

# VKM4 – 3 Axis CNC

## The Knee Mill with MillSlide

Effective June 1, 2011



Spindle Types – Direct Drive with Inverter for Programmable RPM		R8 or #30 or #40
<b>STANDARD MACHINE FEATURES</b>		<b>STANDARD CONTROL FEATURES</b>
<ul style="list-style-type: none"> <li>• Two Year Parts Warranty</li> <li>• Heavily Ribbed Cast Iron Construction</li> <li>• Fully Ground Solid Ways with Turcite Surfaces</li> <li>• Precision Ground Double Anchored Ball Screws</li> <li>• Precision Ground Table Surface</li> <li>• High Torque 8:1 Back Gear</li> <li>• Box Ways on Column and Base</li> <li>• Manual Quill Operation Retained</li> <li>• Automatic Metered Lubrication with Low Lube Fault</li> <li>• Safety Ring for Drive Dog on #40 Spindles</li> <li>• All Axes Laser Calibrated and Ballbar Inspected</li> <li>• High Torque AC Digital Servo Drives</li> <li>• High Torque Vector Spindle Drive System</li> <li>• Spindle Load Meter</li> <li>• Auto DXF File Import</li> <li>• Programming &amp; Machine Manuals in Electronic Format</li> <li>• Single Spare "M" Function with CNC "Wait" Channel</li> </ul>		<ul style="list-style-type: none"> <li>• PC-based 7200 CNC includes 12 MB Parts Storage Memory</li> <li>• 12" LCD Active Matrix Color Display</li> <li>• Conversational plus G &amp; M Code Programming including Coordinate Rotating, Scaling, Mirror Image, Thread Mill Engraving, Helical Interpolation, Auto Routines, &amp; User definable Macros with Trig Assist, &amp; Irregular Pocket Clearing</li> <li>• 3-D Part and Wire Frame Tool Path Graphics</li> <li>• 3.5" Floppy Drive / RS-232 with DNC Buffer (7200 CNC Only)</li> <li>• Large Program Management Software (Allows Editing of 10 MB Files)</li> <li>• Optional Four &amp; Five Axis Simultaneous Interpolation Software &amp; Interface</li> <li>• All Axes Laser Calibrated and Ballbar Inspected</li> <li>• Fully Programmable Accessories including Spindle On/Off, Spindle RPM, and Accessories</li> <li>• Front Panel Mounted Electronic Handwheel &amp; Handwheel Controlled Program Execution</li> <li>• LCD Hour Meter</li> </ul>
<b>CONVENIENCE PACKAGE</b>		
Rigid Tap		
Flood Coolant System with Programmable On/Off		
Coolant Drip Pan		
Work Lamp		
Rear Splash Guards		
Power Drawbar System		
Off-line FastCAM Software for Programming & Training		
Networking Option Includes 30 Days Phone Support		
<i>Items may be purchased separately</i>		
<b>8200 CONTROL PACKAGE – Purchase as a Complete Package Only and Includes all the following:</b>		
<ul style="list-style-type: none"> <li>• Solid State Non-Volatile Memory Upgrade to 1 GB</li> <li>• Enhanced CPU Increases Block Processing Speed from 1200 to 2000 bps</li> <li>• Solid Model Graphics Functionality</li> <li>• USB Connectivity in lieu of 3.5" Floppy Disk Drive</li> <li>• High Speed Performance with Enhanced Jerk Control and Look Ahead</li> <li>• MT Connect Compliant</li> </ul>		
<i>3.5" Floppy Drive is replaced by USB. Do not combine with 256 MB Program Storage and Multi Format Flash Card Reader from other accessories. FastCAM Software replaced with 8200 Software. RS-232 Data transfer not available on 8200 control. SLS not available on 8200 control.</i>		
<b>OTHER ACCESSORIES</b>		
Specify Spindle Type for VKM4	CT40	Standard
	R8, CT/BT30, BT40 NMTB40, DIN2080	Optional
Upgrade to Solid State Non-Volatile Memory 256 MB Flash Card – 7200 Controls Only		Optional
Multi Format Flash Card Reader – 7200 Controls Only		Optional
Quill Position Readout		Optional
Newall MHG Quill Scale Position Readout with CNC Feedback to Update Tool Length Offsets		Optional
Spray Mist Programmable On/Off		Optional
Removable Table Chip Guard		Optional
CE Removable Table Chip Guard Required for European Union countries		Optional
Edit Key Lock-out Switch		Optional
Upgrade Mechanical Handwheels to Larger Dia. with Retractable Handles Limits Rapids to 200 IPM		Optional
Rotary Tables <i>Includes 4<sup>th</sup> Axis Amp &amp; Motor</i>	6.5" (165 mm)	Optional
	5C Collet Table	Optional
Tail Stock for Rotary Table		Optional

4 <sup>th</sup> Axis Servo Amplifier & Motor (Electrics only 0.9 kw motor, larger tables may require a larger motor) – Contact factory for 5 axes <i>Included with Rotary Table Accessory</i>	Optional
<b><i>Milltronics will charge an engineering fee to interface a customer provided rotary table with the electrics only package. Charge will depend on table and engineering requirements</i></b>	
Dual Electronic Handwheels	Optional
End of Cycle Light	Optional
Spare “M” Functions – Block of 4 <i>Maximum 2 blocks; price is for each block</i>	Optional
<i>Digiscan</i> Digitizing 3-D Software, Probe, Manuals - <i>Not available with 8200 Control Package</i>	Optional
RS-232 Cable, 50' 15 Meters	Optional
Printed Programming Manual (Electronic Format Standard)	Optional
Printed Machine Manual (Electronic Format Standard)	Optional
<b>OTHER ACCESSORIES - CONTINUED</b>	
Power Requirements 208-240 VAC, 50 – 60 hz, 3Ø	Standard
Optional Voltage 208-240 VAC, 50 – 60 hz, 1Ø <i>May reduce spindle power by up to 20%</i>	Optional
380-480 Transformer (Reduces Voltage to 208-240) – 20 kVA <i>Factory recommended sizes. Consult local electrical codes for proper transformer sizing.</i>	Optional
CE Code <i>Required for European Union countries</i>	Optional
Export Handling Fee	Consult Factory
Crating Charge	Consult Factory
UL/CUL Compliant	Optional
Two Year Parts Warranty <sup><i>See Note</i></sup>	Standard
Factory Start-up and Training On Site, U.S. only	Optional
Training at Milltronics <i>Includes lunches, training, materials and manual</i>	Optional
<p><i>Terms within USA: Cash or terms with approved credit; down payment due with order. Terms outside USA: Cash or approved Letter of Credit FCA Waconia, Minnesota USA; Prices do not include taxes, duties, transportation, insurance, rigging or start-up.</i></p> <p><i>Milltronics reserves the right to amend or change without notice without incurring obligation; not responsible for typographical errors.</i></p> <p><i>Consult Written Warranty Statement for Details of Two Year Parts Warranty</i></p> <p><i>All sales of equipment, parts, software and service are subject to Milltronics' Standard Terms and Conditions of Sale.</i></p>	

# VKM – 3 Axis CNC Specifications

## The Knee Mill with MillSlide

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<b>VKM4</b>	
Standard Control Type	Milltronics 7200 CNC
Optional Control Type	Milltronics 8200 CNC
Software	CNC or SLS
Number of Axes	3 (Opt 4)
Functions: <i>Automatic</i>	Auto operation of spindle start/stop, mist, flood, RPM
Functions: <i>Manual</i>	All functions operate both manually or automatically, except back gear is manual shift
<b>CAPACITY</b>	
Standard Table Size	53" x 12" <i>1350 x 305 mm</i>
Table Travel - <i>X Axis</i>	30" <i>760 mm</i>
Saddle Travel - <i>Y Axis</i>	15" <i>380 mm</i>
Heavy Duty MillSlide™ Travel - <i>Z Axis</i>	5.25" <i>133 mm</i>
Quill Travel <i>Worm gear style quill feed not available</i>	6" <i>152 mm</i>
Knee Travel	18" <i>450 mm</i>
Throat <i>Spindle to column, adjustable</i>	15.3 - 27.5" <i>390 - 700 mm</i>
Spindle to Table Top <i>Quill up</i>	0 - 21" <i>0 - 535 mm</i>
Maximum Table Load	1500 lb <i>680 kg</i>
Machine Weight	4600 lb <i>2100 kg</i>
T Slots	(4) .63" <i>16 mm</i>
Saddle Width	24.5, 15.5" <i>622, 393 mm</i>
Ball Screw Size: <i>X,Y,Z Axis</i>	1.25"
Ball Screw Grade	C5
Ball Screw Pitch <i>X,Y,Z</i>	X/Y .2"; Z .25"
Head Swivel	Rigid
<b>SPINDLE</b>	
Horsepower <i>1 minute / 30 minutes</i>	7.5 / 5 HP <i>5.5 / 3.7 kw</i>
High Torque Type (Manual Shift)	Back Gear
Spindle Speeds: <i>Low (CNC Programmable)</i>	60-500 RPM
Spindle Speeds: <i>High (CNC Programmable)</i>	500-4000 RPM
Standard Tool Holder Type	CT40
Optional Tool Holder Type	R8, CT/BT30, BT40, NMTB40, DIN2080
Quill Size	4.125" <i>104 mm</i>
<b>PERFORMANCE</b>	
Servo Type	AC Digital
Rapid Traverse ( <i>Reduced to 200 IPM with Upgraded Larger Handwheels</i> )	400 ipm <i>10.1 mpm</i>
Maximum Feedrate	200 ipm <i>5080 mmpm</i>
Position Accuracy <i>See note</i>	±0.00039" <i>.01 mm</i>
Repeatability	.0002" <i>.005 mm</i>
Resolution	.00004" <i>.001 mm</i>
Thrust, Machine Duty Rating	X, Y: 2000 lb <i>900 kg</i> Z: 3000 lb <i>1360 kg</i>
<b>MISCELLANEOUS</b>	
1/8 HP Flood Pump Capacity <i>Optional in Convenience Package</i>	7.5 gal. <i>28 L</i>

<b>VKM4</b>	
Drawbar Air Pressure Required	80 psi <i>5.5 bar</i>
Power Requirements 208-240 VAC, 50 – 60 hz, 3Ø	30 amps, 11 kVA
Power 380-480 VAC, 50 – 60 hz, 3Ø	Requires Transformer
Floor Space Requirement	98" x 72" <i>249 x 1830 mm</i>
Warranty	Parts: 2 Year (or 4200 hours, whichever occurs first) on all normal failures. Service: 1 Year (or 2100 hours, whichever occurs first) from dealer or available from distributor.
<p><i>Note: Measurements performed with Renishaw laser and ballbar systems. Measurements are linear over entire travel. Temperature changes and table loads may affect tolerances. Tolerances are guaranteed over 10" sq. area. Centurion features covered under separate literature. For machine duty rating, see "Truth in Specifications" on <a href="http://www.milltronics.net">www.milltronics.net</a>. Milltronics reserves the right to change specifications at any time without incurring obligation.</i></p>	