Designation: F952 – 12

An American National Standard

Standard Specification for Mixing Machines, Food, Electric[1]

This standard is issued under the fixed designation F952; 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.

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

1. Scope

1.1 This specification covers vertical electric food mixing machines in the size range (as expressed by bowl capacity) from 5 to 140 qt. These machines shall be adaptable for mixing, whipping, and beating food products. This specification does not include special purpose machines that are intended solely for mixing dough.

1.2 This specification also covers optional construction features and attachments that enhance the mixing, beating, or whipping capabilities of the machine. This specification does not cover ancillary equipment that can be driven by the attachment hub.

1.3 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.

1.4 The following precautionary caveat 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:*[2]

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 *NSF/ANSI Standards:*[3]

NSF/ANSI No. 2 Food Equipment

NSF/ANSI No. 8 Commercial Powered Food Preparation Equipment

2.3 *Underwriters Laboratories Standards:* [4]

ANSI/UL 763 Motor-Operated Commercial Food Preparing Machines

ANSI/UL 969 Marking and Labeling Systems

2.4 *ANSI Standards:* [5]

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

ANSI S1.13 Methods for Measurement of Sound Pressure Levels

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 of Subsystems and Equipment

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *agitators, n*—these devices attach to the vertical shaft that protrudes downward from the mixer and converts the planetary rotation into the desired action on the foodstuffs within the bowl.

3.1.2 *attachment hub, n*—the device that locks ancillary devices, such as a vegetable slicer or a chopping end, into an industry standard #12 tapered hub (#10 tapered hub for Size 5

[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 Nov. 1, 2012. Published December 2012. Originally approved in 1985. Last previous edition approved in 2008 as F952 – 08. DOI: 10.1520/F0952-12.

[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, http://www.nsf.org.

[4] Available from comm2000, 1414 Brook Dr., Downers Grove, IL 60515.

[5] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

[6] Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, http://www.dodssp.daps.mil.

machines) and provides a rotating square drive. This is mounted above the bowl on the front of the mixer.

3.1.3 *bowl guard, n*—the barrier, assembled over the bowl area, intended to reduce the user's access to the hazards that exist in the bowl during machine operation.

4. Classification

4.1 Food mixers covered in this specification are the following types:

4.1.1 *Type I,* bench-mounted mixer:

Size	Bowl Capacity, qt, min/max	Agitator r/min		Motor Horsepower Rating, min
		Lowest Speed, less than	Highest Speed, greater than	
5	5/7	150	500	⅛
12	12/15	120	300	⅓
20	20/25	120	300	½

4.1.2 *Type II,* floor-mounted mixer:

Size	Bowl Capacity, qt, min/max	Agitator r/min		Motor Horsepower Rating, min
		Lowest Speed, less than	Highest Speed, greater than	
20	20/25	120	300	½
30	30/36	100	300	¾
40	40/45	100	300	1¼
60	60/70	80	280	1½
80	80/90	80	280	3
140	140/160	55	260	5

4.1.3 *Classes:*

4.1.3.1 *Class 1*—Painted finish.

4.1.3.2 *Class 2*—Nonpainted finish. All nonwearing surfaces to be either polished aluminum, plated carbon steel, or stainless steel.

5. Ordering Information

5.1 Purchasers should select the mixer 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, size, and class of mixer required (see 4.1),

5.1.3 Electrical power supply characteristics; voltage, phase, frequency (see 6.5 and 6.7),

5.1.4 Bowls, agitators, accessory equipment, options, mixer guard, spare parts, and maintenance parts required,

5.1.5 Labeling requirements (if different than Section 13),

5.1.6 Quantity of mixers to be furnished, and

5.1.7 Any special requirements or deviations from this specification.

5.1.8 When Federal/Military procurement is required, review and implement the applicable supplementary requirements (see S1 through S9).

5.1.9 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.

6. Physical Requirements

6.1 *Design and Manufacture*—The mixer shall meet the then current applicable requirements of NSF/ANSI No. 8 and ANSI/UL 763. Accessories, such as agitators, bowl trucks, bowls, tables, extensions, adapters, splash covers, and storage stands shall meet the applicable requirements of NSF/ANSI No. 2 or NSF/ANSI No. 8 at the time of purchase. Optional accessories, component parts, assemblies, and spare parts shall be identical to the extent necessary to insure interchangeability between mixers.

6.1.1 *Compliance with NSF/ANSI No. 8*—Acceptable evidence of the mixer meeting the requirements of NSF/ANSI No. 8 shall be the NSF listing mark on the finished product and listing in the manufacturer's product listings on the NSF website, nsf.org, or 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 ANSI/UL 763*—Acceptable evidence of meeting the requirements of ANSI/UL 763 shall be a UL Listing mark on the mixer, or a certified test report from a recognized independent testing laboratory acceptable to the user.

6.2 *Drive Mechanism*—The mixer shall be driven by an electric motor, through a reduction system, to the planetary/beater shaft system. The entire drive system shall be enclosed within the mixer itself. All constituent active parts within the drive system shall be replaceable. All mixers shall be equipped with an internal clutch, shock absorber, or belt drive to minimize the shock of starting or shifting gears of the mixer. Size 60 and larger gear drive speed selection mixers shall either be equipped with a shift interlock switch that will automatically disconnect power to the main drive motor if the operator attempts to shift speeds without first shutting off the motor or be designed to permit speed changes during operation.

6.3 *Speed Selector*—A speed selector shall be provided to change agitator speed. Either continuously variable or discrete speed selection is acceptable. A means to provide the user with reference marks for speed repeatability is required. In no case shall less than three distinct speeds be available on gear box equipped mixers or three distinct markings be available on continuously variable transmissions.

6.4 *Beater Shaft*—The beater shaft shall be vertically mounted and shall be held securely in place. Agitators shall fit securely and shall be capable of being removed or replaced without tools. The beater shaft shall be connected to planetary gearing to provide two separate rotating motions of the agitator simultaneously.

6.5 *Motor(s)*—Minimum horsepower rating for the main drive motor of the mixer shall meet the requirements of 4.1.1 or 4.1.2, as appropriate. If an auxiliary motor is used to perform another function (such as, bowl lifts), it shall be internally interconnected within the mixer to provide a single electrical point connection. Size 5 through 30 mixers shall be available for operation on a 120/60/1 line. Size 60 and larger mixers shall be available for operation on a 208/60/3 line. Other voltage availabilities are at the discretion of the manufacturer. Mixers with three phase motors shall be provided with a plate, label, or decal showing the direction of rotation. In all cases, the main drive motor shall be rated for continuous duty.

6.6 *Power Supply*—The mixer may either be provided with a power supply cord or designed for permanent electrical connection. Power supply cords shall be a minimum 5-ft (1.52-m) length and provided with a grounding type attachment plug. Mixer housings designed for permanent electrical connection shall be provided with an appropriate hole sized for conduit connection.

6.7 *Electrical Specifications*—Nominal electrical specifications are as follows: 120/60/1, 208/60/1, 240/60/1, 208/60/3, 240/60/3, and 480/60/3.

6.8 *Mixing Bowls*—Bowls shall meet the requirements of NSF/ANSI No. 8. Bowl requirements should be stated in the purchasing document. The bowl shall be equipped with two handles. If the bowl is metallic, the minimum wall thickness for bowls of 60-qt (56.8-L) capacity or less is 0.0625 in. (1.6 mm). For bowls of larger than 60-qt (56.8-L) capacity, the minimum metallic thickness is 0.0781 in. (2 mm). The minimum thickness at any point of the bowl after forming shall be no less than 0.050 in. (1.27 mm) for bowls of 60 qt (56.8 L) or less capacity and not less than 0.062 in. (1.58 mm) for bowls over 60-qt (56.8-L) capacity. All bowls shall be equipped with a durable metallic means of attachment to the bowl yoke. Bowls of 60-qt (56.8-L) capacity or greater shall be reinforced at the points of attachment to the bowl yoke. Bowls of nonmetallic construction shall have equivalent durability to metallic bowls. Metal bowls shall be made from stainless steel.

6.9 *Agitators*—Mixers meeting this specification must be available with batter beater, sweet dough beater, dough hook, pastry knife, wing whip, and wire whip suitable for use with the bowl size(s) specified. Stainless steel must be used on the wires of whips.

6.10 *Bowl Lift*—The mixer shall be provided with a mechanism for raising and lowering the bowl. Mixers of 60-qt (56.8-L) capacity or more shall be equipped with a powered bowl lift. Size 40 and smaller mixers shall have a manually operated lift mechanism with a positive stop at the extremities of the travel. In all cases, a stop shall be provided to prevent the agitator from contacting the bowl when proper bowls and agitators are used together.

6.11 *Bowl Support*—The bowl support shall have three lug positions matching lugs on the bowl. All mixers shall have a positive bowl locking mechanism to prevent bowl motion under heavy loads.

6.12 *Base*—The base shall be constructed of materials that are consistent with the need for rigidity and durability. For Size 12 and larger machines, means shall be provided for bolting the mixer to a stand (Type I) or to the floor (Type II).

6.13 *Timer*—Size 60 and larger mixers shall be provided with a 15-min timer. The timer shall stop the mixer drive motor upon operating for the preset time. The timer or mixer design shall include an override position to permit continuous operation. Mixers less than size 60 shall be available with an optional timer to provide the functions stated above.

6.14 *Attachment Hub*—Size 60 and smaller mixers shall be provided with an attachment hub for operating vegetable and cheese slicing, meat chopping, dicing, or equivalent attachments. This attachment hub shall be capable of at least 350 rpm. This requirement can be met by the manufacturer with an ancillary speed increaser attachment of aluminum construction.

6.15 *Bowl Truck*—Type II mixers shall have optionally available a bowl truck whose use is compatible with the base design of the mixer. The bowl truck shall be durably constructed and designed to hold the bowl above the point of attachment to the bowl support when the support is at its lowest position.

6.16 *Other Optional Equipment:*

6.16.1 *Mixing Bowl Extension*—Shall be optionally available for size 60 and 80 mixers and made of the same material as the bowl.

6.16.2 *Bowl Adapters*—Size 20 and larger mixers shall be optionally available with bowl adapters to use the next smaller size bowl and agitators.

6.16.3 *Splash Covers*—Shall be optionally available for size 60 and larger mixers.

6.16.4 *Table*—Shall be optionally available for Type I, Size 20. When specified, the table shall be 24 in. (610 mm) high with a horizontal surface of 30 by 24 in. (762 by 610 mm). A full-size shelf under the top surface shall be provided for ancillary equipment storage. It shall be of stainless steel construction, able to support a load of 250 lb (113.4 kg).

6.17 *Lubrication*—All wearing parts of the mixer shall be provided with a means for lubrication or be permanently lubricated and sealed. Oil seals shall contain the lubricant. Gear housings shall have provisions for lubrication and shall allow lubricant to circulate around gears if applicable.

6.18 *Finishing*—All exterior surfaces of the mixer and attachments described within this specification shall be finished to the requirements of NSF/ANSI No. 8.

6.19 *Workmanship*—All components and assemblies of the mixer shall be free of dirt and other extraneous materials, burrs, slivers, tool and grind marks, dents, and cracks. Castings, molded parts, and stampings shall be free of voids, sand pits, blow holes, and sprues. External surfaces shall be free of sharp edges and corners. All sheet metals used in the fabrication of the mixing machine shall be free from kinks and unspecified dents. Forming and welding shall not cause damage to the metal and shall be done neatly and accurately. Corners shall be square and true and all bends of a major nature shall be of uniform size and shape.

6.20 *Hazard Protection:*

6.20.1 The mixer shall meet the requirements of ANSI/UL 763.

6.20.2 *Switch Guard*—The ON/OFF control shall be guarded or fabricated in such a manner as to prevent unplanned activation.

6.20.3 *Controls Location*—The controls for the mixer shall be located such that they are easily visible and easily manipulated by the operator when standing in a comfortable operating position.

6.20.4 *Mixer Guard*—A barrier over the bowl area of the mixer may be provided. The barrier may be solid or constructed of a welded grid made of plated or stainless steel rods.

A means shall be provided to allow the barrier to be rotated out of the way or removed to facilitate cleaning and it shall be interlocked with the machine to prevent machine operation when the barrier is not in the closed position.

7. Performance Requirements

7.1 *Functional Test*—The mixer shall produce the manufacturer's rated batch size of heavy bread dough (55 % absorption ratio).

7.2 *Sound Level*—The mixer shall not exceed 85 dBA under load.

7.3 *Bowl Support/Bowl Lift*—The bowl support will support and lift the weight of the bowl plus a weight in pounds equal to twice the size, for example, a size 60 mixer is required to support and lift 120 lb (54.4 kg) plus the bowl weight.

7.4 *Speed Variation*—The agitator speed will be within 10 % of the manufacturer's specification in all speeds.

8. Sampling

8.1 When specified in the contract or purchase order, sampling for inspection shall be performed in accordance with ANSI Z1.4, which will supersede implied sampling requirements stated elsewhere in this specification.

9. Test Methods

9.1 *Operational Tests*—The machine should be installed and connected electrically in an operating position in accordance with the manufacturer's instructions.

9.2 *Bowl Attachment/Capacity*—A representative bowl to fit the mixer being selected shall be filled with the equivalent volume of water. Failure to contain this volume is sufficient to reject the lot. The bowl lift shall then be operated to the full extent of the range through 10 cycles. Any deformation or loss of adjustment shall be cause for rejection of the lot. The water shall then be removed and a flat beater installed on the agitator shaft. The bowl shall be lifted to its operating position and the clearance between the outside surface of the agitator and inside surface of the bowl will be measured. If contact is made with the bowl or if the clearance is greater than ¼ in., the lot may be rejected.

9.3 *Speed Test*—The mixer should be operated with no load and the agitator rpm measured at the lowest available or marked speed. Depending upon test equipment available, a higher planetary speed (as expressed in r/min) shall also be checked against the manufacturer's specifications. Any variation greater than 10 % is cause for lot rejection.

NOTE 1—This is a potentially dangerous test and proper precautions should be taken.

9.4 *Power Bowl Lift Test*—On units with power bowl lifts, the bowl should be loaded with twice the weight of the manufacturer's rated batch size for heavy bread dough (55 % absorption ratio) and the bowl lift operated 10 times. Any slippage or failure to maintain partial travel or full travel position is cause for lot rejection.

9.5 *Run-In Test*—The mixer shall be fitted with the flat beater and the full bowl size and run-in for a period of 15 min. If the machine is equipped with a timer, the timer shall be used to perform this test. A mixture shall be artificially loaded to yield the full load amp rating of the mixer. After the 15-min run-in, the mixer sound level shall be measured in accordance with ANSI S1.13. A dBA level greater than 85 is cause for lot rejection. Any failure in the 15-min test is cause for lot rejection. If the mixer is to be used primarily for dough, the purchaser can, at his option, test his recipe in accordance with the manufacturer's general specifications for acceptability.

10. Inspection

10.1 *Workmanship Inspection*—The mixer is to be inspected in accordance with the requirements of 6.18 and 6.19. Minor faults are cause to inspect another machine. Major faults are cause for rejection of the entire lot.

10.2 *End Item Testing*—When specified in the contract or purchase order, one production item, selected at random from each lot, shall be tested by the manufacturer in accordance with the applicable subsections of Section 9. Performance results shall be recorded in a permanent file and the information shall be available to the customer upon demand. Any subsequent change in design that would relate to performance shall require a new test record.

10.3 *Quality Conformance Inspection*—The manufacturer shall have an effective quality audit system.

10.4 *Component and Material Inspection*—Incoming components and materials shall be inspected by the manufacturer to the design parameters as specified on drawings or purchase documents, or both.

11. Rejection and Rehearing

11.1 *Rejection*—During inspection, any failure to perform in accordance with the requirements of this specification are cause for rejection of the lot.

11.2 *Rehearing*—The supplier will be given a rehearing on the remainder of the lot by inspection of additional mixer(s). Acceptance of the mixer that failed inspection is at the discretion of the purchaser.

12. Manuals

12.1 Manuals shall be furnished in accordance with Specification F760.

13. Product Marking

13.1 *Identification*—Each mixer shall be provided with an identification plate or adjacent plates securely affixed to the item. The plate(s) shall be molded, die-stamped, etched on metal, or an ANSI/UL 969 Recognized label material. Markings shall be durable and should be plain, legible, and readily visible after the item is installed in the intended manner. The identification plates shall include the name, brand, or trademark of the manufacturer, of such known character as to be readily traceable to the manufacturer, and shall state the electrical characteristics of the equipment. The plate(s) shall also bear a distinctive number, letter, or number and letter code that will identify an individual item or production lot to a limited group of items. In addition, such information required

by UL and NSF shall appear on the plate(s). The plates shall be located on an external surface.

14. Packaging and Packing Marking

14.1 Unless otherwise specified, the complete mixer shall be packaged and marked in accordance with Practice D3951. In addition, the package shall be marked with manufacturer's name, model number, and serial number.

15. Keywords

15.1 food mixer; food service equipment; mixer

SUPPLEMENTARY REQUIREMENTS

FEDERAL AND MILITARY PROCUREMENT

S1. *Federal and Military Procurement*—The supplementary requirements that follow apply to all Federal and Military procurements. Where provisions of this supplement conflict with the main body of this specification, these supplementary requirements shall prevail.

S2. *Manual*—A manual complying with Specification F760 and its supplement shall be provided.

S3. *First Article Inspection*—When required, the first article inspection shall be performed on one unit. The first article may be either a first production item or a standard production item from the supplier's current inventory, provided the item meets the requirements of this specification and is representative of the design, construction, and manufacturing techniques applicable to the remaining items to be furnished under the contract.

S4. *Label Plates*—Mixing machines shall be provided with data-name plates and instruction plates.

S4.1 *Data-Name Plates*—In addition to the manufacturer's data plate, machines shall be provided with data-name plates readily visible to the operator during normal operating use and so as to not adversely affect the life and utility of the unit. Plates shall be attached to the front of the unit in such a manner as to meet the applicable NSF International sanitary requirements for this equipment. The plate shall contain the following information, which shall be stamped, engraved, or applied by photosensitive means: National Stock Number and Government Approved Manual Number.

S4.2 *Instruction Plate*—An instruction plate shall be made of corrosion resisting metal or an ANSI/UL 969-recognized label material and shall be attached to the front of the mixing machine. The instruction plate shall bear instructions for startup, operation, and shutdown.

S4.3 *High-Voltage Labels*——On mixing machines rated 440 V ac or higher, a "Danger High Voltage" label shall be affixed to the housing exterior, on or adjacent to each service access cover, and adjacent to one of the fasteners which secures the cover. A voltage warning label with a permanency conforming to ANSI/UL 969 also shall be placed near the high-voltage components inside the equipment. The label shall include, but is not limited to, the following warnings:

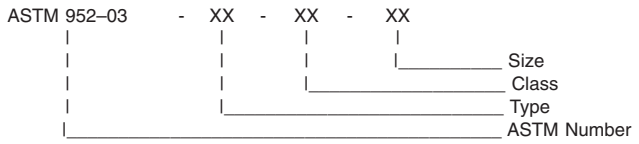
S4.3.1 High voltage.

S4.3.2 Power supply must be disconnected before servicing.

S4.3.3 Access covers must be in place during use.

S4.3.4 Servicing should be done by authorized individuals.

S5. *Part Identifying Number*—The following part identifying numbering procedure is for government purposes and does not constitute a requirement for the contactor. The PINs to be used for items acquired to this specification are created as follows:



The above is an example of the PIN for an item in accordance with ASTM Specification F952–03, Type XX, Class XX, Size XX.

S6. *Human Factors Criteria*—Human factors engineering criteria, principles, and practices, as defined in Practice F1166, shall be used in the design of all mixing machines.

S7. *Preservation, Packaging, and Package Marking*—When other commercial practice or conformance to Practice D3951 is desired, the preservation, packaging, and package marking requirements shall be stated in the purchase order or contract.

S8. *Manufacturer's Certification*—If the manufacturer has successfully furnished the same equipment on a previous contract within the past three years, further inspection will not be required. The manufacturer shall certify in writing that the equipment to be furnished is the same as that previously furnished and approved and that no major design changes have been made to the equipment.

S9. *Naval Shipboard Requirements*—The following additional requirements apply when equipment is to be used for shipboard purposes.

S9.1 *Power Compatibility*—Unless otherwise specified (see 5.1), all types of mixing machines shall operate on either 440 V, 60 Hz, three phase, three-wire, ungrounded or 115 V, 60 Hz, single phase, power sources for shipboard as specified in MIL-STD-1399/300.

S9.2 *Access*—Mixing machines shall pass through a 26-in. (660-mm) wide by 66-in. (1676-mm) shipboard hatch without major disassembly. Mixers for submarines shall pass through a 25-in. (635-mm) diameter circular hatch without major disassembly. When establishing accessibility requirements, both

physical and visual access must be provided along with access for any tools, test equipment, or replacement parts needed.

S9.3 *Mounting*—Where required, provisions shall be made to mount the mixing machine on a horizontal surface. The frame shall be provided with four drilled or threaded bosses or retaining nuts for this purpose. Four symmetrically spaced holes shall be provided, each having a ⅜-in. (9.5-mm) minimum bolt mounting size. Counter or dresser mounted mixing machines shall be provided with four type 300-series stainless steel round legs, each a minimum 1 in. (25.4 mm) in diameter, 4 in. (102 mm) in height, for securing the unit to the dresser.

S9.4 *Environmental Suitability*—Mixing machines shall be capable of withstanding ship vibration and motion. Controls, switches, moving parts, and electrical circuits shall operate under shipboard conditions without malfunction, binding, excessive looseness, or damage (see S9.6.3).

S9.5 *Inclined Operation*—Mixing machines shall operate satisfactorily on surface ships when inclined at an angle of 15° each side of the vertical in each of two vertical planes at right angles to each other, with no spillage of fluid or product. For submarines, the angle of inclination shall be 30°.

S9.6 *Quality Assurance Provisions:*

S9.6.1 *EMI Control Tests*—When specified, mixing machines shall be tested by the contractor in accordance with test methods of MIL-STD-461 for surface ships and submarines. The first article or initial production unit, as applicable, shall be tested. The contractor shall furnish written certification that the equipment meets the requirements of MIL-STD-461. Nonconformance with the requirements specified shall constitute failure of the test.

S9.6.2 *Inclined Operational Test*—The mixing machine shall be bolted to a test platform similar to shipboard installation and inclined at an angle of 15° (30° for submarines). The machine shall be filled to 75 % capacity with product, then operated for 60 s each at each side of the vertical in each of two vertical planes at right angles to each other. Any nonconformance with specified requirements of S9.5 shall constitute failure of this test.

S9.6.3 *Shipboard Environmental Test*—When specified, the mixing machine, under normal operating conditions, shall be tested in accordance with MIL-STD-167/1, Type I equipment. The machine shall be secured to the test machine in the same manner that it will be secured on shipboard. Failure of the machine to perform its function during or after testing, or meeting the requirements of S9.4, shall constitute failure of this test. The Government reserves the right to witness all tests of mixing machines procured for Naval shipboard use, whether performed by the supplier or by an independent testing agency.