

CNC swiss and non-swiss

turning center

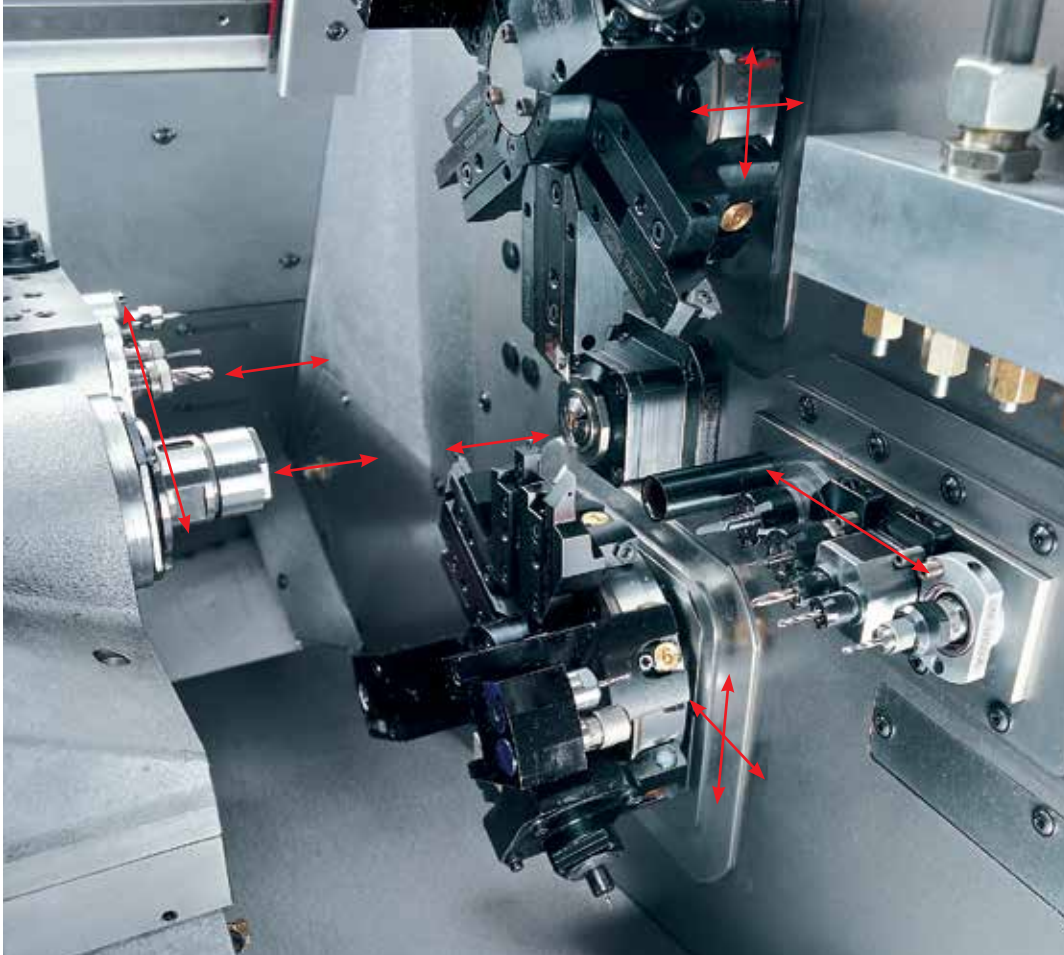


TNL 12

TNL 12K

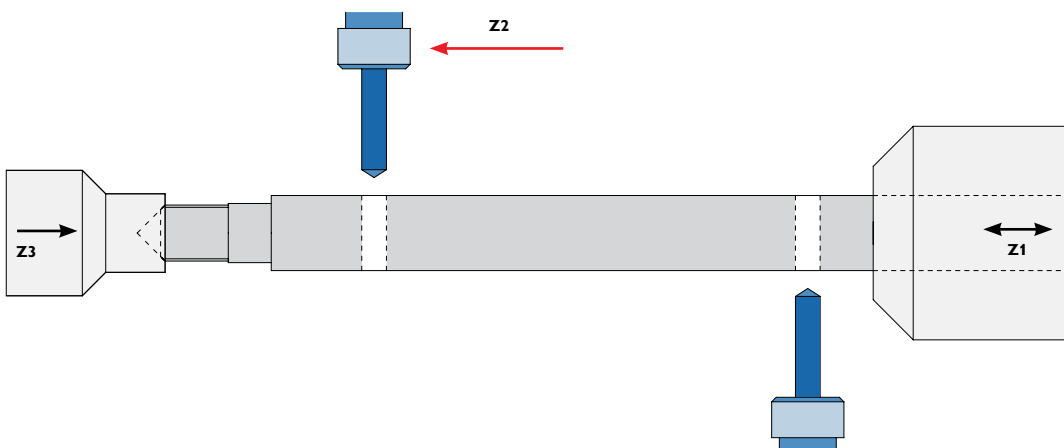


TNL12 – Ideal for your production requirements



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

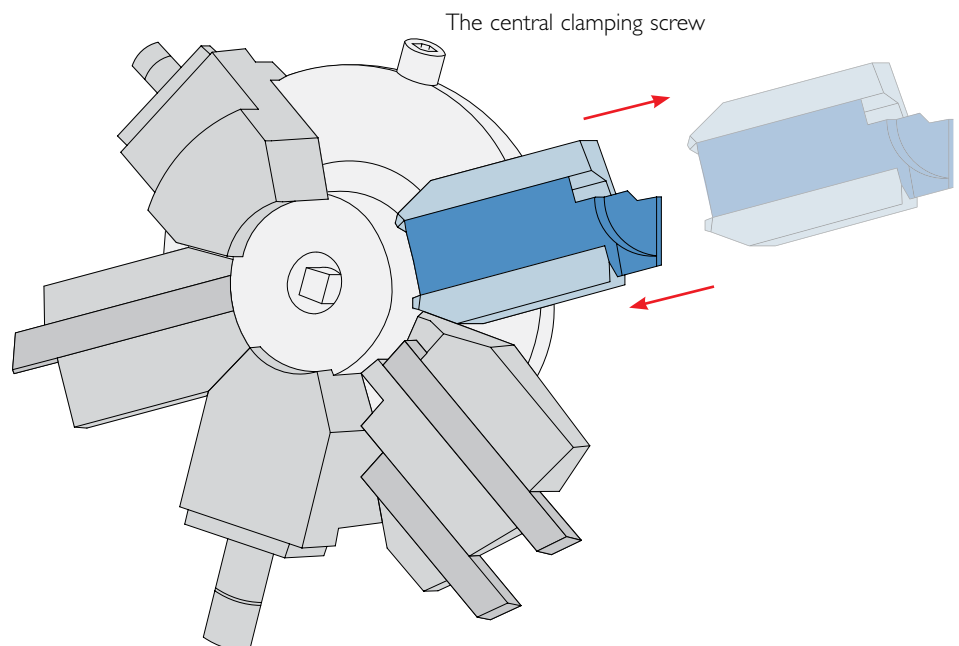
- With 4 stations
- Tool drive possible for all stations
- 3 stations can be fitted with 2 tools each
- Separate X axis

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

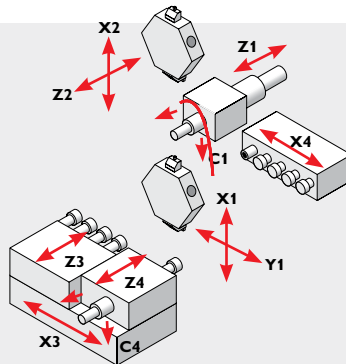
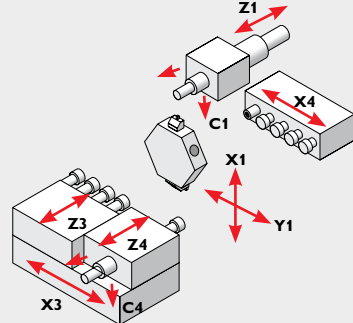
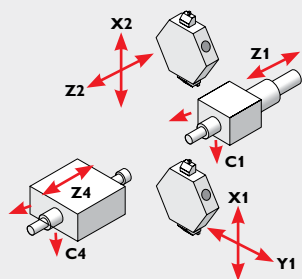
Powerful tool drive

- Max. 1.5 kW
- On all stations



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

Options -as varied as your requirements



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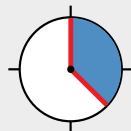
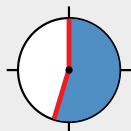
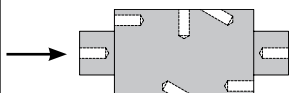
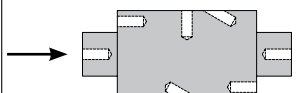
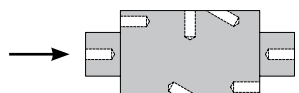
26

38

6 sides

6 sides

6 sides

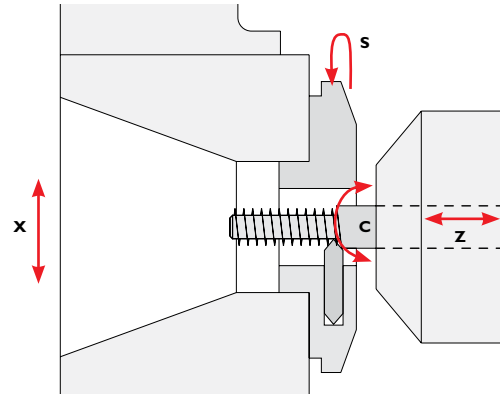


Double tool holder,
fixed or driven



Thread whirling on turret 2:

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

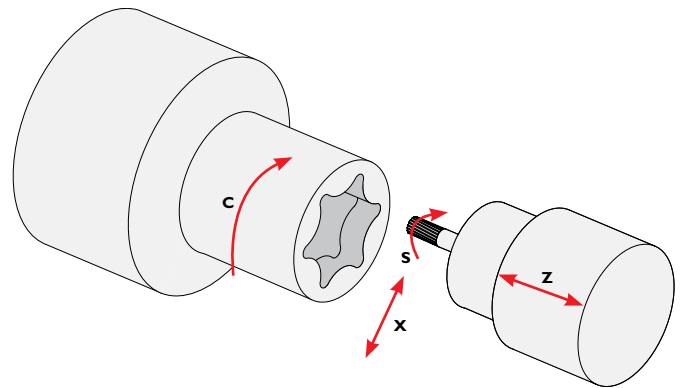


Thread whirling with front working attachment:

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

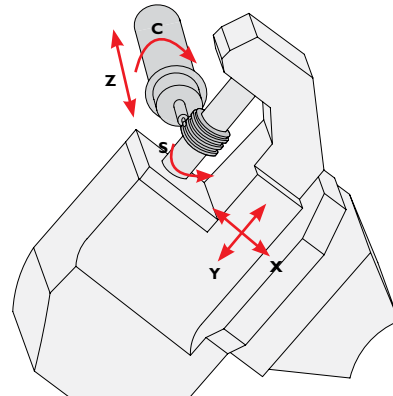
**High-frequency machining (inside) on front working/
backworking attachment:**

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



Gear cutting on turret 1:

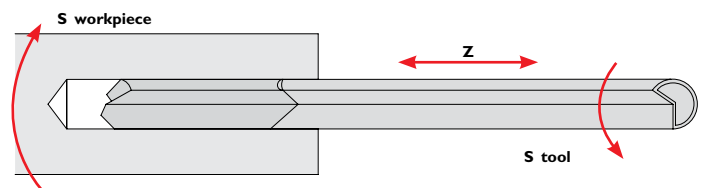
- Straight toothing
- Max. module 0.6



(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

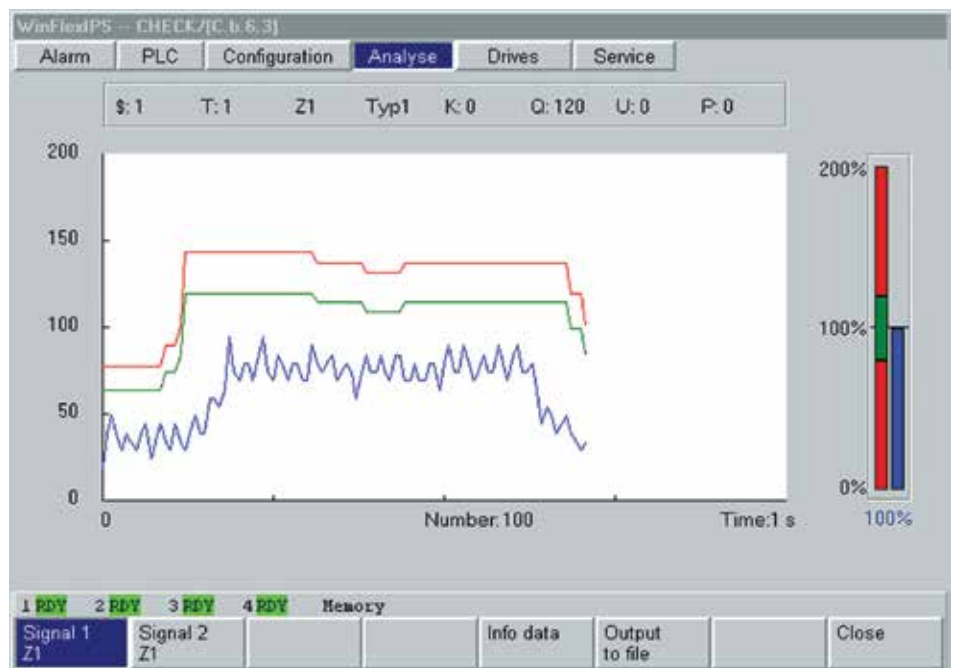
- Graphics-supported interactive guidance also during setup
- Comfortable process synchronization and optimization of the program sequences of parallel machining processes
- Visual verification to avoid collision situations through graphical process simulation
- Highly sensitive tool breakage monitoring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

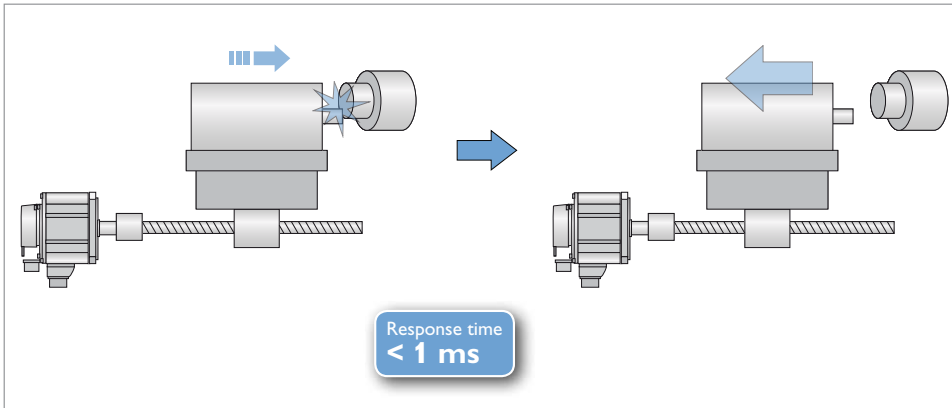
(Option)



TRAUB TX8i-s

The fast control

for good workpieces

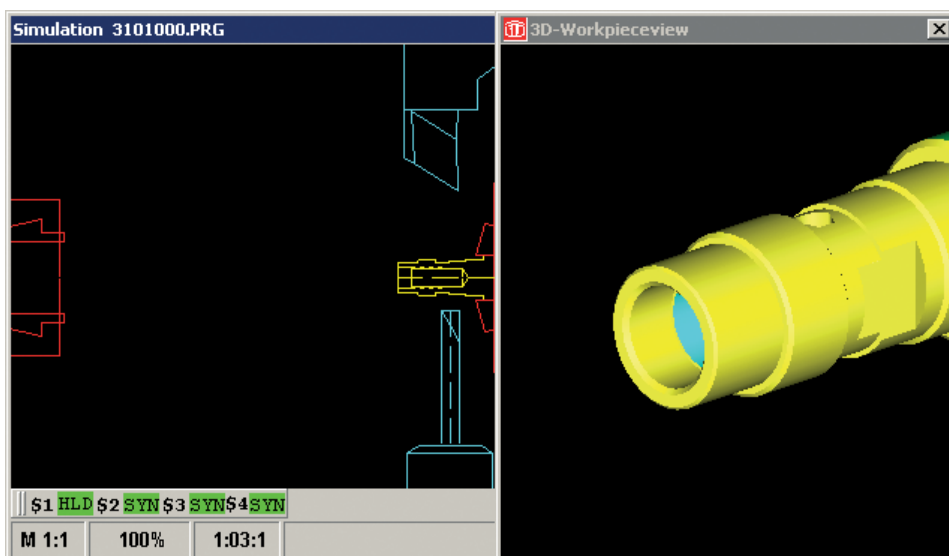


Electronic quick retraction

Additional safety device –

Electronic quick retraction

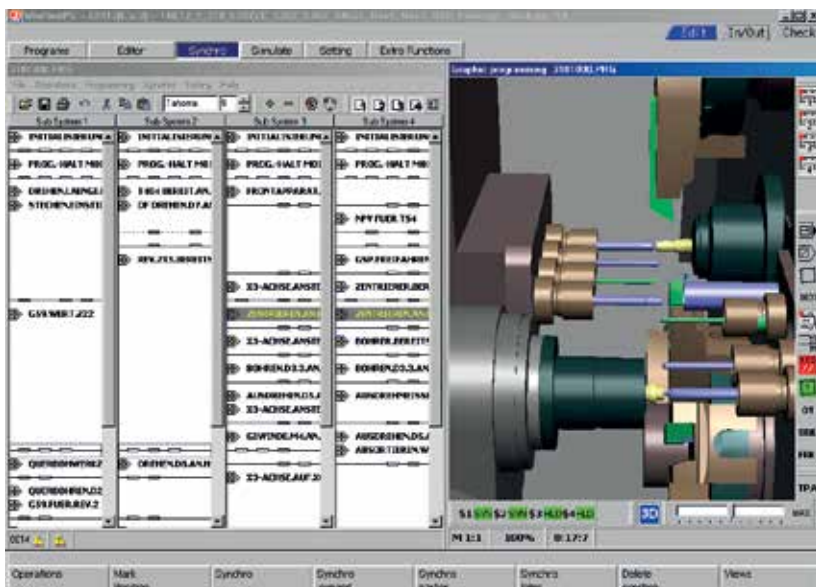
- Active on all TRAUB machines
- Minimization of machine damage
- Active counter control in case of malfunction
- Response time in the millisecond range by intelligent servo amplifier
- More effective than mechanical safety systems



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

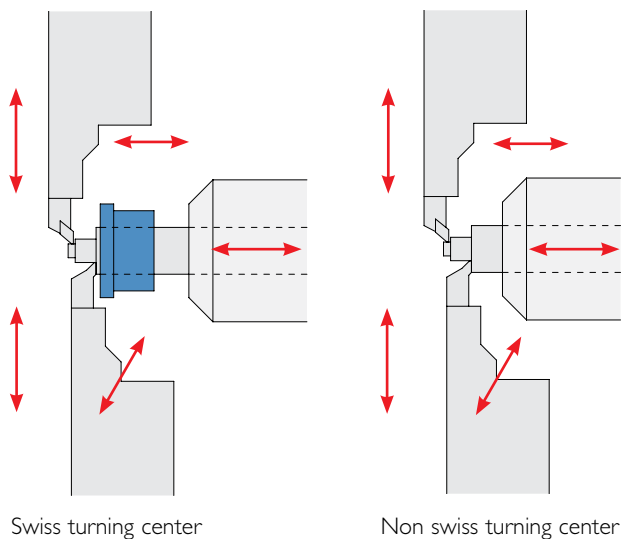
TRAUB WinFlexIPSPlus (option)

- 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



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
Headstock			
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)	

Counter spindle			
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)	

Tool turret 1			
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	

Tool turret 2			
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	

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

Front working attachment		
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)

Backworking attachment		
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)

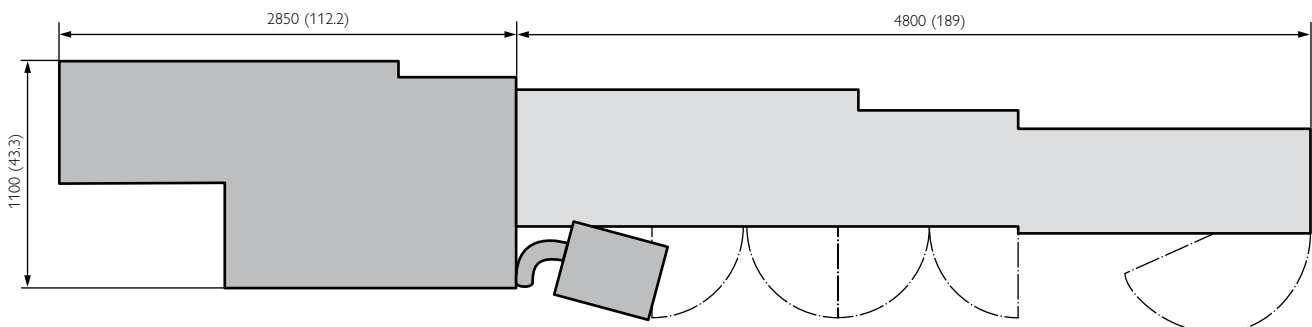
Tool drive for front working attachment		
Speed max.	rpm	12000
Drive power 25%	kW (hp)	4 (5.4)

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

Cooling lubricant unit		
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)

Hydraulics		
Tank capacity	l (gal)	22 (5.8)

Machine dimensions		
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)



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