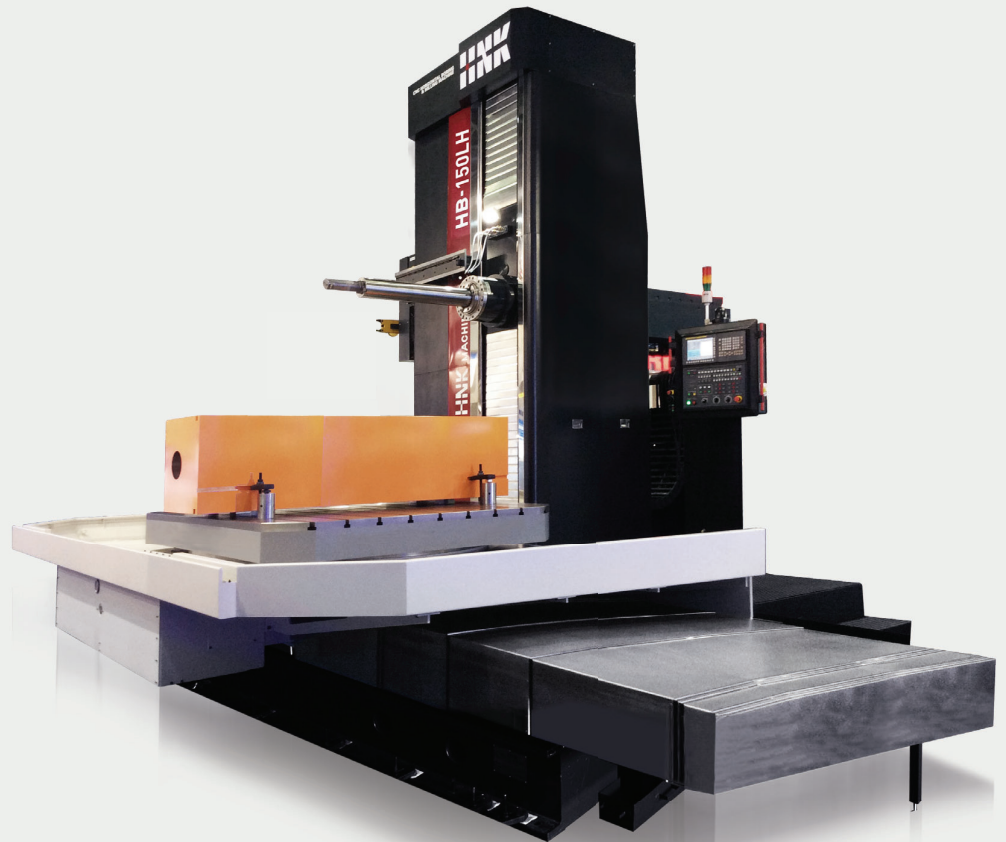


HNK CNC HORIZONTAL BORING & MILLING MACHINE HB Series



The world wide leader in machine tools



HNK MACHINE TOOL CO., LTD.

HNK CNC HORIZONTAL BORING & MILLING MACHINE MODELS



HB-110M

	HB-110M
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	1,000 mm (39")
W-axis Travel	350 mm (13.7")
Rotary Table Size	1,000 × 1,100 mm (39" × 43.3")

HB-130S/130

{option}

	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") {4,000 mm (157")}
Y-axis Travel	1,500 mm (59.1") {2,000 mm (78.7")}	2,300 mm (90.6") {2,500 mm (98")}
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-130CX

(option)

	HB-130CX
Spindle Diameter	Φ 130 mm (5.1")
X-axis Travel	4,000 mm (157.5") {6,000 mm (236")}
Y-axis Travel	2,300 mm (90.6") {2,500 mm (98")}
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-150/150LH

(option)

	HB-150	HB-150LH
Spindle Diameter	Φ 150 mm (5.9")	Φ 150 mm (5.9")
X-axis Travel	3,000 mm (118.1") {6,000 mm (236")}	4,000 mm (157.5") {6,000 mm (236")}
Y-axis Travel	2,300 mm (90.6") {2,500 mm (98.4")}, {3,000 mm (118")}	2,500 mm (98.4") {3,000 mm (118")}
Z-axis Travel	1,600 mm (63.0") {2,000 mm (78")}	1,600 mm (63.0") {2,000 mm (78")}
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") {2,500 × 3,000 mm (98 × 118")}

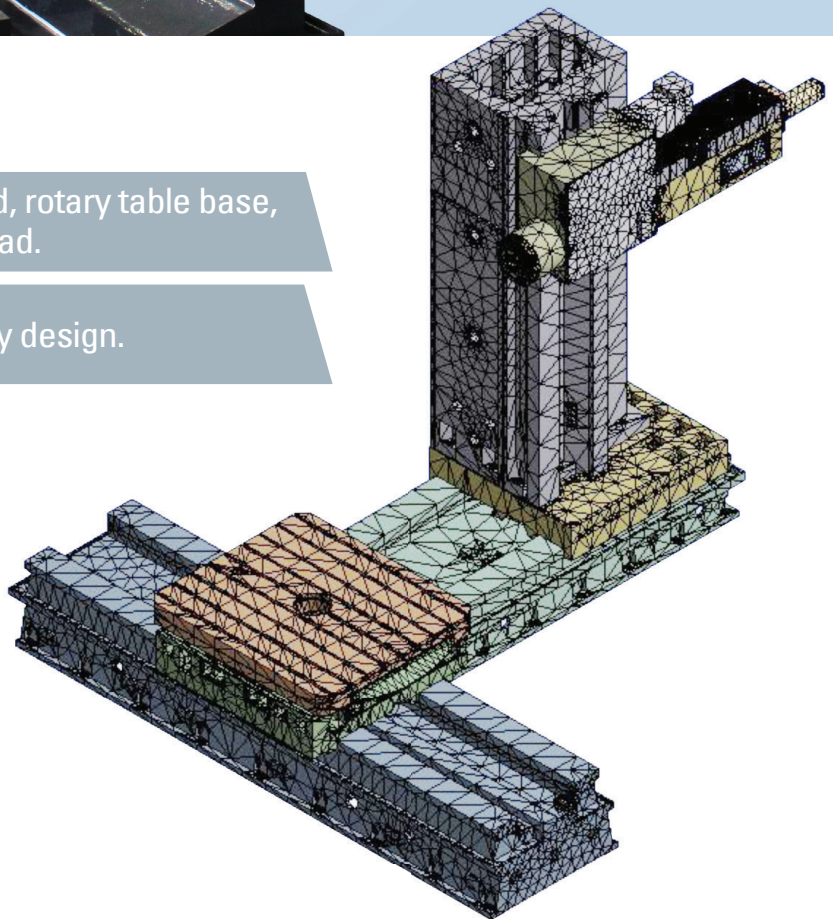


HEAVY DUTY RIGID BODY STRUCTURE

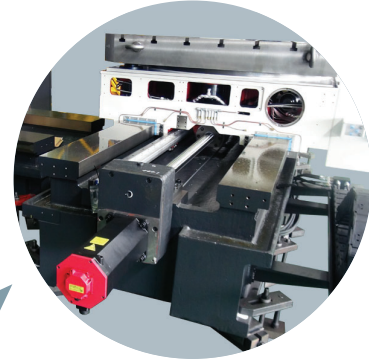
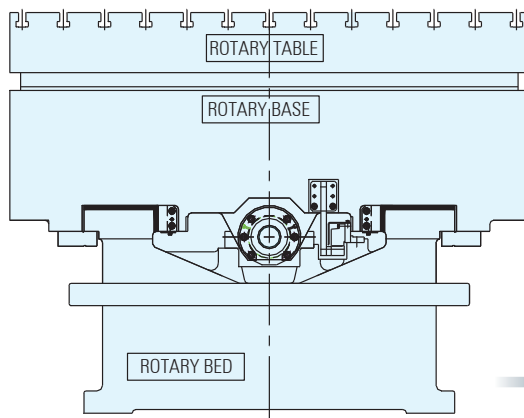


Stress-relieved cast iron bed, rotary table base,
column body and spindle head.

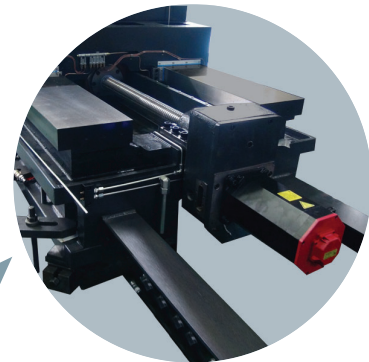
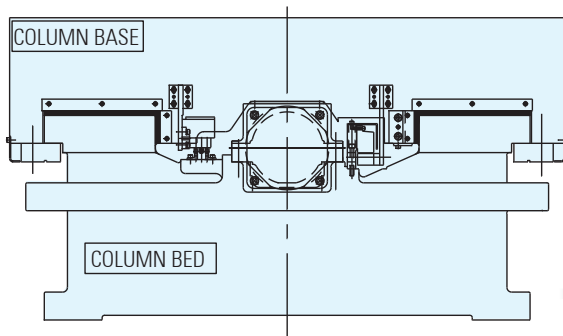
Wide anti-abrasive slide way design.



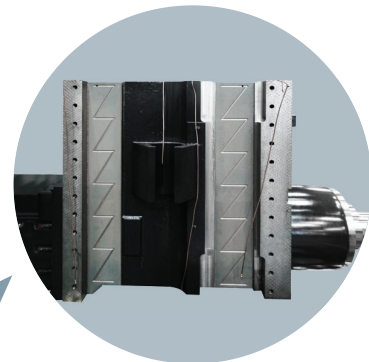
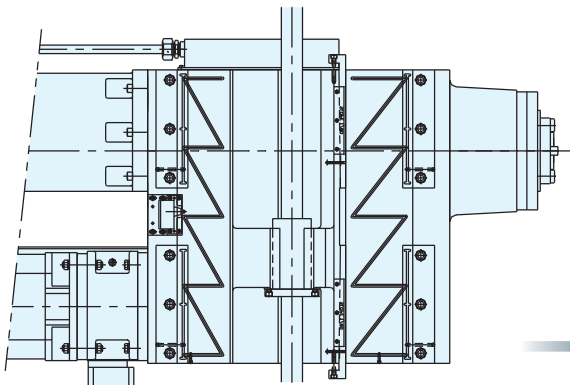
Schematic Drawing of Table / Bed Slide way



Schematic Drawing of Column Base / Column Bed Slide way



Schematic Drawing of Column / Spindle Head Slide way

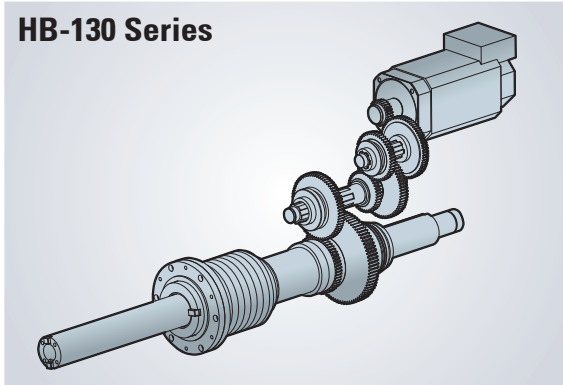


• Note : The above structures are changeable as per each model.

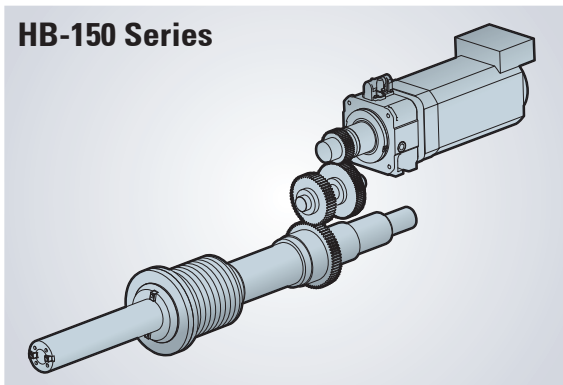
Reliable Head Stock Design

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

HB-130 Series

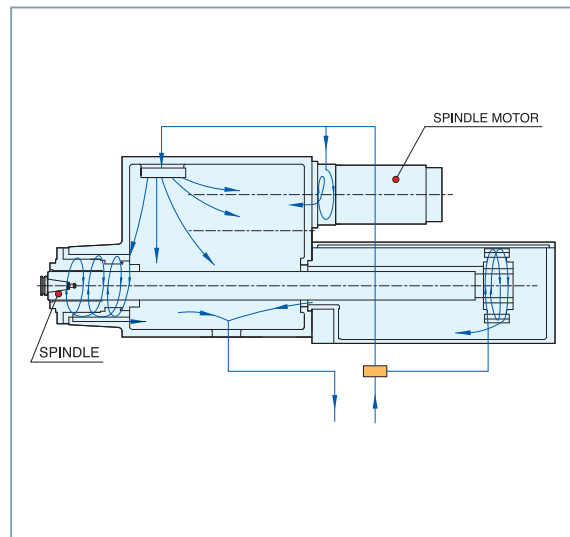


HB-150 Series



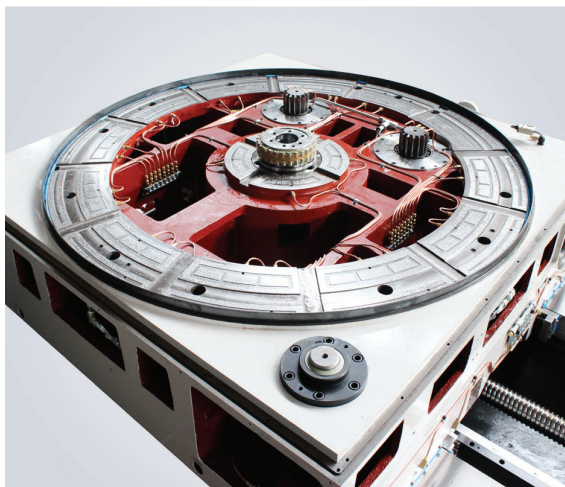
- Oil and air mist (or grease) lubrication
- Built-in ultra-precision paired bearings
- Long nose spindle head
- Precise CNC spindle control
- Effective cooling system for minimal thermal expansion

Spindle Head Cooling System

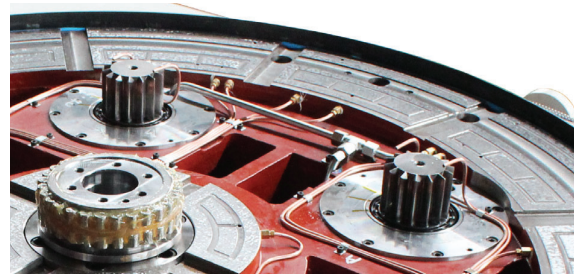


Precision B-axis Control

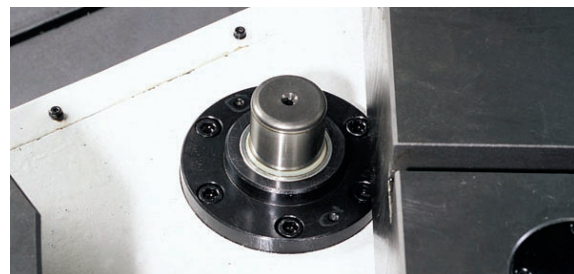
Dual pinion gear design reduces gear backlash in given directions (Clockwise and counter-clockwise), ensuring long-lasting precision rotary table positioning and repeatability .



Double Pinion Gear



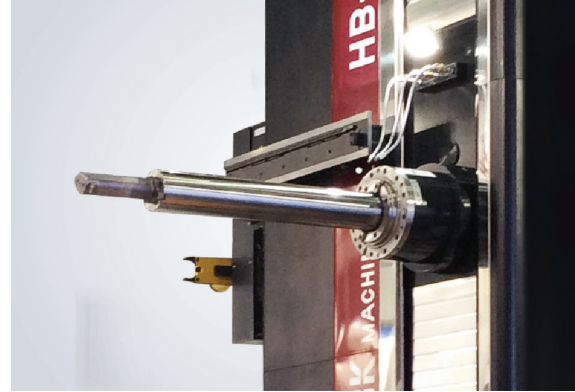
90° Degree Positioning Pin



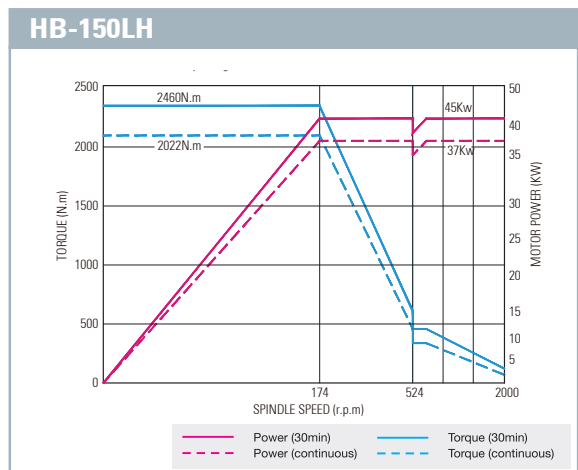
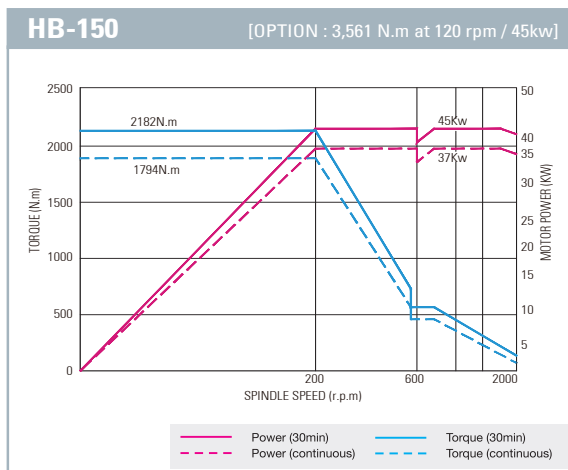
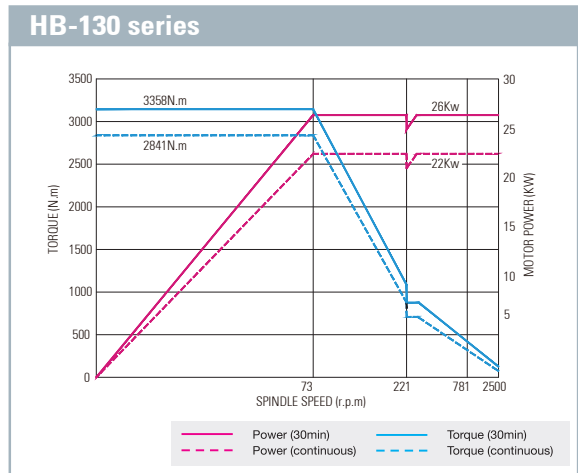
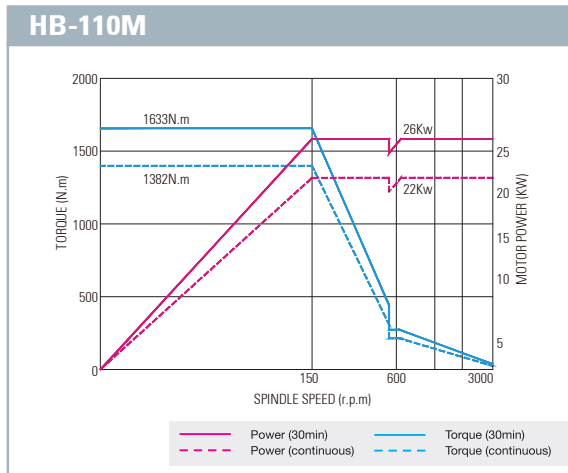
STD Spindle (W-axis : 350mm, 700mm)



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



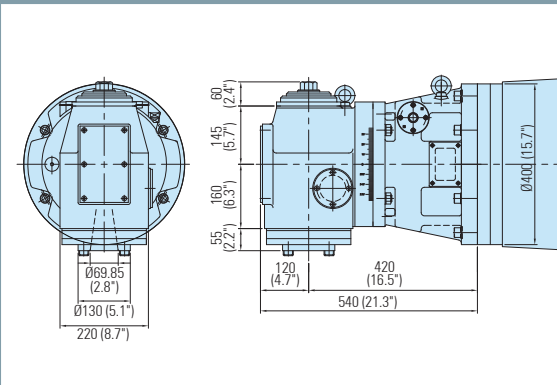
Torque Charts



Accessories

Attachments

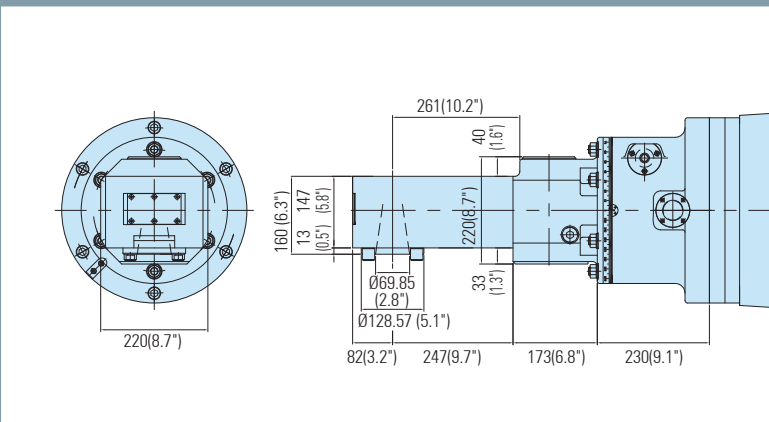
Right Angle Attachments (L=420, 500mm)



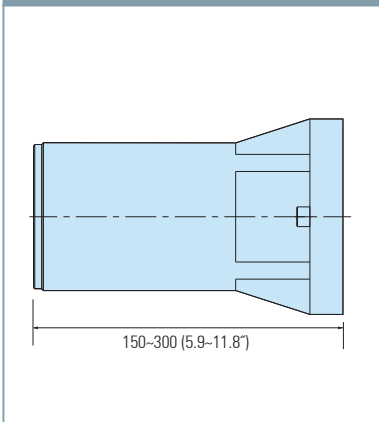
Universal Angle Attachments (L=600mm, 1 deg. Manual)



Special Angle Attachments (300~1100mm)

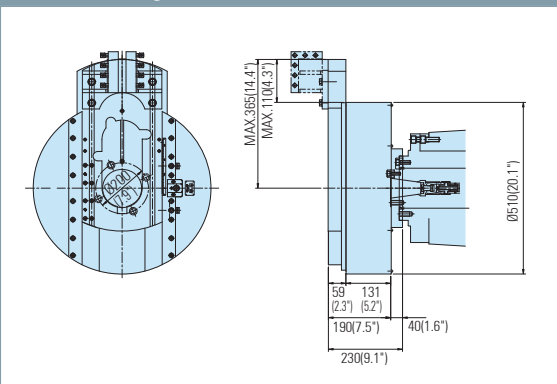


Spindle Support

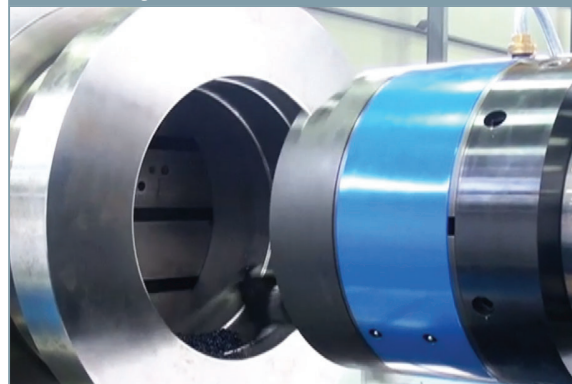


•Note : Customized features can be applicable.

Manual Facing Head



Auto. Facing Head

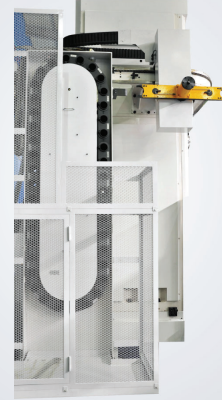


ATC

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.

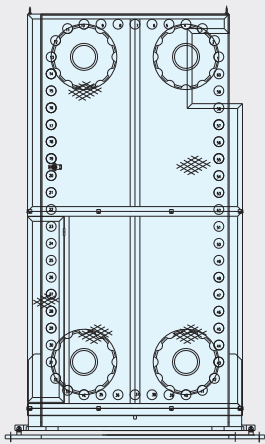
- ATC 40/60/90/120 tool magazine available
- Fully enclosed magazine for safety
- Various types of pull studs : MAS- I , MAS- II & others
- Max. tool diameter : 240mm(9.4")
- Max. tool length : 400mm(15.7")
- Max. tool weight : 25kg(55lbs)

40 Tools (Standard)

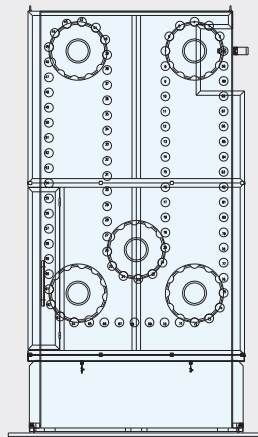


- Option

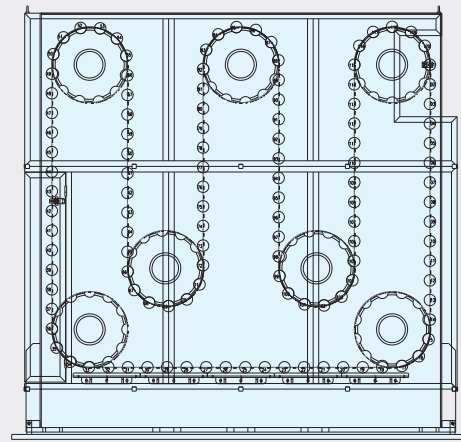
60 Tools



90 Tools



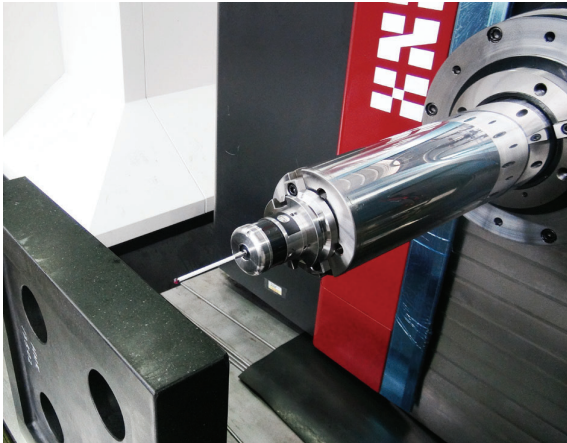
120 Tools



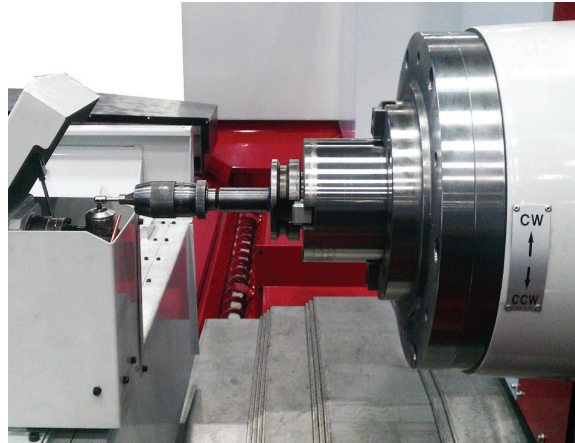
APC (Automatic Pallet Changer)



RMP60



TS27R



Splash Guard

Standard Open Type



Table Enclosure Type Guard



Table Operator Guard Type

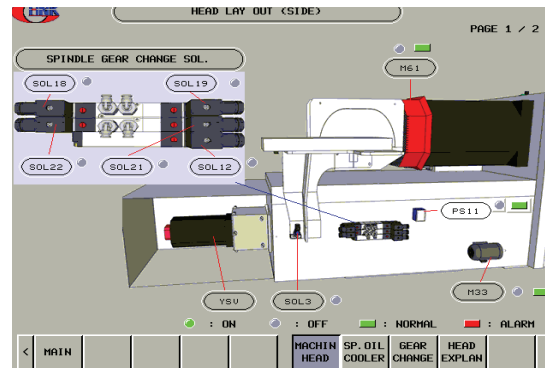
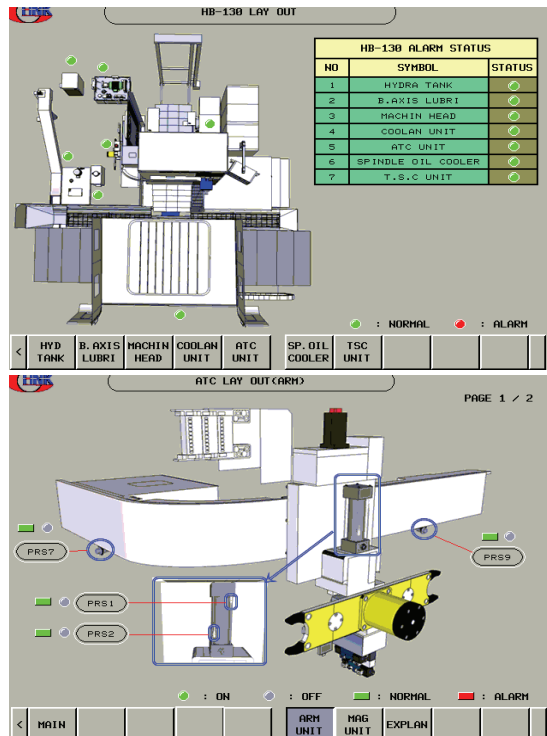


Full Fence Type Guard

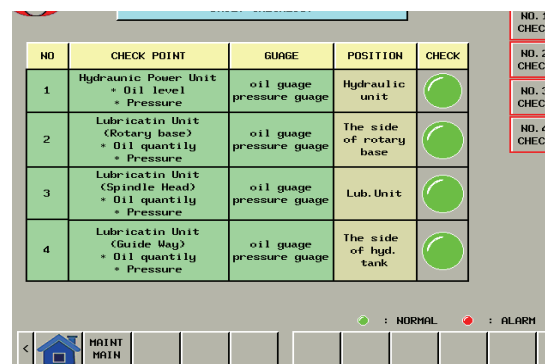
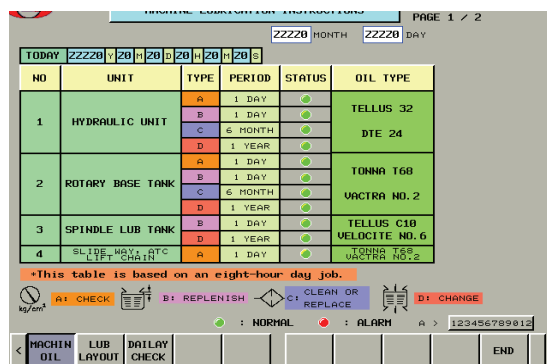


Easy Maintenance Guide

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

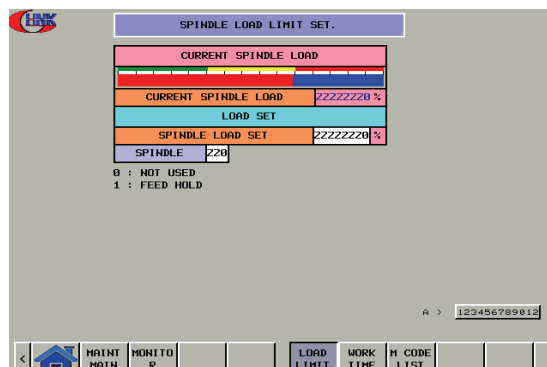


► You can check the signal and alarm messages from each unit for easy maintenance.



► Periodic checkup

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

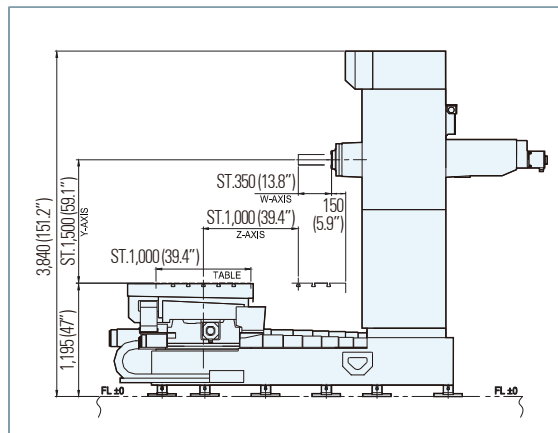
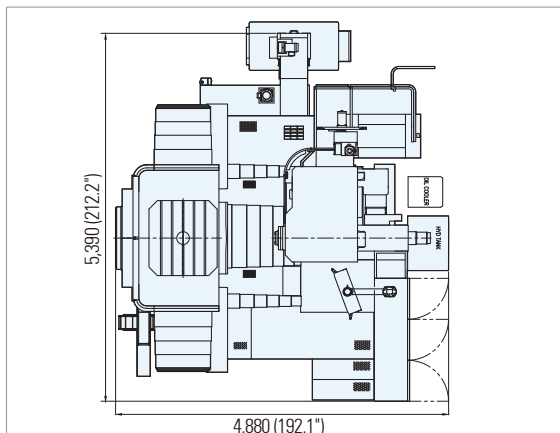


► Spindle load check-up

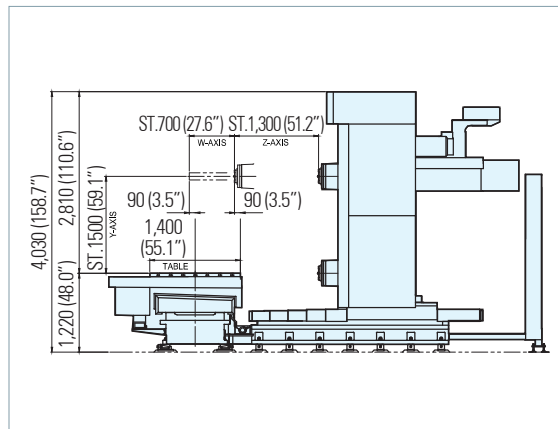
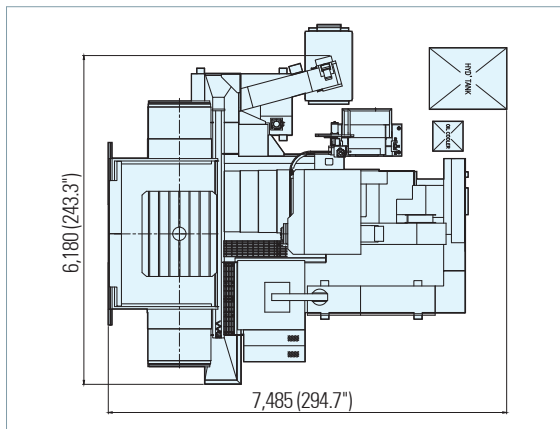
It shows the spindle load status its limitation value can be re-set up

Dimension

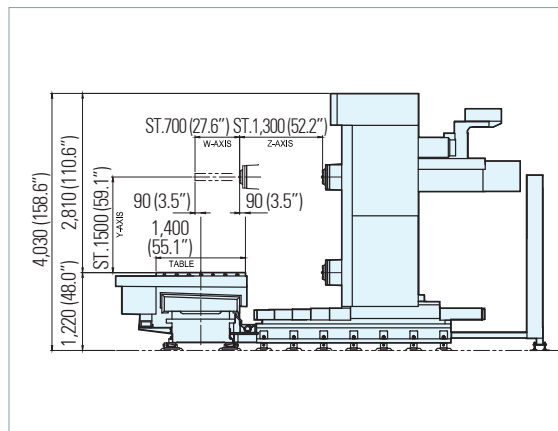
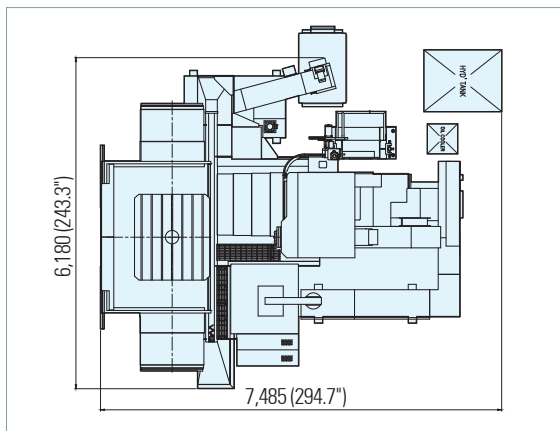
HB-110M



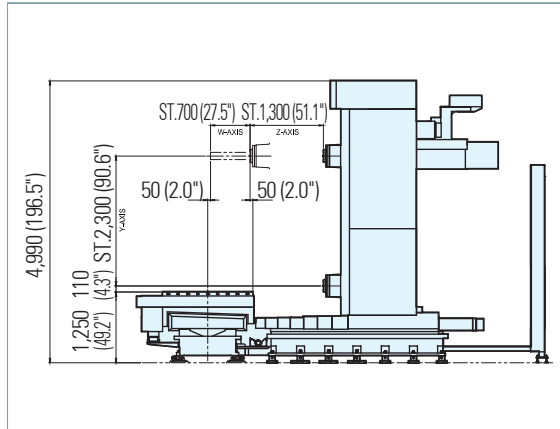
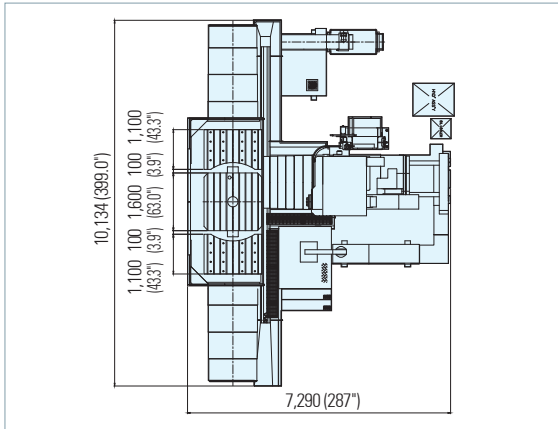
HB-130S



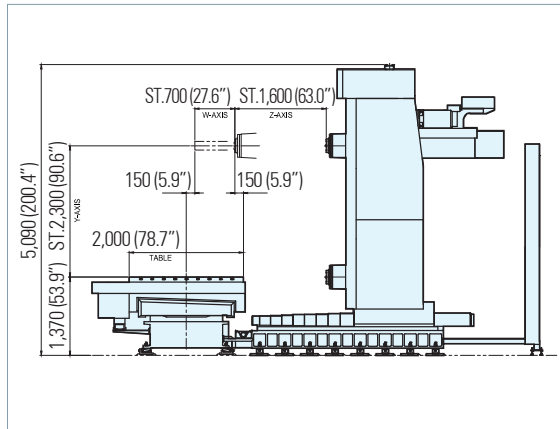
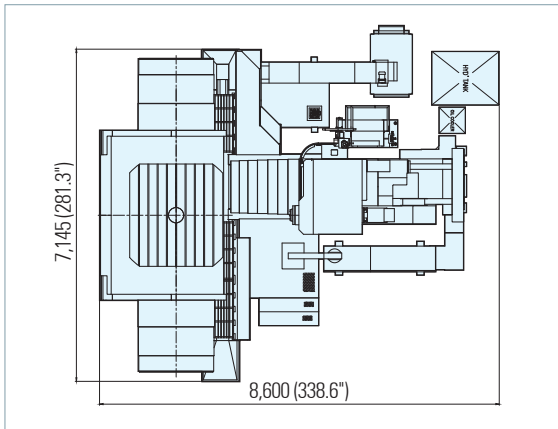
HB-130



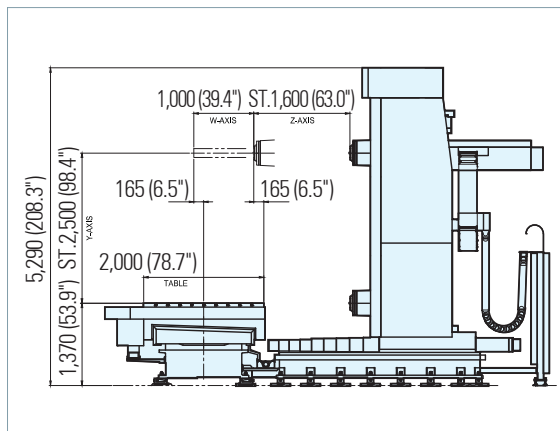
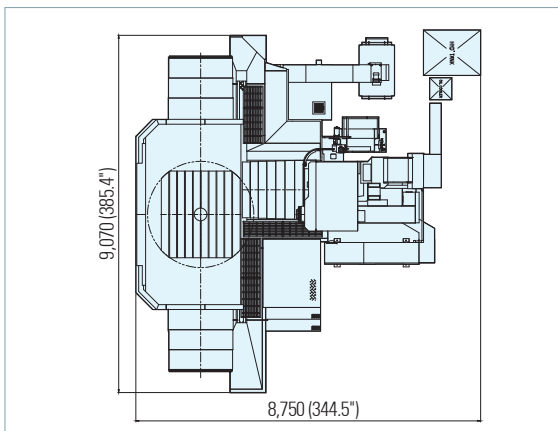
HB-130CX



HB-150



HB-150LH



HB Series Specifications

{option}

	Unit	HB-110M	HB-130S	HB-130	HB-130CX	HB-150	HB-150LH
Stroke							
X-Axis Travel (Table longitudinal)	mm	1,600 (63.0")	2,000 (78.7")	3,000 (118.1") {4,000 (157")}	4,000 (157.5") {6,000 (236")}	3,000 (118.1") {6,000 (236")}	4,000 (157.5") {6,000 (236")}
Y-Axis Travel (Spindle Vertical)	mm	1,500 (59.1")	1,500 (59.1") {2,000 (78")}	2,300 (90.6") {2,500 (98")}	2,300 (90.6") {2,500 (98")}	2,300 (90.6") {2,500 (98.4") {3,000 (118")}	2,500 (98.4") {3,500 (137")}
Z-Axis Travel (Column cross)	mm	1,000 (39")	1,300 (51.1")	1,600 (62.9")	1,300 (51.1")	1,600 (62.9") {2,000 (78")}	1,600 (62.9") {2,000 (78")}
W-Axis Travel (Spindle axial)	mm	350 (13.7")	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	525~1,350 (13.8~53.1")	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")
Table							
Table Size	mm	1,000 x 1,100 mm (39" x 43.3")	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	1,000 x 1,100 mm (39" x 43.3")	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") {2,500x3,000 (98x118")}	
Table Indexing	degree	0.001° (every90° indexing by locate pin)					
Table Type		Rotary	Rotary		Combination	Rotary	
Max. Load on Rotary Table	kg	3,000	7,000	15,000	15,000	20,000 {up to 40,000}	
Table Rotation Speed*	rpm	3	2	1.4	1.4	1	
Spindle Head							
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	
Feed							
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")					
Control							
Control System		Fanuc 31i					
Tape Memory	Mb	1					
LCD	inch	10.4"Color LCD					
Automatic Tool Changer(ATC)							
Tool Storage Capacity	pieces	30	[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					
Motors*							
Spindle (30min/cont.)	Kw(hp)	26/22 (35/30)	26/22 (35/30)		26/22 (30/25)	45/37 (60/50)	
X-Axis	Kw(hp)	3 (4)	7 (9.3)	6(8)	9 (12)	9 (12)	
Y-Axis	Kw(hp)	3 (4)				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)	
Dimensions							
Height	mm	3,840 (151.2")	4,030 (158.6")	4,990 (196.4")	4,990 (196.4")	5,090 (200.3")	5,290 (208.2")
Floor Space	mm	4,880 x 5,390 (192.1" x 212.2")	6,180 x 7,485 (361.4 x 294.6")	7,240 x7,800 (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	20,000	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) | • Rapid traverse rate | • Part program editing |
| • Positioning-G00 (4 axes : X, Y, Z, W) | • Rapid traverse override | • Background editing |
| • Linear Interpolation-G01 (4 axes : X, Y, Z, W) | • Feed per minute/Feed per revolution | • Extended part program editing |
| • Circular interpolation-G02 and G03 | • Tangential speed constant control | • Status display |
| • Least input increment (0.001min) | • Cutting feedrate clamp | • Clock function |
| • Inch/metric conversion | • Automatic acceleration/deceleration | • Self-diagnosis function |
| • Mirror image | • Override cancel | • Alarm display |
| • Backlash compensation | • Feedrate override | • Alarm history display |
| • Pitch error compensation | • Optional block skip (1) | • Operation history display |
| • MDI operation | • Max. programmable dimension (8-digit) | • Help function |
| • Program number search | • Program number (04-digit) | • Servo setting screen |
| • Sequence number search | • Sequence number (N5-digit) | • Display of hardware/
software configuration |
| • Buffer register | • Input unit 10 time multiply | • Data protection key |
| • Dry run | • Rotary axis roll-over function | • Erase CRT screen display |
| • Single block | • Coordinate system shift | • RS 232C interface |
| • JOG feed | • Manual absolute on and off | • Memory card interface (USB) |
| • Manual reference position return | • Sub program call (4 folds nested) | • Status output signal |
| • Incremental feed (x1, x10, x100, x1,000) | • Workpiece coordinate system (G52-59) | • Setting and display unit |
| • Jog and handle simultaneous mode | • Auxiliary Function (M8-digit) | • Manual pulse generator |
| • Program restart | • Auxiliary Function lock | • Programmable data input |
| • Dwell | • Spindle speed function (S5-digit) | • Linear acceleration/
deceleration after cutting feed |
| • Skip function | • Tool function (T8) | • Custom macro |
| • Reference position return | • 200 tool offset pairs | • Manual guide <i>i</i> Rigid tap |
| • Reference position return check | • Cutter compensation C (G41, G42, G43) | |
| • 2nd reference position return | • Tool length compensation | |
| • Programmable mirror image | • Part program storage length 1Mb | |
| | • Number of registerable programs (500) | |

Optional Specifications

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

※ Note : Some Fanuc features can be changed per machine models.



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