

TNX 65

*Turn-mill center for
high performance machining*

TRAUB



better.parts.faster.

TRAUB'S TNX65 sets new standards in high-performance machining.

Its future-oriented machine concept comprising a new, unique milling unit offers previously unexpected opportunities of integrating machining processes. This concept stands for previously unknown flexibility and productivity. The new milling unit impresses by its chip-to-chip times, such as previously only known of tool turrets.



TNX65

A passion for

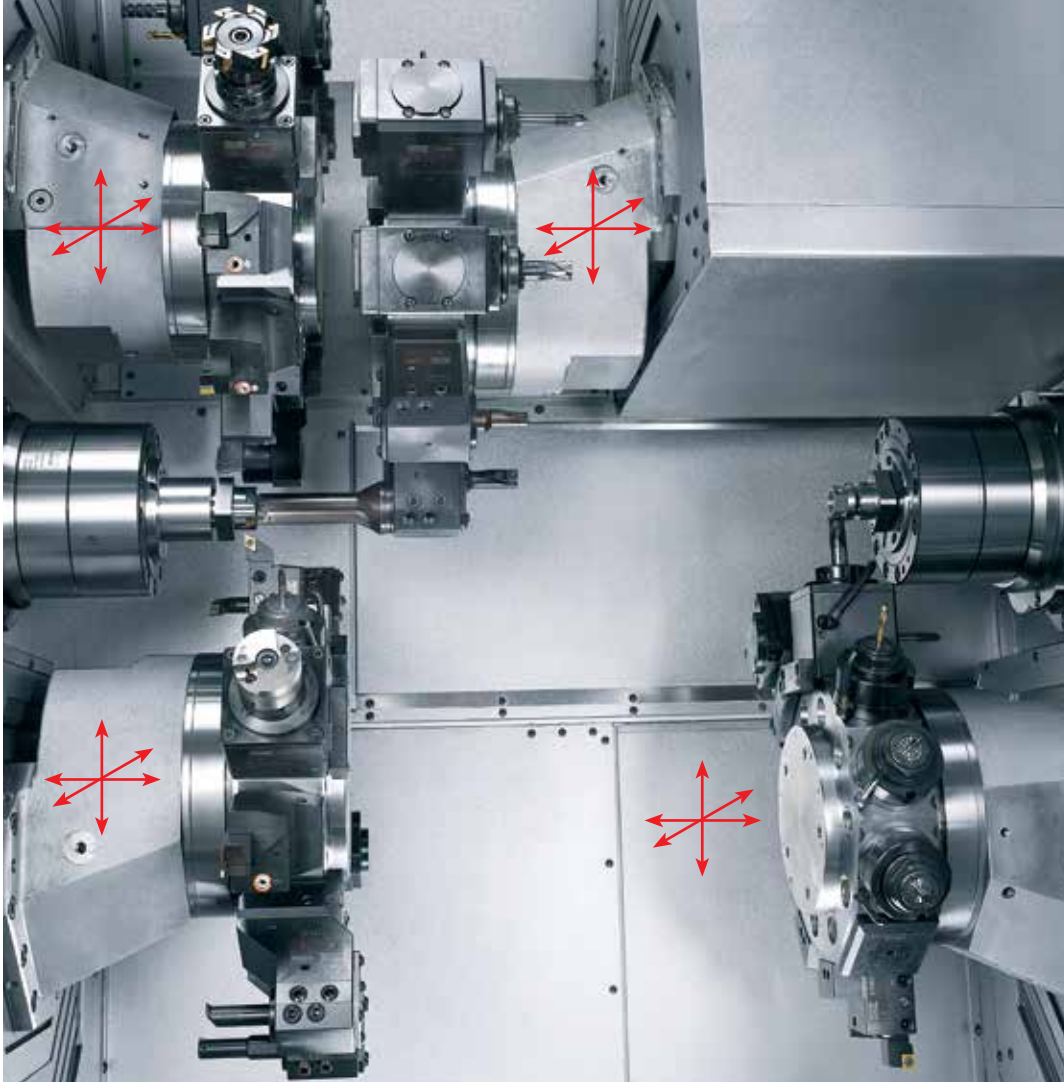
high performance



The TNX65

economical with

2, 3 or 4 turrets



The machine concept of the TNX65 has been tailored to the wide range of requirements needed by users. The result offers many advantages:

- quadruple functional symmetry, i. e. 4 identical turrets with independent Y axis, with identical tool change areas and identical number of tool stations
- free allocation of the tool carriers to the two spindles
- high-powered drives on main and counter spindles provide optimum metal-cutting performance
- powerful tool drives on all turrets for perfect complete machining

Less setup efforts

- precise tool change repetitive accuracy of the tool holders (TRAUB patent)
- large tool stock with up to 80 tools in 4 turrets



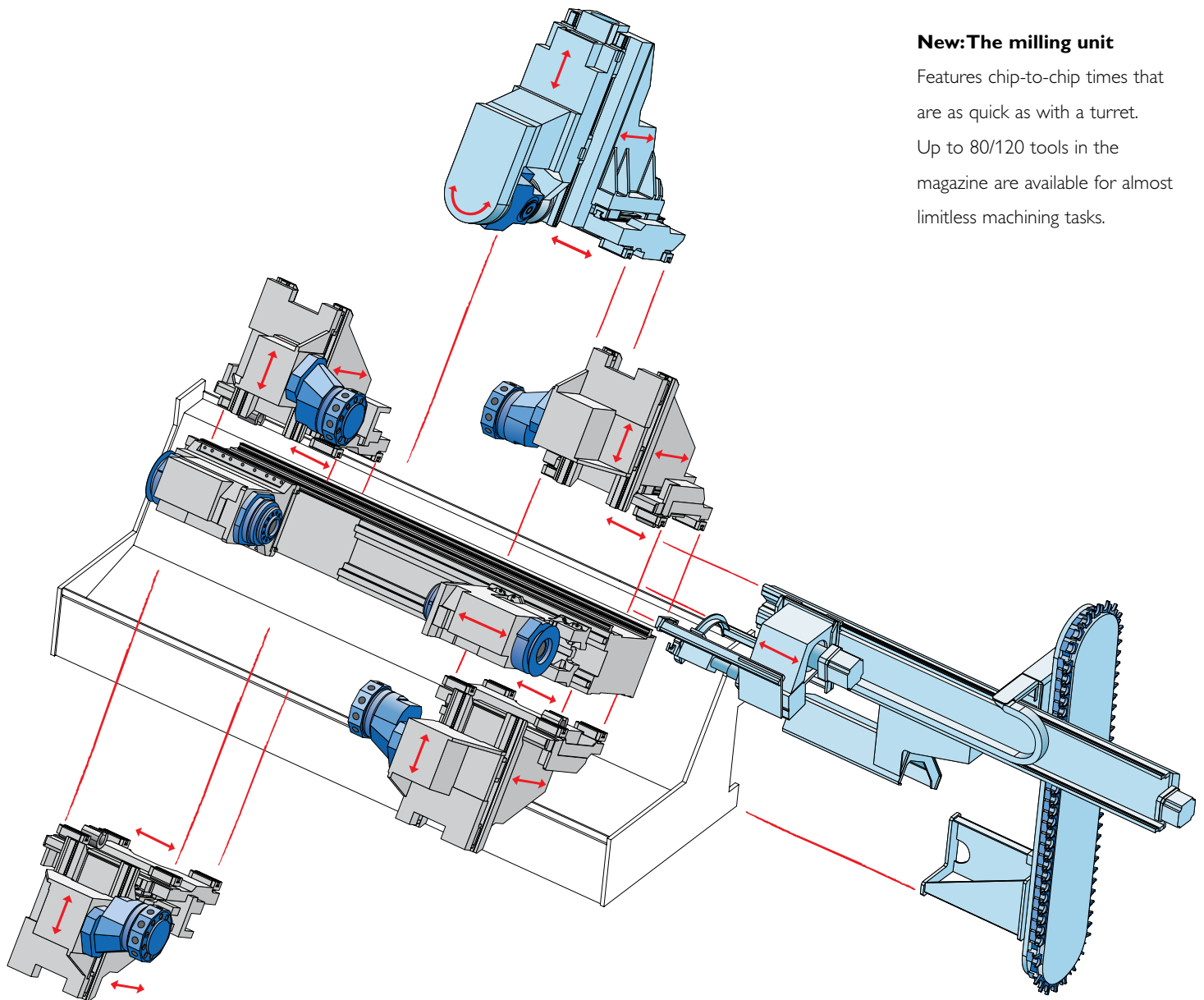
Wide application spectrum for high utilization of the machine

- suitable for all different workpieces and lot sizes
- highly productive due to the simultaneous use of up to 4 tool carriers
- high integrability for different machining methods
- bar, chuck or shaft machining

Modular system

for your specific

requirements



New: The milling unit

Features chip-to-chip times that are as quick as with a turret. Up to 80/120 tools in the magazine are available for almost limitless machining tasks.

The modular system

For optimal adaptation of the machine equipment to your specific needs.

The basic structure

The compact machine bed made of heavily ribbed cast iron has high torsional and bending stiffness. It carries the thermo-symmetric headstock and the linear guideways

for bed slides and counter spindle slides. It offers excellent vibration dampening, outstanding dynamic stiffness and high thermal stability. A bed inclination of 60° ensures unhindered chip fall.

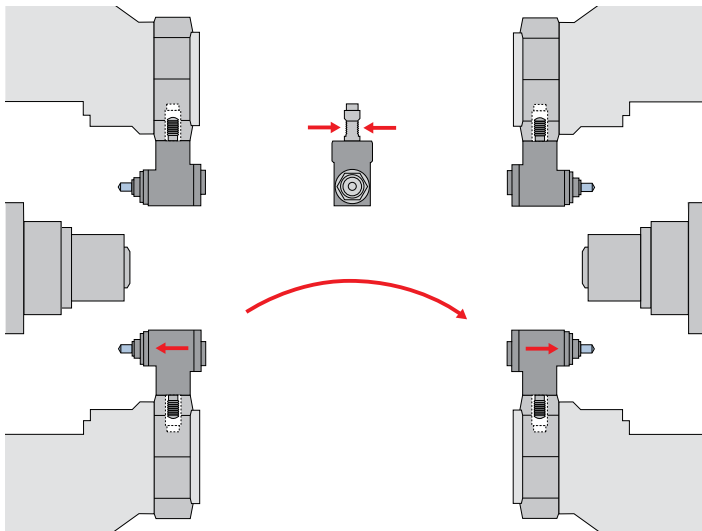
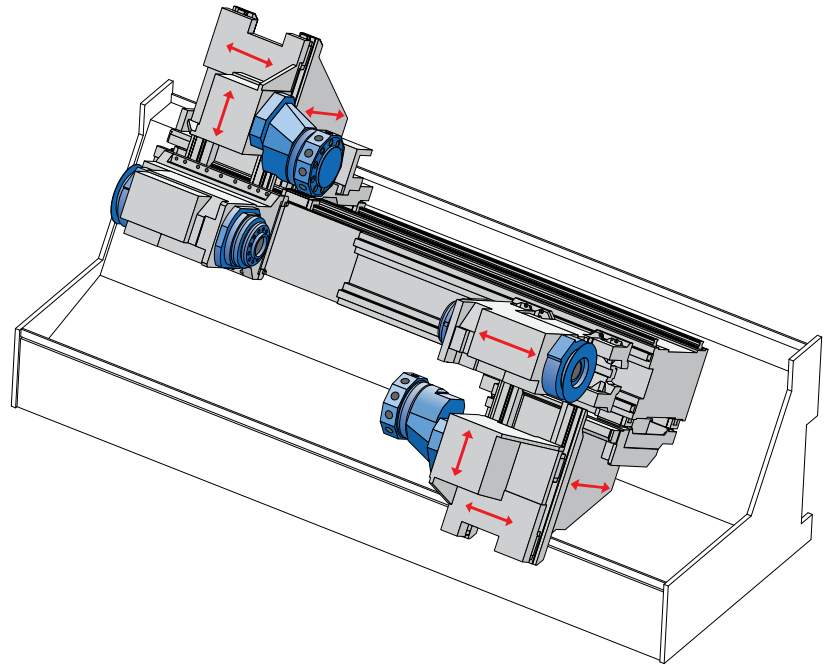
Machine dimensions

- bar diameter up to 65 mm
- chuck sizes up to 175 mm
- turning lengths up to 650 mm

Top performance

with only two turrets

The TRAUB TNX65 allows you to perform a host of different machining tasks using just the basic equipment including two turrets. This is made possible because both tool carriers can be used on both the main and counter spindles. This gives you previously unknown freedom in simultaneous machining of the workpiece on the front and back. Thus, machining tasks can be planned perfectly, and the resulting parts can be produced with minimum cycle times.



One tool holder for all turrets and all machining directions

The two-sided serration of our tool holders (TRAUB patent) allows you to use the cutting tools

on the main and counter spindles. The combination with high-precision tool holder positioning significantly reduces setup times. Thus, no tool alignment is required.



The many options

give you flexibility



The turrets

Owing to their 30 mm of shaft diameter, the 10 tool holder stations form a solid base when using different tools.

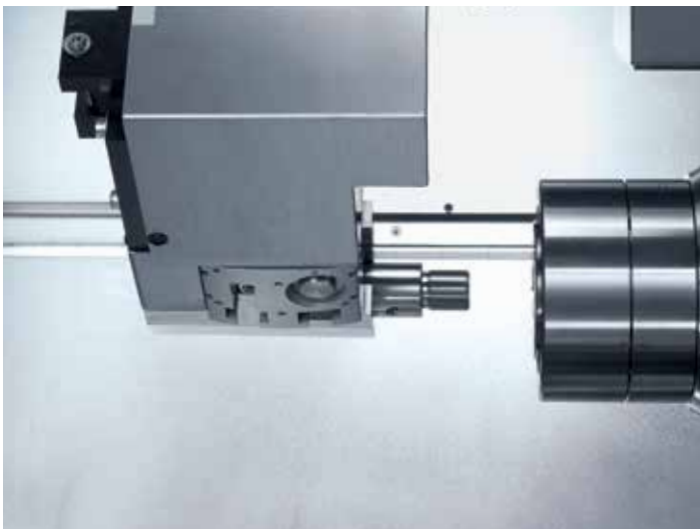
Short setup times are achieved by using the patented TRAUB tool holder alignment or W serration.



The spindles

The identically designed spindles are provided as standard with hybrid bearings. This gives significantly increased service lives.

The powerful motor spindles are designed in synchronous technology.



Automatic unloading

The finished part is discharged by a gripper positioned via highly dynamic axes on the right side of

the machine via a conveyor in parallel to production time. The bar remnant is removed separately.



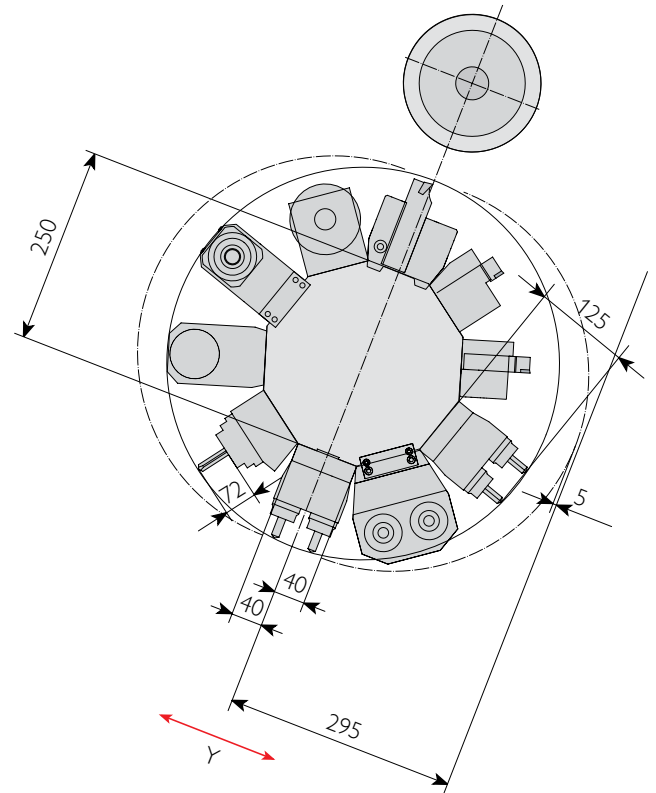
TRAUB ATC

Allows you to measure your tools optically, the resulting data being transmitted automatically to the control system. Your advantage: Time-saving presetting of the

cutting tools in the machine-clamped state. The optical measuring microscope with 17-fold magnification allows non-contact high-precision tool measurement.

Outstanding features

of our turrets

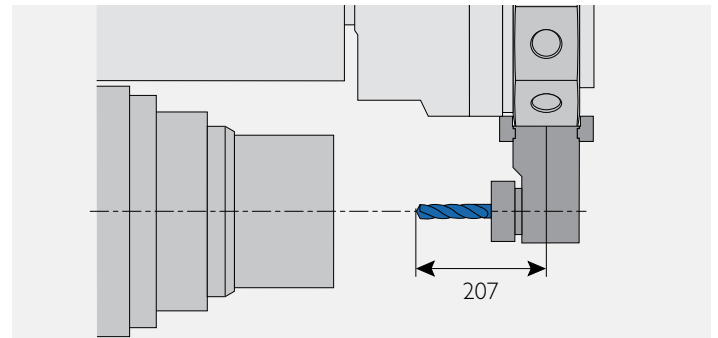


Intelligent turret construction

- the controllable turret indexing simplifies your setup procedure
- large tool change areas and reduced risk of collision are

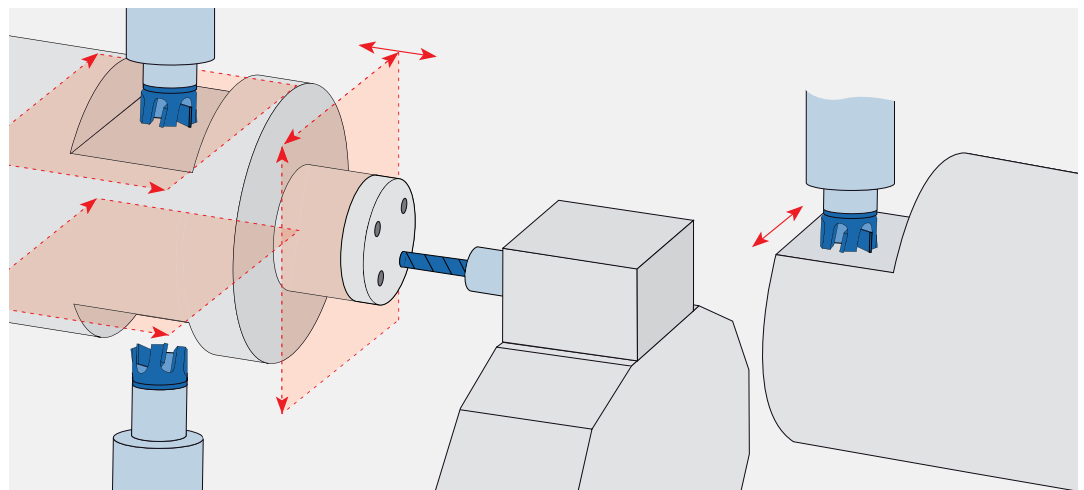
achieved with our inclined bed construction and the particularly large available space

- large tool stock by using double tool holders



3-D machining

- 4 independent sub systems of ± 40 mm Y travel each allow simultaneous drilling and milling with 4 tools on the spindles
- X travels of up to 40 mm under the turning centre allow high-precision end-face machining up to a pitch circle of 80 mm without C axis movement



Simply unique -

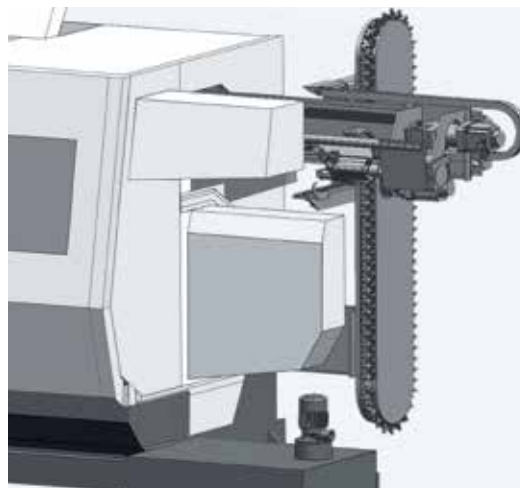
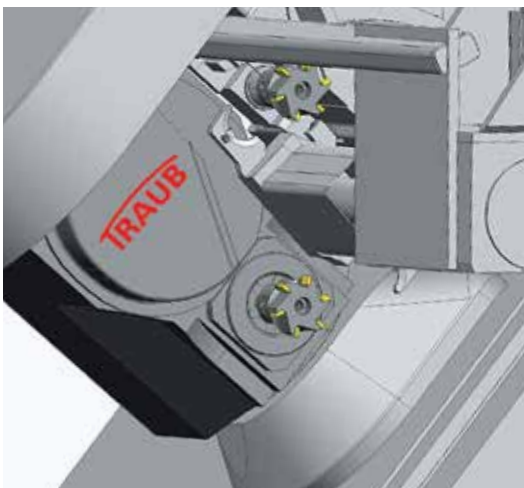
the milling unit



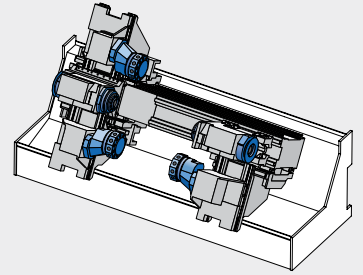
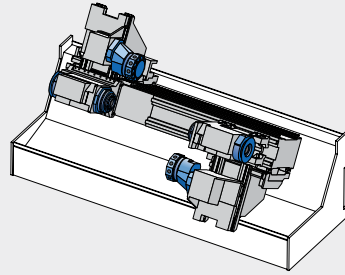
The milling unit is the highlight of the TNX65. The tool magazine with its 80/120 tool pockets and incredible chip-to-chip times stands for maximum productivity.

Speed: max. 12000 rpm
Torque: max. 35.4 Nm
Tool holder system: HSK-A40

- the highly compact design of the milling unit also allows simultaneous end face machining means of the turrets
- no restrictions for the axis movements due to the unique kinematics, i.e., same traversing range as that of the turrets
- unrestricted use on main and counter spindles
- allows processes such as turning, gear hobbing, hobbing, B axis machining etc., to be integrated
- powerful torque thanks to 2-stage gear $i=1:1$ and $1:3$
- internal coolant supply max. 120 bar



- chip-to-chip times comparable to those of a turret
- tool provision via linear shuttle and tool change by double gripper
- 80/120 tool pockets HSK-A40



Main spindle

max. bar capacity

65 mm



Chuck diameter

175 mm

Counter spindle

max. bar capacity

65 mm



Chuck diameter

175 mm

Tool carrier, left-hand top

Stations

10



Drive

all

Tool carrier, right-hand bottom

Stations

10



Drive

all

Tool carrier, left-hand bottom

Stations

10



Drive

all

Tool carrier, right-hand top

Stations

10

Drive

all

Milling unit

including B axis

Tool pockets in magazine

80/120

Number of CNC axes

9

12

Tool stock

20

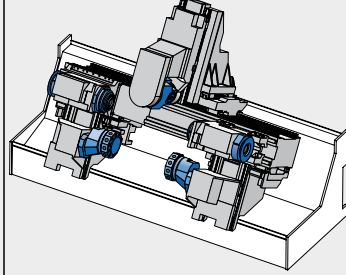
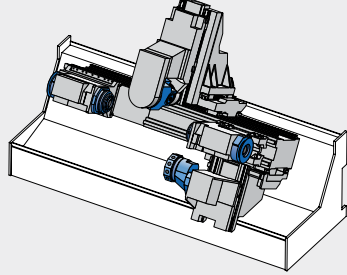
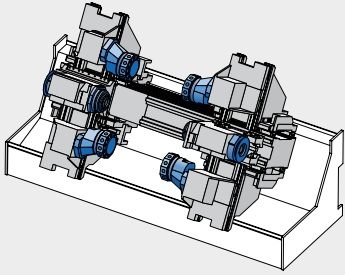
30

Tool stock max.

40

60

Options - as varied as
your requirements



Tool holders:
 single or double
 fixed or driven



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15

10

13

40

90

100

80

140

160

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

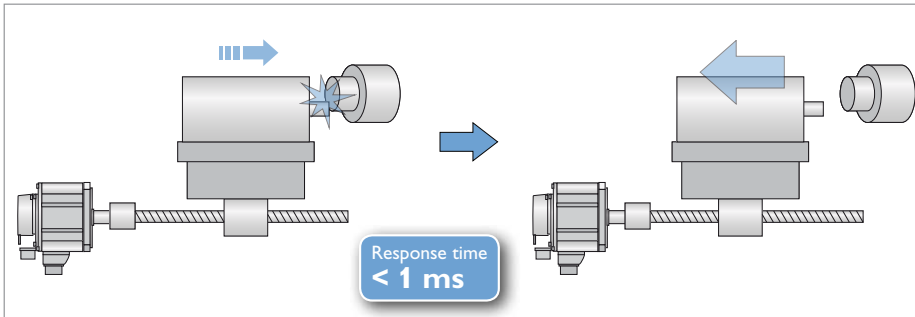
- Ongoing recording of relevant analog and digital signals and data; their flow can be displayed and compared with other recordings at any time
- Alarm messages with detailed clear-text information
- Quick location and elimination of cause of malfunction/generation of limiting curves
- all processes are displayed on the monitor



TRAUB TX8i-s V7

Get a firm grasp

on your production



Electronic quick retraction

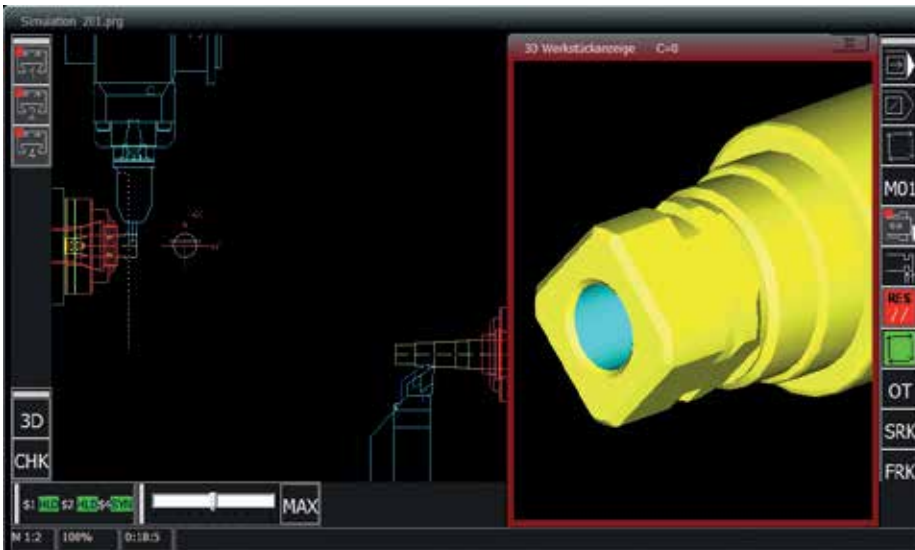
Additional safety device –

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

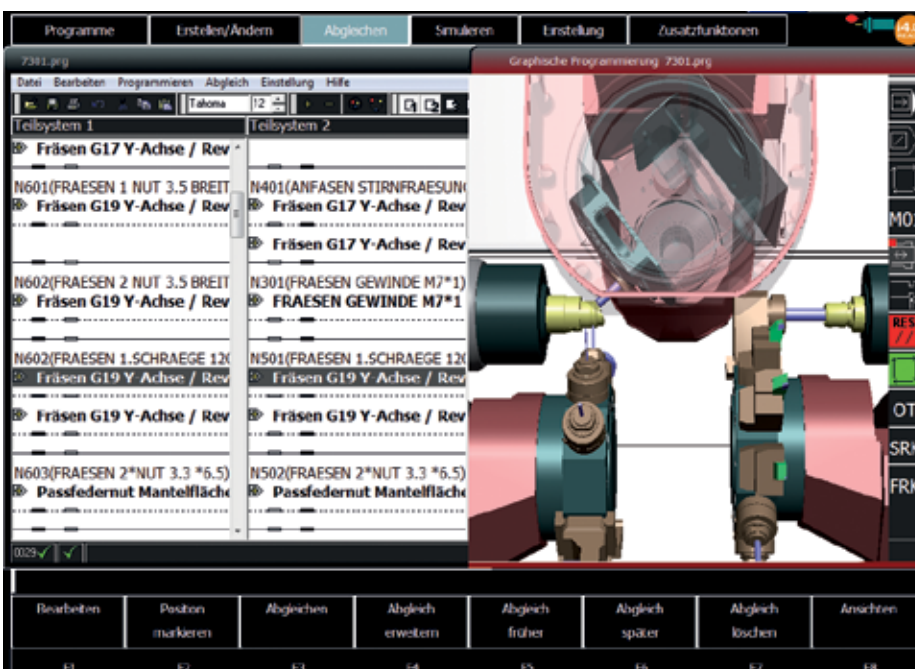
- Realistic real-time simulation for shorter setup times
- 3D workpiece display as standard feature
- Graphical display of the working sequences
- Visual collision check before the machine is run in



External programming

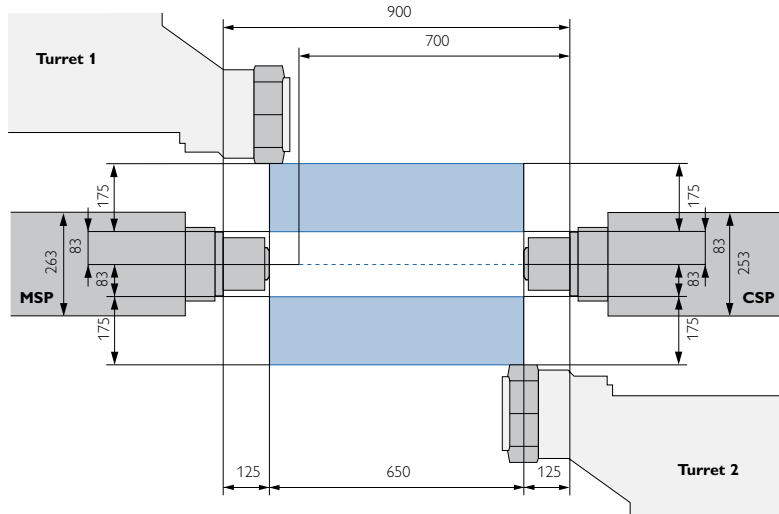
TRAUB WinFlexIPS^{Plus} (option)

- 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

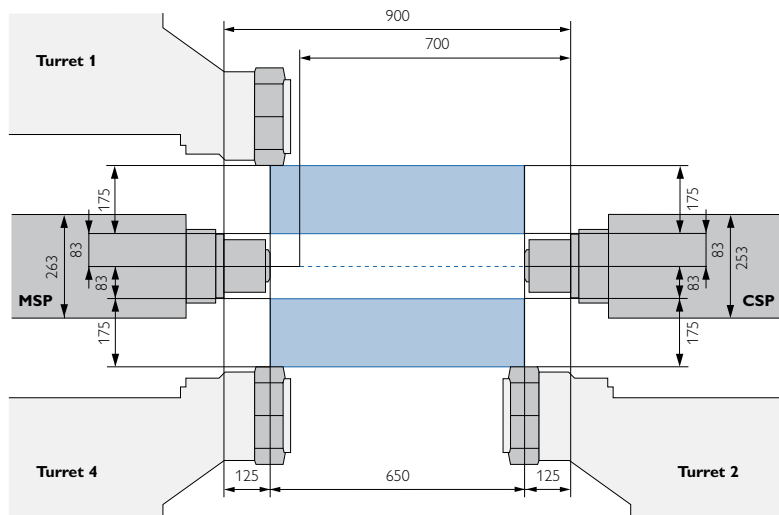


Working areas

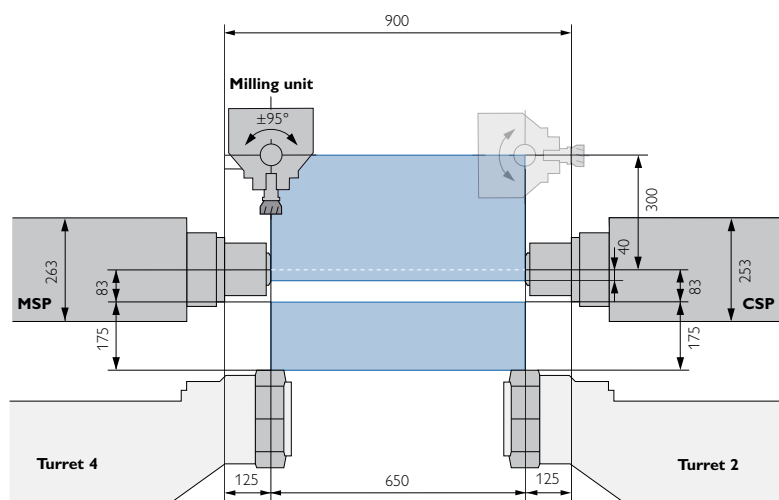
2 Turrets



3 Turrets



Milling unit



Technical data

Working range

Turning length	mm (inch)	650 (25.6)
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Main spindle, counter spindle

D65

Bar capacity (max. bar diameter)	mm (inch)	65 (2.6)
Spindle diameter front bearing	mm (inch)	110 (4.3)
Spindle nose ISO 702/1	size	A6
Chuck diameter	mm (inch)	175 (6.9)
Speed	rpm	5000
Power at 40 %	kW (hp)	24 (32.2)
Torque at 40 %	Nm (ft lbs)	192 (144)
C axis resolution	degrees	0.001
Z axis rapid traverse (counter spindle)	m (inch)/min	40 (1574)

Compound slide

X

Z

Y

Slide travel 1	mm (inch)	175 (6.9)	650 (25.6)	± 40 (1.6)
Slide travel 2	mm (inch)	175 (6.9)	650 (25.6)	± 40 (1.6)
Slide travel 3	mm (inch)	175 (6.9)	650 (25.6)	± 40 (1.6)
Slide travel 4	mm (inch)	175 (6.9)	650 (25.6)	± 40 (1.6)
Rapid traverse	m (inch)/min	20 (787)	40 (1574)	20 (787)

Turrets 1, 2, 3, 4

Number of stations		10
Cylindrical shank mounting DIN 69880	mm (inch)	30x55 (1.2x2.2)
Tool drive speed max.	rpm	6000
Tool drive power max.	kW	5.5 (7.4)
Tool drive torque max.	Nm	17.5 (13)

Milling unit

X

Z

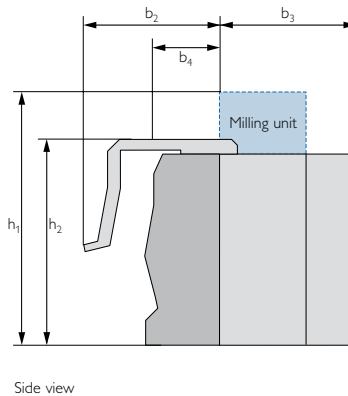
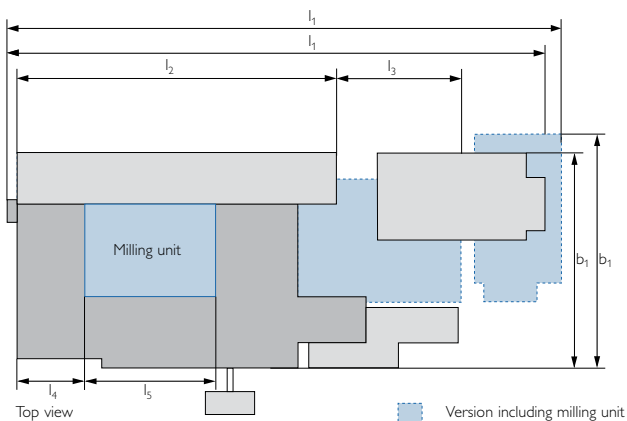
Y

B

Slide travel	mm (inch)	340 (13.4)	650 (25.6)	± 40 (1.6)	± 95°
Rapid traverse	m (inch)/min	30 (1181)	60 (2362)	15 (591)	450°/s
Speed max.	rpm	12000			
Power max.	kW (hp)	5.5 (7.4)			
Torque max.	Nm (ft lbs)	35.4 (26.1)			
Tool holder system		HSK-A40			
Number of tool pockets in magazine		80/120			

Weights and connecting power with max. configuration

Weight	kg (lbs)	approx. 10000 (22000)
Connecting power		85 kW, 400 V, 50/60 Hz



Length	without milling unit	with milling unit
l_1	5450 (214.6)	5870 (231)
l_2	3420 (134.6)	3420 (134.6)
l_3	–	1400 (55.1)
l_4	950 (37.4)	950 (37.4)
l_5	1100 (43.3)	1100 (43.3)
Width		
b_1	2318 (91.3)	2497 (98.3)
b_2	1525 (60)	1525 (60)
b_3	1541 (60.7)	1541 (60.7)
b_4	777 (30.6)	777 (30.6)
Height		
h_1	–	2700 (106.3)
h_2	2258 (88.9)	2258 (88.9)

BRAZIL // Sorocaba

INDEX Tornos Automaticos Ind. e Com. Ltda.
Rua Joaquim Machado 250
18087-280 Sorocaba - SP
Phone +55 15 2102 6017
vendas@indextornos.com.br
br.index-traub.com

CHINA // Shanghai

INDEX Trading (Shanghai) Co., Ltd.
No.526, Fute East 3rd Road
Shanghai 200131
Phone +86 21 54176637
china@index-traub.com
www.index-traub.cn

CHINA // Dalian

INDEX DALIAN Machine Tool Ltd.
17 Changxin Road
Dalian 116600
Phone +86 411 8761 9788
dalian@index-traub.com
www.index-traub.cn

DENMARK // Langeskov

INDEX TRAUB Danmark
Havretoften 1
5550 Langeskov
Phone +45 30681790
b.olsen@index-traub.dk
www.index-traub.dk

GERMANY // Esslingen

INDEX-Werke GmbH & Co. KG Hahn & Tessky
Plochinger Straße 92
73730 Esslingen
Phone +49 711 3191-0
info@index-werke.de
www.index-werke.de

GERMANY // Deizisau

INDEX-Werke GmbH & Co. KG Hahn & Tessky
Plochinger Straße 44
73779 Deizisau
Phone +49 711 3191-0
info@index-werke.de
www.index-werke.de

GERMANY // Reichenbach

INDEX-Werke GmbH & Co. KG Hahn & Tessky
Hauffstraße 4
73262 Reichenbach
Phone +49 7153 502-0
info@index-werke.de
www.index-werke.de

FINLAND // Helsinki

INDEX TRAUB Finland
Hernepellontie 27
00710 Helsinki
Phone +35 8 108432001
pekka.virkki@index-traub.fi
www.index-traub.fi

FRANCE // Paris

INDEX France Sarl
1A, Avenue du Québec / Z.A. de Courtabœuf
91941 Les Ulis Cedex
Phone +33 1 69187676
info@index-france.fr
www.index-france.fr

FRANCE // Bonneville

INDEX France Sarl
399, Av. de La Roche Parnale
74130 Bonneville Cedex
Phone +33 4 50256534
info@index-france.fr
www.index-france.fr

NORWAY // Oslo

INDEX TRAUB Norge
Postbox 2842
0204 Oslo
Phone +46 8 505 979 00
h.sars@index-traub.se
www.index-traub.no

SWEDEN // Stockholm

INDEX TRAUB Nordic AB
Fagerstagatan 2
16308 Spånga
Phone +46 8 505 979 00
h.sars@index-traub.se
www.index-traub.se

INDEX Slovakia s.r.o. // Malacky

Vinohrádok 5359
Malacky 901 01
Phone +34 654 9840
info@index-werke.de
www.index-traub.com

UNITED STATES // Noblesville

INDEX Corporation
14700 North Point Boulevard
Noblesville, IN 46060
Phone +1 317 770 6300
sale@index-usa.com
www.index-usa.com

better.parts.faster.

INDEX
TRAUB

**INDEX-Werke GmbH & Co. KG
Hahn & Tessky**

Plochinger Straße 92
73730 Esslingen

Phone +49 711 3191-0
Fax +49 711 3191-587
info@index-werke.de
www.index-traub.com