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November 16, 1978

INTERIM FEDERAL SPECIFICATION

SEWING MACHINE, INDUSTRIAL & GENERAL SPECIFICATION FOR

This interim Federal Specification was developed by the U.S. Army Natick Research and Development Center (GL), Natick, MA 01760-5014 based upon currently available technical information. It is recommended that Federal Agencies use it in procurement and forward recommendations for changes to the preparing activity at the address shown above.

The General Services Administration has authorized the use of this interim Federal Specification as a valid exception to OO-S-256, dated November 16, 1978.

1. SCOPE

1.1 Scope. This specification covers the general requirements for commercial, industrial sewing machines used in the textile and leather industry.

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.

Federal Specification:

HH-I-553	-	Insulation Tape, Electrical (Rubber, Natural and Synthetic)
QQ-S-571	-	Solder, Tin Alloy: Tin, Lead Alloy; and Lead Alloy
TT-V-119	-	Varnish, Spar, Phenolic - Resin
TT-W-572	-	Wood Preservative: Water Repellent

FSC 3530

PPP-B-566	-	Boxes, Folding, Paperboard
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-665	-	Boxes: Paperboard, Metal Edged and Components
PPP-B-676	-	Boxes, Setup
PPP-T-60	-	Tape: Packaging, Waterproof

(See interim supplement-1 for list of associated detailed specifications)

Federal Standards:

FED-STD-123	-	Marking for Shipment (Civil Agencies)
FED-STD-751	-	Stitches, Seams, and Stitchings

(Activities outside the Federal Government may obtain copies of Federal specification, 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 monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. 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 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; 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-P-116	-	Preservation, Methods Of
MIL-V-173	-	Varnish, Moisture and Fungus-Resistant (For Treatment of Communications, Electronic and Associated Equipment)
MIL-L-10547	-	Liners, Case and Sheet, Overwrap: Water-vaporproof or Waterproof Flexible
MIL-V-13811	-	Varnish, Waterproofing, Electrical Ignition
MIL-C-52950	-	Crated, Wood, Open and Covered

Military Standards:

MIL-STD-105	-	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129	-	Marking for Shipment and Storage
MIL-STD-147	-	Palletized Unit Loads
MIL-STD-1186	-	Cushioning, Anchoring, Bracing, Blocking, and Waterproofing
MS 22073	-	Circuit Breaker, Trip-Free, Push-Pull, 1/2 thru 20 Amp, Type 1

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

Laws and Regulations:

29 CFR 1910 - Occupational Safety and Health Act (OSHA) Standards

(The Code of Federal Regulations (CFR) and the Federal Register (FR) are for sale on a subscription basis by the Superintendent of Documents, US Government Printing Office, Washington, DC 20402. When indicated, reprints of certain regulations may be obtained from the Federal Agency responsible for issuance thereof.)

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:

American National Standard Institute (ANSI)

A208.1 - Mat-Formed Wood Particleboard

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

National Fire Protection Association (NFPA)

No. 70 - National Electrical Code

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

National Electrical Manufacturers' Association (NEMA)

MG 1 - Motors and Generators
ICS 6 -110.10 Type I General Purpose Indoor Closures
Closures for Nonhazardous Locations

(Application for copies should be addressed to the National Electrical Manufacturers' Association, 2101 L Street, N.W., Suite 300, Washington, DC 20037.)

Underwriters Laboratories, Inc.

UL 1004 - Electric Motors

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

American Society for Testing and Materials (ASTM)

A 366 - Steel, Sheets, Carbon, Cold Rolled, Commercial Quality
D 3951 - Standard Practice for Commercial Packaging

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

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

3. REQUIREMENTS

3.1 Detailed specifications. The individual detailed specification shall be as specified herein and in accordance with the applicable specification sheets.

3.2 First article. When specified, a sample shall be subjected to first article inspection (see 4.3, 6.2 and 6.3).

3.3 Codes and standards. The sewing machines shall comply with the applicable requirements of OSHA, NFPA, NEMA and UL.

3.3.1 Compliance. Prior to approval of the first article, if one is submitted, or prior to commencing production, the contractor shall submit to the contracting officer or his authorized representative satisfactory evidence that the machine he proposes to furnish under this specification meets the applicable requirements of OSHA, NFPA, NEMA and UL (where applicable).

3.3.2 OSHA. Acceptable evidence of meeting the requirements of OSHA shall be a certificate of compliance certifying that the sewing machines comply with the applicable requirements of 29 CFR 1910, including a belt guard and a finger guard or shield.

3.3.3 NFPA. Acceptable evidence of meeting the requirements of NFPA shall be a certificate of compliance certifying that the sewing machines comply with the applicable requirements of NFPA 70 for the wiring and installation of electrical components (except requirements for mounting shall not apply).

3.3.4 NEMA. Acceptable evidence of meeting the requirements of NEMA shall be a certificate of compliance certifying that the sewing machines, starter motor inclosure, comply with requirements of NEMA ICS 6-110.10 Type I and also that the sewing machine, motors comply with the requirements of NEMA MG 1, when applicable.

3.3.5 UL. Acceptable evidence of meeting the requirements shall be a certificate of compliance that the sewing machine, motors comply with UL 1004, when applicable.

3.4 Materials. The materials shall be as specified herein. Materials not specifically specified shall be of the quality normally used by the manufacturer for the specified equipment, provided the completed item complies with all the provisions of this specification (see 6.5).

3.5 Design and construction. Unless otherwise specified (see 6.2), all machines provided shall include head, stand, table top, electric light fixture, motor or electric transmitter, drive belt, motor control, switch, thread stand, bobbin winder, oil drip pan, and knee or foot lifter, as applicable. The commercial feed mechanisms shall be as shown in table I. The applicable feed mechanisms for the machines shall be as specified in the detailed specifications. Unless otherwise specified (see 6.2), the machine shall operate on nominal 120 volts, 60 hertz, single phase. When specified (see 6.2), all electrical components and circuit elements, including terminal and circuit connections, shall be coated for fungus-resistance with varnish conforming to MIL-V-173, except that the current-carrying contact surfaces, such as switch contact points, shall not be coated. Motors shall have windings impregnated to resist moisture. Machine stitching shall conform to the applicable class of FED-STD-751. All wiring methods shall conform to NFPA-70. All connections shall be soldered, taped or have staked connections. The solder shall conform to type R of QQ-S-571 and the tape shall conform to HH-I-553.

TABLE I. Feed mechanisms, styles

A - Drop feed
B - Drop feed with alternating pressers
E - Drop feed with differential feed
G - Compound feed
H - Compound feed with alternating pressers
J - Upper feed
K - Gear driven feed
L - Ratchet and pawl feed
O - Universal upper feed

3.5.1 Motors. All motors including those used in transmitter shall conform to NEMA MG 1 or UL 1004. They shall be a minimum 1/2 horse power except where noted in detailed specifications. Motors shall be mounted or suspended so the pulleys of motor or clutch and machine head are in straight belt alignment.

3.5.1.1 Overload protection. All motors shall be protected against overload with resettable type circuit breakers conforming to MS 22073-7½. The motors shall be mounted in an enclosure conforming to NEMA ICS 6-110.10 Type 1. Resetting of breaker shall not require exposure to electrically energized cables or components.

3.5.2 Motor starters. All sewing machines shall be equipped with across the line heavy duty type push button or toggle switch motor starters designed to completely break all electrical connections to the motor. The starter enclosure shall conform to NEMA ICS 6-110.10 Type 1.

3.5.3 Transmitter, electric. The electric transmitter shall be an electric motor and friction clutch built into one complete self-contained driving unit. The clutch shall be actuated by a screw, or a lever, which thrusts the clutch wheel in contact with a continuous running flywheel mounted on the motor rotor, with a friction disc or lining between and mounted on either the clutch wheel or flywheel, permitting speed of the machine to be controlled by the operator. The clutch shall be ball-bearing mounted and shall have a positive acting brake arrangement to stop the machine when the clutch is disengaged by the operator. Adjustment design shall provide for regulating the tolerances between the clutch and brake actions. An adjustable pitman rod shall be provided between the clutch and foot treadle of the stand. For V-belt drive, an adequate belt adapter or arrangement shall be provided with the electric transmitter to give adjustment for proper belt tension.

3.5.4 Belts, drive. Unless otherwise specified in the detailed specification, the drive belts shall be V-type.

3.5.5 Electric light fixture. The sewing machine lamp shall be constructed from UL electrical components. The lead wires shall be high temperature rated (105°C). The arm shall be a minimum of 22 inches long. It shall be constructed from a goose neck type flexible chrome plated steel. The unit shall have a metal air cooled enamel finished cone shape reflector. The light shall be supplied complete with a means for machine or table mounting. The light shall operate on 110 volt AC power. The power cord shall be permanently connected to the energized terminals of the motor starter switch. The light shall have an independent switch.

3.5.6 Stands. The stands unless otherwise specified in the detailed specificatiions shall be fabricated from minimum 13 gauge steel channels. The steel shall conform to ASTM A 366. The stands shall be supplied with heavy duty adjustable H type legs which are of welded construction. The top and feet of the stand shall be furnished with holes for fastening to wooden blocking and table tops. Each stand shall come complete with back and bottom braces. The bottom brace shall be slotted for treadle adjustment.

3.5.7 Treadles. The foot treadle or treadles shall be provided, mounted on a bar or brace which is fastened to the stand near its base for operation control of the machine. Means shall be provided to allow the position of the treadles to be adjusted to meet the needs of the machine operator.

3.5.8 Lifter, foot and knee. The foot lifter shall be mounted on the treadle bar. Knee lifter shall be mounted under the table. When specified in the detailed specification, the foot lifter with stand or knee lifter with table shall be furnished.

3.5.9 Table top. Each sewing machine shall be supplied with a type I or type II table top (see 6.2).

3.5.9.1 Type I. The top of the table shall be constructed of laminated, thermosetting, decorative sheets with a particle board or multi-plywood core, unless otherwise specified in the detailed specification. Unless otherwise specified in detailed specifications, the total thickness of the top shall be not less than 1-1/4 inches. Unless otherwise specified, the table top shall be not less than 20 inches wide by 42 inches long. All gluing shall be done with water-resistant adhesives. The table top shall be fastened to the stand.

3.5.9.1.1 Board, particle core. The particle board core for the top of the table shall conform to ANSI A208.1. Faces shall be flat and smooth.

3.5.9.1.2 Plywood, multiple. The multiple plywood core for the table top shall be made of nine or more plys. Crossbands, face, and back veneers shall be balanced to prevent warpage of the top of the table. Faces shall be flat and smooth.

3.5.9.1.3 Covering, plastic. The plastic covering for the table top shall consist of a laminated, thermosetting, decorative sheet bonded to multiple plywood or particle board core. The reverse side of the top shall be a phenolic laminated, kraft backing sheet not less than 0.020 inch thick. The edges of the table top shall be self-edged with the same material used on the top surfaces or shall be edged with plastic edging of ethycellulose material. The plastic edging shall harmonize in color and pattern with the plastic covering for the table top.

3.5.9.2 Type II. The table top shall be constructed from solid lumber sections laminated together. The lumber shall be uniformly kiln dried without brashness, case hardening or honey combing, in such a manner as to firmly set natural pitch and resin. Moisture content at the time of assembly shall be between 8 and 12 percent. The lumber shall be further selected to eliminate such defects as knots exceeding 1/4 inch in average diameter, decay, mineral streaks, wane, shake, and splits. Anyone of the following species of wood shall be used.

Ash, White	Maple, Hard or Soft
Beech	Hickory
Birch, Yellow or Sweet	Oak, Red or White

The outside dimensions of the table tops shall be as specified in the detailed specifications. All tops shall be a minimum of 1-1/2 inches thick. The configuration for the openings in the tops shall conform to the machine head manufacturer's requirements, and be appropriate for their intended use. The tops shall be joined, planned, and sanded to a flat smooth surface. All surfaces shall be finished with one coat of a sealer conforming to TT-W-572, Composition A. After 72 hours drying time, apply two coats of varnish conforming to TT-V-119. All hardware and accessories required to mount the components including the stand shall be provided.

3.5.10 Head, mounting. The head of the sewing machine shall be mounted on or in the table as specified in the detailed specification. Where mounting is in the table, the head shall be fully submerged in a recessed cut-out in the table top. The cloth plate of the head shall be flush with the top of the table. Insulating pads or bushings shall be provided between the bed of the head and table or mounting board.

3.5.11 Bobbin winder. A bobbin winder shall be provided to wind the bobbin for the sewing machine.

3.5.12 Lubrication, nonautomatic. Nonautomatic lubrication machines shall be provided with means for applying lubrication to bearings and frictional surfaces. Lubricating orifices may be identified by using the word "OIL" or high-lighting by contrasting color. Gears that are required to be packed with grease shall be covered.

3.5.13 Lubrication, automatic. Automatic lubrication machines shall be equipped with covered oil reservoirs and level gages. The reservoirs shall be sufficiently tightly covered to prevent oil from overflowing from machines that are to be furnished on ships or other moving vehicles. The oil shall be distributed to all frictional points during operation by necessary wicks, oil ducts, or direct contact by splashing. Means shall be provided to indicate that oil is circulating through when it is coming from reservoirs not readily visible. Oil in the sewing head shall return to the reservoir by siphon, wick or capillary tube. An automatically lubricated machine may provide lubrication by other means for various parts of the machine head which are inaccessible for the automatic lubrication system.

3.5.14 Tension, adjustable. An adjustable tension arrangement shall be provided for each thread used by the sewing machine, and shall be adjustable to the amount of tension required to sew stitches. The 301 and 401 stitch type machines shall be equipped with an automatic thread tension release effective when the presser foot is raised. Guides for thread shall be polished to prevent fraying of thread.

3.6 Performance.

3.6.1 Operation. The sewing machines unless otherwise specified in the detailed specifications shall conform to the following requirements, when tested as specified in 4.5.1:

(a) Stitch formation for compliance with stitch types specified for applicable types of machines.

(b) Stitch range, stitches per inch and stitch widths where applicable for various kinds of feed for all machines except the buttonhole, button sewing, and tacking machines.

(c) Number of stitches and make up of button holes, tacks and button sewing to comply with requirements of these machines.

3.6.2 Bobbin winder, operation. The sewing machines while stitching shall permit the winding of the bobbin when tested as specified in 4.5.2.

3.6.3 Tension release. The sewing machines shall comply with 3.5.14 when tested as specified in 4.5.3.

3.7 Fasteners and finish. Fasteners and finish shall be in accordance with manufacturers' commercial practice.

3.8 Tools and accessories. Tools and accessories normally supplied by the manufacturer shall be furnished with each machine.

3.9 Marking. The machines shall be marked for identification in accordance with the manufacturers' commercial practice and shall include manufacturers; name, date of manufacturer, model number, and electrical characteristics.

3.10 Workmanship. The sewing machine shall be free from defects such as fractures, splits, punctures, tears, dents, creases and deterioration or malfunction. There shall be no sharp edges, slivers, burrs or projections interfering with the movement of the material to be sewn, or sewn during the operation of the machine. Threaded fasteners shall not be broken, stripped, fractured or loose.

3.10.1 Application of finish. The finish applied to the machine shall be continuous, smooth, adherent, have no imbedded foreign matter, and contain no sags, runs, drips, creeps, laps, bubbles or streaks. No rust or tool marks shall show through the coating.

3.10.2 Electrical wiring. Wiring shall not be cut, abraded or have insulation stripped, and shall be joined at the terminals. Wiring shall have slack to provide strain relief.

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 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 specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Classification of inspection. The inspection requirements specified herein are classified as follows:

(a) First article inspection (see 4.3)
(b) Quality conformance inspection (see 4.4)

4.3 First article inspection. When a first article is required (see 6.2), it shall be examined for the defects specified in 4.4.3.1 and 4.4.3.2 and tested as specified in the applicable test paragraph of the detailed specification. The presence of any defect or failure of any test shall be cause for rejection of the first article.

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

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

4.4.2 End item visual examination. The end items shall be examined for the defects listed in table II. The lot size shall be expressed in units of sewing machines of one style and class only. The sample unit shall be one sewing machine. The inspection level shall be level 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) defects.

TABLE II. End item visual defects

Examine	Defect	Classification Major	Minor
Finish	Finish not in accordance with the manufacturers' commercial practice	X	
	Not continuous, smooth, adherent	X	
	Foreign matter imbedded in finish		X
	Sags, runs, drips, creeps, laps, bubbles, or streaks		X
	Rust or tool marks	X	
Design, construction and workmanship	Any component or part missing or not specified class	X	
	Fractured, split, torn, dented, creased, deteriorated, or mal-formed	X	
	Not applicable feed mechanism	X	
Table top	Not of specified material	X	
	Not fastened as specified	X	
	For type I decorative sheet not bonded as specified	X	
	For type I no backing sheet furnished	X	
	For type I edges not self-edged as specified, or not same color as top	X	
Belts	Not specified type	X	
Lubrication (where applicable)	Insufficiently lubricated		X
	Not specified type lubrication system i.e., automatic or non-automatic	X	
	Not lubricated where required	X	
	Lubrication fitting not readily accessible for servicing	X	
Tools and accessories	Available tools and accessories normally supplied by the manu-facturer missing	X	
Marking	Missing, incomplete, not legible, not specified data		X

TABLE II. End item visual defects (cont'd)

Examine	Defect	Classification Major	Minor
Bolts, nuts, screws, studs and other types of threaded components	Broken, stripped, fractured, or not tight	X	
Electrical assembly	Wiring cut, abraded, or not properly installed or joined	X	
	Adequate slack not provided for wiring to relieve strain		X

4.4.3 End item dimensional examination. The end item shall be examined for compliance with the dimensions specified herein and on the detailed specification sheets. Any dimension that is not within the specified tolerance shall be classified as a defect. The lot size shall be expressed in units of sewing machines. The sample unit shall be one sewing machine. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units shall be 6.5.

4.4.4 End item testing. Each end item shall be tested as specified in 4.5.1, 4.5.2 and 4.5.3. Any failure to conform to the requirements in 3.6.1, 3.6.2 and 3.6.3 shall be cause for rejection of the end item.

4.4.5 Certification compliance examination. Certification of OSHA, NFPA, NEMA and UL where applicable shall be furnished and acceptable to the Government representative for the first article and all production items.

4.4.6 Packaging inspection. An inspection shall be made to determine that the preservation, packing, and marking comply with section 5 requirements. Defects shall be scored in accordance with table III. The sample unit shall be one shipping container fully packaged. The lot size shall be the number of shipping containers in the inspection lot. The inspection level shall be S-4 and the AQL, expressed in terms of defects per hundred units, shall be 6.5.

TABLE III. Packaging inspection

Examine	Defect
Marking, interior and exterior	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application
Preservation	Preservative improperly applied or missing
Materials	Component missing, damaged, or otherwise defective
Workmanship	Inadequate application of components such as; incomplete closure of barrier materials, not taped as specified

4.4.7 Palletization inspection. An inspection shall be made to determine that palletization complies with the section 5 requirements. Defects shall be scored in accordance with table IV. The sample unit shall be one palletized unit load fully packaged. The lot size shall be the number of palletized unit loads in the inspection lot. The inspection level shall be S-1 and the AQL, expressed in terms of defects per hundred units, shall be 6.5.

TABLE IV. Palletization defects

Examine	Defect
Finished dimensions	Length, width, or height exceeds specified maximum requirements.
Palletization	Pallet pattern not as specified. Interlocking of loads not as specified. Load not bonded with required straps as specified.
Weight	Exceeds maximum load limits.
Marking	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.

4.5 Methods of inspection.

4.5.1 Operational test. Each sewing machine head as specified shall be operated for not less than 10 minutes. The machine shall be operated with material comparable to the applicable kind of duty or class of the machine. The machine shall meet the operational requirements of 3.6.1. Nonconformance with 3.6.1 shall constitute failure of the test.

4.5.2 Bobbin winder. During the operational test (4.5.1) install an empty bobbin in the bobbin winder and wind the bobbin until it has achieved full capacity. Nonconformance with 3.6.2 shall constitute failure of the test.

4.5.3 Tension control. During the operational test (4.5.1) the thread tension shall be inspected. Nonconformance with 3.6.3 shall constitute failure of the 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. Disassembly shall be the minimum necessary to safeguard parts known to be subject to damage or loss. Disassembly shall be limited to that which will permit reassembly without the use of special tools or skills. All hardware removed during disassembly shall be placed in a cotton cloth drawstring bag or plastic bag, and the bag secured to one of the disassembled components.

5.1.1.2 Matchmarking. Disassembled parts shall be matchmarked by tags when necessary to facilitate reassembly. Tags shall be securely attached to the removed parts and mating parts or to the basic unit so that they will not damage the item or the preservation.

5.1.1.3 Preservation. Preservation shall be in accordance with material and method requirements of MIL-P-116, as hereinafter specified.

5.1.1.3.1 Tools and accessories. All tools and accessories shall be cleaned in accordance with process C-1 and dried. Tools and accessories shall be preserved in accordance with method III, IA-8 or IC-1, using P-7 or P-9 preservative, and then unit packed in boxes conforming to style A of PPP-B-665 ; variety 1, style III, type F, class f of PPP-B-566; type I, variety 1, class A, style 4 of PPP-B-676; or class domestic of PPP-B-636. The boxes shall be closed in accordance with the appendix of the applicable box specification.

5.1.1.3.2 Machine head. Each machine head shall be preserved in accordance with method IIa of IIe. Parts of the machine that are free to move or rotate shall be secured to prevent movement or vibration while in transit.

5.1.1.3.3 Stand, table top, and transmitter. Each stand, table top, and transmitter with assembly hardware shall be preserved in accordance with method III. All openings into motors shall be sealed with tape conforming to class 1, color optional of PPP-T-60, and exposed surfaces of the tape coated with varnish conforming to MIL-V-13811.

5.1.1.4 Lubrication. Where necessary, parts requiring lubrication shall be lubricated to capacity with the manufacturer's lubricant containing a rust inhibitor. Excess lubricant shall be removed.

5.1.2 Commercial. Sewing machines and components shall be preserved in accordance with ASTM D 3951.

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 Complete machine. One complete machine preserved as specified in 5.1, shall be packed in a shipping container conforming to overseas type of PPP-B-601, or class 2, style 2 or 4 of PPP-B-621. Anchoring, blocking and bracing, and waterproofing shall be in accordance with MIL-STD-1186. Closure and strapping shall be in accordance with the applicable container specification. The shipping containers shall be provided with a type I or II, grade C case liner conforming to MIL-L-10547.

5.2.1.2.1 Stand, table top, and transmitter. Two stands, table tops, and transmitter, preserved as specified in 5.1, shall be packed as specified in 5.2.1.1. In addition, shipping containers may be used that conform to type II, style A of MIL-C-52950, except when skids are used, bottom crossmembers shall be nominal 1 by 6 inch lumber with one edge of the top and bottom cross members in alignment, and skids shall be positioned flush with the inside edge of the end cross member and the intermediate skids under intermediate cross members and flush with its unaligned edge.

5.2.1.2.2 Machine heads. One machine head, preserved as specified in 5.1, shall be packed as specified in 5.2.1.1 except that waterproofing of shipping containers shall not be required to level A interior packs.

5.2.2 Level B packing.

5.2.2.1 Complete machine. One complete machine, preserved, as specified in 5.1, shall be packed in a shipping container as specified in 5.2.1.1, except that the shipping container shall conform to domestic type, style A or B of PPP-B-601, or class 1, style 2 or 4 of PPP-B-621 and waterproofing shall not be required. Alternatively, shipping containers may be used that conform to class 1, grade A, style operational of PPP-B-640, and size and weight limitations shall not be exceeded.

5.2.2.2 Sewing machine components (when procured as separate items).

5.2.2.2.1 Stand, table top, and transmitter. Two stands, table tops, and transmitters, preserved as specified in 5.1, shall be packed as specified in 5.2.2.1 with additional requirements as specified in 5.2.1.2.1.

5.2.2.2.2 Machine heads. One machine head, preserved as specified in 5.1, shall be packed as specified in 5.2.2.1.

5.2.3 Commercial packing. Sewing machines and components, preserved as specified in 5.1, shall be packed in accordance with ASTM D 3951.

5.3 Palletization. When specified (see 6.2), sewing machines and components in shipping containers without skids, packed as specified in 5.2, shall be palletized on a 4-way entry pallet in accordance with load type I of MIL-STD-147. Pallet type shall be type I (4-way entry), type III, type IV or V in accordance with MIL-STD-147. Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means K and L. Pallet patterns shall be in accordance with the appendix of MIL-STD-147. Interlocking of loads shall be effected by reversing the pattern of each course. If the container is of a size which does not conform to any of the pallet patterns specified in MIL-STD-147, the pallet pattern used shall be approved by the contracting officer.

5.4 Marking.

5.4.1 Civil agencies. In addition to any special marking required by the contract or order (see 6.2), interior packs, shipping containers and palletized unit loads shall be marked in accordance with FED-STD-123 or ASTM D 3951, as applicable.

5.4.2 Military requirements. In addition to any special marking required by the contract or order (see 6.2), interior packs, shipping containers and palletized unit loads shall be marked in accordance with MIL-STD-129 or ASTM D 3951, as applicable.

6. NOTES

6.1 Intended use. The sewing machines are intended for industrial use. The detailed indicate the applicable intended use.

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 document.
(b) When a first article is required (see 3.1, 4.3 and 64).
(c) When machine is not furnished as a complete unit, specify which components are to be furnished (see 3.5 and 6.3.2).
(d) Electrical characteristics other than specified (see 3.5).
(e) When fungus-resistance treatment is required (see 3.5).
(f) Whether type 1 or 2 table top is required (see 3.5.9).
(g) Selection of applicable levels of preservation and packing (see 5.1 and 5.2).
(h) Marking required (see 5.4.1 and 5.4.2).
(i) When palletization is required (see 5.3)

6.3 Purchaser's objectives.

6.3.1 Selection of industrial sewing machines. Extreme care should be used in the proper selection of machines, mechanisms, and equipment in order that successful operation and good service will result. Wherever possible, the exact sewing conditions should be specified in the invitation for bids, such as:

(a) Sewing operation to be performed
(b) Type of material or materials to be stitched
(c) Approximate minimum and maximum thicknesses of material to be stitched, and if machine is to be used to stitch over heavy cross seams
(d) Type and size of sewing thread to be used
(e) Any unusual sewing conditions
(f) When in doubt as to the stitch type and class of machine, the feed mechanism style or other equipment required for a particular sewing operation, the recommendations of the manufacturer should be invited.
(g) Buttonhole machines with the shortest range of cut size have the fastest operating cycle. Therefore, maximum efficiency in production is achieved in ordering the machine with the shortest range that will provide all sizes of buttonholes that are required.

6.3.2 Grouping of components. When sewing machine heads and tables are procured separately rather than as a complete unit, the following divisions of components are applicable.

(a) Table top and stand. Included with this item are the following:
  (1) Transmitter
  (2) V-belt and component machine parts
  (3) Where required, a knee or foot lifter to raise presser foot of machine
  (4) Light wire connector, as applicable, that will mate with the machine head work light lead-in
  (5) Starting and stopping motor switch
  (6) Motor pulley of correct size to provide the required machine speed

(b) Sewing machine head. Included with this item are the following:
  (1) Light fixture with bulbs and means for attaching fixture
  (2) Light wiring complete with connector and sufficient length of wire to enable proper light wiring connection
  (3) Thread stand
  (4) Bobbin winder
  (5) Oil drip pan

6.4 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of FAR 52.209. The first article should be a preproduction sample consisting of one sewing machine unit. The contracting officer should include special instructions in all acquisition documents regarding arrangements for inspection and approval of the first article.

6.5 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of this specification (see 3.4).

Custodian:

Army - GL

Preparing activity:

Army - GL

Project No. 3530-A072

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

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1. DOCUMENT NUMBER	2. DOCUMENT TITLE
00-S-00256G	SEWING MACHINES, INDUSTRIAL; GENERAL SPECIFICATION

3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION *(Mark one)*
	☐ VENDOR
	☐ USER
b. ADDRESS *(Street, City, State, ZIP Code)*	☐ MANUFACTURER
	☐ OTHER *(Specify)*: _____

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER *(Last, First, MI)* – Optional	b. WORK TELEPHONE NUMBER *(Include Area Code)* – Optional
c. MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional	8. DATE OF SUBMISSION *(YYMMDD)*

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