

CNC fixed headstock automatic lathe



TNK 42
TNK 65



The TNK ensures productivity and precision in automatic turning up to a bar capacity of 65 mm.

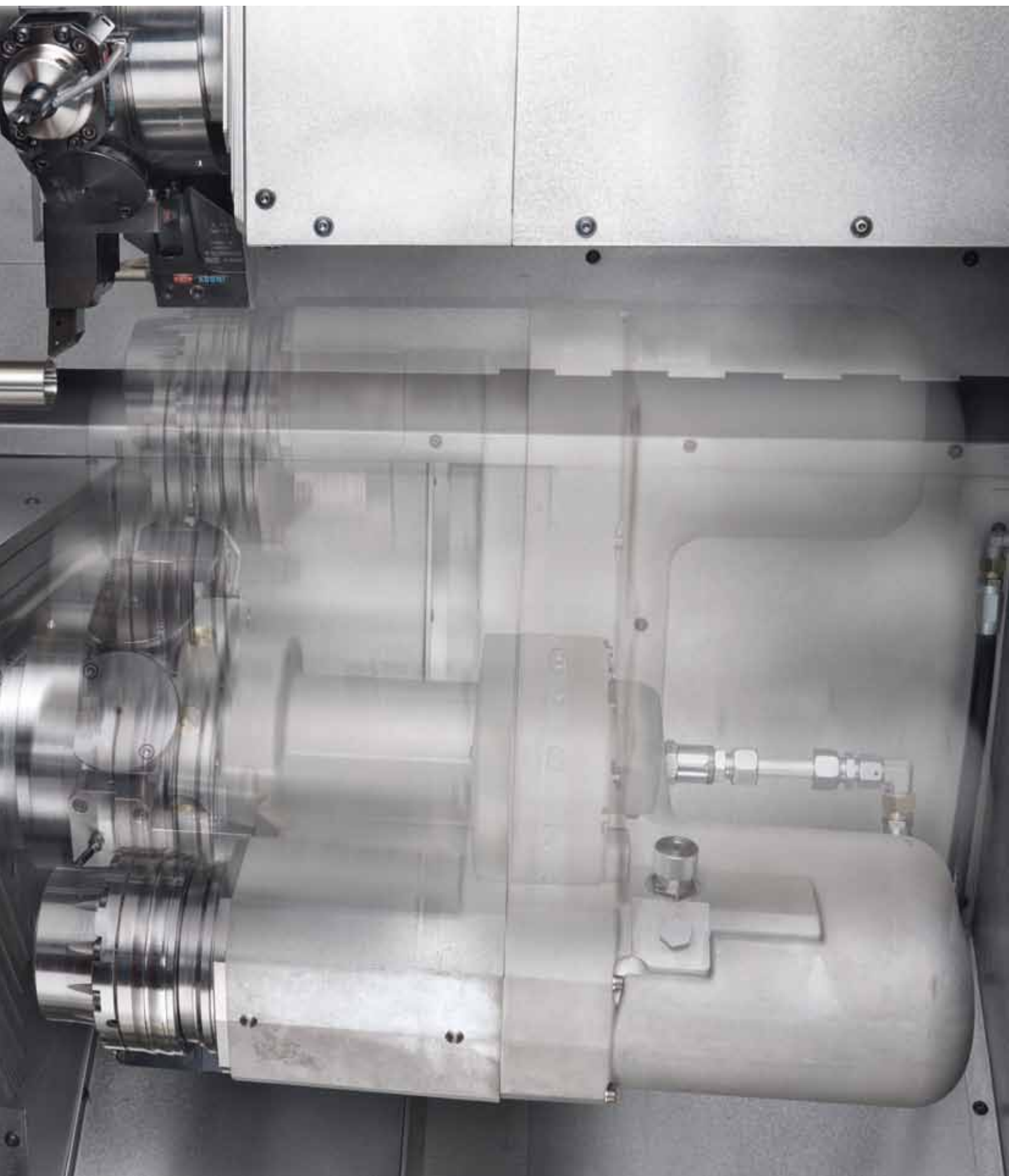
The kinematics of the TNK consistently relies on the successful design of the TRAUB CNC sliding/fixed headstock automatic lathes TNL18 and TNL32.

With only 5.5 m² footprint but with 3 subsystems, 2 interpolated Y-axes and 27 tool stations, the TNK offers the economic approach to the production of complex machine-turned parts of today and tomorrow.



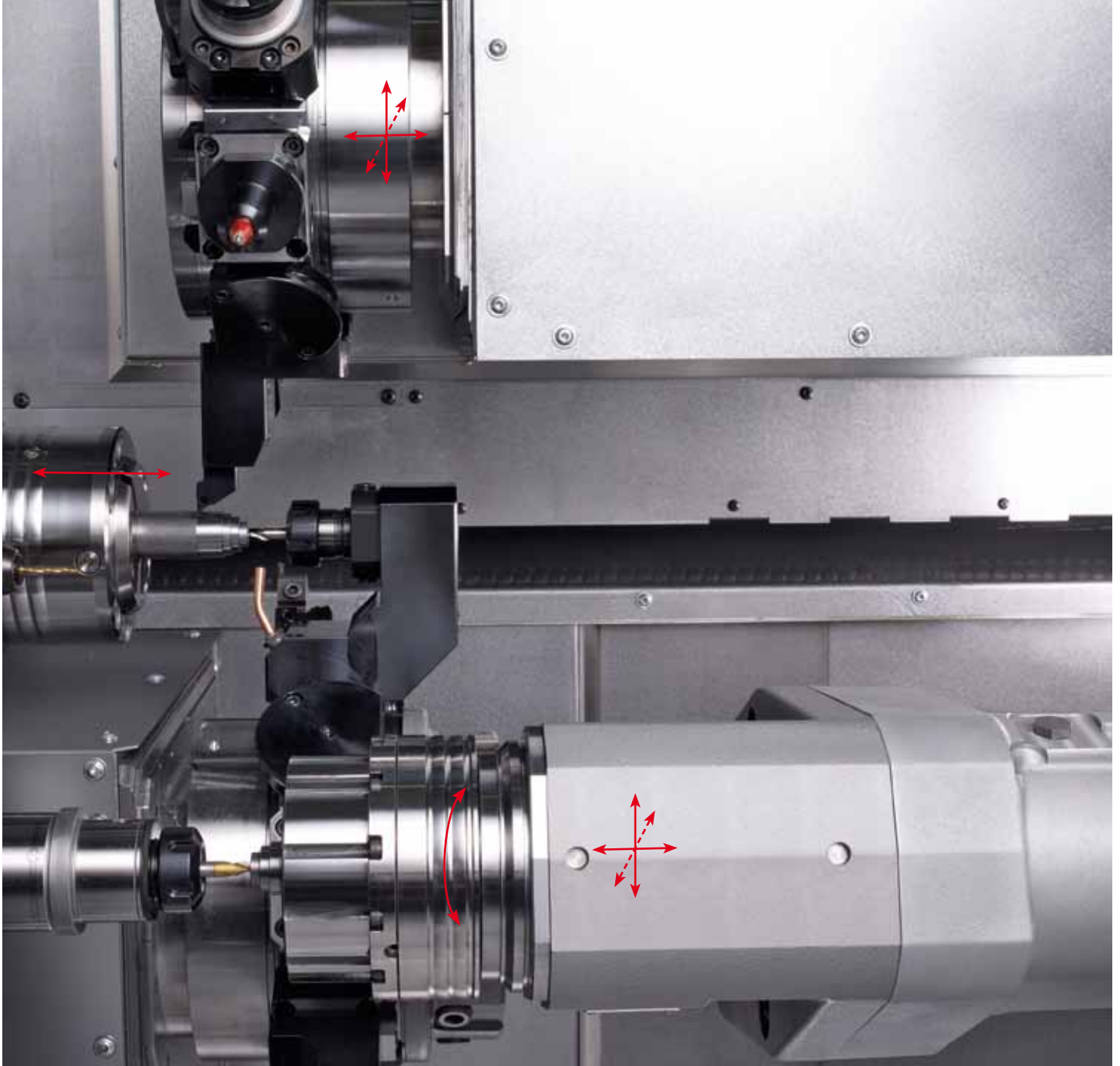
TRAUB automatic turning

fast, accurate, efficient



TNK42/TNK65

The work area



The work area of the TNK is matched to the production of complex machine-turned parts.

The design benefits:

- Simultaneous machining with up to 3 tools
- Easy change-over and handling by very good accessibility to the work area
- Process reliability through vertical and clearly structured work area with large axis travels and generously sized tooling circles
- Economic power density due to small erecting dimensions

Two work spindles, two turrets

and one back working attachment



Main spindle

- Highly dynamic motor spindle in synchronous design
- Fast acting C-axis positioning for short times per piece
- Liquid cooling supports the thermal stability of the machine
- High spindle performance allows large cutting volume

Upper tool carrier

- 10 tool stations
- Powerful tool drive on all stations
- Long axis travels
- Turret indexing designed as NC rotary axis (without mechanical interlock) allows any angle positioning and chip-to-chip times of 0.4 s (station to station)
- Simple multiple tooling of tool stations



Back working attachment

- 8 tool stations
- 5 of which are live tool stations (12,000 rpm and 6.7 kW)
- Large travels of counter spindle allow a large tool pool

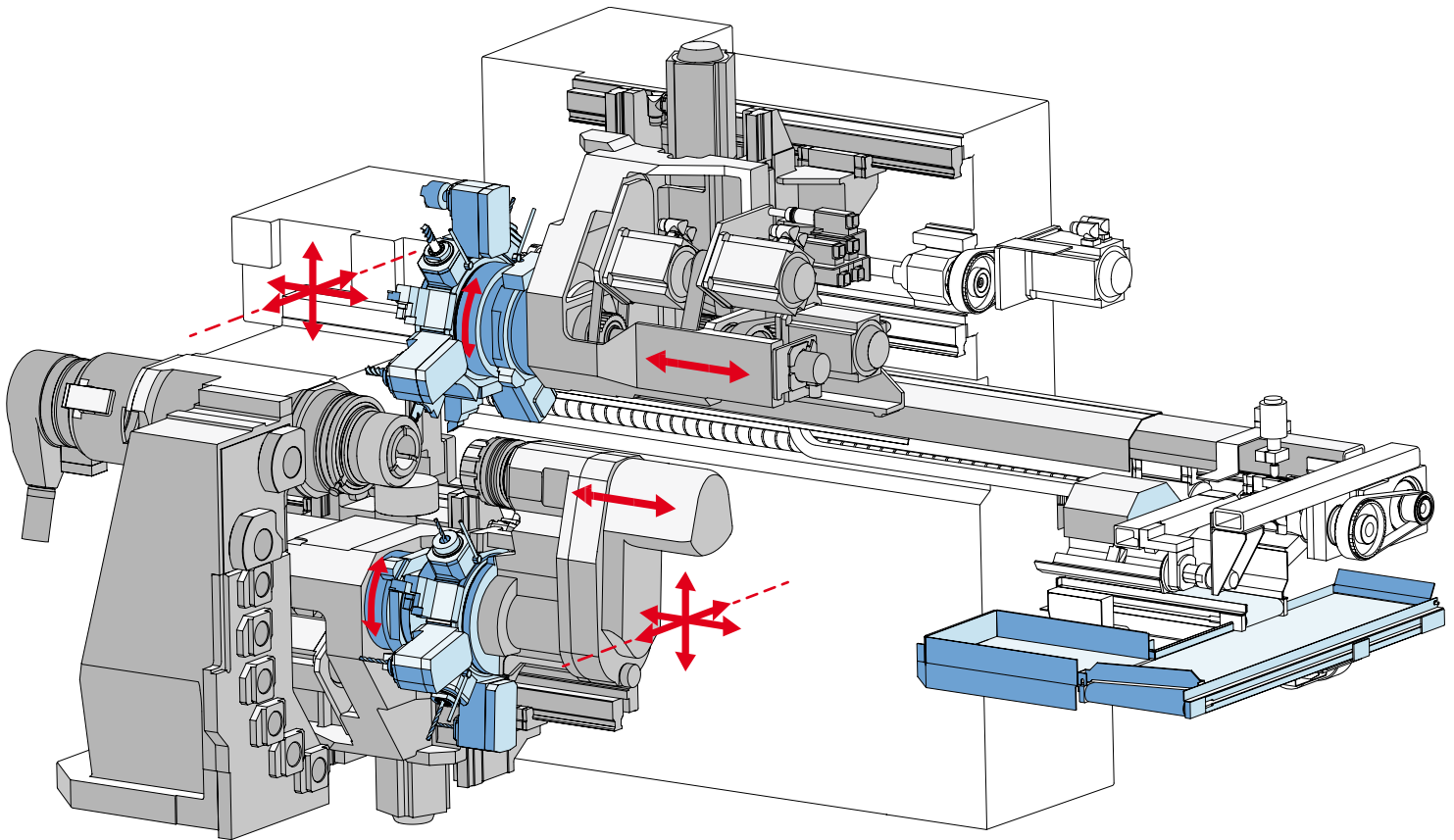
Counter spindle with lower tool carrier

- Powerful counter spindle with large travels in the X- and Z-axes
- Integrated tool turret with 9 stations
- Fast acting C-axis positioning

The machine design for solid manufacturing

The bending and torsion proof machine made of gray cast iron carries the thermo-symmetrically designed headstock. The dynamic stiffness and thermal stability of the machine design guarantees the precision of the turned parts produced.

The vertical machine bed allows a free chip flow. The above-average mass of the TRAUB TNK and the above-average damping properties extend the service life of the cutting tools used.

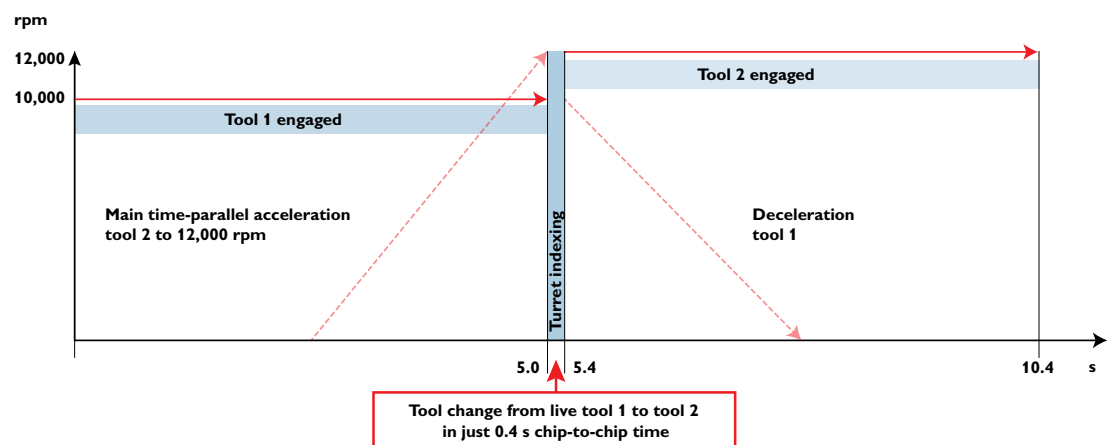


Dual Drive System –

The drive system in which the next tool is accelerated or decelerated during main time.

■ Moderate acceleration and gentle deceleration ensure a long life of the live tool holders

■ Only 0.4 s chip-to-chip time for live tool holders



Fast tool turrets

without locking

Turret indexing by NC rotary axis

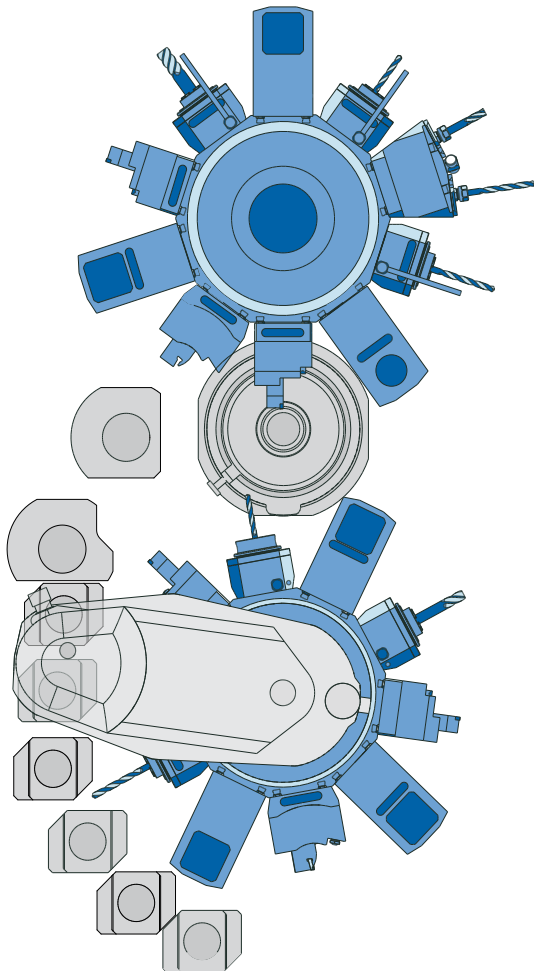
The NC rotary axis of the tool turrets index the turrets in a continuous rotary motion without mechanical interlock.

This allows you to position both the turret and the counter spindle very fast at any angle.

This results in shortest chip-to-chip times, because unlocking and locking of the turrets are eliminated, and the easy use of multi-tool holders increases the applicable tool pool.

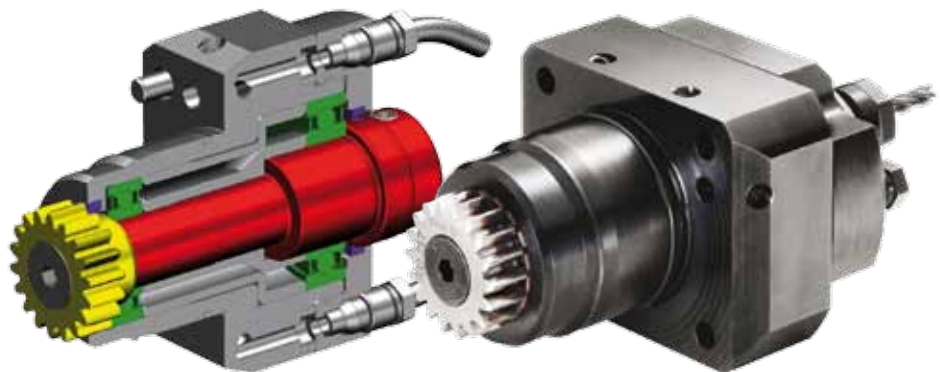
Counter spindle with unique kinematics

The counter spindle is fitted onto an X / Z cross-slide that also carries the lower turret.



Sturdy tool mounting system

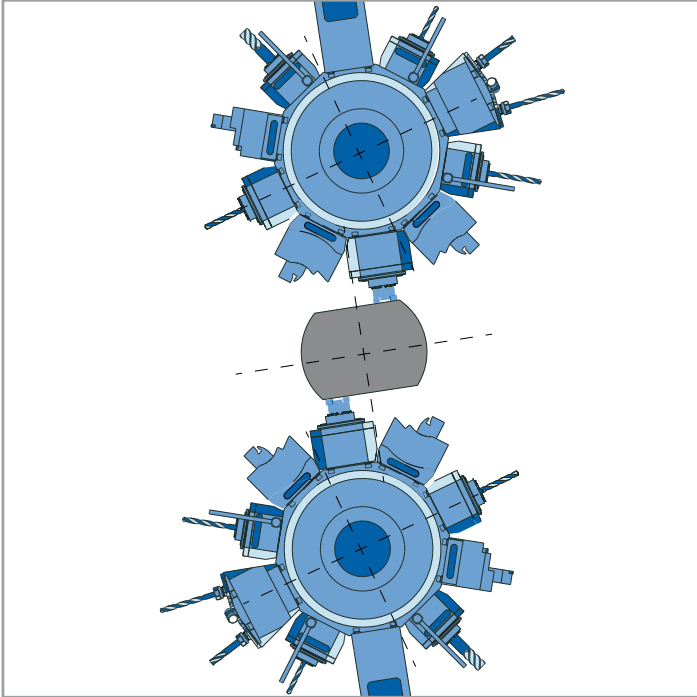
Based on the solid shank dimension ($\varnothing 45$ mm), the compact shank system provides enough space to allow the use of large bearings for live tool holders. This ensures high cutting performance and long service life of the tool holder simultaneously.



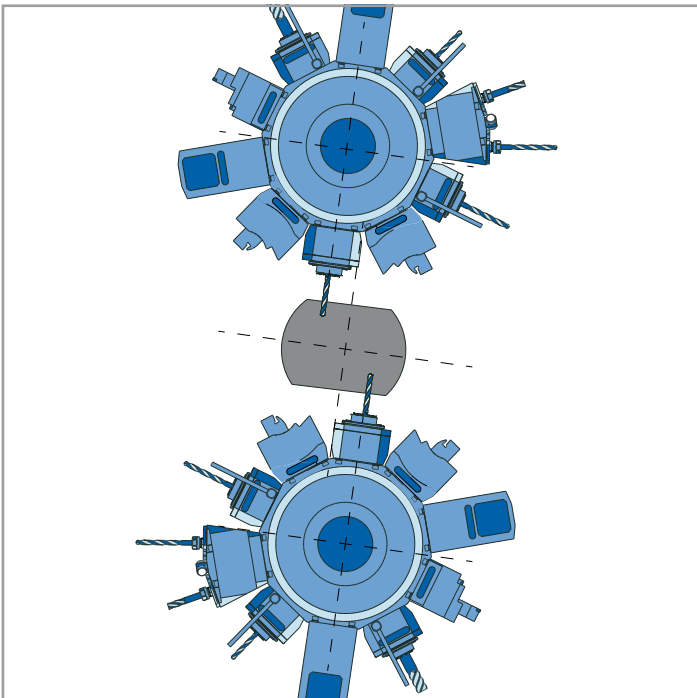
Y-functionality of

tool turrets

Milling of surfaces with 2 cutter heads



Two-side off-center drilling and threading*

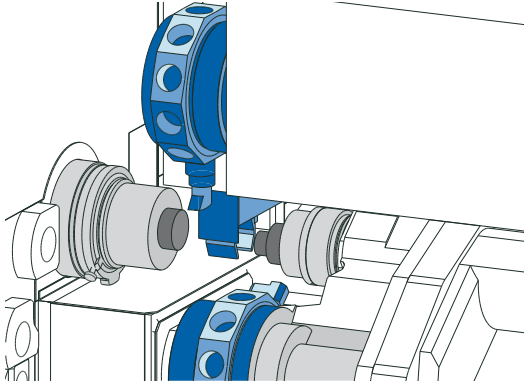


Broad
parts range

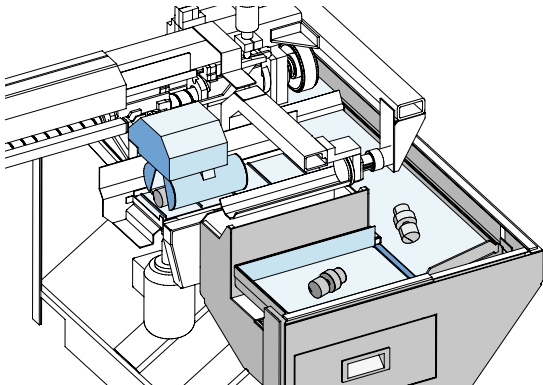


Fast and gentle

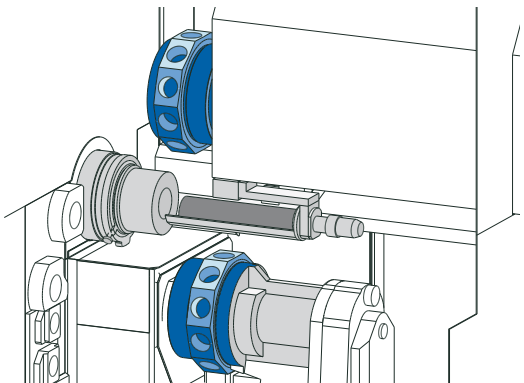
workpiece removal



With the workpiece removal unit integrated into the machine, finished parts can be removed from the counter spindle with ease and without damage using the freely programmable gripper shuttle.



The finished parts are gently placed on an accumulation conveyor belt.

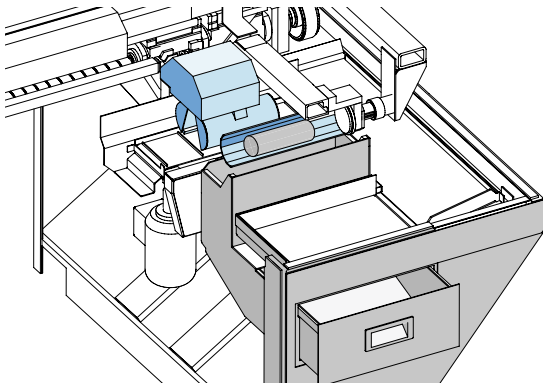


The bar remnant is taken up by a separate gripper shuttle with a collecting bowl on the main spindle.

Ø max. 65 mm

Length max. 250 mm

Mass max. 6.5 kg

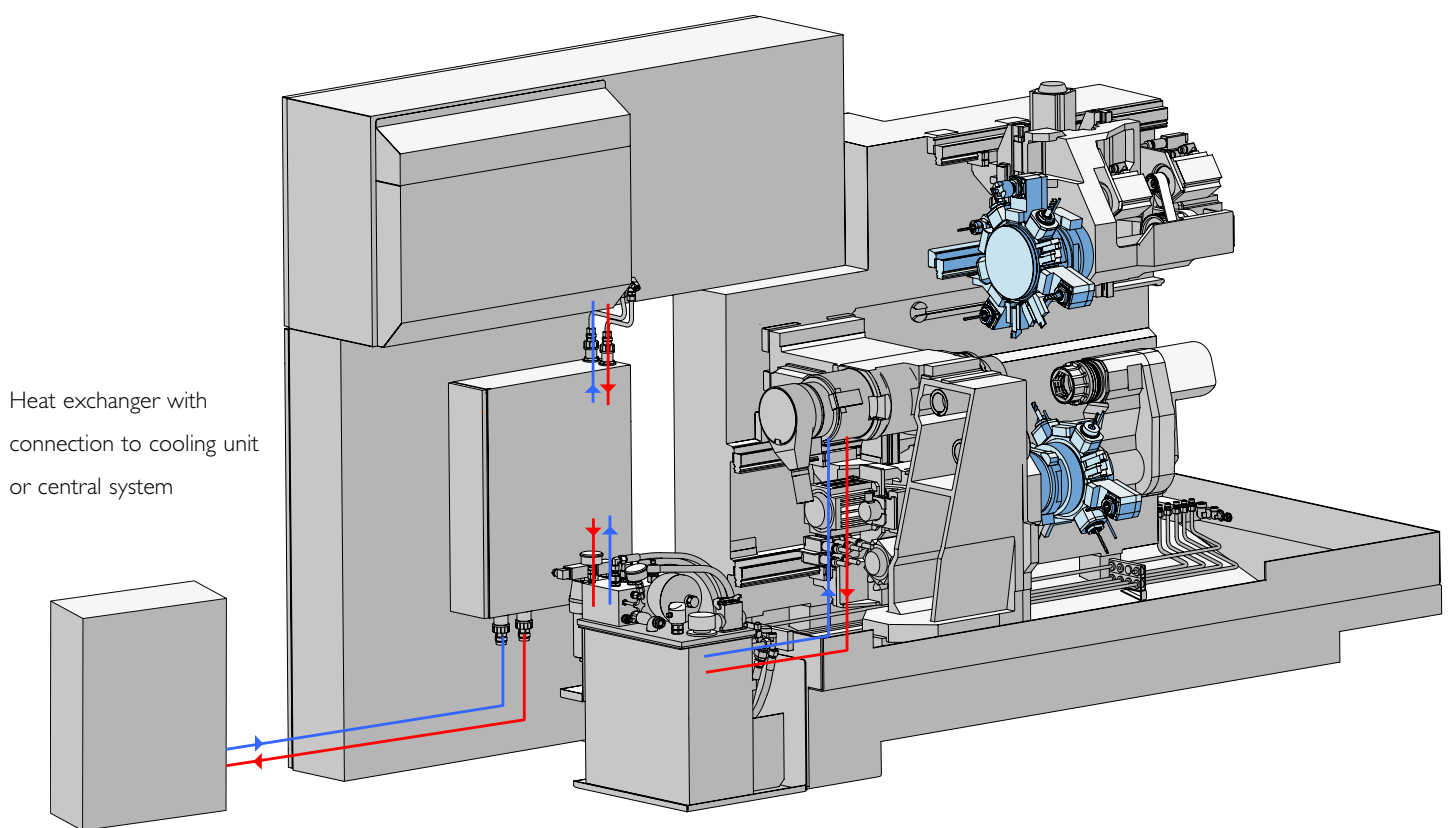


The disposal of the bar remnant takes place separately from the finished parts into its own remnant container.

Clever cooling

The TRAUB TNK impresses with a sophisticated cooling concept. Lost heat that is generated in the spindles, the hydraulic aggregate and the control cabinet is dissipated from the machine through a central fluid circuit. The energy is bound in one single medium and not dissipated to the environment of the machine.

Proven TRAUB cooling concept: You decide which cooling concept you want to use. The structure of the TNK with the integrated water interface provides two solutions for heat dissipation for always optimal cooling, either connecting to a local cooling unit or a central system. So you can adapt the machine optimally to your production environment.



Manufacturing precision

The spindles, hydraulic system and control cabinet are cooled using a consistent cooling concept. Heat energy is effectively dissipated, and temperature stability is improved, thus supporting a precise and reliable machining process.

Better working environment

It is advantageous that cooling can take place away from production. The noise and heat emissions are thus reduced to a minimum and your staff are not unnecessarily burdened.

Safe investment

Whether centralized or decentralized, the cooling concept of the TRAUB TNK is always economic. You decide which variant matches your production environment best. The solution on the basis of a central system offers the advantage that multiple machines can be connected.

Higher reliability

The innovative design allows eliminating components commonly used with conventional cooling principles, such as fans and air conditioners. This enhances availability and increases profitability. The space required is also reduced. No maintenance required.

CNC control

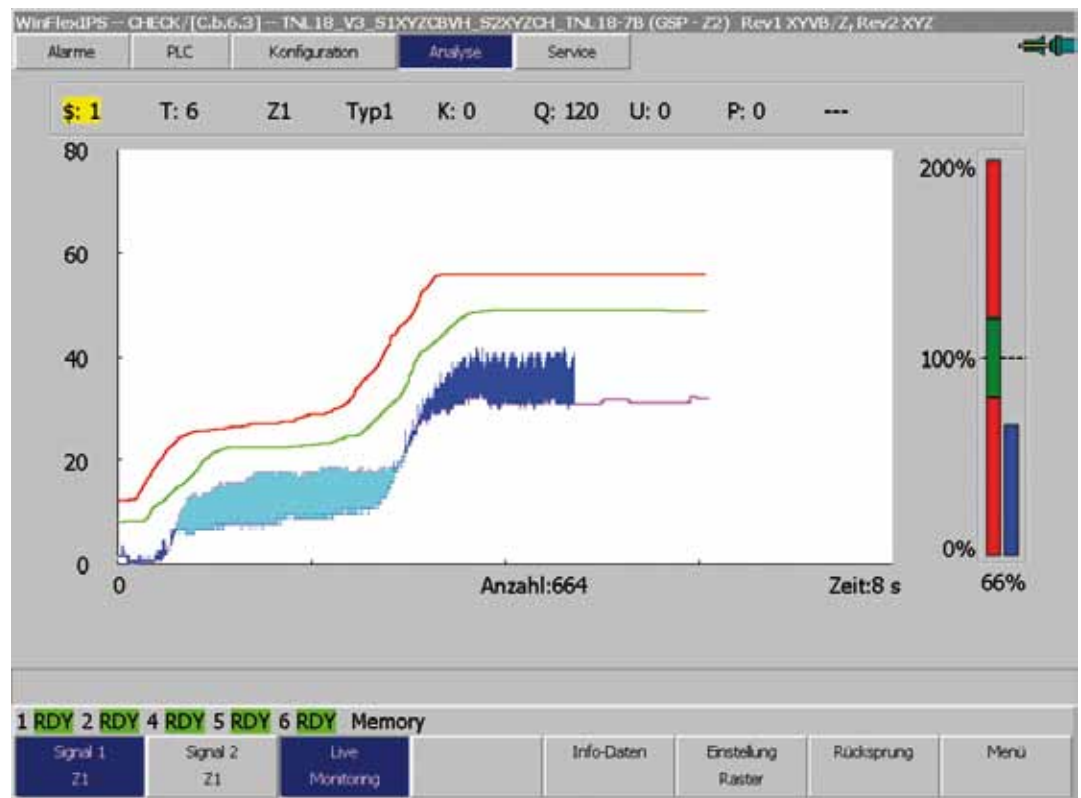
Ergonomic interactive user interface for programming, editing, setup and operation

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



Tool monitoring

- Highly sensitive tool breakage and tool wear monitoring
- No additional sensors required
- Easy to use, for example, through automatic generation of limiting curves
- Live monitoring:
Any deviations of the actual monitoring from the learning curve are displayed live

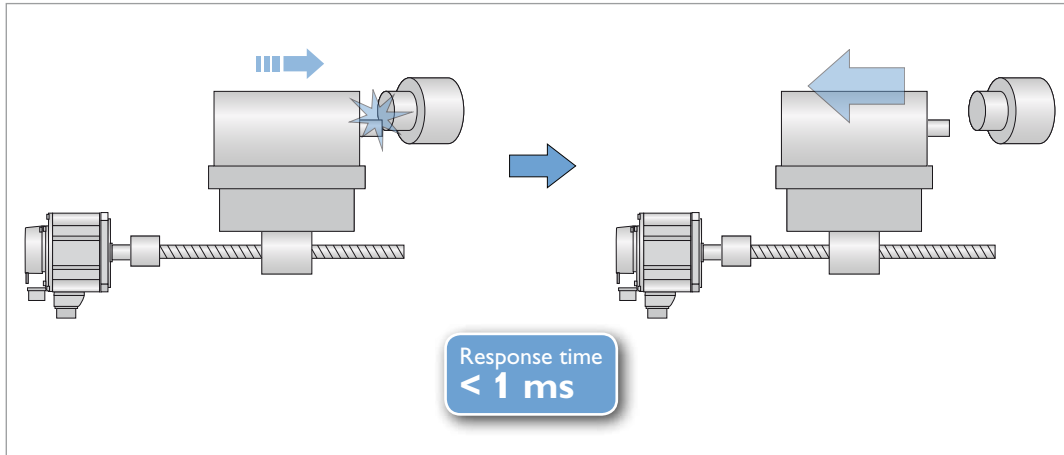


Live image display

TRAUB TX8i-s

The fast control

for good workpieces

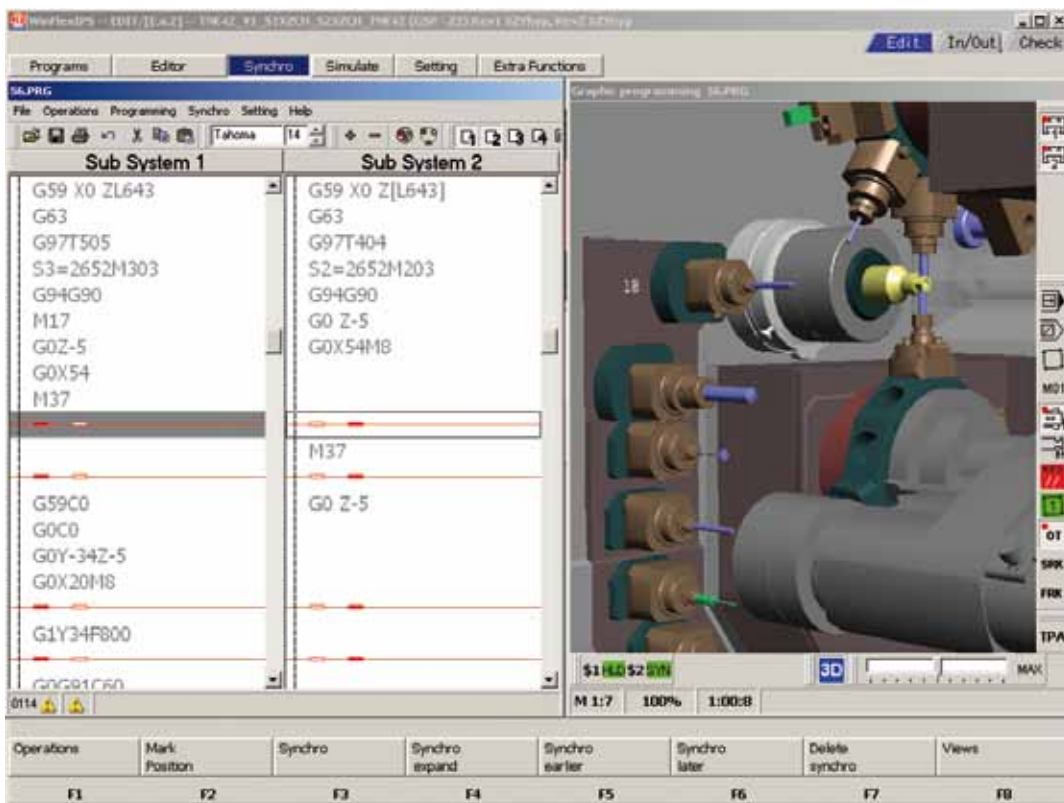


Electronic quick retraction

Additional safety device –

Electronic quick retraction

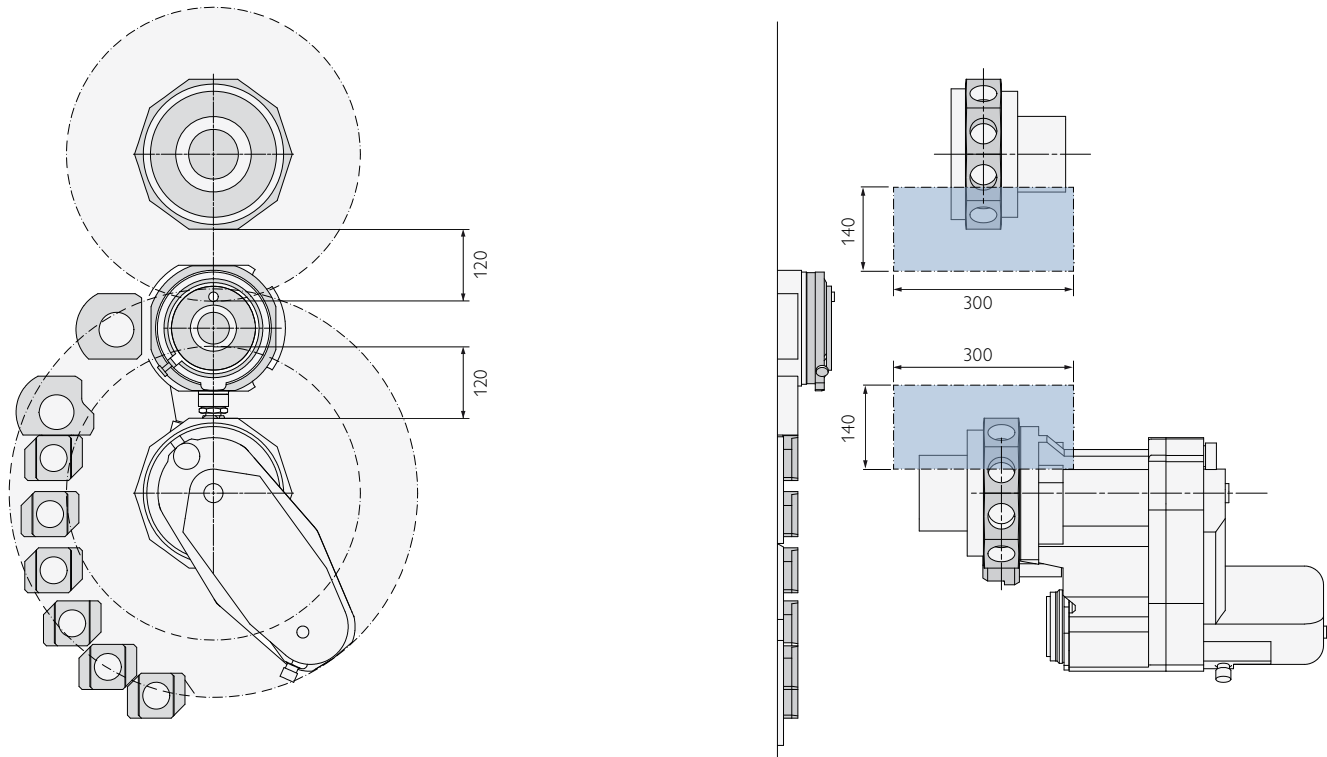
- Active on all TRAUB machines
- Minimization of machine damage
- Active counter control in case of malfunction
- Response time in the millisecond range by intelligent servo amplifier
- More effective than mechanical safety systems



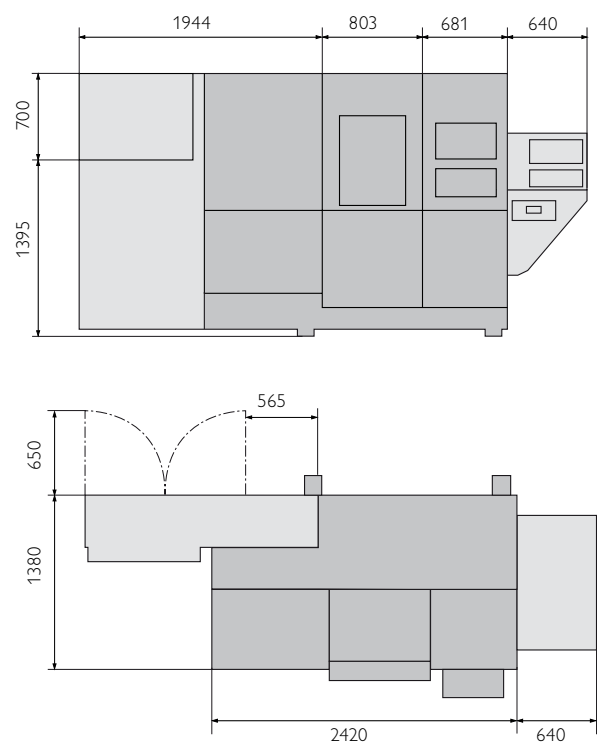
TRAUB WinFlexIPSP^{Plus} (Option) in the machine and external

- Production-ready programs already during program creation
- Step-by-step parallel programming and simulation possible
- Extremely easy synchronization of machining sequences with 2 subsystems
- Cycle-time optimization already during programming
- Planning and optimization of setup operation corresponding to the actual machine
- 3D simulation and computerized check provide for additional safety
- 3D collision protection during setup operation of the machine.

Work area:



Installation chart:



Technical data

Working range		D42	D65
Distance between main & counter spindle	mm	305	295
Main spindle			
Spindle clearance	mm	42	65
Max. speed	rpm	7000	6000
Drive power at 100%/40%	kW	25 / 29	35
Torque at 100%/40%	Nm	50 / 65	120
Chuck diameter	mm	110	160
Spindle nose ISO 702/1	mm	A5	140
C-axis resolution	Deg.	0.001	0.001
Upper tool turret			
Number of stations	Number	10	10
Max. speed	rpm	12000	12000
Drive power at 25%	kW	10	10
Torque at 25%	Nm	8	8
Slide travel X, Y (interpolated), Z	mm	140, +/- 50, 300	140, +/- 50, 300
Rapid traverse rate X/Z	m/min	30 / 50	30 / 50
Chip-to-chip time	s	<0.4	<0.4
Lower tool turret			
Number of stations	Number	9	9
Max. speed	rpm	12000	12000
Drive power at 25%	kW	10	10
Torque at 25%	Nm	8	8
Slide travel X, Y (interpolated), Z	mm	140, +/- 50, 300	140, +/- 50, 300
Rapid traverse rate X/Z	m/min	30 / 50	30 / 50
Chip-to-chip time	s	<0.4	<0.4
Counter spindle			
Spindle clearance	mm	42	52
Max. speed	rpm	6000 (7000*)	6000
Drive power at 25%	kW	12	12
Torque at 25%	Nm	22.5	22.5
Chuck diameter	mm	110	110
Slide travel X, Z	mm	140, 300	140, 300
Rear end machining unit			
Number of stations		8, of which 5 are live	8, of which 5 are live
Max. speed	rpm	12000	12000
Drive power at 25%	kW	6.7	6.7
Torque at 25%	Nm	5.3	5.3
Machine dimensions			
Length x width x height	mm	4070 x 1380 x 2100	4070 x 1380 x 2100
Weight up to approx.	kg	6500	6500
Connected power	kW	41	41
Control		TRAUB TX8i-s	

* in connection with Dual Drive

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