The Heavy Duty Boring Machine KBN135/KBN135C, designed by Hyundai WIA with years of expertise and the latest technology, provides high performance and maximum productivity.

### Technical Leader

The Heavy Duty Boring Machine KBN135/KBN135C, designed by Hyundai WIA with years of expertise and the latest technology, provides high performance and maximum productivity.

<table>
<thead>
<tr>
<th>KBN135</th>
<th>[Option] [SIEMENS]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallet Size</td>
<td>2,000×1,800 (78.7″×70.9″)</td>
</tr>
<tr>
<td>Max. Load Capacity</td>
<td>10,000 (22,046.2)</td>
</tr>
<tr>
<td>Min. Indexing Angle</td>
<td>0.001° / 90° (LOCATING PIN)</td>
</tr>
<tr>
<td>Spindle Quill Diameter</td>
<td>Ø135 (5.3″)</td>
</tr>
<tr>
<td>Spindle Taper</td>
<td>NT #50</td>
</tr>
<tr>
<td>Spindle Speed</td>
<td>2,000 [2,000] [2,000] [2,000]</td>
</tr>
<tr>
<td>Spindle Power</td>
<td>22 (29.5) [26 (34.9)] [37 (49.6)] [37 (49.6)]</td>
</tr>
<tr>
<td>Spindle Driving Method</td>
<td>3 Step Gear</td>
</tr>
<tr>
<td>No. of Tools</td>
<td>40 [60, 90, 120]</td>
</tr>
<tr>
<td>Travel(X/Y/Z/W)</td>
<td>3,000/2,000/1,600/700 (118.1″/78.7″/63″/27.6″)</td>
</tr>
<tr>
<td>Rapid Traverse Rate</td>
<td>8/8/8/8 (315/315/315/315)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KBN135C</th>
<th>[Option] [SIEMENS]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallet Size</td>
<td>2,000×1,800 (78.7″×70.9″)</td>
</tr>
<tr>
<td>Max. Load Capacity</td>
<td>15,000 (33,069) [20,000 (44,093)]</td>
</tr>
<tr>
<td>Min. Indexing Angle</td>
<td>0.001° / 90° (LOCATING PIN)</td>
</tr>
<tr>
<td>Spindle Quill Diameter</td>
<td>Ø135 (5.3″)</td>
</tr>
<tr>
<td>Spindle Taper</td>
<td>NT #50</td>
</tr>
<tr>
<td>Spindle Speed</td>
<td>2,000 [2,000] [2,000] [2,000]</td>
</tr>
<tr>
<td>Spindle Power</td>
<td>22 (29.5) [26 (34.9)] [37 (49.6)] [37 (49.6)]</td>
</tr>
<tr>
<td>Spindle Driving Method</td>
<td>3 Step Gear</td>
</tr>
<tr>
<td>No. of Tools</td>
<td>40 [60, 90, 120]</td>
</tr>
<tr>
<td>Travel(X/Y/Z/W)</td>
<td>3,000/2,000/1,600/700 (118.1″/78.7″/63″/27.6″)</td>
</tr>
<tr>
<td>Rapid Traverse Rate</td>
<td>10/10/10/8 (393.7/393.7/393.7/315)</td>
</tr>
</tbody>
</table>

For more information, contact Hillary Machinery at (877)902-3751 or https://www.hillaryinc.com
The Next Generation Boring Machine
To Revolutionize Productivity

KBN135 Series

- One-piece bed construction for ultra precision (KBN135)
- Movable column structure for high-load, heavy load and heavy duty cutting (KBN 135C)
- X/Y-axis expansion up to 1,000mm (39.4”) and 500mm (19.7”) respectively
- 3 step gear driven spindle for heavy duty cutting
- Optimal boring processing with W-axis travel of 700mm (27.6”)
- Linear scale and rotary scale for ultra precision
- Position Encoder on B-axis for highly precise positioning

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Heavy Duty CNC Boring Machine

KBN135 series features linear scales and a gear driven spindle for high precision and superb heavy duty cutting ability.
01 **Basic Features**

The Most Advanced Mechanism, Revolutionized Productivity & High Performance

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01 **Air Semi-Rising Slide Way**

By applying the Air Semi-Rising Sliding Ways, the load on the X/Z-axis slideway is decreased. Therefore, positioning and repeatability accuracy can be maintained for a long time.

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02 **Fully Protected Slidecover**

Slidecover of each axis is fully protected from chips and debris.

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03 **Spindle**

KBN135 series is designed with a 3 step gear drive, which provides high torque at low rpm and stability at high rpm.

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04 **Table**

KBN135 series is the most optimal machine for fixturing and machining of large workpieces. It has best in class machining area and load capacity.

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Basic Features

Convenient Maintenance
Oil and Air devices are located in front of the machine for easy repair and maintenance.

KBN135C (Column Moving Type)
The column moving Z-axis enables precise machining of large work and prevents sagging of table when loading or machining. Also, table column separate structure provides high rigidity.

KBN135 (Table Moving Type)
The one-piece bed structure of X/Z-axis helps maintain high accuracy and makes it easier to adjust the machine for better precision.
High Precision Spindle
Cutting Edge Design & Optimized Cutting Condition
Heavy Duty Boring Machine

KBN135 Series

Spindle
By using ultra precision cylindrical roller bearings, fast acc/deceleration of the spindle is achieved. The spindle head is designed to minimize the thermal displacement of the spindle, and with the use of a hydraulic tool locking system the machining stability is increased.

Gear Type Spindle
KBN135 series is designed with a 3 step gear driven spindle, providing high torque at low speed and stable machining at high speed.

Through Spindle Coolant option
Through spindle coolant is particularly useful for deep hole drilling and helps increase tool life and decrease cycle time.

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Special Head Option

**Specifications**
- Length: 500 mm (19.7")
- Spindle Speed: 500 rpm
- Speed Ratio: 1:1
- Lubrication: Grease
- Tool Change: Manual
- Tool Shank: BT50
- Tool Clamping: Bolting (M24)
- Max. Tool Weight: 20 kg (44.1 lb)
- Machine Weight: 230 kg (507 lb)

**Angle Head Specifications**
- Length: 500 mm (19.6") and 800 mm (31.5")
- Angle: 90°, 180°, 270° or any other customer needs

**Facing Head Specifications**
- Length: 500 mm (19.7")
- Spindle Speed: 500 rpm
- Speed Ratio: 1:1
- Lubrication: Grease
- Tool Change: Manual
- Tool Shank: BT50
- Tool Clamping: Bolting (M24)
- Max. Tool Weight: 20 kg (44.1 lb)
- Machine Weight: 230 kg (507 lb)

**W-Axis Spindle**

The W-axis travel of 700 mm (27.6") contributes to the KBN135 series’ reputation as among the very best boring machines.

**Spindle Clamping Unit**

A clamping unit is applied to the W-axis for extra support in heavy duty cutting.

Angle Head (Manual)

Angle head comes with rotary body, which enables machining items that are set perpendicular to the spindle. It is connected to arbors that transfer the torque generated from the main spindle motors.

Facing Head (Manual)

A facing head is attached to the cross section of the spindle for various types of operations: outer facing, inner facing, cylindrical and conical boring and threading etc.

It shows excellent performance in machining parts such as flange faces of large valves.

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Magazine & Table

High Productivity Achieved with High Rigidity and Accuracy

For more information, contact Hillary Machinery at (877)902-3751 or https://www.hillaryinc.com
**ATC & Magazine**

KBN135 holds 40 tools as standard and maximum of 120 tools as an option. Fixed address tool selection method and a special controlling panel increase convenience.

(KBN135C : 40 Tool Standard / 60 Tool Option)

- **Machine Dimensions According to Magazine Selection (KBN135)**
  - 40 Tool: 6,900 mm (271.7”)  
  - 60 Tool: 7,300 mm (287.4”)  
  - 90 Tool: 8,275 mm (325.8”)  
  - 120 Tool: 9,250 mm (364.2”)

- **B-Axis Control NC Rotary Table**
  - High ratio worm gear leads to high precision machining and built-in position encoder in B-axis enables precise rotation in 90° and 0.001° which is suitable for machining various shapes. Also it has the largest machining area and best load capacity in its class which enables easier work setting.

- **Table Size**
  - KBN135C Expand: 2,000×1,800 mm (78.7” × 70.9”)

- **Max. Load Capacity**
  - KBN135: 10,000 kg (22,046.2 lb)  
  - KBN135C: 15,000 kg (33,069.3 lb)  
  - KBN135C Expand: 20,000 kg (44,092.4 lb)

- **Mini. Indexing Angle**
  - KBN135C | KBN135C Expand: within 300mm (11.8”) of the biased weight
  - 0.001° / 90° (Locating Pin)

- **B-Axis Spur Gear (KBN135C | KBN135C Expand)**
  - The B-axis is driven by a spur gear to improve productivity, and increase the table positioning speed.

(KBN135C : 2 rpm, KBN135C Expand Option : 1 rpm)
Machining Area
The Best Performance, Powerful Cutting
CNC Boring Machine

KBN135 Series

Expansion of Machining Area

KBN135

<table>
<thead>
<tr>
<th>ITEM</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>W-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>3,000</td>
<td>2,000</td>
<td>1,600</td>
<td>700 (27.5&quot;)</td>
</tr>
<tr>
<td>Expansion</td>
<td>4,000</td>
<td>2,500</td>
<td>1,600</td>
<td>700 (27.5&quot;)</td>
</tr>
</tbody>
</table>

KBN135C

<table>
<thead>
<tr>
<th>ITEM</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
<th>W-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>3,000</td>
<td>2,000</td>
<td>1,600</td>
<td>700 (27.5&quot;)</td>
</tr>
<tr>
<td>Expansion</td>
<td>4,000</td>
<td>2,500</td>
<td>2,000</td>
<td>700 (27.5&quot;)</td>
</tr>
</tbody>
</table>

Optional Specific Processing Area

<table>
<thead>
<tr>
<th>Division</th>
<th>Max. Width</th>
<th>Max. Dia.</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Table Around Cover</td>
<td>X-Axis Standard: 3,000 (118.1&quot;)</td>
<td>X-Axis Standard: Ø3,000 (Ø118.1&quot;)</td>
<td>Standard</td>
</tr>
<tr>
<td></td>
<td>X-Axis Expansion: 4,000 (157.4&quot;)</td>
<td>X-Axis Expansion: Ø4,000 (Ø157.4&quot;)</td>
<td>Option</td>
</tr>
<tr>
<td>Table Around Cover</td>
<td>X-Axis Standard: 3,000 (118.1&quot;)</td>
<td>X-Axis Standard: Ø2,940 (Ø115.7&quot;)</td>
<td>Option</td>
</tr>
<tr>
<td></td>
<td>X-Axis Expansion: 3,550 (140&quot;)</td>
<td>X-Axis Expansion: Ø2,940 (Ø115.7&quot;)</td>
<td>Option</td>
</tr>
<tr>
<td>Coolant splash cover</td>
<td>2,730 (107.5&quot;)</td>
<td>Ø2,730 (Ø107.5&quot;)</td>
<td>Option</td>
</tr>
</tbody>
</table>

For more information, contact Hillary Machinery at (877)902-3751 or https://www.hillaryinc.com
KBN135 / KBN135C

**Face Milling Capability (KBN135)**

<table>
<thead>
<tr>
<th>Quill : 0 mm</th>
<th>Quill : 300 mm (11.8&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>450 rpm</td>
</tr>
<tr>
<td>Cutting depth</td>
<td>6 mm</td>
</tr>
<tr>
<td>Feed</td>
<td>320 mm/min</td>
</tr>
<tr>
<td>No. of blades</td>
<td>10 ea</td>
</tr>
<tr>
<td>Tool Dia.</td>
<td>160 mm</td>
</tr>
<tr>
<td>SS400 (Rolled Structural Steel)</td>
<td>SS400 (Rolled Structural Steel)</td>
</tr>
</tbody>
</table>

▶ Excellent Machined Quality

❖ The above results might be different by types of processing circumstances.

For more information, contact Hillary Machinery at (877)902-3751 or www.hillaryinc.com
Faster processing and enhanced accuracy are possible through the HYUNDAI WIA Smart System. The user-friendly software and equipment monitoring of the Smart System maximizes productivity.

**HYUNDAI WIA Smart System**

Software for Smart Operating and Machining

- **Smart System**
- **Software for Smart Operating and Machining**
- **KBN135 Series**
- **HW-AFC**
- **HYUNDAI WIA Adaptive Feed Control**
- Software that controls the feed automatically to maintain a certain working load to extend tool life as well as productivity.

- **HW-MCS**
- **HYUNDAI WIA Machining Condition Selection**
- Software that automatically sets cutting and feeding parameters according to the machining types (speed, degree, quality).

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**Smart Factory**  **HW-MMS** *(HYUNDAI WIA-Machine Monitoring System)*

A brand new manufacturing machine by HYUNDAI WIA, HW-MMS is a unique software capable of monitoring the operation status of manufacturing machines in factories, a smart solution to improve manufacturing conditions of customers.

- **HW-MCG** *(HYUNDAI WIA Machine Guidance)*
  - Software that offers operation, maintenance, management monitoring and various user friendly features.

- **HW-WARMUP** *(HYUNDAI WIA WARMing Up)*
  - Warm-up software that measures main spindle halt and offers system warm-up time automatically.

- **HW-TDC** *(HYUNDAI WIA Thermal Displacement Compensation)*
  - Software that measures the changes in the external environment as well as heat emission during processing to help reduce thermal displacement.

- **HW-ESS** *(HYUNDAI WIA Energy Saving System)*
  - An environmental friendly software that reduces the unnecessarily wasted standby power waiting for an operation.

- **HW-TOM** *(HYUNDAI WIA Tool Offset Measurement)*
  - User friendly GUI software that indicates tool length, diameter, and damage (H/W excluded)

- **HW-TM** *(HYUNDAI WIA Tool Monitoring)*
  - A tool monitoring software which analyzes the load of the spindle motor to determine and monitor possible damage of tools.

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User Convenience
Various Devices for User Convenience

Measuring Device OPTION

**Touch Sensor**
Workpiece coordinate values can be set automatically using the optional spindle probe.

**TLM - Laser & Touch**
Tool lengths and diameters can be set automatically using the optional tool setter. This can also be used to monitor attrition and detect broken tools.

Chip Conveyor  OPTION

**Chip Disposal**
Screw conveyors which is provided as standard makes chip disposal easier.

• **Hinge Belt Type**: Highly efficient when disposing a lot of chips. Capable of handling stringy chips.
• **Scraper Type**: Convenient for shortly cut chips.
• **Drum Filter Type**: Advantageous in precision, as the chips do not flow in to the coolant nozzle

Control Panel

**Swing Type Control Panel**
Swing type control panel minimizes unnecessary movement of workers and allows optimal control and handling. Also, movable MPG which is standard adds even more accessibility to workers.

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For more information, contact Hillary Machinery at (877)902-3751 or www.hillaryinc.com
Optional

Splash Guard  **OPTION**

**A-Type**  Table Around Cover
KBN135: ○  KBN135C: ○
※ Cannot open or close on KBN135

**B-Type**  Coolant Protect Cover
KBN135: X  KBN135C: ○

**C-Type**  Safety Fence
KBN135: X  KBN135C: ○
※ KBN135 can be installed when Side Cover is not selected

**D-Type**  B+C Type
KBN135: X  KBN135C: ○
※ KBN135 can be installed when Side Cover is not selected

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## SPECIFICATIONS

### Standard & Optional

<table>
<thead>
<tr>
<th>Feature</th>
<th>KBN135</th>
<th>KBN135C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spindle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KBN135 KBN135C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,000rpm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(193/244kW/293/344kW) FANUC</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>(360/451kW/510/600kW) FANUC</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>2,000rpm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(430/530kW/580/680kW) FANUC</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>2,000rpm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(26/30kW/39/46kW) SIEMENS</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>2,000rpm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(37/31kW/49.6/41.6kW) SIEMENS</td>
<td>○</td>
<td>☆</td>
</tr>
<tr>
<td>2,000rpm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(37/31kW/49.6/41.6kW) SIEMENS</td>
<td>○</td>
<td>☆</td>
</tr>
<tr>
<td>Spindle Cooling System</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>W Axis Support Sleeve</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>ATC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATC Extension</td>
<td>40</td>
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<tr>
<td>60</td>
<td>●</td>
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</tr>
<tr>
<td>90</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>○</td>
<td></td>
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<tr>
<td>Tool Shank Type</td>
<td>8T50</td>
<td>●</td>
</tr>
<tr>
<td>CAT50</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Heavy Weight Tool</td>
<td>250kg</td>
<td>○</td>
</tr>
<tr>
<td>295kg</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>TP Center</td>
<td>0.75mm</td>
<td>○</td>
</tr>
<tr>
<td>Pull Stud</td>
<td>45°</td>
<td>●</td>
</tr>
<tr>
<td>60°</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>90°</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Facing Head</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Facing Tool Holder</td>
<td>○</td>
<td>○</td>
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<tr>
<td>Telescopic Tool Holder</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Angle Head</td>
<td>500mm (19.7&quot;)</td>
<td>○</td>
</tr>
<tr>
<td>600mm (15.7&quot;)</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Auto Indexing Head</td>
<td>750mm (29.7&quot;)</td>
<td>○</td>
</tr>
<tr>
<td>Table &amp; Column</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T-Slot Table</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>B Axis Table</td>
<td>0.001&quot;</td>
<td>●</td>
</tr>
<tr>
<td>X Axis Extension</td>
<td>4,000mm (157.4&quot;&quot;)</td>
<td>○</td>
</tr>
<tr>
<td>Y Axis Extension</td>
<td>2,500mm (98.4&quot;&quot;)</td>
<td>○</td>
</tr>
<tr>
<td>Z Axis Extension</td>
<td>2,500mm (98.4&quot;&quot;)</td>
<td>○</td>
</tr>
<tr>
<td>Index Pins (KDF)</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Table Auto Clamp Device</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Coolant System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coolant Device</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Through Spindle Coolant</td>
<td>20 bar (290 psi)</td>
<td>○</td>
</tr>
<tr>
<td>30 bar (435 psi)</td>
<td>○</td>
<td></td>
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<tr>
<td>Gun Coolant (Only for Coolant Device)</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Air Gun</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Cutting Air Blow</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Tool Measuring Air Blow (Only for TLM)</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Coolant Chiller (Only for Coolant Device)</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Chip Wagon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coolant Tank</td>
<td>400 L (106.7 gal)</td>
<td>○</td>
</tr>
<tr>
<td>500 L (132 gal)</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Cabinet Screw Chip Conveyor</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Cabinet Hinge Chip Conveyor</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Chip Conveyor (Hinge/Scrape)</td>
<td>Left (Front)</td>
<td>○</td>
</tr>
<tr>
<td>Left (Hinge)</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Chip Conveyor (Hinge/Scrape) - Only for Coolant Device</td>
<td>Left (Hinge)</td>
<td>○</td>
</tr>
<tr>
<td>Linear Scale X/Y/Z Axis</td>
<td>●</td>
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</tr>
<tr>
<td>Rotary Scale</td>
<td>●</td>
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</tr>
<tr>
<td>Coolant Level Sensor</td>
<td>○</td>
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<td>Environment</td>
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<td></td>
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<tr>
<td>Air Conditioner</td>
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<tr>
<td>Dehumidifier</td>
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<tr>
<td>Oil Mist Collector</td>
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<td></td>
</tr>
<tr>
<td>Oil Skimmer (Only for Chip Conveyor)</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>MQL (Minimal Quantity Lubrication)</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Fixture &amp; Automation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub D/P</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Control of Additional Axis</td>
<td>1 Axis</td>
<td>○</td>
</tr>
<tr>
<td>2 Axes</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>External M Code 4EA</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>I/O Extension (In &amp; Out)</td>
<td>16 Contact</td>
<td>○</td>
</tr>
<tr>
<td>32 Contact</td>
<td>○</td>
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</tr>
<tr>
<td>Hyd. Device</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Std. Hyd. Unit</td>
<td>45bar (652.7 psi)</td>
<td>●</td>
</tr>
<tr>
<td>200bar (293.8 psi)</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Center Hyd. Supply Device</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Hyd. Unit for Fixture</td>
<td>45bar (652.7 psi)</td>
<td>●</td>
</tr>
<tr>
<td>200bar (293.8 psi)</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Tool Box</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>CAD/CAM Software</td>
<td>Need for Munsel Pls</td>
<td>○</td>
</tr>
<tr>
<td>Customized Color</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>W Axis Clamp Device</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Y Axis Clamp Device</td>
<td>●</td>
<td></td>
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</table>

### S/W

<table>
<thead>
<tr>
<th>Feature</th>
<th>KBN135</th>
<th>KBN135C</th>
</tr>
</thead>
<tbody>
<tr>
<td>S/W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machine guidance (HW-MG0)</td>
<td>FANUC/SEMETYS</td>
<td>○</td>
</tr>
<tr>
<td>Tool Monitoring (HW-TM)</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>DTC Software (HW-EDTC)</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Spindle Heat Distortion Compensation (HW-STD)</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Spindle Warm up Function (HW-WARMUP)</td>
<td>FANUC/SEMETYS</td>
<td>○</td>
</tr>
<tr>
<td>Energy Saving System (HW-ESS)</td>
<td>FANUC/SEMETYS</td>
<td>○</td>
</tr>
<tr>
<td>Machine Monitoring System (HW-MMS)</td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>

**Through Spindle Coolant**: Please check the filter types with sales representative.

**Specifications are subject to changes without notice for improvement.**

For more information, contact Hillary Machinery at (877)902-3751 or [https://www.hillaryinc.com](https://www.hillaryinc.com)
External Dimensions

KBN135 (Expand Option)

For more information, contact Hillary Machinery at (877)902-3751 or https://www.hillaryinc.com
KBN135C (Expand Option)

External Dimensions

Height when upper hydraulic supply device is attached: 3,845mm (151.4″)
SPECIFICATIONS

Table Dimensions

<table>
<thead>
<tr>
<th>Tool Shank</th>
<th>unit: mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT50</td>
<td></td>
</tr>
<tr>
<td>CAT-50</td>
<td></td>
</tr>
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</table>

For more information, contact Hillary Machinery at (877)902-3751 or https://www.hillaryinc.com
## SPECIFICATIONS

### Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>KBN135</th>
<th>KBN135C</th>
<th>KBN135C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table Size</td>
<td>2,000×1,800 (78.7″×70.9″)</td>
<td>10,000 (22,046.2)</td>
<td>15,000 (33,069.3)</td>
</tr>
<tr>
<td>Maximum Load Capacity (kgf/lb)</td>
<td>20,000 (44,092.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. Indexing Angle (deg)</td>
<td>0.001° / 90° (LOCATING PIN)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spindle Quill Diameter (mm)</td>
<td>Ø135</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spindle Taper</td>
<td>NT #50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spindle Speed (rpm)</td>
<td>2,000 [2,000] [2,000] [KBN135C : 2,000]</td>
<td>2500 RPM OPTION</td>
<td></td>
</tr>
<tr>
<td>Spindle Power (Max./Cont.) (kW/HP)</td>
<td>22/18.5 (29.5/24.8) [26/22 (34.9/29.5)] [37/30 (49.6/40.2)] [KBN135C : 37/31 (49.6/41.6)]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spindle Torque (Max./Cont.) (N-m/lbf-ft)</td>
<td>3,112/2,617 (2,295.3/1,930.2) [3,677/3,112 (2,712/2,295.3)]</td>
<td>[6,824/5,538 (5,033.1/4,084.6)] [KBN135C : 6,862/5,717 (5,061.2/4,216.6)]</td>
<td></td>
</tr>
<tr>
<td>Spindle Driving Method</td>
<td>3 STEP GEAR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X-axis (mm/in)</td>
<td>3,000 (118.1″)</td>
<td>4,000 (157.5″)</td>
<td>3,000 (118.1″)</td>
</tr>
<tr>
<td>Y-axis (mm/in)</td>
<td>2,000 (78.7″)</td>
<td>2,500 (98.4″)</td>
<td>2,000 (78.7″)</td>
</tr>
<tr>
<td>Z-axis (mm/in)</td>
<td>1,600 (63″)</td>
<td>2,000 (78.7″)</td>
<td></td>
</tr>
<tr>
<td>W-axis (mm/in)</td>
<td>700 (27.6″)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance from Column to SP. center (mm/in)</td>
<td>0 ~ 2,000 (78.7″)</td>
<td>0 ~ 2,500 (98.4″)</td>
<td>0 ~ 2,000 (78.7″)</td>
</tr>
<tr>
<td>Distance from Table Surface to SP (mm/in)</td>
<td>800 ~ 2,400 (31.5″~94.5″)</td>
<td>800 ~ 2,800 (31.5″~110.2″)</td>
<td></td>
</tr>
<tr>
<td>Rapid Traverse Rate (X/Y/Z/W) (m/min/ipm)</td>
<td>8/8/8/8 (315/315/315/315)</td>
<td>10/10/10/8 (393.7/393.7/393.7/315)</td>
<td>7/10/10/8 (275.6/393.7/393.7/315)</td>
</tr>
<tr>
<td>Slide Type</td>
<td>BOX GUIDE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Tools</td>
<td>40 [60, 90, 120]</td>
<td>40 [60]</td>
<td></td>
</tr>
<tr>
<td>Tool Shank</td>
<td>BT50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. Tool Dia. (W.T/W.O) (mm/in)</td>
<td>Ø125/Ø250 (4.9″/9.8″)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. Tool Length (mm/in)</td>
<td>600 (23.6″)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. Tool Weight (kg/lb)</td>
<td>20 [25] [44.1 / 55.1]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tool Selection Method</td>
<td>FIXED ADDRESS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tool Change Time T-T (sec)</td>
<td>30</td>
<td>22.4</td>
<td>30</td>
</tr>
<tr>
<td>Tool Change Time C-C (sec)</td>
<td>70</td>
<td>33.2</td>
<td>70</td>
</tr>
<tr>
<td>Coolant Tank (ℓ/gal)</td>
<td>500 (132.1)</td>
<td>400 (105.7)</td>
<td></td>
</tr>
<tr>
<td>Lubricating Tank (ℓ/gal)</td>
<td>8.5 [2.2]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Tank (ℓ/gal)</td>
<td>200 [52.8]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Consumption (0.5MPa) (l/min)</td>
<td>250 (66)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric Power Supply (kW)</td>
<td>42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness of Power Cable (Sq)</td>
<td>Over 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage (V/Hz)</td>
<td>220/60 (200/50)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor Space (L×W) (mm/in)</td>
<td>6,320×6,900 (248.8″×271.7″)</td>
<td>7,320×6,900 (282.2″×271.7″)</td>
<td>6,880×7,510 (270.9″×295.7″)</td>
</tr>
<tr>
<td>Height (mm/in)</td>
<td>4,793 (188.7″)</td>
<td>5,293 (208.4″)</td>
<td>5,113 (201.3″)</td>
</tr>
<tr>
<td>Weight (kg/lb)</td>
<td>37,200 (82,012)</td>
<td>44,000 (97,003)</td>
<td>46,500 (102,515)</td>
</tr>
<tr>
<td>Controller</td>
<td>FANUC 31i-B</td>
<td>FANUC 31i-A [SIEMENS 840D si]</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
- Specifications are subject to change without notice for improvement.
- Specifications are valid for 300mm (11.8″) of the biased weight.
- *) Using 50Hz voltage instead of 60Hz may lower the output of motors (excluding servo motors and inverter motors).

For more information, contact Hillary Machinery at (877)902-3751 or https://www.hillaryinc.com
FANUC 31i-B (KBN135)

Controlled axis / Display / Accuracy compensation
- Control axes: 5 axes (X, Y, Z, W, B)
- Simultaneously controlled axes: 4 axes
- Least setting unit: 0.001 mm (0.0001 inch)
- Least input increment: 0.001 mm (0.0001 inch)
- Inch / Metric conversion: 0.001 / 0.001
- High response vector control
- Interlock: All axes / Each axis
- Machine lock: All axes
- Backlash compensation: ±0 to ±9999 pulses
- (Rapid traverse / Cutting feed)
- Position switch
- LCD / MDI: 10.4 inch color LCD
- Feedback: Absolute meter / feedback
- Stored stroke check 1: Over travel

Interpolation functions
- Linear interpolation
- Positioning: G00
- Linear interpolation: G01
- Cylindrical interpolation: G02, G03
- Exact stop mode: Single: G00, Continuous: G01
- Skip: G03
- Reference position return: 1st reference: G08
- 2nd reference: G09
- Ref. position check: G30
- Thread synchronous cutting: G33
- Helical interpolation: Circular + Linear interpolation 2 axes

Feed function / ACC. & Dec. control
- Feed function
- Manual feed: Rapid traverse
- Jog: 0 ~ 99999999 mm/min (197 rpm)
- Manual handle: x, y, z, x1, y1, z1, x10, y10, z10
- Reference position return
- Cutting feed command
- Feed rate overide: 0 ~ 200% (100% limit)
- Rapid traverse override: 10%, 20%, 50%, 100%
- Override cancel
- Feed per minute: G04
- Feed per revolution: G08
- Look-ahead block:
  - 48 Block: 200 Block (M40)

Program input
- Tape code: EIA / ISO
- Optional block skip: 1 ea
- Absolute / Incremental program: G90 / G91
- Program stop / end: M00, M01, M02, M30
- Maximum command unit: ±99999999 mm (99,999,9999 inch)
- Workpiece coordinate system: G52, G53, 48 pairs (G54.1 P1 ~ 481)
- Manual absolute: G00
- Manual absolute: G01
- Programable data input: G90
- Sub program call: 10 folds nested
- Custom macro: #100 ~ #169, #500 ~ #549
- G code system: A
- Programable mirror image: G5, G6.1, G6.2.1
- G code preventing buffering: G6.1
- Including Chamfering / Corner R
- Canned cycle: G73, G74, G76, G80 ~ G89
- Coordinate rotation: G28, G69

Auxiliary function / Spindle speed function
- Auxiliary function: M & 4 digit
- Level-up M Code:
  - Multi / Bygroup M code
- Spindle speed command: 5 & 6 digit
- Spindle speed override: 0 ~ 30 (100% limit)
- Spindle orientation: M19
- P598: High speed right tapping
- Tool function / Tool compensation
  - Tool function: Max. 10 digit
  - Tool life management: 256 pairs
  - Tool offset pairs: 99 pairs
  - Tool nose radius compensation: G40, G41, G42
  - Tool nose length compensation: G43, G44, G45
  - Tool offset memory C: Tool length, diameter, abrasion (length, diameter)
  - Tool length measurement: 7 axes input C
- Editing function
  - Part program storage size: 640m (59K8B)
  - No. of registerable programs: 1000 EA
  - Program protect
- Background editing
  - Extended part program editing: Copy, move and change of NC program
  - Memory card program edit
- Data input / output & Interface
  - I/O Interface
    - RS-232C, serial port, ET card, USB memory
  - Screen hard copy
  - External message
  - External key input
  - External workpiece number search
  - Automatic data backup
- Setting, display and diagnosis
  - Self-diagnosis function
  - History display: Alarm & Operator message & Operation
  - Run hour / Parts count display
  - Maintenance information
  - Actual cutting feedrate display
  - Display of spindle speed / T code
  - Graphic display
  - Operating monitor screen: Spindle / Servo load etc.
  - Power consumption monitoring: Servo & Spindle
  - Spindle / Servo setting screen
  - Multi language display
  - Support: 20 languages
  - Display language switching: Selection of 5 optional Languages
  - LCD Screen Saver: Screen saver
  - Processing select: Speed/Inertia setting
  - Option
  - Additional optional block skip: 9 ea
  - Fast ethernet
  - Needed option board
  - Data server: Needed option board
  - Protection of data at 8 levels
  - Sub Spindle control
  - Spindle orientation M19
  - One-way positioning: G66
  - Stored stroke check 2, 3
  - Inverse-time feed: G93
  - Scaling: G50, G51
  - Manual guide i: Conversational auto program
  - Handle interrupt
  - Manual handle feed: 2/3 units
  - Additional custom macro variables:
    - #100 ~ #199, #500 ~ #599
    - #198 ~ #199, #598 ~ #599, #1000 ~ #1999
  - Rigid tap Retain
  - Tool management function
  - Tool offset number: Max. 2000 pairs
  - Program storage capacity: 1.25GB (1000000) / 1.25GB
  - Program registration number: Max. 4000 ea
  - Additional work coordinate:
    - Max. 300 pair (G54.1 P1 ~ P1000)
  - AICC II
    - 200 Block
  - 400 / 600 / 1000 block
The FANUC controller specifications are subject to change based on the policy of company CNC supplying.

Figures in inch are converted from metric values.

The FANUC controller specifications are subject to change based on the policy of company CNC supplying.
**SIEMENS 840D sl (KBN135C)**

### Control Function
- Max. configuration of axis: Max 5-axes (Max. 31 Axes)
- Least Command/input: 0.001mm / 0.0001inch

### Feed Function
- Feedrate Override: 0 – 120%
- Rapid Traverse Override: F0, 25, 50, 100%

### Tool Function
- Tool Radius Comp.
- Tool wear compensation: 6EA (MAX:100EA)
- Programmable Zero Offset: 6EA (MAX:100EA)

### Display
- Language: Chinese Simplified, English, French, German, Italian, Spanish
- CRT/MDI: TFT 10.4˝ Color
- Screen saver
- Travel to fixed stop

### Spindle Function
- Spindle Override: 50% – 120%
- Spindle Orientation
- Spindle Speed Limitation
- Rigid Tapping

### Manual Operation
- Manual Handle/Jog Feed
- Reposition
- Reference Approach: Ref 1, 2 Approach
- Spindle Control: Start, Stop, Rev, Jog, Ort.

### Auto Operation
- Single Block
- Feed Hold
- Optional Block Skip
- Machine Lock
- Dry Run
- Simulation

### Diagnosis Function
- Alarm Display
- ‘Spindle Load Meter / RPM Meter’ (monitor)

### Programming Function
- Part Program Storage Length: 3MB (500MB)
- **Additional CF card (512MB) possible**
- Program Name: 23 digits
- Subroutine Call: 7 level
- Absolute/Incremental Command: (60 – 69)

### Programming Input & Interpolation Function
- Scaling / Rotation
- Inch / Metric Conversion
- Conversion Cycle Program
- Block Search
- Macro
- Read/Write System Variable
- Background Editing
- Miscellaneous Functions: M – Code

### Spindle Function
- Spindle Control: Start, Stop, Rev, Jog, Ort.
- M-code: M00, M01, M02, M30
- Lookahead, Jerk Limitation Feed & Forward Control
- Helical Interpolation
- COMPCAD, COMPCURB
- Cylindrical Interpolation
- Work Coordinate Interpolation
- Interactive Program
- Fanuc Program exe.

### Machining Package Milling
- Protection Function
  - Emergency Stop
- Soft Limit / Over Travel
- Soft Limit & Hard OT
- Contour Monitoring
- Program Protection
- Automation Support Fun.
  - Actual Speed Display (Monitor)

### Tool Life Management
- Tool Life Management: (Time, Parts)
- Work Count: Internal

### Language
- Two Language Switchable: Chinese Traditional, Czech, Danish, Dutch, Finnish, Hungarian, Japanese, Korean, Polish, Russian, Swedish, Portuguese, Turkish

### DATA Transfer
- RS-232C, I/F
- Ethernet
- Network management software is necessary

### Option
- PCU50
  - With Hard disk
- USB Memory Stick (Only PCU50)
  - Only PCU50
- Camer PCU50 (Only Flash Card 512MB)
  - Network management software, Spindle interpolation is standard

### Temperature Compensation

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Figures in inch are converted from metric values.

The SIEMENS controller specifications are subject to change based on the policy of company CNC supplying.

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GLOBAL NETWORK

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