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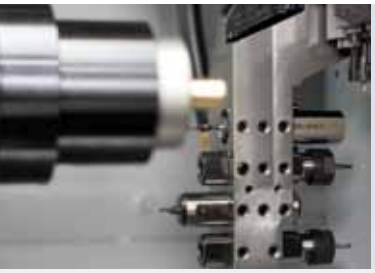


Cincom Evolution Line

Sliding Headstock Type Automatic CNC Lathe

A20-VII

A

Cincom Miyano

"Evolution and Innovation" is the Future

Clear and brief: A lot of performance for your money

If there were no A20 yet... one would have to invent it – for the unexcelled efficiency, accuracy, and high speed of this »Allrounder« among the Citizen sliding head lathes. Even the standard version of the A20 is perfectly capable of mastering the versatile tasks and requirements of a mixed production. Even complex tasks are easily solved by the A20 thanks to its user-oriented software. The unique »Streamline Control« control technique by Citizen leads to shorter cycle times thanks to overlapping processes.

Moreover, the A20-VII is equipped with an additional X2 axis compared to the predecessor model. This increases the flexibility of the machine allowing further simultaneous machining processes.

The A20 has been designed for part diameters up to Ø 20 mm and part lengths up to 165 mm in medium to high batch sizes. Apart from the its favourable price – quite unusual for a 20 mm machine – its high stability & rigidity, its high accuracy, as well as the short machining times are further outstanding features of this machine.

The A20-VII is perfectly suited for heavy-duty cutting due to its rigidity and to the rib reinforcement of the machine bed. No need mentioning that you can get also our service package which comprises service & maintenance contracts, training, and turning tests under field conditions... to name just a few. Moreover we offer an extensive after sales service as well as a reliable telephone hotline which you can reach five days the week. This makes turning with Citizen a smooth thing.

Service – You can count on us!

Monday – Friday	7 a.m. to 8 p.m.
Hotline-Service	+49(0)711-3906-140
E-Mail	service@citizen.de

The machine productivity has been improved.
Through the perfect combination of machine and control, the A20 offers the latest state-of-the-art options in high-speed data processing. An optimum starter model offering an outstanding cost-benefit ratio – not only as regards the purchase price but also in operation.






Contents

All technical data starting from page 11!

Key features at a glance:

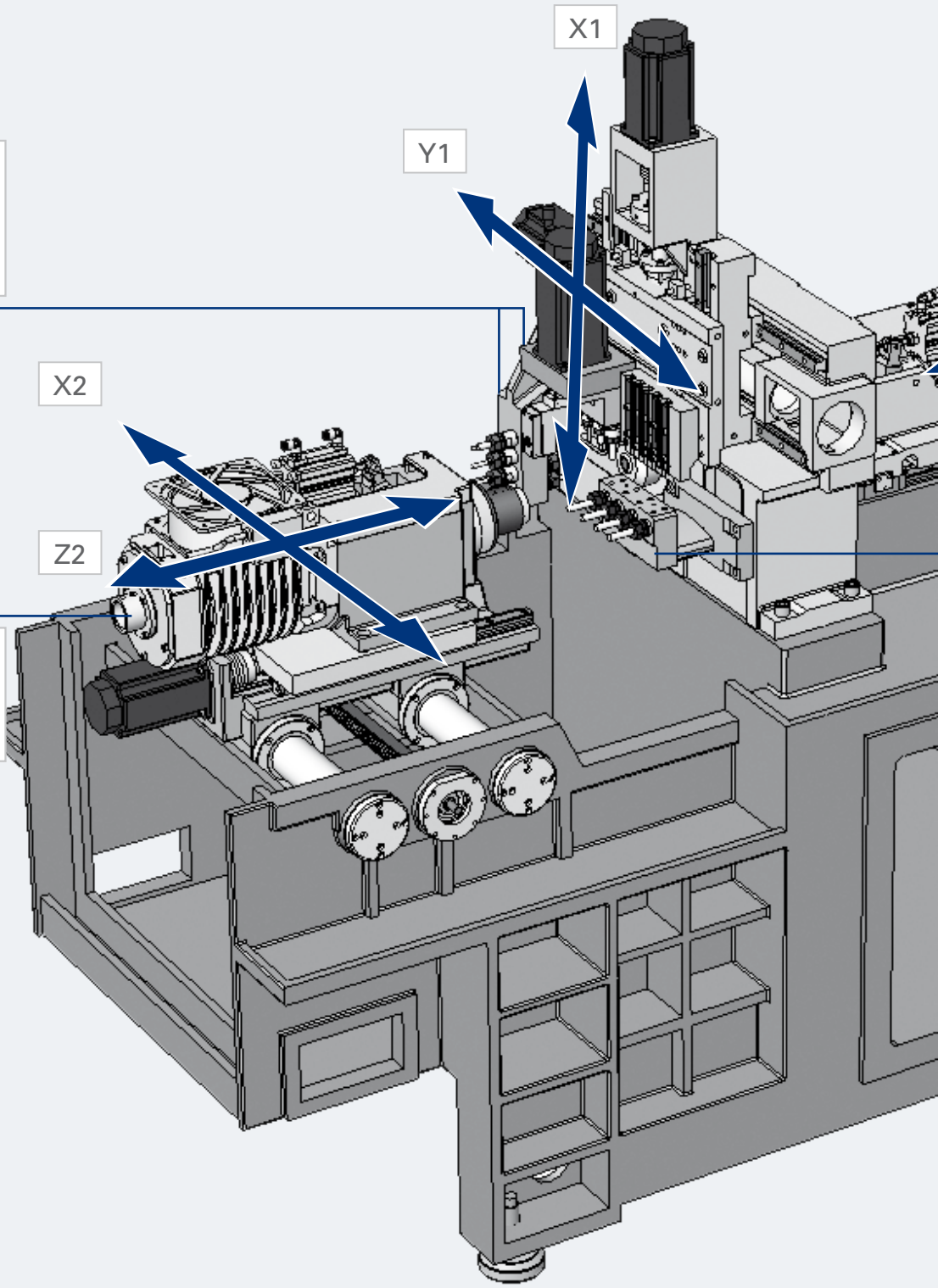
- Attractive price/performance ratio
- Maximum precision and reliability
- 7 axes (X1, Y1, Z1, X2, Z2, C1, C2)
- 32 m/min rapid feedrate
- Simultaneous machining
- Higher productivity
- Headstock right or left at the user's discretion
- Optionally available as short turning lathe (w/o guide bush)
- Up to 22 tools

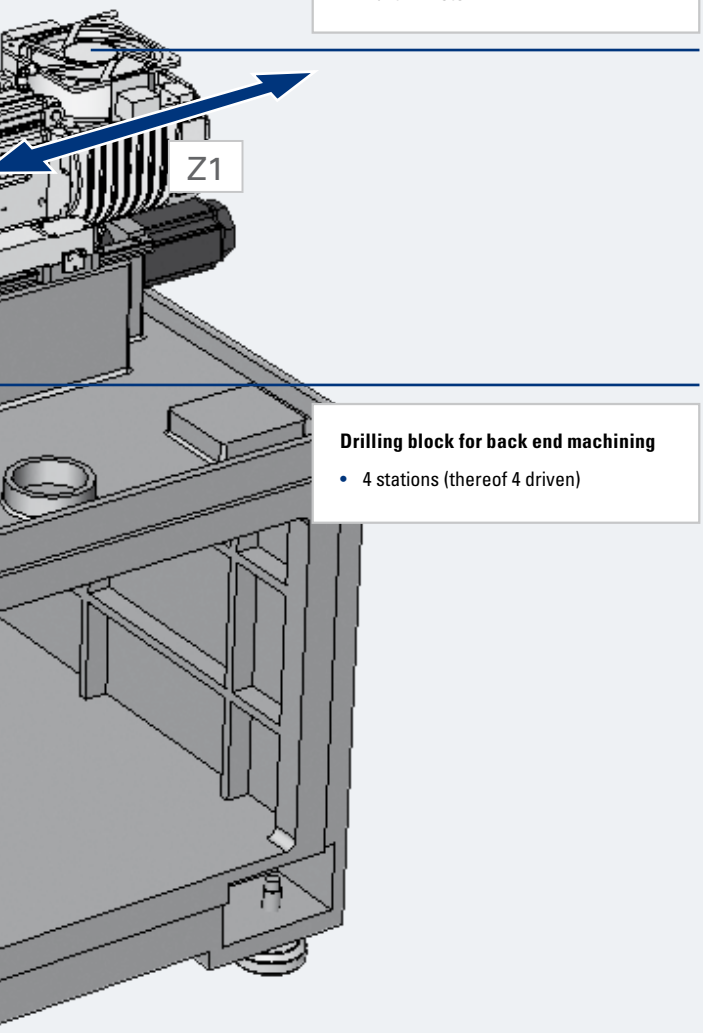
Vertical holder

- 5 turning tools
- 4 drilling tools for front & back end machining
- 4 rotary tools

Sub-spindle

- max. 8,000 min^{-1}
- C axis
- Built-in motor



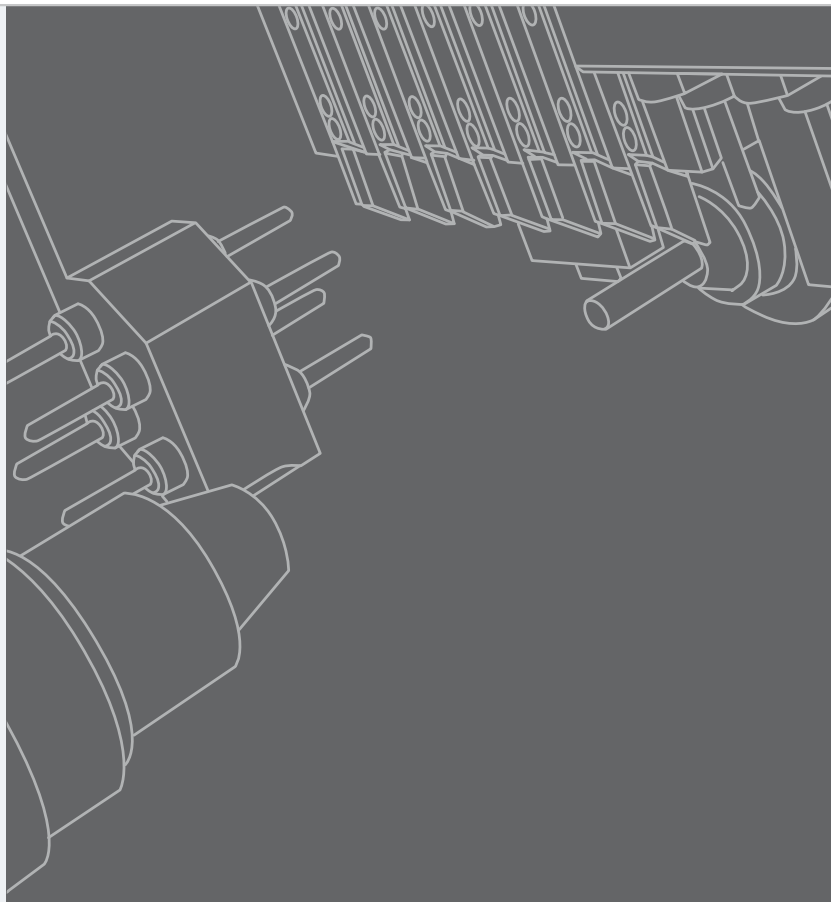


Main spindle

- max. 8,000 min^{-1}
- C axis
- Built-in motor

Drilling block for back end machining

- 4 stations (thereof 4 driven)



Low in maintenance – high in life

Next to the renowned high quality standard of Citizen, further constructive engineering features grant the high reliability of the machine – both in heavy-duty cutting and in high-speed machining.

Air sealing
The synchronous guide bush and the bearings at main spindle and sub-spindle are standard equipped with air seals preventing the penetration of cutting fluid and dirt particles.

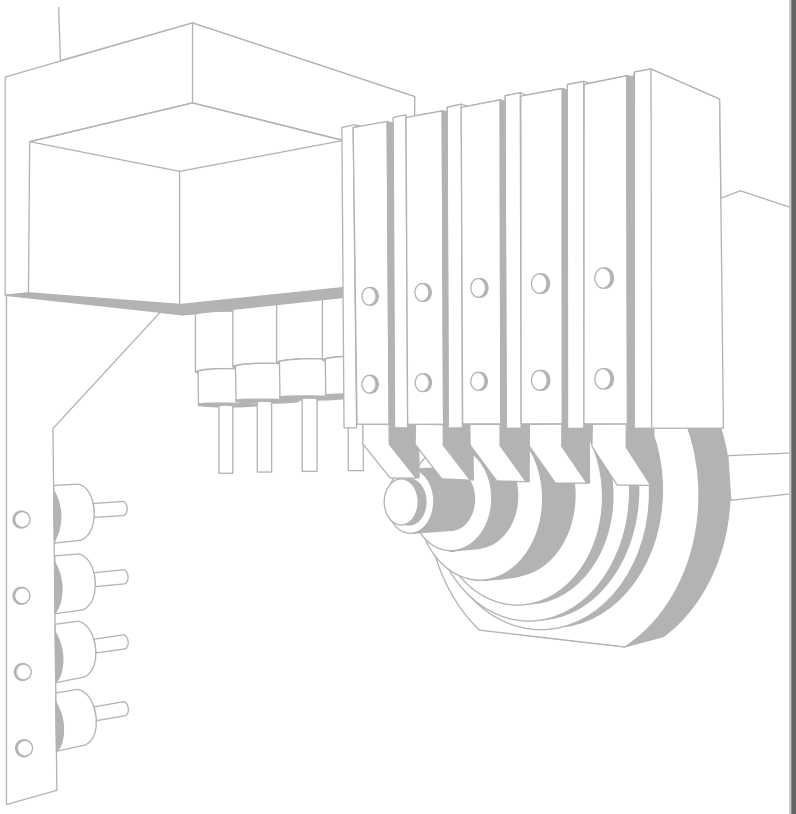
Rigid and extremely stable spindle construction
The spindle features a highly rigid design. This allows for powerful machining processes with perfectly turned surfaces.

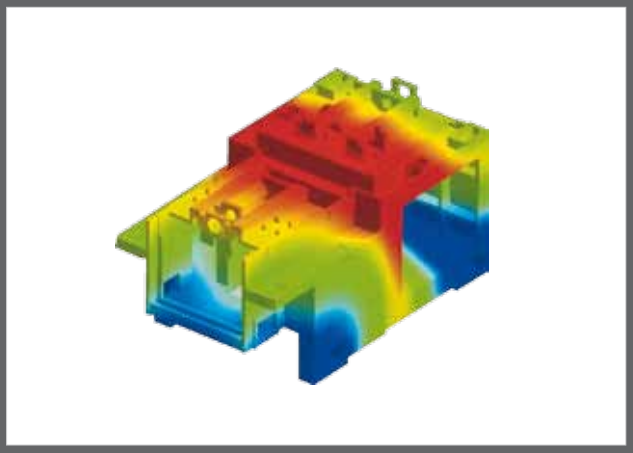
Roller guides for all travelling axes
Roller guides are used for all slide guideways. Thanks to their low elastic deformation under load and their wide contact areas, these extremely rigid and robust rollers run smoothly and stick-slip free.

Central lubrication provided as standard
The ball screws, LM guides, and drive units of the synchronous guide bush are centrally lubricated. The otherwise due maintenance works to be executed on a periodical basis are thus obsolete.

Strong arguments in favour of the A20

In order to guarantee the excellent quality and long life of the machine, we attach great importance to high-quality single components. Because quality is in the detail. This is the reason why we pursue the goal of constantly optimising the process chain „turning“. In this respect, we have already achieved a great deal of success in close cooperation with renowned manufacturers of control units, programming systems, tools, and automation facilities.

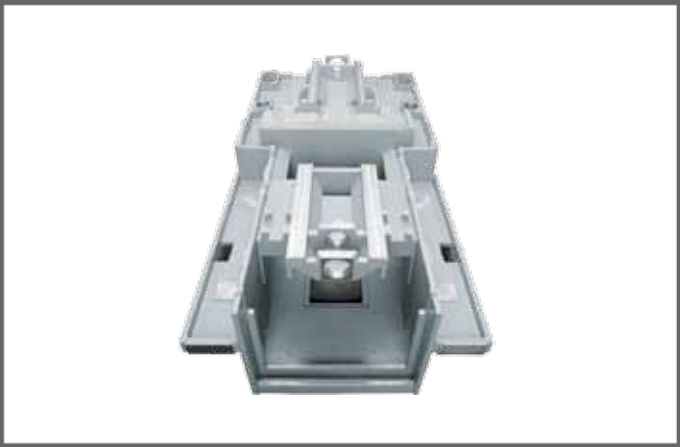




Left-right symmetrical bed
The bed offers a perfectly symmetrical design in order to eliminate thermal expansion. The low thermal expansion of the machine bed grants high machining accuracy – even over long operating times.

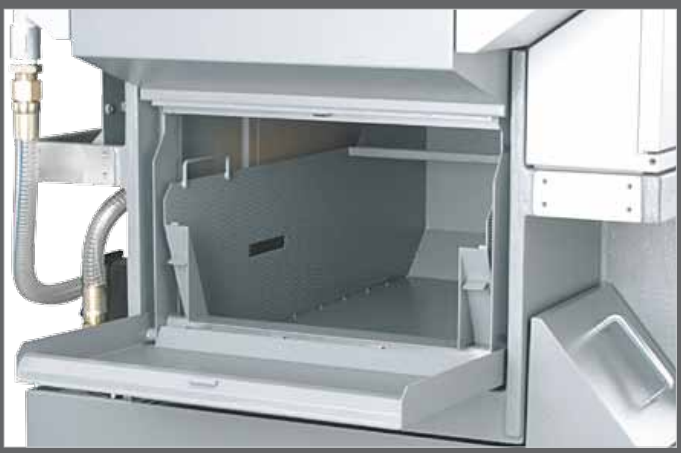
Parts chute
The finished workpieces are transported through the parts chute onto the conveyor belt.

High-capacity coolant tank
The coolant tank with its high capacity of 150 litres is equipped as standard – one of the prerequisites for a long uninterrupted operation.

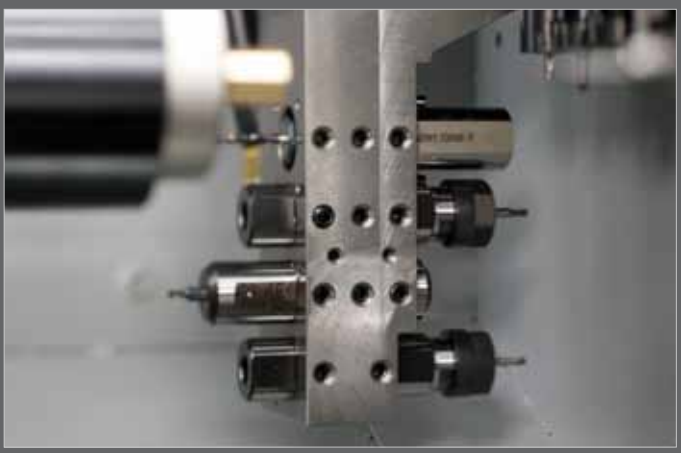


Strong, solid machine bed for maximum rigidity
The machine bed weighs 1.8 times more than that of a conventional machine. Even in heavy-duty cutting processes, it retains maximum precision.

Coolant tank restricts heat emissions
The sealed design of the coolant tank minimises the negative effects of the heat radiation of the coolant on the cast construction.



Chip bucket
The chip bucket offers a high chip capacity. Moreover, the generously dimensioned opening of the chip bucket facilitates chip removal.



Stable drill holders
Designed for very high cut loads during the drilling process.

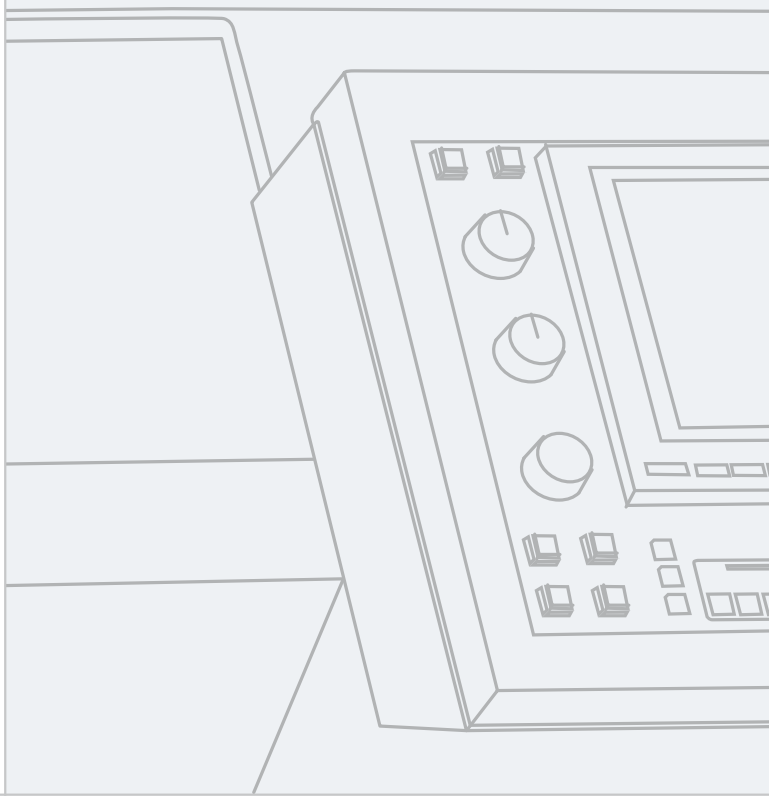
A Machine of Maximum Productivity

By installing the latest state-of-the-art Fanuc 32i-Model A control in combination with Citizen's unique control technique „Streamline Control", we have managed to slash idle times and cycle times. The result of these efforts is a new generation of CNC sliding head lathes offering you an unrivalled cost-benefit ratio hand in hand with a true increase in productivity.

The ultra fast calculation and processing operations lead to drastic time savings when processing macros and reading NC blocks. This is a major contribution to cutting down on cycle times.

Features of the CNC control unit:

- Multi-axis CNC system for simultaneous or single tool machining
- Tool radius compensation
- Multiple repetitive cycles
- Deep drilling cycle
- Constant surface speed
- Insertion of chamfers and radii
- User macro
- Spindle speed monitoring
- Main spindle C axis
- Sub-spindle C axis
- Main and sub-spindle synchronisation
- Synchronous tapping at main and sub-spindle as well as with rotary tools
- 49 tool offsets
- Milling interpolation
- Tool life management 1
- Geometrical function
- Electronic handwheel
- Error diagnosis function
- Interference monitoring
- 7,2" b/w LCD monitor
- Product counter
- Indication of operating time
- Background edit function



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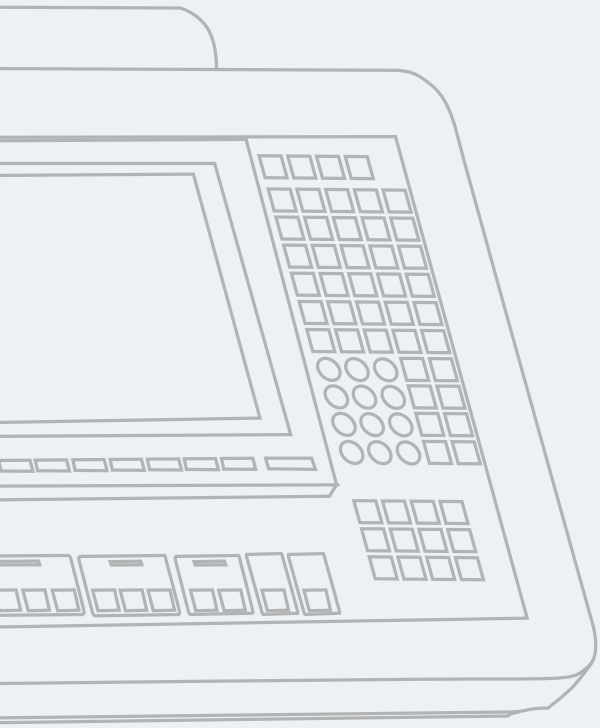
Location of the operating panel
The operating panel may be swivelled to the front or rear which allows the operator to simultaneously monitor the program sequences on the screen and inside the work envelope.



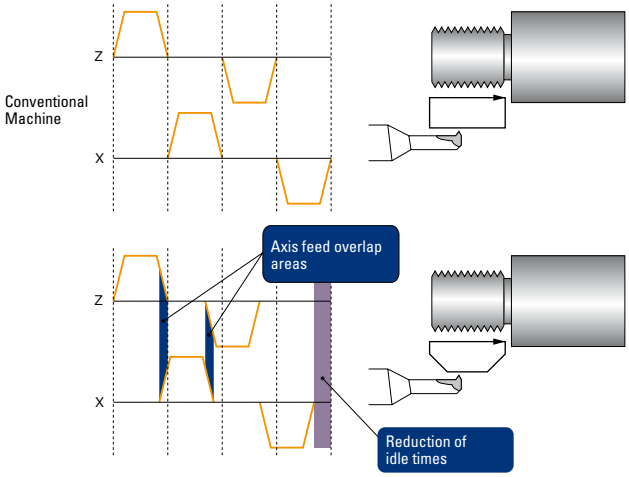
PC card slot
NC programs can be input and output via the PC card slot at the front of the operating panel.

The machine disposes of a compact swivelling operating panel with integrated display.

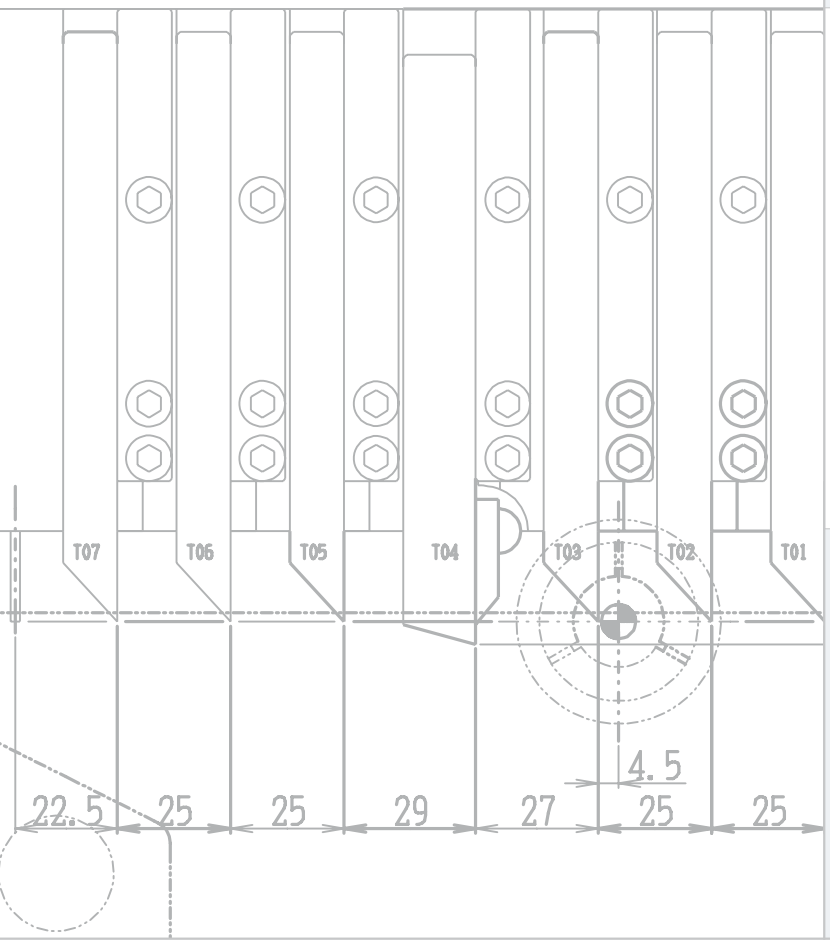
Simply faster: Citizen‘s »Streamline Control«

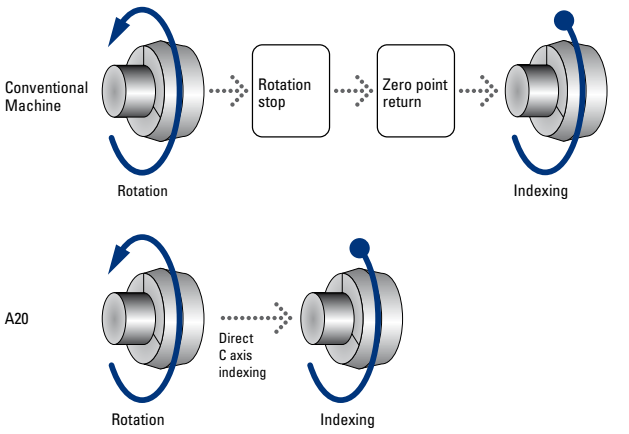
The motion overlap function specifically developed by Citizen grants fast and stick-slip-free axis feed motions thus complying with one of the most important conditions for high-speed machining.

Idle times are minimised without affecting the machining process as the feed motion of the next axis can already be started during the current motion of another axis.

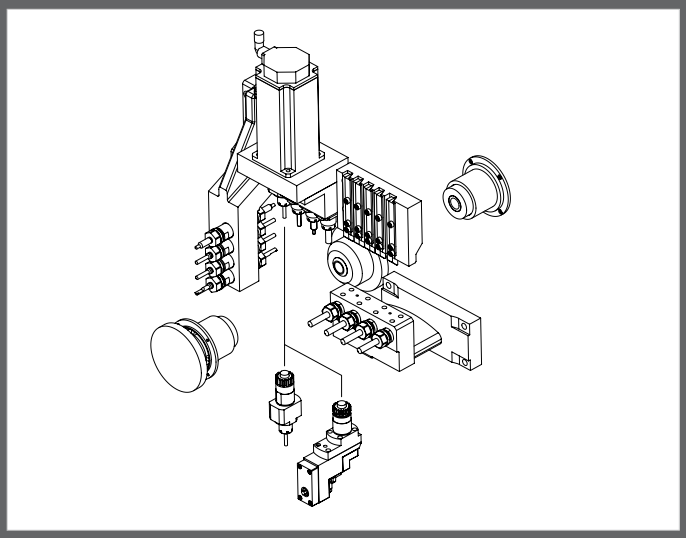


Axis feed motion overlap function
The next axis feed motion starts without waiting for the completion of the current motion – of another axis. This eliminates wasteful idle time and suppresses machine vibration.





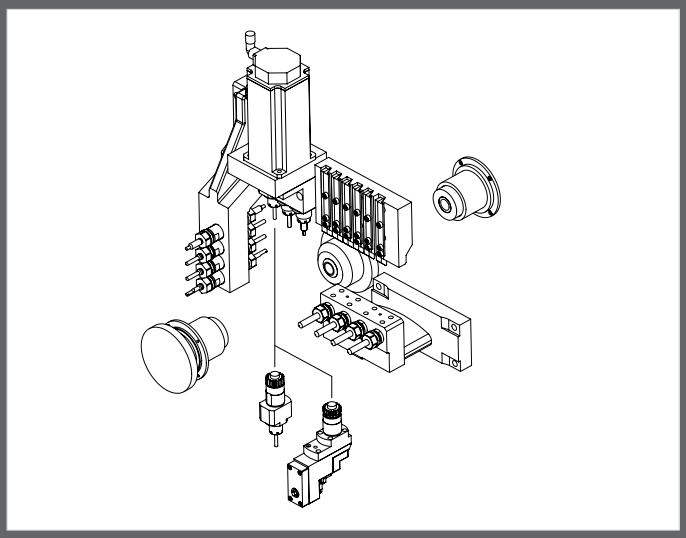
Direct C axis indexing
When a C-axis spindle command is used for positioning, the position at which the spindle decelerates to a stop following the rotation can be made the indexing position, substantially shortening indexing time. This substantially shortens the indexing time.



Standard tool holder

Vertical holder
4 turning tools (12 mm shank section)
1 cut-off tool (16 mm shank section)
4 drilling tools for front end machining
4 drilling tools for back end machining
4 rotary tools

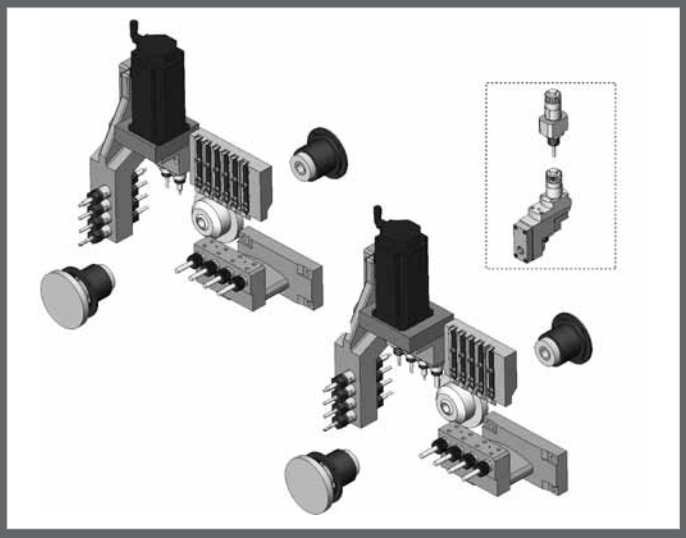
Tool holder for back end machining
4 stations, thereof 4 driven



Optional tool holder

Vertical holder
5 turning tools (12 mm shank section)
1 cut-off tool (16 mm shank section)
4 drilling tools for front end machining
4 drilling tools for back end machining
3 rotary tools

Tool holder for back end machining
4 stations, thereof 4 driven



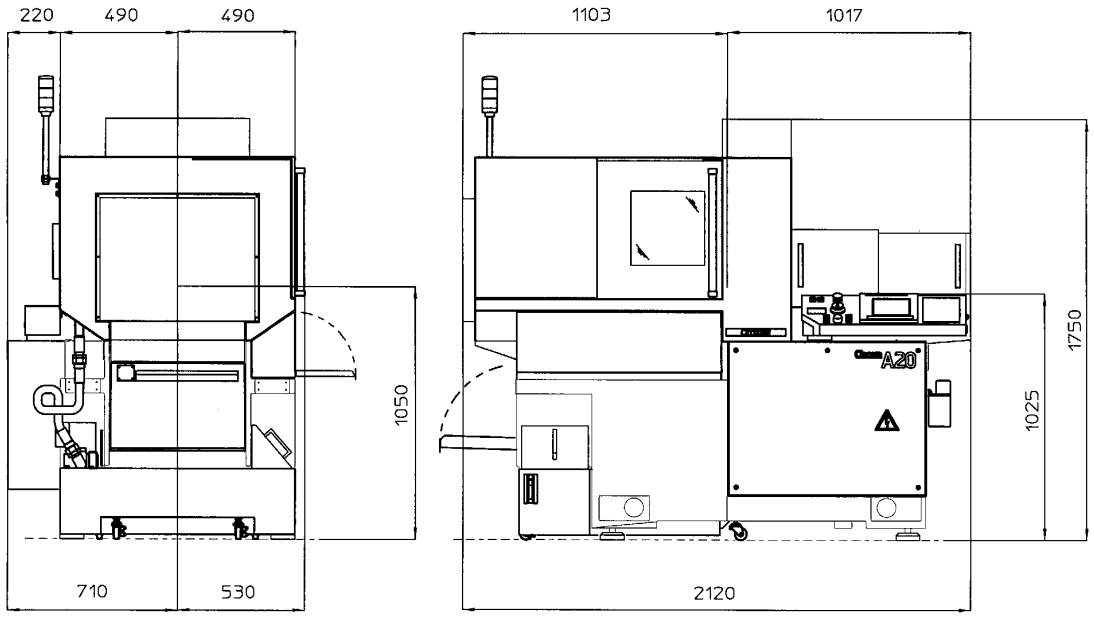
Infinite possibilities for any special requirements.

For you to be able to work efficiently and at low-cost, you need a variable and user-oriented system. That's what the new Cincom A20-VII by Citizen can offer.

Tool features

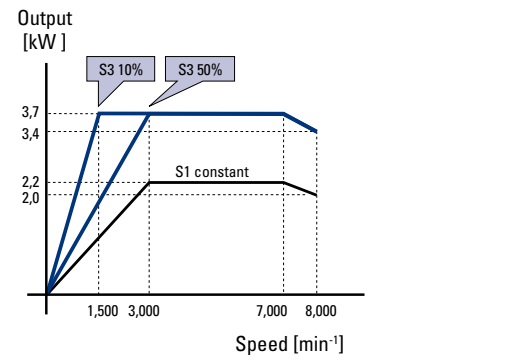
- Optionally 2 to 4 rotary tools
- Cross driven tool holders
- End-face driven tools
- 6 turning tools
- 4 drilling tools for front machining
- 8 drilling tools for back machining
- Up to 21 tools

A20-VII – standard version

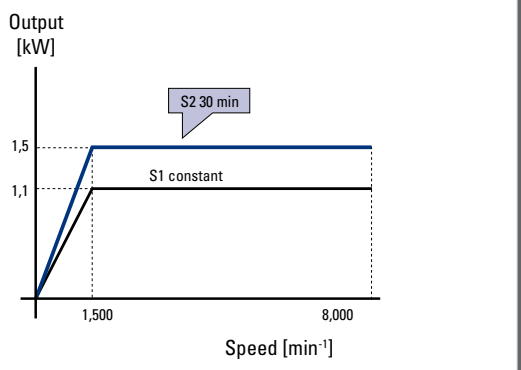


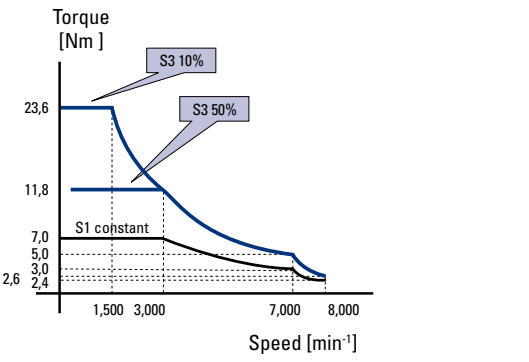
Spindle torque

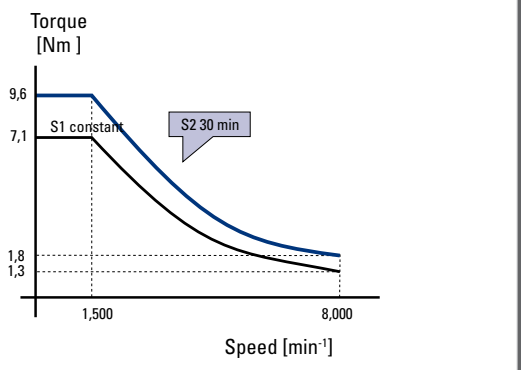
A20 main spindle



A20 sub-spindle







Standard

- Synchronously driven guide bush
- Drive unit for cross driven spindles on vertical holder
- Sub-spindle
- Parts ejector
- Workpiece separator (chute)
- Coolant tank
- Central lubrication
- Door lock
- Pneumatic unit as air seal
- Knock-out device for work-pieces with through-hole
- Quadruple drilling tool for front end machining
- Quadruple drilling tool for back end machining (thereof 4 driven)
- Vertical holder for 5 turning tools with QS Quick system
- 4 rotary tools
- Extended I/O unit (for B code)
- 3-colour caution lamp
- Internal work light
- Workpiece conveyor (workpiece conveyor belt)
- Cut-off breakage monitoring

Option

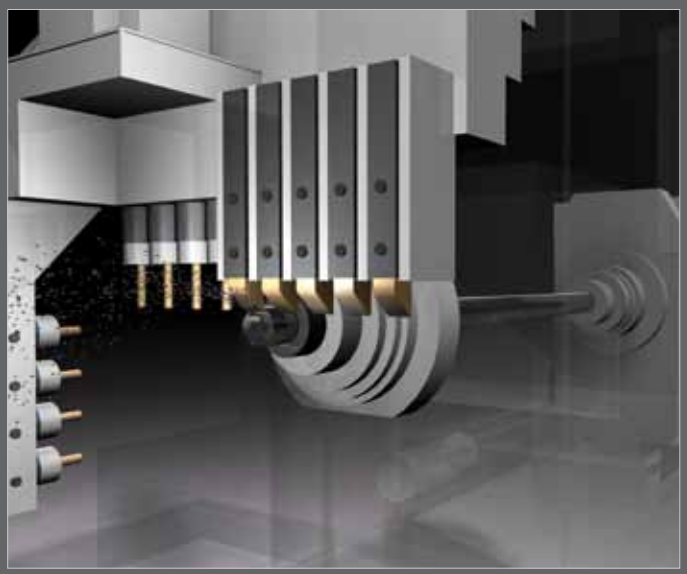
- Chip conveyor
- Vertical holder with 6 turning tools
- Yellow caution lamp
- Stationary guide bush
- Long part option
- Workpiece separator for main spindle
- High-pressure pump
- Coolant flow monitoring

The A20-VII sliding head lathe

The sliding head lathe is always equipped with a guide bush which is set, according to the material to be machined. All machining processes on the main spindle are executed directly in front of the guide bush. This ensures the optimum guidance and support of the material to be machined at the cutting point. The sliding head lathe is perfectly suited for long, slender parts. However, short parts can also be machined.

Advantages of A20-VII sliding head lathe

- Maximum precision
- Easy machining of long parts without any further support
- Finish machining for optimum surface quality
- Simultaneous machining
- Complete machining
- Easy programming
- Fast set-up changes



Specifications

Item	Cincom A20-VII
Main spindle	
Max. machining diameter	Ø 20 mm
Max. machining length without re-chucking	165 mm
Through-hole diameter	Ø 31 mm
Max. spindle speed	8,000 min^{-1}
Spindle indexing C axis	0,001 °
Motor power (built-in Motor)	2,2/3,7 kW
Sub spindle	
Max. machining diameter	Ø 20 mm
Max. machining length	80 mm
Max. spindle speed	8,000 min^{-1}
Spindle indexing C axis	0,001 °
Motor power (built-in Motor)	1,1/1,5 kW
Rotary tools at vertical holder	
Speed	8,000 min^{-1}
Motor output (AC servo motor)	0,75 kW
Number of tools	4
Tooling system	
Turning tools	4
Cut-off tool (number)	1
Cut-off tool (shank section)	16
Drilling tools for front & back end (number)	4
Drill holder for back end machining	4
Tool holders, quills (diameter)	Ø 25,4 mm
Tool holders, turning tools (shank section)	12 mm
Collets and guide bush	
Collet main/sub spindle	F25 (145E)
Guide bush (Neukomm)	T223 (22.001)
Drill quills	ER16
Rotary tools	ER16/ER11
Rapid feedrates	
X1 axis	18 m/min
Z1, Y1, Z2, X2 axis	32 m/min
Machine specifications	
Dimensions (without bar feeder) L/W/H	2,120 x 1,226 x 1,752 mm
Centre height	1.050 mm
Weight	2,400 kg
Input power	6 kVA

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