Universal

CNC Turning machine

TNA500
TNA600

TRAUB

TRAUB TNA – this name is highly regarded throughout the world for machining large chuck, shaft or bar parts. With their precision and efficiency, short setup time and easy operation, these machines set standards in their class. The sturdy mechanical construction with its generously dimensioned working area and its crown-type turret form the basis for all sizes of the TNA500 and TNA600. The TRAUB TX8i-s control makes operating and programming particularly easy in the workshop.
See for yourself the benefits of the TRAUB TNA500 and TNA600.

- Compact, bending- and torsion-proof 45°-inclined bed
- Safety body with polycarbonate viewing glass
- Ergonomically exemplary, swiveling operating panel with color monitor
- Stick slip-free slide motion through special coating
- Statically and dynamically extremely rigid working spindle in two sizes with short-taper mounting for all common power and collet chuck
- Highly dynamic, digitally coupled three-phase motors in two power options with or without gearbox
- Drives digitally coupled with the control and absolute path measuring system, eliminating the need for reference approaching
- Minimal secondary times and easy programming thanks to the intelligent TRAUB TX8i-s control
- Tool presetting using TRAUB ATC
- Crown-type turret with 12 stations for parallel shanks according to DIN 69880-40 or -50 with orientation logic and internal coolant supply
- Tailstock, automatic clamped, and dragged or with its own NC axis
- Steady rest with manual clamping or its own NC axis
- Drive for live tools
- Separate cooling lubricant tank with cooling lubricant pre-filter
- Sensorless tool break and wear monitoring

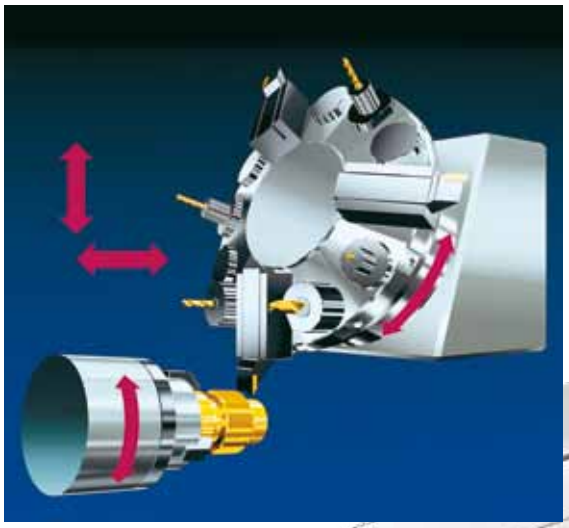
The TNA500 and TNA600 at a glance

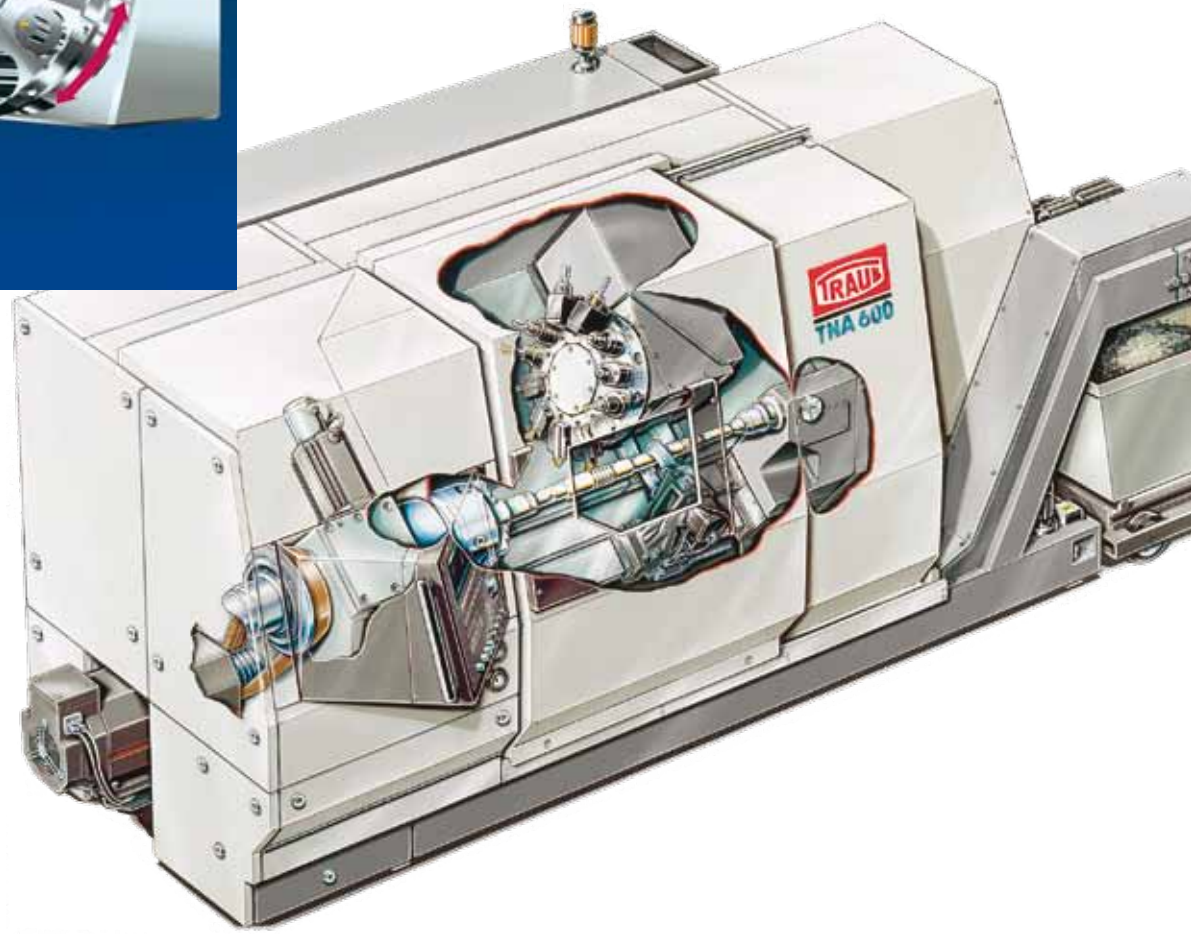
The TNA series machines offer the user many advantages in planning, selection and production. The machines can be tailored to each application, from single or small batch production to medium and large volume production, with process monitoring and automated material flow.

This flexibility is fostered by the powerful TRAUB TX8i-s control implemented fully in 64-bit technology. By including many elements of WOP programming and operating technology, the user is given valuable advantages, such as:

- Easy, straightforward operation and user-friendly programming
- Short setup and running-in times

A large working area with excellent accessibility, layout and arrangement of the TRAUB crown-type turret, digital coupling of drives, absolute path measuring system. No approaching of reference points. This performance package is completed by numerous accessories, from an NC tailstock and steady rests to automatic tool monitoring.





The right machine for tough production conditions

■ **TNA500**
The economic.

■ **TNA600**
The powerful.

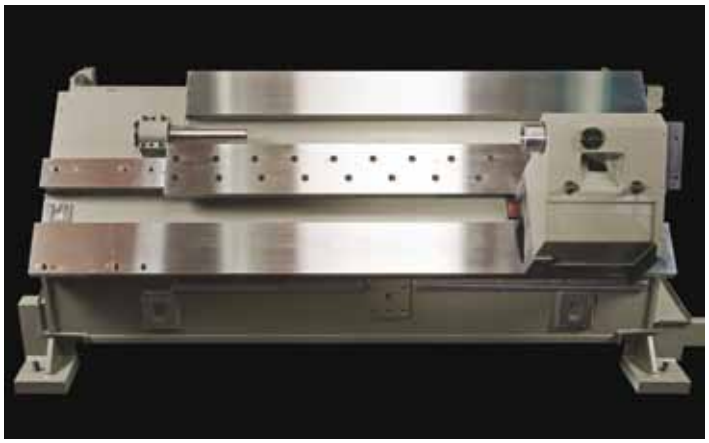
Already the fundamental design of this machine available in two sizes makes it perfectly suited for even the toughest production conditions.

This includes:

The demand for lean, economical manufacturing applies especially to large machine tools. This is why we have equipped the two machines already in their basic configuration with all the features that satisfy your wishes:

■ 31/37 kW three-phase drive for the working spindle
■ Working spindle with spindle head according to DIN 55026-A8/A11
■ Cross-slide with 2 digitally coupled three-phase servo drives
■ Tool carrier as a crown-type turret with 12 mounting bores for parallel shanks according to DIN 69880-40/50
■ Power clamping device with hydraulic full clamping cylinder and safety deviceg
■ Coolant tank with pre-filtering
■ Slat band chip conveyor
■ Coolant system with one 5 bar pressure level
■ Central lubrication system
■ Control cabinet with temperature regulation
■ Optical measuring unit TRAUB ATC

Designed and equipped for heavy-duty machining – TNA500 and TNA600.



Basic structure

■ The bending- and torsion-proof bed is inclined at an angle of 45°. It carries the thermo-symmetrically designed headstock and die guideways for the longitudinal slides, steady rests and the tailstock. The hardened and ground guideways are reliably protected against chips and dirt. The guideways of the slides are coated by a gap pouring method with a special sliding liner, thereby meeting the requirements for highest damping and positioning accuracy.

The feed drives

■ Highly dynamic servo drives, protected by electronic overload couplings (ECS); the digital coupling and the absolute path measuring system ensure that the axis traversing commands issued by the control are executed super-fast.

Benefits:

■ Fast and precise positioning and traversing of tools

■ High contour accuracy

■ High surface qualitye

■ No reference point approaching necessary at shift start.

The drives

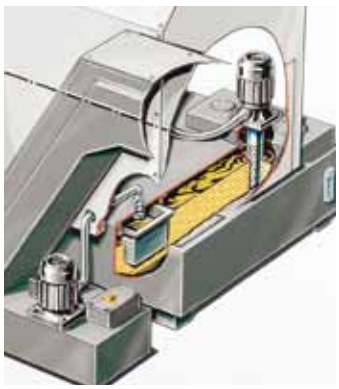
■ The main drive, a powerful AC servo motor, was designed specifically for the part spectrum to be machined. The TNA500 with 31 kW and the TNA600 with 37 kW and a two-stage gearbox provide sufficient power reserves to handle even the toughest cutting jobs. The gearbox allows a considerably wider range at constant power.

The working spindle

■ The working spindles are extremely stiff and run in high-precision, lifetime lubricated zero-backlash pre-tensioned angular contact ball bearings. On the TNA500 models, the spindle head is designed according to DIN 55026 in size A8, on the TNA600 in size A11.

The tool carrier

A special feature of the TNA500 and TNA600 is the TRAUB crown-type turret with 12 tool pockets. Due to its special design, it is extraordinarily robust, and it also offers optimized, unparalleled tool collision clearance.

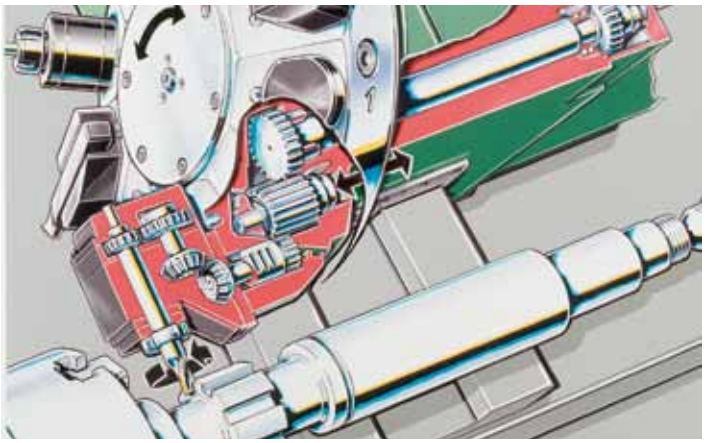


Left: The smart way to preset tools – the TRAUB ATC.

Right: Separate cooling lubricant tank with cooling lubricant pre-filter.

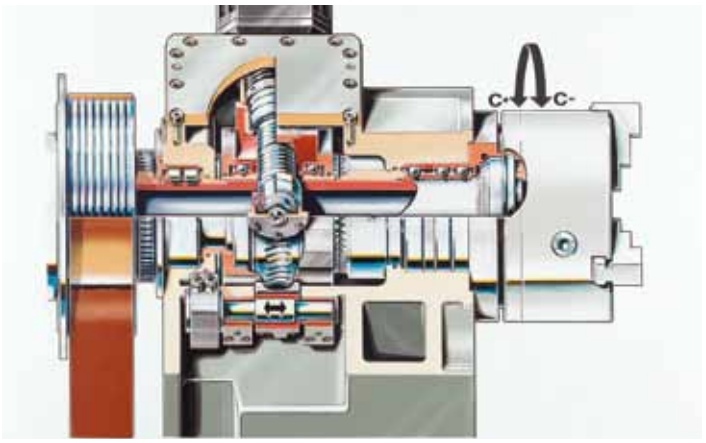
The special

comes as standard



The tool drive

■ Each of the 12 tool pockets of the turret can be freely equipped with drilling, milling and threading tools. They are driven by a three-phase motor and a gearbox. Only the tool located in the working position is live.



The C-axis

■ For all-round complete machining, the TNA series offers a C-axis in two different variants:

■ With its own servo motor and worm gear for highest accuracy at maximum torque.

■ Via the main motor with spindle brake. The working spindle can be quickly placed in any angle position via both C-axis variants for drilling and milling operations on the stationary workpiece.

The tailstock

■ The sturdy tailstock moves on the lower guideway.
Clamping is carried out hydraulically. The quill contact pressing force is infinitely variable.

■ For positioning, the tailstock is coupled hydraulically to the upper longitudinal slide or it is optionally driven via an additional NC axis.

The steady rests

■ For shaft machining, several steady rest models with large working ranges are available. They are installed on the lower guideway and are either fixed or equipped with a numerically controlled longitudinal drive.

Complete solution

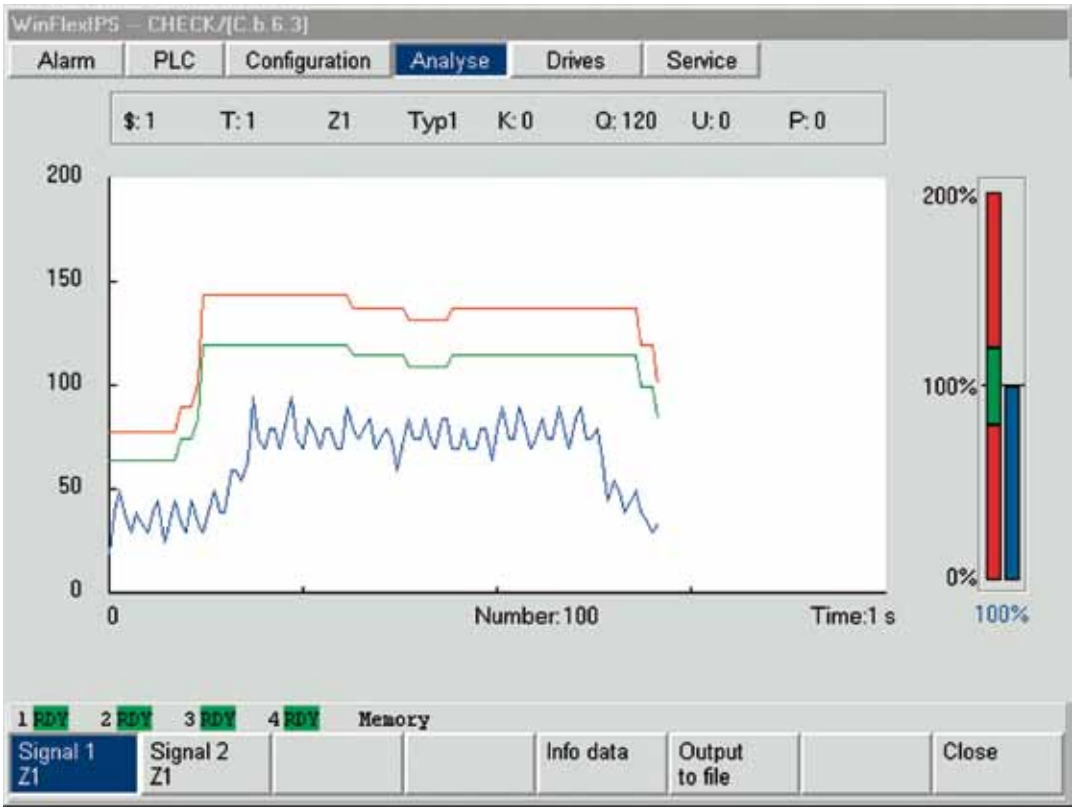
CNC control

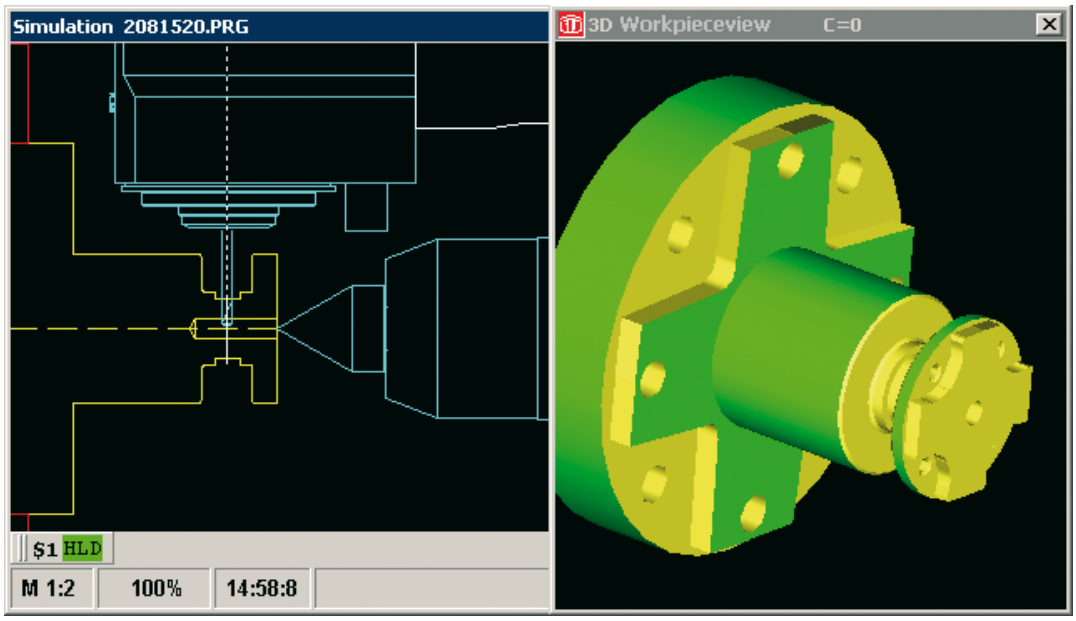
- Clear interactive user interface for programming, editing, setup and operation
- Graphics-supported interactive guidance also during setup
- Visual check for possible collision situations through graphical process simulation (GPS)

Tool monitoring

- Highly sensitive tool break and wear control by continuously monitoring the axis motors
- No additional sensors required
- Easy operation, for example, by automatic generation of limit curves
- All processes are visualized on the display

(Option)

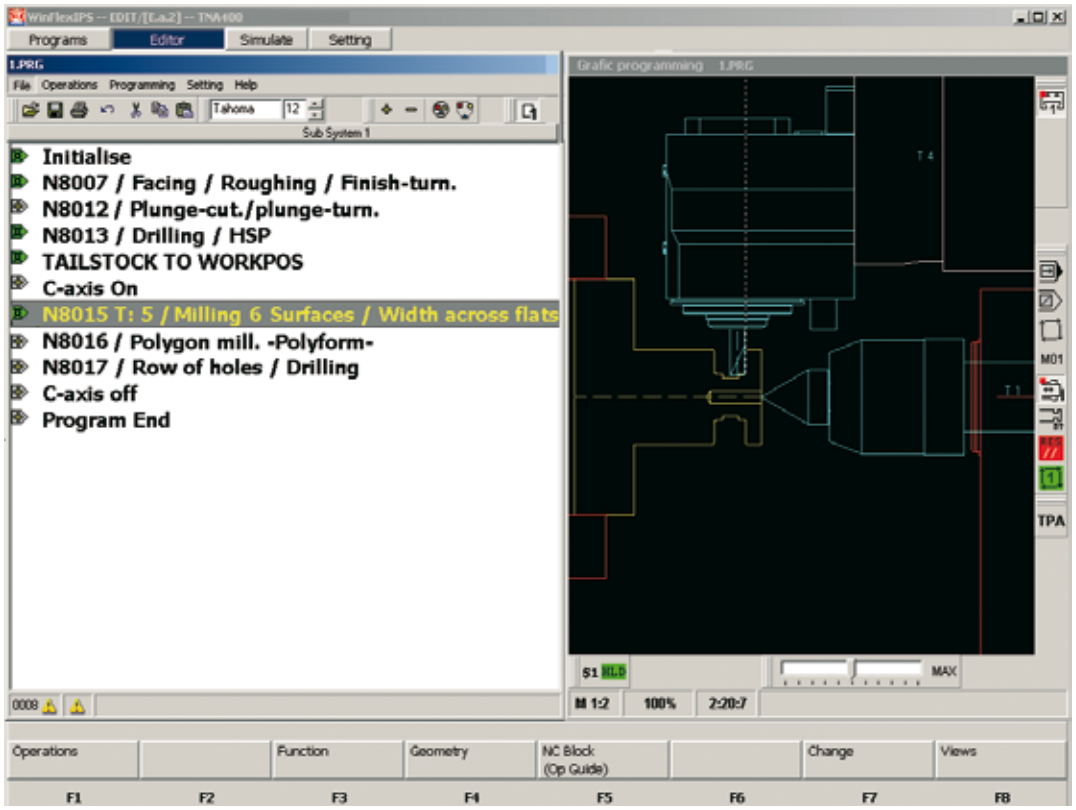




Programming, optimization, simulation

- Realistic real-time simulation for shorter setup times
- Check of the workpiece geometry as standard
- Check of working sequences
- Collision check before the machine is run in

(Standard)

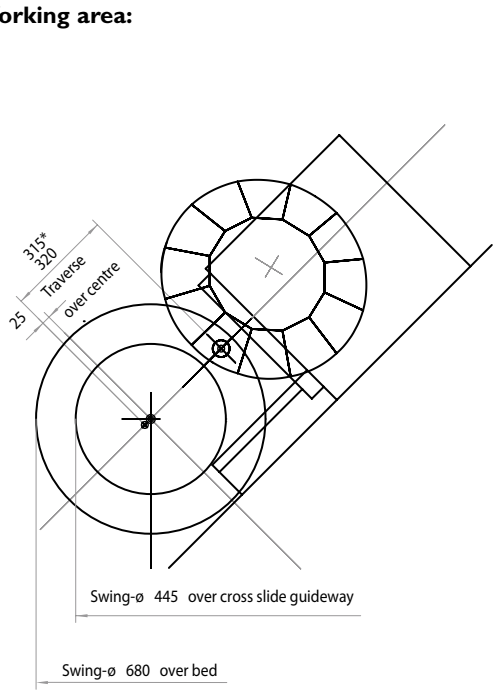


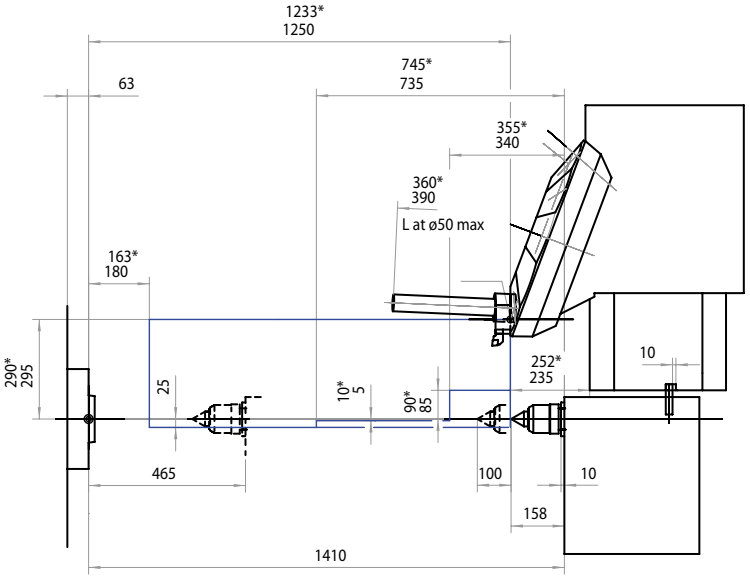
External programming TRAUB WinFlexIPS

- Step-by-step parallel programming and simulation possible
- Floor-to-floor time optimization already during programming

(Option)

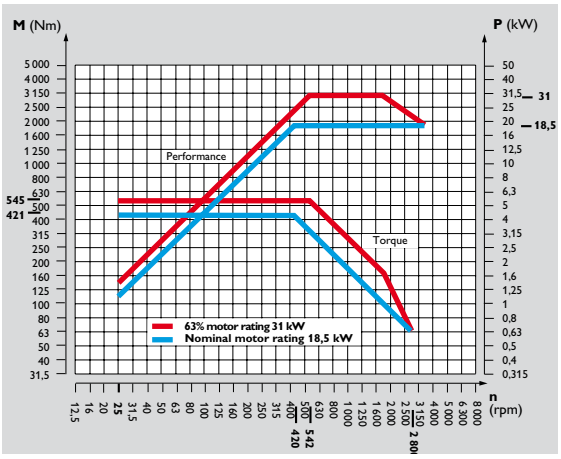
Working area:



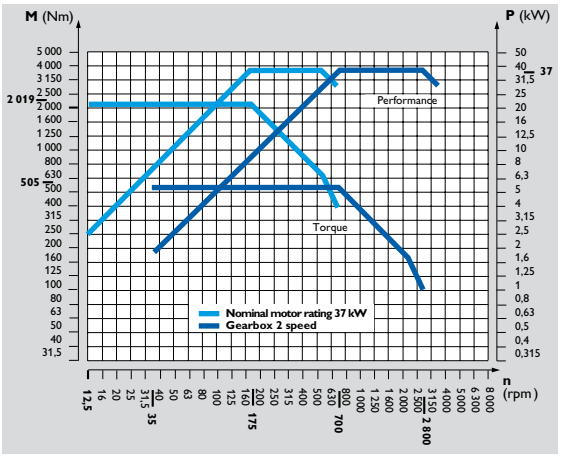


TNA500 / TNA600 working area *

Performance charts:

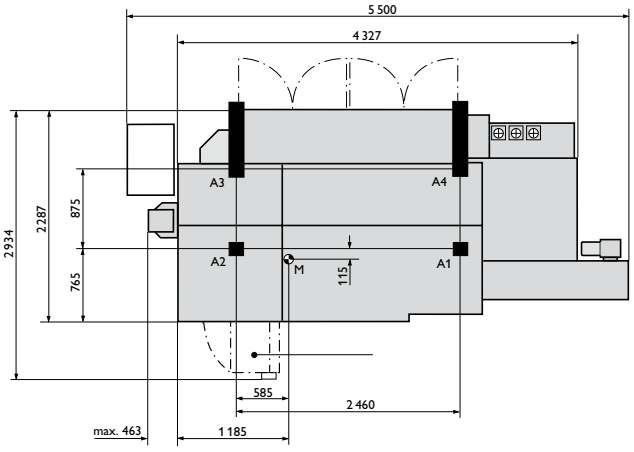


TNA500



TNA600

Installation chart:



Technical data

		TNA500	TNA600
Main spindle			
Spindle clearance (max. bar diameter)	mm	80	100
Chuck diameter	mm	250 / 315	315 / 400
Turning length	mm	1000	1000
Rotation diameter S1 above bed slide / above cross slide	mm	680 / 445	680 / 445
Turning diameter S1	mm	460	440
Spindle head DIN 55026	Size	A8	A11
C-axis (option)		*With main motor*	*With servo motor*
Speed (max.)	rpm	80	60
Torque (max.)	Nm	544	900
Electrical resolution	Degrees	0,001	0,001
Main drive		*Three-phase direct drive*	*Three-phase geared drive infinitely programmable*
Power	kW	31	37
Torque (max.)	Nm	545	2019
Speed range up to	rpm	2800	2800
Constant power range		1:4,5	1:16
Tool carrier			
Tool mountings for parallel shank acc. to DIN 69880		12	12
Shank diameter	mm	40	50
Tool cross-section	mm	25 x 25	32 x 25
Average chip-to-chip time	s	1,6	1,6
Indexing time for 1st station / next stations	s	0,8 / 0,2	0,8 / 0,2
Turret feed drives			
Rapid traverse (X-/Z-axis)	m/min	15 / 20	15 / 20
Feed force	N	8000 / 20000	8000 / 20000
Feed travel	mm	320 / 1070	320 / 1070
Turret tool drive			
Number of live tools		12	12
Power (25%)	kW	6,6	6,6
Torque (max.) (25%)	Nm	60,4	76,1
Tailstock			
Quill diameter	mm	100	100
Quill stroke	mm	100	100
Mounting acc. to DIN 228		MK6	MK6
Contact pressing force at 55 bar	N	13100	13100
Steady rest			
Clamping range 1	mm	8 - 95	8 - 95
Clamping range 2	mm	12 - 145	12 - 145
Clamping range 3	mm	35 - 240	35 - 240
Cooling lubrication system			
Pump pressure			
Standard (options)	bar	5 (12 / 20)	5 (12 / 20)
Tank capacity		380	380
Machine dimensions			
Length x depth	mm	5500 x 2287	5500 x 2287
Height	mm	2147	2147
Weight	kg	6800	6800
Power consumption	kW	42	54

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