CITIZEN
Micro HumanTech

CNC Sliding Head Lathes

L Series
Cincom L20-VIII

»The Dynamo« – Role Model for
All Our Sliding Head Lathes and
a State-of-the-Art Allrounder

Pure Power in Compact Format

The latest generation of the Citizen L20-VII features even more rotary tools, extensive cross and face machining functions and more powerful drives. Rigidity is increased by constructional improvements and enhanced components, and the re-designed machine offers better access for the operator. »Full servo technology« – the elimination of hydraulic and pneumatic components lowers the operating cost and increases productivity by reducing idle times.

Superior simultaneous front and back machining is achieved using Citizen's patented superimposition control function.

A vibration-proof cast machine bed and long life, centrally lubricated larger ballscrews provide higher rigidity, thermal stability and quiet running.

Let yourself also be convinced of Citizen's efficient consulting and customer service. Another area in which we set standards of excellence.






Key features

Versatile, flexible:

- Work envelope (without re-chucking): Ø 20 x 200 mm
- Up to 21 tools
- Up to 13 rotary tools
- Adjustable-angle holder for cross machining
- C axis at main and sub-spindle
- Modular design of the tool holder
- Y axis as standard
- Simultaneous Machining

Fast, time-saving

- Simple and fast set-up
- Short cycle times both for simple and complex parts
- Simultaneous machining with 2 tools
- Max. 32 m/min rapid feed rate
- Simultaneous axis movements to cut down on non-productive times

Powerful, dynamic

- Full Z1 axis travel with synchronous guide bush
- 12 mm shank section for turning tools
- Digital AC drives

At a glance:

Precise, long-lived

- Rigid & strong machine bed for high stability
- Centrally lubricated long-life ball screws for minimal maintenance
- Sealing air at guide bush, main and back spindle
- Maximum precision and repeatability in continuous operation

User and service friendly

- No hydraulic components
- Easily accessible work envelope
- Simple chip disposal
- Free access to all service units

Easy to program

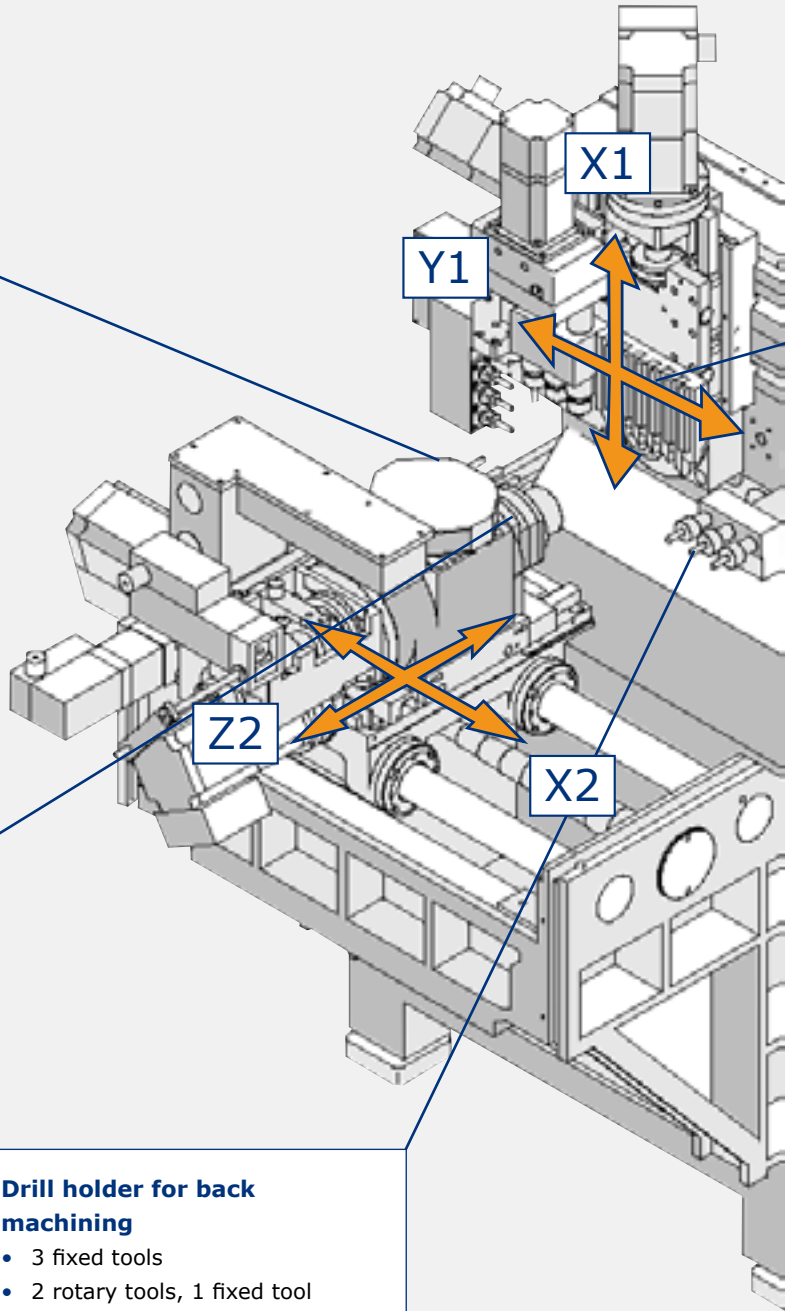
- User friendly Mitsubishi control
- Comfortable interactive programming
- Simple program check using electronic handwheel

Contents

All technical data starting from Page 9!

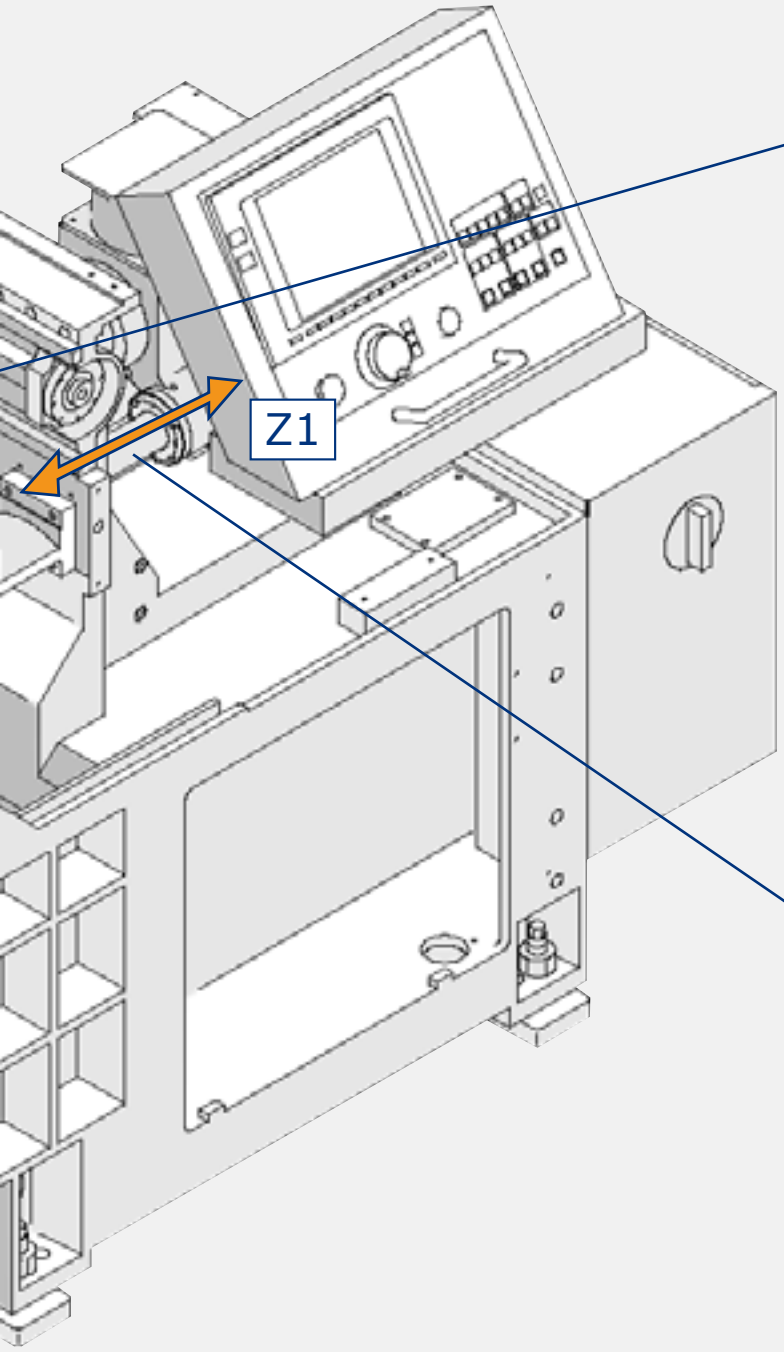
Cincom L20-VIII

Holder for front machining
- 3 fixed tools
- 2 rotary tools, 1 fixed tool (option)



Sub-spindle
- Built-in motor, 8,000 min^{-1}
- 1° indexing
- C axis

Drill holder for back machining
- 3 fixed tools
- 2 rotary tools, 1 fixed tool (option)
- 3 rotary tools, 2 fixed tools (option)



Vertical holder

- 6 turning tools
- 6 rotary tools 1.0 kW / 4,500 min^{-1} (3 of which swivelling by 90°) *option 9 rotary tools*
- Synchronously driven guide bush with AC spindle motor

Main spindle

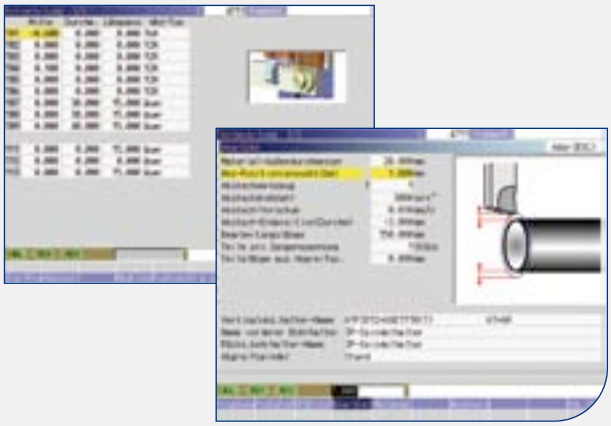
- Built-in motor, 10,000 min^{-1}
- C axis
- Spindle through-hole diameter 24 mm (max. bar capacity 20 mm, no bar preparation required)

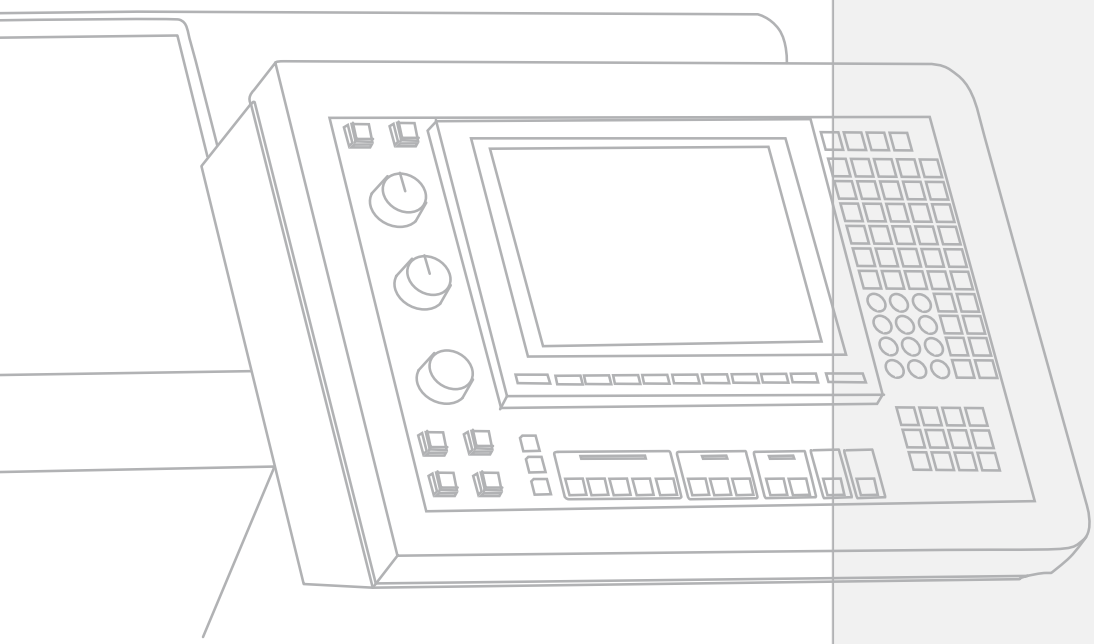
Fast, efficient, precise and easy-to-operate

The newly developed Meldas 730 LUC control comes equipped with a 10.4" TFT screen and features a 'Windows' operator interface.
A high speed CPU cuts the calculation times and accelerates macro processing. The new overlapping machining function and direct spindle indexing reduce cycle times.

The electronic handwheel for the safe and simple program check is included as standard. Any potential interference points are recognised and prevented and thus the axis movements can be optimised.

On the large 10.4" TFT screen, all operating cycles are depicted in form of 3D graphics in an easy and intuitive way.





Features of the CNC control

- Multi-axis CNC system for simultaneous or single machining
- Tool radius compensation
- Multiple repetitive cycles
- Deep drilling cycle
- Constant surface speed on the main spindle
- Insertion of chamfers and radii
- User macros
- Spindle speed monitoring
- Main and sub-spindle synchronisation
- Chase threading cycle
- Main spindle C axis
- Sub-spindle C axis
- Synchronous tapping at main and sub-spindle as well as with rotary tools
- 40 tool offsets
- Background edit function
- Absolute measuring system (reference point return not necessary)
- Electronic handwheel
- Diagnosis function

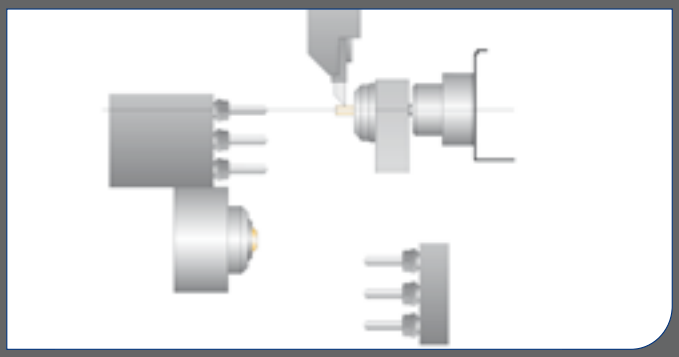
Options (selection)

- Tool life monitoring
- Milling interpolation
- Helical milling interpolation

Simultaneous Machining

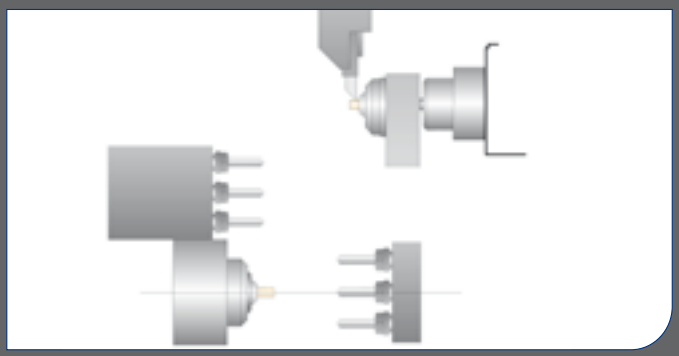
Minimum part production times through simultaneous machining with two spindles and two tool holders. Various simultaneous machining processes - e.g. turning-drilling, roughing-finishing, or milling-drilling are possible.

Example 1



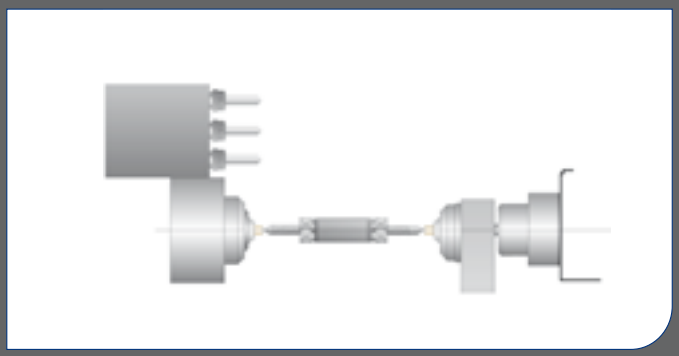
Main spindle: OD turning with vertical carrier, ID drilling/ turning with tool holder for front end machining

Example 2



Main spindle: Turning (or e.g. cross machining with rotary tool) Sub-spindle: Drilling with tool holder for back end machining

Example 3



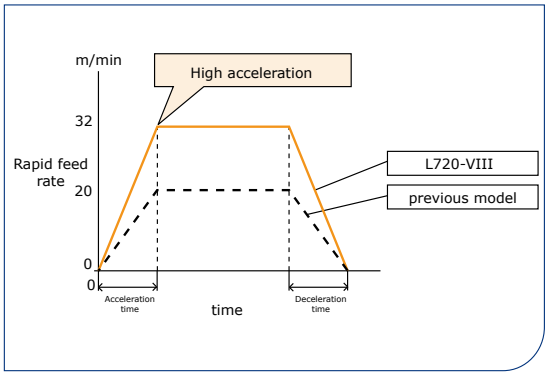
Main and sub-spindle: simultaneous face drilling with rotary tools

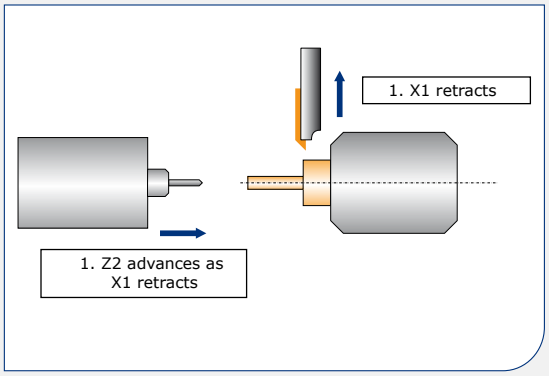
The L20-VIII – For all those who are in a hurry

The new L20-VIII offers outstanding high productivity and efficiency thanks to faster rapid federates, improved axis deceleration/acceleration times and faster program processing provided by Citizen's own software in combination with the new Mitsubishi 730 control unit.

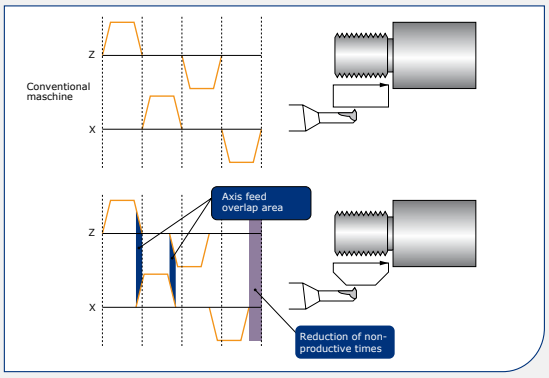
Processing speed is twice as fast as that of the predecessor model.

Rapid feed rates are extremely fast at up to 32 m/min. Outstandingly smooth acceleration/deceleration to the high rapid feed rate is achieved in the same time as the previous model, contributing to further cycle time reduction.





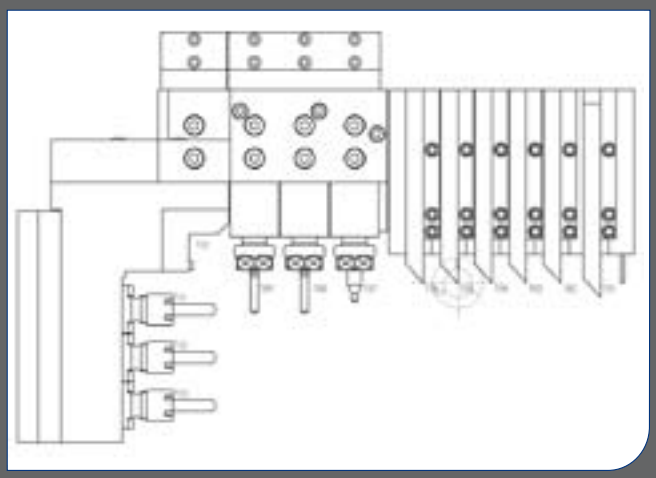
Overlap movement to reduce cycle time
As one tool retracts, the next tool simultaneously advances to the position for the next machining command.



Overlap sequence
Citizen's special software shortens the tool path during non-cutting retract/move back/ advance movements. This example shows the time saving during screw-threading cycle.

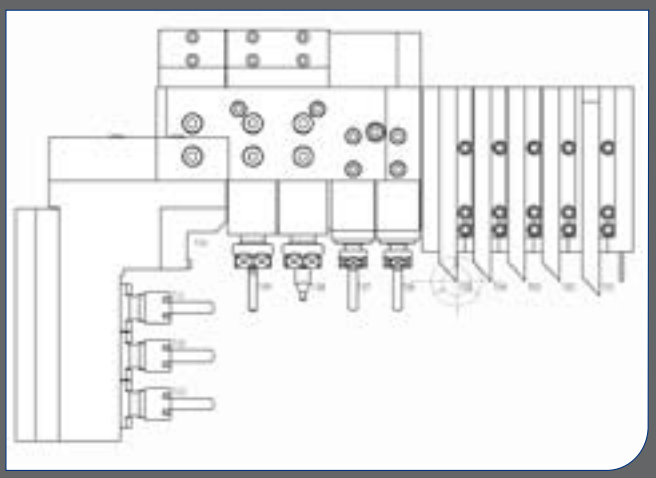
The main spindle provides 6 turning tools and 6 rotary tools as standard. The rotary tools are rated at 1.0 kW / max 4,500 min^{-1}. For endworking, the machine is equipped with 3 tools for front machining and 3 tools for back machining as standard.

Standard tool layout



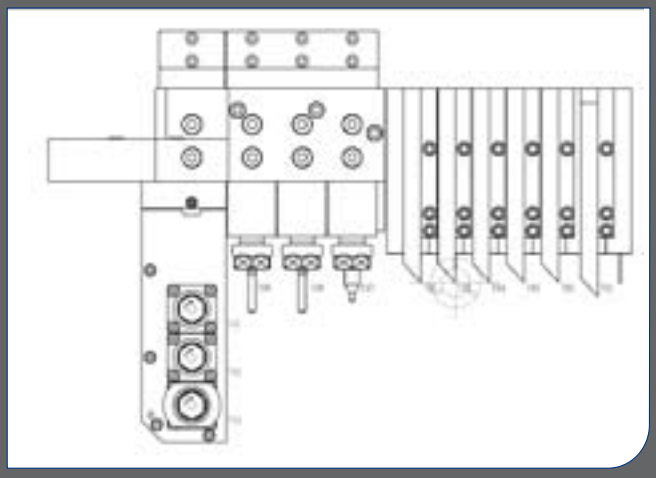
- 6 rotary tools (12 mm shank), 6 rotary tools (3 of which swivelling by 90°)
- 3 drilling tools for front end machining
- 3 drilling tools for back end machining

Optional tool layout



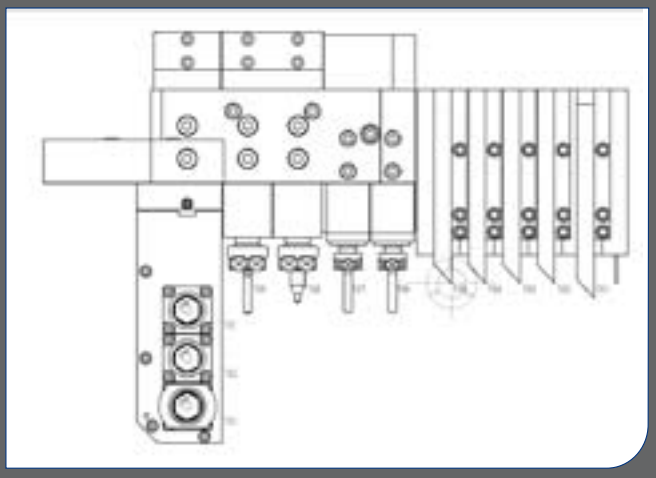
- 5 rotary tools (12 mm shank), 7 rotary tools (3 of which swivelling by 90°)
- 3 drilling tools for front end machining
- 3 drilling tools for back end machining

Optional tool layout



- 6 rotary tools (12 mm shank), 3 rotary tools for cross machining
- 3 rotary tools for end-face machining at the main spindle
- 3 rotary tools for end-face machining at the subspindle

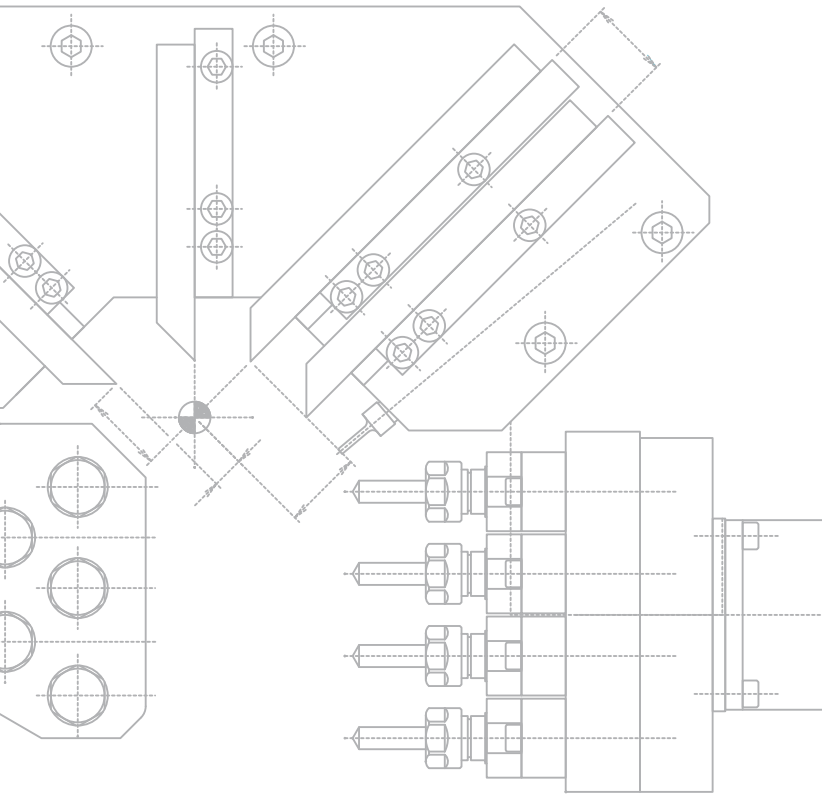
Optional tool layout



- 5 rotary tools (12 mm shank), 4 rotary tools for cross machining
- 3 rotary tools for end-face machining at the main spindle
- 3 rotary tools for end-face machining at the subspindle

Versatility and Modularity

Additional face rotary tools are available for either the front or back end working toolposts. Two stations (out of 3) may be optionally power driven, 0.4kW, max. 5,000 min^{-1}.



Triple-drill holder
Offers a design similar to that of the twin drill holder U151B but comprises two additional modular tools next to a further rotary tool.

Infinitely adjustable holder for cross and longitudinal machining
The infinitely swivelling triple holder allows cross drilling or milling at an arbitrary angle.

Quality and flexibility

Versatile accessories like chip conveyor, workpiece conveyor and long parts adapter, facilitate the handling of finished parts as well as the automatic disposal of chips from the machine.

High pressure coolant systems allow the optimised cooling of tools and an intelligent control of chips in case of hard-to-cut materials.

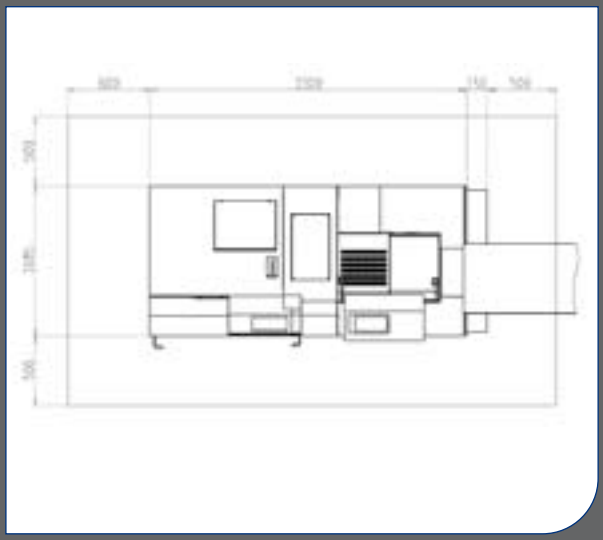
Workpiece conveyor U35J
Ideal for unattended operation of medium/ large batches or for separation of delicate parts. Discharge is to the right front of the machine.

High-pressure pump
State-of-the-art cutting tools increase the demand on cooling lubricants and coolant systems. With the new generation of stationary high-pressure units, volume flows of up to 30 ltrs/min under pressures of max. 210 bar can now be achieved. The highest version allows for the connection of up to 10 independent high-pressure lines.

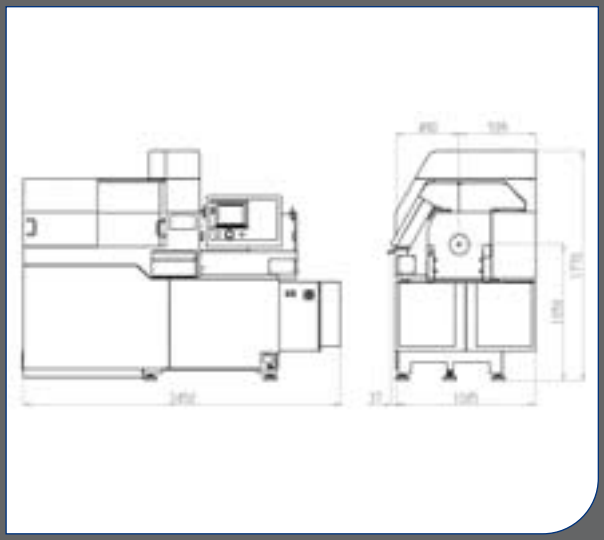
Long part adaptor U4130B
For workpieces of 80 mm up to 600 mm length. The part is discharged through the sub-spindle towards the left side of the machine.

Machine Installation Diagram

Top view

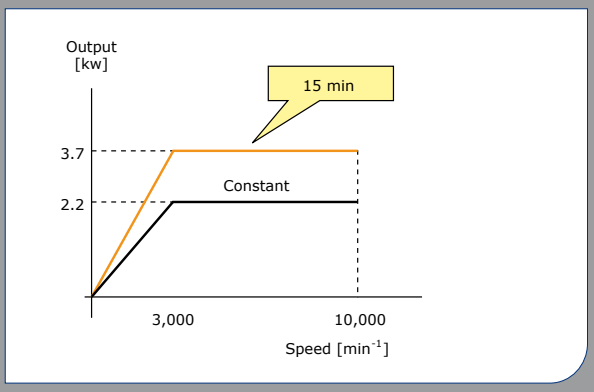


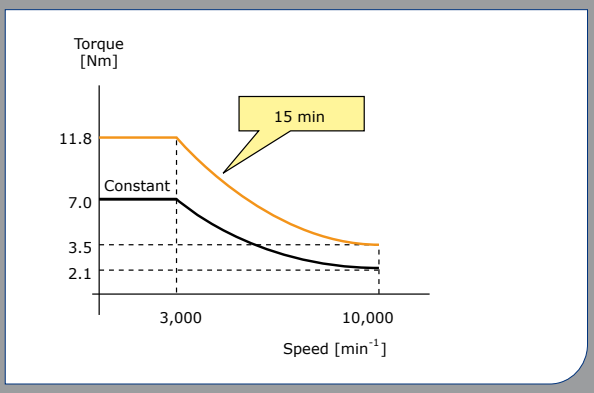
Side view



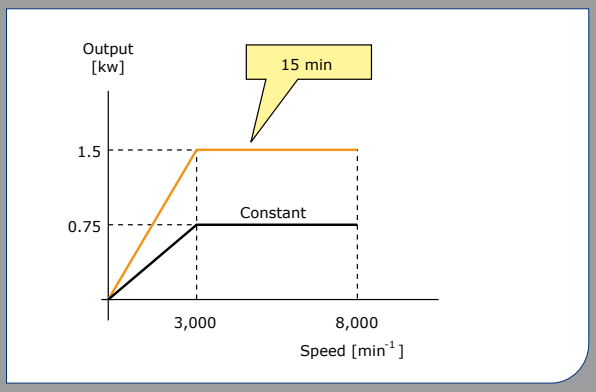
Spindle Power and Torque

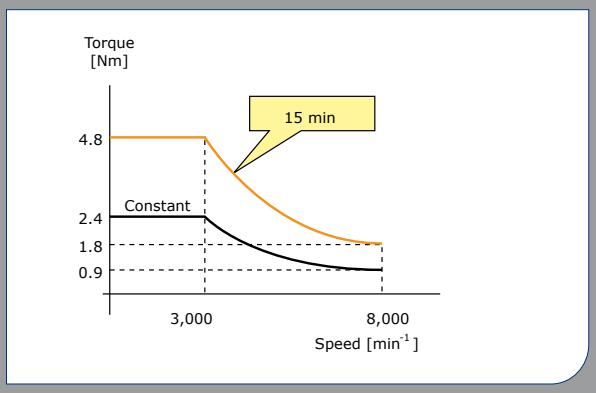
L20 Main spindle





L20 sub-spindle





Specification L Series

	Cincom L20-VIII
Main spindle	
Max. machining diameter [mm]	20
Max. machining length without re-chucking [mm]	200 (600)
Through-hole diameter [mm]	24
Spindle speed [min^{-1}]	200-10,000
Spindle indexing [°]	C axis (0.001)
Motor output (built-in motor) [kW]	2.2 / 3.7
Sub-spindle	
Max. machining diameter [mm]	20
Spindle speed [min^{-1}]	200-8,000
Spindle indexing [°]	C axis (0.001)
Motor output [kW]	0.75 / 1.5
Rotary tools at vertical holder	
Speed [min^{-1}]	200-4,500
Motor output (AC servo motor) [kW]	1.0
Number of tools	6 (7/10/13)
Tooling system	
Turning tools (12x12x130) [number]	5
Tool holder/cut-off tool(16x12x130) [number]	1
Drilling tools (front) [number]	3 (2 rotary)
Drilling tools (back) [number]	3 (3 rotary)
Tool holder / quills	19.05
Collets and guide bush	
Collet main spindle/sub-spindle	145E
Guide bush (Neukomm)	22,001
Drill quills	ER16 (ER11)
Rapid feedrates	
All axes [m/min]	32
Machine dimensions	
Required space (excluding barfeed unit) L/W/H [mm]	2,430 x 1,085 x 1,770
Centre height [mm]	1,050
Machine weight [kg]	2,150
Input power [kVA]	6

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