M32
Sliding Headstock Type Automatic CNC Lathe
Cincom Innovation Line

“Impressive Value” Production
Adding value to efficient production
Innovation is having your own vision and creating new technology.

The M20/32
The market leader re-defined
More tools – more functions – more flexibility – higher productivity – same floor space – more value

The M32 is renowned for its leading capability for 3 tool simultaneous machining in a compact floor space. The all round combination of flexible tooling, large tool capacity, outstanding ease of use has made the M32 our success story in the new century. The next generation M32 increases the 3 tool simultaneous machining abilities with a new Y3 axis on the back tool post with up to 9 tools (up to 6 driven). New advanced functions include a B axis on the gang tool post with 4 axis simultaneous containing control.

**Machine configuration by M20/32 type**

<table>
<thead>
<tr>
<th></th>
<th>Type III</th>
<th>Type V</th>
<th>Type VII</th>
<th>Type VIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y2 axis (turret Y axis)</td>
<td>—</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Y3 axis (back tool post Y axis)</td>
<td>—</td>
<td>—</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>B axis (rotary tools on the gang tool post)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>O</td>
</tr>
</tbody>
</table>

New advanced functions include a B axis on the gang tool post with 4 axis simultaneous containing control.

**Back spindle**

- 8,000 min⁻¹
- 320mm/1 chucking

**Front spindle**

- 8,000 min⁻¹
- Rotary tool on the turret tool post 6,000 min⁻¹
- 10-station turret

**Back rotary tool**

- 6,000 min⁻¹
- (Rating: 4,500 min⁻¹)

**Rotary tools on the gang tool post**

- 6,000 min⁻¹

**Machine configuration by M20/32 type**
B axis with 3 rotary tools on the gang tool post (type VIII)
The B axis is the slant axis in reference to the Y axis direction. When drilling a slanted hole on a conventional machine, the adjustable angle spindle was used, but now rotary tools incorporating a B axis can be used to change the angle continuously allowing you to handle slanted holes at a number of angles. Contouring with simultaneous 4-axis control is also possible (the angle range is –10° to 95°).

Improved turret capability
The turret geometry is carried over from the previous generation to deliver tool holder compatibility. An improved Z2 axis stroke allows simultaneous machining with opposed turning tools or rotary tools on gang tool post thus enabling pinch/balanced turning and pinch/balanced cross drilling and milling. Turret indexing can take place in any position which reduces cycle time.

Y axis on the back tool post (types VII and VIII)
The back tool post can accommodate holders in 3 rows (two rows for rotary tools and one for fixed tools) and up to nine tools can be used. The specifications of the outer diameter milling spindle (GSC1110), 3-drilling spindle (GSE1510) and 3-sleeve holder (GDF1501) are common to those used on the gang tool post and they can be used both on the gang tool post and the back tool post.
* The use of GSE1510 and GDF1501 on the gang tool post is restricted to types III, V and VII.

30% reduction in idle time
Mitsubishi Electric’s latest NC unit, the M730 series, has been adopted. With a fast CPU on board it offers even higher arithmetic processing speeds. In combination with Citizen’s original control technology “Cincom Control”, a rapid traverse rate increased to 32 m/min, and high acceleration/deceleration with spindle/guide bushing synchronization, idle time is reduced by 30%.

Evolved control functions
The control functions have evolved a stage further, with the syntax check function that allows you to check for syntactic errors in NC programs, a function that specifies the locations of alarms in high-speed program checks, tool life management that allows multiple tools to be managed under the same tool number and so on.

Environmentally friendly products
Consideration has been given to saving energy and resources by adopting control methods that reduce power consumption, such as the idling stop function, and by optimizing consumption of oil/air for lubrication. Consideration has also been given to the environment by using materials that are easy to recycle, increasing the percentage of recyclable materials used, and eliminating hazardous substances in conformity with the RoHS Directive.
### Machine Specification

<table>
<thead>
<tr>
<th>Item</th>
<th>M32 Type III</th>
<th>M32 Type V</th>
<th>M32 Type VII</th>
<th>M32 Type VIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. machining diameter (D)</td>
<td>φ 20mm (M20);</td>
<td></td>
<td>φ 32mm (M32)</td>
<td></td>
</tr>
<tr>
<td>Max. machining length (L)</td>
<td>320mm/1 chucking</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Max. front drilling diameter</td>
<td>φ 12mm</td>
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<td></td>
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<tr>
<td>Spindle through-hole diameter</td>
<td>φ 36mm</td>
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<tr>
<td>Spindle speed</td>
<td>8,000min⁻¹</td>
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</tr>
<tr>
<td>Spindle speed of the gang rotary tool</td>
<td>M6</td>
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</tr>
<tr>
<td>Spindle speed of the turret rotary tool</td>
<td>M8</td>
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<tr>
<td>Spindle speed of the back spindle</td>
<td>M10</td>
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</tr>
<tr>
<td>Back spindle speed</td>
<td>8,000min⁻¹</td>
<td></td>
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<tr>
<td>Max. drilling diameter for the gang rotary tool</td>
<td>φ 8mm</td>
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<tr>
<td>Max. tapping diameter for the gang rotary tool</td>
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<td></td>
<td></td>
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<tr>
<td>Max. drilling diameter for the turret rotary tool</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. tapping diameter for the back spindle</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Max. tapping diameter for the back spindle</td>
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<td></td>
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<tr>
<td>Spindle speed of the back tool post rotary tool</td>
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<td></td>
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</tr>
<tr>
<td>Max. chuck diameter of the back spindle</td>
<td>φ 32mm</td>
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<tr>
<td>Max. protrusion length of the back spindle</td>
<td>65mm</td>
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<tr>
<td>Max. protrusion length</td>
<td>145mm</td>
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<tr>
<td>Number of tools to be mounted</td>
<td>25+α</td>
<td>29+α</td>
<td>31+α</td>
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</tr>
<tr>
<td>Turning tool</td>
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<td></td>
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<tr>
<td>Gang rotary tool</td>
<td>5</td>
<td>7</td>
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<tr>
<td>Gang B axis rotary tool</td>
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<tr>
<td>Number of turret station</td>
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<tr>
<td>Back tool post station</td>
<td>5</td>
<td>9</td>
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</tbody>
</table>

### Tool size
- Tool (gang tool post): □ 5/8"
- Sleeve: φ 1"

### Chuck and bushing
- Main spindle collet chuck: TF25 (M20); TF37-SP (M32)
- Back spindle collet chuck: TF25 (M20); TF37-SP (M32)
- Guide bushing: TD25NS (M20); TD32 (M32)

### Rapid feed rate
- All axes (except Y2): 32m/min
- X2 axis: 18m/min
- Y2 axis: 8m/min
- Y3 axis: 32m/min

### Motors
- Spindle drive: 3.7/7.5kW
- Back spindle drive: 2.2/3.7kW
- Gang tool post rotary tool drive: 1.0kW
- Turret rotary tool drive: 0.75/1.5kW
- Back tool post rotary tool drive: 0.4kW

### Coolant oil
- Lubricating oil: 0.003kW
- Center height: 1150mm

### Input power capacity
- 18kVA

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