CNC swiss- and non-swiss

turning center

TNL32

TRAUB

Thanks to the outstanding technical features of the TRAUB TNL32 CNC swiss- and non-swiss turning center, you will notice measurable improvements in production. Just take the turrets designed as NC rotary axes, for example. Not only is their indexing extremely fast, they can also be freely positioned without any mechanical locks required. This allows the use of multiple tools, which in turn reduces the chip-to-chip times and increases the tool pool in the work area.

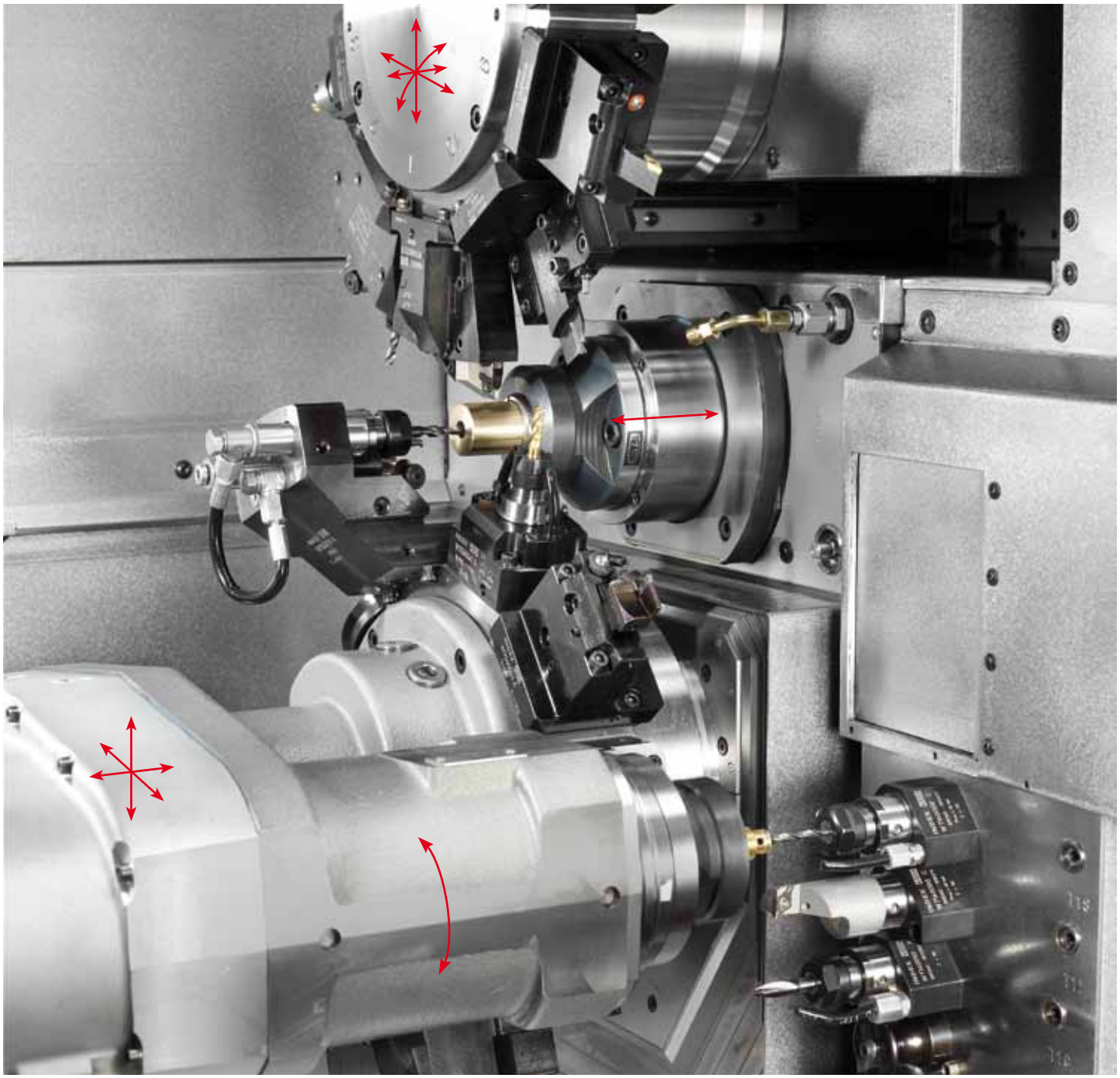
The advantage is that you don't have to do as much setting up, which results in higher productivity.

New solutions open up

new possibilities

TNL32

Ideal for any production task



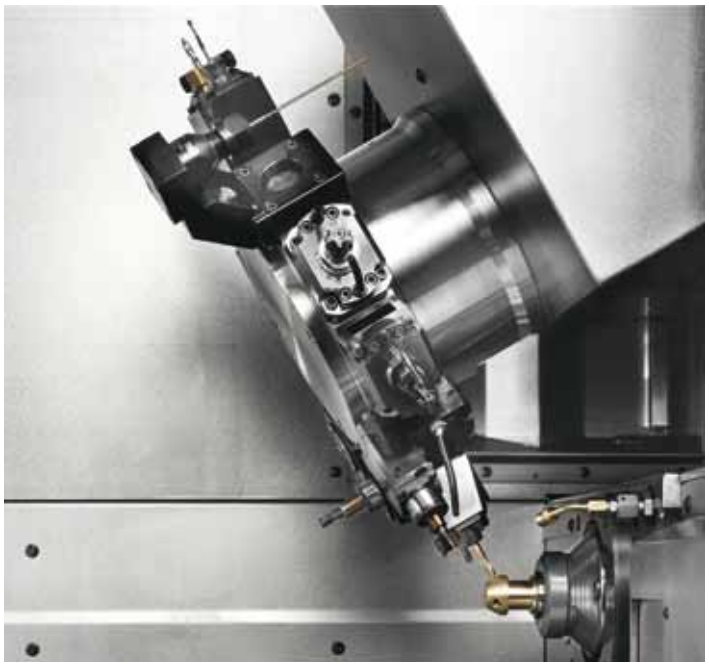
The new machine design of the TNL32 was tuned to meet the varied requirements of typical long-turned and short-turned parts.

This design gives you a range of benefits:

- Simultaneous machining with up to 3 tools (each tool with variable feed rate)
- Clearly structured work area with large axis travels and wide tooling circles
- Excellent accessibility through a large sliding cover
- Easy change-over between sliding and fixed headstock operation
- Very compact, low footprint machine design
- Highest precision due to thermal symmetric machine structure

The interaction

of systems

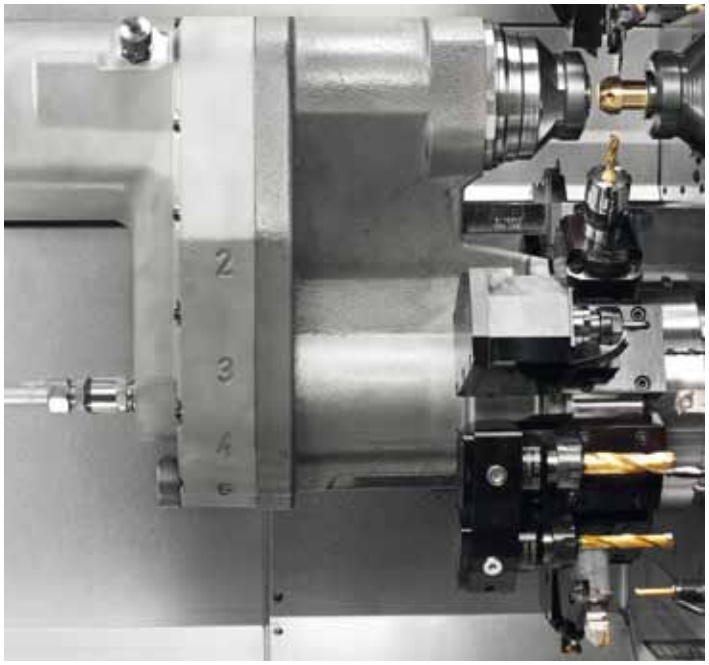


Main spindle

- Highly dynamic motor spindle in synchronous design
- Fast acting C-axis positioning for short times per piece
- Fluid cooling contributes to thermal stability
- High performance ensures large chip volume
- Smart headstock design with large Z-axis travel allows the use as both a sliding and fixed headstock lathe

Top tool carrier

- 10 tool stations
- Optional with B-axis
- Powerful tool drive on all stations
- Large X/Y/Z-axis travels
- Turret indexing designed as an NC rotary axis (without mechanical lock) allows positioning at any angle
- Chip-to-chip times comparable to those with a linear tool carrier
- Each station can be equipped with multiple tool holders



Rear end maching unit

- 8 tool stations
- Large travels of counter spindle allow multiple allocations
- The special drive design provides the choice of high speeds or high torque
- Integrated workpiece discharge by workpiece gripper

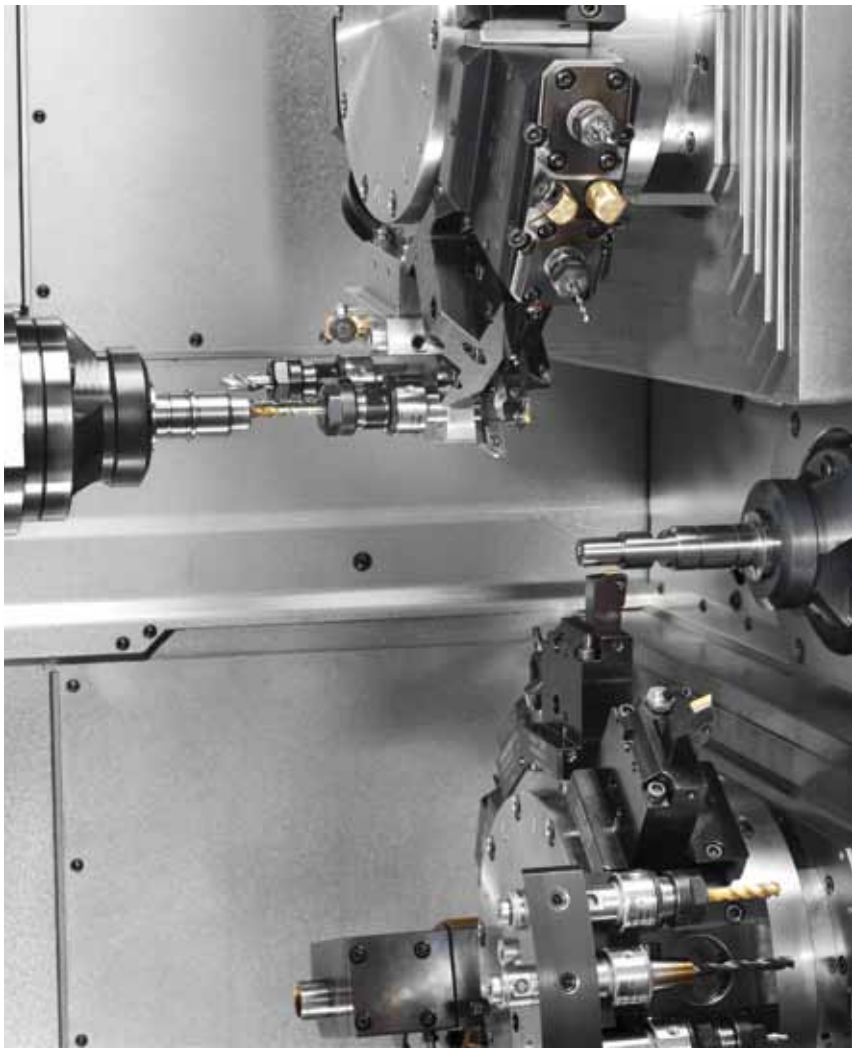
Counter spindle with bottom tool carrier

- Powerful counter spindle with large axis travels in the X/Y/Z axes and integrated tool carrier with 9 stations
- Fast acting C-axis positioning
- Spindle positioning in 3 axes results in ultimate transfer accuracy
- Three-axis rear end machining for parts with complex geometry
- Tool carrier adapted to counter spindle allows simultaneous machining on the main spindle with two independent tools

TNL32

for even more

flexibility

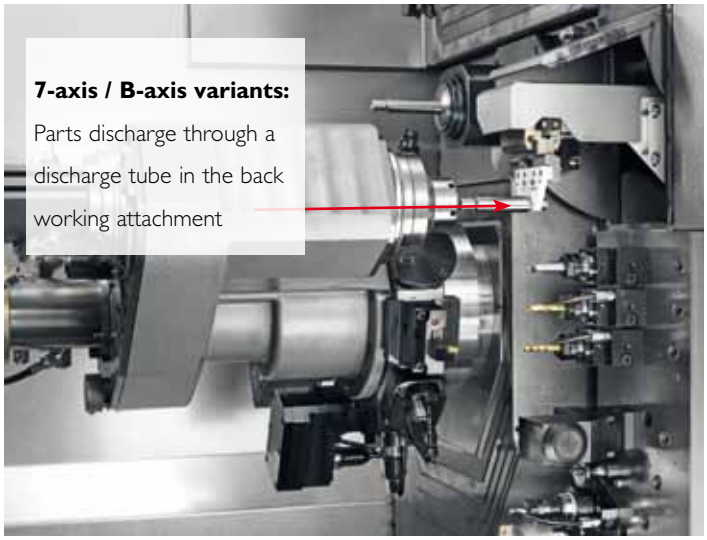


The TNL32's enhanced machine concept has an autonomous counter spindle and 9 NC axes.
This concept offers you comprehensive machining options up to a bar clearance of 32 mm.
A counter spindle identical to the main spindle is mounted on a separate X-Z cross-slide, providing a Z travel range of 300 mm.
140 mm of X-axis stroke ensure simultaneous internal machining on the main and counter spindles.

Here, too, you will benefit from:

- Easy changeover between sliding and fixed headstock operation
- Excellent accessibility through a large sliding cover
- Clearly structured work area with large axis travels
- Turret indexing using an NC rotary axis
- Ultimate precision by thermo-symmetrical machine design

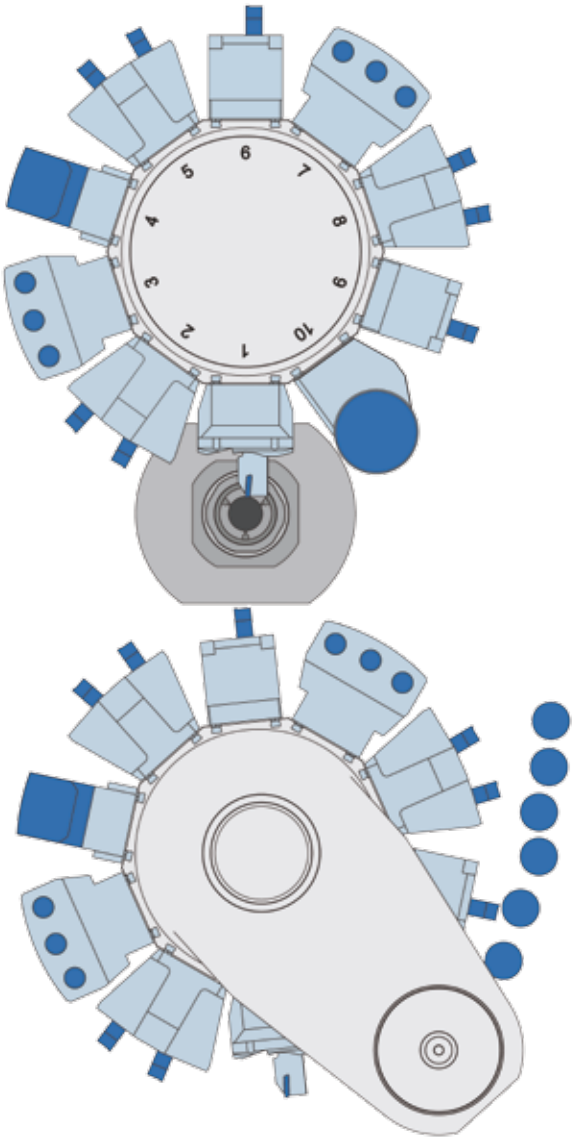
Parts removal



7-axis / B-axis variants:
Parts discharge through a discharge tube in the back working attachment

9-axis variant
Parts discharge to the right through machine partition or to the left through the counter spindle

This makes the tool carriers so special



Turret indexing with NC rotary axis

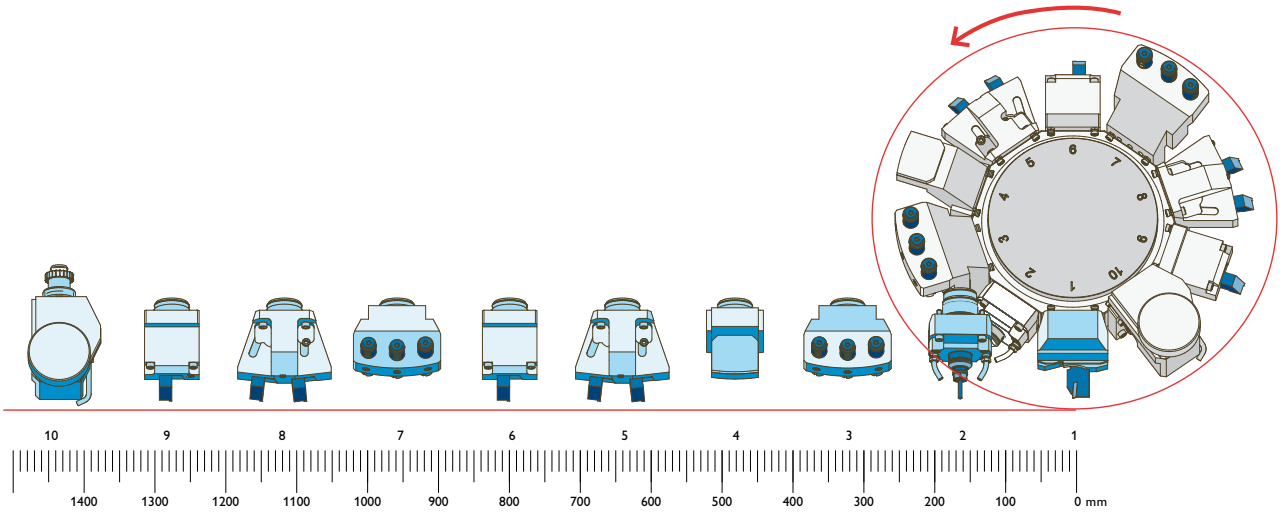
The newly designed tool carriers are a highlight of the TNL32. For the first time, the rotary motion is executed by an NC axis without any mechanical locks. This allows you to position both the turret and the counter spindle very fast at any angle.

Counter spindle with unique kinematics

The innovative TRAUB counter spindle is mounted on an X/Y/Z cross-slide that simultaneously carries the bottom turret.

Large tool stock

The tooling circle corresponds to remarkable 1444 mm of Y-travel unwrapped, beating any linear tool carrier.



The tool drive

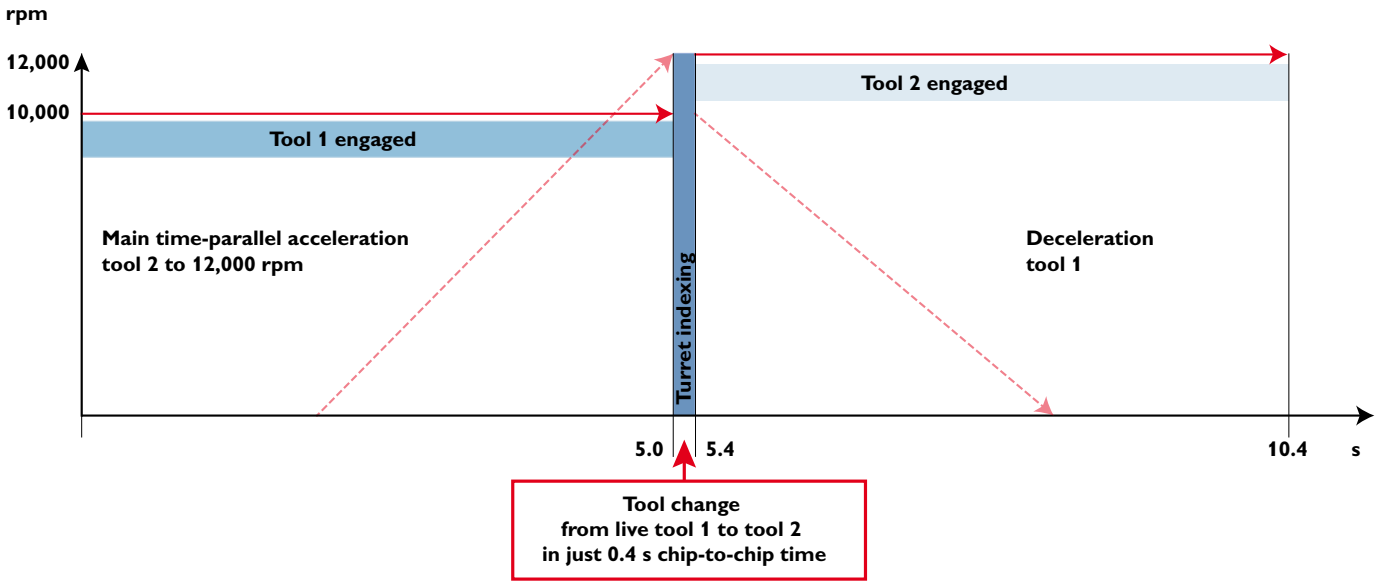
for short

chip-to-chip times

Dual Drive System –

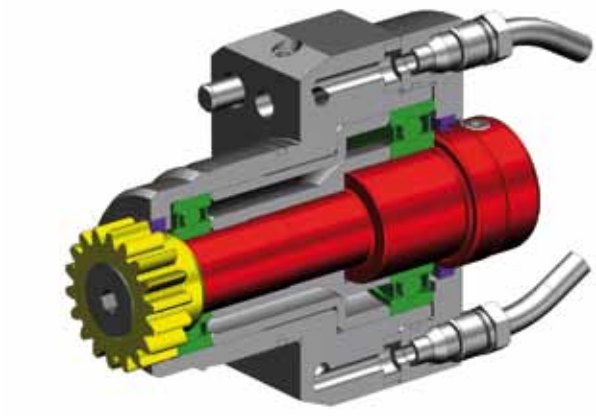
The new drive system from TRAUB, in which the speed for the follow-up tool is ramped up during main time.

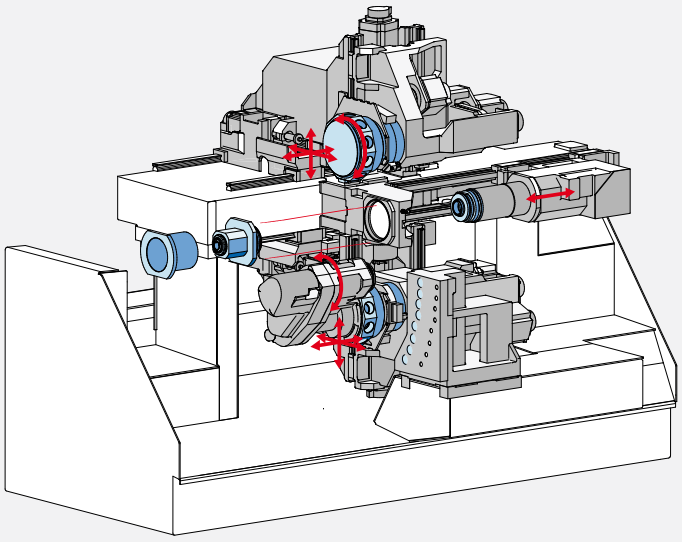
- Moderate acceleration as well as gentle braking ensure a long service life for the tool holders
- Time savings during the power-up time of the tools



Innovative tool mounting system

The new compact shaft system provides significantly higher rigidity, resulting in longer life cycles and improved surface quality.



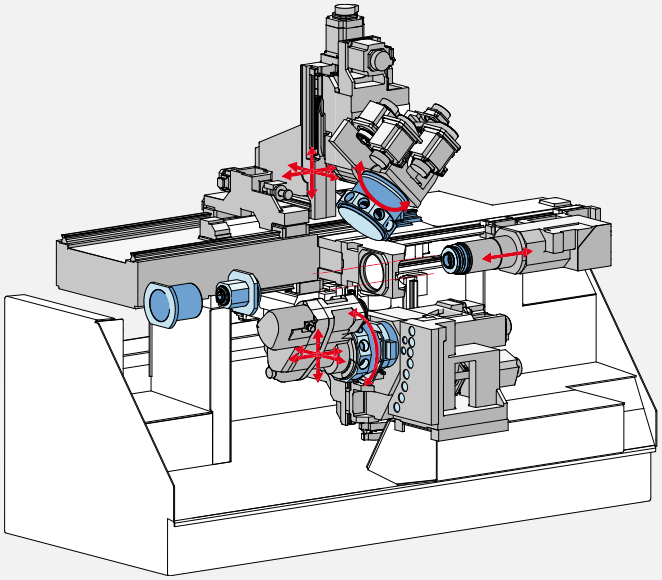


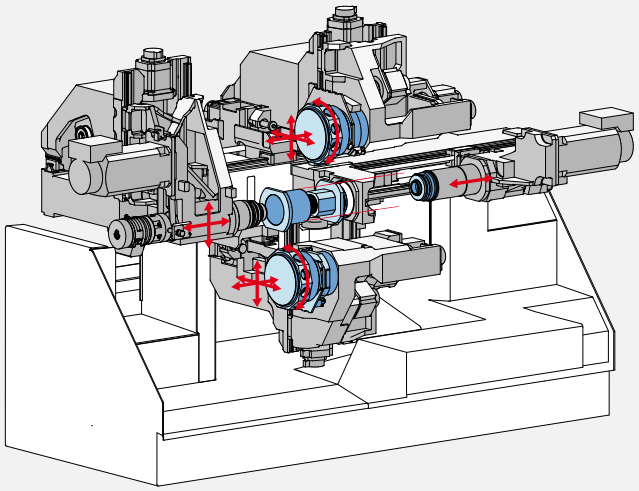
		TNL32-7
Main spindle drive		Motorized spindle / Belt spindle
Headstock		
Max. bar capacity		32
Max. Z stroke	swiss - / non swiss turning center	305 / 127
Counter spindle		with bottom tool
Max. bar capacity		32
Max. X/Z-travel		140 / 320
Top turret		
Stations		10
Axes		X / Y / Z
Bottom turret		
Stations		9
Axes		X / Y / Z
Rear end machining unit		
Stations		8
Number of sub-systems		3
Number of tools		
Maximum simultaneously engaged		2 (3)
Number of CNC linear axes		**7**
Tool pool		27
Max. number of tools	with 2/3-slot tool holders	46
Tool shank Ø turret		45
Tool shank Ø rear end mach. unit		36

Three variants,

as diverse as your

requirements



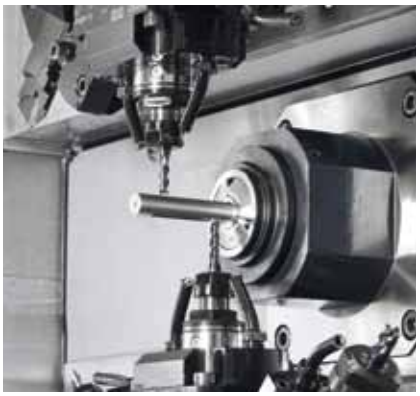


TNL32-7B	TNL32-9
Motorized spindle	Belt spindle
32 305 / 127	32 305 / 127
with bottom tool 32 140 / 320	autonomous 32 140 / 300
10 X / Y / Z / B	10 X / Y / Z
9 X / Y / Z	10 X / Y / Z
8	
3	3
2 (3)	2 (3)
7	**9**
27	20
46	40
45	45
36	

Simultaneous machining on the main spindle

- Turning, milling, cross-drilling
- Headstock function
- Thread chasing without material return through the autonomous Z-axis

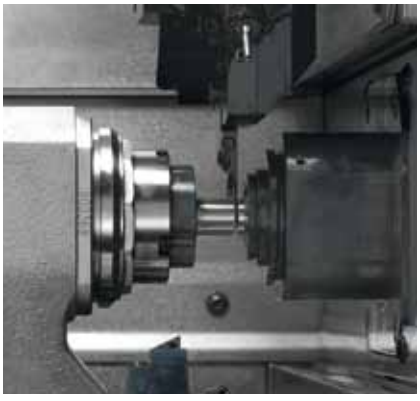
Sample applications for variants -7, -7B, -9

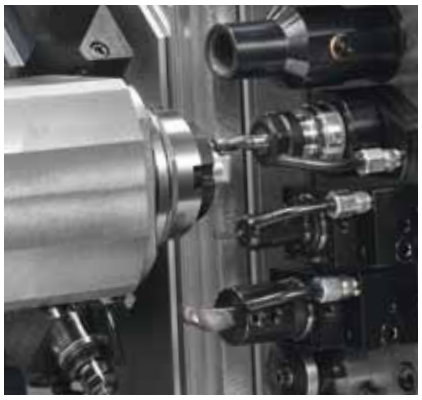


Highly accurate and complex rear end machining

- Precise pick-up position programmable
- Three-axis rear end machining for parts with complex geometry
- Up to 3 tools being used simultaneously

Sample applications for variants -7, -7B





Brilliant for a broad part spectrum – from simple to highly complex

The additional machining capabilities of the B-axis

- Contour machining with precise tool position
- Production of inclined holes and surfaces with standard tool holders
- Line-by-line milling of complex contours

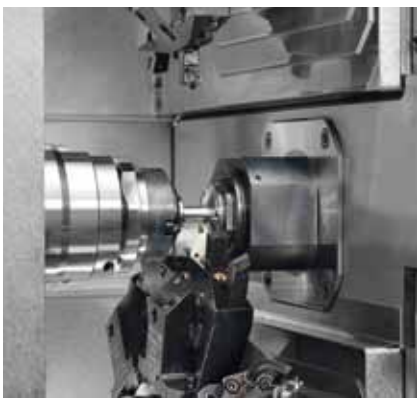
Sample applications for the -7B variant

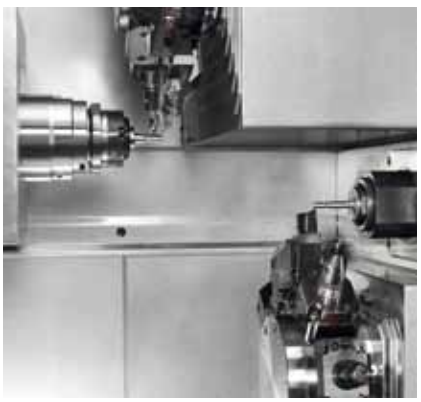
Simultaneous machining with two tool turrets

- Also on the counter spindle
- Turning, milling, cross-drilling
- X-axis in the counter spindle ensures large clearance with simultaneous internal machining on the main and counter spindle
- Use of larger thread rolling heads

Parts discharge through the counter spindle

- Particularly well-suited for very long parts





Sample applications for the -9 variant

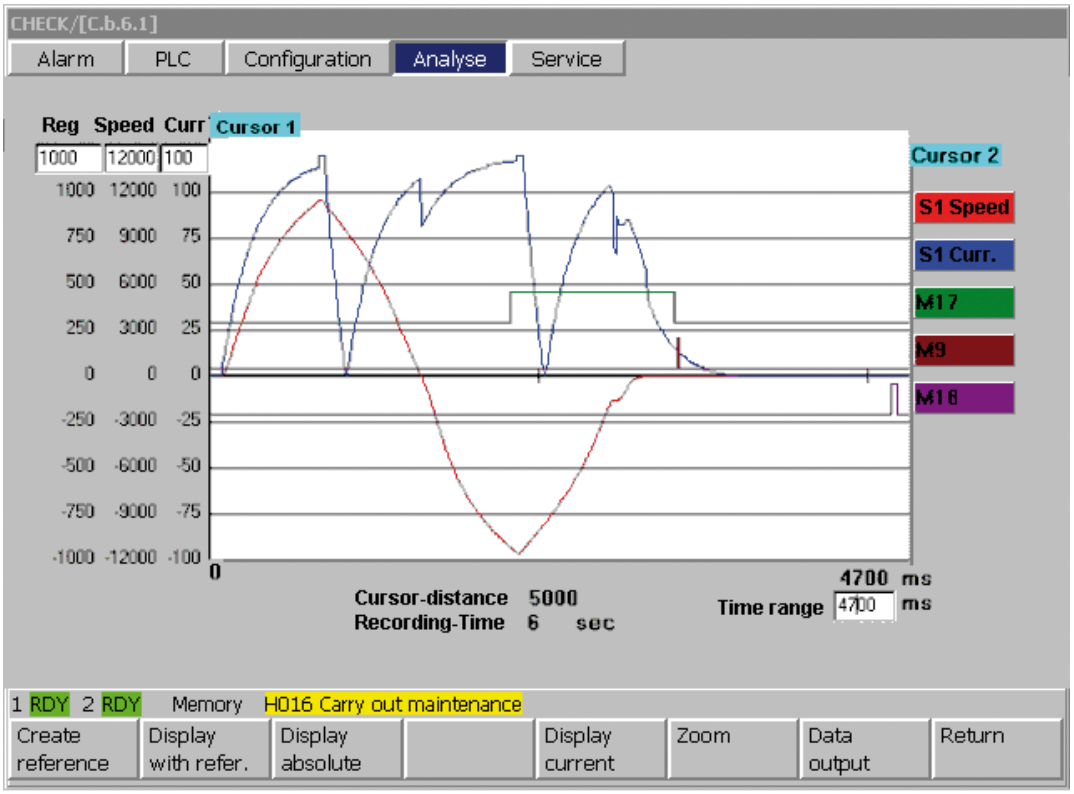
CNC control

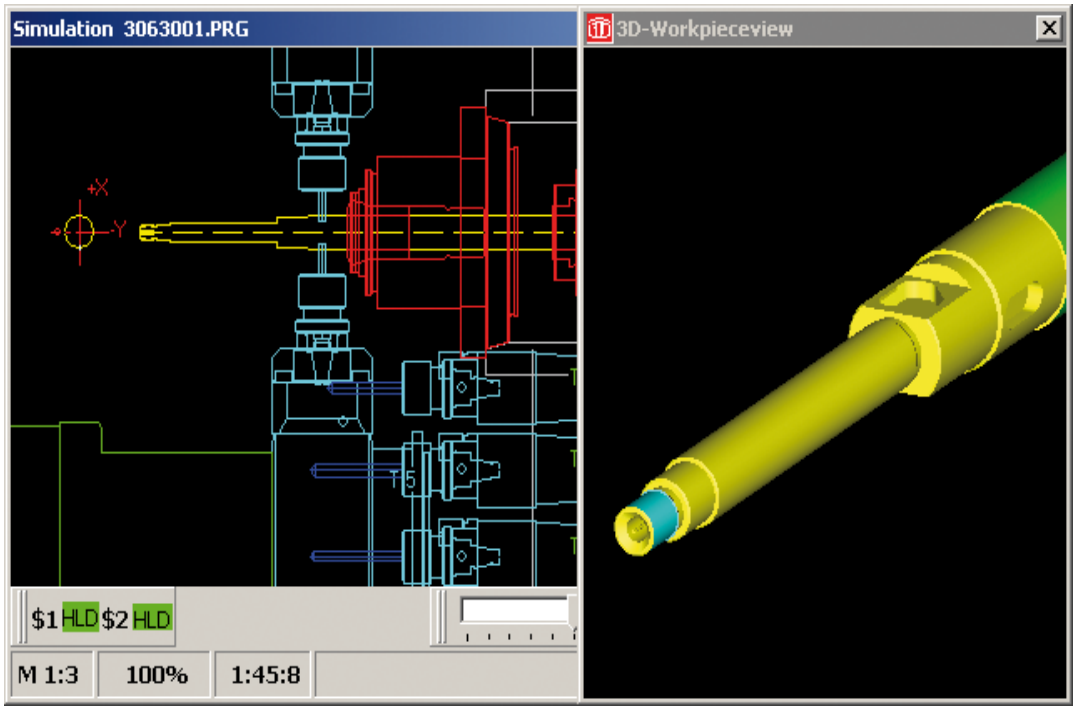
Ergonomic interactive user interface for programming, editing, setup and operation

- Graphics-supported interactive guidance also during setup
- Comfortable process synchronization and optimization of the program sequences of parallel machining processes
- Visual control to avoid collision situations through graphical process simulation
- Highly sensitive tool breakage monitoring
- Large 15" display

Diagnostic features

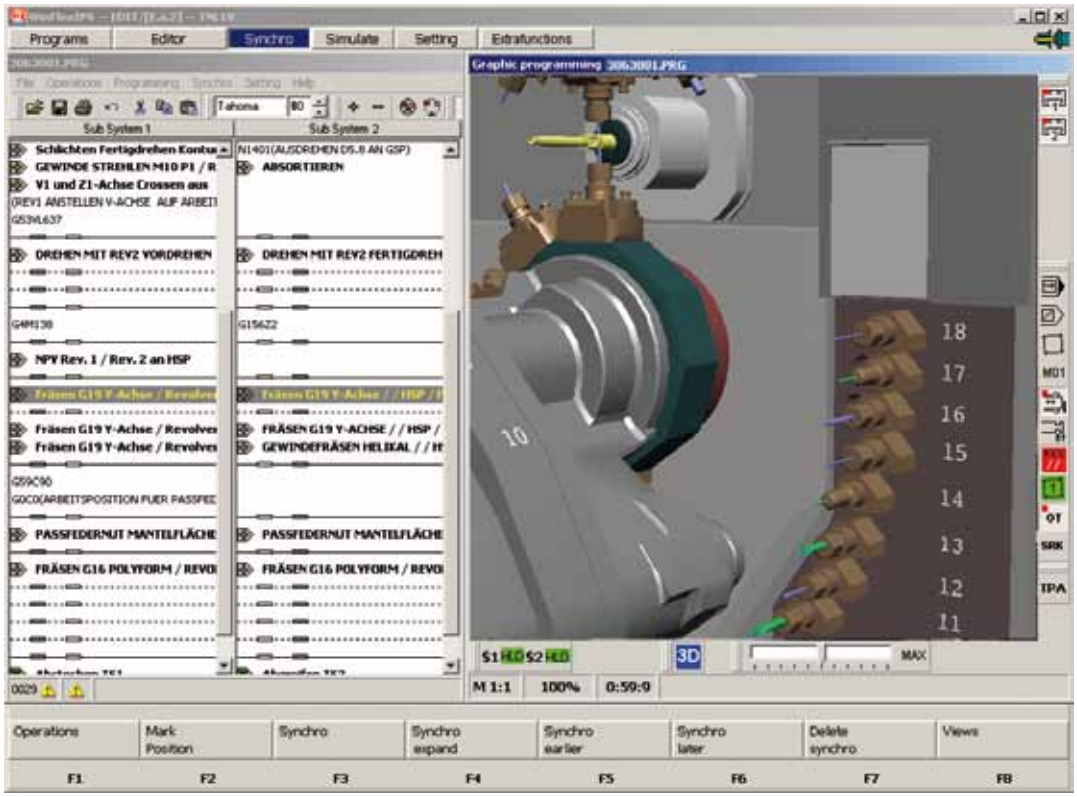
- Ongoing recording of relevant analog and digital signals and data; their flow can be displayed and compared with other recordings at any time
- Alarm messages with detailed clear-text information
- Quick location and elimination of cause of malfunction





Programming, optimization, simulation

- Realistic real-time simulation for shorter setup times
- 3D workpiece display as standard feature
- Graphical display of the working sequences
- Visual collision check before the machine is run in

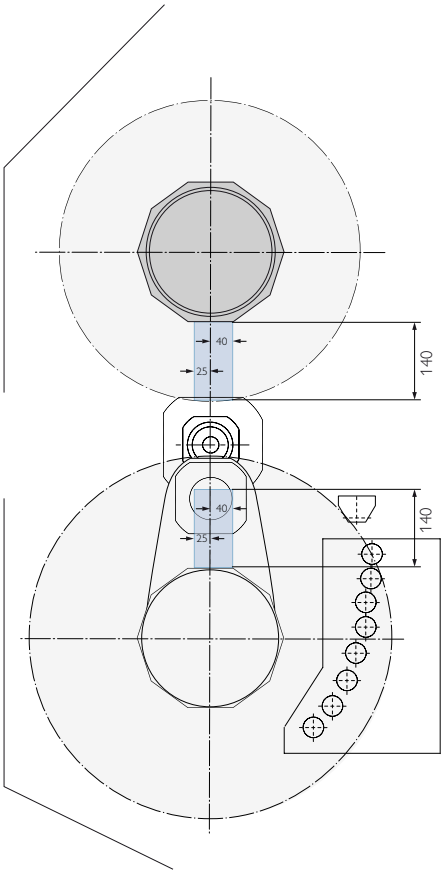


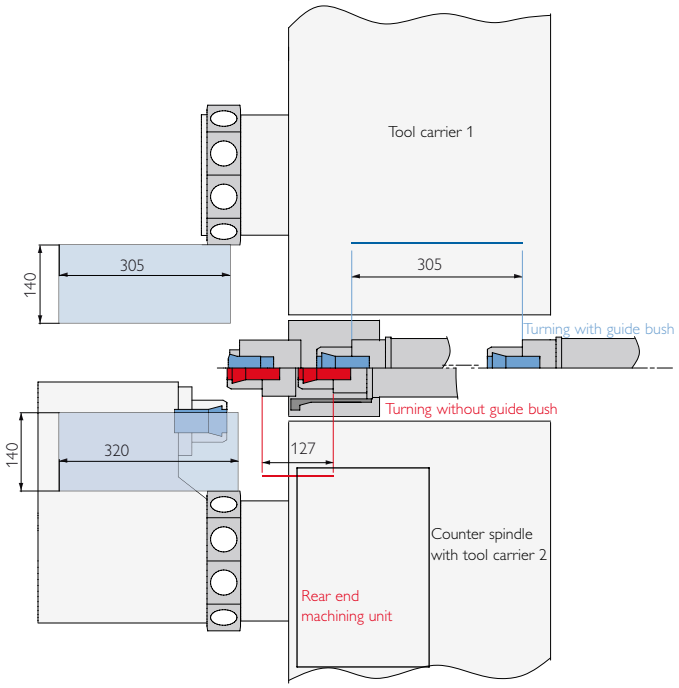
External programming

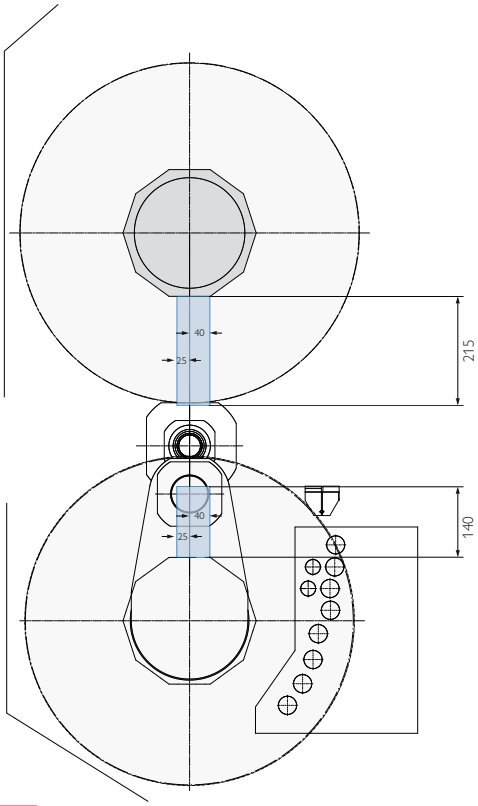
TRAUB WinFlexIPS^{Plus} (option)

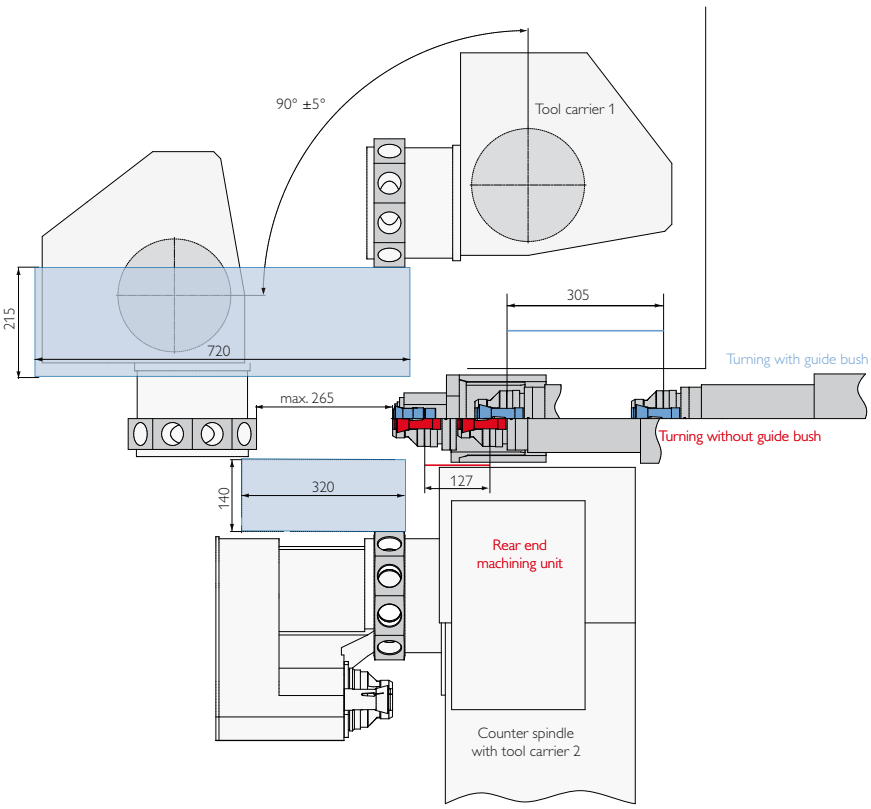
- Step-by-step parallel programming and simulation possible
- Extremely easy synchronization of machining sequences with 2 sub-systems
- Cycle-time optimization already during programming
- Planning and optimization of the setup operation using "Manual mode" and "Automatic mode" functions corresponding to the real machine
- 3D simulation and calculation check provide additional safety
- Optionally as PC version and / or integrated in the control

Work area: TNL32-7 and TNL32-7B







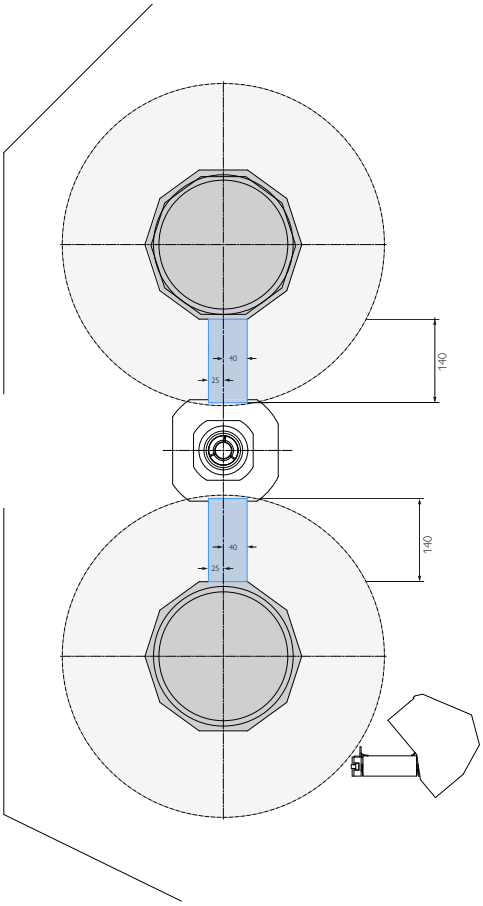


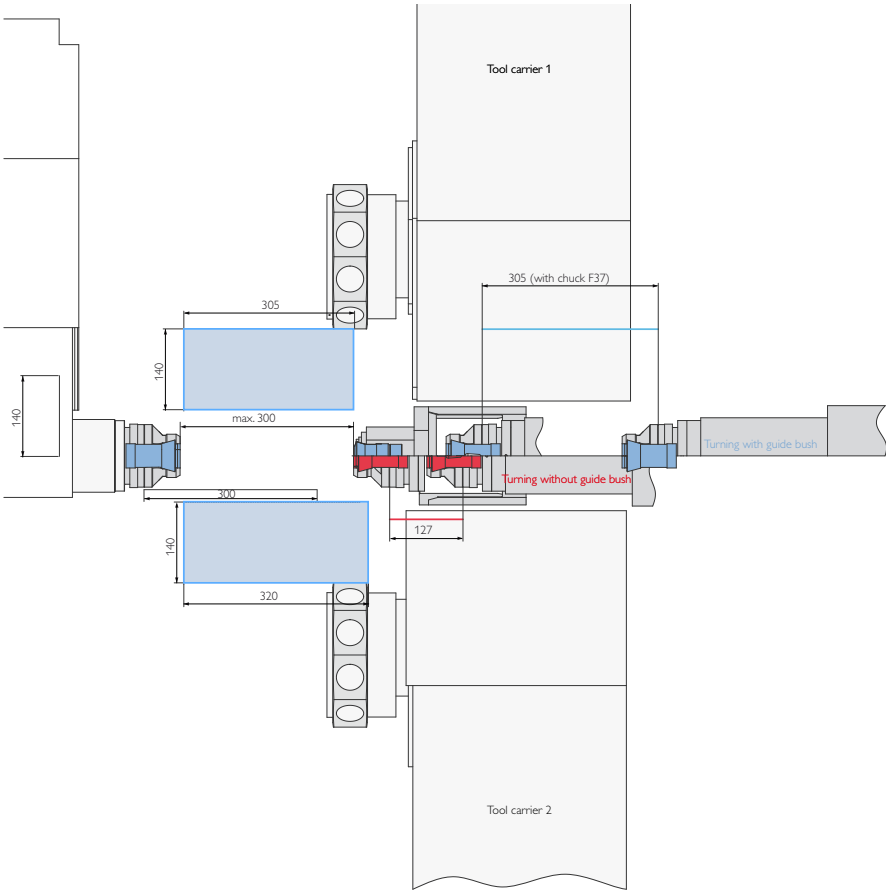
Technical data

		TNL32-7 Motorized spindle	TNL32-7 Belt spindle	TNL32-7B
Headstock				
Max. bar capacity	mm	32		32
Max. Z-travel Swiss- and non swiss turning center	mm	305 / 127*		305 / 127
Max. speed	rpm	8000	6400	8000
Power at 100%/40%	kW	6.7 / 10.7	3.7 / 5.5	6.7 / 10.7
Torque at 100%/40%	Nm	21 / 32	29.4 / 43.7	21 / 32
C-axis resolution	Degrees	0.001		0.001
Max. rapid traverse rate Z	m/min	20		20
*Non swiss turning center				
Top tool turret				
Tool mountings	Number	10		10
Driven tools	Number	10		10
Max. speed	rpm	12000		12000
Mounting-ø	mm	45		45
Power at 100%/20%	kW	1.5 / 3.4		1.5 / 3.4
Turning tool cross-section	mm	16 x 16		16 x 16
Slide travel X	mm	140		215
Slide travel Y	mm	-40 / +25		-40 / +25
Slide travel Z	mm	305		720
Rapid traverse rate X / Y / Z	m/min	20 / 20 / 20		20 / 20 / 40
Chip-to-chip time	s	<0.3		<0.3
Swievel angle B	Degrees	-		100
Bottom tool turret				
Tool mountings	Number	9		9
Driven tools	Number	9		9
Max. speed	rpm	12000		12000
Power at 100%/40%	kW	1.5 / 3.4		1.5 / 3.4
Mounting-ø	mm	45		45
Turning tool cross-section	mm	16 x 16		16 x 16
Slide travel X	mm	140		140
Slide travel Y	mm	-25 / +40		-25 / +40
Slide travel Z	mm	320		320
Rapid traverse rate X / Y / Z	m/min	20 / 20 / 20		20 / 20 / 20
Chip-to-chip time	s	<0,3		<0,3
Counter spindle				
Max. clamping depth / diameter	mm	250 / 32		250 / 32
Max. speed	rpm	8000		8000
Power at 100%/40%	kW	2 / 4,5		2 / 4,5
Torque at 100%/40%	Nm	6.9 / 15.3		6.9 / 15.3
C-axis resolution	Degrees	0.001		0.001
Rear end machining unit				
Tool mountings	Number	8		8
Driven tools	Number	4		4
Mounting-ø	mm	36		36
Max. speed	rpm	12000		12000
Power at 100%/25%	kW	1.5 / 3.4		1.5 / 3.4
Cooling lubricant unit				
Basic unit				
Pump pressure	bar	3 / 8		3 / 8
Tank capacity	l	500		500
Pump capacity 3 / 8 bar	l/min	80 / 100		80 / 100
Filter fineness	µm	50		50
Medium pressure (option)				
Pump pressure	bar	20		20
Pump capacity	l/min	80		80
Filter fineness	µm	50		50
Hydraulic unit				
Tank capacity	l	11		11
Machine dimensions				
Length x width x height	mm	3870 x 1670 x 2500		3870 x 1670 x 2500
Weight up to approx.	kg	6850**		7000**
Connecting power	kW	28		28

** depending on equipment

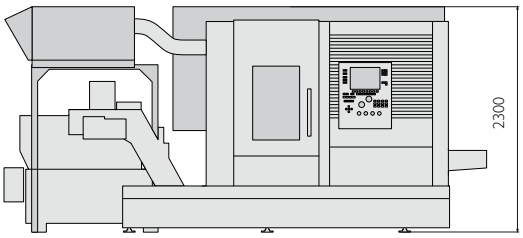
Work area: TNL32-9

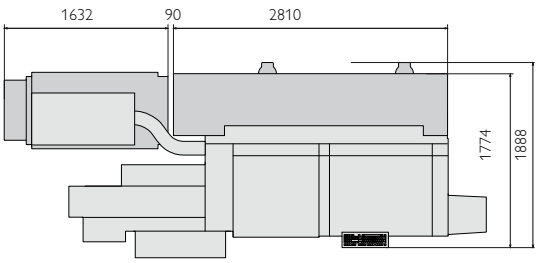




Installation plan:

in the basic design





Technical data

		TNL32-9
Headstock		
Max. bar capacity	mm	32
Max. Z-travel Swiss- and non swiss turning center	mm	1) 305 / 127
Max. speed	rpm	6400
Power at 100%/40%	kW	3.7 / 5.5
Torque at 100%/40%	Nm	29.4 / 43.7
C-axis resolution	Degrees	0.001
Max. rapid traverse rate Z	m/min	20
Top tool turret		
Tool mountings	Number	10
Driven tools	Number	10
Max. speed	rpm	12000
Mounting-ø	mm	45
Power at 100%/20%	kW	1.5 / 3.4
Turning tool cross-section	mm	16 x 16
Slide travel X	mm	140
Slide travel Y	mm	-40 / +25
Slide travel Z	mm	300
Rapid traverse rate X / Y / Z	m/min	20 / 20 / 20
Chip-to-chip time	s	<0.3
Bottom tool turret		
Tool mountings	Number	10
Driven tools	Number	10
Max. speed	rpm	12000
Power at 100%/40%	kW	1.5 / 3.4
Mounting-ø	mm	45
Turning tool cross-section	mm	16 x 16
Slide travel X	mm	140
Slide travel Y	mm	-25 / +40
Slide travel Z	mm	320
Rapid traverse rate X / Y / Z	m/min	20 / 20 / 20
Chip-to-chip time	s	<0.3
Counter spindle		
Max. bar capacity	mm	32 (30*)
Max. speed	rpm	6400
Power at 100%/40%	kW	3.7 / 5.5
Torque at 100%/40%	Nm	29.4 / 43.7
Slide travel X	mm	140
Slide travel Z	mm	300
C-axis resolution	Degrees	0.001
Rapid traverse rate X / Z	m/min	20 / 20
Cooling lubricant unit		
Basic unit		
Pump pressure	bar	3 / 8
Tank capacity	l	500
Pump capacity 3 / 8 bar	l/min	80 / 100
Filter fineness	µm	250
Hydraulic unit		
Tank capacity	l	11
Machine dimensions		
Length x width x height	mm	3870 x 1670 x 2500
Weight up to approx.	kg	7350**
Connecting power	kW	28

* Discharging through the counter spindle
** depending on equipment
1) The headstock stroke depends on the clamping device being used

10.13 – 846/1 ME Subject to change without prior notice

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