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Standard Specification for Slicing Machines, Food, Electric¹

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This standard has been approved for use by agencies of the Department of Defense.

1. Scope

- 1.1 This specification covers commercial food slicers having electrically driven rotating slicing blades.
- 1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.
- 1.3 The following precautionary caveat pertains only to the test method 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:²

F760 Specification for Food Service Equipment Manuals

F1166 Practice for Human Engineering Design for Marine Systems, Equipment, and Facilities

D3951 Practice for Commercial Packaging

2.2 NSF International Standards:³

ANSI/NSF/ANSI Standard No. 8 Commercial Powered Food Preparation Equipment
NSF Food Service Equipment Listing (current year)

2.3 Underwriters Laboratories Standards:⁴

UL 763 Motor-Operated Commercial Food Preparing Machines

UL 969 Marking and Labeling Systems

2.4 ANSI Standard:⁵

ANSI Z1.4 Sampling Procedures and Tables for Inspection by Attributes

2.5 Military Standards:⁶

MIL-STD-1399/300 Interface Standard for Shipboard Systems, Section 300A, Electric Power, Alternating Current

MIL-STD-167/1 Mechanical Vibration of Shipboard Equipment (Type I—Environmental and Type II—Internally Excited)

MIL-STD-461 Requirements for the Control of Electromagnetic Interference Characteristics for Subsystems and Equipment

3. Terminology

3.1 Definitions:

- 3.1.1 *carriage*—device for holding food product that is manually or automatically reciprocated to bring the product in contact with the knife.
- 3.1.2 *feed chute*—device that can replace or supplement the carriage for the purpose of slicing multiple small cross-sectional food products. This device also includes an end weigh or spring to permit slicing of product to within the last one-quarter inch.
- 3.1.3 *gage plate*—device that determines the thickness of an individual slice of food product.
- 3.1.4 *gage plate adjuster*—manually operated device (usually a dial or a lever) that is used by the operator to set the gage plate.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from NSF International, P.O. Box 130140, 789 N. Dixboro Rd., Ann Arbor, MI 48113-0140.

⁴ Available from Global Engineering Documents, 15 Inverness Way, East Englewood, CO 80112-5704.

⁵ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

⁶ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, or Acquisition Streamlining and Standardization Information System (ASSIST), the official source of all documents listed in the DOD index of specification and standards. The ASSIST can be located at <http://dsp.dla.mil>.

Usual practice is to indicate the thickness by a graduated scale with a 0 (zero) setting to indicate that the gage plate is completely closed.

3.1.5 *sharpener*—device for holding the sharpening and truing stones. The sharpener can be either attached to the slicer or removable from the slicer’s sharpener attachment point. If it is removable, a storage location within the machine structure shall be provided.

4. Classification

4.1 Food slicers covered in this specification are of the following types and classes.

4.2 *Types*:

4.2.1 *Type I*—Fully automatic (powered carriage):

4.2.1.1 *Style 1*—Gravity product feed.

(1) *Rate 1*—Single carriage speed.

(2) *Rate 2*—Variable or multiple carriage speed.

(3) *Rate 3*—Two-speed carriage.

4.2.1.2 *Style 2*—Powered product feed.

(1) *Rate 1*—Single carriage speed.

(2) *Rate 2*—Variable or multiple carriage speed.

(3) *Rate 3*—Two-speed carriage.

4.2.1.3 *Style 3*—With grouping and shingling-capability discharge conveyor attachment, and stand.

4.2.2 *Type II*—Semiautomatic (manually operated carriage).

(1) *Style 1*—Compact unit.

(2) *Style 2*—Standard size unit.

4.3 *Classes*:

4.3.1 *Class A*—Bench mounted.

4.3.2 *Class B*—Pedestal mounted.

4.3.3 *Class C*—Stand mounted with casters.

NOTE 1—Classes not applicable to Type I, Style 3.

5. Ordering Information

5.1 Purchasers should select the slicer and any preferred options and include the following information in the purchasing document:

5.1.1 Title, number, and date of this specification.

5.1.2 Type, style, rate, and class of machine required (see 4.2 and 4.3).

5.1.3 Electrical power supply characteristics; voltage, phase, frequency.

5.1.4 Labeling requirements (if different from 6.1.1, 6.1.2, 13.1, and 13.2).

5.1.5 Quantity of slicers to be furnished.

5.1.6 Accessory equipment, spare, and maintenance parts required.

5.1.7 Any special requirements or deviation from this specification.

6. Physical Requirements

6.1 *Design and Manufacture*—The slicer shall meet the then current applicable requirements of NSF/ANSI Standard No. 8 and UL Standard 763.

6.1.1 *Compliance with NSF/ANSI Standard No. 8*—Acceptable evidence of meeting the requirements of NSF/ANSI Standard No. 8 shall be the NSF listing mark on the slicer and listing in the NSF Official Listing of Food Service Equipment, a certified test report from a recognized independent testing laboratory acceptable to the user, or a certificate issued by NSF under its special one-time contract evaluation/certification service.

6.1.2 *Compliance with UL 763*—Acceptable evidence of meeting the requirements of UL 763 shall be a UL Listing mark on the slicer, or a certified test report from a recognized independent testing laboratory acceptable to the user.

6.1.3 *Materials*—Materials used in the construction of food slicers shall comply with the applicable requirements of NSF/ANSI Standard No. 8. Housings shall be of corrosion-resistant, nonporous materials. Aluminum parts contacting food shall be anodized.

6.2 *Sharpening Device*—The slicer shall have a sharpening device included with and attachable to the machine. The sharpening device shall be accessible without lifting or tilting the machine. The sharpening device shall be capable of sharpening the knife to produce product slices that are smooth and free from tears and bruises as required under Section 89.

6.3 *Feet*—Class A slicers shall have three or more nonmetallic, nonskid feet with provisions for attachment to either a bench or a stand.

6.4 *Motor(s)*—The slicer motor(s) shall be of continuous duty type.

6.5 *Assembly and Disassembly*—The slicer shall be simple to disassemble and reassemble for cleaning and sanitizing. The slicer shall not require special tools or equipment to disassemble for cleaning.

6.6 *Ease of Operation*—The slicer, when viewed from the normal operating position, shall have all controls visible and readily accessible.

6.7 *Electrical Devices*—The slicer shall be furnished with a 6-ft (1.83-m)–5-ft (1.52-m) minimum length cord and plug with ground or shall be double insulated. The cord and plug shall be appropriate for the specified electrical characteristics.

6.7.1 The slicer shall be furnished with a switch which shall manually operated controls that open all motor leads. The slicer shall be furnished with a pilot light to indicate when the slicer is running.

6.8 *Receiving Tray*—A receiving tray for sliced product shall be furnished with the slicer, either built in or as an accessory.

6.9 *Product Carriage*—The product carriage and any devices for clamping or pushing the product shall hold the product securely in the cutting position. The product carriage shall employ bearings fabricated from cast iron on steel, oilite bearing surfaces or roller bearings. Drive gears shall be gear-grade laminated phenolic or bronze. Parallelism between knife and carriage shall be maintained within plus and minus one degree.

6.9.1 The slicer shall be designed to prevent contact between the slicing knife and the carriage, the gage plate and the spike assembly of the meat grip.

6.10 *Product Feed Limit*—The Type I, Style 2 or Style 3 slicer shall have a meat grip integral with the carriage that secures the end of the product and allows the product to be uniformly sliced to within the last 1 in. (25.4 mm). The Type I, Style 1, or Type II slicer shall have a toothed product pusher plate, integral with the carriage, that permits slicing to within the last ¼ in. (6.4 mm).

6.11 *Product Size, Rate, Thickness, Knife Diameter, and Motor Horsepower*—See Table 1.

6.12 *Pedestals and Stands*:

6.12.1 *Class B*—Slicer shall be identical to equivalent Class A slicer, except that it shall be supplied with and have provisions for attachment to a pedestal. The pedestal shall be 34 ± 1 in. high (±1 in.) (86.4 ± 2.54 cm) high with provisions for securing to the floor.

6.12.2 *Class C*—Slicer shall be identical to equivalent Class A slicer, except that it shall be supplied with and have provisions for attachment to a stand. The stand shall be of stainless steel construction and shall be 34 ± 1 in. (±1 in.) (86.4 ± 2.54 cm) in height when assembled with the casters. The stand shall have a flat stainless steel top of at least 16 gauge. The stand shall be listed by NSF. The stand shall be capable of supporting a weight of at least 175 lb (79.4 kg). The casters shall be at least 4 in. (10.16 cm) in diameter. The two casters closest to the operator position, shall swivel and lock. The other two casters shall not swivel.

TABLE 1 Product Size, Rate, Thickness, Knife Diameter, and Motor Horsepower

Type	Style	Rate	Minimum Product Cross Section, in. (cm)	Minimum Slices Per Minute	Minimum Range Slice Thickness, in. (mm)	Minimum Slicing Knife Diameter, in. (cm)	Minimum Knife Drive Motor HP (KW)
I	1 and 2	1	10¾ × 3 and 10¾ × 3 and 7 diameter (27.3 × 7.6 and 17.8) — 7 diameter	35	¼ ₈ to ⅝ (0.53 to 15.9)	11¾ (29.8)	⅓ (0.25)
		2	10¾ × 3 and 10¾ × 3 and 7 diameter (27.3 × 7.6 and 17.8) — 7 diameter	45/80 ^A	¼ ₈ to ⅝ (0.53 to 15.9)	11¾ (29.8)	⅓ (0.25)
	3	3	9½ × 5½ × 24 long (24.1 × 14.3 and 61) — 24 long	48	up to ⅝ ₂ (0 to 4)	12½ (31.75)	⅓ (0.25)
	3	3	9½ × 5½ × 24 long (24.1 × 14.3 and 61) — 24 long	48	up to ⅝ ₂ (0 to 4)	12½ (31.75)	⅓ (0.25)
II	1		8½ × 4 and 8½ × 4 and 6 diameter (21.6 × 10.2 and 15.2) — 6 diameter	35	¼ ₈ to ⅝ (0.53 to 9.5)	9¾ (24.8)	¼ (0.19)
	2		10¾ × 3 and 10¾ × 3 and 7 diameter (27.3 × 7.6 and 17.8) — 7 diameter	35	¼ ₈ to ⅝ (0.53 to 15.9)	11¾ (29.8)	¼ (0.19)

^AA 45-slice per minute requirement for product cross section is shown. An 80-slice per minute requirement is based on smaller product cross section and may be met by use of a fence that allows two pieces of product to be sliced simultaneously.