Cincom
K16E
Sliding Headstock Type CNC Automatic Lathe
Faster processing with outstanding ease-of-use

Citizen’s highly successful K series evolves for the new age to meet the needs of the changing global market

Up to 23 tools
To meet the trend to produce complex parts on a lower cost machine.

Flexible tool layout
Up to 8 rotary tools can be mounted, including cross drilling/milling, face drilling & slitting.

Back slitting and back cross drilling capability
Same holder is adaptable for both slitting and cross drilling.

Faster processing
New control delivers significant cycle time savings for complex parts.

Citizen’s renowned ease-of-use
Citizen is the machine of choice for fast set-ups and changeovers. The new control and user interface makes using the K series even easier than before.

Citizen’s unique Cincom Control cuts non-cutting time to a minimum
Citizen’s dynamic software development leads the Swiss type/sliding head sector.

Rigid and compact
The acclaimed rigid but compact construction of the previous K series is carried forward with the K16E.

High speed spindle
15,000 rpm main spindle is standard.

Improved back spindle torque
The back spindle has improved torque at low rpm.

Workpiece Examples

- Medical equipment parts
- Communication device parts
- Parts for industrial machinery
- Electronic device parts
Cincom Control cuts non-cutting time to a minimum

Cincom Control
Citizen has developed a new control system for high-speed, smooth axis motion. “Cincom Control” reduces idle time, increases feed rates and substantially reduces cycle time.

Tool Overlap Function
For front machining, the K16E is equipped with independently controlled gang tool holder and opposed tool holder. Cincom Control positions next tool holder while previous tool holder retracts.

Idle time reduced further
Even in comparison with the previous K series which substantially improved productivity, the K16E has slashed idle time still further and shortened cycle time.

Example targets for idle time cuts

Tool selection / machining pattern switching processing time
The processing speed in operations where a tool is called by a command such as T01* or operations where a machining pattern is declared by a command such as G610, has been speeded up by installing the latest NC unit and reviewing the macro processing.

Chuck opening/closing time
The chuck opening/closing operations of the front and back spindles have been speeded up by changing the chuck mechanism.

Spindle indexing time
Direct spindle indexing operation controlled by Cincom control has been speeded up by the installation of the latest NC unit.

Direct Spindle Indexing
The direct spindle indexing function significantly reduces spindle indexing time. The spindle decelerates directly into the required index position, eliminating the time taken to stop, reference and index.
Efficient, fast and highly productive

Covers wide range of complex machining needs and allows selection of the machine configuration to suit your applications.

Mixed production makes high demands on the flexibility, performance and efficiency of a machine. The Cincom K series proves its worth in every aspect. Its particular strength lies in the production of high-accuracy complex parts up to 16 mm diameter in small to medium batch sizes.

Next to short set-up times, the K series also offers high productivity and efficiency thanks to faster rapid feed rates, improved axis deceleration/acceleration times of the axes, and faster program processing provided by the new control system.

A rigid machine bed combined with exceptional thermal stability ensures the precision of the machine. Due to the flexible modular tool holder system, holders for virtually any application are available. With its small footprint of just 3.7 x 6.2 ft., this machine offers a very compact and space-saving design.

Citizen’s renowned ease-of-use ensure fast set-ups and rapid changeovers.
Wide range of tooling and accessories

Outstanding versatility

GSC807 (U31B), GSC1107 (U152B)
Cross/End face-drilling spindle
Up to 4 spindles on U31B and up to 3 spindles on U152B can be mounted in standard configuration.

GSE2607
Front end-face drilling spindle
Used for eccentric drilling process to end face. This spindle can be mounted on T12 to T14. When one spindle is mounted, another spindle cannot be mounted at an adjacent station. Chuck type: ER11

GSE2707
Back end-face drilling spindle
Used for eccentric drilling process to end face. This spindle can be mounted on T12 to T14. When one spindle is mounted, another spindle cannot be mounted at an adjacent station. Chuck type: ER11

GSE2807
Both-end drilling spindle
Used for eccentric drilling process to end face. This spindle can be mounted on T12 to T14. When one spindle is mounted, another spindle cannot be mounted at an adjacent station. Chuck type: ER11

GSE2507
Double both-end spindle
Used for eccentric drilling process to end face. This spindle can be mounted on T14 only. Chuck type: ER11

GSS950
Slitting spindle
Used for slitting process. This spindle can be mounted on T13 only. Maximum cutter size is 50 mm in diameter. GSS950: Ø50×15.874/12.7 mm

BDF103
1-tool sleeve holder
Used for drilling with drilling sleeve mounted. This holder can be mounted on T12 to T14. BDF103: Ø19.05mm
Convenient, real time operation

User-friendly design displays the screens that are needed, when they are needed.

High-speed NC Installed
Because the latest CNC unit is used, the start-up time and screen switching times are considerably shorter than on other machines with similar functions. The result is a stress-free operating experience.

On-machine Program Check Function
This function allows program operation to be run forward or backward, and program editing and continuation of operation after a temporary stop. It is an effective aid to smooth programming. It also has a high speed program check function.

Program Editing
Easy to understand program editing can be performed by switching between the synchronized displays for two axis control groups, and copying and pasting between programs including MDI.

Code List Display
Another aid in programming is a list of G and M codes accompanied by pictorial explanations of their purpose.

Easy to Understand Illustrations
An illustration is displayed for each item, so that it can be immediately visualized (the screen displaying the machining data).

Remote diagnosis function
You can edit the NC program and input the offset by remote access with your office PC.
Machine layout drawing

K16E Standard Layout

K16E Layout with Options

CAV16E Bar Feeder
Machine Specification

### K16EVII

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum machining diameter (D)</td>
<td>Ø16 mm</td>
</tr>
<tr>
<td>Maximum machining length (L)</td>
<td>200 mm/1chucking</td>
</tr>
<tr>
<td>Maximum front drilling diameter (tap, die)</td>
<td>Ø10 mm</td>
</tr>
<tr>
<td>Maximum front tapping diameter</td>
<td>M8</td>
</tr>
<tr>
<td>Spindle through-hole diameter</td>
<td>Ø20 mm</td>
</tr>
<tr>
<td>Main spindle speed</td>
<td>15,000 rpm</td>
</tr>
<tr>
<td>Max. drilling diameter for the gang rotary tool</td>
<td>Ø5 mm</td>
</tr>
<tr>
<td>Max. tapping diameter for the gang rotary tool</td>
<td>M4</td>
</tr>
<tr>
<td>Spindle speed of the gang rotary tool (Rating)</td>
<td>6,000 rpm</td>
</tr>
<tr>
<td>Max. chuck diameter of the back spindle</td>
<td>Ø16 mm</td>
</tr>
<tr>
<td>Max. protrusion length of the back spindle workpiece</td>
<td>40 mm</td>
</tr>
<tr>
<td>Maximum protrusion length</td>
<td>80 mm</td>
</tr>
<tr>
<td>Max. drilling diameter for the gang rotary tool</td>
<td>Ø6 mm</td>
</tr>
<tr>
<td>Max. tapping diameter for the gang rotary tool</td>
<td>M5</td>
</tr>
<tr>
<td>Back spindle speed</td>
<td>10,000 rpm</td>
</tr>
<tr>
<td>Max. drilling diameter for the back tool post rotary tool</td>
<td>Ø5 mm</td>
</tr>
<tr>
<td>Max. tapping diameter for the back tool post rotary tool</td>
<td>M5</td>
</tr>
<tr>
<td>Spindle speed of the back tool post rotary tool (Rating)</td>
<td>4,500 rpm</td>
</tr>
<tr>
<td>Turning tools on the gang tool post</td>
<td>6</td>
</tr>
<tr>
<td>Cross rotary tools</td>
<td>4</td>
</tr>
<tr>
<td>Front ID tools (stationary)</td>
<td>4</td>
</tr>
<tr>
<td>Live tool on back tool post</td>
<td>3</td>
</tr>
<tr>
<td>Tool size</td>
<td></td>
</tr>
<tr>
<td>Tool (gang tool post)</td>
<td>□⅓&quot;</td>
</tr>
<tr>
<td>Sleeve</td>
<td>Ø¾&quot;</td>
</tr>
<tr>
<td>Chuck and bushing</td>
<td></td>
</tr>
<tr>
<td>Main spindle collet chuck</td>
<td>TF20</td>
</tr>
<tr>
<td>Back spindle collet chuck</td>
<td>TF20</td>
</tr>
<tr>
<td>Rotary tool collet chuck</td>
<td>ER11</td>
</tr>
<tr>
<td>Chuck for drill sleeves</td>
<td>ER11, ER16</td>
</tr>
<tr>
<td>Guide bushing</td>
<td>0201</td>
</tr>
<tr>
<td>Rapid feed rate</td>
<td></td>
</tr>
<tr>
<td>X1 and Y1 axes</td>
<td>24m/min (Composite speed: 34m/min)</td>
</tr>
<tr>
<td>Z1, X2 and Z2 axes</td>
<td>32m/min</td>
</tr>
<tr>
<td>Motors</td>
<td></td>
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<tr>
<td>Spindle drive</td>
<td>2.2/3.7 kW</td>
</tr>
<tr>
<td>Gang tool post rotary tool drive</td>
<td>0.4 kW</td>
</tr>
<tr>
<td>Back spindle drive</td>
<td>0.4/0.75 kW</td>
</tr>
<tr>
<td>Back tool post rotary tool drive</td>
<td>0.4 kW</td>
</tr>
<tr>
<td>Coolant oil</td>
<td>0.25 k W</td>
</tr>
<tr>
<td>Lubricating oil</td>
<td>0.003 kW</td>
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<tr>
<td>Center height</td>
<td>1050 mm</td>
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<tr>
<td>Rated power consumption</td>
<td>7 kVA</td>
</tr>
<tr>
<td>Full-load current</td>
<td>26A</td>
</tr>
<tr>
<td>Main braker capacity</td>
<td>50A</td>
</tr>
<tr>
<td>Air pressure and air flow rate for pneumatic devices</td>
<td>0.5 MPa  • 70 NI/min</td>
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<tr>
<td>Weight</td>
<td>2200 kg</td>
</tr>
</tbody>
</table>

### Main Standard Accessories

- Main spindle chucking device
- Rotary guide chucking device
- Rotary guide bushing device
- Coolant device (with level sensor)
- Door switch/door lock
- Lubricating oil supply unit (with level detector)

### Optional Accessories

- Workpiece separator
- Air seal pneumatic device
- Back spindle chucking device
- Rotary tool spindle drive unit
- for gang tool and back tool post
- Machine relocation detector

### Standard NC Functions

- NC unit dedicated to the K16
- 8.4 inch LCD
- 8-bit B-code function
- Canned cycle for threading
- Chamfer/Corner rounding function
- Constant surface speed control (main & back)
- Continuous threading cycle
- Inch/metric conversion
- Multiple repetitive cycle
- Tool offset pairs: 40
- Part program work area: 80m (32k)
- Single point threading
- Spindle speed fluctuation detection
- Tool breakage detector (spindle speed check)
- Tool nose radius compensation
- Main/back spindle synchronization

### Optional NC Functions

- Tool offset pairs: 80
- Program storage capacity: 160m/320m/600m