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MILLING MACHINES

Vertical, Horizontal, Vertical / Horizontal with two spindles,
Knee Type, Bed Type, CNC Knee Type



Introduction of company

Sharp Industries, Inc has been supplying quality machine tools for over 35 years. The name SHARP stands for enduring precision and long lasting machine life, a statement that defines not only the products that we sell but the very spirit of our company as well. Since 1976, we have grown into a fine tuned machine tool supplier. As our product has expanded, so has our ability to inventory, ship and support all the machines we sell.

Product Line

- Milling Machines – vertical, horizontal, knee type, bed type, CNC
- Lathes – toolroom, high speed, heavy duty, big bore, hollow spindle, CNC
- Grinders – surface grinders, OD/ID grinders, column moving grinders, CNC
- Radial Drills
- EDM – sinkers, small hole drilling, CNC



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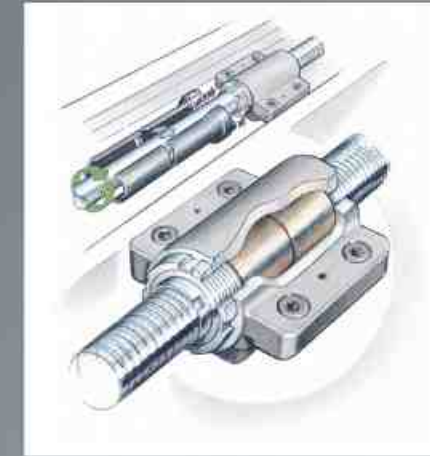
KNEE TYPE VERTICAL MILLING MACHINE MODEL LMV, LMV-50

FEATURES :

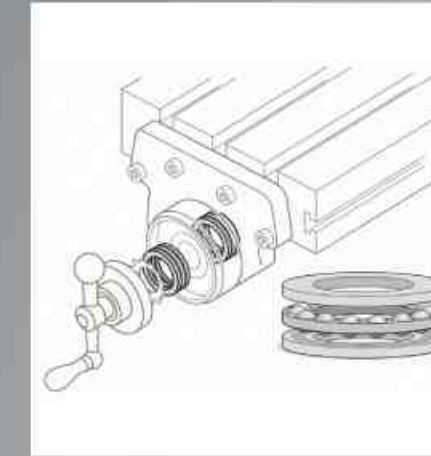
- 12" X 30" travel
- 9" x 42" table (LMV)
- 9" x 50" table (LMV-50)
- 3 HP, R-8 spindle
- Hard chromed dovetail ways
- Vari Speed (60-4500 rpm)
- Digital Vari speed available
- Self lubricating motor shaft
- Precision ground gibs
- Certified Meehanite castings



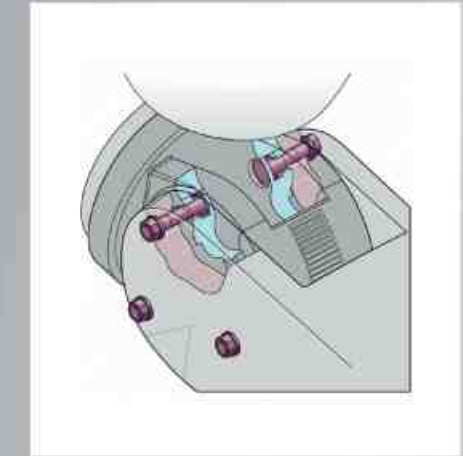
UNIQUE FEATURES OF SHARP DESIGN



Backlash Eliminator By Double Nut Design replaces the older design that squeezes a split nut to get rid of backlash. Sharp is the first one to use a double nut design that keeps the feed screw in contact with a pair of bronze nuts. Using a custom tool supplied with the mill, the feed nuts are adjusted to control backlash and held tight with a retaining nut and locking ring.



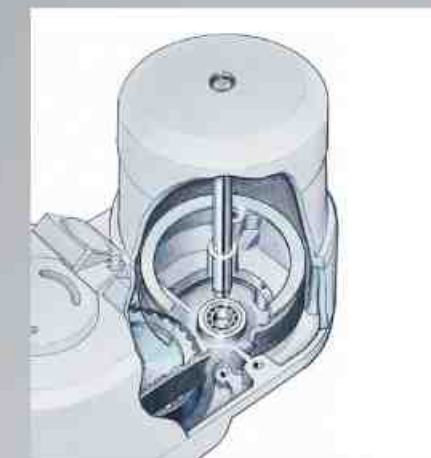
Thrust Bearings that mounted at the end of the table and saddle preload the feed screw, eliminating end play for precisely controlled lateral movements.



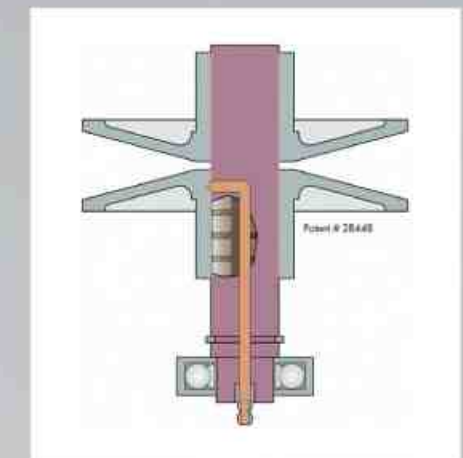
The New Patented Knuckled-Head Design prevents the head from slipping. The Sharp mills have a knuckle which uses 6 bolts, 3 each side, fitted into circular T-slots with matching nuts securing them from the outside. It locks the head in place for better accuracy and performance than the old design using only 3 bolts to squeeze the casting to hold the head without the T-slots.



Dual High Output Fan dissipates heat to protect the motor, belts and bearings.



Roller Bearing Support at the bottom of the motor shaft ensures proper loading, support and alignment of the spindle. It also prevents the distortion of the belts due to tension from long years of milling operation.



Easy Access Lubricating Shaft is designed with an oil channel in the center that is fed by a grease fitting at the lower end.

LARGE CAPACITY KNEE TYPE VERTICAL MILL

MODEL TMV TMV-1

FEATURES :

- 16.3" x 33" travel (TMV)
- 16.3" x 39" travel (TMV-1)
- 10" x 50" table
- 3 HP, R-8 spindle (TMV)
- 5 HP, #40 spindle (TMV-1)
- Hardened and Ground Box ways
- Vari-speed drive (60-4500 rpm)
- Digital Vari-speed drive available
- Turcite coated saddle ways



Model TMV
showing Digital Vari Speed Head



Model TMV-1
with 5 HP, #40 taper Spindle



- 3 HP motor
- R-8 taper spindle
- Digital Vari Speed (optional)



- 5 HP motor
- #40 taper spindle
- Vari Speed head



Box ways on Column and Knee. Also showing Turcite coated top of saddle ways

CNC KNEE TYPE VERTICAL MILL WITH ACU-RITE MILLPWR MODEL MP-2, MP-3 CNC CONTROL

The control is factory installed on 2 axes (Table, Saddle) (Model MP-2)
Or 3 axes (Table, Saddle, Quill) (Model MP-3) of the following SHARP mills
Model : LMV/MP-2 (2 axes), LMV/MP-3 (3 axes) CNC Mill
Model : LMV-50/MP-2 (2 axes), LMV-50/MP-3 (3 axes) CNC Mill
Model : TMV/MP-2 (2 axes), TMV/MP-3 (3 axes) CNC Mill
Model : TMV-1/MP-2 (2 axes), TMV-1/MP-3 (3 axes) CNC MILL

FEATURES:

- Precision ground ball screws with preloaded ballnut assembly
- Digital servo drive system for each axis
- 3 axes digital readout
- Safety hand wheel
- Automatic lube system



HIGHLIGHTS OF MILLPWR BY ACU-RITE, MODELS MP-2, MP-3

Dimension Functions:

ABS/INC, POLAR/CARTESIAN, INCH/METRIC.

Programming:

Program in/out, position/drill, mill lines, mill arc, blend (corner radius)

Holes (bolt circle, rectangular array, rectangular frame, line),

Circle (pocket, frame, ring), rectangle (pocket, frame, slot, facing)

Special features:

Custom pockets, repeat, rotate, mirror image.

Run options:

Single step, dry run, graphics only, manual positioning.

Calculator functions:

Geometry, trig.



Hardware:

Operator console:

Easy to use format. conversational English three dimensional hard keys. 10" flat panel, Color LCD display. remote stop/go switch.

Controller cabinet:

Heavy duty enclosure modular construction, 486sx microprocessor, 115vac - 20 amps

Positioning:

Precision glass scale linear encoders. closed loop feedback through servo amplifiers. dc servo motors. precision ground ball screws.

CNC KNEE TYPE VERTICAL MILL WITH ACU-RITE MODEL 3500i CNC CONTROL

The Control is factory installed on 2 axes (Table, Saddle) or 3 axes (Table, Saddle, Quill) Of the following SHARP knee type mills
Model : LMV/3500i – 2 axes or 3 axes CNC Mill
Model : LMV-50/3500i – 2 axes or 3 axes CNC Mill
Model : TMV/3500i – 2 axes or 3 axes CNC Mill
Model : TMV-1/3500i – 2 axes or 3 axes CNC Mill

FEATURES:

- Precision ground ball screw with preloaded ball nut assembly
- Digital servo drive system for each axis
- Safety hand wheel
- Automatic lube system



HIGHLIGHTS OF ACU-RITE 3500i CNC SYSTEM

FEATURES:

- Touch Screen Interface
- Built in 2D CAM
- USB
- XGA high resolution screen
- 3 and 4 axis ready
- Tool changer support
- Ease of use
- Built in DXF conversion
- Conversational and G-code in one platform
- AC Drive Motors
- Spindle control functions
- Tool life management



CNC KNEE TYPE VERTICAL MILLI WITH **FAGOR** MODEL 8055i CNC CONTROL

The Control is factory installed on 2 axes (Table, Saddle)
or 3 axes (Table, Saddle, Quill) Of the following SHARP knee type mills
Model : LMV-8055i – 2 axes or 3 axes CNC Mill
Model : LMV-8055i – 2 axes or 3 axes CNC Mill
Model : TMV-8055i – 2 axes or 3 axes CNC Mill
Model : TMV-8055i – 2 axes or 3 axes CNC Mill

FEATURES:

- Precision ground ball screw with preloaded ball nut assembly
- Digital servo drive system for each axis
- Safety hand wheel
- Automatic lube system



HIGHLIGHTS OF FAGOR 8055i CNC CONTROL

- Interactive ICON based conversational programming system.
- One screen - One operation, Fill in the blanks & press cycle start.
- No limit to the number of programs in memory!
- Built in Mini CAD/CAM system.
- 11" Color TFT LCD screen.
- Numerous "Easy to Use" conversational cycles (36).
- Tool path and Solid graphic simulation standard.
- (3) 31 in/lb. DC motors and drives with option for AC Brushless or 41 in/lb. upgrade.
- Flash memory (1MB flash ram/ 512MB CF). 2GB CF optional
- USB Memory port standard. Ethernet optional
- WinDNC (DXF converter) and Engraving.
- FULL G-code programming with interactive help screens.
- Smart Z axis quill for CNC and manual mode with scale-fed DRO feedback.
- Full CNC package includes Ball Screws and Motor Brackets for all axes.
- Fagor 8055i/A-MC CNC's give you 4th axis capability out of the box!



HEAVY DUTY KNEE TYPE VERTICAL MILL MODEL V-1

FEATURES:

- 16" X 40" Travel
- 12" x 58" table
- 5HP, NT#40 spindle
- Digital Vari-Speed
- Power Feed Table and Saddle
- Motorized Rapid Knee Positioning
- Hardened and Ground Box Ways
- Extra long saddle, fully support table



HORIZONTAL KNEE TYPE MILL MODEL UH-3

FEATURES:

- 14.8" x 37.4" travel
- 12" x 51.2" table
- Universal Table, swing 90 deg
- 7.5 HP #50 horizontal spindle
- 3 axes power feed and rapid
- Automatic lubrication
- Saddle travels on double box ways



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VERTICAL / HORIZONTAL KNEE TYPE MILL- 2 SPINDLES MODEL VH-25

FEATURES:

- 16.5" x 36" travel
- 10" x 56" table
- 5 HP #40 vertical spindle
- 5 HP #40 horizontal spindle
- Built-in gear driven table
- Double Box Way on saddle
- Motorized rapid knee feed
- 4 way head tilt



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HIGHLIGHTS OF MODEL VH-25

The machine in vertical milling position can be easily switched to horizontal milling position by swinging the overarm around and put in the arbor (included) with the two arbor supports (included). This two-machine-in-one design, increases versatility of the model.



Double box ways on saddle, also showing power feed table driving mechanism.



4 HP NT# 40 vertical spindle, 4 HP, NT#40 horizontal spindle. Knuckle head design allows head to tilt up and down, side to side

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VERTICAL / HORIZONTAL KNEE MILL – 2 SPINDLES MODEL VH-3

FEATURES:

- 14.8" x 37.4" travel
- 12" x 51.2" table
- 5HP #40 vertical spindle
- 7.5 HP #50 horizontal spindle
- 3 axes power feed and rapid
- Joy stick F/R for easy tapping
- Separate lever control for 2 direction boring
- Electro-Magnetic brake, quill lock



HIGHLIGHTS OF MODEL VH-3

The machine in vertical milling position can be easily switched to horizontal milling position by swinging the overarm around and put in the arbor (included) with the two arbor supports (included). This two-machine-in-one design, increases versatility of the model.

- Vertical Milling Head with Joystick control forward/reverse for easy tapping, Separate lever control for two directional boring.
- Two Box ways construction on Knee keep the table in place and providing additional contact surface for better accuracy during heavy milling operations. The Climb Mill Compensator allows smooth and stable horizontal climb milling with the twist of a wrist.



BED TYPE VERTICAL MILL

MODEL KMA-1, KMA-2, KMA-3



MODEL	KMA-1	KMA-2	KMA-3
Travel	15"x39"x19.7"	17.7"x47.3"x21.8"	23.6"x59"x27.6"
Table	15"x67"	17.7" x 75"	19.7" x 86.6"
Geared Head Taper	NT# 50	NT# 50	NT# 50
Geared Head Motor	10 HP	15 HP	20 HP
4 way rapid control	no	yes	yes
Vari speed feed	no	no	yes
Pneumatic lock	no	no	yes

• Specifications subject to change without notice.



Easy, Eye level Down Feed Control
The large spindle head offers coarse and fine feed in addition to power feed for positioning. Control of the feeds along with spindle speeds and head locking mechanism are all conveniently mounted at eye level in the front of the spindle head. A tri-lever handle is installed for quick positioning of the head.



Precise Milling & Boring
The full length travel of the vertical head (KMA-1 19 11/16", KMA-2 21 5/8", KMA-3 27 11/16") along with 6 different feed rates offer unsurpassed capability for precise milling and boring operations.



Honeycombed Ribbing
The vertical column casting is reinforced with honey combed ribbings. Which is 70% more effective than regular rectangular ribbings in dampening vibration and sustaining thermal stability.

Box Way Construction
High quality castings are used on base, column, saddle and table. They are stressed relieved to avoid any distortion. All sliding surfaces are hand scraped to ensure full bearing support. All reference surfaces and T slots are precision ground to exact tolerances.



VERTICAL / HORIZONTAL BED TYPE MILL MODEL KMA-3H

FEATURES :

- Vertical spindle 20 HP, NST#50
- Horizontal spindle 7.5 HP, NST#50
- Horizontal head driven by AC servo motor with ballscrew
- Electronic handwheel (MPG) on horizontal head drive
- Pneumatic power locks on spindle, table and saddle
- Vari-speed feed on table and saddle
- Auto lube on vertical head slide



HIGHLIGHTS OF MODEL KMA-3H

Pendant control showing individual buttons for various types of operations and machine functions.



Model KMA-3H Horizontal Head
Horizontal head travels on precision ballscrew driven by AC servo motor, allows full capacity of horizontal machining operations utilizing the 7.5 HP, NST#50 spindle head.

Specifications

Specifications	LMV	LMV-50	TMV	TMV-1	V-1	UH-3	VH-25	VH-3	KMA-1	KMA-2	KMA-3	KMA-3H
MODEL												
Capacity												
Working Surface	9" x 42"	9" x 50"	10" x 50"	10" x 50"	12" x 58"	51.19" x 11.81"	10" x 56"	51.19" x 11.81"	67" x 15"	75" x 18"	87" x 20"	87" x 20"
T-slot Number, size	3, 5/8"	3, 5/8"	3, 5/8"	3, 5/8"	2.5", 5/8"	3, 5/8", 2.75"	3, 5/8"	3, 5/8", 2.75"	5, 2.75", 7"	5, 3.13", 7"	5, 3.56", 7"	5, 3.56", 7"
Table Travel, x axis	30"	37"	35"	39"	40"	37.38"	36"	37.38"	39"	47"	59"	59"
Table travel, X axis, with CNC control	25"	32"	28"	*	*	*	*	*	*	*	*	*
Saddle Travel, y axis	12"	12"	16.3"	16.3"	16"	14.81"	16.5"	14.81"	15"	17.7"	24"	24"
Saddle travel, Y axis, with CNC control	11"	11"	15.5"	*	*	*	*	*	*	*	*	*
Ram Travel	12"	12"	18.5"	18.5"	17.75"	20"	18.5"	20"	20"	22"	31.5"	31.5"
Quill Travel, z axis	5"	5"	5"	5"	5"	5.12"	5"	5.12"	*	*	*	25.5"(H)
Knee Travel	16"	16"	15.3"	15.3"	16"	18"	17.5"	18"	*	*	*	*
Horizontal head travel, up & down	*	*	*	*	*	*	*	*	*	*	*	25.5"
Distance bet. vert & horiz spindle	*	*	*	*	*	*	*	*	*	*	*	21.7"
Spindle to column (min-max)inches	6.75~18.5	6.75~18.5	9.8~28.3	40~30	*	*	12.8~30.7	3.88~24.13	15	18	22	22
Spindle to nose to table	2.13"~18"	2.13"~18"	1.6"~16.9"	2.3"~17.7"	2~18"	*	5.3"~23"	5.13"~23.63"	4"~24"	4"~26"	4"~35.5"	4"~35.5"
Spindle												
Motor	3 hp	3 hp	3 hp	5 hp	5 hp	7.5 hp	4~5 hp	5~7.5 hp	10 hp	15 hp	20 hp	20 hp / 7.5 hp
Wiring Voltage	220v (440v)	220v (440v)	220/440v	220/440v	220v/440v	220/440v 3 ph, 60 hz	220v (440v)	220/440v 3 ph, 60 hz	220/440v 3 ph, 60 hz	220/440v 3 ph, 60 hz	220/440v 3 ph, 60 hz	220/440v 3 ph, 60 hz
Taper	R-8	R-8	R-8	NT 40	NT 40	*	NT 40	*	*	*	*	*
Taper Vertical	*	*	*	*	*	*	*	NT 40	NT 50	NT 50	NT 50	NT 50
Taper Horizontal	*	*	*	*	*	NT 50	*	NT 50	*	*	*	NT 50
Speed (Vari-speed) rpm	60~4500	60~4500	60~4500	60~4500	70~4000		60~4500	*	*	*	*	*
Quill Feed (IPR)	.0015, .003, .006	.0015, .003, .006	.0015, .003, .005	.0015, .003, .005	.0015, .003, .006	*	.0016, .003, .006	.0019, .0038, .0076	*	*	*	*
Head Swivel	360 deg.	360 deg.	360 deg.	360 deg.	360 deg.	*	360 deg.	45 deg.	*	*	*	*
Accuracy TIR	.0002" TIR	.0002" TIR	.0002"	.0002"	.0002" TIR	.0002" TIR	.0002" TIR	.0002" TIR	.0002" TIR	.0002" TIR	.0002" TIR	.0002" TIR
Head tilt, right-to-left	45 deg.	45 deg.	90 deg.	90 deg.	90 deg.	*	90 deg.	*	*	*	*	*
Head tilt, up-and-down	45 deg.	45 deg.	45 deg.	45 deg.	45 deg.	*	45 deg.	*	*	*	*	*
Speed (Vari-speed) rpm	*	*	*	*	*	35~1382	*	120~3600	45~1500	45~1500	45~1500	45~1500, 40~1450 (H)
General												
Floor Area	52" x 55"	60" x 55"	70" x 75"	84" x 78"	83" x 75"	117" x 69"	82" x 75"	107" x 90"	126" x 79"	150" x 88"	175" x 100"	175" x 100"
Machine Height	79"	79"	88"	92.4"	100"	67.31"	93"	95.25"	87"	103"	113"	113"
Machine Net Weight (approx. lbs.)	2400 lbs.	2400 lbs.	3000	3300	4500	5170	4200	5830	9000	11500	15000	18000

* Proper foundation and environmental controls are required.
• Specifications subject to change without notice.