

# CINCINNATI MACHINES

ASSURED CINCINNATI QUALITY

HARD BOX WAYS  
BALL SCREWS X&Y AXES  
SERVO DRIVES X&Y AXES  
5HP 40 TAPER SPINDLES  
POWERFEED KNEE



## *CINCI*VERSAL

### KNEE TYPE MILLING MACHINE



Very Versatile Milling

- Arbor-Type Milling
- Horizontal Milling
- Vertical Milling
- Heavy-Vertical Milling



**HORIZONTAL SPINDLE & TRANSMISSION**  
The NST #40 Taper Spindle is precision machined from alloy steel, that is tempered and carburized to relieve stresses. The spindle runs in high precision bearings to insure accurate high-speed, yet heavy duty, machining without chatter and for long machine life.



**CENTRALIZED AUTOMATIC LUBRICATION**  
The Centralized Automatic Lubrication System delivers way lubrication to all machine ways automatically to insure smooth accurate machine movements and prolong machine life.



**TABLE POWER-FEED UNIT**  
The standard table power feed unit allows for automatic feeding of the table. The High-Torque power feed system increases operator convenience and efficiency.



**TWO AXIS SERVO MOTOR DRIVE**  
The X and Y axes are driven by an AC Servo Motor, providing powerful fast slide motion with a rapid traverse rate up to 2500mm/min (100 ipm).



**POWER ELEVATION TO THE KNEE**  
The knee elevation is driven by a dedicated knee motor for operator convenience and efficiency. This Knee power movement includes a rapid traverse function.



**PRECISION BALL SCREW DRIVE X&Y AXES**  
Both the X and Y Axes are driven by precision ultra-smooth ball screws, combined with preloaded double ball screw nuts for smooth, powerful, and precision chatter-free machining with minimal backlash.

# Knee Type

## UniVERSAL



# CINCINNATI MACHINES

## CINCIVERSAL

### QUALITY FEATURES ASSURE GREAT MILLING PERFORMANCE



**HORIZONTAL SPINDLE & ARBOR SUPPORTS**  
The Column mounted Horizontal Spindle along with the machine Over-arm and Arbor Supports provide the capability to do machining operations using the arbor-mounted cutters, for slab and/or slot-type cutting.



**HORIZONTAL SPINDLE & TRANSMISSION**  
The Optional Heavy-Duty Bolt-On Vertical Milling Attachment provides the capability to do Extra Heavy-Duty Vertical Milling Operation by simply mounting the Extra-Heavy-Duty Milling Head. This head when bolted in place provides the maximum in machine rigidity for those Extra-Heavy-Duty cuts.



**TURRET TYPE MILLING HEAD**  
The standard built-in Turret-Type Milling head provides the most convenient mode of vertical milling. The standard head is belt driven with 5HP, 40 Taper spindle, 16 speed steps from 75-3600 rpm (standard), or the 80-3600 rpm Vari-Speed (optional). The Milling head tilts 45° right or left.



**16 SPEED TURRET-TYPE HEAD**  
The 16 Step Belt-Driven Head 75-3600 rpm 5HP 40 Taper Spindle



**VARI-SPEED TURRET HEAD**  
The Optional Variable-Speed Turret-Type Milling Head features 80-3,800 rpm, 5HP and 40 Taper spindle and the head tilts 90° left or right.



**CONVENIENT OPERATOR CONTROL PANEL**  
For maximum convenience and efficiency, the Operator Control Panel has all control buttons integrated into the front panel to allow the operator to control all main functions at one location. The panel swivels and moves around to permit the operator to be able to make adjustments and speed changes closer to the point of operation.

### Specifications

Table	Table size	1300 x 300	51 x 11.8"	
	X-axis travel	1000	39.3"	
	Y-axis travel	360 (390) Manual	14 (15.3)"	
	Z-axis travel	450 (490) Manual	17.7 (19.2)"	
	T-slot (Size x numbers x distance)	16 x 3 x 63		
	X,Y axes feedrate (Variable)	2500 mm/min	100 ipm	
	X,Y axes rapid travel	2500 mm/min	100 ipm	
	Z-axis rapid travel	750 mm/min	30 ipm	
Vertical spindle Turret head	Spindle speeds RPM	16 steps, 75-3600 (standard) Variable, 80-3800 (optional)		
	Quill travel	140	5.5"	
	Quill feedrate (3-steps) mm/rev	0.035, 0.07, 0.14		
	Spindle nose	N.S.T. 40#		
	Swivelling angle of spindle head (R & L)	45°		
	Swivelling angle of overarm	360°		
	Overarm travel	660		
	Spindle nose to table surface	110-560	4.3-22"	
	Spindle center to column	110-700	4.3-27.5"	
Powerful vertical head	Spindle speeds RPM	9 85-1300 / 9 steps, 85-1300 #		
	Spindle nose	N.S.T. 40#		
	Spindle nose to table surface	0-386	0-15.2"	
	Spindle center to column	369	14.5"	
Horizontal spindle head	Spindle speeds RPM	9 85-1300 / 9 steps, 85-1300 #		
	Spindle nose (N.S.T)	N.S.T. 40#		
	Dial of milling arbor	25.4	1"	
	Spindle center to table surface	0-450	17.7"	
	Spindle center to overarm bottom	369	14.5"	
Motor	Turret head spindle	/		
	Horizontal spindle	5HP x 4P AC motor		
	Table longitudinal & Cross feedrate	750W Servo motor		
	Vertical feedrate	1HP x 6P AC motor		
	Coolant pump	1/8HP		
	Elevation motor	/		
	Lubricator pump	/		
	Turret pump	/		
	Dimensions	Machine	<b>CINCIVERSAL</b>	
		External dimensions	2060 x 1820 x 2240 81x100x88"	
N.W / G.W		2250 / 2550 kgs 5000lbs		

### STANDARD ACCESSORIES

- Automatic lubricator
- Ball screw (X,Y)
- Complete cooling system
- Tool kits
- Tool box
- Milling arbor with spacer (For Horizontal spindle only)
- Draw bar
- Splash guard
- Chip guard
- Halogen work light
- Transformer (Export only)

### OPTIONAL ACCESSORIES

- Air power draw bar
- 3 axes linear scale
- CE Norm
- Dividing head
- Rotary table
- Swivel milling vise
- Face milling cutter
- Face cutter arbor
- End mill collets & chuck



## HARD BOX WAYS

