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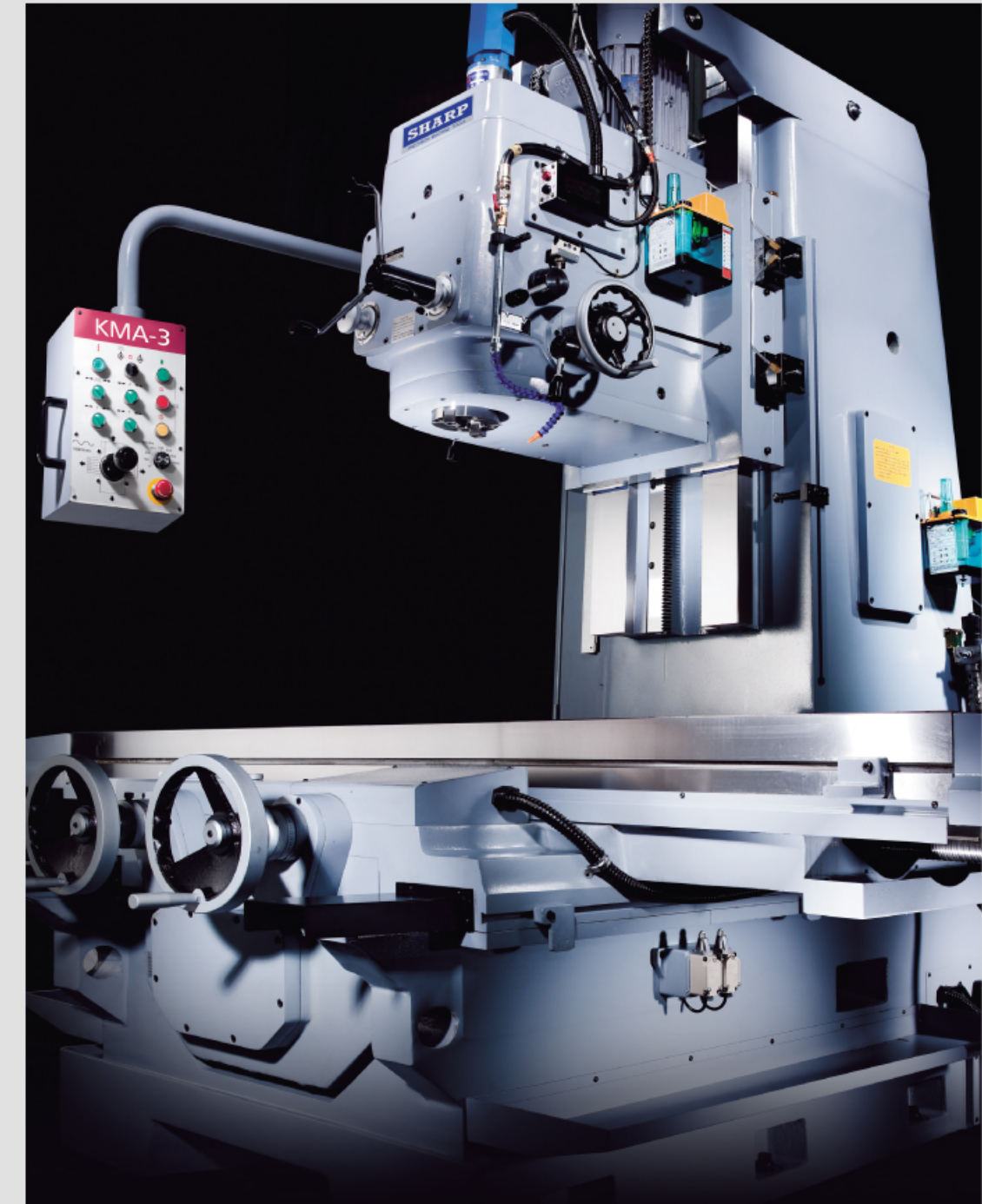
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SHARP KMA VERTICAL / HORIZONTAL BED TYPE MILLING & BORING MACHINE



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

Model KMA-1 39 3/8" x 15" x 19 11/16" travel

Model KMA-2 47 1/4" x 17 11/16" x 21 5/8" travel

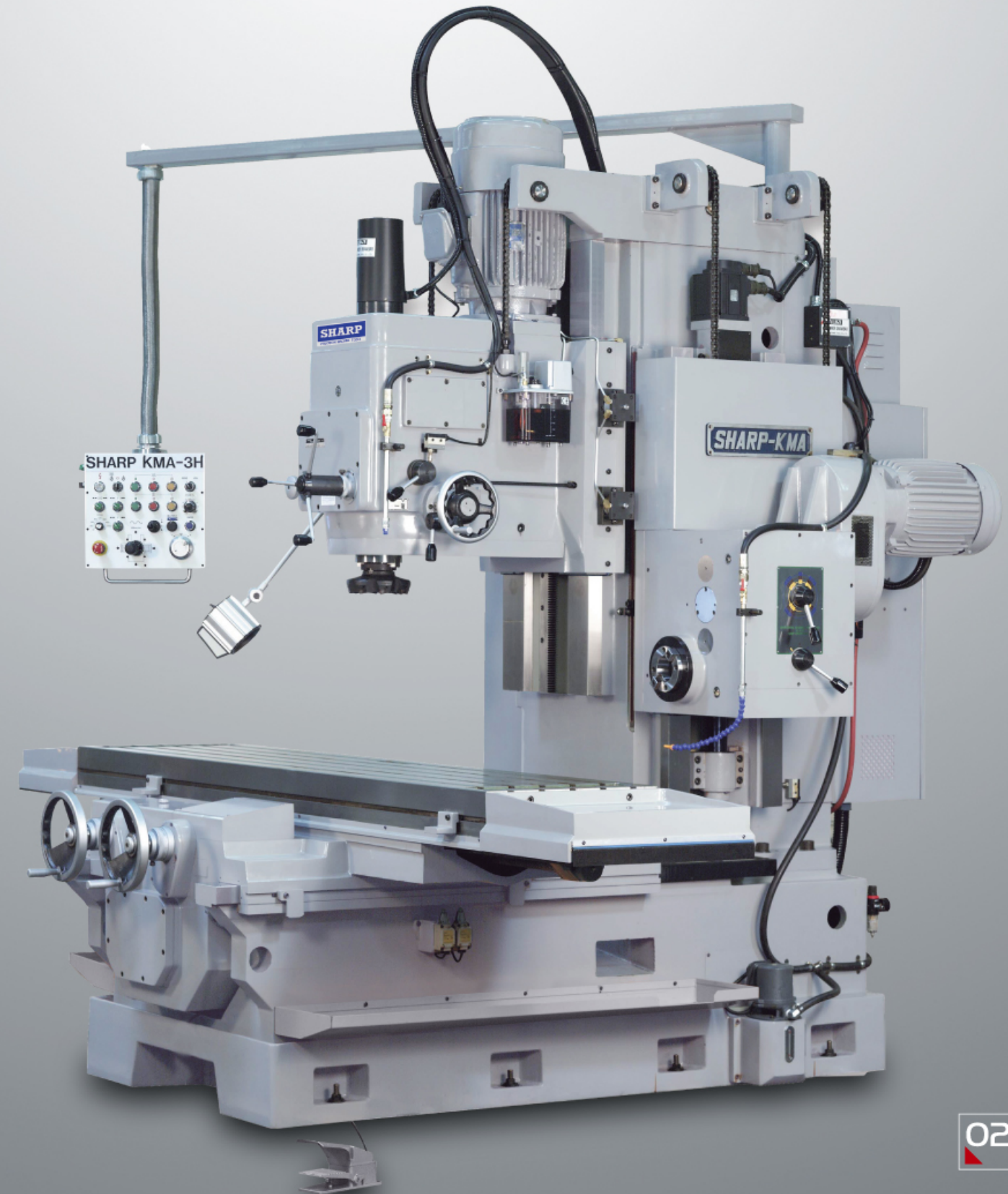
Model KMA-3 59" x 23 5/8" x 27.6" travel

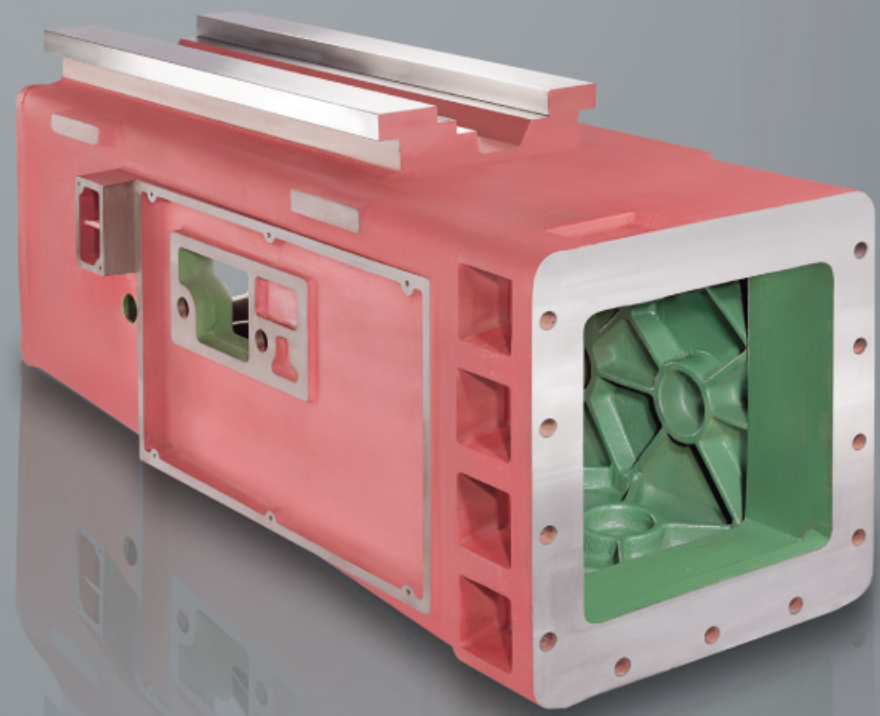


Model KMA-3H (WITH HORIZONTAL SPINDLE)

Model KMA-3H 59" x 23 5/8" x 27.6" travel

Horizontal head 7.5 HP, #50 taper spindle, ballscrew driven by AC servo motor, 25 9/16" Horizontal travel

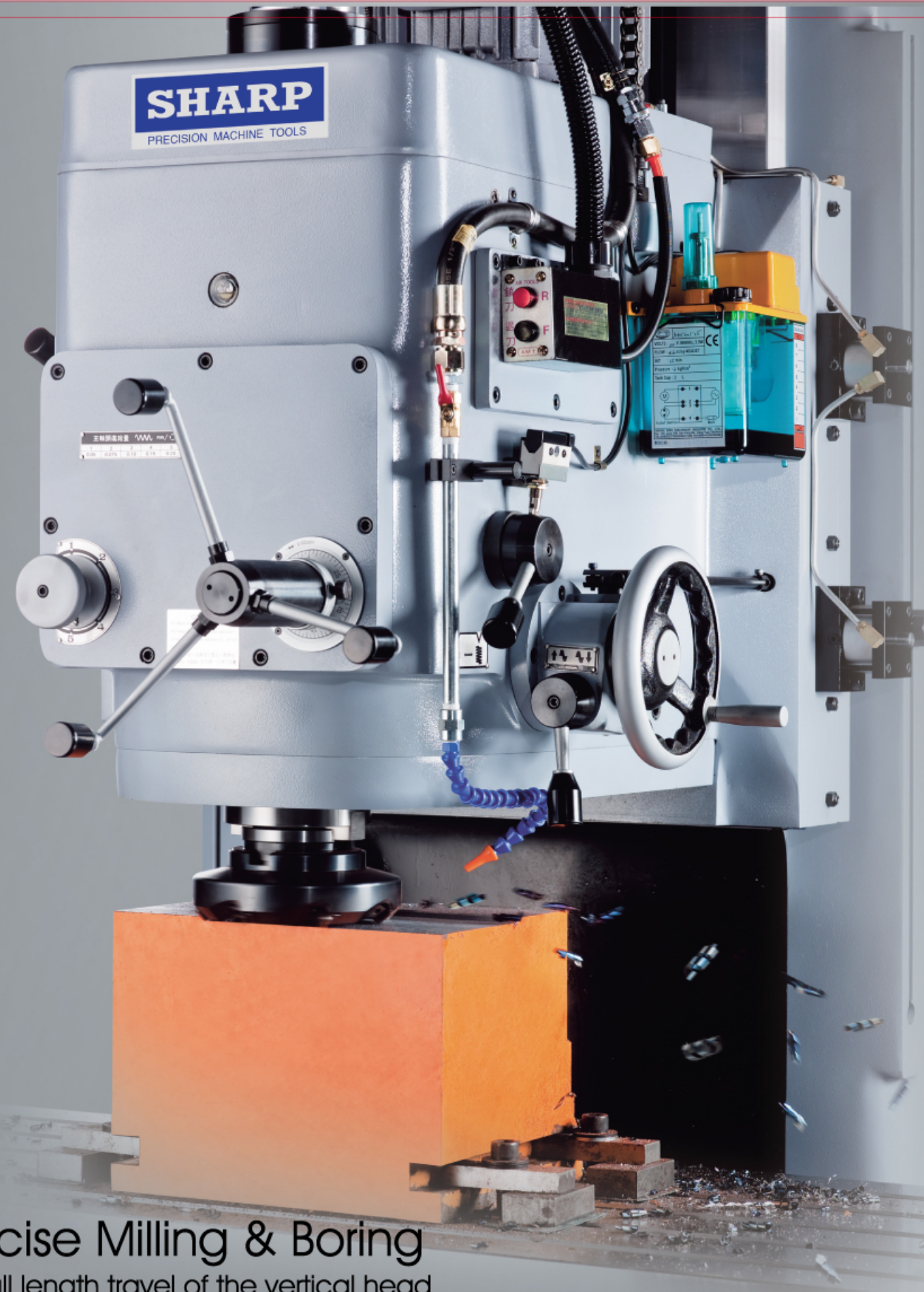
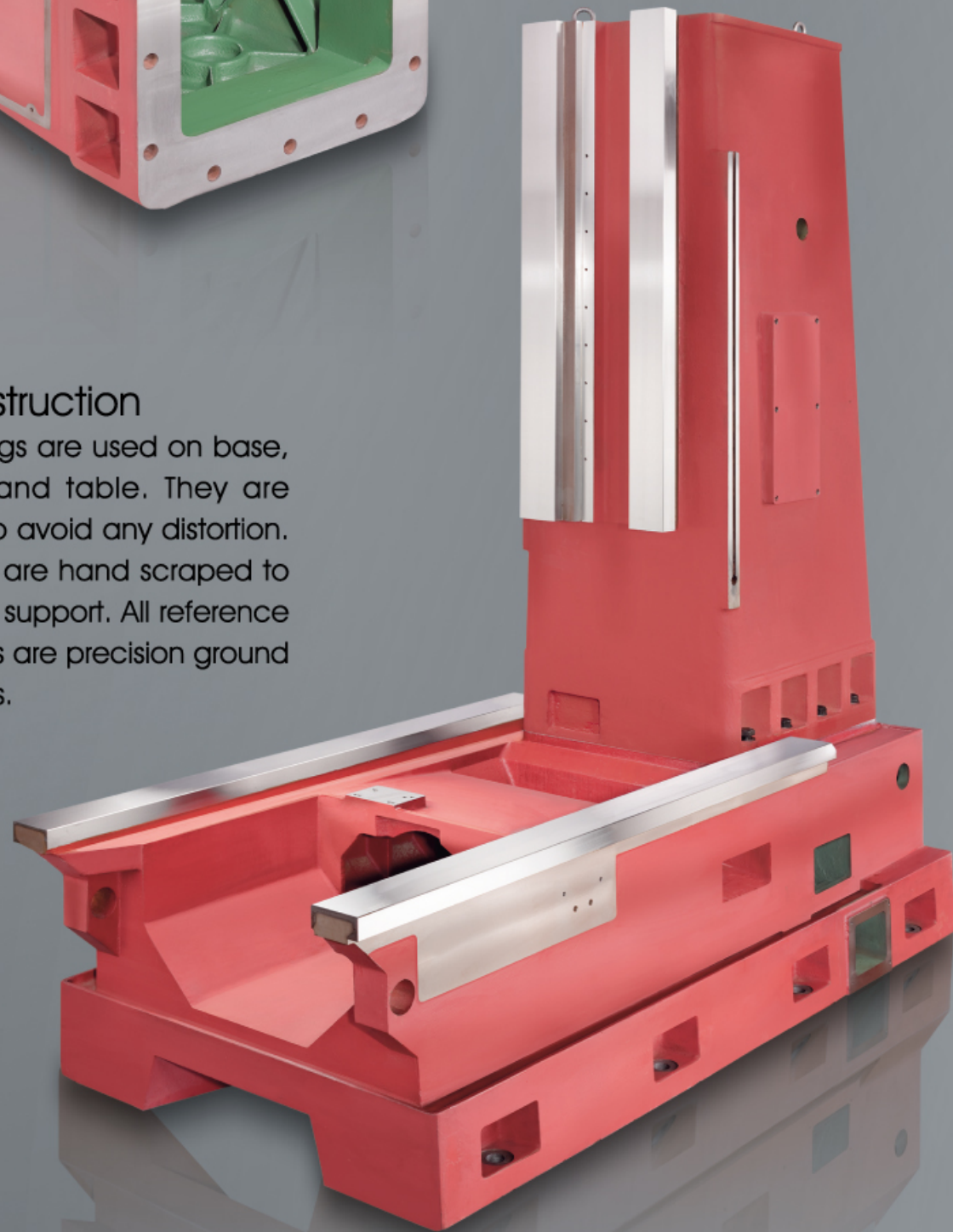




Honeycombed Ribbing
The vertical column casting is reinforced with honey combed ribbings. Which is 70% more effective than regular rectangular ribbings in dampening vibration and sustaining thermal stability.

Box Way Construction

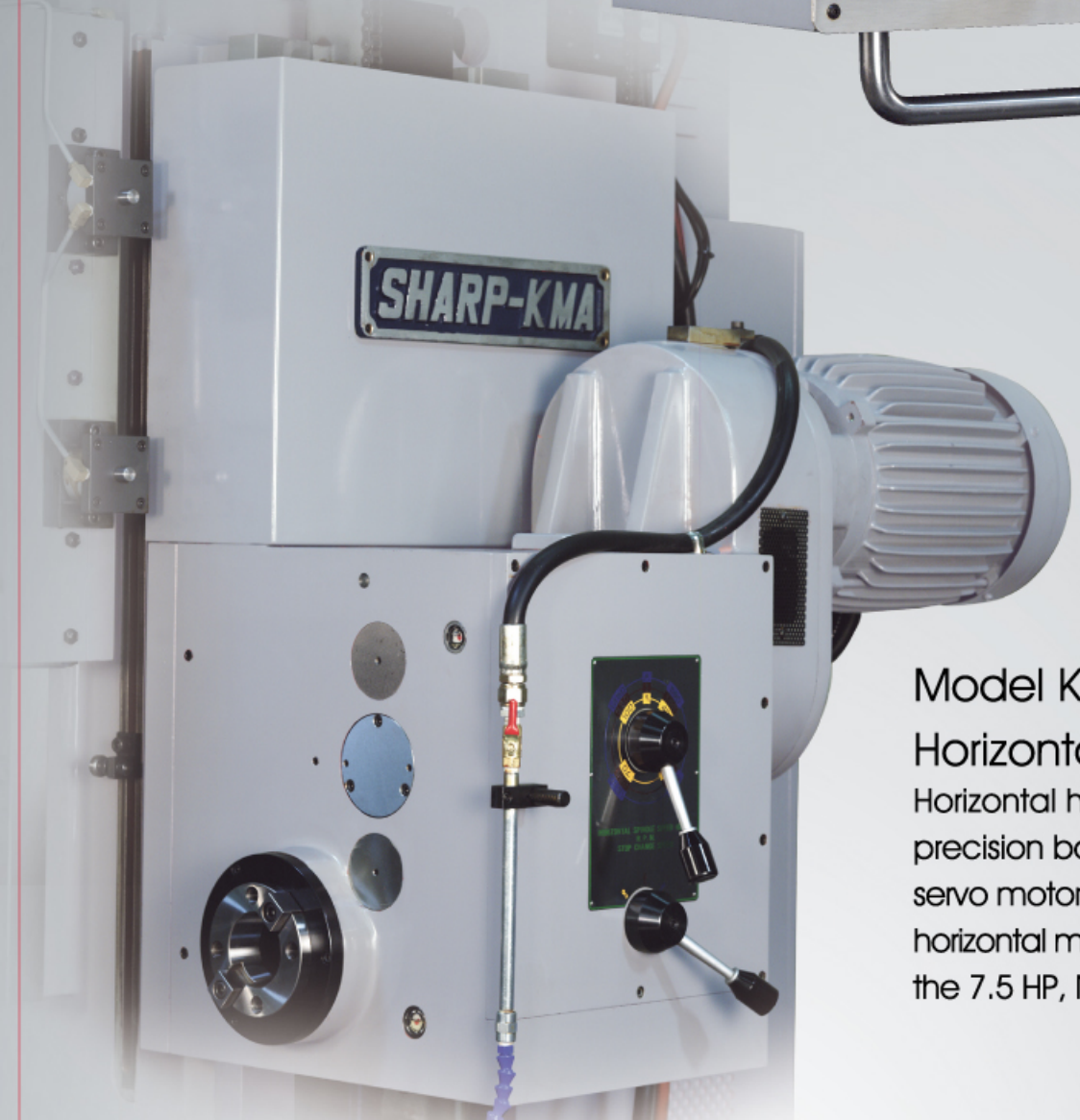
High quality castings are used on base, column, saddle and table. They are stressed relieved to avoid any distortion. All sliding surfaces are hand scraped to ensure full bearing support. All reference surfaces and T slots are precision ground to exact tolerances.



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.

Pendant control for KMA-3H machine showing individual buttons for various types of operations and machine functions.



Model KMA-3H

Horizontal Head

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



KMA-1 FEATURES :

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

KMA-2 ADDITIONAL FEATURES:

- 15 HP spindle motor, oversize 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-3H ADDITIONAL FEATURES :

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

FEATURES:

- Hardened and precision ground boxways
- Honeycombed ribbing in castings for added rigidity
- Hand scrapped 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 operation
- Electro-magnetic spindle control for ease of tapping operation
- Harden 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 drawbar
- Leveling pads and bolts

Optional Accessories:

- 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
MODEL					
Capacity					
Table travel (longitudinal)	in (mm)	39 3/8" (1000)	47 1/4" (1200)	59" (1500)	59" (1500)
Saddle travel (cross)	in (mm)	15" (381)	17.7" (450)	23 5/8" (600)	23 5/8" (600)
Head travel (vertical)	in (mm)	19 11/16" (500)	21 5/8" (550)	27.6" (700)	27.6" (700)
Spindle nose to table top	in (mm)	4"~ 23 5/8" (100~600)	4"~ 25 5/8" (100~650)	4"~31.5" (100~800)	4"~31.5" (100~800)
Spindle center to column	in (mm)	15" (381)	17 11/16" (450)	21 5/8" (550)	21 5/8" (550)
Horizontal head travel (up and down)	in (mm)	NA	NA	NA	25 9/16" (650)
Distance between horiz. Spindle & vertical spindle	in (mm)	NA	NA	NA	21.7" (551)
Table					
Table working area	in (mm)	67" x 15" (1701 x 381)	75" x 17 11/16"(1905 x 450)	86 5/8" x 19.7"(2200 x 500)	86 5/8" x 19.7"(2200 x 500)
T-slot (width x no. x pitch)	in (mm)	0.7 x 5 x 23/4 (17.8 x 5 x 70)	0.7 x 5 x 31/8 (17.8 x 5 x 79.4)	0.7 x 5 x 39/16 (17.8 x 5 x 90.5)	0.7 x 5 x 39/16 (17.8 x 5 x 90.5)
Table top to floor	in (mm)	31.5" (800)	33.5" (851)	33.9" (861)	33.9" (861)
Spindle					
Vertical spindle taper		NST#50	NST#50	NST#50	NST#50
Horizontal spindle taper		-	-	-	NST#50
Vertical spindle speed	rpm	45~1,500	45~1,500	45~1,500	45~1,500
Horizontal spindle speed	rpm	-	-	-	40~1,450
No. of speeds (vert. & horiz)		12	12	12	12
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)
Table & saddle feeds	ipm (mm/min)	1~34 (25~863.6)	1~34 (25~863.6)	1~39.4 (25~1000)	1~39.4 (25~1000)
Table & saddle rapid	ipm (mm/min)	113.4 (274)	113.4 (274)	129.8 (3297)	129.8 (3297)
Horizontal head down feed	ipm	-	-	-	1~39.4 (25~1000)
Horizontal head rapid down	ipm	-	-	-	150 (3810)
Number of feed rates		12	12	variable	variable
Motors					
Vertical spindle	HP	10	15	20	20
Horizontal spindle	HP	-	-	-	7.5
Table & saddle feed	HP	1	2	2.5	2.5
Horizontal head down feed	HP	-	-	-	Servo 1.14
Coolant pump	HP	1/6	1/6	1/6	1/6
Measurements					
Height	in (mm)	94 7/8" (2410)	102 3/8" (2600)	113" (2870)	113" (2870)
Width x depth	in (mm)	126" x 79" (3200 x 2007)	150" x 87" (3810 x 2210)	175" x 100 3/8" (4445 x 2550)	175" x 100 3/8" (4445 x 2550)
Approximate weight	lbs (kg)	8,800 (4,000)	11,500 (5,227)	15,000 (6,818)	18,500 (8,409)

- * Proper foundation and environmental controls are required.
- 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.

