

G500, G520

*Turn-mill centers for high-performance
machining of large workpieces*

INDEX



better.parts.faster.

New dimensions in turning and milling

The INDEX G500/G520 is an innovative turn-mill center in a class of its own – especially when it comes to efficient production of large workpieces with high complexity and variance.

Based on a rigid and vibration-damping machine bed in mineral cast block design and generously dimensioned linear guides in X and Z axes, this series incorporates modern mechanical engineering to achieve excellent machining results with high productivity.

Three tool carriers with a tool pool of up to 151 tools provide maximum flexibility for complete machining of complex workpieces.

A total of up to 14 productive axes ensure impressive machining results without exception.

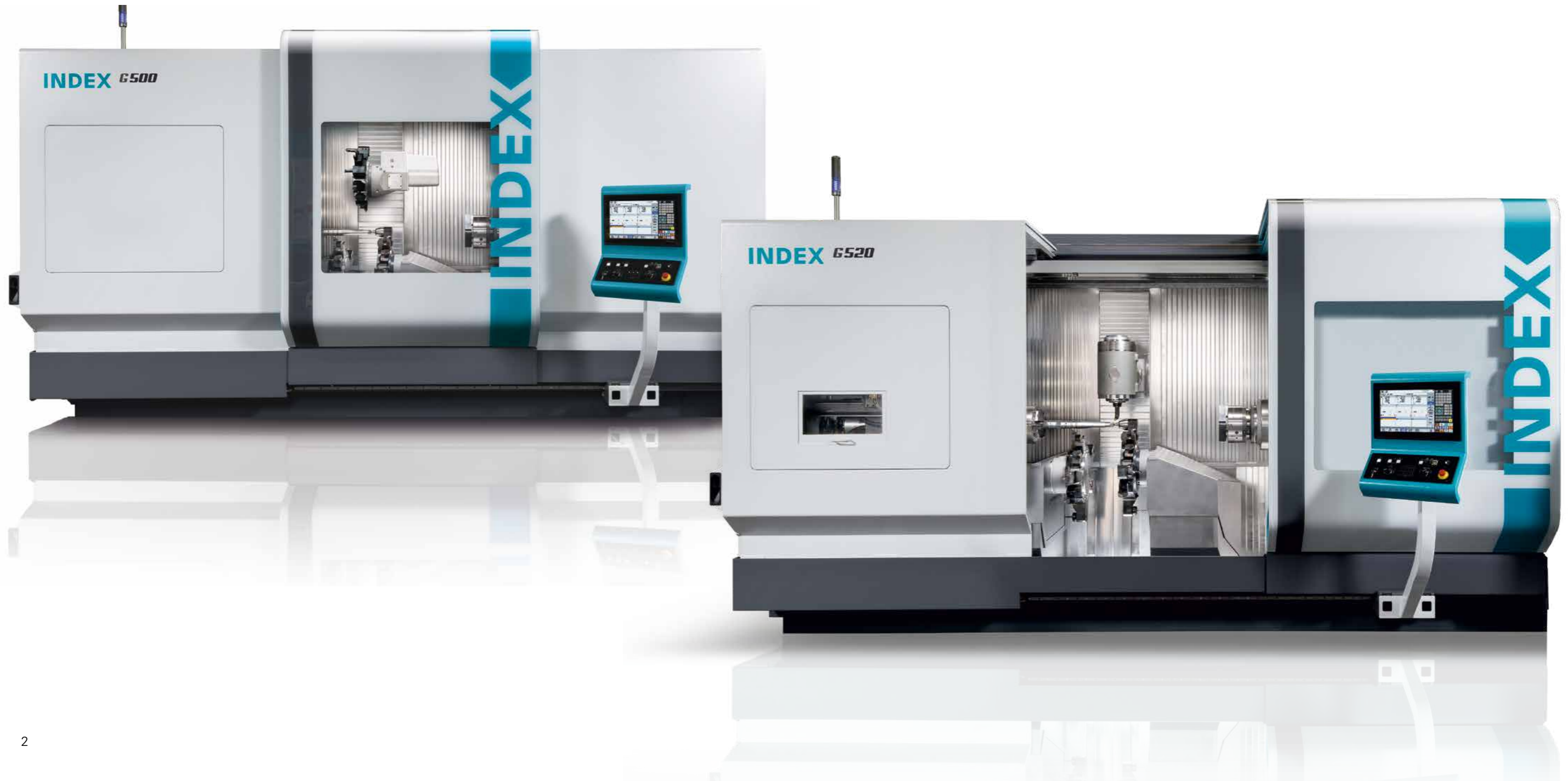
The large work area, is unique in this class and impresses with its sophisticated features that allow simultaneous machining using all three tool carriers with no collision risk.

The vertically sloping interior paneling ensures optimum chip flow. The chip conveyor can be mounted on the right or left side, depending on customer requirements.

The INDEX G500/G520 is relied on for the manufacture of a wide range of products in many industries, such as machinery construction, automotive and aerospace.

The machine concept

- Identical main and counter spindles with spindle clearance dia. of 120 mm
- Chuck up to 500 mm in dia.
- 3 tool carriers for up to 151 tools
- Powerful motorized milling spindle with proven Y/B quill kinematics for complex 5-axis milling operations (G520)
- Sophisticated work area concept for turning lengths up to 1,600 / 2,300 mm and variable machining options
- High thermal and mechanical stability
- High dynamic response (rapid traverse rate up to 50 m/min)

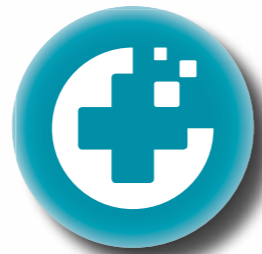


Best performance for applications in the automotive, medical, aerospace, and machinery industries

INDEX offers customers optimal solutions for flexible and efficient production. INDEX engineers have leveraged years of experience from many industries in their product development. Products and processes are made ready for commercial production through feasibility studies, efficiency analyses

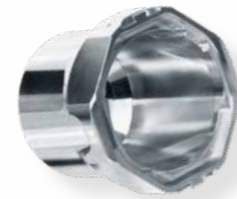
and, above all, close collaboration with customers. Due to the carefully planned design and great flexibility of INDEX products, customers can also utilize an extensive modular system.

The INDEX G500 and INDEX G520 turn-mill centers offer the best performance for customers from the machinery, automotive, and aerospace industries, with high availability and process reliability – the most comprehensive solution when it comes to high-performance machining of large workpieces.



Shaft

Steel
60 mm x 510 mm



Cup

Aluminum
110 mm x 120 mm



Rotor carrier

Steel
140 mm x 285 mm



Flange

Steel
178 mm x 120 mm



Shaft

Steel
60 mm x 320 mm



Centrifuge

Aluminum
200 mm x 60 mm



Bearing flange

Steel
129 mm x 136 mm



Turret head

Steel
273 mm x 76 mm

Complete machining based on a modular system

The modular system in this series offers a wide range of options. Up to 3 tool carriers can be integrated into the work area.

The work area offers ample space to machine any kind of workpiece. The working range allows for parts up to 1,600/2,300 mm in length.

The powerful main and counter spindles are designed for bar diameters up to 120 mm and for chucked part diameters of up to 500 mm.

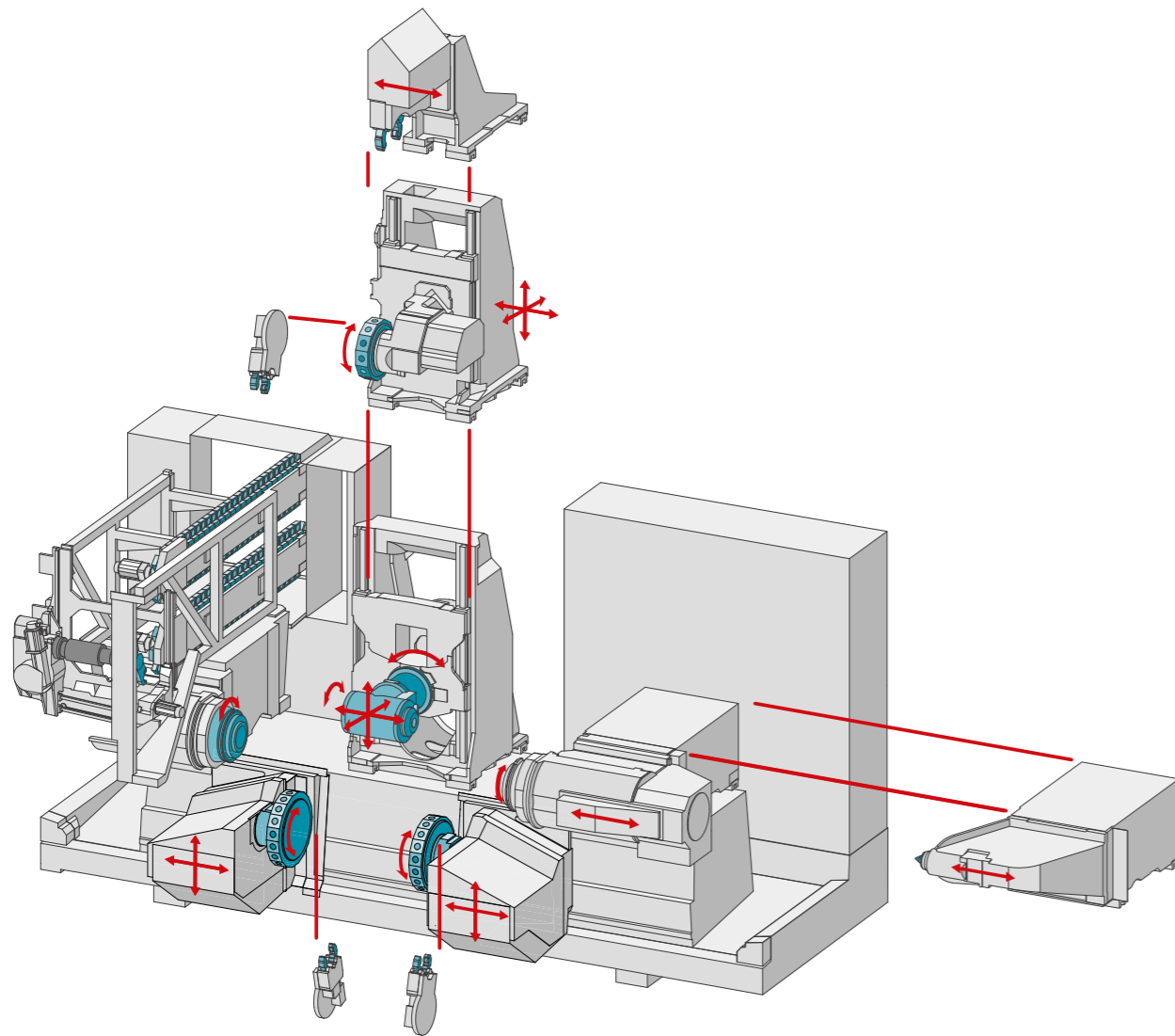
Turret steady rests are available for machining long or shaft-shaped parts.

The INDEX G520 features a powerful motorized milling spindle capable of performing simultaneous 5-axis machining.

The ergonomic setup and operating concept played a major role in the new design.

All the relevant components are easily accessible for operating and maintenance personnel.

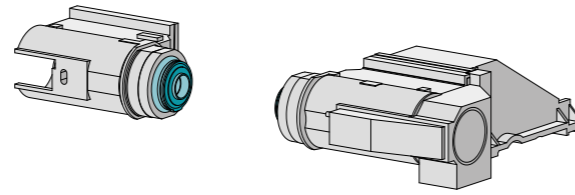
The modular robot cell iXcenter is available for all machines in this series, for flexible feeding and discharging of blanks and finished parts.



The components

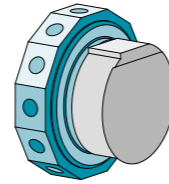
Main and counter spindles

- Spindle clearance dia. 120 mm
- Max. speed 2,500 rpm
- 85 kW, 2,000 Nm (40% DC)
- Chuck diameter 500 mm



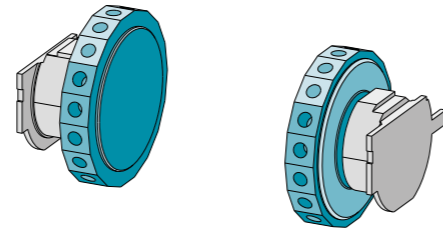
Upper turret (INDEX G500)

- 12 live stations, each VDI 40 with W-serration
- 5,400 rpm, 18 kW, 42 Nm (25% DC)
- X axis 295 mm, rapid traverse rate 30 m/min
- Y axis +/-100 mm, rapid traverse rate 20 m/min
- Z axis 1,580 mm / 2,290 mm, rapid traverse rate 50 m/min



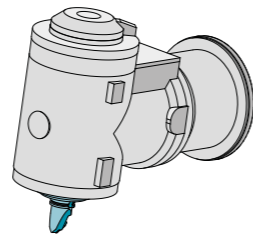
Two turrets with 18 stations each (optional for INDEX G500)

- 18 live stations each, VDI 40 with W-serration
- 5,400 rpm, 18 kW, 42 Nm (25% DC)
- X axis 210 mm, rapid traverse rate 30 m/min
- Z axis 1,600 / 2,300 mm, rapid traverse rate 40 m/min



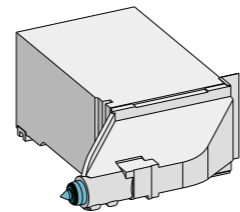
Motorized milling spindle (INDEX G520)

- HSK-T63, 12,000 rpm, 150 Nm (25% DC)
- Capto-C6, 18,000 rpm, 100 Nm (25% DC)
- X axis 750 mm, rapid traverse rate 30 m/min
- Y axis +/- 170 mm, rapid traverse rate 20 m/min
- Z axis 1,600 / 2,300 mm, rapid traverse rate 50 m/min
- B axis -25°/+205°, rapid traverse rate 75 rpm



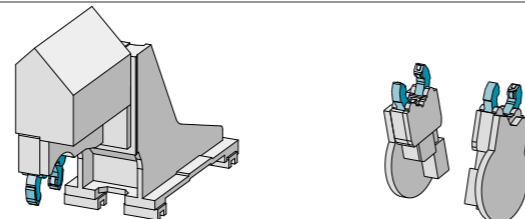
Tailstock

- SK30 mounting
- Pressing force 9,000 N (100% DC)
- Rapid traverse rate 40 m/min



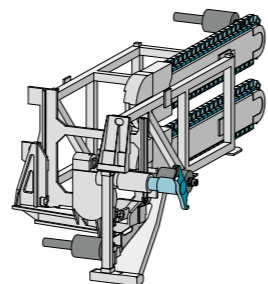
Upper steady rest on separate slide (optional)

- Clamping range 12 - 152 mm / 30 - 245 mm



Lower turret steady rests (optional)

- Clamping range 52 - 131 mm



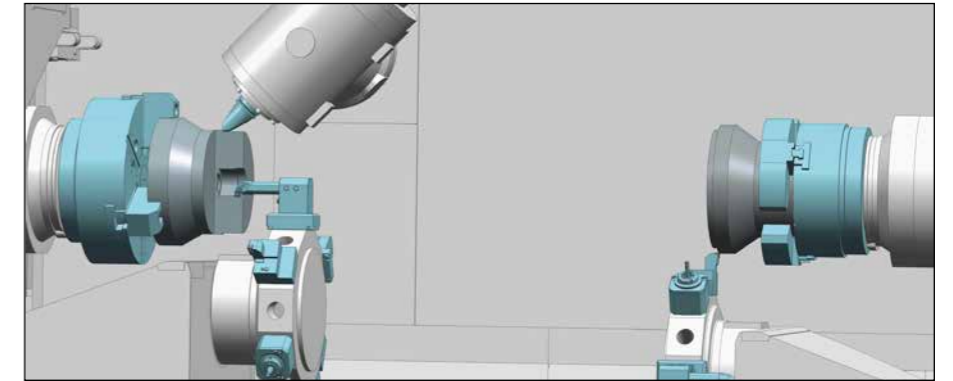
Tool magazine (INDEX G520)

- Single-row: 58 tool locations HSK-T 63 / Capto-C6
- Double-row: 115 tool locations HSK-T 63 / Capto-C6
- Max. tool weight 10 kg
- Max. tool diameter 160 mm
- Max. tool length 500 mm
- Setup station

Large degrees of freedom in the work area for a wide variety of machining options

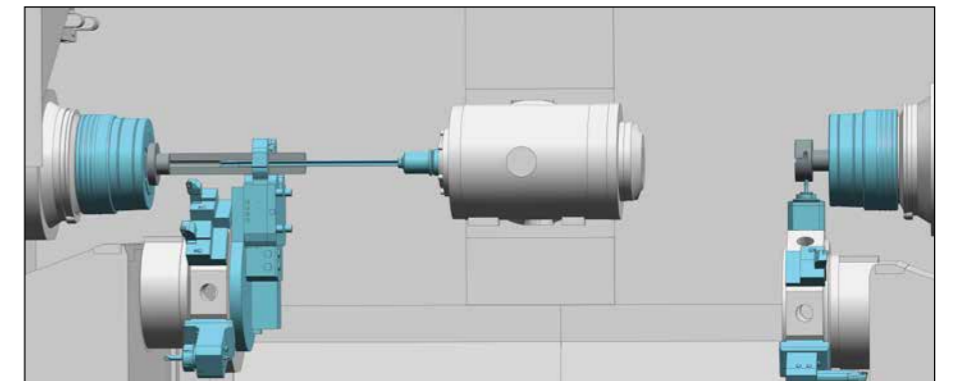
INDEX G520

Maximum productivity by simultaneous machining with 3 tools



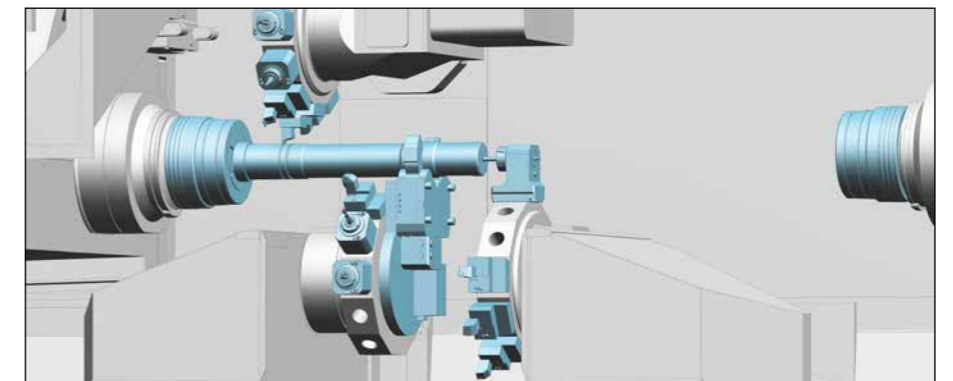
INDEX G520

Use of tools up to 500 mm long in the motorized milling spindle, e.g., for deep-hole drilling applications with the highest precision.



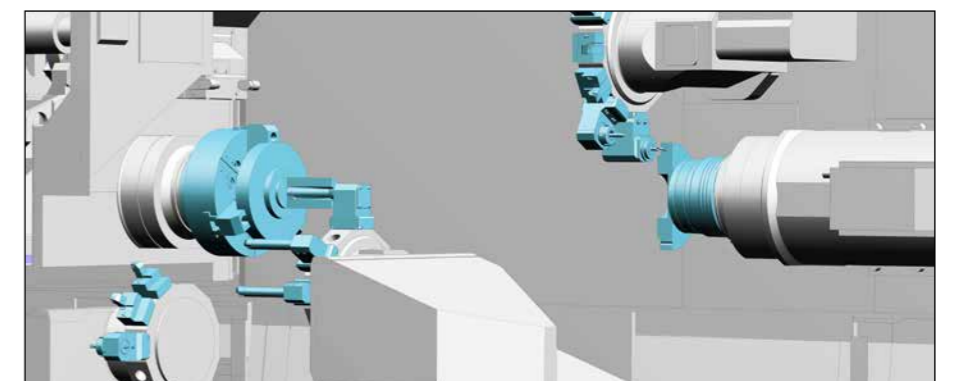
INDEX G500

Flexible shaft machining through the use of turret steady rests



INDEX G500

Maximum freedom from collisions due to "submergence" of the lower tool carriers.



Tool magazine

with up to 115 tool locations
HSK-T63 / Capto-C6

Motorized milling spindle

HSK-T63 or Capto-C6

Y-B quill

with torque motor
for high precision

Work area

Vertical walls for optimum
chip flow

Counter spindle

dia. 120 mm / 2,500 rpm /
2,000 Nm (40 % DC)

Main spindle

dia. 120 mm / 2,500 rpm /
1,595/2,000 Nm (100/40% DC)

Working range

with turning lengths
1,600 mm / 2,300 mm

Tool turret

18 tool locations each /
VDI 40 / 5,400 rpm /
18 kW / 42 Nm (25 % DC)
Optional: Turret steady rest

Turret slides

with linear axes: X 210 mm /
Z 1.600 mm or 2.300 mm

Mineral cast bed

in block design for excellent
rigidity and thermal stability

Robot cell *xcenter*

Intelligent automation – even more flexibility and efficiency

With the iXcenter robot cell, blanks and finished parts can be fed and discharged quickly, safely and flexibly. The overall sequence between the machine and the robot cell is created using predefined macros in the NC program. The sliding door in the machine's work area, which opens and closes automatically, provides access to the robot. The iXcenter is modular in structure and allows you to efficiently integrate various processes. The iXcenter's ease of access to spindles, tool carriers, and tool magazine makes you fully prepared to set up the machine.

Your benefits

- Automatic and ergonomic workpiece feeding and discharge
- Modular basic cell that allows flexible expansion
- Low-manned continuous operation is possible
- Door designed for optimum access and view of the machine
- Compact design
- Modern INDEX machine design
- Entire system from one source

Technical data

- 6-axis robot for 165 kg load capacity
- Reach 2,660 mm



Unlock more potential

Integration of downstream processes by attaching specialized modules

- Pallet/rack modules
- Storage systems
- Circulating conveyors
- Measuring units
- Testing modules
- Discharge units
- Cleaning stations
- Deburring modules
- Laser marking modules
- Additional customer-specific solutions

Add on any configuration options available for the machine

- Bar loading magazines
- Chip conveyors arranged left/right

Options available for the basic cell

- 6-axis robot with up to 270 kg load capacity
- Double grippers in flange and shaft versions
- Automatic gripper change, including gripper storage





The cockpit for easy integration of the machine in your business organization

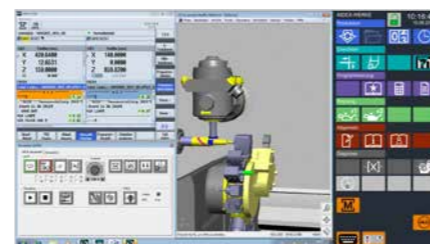
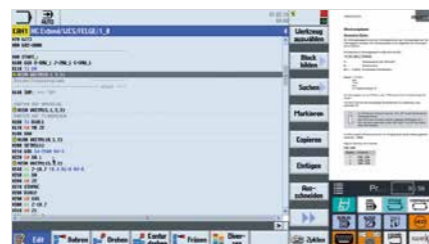


Focus on production and control – Industry 4.0 included.

The iXpanel operating concept provides access to networked production. With iXpanel, your operator always has all relevant information for efficient production right at the machine. iXpanel is included with the standard version and can be enhanced with custom options. You can use iXpanel just as you require it for your business organization – that's Industry 4.0 tailored to suit your needs.

Future-proof.

iXpanel integrates the latest control generation SIEMENS Sinumerik 840D solution line. Use iXpanel intuitively via an 18.5" touchscreen 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 be displayed on a second screen at any time. Operators can enjoy direct, activity-related assistance already with the standard version, such as workpiece drawings, setup lists, programming aids, documentation, etc. All of this is accessible right at the machine.

Virtual & open.

With the optional VPC box (industrial PC), iXpanel opens up the world of the Virtual Machine with the 3 operating modes - CrashStop - RealTime mode - Independent simulation (VM on board) directly in the control system. Thanks to the VPC box, the machine can be integrated into your IT structure without any restrictions.



18.5" TOUCHSCREEN MONITOR

STANDARD included as standard



Order documents



Customer data



Workpiece counter



Production status



Drawings



Setup sheet



Notes



Information center



Maintenance & care



User management



Technology computer



Programming help

OPTION



VPC Box



Virtual Machine 3D simulation



VirtualPro programming studio

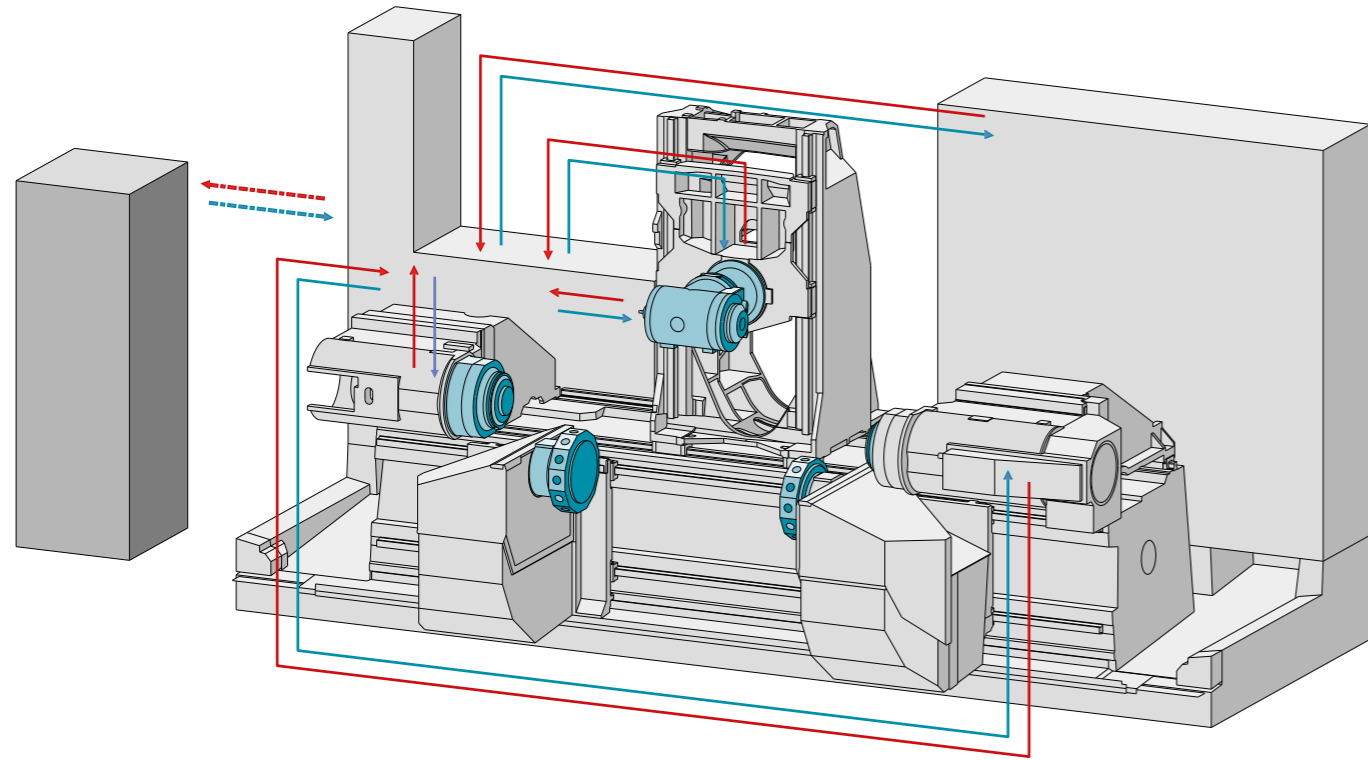


Custom applications

Industry 4.0 features

+ many more standard features

The cooling concept: efficient use of energy



Intelligent use of proven cooling principles:

- **Targeted heat dissipation**

All high-loss heat sources of the INDEX G500/G520 are cooled directly by multiple fluid circuits. In addition to the cooling circuits for the main spindle, counter spindle, motorized milling spindle, and the torque drive of the B axis, there is also a separate cooling circuit for

the hydraulic system and control cabinet. The lost heat energy is absorbed directly in the coolant and removed from a central location of the machine.

- **Economic use of waste heat**

The INDEX "cold water interface" allows the heat loss energy stored in the cooling medium to be removed from a central location and conveyed for another use, if required,

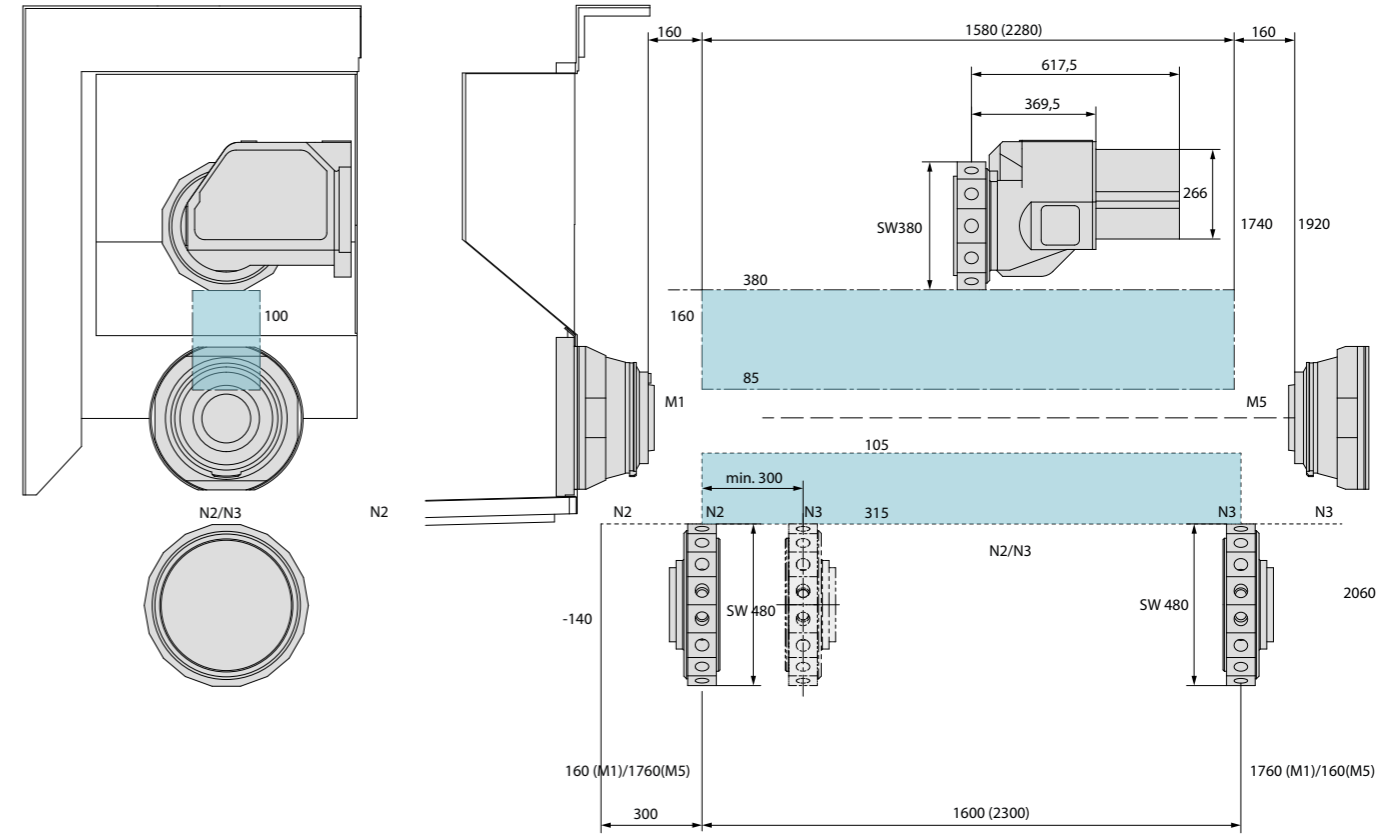
e.g., production hall heating, service water heating or process heating for other production steps. The recovery of machine waste heat enables a sustainable reduction of energy costs in the company.

- **Climate-neutral dissipation of heat**

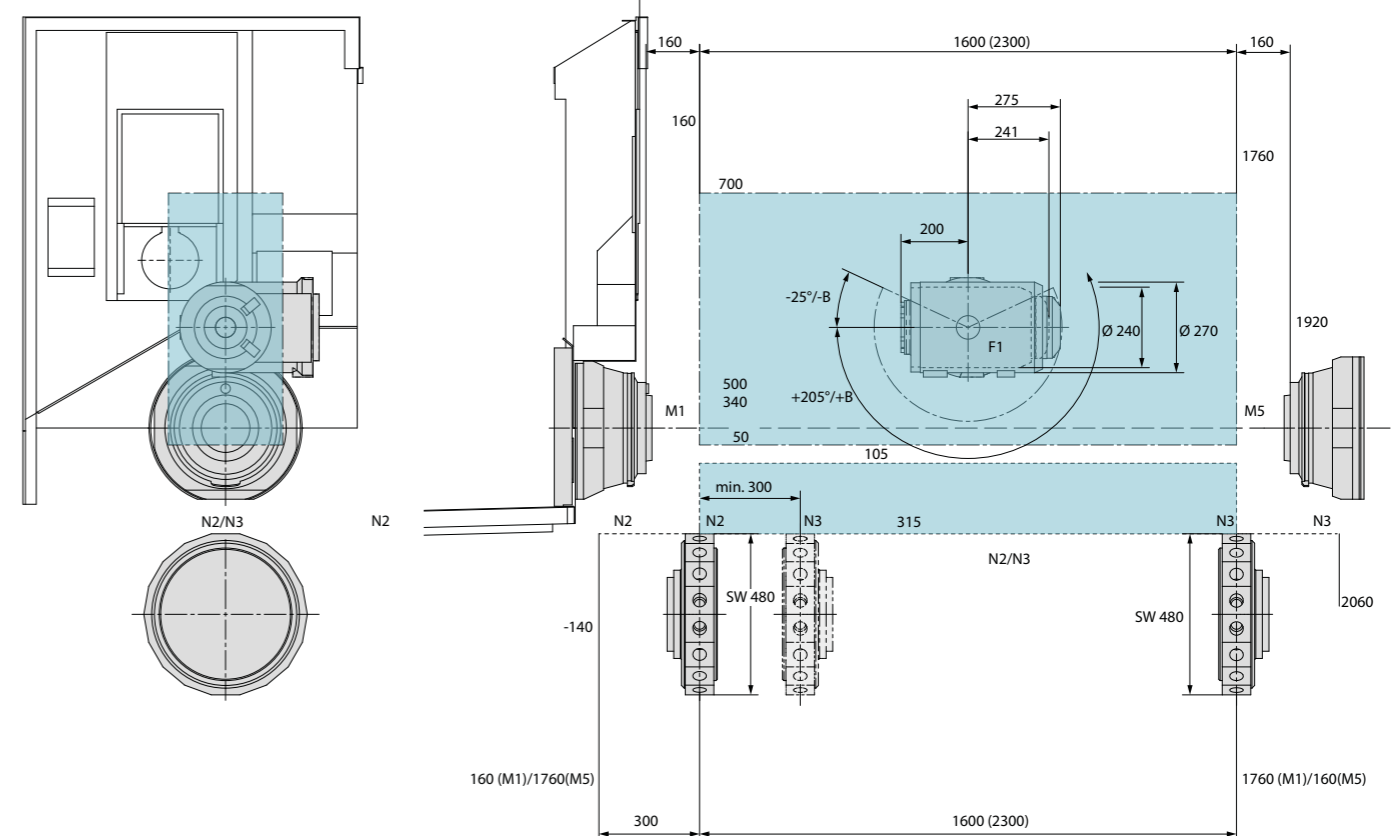
The cold water interface provides the ability to dissipate heat in a climate-neutral manner, if the machine waste heat stored in the

cooling medium cannot be used otherwise. The necessary cooling unit can be used with the help of the water interface first on the outside of the production hall and also centrally for several machines. This offers a considerable energy savings potential for production hall heating dissipation/climate control or increased efficiency as a result of centralized heat disposal.

Work area INDEX G500 - Turning length 1,600 mm (2,300 mm) - Dimensions



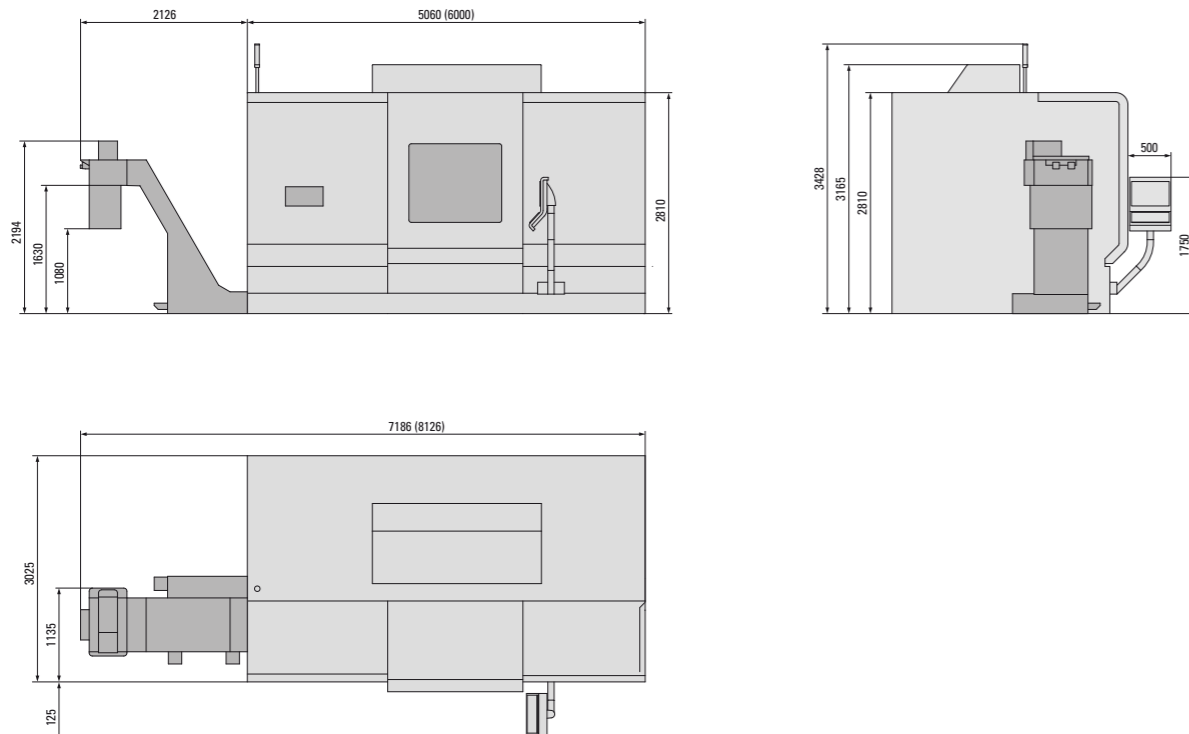
Work area INDEX G520 - Turning length 1,600 mm (2,300 mm) - Dimensions



INDEX G500, G520

Installation plan for INDEX G500/G520

Turning length 1,600 mm (2,300 mm) / chip conveyor at left and workpiece handling



Installation plan for INDEX G500/G520

Turning length 1,600 mm (2,300 mm) / chip conveyor at right
iXcenter with basic cell and pallet module



Technical data

		INDEX G500	INDEX G520
Working range			
Turning length	mm	1,600	1,600
Turning length – long version	mm	2,300	2,300
Main spindle and counter spindle			
Spindle clearance	mm	120	120
Spindle head ISO 702/1		A11	A11
• Max. speed	rpm	2,500	2,500
• Drive power (100% / 40% DC)	kW	68 / 85	68 / 85
• Torque (100%/40% DC)	Nm	1,595 / 2,000	1,595 / 2,000
Chuck diameter	mm	500	500
C axis resolution	deg.	0.001	0.001
Upper tool carrier		Turret	Motorized milling spindle
Kinematics		XYZ	XYZB
Tooling system		VDI40 DIN ISO 10889-1	HSK-T63 // Capto-C6
Number of stations		12	
• Max. speed	rpm	5,400	12,000 // 18,000
• Drive power (100% DC)	kW	18	26 // 27.5
• Torque (25% DC)	Nm	42	150 // 100
X slide travel, rapid traverse rate, feed force	mm / m/min / N	295 / 30 / 10,000	750 / 30 / 10,000
Y slide travel, rapid traverse rate, feed force	mm / m/min / N	+/-100 / 20 / 11,000	+/-170 / 20 / 11,000
Z rapid traverse rate, feed force	m/min / N	50 / 11,000	50 / 11,000
B axis swivel range, rapid traverse rate	degrees/rpm		-25/+205 / 75
Tool carrier, bottom left/right		Turret XZ	Turret XZ
Tooling system		VDI-40 DIN ISO 10889-1	VDI-40 DIN ISO 10889-1
Number of stations (live), turret XYZ/XZ		18	18
• Max. speed	rpm	5,400	5,400
• Drive power (25% DC)	kW	18	18
• Torque (25% DC)	Nm	42	42
X slide travel, rapid traverse rate, feed force	mm / m/min / N	210 / 30 / 10,000	210 / 30 / 10,000
Z rapid traverse rate, feed force	m / min / N	40 / 11,000	40 / 11,000
Tool magazine			
Tooling system			HSK-T63 / Capto-C6
Tool magazine locations			58 / 115
Tool weight max.	kg		10
Max. tool diameter	mm		160
Max. tool length	mm		500
Max. tilting torque	Nm		15
Turret steady rest (optional)			
Turret steady rest clamping range (with chip guard)	mm	52 - 131	52 - 131
General data			
Length x width x height	mm	5,060 x 3,025 x 3,165	5,060 x 3,025 x 3,165
Length x width x height - long version	mm	6,000 x 3,025 x 3,165	6,000 x 3,025 x 3,165
Weight, short/long version	t	25 / 30	27 / 32
Connected power	kW	232	232
Control		Siemens S840D sl	Siemens S840D sl

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