



Standard Specification for Dough Divider and Rounding Machines¹

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1. Scope

1.1 This specification covers commercial hand operated dough divider machines and semi-automatic and automatic, electrically operated, dough divider and rounding machines with or without interchangeable heads.

1.2 The values stated in inch-pound units are to be regarded as the standard. The SI values given in parenthesis are for information only.

1.3 *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 167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip²

A 240/A 240M-99 Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels²

D 3951 Practice for Commercial Packaging³

F 760 Specification for Food Service Equipment Manuals⁴

F 1166 Practice for Human Engineering Design for Marine Systems, Equipment and Facilities⁵

2.2 ANSI Standards:⁶

Z1.4 Sampling Procedures and Tables for Inspection by Attributes

2.3 BISSC Standards:⁷

Basic Criteria

No. 8 Dividers, Rounders, and Bun Machines

No. 29 Electrical Motors and Accessory Equipment

2.4 NEMA Standards:⁸

MG 1 Motors and Generators

WC 5 Thermoplastic—Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy

WC 7 Cross-Linked-Thermosetting-Polyethylene-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy

WD 1 General Requirements for Wiring Devices

2.5 ANSI/NSF Standards:⁶

Criteria C-2 Special Equipment and/or Devices

No. 2 Food Equipment

No. 8 Commercial Powered Food Preparation Equipment

No. 51 Food Equipment Materials

2.6 ANSI/UL Standards:⁶

UL 763 Motor-Operated Commercial Food Preparing Machines

UL 969 Marking and Labeling Systems

2.7 Federal and Military Documents:⁹

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

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

MIL-STD-461 Requirements for the Control of Electromagnetic Interference

MIL-STD-462 Electromagnetic Interference Characteristics, Measurement of

MIL-V-173 Varnish, Moisture and Fungus-Resistant

3. Terminology

3.1 Definitions:

3.1.1 *recovered materials*—materials that have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials.

4. Classification

4.1 *General*—Dough dividers and dough divider/rounding machines covered by this specification are classified by type and size.

4.2 Type:

4.2.1 *Type I*—Dough divider machine, manually operated,

4.2.2 *Type II*—Dough divider and rounder, semi-automatic, electrically operated,

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² *Annual Book of ASTM Standards*, Vol 01.03.

³ *Annual Book of ASTM Standards*, Vol 15.09.

⁴ *Annual Book of ASTM Standards*, Vol 15.07.

⁵ *Annual Book of ASTM Standards*, Vol 01.07.

⁶ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

⁷ Available from Baking Industry Sanitation Standards Committee, 1400 West Devon Ave., #422, Chicago, IL 60660.

⁸ Available from National Electrical Manufacturers Association, 2101 L Street NW, Washington, DC 20037.

⁹ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

4.2.3 *Type III*—Dough divider and rounder, fully-automatic, electrically operated, and

4.2.4 *Type IV*—Dough divider machine, fully-automatic, electrically operated.

4.3 *Class*:

4.3.1 *Class I*—Fixed head,

4.3.2 *Class II*—Fixed variable head, and

4.3.3 *Class III*—Interchangeable head.

4.4 *Size*:

4.4.1 *Size 1*—36-part dough divider (part sizes up to 4 oz),

4.4.2 *Size 2*—18-part dough divider machine (part sizes 2 oz up to 6 oz), and

4.4.3 *Size 3*—Fixed and interchangeable head assemblies that may include the following approximate ranges of part by weight:

36-part (1 oz up to 3 oz)

18-part (3 oz up to 7 oz)

9-part (7 oz up to 1 lb 2 oz)

6-part (1 lb 2 oz up to 1 lb 10 oz)

4.4.4 This specification does not purport to address all of the sizes that may be available, but is an overview of the most common sizes used in the industry today (see Appendix X1).

4.5 *Style*:

4.5.1 *Style 1*—Countertop or bench mounted,

4.5.2 *Style 2*—Floor mounted, and

4.5.3 *Style 3*—Portable.

5. Ordering Information

5.1 *Ordering Data*—Purchasers shall select the dough divider and rounding machine 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, class, size, and style of machine required,

5.1.3 Quantity to be furnished,

5.1.4 Electrical power supply characteristics: voltage, phase, frequency (see 7.4.1),

5.1.5 Accessory equipment, number of heads, options, spare parts, and maintenance parts required,

5.1.6 When Federal/Military procurement is required, review and implement the applicable supplementary requirements (see S1 through S10),

5.1.7 When specified, the purchaser shall be furnished certification that samples representing each lot have been either tested or inspected as directed in this specification and the requirements have been met. When specified, a copy of the test results shall be furnished.

5.1.8 Level of preservation and packing required if other than as stated in Practice D 3951 (see 17.1),

5.1.9 Labeling requirements (if different than section 15.1), and

5.1.10 Whether the equipment shall meet the requirements of ANSI/NSF, ANSI/UL, and/or BISSC standards.

6. Material

6.1 *General*—Dough divider, and dough dividing and rounding machines shall conform to ANSI/NSF No. 8 or BISSC Basic Criteria.⁸ Materials used shall be free from defects that would 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 fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. 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.

6.1.1 *Stainless Steel*: Stainless steel shall conform to the 300 series of Specification A 167 or A 240/A 240M as applicable.

7. Design and Construction

7.1 *General*—Dough divider and rounding machines shall be delivered assembled, ready for mounting, connection to electricity, and use as applicable.

7.2 *Dough Divider*—The Type I machine shall consist of a base, an operating handle, a manually operated dough dividing mechanism (cutting head with stainless steel knives or other material meeting ANSI/NSF Std. 51 or BISSC Basic Criteria requirements, and pressure board meeting the same material requirements), a yoke or support, and a removable dough pan. The base of the Type I machine shall be provided with bolt holes for mounting. The overall dimensions of the machine, excluding operating handle, shall fit into a 17 in. (423 mm) by 18-½ in. (470 mm) square area, 22-½ in. (565 mm) in height, ±3 in. (76.2 mm) for each dimension.

7.2.1 *Pan*—The Type I machine shall be provided with a circular dough pan of one piece, deep drawn stainless steel or other material meeting ANSI/NSF Std. 51 or BISSC Basic Criteria requirements. The pan shall be readily-removable and shall have not less than one handle.

7.3 *Dough Divider and Rounder*—The Type II machine shall be semi-automatic consisting of a floor mounted support or stand with integral housing, a manually operated dough divider mechanism (cutting head with stainless steel knives or other material meeting ANSI/NSF Std. 51 or BISSC Basic Criteria requirements, and pressure board meeting the same material requirements), an electric motor operated rounding mechanism (rounder plate), a yoke or support, and a removable work pallet. The Type II machine shall divide the dough by manual operation and shall round the dough by an automatic operation. The handle shall be fully depressed manually to engage the rounding mechanism for the rounding operation. The return of the handle shall disengage the rounding mechanism. The Type III machine shall be similar in operation to the Type II machine with the exception that the Type III machine is completely automatic, dividing and rounding dough automatically. The base of the Type II and III machines shall be provided with bolt holes for floor mounting. The overall dimensions of the Type II and III machines excluding operating handle, shall fit into a 27 in. (686 mm) by 27 in. (686 mm) square area, 59 in. (1499 mm) in height, ± 2 in. (51 mm) for each dimension.

7.3.1 *Rounder Plate and Work Pallets*—Type II and III machines shall have a rounder plate and four work pallets constructed of stainless steel or other material meeting ANSI/NSF Std. 51 or BISSC Basic Criteria requirements. The