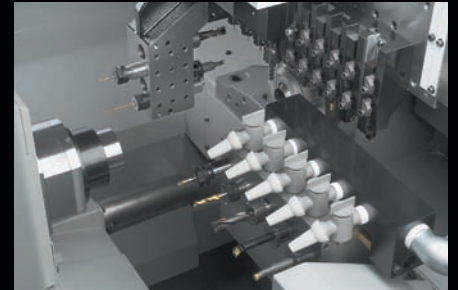
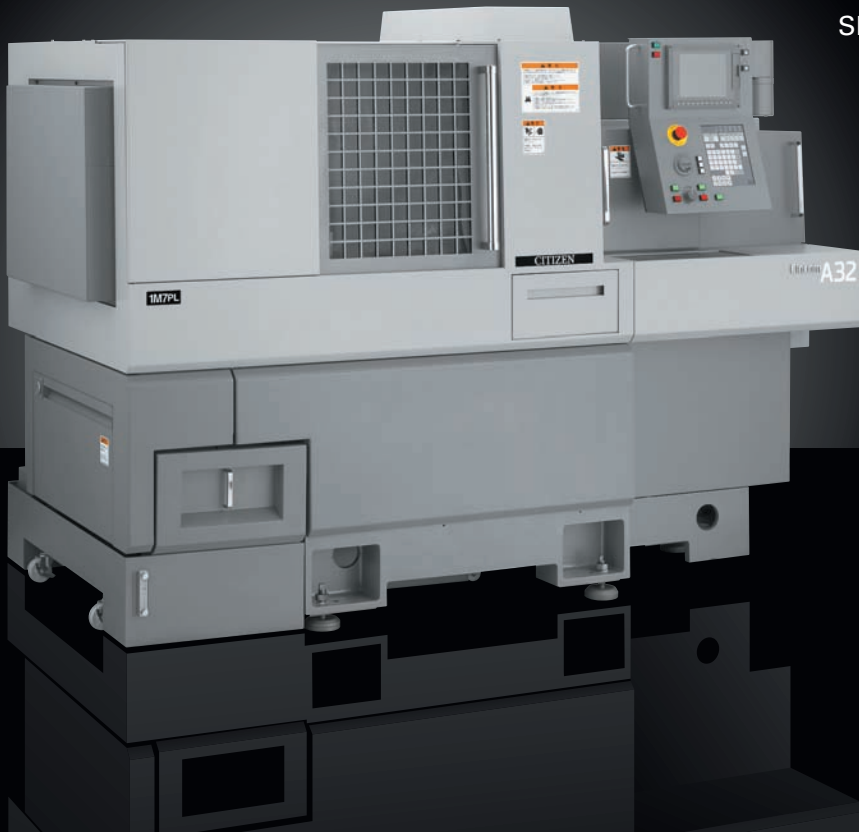


Improved productivity for complex machining

CINCOM

Sliding Headstock Type CNC Automatic Lathe

A32



A

45m/min Rapid Feed Rate—This $\phi 32\text{mm}$ Machine Offers Exceptional Productivity

The A32 offers $\phi 32\text{mm}$ large diameter machining at an unbeatable low price. This cost-effective 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. Special consideration for thermal displacement makes high accuracy machining possible and the design features an ingenious bed shape and electric cabinet placement. The NC unit (that has been acclaimed for its screen clarity and ease of operation) has also been remodeled and is now compatible with network LAN to enable network control of NC programs. Standard equipment has been enhanced, providing a production-ready, value-for-the-money manufacturing solution.

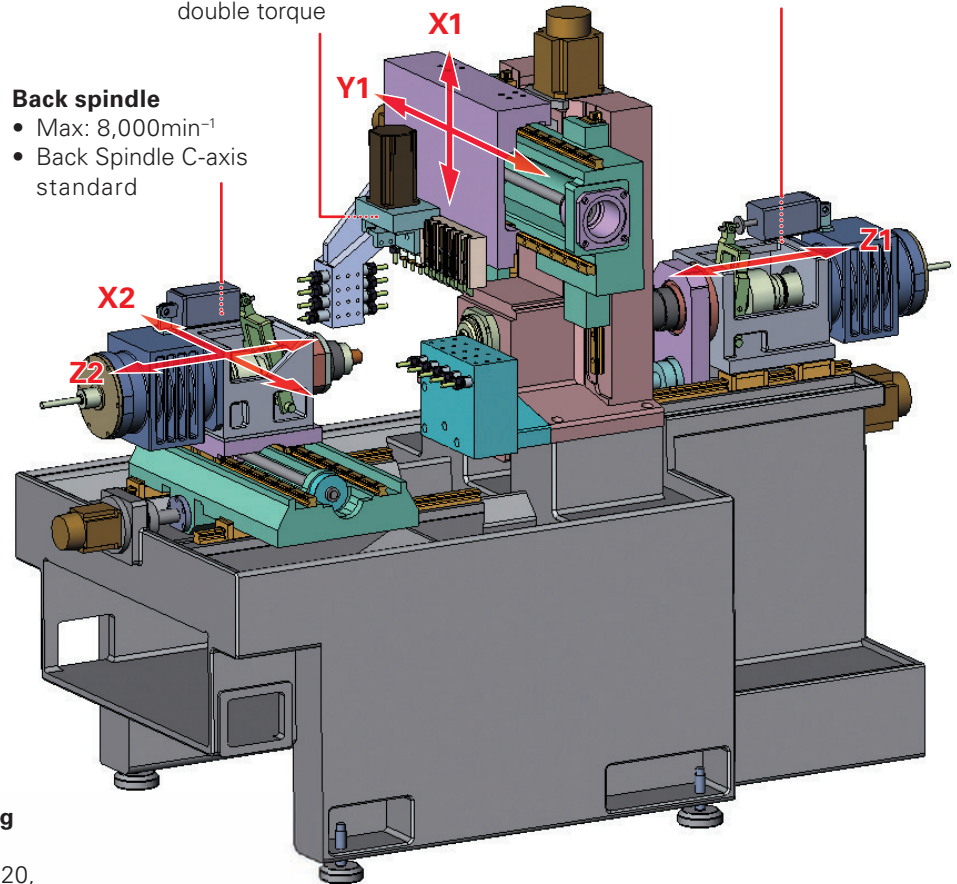
Rotary tools on the gang tool post

- Max: 5,000min⁻¹ (rating: 4,000min⁻¹)
- *One tool is half speed/double torque

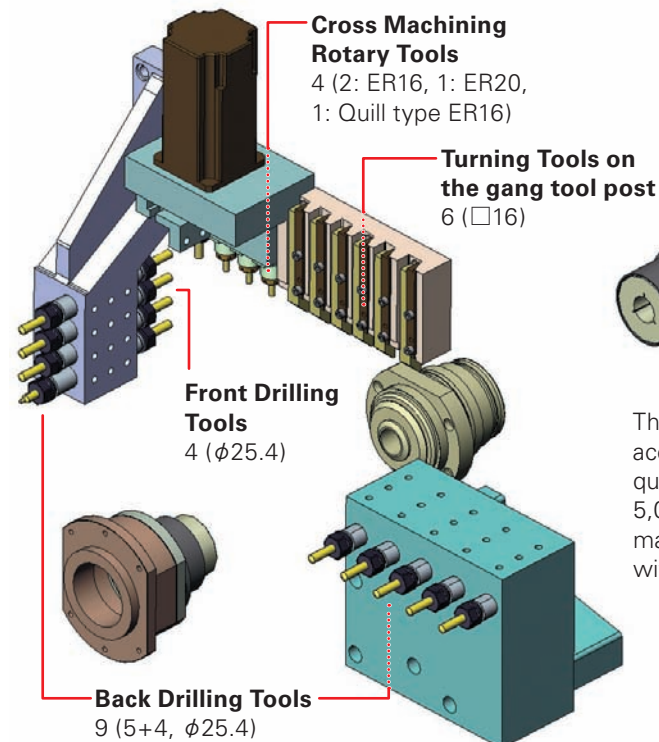
Front spindle

- Max: 8,000min⁻¹
- 320mm/1 chucking (GB)
- 2.5D/1 chucking (NGB)
- Spindle C-axis standard

- ## Back spindle
- Max: 8,000min⁻¹
 - Back Spindle C-axis standard



Standard Tool Layout



The gang tool post for rotary tools supplied as a standard accessory (U30B) is configured with three built-in and one quill type tool. Of the three built-in 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 ER16 cross diameter milling spindle.

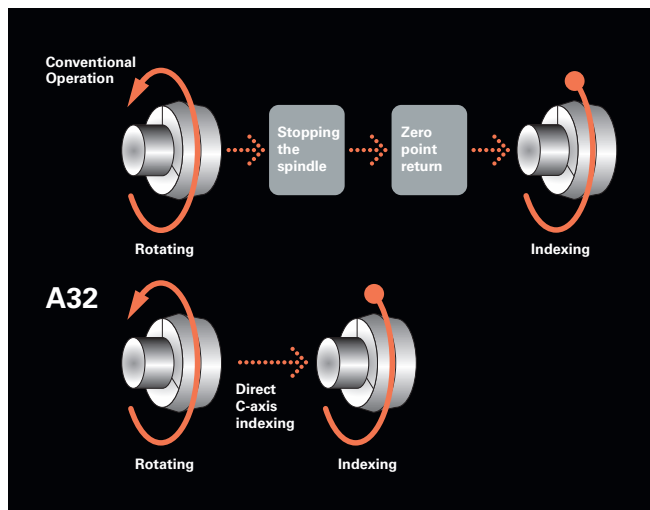
30% Higher Productivity Achieved by Faster and Heavier Machining

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 thus eliminating 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 45m/min (32m/min on the X-axis). Because time constants are taken into account too, high-speed operation is possible even over short travel distances. These unbeatable high feed rates considerably cut cycle times. Keeping in line with the increase 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 substantially increased. When compared with the construction of previous machines, total rigidity has increased by 30%. This makes powerful cutting possible and achieves 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 applied for the front and back spindle, which are key elements in machining. This provides high accuracy, low noise, low energy and stable high-speed rotation. The output of the front spindle motor has been increased from the 3.7/7.5kW of previous machines to 5.5/7.5kW and torque in the effective rotational speed range has been increased by 40%. As with the bed, the spindle has been designed for high rigidity. The spindle bearings have been made one increment larger than on previous machines and the thickness of the spindle has also been increased so the enhanced spindle output can be supported.

User Friendly Operation

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



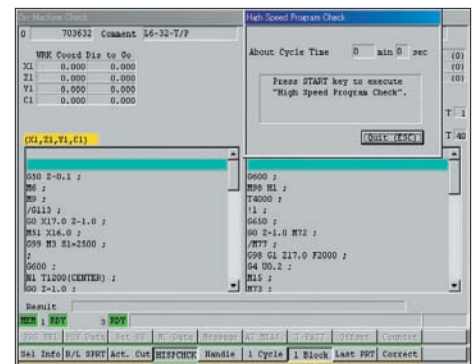
CF Card Slot

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



Swing-out Operation Panel

The operation panel can be swiveled to a convenient position to make tasks, such as changing the front spindle chuck or adjusting the guide bushings, easier.



Machine Specifications

Item	A32VII	A32VIIC
	Guide bushing	Non-guide bushing
Maximum machining diameter (D)	φ32mm	
Maximum machining length (L)	320mm/1 chucking (Z1 stroke: 325mm)	2.5 D/1 chucking (Z1 stroke 85mm)
Maximum front drilling diameter	φ12mm	
Maximum front tapping diameter	M12 (cutting tap)	
Spindle through-hole diameter	φ36mm	
Main spindle speed	8,000min ⁻¹	
Maximum drilling diameter of gang rotary tool	φ10mm	
Maximum tapping diameter of gang rotary tool	M8 (cutting tap)	
Spindle speed of gang rotary tool	3-stations: max. 5,000min ⁻¹ (rating 4,000min ⁻¹) 1-station: max. 2,500min ⁻¹ (rating 1,500min ⁻¹)	
Maximum chuck diameter of back spindle	φ32mm	
Maximum workpiece length for front side ejection	150mm	
Maximum drilling diameter in back spindle	φ10mm	
Max. tapping diameter (for back spindle)	M10 (cutting tap)	
Back spindle speed	max. 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 (4+5)	
Tool size		
Turning Tools (gang tool post)	□ $\frac{5}{8}$ " , □16mm	
Sleeves	φ1" (25.4mm)	
Chuck and Bushing		
Main spindle collet chuck	TF37SP	72-199 (Shaublin)
Back spindle collect chuck	TF37SP	
Rotary tool collet chuck	ER16 (3-Stations), ER20 (1-Station)	
Drill sleeve chuck	ER16	
Guide bushing	TD32	-
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	
Lubrication oil	0.003kW	
Center height	1,050mm	
Input power capacity	15kVA	
Air pressure and air flow rate for pneumatic devices	0.5MPa · 50NI/min (max. 170NI/min) (at the time of air blow)	
Weight	3,500kg	

Standard accessories

Main spindle chucking unit
Back spindle chucking unit
4-gang rotary tool driving device
Coolant device (with level detector)
Lubrication 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 bush drive

Optional accessories

Rotary tool driving device for back machining
Knock-out jig for through-hole workpiece
Workpiece conveyor
Chip conveyor
Workpiece basket on back spindle
Coolant flow rate detector
Patrol light
3-color signal tower
Long workpiece unit

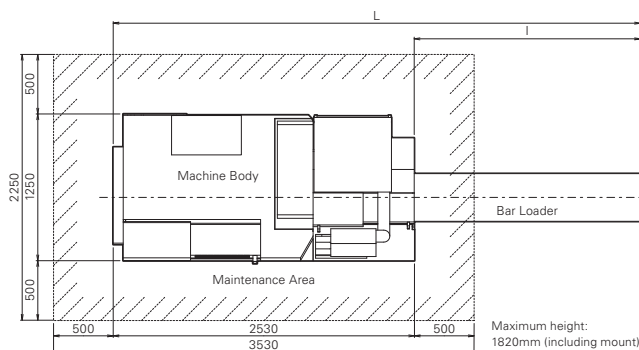
Standard NC functions

NC unit dedicated to the A32
8.4 inch color LCD
Program storage capacity: 80m
Sub program running in PCMCIA card
Tool off-set pairs: 80
Product counter indication (up to 8 digits)
Spindle speed change detector (main & back)
Automatic power-off function
Main & Back spindle C-axis function
On-machine program check function
High speed program check function
Constant surface speed function (main & back)
Variable lead threading
Chamfering, Corner R
Direct input of drawing dimension
Spindle synchronized function
Milling interpolation function
Helical Interpolation function
Multiple repetitive cycle for turning
Canned cycle for drilling
Rigid tapping function
Differential speed rigid tapping function
Tool life management I
Tool life management II
User macro
Inch/metric conversion
Sub-inch command
B code I/F
Bar feeder interface

Optional NC functions

Program storage capacity: 160m

Machine Layout



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Catalog No. A32 0508