

00-W-1307B
12 April 1985
SUPERSEDING
00-W-1307A
15 January 1979

FEDERAL SPECIFICATION

WASHING MACHINES; POT AND PAN, COMMERCIAL (INCLUDING ACCESSORY EQUIPMENT)

This specification was approved by the Assistant Administrator,
Office of Federal Supply and Services, General Services Administration,
for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers pot- and pan-washing machines.

1.2 Classification.

1.2.1 Types, styles, and sizes. The pot- and pan-washing machines shall be of the following types, styles, and sizes as specified (see 6.2):

Type I - One rack capacity

Style A - Two doors (pass-through)

Style B - One door (front-loading)

Style C - Three doors (pass-through with cleanout)

Type II - Two rack capacity

Style A - Two doors (pass-through)

Style C - Three doors (pass-through with cleanout)

Size 1 - 27 gallons

Size 2 - 52 gallons

Size 3 - 90 gallons

Heat source:

E - Electric

G - Gas

S - Steam

FSC 7320

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2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. Unless otherwise specified, the following specifications, standards, and handbooks of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation, form a part of this specification to the extent specified herein.

Federal Specifications:

QQ-N-281 - Nickel-Copper Alloy Bar, Plate, Rod, Plate, Sheet, Strip,
Wire, Forgings, and Structural and Special Shaped Sections
WW-V-35 - Valve, Ball

Federal Standards:

FED-STD-H28 - Screw-Thread Standards For Federal Services
FED STD-123 - Marking For Shipment (Civil Agencies)

(Activities outside the Federal Government may obtain copies of Federal specifications, standards, and commercial item descriptions as outlined under General Information in the Index of Federal Specifications, Standards, and Commercial Item Descriptions. The Index, which includes cumulative bimonthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal specifications and commercial item descriptions required by activities outside the Federal Government for bidding purposes are available without charge from General Services Administration Business Service Centers in Boston, MA; New York, NY; Philadelphia, PA; Washington, DC; Atlanta, GA; Chicago, IL; Kansas City, MO; Fort Worth, TX; Houston, TX; Denver, CO; San Francisco, CA; Los Angeles, CA; and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specification documents, and the Index of Federal Specifications, Standards, and Commercial Item Descriptions from established distribution points in their agencies.)

Military Specifications:

MIL-V-173 - Varnish, Moisture-and-Fungus-Resistant (for Treatment of
Communications, Electronic, and Associated Equipment)
MIL-K-43875 - Kitchen Equipment, Including Unit Assemblies, Repair
Parts and Tools, Preparation for Delivery of

Military Standards:

MIL-STD-105 - Sampling Procedures and Tables for Inspection by
Attributes
MIL-STD-129 - Marking for Shipment and Storage

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- MIL-STD-461 - Electromagnetic Interference Characteristics Requirements for Equipment
- MIL-STD-462 - Electromagnetic Interference Characteristics, Measurement of

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

2.1.2 Other Government documents, drawings, and publications. The following other Government documents form a part of this specification to the extent specified herein.

Department of Labor (DoL)
Occupational Safety and Health Administration (OSHA)

Occupational Safety and Health Standards

(Application for copies should be addressed to the Superintendent of Documents, Government Printing Office, Washington, DC 20402.)

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

American National Standards Institute, Inc. (ANSI)

- A112.14.1 - Backflow Valves in Plumbing Systems
- SI.4 - Specification for Sound Level Meters
- SI.13 - Methods for the Measurement of Sound Pressure Levels

(Application for copies should be addressed to the American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.)

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS)

MSS SP-80 - Bronze Gate, Globe, Angle and Check Valves

(Application for copies should be addressed to the Manufacturers Standardization Society of the Valve and Fittings Industry, 5203 Leesburg Pike, Suite 502, Falls Church, VA 22041.)

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

- ICS 1 - General Standards for Industrial Controls and Systems
- MG 1 - Motors and Generators

(Application for copies should be addressed to the National Electrical Manufacturers Association, 2101 L Street, N.W., Washington, DC 20037.)

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NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

No. 70 - National Electrical Code

(Application for copies should be addressed to the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.)

NATIONAL SANITATION FOUNDATION (NSF)

- No. 5 - Hot Water Generating and Heat Recovery Equipment
- No. 26 - Pot, Pan and Utensil Commercial Spray Type Washing Machines
- No. 51 - Plastic Materials and Components Used in Food Equipment
- Listing of Food Service Equipment

(Application for copies should be addressed to the National Sanitation Foundation, 3475 Plymouth Road, P. O. Box 1468, Ann Arbor, MI 48106.)

UNDERWRITERS LABORATORIES INC. (UL)

- UL 921 - Commercial Electric Dishwashers
- Electrical Appliance and Utilization Equipment List

(Application for copies should be addressed to the Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062.)

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS

3.1 Description. The pot- and pan-washing machine shall consist essentially of a cabinet with a wash tank, wash and rinse spray systems, wash water pump, controls, valves, motors, plumbing, electrical wiring, and all accessory equipment necessary for operation.

3.1.1 Type I. The type I washing machine shall be sized to wash and rinse one rack of utensils, one 30-gallon tub, or pots and pans in the quantity and diameter specified in 3.10. The style A machine shall have two opposing doors in order that racks or pots and pans may pass through the machine. Style B shall contain one door on the front or on the side of the machine, as specified (see 1.2 and 6.2). Style C shall have three doors for pass-through operation with cleanout.

3.1.2 Type II. The type II washing machine shall be sized to simultaneously clean two racks of utensils, two 30-gallon tubs, or the pots and pans in the quantity and diameter specified in 3.10. The type II washer shall be style A or C only, having two or three doors.

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3.1.3 Heat source. Heat source shall be electrically heated, gas fired, or steam powered as specified (see 6.2).

3.2 First article. When specified (see 6.2), the contractor shall furnish a complete pot- and pan-washing machine for first article inspection and approval (see 4.2.1 and 6.4).

3.3 Safety and health requirement. The machine shall be equipped with mechanical and electrical safety devices for all parts that present safety hazards. The devices shall include, but not limited to, cover and guards for moving parts and shockproof controls for protection from mechanical and electrical hazards to personnel. All guards shall provide easy access to guarded parts and shall not interfere with operation of the machine. The machine shall comply with standards promulgated under OSHA which are applicable to the machine itself. Additional requirements for safety and health shall be as specified (see 6.2 and 6.5).

3.4 Standards compliance. Pot- and pan-washing machines shall meet the requirements of the following sanitary and safety standards: ANSI A112.14.1, NSF No. 26, and UL 921.

3.4.1 Certification. As part of the first article test, if a first article test is submitted, and prior to approval of the first shipment, the contractor shall submit satisfactory evidence to the contracting officer or his authorized representative that the pot- and pan-washing machine he proposes to supply under this specification meets the requirements of ANSI A112.14.1, NSF No. 26, and UL 921.

3.4.1.1 ANSI certification. Acceptable evidence of meeting the requirements of ANSI A112.14.1 shall be a statement from the manufacturer certifying that the pot- and pan-washing machine meets the applicable requirements of ANSI A112.14.1.

3.4.1.2 NSF certification. Acceptable evidence of meeting the requirements of NSF No. 26 shall be the NSF Seal on the finished pot- and pan-washing machines and inclusion in the current edition of the NSF Listing of Food Service Equipment, or a test report to acceptable to the contracting officer with the advice of the Army Surgeon General indicating that the pot- and pan-washing machine has been tested and conforms to NFS No. 26.

3.4.1.3 UL certification. Acceptable evidence of meeting the requirements of UL 921 shall be the UL label, listing in the UL Electrical Appliance and Utilization Equipment List.

3.4.2 Applicability. The pot- pan-washing machines shall meet the dimensional requirements, tank capacities, pumping rates, and all other requirements of this specification. The contractor shall select the machine to be offered as meeting these requirements from his models which have an NSF-approved operating capacity not less than the nominal capacity specified herein. Machines which have NSF-approved hourly pot- and pan-handling capacities complying with this specification, but which in other respects do not meet the requirements herein will not be acceptable.

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3.5 Standard commercial product. The pot- pan-washing machine shall, as a minimum, be in accordance with the requirements of this specification and shall be the manufacturer's standard commercial product. Additional or better features which are not specifically prohibited by this specification but which are a part of the manufacturer's standard commercial product, shall be included in the machine being furnished. A standard commercial product is a product which has been sold or is being currently offered for sale on the commercial market through advertisements or manufacturer's catalogs, or brochures, and represents the latest production model.

3.6 Interchangeability. All units of the same classification furnished with similar options under a specific contract shall be identical to the extent necessary to insure interchangeability of component parts, assemblies, accessories, and spare parts.

3.7 Materials. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice. Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this specification are to be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products are allowed under this specification unless otherwise specified.

3.7.1 Corrosion-resisting material. Corrosion-resistant material shall be any material in the American Iron and Steel Institute (AISI) 300 series of stainless material.

3.7.1.1 Plastic Material. All plastic materials and components used shall conform to NSF No. 51.

3.7.2 Nickel-copper-alloy. Nickel-copper-alloy shall conform to QQ-W-281, and shall have a satin finish.

3.7.3 Dissimilar metals. In fabricating the pot- and pan-washing machine, the use of dissimilar metals in intimate contact with each other shall be avoided wherever possible to minimize galvanic corrosion. When use of dissimilar metals cannot be avoided, the joints or contact areas shall be protected against galvanic corrosion by plating, coating, gasketing, or other interposing material unless protection is inherently provided by area relationships of the anodic and cathodic materials.

3.8 Design. The style A and C pot- and pan-washer shall be designed for left to right or right-to-left pass-through operation as specified (see 6.2). Also, style C shall have a door for front loading of large pots. Style B washers shall be designed for inserting and removing utensils in a front or side single door opening (see 3.1.1). The washer shall be designed to operate on electric, gas, or steam as specified (see 6.2). When specified (see 6.2),

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an adequately sized ventilating fan shall be furnished. The washer shall have separate wash-and-rinse-water spray systems. The wash water system shall spray hot wash water at sufficient pressure to adequately remove food particles from pots and pans used for cooking and baking. The hot, clean water spray system shall rinse the wash water from the pots and pans and shall sanitize the washed cookware. The design of the unit shall provide for front access for maintenance and cleaning, and shall be such as to prevent conditions hazardous to personnel or deleterious to equipment. The washer shall be designed to meet the performance requirements of 3.9. All screw threads shall conform to FED-STD-H28.

3.9 Performance. The washer and accessory equipment shall meet the performance requirements specified herein at an ambient room temperature of 70 ± 5 degree Fahrenheit ($^{\circ}\text{F}$), a relative humidity of 45 ± 10 percent, and with the washer control unit set to provide a 120-second wash cycle and a 15-second rinse period. The washer shall be loaded to capacity with soiled and baked-in pots and pans (baked-in pots and pans to be presoaked and scoured) of various sizes, and shall be operated at room temperature for ten consecutive automatic cycles. The wash water temperature shall be maintained between 150°F and 160°F . A minimum temperature of 180°F shall be maintained for hot water rinse spray when connected to 110°F minimum hot water supply. The washer shall spray hot wash water over the entire wash area at a minimum rate of 20 gallons per minute (gpm) per square foot of wash area and a minimum spray pressure of 30 pound-force per square inch (psi) at the point of discharge. The machine shall spray hot rinse water over the entire rinse area at a minimum rate of 3.0 gpm per square foot of rinse area at a minimum pressure of 25 psi at the rinse spray discharge. The wash and rinse areas shall be identical and shall be the net area available for cleaning the kitchen utensils during the wash and rinse cycles. Average water temperature and consumption values, provided that in each case the minimum required water temperature is met, shall be used for the tests of 4.5.3 through 4.5.5. With standard soil (see 4.5.4) applied to a tub of the capacity and size indicated in 3.10, the washer shall clean the tub as specified in the test of 4.5.4. With the control unit set for the required wash and rinse time, and with actuation of the start button, the washer shall automatically operate through a complete cleaning and sanitizing cycle without stopping, when tested as specified in 4.5.3. A visual signal device shall indicate that the washer is in operation on actuation of the start button, and shall automatically stop indicating when the washing machine stops operating.

3.9.1 Noise level. Unless otherwise specified (see 6.2 and 6.5), pot- and pan-washing noise level shall not exceed 80 A-weighted decibels at the operation position(s). The operator position(s) are 1-1/2 feet from the loading end of the washer, 1-1/2 feet from the unloading end, and 5 feet above the floor (see 4.5.8).

3.10 Capacity. The pot- pan-washing machine shall be capable of holding 30-gallon tub(s) having a minimum rim outside diameter (od) of 23 inches. Type I and II washers shall clean the total number of pots listed in Table I in 15 minutes. Allowance shall be provided for loading and unloading washers, and for a time-delay between wash-and-rinse cycles.

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TABLE 1. Washer capacity.

Pot size Rim od (inches)	Capacity (quarts)	No. of pots Type I washer	No. of pots Type II washer
10.0 to 11.0	12-1/2	4	8
12.0 to 13.0	24	3	6
14.0 to 15.0	40	1	2
15.0 to 17.0	60	1	2
18.0 to 19.0	80	1	2
20.0 to 21.0	100 or 120	1	2
TOTAL		11	22

3.11 Construction. The pot- and pan-washing machine shall be a self contained, factory-assembled unit complete with all components including wash and-rinse systems, pump, controls, switches, valves, and motors, and containing the required amount of oil. The cabinet shall be constructed of at least 14-gage (0.078 inch), corrosion-resisting steel and shall be leakproof. All joints and seams shall be welded and made smooth. The washer shall be provided with an adequate access to permit cleanout and inspection. The front-loading door of style C washers may be used as access for cleanout and inspection. The washer shall be mounted on legs provided with means for leveling, have a minimum adjustment of 1-inch, and feet shaped to prevent the accumulation of dirt and the harborage of vermin. The feet shall be made of corrosion-resisting steel and shall be securely fastened to the frame. When specified for shipboard use (see 6.2), the feet shall be adequately constructed to permit secure attachment to the galley deck. A minimum 6-inch unobstructed clearance shall be provided between the floor and the lowest horizontal member, except when the drain pipe and the steam return line are located under the washer. The electrical service and plumbing, except the drain pipe, shall not be attached, run, or connected between the bottom of the washer and the floor. When necessary, due to unique requirements of the manufacturer, the steam condensate line may be located between the bottom of the washer and the floor. The washer shall be ready for operation when connected to the hot water supply, drainage, and power supply specified in 3.11.13.

3.11.1 Wash water tank. The wash water tank shall be constructed as specified herein and shall be in accordance with the manufacturer's standard practice. Type I, style A washers shall be size 1, 2, or 3 having minimum capacities of 27-, 52-, and 90-gallons respectively (see 1.2.1 and 6.2). Type I, style B washers shall be size 1 or 2 having minimum capacities of 27- and 52-gallons respectively (see 1.2.1 and 6.2). Type II, style A and types I and II, style C washers shall be size 2 and 3 only, having a minimum capacity of 52- and 90-gallons, respectively (see 1.2.1 and 6.2).

3.11.2 Wash-and-rinse compartment. The wash-and-rinse compartment shall have one, two, or three doors, as required, and a work area adequate to meet the requirements of 3.10. Doors shall be constructed of corrosion-resisting steel, shall not sag or be distorted, and shall cushion the impact resulting from their opening or closing. Unless otherwise specified (see 6.2), doors shall be operated by use of a coiled spring having constant tension or by a

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counterweight using chain connecting rods (cable connecting rods are not acceptable). The doors of style A and C pot- and pan-washing machines shall operate simultaneously. The door and door openings shall be leakproof when the door is closed and the washing machine is in operation. The top of the wash and-rinse compartment shall be adequately vented.

3.11.3 Wash-and-rinse spray systems. The spray nozzles and piping shall be of sufficient number and size to meet the performance requirements of 3.9. The jets shall be directed to spray from left and right at right angles to the vertical surfaces of pans or from above and below the entire work area to assure complete coverage of the utensils. The nozzles and spray arms shall be readily removable for cleaning without the use of tools.

3.11.4 Plumbing. The plumbing for the pot- and pan-washing machine shall be complete for connection of the wash tank fill pipe, the drain and overflow, and the rinse pipe to the plumbing service. Corrosion-resisting material shall be used for all piping. All water supply pipes and fittings (inside the machine) shall be located above the water level established by the overflow pipe. The plumbing shall be standard pipe connections and shall not obstruct access openings.

3.11.5 Wash tank water supply. The size of the water supply pipe shall be in accordance with the manufacturer's standard practice. If the wash-and-rinse water supplies are separate, the wash water tank water supply systems shall contain an air gap or a vacuum breaker between the lowest point of the fill pipe and the top of the overflow drain pipe opening. The air gap or vacuum breaker shall be in accordance with ANSI A112.14.1. The air gap shall be twice the effective diameter of the fill pipe or 2 inches, whichever is greater. A manual control valve shall be installed between the water supply outlet and the vacuum breaker.

3.11.6 Wash water pump. The pump shall be adequate to meet the requirements of 3.9 and 3.10. A removable corrosion-resisting strainer shall prevent foreign particles from entering the pump opening inside the wash tank. The openings in the strainer shall be smaller than the wash water spray openings. The pump shall have a removable inspection plate and an end cover. The pump shall be furnished with a corrosion-resisting shaft and means for draining.

3.11.7 Wash tank drain and overflow. The wash tank shall be provided with a drain so located as to permit total drainage of water in the tank when the manually operated drain valve is open. The drain pipe shall have a minimum nominal size of twice the nominal supply pipe. A removable corrosion-resisting strainer shall be located in the wash tank drain inlet. The overflow shall be of the same nominal pipe size as the drain, shall bypass the drain valve, and shall be connected to the drain pipe. The height of the overflow pipe shall be in accordance with the manufacturer's standard practice. The overflow pipe shall contain a corrosion-resisting removable strainer at the inlet.

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3.11.8 Rinse water supply. The rinse water supply pipe shall be provided with a Y-type or in-line strainer. The strainer shall be easily cleaned without disturbing the plumbing. A vacuum breaker conforming to ANSI A112.14.1 and a remote control automatic shutoff valve shall be furnished.

3.11.9 Valves. All ball, check, gate, or globe valves shall be constructed of corrosion-resisting material and shall conform to the requirements of WW-V-35 or MSS SP-80 as applicable. The valves shall be easily seen and readily accessible for operation. Numbered metal or plastic tags shall be attached to the valves for ready identification.

3.11.10 Scrap trays. The scrap trays shall be constructed of corrosion-resisting material. The scrap trays shall be located in the washer to catch food particles dislodged from pots and pans and to filter all water draining into the wash tank. Clearances around the trays, shall be not more than 3/8". The scrap trays shall be readily accessible and readily removable for cleaning without the use of tools.

3.11.11 Washer control unit. The washer control unit shall provide manual and automatic means for setting the wash period and the rinse period. The unit shall provide a minimum of 2 minutes for the wash period with the timer set for a minimum of 15 seconds for the rinse period. All components shall be constructed of corrosion-resisting material or metal treated to resist corrosion. The control unit shall consist of the control box, timing device, motor starters, and motor overload protective devices. The wash-and-rinse water pressure gages, thermometers, and warning device may be included as components of the control unit. All components shall be securely mounted and adequately protected against damage. The devices used for making adjustments shall be so located as to prevent tampering.

3.11.11.1 Control box. Except as specified herein, the control box shall contain all components of the washer control unit. The control box shall be located and securely mounted so as to facilitate accessibility to the selector switch control knob and start-and-stop buttons. A small hand tool shall be required for removal of the cover to provide access to all components. The control box shall be of splash-proof construction, but shall provide free air circulation within the box. All components shall be securely mounted within the control box which shall be constructed of corrosion-resisting material of the same gage and finish as the supporting unit.

3.11.11.2 Water pressure gages. The pot- and pan-washing machine shall be furnished with a pump washwater pressure gage. When specified (see 6.2), a rinse water pressure gage shall be supplied. The gages shall be the nonflogging type, and shall indicate the wash-and-rinse water pressures at the spray manifold. The gages shall be mounted either on the control box or in a location providing suitable protection against breakage. The gages shall also be located where they can be readily observed. The washer operating pressure range shall be indicated on the gage dial with a band or sector of contrasting color. The lower limit of this range shall measure the minimum pressure necessary to provide the water spray pressure specified in 3.9. The upper limit shall be in accordance with the manufacturer's standard practice. The capacity and range of the wash water gage shall be twice the rated pressure of the pump. All pressure gages shall be easily replaceable dial-type gages, having a minimum diameter of 2 inches.

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3.11.11.3 Wash-and-rinse water thermometers. The thermometers shall be easily replaceable, nonfogging, dial-type thermometers having a minimum diameter of 2 inches. The thermometers shall indicate the temperature of the wash-and-rinse water at the spray manifolds. The thermometers shall be mounted either on the control box or in a suitable location, and shall be easily read. The operating range of the thermometers shall be 100°F to 200°F for the wash water, and 140°F to 240°F for the rinse water. The operating temperature range shall be indicated on the dial of each thermometer with a band or sector of contrasting color. The thermometers shall be accurate within $\pm 2^\circ\text{F}$.

3.11.11.4 Warning device. A wash water temperature-sensor-actuator shall be provided to prevent washer operation when the water temperature falls below 150°F. In lieu of the actuator, a device may be furnished to transmit an audible signal.

3.11.11.5 Control unit marking. The control unit and the separate control panel, when applicable, shall be marked in a permanent and legible manner. The start and stop buttons, wash-and-rinse water pressure gages, and the wash and-rinse water thermometers shall be clearly identified.

3.11.12 Detergent dispenser unit. Unless otherwise specified (see 6.2), a detergent dispenser unit shall be furnished. The detergent dispenser unit consists essentially of a pair of metal electrodes, electrical or electronic control meter, and a detergent reservoir. The unit shall be constructed of corrosion-resisting material. The dispenser unit shall be ready for operation when connected to the plumbing and electrical services. Unless otherwise specified (see 6.2), the unit shall be securely mounted on the washer. The solenoid rinse valve, detergent sensor, pressure reducing valve including pressure gage, and other operating components shall be protected by watertight enclosures or positioned on the washer to prevent damage. The wash tank shall be filled to capacity with a wash water solution containing 0.25 to 0.35 percent by weight detergent. The unit shall automatically maintain a detergent to water ratio (concentration) of 0.3 percent with a tolerance of 5 percent when the washer is operated in accordance with 3.9 and tested as specified in 4.5.3. The control limits shall range from 0 percent to 0.5 percent concentration. Suitable warning lights shall indicate when the detergent dispenser is in operation and when the detergent-to-water ratio is not within the specified range. An adequate audible- and light-signal shall indicate when the detergent reservoir is empty.

3.11.12.1 Electrodes. The electrodes shall be the replaceable metal type and shall be easily cleaned.

3.11.12.2 Control meter. The electrical or electronic control meter shall have means to manually set the detergent-to-water ratio. The operating scale range shall indicate a maximum concentration of 0.5 percent. The meter shall be provided with an ON-OFF switch. Scale markings shall be in accordance with the manufacturer's standard practice.

3.11.12.3 Detergent reservoir. The detergent reservoir shall be constructed of corrosion-resisting material or of translucent, high impact plastic. The reservoir shall be in an accessible location to permit easy

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servicing and cleaning. The reservoir shall store 5 to 11 pounds of powdered pot-and-pan washing machine compound. The unit shall be provided with adequate means to dispense detergent into the wash tank, and when applicable, to automatically mix the detergent and water.

3.11.12.4 Plumbing. The plumbing shall be constructed of corrosion-resisting material, and in accordance with the manufacturer's standard practice. A remote-controlled water shutoff valve shall be provided in accordance with 3.11.9. The water supply system shall contain an air gap or a vacuum breaker in accordance with ANSI A112.14.1. The air gap shall be twice the effective diameter of the fill pipe or 2 inches, whichever is greater.

3.11.12.5 Detergent dispenser unit marking. The detergent dispenser unit shall be marked in a permanent and legible manner. The ON-OFF switch, indicating lights, and control meter shall be clearly identified.

3.11.13 Motor, motor starter, and motor overload protective device. The motor shall be rated and constructed in accordance with NEMA MG 1. Unless otherwise specified (see 6.2), motors shall be drip-proof, encapsulated, or sealed windings. The motor shall be of the type and size adequate to operate continuously in an ambient temperature of 50° Celsius without overheating, and shall be capable of providing the required water volume and pressure. The motor shall be rated not less than 120 percent of the actual load and provided with a motor starter and adequate means for overload protection. Motor starter and motor overload protection shall conform to NEMA ICS 1. The motor starter and overload protection device shall be located in the control box. Unless otherwise specified (see 6.2), the motor shall operate on supplied power of 208 volt, 3 phase (0), 60 Hertz.

3.11.14 Electrical wiring and components. The washer and accessory equipment shall be completely wired for operation when connected to the electrical source of supply. Wiring and electrical components such as controllers and switches shall conform to the applicable requirements of NFPA No. 70. All wires shall be color-coded, suitably identified at all terminals and junctions, and enclosed in rigid metal tubing or watertight conduit. Tubing or conduit, fittings, junction boxes, and similar items shall be constructed of corrosion-resisting material. A wiring diagram shall be furnished with each pot- and pan-washer.

3.11.15 Water heating. Thermostatically controlled steam heat exchangers, electric heaters, or gas heaters as specified (see 6.2), shall supply hot wash water and hot rinse water to the pot-and-pan washer. When specified (see 3.11.15.2 and 6.2), the heat exchangers, electric heaters, or gas heaters shall be securely mounted as integral components of the machine. When electric or gas hot water generating equipment is specified, the equipment shall meet the requirements for NSF No. 5. Steam heaters shall be of the type in which steam and water do not mix. Utility ratings shall not be less than 10 kilowatts for electric, 100,000 British Thermal Units for gas, and 10 pound-force per square inch gage for steam as specified (see 6.2). A temperature regulator that requires no external source of power and is adjustable over a temperature range of 50°F shall be provided to control the water temperature. Water shall flow through the nozzle only when the washing machine is in operation.

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3.11.15.1 Wash water heating. Steam coils shall be corrosion-resisting material, nickel-copper alloy, copper-nickel alloy, or nickel-bearing cast iron. The steam coil piping shall include a steam trap for removal of air and condensate. Electric immersion heaters shall be corrosion-resisting material sheathed. The circuits for electric immersion heaters shall include a magnetic contactor and an automatic, low-water cutoff. A pressure-reducing valve shall be appropriately mounted in the water supply piping. The wash water temperature shall be maintained between 150° and 160°F.

3.11.15.2 Final rinse water heating. The heater shall raise the final rinse water temperature from a range of 120°F to 140°F to between 180°F and 190°F, and shall automatically maintain the final rinse water at a temperature between 180°F and 190°F. This shall be accomplished without producing steam either within the heater or the piping connected to the heater. The heater shall be equipped with means for complete drainage. When separate mounted heaters are provided, the exterior shell shall be covered with fiberglass or calcium silicate insulation having a protective sheet metal jacket. The insulation thickness shall be adequate to prevent the exterior surface temperature of the jacket from exceeding 150°F. Steam boosters shall be provided to increase the temperature of the final rinse water. The heat exchanger shall automatically maintain the required final rinse water temperature to the machine by an automatic device to operate a steam valve controlling the input of steam to the heat exchanger booster. The booster shall not produce steam in the water supply piping. The heat exchanger shall be provided with, but not limited to, controls and safety equipment as follows: line strainers in the steam line and the hot water line, steam traps, relief valve, hot water pressure regulator, pressure and temperature gauges, and a thermostatically controlled electric solenoid valve or a thermostatically controlled mechanical valve. Unless otherwise specified (see 6.2), required valves and regulators shall be accessible and adjustable from the front of the machine. Valves and pipe unions shall be installed on the heat exchanger where steam and water lines enter the unit. Sensing unit control wires shall be protected by corrosion-resisting armored flexible tubing or the equivalent. Electric heaters shall be of welded steel construction, the inner surfaces lined to prevent corrosion, and furnished with all required pipe fittings. The tank shall be furnished complete with thermostat, low-water cutoff, high temperature limit switch, pressure relief valve, and contactor. Electric heaters shall be UL approved.

3.11.16 Hardware. The hardware shall include nuts, pins, washers, and similar items. All hardware shall be constructed of corrosion-resisting material.

3.12 Accessories. Accessory items shall be furnished as specified (see 6.2). The accessories include a holddown grid, pot- and pan-racks, and a drain table.

3.12.1 Holddown grid. When a holddown grid is required, the grid shall apply sufficient pressure to prevent the pots and pans from movement during the washing process. The grid shall be constructed of corrosion-resisting material. The grid shall be adjustable, easily removable from the wash and rinse compartment, shall function automatically when the door is actuated, and shall not damage the items being washed.

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3.12.2 Pot- and pan-racks. The pot- and pan-racks shall be constructed of corrosion-resisting material. Unless otherwise specified (see 6.2), type I and II washing machines shall be furnished with the quantity of racks indicated herein. In lieu of miscellaneous racks, utility baskets may be furnished in accordance with the manufacturer's standard practice.

	<u>Use</u>	<u>Type I</u>	<u>Type II</u>
Pan rack	To hold bake and sheet pans, pie tins, and similar utensils	3	5
General purpose rack	To hold pots, deep roasting pans, tubs utility pans, and similar utensils	3	6
Miscellaneous rack	To hold sauce pans, frying pans, ladles, and similar utensils	2	4

3.12.3 Drain table. When specified (see 6.2), a drain table shall be furnished. The drain table shall be constructed of 14-gage minimum, corrosion-resisting steel with a No. 2B finish. The table shall be resistant to denting, buckling, and permanent distortion. The length and width of the drain table shall be as specified (see 6.2). The table shall have a minimum 2-1/2 inch raised flange on three sides and one open side. The flange shall have a minimum 180 degree return. The edge of the flange return shall be not less than 3/4 inch from the flange face to provide access for cleaning. All inside corners shall have a minimum radius of 1/2 inch. When the unflanged side lies in the door opening of the washing machine, the table shall be leakproof, and slope toward the washer to permit drainage into the wash water tank. The end of the table away from the washer shall be supported by at least two legs. The legs shall be provided with means for leveling and have a minimum adjustment of 1 inch, with feet shaped to prevent the accumulation of dirt and the harborage of vermin. The legs shall be made of corrosion-resisting material, and shall be welded to the table. When specified for shipboard use (see 6.2), the legs shall be adequately constructed to permit secure attachment to the galley deck.

3.13 Dielectric strength for washer and accessory equipment. The washer and accessory equipment except for motors, shall withstand for a period of 1 minute, without breakdown, a minimum of 1000V plus twice the rated voltage.

3.14 Lubrication. Means for effective and adequate lubrication shall be provided. Lubricating points shall be easily visible and readily accessible, and the pot- and pan-washing machine shall be lubricated with the proper amount of lubricant prior to delivery. Pressure lubrication shall not be used for motor bearings. When lubrication is required, a chart (metal or decal) shall be affixed to each machine to indicate all points requiring lubrication, the grade of lubricant required, and the time interval for accomplishing lubrication.

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3.15 Treatment and painting. Unless otherwise specified (see 6.2), the pot- and pan-washers, and accessories shall be treated and painted in accordance with the manufacturer's standard practice. All surfaces of the machine other than corrosion-resisting material shall be protected against corrosion and present a neat appearance.

3.16 Fungus resistance. When specified (see 6.2), electrical components and circuit elements, including terminal and circuit connections, shall be coated with varnish conforming to MIL-V-173, except that:

- a. Components and elements inherently inert to fungi or hermetically sealed enclosures need not be coated.
- b. Current-carrying contact surfaces, such as relay contact points, shall not be coated.

3.17 Electromagnetic interference suppression. When specified (see 6.2), equipment procured under this specification shall be designed and equipped to meet the electromagnetic interference control requirements for class C3 equipment as specified in MIL-STD-461 and UM 05 limits.

3.18 Identification marking. Identification shall be permanently and legibly marked directly on the pot- pan-washing machine or on a corrosion-resisting material plate securely attached to the machine at the source of manufacturer. Identification shall include the manufacturer's model and serial number, name and trademark to be readily identifiable to the manufacturer. In addition, information required by UL 921 shall be included on the pot- pan-washing machine or on the plate.

3.19 Instruction plates. An instruction plate of corrosion-resisting material or chrome-plated brass shall be attached to each machine at a height readily visible to the operator. The plate shall provide numbered step-by-step instructions for operating and cleaning the pot- and pan-washer. Numbers corresponding to those on the instruction plate shall be attached on the machine, at a location adjacent to the operating positions. The instruction plate shall list the required water temperatures for pumped wash, final rinse, and tank capacity.

3.20 Commercial publications. Manufacturer's standard commercial publications shall be furnished (see 6.3).

3.21 Service parts and maintenance parts. Service and maintenance parts shall be furnished as specified (see 6.2).

3.22 Workmanship.

3.22.1 Steel fabrication. The steel used in fabrication shall be free from kinks, sharp bends, and other conditions which would be deleterious to the finished product. Manufacturing processes shall not reduce the strength of the steel to a value less than intended by the design. Manufacturing processes shall be done neatly and accurately. All bends shall be made by controlled means to insure uniformity of size and shape.

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3.22.2 Welding. Welding procedures shall be in accordance with a nationally recognized welding code. The surface of parts to be welded shall be free from rust, scale, paint, grease, or other foreign matter. Welds shall be of sufficient size and shape to develop the full strength of the parts connected by the welds. Welds shall transmit stress without permanent deformation or failure when the parts connected by the weld are subjected to proof and service loadings.

3.22.3 Solder. All surfaces to be soldered (when applicable) shall be thoroughly cleaned prior to soldering. Solder joints shall be smooth with no pin holes.

3.22.4 Bolted connections. Boltholes shall be accurately punched or drilled and shall have the burrs removed. Washers or lockwashers shall be provided in accordance with good commercial practice, and all bolts, nuts, and screws shall be tight.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor 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.

4.1.1 Component and material inspection. Components and materials shall be inspected in accordance with all the requirements specified herein and in applicable referenced documents.

4.1.2 Standards compliance. The contractor shall make available to the contracting officer or his authorized representative evidence of compliance with the applicable standards cited in 3.4. The Government reserves the right to examine and test all washing machines to determine the validity of the certification.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.2.1).
- b. Quality conformance inspection (see 4.2.2).

4.2.1 First article inspection. The first article inspection shall be performed on one washing machine when a first article is required (see 3.2 and 6.2). This inspection shall include the examination of 4.4 and the tests of 4.5.1 through 4.5.6, 4.5.8, and when applicable 4.5.7. The first article may be either a first production item or a standard production item from the

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supplier's current inventory provided the item meets the requirements of the specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

4.2.2 Quality conformance inspection. The quality conformance inspection shall include the examination of 4.4, the tests of 4.5.1 and 4.5.3, and the packaging inspection of 4.8. This inspection shall be performed on the samples selected in accordance with 4.3.

4.3 Sampling. Sampling and inspection procedures shall be in accordance with MIL-STD-105. The unit of product shall be one washing machine. All washing machines offered for delivery at one time shall be considered a lot for the purpose of inspection. If an inspection lot is rejected, the contractor may rework it to correct the defects, or screen out the defective units, and resubmit for a complete reinspection. Resubmitted lots shall be reinspected using tightened inspection. If the rejected lot was screened, reinspection shall be limited to the defect causing rejection. If the lot was reprocessed, reinspection shall be performed for all defects. Rejected lots shall be separate from new lots, and shall be clearly identified as reinspected lots.

4.3.1 Sampling for examination. Examination shall be based on inspection level II and an Acceptable Quality Level (AQL) of 1.5 percent defective and 4.0 for minor defects expressed in terms of defects per hundred units (DHU).

4.3.2 Sampling for tests. Except for the 100 percent sampling for the operational test of 4.5.1, the remaining tests shall have samples selected based on level S-2 and an AQL of 4.0 DHU.

4.4 Examination. Each pot- pan-washing machine shall be examined for defects listed in table II. Each attribute within each classification of multiple defects shall constitute one defect.

TABLE II. Classification of defects.

Classification	Defects	Requirement paragraph
Critical	None defined.	
Major:		
101	Type, style, and sizes not specified.	1.2, 3.1.1, and 3.1.2
102	Size inadequate to hold quantity of pots and pans specified.	3.1.1, 3.1.2, and 3.10
103	Parts, components, and assemblies not identical to permit interchangeability.	3.6
104	Material not as specified.	3.7
105	Design not as specified.	3.8
106	Washer does not operate as specified; wash and-rinse sprays do not deliver	

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TABLE II. Classification of defects. cont'd

Classification	Defects	Requirement paragraph
Major:		
	water at the specified rates and pressures, signal device does not operate as required.	3.9
107	Noise level not as specified.	3.9.1
108	Construction not as specified; components missing or damaged; motor does not contain required amount of oil for operation; clearance not as specified; legs not adjustable and as otherwise specified; cabinet not leakproof and thickness less than specified; exterior finish other than specified.	3.11
109	Capacity of type I and II wash water tanks not as specified.	3.11.1
110	Wash-and-rinse compartment not as specified; doors not counterweighted to permit easy opening and closing and are not leakproof when closed and washer is in operation; doors of style A and C washers do not operate simultaneously; top of compartment not vented as required.	3.11.2
111	Spray jets and piping not adequate to meet performance requirements; nozzles and spray arms not readily removable without use of tools.	3.11.3
112	Plumbing not as specified, obstructs access openings; water supply pipes and fittings not located above established water level.	3.11.4
113	Wash water tank water supply system not as specified; air gap or vacuum breaker not in accordance with ANSI A112.14.1, and otherwise not as specified; control valve missing or not installed as specified.	3.11.5
114	Wash water pump inadequate to meet performance and capacity requirements; strainer not removable and inadequate strainer openings larger than specified; pump not provided with means for draining.	3.11.6
115	Wash water tank drain does not allow total drainage; drain valve missing or broken; size of drain pipe not as specified; strainer is missing or is not removable; overflow pipe in water tank not as	

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TABLE II. Classification of defects. cont'd

<u>Classification</u>	<u>Defects</u>	<u>Requirement paragraph</u>
Major:		
116	specified, of different size than drain, does not bypass drain valve, not connected to drain pipe, and does not contain a removable strainer. Rinse water supply pipe does not contain a Y-type or in-line strainer, remote control automatic shutoff valve, or a vacuum breaker; vacuum breaker not in conformance with ANSI A112.14.1.	3.11.7 3.11.8
117	Ball, check, gate, or globe valves not in conformance with WW-V-35 or MSS SP-80, as applicable, and otherwise not specified.	3.11.9
118	Scrap trays not as specified; openings and clearances not more than 3/8"; scrap trays not readily removable without tools.	3.11.10
119	Washer control unit not as specified; location of adjustment devices permit tampering; components constructed of material that is resistant to corrosion, missing, does not function properly, not securely mounted, and not protected against damage.	3.11.11
120	Control box not as specified; not located and mounted as required; hand tool missing, damaged, or broken; control box not splash proof, and not constructed of the same gage and finish of corrosion-resisting material as the supporting unit.	3.11.11.1
121	Wash-and-rinse water pressure gages not as specified; not nonfogging, not 2-inch diameter dial-type gage; not mounted to provide protection against breakage.	3.11.11.3
122	Wash-and-rinse thermometers not the non-fogging, 2-inch diameter dial type; operating range not as required; accuracy not as specified.	3.11.11.4
123	Warning device not provided as specified.	3.11.11.5
124	Detergent dispenser unit not as specified; not securely mounted on washer; operating components not protected as specified; unit does not maintain concentration specified; missing or inoperable warning light that indicates	

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TABLE II. Classification of defects. cont'd

Classification	Defects	Requirement paragraph
Major:		
	dispenser operation and when detergent-to-water ratio is not within specified range; inadequate signal to indicate empty detergent reservoir.	3.11.12
125	Electrodes not as specified.	3.11.12.1
126	Control meter not as specified; switch missing or inoperable.	3.11.12.2
127	Detergent reservoir inadequate and otherwise not as specified.	3.11.12.3
128	Remote controlled water shutoff valve not as specified; water supply to detergent dispenser unit not as specified; air gap or vacuum breaker not in accordance with ANSI A112.14.1, and otherwise not as specified.	3.11.12.4
129	Motor not as specified; not in accordance with NEMA MG 1; overload protective device not adequate; motor not designed to operate on electrical supply system specified.	3.11.13
130	Wiring and electrical components not in conformance with NFPA No. 70; wiring missing, not color coded, not enclosed in rigid metal tubing or watertight conduit, not identified at terminal or junction boxes; wiring diagram missing; components not designed to operate on power supply specified.	3.11.14
131	Auxiliary heating not as specified; steam heat exchangers or electric heaters not thermostatically controlled; component parts missing; mounting not as specified; steam heaters not of type specified; temperature regulator not as specified; water flows through nozzle when washing machine is not in operation.	3.11.15
132	Steam coils for wash water heating not as specified; steam trap missing; electric heaters not as specified; magnetic contactor, automatic low-water cutoff missing; heater not protected by pressure relief valve; pressure-reducing valve missing or not mounted as specified; wash water temperature not maintained as required.	3.11.15.1

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TABLE II. Classification of defects. cont'd

		Requirement
Major:		
133	Final rinse water heating temperature not as specified; drainage not provided; separate mounted heaters not as specified; access for cleaning tube bundle not provided; strainer and pressure reducing valve missing; steam trap cleanout and pressure relief valve not provided as specified; electric heater not UL approved and otherwise not provided as specified; tank not furnished complete with thermostat, low-water cutoff, high temperature limit switch, pressure relief valve, and contactor.	3.11.15.2
134	Hardware missing, not constructed of material specified.	3.11.16
135	Accessories not as specified; components missing.	3.12
136	Hold-down grid not provided when required; grid does not prevent pot- pan-movement; not adjustable or removable, and is not automatic when door is actuated.	3.12.1
137	Pot- and pan-racks not furnished in type and quantity specified; utility baskets not furnished as required.	3.12.2
138	Drain table not as specified; not resistant to denting, buckling, and permanent distortion; dimensions not as specified; legs not provided for leveling, adjustment less than required, not welded to table, and not adequately constructed for shipboard use.	3.12.3
139	Washer and accessory equipment, except motors, does not withstand specified voltage.	3.13
140	Lubrication requirements not as specified; insufficient lubrication, fittings inaccessible, and chart missing or contains inadequate information.	3.14
141	Corrosion protection not adequate.	3.15
142	Inadequate fungus treatment or electrical components.	3.16
143	Electromagnetic interference suppression not as specified.	3.17
144	Service and maintenance parts not furnished as specified.	3.21
145	Workmanship not as specified.	3.22

TABLE II. Classification of defects. cont'd

		Requirement
Major:		
146	Welding not in accordance with code acceptable to the procuring activity.	3.22.3
147	Threaded fasteners loose or missing; threads missing, stripped, or broken.	3.22.4
Minor:		
201	Identification marking not as specified.	3.11.11.6, 3.11.12.5, and 3.18
202	Instruction plates not as specified or missing.	3.19
203	Manufacturer's standard publications missing.	3.20

4.5 Tests.

4.5.1 Operational test. The first article sample and each item of production shall be operated at least 1 hour without pots and pans, and racks. The washer and accessory equipment shall be connected to the applicable water, steam, electric, and drainage service. The wash water tank and the detergent reservoir shall be filled with fresh water to overflow level. The washer and accessories shall show no evidence of failure, undue vibration, noise, overheating of bearings or leaks, and the controls shall operate in a positive, smooth, and efficient manner.

4.5.2 Water temperature, consumption, and detergent concentration tests. The first article sample shall be loaded to capacity with soiled- baked-in pots and pans, and operated for 10 consecutive cycles to determine compliance with 3.9. The wash-and rinse-water temperatures, pressures, and flow rates, and the wash water detergent concentration shall be determined with use of the furnished thermometers, pressure gages, and detergent control meter, and with calibrated instruments. The test data shall be recorded as indicated in table III. The average calibrated water temperature, pressure and consumption, and the detergent concentration shall be used to determine compliance with the applicable requirements of 3.9 and for testing providing that no reading of the water temperature falls below the minimum requirement. There shall be no unusual noises, vibrations, and leaks.

4.5.3 Performance test. The first article sample and the samples selected in 4.3.2 shall be tested in accordance with the manufacturer's instructions to determine compliance with 3.9. The wash water tank shall be filled to capacity and charged with a sudless detergent until a detergent-to-water ratio (concentration) from 0.25 to 0.35 percent is obtained. Th meter shall automatically maintain the concentration specified.

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4.5.4 Soil removal test. The first article sample shall be operated to perform the test specified herein. A standard soil shall be thoroughly and uniformly applied to all surfaces of a 30-gallon tub, and allowed to air-dry until hard. The standard soil shall contain the ingredients listed in table IV. The ingredients shall be mixed in a blender in the order listed until the mixture is homogenized. Small increments of water shall be added to produce a creamy blend of paint-like consistency suitable for brush- and spray-application. The tub shall be cleaned when the washer is operated under conditions specified in 3.9. When the washing operation is complete, the tub shall be removed from the washing machine and visually examined. There shall be no visual evidence of soil. An ultraviolet light shall be used to detect traces of soil invisible to the eye. There shall be no undue vibration, noises, and leaks.

TABLE IV. Standard soil.

Ingredient	Amount
Flour	7 ounces (oz)
Corastarch	7 oz
Egg yolk powder	7 oz
Condensed milk	7 oz
Peanut butter	7 oz
Lard	7 oz
Sweet butter	7 oz
Fluorescent dye	1/4 teaspoon (min)

4.5.5 Capacity test. The first article sample shall be given a capacity test as specified herein. The pots listed in table I shall be placed in the washing machine in any combination to utilize the maximum area of the rack of work table. The total quantity of pots for each type of washer shall be cleaned in the time period and under conditions indicated in 3.10 when the pot- and pan-washing machine is operated to meet the applicable performance requirements of 3.9. The rims of pots shall be in contact with the work table or rack bottom. There shall be no undue vibration, noises, and leaks.

4.5.6 Dielectric strength test. The washing machine and accessory equipment shall be tested to determine conformance with the requirements of 3.13.

4.5.7 Electromagnetic interference control test. When electromagnetic interference control is required, the first article sample, equipped for the reduction of electromagnetic interference in accordance with 3.17 shall be tested by the supplier in accordance with test methods UM 05 of MIL-STD-462. The supplier shall furnish the contracting officer, for approval, the interference control plan the EMI-EMC test plan and the test report required in MIL-STD-461. Upon approval of the test report by the contracting officer and provided all other requirements of the specification are met, the first article sample shall be used as a model for all other units.

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4.5.8 Noise level test. Compliance with the noise level limits of 3.9.1 shall be verified by measurement. Noise levels shall be measured using a sound level meter in accordance with ANSI S1.4, type 1. The meter shall be set for the A-weighting "slow" mode of operation. The noise level test shall be set up and conducted in accordance with the guidelines specified in ANSI S1.13 for the "Field" measurement method. The washing machine shall be operated with pots and pans and loaded racks. The noise level measurements shall be made at the loading end and at the unloading end of the washer at the operator's position. Failure to meet the noise level requirements of 3.9.1 shall be cause for rejection. This test may be performed concurrently with the test of 4.6.2.

4.6 Adjustments. Adjustments and calibration of the washer and accessory equipment will be permitted prior to testing.

4.7 Repairs and retests. Repairs and retests will be permitted only upon approval by the contracting activity.

4.8 Preparation for delivery inspection. The inspection of the preservation, packaging, packing, and marking shall be in accordance with the requirements of section 4 of MIL-K-43875.

5. PREPARATION FOR DELIVERY

5.1 Preservation, packaging, and packing. Preservation, packaging, and packing shall be in accordance with the requirements of MIL-K-43875 with the level of preservation, packaging and the level of packing as specified (see 6.2).

5.2 Marking.

5.2.1 Military agencies. Shipments to military agencies shall be marked in accordance with MIL-STD-129.

5.2.2 Civil agencies. Shipments to civil agencies shall be marked in accordance with FED-STD-123.

6. NOTES

6.1 Intended use. The pot- pan-washing machines are intended for cleaning pots, pans, and other kitchen utensils used in the preparation, cooking, and serving of food to Federal and Military governmental employees. Type I washing machines shall be used in galleys serving up to 5,000 men; type II for use in galleys serving up to 10,000 men.

6.2 Ordering data. Purchasers shall select the preferred options permitted herein and include the following information in procurement documents:

- a. Title, number, and date of this specification.
- b. Type, style, heat source (steam, gas, or electric) and size washing machine required (see 1.2.1 and 3.11.1).

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- c. Whether the door of type I, style B washers shall be on the front or the side (see 3.1.1).
- d. When a first article is required for inspection and approval (see 3.2, 4.2.1, and 6.4).
- e. When safety and health requirements are different, specify and fully describe (see 3.3 and 6.5).
- f. Whether style A and C washers shall operate left-to-right or right-to-left (see 3.8).
- g. When ventilating fan is required (see 3.8).
- h. Noise level requirements, of other than specified (see 3.9.1).
- i. When legs are to be constructed for deck attachment on ships (see 3.11 and 3.12.3).
- j. Whether doors shall be operated differently (see 3.11.2).
- k. When a rinse-water pressure gage is required (see 3.11.11.2).
- l. When a detergent dispenser is not required and mounting, if different (see 3.11.12).
- m. When voltage other than 208 is required (see 3.11.13).
- n. When separate mounting of auxillary heater is not acceptable (see 3.11.15).
- o. When valves and regulators shall be accessible and adjustable other than from the front (see 3.11.15.2).
- p. Accessory items to be furnished (see 3.12).
- q. Type and number of racks to be furnished (see 3.12.2).
- r. Length and width of drain table when required (see 3.12.3).
- s. Treatment and painting, if different (see 3.15).
- t. When protection against fungus is required (see 3.16).
- u. When electromagnetic compatibility is required (see 3.17).
- v. Service and maintenance parts to be furnished (see 3.21).
- w. Level of preservation and packaging and level of packing required (see 5.1).

6.3 Data requirements. When this specification is used in an acquisition which incorporates a DD Form 1423, Contract Data Requirements List (CDRL) and invokes the provisions of paragraph 52.227-7031 of the Federal Acquisition Regulations (FAR), the data requirements will be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved CDRL (DD Form 1423) incorporated into the contract. When the provisions of FAR 52.227-7031 are not invoked, the data shall be delivered in accordance with the contract requirements.

6.4 First article. When a first article inspection is required, the item will be tested and should be a first article sample, or it may be a standard production item from the contractor's current inventory as specified in 4.2.1. The first article should consist of one unit. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examination, test, and approval of the first article.

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6.5 Safety and health determinations. In order that equipment integrated into the user's operational environment will comply with the standards promulgated under the Occupational Safety and Health Act of emission, noxious vapors heat, etc. as applicable, specific requirements concerning guarding the points of operation, and other safety health requirements should be specified.

Custodians:

Army - GL
Navy - YD
Air Force - 99

Civil Agency Coordination Activities:

GSA - FSS
VA - OSS
EPA-PM-215

Review Activities:

Army - MD
Navy - MS, SA
Air Force - 85

Preparing Activity:

Navy - YD
DoD project 7320-N751

User Activities:

Navy - MC, CG
DLA - GS

Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein.