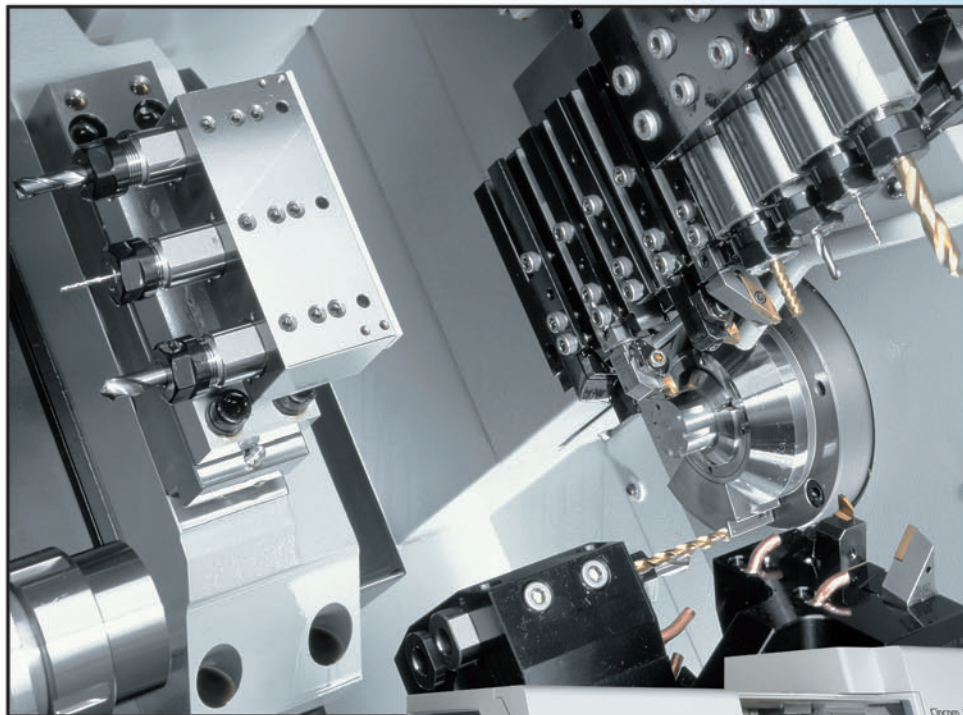


# Cincom M20/32



Multi-tool  
simultaneous  
machining for  
high productivity



# Cincom M20/32

- New mainstream mechanism uniting the high-speed performance of a gang tool and the multiple functions of a turret
- Ergonomic machine design, such as a free-positioning keyboard for relaxed and easy operations
- 2-Spindle and 3-tool posts machine construction realizes ultimate simultaneous machining
- Movement of Y-axis turret corresponds to various shapes of parts
- High-performance CPU reduces cycle time widely

## Multi-axes/Multi-line Control System

The multi-axes/multi-line control system, which controls 2 spindles and 3 tool posts, achieves absolute synchronization control of ALL axes with less idle time. The operator can program without any considerations for complicated movements of synchronization or superimpose functions.

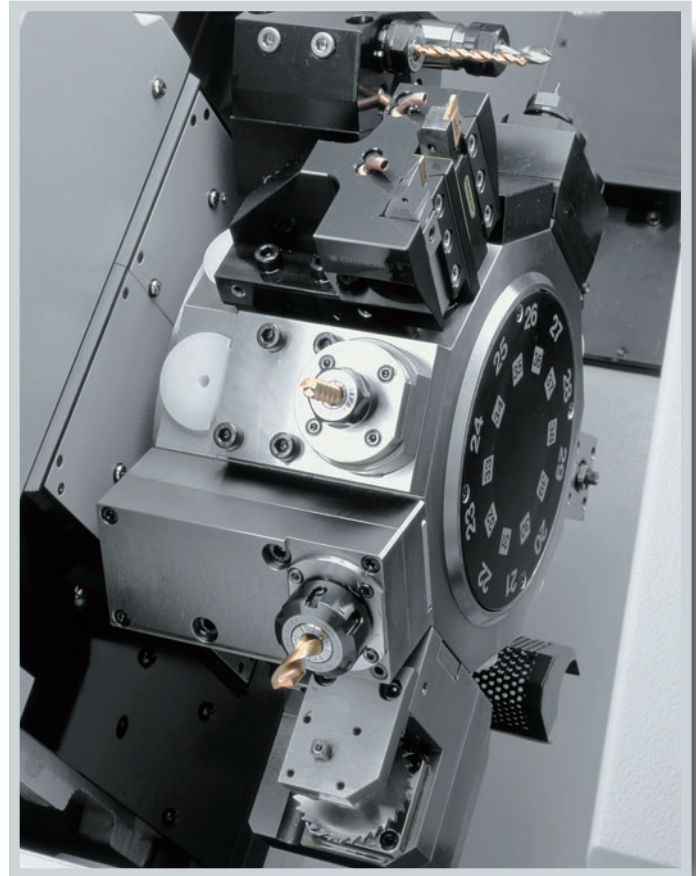
- 13 programmable axes
- A axis for robotic arm, workpiece pick-off, in-process gaging, automatic tool measurement and more
- Front and back work performed simultaneously

## Less preparation/cycle time with these new functions

- High speed program check function (option)
- The program check without any mechanical movement is available. In addition, time estimation is also available.
- High speed threading function (option/under development)
- The threading at high speed is possible without longer incomplete thread
- High speed rigid tapping function (option/under development)
- Less cycle time with high speed reverse movement

## Multi tool simultaneous machining for high productivity

Unique machine construction and intelligent servo control make the machining of precision work pieces in minimal cycle time possible. 3 tool posts construction allows machining with up to 3 tools on main and back spindle simultaneously.

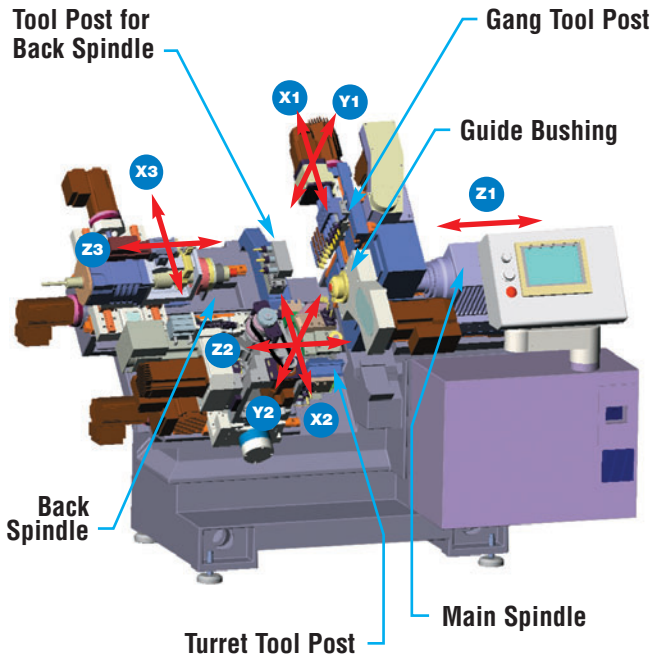


## Complex Part Configurations Possible

The turret tool post, well known for its versatility, has been improved.

- Several tools can be mounted together in one tool holder on one turret station
- Less idle time due to tool changes without turret index
- Operators can adjust the height of turning and milling tools easily with the tool offset function
- The flexibility of milling operations becomes greater
- The machine has more flexibility for complex parts

# Cincom



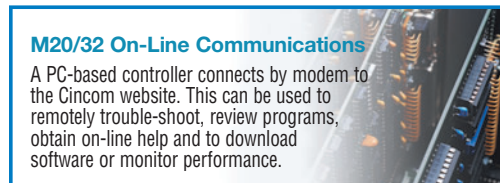
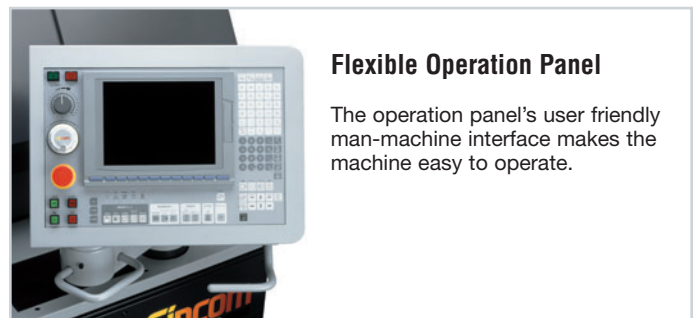
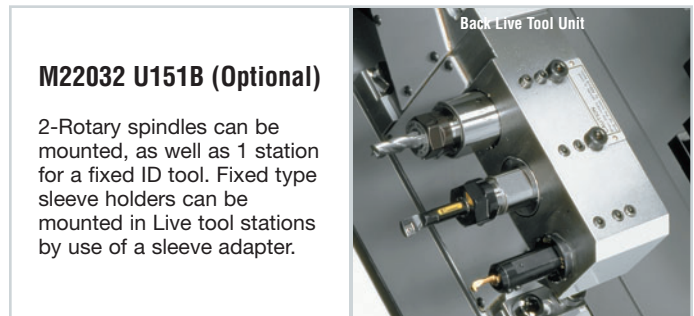
## Secondary Machining Functions

Various machining functions are available for every machining need. Main spindle C axis is available as standard and following functions are available as an option.

- Back spindle 1 degree indexing function and C axis function
- Rigid tapping functions (main spindle, back spindle and tool spindle are available)
- Milling interpolation function
- Differential speed rotary tool function
- Hobbing, polygon and thread milling functions

## High Performance Windows-based NC

The machine is equipped with a higher performance CPU than previous M series machines. Shorter computing time and higher speed macros achieve less cycle time.



### Standard Accessories

- Rotary guide bushing drive unit
- Guide bushing device
- Main spindle chucking device
- Coolant device (level detection function)
- Servo motor driven knock-out device for back machining
- Door switch
- Workpiece separator
- Back spindle chucking device
- Lubrication device (level detection function)
- Rotary tool spindle on gang tool post
- Rotary tool spindle drive unit on turret

### Optional Accessories

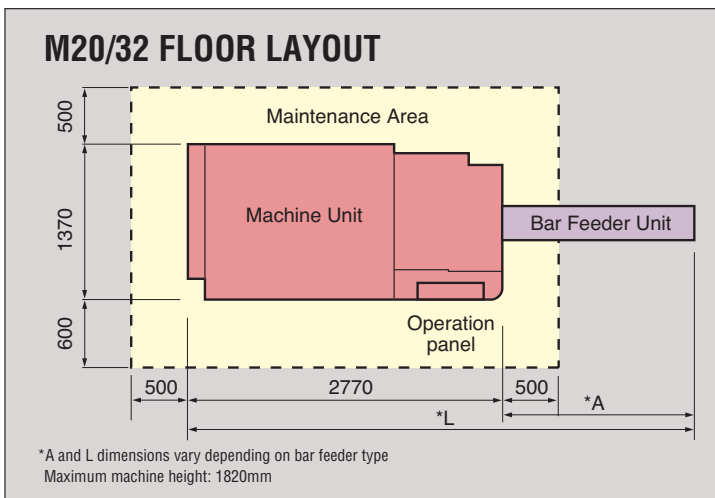
- Rotary tool spindle drive unit for back face machining
- Workpiece conveyor
- Cutoff tool breakage detector
- Chip conveyor
- Automatic tool setting device
- Back long workpiece machining device

### Standard NC Functions

- NC unit dedicated to the Cincom M series
- 10.4" color LCD display
- Operating time display
- Preparation functions
- Corner chamfering/rounding function
- On-machine program check function
- Main spindle speed change detection function
- Main spindle chasing function
- Program work area capacity equivalent to 20m tape
- Thread cutting canned cycle
- Tool offset pairs 40
- Main spindle C-axis function
- Main spindle 1 degree indexing function
- Back spindle constant surface speed control function
- Product counter display: Up to 8 digits
- Nose R compensation function
- Three-dimensional interference check function
- Back spindle speed change detection function
- Main spindle constant surface speed control function
- Automatic power-off function
- Program storage capacity equivalent to 40m tape
- Multiple repetitive cycle for turning
- Back spindle 1 degree indexing function
- Back spindle chasing function
- User macro

### Optional NC Functions

- Synchronized tapping function
- Back spindle C-axis function
- Differential rotary tool function
- Sub-inch command
- Helical interpolation function
- Inclined helical interpolation function
- Milling interpolation function
- Spindle synchronization control function
- Tool life management
- Canned drilling cycle
- Polygon function
- Hobbing function



MACHINE SPECIFICATIONS	Cincom M20/32
Maximum machining diameter	Ø20mm [.79"]/Ø32mm [1.25"]
Maximum machining length	320mm [12.5"] per chucking
Maximum front drilling diameter	Ø12mm [.47"]
Max. front tapping diameter (with tap and die)	M10
Spindle through-hole diameter	Ø36mm [1.41"]
Main spindle speed	200-8,000 min-1
<b>Max. drilling diameter for rotary tool spindle</b>	
Gang tool post	Ø7mm [.27"]
Turret	Ø10mm [.39"]
<b>Max. tapping diameter for rotary tool spindle</b>	
Gang tool post	M6
Turret	M8
<b>Rotary spindle speed</b>	
Gang tool post	200-5,000 min-1
Turret	200-5,000 min-1
Max. chuck diameter of the back spindle	Ø32mm [1.25"]
Maximum workpiece length for the front side collection from the back spindle	145mm [5.7"]
Maximum drilling diameter in the back machining process	Ø10mm [.39"]
Maximum tapping diameter in the back machining process	M8
Back spindle speed	200-7,000 min-1
<b>Number of tools to be mounted</b>	<b>Max. 22 tools</b>
Turning tools on the gang tool post	5
Rotary tools on the gang tool post	4
Tools on the turret	10 (indexed at 20)
Tools on the back tool post	3
<b>Tool size</b>	
Gang tool post (tool)	16×16×130mm [.625×.625×5.11"]
Turret (tool)	16×16×90mm [.625×.625×3.54"]
Turret (sleeve)	Ø25.4mm [1"]
Back tool post (sleeve)	Ø25.4mm [1"]
<b>Rapid feed rate</b>	
X1, Y1, Z1, X2, Z2, X3, Z3 axis	20 m/min
<b>Motors</b>	
Main spindle drive	3.7/5.5KW
Back spindle drive	1.5/2.2KW
Tool spindle drive (gang tool post)	1KW
Tool spindle drive (turret)	0.75/1.5KW
Cutting oil	0.4KW
Center height	1132mm [44.57"]
Weight	3,100kg [6,834 lbs.]

\*All specifications subject to change without notice.

Please contact your local Citizen distributor for actual machine quotation.

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