

INCH-POUND

A-A-55525
10 SEP 1998
SUPERSEDING
MIL-L-14576F
March 24, 1989

COMMERCIAL ITEM DESCRIPTION

LATHE, ARMATURE, AND UNDERCUTTER

The General Services Administration has authorized the use of this Commercial Item Description (CID) for all federal agencies.

1. **SCOPE.** This CID covers armature lathes with an undercutter attachment used in the reconditioning of the commutator part of electric motor armatures.

2. **CLASSIFICATION.** The lathes shall be of the same type and of the sizes specified in the contract or order.

2.1 SIZE

Size 1 -12.5 inches.

Size 2- 22.5 inches.

3. SALIENT CHARACTERISTICS

3.1 Design. The lathe shall be designed for bench top mounting and shall include all components, parts, and features required to meet the specified performance requirements. The lathe shall consist of a bed, an electric motor, headstock, tailstock, a movable tool carriage, and mica undercutter. The tailstock shall be repositionable along the bed to accommodate various lengths of motor armatures. The tool carriage shall permit movement of the armature cutting tool along the entire surface of the commutator. The lathe shall be fully adjustable to compensate for wear, and the components shall be accessible for repair without the necessity to modify the lathe.

3.1.1 Tool Carriage. The tool carriage longitudinal feed shall be provided by a lead screw, which shall be actuated by a ball crank handle or a handwheel.

3.1.2 Tool Holder. The tool carriage shall be equipped with a tool holder and a cutting bit ground for commutator turning. The tool holder shall be provided with means for adjusting the depth of cut and a locking device for locking the tool at any setting. The depth of cut shall be continuously adjustable over its range. Adjustment shall be provided by a graduated thumbscrew or feed wheel.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: Defense Supply Center Columbus, ATTN: DSCC-VAI, Columbus, Ohio 43216-5000.

3.2 Measurement System. The US inch system shall be used for the specifications, dimensions and operator controls.

3.3 Lubrication. The lathe shall be equipped with a lubrication system that permits application of the necessary lubricants without disassembly of lathe components.

3.4 Required Accuracy. The lathe shall be capable of machining a turned cylindrical surface, of the armature undergoing reconditioning, within 0.0005 inch total indicator reading runout, with no more than 0.005 inch taper per linear inch. The machined surface shall have a roughness value of not more than 63 microinches, arithmetical average, IAW ANSI B46.1.

3.5 Lathe Capacity. The lathe shall have the capacity to rotate an armature with a diameter of 6 inches. The lathe shall be able to support armatures 13 inches long (including the shaft length) with a shaft diameter up to 1.063 inches. It shall be capable of machining and undercutting commutators that have a maximum diameter of 3.313 inches and a maximum length of 2.5 inches.

3.6 Undercutter Capacity. The undercutter shall be capable of removing the mica between all bars of the commutator to a depth of 0.0313 ± 0.005 in. The undercut shall be parallel to the centerline of the lathe within 0.005 in. The undercutter shall be mechanically driven.

3.7 Lathe Components. The lathe shall be equipped with the following accessories:

- a. Thrust plugs for the head and tailstock
- b. Removable hardened steel centers for the head and tailstock
- c. A cutting tool ground for commutator turning
- d. Undercutting tools 0.015, 0.020, and 0.025 inches wide.
- e. Self centering head and tailstock chucks with removable jaws and a capacity from 0.203 to 1.063 inches.

3.8 Machining Adjustments. Both the commutator turning tool and the mica undercutter shall have depth of cut adjustments, which are lockable at any point over their range of motion.

3.9 Armature Drive. The armature shall be rotated via a belt encircling the core of the armature. The belt shall be driven by an electric motor. The drive system shall be adjustable to accommodate a variety of armatures per paragraph 3.6.

3.10 Electrical requirements. The lathe shall be designed to operate on single phase, 110 volts, 60-Hertz (Hz) current. Any power cord (s) shall be 8' long and will comply with the manufacturer's already approved UL listed cords.

Table I Size and characteristics.

Size	Distance between chucks (Inches)	Type of undercutter (Drive mechanism)	Chuck capacity (Inches)	Swing over bed (Inches)(min)
1	12.5	Uses undercutter Drive Belt	1.047 to 1.063	6
2	22.5	Electric Motor	1.047 to 1.063	6

3.10.1 Motors. Motors shall be rated for continuous duty. Each motor shall have a drip proof enclosure. Unless otherwise specified the manufacturer's standard motor shall be provided.

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

3.12 Examination and test.

3.12.1 Examination. Each lathe shall be visually examined to determine compliance with all requirements of this commercial item description.

3.12.2 Operational test. Each lathe shall be tested in accordance with the manufacturer's own internal test procedures. Proper operation of all controls, motors, adjusting mechanisms, and accessories shall be verified during the test.

3.12.3 Performance test. Each lathe shall be operated at its maximum dimensional capacity to verify that the resulting machined armature complies with the tolerances specified in 3.5. Operation shall be conducted without making any adjustments to or performing any maintenance on the lathe. Proper operation of all controls, motors, adjusting mechanisms, and accessories shall be verified during the test.

3.12.4 Alignment test. Each lathe shall be tested in accordance with the manufacturer's own internal test procedures to determine compliance with the alignment requirements specified in paragraph 3.5.

3.13 Data plates. All standard data plates normally provided with the manufacturer's standard commercial lathe shall be furnished. Any additional data plates shall be as specified and fully described by the procuring activity.

3.14 Safety. Safety devices shall be provided as necessary. Any guards shall be removable for easy access to guarded parts. The Lathe shall comply with the general safety provision of 29CFR 1910 that are applicable.

3.15 Metric products. Products manufactured to metric dimensions shall be considered on an equal basis with those manufactured using inch-pound units. Metric products shall be considered so long as they fall within specified tolerances using conversion tables contained in the latest revision of FED-STD-376, and all other requirements of this commercial item description are met.

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. QUALITY ASSURANCE PROVISIONS

5.1. Product conformance. The products provided shall meet the salient characteristics of the 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 market. The Government reserves the right to require proof of such conformance.

5.2 Market acceptability.

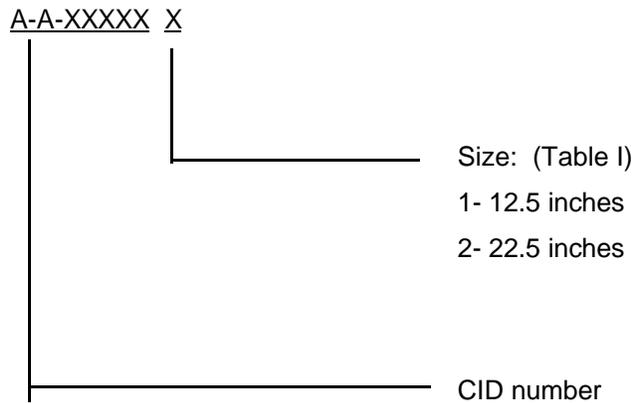
- a. The company producing the item must have been producing a product meeting the requirements of the CID for at least 5 years.

- b. The company must have sold at least 25 units meeting the requirements of the CID over the past 2 most recent procurement years.

6. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or order.

7. NOTES.

7.1 Part Identification Number (PIN). The following part identification numbering procedure is for government purposes and does not constitute a requirement for the contractor.



7.2 Ordering data. Purchasers should select from the following table for the appropriate size lathe.

Size	MFG'R PIN	NSN	CID P.N.
1	B-10	4940-00-263-3077	A-A-XXXXX-1
2	SP-B15	4940-01-375-7311	A-A-XXXXX-2

7.3 Source for reference documents.

7.3.1 Federal Standards, FED-STD-376 is available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

7.3.2 OSHA, 29 CFR 1910 is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001.

7.3.3 ANSI B46.1 is available from the American National Standards Institute, ATTN: Sales Dept., 1430 Broadway, New York, NY 10018.

7.3.4 The Federal Acquisition Regulation (FAR) 23.403 may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

7.4 Intended use. Lathes covered by this commercial item description are for use in machining the commutator part of an electric motor armature in repair and maintenance shops.

MILITARY INTEREST

Custodians:

Army - AL
Navy - SH, YD
Air Force - 99

Reviewers:

Air Force - 84

CIVIL AGENCY COORDINATION ACTIVITY:

GSA - FSS

Preparing activity:

DLA - CC

(Project 4940-0723)