

CNC HORIZONTAL BORING & MILLING MACHINE
HB-SERIES



SINCE 1960

韓國精密機械(株)

HNK MACHINE TOOL CO., LTD.

SUPERIOR RIGIDITY FOR YOUR



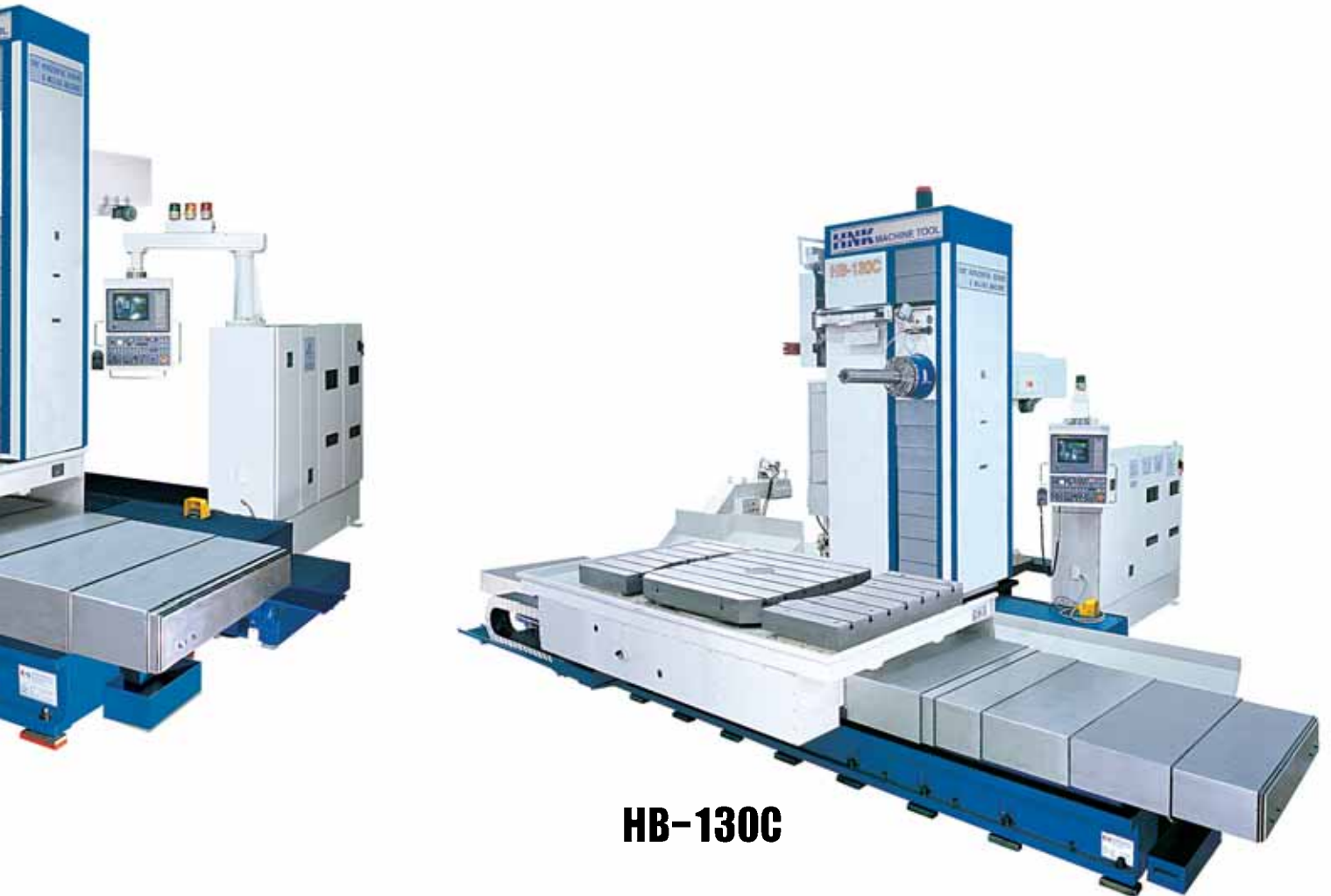
HB-130



HB-150

	HB-110		HB-130S		HB-130: (pictured)	
Spindle Diameter	ø 110 mm	4.3"	ø 130 mm	5.1"	ø 130 mm	5.1"
X-axis Travel	1600 mm	63"	2000 mm	78.7"	3000 mm	118.1"
Y-axis Travel	1500 mm	59.1"	1500 mm	59.1"	2000 mm	78.7"
Z-axis Travel	1200 mm	47.2"	1300 mm	51.2"	1300 mm	51.2"
W-axis Travel	500 mm	19.7"	700 mm	27.6"	700 mm	27.6"
Table size	1150 × 1250 mm	45.3" × 49.2"	1400 × 1600 mm	55.1" × 63"	1600 × 1800 mm	63" × 70.9"

HEAVY DUTY MACHINING



HB-130C

※ These machines have optional accessories

HB-130X	HB-150: (pictured)	HB-130C: (pictured)	HB-130CX
ø 130 mm 5.1"	ø 150 mm 5.9"	ø 130 mm 5.1"	ø 130 mm 5.1"
3000 mm 118.1"	3000 mm 118.1"	3000 mm 118.1"	4000 mm 157.5"
2000 mm 78.7"	2300 mm 90.6"	2000 mm 78.7"	2300 mm 90.6"
1300 mm 51.2"	1600 mm 63"	1300 mm 51.2"	1300 mm 51.2"
700 mm 27.6"	700 mm 27.6"	700 mm 27.6"	700 mm 27.6"
2000 × 2200 mm 78.7" × 86.6"	2000 × 2200 mm 78.7" × 86.6"	1400 × 3000 mm 55.1" × 118.1"	1600 × 4000 mm 63" × 157.5"

Standard Accessories

- Built-in Coil Type Chip Conveyor
- Chip Cover for Slide Ways
- NC Indexing Table Every 0.001°
(Every 90° indexing by locate pin)
- Manual Pulse Generator(M.P.G)
- Work Light and Signal Light
- Spindle Cooling Unit
- Fanuc Servo Motors
- Hydraulic Power Unit
- Foundation Anchor Bolts/Pad Plates

Optional Accessories

- ATC for 40/ 60/ 90/ 120 Tools
- APC for 2/ 4/ 6 pallets
- Coolant-thru-the-spindle Device (T.S.C)
- Splash Guard Type A (Table enclosure type)
- Splash Guard Type B (Column enclosure type)
- Splash Guard Type C (Whole cover type)
- External Coolant System
- Vertical Milling Attachment
- Universal Milling Attachment
- Facing Head
- Angle Plate
- Scale Feed Back System (X, Y, Z)
- Hinge Type Lift-up Conveyor
- Chip Bucket
- Z-axis Dual Coil Type Conveyor
- Auto Tool Length Measuring Device
- Auto Measuring System (Includes Renishaw probe)
- Rigid Tapping
- Additional Coolant Nozzles (Total 4pieces)
- Tap Oil Jet System
- High-speed Spindle
4000, 6000, 8000, 12000rpm

*If you are interested in accessories not listed, please contact your local distributor for more information.



Splash Guard Type A

Rigid Ultra-Precision Spindle

HNK's state-of-the-art spindle design offers high machining rigidity and long lasting spindle bearing life.

- Oil and air mist lubrication
- Built-in ultra-precision paired bearings
- Long nose spindle head
- Precise CNC quill control
- Effective cooling system for minimal thermal expansion



Oil Flow in Spindle Head

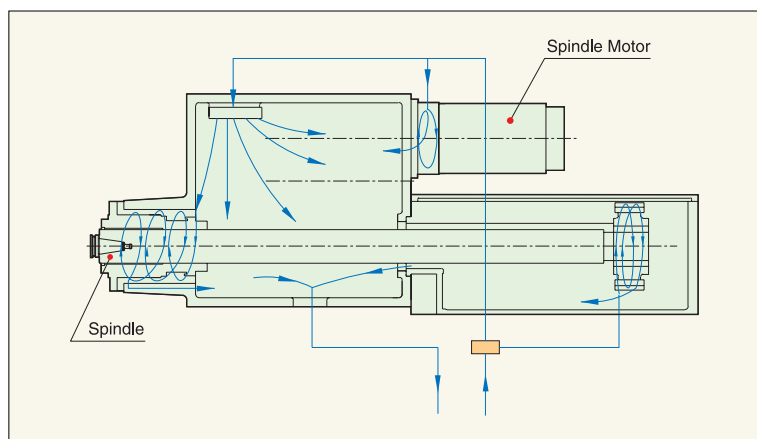


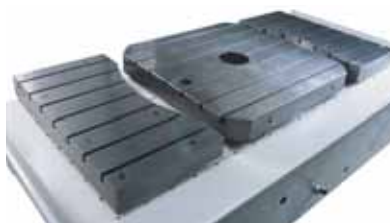
Table with Accurate Positioning

HNK's extended and heavy load built-in rotary/combination table gives flexible and precision machining capability.

- B-axis positioning accuracy (every 90°)
 ± 3 arc sec.
- B-axis positioning accuracy (every 0.001°)
 ± 7 arc sec.
- B-axis repeatability (every 0.001°)
 ± 3 arc sec.



90° Degree Positioning Pin



Combination Table Type
HB-130C, HB-130CX



Rotary Table Type
HB-110, HB-130S, HB-130, HB-150

Automatic Tool Changer

Optional 40/60/90/120 tool magazine Automatic Tool Changer (ATC) can be added on to all HB series machines that provide you with continuous and unmanned operation.

- 40/60/90/120 tool magazine
- Fully enclosed for safety
- Tool shank type MAS BT, 50
- Pull stud type MAS P50T-I (45°)
- Max. tool diameter of 240mm (9.4")
- Max. tool length of 400mm (15.7")
- Max. tool weight of 25kg (55 lbs)



Chip and Coolant Disposal

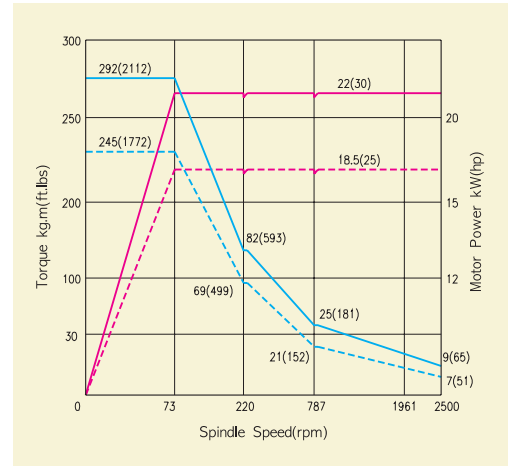
HNK's uniquely designed built-in-the-bed chip conveyor and chip guard collect and dispose chips and coolant efficiently, providing a clean and safe work environment.

- Effective control of chips and coolant
- Optimum coolant re-circulation design

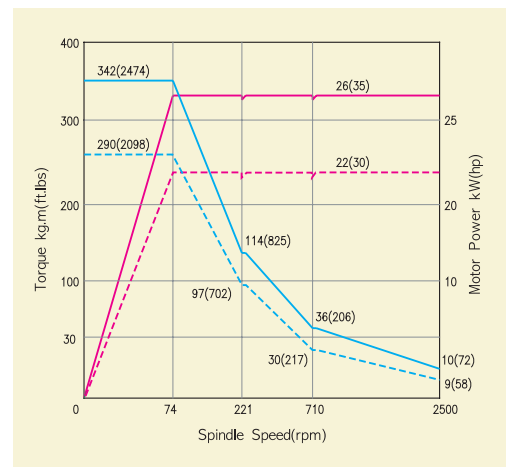


Spindle Power-Torque Diagram

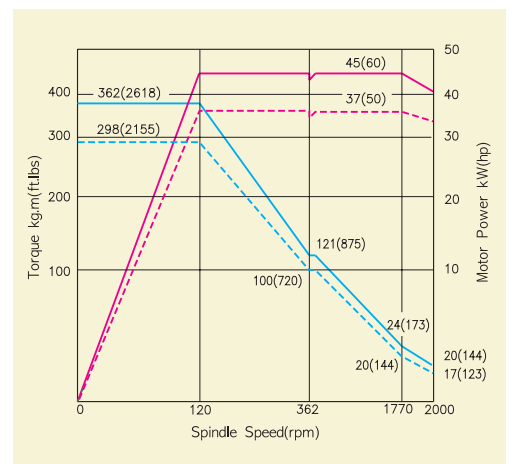
- Power (30 min)
- Torque (30 min)
- - - Power (Continuous)
- - - Torque (Continuous)



HB-110



HB-130 models



HB-150

CNC HORIZONTAL BORING & MILLING MACHINE

	Unit	HB-110	HB-130S	HB-130	HB-130X	HB-130C	HB-130CX	HB-150
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Stroke

X-Axis Travel(Table longitudinal)	mm	1,600 [2,000]	2,000 [3,000]	3,000	3,000	3,000	4,000	3,000 [4,000]
Y-Axis Travel(Spindle vertical)	mm	1,500	1,500 [2,000]	2,000 [2,300]	2,000 [2,300]	2,000 [2,300]	2,300	2,300 [2,500]
Z-Axis Travel(Column cross)	mm	1,200 [1,500]	1,300 [1,600]	1,300 [1,600]	1,300 [1,600]	1,300 [1,600]	1,300 [1,600]	1,600 [2,000]
W-Axis Travel(Spindle axial)	mm	500 [650]	700	700	700	700	700	700
Distance from Spindle Center to Table Surface	mm	0~1,500	0~1,500	0~2,000	0~2,000	100~2,100	100~2,400	0~2,300
Distance from Table Center to Spindle Nose	mm	525~1,725	610~1,910	750~2,050	885~2,185	610~1,910	750~2,050	850~2,450

Table

Table Size	mm	1,150×1,250	1,400×1,600	1,600×1,800	2,000×2,200	1,400×3,000	1,600×4,000	2,000×2,200
Rotary Table Size	mm	1,150×1,250	1,400×1,600	1,600×1,800	2,000×2,200	1,400×1,400	1,600×1,600	2,000×2,200
Table Indexing	degree			0.001° (every 90° indexing by locate pin)				
Table Type		Rotary	Rotary	Rotary	Rotary	Combination	Combination	Rotary
Max. Load on Rotary Table	Kg	5,000 [6,000]	7,000 [9,000]	12,000 [15,000]	15,000 [20,000]	7,000 [9,000]	10,000 [15,000]	15,000 [20,000]
Table Rotation Speed *	rpm	2	2	1.4	1	1.4	1.4	1

Spindle Head

Spindle Diameter	mm	ø110	ø130	ø130	ø130	ø130	ø130	ø150
Spindle Speed *	rpm	5~3,000	5~2,500	5~2,500	5~2,500	5~2,500	5~2,500	5~2,000
Spindle Taper		ISO 50	ISO 50	ISO 50	ISO 50	ISO 50	ISO 50	ISO 50

Feed

Rapid Traverse(X, Y, Z)	mm/min	12,000	10,000	10,000	10,000	10,000	10,000	10,000
Rapid Traverse(W)	mm/min	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Feed Rate(X, Y, Z, W)*	mm/min	1~4,000	1~4,000	1~4,000	1~4,000	1~4,000	1~4,000	1~4,000

Control

Control System			Fanuc 18iMB [Fanuc 16iMB / SIEMENS 840D]					
Tape Memory	m	80	80	80	80	80	80	80
LCD	inch	10.4" Color LCD	10.4" Color LCD	10.4" Color LCD	10.4" Color LCD	10.4" Color LCD	10.4" Color LCD	10.4" Color LCD

Automatic Tool Changer (ATC)

Tool Storage Capacity	pieces	[40/60/90/120]	[40/60/90/120]	[40/60/90/120]	[40/60/90/120]	[40/60/90/120]	[40/60/90/120]	[40/60/90/120]
Max. Tool Diameter(Adjacent pocket empty)	mm	ø240	ø240	ø240	ø240	ø240	ø240	ø240
Max. Tool Length	mm	400	400	400	400	400	400	400
Max. Tool Weight	Kg	25	25	25	25	25	25	25

Motors *

Spindle (30min/cont.)	kw(hp)	22/18.5 (30/25)	26/22 (35/30)	26/22 (35/30)	26/22 (35/30)	26/22 (35/30)	26/22 (35/30)	45/37 (60/50)
X-Axis	kw(hp)	4 (5.3)	6 (8)	6 (8)	9 (12)	6 (8)	9 (12)	9 (12)
Y-Axis	kw(hp)	4 (5.3)	4 (5.3)	4 (5.3)	4 (5.3)	4 (5.3)	4 (5.3)	4 (5.3)
Z-Axis	kw(hp)	4 (5.3)	7 (9.3)	7 (9.3)	7 (9.3)	7 (9.3)	7 (9.3)	7 (9.3)
W-Axis	kw(hp)	4 (5.3)	4 (5.3)	4 (5.3)	4 (5.3)	4 (5.3)	4 (5.3)	4 (5.3)
B-Axis	kw(hp)	4 (5.3)	4 (5.3)	4 (5.3)	7 (9.3)	4 (5.3)	4 (5.3)	7 (9.3)

Dimensions

Machine Height	mm	4,030	4,030	4,810	4,810	4,810	5,110	5,110
Floor Space	mm	5,600×6,650	6,900×6,900	7,350×7,400	7,385×7,550	7,900×7,100	10,910×7,300	7,150×8,000
Machine Weight	Kg	25,000	28,000	38,000	40,000	41,000	50,000	42,000

*Specifications noted in square brackets are optional accessories.

The specifications with "Star Mark()" can be adjusted to meet the customers' requirements.

Standard Specifications

- Controlled axes (5 axes: X, Y, Z, W, B)
- Positioning-G00 (4 axes: X, Y, Z, W)
- Linear Interpolation-G01 (4 axes: X, Y, Z, W)
- Circular Interpolation-G02 and G03
- Least input increment (0.001mm)
- Inch/metric conversion
- Mirror Image
- Backlash compensation
- Pitch error compensation
- MDI operation
- Program number search
- Sequence number search
- Buffer register
- Dry run
- Single block
- JOG feed
- Manual reference position return
- Incremental feed (X1, X10, X100, X1000)
- Jog and handle simultaneous mode
- Program restart
- Single direction positioning
- Dwell
- Skip function
- Reference position return
- Reference position return check
- 2nd reference position return
- Rapid traverse rate
- Rapid traverse override
- Feed per minute/Feed per revolution
- Tangential speed constant control
- Cutting feedrate clamp
- Automatic acceleration/deceleration
- Override cancel
- Feedrate override
- Optional block skip (1)
- Max. programmable dimension (8-digit)
- Program number (04-digit)
- Sequence number (N5-digit)
- Input unit 10 time multiply
- Rotary axis roll-over function
- Coordinate system shift
- Manual absolute on and off
- G code system (A)
- Sub program call (4 folds nested)
- Workpiece coordinate system (G52-59)
- Auxiliary function (M8-digit)
- Auxiliary function lock
- Single speed function (S5-digit)
- High speed M/S/T function
- Tool function (T8)
- 99 tool offset
- Cutter compensation C (G41, G42, G43)
- Tool length compensation
- Part program storage length (80m)
- Number of registerable program (63)
- Part program editing
- Background editing
- Extended part program editing
- Status display
- Clock function
- Self-diagnosis function
- Alarm display
- Alarm history display
- Operation history display
- Help function
- Servo setting screen
- Display of hardware/software configuration
- Data protection key
- Erase CRT screen display
- RS 232C interface
- External workpiece number search
- Memory card interface
- Status output signal
- Setting and display unit
- Manual pulse generator

Optional Specifications

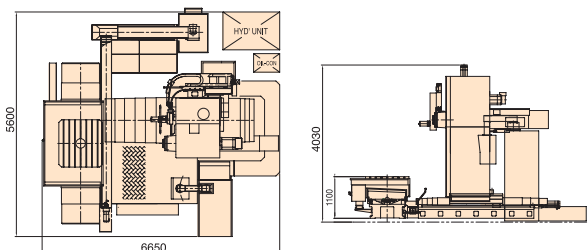
- Tool retract and recover
- Scaling
- Coordinate system rotation
- Helical interpolation
- Automatic corner deceleration
- Stored stroke check 2
- Linear acceleration/deceleration after cutting feed
- Addition of custom macro common variables
- Tool offset pairs memory
- Tool life management function
- Additional tool offset 200 sets
- Play back
- Polar coordinate command
- Additional work coordinate system 48 pairs
- Sequence number comparison and stop
- Restart of block
- Remote buffer
- HPOC+64 bit RISC processor
- Part storage length
(160/320/640/1280/2560/5120m)
- Number of registerable programs (125/200)
- Graphic/display function (Trace mode)
- Background display



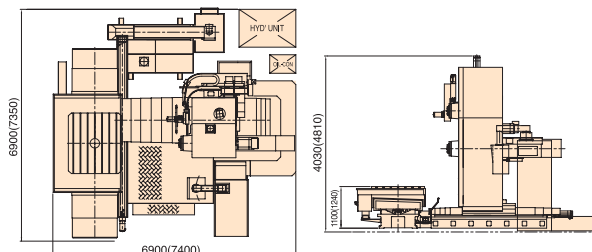
HB Series

Dimensions

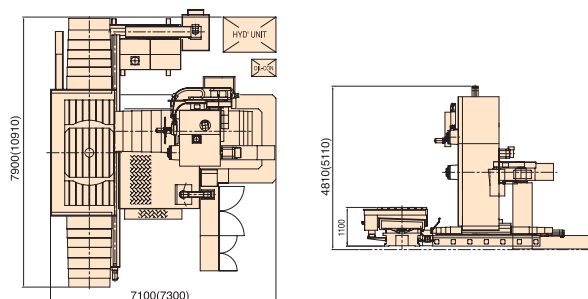
HB-110



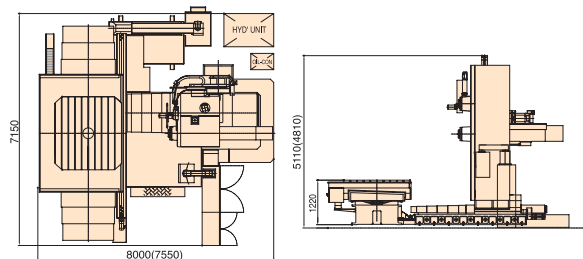
HB-130S (HB-130)



HB-130C (HB-130CX)



HB-150 (HB-130X)



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