

Inspect arbor press (1) for loose bolts (2) and tighten if necessary.

REPLACE

1. Remove two bolts (2), four flat washers (3), two lock washers (4), and two nuts (5).
2. Replace arbor press (1) by installing two bolts (2), four flat washers (3), two lock washers (4), and two nuts (5).

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR POWER STATIC INVERTER**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)

References:

N/A

Materials/Parts:

Power Static Inverter
(WP 0044 00, Figure 12, Item 1)
Hex Head Bolt (WP 0044 00, Figure 12, Item 2)
Flat Washer (WP 0044 00, Figure 12, Item 3)
Flat Washer (WP 0044 00, Figure 12, Item 4)
Lock Washer (WP 0044 00, Figure 12, Item 5)
Plain Hex Nut (WP 0044 00, Figure 12, Item 6)

Equipment Conditions:

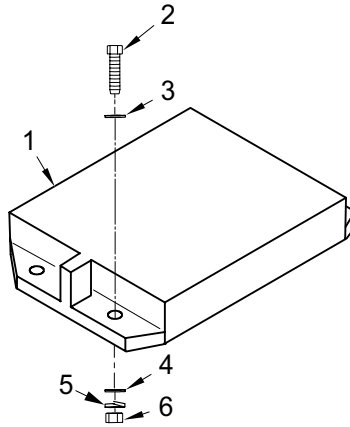
Functional

Personnel Required: (1)

CMF 15 Series

NOTE

During installation of components same hardware should be used so as to maintain original integrity of shop set.



SSAE134

INSPECT

Inspect power static inverter (1) for loose bolts (2) and tighten if necessary.

REPLACE

1. Remove four bolts (2), eight flat washers (3 and 4), four lock washers (5) and four nuts (6).
2. Replace power static inverter (1) by installing four bolts (2), eight flat washers (3 and 4), four lock washers (5) and four nuts (6).

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR EYEWASH STATION ASSEMBLY**

INITIAL SETUP**Tools And Special Tools:**

Torque Wrench 0-600 in. lbs.
(WP 0042 00, Table 2, Item 102)

References:

WP 0038 00

Materials/Parts:

Eyewash Station Assembly
(WP 0044 00, Figure 13, Item 1)
Hex Head Bolt (WP 0044 00, Figure 13, Item 2)
Lock Washer (WP 0044 00, Figure 13, Item 3)
Flat Washer (WP 0044 00, Figure 13, Item 4)

Equipment Conditions:

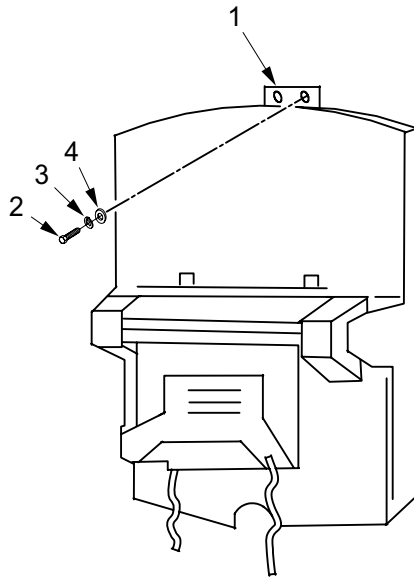
Functional

Personnel Required: (1)

CMF 15 Series

NOTE

During installation of components same hardware should be used so as to maintain original integrity of shop set.



SSAE135

INSPECT

1. Inspect eyewash station bracket (1) for loose bolts (2).
2. If necessary, torque bolts (2) 160-190 in. lbs.
3. If bolts (2) will not tighten to specified torque follow procedures in WP 0038 00.
4. Inspect eyewash station assembly for damage that will deem eyewash station assembly non-operational.
5. Replace eyewash station assembly if deemed non-operational.

REPLACE

1. Remove eyewash station from eyewash station bracket (1).
2. Remove two bolts (2), two lock washers (3), two flat washers (4), and eyewash station bracket (1).
3. Position new eyewash station bracket (1) by aligning bolt holes with wall inserts.
4. Install two bolts (2), two lock washers (3), and two flat washers (4).
5. Torque bolts (2) 160-190 in. lbs.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR FIRST AID BRACKET ASSEMBLY**

INITIAL SETUP**Tools And Special Tools:**

Torque Wrench 0-600 in. lbs.
(WP 0042 00, Table 2, Item 102)
Paint Brush
(WP 0042 00, Table 2, Item 107)

Materials/Parts:

First Aid Bracket
(WP 0044 00, Figure 14, Item 1)
Flat Washer (WP 0044 00, Figure 14, Item 2)
Lock Washer (WP 0044 00, Figure 14, Item 3)
Hex Head Bolt (WP 0044 00, Figure 14, Item 4)
Paint (WP 0048 00, Table 1, Item 3)
Primer (WP 0048 00, Table 1, Item 4)

Personnel Required: (1)

CMF 44B – Welder
CMF 15 Series

References:

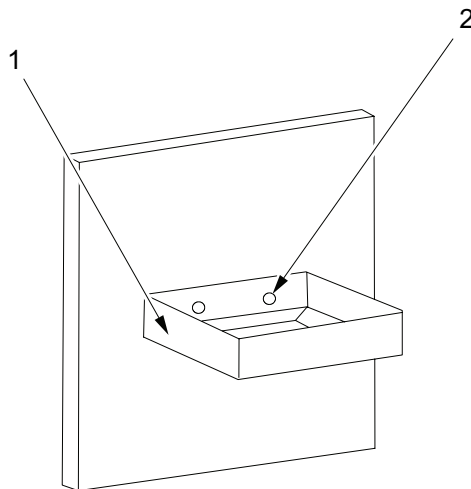
WP 0038 00
WP 0039 00
TM 1-1500-204-23-8

Equipment Conditions:

Functional

NOTE

During installation of components same hardware should be used so as to maintain original integrity of shop set.



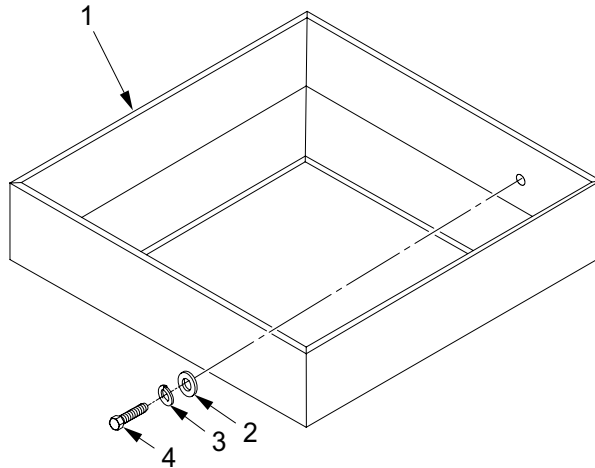
SSAE136

INSPECT

1. Inspect first aid bracket (1) for loose bolts (2).
2. If necessary, torque bolts (2) 160-190 in. lbs.
3. If bolts (2) will not tighten to specified torque follow procedures in WP 0038 00.
4. Inspect first aid bracket (1) for damage.
5. Repair or replace first aid bracket (1) if damage is detected.

REPAIR

1. If first aid bracket (1) can be repaired by welding, weld damaged area IAW TM 1-1500-204-23-8. Repair must not interfere with form, fit, or function of first aid bracket assembly (1).
2. Paint repaired first aid bracket (1) IAW WP 0039 00, Figure 9.

REPLACE

SSAE137

1. Remove two bolts (4), two lock washers (3), and two flat washers (2) attaching first aid bracket (1) to wall.
2. Position new or repaired first aid bracket (1) by aligning bolt holes with wall inserts.
3. Install two bolts (4), two lock washers (3), and two flat washers (2).
4. Torque bolts (4) 160-190 in. lbs.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR FIRE EXTINGUISHER BRACKET**

INITIAL SETUP**Tools And Special Tools:**

Torque Wrench 0-600 in. lbs.
(WP 0042 00, Table 2, Item 102)

References:

WP 0038 00

Equipment Conditions:

Functional

Materials/Parts:

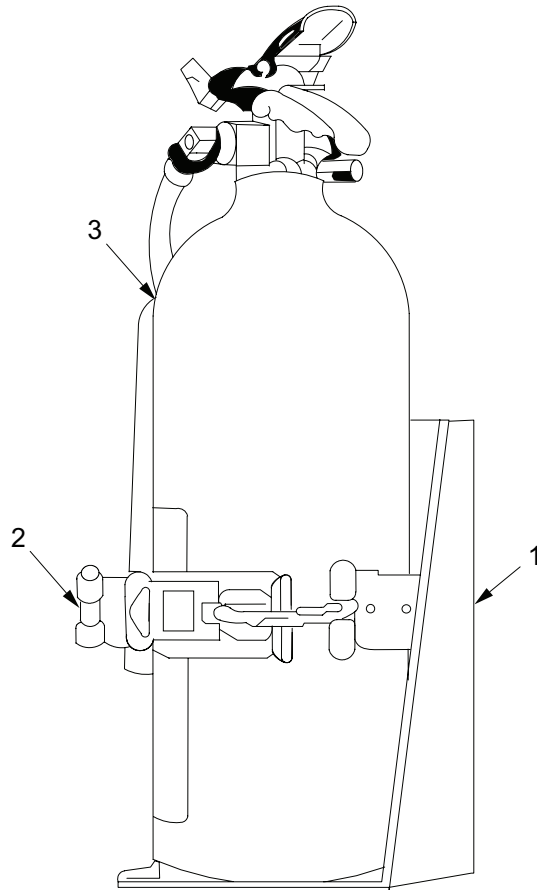
Fire Extinguisher Bracket
(WP 0044 00, Figure 15, Item 1)
Flat Washer (WP 0044 00, Figure 15, Item 2)
Lock Washer (WP 0044 00, Figure 15, Item 3)
Hex Head Bolt (WP 0044 00, Figure 15, Item 4)

Personnel Required: (1)

CMF 15 Series

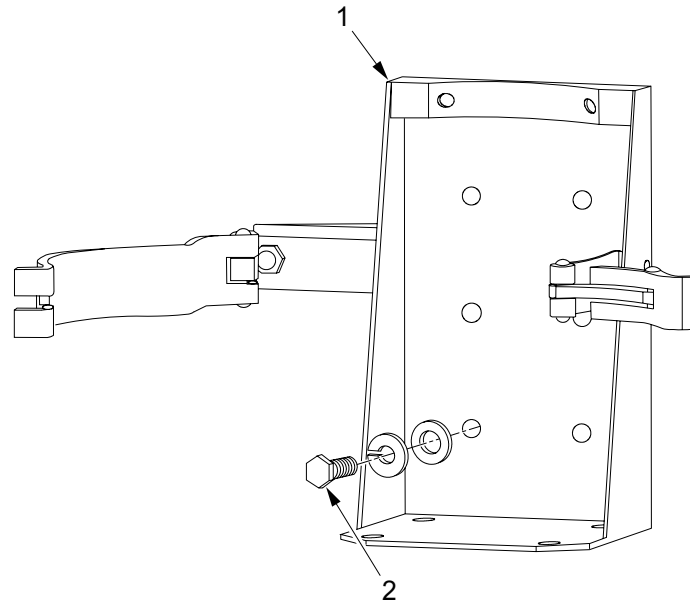
NOTE

During installation of components same hardware should be used so as to maintain original integrity of shop set.

REMOVE FIRE EXTINGUISHER

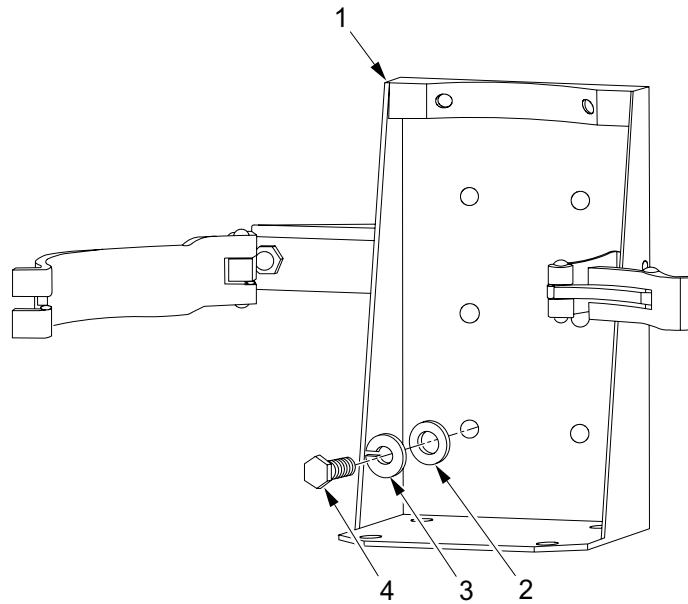
SSAE138

1. Release clamp (2) securing fire extinguisher (3) in fire extinguisher bracket (1).
2. Remove fire extinguisher (3).

INSPECT

SSAE139

1. Inspect fire extinguisher bracket (1) for loose bolts (2).
2. If necessary, torque bolts (2) 160-190 in. lbs.
3. If bolts (2) will not tighten to specified torque follow procedures in WP 0038 00.
4. Inspect fire extinguisher bracket (1) for damage that would deem fire extinguisher bracket (1) non-operational.
5. Replace fire extinguisher bracket (1) if deemed non-operational.

REPLACE

SSAE140

1. With fire extinguisher removed, remove two bolts (4), two lock washers (3), and two flat washers (2).
2. Position new fire extinguisher bracket (1) by aligning bolt holes with wall inserts.
3. Install two bolts (4), two lock washers (3), and two flat washers (2).
4. Torque bolts (4) 160-190 in. lbs.
5. Position fire extinguisher in fire extinguisher bracket (1), and engage clamp securing fire extinguisher.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR DOOR HASP**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)
Disc Grinder
(WP 0042 00, Table 2, Item 103)
Electrical Drill (WP 0042 00, Table 2, Item 104)
Rivet Puller (WP 0042 00, Table 2, Item 105)
Paint Brush
(WP 0042 00, Table 2, Item 107)

References:

TM 1-1500-204-23-8
TM 43-0139

Equipment Conditions:

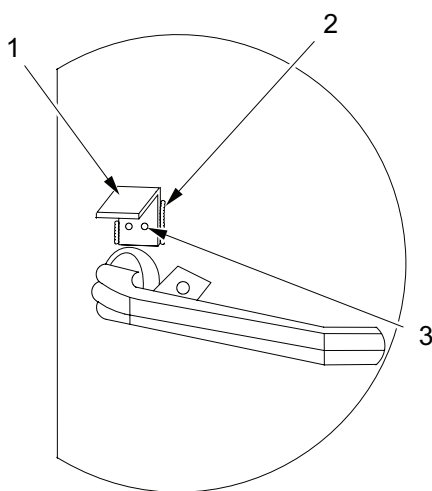
Functional

Materials/Parts:

Door Hasp (WP 0044 00, Figure 16, Item 1)
Blind Rivet (WP 0044 00, Figure 16, Item 2)
Polysulfide Sealant (WP 0048 00, Table 1, Item 5)
Paint (WP 0048 00, Table 1, Item 6)
Drill Set Twist (WP 0048 00, Table 1, Item 9)

Personnel Required: (1)

CMF 44B – Welder
CMF 15 Series



SSAE141

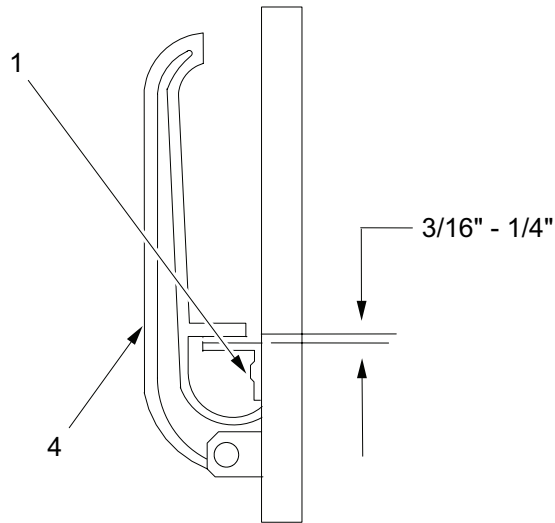
INSPECT

1. Inspect door hasp (1) for broken or cracked welds (2).
2. Ensure rivets (3) are secure.
3. Replace door hasp (1) if damage is detected.

REPLACE**CAUTION**

Use extreme care not to grind or cut through the shelter skin.

1. Grind welds (2) from damaged door hasp (1).
2. Drill out two rivets (3) attaching door hasp (1).
3. Remove door hasp (1).
4. Clean skin surface of paint and epoxy down to bare metal.



SSAE142

5. Install door hasp (1) by using latch handle (4) as a guide to position.
6. Mark position of door hasp (1).

NOTE

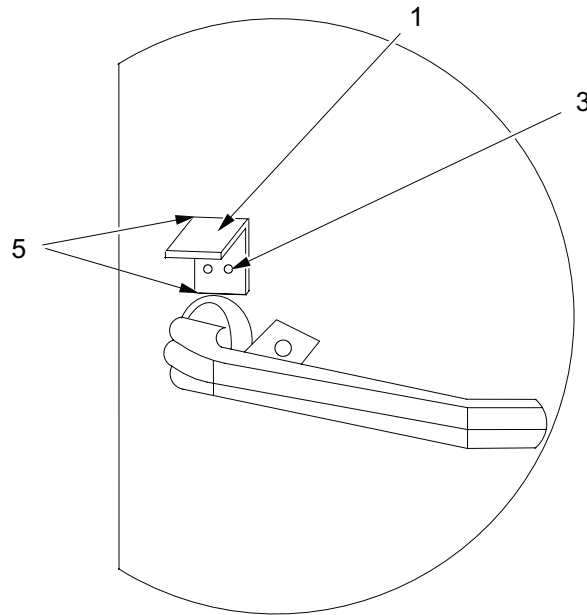
There should be adequate clearance for latch handle to swing around door hasp without interference.

7. Rotate latch handle (4) out of way and match drill door hasp (1) to door in two places.
8. Deburr all holes and clean off all metal shavings.

NOTE

Dip rivet's mandrel in polysulfide sealant before inserting into drilled holes.

9. Position door hasp (1) and insert two rivets into two pre-drilled holes.



SSAE143

10. Pull rivets (3) to secure door hasp (1) to door.
11. Weld door hasp (1) to door in two places IAW TM 1-1500-204-23-8.
12. Apply a bead of polysulfide sealant along remaining two sides (5) of door hasp (1) as well as coating rivet heads (3) with polysulfide sealant.
13. Prime and paint IAW TM 43-0139.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR ECU SECURITY SCREEN AND SUPPORT CABLE ASSEMBLY**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)
Torque Wrench 0-600 in. lbs.
(WP 0042 00, Table 2, Item 102)

References:

WP 0038 00
WP 0039 00

Equipment Conditions:

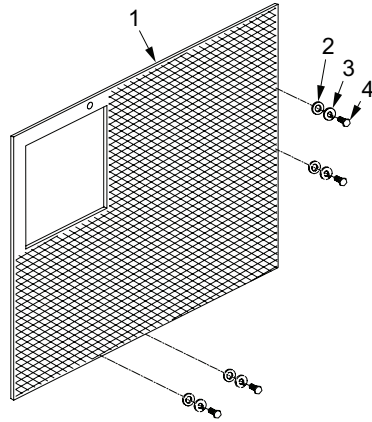
Functional

Materials/Parts:

ECU Security Screen Assembly
(WP 0044 00, Figure 17, Item 1)
Flat Washer (WP 0044 00, Figure 17, Item 2)
Lock Washer (WP 0044 00, Figure 17, Item 3)
Hex Head Bolt (WP 0044 00, Figure 17, Item 4)
ECU Cable Assembly
(WP 0044 00, Figure 18, Item 1)
Machine Screw (WP 0044 00, Figure 18, Item 2)
Washer (WP 0044 00, Figure 18, Item 3)

Personnel Required: (1)

CMF 15 Series

ECU SECURITY SCREEN

SSAE144

Inspect

1. Inspect ECU security screen (1) for loose bolts (4).
2. If necessary, torque bolts (4) 160-190 in. lbs.
3. If bolts (4) will not tighten follow procedures in WP 0038 00.
4. Inspect ECU security screen (1) for broke or cracked welds.
5. Repair or replace ECU security screen (1) if damage is detected.

Repair

1. If ECU security screen (1) can be repaired by welding, weld damaged area IAW TM 1-1500-204-23-8. Repair must not interfere with form, fit, or function of ECU security screen (1).
2. Paint repaired ECU security screen (1) IAW WP 0039 00, Figure 1.

Replace

1. Remove four bolts (4), four lock washers (3), and four flat washers (2).
2. Replace ECU security screen (1) by installing four bolts (4), four lock washers (3), and four flat washers (2).

ECU SUPPORT CABLE ASSEMBLY

SSAE144A

Inspect

Inspect ECU support cable assembly (1) for loose countersunk machine screw (2) and tighten if necessary.

Replace

1. Remove one countersunk machine screw (2) and one washer (3).
2. Remove ECU support cable assembly (1).
3. Position ECU support cable assembly (1) and install one countersunk machine screw (2) and one washer (3).

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR ECU POWER CABLE ASSEMBLY**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)
Multimeter (WP 0042 00, Table 2, Item 106)

References:

N/A

Equipment Conditions:

Functional

Materials/Parts:

ECU Cable Assembly
(WP 0044 00, Figure 19, Item 1)
Box Connector (WP 0044 00, Figure 19, Item 2)
Electrical Tape (WP 0048 00, Table 1, Item 7)
Fibrous Twine (WP 0048 00, Table 1, Item 8)

Personnel Required: (2)

CMF 15 Series – Aircraft Electrician
CMF 15 Series

WARNING

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

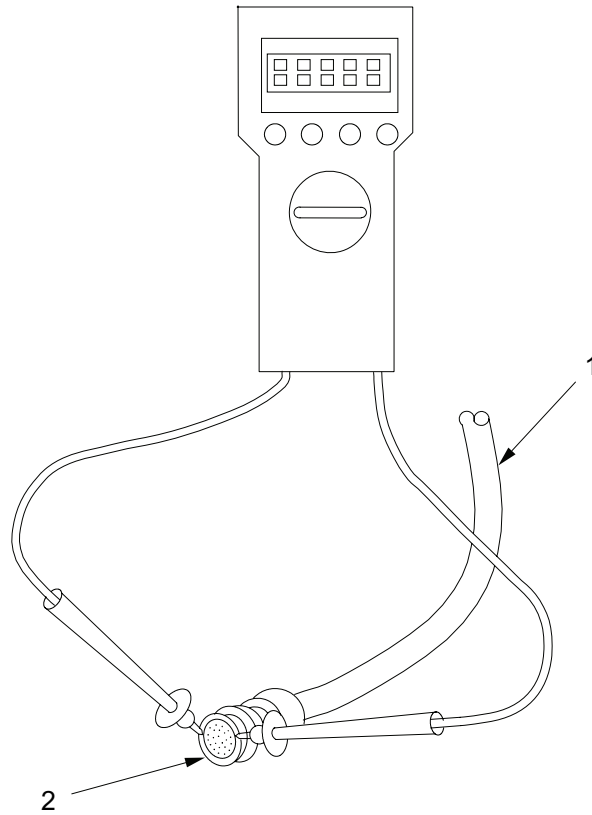
NOTE

During installation of components same hardware should be used so as to maintain original integrity of shop set.

INSPECT

Inspect ECU cable connectors and ECU cable for any type of damage.

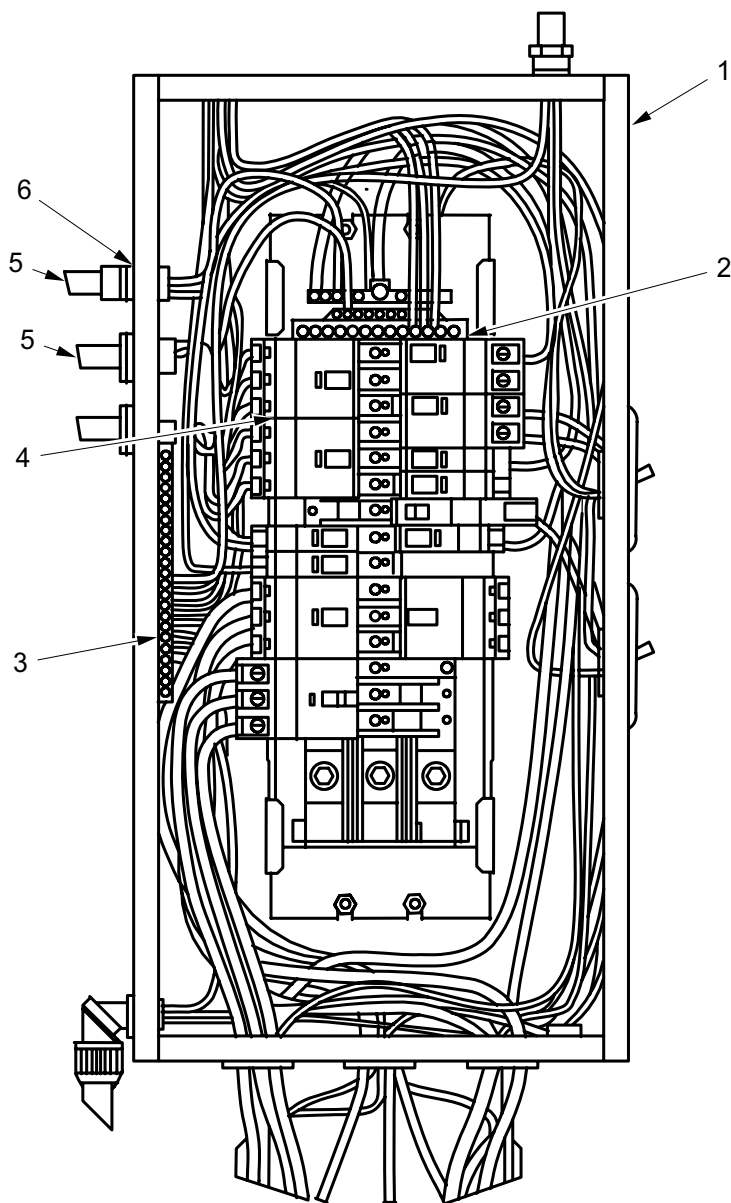
TEST



SSAE145

1. Move main circuit breaker to **OFF** position.
2. Test ECU connectors (2), cables (1), and circuit breaker for any electrical problems.
3. Replace ECU power cable (1) if problems are detected.

REPLACE



SSAE146

WARNING

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

NOTE

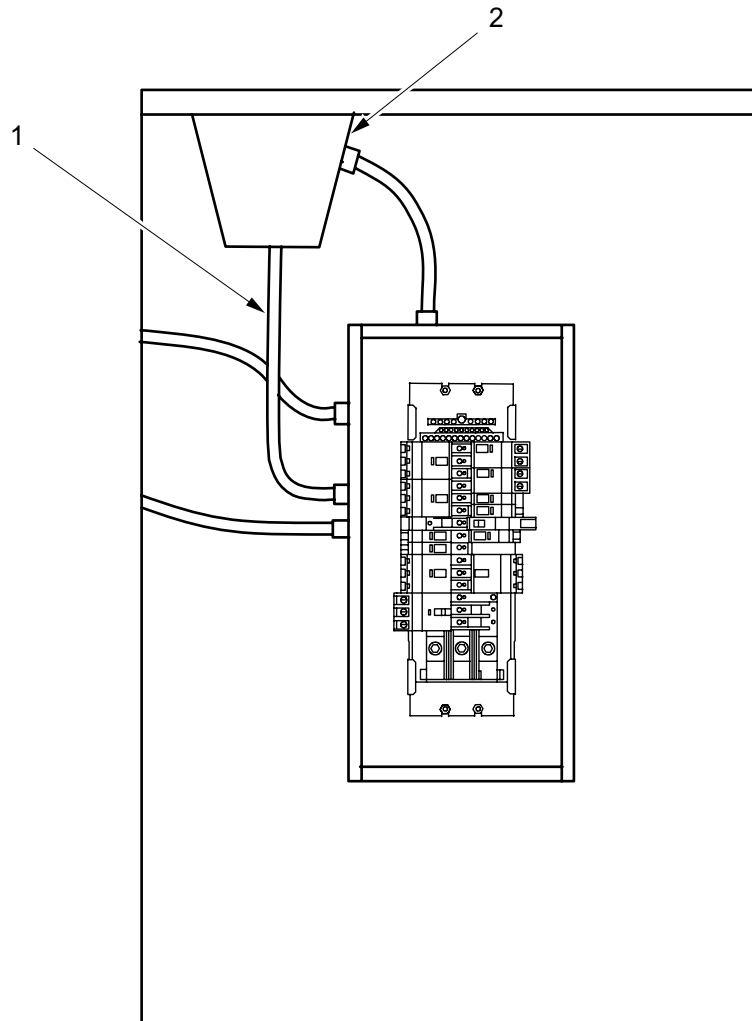
This procedure covers obsolete NQOB circuit breaker panel and new NQOD circuit breaker panel. These units are distinguishable by nameplates attached to panel boards.

Personnel End

1. Move all circuit breaker switches to the **OFF** position.
2. Tag and disconnect shelter electrical power
3. Remove panel cover from circuit breaker box (1).
4. To remove panel cover and board:
 - a. NQOD - Remove four screws and four washers and lift circuit breaker panel cover from panel board.
 - b. NQOB - Move clamp fingers to **OPEN** position and lift circuit breaker panel cover from panel board.
5. Disconnect ECU power cable (5) from 30 amp, 240V, three pole circuit breaker (4).
6. Disconnect neutral from circuit breaker box terminal strip (2).
7. Disconnect ground wire from ground terminal strip (3).
8. Loosen compression nut (6) on box connector at circuit breaker box (1) and pull ECU power cable (5) through and out of box connector.
9. Pull ECU power cable (5) through box connector and tighten compression nut (6) after ECU power cable (5) has been positioned with length (approximately 36 inches) of wire.
10. Attach ECU power cable (5) wires to circuit breaker with neutral and ground wires to corresponding terminal strip.
11. Replace circuit breaker panel board and cover onto circuit breaker box (1).
12. Move main circuit breaker to **ON** position.

Cargo End

1. Repeat steps 1 thru 11 of personnel end to replace ECU power cable for cargo end of shelter.
2. Using electrical tape, attach a length of package twine or 1/4" rope approximately 25-30 feet long to end of ECU power cable. This will be the end just removed from circuit breaker box.

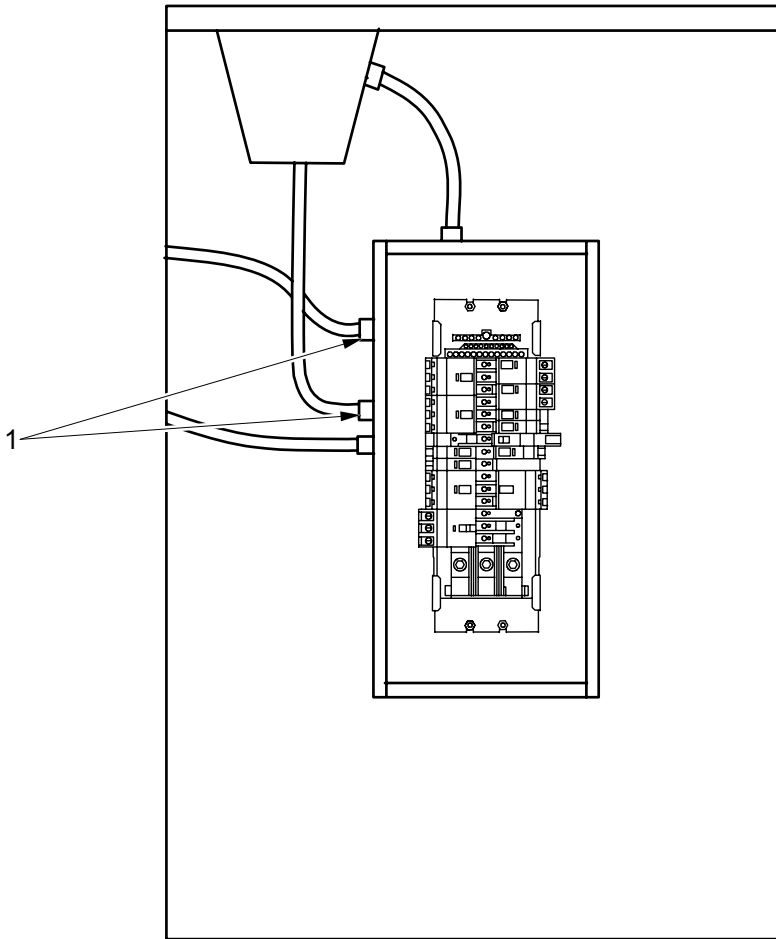


SSAE147

3. At electrical connector end of ECU power cable (1), pull ECU power cable (1) through fixed roof beam (2). When ECU power cable (1) has been pulled completely out of fixed roof beam (2), there should be an adequate amount of twine/rope left at circuit breaker box end to allow for pulling rope back through with new ECU power cable (1) attached.
4. After old ECU power cable (1) has been pulled through, remove twine/rope and attach to new ECU power cable (1).
5. At circuit breaker box end, pull twine/rope through fixed roof beam until correct amount of ECU power cable (1) is extending beyond end of fixed roof beam (2). (A second person at cargo door end guiding and feeding cable into fixed roof beam (2) will make this procedure easier).
6. Remove twine/rope.
7. Pull ECU power cable (1) through box connector and tighten compression nut after ECU power cable (1) has been positioned with length (approximately 36 inches) of wire.
8. Attach ECU power cable (1) wires to circuit breaker with neutral and ground wires to corresponding terminal strip.
9. Replace circuit breaker panel board and cover onto circuit breaker box.
10. Move main circuit breaker to the **ON** position.

BOX CONNECTOR FOR ECU POWER CABLE**WARNING**

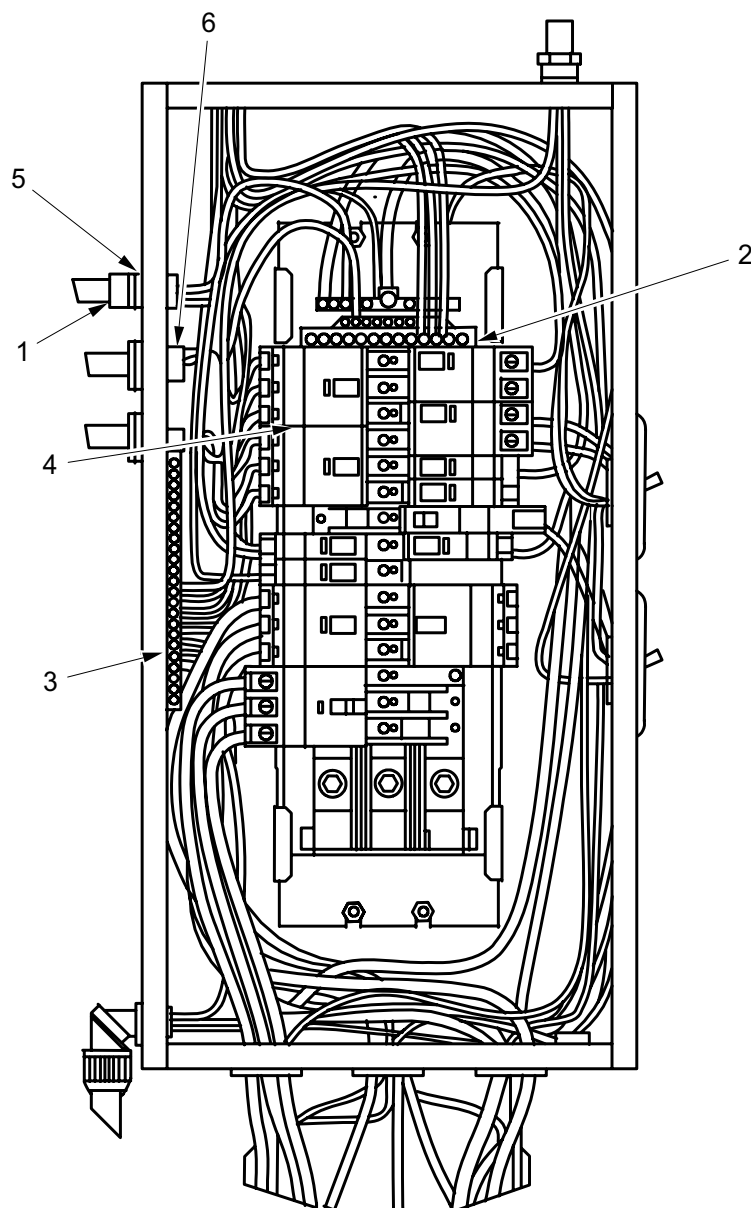
HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.



SSAE148

Inspect

1. Inspect ECU box connector (1) for damage.
2. Replace ECU box connector (1) if damage is detected.



SSAE149

Replace

WARNING

HIGH VOLTAGE exists in electrical system of ship. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

NOTE

This procedure covers obsolete NQOB circuit breaker panel and new NQOD circuit breaker panel. These units are distinguishable by nameplates attached to panel boards.

1. Open circuit breaker panel door.
2. To remove panel cover and board:
 - a. NQOD - Remove four screws and four washers and lift circuit breaker panel cover from panel board.
 - b. NQOB - Move clamp fingers to **OPEN** position and lift circuit breaker panel cover from panel board.
 - c. Remove four screws and lift panel board from circuit breaker box.

NOTE

Once panel boards are removed, all further procedures are identical for both models.

3. With circuit breaker box door and panel removed, disconnect wires from 30 AMP, 240V circuit breakers (4), neutral bar (2) and ground bar (3).
4. Loosen compression nut (5) on outside of circuit breaker box that is securing ECU power cable in box connector (1).
5. Pull ECU power cable through and out of box connector (1).
6. Remove box connector lock nut (6) from inside circuit breaker box.
7. Remove damaged box connector (1).
8. Insert new box connector (1) into hole in side of circuit breaker box, place compression nut (5) on box connector (1) and tighten.
9. Push ECU power cable through box connector (1) and locate at original position.
10. Tighten compression nut (6) on inside of circuit breaker box.
11. Connect wires to 30 AMP, 240V circuit breaker (3).
12. Replace panel board and cover.
13. Move main circuit breaker to the **ON** position.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR 240V OUTLET BOX ASSEMBLY AND COVER**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 102)
Multimeter (WP 0042 00, Table 2, Item 106)

References:

N/A

Equipment Conditions:

Functional

Materials/Parts:

Outlet Box
(WP 0044 00, Figure 20, Item 1)
Outlet Box Cover (WP 0044 00, Figure 20, Item 2)
Pan Head Machine Screw
(WP 0044 00, Figure 20, Item 3)
Lock Washer (WP 0044 00, Figure 20, Item 4)
Flat Washer (WP 0044 00, Figure 20, Item 5)
Retaining Strap (WP 0044 00, Figure 20, Item 6)
Electrical Box Connector
(WP 0044 00, Figure 20, Item 7)
240V Receptacle (WP 0044 00, Figure 20, Item 8)
Insulated Connector
(WP 0044 00, Figure 20, Item 9)

Personnel Required: (1)

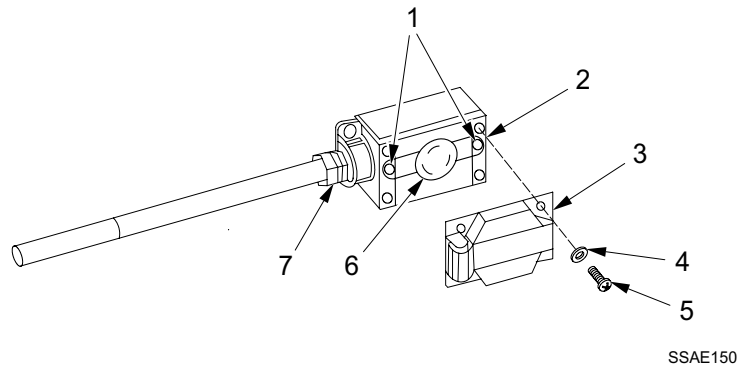
CMF 15 Series – Aircraft Electrician

WARNING

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

NOTE

During installation of components same hardware should be used so as to maintain original integrity of shop set.

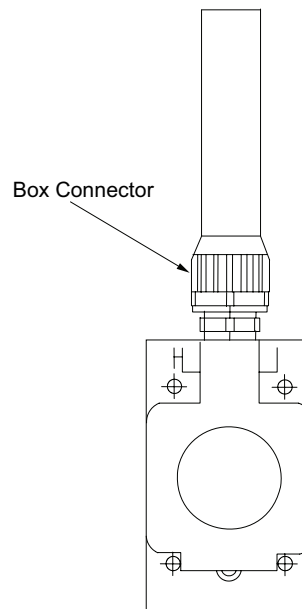
240V OUTLET BOX ASSEMBLY**Inspect**

1. Inspect 240V outlet box assembly (2) and cover (3) for damage.
2. Replace 240V outlet box assembly (2) and/or cover (3) if damage is detected.

Replace**WARNING**

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

1. Move main circuit breaker to **OFF** position.
2. Remove four screws (5) and four washers (4) attaching cover (3) to 240V outlet box assembly (2) (type of screw head may vary).
3. Remove two screws (1) attaching 240V receptacle (6) to outlet box (2).
4. Pull 240V receptacle (6) out of outlet box (2).
5. Loosen wires that are connected to 240V receptacle (6) and disconnect. Set aside for reinstallation.
6. Remove lock nut on box connector (7) located inside outlet box (2).
7. Remove screws attaching outlet box (2) to wall and remove damaged outlet box (2).
8. Place new outlet box (2) onto box connector (7) and start lock nut.
9. Align outlet box (2) up with mounting holes and install screws.
10. Tighten lock nut on box connector (7).
11. Connect wires to 240V receptacle (6) and tighten screws.
12. Mount 240V receptacle (6) to outlet box (2) with two screws (1).
13. Install cover (3) onto outlet box (2).
14. Restore power to outlet box (2) by moving 20 AMP and main circuit breaker to **ON** position.

BOX CONNECTOR

SSAE151

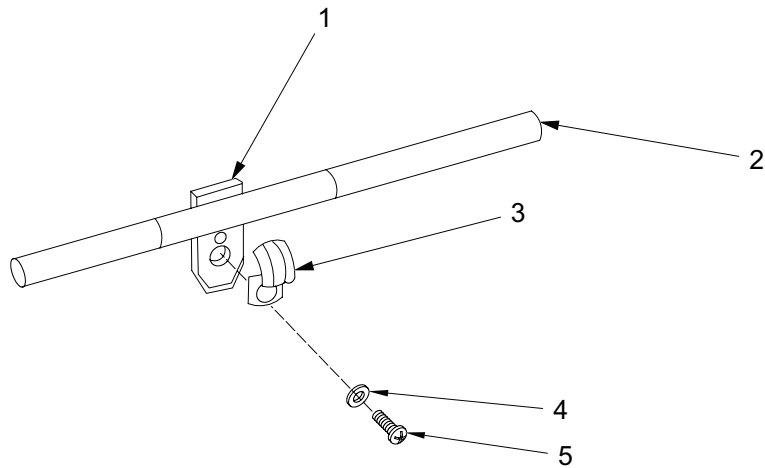
Inspect

1. Visually inspect box connector for damage.
2. Replace box connector if damage is detected.

Replace**WARNING**

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

1. Move main circuit breaker to **OFF** position.
2. Disconnect wires from 240V receptacle to box connector.
3. Pull wires back from box connector.
4. Loosen box connector from conduit.
5. Remove box connector nut and remove from box.
6. Remove box connector by sliding off conduit.
7. Slide new box connector onto conduit.
8. Tighten box connector until it compresses onto conduit securely.
9. Push wire back to 240V receptacle and reconnect wires.
10. Move main circuit breaker to **ON** position.

RETAINING STRAP

SSAE152

Inspect

Inspect retaining strap (3) and spacer (1) for damage.

Replace

1. Remove machine screw (5) and flat washer (4).
2. Remove retaining strap (3) and spacer (1).
3. Place new retaining strap (3) and spacer (1) onto conduit (2).
4. Ensure conduit (2) is properly seated.
5. Install machine screw (5) and flat washer (4).

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR GROUND ROD**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)
Multimeter (WP 0042 00, Table 2, Item 106)

References:

N/A

Equipment Conditions:

Functional

Materials/Parts:

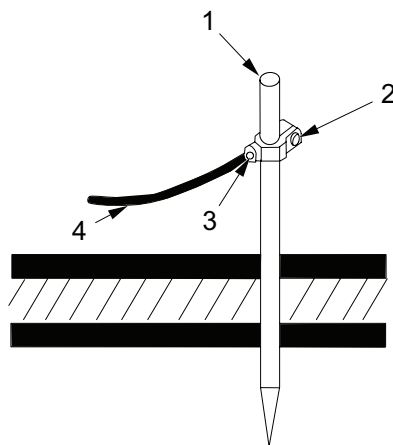
Ground Rod (WP 0044 00, Figure 21 Item 1)
Electrical Clamp (WP 0044 00, Figure 21 Item 2)
Electrical Wire (Bulk)
(WP 0044 00, Figure 21 Item 3)

Personnel Required: (1)

CMF 15 Series – Aircraft Electrician

WARNING

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

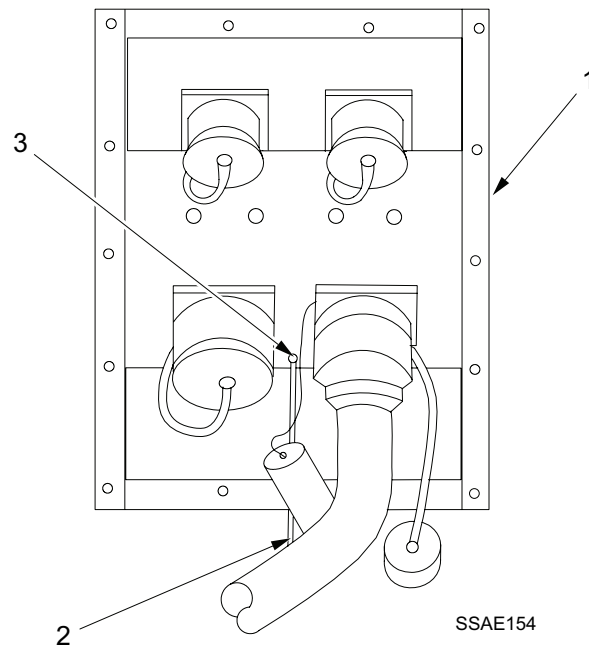


SSAE153

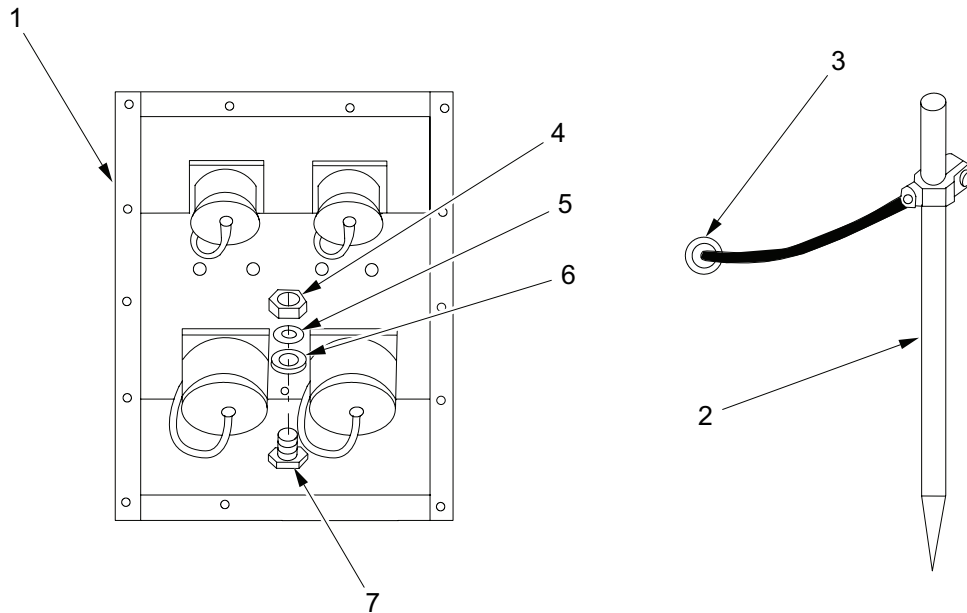
INSPECT

1. Move main circuit breaker to **OFF** position.
2. Ensure ground rod (1) is firmly driven into ground.
3. Ensure Bayonet Neil Concelman (BNC) clamp (2) and screw (3) are securely fastened.
4. Ensure there is no sign of oxidation around clamp (2) or screw (3).
5. Ensure that ground cable (4) is not frayed or broken.
6. Move main circuit breaker to **ON** position.

TEST



1. Move main circuit breaker to the **OFF** position.
2. Check ground cable (2) connection at terminal lug (3) on power entry panel (1) for continuity.
3. Move main circuit breaker to the **ON** position.



SSAE154A

REMOVE

1. On power entry panel (1) remove nut (4), lock washer (5), and flat washer (6) from ground stud (7).
2. Disconnect ground cable lug (3) from ground stud (7).
3. Replace flat washer (6), lock washer (5), and nut (4) on ground stud (7).

INSTALL

1. Remove nut (4), lock washer (5), and flat washer (6) from ground stud (7) on power entry panel (1).
2. Connect ground cable lug (3) to ground stud (7).
3. Secure with flat washer (6), lock washer (5), and nut (4).
4. Ensure all connections are secure.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR BNC CABLE ASSEMBLY**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)
Multimeter (WP 0042 00, Table 2, Item 106)

References:

N/A

Equipment Conditions:

Functional

Materials/Parts:

Electrical Plug Connector
(WP 0044 00, Figure 22, Item 1)
Electrical Cover (WP 0044 00, Figure 22, Item 2)
Connector Adaptor
(WP 0044 00, Figure 22, Item 3)
Radio Frequency Cable
(WP 0044 00, Figure 22, Item 4)

Personnel Required: (1)

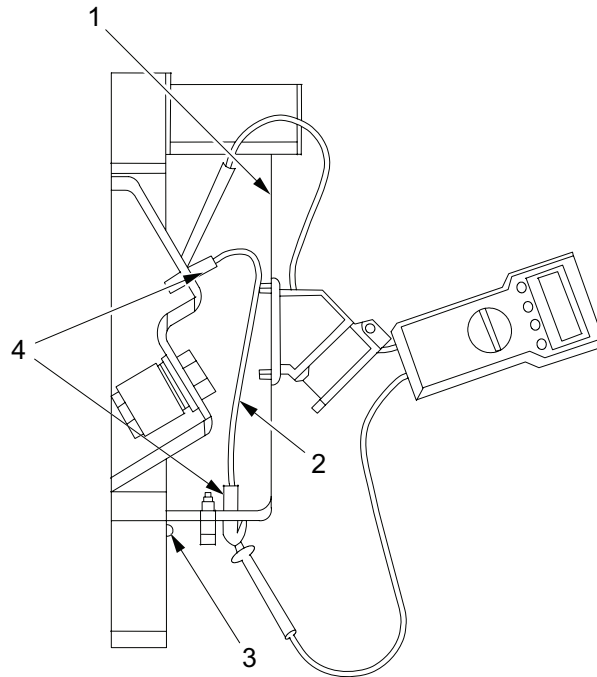
CMF 15 Series – Aircraft Electrician

WARNING

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

NOTE

During installation of components same hardware should be used so as to maintain original integrity of shop set.



SSAE155

INSPECT

1. Move main circuit breaker to **OFF** position.
2. Remove four screws (3) attaching power entry panel cover (1) which is located below circuit breaker panel.
3. Remove power entry panel cover (1) from power entry panel.
4. Visually inspect BNC connectors (4) and cable (2) for damage.
5. Move main circuit breaker to **ON** position.

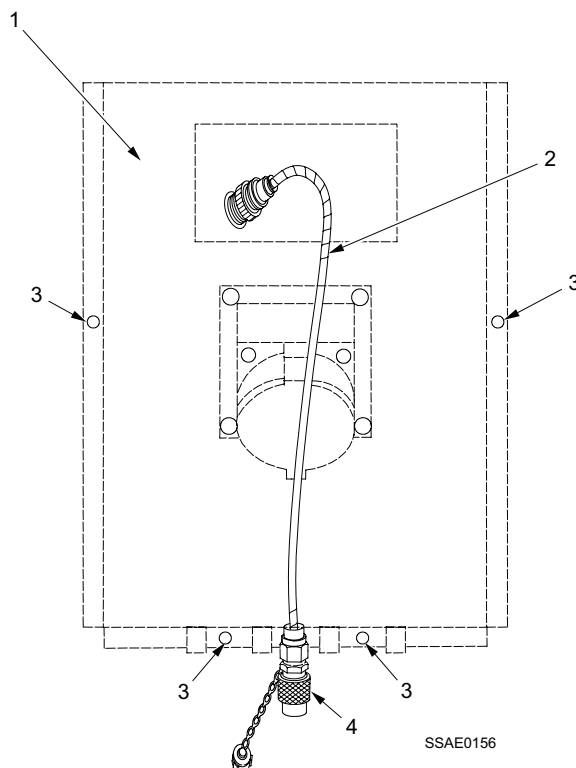
TEST

1. Move main circuit breaker to **OFF** position.
2. Remove four screws (3) attaching power entry panel cover (1) which is located below circuit breaker panel.
3. Remove power entry panel cover (1) from power entry panel.
4. Test BNC cable (2) for continuity.
5. Replace BNC cable (2) if breakage is detected.
6. Move main circuit breaker to **ON** position.

REPLACE

WARNING

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.



1. Move main circuit breaker to **OFF** position.
2. Remove four screws (3) attaching power entry panel cover (1) to power entry panel which is located below circuit breaker panel.
3. Remove power entry panel cover (1) from power entry panel.
4. Remove damaged BNC cable (2) attached to power entry panel by twisting BNC cable connector (4) counter clock wise.
5. Remove damaged BNC cable (2) attached to power entry panel cover (1) by twisting BNC cable connector (4) counter clock wise.
6. Remove damaged cable (2).
7. Install new BNC cable (2) on power entry panel cover (1) by twisting BNC cable connector (4) clockwise.
8. Install new BNC cable (2) into power entry panel by twisting BNC cable connector (4) clockwise.
9. Install power entry panel cover (1) using four screws (3).
10. Move main circuit breaker to **ON** position.

End of Work Package

0033 00-3/(0033 00-4 blank)

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR 60 AMP RECEPTACLE**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0041 00, Table 2, Item 101)
Multimeter (WP 0042 00, Table 2, Item 106)

References:

N/A

Equipment Conditions:

Functional

Materials/Parts:

54 Degree Angle Adapter
(WP 0044 00, Figure 23, Item 1)
Nut (WP 0044 00, Figure 23, Item 2)
Plastic Grommet (WP 0044 00, Figure 23, Item 3)
60 AMP Receptacle
(WP 0044 00, Figure 23, Item 4)

Personnel Required: (1)

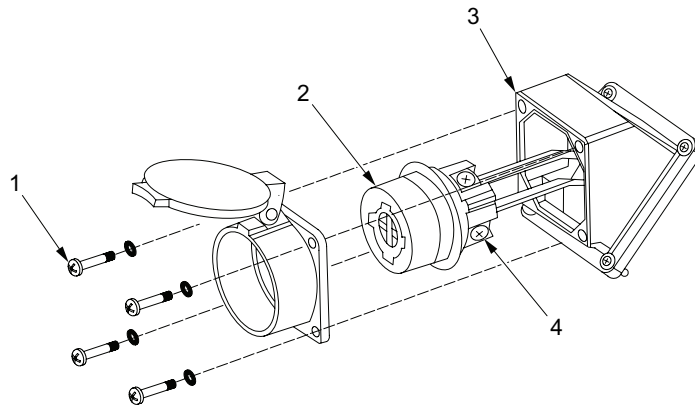
CMF 15 Series – Aircraft Electrician

WARNING

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

NOTE

During installation of components same hardware should be used so as to maintain original integrity of shop set.

60 AMP RECEPTACLE

SSAE157

Inspect

Ensure 60 amp receptacle (2) connections are not loose or damaged.

Test

1. Move main circuit breaker to **OFF** position.
2. Test 60 amp receptacle (2) and wires for continuity.
3. Replace 60 amp receptacle (2) if a problem is detected.
4. Move main circuit breaker to **ON** position.

Replace**WARNING**

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

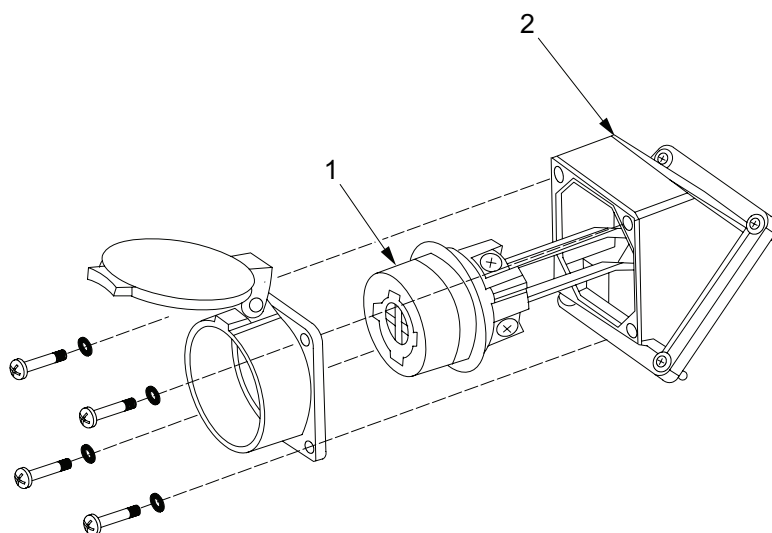
1. Move main circuit breaker to **OFF** position.
2. Remove four machine screws (1) attaching 60 amp receptacle (2) to 54 degree angle adapter (3).
3. Pull 60 AMP receptacle (2) out of 54 degree angle adapter (3) until wire lug terminals (4) are exposed.
4. Loosen wire lug terminals (4) and remove wires.
5. Obtain new 60 amp receptacle (2).

NOTE

Receptacle lugs are identified by letters "X", "Y", and "Z" with ground connection being identified by color green. Black wire will be attached to "X", red wire will be attached to "Y", and blue wire will be attached to "Z".

6. Install new 60 amp receptacle (2) by reattaching wires to wire lug terminals (4).
7. Push 60 amp receptacle (2) back into 54 degree angle adapter (3).
8. Install four machine screws (1) reattaching 60 amp receptacle (2) to 54 degree angle adapter (3).
9. Move main circuit breaker to **ON** position.

54 DEGREE ANGLE ADAPTER



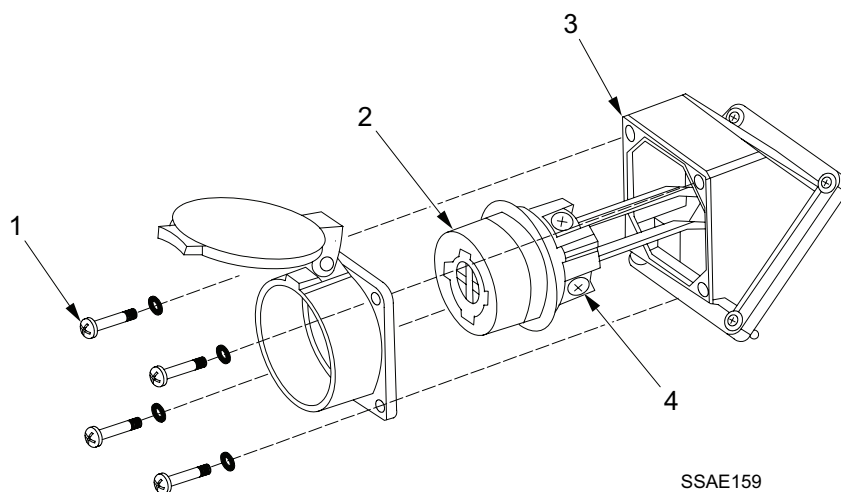
SSAE158

Inspect

Inspect 54 degree angle adapter (2) for any damage that will prevent intended use of 60 amp receptacle (1) or present a safety hazard.

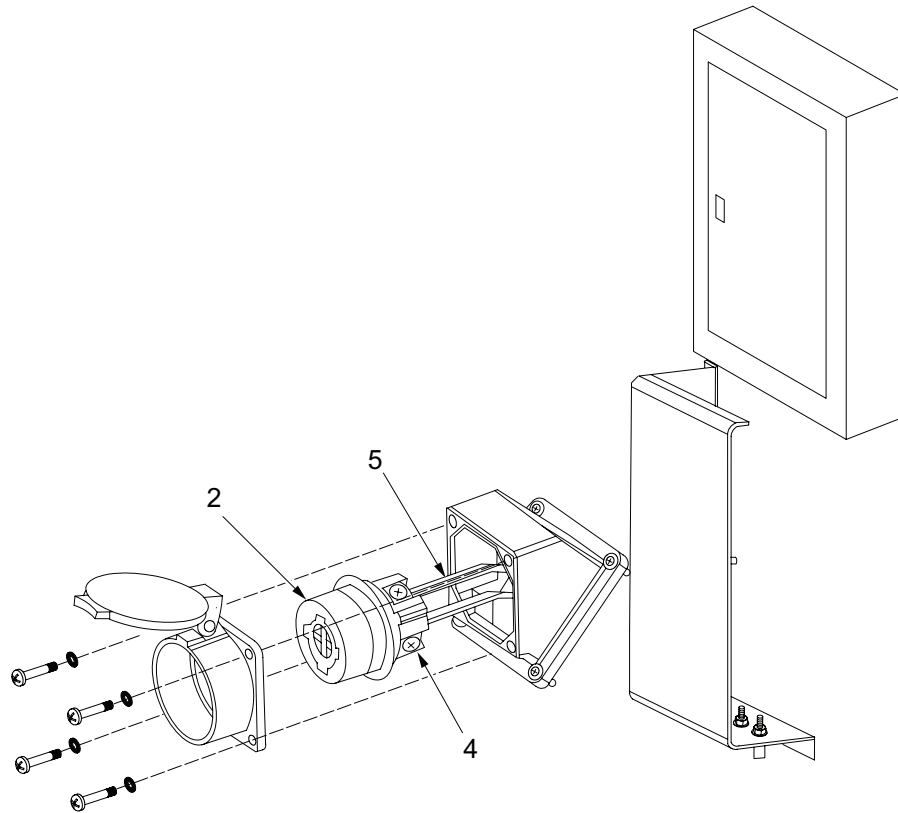
Replace**WARNING**

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.



SSAE159

1. Move main circuit breaker to **OFF** position.
2. Remove four machine screws (1) attaching 60 AMP receptacle (2) to 54 degree angle adapter (3).
3. With machine screws (1) removed, pull 60 AMP receptacle (2) out of 54 degree angle adapter (3) until wire lug terminals (4) are exposed.



SSAE160

NOTE

Receptacle lugs are identified by letters “X”, “Y”, and “Z” with ground connection being identified by color green. Black wire will be attached to “X”, red wire will be attached to “Y”, and blue wire will be attached to “Z”.

4. Loosen all lugs (4) on 60 AMP receptacle (1) and remove wires (5).
5. Remove four machine screws (6) from power entry panel cover (7).
6. Remove four nuts (8), four lock washers (9) and four bolts (10), which attach 54 degree angle adapter (3) to power entry panel cover (7).

NOTE

Hardware for 54 degree angle 60 AMP receptacle is provided by manufacturer.

7. Install new 54 degree angle adapter (3) by installing four bolts (10), four lock washers (9) and four nuts (8) to attach 54 degree angle adapter (3) to power entry panel cover (7).
8. Install four machine screws (6) on power entry panel cover (7).

NOTE

Receptacle lugs are identified by letters “X”, “Y”, and “Z” with ground connection being identified by color green. Black wire will be attached to “X”, red wire will be attached to “Y”, and blue wire will be attached to “Z”.

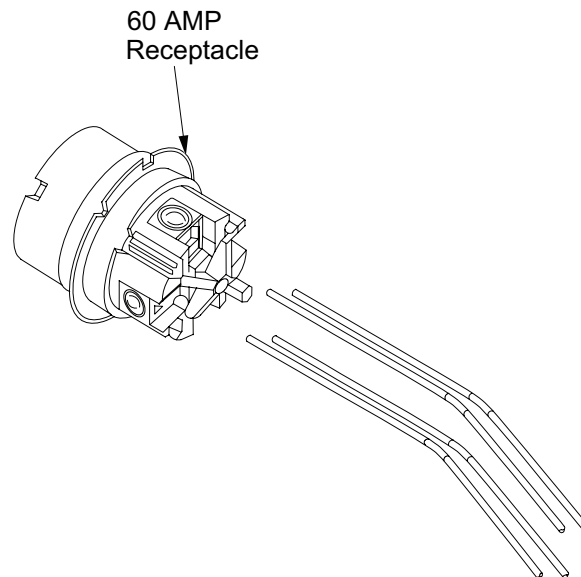
9. Replace wires and tighten all lugs on 60 AMP receptacle.
10. Install four machine screws to attach 60 AMP receptacle to 54 degree adapter housing.
11. Move main circuit breaker to **ON** position.

REPLACE 60 AMP RECEPTACLE**WARNING**

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

NOTE

Receptacle lugs are identified by letters "X", "Y", and "Z" with ground connection being identified by color green. Black wire will be attached to "X", red wire will be attached to "Y", and blue wire will be attached to "Z".



SSAE162

1. Move main circuit breaker to **OFF** position.
2. Loosen all lugs on 60 AMP receptacle and remove wires.
3. Attach wires to new 60 AMP receptacle with black wire connected to "X" lug, red wire to "Y" lug and blue wire connected to "Z" lug.
4. Attach ground wire to "green" terminal.
5. Reinstall 60 AMP receptacle into 54 degree angle adapter using four machine screws.
6. Move main circuit breaker to **ON** position.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR CIRCUIT BREAKERS**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)
Multimeter (WP 0042 00, Table 2, Item 106)

References:

N/A

Equipment Conditions:

Functional

Materials/Parts:

20 AMP 2-Pole Circuit Breaker
(WP 0044 00, Figure 24, Item 1)
20 AMP Single Pole Circuit Breaker
(WP 0044 00, Figure 24, Item 2)
15 AMP GFCI Circuit Breaker
(WP 0044 00, Figure 24, Item 3)
15 AMP Circuit Breaker
(WP 0044 00, Figure 24, Item 4)
60 AMP 2-Pole Circuit Breaker
(WP 0044 00, Figure 24, Item 5)
100 AMP Main Circuit Breaker
(WP 0044 00, Figure 24, Item 6)
40 AMP 3-Pole Circuit Breaker
(WP 0044 00, Figure 24, Item 7)
30 AMP 3-Pole Circuit Breaker
(WP 0044 00, Figure 24, Item 8)

Personnel Required: (1)

CMF 15 Series – Aircraft Electrician

WARNING

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

NOTE

During installation of components same hardware should be used so as to maintain original integrity of shop set.

INSPECT

Inspect circuit breakers for any apparent damage.

TEST

WARNING

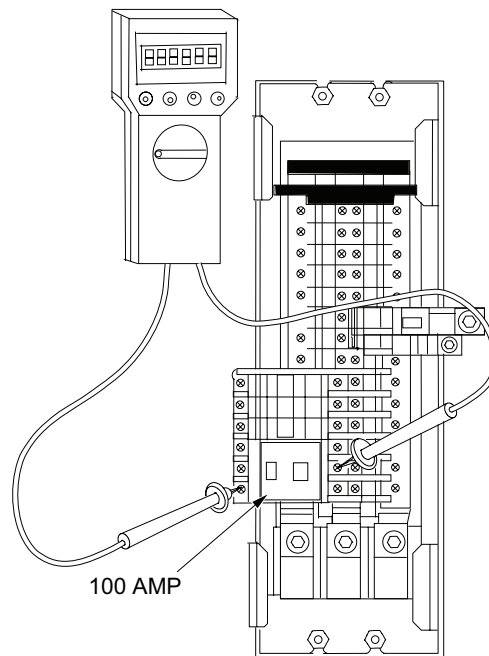
HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.

1. Move all circuit breakers to **OFF** position and tag.

NOTE

This procedure covers obsolete NQOB circuit breaker panel and new NQOD circuit breaker panel. These units are distinguishable by nameplates attached to panel boards.

2. Loosen four captive screws and move clamp fingers to **OPEN** position on model NQOB.
3. Lift circuit breaker panel cover from panel board on model NQOB.
4. Remove four screws and four washers and lift panel board from circuit breaker box on both models.

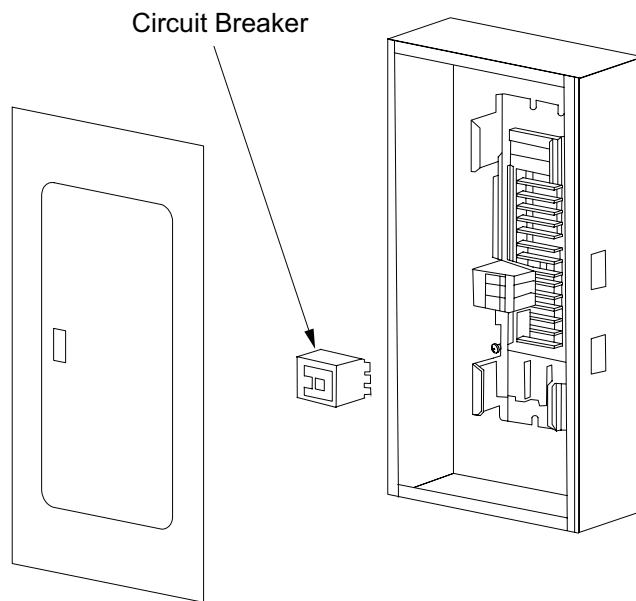


SSAE163

5. Test each circuit breaker by ensuring circuit breaker is in **ON** position.
6. Ensure branch circuit breakers are in **ON** position and observe if any breakers switch to **OFF** position.
7. Move all circuit breakers to **OFF** position.
8. Test each circuit breaker for continuity.
9. Replace circuit breaker(s) if there is no continuity.
10. Move all circuit breakers to **ON** position.

REPLACE**WARNING**

HIGH VOLTAGE exists in electrical system of shop. All electrical inspections, repairs, or replacements will be performed with power **OFF** and only by a qualified electrician. Serious shock hazards exist which could result in **INJURY OR EVEN DEATH** to personnel.



SSAE164

1. Move all circuit breakers to **OFF** position and tag.
2. Mark and disconnect wires from circuit breaker that will be removed.

NOTE

Do not completely remove screw; loosen only enough to allow removal of circuit breaker.

3. Loosen screw securing circuit breaker.
4. Pull circuit breaker from bus bar and remove from circuit breaker box.
5. Position new circuit breaker and tighten screw.
6. Connect wires.
7. Attach panel board to circuit breaker box with four screws and four washers.
8. Place panel cover on model NQOB panel board, move clamp fingers to **LOCK** position and tighten four captive screws.
9. Close circuit breaker panel door.
10. Move all circuit breakers to **ON** position.

End of Work Package

0035 00-3/(0035 00-4 blank)

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR WATER AND AIR FEED-THRU CONNECTOR ASSEMBLIES**

INITIAL SETUP**Tools And Special Tools:**

- General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)
- Utility Knife
(WP 0042 00, Table 2, Item 108)

References:

WP 0039 00

Equipment Conditions:

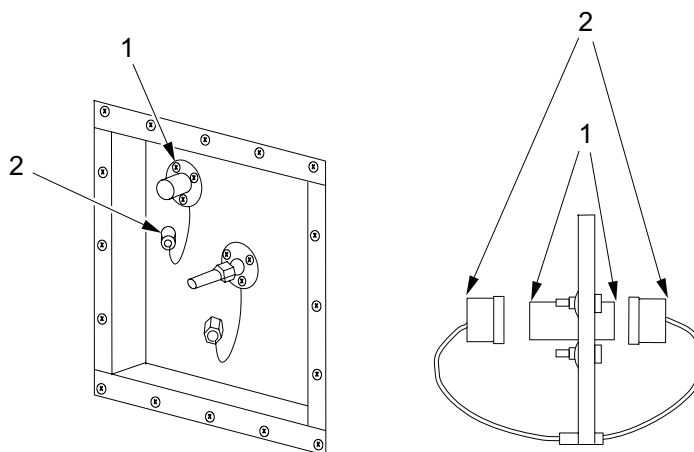
Functional

Materials/Parts:

- Pan Head Machine Screw
(WP 0044 00, Figure 25, Item 1)
- Socket Head Shoulder Screw
(WP 0044 00, Figure 25, Item 2)
- Pipe Cap 1/2" (WP 0044 00, Figure 25, Item 3)
- Water Feed-Thru Connector Assembly
(WP 0044 00, Figure 25, Item 4)
- Flat Washer (WP 0044 00, Figure 25, Item 5)
- Lock Washer (WP 0044 00, Figure 25, Item 6)
- Plain Hex Nut (WP 0044 00, Figure 25, Item 7)
- Air Feed-Thru Connector Assembly
(WP 0044 00, Figure 25, Item 8)
- Lanyard (WP 0044 00, Figure 25, Item 9)
- Pipe Cap 1/4" (WP 0044 00, Figure 25, Item 10)
- Caulking Compound (WP 0048 00, Table 1, Item 1)

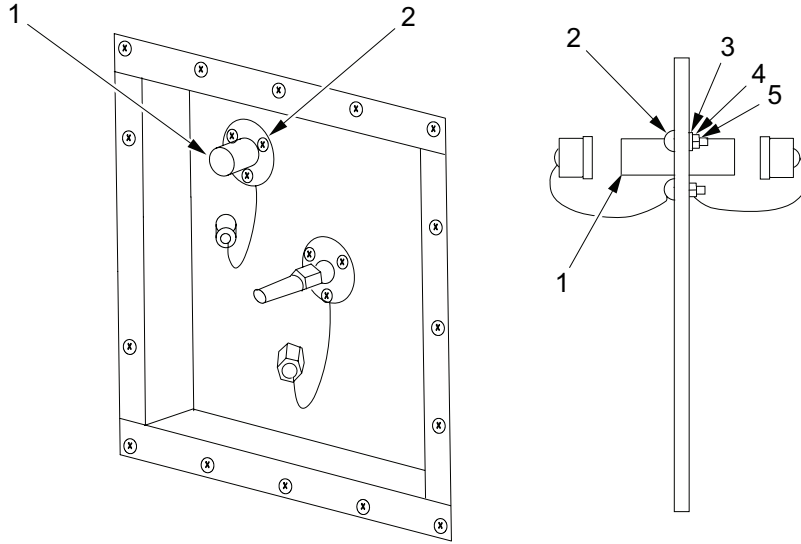
Personnel Required: (2)

CMF 15 Series

WATER FEED-THRU CONNECTOR ASSEMBLY**Inspect**

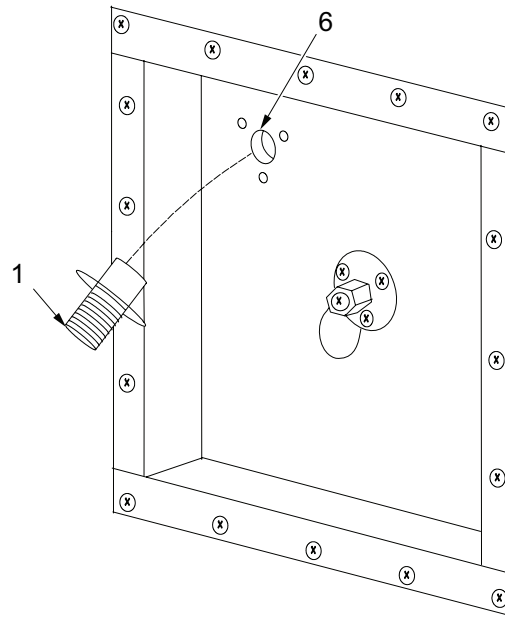
SSAE165

1. Inspect condition of threads on both ends of water feed-thru connector assembly (1).
2. Replace if damage is detected.
3. Ensure that protective dust cap (2) are attached.

Replace

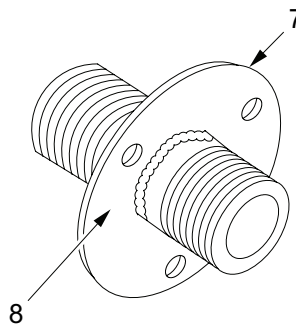
SSAE166

1. Have assistant hold nut (5) inside shelter.
2. Remove nuts (5), flat washers (3), lock washers (4), and screws (2), releasing water feed-thru connector assembly (1).



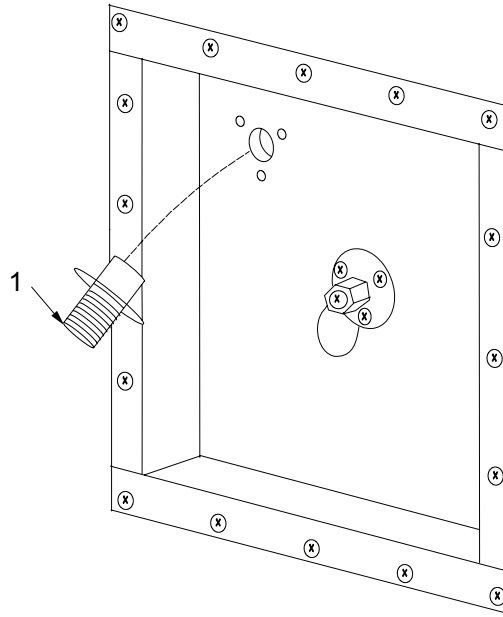
SSAE167

3. Remove water feed-thru connector assembly (1) from services utility panel.
4. Remove old caulking compound (6) by scraping with utility knife.



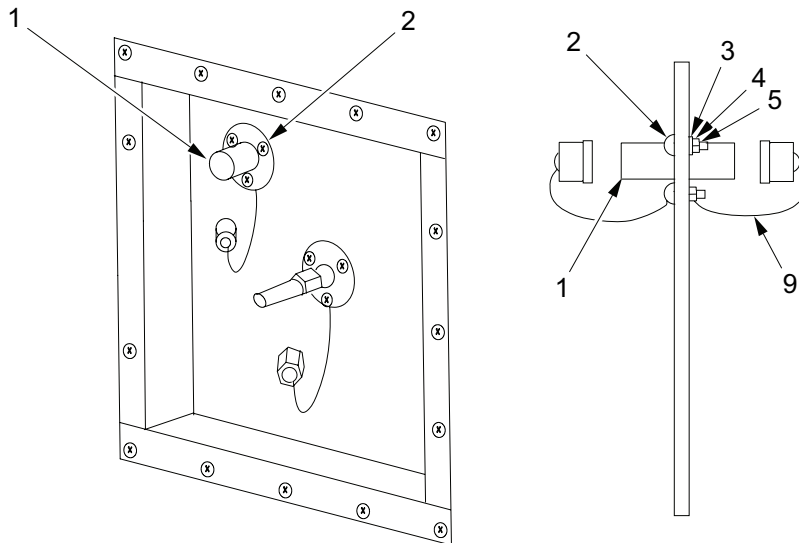
SSAE168

5. Apply caulking compound on inside of water feed-thru connector assembly flange (8) toward long end of water feed-thru connector assembly (7).



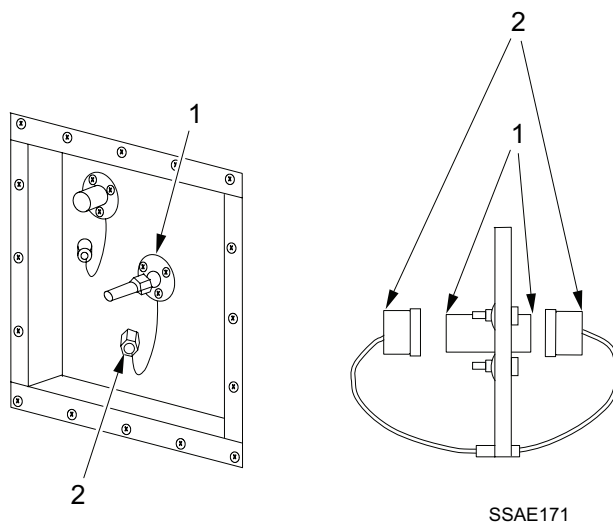
SSAE169

6. Install new water feed-thru connector assembly (1) from outside of shelter with long end through hole.

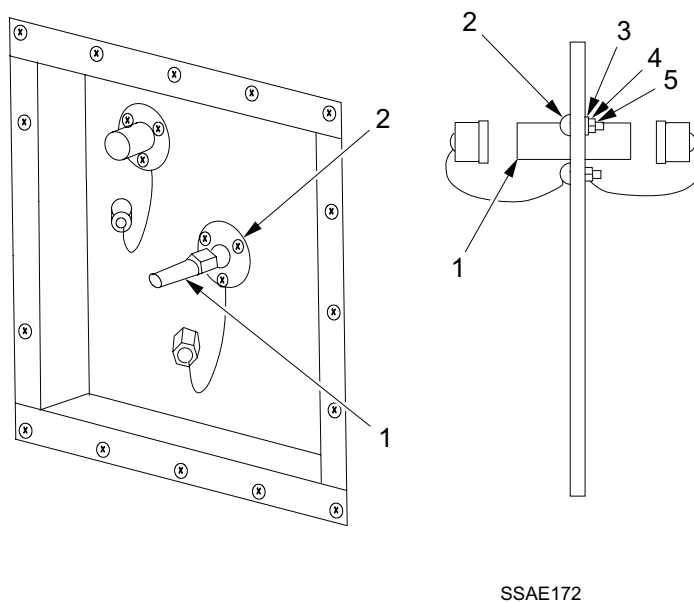


SSAE170

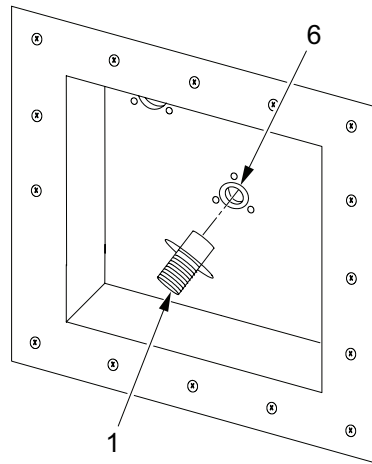
7. Install all but one screw (2), have assistant install flat washers (3), lock washer (4), and nuts (5) inside of shelter and secure.
8. Replace one lanyard (9) on outside of shelter and install remaining screw (2).
9. Have assistant install flat washer (3), lock washer (4), second lanyard (9), and nut (5) on inside of shelter.
10. Tighten screws (2).

AIR FEED-THRU CONNECTOR ASSEMBLY**Inspect**

1. Inspect condition of threads on both ends of air feed-thru connector assembly (1).
2. Replace if damage is detected.
3. Ensure that protective dust caps (2) are attached.

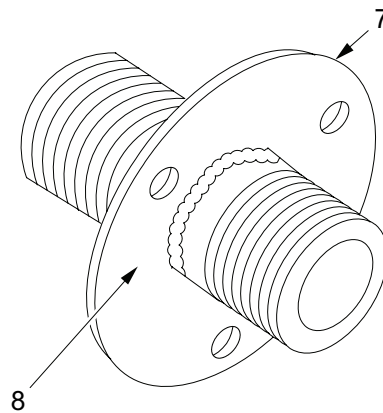
Replace

1. Have assistant hold nut (5) inside shelter.
2. Remove nuts (5), flat washers (3), lock washers (4), and screws (2), releasing air feed-thru connector assembly (1).



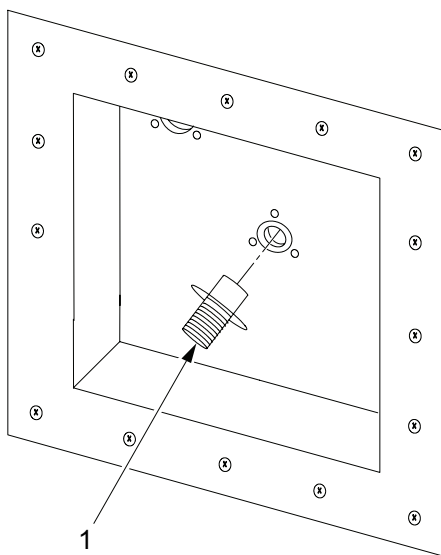
SSAE173

3. Remove air feed-thru connector assembly (1) from services utility panel.
4. Remove old caulking compound (6) by scraping with utility knife.



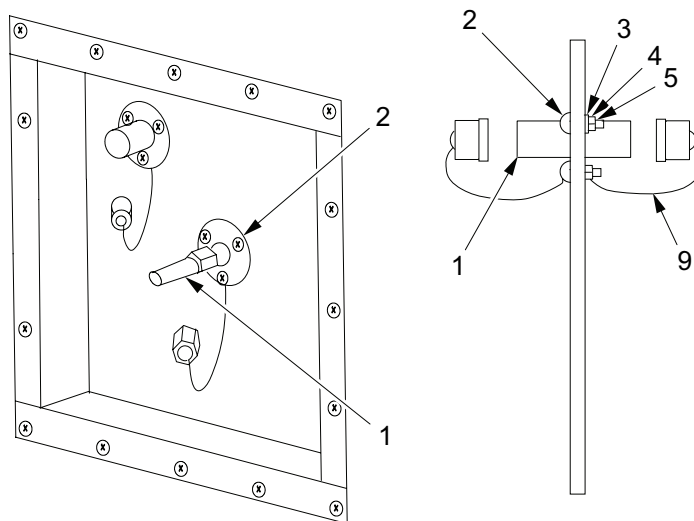
SSAE174

5. Apply caulking compound on inside of air feed-thru connector assembly flange (78) toward long end of air feed-thru connector assembly (7).



SSAE175

6. Install new air feed-thru connector assembly (1) from outside of shelter with long end through hole.



SSAE176

7. Install all but one screw (2), have assistant install flat washers (3), lock washer (4), and nuts (5) inside of shelter and secure.
8. Replace one lanyard (9) on outside of shelter and install screw (2).
9. Have assistant install flat washer (3), lock washer (4), second lanyard (9), and nut (5) on inside of shelter.
10. Tighten screws (2).

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR OIL/WATER SEPARATOR**

INITIAL SETUP**Tools And Special Tools:**

Torque Wrench 0-600 in. lbs.
(WP 0041 00, Table 2, Item 102)
Utility Knife
(WP 0042 00, Table 2, Item 108)

References:

WP 0038 00

Equipment Conditions:

Functional

Materials/Parts:

Oil/Water Separator
(WP 0044 00, Figure 26, Item 1)
Hex Head Bolt (WP 0044 00, Figure 26, Item 2)
Lock Washer (WP 0044 00, Figure 26, Item 3)
Flat Washer (WP 0044 00, Figure 26, Item 4)
Pipe Bushing (WP 0044 00, Figure 26, Item 5)
Pipe Nipple (WP 0044 00, Figure 26, Item 6)
Pipe Coupling (WP 0044 00, Figure 26, Item 7)
Pipe Elbow (WP 0044 00, Figure 26, Item 8)
Hose Fitting (WP 0044 00, Figure 26, Item 9)
Non-Metallic Hose
(WP 0044 00, Figure 26, Item 10)
Loop Clamp (WP 0044 00, Figure 26, Item 11)

Personnel Required: (1)

CMF 15 Series

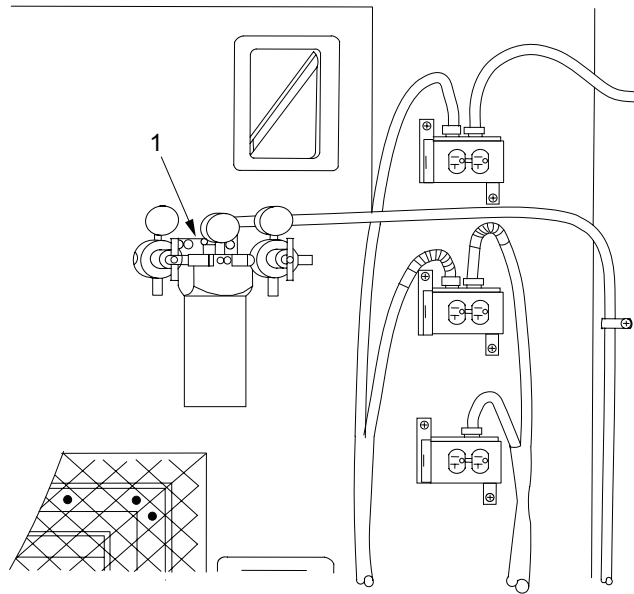
WARNING

Ensure compressed air supply is disconnected before attempting any work on oil/water separator. Do not direct compressed air near eyes or directly against skin. Wear goggles; high pressure air against eyes can cause **BLINDNESS**.

NOTE

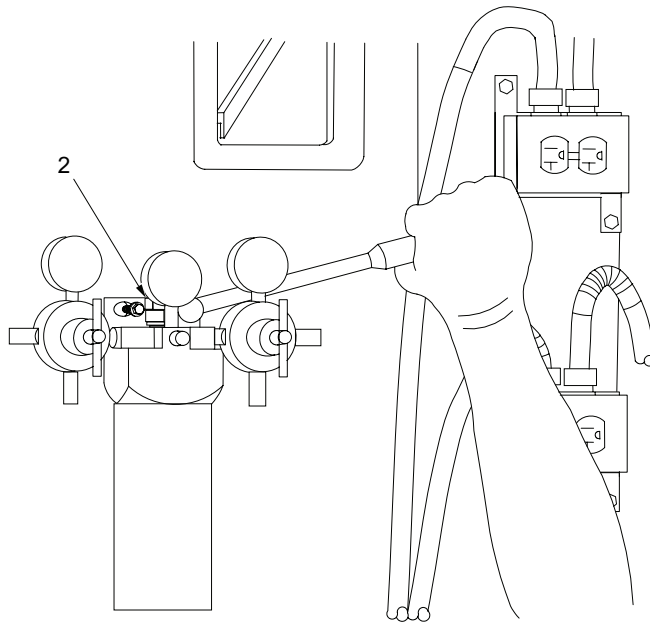
During installation of components same hardware should be used so as to maintain original integrity of shop set.

INSPECT



SSAE177

1. Inspect oil/water separator bracket (1) for looseness.



SSAE178

NOTE

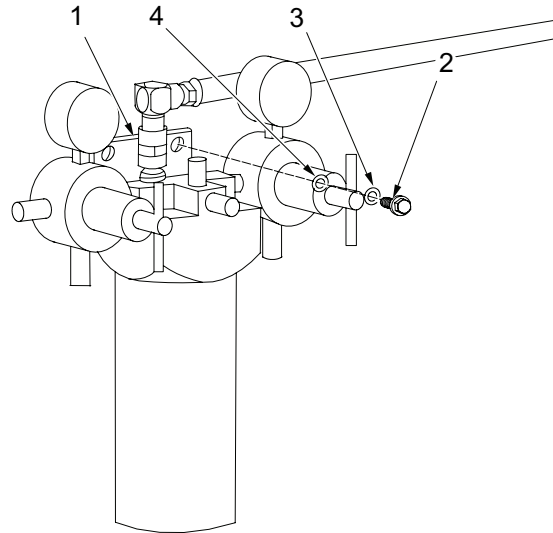
Remove center gauge if necessary to tighten bolts.

2. Tighten mounting bolts (2) if necessary.
3. Torque bolts (2) 160 – 190 in. lbs.
4. If bolts (2) will not tighten to specified torque follow procedures in WP 0038 00.

REPLACE

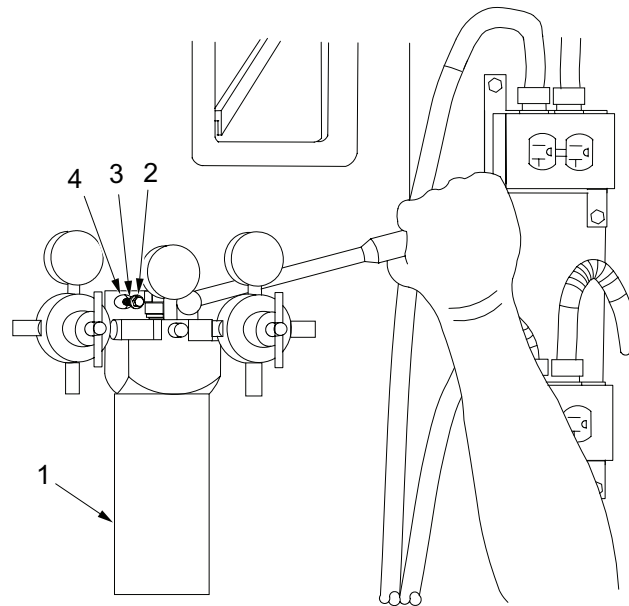
NOTE

Graphic depicts the center gauge removed for clarity.



SSAE179

1. Follow procedures for replacing non-metallic hose (0037 00-5, steps 1 through 7).
2. Remove two bolts (2), two lock washers (3), two flat washers (4), and oil/water separator (1).

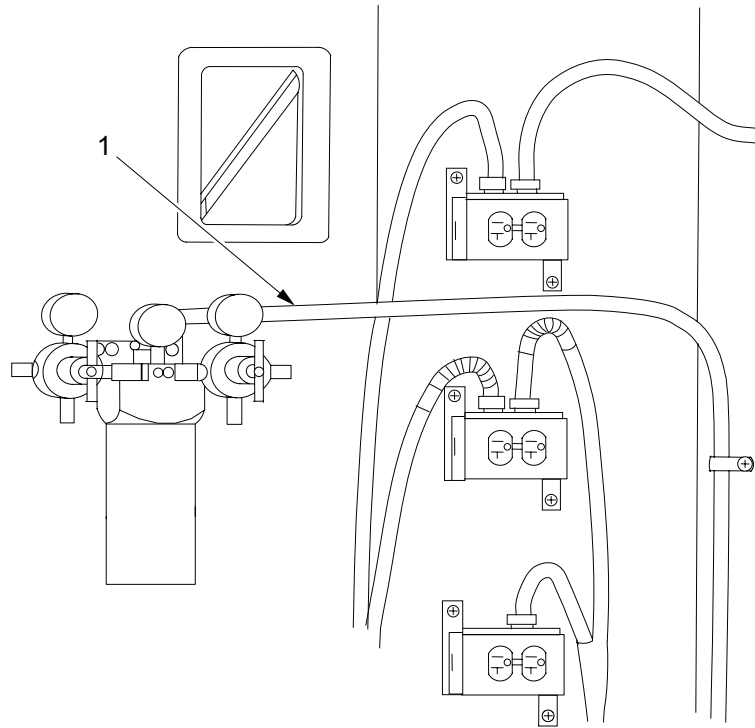


SSAE180

3. Position oil/water separator (1) over wall inserts.
4. Install two bolts (2), two lock washers (3), and two flat washers (4).
5. Torque bolts (4) 160 – 190 in. lbs.

NON-METALLIC HOSE AND FITTINGS**WARNING**

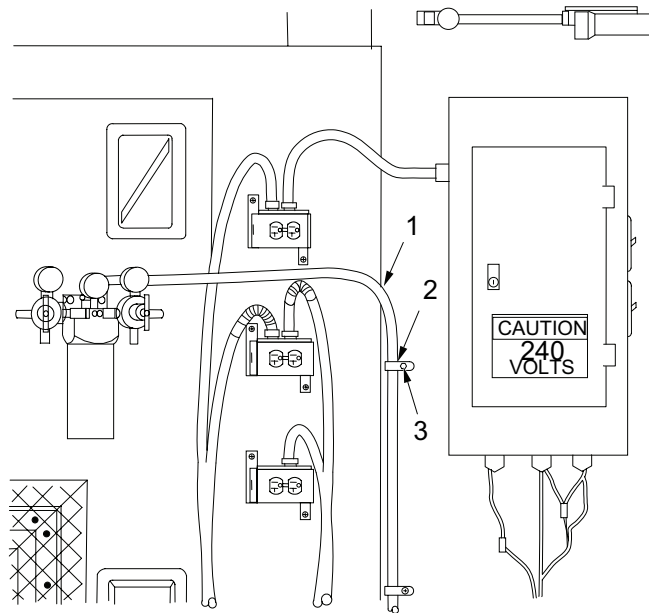
Ensure compressed air supply is disconnected before attempting any work on oil/water separator. Do not direct compressed air near eyes or directly against skin. Wear goggles; high pressure air against eyes can cause **BLINDNESS**.

Inspect

SSAE181

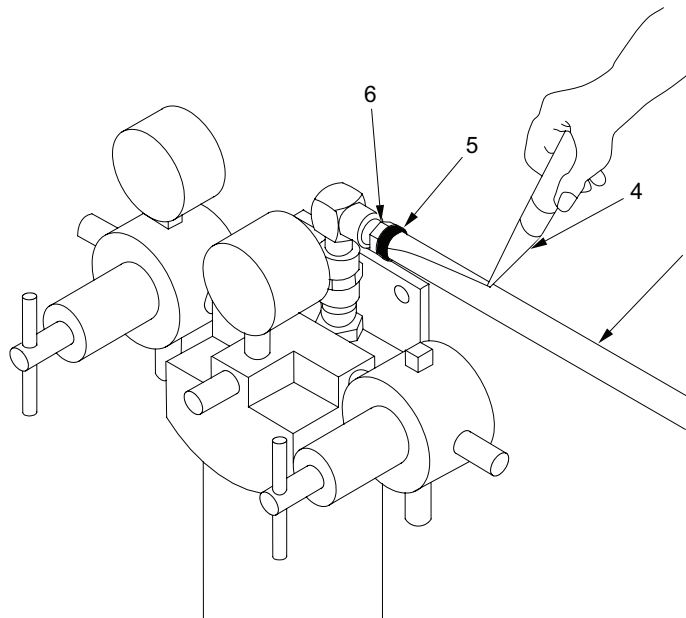
1. Inspect non-metallic hose (1) for visible damage.
2. Replace if damaged is detected.

Replace



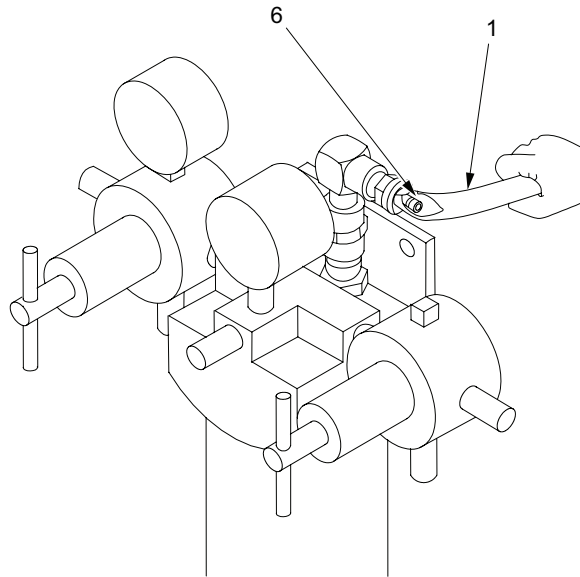
SSAE182

1. Remove bolts (3) and loop clamps (2) from non-metallic hose (1).



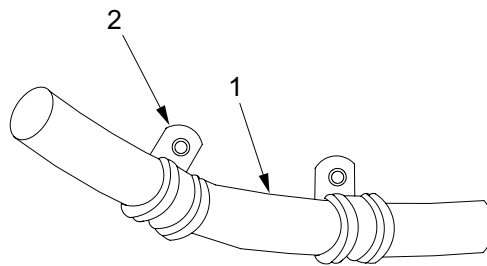
SSAE183

2. Slit non-metallic hose (1) lengthwise, with a utility knife (4), from protective cap (5) to end of fitting (6); approximately 1 1/2 inches.



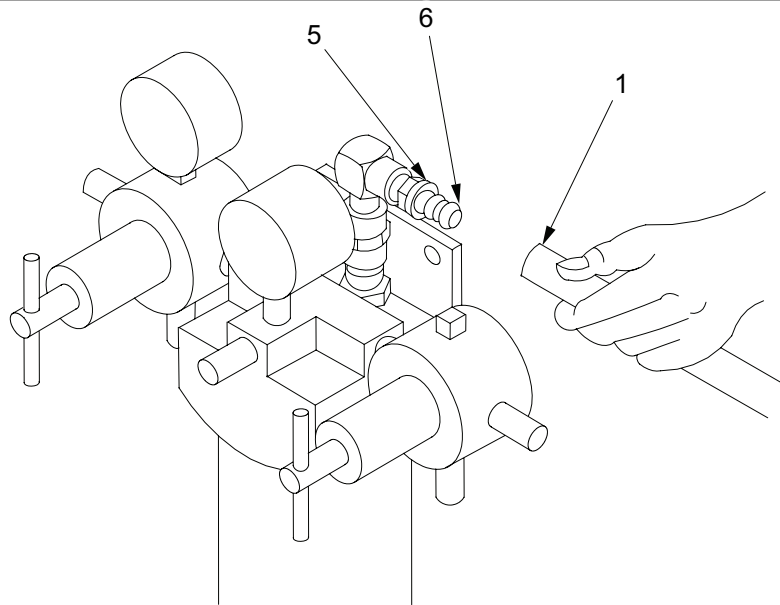
SSAE184

3. Bend non-metallic hose (1) back over fitting (6) to remove.
4. Repeat steps 2 and 3 for other end of hose.



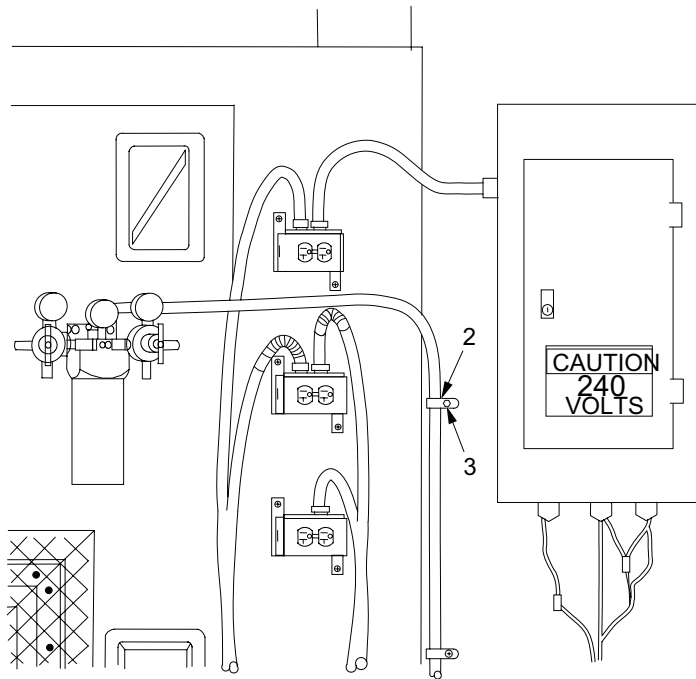
SSAE185

5. Slide loop clamps (2) over new non-metallic hose (1).



SSAE186

6. Push non-metallic hose (1) on fitting (6) until end seats against protective cap (5).



SSAE187

7. Reinstall loop clamps (2) with bolts (3) in original position and secure.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE INSTRUCTIONS FOR BOLTS, SETSCREWS, AND INSERTS**

INITIAL SETUP**Tools And Special Tools:**

General Mechanics Tool Kit
(WP 0042 00, Table 2, Item 101)
Torque Wrench 0-600 in. lbs.
(WP 0042 00, Table 2, Item 102)

References:

TM 10-5411-201-14

Equipment Conditions:

Functional

Materials/Parts:

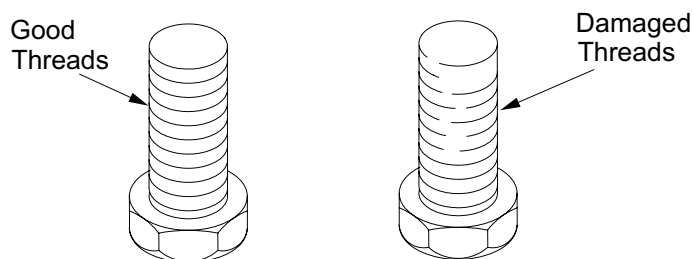
Wall Inserts (WP 0044 00, Figure 27, Item 1)
Floor Inserts (WP 0044 00, Figure 27, Item 2)
Setscrew (WP 0047 00, Table 1, Item 14)

Personnel Required: (1)

CMF 15 Series

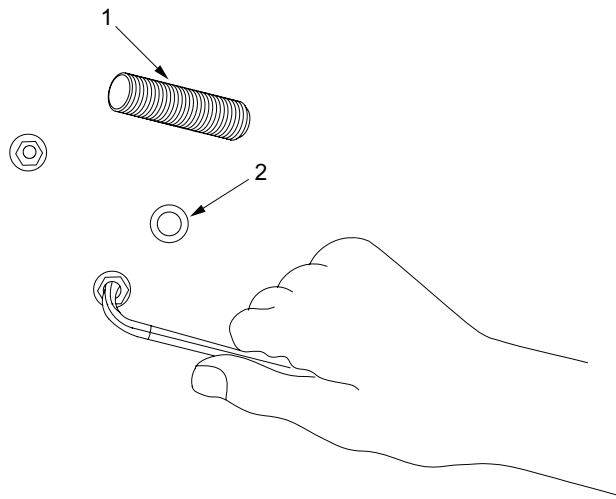
BOLT INSPECTION**NOTE**

Quantity of mounting hardware may vary.



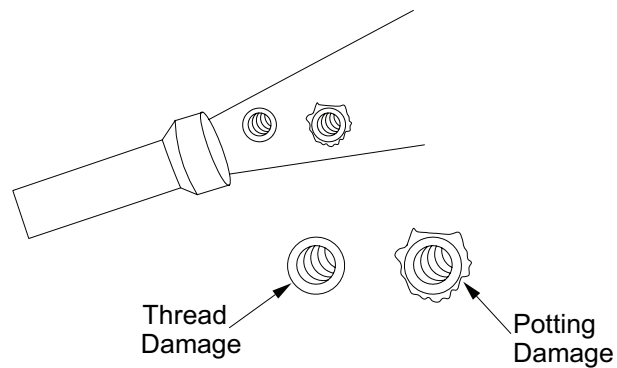
SSAE188

1. Inspect bolt for thread damage or rounded head.
2. Replace bolt if damage is detected.
3. Torque wall or floor mount bolt 160-190 in. lbs.

SETSCREW INSPECTION

SSAE189

1. Remove any setscrew (1) that will not screw into floor insert (2).
2. Inspect setscrew (1) and insert (2) for damaged threads.
3. Install new setscrew (1) as required.

INSERT INSPECTION

SSAE190

1. Inspect insert with a flashlight if damage is detected.
2. Replace insert if insert thread is damaged or insert has broken loose in adhesive potting. For replacement information see TM 10-5411-201-14, Threaded Insert Replacement.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
ILLUSTRATED LIST OF MANUFACTURED ITEMS**

INTRODUCTION**Scope**

This work package includes complete instructions for making items authorized to be manufactured.

How to Use the Index of Manufactured Items

A part number index in alphanumeric order is provided for cross-referencing the part number of the item to be manufactured to the page that covers fabrication criteria.

Explanation of the Illustrations of Manufactured Items

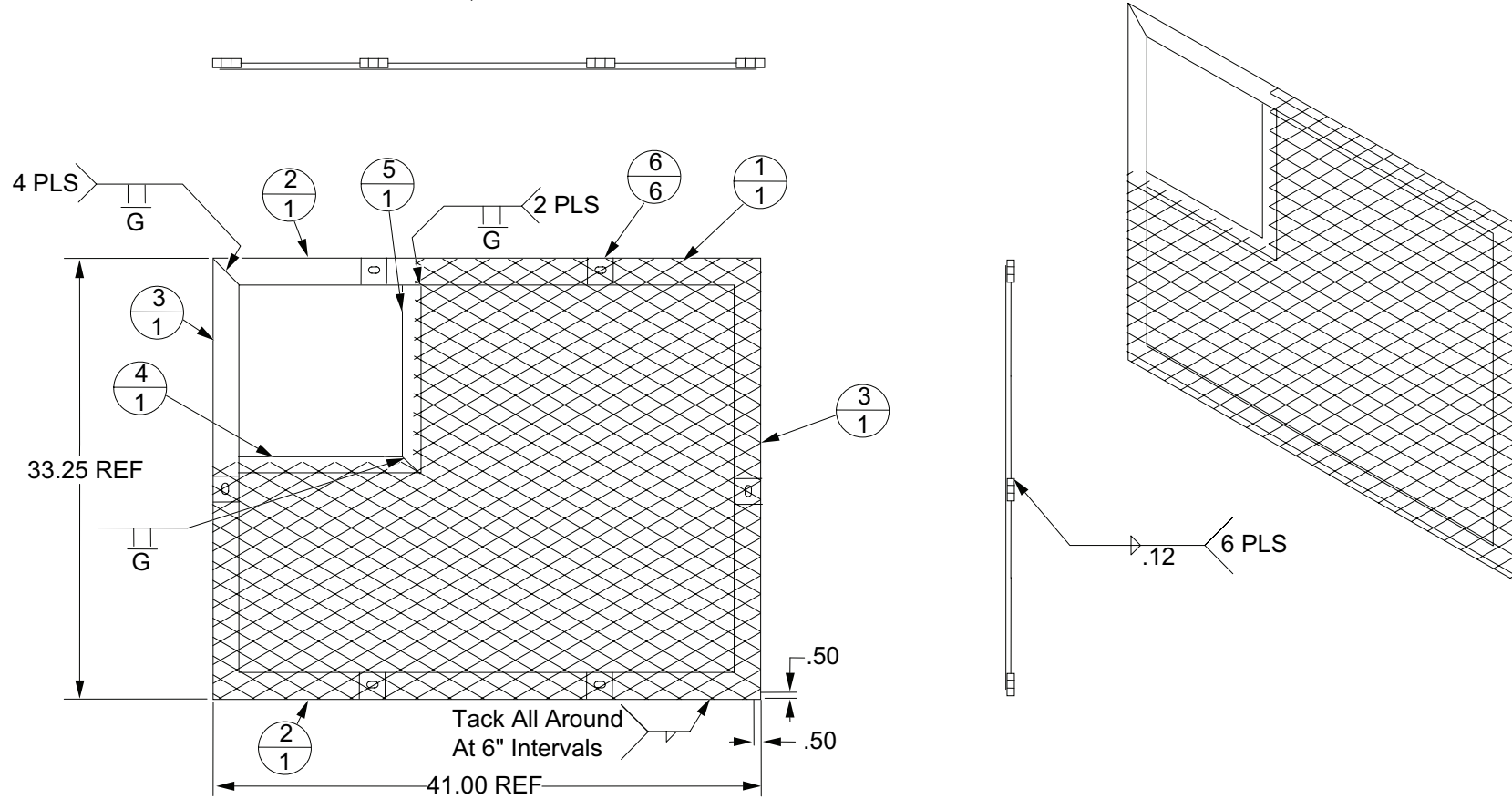
All instructions needed by maintenance personnel to manufacture the item are included on the illustrations. All bulk materials needed for manufacture of an item are listed by part number or specification number in a tabular list on the illustration.

REFERENCE INDEX

PART NUMBER	NOMENCLATURE	FIGURE NO.
17A6X0021	ECU Security Screen Assembly	1
1024534	Strap	2
1024535	Power Supply Mounting Frame	3
1024576	Cabinet Bracket	4
20083250	Water Feed-Thru Connector Assembly	5
20085285	ECU Cable Assembly	6
20085286	Washer	7
20087058	Air Feed-Thru Connector Assembly	8
20089721	First Aid Bracket	9

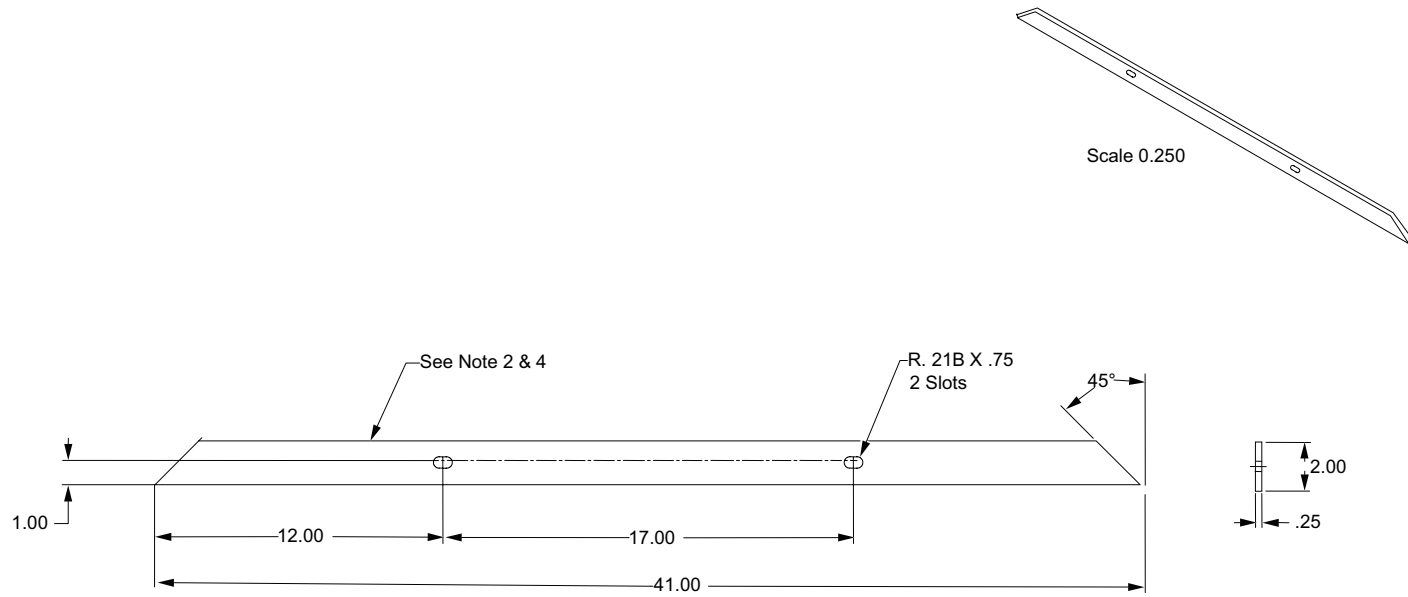
NOTES:

1. APPLICABLE STANDARDS/SPECIFICATIONS:
 - A. ASME Y14.100
 - B. ASME Y14.5M
2. MATERIAL: AL ALY 6061-T6, PER SAE AMS-QQ-A-200/8, ASTM B221, ASTM B308.
3. WELDING IAW 59074-AQ-G1B-010/248 AND 13214E8326 TYPE IIM CLASS 2.
4. REMOVE ALL BURRS AND SHARP EDGES.
5. FINISH: 4.10 PLUS 7.3.1 PLUS 22.2 OF MIL-STD-171, COLOR WHITE NO. 17773.



SSAE191

Figure 1. ECU Security Screen Assembly, PN 17A6X0021 (Sheet 1 of 6).



SSAE192

Figure 1. ECU Security Screen Assembly, PN 17A6X0021 (Sheet 2 of 6).

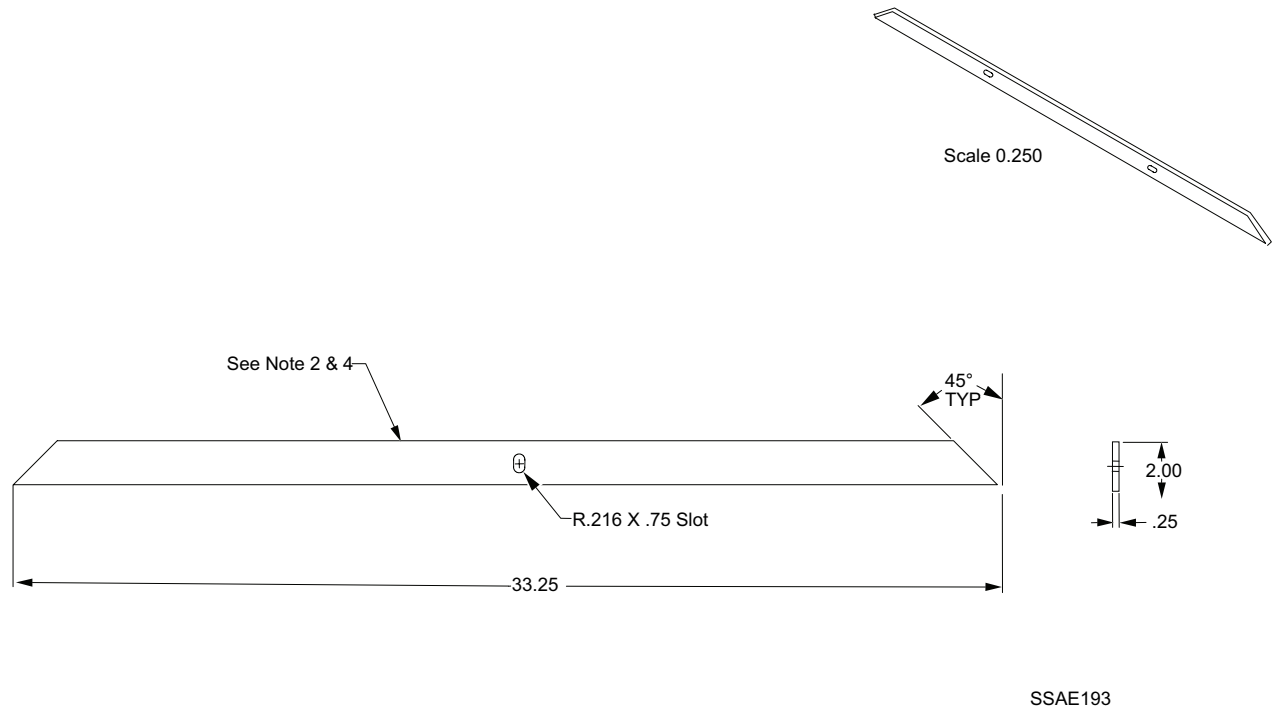


Figure 1. ECU Security Screen Assembly, PN 17A6X0021 (Sheet 3 of 6).

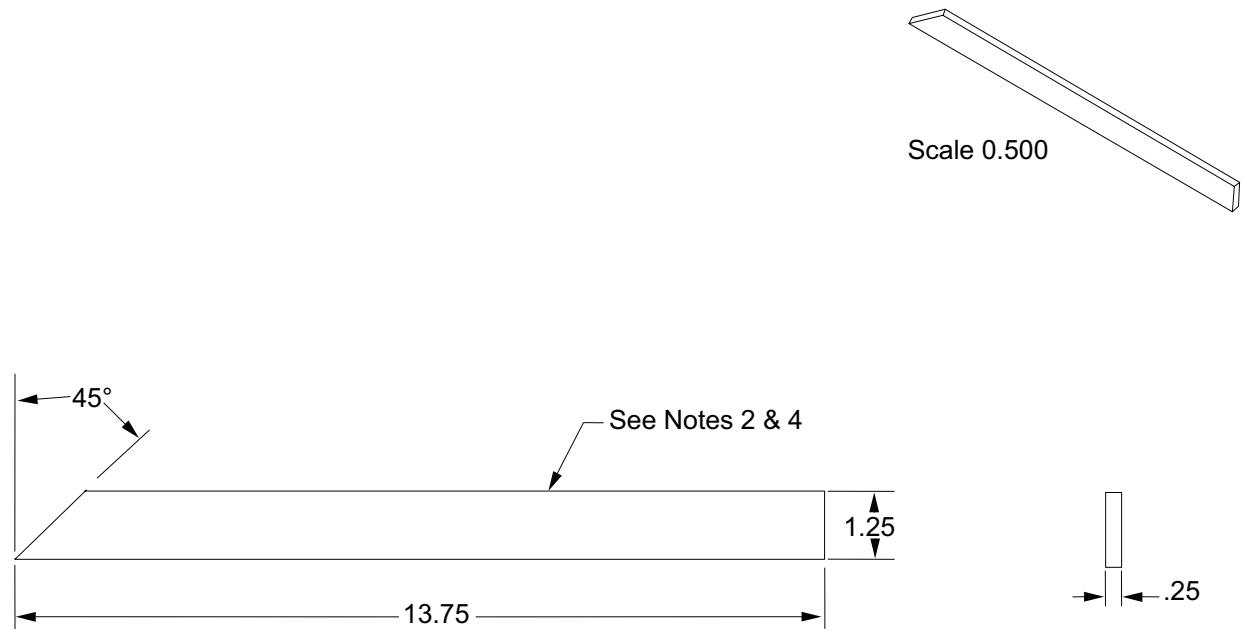


Figure 1. ECU Security Screen Assembly, PN 17A6X0021 (Sheet 4 of 6).

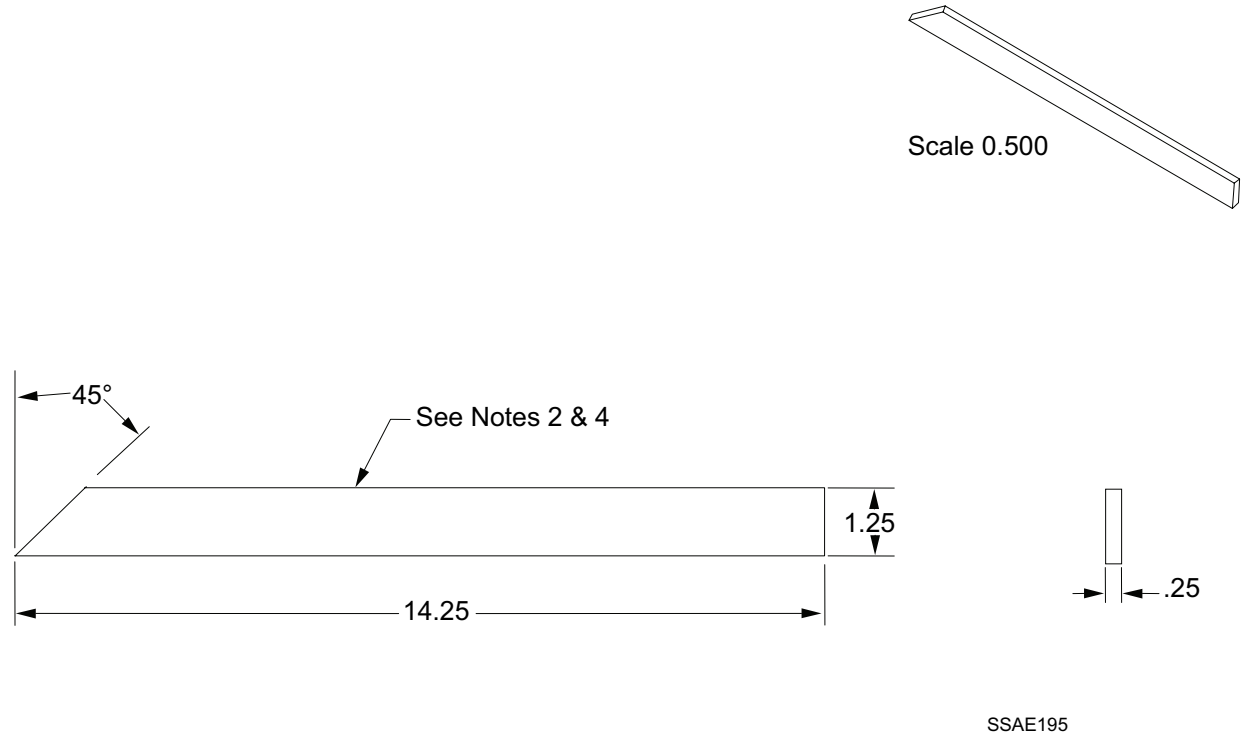


Figure 1. ECU Security Screen Assembly, PN 17A6X0021 (Sheet 5 of 6).

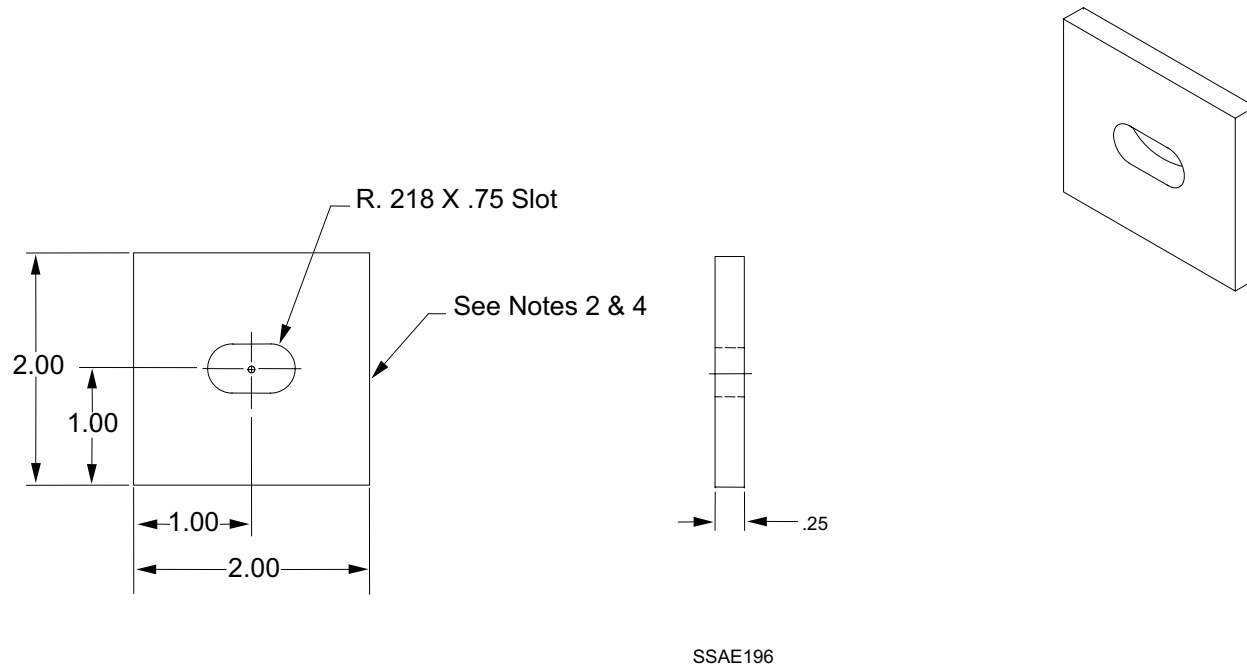
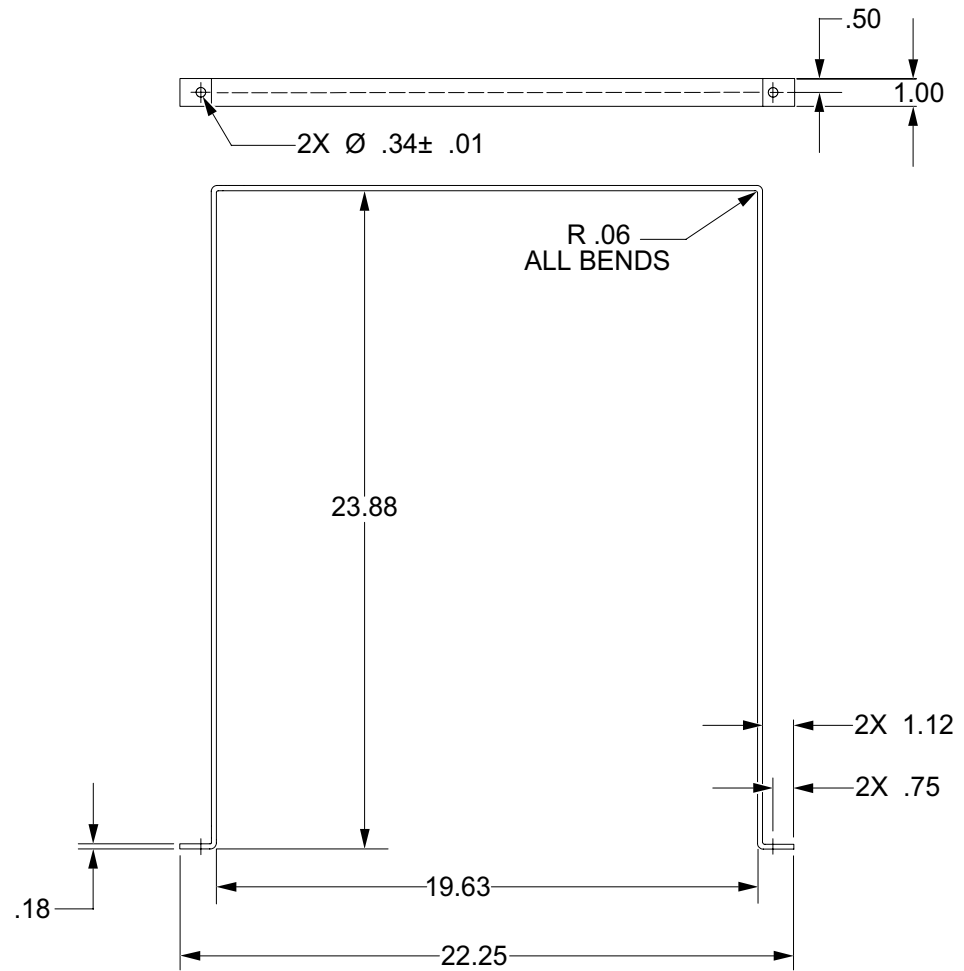


Figure 1. ECU Security Screen Assembly, PN 17A6X0021 (Sheet 6 of 6).

NOTES:

1. APPLICABLE SPECIFICATIONS/STANDARDS:
 - A. ASME Y14.100
 - B. ASME Y14.5M-1994
2. BREAK ALL SHARP EDGES, DEBURR ALL HOLES.
3. PROTECTIVE FINISH: FINISH 5.1.1 PLUS 20.24 OF MIL-STD-171, COLOR 24533 OF FED-STD-595. APPLY AND TEST PER MIL-DTL-53072.
4. MARK PART NO. IAW MIL-STD-130.

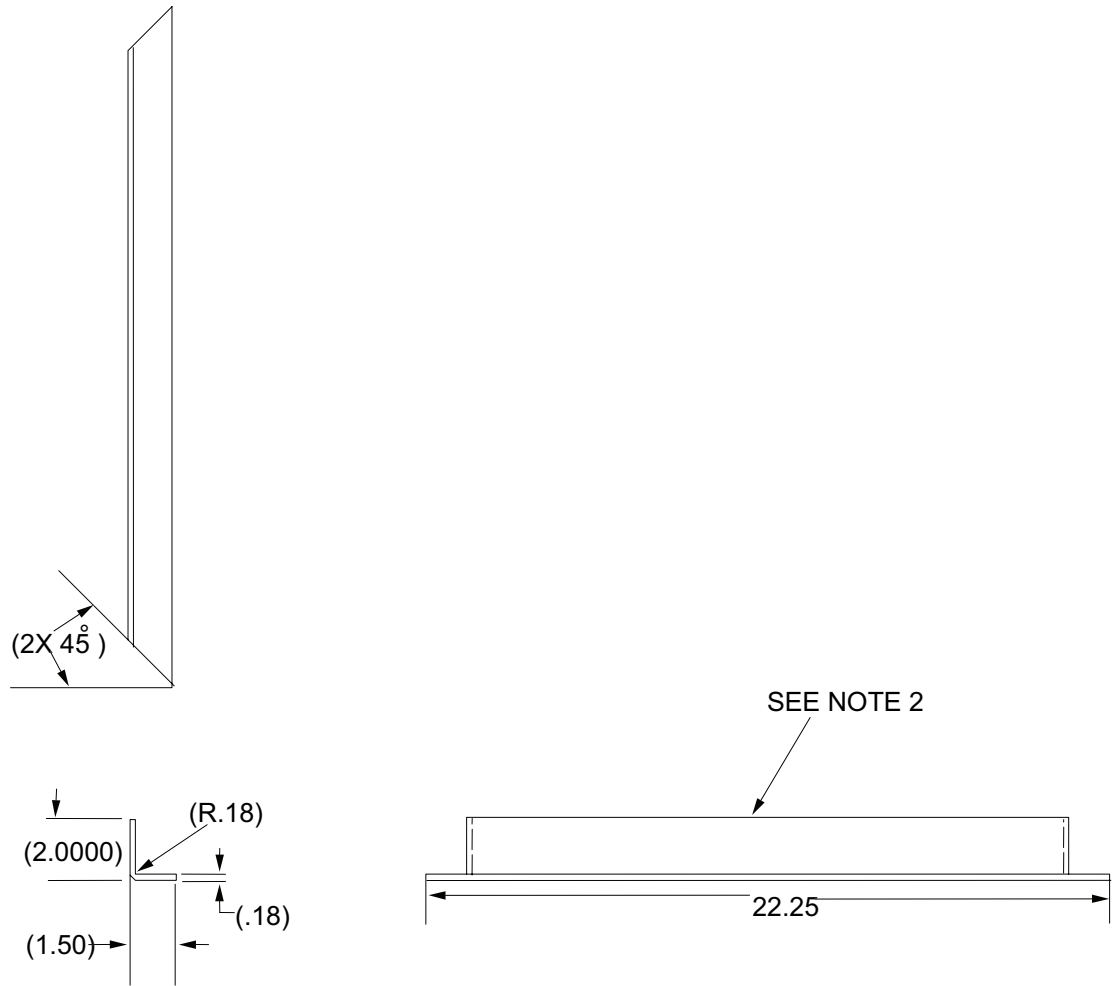


SSAE196A

Figure 2. Strap, PN 1024534.

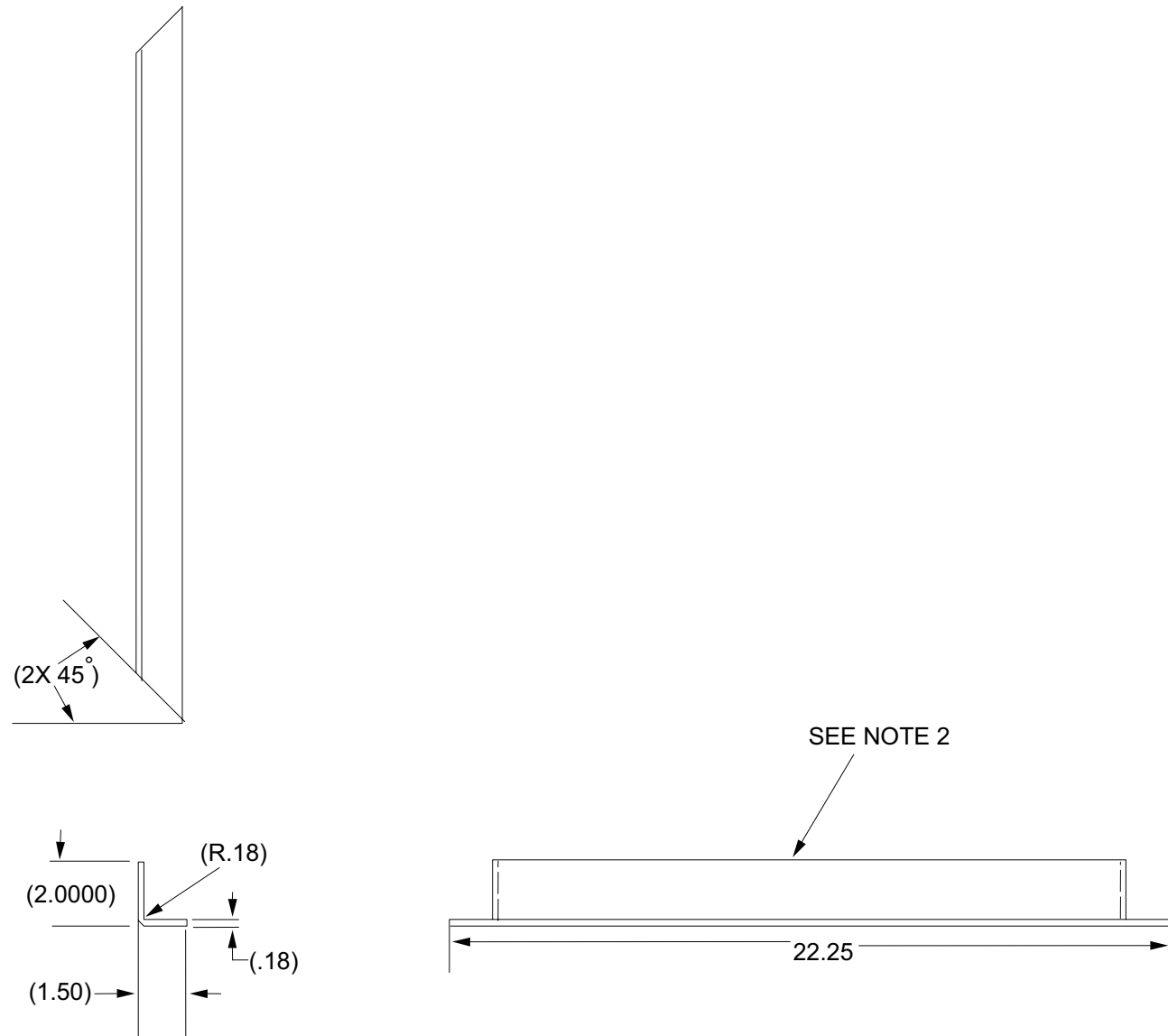
NOTES:

1. MARK PART NO. IAW MIL-STD-130. BALLOONS TO READ ASNOTES:
2. APPLICABLE SPECIFICATIONS/STANDARDS:
 - A. ASME Y14.100
 - B. ASME Y14.5M-1994
3. STEEL, ANGLE, CARBON, STRUCTURAL PER ASTM A36, SIZES AS SHOWN
4. STEEL BAR, MERCHANT QUALITY PER ASTM A575, SIZES AS SHOWN.
5. BREAK ALL SHARP EDGES, DEBURR ALL HOLES.
6. WELD IAW S9074-AQ-G1B-010/248 OR AWS D1.1
7. PROTECTIVE FINISH: FINISH 5.2 FOLLOWED BY 24.17 OF MIL-STD-171, COLOR 24533 OF FED-STD-595. APPLY AND TEST PER MIL-DTL-53072.
8. MARK PART NO. IAW MIL-STD-130. BALLOONS TO READ AS



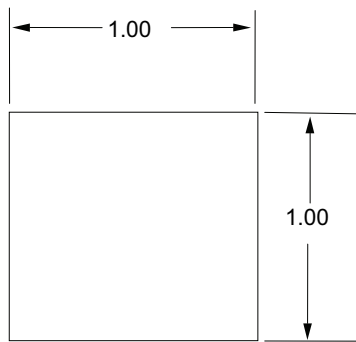
SSAE197

Figure 3. Power Supply Mounting Frame, PN 1024535 (Sheet 1 of 5).

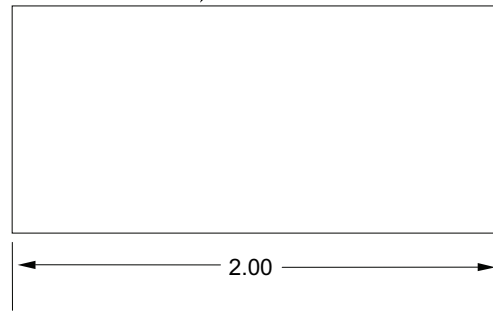


SSAE198

Figure 3. Power Supply Mounting Frame, PN 1024535 (Sheet 2 of 5).



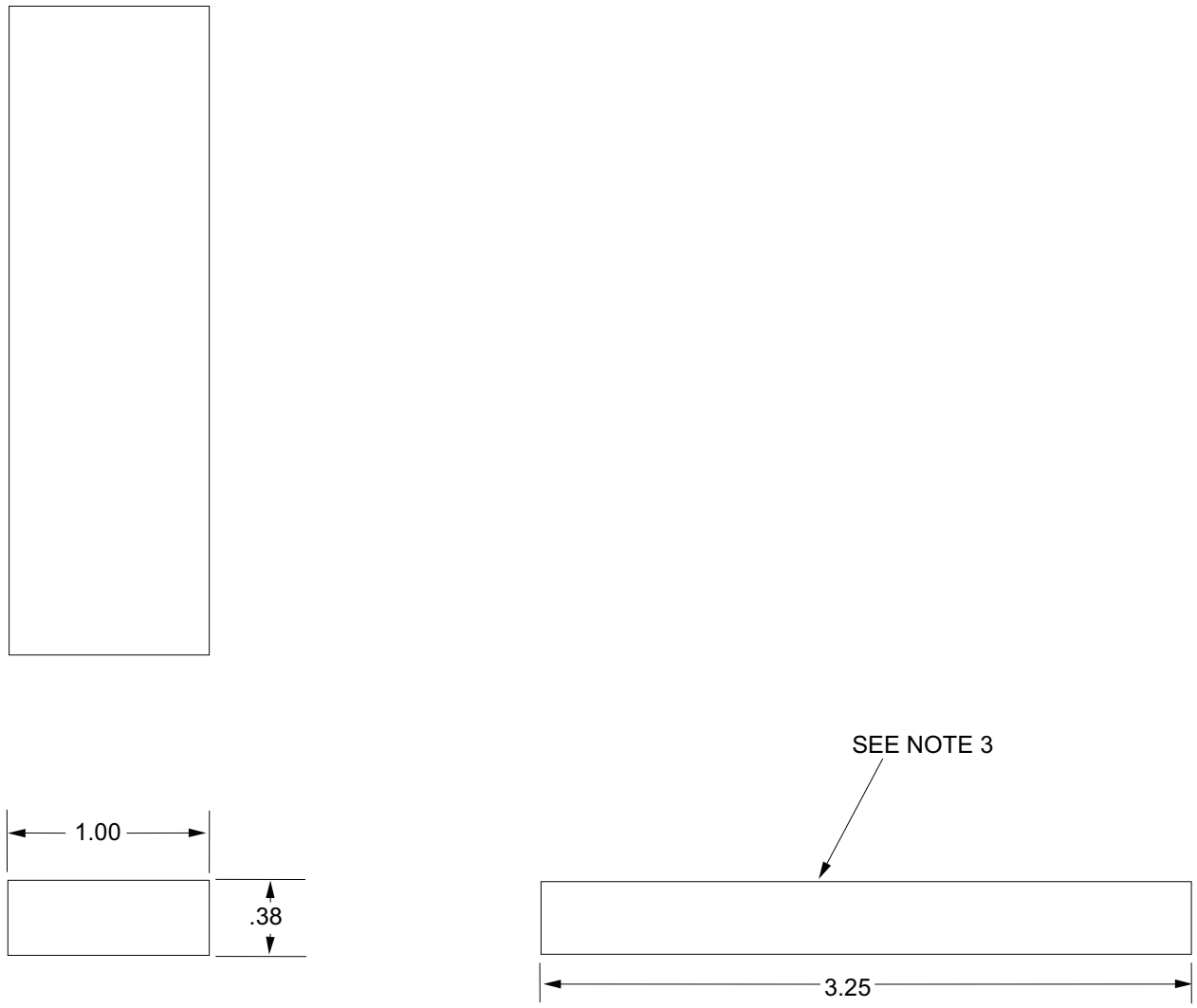
SEE NOTE 3



BAR, 1024535-3

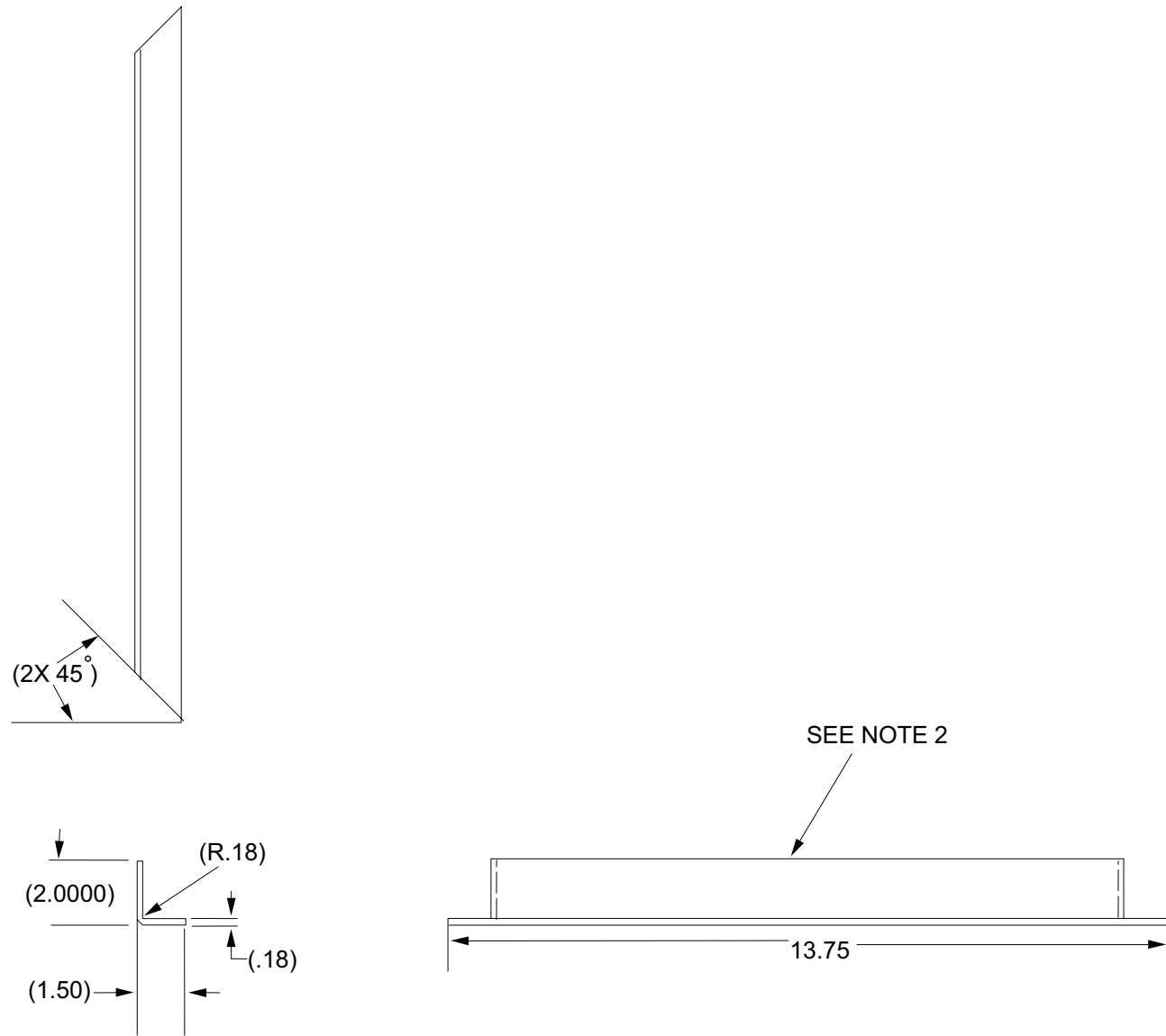
SSAE199

Figure 3. Power Supply Mounting Frame, PN 1024535 (Sheet 3 of 5).



SSAE200

Figure 3. Power Supply Mounting Frame, PN 1024535 (Sheet 4 of 5).

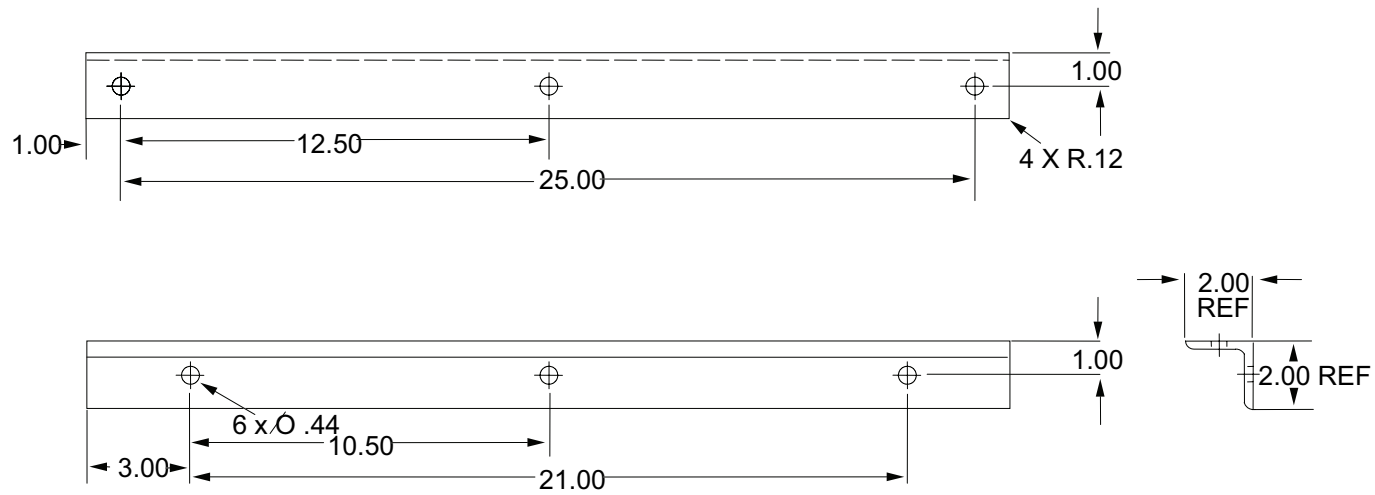


SSAE201

Figure 3. Power Supply Mounting Frame, PN 1024535 (Sheet 5 of 5).

NOTES:

1. APPLICABLE SPECIFICATIONS/STANDARDS:
 - A. ASME Y14.100
 - B. ASME Y14.5M-1994
2. MATERIAL: AL ALY 6061-T6, PER SAE AMS-QQ-A-200/8, ASTM B221, ASTM B308.
3. REMOVE ALL BURRS AND SHARP EDGES.
4. FINISH: 4.10 PLUS 7.3.1 PLUS 22.2 OF MIL-STD-171, COLOR GRAY NO. 16187 PER FED-STD-595.

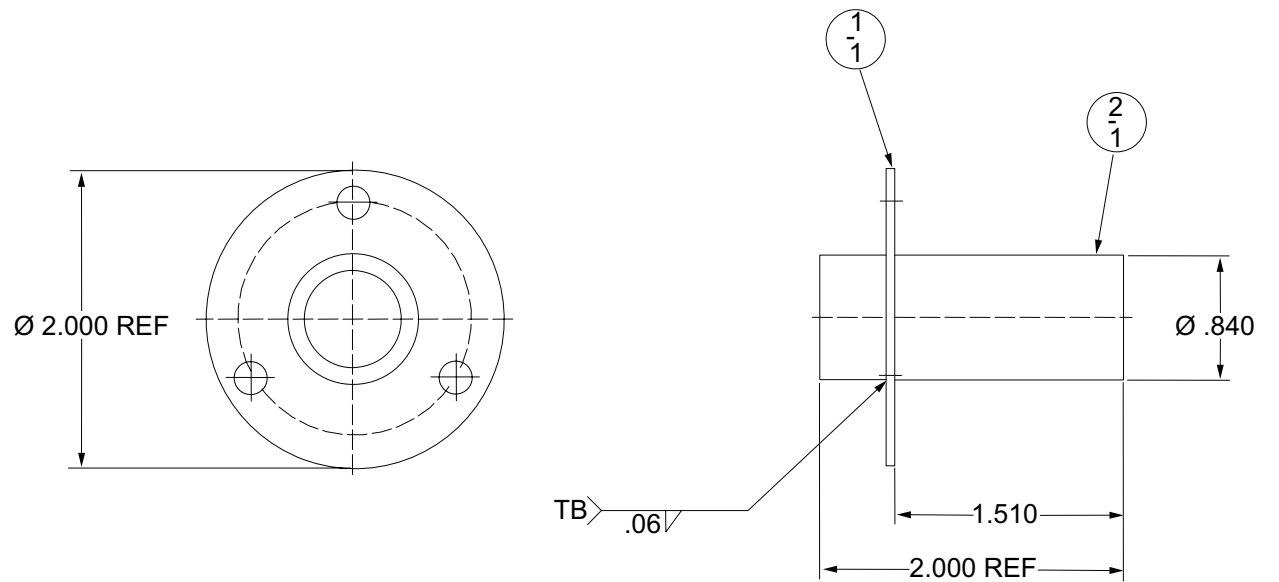


SSAE202

Figure 4. Cabinet Bracket, PN 1024576.

NOTES:

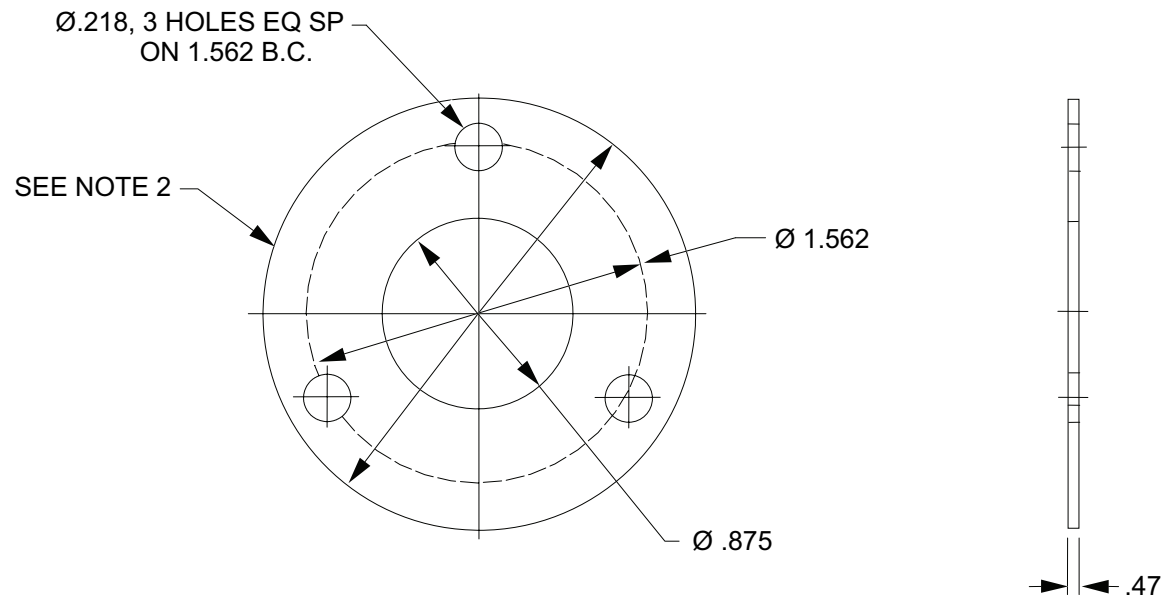
1. APPLICABLE SPECIFICATIONS/STANDARDS:
 - A. ASME Y14.100
 - B. ASME Y14.5M-1994
2. MATERIAL: STEEL, PER QQ-S-698.
3. APPLY GAS TUNSTEN ARC WELDING (GTAW) IAW, NAYSEA S9074-A2-G1B-010/248.
4. FINISH: 6.1.1.2 PLUS 5.2 PLUS 20.4 OF MIL-STD-171, OLIVE DRAB NO. 34087.
5. BALLONS TO READ AS



SSAE203

1	2	AT33S-78CFG	NIPPLE, PIPE, ASTM A733	81346
1	1	20083250-1	FLANGE, .047 (18GA)SH	81996
QTY REQ	FIND NO.	PART OR IDENTIFICATION NO.	NOMENCLATURE OR DESCRIPTION	CAGE
PARTS LIST				

Figure 5. Water Feed-Thru Connector Assembly, PN 20083250 (Sheet 1 of 2).

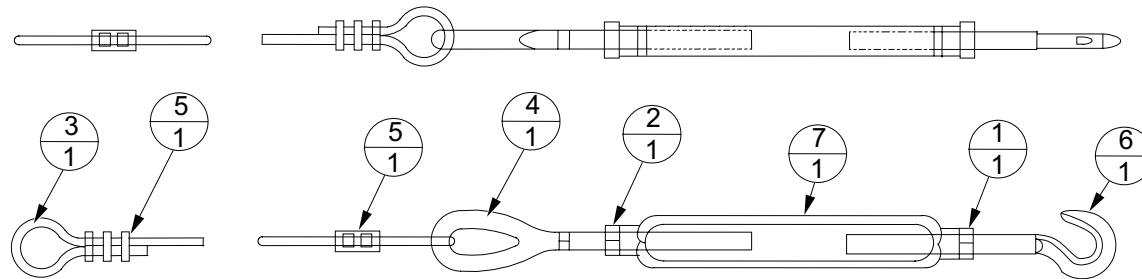


SSAE204

Figure 5. Water Feed-Thru Connector Assembly, PN 20083250 (Sheet 2 of 2).

NOTES:

1. APPLICABLE SPECIFICATIONS/STANDARDS:
 - A. ASME Y14.100
 - B. ASME Y14.5M-1994
2. MATERIAL: WIRE ROPE, TYPE I, COMPOSITION B, DIAMETER .125 X 77.5 ± .5 LONG, 7 X 19 CONSTR.
3. ADJUST LENGTH OF FN 1 TO COMPLY WITH NOTES ON NEXT ASSY DRAWINGS.
4. BALLONS TO READ AS



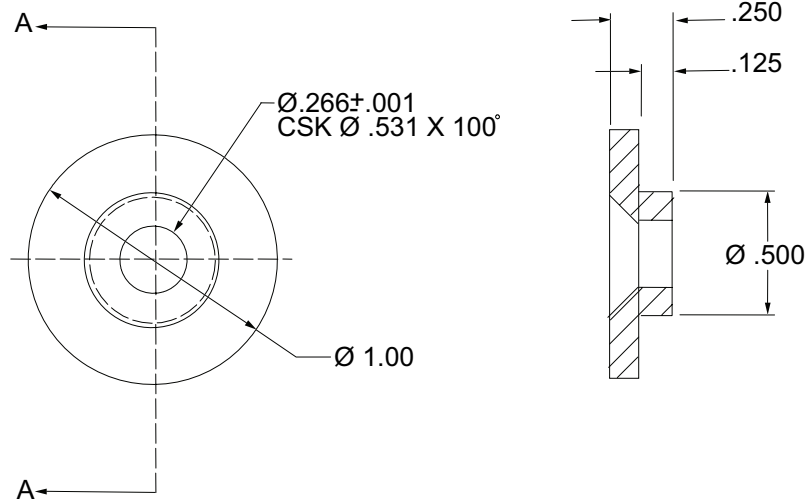
SSAE205

1	7	NASM27954-1	TURNBUCKLE, BODY	80205
1	6	NASM27953-1	BOLT, HOOK-TURNBUCKLE	80205
2	5	MS51844-64	SWAGGING SLEEVE, WIRE ROPE	96906
1	4	MS27950-2	BOLT, EYE-TURNBUCKLE	96906
1	3	MIL-DTL-83420/4-016	TYPE I, WIRE ROPE, FLEXIBLE	81349
1	2	17A6X1012-2	NUT, PLAIN, HEXAGON, MACHINE SCREW, LEFT HAND	81996
1	1	17A6X1012-1	NUT, PLAIN, HEXAGON, MACHINE SCREW, RIGHT HAND	81996
QTY REQ	FIND NO.	PART OR IDENTIFICATION NO.	NOMENCLATURE OR DESCRIPTION	CAGE
PARTS LIST				

Figure 6. Environmental Control Unit Cable Assembly, PN 20085285.

NOTES:

1. APPLICABLE SPECIFICATIONS/STANDARDS:
 - A. ASME Y14.100
 - B. ASME Y14.5M-1994
2. MATERIAL: AL ALY 6061-T6, PER SAE AMS-QQ-A-350/11 (COIL, SHEET OR PLATE) OPTIONAL: AMS QQ-A-225/8 (BAR ROUND).
3. FINISH: 7.3.1 PLUS 20.24 OF MIL-STD-171, COLOR 33446 PER FED-STD-595.

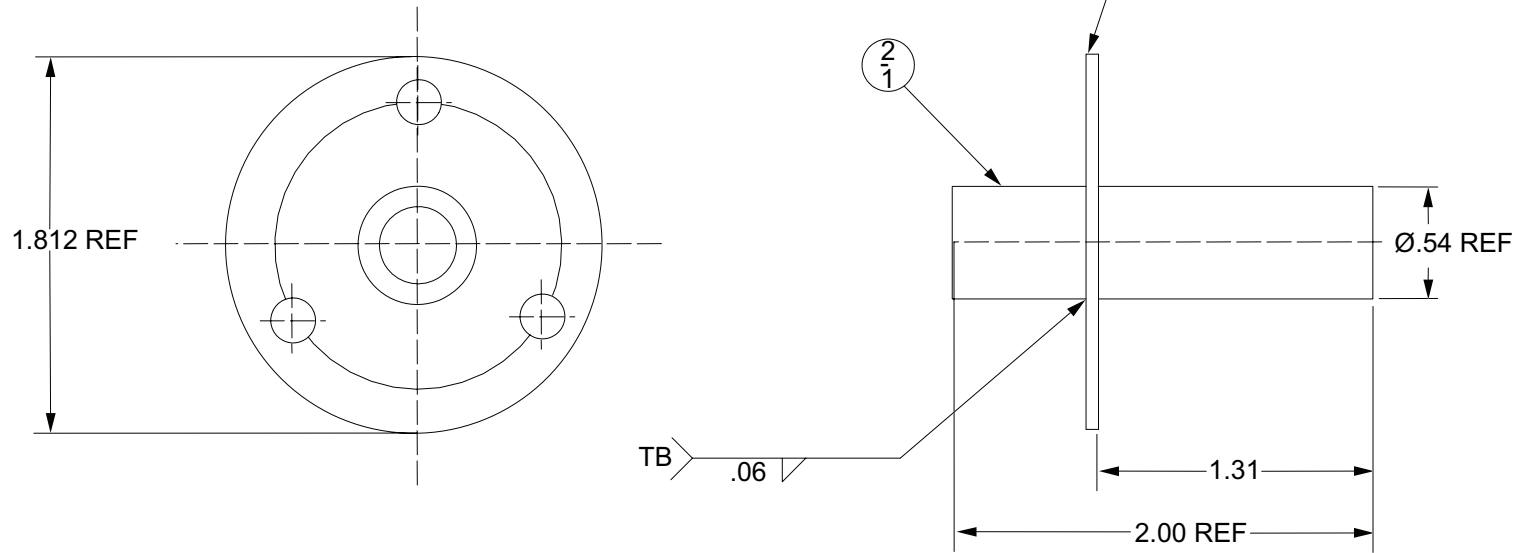


SSAE206

Figure 7. Washer, PN 20085286.

NOTES:

1. APPLICABLE SPECIFICATIONS/STANDARDS:
 - A. ASME Y14.100
 - B. ASME Y14.5M-1994
2. MATERIAL: STEEL, PER QQ-S-698.
3. APPLY GAS TUNSTEN ARC WELDING (GTAW) IAW, NAVSEA S9074-A2-G1B-010/248.
4. FINISH: 6.1.1.2 PLUS 20.4 OF MIL-STD-171, OLIVE DRAB NO. 34087.
5. BALLONS TO READ AS



SSAE207

1	2	AT33S-32CFG	NIPPLE, PIPE, ASTM A733	81346
1	1	20087058-2	FLANGE, .047 SH	81996
QTY REQ	FIND NO.	PART OR IDENTIFICATION NO.	NOMENCLATURE OR DESCRIPTION	CAGE
PARTS LIST				

Figure 8. Air Feed-Thru Connector Assembly, PN 20087058 (Sheet 1 of 2).

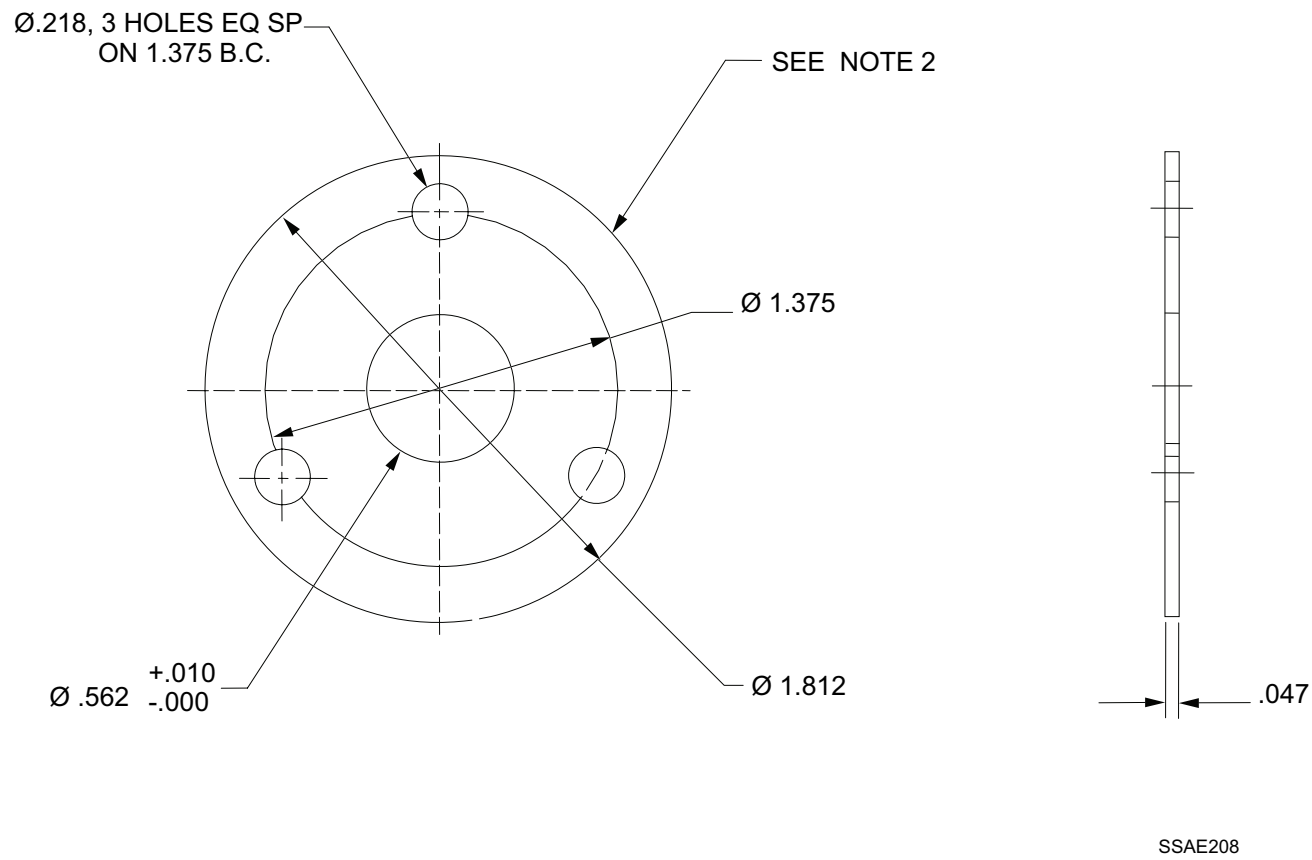


Figure 8. Air Feed-Thru Connector Assembly, PN 20087058 (Sheet 2 of 2).

NOTES:

1. APPLICABLE STANDARDS/SPECIFICATIONS:
 - A. ASME Y14.100
 - B. ASME Y14.5M
2. MATERIAL: AL ALY 6061-T6, PER SAE AMS-QQ-A-200/8.
3. WELDING IAW S9074-AQ-G1B-010/248 AND 13213E8326 TYPE II, CLASS 2. FINISH: 4.10 PLUS, 7.3.1 PLUS 22.2 OF MIL-STD-171, COLOR WHITE NO. 17773 PER FED-STD-595.
4. REMOVE ALL BURRS AND SHARP EDGES.
5. BALLOONS TO READ AS

QTY REQ	FIND NO.	PART OR IDENTIFICATION NO.	NOMENCLATURE OR DESCRIPTION	CAGE
2	2	20089721-2	BAR, 2.00 X .25 AL ALY	81996
4	1	20089721-1	ANGLE, 2.00 X 2.00 X .25 AL ALY	81996
PARTS LIST				

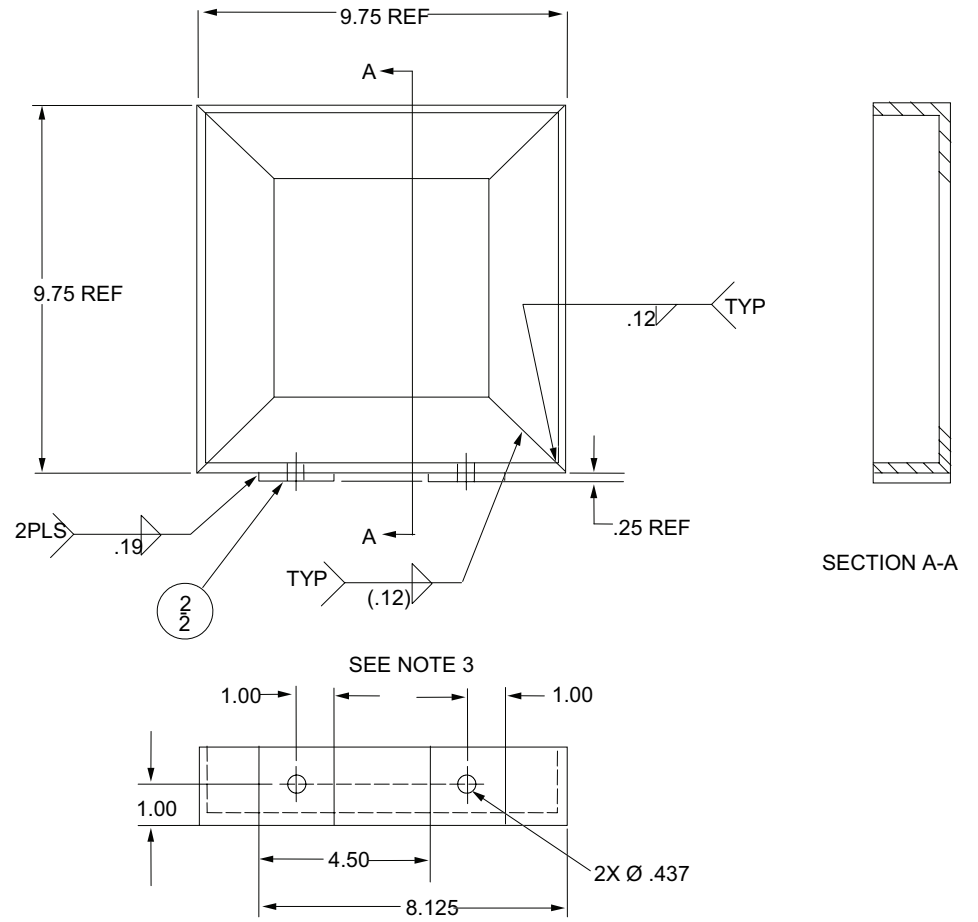
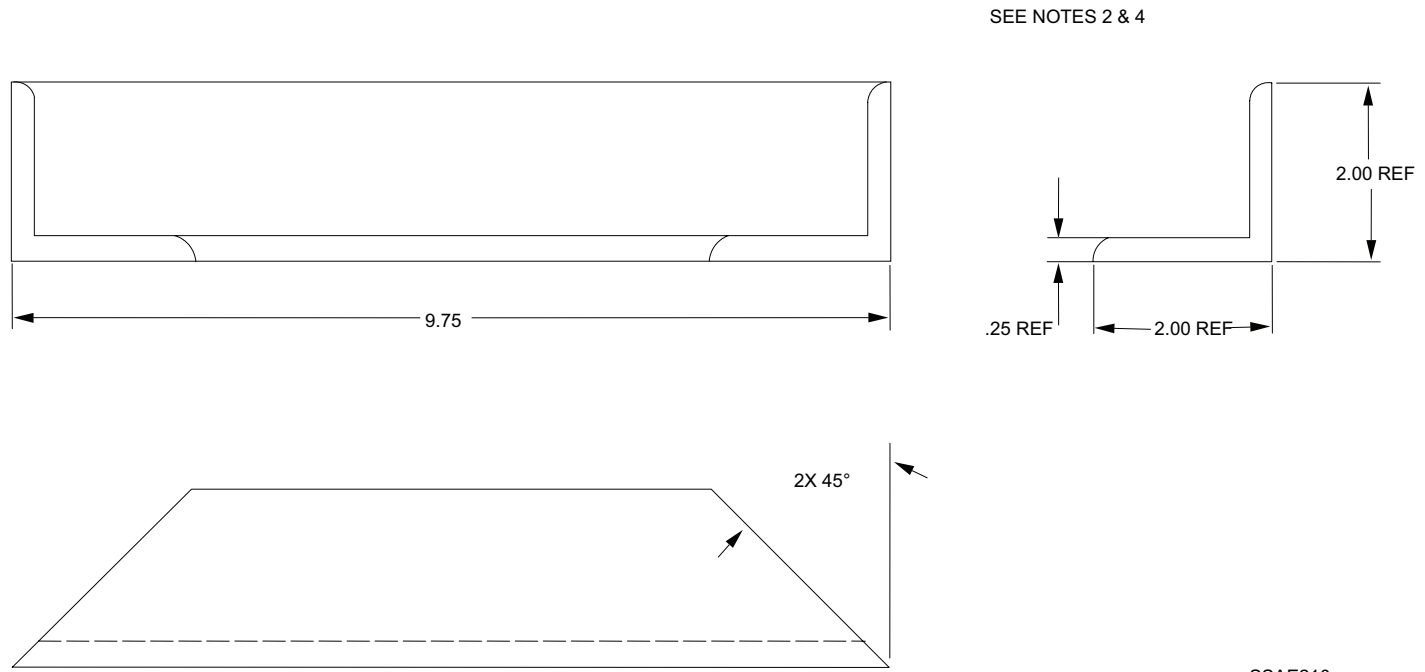
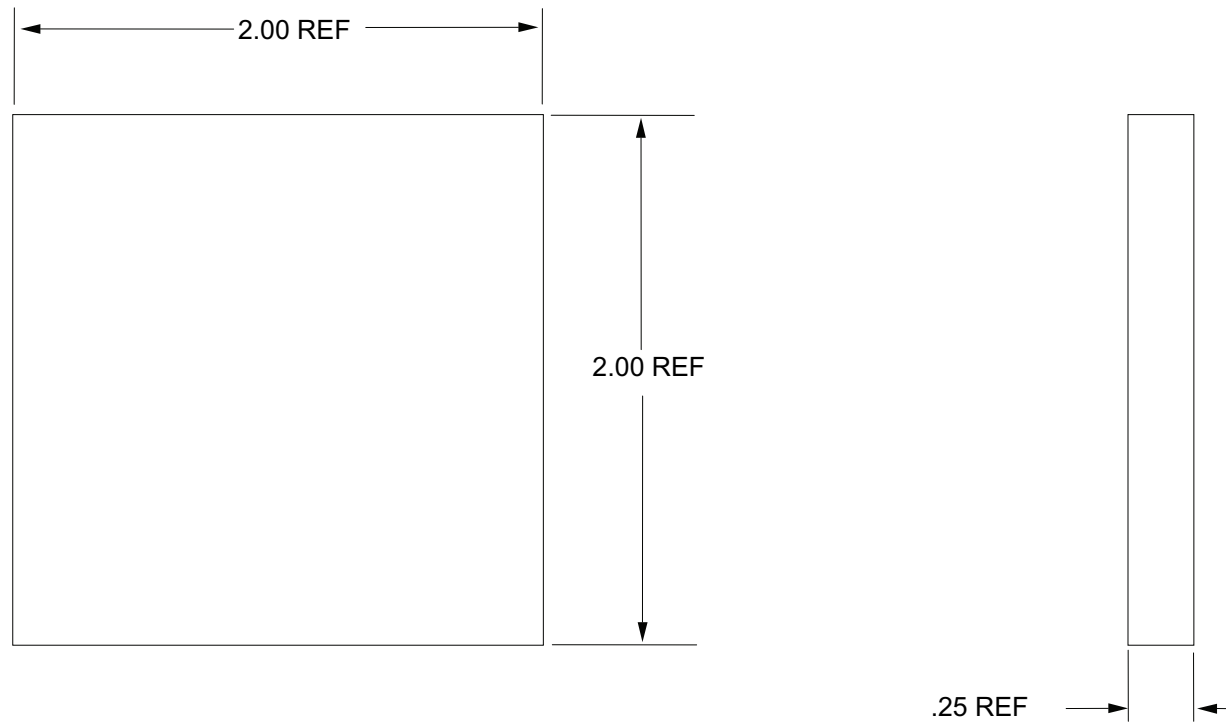


Figure 9. First Aid Kit Bracket, PN 20089721. (Sheet 1 of 3)



SSAE210

Figure 9. First Aid Kit Bracket, PN 20089721. (Sheet 2 of 3)



SSAE211

Figure 9. First Aid Kit Bracket, PN 20089721. (Sheet 3 of 3)

End of Work Package

CHAPTER 5
SUPPORTING INFORMATION
FOR
ARMAMENT AND ELECTRICAL SHOP

ARMAMENT AND ELECTRICAL SHOP REFERENCES

SCOPE

This work package lists all COTS manuals, forms, technical manuals, and miscellaneous publications referenced in this manual.

COTS

Oil Free Portable Air Compressor
Explosion Proof, Dust Ignition Proof Industrial
Vaccum Cleaner System
Pure Flow 1000
Arm-EVAC 50
Jet Arbor Press

FORMS

SF 368 Product Quality Deficiency Report (PQDR)

TECHNICAL MANUALS

TM 1-1500-204-23-8 Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) Manual for General Aircraft Maintenance (Machine and Welding Shop Practices) Volume 8
TM 5-4120-369-14 Air Conditioner, Horizontal, Compact, 18,000 BTU
TM 9-6150-226-13 Operator, Unit, and Direct Support Maintenance Manual for Distribution Illumination Systems, Electrical (DISE) and Power Distribution Illumination Systems, Electrical (PDISE)
TM 9-6150-226-23P Unit and Direct Support Maintenance Repair Parts and Special Tools List for Distribution Systems, Electrical (DISE) and Power Distribution Illumination Systems, Electrical (PDISE)
TM 10-5411-201-14 Operator, Organizational, Direct Support, and General Support Maintenance for Shelter, Tactical, Expandable, One-Sided
TM 43-0139 Painting Instructions for Army Materiel
TM 750-244-1-4 Procedures for the Destruction of Aviation Ground Support Equipment (FSC 4920) to Prevent Enemy Use

OTHER PUBLICATIONS

AR 420-1 Army Facilities Management
AR 700-138 Army Logistics Readiness and Sustainability
AR 735-11-2 Reporting of Supply Discrepancies
AR 750-1 Army Materiel Maintenance Policy
DA PAM 25-30 Consolidated Index of Army Publications and Blank Forms
DA PAM 25-40 Army Publishing: Action Officers Guide
DA PAM 738-751 Functional Users Manual for the Army Maintenance Management System – Aviation (TAMMS-A)
DA PAM 750-8 The Army Maintenance Management System (TAMMS) Users Manual
FED-STD-595 Colors Used in Government Procurement
MIL-STD-130 Identification Marking of U. S. Military Property
MIL-STD-171 Finishing of Metal and Wood Surfaces
MIL-STD-2219 Fusion Welding for Aerospace Applications
ISO 1496/1 Series 1 Freight Containers Specification and Testing, Part 1: General Cargo Containers for General Purposes

End of Work Package

ARMAMENT AND ELECTRICAL SHOP MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION

INTRODUCTION

Aviation Maintenance Allocation Chart

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 level which are shown on the MAC as:

Field - includes two columns, "O" which corresponds to Aviation Maintenance Company (AMC) and "F" which corresponds to Aviation Support Battalion (ASB)

Sustainment - includes two columns, "L" which corresponds to Theater Aviation

Sustainment Maintenance Group (TASMG) and other organizations that have National Maintenance Program Certification and "D" which corresponds to Depot.

The maintenance to be performed below depot and in the field is described as follows:

- 1. Aviation Maintenance Company (AMC).** The primary purpose of the Aviation Maintenance Company is to support the momentum of offensive operations. Composition of the AMC will be based on type of operations being supported, nature of the battlefield, and the need for flexibility. AMCs will provide forward positioning of essential maintenance repair parts and supplies, maximum use of support teams, use of airlift/air drops for resupply, for maintenance that does not interfere with the tactical plans and operations. AMCs are agile, mobile, and well equipped. They will carry limited stockpiles of demand supported, essential parts, and supplies. The AMC performs Battle Damage Assessment and repair (BDAR) and unit level repairs on Aviation Life Support Systems (ALSS). The AMC performs production control, quality control, and Maintenance Management/Maintenance Test Pilot functions. AMCs will rig aircraft for recovery operations. The AMC manages the battalion maintenance program and operates a central tool room. The AMC conducts forward arming and refueling. AMCs will be comprised of 3 to 4 modular platoons, which are configured to maintain unit level operational readiness and aircraft availability:

Headquarters Platoon – Establishes standard operating procedures, receives, and processes work requests, schedules maintenance, maintains status of aircraft, coordinates inspections and test flights and return of repaired aircraft, enforces quality standards, responsible for safety. Also, obtains, stores, and issues Classes II, III, IV, and IX, prescribed load list shop stock and authorized stockage list items.

Airframe Repair Platoon – Tailored to battalion it supports. Performs scheduled and unscheduled maintenance, troubleshoots faulty components, and removes and replaces aircraft components. Provides mission capable aircraft to support flight company operations.

Component Repair Platoon – Performs scheduled and unscheduled maintenance, troubleshoots faulty components, and removes and replaces aircraft components. Performs BDAR and manages Class IX spare/shop stock. This platoon uses Shop Equipment Contact Maintenance (SECM) trucks which are multi-capable and self-contained and are used to perform on-site maintenance using enhanced power tools, test, measurement, and diagnostic equipment, welding and cutting equipment, and an air compressor. The SECM truck is highly mobile.

Armament platoon – Only used in attack battalions and cavalry squadrons. Performs scheduled and unscheduled maintenance on armament components.

2. Aviation Support Company (ASC) in the Aviation Support Battalion (ASB).

Comprised of Headquarters, Airframe, and Component Repair Platoons. Provides maintenance assistance to aviation units helping them maintain operational readiness and aircraft availability. Utilizes SECM trucks. Capable of supporting split based operations in two separate and distinct locations. Performs the following types of maintenance:

- a. Intermediate maintenance and logistics support operations.
- b. Maintenance actions which require more than 3 days to correct.
- c. Phased maintenance and preventive maintenance services.
- d. In-depth troubleshooting and diagnosis of airframe and component malfunctions.
- e. Repairs airframes and LRU component.
- f. Fixes night vision systems, aviation life support systems, aviation electrical and hydraulic components.
- g. Limited capability to fabricate hydraulic lines.
- h. Repairs engines, prop and rotors, armament, and armament subsystems.
- i. Fixes and fuels organic battalion equipment, ground aviation vehicles, and aviation ground support equipment.
- j. Operates and performs field maintenance on aviation ground power units, generator, and ground support equipment.
- k. Battle damage assessment and repair (BDAR).
- l. Production control and quality control.
- m. Test Pilot functions.

3. Theater Aviation Sustainment Maintenance Group (TASMG) – Assists in deployment and redeployment, provides technical assistance, supports increased operational tempo, sustains Army aviation across the entire spectrum of operations. The TASMG:

- a. Provides support to CONUS deploying forces.
- b. Provides support to OCONUS deployed forces.
- c. OCONUS aviation maintenance support for contingency and stability and/or support operations.
- d. Expands aviation maintenance capabilities of CONUS depots.
- e. Classifies and inspects aviation stocks and components.
- f. Repairs engines, airframes, armament, composite materials, electrical systems, avionics, hydraulics.
- g. Fabricates hydraulic lines.
- h. Backup ASB and AMC maintenance functions.

Use of the MAC

NOTE

Approved items names are used throughout this MAC. Generic terms/nomenclature (if any) are expressed in parentheses and are not to be considered as official terminology.

This MAC assigns maintenance functions to the lowest level of maintenance, based on past experience and following considerations:

Skills available.

Work time required.

Tools and test equipment required and/or available.

Only the lowest level of maintenance authorized to perform a maintenance function is indicated. If the lowest maintenance level cannot perform all tasks of any single maintenance function (e.g., test, repair), then the higher maintenance level(s) that can accomplish additional tasks will also be indicated.

A maintenance function assigned to a maintenance level will automatically be authorized to be performed at any higher maintenance level.

A maintenance function that cannot be performed at the assigned level of maintenance for any reason may be evacuated to the next higher maintenance level. Higher maintenance levels will perform the maintenance functions of lower maintenance levels when required by the commander who has the authority to direct such tasking.

The assignment of a maintenance function will be construed as authorization to carry the related repair parts or spares in stock. Information to requisition or otherwise secure the necessary repair parts will be as specified in the associated RPSTL.

Normally there will be no deviation from the assigned level of maintenance. In cases of operational necessity, at the request of a lower maintenance level and on a one-time basis, transfer of maintenance functions to the lower level may be accomplished by specific authorization of the maintenance officer of the higher level of maintenance to which the function is assigned. The special tools, equipment, etc., required by the lower level of maintenance to perform this function will be furnished by the maintenance level to which the function is assigned. This transfer of a maintenance function to a lower maintenance level does not relieve the higher maintenance level of the responsibility for the function. The higher level of maintenance will provide technical supervision and inspection of the function being performed at the lower level.

Maintenance Functions

Maintenance functions will be 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).
2. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.
3. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.
 - a. Unpack. To remove from packing box for after service 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 position, or exact 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 or 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 (ammunition only). 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 painted 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.

NOTES

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 taking apart (or breakdown) of a spare/functional group coded item to the level of its least component identified as maintenance significant (i.e., assigned an SMR code) for the level of maintenance under consideration.

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. Those service/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 Entries in the MAC

Columns (1) – Group Number and (2) Component/Assembly. The functional groupings in the sample below identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly.

Group Number	Component/Assembly Description
04	POWER PLANT
0401	ENGINE, GENERAL Servicing, handling inspection requirements, overhaul and retirement schedules. External lines and hoses. (As applicable)
0402	COMPRESSOR SECTION (COLD SECTION MODULE) Rotor, blades, vanes, impeller, stators, inlet guide vanes, mainframe, particle separator, bleed valve, bearings, seals, external lines and hoses.
0403	COMBUSTION SECTION (HOT SECTION MODULE) Liners, nozzles, stators, rotor, seals, couplings, blades.
0404	POWER-TURBINE (POWER TURBINE MODULE) Nozzles, rotors, blades, exit guide vanes, exhaust frame, drive shaft, bearings, seals, external lines and hoses.
0405	ACCESSORY GEAR BOX (ACCESSORY SECTION MODULE) Input and output gears, seals, chip detector, housings, drive shaft, and bearings.
0406	FUEL SYSTEM Fuel control, fuel boost pump, governors, fuel filter assembly, sequence valve, fuel manifold, fuel nozzle, external lines and hoses.
0407	ELECTRICAL SYSTEM Electrical control units, exciters, thermocouples, ignition harness, electrical cables, history record, torque over speed sensor, Np sensor, external lines, and hoses.
0408	OIL SYSTEM Tanks, oil filter, oil cooler, lube and scavenger pumps, oil filter bypass sensor, external lines and hoses.

Column (3) – Maintenance Function. Column (3) list the functions to be performed on the items listed in Component/Assembly.

Column (4) – Maintenance level. The maintenance levels field and sustainment a listed on the MAC with individual columns for AMC, ASB, TASM, and Depot that include the work times for maintenance functions at each maintenance level. Work time presentations such as “0.1” indicate the average time (expressed in manhours in whole hours or decimals) it requires a maintenance level to perform a specified maintenance function. If a work time has not been established, the columnar presentation will indicate “-”. Maintenance levels higher than the level of maintenance indicated are authorized to perform the indicated function.

Column (5) – Tools and Equipment Reference Code. Column (5) specifies, by code, those common tool sets (not individual tools), common TMDE, and special tools, special TMDE, and special support equipment required to perform the designated function.

Column (6) – Remarks Code. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks.

Explanation of Entries 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 Entries in the Remarks

Column (1) - Remarks Code. The code recorded in remarks code entry of the MAC.

Column (2) - Remarks. This entry lists information pertinent to the maintenance function being performed as indicated in the MAC.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
MAINTENANCE ALLOCATION CHART (MAC)**

Table 1. MAC for Armament and Electrical Shop.

(1) GROUP NUMBER	(2) COMPONENT or ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			AMC	ASB	TASMG	DEPOT		
			(O)	(F)	(L)	(D)		
00	Cabinet Assemblies							
0001	11 Drawer Cabinet A and Cabinet Bracket	Inspect Repair Replace		0.50 1.50 2.00			102 A	
0002	7 Drawer Cabinet B and Cabinet Bracket	Inspect Repair Replace		0.50 1.50 2.00			102 A	
0003	7 Drawer Cabinet C and Cabinet Bracket	Inspect Repair Replace		0.50 1.50 2.00			102 A	
0004	7 Drawer Cabinet D and Cabinet Bracket	Inspect Repair Replace		0.50 1.50 2.00			102 A	
0005	12 Drawer Cabinet E and Cabinet Bracket	Inspect Repair Replace		0.50 1.50 2.00			102 A	
0006	5 Drawer Mobile Cabinets F and G	Inspect Replace		0.50 2.00			101	
0007	7 Drawer Mobile Cabinet H	Inspect Replace		0.25 0.30			101	
01	Table Assembly	Inspect Replace		0.25 0.30			101	
02	Work Table Top Assembly	Inspect		0.50			101	
03	Machinist Vise	Inspect Replace		0.15 0.25			101	
04	Arbor Press	Inspect Replace		0.15 0.25			101	
05	Power Static Inverter	Inspect Replace		0.15 0.25			101	
06	Eyewash Station Assembly	Inspect Replace		0.15 0.25			102 A	
07	First Aid Bracket Assembly	Inspect Repair Replace		0.15 1.00 0.30			102, 107 A, D	
08	Fire Extinguisher Bracket	Remove Inspect Replace		0.15 0.25 0.30			101 A	

(1) GROUP NUMBER	(2) COMPONENT or ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			AMC	ASB	TASMG	DEPOT		
			(O)	(F)	(L)	(D)		
09	Door Hasp	Inspect Replace		0.15 1.00			101, 103, 104, 105, 107	D, E
010	ECU Security Screen	Inspect Repair Replace		0.30 1.00 1.00			102	A, D
011	ECU Support Cable Assembly	Inspect Replace		0.30 0.50			101	
012	ECU Power Cable Assembly	Inspect Test Replace		0.15 0.30 2.00			101, 106	B
013	240V Outlet Box Assembly and Cover	Inspect Replace		0.15 1.00			101, 106	B
014	Ground Rod	Inspect Test Replace		0.15 0.30 1.00			101, 106	B
015	BNC Connector Assembly	Inspect Test Replace		0.15 0.15 1.00			101, 106	B
016	60 AMP Receptacle	Inspect Test Replace		0.45 1.00 3.30			101, 106	B
017	Circuit Breakers	Inspect Test Replace		0.25 0.50 0.50			101, 106	B
018	Water and Air Feed- Thru Connector Assemblies	Inspect Replace		0.25 1.00			101, 108	
019	Oil/Water Separator	Inspect		0.25			102, 108	A
020	Inserts	Inspect Replace		0.25 1.00			101, 102, 105	A, C

Table 2. Tools and Test Equipment for Armament and Electrical Shop.

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL STOCK NUMBER
101	Field	General Mechanics Tool Kit	5180-01-481-8389
102	Field	Torque Wrench, 0-600 in. lbs	5120-01-530-2311
103	Field	Disc Grinder	5130-01-358-5262
104	Field	Electric Drill	5130-00-889-9004
105	Field	Rivet Puller	5120-00-391-0116
106	Field	Multimeter	6625-01-363-5825
107	Field	Paint Brush	8020-00-245-4519
108	Field	Utility Knife	5110-00-293-1585

Table 3. Remarks for Armament and Electrical Shop.

REMARKS REFERENCE CODE	REMARKS
A	Torque value on 3/8" inserts not to exceed 160-190 inch pounds.
B	Electrical and ground checks to be made by qualified electrician.
C	Reference TM 10-5411-201-14 Operator, Organizational, Direct Support, and General Support Maintenance for Shelter, Tactical, Expandable, One-Sided
D	TM 1-1500-204-23-8, Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) Manual for General Aircraft Maintenance (Machine and Welding Shop Practices) Volume 8
E	TM 43-0139, Painting Instructions for Army Material

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
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 the Armament and Electrical Shop. 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

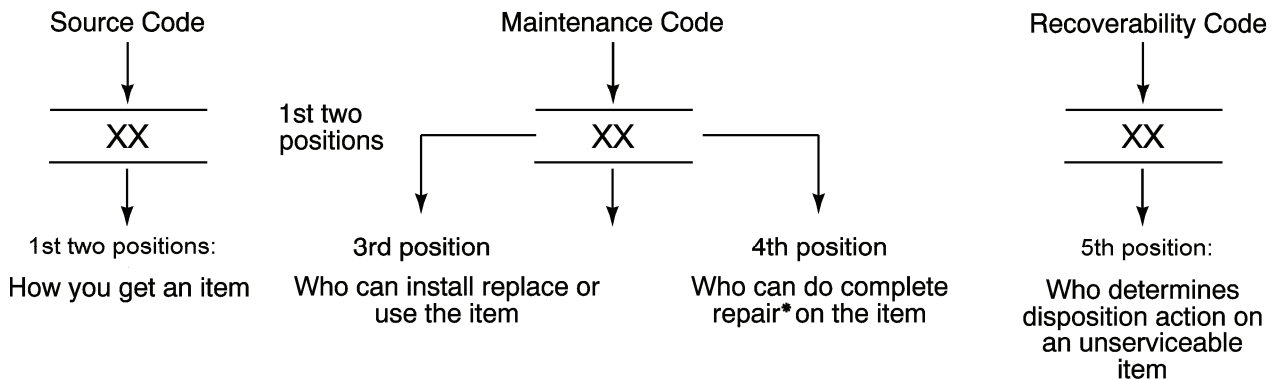
In addition to the Introduction work packages, this RPSTL is divided into the following work packages:

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. Repair parts for repairable special tools are also listed in a separate work package. Items listed are shown on the associated illustrations.
2. Special Tools List Work Packages. Not Applicable.
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 and the Part Number Index work package refer 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:



*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:

SOURCE CODE:	APPLICATION/EXPLANATION
PA	
PB	
PC	NOTE
PD	Items coded PC are subject to deterioration.
PE	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 3 rd position of the SMR code.
PF	
PG	
PH	
PR	
PZ	
KD	
KF	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 3 rd position of the SMR code. The complete kit must be requisitioned and applied.
KB	
MO-Made at unit/ AVUM level	
MF-Made at DS/ AVIM level	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 3 rd 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.
MH-Made at GS level	
ML-Made at SRA	
MD-Made at depot	
MG- Navy only	
AO-Assembled by unit/AVUM level	
AF-Assembled by DS/AVIM level	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 3 rd 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.
AH-Assembled by GS level	
AL-Assembled by SRA	
AD-Assembled by depot	
AG-Navy only	
XA	Do not requisition an "XA" coded item. Order the next higher assembly. (Refer to NOTE below.)
XB	If an item is not available from salvage, order it using the CAGEC and P/N.
XC	Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer's P/N.
XD	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.

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>
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.
G	Afloat and ashore intermediate maintenance can remove, replace, and use the item (Navy only).
K	Contractor facility can remove, replace, and use the item.
Z	Item is not authorized to be removed, replaced, or used at any maintenance level.
D	Depot can remove, replace, and use the item.

*NOTE – Army may use C in the third position. However, for joint service publications, Army will use O.

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 XXXX 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.
G	Both afloat and ashore intermediate levels are capable of complete repair of item. (Navy only)
K	Complete repair is done at contractor facility.
Z	Non-reparable. 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:

Recoverability Code	Application/Explanation
Z	Non-reparable 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.
G	Field level repairable item. Condemn and dispose at either afloat or ashore intermediate levels. (Navy only)
K	Reparable item. Condemnation and disposal to be performed at contractor facility.

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.

*For example, if the NSN is 5385-01-574-1476, the NIIN is 01-574-1476.

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>
PAA	Model M114
PAB	Model M114A
PAC	Model M114B"

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 1-1500-204-23-10.

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 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.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
REPAIR PARTS LIST**

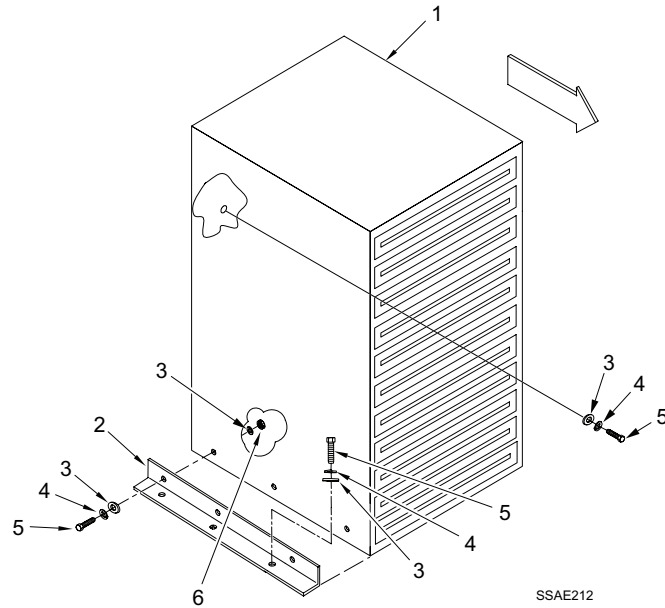


Figure 1. 11 Drawer Cabinet A.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 00 CABINET ASSEMBLIES GROUP 0001 11 DRAWER CABINET A AND CABINET BRACKET FIG 1. 11 DRAWER CABINET A	
1	XDFZZ		34004	RP3576AL	CABINET A, 11 DRAWER	1
2	MFFZZ		81996	1024576	BRACKET, CABINET	1
3	PAFZZ	5310-00-167-0821	80205	NAS1149F0663P	WASHER, FLAT	7
4	PAFZZ	5310-00-004-5033	80205	MS35338-46	WASHER, LOCK	5
5	PAFZZ	5305-00-269-2803	80205	MS90726-60	BOLT, HEX HEAD	5
6	PAFZZ	5310-00-732-0559	96906	MS51968-8	NUT, PLAIN HEX	2
					END OF FIGURE	

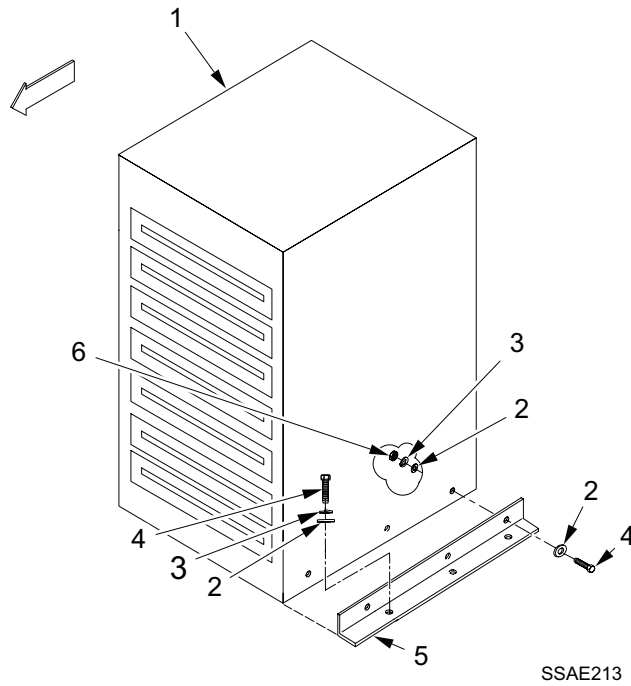


Figure 2. 7 Drawer Cabinet B.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 00 CABINET ASSEMBLIES GROUP 0002 7 DRAWER CABINET B AND CABINET BRACKET FIG 2. 7 DRAWER CABINET B	
1	XDFZZ		34004	RP1985AL	CABINET B, 7 DRAWER	1
2	PAFZZ	5310-00-167-0821	80205	NAS1149F0663P	WASHER, FLAT	7
3	PAFZZ	5310-00-004-5033	80205	MS35338-46	WASHER, LOCK	5
4	PAFZZ	5305-00-269-2803	80205	MS90726-60	BOLT, HEX HEAD	5
5	MFFZZ		81996	1024576	BRACKET, CABINET	1
6	PAFZZ	5310-00-732-0559	96906	MS51968-8	NUT, PLAIN HEX	2
END OF FIGURE						

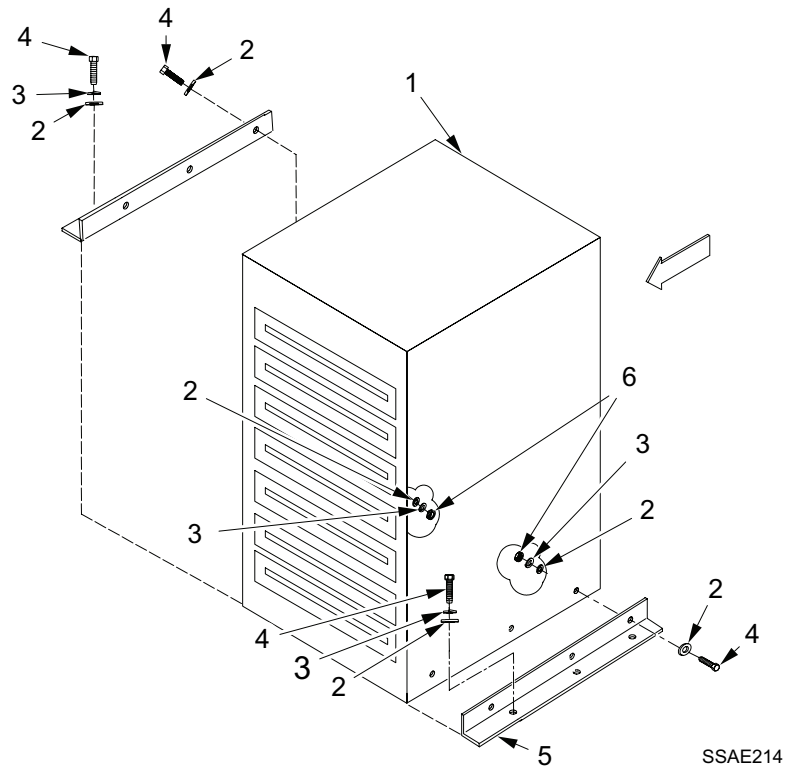


Figure 3. 7 Drawer Cabinet C.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM NO.	SMR CODE	NSN	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY
					GROUP 00 CABINET ASSEMBLIES GROUP 0003 7 DRAWER CABINET C AND CABINET BRACKET FIG 3. 7 DRAWER CABINET C	
1	XDFZZ		34004	RP1985AL	CABINET C, 7 DRAWER	1
2	PAFZZ	5310-00-167-0821	80205	NAS1149F0663P	WASHER, FLAT	14
3	PAFZZ	5310-00-004-5033	80205	MS35338-46	WASHER, LOCK	10
4	PAFZZ	5305-00-269-2803	80205	MS90726-60	BOLT, HEX HEAD	10
5	MFFZZ		81996	1024576	BRACKET, CABINET	2
6	PAFZZ	5310-00-732-0559	96906	MS51968-8	NUT, PLAIN HEX	4
					END OF FIGURE	

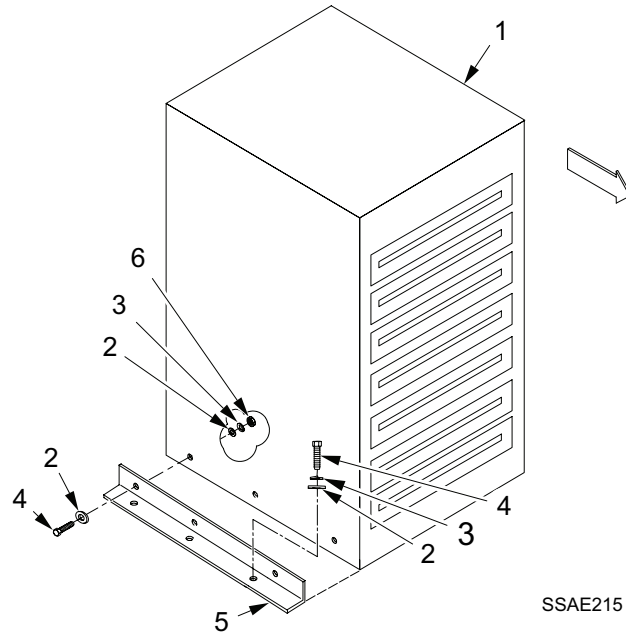
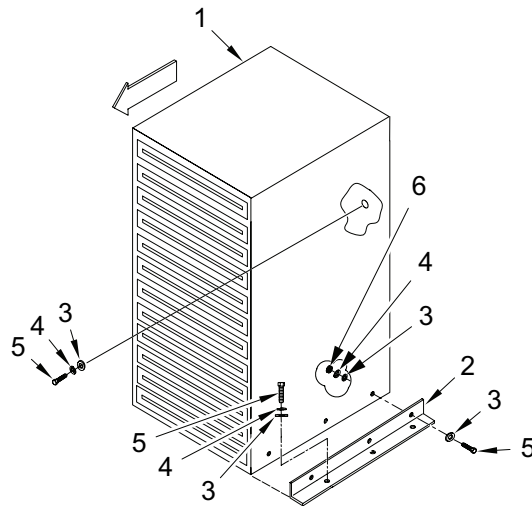


Figure 4. 7 Drawer Cabinet D.

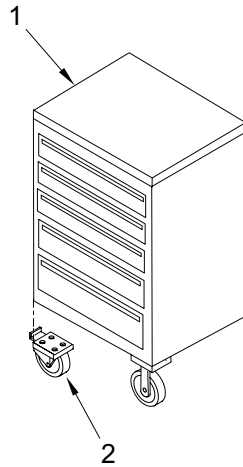
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 00 CABINET ASSEMBLIES GROUP 0004 7 DRAWER CABINET D AND CABINET BRACKET FIG 4. 7 DRAWER CABINET D	
1	XDFZZ		34004	RP1985AL	CABINET D, 7 DRAWER	1
2	PAFZZ	5310-00-167-0821	80205	NAS1149F0663P	WASHER, FLAT	7
3	PAFZZ	5310-00-004-5033	80205	MS35338-46	WASHER, LOCK	5
4	PAFZZ	5305-00-269-2803	80205	MS90726-60	BOLT, HEX HEAD	5
5	MFFZZ		81996	1024576	BRACKET, CABINET	1
6	PAFZZ	5310-00-732-0559	96906	MS51968-8	NUT, PLAIN HEX	2
END OF FIGURE						



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Figure 5. 12 Drawer Cabinet E.

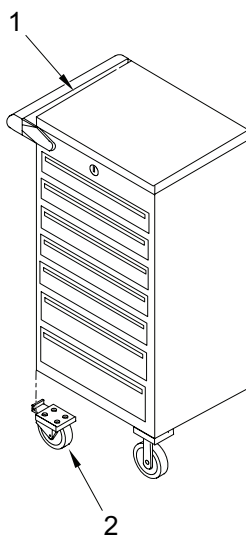
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QT Y
					GROUP 00 CABINET ASSEMBLIES GROUP 0005 12 DRAWER CABINET E AND CABINET BRACKET FIG 5. 12 DRAWER CABINET E	
1	XDFZZ	7125-01-430-7168	34004	RP3575AL	CABINET E, 12 DRAWER	1
2	MFFZZ		81996	1024576	BRACKET, CABINET	1
3	PAFZZ	5310-00-167-0821	80205	NAS1149F0663P	WASHER, FLAT	7
4	PAFZZ	5310-00-004-5033	80205	MS35338-46	WASHER, LOCK	5
5	PAFZZ	5305-00-269-2803	80205	MS90726-60	BOLT, HEX HEAD	5
6	PAFZZ	5310-00-732-0559	96906	MS51968-8	NUT, PLAIN HEX	2
END OF FIGURE						



SSAE217

Figure 6. 5 Drawer Mobile Cabinets F and G.

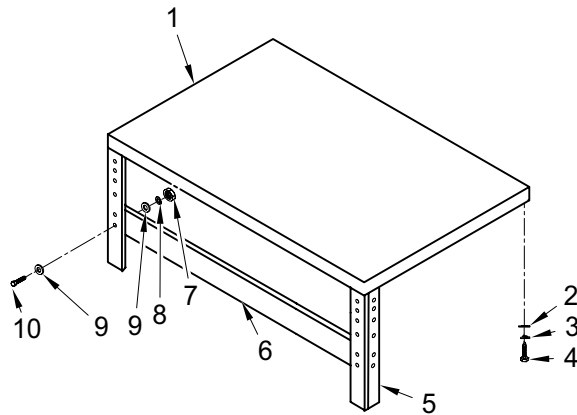
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 00 CABINET ASSEMBLIES GROUP 0006 5 DRAWER MOBILE CABINETS F AND G FIG 6. 5 DRAWER MOBILE CABINETS F AND G	
1	XDFZZ		34004	RP1203AL	MOBILE CABINETS F AND G, 5 DRAWER	2
2	XDFZZ		34004	AU-ST-001-57	CASTER	4
END OF FIGURE						



SSAE218

Figure 7. 7 Drawer Mobile Cabinet H.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 00 CABINET ASSEMBLIES GROUP 0007 7 DRAWER MOBILE CABINET H FIG 7. 7 DRAWER MOBILE CABINET H	
1	XDFZZ		34004	RP1986AL	MOBILE CABINET H, 7 DRAWER	1
2	XDFZZ		34004	IMB5HRLW	CASTER	4
END OF FIGURE						



SSAE219

Figure 8. Table Assembly.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM NO.	SMR CODE	NSN	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY
					GROUP 01 TABLE ASSEMBLY FIG 8. TABLE ASSEMBLY	
1	PAFZZ	7195-01-330-0183	34004	MT60	TOP, TABLE	1
2	PAFZZ	5310-00-167-0768	80205	MS27183-57	WASHER, FLAT	8
3	PAFZZ	5310-00-011-5093	80205	MS35338-46	WASHER, LOCK	8
4	PAFZZ	5305-00-406-9219	05047	ASME-B18.2.1	BOLT, HEX HEAD LAG	8
5	XDFZZ		34004	BL2002	LEGS, TABLE	2
6	XDFZZ		34004	BLFR60	STRINGER	1
7	PAFZZ	5310-00-763-8904	96906	MS51968-21	NUT, PLAIN HEX	4
8	PAFZZ	5310-00-274-8715	80205	MS35338-63	WASHER, LOCK	4
9	PAFZZ	5310-00-167-0766	80205	AN970-4	WASHER, FLAT	8
10	PAFZZ	5305-00-068-0515	80205	MS90726-8	BOLT, HEX HEAD	4
					END OF FIGURE	

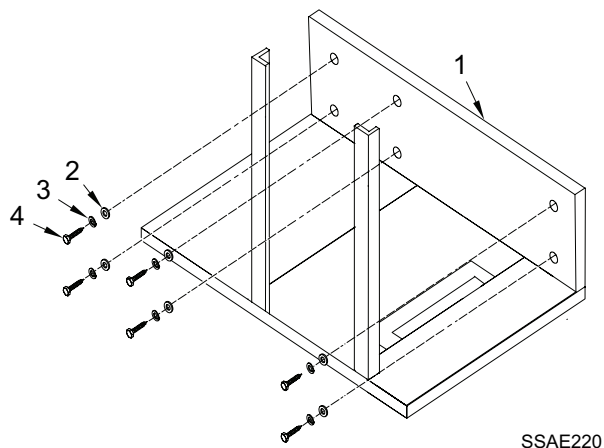
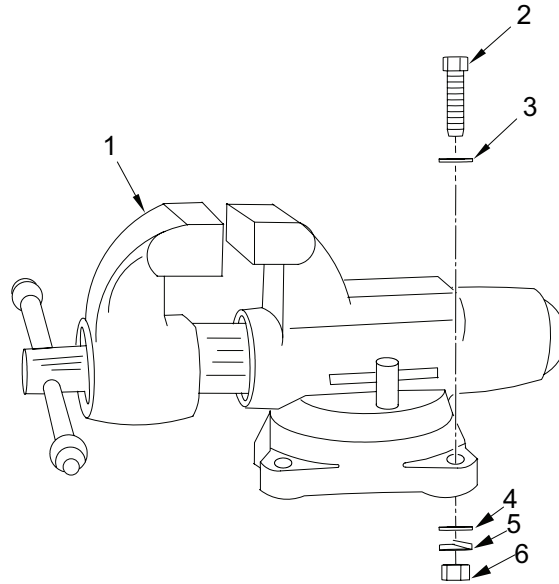


Figure 9. Work Table Top Assembly.

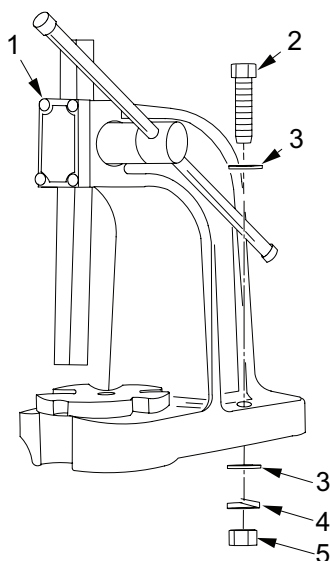
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 02 WORK TABLE ASSEMBLY FIG 9. WORK TABLE TOP ASSEMBLY	
1	XDDZZ	7195-01-330-0183	34004	MT-60	TOP, WORK TABLE	1
2	PAFZZ	5310-00-167-0768	80205	AN970-6	WASHER, FLAT	6
3	PAFZZ	5310-00-004-5033	80205	MS35338-46	WASHER, LOCK	6
4	PAFZZ	5305-00-406-9219	05047	ASME-B18.2.1	BOLT, HEX HEAD LAG	6
END OF FIGURE						



SSAE221

Figure 10. Machinist Vise.

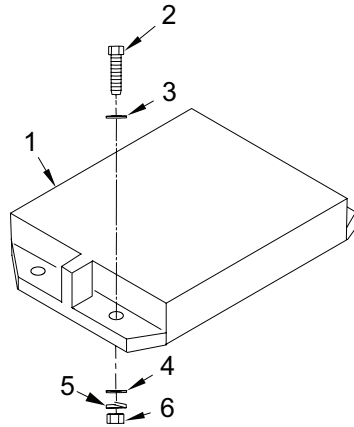
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 03 MACHINIST VISE FIG 10. MACHINIST VISE	
1	PAFZZ	5120-00-293-1439	66983	204	VICE, MACHINIST	1
2	PAFZZ	5305-00-710-4203	80205	MS90726-97	BOLT, HEX HEAD	3
3	PAFZZ	5310-00-167-0769	80205	AN970-7	WASHER, FLAT	3
4	PAFZZ	5310-00-167-0838	80205	NAS1149F0732P	WASHER, FLAT	3
5	PAFZZ	5310-00-209-0965	80205	MS35338-47	WASHER, LOCK	3
6	PAFZZ	5310-00-880-7745	96906	MS51968-11	NUT, PLAIN HEX	3
END OF FIGURE						



SSAE222

Figure 11. Arbor Press.

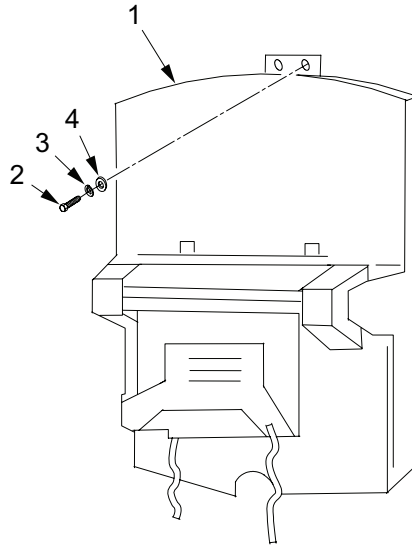
(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM NO.	SMR CODE	NSN	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY
					GROUP 04 ARBOR PRESS FIG 11. ARBOR PRESS	
1	PAFZZ	3444-00-243-2654	21482	0CAB	PRESS, ARBOR	1
2	PAFZZ	5305-00-716-8175	80205	MS90726-123	BOLT, HEX HEAD	2
3	PAFZZ	5310-01-396-8392	80205	NAS1149F0863P	WASHER, FLAT	4
4	PAFZZ	5310-00-584-5272	80205	MS35338-48	WASHER, LOCK	2
5	PAFZZ	5310-00-732-0560	96906	MS51968-14	NUT, PLAIN HEX	2
					END OF FIGURE	



SSAE223

Figure 12. Power Static Inverter.

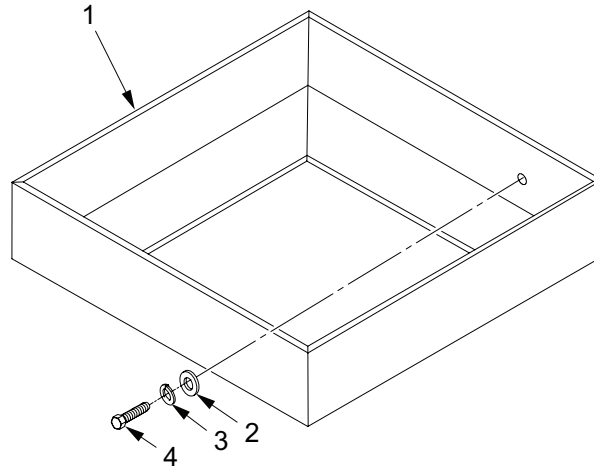
(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM NO.	SMR CODE	NSN	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY
					GROUP 05 POWER STATIC INVERTER	
					FIG 12. POWER STATIC INVERTER	
1	PAFZZ	6130-01-020-3951	16017	SPC-60 (E)	INVERTER, POWER STATIC	1
2	PAFZZ	5305-00-267-8983	80205	MS90726-16	BOLT, HEX HEAD	4
3	PAFZZ	5310-00-167-0766	80205	AN970-4	WASHER, FLAT	4
4	PAFZZ	5310-00-141-1795	80205	NAS1149F0463P	WASHER, FLAT	4
5	PAFZZ	5310-00-582-5965	80205	MS35338-44	WASHER, LOCK	4
6	PAFZZ	5310-00-768-0319	96906	MS51968-2	NUT, PLAIN HEX	4
					END OF FIGURE	



SSAE224

Figure 13. Eyewash Station Assembly.

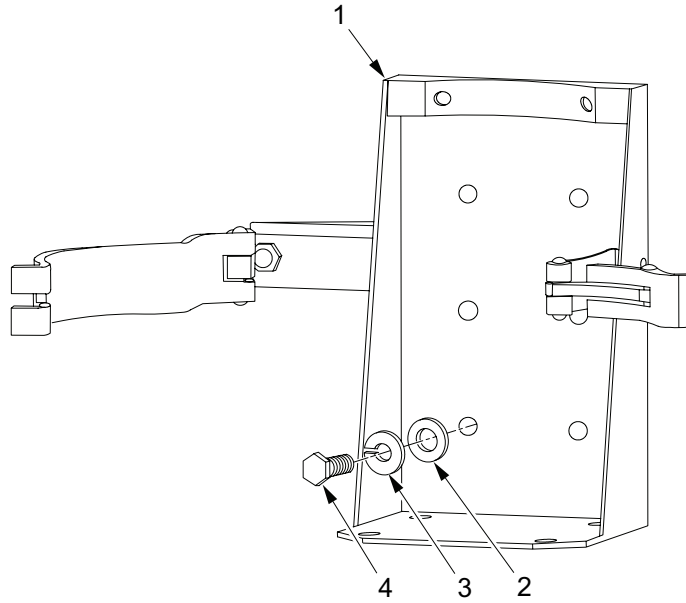
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 06 EYEWASH STATION ASSEMBLY FIG 13. EYEWASH STATION ASSEMBLY	
1	XDFZZ		00236	32-001000	STATION ASSEMBLY, EYEWASH	1
2	PAFZZ	5310-00-274-8702	96906	MS35338-60	BOLT, HEX HEAD	2
3	PAFZZ	5310-00-004-5033	80205	MS35338-46	WASHER, LOCK	2
4	PAFZZ	5310-00-167-0768	80205	AN970-6	WASHER, FLAT	2
END OF FIGURE						



SSAE225

Figure 14. First Aid Bracket Assembly.

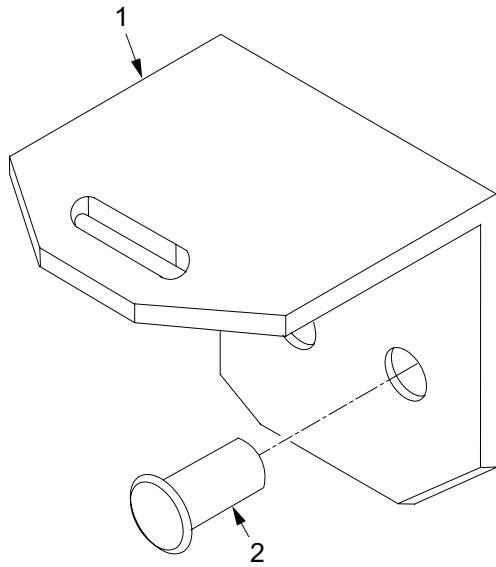
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 07 FIRST AID BRACKET ASSEMBLY FIG 14. FIRST AID BRACKET ASSEMBLY	
1	MFFZZ		81996	20089721	BRACKET, FIRST AID	1
2	PAFZZ	5310-00-080-6004	96906	MS27183-14	WASHER, FLAT	2
3	PAFZZ	5310-00-004-5033	80205	MS35338-46	WASHER, LOCK	2
4	PAFZZ	5305-00-269-2803	80205	MS90726-60	BOLT, HEX HEAD	2
END OF FIGURE						



SSAE226

Figure 15. Fire Extinguisher Bracket.

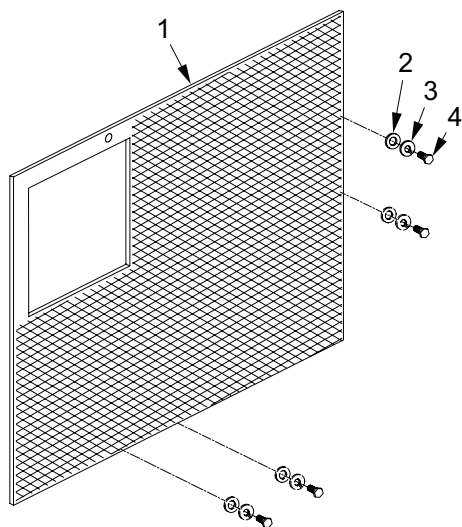
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 08 FIRE EXTINGUISHER BRACKET FIG 15. FIRE EXTINGUISHER BRACKET	
1	PAFZZ	4210-00-595-4085	19207	7357907	BRACKET, FIRE EXTINGUISHER	1
2	PAFZZ	5310-00-080-6004	96906	MS27183-14	WASHER, FLAT	2
3	PAFZZ	5310-00-004-5033	80205	MS35338-46	WASHER, LOCK	2
4	PAFZZ	5305-00-269-2803	80205	MS90726-60	BOLT, HEX HEAD	2
END OF FIGURE						



SSAE227

Figure 16. Door Hasp.

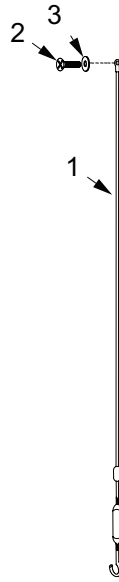
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 09 DOOR HASP FIG 16. DOOR HASP	
1	PAFZZ	2240-00-739-7009	81996	158	HASP, DOOR	1
2	PAFZZ	5320-00-962-4693	07707	AD66BS	RIVET, BLIND	2
END OF FIGURE						



SSAE228

Figure 17. ECU Security Screen.

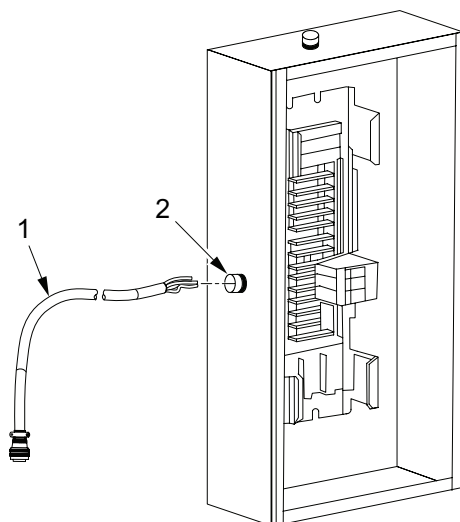
(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM NO.	SMR CODE	NSN	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY
					GROUP 010 ECU SECURITY SCREEN FIG 17. ECU SECURITY SCREEN	
1	MFFZZ		81996	17A6X0021	ECU SECURITY SCREEN ASSEMBLY	1
2	PAFZZ	5310-00-080-6004	96906	MS27183-14	WASHER, FLAT	4
3	PAFZZ	5310-00-004-5033	80205	MS35338-46	WASHER, LOCK	4
4	PAFZZ	5305-00-269-2805	80205	MS90726-62	BOLT, HEX HEAD	4
END OF FIGURE						



SSAE228A

Figure 18. ECU Support Cable Assembly.

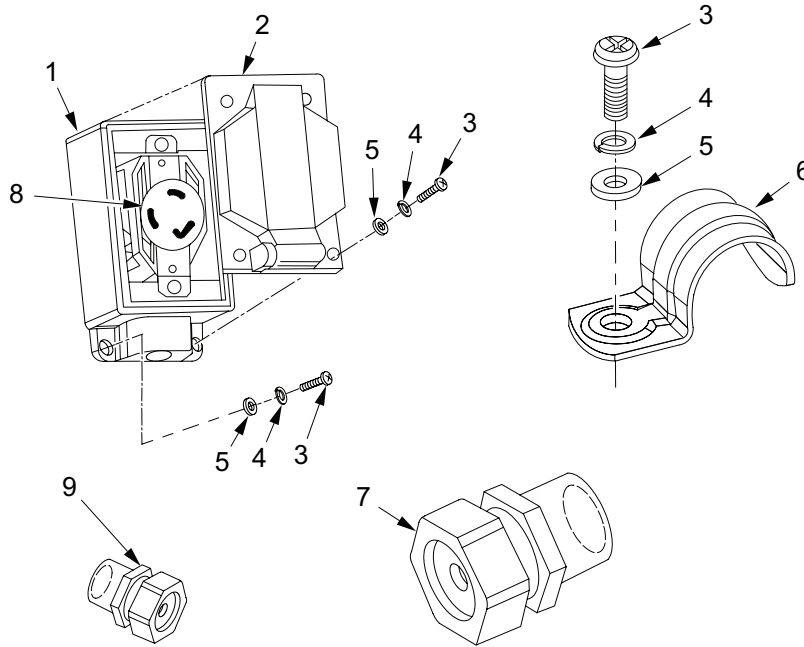
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 011 ECU SUPPORT CABLE ASSEMBLY FIG 18. ECU SUPPORT CABLE ASSEMBLY	
1	MFFZZ		81996	20085285	ECU SUPPORT CABLE ASSEMBLY	2
2	PAFZZ	5305-00-082-6774	80205	MS24694-C102	SCREW, MACHINE	2
3	MFFZZ		81996	20085286	WASHER	2
END OF FIGURE						



SSAE229

Figure 19. ECU Power Cable Assembly.

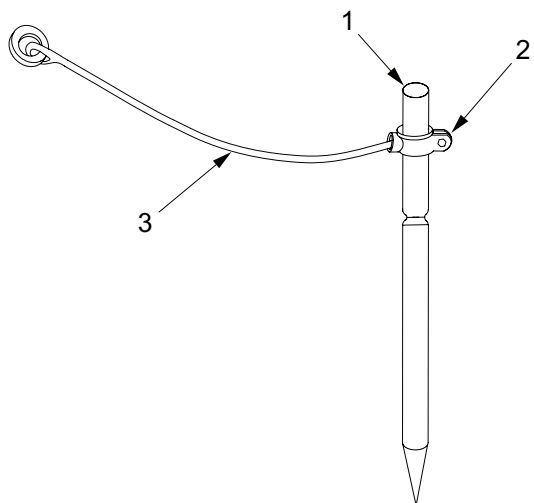
(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM NO.	SMR CODE	NSN	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY
					GROUP 012 ECU POWER CABLE ASSEMBLY	
					FIG 19. ECU POWER CABLE ASSEMBLY	
1	MFFZZ		81996	17A6X1013-1	CABLE ASSEMBLY, ECU (CARGO DOOR SIDE)	1
	MFFZZ		81996	17A6X1013-2	CABLE ASSEMBLY, ECU (PERSONNEL DOOR SIDE)	1
2	MFFZZ		83743	CG-6275	BOX CONNECTOR, ELECTRICAL	2
END OF FIGURE						



SSAE230

Figure 20. 240V Outlet Box Assembly and Cover.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM NO.	SMR CODE	NSN	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY
					GROUP 013 240V OUTLET BOX ASSEMBLY AND COVER FIG 20. 240V OUTLET BOX ASSEMBLY AND COVER	
1	XDFZZ		4R280	FSC1-SC	BOX, OUTLET	1
2	XDFZZ		28488	5091-0	COVER, OUTLET BOX	2
3	PAFZZ	5305-00-984-7341	96906	MS35191-273	SCREW, PAN HEAD MACHINE	5
4	PAFZZ	5310-00-045-3296	80205	MS35338-43	WASHER, LOCK	4
5	PAFZZ	5310-00-167-0834	80205	NAS1149F0332P	WASHER, FLAT	4
6	PAFZZ	5340-01-221-0272	05500	920-S	STRAP, RETAINING	3
7	PAFZZ	5975-00-833-1776	28488	3402	BOX, CONNECTOR, ELECTRICAL	2
8	PAFZZ	5935-01-530-4508	74545	HBL2320	RECEPTACLE, 240V, 1PH, 20A	2
9	XDFZZ		69871	STR 50B	CONNECTOR, INSULATED 1/2 L/T	1
					END OF FIGURE	



SSAE231

Figure 21. Ground Rod.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 014 GROUND ROD	
					FIG 21. GROUND ROD	
1	PAFZZ	5975-00-878-3791	58536	A-A-55804	ROD, GROUNDING	1
2	PAFZZ	5999-00-186-3912	73569	1231	CLAMP, ELECTRICAL	1
3	PAFZZ	6145-01-226-9164	81348	QQW343C06B1B	WIRE, ELECTRICAL, FT (BULK)	AR
					END OF FIGURE	

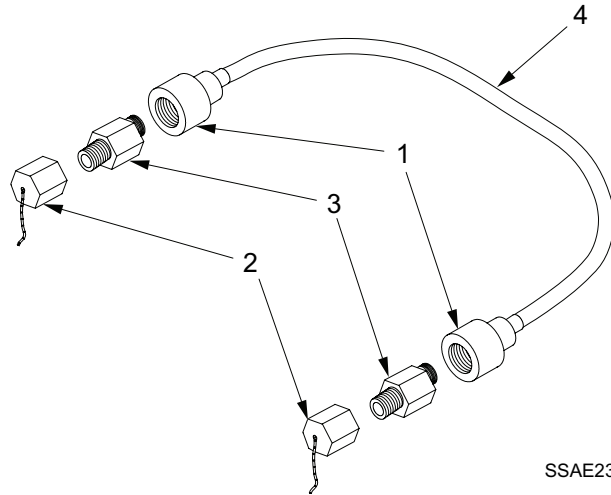
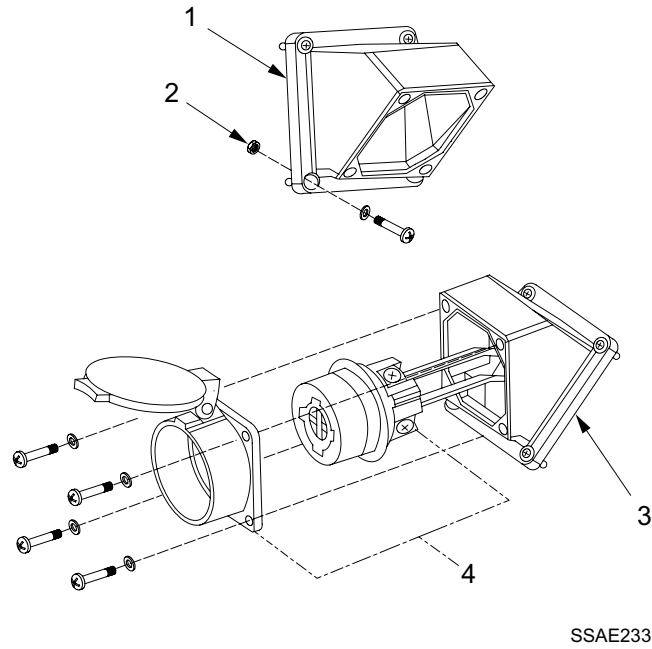


Figure 22. BNC Connector Assembly.

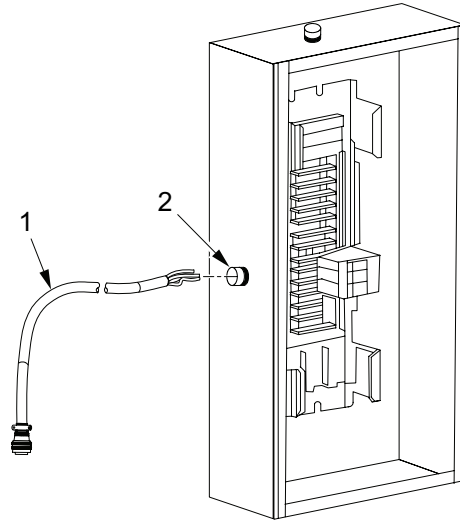
(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM NO.	SMR CODE	NSN	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY
					GROUP 015 BNC CONNECTOR ASSEMBLY FIG 22. BNC CONNECTOR ASSEMBLY	
1	PAFZZ	5935-01-043-5841	81349	M39012/16-0101	CONNECTOR, ELECTRICAL PLUG	2
2	PAFZZ	5935-00-885-2264	81349	M39012/25-0006	COVER, ELECTRICAL	2
3	PAFZZ	5935-00-823-0308	81349	MS55399/13-00492	ADAPTOR, CONNECTOR	2
4	PAFZZ	6145-00-046-4568	81349	MIL-C-17	CABLE, RADIO FREQUENCY	1
					END OF FIGURE	



SSAE233

Figure 23. 60 AMP Receptacle.

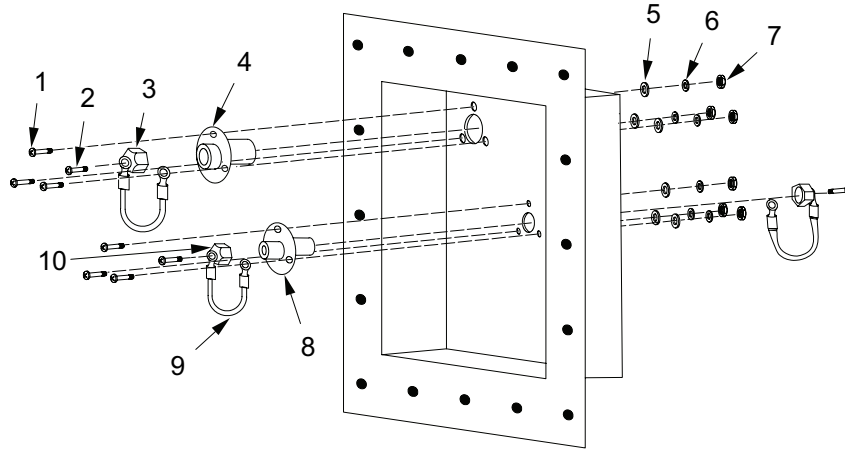
(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM NO.	SMR CODE	NSN	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY
					GROUP 016 60 AMP RECEPTACLE FIG 23. 60 AMP RECEPTACLE	
1	XDFZZ		74545	17A631001	ADAPTER, 54 DEGREE ANGLE	1
2	PAFZZ	5310-00-903-5966	96906	MS51971-1	NUT, 1/4-20 UNC-2B 7/32 THK	4
3	PAFZZ	5325-00-783-4754	80205	NASM21266-1N	PLASTIC GROMMET	1
4	XDFZZ		74545	HBL26410	RECEPTACLE, 60 AMP	1
					END OF FIGURE	



SSAE234

Figure 24. Circuit Breakers.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 017 CIRCUIT BREAKERS FIG 24. CIRCUIT BREAKERS						
1	PAFZZ	5925-00-967-9874	63637	QOB220	20 AMP 2-POLE (NO. 14 AND 16)	2
2	PAFZZ	5925-00-728-1289	63637	QOB120	20 AMP SINGLE POLE (NO. 3, 5, 10 AND 12)	4
3	PAFZZ	5925-01-018-3041	51918	Q0B115GF1	15 AMP GFCI (NO. 8)	1
4	PAFZZ	5925-01-537-6666	56365	QOB115	15 AMP (NO. 6)	1
5	PAFZZ	5925-01-562-1066	56365	QOB260	60 AMP 2-POLE (NO. 2)	1
6	PAFZZ	5925-01-252-7781	63637	QOB3100	100 AMP (MAIN)	1
7	PAFZZ	5925-00-785-4521	63637	QOB340	40 AMP 3-POLE (NO. 1)	1
8	PAFZZ	5925-00-728-1969	63637	QOB330	30 AMP 3-POLE (NO. 11 AND 17)	2
END OF FIGURE						



SSAE235

Figure 25. Water and Air Feed-Thru Connector Assemblies.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM NO.	SMR CODE	NSN	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY
					GROUP 018 WATER AND AIR FEED-THRU CONNECTOR ASSEMBLIES FIG 25. WATER AND AIR FEED-THRU CONNECTOR ASSEMBLIES	
1	PAFZZ	5305-00-912-7308	80205	MS27039-1-14	MACHINE SCREW , PAN HEAD	6
2	PAFZZ	5305-01-340-9057	96906	MS51576-6	SHOULDER SCREW, SOCKET HEAD	3
3	XDFZZ		39428	50785K164	CAP 1/2", PIPE	1
4	MFFZZ		81996	20083250	WATER FEED-THRU CONNECTOR ASSEMBLY	1
5	PAFZZ	5310-01-385-4624	80205	NAS1149D0363K	WASHER, FLAT	6
6	PAFZZ	5310-00-045-3296	80205	MS35338-43	WASHER, LOCK	6
7	PAFZZ	5310-00-934-9751	80205	MS35650-302	NUT, PLAIN HEX	6
8	MFFZZ		81996	20087058	AIR FEED-THRU CONNECTOR ASSEMBLY	1
9	PAFZZ	4010-01-476-2507	39428	30345T2	LANYARD 7.65"	3
10	XDFZZ		39428	50785K162	CAP 1/4", PIPE	2
					END OF FIGURE	

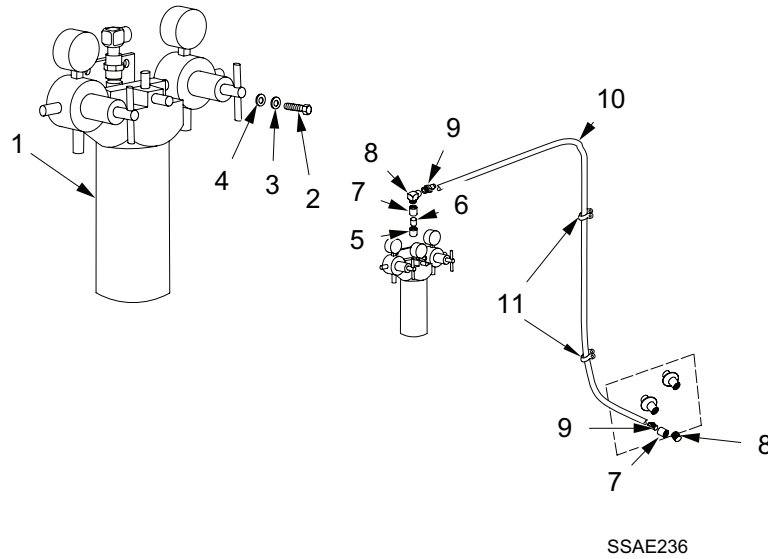
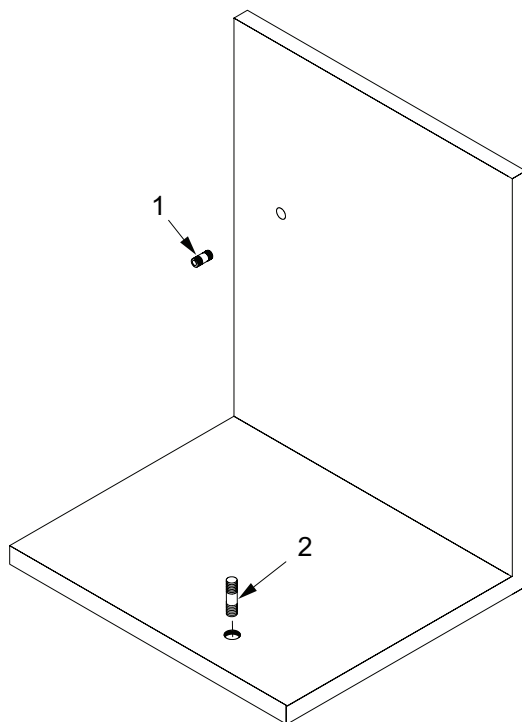


Figure 26. Oil/Water Separator.

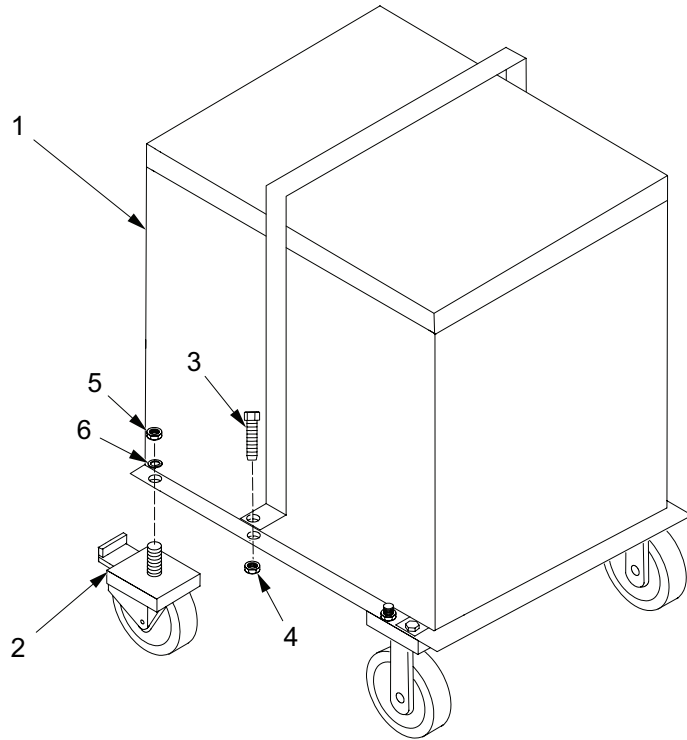
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 019 OIL/WATER SEPARATOR FIG 26. OIL/WATER SEPARATOR						
1	XDFZZ		54360	6740	SEPARATOR, OIL /WATER	1
2	PAFZZ	5305-00-269-2803	80205	MS90726-60	BOLT, HEX HEAD	2
3	PAFZZ	5310-00-004-5033	80205	MS35338-46	WASHER, LOCK	2
4	PAFZZ	5310-01-236-6203	80205	NAS301-6	WASHER, FLAT	2
5	PAFZZ	4730-01-348-6542	93061	209P-8-4	BUSHING, PIPE	1
6	PAFZZ	4730-00-287-1589	13174	896WM	NIPPLE, PIPE	1
7	PAFZZ	4730-00-277-5736	93061	207P-4	COUPLING, PIPE	2
8	PAFZZ	4730-01-515-4774	93061	1202P-4-4	ELBOW, PIPE	2
9	PAFZZ	4730-00-722-5194	45681	30182-4-6B	FITTING, HOSE	2
10	PAFZZ	4720-00-676-7936	01276	2556-6	HOSE, NON-METALLIC	1
11	PAFZZ	5340-00-584-6556	81343	AS21919WDG10	CLAMP, LOOP	2
END OF FIGURE						



SSAE237

Figure 27. Inserts.

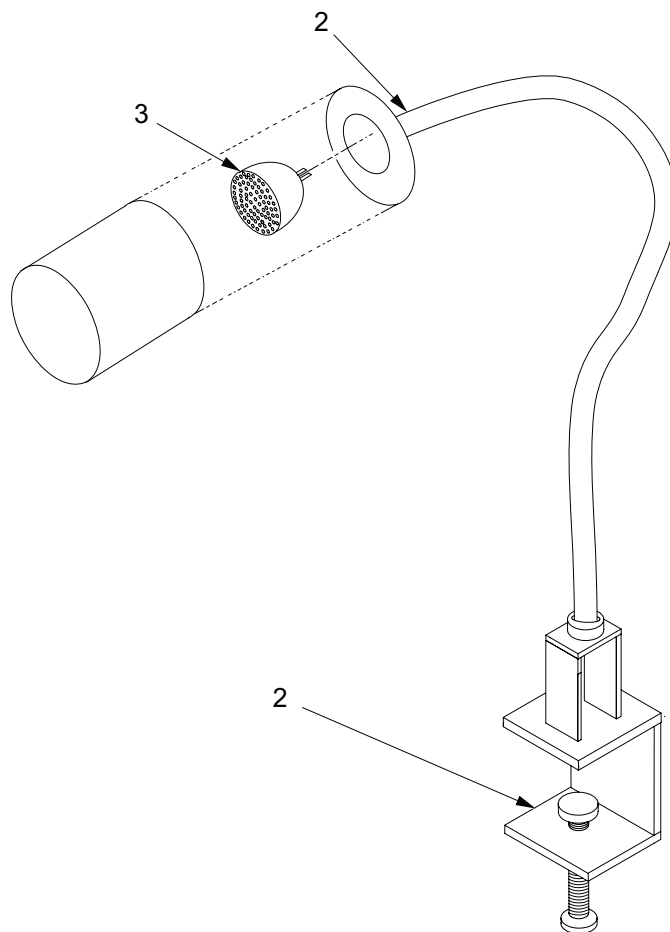
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 020 BOLTS AND INSERTS FIG 27. BOLTS AND INSERTS	
1	XDDZZ		0JHK5	2351-1	SCREW THREAD INSERT, WALL	AR
2	XDDZZ		0JHK5	2351-2	SCREW THREAD INSERT, FLOOR	AR
END OF FIGURE						



SSAE238

Figure 28. Power Supply Mounting Frame Assembly.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
1	MFFZZ			1024547	FIG 28. POWER SUPPLY MOUNTING FRAME ASSEMBLY FRAME, MOUNTING, POWER SUPPLY	1
2	XDFZZ		31767	2-L4-201 5-16 18X1 1/2RP	CASTER	4
3	PAFZZ	5305-00-068-0501	80205	MS90725-5	SCREW, CAP, HEX HEAD	2
4	PAFZZ	5310-00-829-9981	96906	MS35649-2312	NUT, PLAIN, HEX UNC-2B	4
5	PAFZZ	5310-00-997-1888	80205	MS35649-2252	NUT, PLAIN, HEX UNC-2B	2
6	PAFZZ	5310-00-582-5965	80205	MS35338-44	WASHER, LOCK	4
END OF FIGURE						



SSAE239

Figure 29. Focus Light.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					FIG 29. FOCUS LIGHT	
1	XDFZZ		57431	HW1002-20B	FOCUS LIGHT	1
2	XDFZZ		57431	27712L	2.50 IN. CLAMP	1
3	XDFZZ		57431	86388261	LED 5 WATT/LS710-20 QIA	1
END OF FIGURE						

**ARMAMENT AND ELECTRICAL SHOP
SPECIAL TOOLS LIST**

Special tools are not required to perform any maintenance procedures.

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
NATIONAL STOCK NUMBER (NSN) INDEX**

STOCK NUMBER	FIG.	ITEM		STOCK NUMBER	FIG.	ITEM
2240-00-739-7009	16	1		5310-00-004-5033	2	3
3444-00-243-2654	11	1			3	3
4010-01-476-2507	25	9			4	3
4210-00-595-4085	15	1			5	4
4720-00-676-7936	26	10			9	3
4730-00-277-5736	26	7			13	3
4730-00-287-1589	26	6			14	3
4730-00-722-5194	26	9			15	3
4730-01-348-6542	26	5			17	3
4730-01-515-4774	26	8			26	3
5120-00-293-1439	10	1		5310-00-011-5093	8	3
5305-00-068-0501	28	3		5310-00-045-3296	20	4
5305-00-068-0515	8	10			25	6
5305-00-082-6774	18	2		5310-00-080-6004	14	2
5305-00-267-8983	12	2			15	2
5305-00-269-2803	1	5			17	2
	2	4		5310-00-141-1795	12	4
	3	4		5310-00-167-0766	8	8
	4	4			12	3
	5	5		5310-00-167-0768	8	2
	14	4			9	2
	15	4			13	4
	26	2		5310-00-167-0769	10	3
5305-00-269-2805	17	4		5310-00-167-0821	1	3
5305-00-406-9219	8	4			2	2
	9	4			3	2
5305-00-710-4203	10	2			4	2
5305-00-716-8175	11	2			5	3
5305-00-912-7308	25	1		5310-00-167-0834	20	5
5305-00-984-7341	20	3		5310-00-167-0838	10	4
5305-01-340-9057	25	2		5310-00-209-0965	10	5
5310-00-004-5033	1	4		5310-00-274-8702	13	2

STOCK NUMBER	FIG.	ITEM		STOCK NUMBER	FIG.	ITEM
5310-00-274-8715	8	9		5340-01-221-0272	20	6
5310-00-582-5965	12	5		5925-00-728-1289	24	2
	28	6		5925-00-728-1969	24	8
5310-00-584-5272	11	4		5925-00-785-4521	24	7
5310-00-732-0559	1	6		5925-00-967-9874	24	1
	2	6		5925-01-018-3041	24	3
	3	6		5925-01-252-7781	24	6
	4	6		5925-01-537-6666	24	4
	5	6		5925-01-562-1066	24	5
5310-00-732-0560	11	5		5935-00-823-0308	22	3
5310-00-763-8904	8	7		5935-00-885-2264	22	2
5310-00-768-0319	12	6		5935-01-043-5841	22	1
5310-00-829-9981	28	4		5935-01-530-4508	20	8
5310-00-880-7745	10	6		5975-00-833-1776	20	7
5310-00-903-5966	23	2		5975-00-878-3791	21	1
5310-00-934-9751	25	7		5999-00-186-3912	21	2
5310-00-997-1888	28	5		6130-01-020-3951	12	1
5310-01-236-6203	26	4		6145-00-046-4568	22	4
5310-01-385-4624	25	5		6145-01-226-9164	21	3
5310-01-396-8392	11	3		7125-01-430-7168	5	1
5320-00-962-4693	16	2		7195-01-330-0183	8	1
5325-00-783-4754	23	3			9	1
5340-00-584-6556	26	11				

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
PART NUMBER (P/N) INDEX**

PART NUMBER	FIG.	ITEM		PART NUMBER	FIG.	ITEM
158	16	1		30182-4-6B	26	9
204	10	1		30345T2	25	9
1231	21	2		32-001000	13	1
3402	20	7		50785K162	25	10
6740	26	1		50785K164	25	3
1024547	28	1		5091-0	20	2
1024576	1	2		896WM	26	6
1024576	2	5		920-S	20	6
1024576	3	5		A-A-55804	21	1
1024576	4	5		AD66BS	16	2
1024576	5	2		AN970-4	8	8
7357907	15	1		AN970-4	12	3
20083250	25	4		AN970-6	9	2
20085285	18	1		AN970-6	13	4
20085286	18	3		AN970-7	10	3
20087058	25	8		AS21919WDG10	26	11
20089721	14	1		ASME-B18.2.1	8	4
86388261	29	3		ASME-B18.2.1	9	4
0CAB	11	1		AU-ST-001-57	6	2
1202P-4-4	26	8		BL2002	8	5
17A631001	23	1		BLFR60	8	6
17A6X0021	17	1		CG-6275	19	2
17A6X1013-1	19	1		FSC1-SC	20	1
17A6X1013-2	19	1		HBL2320	20	8
207P-4	26	7		HBL26410	23	4
209P-8-4	26	5		HW1002-20B	29	1
2351-1	27	1		IMB5HRLW	7	2
2351-2	27	2		M39012/16-0101	22	1
2556-6	26	10		M39012/25-0006	22	2
27712L	29	2		MIL-C-17	22	4
2-L4-201 5-16 18X1 1/2RP	28	2		MS24694-C102	18	2

PART NUMBER	FIG.	ITEM		PART NUMBER	FIG.	ITEM
MS27039-1-14	25	1		MS51968-21	8	7
MS27183-14	14	2		MS51968-8	1	6
MS27183-14	15	2		MS51968-8	2	6
MS27183-14	17	2		MS51968-8	3	6
MS27183-57	8	2		MS51968-8	4	6
MS35191-273	20	3		MS51968-8	5	6
MS35338-43	20	4		MS51971-1	23	2
MS35338-43	25	6		MS55399/13-00492	22	3
MS35338-44	12	5		MS90725-5	28	3
MS35338-44	28	6		MS90726-123	11	2
MS35338-46	1	4		MS90726-16	12	2
MS35338-46	2	3		MS90726-60	1	5
MS35338-46	3	3		MS90726-60	2	4
MS35338-46	4	3		MS90726-60	3	4
MS35338-46	5	4		MS90726-60	4	4
MS35338-46	8	3		MS90726-60	5	5
MS35338-46	9	3		MS90726-60	14	4
MS35338-46	13	3		MS90726-60	15	4
MS35338-46	14	3		MS90726-60	26	2
MS35338-46	15	3		MS90726-62	17	4
MS35338-46	17	3		MS90726-8	8	10
MS35338-46	26	3		MS90726-97	10	2
MS35338-47	10	5		MT60	8	1
MS35338-48	11	4		MT-60	9	1
MS35338-60	13	2		NAS1149D0363K	25	5
MS35338-63	8	9		NAS1149F0332P	20	5
MS35649-2252	28	5		NAS1149F0463P	12	4
MS35649-2312	28	4		NAS1149F0663P	1	3
MS35650-302	25	7		NAS1149F0663P	2	2
MS51576-6	25	2		NAS1149F0663P	3	2
MS51968-11	10	6		NAS1149F0663P	4	2
MS51968-14	11	5		NAS1149F0663P	5	3
MS51968-2	12	6		NAS1149F0732P	10	4

PART NUMBER	FIG.	ITEM		PART NUMBER	FIG.	ITEM
NAS1149F0863P	11	3		QQW343C06B1B	21	3
NAS301-6	26	4		RP1203AL	6	1
NASM21266-1N	23	3		RP1985AL	2	1
Q0B115GF1	24	3		RP1985AL	3	1
QOB115	24	4		RP1985AL	4	1
QOB120	24	2		RP1986AL	7	1
QOB220	24	1		RP3575AL	5	1
QOB260	24	5		RP3576AL	1	1
QOB3100	24	6		SPC-60 (E)	12	1
QOB330	24	8		STR 50B	20	9
QOB340	24	7				

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS**

INTRODUCTION

Scope

This work package lists COEI and BII for the Armament and Electrical Shop 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 Armament and Electrical Shop. 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 Armament and Electrical Shop in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the Armament and Electrical Shop 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 and BII Lists

Column (1) Item Number. Gives you the number of the item listed.

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 (UOC). When applicable, gives you a code if the item you need is not the same for different models of equipment.

Column (5) Unit of Issue (U/I). Indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

Column (6) Qty Rqr. Indicates the quantity required.

Table 1. Components of End Items (COEI) List.

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC, AND PART NUMBER	(4) UOC	(5) U/I	(6) QTY RQR
1	4210-00-270-4512	EXTINGUISHER, FIRE AME 322 (02788)	N/A	EA	2
2	4210-00-595-4085	BRACKET, FIRE EXTINGUISHER 7357907 (19207)	N/A	EA	2
3	7195-01-330-0183	TOP, WORK TABLE MT60 (34004)	N/A	EA	2
4	8115-00-663-0213	CASE SET, TRANSPORT AND STORAGE MIL-DTL-4710 (13873)	N/A	EA	2
5	8130-00-711-0537	REEL ASSEMBLY, POWER CABLE SC-D-68449 (18876)	N/A	EA	2
6	N/A	LIGHT ASSEMBLY, FOCUS LS710-30 (57431)	N/A	EA	3
7	N/A	BRACKET ASSEMBLY, FIRST AID 20089721 (81996)	N/A	EA	1
8	N/A	FRAME, MOUNTING, POWER SUPPLY 1024548 (81996)	N/A	EA	1
9	N/A	ASSEMBLY, TABLE 1024589 (81996)	N/A	EA	4
10	N/A	MOBILE CABINET, 7 DRAWER RP1986AL (34004)	N/A	EA	1
11	N/A	CABINET, 7 DRAWER STORAGE RP1985AL (34004)	N/A	EA	3
12	N/A	CABINET, 12 DRAWER STORAGE RP3575AL (34004)	N/A	EA	1
13	N/A	MOBILE CABINET, 5 DRAWER RP1203AL (34004)	N/A	EA	2
14	N/A	CABINET, 11 DRAWER STORAGE RP3576AL (34004)	N/A	EA	1
15	N/A	BRACKET, CABINET 1024576 (81996)	N/A	EA	6
16	N/A	SHELF, INSTRUMENT ASSEMBLY, RIGHT HAND 1024601 (81996)	N/A	EA	1
17	N/A	SHELF, INSTRUMENT ASSEMBLY, LEFT HAND 1024602 (81996)	N/A	EA	1
18	TBA (00236:32-001000)	EYEWASH STATION ASSEMBLY 32-001000 (00236)	N/A	EA	1
19	TBA (54360:6740)	SEPARATOR, OIL/WATER 6740 (54360)	N/A	EA	1
20	5411-01-295-3433	SHELTER, EXPANDABLE, ONE SIDE 5-4-3200 (81337)	N/A	EA	1

Table 2. Basic Issue Items (BII) List.

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC, AND PART NUMBER	(4) UOC	(5) U/I	(6) QTY RQR
1	5120-01-013-1676	SLIDE HAMMER, GROUND ROD: STEEL, 36" LENGTH, 5/8" DIA, 5/8"-11 UNC X 3 1/4", THREADED BOTH END BLACK OXIDE FINISH, NUT 5/8-11 UNC EACH END, STRICKER PLATE 4" OD X 1" ID THICK CENTER HOLE 5/8-11 UNC THREADED STEEL BLACK OXIDE FINISH, STRIKER 4" OD x 3/4" ID X P74-144 (45225)	N/A	EA	1
2	5120-01-335-2115	KEY, SOCKET HEAD SCREW: LONG ARM LENGTH 2.25" NOMINAL, MATERIAL STEEL OVERALL, SHORT ARM LENGTH .75" NOMINAL, DESIGN L-HANDLE, WRENCHING SURFACE SIZE .125" NOMINAL SINGLE END 57014 (08292)	N/A	EA	1
3	5120-01-335-2117	KEY, SOCKET HEAD SCREW: LONG ARM LENGTH 2.5" NOMINAL, MATERIAL STEEL OVERALL, SHORT ARM LENGTH .844" NOMINAL, DESIGN L-HANDLE, WRENCHING SURFACE SIZE .156" NOMINAL SINGLE END 57020 (08292)	N/A	EA	1
4	5120-01-335-2118	KEY, SOCKET HEAD SCREW: LONG ARM LENGTH 2.75" NOMINAL, MATERIAL STEEL OVERALL, SHORT ARM LENGTH .938" NOMINAL, DESIGN L-HANDLE, WRENCHING SURFACE SIZE .188" NOMINAL SINGLE END 57022 (08292)	N/A	EA	1
5	5120-01-398-7960	SCREWDRIVER, FLAT TIP: BLADE LENGTH 6" NOMINAL STRAIGHT FLUTED HANDLE, STEEL BLADE, PLASTIC HANDLE, SHANK SHAPE ROUND, ELECTRICIAN'S TYPE, TIP WIDTH .188" NOMINAL 2243-6 (96508)	N/A	EA	1
6	5120-01-398-7989	SCREWDRIVER, FLAT TIP: BLADE LENGTH 8" NOMINAL, FLARED TIP SIDE, STRAIGHT FLUTED HANDLE, STEEL BLADE, CUSHION GRIP HANDLE, OVERALL LENGTH 13.5" NOMINAL, TIP WIDTH .375" NOMINAL 2343-8 (96508)	N/A	EA	1
7	5120-01-399-9019	SCREWDRIVER, CROSS TIP: BLADE LENGTH 4" NOMINAL, CUSHION GRIP, STEEL BLADE, PLASTIC HANDLE, OVERALL LENGTH 8.344" NOMINAL, SHANK SHAPE ROUND, TIP SIZE DESIGN 2, TIP TYPE PHILLIPS CROSS 9484 (1CV05)	N/A	EA	1
8	5120-01-399-9031	SCREWDRIVER, CROSS TIP: BLADE LENGTH 6" NOMINAL, CUSHION GRIP, STEEL BLADE, PLASTIC HANDLE, OVERALL LENGTH 10.344" NOMINAL, SHANK SHAPE ROUND, TIP SIZE DESIGN 2, TIP TYPE PHILLIPS CROSS 65-903 (1CV05)	N/A	EA	1
9	5120-01-399-9534	SOCKET, SOCKET WRENCH: DRIVE SURFACE SIZE .375" NOMINAL SINGLE END, MATERIAL STEEL OVERALL, OVERALL LENGTH 1.125" NOMINAL, SURFACE TREATMENT CHROMIUM OVERALL, WRENCHING SURFACE SHAPE 12 POINT, WRENCHING SURFACE SIZE .5" NOMINAL SINGLE END J5216 (1CV05)	N/A	EA	1
10	5120-01-399-9535	SOCKET, SOCKET WRENCH: DRIVE SURFACE SIZE .375" NOMINAL SINGLE END, MATERIAL STEEL OVERALL, OVERALL LENGTH 1.125" NOMINAL, SURFACE TREATMENT CHROMIUM OVERALL, WRENCHING SURFACE SHAPE 12 POINT, WRENCHING SURFACE SIZE .562" NOMINAL SINGLE END 5218 (1CV05)	N/A	EA	1

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC, AND PART NUMBER	(4) UOC	(5) U/I	(6) QTY RQR
11	5120-01-399-9538	SOCKET, SOCKET WRENCH: DRIVE SURFACE SIZE .375" NOMINAL SINGLE END, MATERIAL STEEL OVERALL, OVERALL LENGTH 1.062" NOMINAL, SURFACE TREATMENT CHROMIUM OVERALL, WRENCHING SURFACE SHAPE 12 POINT, WRENCHING SURFACE SIZE .438" NOMINAL SINGLE END J5214 (1CV05)	N/A	EA	1
12	5120-01-430-7919	EXTENSION, SOCKET WRENCH: DRIVE SURFACE SIZE .375" NOMINAL BOTH ENDS, MATERIAL STEEL OVERALL, OVERALL LENGTH 3" NOMINAL, SURFACE TREATMENT CHROMIUM OVERALL 11905 (08292)	N/A	EA	1
13	5120-01-430-7929	HANDLE, RATCHET SOCKET WRENCH: DRIVE SURFACE SIZE .375" NOMINAL SINGLE END, MATERIAL STEEL OVERALL, OVERALL LENGTH 7.625" NOMINAL, SURFACE TREATMENT CHROMIUM OVERALL 11901 (08292)	N/A	EA	1
14	5210-01-509-2259	LEVEL AND PLUMB: STANDARD EXTRUDED ALUMINUM I-BEAM LEVEL, 24" LENGTH, 1 LEVEL VIAL, 2 PLUMB VIALS 22675A22 (39428)	N/A	EA	1
15	5305-00-728-6350	SETSCREW: FASTENER LENGTH .735" MINIMUM AND .765" MAXIMUM, HEAD STYLE HEXAGON, MATERIAL STEEL COMP 4032/4037/4137/4140/8630/8740 OVERALL, NOMINAL THREAD DIAMETER .375", SURFACE TREATMENT CADMIUM OVERALL AND CHROMATE, THREAD LENGTH .735" MINIMUM AND .765" MS51966-90 (96906)	N/A	EA	38
16	5306-01-341-8525	BOLT, RING: MATERIAL STEEL COMP 4130 OVERALL, NOMINAL THREAD DIAMETER .375", RING INSIDE DIAMETER 1.625" NOMINAL, RING STOCK DIAMETER .25" NOMINAL, SURFACE TREATMENT CADMIUM OVERALL FDA1658M-3 (98313)	N/A	EA	46
17	5340-00-158-3805	PADLOCK: CONSTRUCTION SOLID OR LAMINATED, MATERIAL STEEL OVERALL, OVERALL HEIGHT 3.125" NOMINAL, OVERALL THICKNESS .688" NOMINAL, OVERALL WIDTH 1.75", SURFACE TREATMENT CHROMIUM OVERALL OR ZINC A-A-59487A (58536)	N/A	EA	2
18	5975-00-878-3791	ROD, GROUND: 3 SECTIONS, DIM 9' LG, 5/8" DIA, CONE POINT, MALE THD END, W/SEPARABLE CLAMP, CABLE AND TERMINAL CLAMP WILL BE ATTACHED ON EACH ROD IN A MANNER SO AS NOT TO COME OFF IN HANDLING A-A-55804 (58536)	N/A	EA	1
19	5995-01-134-3159	CABLE ASSEMBLY, POWER, ELECTRICAL SC-D-883963-G9-3 (80063)	N/A	EA	1
20	6150-00-255-8332	CABLE ASSEMBLY, POWER, ELECTRICAL: OVERALL LENGTH 100', 6 AWG ALL CONDUCTORS, CONNECTOR PLUG BOTH ENDS ALL CONDUCTORS 72289-100 (07878)	N/A	EA	1
21	6545-00-116-1410	FIRST AID KIT, GENERAL PURPOSE: GENERAL PURPOSE RIGID CASE UA-68-1371 (06416)	N/A	EA	1
22	8015-00-271-1511	BAG, COTTON MAILING 8015-00-271-1511 (83421)	N/A	EA	1
23	TBA (81996:20085241)	T-SEAL 20085241 (81996)	N/A	EA	2
24	N/A	STRAP, WEBBING ASSEMBLY, 37 INCH 17A6X0034-1 (81996)	N/A	EA	1
25	N/A	STRAP, WEBBING, 36 INCH 1024546-1 (81996)	N/A	EA	1

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC, AND PART NUMBER	(4) UOC	(5) U/I	(6) QTY RQR
26	N/A	STRAP, WEBBING, 72 INCH 1024546-2 (81996)	N/A	EA	13
27	N/A	STRAP, WEBBING, 110 INCH 1024546-3 (81996)	N/A	EA	2
28	N/A	TIE-DOWN, AIRCRAFT CARGO 17A6X1005 (81996)	N/A	EA	15

End of Work Package

**ARMAMENT AND ELECTRICAL SHOP
EXPENDABLE AND DURABLE ITEMS LIST**

INTRODUCTION**Scope**

This work package lists expendable and durable items that you will need to operate and maintain the Armament and Electrical Shop. This list is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 8-100, Army Medical Department Expendable/Durable Items.

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 (WP 0098, item 5)").

Column (2) Level. This column identifies the lowest level of maintenance that requires the listed item (O = Unit/AVUM, F = Direct Support/AVIM, D = Depot).

Column (3) National Stock Number (NSN). This is the NSN assigned to the item, which you can use to requisition it.

Column (4) Item Name, Description, Part Number/(CAGEC). This column provides the other information you need to identify the item. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (5) Unit of Issue (U/I) code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

Table 1. Expendable and Durable Items List.

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGEC, AND PART NUMBER	(5) U/I
1	F	8030-01-075-1156	COMPOUND, CAULKING 9422T16 (39428)	cs
2	F	8010-00-852-9034	ENAMEL, GRAY 16187 (81348)	pt
3	F	8010-00-159-4520	ENAMEL, WHITE 17773 (81348)	pt
4	F	8010-00-297-0593	PRIMER, COATING TT-P-1757 (81348)	pt
5	F	8030-00-753-4599	POLYSULFIDE SEALANT MIL-S-8802 (1DWR5)	kt
6	F	8010-01-276-3640	TAN 686 MIL-C-53039A (81349)	cn
7	F	5970-01-245-7042	TAPE, ELECTRICAL SCOTCH SUPER 33 PLUS 1 INCH (76381)	ea
8	F	4020-00-782-5573	TWINE, FIBROUS T-T-871 (81348)	ce
9	F	5133-00-980-3423	DRILL SET, TWIST NAS 907 (80205)	ea

End of Work Package

By Order of the Secretary of the Army:

Official:

A handwritten signature in black ink that reads "Joyce E. Morrow". The signature is written in a cursive style with a large initial "J" and "M".

JOYCE E. MORROW
*Administrative Assistant to the
Secretary of the Army*
0915901

GEORGE W. CASEY, JR.
*General, United States Army
Chief of Staff*

Distribution:

To be distributed in accordance with the initial distribution number (IDN) 344244,
requirements for TM 1-4920-500-13&P.

These are the instructions for sending an electronic 2028

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17, and 27.

From: "Whomever" whomever@wherever.army.mil

To: 2028@redstone.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 8/30/02
TO: (Forward to proponent of publication or form)(Include ZIP Code) Commander, U.S. Army Aviation and Missile Command ATTN: AMSAM--MMC--MA--NP Redstone Arsenal, AL 35898						FROM: (Activity and location)(Include ZIP Code) MSG, Jane Q. Doe 1234 Any Street Nowhere Town, AL 34565	
PART 1 - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS							
PUBLICATION/FORM NUMBER TM 9-1005-433-24						DATE 16 Sep 2002	TITLE Organizational, Direct Support, And General Support Maintenance Manual for Machine Gun, .50 Caliber M3P and M3P Machine Gun Electrical Test Set Used On Avenger Air Defense Weapon System
ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO. *	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON	
1	WP0005 PG 3		2			Test or Corrective Action column should identify a different WP number.	
EXAMPLE							
* Reference to line numbers within the paragraph or subparagraph.							
TYPED NAME, GRADE OR TITLE MSG, Jane Q. Doe, SFC				TELEPHONE EXCHANGE/ AUTOVON, PLUS EXTENSION 788-1234		SIGNATURE	

TO: (Forward direct to addressee listed in publication) Commander, U.S. Army Aviation and Missile Command ATTN: AMSAM-MMC-MA-NP Redstone Arsenal, AL 35898	FROM: (Activity and location) (Include ZIP Code) MSG, Jane Q. Doe 1234 Any Street Nowhere Town, AL 34565	DATE 8/30/02
---	---	------------------------

PART II - REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER			DATE		TITLE			
PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS (Any general remarks or recommendations or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)

EXAMPLE

TYPED NAME, GRADE OR TITLE MSG, Jane Q. Doe, SFC	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION 788-1234	SIGNATURE
--	---	-----------

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25--30; the proponent agency is ODISC4.						Use PartII(reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/ Supply Manuals (SC/SM)	DATE
TO: (Forward to proponent of publication or form)(Include ZIP Code) Commander, U.S. Army Aviation and Missile Command ATTN: AMSAM-MMC-MA-NP Redstone Arsenal, AL 35898						FROM: (Activity and location)(Include ZIP Code)	
PART 1 --ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS							
PUBLICATION/FORM NUMBER						DATE	TITLE
ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO. *	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON	
* Reference to line numbers within the paragraph or subparagraph.							
TYPED NAME, GRADE OR TITLE						TELEPHONE EXCHANGE/ AUTOVON, PLUS EXTENSION	SIGNATURE

TO: <i>(Forward direct to addressee listed in publication)</i> Commander, U.S. Army Aviation and Missile Command ATTN: AMSAM-MMC-MA-NP Redstone Arsenal, AL 35898	FROM: <i>(Activity and location) (Include ZIP Code)</i>	DATE
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PART II --REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER			DATE		TITLE			
PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III --REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
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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 decagram = 10 grams = .35 ounce
 1 hectogram = 10 decagrams = 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 cu. feet

Approximate Conversion Factors

To change	To	Multiply by	To change	To	Multiply by
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	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)

F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
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