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

**Elliptic 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
- 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

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

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
- 10 tool carriers equipped with 1 or 2 axes
- 2 synchronous spindles
- 2 back-drilling slides carrying 3 tools each, up to 2 of which are driven
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.

**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

**Innovative**
- 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)

**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
- **Max. bar capacity**: 22 (0.86) mm (inch)
- **Speed**: 10000 rpm
- **Power at 100%/25%**: 8.7 / 15 (11.6 / 22.1) kW (hp)
- **Torque at 100%/25%**: 10 / 18 (7.4 / 13.3) Nm (ft lbs)

#### Tool carrier
- **Slide travel X**: 82 (3.2) mm (inch)
- **Slide travel Z**: 85 (3.3) mm (inch)
- **Slide travel Y**: ±12 (0.5) mm (inch)

#### Synchronous spindle
- **Max. clamping diameter**: 22 mm (inch)
- **Speed**: 10000 rpm
- **Power at 100%/40%**: 9.2 / 12 (12.3 / 16.1) kW (hp)
- **Torque at 100%/40%**: 11 / 14 (8.1 / 10.3) Nm (ft lbs)
- **Pivoting angle of the synchronous spindle**: 132 (165) degrees
- **Slide travel Z**: 120 (4.7) mm (inch)

#### Back drilling slides 1x2 (optional)
- **Tool carrier for backworking**: 1 / 2
- **Slide travel X**: 62 (2.5) mm (inch)
- **Number of tools for backworking**: 3
- **of which driven max.**: 2

#### Dimensions, weights and connecting power
- **Weight**: approx. 5700 (12566) kg (lbs)
- **Length**: 3330 (131.1) mm (inch)
- **Width**: 1830 (72) mm (inch)
- **Height**: 2854 (112.4) mm (inch)
- **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*