

"Production of Impressive Value"
Motive by achievement for evolutional production

CINCOM

Sliding Headstock Type Automatic CNC Lathe

A32



A

CITIZEN
Micro HumanTech

45m/min Rapid Feed Rate

This $\phi 32$ mm machine offers electrifying productivity

The A32 offers $\phi 32$ mm large-diameter machining at an unbeatable low price. And although it is inexpensive, the machine is strong, powerful and rigid for exceptional cutting performance. With features like a rapid feed rate of 45m/min, high speed processing with the latest NC unit, and Citizen's unique streamline control, it achieves 30% higher productivity than previous machines. To make high-accuracy machining possible the design also takes thermal displacement into account, and ingenuity has been applied to the shape of the bed and the placing of the electric cabinet. The NC unit that has been acclaimed for its screen clarity and ease of operation has also been remodelled and it is now compatible with the network LAN that enables network control of NC programs. Standard equipment has been enhanced, providing a production-ready value-for-money manufacturing solution.

Rotary tools on the gang tool post
Max: 5,000min⁻¹
(rating: 4,000min⁻¹)
*One tool is half speed/double torque

Back spindle
Max: 8,000min⁻¹
Back Spindle
1 index (OP)
Back Spindle
C-axis (OP)

Front spindle
Max: 8,000min⁻¹
320mm/1chuck (GB)
2.5D/1chuck (GBL)
Spindle 1 index standard
Spindle C-axis (OP)

Standard Tool Layout

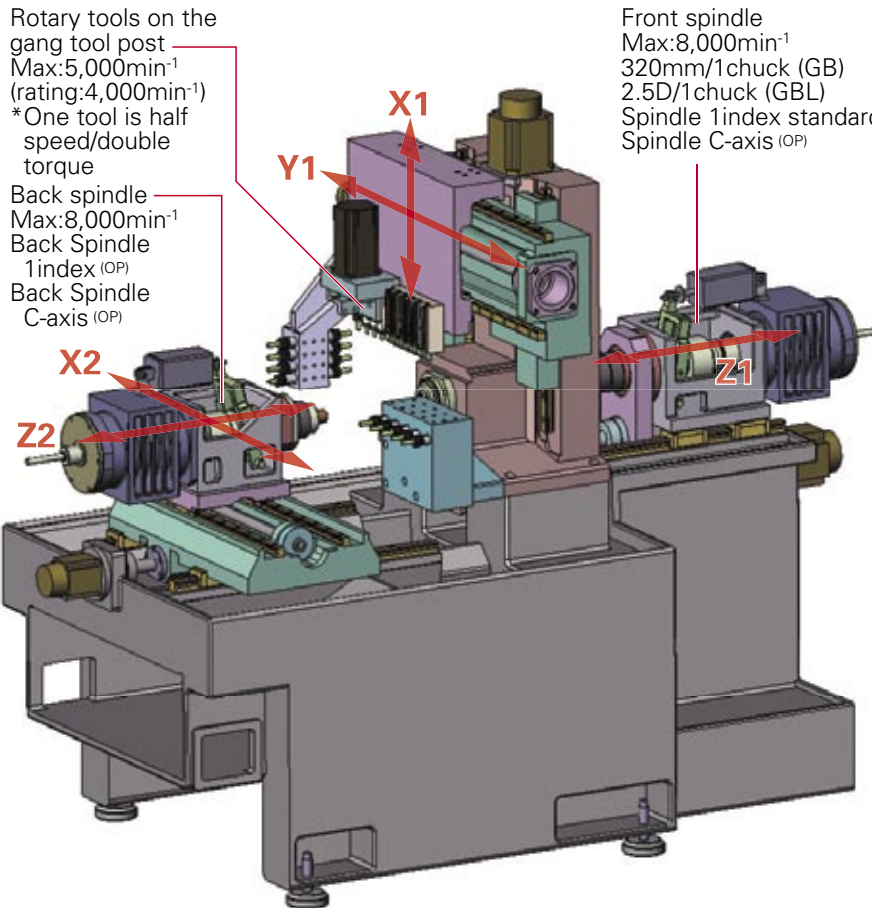
Tools for front drilling
4 ($\phi 25.4$)

Rotary tools for cross machining
4 (2:ER16, 1:ER20, 1:Quill type ER16)

Turning tools on the gang tool post
6 ($\square 16$)

Tools for back drilling
9 (5+4, $\phi 25.4$)

The gang tool post for rotary tools supplied as a standard accessory (U30B) is configured with three fixed and one quill type tool. Of the three fixed tools two are ER16 (max. 5,000 min⁻¹) and one is ER20 (half speed/double torque at max. 2,500 min⁻¹). The quill type section is fitted as standard with a GSC1110 ER11 cross diameter milling spindle.



Support for the operator by convenient operation

The latest NC unit is used, the start-up time and screen switching times are considerably shorter than on other machines. An illustration is displayed for each item, so that it can be immediately visualized.



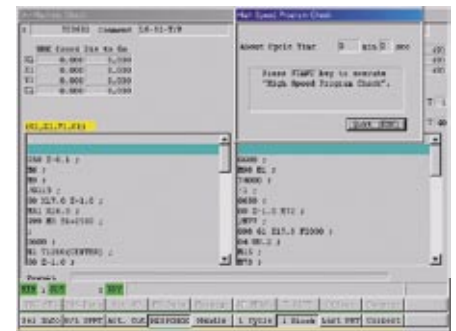
CF Card Slot

NC programs can be input and output using the Compact Flash card slot on the front face of the operation panel.



Swing-out Operation Panel

The operation panel enabling it to be conveniently positioned for tasks such as changing the front collet chuck.



High-speed Program Check Function

This function enables checks for program syntax without actually operating the machine. The cycle time is also displayed.

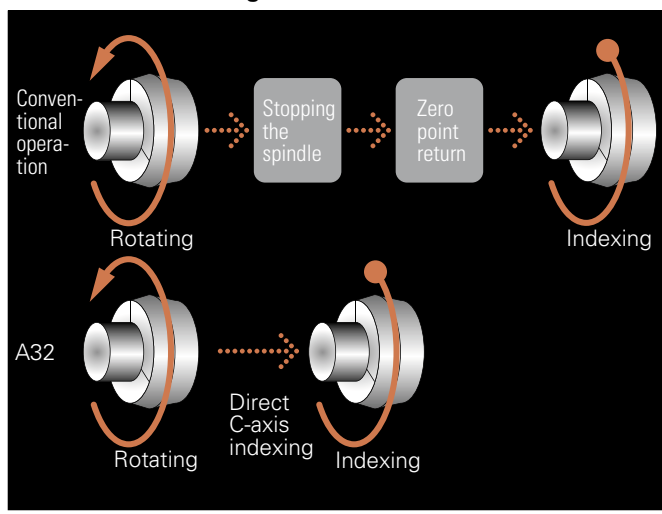
30% higher productivity – achieved by faster and heavier machining

The biggest benefit of the A32 is productivity, 30% higher than previous models. Increasing the machine's rigidity has enabled machining under higher cutting conditions (deep depths of cut, fast feed rates, high spindle speeds, etc.) We have substantially increased the chip discharge volume per unit time, which is a significant benefit towards higher machine productivity.

Streamline Control

"Streamline control" is Citizen's unique control technique that ensures high speed and smooth motion. It reduces idle time hence reducing cycle time with no effect on cutting performance. "Direct C-axis indexing function" achieves spindle index position directly from revolution during C-axis positioning. The "axis motion overlap function" starts the next axis motion without waiting for the completion of the current one. This eliminates wasteful idle time.

Direct C-axis indexing function



Rapid feed rate of 45 m/min

The rapid feed rate of previous $\phi 32$ machines is 20 m/min., but the A32 more than doubles this with a feed rate of 45 m/min. (40 m/min. on the X-axis). Because time constants are taken into account too, high-speed operation is possible even over short travel distances. These unbeatably high feed rates considerably cut cycle times. And in line with the speeding up of rapid feed rates, the 10% increments that have been used up until now when setting overrides have been supplemented with 1%, 3% and 5% increments.

Substantially improved machine rigidity

Advanced CAD techniques have enabled rigidity to be sub-stantially increased. When compared with the construction of previous machines, total rigidity has increased by 30%. This makes powerful cutting possible and realises chatter-free and uniform machined surfaces.

High-rigidity bed

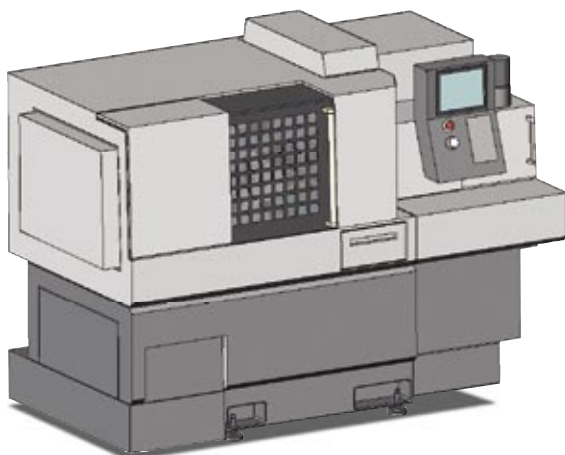
The bed has been designed for increased rigidity and optimal weight. The weight of the bed is the same as that of the previous $\phi 32$ machine but the construction has been revised so that it is more compact, and the torsional rigidity has been considerably increased.

Thick, highly rigid spindle & High-output motor

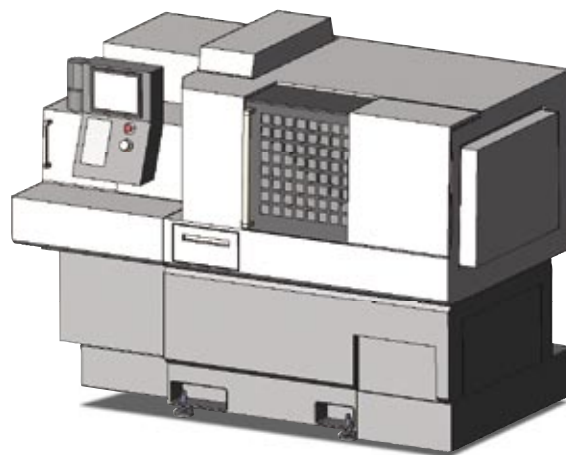
The built-in spindle configuration is adopted for the front spindle and back spindle, which are the key elements in machining. This realizes high accuracy, low noise, low energy and stable high-speed rotation. The output of the front spindle motor has been increased from the 3.7/7.5 kW of previous machines to 5.5/7.5 kW and torque in the effective rotational speed range has been increased by 40%. In the same way as the bed, the spindle has been designed for high rigidity. The spindle bearings have been made one rank larger than on previous machines. In line with this, the thickness of the spindle has also been increased, so that this increased spindle output can be supported.

Your choice - Left and Right Spindles, Guide-bushing model, Guide-bushing-less model.

The major feature of A series machines, i.e. the availability of both right-spindle and left-spindle models, has of course been extended to the A32. Whether spindles are located at the left or right can be selected in accordance with the environment at the site and the direction in which the customer is used to working. For each model the customer can select specifications with guide bushings or specifications without guide bushings, giving a total line-up of four types.



A32 right spindle machine
(VII PL·Guide-bushing model)
(VII CL·Guide-bushing-less model)

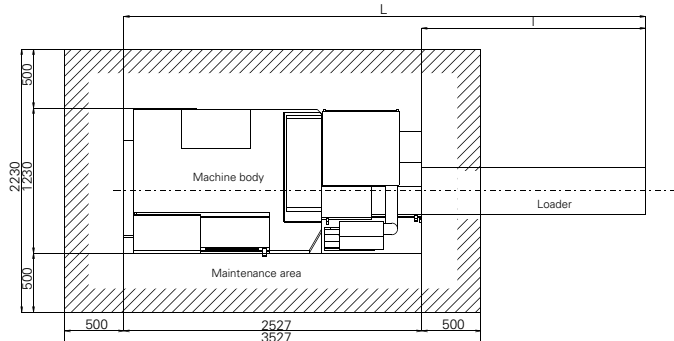


A32 left spindle machine
(VII PR·Guide-bushing model)
(VII CR·Guide-bushing-less model)

Machine Specification

Item	A32 VII	
	PL/PR (Guide-bushing)	CL/CR (Guide-bushing-less)
Maximum machining diameter (D)	φ32mm	
Maximum machining length (L)	320mm/1chucking	2.5D/1chucking (Z1stroke 85mm)
Maximum front drilling diameter	φ12mm	
Maximum front tapping diameter (tap, die)	M12	
Spindle through-hole diameter	φ36mm	
Main spindle speed	8,000min ⁻¹	
Maximum drilling diameter for the gang rotary tool	φ10mm	
Maximum tapping diameter for the gang rotary tool	M8	
Spindle speed of the gang rotary tool	max.5,000min ⁻¹ (rating 4,000min ⁻¹)	
Maximum chuck diameter of back spindle	φ32mm	
Maximum protrusion length of the back spindle workpiece	65mm	
Maximum protrusion length	150mm	85mm
Maximum drilling diameter in back machining process	φ10mm	
Maximum tapping diameter in back machining process	M10	
Back spindle speed	8,000min ⁻¹	
Number of tools to be mounted	23	
Turning tools on the gang tool post	6	
Cross rotary tools	4	
Tools for front drilling	4	
Tools for back drilling	9 (5+4)	
Tool size		
Tool (gang tool post)	□16mm	
Sleeve	φ25.4mm	
Chuck and bushing		
Main spindle collet chuck	WFC081-M	FC955-M-K
Back spindle collet chuck	WFC081-M-K	
Rotary tool collet chuck	ER16, ER20	
Chuck for drill sleeves	ER16, ER20, ER25	
Guide bushing	FG531-M	—
Rapid feed rate		
X2,Y1,Z1,Z2 axes	45m/min	
X1 axis	32m/min	
Motors		
Spindle drive	5.5/7.5kW	
Tool spindle drive	1.0kW	
Back spindle drive	2.2/3.7kW	
Coolant oil	0.4kW	
Lubricating oil	0.003kW	
Center height	1050mm	
Input power capacity	15kVA	
Air pressure and air flow rate for pneumatic devices	0.5MPa · 50NI/min (max.170NI/min)	
Weight	2800kg	

A32 VII Right Spindle Machine Standard



Maximum height:1,780mm (including mount)

Standard accessories

Main spindle chucking device
Back spindle chucking device
Gang rotary tool driving devices
Coolant device (with level detector)
Lubricating oil supply unit (with level detector)
Machine relocation detector
Door lock function
Workpiece separator
Pneumatic device for air sealing
Cut-off tool breakage detection
Lighting
Rotary guide bushing device

Special Accessories

Knock-out jig for through-hole workpiece
Workpiece conveyor
Chip conveyor
Workpiece separator for front collection
Coolant flow rate detector
Signal lamp
3-color signal tower

Standard NC functions

NC unit dedicated to the A32
8.4 inch Color liquid crystal display (LCD)
Program storage capacity : 40m
Tool offset pairs : 40
Product counter indication (up to 8 digits)
Spindle speed change detector
Main spindle indexing at 1 intervals
On-machine program check function
Constant surface speed control function
Back spindle chasing function

Special NC functions

Variable lead thread cutting
Chamfering, corner R
Geometric function
Spindle synchronized function
Spindle C-axis function
Milling interpolation
Back spindle 1 indexing function
Back spindle C-axis function
Multiple repetitive cycle for turning
Canned cycle drilling
Rigid tapping function
High speed Rigid tapping function
Tool offset pairs : 80
Tool life management I
Tool life management II
Helical interpolation function
Program storage capacity 80m
Program storage capacity 160m
User macros
Submicrom commands
Inch command
Sub inch command

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CITIZEN MACHINERY & BOLEY GmbH
MARUBENI CITIZEN-CINCOM INC.

TEL.81-267-32-5961 FAX.81-267-32-5928
TEL.66-35-721-833 FAX.66-35-721-835
TEL.86-21-6334-3290 FAX.86-21-6334-3289
TEL.49-711-3906-100 FAX.49-711-3906-106
TEL.1-201-818-0100 FAX.1-201-818-1877

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