

**CNC swiss and non-swiss**

**turning center**

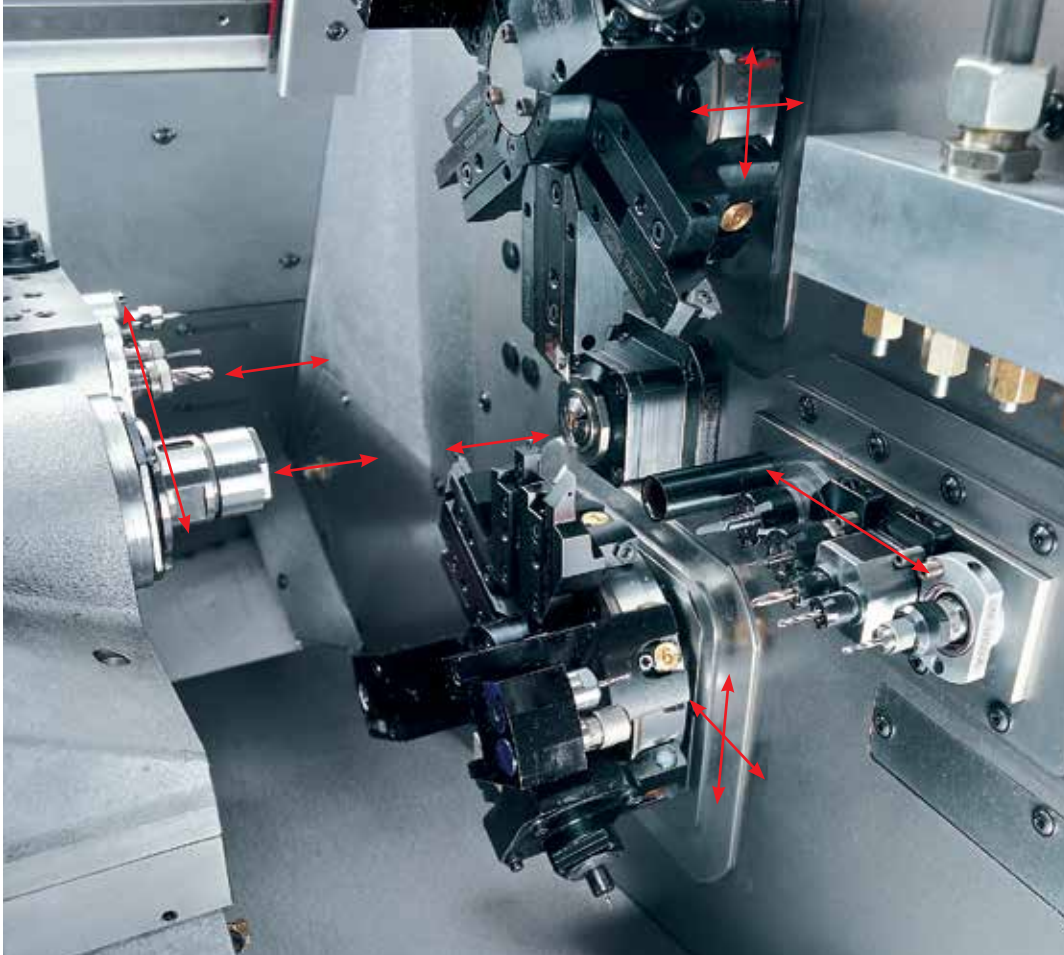


**TNL 12**

**TNL 12K**

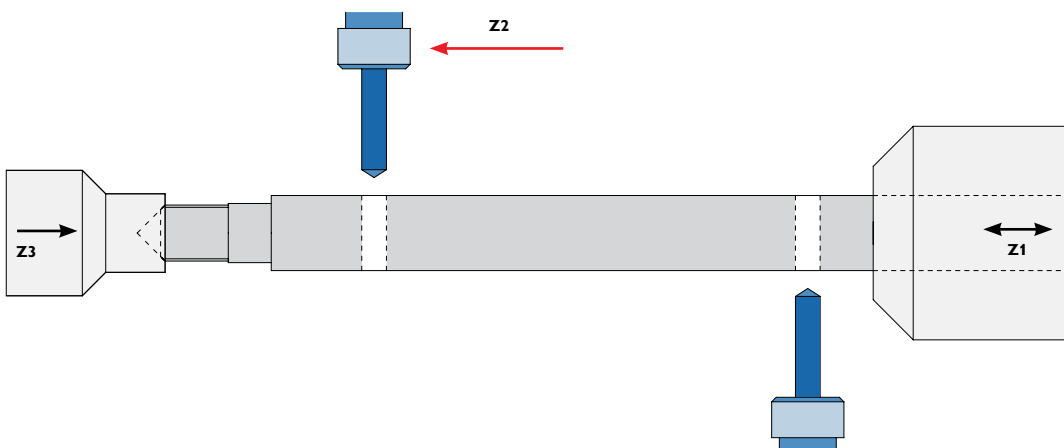


## **TNL12 – Ideal for your production requirements**



**The machine concept of the TNL12 has been matched to the daily requirements of the user. But this is not all. In addition, it offers a large number of advantages:**

- Simultaneous and independent machining of up to 4 tool carriers for highly productive machining in a single clamping setup
- 2 independent working levels (patented) ensure absence of collisions
- Optimum operating ergonomics provided by the work area accessible on both sides
- Hydraulic hollow clamping cylinders for main spindle and counter spindle
- Guide bushings freely selectable: fixed, synchronously running or programmable



### **The independent Z2 axis**

- Flexibility
- Productivity
- Process safety

## Up to 4 tool carriers

### for your flexibility

- Compact inclined bed of high torsional and bending stiffness at a 60 degree inclination for unrestricted chip fall
- Standard thermocompensation provides lasting precision
- Small amount of space required for the machine groups through compact machine dimensions suited to the room size



#### 2 tool turrets

- Containing 6 stations each (tool drive possible, stations can be fitted with 2 tools)
- Chip-to-chip time 0.3 seconds
- separate Z axis for tool turret top
- Y axis for tool turret bottom

#### Front working attachment

- With 4 stations
- Tool drive possible for all stations
- 3 stations can be fitted with 2 tools each
- Separate Z axis

#### Backworking attachment

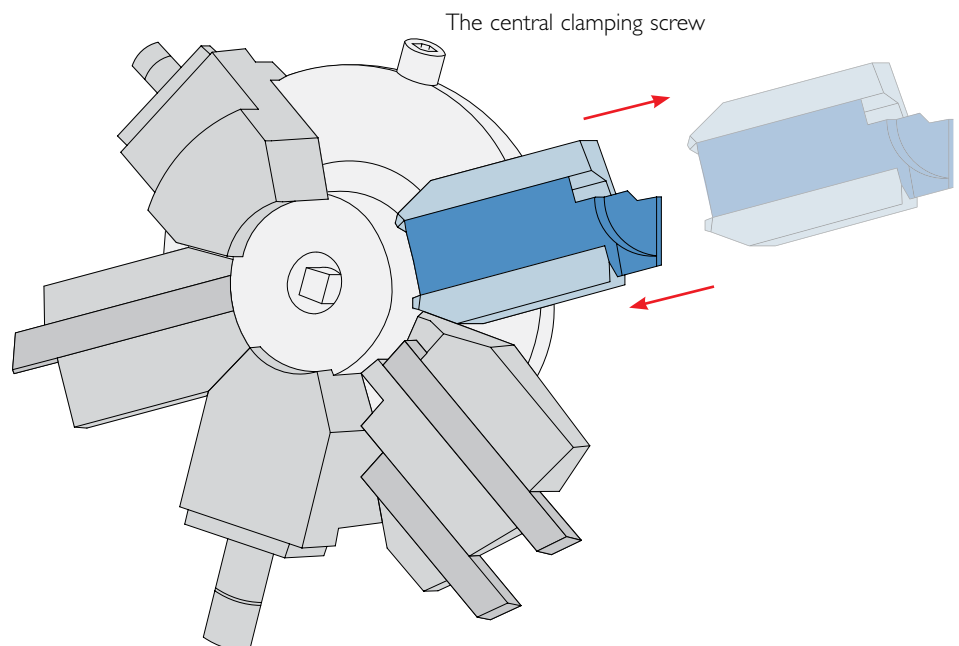
- With 4 stations
- Tool drive possible for all stations
- 3 stations can be fitted with 2 tools each
- Separate X axis

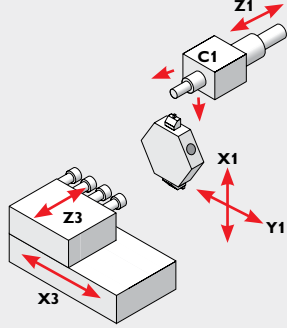
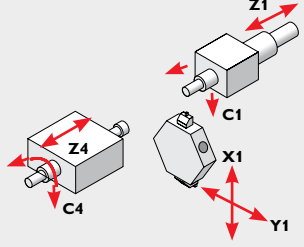
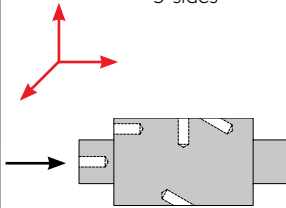
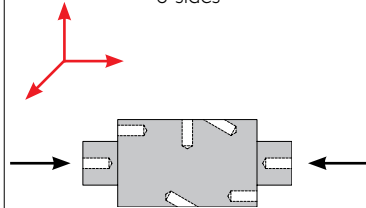
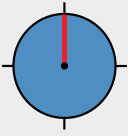
#### Tool holder change in just 30 seconds

- The central clamping screw allows you to set up each station in no time
- Repeating accuracy +/- 0.01 mm

#### Powerful tool drive

- Max. 1.5 kW
- On all stations



			
<b>Headstock</b> max. bar capacity Z1 storke max.	13/16 mm (0,5/0.6 inch) 130 mm (5.1 inch)		●
<b>Counter spindle</b> max. bar capacity Z4 storke max.	13/16 mm (0,5/0.6 inch) 139 mm (5.5 inch)		●
<b>Turret 1</b> Stations Drive	6 (12) possible	●	●
<b>Turret 2</b> Stations Drive	6 (12) possible		
<b>Front working attachment</b> Stations Drive	4 (7) possible	●	
<b>Backworking attachment</b> Stations Drive	4 (7) possible		
<b>Number of subsystems for simultaneous independent machining</b>		2	1
<b>Number of CNC linear axes</b>		5	4
<b>Tool stock</b>		10	6
<b>Tool stock max.</b>		19	12
<b>Machinable</b>		5 sides 	6 sides 
<b>Relative machining time</b>			

Options -as varied as  


---

your requirements  


---

•	•	•
•	•	•
•	•	•
•	•	•
	•	•
	•	•
2	3	4
6	7	9
12	14	20
24	26	38
6 sides	6 sides	6 sides

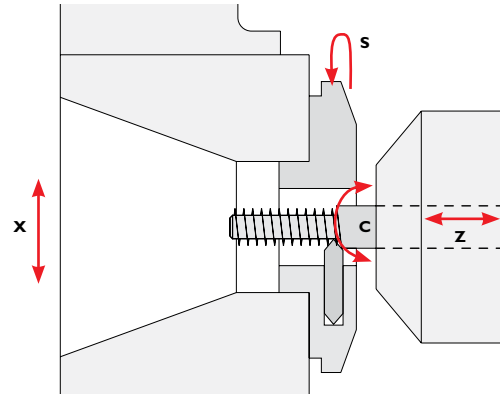


Double tool holder,  
fixed or driven



**Thread whirling on turret 2:**

- Max. material  $\varnothing$  5.5 mm ( $\varnothing$  0.2 inch)
- Max. thread length 38 mm (1.5 inch)

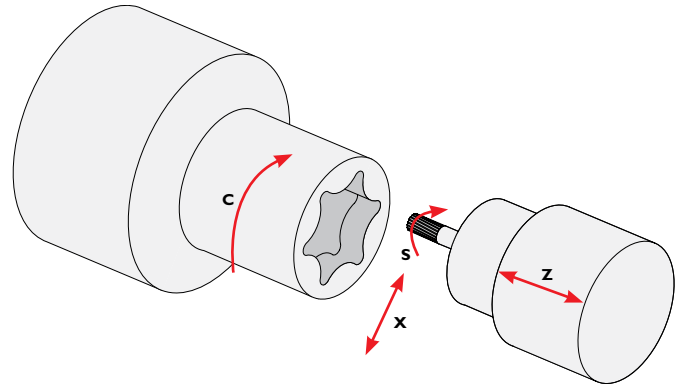


**Thread whirling with front working attachment:**

- Max. material  $\varnothing$  10 mm ( $\varnothing$  0.4 inch)
- Max. thread length 110 mm (4.3 inch)

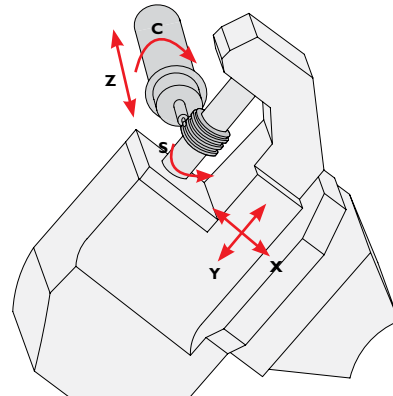
**High-frequency machining (inside) on front working/  
backworking attachment:**

- Max. speed 35,000 rpm (80,000 rpm)



**Gear cutting on turret 1:**

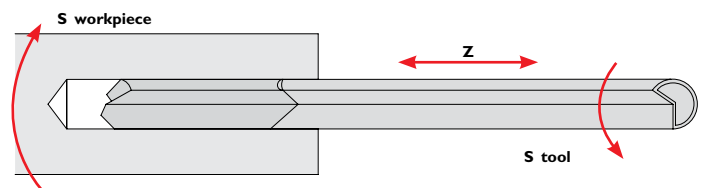
- Straight toothing
- Max. module 0.6



(only TNL12K)

**Deep hole drilling on front working/backworking  
attachment:**

- Max. coolant injection pressure 120 (160) bar
- Min. drill  $\varnothing$  0.7 mm ( $\varnothing$  0.03 inch)
- Max. drilling depth approx. 100 mm (3.9 inch)



The best choice for a wide  

---

range of parts  

---



### CNC control

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

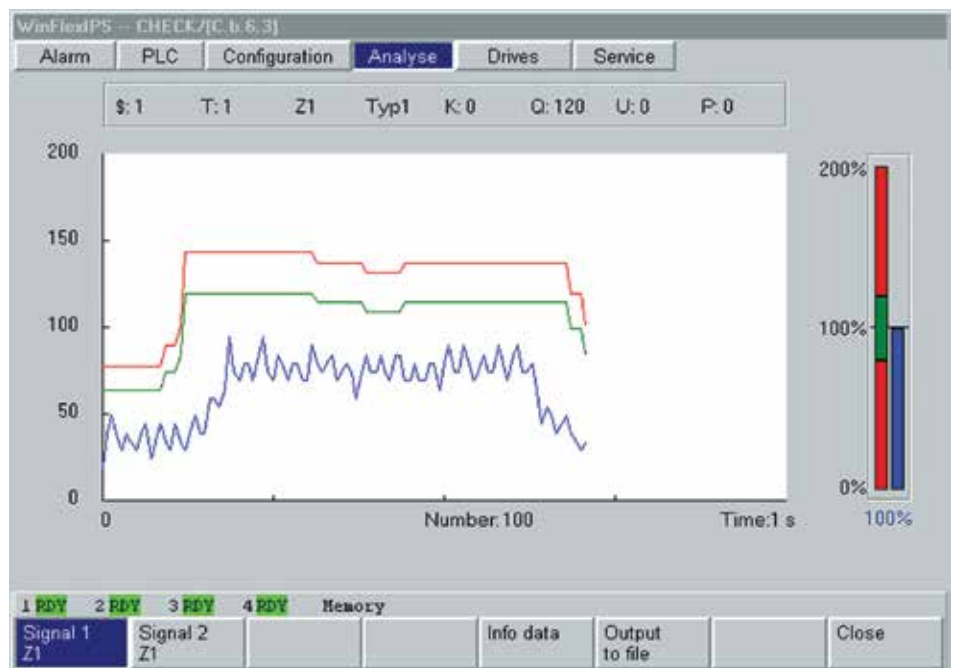
- Graphics-supported interactive guidance also during setup
- Comfortable process synchronization and optimization of the program sequences of parallel machining processes
- Visual verification to avoid collision situations through graphical process simulation
- Highly sensitive tool breakage monitoring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

(Option)

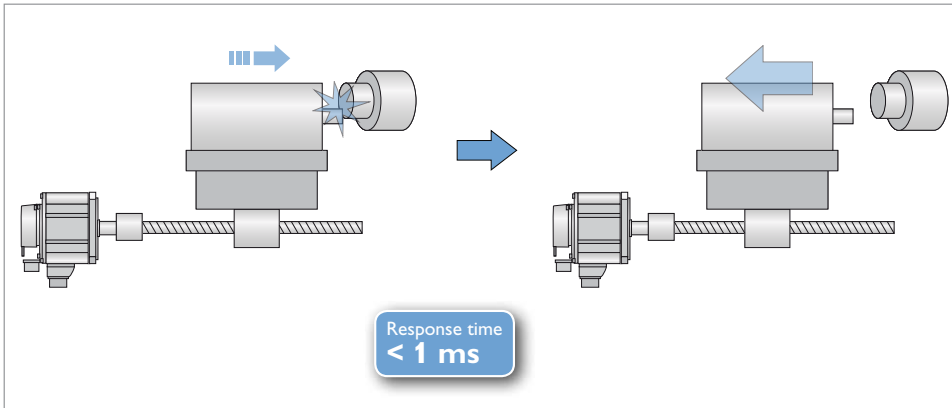




## TRAUB TX8i-s

### The fast control

### for good workpieces

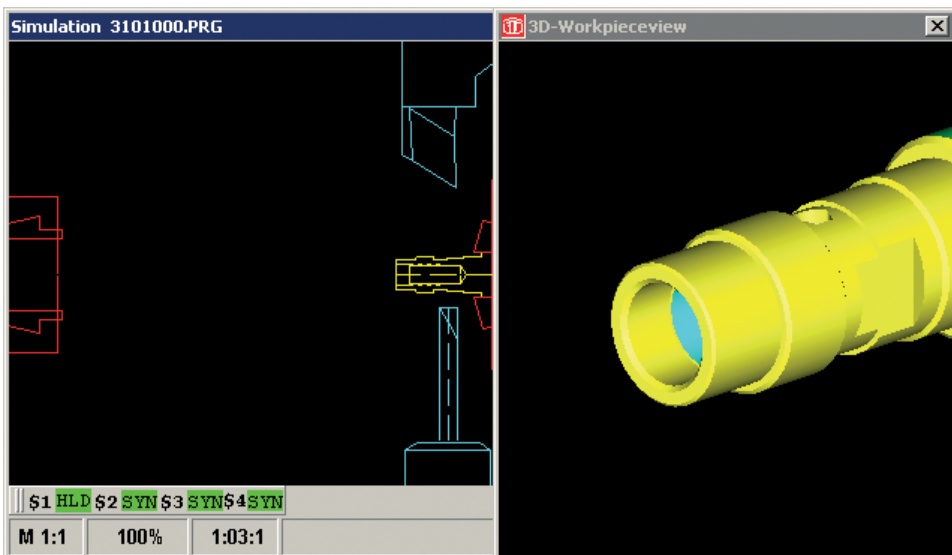


Electronic quick retraction

#### Additional safety device –

#### Electronic quick retraction

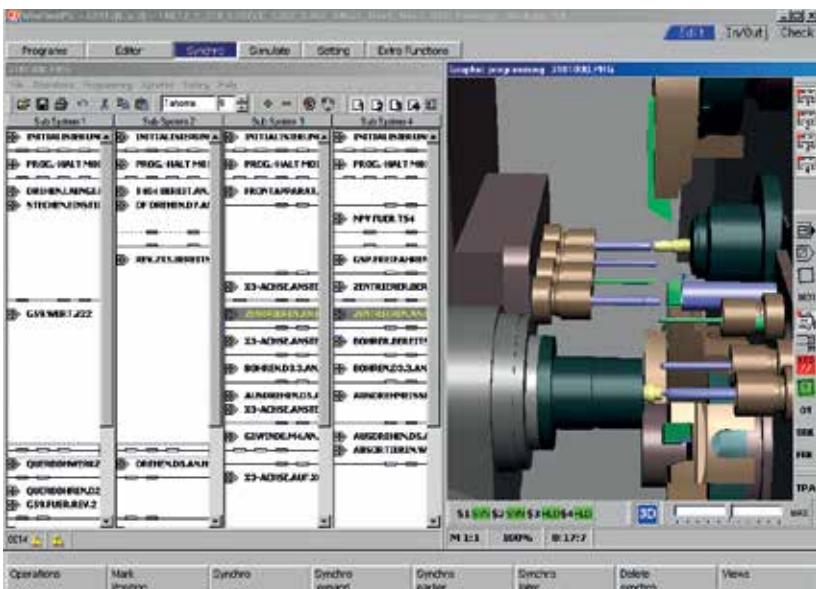
- Active on all TRAUB machines
- Minimization of machine damage
- Active counter control in case of malfunction
- Response time in the millisecond range by intelligent servo amplifier
- More effective than mechanical safety systems



#### Programming, Optimization, Simulation

- Realistic real-time simulation for shorter setup times
- Standard 3-D control of workpiece geometry
- Control of the working sequences
- Visual collision control before the machine is run in

(standard)



#### External programming

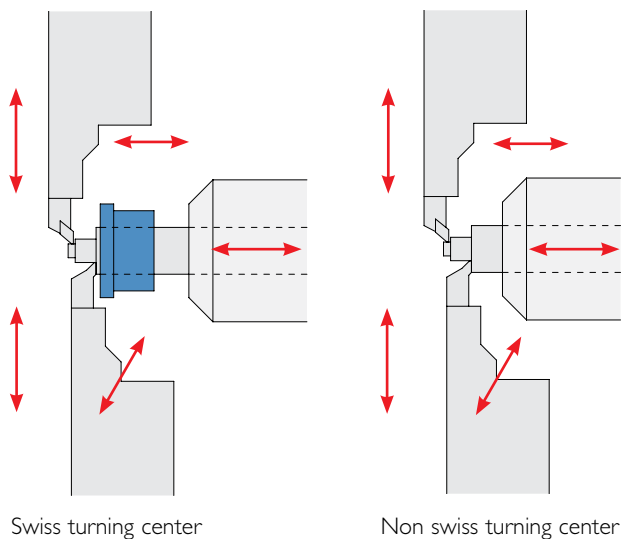
#### TRAUB WinFlexIPSPlus (option)

- Step-by-step parallel programming and simulation possible
- Extremely easy synchronization of machining sequences of up to 4 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

**Unique in its kind:**

**using one machine concept for**

**the CNC swiss and non-swiss turning center**



Swiss turning center

Non swiss turning center

**One machine model -**

**twice the range of parts**

whether swiss and non-swiss turning center, the machine concept is the same:

- TNL12 swiss turning center
- TNL12K non-swiss turning center

**Your advantage:**

- You use the same tool holders
- Identical programming on both machines, thus no additional training required

## Technical data

		TNL12	TNL12K
<b>Headstock</b>			
Bar capacity max.	mm (inch)	13/16 (0.5/0.6)	16 (0.6)
Z1 travel with synchr. running guide bushing	mm (inch)	130 (5.1)	
Z1 travel with programmed guide bushing	mm (inch)	80 (3.2)	
Headstock stroke Z1	mm (inch)		50 (2)
Quality of round material	mm (inch)	ø x IT9	ø x IT11

		TNL12/TNL12K	
Speed max.	rpm	12000	
Drive power 100/25 %	kW (hp)	2.5/4 (3.4/5.4)	
C axis resolution	degree	0.001	
Positioning device resolution	degree	0.1	
Rapid traverse Z1	m(inch)/min.	30 (1181)	

<b>Counter spindle</b>			
Bar capacity max.	mm (inch)	13/16 (0.5/0.6)	
Longitudinal stroke Z4 max.	mm (inch)	139 (5.5)	
Speed max.	rpm	12000	
Drive power 100/25 %	kW (hp)	2.5/4 (3.4/5.4)	
C axis resolution	degree	0.001	
Positioning device resolution	degree	0.1	
Rapid traverse Z4	m(inch)/min.	30 (1181)	

<b>Tool turret 1</b>			
Tool holding fixtures	number	6	
driven tools	number	6	
Turning tool cross-section	mm (inch)	12x12 (0.5x0.5)	
Slide travel X1	mm (inch)	35 (1.4)	
Slide travel Y1	mm (inch)	37.5 -9.5+28 (1.5)	
Rapid traverse X1/Y1	m(inch) /min.	15/15 (590/590)	
Chip-to-chip time	sec.	0.3	

<b>Tool turret 2</b>			
Tool holding fixtures	number	6	
driven tools	number	6	
Turning tool cross-section	mm (inch)	12 x 12 (0.5x0.5)	
Slide travel X2	mm (inch)	35 (1.4)	
Slide travel Z2	mm (inch)	50 (2)	
Rapid traverse X2/Y2	m(inch)/min.	15/15 (590/590)	
Chip-to-chip time	sec.	0.3	

<b>Tool drive for turrets 1 and 2</b>		
Speed max.	rpm	8000
Drive power 25%	kW (hp)	1.5

<b>Front working attachment</b>		
Tool holding fixtures	number	4
Driven tools	number	4
Adaptère-ø	mm (inch)	28 (1.1)
Spindle clearance	mm (inch)	32 (1.3)
Slide travel X3	mm (inch)	222 (8.8)
Slide travel Z3	mm (inch)	139 (5.5)
Rapid traverse X3/Z3	m(inch) /min.	30/30 (1181/1181)

<b>Backworking attachment</b>		
Tool holding fixtures	number	4
Driven tools	number	4
Adapter-ø	mm (inch)	28 (1.1)
Spindle clearance	mm (inch)	32 (1.3)
Slide travel X4	mm (inch)	39 (1.5)
Rapid traverse Z4	m(inch) /min.	15 (590)

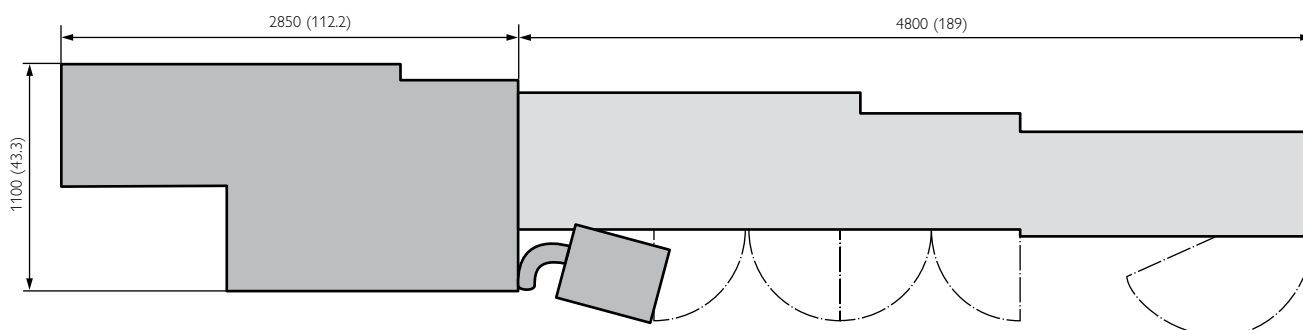
<b>Tool drive for front working attachment</b>		
Speed max.	rpm	12000
Drive power 25 %	kW (hp)	4 (5.4)

<b>Tool drive for backworking attachment</b>		
Speed max.	rpm	8000
Drive power 25 %	kW (hp)	1.5 (2)

<b>Cooling lubricant unit</b>		
Pump pressure, single-stage	bar (psi)	3 (44)
Tank capacity	l (gal)	200/400 (52.8/105.6)
Pump capacity	l/min. (gal/min.)	40 (10.6)

<b>Hydraulics</b>		
Tank capacity	l (gal)	22 (5.8)

<b>Machine dimensions</b>		
Length x width x height	mm (inch)	2850 x 1100 x 1480 (112.2 x 43.3 x 58.3)
Weight, approx.	kg (lbs)	2000 (4400)
Connecting power	kW (hp)	16 (22)



TRAUB Drehmaschinen  
GmbH & Co. KG  
Hauffstraße 4  
73262 Reichenbach, Germany  
Phone +49 (0) 7153 502-0  
Fax +49 (0) 7153) 502-694  
[info@traub.de](mailto:info@traub.de)  
[www.traub.de](http://www.traub.de)

