

Cincom

L20

Sliding Headstock Type CNC Automatic Lathe



Our bestselling L20, completely renewed



A machine synonymous with the history of Cincom has been designed for the new age with 3 models in a modular design.

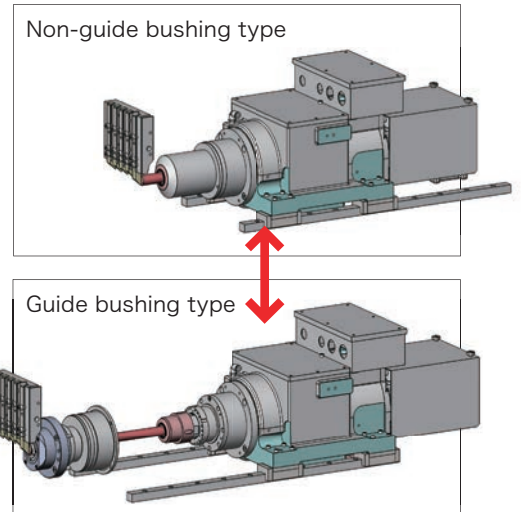
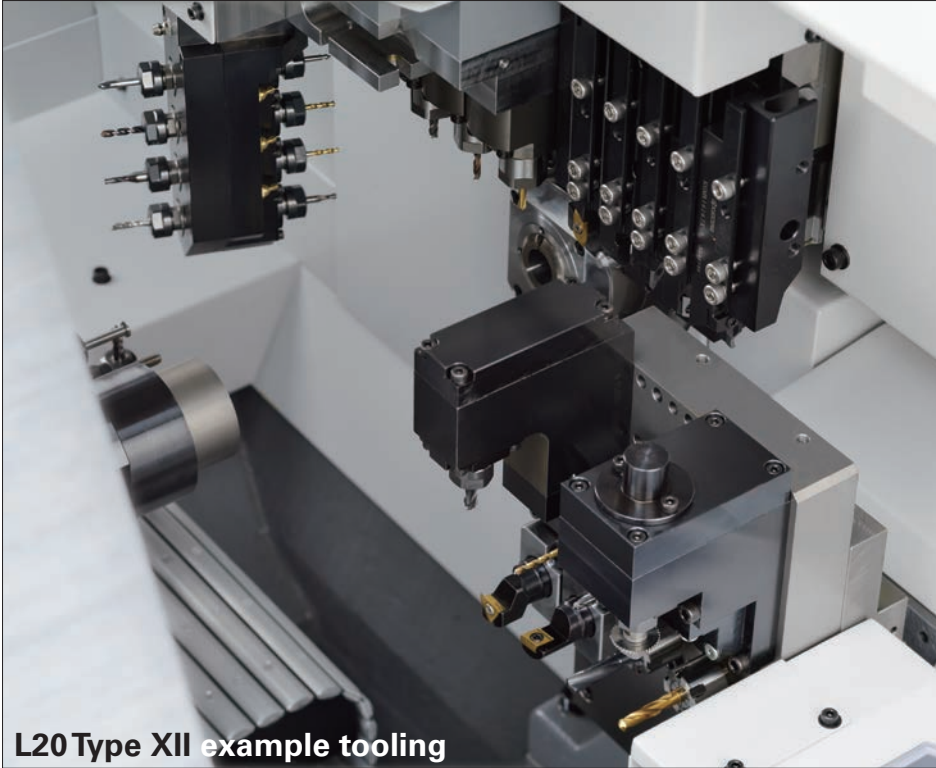
Ranging from a 5-axis machine with excellent cost performance to a high-end machine equipped with B axis and a back spindle Y axis, you can select the machine according to the functions you require.

This concept offers unrivalled versatility – two types of gang tool post, five types of opposite tool post and three types of back tool post are available to be specified according to the functions required.

Stable, powerful & productive with versatile modular design

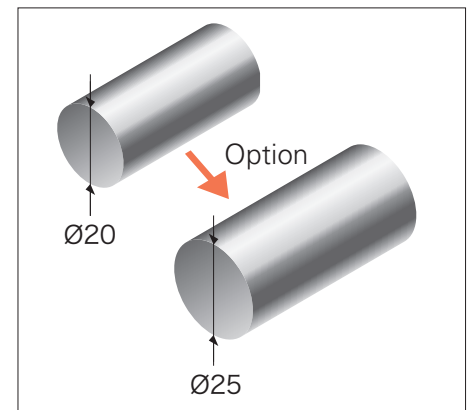
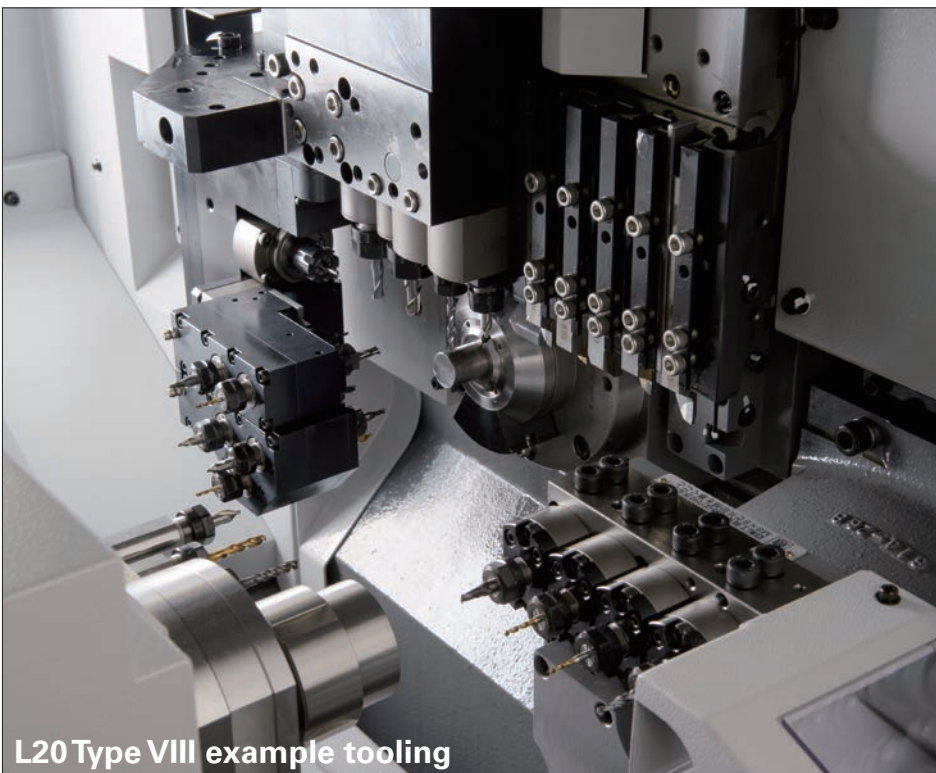
With the current shift in the manufacturing industry, the requirement is for variable-lot machining of a wide range of workpieces. In order to meet this requirement, Citizen has introduced Modular Design. We allow the

selection of functions corresponding to a diverse range of machining needs, and help customers optimize their manufacturing by combining these functions to achieve their ideal machine configuration.



Ability to use with or without a guide bushing

Guide bushing or non-guide bushing type can be selected as appropriate when machining long, thin workpieces, when using cold drawn material, and in order to leave short remnant bars.



Ø20mm max. bar as standard; Ø25mm as option

Supply of bar stock up to Ø25mm is supported as an option. The machining length per chucking is 200mm (Ø20mm) and 188mm (Ø25mm).

The long workpiece unit (optional) supports workpieces up to Ø20mm.

The new L20 – now with 3 models...

Each model can be specified to deliver the functions you need: from simple to complex workpieces and for small, medium and large lot sizes.

Rotary tools on the gang tool post
6,000 rpm (Max)
4,500 rpm (rating)

B-axis rotary tools *Type XII
8,000 rpm (Max)
6,000 rpm (rating)
Motor: 1.0 kW

Opposite tool post rotary tools *Option for Type X, XII
7,500 rpm (Max)
6,000 rpm (rating)
Motor: 0.75 kW

Back spindle
8,000 rpm
Motor: 0.75 / 1.5 kW

Rotary tools on the back tool post
7,500 rpm (Max)
6,000 rpm (rating)
Motor: 0.75 kW

Front spindle
10,000 rpm
Motor: 2.2 / 3.7 kW
Max. machining length: 200 mm/1 chucking (GB)

	Type VIII	Type X	Type XII
B axis (rotary tools on the gang tool post)	–	–	○
Opposite tool post Y axis	–	○	○
Number of tools	3	6	6
Rotary tools	–	○	○
Back tool post Number of tools	4	8	8
Rotary tools	○	○	○

...and with Citizen's renowned 'ease of use'



Position adjustable operation panel

By swiveling the position adjustable operation panel, you can perform operations while viewing the machining area.



In-machine lighting

Low energy LED lighting provides excellent brightness, clarity and visibility.

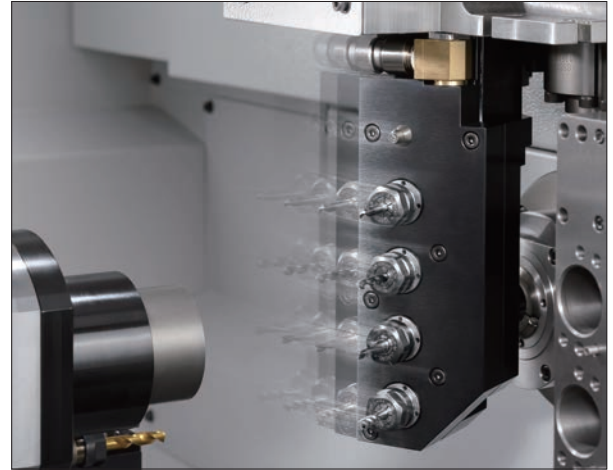
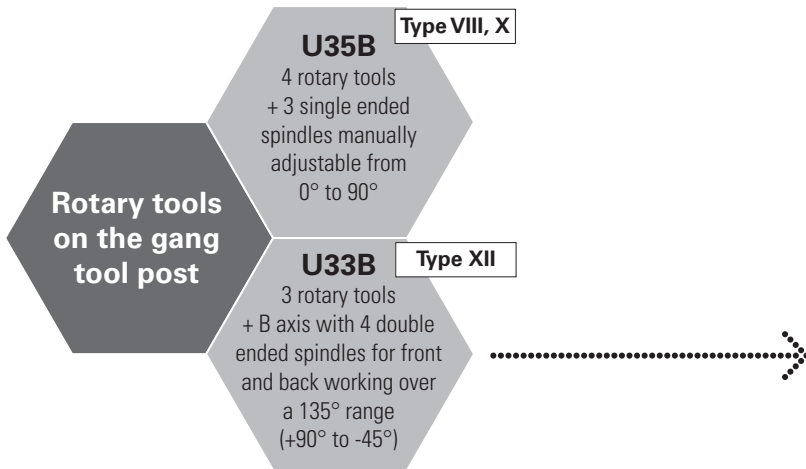


NC program I/O

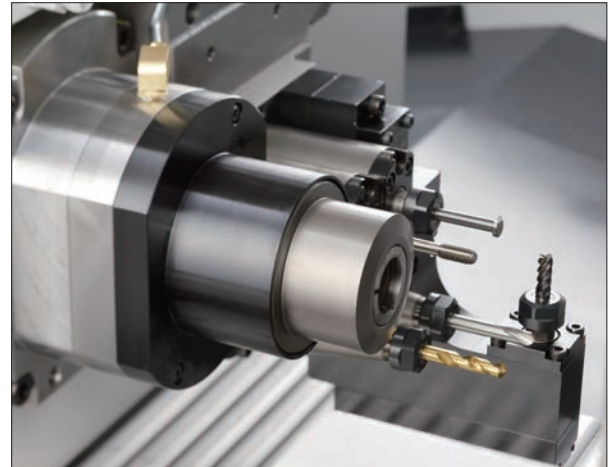
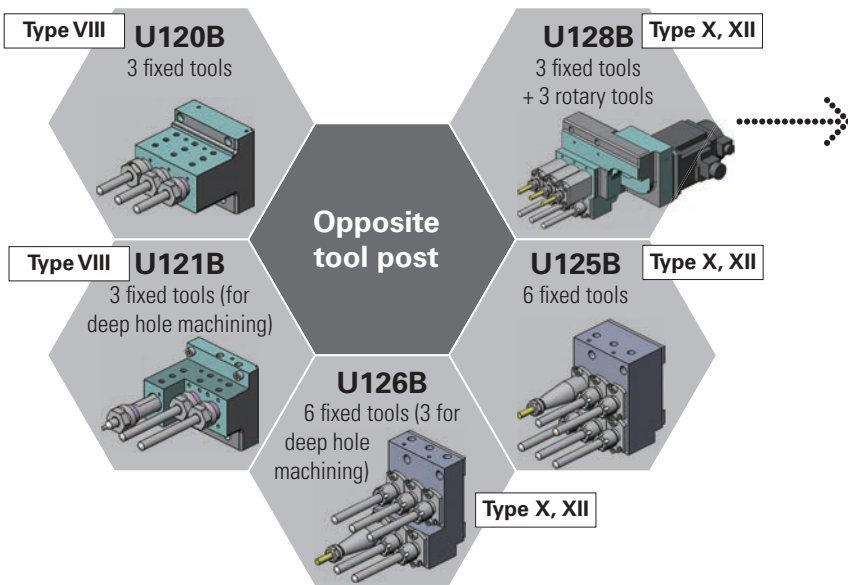
NC programs can be input and output using a USB memory stick or compact flash card.

Selectable modules to improve your productivity & profitability

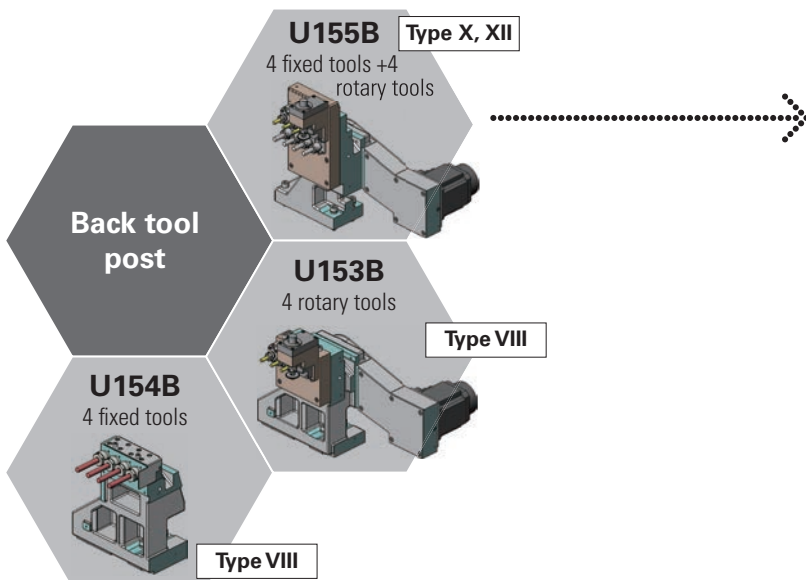
Function modules that can be combined without restrictions



Features a B axis for rotary tools on the gang tool posts of Type XII machine as standard; it can be set over a 135° range from 90° to -45°.



For the opposite tool post, a tool post that is capable of pinch milling or one that can handle deep hole machining can also be selected as options.



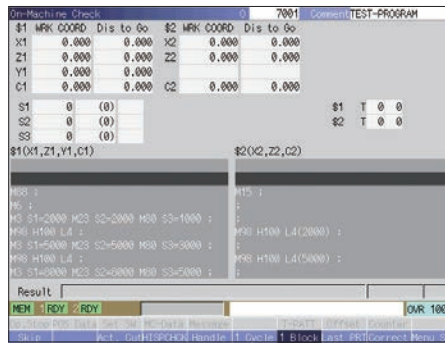
The back tool post on Type X and XII machines can accommodate a total of 8 tools: 4 rotary tools in the upper row and 4 fixed tools in the lower row.

Intuitive screen display is readable at a glance



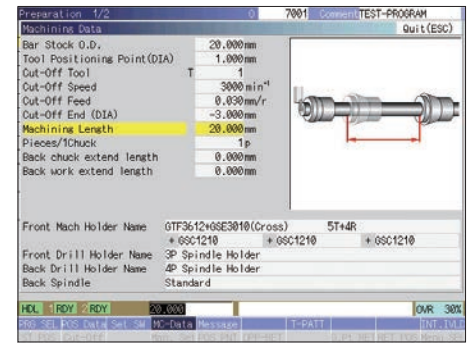
Equipped with high-speed NC

The latest NC model drastically reduces the start-up and screen switching time compared to conventional machines with advanced functions.



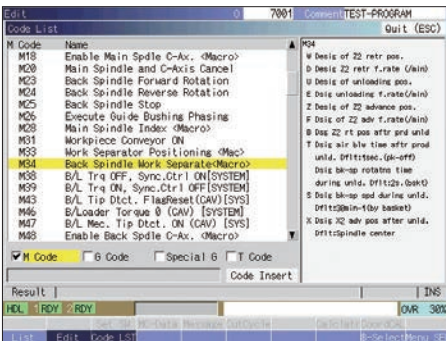
On-machine program check function

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 the operation.



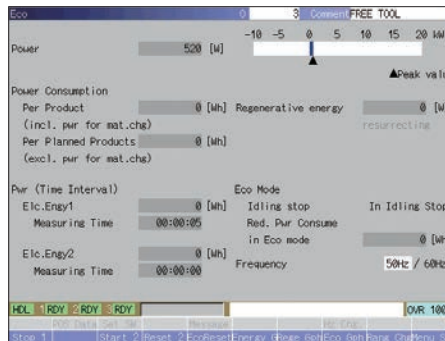
Display of easily understood illustrations

Illustrations appropriate for each item are displayed. You can see what they mean at a glance (the screen shown above displays the machining data).



Code list display

The function displays the list of G and M codes including explanations to aid programming.



Eco screen

The current power consumption is shown on the screen, along with the cumulative power consumption, and the power regeneration (generation) status.



Eco screen (example graph display)

The machine's power consumption can also be shown in the form of an easy to understand graph.

The next process starts before the current one ends

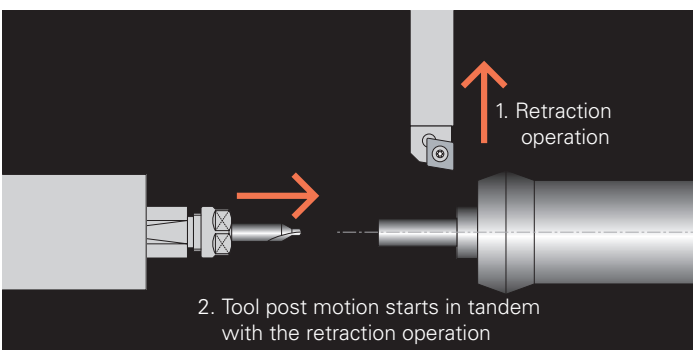
Cincom Control saves time between processes

Cincom Control

We have developed a new control system unique to Citizen that realizes fast and smooth operation. It reduces idle time and achieves faster rapid feed together with substantial shortening of cycle time.

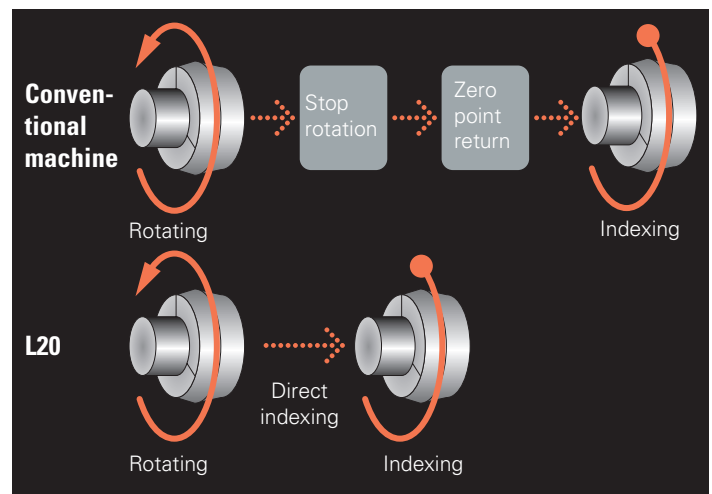
Multiple tool post overlapping function

Independent opposite and gang tool posts are provided. In front machining, idle time has been completely eliminated by using a unique control method whereby the tool post to be used next starts the preparation for machining without waiting for the other one to complete its retraction operation.



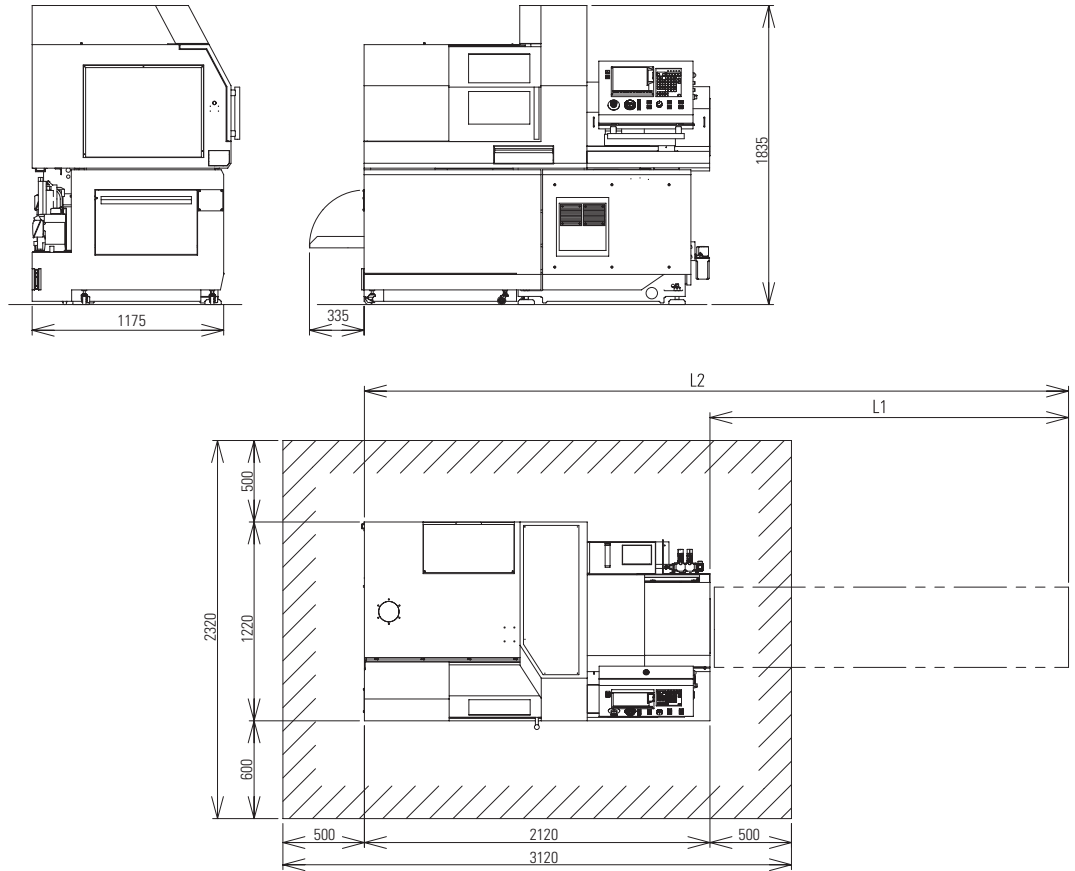
Direct spindle indexing function

This substantially reduces spindle indexing time. When indexing the spindle, this function allows the spindle to be decelerated and stopped at the required index position by specifying this position with a C-axis command while the spindle is rotating. This eliminates the idle time up until rotation stops, and improves working efficiency.

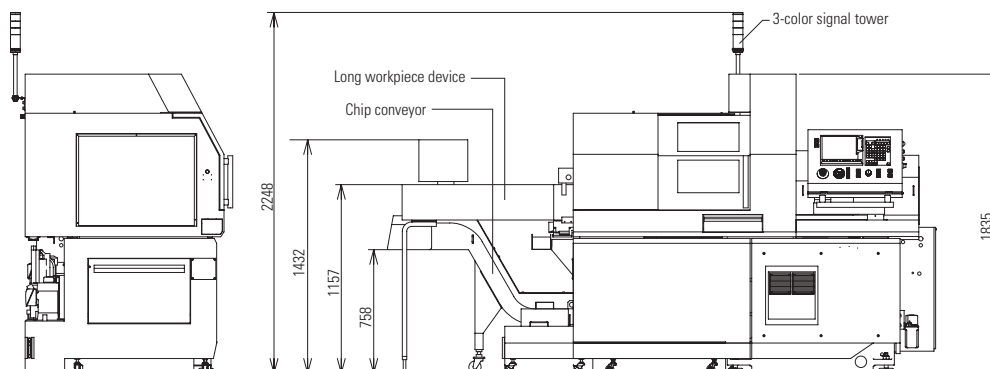
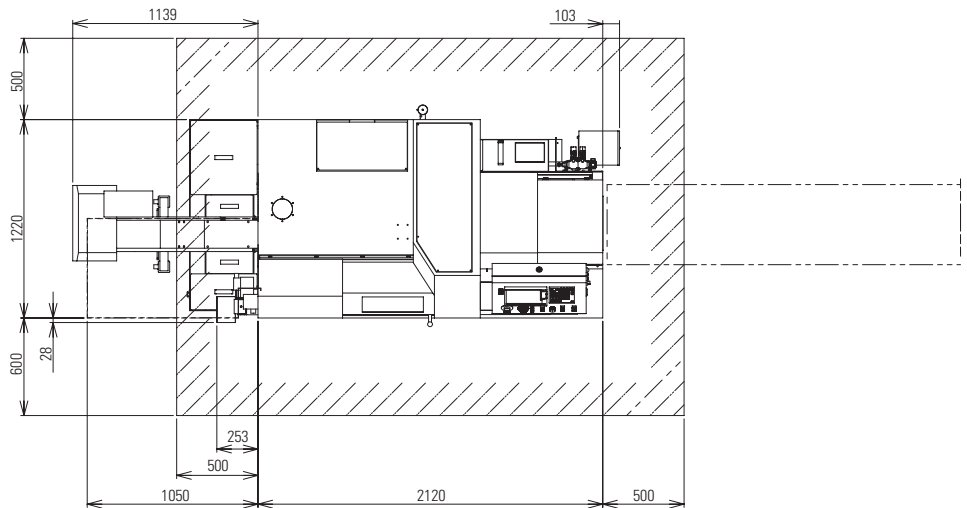


Machine layout

■ L20 Standard Machine



■ L20 Option-installed Machine



Machine Specifications

Item	Type VIII	Type X	Type XII
	L20E-2M8	L20E-2M10	L20E-2M12
Max. machining diameter (D)	Ø20 mm (Ø25 option)		
Max. machining length (L)	GB:200 mm/1chucking (188 mm: Ø25 spec.) NGB: 2.5D		
Spindle through-hole diameter	Ø26 mm		
Main spindle speed	Max.10,000 rpm		
Max. chuck diameter of back spindle	Ø20 mm (Ø25 option)		
Max. protrusion length of back spindle workpiece	30 mm		
Max. protrusion length	80 mm		
Back spindle speed	Max.8,000 rpm		
Gang rotary tool spindle speed	Max.6,000 rpm (Rating 4,500 rpm)		
Front rotary tool spindle speed (type X, XII)	–	Max. 7,500 rpm (Rating 6,000 rpm)	
Back tool post rotary tool spindle speed	Max. 7,500 rpm (Rating 6,000 rpm)		
Number of tools to be mounted (max.)	37	44	40
Gang turning tool	5		
Gang rotary tool	25	25	21
Front drilling tool	3	6	
Back drilling tool	4	8	
Tool size			
Gang turning tool	½"		
Sleeve	¾"		
Chuck and bushing			
Main spindle collet chuck	TF25 (TF30: Ø25 mm)		
Back spindle collet chuck	TF25 (TF30: Ø25 mm)		
Rotary tool collet chuck	ER11, ER16		
Chuck for drill sleeves	ER11, ER16		
Guide bushing	TD25NS (CD25: Ø25 mm)		
Rapid feed rate			
All axes (except Y2)	32 m/min		
Y2 axis	–	8 m/min	
Motors			
Spindle drive	2.2 / 3.7 kW		
Gang tool post rotary tool drive	1.0 kW		
Back spindle drive	0.75 / 1.5 kW		
Back tool post rotary tool drive	0.75 kW		
Front rotary tool drive	0.75 kW		
Coolant oil	0.4 kW		
Lubricating oil	0.003 kW		
Center height	1,050 mm		
Rated power consumption	7.3 kVA		
Full-load current	32A		
Main breaker capacity	40A		
Air pressure	0.5 MPa		
Weight	5,182 lbs	5,292 lbs	

Standard accessories	
Main spindle chucking unit	Door lock
Back spindle chucking unit	Cut-off tool breakage detector
Rotary guide bushing unit	Workpiece separator
Gang rotary tool driving unit	Lighting
Coolant unit (with level detector)	Main spindle coolant unit
Lubricating oil supply unit (with level detector)	Front rotary tool unit (type X, XII)
Machine relocation detector	Back tool post rotary unit

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

Standard NC functions	
CINCOM SYSTEM M70LPC-VU (Mitsubishi)	Spindle synchronized function
8.4 inch color LCD	Spindle C-axis function
USB slot	Milling interpolation
Program storage capacity: 160m (approx. 64KB)	Back spindle C-axis function
Tool offset pairs : 40	Back spindle chasing function
Product counter indication (up to 8 digits)	Canned cycle drilling
Operating time display function	Rigid tapping function
Machine operation information display	High speed rigid tapping function
Multiple repetitive cycle for turning	Synchronized tapping phase adjustment function
B axis control function *Type XII	Differential speed rotary tool function
Interference check function	Tool life management I
Spindle speed change detector	Tool life management II
Constant surface speed control function	External memory program driving
Automatic power-off function	User macros
On-machine program check function	Helical interpolation function
Chamfering, corner R	Hob function
Nose radius compensation	Polygon function
Eco indication	Inch command
Variable lead thread cutting	Sub inch command
Arc threading function	Network I/O function
Geometric functions	

Optional NC functions	
Tool offset pairs: 80	
Optional block skip (9 sets)	
Back machining program skip function	
Program storage capacity 600m (approx. 240KB)	

Environmental Information

Basic Information	<i>Energy Usage</i>	Power supply voltage	AC200 V
		Electrical power requirement (Max)	7.3 kVA
		Required pneumatic pressure	0.5 MPa
Environmental Performance Information	<i>Power Consumption</i>	Standby power ^{*1}	0.300 kW
		Power consumption with model workpiece ^{*2}	0.0113 kWh/cycle
		Power consumption value above converted to a CO2 value ^{*3}	5.4 g/cycle
	<i>Air Consumption</i>	Required air flow rate	53 NL/min (max. 210 NL/min., during air blow)
	<i>Lubricant Consumption</i>	At power ON	2.5 cc/60 min
Approach to Environmental Issues	<i>Noise Level</i>	Value measured based on JIS	75.2 dB
	<i>Environmental load reduction</i>	RoHS Directive / REACH regulations	Compliant
	<i>Recycling</i>	Indication of the material names of plastic parts	Covered in the instruction manual ^{*4}
	<i>Environmental management</i>	We are ISO14001 accredited. We pursue "Green Procurement" by prioritizing purchases for 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 CO2 emissions coefficient for 2009 as published by the Ministry of the Environment.

*4: If polyvinyl chloride (PVC) and fluorine resin are not processed correctly they can generate harmful gases. When recycling these materials, commission a contractor that is capable of processing them appropriately.

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