

# ***C100, C200***

*Production turning machine  
for highly productive bar machining*

# **INDEX**



*better.parts.faster.*

## 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

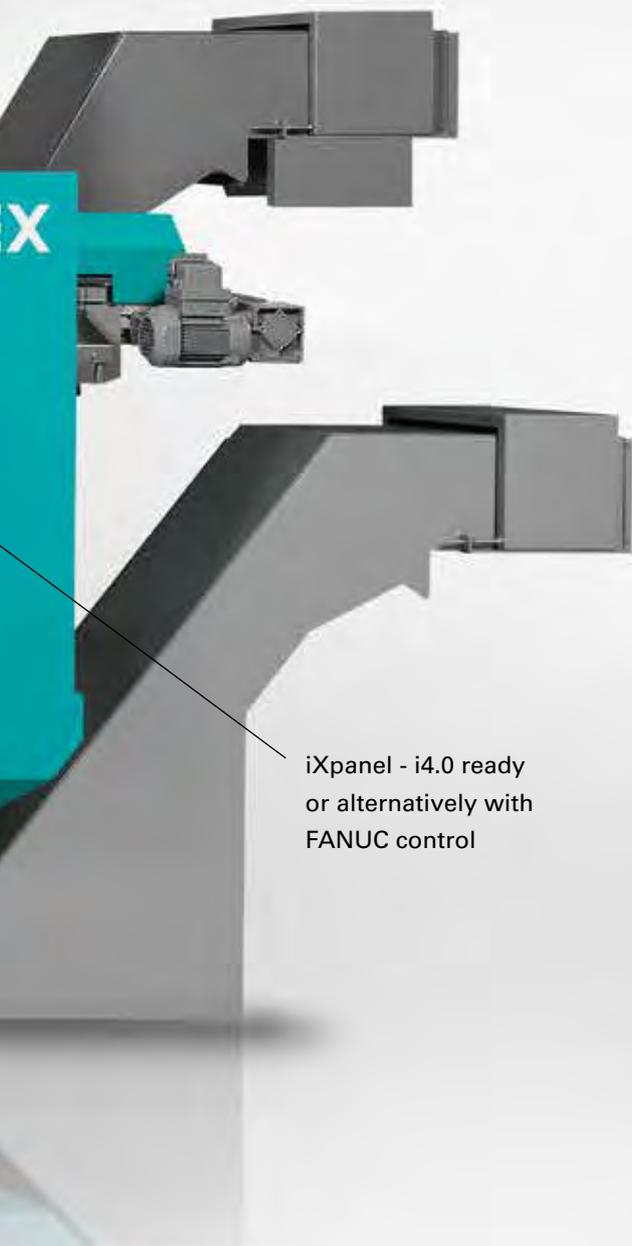
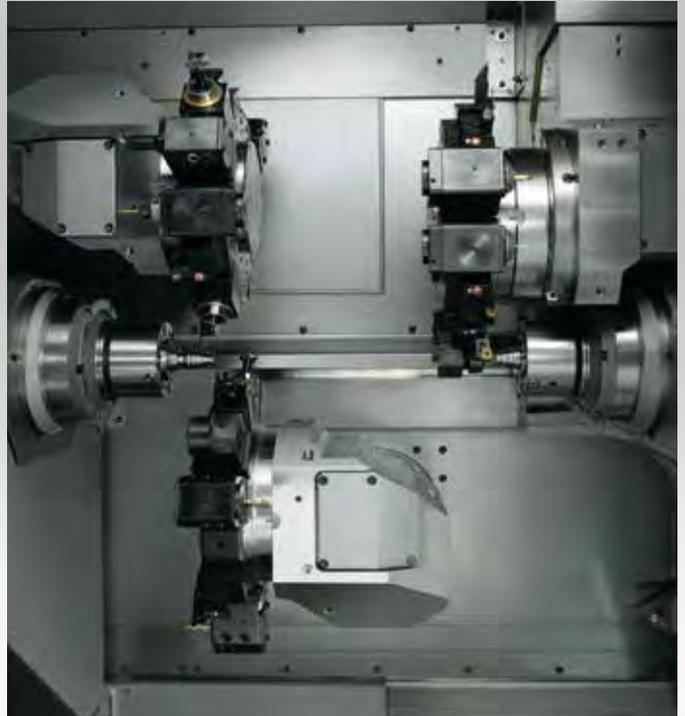
exterior dimensions, the INDEX C100 and C200 as 2 or 3-turret-machines offer a spacious working area for the complete machining of workpieces. The new

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**



iXpanel - i4.0 ready  
or alternatively with  
FANUC control

#### **High speed**

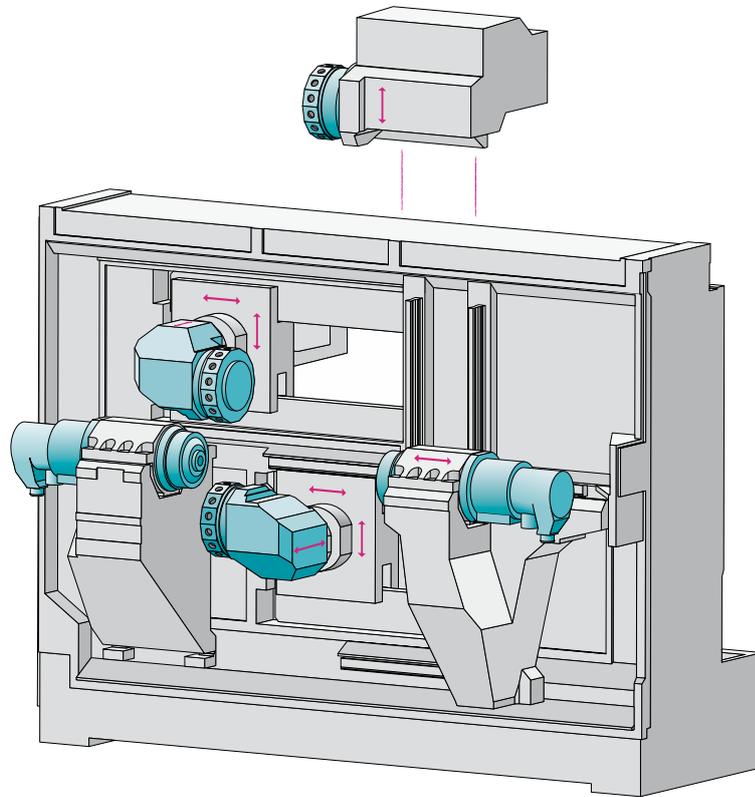
- **C100:** 42 mm  
**C200:** 65 or 90 mm  
bar capacity
- Simultaneous machining  
with 2 or 3 turrets
- High acceleration (1g)  
and high rapid traverses  
(60 m/min)
- Workpiece carrier with  
Y-axis available at main  
and counter spindle
- Quick turret indexing
- Very good vibration  
damping through  
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. Up to 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

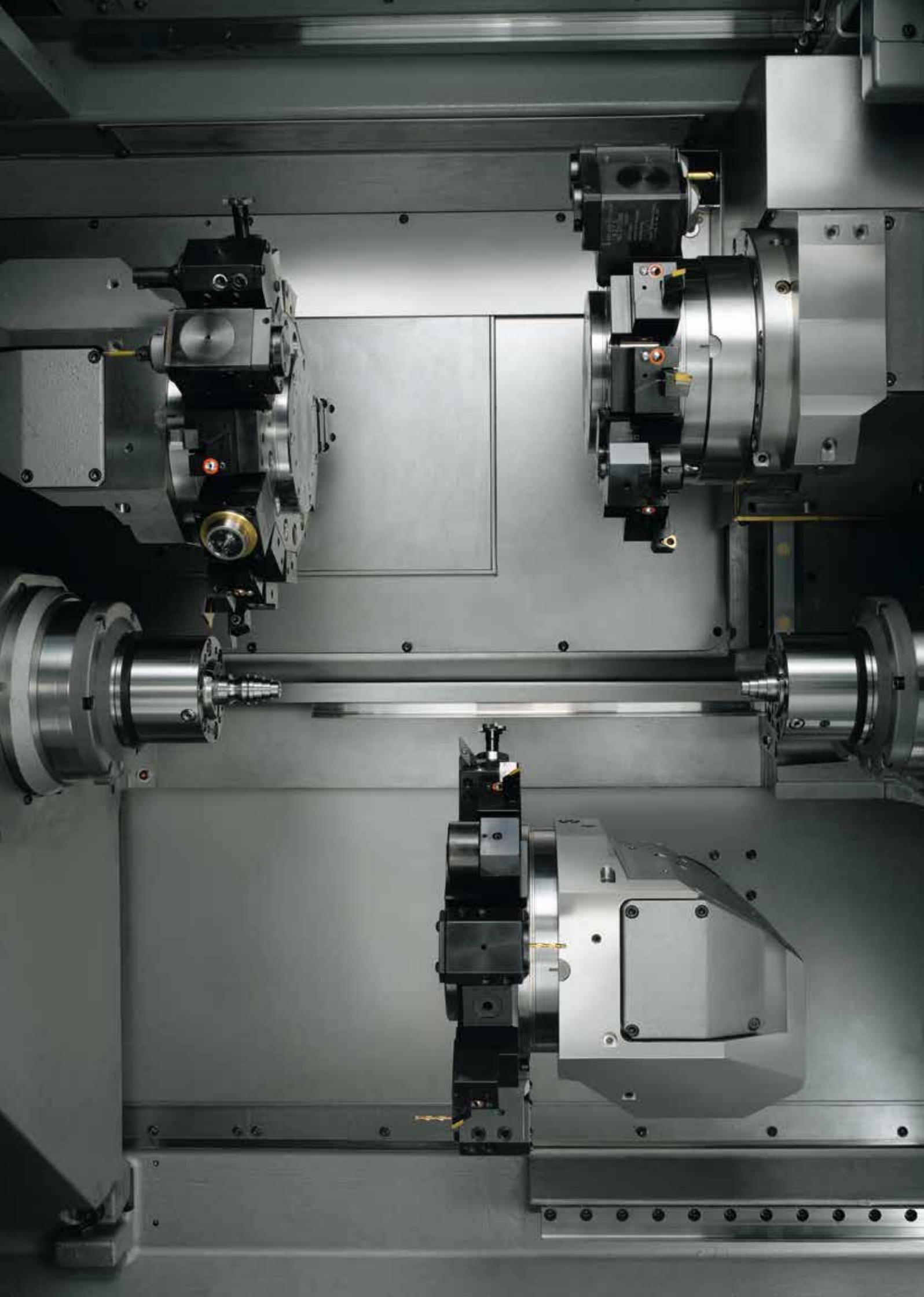
The integrated gantry-type removal unit guarantees quick workpiece removal without damage to the workpiece. In addition, the bar remnant can be removed separately from the main spindle.

- C100:  
ø 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
- **Siemens Control**
- C100: 8000 rpm, 6.2 kW
- C200: 8000 rpm, 10 kW
- **FANUC Control**
- C100: 6000 rpm, 4.2 kW
- C200: 6000 rpm, 4.5 kW

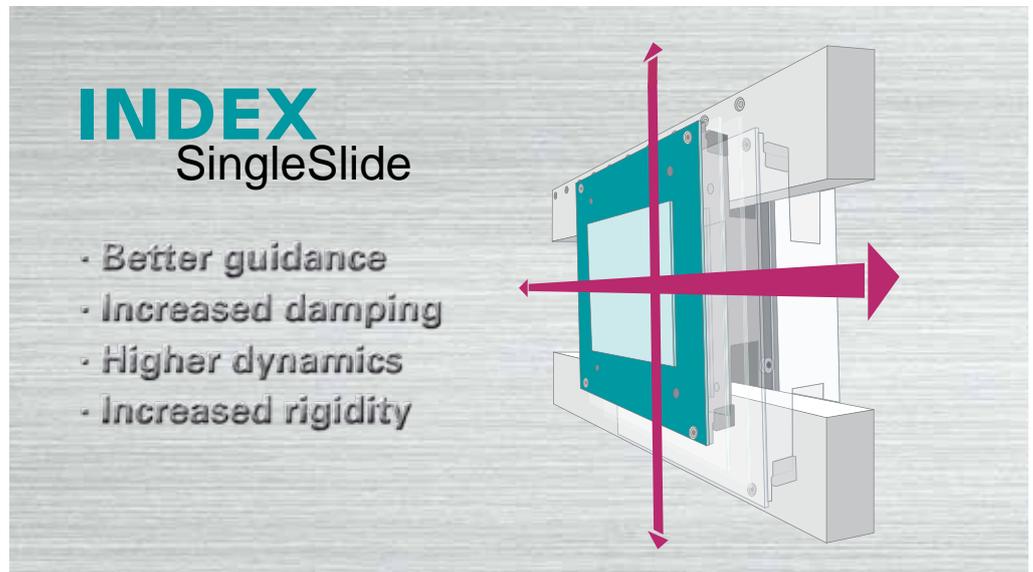
- Simultaneous machining on both spindles
- C100: 70 mm Y axis travel
- C200: 100 mm Y axis travel
- Stable quill guide

- 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

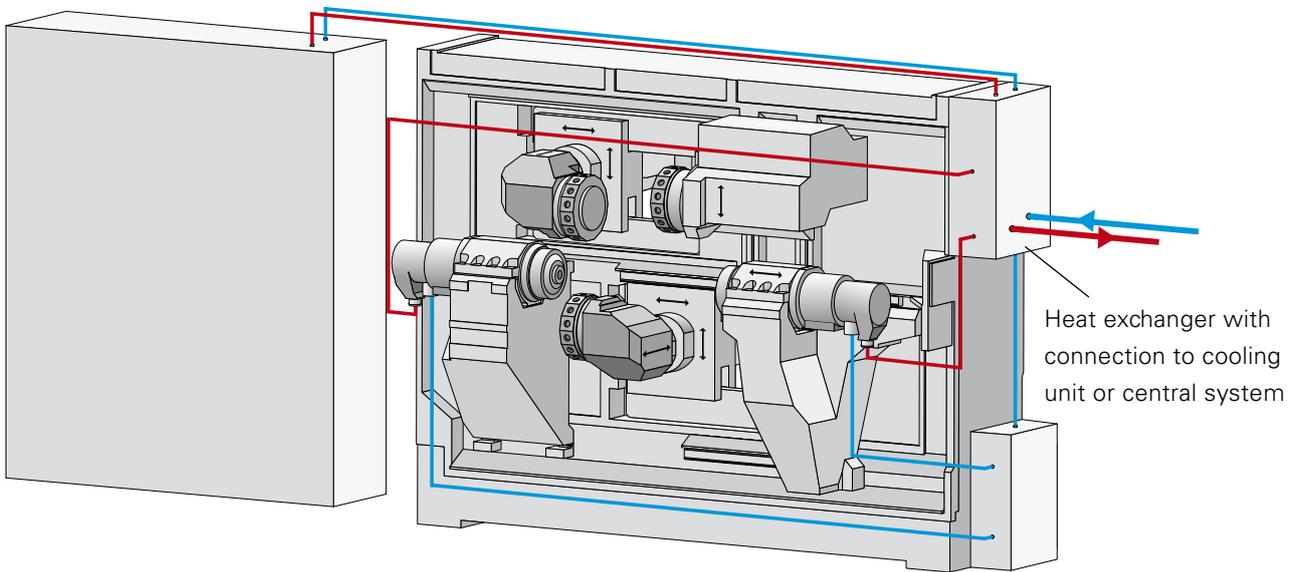
the machine. The energy is bound in one single medium and not given off to the surrounding area of the machine.

**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 cockpit for easy integration of the machine in your business organization.

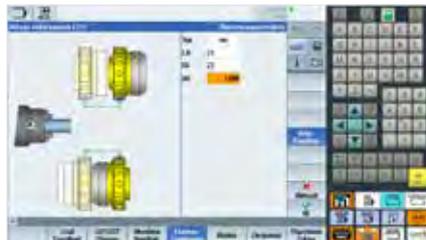
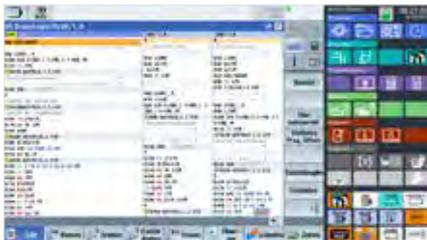


**Focus on production and control – Industry 4.0 included.**

The iXpanel operating concept provides access to networked production. With iXpanel, your staff always has all relevant information for efficient production right at the machine. iXpanel is already included in the standard and can be individually extended. You can use iXpanel as you want it for your business organization – that’s Industry 4.0 tailored to your needs.

**Future-proof.**

iXpanel integrates the latest control generation SIEMENS S840D sl. Use iXpanel intuitively through an 18.5” touch monitor.



**Productive.**

Maximum performance through comprehensive technology cycles and programming screens, e.g., for optimum turning, milling and drilling, especially when using several tools simultaneously.

**Intelligent.**

The machine always starts with the control home screen. Other functions can always be displayed on a second screen, and the operator enjoys direct, activity-related assistance already in the standard version, such as workpiece drawings, setup lists, programming tools, documentations.

**Virtual & open.**

With the optional VPC box (industrial PC), iXpanel opens up the world of Virtual Machine with the 3 operating modes

- CrashStop
- RealTime mode
- Independent simulation (VM on board) directly on the control.

Thanks to the VPC box, the machine can be integrated into your IT structure without restrictions.

CUSTOMER

NETWORK

SERVER

APPLICATION

18,5" TOUCH-MONITOR

STANDARD included as standard

OPTION

Industrie 4.0 - features



Order documents



Customer data



Workpiece counter



Production status



Drawings



Setup sheet



Notes



Information center



Maintenance & care



User management



Technology computer



Programming help



VPC Box



Virtual Machine 3D simulation



VirtualPro Programming Studio



Custom applications

+ many more standard features

# The control: simple and well-known – the FANUC standard

## FANUC Control 31i-B – the future-proof standard control

### All advantages at a glance:

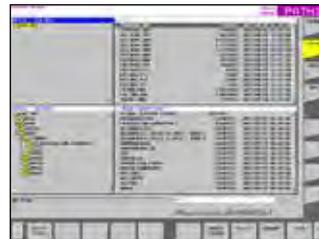
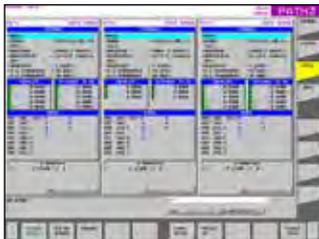
- Control of the latest FANUC series (31i/B)
- FANUC control panel with CNC keyboard and 15" touchscreen monitor
- Original FANUC machine control panel with axis and spindle override
- Electronic handwheel integrated in machine control panel (standard)
- Memory for 1000 part programs

- File system for structured program storage
- USB interface and CARD reader at the control panel
- Advanced operator safety by FANUC Dual Check Safety
- Protection level concept for defined access rights

## INDEX enhancements and additions

- Individual keys on the control panel with direct access to the following functions:
  - Turret indexing / Single station (CCW/CW)
  - Setup / Production (key switch removable in "Production" position)
  - Cycle Start / Cycle Stop
  - Consent function
  - Open workpiece clamping

- INDEX-specific enhancements of the user interface for easier machine operation, program and parameter input, machine monitoring
- Sensorless tool monitoring based on motor current
- Freely programmable interface for adjusting external (automation) devices to the machine (e.g., handling system)
- Lateral "INDEX Hotkey" bar for quick navigation



## Programming

- Text editor with Insert, Overwrite, Find, Replace, Copy, and Delete functions
- Annotating NC programs
- NC program numbers or NC program names
- Up to 3 M functions possible per NC block
- Arithmetic and trigonometric computing operations
- Parameter calculation and reading/loading of system data
- Manual Guide *i*, Workshop Programming (option)

## Technology

- Standard cycles for turning and milling
- Cutting longitudinal, transverse and tapered threads with constant or variable pitch
- Threading without compensating chuck (up to  $n_{max} = 2000$  rpm)
- TRANSMIT and cylinder surface interpolation
- Oriented spindle stop
- Minimum input/output unit 0.0001 mm or 0.00001"
- Program sequence with handwheel (option)

## Program input/output

- Program input via control keyboard
- USB port
- Memory card
- ETHERNET-interface
- Input switchable between metric/inch for
  - Program entry
  - Programmed travel movements
  - Tool offsets
  - Screen display
- Three-channel program display and editor

## Production

- Absolute measuring systems in all axes, i.e. no referencing required
- Electronic tool offset in X, Z
- Total number-of-parts counter
  - Counter for setting the order batch size
- Tool breakage monitoring
- Operating data signals
- Warm-up control
- Channel lock for easy run-in of individual channels



PANUC Series 211-MODEL B

PATH1

NO.	NO.	NO.	NO.	NO.	NO.
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96
97	98	99	100	101	102
103	104	105	106	107	108
109	110	111	112	113	114
115	116	117	118	119	120
121	122	123	124	125	126
127	128	129	130	131	132
133	134	135	136	137	138
139	140	141	142	143	144
145	146	147	148	149	150
151	152	153	154	155	156
157	158	159	160	161	162
163	164	165	166	167	168
169	170	171	172	173	174
175	176	177	178	179	180
181	182	183	184	185	186
187	188	189	190	191	192
193	194	195	196	197	198
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205	206	207	208	209	210
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223	224	225	226	227	228
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235	236	237	238	239	240
241	242	243	244	245	246
247	248	249	250	251	252
253	254	255	256	257	258
259	260	261	262	263	264
265	266	267	268	269	270
271	272	273	274	275	276
277	278	279	280	281	282
283	284	285	286	287	288
289	290	291	292	293	294
295	296	297	298	299	300

Control console featuring a red emergency stop button, a yellow start button, a power switch, a numeric keypad, and several function keys. It also includes two rotary dials and a trackball.

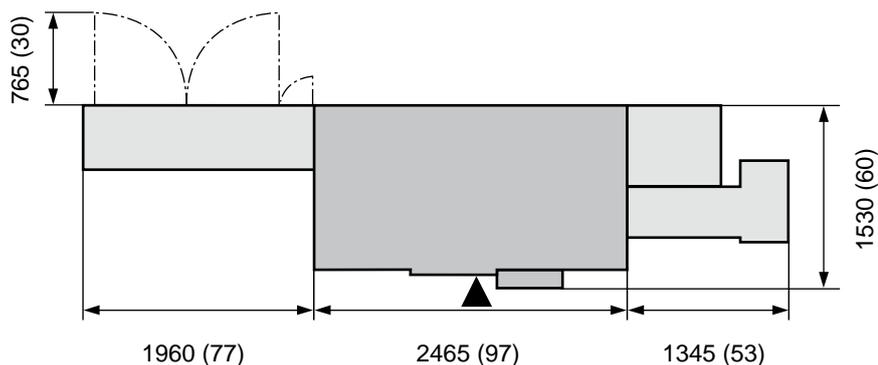
A standard QWERTY keyboard mounted on a tray below the control console.

A trackball located to the left of the keyboard.

OP1

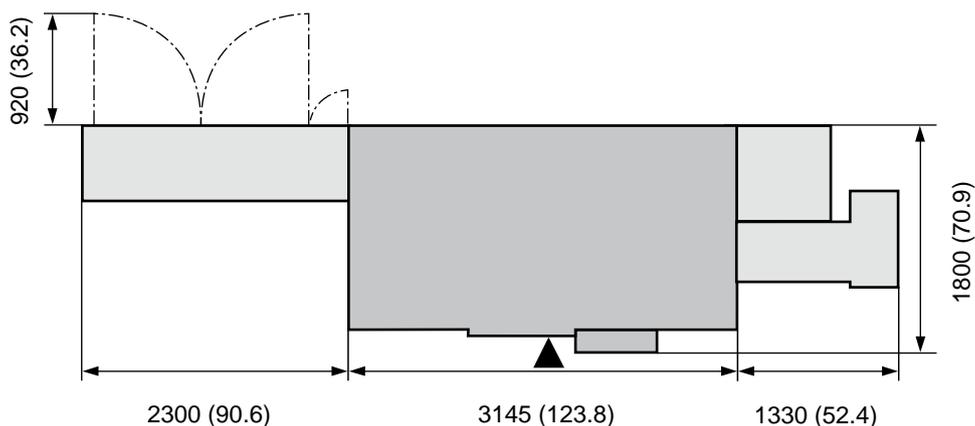
# Technical data C100

		Siemens		FANUC	
<b>Working area</b>					
Distance main and counter spindles	mm (inch)	515 (20.3)		515 (20.3)	
<b>Main spindle</b>					
Bar capacity	mm (inch)	42 (1.7)		42 (1.7)	
Speed	rpm	7000		7000	
Power at 100%/40%	kW (hp)	25/29 (33.5/38.9)		25/29 (33.5/38.9)	
Torque at 100%/40%	Nm (ft lbs)	49/65 (36.2/48)		49/65 (36.2/48)	
Chuck diameter	mm (inch)	110 (4.3)		110 (4.3)	
Spindle head ISO 702/1	size	A5		A5	
C axis resolution	degrees	0.001		0.001	
<b>Counter spindle</b>					
Bar capacity	mm (inch)	42 (1.7)		42 (1.7)	
Speed	rpm	7000		7000	
Power at 100%/40%	kW (hp)	16.5/19 (22.1/25.5)		16.5/19 (22.1/25.5)	
Torque at 100%/40%	Nm (ft lbs)	32/43 (23.6/31.7)		32/43 (23.6/31.7)	
Chuck diameter	mm (inch)	110 (4.3)		110 (4.3)	
Spindle head ISO 702/1	size	A5		A5	
C axis resolution	degrees	0.001		0.001	
<b>Counter spindle slide</b>					
		<b>Z</b>		<b>Z</b>	
Slide travel	mm (inch)	505 (19.9)		505 (19.9)	
Rapid traverse	m (inch) / min	60 (2360)		60 (2360)	
<b>Turret</b>					
Number of stations		14	10	14	10
Tool system DIN 69880	mm (inch)	20 x 40 (0.8 x 1.6)	25 x 48 (1 x 1.9)	20 x 40 (0.8 x 1.6)	25 x 48 (1 x 1.9)
Tool drive speed	rpm	8000	8000	6000	6000
Power at 25%	kW (hp)	6.2 (8.3)	6.2 (8.3)	4.2 (5.6)	4.2 (5.6)
Torque at 25%	Nm (ft lbs)	11 (8.1)	11 (8.1)	11 (8.1)	11 (8.1)
<b>Tool carrier 1 (top left)</b>					
		<b>X</b>	<b>Z</b>	<b>Y</b>	<b>X</b> <b>Z</b> <b>Y</b>
Slide travel	mm (inch)	70 (2.8)	250 (9.9)	70 (2.8)	70 (2.8)      250 (9.9)      70 (2.8)
Rapid traverse	m (inch) / min	30 (1180)	60 (2360)	15 (590)	30 (1180)      60 (2360)      15 (590)
<b>Tool carrier 2 (bottom)</b>					
		<b>X</b>	<b>Z</b>	<b>Y</b>	<b>X</b> <b>Z</b> <b>Y</b>
Slide travel	mm (inch)	70 (2.8)	400 (15.8)	70 (2.8)	70 (2.8)      400 (15.8)      70 (2.8)
Rapid traverse	m (inch) / min	30 (1180)	60 (2360)	15 (590)	30 (1180)      60 (2360)      15 (590)
<b>Tool carrier 3 (optional top right)</b>					
		<b>X</b>			<b>X</b>
Slide travel	mm (inch)	125 (4.9)			125 (4.9)
Rapid traverse	m (inch) / min	30 (1180)			30 (1180)
<b>Workpiece discharging unit</b>					
Workpiece weight	kg (lbs)	2.5 (5.5)		2.5 (5.5)	
<b>Weight and connecting power with maximum configuration</b>					
Weight	kg (lbs)	5500 (12125)			
Connecting power		57 kW, 68 kVA, 97 A, 400 V, 50/60 Hz			
<b>Control</b>		INDEX C200 sl (based on Siemens S840D sl)		FANUC 31i-B	



# Technical data C200

		Siemens		FANUC	
<b>Working area</b>					
Distance main and counter spindles	mm (inch)	710 (30)		710 (30)	
<b>Main spindle</b>					
Bar capacity	mm (inch)	65 (2.6)	90 (3.5)	65 (2.6)	
Speed	rpm	5000	3500	5000	
Power at 100%/40%	kW (hp)	31.5/32 (42.3/43)	29/40 (38.9/53.6)	20/24 (26.8/32.2)	
Torque at 100%/40%	Nm (ft lbs)	125/170 (92.2/125.4)	142/207 (104.8/152.8)	135/190 (99.6/140.1)	
Chuck diameter	mm (inch)	160 (6.3)	-	160 (6.3)	
Spindle head ISO 702/1	size	140 mm (5.5 inch)	A8	140 mm (5.5 inch)	
C axis resolution	degrees	0.001	0.001	0.001	
<b>Counter spindle</b>					
Bar capacity	mm (inch)	65 (2.6)	90 (3.5)	65 (2.6)	
Speed	rpm	5000	3500	5000	
Power at 100%/40%	kW (hp)	20/24 (26.8/32.2)	23/31 (30.9/41.6)	20/24 (26.8/32.2)	
Torque at 100%/40%	Nm (ft lbs)	135/190 (99.6/140.1)	116/155 (85.6/114.3)	135/190 (99.6/140.1)	
Chuck diameter	mm (inch)	160 (6.3)	-	160 (6.3)	
Spindle head ISO 702/1	size	140 mm (5.5 inch)	A8	140 mm (5.5 inch)	
C axis resolution	degrees	0.001	0.001	0.001	
<b>Counter spindle slide</b>					
		<b>Z</b>		<b>Z</b>	
Slide travel	mm (inch)	700 (27.6)		700 (27.6)	
Rapid traverse	m (inch) / min	50 (1969)		50 (1969)	
<b>Turret</b>					
Number of stations		14	10	14	10
Tool system DIN 69880	mm (inch)	25 x 48 (1 x 1.9)	30 x 55 (1.2 x 2.2)	25 x 48 (1 x 1.9)	30 x 55 (1.2 x 2.2)
Tool drive speed	rpm	8000	8000	6000	6000
Power at 25%	kW (hp)	10 (13.4)	10 (13.4)	4.5 (6.0)	4.5 (6.0)
Torque at 25%	Nm (ft lbs)	16 (11.8)	16 (11.8)	16 (11.8)	16 (11.8)
<b>Tool carrier 1 (top left)</b>					
		<b>X</b>	<b>Z</b>	<b>Y</b>	<b>X</b> <b>Z</b> <b>Y</b>
Slide travel	mm (inch)	110 (4.3)	320 (12.6)	100 (4)	110 (4.3)      320 (12.6)      100 (4)
Rapid traverse	m (inch) / min	30 (1180)	50 (1969)	15 (590)	30 (1180)      50 (1969)      15 (590)
<b>Tool carrier 2 (bottom)</b>					
		<b>X</b>	<b>Z</b>	<b>Y</b>	<b>X</b> <b>Z</b> <b>Y</b>
Slide travel	mm (inch)	110 (4.3)	550 (21.7)	100 (4)	110 (4.3)      550 (21.7)      100 (4)
Rapid traverse	m (inch) / min	30 (1180)	50 (1969)	15 (590)	30 (1180)      50 (1969)      15 (590)
<b>Tool carrier 3 (optional top right)</b>					
		<b>X</b>			<b>X</b>
Slide travel	mm (inch)	180 (7.1)			180 (7.1)
Rapid traverse	m (inch) / min	30 (1180)			30 (1180)
<b>Workpiece discharging unit</b>					
Workpiece weight	kg (lbs)	3.5 (7.7)		3.5 (7.7)	
<b>Weight and connecting power with maximum configuration</b>					
Weight	kg (lbs)	9000 (19841)			
Connecting power		72 kW, 84 kVA, 122 A, 400 V, 50/60 Hz			
<b>Control</b>		INDEX C200 sl (based on Siemens S840D sl)		FANUC 31iB	



## 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

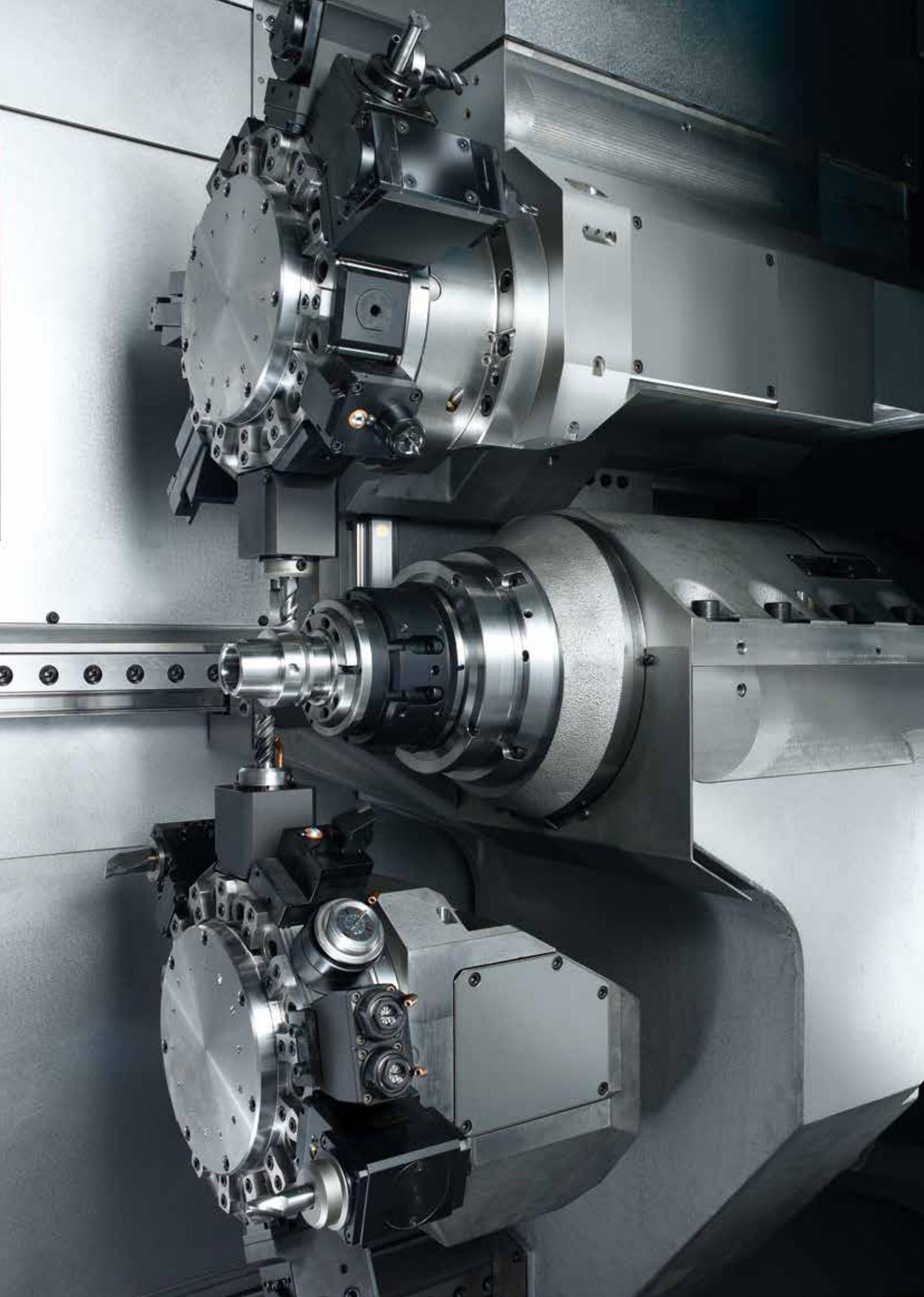


### Production planning and job preparation

- 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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The logo for INDEX TRAUB. The word "INDEX" is in a bold, teal, sans-serif font. Below it, the word "TRAUB" is in a bold, red, sans-serif font, with a red curved line arching over the letters.

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