

## TECHNICAL MANUAL

# General Instructions for Cleaning, Preservation, Packaging, and Identification Marking

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## SAFETY PRECAUTIONS

### EXPLOSIVE MATERIALS.

Certain units contain high explosives. Do not strike or drop high-explosive components. Avoid sparks, open flames, and other sources of ignition in the presence of high explosives.

### HIGH VOLTAGE.

The voltages used in certain units are dangerous and may be fatal if contacted by unprotected persons. Use appropriate precautions when working with this type of unit.

### VOLATILE MATERIALS.

Most cleaning and painting agents are toxic and combustible. Use such agents sparingly and only in well ventilated areas; wash hands after use.

# SECTION 1

## INTRODUCTION

### 1-1 PURPOSE.

This manual provides cleaning, preservation, packaging, and identification marking information and instructions to be used, when authorized, by concerned personnel for maintaining certain assemblies and equipment at an acceptable quality level.

### 1-2 SCOPE.

The basic operations involved in the preservation of a given item are cleaning, drying, preservation of surface finishes, packaging, identification marking, and, when specified, marking for shipment. These operations (figure 1-1) are presented in this manual in their logical sequence. They are defined as those general operations required to maintain a given part in functional condition or to prepare that part for storage or shipment.

### 1-3 LIMITATIONS.

1-3.1 The procedures in this manual are a compilation of current cleaning, preservation, packaging, and identification marking procedures. Specific information or procedures contained herein are to be used only to the extent authorized by referencing documents.

1-3.2 The necessity for cleaning, preservation, packaging, or identification marking is determined during the course of normal operations or retrofit action. The degree to which these procedures may be performed at any installation is governed by facilities, availability of technically qualified personnel, time, and the extent of authorization.

1-3.3 Except as noted for a particular cleaning, preservation, fabrication, packaging, or identification marking operation or procedure, the sequence of procedures may be changed by the using organization to facilitate operations, provided no required inspections are omitted or invalidated and no safety features violated.

1-3.4 The materials, processes, and operations specified herein are standard. However, when a material, process, or operation specification in a referencing document is at variance with specifications contained in this manual, the instructions of the specific referencing document shall take precedence.

1-3.5 When a Federal or Military Specification is used to indicate a specific process or material, it is assumed that reference will be made to the latest issue, including amendments, of the specification or to a superseding specification, if applicable.

1-3.6 This publication refers to certain materials by AEC part numbers. For Federal Stock Numbers for use within a given Service, use the Cross Reference List (C1100-CR) of the C1100 series Federal Supply Catalog, or use appropriate Service supply manuals such as USAF Stock List C-1100 for the Air Force or SPCC Notice 4410 for the Navy.

### 1-4 QUALITY OF WORKMANSHIP.

1-4.1 In the performance of all authorized cleaning, preservation, fabrication, packaging, or identification marking, use such equipment as is necessary (1) to insure completion of the operation in accordance with the highest grade of professional practices associated with the work and (2) to maintain the parts at an acceptable quality level.

1-4.2 Where special equipment is specified in this manual, either the specified equipment or an equivalent indicated as being acceptable must be used. The application or use of standard shop tools or equipment is purposely omitted.

1-4.3 The methods, techniques, and practices used in performance of the cleaning, preservation, fabrication, packaging, or identification marking procedures shall be such as to permit the job to meet final inspection requirements.

### 1-5 DEFINITION OF TERMS.

As used in these instructions, the following terms have the meaning indicated.

#### 1-5.1 INTERIOR PACKAGES AND PARCELS.

1-5.1.1 INTERIOR PACKAGE. An interior package is a tie, wrap, or container that provides complete environmental protection and preservation but is not suitable for shipment unless placed in a package (paragraph 1-5.3).

1-5.1.1.1 UNIT PACKAGE. A unit package is an interior package that contains a single item or group of items of the same part number.

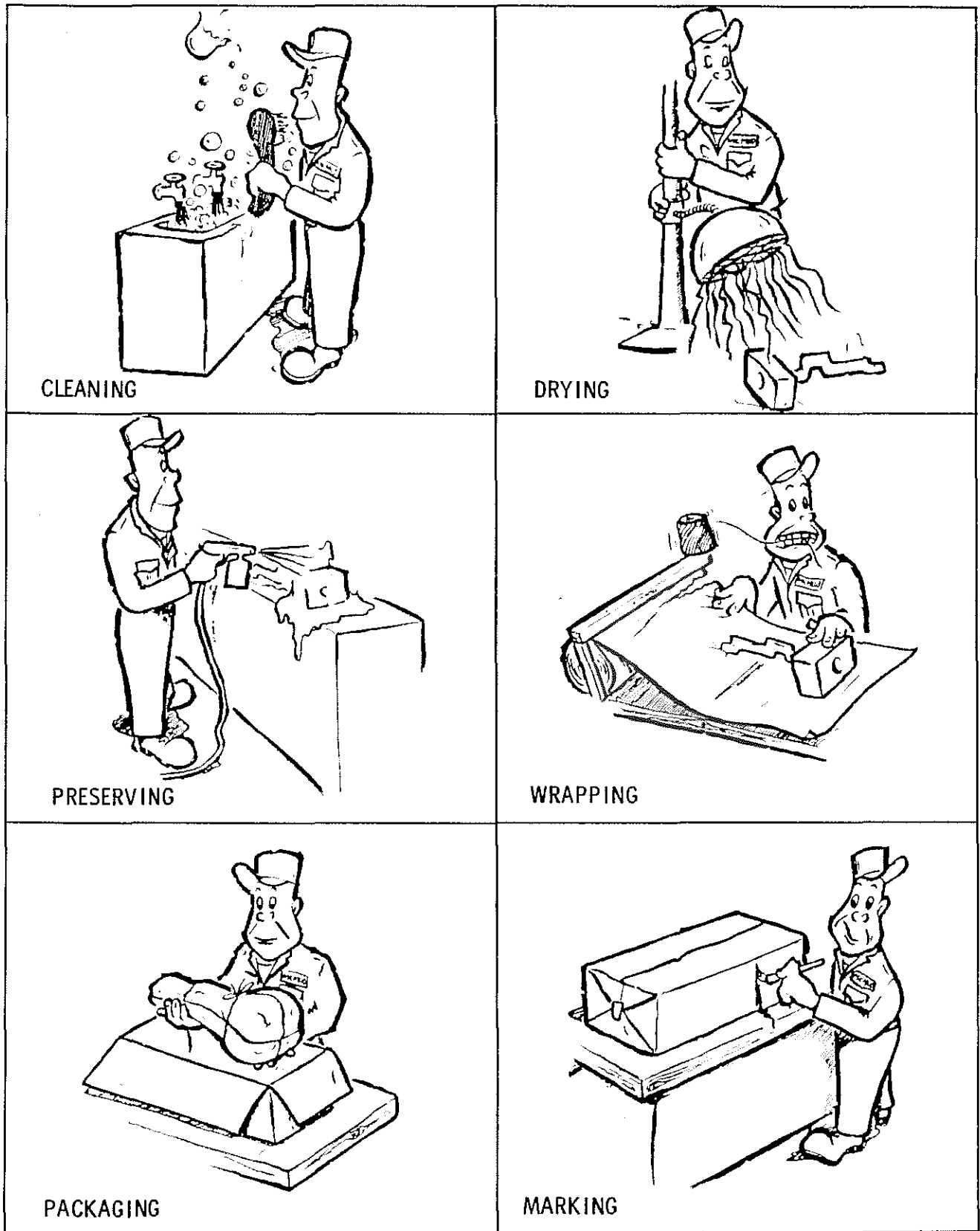


Figure 1-1 Basic Steps of Preservation

1-5.1.1.2 INTERMEDIATE PACKAGE. An intermediate package is an interior package that incloses two or more identical unit packages.

1-5.1.2 PARCEL. A parcel is an interior tie, wrap, or container that lacks some element of environmental protection or preservation.

1-5.1.2.1 UNIT PARCEL. A unit parcel is a parcel that contains a single item or group of items of the same part number.

1-5.1.2.2 INTERMEDIATE PARCEL. An intermediate parcel is a parcel inclosing two or more identical unit parcels.

1-5.1.2.3 ASSORTED PARCEL. An assorted parcel is a parcel inclosing two or more unit parcels of unlike items.

1-5.2 UNPACKED ITEM. An unpacked item is an item which does not require a shipping container.

1-5.3 PACKAGE. A package consists of an item or group of items packed with all necessary preservation and protection materials within a single exterior shipping container.

1-5.4 SHIPPING CONTAINER. A shipping container is any exterior container which may be used for shipment. The container may or may not restrain the entry of water. A shipping container may be a unit container or have a number of parcels or packages packed in the container.

1-5.5 DRUM-TYPE CONTAINER. The term "drum-type container" as used throughout this manual, refers to any metal shipping container having a cylindrical shape.

1-5.6 INTERIOR CONTAINER. An interior container is a container which is used inside a shipping container. Interior containers are generally susceptible to water damage.

1-5.7 DUNNAGE. Dunnage is any cushioning, blocking, wrapping, or other packaging material used inside a container or barrier.

1-5.8 INITIAL WRAP. The initial wrap is the barrier material which is used in direct contact with the product.

## 1-6 MATERIALS.

1-6.1 Table I is an alphabetical listing of expendable materials which are used in the maintenance of assemblies. Additional items, added by printed change, are listed at the end of the table and will be included in proper alphabetical order in the table at the time of the next manual revision. Items in table I are referenced by nomenclature only.

1-6.1A Certain materials which are merely suggested for use in procedures in this or the referencing document and which are considered to have a wide range of substitutes, will not be listed in table I. These materials include: lint-free cloth, tissue, or disposable paper wipes; cotton batting, swabs, or waste; tongue depressors or wooden spatulas; toothpicks; metal foil; and pipe cleaners.

1-6.1B The nomenclature used in table I is an arbitrary nomenclature for use in referencing from material series TP manuals (-1, -1A, -3, etc) into the table. It is not necessarily the same as the nomenclature used in catalogues or marked on the item. The materials involved are controlled by AEC part number or specification and by FSN, rather than by the nomenclature listed in the table.

1-6.2 For procurement purposes, each item will be additionally identified by either an AEC part number or by a recognized specification. When identified by an AEC part number, items to be used with WR weapons must be procured through base spare supply channels; when identified only by specification, the item may be procured from any normal military supply channel as long as it meets the requirements of the particular specification.

1-6.3 In the maintenance of training equipment or test and handling equipment, any material which is at least the functional equivalent of the specified material or part may be used, unless otherwise stated in the referencing document.

1-6.4 Refer to table II for use, limitations, and thinners of marking and touchup materials.

TABLE I  
EXPENDABLE MATERIALS

NOTE			
Unless otherwise specified, items indicated by a lower-case letter (a, b, etc) are interchangeable with the basic item above and with each other			
NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Abrasive Mat, Nonwoven, Nonmetallic	MIL-A-9962A, Type I, Grade A	-	-
Acetone (Dimethyl ketone)	O-A-0051e	-	-
a. Acetone (Technical)	O-A-0051e	-	-
Adhesive (C-518)	833251-00	Gal	-
Adhesive (EC-194)	801477-00	Pt	-
Adhesive (EC-847 or EC-2124) (formerly EC-711 or EC-870)	MMM-A-130A	-	-
Adhesive (Reclaimed rubber)	829899-00	Pt	-
Adhesive (Resin base)	829912-00	Qt	-
Adhesive (Rubber)	MMM-A-250B	-	-
a. Adhesive (EC-226)	MMM-A-250B	-	-
Adhesive (Rubber, Buna-N-type)	MIL-A-5092B, Type III	-	-
Adhesive (Water emulsion type)	MMM-A-260A, Type II, Grade B, Class 2	-	-
Alcohol, Denatured	O-E-760b, Grade 3	-	-
Alcohol, Isopropyl (Technical)	TT-I-735a, Grade A	-	-
Aluminum Shot (25 lb)	875831-00	Ea	-
Bag, Plastic (5 in. L by 3 in. W)	PPP-B-26, lie-flat tubing, 0.004 gage, 1/16 in. seam 1/4 in. from edge, style 1, 3 in. tubing by 5 in. long overall	-	-
Bag, Plastic (6 in. L by 4 in. W)	PPP-B-26, lie-flat tubing, 0.004 gage, 1/16 in. seam 1/4 in. from edge, style 1, 4 in. tubing by 6 in. long overall	-	-
Bag, Plastic (9 in. L by 6 in. W)	PPP-B-26, lie-flat tubing, 0.004 gage, 1/16 in. seam 1/4 in. from edge, style 1, 6 in. tubing by 9 in. long overall	-	-
Barrier Material, Greaseproof (Medium duty, Grade A, Type II, Class 1)	MIL-B-121C, Type II, Grade A, Class 1	-	-
(Continued on next page)			

TABLE I  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Barrier Material, Greaseproofed-Waterproofed, Flexible (Medium duty, Grade A, Type II, Class 2)	MIL-B-121C, Type II, Grade A, Class 2	-	-
a. Barrier Material, Paper, Non-corrosive (Heavy duty, Type 1)	MIL-P-130C, Type I, 36 in. Wide	-	-
b. Barrier Material, Greaseproofed-Waterproofed, Flexible (Heavy duty, Grade C, Type 1)	MIL-B-121C, Type I, Grade C, Class 1	-	-
Barrier Material, Paper, Noncorrosive (crepe); Now called: Paper, Wrapping, Laminated and Creped			
Barrier Material, Waterproofed, Flexible (Class E-1)	PPP-B-1055, Class E-1, 36 in.	-	-
a. Barrier Material, Waterproofed, Flexible (Class E-1)	PPP-B-1055, Class E-1, 48 in.	-	-
Barrier Material, Waterproofed, Flexible (Heavy duty, Grade A, Type B-2, Class 1)	MIL-B-13239D, Type B-2, Class 1, Grade A	-	-
Barrier Material, Waterproofed, Flexible (Medium duty, Grade B, Type B-2, Class 1)	MIL-B-13239D, Type B-2, Class 1, Grade B	-	-
a. Barrier Material, Waterproofed, Flexible (Light duty, Grade C, Type B-2, Class 1)	MIL-B-13239D, Type B-2, Class 1, Grade C	-	-
Barrier Material, Waterproofed, Flexible (20-lb strength, Class 1)	PPP-B-1055, Class C-1, 36 in.	-	-
Barrier Material, Waterproofed, Flexible (VPI), 36 in. W by 100 yd L	945056-00	Roll	-
Barrier Material, Waterproofed, Flexible (36-lb strength, Class E-2)	PPP-B-1055, Class E-2, 36 in.	-	-
Barrier Material, Moisture-Vaporproof (Class 1)	MIL-B-131E, Class 1	-	-
a. Barrier Material, Water-Vaporproofed, Flexible (Class 2)	MIL-B-131E, Class 2	-	-
Barrier Material, Water-Vaporproofed, Flexible (Class 1)	MIL-B-131E, Class 1	-	-
Bolt and Nut, Machine (1/4-20 UNC by 2 in. L)	131550-00	Ea	-

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TABLE I  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Bolt, Machine (5/16-18 NC by 3-1/4 in. L)	120801-00	Ea	-
Box, Folding (3 in. by 3 in. by 3 in.)	PPP-B-636d, Type CF, Domestic, SW, Grade 125, Style RSC	-	-
Box, Folding (4 in. by 4 in. by 3 in.)			
Box, Folding (4-1/2 in. by 3-1/2 in. by 2 in.)			
Box Folding (4 in. by 4 in. by 4 in.)			
Box, Folding (5 in. by 2-1/2 in. by 2-1/2 in.)			
Box, Folding (6-1/2 in. by 3 in. by 3 in.)			
Box, Folding, Paperboard	PPP-B-566	-	-
Box, Paperboard, Metal-Stayed	MIL-B-4229A	-	-
Box, Setup, Paperboard	PPP-B-676	-	-
Calcium Sulphate	837020-00	Lb	-
Can, Friction Top (Round, plastic, 4 in. dia by 2-1/2 in. high)	836059-00	Ea	-
Can, Screw Cap (55.4 cu in.)	832927-00	Ea	-
Catch, Luggage	813266-00	Ea	-
Catch, Luggage	827477-00	Ea	-
Chromium Trioxide (Technical)	O-C-303c	-	-
Cleaning Compound, Aluminum Surface	MIL-C-5410B, Type I	-	-
Cleaning Compound, High-Pressure	P-C-437c-3	-	-
Cleaning Compound, Solvent (Emulsion type)	MIL-C-25179A	-	-
Cleaning Compound (Washing machine)	MIL-C-5543	-	-
Coating Compound, Aluminum (Alodine) (Powdered or solution)	MIL-C-5541A, Grade B, Class 2	-	-
Coating Compound, Aluminum (Alodine) (Electrically Conductive) (Powdered)	MIL-C-5541, Type II, Grade B, Class 3	-	-

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TABLE I  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Coating Compound, Bituminous (Emulsion type)	875754-00	Qt	-
Coating Compound, Conductive (Silver)	871520-00	20 oz	30
Coating Compound, Fluorescent (Red- orange, built-in spray)	MIL-P-21600A, Red-Orange No. 633	-	-
Coating Compound, Fluorescent (Red- orange, 1-1/2-gal kit)	MIL-P-21600A, Red-Orange No. 633	-	28
Coating Compound, Fluorescent (Signal green)	MIL-L-3891A, Type F, Green	-	-
Coating Compound, Fluorescent (Fire red)	MIL-L-3891A, Type F, Red	-	-
Coating Compound, Metal Pretreatment (Resin-Acid, 5-gal kit)	MIL-P-15328C	-	-
Coating Compound, Phosphorescent (Pale green) NOTE: Also requires use of following item	MIL-L-4996A, Type I	-	-
Enamel and Lacquer Kit (White enamel and clear lacquer - 1 qt of each)	830919-00	Ea	-
Coating Compound, Plastic, Strippable	MIL-P-149B, Type II	-	-
Coating Compound, Polyurethane (Black, semigloss, qt kit)	872243-00	Ea	24
Coating Compound, Polyurethane (Blue, semigloss, qt kit)	873388-00	Ea	24
Coating Compound, Polyurethane (Magenta, semigloss, qt kit)	872241-00	Ea	24
Coating Compound, Polyurethane (White, lusterless, qt kit)	872242-00	Ea	24
Coating Compound, Rubber	874275-00	Qt	-
Coating Compound, Thermal Resistant (White, 2-gal kit)	MIL-C-27227A	-	-
Coating, Protective (MMM No. 1706)	872831-00	Qt	29
a. Coating, Protective (MMM No. 1706)	872364-00	Pt	29
Coating Compound, Vinyl-Aluminum	872254-00	Gal	25

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**TABLE I**  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Coating Kit Epoxy-Polyamide (Clear)	MIL-C-22750, Type I, Clear	-	-
Coating, Vinyl (OD)	834540-00	Qt	1
Coating, Vinyl (White)	834633-00	Qt	1
Coating, Vinyl (Yellow)	834541-00	Qt	1
Compressor, Locking Ring, Metal Drum Cover (Use with AN8024 and AN8025)	945031-00	Ea	-
Compressor, Locking Ring, Metal Drum Cover (Use with AN8026)	945032-00	Ea	-
Compressor, Locking Ring, Metal Drum Cover (Use with AN8027)	945033-00	Ea	-
Cork, Sheet (1/16 in. thick)	HH-C-576b, Type IIA, Class 2, 1/16 by 12 by 36	-	-
Cork, Sheet (1/8 in. thick)	HH-C-576b, Type IIA, Class 2, 1/8 by 12 by 36	-	-
Cork, Sheet (1/4 in. thick)	HH-C-576b, Type IIA, Class 2, 1/4 by 24 by 36	-	-
Corrosion Preventive, Fingerprint Remover	MIL-C-15074C	-	-
Corrosion Preventive, Compound (Solvent-Cutback)	MIL-C-16173D, Grade I	-	-
Corrosion Preventive Compound, Water Displacing, Ultra-thin Film (Grade A)	MIL-C-81309A, Grade A	-	-
Cover, Insert (for 16-gallon metal drum)	265909-00	-	-
Cushioning Material, Packaging (Cellulosic)	PPP-C-843a, Type II, Class B, 36 in. W, 1 or 2 in. thick	-	-
Cushioning Material, Packaging (Urethane foam, 1/2 in. by 24 in. by 72 in.)	874740-00	Sheet	-
Cushioning Material, Packaging (Urethane foam, 1 in. by 24 in. by 72 in.)	874741-00	Sheet	-
Cushioning Material, Packaging (Urethane foam, 2 in. by 24 in. by 72 in.)	874742-00	Sheet	-

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TABLE I  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Cushioning Material, Packaging (Vegetable or synthetic fiber, 2 in. thick)	PPP-C-1120, Type III, Class B, 2 in.	-	-
Cushioning Material, Packaging (Vegetable or synthetic fiber, 1 in. thick)	PPP-C-1120, Type III, Class B, 1 in.	-	-
Decal, Metal (Printed: RELIEF VALVE CAUTION UNSCREW BEFORE UNLOCK- ING CASE SCREW TIGHTLY AFTER LOCKING CASE)	826258-00	Ea	-
Decal, Metal (Printed: TO REMOVE COVER DEPRESS VALVE UNTIL PRESSURE IS EQUALIZED)	130635-00	Ea	-
Decal (Printed: TRAINING ONLY)	836435-00	Ea	-
Desiccant, Activated (1/3-unit bag)	MIL-D-3464D, Type I	-	-
Desiccant, Activated (1/2-unit bag)			
Desiccant, Activated (1-unit bag)			
Desiccant, Activated (2-unit bag)			
Desiccant, Activated (4-unit bag)			
Desiccant, Activated (8-unit bag)			
Desiccant, Activated (16-unit bag)			
Desiccant, Activated (Bulk)	MIL-D-3716, Type IV, Grade H	-	-
a. Desiccant, Activated (Blue, bulk)	MIL-D-3716, Type IV, Grade H	-	-
Desiccant, Activated (Bulk)	MIL-D-3716, Type I, Grade H	-	-
Desiccant, Activated (Bulk)	MIL-D-3716, Type II, Grade H	-	-
Desiccant, Activated (Microtrap, 8- unit bag) (100-lb package)	870326-00	Ea	-
Desiccant, Activated (Microtrap, 1- lb bag)	874050-00	Ea	-
Disinfectant, Germicidal and Fungicidal (Quanterary ammonium type)	O-D-001277	-	-

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TABLE I  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Dye (Green)	839099-00	Lb	-
Dye, Layout (Purplish blue)	871173-00	8 oz	-
Dye (Magenta)	839100-00	Lb	-
Dye (Orange)	839421-00	Lb	-
Dye (Yellow)	839101-00	Lb	-
Enamel (Black, gloss)	TT-E-489E, Class A, Black, No. 17038	-	7
Enamel (Black, gloss, Epolux 100E-6, Qt kit)	871155-00	Ea	-
Enamel (Black, gloss, Epolux 160-B-104)	872935-00	1/4 pt	-
Enamel (Black, lusterless)	TT-E-515, Black, No. 37038	-	2
Enamel (Bright blue, gloss)	TT-E-489E, Class A, Blue, No. 15123	-	6
Enamel (Medium gray, gloss)	TT-E-489E, Class A, Gray, No. 16187	-	6
Enamel (Gray, lusterless)	TT-E-515, Gray, No. 36492	-	1
Enamel (Green, gloss)	TT-E-489E, Class A, Green, No. 14108	-	7
Enamel (Green, lusterless)	TT-E-515, Green, No. 34108	-	-
Enamel (Light blue, gloss)	TT-E-489E, Class A, Blue, No. 15102	-	7
Enamel (Light gray, semigloss)	MIL-E-15090B, Type II, Class 2	-	4
Enamel (Magenta, semigloss)	TT-E-529b, Class A, Magenta, No. 27142	-	20
Enamel (Ocean gray)	MIL-E-16663, Type I, Class 1, Ocean Gray	-	-
Enamel (OD, lusterless)	TT-E-515, OD, No. X-34087	-	2
Enamel (OD, rust inhibiting)	TT-E-485f, Type II, OD	-	5
Enamel (Orange, gloss)	TT-E-489E, Class A, Orange, No. 12246	-	6
Enamel (Purple, semigloss)	TT-E-529B, Class A, Purple, No. 27144	-	23

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TABLE I  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Enamel (Red, gloss)	TT-E-489E, Class A, Red, No. 11105	-	-
Enamel (Red, lusterless)	TT-E-515, Red, No. 31136	-	-
Enamel (White, gloss, 48-hr dry time)	TT-E-489E, Class A, White	-	6
Enamel (White, gloss, 8-hr dry time)	TT-E-489E, Class A, White	-	7
Enamel (White, gloss, Epolux 160-W-108)	871081-00	Qt	31
a. Coating Compound, Epoxy Resin (White, gloss)	837994-00	Qt	32
b. Enamel (White, gloss, Epolux 100E-1)	837877-00	Qt	31
c. Enamel (White, gloss, Epolux 100E-1)	179350-00	1/4 pt	31
Enamel (White, lusterless)	TT-E-515, White, No. 37875	-	2
Enamel (Yellow, gloss)	TT-E-489E, Class A, Yellow, No. 13655	-	7
Enamel (Yellow, gloss, 48-hr dry time)	TT-E-489E, Class A, Yellow, No. 13538	-	6
Enamel (Yellow, lusterless)	TT-E-515, Yellow, No. 33538	-	2
Envelope, Mailing (Plain, brown, 15 by 10 in.)	UU-E-00522c, Side-opening, blank	-	-
Envelope, Packing List (5.75 in. L by 4.25 in. W)	PPP-E-540b, Class 1, Style 3, Size 2	-	-
Envelope, Waterproofed (12 in. L by 12 in. W)	PPP-E-540b, Class 1, Style 3, 12 in. L by 12 in. W	-	-
a. Envelope, Packing List (12 L by 10 in. W)	PPP-E-540b, Class 1, Style 3, Size 9	-	-
Felt, Insulation, Thermal (3/4 in. thick by 36 in. W by 24 ft L)	875457-00	Roll	-
Fiber, Asbestos	803144-00	100 lb	-
Fiberboard, Corrugated (Flexible, medium duty)	PPP-P-291d, Type III, Style 1, 36 in. Wide	-	-

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TABLE I  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Fiberboard, Corrugated (Flexible, waterproofed creped) (36 in. W by 250 ft L)	804331-00	Roll	-
Fiberboard, Corrugated (200 psi)	PPP-F-320c, Type CF, Domestic, SW, Grade 200	-	-
Fiberboard, Corrugated (400 psi)	PPP-F-320c, Type CF, Weather-resistant, SW, Grade V3C	-	-
Gasket, Rubber (For 22-1/2 in. ID Metal drums)	MS63054-41	-	-
Grain, Abrasive (30-mesh size)	MIL-G-5634B, Type I or Type III	-	-
Handle, Chest	853468-00	Ea	-
a. Handle, Chest	808886-00	Ea	-
Indicator, Humidity, Card (Rectangular)	826004-00	Ea	-
Indicator, Humidity, Card (Round, 2-1/2 in. max dia)	826383-00	Ea	-
Indicator, Humidity, Card (Round, 1-3/16 in. dia)	835511-00	Ea	-
Indicator, Humidity, Plug	828791-00	Ea	-
Ink, Marking Stencil (Black)	TT-I-559b, Black, No. 37038	-	-
Ink, Stamp Pad (Black)	836470-00	Qt	-
Ink, Stamp Pad (Black)	809556-00	Qt	-
Ink, Stamp Pad (Red)	813954-00	Oz	-
Ink, Stamp Pad (White)	814350-00	Pt	-
Ink, Stamp Pad (Yellow)	835889-00	4 oz	-
Ink, Stencil Marking (Black, Type N)	873322-00	Pt	-
Ink, Stencil Marking (Black)	TT-I-558c, Black, No. 37038	-	-
Ink, Stencil Marking (White)	TT-I-558c, White, No. 37875	-	-

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TABLE I  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Insert, Container (for 16-gal metal drum)	265910-00	Ea	-
Jar (Round, bakelite, 2-5/8 in. dia by 2-1/2 in. high)	829480-00	Ea	-
Kerosine	VV-K-211d	-	-
Label, Yellow (Printed: RADIO-ACTIVE, III)	876362-00	Ea	-
Label (Printed: FRAGILE HANDLE WITH CARE)	837292-00	Ea	-
Label (Printed: METHOD II PACKAGE, etc) (2-1/2 in. L by 1 in. W)	834769-00	Ea	-
Label (Printed: METHOD II PACKAGE, etc) (6 in. L by 2-1/2 in. W)	834770-00	Ea	-
Label (Printed: CORROSIVE LIQUID) (Air transport)	873918-00	Ea	-
Label (Printed: ALKALINE CAUSTIC LIQUID)	873919-00	Ea	-
Lacquer (Aluminum, built-in spray)	TT-L-50e, Type I, aluminized	-	-
Lacquer (Aluminum, kit)	TT-L-32, Aluminized	-	8
a. Paint (Aluminum color, vinyl resin base)	830076-00	5 gal	8
b. Lacquer (Aluminum, built-in spray)	TT-L-50e, Type I, Aluminized	-	-
Lacquer (Black, lusterless)	TT-L-20a, Black, No. 37038	-	3
Lacquer (Blue, lusterless)	TT-L-20a, Blue, No. 35109	-	3
Lacquer (Clear, MIL-L-7178)	TT-L-32, Clear	-	9
a. Lacquer (Clear)	TT-L-0058c, Type I, Class 1	-	9
b. Lacquer (Clear, built-in-spray)	876330-00	16 oz	9
Lacquer (Interior green, lusterless)	TT-L-20a, Green, No. 34151	-	-
Lacquer (OD, lusterless)	TT-L-20a, OD, No. X-34087	-	3
Lacquer (OD, built-in spray)	837589-00	16 oz	10

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TABLE I  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Lacquer (Purple, lusterless)	TT-L-20a, Purple, No. 37144	-	3
Lacquer (Red, lusterless)	TT-L-20a, Red, No. 31136	-	3
Lacquer (Sand, lusterless)	832462-00	Qt	11
Lacquer (White, lusterless)	TT-L-20a, White, No. 37875	-	3
Lacquer (Yellow, lusterless) NOTE: Following 2 items alternates for stencil- ing purpose only	TT-L-20a, Yellow, No. 33538	-	3
a. Paint, Stencil (Yellow)	TT-P-98b, Type I, Yellow	-	12
b. Lacquer (Yellow, stencil)	807688-00	Gal	12
Lubricant, Dry Film (Lubri Bond, Type B)	828286-00	Qt	-
Lubricant, Mold (Vydux AR)	268643-00	Qt	-
Lubricating Oil, General Purpose (Ensis, No. 103)	MIL-L-3150A	-	-
Lubricating Oil, General Purpose	MIL-L-3150A	-	-
Marker, Electrical Wire, Pressure-Sensitive Adhesive	MIL-M-22106A, Type I or IV, 3/4- in. L, (Nos. 1 through 33)	-	-
Marker, Electrical Wire, Pressure-Sensitive Adhesive	MIL-M-22106A, Type I or IV, 3/4- in. L, (Nos. 34 through 66)	-	-
Marker, Electrical Wire, Pressure-Sensitive Adhesive	MIL-M-22106A, Type I or IV, 3/4- in. L, (Nos. 67 through 99)	-	-
Marker, Electrical Wire, Pressure-Sensitive Adhesive	MIL-M-22106A, Type I or IV, 3/4- in. L, (Letter "C")	-	-
Marker, Electrical Wire, Pressure-Sensitive Adhesive	MIL-M-22106A, Type I or IV, 3/4- in. L, (Letter "F")	-	-
Marker, Electrical Wire, Pressure-Sensitive Adhesive	MIL-M-22106A, Type I or IV, 3/4- in. L, (Letter "T")	-	-
Methanol, ACS	Technical Grade	-	-
Methyl Ethyl Ketone (Technical)	TT-M-261b	-	-
Methyl Isobutyl Ketone	TT-M-268b	-	-
Naptha, Aliphatic (Type II)	TT-N-95b, Type II	-	-
Paint (Chrome yellow, built-in spray)	837861-00	16 oz	10
Paint (Flat black, built-in spray)	837862-00	16 oz	10
Paint, Heat Resisting (White)	832820-00	Gal	13
Paint (Gray, built-in spray)	837859-00	16 oz	10

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**TABLE I**  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Paint (Ocean gray)	837634-00	Gal	14
Paint (White, built-in spray)	837860-00	16 oz	10
Paint, Stencil (Blue)	TT-P-98b, Type I, Blue	-	12
Paint, Stencil (Purple)	TT-P-98b, Type I, Purple	-	12
Paint, Vinyl-Alkyd (Gray, outside)	MIL-P-15936B	-	15
Paper, Kraft, Untreated and Unbleached	UU-P-268e	-	-
Paper, Packaging (VCI treated, aluminum foil backed)	MIL-P-3420, Type I, Class 1, Style C	-	-
Paper, Packaging (VCI treated, Kraft backed)	MIL-P-3420, Type I, Class 1, Style A	-	-
Paper, Wrapping, Laminated and Creped (Type I) (formerly Barrier Material Non-corrosive (crepe))	MIL-P-130D, Type I, 36 in. wide	-	-
Paper, Wrapping, Chemically Neutral	MIL-P-17667B, Type II, Class 1, Roll, 33 in. wide	-	-
Paper, Wrapping, Laminated and Creped (Heavy duty) (36 in. W by 100 yd L)	829872-00	Roll	-
Paper, Wrapping, Tissue	UU-P-553b, Type II, Class 1	-	-
Pigment, Aluminum	TT-P-320	-	-
Plate, DOT Identification	272501-00	Ea	-
Plywood, Container Grade (4 by 8 ft sheet)	NN-P-530, Grade 1, Class 1	-	-
Plywood, Flat, Panel (Exterior type, 4 by 8 sheet)	AC or BC	-	-
Primer Coating, Epoxy (Kit, 2 gal)	872178-00	Ea	27
Primer Coating (Green, zinc chromate)	MIL-P-8585A, Color T	-	16
Primer Coating (Synthetic, wood and ferrous metal surfaces)	TT-P-636c	-	-
Primer Coating, Vinyl (Red)	872255-00	Gal	26
Primer Coating (Vinyl-zinc chromate)	MIL-P-15930B	-	17
Primer Coating (Yellow, zinc chromate)	MIL-P-8585A, Color Y	-	16

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TABLE I  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Protector, Packing-List (Waterproof fiberboard)	PPP-P-700a, Size 4	-	-
Remover, Paint	TT-R-251h, Type III, Class A	-	-
Scouring Powder (Glass cleaning)	P-S-320b	-	-
Seal, Lead (With No. 23A(steel)WG wire, 10 in. L)	828446-00	Ea	-
a. Wire, Steel, Carbon (No. 23, ASWG) (100-ft lg spool)	811461-00	Ea	-
b. Seal, Lead	835267-00	Ea	-
Seal, Lead (With No. 26-30 AWG copper wire, 24 in. L)	840045-00	Ea	-
Seal, Steel Strapping (For 5/8-in. steel strap)	805418-00	Ea	-
Seal, Steel Strapping (For 1-1/4-in. steel strap)	805417-00	Ea	-
Sealing Compound (Hysol 13-080, 3-5 g kit)	870377-00	Ea	22
Solvent, Dry Cleaning (Stoddard)	P-D-680, Type I	-	-
Staple, Ribbon Wire (For 5/8-in. steel strap)	805419-00	Lb	-
Staple, Ribbon Wire (For 1-1/4-in. steel strap)	803265-00	Lb	-
Steel Strapping, Flat (5/8-in. W or 1-1/4 in. W)	QQ-S-781, Type I, Class B, Grade 2 or	-	-
Steel Strapping, Flat (5/8-in. W or 1-1/4 in. W)	QQ-S-781, Type I, Class A	-	-
Strike, Catch	801497-00	Ea	-
Tag, Blank (Manila, w/wire attached)	UU-T-81, Type B, Class 2, Grade 20 WR, Size 6, Manila (w/wire and metal eyelet)	-	-
Tag, Blank (Yellow, w/wire attached)	UU-T-81, Type B, Class 2, Grade 20 WR, Size 5, Yellow (w/wire and metal eyelet)	-	-
Tag, Blank (Red, w/wire attached)	UU-T-81, Type B, Class 2, Grade 20 WR, Size 5, Red (w/wire and metal eyelet)	-	-
Tape, Pressure-Sensitive, Adhesive (Cellophane, clear)	L-T-90C, Type I, Class A, 2-1/2 in. or 1 in.	-	-

(Continued on next page)

TABLE I  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Tape, Gummed, Waterproof	PPP-T-45b, Type I, 3 in.	-	-
Tape, Gummed, Water resistant	PPP-T-76b, 3 in.	-	-
Tape, Insulation, Electrical (Yellow plastic)	MIL-I-7798A, 0.007 in., Yellow, 3/4 in.	-	-
a. Tape, Insulation, Electrical (Black, MMM No. 33)	MIL-I-7798A, 0.007 in., Black, 3/4 in.	-	-
b. Tape, Insulation, Electrical (Yellow plastic)	MIL-I-7798A, 0.010 in., Yellow, 1/2 in.	-	-
c. Tape, Insulation, Electrical (Black plastic)	MIL-I-7798A, 0.010 in., Black, 1/2 in.	-	-
Tape, Gummed (Filament reinforced)	PPP-T-97C, Type IV, 1 in.	-	-
Tape, Pressure-Sensitive, Adhesive (Black, MMM No. 870)	PPP-T-97C, Type IV, 1 in.	-	-
Tape, Pressure-Sensitive, Adhesive Filament Reinforced	PPP-T-97C, Type IV, 1 in.	-	-
Tape, Pressure-Sensitive, Adhesive (Lead foil)	HH-T-0029, 1 in. or 2 in.	-	-
Tape, Pressure-Sensitive, Adhesive (Masking)	UU-T-106C, Type I or II, 1 in. or 2 in.	-	-
Tape, Pressure-Sensitive, Adhesive (Aluminum foil) (2in. W by 60 yd L)	806361-00	Roll	-
Tape, Pressure-Sensitive, Adhesive (Yellow plastic, vinyl)	PPP-T-66d, Type II, Class 2, Yellow, 1/4 in. or 1 in.	-	-
Tape, Pressure-Sensitive, Adhesive (Red)	PPP-T-60b, Type IV, Class 1, 2 in., Red, No. 21136	-	-
Tape, Pressure-Sensitive, Adhesive (Red vinyl, 3 in. W)	PPP-T-66d, Type I, Class 2, Red, 3 in.	-	-
Tape, Pressure-Sensitive, Adhesive (OD, Class 1)	PPP-T-60b, Type IV, Class 1, 2 in., OD, No. 24087 or No. 34087	-	-
Tape, Pressure-Sensitive, Adhesive (Vinyl, blue satin finish)	UU-T-94b, Class 2, Blue, 1/2 in.	-	-
Tape, Pressure-Sensitive, Adhesive (Waterproof, transparent)	PPP-T-60b, Type V, Class 2, Transparent, 1 in. or 2 in.	-	-
Tape, Pressure-Sensitive, Adhesive (Water resistant)	PPP-T-76b, 2 in. (Continued on next page)	-	-

**TABLE I**  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Tape, Pressure-Sensitive, Adhesive (MMM No. 478, yellow) (1-1/2 in. W by 36 yd L)	873792-00	Roll	-
Tape, Pressure-Sensitive, Adhesive (Red, marking)	L-T-90C, Type I, Class B, Red, 1/4 in. wide	-	-
Tape, Pressure-Sensitive, Adhesive	L-T-90C, Type I, Class B, Black, 1 in. wide or wider	-	-
Tape, Pressure-Sensitive, Adhesive (Transfer, adhesive both sides)	UU-T-91, Type I, Class 1, 2 in.	-	-
Tape, Putty (3/4 in. W by 50 ft L)	827384-00	Roll	-
Tape, Textile (White cotton)	DDD-T-86e, Type I, Class 2, 1 in., White	-	-
Tape, Textile (Scarlet nylon) (15/16 in. W by 10 yd L)	814065-00	Roll	-
Tape, Textile (Red nylon) (2-1/8 in. W by 10 yd L)	812873-00	Roll	-
Thinner, Dope and Lacquer	TT-T-266b	-	-
Thinner, Dope and Lacquer	MIL-T-19544	-	-
Thinner, Epoxy Enamel	876933-00	Gal	31
Thinner, Epoxy Coating	876934-00	Gal	32
Thinner, (No. 81)	872256-00	Gal	25, 26
Thinner, Paint, Mineral Spirits	TT-T-291c, Grade 1	-	-
Thinner, Vinyl Coating	834544-00	Qt	-
Toluene (Technical)	TT-T-548c	-	-
Trichloroethane (Technical)	O-T-620c	-	-
Trichloroethylene (Technical)	O-T-634b, Type I	-	-
a. Solvent Chlorinated (Xythene)	O-T-620c	-	-
b. Tetrachloroethylene (Perchloroethylene, technical)	830264-00	5 gal	-
c. Trichlorotrifluoroethane (Commercial, Freon TF)	268641-00	5 gal	-
d. Trichlorotrifluoroethane (Electronic, Freon PCA)	268642-00	5 gal	-
Trichlorotrifluoroethane (Commercial, Freon TF)	268641-00	5 gal	-
Trichlorotrifluoroethane (Electronic, Freon PCA)	268642-00	5 gal	-

(Continued on next page)

TABLE I  
(Continued)

NOMENCLATURE	AEC PART NO. OR SPECIFICATION	UNIT OF ISSUE	USE CODE (Table II)
Twine, Impregnated	MIL-T-713D, Type P, Unwaxed, Class 3	-	-
Varnish (Clear glyptal)	801587-00	Pt	-
Varnish, Insulating, Electrical (Clear)	MIL-I-24092A, Class 105, Type AN	-	18
Varnish (Phenolic resin base)	TT-V-119b	-	19
Wadding, Bound Fiberglass (1 in. thick) (Roll, 36 in. W by 100 ft L)	945054-00	Ea	-
Wadding, Bound Hair (1 in. by 2 ft by 6 ft)	PPP-C-1120, Type IV, Class A	-	-
Wadding, Bound Hair (2 in. by 2 ft by 6 ft)	PPP-C-1120, Type IV, Class A	-	-
Wire, Steel, Corrosion Resistant	QQ-W-423, Form;, Composition FS302 or FS304	-	-
Wire, Steel, Zinc Coated	QQ-W-461, Annealed, FS1005, FS1010, or FS1015	-	-
Wool, Steel	FF-S-740	-	-
Xylene (Technical)	TT-X-916b, Grade B	-	-

TABLE II  
USE AND LIMITATIONS OF MARKING AND TOUCHUP MATERIALS

NOTES

- 1 All items specified for use in organic finish, surface touchup, stenciling, and/or cover coat in the USE column of this table are completely compatible with each other.
- 2 Specific use limitations are given only where known from specifications or laboratory tests. If doubt exists regarding certain combinations of materials, compatibility of materials should be determined by experiencing on test panels prior to use. Besides the specific limitations given in the table, the following are generally incompatible combinations:
  - a. Vinyl insulation sleeving in contact with lacquer finishes
  - b. Lacquer applied on vinyl as finish or as stencil
  - c. Rubber in contact with lacquer, especially under compression
  - d. Painting with lacquer or enamel on rubber cemented to metals
  - e. (Deleted)
  - f. Some epoxy finishes over alkyd enamels or primers
  - g. Chlorinated hydrocarbons (carbon tetrachloride, trichloroethylene, etc) on painted surfaces in cleaning operations
- 3 When thinners recommended by the manufacturer or specific procedures differ from those given in this table, the manufacturer's or procedural recommendations supersede. The following types of thinners are listed in the table; generally, thinners of the same type are interchangeable:

Polarized Thinners

Xylene  
Toluene (Technical)

Nonpolarized Thinners

Mineral Spirits  
Aliphatic Naptha

Neutral Thinners

Dope and Lacquer Thinner  
Acetone  
Methyl Ethyl Ketone  
Methyl Isobutyl Ketone

- 4 The dry-time characteristics are as follows:

- a. A film is considered set to touch when, under slight finger pressure, the film exhibits a tacky condition, but none of it adheres to the finger
- b. A film is considered dry through or dry for handling if it exhibits no loosening, detachment, wrinkling, or other distortion when considerable thumb pressure is exerted and the thumb turned through an angle of 90 degrees in the plane of the film
- c. A film is considered to have reached full hardness when it is very difficult to remove with the fingernail or a knife blade

CODE (Table I)	USE (Note 1)	LIMITATIONS OR REMARKS (Note 2)	THINNER (Note 3)	APPROXIMATE AIR-DRYING TIME (Note 4)		
				To Touch	Dry Through	Full Hardness
1	Surface finish and stenciling on vinyl surfaces	Not compatible with lacquer	Vinyl coating thinner	-	-	4 hr
2	Organic finish; surface touchup; stenciling	-	Xylene-mineral spirits mixture (1-to-1 mixture)	6 min	10 min	72 hr

(Continued on next page)

TABLE II  
(Continued)

CODE (Table I)	USE (Note 1)	LIMITATIONS OR REMARKS (Note 2)	THINNER (Note 3)	APPROXIMATE AIR-DRYING TIME (Note 4)		
				To Touch	Dry Through	Full Hardness
3	Organic finish; surface touchup; stenciling	-	Dope and lac- quer thinner	1-1/2 to 3 min	6 min	48 hr
4	Organic finish; surface touchup; stenciling	-	Xylene	10 min	18 hr	-
5	Protective finish on ferrous metal and wood; primer coat on ferrous metal	If used as primer, compatibility of topcoat must first be determined on test panels. Com- patible with lac- quer (OD) topcoat or touchup ma- terial	Mineral spirits	3 hr (max)	16 hr (max)	72 hr (max)
6	High-gloss finish on primed metal	Air-dry only. Not intended for wood or plastic sur- faces. Requires periodic waxing to prevent chalking	Xylene - mineral spirits (1-to-1 mix- ture)	2 hr	8 hr	48 hr
7	Organic finish; surface touchup; stenciling	-	Aliphatic naptha	45 min	-	8 hr
8	Organic finish; surface touchup; stenciling; clear cover coat for ink stamping (clear lacquer only)	The aluminum lac- quer kit contains lacquer (clear) (MIL-L-7178) and aluminum pigment with mixing in- structions	Dope and lac- quer thinner	-	40 min	-
9	Organic finish; surface touchup; clear cover coat for ink stamping	-	Dope and lac- quer thinner	10 min (max)	40 min	24 hr (max)
10	Minor touchup and stenciling	For extensive use, compatibility with undercoats must first be determined	-	-	-	-

(Continued on next page)

TABLE II  
(Continued)

CODE (Table I)	USE (Note 1)	LIMITATIONS OR REMARKS (Note 2)	THINNER (Note 3)	APPROXIMATE AIR-DRYING TIME (Note 4)		
				To Touch	Dry Through	Full Hardness
11	Organic finish; surface	-	Toluene (technical)	-	5 min	-
12	Stenciling	Brush or spray application; not intended for use with fountain-type stencil brushes. Not compatible with vinyl-coated surfaces	Mineral spirits	10 min (max)	1 hr (max)	-
13	Heat-retardant exterior finish	-	As specified by manufac- turer	-	-	14 hr
14	Formula No. 5-0 for outside ship- board finish	-	Mineral spirits	1 hr	8 hr	-
15	Formula No. 122-27 for use on primed or pretreated out- side shipboard surfaces	-	1-to-1 mix- ture toluene (technical) and methyl isobutyl ketone	15 min	30 min	-
16	Organic finish; surface touch- up	-	Toluene (technical)	5 min	30 min	6 hr*
17	Formula No. 120 primer for use on pretreated metal surfaces	Compatible with vinyl-alkyd paint (gray, out- side). Not to be used on bare metal	1-to-1 mix- ture toluene (technical) and methyl isobutyl ketone	15 min	30 min	-
18	Protective coat- ing for electro- motive equipment; clear cover coat for ink stamping	Brush or spray application; air- dry only	Mineral spirits	-	8 hr	-
19	Protective coat- ing for wood, metal, and doped fabrics; clear cover coat for ink stamping	-	Mineral spirits	2-1/2 hr	8 hr	-
(Continued on next page; see footnote at end of table)						

TABLE II  
(Continued)

CODE (Table I)	USE (Note 1)	LIMITATIONS OR REMARKS (Note 2)	THINNER (Note 3)	APPROXIMATE AIR-DRYING TIME (Note 4)		
				To Touch	Dry Through	Full Hardness
20	High gloss finish for metals	Spray application only (approx 50 psi)	Dope and lac- quer thinner	10 min	-	-
21	Organic finish; surface touchup	Air drying; brush or spray applica- tion. Spray appli- cation will dry hard in 30 min	As specified by manufacturer	20 min	-	16 hr
22	Protective coat- ing for fiberglass	-	Supplied in kit	-	10 hr	72 hr
23	Organic finish; surface touchup	-	Xylene-min- eral spirits mixture (1-to- 1 mixture)	1/2-2 hr	-	8 hr
24	Special finish for metals; applied over epoxy pri- mer coating	-	As specified by manufacturer	20 min	30 min	4 hr
25	Special finish for metals; applied over vinyl primer coating (red)	Not compatible w/ lacquer (stencilled markings)	Thinner No. 81	30 min	4 hr	24 to 48 hr
26	Priming surfaces prior to applica- tion of vinyl coat- ing (aluminum)	-	Thinner No. 81	20 min	-	3 hr
27	Priming surfaces prior to applica- tion of coating compound (polyurethane)	-	As specified by manufacturer	10 min	45 min	2 hr
28	Special marking material; kit in- cludes clear cover-coat material	-	As specified by manufacturer	-	Base - 1 hr Cover- 30 min	-
29	Special finish	-	As specified by manufacturer	-	1 hr	24 hr
30	Special finish for plastics	-	As specified by manufacturer	-	-	10 to 12 hr

(Continued on next page; footnotes are at end of table.)



TABLE II  
(Continued)

CODE (Table I)	USE (Note 1)	LIMITATIONS OR REMARKS (Note 2)	THINNER (Note 3)	APPROXIMATE AIR-DRYING TIME (Note 4)		
				To Touch	Dry Through	Full Hardness
31	Epoxy finish, surface touchup	Do not intermix components from different manufacturers	Epoxy enamel thinner	45 min	1-1/2 to 3 hr	7 days
32	Epoxy finish, surface touchup	Do not intermix components from different manufacturers	Epoxy coating thinner	30 min	3 hr	72 hr

\*Recoat times differ depending upon the type of finish. Refer to organic finish procedures in paragraph 4-7

## SECTION 2

### FABRICATION

#### 2-1 GENERAL.

This section contains details for the preparation and fabrication of bags, plastic windows, fiberboard containers, wood boxes, and crates of various kinds used for the packaging and subsequent storage or shipment of units and/or assemblies. Variations of methods of fabrication may be required under certain circumstances. Such variations may be used depending on materials and equipment available or time element.

#### 2-2 FABRICATION MATERIALS.

The part number or specification and unit of issue information listed in table I is provided as a guide for the procurement of fabrication materials. Alternate materials other than those listed in table I, which are at least the equivalent of those specified, may be used.

#### 2-3 WATER-VAPORPROOF BAG (Flat).

##### 2-3.1 FABRICATION.

2-3.1.1 To determine the size of a flat bag made from flexible water-vaporproofed barrier material (Class 1) for a given fiberboard container, add the container height and width, plus 1 in. This will establish the inside width of the bag. To determine the bag length, add the height plus the length.

2-3.1.2 To allow for a 1-in.-wide seal on the width, add 2 in. to the width.

2-3.1.3 To allow for a 1-in.-wide seal on the length, and to supply a sufficient quantity of excess barrier material which will permit two additional seals (for inspection and resealing), add 6 in. to the length.

2-3.1.4 To fabricate the bag, cut two pieces of barrier material to predetermined size and seal the two long dimensions together.

2-3.2 HEAT SEAL. For all sealing operations, use sealing iron and seal in accordance with instructions furnished with the material, printed on the reverse side of the material, or furnished with the sealing iron. When no sealing instructions are given, use 450°F, 30 psi, and a 2.5-sec dwell. If necessary, make test sample seal in accordance with material or sealer specifications and adjust sealer to give a satisfactory seal.

2-3.2.1 Seal one end of the bag, insert the container in the bag, and seal the remaining open end except for approximately 1-1/2 in.

#### CAUTION

An attempt to create a vacuum when removing air from bag may cause bag to rupture.

2-3.2.2 Insert vacuum tool and remove excess air so that water-vaporproof bag will be formfitting to the container. Remove vacuum tool and make the final seal at once.

2-3.2.3 Fold the excess barrier material (flaps of bag) against the ends or sides of the container and secure in place with pressure-sensitive adhesive tape.

#### 2-4 WATER-VAPORPROOF BAG (Square or Rectangular).

##### 2-4.1 FABRICATION.

2-4.1.1 To determine the size of a water-vaporproof bag made from flexible water-vaporproofed barrier material (Class 1) of given dimensions, cut two pieces of barrier material 2 in. larger than the ends of the part being fitted, two pieces 2 in. larger than the sides, and two pieces 2 in. larger than the bottom (or top) for the bottom and top; henceforth, these pieces are called ends, sides, and bottom, respectively.

2-4.1.2 When required, prepare a window for the card humidity indicator in the bag by cutting an opening in the barrier material. Using pressure-sensitive adhesive tape (lead foil), seal a transparent plastic window over the cutout. Prior to final sealing of the bag, tape a card humidity indicator inside the window, with the printed side of the indicator against the plastic. When taping the card humidity indicator in place, do not cover the indicating spots.

2-4.1.3 When required, cut a hole in the top of the bag to receive a plug humidity indicator. Install indicator in accordance with procedures in paragraph 2-5.

2-4.2 HEAT SEAL. For all sealing operations, use sealing iron and seal in accordance with instructions furnished with the material, printed on the reverse side of the material, or furnished with the sealing iron.

When no sealing instructions are given, use 450°F, 30 psi, and a 2.5-sec dwell. If necessary, make test sample seal in accordance with material or sealer specifications and adjust sealer to give a satisfactory seal.

2-4.2.1 Seal the lower edges of the two sides and two ends of the edges of the bottom. Draw the side and end pieces up to a vertical position and seal the four vertical edges. This forms a rectangular box-like bag without a top.

2-4.2.2 Insert component to be packed and seal the top in place except for approximately 1-1/2 in. If the component being packaged is heavy and hard to handle or is packed in accordance with method IIa (paragraph 5-3.5.2), invert the bag and place it over the item being packed to aid the operation.

### CAUTION

An attempt to create a vacuum when removing air from bag may cause bag to rupture.

2-4.2.3 Insert vacuum tool and remove excess air from the bag. Remove the vacuum tool and make the final seal at once.

## 2-5 PLUG HUMIDITY INDICATOR.

Plug humidity indicator (P/N 828791-00) may be removed and/or installed on protective bags used in packaging.

2-5.1 Unscrew the hexagon head containing the indicator card from the hexagon-head threaded bushing and remove them, as well as the round flat washer, from the hole in the bag.

2-5.2 If a replacement plug humidity indicator or parts of a replacement plug humidity indicator are to be installed, disassemble the plug humidity indicator into its three component parts.

2-5.3 If not accomplished, cut a round hole in the top of the bag, cutting it just large enough to permit the threaded shank of the hexagon head (containing the indicator card) to be inserted through it.

2-5.4 Install the externally threaded shank through the hole, from the outside of the bag. Install the round flat washer over the externally threaded shank and seat it against the bag and seat the bag against the hexagon head. Install the hexagon-head threaded bushing on the threaded bushing on the threaded shank and tighten it securely.

## 2-6 INSTALLATION OF LINER IN BOXES USING BARRIER MATERIAL.

To line boxes, use flexible waterproofed barrier material (Class E-1). Refer to procedures in paragraph 2-6.1 to determine the length and width of material required. If the width required is greater than the width of the barrier material available, line the box in accordance with procedures in paragraph 2-6.3; otherwise, use procedures provided in paragraph 2-6.2.

### NOTE

When the use of a liner in a wood box is specified for a method II pack shipping container, it is permissible to omit the liner, provided each interior parcel is overwrapped with either flexible waterproofed barrier material (Class E-1) or flexible greaseproofed-waterproofed barrier material (crepe).

### 2-6.1 SELECTION OF STOCK.

2-6.1.1 TO DETERMINE LENGTH OF PAPER. As viewed from the open top of the box, measure the inside length of one of the sides (front to back) and the inside length of either the front or back (side to side). Add the figures obtained, multiply by two, and add 6 in. for overlap. The resultant figure is the length of paper required.

2-6.1.2 TO DETERMINE WIDTH OF PAPER. Measure the inside width of the box; take two-thirds of this figure and multiply by two. To this result, add the inside height of the box. This total will be the total width of paper required.

### 2-6.2 INSTALLATION OF RELATIVELY WIDE STOCK.

#### 2-6.2.1 METHOD 1.

2-6.2.1.1 After the length and width of paper have been determined, lay the paper out flat. Make a fold parallel to the long dimension and at a distance from one edge equivalent to approximately two-thirds of the box width. When the fold is completed, roll the paper up the long way, loosely, with the folded section to the inside. Insert the roll into the box in a vertical position, with the folded section to the bottom.

2-6.2.1.2 Beginning at the middle of one side of the box (never at a corner), unroll the paper around and against the inside vertical walls of the box, still with the folded section to the bottom.

2-6.2.1.3 Smooth the paper against the vertical sides, and carefully crease the paper into the vertical corners. Remove the paper from the box.

2-6.2.1.4 Apply adhesive (EC-194) to the sides of the box.

2-6.2.1.5 Beginning at the sides, force the folded section of paper down to the bottom of the box. Fold the end flaps last in such a manner that there will be a triangular flap at each end. Cement the flaps to the bottom.

## 2-6.2.2 ALTERNATE METHOD.

2-6.2.2.1 Determine required length of paper in accordance with instructions in paragraph 2-6.1.

2-6.2.2.2 On the paper, measure a distance equal to the height of the box (inside) plus 2 in., and fold over the amount left between that and the edge. When the fold is completed, roll the paper up the long way, loosely, with the folded section to the inside. Insert the roll into the box in a vertical position, with the folded section to the bottom.

2-6.2.2.3 Beginning at the middle of one side of the box (never at a corner) unroll the paper around and against the inside vertical walls of the box, still with the folded section to the bottom.

2-6.2.2.4 Smooth the paper against the vertical sides, and crease the paper into the vertical corners.

2-6.2.2.5 Apply adhesive (EC-194) to the sides of the box and press the paper firmly in place.

2-6.2.2.6 Beginning at the sides, force the bottom folded section of paper down to the bottom of the box.

2-6.2.2.7 Cut one piece of paper equivalent to the inside width and length of the box.

2-6.2.2.8 Place the piece of paper cut to inside box dimensions (paragraph 2-6.2.2.7) over the folds in the bottom, and seal in place with adhesive.

2-6.2.2.9 Fold the 2-in. overlap back over the top edge of the box and seal in place with adhesive.

2-6.2.2.10 Cut one piece of paper the same size as the lid of the box and cement to the inside of the lid.

2-6.3 INSTALLATION OF RELATIVELY NARROW STOCK. If the stock roll of paper is too narrow to fabricate a liner in accordance with procedures in paragraph 2-6.2, proceed as follows:

2-6.3.1 In the middle of the stock sheet, measure a distance equal to the height of the box, and fold over the amount left between that and the sheet edges. Determine the length of the paper in accordance with procedures in paragraph 2-6.1.

2-6.3.2 Cut two pieces of paper each equivalent to the inside width and length of the box.

2-6.3.3 Roll the paper up the long way. Insert the roll into the box. Beginning at the middle (never at a corner), unroll the paper around and against the inside vertical walls of the box.

2-6.3.4 Smooth the paper against the vertical sides of the box, and carefully crease the paper into the vertical corners. Remove the paper from the box.

2-6.3.5 Apply adhesive (EC-194) to the sides of the box.

2-6.3.6 Beginning at the sides, force the bottom folded section of paper down to the bottom of the box. Place one piece of paper (cut in accordance with procedures in paragraph 2-6.3.2) over the folds in the bottom of the box, and seal in place with adhesive.

## 2-7 FIBERBOARD CONTAINERS.

### 2-7.1 GENERAL.

2-7.1.1 These procedures present approved methods for fabricating containers from corrugated fiberboard.

2-7.1.2 These procedures do not prohibit the use of containers of special design when in the judgment of the packaging and shipping agency the nature of the material to be shipped justifies the use of such containers. Insure that each container complies with the specification prescribed in the Department of Transportation regulations for the Transportation of Explosives and Other Dangerous Articles for the particular articles to which those regulations apply.

2-7.1.3 Fabricate containers in accordance with high-grade commercial practice, making them free of imperfections which might affect their utility. Accurately cut, score and/or slot all dimensions of the maker's blank so that the assembled parts of the container fit closely without undue binding. Make all scoring uniformly and of a depth such that only minor surface breaks occur, whether at the time of creasing or of filling and sealing the container.

2-7.1.4 Permit no flap to project beyond an edge of the setup container.

### 2-7.2 DEFINITION OF CLASSES.

2-7.2.1 CLASS 1 - DOMESTIC SERVICE AND INTERIOR CONTAINERS. For domestic shipments not involving sea transportation, subject to storage, re-handling, or reshipment to domestic destinations, or for interior containers where waterproof protection is not required.

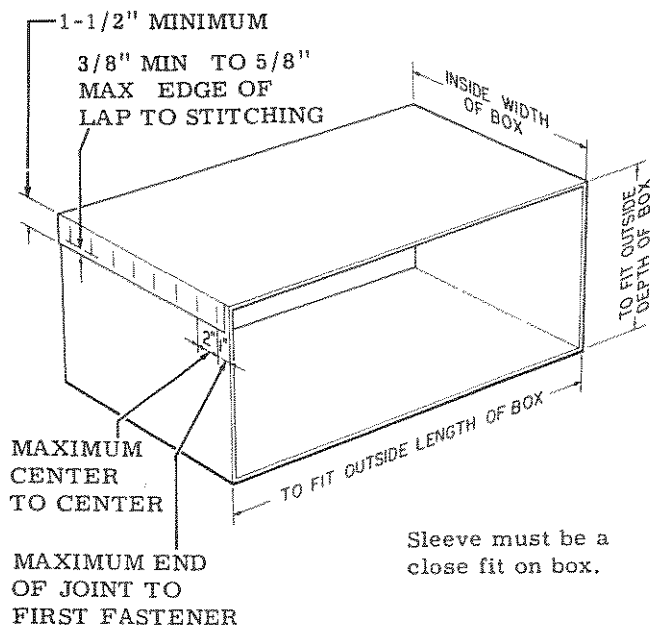


Figure 2-10 Sleeve

## 2-8 STYLE 2 WOOD BOX.

Make containers to the dimensions specified. Dimensions given are inside dimensions.

**2-8.1 LUMBER.** Use reasonably dry No. 2 Common or better grade of the following species of commercial lumber. Use boards free from defects that would materially weaken them or that would cause exposure of the contents of the finished box.

- a. Pine, Ponderosa (Western yellow)
- b. Pine, Sugar
- c. Pine, White
- d. Spruce, Engleman

### e. Fir, White

**2-8.2 PLYWOOD.** Seasoned plywood may be used as an alternate material for the top, bottom, sides, and ends of boxes. When sides of the box are made from plywood, refer to paragraph 2-8.2.2; use steel angles. For plywood boxes, use 1-in. nominal lumber for cleats, battens, and risers.

**2-8.2.1** Because of the series of laminated veneers (plies) of which plywood is constructed, plywood must be worked carefully to avoid splintering and splitting of the exterior surfaces.

**2-8.2.1.1** Prior to sawing plywood, prescore both sides on the marked cutoff lines with a sharp chisel or other sharp tool. Scoring should be deep enough to separate the top layer of veneer on both sides. This will help prevent splintering and splitting of surfaces. Cut with a fine-tooth saw.

**2-8.2.1.2** An alternate method of preventing splintering is to firmly press a layer of cellophane tape over cutoff line on the underside of the panel. Cut from the top with a fine-tooth saw.

**2-8.2.1.3** Prior to drilling plywood, clamp a piece of scrap wood tightly to the far side of the area to be drilled. This will prevent splintering of the surface when drilling.

**2-8.2.2** Use 1/2- to 3/4-in., 5-ply, container-grade plywood or flat panel plywood (exterior type).

### 2-8.3 MINIMUM WIDTH OF PIECES OF LUMBER.

Select lumber for sides, tops, bottoms, and ends so that no piece is less than 2-1/2 in. wide.

### 2-8.4 CLEATS.

**2-8.4.1** Cut cleats from 1-in. nominal lumber not less than 2-1/2 in. wide. Use wider cleats if the weight of the container justifies their use. The maximum divergence of grain in each cleat is not to exceed 1 in. in 10 in. of length.

TABLE VI  
REQUIREMENTS FOR BATTENS AND SKIDS FOR BOXES

OVER-ALL LENGTH (Inches)	NUMBER OF TOP AND BOTTOM BATTENS*	NUMBER OF SIDE BATTENS	NUMBER OF SKIDS
<u>60 Lb or less</u>			
0 thru 25	0	0	Not required
More than 25 thru 47	2	0	
More than 47 thru 83	3	1	
More than 83 thru 119	4	2	
<u>Over 60 lb</u>			
More than 0 thru 53	(Same as for 60 lb or less)	(Same as for 60 lb or less)	2
More than 53 thru 80			3
More than 80 thru 119			4
*Bottom battens are omitted when skids are used			

2-8.4.2 Position vertical cleats across the grain of the board(s) and flush with the ends of the end board(s). Locate vertical cleats within 1/16 to 1/8 in. of the top and bottom edges of the end board(s).

2-8.4.3 Position horizontal cleats flush with the top and bottom edges of the end board(s). Horizontal cleats extend between the outer vertical cleats.

2-8.4.4 Place additional vertical cleats on the end board(s) when the span between vertical cleats exceeds 45 in., and space the cleats evenly, extending them between horizontal cleats.

2-8.4.5 If the boxes are 11 in. or less in height, solid ends consisting of 2-in. nominal lumber may be used. (No cleats are required.)

#### 2-8.5 BATTENS.

2-8.5.1 Refer to table VI to determine the number of battens required on sides, top, or bottom of a box. Use battens of the same width and thickness as the cleats.

2-8.5.2 Nail the battens in place so that they run across the grain of the boards to which attached. Space the outer top battens approximately 4 in. from the ends of the box. Install additional battens, where used, by spacing them as evenly as possible and offsetting them slightly from the skids so that the skids will not interfere with the strapping process. If the nature of the contents will permit, place battens inside of the box. When battens are applied to the

outside of the box, locate in the same position as the top battens.

#### 2-8.6 SKIDS.

2-8.6.1 Boxes which weigh more than 60 lb, with or without contents, require two or more skids. Refer to table VI to determine the number of skids required for a box of given length. No skids are necessary if the box and contents weigh less than 60 lb.

2-8.6.2 Place the two outside skids flush with the ends of the bottom boards and across the grain of the lumber or parallel to the bottom horizontal cleat.

2-8.6.3 Bevel the skid to half its depth at a 45-degree angle, as shown in figure 2-11.

2-8.6.4 Additional skids will be required when the unsupported span exceeds 45 in. Space additional skids as evenly as possible.

2-8.6.5 Fabricate skids from 2- by 4-in. nominal lumber and place them so that they ride on the widest surface.

2-8.6.6 Make all skids of a box the same dimensions.

2-8.6.7 Locate skids of identical boxes so they will nest with battens on the tops of other boxes. If top battens and bottom skid fall along the same centerline, offset the skid to the left approximately 1-3/4 in., and offset the top batten to the right approximately 1-3/4 in.

For construction of lid and bottom, 3/4-in. plywood may be used. If nominal lumber is used for sides, angles need not be used.

QUICK-RELEASE  
LATCH

Angles shall be provided for each side of boxes constructed of plywood. Additional angles shall be used when unsupported span exceeds 12 in. in length. Attach angles with 2d nails. Angles are not required on boxes constructed of lumber.

BATTEN

CLEATS

SKID

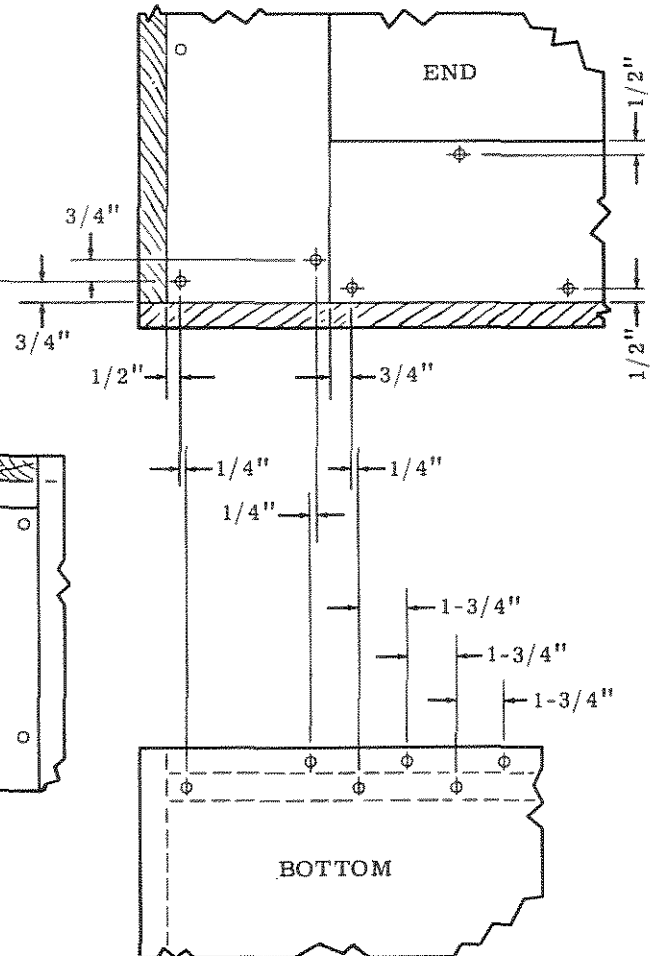
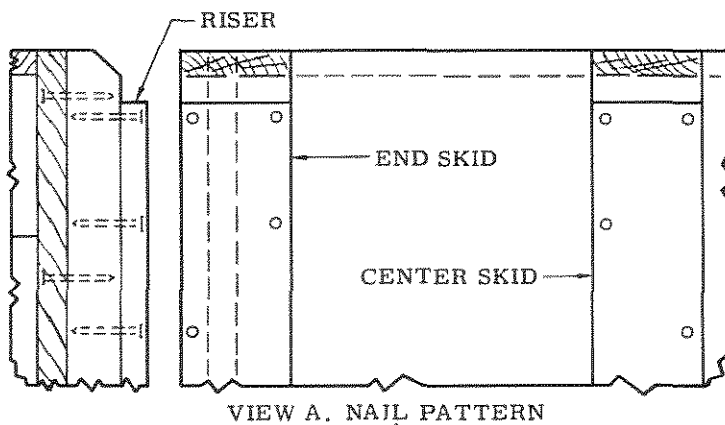
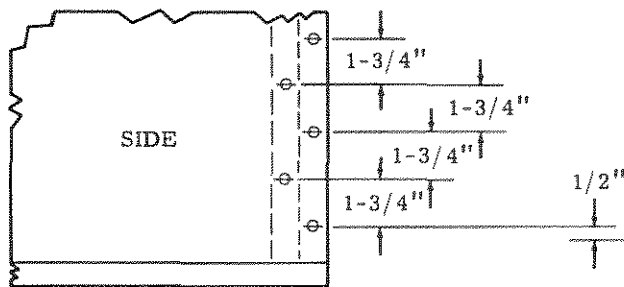
RUBBING STRIP  
OR RISER

VIEW A

ADDITIONAL  
BATTEN

6-1/8"  
HOLES

ANGLE  
18" GA STEEL



Solid ends of 2-in. lumber may be used to construct boxes 11 in. in height and 36 in. in width, or under.

Figure 2-11 Construction Details for Typical Style 2 Box

## 2-8.7 RUBBING STRIPS (Or Risers).

2-8.7.1 Use rubbing strips for all boxes which, with their contents, will weigh more than 150 lb.

2-8.7.2 Make rubbing strips the same width as the skid, of 1-in. nominal lumber, and approximately 4 in. shorter than the skid.

2-8.7.3 Locate the rubbing strip approximately in the center of the bottom of the skid.

2-8.8 ENDS, SIDES, TOP, AND BOTTOM. Place the sides, top, and bottom of the box so that they are flush with the outside of the end cleats (figure 2-11).

2-8.8.1 If 2-in. nominal lumber is specified in the applicable packaging procedure for the bottom of the box, install the sides of the box so that they overlap the bottom. Nail 2-in. lumber to the end cleats with 12d or 16d nails.

2-8.8.2 The ends of boxes may be fabricated from two layers of plywood. If done, rest the inner layer on the bottom of the box and against the inside surface of the sides. Install the outer layer so that it overlaps both the bottom and sides.

## 2-8.9 NAILS.

### NOTE

Lengths of nails are indicated by penny (d). The length of a specified d size nail may vary as much as 1/8 to 1/4 in. Lengths corresponding to the more usual d sizes of nails are; 4d, 1-1/4 in.; 6d, 2 in.; 8d, 2-1/2 in.; 10d, 3 in.; 20d, 4 in., and 60d, 6 in.

2-8.9.1 Use standard box, cement-coated, or chemically etched nails. Other fasteners may be used provided their total resistance to lateral displacement equals or exceeds the resistance to lateral displacement provided by the total number of nails specified herein. Stagger such fasteners and determine their lengthwise spacing by their total resistance to lateral displacement.

2-8.9.2 Pass nails through both the cleat (or batten) and end (or side, top, or bottom) and clinch them not less than 1/8 in. Drive nails in two rows, spaced as shown in figure 2-11 and as specified in paragraph 2-8.9.1.

2-8.9.3 Use 8d or 6d nails for fastening sides, top, and bottom to end boards and cleats.

2-8.9.4 Attach two outer skids to the bottom with 10d or 16d nails driven from the outside into the cleat and end boards. Clinch all protruding nails.

2-8.9.5 Attach additional skids to the box with 8d nails driven from the inside.

2-8.9.6 Attach rubbing strips (or risers) to the bottom of the skid with 6d nails.

2-8.9.7 When tops or bottoms are nailed to the sides, space the nails 8 to 10 in. apart. No nails are required in the top when quick-release latches are used.

2-8.9.8 If two layers of plywood are used for the ends of the box, nail the inner layer from the sides and bottom, and nail the outer layer to the ends of the side and bottom boards.

2-8.9.9 Nail each end of the pieces in the sides, top, and bottom with no fewer than two nails, half of which are driven into the end board(s) and the other half into the cleat(s). If quick-release latches are required, do not nail the top.

2-8.9.10 Approximately one-half of the nails used to secure lengthwise boards forming the top, bottom, or sides to cleat edge shall be driven into the end boards, and the remainder into the cleat (figure 2-11).

2-8.9.11 Space nails holding the sides, tops, or bottoms to the end boards, cleats, or battens to average not farther than 2-1/2 in. apart. Space the first and last nail one-half of the specified spacing distance from the end of the nailing edge. If it is necessary to exceed this spacing because of small knots, cracks, or joints between boards, increase the distance between any two adjacent nails to a maximum of 3-1/2 in.

2-8.9.12 Drive nails so that neither the head nor point will project above the surface of the wood. Occasional overdriving is permitted, but do not overdrive any nail more than one-eighth the thickness of the piece.

2-8.9.13 If the specified nails are not available, use one size larger or one size smaller. If smaller nails are used, reduce the spacing to approximately 1/4 in. closer.

2-8.10 QUICK-RELEASE LATCHES. Component boxes, regardless of the type of shipment, will be equipped with quick-release latches. Wooden containers other than special design used to pack T-, H-, or miscellaneous equipment for domestic or Class B export shipments, will not require quick-release latches unless specified by the procuring agency.

2-8.10.1 Unless otherwise specified, use quick-release latches for securing the top of all boxes serving as exterior shipping containers for export or war reserve shipments.



2-9.3.2 Fasten cleats to each other (through the plywood) with five 6d nails.

2-9.3.3 To fasten 1-in. bottom boards to the skids, use 8d nails. To fasten 2-in. bottom boards, use 16d nails. Use no fewer than two nails on any board. Fasten 6-in. boards with 3 nails, 8-in. boards with 4 nails, and 12-in. boards with 5 nails.

2-9.3.4 To fasten cleats to the plywood top, use 6d nails, staggered approximately every 3 in. Drive nails 3/8 to 1/2 in. from the edge of the cleat wherever practicable. Use three or four evenly spaced corrugated fasteners at the joints where the cleats come together.

2-9.3.5 To attach plywood splices to plywood sides, ends, or top, use 4d nails staggered about every 3 in.

2-9.3.6 Assemble Style A crates by nailing, except for the bottom, which is always assembled to the rest of the crate with wood screws.

2-9.3.7 Use 8d nails for assembling crates. Nail the corners in such a way as to provide a 3-corner lock joint. Space nails along the edges, approximately 12 in. apart.

2-9.3.8 Attach the sides and ends to the bottom with flat head wood screws. Attach the cleats to the edge of the bottom with No. 10 by 2-1/2-in. flat head wood screws. Attach the plywood to the edge of the bottom with No. 8 by 1-1/2-in. flat head wood screws. Space screws approximately 8 in. apart. Use no fewer than two screws in any cleat.

2-9.3.9 If specified in packaging procedures, assemble the panels with No. 16 by 2-1/2-in. flat head wood screws. Space the screws approximately 8 in. apart, but install no screws through plywood alone on any one panel. Use no fewer than two screws in any cleat.

#### 2-9.4 STYLE B CONSTRUCTION DETAILS.

2-9.4.1 Fasten plywood sides and ends to cleats with 6d nails staggered approximately every 8 in.

Drive nails 3/8 to 1/2 in. from the edge of the cleat wherever practicable.

2-9.4.2 Fasten cleats to each other (through the plywood) with five 16d nails.

2-9.4.3 Fasten bottom boards to skids with 16d nails. Use no fewer than two nails in any board. Use 5 nails in 12-in. boards.

2-9.4.4 Fasten cleats to a plywood top with 6d nails staggered approximately every 3 in. Drive nails 3/8 to 1/2 in. from the edge of cleat wherever practicable. Use three or four evenly spaced corrugated fasteners at the joints where the top cleats come together.

2-9.4.5 Attach plywood splices to plywood sides, ends, or top with 4d box nails staggered approximately every 3 in.

2-9.4.6 Assemble all Style B crates with lag bolts.

2-9.4.7 Use size 3/8- by 4-in. lag bolts in assembling crates. Locate the bolts approximately 12 in. apart, but use at least one bolt at each end of every cleat. Install no bolts through the plywood alone on any one panel.

2-9.4.8 Attach each external cleat to the edge of the bottom with 3/8- by 4-in. lag bolts. Attach the plywood to the edge of the bottom with 1/4- by 1-1/2-in. lag bolts, spaced approximately 12 in. apart.

#### 2-9.5 PAINTING OF CRATES.

2-9.5.1 For Class A export and war reserve shipments, apply one coat of primer and one coat of enamel by either brush or spray.

2-9.5.1.1 Apply one coat of primer coating (synthetic, wood and ferrous metal surfaces).

2-9.5.1.2 Apply one coat of enamel (OD, rust inhibiting).

2-9.5.2 Crates used for Class B export, domestic, and DASA shipments need not be painted.

## SECTION 3

### CLEANING

#### 3-1 GENERAL.

3-1.1 This section includes detailed procedures used for various methods or processes of cleaning and drying and are applicable to any component or assembly, as specified.

3-1.2 The cleaning of a component part is the operation of removing any deposit foreign to the composition of the part. The type of cleaning agent and the method of cleaning employed are determined primarily by the materials and equipment available, the composition and complexity of the part to be cleaned, the nature of the deposit to be removed, and the possible hazards involved.

3-1.3 Variations of methods or a combination of methods may be required under certain circumstances. Such variations or combination of methods may be used as required, depending on cleaning materials and equipment available, degree of disassembly, or time element.

3-1.4 Any cleaning process must meet the requirements outlined in figure 3-1.

#### 3-2 SAFETY PRECAUTIONS.

Observe these general safety precautions, as applicable, in conjunction with any other precautions specified in referencing documents or by any applicable Service directives, for cleaning or painting operations.

#### NOTE

The safety precautions provided in the following paragraphs and throughout this manual are only general in nature and indicative of the hazard involved (toxicity, flammability, etc). They are not meant to provide the detailed and specific guidance which would result in completely safe handling of the material or process involved. They are intended only as general precautionary statements from which detailed and specific precautions of complete adequacy for the local situation must be derived.

3-2.1 When applying any solvent, use only clean, lint-free cloths or disposable paper wipes which are free from any previous contamination.

3-2.2 When using toxic cleaning agents, be sure the ventilation rate meets the locally specified minimum, or that the specified type of filter mask is employed.

3-2.3 Do not use a cleaning process on any assembly containing fabric, rubber, plastic, or any other organic materials unless it has been reliably determined that no detrimental effects to the material will result.

#### 3-3 CLEANING MATERIALS.

3-3.1 The information listed in table I is used as a guide for the procurement of cleaning materials.

3-3.2 Materials listed in table I are not to be accepted as a complete listing of cleaning agents. Materials to be used for cleaning, other than those listed in the table or otherwise specified, must have a closed-cup flashpoint above 100°F. Alternate materials must be at least the equivalent of those listed.

3-3.3 Certain materials, which are merely suggested for use in these procedures or the referencing document and which are considered to have a wide range of substitutes, will not be listed in table I. Such items include: toothpicks, pipe cleaners, cotton swabs, tongue depressors, cloth or paper wipes, etc.

3-3.4 Throughout the following procedures for cleaning and drying, disposable paper wipes (lint-free when required) may be substituted freely for clean cloth.

#### 3-4 CLEANING PROCESSES.

When cleaning components, exercise care to avoid obliterating identification marking or causing them to become illegible. If removal of such markings is found to be unavoidable, make a note of markings, then re-mark component subsequent to cleaning operations as noted in accordance with applicable procedures in section 6.

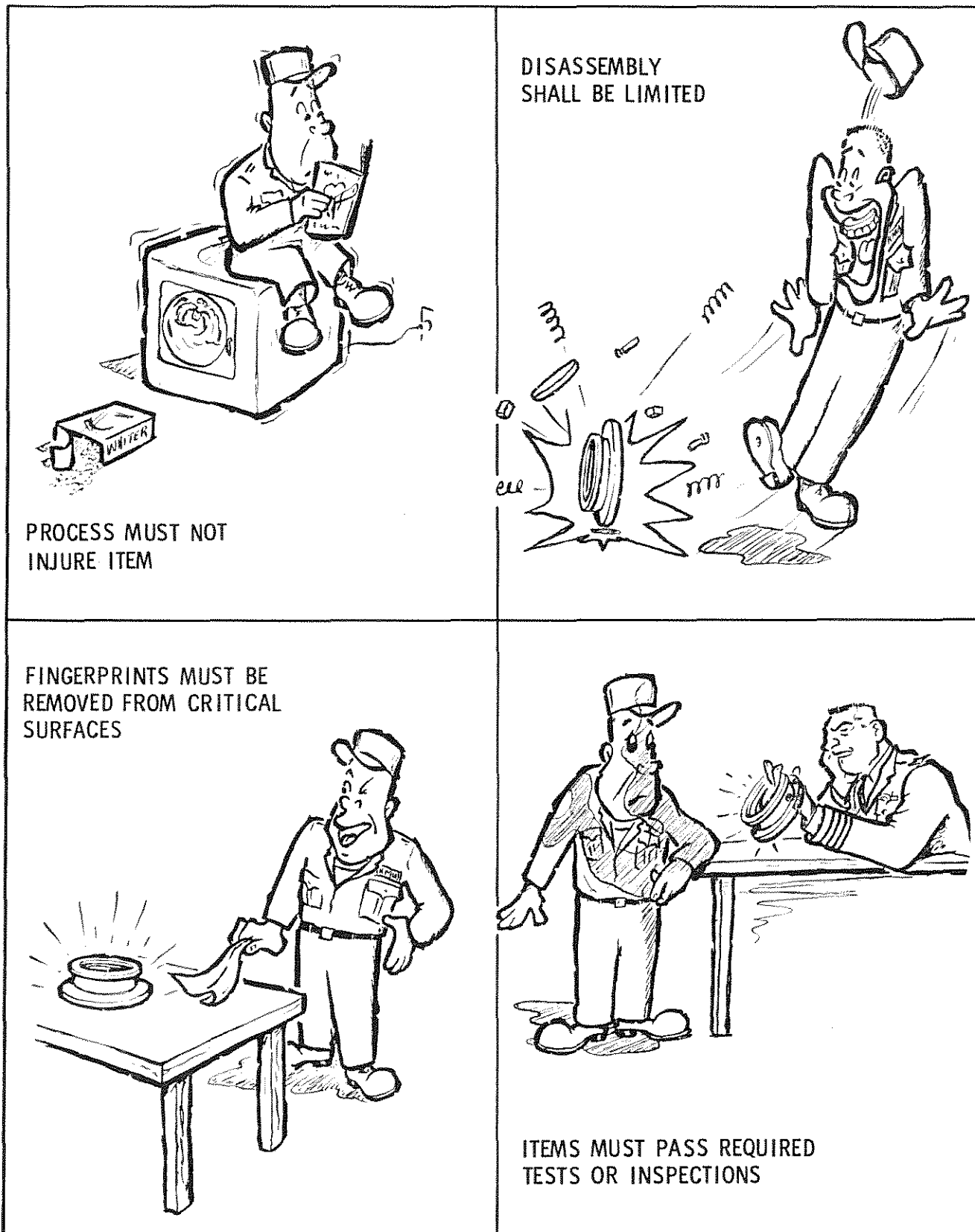


Figure 3-1 Cleaning Process Requirements

### 3-4.1 CLEANING SMALL AREAS WITH STANDARD CLEANING MATERIALS.

#### CAUTION

Avoid trapping any cleaning solvent, including water, in a sealed system. Additionally, avoid cleaning recessed surfaces which would tend to trap any cleaning solvent including water.

3-4.1.1 Observe safety precautions (paragraph 3-2) as applicable.

3-4.1.2 Clean foreign material from substances indicated in table VII, using the materials or methods specified in the table.

3-4.1.3 When applying cleaning materials, use a clean lint-free cloth, disposable paper wipes, or a bristle brush, moistened (damp, not dripping) with the cleaning material. Paper wipes are preferable to cloth.

3-4.1.4 Where a mechanical method is specified in table VII, use a knife, scraper, or other suitable tool that will not damage the component, and scrape and/or peel off the foreign material carefully.

3-4.1.5 Where detergent and hot water is specified in table VII, use any standard commercial detergent. After use of detergent and hot water, rinse or wipe with clean water and dry the area thoroughly (paragraph 3-5) as applicable.

#### NOTE

Whenever the use of detergent and hot water is indicated in table VII, it is the preferred method of cleaning (unless otherwise specified) and should be used whenever possible.

3-4.1.6 Clean excess of newly applied synthetic rubber sealing compounds with trichloroethylene (technical grade) or toluene (technical) before they have cured.

3-4.1.7 (Deleted)

3-4.1.8 When cleaning shear pads, grease and/or oil is to be cleaned from the surface of the rubber block with a clean dry cloth only. The white or yellowish powdery film on the surface of the rubber is not to be removed in excess of the amount that may be wiped off when removing grease and/or oil.

### 3-4.2 CLEANING WITH KEROSENE.

3-4.2.1 Cleaning with kerosene is performed where a slight corrosion-preventive residual oil film is desired. Parts are cleaned by means of a clean lint-free cloth soaked in kerosene or by immersion.

3-4.2.2 When cleaning by immersion, remove parts from tank and hang on hooks or place on racks or in baskets suitable for satisfactory drainage.

3-4.3 CLEANING BY ABRASION. This method may be used for the removal of corrosion and for other surface repair on finished or unfinished surfaces.

#### CAUTION

When abrading an assembled or installed component, take precautions to prevent any particles from entering the equipment. These particles cause abrasion of moving surfaces. A drop cloth may be used as an aid in preventing particles from entering the equipment.

Do not use emery cloth or steel wool when abrading around electrical equipment. Emery or steel wool particles are conductive. Use appropriate grade of sandpaper.

### 3-4.3.1 ABRADING LIMITATION.

3-4.3.1.1 Parts or surfaces machined to close tolerances can sustain only a minimum of filing and/or abrading.

3-4.3.1.2 Corroded structural or other parts may be wire-brushed or abraded only to the extent that they may continue to safely perform their original function.

3-4.3.2 ABRASIVES. The selection of the correct abrasives for the operation to be performed is essential to effective results. In general, abrasives are divided into classes of sandpaper, emery cloth, paper, steel, and aluminum wool; and various powders, each of which is divided into classifications or grades (table VIII).

TABLE VII  
CLEANING OF SMALL AREAS

TYPE OF CONTAMINATION	COMPONENT MATERIAL AND CLEANING METHOD				
	Glass and Plastics	Rubber <sup>1</sup>	Coated Cloth <sup>1</sup>	Uncoated Metal	Coated Metal
OIL AND GREASE (Electrical insulating compound (DC-4), lubricants, and mold release agents)	Detergent and hot water (except polyethylene) <sup>4,5</sup> Dry cleaning solvent (Stoddard)	Detergent and hot water Dry cleaning solvent (Stoddard) Toluene (Technical) for electrical insulating compound (DC-4)	Detergent and hot water Dry cleaning solvent (Stoddard)	Toluene Trichloroethylene <sup>3</sup> Dry cleaning solvent (Stoddard) (use only if not to be painted)	Detergent and hot water Clean only as absolutely necessary, in the same manner as uncoated metal <sup>7</sup>
RUBBER BASE ADHESIVES <sup>8</sup>	Toluene (Technical) <sup>2</sup> Trichloroethylene <sup>2</sup> Detergent and water (with clear water rinse) Alcohol	Mechanical (Paragraph 3-4.1.4)	Toluene (Technical) Trichloroethylene	Toluene (Technical) Trichloroethylene <sup>3</sup>	Detergent and hot water (if adhesive has not cured) Minimal amounts of aliphatic naphtha (type II) or mineral spirits paint thinner (if adhesive has cured) <sup>7</sup>
OTHER ADHESIVES (Epoxy and Vinyl Resin)	Acetone or methyl ethyl ketone (technical) (use before adhesive has cured)	Mechanical (Paragraph 3-4.1.4)	Acetone or methyl ethyl ketone (technical) (use before adhesive has cured)	Acetone or methyl ethyl ketone (technical) (use before adhesive has cured)	Mechanical cleaning (paragraph 3-4.1.5) and refinish as required
MISCELLANEOUS DIRT, FINGER-PRINTS, ETC	Detergent and hot water (except polyethylene) <sup>4,5</sup> Alcohol	Detergent and hot water Alcohol	Detergent and hot water Trichloroethylene	Detergent and hot water Trichloroethylene	Detergent and hot water Alcohol

- 1 Use solvents sparingly, as they will tend to deteriorate the component material
- 2 Do not use on transparent rigid plastics, because of crazing
- 3 Do not use chlorinated solvent (Vythene) on uncoated aluminum
- 4 Do not use on cellulosic or vinyl compounds
- 5 On some flexible plastics (polyethylene, plasticized vinyls, etc), removal by mechanical means (paragraph 3-4.1.4) is usually easiest
- 6 (Deleted)

- 7 Use solvents or paint thinners on coated metal sparingly, since they will tend to deteriorate the surface finish. If a lacquer finish tends to "blister," either attempt removal of contaminants by mechanical means (paragraph 3-4.1.4) or experiment with various solvents or thinners on a similarly coated test panel until satisfactory cleaner is found
- 8 Includes adhesives deposited by pressure-sensitive adhesive tapes

TABLE VIII  
ABRASIVES

MATERIAL	SPECIFICATION	GRADES (Grit Size)*
Abrasive Cloth (Aluminum oxide and silicon carbide)	P-C-451	Fine to Coarse: 220, 180, 150, 120, 100, 80, 60, and 50
Abrasive Ground Pumice	SS-P-821	-
Aluminum Wool	MIL-A-4864 (USAF)	Extra Fine to Coarse
Crocus Abrasive Cloth	P-C-458	Less than 325
Flint Abrasive Paper	P-P-105	Class 1: Fine to Coarse: 4/0, 3/0, and 2/0 Class 2: Extra Fine, Fine, Medium, Coarse, and Extra Coarse Class 3: Extra Fine, Fine, Medium, Coarse, and Extra Coarse
Garnet Abrasive Paper	P-P-121	Class 1: Fine to Coarse: 8/0-280, 7/0-240, 6/0-220, 5/0-180, 4/0-150, 3/0-120, 2/0-100, and 1/0-80 Class 2: Fine to Coarse: 4/0-150, 3/0-120, 2/0-100, 1/0-80, 1/2-60, 1-50, 1-1/2-40, and 2-36 Class 3: Fine to Coarse: 3/0-120, 2/0-100, 1/0-80, 1/2-60, 1-40, 1-1/2-40, 2-1/2-30, and 3-24
Ground Pumice (Abrasive pigment)	MIL-P-2909	-
Steel Wool	FF-S-740	Extra Fine to Coarse
Waterproof Garnet	P-P-126	Fine to Coarse: 8/0-280, 7/0-240, 6/0-220, 5/0-180, 4/0-150, 3/0-120, 2/0-100, and 1/0-80
*Grit sizes are stamped on the reverse of a sheet of abrasive. Some figures are mesh sizes from 12 (very coarse) to 600 (very fine). Others have arbitrary numbers such as 2/0, 6/0, etc. Still others are marked FINE, MEDIUM, COARSE, etc. Unless otherwise specified, equivalent grades may be used interchangeably		

## NOTE

Silicon carbide is next to the diamond in hardness. Next on the abrasive scale is aluminum oxide. Garnet is slightly softer than aluminum oxide, with emery next in hardness. Flint is next, then crocus, a dust-fine oxide.

## CAUTION

When abrading coated aluminum surfaces, use a fine grade of abrasive that will not score the aluminum.

3-4.3.3.1 Abrade corroded areas to the clean metal. If corrosion covers a large area or is deep, remove most of the corrosion with a wire brush or stiff-bristle brush and then abrade the surface.

3-4.3.3 CORROSION ON COATED AREAS.

3-4.3.3.2 Wipe off the abraded surface with a clean dry lint-free cloth.

3-4.3.3.3 Refinish abraded surface as required.

### 3-4.3.4 CORROSION OF UNCOATED AREAS.

#### CAUTION

When abrading aluminum surfaces, use a fine grade of abrasive that will not score the aluminum.

3-4.3.4.1 Clean the corroded areas thoroughly with cleaning compound. If all signs of corrosion are removed, the part may be used without further cleaning. However, if any evidence of corrosion remains (pits, stains, etc), proceed as follows:

3-4.3.4.2 Remove most of the corrosion with a wire or stiff bristle brush and then abrade the surface with emery cloth.

3-4.3.4.3 Wipe off the abraded surface with a clean, dry, lint-free cloth.

3-4.3.5 FUNGUS GROWTHS ON METAL SURFACES (Painted or Unpainted).

3-4.3.5.1 Wipe fungus from affected area using a clean lint-free cloth moistened with a 5% solution of germicidal and fungicidal disinfectant. Wipe dry or allow to air dry.

3-4.3.5.2 If affected area is a painted surface, visually determine whether damage to paint has resulted from fungus growth. If streaks which cannot be removed or pits are apparent, repair the damage as follows.

#### CAUTION

When abrading painted or unpainted aluminum surfaces, use a fine grade of abrasive which will not score the aluminum.

3-4.3.5.2.1 Abrade damaged surface area with emery cloth. Abrade only to clean metal surface. If the area of contamination is large, brush the surface with a stiff bristle brush and then abrade with emery cloth.

3-4.3.5.2.2 Wipe off the abraded surface with a clean lint-free cloth moistened with trichloroethylene (technical).

3-4.3.5.2.3 Refinish abraded surface as specified.

3-4.3.5.3 If desired, prior to repackaging, all exposed surfaces may be coated with a 5% solution of germicidal and fungicidal disinfectant to reduce the possibility of fungus growth.

3-4.3.6 FUNGUS GROWTH ON RUBBER SURFACES (Nonelectrical).

3-4.3.6.1 Using a bristle brush with warm water and soap, clean contaminated surfaces as required.

3-4.3.6.2 Rinse with clear water and thoroughly dry clean surfaces.

3-4.4 CLEANING OF ELECTRICAL CONNECTORS. Cleaning of foreign matter from electrical connectors should be accomplished whenever possible by the use of a vacuum cleaner or a vacuum cleaner used in conjunction with dry brushing, dry wiping, or scraping with a wood or plastic tool. Exercise care at all times to avoid damage to pins and sockets. Do not attempt to clean sockets of miniature connectors by the insertion of any tool. If foreign matter requiring the use of a solvent is present on a connector, it may be removed by wiping with a clean lint-free cloth moistened (damp, not dripping) with trichloroethylene.

3-4.5 CLEANING OF VINYL PLASTIC INSULATION SLEEVING.

#### NOTE

Most discoloration of vinyl plastic insulation sleeving is the result of chemical action and will not necessarily deteriorate the physical or electrical properties of the material.

3-4.5.1 Using a clean cloth moistened (not dripping) with dry cleaning solvent (Stoddard) or toluene (technical), wipe sleeving, removing any foreign matter.

3-4.5.2 Wipe sleeving with a clean dry cloth to remove any excess cleaning material.

3-4.6 REMOVAL OF EPOXY RESIN ADHESIVE.

#### CAUTION

Do not use these procedures to remove epoxy resin from any plastic.

3-4.6.1 Observe safety precautions (paragraph 3-2) as applicable.

3-4.6.2 Using a small brush, apply a coating of paint remover to the surfaces to be cleaned of epoxy resin adhesive. Allow the paint remover to set for approximately 1 hr.

3-4.6.3 After the hour is over, wipe the surfaces with a clean dry cloth and remove the cured adhesive.

3-4.6.4 Using steel wool, rub lightly to remove any remaining traces of cured adhesive.

3-4.6.5 As required, clean the surface to remove any foreign material, using any method which will not damage the item being cleaned.

### 3-4.7 CLEANING OF PREFORMED PACKINGS (O-RINGS).

#### CAUTION

Use care to prevent stretching of pre-formed packings.

3-4.7.1 When procedures in the referencing document specify cleaning of new preformed packings, briefly immerse each packing in isopropyl or denatured alcohol, blow excess alcohol from packing, then allow packing to air-dry for a minimum of 10 minutes prior to use.

3-4.7.2 When cleaning a removed packing for reuse or cleaning a new packing which has been contaminated, perform the following:

#### CAUTION

Immersing preformed packings in the following solvent may result in permanent deformation or other damage to the packing.

Certain packings may leave a black residue when wiped; the source of the residue is normal and no attempt should be made to remove it.

a. Using a clean lint-free cloth moistened (damp, not dripping) with trichlorotrifluoroethane (Freon TF or Freon PCA) or acetone, wipe foreign material from packing.

b. Allow packing to air-dry for a minimum of 10 minutes prior to use.

### 3-4.8 USE OF VACUUM CLEANER.

#### WARNING

Failure to use only the specified type of equipment near explosives or loose radioactive materials may result in personnel injury.

3-4.8.1 Use an explosion-proof vacuum cleaner (No. 95 Vackar, Black and Decker, or Explosion-Proof Vacuum Cleaner, Hoffman Machine Corp, each Underwriter's Laboratory approved for Class II, Group G, or equivalent) where explosives are exposed or any possibility of an explosive atmosphere exists. If a vacuum cleaner is used to clean components or areas

where there are possible loose radioactive materials, monitor the bag of the cleaner periodically. If found to be contaminated, dispose of the bag in a paper bag labeled "Contaminated Waste."

3-4.8.2 A vacuum cleaner may be used to clean inaccessible areas of the case assemblies, or other assemblies containing cavities of loose dirt, dust, or other foreign matter.

3-4.8.3 Air suction (provided by a vacuum cleaner) may be used to clean hoses or other tubing of dust, dirt, or other foreign matter. Draw air through the tube and check air intake by placing fingertip over end of tube.

### 3-5 DRYING METHODS.

3-5.1 GENERAL. The following instructions apply to the removal of moisture from surfaces of parts after any method of cleaning and before applying corrosion preventives (if required).

3-5.1.1 Dry the parts, preferably by blowing with compressed air, or if air is not available, by drying in an oven. Dry by wiping only when it is impractical to use an air blast or oven.

3-5.1.2 Where there are large quantities of water to be removed or where extra drying precautions are required, oven-dry the parts after the compressed air blowoff.

3-5.1.3 If it is necessary to dry solvents in an oven, adequate quantities of fresh air must be delivered to the oven in order to expel the solvent vapor from the oven as fast as the solvents evaporate. In addition, the exhaust must be provided with suitable fire protection equipment.

### 3-5.2 CONTROL OF COMPRESSED AIR FOR DRYING PURPOSES.

#### WARNING

Use coverall or cup-type goggles for this method; when using compressed air do not direct air blast toward any part of the body. Adjust regulator to supply air at a maximum of 15 psi for drying and cleaning purposes.

#### CAUTION

When air-drying bearings, exercise care not to spin bearings at high speed.

3-5.2.1 The compressed air used for blowoff purposes must be free of condensation, oil, and dirt.

3-5.2.2 The presence of moisture in compressed air may be readily detected by permitting the air to blow



on a polished metal part at room temperature and by observing for condensation.

3-5.2.3 Line pressures of air may vary with the capacity of available equipment, but air used for drying must be regulated to a maximum of 15 psi.

3-5.2.4 Provide moisture traps. Locate them within the same building as near as possible to air outlets and not more than 50 ft from the farthest air outlet. Dump moisture from traps twice daily when air outlets are being used.

3-5.2.5 Provide each outlet or group of outlets with an oil and dirt filter. Filters can be "backed up" fabric, screen or ceramics, provided that they are equivalent of 200 mesh or finer.

3-5.2.6 Replace or clean filters whenever air flow is restricted or oil and dirt are passed.

3-5.3 CONTROL OF OVENS FOR DRYING PURPOSES. Use a Forced Draft Isotemp Oven (Fisher Oven No. 13-245-5 or equivalent) for this method and vent the oven outside the building in which it is located.

### CAUTION

Do not use this method on tuballoy, electrical parts, or parts containing fabric, rubber, or other organic materials, unless it has first been determined that no detrimental effects will result.

3-5.3.1 If compressed air is not available for blowing dry or if blowing does not remove all the moisture or solvent, dry the parts in an oven.

3-5.3.2 Do not place parts with trapped pockets of water or solvent in an oven for drying, as this may cause corrosion during drying. Wipe parts or blow with compressed air to remove residual moisture or solvent prior to placing them in an oven for drying.

3-5.3.3 Oven temperatures must be kept between 250° and 350°F, except when lower temperatures are necessary.

3-5.3.4 Lower oven temperatures may be used when oven drying is merely for the purpose of speeding up the evaporation of petroleum solvents or methanol.

3-5.3.5 Circulate and replace the air in the drying ovens by means of a fan or air jet to aid in accelerating the drying operations and to prevent the air in the oven from becoming saturated with moisture or solvents.

3-5.3.6 To obtain surfaces which are thoroughly dry, vary the drying times according to the amount of residual water or solvent, mass of part, and oven temperature.

### 3-5.4 DRYING BY WIPING.

3-5.4.1 Cloth or waste used for wiping must be clean, dry, and lint-free.

3-5.4.2 Wiping must be sufficiently thorough to remove all residual cleaning solvent.

3-5.4.3 Discard the cloth when it becomes contaminated or damp enough to prevent satisfactory drying.

3-5.4.4 Perform wiping in two steps. First, remove all solvent and leave an apparently dry surface. Perform final wipe of the dry surface with a second clean dry cloth to insure a thoroughly dried surface.

3-5.4.5 Wear canvas gloves or their equivalent during the drying to prevent contaminating cleaned surfaces with perspiration.

### 3-5.5 INFRARED LAMP DRYING.

3-5.5.1 This process consists of exposing the parts to direct heat rays from banks of infrared lamps.

3-5.5.2 Usually, 2 min of drying time with enough heat to maintain the temperature of the drying parts at approximately 160°F is sufficient.

3-5.5.3 Temperatures attained by individual parts will depend upon the number and spacing of the lamps, their distance from the parts, and the mass and composition of the parts.

## SECTION 4

### PRESERVATION OF SURFACES

#### 4-1 GENERAL.

4-1.1 This section covers the preservation of surfaces of components by touchup and various surface treatments and/or finishes. Where not specified herein, materials and colors used for these operations are specified in referencing documents. Part numbers and unit-of-issue information for required materials are indicated in table I. Refer to table II for use, limitations, thinners, and drying time of touchup materials, where not specified.

4-1.2 Organic finishes include primer coating and lacquer or enamel painting.

4-1.3 All procedures on surface finishes in this section are intended primarily for touchup or rework of damaged, scratched, abraded, or otherwise imperfect finishes. Unless otherwise specified, the procedures are not intended for the production of original finishes.

4-1.4 Unless otherwise specified, use procedures in section 3 for applicable cleaning and drying methods.

#### CAUTION

Failure to take the following precautions may result in damaged equipment or a reject weapon.

4-1.5 Prior to application of any surface treatment or finish, use extreme care to prevent any materials entering baro ports or other critical areas. Plug or cap openings where such surface treatment or finish is not desired. Additionally, areas not requiring surface treatment or finish may be masked out as desired.

#### 4-2 SAFETY PRECAUTIONS.

When using paints, epoxy resins, enamels, lacquers, thinners, etc, in quantity, the general safety precautions indicated in paragraph 3-2 and figure 4-1 are to be observed, as applicable, during the various touchup, surface treatment, or finish operations. These precautions are in addition to any other precautions specified in referencing documents or by any applicable Service directives.

#### 4-3 ALUMINUM AND ALUMINUM ALLOY PARTS (Brush Alodine Finish).

Aluminum and aluminum alloy parts are treated with a brush-on-type chemical film (called brush Alodine) to provide corrosion protection to the base metal. The brush-on-type chemical film is used primarily for touchup or rework of damaged or unfinished areas of a previously anodized surface. Do not use brush-on-type chemical films without subsequent finish coatings except in special applications such as touchup of scratched or machined anodized surfaces or on surfaces requiring electrical conductivity. The material used for the finish is aluminum coating compound (Alodine).

#### WARNING

Alodine material contains nitric acid and chromium trioxide and (both before and after mixing) is toxic, harmful to the skin, and destructive of nonmetallic materials. Cloth or paper wipes used in the following procedures may be flammable when dried if not given a thorough water rinsing immediately after use.

4-3.1 If not already accomplished, mix clean water and Alodine material in ratio of 2 qt of water to 1 oz of Alodine.

4-3.2 Wet sand area to be refinished, using silicon carbide type abrasive of approximately 240 grit. Thoroughly rinse surface with clean water or wipe with clean cloth saturated with water.

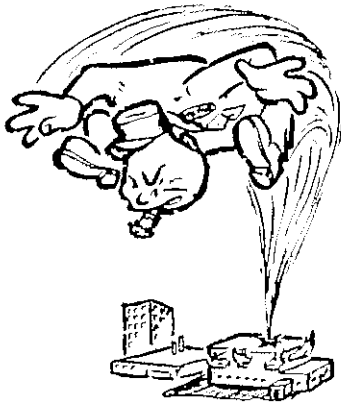
#### NOTE

If the Alodine solution is not to be sprayed, a more effective finish is obtained by applying the solution while the surface is still wet from the water rinse.

4-3.3 Apply liberal amounts of Alodine solution to surface. Allow solution to set for 1 to 5 min before continuing with procedures.

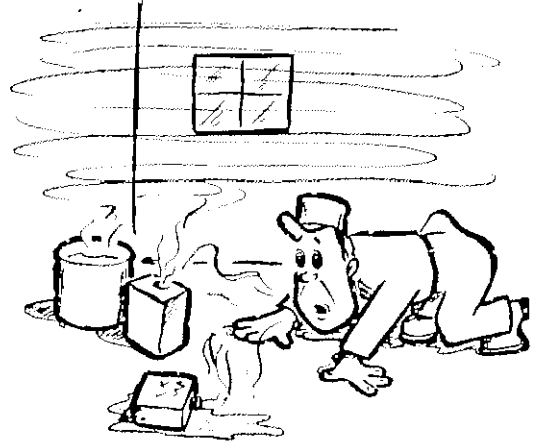
4-3.4 Before Alodine solution dries, wipe surface with clean cloth wet with water or rinse with clean water; if cloth is used, immediately rinse cloth with water, then discard cloth.

4-3.5 Allow surface to air-dry. To expedite drying, if desired, wipe surface with clean dry cloth or use compressed air. Use compressed air to blow moisture from joints, recesses, etc.



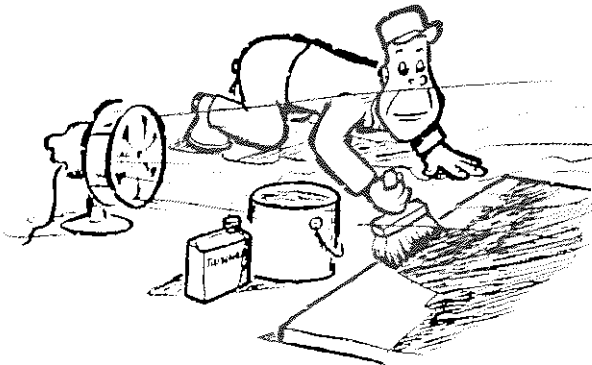
### FLAMMABLE AGENTS

When using flammable materials such as paints, enamels, lacquers, thinners, etc, provide proper ventilation and exhaust facilities. Do not permit sparks, open flames, or other sources of ignition in the work area.



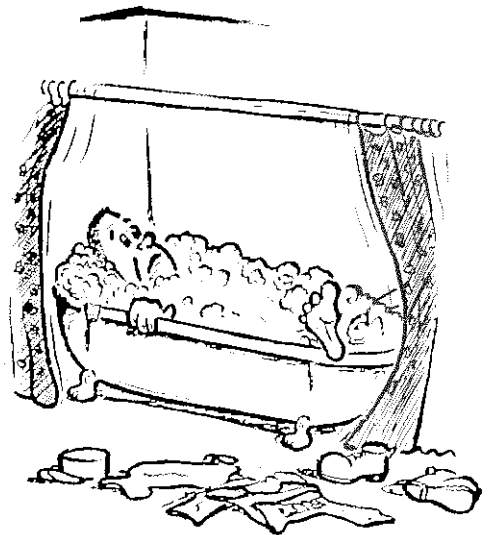
### CLOSE CONTAINERS

Keep paint, enamel, lacquer, thinner, or contaminated waste material containers closed except when in actual use.



### TOXIC AGENTS

When using toxic materials such as paints, enamels, lacquers, thinners, etc, provide proper ventilation and exhaust facilities. Use toxic materials as sparingly as possible.



### WASH

Paint, enamel, lacquer, thinners, etc, are skin irritants. Wash hands thoroughly with soap and warm water after using such materials.

Figure 4-1 Safety Precautions

4-3.6 Aluminum properly treated with Alodine solution usually has a thin, iridescent golden coating. The coating is hard and free from powder if the solution has been properly mixed and applied. Streaks resulting from brushing and "rundown" of excess solution are acceptable; however, excessive streaking indicates that surface was not properly cleaned prior to treatment.

4-3.7 If painting is required, avoid handling treated surface and apply paint finish as specified. If painting is delayed, remove dust from surface with clean dry cloth; if oil collects on surface, clean with suitable paint thinner.

#### 4-4 STEEL PARTS (Cadmium- or Zinc-Plated).

Minor scratches, abrasions, or other type defects in cadmium- or zinc-plated steel surfaces are touched up by application of an organic finish to the damaged area. If the scratch or defect exposes bare metal, a metal pretreatment coating is applied prior to application of the organic finish.

### WARNING

The cleaning and painting materials are toxic and flammable. Observe applicable safety precautions.

4-4.1 If bare metal is exposed, remove cadmium- or zinc-plated surface from damaged area by abrasion, using medium grade abrasive.

4-4.2 Clean damaged surface thoroughly with toluene.

4-4.3 Allow surface to air-dry completely. Compressed air may be used.

4-4.4 If bare metal is exposed, prepare and apply metal pretreatment coating compound (kit, resin-acid) in accordance with surface finishes procedures for "dandelion" materials in paragraphs 4-6.2 and 4-6.3.

4-4.5 Apply organic finish, Type I or Type II as applicable, to the damaged area.

#### 4-5 MAGNESIUM PARTS (Process 1).

Scratched or marred magnesium surfaces are repaired by one process, which, for purposes of identification, is presented as Process 1. This process provides corrosion-preventive finishes on magnesium surfaces which have been scratched or marred to the extent that base metal is exposed. The process is not intended to provide complete resurfacing of the part. Use the process only when and as specified. Process 1 provides a corrosion-protective finish for marred magnesium surfaces by application of a chromic acid touchup solution followed by an organic finish.

4-5.1 Prepare touchup solution prior to cleaning area to be refinished.

### NOTE

Process 1 touchup solution has an indefinite shelf life when stored in a tightly sealed glass or plastic container. It is suitable for use if it has not coagulated or jelled.

Since the amount of calcium sulfate used in preparation of Process 1 touchup solution exceeds its solubility, the excess will settle out following agitation; this condition is acceptable.

### WARNING

Chromium trioxide is toxic and flammable. Observe applicable safety precautions during mixing and application of solution.

4-5.1.1 Using water at room temperature (70° to 100°F), add 1-1/3 oz (avdp) of chromium trioxide (technical) to 1 gal water (or 10 g of chromium trioxide per liter of water).

4-5.1.2 Add 1 oz (avdp) of calcium sulphate to mixture (or 7.5 g of calcium sulphate per liter of water). Insure complete mixing of solution by stirring vigorously by mechanical means or by air agitation for 15 min minimum.

4-5.2 Lightly abraid undamaged organic finish surrounding damaged area with fine aluminum oxide abrasive.

### WARNING

The cleaning solutions used are toxic and flammable. Observe applicable safety precautions.

4-5.3 Using solvent, such as dope and lacquer thinner or toluene (technical), clean surface of all dust, oil, grease, and corrosion.

4-5.4 Brush or spray touchup solution (at room temperature) on surface, continuing application sufficiently long (1 to 3 min) to produce brassy iridescent finish; avoid prolonged application.

### NOTE

The exact required application time depends on ambient temperature and humidity conditions. Excessive application produces a dark brown or powdery coating.

4-5.5 While touchup solution is still wet, rinse with cold, clean water or, if rinsing is not feasible, wipe with clean cloth saturated with water; wipe surface dry with clean dry cloth. Using compressed air with regulator adjusted to supply air at maximum of 15 psi, blow out seams and joints. If expedited drying is

required, dry with air or in oven at maximum temperature of 150°F.

4-5.6 Avoid handling treated surface and continue with following procedures.

### CAUTION

Relative humidity shall not exceed 80% when preparing and applying the pretreatment coating.

4-5.7 Prepare metal pretreatment coating compound using acid-resin kit in ratio of 80% by volume of resin component, 20% by volume of acid component. Mix as follows:

4-5.7.1 Stir resin component thoroughly prior to mixing.

4-5.7.2 While stirring continuously, slowly add acid component to resin component, and then add denatured ethyl alcohol. If thinning is required, add additional ethyl alcohol.

4-5.7.3 Thin as necessary for spray application, using denatured ethyl or isopropyl alcohol.

### CAUTION

The pot life of the pretreatment coating, after mixing, is limited. Use the coating within 8 hr after addition of the acid component to the resin component.

4-5.8 Apply 1 light uniform coat of pretreatment coating to surface being touched up.

4-5.9 Within 2 hr after application of pretreatment coating, apply 1 light uniform coat of vinyl-zinc chromate primer coating by brush or spray. If thinning is required, use 1-to-1-mixture of toluene (technical) and methyl isobutyl ketone; add thinner as required to obtain desired consistency. Dry at room temperature until coating is dry to touch. Drying time will vary depending on thickness of paint film, consistency of paint, and weather conditions.

4-5.10 Apply 2 light uniform coats of vinyl-alkyd paint (gray, outside) by brush or spray. If thinning is required, use 1-to-1-mixture of toluene (technical) and methyl isobutyl ketone; add thinner as required to obtain desired consistency. Dry first coat at room temperature until dry to touch before applying a second coat. Dry second coat at room temperature for 24 hr minimum.

4-5.11 Apply 1 light uniform coat of enamel by brush or spray. If thinning is required, use xylene (technical); add thinner as required to obtain desired consistency. Dry at room temperature until coating is dry to touch.

## 4-6 "DANDELION" MATERIALS.

Surfaces of materials identified as "dandelion" materials are touched up by applying a pretreatment coating and a thermal resistant coating compound to the marred areas.

4-6.1 Clean surface thoroughly of all dust, grease, corrosion, or other foreign matter by vapor degreasing or solvent wipe.

4-6.2 Prepare metal pretreatment coating compound (kit, resin-acid) in accordance with instructions supplied in kit. If instructions are not available, prepare coating as follows:

4-6.2.1 Stir resin component thoroughly prior to mixing.

4-6.2.2 While stirring mixture continuously, add acid component to resin component in ratio of 1 part acid to 4 parts resin (by volume).

### CAUTION

The pot life of the pretreatment coating after mixing is limited. Use the mixture within 8 hr after mixing.

4-6.2.3 Add denatured alcohol (ethyl) as necessary to thin mixture to desired application consistency.

### NOTE

Thinning is usually necessary to obtain uniform, thin wet films of pretreatment coating and to minimize the tendency of the coating to "string" or "cobweb". Addition of a volume of alcohol equal to the volume of acid component in the mixture is generally sufficient.

4-6.3 Using spray, brush, or other method, apply one light uniform coat of pretreatment coating to surface being touched up.

### NOTE

If damaged area does not exceed approximately 1/4 in. dia, omit use of pretreatment coating and use only thermal resistant coating compound.

4-6.4 Prepare thermal resistant coating compound (white, kit) in accordance with instructions supplied

in kit. If instructions are not available, prepare coating compound as follows:

4-6.4.1 Thoroughly stir polyester base component of kit prior to mixing with catalyst component of kit.

4-6.4.2 While stirring base component continuously, add catalyst component to base component in ratio of 1 to 1.

### CAUTION

Use thermal resistant coating compound within 8 hr after mixing, and within 4 hr after application of pretreatment coating (if pretreatment coating is used).

4-6.5 Using spray or brush, apply 1 uniform coat of thermal resistant coating compound (white, kit) to surface being touched up.

## 4-7 ORGANIC FINISH (Primer Coating and Painting).

The organic finish provides further corrosion and abrasion protection to surfaces previously treated with inorganic conversion or pretreatment coatings. The organic finish is used to provide an original finish or to touch up scratched, abraded, or marred areas of a finish. Two types of organic finish are used: Type I consists of 2 coats of primer coating; Type II consists of 1 coat of primer coating followed by 1 of the following 3 classes of finish coats:

Class 1: One or 2 coats of lusterless lacquer or enamel, color as specified

Class 2: One or 2 coats of semigloss light gray enamel

Class 3: One or 2 coats of aluminum lacquer or paint

### WARNING

The cleaning, thinning, and painting materials used during application of organic finishes are toxic and flammable. Observe applicable safety precautions during all operations.

### NOTE

A pretreatment coating, applied prior to the organic finish, will insure firm adhesion of the organic finish and will allow a shorter drying time for the initial primer coat. If a pretreatment coating is to be applied, apply brush alodine solution (aluminum only) (paragraph 4-3) or pretreatment coating compound (paragraphs

4-6.1 through 4-6.3) prior to application of the 1st primer coat. The 1st primer coat should be applied as soon as the pretreatment coating is dry, and not later than 24 hr after application of the pretreatment coating.

### 4-7.1 TYPE I ORGANIC FINISH.

4-7.1.1 Using any suitable method, clean surface be finished. If damaged area is being touched up before cleaning, lightly abrade small area surrounding damaged area, being careful not to score surface.

4-7.1.2 Mask out adjacent areas not requiring finish.

4-7.1.3 Thin primer coating to proper consistency for spray or brush application.

### NOTE

Application of primer by atomized spray is preferred to brush application; use brush application only if necessary.

4-7.1.3.1 For spray application, either use built-in spray container or thin bulk primer coating with approximately 2 to 2-1/2 parts of toluene (technical) 1 part primer by volume. For slower drying characteristics, replace up to 1/4 toluene with xylene (technical).

4-7.1.3.2 For brush application, thin primer coating with approximately 1 part toluene and/or xylene 1 part primer, by volume.

4-7.1.4 Apply 1 thin coat of primer coating (yellow maintaining proper film thickness by insuring that coating exhibits a continuous yellow-green color.

### NOTE

The color of the 1st primer coating is optional; however, yellow is preferred because the yellow-green color of the thin coat provides an easy standard for proper film thickness and uniformity. A distinctly yellow coating indicates excessive thickness and is unsatisfactory.

### CAUTION

When drying organic finishes, do not use the force-dry method on tuballoy, electrical parts, or parts containing fabric, rubber, plastic, or other sensitive materials, unless it has first been determined that no detrimental effects will result.

4-7.1.5 Air-dry first primer coat for a minimum of 2 hr, or, if pretreatment coating was applied before primer, for a minimum of 1-1/2 hr. However, if primer coating from built-in-spray container was applied, air-dry time may be reduced to 30 min. If it has been determined that force-dry temperatures will not damage equipment being treated, force-dry for minimum of 45 min at 160° to 180°F or for minimum of 20 min at 220° to 240°F.

4-7.1.6 Lightly abrade primer coating to remove surface specks and wipe clean.

4-7.1.7 Apply thin second coat of primer coating (green), thinned to same application consistency as first coat.

#### NOTE

The color of the second coat of primer is optional; however, green is preferred because uniform coverage over yellow primer can be visually ascertained and excessive thickness avoided.

4-7.1.8 Air-dry second primer coat to full hardness as specified in table II or, if desired, force-dry as specified for first coat.

#### 4-7.2 TYPE II ORGANIC FINISH.

4-7.2.1 Clean surface and apply one thin coat of primer coating (yellow) in the same manner as first primer coat for type I finish except, if air-dry method is used for curing, air-dry for minimum of 6 hr; or if pretreatment coating was applied, air-dry basic primer coat for a minimum of 1-1/2 hr. However, if primer coating from built-in-spray container was applied, both drying times may be reduced to 30 min.

#### CAUTION

The maximum interval between application of the basic primer coat and application of class 1, 2, or 3 lacquer/enamel top coat is normally 24 hr; however, this interval may be extended to 72 hr when necessary if it can be determined that the adhesion of subsequent paint coatings is not impaired. If the maximum interval has expired, or if some parts of an assembly have previously been primed, a second light film of primer coating (green) should be applied, after proper cleaning, to reactivate the surface.

4-7.2.2 Apply one coat of lacquer or enamel (class 1, 2, or 3, as specified), thinned to application consistency by means of dope and lacquer thinner.

#### CAUTION

When drying organic finishes, do not use the force-dry method on tuballoy, elec-

trical parts, or parts containing fabric, rubber, plastic, or other sensitive materials, unless it has first been determined that no detrimental effects will result.

4-7.2.3 Air-dry to full hardness as specified in table II or, if it has been determined that force-dry temperatures will not damage equipment being treated, force-dry for a minimum of 1 hr at 150° to 155°F.

#### NOTE

The force-dry schedule will produce a finish sufficiently dry for handling.

4-7.2.4 If second coat of lacquer or enamel is specified, apply and dry in same manner as first coat.

#### 4-7.3 INSPECTION.

4-7.3.1 Organic finishes shall be uniform in appearance and shall completely cover the area specified. Irregularities such as peeling, runs, blisters, and inclusions of foreign matter shall be allowed only to an extent consistent with good commercial practice.

4-7.3.2 Organic finishes shall show good resistance to a knife edge. Finishes which are brittle, chip off, or leave a sawtooth edge at the interface between the paint and surface, or that otherwise show evidence of poor adhesion, are unacceptable.

#### 4-7.4 REMOVAL OF ORGANIC FINISH.

#### WARNING

Paint removing solutions are toxic and flammable. Observe applicable safety precautions.

#### CAUTION

Do not use acetone or dope and lacquer thinner on plastic.

4-7.4.1 For removal of finish from small area, mask out areas not requiring finish removal, and wipe area with cloth or paper wipe moistened (not dripping) with acetone, paint remover, or dope and lacquer thinner. Repeat wiping operation as necessary. Wipe area clean and dry.

4-7.4.2 For small parts requiring complete removal of finish, immerse in acetone or dope and lacquer thinner. Wipe parts clean and dry.

## 4-8 TOUCHUP OF EPOXY RESIN SURFACE FINISHES.

### NOTE

Prior to mixing, the temperature of the epoxy resin components should be 70°F or above.

It is desirable that temperature of surface to be touched up should be 70°F or higher when applying epoxy resin finishes. Application at temperatures between 60° and 70°F is acceptable but will cause excessive cure time. Application at temperatures below 60°F is considered unacceptable.

Procedures in this paragraph cover the touchup of marred or damaged areas of surfaces bearing a final finish of epoxy resin coating compound (white, gloss) or enamel (white, gloss, Epolux 160-W-108 or 100E-1) and enamel (black, gloss, Epolux 100-E-6 or 160-B104). Either material may be used for touchup. Exposed bare metal requires no other treatment than that prescribed in this procedure unless specified in the referencing document.

4-8.1 Thoroughly clean all contaminants (dirt, grit, oil, grease, loose paint, etc) from damaged area in accordance with procedures in paragraph 3-4.1. Lightly abrade damaged area and repeat cleaning.

### CAUTION

The shelf life of epoxy coating compound and Epolux enamel is 2 and 1 yr, respectively, measured from date of manufacture. An extension, if authorized, will be noted on the container.

### WARNING

Epoxy resins are toxic and may cause severe skin irritations. Observe applicable safety precautions during mixing and application.

4-8.2 Mix components of epoxy resin material in accordance with manufacturer's instructions. If instructions are not available, mix components as follows.

- a. Thoroughly stir resin component and accompanying catalyst separately prior to mixing.
- b. While stirring resin component continuously, add total contents of catalyst to total contents of resin

component. Allow mixture to stand for 1 hr prior to use.

- c. If application by spraying is desired, thin mixture to spraying consistency by addition of suitable thinner (table II).

### CAUTION

The pot life of the epoxy coating compound and Epolux enamel, after mixing, is limited to approximately 24 and 48 hr, respectively. The pot life of both can be extended up to approximately 7 days by storing the mixtures in closed containers at approximately 40°F. Make sure the mixture has warmed to 70°F or above prior to use.

4-8.3 Brush or spray mixture on surface to be re-finished using the following procedures:

- a. Minor scratches or blemishes which do not expose base metal may be repaired by application of only 1 coat.
- b. For larger areas or for areas exposing base metal, apply 2 coats. Allow first coat to air-dry to "dry-through" hardness (table II) prior to application of second coat.
- c. Feather edges of new finish to avoid abrupt changes in thickness of over-all finish.
- d. For application by spraying, a light mist coating should be applied approximately 10 to 15 min before application of first main coat.

### WARNING

Assemblies containing explosives and other assemblies containing components which may be damaged by excessive heat must not be subjected to surface temperatures in excess of 150°F unless authorized by the referencing document.

4-8.4 If desired, after the coating has been allowed to air-dry for approximately 1/2 hr, the cure time for the final coat can be accelerated by applying heat up to a surface temperature of 150°F.

### NOTE

The treated surfaces are not to be stenciled or treated with any other paint system until after the epoxy coating has cured to a full hard condition (table II).



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## 4-9 TOUCHUP OF EPOXY POLYAMIDE SURFACE FINISHES.

### NOTE

Prior to mixing, the temperature of the epoxy polyamide components should be between 65° and 95°F.

It is desirable that temperature of surface to be touched up should be 70°F or higher when applying epoxy polyamide finishes. Application at temperatures lower than 70°F is acceptable but will cause excessive cure time.

Procedures in this paragraph cover the touchup of marred or damaged areas of surfaces bearing a finish of aluminum-pigmented epoxy polyamide coating. Minor surface blemishes which do not expose base metal are repaired by touching up with a single coat; blemishes which expose base metal must be covered by 2 coats and only after treatment of the exposed metal with aluminum coating compound in accordance with procedures in paragraph 4-3.

4-9.1 Thoroughly clean all contaminants (dirt, oil, grease, loose paint, etc) from damaged area in accordance with procedures in paragraph 3-4.1. Lightly abrade damaged area using 300 to 400 grit abrasive and repeat cleaning.

### CAUTION

The shelf life of epoxy polyamide coating is 2 yr measured from date of manufacture. However, if containers are closed immediately after pouring, portions of the contents may be used from each container with no adverse effect on shelf life.

### WARNING

Epoxy polyamides are toxic and may cause severe skin irritations. Observe applicable safety precautions during mixing and application.

4-9.2 Prepare the epoxy polyamide coating kit and aluminum pigment in accordance with the manufacturer's instructions. If instructions are not available, prepare as follows:

a. Thoroughly stir the 2 components of the epoxy polyamide coating kit separately and pour a measured amount of component I into a separate container for mixing.

b. While constantly stirring, pour a like measured amount of component II into component I.

c. After the 2 components of the kit are thoroughly mixed, and while stirring, add the aluminum pigment (paste) in small increments in the proportion of 16 oz of paste to 1 gal of mixed coating.

d. If application by spraying is desired, add dope and lacquer thinner (MIL-T-19544) to coating in the proportion of 1 part thinner to 2 parts coating and mix thoroughly. Allow to stand for 1 hr prior to use.

### CAUTION

The pot life of epoxy polyamide coating is limited to approximately 24 hr. This can be extended up to approximately 7 days by storing the mixture in a closed container at approximately 40°F.

4-9.3 Brush or spray coating over damaged area using care to feather edges of new finish. Allow first coat to dry to "dry-through" hardness (defined in table II) prior to application of second coat if second coat is required.

4-9.4 Prepare a final application of epoxy polyamide coating in accordance with procedures in paragraph 4-9.2 except do not add aluminum pigment (paste). After previous coating has dried to "dry-through" hardness, apply 1 coat of the clear mixture over the area which has been touched up.

### NOTE

The treated surfaces are not to be stenciled or treated with any other paint system until after the epoxy polyamide coating has cured to a full hard condition as described in table II.

## SECTION 5

### PACKAGING

#### 5-1 GENERAL.

This section covers instructions governing protection and preservation of material, and includes packaging methods, details, materials, and closing and wire sealing of containers. The packaging procedures contained herein are based on Military Specification MIL-P-116.

5-1.1 Unless otherwise specified, package all items using the procedures and materials specified in this section for the packaging method indicated.

5-1.2 When choice of a submethod is made by the packaging agency, use the method and materials specified as consistently as is practical throughout the production of the particular package.

5-1.3 In all cases, parcel and package size are to be the minimum size which is consistent with the amount of protection required. Flexible materials (wrappings, sleeves, etc) must conform as closely as possible to the shape of the item. Containers must be of such size that dunnage over and above that used for protection is not required. When no cushioning is required, the use of standard blocking and bracing materials and procedures is authorized.

5-1.4 Unless otherwise specified, inclose all items in an initial wrap or bag. In no case shall items of more than one part number be placed in the same initial wrap or bag, with the exception of assemblies not bearing assembly part number. Initial wraps or bags consist of one of the materials, or its alternates, listed in paragraph 5-5.2.2.

5-1.5 Interior containers are used when specified (paragraphs 5-4.1 and 5-4.2). In addition, interior containers may be used as necessary to provide protection to protruding parts, to regularize shapes, etc. Unless otherwise specified, any container indicated in paragraph 5-4.1 or 5-4.2 may be used, provided that the size and weight limitations are not exceeded.

5-1.6 Unless otherwise specified, all packages must be placed in an additional container for shipment. Refer to paragraph 5-4.3 for approved shipping containers.

5-1.7 The part number or specification, and unit-of-issue information listed in table I is used as a guide for the procurement of materials for the packaging of components.

#### 5-2 DESICCANT SPECIFICATIONS.

5-2.1 DESICCANT IDENTIFICATION. The desiccant currently used in the packaging of weapons components and ancillary equipment is either activated or re-activated silica gel desiccant or clay desiccant. Desiccant is used in either bagged or bulk (loose) form.

#### NOTE

Activated desiccant (Microtrap, 8-unit bag) is a special desiccant with a single application. The provisions for desiccant procured under Military Specifications (MIL-D-3716 or MIL-D-3464) do not apply. Additionally, the limitations, reactivation, etc, indicated in paragraphs 5-2.2, 5-2.3, and 5-2.4 are not applicable to the activated desiccant (Microtrap).

5-2.1.1 Activated desiccant (Military Specification MIL-D-3464) is contained in bags.

5-2.1.2 Bulk or loose desiccant (Military Specification MIL-D-3716, Type I or II, Grade H) is received in 1-lb, 5-lb, and 5-gal pressure-sealed containers, and is only used when specified.

5-2.1.3 Desiccant procured under MIL-D-3464 or MIL-D-3716 must meet the requirements of the current issue of the applicable one of the two specifications. Desiccant used must meet the requirements specified in paragraph 5-2.3.

#### 5-2.2 USE AND LIMITATIONS.

5-2.2.1 Desiccant currently on hand which was procured to earlier applicable specifications, whether new or reactivated desiccant, may be used until supplies are exhausted, with the following limitation: Dusting-type desiccants may not be used in the preservation of pits, electrical test equipment, or F and F components where such components would be exposed to the desiccant dust.

5-2.2.2 Wherever an individual packaging procedure or other condition involving use of desiccant specifies unit size and quantity for bagged desiccant, it is permissible to use bags of a different unit size, as long as the total original specified quantity is achieved. In applying this principle, the following precaution

must be observed: The space to be desiccated must be such as to permit the use of different sized bags. This flexibility in unit size of the bag cannot apply where special bag configurations are needed.

5-2.2.3 Used desiccant that is removed from war reserve packages, and that passes the requirements specified in paragraph 5-2.3 is acceptable for reuse in war reserve packages.

5-2.3 MOISTURE CONTENT CRITERIA. New or reactivated desiccant (bagged or loose) used for packaging atomic weapons material will have a free moisture content of no more than 4%.

5-2.3.1 New desiccant, when received in the original unopened manufacturer's container, is normally satisfactory for use, provided the container shows no signs of damage and has not been otherwise exposed to adverse conditions that could have caused a deterioration of the desiccant.

5-2.3.2 New desiccant, in suspect containers, and reactivated desiccant should be checked prior to use for acceptable maximum free moisture content.

5-2.3.3 To minimize total openings of a container, as well as elapsed time from initial opening to use of the last desiccant, all desiccant should be procured in the smallest containers commensurate with the usage rate.

5-2.3.4 Do not open a desiccant container more often or leave it open for a longer period than is absolutely necessary for desiccant withdrawals. Close the container tightly immediately after desiccant withdrawal.

## 5-2.4 DESICCANT REACTIVATION.

5-2.4.1 DESICCANT TO BE REACTIVATED. Visually inspect bags to determine that bags are free of holes or similar defects.

5-2.4.1.1 SILICA GEL. Any silica gel may be reactivated.

5-2.4.1.2 CLAY DESICCANT. Insure that clay-type desiccant has not been permitted to absorb excess quantities of moisture. This may be determined by feeling the bag. If desiccant has become a solid bar or is in other than granular form, reject clay desiccant for reactivation.

## 5-2.4.2 REACTIVATION TEMPERATURE.

5-2.4.2.1 The reactivation temperature will be the median temperature specified on the bag.

5-2.4.2.2 If the temperature is not specified on the bag, the temperature shall be in excess of 245°F but not more than 275°F.

## 5-2.4.3 REACTIVATION TIME.

5-2.4.3.1 The reactivation time will be the median time specified on the bag.

5-2.4.3.2 If the time is not specified on the bag, the cooking time must not be less than 16 hr or more than 24 hr.

5-2.4.3.3 If necessary because of production time, desiccant may be left in the oven over the 24-hr period. If left in the oven over the maximum period, lower the temperature approximately 50°F for each 24 hr.

## 5-2.4.4 PLACEMENT OF DESICCANT IN OVEN.

5-2.4.4.1 Stack the material in the oven as specified in the operational manual for the particular oven in use.

5-2.4.4.2 If operational instructions are not available, place the desiccant in the oven in such a manner that the optimum exposure will be obtained.

5-2.4.5 REMOVAL OF DESICCANT FROM OVEN. Remove the desiccant from the oven, and as soon as practicable thereafter place the desiccant in airtight containers. Do not expose the desiccant any longer than is necessary.

## 5-2.4.6 TESTING OF REACTIVATED DESICCANT.

5-2.4.6.1 A sample of reactivated desiccant must be tested for moisture content. The moisture content must be within that specified in paragraph 5-2.3.

5-2.4.6.2 Take a minimum of 3 sample runs in any one batch of desiccant. The total percent, spread between the highest and the lowest indication, must not be more than 2/10 of 1%. If the results spread over a wider area than this, take 5 more samples and use the average value of all samples as the final answer.

## 5-2.4.7 TESTING OF BAGS.

5-2.4.7.1 Select three representative bags of desiccant and cool to room temperature.

5-2.4.7.2 Drop each bag separately 3 times from a height of 10 ft to a concrete surface, so that the bag lands on its large flat side (not on the edge or end).

5-2.4.7.3 Visually inspect bags for evidence of puncturing, bursting, or other failure.

5-2.4.7.4 Failure of any one of the bags to pass the test will not be cause for rejection of the lot. Subject three more representative samples to the test (paragraphs 5-2.4.7.1 through 5-2.4.7.4). If a total of four bags fail to pass the test, reject the entire lot for reactivation.

5-2.4.8 MARKING OF REACTIVATED DESICCANT CONTAINER. Stencil each container packed with reactivated desiccant with contrasting color and character size in accordance with applicable procedures in Section 6 with the following information:

a. REACTIVATED (Date).

b. PERCENT FREE MOISTURE (Amount).

### 5-3 PACKAGING METHODS.

The following packaging methods are standard. Unless otherwise specified, the submethod used is at the option of the packaging agency. When alternate materials are indicated, the option of the packaging agency must prevail.

#### 5-3.1 METHOD I - PRESERVATIVE MATERIAL ONLY.

5-3.1.1 MATERIAL. The wrap shall be packaging paper.

5-3.1.2 PROCEDURE. Wrap item in the barrier material. Place small items in interior containers. Place larger items directly in a shipping container.

#### NOTE

If the container provides waterproof protection, the packaging is Method IC rather than Method I.

5-3.1.3 MARKING. Mark the wrap and the interior container (if present) using a label or stencil; mark the shipping container by a stencil in accordance with applicable procedures in paragraph 6-4.

#### 5-3.2 METHOD IA - WATER-VAPORPROOF.

##### 5-3.2.1 IA-5 - SEALED RIGID METAL CONTAINER.

5-3.2.1.1 MATERIAL. The metal container may be a drum-type container (table X) or a commercial metal container hermetically sealed (restricted to items not requiring a storage inspection) and painted on the outer surface.

5-3.2.1.2 CLOSURE. Close drum-type containers as specified in paragraph 5-8.5 and other containers in the applicable manner. Closure must effect an airtight seal.

5-3.2.1.3 MARKING. When used as an interior or exterior container, mark by using a label, tag, stencil, or printing in accordance with applicable procedures in paragraph 6-4.

##### 5-3.2.2 IA-8 - SEALED WATER-VAPORPROOF BAG.

###### 5-3.2.2.1 MATERIAL.

a. Fabricate bag in accordance with procedures in paragraph 2-3 or 2-4, using flexible water-vaporproof barrier material (Class 1).

b. As an alternate, fabricate bag in accordance with procedures in paragraph 2-3 or 2-4 using flexible water-vaporproof barrier material (Class 2). This bag is limited to 10-lb net load.

5-3.2.2.2 PROCEDURE. Wrap and cushion item, if necessary, in such a manner as to prevent puncturing of the bag by sharp edges and/or projections.

5-3.2.2.3 CLOSURE. Prior to heat sealing, press bag closely to contents. Seal bag in accordance with applicable procedures in paragraph 2-3.2 or 2-4.2.

5-3.2.2.4 MARKING. Mark the bag by using a label, tag, stencil, or printing in accordance with applicable procedures in paragraph 6-4.

##### 5-3.2.3 IA-13 - SEALED RIGID CONTAINER OTHER THAN ALL METAL.

5-3.2.3.1 MATERIAL. The containers are spirally wound fiber cans (MIL-C-3955, Type I, Grade B (10-lb limit)).

5-3.2.3.2 PROCEDURE. Place item directly into container. If required, use wrapping and cushioning to provide a snug fit.

5-3.2.3.3 CLOSURE. Make closure only by use of the crimping tool recommended by the manufacturer of the container.

5-3.2.3.4 MARKING. Mark the container by using a label, tag, stencil, or printing in accordance with applicable procedures in paragraph 6-4. If a label is used, cover with clear cellophane tape by completely circling the container and overlapping one-third of the circumference of the container.

##### 5-3.2.4 IA-14 - CONTAINER, BAG, AND CONTAINER.

###### 5-3.2.4.1 MATERIAL.

a. The interior container is any container specified in paragraph 5-4.1.

b. Fabricate the bag in accordance with procedures in paragraph 2-3 or 2-4, using flexible water-vaporproofed barrier material (Class 1).

c. As an alternate, fabricate the bag in accordance with procedures in paragraph 2-3 or 2-4, using flexible water-vaporproofed barrier material (limited use). This bag is limited to 10 lb net load.

d. The outer container, if a shipping container, is any container specified in paragraph 5-4.3. If outer container is to be shipped in another container, it may be any rectangular container specified in paragraph 5-4.1.

#### 5-3.2.4.2 PROCEDURE.

5-3.2.4.2.1 After initial wrap, place item in a snug-fitting interior container. If necessary, add cushioning to prevent excessive movement. If required, fasten container with a suitable pressure-sensitive adhesive tape. Blunt the corners of the container to prevent puncturing the bag.

5-3.2.4.2.2 Insert the container into the bag. Press the bag closely to the container to reduce the inclosed air. Heat-seal the bag in accordance with applicable procedures in paragraph 2-3.2 or 2-4.2.

5-3.2.4.2.3 Fold the bag closely around the inner container and secure the dog ears with a suitable pressure-sensitive adhesive tape. If required, protect the bag from abrasion or puncturing by over-wrap or any other suitable means.

5-3.2.4.2.4 Place the bagged item in the outer container and close the outer container in accordance with applicable procedures in paragraph 5-8.

5-3.2.4.3 MARKING. Mark the bag, outer container, and protection wrap (if present) by using a label, tag, stencil, or printing in accordance with applicable procedures in paragraph 6-4.

5-3.2.5 IA-15 - BAG AND CONTAINER. This method is accomplished in the same manner as method IA-14 (paragraph 5-3.2.4), with the exception that the outer container is not used.

5-3.2.5.1 MATERIAL. The materials are the same as for method IA-14, with the exception that the outer container is not used.

5-3.2.5.2 LIMITATIONS. This method is to be used on small items which are to be packed with other items in the same shipping container. This method is normally used on items weighing 5 lb or less.

5-3.2.5.3 OVERWRAP. Unless the package is placed in an intermediate container with a number of identical packages, the package must be overwrapped with a suitable flexible barrier material.

5-3.2.5.4 MARKING. Mark the bag and outer wrap (if present) by using a label, tag, stencil, or printing in accordance with applicable procedures in paragraph 6-4.

5-3.2.6 IA-16 - FLOATING BARRIER. This method is limited to items which cannot be held in place because of size, shape, or weight; items which have mounting provisions; or items which can be mounted

easily to a base by means of cradles, holddowns, or other suitable securing methods.

#### 5-3.2.6.1 MATERIAL.

a. Fabricate the barrier using flexible water-vaporproofed barrier material (Class 1) in accordance with procedures in paragraph 2-4.1.

b. Fabricate the gasket from sheet cork (1/16-in. thick).

c. Secure the gaskets to the barrier with any of the following adhesives: EC-226, EC-847, reclaimed rubber, or buna N rubber.

d. The container is any rectangular container specified in paragraph 5-4.3.

e. The bolts are carriage or step bolts of adequate length.

#### 5-3.2.6.2 PROCEDURE.

5-3.2.6.2.1 Fabricate a base by drilling and smoothing mounting holes in one of the panels of the container or other material of adequate thickness that would prevent the bolts from pulling through the surface of the material.

5-3.2.6.2.2 Apply adhesive to the area around the mounting hole, the base of the bolt, and to both sides of the gasket. Insert the bolt from the underside of the base through the hole and install a gasket on the bolt.

### NOTE

The sequence of application of adhesive through the installation of the nut is to be a continuous operation to prevent the adhesive drying before the operation is complete.

5-3.2.6.2.3 Make holes in the barrier and install the bolts through the holes. Apply adhesive to the barrier around the holes and install a gasket on the bolt.

5-3.2.6.2.4 Place the item, or mounting provisions and the item, on the bolts. Install flat washers and nuts on the bolts and tighten nuts securely. If the nut is not a locknut, stake the bolt in accordance with procedures in TP 40-54.

5-3.2.6.2.5 Use cushioning material or an initial wrap to cover all existing sharp edges and corners of the item which could damage the barrier material.

5-3.2.6.2.6 Press the barrier close around the item to reduce the inclosed air. Heat-seal bag in accordance with applicable procedures in paragraph 2-4.2.

TABLE X  
STANDARD DRUM-TYPE CONTAINER DATA

NOTE						
The "drum-type" container is also known as "reusable metal shipping container" in later specifications						
MS OR AN NO.	AEC PART NO.		INSIDE DIMENSIONS (Diameter x Height in Inches)	CAPACITY	OUTSIDE DIMENSIONS (Diameter x Height in Inches)	CUBAGE (Cu Ft)
	Without Humidity Ind	W/Humidity Ind in Side				
MS24347-1	834853-00	123499-00	5.0 x 4.5	88 cu in.	5.75 x 5.25	.1
AN-8029-1	813031-00*					
MS24347-3	834855-00	123501-00	6.5 x 4.5	149 cu in.	7.5 x 5.25	.2
AN-8029-3	813033-00*					
MS24347-2	834854-00	123500-00	5.0 x 8.5	167 cu in.	6.0 x 9.5	.2
AN-8029-2	813032-00*					
MS24347-4	834856-00	123502-00	6.5 x 6.8	224 cu in.	7.5 x 7.5	.2
AN-8029-8	813038-00*					
MS24347-5	834857-00	123503-00	6.5 x 8.5	282 cu in.	7.5 x 9.25	.3
AN-8029-4	813034-00*					
MS24347-6	834858-00	123504-00	8.5 x 6.0	340 cu in.	9.5 x 6.75	.4
AN-8029-5	813035-00*					
MS24347-7	834859-00	123505-00	8.5 x 7.5	425 cu in.	9.5 x 8.25	.4
AN-8029-6	813036-00*					
MS24347-8	834860-00	123506-00	8.5 x 9.0	510 cu in.	9.5 x 9.75	.5
AN-8029-7	813037-00*					
MS63047-1	871965-00	-	10.5 x 8.0	3 gal	11.2 x 9.3	.7
MS63048-1	871956-00	123507-00	10.5 x 12.8	4 gal	12.0 x 14.5	1.2
-	-	130597-00	13.8 x 8.0	5.2 gal	14.5 x 8.5	1.4
MS63049-1	871957-00	123508-00	10.5 x 16.7	6 gal	12.0 x 18.6	1.6
(Continued on next page; see footnote at end of table)						

TABLE X  
(Continued)

MS OR AN NO.	AEC PART NO.		INSIDE DIMENSIONS (Diameter X Height in Inches)	CAPACITY (Gal)	OUTSIDE DIMENSIONS (Diameter x Height in Inches)	CUBAGE (Cu Ft)
	Without Humidity Ind	W/Humidity Ind in Side				
MS63049-2	871958-00	123500-00	10.5 x 18.7	7	12.0 x 20.6	1.7
MS63052-1	871959-00	123510-00	13.8 x 14.2	9	15.0 x 15.4	2.1
MS63052-2	871960-00	123511-00	13.8 x 19.7	13	15.0 x 20.3	2.8
MS63053-1	871961-00	123512-00	15.4 x 19.9	16	17.0 x 21.9	3.6
MS63053-2	871962-00	123513-00	15.4 x 23.8	19	17.0 x 25.9	4.3
-	871963-00	-	18.2 x 14.0	20	19.6 x 16.0	3.6
-	871967-00	-	22.5 x 16.0	27.5	24.5 x 17.0	5.9
-	871964-00	-	18.3 x 27.6	30	19.3 x 28.4	6.1
-	871968-00	-	22.5 x 22.8	35	23.7 x 24.0	7.7
-	871970-00	-	22.5 x 33.0	55	24.5 x 37.5	12.0
-	871974-00	-	22.5 x 44.0	79	24.5 x 46.3	16.0
*These part numbers represent the older containers, which are interchangeable with the container indicated immediately above. The older containers may be used until existing stocks are exhausted						



TABLE XI  
AUTHORIZED CONTAINERS

NOMENCLATURE	SPECIFICATION OR PARAGRAPH REFERENCE	CLASS OR STYLE	WEIGHT LIMIT (Pounds)	SIZE LIMIT
Container, Fiberboard	Par. 2-7	Class 2	70	80 in. sum of dimensions
Container, Fiberboard	Par. 2-7	Class 3	40	70 in. sum of dimensions
Box, Wood	Par. 2-8	Style 2	400	10 ft any dimension
Box, Wood Cleated, Solid Fiberboard*	PPP-B-591	Style A or B	200	4 ft by 3 ft by 3 ft
Box, Wood Cleated, Plywood*	PPP-B-601	Style A or B	1,000	-
Crate, Wood	Par. 2-9	Style A	1,000	-
Crate, Wood	Par. 2-9	Style B	-	-
Crate, Wood, Lumber and Plywood Sheathed	MIL-C-104A	-	30,000	30 ft by 9 ft by 11 ft
*Use skids and quick-release latches as applicable. Refer to paragraphs 2-8.6 and 2-8.10 respectively				

d. Flexible greaseproofed-waterproofed barrier material

e. Noncorrosive paper barrier material (crepe)

f. Noncorrosive paper barrier material (heavy duty, Type 1)

g. Chemically neutral wrapping paper

5-5.2.4 When a plastic bag is used to package a component that has sharp or protruding edges, wrap the edges of the component with noncorrosive paper barrier material (crepe) to protect the plastic bag from punctures.

5-5.2.5 Suppliers' cartons may be reused to inclose individual components. Otherwise, use plastic bags or noncorrosive paper barrier material (crepe).

5-5.2.6 Wrap fragile components (glass, ceramics, etc) with bound fiberglass wadding and place in containers, plastic bags, or noncorrosive paper barrier material (crepe). Secure with a suitable pressure-sensitive adhesive tape or by stapling.

5-5.2.7 When material is to be shipped in glass containers, wrap the glass container in bound hair wadding (1 in. thick) and secure the wadding with a suitable pressure-sensitive adhesive tape.

5-5.2.8 When specified, place an insert of packaging paper (VCI treated) inside each plastic bag. The insert shall be an unfolded single thickness of paper with an area on one side approximately equal to one-half the surface area of one side of the bag.

5-5.2.9 When flexible barrier materials are used for lining drum-type containers, use a suitable pressure-sensitive adhesive tape to secure the liner.

5-5.2.10 Secure plastic bags with a suitable pressure-sensitive adhesive tape or by stapling.

5-5.2.11 Close the bottom flaps of internal fiberboard containers by metal stitching (paragraph 2-7.7) or with a suitable pressure-sensitive adhesive tape.

5-5.2.12 Close top flaps of internal fiberboard containers with a suitable pressure-sensitive adhesive tape.

5-5.2.13 When a component that has sharp or protruding edges or parts is to be wrapped, first wrap or pad the sharp or protruding edges or parts with the specified barrier material to protect the initial wrap from punctures, then wrap the component in the specified initial wrap. As an alternate, the component may be wrapped using two thicknesses of the specified barrier material or two separate wraps, whichever is more practicable.

### 5-5.3 MISCELLANEOUS WEAPON AND H-NUMBERED CONTAINER PACKAGING DETAILS.

5-5.3.1 WRAPPING OF UNCONNECTED CABLE CONNECTORS. When a component is to be stored with cable connectors not connected, package the connector as follows. If available, install an electrical connector cover (dust cap) on the connector. Wrap the cable connector in noncorrosive paper barrier material (crepe), flexible greaseproof barrier material (Grade A, medium duty), or a plastic bag. Gather the ends of the barrier material or plastic bag firmly against the cable and secure in place, using several turns of a suitable pressure-sensitive adhesive tape. Tape or tie cables and locate as specified. If a pressure-sensitive adhesive tape is used, protect cable with paper barrier material.

5-5.3.2 TAPING. Tape areas as specified with pressure-sensitive adhesive tape (lead foil).

### CAUTION

Weapon skin temperature must be between 65° and 90°F before application of tape.

5-5.3.2.1 Clean the area to be taped in accordance with applicable method in paragraph 3-4.1.

5-5.3.2.2 If the pressure-sensitive adhesive tape (lead foil) is cold, the adhesive may tend to strip off when the backing is removed, or when the tape is unrolled if there is no backing. To prevent this, warm the tape to above freezing temperature.

5-5.3.2.3 Apply the tape to the designated area, covering the area so that the tape extends approximately equally beyond the boundaries of the area being covered. Rub the tape down to increase adhesion, using a smoothing roller or a block of wood or other suitable material. Except on compound curves, wrinkles should seldom appear. Keep wrinkles to an absolute minimum, smooth out and flatten any that do occur, and be sure the seal formed by the tape is not impaired. When applying tape to a surface, be sure the surface is clean and dry. Cover any tears in the tape with a patch, or remove the tape entirely and apply another piece. When applying tape, do not cover adjacent markings; either position tape away from markings, or cut away tape as necessary to expose markings.

### 5-5.3.3 PACKAGING CABLE ASSEMBLIES.

### CAUTION

Tape must contact only the wrapping material, not the cable.

5-5.3.3.1 If available, install electrical connector covers (dust caps) on cable connectors. Place a plastic bag (appropriate size) over each cable connector and secure the bag in place using several turns of suitable pressure-sensitive adhesive tape; or, wrap each cable connector in noncorrosive paper barrier material (crepe) (if this material is not available, use flexible greaseproof barrier material (Grade A, medium duty)) and gather ends of the barrier material firmly against the cable and secure in place using several turns of a suitable pressure-sensitive adhesive tape.

5-5.3.3.2 Coil cables (with the connector inside the coil) to a diameter as large as the inside diameter of the container will permit. Avoid sharp kinks or angle bends. When specified, wrap cables (coiled or uncoiled) in noncorrosive paper barrier material (crepe) and secure wrappings with a suitable pressure-sensitive adhesive tape. If desired, when wire rope sling is part of cable, wrap rope sling separately in noncorrosive paper barrier material (crepe) and secure wrapping with suitable pressure-sensitive adhesive tape. If desired, prior to wrapping cable secure the connectors to the cable with textile tape to facilitate packaging.

### 5-5.3.4 PACKAGING AND UNPACKAGING OF THERMAL BATTERY PACKS FROM H-CONTAINER (Figure 5-1).

5-5.3.4.1 PACKAGING. When specified, package the thermal battery pack case as follows.

### CAUTION

When cleaning the thermal battery pack, do not permit the cleaning solvents to enter the electrical connectors.

5-5.3.4.1.1 If required, clean the thermal battery pack, using any applicable method that will accomplish thorough cleaning without damage to the component.

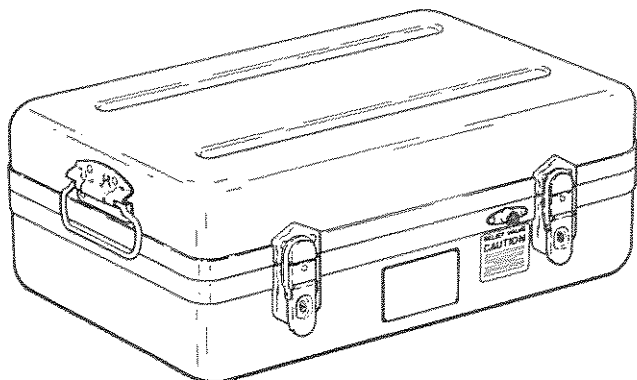


Figure 5-1 Exterior of Thermal Battery Pack Case

5-5.3.4.1.2 Obtain the thermal battery pack case specified for the particular thermal battery pack and set the case on its base. Unscrew the relief valve on the case to equalize the pressure before opening the case. Release the 4 trunk-type latches and remove the cover from the case. Remove the dust and moisture seal protective cap-plug(s) and/or electrical connector cover and the shorting plate or dummy connector plug (table XII) from the molded curled hair pad; remove these items from only the cavity in which the thermal battery pack is to be placed.

5-5.3.4.1.3 Examine the upper and lower pads to insure that they are in usable condition. The 4-1/8-in. thick pad fits in the cover and the 4-1/2-in. thick pad fits in the base.

5-5.3.4.1.4 Arrange the pads in the case so that the black orientation stripe on each pad will, after closure of the case, contact the orientation stripe on the other pad and the stripes will be adjacent to the relief valve on the case.

#### NOTE

The latches on the case are offset so that the cover fits the base in only one way.

5-5.3.4.1.5 Install the shorting plate or dummy connector plug on the weapon and the dust and moisture seal protective cap(s) or electrical connector cover on the battery pack, as specified.

5-5.3.4.1.6 Wrap the thermal battery pack in flexible greaseproof barrier material (Grade A, medium duty) in accordance with procedures in paragraph 5-5.2.13. Secure the wrap in place, using pressure-sensitive adhesive tape (masking, 2 in. W).

5-5.3.4.1.7 Align the wrapped thermal battery pack with the cavity in the lower pad and arrange the thermal battery pack in the cavity.

5-5.3.4.1.8 Refer to table XII to determine whether or not the use of desiccant and a card humidity indicator are required. As applicable, install a rectangular card humidity indicator in the case and install 4 bags of activated desiccant (8-unit bag), placing 1 bag in the cavity provided at each corner of the case.

5-5.3.4.1.9 Insure that the pads are properly oriented, install the cover, and secure it by means of the 4 trunk-type latches. Tighten the relief-valve screw securely after locking the case.

5-5.3.4.1.10 In addition to existing markings, the minimum marking requirements for the exterior container is specified in table XVII. If required for shipment, mark exterior container additionally as specified in section 7.

5-5.3.4.2 UNPACKAGING. When specified, unpackage the thermal battery pack from the thermal battery pack case.

5-5.3.4.2.1 Remove the shorting plate or dummy connector plug from the unit in which the thermal battery pack is to be installed, as applicable.

5-5.3.4.2.2 Obtain the thermal battery pack case and contents, as specified, for the unit on which the thermal battery pack is to be installed. Set the case on its base. Unscrew the relief valve on the case to equalize the pressure before opening the case. Release the 4 trunk-type latches and remove the cover of the thermal battery pack case.

5-5.3.4.2.3 Remove the thermal battery pack from the case. Unwrap the thermal battery pack.

5-5.3.4.2.4 Remove the dust and moisture seal protective cap-plug(s) or electrical connector cover from the connectors of the thermal battery pack. Install the thermal battery pack on the unit, as specified.

5-5.3.4.2.5 Place the dust and moisture seal protective cap-plug(s) or electrical connector cover in the plastic bag (6 in. L by 4 in. W).

5-5.3.4.2.6 If the H635 is the thermal battery pack case involved, place the dummy connector plug in the same plastic bag used for the cap-plugs.

5-5.3.4.2.7 Place the plastic bag and contents in the cavity from which the thermal battery pack was removed. It is not necessary to apply markings for the identification of the contents of the plastic bag.

TABLE XII  
CONFIGURATION OF THERMAL BATTERY PACK CASE

H-NUMBER	ITEMS CONTAINED IN THERMAL BATTERY PACK CASE*		USE OF DESICCANT AND CARD HUMIDITY INDICATOR REQUIRED
	For Use on Battery Pack	For Use on Weapon	
H635	Dust and Moisture Seal Protective Cap-Plug:  1 ea P/N 809784-00**  1 ea P/N 809668-00**	Dummy Connector Plug:  1 ea P/N 160283-00**	No
H636	Electrical Connector Cover:  1 ea P/N 831816-00	Nothing required	Yes***
<p>*Quantities shown are those required for storage of each battery pack. Cases contain the quantities shown in each of the two cavities in the pad.</p> <p>**These items are not a part of the H635, but will be placed in each H635 subsequent to the first usage of the H635 as a storage case for a thermal battery pack.</p> <p>***A requirement whenever there is a battery pack in the thermal battery pack case</p>			

5-5.3.4.2.8 Insure that the pads are in a usable condition. The 4-1/8-in. thick pad fits in the cover and the 4-1/2-in. thick pad fits in the base.

### NOTE

The latches on the case are offset so that the cover fits the base in only one way.

5-5.3.4.2.9 Arrange the pads in the case so that the black orientation stripe on each pad will, after closure of the case, contact the orientation stripe on the other pad and the stripes will be adjacent to the relief valve on the case.

5-5.3.4.2.10 Install the cover on the base of the case and secure it by means of the 4 trunk-type latches. Tighten the relief-valve screw securely after locking the case.

5-5.3.5 PACKAGING OF THERMAL BATTERY PACKS IN DRUM-TYPE CONTAINER. These procedures are used as an alternate to packaging thermal battery pack in thermal battery pack case (paragraph 5-5.3.4).

5-5.3.5.1 If required, clean the thermal battery pack, using any applicable method that will accomplish thorough cleaning without damage to the component.

5-5.3.5.2 If required, fabricate style RSC container from 200-psi corrugated fiberboard in accordance with procedures in paragraph 2-7.8, appropriate in size to include 2 in. of wadding around the pack and desiccant, when applicable.

5-5.3.5.3 Install the dust and moisture seal protective cap-plugs on the battery pack, when applicable.

5-5.3.5.4 Wrap the thermal battery pack in non-corrosive paper barrier material (crepe). Secure

the wrap in place using any suitable pressure-sensitive adhesive tape.

5-5.3.5.5 Cover the bottom of the fiberboard container with bound hair wadding (1 in. thick). Place the thermal battery pack into the container. Fill the remaining space with sufficient bound hair wadding to prevent excessive movement of the pack. Close and secure the fiberboard container using pressure-sensitive adhesive tape (masking, 1 or 2 in. W).

5-5.3.5.6 Cover the bottom of an appropriate size drum-type container with bound hair wadding (2 in. thick). Line the sides of the container with bound hair wadding (2 in. thick). Place the thermal battery pack parcel into the container. If required in table XII, add activated desiccant along the sides of the parcel in accordance with procedures in paragraph 5-3.5.1.1. Using bound hair wadding (1 or 2 in. thick), fill the remaining space (including wadding on top of the pack) to prevent excessive movement of the parcel. When applicable, add a rectangular card humidity indicator. Close the container in accordance with procedures in paragraph 5-8.5.

5-5.3.5.7 In addition to existing markings, the minimum marking requirements for the exterior container are specified in table XVII. If required for shipment, mark exterior container additionally as specified in section 7.

5-5.3.6 INSTALLATION OF PACKING LIST ENVELOPE ON CONTAINERS (Other than H-Numbered Containers). For each container requiring packing lists, attach 1 copy to the exterior, and when specified, place 1 copy in a conspicuous location in the interior.

#### NOTE

When taping a packing list envelope to any exterior container surface, insure that the surface is clean and dry and especially clean of oil or grease.

5-5.3.6.1 For wood boxes and crates, tack or staple a packing list protector (waterproof fiberboard) embossed with the words PACKING LIST in the location specified. Staples or tacks used to secure the protector must not penetrate more than 2/3 of the thickness of the lumber. The packing list must be placed in a packing list envelope of the proper size and inserted under the packing list protector before final fastening of protector to box or crate.

5-5.3.6.2 Standard drum-type containers, when serving as exterior shipping containers for packages requiring packing lists, must have the packing list in a packing list envelope of the proper size wired

to the closure ring bolt with corrosion-resistant or zinc-coated steel wire (0.32 or 0.447 in. dia). Tape the envelope to the side of the container in accordance with procedures in paragraph 5-5.3.6.3, in a manner that will avoid obscuring stenciling on the container. The packing list envelopes for drum-type containers, 88 cu in. through 224 cu in., may be folded prior to taping to the container and the words PACKING LIST need not be exposed.

5-5.3.6.3 Fiberboard or similar exterior shipping containers shall have the packing lists in packing list envelopes of the proper size. Tape the envelope to the container using filament reinforced pressure-sensitive adhesive tape. If necessary, the envelope may be folded to suit size of container. Tape the envelope to one of the marked surfaces; if space is insufficient the envelope may be placed on any side or end where markings will not be covered.

5-5.3.7 INSTALLATION OF PACKING LIST ENVELOPE ON BASIC ASSEMBLIES AND H-NUMBERED CONTAINERS (Other than Drum-Type).

5-5.3.7.1 Packing list envelopes are located as specified. Position the packing list envelope on the assembly and secure the envelope with pressure-sensitive adhesive tape (black) as shown in figure 5-2. When packing lists envelopes are wired to a container, use corrosion-resistant or zinc-coated steel wire (0.032 or 0.047 in. dia).

5-5.3.7.2 As an alternate method, the packing list envelope may be installed on curved surfaces as shown in figure 5-3. For wood boxes and crates, the packing list envelope may be tacked or stapled in place as specified in paragraph 5-5.3.6.1.

5-5.3.7.3 For taping packing list envelope to any surface other than an exterior container surface, pressure-sensitive adhesive tape (masking) may be used instead of the specified tape.

5-5.3.8 INSTALLATION OF PACKING LIST ENVELOPE ON DRUM-TYPE H-NUMBERED CONTAINERS.

5-5.3.8.1 Procedures for installation of a packing list envelope on a drum-type H-numbered container are the same as for a standard drum-type container (paragraph 5-5.3.6.2).

5-5.3.8.2 As an alternate method, the packing list envelope may be installed as shown in figure 5-3.

5-5.3.9 PACKAGING OF O-RINGS OR PREFORMED PACKINGS FOR DOMESTIC SHIPMENT. These pro-

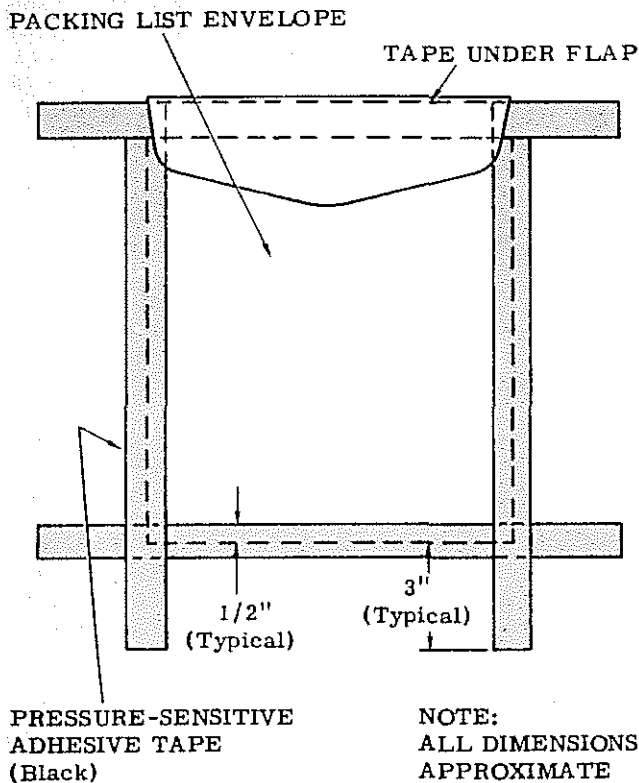


Figure 5-2 Method of Taping Packing List Envelope

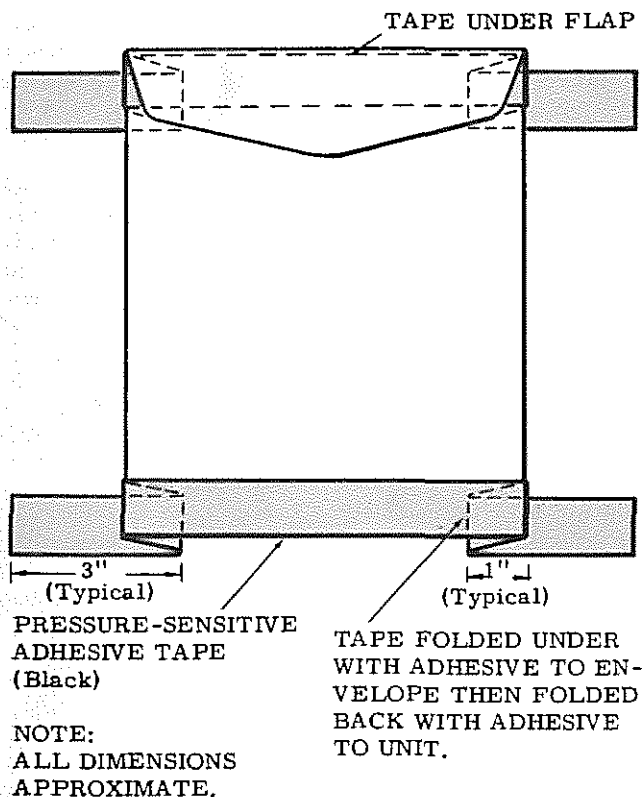


Figure 5-3 Alternate Method of Taping Packing List Envelope

cedures cover requirements for unit and shipping packaging of O-rings and are only to be used when specified and required for domestic shipment. Unless otherwise specified, the three processes are alternates, except that method III is only used for O-rings having an inside diameter of 4 in. or less.

5-5.3.9.1 PROCESS I. This is a skin packaging process on plastic coated fiberboard. One O-ring is packaged per unit package.

5-5.3.9.1.1 Cover fiberboard with plastic by the hot coating method.

5-5.3.9.1.2 Place O-ring on the covered fiberboard, positioning the O-ring as closely as practicable to its original shape. Cover with plastic skin, forming skin to the O-ring contour. Seal by heat and vacuum.

5-5.3.9.1.3 For removing O-ring from package, a stripper is required to facilitate removal.

5-5.3.9.2 PROCESS II (Figure 5-4).

5-5.3.9.2.1 Cut a top and bottom square pad from fiberboard (minimum 275 psi), not less than 2 in. or more than 4 in. larger than the outside diameter of the O-ring, or the overall diameter of the O-ring as coiled (paragraph 5-5.3.9.2.4).

5-5.3.9.2.2 Fabricate disc from fiberboard using any number of discs to equal a height of not less than 1/8 in. or more than 1/4 in. than the cross section of the O-ring or the overall height of the O-ring as coiled (paragraph 5-5.3.9.2.4). Cut disc diameter to 1/4±1/8 in. smaller than the inside diameter of the O-ring, or the inside diameter of the O-ring as coiled.

5-5.3.9.2.3 Secure disc to the approximate center of the bottom pad using any suitable adhesive, or staples of sufficient length to allow clinching.

5-5.3.9.2.4 Place one O-ring per package around the disc on the bottom pad. Coil O-rings that have an inside diameter of over 16 in. Coil as few times as possible to obtain a 16 in. diameter or less.

#### NOTE

Square or rectangular parts shall not be coiled.

5-5.3.9.2.5 Secure top and bottom pads of fiberboard protector together with any suitable pressure-sensitive adhesive tape. Apply tape in such a manner as to prevent adhesive portion of tape from contacting O-ring.

5-5.3.9.2.6 Fabricate a water-vaporproof bag in accordance with procedures in paragraph 2-3.1. Cut the bag to sufficient length to allow opening and resealing

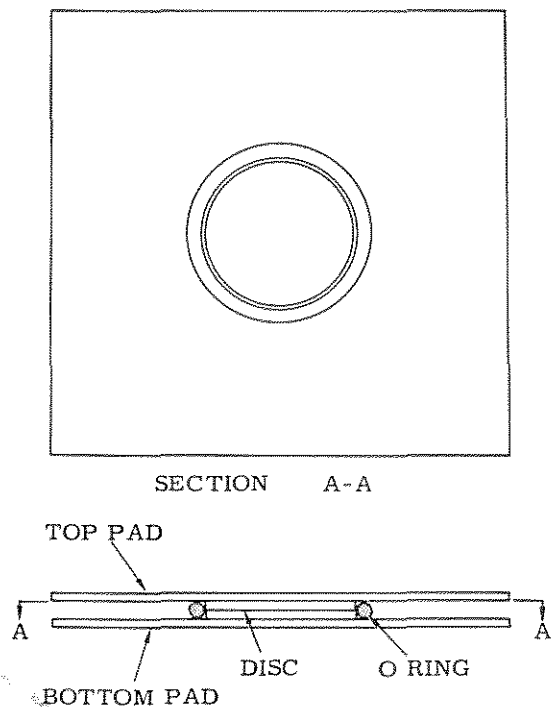


Figure 5-4 Fiberboard O-Ring Protector

three times. Place O-ring and fiberboard protector in the bag. Heat-seal the bag in accordance with procedures in paragraph 2-3.2.

5-5.3.9.3 PROCESS III. This process is applicable to O-rings having an inside diameter of 4 in. or less.

5-5.3.9.3.1 Fabricate a water-vaporproof bag in accordance with procedures in paragraph 2-3.1. Cut the bag to sufficient length to allow opening and resealing three times and to permit the O-ring to retain its original shape.

5-5.3.9.3.2 Place one O-ring in the bag, and heat-seal in accordance with procedures in paragraph 2-3.2.

5-5.3.9.4 UNIT PACKAGE MARKING.

5-5.3.9.4.1 Mark unit package using any legible method (paragraph 6-4).

5-5.3.9.4.2 Mark each unit package with the following information.

- a. Part Number
- b. Nomenclature (applicable short designation)
- c. 1 EA

d. DO NOT OPEN UNTIL READY FOR USE. (Separated from other markings to make it as conspicuous as practicable.)

5-5.3.9.5 PACKAGING UNIT PACKAGES FOR DOMESTIC SHIPMENT. Pack any number of unit packages in a shipping container suitable for domestic shipment (paragraph 5-4.3). When unit packages do not completely fill the shipping container, use sufficient suitable cushioning material (paragraph 5-5.1) to prevent excessive movement.

5-5.3.9.5.1 Place unit packages wrapped in accordance with process I (paragraph 5-5.3.9.1) on edge in the shipping container.

5-5.3.9.5.2 Place unit packages wrapped in accordance with processes II and III (paragraphs 5-5.3.9.2 and 5-5.3.9.3) as flat as practicable in the shipping container.

5-5.3.9.5.3 When unit packages of O-rings are packed in a container with miscellaneous material, observe the same packing criteria as indicated in paragraphs 5-5.3.9.5.1 and 5-5.3.9.5.2.

5-5.3.9.6 MARKING CONTAINER FOR SHIPMENT. Mark shipping containers in accordance with applicable procedures in paragraph 7-4.

5-5.3.10 PACKAGING OF INSPECTION RECORD CARD FOR WEAPON MAJOR ASSEMBLIES.

5-5.3.10.1 Place the inspection record card(s) and any additional records specified in the referencing document in one 10 by 15 in. plain brown mailing envelope or other suitable opaque envelope without folding the cards.

5-5.3.10.2 If any card is classified, mark the envelope with appropriate classification and other required information in accordance with Service directives. Also mark the following information on at least one side of the envelope, using any method desired:

NOTICE: THIS ENVELOPE, AND ITS CONTENTS, ARE THE PROPERTY OF THE U.S. GOVERNMENT. IF FOUND, PLEASE MAIL TO:

COMMANDER  
FIELD COMMAND DASA  
SANDIA BASE  
ATTN: ADJUTANT GENERAL  
ALBUQUERQUE, N M 87115

#### NOTE

The address marking may also be placed on envelopes containing unclassified cards.

5-5.3.10.3 Seal and fold envelope containing card(s) and place it in 12 by 12 in. waterproofed envelope, taking care not to fold enclosed cards. Close the envelope.

5-5.3.10.4 Secure the waterproofed envelope to the exterior of the package, using filament reinforced pressure-sensitive adhesive tape, corrosion-resistant or zinc-coated steel wire (0.032 to 0.047 in. dia), and location specified in the referencing document. Keep the length of wire as short as practical.

## 5-6 PACKAGING OF TEST EQUIPMENT CONTAINERS AND MATERIALS.

5-6.1 GENERAL. Refer to paragraph 5-1 for materials and general procedures, as applicable. Install a new card humidity indicator in the container if the existing card is damaged or missing in accordance with procedures in TP 40-54.

### 5-6.2 ALUMINUM CARRYING CASE.

5-6.2.1 Check the dehydrator in the cover of the carrying case. If the desiccant is pink 2/3 the length of the tube, replace the desiccant with activated desiccant (blue bulk).

5-6.2.2 If auxiliaries and/or spares are to be packed in the case, and if specified, line the storage compartment with noncorrosive paper barrier material (crepe) using sufficient material to allow for folding across items when packed. Place auxiliaries and/or spares in storage compartment. Add the specified amount of activated desiccant and fold the barrier material over the items. Use sufficient bound fiberglass wadding to prevent excessive movement. Close compartment door.

5-6.2.3 If auxiliaries and/or spares are not packed in case assembly, place the specified amount of activated desiccant in the case lid assembly.

5-6.2.4 Install the carrying-case cover and torque the cover retaining screws 30 to 50 in.-lb.

### 5-6.3 GLASS-FIBER CARRYING CASE.

5-6.3.1 Check the plastic dehydrator in the cover of the carrying case. If the dehydrator container is crazed or clouded to the extent that the color of the desiccant cannot be determined, replace the dehydrator. If the desiccant is pink up to the red line (placed perpendicular to the spiral air path), perform drying of desiccant in dehydrator in accordance with procedures in paragraph 5-6.8.

5-6.3.2 If auxiliaries and/or spares are to be packed in storage compartment, line the compartment with noncorrosive paper barrier material (crepe) using sufficient material to allow for folding across items when packed. Place auxiliaries and/or spares in storage compartment and add the specified amount of

activated desiccant. Use sufficient bound fiberglass wadding to prevent excessive movement. Close compartment door.

5-6.3.3 If auxiliaries and/or spares are not packed in case assembly, place the specified amount of activated desiccant in the case lid assembly. Close and latch the case.

### 5-6.4 GLASS-FIBER PLASTIC CONTAINER.

5-6.4.1 If auxiliaries and/or spares are to be packed in storage compartment, line the compartment with noncorrosive paper barrier material (crepe) using sufficient material to allow for folding across items when packed. Place auxiliaries and/or spares in storage compartment and add the specified amount of activated desiccant. Use sufficient bound fiberglass wadding to prevent excessive movement. Close compartment door.

5-6.4.2 If auxiliaries and/or spares are not packed in container, place the specified amount of activated desiccant in the storage compartment. Close and latch the container. If container has a pressure relief valve, close valve by turning clockwise until tight.

### 5-6.5 DRUM-TYPE CONTAINERS.

#### 5-6.5.1 AUXILIARIES AND/OR SPARES.

5-6.5.1.1 Cover bottom of container with one piece of bound hair wadding (1 in. thick).

5-6.5.1.2 Line the container with noncorrosive paper barrier material (crepe), using enough material to allow for folding across container contents when contents are added.

5-6.5.1.3 Place all items in the container with the large and/or heavy items near the bottom.

5-6.5.1.4 Add the specified amount of activated desiccant and fold the barrier material over contents. Use sufficient bound hair wadding to prevent excessive movement.

5-6.5.1.5 Close the container, and wire-seal if required (paragraph 5-8.5 and 5-8.7 respectively).

5-6.5.2 CABLE SETS. Package cable sets in accordance with procedures in paragraphs 5-5.3.3 and 5-6.5.1, with the exception that the bottom of the container is covered with bound fiberglass wadding, if specified. Additionally, use sufficient bound fiberglass wadding to prevent excessive movement of the components if specified.

## NOTE

If grounding blade of CT1192 Electrical Special Purpose Cable Assembly has been



removed, place grounding blade in cloth bag and attach bag to cable by means of draw strings. Attach bag to within 12 in. of plug P2.

### 5-6.5.3 TEST SETS OTHER THAN CABLE SETS.

5-6.5.3.1 Line the interior of the container with bound hair wadding.

5-6.5.3.2 Wrap the test set in the material specified and place in the container.

5-6.5.3.3 Add the specified amount of activated desiccant and use sufficient bound hair wadding to prevent excessive movement.

5-6.5.3.4 Close the container, and wire-seal if required (paragraphs 5-8.5 and 5-8.7, respectively).

### 5-6.6 INSTALLATION OF PACKING LIST ENVELOPE.

5-6.6.1 Where special design containers are used attach the packing list, in its packing list envelope, as shown in figures or tables pertaining to the particular type of container (Section 6). When packing lists are wired to a container, use steel wire (No. 18, 22, or 23 AWG).

5-6.6.2 When fiberboard or similar exterior shipping containers are used as over-pack for test equipment containers, packing lists in packing list envelopes are attached to the exterior shipping container. Tape the envelope to the fiberboard container with the same kind of tape used to seal the container or use black pressure-sensitive adhesive tape. If necessary, the envelope may be folded to suit size of container. Tape the envelope to one of the marked surfaces. If space is insufficient, the envelope may be placed on any side or end where markings will not be covered.

5-6.7 INSPECTION AND PACKAGING OF DEHYDRATOR UNITS. These procedures provide detail requirements for the periodic inspection and packaging of dehydrator units (P/N 124138-00 and/or P/N 137267-00).

5-6.7.1 INSPECTION OF DEHYDRATOR UNIT. When the dehydrator unit is not installed for a period of 12 mo, open the shipping and intermediate containers and inspect the dehydrator units. If the plastic dehydrator container is "crazed" or clouded to the extent that the color of the desiccant cannot be determined, dispose of the dehydrator. If the desiccant in any dehydrator is pink, perform drying of desiccant in dehydrator in accordance with procedures in paragraph 5-6.8. Repackage the dehydrator units. If desired, desiccant in dehydrator may be replaced.

### 5-6.7.2 PACKAGING OF DEHYDRATOR UNITS.

5-6.7.2.1 Wrap each dehydrator unit in noncorrosive paper barrier material (crepe) and secure with pressure-sensitive adhesive tape (masking).

5-6.7.2.2 Place parcel in a water-vaporproof barrier material (Class 1) bag. If necessary, fabricate a bag (paragraph 2-3) long enough to permit opening and reclosing a minimum of three times. Add a total of 6 units of activated desiccant and heat-seal the bag in accordance with procedures in paragraph 2-3.2.

5-6.7.2.3 Place parcel in a close-fitting corrugated fiberboard container (minimum 125 psi). Use cushioning as required to prevent excessive movement of the packed items. Close the container, using water-resistant gummed paper tape.

5-6.7.2.4 Place the containers in a fiberboard container in quantities not to exceed the weight limitations of the container (table XI). If necessary, use cushioning material to prevent excessive movement of the packed items. Close container in accordance with procedures in paragraph 5-8.1.

5-6.7.2.5 When dehydrator unit packages have been opened for inspection, and subsequent to closing and sealing of exterior container, obliterate the old packed date and stencil new packed date in accordance with applicable procedures in Section 6.

5-6.8 DRYING OF DESICCANT IN SPIRAL DEHYDRATOR (P/N 124138-00 or P/N 137267-00). The following method is used for the drying of desiccant in spiral dehydrator (P/N 124138-00 or P/N 137267-00) without disassembly of the dehydrator. If dehydrator is in storage, unpackage the dehydrator and use the procedures to the extent applicable.

5-6.8.1 Equipment required to perform drying operation consists of:

- a. Oven (with oven fan, if possible)
- b. Vacuum pump (approximate capacity of 900 cu in. in 1 min per dehydrator at sea level)
- c. Adapter plug (to mate with 1/2-13UNC-2B threads in stem on bottom of dehydrator and adapt to the vacuum pump)

5-6.8.2 Remove the dehydrator mounting nut from the cover of the container, and remove the dehydrator from the cover. For dehydrators removed from storage, remove the cellophane tape from the screened opening on top of the dehydrator outer periphery.

5-6.8.3 Install the adapter plug into the stem on the bottom of the dehydrator and connect to an external vacuum pump.

5-6.8.4 Place dehydrator in the oven and position it so that the oven fan will blow directly on the top face (screened opening on the outer periphery) of the dehydrator. If the oven is not equipped with a fan, orient the dehydrator for maximum free air flow.

### CAUTION

Do not heat the oven over 180°F, as damage to the plastic dehydrator case will result.

5-6.8.5 Set the oven temperature at 176° to 180°F, and preheat the oven for 1 hr. Start the vacuum pump and draw warm air through the dehydrator for 3 hr.

5-6.8.6 Remove dehydrator from the oven and allow to cool. For dehydrators to be returned to storage only, install cellophane tape over screened opening on top of the dehydrator outer periphery. For dehydrator to be stored, package in accordance with procedures in paragraph 5-6.7.2. If dehydrator is to be installed in fiberglass container, continue with procedures in paragraph 5-6.8.7.

5-6.8.7 Position aluminum disc (P/N 144552-00) over opening in inside of case cover. Install dehydrator in case cover and secure with the dehydrator mounting nut. Torque nut to 300±10 in.-lb.

## 5-7 OPENING DRUM-TYPE CONTAINERS.

### WARNING

Pressure may build up within container not equipped with relief valve. Observe appropriate safety precautions when removing cover.

Remove any seal, and remove nut and bolt securing locking ring of container. Remove the locking ring and cover.

## 5-8 CLOSING, STRAPPING, AND WIRE SEALING OF EXTERIOR CONTAINERS.

### 5-8.1 CLOSING EXTERIOR FIBERBOARD CONTAINERS.

5-8.1.1 Secure bottom flaps of fiberboard containers by metal stitching (paragraph 2-7.7) or by use of EC-194 adhesive.

5-8.1.2 Seal the closure flaps of fiberboard containers by means of EC-194 adhesive, applying the adhesive to the entire area of contact between flaps.

5-8.1.3 Apply gummed tape over all joined seams of fiberboard containers. The following listed tapes are used for this purpose.

- a. Gummed tape
- b. Water-resistant gummed paper tape
- c. Waterproof pressure-sensitive adhesive tape
- d. Gummed filament reinforced tape

5-8.2 SLEEVING AND STRAPPING EXTERIOR FIBERBOARD CONTAINERS. These procedures are applicable only to an exterior fiberboard container which has two of the three dimensions (length, width, or height) measuring 9 in. or more.

5-8.2.1 Use a fiberboard sleeve on the container (paragraph 2-7.17).

5-8.2.2 Strap the container with flat steel strapping (galvanized finish, 5/8 in. W).

5-8.2.3 When applying strapping on the container, run the strapping over the top and bottom of the sleeve and the two sides of the container, not over the ends.

5-8.2.4 Keep the straps straight. Use sufficient tension to imbed the strap in the edges of the container but not enough to cut, tear, or otherwise damage the fiberboard or crush the contents of the container.

5-8.2.5 Refer to table XIII to determine the number of straps required for a container of a given size.

### 5-8.3 CLOSING OF WOOD BOXES.

#### 5-8.3.1 WHEN RELATIVELY WIDE BARRIER MATERIAL STOCK IS USED.

5-8.3.1.1 After contents have been packed, fold down two opposite sides of the flexible waterproofed barrier material (Class E-1) extending above the top of the box. Fold down the triangular flaps at each end and cement the flaps in place, using EC-194 adhesive.

5-8.3.1.2 Cut barrier material to cover the open box, approximately 2 in. larger than the outside dimensions of the box top.

5-8.3.1.3 Apply adhesive around the entire top edge of the box. Place the barrier material on the cemented edges and press barrier material firmly in place. Make sure of a good seal all the way around the top. Trim off excess barrier material. Secure lid in place in accordance with procedures in paragraphs 2-8.9.7 through 2-8.9.13.

5-8.3.1.4 As an alternate method, the barrier material may be cemented to the lid of the box. Prior to placing the lid on the box, apply adhesive around

**TABLE XIII**  
**REQUIRED NUMBER OF STRAPS FOR EXTERIOR**  
**FIBERBOARD CONTAINERS**

LENGTH OF CONTAINER (Inches)	NUMBER OF STRAPS (Minimum)
9 thru 18	1*
More than 18 thru 30	2**
More than 30	Add one strap for each 2 ft. or fraction thereof, in excess of 30 in.***
<p>*When only one strap is used, it shall be centered with the length of the container</p> <p>**When two straps are used, the distance between the straps and the end of the container shall be not less than 3 in. nor more than 5 in.</p> <p>***Intermediate straps shall be equidistant between end straps</p>	

the top edge of the box. Trim off excess barrier material. Secure lid in place in accordance with procedures in paragraphs 2-8.9.7 through 2-8.9.13.

#### 5-8.3.2 WHEN RELATIVELY NARROW BARRIER MATERIAL STOCK IS USED.

5-8.3.2.1 After contents have been packed, and with the top section of flexible waterproofed barrier material (Class E-1) in a horizontal position, place the second piece of barrier material (cut in accordance with procedures in paragraph 2-6.3.2) on top and seal in place with EC-194 adhesive.

5-8.3.2.2 Cut barrier material to cover the open box, approximately 2 in. larger than the outside dimensions of the box top.

5-8.3.2.3 Apply adhesive around the entire top edge of the box. Place the barrier material on the cemented edges and press barrier material firmly in place. Make sure of a good seal all the way around the top. Trim off excess barrier material. Secure lid in place in accordance with procedures in paragraphs 2-8.9.7 through 2-8.9.13.

5-8.3.2.4 As an alternate method, the barrier material may be cemented to the lid of the box. Prior

to placing the lid on the box, apply adhesive around the top edge of the box. Secure lid in place in accordance with procedures in paragraphs 2-8.9.7 through 2-8.9.13.

#### 5-8.4 STRAPPING WOOD BOXES AND CRATES.

5-8.4.1 When a box or crate and its contents weigh 200 lb or less, use 5/8-in. flat steel strapping (galvanized or coated finish). When a box or crate and its contents weigh more than 200 lb, use 1-1/4-in. flat steel strapping (galvanized or coated finish).

5-8.4.2 Use two or more straps on all wooden boxes or crates.

5-8.4.3 For boxes, locate outer straps not less than 2 in. nor more than 6 in. from the end of the box. Whenever possible, place straps in the centers of top end battens.

5-8.4.4 For crates, locate outer straps approximately in the center of the butt ends of the diagonal side braces, but in no case more than 12 in. from the end of the crate.

5-8.4.5 Use additional strapping as follows:

5-8.4.5.1 When the distance between outer straps on a box or crate is more than 24 in., place an intermediate strap approximately midway between the two outer straps.

5-8.4.5.2 Use additional strapping as required to assure that the maximum distance between any two straps will be 24 in. When more than two straps are used, space straps at approximately equal intervals.

5-8.4.5.3 When a box or crate is so constructed that a skid interferes with placement of an intermediate or additional strap, offset the strapping to either side of the skid. If offsetting the strapping increases the distance between any two straps to more than 24 in., an additional strap need not be installed.

5-8.4.6 Install all strapping perpendicular to the edges of the box or crate over which routed and draw tight enough to sink into the edges of the wood. Do not tighten the strapping so much that it bows, splits, or otherwise damages the box or crate.

5-8.4.7 Staple the strapping to the sides and top of the box or crate. If the side or top is 24 in. wide or less, use two staples for that side or top. Use an additional staple for each additional foot of width for any side or top. Apply staples only on the braces of crates. When using staples, do not permit them to protrude into the interior of the box or crate.

## 5-8.5 CLOSING DRUM-TYPE CONTAINERS.

5-8.5.1 Place the gasket in the lid of the container so that the flat part of the gasket will contact the upper bead on the container when the lid is installed.

5-8.5.2 Place the lid on the container. Cover the inside of the locking ring with a film of general-purpose lubricating oil and install the locking ring over the bead of the container and the edge of the lid. Insure that the lugs of the locking ring do not extend above the lid.

### NOTE

Where a locking-ring compressor is not available for the container, tap around the locking ring with a rubber mallet while tightening to insure the ring is pulled tight around the entire circumference of the containers.

5-8.5.3 To help tighten the locking ring, use the appropriate metal drum cover locking-ring compressor.

5-8.5.4 Use machine bolt and nut (1/4-20 UNC by 2 in. L) for closing 5-in. through 8.5-in. inside-diameter drum-type containers.

5-8.5.5 Use machine bolt (5/16-18 NC by 3-1/4 in. L) for closing 10.5-in. through 22.5-in. inside-diameter drum-type containers. Also use the nut furnished with the container, a hexagon plain nut (5/16-18 NC-2), or a square plain nut (5/16-18 NC-2).

5-8.5.6 Tighten the locking-ring bolt so that the lid is secured in place. Do not allow the ends of the locking ring to touch or to come closer to one another than 1/8 in.

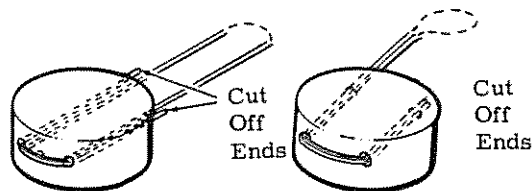
5-8.5.7 Cover all exposed bolt threads that have passed through the nut with a thin film of solvent-cutback corrosion preventive.

5-8.6 CLOSING MULTIPLE-PURPOSE CONTAINER. Before closing the packed multiple-purpose container, remove any tape that may be installed on the dehydrator port located in the center of the container lid.

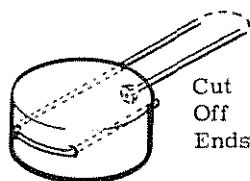
5-8.7 WIRE SEALING. Containers are wire sealed using a lead seal with wire attached or a lead seal and separate sealing wire. Proper assembly of both types of seals is shown in figure 5-5.

### NOTE

The method of wire sealing used in paragraph 5-8.7.1 may be used as an alternate for the methods specified in paragraphs 5-8.7.2 and 5-8.7.3.



SEPARATE SEAL  
AND WIRE



SEAL WITH  
SINGLE OR  
STRANDED  
WIRE  
ATTACHED

### NOTE:

If any seal shown has slot between holes, imbed wires in slot before crimping seal.

Figure 5-5 Safety Wire and Lead Seal

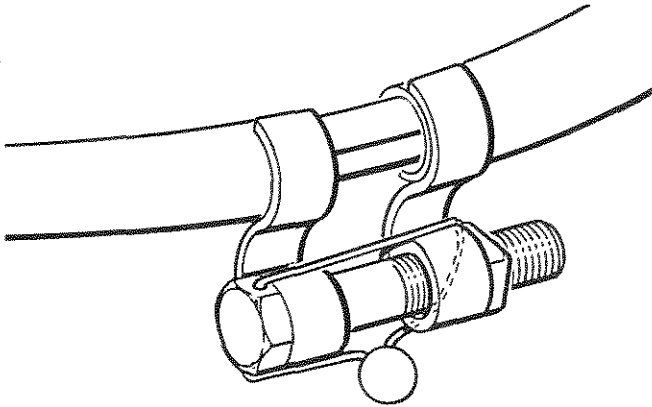
5-8.7.1 For drum-type containers having a closure bolt with a drilled head, run the wire through the drilled hole and around the locking ring and the bolt, as shown in figure 5-6. Compress the lead seal with a hand crimper after drawing the wire taut.

5-8.7.2 For drum-type containers of 5 in. through 8.5 in. inside diameter, run the wire through the lower hole in each lug as shown in figure 5-7 or through one unbroken hole in each lug.

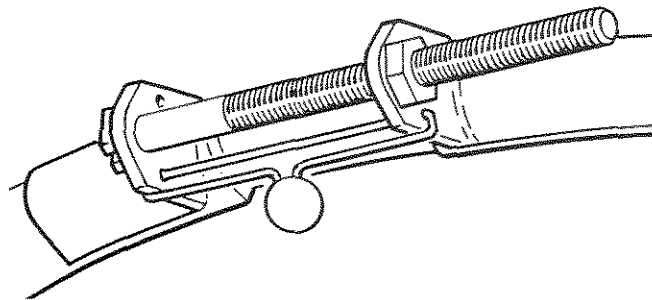
5-8.7.3 For drum-type containers having a closure ring with cast or forged lugs, run the wire through the small diameter hole in each lug, approximately center the lead seal between the lugs and install the wire through the seal as shown in figure 5-7A. Draw the wire as tight as practicable and crimp the seal.

5-8.7.4 Boxes and crates strapped in accordance with procedures in paragraph 5-8 require no additional sealing.

5-8.7.5 On standard aluminum test equipment cases, run the wire through the drilled head of the cover-closure screw, then through the gusset on the cover handle. Use 2 seals, 1 for each cover handle. On old-type cases which have no cover handles, run the wire through the 2 drilled screwheads located on one corner of the cover.



**Figure 5-6** Wire Seal for Drum-Type Containers with Drilled-Head Closure Bolts



**Figure 5-7** Wire Seal for Drum-Type Containers with Nondrilled-Head Closure Bolts

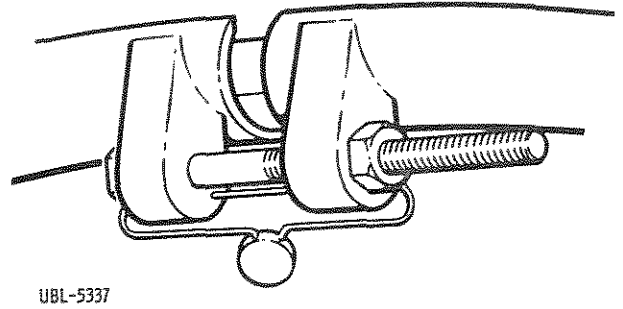
**5-8.7.6** For standard fiberglass test equipment cases, use wire seal on any 2 opposite latches.

**5-8.7.7** Apply wire seals to cylindrical H-numbered containers with mounting flanges in accordance with procedures in paragraphs 5-8.7.7.1 through 5-8.7.7.5, as applicable.

**5-8.7.7.1** On flange-type containers having closure bolts with drilled head, thread the wire through the heads of 2 bolts on 1 side of the container, nearest to the indicator window, if present. Do not twist the wire. Draw wire tight and compress the lead seal, using a hand crimper. Seal the 2 bolts on the opposite side of the container in the same way.

**5-8.7.7.2** On flange-type containers which do not have drilled-head closure bolts but which have 2 pairs of holes (located 180° apart) in the flange, thread the wire through 1 pair of holes. Do not twist the wire. Draw the wire tight and compress the lead seal, using a hand crimper. Install a seal on the second pair of holes in the same way.

**5-8.7.7.3** On flange-type containers which do not have drilled-head closure bolts and which have 2 single holes (located 180° apart) in the flange, thread the wire through 1 of the holes and loop



**Figure 5-7A** Wire Seal for Drum-Type Containers with Cast or Forged Lugs

the wire around the flange. Do not twist the wire. Draw the wire tight and compress the lead seal, using a hand crimper. Install a seal on the second hole in the same way.

**5-8.7.7.4** On flange-type containers having both closure bolts with drilled heads and either 2 pairs or 2 single holes in the flange, any of the applicable methods described in paragraphs 5-8.7.7.1 through 5-8.7.7.3 are acceptable. However, the methods specified in paragraphs 5-8.7.7.2 or 5-8.7.7.3, as applicable, are preferred.

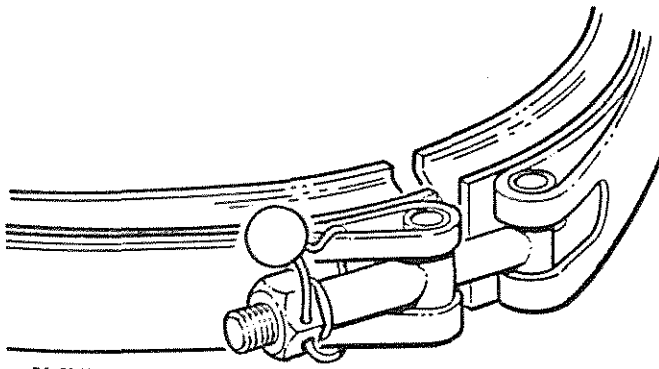
**5-8.7.7.5** On containers having a band clamp with a T-bolt latch with drilled nut (figure 5-8), thread the wire through the hole in the nut and under the T-bolt retainer of the strap. Do not twist the wire. Draw the wire tight and install and compress the lead seal with a hand crimper.

**5-8.7.7.6** On containers having 2 flat loop brackets on the locking ring, and a closure bolt without a drilled head, run wire under and around each flat loop bracket as shown in figure 5-9. Compress the lead seal with a hand crimper after drawing wire taut. If container has a closure bolt with a drilled head, run wire through drilled hole and under and around flat loop bracket located opposite bolt head, or route wire as shown in figure 5-6. Compress the lead seal with a hand crimper after drawing wire taut.

**5-8.7.8** Apply wire seals to access doors and covers equipped with mounted sealing rods (figure 5-10) at all locations where pairs of sealing rods are installed.

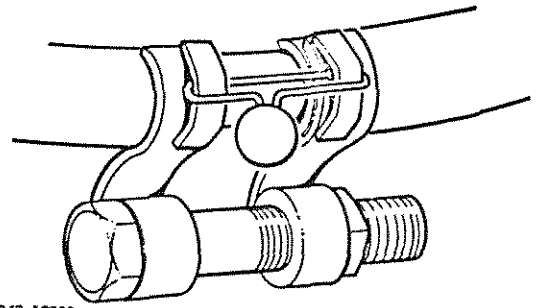
**5-8.7.8.1** Run the wire through the slot under each of the 2 sealing rods and bring the wire across the top of the rods. Do not twist wire. Draw the wire tight and compress the lead seal using a hand crimper.

**5-8.7.8.2** Repeat for each pair of sealing rods on the container.



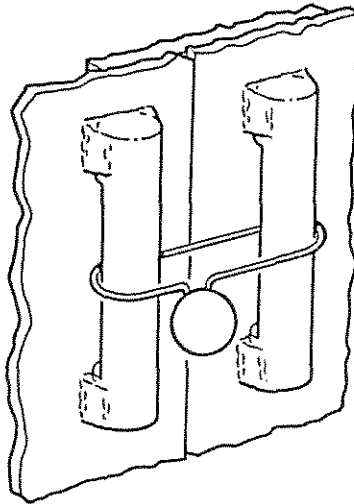
D1-3148

**Figure 5-8** Wire Seal for Containers with T-Bolt Latch with Drilled Nut



D63-12389

**Figure 5-9** Wire Seal for Containers Having Flat Loop Brackets on Locking Ring and Undrilled Bolt Head



D-103181

**Figure 5-10** Wire Seal for Access Doors and Covers Equipped with Mounted Sealing Rods

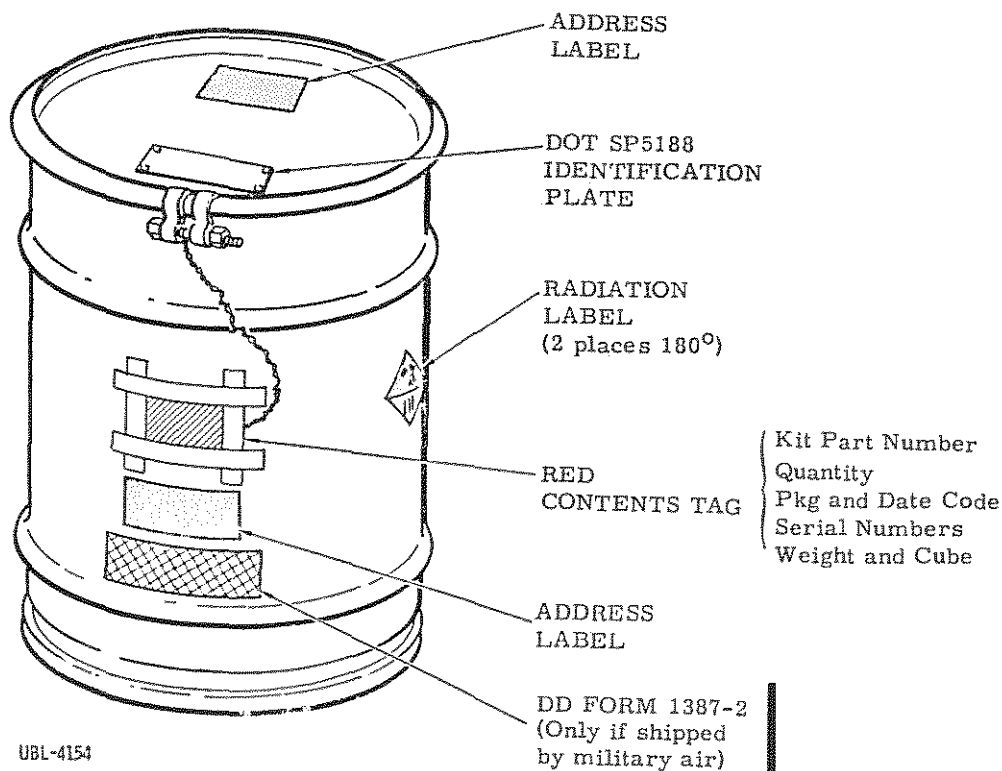


Figure 5-11 Typical LLC Package Using 16-Gallon Drum

5-8.8 CLOSING LLC CONTAINERS (Figures 5-11 and 5-12).

#### NOTE

These procedures assume that interior packaging procedures have been performed in accordance with the referencing document, and any required forms have been placed in the container.

5-8.8.1 For 16-gal drum only, if not already done, cover screw heads on bottom side of drum cover with pressure-sensitive adhesive tape (lead foil) so that tape extends at least 1/2-in. beyond screw heads.

5-8.8.2 Place sufficient additional packaging material (use thermal insulation felt for 16-gal drum; use bound hair wadding, urethane foam, etc for 9-gal drum) to insure slight compression on contents when cover is installed.

5-8.8.3 Install cover and locking ring in accordance with procedures in paragraph 5-8.5 except for those covers having a DOT Identification Plate (figure 5-11), orient the plate adjacent to and centered with the lugs on the locking ring.

5-8.8.4 Using lead seal (with No. 23 A(steel)WG wire, 10 in. L), seal container in accordance with procedures in paragraph 5-8.7.1 or 5-8.7.3, as appropriate.

5-8.8.5 Remove and discard wire from blank tag (red, w/wire attached) and, using kit part number obtained from the referencing document and serial numbers obtained from notes, mark the red contents tag with the information shown below. Hand-lettering shall be in waterproof ink, using characters 5/32-in. or more high; typed characters shall be in capital letters.

Kit Part Number (Obtain from referencing document.)

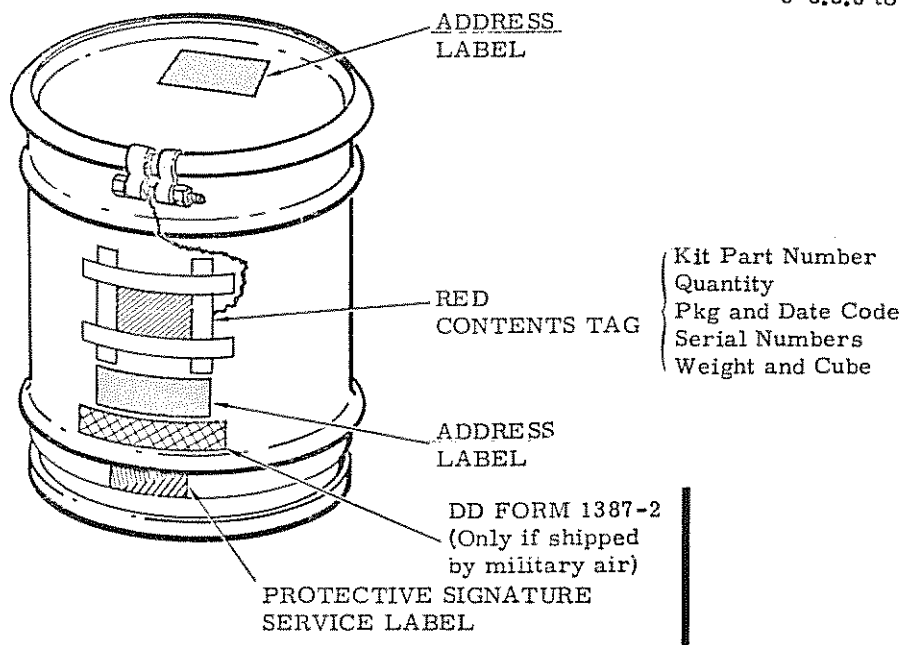
Quantity: "1 EA"

Pkg and Date Code: "A/A-1A- (current date by month and year  
Example: 6/69)

Serial Numbers (List serial numbers of packaged units in the order in which they were initially recorded; do not list prefixes or suffixes.)

Weight (Package weight to nearest pound.)

Cube (3.6 for 16-gal drum) (2.1 for 9-gal drum)



## NOTE:

Shipments containing explosive neutron generators require labeling or stenciling on opposite side of drum:

DETONATING FUZES  
CLASS C EXPLOSIVES  
HANDLE CAREFULLY

UBL-4157

Figure 5-12 Typical LLC Package Using 9-Gallon Drum

## NOTE

Any additional information, words, or symbols may classify the tag.

5-8.8.6 Apply cover coat to red contents tag using lacquer (clear) or varnish (Phenolic resin base).

5-8.8.7 Using corrosion resistant or zinc coated steel wire (0.032-0.035 in. dia) and single- or double-twist method, wire the red contents tag to center of closure bolt; keep length of wire as short as practical.

5-8.8.8 Locate tag below closure bolt with long sides of tag horizontal and secure tag to container using strips of pressure-sensitive adhesive tape (black, MMM No. 870) along edges as shown.

5-8.8.9 For 16-gal drum only if present, remove the blue and white diamond-shaped label from side of container.

5-8.8.10 For 16-gal drum only if not already done, install 2 yellow labels (RADIOACTIVE-III) on opposite sides of the container as shown in figure 5-11; do not cover or obliterate any other tags or markings. Using any suitable method, mark "N.O.S." on labels after the headings "CONTENTS" and "NO. OF CURIES"; additionally, mark a "0" (zero) in the block beneath "NO. OF CURIES".

5-8.8.11 For 16-gal drum only if there is a hole in the bottom and/or side of the container, cover hole(s) using pressure-sensitive adhesive tape (lead foil).

5-8.8.12 For 9-gal drum only, if units packaged in drum are explosive-type, stencil the following markings on side opposite red contents tag, using lusterless yellow enamel or lacquer and 1/2-in. high capital letters or, as an alternate method, install a prepared label containing the markings:

DETONATING FUZES  
CLASS C EXPLOSIVES  
HANDLE CAREFULLY

5-8.8.13 All LLC containers to be shipped by REA Express will have affixed to container side a Protective Signature Service Label. The label will be affixed by REA Express or shipper at time of shipment.

5-8.8.14 Each LLC shipping container will have 2 address labels, DD Form 1387, "Military Shipment Label." One label will be secured to the container cover and the other one will be affixed to the side of the container. Each label will indicate shipping document identifier, consignor, consignee, container (piece) number, total containers (pieces), total weight, and cube.



## SECTION 6

### IDENTIFICATION MARKING

#### 6-1 GENERAL.

6-1.1 This section contains instructions for the uniform identification marking of shipping and storage containers or security covers, test equipment containers, interior packages, parcels, etc, electrical wires and cables, and other components or containers as specified in referencing documents.

6-1.2 Referencing documents provide specific marking instructions to the extent required to reflect the status of the entity involved, whether markings are functional or nonfunctional. Although the maintenance of non-functional markings is not required by referencing documents, neither are such markings to be obliterated merely because they are not maintained or illustrated in a given referencing document. However, when refinishing any item, only functional markings as defined in referencing documents are required to be either masked out prior to refinishing or reapplied after refinishing.

6-1.3 Marking illustrations contained herein are typical, and, unless otherwise specified, similar items are marked approximately as shown. If necessary, adjust the location of markings slightly to clear straps, catches, rolling hoops, or other removable parts. Various illustrations and tables specify what markings appear on packages and containers and where the markings are located.

6-1.4 The Federal Stock Number is used when applicable and available. The Federal Stock Number is obtained from current information. Any application of Federal Stock Numbers to atomic weapons material is to be done at the discretion of the using agency and is to be located in an area which will not interfere with existing markings on the item in question. Use size and color of characters to match existing markings.

6-1.5 Refer to paragraph 1-5 for definition of terms used.

#### 6-2 SAFETY PRECAUTIONS.

When using paints, enamels, lacquers, thinners, etc, in quantity, observe the general safety precautions indicated in paragraph 3-2 and figure 4-1 as applicable during marking operations. The precautions are in addition to any other precautions specified in referencing documents or by any applicable Service directives.

#### 6-3 MARKING MATERIALS.

6-3.1 Use the part number and unit-of-issue information listed in table I as a guide for the procurement of materials for identification marking. Unless otherwise specified, alternate materials indicated in the table may be used when desired.

6-3.2 Refer to table II for use, limitations, thinners, and drying time of marking materials, when not specified.

#### 6-4 MARKING METHODS.

The following marking information is included for use in addition to standard marking practices.

##### 6-4.1 GENERAL.

6-4.1.1 Before any marking operation, insure that all dirt, grease, mold-release agents, oxidized surface film, or other foreign matter has been removed from surfaces to be marked.

6-4.1.2 Marking must be properly spaced and aligned to provide legibility and neatness.

6-4.1.3 Unless otherwise specified, enamels and lacquers are used as alternates.

6-4.1.4 Stenciled markings may be applied by either brush, roller, or spray. If spray method is used, mask out area around marking and observe applicable safety precautions.

6-4.1.5 Cover coats are not applied to markings unless specified.

6-4.1.6 To avoid "fuzzy" edges to stenciled characters and to apply stenciled markings to corrugated or irregular surfaces, apply marking as follows.

6-4.1.6.1 Apply continuous strips of pressure-sensitive adhesive tape (transfer, adhesive both sides) to one surface of suitably-sized stencil board. Use light stencil board if marking is to be applied to irregular surface. Apply sufficient tape to cover area to be cut with stencil cutter.

6-4.1.6.2 With taped surface of board underneath, cut specified marking in board.

6-4.1.6.3 Carefully peel strips of white backing from tape.

6-4.1.6.4 Position stencil on cleaned surface to be marked so that taped side of stencil adheres to surface. Firmly press stencil in place to insure complete adherence, especially around cut characters. If stencil is being applied to irregular surface, insure that stencil adheres in all depressions and recesses of surface.

6-4.1.6.5 Apply marking as specified and carefully remove stencil from surface.

6-4.1.7 When dimensions or tolerances are specified in decimals and fractional equivalent is desired, use a decimal-fraction conversion scale (P/N 874228-00).

6-4.2 PHOSPHORESCENT AND FLUORESCENT FINISH APPLICATION. The phosphorescent finish consists of (1) a white enamel undercoat and clear lacquer topcoat, furnished as an enamel and lacquer kit (used with phosphorescent coating compound only) and (2) a phosphorescent coating compound (used with the foregoing kit only). The finish may be applied by brush or atomized spray.

#### NOTE

Fluorescent coating compound (fire red) is applied in same manner as phosphorescent coating compound (pale green) with exception that application of white enamel undercoat is not required. Lacquer (clear) is applied as a covercoat.

6-4.2.1 Clean scale from surfaces to be finished. Select method or combination of methods to be used for cleaning to suit material being painted and degree of contamination present. Refer to Section 3 for applicable cleaning method.

6-4.2.2 Apply one thin coat of white enamel. Air-dry until sufficiently hard to recoat or force-dry 20 min at 175°F. Exercise care not to completely fill engraved lines or characters with enamel. Leave sufficient room for phosphorescent compound.

6-4.2.3 Apply one coat of phosphorescent compound. Air-dry until sufficiently hard to recoat or force-dry 20 min at 175°F. When applying compound in engravings or depressions, fill depressed areas with compound as completely as possible.

6-4.2.4 Apply one coat of clear lacquer thinned to application consistency to areas as required.

6-4.2.5 The finish shall be neat and adherent. Engraved lines or depressed areas shall be uniformly filled.

#### 6-4.3 TAGS.

6-4.3.1 A metal, waterproofed cloth, or waterproofed paper shipping tag bearing required markings is used when specified or whenever container is such that it is impossible to stencil marking thereon or impracticable to use a label.

6-4.3.2 Markings on tags other than metal are printed with waterproof ink or typed. Metal tags are marked with dies or punches. Tags are attached with steel wire (No. 23 A(steel)WG), twine, or other suitable corrosion resistant metal fasteners. Maximum size of tag is 28 sq in.

6-4.3.3 When specified, cloth or paper shipping tags (after markings have been added) are coated on both sides with waterproof protective lacquer, adhesive, or cement.

#### 6-4.4 LABELS.

6-4.4.1 FOR SHIPPING CONTAINERS. Labels are used only when specifically authorized. When labels are used, required markings are printed, typed, or reproduced. The maximum size of label is 28 sq in. except when specifically authorized by cognizant activity concerned, regulation, or statute. When used, cover-coat labels with lacquer (clear) or varnish (Phenolic resin base) for level A or B packs.

#### NOTE

The use of labels on shipping containers is prohibited except for domestic address, required precautionary labels, and when containers are too small to permit stenciling in accordance with specified size.

6-4.4.2 FOR INTERIOR PACKAGES. Required markings on labels for interior packages are printed, typed, or reproduced. Use labels of a size consistent with size of package and of a size which permits ready identification. Pressure-sensitive or heat-activated plastic-coated labels may be used in lieu of paper labels.

#### 6-4.5 LOCATION AND LAYOUT.

6-4.5.1 Size, layout, location, and color of markings are specified in applicable referencing document or in this section. If color or size specified for a marking does not match color or size of marking being touched up or changed, use a color or size which will match.

6-4.5.2 The location, spacing, and number of lines of markings, unless specifically dimensioned, are approximate. Also, it is permissible to use more or fewer lines for a given entry than indicated in marking illustrations or tables.

TABLE XIV  
SIZE OF CHARACTERS AND ARROWS

SIZE OF CHARACTERS			SIZE OF ARROW			
Decimal (Inch)	Fraction (Inch)	Point	Overall Length (L) (Inches)	Stem Width (W) (Inch)	Point Length (PL) (Inch)	Point Base Width (B) (Inches)
0.125	1/8	9	-	-	-	-
0.250	1/4	18	2.00	0.25	0.50	0.75
0.500	1/2	36	3.00	0.38	0.75	1.00
1.000	1	72	4.00	0.50	1.00	1.50

The diagram shows a left-pointing arrow. Dimension lines indicate: L is the total length from the tip to the end of the stem; W is the width of the stem; B is the height of the arrowhead; and PL is the length of the arrowhead from its base to its tip.

6-4.5.3 Tolerance for size of letters and numerals is governed by tolerances permitted in standard stencil-cutting machines, printing sets, and die sets.

6-4.5.4 Unless otherwise specified, spacing between lines of stenciled markings is to be approximately equal to standard spacing of a stencil-cutting machine.

6-4.5.5 Unless otherwise specified, size of arrows is governed by size of characters as indicated in table XIV. Specially designed arrows are dimensioned in referencing document.

#### 6-4.6 DRYING TIME FOR LACQUER, ENAMEL, OR PAINT.

6-4.6.1 Approximate air-drying time for lacquer, enamel, or paint is indicated in table II and may be used in conjunction with marking operations. Drying time for materials not shown may be estimated on the basis of time shown for comparable materials.

#### CAUTION

When performing procedures in following paragraph, do not use force-dry method on tuballoy, electrical parts, or parts containing fabric, rubber, or other organic materials unless it has been determined that no detrimental effects will result.

6-4.6.2 If desired for handling, force-dry enamel or lacquer for a minimum of 1 hr at 150° to 155°F where

these temperatures will not damage equipment being marked or coated.

#### 6-5 MARKING OF WR MAJOR ASSEMBLIES AND THEIR SHIPPING CONTAINERS OR SECURITY COVERS.

6-5.1 These general marking instructions are used in conjunction with marking details specified in applicable TP manuals. The instructions apply to external functional markings only. Functional markings are defined as those markings required for logistic purposes and for efficient and safe handling of major assemblies, for which reason they must be maintained in a clear, legible condition. All other external markings are considered nonfunctional within the scope of this paragraph; however, this is not to be construed as authority to remove or obliterate such markings.

#### NOTE

In addition to functional markings shown in applicable referencing documents, explosive markings may be stenciled on security covers as required by and in accordance with Service directives. These markings are acceptable provided they do not interfere with other markings. Maintenance of such markings is to be performed in accordance with appropriate Service directives.

TABLE XV  
TYPICAL TYPE MIL MARKINGS

NOMENCLATURE OF MARKING	SAMPLE MARKING
Nomenclature	WXX-0*
Nomenclature (Y version)	WXXY1-0*
Package Number	1 EA**
Packed Method and Date	A/A-2-5/68***
Part Number (Contents)	123456-00
Serial Number	SERIAL 1234
Dimensions (Cylindrical)	16 X 16 X 12****
Dimensions (Rectangular)	14 X 8 X 12****
Cubage (To nearest 0.1 cu ft)	CU 5.2
Weight (To nearest lb)	WT 28
Handling Precautions	HANDLE WITH CARE, etc
<p>*Nomenclature includes Mk and Mod</p> <p>**For 2 or more packages mark as follows (refer to figure 6-1 for size of circle)</p> <p style="text-align: center;">○</p> <p style="text-align: center;">PKG 2 OF 4 SERIAL 1234</p> <p>***The levels of preservation and packaging of contents are: Level A for overseas shipment and/or long term storage; level B for domestic shipment and/or long term storage; and level C for domestic shipment. The packaging date is part of packed method as:</p> <p style="text-align: center;"> Level of Preservation <u>    A/A-2-5/68    </u>  Level of Packaging <u>                    </u>  Method of Preservation <u>                    </u>  Date (month and year) <u>                    </u> </p> <p>****May be in feet and inches (12 FT 2 IN X 6 FT X 2 FT 4 IN), which is acceptable</p>	

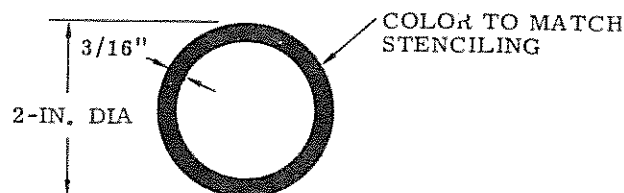


Figure 6-1 Circle Marking Detail

6-5.2 Types of identification marking are established as Type AEC and Type MIL. Both are acceptable. Type AEC markings reflect the older style AEC/Sandia Corporation marking requirements. Type MIL marking conforms to MIL-STD-129, and is the later style. Table XV lists typical Type MIL marking entries.

6-5.3 External dimensions, cubage, and gross weight of each major assembly shipping configuration are given in TP 45-51A.

6-5.4 When specified, major assembly marking information for security covers is applied to a piece of fiberboard and not to the cover. Using a 12±1/8-in.-square piece of corrugated fiberboard (400 psi) stencil as shown in applicable referencing document.

6-5.5 Further detail markings, such as Service symbols, color, etc, for components and shipping and storage containers required by individual Services for Type MIL markings are specified in MIL-STD-129.

## 6-6 MARKING ON NON-WR WEAPONS AND COMPONENTS.

6-6.1 WEAPONS ASSEMBLIES. Non-WR weapons are marked comparably with war reserve weapons except for the addition of the TYPE series designator. When TYPE designator is shown (TYPE 2, 3, etc), it is placed immediately after and in line with Mk-Mod designation or, if space is not adequate, TYPE designator may be placed on line above.

6-6.2 MAJOR COMPONENTS. All major components of training weapons, their containers, weapon associated H-items, and carrying cases for nuclear training components, are marked with the words TRAINING ONLY. Training item identifications once applied are not to be removed. These items are not interchangeable with war reserve material. All military organizations having supplies of decalcomanias marked with the words TRAINING ITEM may continue to use this item until existing supplies are exhausted.

### NOTE

If operational conditions exist which make reading of red stenciling difficult, apply

marking in a more readily discernible color, provided this marking is accomplished on a red background of appropriate size.

**6-6.3 METHODS OF MARKING.** Marking is accomplished by use of a 2- by 4-in. decalcomania, or by stenciling with red lacquer or red gloss enamel. Stenciled characters must be at least 1/2 in. high. Exceptions to these limitations are as follows:

**6-6.3.1** Identify components which are too small for a 2- by 4-in. decalcomania or a 1/2-in. stencil by marking a red letter T on the component. Make size of this marking proportionate with available surface area on component.

**6-6.3.2** Major components permanently marked for training or practice, or as inert, do not require further identification.

**6-6.4 APPLICATION OF DECALCOMANIAS.** Place decalcomania in a prominent place on component. On items which are located where a case or cover is removed, place decalcomanias on main housing of item and on case and/or cover. After application, coat decalcomania with lacquer (clear) for protection.

## 6-7 MINIMUM MARKING REQUIREMENTS FOR BASE SPARES H-CONTAINERS AND OTHER MISCELLANEOUS CONTAINERS.

When required or specified, H-containers in base spares or other miscellaneous exterior containers are marked to include minimum information specified below. When a container is used which already contains any portion of required information, or other information, only that information not included on container shall be added. This is not to be construed as authority to remove or obliterate any markings except as otherwise specified.

**6-7.1** Match size and color of markings with those existing on container. If no previous markings exist on container, size is as specified in table XVI.

TABLE XVI  
SIZE OF MARKINGS

CAPACITY (Gallons)	SIZE OF STENCIL (Inch)
0 thru 7	1/4
9 thru 19	1/2
27.5 thru 79	1/2

**6-7.2** Detail markings are blocked on left and approximately centered in one area on side of container.

a. Nomenclature: May be an MC number, an unclassified title, or a brief description of component.

b. Part number: Assigned to component for identification.

### NOTE

Leave a 1-line space for rework numbers between P/N and ALTS. Space is governed by size of characters used.

c. Alts (alterations): Further subdesignations of components indicating an alteration change to component. Add alts as specified.

d. Handling precautions: Applied as specified in the referencing document.

## 6-8 MARKING OF INTERIOR PACKAGE, PARCEL, ASSORTED PARCEL, AND UNIT PARCEL.

**6-8.1** Unless otherwise specified, interior packages, parcels, and unit parcels are marked as applicable as indicated in figures 6-3 or 6-4. Markings are applied by any applicable method, or as specified.

(Figure 6-2 deleted)

**6-8.2** An assorted parcel, containing two or more unlike items, may be marked on exterior wrapping (Example: ASSORTED ITEMS PART OF XXXXXX-XX) by any applicable method, or as specified.

**6-8.2A** A marking of "SECRET" or "CONFIDENTIAL", as appropriate, shall be applied to interior packages, parcels, assorted parcels, and unit parcels which contain classified parts.

**6-8.3** Markings are located so that information can be easily read when package or parcel is stored on shelves or stacked, will not be obscured by ties or other material used for securing, and will not be destroyed when package is opened for inspection or before contents are removed.

Federal Stock Number (When applicable)  
 Part Number  
 Nomenclature  
 Quantity and Unit  
 Serial Number (If applicable)

Figure 6-3 Typical Type MIL Markings for Interior Unit Parcel

Federal Stock Number (When applicable)  
 Part Number  
 Nomenclature  
 Quantity and Unit  
 Preservation Marking  
 Serial Number

Figure 6-4 Typical Type MIL Markings for Interior Unit Package

① Federal Stock Number  
 ② Part Number  
 ③ Nomenclature

L W H  
 WT  
 CU

NOTES:

- ① When applicable.
- ② Part number of H item container. Do not precede part number by P/N or other designation.
- ③ Space for rework marking.

Figure 6-5 Minimum Marking Requirements for Containers Containing H-Equipment

6-8.4 The description or nomenclature appearing on parcels or unit parcels must be similar to that used on packing list. Minor differences of description or nomenclature are acceptable, provided difference does not impair clarity of description.

## 6-9 MINIMUM MARKING REQUIREMENTS FOR CONTAINERS CONTAINING H-EQUIPMENT.

6-9.1 Minimum marking requirements for containers containing H-equipment are shown in figure 6-5. Markings shown in figure are required on one side, preferably the largest one. Match size and color of markings existing on container. If no previous markings exist, use 1/2-in.-high characters if space permits, 1/4-in.-high characters if not, and use color as specified.

6-9.2 When containers containing H-equipment are prepared for shipment, mark containers additionally as specified in section 7, as required.

6-10 (Deleted)

(Figure 6-6 deleted)

TABLE XVII  
TYPE MIL MARKINGS ON RECTANGULAR AND DRUM-TYPE  
SHIPPING CONTAINERS

<div style="border: 1px dashed black; padding: 10px; margin: 10px auto; width: fit-content;"> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: left;"> <p>① Federal Stock Number Part Number</p> <p>②</p> <p>Nomenclature 1 EA Preservation Marking</p> <p>SERIAL     <span style="border: 1px solid black; display: inline-block; width: 50px; height: 15px; vertical-align: middle;"></span></p> <p>WT                      CU</p> </div> </div> </div>		
<p>NOTES:</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>① When applicable.</p> <p>② Space for rework marking.</p> </div> <div style="width: 45%;"> <p>Job number located on far side when applied by packing agency. Not required for restenciling.</p> </div> </div>		
BOXES Height of Container* (Inches)	DRUM-TYPE CONTAINERS (Capacity in Gallons)	SIZE OF CHARACTERS** (Inch)
Up to and including 15	0 thru 4, and 9	0.25±0.06
16 thru 30	6, 7, 18 thru 27.5, and 35	0.50±0.06
More than 30	30, 55, and 79	1.00±0.25
<p>*Container height is the inside height. Mark (upper left-hand corner) one end and one side</p> <p>**If box length prevents placing each of the required entries on a single line, use the next smaller character size. Refer to table XIV for size of arrows, if required. Mark arrows in upper corners of box</p>		

## 6-11 TYPE MIL MARKING OF RECTANGULAR AND DRUM-TYPE CONTAINERS.

Type MIL markings for rectangular and drum-type shipping containers (paragraph 5-4.3) are located approximately as shown in table XVII. Use character-size specified in table for size container being marked.

## 6-12 MARKING OF TEST EQUIPMENT CONTAINERS.

### 6-12.1 GENERAL.

6-12.1.1 These marking instructions are used in conjunction with marking details specified in applicable

TP manuals of the -2 and -500 series. The instructions apply to functional markings as defined in paragraph 6-5.1.

6-12.1.2 When markings or color of a test equipment container have been changed by a Service directive, such markings and finish must be maintained in accordance with applicable Service directive.

6-12.1.3 Both Type AEC and MIL markings (paragraph 6-5.2) are found on test equipment containers. Type MIL marking on containers is not to be construed as authority to re-mark containers bearing Type AEC marking.



6-12.1.4 Marking materials and methods (paragraphs 6-3 and 6-4, respectively) are employed, as applicable, to test equipment container marking.

6-12.1.5 Job number found on containers is not required for retouching.

6-12.1.6 Test equipment with Type MIL marking which is packed in two or more shipping containers is marked:

○  
PKG 1 OF 2  
SERIAL 12345

Dimension circle above container (package) number as shown in figure 6-1.

6-12.2 REPLACEMENT OF METAL DECAL ON GLASS-FIBER REINFORCED PLASTIC CONTAINER. Replace metal decals when original decals become illegible or otherwise damaged. Refer to table I for full nomenclature of applicable decal.

### NOTE

There are two types of metal decals used. On containers equipped with depress button for relief, use appropriate metal decal (P/N 130635-00) listed in table I. On containers equipped with screw-type relief valve, use appropriate metal decal (P/N 826258-00) listed in table I.

### CAUTION

When performing procedures in paragraph 6-12.2, use only a thin, flat blunt tool to prevent scratching container surface.

6-12.2.1 Remove damaged decal with a blunt-edged scraper 2 to 3 in. wide.

6-12.2.2 Abrade surface lightly with No. 00 abrasive to remove any mold-release agent or other foreign matter. Wipe area with a clean lint-free cloth moistened with acetone. Surface to which replacement decal is to be applied must be clean and free from fingerprints.

### CAUTION

When performing procedures in paragraph 6-12.2.3, do not touch adhesive back. Handle decals by edges only.

6-12.2.3 Remove protective film on replacement decal by immersion in water at room temperature (approximately 70°F) for approximately 1 min. Remove excess water and peel protective film from back of decal.

6-12.2.4 Place replacement decal on container, positioned approximately in the same location as the removed damaged decal (marked CAUTION, item 1 in figures 6-7 or 6-9). Roll decal with a hard-surfaced roller, using sufficient pressure to insure complete adhesion of decal.

6-12.3 TYPE AEC MARKING OF RECTANGULAR TEST EQUIPMENT CONTAINERS. Mark rectangular test equipment containers as shown in table XVIII. When specified in referencing document, apply arrows in upper left- and right-hand corners of front, both ends, and rear of container. Install packing list on front panel only.

6-12.4 TYPE AEC MARKING OF DRUM-TYPE TEST EQUIPMENT CONTAINERS. Mark drum-type test equipment containers as shown in table XIX.

6-12.5 TYPE AEC MARKING OF SPECIAL-DESIGN TEST EQUIPMENT CONTAINERS. Mark special design test equipment containers as shown in figure 6-7. Packing lists are taped in place and wired to handle or latch as shown.

6-12.6 TYPE MIL MARKING OF STYLE 2 WOOD BOXES AND DRUM-TYPE CONTAINERS FOR TEST EQUIPMENT.

6-12.6.1 Mark Style 2 wood boxes in upper left-hand corner of one end and on one side as shown in figure 6-8. Use size-characters and arrows (if required) as specified in table XVII. One end and top and bottom of style 2 box are always free of marking, except for Service symbols and colors or specific markings required for safe handling. Locate packing list in lower right-hand corner of marked end.

6-12.6.2 Mark drum-type containers as shown in figure 6-8. Use size-characters as specified in table XVII.

6-12.7 TYPE MIL MARKING OF SPECIAL-DESIGN TEST EQUIPMENT CONTAINERS. Use 1/4-in. characters located approximately as shown on item 1 in figure 6-9 for glass-fiber reinforced plastic container, item 2 in figure 6-9 for multiple-purpose container, and item 3 in figure 6-9 for glass-fiber reinforced carrying case.

6-12.8 T1500-SERIES CONTAINER AND CASE MARKING.

6-12.8.1 T1502 container is marked using 1/4-in. high characters located approximately as shown in item 1, figure 6-9.

6-12.8.2 Other T1500-series cases are marked using 1/4-in. high characters located approximately as shown in figure 6-10. Apply cover coat of clear lacquer over stenciled markings.

TABLE XVIII  
TYPE AEC MARKINGS ON RECTANGULAR TEST EQUIPMENT CONTAINERS

T-000 1/1 Nomenclature P/N  * PKD METH DATE  Handling Instructions   SER NO	<div style="border: 1px solid black; padding: 5px; display: inline-block;">           PACKING LIST         </div>
	L W H CU WT

\*Space for rework marking

VOLUME (Cu Ft)	HEIGHT** (In. )	WEIGHT (Lb)	REFER TO NUMBERED FOOTNOTES FOR REQUIRED ITEMS		
			Front***	End	Top***
Less than 0.5	Any	5 or less	1 thru 4, 6, 9, and 11	-	1 thru 4, 6, 9, and 11
	Any	More than 5	1 thru 4, 6, 8, 9, and 12	-	1 thru 4, 6, 8, 9, and 11
0.5 to 1.0	Any	Any	1 thru 4, 6, 8, 9, 11, and 12	-	1 thru 4, 6, 8, 9, 11, and 12
1 thru 2	Any	Any	1 thru 2, 6, 7, 8, 9, 11, and 12	-	1 thru 4, 6, 7, 8, 9, 11, and 12
	12 or less	Any	1 thru 5, and 11	1 thru 4	1 thru 7, 8, 9, 11, and 12
More than 2	More than 12	Any	1 thru 7, 8, 9, 11, and 12	1 thru 7, 8, 9, 11, and 12	1 thru 7, 8, 9, 11, and 12

1 Nomenclature Designation (T-XXX)

2 Nomenclature (TEST SET, AUXILIARIES)

3 Part Number (P/N XXXXXX-XX)\*\*\*\*

4 Package Number (1/1, 1/2, etc)

5 Handling Instructions (DELICATE INSTRUMENT, HANDLE WITH CARE, etc, as specified)

6 Packed Method (PKD METH 2, etc)

USE THE FOLLOWING FOR INCHES AS  
DECIMALS OF A FOOT

1 in.	.1	7 in.	.6
2 in.	.2	8 in.	.7
3 in.	.3	9 in.	.8
4 in.	.4	10 in.	.8
5 in.	.5	11 in.	.9
6 in.	.6	12 in.	1.0

(Continued on next page)

TABLE XVIII

(Continued)

7 Dimensions (Inches) (For noncylindrical packages, L 12 W 12 H 6.5; fractional parts of an inch expressed to the next higher half inch)

8 Weight (WT 7.5) (To nearest 0.5 lb). (If container volume is 0.5 cu ft or greater, the weight is always marked; if container is less than 0.5 cu ft and weighs less than 5 lb, the weight is not marked)

9 Date or Packed Date  
DATE 1/58

10 Container Part Number (XXXXXX-XX)

11 Serial Number:

AA1234A6

Date Code

Serial Number

Manufacturer's Code

12 Cubage (CU 5.2) (Cubage to the nearest 0.1 cu ft)

\*\*The heights do not include skids or battens

\*\*\*Mark either surface, whichever is larger. If the side and top are equal, the top is preferred in the marking of wooden boxes and the side is preferred in the marking of fiberboard containers

\*\*\*\*P/N (Part Number) is used on all new production containers. S/N (Stock Number) is found on all old production containers and is an acceptable alternate

6-12.9 MARKING TEST EQUIPMENT CONTAINERS FOR SHIPMENT. When test equipment containers are marked for shipment, only the external shipping container is additionally marked. As required, mark containers as specified in Section 7.

## 6-13 MARKING OF CABLES AND WIRES.

These procedures are used to supplement standards and specifications as indicated in referencing documents and shop practices.

6-13.1 Markings which have become obliterated by authorized repair are remarked or replaced in the approximate area from which they were obliterated or removed.

6-13.2. (Deleted)

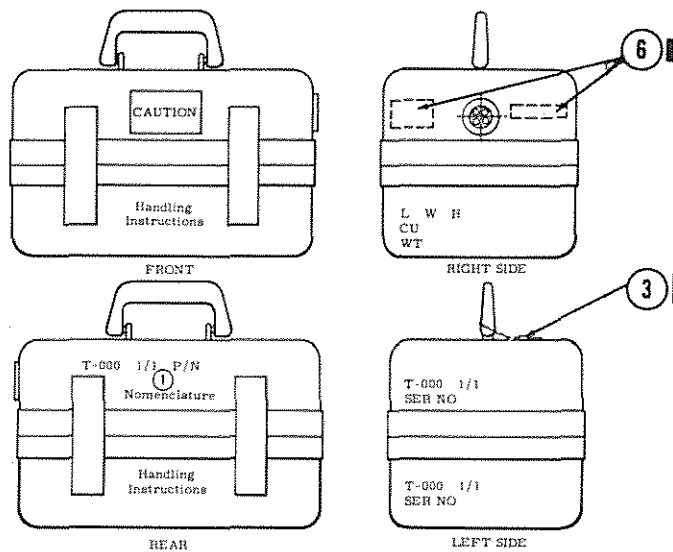
6-13.3 Locate cable marking as shown in figure 6-11. Unless otherwise specified, wires shorter than 3 in., such as jumper wires, do not require marking.

6-13.4 Apply appropriate individual letters and numbers selected from 3/4-in. L pressure-sensitive adhesive electrical wire markers (table I) as required to provide identification.

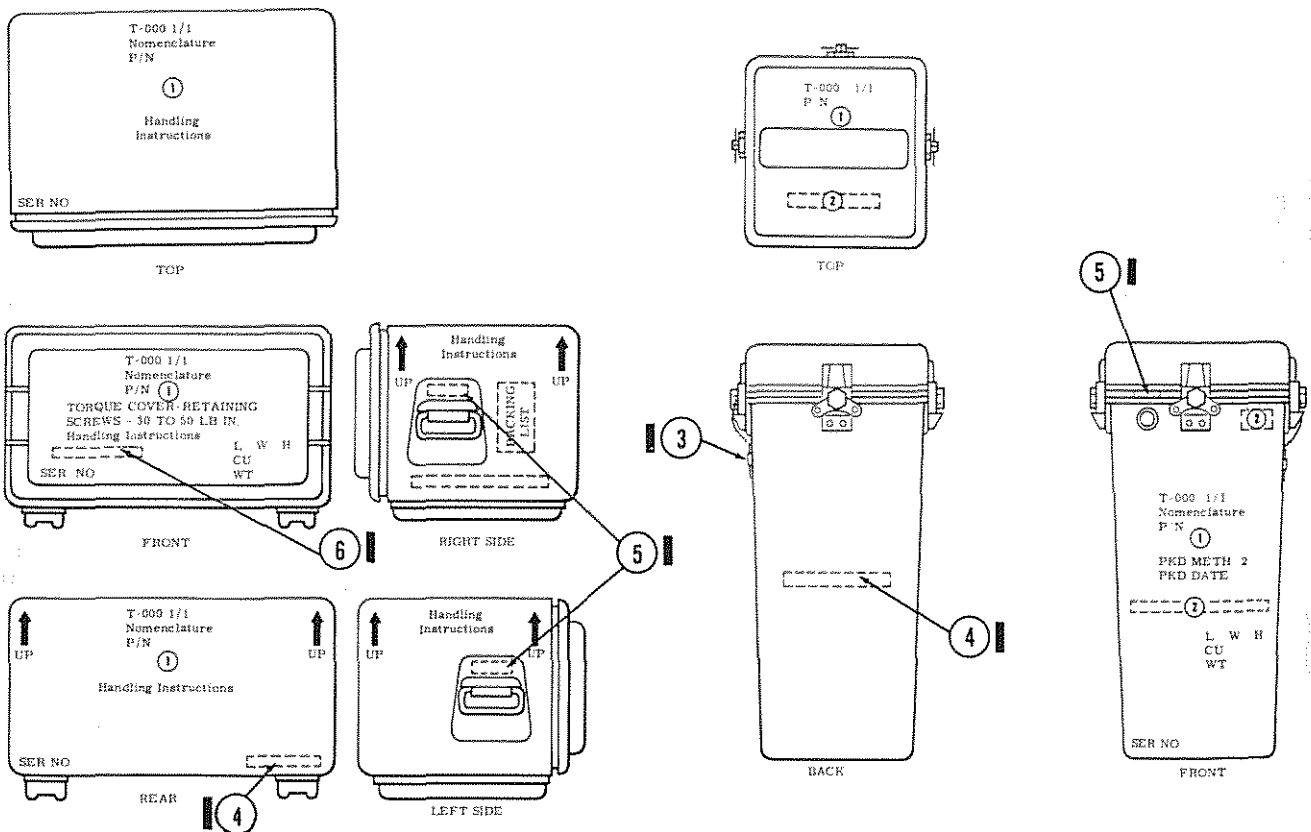
6-13.5 When required, detonator cables are marked using appropriate numbers selected as required from cards of 3/4-in. L pressure-sensitive adhesive electrical wire markers which contain numbers in series; i.e., 1 through 33, 34 through 66, or 67 through 99.

## NOTE

If detonator cables are marked with yellow plastic identification tape, do not remove such tape merely to replace with white labels. Replace yellow identification tape when tape is damaged, marking becomes illegible, or when repaired cables require a new or rework number.



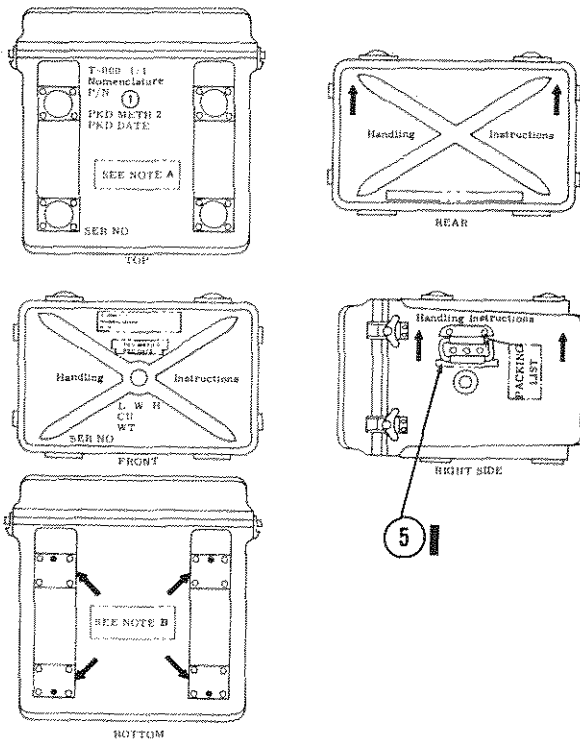
**ITEM 1** Glass-Fiber Reinforced Plastic Container



**ITEM 2** Lightweight Metal Carrying Case

**ITEM 3** Multiple-Purpose Container

**Figure 6-7** Typical Type AEC Markings on Special-Design Test Equipment Containers (Part 1 of 2)



## NOTES:

(The following is stencilled in 0.25-in.-high characters (except the word CAUTION which is 0.50 in. high) using lacquer or enamel (red) and cover-coated with lacquer (clear). Arrows per table XIV).

A WHEN USING CASE TIEDOWN FEATURES, SEE CAUTION NOTE ON BOTTOM.

B CAUTION

WHEN USING CASE TIEDOWN FEATURE, REMOVE THE FOUR NYLON PLUGS. THE 3/8-IN. MOUNTING BOLTS SHALL NOT ENGAGE MATING THREADS IN CASE MORE THAN 9/16 IN. MAXIMUM.

## ITEM 4 Glass-Fiber Reinforced Carrying Case

Refer to footnote numbers 1 through 12, table XVIII, for general marking coverage. Footnotes for this figure are as follows:

1. Space for rework marking.
2. Handling instructions.
3. Packing list taped as shown and wired to handle or latch.
4. Job number not required for touch-up or re-stenciling.
5. Container part number.
6. Date or packed date.

Use same size characters for all markings on any single container, unless otherwise specified.

For item 1, 0.25 or 0.50-in. characters may be used. 0.50-in. characters are preferable, if space and legibility considerations permit.

For items 3 and 4, 0.25-in. characters are preferable; however, 0.5-in. characters may be used if space and legibility considerations permit.

P/N (Part Number) is used on all new production containers. S/N (Stock Number) is found on all old production containers and is an acceptable alternate.

Figure 6-7 Typical Type AEC Markings on Special-Design Test Equipment Containers (Part 2 of 2)

TABLE XIX  
TYPE AEC MARKINGS ON DRUM-TYPE TEST EQUIPMENT CONTAINERS<sup>1</sup>

INSIDE DIM. OF CONTAINER (Diameter x Height in in.)	SIZE OF STENCIL <sup>2</sup> (in.)	MARKING			REMARKS
		Top <sup>3</sup>	Front <sup>3</sup>	Rear	
5.0 x 4.5 6.5 x 4.5	0.25 or 0.50 <sup>5</sup>	T-000 1/1	T-000 1/1 Nomenclature P/N 4 PKD METH DATE	SER NO	-
5.0 x 8.5 6.5 x 8.5 6.5 x 6.8 8.5 x 6.0 8.5 x 7.5 8.5 x 9.0			T-000 1/1 Nomenclature P/N 4 PKD METH DATE Handling Instructions SER NO      WT	(None)	
10.5 x 12.8 10.5 x 16.6 10.5 x 18.6			T-000 1/1 Nomenclature P/N 4 PKD METH DATE Handling Instructions	T-000 1/1 P/N	Locate packing list near top of rear of container. Locate below rolling hoop when space above is too small. Keep packing list wire (attached to ring) as short as practicable
13.8 x 8.0		T-000 1/1 Nomenclature P/N 4 PKD METH DATE Handling Instructions DIA H CU WT			
13.8 x 14.0 13.8 x 19.5 15.4 x 19.8 15.4 x 23.8 20.0 x 34.0	0.50	T-000 1/1 Nomenclature P/N 4 PKD METH DATE Handling Instructions DIA CU WT SER NO	SER NO      DIA H CU WT		

- 1 P/N (Part Number) is used on all new production containers. S/N (Stock Number) is found on all old production containers and is an acceptable alternate
- 2 The same size characters are used for all markings on any single container, unless otherwise specified
- 3 The centerline shown through the top and front markings indicates center of container
- 4 Space for rework marking
- 5 0.25-in. characters are preferable; however, 0.5-in. characters may be used if space and legibility considerations permit

(Table XXI deleted)

①	Federal Stock Number Part Number
②	Nomenclature
③	1 EA Handling Instructions Preservation Marking
④	SERIAL <input type="text"/> WT                      CU

## NOTES:

- 1 When applicable
- 2 Space for rework marking
- 3 1 EA when only 1 package is involved. Omit when 2 or more packages are involved. Close space
- 4 SERIAL  when only 1 package is involved. Close space

Figure 6-8 Typical Type MIL Markings on Test Equipment Style 2 Wood Boxes and Drum-Type Containers

(Table XX deleted)

## 6-14.1 OBLITERATION OF MARKINGS.

## NOTE

The procedures in this paragraph are for use when obliteration of markings is a specific requirement. Do not obliterate any markings unless so specified. If marking is to be performed immediately following obliteration of old marking, refer to table II for approximate drying time for lacquer and enamel.

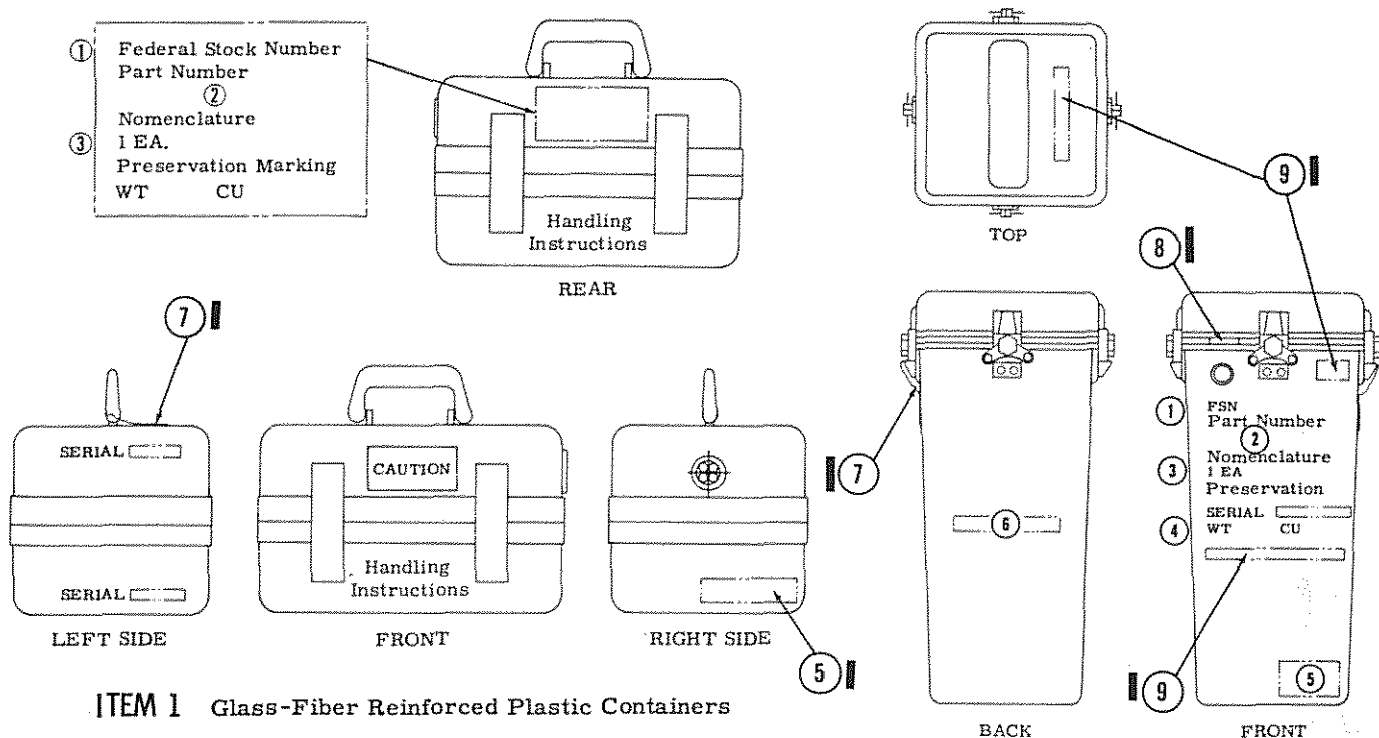
6-14.1.1 When obliterating markings from surfaces coated with epoxy-type paints, remove the markings from the paint by using a cloth moistened (damp, not dripping) with dope and lacquer thinner, methyl ethyl ketone, or methyl isobutyl ketone.

6-14.1.2 When obliterating markings from surfaces coated with conventional paint systems, remove all dirt grease, and other foreign material from area of marking (paragraph 3-4.1) and paint over the marking to be obliterated, using enamel or lacquer of a color to match the surface coating.

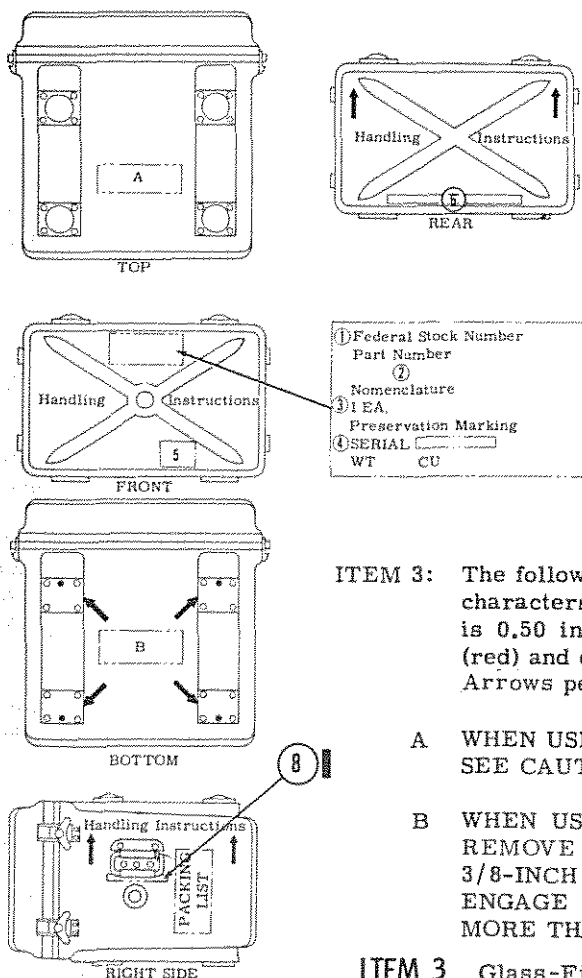
6-14.1.3 When an H-numbered container and its contents are permanently disassociated, obliterate any of the following markings that may be present on container: Package part number; major assembly-

## 6-14 CHANGE OF IDENTIFICATION MARKING.

These procedures cover change of identification marking of items which require further identification. Specific detail requirements are indicated in applicable referencing documents.



ITEM 1 Glass-Fiber Reinforced Plastic Containers



ITEM 3: The following is stenciled in 0.25-inch-high characters (except the word CAUTION which is 0.50 inch high) using lacquer or enamel (red) and cover-coated with lacquer (clear). Arrows per table XIV.

A WHEN USING CASE TIEDOWN FEATURES, SEE CAUTION NOTE ON BOTTOM.

CAUTION

B WHEN USING CASE TIEDOWN FEATURE, REMOVE THE 4 NYLON PLUGS. THE 3/8-INCH MOUNTING BOLTS SHALL NOT ENGAGE MATING THREADS IN CASE MORE THAN 9/16-INCH MAXIMUM.

ITEM 3 Glass-Fiber Reinforced Carrying Case

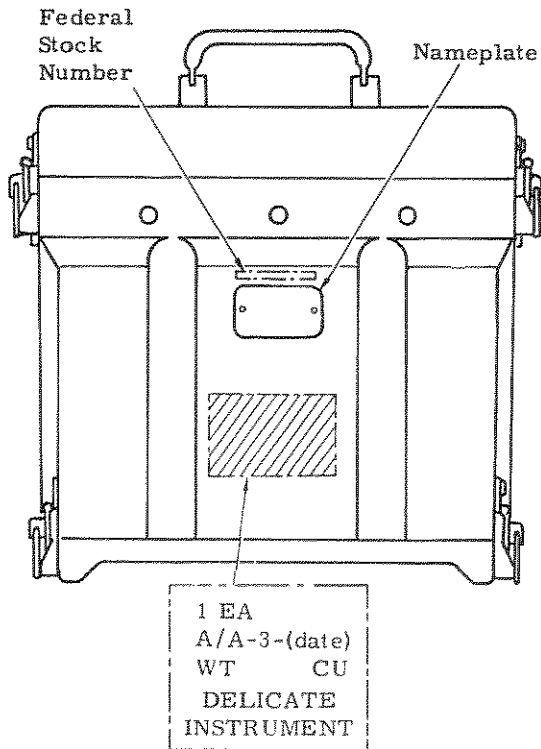
ITEM 2 Multiple-Purpose Containers

## NOTES:

- 1 When applicable
- 2 Space for rework marking
- 3 1 EA when only 1 package is involved. Omit when 2 or more packages are involved. Close space
- 4 SERIAL  when only 1 package is involved. Omit when 2 or more packages are involved. Close space
- 5 Apply appropriate marking when 2 or more packages are involved
- 6 Job number when applied by original packing agency. Not required for restenciling
- 7 Packing list taped as shown and wired to handle or latch
- 8 Container part number
- 9 Handling instructions

Figure 6-9 Typical Type MIL Markings on Special-Design Test Equipment Containers





(Figure 6-12 deleted)

NOTE: TAPE PACKING LIST ENVELOPE  
TO SIDE OF CASE OPPOSITE  
MARKINGS.

Figure 6-10 Typical Markings on T1500-Series Cases

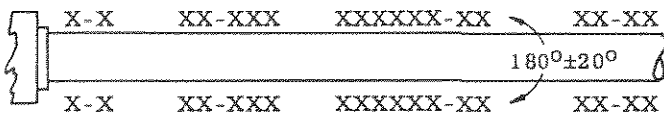


Figure 6-11 Location of Markings on Cables

Alt part numbers; serial number of former contents; and handling precautions pertaining to former contents; date; packing method; and weight. Obliterate markings in accordance with procedures in paragraph 6-14.1.2.

6-14.1.4 When a shipping container (other than one with an H-number) and its contents are permanently disassociated, obliterate all markings except dimensions and cubage appearing on container in accordance with procedures in paragraph 6-14.1.2.

6-14.1.5 For test equipment containers, obliterating and marking instructions for re-marking presume test equipment case is painted and marked according to production specifications. If case has been repainted or re-marked according to a Service directive, perform obliterating and marking specification in TP publication, using materials and colors specified by applicable Service directive.

#### 6-14.2 GENERAL.

6-14.2.1 When applying a new designation following obliteration and color or size specified for application of new marking does not match color or size of marking being changed, use a color or size that will match.

6-14.2.2 For clarity of impression on contoured (especially concave) surfaces, it is permissible to use individual letter/numeral stamps as alternates to those specified, provided the same size and type of character is used. It is also permissible to fabricate a block of wood contoured to the surface to be stamped and slotted to receive the rubber stamp characters.

6-14.2.3 A retrofit order may require addition of rework numbers to part numbers or revisions to other markings which have become illegible or obliterated. In such cases, establish change status of material by comparison with like stockpile material and from appropriate records to determine part number or other marking. Add part number and/or other marking, as required; then add rework number and/or other marking revisions as specified.

6-14.2.4 When rework specifies a numerical marking, use marking material and size of numeral specified and apply rework numeral under first digit on extreme left of part number. If one or more designators are

already present, apply rework numeral to right of existing rework designator(s), and separate from previous designator(s) by a comma. If there is not sufficient space available between part number and other markings on item being marked to permit application of rework designator, note and then obliterate such markings. Apply rework designator as specified, then apply obliterated markings under rework designator in remaining space.

6-14.2.5 When rework operations specify addition of a letter suffix to nomenclature designation on an identification plate, metal-stamp specified letter (A, B, etc) in raised block located to right of nomenclature designation. Stamp letter as close to left side of block as possible. If a letter is already stamped in block, "X-out" existing letter, and stamp letter to right of obliterated letter.

6-14.2.5.1 Make stamped impression essentially uniform in depth, and no deeper than is necessary to produce a legible marking.

6-14.2.5.2 If, as a result of rework, stamping is done after coating and painted surface becomes cracked or chipped, recoat with same color enamel or lacquer as original coating.

6-14.2.6 Impression marking on nonmetallic materials such as plastics, etc, is done with heated stamps of specified size. The proper temperature for impression marking will depend upon flow temperature of material being marked. Determine proper temperature by experimental marking before marking part.

6-14.2.6.1 When impression stamping, do not permit marking to unduly burn or deform surface of part. Limit any slight defacing to a distance of 0.12 in. around marking. Support very thin parts on the opposite side and stamp with care.

6-14.2.6.2 Impression-stamp to a depth of no more than 0.03 in.

6-14.2.7 When a letter suffix is added to nomenclature, place suffix immediately to right of final character in existing nomenclature designation.

6-14.2.8 When a referencing document specifies a change to date or manufacturer's code, apply changed code under existing one. If space does not permit this, apply code as specified in referencing document. Date code designation is determined as follows:

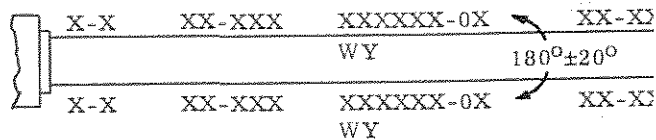
First of 2 characters indicates month; that is, A denotes January, B denotes February, and so on, in sequence. Second of 2 characters indicates year; that is, 8 denotes 1968, 9 denotes 1969, and so on, in sequence.

6-14.2.9 When adding an alt number, apply alt number to right of ALTS heading; or, if other alt numbers are already present, apply alt number to right of existing alt number, and separate from existing number by comma. If several alt numbers are already present and additional space is required, move serial number marking downward 1 line. Obliterate original serial number marking, and add new alt number under first existing alt number.

6-14.2.10 When a mod number is changed, obliterate old number, then apply new mod number. Unless otherwise specified, and if any are present, obliterate existing alt numbers and apply "O" after alts heading.

6-14.2.11 The packaging date code is changed when package is repacked. Change date code to indicate month and year of repackaging (paragraph 6-14.2.8).

6-14.3 CABLES AND SLEEVES. Because of the many types of cables, cables with extruded jackets, sleeved cables, etc, and materials and methods involved in rework, information required to perform changes to identification marking are specified in referencing documents. Rework markings are located on cables as shown in figure 6-13.



X = Existing Designations.

Y = New Designations Specified  
in Retrofit Order.

Figure 6-13 Rework Markings on Cable

## SECTION 7

# PACKAGING AND MARKING FOR SHIPMENT

### 7-1 GENERAL.

This section contains information for the preparation and packaging of components and the marking of containers, boxes, and crates for shipment.

### 7-2 PRELIMINARY PREPARATION.

**7-2.1 FABRICATION OF FIBERBOARD CONTAINERS, WOOD BOXES, AND CRATES.** Fiberboard containers and sleeves and wood boxes and crates are fabricated as required in accordance with procedures in Section 2.

**7-2.2 CLEANING.** Cleaning of components, if required and specified, is performed in accordance with procedures in Section 3.

**7-2.3 PACKAGING.** As applicable, and unless otherwise specified, the procedures in Section 5 are used for packaging methods and details.

### 7-3 CLOSING AND SEALING OF CONTAINERS.

**7-3.1** As applicable, and unless otherwise specified, containers are closed, strapped, and wire-sealed in accordance with procedures in paragraph 5-8.

**7-3.1.1** Fiberboard containers may be sealed with adhesive and/or tape.

**7-3.1.2** Fiberboard containers used to restrain the entrance of liquid water must have the entire surface of the inner flaps covered with EC-194 rubber adhesive, or an equivalent. Seal all openings of the container with gummed tape.

**7-3.1.3** Fiberboard containers used for physical protection only may be sealed in any applicable manner which will insure safe transportation to point of delivery.

**7-3.2** Fiberboard containers which weigh more than 40 lb must be equipped with sleeves.

**7-3.3** The use of steel strapping for fiberboard containers is optional and must be left to the discretion of the packing agency, with the exception that all fiberboard containers weighing over 40 lb must be strapped (paragraph 5-8.2) or taped using black pressure-sensitive adhesive tape.

### 7-4 MARKING OF CONTAINERS.

The markings shown in figures 7-1 and 7-2 contain the minimum information required. When a previously unmarked container is used, the markings must be located approximately as shown in the figures. When a container is used which already contains any portion of the required information, or other information, only that information not included on the container must be added. This is not to be construed as authority to remove or obliterate any markings, except as specified or not applicable to the current shipment.

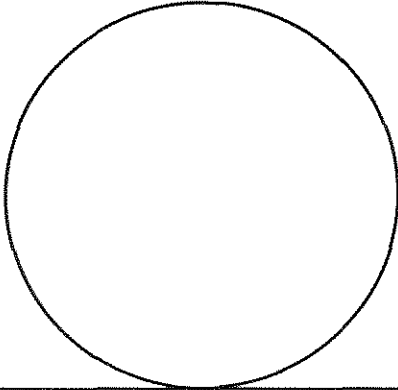
**7-4.1 UNIT PACKAGE.** The unit package must be identified with nomenclature, quantity, and part number. Marking may be applied either by stencil or brush, just so markings are legible.

**7-4.2 INTERMEDIATE CONTAINER.** When intermediate containers contain only identical components, the container must be identified with quantity and part number only.

**7-4.3 SPECIAL IDENTIFICATION.** Special marking such as HANDLE WITH CARE must be at the option of the packing agency, if not specified. Such markings must be separated from other markings. Special markings such as EXPLOSIVE, ACID, etc, must be in accordance with Interstate Commerce Commission regulations.

**7-4.4 OBLITERATION OF MARKINGS.** When required, markings are obliterated in accordance with procedures in paragraph 6-14. No markings are to be obliterated merely because they are not of a specified size, or are not located as shown in figures 7-1 or 7-2.

**7-4.5 EXTERNAL DRUM-TYPE CONTAINERS.** All markings shall be clear and legible. Material specifications and use must be in accordance with instructions in paragraph 6-3.1. Markings must be located approximately as shown in figure 7-1. When required, the following information must be stenciled in suitable size characters on the side wall of all containers of 4-gal capacity or greater. Containers of less than 4-gal capacity must be stenciled in any suitable manner which will group the information specified in paragraphs 7-4.5.1.1 through 7-4.5.1.3.



Nomenclature Part No. Quantity	
Address of Receiving Agency  <div style="display: flex; justify-content: space-between; width: 80%; margin: auto;"> <div>           Package No.            Lot No.         </div> <div>           DIA H            CU            WT         </div> </div>	

Figure 7-1 Required Markings on Drum-Type Containers for Shipment

Nomenclature Part No. Quantity	From: Name and Address of Shipping Agency
Ship To: Address of Receiving Agency	
Package or Box No.	L W H WT CU

TOP

Package or Box No.	Nomenclature Part No. Quantity	From: Name and Address of Shipping Agency
Ship To: Address of Receiving Agency		L W H WT CU

SIDE

END

Figure 7-2 Required Markings on Fiberboard Containers, Wood Boxes, and Crates for Shipment

## 7-4.5.1 UPPER PORTION.

## NOTE

The information specified in paragraphs 7-4.5.1.1 through 7-4.5.1.3 is not required when the package contains a group of miscellaneous components.

7-4.5.1.1 NOMENCLATURE. MC, T or H number, unclassified title, or a brief description of the component.

7-4.5.1.2 PART NUMBER. The number assigned to the component for identification.

7-4.5.1.3 QUANTITY. The number of components contained in the package.

7-4.5.2 CENTER PORTION. Address of the receiving agency. When specified, the project number or retrofit order number is added below the address to identify the package to the receiving agency for disposition.

7-4.5.3 LOWER LEFT PORTION. Package or container number, if required. The package or container number of the container is assigned to an individual container within a given lot. The container numbers must run consecutively within a given lot and must not be duplicated within the lot. The container number is used when specified.

## 7-4.5.4 LOWER RIGHT PORTION.

7-4.5.4.1 DIAMETER AND HEIGHT. These are the overall outside dimensions of the container expressed in inches to the nearest  $1/2 \pm 1/4$  in.

7-4.5.4.2 WEIGHT. The outer shipping container with contents must not weigh more than  $250 \pm 2$  lb.

7-4.5.4.3 CUBIC FEET. This is the volume of space (in cubic feet) occupied by the container. Using outside dimensions measured in inches, it is calculated by the formula diameter times diameter times height divided by 1,728 = cubic feet, recorded to nearest tenth of a cubic foot.

## NOTE

Containers less than 1 cu ft need not be stenciled with dimensions, weight, or cube, unless the weight exceeds 65 lb, in which case the weight will be stenciled.

7-4.5.5 TEST EQUIPMENT CONTAINERS. Test equipment may be shipped in original shipping containers, if containers are available. Mark additionally as shown in figure 7-1.

7-4.6 FIBERBOARD CONTAINERS, WOOD BOXES, AND CRATES. All markings shall be clear and legible. Material specifications and use must be in accordance with instructions in paragraph 6-3.1. When required, the following information must be stenciled in suitable size characters on the top, side, and one end of the container, located approximately as shown in figure 7-2. Small containers which are less than 2 cu ft need only be stenciled on one side or top. If information to be stenciled requires a greater area than one side or top, the information may be stenciled on one side and top.

## 7-4.6.1 UPPER LEFT CORNER.

## NOTE

The information specified in paragraphs 7-4.6.1.1 through 7-4.6.1.3 is not required when the package contains a group of miscellaneous components.

7-4.6.1.1 NOMENCLATURE. MC, T, or H number, unclassified title, or a brief description of the component.

7-4.6.1.2 PART NUMBER. The number assigned to the component for identification.

7-4.6.1.3 QUANTITY. The number of components contained in the package.

7-4.6.2 CENTER PORTION. Address of the receiving agency. When specified, the project number or retrofit order number is added below the address to identify the package to the receiving agency for disposition.

7-4.6.3 LOWER LEFT CORNER AND END OF BOX (If Practical). Package or box number, if required. The package or box number is the number of the container assigned to an individual container within a given lot, and must not be duplicated within the lot. The package or box number is used when specified.

## 7-4.6.4 LOWER RIGHT CORNER.

7-4.6.4.1 LENGTH, WIDTH, AND HEIGHT. These are the overall outside dimensions of the package expressed in inches to the nearest  $1/2 \pm 1/4$  in.

7-4.6.4.2 WEIGHT. This is the approximate gross weight of a package with contents, recorded to the nearest pound  $\pm 2$  lb. External shipping container weight limitations must be as follows:

7-4.6.4.2.1 Wood containers: 250 lb  $\pm 20\%$ .

7-4.6.4.2.2 External fiberboard containers: 65 lb  $\pm 20\%$ .

7-4.6.4.2.3 Domestic fiberboard (cardboard) containers: 40 lb  $\pm$ 20%.

7-4.6.4.3 CUBIC FEET. This is the volume of space occupied by a container as calculated in the form of a cube (L" x W" x H" divided by 1,728 = cu ft), recorded to the nearest 0.2 $\pm$ 0.1 cu ft.

#### NOTE

Containers from 0.5 to 1.0 cu ft will not require stenciling of dimensions, but will

require stenciling of weight and cubage. The weight must be stenciled on all containers of less than 0.5 cu ft which weigh 5 lb or more.

7-4.6.5 TEST EQUIPMENT CONTAINERS. Test equipment may be shipped in original shipping containers, if containers are available. Mark additionally as shown in figure 7-2.

REFERENCE NOMENCLATURE		SPECIFICATION OR STANDARD
FED STK NO.	FEDERAL ITEM NAME	REMARKS
Acetone (Dimethyl keytone)		O-A-0051e
Acetone (Technical)		
6810-223-2739	ACETONE, TECHNICAL	1 PT
6810-184-4796		5 GL
6810-281-1864		55 GL
Adhesive (EC-847 or EC-2124) (formerly EC-711 or EC-870)		MMM-A-130a
8040-058-2399	ADHESIVE	1 QT
8040-754-2685		1 GL
Adhesive (Rubber)		MMM-A-250b
Adhesive (EC-226)		
8040-053-1271	ADHESIVE	1 QT Spec type II, hand appl
8040-264-3845		5 GL Spec type II, hand appl
8040-270-8159		55 GL Spec type II, hand appl
Adhesive (Rubber, Buna-N-type)		MIL-A-5092B, Type III
8040-869-8792	ADHESIVE	2 OZ
8040-298-1946		½ PT
8040-262-9011		1 PT
8040-515-2250		1 QT
8040-273-8697		1 GL
8040-281-1977		5 GL
Alcohol, Denatured		O-E-760b, Grade 3
6810-201-0906	ALCOHOL, DENATURED	1 PT
6810-543-7415		1 GL
6810-201-0907		5 GL
6810-201-0904		54 GL in 55 GL drum
Alcohol, Isopropyl (Technical)		TT-I-735a, Grade A
6810-983-8551	ISOPROPYL ALCOHOL, TECHNICAL	1 QT
6810-286-5435		1 GL
6810-543-7915		55 GL
Bag, Plastic (5 in. L by 3 in. W)		PPP-B-26, lie-flat tubing, 0.004 gage, 1/16 in. seam ¼ in. from edge, style 1, 3 in. tubing by 5 in. long overall
8105-579-9286	BAG, PLASTIC	EA
Bag, Plastic (6 in. L by 4 in. W)		PPP-B-26, lie-flat tubing, 0.004 gage, 1/16 in. seam ¼ in. from edge, style 1, 4 in. tubing by 6 in. long overall
8105-680-0503	BAG, PLASTIC	EA
Bag, Plastic (9 in. L by 6 in. W)		PPP-B-26, lie-flat tubing, 0.004 gage, 1/16 in. seam ¼ in. from edge, style 1, 6 in. tubing by 9 in. long overall
8105-579-9285	BAG, PLASTIC	EA

REFERENCE NOMENCLATURE		SPECIFICATION OR STANDARD
FED STK NO.	FEDERAL ITEM NAME	REMARKS
Barrier Material, Greaseproof (Medium duty, Grade A, Type II, Class 1)		MIL-B-121C, Type II, Grade A, Class 1
8135-543-6573	BARRIER MATERIAL, GREASEPROOFED-WATERPROOFED, FLEXIBLE	12 in. wide, 200 yd long RO
8135-171-0926		36 in. wide, 100 yd long RO
8135-224-8885		36 in. wide, 200 yd long RO
Barrier Material, Greaseproofed - Waterproofed, Flexible (Medium duty, Grade A, Type II, Class 2)		MIL-B-121C, Type II, Grade A, Class 2
8135-753-4662	BARRIER MATERIAL, GREASEPROOFED-WATERPROOFED, FLEXIBLE	36 in. wide, 100 yd long RO, red
8135-226-3124		36 in. wide, 200 yd long RO
Barrier Material, Paper, Noncorrosive (Heavy duty, Type 1)		MIL-P-130C, Type I, 36 in. wide
8135-664-0028	PAPER, WRAPPING, LAMINATED AND CREPED	36 in. wide, 100 yd long RO
8135-702-3158		36 in. wide, 200 yd long RO
Barrier Material, Greaseproofed-Waterproofed, Flexible (Heavy duty, Grade C, Type 1)		MIL-B-121C, Type I, Grade C, Class 1
8135-222-4027	BARRIER MATERIAL, GREASEPROOFED-WATERPROOFED, FLEXIBLE	36 in. wide, 100 yd long RO
Barrier Material, Waterproofed, Flexible (Class E-1)		PPP-B-1055, Class E-1, 36 in.
8135-526-1906	BARRIER MATERIAL, WATERPROOFED, FLEXIBLE	36 in. wide, 200 yd long RO
Barrier Material, Waterproofed, Flexible (Class E-1)		PPP-B-1055, Class E-1, 48 in.
8135-171-1001	BARRIER MATERIAL, WATERPROOFED, FLEXIBLE	48 in. wide, 200 yd long RO
Barrier Material, Waterproofed, Flexible (Heavy duty, Grade A, Type B-2, Class 1)		MIL-B-13239D, Type B-2, Class 1, Grade A
8135-655-5755	BARRIER MATERIAL, WATERPROOFED, FLEXIBLE	36 in. wide, 100 yd long RO
Barrier Material, Waterproofed, Flexible (20-lb strength, Class 1)		PPP-B-1055, Class C-1, 36 in.
8135-171-1559	BARRIER MATERIAL, WATERPROOFED, FLEXIBLE	36 in. wide, 200 yd long RO
Barrier Material, Waterproofed, Flexible (36-lb strength, Class E-2)		PPP-B-1055, Class E-2, 36 in.
8135-222-4032	BARRIER MATERIAL, WATERPROOFED, FLEXIBLE	36 in. wide, 100 yd long RO



REFERENCE NOMENCLATURE FED STK NO.	FEDERAL ITEM NAME	SPECIFICATION OR STANDARD REMARKS
Barrier Material,Moisture-Vaporproof (Class 1)		MIL-B-131E,Class 1 See - Barrier Material,Water-Vaporproofed,Flexible (Class 1)
Barrier Material,Water-Vaporproofed,Flexible (Class 2)		MIL-B-131E,Class 2
8135-282-8256	BARRIER MATERIAL,WATER-VAPORPROOFED,FLEXIBLE	36 in. wide,200 yd long RO
Barrier Material,Water-Vaporproofed,Flexible (Class 1)		MIL-B-131E,Class 1
8135-282-0565	BARRIER MATERIAL,WATER-VAPORPROOFED,FLEXIBLE	36 in. wide,200 yd long RO
Box,Folding (4 in. by 4 in. by 3 in.)		PPP-B-636,Type CF,Class Domestic,Variety SW,Grade 125,Style RSC
8115-843-5353	BOX,FIBERBOARD	EA
Box,Folding (4 in. by 4 in. by 4 in.)		PPP-B-636,Type CF,Class Domestic,Variety SW,Grade 125,Style RSC
8115-183-9440	BOX,FIBERBOARD	EA
Chromium Trioxide (Technical)		O-C-303c
6810-264-6517	CHROMIUM TRIOXIDE, TECHNICAL	5 LB
6810-264-3939		100 LB
Cleaning Compound,Aluminum Surface		MIL-C-5410B,Type I
6850-628-7249	CLEANING COMPOUND, ALUMINUM SURFACE	1 QT
Cleaning Compound,High-pressure		P-C-437a
6850-965-2087	CLEANING COMPOUND, HIGH PRESSURE CLEANER	25 LB
6850-256-0157		125 LB
6850-965-2329		400 LB
Cleaning Compound (Washing machine)		MIL-C-5543
6850-965-2330	CLEANING COMPOUND, HIGH PRESSURE CLEANER	150 LB
Coating Compound,Aluminum (Alodine) (Powdered or solution)		MIL-C-5541A,Grade B, Class 2
8030-926-9131	CORROSION RESISTANT COATING,CHEMICALLY TREATED ALUMINUM	5 LB,Spec Type II (powder)
Coating Compound,Fluorescent (Red-orange, built-in spray)		MIL-P-21600A,Red-orange No. 633

Entry continued on following page.

REFERENCE NOMENCLATURE FED STK NO.	FEDERAL ITEM NAME	SPECIFICATION OR STANDARD REMARKS
Coating Compound,Fluorescent (Red-orange, 1½ gal kit 8010-687-4386	COATING COMPOUND, FLUORESCENT	Two 1 GL pails paint and one 1 GL pail clear overcoat
Coating Compound,Fluorescent (Fire red) 8010-818-8020	COATING COMPOUND, FLUORESCENT	MIL-L-3891A,Type F,Red 1 PT
Coating Compound,Metal Pretreatment (Resin-acid,5 gal kit) 8030-165-8577	COATING COMPOUND,METAL PRETREATMENT,RESIN-ACID	MIL-P-15328C 4 GL pail resin and 1 GL bottle acid/KT
8010-664-4966	PRIMER COATING	Ingredients in separate containers,5 GL BX
Coating Compound,Phosphorescent, (Pale green) NOTE: Also requires use of Enamel and Lacquer Kit (White enamel and clear lacquer - 1 qt of each) AEC part No. 830919-00 8010-598-8671	COATING COMPOUND, PHOSPHORESCENT	MIL-C-4996A,Type I ½ PT
Coating Compound,Plastic,Strippable 8030-582-4598	PLASTIC COATING COMPOUND, STRIPPABLE	MIL-P-149B,Type II 2 LB blocks/25 LB BX
8030-166-8839		10 LB CK
Coating Compound,Thermal Resistant (White,2-gal kit) 8010-898-5984	POLYURETHANE COATING	MIL-C-27227A 1 QT polyester base and 1 QT reactant
Coating Kit Epoxy-Polyamide (clear) (Two 1-gal cans) 8010-896-1980	LACQUER	MIL-C-22750,Type I,clear 1 GL can pigmented compound and 1 GL can converter/KT
Corrosion Preventive,Fingerprint Remover 8030-558-7649	CORROSION PREVENTIVE, FINGERPRINT REMOVER	MIL-C-15074C 1 PT
8030-664-4017		1 QT
8030-281-2338		1 GL
8030-252-8300		5 GL
8030-252-8301		55 GL
Corrosion Preventive,Compound (Solvent- cutback) 8030-062-6950	CORROSION PREVENTIVE COMPOUND	MIL-C-16173D,Grade I 1 QT
8030-231-2345		1 GL
8030-244-1299		5 GL
8030-244-1300		55 GL

REFERENCE NOMENCLATURE FED STK NO.	FEDERAL ITEM NAME	SPECIFICATION OR STANDARD REMARKS
Paint, Stencil (Yellow)	NOTE: This item alternate for Lacquer (yellow, lusterless) above, for stenciling purpose only	TT-P-98b, Type I, Yellow
8010-285-4935	PAINT, STENCIL	1 QT
8010-285-4936		1 GL
8010-285-4937		5 GL
Lubricating Oil, General Purpose (Ensis, No. 103)		MIL-L-3150A
Lubricating Oil, General Purpose		
9150-231-2361	LUBRICATING OIL, GENERAL PURPOSE	1 QT
9150-231-2356		5 GL
9150-292-9692		55 GL drum, 16 gage
Methyl Ethyl Ketone (Technical)		TT-M-261b
6810-264-8983	METHYL ETHYL KETONE, TECHNICAL	3 oz
6810-687-8429		½ GL
6810-281-2785		1 GL
6810-281-2763		55 GL
Methyl Isobutyl Ketone		TT-M-268b
6810-286-3785	METHYL ISOBUTYL KETONE, TECHNICAL	1 GL
6810-180-5976		5 GL
6810-281-2761		55 GL
Naptha, Aliphatic (Type II)		TT-N-95b, Type II
6810-238-8119	NAPTHA, ALIPHATIC	1 GL
6810-265-0664		5 GL
6810-238-8117		55 GL drum, 18 gage
Paint, Stencil (Blue)		TT-P-98b, Type I, Blue
8010-285-4919	PAINT, STENCIL	1 GL, color No. 35042
Paint, Stencil (Purple)		TT-P-98b, Type I, Purple
8010-664-8242	PAINT, STENCIL	8 oz, color No. 37144
Paint, Vinyl-Alkyd (Gray, outside)		MIL-E-15936B
8010-079-2455	ENAMEL	1 QT
8010-912-9525		1 GL
8010-634-7324		5 GL

REFERENCE NOMENCLATURE		SPECIFICATION OR STANDARD
FED STK NO.	FEDERAL ITEM NAME	REMARKS
Paper,Kraft,Untreated and Unbleached		UU-P-268e
8135-160-7757	PAPER,KRAFT,UNTREATED	Spec Grade B,24 in. wide, 9 in. dia RO,40 lb substance
8135-290-3407		Spec Grade B,24 in. wide, 9 in. dia RO,50 lb substance
8135-160-7766		Spec Grade B,24 in. wide 9 in. dia RO,60 lb substance
8135-160-7770		Spec Grade B,24 in. wide, 9 in. dia RO,70 lb substance
8135-286-7318		Spec Grade B,24 in. wide, 9 in. dia RO,80 lb substance
8135-160-7752		Spec Grade B,30 in. wide, 9 in. dia RO,30 lb substance
8135-160-7758		Spec Grade B,30 in. wide, 9 in. dia RO,40 lb substance
8135-160-7753		Spec Grade B,36 in. wide, 9 in. dia RO,30 lb substance
8135-160-7759		Spec Grade B,36 in. wide, 9 in. dia RO,40 lb substance
8135-160-7764		Spec Grade B,36 in. wide, 9 in. dia RO,50 lb substance
8135-160-7768		Spec Grade B,36 in. wide, 9 in. dia RO,60 lb substance
8135-160-7771		Spec Grade B,36 in. wide, 9 in. dia RO,70 lb substance
8135-160-7776		Spec Grade B,36 in. wide, 9 in. dia RO,80 lb substance
8135-160-7762		Spec Grade B,48 in. wide, 9 in. dia RO,40 lb substance
8135-160-7769		Spec Grade B,48 in. wide, 9 in. dia RO,60 lb substance
8135-160-7772		Spec Grade B,48 in. wide, 9 in. dia RO,70 lb substance
8135-160-7778		Spec Grade B,48 in. wide, 9 in. dia RO,80 lb substance
Paper,Packaging (VCI treated,aluminum foil backed)		MIL-P-3420,Type I,Class 1,Style C
8135-664-0015	PAPER,VOLATILE CORROSION INHIBITOR TREATED	36 in. wide,200 YD long RO
Paper,Packaging (VCI treated,Kraft backed)		MIL-P-3420,Type I,Class 1,Style A
8135-664-4010	PAPER,VOLATILE CORROSION INHIBITOR TREATED	36 in. wide,200 YD long RO
Paper,Wrapping,Laminated and Creped (Type I) (Formerly Barrier Material Noncorrosive (Crepe))		MIL-P-130D,Type I,36 in. wide See-Barrier Material,Paper Non-corrosive (Heavy Duty,Type I)

REFERENCE NOMENCLATURE		SPECIFICATION OR STANDARD	REMARKS
FED STK NO.	FEDERAL ITEM NAME		
Paper,Wrapping,Chemically Neutral		MIL-P-17667B,Type II,Class 1,	
8135-558-1245	PAPER,WRAPPING,CHEMICALLY NEUTRAL	Roll,33 in. wide	36 in. wide,100 YD long RO
Paper,Wrapping,Tissue		UU-P-553b,Type II,Class 1	
8135-281-1435	PAPER,WRAPPING,TISSUE	24 in. wide,36 in long,	480 sheets per ream
Pigment,Aluminum		TT-P-320	
8010-265-7661	PIGMENT,ALUMINUM	Type I,class 1,50 LB	
8010-634-7323		Type I,Class 2,¼ LB	
8010-721-9008		Type I,Class 2,1 LB	
8010-687-4019		Type II,Class 1,1 LB	
8010-247-8723		Type II,Class 1,50 LB	
8010-247-4347		Type II,Class 2,1 LB	
8010-247-4348		Type II,Class 2,10 LB	
Plywood,Container Grade (4 by 8 ft sheet)		NN-P-530d,Group A,Type I,or Group B,	
5530-051-0516	PLYWOOD	Exterior Type	
		Spec. Group B,Exterior Type,	
		1/4 in. thick,48 in. wide,	
		96 in. long, 12 SH per PG	
5530-051-0511		Spec. Group B,Exterior Type,	
		1/4 in. thick,48 in. wide,	
		96 in. long,120 SH per SD	
5530-051-0514		Spec. Group B, Exterior Type,	
		1/2 in thick,48 in. wide,	
		96 in. long, 6 SH per PG	
5530-151-0508		Spec. Group B,Exterior Type,	
		1/2 in. thick,48 in. wide,	
		96 in. long,60 SH per SD	
5530-151-0512		Spec. Group B,Exterior Type,	
		3/4 in thick,48 in. wide,	
		96 in. long, 4 SH per PG	
5530-151-0506		Spec. Group B,Exterior Type,	
		3/4 in. thick,48 in. wide,	
		96 in. long,40 SH per SD	
Primer coating (Green,zinc chromate)		MIL-P-8585A,Color T	
8010-899-8825	PRIMER COATING	15 oz spray can	
8010-899-0931		1 QT	
8010-582-5318		1 GL	
Primer coating (Synthetic,wood and ferrous metal surfaces)		TT-P-636c	
8010-817-1214	PRIMER COATING	1 QT	
8010-161-7425		1 GL	
8010-161-5718		5 GL	
Primer Coating (Vinyl-zinc chromate)		MIL-P-15930B	
8010-584-2953	PRIMER COATING	1 QT	
8010-664-0018		1 GL	
8010-753-4714		5 GL	

REFERENCE NOMENCLATURE FED STK NO.	FEDERAL ITEM NAME	SPECIFICATION OR STANDARD REMARKS
Primer Coating (Yellow, zinc chromate) 8010-297-0593 8010-835-2114 8010-515-2208 8010-515-2211	PRIMER COATING	MIL-P-8585A, Color Y 15 oz spray can 1 PT 1 GL 5 GL
Protector, Packing-List (Waterproof fiberboard) 8105-926-2260	PROTECTOR, PACKING LIST	PPP-P-700a, Size 4 5-3/4 in. by 7 in., HD
Remover, Paint 8010-160-5799 8010-597-8234 8010-165-4447	REMOVER, PAINT	TT-R-251h, Type III, Class A 1 QT 1 GL 5 GL
Scouring Powder (Glass cleaning) 7930-985-6902	SCOURING POWDER	P-S-320b 14 OZ CN
Solvent, Dry Cleaning (Stoddard) 6850-281-3061 6850-281-1985 6850-264-9038 6850-264-9037 6850-285-8012 6850-264-9039	DRY CLEANING SOLVENT	P-D-680, Type I 4 oz 1 GL 5 GL 55 GL drum, 16 gage 55 GL drum, 18 gage Bulk
Steel Strapping, Flat (5/8 in. W or 1 1/4 in. W) 8135-283-0667 8135-283-0671	STRAPPING	QQ-S-781, Type I, Class B, Grade 2 5/8 in. wide, 100 LB CL 1 1/4 in. wide, 90 to 95 LB CL
Steel Strapping, Flat (5/8 in. W or 1 1/4 in. W) 8135-281-4071 8135-531-7721	STRAPPING	QQ-S-781, Type I, Class A 5/8 in. wide, 100 LB CL 1 1/4 in. wide, 90 to 95 LB CL
Tape, Pressure-Sensitive, Adhesive (Cellophane, clear) 7510-551-9817 7510-551-9826 7510-234-7960	TAPE, PRESSURE-SENSITIVE, ADHESIVE	L-T-90c, Type I, Class A, 2 1/2 in. or 1 in. 1 in. wide, 72 YD long RO 1 1/2 in. wide, 72 YD long RO 2 in. wide, 72 YD long RO
Tape, Gummed, Waterproof 8135-598-6097	TAPE, GUMMED	PPP-T-45b, Type I, 3 in. 100 YD long RO
Tape, Gummed, Water resistant 8135-297-6656	TAPE, PRESSURE-SENSITIVE, ADHESIVE	PPP-T-76b, 3 in. 120 YD long RO
Tape, Insulation, Electrical (Yellow plastic) 5970-636-1770	INSULATION TAPE, ELECTRICAL	MIL-I-7798A, 0.007 in. yellow, 3/4 in. 108 FT long RO
Tape, Insulation, Electrical (Black MMM No. 33) 5970-284-8410	INSULATION TAPE, ELECTRICAL	MIL-I-7798A, 0.007 in. Black, 3/4 in. 108 FT long RO
Tape, Insulation, Electrical (Black plastic) 5970-644-3181	INSULATION TAPE, ELECTRICAL	MIL-I-7798A, 0.010 in. Black, 1/2 in. 108 FT long RO

REFERENCE NOMENCLATURE		SPECIFICATION OR STANDARD
FED STK NO.	FEDERAL ITEM NAME	REMARKS
Solvent chlorinated (Xythene)		O-T-620c See - Trichloroethane (Technical)
Twine, Impregnated		MIL-T-713D, Type P, Unwaxed, Class 3 1 LB TU, 4200 feet per LB
4020-855-2144	TWINE, NYLON	
Varnish, Insulating, Electrical (Clear)		MIL-I-24092A, Class 105, Type AN Class 130, 1 GL
5970-161-7232	INSULATING VARNISH, ELECTRICAL	
5970-166-1682		Class 130, 5 GL
Varnish (Phenolic resin base)		TT-V-119b
8010-664-5411	VARNISH, OIL	1 PT
8010-597-7856		1 GL
Wadding, Bound Hair		PPP-C-1120, Type IV, Class A
8135-132-9568	CUSHIONING MATERIAL, PACKAGING	24 in. wide, 72 in. long, 1 in. thick, SH
8135-664-0057		24 in. wide, 72 in. long, 2 in. thick, SH
Wire, Steel, Corrosion Resistant		QQ-W-423, Form; Composition FS 302 or FS 304
9505-596-5101	WIRE, STEEL, CORROSION RESISTING	0.0204 in. dia, Composition 302, annealed, 5 pound CL
9505-555-8177		0.024 in. dia, Composition 302, annealed, 1 pound SL
9505-293-4208		0.032 in. dia, Composition 302, annealed, 1 pound SL
9505-684-0982		0.041 in. dia, Composition 302, annealed, 1 pound SL
9505-554-0100		0.023 in. dia, Composition 304, annealed, bright finish, 1 pound SL
9505-804-3814		0.042 in. dia, Composition 304, annealed, bright finish, 1 pound SL

## REFERENCE NOMENCLATURE

FED STK NO.

FEDERAL ITEM NAME

## SPECIFICATION OR STANDARD

REMARKS

Wire, Steel, Zinc Coated

9505-248-9847 WIRE, STEEL, CARBON

9505-684-4841

9505-248-9848

9505-684-4843

9505-248-9850

QQ-W-461, Annealed, FS 1005,  
FS 1010, or FS 1015

0.028 in. dia, Composition  
1010, soft temper, medium  
zinc coating, 1 pound SL  
0.031 in. dia, Composition  
1010, soft temper, light zinc  
coating, 1 pound SL  
0.032 in. dia, Composition  
1010, soft temper, light zinc  
coating, 1 pound SL  
0.041 in. dia, Composition  
1010, soft temper, heavy zinc  
coating, 1 pound SL  
0.0475 in. dia, Composition  
1010, soft temper, medium zinc  
coating, 1 pound SL

Xylene (Technical)

6810-584-4071 XYLENE, TECHNICAL

6810-598-6600

6810-584-4070

6810-290-4166

TT-X-916b, Grade B

1 QT  
1 GL  
5 GL  
55 GL



DEPARTMENTS OF THE ARMY, NAVY, AND AIR FORCE  
Washington, D. C., 7 June 1972

BY ORDER OF THE SECRETARIES OF THE ARMY, NAVY, AND AIR FORCE:

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The Adjutant General

W. C. WESTMORELAND  
General, United States Army  
Chief of Staff

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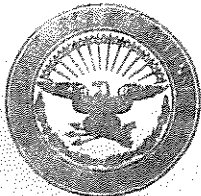
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H. C. DONNELLY  
Manager, Albuquerque Operations  
U. S. Atomic Energy Commission



DEPARTMENT OF THE NAVY  
NAVAL ORDNANCE SYSTEMS COMMAND  
WASHINGTON, D. C. 20360

IN REPLY REFER TO

ORD-0523E/528:HJS  
31 Oct 1972

From: Commander, Naval Ordnance Systems Command  
To: Holders of SWOP 35-51

Subj: Use of SWOP 35-51

1. During recent logistical evaluation exercises, field exercises, and informal liaison with both Navy and Marine Corps nuclear-capable units, it has been noted that the role or use of SWOP 35-51 is interpreted in different manners. Therefore, this letter establishes the policy for its use within the Navy-Marine Corps.

2. SWOP 35-51 procedures shall be followed in the following situations when working war reserve, training, QAST, etc. weapons unless otherwise directed:

a. When the weapon SWOP specifically refers to SWOP 35-51, e.g., "package in accordance with SWOP 35-51."

b. When the weapon SWOP does not give details on how an operation is to be performed, e.g., "clean the "O" ring."

3. SWOP 35-51 procedures shall not be followed when the weapon SWOP gives details on how an operation is to be performed, e.g., "clean (or wipe) the preformed packing with a lint-free cloth." Although this operation is brief, it tells the technician what the weapon (or component) designer, SWOP writer, and the concerned technical reviewers of the weapon SWOP intended for him to do. Thus, there is no need to follow the SWOP 35-51 procedures of using acetone or Freon and allowing the packing to air-dry for minimum of 10 minutes.

4. The rationale for this policy is based upon paragraph 1-1 of SWOP 35-51 (and informal liaison with the AEC community), which states, "This manual provides cleaning, preservation, packaging, and identification marking information and instructions to be used when authorized, by concerned personnel . . ." The key words are "when authorized." Authorization will be given by a specific weapon SWOP. The intent of paragraph 1-3.4 of SWOP 35-51 (about the variances between the referencing document and 35-51) is to cover such examples as given in paragraph 3 herein.