

**CNC swiss and non-swiss**

**turning center**



**TNL32**

**TRAUB**

**New solutions open up**

**new possibilities**

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.

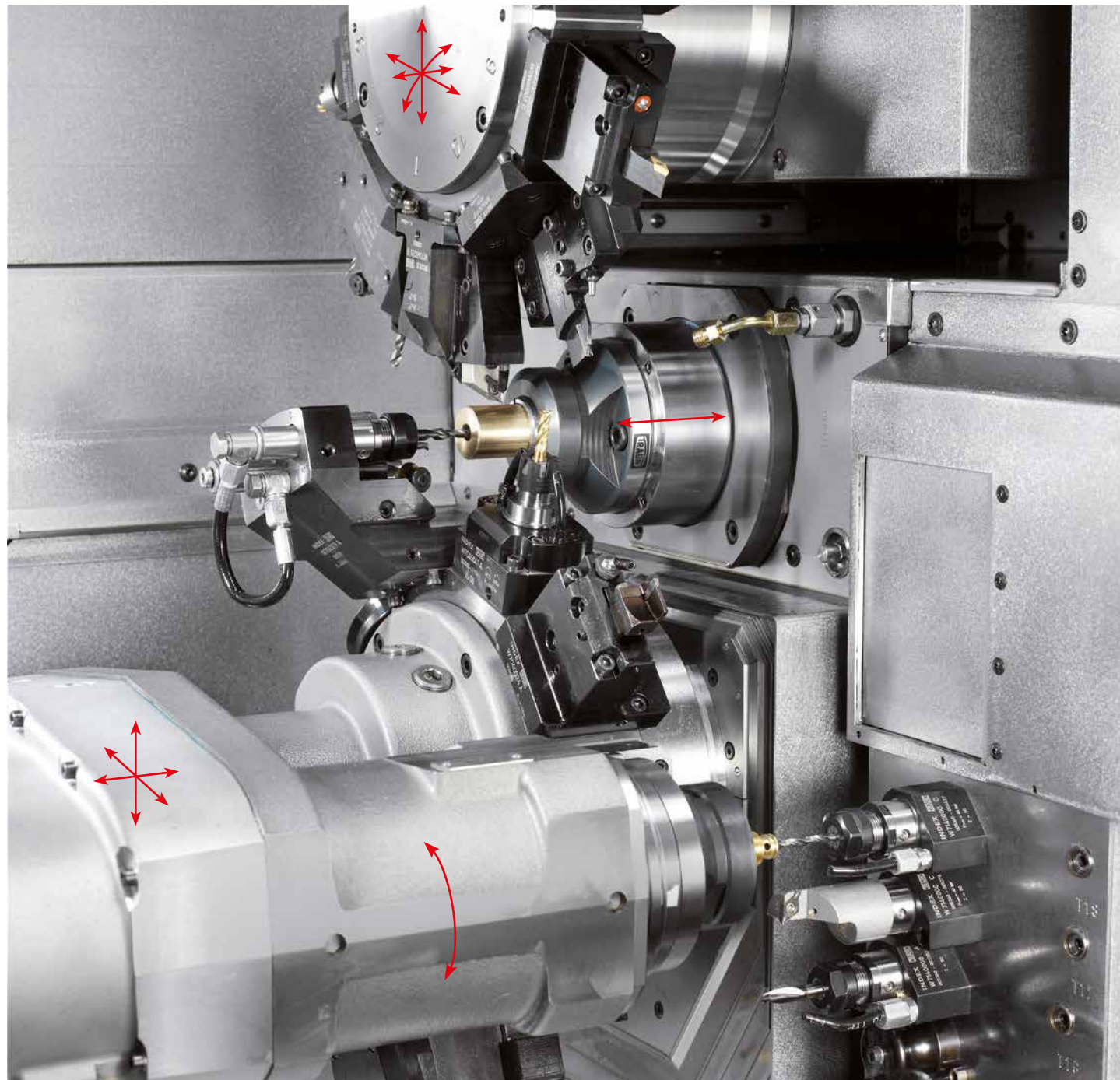




## TNL32

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:

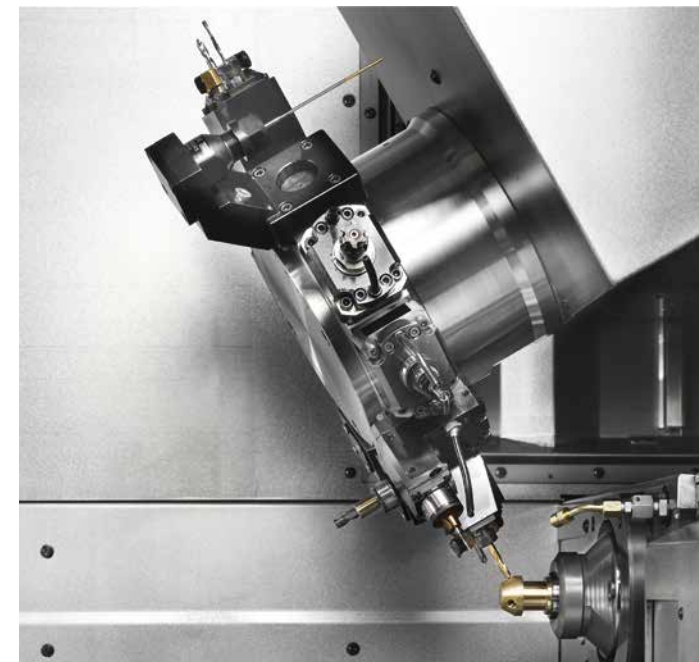
- Simultaneous machining with up to 3 tools (each tool with variable feed rate)

- Clearly structured work area with large axis travels and wide tooling circles
- Excellent accessibility through a large sliding cover
- Easy change-over between swiss and non-swiss turning operation
- Very compact, low footprint machine design
- Highest precision due to thermal symmetric machine structure

## TNL32-7B

The interaction

of systems

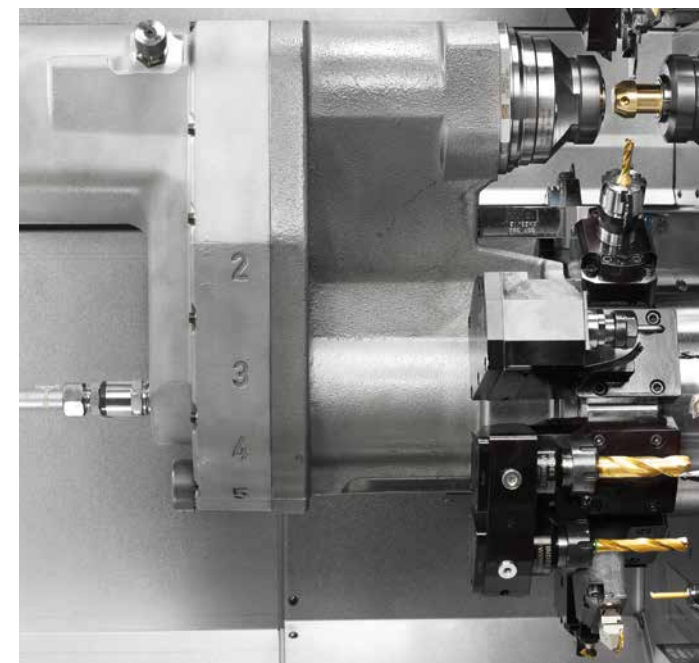


### Main spindle

- 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 head-stock 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



### 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



### Rear end machining 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

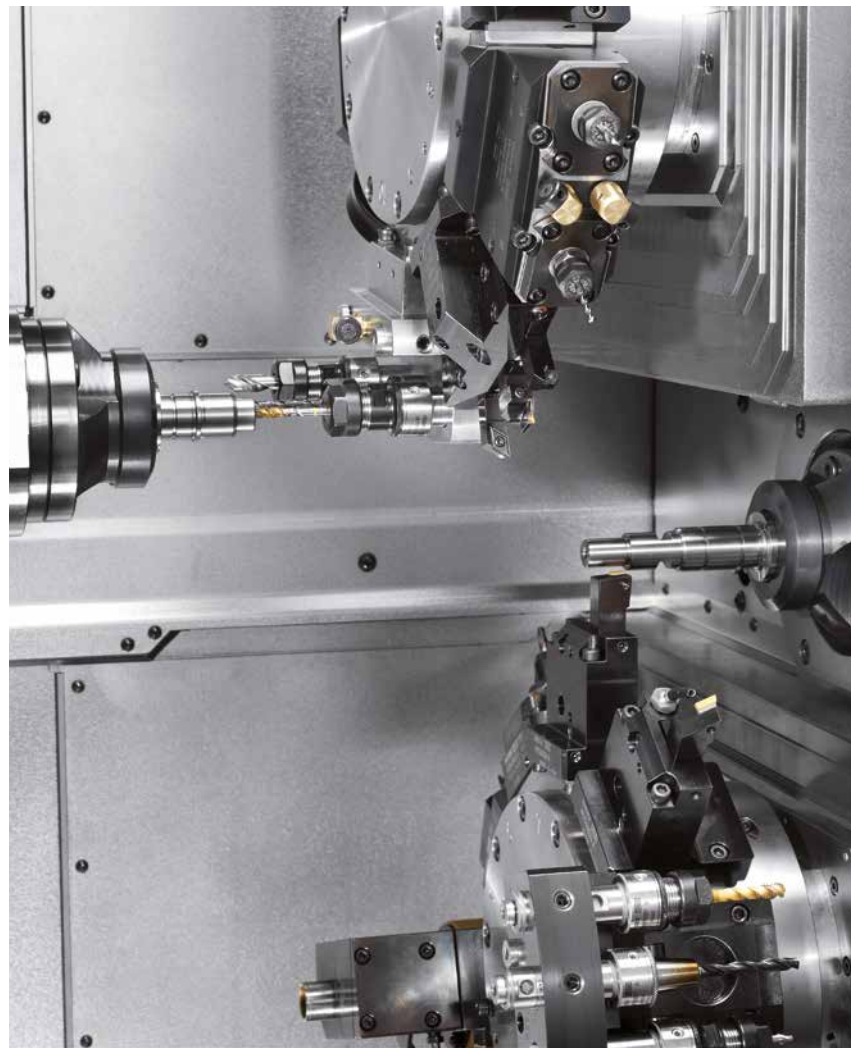
- Tool carrier adapted to counter spindle allows simultaneous machining on the main spindle with two independent tools



## TNL32-9

for even more

flexibility



The TNL32-9'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.

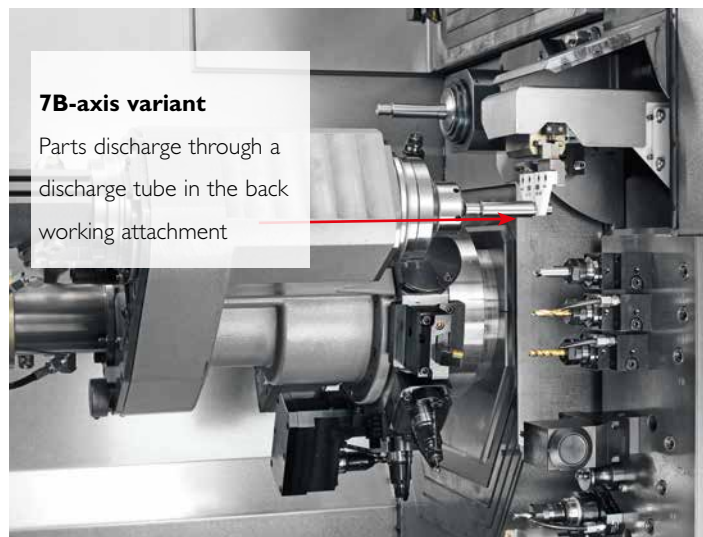
140 mm of X-axis stroke ensures simultaneous internal machining on the main and counter spindles.

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

### 7B-axis variant

Parts discharge through a discharge tube in the back working attachment



### Parts removal

#### 9-axis / 11-axis variants

Parts discharge to the right through machine partition or to the left through the counter spindle



## TNL32-11

more productivity

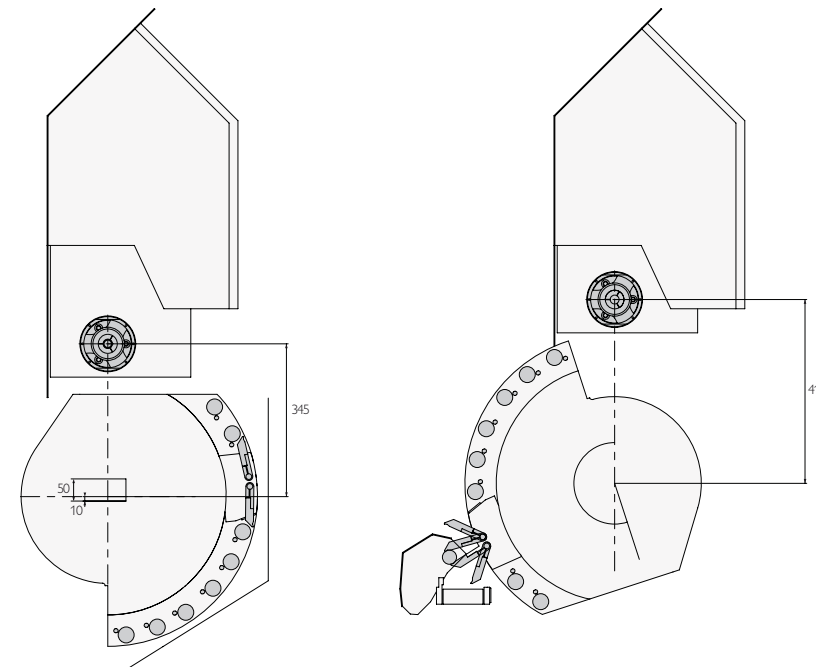
with front working attachment



The TNL32-11 with an additional front working attachment and autonomous counter spindle

Two turrets and an additional front working attachment allow you to machine with three independent subsystems.

- Y-axis function in the front working attachment
- Large tool pool
  - 4 x stationary tools
  - 4 x live tools
- max. drive power 3.4 kW
- max. speed 12,000 rpm
- Internal coolant supply at each station with
  - max. cutting oil pressure 80 bar
- Deep-hole drilling station
  - max. speed 12,000 rpm
  - max. cutting oil pressure 120 bar
- Feed force up to 6,200 N
- Tailstock function for bar stock machining
- Workpiece gripper



### Parts removal

#### 11-axis variant

Gentle part removal by gripper carrier in front working attachment

- Ø max. 32 mm
- Length max. 250 mm
- Mass max. (1.6) 2.9 kg



**This makes the**  
**tool carriers**  
**so special**

**Turret indexing with NC rotary axis**

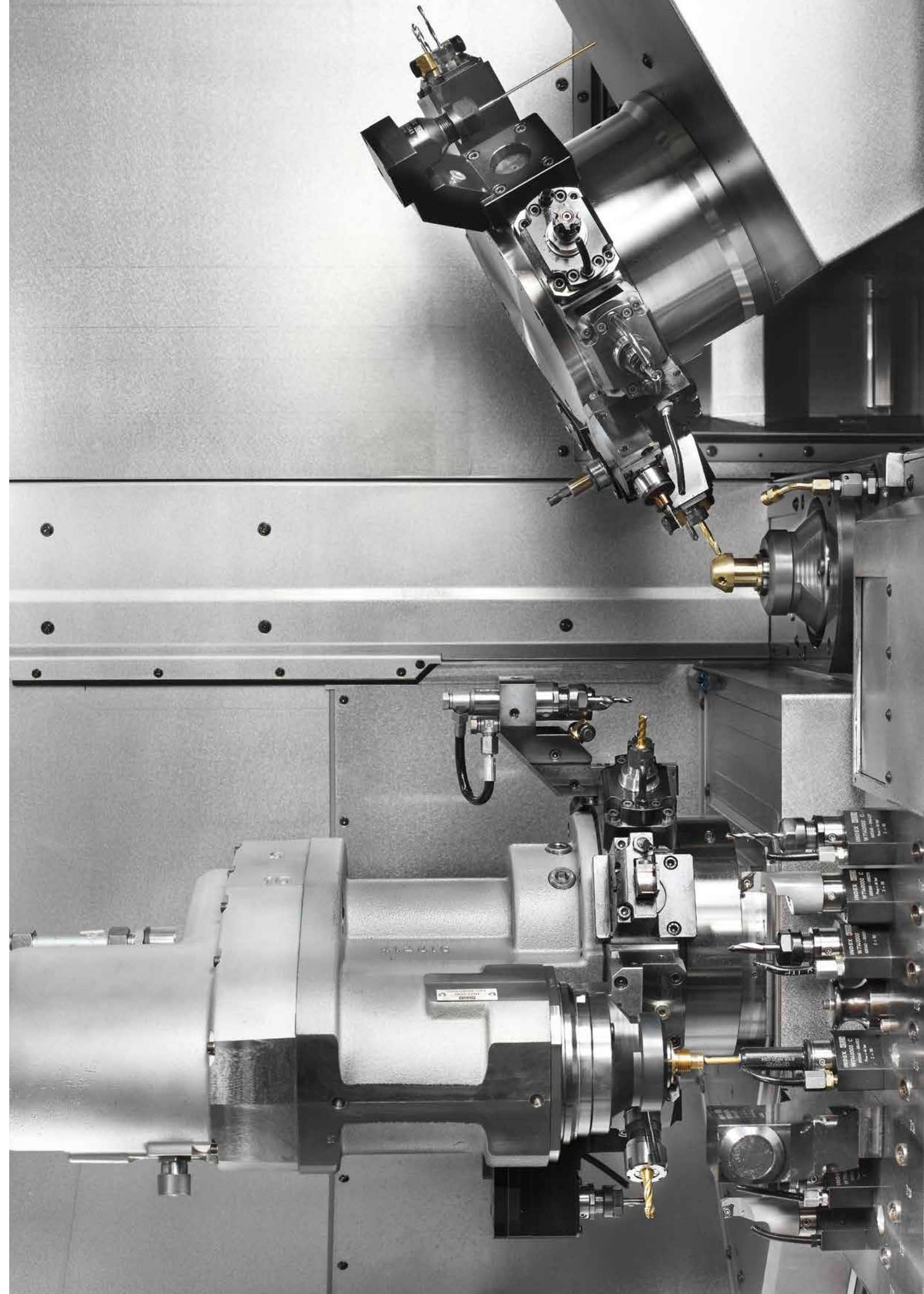
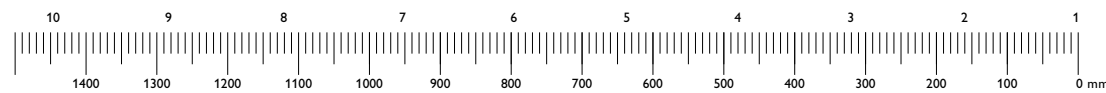
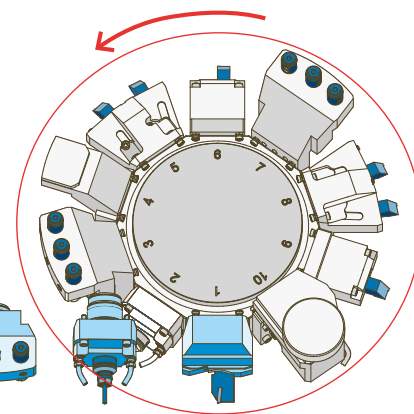
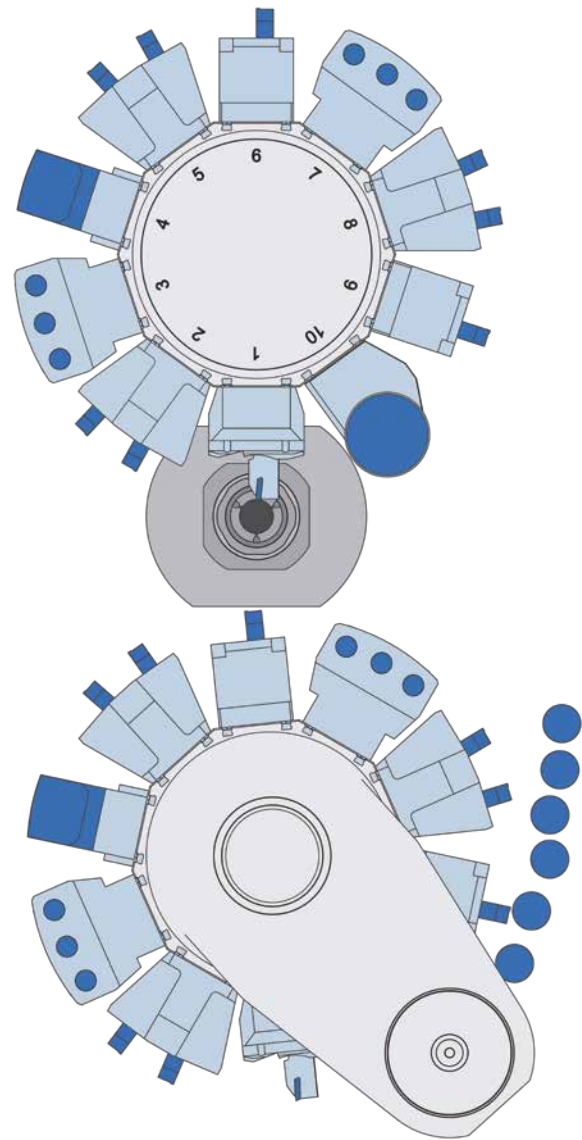
The newly designed tool carriers are a highlight of the TNL32. For the first time, the rotary motion is executed by an NC axis without any mechanical locks. This allows you to position both the turret and the counter spindle very fast at any angle.

**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

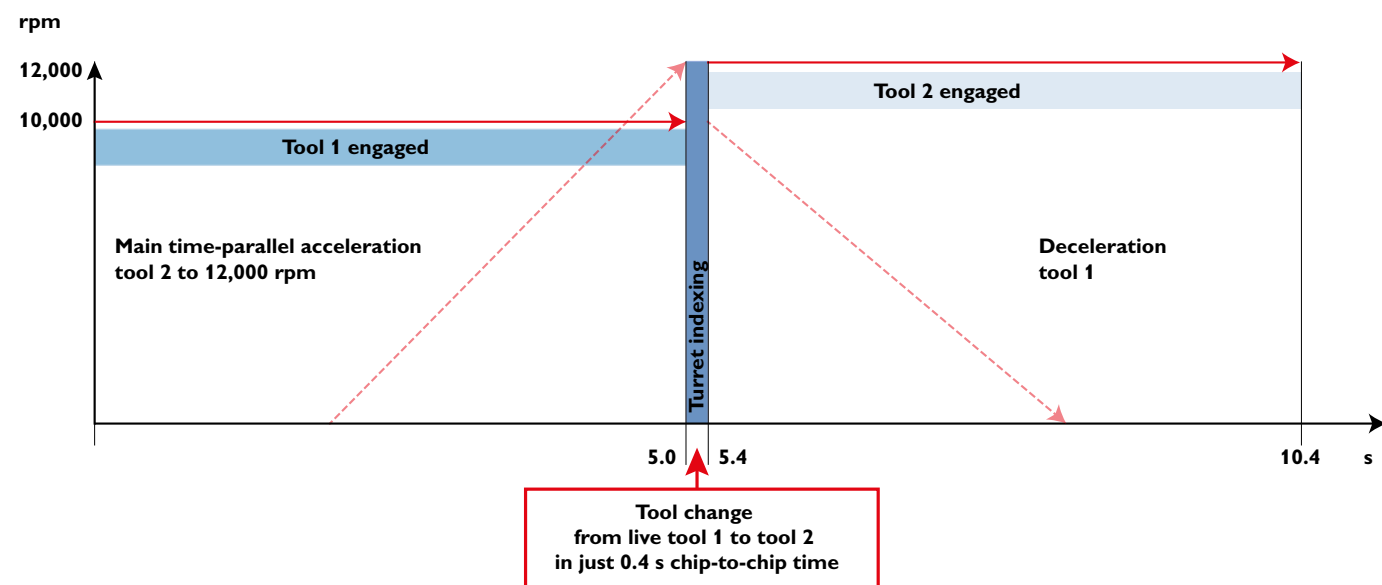
for short

chip-to-chip times

### Dual Drive System –

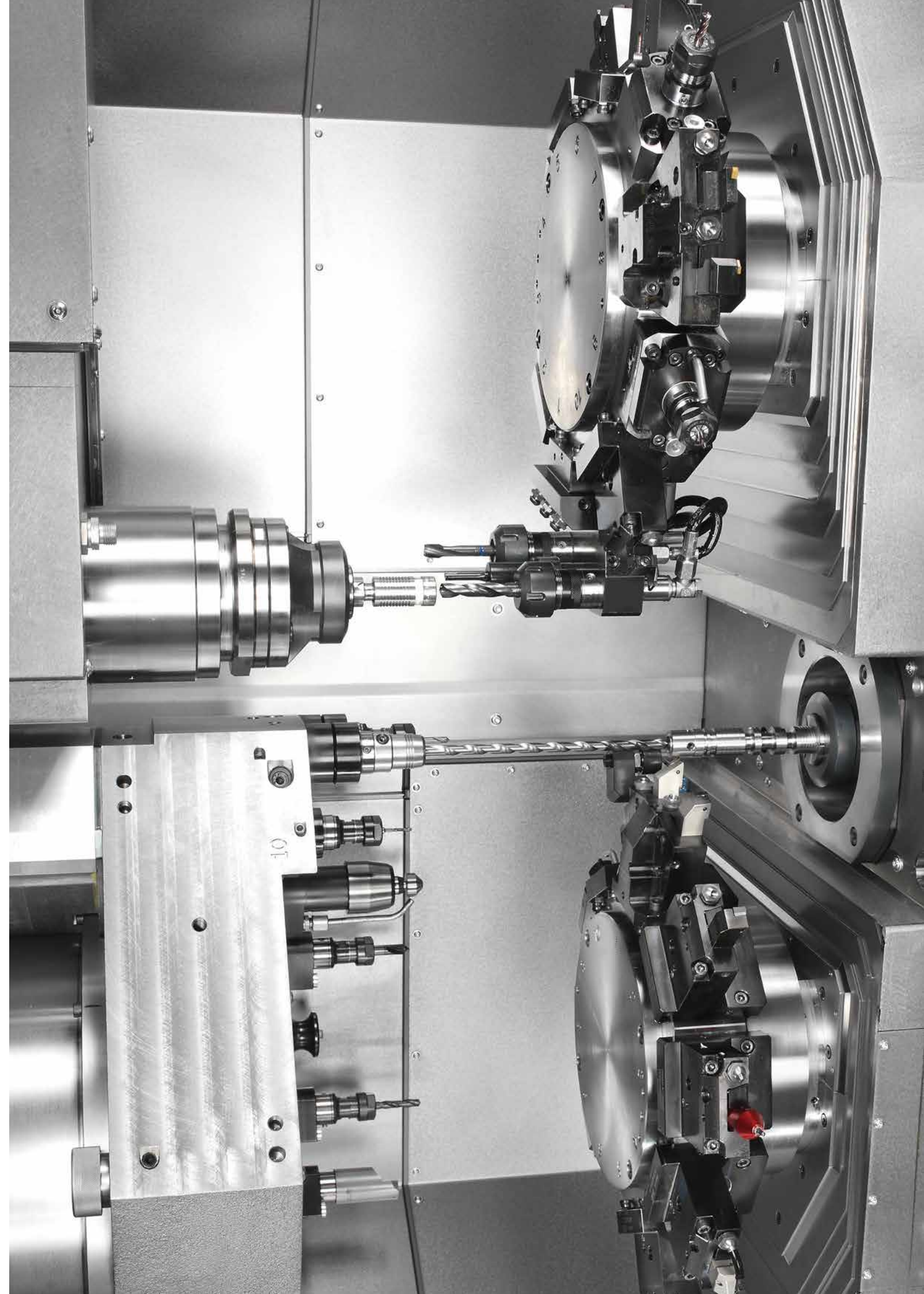
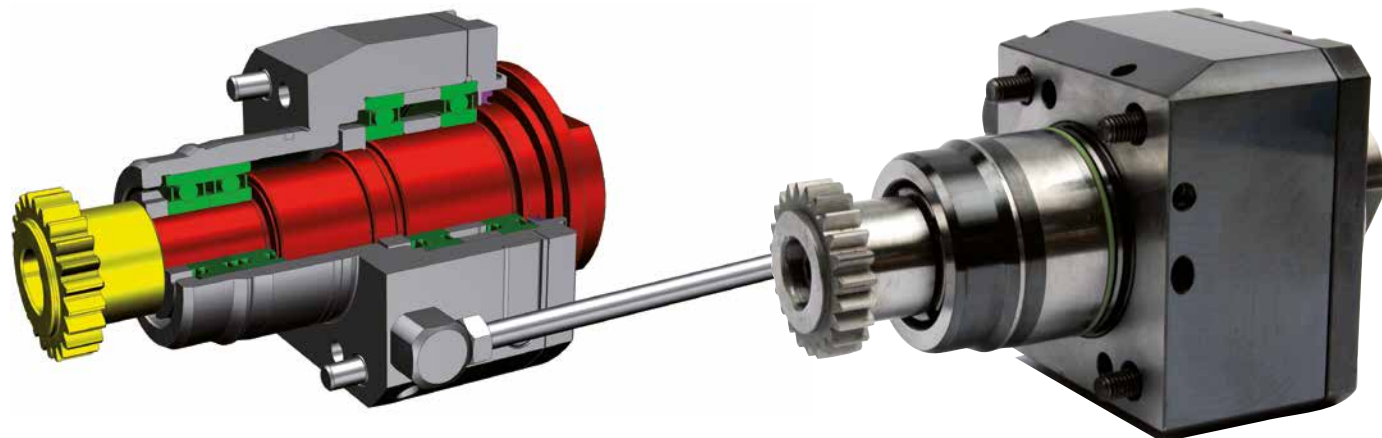
The new drive system from TRAUB, in which the speed for the follow-up tool is ramped up during main time.

- 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

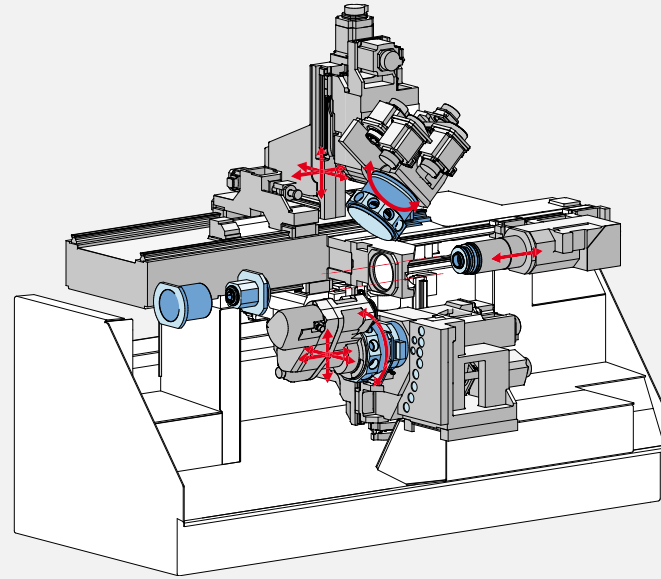


### Innovative tool mounting system

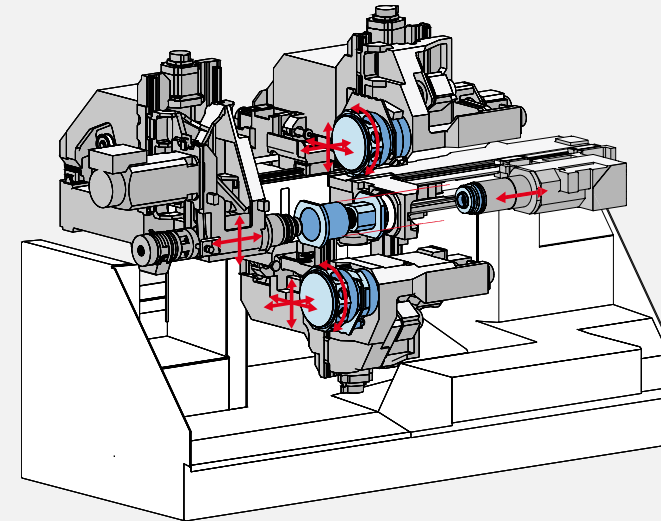
The new compact shaft system provides significantly higher rigidity, resulting in longer life cycles and improved surface quality.



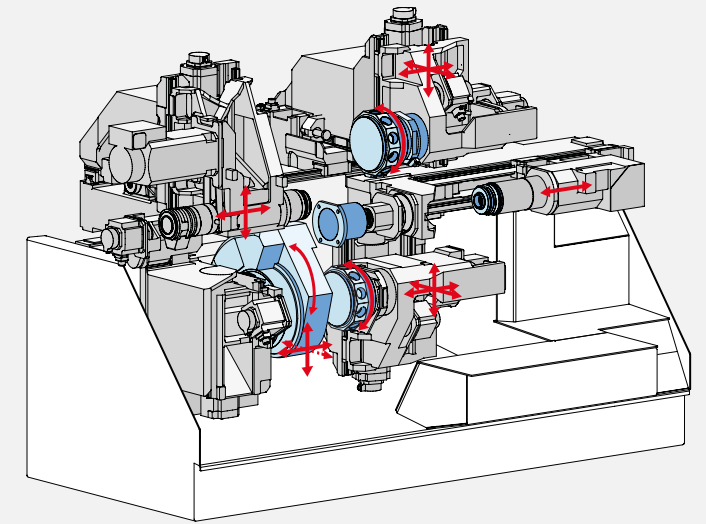
**Three variants,**  
**as diverse as your**  
**requirements**



**TNL32-7B**



**TNL32-9**



**TNL32-11**

|  | <b>TNL32-7B</b>   | <b>TNL32-9</b>    | <b>TNL32-11</b>   |
|--|-------------------|-------------------|-------------------|
| <b>Main spindle drive</b>                      | Motorized spindle | Motorized spindle | Motorized spindle |
| <b>Headstock</b>                               |                   |                   |                   |
| Max. bar capacity                              | 32                | 32                | 32                |
| Max. Z stroke swiss / non swiss turning center | 305 / 127         | 305 / 127         | 305 / 127         |
| <b>Counter spindle</b>                         | with bottom tool  | autonomous        | autonomous        |
| Max. bar capacity                              | 32                | 32                | 32                |
| Max. X / Z-travel                              | 140 / 320         | 140 / 300         | 140 / 300         |
| <b>Top turret</b>                              |                   |                   |                   |
| Stations                                       | 10                | 10                | 10                |
| Axes   | X / Y / Z / B / H | X / Y / Z / H     | X / Y / Z / H     |
| <b>Bottom turret</b>                           |                   |                   |                   |
| Stations                                       | 9                 | 10                | 10                |
| Axes   | X / Y / Z / H     | X / Y / Z / H     | X / Y / Z / H     |
| <b>Front working attachment</b>                |                   |                   |                   |
| Stations                                       |                   |                   | 8                 |
| Axes   |                   |                   | X / Z / H         |
| <b>Rear end machining unit</b>                 |                   |                   |                   |
| Stations                                       | 8                 |                   |                   |
| <b>Number of sub-systems</b>                   | 2                 | 3                 | 4                 |
| <b>Number of tools</b>                         |                   |                   |                   |
| Maximum simultaneously engaged                 | 2 (3)             | 2 (3)             | 3                 |
| <b>Number of CNC linear axes</b>               | <b>7</b>          | <b>9</b>          | <b>11</b>         |
| <b>Tool pool</b>                               | 27                | 20                | 28                |
| <b>Max. number of tools</b>                    |                   |                   |                   |
| with 2/3-slot tool holders                     | 46                | 40                | 49                |
| <b>Tool shank Ø turret</b>                     | 45                | 45                | 45                |
| <b>Tool shank Ø front working attachment</b>   |                   |                   | 36                |
| <b>Tool shank Ø rear end mach. unit</b>        | 36                |                   |                   |



**Brilliant for a broad part**

**spectrum – from simple**

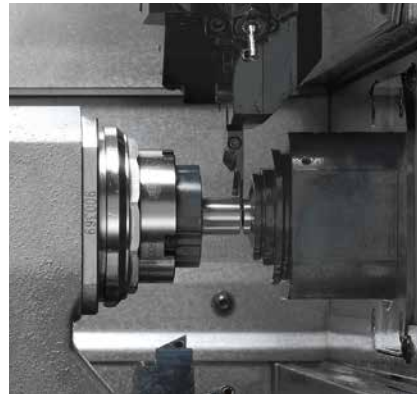
**to highly complex**

**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 -7B**

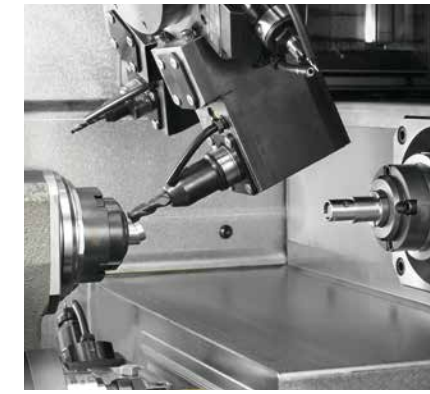


**The additional machining capabilities of the B-axis**

- 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**

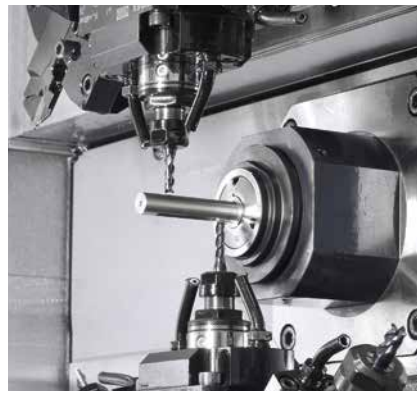


**Simultaneous machining on the main spindle**

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



**Sample applications for variants -7B, -9, -11**



**Simultaneous machining with two tool turrets**

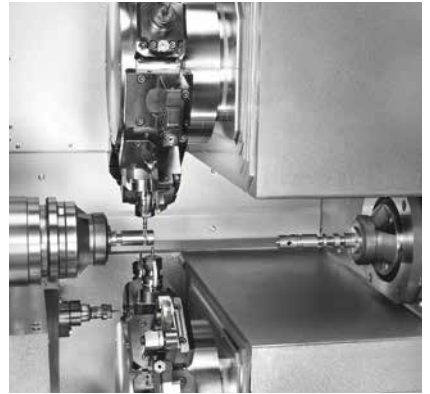
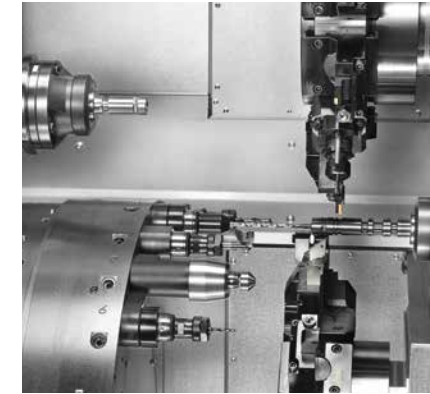
- Also on the counter spindle
- Turning, milling, cross-drilling
- X-axis in the counter spindle ensures large clearance with simultaneous internal machining on the main and counter spindle
- Use of larger thread rolling heads
- 3 tools being used simultaneously and independently (-11 variant)

**Parts discharge through the counter spindle**

- Particularly well-suited for very long parts



**Sample applications for the -9, -11 variants**





## TRAUB TX8i-s V7

Get a firm grasp

on your production

### CNC control

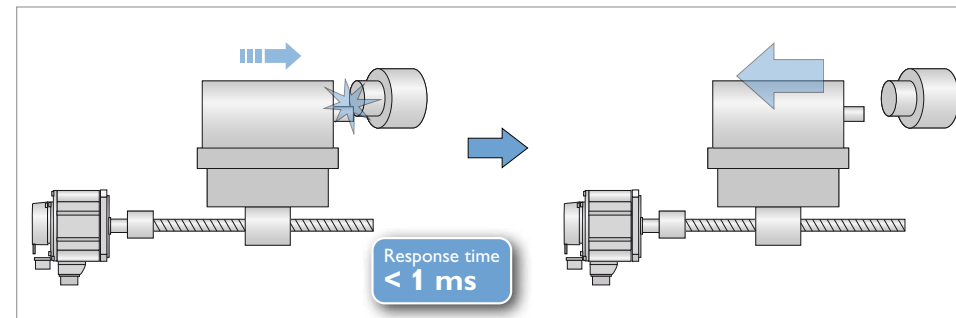
Clearly arranged user interface with dialog technology for programming, editing, setup and operation

- 15" Multitouch display for the use of touch functions with gesture technology or menu operation using buttons
- Ideally equipped for Industry 4.0 – easy integration of the machine into the manufacturing environment
- Online retrieval of manufacturing and setup information; remote access via VNC
- 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



### Diagnostic features

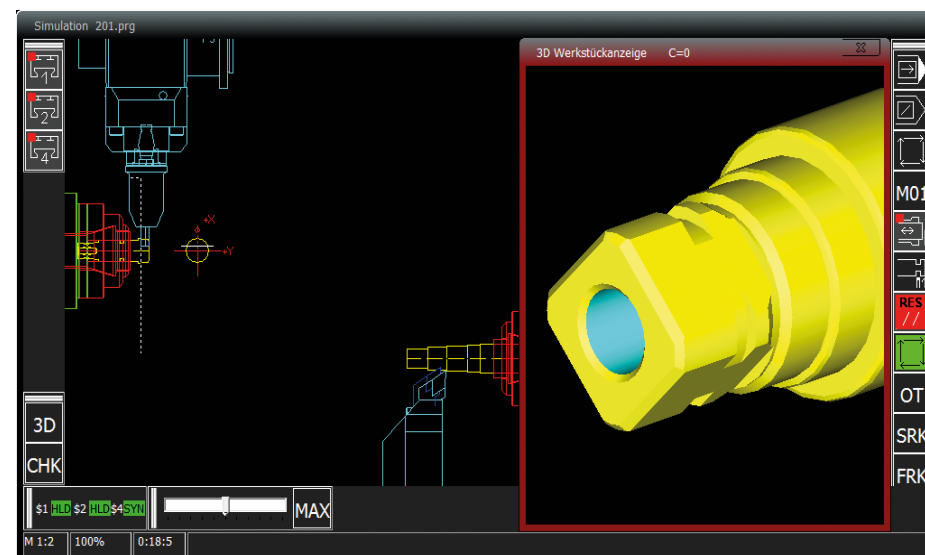
- Ongoing recording of relevant analog and digital signals and data; their flow can be displayed and compared with other recordings at any time
- Alarm messages with detailed clear-text information
- Quick location and elimination of cause of malfunction



Electronic quick retraction

### Additional safety device – Electronic quick retraction

- Active on all TRAUB machines
- Active counter control in case of malfunction
- Response time in the millisecond range by intelligent servo amplifier
- More effective than mechanical safety systems



### 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

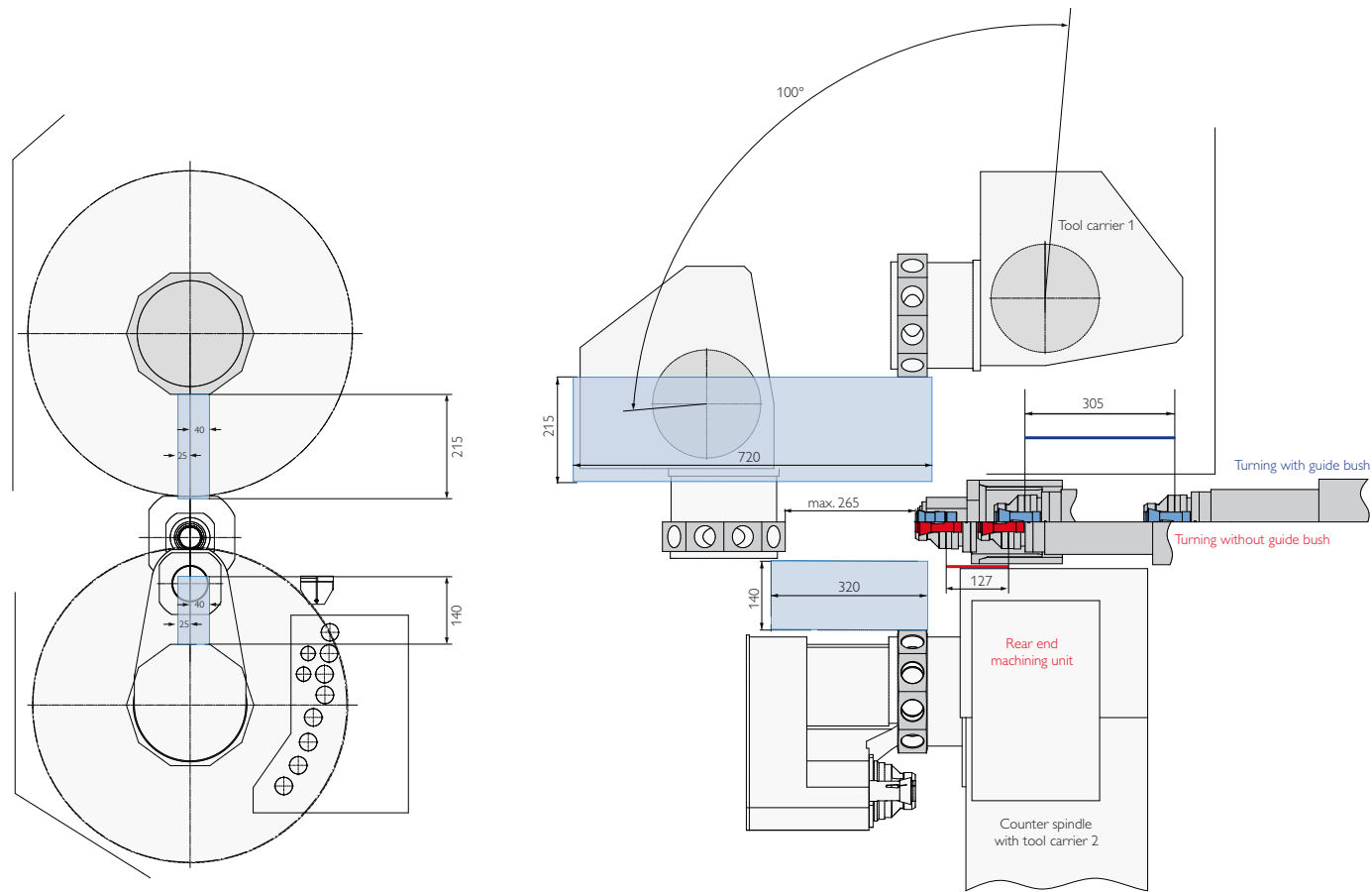
### External programming

#### TRAUB WinFlexIPSPlus (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
- 3D collision protection during setup operation of the machine







## Technical data

### TNL32-7B

#### Headstock

|   |         |             |
|---|---------|-------------|
| Max. bar capacity                                       | mm      | 32          |
| Max. Z-travel <b>Swiss and non swiss turning center</b> | mm      | 305 / 127 * |
| Max. speed  | rpm     | 8,000       |
| Power at 100%/40%                                       | kW      | 6.7 / 10.7  |
| Torque at 100%/40%                                      | Nm      | 21 / 32     |
| C-axis resolution                                       | Degrees | 0.001       |
| Max. rapid traverse rate Z                              | m/min   | 20          |

\* Non swiss turning center

#### Top tool turret

|                               |         |              |
|-------------------------------|---------|--------------|
| Tool mountings                | Number  | 10           |
| Driven tools                  | Number  | 10           |
| Max. speed                    | rpm     | 12,000       |
| 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      | 215          |
| Slide travel Y                | mm      | -40 / +25    |
| Slide travel Z                | mm      | 720          |
| Rapid traverse rate X / Y / Z | m/min   | 20 / 20 / 40 |
| Swivel angle B                | Degrees | 100          |

#### Bottom tool turret

|                               |        |              |
|-------------------------------|--------|--------------|
| Tool mountings                | Number | 9            |
| Driven tools                  | Number | 9            |
| Max. speed                    | rpm    | 12,000       |
| 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 |

#### Counter spindle

|                                |         |            |
|--------------------------------|---------|------------|
| Max. clamping depth / diameter | mm      | 250 / 32   |
| Max. speed                     | rpm     | 8,000      |
| Power at 100%/40%              | kW      | 2 / 4.5    |
| Torque at 100%/40%             | Nm      | 6.9 / 15.3 |
| C-axis resolution              | Degrees | 0.001      |

#### Rear end machining unit

|                   |        |           |
|-------------------|--------|-----------|
| Tool mountings    | Number | 8         |
| Driven tools      | Number | 4         |
| Mounting-ø        | mm     | 36        |
| Max. speed        | rpm    | 12,000    |
| Power at 100%/25% | kW     | 1.5 / 3.4 |

#### 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    | 50       |

#### Medium pressure (option)

|                 |       |    |
|-----------------|-------|----|
| Pump pressure   | bar   | 20 |
| Pump capacity   | l/min | 80 |
| Filter fineness | µm    | 50 |

#### Hydraulic unit

|               |   |    |
|---------------|---|----|
| Tank capacity | l | 11 |
|---------------|---|----|

#### Machine dimensions

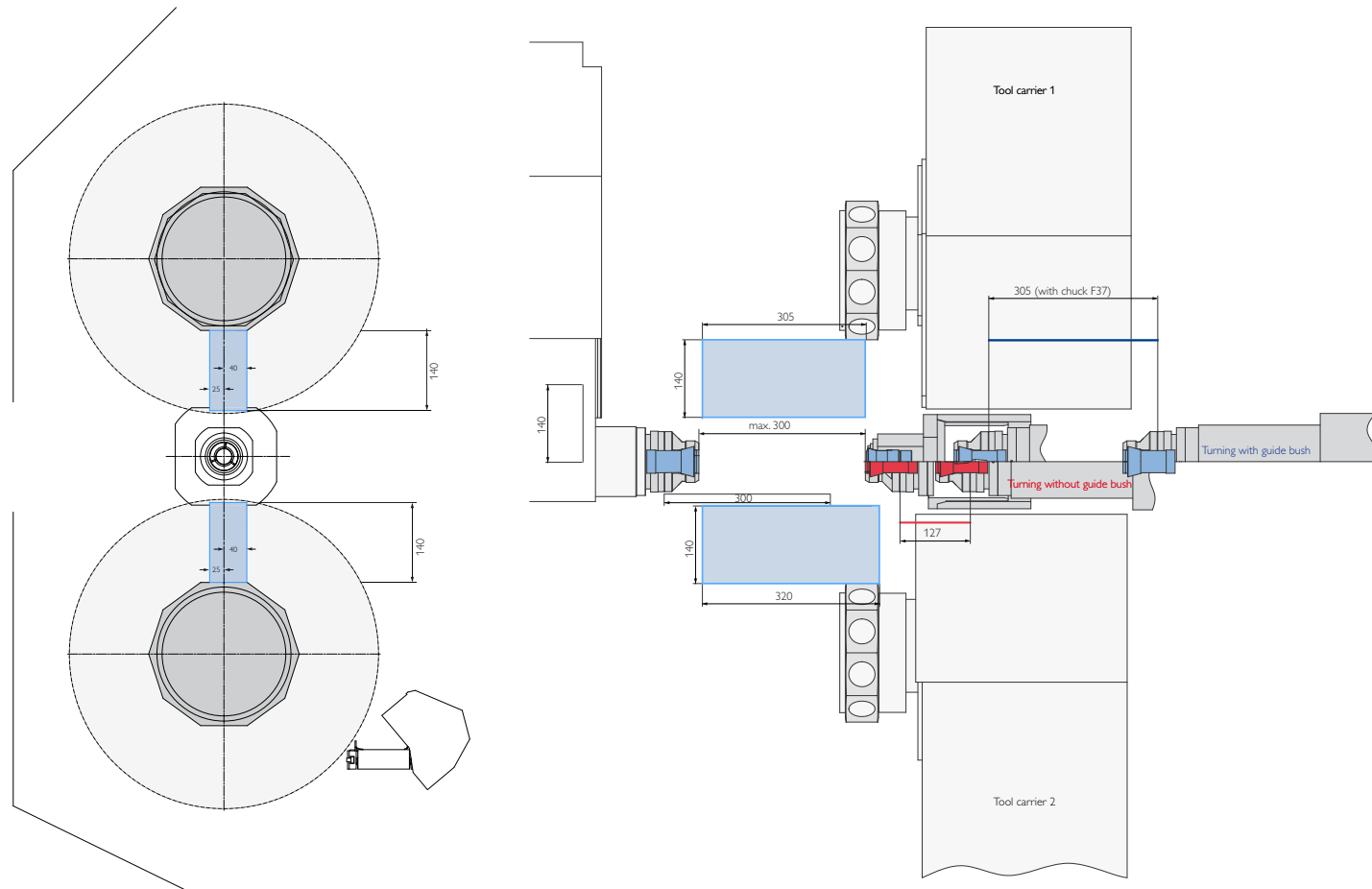
|                         |    |                    |
|-------------------------|----|--------------------|
| Length x width x height | mm | 3870 x 1670 x 2500 |
| Weight up to approx.    | kg | 7000 **            |
| Connecting power        | kW | 28                 |

\*\* Depending on equipment



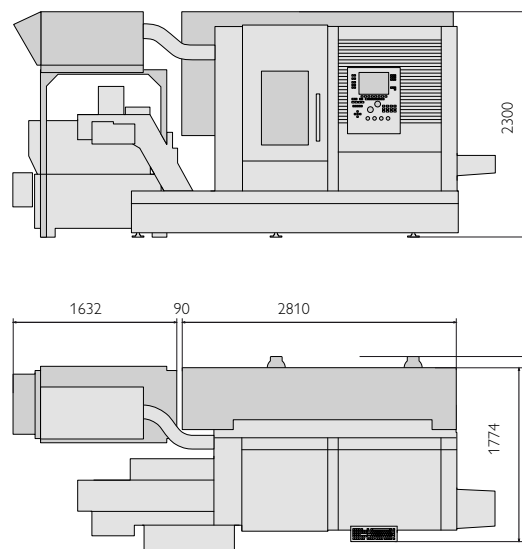
## Technical data

### Work area: TNL32-9



### Installation plan:

in the basic design



### TNL32-9

#### Headstock

|   |         |                         |
|---|---------|-------------------------|
| Max. bar capacity                                       | mm      | 32                      |
| Max. Z-travel <b>Swiss and non swiss turning center</b> | mm      | <sup>1)</sup> 305 / 127 |
| Max. speed  | rpm     | 8,000                   |
| Power at 100%/40%                                       | kW      | 6.7 / 10.7              |
| Torque at 100%/40%                                      | Nm      | 21 / 32                 |
| 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    | 12,000       |
| Mounting- $\varnothing$       | 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 |

#### Bottom tool turret

|                               |        |              |
|-------------------------------|--------|--------------|
| Tool mountings                | Number | 10           |
| Driven tools                  | Number | 10           |
| Max. speed                    | rpm    | 12,000       |
| Power at 100%/40%             | kW     | 1.5 / 3.4    |
| Mounting- $\varnothing$       | 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 |

#### Counter spindle

|                           |         |             |
|---------------------------|---------|-------------|
| Max. bar capacity         | mm      | 32 (30 *)   |
| Max. speed                | rpm     | 6,400       |
| 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         | $\mu$ m | 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

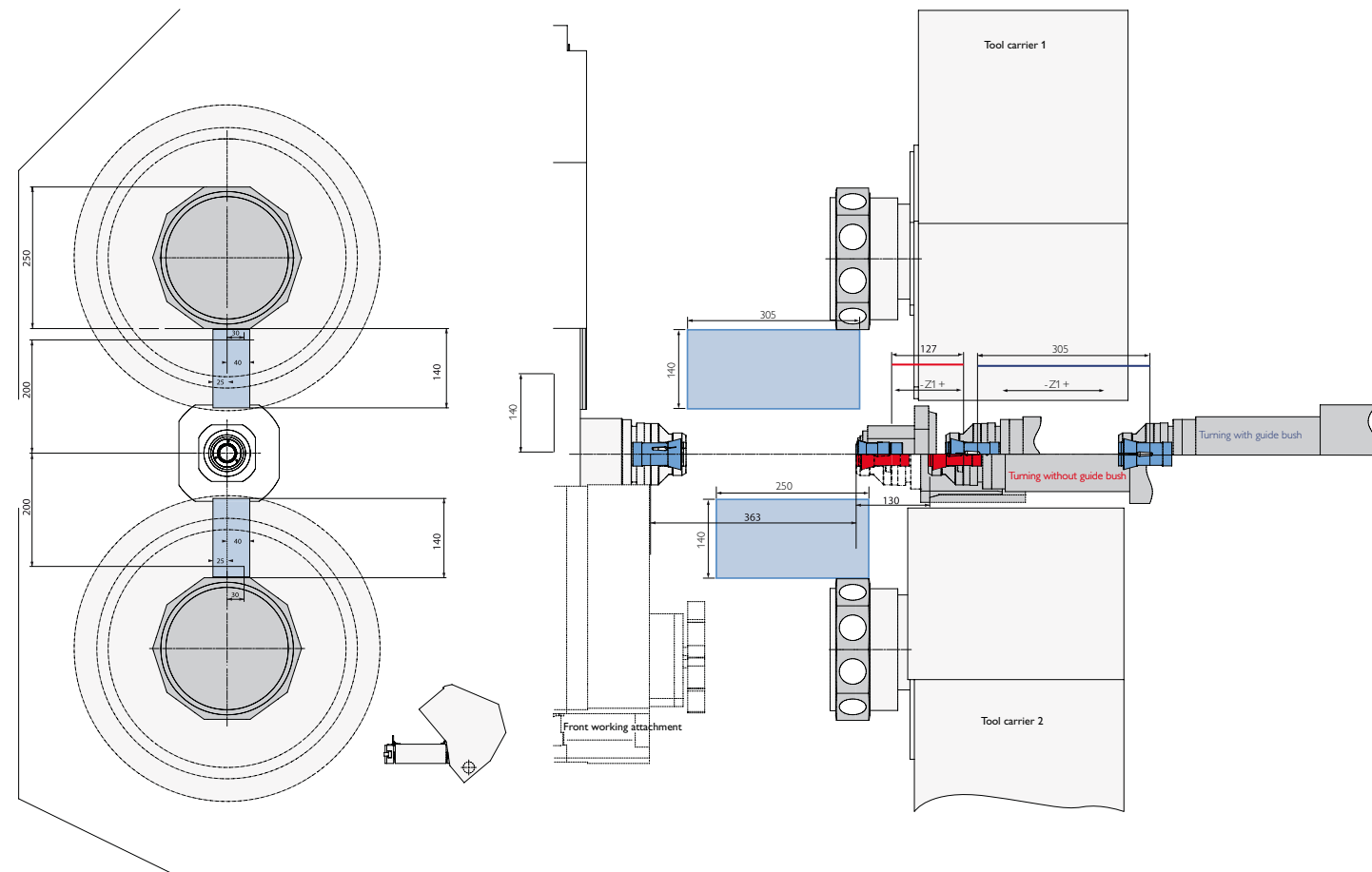
\*\* Depending on equipment

1) The headstock stroke depends on the clamping device being used

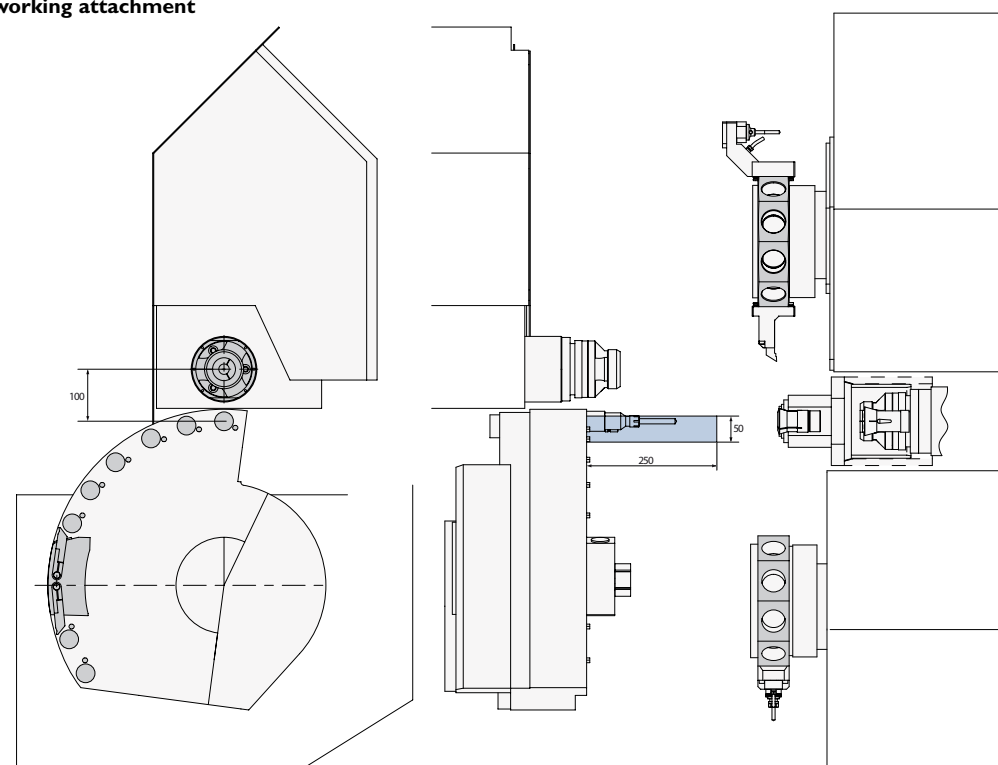


## Technical data

### Work area: TNL32-11



### Front working attachment



### TNL32-11

#### Headstock

|  |         |              |
|--|---------|--------------|
| Max. bar capacity                                | mm      | 32           |
| Max. Z-travel Swiss and non swiss turning center | mm      | 1) 305 / 127 |
| Max. speed                                       | rpm     | 8,000        |
| Power at 100%/40%                                | kW      | 6.7 / 10.7   |
| Torque at 100%/40%                               | Nm      | 21 / 32      |
| 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    | 12,000              |
| Mounting- $\varnothing$     | mm     | 45                  |
| Power at 100%/20%           | kW     | 1.5 / 3.4           |
| Turning tool cross-section  | mm     | 16 x 16             |
| Slide travel X, Y, Z        | mm     | 140, -40 / +25, 305 |
| Rapid traverse rate X, Y, Z | m/min  | 20 / 20 / 20        |

#### Bottom tool turret

|                             |        |                     |
|-----------------------------|--------|---------------------|
| Tool mountings              | Number | 10                  |
| Driven tools                | Number | 10                  |
| Max. speed                  | rpm    | 12,000              |
| Power at 100%/40%           | kW     | 1.5 / 3.4           |
| Mounting- $\varnothing$     | mm     | 45                  |
| Turning tool cross-section  | mm     | 16 x 16             |
| Slide travel X, Y, Z        | mm     | 140, -25 / +40, 250 |
| Rapid traverse rate X, Y, Z | m/min  | 20 / 20 / 20        |

#### Front working attachment

|                          |        |                |
|--------------------------|--------|----------------|
| Tool mountings           | Number | 8              |
| Driven tools             | Number | 4              |
| Mounting- $\varnothing$  | mm     | 36             |
| Max. speed               | rpm    | 12,000         |
| Power at 100%/40%        | kW     | 1.5 / 3.4      |
| Slide travel X, Z        | mm     | -40 / +10, 250 |
| Rapid traverse rate X, Z | m/min  | 20 / 20        |

#### Deep-hole drilling station (option)

|                                |        |        |
|--------------------------------|--------|--------|
| Driven tools                   | Number | 1      |
| Max. speed                     | rpm    | 12,000 |
| Max. coolant pressure (option) | bar    | 120    |

#### Counter spindle

|                          |         |             |
|--------------------------|---------|-------------|
| Max. bar capacity        | mm      | 32 (30*)    |
| Max. speed               | rpm     | 6,400       |
| Power at 100%/40%        | kW      | 3.7 / 5.5   |
| Torque at 100%/40%       | Nm      | 29.4 / 43.7 |
| Slide travel X, Z        | mm      | 140, 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         | $\mu$ m | 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



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