



PRECISION MACHINE TOOLS

Sharp Industries, Inc.

3501 Challenger Street
Torrance, CA 90503

Tel: 310-370-5990 Fax: 310-542-6162

Email: info@sharp-industries.com

Parts: parts@sharp-industries.com

Sales: sales@sharp-industries.com

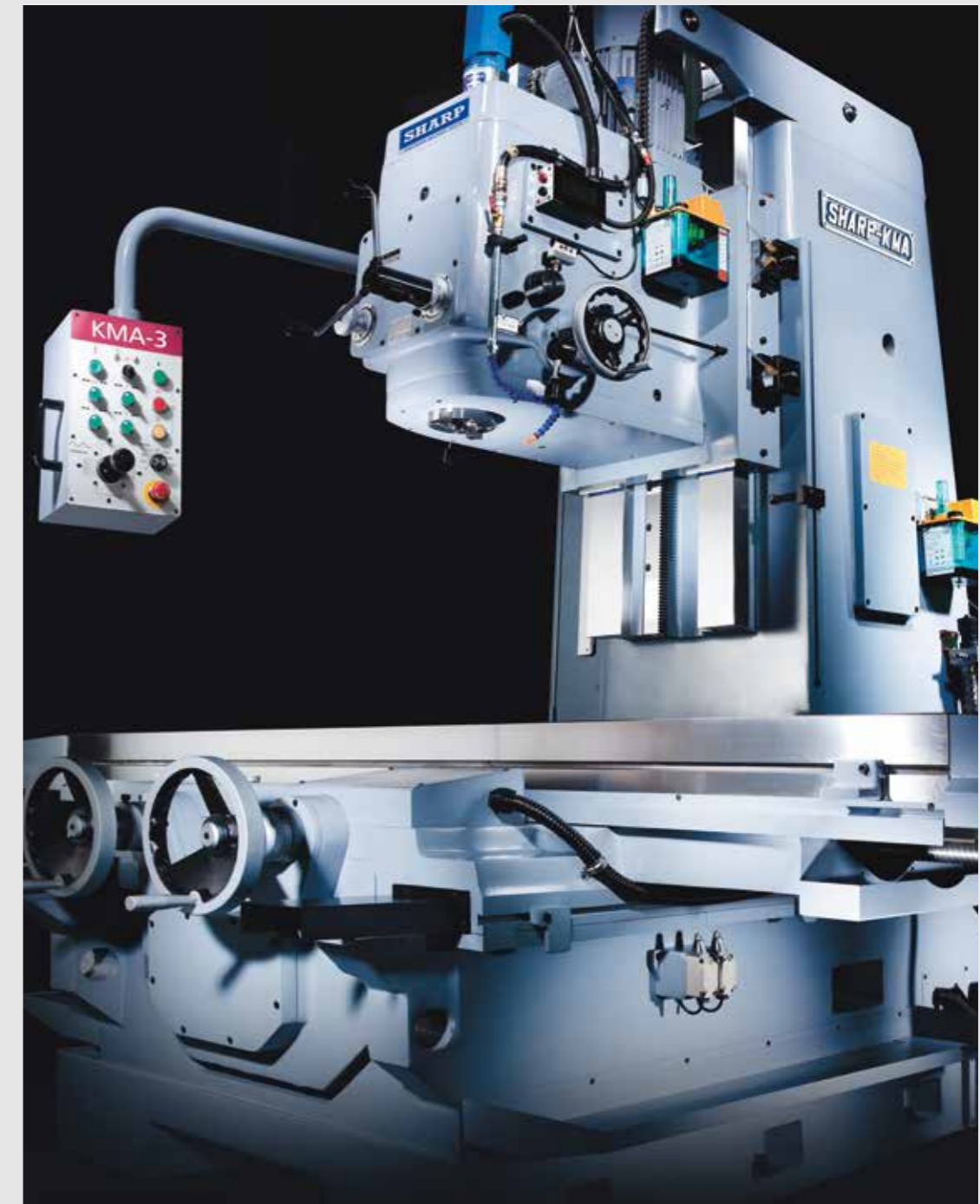
Support: support@sharp-industries.com

Website: www.sharp-industries.com



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SHARP KMA VERTICAL / HORIZONTAL BED TYPE MILLING & BORING MACHINE



PRECISION MACHINE TOOLS

Model KMA-1, KMA-2, KMA-3

Model KMA-1 39 3/8" x 15" x 19 11/16" travel, 10 HP spindle motor

Model KMA-2 47 1/4" x 17 11/16" x 21 5/8" travel, 15 HP spindle motor

Model KMA-3 59" x 23 5/8" x 27 9/16" travel, 78 3/4" x 23 5/8" x 27 9/16" travel with optional outboard supports for table
20 HP spindle motor

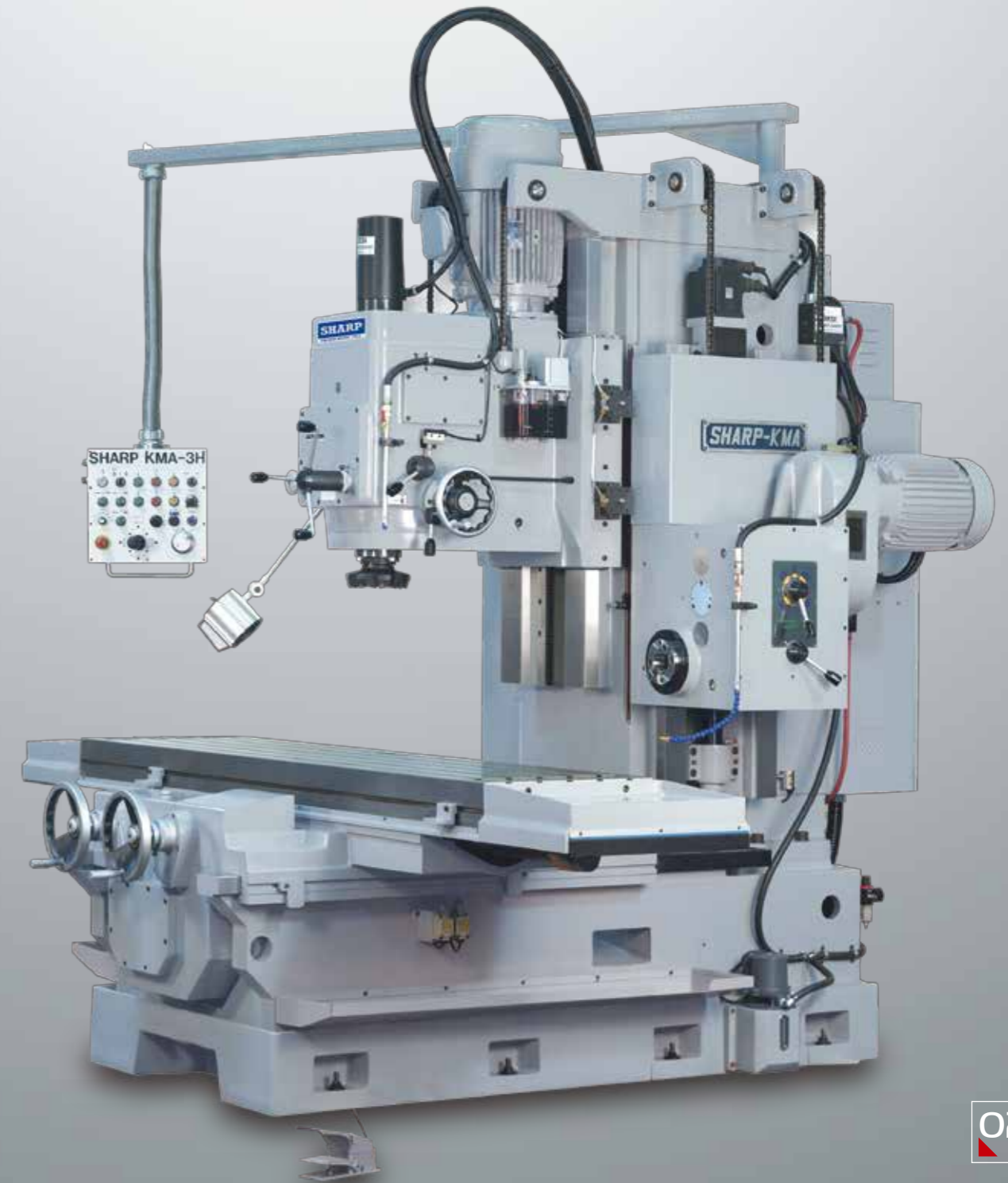


Model KMA-3H (WITH HORIZONTAL SPINDLE)

Work Table : 59" x 23 5/8" x 27 9/16" travel, 78 3/4" x 23 5/8" x 27 9/16" travel with optional outboard supports for table

Vertical Head : 27 9/16" vertical travel, 20 HP spindle motor,
12 steps spindle speed

Horizontal Head : 25 1/2" vertical travel (AC servo driven),
7.5 HP spindle motor, 12 step speed



Model KMA-5

78 3/4" x 31 1/2" x 27 5/8" travel,
98 7/16" x 31 1/2" x 27 5/8" travel with optional outboard table support,
20 HP spindle motor



Model KMA-5H (WITH HORIZONTAL HEAD)

Work Table : 78 3/4" x 31 1/2" x 27 5/8" travel, 98 7/16" x 31 1/2" x 27 5/8" travel,
with optional outboard supports for table
Vertical Head : 27 5/8" vertical travel (AC servo driven),
20 HP spindle motor, infinite vari speed
Horizontal Head : 25 1/2" vertical travel (AC servo driven),
7.5 HP spindle motor, 12 step speed





Honeycombed Ribbing

The vertical column casting is reinforced with honeycombed ribbing. 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.



Precise Milling & Boring

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



KMA-1 FEATURES :

- 10 HP spindle motor
- NST #50 spindle
- Geared head spindle, 45-1,500 RPM (12)
- Auto lube on saddle and table ways

KMA-2 ADDITIONAL FEATURES:

- 15 HP spindle motor, oversized spindle
- Built-in coolant tank
- 4-way toggle control of table rapid traverse

KMA-3 ADDITIONAL FEATURES :

- 20 HP spindle motor
- Pneumatic locks on spindle, table, saddle
- Variable speed feed rate on table, saddle
- Auto lube on vertical ways

KMA-5 ADDITIONAL FEATURES :

- Ballscrew, AC servo driven table/saddle feed
- Ballscrew, AC servo driven vertical head feed
- infinite vari speed
- Outboard supports for table (optional)

KMA-3H ADDITIONAL FEATURES :

- 20 HP vertical, 7.5 HP horizontal spindle
- Ballscrew, AC servo drive on horizontal head
- Electronic handwheel (MPG) for horizontal head

KMA-5H ADDITIONAL FEATURES :

- Ballscrew, AC servo driven table/saddle feed
- Ballscrew, AC servo driven table feed
- Ballscrew, AC servo driven horizontal head (up down)
- Outboard supports for table (optional)

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 at the front of the spindle head. A tri-lever handle is installed for quick positioning of the head.



Pendant control for Model KMA-5 machine showing individual buttons for various types of operations and machine functions.



Horizontal Head Model KMA-3H, KMA-5H
Horizontal head travels

Horizontal head travels on precision ball screw driven by AC servo motor. It allows full capacity horizontal milling operations, utilizing the 7.5 HP, NST#50 spindle head.

FEATURES:

- Hardened and precision ground boxways
- Honeycombed ribbing in castings for added rigidity
- Hand scraped table and saddle ways for full bearing support
- Adjustable backlash eliminator for long lasting accuracy
- Sliding base design for ease of positioning saddle and table
- Eye level control of feeds and speeds at vertical feed
- Wide range feed rates for boring operations
- Hardened and ground gears for long lasting wear
- Pedant style operation panel for easy control
- Automatic lubrication of table and saddle ways

Standard Accessories:

- Automatic lubrication systems
- Coolant system
- Manual draw bar
- Leveling pads and bolts

Optional Accessories:

- Outboard supports for table for Models KMA-3, KMA-3H, KMA-5, KMA-5H
- Power draw bar (wired into pendant control) with foot pedal
- Halogen work light
- Digital readout systems

Specifications	UNIT	KMA-1	KMA-2	KMA-3	KMA-3H	KMA-5	KMA-5H
Capacity							
Table travel (longitudinal)	in (mm)	39 3/8" (1000)	47 1/4" (1200)	59" (1500) 78 3/4" (2000) opt*	59" (1500) 78 3/4" (2000) opt*	78 3/4" (2000) 98 7/16" (2500) opt*	78 3/4" (2000) 98 7/16" (2500) opt*
Saddle travel	in (mm)	14 15/16" (380)	17 11/16" (450)	23 5/8" (600)	23 5/8" (600)	31.5" (800)	31.5" (800)
Head travel (vertical)	in (mm)	19 11/16" (500)	21 5/8" (550)	27 9/16" (700)	27 9/16" (700)	27.56" (700)	27.56" (700)
Spindle nose to table top	in (mm)	3 15/16"~ 23 5/8" (100~600)	3 15/16"~ 25 5/8" (100~650)	3 15/16"~ 31.5" (100~800)	3 15/16"~ 31.5" (100~800)	2.75"~30.3" (70~770)	2.75"~30.3" (70~770)
Spindle center to column	in (mm)	14 15/16" (380)	17 11/16" (450)	21 5/8" (550)	21 5/8" (550)	31.5" (800)	31.5" (800)
Horizontal head travel (up and down)	in (mm)	N/A	N/A	N/A	25 9/16" (650)	N/A	25 9/16" (650)
Distance between horiz. Spindle & vertical spindle	in (mm)	N/A	N/A	N/A	21.7" (551)	N/A	24" (610)
Table							
Table working area	in (mm)	67" x 14 15/16" (1700 x 380)	74 13/16" x 17 11/16" (1900 x 450)	86 5/8" x 19 11/16" (1900 x 500)opt*	86 5/8" x 19 11/16" (1900 x 500)opt*	106.3" x 29.5" (2700 x 750)	106.3" x 29.5" (2700 x 750)
T-slot (width x no. x pitch)	in (mm)	0.7 x 5 x 2 3/4" (18 x 5 x 70)	0.7 x 5 x 3 1/8" (18 x 5 x 70)	0.7 x 5 x 3 9/16" (18 x 5 x 90)	0.7 x 5 x 3 9/16" (18 x 5 x 90)	0.7 x 5 x 5.9" (18 x 5 x 150)	0.7 x 5 x 5.9" (18 x 5 x 150)
Table top to floor	in (mm)	31.5" (800)	33.5" (850)	34.25" (870)	34.25" (870)	35.43" (900)	35.43" (900)
Spindle							
Vertical spindle taper		NST#50	NST#50	NST#50	NST#50	NST#50	NST#50
Horizontal spindle taper		N/A	N/A	N/A	NST#50	N/A	NST#50
Vertical spindle speed	rpm	45~1,500	45~1,500	45~1,500	45~1,500	45~1,500	45~1,500
Horizontal spindle speed	rpm	N/A	N/A	N/A	40~1,450	N/A	40~1,450
No. of speeds (vert. & horiz)		12	12	12	12 (Vert / horiz)	Variable (2 step)	Variable 2 step (vert & horiz)
Feed Rate							
Vertical head feeds	ipr (mm per rev.)	0.002~0.008 (0.05~0.2)	0.002~0.008 (0.05~0.2)	0.002~0.008 (0.05~0.2)	0.002~0.008 (0.05~0.2)	0.12~11.8 (3~300)	0.12~11.8 (3~300)
Table & saddle feeds	ipm (mm/min)	1 1/8~39 3/8 (28~1000)	1 1/8~34 7/16 (28~875)	1 1/8~39 3/8 (28~1000)	1 1/8~39 3/8 (28~1000)	1.1~39.37 (28~1000)	1.1~39.37 (28~1000)
Table & saddle rapid	ipm (mm/min)	110 (2800)	113 3/8 (2880)	129 7/8 (3300)	129 7/8 (3300)	122 (3100)	122 (3100)
Horizontal head down feed	ipm	N/A	N/A	N/A	1 1/8~39 3/8 (28~1000)	N/A	1.1~39.4 (28~1000)
Horizontal head rapid down	ipm	N/A	N/A	N/A	150 (3800)	N/A	150 (3800)
Number of feed rates		variable	12	variable	variable	variable	variable
Motors							
Vertical spindle	HP	10	15	20	20	20	20
Horizontal spindle	HP	1	N/A	N/A	7.5	N/A	7.5
Table & saddle feed	HP	Servo 1.74	2	2	Servo 4.7	Servo 4.7	Servo 4.7
Horizontal head down feed	HP	N/A	N/A	N/A	Servo 1.14	N/A	Servo 1.14
Coolant pump	HP	1/6	1/6	1/6	1/6	1/6	1/6
Measurements							
Height	in (mm)	94 7/8" (2410)	102 3/8" (2600)	113" (2870)	113" (2870)	115" (2923)	126" (3198)
Width x depth	in (mm)	126" x 78" (3200 x 1960)	150" x 87" (3800 x 2210)	174 7/8" x 100 3/8" (4440 x 2550)	174 7/8" x 100 3/8" (4440 x 2550)	224.2" x 121" (5694 x 3075)	224.2" x 121" (5694 x 3075)
Approximate weight	lbs (kg)	8,800 (4,000)	11,440 (5,200)	15,400 (7,000)	19,140 (8,700)	26,000 (11,800)	28,650 (13,000)

- * Must be equipped with optional outboard supports with table.
- Proper foundation and environmental controls are required.
- Specifications subject to change without notice.