

SpeedLine
C100
C200

Production turning machines



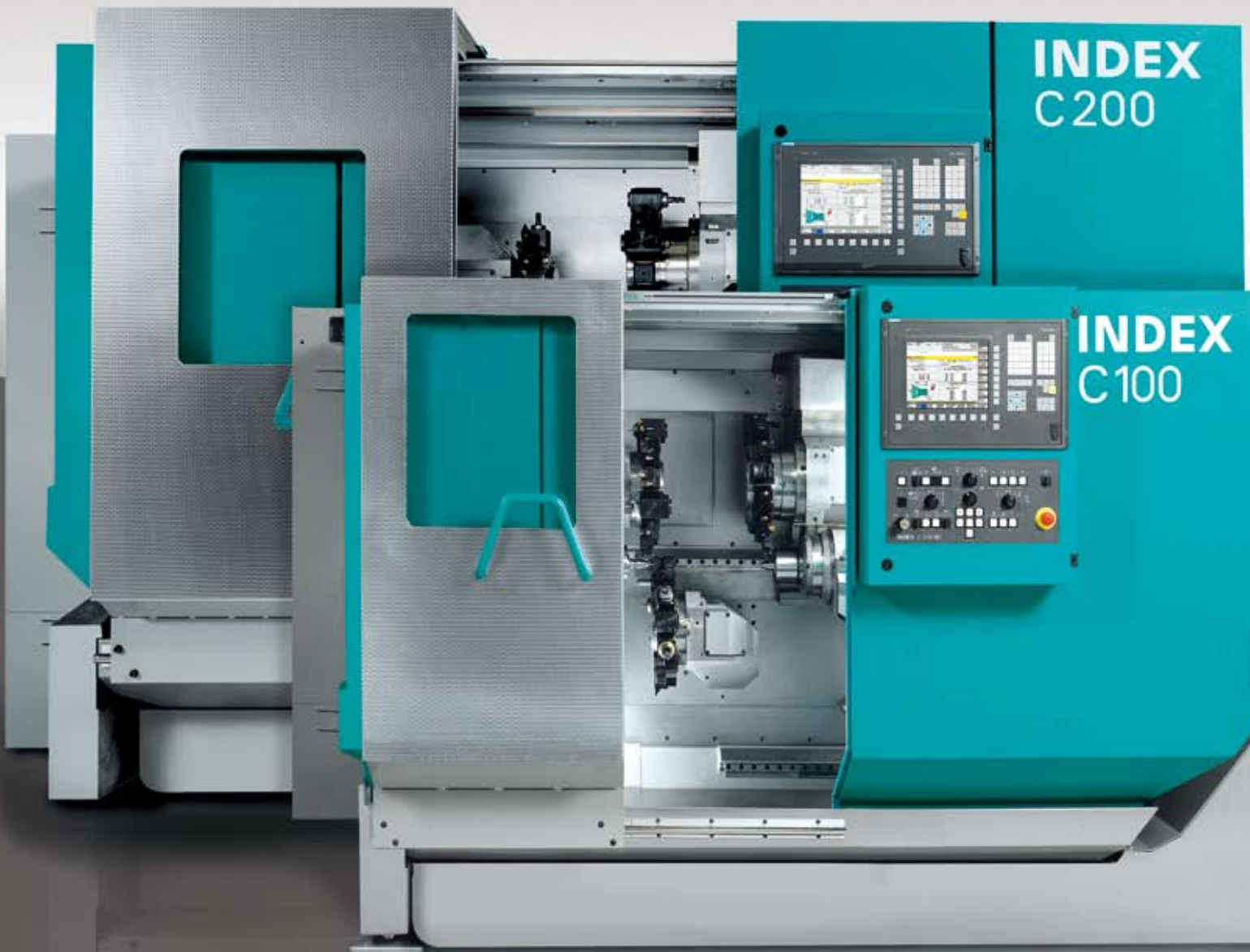
The power packs for high-speed machining

With the INDEX C100 and C200 machines, new opportunities open up for high-speed production of parts turned from bar stock. Despite their compact

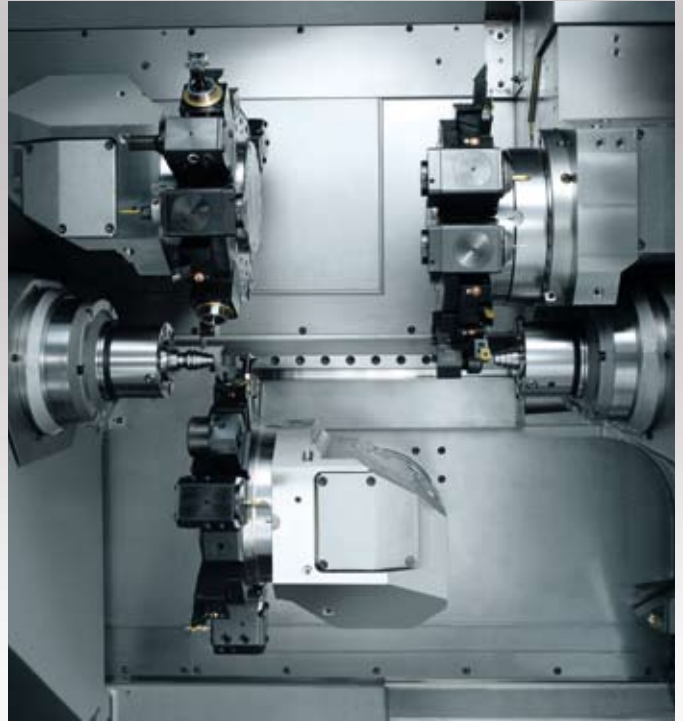
exterior dimensions, the INDEX C100 and C200 as 3-turret-machines offer a spacious working area for the complete machining of workpieces. The new

guideway system INDEX SingleSlide guarantees substantially higher dynamics with optimum vibration damping. The quality of the workpiece is improved as is

the tool life in combination with reduced cycle times.



**New productivity for parts
turned from bar stock**



High speed

- **C100:** 30 or 42 mm
C200: 65 or 90 mm
bar capacity
- Simultaneous machining
with 3 turrets
- High acceleration (1g)
and high rapid traverses
(60 m/min)
- Workpiece carrier with
Y-axis available at main
and counter spindle
- 2 powerful motor spindles
of identical design
- Quick turret indexing
- Short travels despite
largesized working area
- Very good vibration
damping through
INDEX SingleSlide

Complete machining

- Maximal part diversity
through 3 turrets and
42 tools
- All stations driven
- 2 Y axes
- Machining with bottom
turret at main and counter
spindles possible
- High-quality backworking
- Clearly structured
machining area
- Ready access to working
area during setup

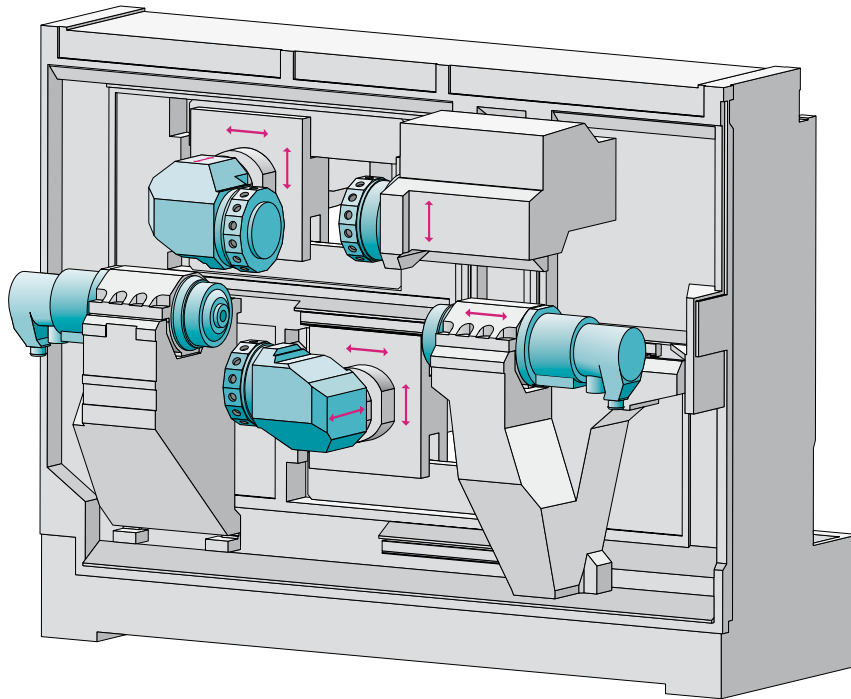
Excellent productivity, impressive flexibility

The typical INDEX added value in machine design is shown in many details of the INDEX C100 and C200

machines. Three turrets and a clearly structured machining area increase productivity. Further details maximize the

flexibility and the possible part diversity with short setup times. The vertical design of the machine bed guarantees

optimum swarf removal and ready access.



Two powerful spindles

The two powerful motor-spindles guarantee particularly efficient metal cutting. Main and counter spindles have identical design and are cooled with liquids. The rapid traverse of the counter spindle is 60 m/min (C100).

Three turrets with 42 stations

The large tool stock including 3 x 14 stations and the patented INDEX W-type serration guarantee short setup times even with small lot sizes. The extremely high dynamics and the quick turret indexing lower the chip-to-chip times.

Two Y axes for optimum division of work

2 Y axes at the main spindle or 1 each at the main and counter spindles are possible. This allows an optimum division even of complex operations and a reduction of cycle times.

Integrated handling system for parts removal

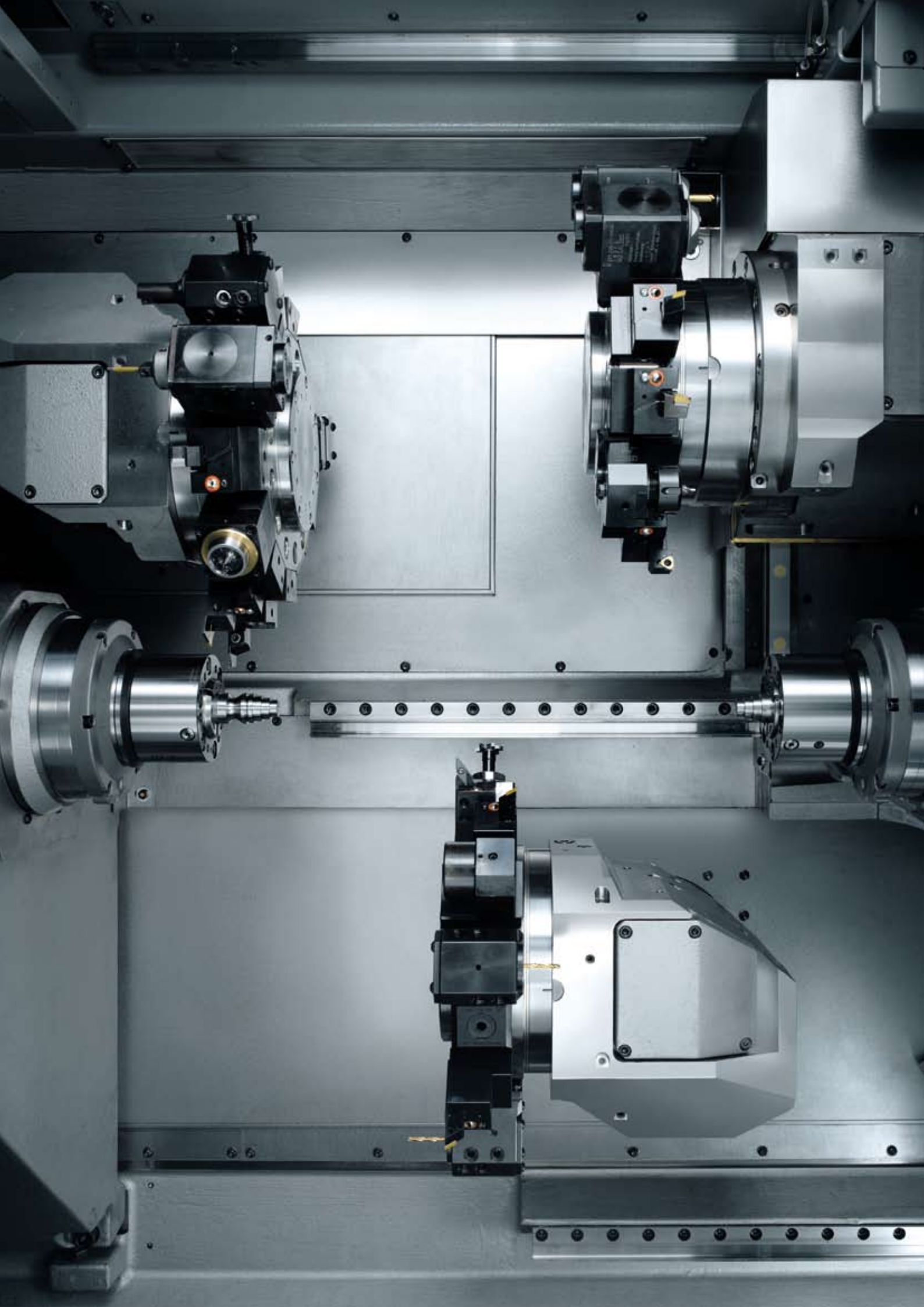
The integrated gantry-type removal unit guarantees quick workpiece removal without damage to the workpiece. In addition, the bar remnant can be removed separately from the main spindle.

- C100:
 ø 30 mm: 8000 rpm
 ø 42 mm: 7000 rpm
- C200:
 ø 65 mm: 5000 rpm
 ø 90 mm: 3500 rpm

- Only the tool currently in use is driven – at full metal-cutting performance
- C100: 8000 rpm, 4,2 kW
- C200: 8000 rpm, 6,5 kW

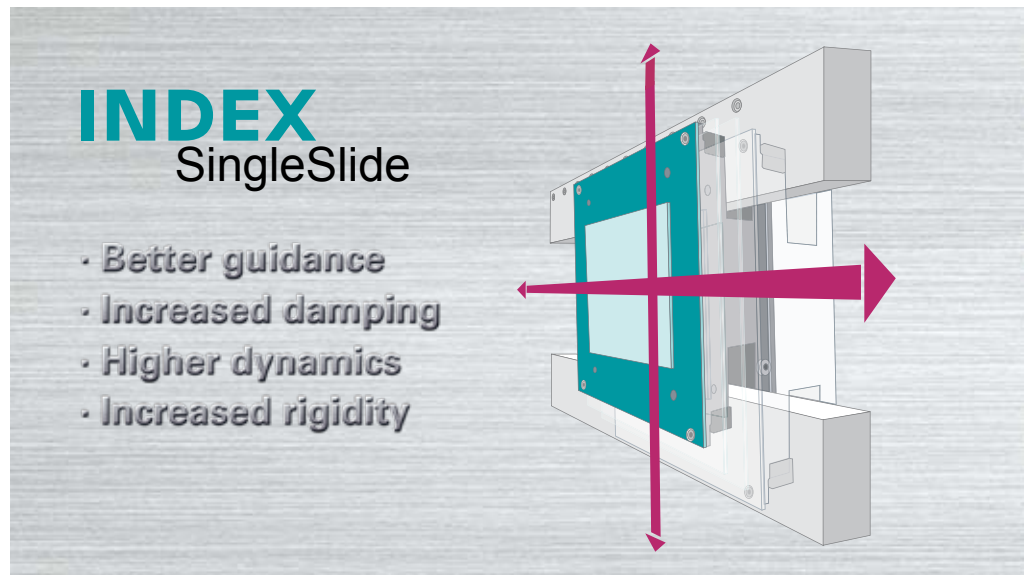
- Simultaneous machining on both spindles
- C100: 70 mm Y axis travel
- C200: 100 mm Y axis travel
- Stable quill guide with hydraulic clamping

- Removal of workpiece / remnant possible on main and counter spindles
- Rapid traverse 100 m/min



INDEX SingleSlide: Better and clearly faster machining

The market is requesting production turning machines that provide shorter cycle times, higher tool lives and work more economically. The INDEX C100 and C200 meet these requirements to a high degree. With INDEX SingleSlide, a new slideway with two degrees of freedom in one plane, the INDEX C100 and C200 have many advantages compared with conventional machines.



Advantages



Higher workpiece quality

INDEX SingleSlide is an innovative slideway composed of guide strips with wear- and friction-reduced coating and hardened and surface-treated guide plates.



Longer tool lives

The INDEX SingleSlide concept substantially increases the damping properties compared with conventional systems. Superior properties resulting in further advantages, such as tool lives increased by up to 30 % and higher surface quality.



Higher rapid traverses and accelerations

The turret slides move on flat innovative slideways in the X and Z directions. The two directions of movement are in one traversing plane. The low weight of the single-piece cross slide makes it possible to reach rapid traverses of up to 60 m/min and accelerations of up to 1g.



Higher metal-cutting performance

In conventional linear guideways, it is customary for one drive to support the other one. This differs from the INDEX SingleSlide. Two degrees of freedom in one plane of movement produce high rigidity, thus guaranteeing maximum metal-cutting performance.

Clever cooling

The INDEX C100 and C200 production turning machines are convincing with a well thought-through cooling concept. Lost heat that is generated in the spindles, the hydraulic unit and the switching cabinet is discharged via a central fluid circuit from

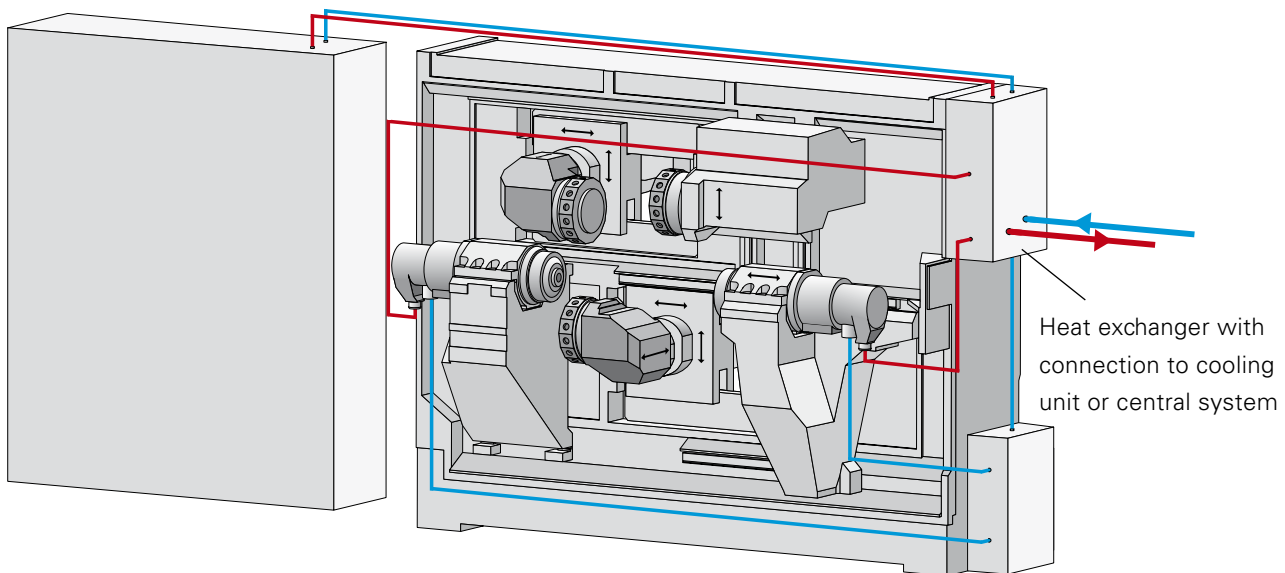
the machine. The energy is bound in one single medium and not given off to the surrounding area of the machine.

The discharge: locally or centrally

The innovation from INDEX: You decide which cooling

concept you want to use. The design of the INDEX C100 and C200 with an integrated water interface permits two solutions for conducting heat: either the connection to a local cooling unit or to a central system. This means that you can

adapt the machine ideally to your production environment. Irrespective of which variant you choose, optimum cooling will be achieved at all times.



High manufacturing precision

Using a consistent cooling concept, spindles, hydraulics and switching cabinet are cooled. The heat energy is discharged effectively, and the temperature stability is improved. In this way, a precise and reliable machining process is supported.

Improved working climate

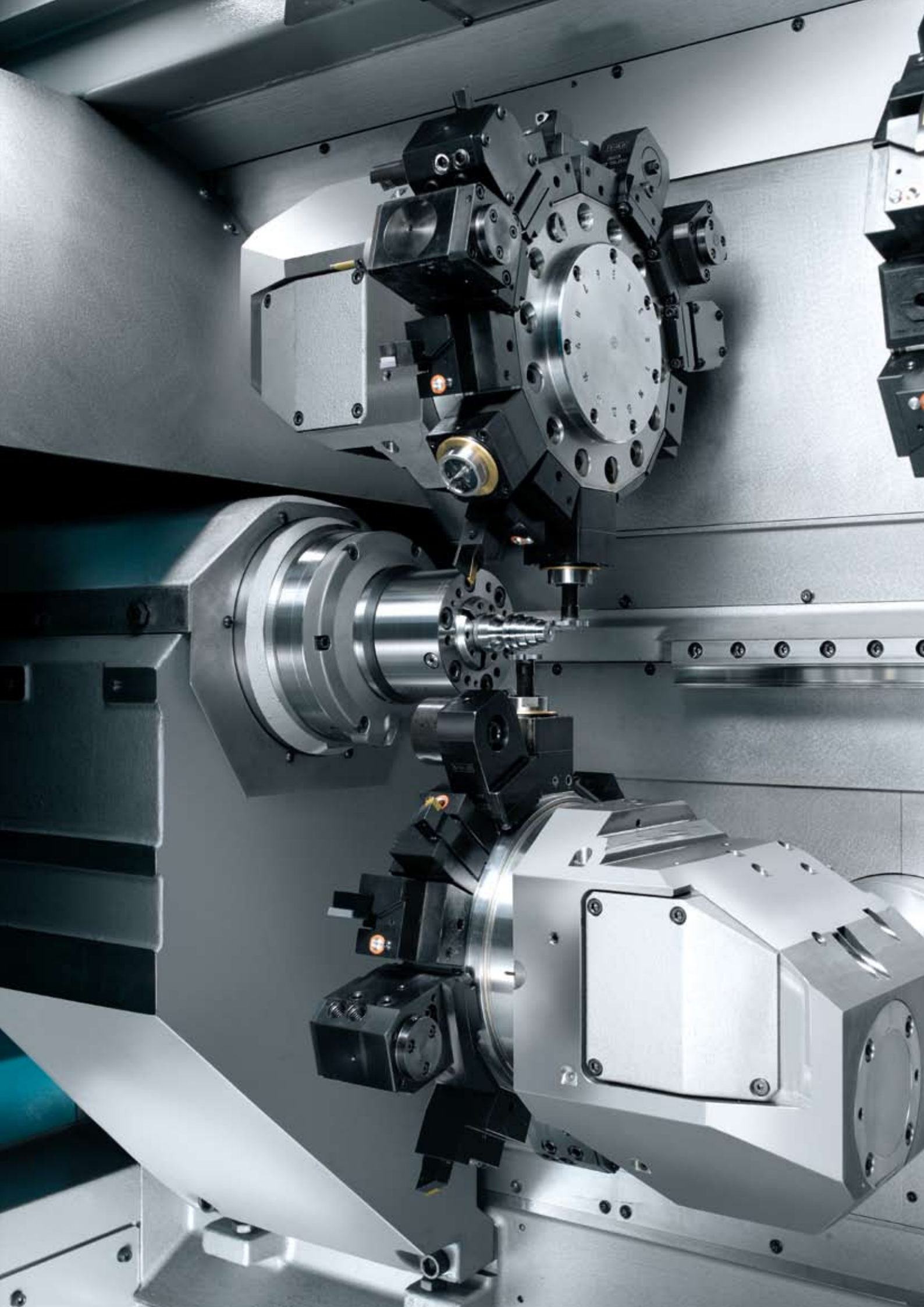
It is also advantageous that the cooling can be done away from the production. The noise and heat emissions are thus minimized, and your staff are not subject to stress unnecessarily.

Safe investment

Whether centralized or decentralized, the cooling concept of the INDEX C100 and C200 is cost-effective at all times. You decide which variant matches your production environment best. The solution on the basis of a central system offers the advantage that more than one machines can be connected.

Higher reliability

The innovative construction makes it possible to do without components that used to be customary with conventional cooling principles, such as fans and temperature sensors. This enhances availability and increases profitability. The space required is also reduced.





The key here is productivity

Advantageous: The INDEX C200-4D control concept is based on the practice-tested SIEMENS SINUMERIK 840D powerline. Optimal: INDEX has integrated intelligent functions in application and speed in the C200-4D control to make it ideally suited to high-efficiency machining

with 3 individual systems. Customized machine cycles and time-optimized machining sequences give this machine a genuine added value.

Easy to operate with 3 turrets

The ease of operation of the control allows safe simulta-

neous handling of 3 turrets: during setup and loading of the tool carriers – if desired, also one by one – or, owing to the synchronized display of the 3 individual systems, also during programming.

- All displays and operating steps in plain text
- Clear view of all axes and spindles on a single screen
- Start requirements for safe program start guaranteed by guided approach of machine home position
- In case of error: Display of error location and cause of error

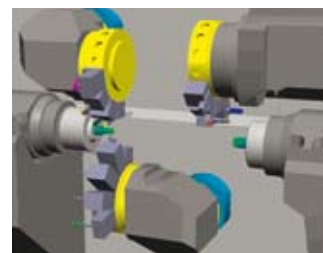


- The most important aspects in designing the C100 and C200 control were minimum reaction times and high-speed processing times.
- This, in conjunction with the structure of the INDEX SingleSlide technology with its extremely low momentum of inertia, makes it possible to achieve a substantial reduction in cycle times.

INDEX C200-4D



based on Siemens 840D



Superior programming

More than 70 user cycles are synonymous with

- Easy and quick programming
- Practice- and technology-oriented applications
- Safe machine run in combination with maximum flexibility
- Optimum runtimes, optimum machine use

Easy synchronization

Safe handling of 3 turrets through

- Separate part programs for each individual system
- 3-channel display on a single screen
- Parallel or synchronized display of the 3 part programs
- Multi-channel block search

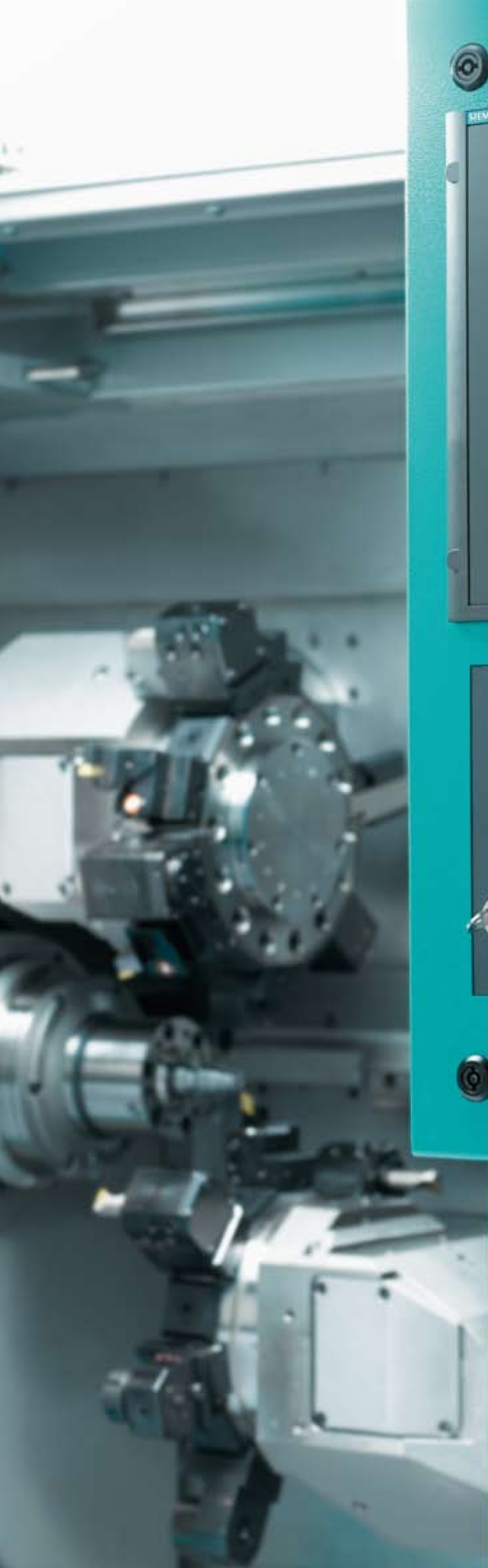
Easy optimization

Optionally, programs can be created, checked and optimized on an external PC, using the virtual machine.

- 1:1 copy of control, operation and machine on a PC
- Geometrically exact image of working area and machining
- Collision monitoring

Efficient production

- Multi-channel synchronous block search of interruption locations or other program locations
- Direct access of wear corrections via separate key
- Optionally: Tool breakage monitoring with adjustable error reaction
- Start requirements



SIEMENS

SINUMERIK

| Machine | | ALLOS | 1001 | AUTO | second operation | 18.11.48 | father unit position |
|--------------------------|----|-----------------|------------------------|---------------------|------------------|----------|----------------------|
| Channel | | 1 | 0.000 | 0.000 | Program started | | |
| Display selection | | | | | | | |
| | | actual position | Set-actual diff./Amper | main spindle / head | | | spindle |
| 1001 | X | 236.825 mm | 0.000 | 1.0 MPY | 54 0 rpm | 100% | single channel |
| | Y | 0.000 mm | 0.000 | | | | |
| | Z | 250.821 mm | 0.000 | | | | |
| | C | 16.580 deg | 0.000 | | | | |
| | C1 | 0.000 deg | 0.000 | | | | |
| 1002 | X | 236.410 mm | 0.000 | 2.0 MPY | 54 0 rpm | 100% | for head |
| | Y | 0.000 mm | 0.000 | | | | |
| | Z | 250.987 mm | 0.000 | | | | |
| | X2 | 0.000 mm | 0.000 | | | | |
| | Z2 | 0.000 mm | 0.000 | | | | |
| 1003 | X | 370.000 mm | 0.000 | 3.0 MPY | 55 0 rpm | 100% | axis overview |
| | Z | 151.000 mm | 0.000 | | | | |
| | C3 | 0.000 deg | 0.000 | | | | |

Physical control panel for the SINUMERIK system, featuring:

- Emergency stop button (red)
- Power on/off button (green)
- Mode selection buttons (e.g., AUTO, M03, M04, M05)
| 1- | 1+ | 1+ |
| Z- | Z | Z+ |
| | I- | |
- Feed rate override knob (0-100%)
| 1000 | 100 | 10 | 1 | 0.1 | 0.01 |
- Spindle speed override knob (0-100%)
| 10000 | 1000 | 100 | 10 | 1 | 0.1 | 0.01 |
- Axis selection buttons (X, Y, Z, C)
- Axis stop buttons (X-, X+, Y-, Y+, Z-, Z+, C-, C+)
- Axis jog buttons (X, Y, Z, C)
- Axis lock buttons (X-L, Y-L, Z-L, C-L)
- Axis unlock buttons (X-U, Y-U, Z-U, C-U)
- Axis return buttons (X-R, Y-R, Z-R, C-R)
- Axis search buttons (X-S, Y-S, Z-S, C-S)
- Axis stop buttons (X-S, Y-S, Z-S, C-S)
- Axis start buttons (X-S, Y-S, Z-S, C-S)
- Axis stop buttons (X-S, Y-S, Z-S, C-S)
- Axis start buttons (X-S, Y-S, Z-S, C-S)

INDEX C 200-4D

Technical data C100

Working area

| | | |
|------------------------------------|-----------|------------|
| Distance main and counter spindles | mm (inch) | 510 (20.1) |
|------------------------------------|-----------|------------|

Main spindle

| | | | |
|------------------------|-------------|-------------------|-------------------|
| Bar capacity | mm (inch) | 30 (1.2) | 42 (1.7) |
| Speed | rpm | 9000 | 7000 |
| Power at 100%/40% | kW (hp) | 20/29 (26.8/38.9) | 25/29 (33.5/38.9) |
| Torque at 100%/40% | Nm (ft lbs) | 35/50 (25.8/36.9) | 50/65 (36.9/48) |
| Chuck diameter | mm (inch) | - | 110 (4.3) |
| Spindle head ISO 702/1 | size | A4 | A5 |
| C axis resolution | degrees | 0,001 | 0,001 |

Counter spindle

| | | | |
|------------------------|-------------|---------------------|---------------------|
| Bar capacity | mm (inch) | 30 (1.2) | 42 (1.7) |
| Speed | rpm | 8000 | 7000 |
| Power at 100%/40% | kW (hp) | 13,5/19 (18.1/25.5) | 16,5/19 (22.1/25.5) |
| Torque at 100%/40% | Nm (ft lbs) | 23/33 (17/24.3) | 32/43 (23.6/31.7) |
| Chuck diameter | mm (inch) | - | 110 (4.3) |
| Spindle head ISO 702/1 | size | A4 | A5 |
| C axis resolution | degrees | 0,001 | 0,001 |

Counter spindle slide

| | | | |
|----------------|----------------|------------|--|
| | | Z | |
| Slide travel | mm (inch) | 500 (19.7) | |
| Rapid traverse | m (inch) / min | 60 (2360) | |

Turret

| | | | |
|-----------------------|-------------|---------------------|-------------------|
| Number of stations | | 14 | 10 |
| Tool system DIN 69880 | mm (inch) | 20 x 40 (0.8 x 1.6) | 25 x 48 (1 x 1.9) |
| Tool drive speed | rpm | 8000 | 7000 |
| Power at 25% | kW (hp) | 4,2 (5.6) | 4,2 (5.6) |
| Torque at 25% | Nm (ft lbs) | 11 (8.1) | 11 (8.1) |

Tool carrier 1 (top left)

| | | | | |
|----------------|----------------|-----------|-----------|----------|
| | | X | Z | Y |
| Slide travel | mm (inch) | 70 (2.8) | 250 (9.9) | 70 (2.8) |
| Rapid traverse | m (inch) / min | 30 (1180) | 60 (2360) | 15 (590) |

Tool carrier 2 (bottom)

| | | | | |
|----------------|----------------|-----------|------------|----------|
| | | X | Z | Y |
| Slide travel | mm (inch) | 70 (2.8) | 400 (15.8) | 70 (2.8) |
| Rapid traverse | m (inch) / min | 30 (1180) | 60 (2360) | 15 (590) |

Tool carrier 3 (top right)

| | | |
|----------------|----------------|-----------|
| | | X |
| Slide travel | mm (inch) | 125 (4.9) |
| Rapid traverse | m (inch) / min | 30 (1180) |

Workpiece discharging unit

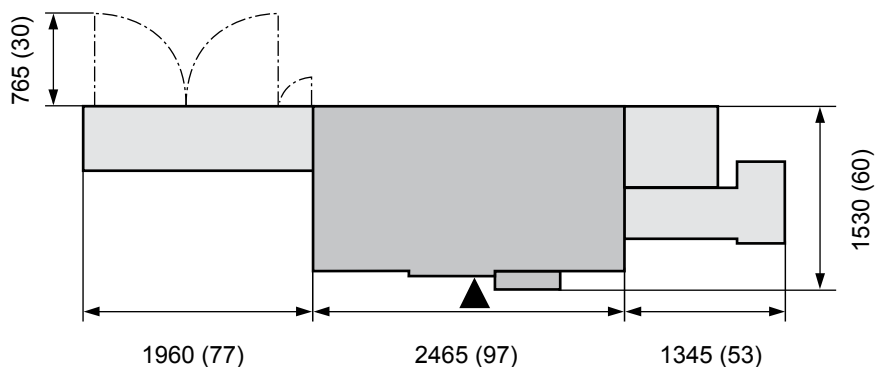
| | | |
|-----------------------|----------|-----------|
| Workpiece length max. | mm | 200 (7.9) |
| Workpiece weight | kg (lbs) | 2,5 (5.5) |

Weight and connecting power with maximum configuration

| | | |
|------------------|----------|--------------------------------------|
| Weight | kg (lbs) | 5500 (12125) |
| Connecting power | | 57 kW, 68 kVA, 97 A, 400 V, 50/60 Hz |

Control

INDEX C200-4D (based on Siemens 840D powerline)



Technical data C200

Working area

| | | |
|------------------------------------|-----------|----------|
| Distance main and counter spindles | mm (inch) | 710 (30) |
|------------------------------------|-----------|----------|

Main spindle

| | | | |
|------------------------|-------------|----------------------|-----------------------|
| Bar capacity | mm (inch) | 65 (2.6) | 90 (3.5) |
| Speed | rpm | 5000 | 3500 |
| Power at 100%/40% | kW (hp) | 25/33 (33.5/44.3) | 29/40 (38.9/53.6) |
| Torque at 100%/40% | Nm (ft lbs) | 112/150 (82.6/110.6) | 142/207 (104.8/152.8) |
| Chuck diameter | mm (inch) | 160 (6.3) | - |
| Spindle head ISO 702/1 | size | 140 mm (5.5 inch) | A8 |
| C axis resolution | degrees | 0,001 | 0,001 |

Counter spindle

| | | | |
|------------------------|-------------|----------------------|----------------------|
| Bar capacity | mm (inch) | 65 (2.6) | 90 (3.5) |
| Speed | rpm | 5000 | 3500 |
| Power at 100%/40% | kW (hp) | 25/33 (33.5/44.3) | 23/31 (30.9/41.6) |
| Torque at 100%/40% | Nm (ft lbs) | 112/150 (82.6/110.6) | 116/155 (85.6/114.3) |
| Chuck diameter | mm (inch) | 160 (6.3) | - |
| Spindle head ISO 702/1 | size | 140 mm (5.5 inch) | A8 |
| C axis resolution | degrees | 0,001 | 0,001 |

Counter spindle slide

| | | | |
|----------------|----------------|------------|--|
| | | Z | |
| Slide travel | mm (inch) | 700 (27.6) | |
| Rapid traverse | m (inch) / min | 50 (1969) | |

Turret

| | | | |
|-----------------------|-------------|-------------------|---------------------|
| Number of stations | | 14 | 10 |
| Tool system DIN 69880 | mm (inch) | 25 x 48 (1 x 1.9) | 30 x 55 (1.2 x 2.2) |
| Tool drive speed | rpm | 8000 | 8000 |
| Power at 25% | kW (hp) | 6,5 (8.7) | 6,5 (8.7) |
| Torque at 25% | Nm (ft lbs) | 16 (11.8) | 16 (11.8) |

Tool carrier 1 (top left)

| | | | | |
|----------------|----------------|-----------|------------|----------|
| | | X | Z | Y |
| Slide travel | mm (inch) | 110 (4.3) | 320 (12.6) | 100 (4) |
| Rapid traverse | m (inch) / min | 30 (1180) | 50 | 15 (590) |

Tool carrier 2 (bottom)

| | | | | |
|----------------|----------------|-----------|------------|----------|
| | | X | Z | Y |
| Slide travel | mm (inch) | 110 (4.3) | 320 (12.6) | 100 (4) |
| Rapid traverse | m (inch) / min | 30 (1180) | 50 (1969) | 15 (590) |

Tool carrier 3 (top right)

| | | |
|----------------|----------------|-----------|
| | | X |
| Slide travel | mm (inch) | 180 (7.1) |
| Rapid traverse | m (inch) / min | 30 (1180) |

Workpiece discharging unit

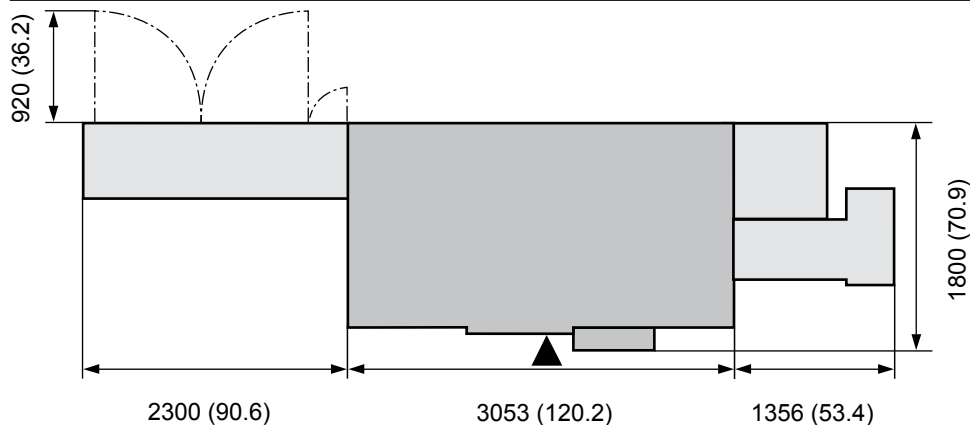
| | | |
|-----------------------|----------|-----------|
| Workpiece length max. | mm | 250 (9.9) |
| Workpiece weight | kg (lbs) | 3,5 (7.7) |

Weight and connecting power with maximum configuration

| | | |
|------------------|----------|---------------------------------------|
| Weight | kg (lbs) | 8800 (19400) |
| Connecting power | | 72 kW, 84 kVA, 122 A, 400 V, 50/60 Hz |

Control

INDEX C200-4D (based on Siemens 840D powerline)



Advantages that everybody benefits from

The investor

- Optimum use of the production area through extremely compact machine in combination with minimum space requirements
- Up to 30 % lower tool costs
- Quick pay-off through high dynamics and productivity
- Minimum cycle times
- Complete machining, no transportation times and non-productive times



Production planning and job preparation

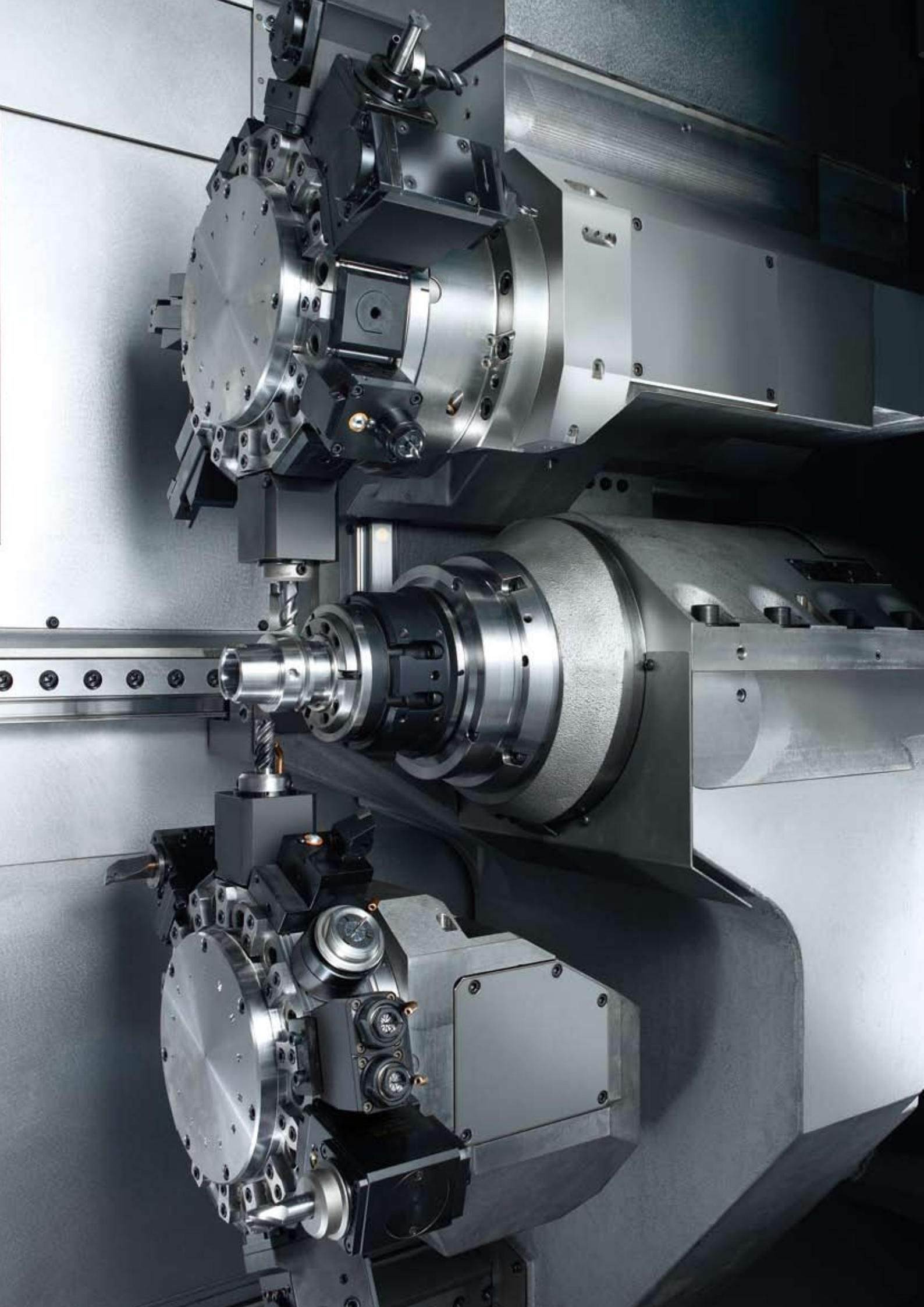
- Setup times reduction through large tool stock
- Simultaneous use of 3 tools for maximum productivity
- Powerful motor spindles allow large metal-cutting volume
- Minimal non-productive times through high rapid traverses and quick turret indexing
- A wide range of options, owing to 2 Y axes and powerful tool drives



Production, manufacture and maintenance

- Easy and user-friendly programming
- Working area with optimum access
- INDEX W-type serration for quick changeover
- Clearly structured arrangement of the tool carriers for short setup times
- Optimum access from all sides through parallel arrangement of the switch cabinet, relative to the bar feed





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