INCH-POUND
MIL-H-24299A(SH)
5 August 1994
SUPERSEDING
MIL-H-24299(SHIPS)
12 July 1967
(See 6.8)

MILITARY SPECIFICATION

HEATERS, LUBRICATING OIL AND FUEL, ELECTRIC NAVAL SHIPBOARD

This specification is approved for use by the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers heaters that are stationary, self-contained, and electrically operated. The heaters are used to heat lubricating oil or fuel for purification or warm-up.

1.2 Classification. Heaters are of the following types and styles as specified (see 6.2):

Type A - Immersion heater
Type B - Circulation heater
  Style 1 - Horizontal mount
  Style 2 - Vertical mount

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, SEA 03R42, Naval Sea Systems Command, 2531 Jefferson Davis Hwy, Arlington, VA 22242-5160 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 4540

SPECIFICATIONS

FEDERAL

QQ-N-286	- Nickel-Copper-Aluminum Alloy, Wrought (UNS N05500).
TT-P-645	- Primer, Paint, Zinc-Molybdate, Alkyd Type.
PPP-F-320	- Fiberboard; Corrugated and Solid, Sheet Stock (Container Grade), and Cut Shapes.

MILITARY

MIL-S-901	- Shock Tests, H.I. (High-Impact) Shipboard Machinery, Equipment, and Systems, Requirements for.
MIL-E-917	- Electric Power Equipment, Basic Requirements (Naval Shipboard Use).
MIL-G-1149	- Gasket Materials, Synthetic Rubber, 50 and 65 Durometer Hardness.
MIL-S-1222	- Studs, Bolts, Hex Cap Screws, Socket Head Cap Screws and Nuts.
MIL-C-2212	- Contactors and Controllers, Electric Motor AC or DC, and Associated Switching Devices.
MIL-L-9000	- Lubricating Oil, Shipboard Internal Combustion Engine, High Output Diesel.
MIL-P-15024	- Plates, Tags, and Bands for Identification of Equipment.
MIL-E-15090	- Enamel, Equipment, Light-Gray (Formula No. 111).
MIL-C-15726	- Copper-Nickel Alloy, Sheet, Plate, Strip, Bar, Rod and Wire.
MIL-T-16420	- Tube, Copper-Nickel Alloy, Seamless and Welded (Copper Alloy Numbers 715 and 706).
MIL-L-17331	- Lubricating Oil, Steam Turbine and Gear, Moderate Service.
MIL-E-17555	- Electronic and Electrical Equipment, Accessories, and Provisioned Items (Repair Parts): Packaging of.
MIL-L-19140	- Lumber and Plywood, Fire-Retardant Treated.
MIL-S-19622	- Stuffing Tubes, Nylon; and Packing Assemblies; General Specification for.
MIL-F-20042	- Flanges, Pipe and Bulkhead, Bronze (Silver Brazing).
MIL-H-22577	- Heating Elements, Electrical: Cartridge, Strip and Tubular Type.
MIL-S-22698	- Steel Plate, Shapes and Bars, Weldable Ordinary Strength and Higher Strength: Structural.
MIL-T-23648	- Resistor, Thermal, (Thermally Sensitive Resistor) Insulated, General Specification for.
MIL-L-23699	- Lubricating Oil, Aircraft Turbine Engine, Synthetic Base, NATO Code Number 0-156.
MIL-T-24388	- Thermocouple and Resistance Temperature Detector Assemblies, General Specification for (Naval Shipboard).

MIL-P-24691 - Pipe and Tube, Carbon, Alloy and Stainless Steel, Seamless and Welded, General Specification for.
MIL-P-24691/1 - Pipe and Tube, Carbon Steel, Seamless.
MIL-G-24716 - Gaskets, Metallic-Flexible Graphite, Spiral Wound.
MIL-R-83248 - Rubber Fluorocarbon Elastomer, High Temperature, Fluid and Compression Set Resistant.
MIL-R-83248/1 - Rubber, Fluorocarbon Elastomer, High Temperature, Fluid, and Compression Set Resistant, O-Rings, Class 1, 75 Hardness.
MIL-R-83248/2 - Rubber, Fluorocarbon Elastomer, High Temperature, Fluid, and Compression Set Resistant, O-Rings, Class 2, 90 Hardness.

STANDARDS

FEDERAL

FED-STD-791 - Lubricants, Liquid Fuels, and Related Products; Methods of Testing.

MILITARY

MIL-STD-167-1 - Mechanical Vibrations of Shipboard Equipment (Type I - Environmental and Type II - Internally Excited).
MIL-STD-202 - Test Methods for Electronic and Electrical Component Parts.
MIL-STD-278 - Welding and Casting Standard.
MIL-STD-454 - Standard General Requirements for Electronic Equipment.
MIL-STD-769 - Thermal Insulation Requirements for Machinery and Piping.
MIL-STD-1399 Section 300 - Interface Standard for Shipboard Systems Section 300 Electric Power, Alternating Current. (Metric)
MS15795 - Washer, Flat-Metal, Round General Purpose.
MS16187 - Stud, Continuous Thread (Bolt Stud), B16 Alloy Steel, High Temperature Service (875-1000°F).
MS17828 - Nut, Self-Locking, Hexagon, Regular-Height, (Non-Metallic Insert) 250°F Nickel-Copper Alloy.
MS17829 - Nut, Self-Locking, Hexagon, Regular Height, 250°F, (Non-Metallic Insert) Non-Corrosion-Resistant Steel.
MS17830 - Nut, Self-Locking, Hexagon, Regular Height, 250°F (Non-Metallic Insert) CRES.
MS18229 - Plug for "O" Ring Gasket.
MS21044 - Nut, Self-Locking, Hexagon, Regular Height, 250°F, 125 KSI FTM and 60 KSI FTM.
MS35307 - Screw, Cap, Hexagon Head (Finished Hexagon Bolt), Steel, Corrosion Resisting, Passivated, UNC-2A.
MS35311 - Screw, Cap, Hexagon Head-Nickel-Copper Alloy, Plain Finish, UNC-2A.
MS35649 - Nut, Plain, Hexagon, Machine Screw, UNC-2B.
MS51412 - Washer, Flat (Round, Steel, General Purpose).
MS51472 - Nut, Plain, Hexagon, Carbon Steel, UNC-2B.