

DESCRIPTION FOR PURCHASE
LATHES, ENGINE, GAP, SLIDING BED

1. SCOPE

1.1 Scope. This specification covers sliding gap bed lathes that serve as standard engine lathes with the bed closed and provide additional swing and length capacity with the bed extended with equipment and accessories specified herein.

1.2 Intended use. The lathes covered by this specification are intended for use in any machine shop as a standard engine lathe with additional swing and length capacity for handling large diameters and odd shapes. The lathes are suitable for light and heavy duty turning operations using high-speed steel or carbide tooling.

2. APPLICABLE DOCUMENTS

2.1 Government documents. The following Government documents and publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

STANDARDS

U.S. DEPARTMENT OF LABOR

29 CFR 1900 -1910 - Regulations Relating to Labor, Chapter XVII - Occupational Safety and Health Administration Department of Labor

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

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

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issue of the documents that are DoD adopted shall be those listed in the issue of the DoDISS specified in the solicitation. Unless otherwise specified, the issue of documents not listed in the DoDISS shall be the issue of the non-Government documents, which is current on the date of the solicitation.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- ANSI B5.1 - T-Slots, Their Bolts, Nuts, Tongues, and Cutters.
- ANSI B5.8 - Chucks and Chuck Jaws.
- ANSI B5.9 - Spindle Noses for Tool Room Lathes, Engine Lathes, Turret Lathes, and Automatic Lathes.
- ANSI B5.10 - Machine Tapers.
- ANSI B5.16 - Accuracy of Engine and Tool Room Lathes.
- ANSI B11.6 - Safety Requirements for the Construction, Care and Use of Lathes.

(Application for copies should be addressed to the American National Standards Institute, ATTN: Sales Dept., 1430 Broadway, New York, NY 10018-3351).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- ASTM D 3951 - Commercial Packaging, Standard Practice for

(Application for copies should be addressed to the American Society for Testing and Materials, 100 Barr Harbor Dr., West Conshohocken, PA 19103.

AMERICAN GEAR MANUFACTURER'S ASSOCIATION (AGMA)

- AGMA 390.03a - Gear Handbook - Gear Classification, Materials and Measuring Methods for Bevel, Hypoid, Fine Pitch Worm Gearing and Racks Only as Unassembled Gears
- AGMA 2000 - Gear Classification and Inspection Handbook

(Application for copies should be addressed to the American Gear Manufacturer's Association, Standards Department, Suite 1000, 1901 North Fort Meyer Drive, Arlington, VA 22209-1695)

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

- ASME B1.13M - Metric Screw Threads - M Profile
- ASME B1.21M - Metric Screw Threads - MJ Profile
- ASME B1.1 - Unified Inch Screw Threads (UN and UNR Thread Forms)

(Application for copies should be addressed to The American Society of Mechanical Engineers, United Engineering Center, 345 E. 47th Street, New York, NY 10017)

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

- NEMA MG-1 - Motors and Generators

(Application for copies should be addressed to the National Electrical Manufacturers Association, 2101 L Street, NW, Washington, DC 20037 or from American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- NFPA-70 - National Electrical Code (NEC)
- NFPA-79 - Electrical Standard for Industrial Machinery

(Application for copies should be addressed to the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269.)

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

- IEEE/ASTM SI 10 - Standard for Use of the International Systems of Units (SI): The Modern Metric System

(Application for copies should be addressed to the Institute of Electrical and Electronics Engineers, Inc., 445 Hoes Lane, P.O. Box 1331, Piscataway NJ 08855-1331.)

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

- ISO 54 - Cylindrical Gears For General Engineering and For Heavy Engineering, Modules and Diametral Pitches of

(Application for copies should be addressed to the International Organization for Standardization, c/o American National Standards Institute, ATTN. Sales Department, 1430 Broadway, New York, NY 10018-3351).

(Non-Government standards and other publications are normally available from the organizations which prepare or which 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 conflict between the text of this specification and the references cited herein, (except for associated detail specifications, specification sheets or MS standards) the text of this specification shall take precedence. Nothing in this specification however shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Design. The lathe shall be new and one of the manufacturer's current models capable of operations in accordance with the requirements herein. The lathe shall include all components, parts, and features necessary to meet the performance requirements specified herein. All parts subject to wear, breakage, or distortion shall be accessible for adjustment, replacement, and repair.

3.2 Measurement systems. In this specification, all measurements, dimensions, sizes and capacities are given in US units. These measurements may be converted to SI units through the use of the conversion factors and methods specified in IEEE/ASTM SI 10.

3.3 Measuring and indicating device calibrations. Both the U.S. Customary System of Units (US) and the International System of Units (SI) shall be used to graduate the measuring and indicating devices such as scales, depth stops, carriage stops, dial indicators, pressure gauges, temperature indicators, and other similar devices. All feed dials shall have independent zero adjustments and shall be calibrated in such a manner that the last dial graduation progresses into and is continuous with the first dial graduation as the dial is rotated through

the zero position. If dual scale dials are not available, a digital read-out may be used to meet the English/metric requirement.

3.4 Reclaimed materials. The lathe may contain reclaimed materials provided such materials will not jeopardize the lathe's intended use and performance. The reclaimed materials shall have been reprocessed, remanufactured, or recycled in a manner which will restore them to the same chemical composition and physical properties as the materials originally selected for use on the lathe.

3.5 Energy efficiency. The lathe and its components that directly consume energy in normal operation shall be designed and constructed for energy efficiency as governed by the latest developments available within the industry.

3.6 Controls. All operating controls shall be located convenient to the operator's normal workstation.

3.7 Safety and health requirements. Covers, guards, or other safety devices shall be provided for all parts of the lathe that present safety hazards. The safety devices shall not interfere with the operation of the lathe. The safety devices shall prevent unintentional contact with the guarded part, and shall be removable to facilitate inspection, maintenance, and repair of the parts. All lathe parts, components, mechanisms, and assemblies furnished on the lathe, whether or not specifically required herein, shall comply with all of the requirements of 29 CFR 1910 that are applicable to the lathe itself. In addition, the machine shall comply with all requirements of ANSI B11.6 that are designated therein as the responsibility of the machine manufacturer. In the event of a conflict between the requirements of 29 CFR 1910 and ANSI Standards, the requirements of 29 CFR 1910 shall apply

3.8 Guarding. In addition to the safety and health requirements specified in 3.7, the machine shall be furnished with a full-length splashguard, a swing away chuck guard mounted on the headstock, and a transparent chip guard mounted on the carriage to confine flying chips.

3.9 Mercury restriction. The lathe shall not contain mercury or mercury components nor be exposed to free mercury during manufacture.

3.10 Asbestos restriction. Asbestos and materials containing asbestos shall not be used on or in the lathe.

3.11 Interchangeability. To provide for replacement of worn parts, all parts shall be manufactured to definite dimensions and tolerances.

3.12 Construction. The lathe shall be constructed of parts that are new, without defects, and free of repairs. The structure shall be capable of withstanding all forces encountered during operation of the lathe at its maximum rating and capacity without permanent distortion.

3.13 Lubrication. All bearings, (except sealed for life, permanently lubricated type), mating gears, and all other moving parts shall be provided means to ensure adequate lubrication. Recirculating systems shall include filters, which are cleanable or replaceable. Each lubricant reservoir shall have means for determining fluid levels. All oil holes, grease fittings, and filler caps shall be readily accessible. The supplier shall include and install all lubricants, fluids, greases and other compounds. The lubricant systems shall be temporarily capped or stopped to prevent loss of lubricants during shipment. The supplier shall include a warning notice in the instruction manual to remove the temporary caps and stoppers prior to the startup or use of the machine. The supplier shall include all applicable National Stock Numbers (NSN) of the oils, fluids, and lubricants used in the lathe.

3.14 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.

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

3.16 Fastening devices. All screws, pins, bolts, and other fasteners shall be installed in a manner to prevent change of tightness. Fastening devices subject to removal or adjustment shall not be swaged, peened, staked, or otherwise permanently installed.

3.17 Surfaces. All surfaces shall be clean and free of sand, dirt, fins, sprues, flash, scale, flux, and other harmful or extraneous materials. All edges shall be either rounded or beveled unless sharpness is required to perform a necessary function. The condition and finish of all surfaces shall be in accordance with the manufacturer's commercial practice.

3.18 Protective finish. The following protective finish requirement shall apply. All surfaces to be painted shall, immediately prior to painting, be cleaned and dried and be free of foreign matter. The protective paint coating shall be at least 0.0020 inch thick and shall have the hardness and adhesion necessary for the prevention of scuffing and peeling. Where no protective finish is utilized (such as bed ways, machine guide surfaces, etc.), the natural finish of the material or the finish obtained from heat treatment is permissible provided the surfaces are free from scale or corrosion.

3.19 Threads. All machined threads shall conform to ASME B1.1 and B1.13M or B1.21M.

3.20 Dials. All rotating dials or hand wheels that are used to position machine axis or for tool movement shall be graduated in increments not larger than 0.001 inch and 0.020 millimeters. Dial and hand wheel diameters shall be permanently and legibly engraved or etched on a nonglare background with graduations that can be read from the operator's normal position.

3.21 Gears. All gears and pinions of spindle and axis drive trains shall be designed and manufactured of a suitable ferrous material to meet or exceed the requirements of AGMA 390.03a and 2000 for the English (US) system or ISO 54 for the metric (SI) system. The gears shall be of proper material, hardness, width and size to transmit full-rated torque and horsepower throughout the speed ranges without failure for the expected service life of the machine.

3.22 Components. Each lathe shall consist essentially of a bed and base, sliding bed, headstock, headstock spindle, spindle drive, spindle speed change mechanism, carriage and apron, feed mechanism, cross slide, compound rest, and tailstock. In addition, the machine shall have all other equipment specifically described herein and all additional equipment necessary for the machine to meet all of the performance requirements stated herein.

3.22.1 Bed and base. The lathe shall have a bed and base structure that supports the sliding bed, headstock, tailstock, carriage and other related equipment. The bed and base shall be a ferrous casting with integral cross ribs, having sufficient strength and rigidity to maintain all the lathe components in alignment in accordance with the Table II alignment requirements, while turning parts. The base shall be of the box-type construction, and shall have hold down bolts and leveling screws or other means for mounting or leveling the machine on a foundation. The base shall be fitted with a watertight chip pan arranged to facilitate removal of chips and coolant. The bed shall have a sufficient number of covered access openings to facilitate inspection, adjustment, and repair of components located within the structure.

3.22.2 Sliding Bed. The lathe bed shall consist of two sections; a stationary base and a movable top section. The top section shall be mounted on V-ways on the stationary section. The bed and base shall retain the required alignment between the top bed and the spindle centerline. When in the closed position, the top bed ways section shall extend to the headstock, permitting the running of the carriage up to the spindle for normal operations. All surfaces of the top bed ways on which the carriage bears for support and guidance shall have hardness sufficient to prevent wear for the life of the machine. The top bed section shall be able to be moved along the stationary section to extend the center distance and to open a gap to permit additional swing capacity. The top bed shall be able to be locked into the selected position, retain alignment, and prevent movement under workload. The lathe shall be equipped with means of supporting the sliding bed when extended.

3.22.3 Headstock. The lathe shall have a headstock that supports and aligns the spindle axis parallel with the bed ways. The headstock shall house the gearing for the spindle drive and power take-off source for the feed mechanism. The headstock shall be constructed to support the spindle and gear shafts so as to prevent deflection that would affect accuracy under full operating and cutting loads. All load carrying surfaces of gears, clutch jaws and surfaces of shafts on which gears and clutches slide, or internal surfaces of sliding parts, shall have a surface hardness sufficient to prevent wear for the life of the lathe. The headstock shall be an oil tight unit and shall have means of lubricating all bearings and gears that require continuous and changing spindle speeds.

3.22.4 Headstock spindle. The lathe shall have a headstock spindle to support a chuck, faceplate, or collet, which in turn holds and provides rotation of the work piece. The spindle shall be supported by roller or ball-type bearings that have a size, type and precision class suitable for the application. The spindle nose shall be as specified in Table I and shall conform to the requirements of ANSI B5.9. The spindle nose shall be accurately machined to provide locating surfaces for lathe centers, faceplates, and chucks. The inner and outer surfaces of the spindle nose, on which work holding devices are mounted, shall be hardened to prevent wear for the expected service life of the lathe. The lathe shall be furnished with a functional spindle brake. The brake shall completely stop the spindle when the control lever is placed in the off position and when the emergency stop is actuated. When actuated, the brake shall slow the spindle rotation from at least 1000 rpm to zero rpm in no more than 5 seconds, while a chuck and work piece are mounted on the spindle.

3.22.5 Spindle drive. The lathe shall have a spindle drive mechanism that will provide the required range of spindle speeds listed in Table I. The spindle shall be driven through an all gear or combination gear and belt drive, powered by an electric motor as specified in Table I. All gears shall meet the requirements of 3.21. The spindle speed change mechanism shall be the manual or variable speed type. The shifting mechanism shall be designed so that speed change cannot occur unintentionally. Except for the variable speed drive, speeds shall be in geometric progression. The manual speed change mechanism shall allow spindle speed changes by positioning gearshift levers or dials located on the front side of the headstock. Speeds shall be selected by positioning the levers as indicated on a conveniently located speed chart or by positioning a direct reading dial. The spindle shall operate in both directions of rotation. The actual spindle speeds in RPM shall be shown by a speed indicating device located convenient to the operator.

3.22.6 Feed thread gearbox. The feed thread gearbox shall control the ratio of the speed of the spindle with respect to the lead screw and feed rod to obtain the feed rate and thread lead. A combination inch/metric gearbox shall be furnished. A feed and thread chart shall be mounted near the gearbox as a ready reference for feed and thread selections. All feed and thread selections shall be shown without the need for mathematical conversion. Both feed and thread operations shall be performed in either direction, independent of the direction of spindle rotation. There shall be an interlock to prevent simultaneous engagement of both the feed and threading mechanisms.

3.22.7 Carriage. The carriage shall support the apron, cross slide, and compound rest. A means shall be provided to maintain adjustment between sliding surfaces. The carriage shall be able to be securely locked in

position on the bed when cross feeding. The carriage shall traverse longitudinally on the bed ways and operate in both longitudinal directions under power, regardless of the direction of spindle rotation. Way wipers shall be fitted to the carriage wings to prevent entrance of chips and abrasive materials between the way surfaces.

3.22.8 Apron. The apron shall contain the feed mechanism, threading mechanism, operating controls and automatic lubrication system for the apron and carriage components. Safety devices such as disengaging or slip type clutches and interlocks shall protect the feed mechanism from damage by overload. The feed rod and lead screw shall be separate units. Rotating shafts shall be supported at both ends by ball or roller bearings. The lathe shall have an apron controlled reversing mechanism to permit reversing the direction of the carriage without disengaging the lead screw half-nut or changing the speed and direction of spindle rotation.

3.22.9 Cross slide. The cross slide shall be fitted to the carriageways and shall have means to compensate for wear between the sliding surfaces. The cross slide shall be positioned by a precision feed screw, which shall be protected from dirt and chips. The cross slide shall be located at the extreme left end of the carriage to make full use of the gap and to provide maximum tool rigidity.

3.22.10 Compound rest. A compound rest shall be fitted to the top of the cross slide to allow positioning of the cutting tool at any horizontal angle. The compound rest slide shall be moved over the base by a precision feed screw. A manual crank shall impart feed movement to the compound rest. The base for the compound rest shall swivel and lock at any position through 360 degrees. The base shall be graduated in one degree increments to at least 90 degrees each side of a zero point of reference. The compound rest shall have a standard T-slot for tool holders. T-slot dimensions shall meet the requirements of ANSI B5.1.

3.22.11 Tailstock. The tailstock shall be constructed to permit supporting a work part close to the compound rest without interference with the operation of the top slide. The tailstock shall be easily moved along the bed ways and have a quick acting clamp for locking in position. The spindle shall hold and eject tang type tools, and shall be graduated in increments not greater than 1/16-inch for measuring spindle extension. The tailstock spindle taper shall be in accordance with ANSI B5.10 for self-holding tapers. Spindle locking shall not affect accuracy of alignment. The tailstock shall be marked to indicate set-over as specified in Table I.

3.22.12 Electrical system. The electrical system of the lathe shall operate from 230/460 volts, three-phase, 60-hertz electrical power sources; initially wired for 460-volt service. A four wire (one for ground) electric power supply cable shall be installed on each lathe. The electric power supply cable shall be at least 10 feet in length and shall terminate in at least one inch of stripped tinned wire, without-a receptacle plug. The electric power supply cable shall include proper sheathing/covering in accordance with National Fire Protection Association (NFPA) standard No. 70 and the Occupational Safety and Health Act, 29 CFR. The electric power supply cable shall have a voltage/potential and ampere/current carrying capacity exceeding that required by the electric power consuming devices, including electric motors, in accordance with the NFPA No. 70. The electrical system shall conform to applicable requirements of NFPA No. 79. A disconnect switch, isolating electric power, shall be provided to disengage all incoming electricity, separate from the normal "ON" and "OFF" Switch. An identified ground terminal shall be provided to connect the proper size grounding conductor or strap. Connections of conductors and terminal parts shall be of the screw, pressure, or solder type. When soldered connections are used, the conductors and terminal parts shall be mechanically secured before soldering. Only rosin base fluxes shall be used in soldering operations. Connections to screw type terminals shall be mechanically secured with a means to prevent loss of tightness.

3.22.12.1 Motors. The motors shall conform to the requirements of NEMA MG 1 "Motors and Generators", as applicable. The machine shall be furnished with a continuous duty, induction squirrel-cage type motor, rated at no less than 7-1/2 horsepower with a temperature rise of not more than 50 degrees Celsius above ambient temperature, and thermal overload protection. Mounting shall be in accordance with NEMA standards.

Motors shall be protected from dirt and grit and shall be equipped with sealed-for-life, antifriction bearings. A start-stop switch shall be mounted and wired, convenient to the operator at the normal operating position."

3.22.12.2 Identification of electrical circuits. The conductors in the electrical system shall be identified at each termination to correspond with the identification on the wiring diagrams and schematics. Conductors shall be color coded and identified in accordance with NFPA 79. The electrical system diagrams and schematics provided with each lathe shall be an exact duplication of the electrical system and wiring in the lathe. Diagrams and schematics shall clearly identify the individual, point-to-point, wire and wire termination point locations in the electrical system.

3.22.13 Coolant system. The coolant system shall include a sump or reservoir, a power driven pump and all necessary piping. The sump or reservoir shall have sufficient capacity to permit full flow of coolant. The system shall have means for draining and cleaning and shall include a baffle or a strainer that is easily removable for cleaning. Means shall be provided to permit the operator to direct and control the amount of coolant.

3.23 Size and capacity. The size and capacity of the machine shall be not less than those specified in table I.

3.24 Alignment tolerances. Each machine shall meet the alignment accuracies of table II and ANSI B5.16.

3.25 Performance. The machine shall be capable of performing to the accuracies of table III.

3.26 Equipment. The equipment specified herein shall be furnished with each lathe. The equipment supplied shall fit the machine provided.

3.26.1 Lathe centers and center sleeve. One headstock center, one tailstock center, and one headstock center sleeve shall be furnished. The centers and sleeves shall conform to the requirements of ANSI B5.9 for the type spindle furnished.

3.26.2 Chuck, 4-jaw, independent. The chuck and jaws shall conform to ANSI B5.8 for medium duty, wrench operated type chucks and shall fit the spindle nose of the lathe supplied. The chuck shall be made of steel. The front face of the chuck shall have a progression of concentric circles marked to facilitate chucking the work piece. The chuck shall have stepped, reversible, independent jaws. A self-ejecting chuck wrench shall be provided. The adjusting screws for operating the chuck jaws shall be threaded their full length with square or acme threads. The chuck shall not exceed the runout requirements specified in Table II. The chuck diameter and capacity shall be 12 inches.

3.26.3 Chuck, 3-jaw, universal. The chuck shall be made of steel, shall be self-centering, shall fit the spindle nose furnished, and shall conform to the applicable specifications of ANSI B5.8 for medium duty, wrench operated chucks. The top jaws shall be the reversible, stepped type for internal and external grip. Concentricity of the chuck jaws shall be within 0.003 inch total indicator reading. Chuck diameter and capacity shall be 12 inches. A self-ejecting chuck wrench shall be provided.

3.26.4 Chuck, drill. The chuck shall be a 1/2-inch capacity, heavy duty, ball bearing type with geared sleeve and pinion, and be key operated. The jaws shall run concentric to the shank taper center. The taper shall fit the tailstock without a sleeve. One self-ejecting chuck key shall be furnished for operating the drill chuck.

3.26.5 Spindle nose collet chuck. The collect chuck shall mount directly on the spindle nose of the lathe furnished. The chuck shall be the drawbar type, operated from the back of the headstock, and shall be of hardened and ground steel construction. The collets shall be the Hardinge 5C type, manufactured from alloy

steel. A complete set of 17 collets shall be furnished, covering a range of 1/16 inch to 1-1/16 inch, in increments of 1/16 inch. The collets shall be boxed in a suitable container. The spindle nose collet chuck shall meet or exceed the accuracy requirements of Table II.

3.26.6 Drive plate. The drive plate diameter shall be sized to the nominal capacity of the lathe swing with the gap closed. The drive plate shall have at least two opposing radial slots for lathe dogs. The drive plate shall fit the spindle nose furnished and shall conform to the Table II tolerances for faceplate runout.

3.26.7 Faceplate, large. The faceplate diameter shall be sized to the nominal capacity of the lathe swing with bed extended, gap open. The faceplate shall have not less than 4 T-slots equally spaced radially in accordance with ANSI B5.1. The faceplate shall fit the type of spindle nose furnished and conform to test No. 18 ANSI B5.16.

3.26.8 Faceplate jaws, reversible. The jaws shall mount in the T-slots of the large faceplate. Each jaw shall be stepped, screw type, adjustable after attachment, and capable of work holding inside or outside diameters. Bolts and T-nuts shall be furnished with each jaw and sized in accordance with tables of ANSI B5.1. Four faceplate jaws are required with each faceplate.

3.26.9 Steady rest. The steady rest shall have a capacity of 1 to 6 inches. The top shall be hinged and equipped with one set each, plain and roller type jaws. Each jaw shall have an adjusting screw and a lock-screw for centering the work piece. The base shall be accurately fit to the bed ways and provided with a clamp for securing the rest to the bed way. A wrench shall be provided for adjusting all elements of the steady rest.

3.26.10 Positive threading stop. The thread cutting stop shall be fitted to the cross-slide to permit quick withdrawal and repositioning of the tool after each pass when cutting and chasing threads.

3.26.11 Bent tail dog set. The set shall consist of 2, 2-1/2, 3, 3-1/2, and 4-inch dogs.

3.26.12 Lathe tool holder sets. Lathe tool holders, as required herein, shall be provided with each lathe. The holders shall mate with the tool post specified in 3.26.20 and shall accommodate the tooling specified in 3.26.13 through 3.26.17. The tool holders, while mounted in the Tool Post, shall meet or exceed the performance requirements stated herein.

3.26.13 Knurling tool. The knurling tools furnished shall have a diamond pattern in fine, medium, and coarse knurls.

3.26.14 Cut-off tool. High Speed Steel (HSS) cut-off tools, fitting the supplied holders, shall be furnished. Six tools or bits are required.

3.26.15 Turning tool. HSS turning tools, fitting the supplied holders, shall be furnished. Six tools or bits are required.

3.26.16 Boring bars. The boring bars shall have one 90-degree square tool bit on one end and one 45-degree square tool bit on the other end. The tool bits shall be no less than 1/4 inch square. Six HSS boring bits shall be furnished with each bar.

3.26.17 Threading cutter. Six HSS tool bits shall be furnished with each holder.

3.26.18 Center tailstock, live. The live center shall be the ball bearing type for mounting in the tailstock spindle of the lathe. The live center shall be hardened and ground to not less than Rockwell C-50.

3.26.19 Extension rest. The extension rest shall be interchangeable with the compound slide and shall

provide sufficient reach across the open gap for turning and facing operations to the chuck or faceplate.

3.26.20 Quick change tool post. A quick-change tool post, with sliding tapered gibs, shall be provided with each lathe. Each tool post shall have sliding gibs for two tool holders. The tool post shall mount on the T-slot of the lathe tool slide and shall have means to extend the gibs, tightening them into the mating slots of the tool holder. Means shall also be provided to tighten the tool post in the lathe T-slot. The tool post shall be manufactured from steel.

3.26.21 Thread-chasing dial. The thread-chasing dial shall be calibrated to indicate correct engagement of the lead screw and half-nut when cutting threads. A thread chasing stop shall be provided.

3.26.22 Micrometer carriage stop. The micrometer stop shall be mounted on the front bed to provide an adjustable stop. The micrometer dial shall be graduated in increments of 0.001 inch or less with at least 3/4 inch of adjustment.

3.26.23 Work light. The work light shall be an adjustable arm type with all necessary components for mounting on the lathe. The light shall operate on 110 to 120 volts, alternating current, 60-hertz, and shall be shielded against dirt and chips.

3.26.24 Wrenches. All special tools and wrenches required for operating the lathe and accessories that are normally supplied with the equipment shall be provided.

3.27 Lubrication chart or plate. A lubrication chart or plate shall be permanently and securely attached to each lathe. If a chart is furnished, it shall be placed in a transparent plastic folder or permanently sealed between clear plastic sheets, with suitable means for mounting. The chart or plate shall contain the following:

- Types of lubricants (with all applicable NSN's)
- Points of lubricant application
- Service interval
- Viscosity.

3.28 Nameplate. A corrosion resistant metal nameplate shall be securely attached to the lathe. The nameplate shall contain the information listed below. If the lathe is a special model, the model designation shall include the model of the basic standard lathe and a suffix identified in the manufacturer's permanent records. The captions listed may be shortened or abbreviated, provided the entry for each caption is clear as to its meaning.

- Nomenclature.
- Manufacturer's name.
- Manufacturer's model designation.
- Manufacturer's serial number.
- Power input (volts, total amps, phase, frequency).
- Contract Number or Order Number.
- National Stock Number
- Date of manufacture.

3.29 Workmanship. Workmanship of the lathes and accessories shall be of a quality equal to that of the manufacturer' a commercial equipment of the type specified herein.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, 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 the specification where such inspections are deemed necessary to assure 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 assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Classification of inspection. The inspection requirements specified herein are classified as Quality Conformance Inspections.

4.3 Quality conformance inspection. Unless otherwise specified, quality conformance inspection shall be applied to production items offered for acceptance under the contract. Unless otherwise specified, quality conformance inspection shall consist of a. and b. below. Failure of any item to pass an examination or test shall be cause for rejection of the item.

a. Product examination (see 4.4).

b. Tests (see 4.7).

4.4 Product examination. Visually and manually examine the lathe and the accessory items to determine conformance with the requirements of 3.2 through 3.3; 3.6; 3.8; 3.12 through 3.17; 3.19 through 3.22.13; 3.23; 3.26; 3.26.1 through 3.24; and Packaging. Visual examinations shall include verification of completeness of manufacture and assembly, conformance to specified standards, adequacy of markings, proper cleaning, and freedom from the identified defects. Manual examinations shall include the operation of movable parts by hand to assure proper functioning. The examination provisions may be applied to the earliest practical point in manufacture at which it is feasible to inspect for acceptance without risk of change in the characteristic by subsequent operations. Failure of the contractor to provide objective evidence that the lathe and its components have passed the examinations prescribed for them by the contractor's inspection system shall be cause for rejection. In addition, failure of the contractor to provide objective evidence that all parts are manufactured to definite standards, clearances, and tolerances so that no replacement part will degrade the form, fit or function of the end item (see 3.11) shall be cause for rejection.

4.5 Certificate of conformance (COC). When COC is specified, a certificate of conformance is required for Military Standard and commercial items, supported by inspection and test data, material analysis, or certification from the raw material producer or processor, and shall be made available to the Government for specifications covering raw material, processed material, and processes. The contractor shall make the COC available to the Government prior to or with the request to perform acceptance inspection approval by the Government. This is in addition to, and not in lieu of, any rights of the Government under this contract or law. A COC may be used as an element incident to, but shall not be used as the sole basis for, Government acceptance of contract item(s) unless so indicated in the technical documentation or contract. As a minimum, the COC shall contain the following:

- a. Name of company and date.
- b. Contract number or purchase order number, national stock number and drawing number.
- c. Complete nomenclature of supplies together with lot number or other identification. The quantity in each lot or shipment shall be given.
- d. A statement certifying that material meets all requirements of the contract. The contractor shall furnish, to the cognizant engineering activity, a proposed statement for approval.

4.5.1 COC specification. COC are required for 3.4 through 3.5; 3.7; 3.9 through 3.11; 3.18 through 3.19; 3.22.12 through 3.22.12.2; 3.26.1 through 3.26.8; and 3.26.18.

4.6 Certified test reports (CTR). If CTR is specified, the contractor shall make available to the Government a CTR for each lot of parts, assemblies, subsystems and systems by lot number prior to acceptance. This test report is in addition to, and not in lieu of, any rights of the Government under this contract or law. A CTR may be used as an element incident to, but shall not be used as the sole basis for, Government acceptance of the contract item(s) unless so indicated in the technical documentation or contract. As a minimum, the report shall contain the following:

- a. Name of company and date.
- b. Contract number or purchase order number, national stock number and drawing number.
- c. Complete nomenclature of supplies together with lot number or other identification. The quantity in each lot or shipment shall be given.
- d. All inspections and tests required by contract (i.e., material, processes, performance, functional, etc.) shall be recorded in test reports. These reports shall identify each lot submitted for acceptance by lot number, the specification or drawing, revision and date, grade or type as applicable, number of specimens tested, specified characteristics and requirements, and actual results obtained.
- e. Reports of the raw material producer's chemical, mechanical, and physical analysis.
- f. A statement, as follows, certifying that material meets all requirements of the contract:

“The undersigned, individually, and as the authorized representative of the contractor, warrants and represents that: All the information supplied above is true and accurate; the material covered by this certificate conforms to all contract requirements (including but not limited to the drawings and specifications); the inspection and test results, and the analysis appearing herein are true and accurate; and this certificate is made for the purpose of inducing payment and with knowledge that the information and certification may be used as a basis for payment.”

g. Signature and title of certifying official.

4.7 Tests. Each lathe shall be tested to determine compliance with test requirements as specified in 4.7.1 through 4.7.10. The contactor may, substitute CTR in lieu of testing, however the Government reserves the right to test.

4.7.1 Operational test. The lathe shall be operated at no load for not less than sixty (60) minutes. Proper operation of all controls, motors, adjusting mechanisms and accessories shall be verified during the trial period.

4.7.2 Alignment accuracy test. Each lathe shall be tested to determine that it complies with the alignment tolerance requirements of 3.24.

4.7.3 Performance tests. The lathe shall be subjected to the following turning test to determine conformance to the accuracies of 3.25.

4.7.3.1 Round turning test. A bar of SAE 1045 carbon steel or steel of similar machinability not less than two (2) inches in diameter and four (4) inches long, shall be held in the chuck furnished with the lathe. A rough and finish cut shall be made at least two (2) inches long using a cutting speed of not less than eight feet per minute (80 fpm). The turned diameter shall conform to the accuracy of the round turning test in Table III.

4.7.3.2 Cylindrical turning test. A bar of SAE 1045 carbon steel or steel of similar machinability not less than four (4) inches in diameter and twelve (12) inches long, with a collar at each end, shall be used for a cylindrical turning test. The collars shall be not less than four (4) inches apart. A finish cut shall be taken over two (2) collars in one pass using a single point carbide tip turning tool and a cutting speed not less than three hundred fifty feet per minute (350 fpm). The turned diameter shall conform to the accuracy of Table III. Upon completion of the test, the test specimen shall be prepared for turning between centers. A single cut shall be taken over two collars and turned diameters shall conform to the accuracy of the cylindrical turning test in Table III.

4.7.4 High voltage test. A sixty Hertz (60 Hz) sine wave test voltage of at least two thousand five hundred volts (2500 V) peak at standard temperature and pressure shall be applied to each electrically isolated circuit and the chassis or frame ground, and between primary and secondary winding of each power transformer except auto transformers. The test voltage shall be applied to un-insulated points and shall be maintained for no less than fifteen seconds (15 sec.) at each circuit. The voltage shall be monitored with an analog voltmeter throughout the test. Solid-state devices, if present in each circuit, may be removed or shunted to prevent damage during test. Damage or degradation of solid-state devices by this test is not cause for rejection of the end item, but all damaged or degraded devices shall be replaced by the contractor at the contractor's expense before acceptance by the Government. Failure of the test as evidenced by component heating, breakdown, arcing, or other surface or air discharge, or a constant or momentary lowering of the monitored voltage below the test voltage level, shall be cause for rejection.

4.7.5 Hardness test. Hardness tests shall be performed on the components of the lathe

listed below, or test samples processed concurrently with components. Failure of the component or sample to meet the hardness number shown for that component shall be cause for rejection. A certificate of conformance (COC) may be accepted for a component in lieu of this test, provided that the COC is written in English language and is signed by a responsible officer of the original equipment manufacturer of that component.

Component	Rockwell C Number (Minimum)	Paragraph
Gears	45	3.21
Top bed ways	50	3.22.1 through 3.22.2
Headstock.	48	3.22.3
Tailstock.		3.22.11

4.7.8 Headstock spindle stop test. After running the lathe at a minimum of one thousand revolutions per minute (rpm), for a minimum of sixty seconds (60 sec) while a chuck and work piece are mounted on the spindle, the spindle brake shall be engaged. The brake shall be placed in the off position and the emergency stop must be actuated. The lathe shall come to a full stop in no more than five seconds (5 sec). Failure of the test shall be cause for rejection.

4.7.9 Compound rest test. A compound rest shall be fitted to the top of the cross slide. The compound rest slide shall be moved over the base by a precision feed screw. A manual crank shall impart feed movement to the compound rest. The base for the compound rest shall swivel and lock at any position through 360 degrees. The base shall be graduated in one degree increments to at least 90 degrees each side of a zero point of reference.

4.7.10 Packaging validation test. After the Quality Assurance inspection and tests have been successfully completed, one lathe, packaged in accordance with the requirements of Section 5 - Packaging, shall be subjected to the following Lifting and Transporting by Forklift Truck test (4.7.10.1). The lathe used for the tests in paragraphs 4.7.1 through 4.7.9 shall be used in the packaging validation tests. A dummy load shall not be used. All tests are to be conducted under ambient conditions. Environmental temperatures/humidity tests are not required. After the tests have been completed, the container shall be inspected. Defects in accordance with those described below shall be cause for rejection. The unit shall then be unpacked and again subjected to Quality Assurance inspections and tests of paragraphs 4.7.1 through 4.7.9 to reaffirm that the lathe meets the requirements specified in this DFP. After all requirements have been met, the unit shall be inspected and repacked (See Attachment 2) before submission for Government acceptance. After testing, any damage to the packaging shall be replaced prior to acceptance.

4.7.10.1 Lifting and transporting by forklift truck. The specimen shall be lifted clear of the ground by a forklift truck at one side of the specimen and transported on the forks in the level or the back-tilt position across a hard pavement for a distance not less than 100 feet. Parallel pairs of 1-inch boards spaced 54 inches apart shall be laid flatwise on the pavement across the path of the forklift truck. The first pair shall be placed squarely across the truck's path and centered 30 feet from the starting point; the second pair shall be laid 60 feet from the starting point at an angle of about 60 degrees to the truck's path so the left wheel strikes first; and the third pair shall be laid 90 feet from the starting point at about 75 degrees to the truck's path so the right wheel strikes first. The forklift truck carrying the specimen shall travel the 100 feet in about 23 seconds at a uniform speed (normal walking speed), and then shall be brought to a stop. The specimen shall be carefully observed during the traverse and while the forklift truck is at a stop for any damage, evidence of inadequacy, or deflection of the specimen that might cause damage or displacement of the contents. A record shall be made of the observations. The specimen shall then be lowered to the ground. The forklift truck shall be moved from the side to the end of the specimen. The forks shall be run under the specimen as far as possible and then operated to lift the end 6 inches. Observe the specimen, particularly in the vicinity of the ends of the forks, and record observations. If the specimen can thus be lifted clear of the floor, transport it on the forks over the same 100-foot course, and record observations. If it cannot be thus lifted, report the length of forks used and state that the specimen could not be carried on the forklift truck at either end.

4.7.10.2 Pass or fail criteria. When the container or package is subjected to the test in 4.7.10.1, the contents shall show no functional or physical damage, and the container and packing shall show no functional damage. Damage to the exterior shipping container, which is the result of improper interior packaging, blocking, or bracing shall be cause for rejection. Structural failure of the exterior shipping container, which would result in spilling of the contents or failure of the container in subsequent handling is cause for rejection. There shall be no evidence of a substantial amount of shifting of the contents within the exterior shipping container that would create conditions likely to cause damage during shipment, storage, and reshipment of the container. Minor container damage, such as chipping of wood members, negligible dents, and paint chipping, is not cause for rejection.

5. PACKAGING

5.1 Preservation, packing, and marking. Unless otherwise specified, preservation, packing, and marking shall be in accordance with the contract.

TABLE I - Size and capacities

Characteristics	Requirements
Swing over bed, inches	19
Swing over cross slide, inches	12
Swing in gap, inches	34
Distance between centers, inches:	
Bed closed	30
Bed open	54
Spindle speed selections, infinite: or	
Standard	12
Spindle speed ranges, RPM:	25 to 1000
Cross slide travel, inches	15
Compound slide travel, inches	4
Main drive motor, H.P	7-1/2
Size hole through spindle, inches	1-3/4
Spindle nose size, type	6 inch D-1
Spindle center, Morse taper	No. 4
Longitudinal feed selection	0.0025 to 0.093
Threads, English:	
Number of selections	40
Number of threads, TPI	2 to 56
Thread, Metric:	
Number of selections	35
Number of threads, pitch in mm	0.5 to 14
Tailstock spindle diameter, inches	2-3/4
Tailstock spindle travel, inches	7
Tailstock center, Morse taper	No. 4
Tailstock set over, each side of center, inches	1/2
Lead screw diameter, inches	1-1/4

NOTE: Machine sizes and capacities shall be not less than the stated requirements of the size shown in above table. The size and capacity of the machine offered shall not exceed the stated requirements by more than 10 percent. When a range is shown, the required performance is from the stated minimum or less to the stated maximum or greater.

TABLE II - Alignment accuracies

Test	Permissible error
Spindle center runout	0.0004 inch TIR
Spindle nose runout	0.0004 inch TIR
Cam action of spindle, rear side of test plate	0.0005inch TIR
Spindle taper runout:	

Test	Permissible error
At end of 12 in. test bar	0.0012 inch TIR
At spindle nose end of bar	0.0004 inch TIR
Headstock alignment:	
Vertical, high at end of 12 inch test bar	0.0008 inch
Horizontal, at end of 12 inch test bar toward operators side	± 0.0008 inch
Headstock and tailstock center alignment, vertical, high at tailstock	0.003 inch
Lead screw, lead per foot	0.001 inch
Cross slide alignment, to face, hollow or concave only, on 12 inch diameter	0.0008 inch
Face plate runout:	
On diameter	0.001 inch
On face at nominal diameter	0.0015 inch
Chuck-runout, face and periphery	0.003 inch

NOTE: TIR - Total Indicator Reading.

TABLE III - Performance accuracies

Test	Permissible error
Rough turning:	
Out-of-round	0.005 inch
Taper per foot	0.005 inch
Finish turning:	
Out-of-round	0.0004 inch
Cylindrical:	
Two finished collars shall have the same diameter:	
Part held in chuck or collet, within	0.0015 inch
Part held between centers, within	0.0010 inch

PACKAGING

NSN: 3416-00-725-3508

NOMEN: Lathe, Sliding Gap Bed

PRESERVATION, PACKING, AND PACKAGING. Preservation, Packing and Packaging shall be in accordance with ASTM-D-3951 plus the following additional requirements. The unit package quantity shall be 1 lathe plus all accessories. To facilitate handling, the items do not necessarily have to be placed in one package, but packages must be marked to show which items constitute one unit.

ADDITIONAL REQUIREMENTS:

If oak or chestnut wood products are used in the performance of this contract, these wood or wood products must be free of all bark.

Unless otherwise specified herein, shipments to the same destination of identical items having a total packaged displacement exceeding 50 cubic feet shall be palletized unless forklift - handling features such as skids are included on containers.

Workmanship shall be such that when proper procedure is followed, materials and equipment being processed will be provided the maximum protection against corrosion, deterioration, and be suitable for storage to the level of packaging specified.

The Lathe and its accessories shall be blocked, braced and cushioned to prevent any physical or functional damage when handled by forklift and when shipped by road, rail, sea or air. All moveable parts shall be made immobile, gages and dial indicators shall
Be given extra protection to prevent maladjustment or misalignment.

If the items are packaged in more than one box, the boxes shall be marked i.e., 1 of 3, 2 of 3, 3 of 3 etc.

MARKING REQUIREMENTS:

Container markings shall be in capital letters of equal height, shall be proportionate to the available marking space and shall contain the following information in the order listed:

- a. NSN/NATO stock number.
- b. CAGE code of the company awarded the contract, and part number of the item as specified in the contract.
- c. Quantity and unit of issue.
- d. Level of protection and date packed.
- e. Contract or purchase order number.

Markings on the shipping container shall be grouped into three distinct categories, identification markings, contract data markings and address markings.

PACKAGING

NSN: 3416-00-725-3508

NOMEN: Lathe, Sliding Gap Bed

Identification Markings:

- a. NSN/NATO stock number.
- b. CAGE code of the company awarded the contract, and part number of the item as specified in the contract.
- c. Quantity and unit of issue.
- d. Level of protection and date packed.
- e. Gross weight and cube.
- f. Item description or nomenclature.

Contract Data Marking:

The contract data marking placed under the identification markings, shall consist of the contract or purchase order number.

Address Markings:

The address markings placed to the right of the identification and contract data markings (if space is available) shall consist of the following information in the order shown.

- a. Control number or reference number (as a minimum, the Transportation Control Number (TCN) shall be provided as the single standard shipment identification number)
- b. FROM MILITARY: Name and address of consignor (DOD Activity Address Code) and in the clear address if applicable.
- c. FROM CONTRACTOR: Name and address of the contractor (including nine-digit zip code). When supplies are shipped from a subcontractor, only the name and address of the company awarded the contract shall be used.
- d. TO: Name and address of consignee (DOD Activity Address Code (DODAAC) and in the clear Address if applicable
- e. Piece number and total pieces (if more than one shipping container is used for the order).

In addition to the above information, the NSN/NATO stock number shall be bar coded on the unit packs and intermediate containers. The following shall be bar coded on the shipping container. All bar coding shall use the 3 of 9 format in accordance with ANSI MH10.8M.

NSN/NATO stock number.

Contract or order number.

CAGE code of the company awarded the contract.

Contract Line Item Number (CLIN) if applicable.

52.212-1 Instructions to Offerers--Commercial Items.

As prescribed in 12.301 (b)(1), insert the following provision:

INSTRUCTIONS TO OFFERORS--COMMERCIAL ITEMS (OCT 2000)

(a) North American Industry Classification System (NAICS) code and small business size standard. The NAICS code and small business size standard for this acquisition appear in Block 10 of the solicitation cover sheet (SF 1449). However, the small business size standard for a concern which submits an offer in its own name, but which proposes to furnish an item which it did not itself manufacture, is 500 employees.

(b) Submission of offers. Submit signed and dated offers to the office specified in this solicitation at or before the exact time specified in this solicitation. Offers may be submitted on the SF 1449, letterhead stationery, or as otherwise specified in the solicitation. As a minimum, offers must show--

(1) The solicitation number;

(2) The time specified in the solicitation for receipt of offers;

(3) The name, address, and telephone number of the offeror;

(4) A technical description of the items being offered in sufficient detail to evaluate compliance with the requirements in the solicitation. This may include product literature, or other documents, if necessary;

(5) Terms of any express warranty;

(6) Price and any discount terms;

(7) 'Remit to' address, if different than mailing address;

(8) A completed copy of the representations and certifications at FAR 52.212-3 ;

(9) Acknowledgment of Solicitation Amendments;

(10) Past performance information, when included as an evaluation factor, to include recent and relevant contracts for the same or similar items and other references (including contract numbers, points of contact with telephone numbers and other relevant information); and

(11) If the offer is not submitted on the SF 1449, include a statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation. Offers that fail to furnish required representations or information, or reject the terms and conditions of the solicitation may be excluded from consideration.

(c) Period for acceptance of offers. The offeror agrees to hold the prices in its offer firm for 30 calendar days from the date specified for receipt of offers, unless another time period is specified in an addendum to the solicitation.

(d) Product samples. When required by the solicitation, product samples shall be submitted at or prior to the time specified for receipt of offers. Unless otherwise specified in this solicitation, these samples shall be submitted at no expense to the Government, and returned at the sender's request and expense, unless they are destroyed during preaward testing.

(e) Multiple offers. Offerors are encouraged to submit multiple offers presenting alternative terms and conditions or commercial items for satisfying the requirements of this solicitation. Each offer submitted will be evaluated separately.

(f) Late submissions, modifications, revisions, and withdrawals of offers. (1) Offerors are responsible for submitting offers, and any modifications, revisions, or withdrawals, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that offers or revisions are due.

(2)(i) Any offer, modification, revision, or withdrawal of an offer received at the Government office designated in the solicitation after the exact time specified for receipt of offers is 'late' and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and--

(A) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of offers; or

(B) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or

(C) If this solicitation is a request for proposals, it was the only proposal received.

(ii) However, a late modification of an otherwise successful offer, that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(3) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the offer wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(4) If an emergency or unanticipated event interrupts normal Government processes so that offers cannot be received at the Government office designated for receipt of offers by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation or other notice of an extension of the closing date, the time specified for receipt of offers will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(5) Offers may be withdrawn by written notice received at any time before the exact time set for receipt of offers. Oral offers in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile offers, offers may be withdrawn via facsimile received at any time before the exact time set for receipt of offers, subject to the conditions specified in the solicitation concerning facsimile offers. An offer may be withdrawn in person by an offeror or its authorized representative if, before the exact time set for receipt of offers, the identity of the person requesting withdrawal is established and the person signs a receipt for the offer.

(g) Contract award (not applicable to Invitation for Bids). The Government intends to evaluate offers and award a contract without discussions with offerors. Therefore, the offeror's initial offer should contain the offeror's best terms from a price and technical standpoint. However, the Government reserves the right to conduct discussions if later determined by the Contracting Officer to be necessary. The Government may reject any or all offers if such action is in the public interest; accept other than the lowest offer; and waive informalities and minor irregularities in offers received.

(h) Multiple awards. The Government may accept any item or group of items of an offer, unless the offeror qualifies the offer by specific limitations. Unless otherwise provided in the Schedule, offers may not be submitted for quantities less than those specified. The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit prices offered, unless the offeror specifies otherwise in the offer.

(i) Availability of requirements documents cited in the solicitation. (1)(i) The GSA Index of Federal Specifications, Standards and Commercial Item Descriptions, FPMR Part 101-29, and copies of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained for a fee by submitting a request to--

GSA Federal Supply Service Specifications Section

Suite 8100, 470 L'Enfant Plaza, SW

Washington, DC 20407

Telephone (202) 619-8925

Facsimile (202) 619-8978.

(ii) If the General Services Administration, Department of Agriculture, or Department of Veterans Affairs issued this solicitation, a single copy of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained free of charge by submitting a request to the addressee in paragraph (i)(1)(i) of this provision. Additional copies will be issued for a fee.

(2) The DOD Index of Specifications and Standards (DODISS) and documents listed in it may be obtained from the:

Department of Defense Single Stock Point (DoDSSP)

Building 4, Section D,

700 Robbins Avenue

Philadelphia, PA 19111-5094

Telephone (215) 697-2667/2179

Facsimile (215) 697-1462.

(i) Automatic distribution may be obtained on a subscription basis.

(ii) Order forms, pricing information, and customer support information may be obtained--

(A) By telephone at (215) 697-2667/2179; or

(B) Through the DoDSSP Internet site at <http://assist.daps.mil>.

(3) Nongovernment (voluntary) standards must be obtained from the organization responsible for their preparation, publication or maintenance.

(j) Data Universal Numbering System (DUNS) Number. (Applies to offers exceeding \$25,000.) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation 'DUNS' followed by the DUNS number that identifies the offeror's name and address. If the offeror does not have a DUNS number, it should contact Dun and Bradstreet to obtain one at no charge. An offeror within the United States may call

1-800-333-0505. The offeror may obtain more information regarding the DUNS number, including locations of local Dun and Bradstreet Information Services offices for offerors located outside the United States, from the Internet home page at <http://www.customerservice@dnb.com>. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@mail.dnb.com.

(End of provision)

[65 FR 46058, July 26, 2000]

52.212-4 Contract Terms and Conditions--Commercial Items.

As prescribed in 12.301 (b)(3), insert the following clause:

CONTRACT TERMS AND CONDITIONS--COMMERCIAL ITEMS (MAY 1999)

(a) Inspection/Acceptance. The Contractor shall only tender for acceptance those items that conform to the requirements of this contract. The Government reserves the right to inspect or test any supplies or services that have been tendered for acceptance. The Government may require repair or replacement of nonconforming supplies or reperformance of nonconforming services at no increase in contract price. The Government must exercise its post-acceptance rights--

(1) Within a reasonable time after the defect was discovered or should have been discovered; and

(2) Before any substantial change occurs in the condition of the item, unless the change is due to the defect in the item.

(b) Assignment. The Contractor or its assignee's rights to be paid amounts due as a result of performance of this contract, may be assigned to a bank, trust company, or other financing institution, including any Federal lending agency in accordance with the Assignment of Claims Act (31 U.S.C. 3727).

(c) Changes. Changes in the terms and conditions of this contract may be made only by written agreement of the parties.

(d) Disputes. This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613). Failure of the parties to this contract to reach agreement on any request for equitable adjustment, claim, appeal or action arising under or relating to this contract shall be a dispute to be resolved in accordance with the clause at FAR 52.233-1, Disputes, which is incorporated herein by reference. The Contractor shall proceed diligently with performance of this contract, pending final resolution of any dispute arising under the contract.

(e) Definitions. The clause at FAR 52.202-1, Definitions, is incorporated herein by reference.

(f) Excusable delays. The Contractor shall be liable for default unless nonperformance is caused by an occurrence beyond the reasonable control of the Contractor and without its fault or negligence such as, acts of God or the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, unusually severe weather, and delays of common carriers. The Contractor shall notify the Contracting Officer in writing as soon as it is reasonably possible after the commencement of any excusable delay, setting forth the full particulars in connection therewith, shall remedy such occurrence with all reasonable dispatch, and shall promptly give written notice to the Contracting Officer of the cessation of such occurrence.

(g) Invoice. The Contractor shall submit an original invoice and three copies (or electronic invoice, if authorized,) to the address designated in the contract to receive invoices. An invoice must include--

(1) Name and address of the Contractor;

(2) Invoice date;

(3) Contract number, contract line item number and, if applicable, the order number;

(4) Description, quantity, unit of measure, unit price and extended price of the items delivered;

(5) Shipping number and date of shipment including the bill of lading number and weight of shipment if shipped on Government bill of lading;

(6) Terms of any prompt payment discount offered;

(7) Name and address of official to whom payment is to be sent; and

(8) Name, title, and phone number of person to be notified in event of defective invoice. Invoices will be handled in accordance with the Prompt Payment Act (31 U.S.C. 3903) and Office of Management and Budget (OMB) Circular A-125, Prompt Payment. Contractors are encouraged to assign an identification number to each invoice.

(h) Patent indemnity. The Contractor shall indemnify the Government and its officers, employees and agents against liability, including costs, for actual or alleged direct or contributory infringement of, or inducement to infringe, any United States or foreign patent, trademark or copyright, arising out of the performance of this contract, provided the Contractor is reasonably notified of such claims and proceedings.

(i) Payment. Payment shall be made for items accepted by the Government that have been delivered to the delivery destinations set forth in this contract. The Government will make payment in accordance with the Prompt Payment Act (31 U.S.C. 3903) and Office of Management and Budget (OMB) Circular A-125, Prompt Payment. If the Government makes payment by Electronic Funds Transfer (EFT), see 52.212-5 (b) for the appropriate EFT clause. In connection with any discount offered for early payment, time shall be computed from the date of the invoice. For the purpose of computing the discount earned, payment shall be considered to have been made on the date which appears on the payment check or the specified payment date if an electronic funds transfer payment is made.

(j) Risk of loss. Unless the contract specifically provides otherwise, risk of loss or damage to the supplies provided under this contract shall remain with the Contractor until, and shall pass to the Government upon:

(1) Delivery of the supplies to a carrier, if transportation is f.o.b. origin; or

(2) Delivery of the supplies to the Government at the destination specified in the contract, if transportation is f.o.b. destination.

(k) Taxes. The contract price includes all applicable Federal, State, and local taxes and duties.

(l) Termination for the Government's convenience. The Government reserves the right to terminate this contract, or any part hereof, for its sole convenience. In the event of such termination, the Contractor shall immediately stop all work hereunder and shall immediately cause any and all of its suppliers and subcontractors to cease work. Subject to the terms of this contract, the Contractor shall be paid a percentage of the contract price reflecting the percentage of the work performed prior to the notice of termination, plus reasonable charges the Contractor can demonstrate to the satisfaction of the Government using its standard record keeping system, have resulted from the termination. The Contractor shall not be required to comply with the cost accounting standards or contract cost principles for this purpose. This paragraph does not give the Government any right to audit the Contractor's records. The Contractor shall not be paid for any work performed or costs incurred which reasonably could have been avoided.

(m) Termination for cause. The Government may terminate this contract, or any part hereof, for cause in the event of any default by the Contractor, or if the Contractor fails to comply with any contract terms and conditions, or fails to provide the Government, upon request, with adequate assurances of future performance. In the event of termination for cause, the Government shall not be liable to the Contractor for any amount for supplies or services not accepted, and the Contractor shall be liable to the Government for any and all rights and remedies provided by law. If it is determined that the Government improperly terminated this contract for default, such termination shall be deemed a termination for convenience.

(n) Title. Unless specified elsewhere in this contract, title to items furnished under this contract shall pass to the Government upon acceptance, regardless of when or where the Government takes physical possession.

(o) Warranty. The Contractor warrants and implies that the items delivered hereunder are merchantable and fit for use for the particular purpose described in this contract.

(p) Limitation of liability. Except as otherwise provided by an express or implied warranty, the Contractor will not be liable to the Government for consequential damages resulting from any defect or deficiencies in accepted items.

(q) Other compliances. The Contractor shall comply with all applicable Federal, State and local laws, executive orders, rules and regulations applicable to its performance under this contract.

(r) Compliance with laws unique to Government contracts. The Contractor agrees to comply with 31 U.S.C. 1352 relating to limitations on the use of appropriated funds to influence certain Federal contracts; 18 U.S.C. 431 relating to officials not to benefit; 40 U.S.C. 327, et seq., Contract Work Hours and Safety Standards Act; 41 U.S.C. 51-58, Anti-Kickback Act of 1986; 41 U.S.C. 265 and 10 U.S.C. 2409 relating to whistle blower protections; 49 U.S.C. 40118, Fly American; and 41 U.S.C. 423 relating to procurement integrity.

(s) Order of precedence. Any inconsistencies in this solicitation or contract shall be resolved by giving precedence in the following order:

- (1) The schedule of supplies/services.
- (2) The Assignments, Disputes, Payments, Invoice, Other Compliances, and Compliance with Laws Unique to Government Contracts paragraphs of this clause.
- (3) The clause at 52.212-5 .
- (4) Addenda to this solicitation or contract, including any license agreements for computer software.
- (5) Solicitation provisions if this is a solicitation.
- (6) Other paragraphs of this clause.
- (7) The Standard Form 1449.
- (8) Other documents, exhibits, and attachments.
- (9) The specification.

(End of clause)

[64 FR 10542, March 4, 1999]

TABLE I - Size and capacities

Characteristics	Requirements	Actual Value
Swing over bed, inches	19	
Swing over cross slide, inches	12	
Swing in gap, inches	34	
Distance between centers, inches:		
Bed closed	30	
Bed open	54	
Spindle speed selections, infinite: or		
Standard	12	
Spindle speed ranges, RPM:	25 to 1000	
Cross slide travel, inches	15	
Compound slide travel, inches	4	
Main drive motor, H.P	7-1/2	
Size hole through spindle, inches	1-3/4	
Spindle nose size, type	6 inch D-1	
Spindle center, Morse taper	No. 4	
Longitudinal feed selection	0.0025 to 0.093	
Threads, English:		
Number of selections	40	
Number of threads, TPI	2 to 56	
Thread, Metric:		
Number of selections	35	
Number of threads, pitch in mm	0.5 to 14	
Tailstock spindle diameter, inches	2-3/4	
Tailstock spindle travel, inches	7	
Tailstock center, Morse taper	No. 4	
Tailstock set over, each side of center, inches	1/2	
Lead screw diameter, inches	1-1/4	

NOTE: Machine sizes and capacities shall be not less than the stated requirements of the size shown in above table. The size and capacity of the machine offered shall not exceed the stated requirements by more than 10 percent. When a range is shown, the required performance is from the stated minimum or less to the stated maximum or greater.