INCH-POUND

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SUPERSEDING
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COMMERCIAL ITEM DESCRIPTION

SHRINKING AND STRETCHING MACHINE, SHEET METAL

The General Services Administration has authorized the use of this commercial item description for all federal agencies.

1. SCOPE. This commercial item description (CID) covers shrinking and stretching machines for forming sheet metal, angles, flatbars, and plates with equipment and accessories specified herein. These machines are used by aircraft manufacturers, fabricators, and the sheet metal trade to shrink and stretch flats, angles, plates, and extrusions for forming, fitting, and removing wrinkles.

2. CLASSIFICATION. The shrinking and stretching machines shall be of the following types and sizes.

2.1 Type. Unless otherwise specified (see 7.3(b)), the type shall be one of the following:

Type I - Manually operated
Type II - Pneumatically operated
Type III - Hydraulically operated
Type IV - Electro-mechanically operated

2.2 Size. Size is defined as the distance from the center of the jaw to back of machine throat: Unless otherwise specified (see 7.3(c)), the size shall be one of the following.

Size 01 - 1-inch throat depth
Size XX - other

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: STDZNMGT@dla.mil or Defense Supply Center Richmond (DSCR), ATTN: DSCR-VEB, 8000 Jefferson Davis Highway, Richmond, VA 23297-5616.

3. SALIENT CHARACTERISTICS

3.1 Design. The shrinking and stretching machine shall be capable of shrinking and stretching ferrous and non-ferrous metal through the application of compression or tension force on the metal, which is gripped in sliding jaws, in accordance with the requirements specified herein. The machine shall be capable of shrinking and stretching aluminum, stainless steel, and titanium. The machine shall consist basically of a "C" type frame with a ram for application of pressure to the jaws. Design of the machine shall allow the operator to change tooling from one operation to another with relative ease. The machine shall include all components, parts, and features necessary to meet the performance requirements specified herein. The shrinking and stretching machine shall comply with the requirements of American National Standards Institute (ANSI) B11.7, "Cold Headers and Cold Formers, Safety Requirements for the Construction, Care and Use of", and the safety requirements of Occupational Safety and Health Administration (OSHA) in 29 CFR 1910, "Occupational Safety and Health Standards".

3.2 Controls. All operating controls shall be located conveniently to the operator's workstation. Unless otherwise specified (see 7.3(d)), types II, III, and IV machines shall have foot controls.

3.3 Frame. The frame shall be manufactured sufficient in strength and rigidity to support and maintain alignment of all components when the machine is operated at its maximum rated capacity.

3.4 Ram or pressure lever. The machine shall have a ram or pressure lever for mounting the upper jaw assembly. The ram or pressure lever shall be supported by guides or bushings mounted on the frame, permitting vertical operation through a lever and toggle linkage.

3.5 Type I machines (manual). The type I machines shall be manually operated by either a foot treadle or hand lever providing sufficient force to accomplish the shrinking and stretching capacities for the machine size specified. The foot treadle or hand lever shall be either counter balanced or spring loaded to maintain the starting position after release.

3.6 Type II machines (pneumatic). The type II machine shall be pneumatically operated. The pneumatic system shall conform to National Fluid Power Association's NFPA T2.25.1, "Pneumatic Fluid Power - Systems Standard for Industrial Machinery". The system shall have an air line filter, water trap, and filter regulator lubricator, as necessary. The system shall include all devices necessary to meet the requirements specified herein. Air pressure gauges shall be provided to indicate input air pressure in all lines that are downstream from a pressure control device.

3.7 Type III machines (hydraulic). The type III machine shall be hydraulically operated. The hydraulic system shall meet or exceed the requirements of National Fluid Power Association's NFPA T2.24.1, "Hydraulic Fluid Power - Systems Standard for Stationary Industrial Machinery". Overpressure protection shall be provided in the high pressure line to prevent damage to components. A filter system shall be provided to ensure delivery of clean fluid. The hydraulic reservoir shall have a means for determining fluid level, a provision for draining, and a cleanout access plate if the reservoir is not removable.

3.8 Type IV machines (electro-mechanical). The type IV machine shall be electro-mechanically operated. Power shall be transmitted mechanically from an electric motor to a flywheel and ram actuating mechanism with sufficient force to perform the shrinking and stretching operations as specified herein.

3.9 Jaw assemblies. The jaw assembly shall consist of an anvil and movable jaws made of alloy steel with a surface hardness of not less than 55 on the Rockwell "C" scale. The jaw assemblies shall be mounted one to the ram or pressure fingers and one to the bed by means of a quick change locking and releasing device to expedite tooling changeover. The jaw assembly shall perform one forming operation per stroke. Unless otherwise specified (see 7.3(e)), the standard shrinking assemblies shall have a number 2 stipple or serrated gripping surface. When surface marking is unacceptable, jaws made of plastic or other suitable material shall be provided.

3.10 Electrical system. The electrical system required on type II, III, and IV machines shall conform to the latest National Fire Protection Association's NFPA 79, "Electrical Standard for Industrial Machinery". Each machine shall have a fused safety disconnect switch or circuit breaker. An identified terminal for grounding the machine when it is installed shall be mounted in or near the disconnect switch. The terminal shall be suitable for connecting the size grounding connector.

3.10.1 Primary input voltage. Unless otherwise specified (see 7.3(f)), the powered machines shall be wired to draw all of its electrical power from a single 230/460 volt (V), 3-phase circuit. The machine shall be initially wired to operate from a 460 V source.

3.10.2 Motors. Motors shall be rated for continuous duty. Unless otherwise specified (see 7.3(g)), the motor shall be the manufacturer's standard motor.

3.11 Control circuit voltage. Auxiliary control circuits shall be isolated from the input electrical power by a low-voltage transformer having a secondary voltage no greater than 120 V.

3.12 Lubrication. Means shall be provided to ensure lubrication for all moving parts. All oil holes, grease fittings, and filler caps shall be accessible. When specified (see 7.3(h)), a centralized automatic lubrication system shall be provided.

3.13 Hour meter. Unless otherwise specified (see 7.3(i)), type III and IV machines shall be equipped with an hour meter installed to display accumulated operating time of the main drive motor. The meter shall be of the non-resetting type with a range of 0 to 99,999 hours in increments of not greater than 1 hour. The meter shall be sealed to prevent the entrance of dust and moisture and it shall be mounted to withstand the shock and vibration of the machine. Upon reaching 99,999 hours, the meter readout shall automatically return to zero and continue to accumulate time.

3.14 Physical size limitations. The physical size of the machine shall not exceed the height, width, and length restrictions specified by the procuring activity (see 7.3(j)) to ensure the machine will fit into its future operating location.

3.15 Standard equipment. All equipment normally provided with the manufacturer's standard commercial machine shall be furnished, including the following:

a. One set of maintenance and adjusting tools.
b. One set of manufacturers standard stretching jaw assemblies.
c. One set of manufacturers extended shrinking jaw assemblies.
d. One set of manufacturers extended stretching jaw assemblies.

3.16 Optional equipment. When specified (see 7.3(k)), optional equipment shall be provided by the manufacturer.

3.17 Marking on charts and plates. All words on charts and plates shall be in the English language. Characters shall be permanently marked in boldface type on a contrasting background.

3.17.1 Lubrication chart or plate. A lubrication chart or plate shall be securely attached to each machine. The chart or plate shall contain the following information:

a. Points of lubrication application.
b. Servicing interval.
c. Type of lubricant.
d. Viscosity.

3.17.2 Nameplate. A nameplate shall be securely attached to each machine. Unless otherwise specified (see 7.3(l)), the nameplate shall contain the following information:

a. Nomenclature.
b. Manufacturer's name.
c. Manufacturer's model.
d. Manufacturer's serial number.
e. Power inputs (volts, total amps, phase, frequency).
f. Contract number or order number.
g. National stock number.
h. Date of manufacturer.

3.18 Metric products. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they meet specified tolerances using conversion tables contained in FED-STD-376, "Preferred Metric Units for General Use by the Federal Government".

4. REGULATORY REQUIREMENTS

4.1 Recovered materials. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

5. PRODUCT CONFORMANCE PROVISIONS

5.1 Product conformance. The products provided shall meet the salient characteristics of this CID, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

5.2 Market acceptability. The product offered must have been previously sold either to the government or on the commercial market.

6. PACKAGING

6.1 Preservation, packing, and marking. Preservation, packing, and marking shall be as specified in the acquisition order (see 7.3(m)).

7. NOTES

7.1 Part or identification number (PIN). The following PIN procedure is for government purposes and does not constitute a requirement for the contractor.

AA59420 - X XX — Example of reference part number: AA59420-201

- Size: 01 - 1-inch throat depth
  XX - Other throat depth (i.e., 06 = 6-inch throat depth)
- Type: 1 - Type I - Manually operated
  2 - Type II - Pneumatically operated
  3 - Type III - Hydraulically operated
  4 - Type IV - Electro-mechanically operated
- CID number

7.2 Sources of documents.

7.2.1 CFR and FAR. Copies of CFR and FAR may be obtained from the Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Electronic copies of CFR documents may be obtained from http://www.access.gpo.gov/. Electronic copies of FAR documents may be obtained from http://www.arnet.gov/far/.

7.2.2 Federal standards. Copies of federal standards may be obtained from General Services Administration, Federal Supply Service, Specification Section, 470 East L'Enfant Plaza SW, Suite 8100, Washington, DC 20407. Electronic copies of federal standards may be obtained from http://assist.daps.dla.mil/.

7.2.3 ANSI standards. Copies of ANSI standards may be obtained from the American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, NY 10036. Electronic copies of ANSI standards may be obtained from http://web.ansi.org/.

7.2.4 National Fire Protection Association standards. Copies of these standards may be obtained from the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101. Electronic copies may be obtained from http://www.nfpa.org/.

7.2.5 National Fluid Power Association standards. Copies of these standards may be obtained from the National Fluid Power Association, 3333 N. Mayfair Road, Milwaukee, WI 53222-3219. Electronic copies may be obtained from http://www.nfpa.com/.

7.3 Ordering data. The acquisition order should specify the following:

a. CID document number, revision, and CID PIN.
b. Type required (see 2.1).
c. Size required (see 2.2).
d. Controls, if different (see 3.2).
e. Gripping surfaces, if different (see 3.9).
f. Primary voltage, if different (see 3.10.1).
g. Motor, if different (see 3.10.2).
h. Centralized lubrication system, if required (see 3.12).
i. Hour meter, if different (see 3.13).
j. Height, width, and length restrictions (see 3.14).
k. Optional equipment, if required (see 3.16).
l. Nameplate, if different (see 3.17.2).
m. Preservation, packing, and marking (see 6.1).

7.4 Subject term (key word) listing.

angles
extrusions
flats
flatbars
jaw
plates

MILITARY INTERESTS:

Custodians:
Army - AR
Navy - SH
Air Force - 99

Review Activities:
Navy - MC
Air Force - 84

CIVIL AGENCY
COORDINATING ACTIVITY:

GSA - FSS

Preparing Activity:
DLA - GS6

(Project 3441-2006-001)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST database at http://assist.daps.dla.mil.