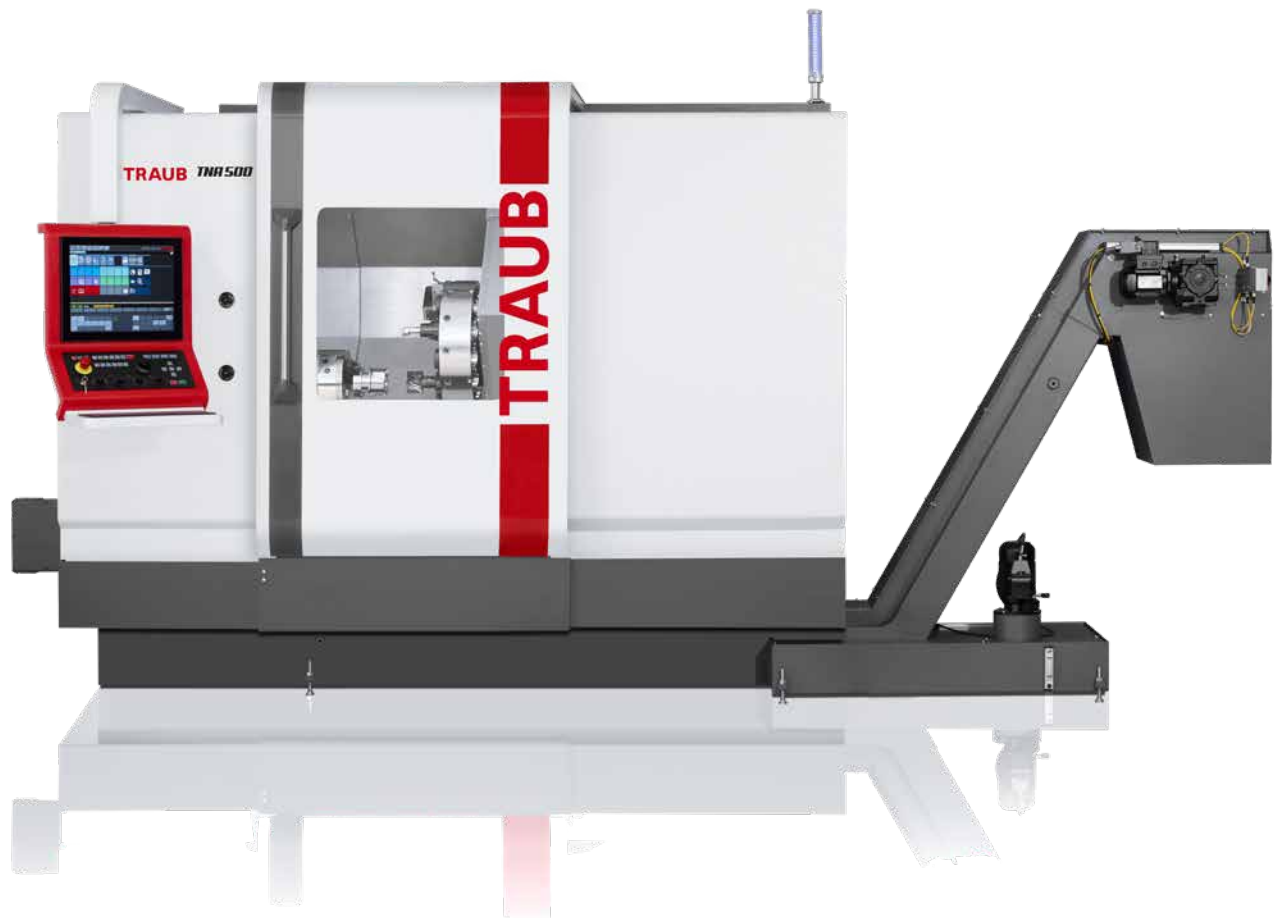


# ***TNA400, TNA500***

*Universal lathes for  
precise and powerful cutting*

# **TRAUB**



*better.parts.faster.*

## Universal turning at the highest level

The TRAUB TNA400/TNA500 universal lathe impresses with its innovative machine layout and raises universal turning to a new dimension.

The stiff and vibration-damping machine bed in mineral cast block-unit design ensures ideal results when machining complex workpieces from batch size 1.

With a high spindle torque up to high spindle speeds, even difficult-to-cut materials can be machined powerfully and reliably. A particular feature of the TRAUB TNA400/TNA500 is the completely newly designed and clearly structured work area for a variety of applications.

A turning length of up to 1,200 mm allows for a variety of machining options. With the optionally available counter spindle, rear-end machining can be carried out with high precision.

The ergonomic design ensures quick setup and easy control of the machine.

The proven INDEX iXpanel operating concept and the 18.5" touch monitor provide the operator at any time with all relevant data for economical production and access to networked production.

### The machine concept

- Clearly structured and ergonomically advanced work area concept
- Rigid mineral cast bed in 45° block-unit design for high accuracy
- Work spindle with belt drive for high torques
- Spindle head A8 / A11, spindle clearance dia. 82 / 102 mm, chuck up to dia. 315 / 400 mm
- Generously designed bed guides
- Radial turret for 18 tools with VDI 30/VDI 40 mounting and W-serration for high process reliability or disk-type turret for 12 tools with VDI 40 mounting (in combination with tailstock only).
- Orthogonal, linear Y-axis for high accuracy
- Large axis travels X 360 mm / Y ±60 mm / Z 750 mm
- Options
  - Long version with a turning length of up to 1,200 mm
  - Counter spindle with A6/A8 interface
  - NC tailstock with electrically controlled axis
  - Steady rest, electronically positionable
  - Bar package with short bar loader
  - INDEX EcoFluid
  - Workpiece handling

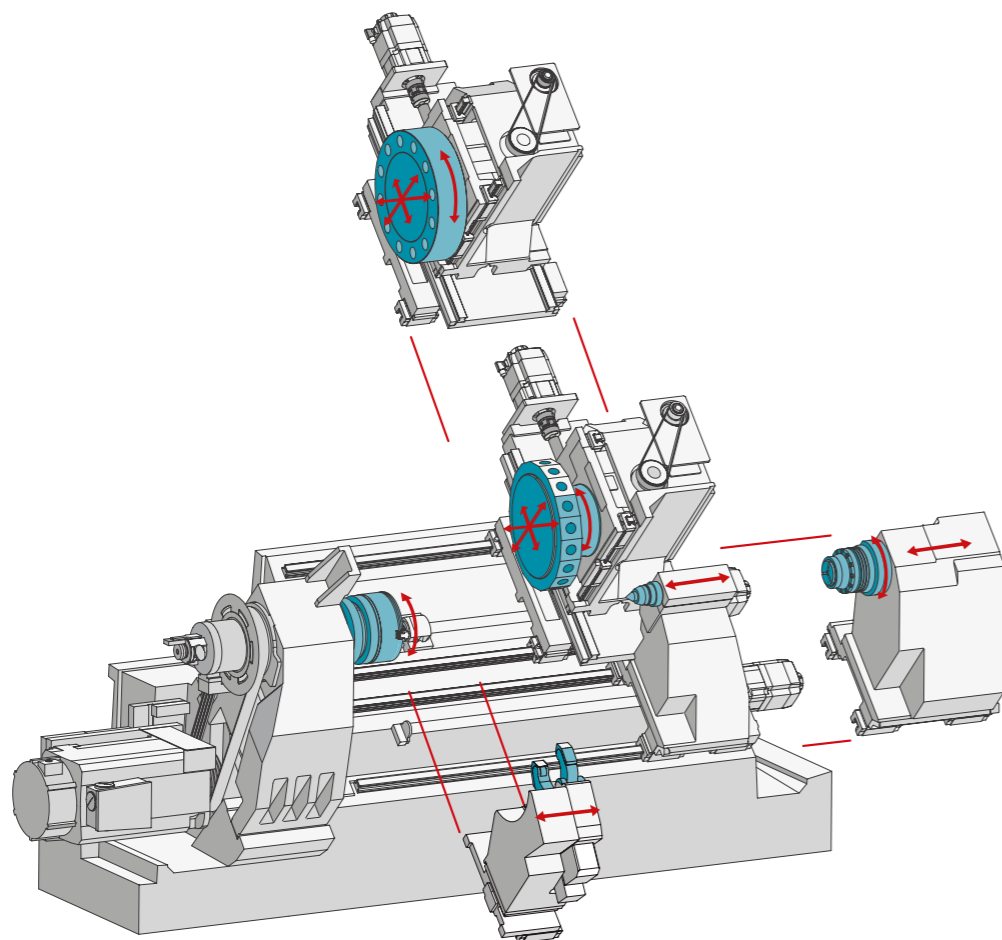


## Clearly structured machine design and versatile applications

The TRAUB TNA400/TNA500 represents a logical further development of proven manufacturing solutions within the IN-DEX Group. Individually equipped, this very flexible universal lathe takes its place both in tooling and prototyping, but also in medium and high-volume production.

Decades of know-how is reflected in numerous design details, such as in a pocket in the panel above the main spindle which ensures collision-free use of long boring bars.

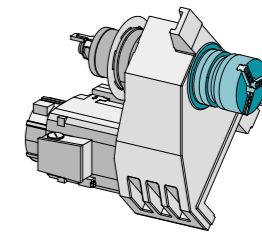
### TRAUB TNA400/TNA500 modular system



## The components

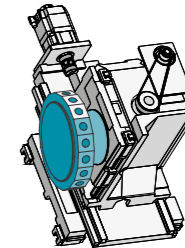
### Main spindle (TNA400/TNA500)

- Spindle clearance dia. 82 / 102 mm, chuck up to dia. 315 / 400 mm
- Max. speed 4,000 / 3,150 rpm
- Spindle power 24 / 37.5 kW (40% DC)
- Torque 480 / 1,020 Nm (40% DC)
- Holding brake for indexing the axis



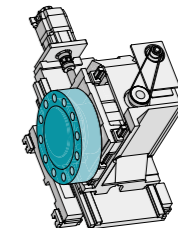
### Radial turret

- 18 live tool stations
- VDI 30 / 40 according to DIN 69880 with patented W-serration
- X 360 mm / Y ±60 mm / Z 750 mm (long version Z 1,250 mm)
- Machining possible up to 70 mm below center of rotation\*
- 6,000/5,400 rpm, 9.5/16.5 kW, 19.5/37 Nm (25% DC)



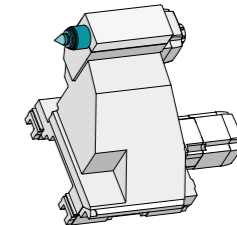
### Disk-type turret

- 12 live stations, VDI 40 DIN 69880
- X 360 mm / Y ±60 mm / Z 750 mm
- Machining possible up to 60 mm below center of rotation
- 5,400 rpm, 9 kW, 37 Nm (25% DC)



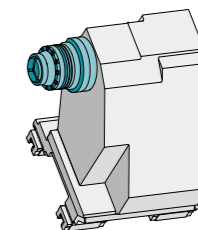
### NC tailstock

- Electronically freely positionable
- Generously dimensioned roller guides
- Electronically adjustable pressing force up to 10,000 N
- Cone center MK5 / SK 30
- Rapid traverse rate 8.5 m/min



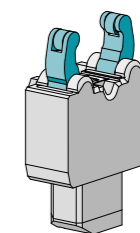
### Counter spindle

- Spindle clearance dia. 65 / 82 mm, chuck up to dia. 175 / 250 mm
- Max. speed 4,000 / 3,150 rpm
- Spindle power 11 / 11 kW (40% DC)
- Torque Nm 126 / 220 (40% DC)
- Holding brake for indexing the axis



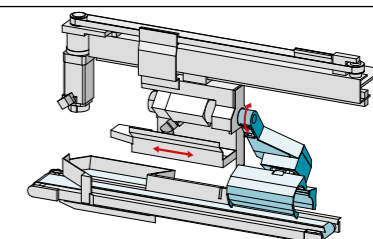
### Steady rest (option)

- Electronically positionable
- NC-programmable
- Clamping range 8 - 101 mm/12 - 152 mm



### Workpiece handling unit (option)

- Diameter dia. max. 82 / 102 mm
- Max. length 250 / 250 mm
- Max. weight 10 kg



\* (on the main spindle)

## Ideal for a wide range of parts

With the TRAUB TNA400/TNA500 universal lathe, a wide variety of workpieces can be machined from bars of up to dia. 82/102 mm and in the chuck up to dia. 315/400 mm.



### Shaft

C45  
dia. 65 mm x 400 mm



### Sleeve

25CrMo4  
dia. 250 mm x 230 mm



### Ball screw nut

20NiCrMo2-2  
dia. 78 mm

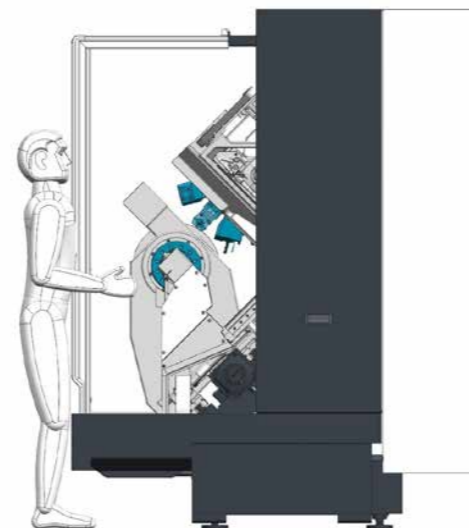
## The ergonomic operating concept

The generously dimensioned work area ensures best accessibility for setup of the TRAUB TNA400/TNA500.

The main spindle and tool turret can be accessed easily, enabling fast setup and changeover. The sophisticated work area concept with steep-sloping and smooth covers provides for an ideal chip flow and prevents chip nests.

### Highlights

- Fast setup
- Excellent access to the work area
- Optimized chip flow



## The principle of W-slots

The patented INDEX W-serration on the tool holders and radial turret ensures high repeatability when changing tools.

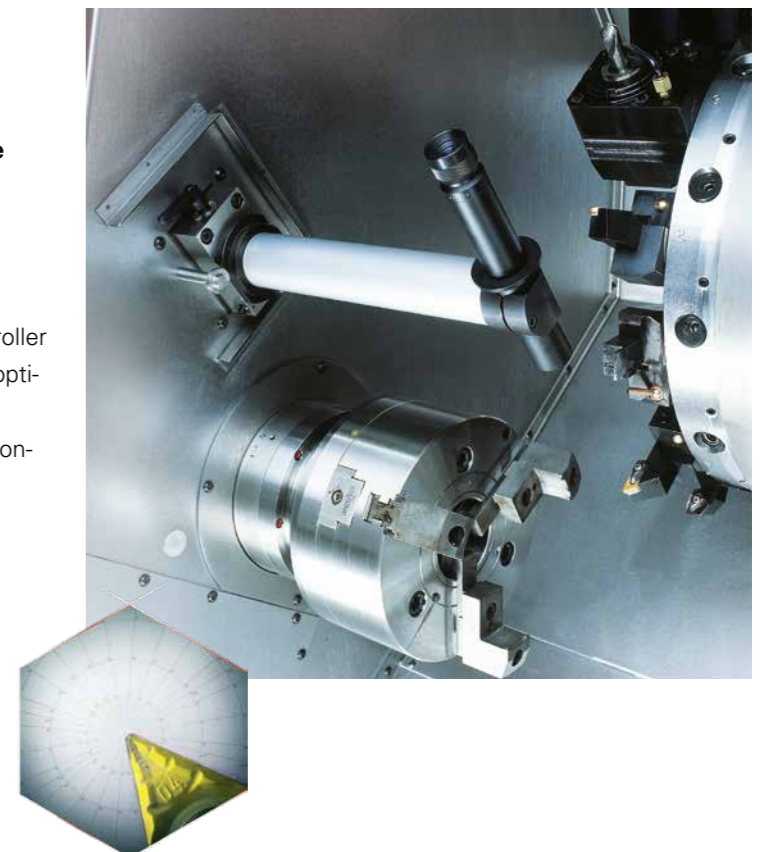
- Tool mounting VDI 30 / VDI 40
- Short tooling/setup times
- High change accuracy with long fixing grooves
- Extended life of cutting inserts
- DIN 69880-compatible
- Suitable for stationary and live tools



## ATC measuring device

### Fast and precise tool measurement directly in the machine

- Fast tool measurement in the machine
- Measurement of multi-tool holders possible
- Automatic transfer of the correction values to the controller
- Damage detection on the cutting edge with enlarged, optical display
- Very high accuracy due to direct measurement in the configured machine
- No separate presetting unit required



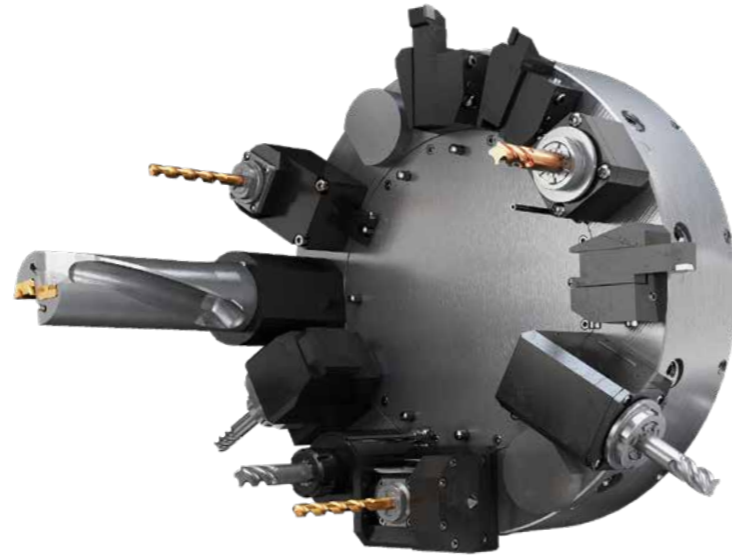
## The available tool carriers

Two different tool carriers are available for the TRAUB TNA400/TNA500. Up to 12/18 stationary or live tools can be installed on the tool carriers.

### Disk-type turret—the tried and tested TRAUB classic

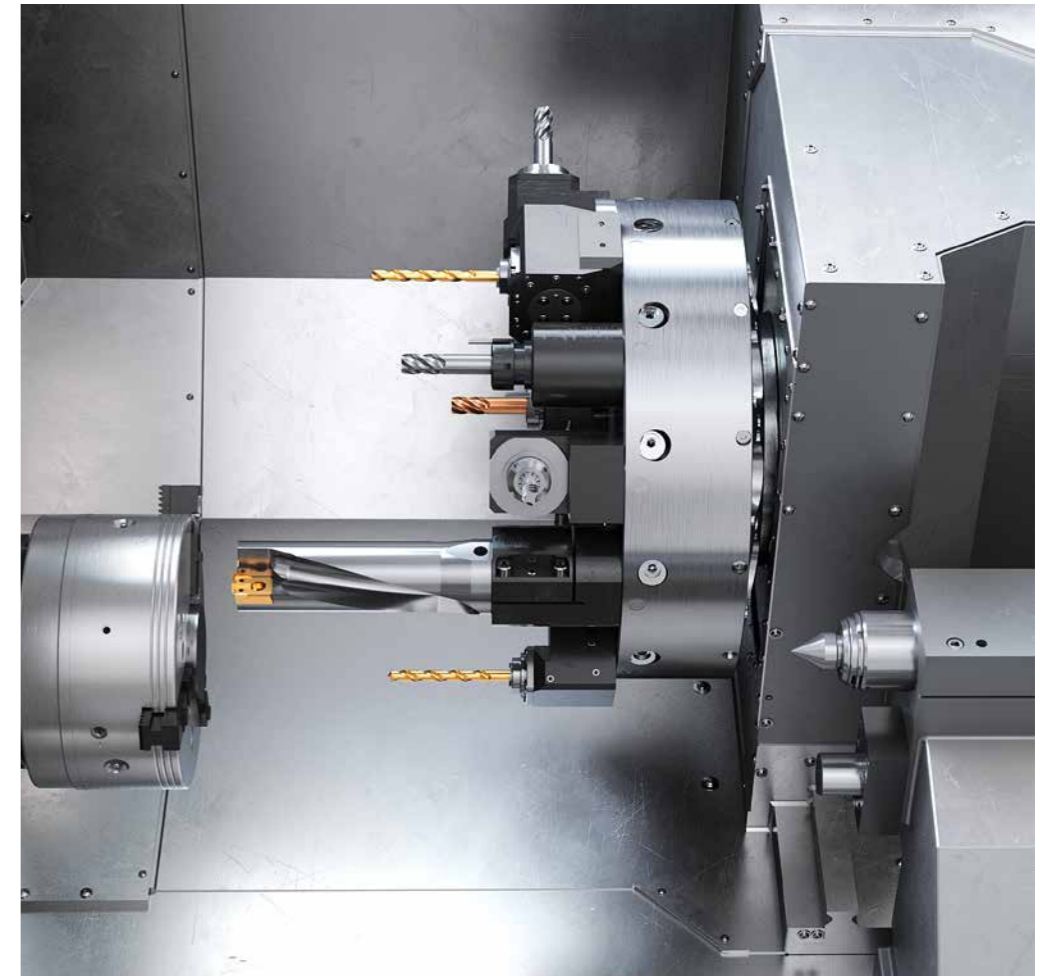
The disk-type turret is excellently suited for powerful machining due to its design aligned to the main spindle.

- Tool mounting VDI 40
- Ideal for use of large solid drills, as the forces can act directly on the workpiece
- High stability owing to direct force flow
- 12 stationary or live tools



### Work area

TRAUB TNA400/TNA500 with main spindle, tailstock, and disk-type turret



### Radial turret—with patented INDEX W-serration

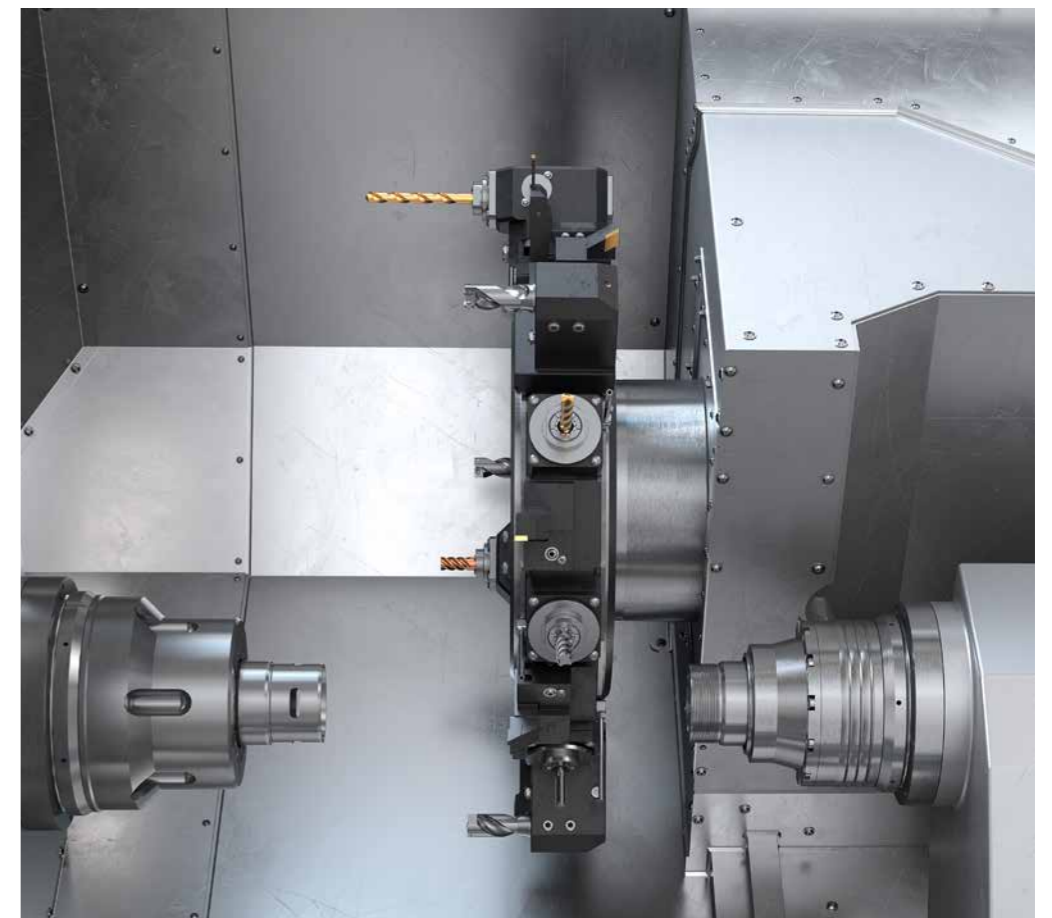
The radial turret stands out with its patented INDEX W-serration and ensures high repeatability during tool changes.

- Tool mounting VDI 30 / VDI 40
- Short tooling and setup times
- High change accuracy with W-slots
- Extended life of cutting inserts
- DIN 69880-compatible
- Rear-end machining possible
- Up to 18 tools for numerous machining options on main and counter spindles



### Work area

TRAUB TNA400/TNA500 with main spindle, counter spindle, and radial turret



## ***X*center Robot cell**

### **Intelligent automation— even more flexibility and efficiency**

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



#### **Ready to go**

- 6-axis robot for up to 7 kg payload with integrated gripper control
- Double gripper included as standard
- 22 pallets (without work-piece-specific inlays) are included as standard
- Easy in-house relocation possible

#### **Unlock more potential**

Downstream processes, such as cleaning, measuring, and deburring, can be integrated in the robot cell.

#### **Simply good handling of blanks and finished parts**

- Space-saving vertical storage with up to 22 pallets stacked up
- Pallet size 600 x 400 mm
- Minimum pallet height 25.4 mm
- Pallets with blanks are loaded at the bottom, pallets with finished parts are removed at the top – at any time without interrupting production
- Pallets are inserted/removed by the robot
- Easy macro-programming





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

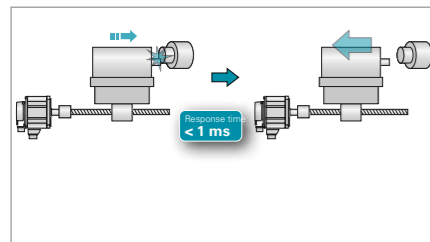
### Focus on production and control—Industry 4.0 included

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

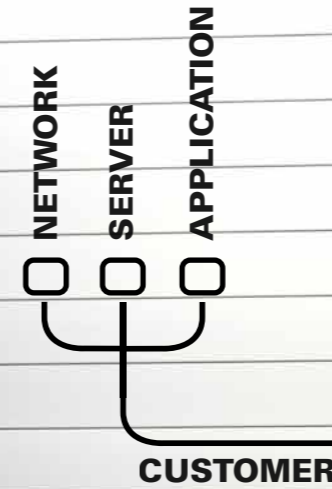
- Online retrieval of manufacturing and setup information; remote access via VNC Graphics-supported interactive guidance, also during setup
- Comfortable process synchronization and optimization of program sequences of parallel machining processes
- Visual verification to avoid collision situations through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



### Virtual & open

with the TRAUB WinFlexIPS <sup>plus</sup> 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



Order documents



Customer data



Browser



Drawings



Setup sheet



Notes



Information center



Remote access



User management



Technology computer



Programming help

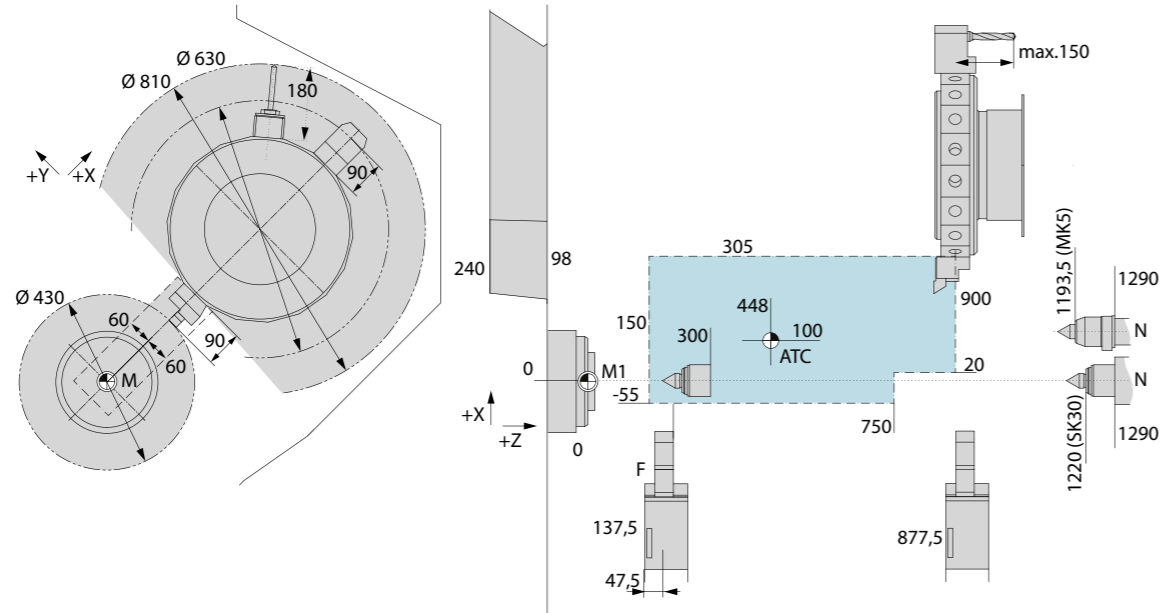
- WinFlexIPS
- WinFlexIPS <sup>Plus</sup>
- Custom applications

+ many more standard features

**TRAUB TNA400**

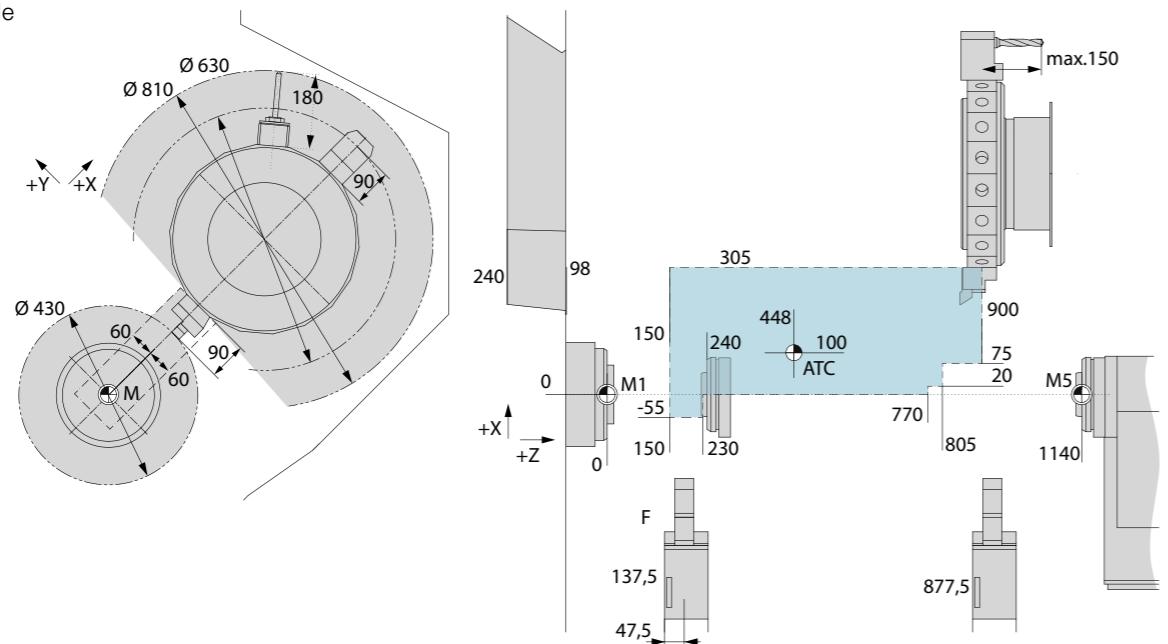
**TNA400 work area**

VDI 30 radial turret with tailstock



**TNA400 work area**

VDI 30 radial turret with counter spindle





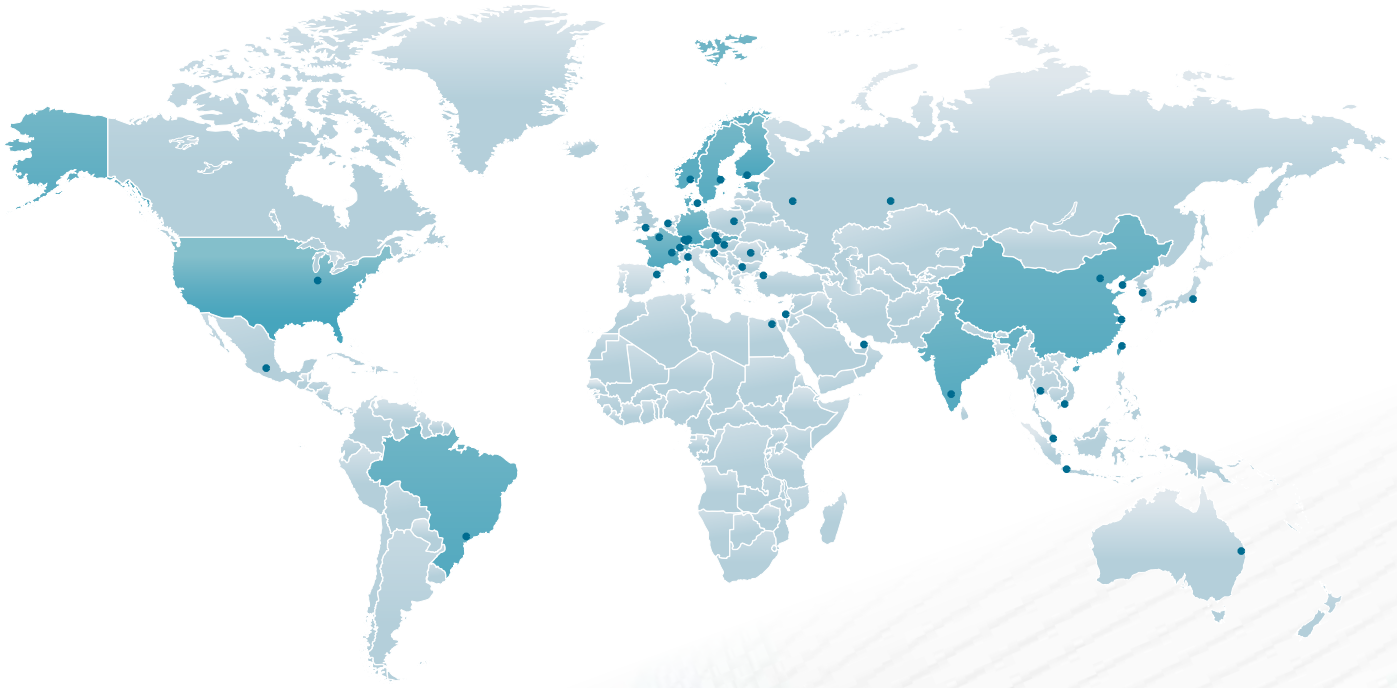


## Technical data TRAUB TNA400

Work area		
Turning length	mm	750
Main spindle		
Spindle clearance	mm	82
Spindle nose DIN 55026	Size	A8
Max. chuck	mm	315
Max. speed	rpm	4,000
Drive power (100%/40% DC)	kW	30/38
Torque (100%/40% DC)	Nm	375/460
Counter spindle		
Spindle clearance	mm	65
Spindle nose DIN 55026	Size	A6
Max. chuck	mm	175
Max. speed	rpm	4,000
Drive power (100% / 40% DC)	kW	8/11
Torque (100%/40% DC)	Nm	86/126
Tool turret	Radial turret	Disk-type turret
Tool mountings DIN 69880	Number	18 VDI 30/VDI 40
Live tools	Number	18/18
Max. speed	rpm	6,000/5,400
Drive power (25% DC)	kW	9.5/16.5
Torque (25% DC)	Nm	19.5/37
Slide travel X	mm	360/360
Slide travel Y	mm	±60 / ±60
Slide travel Z	mm	750/750
Feed force X (63% DC)	N	11,900
Feed force Y (63% DC)	N	11,700
Feed force Z (63% DC)	N	11,900
Rapid traverse rate X/Y/Z	m/min	40/20/40
Tailstock		
Mounting		MK 5/SK 30
Max. pressing force	N	10,000
Rapid traverse rate	m/min	8.5
Cooling lubricant unit (basic unit)		
Pump pressure	bar	8/20
Tank capacity	l	300
Pump capacity 8/20 bar	l/min	80/30
Degree of filtration	µm	200
Machine dimensions		
Length x width x height	mm	3,244 x 1,900 x 2,290
Weight	kg	7,800
Connected power	kW, kVA, A, Hz	40 kW, 47 kVA, 68 A, 50/60 Hz

## Technical data TRAUB TNA500

Work area	TNA500 DL 750		TNA500 DL 1,200	
Turning length	mm	750	1,200	
Main spindle				
Spindle clearance	mm	102	102	
Spindle head ISO 702/1 DIN 55026	Size	A11	A11	
Max. chuck	mm	400	400	
Max. speed	rpm	3,150	3,150	
Drive power (100%/40% DC)	kW	25/37.5	25/37.5	
Torque (100%/40% DC)	Nm	750/1,120	750/1,120	
Counter spindle				
Spindle clearance	mm	82	82	
Spindle nose	Size	A8	A8	
Max. chuck	mm	250	250	
Max. speed	rpm	3,150	3,150	
Drive power (100% / 40% DC)	kW	7.5/11	7.5/11	
Torque (100%/40% DC)	Nm	135/220	135/220	
Tool turret	Radial turret	Disk-type turret	Radial turret	Disk-type turret
Tool mountings DIN 69880, DIN ISO 10889	Number	18 / VDI 40	12 / VDI 40	18 / VDI 40
Live tools	Number	18	12	18
Max. speed	rpm	6,000	5,400	6,000
Drive power (25% DC)	kW	16.5	9	16.5
Torque (25% DC)	Nm	37	37	37
Slide travel X	mm	360	360	360
Slide travel Y	mm	±60	±60	±60
Slide travel Z	mm	750	750	1,200
Feed force X (63% DC)	N	11,900	11,900	11,900
Feed force Y (63% DC)	N	11,700	11,700	11,700
Feed force Z (63% DC)	N	11,900	11,900	11,900
Rapid traverse rate X/Y/Z	m/min	40/20/40	40/20/40	40/20/40
Tailstock				
Mounting		MK 5/SK 30	MK 5/SK 30	
Max. pressing force	N	10,000	10,000	
Rapid traverse rate	m/min	8.5	8.5	
Cooling lubricant unit (basic unit)				
Pump pressure	bar	8/20	8/20	
Tank capacity	l	300	300	
Pump capacity 8/20	l/min	80/30	80/30	
Degree of filtration	µm	200	200	
Machine dimensions				
Length x width x height	mm	3,690 x 1,900 x 2,290	4,270 x 1,900 x 2,290	
Weight	kg	9,850	12,500	
Connected power	kW, kVA, A, Hz	54 kW, 65 kVA, 94 A, 50/60 Hz	54 kW, 65 kVA, 94 A, 50/60 Hz	



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