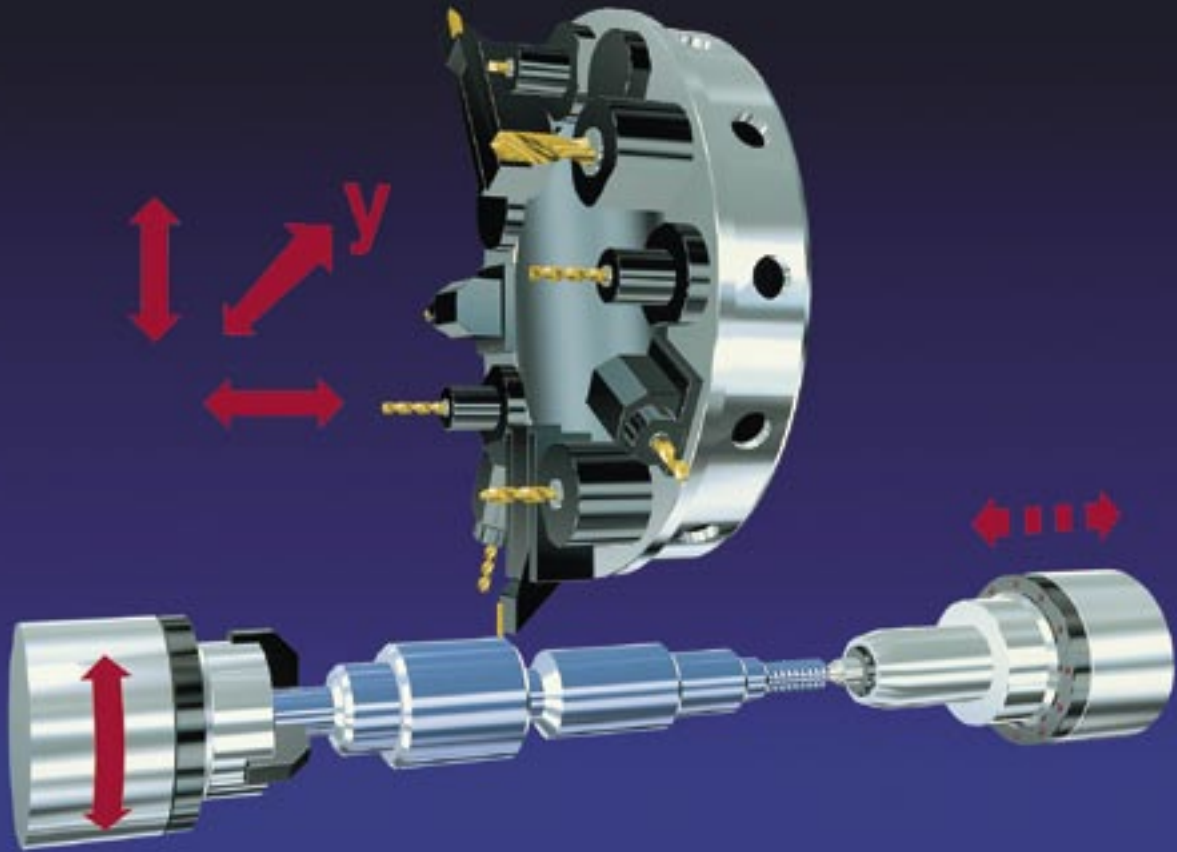


Universal

CNC Turning machine



**TNA400**







**The TRAUB TNA400 is a well established machine from TRAUB in the product range "Universal CNC turning machines". A machine that can be equipped according to your particular production requirements and which holds its own in tool room and production line alike. Besides the up-to-date, well proven mechanical construction with its superior tooling zone and an optionally available Y-axis the TNA400 offers latest NC technology with its TX8i 64bit control system. Convince yourself at a glance of the features of this TRAUB machine.**

## **The TNA400**

### **at a glance**

- compact, torsion and deflection resistant slant bed with 40° angle.
- modern design safety envelope. Polycarbonate viewing panels. Ergonomically optimal pivoting operator console.
- can be transported without the need for a lifting tackle. Levelled on four adjustable floor bolts.
- tailstock positioned on separate guideway, with optional R-axis for automatic operation.
- separate, easy to maintain coolant tank with filtration system.
- no central lube system, as bearings and slides are lifetime lubricated.
- main spindle with short taper receptor for all standard power and collet chucks.
- highly dynamic, digitally coupled AC motor for maximum torque. Maintenance free, of robust design and without adverse thermal effect on headstock.
- digital coupling of drives and control system.
- absolute position feedback systems eliminate the need to reference the machine.
- 12-station disk-type turret with cylindrical tool receptors to DIN 69 880-40.
- the turret traverses 50 mm over spindle centre to allow optimal use of tools.
- internal coolant supply (5 bar) through the tool.
- the rotating tools in all 12 turret stations are driven individually.
- rigid tapping.
- a hollow shaft encoder guarantees maximum C-axis precision.
- linear Y-axis with 100 mm traverse.
- sensor-free tool force monitoring.
- TRAUB TX8i open control system with ultra-fast 64bit high performance processor.
- DNH Bar Loading Magazine, TRAUB FHS Flexible Handling System.

**A CNC turning machine which speeds up your production output.**

■ The TNA400 offers the user many advantages in planning, selection and

production.

Starting with the standard equipment specification on the machine

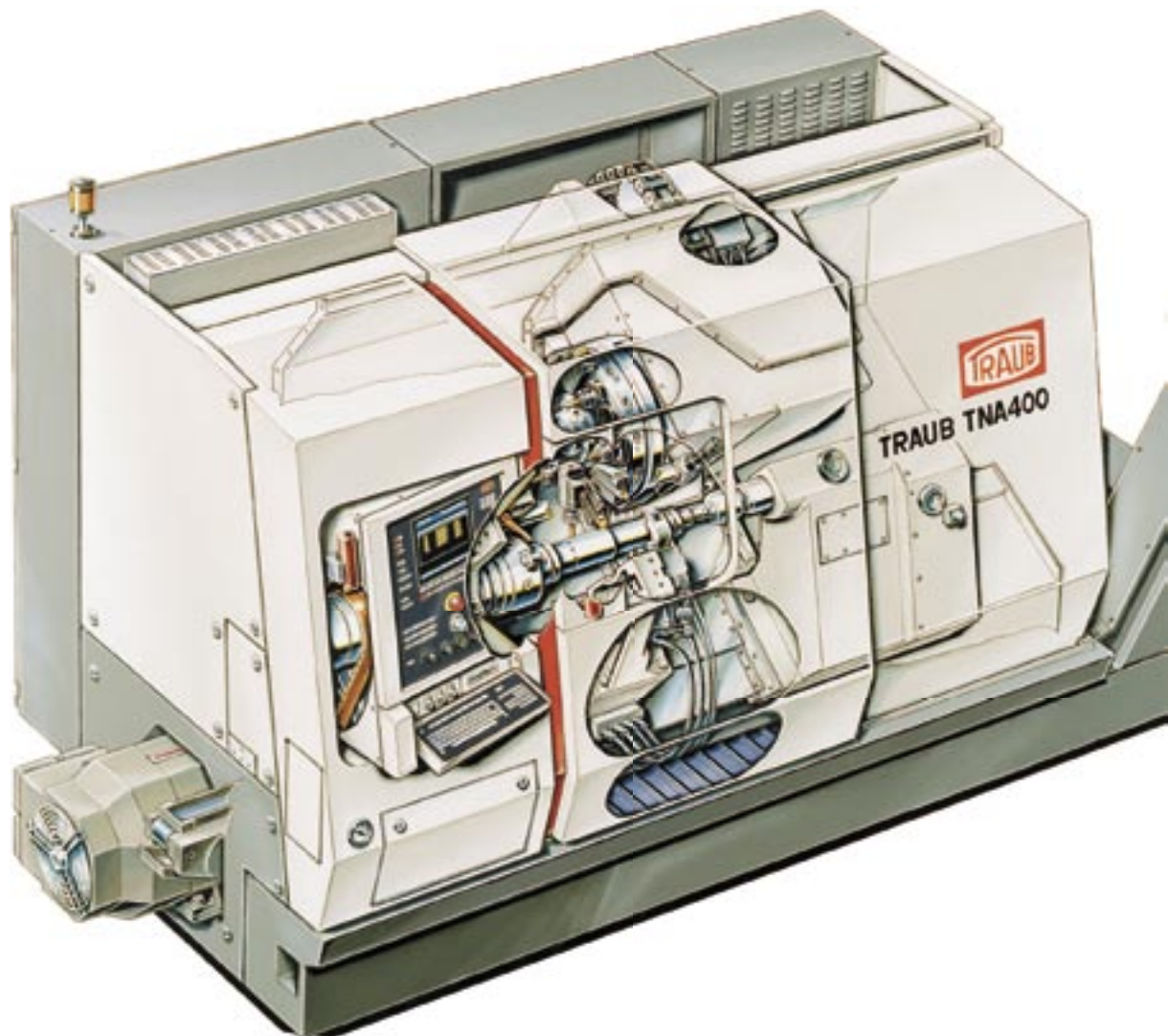
can be tailored to suit any particular requirement - whether it is the machining of one-offs and small batches so typical of mould

making, tool manufacture and prototype production, or medium size and large component batches with process monitoring, automated material flow and many other special features. Its flexibility is further increased by the new, powerful 64bit technology of the TRAUB TX8i control system.

■ The large, easily accessible tooling zone, the digital coupling of drives, the absolute position feedback system which eliminates the need for referencing the machine, as well as the possibility to equip the machine with a

flexible handling system, are all outstanding features of the TNA400.

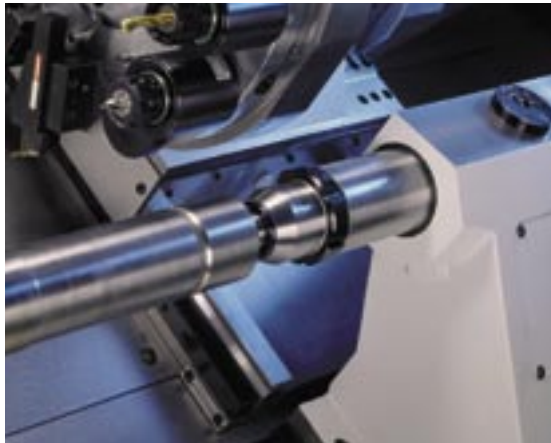
State-of-the-art design, pleasing colours and ergonomic construction are guarantors for a comfortable working environment.



## TNA 400 top-of-the range

technology for

your production line



The sturdy tailstock can be supplied with an R-axis.



The automatic tool position setting ATC forms an integral part of the basic equipment.



Whether you use power or collet chucks – they are aids for all-purpose component manufacture.



Modern design safety envelope with polycarbonate viewing panels.

### The basic construction

■ The TNA400 features a torsion and deflection resistant slant bed with 40° angle. This carries the thermo-symmetrically designed headstock, the linear motion guideways

for the compound slide and the separate guideways for tailstock and steady. The tailstock offers hydraulic quill movements and hydraulic clamping. As an option it can be supplied with an R-axis.

■ The main spindle is supported in high-precision, lifetime lubricated, play-free, preloaded angular contact bearings. The spindle nose with short taper receptor suits all conventional chucking equipment.

■ The disk-type turret features 12 tool reception bores to DIN 69880-40. Internal coolant supply and directional logic are standard. The turret head does not lift off during indexing, which results in outstanding chip-to-chip times.

■ If you should decide in favour of the TNA400 you will be acquiring a machine which sets new standards not only with regard

**The machine that can be tailored to suit any production requirement**

to technical requirements but also where equipment specification

is concerned. The basic machine already includes all the components you need for fast, accurate and – above all – economic production. This includes, amongst other features:

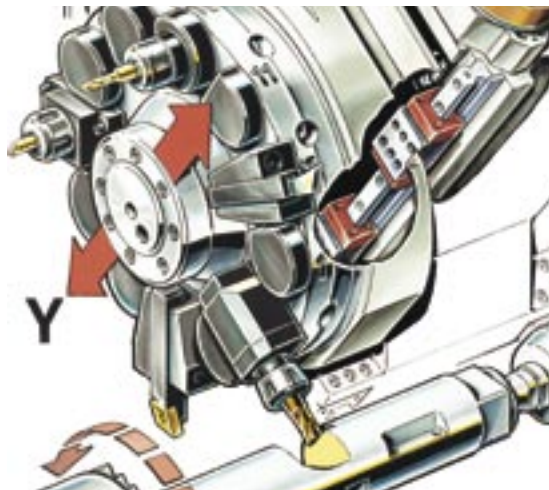
- hydraulic chucking cylinder
- 12-station turret with VDI receptors
- internal coolant supply with 5 bar pressure
- tailstock with hydraulic quill movement
- swarf conveyor
- coolant tank with filtration system
- pivoting operator console with hinge-type ASCII keyboard
- built-in floppy drive
- latest generation control system TRAUB TX8i
- TRAUB-ATC
- electronic collision shut down through monitoring of all drive axis motor currents.



A generously dimensioned tooling zone and a rapid-index disk-type turret with 12 tool reception bores. Internal coolant supply and directional logic are standard.



C-axis with hollow shaft encoder for maximum positioning accuracy considerably enhances the range of application.



#### Y-axis

Further requirements can be covered by the combination of C- and Y-axis. It allows linear milling or off-centre drilling operations which can be carried out with ease.

## Production optimized

## with the aid of

## auxiliary attachments

When we state that the machine can be tailored to suit any requirement we understand this to mean that a few auxiliary attachments open up additional machining possibilities, thus turning the TNA400 into an indispensable manufacturing aid. These options include various chucking equipment components and the use of driven tools in conjunction with a C-axis or a steady.

### The tool drive

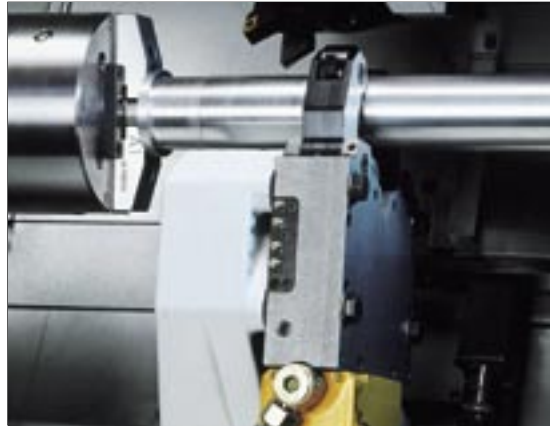
■ Toolholders for driven drilling, milling and threading tools can be accommodated in all turret stations. As only the active tool is driven, maximum cutting force can be applied to the relevant machining operation. In conjunction with the C-axis, the Y-axis or the POLYFORM software even the most complex milling requirements can be fulfilled.

### The automation components

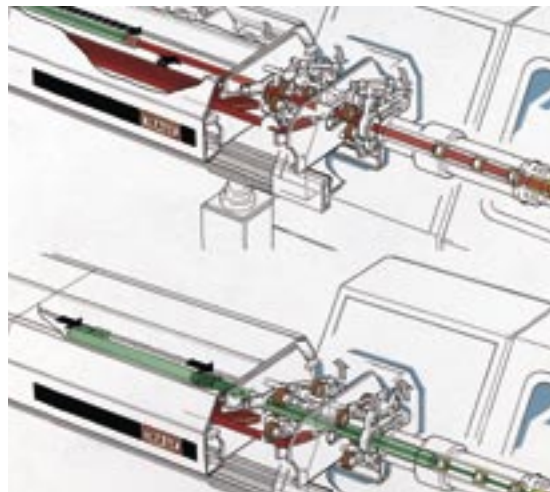
■ In conjunction with the DNH Bar Loading Magazine, specially developed by TRAUB for use with CNC turning centres, or the FHS 10 Flexible Handling System, the machine can be turned into an economical manufacturing cell with the highest possible degree of automation.

■ For workpiece handling purposes TRAUB offers a recirculating pallet conveyor which, in its standard version, can be loaded with 400 kg of components. Other systems can be designed and made available on request.

■ The TRAUB AWUE tool force monitor or the integrated in-process gauging unit guarantee that worn or broken tools are replaced in time, a factor of particular importance in automatic and unattended production.



Whether shaft-type, semi-finished or bar components – universal machining is a decisive factor.  
Photo: fixed steady



Made to suit the machine and its CNC control. Automated material flow with the TRAUB DNH Bar Loading Magazine.

Technical data:	TRAUB FHS 10
<b>Traverse speed</b>	
Linear gantry	m/min max. 80
Lift-off unit	m/min max. 80
<b>Workpiece gripper</b>	
Shaft	mm Ø120 x450
Disc	mm Ø180 x135
<b>Workpiece weight</b>	kg 2 x 10
<b>Control system</b>	TRAUB TX8i
<b>Setup</b>	MDI input or manual
<b>Weight (net)</b>	kg approx. 850
(without workpiece storage unit)	

Automated material flow when machining blanks, with the aid of the FHS 10 Flexible Handling System.

## Complete solution

### CNC control

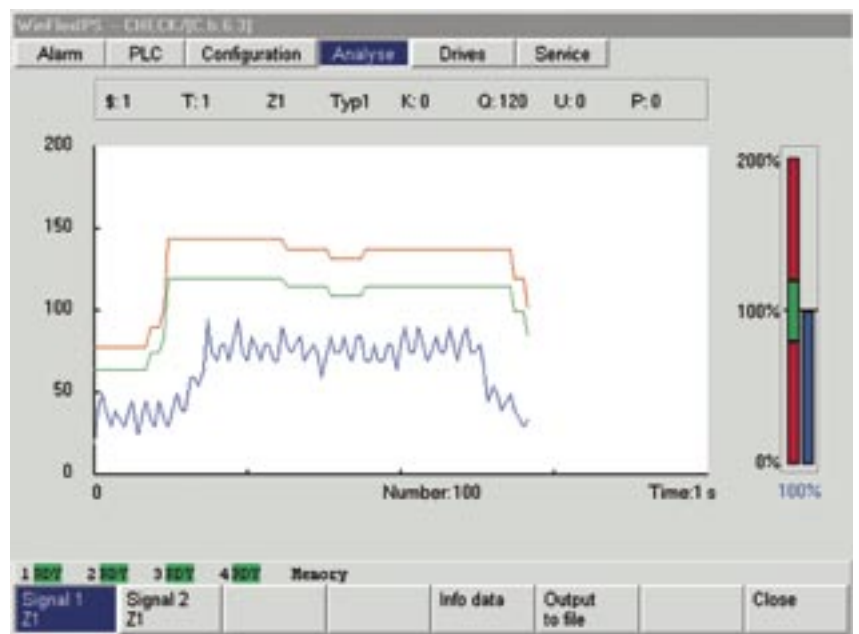
- clearly arranged user interface with dialog technology for programming, editing, setup and operation
- graphics-supported dialog instructions also during setup
- visual control of potential collision situations through graphic process simulation GPS



### Tool monitoring

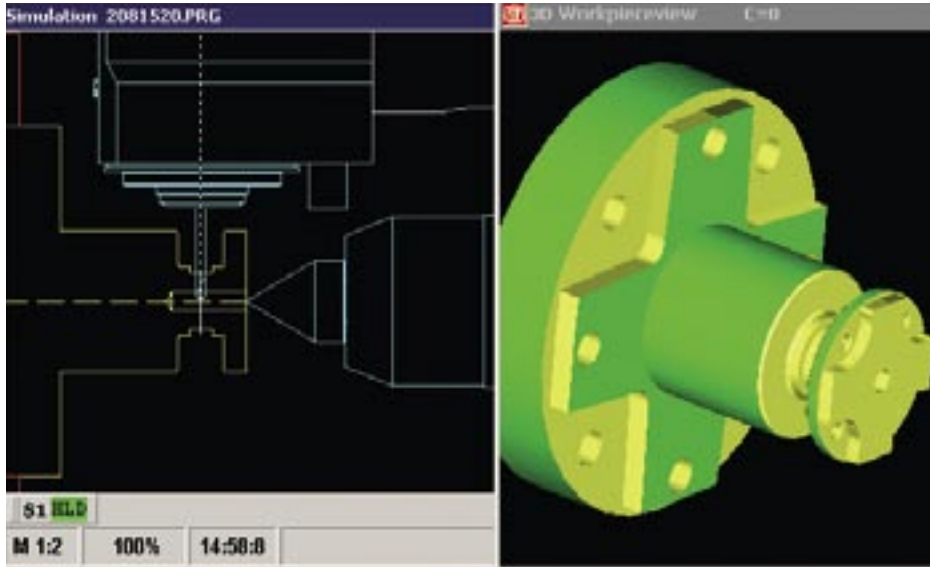
- highly sensitive tool breakage and tool wear control through permanent monitoring of the axis motors
- sensitivity up to 2 mm of drill diameter without any additional sensors
- easy-to-use, for example through automatic generation of limiting curves
- all processes are displayed on the monitor

(option)



## TRAUB TX8i

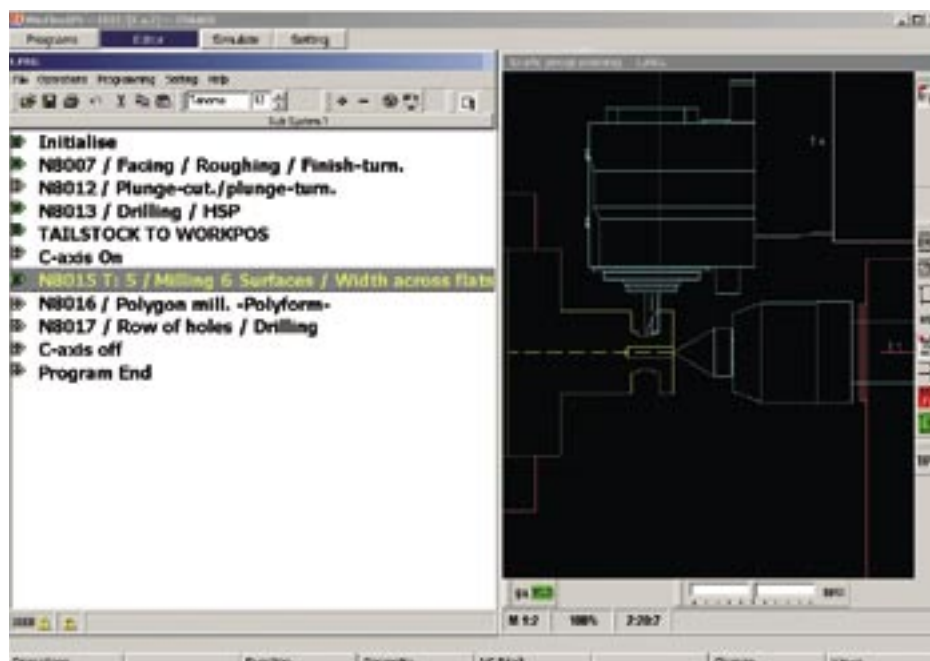
### To ensure your production



#### Programming, Optimization, Simulation

- realistic real-time simulation for shorter setup times
- standard 3D control of workpiece geometry
- control of the working sequences
- visual collision control before the machine is run in

(standard)

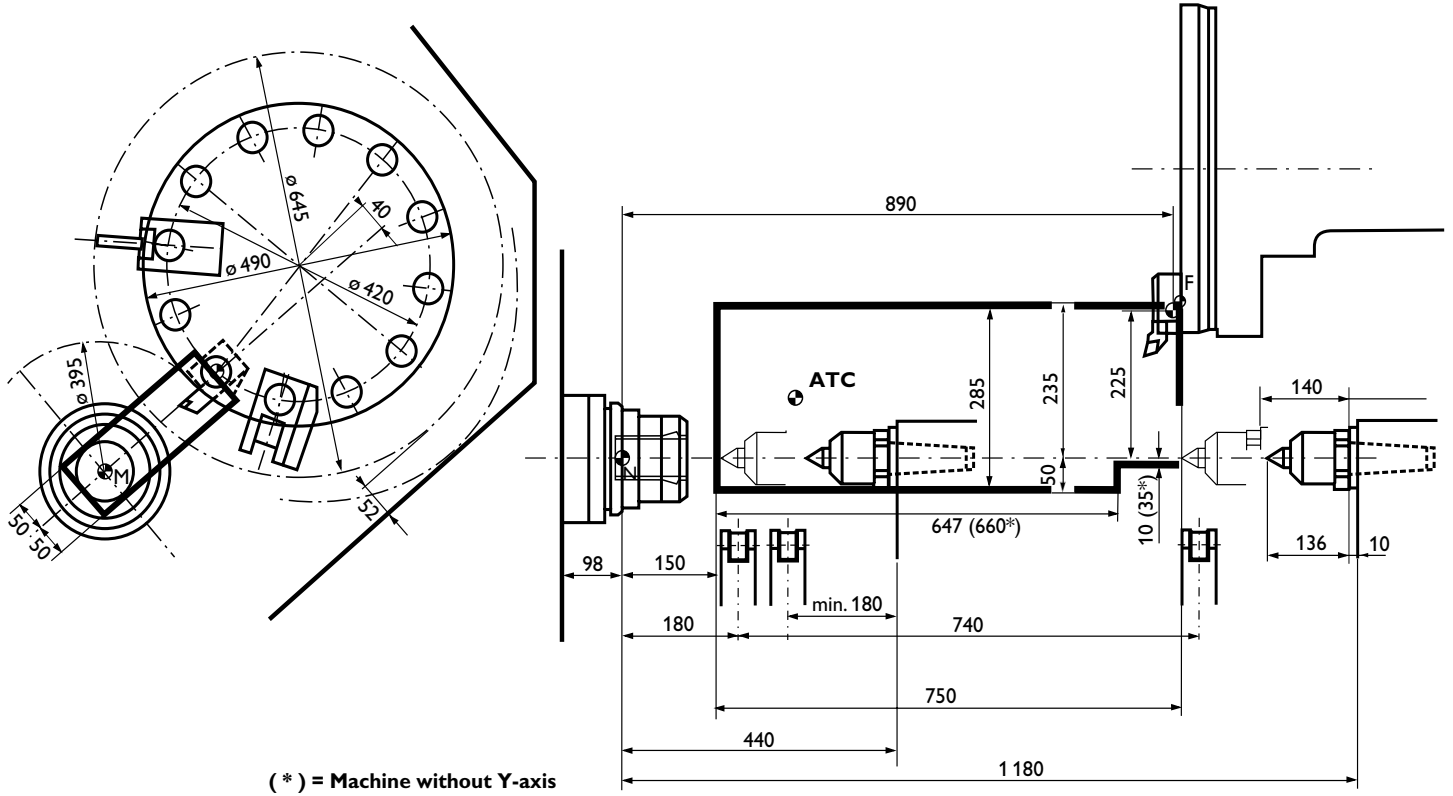


#### External programming TRAUB WinFlexIPS

- stepwise parallel programming and simulation possible
- cycle time optimization already during programming

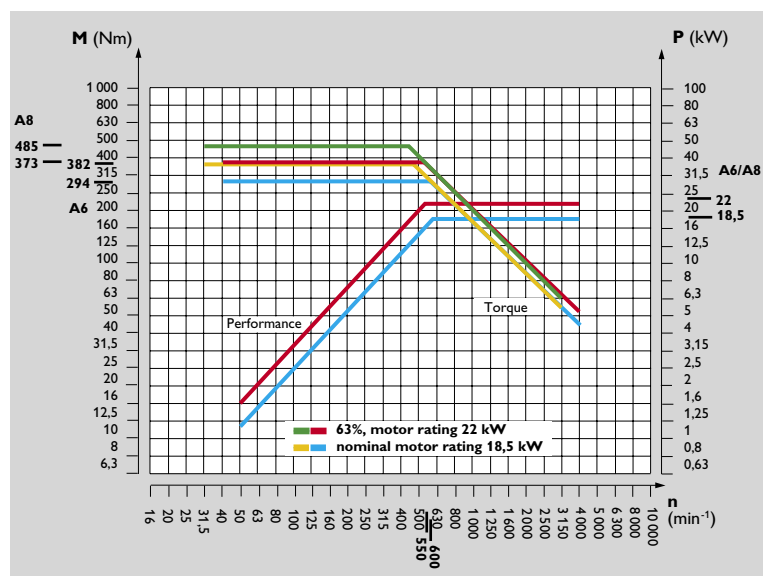
(option)

## Tooling zone and performance diagram



**CE** You can feel safe

Safety is not just a word at TRAUB's. It is technology transposed. This is why all machines manufactured by TRAUB conform to EG machine guidelines. It is documented by the EG declaration of conformity in conjunction with the CE symbol on the machine.



Performance diagram TNA400

## Technical data

### Capacity

Spindle passage (option)	mm	65 (80)
Spindle nose DIN 55026 (option)	size	A6 (A8)
Chuck diameter (option)	mm	200–260 (315)
Turning diameter; max., over total length	mm	340 (395)
Traverse over centre	mm	50
Turning length, max.	mm	750
Swing diameter over cross slide	mm	530
Swing diameter over bed	mm	665

### Main drive

Power rating	kW	22
Spindle speed, max. (option)	rpm	4000 (3150)
Constant power rating		1 : 7,3
Torque (option)	Nm	382 (485)
C-axis (option)	rpm	100

### Turret

Tool registers for cylinder shanks DIN 69880	Qty	12
Shank diameter	mm	40
Tool section dimension	mm	25 x 25
Indexing time 1st station	sec	0,6
Indexing time each additional station	sec	0,15
Y-axis (option)	mm	± 50

### Feed drives

X-axis rapid traverse and feed rate	m/min	15 / 15
Z-axis rapid traverse and feed rate	m/min	24 / 24

### Drive for rotating turret tools

Turret stations with drive	Qty	12
Power rating at 25%	kW	5,5
Max. torque on drive gear	Nm	47
Max. drive gear speed	rpm	4000

### Tailstock

Quill size	mm	85
Quill stroke	mm	140
Quill force at 55 bar	N	10 000
Quill receptor to DIN 228		MK 5

### Steady (fixed)

Clamping range	mm	12–145
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### Coolant system

Coolant pressure, standard	bar	5
Coolant tank capacity	l	275

### Total installed power rating

with drive for rotating turret tools	kW	30
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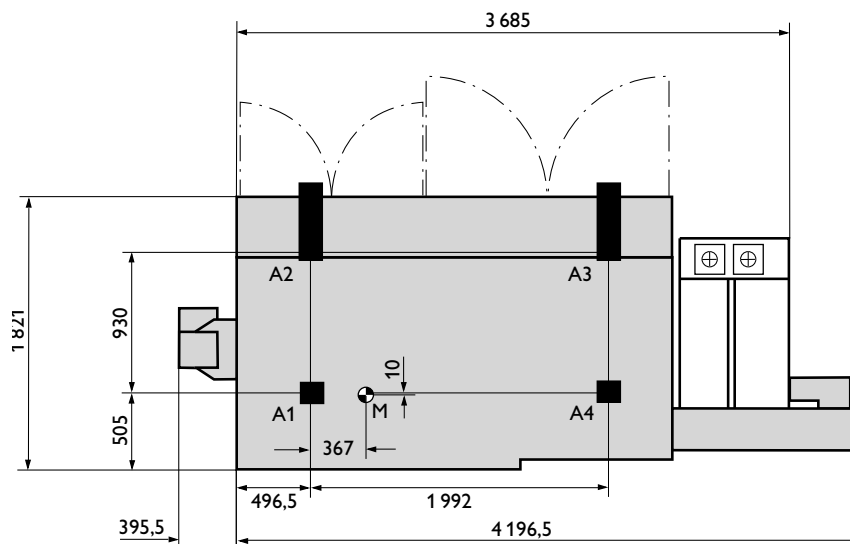
### Weight

with tailstock and steady, approx.	kg	6200
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### Machine dimensions

Length (with swarf conveyor)	mm	4592
Depth	mm	1821
Height	mm	2005

## ■ The floor plan



A1 = 15 kN  
A2 = 17 kN  
A3 = 16 kN  
A4 = 14 kN

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