

MIL-D-3209C  
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SUPERSEDING  
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MILITARY SPECIFICATION  
DISTILLATION UNITS, WATER, THERMOCOMPRESSON-TYPE,  
PACKAGING OF

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements for preservation, packaging, packing and marking of thermocompression-type water distillation units.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal form a part of this specification to the extent specified herein:

SPECIFICATIONS

Federal

TT-P-664

UU-T-81

PPP-B-601

PPP-B-621

- Primer Coating, Synthetic, Rust-Inhibiting, Lacquer-Resisting.
- Tags, Shipping and Stock.
- Boxes, Wood, Cleated-Plywood.
- Boxes, Wood, Nailed and Lock-Corner.

FSC 4620

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PPP-B-636

PPP-B-640

PPP-C-650

PPP-P-40

PPP-T-75

- Boxes, Shipping, Fiberboard
- Boxes, Fiberboard, Corrugated, Triple-Wall.
- Crates, Wood, Open and Covered.
- Packaging and Packing of Hand Tools.
- Tape, Preservation and Sealing.

Military

MIL-V-3

MIL-C-104

MIL-P-116

MIL-B-121

MIL-H-775

MIL-C-3774

MIL-E-10062

MIL-V-13811

MIL-E-16298

MIL-L-21260

MIL-P-46093

MIL-C-52078

- Valves, Fittings, and Flanges (Except for Systems Indicated Herein): Packaging of.
- Crates, Wood; Lumber and Plywood Sheathed, Nailed and Bolted.
- Preservation, Methods of.
- Barrier Material, Greaseproofed, Waterproofed, Flexible.
- Hose, Rubber, Plastic, Fabric, or Metal (Including Tubing); and Fittings, Nozzles and Strainers, Packaging of.
- Crates, Wood; Open, 12,000- and 16,000-Pound Capacity.
- Engines: Preparation for Shipment and Storage of.
- Varnish, Waterproofing, Electrical, Ignition.
- Electric Machines having Rotating Parts and Associated Repair Parts: Packaging of.
- Lubricating Oil, Internal Combustion Engine, Preservative and Break-In.
- Primer Coating, Synthetic (For Brake Drums).
- Cap-Plug, Cap, and Plug, Protective, Plastic, Dust and Moisture Seal.

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**STANDARDS****Military**

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|--------------|---|
| MIL-STD-105  | - Sampling Procedures and Tables for Inspection by Attributes.                                      |
| MIL-STD-129  | - Marking for Shipment and Storage.   |
| MIL-STD-281  | - Automobiles, Trucks, Truck-Tractors, Trailers and Trailer Dollies; Preservation and Packaging of. |
| MIL-STD-1186 | - Cushioning, Anchoring, Bracing, Blocking, and Waterproofing; with Appropriate Test Methods.       |

(Copies of specifications and standards required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

**UNIFORM CLASSIFICATION COMMITTEE, AGENT****Uniform Freight Classification**

(Application for copies should be addressed to the Uniform Classification Committee, Tariff Publishing Officer, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

**NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT****National Motor Freight Classification**

(Application for copies should be addressed to the American Trucking Associations, Inc., Att'n: Tariff Order Section, 1616 P Street, NW, Washington, DC 20036.)

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### 3. REQUIREMENTS

3.1 Preproduction pack. Unless otherwise specified (see 6.2), the supplier shall furnish a preproduction pack for examination and test within the time frame specified (see 6.2), to prove prior to starting production packaging and packing that the applied preservation, packaging, packing and marking comply with the requirements of this specification. Examination and test shall be as specified in section 4 and shall be subject to surveillance and approval by the Government (see 6.3). The preproduction pack may be accomplished utilizing either the preproduction model, first produced model or a production unit. If the preproduction or first produced model unit is utilized, any preservation, packaging, and packing shall be removed by the supplier at no expense to the Government, when requested by the Government to facilitate comparison between the preproduction model or first produced unit and production unit.

3.2 Materials. Materials shall be as specified herein. Materials not specified shall be selected by the supplier and shall be subject to all provisions of this specification.

3.3 Preservation and packaging. Preservation and packaging shall be level A, B, or C, as specified (see 6.2).

#### 3.3.1 Level A.

3.3.1.1 Disassembly. Disassembly of the units shall be the minimum necessary to safeguard parts vulnerable to damage, pilferage, and loss. The extent of further disassembly shall be confined to the removal of protruding parts that would otherwise increase cubage; however, disassembly shall be limited to those parts that can be removed and reinstalled without special tools and skilled personnel. Removed bolts, nuts, pins, screws, and washers shall be reinstalled in mating parts and secured to prevent their loss.

3.3.1.2 Matchmarking. Removed parts and mating parts on the units shall be matchmarked when necessary to facilitate reassembly. Removed parts and mating parts on the units shall be identified by attaching shipping tags conforming to UU-T-81, type B, class 2. Waterproof ink shall be used for identification marking on the tags.

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3.3.1.3 Cleaning, drying, and preservatives. Surfaces to which a preservative is to be applied shall be cleaned and dried in accordance with MIL-P-116. Preservatives identified herein by "P" number shall conform to the applicable specifications listed in and shall be applied in accordance with MIL-P-116. Preservative lubricating oil specified herein shall conform to MIL-L-21260, type and grade as specified herein.

3.3.1.3.1 Caution. Petroleum base preservatives, other than type P-14, shall not be applied to any surface that will come in contact with feedwater or distillate such as the pumps, compressor, engine coolant system, flow controllers, or any other heat transfer surface.

3.3.1.3.2 Exterior surfaces. Exterior surfaces of components and parts that will not contact the feedwater or distillate, including those parts exposed by disassembly, requiring the application of a contact preservative in accordance with MIL-P-116 shall be coated with type P-1 preservative. Exposed machined surfaces that will not come in contact with feedwater or distillate shall be coated with type P-11 preservative and the coated surfaces shall be wrapped or covered with barrier-material conforming to MIL-B-121, type II, grade A, class 2. The wrap or cover shall be secured in place with tape conforming to PFP-T-75, type II. Unpainted metal information plates, excluding anodized aluminum, shall be coated with varnish conforming to MIL-V-13811.

3.3.1.4 Drains. Except for crankcases and housings containing fluid lubricants or fluid preservatives, all drain plugs shall be removed, and all valves and cocks shall be placed in the open position. Drain plugs shall be secured to the unit with tape conforming to PFP-T-75, type II. A shipping tag conforming to UU-T-81, type B, class 2 shall be attached to the unit indicating: "Drain valves and drain cocks have been left open. Drain plugs have been removed and secured to the unit. Close valves, close cocks, and install drain plugs prior to placing the unit in operation." Waterproof ink shall be used for marking on the tag.

3.3.1.5 Engines. Engines and accessories, except the engine coolant system, shall be preserved in accordance with MIL-E-10062, type I, method I or type II, method I, as specified (see 6.2). Type P-14 preservative shall be applied to the coolant system; the excess preservative shall be drained and the drain cocks shall be left open.

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3.3.1.6 Electric motors (when furnished). Electric motors shall be preserved in accordance with the level A requirements of MIL-E-16298, alternate method, as specified for assembled machines.

3.3.1.7 Pumps. The interior surfaces of all pumps shall be coated with type P-14 preservative. Excess preservative shall be drained. Pump drains shall be left open.

3.3.1.8 Instrument panels. For unboxed (mobile) units, all instruments, meters, and gages not protected by a metal housing or cover shall have the instrument glass or gage glass covered with barrier material conforming to MIL-B-121, type II, grade A, class 2, over which a fitted piece of 1/4-inch plywood shall be placed and secured with tape conforming to PPP-T-75, type II.

3.3.1.9 Disk-type clutches. With the cover plates removed and the clutch engaged, all accessible metal interior components of the clutch shall be sprayed with a thin film of primer conforming to TT-P-664 or MIL-P-46093. Clutch control mechanisms not enclosed shall be coated with type P-1 preservative. After being sprayed, spring-loaded-type clutches shall be secured in a partially disengaged position to eliminate contact between the disk facings and pressure plates. Snap-over-center and toggle-in-type clutches shall be completely disengaged.

3.3.1.10 Drive belts and pulleys. Drive belts shall be removed or released from tension. Pulley faces or grooves shall be coated with primer conforming to TT-P-664. Removed belts shall be preserved in accordance with MIL-P-116, method IC-1.

3.3.1.11 Compressor. The compressor crankcase shall contain the approved lubricant, filled to the operating level. A tag shall be attached indicating the crankcase is filled with operating lubricant. The compressor shall be actuated to insure coating of all surfaces and parts with the lubricant. The interior surfaces of the compressor that will contact feedwater, vapor, or distillate shall be coated with type P-14 preservative. The excess preservative shall be drained. Drains shall be left open. The tag shall conform to UU-T-81, type B, class 2. Waterproof ink shall be used for marking on the tag.

3.3.1.12 Enclosed gears. Gears operating in engine lubricating oil grades 10, 30, or 50, shall have the housing drained and filled to the operating level with preservative oil conforming to MIL-L-21260, type I,

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grade 10, 30 or 50 as applicable, and shall be tagged to indicate that the preservative oil is suitable for operation and shall remain in the housing until the first required lubricant change. Gears operating in other than engine lubricating oil grade 10, 30 or 50, shall have the housing filled to the operating level with the approved lubricant required by the lubrication order for operation, and shall be tagged to indicate that the housing is filled with the required operating oil. The tag shall conform to UU-T-81, type B, class 2, and waterproof ink shall be used for marking the tag.

3.3.1.13 Enclosed chains. Enclosed drive chains and chain housings shall be preserved as specified in 3.3.1.12 for enclosed gears.

3.3.1.14 Evaporators and heat exchangers. Evaporators and heat exchangers shall be drained and thoroughly dried with dry compressed air. Drain valves shall be left open.

3.3.1.15 Pipe and tubing. The ends of open pipe and tubing shall be sealed with plastic caps or plugs conforming to MIL-C-52078, or with tape conforming to PPP-T-75, type II.

3.3.1.16 Loose valves, fittings, and flanges. Loose valves, fittings, and flanges shall be preserved and packaged in accordance with the level A requirements of MIL-V-3, except type P-14 preservative shall be applied in lieu of the preservatives specified in MIL-V-3. In addition, all valves with float mechanisms shall have the floats secured against movement. A tag shall be attached to the valve stating: "Float has been secured and must be released before valve is placed in operation." The tag shall conform to UU-T-81, type B, class 2 and waterproof ink shall be used for marking the tag.

3.3.1.17 Hose and hose fittings. Hose and hose fittings removed from the units shall be packaged in accordance with the level A requirements of MIL-H-775, except type P-14 preservative shall be applied to fittings in lieu of the preservative specified in MIL-H-775. Openings into ends of hose not removed and fittings not removed shall be sealed with plastic caps or plugs conforming to MIL-C-52078, or with tape conforming to PPP-T-75, type II. Hose on reels shall be secured to prevent unwinding.

3.3.1.18 Gages, regulators, and meters. Removed gages, regulators, and meters shall be preserved in accordance with MIL-P-116, method III, using boxes conforming to PPP-B-636, W5c or W6c, as the containers.

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The boxes shall be waterproof sealed with tape in accordance with the appendix to the box specification.

3.3.1.19 Trailer chassis, truck chassis, and wheel mountings. Trailer chassis, truck chassis, and wheel mountings with the equipment mounted thereon shall be preserved and packaged in accordance with the level A requirements of MIL-STD-281 for mobile or boxed shipment, as specified (see 6.2).

3.3.1.20 Fire extinguishers (when furnished). Unpainted exterior surfaces of the fire extinguishers requiring a contact preservative in accordance with MIL-P-116 shall be coated with type P-1 preservative. For boxed shipment of the units, extinguishers shall be placed in the mounting brackets and secured. For unboxed (mobile) shipment of the units, the fire extinguishers shall be individually preserved in accordance with MIL-P-116, method III in boxes conforming to PPP-B-636, W6c, style optional. The boxes shall be waterproof sealed with tape in accordance with the appendix to the box specification.

3.3.1.21 Repair parts. The preservative application criteria and applicable method(s) of preservation of MIL-P-116 shall be used to preserve and package the repair parts, except type P-14 preservative shall be applied to those parts that will come in contact with feedwater or distillate except that, when specified (see 6.2), preservation and packaging of repair parts shall be as required by the procuring activity.

3.3.1.22 Maintenance tools. Maintenance tools shall be preserved and packaged in accordance with the level A requirements of PPP-P-40.

3.3.1.23 Technical publications. Technical publications for each unit shall be preserved together in accordance with MIL-P-116, method IC-1.

3.3.1.24 Consolidated packaging.

3.3.1.24.1 For units to be packed in fully sheathed crates. The disassembled components, packaged and unpackaged components, repair parts, tools, and publications shall be consolidated packaged in quantities not to exceed the weight limitation of fiberboard boxes conforming to PPP-B-636, V3c or V3s, style optional, or PPP-B-640, class 2, grade A.



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3.3.1.24.2 For units to be packed in open-type crates. The disassembled components, packaged and unpackaged components, repair parts, tools, and publications shall be consolidated packaged in quantities not to exceed 200 pounds in close-fitting boxes conforming to PPP-B-621, class 1, style optional, or PPP-B-601, domestic type, style optional. Strapping shall not be required.

3.3.1.24.3 For unboxed (mobile) units. For truck- and trailer-mounted units, the disassembled components, packaged and unpackaged components, repair parts, tools, and publications shall be consolidated packaged as specified in 3.3.1.24.2, except boxes shall be overseas type and class, and strapping shall be applied in accordance with the appendix to the applicable box specification. Strapping shall be zinc coated. The sizes of the boxes shall be determined by the available space for securing to the unit.

3.3.2 Level B. Unless otherwise specified (see 6.2 and 6.4), level B preservation and packaging requirements shall be as follows.

3.3.2.1 Disassembly and matchmarking. Disassembly and matchmarking shall be as specified in 3.3.1.1 and 3.3.1.2, for level A, except shipping tags may be class 1, and the marking ink need not be waterproof.

3.3.2.2 Cleaning, drying, and preservative. Cleaning, drying, and application of preservatives shall be as specified in 3.3.1.3 and 3.3.1.3.1 for level A.

3.3.2.3 Exterior surfaces. Exterior surfaces shall be coated with preservatives as specified in 3.3.1.3.2 for level A, except unpainted information plates need not be coated with varnish.

3.3.2.4 Drains. Drain valves and drain cocks shall be left open, drain plugs shall be removed and secured to the unit, and tags shall be attached as specified in 3.3.1.4 for level A, except tags may be class 1 and the marking ink need not be waterproof.

3.3.2.5 Engines. The fuel system, combustion chambers and valves shall be preserved in accordance with MIL-E-10062, type I, method I or type II, method I as specified (see 6.2). Preservative shall not be applied to the engine coolant system. The coolant system drain valves or cocks shall be left open.

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3.3.2.6 Electric motors (when furnished). Openings into electric motors shall be sealed with tape conforming to PPP-T-75, type II.

3.3.2.7 Instrument panels. For unboxed (mobile) units, instrument and gage glasses not protected by a metal housing shall be protected as specified in 3.3.1.8 for level A.

3.3.2.8 Compressor. The compressor crankcase shall contain the approved lubricant, filled to the operating level. A tag shall be attached indicating the crankcase is filled with operating lubricant. Interior preservation of parts that will contact feedwater, vapor, or distillate shall not be required. Drains shall be left open. The tag shall conform to UU-T-81, type B, class 1 or 2.

3.3.2.9 Pumps. Interior surfaces of the pumps shall not require preservation. Drains shall be left open.

3.3.2.10 Enclosed gears and chains. The housings shall be filled to the operating level with the lubricant required for operation and tagged to indicate the housing is filled with the required lubricating oil. The tag shall conform to UU-T-81, type B, class 1 or 2.

3.3.2.11 Drive belts. Drive belts shall be released from tension.

3.3.2.12 Evaporators and heat exchangers. Evaporators and heat exchangers shall be thoroughly drained and dried with dry compressed air. Drains shall be left open.

3.3.2.13 Hose, hose fittings, and valves. Openings into hose, hose fittings, and valves shall be sealed with plastic caps or plugs conforming to MIL-C-52078 or with tape conforming to PPP-T-75, type II. Float valves shall be secured to prevent movement. A tag shall be attached to the float valve stating: "Float has been secured and must be released before valve is placed in operation." The tag shall conform to UU-T-81, type B, class 1 or 2.

3.3.2.14 Meters and gages. Removed meters and gages shall be preserved in accordance with MIL-P-116, method III, using boxes conforming to PPP-B-636, type CF, class domestic, SW, grade 125, style optional, as the containers.

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3.3.2.15 Trailer chassis, wheel mountings, and truck chassis. Components of the trailer chassis, wheel mountings, and truck chassis shall be preserved in accordance with the level B requirements of MIL-STD-281, for mobile or boxed shipment as specified (see 6.2).

3.3.2.16 Fire extinguishers (when furnished). For boxed shipment of the units, the fire extinguishers shall be placed in the mounting brackets and secured. For unboxed (mobile) shipment of the units, the fire extinguishers shall be preserved in accordance with MIL-P-116, method III, using boxes conforming to PPP-B-636, type CF, class domestic, SW, grade 125, style optional, as the containers.

3.3.2.17 Repair parts, tools, and publications. The repair parts, tools, and publications shall be preserved as specified for level A.

3.3.2.18 Consolidated packaging. Consolidated packaging shall be as specified for level A, except all containers shall be domestic type and class, and strapping need not be zinc coated.

3.3.3 Level C. The equipment, repair parts, tools, and publications shall be preserved and packaged to afford adequate protection against corrosion, deterioration, and physical damage during shipment from supply source to the first receiving activity for immediate use. When specified (see 6.2), the following additional preservation and packaging shall be accomplished.

3.3.3.1 Repair parts, tools, and publications. Repair parts, tools, and technical publications shall be preserved and packaged as specified for level A.

3.3.3.2 Engines. Engine components shall be preserved in accordance with MIL-E-10062, level C, type I or type II as specified (see 6.2). Preservative shall not be applied to the coolant system. The coolant system drains shall be left open.

3.3.3.3 Units. Parts that protrude beyond the units shall be removed when a substantial reduction in cube can be realized or when the parts are susceptible to damage, pilferage, or loss. Removed parts and mating parts shall be matchmarked to facilitate reassembly. The systems shall be drained as specified for level A. Preservation and packaging of components shall be such as to provide protection against corrosion deterioration and physical damage from the supplier to the initial destination for immediate use. Drains shall be left open as specified in 3.3.1.4.

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3.3.3.4 Caution. Petroleum base preservatives shall not be applied to surfaces that will come in contact with feedwater or distillate when the unit is placed in service.

3.4 Packing. Packing shall be level A, B, or C, as specified (see 6.2).

3.4.1 Level A.

3.4.1.1 Crated units. Unless otherwise specified in 3.4.1.2, each complete unit, with components, tools, publications, and repair parts (except truck-mounted units) shall be packed in a crate conforming to MIL-C-104, type I, class 1 or 2, style a. Strapping shall be zinc coated and shall be applied in accordance with the appendix to the crate specification. Blocking, bracing, and anchoring of items in crates shall be in accordance with MIL-STD-1186, and in accordance with the crate specification.

3.4.1.2 Wheel- and trailer-mounted units. When specified (see 6.2), each complete wheel- or trailer-mounted unit, with components, tools, publications, and repair parts, shall be prepared for unboxed mobile shipment. Consolidated containers shall be secured to the equipment in a manner not to increase cubage or to interfere with towing or lifting the unit.

3.4.1.3 Truck-mounted units. Truck-mounted units shall be prepared for unboxed (mobile) shipment. Consolidated containers shall be secured to the equipment in a manner not to increase cubage or interfere with towing or lifting the unit.

3.4.2 Level B.

3.4.2.1 Crated units. Unless otherwise specified in 3.4.2.2, each complete unit, with components, repair parts, tools, and publications (except truck-mounted units) shall be packed in a crate conforming to PPP-C-650, type V, style A, class 1, or MIL-C-3774, nailed assembly. Strapping shall be in accordance with the crate specification and appendix thereto. Blocking, bracing, and anchoring of items in crates shall be in accordance with MIL-STD-1186, and in accordance with the applicable crate specification.

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3.4.2.2 Wheel- and trailer-mounted units. When specified (see 6.2), each complete wheel- and trailer-mounted unit, with components, repair parts, tools, and publications, shall be prepared for unboxed mobile shipment. Consolidated containers shall be secured to the unit as specified for level A.

3.4.2.3 Truck-mounted units. Each complete truck-mounted unit, with components, repair parts, tools, and publications, shall be prepared for unboxed mobile shipment. Consolidated containers shall be secured to the equipment as specified for level A.

3.4.3 Level C. Each complete unit, with components, repair parts, tools, and publications, shall be packed as a complete unit to insure carrier acceptance and safe arrival at destination at lowest rates in compliance with Uniform Freight Classification rules, or National Motor Freight Classification rules.

3.5 Additional cleaning. In addition to the cleaning specified prior to application of preservatives for levels A, B, or C, the following shall be accomplished: The distillation unit shall be thoroughly cleaned of all cutting oil, grease, residue of tests, dirt, metal scrap, and other contaminants. Cleaning shall be accomplished in a manner that will not leave a residue or otherwise make the distillation unit unsuitable for its intended use. The unit shall be completely drained and dried before preparation for delivery.

3.6 Marking. Packages, shipping containers, and unboxed units shall be marked in accordance with MIL-STD-129.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

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4.1.1 Material inspection. The supplier is responsible for insuring that supplies and materials used are manufactured, examined, and tested in accordance with referenced specifications and standards.

4.2 Classification of inspection. Inspection shall be classified as follows:

- (a) Preproduction pack inspection (see 4.3).
- (b) Quality conformance inspection (see 4.4).

4.3 Preproduction pack inspection.

4.3.1 Examination. The preproduction pack shall be examined for the defects specified in 4.4.4. Presence of one or more defects shall be cause for rejection.

4.3.2 Test. The preproduction pack of crated units for levels A and B shall be subjected to the guided impact test (railroad-car) in appendix A to MIL-STD-1186. The car shall strike a string of five empty cars, with draft gear extended and the brakes set, at a speed of not less than 10 miles per hour and not more than 11 miles per hour. Any visible damage to the contents, shifting of contents, loosening, breaking or displacement of anchoring, blocking or bracing within the container shall be cause for rejection. When specified (see 6.2), the units shall be subjected to the operational test(s) specified in the end-item specification. Any malfunction of the equipment contributable to the preproduction pack test shall be cause for rejection.

4.4 Quality conformance inspection.

4.4.1 Inspection stages. Inspection shall be in three stages as follows:

- (a) The first stage shall include inspection of procedures, methods, materials, containers and packaging marking prior to placing the packaged and unpackaged items into the consolidated containers.
- (b) The second stage shall include inspection of closure and marking of the consolidated containers, and the arrangement, blocking, bracing and anchoring of the items and consolidated containers within the shipping container or to the wheel mounted, trailer mounted or truck mounted units.

- (c) The third stage shall include inspection of the closed, strapped and marked shipping container or the wheel mounted, trailer mounted or truck mounted unit prepared for shipment.

4.4.2 Unit of product. For the purpose of inspection, all packages or packs prepared for any applicable inspection stage that will comprise a complete pack shall be considered a unit of product.

4.4.3 Sampling. Sampling for examination shall be in accordance with MIL-STD-105.

4.4.4 Examination. Samples selected in accordance with 4.4.3 shall be examined for the defects marked "X" for the applicable level in table I. Acceptable quality level (AQL) shall be 2.5 percent defective.

Table I. Classification of defects

No.	Defect	Level		
		A	B	C
101.	Materials, methods or containers not as specified. Each incorrect material, method or container shall constitute one defect (3.2, 3.3, 3.4).	X	X	X
102.	Disassembly not as specified (3.3.1.1, 3.3.2.1, 3.3.3.3).	X	X	X
103.	Matchmarking not as specified (3.3.1.2, 3.3.2.1, 3.3.3.3).	X	X	X
104.	Tags used for matchmarking and identification marking not as specified (3.3.1.2, 3.3.1.4, 3.3.1.11, 3.3.1.12, 3.3.1.16, 3.3.2.1, 3.3.2.4, 3.3.2.8, 3.3.2.10, 3.3.2.13).	X	X	-
105.	Preservatives other than type P-14 applied to surface will contact feedwater or distillate (3.3.1.3.1, 3.3.3.2, 3.3.3.4).	X	X	X
106.	Exterior surfaces not coated with preservatives as specified (3.3.1.3.2, 3.3.2.3).	X	X	-
107.	Coated surfaces of machined surfaces not wrapped or covered as specified (3.3.1.3.2, 3.3.2.3).	X	X	-
108.	Unpainted metal information plate not coated with varnish (3.3.1.3.2).	X	-	-
109.	Drains not open (when applicable) and tagged as specified (3.3.1.4, 3.3.2.4, 3.3.3.3).	X	X	X
110.	Excess type P-14 not drained from engine coolant system or the drain cocks not left open (3.3.1.5, 3.3.2.5, 3.3.3.2).	X	X	X



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Table I. Classification of defects (cont'd)

No.	Defect	Level		
		A	B	C
111.	Excess type P-14 not drained from pumps or the drains not left open (3.3.1.7, 3.3.2.9).	X	X	-
112.	Instruments, gages, and meters not protected with plywood when required for unboxed (mobile) units (3.3.1.8, 3.3.2.7).	X	X	-
113.	Disk-type clutches not preserved and disengaged as specified (3.3.1.9).	X	-	-
114.	Drive belts not removed or released from tension as applicable (3.3.1.10, 3.3.2.11).	X	X	-
115.	Compressor crankcase does not contain the approved lubricant (3.3.1.11, 3.3.2.8).	X	X	-
116.	Interior surfaces of the compressor not coated with type P-14 preservative and the excess preservative not drained (3.3.1.11).	X	-	-
117.	Compressor drains not left open (3.3.1.11, 3.3.2.8, 3.3.3.3).	X	X	X
118.	Enclosed gears not preserved as specified (3.3.1.12, 3.3.2.10).	X	X	-
119.	Enclosed chains not preserved as specified (3.3.1.13, 3.3.2.10).	X	X	-
120.	Evaporators and heat exchangers not thoroughly dried and the drain valves not left open (3.3.1.14, 3.3.2.12, 3.3.3.3).	X	X	X
121.	Ends of pipe and tubing not sealed as specified (3.3.1.15, 3.3.1.17, 3.3.2.13).	X	X	-
122.	Other than type P-14 preservative applied to valves, fittings, and flanges (3.3.1.16, 3.3.1.17).	X	-	-
123.	Float mechanisms not secured and tagged as specified (3.3.1.16, 3.3.2.13).	X	X	-
124.	Gages, regulators, and meters, when removed, not preserved (3.3.1.18, 3.3.2.14).	X	X	-
125.	Fire extinguishers not secured in brackets for boxed units (3.3.1.20, 3.3.2.16).	X	X	-
126.	Fire extinguishers not preserved as specified for unboxed (mobile) units (3.3.1.20, 3.3.2.16).	X	X	-
127.	Repair parts not preserved as specified (3.3.1.21, 3.3.2.17, 3.3.3.1).	X	X	X
128.	Technical publications not preserved as specified (3.3.1.23, 3.3.2.17, 3.3.3.1).	X	X	X



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Table I. Classification of defects (cont'd)

No.	Defect	Level		
		A	B	C
129.	Consolidated packaging not as specified (3.3.1.24.1, 3.3.1.24.2, 3.3.1.24.3, 3.3.2.18).	X	X	-
130.	Strapping not zinc coated (3.3.1.24.3, 3.4.1.1).	X	-	-
131.	Additional cleaning not performed as specified (3.5).	X	X	X
132.	Marking illegible, incomplete, incorrect or missing (3.6).	X	X	X

5. PREPARATION FOR DELIVERY  
(Not applicable)

6. NOTES

6.1 Intended use. It is intended that this specification be used for preservation, packaging, packing, and marking of distillation units and for reference in section 5 of commodity specifications or direct reference in contracts or orders.

6.2 Ordering data. Procurement documents should specify the following:

- (a) Title, number and date of this specification.
- (b) When a preproduction pack is not required (see 3.1).
- (c) Time frame required for submission of the preproduction pack (see 3.1).
- (d) Level of preservation and packaging and level of packing required (see 3.3 and 3.4). Level B preservation and packaging (see 3.3.2 and 6.4) is intended to provide limited but economical protection and should be specified only when it is determined the units will be held in covered storage for an indefinite period.
- (e) Whether engines are to be preserved for type I or type II (see 3.3.1.5, 3.3.2.5 and 3.3.3.2).
- (f) Whether trailer chassis and wheel mountings shall be prepared for boxed or mobile shipment (see 3.3.1.19 and 3.3.2.15).
- (g) Preservation and packaging required for repair parts if other than as specified (see 3.3.1.21).

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- (g) When level B preservation and packaging requirements shall be other than as specified (see 3.3.2).
- (h) When additional preservation and packaging is required for level C (see 3.3.3). The additional requirements for level C should be specified when it has been determined that the equipment will be held in controlled humidity storage upon delivery.
- (i) When wheeled and trailer-mounted units shall be prepared for unboxed mobile shipment (see 3.4.1.2 and 3.4.2.2).
- (j) When units shall be subjected to the operational tests (see 4.3.2).

6.3 Preproduction pack. Any changes or deviations of production packs from the approved preproduction pack will be subject to the approval of the contracting officer. Approval of the preproduction pack will not relieve the supplier of his obligation to preserve, package, pack and mark the distillation units in accordance with this specification.

6.4 Preservation. Level B preservation and packaging (see 3.3.2), has been developed for use by the Army and Air Force for conditions specified in 6.2. For Navy procurements, details of level B preservation and packaging, when required, should be developed at time of procurement when all conditions are known.

Custodians:

Army - ME  
Navy - YD  
Air Force - 84

Preparing activity:

Army - ME

Review activities:

Army - SM  
DSA - CS

Project No. 4620-0023

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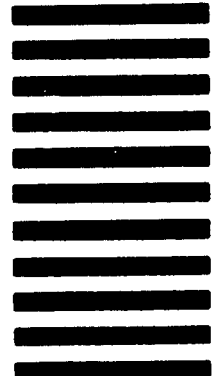
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