

CITIZEN

Cincom L12-VII



Sliding Headstock Type CNC Automatic Lathe



The L12 - The perfect solution for small diameter work with switchable guide bush and 15,000 rpm spindle

Building on the legacy of Citizen's L series machines, setting the benchmark of functionality and performance.

Outstanding performance for machining high speed, small diameter application with 15,000 rpm on main spindle and 10,000 rpm on sub spindle.

Now with the added flexibility of using in either standard guide bush or non-guide bush mode with simple setup of both modes.

The regular guide bush can be used for long or slender parts. The non-guide bush mode can be used for short parts to save material wastage.



Achieving optimum machining conditions

High-speed spindle and rotary tools

The maximum speed of the front spindle is 15,000 min⁻¹ even when using a rotary guide bush (maximum machining length: 135mm per chuck), and rotary tools are able to reach speeds of 10,000 min⁻¹. This makes it possible to use the optimum machining conditions when machining small diameter bar material or using small diameter drills or end mills.

Handles workpieces with complex shapes

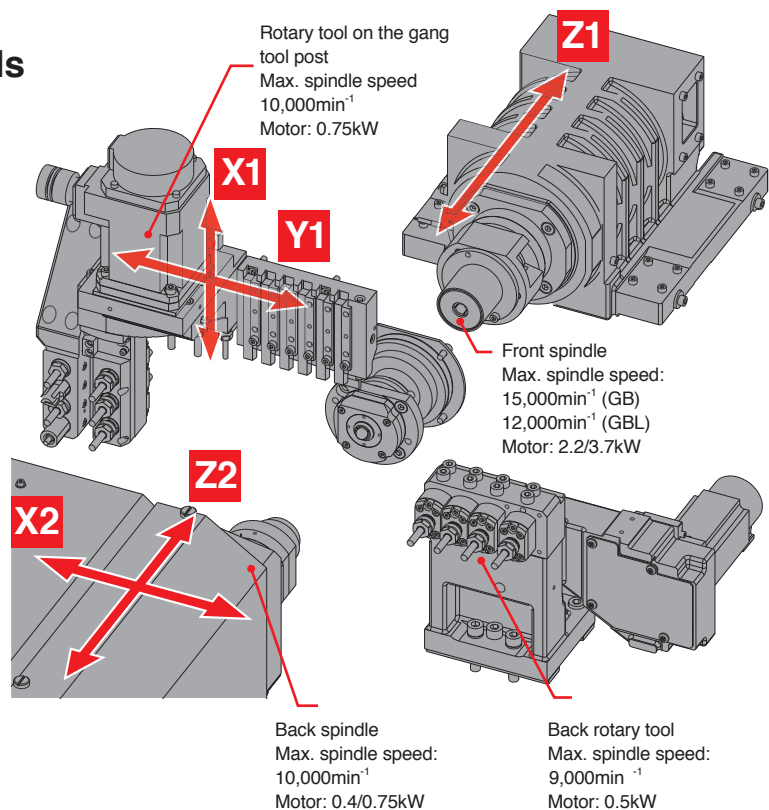
Comprehensive tooling

A full range of optional tooling is available. Three double ended rotary tools (angle adjustable from 0° to 30°) can be mounted among the rotary tools on the gang tool post. In addition, adopting rotary tool specifications for the back tool post has made it possible to mount end face rotary tools and a slitting spindle for back machining.

Improved productivity per unit area

Compact design

The design is only 1,760 mm wide by 820 mm deep. You can introduce a high-productivity, 5-axis machine into the same space as required to install a B12 machine up until now.

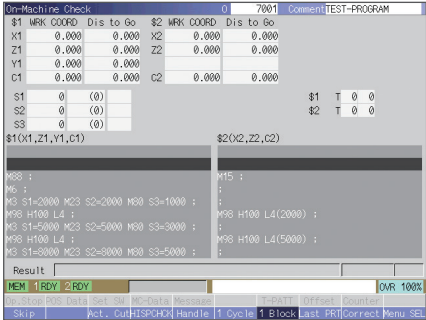


Intuitive screen display is easy to use and read

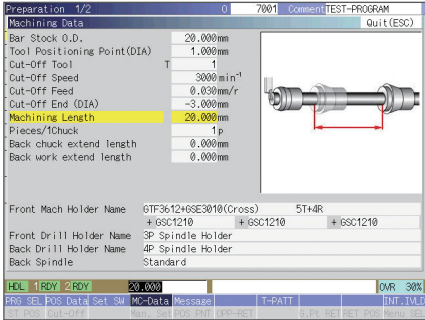
Screen designed from the operator's perspective and comfortable to use



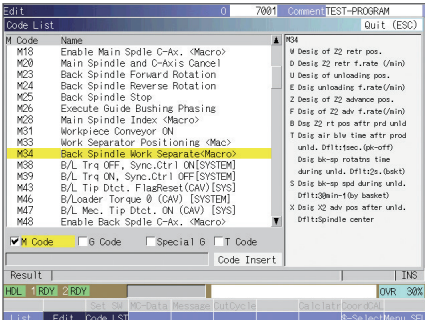
Equipped with high-speed NC
The machine is equipped with the latest NC model to drastically reduce the start-up and screen switching time compared to conventional machines with advanced functions. This feature provides stress-free operation environment.



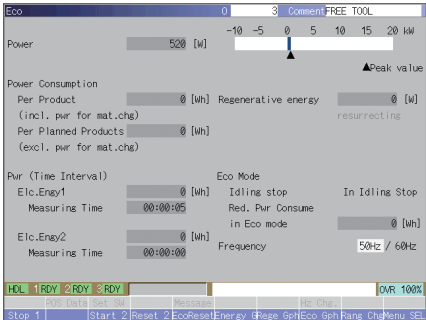
On-machine program check function
The program can be run round using the handwheel giving enhanced user confidence. The program can run in forward or reverse directions and can be paused to edit before restarting.



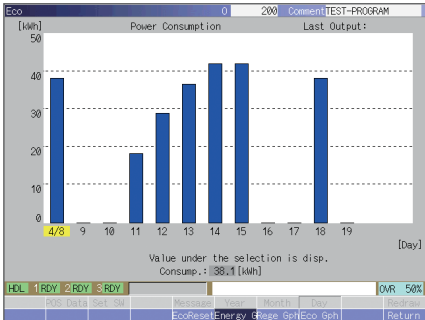
Display of easily understood illustrations
In response to the selection of an item, the corresponding illustration is displayed on the screen so that the operator can easily recognise the meaning of the selected item. (The screen shown above displays the machining data).



Display of code list
The function displays the list of G and M codes including explanations of each code.

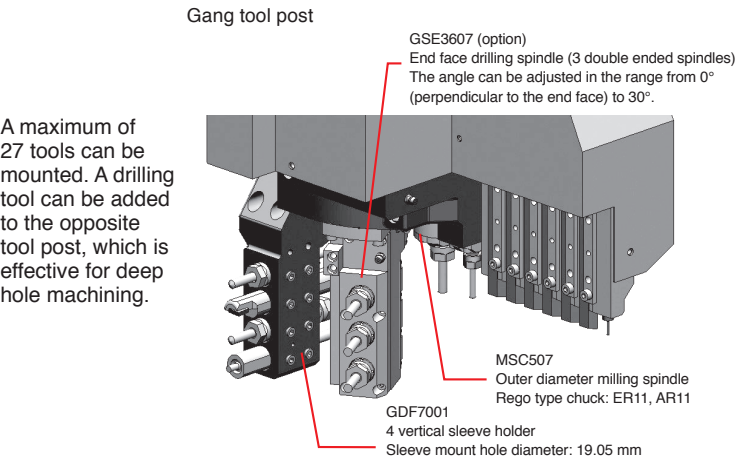


Eco Screen
The current power consumption is shown on the screen, along with the maximum power consumption value, the power consumption record, the cumulative power consumption and the power regeneration (generation) status. Data can be output too.

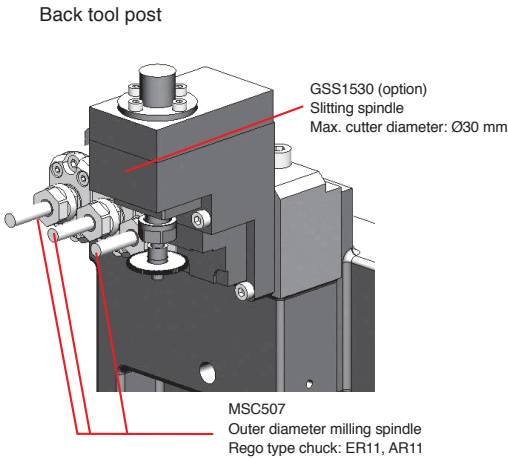


Eco Screen
The machine's power consumption can be shown in the form of an easy-to-understand graph.

Comprehensive tooling



A maximum of 27 tools can be mounted. A drilling tool can be added to the opposite tool post, which is effective for deep hole machining.



LFV



LFV* (low-frequency vibration) cutting is a technology for cutting in which each X/Z servo axis is vibrated in the cutting direction and synchronized with the spindle speed. This reduces various types of problems such as cutting chips being caught up in components, workpieces or cutting tools, and enables small-diameter deep hole drilling and machining of materials that are difficult to cut.

Model type	Front X1, Z1	Back X2, Z2	LFV Mode 1	LFV Mode 2
VII	○ Back performs standard cutting	○ Front performs standard cutting	○	○

- 1. LFV machining cannot be performed with the Y axis.
- 2. Up to one pair (= two axes) can be operated simultaneously as LFV machining.
- 3. LFV machining using rotary tools requires the "LFV function" and "Rotary tool per rotation feedrate" options.
- * LFV is a registered trademark of Citizen Watch Co., Japan.

Machine specification

Item	L12-VII (L12-1M7)	Standard accessories
Maximum machining diameter (D)	12mm / 16mm option	Main spindle chucking unit
Maximum machining length (L)	GB: 135mm/1chuck GBL:30mm	Air-driven knock-out device for back machining
Spindle through-hole diameter	ø20mm	Back spindle chucking unit Machine relocation detector
Main spindle speed	GB:Max.15,000min ⁻¹ GBL:Max.12,000min ⁻¹	Gang rotary tool driving unit Door lock
Max. chuck diameter of the back spindle	ø12mm	Coolant device (with level detector) Workpiece separator
Max. protrusion length	80mm	Lubricating oil supply unit (with level detector)
Max. protrusion length of the back spindle workpiece	30mm	
Back spindle speed	Max.10,000min ⁻¹	Special accessories
Gang rotary tool		Rotary guide bushing unit
Spindle speed	Max.10,000min ⁻¹	Motor-driven knock-out device for back machining
Back tool post rotary tool Option		Cut-off tool breakage detector Workpiece conveyor
Spindle speed	Max.9,000min ⁻¹	Knock-out jig for through-hole workpiece
Number of tools to be mounted	27	Chip conveyor Scratch-free part of product chute
Gang turning tool	6	Medium-pressure coolant device Workpiece separator (for front face)
Gang rotary tool	4 - 9	Signal lamp Coolant flow rate detector
Gang drilling tool	Front 4, Back 4	3-colour signal tower
Back tool post	4	
Tool size		Standard NC functions
Tool	10mm	NC unit dedicated to the L12
Sleeve	ø19.05mm	Constant surface speed control function
Main spindle collet chuck	FC096-M	8.4 inch colour liquid crystal display (LCD)
Guide bushing	WFG541-M	Automatic power-off function
Back spindle collet chuck	FC096-M-K	Program storage capacity : 40m (approx.16KB)
Rapid feed rate (all axes)	35m/min	Main spindle indexing at 1° intervals
Motors		Tool offset pairs : 40 Nose radius compensation
Spindle drive	2.2/3.7kW	Product counter indication (up to 8 digits)
Gang tool post rotary tool drive	0.75kW	Chamfering, corner R Operating time display function
Back spindle drive	0.4/0.75kW	On-machine program check function
Back tool post rotary tool drive Option	0.5kW	Spindle speed change detector
Coolant oil	0.25kW	
Centre height	1,000mm	Special NC functions
Rated power consumption	6.1kVA	Variable lead thread cutting Tool offset pairs: 80
Full-load current	22A	Arc threading function Tool life management I
Main breaker capacity	30A	Geometric function Tool life management II
Air pressure and air flow rate		Spindle synchronised function
for pneumatic devices	0.5MPa, 60NL (Max.190NL)	Program storage capacity 600m (approx. 240KB)
Weight	1,700kg	Spindle C-axis function External memory program driving
Machine main unit dimensions	W1760 x D280 x H1610mm	Milling interpolation Network I/O function
		Back spindle 1°indexing function Submicron commands
		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
		Inch command Sub inch command
		Rigid tapping phase adjustment function
		Differential speed rotary tool function

*Front rotary tool drive unit is optional

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