----
* NOT MEASUREMENT *
*   SENSITIVE   *

OO-P-2873
June 2, 1994

SUPERSEDING
MIL-P-52554B
28 January 1989

FEDERAL SPECIFICATION

PRESS, HYDRAULIC, PORTABLE, WITH DIES FOR SWAGING, 500-TON, GASOLINE-ENGINE-DRIVEN

This specification is approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE

1.1 Scope. This specification covers a portable hydraulic press for swaging ferrules and sleeves onto wire rope.

1.2 Measurement conversion. Values used herein in the inch/pound system are converted to the metric system conforming to FED-STD-376 (see 6.9).

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this specification 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).

Federal Specifications

W-B-131 - Battery Storage, (Vehicular, Ignition, Lighting and Starting)
RR-W-410 - Wire Rope and Strand
UU-T-81 - Tags, Shipping, and Storage

Beneficial comments (recommendations, additions, deletions) and any pertinent
*data which may be of use in improving this document should be addressed to: *
*Commanding Officer (Code 156), Naval Construction Battalion Center,   *
*1000 23rd Avenue, Port Hueneme, CA 93043-4301, by using the Standardization *
*Document Improvement Proposal (DD Form 1426) appearing at the end of this   *
*document or by letter.   *

AMSC N/A FSC 3442

Federal Standards

FED-STD-H28 - Screw-Thread Standards for Federal Services
FED-STD-297 - Rustproofing of Commercial (Non-Tactical) Vehicles
FED-STD-376 - Preferred Metric Units For General Use By The Federal Government

Military Specifications

MIL-P-116 - Preservation, Methods of
MIL-B-121 - Barrier Material, Greaseproofed, Waterproofed, Flexible
MIL-C-3774 - Crates, Wood, Open, 12,000- and 16,000-Pound Capacity
MIL-E-10062 - Engines, Preparation for Shipment and Storage of
MIL-T-22085 - Tapes, Pressure-Sensitive, Adhesive, Preservation and Sealing
MIL-C-43006 - Cloth and Strip, Laminated or Coated, Vinyl-Nylon or Polyester High Strength, Flexible
MIL-F-52553 - Fittings, Wire Rope

Military Standards

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129 - Marking for Shipment and Storage
MIL-STD-209 - Slinging and Tiedown Provisions for Lifting and Tying Down Military Equipment
MIL-STD-461 - Electromagnetic Interference Emissions and Susceptibility
MIL-STD-1186 - Cushioning, Anchoring, Bracing, Blocking, and Waterproofing, with Appropriate Test Methods
MIL-STD-1474 - Noise Limits For Military Materiel

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Non-Government publications. The following document(s) form a part of this specification 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 the documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

American Society for Testing and Materials (ASTM)

ASTM A53 - Pipe, Steel, Black and Hot Dipped, Zinc-Coated, Welded and Seamless
ASTM D3951 - Commercial Packaging, Practice for

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.)

Environmental Protection Agency (EPA)

Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines: Certification and Test Procedures
Interstate Motor Carrier Noise Emission Standards
Motor Vehicle Air Pollution Standards
Title 40, CFR, Part 204 Subpart B - Noise Emission Standards for Construction Equipment

(Application for copies should be addressed to the Public Affairs Office, Environmental Protection Agency, Rockville, MD 20852; or CFR, Title 40 should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

State of California

California Vehicle Code

(Application for copies should be addressed to the Department of Motor Vehicles, 2570 24th Street, Sacramento, CA 95809.)

Department of Labor (DoL)
Occupational Safety and Health Administration (OSHA)

OSHA - Title 29, Code of Federal Regulations, Chapter XVII, part 1910, and Amendments

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

Society of Automotive Engineers, Inc. (SAE)

SAE J88 - Sound Measurement-Earthmoving Machinery - Exterior Standard
SAE J514 - Hydraulic Tube Fittings
SAE J516 - Hydraulic Hose Fittings
SAE J517 - Hydraulic Hose
SAE J524 - Seamless Low Carbon Steel Tubing Annealed for Bending and Flaring
SAE J525 - Welded and Cold Drawn Low Carbon Steel Tubing Annealed for Bending and Flaring
SAE J534 - Lubrication Fittings, Standard
SAE J1065 - Pressure Ratings for Hydraulic Tubing and Fittings, Information Report

(Application for copies should be addressed to the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.)

(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 Description. The portable hydraulic press (hereinafter called "press") shall be a gasoline-engine-driven hydraulic press complete with replaceable dies required for operation as specified herein. The swaging press shall develop 500 tons of force on the swaging dies (see Figure 1).

3.1.1 Swaging sleeves. Unless otherwise specified (see 6.2) the press shall be provided with sleeves as indicated in Table I.

TABLE I. Sleeve assortment.

Nominal wire rope size (in.)	Material	Type	Quantity
1/4	Carbon steel	Round	50
3/8	Carbon steel		50
1/2	Carbon steel		200
5/8	Carbon steel		200
3/4	Carbon steel		200
7/8	Carbon steel		100
1	Carbon steel		100
1-1/8	Carbon steel		50
1-1/4	Carbon steel		50
1-1/2	Stainless steel	Oval two-piece duplex	20

3.2 First article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.2.1 and 6.3).

3.3 Standard commercial product. The press shall, as a minimum, be in accordance with the requirements of this specification and shall be the manufacturer’s standard commercial product, not a prototype. Additional or better features which are not specifically prohibited by this specification but which are a part of the manufacturer’s standard commercial product, shall be included in the press being furnished. A standard commercial product is a product which has been sold or is being currently offered for sale on the commercial market through advertisements or manufacturer’s catalogs, or brochures, and represents the latest production model.

3.4 Materials. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice. Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this specification are to be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials

which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. Unless otherwise specified, none of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification.

3.5 Interchangeability. All units of the same classification furnished with similar options under a specific contract shall be identical to the extent necessary to insure interchangeability of component parts, assemblies, accessories, and spare parts.

3.6 Screw threads. All screw threads shall conform to FED-STD-H28.

3.7 Environmental conditions.

3.7.1 Operating temperature. The swaging press shall perform as specified herein in any ambient temperature from +125 degrees Fahrenheit (oF) to -20oF.

3.7.2 Storage temperature. The swaging press shall not be damaged by storage in any ambient temperature from +160oF to -50oF.

3.8 Safety. All belts, gears, shafts, pulleys, chains, and other reciprocating, rotating, or moving parts of equipment shall be guarded in accordance with current OSHA regulation, 29 CFR, Chapter XVII, 1910.212, when such parts are exposed to contact by personnel or otherwise create a hazard. All hot surfaces of equipment, including exhaust pipes and other lines which may be subject to high temperatures, exposed to contact by personnel, or which create a fire hazard shall be fully guarded or insulated. Exhausts or discharges from the equipment shall be directed so that they do not endanger personnel or obstruct the view of the operator. The fuel tank shall be located in a manner which will not allow spills or overflows to run onto the engine, exhaust, or electrical equipment. Adequate shielding may be used to attain the same purpose. All high pressure hydraulic hoses shall be shielded in such a manner as to prevent operator injury. Electrical equipment shall be effectively guarded and grounded to protect all persons and objects from electrical shock hazard.

3.8.1 Deadman control. When released, the control valve handle shall return to neutral and cause immediate stopping of the hydraulic ram movement.

3.8.2 Stress. Under any of the operating conditions specified herein, no component of the hydraulic press shall be stressed beyond 60 percent of its yield strength.

3.9 Noise. The press shall not emit noise in excess of 85dB when operating in the pressing mode. The noise level shall be measured on the A-scale of the standard sound level meter at slow response at 5 feet in height. If sound level exceeds 85dB when tested in accordance with 4.4.3, hazard signs shall be placed on the press, and shall state "CAUTION, HEARING PROTECTION REQUIRED" and shall not exceed EPA Interstate Motor Carrier Noise Emission Standards.

3.10 Reliability and maintenance.

3.10.1 Reliability. The swaging press shall perform not less than 5,000 swaging operations without unscheduled maintenance.

3.10.2 Ease of maintenance. All major assemblies and installed attachments shall be accessible for maintenance, repair, and replacement without the removal of other major assemblies and installed attachments not normally removed. Covers or plates which must be removed for component adjustment, repair, replacement, or maintenance shall be equipped with quick-disconnect fasteners. Drain outlets shall be located for accessibility. Provisions shall be made to permit the use of receptacles for collecting drainage.

3.10.3 Filling, draining, and checking provisions. The hydraulic system reservoir and other enclosures which contain lubricant or hydraulic oil shall be equipped with dipsticks or with check plugs of not less than 1/2-inch pipe size to determine the fluid level. Dipsticks shall be etched, knurled, sand blasted, or phosphate coated to facilitate determining the liquid level. Each enclosure shall be equipped with means for filling and for draining. The drain shall be fitted with a magnetic drain plug having either tapered pipe threads or shoulder and gasket; or in lieu of the magnetic drain plug, a separate magnetic device shall be fastened inside the enclosure at or near the bottom and shall be removable for cleaning. Each drain plug or valve shall be located so that removal of the plug or valve will result in complete drainage of the fluid from the enclosure. The fuel tank filler cap shall be captive chained and marked "FUEL" with cast or embossed letters. The hydraulic system filler cap shall be marked as follows with cast or embossed letters: "HYD. RES. USE HYDRAULIC OIL."

3.11 Performance. The swaging press shall swage a wire rope fitting to the applicable size wire rope when using fittings conforming to MIL-F-52553 and dies that are compatible to both the swaging press and the fittings. After swaging with a force of not more that 500 tons, the fittings shall withstand the pull forces indicated in Table II without separation, slipping, cracking, or other failure attributable to any deficiency in design or construction of the dies or the swaging press.

TABLE II. Pull loads for swaged sleeves and ferrules.

Wire rope size diameter (inches)	Minimum breaking strength of test item (pounds)
1/4	5,880
3/8	13,120
1/2	23,000
5/8	35,800
3/4	51,200
7/8	69,200
1	89,800
1-1/8	113,000
1-1/4	138,800
1-3/8	167,000
1-1/2	197,800

3.12 Engine. The press shall be equipped with a commercial, industrial type, electric cranking, internal combustion, four-stroke cycle gasoline engine having horsepower, torque, and speed characteristics to meet satisfactorily all the press performance requirements specified herein. The engine shall start within five minutes and be ready for full load operation within fifteen minutes in any ambient temperature from +110oF to -20oF.

3.12.1 Engine control systems. The engine shall be furnished with standard commercial control systems. The control systems shall include a high-temperature control, low-oil-pressure control, and an overspeed control. All controls shall be of the engine-shut-off type.

3.12.2 Governor. An engine governor shall be furnished and set and sealed to limit the engine to engine manufacturer's maximum recommended operating speed.

3.12.3 Air pollution control. The press shall comply with EPA Regulations governing Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines in effect on the date of manufacture, and EPA Motor Vehicle Air Pollution Standards. In addition, vehicles destined for California shall comply with State of California Vehicle Code regulations governing air pollution control in effect on date of manufacture.

3.12.4 Battery. The engine shall be furnished with a 380 CCA, 12-volt potential battery. The battery shall be of the maintenance-free type having the maintenance-free characteristics listed in W-B-131.

3.13 Hydraulic system. A fully closed hydraulic system consisting of a pump, pressure relief valves, control valves, hoses, fittings, strainer, ram, pressure gauge, and a reservoir having a capacity in excess of that required for complete extension of the ram shall be furnished. The hydraulic system shall operate at a pressure no more than 7,500 pound-force per square inch (psi), and shall have the pressure relief valve set in the range of 110 to 115 percent of the operating pressure required. All hydraulic lines shall be either steel tubing or pipe with steel fittings or reinforced rubber hose. The maximum operating pressure shall not exceed the specified working pressure of any component of the hydraulic system.

3.13.1 Pressure gauge. A pressure gauge marked in psi with a scale range at least 1.3 times the maximum operating pressure required shall be furnished. The gauge shall be equipped with snubbers and have an accuracy of +/-3 percent of the full scale value. Gauge readings above the operating pressure shall be completely overprinted in red and clearly marked "DANGER."

3.13.2 Hydraulic ram. The swaging hydraulic ram shall be the single-acting type and shall have a stroke of not less than 5 inches. If cylinders are used to retract the ram, they may be double acting.

3.13.3 Hydraulic lines.

3.13.3.1 Hose assemblies. Hydraulic hose shall conform to SAE J517, and hose fittings shall conform to SAE J516. The rated working pressure of the hose size and type selected shall be equal to or greater than the system relief valve setting.

3.13.3.2 Tubing and fittings. Tubing shall conform to SAE J524 or SAE J525. Tube wall thickness shall conform to SAE J1065. Fittings shall conform to SAE J514.

3.13.3.3 Pipe. Pipe shall conform to ASTM A53.

3.14 Swaging dies. The swaging press shall be provided with replaceable dies in all sizes required for installation of the ferrules and sleeves specified in MIL-F-52553. The dies shall be of hardened alloy steel.

3.15 Weight. The maximum allowable weight of the swaging press complete with engine shall be 8,000 pounds (lb).

3.16 Electromagnetic interference. When specified (see 6.2), the electromagnetic interference emission characteristics of the swaging press shall conform to MIL-STD-461, Class IIIC.

3.17 Lubrication. Means for lubrication shall be in accordance with the manufacturer's standard practice. The lubricating points shall be easily visible and accessible. Hydraulic lubrication fittings shall be in accordance with SAE J534. Where use of high pressure lubricating equipment, 1,000 psi or higher, will damage grease seals or other parts, a suitable warning shall be affixed to the equipment in a conspicuous location. The unit shall be lubricated prior to delivery with type of lubricant specified in the operator's manual and grade of lubricant recommended for ambient temperature at the delivery point. The unit shall be conspicuously tagged to identify the lubricants and their temperature range.

3.18 Rustproofing. The press shall be rustproofed in accordance with FED-STD-297.

3.19 Lifting and tiedown attachments. The press shall be equipped with lifting and tiedown attachments. Lifting and tiedown attachments shall conform to type II or type III of MIL-STD-209. A nonferrous transportation plate shall be provided and mechanically attached to the press. Transportation plates shall be inscribed with a diagram showing the lifting attachments and lifting slings, the capacity of each attachment, and the required length and size of each sling cable. A silhouette of the item furnished showing the center of gravity shall be provided on the transportation plate. Tiedown attachments may be identified by stenciling or other suitable marking. Tiedown marking shall clearly indicate that the attachments are intended for the tie down of the press on the carrier when shipped.

3.20 Identification plate. An identification plate will be furnished by the contracting officer for each press. The contractor shall stamp all necessary data in the blank spaces of the plate provided for that purpose, and securely affix a plate to each press in a conspicuous place with nonferrous screws, rivets, or bolts not less than 1/8-inch in diameter. The applicable nomenclature contained in the contract item description shall be placed in the top blank.

3.21 Instruction plates. The press shall be equipped with instruction plates suitably located, describing any special or important procedures to be followed in operating and servicing the equipment. Plates shall be of a

material which will last and remain legible for the life of the equipment. Plates shall be securely affixed to the equipment with nonferrous screws or bolts of not less than 1/8-inch diameter.

3.22 Cleaning, treatment, and painting. Surfaces normally painted in good commercial practice shall be cleaned, treated, and painted as specified herein. The color of the finish coat shall be as specified (see 6.2). Surfaces to be painted shall be cleaned and dried to insure that they are free from contaminants such as oil, grease, welding slag and spatter, loose mill scale, water, dirt, corrosion product, or any other contaminating substances. As soon as practicable after cleaning, and before any corrosion product or other contamination can result, the surfaces shall be prepared or treated to insure the adhesion of the coating system. The painting shall consist of at least one coat of primer and one finish coat of acrylic-based enamel. The primer shall be applied to a clean, dry surface as soon as practicable after cleaning and treating. The total dry film thickness shall be not less than 2.5 mils over the entire surface. The paint shall be free from runs, sags, orange peel, or other defects.

3.23 Cover. When specified (see 6.2), the swaging press, including the engine, shall be provided with a fitted cover. The cover material shall conform to MIL-C-43006, Type I, Class 1, Form 1, matching Color No. 34087. The cover shall be equipped with tiedown grommet eyes of sufficient size to accommodate 3/8-inch-diameter rope.

3.24 Steel fabrication. The steel used in fabrication shall be free from kinks, sharp bends, and other conditions which would be deleterious to the finished product. Manufacturing processes shall not reduce the strength of the steel to a value less than intended by the design and shall be done neatly and accurately. All bends shall be made by controlled means to insure uniformity of size and shape.

3.25 Bolted connections. Bolt holes shall be accurately punched or drilled and shall have the burrs removed. Washers or lockwashers shall be provided in accordance with good commercial practice. All fasteners shall be tight.

3.26 Riveted connections. Rivet holes shall be accurately punched or drilled and shall have the burrs removed. Rivets shall be driven with pressure tools and shall completely fill the holes. Rivet heads, when not countersunk or flattened, shall be of approved shape and of uniform size for the same diameter of rivet. Rivet heads shall be full, neatly made, concentric with the rivet holes, and in full contact with the surface of the member.

3.27 Welding. Welding procedures shall be in accordance with a nationally recognized welding code. The surface of parts to be welded shall be free from rust, scale, paint, grease, or other foreign matter. Welds shall be of sufficient size and shape to develop the full strength of the parts connected by the welds. Welds shall transmit stress without permanent deformation or failure when the parts connected by the weld are subjected to proof and service loadings.

3.28 Castings. All castings shall be sound and free from patching, misplaced coring, warping, or any other defect which reduces the casting's ability to perform its intended function.

3.29 System of measurement. The dimensions used in this specification are not intended to preclude the use of the metric system of measurement in the fabrication and production of the material, individual parts, and the finished product, provided form, fit, and function requirements are satisfied. Inch-pound values used herein are converted to metric values using FED-STD-376 (see 6.9).

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 of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection 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.

4.1.2 Material inspection. The contractor is responsible for insuring that supplies and materials are inspected for compliance with all the requirements specified herein and in applicable referenced documents.

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

a. First article inspection (see 4.2.1).
b. Quality conformance inspection (see 4.2.2).

4.2.1 First article inspection. The first article inspection shall be performed on press when a first article is required (see 3.2 and 6.2). This inspection shall include the examination of 4.3 and the tests of 4.4. The first article may be either a first production item or a standard production item from the supplier's current inventory provided the item meets the requirements of the specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

4.2.2 Quality conformance inspection. The quality conformance inspection shall include the examination of 4.3, the tests of 4.4, and the packaging inspection of 4.5. This inspection shall be performed on the samples selected in accordance with MIL-STD-105 inspection level II.

4.3 Examination. Each press shall be examined for compliance with the requirements specified in section 3 of this specification. Any redesign or modification of the contractor's standard product to comply with specified requirements, or any necessary redesign or modification following failure to meet specified requirements shall receive particular attention for adequacy and suitability. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirements or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

4.4 First article tests. The first article shall be subjected to the tests specified in 4.4.1 through 4.4.6; and when provided with lifting and tiedown attachments, to the test specified in 4.4.5. Failure to pass any phase of these tests shall be cause for rejection.

4.4.1 Ease of maintenance. Maintenance operations shall be accomplished during preproduction testing. Nonconformance to 3.10.2 shall constitute failure of this test.

4.4.2 Safety. The swaging press shall be evaluated throughout testing as specified in 4.4. Nonconformance to 3.8 shall constitute failure of this test.

4.4.3 Noise level tests. Exterior noise level shall be verified for conformance in 3.9 in accordance with SAE J88.

4.4.4 Performance.

4.4.4.1 Swaging press. Block the ram at or near the end of its upward position. Run the ram against the block and hold the control valve open until the relief valve opens. Record the reading of the pressure gauge when the relief valve opens. Cycle the ram from its bottom position to full load against the blocking for 10 cycles. Examine all components of the swaging press during the cycling operation. Permanent distortion of the frame, binding of the ram, air in the hydraulic system, hydraulic fluid leakage, or failure of the relief valve to open at a gauge indication between 550 and 575 tons shall constitute failure of this test.

4.4.4.2 Operation. Operate the swaging press, swaging 4 sleeves and 4 ferrules of each size specified in MIL-F-52553 to the appropriate size wire rope. The contractor shall use extra-improved plow steel wire rope conforming to RR-W-410, table XI, to reduce possibility of wire rope failure. Test samples shall conform to those indicated in figure 2. Using a tension testing machine, each test sample shall be submitted to the pull forces specified in table I. The unit shall be started three times at ambient temperatures of 120oF and operated for 1 hour at full throttle without overheating. The unit shall be started three times without booster batteries at ambient temperatures of -20oF at 2-hour intervals while at -20oF. Nonconformance to 3.7.1 and 3.11 shall constitute failure of this test.

4.4.4.3 Reliability. When specified (see 6.2), the swaging dies and swaging press shall perform not less than 5,000 swaging operations using fittings conforming to MIL-F-52553. Nonconformance to 3.10.1 and 3.14 shall constitute failure of this test.

4.4.4.4 Electromagnetic interference. When specified (see 6.2), the first article shall be tested to determine conformance to 3.16. The contractor shall furnish the contracting officer a report of tests required by MIL-STD-461. Disapproval of the report shall constitute failure of this test.

4.4.5 Slinging provisions.

4.4.5.1 Test procedure.

a. Lift the swaging press and hold it in suspension in its normal travel position using slings that converge not more than 24 feet above the lowest extremity of the swaging press. Determine the forward angles of application for each provision. Measure the clearance between each sling and the swaging press. Measure the eye openings and clearance dimensions of the provisions.

b. Restrain the swaging press by anchoring the main frame and subject each slinging provision to a force of 2-1/2 times the load it carried when suspended. This force shall be applied in the direction as determined in (a) above. An acceptable alternate method of test shall be to lift the swaging press as in (a) above and add weights to the swaging press until the force on each provision is 2-1/2 times the initial force. Hold the swaging press under either of the above loading conditions for not less than 90 seconds.

4.4.5.2 Failure criteria. Weld failure, permanent deformation of the swaging press or any slinging provision, slings converging more than 24 feet above the lowest extremity of the swaging press, or nonconformance to MIL-STD-209, class 1, shall constitute failure of this test.

4.4.6 Tiedown provisions.

4.4.6.1 Test procedure. With the swaging press anchored by means other than the tiedown being tested, apply the static loads specified in MIL-STD-209, class 2, to each provision. Measure the dimensions of the tiedowns.

4.4.6.2 Failure criteria. Weld failure, permanent deformation of the swaging press or its tiedown provisions, breakage of the provisions, or nonconformance to MIL-STD-209, class 2, shall constitute failure of this test.

4.5 Packaging inspection. The preservation, packing, and marking of the item shall be inspected to verify conformance to the requirements of section 5.

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 Preservatives. Preservatives specified herein shall conform to the applicable specification listed in MIL-P-116 and shall be applied in accordance with MIL-P-116.

5.1.1.2 Unprotected surfaces. Unpainted exterior metal surfaces requiring the application of a contact preservative in accordance with MIL-P-116, and not specifically specified herein, shall be coated with preservative as follows.

5.1.1.2.1 Unfinished surfaces. Unfinished exterior metal surfaces shall be coated with Type P-1 preservative.

5.1.1.2.2 Machined surfaces. Exposed machine surfaces shall be coated with type P-6 or P-11 preservative and the coated surface wrapped or covered with barrier material conforming to MIL-B-121, type I, grade A, class 2. The material shall be secured in place with tape conforming to MIL-T-22085, type I or II.

5.1.1.3 Engine. The engine and engine accessories shall be preserved in accordance with the level A requirements of MIL-E-10062, as specified for type II, method I.

5.1.1.4 Hydraulic system. The hydraulic fluid supply tank shall be filled with the hydraulic fluid recommended for operation. The piston shall be fully retracted into the cylinder and secured. Any exposed portions of the piston rod (ramshaft) shall be coated with type P-6 or P-11 preservative and wrapped or covered with barrier material conforming to MIL-B-121, type I, grade A, class 2, extending the wrap approximately two inches on the ram cylinder. The wrap shall be secured in place with tape conforming to MIL-T-22085, type I or II. The hydraulic control valve shall be secured in the neutral position. The hose shall not be disconnected. All exposed parts and fittings shall be cupped or plugged. Any unpainted exterior surfaces of the system requiring the application of a contact preservative in accordance with MIL-P-116, shall be coated with type P-1 preservative. A tag shall be attached indicating:

"The hydraulic supply tank is filled with the fluid required for operation."

The tag and the printing thereon shall be waterproofed. The tag shall be in accordance with UU-T-81.

5.1.2 Commercial. Material shall be preserved in accordance with ASTM D3951.

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

5.2.1 Level A. Each complete swaging press, with tarpaulin secured in place, shall be packed in a close-fitting crate conforming to MIL-C-3774, style A, type II. The contents shall be blocked, braced, and anchored to the crate base in accordance with MIL-STD-1186 and the appendix to the crate specification.

5.2.2 Commercial. Material shall be packed in accordance with ASTM D3951.

5.3 Marking. Marking shall be in accordance with MIL-STD-129.

6. NOTES

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

6.1 Intended use. The swaging press is intended for use in swaging ferrules and sleeves conforming to MIL-F-52553 onto wire rope.

6.2 Acquisition requirements. Purchasers should select the preferred options permitted herein and include the following information in acquisition documents:

a. Title, number, and date of this specification
b. 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)
c. When sleeve requirements are different (see 3.1.1)
d. When first article and inspection sample is required (see 3.2 and 4.2.1)
e. When reliability testing is required (see 3.10 and 4.4.4.3)
f. When electromagnetic interference restrictions are specified (see 3.16)
g. Color of finish coat (see 3.22)
h. When a fitted cover is required (see 3.23)
i. Level of preservation and level of packing required (see 5.1 and 5.2)

6.3 First article. When a first article inspection is required, the item will be tested and should be a first article sample, or it may be a standard production item from the contractor's current inventory as specified in 4.2.1. The first article should consist of one unit. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examination, test, and approval of the first article.

6.4 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (DD Form 1423) incorporated into the contract. When the provisions of DoD Federal Acquisition Regulations (FAR) Supplement, Part 27, Sub-Part 227.405-70 are invoked and the DD Form 1423 is not used, the data should be delivered by the contractor in accordance with the contract or purchase order requirements.

6.5 Provisioning. The contracting officer should include provisioning requirements for repair parts and maintenance tools as necessary (including any special tools), and instructions regarding shipment of swaging presses.

6.6 Noise limits. When the noise level of the swaging press exceeds 85dB(A), the appropriate discussion of the noise hazard in accordance with MIL-STD-1474 should include the requirement for hearing protection, the noise level of the swaging press, the distance from the swaging press at which 85dB(A) will always be met, and what operational situation or system configuration will reduce the level to 85dB(A).

6.7 Information figure. Figure 1 shows a type of swaging press which has been found acceptable; however, the figure is included for illustration only and is not intended to preclude the furnishing of another swaging press which conforms to this specification.

6.8 Recycled material. It is encouraged that recycled material be used, when practical, as long as it meets the requirements of the specification.

6.9 Measurement conversion. Numerical values used herein are converted to metric values using FED-STD-376:

Inch-pound		Metric	
Linear			
1/8	inch	3.175	millimeters (mm)
1/4	inch	6.350	mm
3/8	inch	9.525	mm
1/2	inch	12.70	mm
5/8	inch	15.875	mm
3/4	inch	19.050	mm
7/8	inch	22.225	mm
1	inch	25.40	mm
5	foot	1.524	meters (m)
24	foot	7.315	m
Force			
5,880	Pound	26	kilonewtons (kN)
8,000	Pound	36	kN
9,160	Pound	41	kN
13,120	Pound	58	kN
23,000	Pound	102	kN
35,800	Pound	159	kN
51,200	Pound	228	kN
69,200	Pound	308	kN
89,800	Pound	399	kN
113,000	Pound	502	kN
138,800	Pound	617	kN
167,000	Pound	743	kN
197,800	Pound	876	kN
500	Ton (2,000 pound ton)	4 448	kN
550	Ton	4 893	kN
575	Ton	5 115	kN
Pound Per Square Inch			
1,000	psi	6 895	kilopascal (kPa)
7,500	psi	51 711	kPa

Inch-pound	Metric
Temperature	
-20 oF	-29 oCelsius (C)
-50 oF	-46 oC
110 oF	43 oC
125 oF	52 oC
160 oF	71 oC

MILITARY INTERESTS:

Custodians

Army - ME
Navy - YD1
Air Force - 99

Review Activities

Air Force - 84
DLA - GS

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

Preparing Activity:

Navy - YD1

(Project 3442-0063)

[FIGURE 1. Swaging press, 500 ton.] - GRAPHIC NOT INCLUDED

[FIGURE 2. Fabrication of test samples.] - GRAPHIC NOT INCLUDED