
TECHNICAL MANUAL

**AVIATION UNIT AND INTERMEDIATE
MAINTENANCE MANUAL
FOR
TARGET ACQUISITION DESIGNATION
SIGHT (TADS) ASSEMBLY
SHIPPING AND STORAGE CONTAINERS**

13082385, 13082387, 13083610, 13083611, 13083613-19,
13083614, 13083615, 13083617, 13083618, 13083619, 13083620, 13083621,
13083622, 13083624, 13083625

**PILOT NIGHT VISION SENSOR (PNVS) ASSEMBLY
SHIPPING AND STORAGE CONTAINERS**

13083608, 13083612, 13083616

*This manual supersedes TM 9-8145-476-23, dated 30 April 1985, including all changes.

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

AH-64A ATTACK HELICOPTER

**HEADQUARTERS, DEPARTMENT OF THE ARMY
30 AUGUST 2001**

WARNING

HAZARDOUS SOLVENTS

When you use solvents, be sure that the place you work in is well ventilated. **WEAR GLOVES AND EYE PROTECTION.** If you don't have good ventilation, read TB MED 223 and use the recommended respiratory (breathing) protection.

DON'T USE FLAMMABLE SOLVENTS AROUND HEAT, OPEN FLAME, OR SPARKS.

IF YOU GET SOLVENT IN YOUR EYES OR ON YOUR SKIN, FLUSH THE SOLVENT AWAY WITH WATER FOR 15 MINUTES; THEN GET MEDICAL HELP.

Freon reacts with highly active free metals such as sodium, barium, or potassium, and may produce toxic byproducts, fires, or explosions. Do not use Freon near highly active free metals.

TOXIC AND FLAMMABLE CHEMICALS

Use the same care for toxic and flammable chemicals as you would for hazardous solvents.

CHEMICAL, BIOLOGICAL, AND RADIOLOGICAL CONTAMINATION

Notify your supervisor if you think you have been exposed to chemical, biological, or radiological contamination. TM 9-1300-275/2 gives procedures for decontamination.

LIST OF EFFECTIVE PAGES

INSERT LATEST CHANGE PAGES. DESTROY SUPERSEDED PAGES.

NOTE: The portion of the text affected by the changes is indicated by a vertical line in the outer margins of the page. Changes to illustrations are indicated by miniature pointing hands. Changes to wiring diagrams are indicated by shaded areas.

Dates of issue for original and change pages are:

Original 0 30 August 2001

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 93, CONSISTING OF THE FOLLOWING:

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TECHNICAL MANUAL

No. 1-8145-476-23

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 30 AUGUST 2001

AVIATION UNIT AND INTERMEDIATE
MAINTENANCE MANUAL
FOR
TARGET ACQUISITION DESIGNATION SIGHT (TADS) ASSEMBLY
SHIPPING AND STORAGE CONTAINERS,
13082385, 13082387, 13083610, 13083611, 13083613-19, 13083614, 13083615, 13083617,
13083618, 13083619, 13083620, 13083621, 13083622, 13083624, AND 13083625
AND
PILOT NIGHT VISION SENSOR (PNVS) ASSEMBLY
SHIPPING AND STORAGE CONTAINERS,
13083608, 13083612, AND 13083616
(AH-64A ATTACK HELICOPTER)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS
You can help improve this manual. If you find any errors or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 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 send in your comments electronically to our e-mail address: 2028@redstone.army.mil or FAX us at (256) 842-6546/DSN 788-6546. Instructions for sending an electronic 2028 may be found at the end of this TM immediately preceding the hard copy 2028.

*This manual supersedes TM 9-8145-476-23, dated 30 April 1985, including all changes.
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HOW TO USE THIS MANUAL

If you cannot find the information you are looking for, you cannot properly do your job. Take a few minutes to look through this manual. You will find it easier to use once you have become familiar with it.

Each chapter and section is set up to lead you through it step by step. For example:

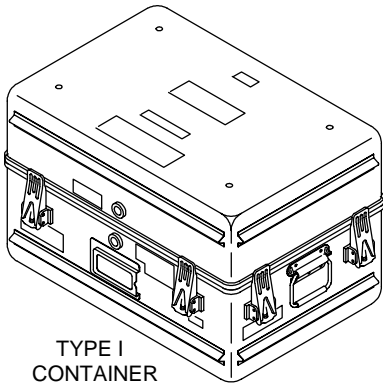
1. On the chapter page, you will see a listing of the sections in that chapter. Listed under the section titles is a listing of the tasks for that section. Find the task (by title) that you have been assigned. Now, look across from the task title and you will find the paragraph and page number for the task. Notice that the chapter number forms part of the page number.
2. Now that you have located the page number, turn to that page and review the task requirements before starting the procedures.
3. Did you notice that each task or job begins with an initial setup?
 - a. INITIAL SETUP lists the configuration, test equipment, tools and special tools, materials/parts, military occupational specialty (MOS), references, safety instructions, condition equipment should be in, and general instructions for you to complete the task. FOLLOWUP lists the procedures to be performed after you have completed the basic task.
 - b. Now, what exactly does INITIAL SETUP mean to you? The term "INITIAL SETUP" means, "DO THIS FIRST BEFORE STARTING THE TASK." Review one of the initial setup tables and become familiar with the requirements.
4. An explanation of the initial setup headings is presented below.
 - a. Tools and Special Tools. Special tools needed to perform the task. Be sure to acquire all the tools before you start the task.
 - b. Materials/Parts. Materials and parts needed to perform the task. Materials can be found in Appendix C. Next to the name of the material listed in the initial setup you will find an item number. This number matches the item number in column (1) of Appendix C. Be sure to acquire all the materials and parts before you start the task.
 - c. Personnel Required. MOS required to do the task. This will also tell you the number of persons needed to perform the task.
5. You can also use the table of contents on page i of this manual to locate page number for chapters, sections, and the appendixes.
6. Let's see if you understand how to find a specific task. Suppose your supervisor wants you to replace a part or assembly.

Here's how you would find it:

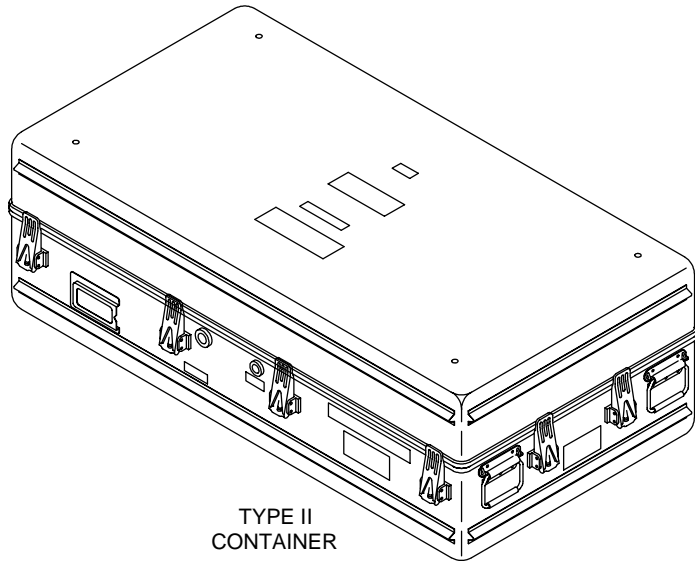
 - a. Obtain the correct TM for the task and look up the procedure in the chapter covering the type of task you are to perform.
 - b. For example: Replacement is a maintenance task you can find located in the maintenance chapter.

HOW TO USE THIS MANUAL (cont)

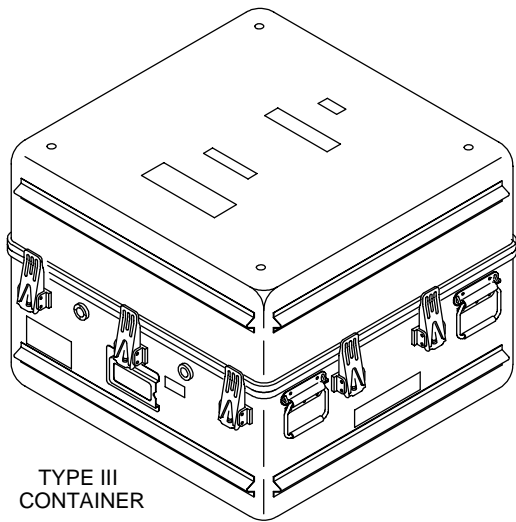
- c. Looking at the section titles listed in the maintenance chapter index, you should have located the page number for the maintenance procedures. Going to that page you found the section index and located the paragraph and page number of the replacement task.
7. Another approach would be to look in the alphabetical index in the rear of the manual.



TYPE I
CONTAINER



TYPE II
CONTAINER



TYPE III
CONTAINER

400-014

CHAPTER 1
INTRODUCTION

	Section	Page
General Information	I	1-1
Equipment Description and Data	II	1-3

Section I. GENERAL INFORMATION

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Scope	1-1	1-1
Maintenance Forms, Records, and Reports	1-2	1-1
Destruction of Army Materiel to Prevent Enemy Use	1-3	1-1
Preparation for Storage or Shipment	1-4	1-1
Quality Assurance/Quality Control (QA/QC)	1-5	1-1
Official Nomenclature, Names, and Designations	1-6	1-2

1-1. SCOPE

a. Type of Manual. This manual provides aviation unit and intermediate maintenance instructions for shipping and storage containers.

b. Model Number and Equipment Name. There are three types of reusable shipping and storage containers. Each type is modified to handle the line replaceable units (LRUs) that comprise the Target Acquisition Designation Sight (TADS) Assembly and Pilot Night Vision Sensor (PNVS) Assembly. Refer to table 1-2 for the container type and LRU configuration part number.

c. Purpose of Equipment. The shipping and storage containers provide protection for the LRUs during shipping, storage, and handling.

1-2. MAINTENANCE FORMS, RECORDS AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-751, The Army Maintenance Management System - Aviation (TAMMS).

1-3. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Refer to TM 750-244-2 for information about destruction of Army materiel to prevent enemy use.

1-4. PREPARATION FOR STORAGE OR SHIPMENT

Preparation for the storage or shipment of the containers should be done per Department of Defense (DOD) Standards. There are no special handling procedures for the containers.

1-5. QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Refer to FM 1-511 for information about Quality Assurance/Quality Control (QA/QC).

1-6. OFFICIAL NOMENCLATURE, NAMES, AND DESIGNATIONS

This listing includes nomenclature cross-references used in this manual. Refer to the glossary in the back of this manual for an explanation of other abbreviations.

Name/
Abbreviation

Official
Nomenclature

Helicopter
PNVS
TADS

AH-64A Attack Helicopter
Pilot Night Vision Sensor Assembly AN/AAQ-11
Target Acquisition Designation Sight Assembly AN/ASQ-170

Section II. EQUIPMENT DESCRIPTION AND DATA

Subject	Para	Page
Equipment Purpose, Capabilities, and Features	1-7	1-3
Differences Between Models	1-8	1-6
Equipment Data	1-9	1-6
Safety, Care, and Handling	1-10	1-7
Equipment Configuration	1-11	1-8

1-7. EQUIPMENT PURPOSES, CAPABILITIES, AND FEATURES

The purposes, capabilities, and features described below are typical of container types I, II, and III.

a. Purpose. The shipping and storage containers are reusable containers rectangular in shape, made of an aluminum alloy material. Each container is designed to protect the equipment from shock, vibration, humidity, and water damage during transportation and storage.

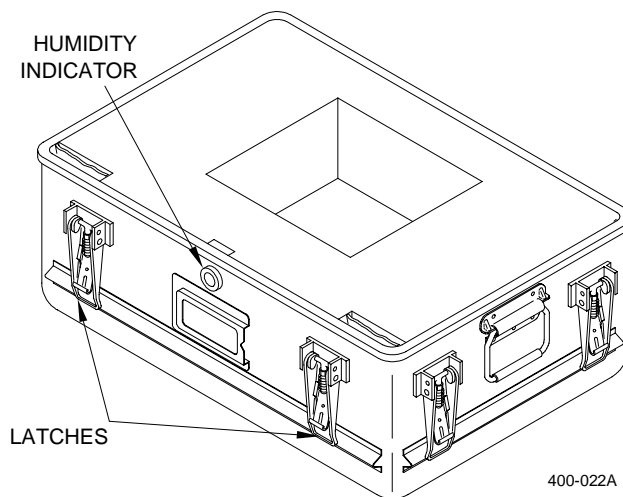
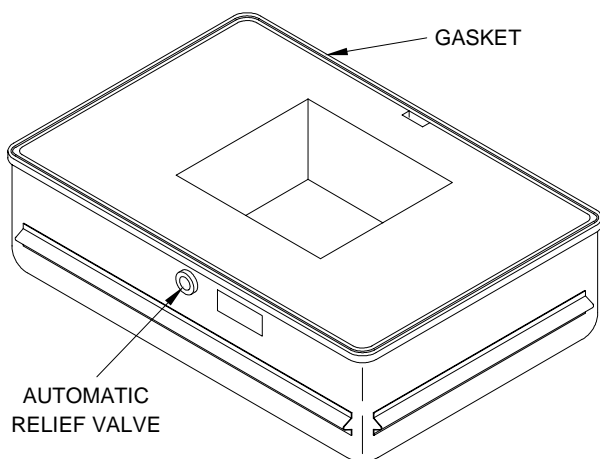
b. Capabilities and Features

(1) Latches. Type I has eight latches, type II has 12 latches, and type III has 10 latches securing the lid to the container during storage. Release all latches when opening the container.

(2) Automatic relief valve. A two-way valve operates by vacuum or pressure to equalize pressure inside the container with atmospheric pressure outside the container. The vacuum rating is 3-1/2 psi and pressure rating is 2-1/2 psi. Internal pressure is equalized by pressing the manual release core.

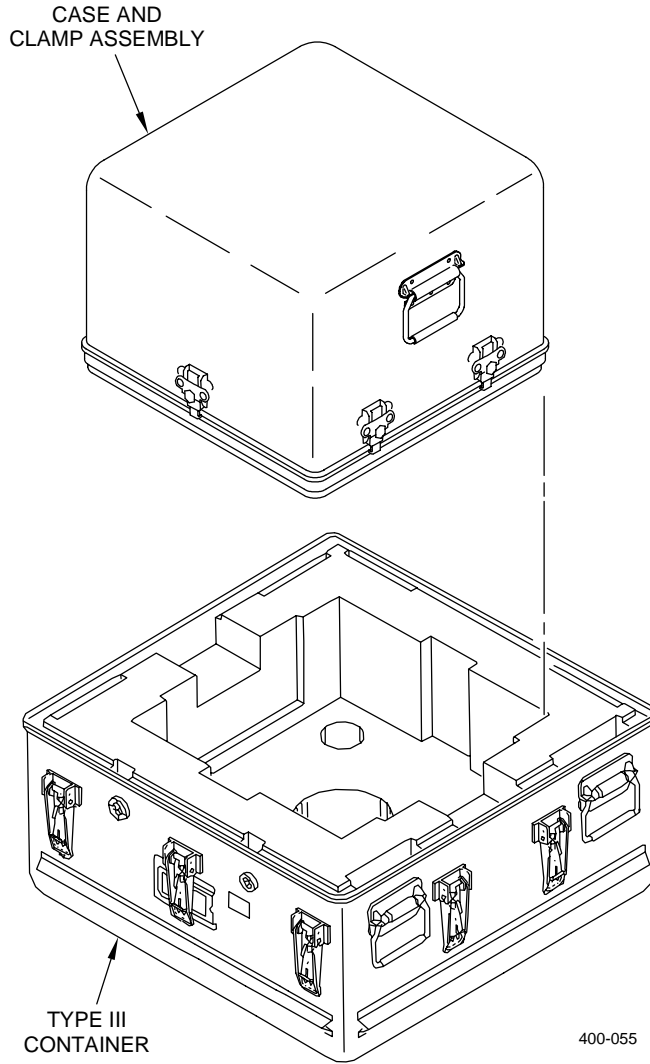
(3) Humidity indicator. Humidity is registered to 50 percent and indicated by a lavender (or bluish) color in one or more of four circles. The circles indicate 20, 30, 40, or 50 percent humidity. After exposure to high humidity, the desiccant is replaced and circles return to former color (black numbers on a white background).

(4) Gasket. When closed, a rubber gasket waterproofs the container.



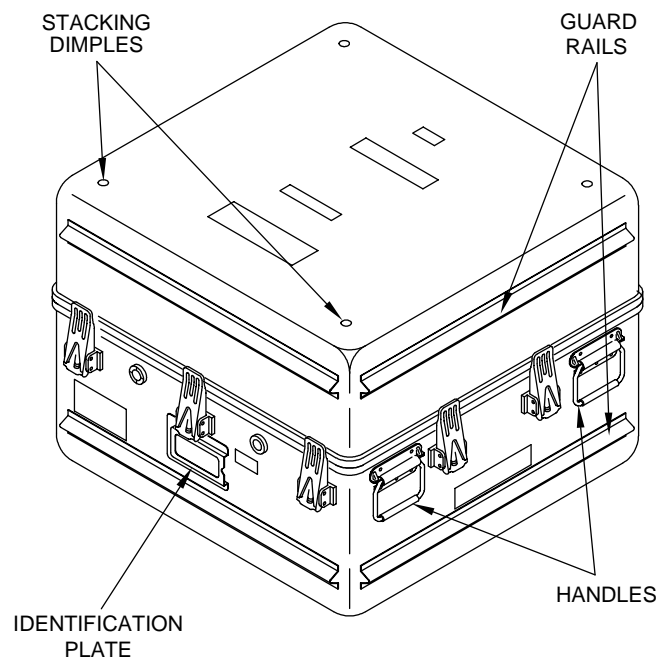
1-7. EQUIPMENT PURPOSES, CAPABILITIES, AND FEATURES (cont)

(5) Case and clamp assembly. Located in two of the seven type III containers. Used to transport and store the Day Sensor and Night Sensor assemblies only.



1-7. EQUIPMENT PURPOSES, CAPABILITIES, AND FEATURES (cont)

- (6) Guard rails. Guard rails prevent damage to externally mounted components.
- (7) Stacking dimples. Stacking dimples prevent containers from slipping during stacking for storage.
- (8) Identification (ID) plate. The identification plate consists of information needed for basic container, LRU, and inserts which make up each container configuration.
- (9) Handles. Type II and III containers each have four handles and type I has two handles providing ease when handling.



TYPICAL CONTAINER

400-013

1-8. DIFFERENCES BETWEEN MODELS

Within container types there are no differences between models except for container cushions. There are two types of case and clamp assembly containers with different types of clamp assemblies and spacer plates. Both types are included in this manual.

1-9. EQUIPMENT DATA

Refer to table 1-1 for physical data on containers.

Table 1-1. Physical Data

Type I	Length	29.44 in.
	Width	18.60 in.
	Height	20.44 in.
	Volume	4.95 cu ft
	Weight (unloaded)	34.00 lb
	Weight (loaded)	See ID plate
Type II	Length	56.69 in.
	Width	30.44 in.
	Height	18.20 in.
	Volume	15.10 cu ft
	Weight (unloaded)	84.00 lb
	Weight (loaded)	See ID plate
Type III	Length	30.69 in.
	Width	30.69 in.
	Height	24.90 in.
	Volume	11.04 cu ft
	Weight (unloaded)	56.00 lb
	Weight (loaded)	See ID plate

1-10. SAFETY, CARE, AND HANDLING

a. Safety. The following safety rules apply when using containers.

- (1) Do not try to lift a container alone that requires a two-man lift.
- (2) Do not use containers as work stands. They are not made to support your weight.
- (3) Only stack same size containers.
- (4) Stack containers maximum of four high. Ensure that stacking feet are firmly seated in the stacking dimples of the bottom container.
- (5) A container can be damaged if lid is installed wrong. The lid is keyed to the lower half of the container. Several welds are located on rim of lid to prevent engagement of latches if lid is installed wrong.

b. Care. With proper care, containers should last indefinitely. The following rules apply when caring for containers.

- (1) Do not use containers as dunnage to support heavy items.
- (2) Keep containers closed at all times when not in use. Excessive humidity will cause frequent changing of the desiccant bags.
- (3) Replace instruction labels and stenciling when they become hard to read, (para 3-10 and 3-11).
- (4) When gaskets become damaged, replace them immediately to preserve airtightness (para 3-15).
- (5) Always replace broken or missing items immediately to maintain a serviceable condition.

c. Handling. The following rules apply when handling containers.

- (1) Always use handles when lifting and carrying containers.
- (2) Do not drag containers. It will damage paint finish and increase maintenance.
- (3) Never throw or drop a container. It may damage the component inside.
- (4) Always tie down containers being transported in an open body vehicle.

1-11. EQUIPMENT CONFIGURATION

Table 1-2 provides configuration information by container type. Column headings are explained below.

- a. **Item Name.** Common name of the item for which the container is used.
- b. **Assembly.** Part number of container assembly.
- c. **Container.** Part number of the container without cushions and desiccant.
- d. **Upper.** Part number of upper cushion.
- e. **Lower.** Part number of lower cushion.
- f. **Desiccant.** The quantity of bags of desiccant required.

Table 1-2. Container Configuration*

Item Name	Assembly Part No.	Container Part No.	Upper Part No.	Lower Part No.	Bags of Desiccant
Type I					
Boresight assembly	3613	3643	3570	3569	4
	3613-19	3643	3570-2	3569-2	4
Power supply assembly	3614	3643	3572	3571	4
Laser electronics unit assembly	3615	3643	3574	3573	4
PNVS electronic unit assembly	3616	3643	3576	3575	4
TADS electronic unit assembly	3618	3643	3580	3579	4
Laser transceiver unit assembly	3619	3643	3582	3581	4
Television sensor assembly	3620	3643	3584	3583	4
Laser tracker receiver assembly	3621	3643	3586	3585	4
TADS electronic control amplifier assembly	3622	3643	3588	3587	4
Control panel assembly	3624	3643	3592	3591	4
Type II					
Optical relay column assembly	3617	3644	3578	3577	8
Type III					
Night sensor assembly**	2385	3645	2389	2388	10
PNVS turret assembly	3608	3645	3561	3560	6
Day sensor assembly**	2387	3645	2389	2388	10
Night sensor shroud assembly	3610	3645	3565	3564	6
Day sensor shroud assembly	3611	3645	3632	3566	6
PNVS shroud assembly	3612	3645	3568	3567	6
Indirect view display electronics assembly	3625	3645	3594	3593	6

*Precede all numbers with 1308 to complete the part number.

**A case and clamp assembly is provided as part of the container assembly.

CHAPTER 2

AVIATION UNIT MAINTENANCE INSTRUCTIONS

	Section	Page
Repair Parts; Special Tools; Test, Measurement, and Diagnostic Equipment (TMDE); and Support Equipment	I	2-1
Preventive Maintenance Checks and Services (PMCS)	II	2-2
Aviation Unit Maintenance Procedures	III	2-4

**Section I. REPAIR PARTS; SPECIAL TOOLS; TEST, MEASUREMENT, AND
DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT**

Subject	Para	Page
Common Tools and Equipment	2-1	2-1
Special Tools, TMDE, and Support Equipment	2-2	2-1
Repair Parts	2-3	2-1

2-1. COMMON TOOLS AND EQUIPMENT

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

2-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

For authorized special tools and support equipment pertaining to aviation unit maintenance, refer to TM 1-8145-476-23P, Repair Parts and Special Tools List (RPSTL).

2-3. REPAIR PARTS

Repair parts are listed and illustrated in the RPSTL (TM 1-8145-476-23P) covering aviation unit maintenance for this equipment.

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Subject	Para	Page
General	2-4	2-2
PMCS Procedures	2-5	2-2

2-4. GENERAL

To ensure that the shipping and storage containers are ready for use at all times, they must be checked at regular intervals. Upon completion of all maintenance tasks, complete the proper forms in accordance with DA PAM 738-751, The Army Maintenance Management System - Aviation (TAMMS).

2-5. PMCS PROCEDURES

Table 2-1 provides PMCS information. Column headings are explained below.

- a. Item Number.** Listed is the item number in order of performance regardless of interval. This column shall be used as a source of item numbers for the TM number column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording results of PMCS.
- b. Interval.** The interval column is self-explanatory as indicated by the legend that precedes the table.
- c. Item to be Inspected.** This column lists items to be inspected.
- d. Procedures.** This column contains a brief description of the procedure to be performed.

Table 2-1. Preventive Maintenance Checks and Services

Item No.	Interval		Item to Be Inspected	Procedure
	30 Days	60 Days		
1		X	Humidity indicator	Check humidity indicator 20, 30, 40, and 50 circles. Humidity indicator should be black numbers on a white background. If any of the background circles are lavender (or bluish) in color, replace all desiccant bags (para 3-16).
2	X		Automatic relief valve	Check screen for clogging with dust or dirt. Brush or vacuum foreign matter off screen.
3	X		Container and case assembly gasket	Check for tears, gouges, or missing portions. Replace gasket (para 3-15).

*Pertains to configurations 13082385 and 13082387 only.

Table 2-1. Preventive Maintenance Checks and Services (cont)

Item No.	Interval		Item to Be Inspected	Procedure
	30 Days	60 Days		
4	X		Cushions	Check for tears, gouges, or missing cushions. If tears or gouges intersect LRU cutout or cushion is missing, replace cushion (para 3-17).
5	X		Container and case assembly labels and stenciling	Check for legibility. If not readable replace label and/or stenciling (para 3-10 and 3-11).
6	X		Container	Check for scratches, chipped paint, or exposed metal. If necessary, touch up paint area (para 3-9).
7	X		Case assembly*	Check for scratches, chipped paint, or exposed metal. If necessary, touch up paint area (para 3-9).
8	X		Container latches	Check for loose, incorrect fitting latches. If necessary, tighten latches for proper fit (para 2-8).
9	X		Clamp assembly*	Check for loose or broken hardware. Tighten hardware and if necessary repair clamp assembly (para 3-18).
10	X		Mounting plate assembly*	Check for loose or broken hardware. Tighten hardware and if necessary replace mounting plate assembly (para 3-18).
11	X		Spacer plate*	Check for loose or broken hardware. Tighten hardware and if necessary replace mounting plate assembly (para 3-18).

*Pertains to configurations 13082385 and 13082387 only.

Section III. AVIATION UNIT MAINTENANCE PROCEDURES

Subject	Para	Page
General	2-6	2-4
Container Cleaning	2-7	2-5
Container Latch Adjustment	2-8	2-8

2-6. GENERAL

This section provides corrective maintenance procedures specifically directed to aviation unit maintenance level personnel.

2-7. CONTAINER CLEANING

This task covers cleaning of:

<u>Para</u>	<u>Item</u>	<u>Para</u>	<u>Item</u>
1.	Container exterior	3.	Cushion cleaning
2.	Container interior	4.	Case and clamp assembly

INITIAL SETUP

Materials (appendix C)

Clean water
 Liquid bleach (Item 4)
 Wiping cloth (Item 10)
 Liquid detergent (Item 15)
 Pail (Item 18)
 Flat paint brush (Item 7)

Personnel Required

68J Aircraft Fire Control Repairer

1. CONTAINER EXTERIOR CLEANING

CAUTION

WARNING

HEAVY OBJECT

- Excessive strain can cause serious injury.
 - Don't: Attempt to lift or carry heavy objects alone.
 - Do: Get help for lifting or carrying objects weighing more than 35 pounds.
 - If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.
- a. Remove all foreign matter from container surfaces.
 - (1) Using handle of flat paint brush, remove any caked-on mud.
 - (2) Using flat paint brush, clean dust and dirt particles from surface.
 - (3) Using flat paint brush, clean screen of automatic relief valve.

Do not allow water to enter opening in automatic relief valve. Damage to valve may result.

- b. Wash exterior of container.
 - (1) Using clean water and liquid detergent, wash all exterior surfaces with a wiping cloth.
 - (2) Using clean water, rinse wiping cloth, wring dry, and remove all soapy water from surfaces.
- c. Allow container to air dry.
 - (1) Place container in a clean dry area.
 - (2) Turn container every 10 minutes exposing all sides to air until dry.

END OF TASK

2-7. CONTAINER CLEANING (cont)

2. CONTAINER INTERIOR CLEANING

WARNING

HEAVY OBJECT

- Excessive strain can cause serious injury.
 - Don't: Attempt to lift or carry heavy objects alone.
 - Do: Get help for lifting or carrying objects weighing more than 35 pounds.
 - If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.
- a. Press red button located in center of automatic relief valve and equalize pressure before opening container.
 - b. Unlatch all latches and open container.

NOTE

If container has case and clamp assembly packed inside, go to step 4 below.

- c. Remove cushions from container.
 - (1) Remove all desiccant bags from container pockets.
 - (2) Grasp lower cushion at corner and pull inward towards center of container.
 - (3) Pull cushion up and out of container. Place on clean dry surface.
 - (4) Repeat steps (2) and (3) above for upper cushion.
- d. Clean interior of container.
 - (1) Turn container top on its side; using a flat paint brush, brush out dust and dirt. Repeat for container bottom.

- (2) Using clean water, rinse wiping cloth, wring dry, and wipe interior surfaces.
- (3) For hard to remove dirt and stains, perform step e below.

CAUTION

Do not allow water to enter opening in automatic relief valve. Damage to the valve may result.

NOTE

If there is mold or mildew on interior surfaces of container, add 2 ounces of liquid bleach to detergent/water solution.

- e. Wash interior of container.
 - (1) Using clean water and liquid detergent, wash all interior surfaces with a wiping cloth.
 - (2) Using clean water, rinse wiping cloth, wring dry, and remove all soapy water from container surfaces.
- f. Place both parts of container in a clean dry area and allow to air dry.

- g. Install cushions in container.

NOTE

Ensure that cutouts in upper and lower cushions mate and are properly aligned.

- (1) Set lower cushion inside bottom container.
- (2) Evenly insert cushion approximately 1 inch into bottom container.
- (3) Push cushion down into container.

2-7. CONTAINER CLEANING (cont)

(4) Install new desiccant bags in container pockets (para 3-16).

(5) Repeat steps (1) through (3) for upper cushion.

h. Close container and latch all latches.

END OF TASK

3. CUSHION CLEANING

WARNING

HEAVY OBJECT

- Excessive strain can cause serious injury.
- Don't: Attempt to lift or carry heavy objects alone.
- Do: Get help for lifting or carrying objects weighing more than 35 pounds.
- If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.

a. Remove cushions by performing steps 2a through 2c above.

b. Wash cushions.

(1) Mix liquid detergent and clean water in a container large enough to immerse one cushion.

(2) Immerse upper cushion in detergent and squeeze, working it up and down to remove dirt and stains.

CAUTION

Do not wring cushion. Tears or gouges may occur.

(3) Remove from water and squeeze cushion, until all excess soapy water is removed.

(4) Repeat steps (2) and (3) using clean water only until all traces of soap are removed.

(5) Repeat steps (1) through (4) for lower cushion.

c. Allow cushions to air dry.

CAUTION

Do not place cushions in container until completely dry to prevent mildew or other damage.

(1) Place cushions in a clean dry area.

(2) Turn cushions after 30 minutes to dry bottom.

d. Repeat step 2g (1) through (5) above to install cushions in container.

END OF TASK

4. CASE AND CLAMP ASSEMBLY CLEANING

a. Remove case and clamp assembly by grasping handles and pulling assembly up and out of container.

b. Unlatch all latches and open case assembly.

c. Clean interior of case and clamp assembly using step 2d above.

d. Close case assembly and latch all latches.

e. If you entered this task from step 2c above, return to that task.

END OF TASK

2-8. CONTAINER LATCH ADJUSTMENT

This task covers:

<u>Para</u>	<u>Item</u>	<u>Para</u>	<u>Item</u>
1.	Container latch check	3.	Container latch tightening
2.	Container latch loosening		

INITIAL SETUP

Tools

Aircraft armament repairman tool set

Personnel Required

68J Aircraft Fire Control Repairer

NOTE

The following steps should be performed for each latch.

1. CONTAINER LATCH CHECK

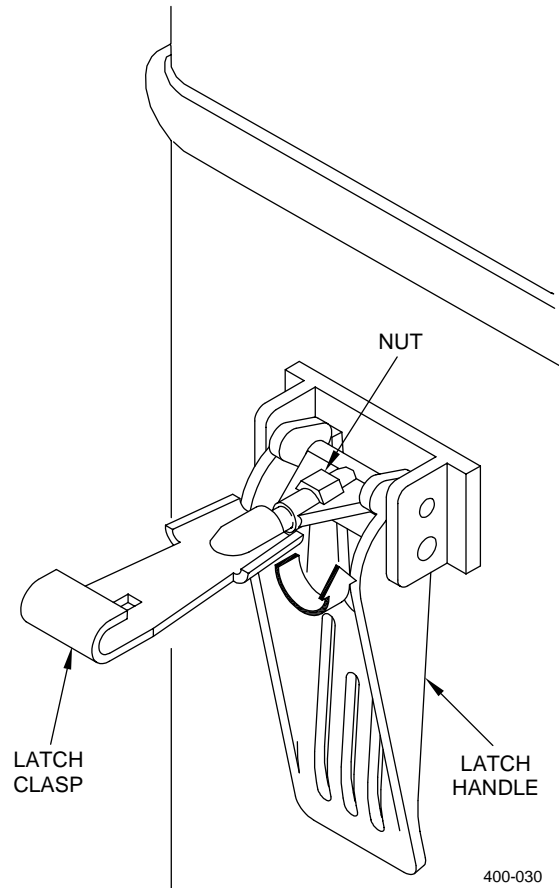
- a. If latch is popped open, close latch. If latch will not close or pops back open, loosen latch using step 2 below.
- b. If latch is closed and fits loosely, tighten latch using step 3 below.

END OF TASK

2. CONTAINER LATCH LOOSENING

- a. Unlatch latch, allow latch handle to hang, and hold nut.
- b. Turn latch clasp counterclockwise one or two turns.
- c. Latch the latch
- d. Repeat step 1 above until latch closes snugly and properly.

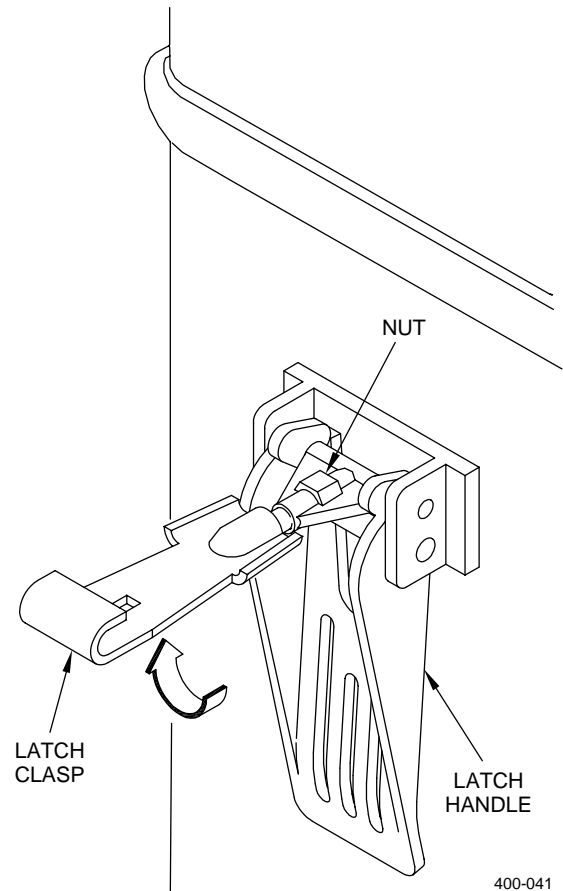
END OF TASK



2-8. CONTAINER LATCH ADJUSTMENT (cont)**3. CONTAINER LATCH TIGHTENING**

- a. Unlatch latch, allow latch handle to hang, and hold nut.
- b. Turn latch clasp clockwise one or two turns.
- c. Latch the latch.
- d. Repeat step 1 above until latch closes snugly and properly.

END OF TASK



400-041

CHAPTER 3

AVIATION INTERMEDIATE MAINTENANCE INSTRUCTIONS

	Section	Page
Repair Parts; Special Tools; Test, Measurement, and Diagnostic Equipment (TMDE); and Support Equipment	I	3-1
Aviation Intermediate Maintenance Procedures	II	3-2

Section I. REPAIR PARTS; SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE), AND SUPPORT EQUIPMENT

Subject	Para	Page
Common Tools and Equipment	3-1	3-1
Special Tools, TMDE, and Support Equipment	3-2	3-1
Repair Parts	3-3	3-1

3-1. COMMON TOOLS AND EQUIPMENT

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

3-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

For authorized special tools and support equipment pertaining to aviation intermediate maintenance, refer to TM 1-8145-476-23P, Repair Parts and Special Tools List (RPSTL).

3-3. REPAIR PARTS

Repair parts are listed and illustrated in the RPSTL (TM 1-8145-476-23P) covering aviation unit and intermediate maintenance for this equipment.

Section II. AVIATION INTERMEDIATE MAINTENANCE PROCEDURES

Subject	Para	Page
General	3-4	3-2
Surface Preparation.....	3-5	3-3
Sealing, Locking, and Retaining Compound Removal, Application, and Curing	3-6	3-4
Antiseize Lubricant Application	3-7	3-6
Corrosion Inhibitive Sealing and Coating Compound Removal, Application, and Curing	3-8	3-7
Touchup Painting	3-9	3-9
Stencil Repair.....	3-10	3-11
Adhesive Label Replacement	3-11	3-15
Identification (ID) Plate Replacement	3-12	3-17
Humidity Indicator Replacement	3-13	3-19
Automatic Relief Valve Replacement.....	3-14	3-21
Gasket Replacement	3-15	3-23
Desiccant Replacement.....	3-16	3-27
Cushion Replacement	3-17	3-29
Case and Clamp Assembly 13231940-9 Maintenance	3-18	3-31
Case and Clamp Assembly 13082420 Maintenance	3-19	3-42

3-4. GENERAL

This section provides corrective maintenance procedures specifically directed to aviation intermediate maintenance personnel for repair of the various container components.

3-5. SURFACE PREPARATION

This task covers surface preparation of structure and hardware for corrosion control.

INITIAL SETUP

Tools

Aircraft armament repairman tool set
Goggles
Hard bristle brush
Rubber apron
Rubber gloves

Pipe cleaner (Item 9)
Trichlorotrifluoroethane (item 30)
Zinc chromate primer (Item 24)

Personnel Required

68J Aircraft Fire Control Repairer

Materials (appendix C)

Abrasive paper, 400 grit (Item 21)
Cheesecloth pad (Item 17)

1. Using abrasive paper, cheesecloth pad, and pipe cleaner, loosen and remove residue from structure and threaded hardware.
2. Using cheesecloth pad, pipe cleaner, and isopropyl alcohol, clean structure and threads.
3. Insert a clean pipe cleaner in threaded insert and verify cleanness.
4. Using hard bristle brush, clean zinc chromate primer residue from hardware.
5. Using cheesecloth pad and isopropyl alcohol, clean hardware.
6. Install and prime hardware as specified in the appropriate maintenance task.

WARNING

TRICHLOROTRIFLUOROETHANE

- Flammable, toxic, irritating. Can cause breathing problems, eye damage.
- Don't: Let it get on skin, or breathe vapors.
- Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles, rubber gloves, and rubber apron.
- If it contacts skin or eyes, wash affected areas with running water. Get medical help at once.
- If you experience any breathing problems, get to fresh air at once.

END OF TASK

3-6. SEALING, LOCKING, AND RETAINING COMPOUND REMOVAL, APPLICATION, AND CURING

This task covers removal, application, and curing for sealing, locking, and retaining compound.

INITIAL SETUP

Tools

Aircraft armament repairman tool set
Goggles
Hard bristle brush
Rubber apron
Rubber gloves

Cheesecloth pad (Item 17)
Isopropyl alcohol (Item 3)
Pipe cleaner (Item 9)
Sealing, locking, and retaining compound
(Item 13)

Personnel Required

68J Aircraft Fire Control Repairer

Materials (appendix C)

Abrasive paper, 400 grit (Item 21)

WARNING

ISOPROPYL ALCOHOL

- Flammable, toxic, irritating. Can cause breathing problems, eye damage.
- Don't: Use near flames or sparks, let it get in eyes, or breathe vapors.
- Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles, rubber gloves, and rubber apron.
- If it contacts eyes, wash eyes with running water. Get medical help at once.
- If you experience any breathing problems, get to fresh air at once.

- Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles and rubber apron.
- If it contacts skin or eyes, wash affected areas with running water. Get medical help at once.

REMOVAL

- a. Remove cured compound by one or both of the following methods:
 - (1) Scrub with hard bristle brush.
 - (2) Run screw or bolt in and out of threaded insert until threads are clean.

WARNING

SEALING, LOCKING, AND RETAINING COMPOUND

- Flammable, toxic, irritating. Can cause eye damage.
- Don't: Use near flames or sparks, or let it get on skin.

3-6. SEALING, LOCKING, AND RETAINING COMPOUND REMOVAL, APPLICATION, AND CURING (cont)

APPLICATION

CAUTION

- Locking compounds soften or pit surfaces of plastics, and lacquer type finishes.
- Do not use locking compounds on plastics, or lacquer type finishes.

NOTE

- Apply locking compound within 8 hours.
 - There are two ways to apply sealing, locking, and retaining compound.
 - Type I application - the locking compound is applied to mounting hardware before installation.
 - Type II - the locking compound is applied to mounting hardware after installation and final adjustments are made.
- b. Apply locking compound using soft bristle brush or applicator nozzle supplied with locking compound.

NOTE

Remove excess uncured compound using a cloth and isopropyl alcohol.

CURING

NOTE

All parts must cure for at least 30 minutes at 45°F (7.3°C) or above before application of heat for accelerated cure.

- c. Cure compound applied over grade T primer for 1 hour at 45°F (7.3°C) or above.
- d. Cure compound applied over grade N primer for 5 hours at 45°F (7.3°C) or above.

END OF TASK

3-7. ANTISEIZE LUBRICANT APPLICATION

This task covers surface preparation of structure and hardware for antiseize lubricant application.

INITIAL SETUP

Tools

Aircraft armament repairman tool set
Goggles
Hard bristle brush
Rubber apron
Rubber gloves

Materials (appendix C)

Abrasive paper, 400 grit (Item 21)

Antiseize lubricant (Item 16)
Cheesecloth pad (Item 17)
Isopropyl alcohol (Item 3)
Pipe cleaner (Item 9)

Personnel Required

68J Aircraft Fire Control Repairer

1. Using abrasive paper, cheesecloth pad, and pipe cleaner, loosen and remove residue from structure and threaded hardware.
2. Using cheesecloth pad, pipe cleaner, and isopropyl alcohol, clean structure and threads.
3. Insert a clean pipe cleaner in threaded insert and verify cleanness.
4. Using hard bristle brush, clean sealant residue from hardware.
5. Using cheesecloth pad and isopropyl alcohol, clean hardware.
6. Apply antiseize lubricant as specified in the appropriate maintenance task.

WARNING

ISOPROPYL ALCOHOL

- Flammable, toxic, irritating. Can cause breathing problems, eye damage.
- Don't: Use near flames or sparks, let it get in eyes, or breathe vapors.
- Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles, rubber gloves, and rubber apron.
- If it contacts eyes, wash eyes with running water. Get medical help at once.
- If you experience any breathing problems, get to fresh air at once.

END OF TASK

3-8. CORROSION INHIBITIVE SEALING AND COATING COMPOUND REMOVAL, APPLICATION, AND CURING

INITIAL SETUP

Tools

Aircraft armament repairman tool set
Goggles
Hard bristle brush
Rubber apron
Rubber gloves

Materials (appendix C)

Brush (Item 7)
Corrosion inhibitive sealing and coating compound (Item 12)
Isopropyl alcohol (Item 3)
Wiping cloth (Item 10)

Personnel Required

68J Aircraft Fire Control Repairer

This task contains procedures for removing, applying, and curing corrosion inhibitive sealing and coating compounds used throughout this manual.

WARNING

CORROSION INHIBITIVE SEALING AND COATING COMPOUND AND ALCOHOL

- Flammable, toxic, irritating. Can cause breathing problems, eye damage.
- Don't: Use near flames or sparks, let it get on skin, or breathe vapors.
- Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles, rubber gloves, and rubber apron.
- If it contacts skin or eyes, wash affected areas with running water. Get medical help at once.
- If you experience any breathing problems, get to fresh air at once.

REMOVAL

- a. Remove cured compound by one or more of the methods listed below.
 - (1) Cut or scrape away with knife, then wipe with cloth and isopropyl alcohol.

- (2) Brush or swab with isopropyl alcohol. Keep compound wet until bond line swells; then remove as in step (1) above.

APPLICATION (Work life is 1 hour at 67 to 87°F (19.4 to 30.5°C.))

- b. Let base and hardener containers stand for at least 24 hours at 67 to 87°F (19.4 to 30.5°C).
- c. Clean surfaces with cloth and isopropyl alcohol.
- d. Mix curing agent in its containers until it becomes a uniform paste.
 - (1) PR-1436-G: Mix 10 parts base to 1 part hardener until color is uniform.
 - (2) Thoroughly mix and blend for 5 minutes minimum. Do not allow air bubbles to form.
- e. Use brush or small putty knife to apply compound as follows:

3-8. CORROSION INHIBITIVE SEALING AND COATING COMPOUND REMOVAL, APPLICATION, AND CURING (cont)

- (1) Apply minimal amount of compound to bolt and insert threads immediately before installation.

CURING

NOTE

- (2) Apply compound over the ends of the insert to the housing surface.

Assemblies may be handled immediately after completion of assembly.

NOTE

Remove excess uncured compound using cloth and isopropyl alcohol.

- f. Compound reaches full cure in approximately 30 hours at 67 to 87°F (19.4 to 30.5°C).

END OF TASK

3-9. TOUCHUP PAINTING

INITIAL SETUP

Tools

Acid-type safety goggles
 Rubber apron
 Rubber gloves

Materials (appendix C)

Abrasive paper, 400 grit (Item 21)
 Artist brush (3) (Item 5)
 Cheesecloth pad (Item 17)
 Chemical film (Item 8)
 Flat paint brush, 1-inch (Item 7)
 Masking tape (Item 28)
 Polyurethane coating (green 383)
 (Item 11)

Primer coating (Item 23)
 Trichloroethane (Item 29)
 Wiping cloth (2) (Item 10)

Personnel Required

68J Aircraft Fire Control Repairer

Special Environmental Conditions

Temperature between 50 and 90°F

General Safety Instructions

Paint in well-ventilated area

WARNING

HEAVY OBJECT

- Excessive strain can cause serious injury.
 - Don't: Attempt to lift or carry heavy objects alone.
 - Do: Get help for lifting or carrying objects weighing more than 35 pounds.
 - If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.
1. Using abrasive paper, remove loose paint.

WARNING

TRICHLOROETHANE

- Flammable, toxic, irritating. Can cause breathing problems, eye damage.
- At 325°F, gives off phosgene gas, which can cause death or serious injury.
- Don't: Use near flames or sparks, let it get on skin, or breathe vapors.

- Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles, rubber gloves, and rubber apron.
 - If it contacts skin or eyes, wash affected areas with running water. Get medical help at once.
 - If you experience any breathing problems, get to fresh air at once.
2. Using clean wiping cloth moistened with trichloroethane, wipe sanded area. Allow to air dry.
 3. If bare metal is exposed, apply a coat of chemical film (Item 8), step 4; otherwise, go to step 11.
 4. Sand bare surface with abrasive paper (Item 21).

3-9. TOUCHUP PAINTING (cont)

WARNING

TRICHLOROETHANE

- Flammable, toxic, irritating. Can cause breathing problems, eye damage.
 - At 325°F, gives off phosgene gas, which can cause death or serious injury.
 - Don't: Use near flames or sparks let it get on skin, or breathe vapors.
 - Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles, rubber gloves, and rubber apron.
 - If it contacts skin or eyes, wash affected areas with running water. Get medical help at once.
 - If you experience any breathing problems, get to fresh air at once.
5. Clean sanded surface with a cheesecloth pad and trichloroethane (Item 29).
 6. Let surface air dry for 5 minutes.

WARNING

CHEMICAL FILM

- Toxic, irritating. Can cause eyedamage.
 - Don't: Let it get on skin.
 - Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles, rubber gloves, and rubber apron.
 - If it contacts skin or eyes, wash affected areas with running water. Get medical help at once.
7. Apply chemical film (Item 8) to sanded area.
 8. Let surface air dry for 5 minutes.

9. Lightly wipe surface with a cheesecloth pad and water. If the surface shows streaks, continue wiping until streaks are gone.
10. Let surface air dry.

WARNING

PRIMER AND PAINT

- Flammable, toxic, can cause breathing problems.
 - Don't: Use near flames or sparks or breathe vapors.
 - Do: Use in well-ventilated area, close containers when not using.
 - If you experience shortness of breath, or other breathing problems, get to fresh air at once.
11. Using artist brush, apply a thin coat of primer coating (Item 23). Allow to air dry.
 12. Using artist brush, apply a thin coat of green polyurethane coating (Item 11). Allow to air dry.
 13. Refer to TM 43-1039 for painting instructions.

END OF TASK

3-10. STENCIL REPAIR

This task covers two typical stenciling procedures. The method of stenciling identical for all containers. The information being applied to each container is different.

<u>Para</u>	<u>Item</u>	<u>Para</u>	<u>Item</u>
1.	Minor stencil repair	2.	Major stencil repair

INITIAL SETUP

Tools

Goggles
 Rubber apron
 Rubber gloves

Materials (appendix C)

Abrasive paper, 600 grit (Item 22)
 Alphanumeric stencil sets (3) 0.50-inch, 0.38-inch, and 0.25-inch characters (Item 27)
 Artist brush, No. 9 (Item 5)
 Black marking paint (Item 19)
 Flat paint brush, 1-inch (Item 7)
 Stencil brush, 1-inch diameter (Item 6)

Trichlorotrifluoroethane (Item 30)
 Wiping cloth (2) (Item 10)

Personnel Required

68J Aircraft Fire Control Repairer

Special Environmental Conditions

Temperature between 50 and 90°F
 Humidity not to exceed 85 percent

General Safety Instructions

Paint in a well-ventilated area

WARNING

HEAVY OBJECT

- Excessive strain can cause serious injury.
- Don't: Attempt to lift or carry heavy objects alone.
- Do: Get help for lifting or carrying objects weighing more than 35 pounds.
- If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.

1. MINOR STENCIL REPAIR

- a. Using abrasive paper, lightly sand area where stencil data is missing without hitting bare metal.

3-10. STENCIL REPAIR (cont)

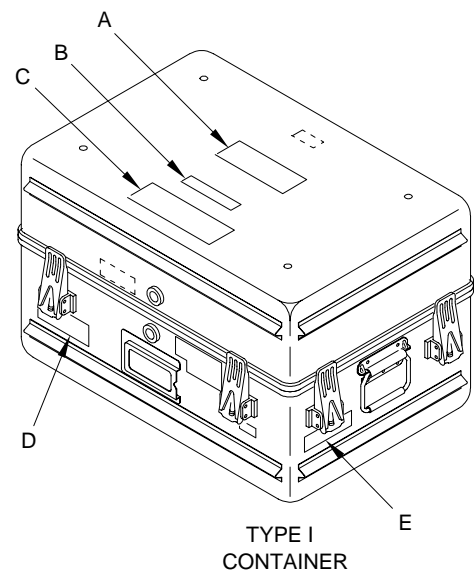
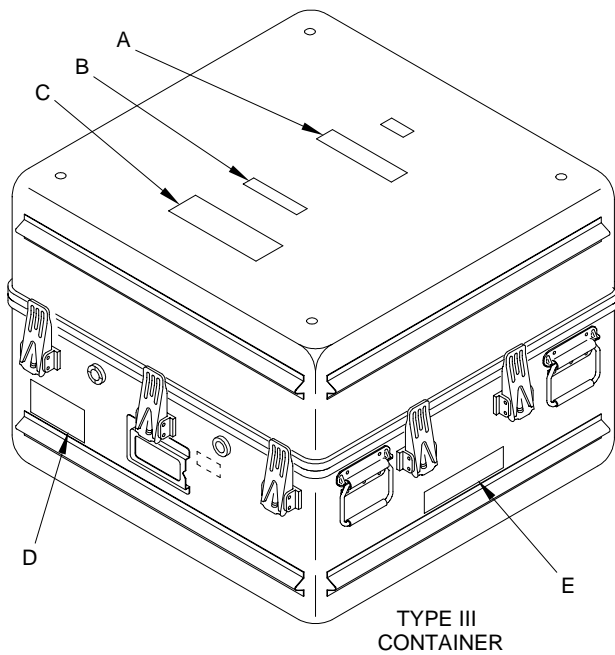
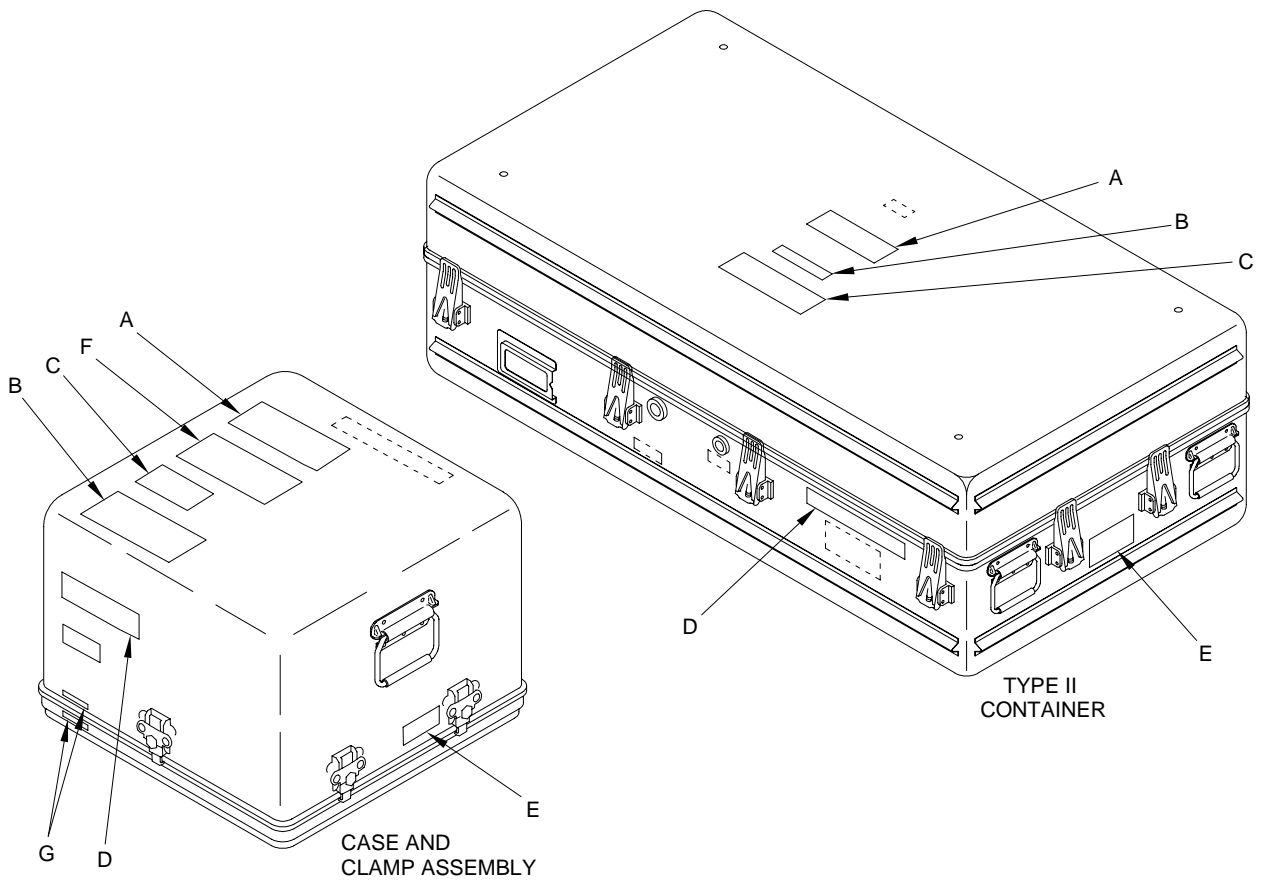
Table 3-1. Location and Stenciling Data

Container	A*	B*	C, D, & E*	F*	G*
Type I	REUSABLE CONTAINER DO NOT DESTROY	TWO MAN LIFT	WEIGHT LOADED - SEE IDENTIFICATION PLATE UNLOADED - 34 LB	-	-
Type II	REUSABLE CONTAINER DO NOT DESTROY	FOUR MAN LIFT	WEIGHT LOADED - SEE IDENTIFICATION PLATE UNLOADED - 84 LB	-	-
Type III	REUSABLE CONTAINER DO NOT DESTROY	FOUR MAN LIFT	WEIGHT LOADED - SEE IDENTIFICATION PLATE UNLOADED - 56 LB	-	-
Case and Clamp Assembly	REUSABLE CONTAINER DO NOT DESTROY TWO MAN LIFT WHEN LOADED	CAUTION Do not transport or store without shipping and storage container.	WEIGHT UNLOADED - 30 LB	CAUTION Container bases and covers must have same vendor number.	**See NOTE

*Character height is 0.50 inch for locations A and B, 0.38 inch for locations C, D, and E.

**NOTE: Base and cover must have same vendor number stencil. Zero Corp. vendor number is D16210, Erie Engineered Products vendor number is 31-02586-01.

3-10. STENCIL REPAIR (cont)



400-042A

3-10. STENCIL REPAIR (cont)

WARNING

TRICHLOROTRIFLUOROETHANE

- Flammable, toxic, irritating. Can cause breathing problems, eye damage.
 - Don't: Let it get on skin, or breathe vapors.
 - Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles, rubber gloves, and rubber apron.
 - If it contacts skin or eyes, wash affected areas with running water. Get medical help at once.
 - If you experience any breathing problems, get to fresh air at once.
- b. Using wiping cloth moistened with trichlorotrifluoroethane, wipe area just sanded. Allow to air dry.
- c. Using artist brush and black marking paint, restore characters by hand. Allow to air dry. Refer to table 3-1 for stencil information.

END OF TASK

2. MAJOR STENCIL REPAIR

- a. Using abrasive paper, lightly sand and remove as much of old stencil as possible without hitting bare metal.
- b. Touch up paint the area to be stenciled (para 3-9).
- c. Prepare stencil using information in table 3-1.
- d. Using stencil brush and black marking paint, stencil data on container. Allow to air dry.

END OF TASK

3-11. ADHESIVE LABEL REPLACEMENT

INITIAL SETUP

Tools

Goggles
 Rubber apron
 Rubber gloves

Materials (appendix C)

Isopropyl alcohol (Item 3)

Trichloroethane (Item 29)
 Wiping cloth (Item 10)

Personnel Required

68J Aircraft Fire Control Repairer

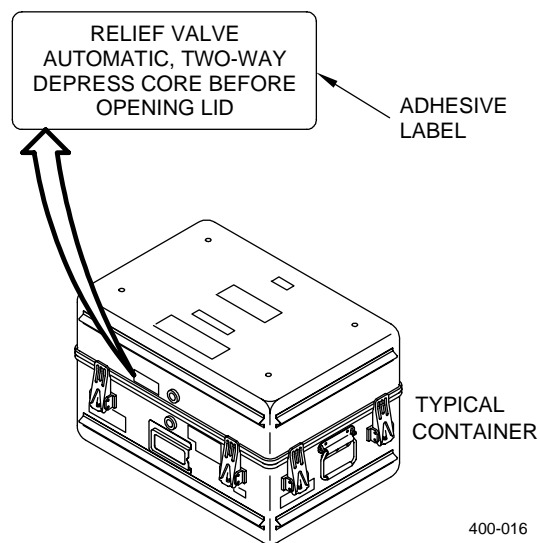
WARNING

HEAVY OBJECT

- Excessive strain can cause serious injury.
- Don't: Attempt to lift or carry heavy objects alone.
- Do: Get help for lifting or carrying objects weighing more than 35 pounds.
- If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.

REMOVAL

1. Remove old label from container.



3-11. ADHESIVE LABEL REPLACEMENT (cont)

WARNING

TRICHLOROETHANE

- Flammable, toxic, irritating. Can cause breathing problems, eye damage.
 - At 325°F, gives off phosgene gas, which can cause death or serious injury.
 - Don't: Use near flames or sparks, let it get on skin, or breathe vapors.
 - Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles, rubber gloves, and rubber apron.
 - If it contacts skin or eyes, wash affected areas with running water. Get medical help at once.
 - If you experience any breathing problems, get to fresh air at once.
2. Wet wiping cloth with trichloroethane and remove all traces of old adhesive.
 3. If necessary, touch up paint area where label was removed (para 3-9).

INSTALLATION

WARNING

ISOPROPYL ALCOHOL

- Flammable, toxic, irritating. Can cause breathing problems, eye damage.
 - Don't: Use near flames or sparks, let it get in eyes, or breathe vapors.
 - Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles, rubber gloves, and rubber apron.
 - If it contacts eyes, wash eyes with running water. Get medical help at once.
 - If you experience any breathing problems, get to fresh air at once.
4. Wet wiping cloth with isopropyl alcohol and clean label mounting area.
 5. Peel backing off label and apply as shown.

END OF TASK

3-12. IDENTIFICATION (ID) PLATE REPLACEMENT

This task covers a typical ID plate replacement procedure. Included are procedures for determining correct plate, removing old plate, and installing new plate. The procedures are identical for each container.

INITIAL SETUP

Personnel Required

68J Aircraft Fire Control Repairer

WARNING

HEAVY OBJECT

- Excessive strain can cause serious injury.
- Don't: Attempt to lift or carry heavy objects alone.
- Do: Get help for lifting or carrying objects weighing more than 35 pounds.
- If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.

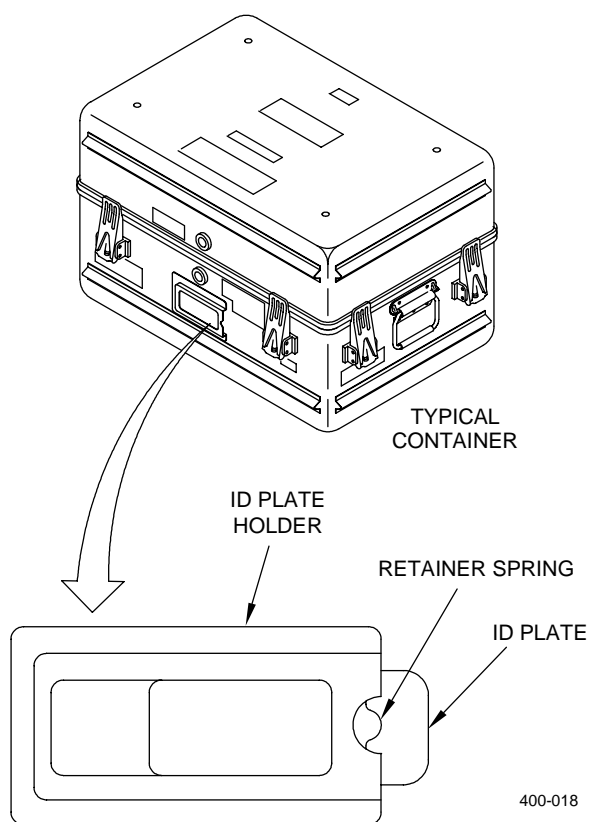
REMOVAL

1. Lift retainer spring, grasp edge of ID plate, and remove from ID plate holder.

INSTALLATION

2. Determine from table 3-2, ID plate part number and obtain ID plate.
3. Lift retainer spring, insert new ID plate, and release retainer spring.

END OF TASK

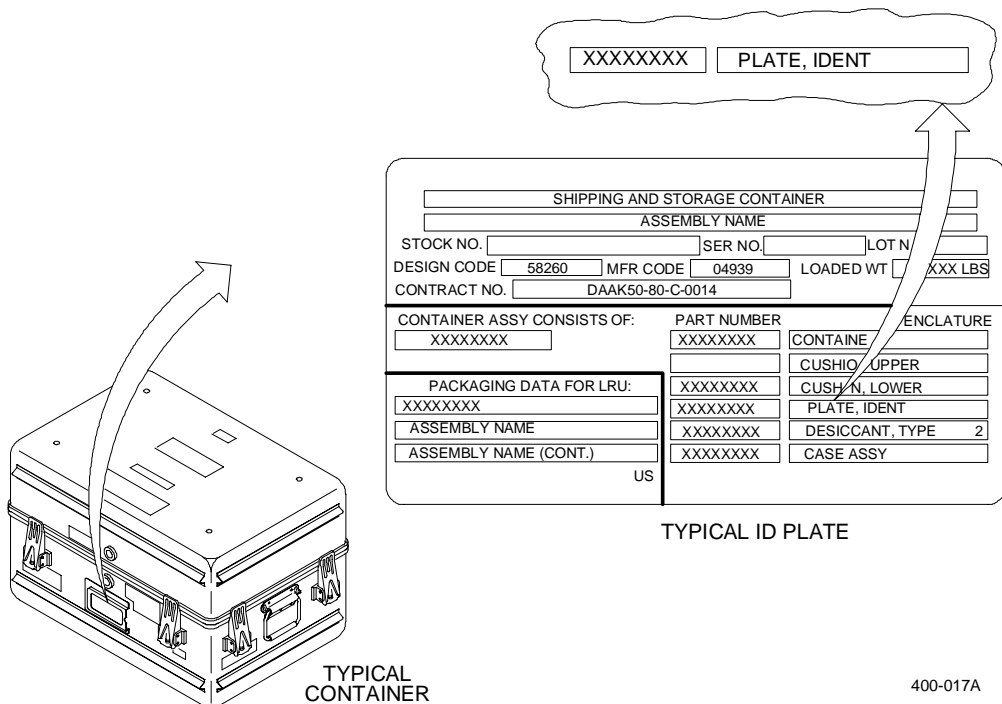


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3-12. IDENTIFICATION (ID) PLATE REPLACEMENT (cont)

Table 3-2. ID Plate Part Numbers

Part No.	Assembly
13082384	NIGHT SENSOR ASSEMBLY-TADS
13082384-2	TURRET ASSEMBLY
13082384-3	DAY SENSOR SUBASSEMBLY-TADS
13082384-4	SHROUD ASSEMBLY, NIGHT SENSOR
13082384-5	SHROUD ASSEMBLY, DAY SENSOR
13082384-6	SHROUD ASSEMBLY-PNVS
13082384-7	BORESIGHT ASSEMBLY
13082384-8	POWER SUPPLY ASSEMBLY
13082384-11	LASER ELECTRONIC UNIT ASSEMBLY
13082384-12	PNVS ELECTRONIC UNIT ASSEMBLY
13082384-13	OPTICAL RELAY COLUMN ASSEMBLY
13082384-14	ELECTRONIC UNIT ASSEMBLY-TADS
13082384-15	LASER TRANSCIEVER UNIT ASSEMBLY
13082384-16	TELEVISION SENSOR ASSEMBLY
13082384-17	LASER TRACKER RECEIVER UNIT
13082384-18	AMPLIFIER ASSEMBLY, ELECTRONIC CONTROL-TADS
13082384-21	CONTROL PANEL ASSEMBLY
13082384-22	ELECTRONIC ASSEMBLY, IVD



400-017A

3-13. HUMIDITY INDICATOR REPLACEMENT

INITIAL SETUP

Tools

Aircraft armament repairman tool set
Goggles

Materials (appendix C)

Isopropyl alcohol (Item 3)
Wiping cloth (Item 10)

Personnel Required

68J Aircraft Fire Control Repairer

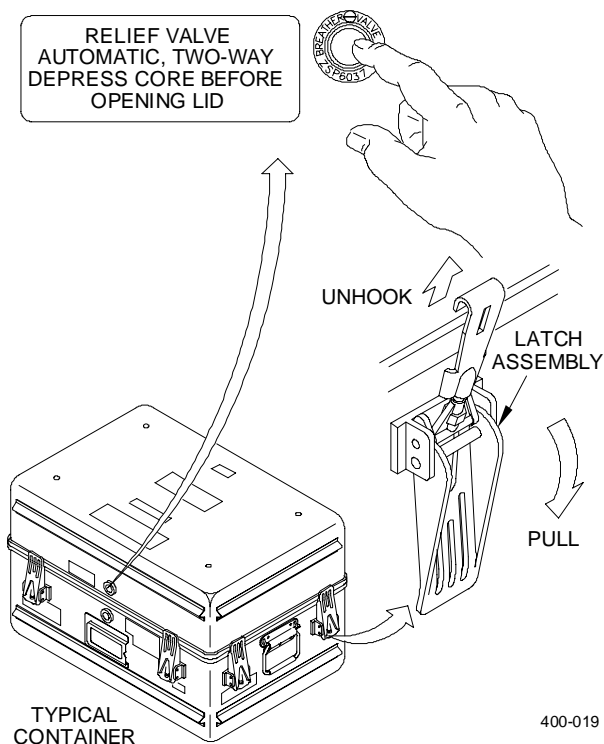
WARNING

HEAVY OBJECT

- Excessive strain can cause serious injury.
- Don't: Attempt to lift or carry heavy objects alone.
- Do: Get help for lifting or carrying objects weighing more than 35 pounds.
- If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.

REMOVAL

1. Press red button located in center of automatic relief valve and equalize pressure before opening container.
2. Unlatch all latches and open container.



3-13. HUMIDITY INDICATOR REPLACEMENT (cont)

3. Push cushion away from container exposing back of humidity indicator.
4. Remove humidity indicator by removing large hex nut.

WARNING

ISOPROPYL ALCOHOL

- Flammable, toxic, irritating. Can cause breathing problems, eye damage.
- Don't: Use near flames or sparks, let it get in eyes, or breathe vapors.
- Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles.
- If it contacts eyes, wash eyes with running water. Get medical help at once.
- If you experience any breathing problems, get to fresh air at once.

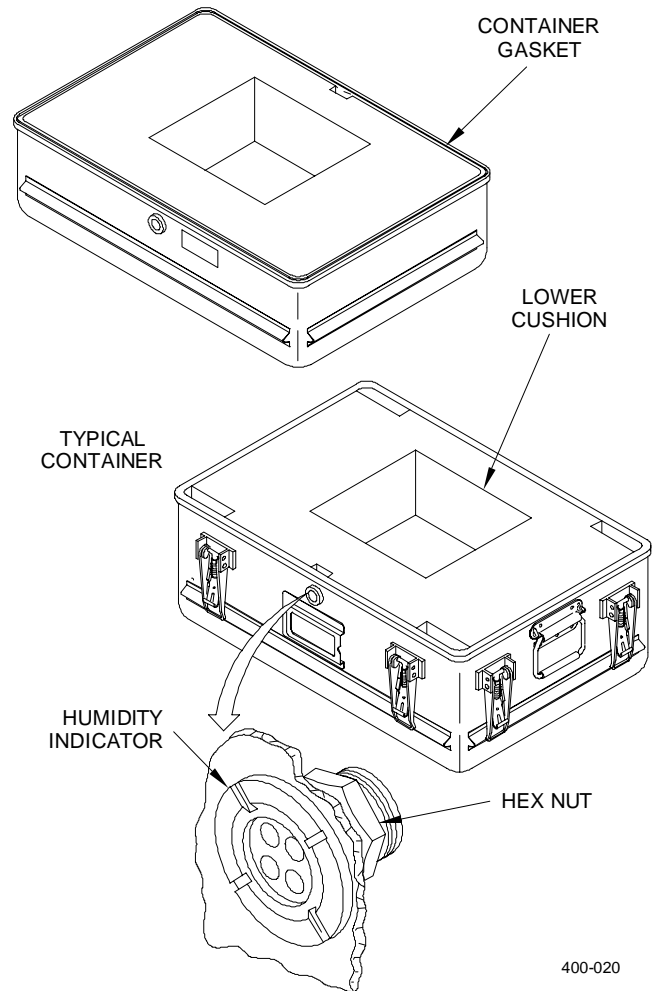
INSTALLATION

5. Check humidity indicator mounting hole for pieces of gasket material. If gasket material is present, clean mounting hole with wiping cloth dipped in isopropyl alcohol.
6. Remove large hex nut from replacement humidity indicator.

NOTE

Ensure that numerical indicators on face are properly oriented.

7. Place humidity indicator in mounting hole and install large hex nut.



400-020

8. Check container gasket around container top for tears, gouges, cracks, or missing portions (table 2-1). If necessary, replace gasket (para 3-15).
9. Close container and latch all latches.

END OF TASK

3-14. AUTOMATIC RELIEF VALVE REPLACEMENT

INITIAL SETUP

Tools

Aircraft armament repairman tool set
Goggles

Materials (appendix C)

Isopropyl alcohol (Item 3)
Wiping cloth (Item 10)

Personnel Required

68J Aircraft Fire Control Repairer

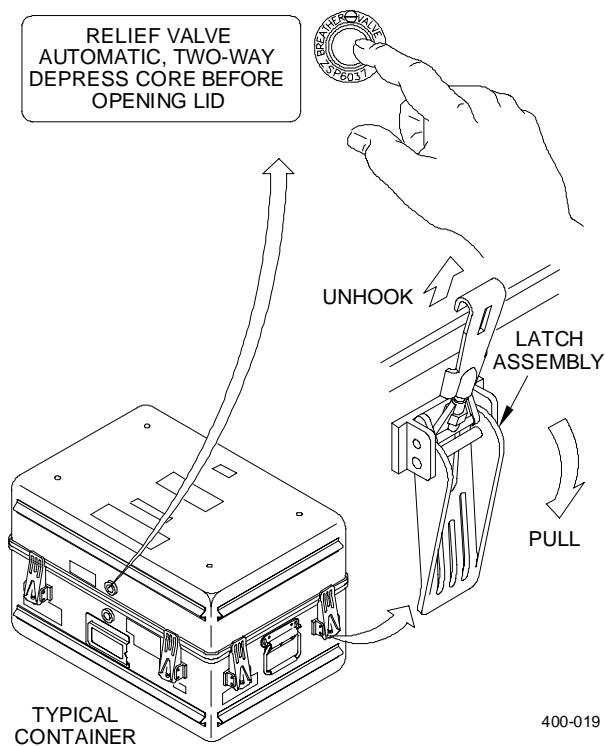
WARNING

HEAVY OBJECT

- Excessive strain can cause serious injury.
- Don't: Attempt to lift or carry heavy objects alone.
- Do: Get help for lifting or carrying objects weighing more than 35 pounds.
- If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.

REMOVAL

1. Press red button located in center of automatic relief valve and equalize pressure before opening container.
2. Unlatch all latches and open container.



3-14. AUTOMATIC RELIEF VALVE REPLACEMENT (cont)

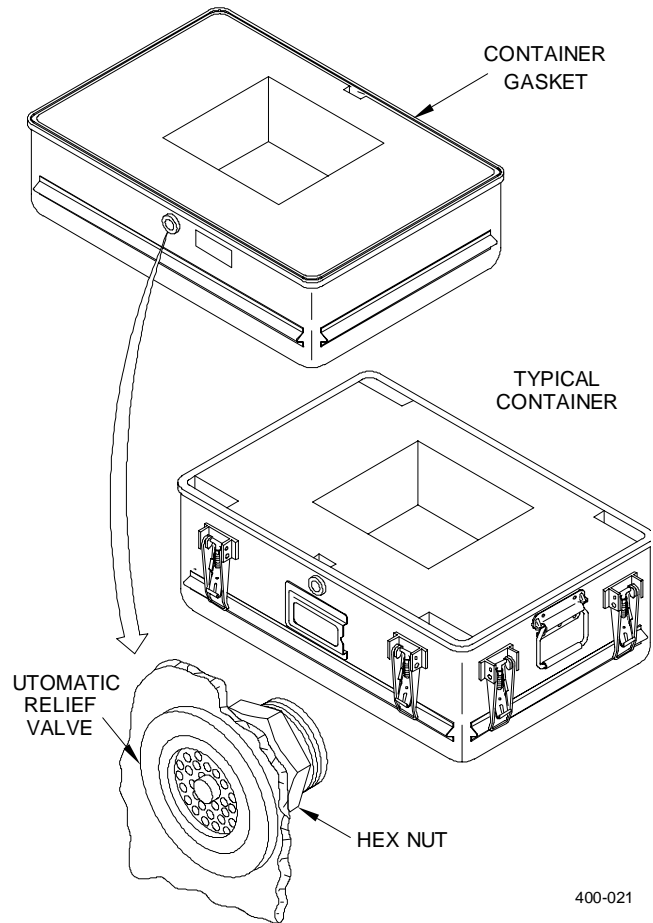
3. Push cushion away from container, exposing back of automatic relief valve.
4. Remove automatic relief valve by removing hex nut.

INSTALLATION

WARNING

ISOPROPYL ALCOHOL

- Flammable, toxic, irritating. Can cause breathing problems, eye damage.
 - Don't: Use near flames or sparks, let it get in eyes, or breathe vapors.
 - Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles.
 - If it contacts eyes, wash eyes with running water. Get medical help at once.
 - If you experience any breathing problems, get to fresh air at once.
5. Check automatic relief valve mounting hole for pieces of gasket material. If gasket material is present, clean mounting hole with wiping cloth dipped in isopropyl alcohol.
 6. Remove hex nut from replacement automatic relief valve.
 7. Place automatic relief valve in mounting hole and install hex nut.



400-021

8. Check container gasket around container top for tears, gouges, cracks, or missing portions (table 2-1). If necessary, replace gasket (para 3-15).
9. Close container and latch all latches.

END OF TASK

3-15. GASKET REPLACEMENT

INITIAL SETUP

Tools

Aircraft armament repairman tool set
Goggles

Paper, abrasive (Item 21)
Rubber strip (Item 25)
Wiping cloth (Item 10)

Materials (appendix C)

Acetone (Item 1)
Grey RTV adhesive (Item 2)

Personnel Required

68J Aircraft Fire Control Repairer

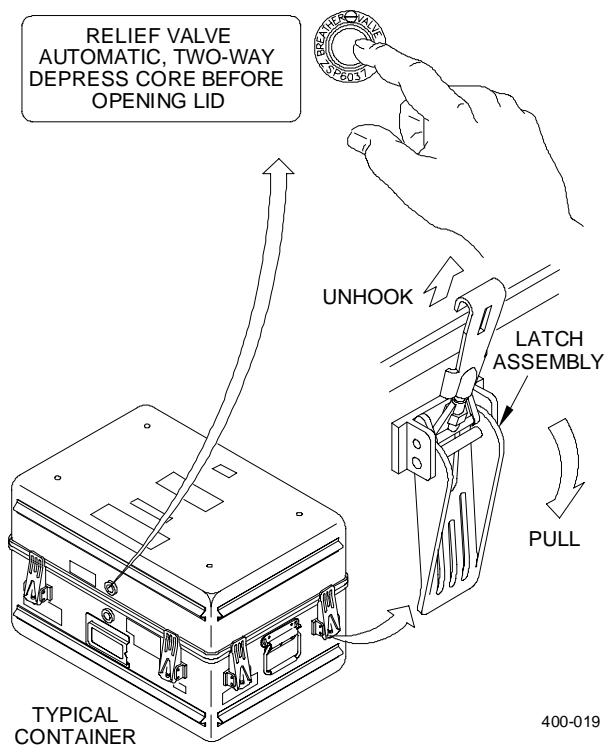
WARNING

HEAVY OBJECT

- Excessive strain can cause serious injury.
- Don't: Attempt to lift or carry heavy objects alone.
- Do: Get help for lifting or carrying objects weighing more than 35 pounds.
- If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.

REMOVAL

1. Press red button located in center of automatic relief valve and equalize pressure before opening container.
2. Unlatch all latches and open container.



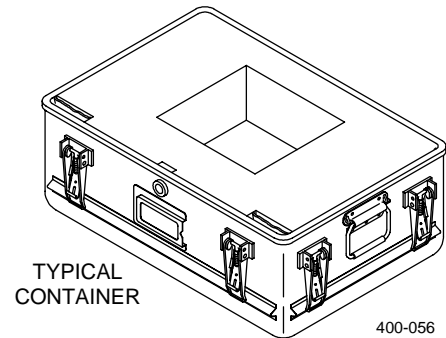
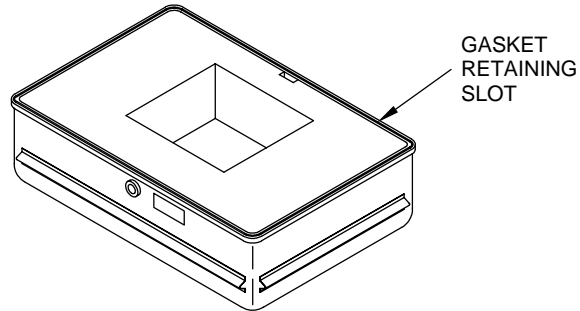
3-15. GASKET REPLACEMENT (cont)

3. Starting at corner and using a small screwdriver, pry a 3 to 4-inch section of gasket (rubber strip) from gasket retaining slot.
4. Remove gasket.

WARNING

ACETONE

- Flammable, toxic, irritating. Can cause breathing problems, eye damage.
- Don't: Use near flames or sparks, let it get on skin, or breathe vapors.
- Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles, rubber gloves, and rubber apron.
- If it contacts skin or eyes, wash affected areas with running water. Get medical help at once.
- If you experience any breathing problems, get to fresh air at once.



400-056

5. Check gasket retaining slot for pieces of rubber strip. If rubber strip is present, clean gasket retaining slot with wiping cloth dipped in acetone.
6. If necessary, touch up paint area where gasket was removed (para 3-9).

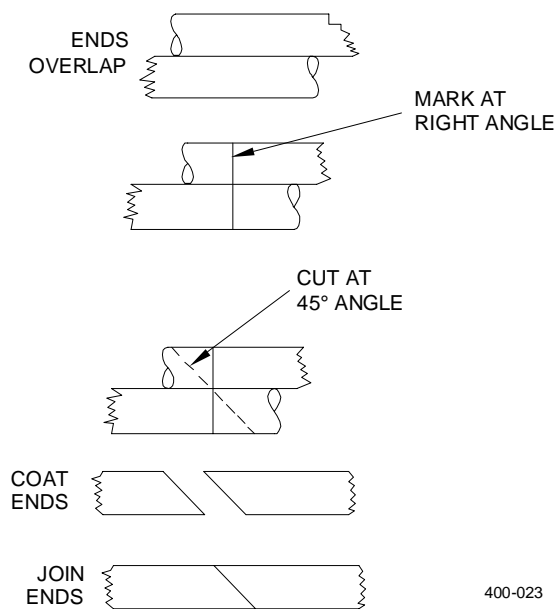
INSTALLATION

7. Cut required length of rubber strip as indicated below.

Container	Length (inches)
Type I	100
Type II	176
Type III	126
Case and Clamp Assembly	126

3-15. GASKET REPLACEMENT (cont)

8. Stretch the rubber strip slightly 1/8 to 1/4 inch.
9. Temporarily position rubber strip on gasket retaining slot allowing ends to overlap as shown.
10. Mark both ends at right angles to container.
11. Remove rubber strip from gasket retaining slot and lay on flat surface. Overlap ends and align marks as shown.
12. Cut both ends at approximately a 45-degree angle as shown.
13. Abrade with clean 180 grit abrasive sheet and wipe clean with acetone.



WARNING

SILICONE ADHESIVE

- Flammable, toxic, can cause breathing problems.
- Don't: Use near flames or sparks or breathe vapors.
- Do: Use in well-ventilated area, close containers when not using.
- If you experience shortness of breath, or other breathing problems, get to fresh air at once.

14. Coat both ends of rubber strip with grey RTV adhesive and wait 60 seconds, or until surface is tacky.
15. Align and join ends together as shown.

400-023

3-15. GASKET REPLACEMENT (cont)

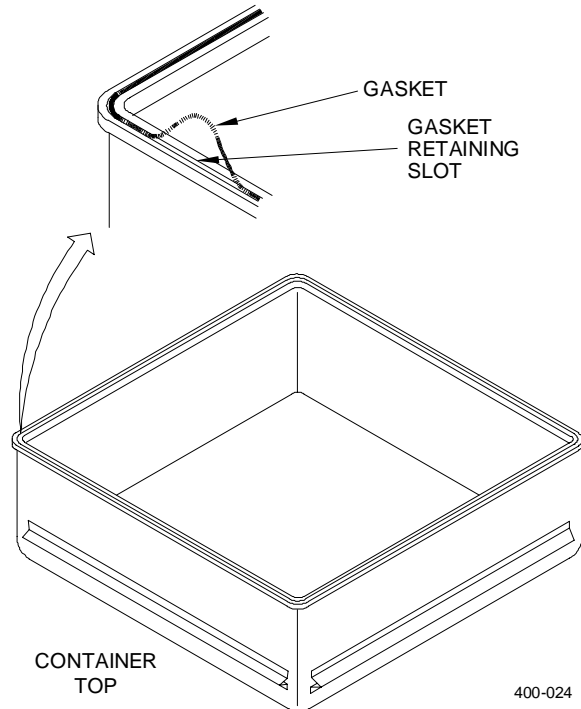
WARNING

ACETONE

- Flammable, toxic, irritating. Can cause breathing problems, eye damage.
- Don't: Use near flames or sparks, let it get on skin, or breathe vapors.
- Do: Use in well-ventilated area, close containers when not using. Wear acid-type safety goggles, rubber gloves, and rubber apron.
- If it contacts skin or eyes, wash affected areas with running water. Get medical help at once.
- If you experience any breathing problems, get to fresh air at once.

16. Clean excess grey RTV adhesive off gasket with wiping cloth dipped in acetone.
17. Allow grey RTV adhesive to cure for 30 hours.
18. Starting with joined ends in center front of container, press a 3 to 4-inch section of rubber strip firmly into gasket retaining slot until well seated.
19. Continue pressing rubber strip around container top perimeter until entire rubber strip is seated in gasket retaining slot.
20. Close container and latch all latches.

END OF TASK



400-024

3-16. DESICCANT REPLACEMENT

INITIAL SETUP

Materials (appendix C)

Desiccant bags (Item 14)

Personnel Required

68J Aircraft Fire Control Repairer

WARNING

HEAVY OBJECT

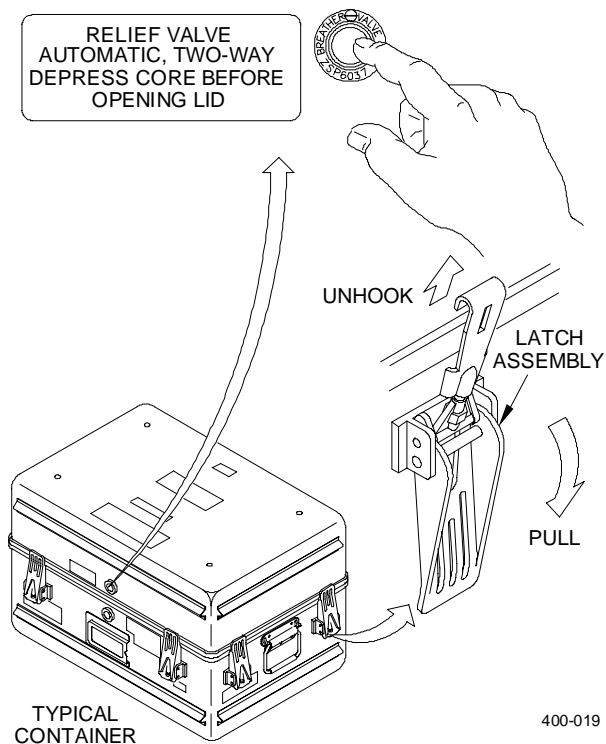
- Excessive strain can cause serious injury.
- Don't: Attempt to lift or carry heavy objects alone.
- Do: Get help for lifting or carrying objects weighing more than 35 pounds.
- If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.

NOTE

Number of desiccant bags required will vary. Refer to table 1-2 for quantity used.

REMOVAL

1. Press red button located in center of automatic relief valve and equalize pressure before opening container.
2. Unlatch all latches and open container.



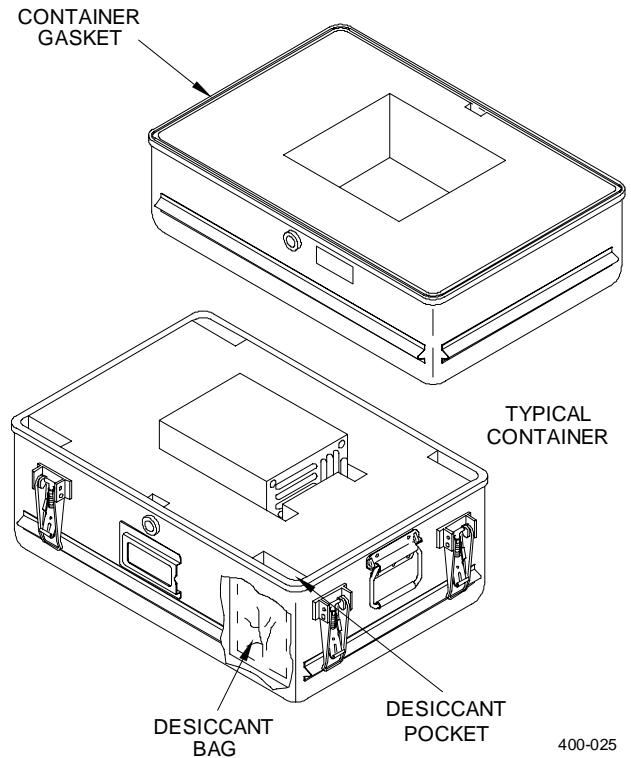
400-019

3-16. DESICCANT REPLACEMENT (cont)

3. Push desiccant pocket away from container wall.
4. Remove desiccant bags from pocket.
5. Repeat steps 3 and 4 for remainder of desiccant bags.

INSTALLATION

6. Determine number of desiccant bags needed (table 1-2).
7. Push desiccant pocket away from container wall.
8. Install new desiccant bag into pocket.
9. Repeat steps 7 and 8 for remainder of desiccant bags.
10. Check container gasket around container top for tears, gouges, cracks, or missing portions. If necessary, replace gasket (para 3-15).
11. Close container and latch all latches.



400-025

END OF TASK

3-17. CUSHION REPLACEMENT

INITIAL SETUP

Personnel Required

68J Aircraft Fire Control Repairer

WARNING

HEAVY OBJECT

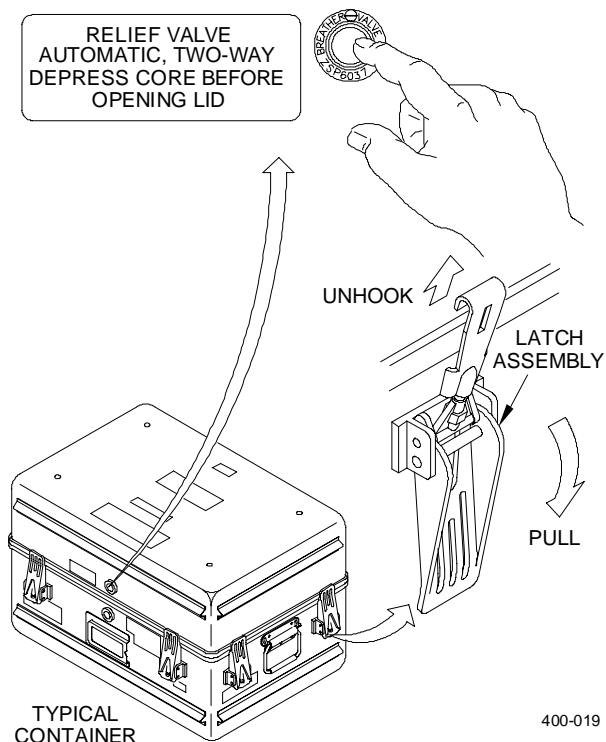
- Excessive strain can cause serious injury.
- Don't: Attempt to lift or carry heavy objects alone.
- Do: Get help for lifting or carrying objects weighing more than 35 pounds.
- If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.

REMOVAL

NOTE

This procedure replaces the lower cushion and can also be used to replace the upper cushion. Refer to paragraph 3-16 to replace desiccant as required.

1. Press red button located in center of automatic relief valve and equalize pressure before opening container.
2. Unlatch all latches and open container.



400-019

3-17. CUSHION REPLACEMENT (cont)

3. If replacing lower cushion, remove desiccant (para 3-16).
4. Grasp cushion at corner and pull inward towards center of container.
5. Pull cushion up and out of container. Place on clean dry surface.

INSTALLATION

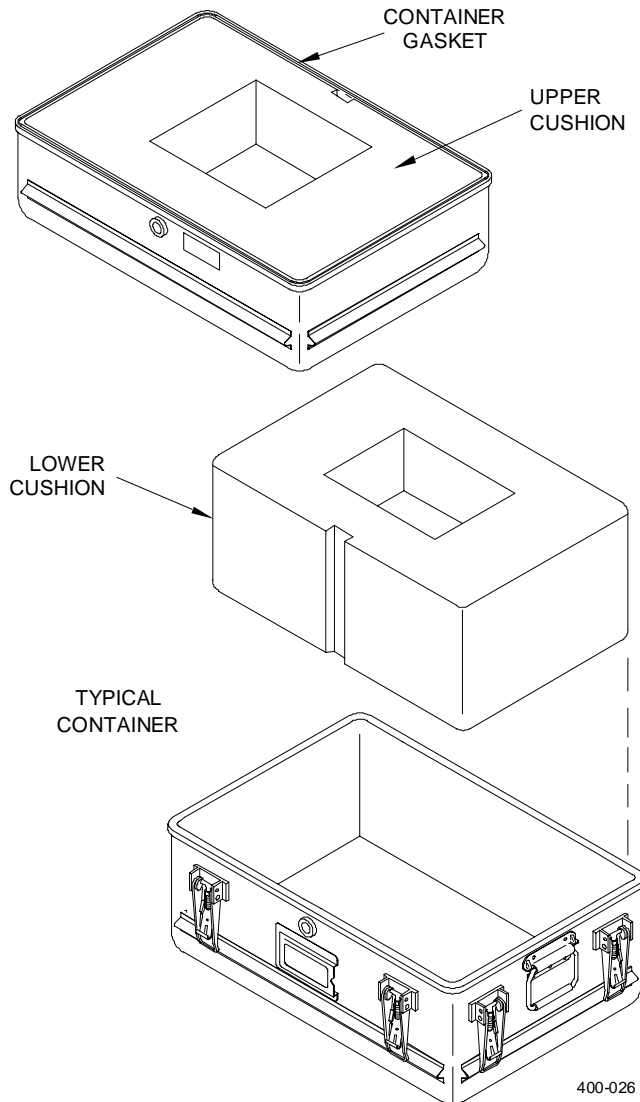
6. Determine cushion part number and obtain new cushion (table 1-2).
7. If necessary, clean interior of container (para 2-7).

NOTE

Ensure that slot in cushion aligns with humidity indicator and/or automatic relief valve when performing the following steps.

8. Set cushion inside container.
9. Evenly insert cushion approximately 1 inch into container.
10. Push cushion down into container.
11. Install desiccant (para 3-16, steps 6 through 11).

END OF TASK



400-026

3-18. CASE AND CLAMP ASSEMBLY 13231940-9 MAINTENANCE

This task covers:

<u>Para</u>	<u>Item</u>	<u>Para</u>	<u>Item</u>
1.	Clamp assembly repair	3.	Rubber foot replacement
2.	Mounting plate assembly and spacer plate replacement		

INITIAL SETUP

Tools

Rubber gloves
 Aircraft armament repairman tool set
 Goggles

Materials (appendix C)

Antiseize lubricant (Item 16)

Corrosion inhibitive sealant (item 12)
 Self-locking nut (Item 26)

Personnel Required

68J Aircraft Fire Control Repairman

NOTE

For general maintenance to case and clamp assembly, as performed on container itself, refer to paragraph 2-7 for cleaning, paragraph 3-9 for touchup painting, paragraph 3-10 for stencil repair, and paragraph 3-15 for gasket replacement.

1. CLAMP ASSEMBLY REPAIR

WARNING

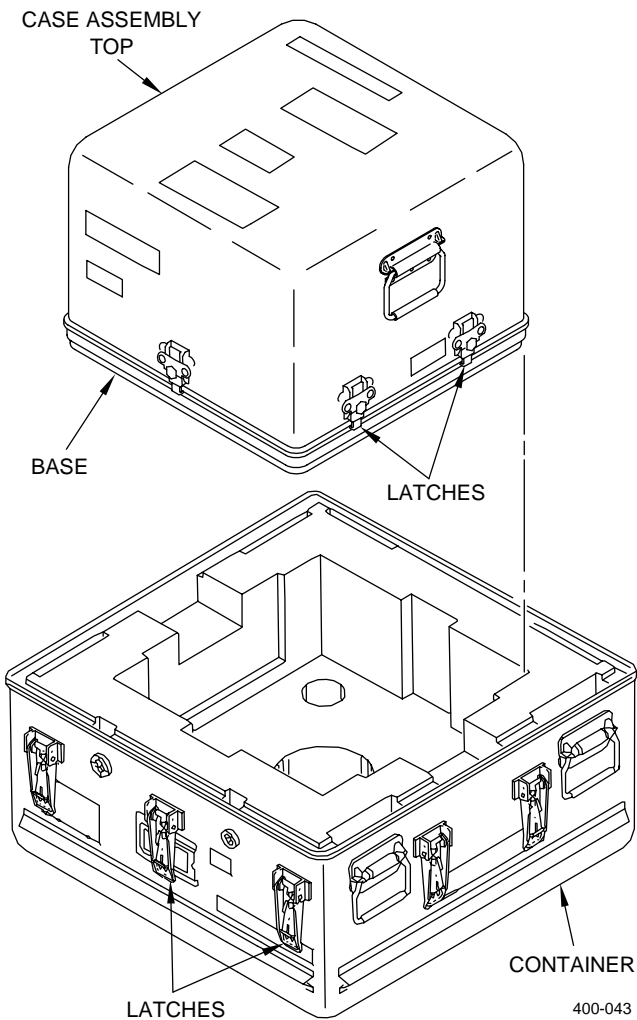
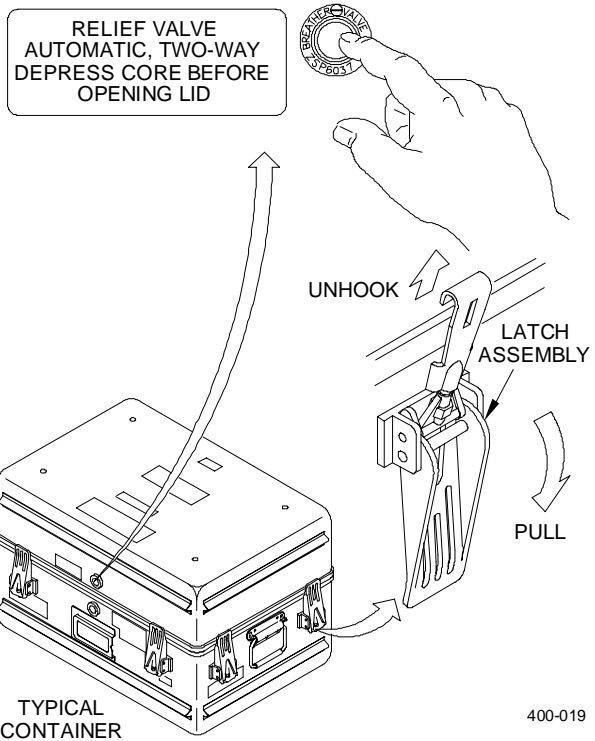
HEAVY OBJECT

- Excessive strain can cause serious injury.
- Don't: Attempt to lift or carry heavy objects alone.
- Do: Get help for lifting or carrying objects weighing more than 35 pounds.
- If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.

3-18. CASE AND CLAMP ASSEMBLY 13231940-9 MAINTENANCE (cont)

REMOVAL

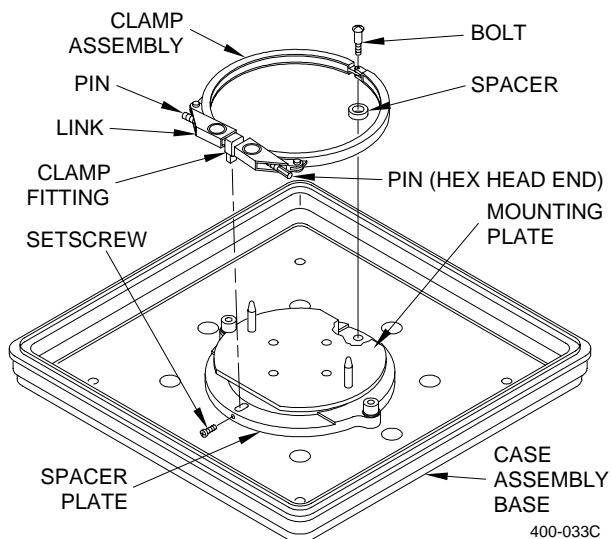
- a. Press red button located in center of automatic relief valve and equalize pressure before opening container.



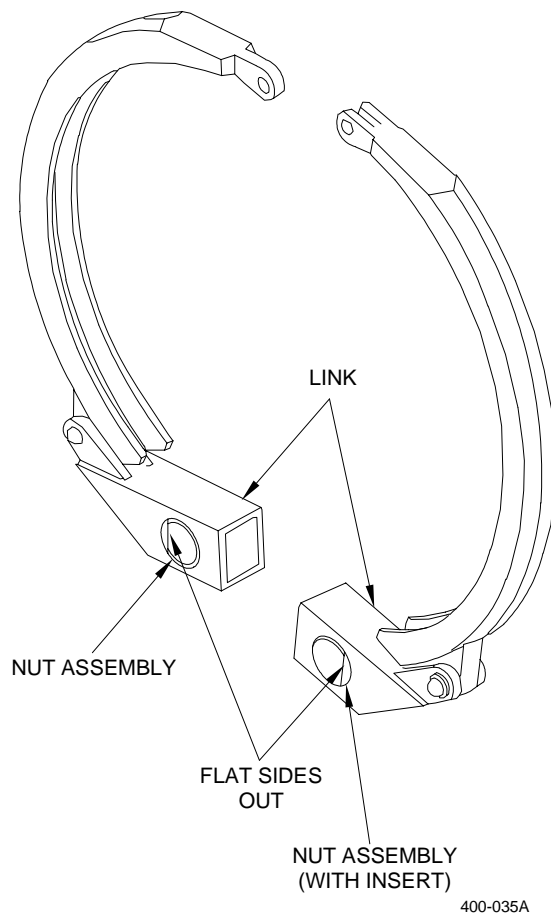
- b. Unlatch latches and open container.
- c. Remove case assembly from container.
- d. Unlatch latches on case assembly, remove case assembly top, and set top aside.

3-18. CASE AND CLAMP ASSEMBLY 13231940-9 MAINTENANCE (cont)

- e. Remove bolt securing clamp assembly and spacer to base. Loosen setscrew holding clamp fitting to mounting plate and lift out clamp assembly and spacer.
- f. Unscrew pin and remove pin and clamp fitting from links.

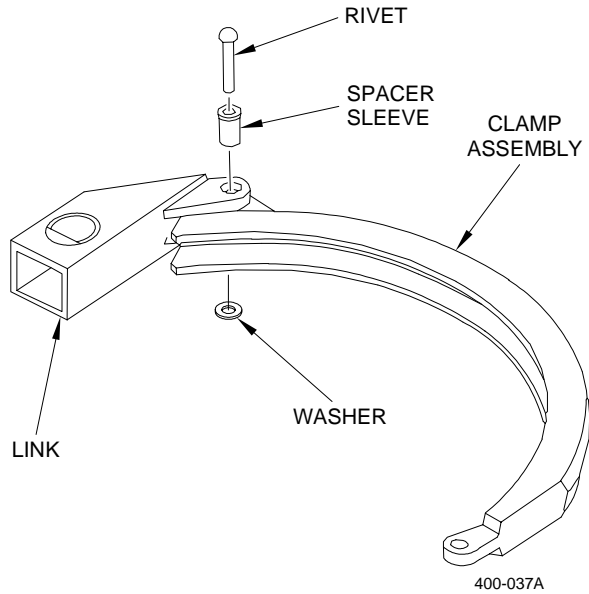


- g. Remove nut assemblies from links.



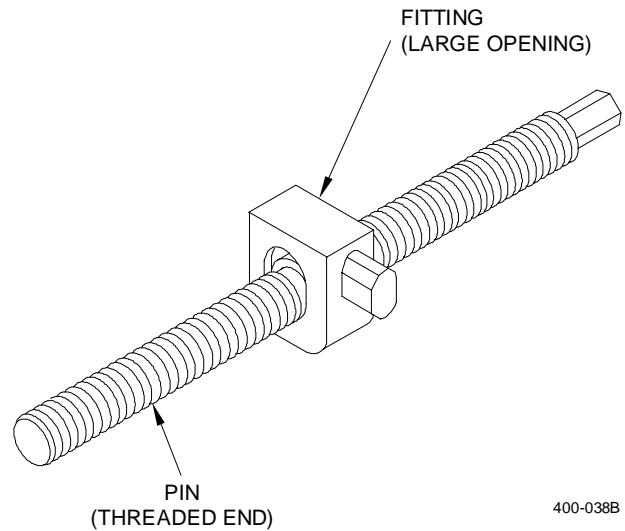
3-18. CASE AND CLAMP ASSEMBLY 13231940-9 MAINTENANCE (cont)

- h. Separate clamp halves from links by removing rivets, spacer sleeves, and washers.



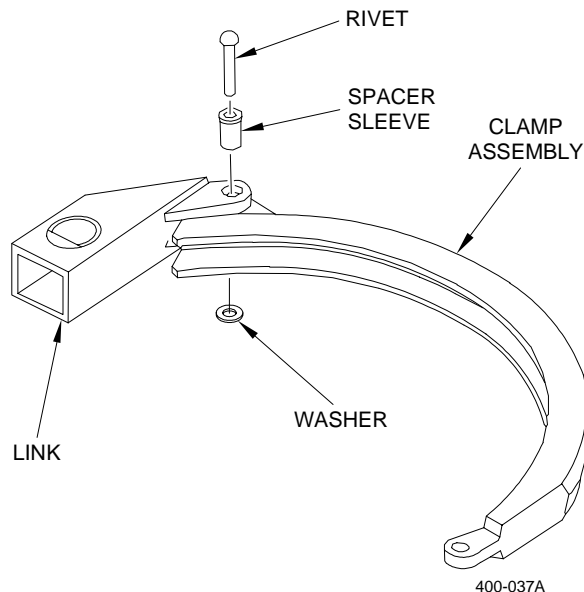
INSTALLATION

- i. Slide fitting on threaded end of pin. Make sure large opening faces hex end of pin.

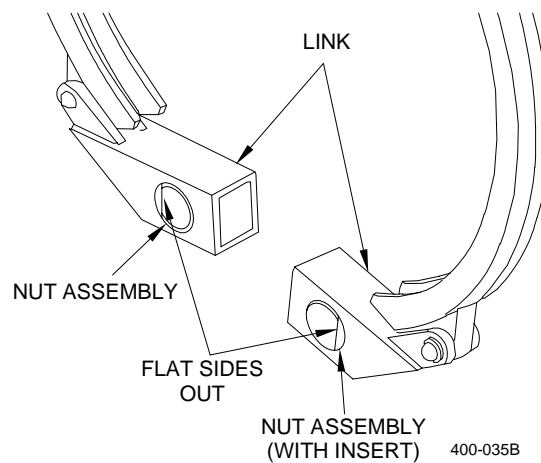


3-18. CASE AND CLAMP ASSEMBLY 13231940-9 MAINTENANCE (cont)

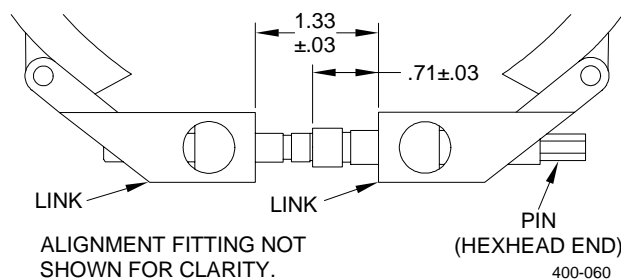
- j. Install spacer sleeve, rivet, and washer to connect clamp half to link.
- k. Install other spacer sleeve, rivet, and washer to connect clamp half to other link.



- l. Apply antiseize lubricant to threads of nut assembly (para 3-7) and install nut assembly without insert into left link. Flat side of nut assembly should be facing out.
- m. Apply antiseize lubricant to threads of nut assembly (para 3-7) and install nut assembly with insert into other link. Flat side of nut assembly should be facing out.
- n. Slide hexhead end of pin into nut assembly without insert and turn until bolt is through nut assembly.

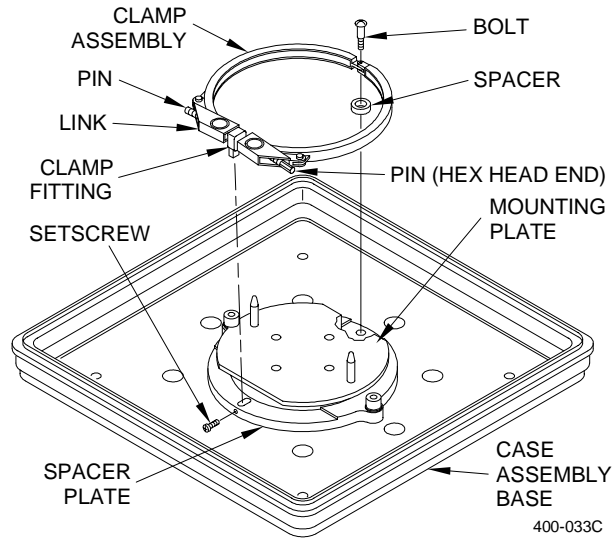


- o. Insert threaded end of pin into nut assembly with insert and turn until tight.
- p. Turn clamp assembly halves on pin until space between links is 1.33 ± 0.3 inches, and distance from raised shoulder of pin to right clamp assembly link is 0.71 ± 0.03 inches.



3-18. CASE AND CLAMP ASSEMBLY 13231940-9 MAINTENANCE (cont)

- q. Prepare clamp assembly and surface area for application of corrosion inhibitive sealant (para 3-8).
- r. Apply corrosion inhibitive sealant to clamp assembly bolt, setscrew, and surface area.
- s. Place spacer and clamp assembly on mounting plate with hexhead end of pin on right as shown in figure and secure with setscrew and clamp assembly bolt.

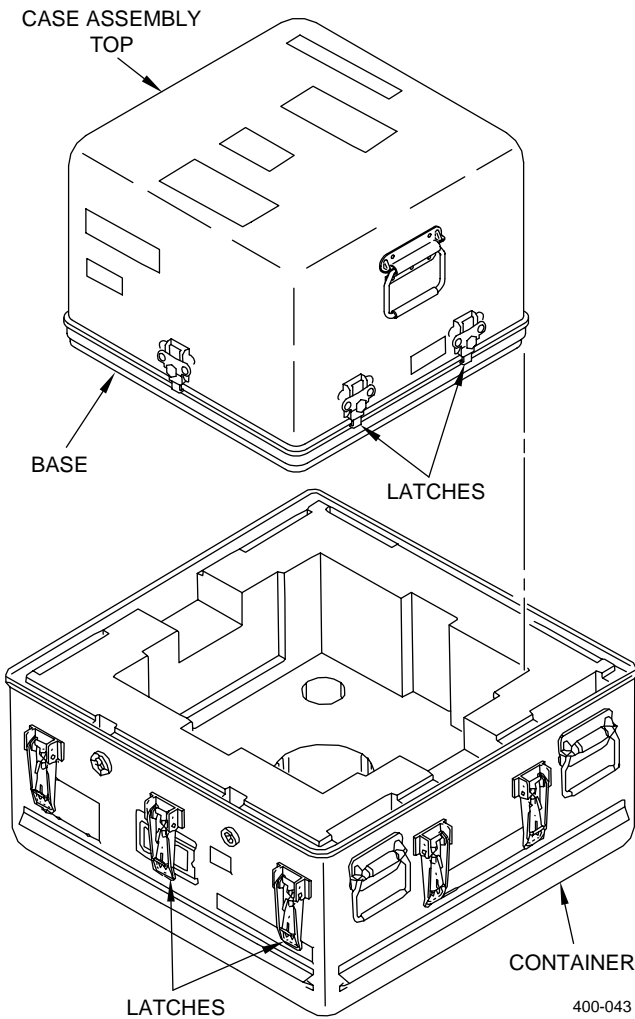


CAUTION

Case assembly base and top must have same vendor number.

- t. Put top of case assembly on base and latch all latches.
- u. Slide case assembly into container. Close container and latch all latches.

END OF TASK

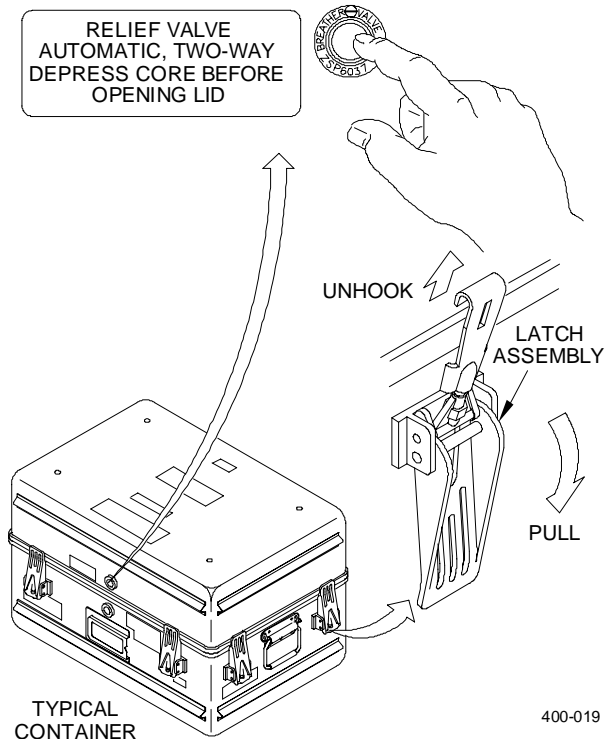
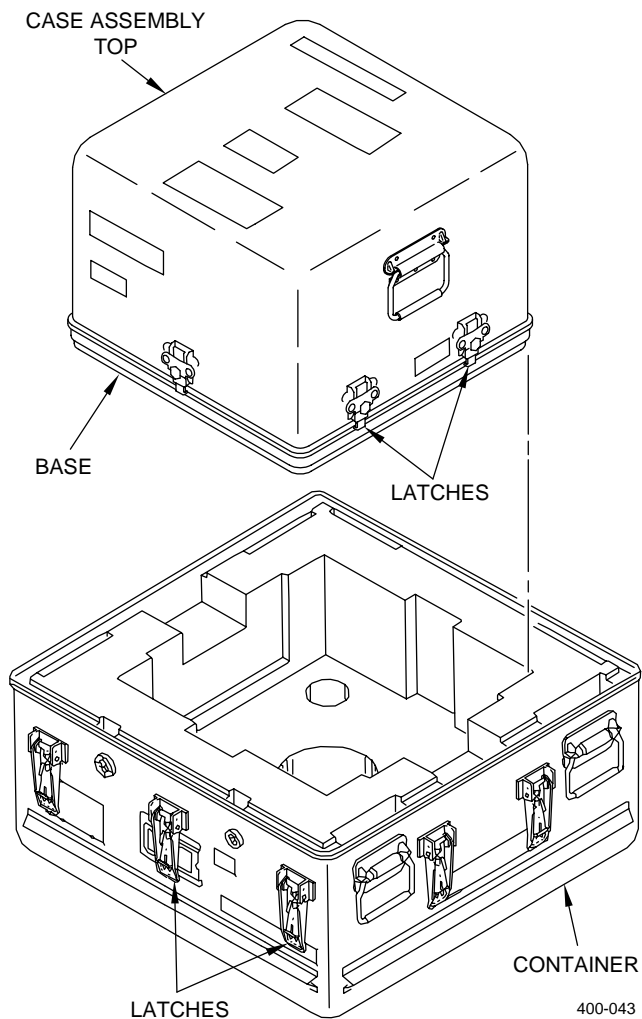


3-18. CASE AND CLAMP ASSEMBLY 13231940-9 MAINTENANCE (cont)

2. MOUNTING PLATE ASSEMBLY AND SPACER PLATE REPLACEMENT

REMOVAL

- a. Press red button located in center of automatic relief valve and equalize pressure before opening container.



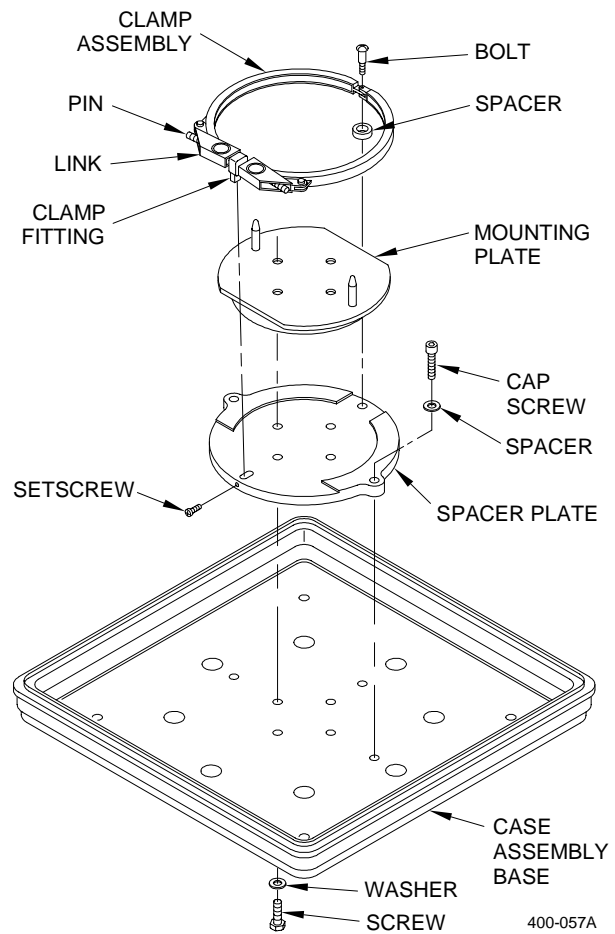
- b. Unlatch latches and open container.
- c. Remove case assembly from container.
- d. Unlatch latches on case assembly, remove top and set top aside.

3-18. CASE AND CLAMP ASSEMBLY 13231940-9 MAINTENANCE (cont)

- e. Loosen pin on clamp assembly.
- f. Loosen setscrew and remove bolt securing clamp assembly and spacer to base. Lift out clamp assembly and spacer.
- g. Remove four screws and washers from bottom case assembly base.
- h. Lift out mounting plate.
- i. Remove two capscrews and spacers securing spacer plate and remove spacer plate from base.

INSTALLATION

- j. Prepare screws, capscrew, setscrew, and surface area for application of corrosion inhibitive sealant (para 3-8).
- k. Apply corrosion inhibitive sealant to screws, capscrew, setscrew, and surface area.
- l. Place spacer plate on case assembly base, aline holes, and secure with two capscrews and spacers.
- m. Install mounting plate and insert four screws and washers and tighten to secure mounting plate to case assembly base.
- n. Refer to steps 1i through 1s above to install clamp assembly.



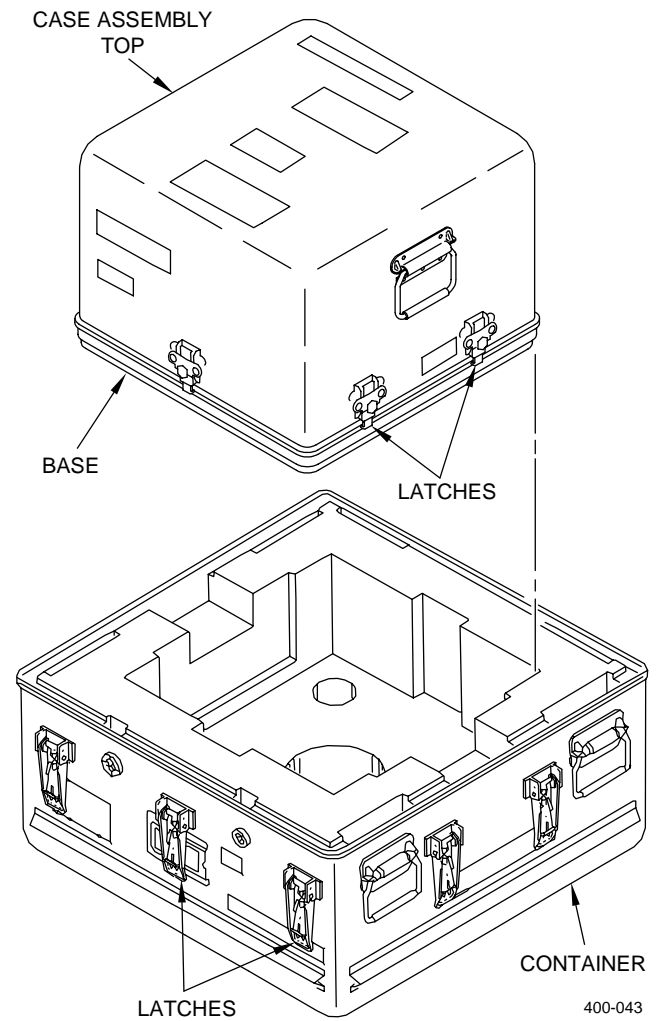
3-18. CASE AND CLAMP ASSEMBLY 13231940-9 MAINTENANCE (cont)

CAUTION

Case assembly base and top must have same vendor number.

- o. Put top of case assembly on base and latch all latches.
- p. Slide case assembly into container. Close container and latch all latches.

END OF TASK

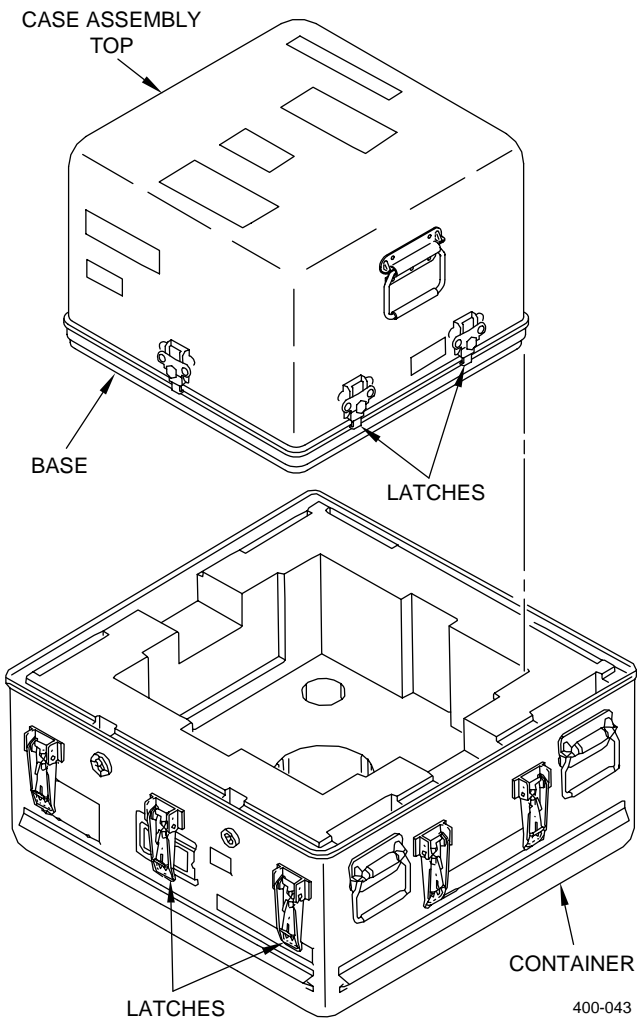
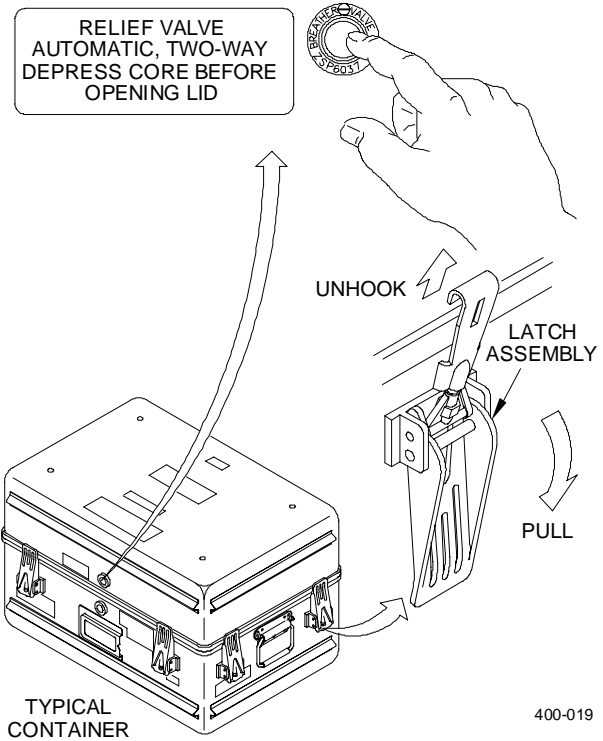


3-18. CASE AND CLAMP ASSEMBLY 13231940-9 MAINTENANCE (cont)

3. RUBBER FOOT REPLACEMENT

REMOVAL

- a. Press red button located in center of automatic relief valve and equalize pressure before opening container.



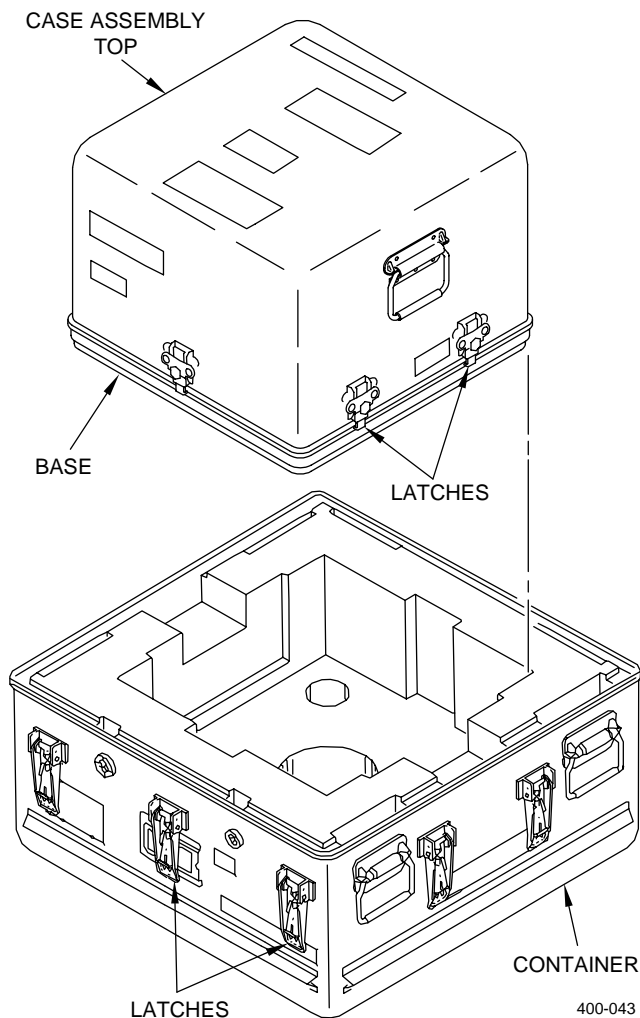
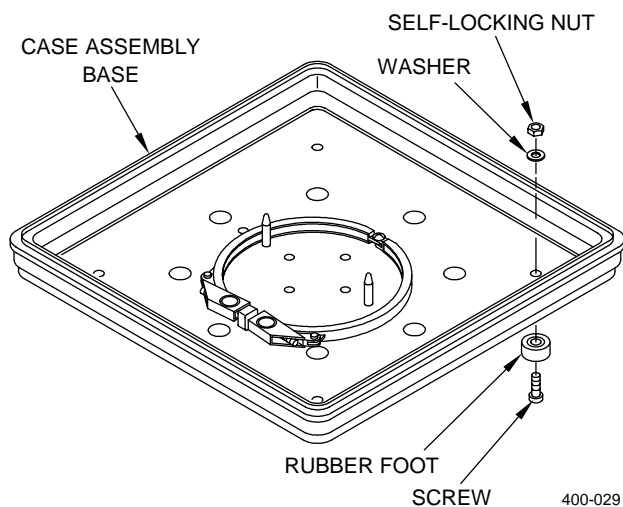
- b. Unlatch latches and open container.
- c. Remove case assembly from container.
- d. Unlatch latches on case assembly, remove top, and set top aside.

3-18. CASE AND CLAMP ASSEMBLY 13231940-9 MAINTENANCE (cont)

NOTE

The following procedures are typical of all four feet.

- e. Remove screw, rubber foot, and washer from case assembly base.
- f. Remove and discard self-locking nut.



INSTALLATION

- g. Aline rubber foot with hole in case assembly base, secure with screw, washer, and new self-locking nut.

CAUTION

Case assembly base and top must have same vendor number.

- h. Put top of case assembly on base and latch all latches.
- i. Slide case assembly into container. Close container and latch all latches.

END OF TASK

3-19. CASE AND CLAMP ASSEMBLY 13082420 MAINTENANCE

This task covers:

<u>Para</u>	<u>Item</u>	<u>Para</u>	<u>Item</u>
1.	Clamp assembly repair	3.	Rubber foot replacement
2.	Mounting plate assembly and support plate replacement		

INITIAL SETUP

Tools

Aircraft armament repairman tool set

Materials (appendix C)

Self-locking nut (Item 26)
 Sealing, locking and retaining compound (Item 13)

Zinc chromate primer (Item 24)

Personnel Required

68J Aircraft Fire Control Repairman

NOTE

For general maintenance to case and clamp assembly, as performed on container itself, refer to paragraph 2-7 for cleaning, paragraph 3-9 for touchup painting, paragraph 3-10 for stencil repair, and paragraph 3-15 for gasket replacement.

1. CLAMP ASSEMBLY REPAIR

WARNING

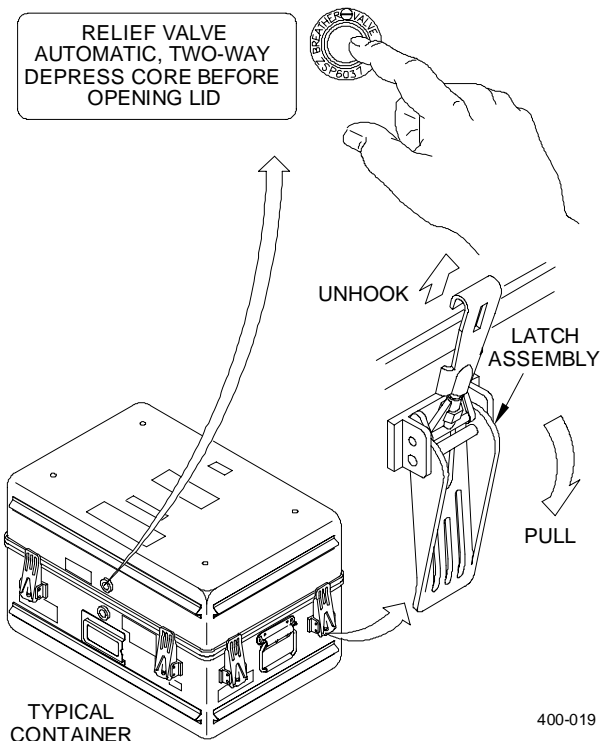
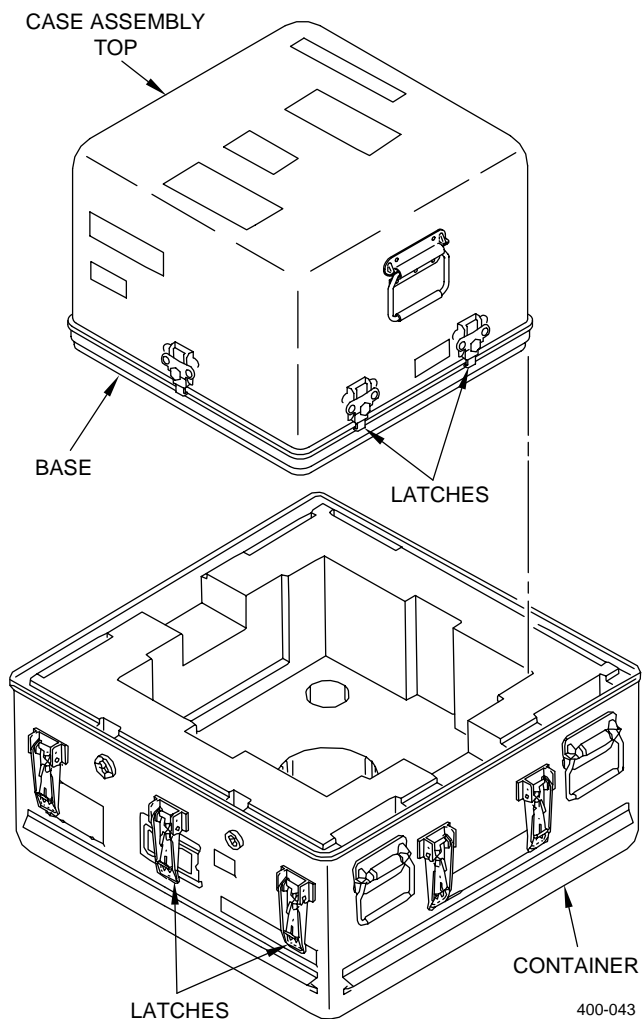
HEAVY OBJECT

- Excessive strain can cause serious injury.
- Don't: Attempt to lift or carry heavy objects alone.
- Do: Get help for lifting or carrying objects weighing more than 35 pounds.
- If you experience a sudden pain while lifting or discomfort after lifting, get medical help at once.

3-19. CASE AND CLAMP ASSEMBLY 13082420 MAINTENANCE (cont)

REMOVAL

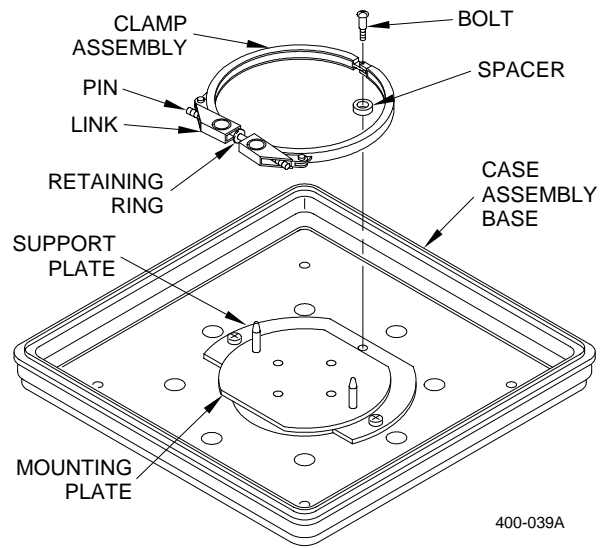
- a. Press red button located in center of automatic relief valve and equalize pressure before opening container.



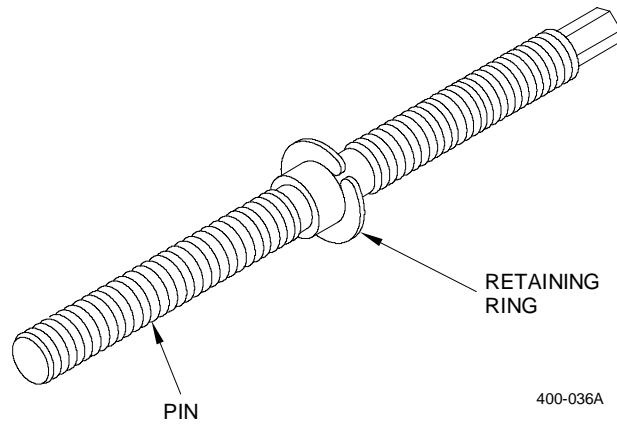
- b. Unlatch latches and open container.
- c. Remove case assembly from container.
- d. Unlatch latches on case assembly, remove case assembly top, and set top aside.

3-19. CASE AND CLAMP ASSEMBLY 13082420 MAINTENANCE (cont)

- e. Remove bolt securing clamp assembly and spacer to base. Lift out clamp assembly and spacer.
- f. Unscrew and remove pin and clamp fitting from links.

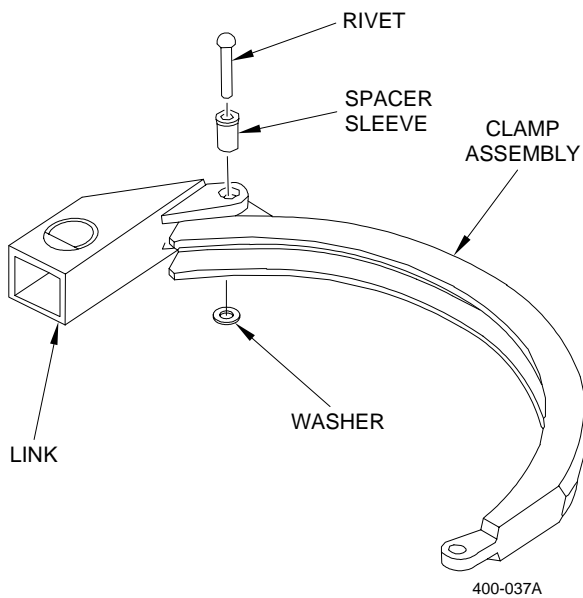
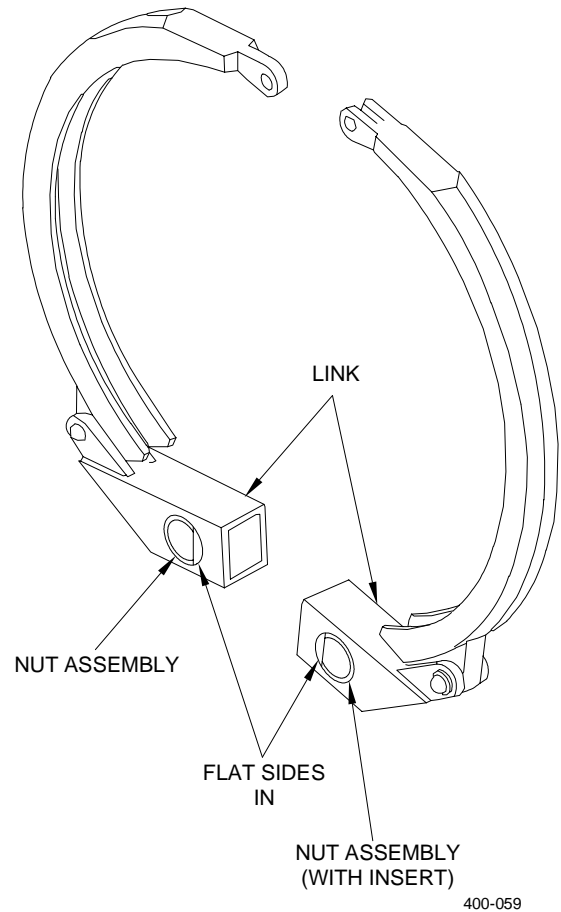


- g. Remove and discard retaining ring and clamp fitting from pin.



3-19. CASE AND CLAMP ASSEMBLY 13082420 MAINTENANCE (cont)

h. Remove nut assemblies from links.



i. Separate clamp halves from links by removing rivets, spacer sleeves, and washers.

INSTALLATION

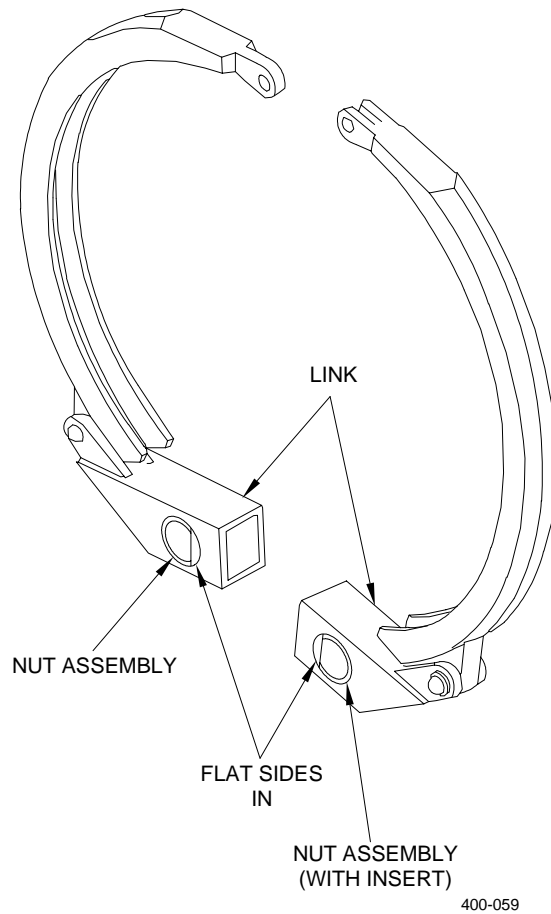
- j. Install spacer sleeve, rivet, and washer to connect clamp half to link.
- k. Install other spacer sleeve, rivet, and washer to connect clamp half to other link.

3-19. CASE AND CLAMP ASSEMBLY 13082420 MAINTENANCE (cont)

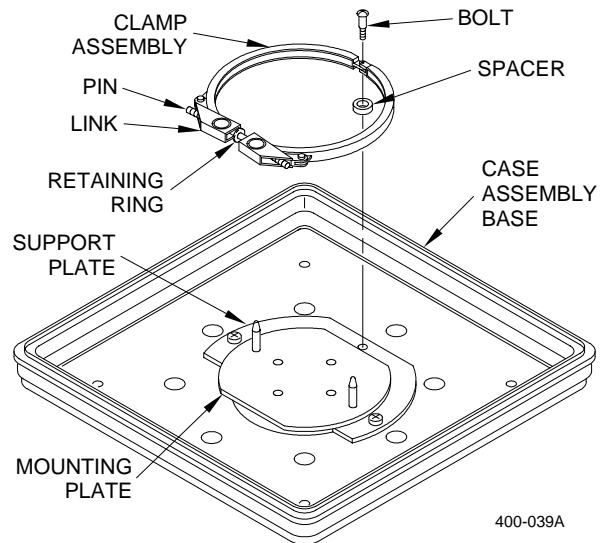
NOTE

- If using clamp assembly 13074657, flat side of nut assemblies installed in steps l and m should be facing toward center of pin as shown in figure.
- If using clamp assembly 13075677, install nut assemblies with flat sides away from center of pin.

- l. Install nut assembly without insert into left link. Flat side of nut assembly should be facing center of pin.
- m. Install nut assembly with insert into other link. Flat side of nut assembly should be facing center of pin.



- n. Slide bolt end of pin into nut assembly without insert and turn until bolt is through nut assembly.
- o. Insert threaded end of pin into nut assembly with insert and turn until tight.
- p. Prepare shoulder bolt and surface area for application of zinc chromate primer (para 3-5).
- q. Apply zinc chromate primer to shoulder bolt and surface area.
- r. Place spacer and clamp assembly on case assembly base and secure with screw.



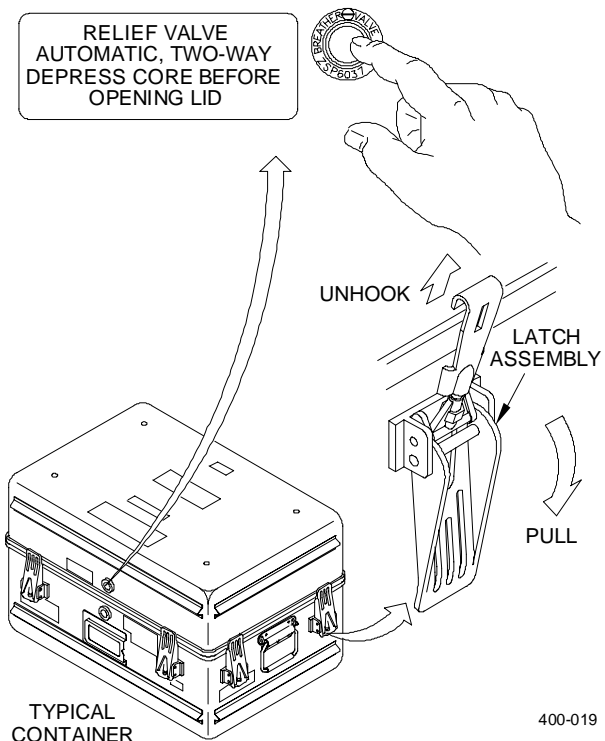
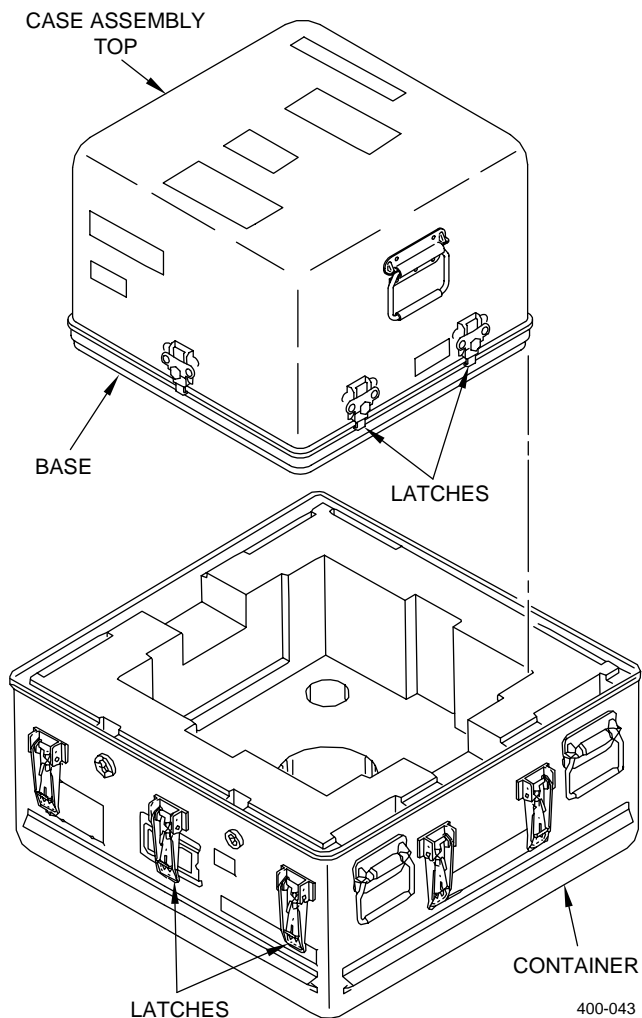
3-19. CASE AND CLAMP ASSEMBLY 13082420 MAINTENANCE (cont)

CAUTION

Case assembly base and top must have same vendor number.

- s. Put top of case assembly on base and latch all latches.
- t. Slide case assembly into container. Close container and latch all latches.

END OF TASK



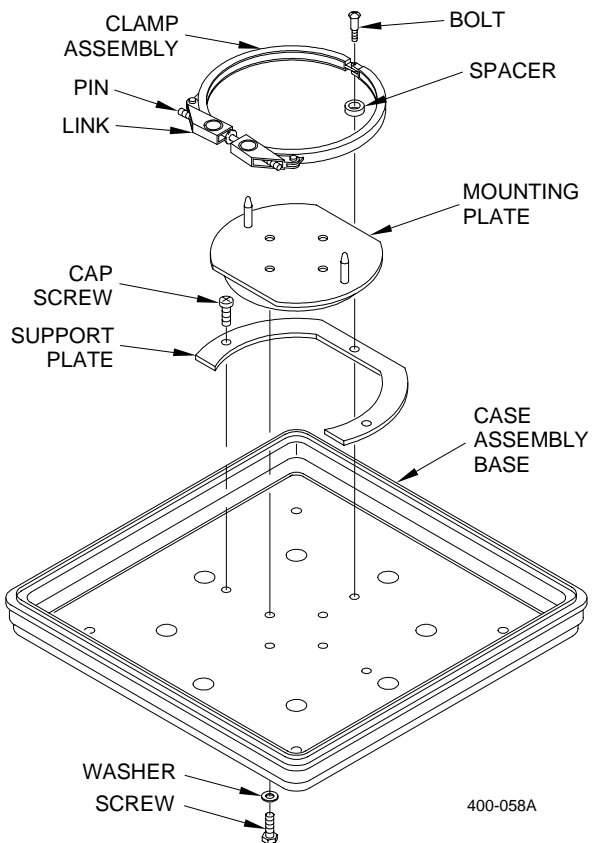
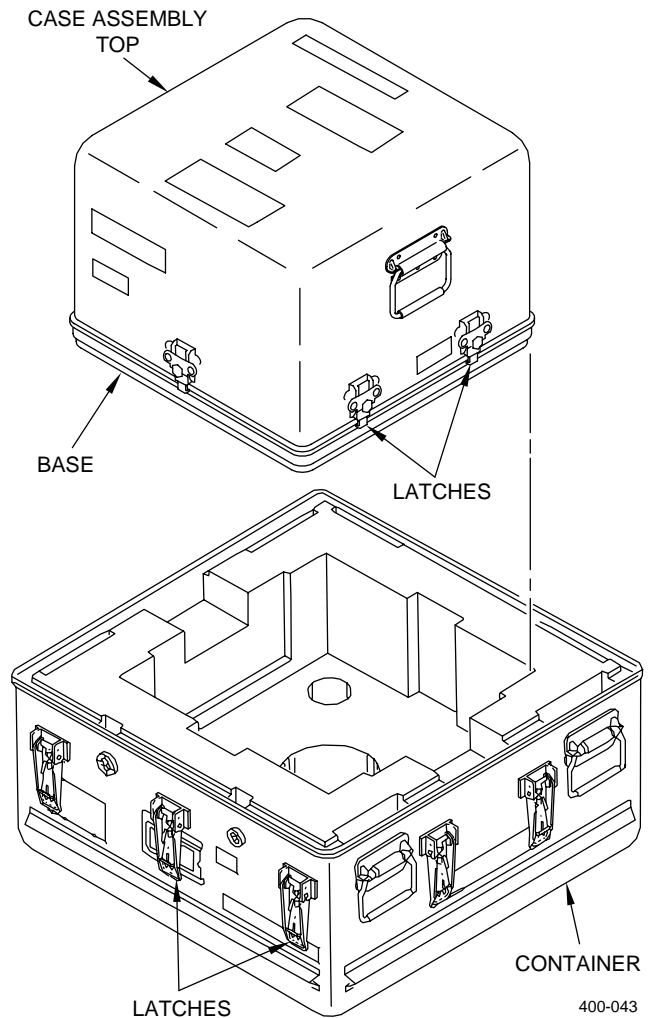
2. MOUNTING PLATE ASSEMBLY AND SUPPORT PLATE REPLACEMENT

REMOVAL

- a. Press red button located in center of automatic relief valve and equalize pressure before opening container.

3-19. CASE AND CLAMP ASSEMBLY 13082420 MAINTENANCE (cont)

- b. Unlatch latches and open container.
- c. Remove case assembly from container.
- d. Unlatch latches on case assembly, remove top and set top aside.

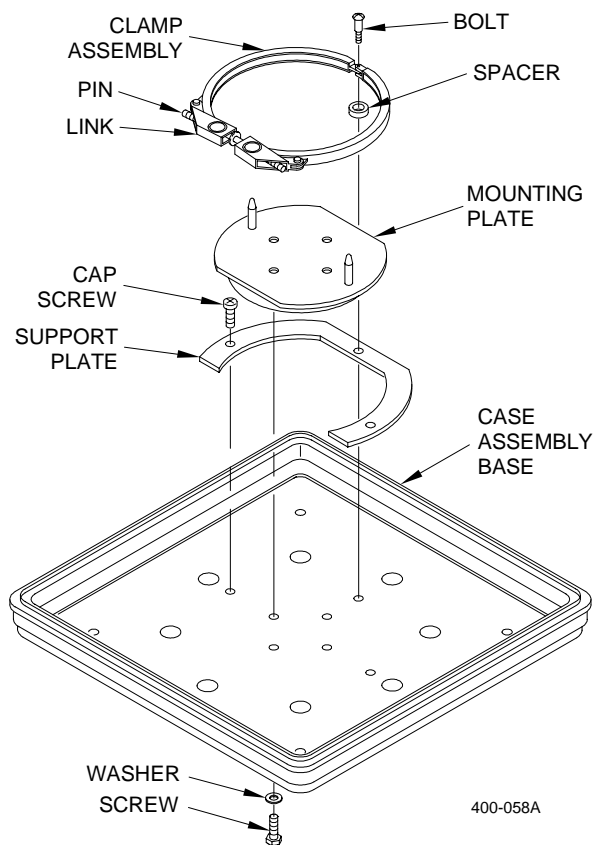


- e. Remove shoulder bolt securing clamp assembly and spacer to base. Lift out clamp assembly and spacer.
- f. Remove four screws and washers from bottom case assembly base.
- g. Lift out mounting plate.
- h. Remove two capscrews securing support plate and remove support plate from case assembly base.

3-19. CASE AND CLAMP ASSEMBLY 13082420 MAINTENANCE (cont)

INSTALLATION

- i. Prepare screws and surface area of support plate for application of sealing compound (para 3-6).
- j. Apply sealing compound to capscrews to and surface area of support plate.
- k. Position support plate on case assembly base and secure with two capscrews.
- l. Prepare screws and surface area of mounting plate for application of zinc chromate primer (para 3-5).
- m. Apply zinc chromate primer to screws and surface area of mounting plate.
- n. Place mounting plate on case assembly base and aline four holes.
- o. Insert four screws and washers and tighten to secure mounting plate to case assembly base.
- p. Refer to steps 1i through 1t above to install clamp assembly.



3-19. CASE AND CLAMP ASSEMBLY 13082420 MAINTENANCE (cont)

CAUTION

Case assembly base and top must have same vendor number.

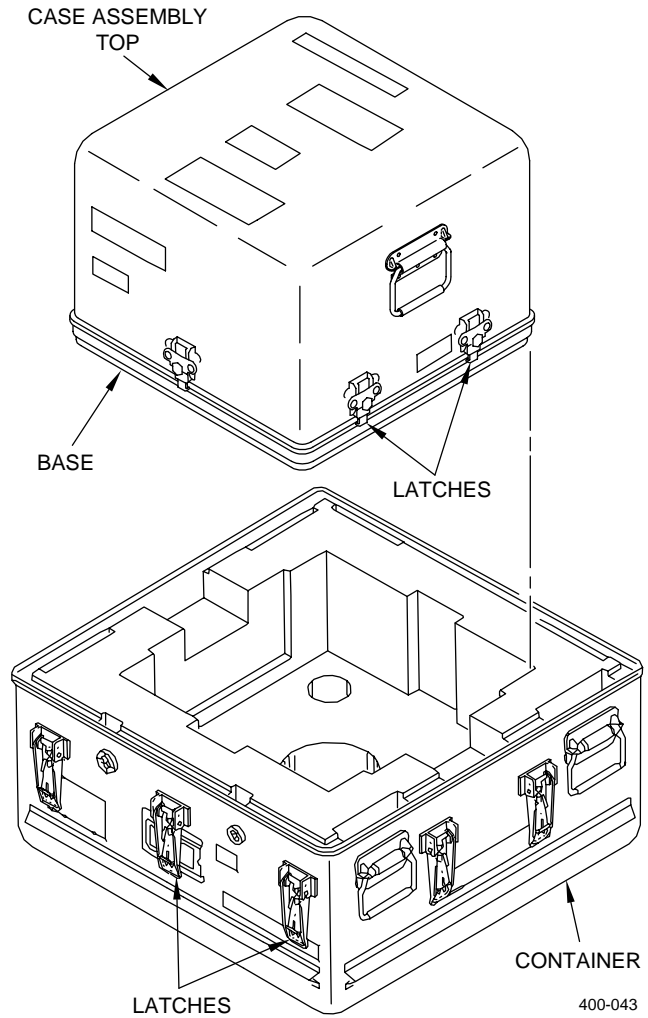
- q. Put top of case assembly on base and latch all latches.
- r. Slide case assembly into container. Close container and latch all latches.

END OF TASK

3. RUBBER FOOT REPLACEMENT

REMOVAL

Refer to para 3-18 for replacement of rubber feet.



APPENDIX A
REFERENCES

A-1. SCOPE

This appendix lists all technical manuals, RPSTLs, supply catalogs, and general information referenced in this manual.

A-2. GENERAL INFORMATION

The Army Maintenance Management System - Aviation (TAMMS)DA Pam 738-751

A-3. FIELD MANUALS

Army Aircraft Quality Control and Technical InspectionFM 1-511

A-4. TECHNICAL MANUALS

Aviation Unit Maintenance Manual, Target Acquisition Designation
Sight (TADS) Assembly AN/ASQ-170 TM 1-1270-476-20-1

Aviation Unit Maintenance Manual, Pilot Night Vision Sensor (PNVS)
Assembly AN/AAQ-11 TM 1-5855-265-20

Painting Instructions for Field UseTM 43-1039

Procedures for Destruction of Electronics Material to Prevent Enemy Use TM 750-244-2

A-5. REPAIR PARTS AND SPECIAL TOOLS LISTS

Aviation Unit and Intermediate Maintenance Repair Parts and Special
Tools List for Target Acquisition Designation Sight (TADS) Assembly
and Pilot Night Vision Sensor (PNVS) Assembly Shipping and Storage
Containers TM 1-8145-476-23P

A-6. SUPPLY CATALOGS

Aircraft Armament Repairman Tool Set SC 5180-95-CL-B09

Aircraft Armament Repairman Tool Set, Supplement SC 5180-95-CL-B10

APPENDIX B

MAINTENANCE ALLOCATION CHART (MAC)

Section I. INTRODUCTION

B-1. GENERAL

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance categories.

b. The Maintenance Allocation Chart (MAC) in section II 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 will be consistent with the capacities and capabilities of the designated maintenance categories.

c. Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from section II.

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

B-2. MAINTENANCE FUNCTIONS

Maintenance functions will be limited to and defined as follows:

a. 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).

b. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. 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.

d. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

e. Aline. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. 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.

B-2. MAINTENANCE FUNCTIONS (cont)

g. 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.

h. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and is shown as the 3rd position of the SMR code.

i. Repair. The application of maintenance services¹, including fault location/troubleshooting, removal/installation, and disassembly/assembly² procedures, and maintenance actions³, to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (compartment or assembly), end item, or system. 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 (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

j. 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 (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles, etc.) considered in classifying Army equipment/components.

¹Services - inspect, test, service, adjust, cline, calibrate, and/or replace.

²Fault locate/troubleshoot - 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).

³Disassemble/assemble - encompasses 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 category of maintenance under consideration.

⁴Actions - welding, grinding, riveting, straightening, facing, remachining and/or resurfacing.

B-3. EXPLANATION OF COLUMNS IN THE MAC, SECTION II

a. Column 1, Group Number. Column 1 lists functional group code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly. End item group number shall be "00."

b. Column 2, Component/Assembly. Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Function. Column 3 lists the functions to be performed on the item listed in Column 2. (For detailed explanation of these functions, see paragraph B-2.)

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a work time figure in the appropriate subcolumn(s), the category of maintenance authorized to perform the function listed in Column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate work time figures will be shown for each category. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance categories are as follows:

AVUM, which corresponds to an 0 Code in the Repair Parts and Special Tools List (RPSTL).

AVIM, which corresponds to an F Code in the Repair Parts and Special Tools List (RPSTL).

DEPOT, which corresponds to a D Code in the Repair Parts and Special Tools List (RPSTL).

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

f. Column 6, Remarks. This column shall, when applicable, contain a letter code, in alphabetic order, which shall be keyed to the remarks contained in section IV.

B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III

- a. Column 1, Reference Code. The tool and test equipment reference code correlates with a code used in the MAC, Section II, column 5.
- b. Column 2, Maintenance Category. The lowest category of maintenance authorized to use the tool or test equipment.
- c. Column 3, Nomenclature. Name or identification of the tool or test equipment.
- d. Column 5, Tool Number. The manufacturer's part number.

B-5. EXPLANATION OF COLUMNS IN REMARKS, SECTION IV

- a. Column 1, Reference Code. The code recorded in column 6, Section II.
- b. Column 2, Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC, Section II.

**Section II. MAINTENANCE ALLOCATION CHART
FOR
TADS/PNVS SHIPPING AND STORAGE CONTAINERS**

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
00	Shipping/Storage Container	Inspect	0.5	-	-	1,2,3,4	A
		Service	0.5	1.0	-	1,2	
		Repair	-	2.0	-		
	Cushion, Upper	Inspect	0.2	-	-		
		Service	0.2	-	-		
		Replace		0.2	-		
	Cushion, Lower	Inspect	0.2	-	-		
		Service	0.2	-	-		
		Replace		0.2	-		
	Identification Plate	Replace		0.1	-		
	Label	Inspect	0.1	-	-		
		Replace		0.2	-	3,4	
	Automatic Relief Valve	Inspect	0.2	-	-		
		Replace		0.3	-	1,2,3	
	Humidity Indicator	Inspect	0.1	-	-		
		Replace		0.3	-	1,2,3	
	Gasket	Inspect	0.2	-	-		
		Replace		0.5	-	1,2,3	
	Latch	Adjust	0.2	-	-		
	Case and Clamp Assembly	Inspect	0.2	-	-		
Replace			0.1	-			
Repair			1.2	-	1,2		
Clamp Assembly	Inspect	0.1	-	-			
	Repair		0.5	-	1,2		
Mounting Plate Assembly	Inspect	0.1	-	-			
	Replace		0.6	-	1,2		
Rubber Feet	Inspect	0.1	-	-			
	Replace		0.1	-	1,2		

**Section III. TOOL AND TEST EQUIPMENT
FOR
TADS/PNVS SHIPPING AND STORAGE CONTAINERS**

Tool or Test Equipment Reference Code	Maintenance Category	Nomenclature	National/NATO Stock Number	Tool Number
1	O,F	Tool Kit, Aircraft Armament Repairman	4933-00-987-9816	SC 4933-95-CL-A13
2	O,F	Tool Kit, Aircraft Armament Repairman Supplemental	4933-00-994-9242	SC 4933-95-CL-A14
3	O,F	Goggles	4240-00-052-3776	-
4	O,F	Rubber Apron	8415-00-082-6108	-
5	O,F	Rubber Gloves ZZ-G-381	8415-00-266-8675	-

Section IV. REMARKS

(1) Reference Code	(2) Remarks
A	Aviation Unit service limited to cleaning.

APPENDIX C

EXPENDABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

C-1. SCOPE

This appendix lists expendable supplies and materials you will need to maintain the shipping and storage containers. These items are authorized to you by CTA 50-970, expendable items (except medical, class V, repair parts, and heraldic items).

C-2. EXPLANATION OF COLUMNS

a. Column 1 - Item Number. This number is assigned to the entry in the listing and is referenced in the procedures to identify the material. Example: A Material/Parts list may show alcohol (item 3).

b. Column 2 - Level. This column identifies the lowest level of maintenance that requires the listed item.

0 - Aviation Unit Maintenance

F - Aviation Intermediate Maintenance

c. Column 3 - National Stock Number. This is the national stock number assigned to the item; use it to order a new item.

d. Column 4 - Description. Indicates the federal item name and, if required, a description to identify the item.

e. Column 5 - Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. The measure is expressed by a two-letter alphabetical abbreviation such as: ea for each, ft for foot, oz for ounce, in for inch, cc for cubic centimeter, pr for pair, and sh for sheet. If the unit measure is different from the unit of issue, order the lowest unit of issue that will do the job for you.

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
1	F	6810-00-223-2739	Acetone, technical, 0-A-51	oz
2	F	8040-00-145-0020	Adhesive, RTV, grey, MIL-A-46146	oz
3	F	6810-00-753-4993	Alcohol, isopropyl, grade A, TT-I-735	oz
4	O	6810-00-825-3298	Bleach, liquid	oz
5	F	8020-00-264-3883	Brush, artist, H-B-118	ea
6	F	7520-00-223-8000	Brush, stencil, 1-inch diameter, H-B-621	ea
7	O	8020-00-889-7920	Brush, varnish, flat, 1-inch, H-B-695	ea
8	O,F	8030-00-142-9272	Chemical film, MIL-C-81706, class IA, form 3, method B	oz
9	O	9920-00-292-9946	Cleaner, pipe, dills	pg
10	O	7920-00-044-9281	Cloth, cotton wiping, CCC-C-46C	ea
11	F	8010-01-160-6741	Coating, polyurethane, green 383, 34094, MIL-C-46168	gl
12		8030-00-871-8489	Compound, corrosion inhibitive sealing and coating, type III-1, PR-1436-G, MIL-S-81733	kt
13	F	8030-00-081-2325	Compound, sealing, locking and retaining, grade H, MIL-S-22473	oz
14	F	6850-01-059-8392	Desiccant bag, active, MIL-D-3464, type 2, size 4	ea
15	O	7930-00-985-6945	Detergent, mild, liquid, P-D-225	oz
16	F	8030-00-149-0335	Lubricant, antiseize, 13085110	oz
17	O	7920-00-205-3558	Pad, cheesecloth DDD-C-301	pg
18	O	7240-00-274-3875	Pail, galvanized, 3 gallon capacity	gl
19	F	-	Paint, type optional, black 37038, MIL-C-46168	pt
20	F	5320-00-721-8117	Paper, abrasive, 180 grit P-P-101	sh
21	F	5350-00-224-7201	Paper, abrasive, 400 grit, P-P-101E	sh
22	F	5350-00-224-7215	Paper, abrasive, 600 grit, P-P-10	sh
23	F	8010-01-120-5004	Primer coating, epoxy polyamide, MIL-P-23377, type 1	qt
24	F	8010-00-835-2114	Primer, zinc chromate, TT-P-1757 yellow, Comp G	pt
25	F	9320-01-095-1759	Rubber strip, ZZ-R-765, class 3B, grade 60, 0.062	ft

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
26	F	5310-00-536-6865	WT X 0.250DX0 Self-locking nut, 52NTE-48	ea
27	F	-	Stencil set, alphanumeric, 0.50, 0.38, and 0.25-inch characters	ea
28	F	7510-00-290-2023	Tape, pressure sensitive (masking)	in
29	F	6810-00-664-0387	Trichloroethane, O-T-620, type 1	oz
30	F	6830-00-584-2957	Trichlorotrifluoroethane, technical, MIL-C-81302, type 2 (freon 113)	oz

GLOSSARY

DSA	Day sensor assembly
HD	Heads down display
ID	Identification
IVD	Indirect view display
LEU	Laser electronics unit
LRU	Line replaceable unit
LTR	Laser tracker receiver
LTU	Laser transceiver unit
MAC	Maintenance allocation chart
MTOE	Modified table of organization and equipment
NSA	Night sensor assembly
NSN	National stock number
ORC	Optical relay column
ORT	Optical relay tube
PEU	PNVS Electronic unit
PMCS	Preventive maintenance checks and services
PNVS	Pilot night vision sensor
QA/QC	Quality assurance/quality control
RPSTL	Repair parts and special tools list
SOP	Standard operating procedures
TAMMS	The Army Maintenance Management System
TADS	Target acquisition designation sight
TEU	TADS electronic unit
TMDE	Test, measurement, and diagnostic equipment
U/M	Unit of measure

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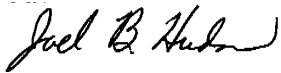
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By Order of the Secretary of the Army:

Official:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff



JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0119702

DISTRIBUTION:

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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@avma27.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 EQUIPMENT TECHNICAL PUBLICATIONS

SOMETHING WRONG

WITH THIS PUBLICATION?



THEN . . . JOT DOWN THE DOPE ABOUT IT ON THIS FORM, FOLD IT, AND DROP IT IN THE MAIL!

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)
 MMC, Br. , 432 PSD
 ATTN: SP5 B. VAN ALSTINE
 ORLANDO, FL. 32809

DATE SENT
 31 DEC 91

PUBLICATION NUMBER
 TM 1-1270-476-20

PUBLICATION DATE
 31 AUGUST 91

PUBLICATION TITLE
 AVIATION UNIT MAINTENANCE MANUAL
 TARGET ACQUISITION DESIGNATION SIGHT
 (TADS) ASSEMBLY AN/ASQ-170

BE EXACT . . . PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.
2-14			Com

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

Detailed Step No. 14 indicates (Accumetric A-105 primer) Should be changed to (Stauffer SWS-1001 Insulating primer)

SAMPLE

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER
 SP5 B. L. VAN ALSTINE 305-503-3050

SIGN HERE

REVERSE OF DA FORM 2028-2

FILL IN YOUR
UNIT'S ADDRESS



FOLD BACK



DEPARTMENT OF THE ARMY

**COMMANDER
U.S. Army Aviation and Missile Command
ATTN: AMSAM-MMC-MA-NP
Redstone Arsenal, AL 35898-5230**

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

SOMETHING WRONG

WITH THIS PUBLICATION?



THEN . . . JOT DOWN THE DOPE ABOUT IT ON THIS FORM, FOLD IT, AND DROP IT IN THE MAIL!

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER

TM 1-8145-476-23

PUBLICATION DATE

PUBLICATION TITLE

TADS Shipping and Storage Containers

BE EXACT . . . PIN-POINT WHERE IT IS

PAGE NO.

PARA-GRAPH

FIGURE NO.

TABLE NO.

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE

PS-IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS

REVERSE OF DA FORM 2028-2

FILL IN YOUR
UNIT'S ADDRESS



FOLD BACK

DEPARTMENT OF THE ARMY

**COMMANDER
U.S. Army Aviation and Missile Command
ATTN: AMSAM-MMC-MA-NP
Redstone Arsenal, AL 35898-5230**

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = 0.39 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

Liquid Measure

1 centiliter = 10 milliliters = 0.34 fl. ounce
 1 deciliter = 10 centiliters = 3.38 fl. ounces
 1 liter = 10 deciliters = 33.81 fl. ounces
 1 dekaliter = 10 liters = 2.64 gallons
 1 hectoliter = 10 dekaliters = 26.42 gallons
 1 kiloliter = 10 hectoliters = 264.18 gallons

Weights

1 centigram = 10 milligrams = 0.15 grain
 1 decigram = 10 centigrams = 1.54 grains
 1 gram = 10 decigrams = 0.035 ounce
 1 dekagram = 10 grams = 0.35 ounce
 1 hectogram = 10 dekagrams = 3.52 ounces
 1 kilogram = 10 hectograms = 2.2 pounds
 1 quintal = 100 kilograms = 220.46 pounds
 1 metric ton = 10 quintals = 1.1 short tons

Square Measure

1 sq. centimeter = 100 sq. millimeters = 0.155 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 = 0.386 sq. mile

Temperature

$5/9 (°F - 32) = °C$
 212° Fahrenheit = 100° Celsius
 90° Fahrenheit = 32.2° Celsius
 32° Fahrenheit = 0° Celsius
 $9/5 C° + 32 = F°$

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = 0.06 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	0.007062
feet	meters	0.305	centimeters	inches	0.394
yards	meters	0.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	0.621
square feet	square meters	0.093	square centimeters	square inches	0.155
square yards	square meters	0.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	0.405	square kilometers	square miles	0.386
cubic feet	cubic meters	0.028	square hectometers	acres	2.471
cubic yards	cubic meters	0.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	0.473	milliliters	fluid ounces	0.034
quarts	liters	0.946	liters	pints	2.113
gallons	liters	3.785	liters	pints	1.057
ounces	grams	28.349	liters	quarts	0.264
pounds	kilograms	0.454	grams	ounces	0.035
short tons	metric tons	0.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	0.11296	Newton-meters	pound-feet	0.738
			Kilo pascals	pounds per square inch	0.145

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