

MIL-L-43615A

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SUPERSEDING

MIL-L-43615

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MILITARY SPECIFICATION

LAUNDRY PRESS UNITS, COAT, TWO-OPERATOR

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers laundry presses for finishing of laundered coats when used as a unit by two operators.

* 1.2 Classification. The coat laundry presses covered by this specification shall be of the following types, styles and combination units as specified (see 6.2).

Type I - Press, pneumatic, collar and lapel
Type II - Press, pneumatic, cabinet type, sleeve
Type III - Press, pneumatic, cabinet type, bosom, body, and yoke

Style A - Single buck
Style B - Double buck

Combination Unit No. 1 - Type, style and quantity required

Type I - one
Type II - one
Type III, style A - two

Combination Unit No. 2 - Type, style and quantity required

Type I - one
Type II - one
Type III, style B - one

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2. APPLICABLE DOCUMENTS

- * 2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

SPECIFICATIONS

FEDERAL

- CC-M-636 - Motor, Alternating-Current, (Fractional Horsepower)
- CC-M-641 - Motor, Alternating-Current, (Integral Horsepower, 200 HP and Smaller)
- QQ-C-390 - Copper Alloy Castings (Including Cast Bar)
- QQ-N-281 - Nickel-Copper-Alloy Bar, Plate, Rod, Sheet, Strip, Wire, Forgings, and Structural and Special Shaped Sections
- QQ-N-288 - Nickel-Copper Alloy and Nickel-Copper-Silicon Alloy Castings

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- MIL-T-152 - Treatment, Moisture-and-Fungus-Resistant, of Communications, Electronic, and Associated Electrical Equipment
- MIL-L-3153 - Laundry and Dry Cleaning Machinery and Equipment (For Fixed Installations), Preparation for Delivery of

STANDARDS

FEDERAL

- FED-STD-595 - Colors

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- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
- MIL-STD-130 - Identification Marking of U.S. Military Property
- MIL-STD-461 - Electromagnetic Interference Characteristics Requirements for Equipment
- MIL-STD-462 - Electromagnetic Interference Characteristics, Measurement Of

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

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- * 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:

National Electrical Manufacturers' Association Standards (NEMA)

Publication No. ICl-1965 - Industrial Controls

(Application for copies should be addressed to the National Electrical Manufacturers' Association, 155 East 44th Street, New York, NY 10017.)

Underwriters' Laboratories, Inc. (UL)

UL Standard 508 - Industrial Controls

(Application for copies should be addressed to the Underwriters' Laboratories, Inc., 207 East Ohio Street, Chicago, IL 60611; 1285 Walt Whitman Road, Melville, Long Island, NY 11746; or 1655 Scott Boulevard, Santa Clara, CA 95050.)

National Fire Protection Association (NFPA)

NFPA Standard No. 70 - The National Electrical Code

(Application for copies should be addressed to the National Fire Protection Association, 60 Batterymarch Street, Boston, MA 02110.)

American Society of Mechanical Engineers Code (ASME)

Boiler and Pressure Vessel Code, Section VIII, Unfired Pressure Vessels

Welding Qualifications of the American Society of Mechanical Engineers

(Application for copies should be addressed to the American Society of Mechanical Engineers, 345 East 45th Street, New York, NY 10017.)

American Society for Testing and Materials (ASTM)

- A 167 - Corrosion-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
- A 176 - Stainless and Heat-Resisting Chromium Steel Plate, Sheet, and Strip

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

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(Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

3. REQUIREMENTS

- * 3.1 Standard product. The laundry presses delivered under this specification shall be the manufacturer's commercial product, except for any changes necessary to comply with the specification requirements. All like items furnished on any one contract, including parts and subassemblies thereof, shall be new and interchangeable.

3.2 Codes and standards.

- * 3.2.1 NFPA. The installation of the electrical components and wiring of the laundry press shall conform to NFPA Standard No. 70.

3.2.2 UL. Electrical controls of the laundry press shall conform to UL Standard No. 508 for use in ordinary locations.

- * 3.2.3 NEMA. Motor controllers shall conform to performance requirements of NEMA Standards Publication No. ICI-1965.

3.2.4 ASME. All chests, cylinders, and chambers containing steam shall be fabricated and tested in accordance with the ASME code for unfired pressure vessels.

- * 3.3 Certification. Prior to approval of the preproduction sample, or if none is submitted, prior to approval of the first shipment, the supplier shall submit satisfactory evidence to the contracting officer or his authorized representative, that the laundry press or electrical components he proposes to furnish meet the requirements specified in 3.2.1, 3.2.2, 3.2.3 and 3.2.4, as applicable.

3.3.1 NFPA. Acceptable evidence of meeting requirements of 3.2.1 shall be the manufacturer's certified statement that the laundry press conforms to NFPA Standard No. 70.

3.3.2 UL. Acceptable evidence of meeting requirements of 3.2.2 shall be the UL label or a UL listing of the laundry press or the electrical components, or certification from an independent testing laboratory acceptable to the contracting officer or his authorized representative that the laundry press or electrical components conform to applicable UL Standards.

3.3.3 NEMA. Acceptable evidence of meeting the requirements of 3.2.3 shall be the manufacturer's certified statement that the motor controllers conform to NEMA Standard Publication No. ICI-1965. A tag or label attached to the controller(s) stating the component conforms to this standard is acceptable evidence.

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3.3.4 ASME. Acceptable evidence of meeting the requirements of 3.2.4 shall be a written certificate stating that each chest, chamber, and cylinder has been inspected by an inspector qualified under the provisions of the ASME code for unfired pressure vessels and that the ASME Code official stamp has been placed on each chest, chamber, and cylinder by the inspector. The stamp on each chest, chamber, and cylinder shall contain the U or UM symbol as applicable.

* 3.4 Materials. Materials not definitely specified, shall be of the quality normally used by the manufacturer for laundry press units provided the completed item complies with all the provisions of this specification.

* 3.4.1 Corrosion-resistant metal used in the fabrication of the laundry presses shall be corrosion-resisting steel conforming to the requirements of ASTM Specifications A 167 or A 176, as applicable; nickel-copper-alloy conforming to QQ-N-281 or QQ-N-288, or copper-alloy castings conforming to alloy numbers G1 through G8 of QQ-C-390.

* 3.4.2 Materials for fasteners. Rivets, bolts, screws, nuts, and washers shall be of steel except where brass or corrosion-resistant metal is to be fastened, in which case they shall be of brass or corrosion-resistant metal, respectively. Where dissimilar metals are fastened, bolts, rivets, screws, and nuts shall be of corrosion-resistant metal.

* 3.4.3 Pipe, tube, fittings, and valves. Pipe, tube, valves, and fittings used for air and steam lines shall comply with accepted plumbing practices.

3.4.4 Conduit and electric wire. Electrical conduit shall be rigid or flexible steel, or electrical tubing. All electrical wire shall be heat resistant grade, thermoplastic insulated.

* 3.4.5 Motors. Motors shall conform to the requirements of CC-M-636 or CC-M-641, and to the following requirements.

(a) All motors shall have windings impregnated to resist moisture.

(b) Motors shall have the proper starting characteristics and ample power with a reasonable factor of safety for their intended operation under full-load conditions without exceeding the permissible temperature rise.

(c) Motors shall be equipped with ball bearings, except that motors of 1/2 horsepower or less for horizontal applications may have sleeve bearings. Motor bearings shall be of the permanently lubricated type or shall have adequate and accessible means for lubrication.

* 3.5 Design and construction. Design and construction of the laundry presses shall conform to the requirements and construction details specified herein. The laundry presses shall be furnished complete with motors,

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driving mechanism, starters, and controllers, including master switches, timers, cut outs, and other electrical equipment and commercial accessories, as applicable, for operation of the laundry presses.

(a) Each coat press unit, combination No. 1 or 2, shall have a capacity for suitably pressing not less than 120 shirts, utility, man's cotton, olive green 107; coat, food handlers; coat, dental; and similar garments per hour when operated by two operators.

(b) The assembly of components shall have complete and proper inter-relationship.

(c) Starting, stopping, and control devices shall operate smoothly and positively.

(d) Moving parts and bearings shall evidence no overheating. Compliance with these requirements shall be determined when tested as specified in 4.4.3 and 4.4.4.

3.5.1 Equipment bases. Bases shall be constructed so that points of contact with the floor shall be in the same plane. Provisions for anchoring to the floor shall be provided. The base shall have anchor bolt holes of the diameter and amount to secure the press to the floor.

* 3.5.2 Pressures and temperatures. The assembly of pipe, tube, fittings, coils, cylinders, chests, and chambers using steam shall be designed and fabricated for a working steam pressure of not less than 125 pounds per square inch gage and shall withstand without leakage or permanent deformation, a hydrostatic test pressure established in accordance with the provisions of the ASME code for unfired pressure vessels based on a design pressure of not less than 150 psig. Compliance with these requirements shall be determined when tested as specified in 4.4.1. The pressing surfaces of the heads and bucks shall have a temperature of at least 345 F at a point nearest the steam inlet when tested as specified in 4.4.2.

* 3.5.3 Press pressure. The presses shall have the same basic operating characteristics and pressures between the head and buck as supplied for commercial use. The presses shall operate pneumatically on a working air pressure of 70 psig minimum, when tested as specified in 4.4.4.

3.5.4 Gearing. All gears shall have machined teeth and shall operate quietly. Spiral, hypoid, bevel, and worm gears, if used, shall operate in lubricant. When run in an oil bath, the pinion shall be of ferrous metal and the gear shall be of ferrous metal or bronze. Gears not run in oil bath may be of aphenolic formaldehyde resin, or other noise-reducing material. When gears are of a composition material, either the motor pinion or gear with which it meshes shall be at least 1/4 inch wider than the other, except when thrust bearings are used on the armature shaft, the gear and pinion may be of the same width.

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3.5.5 Replaceability of bearings. Bearings shall be replaceable.

3.5.6 Lubrication. Lubrication fittings for force type systems shall be provided and accessibly located for lubricating bearings (except motors, see 3.4.5). Where lubricant reservoirs are required for chain or gear drives, the reservoirs shall be provided with a threaded cap at the top, a drain plug at the bottom, and a measuring bayonet with a minimum and maximum marking.

3.5.6.1 Seals. Seals shall be provided to prevent the lubricant from entering part of the machine where cloth is handled (see 4.4.4).

3.5.7 Belts and pulleys. V-belts shall be of the grades commercially known as multiple-drive or variable speed types, except that where a single belt is furnished with a fractional-horsepower motor, a V-belt commercially known as a fractional-horsepower motor belt may be supplied in lieu of the multiple-drive or variable speed types. Pulleys for V-belts shall be suitably grooved. Chain drives shall be of the silent or roller-chain type.

3.5.8 Belt and chain tension adjustment. Means shall be provided for adjusting belt and chain tension.

3.5.9 Plumbing and fittings. Pipe, fittings, condensate traps, pressure-reducing valves, and all other valves for air, steam, and drains shall be furnished as complete assemblies suitable for installation with unions or other standard fittings. All steam and waste lines shall be installed to comply with accepted plumbing practices.

3.5.9.1 Valves and traps. Condensate traps (with three-valve by-pass), steam, drain, air, and other operational valves shall be accessible for operation and maintenance. Inlet steam and air supply connections shall be supplied with shut-off valves.

3.5.10 Spacing and extent of fastenings. The spacing and extent of rivets, bolts, and screws shall insure suitable fastenings and prevent bulging of the metals fastened.

3.5.11 Tolerances. Unless otherwise specified herein, tolerances shall be in accordance with the manufacturer's current commercial practice.

3.5.12 Safety devices. Exposed belts, chains, shafts, pulleys, gears, and other moving parts shall be fully enclosed or guarded. Guards shall be cast iron or sheet metal. All parts of the guard shall be rigid and secured to be readily removable without disassembling pipes or fittings on the machine. Provisions shall be made in guards fitted over parts requiring frequent adjustment to permit easy access. Access holes provided shall be fitted with covers.

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3.6 Construction details.

- * 3.6.1 Type I, collar and lapel press. The type I press shall have a buck 25 inches in length, 12 inches wide at the ends, and 7-1/2 inches at center with tolerances of plus or minus 2 inches in the length and plus or minus 1 inch in the width. The heads shall be approximately the same dimensions as the corresponding buck. The press shall be equipped with a condensate trap with a three-valve by-pass. The press shall be furnished with press controls for automatic releasing (see 3.6.1.4.1). The type I press shall consist of a rugged-steel frame supporting a steam-heated head conforming to a heated buck. The frame shall also support the work table, operating mechanism, and enclosure for the operating mechanism on both sides and front, and shall be provided with removable panels for inspection and maintenance.

3.6.1.1 Head construction. The heads shall be removable steam chambers of carbon or alloy steel or cast iron, or corrosion-resistant metal, concave in shape to conform to the buck. Aluminum heads are not acceptable. The upper surface shall be covered with sheet metal over asbestos or other approved heat-insulating material. Steel, cast-iron, or fabricated-steel ironing surfaces shall be plated with nickel, chromium, or other corrosion-resistant metal. All ironing surfaces shall be polished smooth. Base plate at the head shall be curved and shaped to fit the buck. The top plate of the press head, when used to form the upper part of the steam chamber, shall be made of the same material as the base plate, or of corrosion-resistant metal. Steam chambers shall be divided with steel members of the manufacturer's selection, properly welded in place.

3.6.1.2 Buck construction. The buck shall be a cast iron or steel steam chamber, convex in shape, substantially mounted and connected to the frame or mounted to permit alignment with the head. Aluminum bucks are not acceptable. The top plate of the buck shall be curved and shaped to fit the head and the articles for which the press is especially adapted. The bottom plate forming the lower part of the buck steam chamber shall be made of the same material as the upper plate, or of corrosion-resisting steel and the steam chamber shall be divided with steel members of the manufacturer's selection, properly welded in place.

3.6.1.2.1 Buck padding. A preformed, corrosion-resistant, woven, metallic pad, with double-faced nylon flannel, shall be provided directly over the buck. Tailored heat-resistant nylon cover cloth with draw cord and retaining springs, where needed, shall be placed over the metallic pad. Spring padding shall be furnished when required on the suppliers commercial model.

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3.6.1.3 Head and buck arrangement. The head, or both head and buck, shall be movable and spring counterbalanced as required. The yoke, where connected to the leverage system, shall be fitted with ball, roller, bronze or sintered cast-iron bearings, and shall be arranged so that it will not interfere with the placing of the goods or making proper contact with the opposite member when it is raised or lowered. The head and buck shall be arranged for front loading.

3.6.1.4 Pneumatic-operation. The press shall be fully opened automatically when pneumatic power is off. The head or both head and buck shall be pneumatically powered. Motion shall be continuous and uniform. The amount of pressure shall be adjustable. The press head, or both the head and buck, shall provide automatic takeup to compensate constantly for padding shrinkage. Compliance with these requirements shall be determined when tested as specified in 4.4.3. The press shall insure satisfactory pressure for garments of unequal thickness as well as those of uniform thickness. With an obstruction of 3/4 inch between the head and padded buck, the moving member or members shall not lock. Compliance with these requirements shall be determined when tested as specified in 4.4.4.

3.6.1.4.1 Press controls. Pneumatic operation of the press shall be controlled by two manually operated controls conveniently located and arranged so that both hands of the operator must be on the controls before the unit can be operated. Upon releasing one or both controls before the head has reached the closed position, the moving member shall return automatically and promptly to the open position. Compliance with these requirements shall be determined when tested as specified in 4.4.3. Type I presses shall be equipped with an automatic timer which releases press head from a pressing position and returns head to an open position after a pre-set ironing time. Compliance with this requirement shall be determined when tested as specified in 4.4.3.

3.6.2 Type II, sleeve press. The type II sleeve press shall consist of a rugged-steel frame supporting two movable steam-heated expansible bucks, vertically mounted to operate simultaneously on a single carriage and two sets of pneumatically operated, steam-heated, ironing chests which close around the buck and exert pressure over the entire surface of the padded buck, when the buck has been moved to the ironing position. The frame shall also support the operating mechanisms which shall be inclosed as much as possible and shall be provided with removable panels, for inspection and maintenance.

3.6.2.1 Buck construction. The bucks shall be removable steam chambers of steel or cast iron and shall have elliptical cross-sectional contours or flat parallel sides. The bucks shall be vertically mounted on a single carriage and shall be of sufficient length to provide for the complete ironing of the coat sleeves of standard manufactured sizes, from the shoulder seam to the cuff. Bucks shall be provided with padded wings or expandable air bags capable of being expanded by the operator to fit the varying diameters of sleeve size.

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3.6.2.2 Sleeve measuring device. The press shall be equipped with an operator-actuated sleeve-measuring device which, when placed or positioned on the shoulder seam, either mechanically or electrically, shall cause the bucks to enter the opened ironing chests at a height to assure the complete ironing of the sleeve from shoulder seam to the cuff. Compliance with this requirement shall be determined when tested as specified in 4.4.4.

3.6.2.3 Cuff clamps. Unless otherwise specified (see 6.2), a manually or semi-automatic operated cuff clamp shall be mounted near the top of each buck to provide for holding the cuffs in such a position that ironing chests shall not exert pressure on the cuffs.

3.6.2.4 Ironing chest construction. The two ironing chests shall be removable steam chambers of cast iron, or carbon, alloy, or corrosion-resisting steel and shall be concave or flat in shape to conform to either the right or left side of the buck. The chests shall be mounted in pairs, each pair shall be operated by a pneumatic-powered device which shall cause the two chests to open or to close and exert pressure against the bucks when they have moved into the ironing position. Steel or cast-iron ironing surfaces shall be plated with nickel, chromium, or other corrosion-resistant metal. All ironing surfaces of the chests shall be polished smooth.

3.6.2.4.1 Ironing chest operation. The chest shall be in an open position when the bucks are in the forward or loading and unloading position. The bucks, when moved into the ironing position, shall actuate the pneumatic-powered device which shall cause the chests to close around and exert pressure against the bucks. The press shall be provided with a timing device, which shall cause the chest to remain in the pressure position for a manually preset time. At the expiration of this time, the timing device shall cause the chest to open and shall simultaneously cause the bucks to return to the loading and unloading position. Compliance with these requirements shall be determined when tested as specified in 4.4.3.

3.6.3 Type III, style A, bosom, body, and yoke, single buck. The type III, style A, single buck cabinet press shall be capable of finishing the entire body except the collar, lapel, and sleeves of military type utility shirts in sizes small, medium, and large, made from material 8.2 ounces per square yard. The press shall be furnished with a yoke-pressing attachment unless the press is provided with an air-heated expansible yoke. The press shall consist of a rugged-steel frame supporting a movable steam or air-heated expansible buck or body form having side and sleeve expanders and neckband and tail clamps and a set of steam-heated chambers forming an ironing chest. If the buck is air-heated, all the necessary equipment for heating, supplying, and controlling the hot air to the buck shall be included as components of the press. The steel frame shall also support the operating mechanism, which shall be pneumatic-operated, and inclosed as much as possible; and shall be provided with removable panels for inspection and maintenance. Spring padding shall be furnished when required on the suppliers commercial model.

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3.6.3.1 Buck or body form construction. The buck or form shall be either steam heated or hot-air heated. If steam heated, it shall be a removable steam chamber of cast iron, cast copper-alloy, cast steel, or fabricated steel. If it is hot-air heated, provisions shall be made for blowing the air through the buck padding to keep the buck padding dry. The buck shall be provided with side expanders and sleeve expanders and shall be vertically mounted on a movable carriage. The carriage shall be operated by pneumatic cylinders which shall cause the buck to enter the cabinet in ironing position, at the will of the operator, and return to unloading position when released by a timer. The side and sleeve expanders shall be capable of being expanded by the operator so that the side expanders shall compensate for variations in shirt sizes and the sleeve expanders shall hold shirt sleeves out of the ironing chests. Compliance with this requirement shall be determined when tested as specified in 4.4.4. Side expanders shall be air bags or metal fins padded with heat-resistant material and covered with heat-resistant nylon cover cloth.

3.6.3.1.1 Buck padding. The buck shall be covered on both sides with a preformed, corrosion-resistant, woven, metallic pad. The woven, metallic pad shall be covered with double-faced nylon flannel and tailored heat-resistant nylon cover cloth having drawcord and retaining springs, as required. In addition to the woven, metallic pad, a spring-coil padding may be used on one or both sides of the buck. If the buck is steam heated in addition to the above, an asbestos-type material shall be placed between the woven, metallic pad and the double faced nylon flannel. No asbestos-type material is required on air-heated bucks.

3.6.3.1.2 Collar clamp. The buck shall be equipped with a manually or semi-automatic operated collar clamp which shall provide for the holding of the shirt neckband firmly in place while the shirt is being stretched over the form and the collar in such a position that it shall not come in contact with the ironing chest.

3.6.3.1.3 Tail clamp. Unless otherwise specified (see 6.2), the buck shall be equipped with a tail clamp for holding the body portion of the shirt being pressed firmly against the buck. The tail clamp shall have means to compensate for padding wear.

3.6.3.2 Ironing chest construction. The ironing chest shall consist of two removable steam chambers of cast iron, cast copper alloy, carbon or alloy steel, or corrosion-resistant metal shaped to conform to the buck. Cast-iron or steel ironing surfaces shall be plated with nickel, chromium, or other corrosion-resistant metal. All ironing surfaces shall be polished smooth. The chest shall comply with the ASME code for unfired vessels. The chest shall be operated by a pneumatic cylinder which shall cause the chest to open or to close and exert pressure against the buck when it is moved into ironing position. Compliance with this requirement shall be determined when tested as specified in 4.4.3.

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3.6.3.2.1 Ironing chest operation. The steam chests shall be in an open position when the buck is in the forward or loading and unloading position. When the press is equipped with a yoke-pressing attachment and the buck is dressed at the loading position, a push button shall be depressed and the shoulder or yoke pressing attachment shall be lowered onto the shoulder or yoke of the shirt. The shoulder or yoke press shall remain in the pressure pressing position for a manually preset time. At the expiration of this time, the timer device shall cause the shoulder or yoke press to open. By depressing a second button, it shall cause the buck to move into pressing position between the two ironing chests. The buck, when moved into the pressing position, shall actuate the pneumatic powered device which shall cause the chests to close around and exert pressure against the buck. The press shall be provided with a timing device, which shall cause the chest to remain in the pressure position for a manually preset time and, at the expiration of this time, shall cause the chest to open. Compliance with these requirements shall be determined when tested as specified in 4.4.3.

3.6.4 Type III, style B, bosom, body, and yoke, double buck. The type III, style B, double buck cabinet press shall be capable of finishing the entire bodies except the collar, lapel, and sleeve of military type and utility shirts in sizes small, medium, and large made from material 8.2 ounces per square yard. The press shall be furnished with a yoke-pressing attachment unless the press is provided with an air-heated, expansible yoke. The press shall consist of a rugged-steel frame supporting a movable steam or air-heated expansible buck or body form having side and sleeve expanders and neckband and tail clamps and a set of steam-heated chambers forming an ironing chest. If the buck is air-heated, all the necessary equipment for heating, supplying, and controlling the hot air to the buck shall be included as components of the press. The steel frame shall also support the operating mechanism, which shall be pneumatic operated, inclosed as much as possible, and shall be provided with removable panels for inspection and maintenance. Spring padding shall be furnished when required on the suppliers commercial model.

3.6.4.1 Buck or body form construction. Buck or body form construction shall conform to 3.6.3.1.

3.6.4.1.1 Buck padding. The buck padding shall conform to 3.6.3.1.1.

3.6.4.1.2 Collar clamp. The collar clamp shall conform to 3.6.3.1.2.

3.6.4.1.3 Tail clamp. The tail clamp shall conform to 3.6.3.1.3.

3.6.4.2 Ironing chest construction. The ironing chest construction shall conform to 3.6.3.2.

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3.6.4.2.1 Ironing chest operation. One buck shall be in the forward or loading and unloading station, while the other buck is in the steam chest and under pressure, during the pressing or ironing cycle. When the press is equipped with a yoke-pressing attachment and the buck is dressed at the loading position, a push button shall be depressed and the shoulder or yoke press lowered onto the shoulder or yoke area of the shirt. The shoulder or yoke press shall remain in the pressure position for a manually preset time and at the expiration of this time the timer device shall cause the shoulder or yoke press to open. Depressing a second button shall interchange the two bucks transferring one from the pressing or ironing station to the loading-unloading station and the other buck from the loading-unloading station into the pressing or ironing station. The buck, when moved into the ironing position shall actuate the pneumatic-powered device which shall cause the chests to close around and exert pressure against the bucks. The press shall be provided with a timing device, which shall cause the chest to remain in the pressure position for a manually preset time and at the expiration of this time shall cause the chest to open. Compliance with these requirements shall be determined when tested in 4.4.3.

3.7 Electrical requirements. The electrical components of the system shall be designed for operation on the voltage, frequency, and number of phases specified (see 6.2).

3.7.1 Wiring. Wiring shall be installed in conduit which shall be provided between all components mounted on the presses except wiring for controls on the type I press when the wiring is concealed within the frame or other members of the press and is not subject to abrasion or other physical damage. Wiring and conduit shall be as specified in 3.4.4, except flexible, metallic conduit may be used inside of the frame when inclosed by the outer cover. Installation shall conform to the requirements of the NFPA Standard No. 70. All wiring shall terminate in a connection box with provisions for mounting controllers separately from the machine. The connection box and controllers shall be furnished with the machine. Wiring beyond the machine shall be furnished by the purchaser.

3.7.2 Motor controls. Each press equipped with motors shall be provided with a controller for each motor. Controllers shall be of the magnetic across-the-line type having a separate pole for each ungrounded conductor. In addition, timers, limit switches, remote control push button switches, signals, and indicating lights shall be provided on each press as necessary to perform the intended functions. Push button control stations shall be mounted at points readily functions. Push button control stations shall be mounted at points readily accessible to operators. Push buttons shall be fully protected or recessed to prevent accidental operation.

3.7.3 Electromagnetic compatibility. When specified (see 6.2), equipment procured under this specification shall be designed and equipped for electromagnetic compatibility in accordance with class IIB of MIL-STD-461 (see 4.4.5).

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3.7.4 Moisture and fungus-resistant treatment. When specified (see 6.2), electrical components of equipment covered by this specification shall be moisture and fungus-resistant treated with materials conforming to and applied as required by MIL-T-152.

3.8 Welders. The welders performing the welding on subassemblies, assemblies, and on the end item shall be certified welders and have passed the qualification test as prescribed by the "Standard Qualification of the American Society of Mechanical Engineers" code. The supplier shall furnish the Government with a list of names of his welders who are certified and have passed the test of either referenced codes and he shall certify that the welding of this equipment was performed by the welders listed.

3.9 Finish and color. Unless otherwise specified (see 6.2), laundry presses shall be finished according to the manufacturer's standard practice except exposed heated surfaces at the top of the press heads shall be painted with aluminum varnish of a heat-resisting grade. Emergency-stop and normal-stop push buttons shall be red and this color shall be limited to push buttons.

3.10 Equipment manual. The supplier shall furnish with each laundry press an equipment manual. Manual contents and additional distribution shall be as specified in the contract or order (see 6.2.2).

3.11 Name and data plates. Each laundry press shall be marked for identification in accordance with MIL-STD-130.

3.12 Workmanship. Each laundry press shall be free from defects such as fractures, splits, punctures, tears, dents, creases, deteriorations, or malformation. There shall be no sharp edges, slivers, burrs, projections, or other defects.

3.12.1 Application of finish. The finish applied to the end item shall be continuous, smooth, adherent, without discoloration or foreign material imbedded and contain no sags, runs, drips, creeps, laps, bubbles, streaks, wrinkles, blisters, cracks, scratches, pores, pits, lumps, flux, orange peel, or area of no film. No rust, rough grinds, or tool marks shall show through the coating.

3.12.2 Welding. The surfaces of parts to be welded shall be free from oxide, scale, paint, grease, and other foreign matter. Welds shall be continuous, sound, smooth, and free from porosity, cracks, incomplete fusion, air pockets and deformation of material. All scale and flux (when flux is used) shall be removed from the finished welds. Electrodes or welding rods used for welding shall deposit material compatible with the base metal.

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3.12.3 Soldering. Soldering shall be complete and adherent with all flux and residue removed and shall contain no pinholes.

3.12.4 Bolts, nuts, screws, studs, and other threaded fasteners. Threaded fasteners shall not be broken, stripped, fractured, or loose. Threaded assemblies shall be made with washers and lockwashers in accordance with normal commercial practice.

3.12.5 Rivets. Rivets shall be driven to completely fill the holes, with full size heads neatly finished and in full contact with the surface of the members.

3.12.6 Electrical wiring. Wiring shall not be cut, abraded, or have excessive insulation stripped, and shall be properly and tightly joined at terminals. Wiring shall have adequate slack to provide strain relief.

3.13 Drawings and installation. When specified (see 6.2), drawings and installation supervision shall be furnished.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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 specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Quality conformance inspection. Sampling for inspection shall be performed in accordance with MIL-STD-105, except where otherwise indicated hereinafter.

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

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4.2.2 Inspection of the end product. The inspection lot shall consist of all combination units or laundry presses of the type and style offered for inspection at one time. The sample unit shall be one completely fabricated combination unit or laundry presses as specified (see 6.2.1).

4.2.2.1 Visual examination. Examination of the end item shall be for the defects set forth in table I. The inspection level and acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be level II with an AQL of 2.5 for major defects and 6.5 for total defects.

TABLE I. Classification of defects

Examine	Defect	Classification	
		Major	Minor
Finish	Not finished where required	X	
	Ironing surfaces not polished	X	
	Ironing surfaces not plated, where required	X	
	Type of finish not in accordance with manufacturer's standard practice		X
	Color not as specified		X
	Discoloration or foreign material imbedded in finish		X
	Not smooth and continuous		X
	Sags, runs, drips, creeps, laps, bubbles, streaks, wrinkles, blisters, cracks, scratches, pores, pits, lumps, flux, orange peel or area of no film		X
	Rust, rough grinds, or tool marks showing through coating		X
Construction and workmanship (applicable to all components and assemblies)			
Fabrication	Part missing	X	
	Kinks and sharp bends in sheet metal		X
	Any component fractured, split, punctured, torn, dented, bowed, or sprung	X	
	Any burr, sharp edge, or sliver		X
	Edges not ground smooth		X

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TABLE I. Classification of defects (cont'd)

Examine	Defect	Classification	
		Major	Minor
Construction and workmanship (applicable to all components and assemblies) (cont'd)	Bolted connections		
	Bolt holes not accurately punched or drilled		X
	Burrs not removed		X
	Washers or lockwashers not provided in accordance with commercial practice		X
	Bolts, nuts, and screws missing, broken, stripped, fractured, or not drawn tight		X
	Rivets (when required)		X
	Missing, loose, broken, or inadequately peened		X
	Welding and brazing		
	Missing, incomplete, through burn holes, severe undercut, fractured, porous, undercut, or otherwise not fused	X	
	Air pockets in welded areas	X	
Electrical assembly	Slight slag inclusion, slight undercut, not smooth and uniform, scale or flux deposit not removed		X
	Wiring cut, abraded, or not properly joined	X	
	Adequate slack not provided for wiring to relieve strain, or excessive insulation stripped from wiring		X
Construction: (General)	Motor bearings, where applicable, not accessible for lubrication	X	
	Push buttons not fully protected or recessed, or not mounted at points convenient to operator	X	
	All wiring not terminated in connection box	X	

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TABLE I. Classification of defects (cont'd)

<u>Examine</u>	<u>Defect</u>	<u>Classification</u>	
		<u>Major</u>	<u>Minor</u>
Construction: (General) (cont'd)	Moving parts not fully enclosed or guarded	X	
	Guards not removable	X	
	Bearings not readily replaceable	X	
	Provisions not made for adjusting chain and belt tension	X	
	Valves not readily accessible for operation and maintenance	X	
	Head of press not removable or concave in shape to conform to the buck	X	
	Base of presses not drilled for anchor bolts	X	
	Top plate of buck or press not curved and shaped to fit the head	X	
	The head or buck for type I presses not movable	X	
	Manually operated controls for type I presses not conveniently located and arranged so that both hands of the operator must be on the controls before the unit can be operated	X	
	Bucks not removable	X	
	Panels for inspection and maintenance not removable	X	
	Wings, air bags, or blades of buck for type II, type III, style A and B presses not expandable	X	
	Ironing chests not removable	X	
Equipment manual	Missing, incomplete, illegible	X	
Identification marking	Missing, incomplete, illegible		X

4.2.2.2 Dimensional examination. Examination shall be made of the end item for compliance with dimensions specified. The inspection level shall be S-2 with an AQL of 4.0, expressed in terms of defects per hundred units.

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4.2.2.3 End item testing. Each laundry press shall be tested as specified in 4.4.1, 4.4.2 and 4.4.3 and failure to pass any test shall be cause for rejection of the press. The tests as specified in 4.4.4 and 4.4.5, when applicable, shall be performed on one combination laundry press unit or laundry press, as applicable (see 6.3). Failure of any test shall be cause for rejection of the lot.

4.2.3 Examination of preparation for delivery. Examination shall be made for preservation, packaging, packing and marking in accordance with MIL-L-3153.

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

4.4 Tests.

4.4.1 Hydrostatic pressure tests. The chests and chambers using steam shall be tested by the suppliers with a hydrostatic pressure in accordance with the provisions of the ASME code for unfired pressure vessels based on a design pressure not less than 150 psig. All assemblies of pipes, fittings, coils, and cylinders using steam shall be tested for compliance with 3.5.2 with the same hydrostatic pressure.

4.4.2 Temperature tests. The pressing surface temperatures of the head and the metal surface temperature of the buck shall be taken with steam pressure at 125 psig to determine compliance with 3.5.2.

4.4.3 Operational testing. Each laundry press shall be connected to electricity, steam and pneumatic sources and operationally tested, without garments. The following items and operations shall be checked:

(a) Assemblies of component parts, moving parts, bearings, and starting and stopping devices for compliance with 3.5.

(b) Opening of the head and buck when the pneumatic power is off for compliance with 3.6.1.4.

(c) Adjustability of pressure for compliance with 3.6.1.4.

(d) Automatic takeup of press head or buck for compliance with 3.6.1.4.

(e) Manually operated press controls for compliance with 3.6.1.4.1.

(f) Operation of automatic timer for compliance with 3.6.1.4.1, 3.6.3.2.1, and 3.6.4.2.1.

(g) Operation of the ironing chests for compliance with 3.6.2.4.1 and 3.6.3.2.1.

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4.4.4 Functional testing. Following the operational test specified in 4.4.3 the functional testing shall be performed by operating with garments under full service load. The following items and operations shall be checked, as applicable:

- (a) The laundry press unit, combination No. 1 or 2, shall be operated for 30 minutes to determine compliance with 3.5 (a).
- (b) Working air pressure for compliance with 3.5.3.
- (c) Seal leakage for compliance with 3.5.6.1.
- (d) Obstruction on garment for compliance with 3.6.1.4.
- (e) Operation of sleeve measuring device for compliance with 3.6.2.2.
- (f) Operation of side and sleeve expanders for compliance with 3.6.3.1 and 3.6.4.1.

4.4.5 Electromagnetic compatibility test. When electromagnetic compatibility is required, the production unit shall be tested by the supplier in accordance with test methods CE03 and RE02 of MIL-STD-462. The Government reserves the right to witness tests performed by the supplier or his private testing agency. The supplier shall furnish the contracting officer written certification that the Interference Control Plan, the EMI/EMC Test Plan, and the Electromagnetic Compatibility Test Report meet the requirements of MIL-STD-461.

5. PREPARATION FOR DELIVERY

5.1 Preservation and packaging. Preservation and packaging shall be level A or C as specified (see 6.2.1).

5.1.1 Levels A and C. Each laundry press shall be preserved and packaged in accordance with the applicable requirements of MIL-L-3153.

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

5.2.1 Levels A, B and C. Laundry presses, preserved and packaged as specified in 5.1, shall be packed in accordance with the applicable requirements of MIL-L-3153.

5.3 Marking. In addition to any special marking required by the contract or order, interior packages and shipping containers shall be marked in accordance with the applicable requirements of MIL-L-3153.

6. NOTES

6.1 Intended use. The laundry presses covered by this specification are for use in fixed laundry installations.

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6.2 Ordering data. Procurement documents should specify the following:

6.2.1 Procurement requirements.

- (a) Title, number, and date of this specification.
- (b) Combination unit required or type and style required (see 1.2).
- (c) When cuff clamps are not required for type II, (cuff clamps are not required for pressing Army utility shirts) (see 3.6.2.3).
- (d) When tail clamp is not required for type III, style A and B presses (see 3.6.3.1.3).
- (e) Electrical characteristics required (voltage, frequency, and number of phases) (see 3.7).
- (f) When electromagnetic compatibility is required (see 3.7.3).
- (g) When moisture and fungus-resistant treatment is required (see 3.7.4).
- (h) Finish when other than specified (see 3.9).
- (i) Selection of applicable levels of preservation and packaging, and packing (see 5.1 and 5.2).
- (j) When drawings are required for installation purposes, request that successful bidder furnish drawings showing the exact dimensions of the item, overall floor space requirement, location of holddown bolts, location of the inlet and outlet lines; the point where electrical connections are to be made, and the electrical characteristics of the motor(s) of any equipment (see 3.13). When purchases are for the Air Force, drawings are required within 10 days after award to the successful bidder.
- (k) When the supplier is to furnish supervision of installation or demonstration service of items. If required, the location, approximate date, the person or office to report to, and any accommodations or services to be supplied by the installation or agency shall be stated (see 3.13).
- (l) Air Force purchases when specified shall provide for an automatic spray device on the type III, style A and B presses, and a moisture sensing device on type II and type III, style A and B presses.

6.2.2 Contract data requirements. Any data items to be delivered under any contract for items covered by this specification (see 3.11) should be specifically cited in the contract in accordance with the applicable regulations of the procuring activity.

6.3 End item tests. Performing the tests as specified in 4.4.4 and 4.4.5 should be limited to one successful demonstration of compliance to the requirements of this specification for each contract.

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6.4 Successful commercial operation. Invitation for bids should specify that no item of equipment shall be acceptable unless the manufacturer has had equipment of approximately the same type and design as that specified operating successfully in a commercial or institutional laundry or laundries for at least 1 year. Equipment installed for test purposes in a manufacturer's plant or laboratory shall not come within the category of successful commercial operation.

6.5 The margins of this specification are marked with an asterisk (*) to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and suppliers 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 issue.

Custodians:

Army - GL
Navy - YD
Air Force - 84

Preparing activity:

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User activities:

Army - CE
Navy - KC

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