

TNL32 compact

*Sliding and fixed headstock automatic lathe for
precise and economic machining*

TRAUB



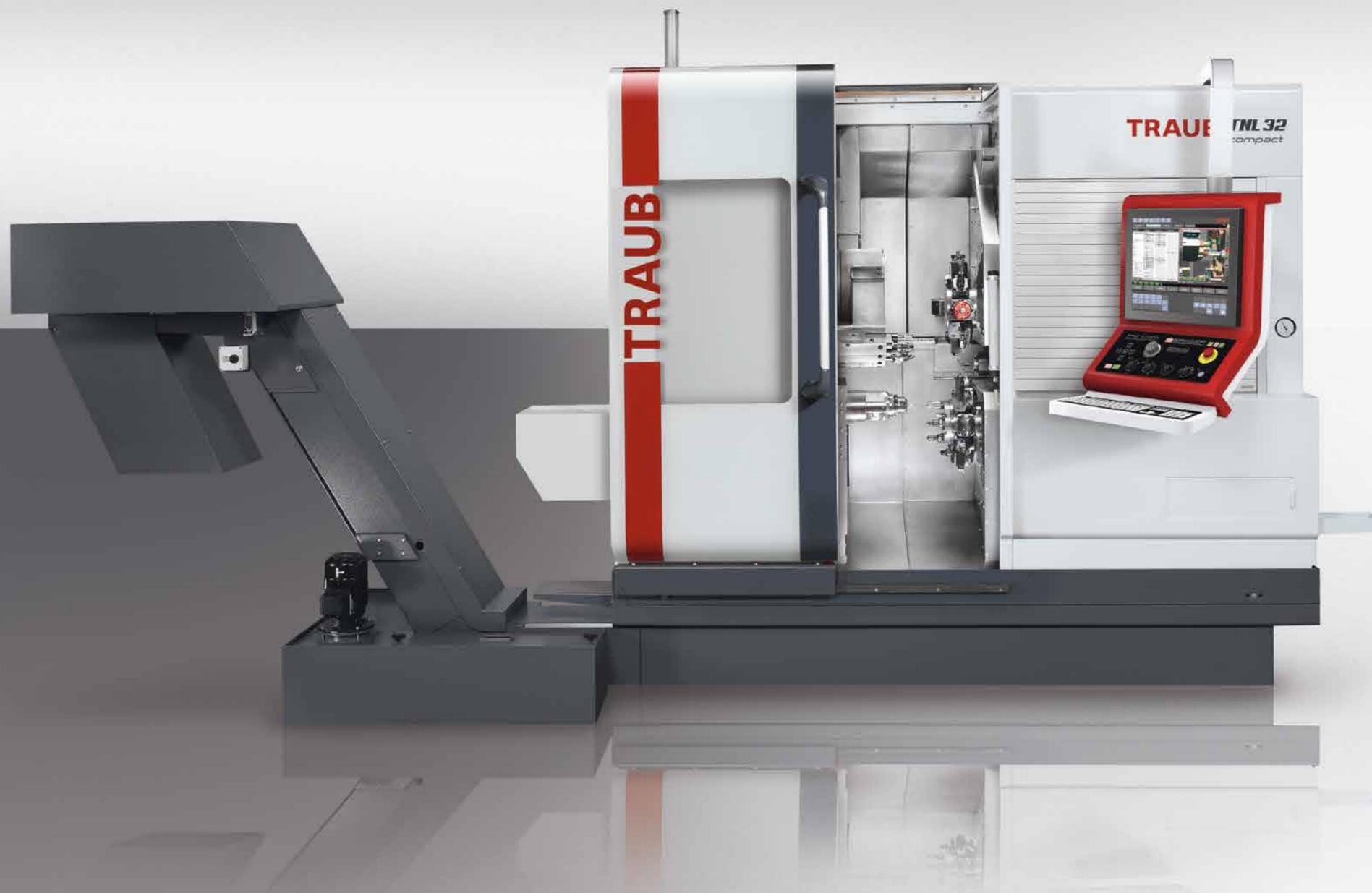
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TNL32 compact – productive sliding and fixed headstock turning of medium and high complexity workpieces from bar stock or with an integrated robot cell

The TNL32 compact has two identical work spindles and two tool turrets, each with X, Z, and Y axes. It can also be equipped with a front and rear end machining unit. The upper tool turret can be equipped with an optional B axis. This sliding and fixed headstock automatic lathe combines the productivity of a very high-performance automatic lathe with the ability to produce precise and profitable workpieces even when they are the most demanding.

With its compact footprint, the work area of this automatic lathe—which is unique in its class—ensures a very high power density for cost-effective production. Moreover, the vertical work area concept provides optimal process reliability, combined with minimal setup effort.

The work area concept
Perform simultaneous and productive machining with two tool turrets together and a front and rear end machining unit.



The machine concept

- Bar capacity up to $\varnothing 32$ mm
- Up to three tool carriers and one rear end machining unit, all with Y axis
- Simultaneous machining with two, three or four tools
- Large tool pool for setup-friendly production
- Short tool change times owing to the CNC indexing axis in the tool turrets and in the front end machining unit
- Generously dimensioned work area designed for process reliability
- Flexible hydraulic hollow clamping system on main and counter spindles for clamping tasks with collets and chucks

The TNL32 compact – available in three configuration variants

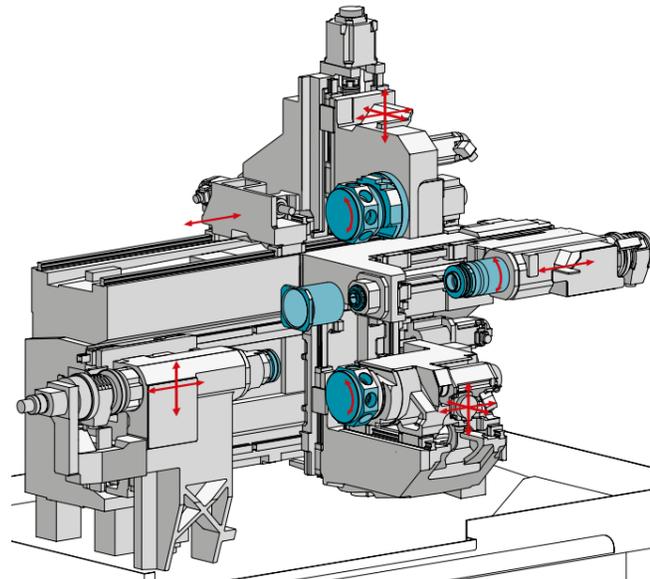
TNL32-9 compact TNL32-9B compact TNL32-11 compact

The concept of the TNL32 compact machine has been strictly tailored to the daily needs of its users. For instance, the machine's kinematics allow for effective and simultaneous machining with two, three or four tools.

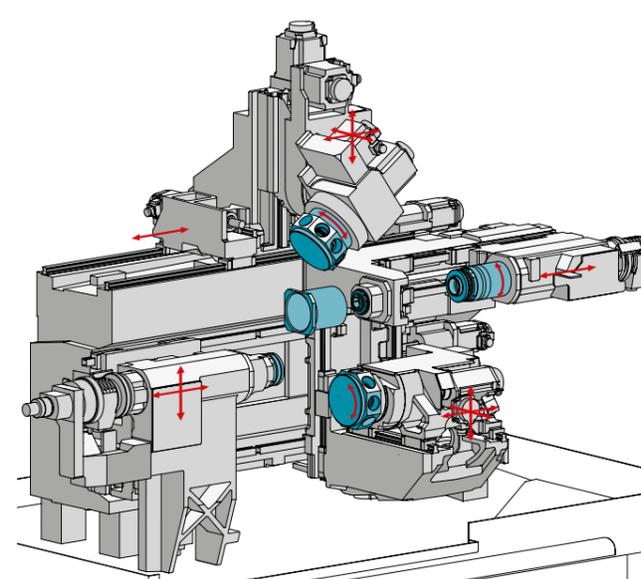
The generous and vertically arranged work area provides for the necessary degrees of freedom, as well as for very high process reliability.

The machine's crucial productivity advantage is the result of its extraordinarily high dynamics. The machine bed made from gray cast iron and the vibration-damping feet form the basis for the machine's outstanding dynamic properties. In addition, the high rigidity and thermal stability ensure optimal workpiece quality.

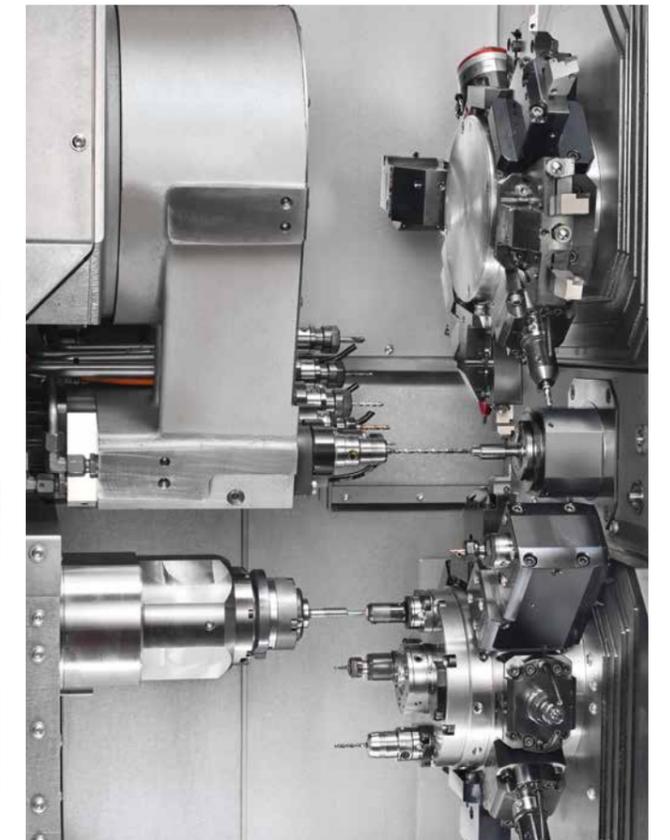
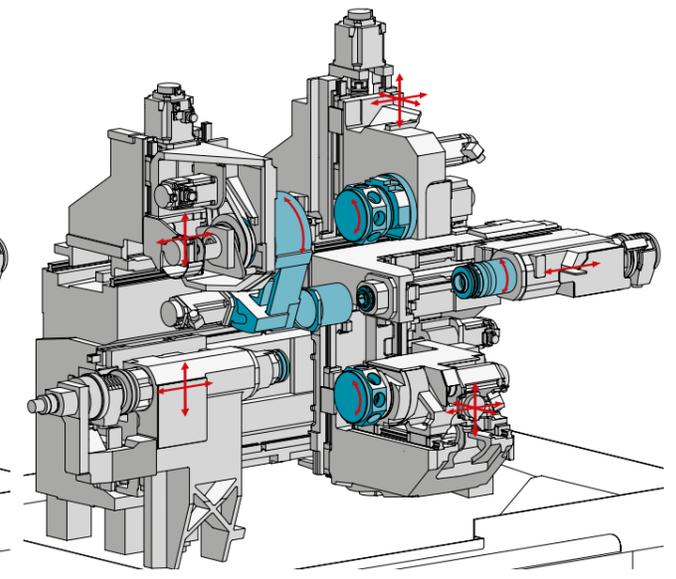
TNL32-9 compact



TNL32-9B compact



TNL32-11 compact



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

INDEX provides optimal solutions for flexible and efficient production. Its engineers have integrated years of experience leveraged from many industries into the product development process.

Products and processes are then tailored to specific customer needs through feasibility studies, efficiency analyses, and, above all, close collaboration with the customer. TRAUB products are modular in design and highly flexible, giving customers access to an extensive modular system for a solution that perfectly matches their application.



Fixing sleeve

Steel
Ø 16 mm x 30 mm



Spindle / shaft

Steel
Ø 24 mm x 180 mm



Housing

Aluminum
Ø 20 mm x 30 mm



Spindle / shaft

Steel
Ø 25 mm x 240 mm



Drive shaft

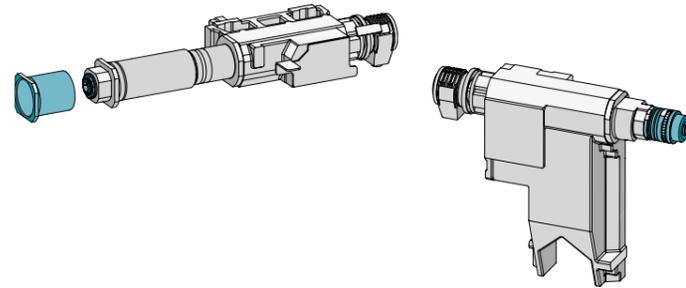
Stainless steel
Ø 24 mm x 180 mm



Components

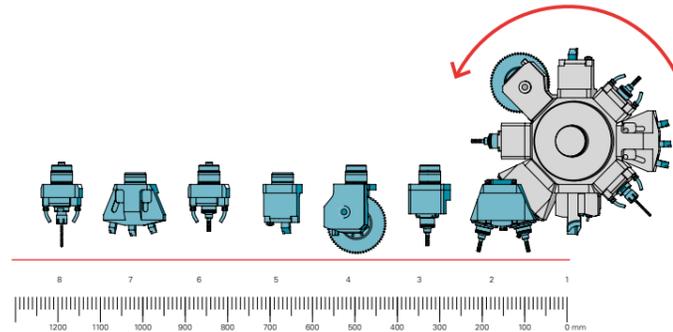
Main and counter spindles

- Bar capacity \varnothing 32 mm
- Spindle speed 8,000 rpm
- Drive power (100%/40%) 9.9/13.6 kW
Torque (100%/40%) 19/26/35 Nm max.
- Hydraulic hollow clamping cylinder



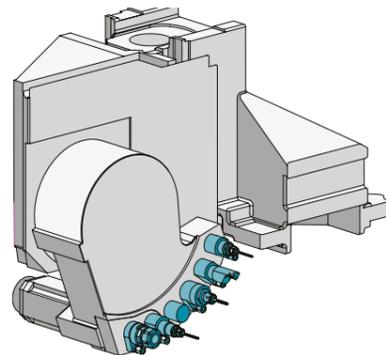
Two tool turrets

- Indexing axis designed as interpolated H axis
- 8 stations, up to 24 tools per turret can be used
- Compact shank mounting \varnothing 45 mm
- X22.5 / Y25 / Z25 m/min
- Coolant pressure up to 80 bar and up to 120 bar at stations 1 and 7
- Additional B axis for TNL32-9B compact
- Choice of overall or single drive



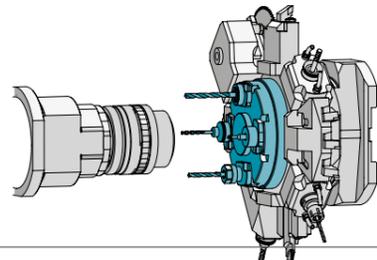
Front end machining unit

- Autonomous compound slide with X and Z axes
- Y axis function using X and H-axis interpolation
- 6 tool mountings, of which 3 are driven
- Drive power (100%/25% ED) 1.5/3.0 kW
- up to two HF spindles can be used
- Coolant pressure up to 80 bar and up to 120 bar at stations 1 and 4
- Greater distance between tool mountings for optimal collision prevention
- Possibility to attach a switchable deep-hole drilling unit



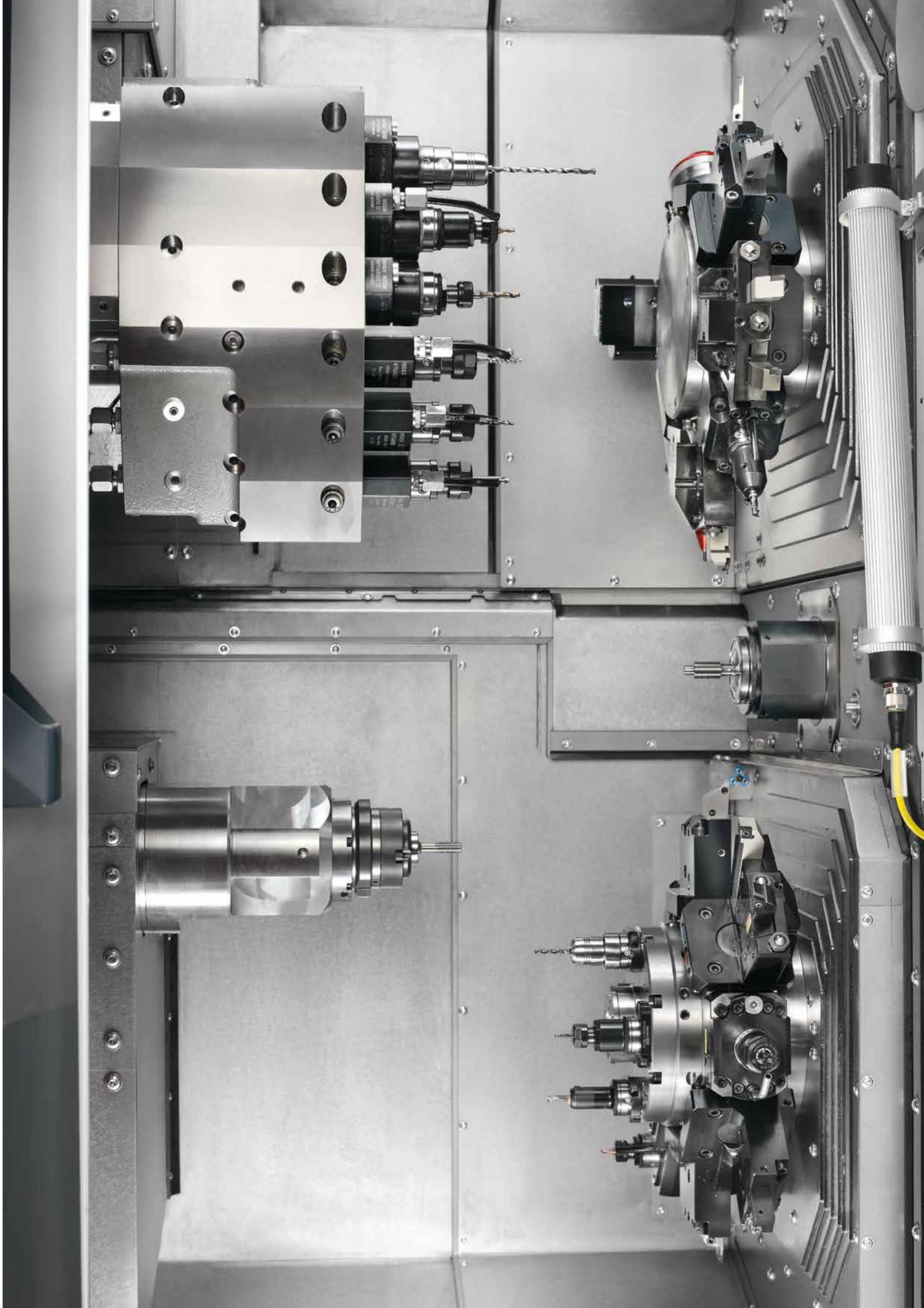
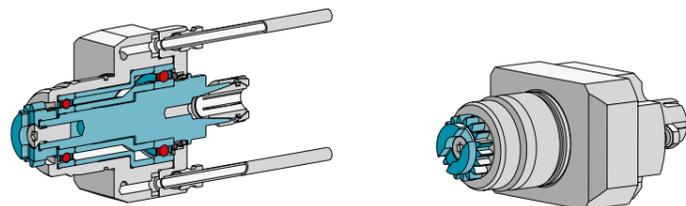
Rear end machining unit

- 4 x tool mountings for internal and external machining (stationary)
- Coolant pressure up to 80 bar and up to 120 bar at two stations



Tool holders

- The compact shank system with its large, robust bearings and drive elements ensures full transfer of the tool drive on the workpiece.
The combination pinion allows for the use of an overall and a single drive.



Workpiece discharge unit—fast, safe, and gentle

Workpiece discharge unit with gripper

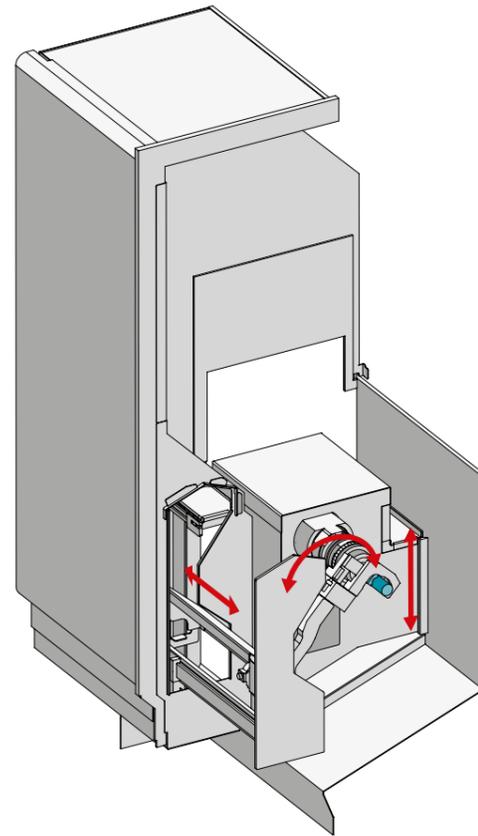
The workpiece discharge unit (servo linear axis in Z direction and servo swivel axis) removes the finished workpieces with a workpiece gripper (two jaws, 20 mm stroke per jaw) and places them on a part removal conveyor.

The part removal conveyor then discharges the workpieces at an ergonomic height to the left out of the machine's work area.

Max. workpiece dimensions:

D = 32 mm L = 215 (250) mm

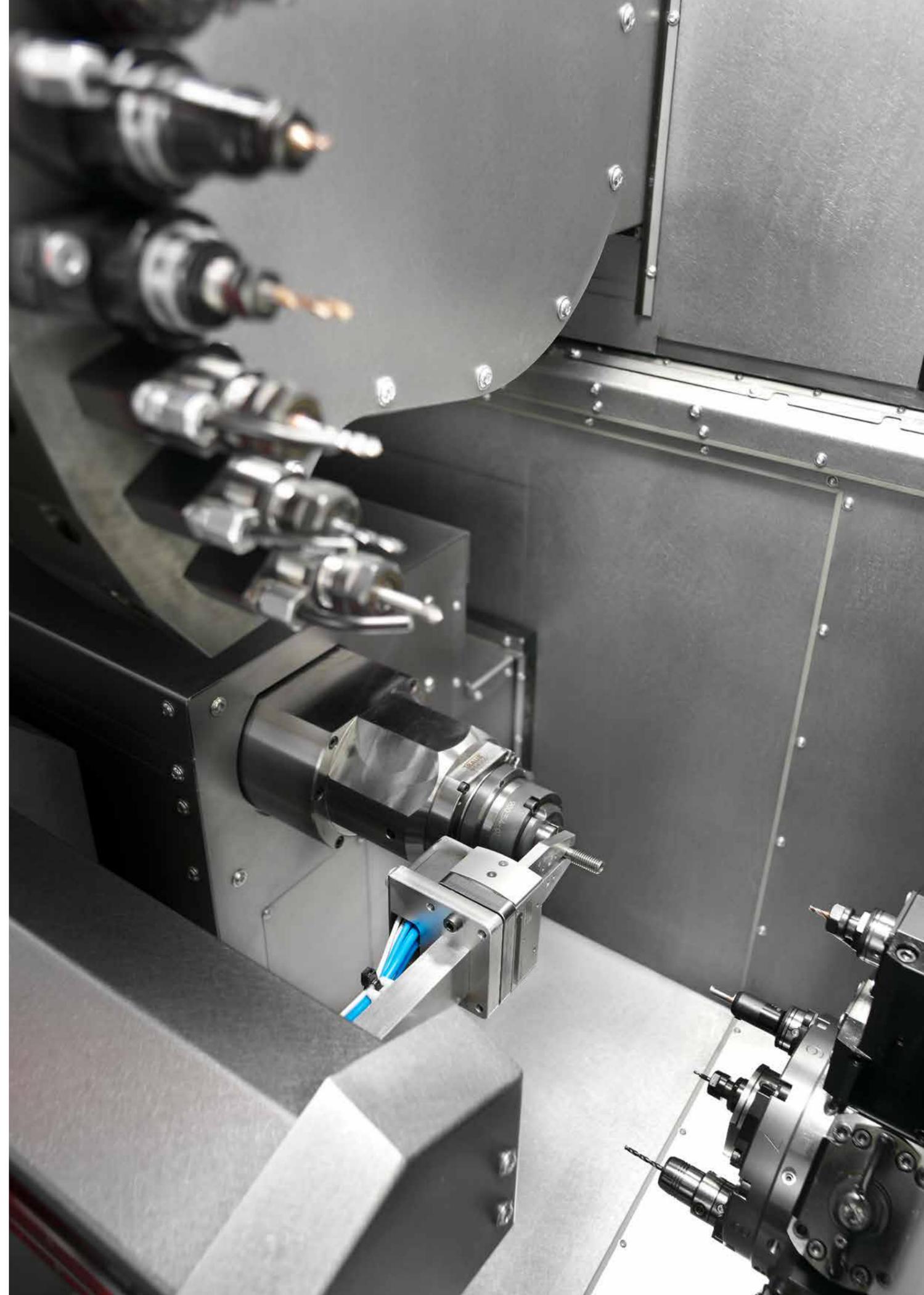
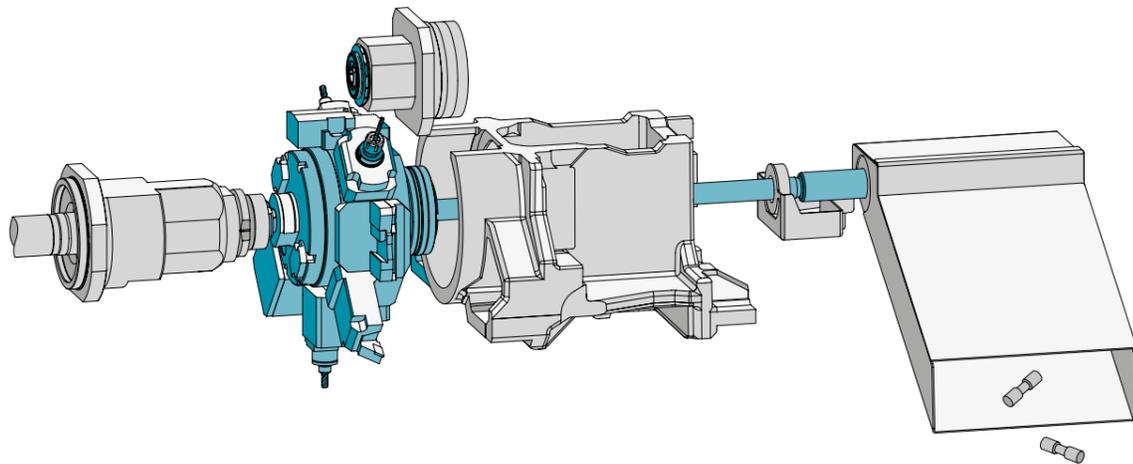
Workpiece discharge through counter spindle is available as an option to remove longer workpieces.



Flushing unit for workpieces

Small workpieces weighing up to approx. 150 g and up to 20 mm in diameter can be flushed out easily, quickly and gently from the counter spindle through the indexing shaft of the lower tool turret by means of an optional flushing unit.

A ring sensor monitors and confirms the safe discharge of the workpieces to the right into a workpiece container or onto an optional part conveyor belt.



Integrated robot cell *Xcenter*

Intelligent automation—even greater flexibility and cost-efficiency

With the optional robot cell, blanks and/or finished parts can be supplied and discharged quickly, safely, and flexibly. The robot cell is attached ergonomically to the machine. It can easily be moved to the left during the setup process, allowing unobstructed access to the work area of the machine. During production, the robot cell is fixed in front of the machine's work area. The robot gains access to the machine's work area through the work area door, which opens automatically behind the robot cell.



Simply good handling of blanks and finished parts

- 6-axis robot for 6 kg payload with integrated gripper control
- Space-saving vertical storage with up to 14 pallets stacked up
- Pallet size 400x300 mm
- Minimal pallet height 25.4 mm
- Pallets with blanks are loaded at the top, pallets with finished parts are removed from the bottom—at any time without interrupting production
- Robot performs Pallet insertion/removal
- Easy macro-programming
- Designed for output of SPC and NOK parts

Use more potentials

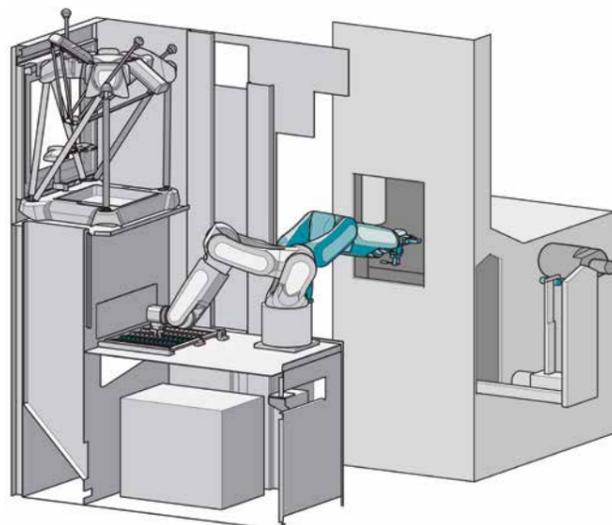
The space above the vertical storage can be used effortlessly for subsequent processes such as cleaning, measuring, deburring, etc. The integration of a measuring device allows for closed-loop process control.

Higher productivity

The vertical storage can optionally be extended to 22 pallets. By combining the robot with the machine's integrated workpiece removal unit, finished parts can be discharged during the machining process without opening the work area door.

Ready to go

- Double gripper included as standard
- 14/22 pallets (without workpiece-specific inlays) included as standard
- No separate installation and setup required
- Easy in-house relocation





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

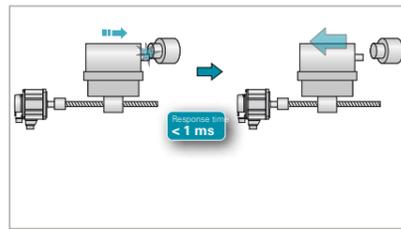


Focus on production and control—Industry 4.0 included

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 just as you require it for your business organization—that's Industry 4.0 tailored to suit your needs.

Future-proof:

TRAUB TX8i-s V8 optimally integrates iXpanel functionalities. Use iXpanel intuitively via a 19" touchscreen monitor.



Intelligent

- Overload and collision monitoring with electronic quick retraction
- Active on all TRAUB machines
- Minimizes damage to the machine
- Active counter control in case of malfunction
- Response time in the millisecond range by intelligent servo amplifier



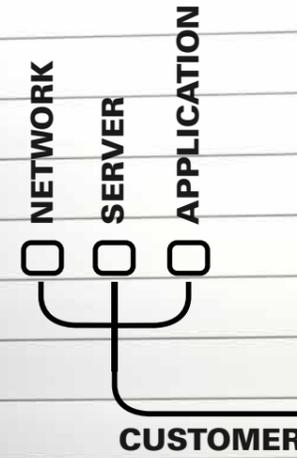
Productive

- Ergonomic interactive user interface for programming, editing, setup, and operation
- Online retrieval of manufacturing and setup information; remote access via VNC
- Graphics-supported interactive guidance, also during setup
- Comfortable process synchronization and optimization of program sequences of parallel machining processes
- Visual verification to avoid collision situations through graphical process simulation
- Highly sensitive tool breakage monitoring



Virtual & open

- with the TRAUB WinFlexIPS plus option
- Step-by-step parallel programming and simulation
- Extremely easy synchronization of machining sequences including up to 4 subsystems
- Cycle-time optimization already during programming
- Planning and optimization of a setup in manual/automatic mode just as on the machine
- 3D simulation and 3D collision detection provide for additional safety
- Optionally on an external PC and/or integrated in the control
- Third-party software can be installed via an optional gateway computer



19" TOUCHSCREEN MONITOR



STANDARD included as standard

OPTION

Industry 4.0 features

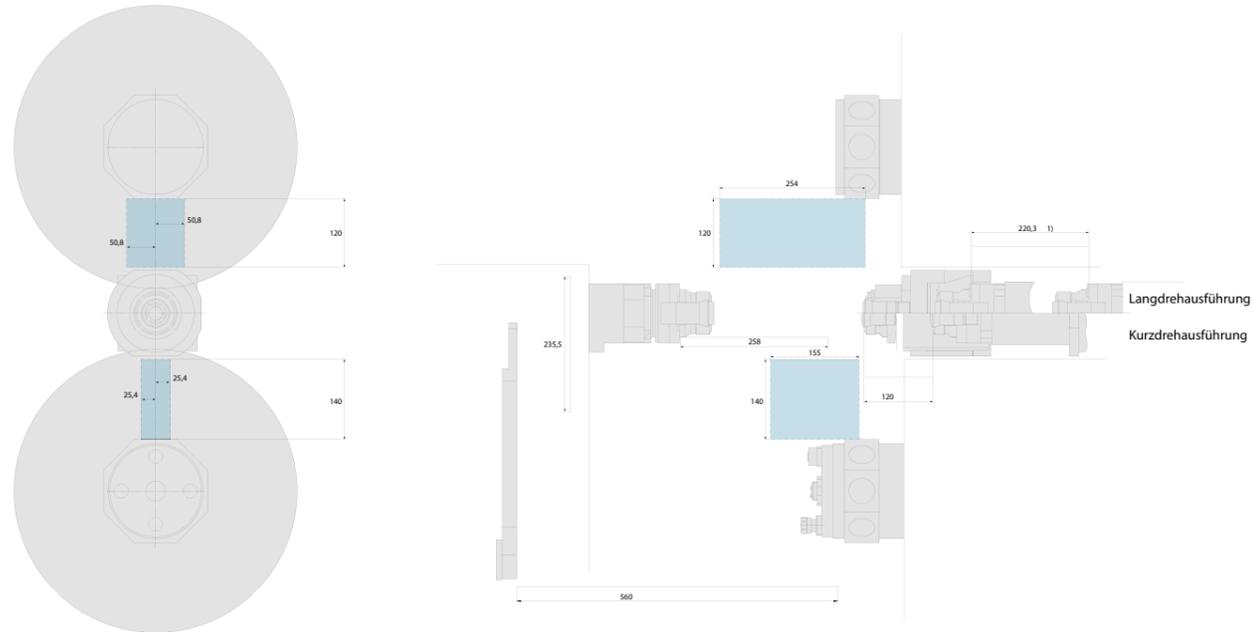
Job documents	Customer data	Browser	Drawings	Setup sheet
Notes	Information center	Remote access	User management	Technology computer
			Programming help	

- WinFlexIPS
- WinFlexIPS Plus
- Custom applications

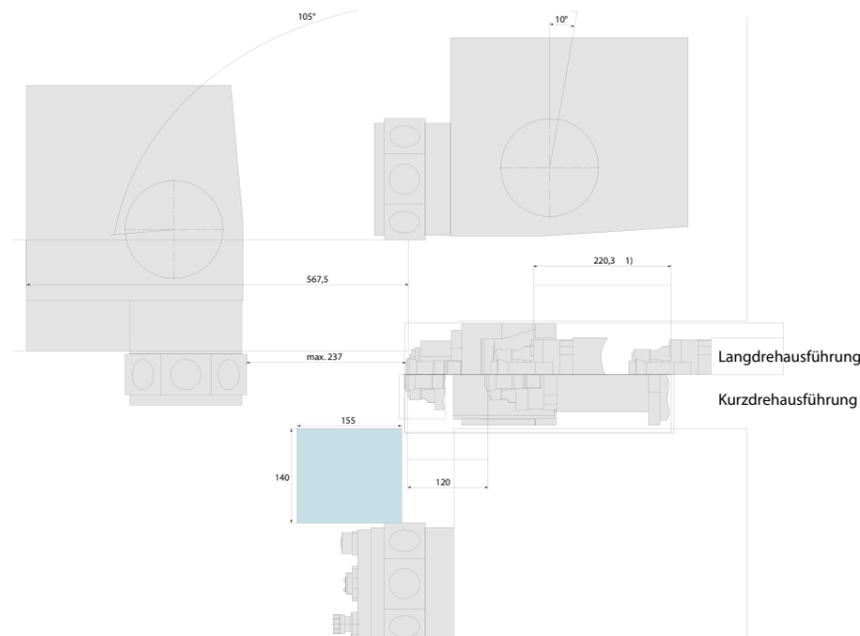
+ many more standard features

Sliding and fixed headstock automatic lathe TNL32 compact

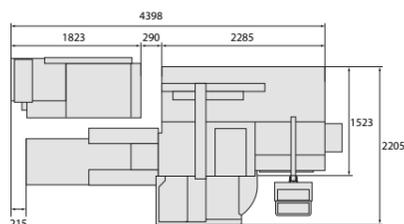
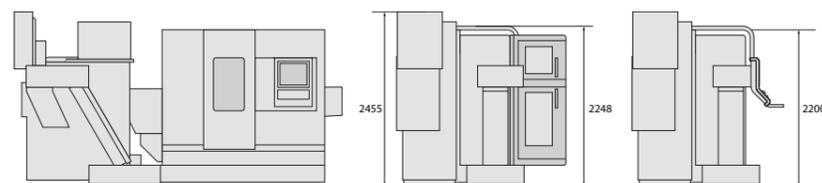
Work area TNL32-9 compact



Work area TNL32-9B compact



Installation plan TNL32 compact



Technical data

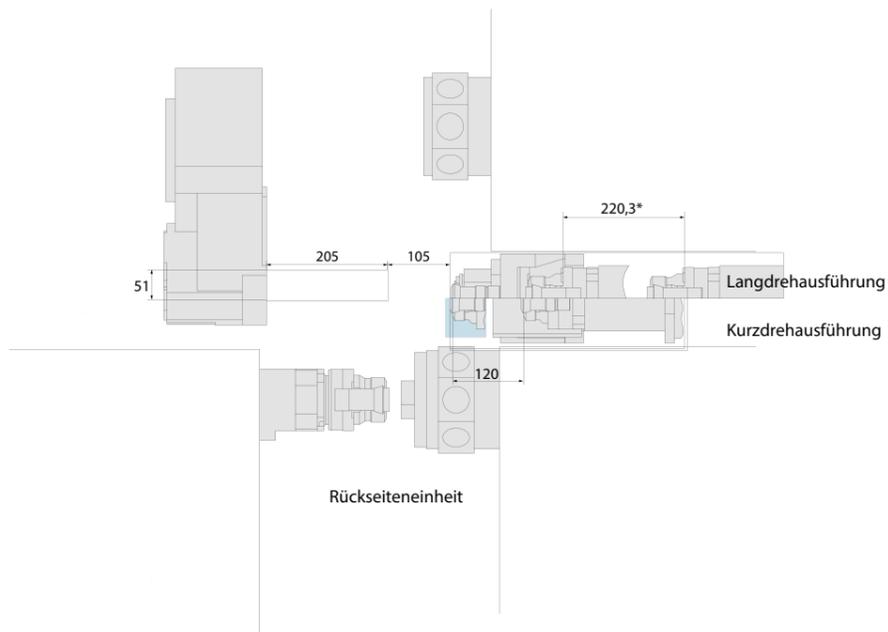
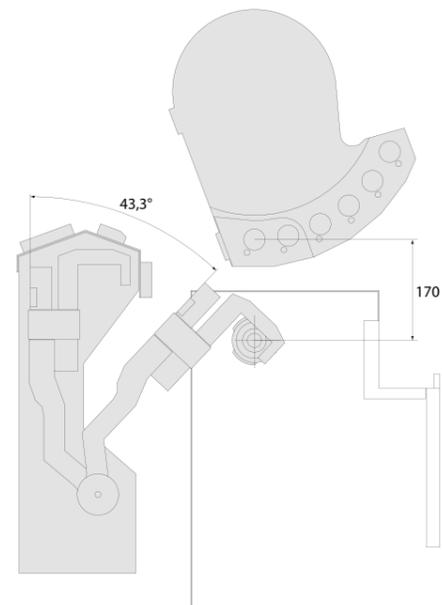
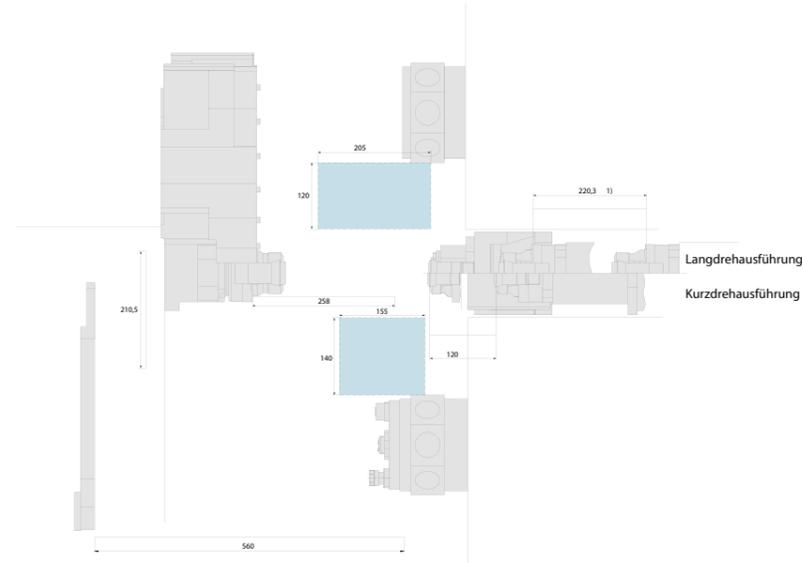
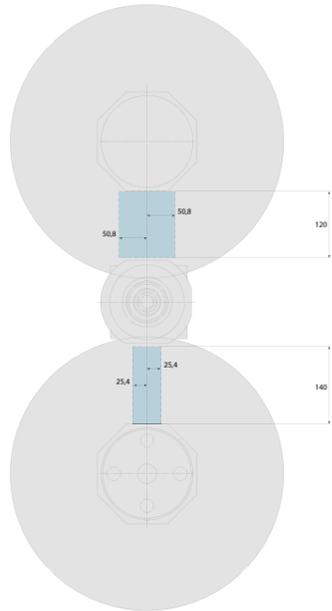
TNL32-9 compact

TNL32-9B compact

Main spindle			
Max. bar clearance	mm	32	32
Max. Z travel sliding headstock machine/fixed headstock machine	mm	¹⁾ 220.3 / 120	¹⁾ 220.3 / 120
Max. speed	rpm	8,000	8,000
Drive power 100% / 40% DC / max.	kW	9.9 / 13.6 / 18.3	9.9 / 13.6 / 18.3
Torque 100%/40% DC / max.	Nm	19 / 26 / 35	19 / 26 / 35
C axis resolution	degrees	0.001	0.001
Max. rapid traverse rate Z	m/min	25	25
Upper tool turret			
Tool mountings	Number	8	8
Live tools	Number	8	8
Max. speed	rpm	12,000	12,000
Mounting ø	mm	45	45
Drive power 100% / 40% DC Single drive	kW	1.0 / 2.8	1.0 / 2.8
Turning tool cross-section	mm	16x16 / 20x20	16x16 / 20x20
Slide travel X/Y/Z	mm	120 / ±50.8 / 254	165 / ±50.8 / 567.5
Rapid traverse rate X/Y/Z	m/min	22.5 / 25 / 25	22.5 / 25 / 50
B axis swivel angle	degrees		105
Lower tool turret			
Tool mountings	Number	8	8
Live tools	Number	8	8
Max. speed	rpm	12,000	12,000
Mounting ø	mm	45	45
Drive power 100% / 40% DC Overall drive	kW	1.5 / 4.1	1.5 / 4.1
Turning tool cross-section	mm	16x16 / 20x20	16x16 / 20x20
Slide travel X/Y/Z	mm	140 / ±25.4 / 155	140 / ±25.4 / 155
Rapid traverse rate X/Y/Z	m/min	24 / 25 / 25	24 / 25 / 25
Rear end machining unit			
Tool mountings	Number	4	4
Slide travel X/Y/Z	mm	140 / ±25.4 / 155	140 / ±25.4 / 155
Mounting ø	mm	25	25
Counter spindle			
Max. spindle clearance	mm	32	32
Max. speed	rpm	8,000	8,000
Drive power 100%/40% DC max.	kW	9.9 / 13.6 / 18.3	9.9 / 13.6 / 18.3
Torque 100%/40% DC max.	Nm	19 / 26 / 35	19 / 26 / 35
Slide travel X / Z	mm	235.5 / 258	235.5 / 258
C axis resolution	degrees	0.001	0.001
Rapid traverse rate X / Z	m/min	24 / 25	24 / 25
Cooling lubricant system base unit			
Pump pressure	bar	3 / 8	3 / 8
Tank capacity	l	600	600
Pump capacity 3/8 bar	l/min	45 / 80	45 / 80
Degree of filtration	µm	50	50
Machine dimensions			
Length x width x height	mm	see installation chart*	
Weight	kg	5,300*	
Connected power	kW	40 (47 kVA)	

* Depending on equipment

¹⁾ The headstock stroke depends on the clamping device used



Technical data

TNL32-11 compact

Main spindle		
Max. bar clearance	mm	32
Max. Z travel sliding headstock machine/fixed headstock machine	mm	¹⁾ 220.3 / 120
Max. speed	rpm	8,000
Torque at 100% / 40% DC	kW	9.9 / 13.6 / 18.3
Torque 100%/40% DC	Nm	19 / 26 / 35
C axis resolution	degrees	0.001
Max. rapid traverse rate Z	m/min	25
Upper tool turret		
Tool mountings	Number	8
Live tools	Number	8
Max. speed	rpm	12,000
Drive power 100% / 40% DC Single drive	kW	1.0 / 2.8
Mounting ø	mm	45
Turning tool cross-section	mm	16x16 / 20x20
Slide travel X/Y/Z	mm	120 / ±50.8 / 205
Rapid traverse rate X/Y/Z	m/min	22.5 / 25 / 25
Lower tool turret		
Tool mountings	Number	8
Live tools	Number	8
Max. speed	rpm	12,000
Drive power 100% / 40% DC Overall drive	kW	1.5 / 4.1
Mounting ø	mm	45
Turning tool cross-section	mm	16x16 / 20x20
Slide travel X/Y/Z	mm	140 / ±25.4 / 155
Rapid traverse rate X/Y/Z	m/min	24 / 25 / 25
Front end machining unit		
Tool mountings	Number	6
Live tools	Number	3
Mounting ø	mm	36
Max. speed	rpm	12,000 (stations 2+4) / 6,000 (station 3)
Torque at 100% / 25% DC	kW	1.5 / 3.0
Slide travel X/Y/Z	mm	51 / ±13 (interpolated) / 205
Rapid traverse rate X / Z	m/min	22.5 / 25
Rear end machining unit		
Tool mountings	Number	4
Slide travel X/Y/Z	mm	140 / ±25.4 / 155
Mounting ø	mm	25
Counter spindle		
Max. spindle clearance	mm	32
Max. speed	rpm	8,000
Torque at 100% / 40% DC	kW	9.9 / 13.6 / 18.3
Torque 100%/40% DC	Nm	19 / 26 / 35
Slide travel X / Z	mm	210.5 / 258
C axis resolution	degrees	0.001
Rapid traverse rate X / Z	m/min	24 / 25
Cooling lubricant system base unit		
Pump pressure	bar	3 / 8
Tank capacity	l	600
Pump capacity 3/8 bar	l/min	45 / 80
Degree of filtration	µm	50
Machine dimensions		
Length x width x height	mm	see installation chart*
Weight	kg	5,700*
Connected power	kW	40 (47 kVA)

* Depending on equipment

1) The headstock stroke depends on the clamping device used



BRAZIL | Sorocaba
INDEX Tornos Automaticos Ind. e Com. Ltda.
Rua Joaquim Machado 250
18087-280 Sorocaba - SP
Phone +55 15 2102 6017
info@index-traub.com.br
www.index-traub.com.br

CHINA | Shanghai
INDEX Trading (Shanghai) Co., Ltd.
No. 526, Fute East 3rd Road
Shanghai 200131
Phone +86 21 54176637
info@index-traub.cn
www.index-traub.cn

CHINA | Taicang
INDEX Machine Tools (Taicang) Co., Ltd.
1-1 Fada Road, Building no. 4
Ban Qiao, Cheng Xiang Town
215413 Taicang, Jiangsu
Phone +86 512 5372 2939
taicang@index-traub.cn
www.index-traub.cn

DENMARK | Langskov
INDEX TRAUB Danmark
Havretoften 1
5550 Langskov
Phone +45 30681790
info@index-traub.dk
www.index-traub.dk

GERMANY | Esslingen
INDEX-Werke GmbH & Co. KG Hahn & Tessky
Plochinger Strasse 92
73730 Esslingen
Phone +49 711 3191-0
info@index-werke.de
www.index-werke.de

GERMANY | Deizisau
INDEX-Werke GmbH & Co. KG Hahn & Tessky
Plochinger Strasse 44
73779 Deizisau
Phone +49 711 3191-0
info@index-werke.de
www.index-werke.de

GERMANY | Reichenbach
INDEX-Werke GmbH & Co. KG Hahn & Tessky
Hauffstrasse 4
73262 Reichenbach
Phone +49 7153 502-0
info@index-werke.de
www.index-werke.de

FINLAND | Helsinki
INDEX TRAUB Finland
Hernepellontie 27
00710 Helsinki
Phone +358 10 843 2001
info@index-traub.fi
www.index-traub.fi

FRANCE | Paris
INDEX France S.à.r.l
12 Avenue d'Ouessant
Bâtiment I
91140 Villebon sur Yvette
Phone +33 1 69 18 76 76
info@index-france.fr
www.index-france.fr

FRANCE | Bonneville
INDEX France S.à.r.l
399, Av. de La Roche Parnale
74130 Bonneville Cedex
Phone +33 4 50 25 65 34
info@index-france.fr
www.index-france.fr

NORWAY | Oslo
INDEX-TRAUB Norge AB
Liadammen 23
1684 Vesterøy
Phone +47 93080550
info@index-traub.no
www.index-traub.no

SWEDEN | Stockholm
INDEX Nordic AB
Fagerstagatan 2
16308 Spånga
Phone +46 8 505 979 00
info@index-traub.se
www.index-traub.se

SWITZERLAND | St-Blaise
INDEX Werkzeugmaschinen (Schweiz) AG
Av. des Pâquiers 1
2072 St-Blaise
Phone +41 32 756 96 10
info@index-traub.ch
www.index-traub.ch

SLOVAKIA | Malacky
INDEX Slovakia s.r.o.
Vinohradok 5359
901 01 Malacky
Phone +421 34 286 1000
info@index-werke.de
sk.index-traub.com

U.S.A. | Noblesville
INDEX Corporation
14700 North Pointe Boulevard
Noblesville, IN 46060
Phone +1 317 770 6300
info@index-usa.com
www.index-usa.com

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INDEX

**INDEX-Werke GmbH & Co. KG
Hahn & Tessky**

Plochinger Strasse 92
D-73730 Esslingen, Germany

Phone +49 711 3191-0
Fax +49 711 3191-587
info@index-werke.de
www.index-werke.de