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SUPERSEDING
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FEDERAL SPECIFICATION

VEGETABLE PEELING MACHINE, ELECTRIC

This specification was approved by the Assistant Administrator, Office of Federal Supply and Services, General Services Administration, for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers counter mounted and floor-mounted, electric-motor-operated peeling machines for removing skins from vegetables.

1.2 Classification.

1.2.1 Styles and sizes. Vegetable peeling machines shall be of the following styles and sizes, as specified (see 6.2):

Style 1 - Counter mounted
  Size A - 15 pounds of potatoes per charge

Style 2 - Floor-mounted
  Size A - 15 pounds of potatoes per charge
  Size B - 30 pounds of potatoes per charge
  Size C - 50 pounds of potatoes per charge

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issues in effect on date of invitation for bids or request for proposal, form a part of this

Federal Specifications:

CC-M-1807	-	Motors, Alternating Current, Fractional and Integral Horsepower (500 HP and Smaller)
TT-P-664	-	Primer Coating, Synthetic, Rust-Inhibiting, Lacquer-Resisting

FSC 7320

MMM-A-260	-	Adhesive, Water-Resistant (For Sealing Water-proofed Paper)
PPP-B-601	-	Boxes, Wood, Cleated-Plywood
PPP-B-621	-	Boxes, Wood, Nailed and Lock-Corner
PPP-B-636	-	Boxes, Shipping, Fiberboard
PPP-B-640	-	Box, Fiberboard, Corrugated, Triple Wall
PPP-B-1055	-	Barrier Material, Waterproofed, Flexible
PPP-T-45	-	Tape, Gummed, Paper, Reinforced and Plain, For Sealing and Securing

Federal Standard:

FED-STD-123	-	Marking for Shipment (Civil Agencies)

(Activities outside the Federal Government may obtain copies of Federal specifications, standards and commercial item descriptions as outlined under General Information in the Index of Federal Specifications, Standards and Commercial Item Descriptions. The Index, which includes cumulative bimonthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, US Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal specifications, and commercial item descriptions required by activities outside the Federal Government for bidding purposes are available without charge from General Services Administration Business Service Centers in Boston, MA; New York, NY; Philadelphia, PA; Washington, DC; Atlanta, GA; Chicago, IL; Kansas City, MO; Fort Worth, TX; Houston, TX; Denver, CO; San Francisco, CA; Los Angeles, CA; and Seattle, WA.

(Federal Government activities may obtain copies of Federal standardization documents and the Index of Federal Specifications, Standards and Commercial Item Descriptions from established distribution points in their agencies.)

Military Specifications:

MIL-C-104	-	Crates, Wood; Lumber and Plywood Sheathed, Nailed and Bolted
MIL-P-116	-	Preservation, Methods of
MIL-B-121	-	Barrier Material, Greaseproofed, Waterproofed, Flexible
MIL-V-173	-	Varnish, Moisture-and-Fungus-Resistant (For the Treatment of Communications, Electronic, and Associated Equipment)

Military Standards:

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129 - Marking for Shipment and Storage
MIL-STD-461 - Electromagnetic Emission and Susceptibility Requirements for The Control of Electromagnetic Interference
MIL-STD-462 - Electromagnetic Interference Characteristics, Measurement of
MIL-STD-1188 - Commercial Packaging of Supplies and Equipment

(Copies of Military specifications and standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contacting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply:

Underwriters Laboratories Inc. (UL)

UL 73 - Motor-Operated Appliances

(Application for copies should be addressed to the Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062.)

National Sanitation Foundation (NSF)

Standard No. 8 - Commercial Powered Food Preparation Equipment

Listing of Food Service Equipment

(Application for copies should be addressed to the National Sanitation Foundation, NSF Building, Ann Arbor, MI 48105.)

Americal National Standards Institute, Inc. (ANSI)

C 73 - Dimensions of Caps, Plugs, and Receptacles
S1.13 - Methods for the Measurement of Sound Pressure Levels

(Application for copies should be addressed to the National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.)

American Society for Testing and Materials (ASTM)

A 167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19105.)

American Society of Sanitary Engineering (ASSE)

No. 1009 - Commercial Food Waste Disposer Units

(Application for copies should be addressed to the American Society of Sanitary Engineering, 960 Illuminating Building, Cleveland, OH 44113.)

3. REQUIREMENTS

3.1 Standard product. The vegetable peeling machines shall, as a minimum, be in accordance with the requirements of this specification and shall be the manufacturer's standard commercial product with any added features needed to comply with the requirements of this specification. Modifications to add features shall not incorporate different parts unless such parts are used on other current commercial models. Standard or modified commercial products furnished in accordance with this specification shall be identifiable by all regular manufacturer's or commercial service organizations servicing the brand involved. Service organizations shall be capable of providing complete parts and repair services on models furnished to the Government consistent with their normal commercial practices.

3.2 Standards. The vegetable peeling machines shall comply with the applicable requirements of NSF Standards No. 8. The vegetable peeling machine shall comply with the requirements of UL 73. The waste disposer shall conform to the applicable requirements of ASSE Standard No. 1009.

3.2.1 Compliance. Prior to approval of the first shipment, the contractor shall submit satisfactory evidence to the contracting officer or his authorized representative that the vegetable peeling machines and waste disposer, when applicable, conform to the requirements of NSF, UL and ASSE standards, as applicable.

3.2.1.1 NSF. Acceptable evidence of meeting the requirements of NSF shall be:

(1) A listing in the current edition of the NSF "Listing of Food Service Equipment" and display of the NSF seal on the finished vegetable peeling machine, or

(2) A certification for the vegetable peeling machine issued by NSF under their special one-time contract evaluation-certification service, or

(3) A certified test report from a recognized independent testing laboratory acceptable to the medical department of the service for which the machines are being procured indicating that the vegetable peeling machines have been tested and conform to NSF Standard No. 8.

3.2.1.2 UL. Acceptable evidence of meeting the applicable requirements of UL shall be the UL listing mark, or a certified test report from a recognized independent testing laboratory acceptable to the Government indicating compliance with applicable requirements of UL 73.

3.2.1.3 ASSE. The contractor shall submit satisfactory evidence to the contracting officer or his authorized representative that the waste disposer he proposes to furnish under this specification conforms to the applicable requirements of ASSE No. 1009.

3.3 Materials and components. Materials (see 6.5), and components shall be as specified herein. Materials not definitely specified shall be of the quality normally used by the manufacturer in his standard commercial vegetable peeling machines provided the completed item complies with all provisions of this specification.

3.3.1 Stainless steel. Stainless steel shall conform to any of the type 300 series specified in ASTM A 167.

3.4 Design and construction. The vegetable peeling machines shall consist of a cylinder not more than 44 inches high having an abrasive or ribbed wall; an abrasive disc with lobes; a peel trap (when waste disposer is not specified), a waste outlet; a water inlet and air-gap type sprayer; and a cylinder cover. The style 1 machine shall be counter mounted (see 3.4.8). The style 2 machine shall be furnished with a cabinet supporting base for floor-mounting (see 3.4.9). The base shall have a closed type constructed top to prevent moisture from entering motor and drive unit. The machine shall be driven by an electric motor, with belt or gear reduction to meet the speed requirements. The cylinder, when charged with the weight of potatoes stated in 1.2 shall not be more than three-fourths full, and peeling time shall not exceed 3 minutes when tested as specified in 4.4.2. Potatoes shall be considered satisfactorily peeled when all the outer and under skins, except the eyes, and the skin on low spots, have been removed (see 4.4.2). At rated capacity, the machine shall be capable of peeling all sizes of new and old potatoes conforming to U.S. Grade No. 1 without flats and without weight loss greater than 12 percent (see 4.4.2). The motor shall be capable of starting with a full cylinder and building up to rated speed without tripping the thermal overload protective device (see 4.4.3). The cylinder shall be equipped with a washing device so arranged that the vegetables are washed as the skins are being removed. The machine shall not move more than 1/2 inch from its original floor position when tested as specified in 4.4.1. Unless otherwise specified (see 6.2), the exterior cylinder shell and base shall be stainless steel conforming to 3.3.1. Stainless steel used for food contact surfaces shall conform to 3.3.1, except aluminum may be used for the vegetable guide or chute, hinged door and legs.

3.4.1 Cylinder. The cylinder shall be cast iron, carbon steel, sheet aluminum, or stainless steel. The inside surface of the cylinder shall be one of the following:

a. Silicon carbide fused to a cast iron cylinder.
b. Silicon carbide bonded with a thermosetting resin or epoxy adhesive to a sheet aluminum cylinder, a carbon steel cylinder, or a stainless steel cylinder.
c. A ribbed stainless steel cylinder.
d. Silicon carbide bonded with an asphalt compound to a sheet aluminum cylinder.
e. Aluminum oxide fused to a sheet aluminum cylinder.

When silicon carbide or aluminum oxide is used, it shall completely and uniformly cover the inside surface of the cylinder. After testing in accordance with 4.4.1, the silicon carbide or aluminum oxide shall still be intact, without looseness or bare spots.

3.4.2 Disc. The disc shall be cast iron, cast steel, cast aluminum, formed aluminum, or stainless steel sheet. Each disc shall be removable through the top of the cylinder. The top surface of the disc shall be completely and uniformly covered with silicon carbide or aluminum oxide, except for short, vegetable-agitating lobes which may be either with or without abrasive. The top surface of the disc shall be one of the following:

a. Silicon carbide fused to the cast iron or cast aluminum.
b. Silicon carbide bonded with a thermosetting resin to the cast iron, cast aluminum, or molded fiberglass.
c. Silicon carbide bonded with an asphalt compound to the cast aluminum.
d. Aluminum oxide fused to the sheet aluminum.

The abrasive surface of the disc shall remain intact, without looseness or bare spots, after the accelerated life test specified in 4.4.1.

3.4.3 Vegetable outlet. The cylinder shall be provided with a vegetable discharge outlet consisting of a hinged metal door, with brass, stainless steel, or wear-resisting aluminum alloy hinge pins; a door-latching mechanism; and a metal vegetable guide or chute. The height of the outlet shall be not less than 37 inches and not more than 40 inches above the floor. The door shall open and close easily and shall have a positive locking action. The inside surface of the hinged metal door shall line up with the inside surface of the cylinder wall when in the closed position. The inside surface of the door shall be lined with the same abrasive as the inside of the cylinder. The door shall be equipped with a rubber gasket to prevent leakage, or there shall be a trough and drain arranged around, or under the door, so that any seeping is automatically returned to the waste outlet of the cylinder. There shall be no leakage of water from either the cylinder or waste compartments when tested as specified in 4.4.4. The door-latching mechanism shall automatically compensate for wear of the gasket.

3.4.4 Peel trap. The peel trap for style 2 machine shall be an integral part of the machine and shall consist of a removable wire mesh or perforated sheet metal basket constructed of stainless steel, carbon steel, or brass. Carbon steel or brass shall be tinned or zinc plated after the basket has been fabricated. The style 1 machine shall be furnished with a peel trap basket for attachment to the discharge hose. A peel trap is not required when disposer is provided.

3.4.5 Waste outlet. A threaded outlet shall be located below the level of the disc for connection to a waste water drain. The machine drain system and outlet shall completely drain the compartment beneath the disc when tested as specified in 4.4.2. The outlet shall be at least 1-1/2 inch iron pipe size (IPS) for size A and B machines and at least 2 inch IPS for size C.

3.4.6 Water inlet and sprayer. The water sprayer shall be designed to spray, wash, and flush the inside of the cylinder and the vegetables during the peeling operation. The sprayer shall be designed to spray through an opening in the cover or shall be permanently attached to the top inside cylinder wall, and shall be so positioned that it does not interfere with cylinder loading. The supply-pipe to the spray-head shall be at least 1/4 inch IPS or 1/4 inch tube.

3.4.7 Cylinder covering ring. The cylinder covering ring shall be cast iron, cast aluminum, spun sheet aluminum, or fiberglass-reinforced plastic. The ring shall be either readily removable or so hinged to the cylinder as not to interfere with the removal of the disc. The ring shall prevent water from splashing out when the machine is peeling vegetables. The opening in the ring shall facilitate charging the cylinder.

3.4.8 Style 1, counter mounted. The style 1 machine shall be equipped with provisions for counter mounting.

3.4.9 Style 2, floor-mounted. The supporting base shall be cast iron, steel, aluminum, or stainless steel. The base shall provide a rigid and stable support for all machine components. The base shall be equipped with adjustable legs, with provision for bolting the legs to the floor.

3.4.10 Disposer, waste. When specified (see 6.2), the style 2, size B and C vegetable peeling machines shall be furnished with a waste disposer. The disposer housing shall be stainless steel, bolt mounted, suitable for mounting to 7-1/2 inch inside diameter throat opening, capable of operating in either direction and equipped with UL approved "On-Off" switch. Breaker bars and grinding teeth shall be hardened and ground. The disposer motor shall be as specified in 3.4.11.1. A tailpiece of chrome-plated brass shall be provided for 1-1/2 inch drain connection. A peel trap is not required when disposer is provided. The waste disposer shall operate smoothly disposing of vegetable peelings without leakage when tested as specified in 4.4.2.

3.4.11 Electrical components.

3.4.11.1 Motors. Unless otherwise specified (see 6.2), the vegetable peeling machine motor shall be suitable for operation on a nominal 208-volt, three-phase, 60-hertz (Hz) service. The motor shall be capacitor-start type, conforming to CC-M-1807 not less than 1/3 (248 W), 3/4 (559 W), and 1 horsepower (746 W) for sizes A, B, and C machines, respectively. Motor terminals shall be totally enclosed. The disposer motor shall be 1/2 HP (373 W) minimum, rated for continuous operation, 115 volt, 60 hertz, 1-phase, manual reset overload protection, equipped with permanently lubricated bearings (ball for upper shaft and sleeve for lower shaft support). The manual reset overload protection button shall be easily accessible to the operator.

3.4.11.2 Wiring. The machine shall be completely wired. Provisions shall be made for a grounded permanent power supply by electric conduit. When specified (see 6.2) vegetable peeling machines shall be supplied with power supply cords with attachment plugs in accordance with ANSI C 73 as follows:

Voltage	System	Machine	Attachment plug
115 V, 60 Hz, 1 ph	2 pole 3 wire	Sizes A and B	ANSI C 73.42 (L5 - 15P)
115 V, 60 Hz, 1 ph	2 pole 3 wire	Size C	ANSI C 73.72 (L5 - 20P)
208 V, 60 Hz, 1 ph	2 ple 3 wire	Sizes A, B and C	ANSI C 73.74 (L6 - 15P)
208 V, 60 Hz, 3 ph	3 pole 4 wire	Sizes B and C	ANSI C 73.85 (L15 - 20P)

3.4.11.3 Timer. When specified (see 6.2), the vegetable peeling machine shall be provided with a timer. The timer shall be adjustable in increments of 15 seconds up to at least 4 minutes, with the increments permanently marked on a timer dial.

3.4.11.4 Switch. Switch and wiring shall be conveniently and safely located so as to preclude the possibility of their being splashed by water which has accidently reached the drive-belt, or accidently wetted by any other means.

3.4.11.5 Fungus and moisture resistance of electrical components. When specified (see 6.2), the machine shall be treated to resist fungus and moisture. Circuit elements, which have a temperature rise of not more than 75 deg. F, when operating at full load, shall be coated with fungus-resistant varnish conforming to MIL-V-173. Circuit elements include, but are not limited to, cable, wire, terminal blocks, capacitors, and coils. Electrical components such as switches, fuses, and contacts, shall not be treated. Other materials and components which are inherently fungus resistant or are protected by hermetic sealing need not be treated.

3.4.12 Drive. Oil-bath housings of gear trains shall be charged with oil or grease to the proper level, and means shall be provided to change the lubricant. To maintain the correct belt tension, a manually operated adjusting device, with a take-up of not less than 1/4 inch per foot of belt, shall be provided. If the drive (belt or pulleys) is visible to the operator, or in any exposed location, a belt guard shall be provided. The maximum peeling-disc rotation shall be 360 revolutions per minute (r.p.m.), 350 r.p.m. and 305 r.p.m., for sizes A, B, and C, respectively (see 4.4.2).

3.4.12.1 Bearings. Drive bearings shall be sleeve, ball, or roller type, sealed and splash-proof to exclude water and dirt and prevent loss of lubricant. Bearings shall be lubricated as specified in 3.4.12.2.

3.4.12.2 Lubrication. All bearings and other moving parts of the vegetable peeling machine shall be provided with means for lubrication except as specified in 3.4.12, unless they are permanently lubricated and sealed. Bearings shall be oil-lubricated or packed with grease and sealed. Self lubricated sintered metal bearings, if used, shall be enclosed.

3.4.13 Electromagnetic compatibility. When specified (see 6.2), the vegetable peeling machine shall be designed for electromagnetic compatibility in accordance with class IIB of MIL-STD-461 (see 4.2.6).

3.4.14 Noise limits. The vegetable peeling machine shall not exceed 85 decibels A- weighted at the normal operator position when tested as specified in 4.4.5.

3.5 Operation. When tested as specified in 4.2.5, the machine shall function smoothly, without excessive vibration or noise. All adjustment and control devices shall function as intended.

3.6 Repair and maintenance. All major assemblies and installed attachments shall be accessible for maintenance, repair, and replacements. Access panels, covers, and plates shall be provided as required for component adjustment, repair, or replacement and shall be fastened with easily operated quick-disconnect fasteners or with screws.

3.7 Finish. The vegetable peeling machine, including all components shall have the manufacturer’s standard finish, except the exterior of the cylinder shall not be painted. The finish shall be smooth, uniform, and free of soil and corrosion.

3.8 Marking. Identification and operating instructions shall be permanently and legibly marked directly on the item or on an aluminum, brass, or stainless steel plate firmly affixed to the item. Marking shall be stamped, embossed, engraved or applied by photosensitive means. The plate thickness shall be not less than 0.012 inch. The identification or name plate, and instruction plate shall be affixed near the top of the cylinder in clearly visible locations where they can be read without stooping.

3.8.1 Identification. Each vegetable peeling machine identification plate shall include the manufacturer's model and serial number, name, tradename or trademark, of such known character as to be readily identifiable to the manufacturer. The ID plate will also contain the DLA contract number and National Stock Number under which equipment was purchased. In addition, such information as required by UL 73 for the vegetable peeling machine shall be included on the plate.

3.8.2 User's instruction plate (for military agencies only). Unless otherwise specified (see 6.2), each vegetable peeling machine purchased for military agencies shall be equipped with a user's instruction plate. The instructions shall be in characters not less than 3/32 of an inch high except that the words "VEGETABLE PEELER" shall be in characters not less than 3/16 of an inch high; the words "USER'S INSTRUCTIONS" shall be in characters not less than 1/8 of an inch high.

VEGETABLE PEELER

USER'S INSTRUCTIONS

1. Potatoes should be sorted to obtain uniform size, and also to eliminate foreign material.
2. Start motor before loading.
3. Turn on water. Use only sufficient water to rinse potatoes. Too much water will tend to soften potatoes.
4. Load machine with 3/4 of cylinder capacity. Do not overload.
5. To discharge peeled potatoes, simply open discharge door. Do not stop machine during peeling operation; allow it to run until machine is empty.
6. Scrub abrasive wall and disc with stiff fiber brush after each use.
7. Flush bowl and peel trap thoroughly after cleaning. [1]

[1] When a style 1 or waste disposer is specified the words "and peel trap" shall be removed.

3.9 Workmanship. The finished vegetable peeling machine shall be free of corrosion, marred surfaces, dents, punctures, fractures, rough edges, burrs, and slivers. All welds shall be smooth and uniform, completely fused, without undercuts, cracks, burnholes, or fractures. All fasteners shall be tight. No component shall be missing or malformed. All components shall be assembled, adjusted, and aligned.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specifications where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.2 Quality conformance inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with MIL-STD-105.

4.2.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced specifications and standards unless otherwise excluded, amended, modified, or qualified in this specificatin or applicable purchase document.

4.2.2 End item visual examination. The end item shall be examined for the defects listed in table I. The lot size shall be expressed in units of machines. The sample unit shall be one complete machine. The inspection level shall be II and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5 for major defects and 6.5 for total (major and minor combined) defects.

TABLE I. Classification of defects

Examine	Defect	Classification Major	Minor
Standard product	Item not in accordance with manufacturer's standard product except for changes necessary to comply with specification requirements.	X	
Finish	Not manufacturer's standard finish (except cylinder exterior shall not be painted).	X	
	Any part corroded.	X	
	Any part soiled.		X
	Finished surfaces not smooth and uniform.	X	

TABLE I. Classification of defects (cont'd)

Examine	Defect	Classification Major	Minor
Construction, design, and workmanship, general	Any part missing.	X	
	Any part fractured, split, punctured, torn, dented, creased, bowed, sprung, malformed,	X	
	Functioning component that is inoperative or will not function as intended.	X	
	Component or assembly damaged or defective.	X	
	Not connected or joined as specified or poorly accomplished.	X	
	Adjustable assembly that cannot be adjusted.	X	
	Belt guard not provided for exposed drive.	X	
	Adjustable assembly not properly adjusted to perform the function intended.	X	
	Castings miscast, incomplete or contain blowholes.	X	
	Rough edges, burrs, or slivers.	X	
	Marred surfaces, dents, or punctures.	X	
Electrical	Motor, wiring, timer, switch not as specified.	X	
Rivets	Loose.	X	
Welding and brazing	Incomplete, through burn holes, cracked, severe undercut, porous, fractured, or otherwise not fused.	X	
	Slag inclusion, not smooth and uniform, scale or flux deposit not removed.		X
Threaded components	Broken, stripped, or fractured.	X	
	Not drawn tight.		X
Marking for identification	Missing, incomplete, not legible; not specified type or size; not affixed in the prescribed manner; not of the specified material.	X	
	Not in a clearly visible location where it can be read without stooping.	X	

TABLE I. Classification of defects (cont'd)

Examine	Defect	Classification Major	Minor
Instructions	Incomplete, not legible, or contents not as specified.	X	
	Instruction plate not in a clearly visible location where it call be read without stooping.	X	

4.2.3 End item dimensional examination. The end item shall be examined for conformance to all dimensions specified. Any dimension not within the specified tolerance shall be classified as a defect. The lot size shall be expressed in units of machines. The sample unit shall be one complete machine. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 4.0.

4.2.4 End item performance testing. One vegetable peeling machine selected at random from each inspection lot shall be tested as specified in 4.4.1 through 4.4.5. Any test failure shall be cause for rejection of the lot represented.

4.2.5 End item operation testing. Every vegetable peeling machine shall be completely assembled, connected to a power source, and operated without load. Any machine failing to conform to all operation requirements in 3.5 shall be rejected.

4.2.6 Electromagnetic compatibility testing. When electromagnetic compatibility is required, one production unit from the initial lot shall be tested by the supplier in accordance with Method CE03 and RE02 of MIL-STD-462. The Government reserves the right to witness tests performed by the contractor or an independent testing agency. The supplier shall furnish the contracting offier written certification that the Interference Control Plan, the EMI/EMC Test Plan, and the Electromagnetic Test Report Requirements meet MIL-STD-461. Any nonconformance shall constitute failure of this test.

4.2.7 Packaging inspection. An examination shall be made to determine that preservation, packing and marking comply with the section 5 requirements. Defects shall be scored in accordance with the list below. The sample unit shall the one shipping container fully packaged. The lot size shall be the number of containers in the inspection lot. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 4.0.

Examine	Defect
Marking (exterior and interior)	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application
Materials	Any component missing, damaged, or not as specified

4.3 Certificate examination. Certificates of compliance, certified test reports, or listing marks for codes and standards, as applicable, that are submitted as proof of compliance with the requirements of 3.2, shall be examined and validated.

4.4 Methods of inspection. The first three tests shall be performed in the order shown below.

4.4.1 Vibration and accelerated life test. Vibration shall be tested by filling the machine with a normal load (3/4 - full cylinder) of 2-inch cubical, hard maple blocks. The blocks shall be loaded so as to give the maximum possible unbalance when the cylinder covering ring is in position. The machine shall be resting on a smooth concrete floor and the position of the legs or base shall be clearly marked on the floor before the machine is started. The machine shall be run for 5 minutes without water, and the leg positions checked against the leg marks on the concrete floor to determine compliance with 3.4. The accelerated life test shall be accomplished by filling the machine 1/2 full with the blocks specified above and operating it for 1 hour with a normal flow of flushing water, after which the abrasive inside surface of the cylinder and abrasive top surface of the disc shall be checked for looseness or bare spots to determine compliance with 3.4.1 and 3.4.2. Any nonconformance shall constitute failure of this test.

4.4.2 Cylinder capacity, peeling and disc rotation test. The machine shall be loaded with clean unpeeled potatoes until 3/4-full. The potatoes shall be removed and weighed to determine compliance with capacity requirement in 3.4, and then placed back into the machine. The machine shall then be operated for not more than 3 minutes, and stopped. During this test, disc r.p.m. shall be checked to determine compliance with 3.4.12. Immediately after all the potatoes are discharged and the machine is stopped, the disc shall be removed and the compartment beneath the disc shall be examined to determine compliance with 3.4.5. The potatoes shall be examined to determine compliance with the completeness of peeling, peeling time, and weight loss requirements of 3.4. The weight loss shall be the difference between the weight of the specified charge of unpeeled potatoes and the weight of satisfactorily peeled and thoroughly washed potatoes. Any nonconformance shall constitute failure of this test. When machine with disposer is specified, the disposer shall be operated concurrent with the above test to determine compliance with 3.4.10. Any nonconformance shall constitute failure of this test.

4.4.3 Motor overload. The machine with a cylinder full of potatoes shall be placed in operation to determine compliance with the overload requirement of 3.4. Any nonconformance shall constitute failure of this test.

4.4.4 Leakage. The waste compartment below the bottom level of the disc shall be filled with water after sealing the waste outlet. The machine shall be connected to the electric supply circuit and operated for 15 minutes. At the end of 15 minutes there shall be no leakage of water from either the cylinder or the waste compartments except as permitted by 3.4.3. Any nonconformance shall constitute failure of this test.

4.4.5 Noise level measurement. The vegetable peeling machine noise level shall be measured in accordance with the field method of ANSI S1.13 except that the A- weighted network shall be used in lieu of the octave or narrow band analyzers to determine conformance with 3.4.14. Any nonconformance shall constitute failure of this test.

5. PACKAGING

5.1 Preservation. Preservation shall be level A or Commercial as specified (see 6.2).

5.1.1 Level A.

5.1.1.1 Disassembly. Machines having removable legs shall have the legs detached from the base and all bolts, nuts, and washers placed in mating parts and secured to prevent their loss.

5.1.1.2 Cleaning. All exposed, uncoated, ferrous metal surfaces of the machine shall be cleaned process C-1, and thoroughly dried in accordance with MIL-P-116.

5.1.1.3 Preservative. All cleaned, uncoated, ferrous metal surfaces shall be coated with type P-14 preservative of MIL-P-116.

5.1.1.4 Protection of preservative. Surfaces, from which preservative might be removed by contact with packaging and packing materials, shall be covered or wrapped with greaseproof barrier material conforming to type I or II, grade A of MIL-B-121. Barrier material shall be secured with twine made of jute, sisal, manila, or cotton, or tape conforming to type III, grade A of PPP-T-45, or heat sealed when heat sealable barrier material is used.

5.1.1.5 Belts and sheaves. Belts shall be removed. Sheaves, cleaned as specified in 5.1.1.2 shall be coated with primer conforming to TT-P-664, thoroughly dried and then the belts replaced.

5.1.1.6 Sealing. Switches, water inlets and outlets, and all openings into motors and control boxes shall be sealed with tape specified in 5.1.1.4. A caution tag containing the words "Remove tape from electric motor prior to operation of the machine" shall be secured in a prominent location on the machine.

5.1.1.7 Unit packing. All removable components such as abrasive disc, cover, peel trap, and hopper shall be secured in a manner as to prevent movement and damage during transit. All detached components shall be unit packed in a snug-fitting fiberboard box or boxes conforming to style RSC, type CF, variety SW, or type SF, class domestic of PPP-B-636. Box closure shall be in accordance with method II of the appendix of PPP-B-636.

5.1.2 Commercial. Each machine shall be preserved in accordance with MIL-STD-1188.

5.2 Packing. Packing shall be level A, B, or Commercial as specified (see 6.2).

5.2.1 Level A packing.

5.2.1.1 Machines weighing more than 500 pounds. Each machine weighing more than 500 pounds, preserved as specified in 5.1, shall be packed in a crate conforming to type I, class 1 or 2, style a of MIL-C-104. The fiberboard box containing detached components shall be wrapped in barrier material conforming to class L-2 (b) or M-1 of PPP-B-1055. All seams and closures of the wrap shall be completely sealed with a 3/4 of an inch minimum width continuous seam of water-resistant adhesive conforming to MMM-A-260. The wrapped box shall be secured in an unused portion of the shipping container. Contents shall be anchored in accordance with the appendix of the crate specification. A minimum clearance of 1 inch shall be maintained between the top, sides, and ends of each bolted machine and the interior of the crate.

5.2.1 Machines weighing 500 pounds or less. Each machine weighing 500 pounds or less, preserved as specified in 5.1, shall be packed in a cleated plywood shipping container conforming to overseas type, type 3 load of PPP-B-601, with exceptions specified in 5.2.1.2.1, or a nailed wood shipping container conforming to class 2, style 2 or 4, type 3 load of PPP-B-621, with exceptions specified in 5.2.1.2.2. The contents shall be anchored, clearance provided, and the fiberboard box containing detached components waterproofed and secured as specified in 5.2.1.1. Each machine shall be provided with a full length shroud made of barrier material and having all seams sealed as specified in 5.2.1.1. Closure and strapping shall be in accordance with the appendix of the applicable container specification.

5.2.1.2.1 Exceptions to PPP-B-601. Each shipping container shall have the base constructed of a sheet of plywood, as specified in the container specification, two nominal 2- by 4-inch skids secured to the bottom, two nominal 2- by 6-inch headers (end floor members) on top of the floor panel secured to the skids through the floor panel. The side panels of each container shall extend down to within 1/4 of an inch of the bottom of the skids. The end panels of each container shall rest on the top of the skids and be secured to the sides of the headers (end floor members). When the peeling machine is secured by bolting to the base, the bolts shall pass through the skids and the header, headers and floor, or through added nominal 2- by 6-inch load bearing members secured to the skids as specified above, centered at the bolts securing the peeling machine to the base.

5.2.1.2.2 Exceptions to PPP-B-621. Each shipping container shall have the base constructed of two nominal 2- by 4-inch skids, nominal 1-inch floor boards secured at right angles to the skids between two 2- by 6-inch headers (end floor members) secured at right angles to the skids. The end panels shall extend down to within 1/4 of an inch of the bottom of the skids and be secured to the sides of the skids. The horizontal members of the sides shall rest on top of the skids and be secured to the sides of the headers (end floor members). When the peeling machine is secured by bolting to the base, it shall be secured as specified in 5.2.1.2.1.

5.2.2 Level B packing.

5.2.2.1 Machines weighing more than 500 pounds. Each machine weighing more than 500 pounds, preserved as specified in 5.1, shall be packed as specified in 5.2.1.1, except that waterproof wrap shall not be required for fiberboard boxes and the waterproof barrier material shall not be required for the crate.

5.2.2.2 Machines weighing 500 pounds or less. Each machine weighing 500 pounds or less, preserved as specified in 5.1, shall be packed in a cleated plywood shipping container conforming to domestic type, style A or B or PPP-B-601, with exceptions specified in 5.2.1.2.1, or a nailed wood shipping container conforming to class 1, style 2 or 4, type 3 load of PPP-B-621, with exception specified in 5.2.1.2.2. The fiberboard box containing detached components shall be secured in an unused portion of the shipping container. The contents shall be anchored in accordance with the appendix of MIL-C-104. A minimum clearance of 1 inch shall be maintained between the top, sides, and ends of each bolted machine and the interior of the container. Closure and strapping shall be in accordance with the appendix of the applicable container specification. Alternatively, the shipping container may conform to class 1, style G of PPP-B-640 when the gross weight does not exceed 275 pounds.

5.2.3 Commercial packing. Machines preserved as specified in 5.1, shall be packed in accordance with MIL-STD-1188.

5.3 Marking. Marking shall be in accordance with 5.3.1 or 5.3.2, as specified (see 6.2).

5.3.1 Civil agencies. In addition to any special marking required by the contract or purchase order, unit packs and shipping containers shall be marked in accordance with FED-STD-123 or MIL-STD-1188, as applicable.

5.3.2 Military requirements. In addition to any special marking required by the contract or purchase order, unit packs and shipping containers shall be marked in accordance with MIL-STD-129 or MIL-STD-1188, as applicable. Special handling markings applicable to arrows and the words "THIS SIDE UP" shall apply.

6. NOTES

6.1 Intended use. The vegetable peeling machines are intended for use in kitchens for peeling vegetables such as potatoes, carrots and turnips.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents:

(a) Title, number, and date of this specification.
(b) Styles and sizes required (see 1.2.1).
(c) When a stainless steel machine is not required (see 3.4).
(d) When waste disposer is required for size B and C machines (see 3.4.10).
(e) Electrical characteristics, if other than specified (see 3.4.11.1).
(f) When a power supply cord is required (see 3.4.11.2).
(g) When a timer is required (see 3.4.11.3).
(h) When fungus and moisture resistance of electrical components is required (see 3.4.11.5).
(i) When electromagnetic compatibility is required (see 3.4.13).
(j) When instruction plate for Military agencies is not required (see 3.8.2).
(k) Selection of the applicable levels of preservation, and packing (see 5.1 and 5.2).
(l) Marking required (see 5.3).

6.3 Contract data requirements. Any data items to be delivered under any contract for items covered by this specification should be specifically called for in the contract in accordance with the applicable regulations of the procuring activity.

6.4 Standard pack (civil agencies). The standard pack for civil agencies shall be as classified in 5.1.1 and 5.2.2.

6.5 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of this document (see 3.3).

MILITARY INTERESTS:

Custodians

Army - GL
Navy- YD
Air Force - 99

Review Activities

Army - CE, MD
Navy - MC

User Activity

Navy - SA

CIVIL AGENCY COORDINATING ACTIVITIES:

GSA - FSS
HHS - HSM
VA - OSS

PREPARING ACTIVITY:

Army - GL

Project No. 7320-0674

OO-V-185F
INTERIM AMENDMENT-2 (Army-GL)
March 1, 1988
SUPERSEDING
INTERIM AMENDMENT-1 (Army-GL)
June 5, 1986

INTERIM AMENDMENT

TO

FEDERAL SPECIFICATION

VEGETABLE PEELING MACHINE, ELECTRIC

This interim amendment was developed by the U.S. Army Natick Research, Development and Engineering Center (GL), Natick, MA 01760-5014, based upon currently available technical information. The General Services Administration has authorized this interim amendment as part of OO-V-185F (Army-GL), dated June 14, 1983.

PAGE 3

2.1, under "Military Standards": Delete "MIL-STD-1188" and its title.

* 2.1, under "Military Standards": add the following:

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

MIL-STD-1472 - Human Engineering Design Criteria for Military Systems, Equipment and Facilities."

2.2, under "American Society for Testing and Materials (ASTM)": Add "D-3951 - Standard Practice for Commercial Packaging".

PAGE 6

3.4.1.b, line 1, after "carbide": Add "or silica quartz".

3.4.1, lines 12 and 14, after "carbide": Add ", silica quartz".

3.4.2, line 4, after "carbide": Add ", silica quartz".

3.4.2.b, after "carbide": Add "or silica quartz".

AMSC N/A FSC 7320

DISTRIBUTION STATEMENT A. Approved for public release, distribution is unlimited.

PAGE 9

* 3.4.13, after last sentence: Add "When specified for shipboard use, requirements and test limits of class A4 for surface ships and class A5 for submarines of MIL-STD-461 apply. Shipboard equipment shall meet the emission and susceptibility requirements for CE01, CE03 and RE02."

* Add the following new paragraphs:

"3.4.15 Human factors criteria. Human factors engineering criteria, principles, and practices, as defined in MIL-STD-1472, shall be incorporated into the design of the vegetable peeling machine. Maintenance and operation tasks shall permit safe and efficient performance by the 5th percentile female to the 95th percentile male as defined in MIL-STD-1472. Particular attention shall be given to the machine such that the hands of the 5th percentile female shall not inadvertently come in contact with any moving mechanisms. Controls and switches shall be selected and integrated into the design of the machine so as to meet the applicable requirements of MIL-STD-1472. Sufficient clearance or free area required around an item shall permit an individual with applicable 5th to 95th percentile body dimensions and physical capabilities to safely operate, maintain, remove, or replace that item. When establishing accessibility requirements, both physical and visual access must be provided along with access for the use of any tools, test equipment, or replacement parts needed. When inspecting for defects and performing tests, the equipment shall adhere to the human factors engineering considerations listed herein.

* "3.4.16 Inclined operation. When specified for shipboard use, the vegetable peeling machine shall operate satisfactorily when inclined at an angle of 15 degrees each side of the vertical in each of two vertical planes at right angles to each other, with no spillage of fluid or product when tested as specified in 4.4.6.

* 3.4.17 Environmental suitability. When specified for shipboard use (see 6.2), the vegetable peeling machine shall be capable of withstanding ship's vibration and motion. Controls, switches, moving parts and electrical circuits shall operate under shipboard conditions without malfunction, binding, excessive looseness, or damage when tested as specified in 4.4.7."

PAGE 11

Add the following:

"4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this document shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirement in the document shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the

contract. Sampling in quality conformance dies not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material."

PAGE 13

* 4.2.6, line 3, after "Method": Add "CE01,".

PAGE 15

* Add the following paragraphs:

* "4.4.6 Inclined operational test. Position the vegetable peeling machine with the base set at an angle of 15 degrees, then operate the machine for 30 seconds at each side of the vertical in each of two vertical planes at right angles to each other. At each of these positions observe for conformance with specified requirements (see 3.4.16). For the test, the vegetable peeling machine shall be loaded with potatoes until 3/4-full.

* 4.4.7 Shipboard environmental test. The vegetable peeling machine under normal operating conditions, shall be tested in accordance with MIL-STD-167/1, type I equipment. The vegetable peeling machine shall be secured to the test machine in the same manner that it will be secured on shipboard. Failure of the vegetable peeling machine to perform its function during and after testing, or meeting requirements of 3.4.17 shall constitute failure of this test. For the test the machine shall be loaded with potatoes until 3/4-full."

PAGE 16

5.1.2, line 2: Delete MIL-STD-1188" and substitute "ASTM D 3951".

PAGE 17

5.2.3, line 2: Delete "MIL-STD-1188" and substitute "ASTM D 3951".

PAGE 18

5.3.1 and 5.3.2, line 3: Delete "MIL-STD-1188" and substitute "ASTM D 3951".

* 6.2: Add the following:

* "(m) When the vegetable peeling machine is for shipboard use (see 3.4.16 and 3.4.17)."

Add the following new paragraph:

* "6.3.1 Technical manuals. The requirement for technical manuals should be considered when this document is cited in a contract. If technical manuals are required, a contract exhibit must be prepared to fully describe statement of work criteria and delivery instructions, and cite the applicable technical manual requirements. The technical manuals must be acquired by separate Contract Line Item Number (CLIN) in the contract."

"The margins of this amendment are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment."

MILITARY INTERESTS:

Custodians

Army - GL
Navy - YD
Air Force - 99

Review Activities

Army - CE, MD
Navy - MC, SH
Air Force - 84
DLA - GS

User Activity

Navy - SA

CIVIL AGENCY COORDINATING ACTIVITIES:

GSA - FSS
HHS - HSM
VA - OSS

PREPARING ACTIVITY:

Army - GL

Project No. 7320-A838