

Cost effective solution for complex machining

CINCOM

Sliding Headstock Type CNC Automatic Lathe

A20^{VII}



A

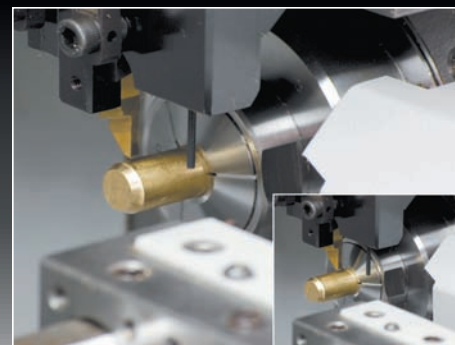
Exceptional Productivity and Cost Performance in a 5-axis $\phi 20$ mm Machine

The A20 has been acclaimed by customers as a highly rigid and reliable, low-cost machine. Now the A20 Type VII model contains 5 axes, 4 rotary tools and sub-spindle. The fully specified A20VII

includes an X2 axis on the back spindle enabling front/back simultaneous machining. This, in combination with the rapid feed rate, has substantially cut cycle times. High reliability is assured through conformity with IP54.

Non-Guide Bushing Model Also Available

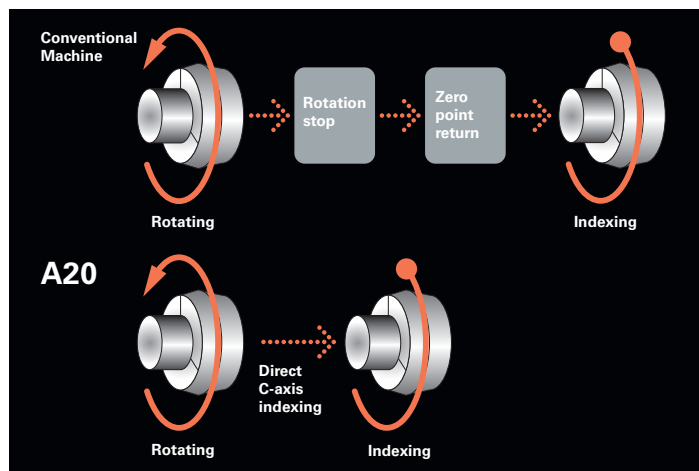
With the increase in material costs in recent years, less waste with the non-guide bushing A20VII might be right for you. The non-guide bushing model doesn't require the spaces between the guide bushing and collet chuck so there is less waste. In addition, the powerful chucking force enables heavy cutting, minimizes roughness and improves roundness.



Non-guide bushing spindle

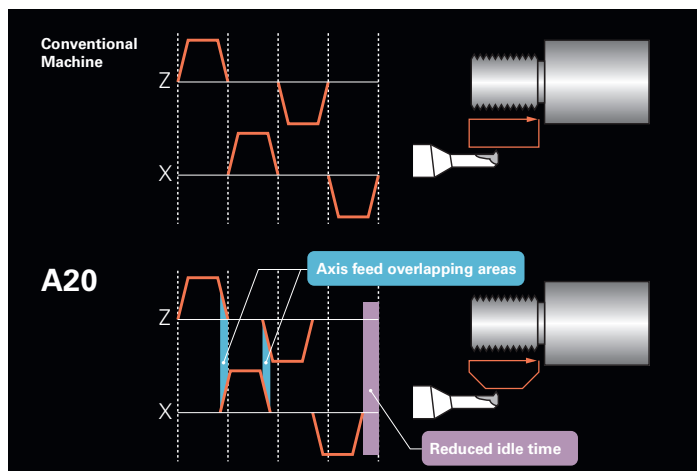
Streamline Control

Streamline Control is a technique unique to Citizen that produces fast and smooth movements. It reduces idle time without any effect on cutting and achieves substantial reductions in cycle time.



Direct C-axis indexing

Direct C-axis indexing enables deceleration direct to the chosen index position, eliminating the wasted time of performing zero return.



Axis feed motion overlap function

The next axis feed motion starts without waiting for completion of the current motion of another axis. This cuts out wasteful idle time and also suppresses unwanted vibration.

4 Rotary Tools for Cross Machining

4 Rotary tools (standard)

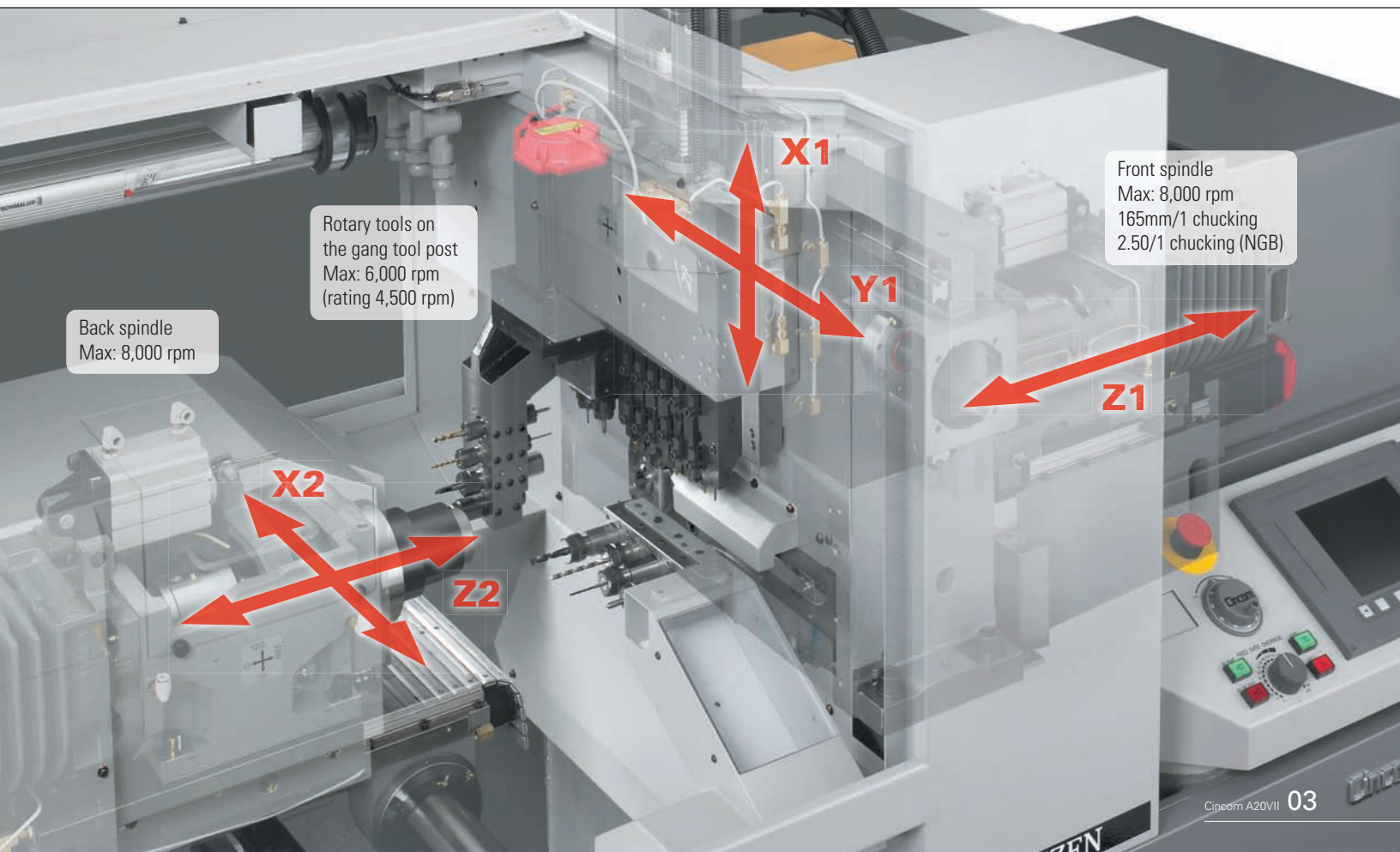
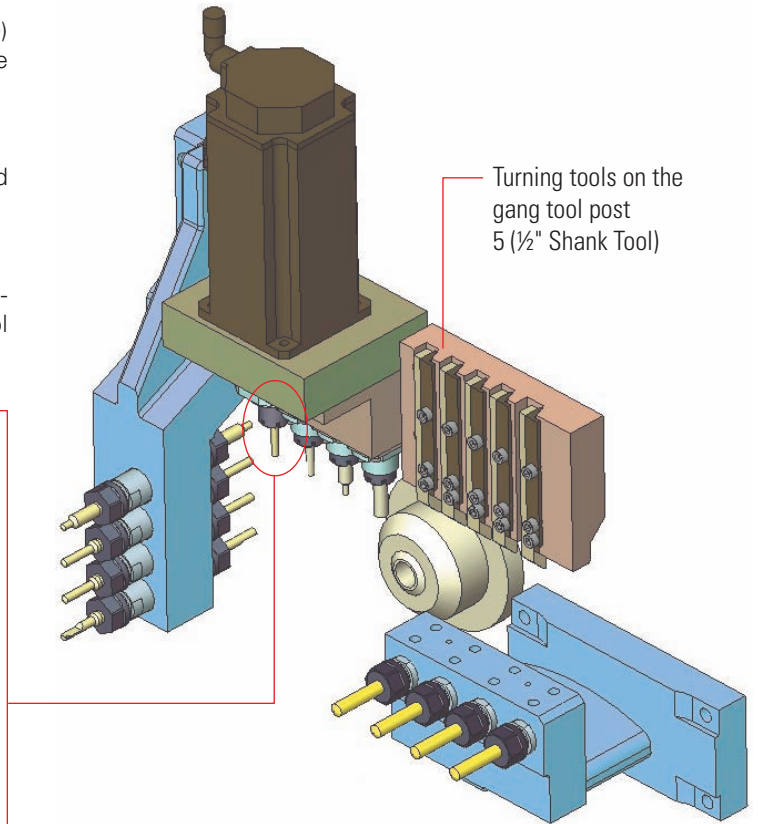
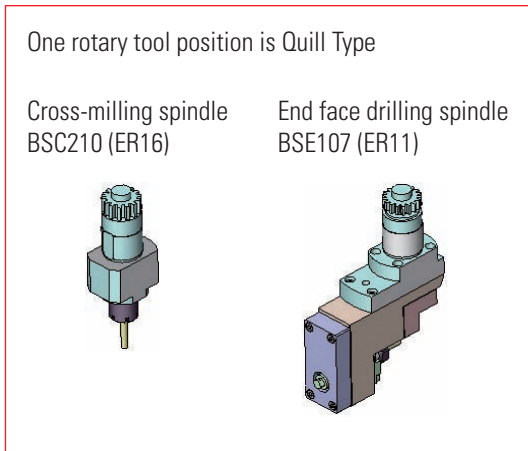
One Quill type rotary tool position and cross-milling spindle (BSC210) comes with machines as standard. The maximum tool spindle speed is 6,000 rpm (rating 4,500 rpm).

CS Quick Wedge

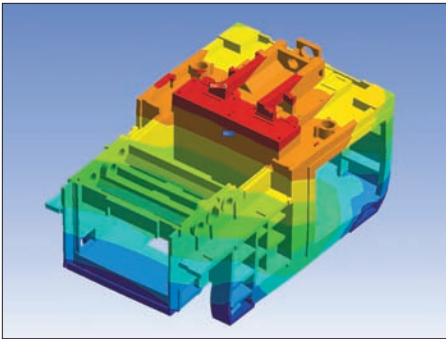
This tool clamping system is a standard feature that simplifies and speeds up tool setting.

End Face Milling Spindle (option)

The optional Quill type end face drilling spindle (BSE107) can replace the standard cross-milling spindle (BSC210). Maximum tool length is 40 mm (1.57").



High Rigidity and Convenient Features

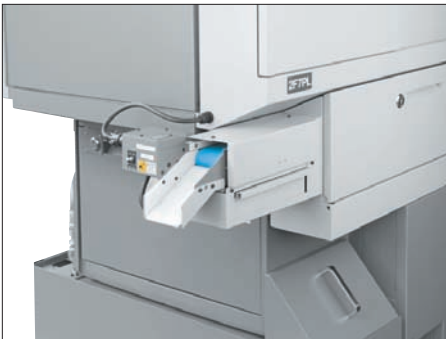


Left/Right symmetrical bed

With a bed 1.8 times as heavy as those of existing machines, the machine is constructed to counter thermal displacement. The relatively small thermal displacement of the bed during long periods of operation promotes high accuracy.

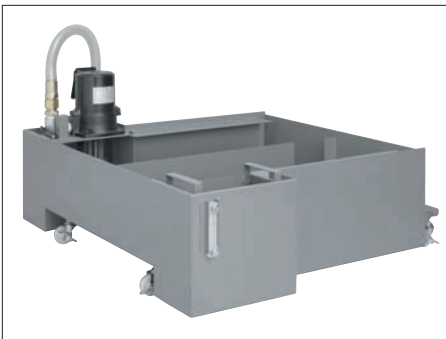
High-rigidity roller guides on all sliding axes

Roller guides, which are characterized by high rigidity, have been adopted for the slide axes (X1, Y1, Z1, Z2). Since rollers show little elastic deformation under loads, they have a broad area of contact with their track to provide rigidity with quiet and smooth operation.



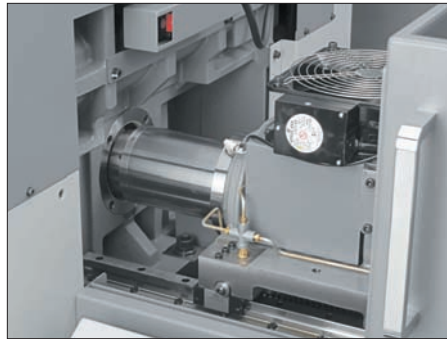
Work Conveyor (option)

The workpiece conveyor can handle products up to 80 mm in length, discharging to the front of the machine.



Large Capacity Coolant Tank

A 150-liter, large capacity coolant tank is equipped as standard, allowing long periods of continuous operation.



High-rigidity spindle construction

High-rigidity spindles are the key components for precision machining. The spindle design offers high resistance against loads in the radial direction (direction perpendicular to the spindle axis) for superior cutting performance, high accuracy and smooth surface quality.



Chip conveyor, long workpiece machining unit (option)

Long workpiece machining unit enables the discharge of long workpieces (max. 600 mm) through the hollow back-spindle. Chip conveyor discharges chips outside the machine.



User Friendly for Ease of Operation



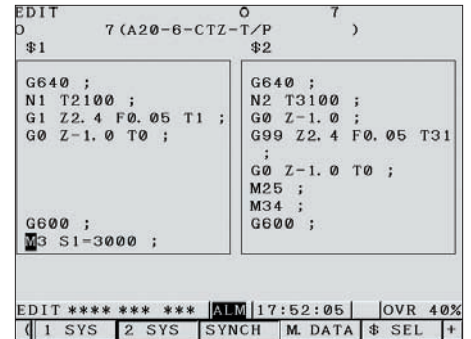
Operation Panel

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



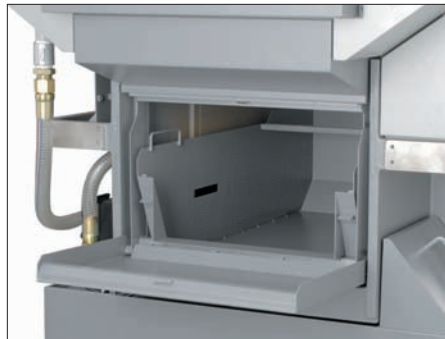
PC Card Slot

NC programs can be input and output by using the PC card slot on the front face of the operation panel.



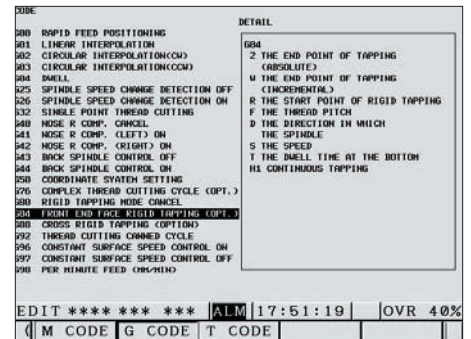
Text size change

Two levels of text size can be set on each screen (the screen shown here is displaying the larger text size).



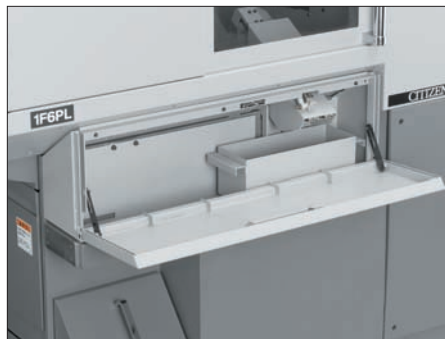
Chip Receiver Box

The large capacity box and generous sized door makes cleaning easy.



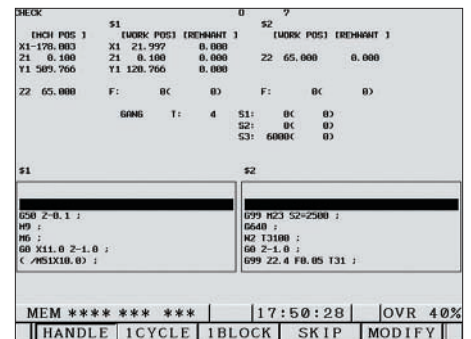
Code list display

You can display a list of G, M and T codes that feature explanations of their functions for easy operation and programming.



Parts Collection Box

The large capacity collection box reduces the need for frequent emptying.



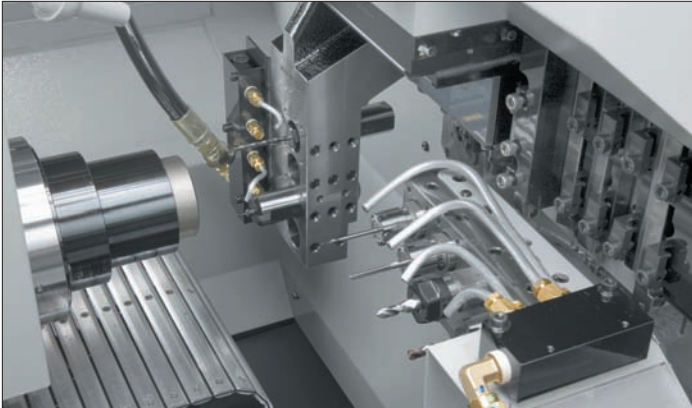
On-machine program check function

This function allows you to execute an NC program forward and in reverse using manual handle feed, after stopping temporarily during the check. You can edit the program and re-run it to check the operation.



Accessories

Coolant & AGB systems



Coolant nozzle

The nozzle for high or medium pressure coolant system is effective for front/back drilling and clearing around the guide bushing.



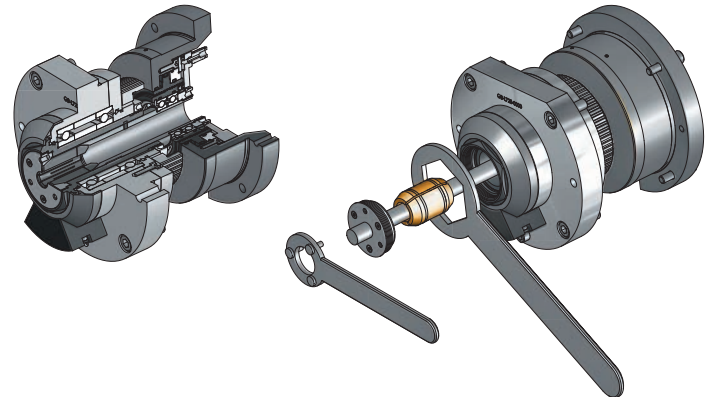
Through tool coolant

High pressure system is effective for through tool coolant even for smaller diameter drills.



Cool blaster (high pressure coolant system)

High pressure up to 14MPa (2000 psi) can control chips, improve the surface finish, increase tool life and reduce cycle time. Available with 5 or 10 ports.

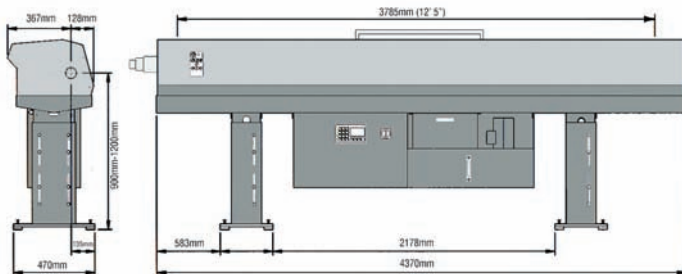


Adaptive guide bushing (AGB) system

AGB systems can be used in place of standard guide bushing units for non-ground material. This system uses a double taper bushing which will always close parallel, and constant pressure is applied to compensate for any bar deviation up to .008" in diameter.

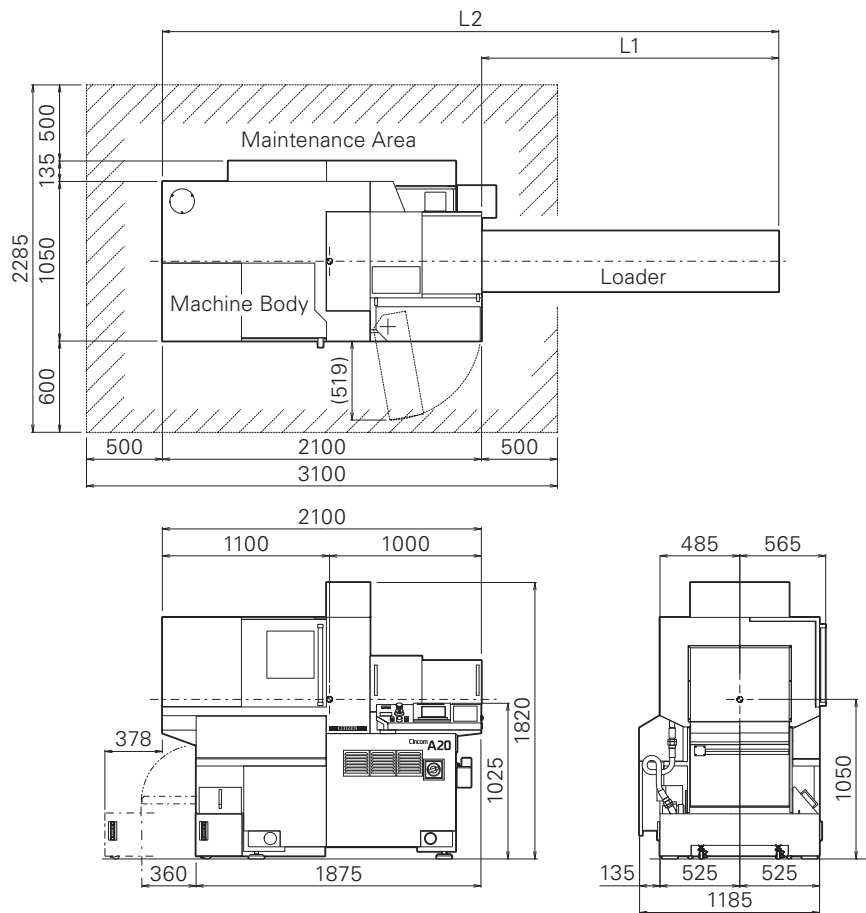
C320 Barfeeder

The MCC C320 automatically feeds round, square and hexagonal bar stock into the A20VII in lengths up to 12' and a diameter range of 3-20 mm.

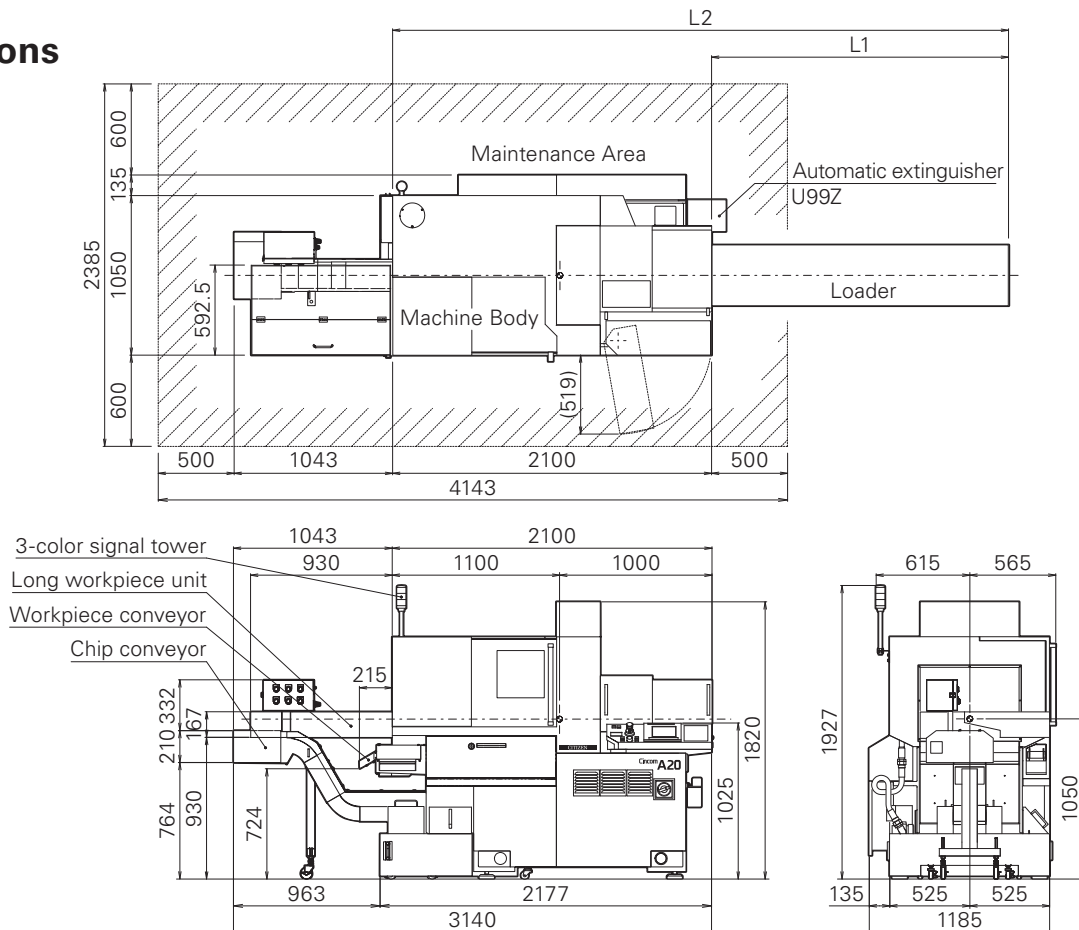


Machine Layout

Standard



With Options



Machine Specifications

Item	A20VII	A20VIIC
	Guide bushing	Non-guide bushing
Maximum machining diameter (D)	φ20 mm	
Maximum machining length (L)	165 mm/1 chucking	2.5D/1 chucking (Z1 stroke 55 mm)
Maximum front drilling diameter	φ10 mm	
Maximum front tapping diameter (tap, die)	M8	
Spindle through-hole diameter	φ31 mm	φ28.5 mm
Main spindle speed	8,000 rpm	
Maximum drilling diameter of gang rotary tool	φ7 mm	
Maximum tapping diameter of gang rotary tool	M6	
Spindle speed of gang rotary tool	max 6,000 rpm (rating: 4,500 rpm)	
Maximum chuck diameter of back spindle	φ20 mm	
Maximum workpiece length for front side ejection	100 mm	2.5D (max. 50 mm)
Maximum drilling diameter in back machining process	φ8 mm	
Maximum tapping diameter in back machining process	M6	
Back spindle speed	8,000 rpm	
Number of tools to be mounted	21	
Turning tools on the gang tool post	5	
Cross rotary tools	4	
Tools for front drilling	4	
Tools for back drilling	8 (4+4)	
Tool size		
Tool (gang tool post)	□ ½", (□12mm)	
Sleeve	φ1" (25.4 mm)	
Chuck and bushing		
Main spindle collet chuck	TF25	BL25
Back spindle collet chuck	TF25	
Rotary tool collet chuck	ER16	
Chuck for drill sleeves	ER16	
Guide bushing	TD25NS	—
Rapid feed rate		
X2, Y1, Z1, Z2 axes	32m/min	
X1 axis	18m/min	
Motors		
Spindle drive	2.2/3.7 kW	
Tool spindle drive	0.75 kW	
Back spindle drive	1.1/1.5 kW	
Coolant oil	0.25 kW	
Lubricating oil	0.003 kW	
Center height	1050 mm	
Input power capacity	6 KVA	
Air pressure and air flow rate for pneumatic devices	0.5MPa · 90NL/min (max. 150NL/min)	
Weight	2550 kgs	

Standard accessories

Main spindle chucking device
 Back spindle chucking device
 Headstock cooling device
 4-gang rotary tool driving devices
 Coolant device (with level detector)
 Lubricating oil supply unit (with level detector)
 Machine relocation detector
 Door lock function
 Workpiece separator
 Pneumatic device for air sealing
 Cut-off tool breakage detection
 Lighting
 Rotary guide bushing device

Optional accessories

Knock-out jig for through-hole workpiece
 Workpiece conveyor
 Chip conveyor
 Workpiece basket on back spindle
 Coolant flow rate detector
 Patrol light
 3-color signal tower
 Long workpiece unit

Standard NC functions

NC unit dedicated to the A20
 7.2-inch monochrome LCD
 Pre-processing function
 Program storage capacity: 80m
 Tool offset pairs: 49
 Product counter indication (up to 8 digits)
 Spindle speed change detector (main & back)
 Automatic power-off function
 Main spindle indexing at 15° intervals
 Main & Back spindle C-axis function
 On-machine program check function
 Constant surface speed control function
 (main & back spindle)
 Canned cycle for threading
 Variable lead thread cutting
 Chamfering, corner R
 Direct input of drawing dimensions
 Spindle synchronized function
 Milling interpolation
 Multiple repetitive cycle for turning
 Canned cycle drilling
 Rigid tapping function
 Y-axis offset
 Tool life management I
 Tool life management II
 User macros
 Inch/metric conversion
 Sub-inch command
 B-code I/F
 Bar feeder interface

Optional NC functions

Program storage capacity: 120m
 Additional custom macro variables

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