

[INCH-POUND]

A-A-59334

25 January 1999

SUPERSEDING

See section 7.4

COMMERCIAL ITEM DESCRIPTION

LATHE, ENGINE (STANDARD) AND TOOLROOM (PRECISION), HORIZONTAL SPINDLE

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 horizontal spindle, standard (engine) and precision (tool room) lathes. The lathes covered by this CID are intended for use in operations that require metal workpiece turning, drilling, facing, treading or secondary operation finishing.

2. **CLASSIFICATION.** The lathes shall be of the following types, styles, swings, and sizes. The type, style, swing, and size to be furnished shall be as specified (see 7.2(b)).

Type I - Engine (standard)

Type II - Tool room (precision)

Style A - Gap bed

Style B - Gapless bed

Swing - Swing over bed (See table I)

Size - Center-to-center distance (See table I)

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any data which may improve this document should be sent to: Defense Supply Center Richmond, ATTN: DSCR-VBD, 8000 Jefferson Davis Highway, Richmond, VA 23297-5610.
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AMSC N/A

FSC 3416

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TABLE I. Swing and sizes.

Swing, inches	Horse- power	Size - center-to-center distance, inches										
		20	30	40	50	60	80	100	120	160	200	240
10	3	X	X									
13	5	X	X	X	X	X						
14	7.5		X	X	X	X	X					
15	10		X	X	X	X	X	X	X	X		
16	10			X	X	X	X	X	X	X		
18	10			X	X	X	X	X	X	X		
20	15			X	X	X	X	X	X	X	X	
24	15			X	X	X	X	X	X	X	X	
28	30			X	X	X	X	X	X	X	X	X
30	30						X	X	X	X	X	X
32	30						X	X	X	X	X	X
40	30						X	X	X	X	X	X

Note 1: "X" denotes availability

Note 2: Machine size and capacity shall not be less than the stated requirements selected from tables I and II for the class, swing, and size specified. The ranges of size and capacity shown in tables I and II imply that the machine offered shall be equal to or larger than the size and capacity stated but smaller than the next available size. When the largest machine shown in tables I and II is ordered, the size and capacity of the machine offered shall not exceed the stated requirements by more than 10 percent.

3. SALIENT CHARACTERISTICS

3.1 General requirements. The machine shall be new and one of the manufacturer's current models capable of operation in accordance with the requirements herein. All parts subject to wear, breakage, or distortion shall be accessible for adjustment, replacement, and repair.

3.2 Components. The lathe shall include, as a minimum, the following components:

3.2.1 Bed. The bed shall support all the components of the lathe and shall have provisions for leveling and anchoring the machine to the floor.

3.2.2 Machineways. The machineways shall be hardened and precision ground.

3.2.3 Carriage. The carriage shall hold the cross-slide and the tool post assembly. The carriage shall move along the workpiece axis on the ways by hand crank and power feed.

3.2.4 Cross-slide. The cross-slide shall provide tool movement along the axis perpendicular to the workpiece axis and through the swing of the lathe by hand crank. When specified (see 7.2(c)), the cross-slide shall have power feed. The cross-slide shall be equipped with a graduated compound rest that shall allow 360-degree adjustment of the tool in the tool post with respect to the workpiece axis.

3.2.5 Gearbox. Unless otherwise specified (see 7.2(d)), the gearbox shall provide a selectable range of 32 English threads from 2 to 56 threads per inch and 32 metric thread pitches from 0.4 to 7 millimeters per thread. Unless otherwise specified (see 7.2(e)), the power-feed leadscrew shall be capable of being coupled to the spindle to coordinate feed and rotation for cutting threads. When specified (see 7.2(f)), the gearbox mechanism shall be provided with safety overload protection.

3.2.6 Spindle. Unless otherwise specified (see 7.2(g)) the spindle shall be the manufacturer's standard capable of multiple-step or infinitely variable speeds through a belt or gear drive, or a combination of both. The spindle shall have one or more of the following material-holding mechanisms as specified (see 7.2(h)):

- a. Draw-in collets.
- b. Multiple-jaw chuck(s).
- c. Center with Morse or other taper.

If required, the spindle shall be equipped with one or more of the following optional features as specified (see 7.2(i)):

- a. Foot-operated or automatic brake.
- b. Reverse spindle rotation capability.
- c. Spindle clutch.
- d. Automatic kick-out on overload.

3.2.7 Tailstock. The lathe shall have a tailstock that is adjustable and lockable along the ways. The tailstock spindle travel shall be controlled by a handwheel, have a quick-locking feature, and have a graduated scale to indicate spindle location. The tailstock spindle shall have a tool-holding Morse or other taper as specified (see 7.2(j)). The tailstock spindle shall have a built-in quick release method for tools.

3.2.8 Turret. When specified (see 7.2(k)), the lathe shall be provided with a multiple tool-holding turret that can be installed on the ways in place of the tailstock. The turret shall have a minimum of four tool positions and shall be indexable with independently adjustable stops for each turret position. The turret shall have a means to feed and retract the indexed tool into the workpiece.

3.2.9 Controls. The lathe controls shall, as a minimum, consist of spindle speed, tool feed, cutting depth, and start/stop. Unless otherwise specified (see 7.2(l)), control adjustments shall be accomplished by hand wheels, locking levers, and control knobs.

3.2.10 Digital readout system. When specified (see 7.2(m)), the lathe shall be equipped with a digital readout system consisting of sensors and display for the X- and Z-axes of travel. The digital readout system shall have a resolution of not less than 0.0001 inches.

3.2.11 Lubrication system. Unless otherwise specified (see 7.2(n)), machine components requiring continuous lubrication shall be permanently lubricated or lubricated by automatic means. Machine components requiring periodic manual lubrication shall be readily accessible.

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3.2.12 Coolant system. When specified (see 7.2(o)), the lathe shall be equipped with a tool coolant system. The coolant system shall consist of a reservoir, motor-driven pump, and chip tray. The system shall have means for draining and cleaning and shall permit the operator to direct and control the amount of coolant flow.

3.2.13 Electrical system. The electrical system shall conform to the American National Standards Institute/National Fire Protection Association (ANSI/NFPA) 79. The lathe shall operate from a dual 230/460-volt, 3-phase, 60-hertz circuit and shall be wired for the voltage specified (see 7.2(p)). The control system shall operate on a 120-volt, single-phase, 60-hertz circuit from the machine's main power supply transformer with an isolated secondary winding.

3.2.14 Electric motors. The spindle drive motor shall have sealed and permanently lubricated ball or roller bearings, shall be energy efficient, and shall conform to National Electrical Manufacturers Association (NEMA) MG-1. Unless otherwise specified (see 7.2(q)), the motors shall have dripproof enclosures.

3.2.15 Optional accessories. Optional accessories shall be provided as specified (see 7.2(r)).

3.3 Performance. Unless otherwise specified (see 7.2(s)), type I lathes shall meet the performance requirements of paragraph 4.1 of the Geometrical tests, "Other lathes" section of International Organization for Standardization (ISO) 1708 when tested in accordance with sections 5.3 through 5.3.4 herein. Unless otherwise specified (see 7.2(t)), type II lathes shall meet the performance requirements of paragraph 4.1 of the Geometrical tests, "Other precision lathes" section of ISO 1708 when tested in accordance with sections 5.3 through 5.3.4 herein.

3.4 Machine dimensions and weight. If required, the maximum machine dimensions (length, width, and height) and machine weight shall not exceed the restrictions specified (see 7.2(u)).

3.5 Safety and health requirements. The machine shall be designed and manufactured in accordance with ANSI B11.6. The manufacturer shall ensure that the machine and all equipment and accessories used on the machine shall be in compliance with Occupational Safety and Health Administration (OSHA) 29 CFR PART 1910. If a conflict arises between the ANSI and OSHA standards, the OSHA standards shall apply.

3.6 System of units. The U.S. Customary System of Units (US) or the International System of Units (SI) shall be used to graduate measuring and indicating devices. When only one system of graduation is acceptable, the particular graduation required shall be as specified (see 7.2(v)). Regardless of the measurement system used, all measuring and indicating devices on the machine shall be graduated in the same system. When specified (see 7.2(w)), measuring and indicating devices shall be graduated in both the US and SI system of measurements.

3.7 Nameplate. A nameplate shall be securely attached to the machine. Unless otherwise specified (see 7.2(x)), the nameplate shall contain the following information:

- a. Nomenclature.
- b. Manufacturer's name.
- c. Machine model designation.

- d. Power input (volts, total amperes, phase, frequency).
- e. Short-circuit/over-current rating.
- f. Contract number or order number.
- g. National stock number or plant equipment code.
- h. Date of manufacture.

3.8 Lubrication plate or chart. When specified (see 7.2(y)), a lubrication plate or chart shall be attached to the machine. The information provided on the plate or chart shall include:

- a. Points of lubricant application.
- b. Servicing interval.
- c. Type of lubricant(s) with SAE number or lubricant identifier.

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).

4.2 Environmental protection. The item shall meet all applicable Environmental Protection Agency (EPA) restrictions in effect on the date of the contract. These regulations apply to the emission of materials hazardous to the environment or the user's health and shall be adhered to during the manufacturing, service, transportation, storage, and operation/use of the item.

5. QUALITY ASSURANCE PROVISIONS

5.1 Product conformance. The products shall meet the salient characteristics of this commercial item description; conform to the manufacturer's own drawings, specifications, standards, and quality assurance practices; and be the same system offered for sale in the commercial market. The Government reserves the right to require proof of such conformance.

5.2 Inspection. The lathe shall be inspected to determine compliance with all requirements specified in this CID.

5.3 Testing. Unless otherwise specified (see 7.2(z)), the lathe shall be tested in accordance with sections 5.3.1 through 5.3.4.

5.3.1 Test setup and conditions. Unless otherwise specified (see 7.2(aa)), the manufacturer shall be responsible for supplying all tooling and material(s) and shall conduct all tests required by the Government. The manufacturer shall provide test instruments and equipment with calibration traceable to National Institute of Standards and Technology (NIST) and shall provide certification of calibration as specified (see 7.2(bb)).

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5.3.2 Operational test. The lathe shall be operated in accordance with the manufacturer's standard operating procedures for a period of 1 hour. Proper operation of all controls and features shall be verified during the test period.

5.3.3 Performance tests. Unless otherwise specified (see 7.2(cc)), the performance test shall consist of the tests listed in ISO 1708. The Government reserves the right to specify any or all of the tests listed in ISO 1708.

5.3.4 Optional tests. Optional tests shall be conducted as specified (see 7.2(dd)).

5.4 Acceptance. Unless otherwise specified (see 7.2(ee)), preliminary and final acceptance tests shall be conducted at the manufacturer's site. The results of the performance tests shall be compared to the performance requirements shown in ISO 1708. Failure of the lathe to meet the performance requirements for the type lathe specified shall be cause for rejection.

6. PACKAGING. Preservation, packing, and marking shall be as specified (7.2(ff)).

7. NOTES

7.1 Sources of documents.

7.1.1 Government documents. Copies of Federal documents may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

7.1.2 Industry standards. Copies of industry standards referenced in this CID may be obtained from the following addresses:

American National Standards Institute (ANSI)

ANSI B11.6 Machine Tools – Lathes – Safety Requirements for Construction, Care,
and Use

Applications for copies should be sent to the American National Standards Institute, 11 West 42nd Street, New York, NY 10036.

International Electrotechnical Commission (IEC)

IEC 204-1 Electrical Equipment of Industrial Machines - Part I: General
Requirements

Applications for copies should be sent to the American National Standards Institute, 11 West 42nd Street, New York, NY 10036.

International Organization for Standardization (ISO)

ISO 1708 Acceptance conditions for general purpose parallel lathes-Testing for accuracy

Applications for copies should be sent to the American National Standards Institute, 11 West 42nd Street, New York, NY 10036

National Electrical Manufacturers Association (NEMA)

NEMA MG-1 Motors and Generators

NEMA/NFPA 79 Electrical Standard for Industrial Machinery

Applications for copies should be sent to the National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.

Occupational Safety and Health Association (OSHA)

OSHA 1910 Occupational Safety and Health Standards for General Industry
(29 CFR Part 1910)

Applications for copies should be sent to the U.S. Department of Labor, 200 Constitution Avenue NW, Room 423, Washington, DC 20210.

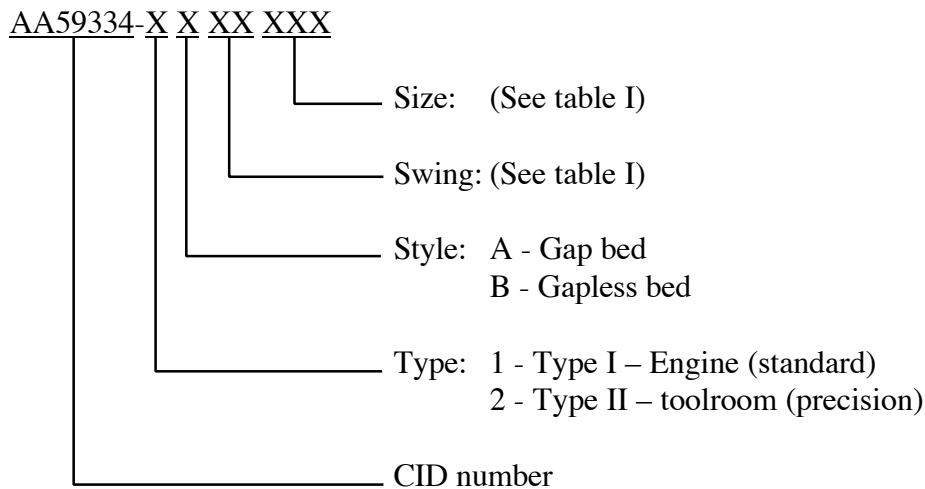
7.2 Ordering data. Acquisition documents must specify the following:

- a. Title, number, and date of this document.
- b. Type, style, swing, and size of lathe required (see 2).
- c. Cross-slide power feed, if required (see 3.2.4).
- d. Gearbox capabilities, if different (see 3.2.5).
- e. Leadscrew, if different (see 3.2.5).
- f. Gearbox safety overload, if required (see 3.2.5).
- g. Spindle belt, gear drive, or both, if different (see 3.2.6).
- h. Material-holding collets, chucks, or tapers, as specified (see 3.2.6).
- i. Spindle optional features, as specified (see 3.2.6).
- j. Tailstock spindle taper type and size, as specified (see 3.2.7).
- k. Tool turret, if required (see 3.2.8).
- l. Control adjustments, if different (see 3.2.9).
- m. Digital readout system, if required (see 3.2.10).
- n. Lubrication system, if different (see 3.2.11).
- o. Coolant system, if required (see 3.2.12).
- p. Electrical system, if different (see 3.2.13).
- q. Motor enclosure, if different (see 3.2.14).
- r. Optional accessories, as specified (see 3.2.15).

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- s. Type I lathe performance, if different (see 3.3).
- t. Type II lathe performance, if different (see 3.3).
- u. Machine dimensions and weight, as specified (see 3.4).
- v. System of units required (see 3.6).
- w. Dual system of units, if required (see 3.6).
- x. Nameplate, if different (see 3.7).
- y. Lubrication plate or chart, if required (see 3.8).
- z. Testing, if different (see 5.3).
- aa. Test responsibility, if different (see 5.3.1).
- bb. Certification of calibration, as specified (see 5.3.1).
- cc. Performance tests, if different (see 5.3.3).
- dd. Optional tests, as specified (see 5.3.4).
- ee. Acceptance, if different (see 5.4).
- ff. Packaging requirements (see 6).

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



7.4 Supersession data.

- a. MIL-L-80007E dated September 29, 1989
- b. MIL-L-80277 dated September 29, 1989
- c. MIL-L-23249D dated September 16, 1986
- d. MIL-L-23251E dated September 29, 1989
- e. MIL-L-23257E dated June 30, 1989
- f. MIL-L-23400E dated November 12, 1986
- g. MIL-L-13896E dated February 26, 1987

MILITARY INTERESTS:

Custodians

Air Force - 99

Navy - SH

Army - AL

Reviewers

Air Force - 84

Army - AR, CE, CR4, SM, AV

Navy - AS, MC

PREPARING ACTIVITY

DLA - GS

(Project 3416-0275)