Machine Specification

Item	M32			
	Type III	Type V	Type VII	Type VIII
Max. machining diameter (D)	φ32mm (φ35mm option)			
Max. machining length (L)	320mm/1 chucking			
Max. front drilling diameter	φ12mm			
Max. front tapping diameter (tap, die)	M10			
Spindle through-hole diameter	φ36mm			
Main spindle speed	8,000min^{-1}			
Max. drilling diameter for the gang rotary tool	φ8mm			
Max. tapping diameter for the gang rotary tool	M6			
Spindle speed of the gang rotary tool	6,000min^{-1} (Rating 4,500min^{-1})			
Max. drilling diameter for the turret rotary tool	φ10mm			
Max. tapping diameter for the turret rotary tool	M8			
Spindle speed of the turret rotary tool	6,000min^{-1}			
Max. drilling diameter for the back spindle	φ10mm			
Max. tapping diameter for the back spindle	M10			
Back spindle speed	8,000min^{-1}			
Max. drilling diameter for the back tool post rotary tool			φ8mm	
Max. tapping diameter for the back tool post rotary tool	(Option)		M6	
Spindle speed of the back tool post rotary tool			6,000min^{-1}	
Max. chuck diameter of the back spindle	φ32mm			
Max. protrusion length of the back spindle workpiece	65mm			
Max. protrusion length	145mm			
Number of tools to be mounted	25+α		29+α	31+α
Gang tool post	5			
Gang rotary tool	5			4
Gang B axis rotary tool	0			3
Number of turret station	10			
Back tool post	5		9	

Item	M32			
	Type III	Type V	Type VII	Type VIII
Tool size				
Tool (gang tool post)	□16mm			
Sleeve	φ25.4mm			
Chuck and bushing				
Main spindle collet chuck	FC081-M			
Back spindle collet chuck	FC081-M-K			
Guide bushing	FG531-M			
Rapid feed rate				
All axes (except X2 & 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	—		1.0kW	
Coolant oil	0.4kW			
Lubricating oil	0.003kW			
Center height	1150mm			
Input power capacity	20kVA			
Weight	3500kg	3550kg	3650kg	

Environmental Information

Basic Information	Energy usage	Power supply voltage	AC200V
		Electrical power requirement	18KVA
		Required pneumatic pressure	0.5MPa
Environmental Performance Information	Power consumption	Standby power *1	0.524kW
		Power consumption with model workpiece *2	0.017kWh/cycle
		Power consumption value above converted to a CO_2 value *3	8.1g/cycle
	Air consumption	Required air flow rate	90Nl/min(max. 240 NL/min., during air blow)
	Lubricant consumption	At power ON	5.5cc/30min
	Noise level	Value measured based on JIS	80dB
Approach to Environmental Issues	Environmental load reduction	RoHS Directive / REACH regulations	Compliant
	Recycling	Indication of the material names of plastic parts	Covered in the instruction manual *4
	Environmental management		We pursue "Green Procurement", whereby we make our purchases while prioritizing goods and services that show consideration for the environment.

*1 : This is the standby power in the idle stop mode (a function that turns servomotor excitation off when it is not necessary, for example during program editing).
*2 : This is the power consumption in program operation (when not cutting) for one of our standard test pieces, shown for the purpose of comparing the environmental performance with that of existing models.
*3 : This is the value converted in accordance with the CHUBU Electric Power CO_2 emissions coefficient for 2009 as published by the Ministry of the Environment.
*4 : If polyvinyl chloride (PVC) and fluoric resin are not processed correctly they can generate harmful gases. When recycling these materials, commission a contractor that is capable of processing them appropriately.

ISO 9001
ISO 14001
BUREAU VERITAS
Certification

CITIZEN MACHINERY MIYANO CO., LTD. (Cincom Company)

CITIZEN Micro HumanTech

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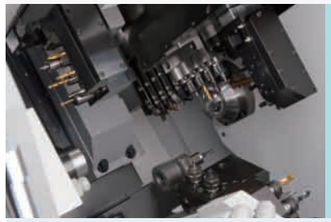


M32

Sliding Headstock Type Automatic CNC Lathe

Cincom Innovation Line

M

Cincom Miyano

"Evolution and Innovation" is the Future

Innovation is having your own vision and creating new technology

The M32. The market leader re-defined

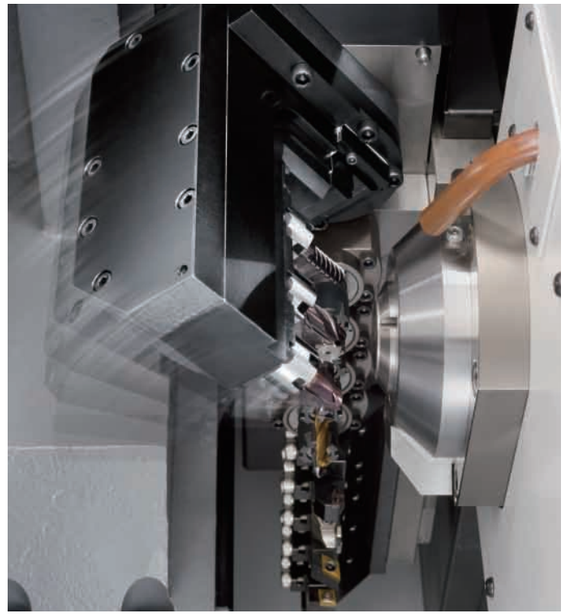
– more tools
– more functions
– more flexibility
– higher productivity
– same floor space
– more value

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.
There are 4 types of new M32:
M32-III, -V, -VII and -VIII.

Y axis on the back tool post (types VII and VIII)

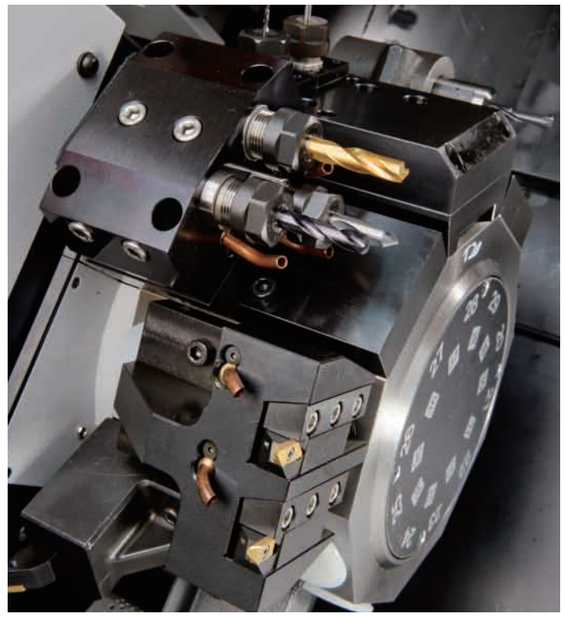
The back tool post can accommodate holders in 3 rows (two rows for rotary tools and one for fixed tools) and up to nine tools can be used. All 3 rows are under Y3 axis control. The specifications of the outer diameter milling spindle (GSC1110), 3-drilling spindle (GSE1510) and 3-sleeve holder (GDF1501)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

* The use of GSE1510 and GDF1501 on the gang tool post is applicable to types III, V and VII.



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 4 models

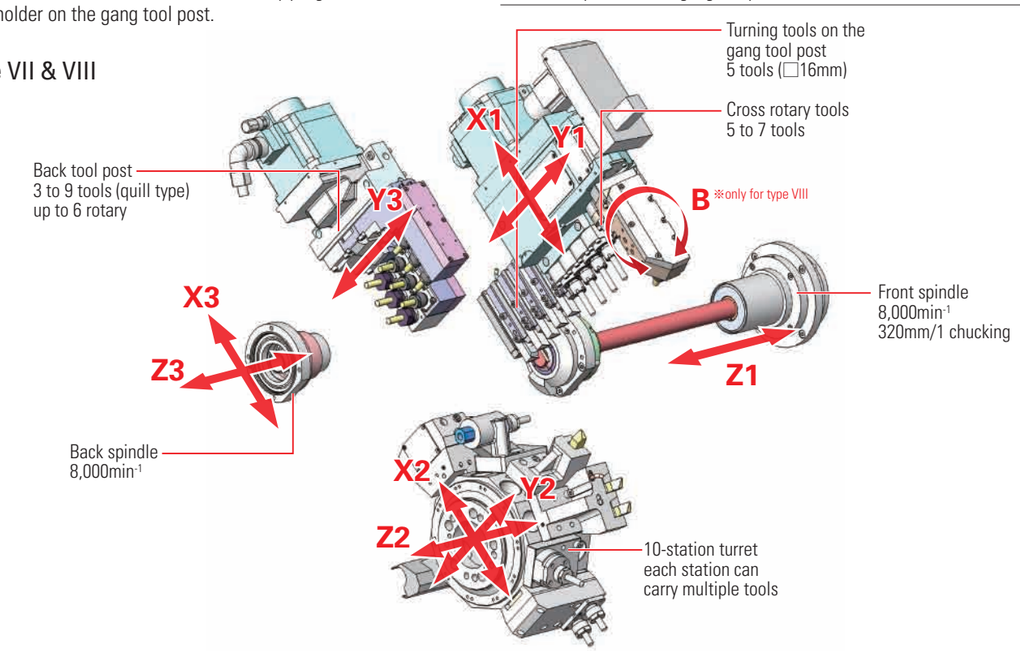
Selectable by 1, 2 or 3 Y axes and B axis

The new M32-III is the successor model to the original M32 with Y axis to the gang tool post now with the capability of an angle adjustable 3-rotary tool holder on the gang tool post. The M32-V additionally 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.

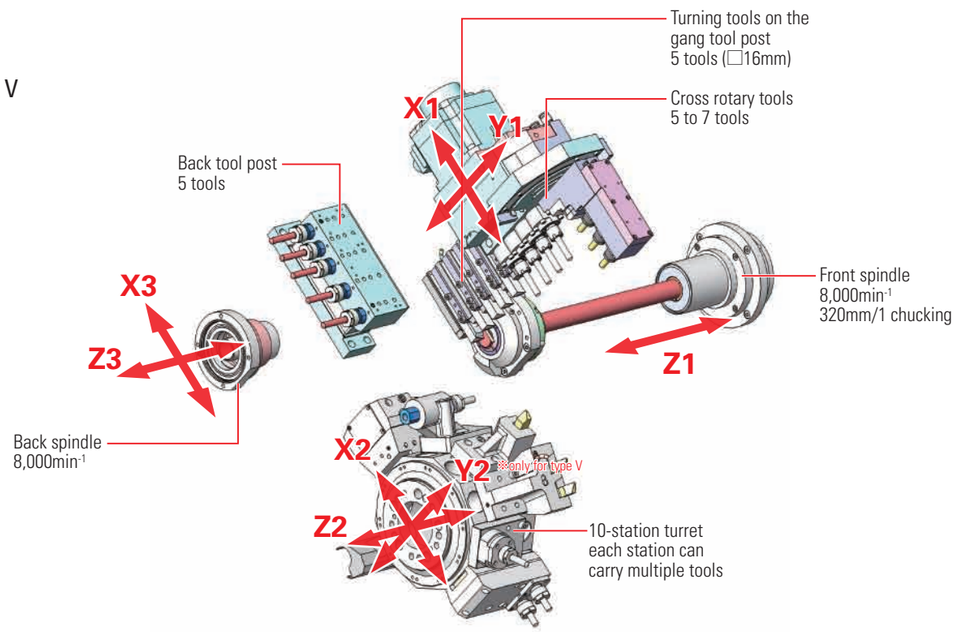
Machine configuration by M32 type

	Type III	Type V	Type VII	Type VIII
Y2 axis (turret Y axis)	—	○	○	○
Y3 axis (back tool post Y axis)	—	—	○	○
B axis (rotary tools on the gang tool post)	—	—	—	○

M32 type VII & VIII

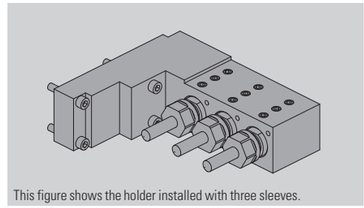


M32 type III & V



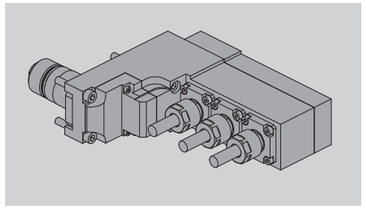
Tooling options for endless machining possibilities

Flexible multiple tooling combinations

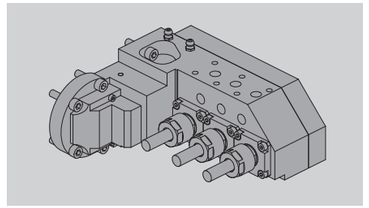


This figure shows the holder installed with three sleeves.

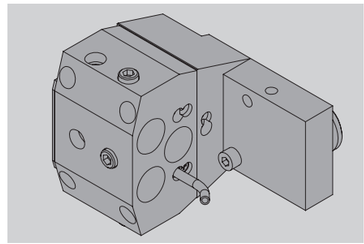
GDF1501
3-tool sleeve holder
Up to three fixed drill sleeves can be carried. The GDF1501 is mountable in one of the rotary tool positions of the gang tool post, U34B, of type III, V and VII models, or in back rotary tool drive device U152B of type VII and VIII machines.
Sleeve dia: ϕ25.4 mm



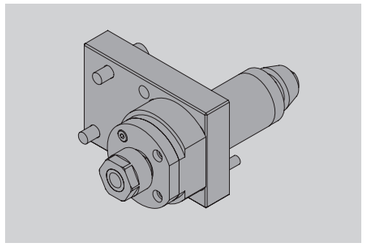
GSE1510
3-tool drilling spindle
Used for drilling and end milling. Mountable in the 5th rotary position of the gang tool post, U34B, of type III, V and VII models, or in back rotary tool drive device U152B of type VII and VIII machines. When mounted in U34B, the angle can be manually adjusted between 0°and 90°.
Max. chuck dia: ϕ10 mm
Chuck model: ER16



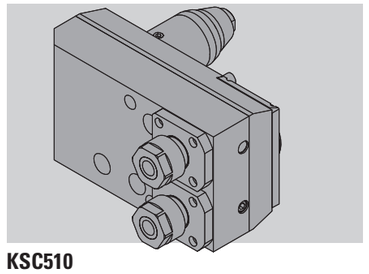
SEU810
3-tool drilling spindle
Used for face, cross or angle drilling/milling. Mountable in the 5th rotary position of the gang tool post, U33B, of type VIII models. The angle can be designated by B axis command -10° to +95°. Simultaneous 4 axis contouring is possible.
Max. chuck dia: ϕ10 mm
Chuck model: ER16



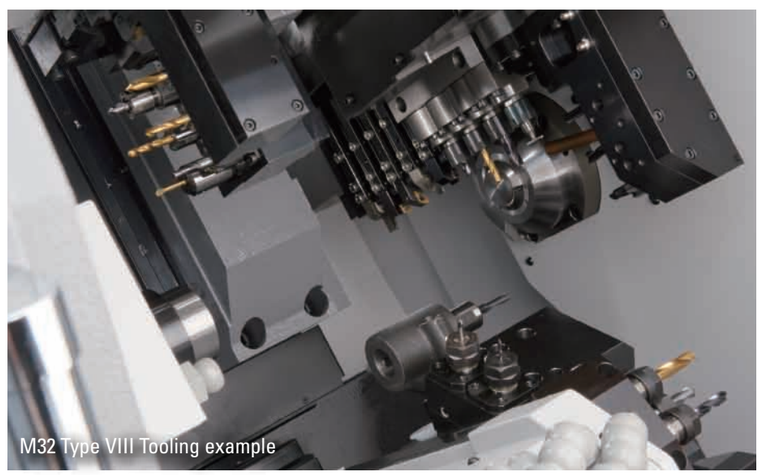
CDF901
Fixed type sleeve holder (Triple sleeve)
Up to three fixed drill sleeves can be mounted on one turret position. Including coolant nozzle.
Not usable on type III
Sleeve dia: ϕ25.4 mm



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: ϕ10 mm
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.
Not usable on type III
Max. chuck dia: ϕ10 mm
Chuck model: ER16



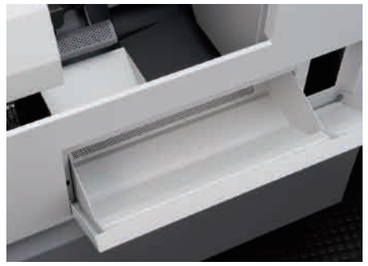
M32 Type VIII Tooling example

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.

Operation panel
The pivoting operation panel enables easy operation whilst simultaneously viewing the machining process.

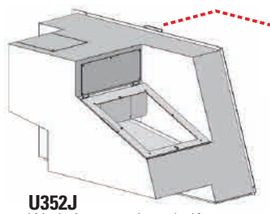


Product collection
The workpiece is ejected from the back spindle into the product chute or optional workpiece conveyor for collection. See below for optional fully programmable workpiece unloader unit which offers the advantage of controlled removal of the workpiece from the back spindle.

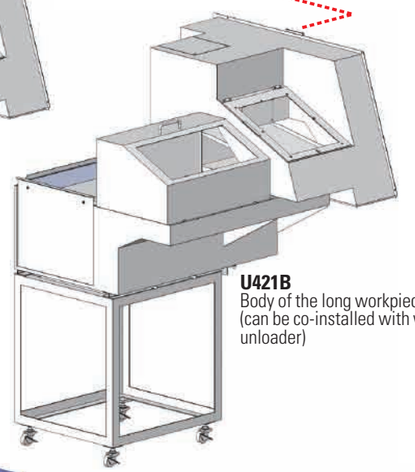
Optional attachment

Workpiece unloader unit (Option)

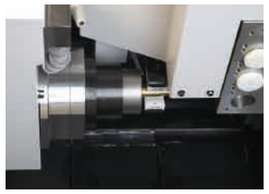
U35J
Workpiece unloader unit



U352J
Workpiece receiver shelf
for product unloader



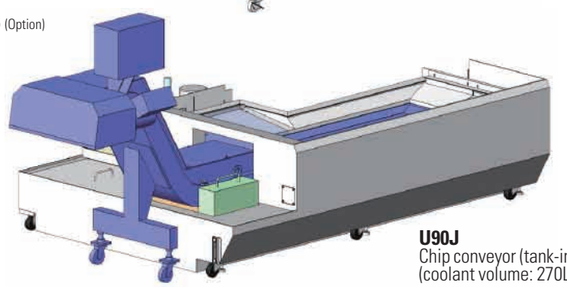
U421B
Body of the long workpiece device
(can be co-installed with workpiece unloader)



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 removed
110mm (with basket U351J)
Types VII and VIII
195mm (with hand)
110mm (with basket U351J)
U35J longitudinal motion is programmable; hand clamp / unclamp by M code.

Chip conveyor (Option)

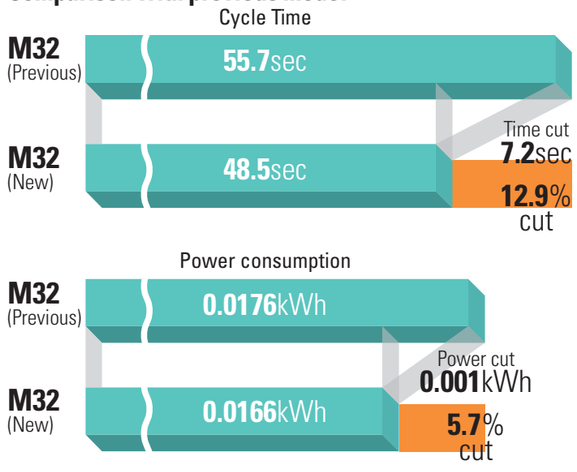


U90J
Chip conveyor (tank-integrated type)
(coolant volume: 270L)

Environmentally friendly products

Reducing not only Cycle time but also Power consumption

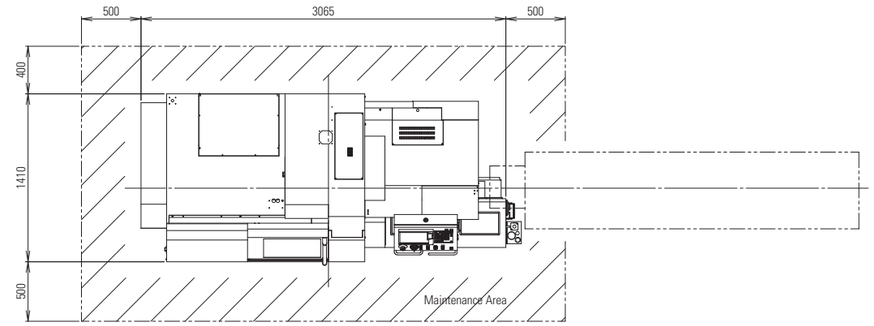
Cycle time and Power consumption
Comparison with previous model



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