

MultiLine MS22C

CNC Multi spindle
turning machine



Precise, fast and flexible

The machine concept of the MS22C has been customized to meet user requirements

- Machine open at the front for bar work
- Freely accessible and thus extremely user-friendly
- High-dynamics slid equipped with plain-bearing slideways (X axis)
- Wear-resistant Z axis, since quills are mounted on hydrostatic bearings
- Extremely high-speed synchronous spindles
- 6 tools maximum for backworking



The centerpiece

The compact spindle drum provides maximum precision in any position due to its three-part Hirth coupling. The centerpiece is formed by six air-cooled motor spindles integrated into the drum. An infinitely variable speed range, high torque, small compact design, low maintenance and the latest synchronous technology – that's what INDEX CNC multi-spindle automatics are known for.

Independent speeds

The spindle speed for each spindle position and each cutting edge can be optimized, even while cutting is in progress. This results in good chip control, high-quality surface finishes, short cycle times and longer tool life. Machining of those materials which previously could not be machined on multi-spindle automatics has now become possible.

More than just turning

INDEX CNC multi-spindle automatics with driven tools, C axis and Y axis open up completely new opportunities, such as:

- Eccentric bores and threads
- Angular drilling
- Contour milling
- Gear hobbing
- Polygon turning



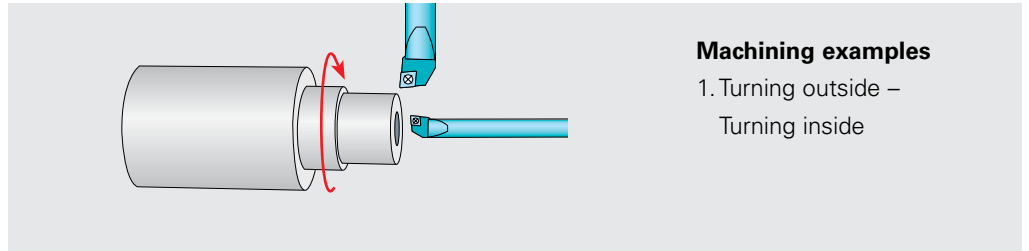
Unlimited options

Working area – unlimited number of machining situations per spindle position

The arrangement of the tool carriers in the working area in the absence of a slide-mounting block typical of INDEX allows several tools to be used on each spindle. Accordingly, the machining options are only determined by the tool holder. This allows you to freely establish all operations in almost all spindle positions. Another advantage: Free chip fall.

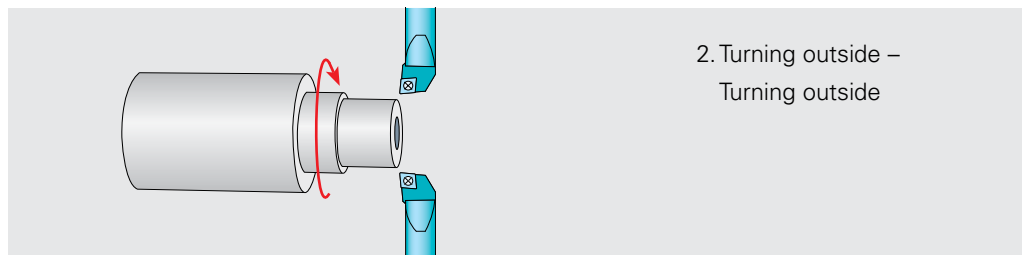
That is what we mean by performance

Maximum productivity and economy of multi-spindle automatics combined with the precision and flexibility of CNC single-spindle automatics is what makes the MS22C multi-spindle automatic so successful.

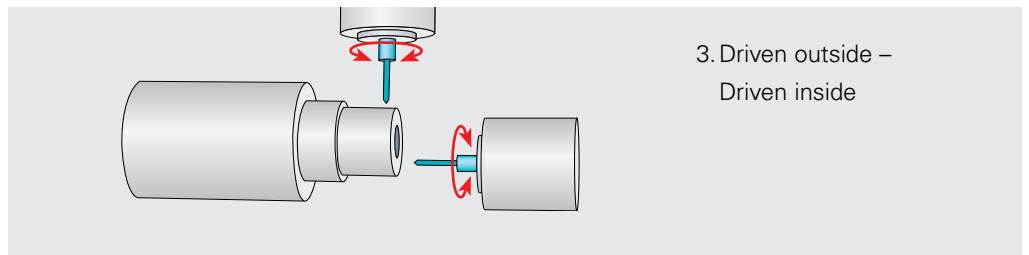


Machining examples

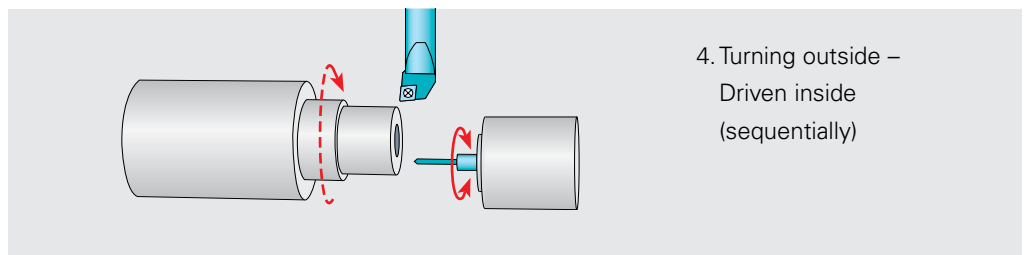
1. Turning outside – Turning inside



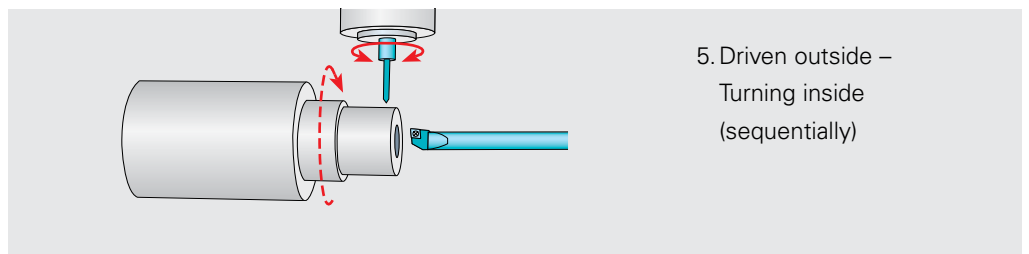
2. Turning outside – Turning outside



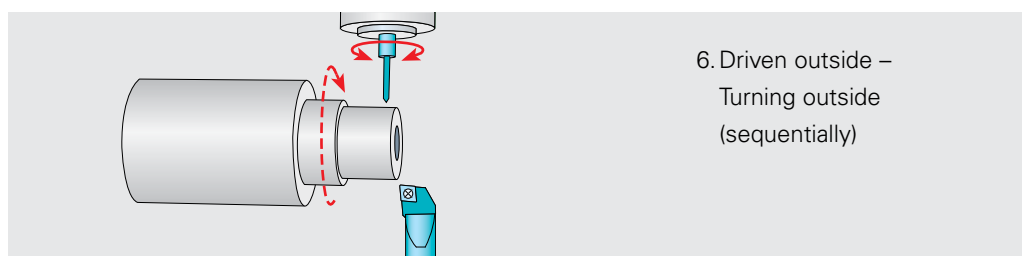
3. Driven outside – Driven inside



4. Turning outside – Driven inside (sequentially)



5. Driven outside – Turning inside (sequentially)

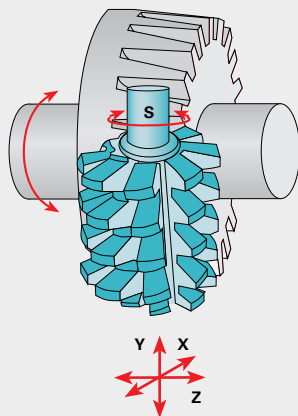


6. Driven outside – Turning outside (sequentially)

Suitable for a wide range of different operations ...

Gear cutting, gear hobbing

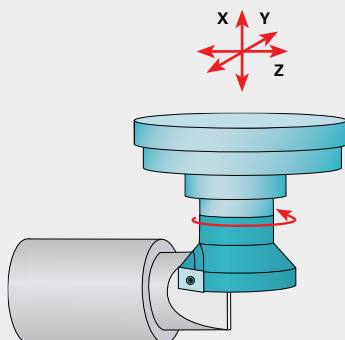
- Coupled with electronic precision
- Maximum stability
- Positionally correct gearing with other surfaces or form elements
- Any desired angle offset can be programmed
- Higher tool lives by shifting to Y axis



Milling

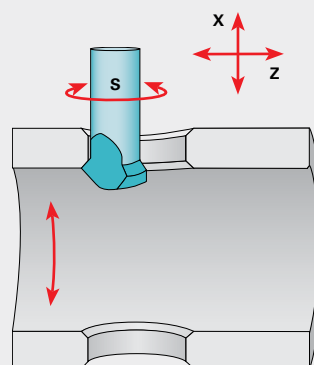
Milling using driven tools in the following versions

- Disk milling cutter in connection with C axis operation (transmit function)
- Slot drill in connection with Y axis operation
- Plunge milling



Elliptical deburring of transverse holes

Uniform deburring (uniform chip removal) of transverse holes by interpolation of C axis, X axis and Z axis with driven tool.



... and for complete machining



Versatility is the strong point of the MS22C. Whether complex parts or many different processes - almost anything is possible

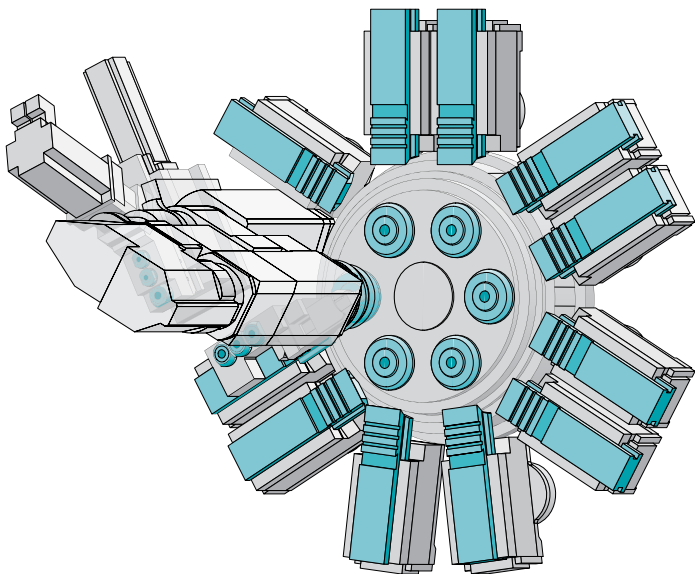
- 11 tool carriers equipped with 1 or 2 travel axes
- Synchronous spindle
- Use of up to 18 tools on the main spindles
- Variable use of the tool carriers for internal and external machining
- Transverse machining with driven tools
- C axis and polygon turning for extended applications

Now even more options for backworking by means of the synchronous spindle

- Up to 6 tools, 2 of which are driven
- Quick pivoting movement and hydraulic clamping of the synchronous spindle
- Favorable chip fall, as machining takes place outside the main working area
- Wide range of options: Drilling, outside diameter turning, facing, thread chasing, eccentric machining operations, transverse drilling
- X axis travel of the back-drilling slide

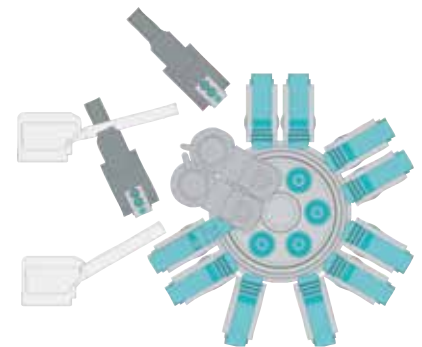
Machine structure

The INDEX modular design allows you to assemble the MS22C precisely to fit your requirements.



The double three-spindle automatic – another interesting option

- Additional cycle time reduction through simultaneous production of 2 identical workpieces



The control – New – Fast – With pioneering user interface

New and optimized

The new INDEX C200-SL control is firmly committed to the new SIEMENS S840D solution line control and SIEMENS SINAMICS drives and therefore represents the highest level of performance and functionality. This ensures future security and productivity!

Pioneering –

The user interface

The INDEX MS22C is the first INDEX multi-spindle machine to receive a 43.5 cm screen with a full touch-sensitive surface as standard equipment. A touch of the finger now suffices to use softkeys directly on the screen to open files, folders and menu trees or to move entire pages

on the screen.

Even switching the operating areas or enabling/disabling of block skip levels is now done simply by "finger pointing" on the screen.

Compatible

Despite the innovative technology, the new INDEX C200-SL control is compatible with the previous control in all key operating areas. And existing MS22C NC programs can be run in the new control as well.

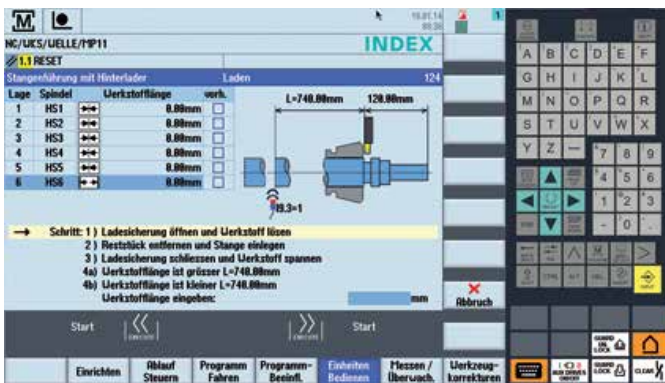
Innovative

In addition to the adoption of various selector switches directly into the touch-sensitive user interface on the screen, LED backlit control buttons and switches on the machine control panel are also part of the new control concept.

They are used by the control to actively indicate allowable movements or enabled switches to the operator – inadmissible movements and switches remain dark.

Actions expected by the operator are signaled by flashing keys!

In this way, the C200-SL control communicates directly with the operator!



Modern

- The latest editor for easy and fast programming
- Convenient display functions such as multi-editor, animated cycles, etc.
- Programming of mathematical functions, variables and workpiece counts
- The same functionality for turning, milling, drilling
- Easy network integration through control-integrated network technology
- Intelligent online help, detailed descriptions of error causes and remedies

Efficient

- Largely unchanged machine operation and key arrangement compared to the previous control (INDEX)
- Practical machine cycles support safe, time-effective and collision-free machine operation
- Internal calculation accuracy better than nano-interpolation (80 bit floating point arithmetic)
- All displays and operating inputs in clear text
- More than 20 foreign languages

Productive

- Latest control generation with maximum performance
- Full-fledged Y-axis/axes for drilling and milling
- Comprehensive technology cycles for error-free and optimal machining quality
- Free assignment and programming of additional drilling and milling units
- Fast and safe job change by automatic saving of setup data and automatic re-initialization at (re-)selection of the job

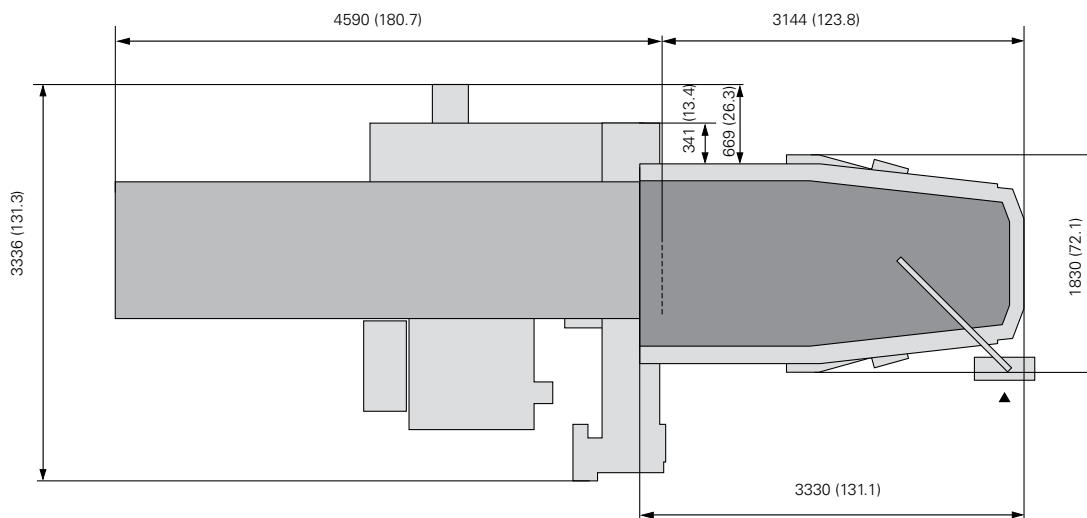
Safe

- Tool breakage monitoring from INDEX or, alternatively, from third parties (ARTIS) available (option)
- Safety Integrated Inside: Continuous safety monitoring and testing integrated in the control
- Post-process and in-process measurement possible (optional)
- INDEX Virtual Machine & VPro Programming Studio for off-machine programming, setup, optimizing on a PC (option)

Technical data

Work spindles		6
Max. bar capacity	mm (inch)	22 (0.86)
Speed *	rpm	10000
Power at 100%/25%	kW (hp)	8.7 / 15 (11.6 / 20.1)
Torque at 100%/25%	Nm (ft lbs)	10 / 18 (7.4 / 13.3)
Tool carrier		11
Slide travel X	mm (inch)	62 (2.4)
Slide travel Z	mm (inch)	85 (3.3)
Slide travel Y	mm (inch)	±12 (0.5)
Synchronous spindle		1 / 2
Max. clamping diameter		22
Speed *	rpm	10000
Power at 100%/40%	kW (hp)	9.2 / 12 (12.3 / 16.1)
Torque at 100%/40%	Nm (ft lbs)	11 / 14 (8.1 / 10.3)
Pivoting angle of the synchronous spindle	degrees	132 (165)
Slide travel Z	mm (inch)	120 (4.7)
Number of tools for backworking		3
Back-drilling slides 1+2 (optional)		1 / 2
Tool carrier for backworking		1 / 2
Slide travel X	mm (inch)	62 (2.5)
Number of tools for backworking		3
of which driven		max. 2
Dimensions, weights and connecting power (with max. configuration, without bar guide unit or loading magazine)		
Weight	kg (lbs)	approx 5700 (12566)
Length	mm (inch)	3330 (131.1)
Width	mm (inch)	1830 (72)
Height	mm (inch)	2854 (112.4)
Connecting power		62 kW, 75 kVA, 105 A
A/C		400 V, 50/60 Hz
Control		
INDEX C200-SL (based on Siemens 840D solution line) including teleservice, spindle stop, C axis included in standard package		
Options		
Polygon turning, gear hobbing, tool monitoring, Y axis, transmit function		

*Depending on the bar diameter, bar guide unit and part clamping, speed limits are necessary



INDEX

LM91102.4486-06.14.WA Printed in Germany Subject to change without prior notice

INDEX-Werke GmbH & Co. KG

Hahn & Tessky

Plochinger Straße 92

73730 Esslingen, Germany

Tel. +49 (711) 3191-0

Fax +49 (711) 3191-587

www.index-werke.de