



Standard Specification for Dough Divider and Rounding Machines¹

This standard is issued under the fixed designation F1966; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers commercial hand operated dough divider machines and semiautomatic 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 standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

A167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip (Withdrawn 2014)³

A240/A240M Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications

D3951 Practice for Commercial Packaging

F760 Specification for Food Service Equipment Manuals

F1166 Practice for Human Engineering Design for Marine

Systems, Equipment, and Facilities

2.2 ANSI Standards:⁴

Z1.4 Sampling Procedures and Tables for Inspection by Attributes

2.3 BISSC Standards:⁵

Basic Criteria

No. 8 Dividers, Rounders, and Bun Machines

No. 29 Electrical Motors and Accessory Equipment

2.4 NEMA Standards:⁶

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 NSF/ANSI Standards:⁷

NSF/ANSI No. 2 Food Equipment

NSF/ANSI No. 8 Commercial Powered Food Preparation Equipment

NSF/ANSI No. 51 Food Equipment Materials

NSF/ANSI No. 169 Special Purpose Food Equipment and Devices

2.6 ANSI/UL Standards:⁸

ANSI/UL 763 Motor-Operated Commercial Food Preparing Machines

ANSI/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)

¹ This specification is under the jurisdiction of ASTM Committee F26 on Food Service Equipment and is the direct responsibility of Subcommittee F26.04 on Mechanical Preparation Equipment.

Current edition approved Jan. 1, 2023. Published February 2023. Originally approved in 1999. Last previous edition approved in 2017 as F1966 – 12 (2017)^{ε1}. DOI: 10.1520/F1966-12R23.

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 The last approved version of this historical standard is referenced on www.astm.org.

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

⁵ Available from Baking Industry Sanitation Standards Committee (BISSC), 1400 W. Devon Ave., Suite 422, Chicago, IL 60660.

⁶ Available from Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112-5704

⁷ Available from NSF International, P.O. Box 130140, 789 N. Dixboro Rd., Ann Arbor, MI 48113-0140.

⁸ Available from comm2000, 1414 Brook Dr., Downers Grove, IL 60515, <http://www.shopulstandards.com>.

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

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

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, semiautomatic, electrically operated,

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 (113.4 g)),

4.4.2 *Size 2*—18-part dough divider machine (part sizes 2 oz up to 6 oz (56.7 to 170.1 g)), 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 (28.4 g up to 85.2 g)

18-part 3 oz up to 7 oz (85.2 g up to 199 g)

9-part 7 oz up to 1 lb 2 oz (199 g up to 510.3 g)

6-part 1 lb 2 oz up to 1 lb 10 oz (510.3 g up to 737.1 g)

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 S9),

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 **D3951** (see **17.1**),

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

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

6. Material

6.1 *General*—Dough divider, and dough dividing and rounding machines shall conform to NSF/ANSI No. 8 or BISSC Basic Criteria and Standard No. 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 **A167** or **A240/A240M** 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 NSF/ANSI No. 51 or BISSC Basic Criteria and Standard No. 8 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 NSF/ANSI 51 or BISSC Basic Criteria and Standard No. 8 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 semiautomatic 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