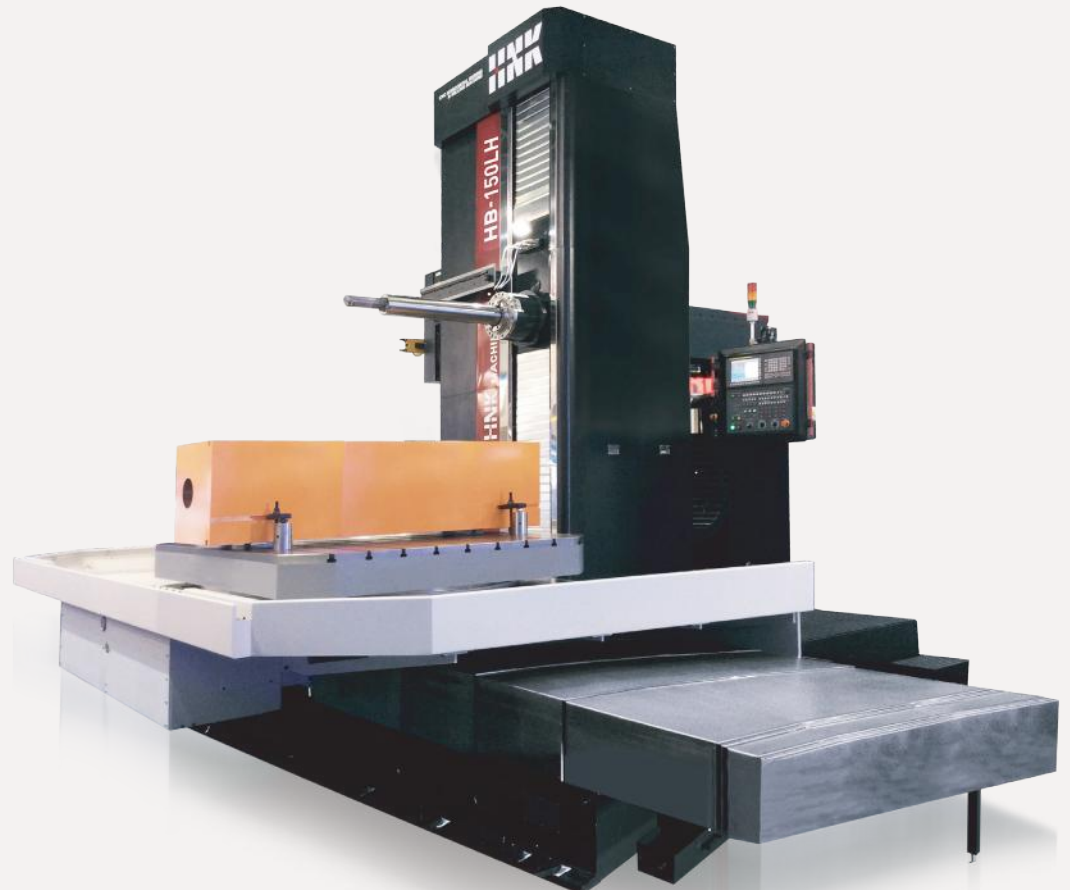


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# HNK CNC HORIZONTAL BORING & MILLING MACHINE HB Series



The world wide leader in machine tools



**HNK MACHINE TOOL CO., LTD.**

SINCE 1960

# HNK CNC HORIZONTAL BORING & MILLING MACHINE MODELS



## HB-110

	HB-110
Spindle Diameter	Φ 110 mm (4.3")
X-axis Travel	1,600 mm (63.0")
Y-axis Travel	1,500 mm (59.1")
Z-axis Travel	1,200 mm (47.2")
W-axis Travel	500 mm (19.7")
Rotary Table Size	1,150 × 1,250 mm (45.3 × 49.2")

## HB-130CX

	HB-130CX
Spindle Diameter	Φ 130 mm (5.1")
X-axis Travel	4,000 mm (157.5")
Y-axis Travel	2,300 mm (90.6")
Z-axis Travel	1,300 mm (51.2")
W-axis Travel	700 mm (27.6")
Table Size	1,600 × 4,000 mm (63.0 × 157.5")
Rotary Table Size	1,600 × 1,600 mm (63.0 × 63.0")



## HB-130S/130

	HB-130S	HB-130
Spindle Diameter	Φ 130 mm (5.1")	Φ 130 mm (5.1")
X-axis Travel	2,000 mm (78.7")	3,000 mm (118.1")
Y-axis Travel	1,500 mm (59.1")	2,300 mm (90.6")
Z-axis Travel	1,300 mm (51.2")	1,600 mm (63.0")
W-axis Travel	700 mm (27.6")	700 mm (27.6")
Rotary Table Size	1,400 × 1,600 mm (55.1 × 63.0")	1,600 × 1,800 mm (63.0 × 70.9")



## HB-150/150LH

	HB-150	HB-150LH
Spindle Diameter	Φ 150 mm (5.9")	Φ 150 mm (5.9")
X-axis Travel	3,000 mm (118.1")	4,000 mm (157.5")
Y-axis Travel	2,300 mm (90.6")	2,500 mm (98.4")
Z-axis Travel	1,600 mm (63.0")	1,600 mm (63.0")
W-axis Travel	700 mm (27.6")	1,000 mm (39.4")
Rotary Table Size	2,000 × 2,200 mm (78.7 × 86.6")	2,000 × 2,200 mm (78.7 × 86.6")



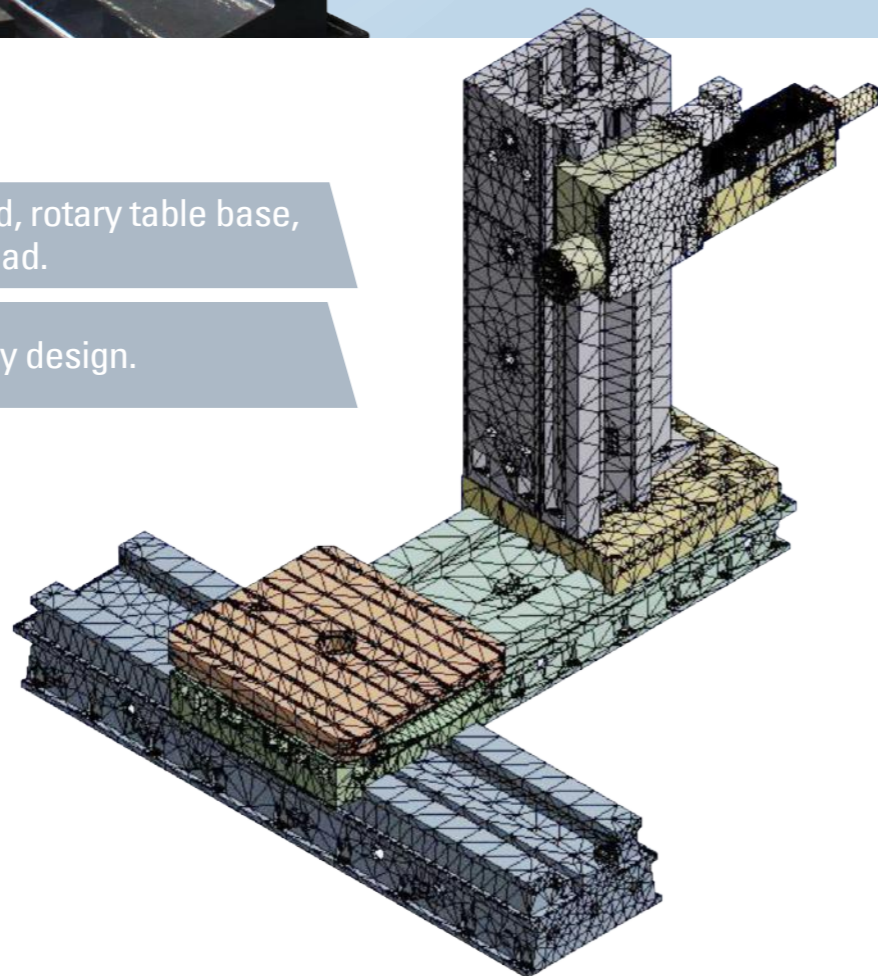


# HEAVY DUTY RIGID BODY STRUCTURE

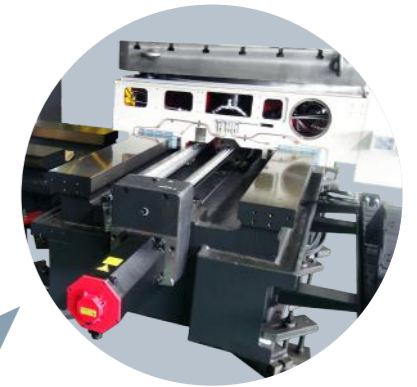
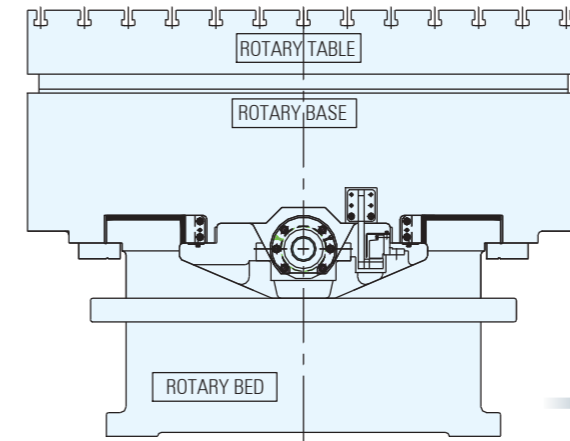


Stress-relieved cast iron bed, rotary table base, column body and spindle head.

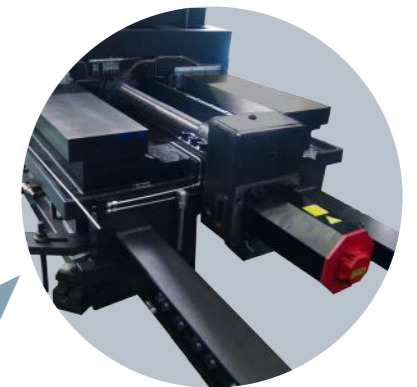
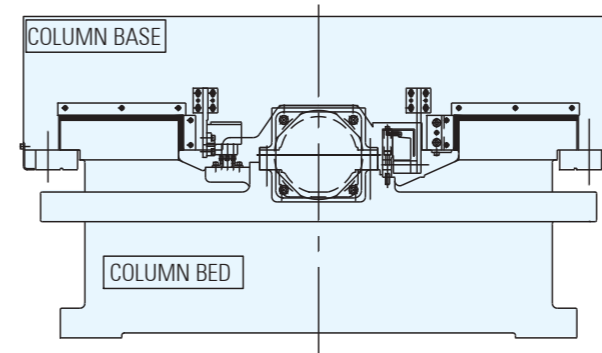
Wide anti-abrasive slide way design.



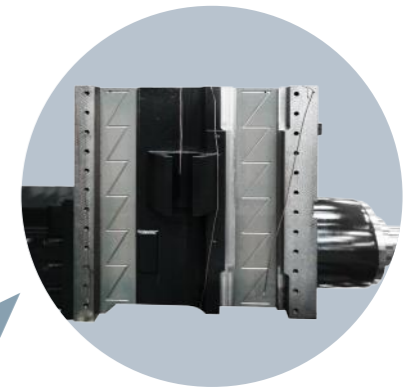
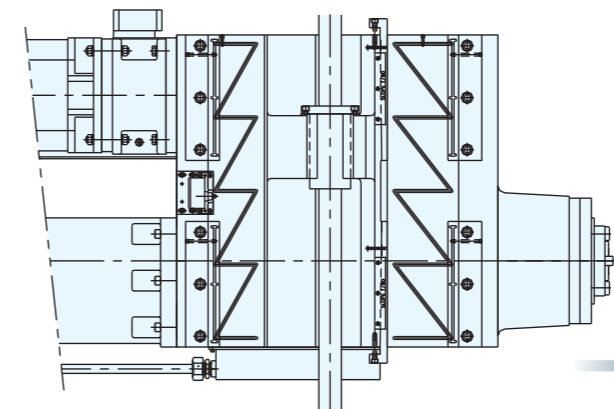
## Schematic Drawing of Table / Bed Slide way



## Schematic Drawing of Column Base / Column Bed Slide way



## Schematic Drawing of Column / Spindle Head Slide way



•Note : The above structures are changeable as per each model.

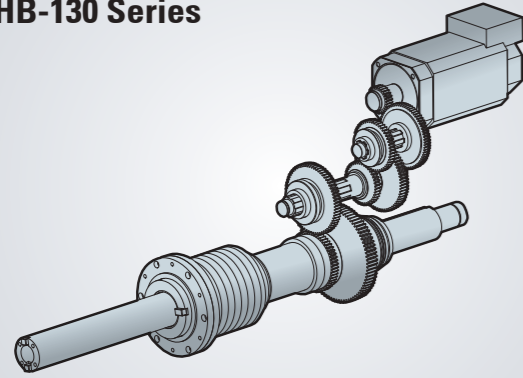


## Reliable Head Stock Design

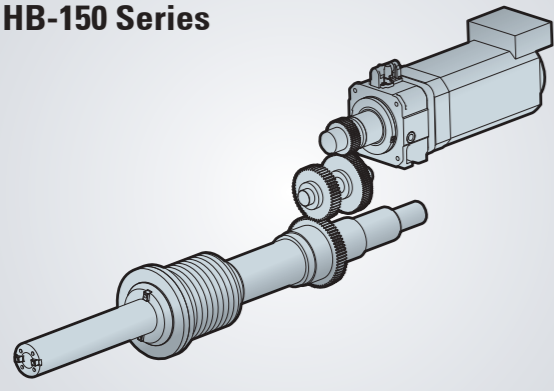
HNK's state-of-the-art head stock design ensures long lasting heavy duty and precision machining.

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

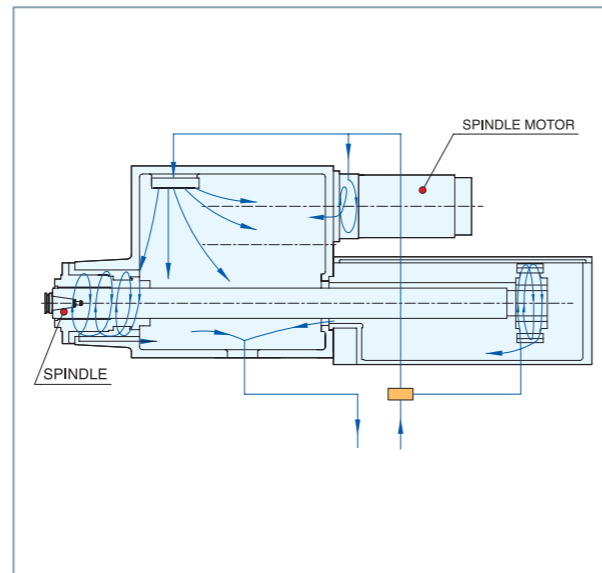
### HB-130 Series



### HB-150 Series



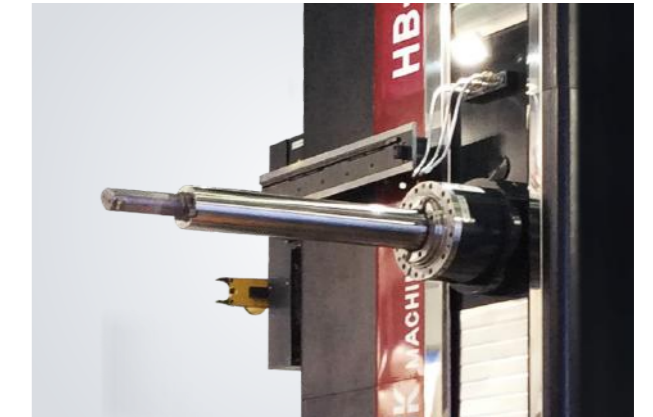
### Spindle Head Cooling System



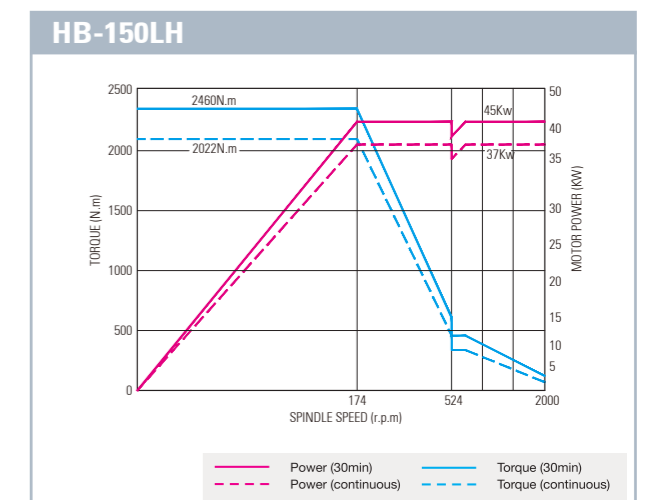
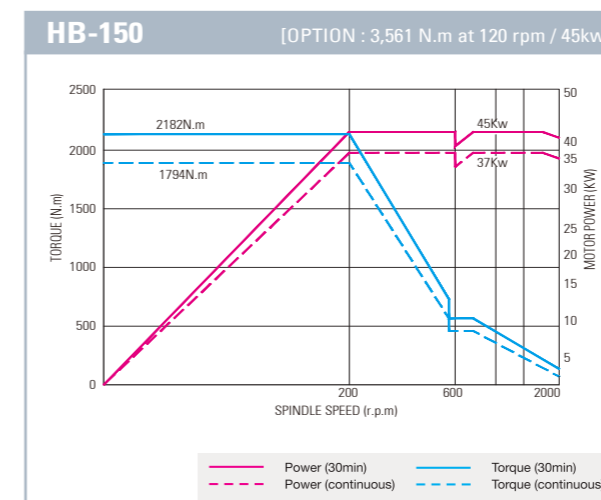
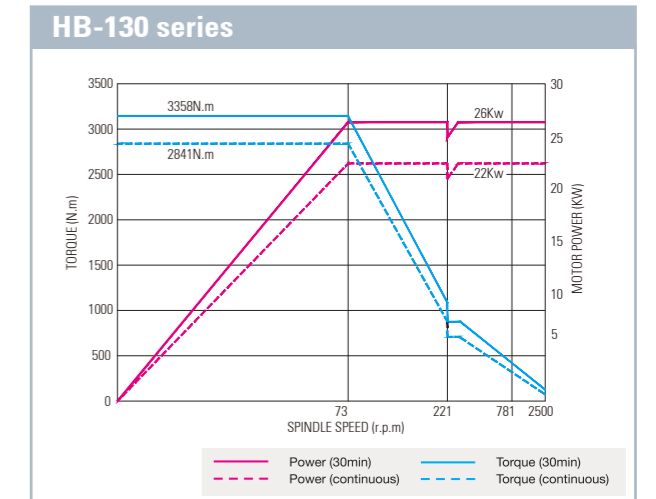
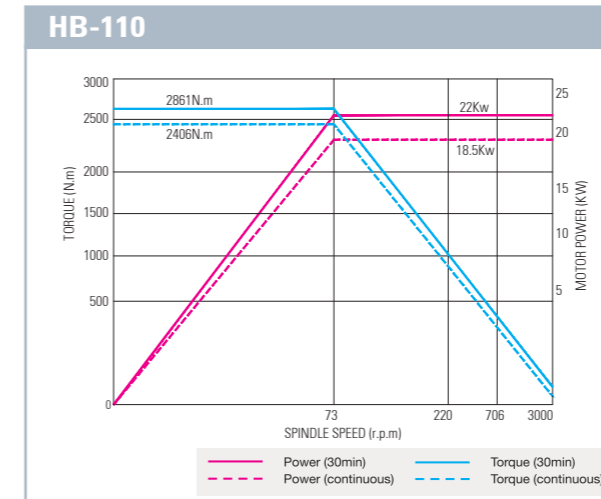
### STD Spindle (W-axis : 500mm, 700mm)



### LH (Long Horn) Type Spindle (W-axis : 1,000mm)

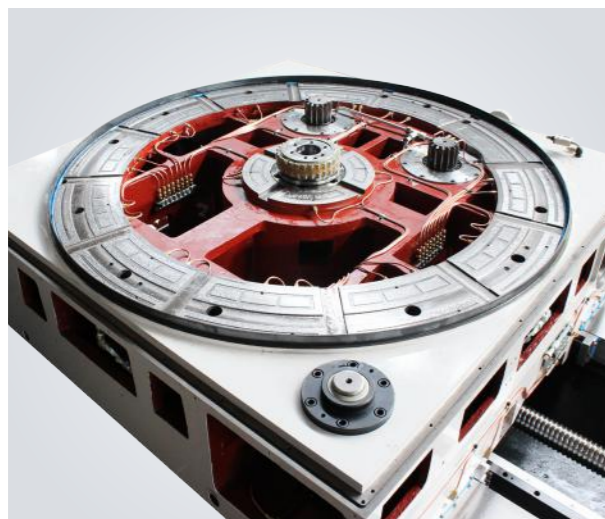


## Torque Charts



## Precision B-axis Control

Dual pinion gear design reduces gear backlash in given directions (Clockwise and counter-clockwise), ensuring long-lasting precision rotary table positioning and repeatability .



### Double Pinion Gear



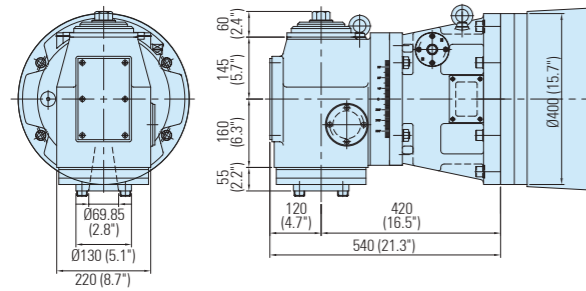
### 90° Degree Positioning Pin



## Accessories

### Attachments

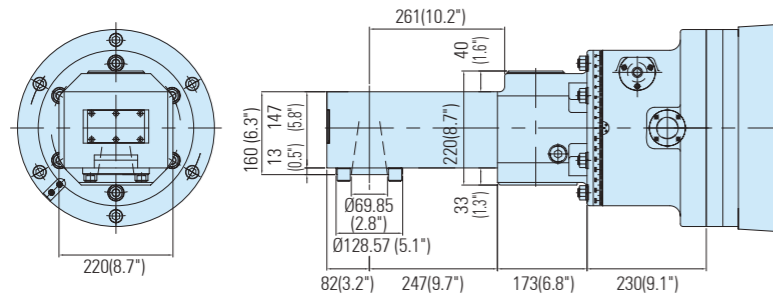
Right Angle Attachments (L=420, 500mm)



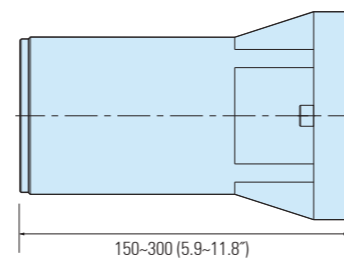
Universal Angle Attachments (L=600mm, 1 deg. Manual)



Special Angle Attachments (300~1100mm)

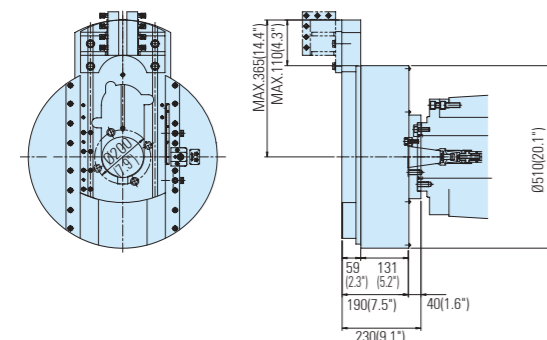


Spindle Support

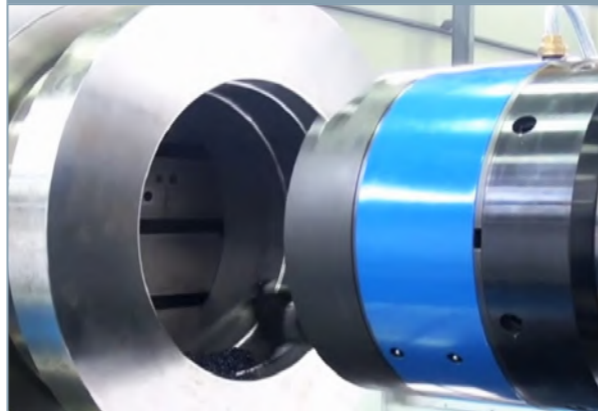


• Note : Customized features can be applicable.

Manual Facing Head



Auto. Facing Head



### ATC

Various number of automatic tool changer (ATC) tool magazines can be added on to all HB series machines that provide you with continuous and unmanned operation.

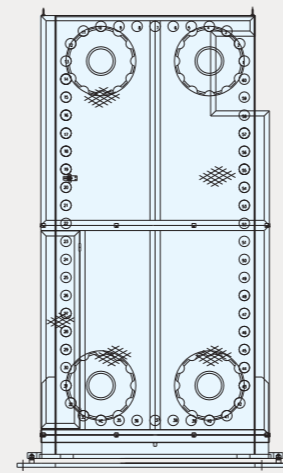
- ATC 40/60/90/120 tool magazine available
- Fully enclosed magazine for safety
- Various types of pull studs : MAS- I , MAS- II & others
- Max. tool diameter : 240mm(9.4")
- Max. tool length : 400mm(15.7")
- Max. tool weight : 25kg(55lbs)

40 Tools (Standard)

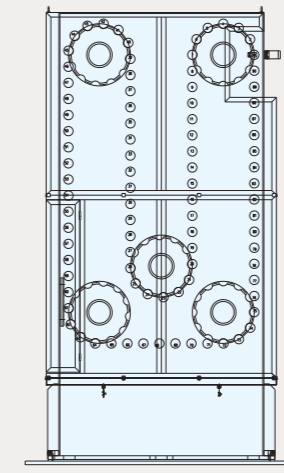


- Option

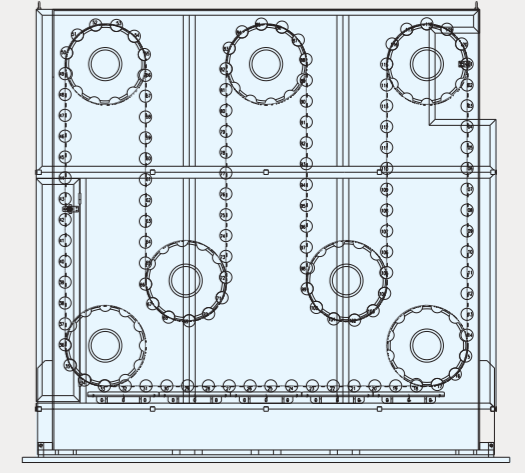
60 Tools



90 Tools



120 Tools



### APC (Automatic Pallet Changer)

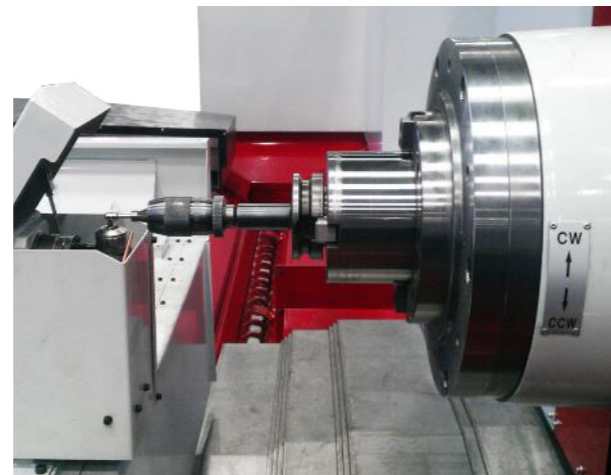




RMP60



TS27R



Splash Guard

Standard Open Type



Table Enclosure Type Guard



Table Operator Guard Type

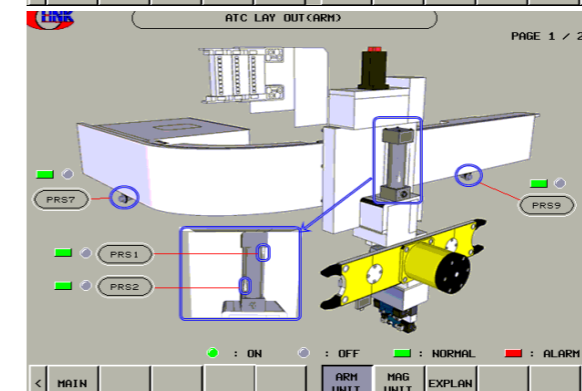
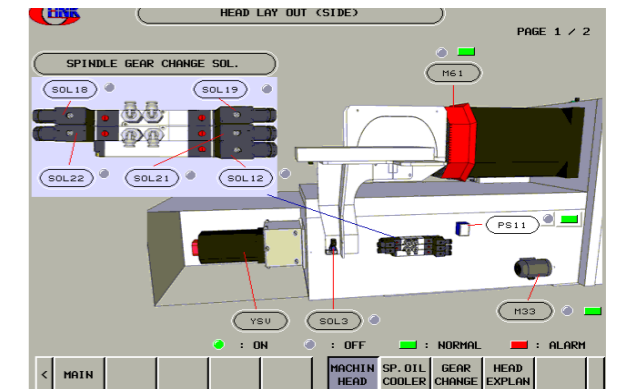
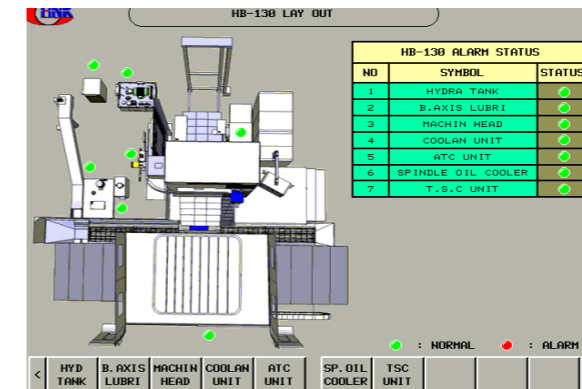


Full Fence Type Guard

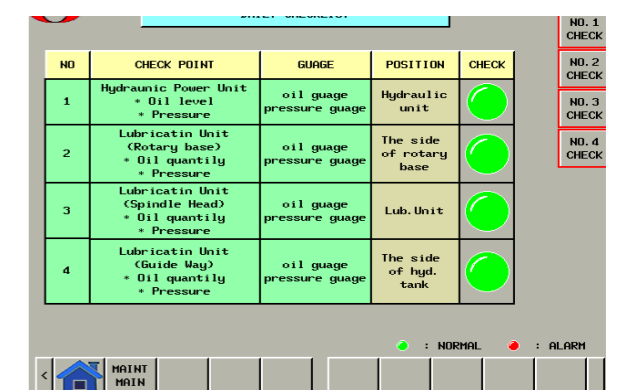
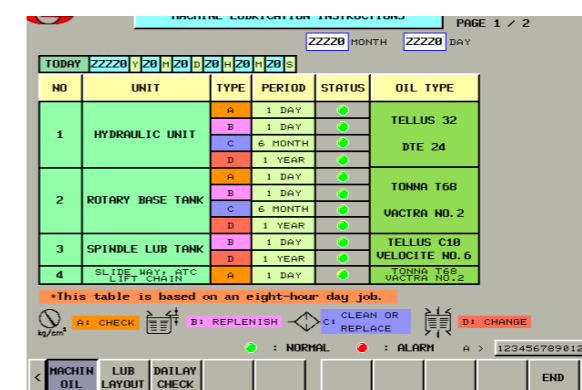


Easy Maintenance Guide

The screen is provided for the operator's easy maintenance and operation.

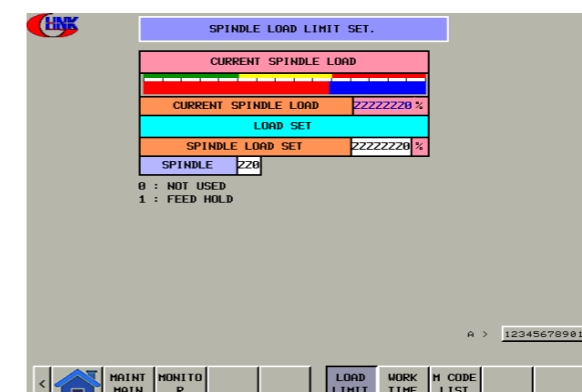


▶ You can check the signal and alarm messages from each unit for easy maintenance.



▶ Periodic checkup

The operator keeps getting the information on the maintenance items like oil fill-up time and daily check-up points.

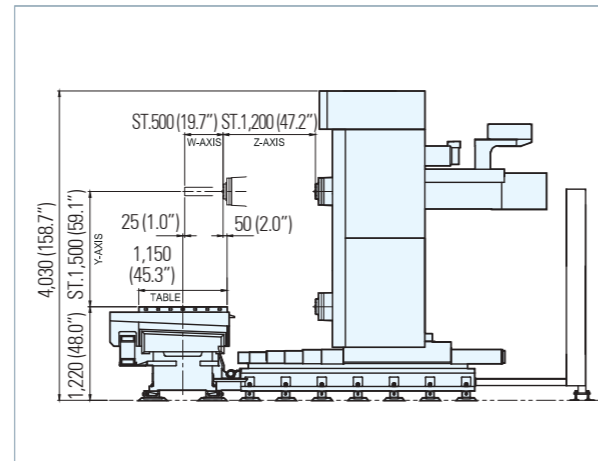
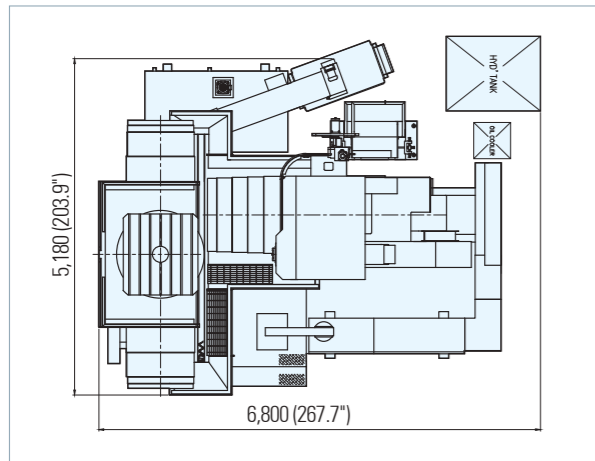


▶ Spindle load check-up

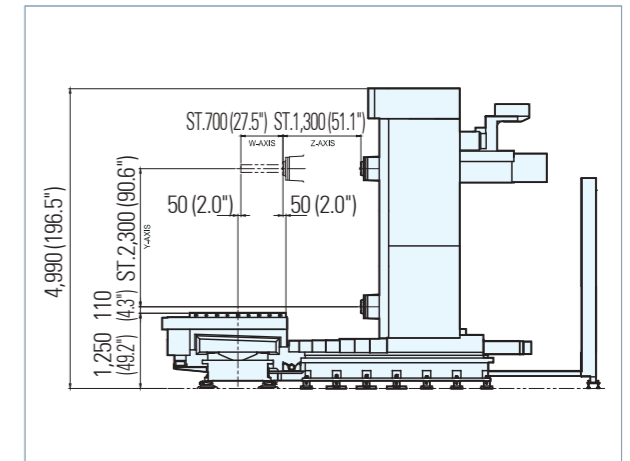
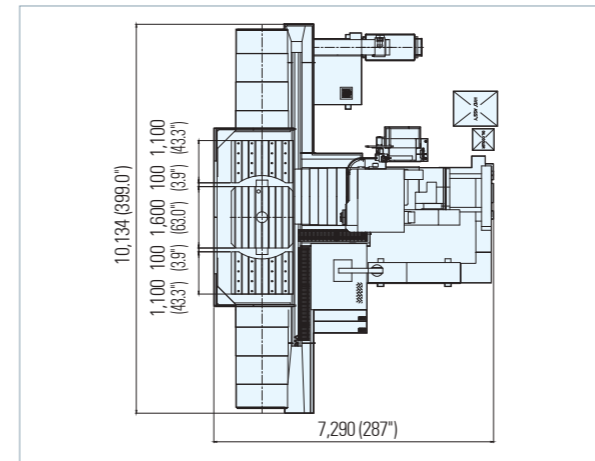
It shows the spindle load status its limitation value can be re-set up

Dimension

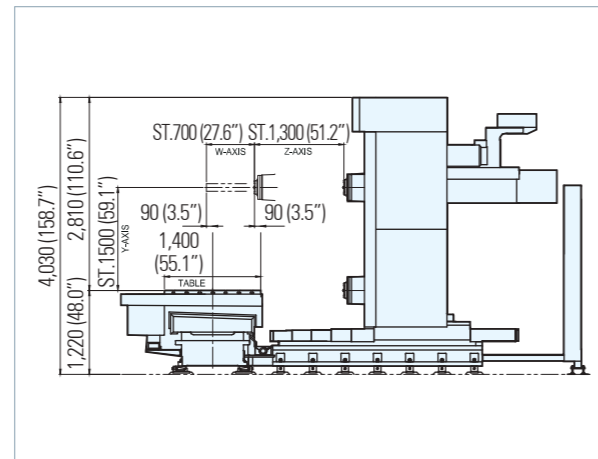
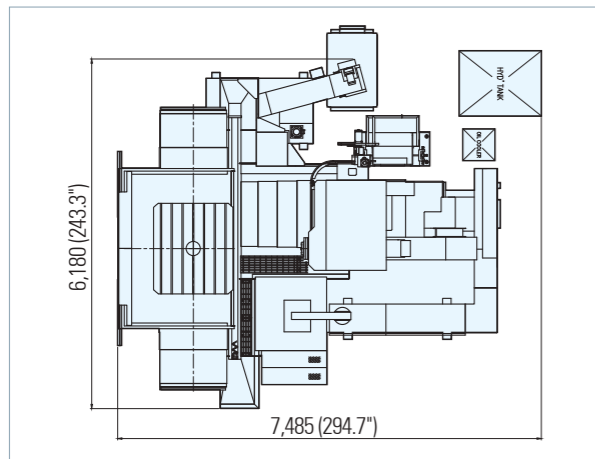
HB-110



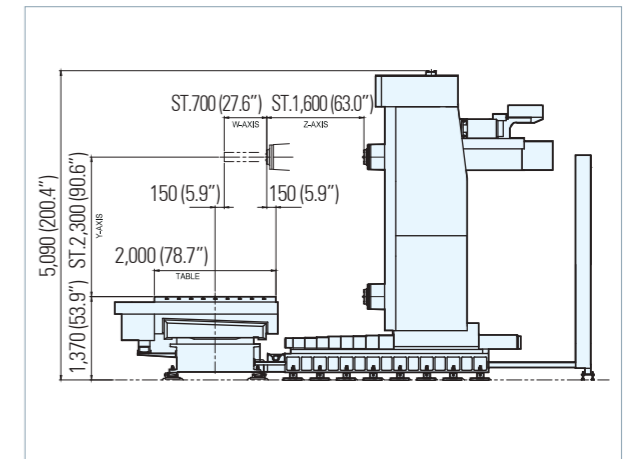
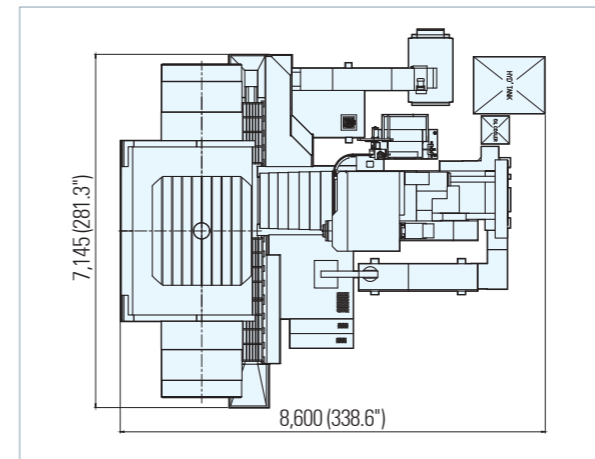
HB-130CX



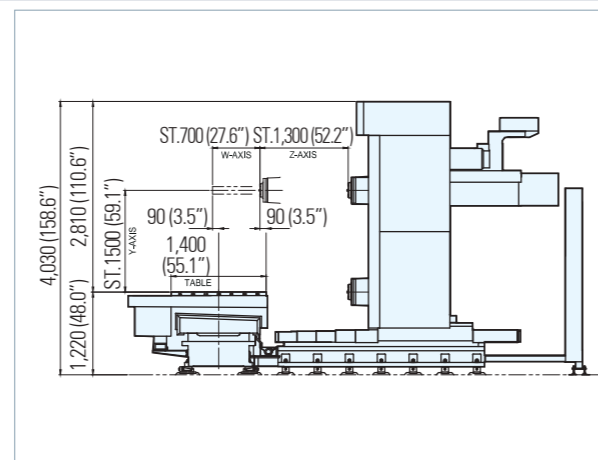
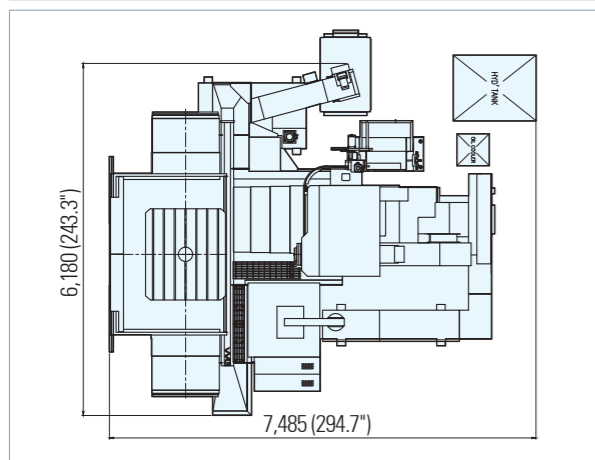
HB-130S



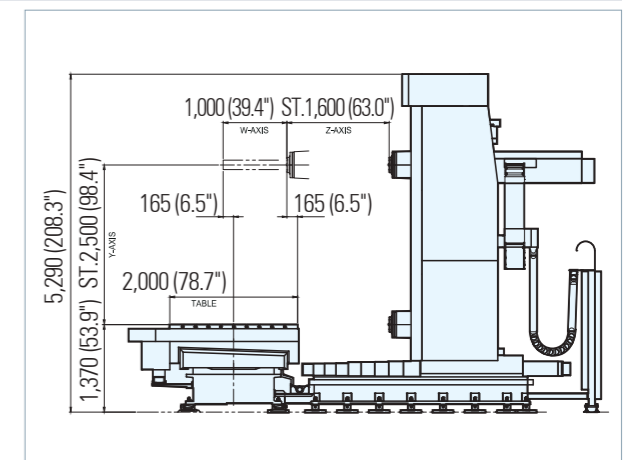
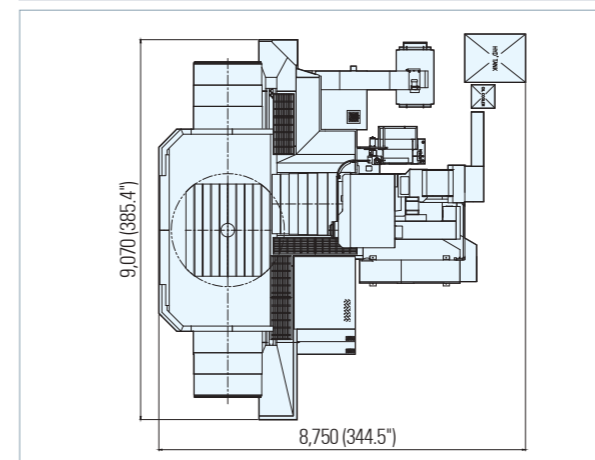
HB-150



HB-130



HB-150LH



### HB Series Specifications

	Unit	HB-110	HB-130S	HB-130	HB-130CX	HB-150	HB-150LH
<b>Stroke</b>							
X-Axis Travel (Table longitudinal)	mm	1,600 (63.0)	2,000 (78.7)	3,000 (118.1)	4,000 (157.5)	3,000 (118.1)	4,000 (157.5)
Y-Axis Travel (Table longitudinal)	mm	1,500 (59.1)	1,500 (59.1)	2,300 (90.6)	2,300 (90.6)	2,300 (90.6)	2,500 (98.4)
Z-Axis Travel (Column cross)	mm	1,200 (47.2)	1,300 (51.1)	1,600 (62.9)	1,300 (51.1)	1,600 (62.9)	1,600 (62.9)
W-Axis Travel (Spindle axial)	mm	500 (19.6)	700 (27.5)	700 (27.5)	700 (27.5)	700 (27.5)	1,000 (39.3)
Distance from Spindle Center to Table Surface	mm	0-1,500 (0-59.0)	0-1,500 (0-59.0)	0-2,300 (0-90.5)	110-2,410 (4.3-94.8)	0-2,300 (0-90.5)	0-2,500 (0-98.4)
Distance from Table Center to Spindle Nose	mm	525-1,725 (20.6-67.9)	610-1,910 (24.01-75.1)	750-2,350 (29.5-92.5)	750-2,050(29.5-80.7)	850-2,450 (33.4-96.4)	835-2,435 (32.8-95.8)
<b>Table</b>							
Table Size	mm	1,150 x 1,250 (45.2 x 49.2)	1,400 x 1,600 (55.1 x 62.9)	1,600 x 1,800 (62.9 x 70.8)	1,600 x 4,000 (62.9 x 157.4)	2,000 x 2,200 (78.7 x 86.6)	
Rotary Table Size	mm	1,150 x 1,250 (45.2 x 49.2)	1,400 x 1,600 (55.1 x 62.9)	1,600 x 1,800 (62.9 x 70.8)	1,600 x 1,600 (62.9 x 62.9)	2,000 x 2,200 (78.7 x 86.6)	
Table Indexing	degree	0.001° (every 90° indexing by locate pin)					
Table Type		Rotary	Rotary		Combination	Rotary	
Max. Load on Rotary Table	kg	5,000	7,000	15,000	15,000	20,000	
Table Rotation Speed*	rpm	2	2	1.4	1.4	1	
<b>Spindle Head</b>							
Spindle Diameter	mm	Ø110 (4.3)	Ø130 (5.1)		Ø130 (5.1)	Ø150 (5.9)	
Spindle Speed*	rpm	5-3,000	5-2,500		5-2,500	5-2,000	
Spindle Taper		ISO 50	ISO 50		ISO 50	ISO 50	
<b>Feed</b>							
Rapid Traverse (X, Y, Z)	mm/min	12,000 (472.4)	10,000 (393.7)		10,000 (393.7)	10,000 (393.7)	
Rapid Traverse (W)	mm/min	6,000 (236.2)					
Feed Rate* (X,Y,Z,W)*	mm/min	1-4,000 (1-157.4)					
<b>Control</b>							
Control System		Fanuc 31i					
Tape Memory	Mb	1					
LCD	inch	10.4"Color LCD					
<b>Automatic Tool Changer(ATC)</b>							
Tool Storage Capacity	pieces	[40/60/90/120]					
Max. Tool Diameter (Adjacent pocket empty)	mm	Ø240 (9.4)					
Max. Tool Length	mm	400 (15.7)					
Max. Tool Weight	Kg	25					
<b>Motors*</b>							
Spindle (30min/cont.)	Kw(hp)	22/18.5 (30/25)	26/22 (35/30)		26/22 (30/25)	45/37 (60/50)	
X-Axis	Kw(hp)	4 (5.3)	7 (9.3)	6(8)	9 (12)	9 (12)	
Y-Axis	Kw(hp)	4(5.3)					
Z-Axis	Kw(hp)	4 (5.3)	7 (9.3)		7 (9.3)	7 (9.3)	9 (12)
W-Axis	Kw(hp)	4 (5.3)					
B-Axis	Kw(hp)	4 (5.3)	4 (5.3)		7 (9.3)	7 (9.3)	
<b>Dimensions</b>							
Height	mm	4,030 (158.6)	4,030 (158.6)	4,990 (196.4)	4,990 (196.4)	5,090 (200.3)	5,290 (208.2)
Floor Space	mm	5,180 x 6,800 (203.9 x 267.7)	6,180 x 7,485 (361.4 x 294.6)	7,240 x 7,800 (285.0 x 307.0)	10,134 x 7,290 (398.9 x 287.0)	7,145 x 8,600 (281.2 x 338.5)	9,070 x 8,750 (357.0 x 344.4)
Machine Weight	kg	28,000	32,000	44,000	54,000	49,000	55,800

### 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
- Tool retract recover
- Coordinate system rotation
- Helical interpolation
- Automatic corner deceleration
- Linear acceleration/deceleration before cutting feed
- Tool offset memory "C"
- Polar coordinate command
- Number of registerable programs (1,000)
- Automatic data backup
- Run hour and parts counter display

### Optional Accessories

- ATC for 40/60/90/120 Tools
- APC for 2/4/6 pallets
- External Coolant System
- Vertical Milling Attachment
- Universal Milling Attachment
- Facing Head
- Scale Feed Back System (X, Y, Z)
- Hinge Type Lift-up Conveyor
- Part Probe System
- Auto Tool Length Measuring Device
- Rigid Tapping
- Additional Coolant Nozzles (Total 4 pieces)
- Tap Oil Jet System

### HB Series CNC Control (Fanuc 31i)

#### 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 (0.001min)
- 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, x1,000)
- Jog and handle simultaneous mode
- Program restart
- Dwell
- Skip function
- Reference position return
- Reference position return check
- 2nd reference position return
- Programmable mirror image
- 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
- Sub program call (4 folds nested)
- Workpiece coordinate system (G52-59)
- Auxiliary Function (M8-digit)
- Auxiliary Function lock
- Spindle speed function (S5-digit)
- Tool function (T8)
- 200 tool offset pairs
- Cutter compensation C (G41, G42, G43)
- Tool length compensation
- Part program storage length 1Mb
- Number of registerable programs (500)
- 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
- Memory card interface (USB)
- Status output signal
- Setting and display unit
- Manual pulse generator
- Programmable data input
- Linear acceleration/deceleration after cutting feed
- Custom macro
- Manual guide i Rigid tap

#### Optional Specifications

- Scaling
- Store stroke check 2
- Addition of custom macro common variables
- Tool life management function
- Tool offset pairs 499-999
- Play back
- Additional work coordinate system 48 pairs (48/300)
- Sequence number comparison and stop
- Part storage length (2/4/8Mb)
- Number of registerable programs (2,000)
- Graphic/display function (Trace mode)
- External workpiece number search
- Data server function
- Optional block skip 9
- Cylindrical interpolation
- Single direction positioning
- Easy maintenance guide (Programed by HNK)





SINCE 1960

**HNK MACHINE TOOL CO., LTD.**

[www.hnkkorea.com](http://www.hnkkorea.com)

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