



Designation: F 1203 – 97

Standard Specification for Washing Machines—Pot, Pan, and Utensil, Heat Sanitizing, Commercial Rotary Conveyor Type¹

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1. Scope

1.1 This specification covers manually fed, motor-driven rotary conveyor type, automatically controlled, commercial pot, pan, and utensil washing machines, hereinafter referred to as “the washer.”

1.2 The following precautionary statement pertains only to the test methods portion, Section 9 of this specification: *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- A 120 Specification for Pipe, Steel, Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless for Ordinary Uses²
- A 167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip³
- A 276 Specification for Stainless and Heat-Resisting Steel Bars and Shapes³
- A 436 Specification for Austenitic Gray Iron Castings⁴
- A 554 Specification for Welded Stainless Steel Mechanical Tubing⁵
- B 43 Specification for Seamless Red Brass Pipe, Standard Sizes⁶
- B 75 Specification for Seamless Copper Tube⁶
- B 127 Specification for Nickel-Copper Alloy (UNS NO4400) Plate, Sheet, and Strip⁷

D 3951 Practice for Commercial Packaging⁸

F 760 Specification for Food Service Equipment Manuals⁹

F 1021 Specification for Feeders, Detergent, Rinse Agent, and Sanitizing Agent for Commercial Dishwashing and Glasswashing Machines⁹

2.2 *Federal Regulations:*¹⁰

OSHA Title 29

2.3 *American National Standards:*¹¹

ANSI SI.4 Specification for Sound Level Meters

ANSI SI.13 Methods for the Measurement of Sound Pressure Levels

2.4 *National Electrical Manufacturers Association Standards:*¹²

NEMA ICS Industrial Controls and Systems

NEMA MG-I Motors and Generators

2.5 *National Fire Protection Association Standard:*¹³

NFPA No. 70 National Electrical Code

2.6 *National Sanitation Foundation Standards:*¹⁴

NSF No. 5 Commercial Hot Water Generating Equipment

NSF No. 14 Plastic Piping System Components and Related Materials

NSF No. 26 Spray Type Pot, Pan and Utensil Washing Machines

NSF No. 29 Detergent/Chemical Feeders for Commercial Spray-Type Dishwashing Machines

NSF No. 51 Plastic Materials and Components Used in Food Equipment

NSF Criteria C-2 Special Equipment and/or Devices

NSF Food Service Equipment Listing

¹ This specification is under the jurisdiction of ASTM Committee F-26 on Food Service Equipment and is the direct responsibility of Subcommittee F26.01 on Cleaning and Sanitation Equipment.

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² *Discontinued 1987; Replaced by A53.*

³ *Annual Book of ASTM Standards*, Vol 01.03.

⁴ *Annual Book of ASTM Standards*, Vol 01.02.

⁵ *Annual Book of ASTM Standards*, Vol 01.01.

⁶ *Annual Book of ASTM Standards*, Vol 02.01.

⁷ *Annual Book of ASTM Standards*, Vol 02.04.

⁸ *Annual Book of ASTM Standards*, Vol 15.09.

⁹ *Annual Book of ASTM Standards*, Vol 15.07.

¹⁰ Available from the Superintendent of Documents, Government Printing Office, Washington, DC 20401.

¹¹ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

¹² Available from National Electrical Manufacturers Association, 2101 L St. N.W., Washington, DC 20037.

¹³ Available from National Fire Protection Assoc., Batterymarch Park, NE Quincy, MA 02269.

¹⁴ Available from NSF International, P.O. Box 130140, Ann Arbor, MI 48113-0140.



2.7 *Underwriters Laboratories Standard*:¹⁵

UL 921 Commercial Electric Dishwashers

2.8 *American Society of Sanitary Engineering Standards*:¹⁶

ASSE 1001 Pipe Applied Atmospheric Vacuum Breakers

ASSE 1004 Dishwashers

3. Terminology

3.1 *Definition*:

3.1.1 *commercial pot, pan, and utensil washing machines*—machines that uniformly wash, rinse and heat sanitize food preparation utensils. The machines shall be capable of removing physical soil and sanitizing properly racked and pre-scraped multiple pots, pans, and utensils. The machines shall consist of the following principal parts: legs, wash chamber, hood tank, doors, spray assemblies, pumps, motors, controls, piping, valves, heating equipment and accessories.

4. Classification

4.1 *General*—The washer shall be of the following type, size, and class as specified.

4.2 *Types*:

4.2.1 *Motor-Driven Continuous Rotary Conveyor*:

4.2.1.1 *Type I*—One door (front loading).

4.2.1.2 *Type II*—One or two door (pass-through corner operation).

4.2.1.3 *Type III*—One or two door (pass-through straight line operation).

4.2.1.4 *Size 1*—Nominal 42-in. diameter.

4.2.1.5 *Size 2*—Nominal 60-in. diameter.

4.2.1.6 *Size 3*—Nominal 74-in. diameter.

4.2.1.7 *Size 4*—Nominal 86-in. diameter.

4.3 *Tank Heat*:

4.3.1 *Style 1*—Steam heated.

4.3.1.1 *Class A*—Injection.

4.3.1.2 *Class B*—Heat exchange coil.

4.3.2 *Style 2*—Electric heat.

5. Ordering Information

5.1 Purchasers should select the preferred options permitted in this specification and include the following information in the procurement document.

5.1.1 Title, number, and date of this standard; type, style, and class of machine required.

5.1.2 A pressure-reducing valve, if required (see section 7.4). Incoming water pressure must be specified when ordering a pressure reduction valve.

5.1.3 A standard 40°F (22°C) temperature rise steam, or electric booster if required. If the required temperature rise is more than 40°F (22°C) (see 7.11), it should be specified.

5.1.4 Electrical power supply characteristics (voltage, phase, frequency) (see section 7.9.3).

5.1.5 A detergent feeder, if required (see 7.12).

5.1.6 Accessory equipment, spare and maintenance parts required, selected options.

5.1.7 Treatment and painting if other than specified (see 7.16).

5.1.8 When energy consumption profiles, water consumption profiles, or productivity profiles are desired.

5.1.9 Manufacturer's certification, when required (see Section 10).

6. Materials

6.1 All materials shall be specified as follows:

6.1.1 Materials used shall be free from defects that would adversely affect the performance or maintainability of individual components of the overall assembly. The pot, pan, and utensil washing machines shall meet the material, design, and construction requirements of NSF No. 26 or Criteria C-2.

6.1.2 *Corrosion-Resistant Steel*—Corrosion-resistant steel shall conform to the requirements of any 300 series stainless steel specified in 2.1 (see Specification A 167).

6.1.3 *Corrosion-Resisting Material*—Corrosion-resisting material is other than corrosion-resistant steel that is equivalent in the pot, pan, and utensil washer application.

6.1.4 *Nickel-Copper Alloy*—Nickel-copper alloys shall conform to the requirements of Specification B 127.

6.1.5 *Plastics*—All plastic materials and components used in the pot, pan, and utensil machine rinse system shall conform to NSF No. 14 and NSF No. 51.

7. Design and Construction

7.1 The pot, pan, and utensil washing machine shall be complete so that when connected to the specified source of power, water supply, heating means (steam or electric), drainage, detergent feeder as applicable, the unit can be used for its intended function. Machines shall be rigid and quiet in operation. Parts requiring adjustment or service, or both, shall be readily accessible. The machine shall wash pots, pans, and utensils by means of a water and detergent solution pumped from a tank, and shall final rinse the pots, pans, and utensils with fresh water from an outside source at 15 to 25 psi (20 psi nominal) flow pressure. Provisions shall be made to fill the wash tank, either directly from the regular hot water supply with a hand valve, or through the booster or solenoid, or both. The wash, dwell, and rinse cycles shall be automatically controlled. A light shall be provided to indicate when the machine is in operation. Machines shall be provided with a motor-driven rotary table, constructed of corrosion-resistant steel or other corrosion-resisting material. They shall have an inside working height, including the door height, of not less than 27 in. (685.8 mm).

7.2 *Piping, Tubing, Fittings, and Valves (Installation)*—Connections shall be readily accessible to facilitate installation and maintenance. (See Specifications B 43, B 75, A 554, and A 120.)

7.3 *Piping and Fittings*—Water, steam piping, and fittings shall be of corrosion-resisting material or suitable heat-resisting plastic material. Fresh water supply to the tank shall be discharged not lower than 2 in. (50.8 mm) above the maximum flood level rim, or an effective air gap, or vent.

¹⁵ Available from Underwriters Laboratories, Inc., 333 Pfingsten Rd., Northbrook, IL 60062.

¹⁶ Available from American Society of Sanitary Engineering, P.O. Box 9712, Bay Village, OH 44140.