

INCH-POUND

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 SUPERSEDING
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MILITARY SPECIFICATION

PRESSES, MECHANICAL, OPEN-BACK-INCLINABLE (OBI),
 SINGLE AND DOUBLE CRANK TYPE

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

1. SCOPE

1.1 Scope. This specification covers open-back-inclinable (OBI) single and double crank type mechanical presses with equipment and accessories specified herein.

1.2 Classification. The press shall be of the following types, classes, and sizes. The type, class, and size to be furnished shall be as specified (see 3.5 and 6.2).

Type I - Single crank (see Table 1)

Class 1 - Non-geared

Size-1A-----5 tons	Size--9-----60 tons
Size-2A-----9 tons	Size-10-----75 tons
Size-4A-----15 tons	Size-11-----90 tons
Size-6-----22 tons	Size-12----110 tons
Size-7-----35 tons	Size-12A---125 tons
Size-8-----45 tons	Size-13----150 tons

Class 2 - Geared (see Table II)

Size-1A-----15 tons	Size--7-----90 tons
Size-2-----22 tons	Size--8----110 tons
Size-3-----35 tons	Size--9----150 tons
Size-4-----45 tons	Size-10---200 tons
Size-5-----60 tons	Size-n----250 tons
Size-6-----75 tons	

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Defense Industrial Plant Equipment Center, ATTN: DIPEC-SSG, 2163 Airways Blvd. Memphis, Tennessee 38114-5051, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 3443

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

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Type II - Double crank {see Table III)

Class 1 - Non-geared

Class 2 - Geared

Size 1-----35 tons

Size 2-----60 tons

Size 3-----75 tons

Size 4-----100 tons

Size 5-----150 tons

Size 6-----200 tons

Size 7-----250 tons

Size 8-----300 tons

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

MILITARY

MIL-M-18058 - Machinery, Metal and Woodworking, Packaging of.

STANDARDS

FEDERAL

FED-STD-H28 - Screw Thread Standards for Federal Services.

MILITARY

MIL-STD-461 - Electromagnetic Emission and Susceptibility Requirements for the Control of Electromagnetic Interference.

MIL-STD-462 - Electromagnetic Interference Characteristics, Measurement of,

(Unless otherwise indicated copies of Federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS) 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

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CODE OF FEDERAL REGULATIONS (CFR)

U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
(OSHA)

29 CFR 1910 - Occupational Safety and Health Standards.

(Application for copies should be addressed to the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402-0001.)

(Copies of specifications, standards, handbooks, drawings, publications, and other Government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contract activity.)

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI B5.1 - T-Slots, Their Bolts, Nuts, Tongues and Cutters. (DOD adopted)

ANSI 611.1 - Mechanical Power Presses - Safety Requirement for the Construction, Care, and Use. (DOD adopted)

ANSI B93.114M - Pneumatic Fluid Power - Systems Standard for Industrial Equipment and Machine Tool Applications.

(Application for copies should be addressed to the American National Standards Institute, ATTN: Sales Dept., 1430 Broadway, New York, NY 10018-3363.)

NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION (NEMA)

NEMA MG 1 - Motors and Generators. (DOD adopted)

(Application for copies should be addressed to the National Electrical Manufacturers' Association, 2101 L Street, N.W., Washington, DC 20037-1580.)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 79 - Electrical Standard for Industrial Machinery. (DOD Adopted)

(Application for copies should be addressed to the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.)

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(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified (see 6.2), one complete press shall be subjected to first article inspection (see 6.4) in accordance with 4.4.

3.2 Design. The press shall be new (not a prototype) and one of the manufacturer's current production models capable of operations in accordance with the requirements herein. The press shall be of the inclinable gap or "C" type frame design, and shall provide power to dies used for forming, blanking, or shaping metal and non-metallic parts. All components, parts, and features necessary to meet the performance specified herein shall be provided. Parts subject to wear, breakage, or distortion shall be accessible for adjustment, replacement, or repair.

3.2.1 Measuring and indicating device calibration. Measuring and indicating devices shall be graduated in Inch-pound (see 6.5.1), metric (see 6.5.2), or dual (inch-pound and metric) units as specified by the procuring activity (see 6.2). Regardless of the measurement system used, all measuring and indicating devices on the machine shall be graduated in the same system.

3.2.2 Reclaimed materials. The press may contain reclaimed materials to the maximum extent possible provided such materials will not jeopardize the intended use, performance, or design life of the press. Reclaimed materials shall have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used, rebuilt, or remanufactured end products are allowed under this specification.

3.2.3 Energy efficiency. The press and its components that directly consume energy in normal operation shall be designed and constructed for energy efficiency in accordance with the developments available within the industry.

3.2.4 Controls. All operating controls shall be located convenient to the operator's work station(s).

3.2.5 Safety and health requirements. All parts, components, mechanisms, and assemblies furnished on the press, whether or not specifically required herein, shall conform with all requirements of 29 CFR 1910 and ANSI B11.1. If a conflict arises between 29 CFR 1910 and B11.1, 29 CFR 1910 shall apply. Additional safety and health requirements shall be as specified in detail (see 6.2). Covers, guards, or other safety devices normally furnished as standard on the manufacturer's commercial press supplied to the commercial market shall

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be provided for the point of operation and all other parts of the press that present safety hazards. Additional guarding dependent on workpiece size and configuration shall be provided when specified and fully described by the procuring activity (see 6.2).

3.2.6 Mercury restriction. The press shall not contain mercury or mercury compounds nor be exposed to free mercury during manufacture.

3.2.7 Asbestos restriction. Asbestos and materials containing asbestos shall not be used on or in the press.

3.2.8 Environmental protection. During the manufacture, operation, service, transportation, or storage of the press, and its components, materials hazardous to the ecological system as prohibited by Federal, state, or local statutes in effect at the point of installation on the date of the contract shall not be used or emitted.

3.2.9 Lubrication. Unless otherwise specified (see 6.2), an automatic oil lubricating system shall be provided for all parts and mechanisms requiring a continuous flow of lubricating oil. When specified (see 6.2), an automatic recirculating system shall be furnished. Mechanisms requiring periodic manual lubrication shall be readily accessible for servicing.

3.2.10 Interchangeability. To provide for replacement of worn parts, all parts shall be manufactured to definite dimensions and tolerances that will permit installation of replacement parts without modification of the part or machine. All replacement parts shall be interchangeable with their respective original parts, and fit/function with mating components.

3.3 Construction. The press shall be constructed of parts which are new, without defects, and free of repairs. The structure shall withstand all forces encountered during operation of the press to its maximum rating and capacity without permanent distortion, or failure.

3.3.1 Castings and forgings. All castings and forgings shall be free of defects, scale, and mismatching. No processes such as welding, peening, plugging, or filling with solder or paste shall be used for reclaiming any defective part. Such processes may be used only for enhancing surface finish and appearance.

3.3.2 Fastening devices. All fasteners shall be installed to prevent change of tightness. Fastening devices subject to removal or adjustment shall not be permanently installed.

3.3.3 Surfaces. All surfaces shall be clean and free of harmful or extraneous materials. All edges shall be either rounded or beveled unless sharpness is required to perform a necessary function. Except as otherwise specified herein, the condition and finish of all surfaces shall be in accordance with the manufacturer's commercial practice.

3.3.4 Welding, brazing, or soldering. Welding, brazing, or soldering shall be employed only where specified in the original design. None of these operations shall be employed as repair measure for any defective part.

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3.3.5 Painting. Unless otherwise specified (see 6.2), the press shall be painted in accordance with the manufacturer's commercial practice and color.

3.3.6 Threads. All threaded parts used on the press and its related attachments and accessories shall conform to FED-STD-H28 and the applicable "Detailed Standard" section referenced therein.

3.3.7 Gears. All gears shall be constructed from a material suitable for the intended purpose. All drive gears shall have the hardness, surface finish, and toughness that will enable the gear train to transmit full rated torque of the drive motor without gear damage, failure, or premature deterioration and wear.

3.3.8 Electromagnetic interference control. When specified (see 6.2), equipment furnished under this specification shall comply with MIL-STD-461. The equipment and subsystem(s) class and the emission and susceptibility requirements shall be as specified.

3.4 Components. The press shall consist of not less than a frame, legs, slide, crankshaft, drive motor, and all other components essential for the safe operation of the press at its maximum rated tonnage.

3.4.1 Frame. The press frame shall be of the gap type, of either a one piece casting or of welded steel construction and stress relieved. The crown portion of the frame shall support the crankshaft, flywheel, and all other parts and components essential to the drive system. The bed portion of the frame shall be machined to a tolerance of +0.001 inch per foot, front to back and left to right for installation of the bolster. When specified (see 6.2), provisions for a die cushion shall be provided. The frame shall have an open back so when in the incline position, parts or scrap will be discharged by gravity through the back of the press. The lower section of the frame shall have the necessary holes and fittings for mounting the frame to the press legs providing a pivot point for inclining the press.

3.4.1.1 Legs. The press shall have right and left legs to support the press frame. The legs shall be of either a casting or of a welded steel fabrication, and stress relieved. The legs and frame shall have provisions for inclining the frame not less than 20 degrees backward from the vertical position. Provisions shall be made for securing the legs to the floor or foundation.

3.4.1.7 Slide. The slide shall be a solid casting or steel fabrication. The design and construction of the slide and gibs shall provide precise alignment of the slide with the bed at all times, under all operating conditions. The slide shall have adjustable gibs for precision adjustment of alignment and to compensate for wear. The gibs shall be of sufficient length to maintain precise control of the slide throughout its maximum stroke length. When specified (see 6.2), the die area of the slide face shall be T-slotted in accordance with ANSI B5.1. Provisions shall be made for installation of crossbar knockouts.

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3.4.1.3 Slide adjustment. The slide shall be adjustable vertically to change its position with relation to the bolster plate or bed, when the slide is at the bottom of its stroke. The amount of adjustment shall be not less than that specified in table I. Unless otherwise specified (see 6.2), presses with a rated tonnage capacity of 150 tons or less may be adjusted manually. Presses rated at more than 150 tons shall have an electric or pneumatic motor driven adjusting mechanisms. When specified (see 6.2), each press shall be equipped with a slide position indicator to show the position of the slide at all points of the stroke.

3.4.1.4 Crankshaft. The crankshaft shall be of the size, material, and strength required to transmit the maximum imposed torsional loads without permanent deformation or distortion. The shaft shall be supported by, and revolve in, replaceable bearings. Shaft bearings shall be line reamed and finish fitted to provide a running clearance in accordance with the manufacturer's requirements for the size shaft furnished. When specified (see 6.2), a shaft extension shall be provided as a power source for driving auxiliary equipment.

3.4.1.5 Inclining mechanism. Each press shall be provided with a mechanism which will allow the press frame to be inclined backward (see 3.4.1). The mechanism shall be the manufacturer's standard device offered to the commercial market. If a specific inclining mechanism is required, it shall be as specified (see 6.2).

3.4.2 Drive. Unless otherwise specified (see 6.2), the press drive shall be a constant fixed speed. When specified, a variable speed drive shall be furnished.

3.4.2.1 Class 1, non-geared. The class 1 press shall have a flywheel drive consisting essentially of the drive motor, crankshaft, flywheel, V-belts, clutch and brake, and connecting components between the crankshaft and slide. The arrangement of the drive components in or on the crown of the frame shall be as standard with the manufacturer.

3.4.2.2 Class 2, geared. The class 2 press shall have a single geared, single end drive consisting of an electric motor, multiple V-belt drive, clutch, brake, drive shaft with a pinion driving the main drive gear on the crankshaft, and a flywheel mounted on the drive shaft.

3.4.2.4 V-belts. V-belts shall be furnished in matched sets in order to provide maximum power transmission. Means shall be provided for adjusting and replacing belts.

3.4.2.5 Flywheel. The flywheel shall be balanced after machining, and have sufficient mass and speed to supply kinetic energy required to perform any operation within the capacity of the press without imposing overload conditions on the drive motor or other driving components. When specified (see 6.2), a flywheel brake shall be provided for stopping the flywheel within 30 seconds after the drive motor power has been turned off.

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3.4.2.6 Clutch. The clutch shall be of the air engaged and spring released type. The engagement and disengagement of the clutch shall be synchronized with the brake so that when the clutch is engaged, the brake is released, and when the clutch is disengaged, the brake shall be applied. The clutch control system shall automatically release the clutch and apply the brake in the event of failure in either the air or electrical supply.

3.4.2.7 Brake. The brake shall be of the spring applied and air released type and shall stop the shaft when the slide is at or near the top of the stroke when the control is set for single stroke operation. Brake application shall be synchronized with clutch functions (see 3.4.2.6).

3.4.2.9 Driveshaft. Intermediate shafts transmitting power between the drive motor and crankshaft, shall be of sufficient size and strength to transmit maximum rated torsional loads without permanent deformation or distortion.

3.4.2.10 Connection (pitman). The connection shall be of such mass as to transmit the maximum rated tonnage without deformation. The crankshaft end of the slide connection for all presses shall be fitted to the shaft with replaceable bushings. The slide end of the connection shall be fitted into the slide in accordance with the manufacturer's standard commercial practice. The design of the connection shall include provisions for adjusting the shut height and for securely locking the adjusting mechanism after adjustment.

3.4.3 Counterbalance. Unless otherwise specified (see 6.2), each press shall be equipped with an adjustable pneumatic counterbalance system for offsetting the weight of the slide and dies. The system shall include valving, gages, and a pressure regulator to control air pressure for compensating varying die weights. All receivers, accumulators, and other pressure tanks shall meet the requirements of the ASME Unfired Boiler and Pressure Vessel Code, Section VIII, for non-fired pressure vessels, and shall have the required ASME label affixed. The pneumatic system shall conform to the requirements of ANSI B93.114M.

3.4.4 Bolster. Unless otherwise specified (see 6.2), the manufacturer's standard bolster for the press specified shall be furnished. When T-slotted bolsters are furnished, slotting shall be in accordance with ANSI B5.1.

3.4.5 Cushion. When specified (see 6.2), a die cushion or cushions shall be furnished as described by the procuring activity.

3.4.6 Peak load measurement system. When specified (see 6.2), the press shall have a peak load measurement system that measures and provides a visual indication of the peak load exerted by the press slide during a pressing cycle. The system shall consist essentially of a calibrated strain sensing device mounted on a strained area of the press structure.

3.4.7 Quick die change. When specified (see 6.2), the press shall be furnished with provisions for quick die change. The method furnished shall be of the same design as that offered to the commercial market. The clamping system shall be of a fail safe design.

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3.4.8 Tie rods. When specified (see 6.2), tie rods shall be furnished. Tie rods shall be of the size and strength to minimize deflection of the press frame.

3.4.9 Electrical requirements. The machine shall be wired to conform to NFPA 79. Unless otherwise specified (see 6.2), each machine shall be designed to operate on 3-phase, 60-Hertz (Hz), 230/460-volts. Unless otherwise specified (see 6.2), the press shall be initially wired for operation on 460 volts.

3.4.9.1 Motors. Motors shall be rated for continuous duty and shall have ball or roller bearings of the sealed and permanently lubricated type. Unless otherwise specified (see 6.2), each motor shall have a dripproof enclosure. All motors shall meet the requirements of NEMA MG1.

3.4.10 Worklight. The light shall have a protective shield, and on-off switch, and shall be adjustable to reflect maximum light on the work area.

3.4.11 Hour meter. When specified (see 6.2), the press shall be equipped with an hour meter. The hour meter shall be installed to display accumulated operating time of the main drive motor. The meter shall be of the nonresetting type and shall have a range of 0 to 9,999 hours in increments of not greater than 1 hour. The meter shall be sealed to prevent the entrance of dust and moisture and shall be mounted to withstand shock and vibration generated by the press.

3.5 Size and capacity. Unless otherwise specified (see 6.2), the size and capacity of the press shall meet the requirements of tables I, II, or III for the type, class, and size press specified.

3.5.1 Physical size limitations. When specified (see 6.2), the physical size of the machine shall not exceed the height, width, and length restrictions specified by the procuring activity to ensure the machine will fit in its future operating location.

3.6 Alignment accuracy. The bottom surface of the slide shall be parallel to the top surface of the bed or bolster within the following accuracies:

- a. 0.002 inch per foot at top of stroke.
- b. 0.003 inch per foot at midstroke.

3.7 Standard equipment. All standard equipment normally provided with the manufacturer's commercial press shall be furnished.

3.8 Optional equipment. Optional equipment shall be furnished as specified and fully described (see 6.2). The optional equipment provided shall be functional without requiring modification of the equipment or machine.

TABLE I. Type I, class I machine, sizes and capacities.

Machine Size	1A	2A	4A	6	7	8	9	10	11	12	12A	13
Rated capacity (tons)	5	9	15	22	35	45	60	75	90	110	125	150
Stroke length, std., (inches)	1	1	1	2	2	2	2	2	2	3	3	6
Stroke per minute	225	150	125	150	110	100	90	85	85	80	80	80
Slide adjustment, (inches)	1	1	1	2	2	2	3	3	3	4	4	6
Shut height, std., bed to slide, (inches) (SDAU) 1/	7	6	7	9	10	11	13	15	15	17	18	22
Area of slide, LR x FB, 2/ (inches)	3x4	4x5	5x5	7x8	8x8	9x10	11x10	12x12	12x17	15x19	15x19	34x24
Area of bed or bolster, LR x FB, (inches)	12x7	13x7	11x8	13x12	16x14	19x18	22x20	24x23	24x25	30x27	30x50	50x30
Motor H.P.	3/4	1	1	2	3	5	5	7-1/2	7	10	10	15

NOTE: 1/ SDAU - Slide Down Adjustment Up

2/ LR x FB - Left to Right x Front to Back

For sizes 1 thru 12A, the stated requirements for the press size specified in 6.2 shall not be greater than the sizes and capacities for the next larger size press shown in Table I. When a size 13 is specified, it shall not exceed the stated requirements by more than 10 percent.

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TABLE II. Type I class 2 machine, sizes and capacities.

Machine Size	1A	2	3	4	5	6	7	8	9	10	11
Rated capacity, tons	15	22	35	45	60	75	90	110	150	200	250
Stroke length, std., (inches)	1	2	2	2	4	4	4	5	6	8	8
Strokes per minute	50	65	40	40	35	35	40	40	32	32	30
Slide adjustment, (inches)	2	2	2	2	3	3	3	4	6	6	6
Shut height, std., bed to slide (SDAU) 1/	7	9	10	12	14	15	15	17	22	24	24
Area of slide, LR x FB, 2/ (inches)	5x5	12x10	9x8	11x10	14x10	14x12	20x14	28x21	34x24	36x28	36x28
Area of bed or bolster, LR x FB, (inches)	16x3	20x12	24x14	28x18	31x20	32x23	34x21	42x27	50x30	58x34	58x34
Motor H.P.	1	2	3	5	7-1/2	7-1/2	7-1/2	10	15	20	25

NOTE: 1/ SDAU - Slide Down Adjustment Up

2/ LR x FB - Left to Right x Front to Back

For sizes 1 thru 10, the stated requirements for the press size specified in 6.2 shall not be greater than the sizes and capacities for the next larger size press shown in table II. When a size 11 is specified, it shall not exceed the stated requirements by more than 10 percent.

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TABLE III. Type II, class 1 and class 2 machine, sizes and capacities.

Machine Size	1	2	3	4	5	6	7	8
Rated capacity, tons	35	60	75	100	150	200	250	300
Stroke length, std., (inches)	2-1/2	3	3	4	4	6	8	8
Strokes per minute, (Class 1, non-g geared)	120	100	90	85	70	-	-	-
Strokes per minute, (Class 2, geared)	-	45	44	40	36	30	18	16
Slide adjustment, (inches)	2-1/4	2-1/2	3	3	3-1/2	4	6	6
Shut height, std., bed to slide, SDAU) 1/	11	14	15	17	18	22	24	24
Area of slide, L.R. and F.B., (inches) 1/	42x12	42x18	42x18	48x24	54x24	60x24	72x42	72x48
Area of bolster, L.R. and F.B., (inches) 2/	45x18	54x24	60x24	66x30	66x30	72x30		
Throat depth, center of slide to frame, (inches)	10	13	13	16	16-1/2	16-1/2	23	26
Motor H.P.	3	5	7-1/2	10	15	20	25	30

NOTE: 1/ SDAU - Slide Down Adjustment Up

2/ LR x FB - Left to Right x Front to Back

For sizes 1 thru 7, the stated requirements for the press size specified in 6.2 shall not be greater than the sizes and capacities for the next larger size press shown in table III. When a size 8 is specified, it shall not exceed the stated requirements by more than 10 percent.

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3.9 Repair parts. Required repair parts shall be furnished as specified (see 6.2).

3.10 Marking on instruments, control panels, charts, and plates. All words on instruments, control panels, charts and plates shall be in the English language. Characters shall be permanently marked in boldface on a contrasting background. All plates shall be corrosion resistant.

3.10.1 Lubrication plate or chart. When specified (see 6.2), a lubrication plate or chart shall be attached to each press. If a chart is furnished, it shall be placed in a transparent plastic folder, or permanently sealed between clear plastic sheets. Unless otherwise specified (see 6.2), the information provided on the chart or plate shall be as listed below.

- Points of lubricant application
- Type of lubricant
- Servicing interval
- Military or Federal specification for each lubricant (if applicable)

3.10.2 Nameplate. A nameplate shall be securely attached to each press. Unless otherwise specified (see 6.2), the nameplate shall contain the information listed below.

- Nomenclature
- Manufacturer's name
- Manufacturer's model designation
- Manufacturer's serial number
- Power input (volts, total amps, phase, frequency)
- Amp rating of largest motor
- Short circuit/over-current protection rating
- Contract number or order number
- National stock number or plant equipment code
- Date of manufacture

3.11 Workmanship. Workmanship of the press and its accessories shall meet all requirements specified herein.

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 (examinations and tests) 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 inspections set forth in the specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

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4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspections set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

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

- a. First article inspection (see 4.4).
- b. Quality conformance inspection (see 4.5).
- c. Acceptance test (see 4.6).

4.3 Inspection conditions. Unless otherwise specified (see 6.2), all inspections shall be performed in accordance with the test conditions specified in 4.1.1.

4.4 First article insertion. When a first article inspection is required, it shall be applied to the first article submitted in accordance with 3.1. Unless otherwise specified (see 6.2), first article inspection shall consist of the examination in 4.7, and all tests in 4.8. The press shall pass the examination and all tests to be accepted.

4.5 Quality conformance inspection. Quality conformance inspection shall be applied to each press prior to being offered for acceptance under the contract. Unless otherwise specified (see 6.2), quality conformance inspection shall consist of the examination in 4.7, the test in 4.3.2, and the inspection in 4.9. The machine shall pass the examination, all tests, and the inspection to be accepted,

4.6 Acceptance test. When specified (see 5.2), an acceptance test shall be performed on each press to ensure conformance with this specification. Unless otherwise specified (see 6.2), the acceptance test shall be performed only after the press is installed at its final location. The acceptance test shall consist of the examination in 4.7, and all tests in 4.5. The machine shall pass the examination and all tests to be accepted.

4.7 Examination. Each press shall be examined to determine compliance with all requirements of this Specification.

4.8 Tests.

4.8.1 Test conditions. All tests shall be performed in an indoor facility with ambient conditions of 41° to 104° Fahrenheit (F) and 20 percent to 95 percent relative humidity.

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4.8.2 Operational test. Each press shall be operated at no load for not less than one-half hour. Proper operation of all controls, motors, adjusting mechanisms, and accessories shall be verified during the trial period.

4.8.3 Alignment tolerance test. Each press shall be tested to determine compliance with the alignment tolerance requirements of 3.6. The alignment tolerance test shall be performed prior to and subsequent to the performance test given in 4.8.4. Any machine adjustments required to comply with 3.6 during or after the performance test shall be cause for rejection.

4.8.4 Tonnage capacity test. The press shall be tested for conformance with the tonnage capacity requirements in tables I, II, or III for the size press specified. Unless otherwise specified (see 6.2), the method used shall be of the manufacturer's standard test procedure for the verification of machine tonnage.

4.8.5 Electromagnetic interference control test. Equipment requiring electromagnetic interference control shall be tested for compliance with 3.3.8 using the procedures given in MIL-STD-462.

4.9 Packaging inspection. Packaging of each item shall be inspected to determine compliance with the requirements of section 5.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-M-18058.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Presses specified herein are intended for forming, blanking, or shaping metal and non-metallic materials.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Type, class, and size required (see 1.2).
- c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- d. First article, if required (see 3.1).
- e. Specify system of units for measuring and indicating devices (see 3.2.1).
- f. Additional safety and health requirements, if required (see 3.2.5).

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- g. Specify configuration of additional point-of-operation guarding, if required (see 3.2.5).
- h. Lubrication system, if different (see 3.2.9),
- i. Painting, if different (see 3.3.5).
- j. If electromagnetic interference control is required, specify the equipment and subsystem class and the emission and susceptibility required (see 3.3.8).
- k. Provisions for die cushion, if required (see 3.4.1).
- l. Slide face T-slots, if required (see 3.4.1.2).
- m. Slide adjustment, if different (see 3.4.1.3).
- n. Slide position indicator, if required (see 3.4.1.3).
- o. Shaft extension, if required (see 3.4.1.4).
- p. Inclining mechanism, if different (see 3.4.1.5).
- q. Drive, if different (see 3.4.2).
- r. Flywheel brake, if required (see 3.4.2.5).
- s. Counterbalance, if required (see 3.4.3).
- t. Bolster, if different (see 3.4.4).
- u. Die cushion, if required (see 3.4.5).
- v. Peak lead measurement system, if required (see 3.4.6).
- w. Quick die change, if required (see 3.4.7).
- x. Tie rods, if required (see 3.4.8).
- y. Electrical requirements, if different (see 3.4.9).
- z. Voltage requirements, if different (see 3.4.9).
- aa. Motors, If different (see 3.4.9.1).
- bb. Worklight, If required (see 3.4.10).
- cc. Hour meter, if required (see 3.4.11).
- dd. Size and capacity, specify if different (see 3.5).
- ee. Specify physical size limitation, if required (see 3.5.1),

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- ff. Specify and fully describe optional equipment, if required (see 3.8).
- gg. Specify applicable repair parts, if required (see 3.9).
- hh. Lubrication plate, if required (see 3.10.1).
- ii. Specify information to be provided on lubrication plate, if different (see 3.10.1).
- jj. Nameplate, if different (see 3.10.2).
- kk. Inspection conditions, if different (see 4.3).
- ll. First article inspection, if different (see 4.4).
- mm. Quality conformance inspection, if different (4.5).
- nn. Acceptance test, if different (see 4.6).
- oo. Specify test, if different (see 4.8.4).

6.3 Consideration of data requirements. The following data requirements should be considered when this specification is applied on a contract. The applicable Data Item Descriptions (DIDs) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/provided and that the DIDs are tailored to reflect the requirements of the specification acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DOD FAR Supplement 27.475-1 exempts the requirement for a DD Form 1423.

<u>Reference Paragraph</u>	<u>DID Number</u>	<u>DID Title</u>	<u>Suggested Tailoring</u>
.	.	.	.
.	.	.	.
.	.	.	.

The above DIDs were those cleared as of the date of this specification. The current issue of DOD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DIDs are cited on the DD Form 1423.

6.3.1 Technical data. It should be specified in the remarks section of the DD Form 1423 that all technical data furnished should be written in the English language.

6.4 First article. When first. article inspection is required, the contracting officer should provide specific guidance to offerors whether the item(s) should be a first article sample, a first production item, or a standard production item from the contractor's current inventory and the number of items to be tested as specified in 4.4. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examinations, approval of first article test results and disposition of first articles. Invitations for bids should provide that the

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Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract.

6.5 Definitions.

6.5.1 Inch-pound units. Inch-pound units are a system of measures based on the yard and pound commonly used in the United States of America and defined by the National Institute of Standards and Technology. Inch-pound units having the same names in other countries may differ in magnitude.

6.5.2 Metric units. Metric units are a system of basic measures defined by the International System of Units based on "Le Systeme International d'Unites (SI)," of the International Bureau of Weights and Measures. These units are described in ASTM E 380 and IEEE 268 (MIL-STD-961).

6.6 Measurement system. In this specification, all measurements, dimensions, sizes, and capacities are given in inch-pound units. These measurements may be converted to metric units through the use of the conversion factors and methods specified in FED-STD-376.

6.7 Changes from previous issues. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

6.8 Safety and health requirements. The 29 CFR 1910 limits only the total hazard level (noise, radiation, electromagnetic emissions, noxious vapors, air contaminants and heat) of the environment in which a machine will operate. It does not limit the hazard level of individual machines in an operating environment. The procuring activity should analyze the existing hazard level in the proposed operating environment and specify additional requirements necessary to integrate this new machine into its future environment.

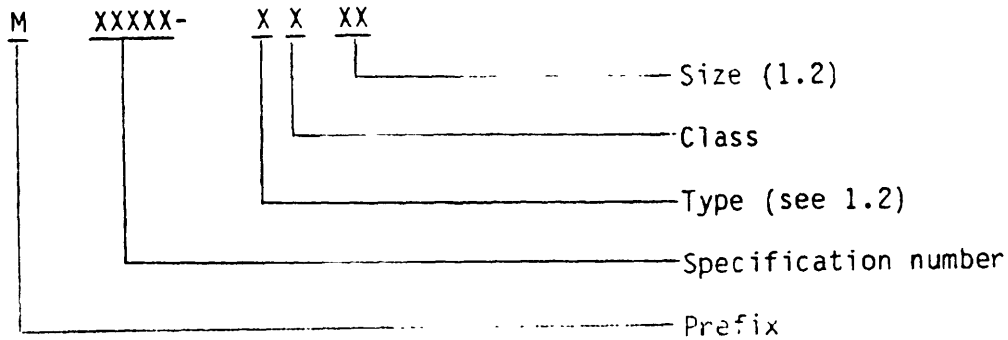
6.9 Training. Training required by the procuring activity should be provided as specified in the contract.

6.10 Warranty. Warranty requirements should be as specified by the procuring activity in the contract.

6.11 Inspection location. The contractor should identify in his response to the solicitation the location where inspection and tests are to be performed.

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6.12 Part or Identifying Number (PIN). The PIN to be used for presses acquired to this specification are created as follows:



6.13 Subject term (key word) listing.

Metalworking
Press mechanical
Press punch
Pressing

Custodians:

Navy - SH
Air Force - 99

Preparing activity:
DLA - IP

Project (3443-0087)

Review activities:

Army - AL
Air Force - 84
DLA - GS

User activities:

Army - AR
Navy - MC

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

1 RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-P-80041D	2. DOCUMENT DATE (YYMMDD) 10 March 1990
3. DOCUMENT TITLE PRESSES, MECHANICAL, OPEN-BACK-INCLINABLE (OBI), SINGLE AND DOUBLE CRANK TYPE		
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if ; e. Attach extra sheets as needed.)		
5. REASON FOR RECOMMENDATION		
6. SUBMITTER		
a. NAME (Last, First, Middle Initial)	b. ORGANIZATION	
c. ADDRESS (Include Zip Code)	c. TELEPHONE (include Area Code) (1) Commercial (2) AUTOVON (If applicable)	7. DATE SUBMITTED (YYMMDD)
8. PREPARING ACTIVITY		
a. NAME	b. TELEPHONE (include Area Code) (1) Commercial (2) AUTOVON	
c. ADDRESS (Include Zip Code)	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT Defense Quality and Standardization Office 5203 Leesburg Pike Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 754-2340 AUTOVON 289 2340	