CNC HORIZONTAL BORING & MILLING MACHINE

HB-SERIES

SINCE 1960 HNK MACHINE TOOL CO., LTD.
SUPERIOR RIGIDITY FOR YOUR HEAVY DUTY MACHINING

<table>
<thead>
<tr>
<th></th>
<th>HB-110</th>
<th>HB-130S</th>
<th>HB-130: (pictured)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spindle Diameter</td>
<td>Ø 110 mm 4.3&quot;</td>
<td>Ø 130 mm 5.1&quot;</td>
<td>Ø 130 mm 5.1&quot;</td>
</tr>
<tr>
<td>X-axis Travel</td>
<td>1600 mm  63&quot;</td>
<td>2000 mm  78.7&quot;</td>
<td>3000 mm 118.1&quot;</td>
</tr>
<tr>
<td>Y-axis Travel</td>
<td>1500 mm  59.1&quot;</td>
<td>1500 mm  59.1&quot;</td>
<td>2000 mm  78.7&quot;</td>
</tr>
<tr>
<td>Z-axis Travel</td>
<td>1200 mm  47.2&quot;</td>
<td>1300 mm  51.2&quot;</td>
<td>1300 mm  51.2&quot;</td>
</tr>
<tr>
<td>W-axis Travel</td>
<td>500 mm    19.7&quot;</td>
<td>700 mm    27.6&quot;</td>
<td>700 mm    27.6&quot;</td>
</tr>
<tr>
<td>Table size</td>
<td>1150 × 1250 mm 45.3&quot; × 49.2&quot;</td>
<td>1400 × 1600 mm 55.1&quot; × 63&quot;</td>
<td>1600 × 1800 mm 63&quot; × 70.9&quot;</td>
</tr>
</tbody>
</table>
HEAVY DUTY MACHINING

<table>
<thead>
<tr>
<th>HB-130X</th>
<th>HB-150: (pictured)</th>
<th>HB-130C: (pictured)</th>
<th>HB-130CX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 130 mm 5.1&quot;</td>
<td>Ø 150 mm 5.9&quot;</td>
<td>Ø 130 mm 5.1&quot;</td>
<td>Ø 130 mm 5.1&quot;</td>
</tr>
<tr>
<td>3000 mm 118.1&quot;</td>
<td>3000 mm 118.1&quot;</td>
<td>3000 mm 118.1&quot;</td>
<td>4000 mm 157.5&quot;</td>
</tr>
<tr>
<td>2000 mm 78.7&quot;</td>
<td>2300 mm 90.6&quot;</td>
<td>2000 mm 78.7&quot;</td>
<td>2300 mm 90.6&quot;</td>
</tr>
<tr>
<td>1300 mm 51.2&quot;</td>
<td>1600 mm 63&quot;</td>
<td>1300 mm 51.2&quot;</td>
<td>1300 mm 51.2&quot;</td>
</tr>
<tr>
<td>700 mm 27.6&quot;</td>
<td>700 mm 27.6&quot;</td>
<td>700 mm 27.6&quot;</td>
<td>700 mm 27.6&quot;</td>
</tr>
<tr>
<td>2000 × 2200 mm 78.7&quot; × 86.6&quot;</td>
<td>2000 × 2200 mm 78.7&quot; × 86.6&quot;</td>
<td>1400 × 3000 mm 55.1&quot; × 118.1&quot;</td>
<td>1600 × 4000 mm 63&quot; × 157.5&quot;</td>
</tr>
</tbody>
</table>

*These machines have optional accessories*
Standard Accessories

- Built-in Coolant Type Chip Conveyor
- Chip Cover for Slide Ways
- NC Indexing Table Every 0.001" (Every 90, indexing by locale 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 Cool Type Conveyor
- Auto Tool Length Measuring Device
- Auto Measuring System (Includes Renishaw probe)
- Rigid Tapping
- Additional Coolant Nozzles (Total 4 pieces)
- 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.

Rigid Ultra-Precision Spindle

H NK’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

H NK’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

Splash Guard Type A

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-L (45°)
- Max, tool diameter of 240mm (9.4″)
- Max, tool length of 400mm (15.7″)
- Max, tool weight of 25kg (55lbs)

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
<table>
<thead>
<tr>
<th>Stroke</th>
<th>Unit</th>
<th>HB-110</th>
<th>HB-130S</th>
<th>HB-130</th>
<th>HB-130X</th>
<th>HB-130C</th>
<th>HB-130CX</th>
<th>HB-150</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-Axis Travel (Table longitudinal)</td>
<td>mm</td>
<td>1,600 [2,000]</td>
<td>2,000 [3,000]</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
<td>4,000</td>
<td>3,000 [4,000]</td>
</tr>
<tr>
<td>Y-Axis Travel (Spindle vertical)</td>
<td>mm</td>
<td>1,500</td>
<td>1,500 [2,000]</td>
<td>2,000 [2,300]</td>
<td>2,000 [2,300]</td>
<td>2,000 [2,300]</td>
<td>2,300</td>
<td>2,300 [2,500]</td>
</tr>
<tr>
<td>Z-Axis Travel (Column cross)</td>
<td>mm</td>
<td>1,200 [1,500]</td>
<td>1,300 [1,600]</td>
<td>1,300 [1,600]</td>
<td>1,300 [1,600]</td>
<td>1,300 [1,600]</td>
<td>1,300 [1,600]</td>
<td>1,600 [2,000]</td>
</tr>
<tr>
<td>W-Axis Travel (Spindle axis)</td>
<td>mm</td>
<td>500 [650]</td>
<td>700</td>
<td>700</td>
<td>700</td>
<td>700</td>
<td>700</td>
<td>700</td>
</tr>
<tr>
<td>Distance from Spindle Center to Table Surface</td>
<td>mm</td>
<td>0~1,500</td>
<td>0~1,500</td>
<td>0~2,000</td>
<td>0~2,000</td>
<td>100~2,100</td>
<td>100~2,400</td>
<td>0~2,300</td>
</tr>
<tr>
<td>Distance from Table Center to Spindle Nose</td>
<td>mm</td>
<td>525~1,725</td>
<td>610~1,910</td>
<td>750~2,050</td>
<td>885~2,185</td>
<td>610~1,910</td>
<td>750~2,050</td>
<td>850~2,450</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Table</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Table Size</td>
<td>mm</td>
<td>1,150×1,250</td>
<td>1,400×1,600</td>
<td>1,600×1,800</td>
<td>2,000×2,200</td>
<td>1,400×3,000</td>
<td>1,600×4,000</td>
<td>2,000×2,200</td>
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<tr>
<td>Rotary Table Size</td>
<td>mm</td>
<td>1,150×1,250</td>
<td>1,400×1,600</td>
<td>1,600×1,800</td>
<td>2,000×2,200</td>
<td>1,400×1,400</td>
<td>1,600×1,600</td>
<td>2,000×2,200</td>
</tr>
<tr>
<td>Table Indexing Degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Table Type</td>
<td></td>
<td>Rotary</td>
<td>Rotary</td>
<td>Rotary</td>
<td>Rotary</td>
<td>Combination</td>
<td>Combination</td>
<td>Rotary</td>
</tr>
<tr>
<td>Max. Load on Rotary Table</td>
<td>Kg</td>
<td>5,000 [8,000]</td>
<td>7,000 [9,000]</td>
<td>12,000 [15,000]</td>
<td>15,000 [20,000]</td>
<td>7,000 [8,000]</td>
<td>10,000 [15,000]</td>
<td>15,000 [20,000]</td>
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<tr>
<td>Table Rotation Speed *</td>
<td>rpm</td>
<td>2</td>
<td>2</td>
<td>1.4</td>
<td>1</td>
<td>1</td>
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<table>
<thead>
<tr>
<th>Spindle Head</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Spindle Diameter</td>
<td>mm</td>
<td>Ø110</td>
<td>Ø130</td>
<td>Ø130</td>
<td>Ø130</td>
<td>Ø130</td>
<td>Ø130</td>
<td>Ø150</td>
</tr>
<tr>
<td>Spindle Speed *</td>
<td>rpm</td>
<td>5~3,000</td>
<td>5~2,500</td>
<td>5~2,500</td>
<td>5~2,500</td>
<td>5~2,500</td>
<td>5~2,500</td>
<td>5~2,000</td>
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<tr>
<td>Spindle Taper</td>
<td>mm</td>
<td>ISO 50</td>
<td>ISO 50</td>
<td>ISO 50</td>
<td>ISO 50</td>
<td>ISO 50</td>
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<table>
<thead>
<tr>
<th>Feed</th>
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</thead>
<tbody>
<tr>
<td>Rapid Traverse (X, Y, Z)</td>
<td>mm/min</td>
<td>12,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Rapid Traverse (W)</td>
<td>mm/min</td>
<td>6,000</td>
<td>6,000</td>
<td>6,000</td>
<td>6,000</td>
<td>6,000</td>
<td>6,000</td>
<td>6,000</td>
</tr>
<tr>
<td>Feed Rate (X, Y, Z, W) *</td>
<td>mm/min</td>
<td>1~4,000</td>
<td>1~4,000</td>
<td>1~4,000</td>
<td>1~4,000</td>
<td>1~4,000</td>
<td>1~4,000</td>
<td>1~4,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Control</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Control System</td>
<td></td>
<td>Fanuc 18i/MB</td>
<td>Fanuc 16i/MB</td>
<td>SIEMENS 840D</td>
<td></td>
<td></td>
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<tr>
<td>Tape Memory</td>
<td>m</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>LCD</td>
<td>inch</td>
<td>10.4&quot; Color LCD</td>
<td>10.4&quot; Color LCD</td>
<td>10.4&quot; Color LCD</td>
<td>10.4&quot; Color LCD</td>
<td>10.4&quot; Color LCD</td>
<td>10.4&quot; Color LCD</td>
<td>10.4&quot; Color LCD</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Automatic Tool Changer (ATC)</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Tool Storage Capacity</td>
<td>pieces</td>
<td>40/60/90/120</td>
<td>40/60/90/120</td>
<td>40/60/90/120</td>
<td>40/60/90/120</td>
<td>40/60/90/120</td>
<td>40/60/90/120</td>
<td>40/60/90/120</td>
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<tr>
<td>Max. Tool Diameter (Adjacent pocket empty)</td>
<td>mm</td>
<td>Ø240</td>
<td>Ø240</td>
<td>Ø240</td>
<td>Ø240</td>
<td>Ø240</td>
<td>Ø240</td>
<td>Ø240</td>
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<tr>
<td>Max. Tool Length</td>
<td>mm</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Max. Tool Weight</td>
<td>Kg</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Spindle (30min/cont.)</th>
<th>kw/hp</th>
<th>22/18.5 (30/25)</th>
<th>28/22 (35/30)</th>
<th>26/22 (35/30)</th>
<th>26/22 (35/30)</th>
<th>26/22 (35/30)</th>
<th>26/22 (35/30)</th>
<th>45/37 (60/50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-Axis</td>
<td>kw/hp</td>
<td>4 (5.3)</td>
<td>6 (8)</td>
<td>6 (8)</td>
<td>9 (12)</td>
<td>6 (8)</td>
<td>9 (12)</td>
<td>9 (12)</td>
</tr>
<tr>
<td>Y-Axis</td>
<td>kw/hp</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
</tr>
<tr>
<td>Z-Axis</td>
<td>kw/hp</td>
<td>4 (5.3)</td>
<td>7 (9.3)</td>
<td>7 (9.3)</td>
<td>7 (9.3)</td>
<td>7 (9.3)</td>
<td>7 (9.3)</td>
<td>7 (9.3)</td>
</tr>
<tr>
<td>W-Axis</td>
<td>kw/hp</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
</tr>
<tr>
<td>B-Axis</td>
<td>kw/hp</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>4 (5.3)</td>
<td>7 (9.3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimensions</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Machine Height</td>
<td>mm</td>
<td>4,030</td>
<td>4,030</td>
<td>4,810</td>
<td>4,810</td>
<td>4,810</td>
<td>5,110</td>
<td>5,110</td>
</tr>
<tr>
<td>Floor Space</td>
<td>mm</td>
<td>5,600×6,650</td>
<td>6,900×6,900</td>
<td>7,350×7,400</td>
<td>7,385×7,550</td>
<td>7,900×7,100</td>
<td>10,910×7,300</td>
<td>7,150×8,000</td>
</tr>
<tr>
<td>Machine Weight</td>
<td>Kg</td>
<td>25,000</td>
<td>28,000</td>
<td>38,000</td>
<td>40,000</td>
<td>41,000</td>
<td>50,000</td>
<td>42,000</td>
</tr>
</tbody>
</table>

*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 (×1,×10,×100,×1000)
- 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 (NS-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 (MB-digit)
- Auxiliary function lock
- Single speed function (SS-digit)
- High speed M/S/T function
- Tool function (TB)
- 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
- HPC+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
**Dimensions**

### HB-110

### HB-130S (HB-130)

### HB-130C (HB-130CX)

### HB-150 (HB-130X)

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**DISTRIBUTOR**

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Note: HNK reserves the right to change design and specification without notice.

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