NH 630B
High Precision Horizontal Machining Center
Introducing the brand new NH 630B High Precision Horizontal Machining Center. The NH 630B incorporates the state-of-the-art dual drive technology along with the utmost rigid structural design to satisfy high accuracy applications. The machine can perform multi-face machining applications to reduce fixture clamping and machining time. The NH 630B is specially designed to meet high precision and high performance machining demands.

**High Rigidity Structural Design**
- One piece T-base foundation with rib construction for unprecedented rigidity.
- Spindle headstock is made of one piece casting to ensure cutting rigidity and accuracy during long-period machining.
- Stepped castings design on X-axis to increase the cutting rigidity.
- Dual-wall column design for eliminating possible thermal deformation.

**Y-axis Dual Drive System**
- Headstock is driven at the center of the gravity to minimize vibration. The dual-driven design restrains vibration and delivers high speed, high quality machining ability while increasing machine performance and tool life.

**High Performance Built-in Motorized Spindle**
- Built-in motorized spindle reduces vibration during high-speed machining and ensures spindle life.
- 10,000 rpm maximum spindle speed with 45 kW output delivers 623 Nm torque.
- Micro oil-air lubrication for angular ceramic ball bearings prolongs spindle life.
- Circulated oil jacket cooling system minimize thermal deformation, ensuring high accuracy.
- Easy spindle unit replacement reduces maintenance time.

**High Rigidity Roller Guideways**
- Oversize roller guideways increase rigidity and precision.
- High dynamic AC servo driven pre-tensioned ball screws, delivering high control qualities.
- 60 m/min. rapid feedrate increase machining efficiency.

**Reliable Automatic Tool Change**
- Servo motor driven tool magazine shortens tool search time.
- Short tool change arm with low moment of inertia design.

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- High rigidity roller guideways
- Stepped casting design on X-axis with large span
- Discharging air jet pallet indexing system
High Precision B-axis Rotary Table
- Disc brake with damped clamping system.
- High precision in-house pallet indexing system.
- Discharging air jet pallet indexing system.

Automatic Pallet Change
- 12-second pallet change.
- Servo motor driven.
- Simple structural design, fast reliable movement and easy maintenance.

High Capacity Machining Space
- Ø1,100 mm x 1,000 mm largest working envelope within its rank.
- 1,200 kg maximum loading capacity on each pallet.

Central Chip Disposal System
- Chip removal design assures the chips to drop directly to the conveyor.
- Dual chip augers are utilized for efficient chip removal.
- Heavy duty coolant pump.
**Cutting Capacity**

Spindle Speed 10,000 rpm (63 kgf-m)

**FACE MILL**

**S45C Steel**

Material Removal Rate

1,134 cc/min.

- Tool: ø125 mm x 8T
- Spindle Speed: 675 rpm
- Feedrate: 3,240 mm/min.
- Width of Cut: 100 mm
- Depth of Cut: 3.5 mm

**U-DRILL**

**S45C Steel**

Drilling (Max.)

ø65 mm

- Tool: ø65 mm x 1T
- Spindle Speed: 800 rpm
- Feedrate: 120 mm/min.
- Depth of Cut: 50 mm

**END MILL**

**S45C Steel**

Depth of Cut

30 mm

- Tool: ø63 mm x 4T
- Spindle Speed: 750 rpm
- Feedrate: 300 mm/min.
- Width of Cut: 63 mm

**Power Chart**

Spindle Speeds and corresponding power and torque values are provided in kgf-m and lb-ft, along with HP and kW ratings for different cutting capacities and materials. The chart includes details for both STD and OPT conditions.
### Specifications

<table>
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<th>Characteristics</th>
<th>NH 630B</th>
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</thead>
<tbody>
<tr>
<td><strong>SPINDLE</strong></td>
<td></td>
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<tr>
<td>Spindle Speed (opt.)</td>
<td>10,000 rpm (8,000 rpm)</td>
</tr>
<tr>
<td>Spindle Power (opt.)</td>
<td>45 kW 60HP (55 kW 74HP)</td>
</tr>
<tr>
<td>Spindle Torque (opt.)</td>
<td>63 kgf-m 455.7 lb-ft (122 kgf-m 882.4 lb-ft)</td>
</tr>
<tr>
<td>Spindle Taper</td>
<td>BBT50</td>
</tr>
<tr>
<td><strong>TRAVEL</strong></td>
<td></td>
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<tr>
<td>X-axis Travel</td>
<td>1,050 mm 41.34&quot;</td>
</tr>
<tr>
<td>Y-axis Travel</td>
<td>850 mm 33.46&quot;</td>
</tr>
<tr>
<td>Z-axis Travel</td>
<td>850 mm 33.46&quot;</td>
</tr>
<tr>
<td>Distance Between Spindle Nose and Table Center</td>
<td>150~1,000 mm 5.91&quot;~39.37&quot;</td>
</tr>
<tr>
<td><strong>TABLE</strong></td>
<td></td>
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<tr>
<td>Pallet Size</td>
<td>630 mm x 630 mm 24.8&quot; x 24.8&quot;</td>
</tr>
<tr>
<td>Max. Load on Table</td>
<td>1,200 kg 2,646 lb</td>
</tr>
<tr>
<td>Pallet Surface Configuration</td>
<td>M16 x 24 mm x 125 mm M16 x 0.94&quot; x 4.92&quot;</td>
</tr>
<tr>
<td>Pallet top height (from the floor)</td>
<td>1,300 mm 51.2&quot;</td>
</tr>
<tr>
<td>Pallet Index (opt.)</td>
<td>1° (0.001&quot;)</td>
</tr>
<tr>
<td>Pallet Change Time</td>
<td>12 sec.</td>
</tr>
<tr>
<td><strong>FEEDRATE</strong></td>
<td></td>
</tr>
<tr>
<td>Rapid Feedrate X/Y/Z</td>
<td>60 / 60 / 60 m/min. 2,362 / 2,362 / 2,362 ipm</td>
</tr>
<tr>
<td>Cutting Feedrate</td>
<td>1<del>30,000 mm/min. 0.04</del>118 ipm</td>
</tr>
<tr>
<td><strong>ACURACY</strong></td>
<td>ISO 10791-4</td>
</tr>
<tr>
<td>Axial Travel</td>
<td>Full Length</td>
</tr>
<tr>
<td>Positioning (X/Y/Z)</td>
<td>A 0.042 / 0.032 / 0.032 mm 0.0017&quot; / 0.0013&quot; / 0.0013&quot; 0.014 / 0.014 / 0.014 mm 0.0005&quot; / 0.0005&quot; / 0.0005&quot;</td>
</tr>
<tr>
<td>Repeatability (X/Y/Z)</td>
<td>R 0.020 / 0.018 / 0.018 mm 0.0008&quot; / 0.0007&quot; / 0.0007&quot; 0.01 / 0.01 / 0.01 mm 0.0004&quot; / 0.0004&quot; / 0.0004&quot;</td>
</tr>
</tbody>
</table>

*All values shown above are for reference.

| ATC                                |         |
| Tool Magazine Capacity (opt.)      | 40T (60T / 120T) |
| Max. Tool Weight                   | 25 kg 55 lb |
| Max. Tool Dimensions               | ø125 mm x 500 mm ø3.94" x 19.69" |
| (W/O Adjacent Tools)              | (ø250 mm x 500 mm ø9.84" x 19.69") |
| **GENERAL**                        |         |
| Pneumatic Pressure                 | 5.5 kg/cm² 78.2psi |
| Power Consumption (Transformer)    | 84 kVA (100 kVA) |
| Machine Weight (opt.)              | 40T: 26,000 kg 57,320 lb (60T: 26,500 kg 58,422 lb / 120T: 27,000 kg 59,524 lb ) |

**STANDARD ACCESSORIES**
- Full Chip Enclosure
- Spindle Air Blast
- Guideway Cover
- Sealed Electrical Cabinet
- Heat Exchanger for Electrical Cabinet
- Central Lubrication System
- Coolant Equipment System

**OPTIONAL ACCESSORIES**
- Coolant Through Spindle System (20 Bar)
- Optical Scale
- Optical Scale on B Axis
- Oil-mist Collector
- Chip Conveyor
- A/C. Cooler for Electrical Cabinet
- 4th Axis Rotary Table (0.001")
- Work Lamp
- Remote Monitoring System
- Guide Lamp
- Tool Shank
- Pull stud
- Auxiliary Table

### Dimensions

Unit: mm inch