

CITIZEN

Cincom

M32

Sliding Headstock Type CNC Automatic Lathe



The M32 - 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, and 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 which carries 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.

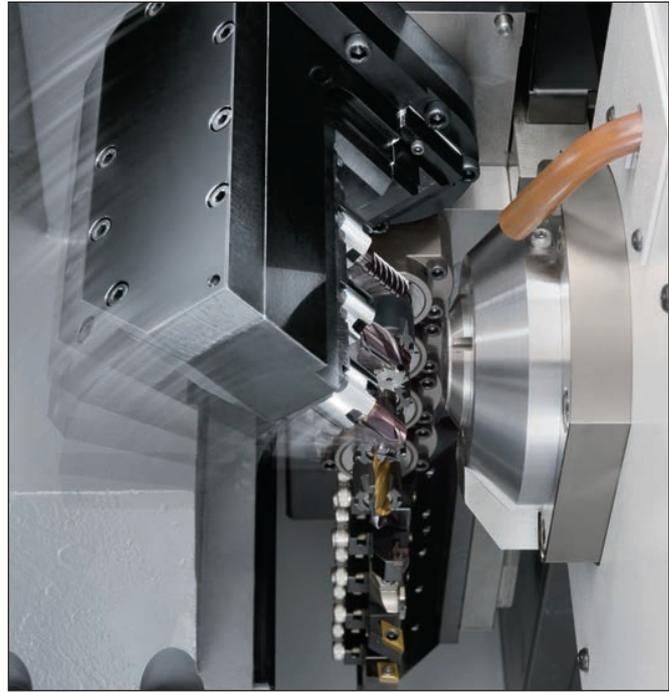




Y axis on the back tool post

(types VIII)

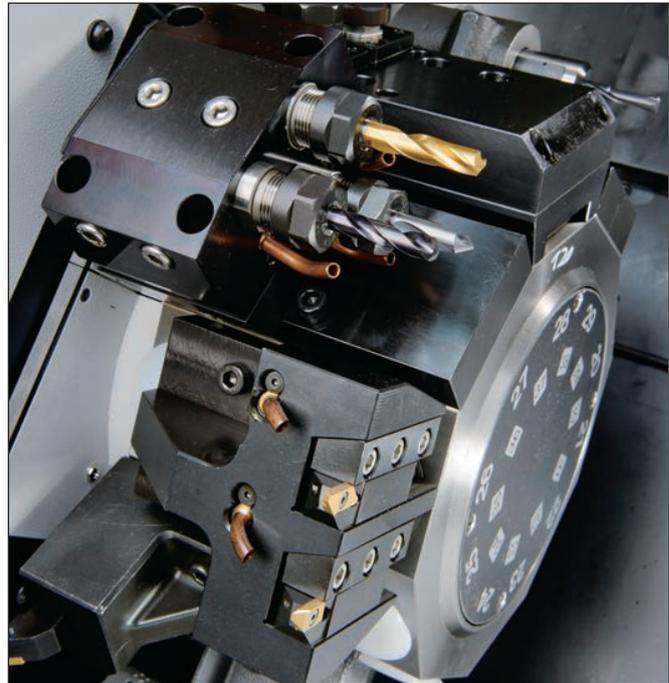
The back tool post can accommodate holders in 3 rows (two rows for rotary tools and one for fixed tools) and up to nine tools can be used. All 3 rows are under Y3 axis control. The specifications of the outer diameter milling spindle (GSC1110), 3-drilling spindle (GSE1510) and 3-sleeve holder (GDF1501) 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.



B axis with 3 rotary tools on the gang tool post

(type VIII)

The B axis is the slant axis in reference to the Y1 axis. When drilling a slant hole on a conventional machine, an adjustable angle spindle on the turret was required, but now rotary tools incorporating a B axis can be used to change the angle by program command, enabling 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 the 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.

Choice of 2 models

With and without B axis

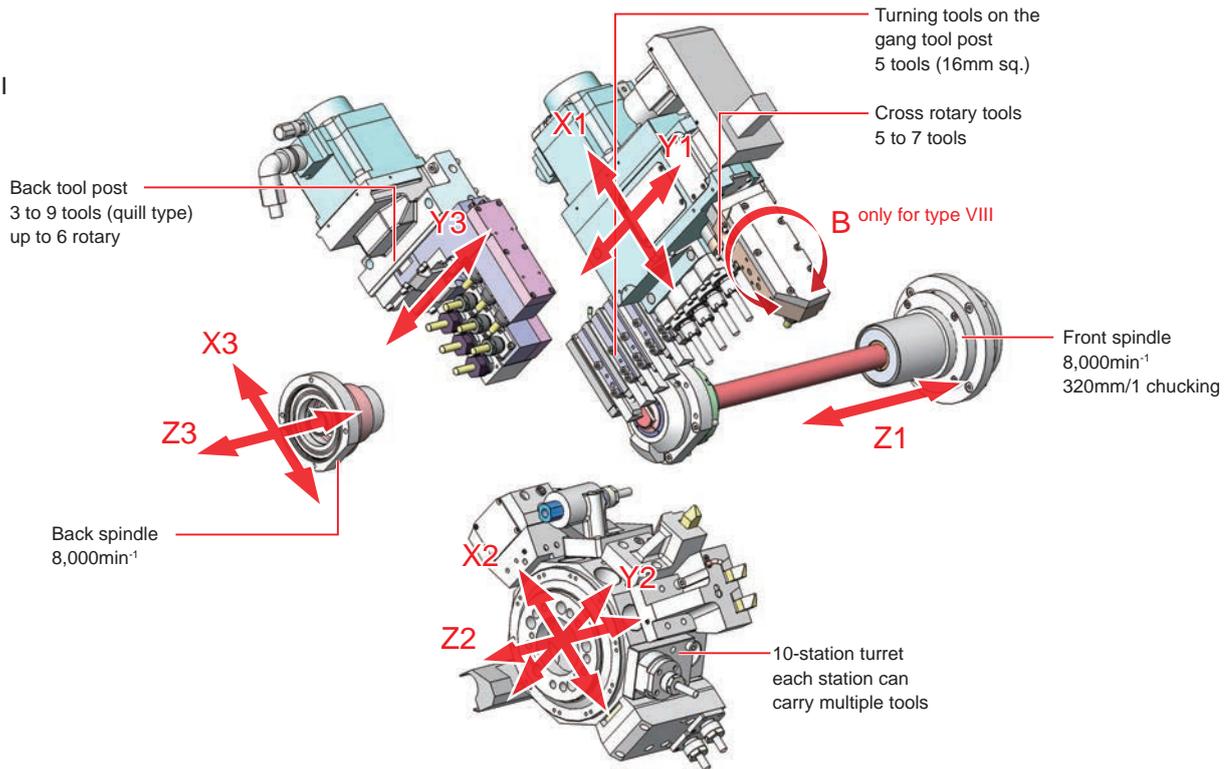
The M32-V has Y2 axis to the turret and the M32-VII adds the new Y3 axis and the 9 position back tool post with 6 driven and 3 fixed tool positioning.

The M32-VIII has all 3 Y axes and the B axis fully programmable 3 rotary tool holder on the gang tool post.

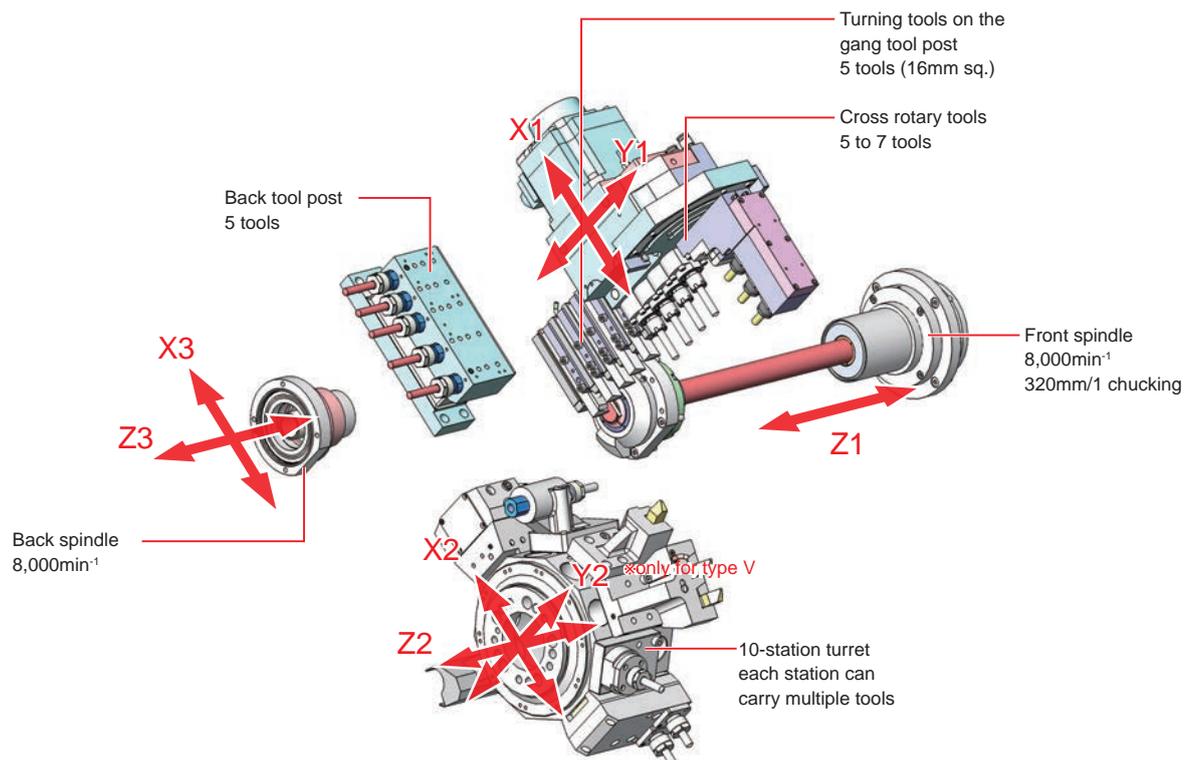
Machine configuration by M32 type

	V	VIII
Y2 axis (turret Y axis)	Available	Available
Y3 axis (back tool post Y axis)	N/A	Available
B axis (rotary tools on the gang tool post)	N/A	Available

M32 type VIII

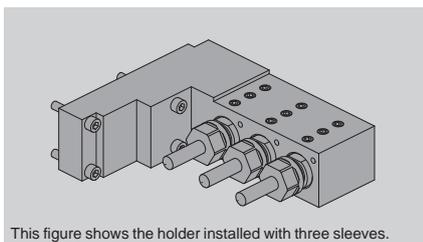


M32 type V



Tooling options for endless machining possibilities

Flexible multiple tooling combinations



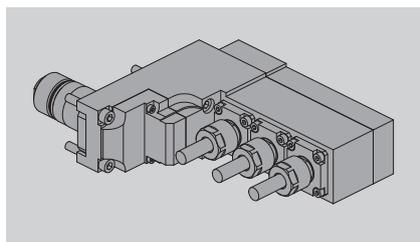
This figure shows the holder installed with three sleeves.

GDF1501

3-tool sleeve holder

Up to three fixed drill sleeves can be carried. The GDF1501 is mountable in one of the rotary tool positions of the gang tool post, U34B, of type V, or in back rotary tool drive device U152B of type VII and VIII machines.

Sleeve dia: 25.4 mm Dia.



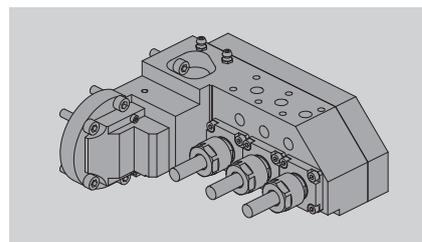
GSE1510

3-tool drilling spindle

Used for drilling and end milling. Mountable in the 5th rotary position of the gang tool post, U34B, of type V, or in back rotary tool drive device U152B of type VIII machines. When mounted in U34B, the angle can be manually adjusted between 0° and 90°.

Max. chuck dia: 10 mm Dia.

Chuck model: ER16



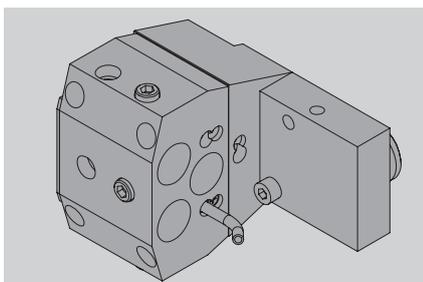
SEU810

3-tool drilling spindle

Used for face, cross or angle drilling/milling. Mountable in the 5th rotary position of the gang tool post, U33B, of type VIII models. The angle can be designated by B axis command -10° to +95°. Simultaneous 4 axis contouring is possible.

Max. chuck dia: 10 mm Dia.

Chuck model: ER16

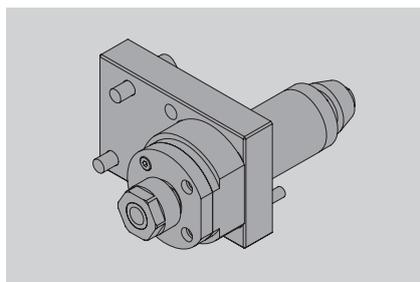


CDF901

Fixed type sleeve holder (Triple sleeve)

Up to three fixed drill sleeves can be mounted on one turret position. Including coolant nozzle.

Sleeve dia: 25.4 mm Dia.



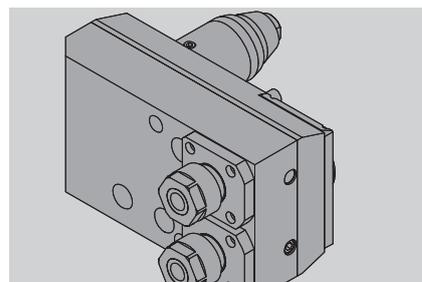
KSC110

Cross drilling spindle

Turret mounted holder used for drilling and end milling in the cross machining direction. Suitable for pinch/balanced cross drilling in conjunction with rotary tools on gang tool post.

Max. chuck dia: 10 mm Dia.

Chuck model: ER16



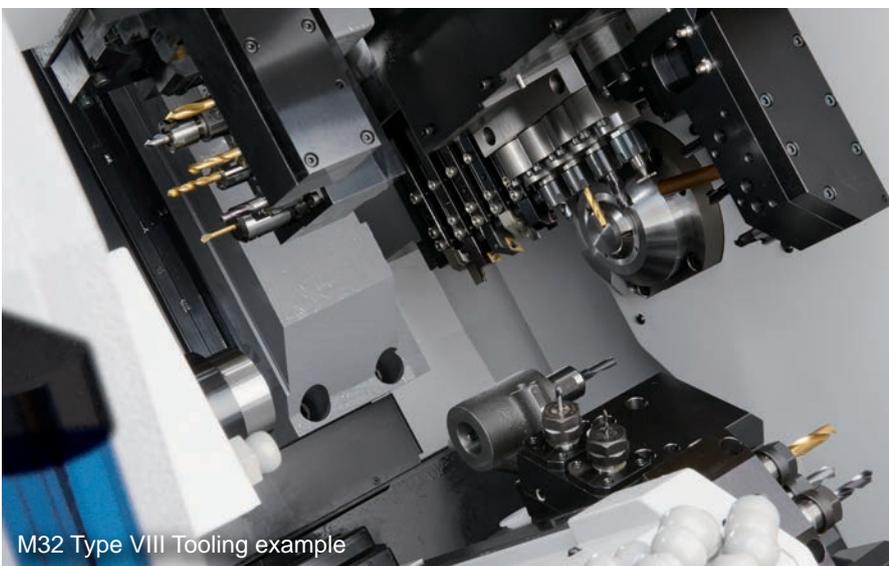
KSC510

Cross drilling spindle (Double)

Turret mounted holder used for drilling and end milling in the cross machining direction. Suitable for pinch/balanced cross drilling in conjunction with rotary tools on gang tool post.

Max. chuck dia: 10 mm Dia.

Chuck model: ER16



M32 Type VIII Tooling example

Making operation easier for you

You can add the product unloader device and chip conveyor



Latest high speed CNC unit

Start-up time, screen switching and processing times are considerably shorter. 'Cincom Control' is adopted to further reduce cycle times.



On-machine program check function

Using manual handle feed, operations can be run in the forward or reverse directions, and you can temporarily stop program operation, edit the program, and then restart operation.

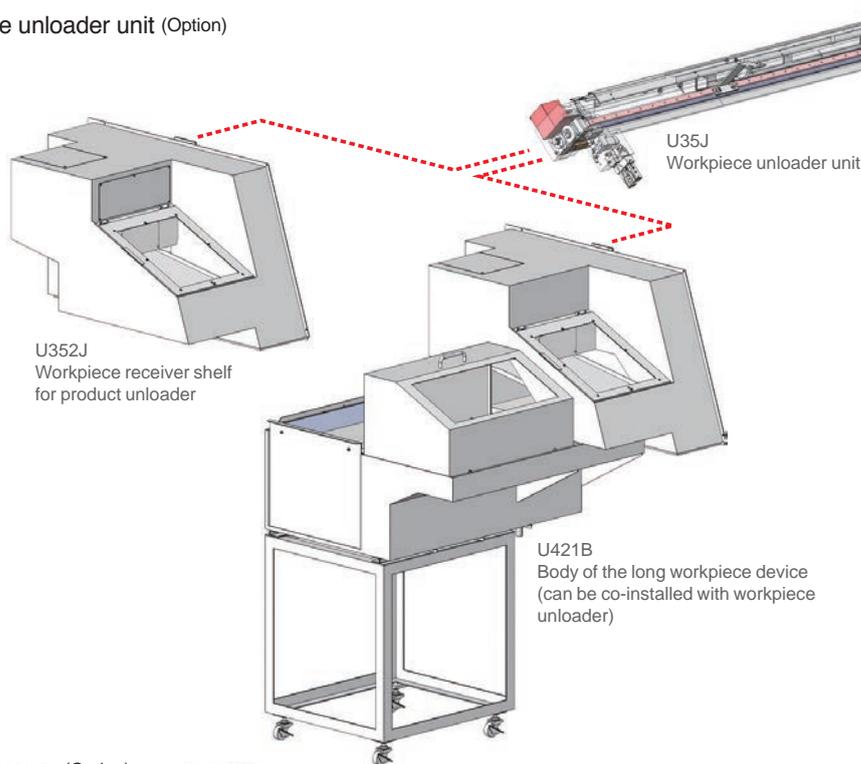


Product collection

The workpiece is ejected from the back spindle into the product chute or optional workpiece conveyor for collection. See below for optional fully programmable workpiece unloader unit which offers the advantage of controlled removal of the workpiece from the back spindle.

Optional attachment

Workpiece unloader unit (Option)



U352J
Workpiece receiver shelf
for product unloader

U35J
Workpiece unloader unit

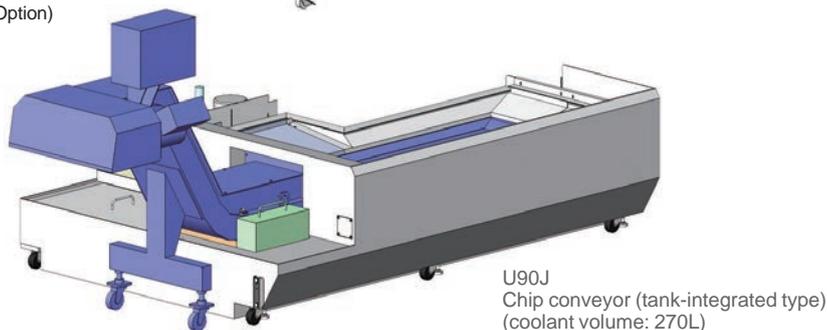
U421B
Body of the long workpiece device
(can be co-installed with workpiece
unloader)



Workpiece collection with hand

Maximum workpiece collection length
when using U35J
Type III and V
225mm (with hand)
*Up to 315 mm possible with the knock-out device re
110mm (with basket U351J)
Types VII and VIII
195mm (with hand)
110mm (with basket U351J)
U35J longitudinal motion is programmable; hand clasp
unclamp by M code.

Chip Conveyor (Option)

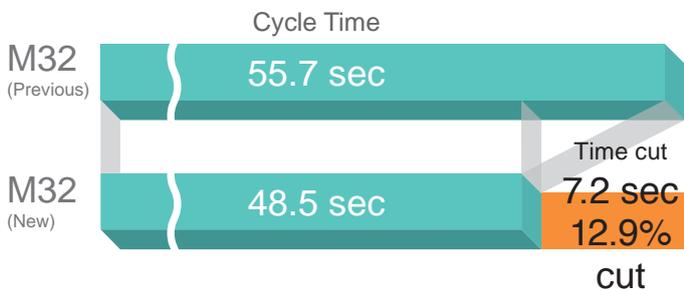


U90J
Chip conveyor (tank-integrated type)
(coolant volume: 270L)

Environmentally friendly products

Reducing not only cycle time but also power consumption

Cycle time and Power consumption
Comparison with previous model



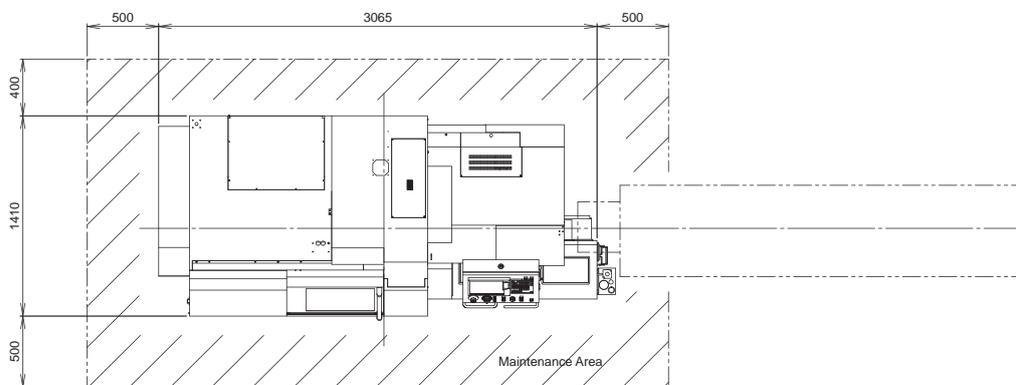
Average power consumption per component



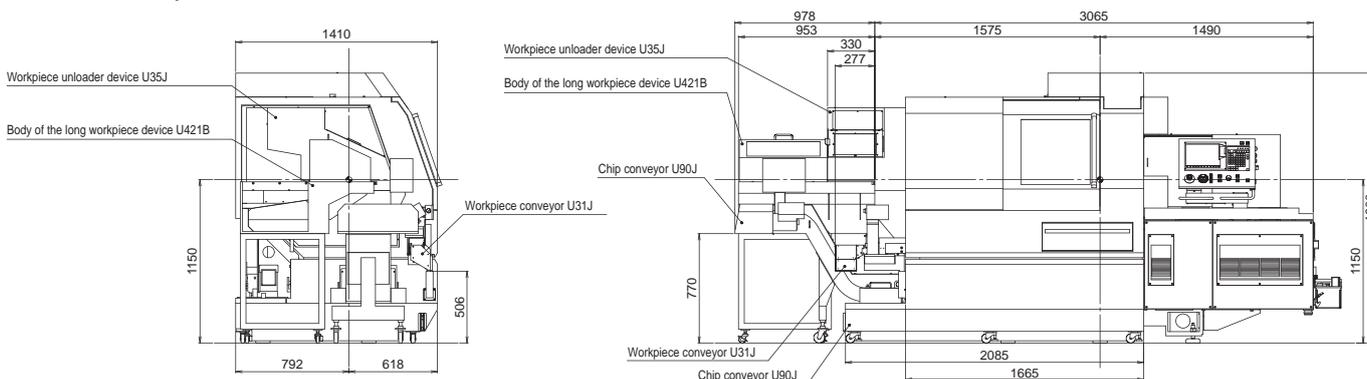
Citizen has developed a new control system for high-speed, smooth axis motion. "Cincom Control" reduces not only cycle time but also power consumption. Consideration has been given to saving energy and resources by adopting control methods that reduce power consumption, such as the idling stop function, 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 layout

M32 Machine Layout with options



M32 Machine Layout



Machine specification

Item	M32		Standard accessories	
	Type V	Type VIII		
	M32-4M5	M32-4M8	Main spindle chucking unit	Workpiece separator
Max. machining diameter (D)	32mm dia. (35mm ^{OP})		Rotary guide bushing unit	Machine relocation detector
Max. machining length (L)	320mm/1 chucking		Back spindle chucking unit	Door lock
Spindle through-hole diameter	36mm dia.		Gang rotary tool driving unit	Lighting
Main spindle speed	8,000min ⁻¹		Coolant unit (with level detector)	
Spindle speed of the gang rotary tool	6,000min ⁻¹ (Rating 4,500min ⁻¹)		Lubricating oil supply unit (with level detector)	
Spindle speed of the turret rotary tool	6,000min ⁻¹		Air-driven knock-out device for back machining	
Back spindle speed	8,000min ⁻¹			
Max. drilling diameter for the back tool post rotary tool	---	8mm dia.	Special accessories	
Max. tapping diameter for the back tool post rotary tool	(Option)	M6	Cut-off tool breakage detector	Workpiece conveyor
Spindle speed of the back tool post rotary tool	---	6,000min ⁻¹	Long workpiece unit	Chip conveyor
Max. chuck diameter of the back spindle	32mm dia.		Product unloader	Signal lamp
Max. protrusion length of the back spindle workpiece	65mm		Coolant flow rate detector	3-color signal tower
Max. protrusion length	145mm		Medium-pressure coolant unit	
Number of tools to be mounted	25+a	31+a	Knock-out jig for through-hole workpiece	
Gang tool post	5		Motor-driven knock-out device for back machining	
Gang rotary tool	5	4	Gang Rotary tool driving unit power-up	
Gang B axis rotary tool	0	3		
Number of turret station	10		Standard NC functions	
Back tool post	5	9	NC unit dedicated to the M32 (M730LPC-4VS)	
Tool size			10.4 inch color liquid crystal display (LCD)	
Tool (gang tool post)	16mm sq.		Program storage capacity : 40m (Approx.16KB)	
Sleeve	25.4mm dia.		Tool offset pairs : 40	
Chuck and bushing			Product counter indication (up to 8 digits)	
Main spindle collet chuck	F37		Operating time display function	
Back spindle collet chuck	F37		Spindle speed change detector	
Guide bushing	N229		Constant surface speed control function	
Rapid feed rate			Spindle C-axis function	
All axes (except X2 & Y2)	32m/min		Automatic power-off function	
X2 axis	18m/min		On-machine program check function	
Y2 axis	---	8m/min	Nose radius compensation	
Y3 axis	---	32m/min	Chamfering, corner R	
Motors			Format check function	
Spindle drive	3.7/7.5kW		Alarm block display function	
Back spindle drive	2.2/5.7kW		Eco display	
Gang tool post rotary tool drive	1.0kW		Machine operation information display	
Turret rotary tool drive	0.75/1.5kW			
Back tool post rotary tool drive	---	1.0kW	Special NC functions	
Coolant oil	0.4kW		Variable lead thread cutting	Tool offset pairs: 80
Lubricating oil	0.003kW		Arc threading function	Tool life management I
Centre height	1150mm		Geometric function	Tool life management II
Rated power consumption	14.5kVA		Spindle synchronized function	External memory program driving
Full-load current	53A		Milling interpolation	Network I/O function
Main braker capacity	75A		Back spindle 1° indexing function	Submicron commands
Weight	3500kg	3550kg	Back spindle C-axis function	User macros
			Back spindle chasing function	Helical interpolation function
			Canned cycle drilling	Inclined helical interpolation function
			Rigid tapping function	Hob function
			High speed Rigid tapping function	Polygon function
			Rigid tapping phase adjustment function	
			Differential speed rotary tool function	
			Optional block skip (9 sets)	
			Back machining program skip function	
			Program storage capacity: 1200m (Approx.480KB)	
			Inch command	
			Sub inch command	
			3D camfering function	

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