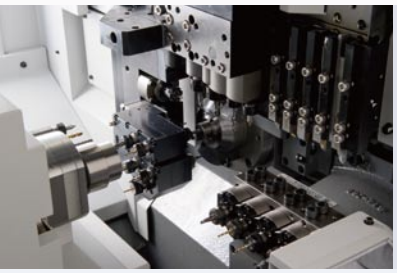
CITIZEN
Micro HumanTech

Cincom



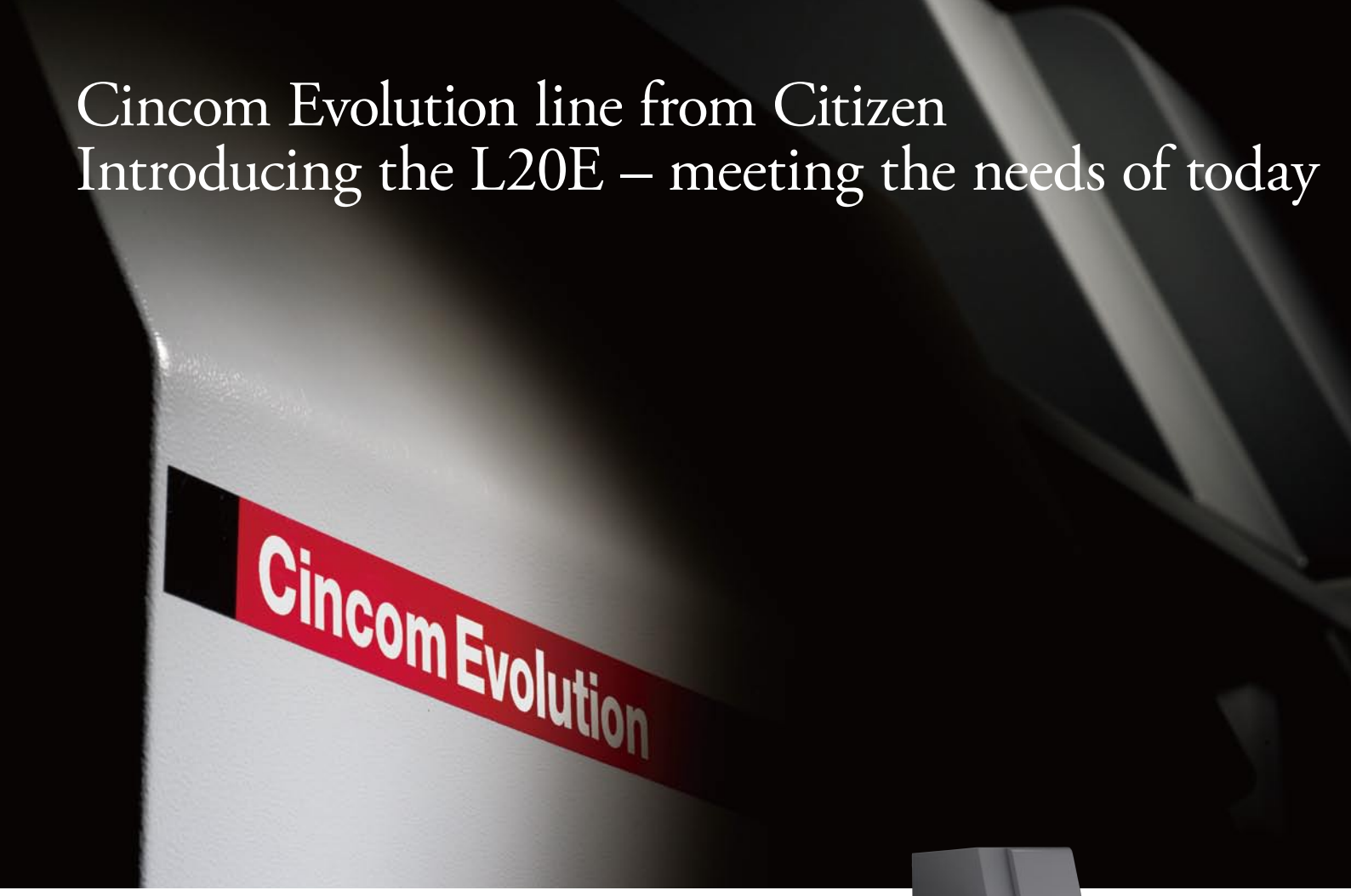
Cincom Evolution Line

Sliding Headstock Type Automatic CNC Lathe

L20E

"Impressive Value" Production
Adding value to efficient production

Cincom Evolution line from Citizen
Introducing the L20E – meeting the needs of today



Citizen's highly successful L20 series evolves for the new age to meet the needs of the drastically changing global market

Up to 32 tools
To meet the trend to produce complex parts on a lower cost machine
Tooling layout quickly changeable
The layout is easily adapted to suit parts with priority towards mainly cross drilling/milling; or face milling/drilling; or turning
Now with back slitting and back cross drilling capability
Same holder is adaptable for both slitting and cross drilling
Citizen's renowned ease of use
Citizen is the machine of choice for fast set-ups & changeovers
Citizen's unique Cincom Control (Streamline Control) cuts non-cutting time to a minimum
Citizen's dynamic software development leads the swiss type/sliding head sector
Back rotary tool drive now standard
4 live positions for fixed, end face drilling/milling, slitting, cross drilling

L20E Workpiece Examples

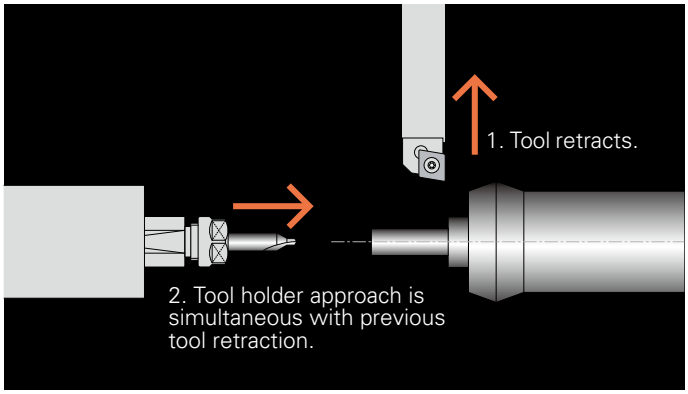
IT parts	Automobile parts	Medical equipment parts
		

Next tool advances whilst the previous tool retracts.

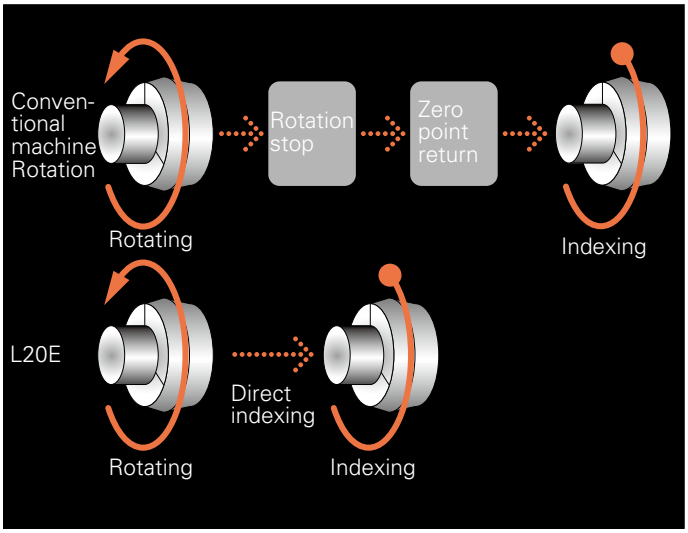
Cincom Control cuts non-cutting time to a minimum.

Cincom Control
Citizen has developed a new control method system for high-speed, smooth axis motion. "*Cincom Control*" reduces idle time, increases feed rates and substantially reduces cycle time.

Tool Overlap Function
For front machining, the L20E is equipped with independently controlled gang tool holder and opposed tool holder. "*Cincom Control*" positioning next tool holder while previous tool holder extracts.



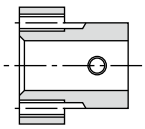
Direct Spindle Indexing
The Direct spindle indexing function significantly reduces spindle indexing time. The spindle decelerates directly into the required index position, eliminating the time taken to stop, reference and index.

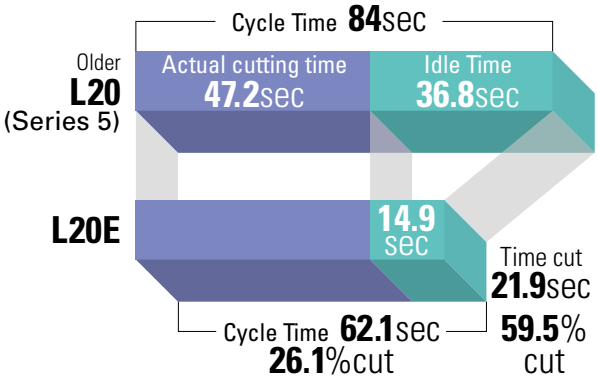


Cycle Time Comparison

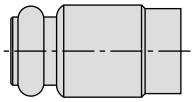
Compared with earlier generations of the L Series, the L20E delivers substantial improvements in productivity. Under the same cutting conditions of spindle speed and feed rate, Citizen's Cincom Control in conjunction with increased rapid feed rate has reduced cycle time significantly. Why not compare the greatly reduced 'cost per part' of the L20E compared with your current machine? The L20E will offer additional advantages of faster set-up and lower maintenance costs.
* Actual cutting time indicates the time required to machine a workpiece in a cutting mode such as the G1, G2 and G3 mode.

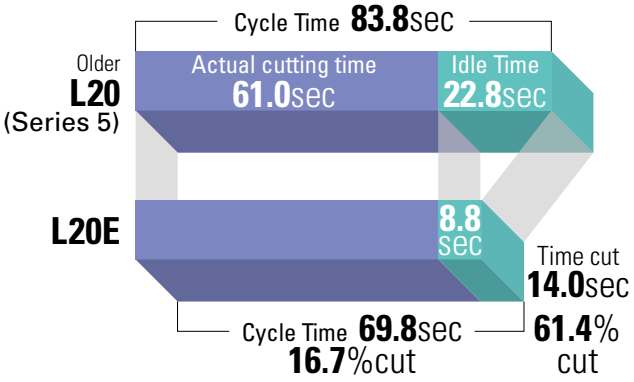
■ Sample work 1



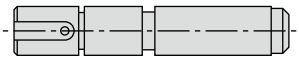


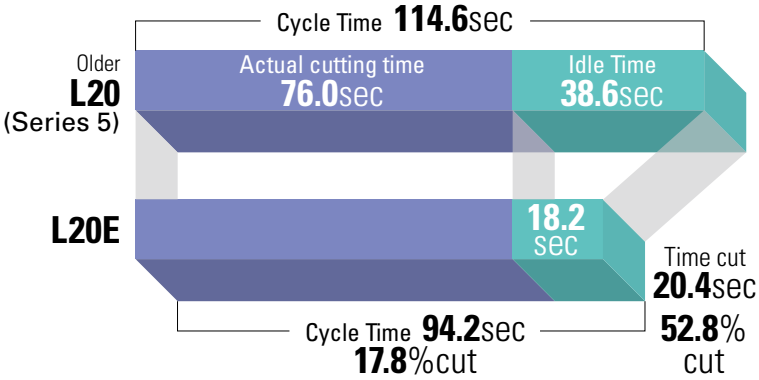
■ Sample work 2





■ Sample work 3

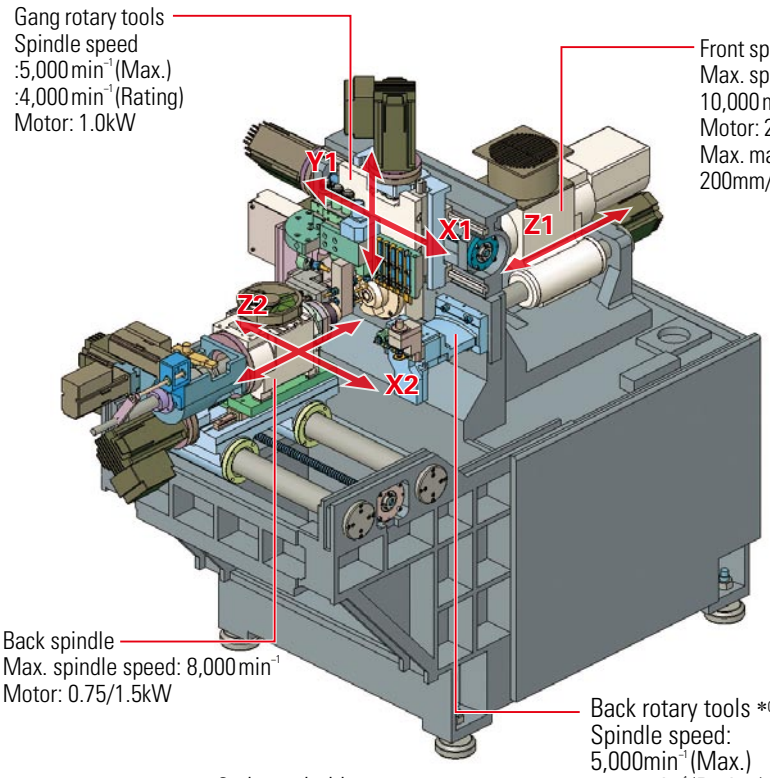


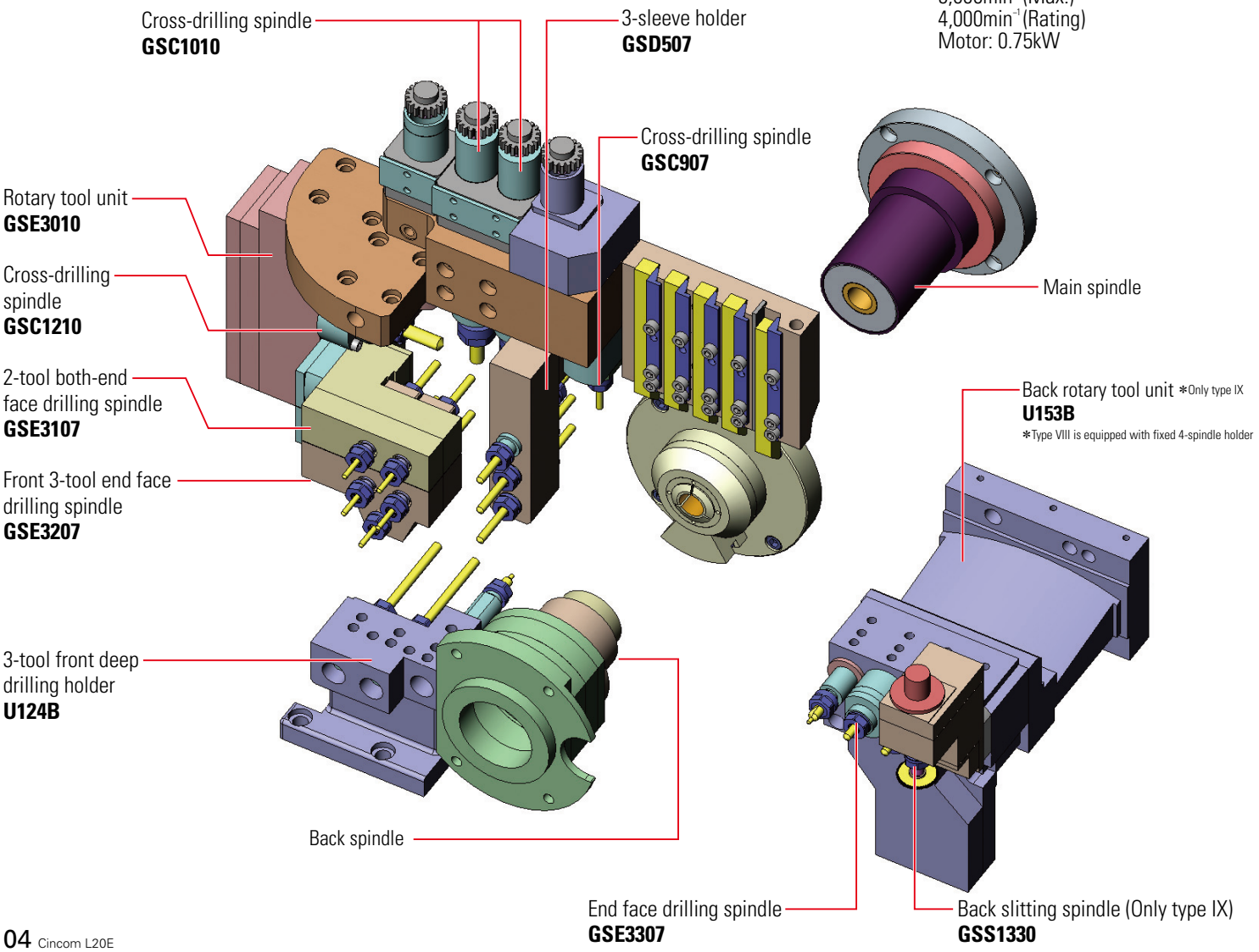


The right type for the right workpiece

Type VIII offers superior cost performance and Type IX provides additional versatility with its back rotary tool drive unit.

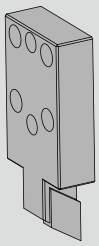
The L20E comes in two types, Type VIII and Type IX, which differ in whether the back tool post rotary tool drive unit is installed or not.
A gang tool post that allows a wide variety of tooling and an opposing tool post that enables deep-hole drilling (up to 100 mm) by installing the optional U124B are available on both Type VIII and Type IX.
If your products require off-center drilling / milling or slitting on the end face during back machining, Type IX is the suitable choice since it features the back rotary tool drive unit as standard. Parallel execution of front and back secondary machining can reduce cycle time.
If back rotary machining is not required or a rotary tool on a gang tool post can finish your products, you should choose Type VIII for its excellent cost performance.





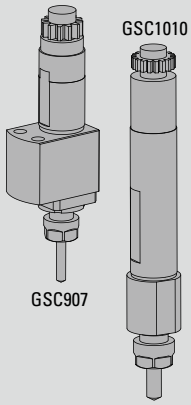
Outstanding tooling versatility of the new L20

Easy machining of complex shapes



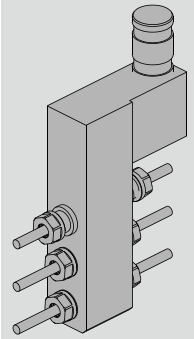
GTF3712
1-tool holder

This is a tool holder for front turning that is mounted on the 5-rotary-tool vertical holder. The GTF3711 for back turning and grooving is also available.



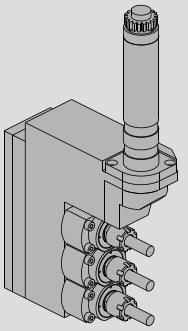
GSC907/ GSC1010
Cross-drilling spindle

This is for performing drilling and milling on the outer diameter.
GSC907
Max. collet dia.: ϕ7mm
Chuck model : ER11
GSC1010
Max. collet dia.: ϕ10mm
Chuck model : ER16



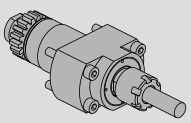
GDF507
3-sleeve holder

Up to three sleeves can be mounted in this holder, for drilling on front/back end faces. The sleeve mounting hole diameter is ϕ19.05mm. This figure shows the holder installed with three double-ended sleeves.



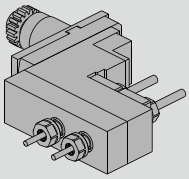
GSE3010
Rotary tool unit

The mounting direc-tion of this spindle can be switched for cross or end face machining, and it can perform drilling on the outer diameter or drill on the end face.
This figure shows the holder installed with three GSC1210 rotary spindles.



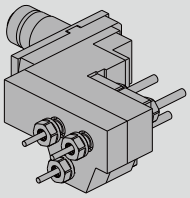
GSC1210
Cross-drilling spindle

This is for performing drilling and milling on the outer diameter.
This spindle is mounted on GSE3010.
Max. collet dia. : ϕ10mm
Chuck model : ER16



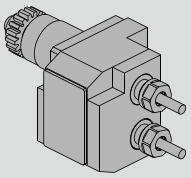
GSE3107
2-tool both-end face drilling spindle

This spindle performs drilling or milling on the front and back end face. This spindle is mounted on GSE3010.
[Front] Max. collet dia.
: ϕ7mm
Chuck model : ER11
[Back] Max. collet dia.
: ϕ5mm
Chuck model : ER8



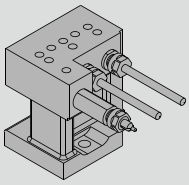
GSE3207
Front 3-tool back 2-tool end face drilling spindle

This spindle performs drilling or milling on the front and back end face. This spindle is mounted on GSE3010.
[Front] Max. collet dia.
: ϕ7mm
Chuck model : ER11
[Back] Max. collet dia.
: ϕ5mm
Chuck model : ER8



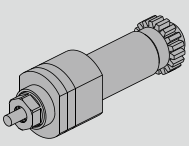
GSC1307
2-tool cross-drilling spindle

This is for performing drilling and milling on the outer diameter. This spindle is mounted on GSE3010.
Max. collet dia. : ϕ7mm
Chuck model : ER11



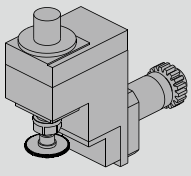
U124B
3-tool front deep drilling holder

This is for performing front drilling. Up to three ϕ19.05mm diameter sleeves can be mounted.
It is possible to 100mm depth drilling.
Efficient tool length
: 75mm (1 tool),
100mm (2 tool)



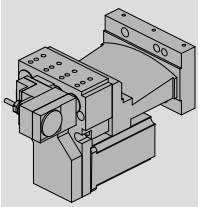
GSE3307
End face drilling spindle

This is for performing drilling and milling on the back end face.
This spindle is mounted on back tool post.
Max. collet dia. : ϕ7mm
Chuck model : ER11



GSS1330
Back Slitting spindle

This is for performing back slitting.
This spindle is mounted on back tool post.
Max. cutter dia. : ϕ30mm
Max. collet dia. : ϕ7mm
Chuck model : ER11



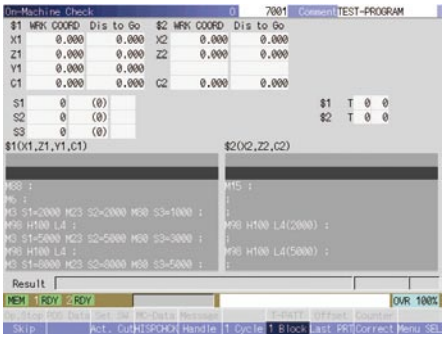
GSS1330
Back Slitting spindle (mounted in cross direction)

GSS1330 peforms cross machining on the workpiece on back spindle.
Note: occupies 3 positions of U153B

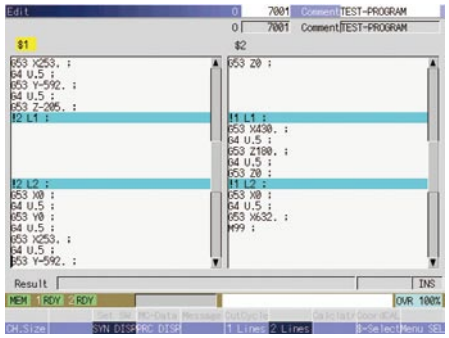
Convenient operation, keeping you informed in real time.

Support for the operator by displaying the screens that are needed, when they are needed

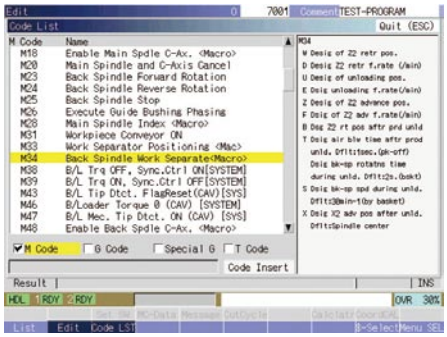
High-speed NC Installed
Because the latest CNC unit is used, the start-up time and screen switching times are considerably shorter than on other machines with similar functions. The result is a stress-free operating experience.



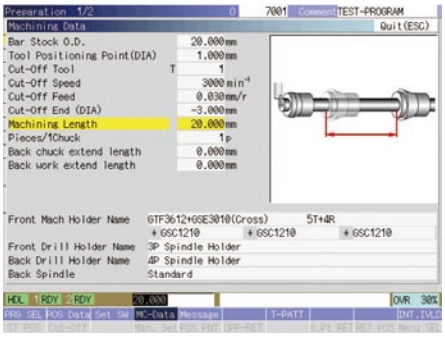
On-machine Program Check Function
This function allows program operation to be run forward or backward, and program editing and continuation of operation after a temporary stop. It is an effective aid to smooth programming. It also has a high speed program check function.



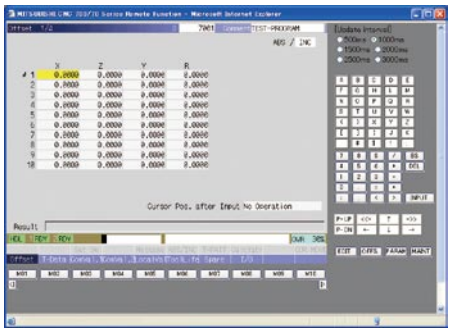
Program Editing
Easy to understand program editing can be performed by switching between the synchronized displays for two axis control groups, and copying and pasting between programs including MDI.



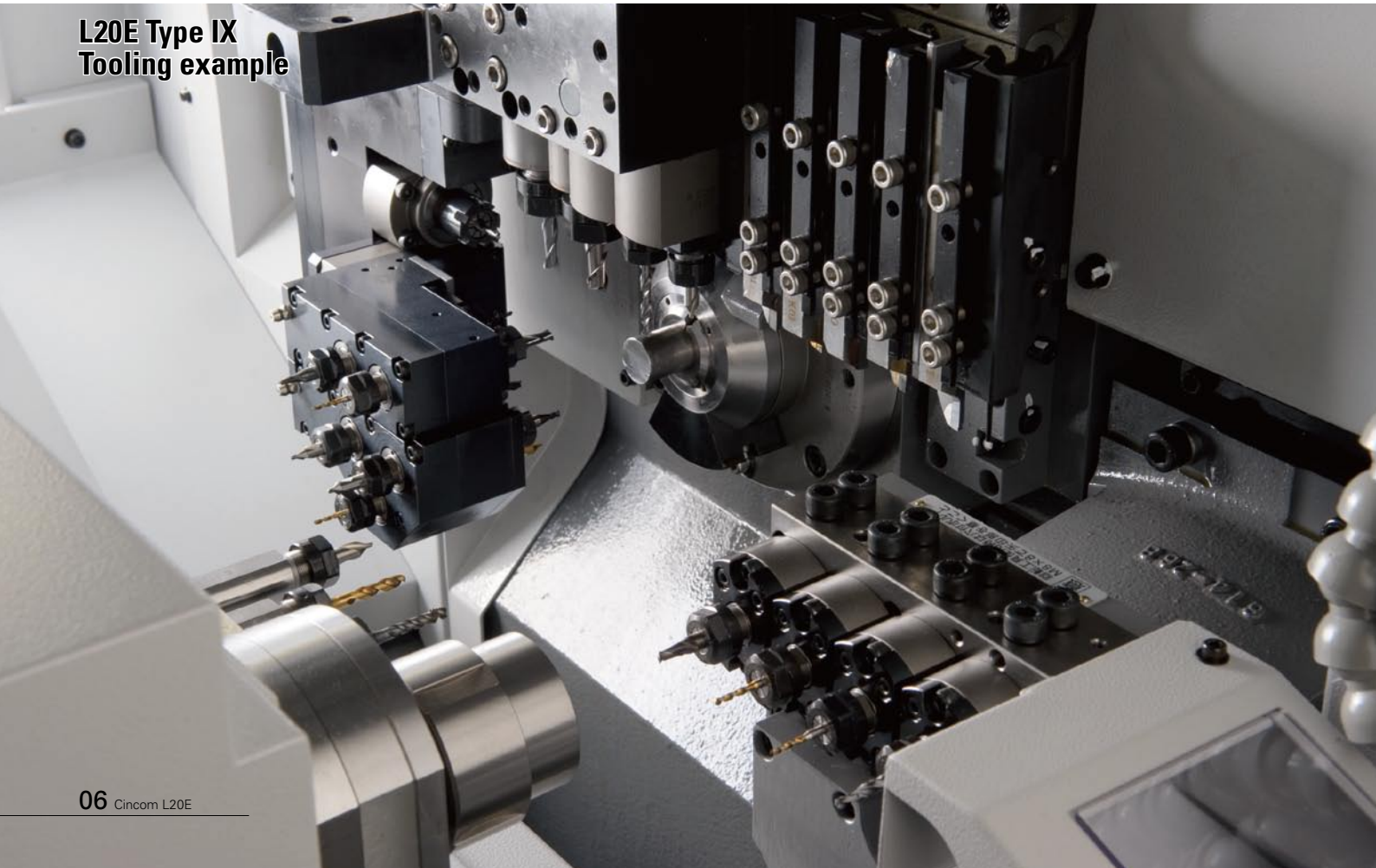
Code List Display
Another aid in programming is a list of G and M codes accompanied by pictorial explanations of their purpose.



Easy to understand Illustrations
An illustration is displayed for each item, so that it can be immediately visualised (the screen displaying the machining data).

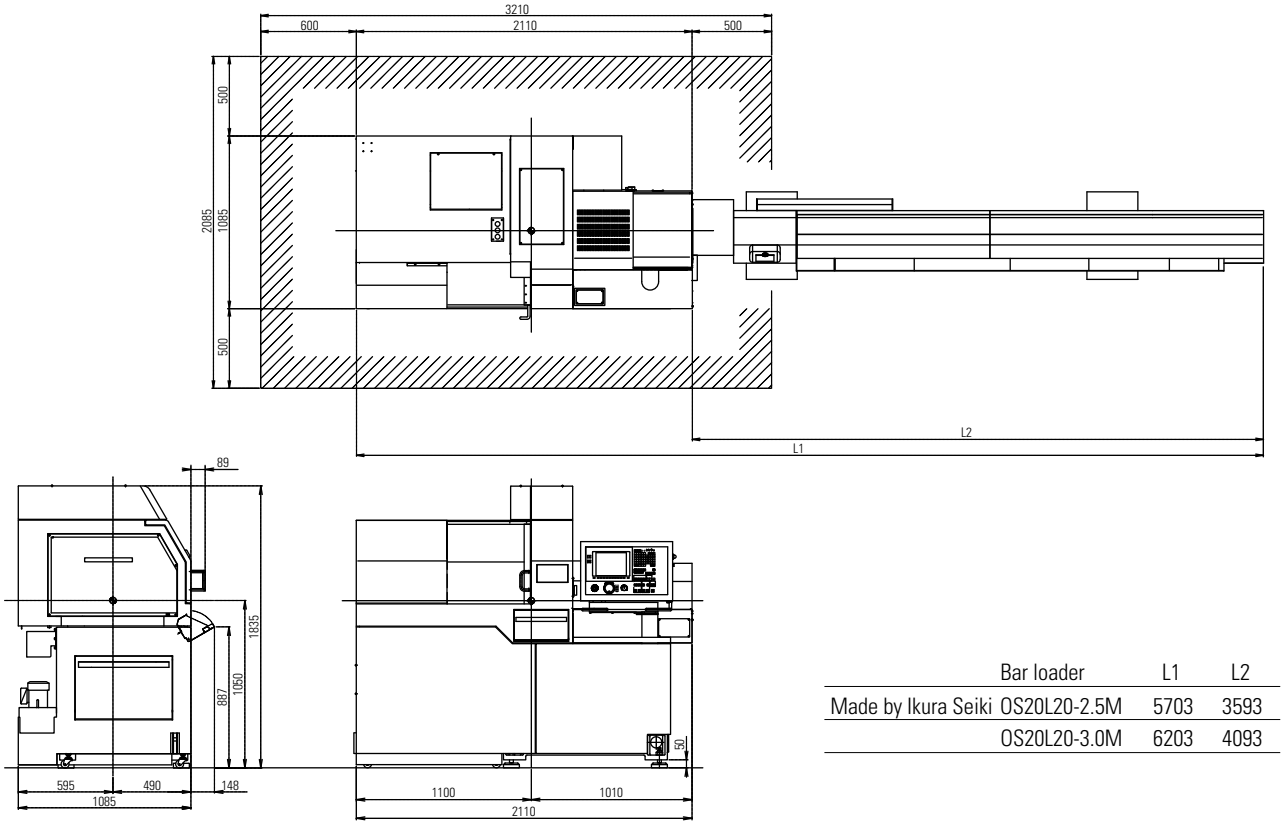


Remote diagnosis function (Under development)
You can edit the NC program and input the offset by remote access with your office PC.



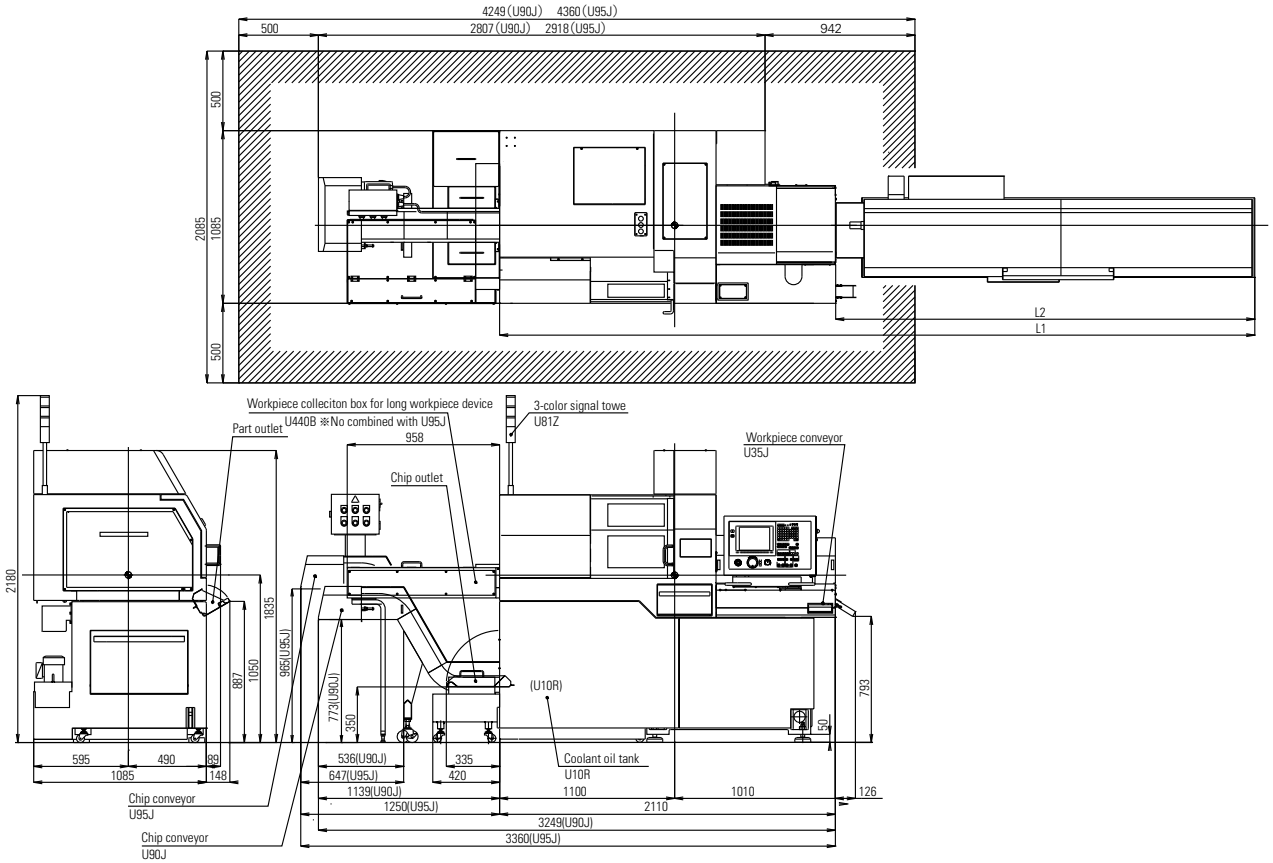
Machine Layout Drawing

■ L20E Standard Machine



	Bar loader	L1	L2
Made by Ikura Seiki	OS20L20-2.5M	5703	3593
	OS20L20-3.0M	6203	4093

■ L20E Option-installed Machine



Machine Specification

Item	L20E	
	Type VIII	Type IX
Maximum machining diameter (D)	φ20mm	
Maximum machining length (L)	200mm/1chuking	
Maximum front drilling diameter	φ10mm	
Maximum front tapping diameter (tap, die)	M8	
Spindle through-hole diameter	φ24mm	
Main spindle speed	10,000min^{-1}	
Maximum drilling diameter for the gang rotary tool	φ8mm	
Maximum tapping diameter for the gang rotary tool	M6	
Spindle speed of the gang rotary tool (Rating)	5,000min^{-1}(4,000min^{-1})	
Maximum chuck diameter of the back spindle	φ20mm	
Maximum protrusion length of the back spindle workpiece	30mm	
Maximum protrusion length	80mm	
Maximum drilling diameter for the gang rotary tool	φ8mm	
Maximum tapping diameter for the gang rotary tool	M6	
Back spindle speed	8,000min^{-1}	
Maximum drilling diameter for the back tool post rotary tool	φ5mm	
Maximum tapping diameter for the back tool post rotary tool	M4	
Spindle speed of the back tool post rotary tool (Rating)	5,000min^{-1}(4,000min^{-1})	
Number of tools to be mounted	32	
Turning tools on the gang tool post	5～7	
Cross rotary tools	4～8	
Rotary tools for front drilling	0～5	
Tools for front drilling	3～12	
Rotary tools for the back drilling	0～5	4～9
Tools for the back drilling	4～13	
Tool size		
Tool (gang tool post)	□12mm(□13mm,□16mm)	
Sleeve	φ19.05mm	
Chuck and bushing		
Main spindle collet chuck	FC034-M	
Back spindle collet chuck	FC034-M-K	
Rotary tool collet chuck	ER11, ER16	
Chuck for drill sleeves	ER11, ER16	
Guide bushing	WFG206-M	
Rapid feed rate		
All axes	32m/min	
Motors		
Spindle drive	2.2/3.7kW	
Gang tool post rotary tool drive	1.0kW	
Back spindle drive	0.75/1.5kW	
Back tool post rotary tool drive	—	0.75kW
Coolant oil	0.4kW	
Lubricating oil	0.003kW	
Center height	1050mm	
Input power capacity	8kVA	
Air pressure and air flow rate for pneumatic devices	0.5MPa · 60Nl/min	
Weight	2200kg	

Standard accessories	
Main spindle chucking device	Machine relocation detector
Back spindle chucking device	Door lock
Gang rotary tool driving devices	Workpiece separator
Coolant device (with level detector)	Lighting
Lubricating oil supply unit (with level detector)	Rotary guide bushing drive device

Special Accessories	
Rotary guide bushing device	Medium-pressure coolant device
Cut-off tool breakage detector	Coolant flow rate detector
Knock-out jig for through-hole workpiece	Signal lamp
Workpiece conveyor	3-color signal tower
Chip conveyor	

Standard NC functions	
NC unit dedicated to the L20	Constant furface speed control function
8.4 inch color liquid crystal display (LCD)	Automatic power-off function
Program storage capacity : 40m	Main spindle indexing at 1° intervals
Tool offset pairs : 40	On-machine program check function
Product counter indication (up to 8 digits)	Chamfering, corner R
Spindle speed change detector	

Special NC functions	
Variable lead thread cutting	Differential speed rotarytool function
Arc threading function	Tool offset pairs : 80
Geometric function	Tool life management I
Spindle synchronized function	Tool life management II
Spindle C-axis function	Program storage capacity 600m
Milling interpolation	External memory program driving
Back spindle 1°indexing function	Submicrom commands
Back spindle C-axis function	User macros
Back spindle chasing function	Helical interpolation function
Multiple repetitive cycle for turning	Inclined helical interpolation function
Canned cycle drilling	Hob function
Rigid tapping function	Polygon function
High speed Rigid tapping function	Inch command
Rigid tapping phase adjustment function	Sub inch command

ISO 9001
ISO 14001
BUREAU VERITAS
Certification

CITIZEN MACHINERY CO., LTD.

CITIZEN
Micro HumanTech

URL:**http://cmj.citizen.co.jp/**

JAPAN	CITIZEN MACHINERY CO.,LTD.	TEL.81-267-32-5961	FAX.81-267-32-5928
SOUTH ASIA	CITIZEN MACHINERY ASIA CO.,LTD.	TEL.66-35-721-833	FAX.66-35-721-835
CHINA	CITIZEN MACHINERY CHINA CO.,LTD.	TEL.86-21-6415-6485	FAX.86-21-6334-3289
EUROPE-Germany	CITIZEN MACHINERY EUROPE GmbH	TEL.49-711-3906-100	FAX.49-711-3906-106
EUROPE-UK	CITIZEN MACHINERY UK LTD.	TEL.44-1923-691500	FAX.44-1923-691599
AMERICA	MARUBENI CITIZEN-CINCOM INC.	TEL.1-201-818-0100	FAX.1-201-818-1877

201006-2,000 TAS+NN Catalog No.414