

Pricing Evaluation Spreadsheet

DAAE20-01-T-0145

CLIN 0001, Milling Machine, NSN 3417-00-494-9573

Pricing Period	Quantity Order Range	Unit Price	x	Weight	x	Quantity Multiplier	=	Weighted Price	Evaluated CLIN Price		
1	1 - 2	<input style="width: 100px; height: 20px;" type="text"/>		5%		1		\$ -			
	3 - 4	<input style="width: 100px; height: 20px;" type="text"/>		85%		3		\$ -			
	5 - 6	<input style="width: 100px; height: 20px;" type="text"/>		5%		5		\$ -			
	8 - 10	<input style="width: 100px; height: 20px;" type="text"/>		5% 100%		8		\$ -			
				Quantity		Months		Storage Cost (3 units for 6 mos.)			
Monthly Storage Cost per unit		<input style="width: 100px; height: 20px;" type="text"/>	x	3	=	\$ -	x	6	=	\$ -	\$ -
2	1 - 2	<input style="width: 100px; height: 20px;" type="text"/>		5%		1		-			
	3 - 4	<input style="width: 100px; height: 20px;" type="text"/>		85%		3		-			
	5 - 6	<input style="width: 100px; height: 20px;" type="text"/>		5%		5		-			
	8 - 10	<input style="width: 100px; height: 20px;" type="text"/>		5% 100%		8		-			
				Quantity		Months		Storage Cost (3 units for 6 mos.)			
Monthly Storage Cost per unit		<input style="width: 100px; height: 20px;" type="text"/>	x	3	=	\$ -	x	6	=	\$ -	\$ -
3	1 - 2	<input style="width: 100px; height: 20px;" type="text"/>		5%		1		-			
	3 - 4	<input style="width: 100px; height: 20px;" type="text"/>		85%		3		-			
	5 - 6	<input style="width: 100px; height: 20px;" type="text"/>		5%		5		-			
	8 - 10	<input style="width: 100px; height: 20px;" type="text"/>		5% 100%		8		-			
				Quantity		Months		Storage Cost (3 units for 6 mos.)			
Monthly Storage Cost per unit		<input style="width: 100px; height: 20px;" type="text"/>	x	3	=	\$ -	x	6	=	\$ -	\$ -
4	1 - 2	<input style="width: 100px; height: 20px;" type="text"/>		5%		1		-			
	3 - 4	<input style="width: 100px; height: 20px;" type="text"/>		85%		3		-			
	5 - 6	<input style="width: 100px; height: 20px;" type="text"/>		5%		5		-			
	8 - 10	<input style="width: 100px; height: 20px;" type="text"/>		5% 100%		8		-			
				Quantity		Months		Storage Cost (3 units for 6 mos.)			
Monthly Storage Cost per unit		<input style="width: 100px; height: 20px;" type="text"/>	x	3	=	\$ -	x	6	=	\$ -	\$ -
5	1 - 2	<input style="width: 100px; height: 20px;" type="text"/>		5%		1		-			
	3 - 4	<input style="width: 100px; height: 20px;" type="text"/>		85%		3		-			
	5 - 6	<input style="width: 100px; height: 20px;" type="text"/>		5%		5		-			
	8 - 10	<input style="width: 100px; height: 20px;" type="text"/>		5% 100%		8		-			
				Quantity		Months		Storage Cost (3 units for 6 mos.)			
Monthly Storage Cost per unit		<input style="width: 100px; height: 20px;" type="text"/>	x	3	=	\$ -	x	6	=	\$ -	\$ -
Total Evaluated CLIN Price									\$ -		

19-Jan-01
DFP-398
19-Jan-01

BATTLEFIELD MAINTENANCE SYSTEMS
ENGINEERING TEAM

DESCRIPTION FOR PURCHASE

MILLING MACHINE, HORIZONTAL AND VERTICAL, KNEE TYPE
3417-00-494-9573

1. GENERAL

This document includes the minimum Government requirements for a floor mounted, manually operated, knee type Milling Machine that is capable of both horizontal and vertical milling and is specifically configured for use in a limited height, Shop Van.

2. SALIENT CHARACTERISTICS

2.1 Design. The milling machine shall be new and one of the manufacturer's current models. A special feature of the required machine is that the overall height shall be no greater than 72¹/₂ inches. All components, optional equipment, and ancillary items necessary to meet the requirements specified herein shall be included. All parts subject to wear, breakage, or distortion shall be accessible for adjustment, replacement, or repair. The milling machine shall be capable of horizontal and vertical milling of ferrous and non-ferrous metals. The contractor has the option to provide this capability with a machine having a head, heads, or head with attachments in accordance with the requirements stated herein.

2.2 Safety and health requirements. Covers, guards, or other safety devices shall be provided, which do not interfere with operation of the machine. 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 machine parts, components, mechanisms and assemblies furnished on the machine, whether or not specifically required herein, shall comply with all the requirements of 29 CFR, Part 1910, that are applicable to the machine itself. In addition, the machine shall comply with all the requirements of ANSI B11.8 that are designated therein as the responsibility of the machine manufacturer. In the event of a conflict between the requirements of 29 CFR and ANSI standards, the requirements of 29 CFR shall apply.

2.3 Chip guards. In accordance with the safety and health requirements specified in paragraph 2.2, the machine shall be furnished with a transparent chip guard(s) to deflect chips, sparks, coolant and broken tools from striking the operator during horizontal or vertical milling. Guard(s) shall be easily positioned for use and easily removable for access to work piece and cutters.

2.4 Controls. All operating controls shall be located convenient to the operator at his normal workstation.

2.5 Lubricating systems. All bearings (except for the sealed for life, permanently lubricated type), matching gears, and all other moving parts shall be provided with means to assure adequate lubrication. Recirculating systems shall include filters that are cleanable or replaceable. Each lubricant reservoir shall have means for determining fluid levels. All oil holes, grease fittings, and filler caps shall be so located as to be readily accessible.

2.6 Threads. All threads shall conform to ASME B1.1 for Unified Inch threads and B1.13M or B1.21M for Metric threads.

2.7 Gears. All gear and pinions of spindle and axis drive trains shall be designed and manufactured of a suitable ferrous material, meeting or exceeding the requirements of AGMA 390.03 and AGMA 2000, or ISO 54 for the metric (SI) system. The gears shall be of the proper width, size and hardness to transmit full rated torque and horsepower throughout the speed ranges.

2.8 Dials. Dials shall be graduated in the US customary inch and metric (SI) systems of measurement. Dial graduations indicating stock removal or tool movement shall be in increments of not more than 0.001 inch and 0.02 mm. Dial graduations shall be easily read from the machine operator's normal working position. Graduations shall be permanently and legibly etched or engraved on a contrasting non-glare background. Dials requiring more than one revolution to indicate their full range shall be calibrated in such a manner that the last dial graduation progresses into and is continuous with the first graduation as the dial is rotated through the zero position for successive revolutions. Dual scale feed adjustment devices shall have independent zero adjustments for the US and Metric graduations on the same devices. Dials shall be accurate indicators for adjustment of tool/component movement.

2.9 Painting and protective finish. Painting and protective finishing shall be in accordance with the best practice of the commercial industry. The protective finish shall be a paint coating of at least 2.0 mils (.002 inch) thickness. All surfaces to be painted shall be, immediately prior to painting, cleaned, free of all foreign matter, and dried. The paint shall withstand the removal of fiberglass tape firmly applied over two intersecting cuts in the paint without paint peeling from the base metal. The intersecting cuts shall each be two inches long, and cut through to the base metal. Where no protective finish is utilized (such as machine bed ways, guide surfaces, plated surfaces, etc.) the natural finish of the material or finish obtained from heat treatment shall be permissible, provided the surfaces are free of scale and have a protective coating to inhibit corrosion. The surface hardness of the paint shall be between the industrial standards of H to HB pencil lead.

2.10 Machine ways. The machine ways shall be adequately protected to prevent chips, dirt, coolant, and other hazards from causing damage, resulting in inaccurate functioning of any interfacing members. Mating ways of knee, saddle and table shall be provided with adjustable gibs. Machine ways shall be provided in any of the options listed below.

a. Hardened and ground. This option may be provided if the ways and their mating ways are hardened to the same hardness and ground.

b. Hand scraped and chrome plated. This option may be provided if mating ways are chrome plated. Chrome plating shall be applied in any uniform thickness ranging from .0004 inch thru .001 inch.

c. Machined and scraped. This option may be provided when equipped with automatic lubrication of table ways, and with accordion or other type guarding.

2.11 Column and base. The column and base shall be rigidly constructed and have access doors or removable covers for servicing built-in equipment. The column ways shall be in accordance with the requirements of paragraph 2.10. The base shall have provisions for securing the machine to the floor or foundation.

2.12 Knee. The knee shall be of a rigid construction and support the saddle, table and related feed mechanisms. The ways mating the column and the ways mating the saddle shall meet the requirements of paragraph 2.10. Means shall be provided to clamp the knee at any desired height within its range on the column. The knee elevating screw shall have either square, acme, or ball screw threads. The knee-adjusting crank shall not revolve when power feed or rapid traverse is engaged and operating.

2.13 Saddle. The saddle shall be of a rigid construction. The machine ways of the saddle shall meet the requirements of paragraph 2.10. The cross feed hand wheel or crank on machines equipped with power feed shall have means for disengagement when power feed or rapid traverse is engaged.

2.14 Table. The table shall meet or exceed the requirements specified in Table I and the alignment tolerances specified in Table II. The table shall not have less than 3 equally spaced T-Slots for $\frac{5}{8}$ inch T-Bolts or T-Nuts, which conform dimensionally to ANSI B5.1. The table shall have coolant drain channels and provisions for returning the coolant to the reservoir. Means shall be provided to clamp the table in any position within its range on the saddle.

2.15 Limit stops. Adjustable stops for automatic disengagement of power feeds shall be provided. Positive limit stops shall be provided to prevent damage to the machine in case of overrunning feeds or rapid travel in all directions.

2.16 Arbor support(s). An arbor support shall be provided that is appropriate for the configuration of the milling machine furnished.

2.17 Milling head(s). A milling head or heads, with attachments as necessary to meet the requirements for machine capability to perform horizontal and vertical milling shall be provided. The head providing the power for its milling attachment shall be driven by an electric motor of not less than $1\frac{1}{2}$ horsepower.

2.17.1 Vertical head or vertical milling attachment. The vertical head or vertical head attachment shall be adjustable to any angle of rotation from the vertical through 90° in clockwise or counter-clockwise directions in the vertical plane. The vertical plane shall be either parallel to the column face or at right angles to the column face. A scale graduated in not more than 1° increments with numerical markings every 10° shall be provided to indicate the true axial position of the vertical spindle.

2.17.2 Horizontal head or horizontal milling attachment. The contractor has the option of providing either a stationary horizontal head, or a horizontal head with "rise and fall" capability, or a horizontal milling attachment for use with the machine's vertical head.

2.18 Spindle(s). The spindle(s) shall be alloy steel, which has been hardened and ground. The spindle(s) shall be mounted in precision type ball or roller bearings. The spindle(s) shall have a precision ground American National Standard Spindle nose with size 30, 40, or R8 taper and drawbar conforming to ANSI B5.18. A self-contained spindle braking mechanism shall be provided in accordance with ANSI B5.18. Spindle(s) rotation shall be reversible by control(s). All spindles on the machine shall be provided with the same size taper.

2.19 Feeds. Each cross movement of the table, vertical movement of the knee, and longitudinal movement of the table shall have a hand feed. Longitudinal table movement shall be provided with a power feed. The power feed shall have the capability to advance, to reverse, and to be neutral. The power feed shall be powered by an electric motor. Air power is unacceptable. The milling machine shall have a climb milling capability in the table longitudinal direction. The feed ranges and power feed rate shall be as specified in Table I. All feed hand wheels or cranks shall be of the type that will not revolve when power feed or rapid traverse is engaged and operating.

2.20 Feed screws, nuts, and bearings. The feed screws for longitudinal, cross and vertical travel shall be mounted on precision type ball or roller bearings. An anti-backlash adjustment mechanism shall be provided for climb mill operations. All feed screws and nuts shall have square, acme, or ball screw threads.

2.21 Electrical system. The electrical system of the milling machine shall operate from a 220 volts, 50/60 Hertz, three-phase, electrical power source. A four wire (one for ground) electric power supply cable shall be installed on each milling machine. The electric power supply cable shall be at least 10 feet in length and terminate in at least 1 inch of stripped tinned wire, without a receptacle plug. The electric power supply cable shall include proper sheathing/covering in accordance with NFPA 70 and CFR 29. The electric 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 NFPA 70. The electrical system shall conform to the applicable requirements of NFPA 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. Connections of conductors and terminal parts shall be 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.

2.22 High voltage requirement. The entire electrical system of the milling machine shall withstand, without damage, malfunction, breakdown, arcing, surface or air discharge, at least 2500 volts peak, 60 Hertz, sinusoidal wave electrical energy at standard temperature and pressure. The electrical energy shall be applied instantaneously at full voltage and shall be maintained for at least 15 seconds. Each circuit shall be isolated from other circuits and electrical ground. Solid state components may be damaged as a result of high voltage and shall

not be a cause for rejection. Damage to solid state components may be avoided by wiring around or bypassing them, terminal to terminal. No arcing or discharge from solid-state control components is acceptable.

2.23 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 are color coded and identified in accordance with NFPA 79. The electrical system diagrams/schematics provided with each milling machine shall be an exact duplication of the electrical system and wiring in the milling machine. Diagrams/schematics shall clearly identify the individual, point-to-point, wire and wire termination points in the electrical system.

2.24 Motors. The motors shall conform to the requirements of NEMA MG-1. Spindle drive motor(s) shall be furnished with a continuous duty, fan-cooled, splash proof, induction type motor, with a horsepower rating conforming to the requirements of Table I and the electrical requirements of para.2.21. The motor shall be thermally protected with a temperature rise of not more than 50° Celsius above ambient temperature. All motors shall be protected from dirt and grit and shall be equipped with sealed-for-life, anti-friction bearings. Mountings shall be in accordance with NEMA standards. A start-stop switch shall be mounted and wired in a convenient location for the operator in accordance with paragraph 2.4.

2.25 Coolant system. The coolant system shall be the flood type with a recycling system and shall include a sump or reservoir, an electric power driven pump, and all necessary piping. The sump or reservoir shall be of sufficient capacity to permit the continuous flow of coolant. The system shall have a means for draining and cleaning. The system shall include a strainer, which is easily removed for cleaning. A valve and flexible hose, conveniently located to the operator's normal working position, shall be provided to permit an operator to direct and control the coolant flow.

2.26 Performance. The milling machine shall perform milling operations on a bar of 1045 steel, which is 3 inches wide by 2 inches thick by 12 inches long. The stock removal rate shall be not less than 0.65 cubic inches per minute per rated horsepower of the spindle drive motor. All gears, pinions, and spindle drive components, including horizontal and/or vertical heads shall be capable of operating for 10,000 hours or five years whichever comes first, without failure or wear which cannot be compensated for by adjustments and would cause the milling machine to lose its inherent accuracy. All machine ways, feed screws, feed screw nuts, and bearings shall not structurally fail or exhibit wear that cannot be compensated for by adjustment for 10,000 hours of operation or five years whichever comes first.

2.27 Accuracy. The milled surface of the test piece of paragraph 2.26 shall have a finish of 125 micro inches arithmetical average (aa) or better. The milled surfaces shall be flat within 0.001-inch total deviation for the entire surface. Adjacent sides shall be square within 0.001 inch per foot. Opposite sides shall be parallel within 0.001 inch per foot.

2.28 Sizes and capacities. The sizes and capacities of the milling machine shall meet the requirements of Table I. Where a range is shown, the milling machine shall have the capability of operating throughout the entire range.

TABLE I Sizes and Capacities

<u>Characteristics</u>	<u>Requirements</u>
MACHINE	
Table Overall height, inches	not more than 72 ¹ / ₂
Length, inches	not less than 24
Width, inches	not less than 6 ¹ / ₂
Height from floor (lowest position)	not less than 30
Travel, inches	
Longitudinal	not less than 15
Cross	not less than 6 ³ / ₄
Vertical	not less than 15
T-Slots	
Number	3
Width of throat, inches	0.625
Feed speed range, inches per minute	
Longitudinal	As normally commercially provided
Cross	Hand
Vertical	Hand
SPINDLE, HORIZONTAL HEAD OR AS ATTACHMENT FOR HORIZONTAL HEAD	
Horsepower	(see 2.17)
Nose taper size	ANSI B5.18, No. 30, 40, or R8
Speeds, number	Infinitely variable or not less than 8
Speeds, range, rev/min	As normally commercially provided
Reversible	Yes
SPINDLE, VERTICAL HEAD OR AS ATTACHMENT FOR HORIZONTAL HEAD	
Horsepower	(see 2.17)
Nose taper size	ANSI B5.18, No. 30, 40, or R8
MOTORS	
Horizontal spindle drive	not less than 1 ¹ / ₂ horsepower
Coolant pump	not less than 0.1 horsepower

2.29 Alignment tolerances. The milling machine and its attachments shall meet the alignment tolerances of Table II when tested in accordance with Aerospace Industries Association (AIA) National Aerospace Standard (NAS) 985, Uniform Tests - NAS 900 Series Equipment Specifications as listed in Table II.

TABLE II
Alignment Tolerances

<u>NAS 985 paragraph no.</u>	<u>Test Parameters</u>
4.3.2.1	Flatness - work-mounting surface -Maximum deviation in any 12 inches: 0.0008 inch (0.02 mm in 300 mm) -Maximum overall accumulated error shall not exceed 0.0008 inch plus 0.00015 inch per foot for either length or width (0.02mm +0.0038 per 300 mm)
4.3.3.1	Rise and fall of work-mounting surface - Maximum deviation in any 12 inches: 0.0008 inch (0.02 mm in 300 mm) - Maximum overall accumulated error shall not exceed 0.0008 inch plus 0.00015 inch per foot for either length or width (0.02mm +0.0038 per 300 mm)
4.3.4.1	T-slots parallel with longitudinal movement - Maximum deviation in any 12 inches: 0.0008 inch (0.02 mm in 300 mm) - Maximum overall accumulated error shall not exceed 0.0008 inch plus 0.00015 inch per foot for total T-slot length (0.02mm +0.0038 per 300 mm)
4.3.5.1	Transverse movement square with center T-slot - Maximum deviation in any 12 inches: 0.0008 inch (0.02 mm in 300 mm) - Maximum overall accumulated error shall not exceed 0.0008 inch plus 0.00015 inch per foot for total travel up to 0.003 inch (0.02mm +0.0038 per 300 mm up to 0.075 mm)
4.3.6.1	Center T-slot square with spindle - Maximum deviation shall not exceed 0.001 inch in an 18-inch sweep (.025 mm in 457mm) - Compensate for any error indicated in test section 4.3.4.1
4.3.8.1	Work-mounting surface square with spindle (vertical) - 12-inch sweep 0.001 inch TIR (0.025 mm in 300 mm TIR) - 24-inch sweep 0.002 inch TIR (0.05 mm in 610 mm TIR)
4.3.9.1	Transverse movement square with longitudinal movement - Maximum deviation in any 12 inches: 0.0008 inch (0.02 mm in 300 mm) - Maximum overall accumulated error shall not exceed 0.0008 inch plus 0.00015 inch per foot for total travel up to 0.003 inch (0.02mm +0.0038 per 300 mm up to 0.075 mm)
4.3.10.1	Spindle runout - Radial runout: 0.0003 inch (0.008 mm) TIR - Axial (face) runout: 0.0002 inch (0.005 mm)TIR - 1.25 inches (31 mm) from face: 0.0003 inch (0.008 mm) TIR 12 inches (300mm)from face: 0.001 inch (0.025 mm) TIR
4.3.13.1	Alignment of spindle with arbor support - Runout shall not exceed 0.001 inch (0.025 mm) TIR with arbor support clamped
4.3.14.1	Spindle parallel with overarm - Maximum deviation shall not exceed 0.002 inch (0.05 mm) TIR overall
4.3.15.1	Saddle transverse movement parallel with spindle - Maximum deviation shall not exceed 0.00075 inch per foot (0.02 in 300 mm)
4.3.17.1	Spindle parallel with work-mounting surface

	- Maximum deviation shall not exceed 0.001 inch per foot (0.025 mm per 300mm) with worktable in unclamped position
4.3.18.1	Work-mounting surface square with vertical knee movement - Maximum deviation shall not exceed 0.005 inch per foot (0.13 mm per 300mm)
4.3.21.1	Deflection of worktable under load - Worktable shall support 350 pounds per square foot (1,710 kilograms per square meter) on overhanging portion with a maximum deflection of 0.015 inch (0.4 mm)
4.3.22.1	Slide displacement due to clamping - Movement of knee assembly when clamp is locked shall not exceed 0.001 inch per foot (0.02mm per 300 mm)

NOTE: TIR - Total Indicator Reading.

2.30 Equipment. The equipment specified herein shall be furnished with each milling machine:

2.30.1 Elapsed time meter. The milling machine shall be fitted with a standard meter to measure the accumulative operating time of the machine. The meter shall be calibrated to indicate in hours. The meter shall be the non-resetting type and shall have a range of one hour to 9,999 hours. Quality and mounting of the meter shall be commensurate with its capability to reliably display accumulated time for warranty purposes.

2.30.2 Swivel vise. A swivel vise shall be furnished with each milling machine. The Swivel vise jaws shall be at least 4¹/₂ inches in width, and shall open to no less than 4 inches. The jaws shall be hardened, ground, and removable. The swivel base of the vise shall be graduated in increments of one degree to indicate a full 360° of swivel. A hand crank and at least two T-Bolts conforming to ANSI B5.1 with nuts and washers shall be furnished with each vise.

2.30.3 Work light. A shielded work light to illuminate the milling area shall be provided with each milling machine. The work light position shall be adjustable.

2.30.4 Special wrenches. One set of any special wrenches required to service or operate the milling machine and its accessories shall be provided.

2.30.5 Chuck, 3-jaw. A 3-jaw drill chuck with ¹/₂-inch capacity, with hardened jaws, with a chuck key, shall be provided. The chuck shall have a shank with a No. 2 Morse Taper.

2.30.6 Arbors and collets. Each arbor shall have a taper shank conforming to the spindle(s) furnished as shown in Table I. The taper shall be of the same size as the spindle nose(s). All arbors and arbor components shall be hardened and ground. The following arbors, arbor components, and collets shall be provided:

- a. One style A arbor, 7/8 inch diameter with arbor nut, with cutter space length maximum as appropriate for the milling machine furnished.
- b. One style A arbor, 1 inch in diameter, with arbor nut, with cutter space length maximum as appropriate for the milling machine furnished.

- c. One spindle adapter, No. 2 Morse Taper.
- d. One each 3/16, 3/8, 1/2, and 1-inch end mill holders for spindle taper provided.
- e. One each 1/2, 3/4, 1 1-1/4 inch shell end mill holders for spindle taper provided.
- f. One arbor with collet chuck furnished with round bore collets as follows:

Eleven collets 1/8 inch through 7/16 inch by 32nds.

Five collets 1/2 inch through 3/4 inch by 16ths.

2.31 Plates. All nameplates, information plates, instruction plates, and lubrication plates specified herein, see 2.31.1 through 2.31.4, shall be a corrosion resistant, metallic composition material, with all lettering in the American-English language. Characters and numerals shall be permanently and legibly engraved, etched, embossed, or stamped in bold print on a contrasting background. Each plate shall be secured to the milling machine with permanent fasteners such as screws, bolts, or rivets at each of its four corners. Plates may be combined, when all other requirements such as location for instructions, cautions, warnings, and lubrication, are met.

2.31.1 Nameplate. The nameplate shall meet the requirements of 2.31 and include the following:

- Nomenclature
- National Stock Number (NSN)
- Manufacturer's Name
- Manufacturer's Model Number
- Manufacturer's Serial Number (if applicable)
- Contract Number

2.31.2 Lubrication plate. A lubrication plate meeting the requirements of 2.31 shall be attached to each milling machine in a location conveniently visible to the operator. If a chart is furnished, it shall be placed in a transparent plastic folder or laminated between clear plastic, permanently sealed sheets, with suitable means for mounting. The following information shall be included on the lubrication plate and chart:

- Points of Application
- Service Interval
- Type of Lubricant
- Viscosity
- Military or Federal Specification Number of Lubricant

2.31.3 Instruction plates. Instruction plates shall meet the requirements of 2.31. Instruction plates shall be clear and concise in their meaning and application. All instruction plates shall be located on the milling machine in a position that the operator can readily and easily receive (read) the necessary instructions from the work station(s).

2.31.4 Information plates. The information plates shall meet the requirements of 2.31. The information plate(s) shall be located in a location that is visually convenient to the operator. Information plates shall include warnings, cautions, and procedures to be followed when operating the milling machine.

3. REGULATORY REQUIREMENTS.

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

4. QUALITY ASSURANCE PROVISIONS.

4.1 General requirements. The Milling Machines provided shall meet the Salient Characteristics of this Description for Purchase (DFP) and conform to the producers own drawings, specifications, standards, and quality assurance practices. The Machines provided shall be one of the manufacturers standard commercial models for which a proven service record exists and which have been accepted by industry for the use intended. The Government reserves the right to require proof of such conformance.

4.2 Market acceptability requirements. The Manufacturers of the Milling Machines shall certify that the offered Machine meets the following Market Acceptability Requirements:

4.2.1 DFP requirements. The Milling Machine shall meet all of the requirements of this DFP after any required changes have been made to conform the machine 72-1/2 inch height restriction.

4.2.2 Capacity requirements. The Machine shall meet or exceed the capacity requirements specified herein.

4.3 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.

4.3.1 Responsibility for compliance. 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.

4.4. Product examination. Visually and manually examine the item to determine conformance with the requirements of the DFP. In addition certification of conformance (COC) shall be furnished by the contractor (See 4.5).

4.5 Certificate of conformance (COC). A certificate of conformance is required for Military Standard and commercial items. 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. As a minimum, the COC shall contain the hardness requirement shown in Table A, and 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.

TABLE A

Component	Rockwell C Number (Minimum)
Gears	45
Ways	50

5. PACKAGING

Preservation, packaging, and packing shall be in accordance with the contract requirements.

6. NOTES.

6.1 The following specifications and standards form a part of this document to the extent specified herein:

OFFICE OF THE FEDERAL REGISTER

CFR 29 Parts 1900 to 1910 - Code of Federal Regulations - Regulations relating to Labor,
Chapter XVII - Occupational Safety and Health Administration Department of Labor

AMERICAN GEAR MANUFACTURERS ASSOCIATION (AGMA)

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

AGMA 2000 - Gear Classification and Inspection Handbook

(Application for copies should be addressed to the American Gear Manufacturers Association, Suite 201, Alexandria, VA 22314.)

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO 54 - Cylindrical Gear for General Engineering and for Heavy Engineering Modules

(Application for copies should be addressed to the American National Standards Institute, 11 West 42nd, New York, NY 10036.)

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

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

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

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI B5.1 - T-Slots - Their Bolts, Nuts, Tongues, and Cutters
ANSI B5.18 - Spindle Noses and Tool Shanks for Milling Machines
ANSI B11.8 - Machine Tools – Drilling Milling and Boring Machines - Safety Requirements for Construction, Care, and Use

(Application for copies should be addressed to the American National Standards Institute, 11 West 42nd Street, New York, NY 10036.)

AEROSPACE INDUSTRIES ASSOCIATION

NAS 985 - Uniform Alignment Test - NAS Series Metal Equipment Specifications

(Application for copies should be addressed to the Aerospace Industries Association, 1250 Eye Street NW, Suite 1200 Washington DC 20005-3924.)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 - National Electrical Code
NFPA 79 - Electrical Standard for Metalworking Machine Tools and Plastics Machinery

(Application for copies should be addressed to the National Fire Protection Association, Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.)

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

MG-1 - Motors and Generators

(Application for copies should be addressed to the National Electric Manufacturers Association, 2101 L Street, NW Suite 300, Washington, D.C. 20037.)

Specifications and Standards referenced in the above cited applicable document(s) (drawings, parts lists, specifications) shall be the effective issue or revision in effect as listed in the Department of Defense Index of Specifications and Standards (DODISS) dated 1 July 00 and the Supplement dated 1 November 00.

PART 1 SECTION D

PACKAGING

NSN: 3417-00-624-4254

NOMEN: Milling Machine, Horizontal and Vertical, Knee Type

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 each.

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 Milling Machines 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.

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.

PART 1 SECTION D (Cont'd)
PACKAGING

NSN: 3417-00-624-4254

NOMEN: Milling Machine, Horizontal and Vertical, Knee Type

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

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.

PART 1 SECTION D (Cont'd)

PACKAGING

NSN: 3417-00-624-4254

NOMEN: Milling Machine, Horizontal and Vertical, Knee Type

- 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 Offerors--Commercial Items.

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

INSTRUCTIONS TO OFFERORS--COMMERCIAL ITEMS (NOV 1999)

(a) Standard industrial classification (SIC) code and small business size standard. The SIC 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://www.dodssp.daps.mil>.

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

(3) 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)

[64 FR 51840, September 24, 1999]

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 performance 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; 1 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. 23 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)