



**WATCHME.TORNOS.CH**

– ENGLISH –

# SwissNano

**WATCH ME!**



SMALL IS BEAUTIFUL



SwissNano releases unique emotions with its innovative design. It adds a layer with the ability to customize the machine in eight different colors.

#### SPECIAL EDITIONS



*"Watchmaking"*



*"Swiss"*



SWISSNANO





*green acid*



*red passion*



*pink diva*



*orange pumpkin*



*black graphite*



*purple grapes*

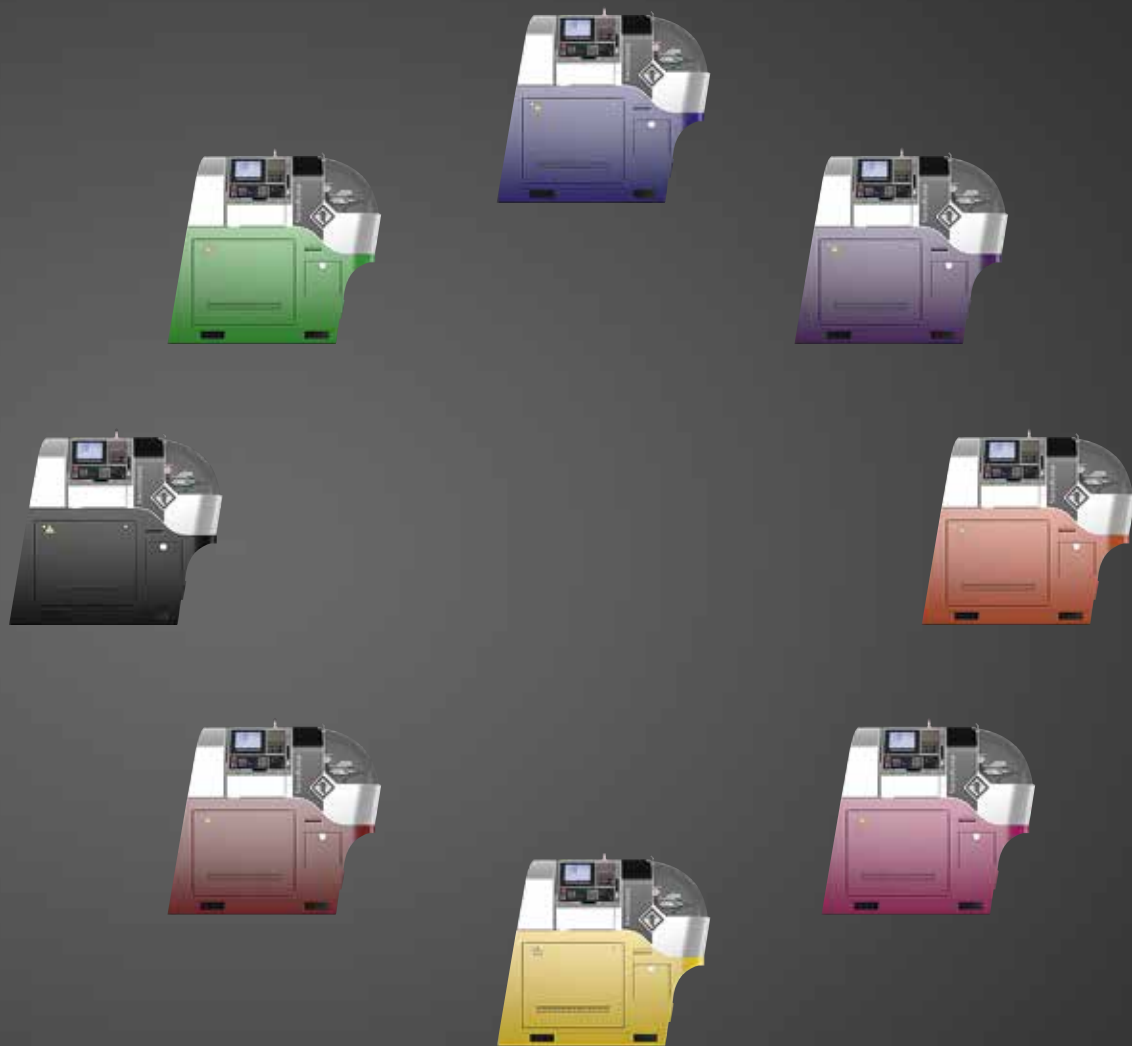


*blue ocean*



*yellow summer*

# COLORS



compact  
4 mm  
Symmetrical structure  
Watchmaking  
Design  
Ergonomics  
Compact  
Design  
Compact  
Gear hobbing  
Machining with or without guide bush  
4 mm  
6 linear axes  
Front access  
High precision  
Ergonomics  
Symmetrical structure  
Gear hobbing  
Watchmaking  
Ergonomics  
Machining with or without guide bush  
6 linear axes  
Ergonomics  
Compact  
Watchmaking  
Front access  
Symmetrical structure  
High precision  
Symmetrical structure  
Ergonomics  
Gear hobbing  
Compact  
Front access  
Ergonomics  
4 mm  
Symmetrical structure  
Front access  
Ergonomics  
Compact  
High precision  
Machining with or without guide bush  
6 linear axes  
Gear hobbing  
High precision  
Watchmaking  
Machining with or without guide bush









HIGH PRECISION





HIGH PRECISION



Material:	20 AP
External diameter:	Ø 0.372 mm
Part length:	1.3 mm



Material: 20 AP  
External diameter:  $\varnothing$  1.0 mm  
Part length: 1.787 mm

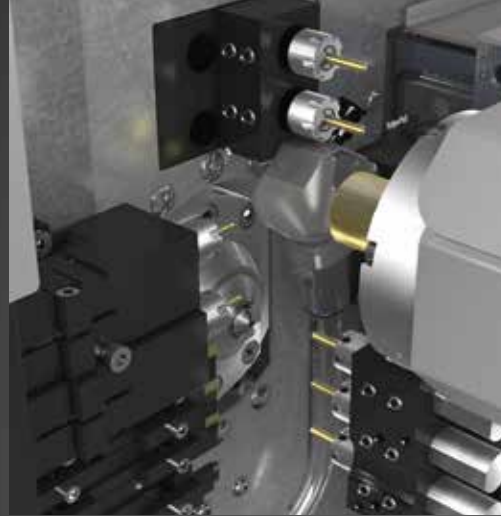
HIGH PRECISION



Material:	20 AP
External diameter:	Ø 2.48 mm
Part length:	3.69 mm



*Turning*



*Drilling*



*Synchronous rotating bushing*



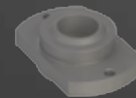
*Cross rotating spindle*



*Gear hobbing attachment*



*Thread milling / Polygon  
milling attachment*



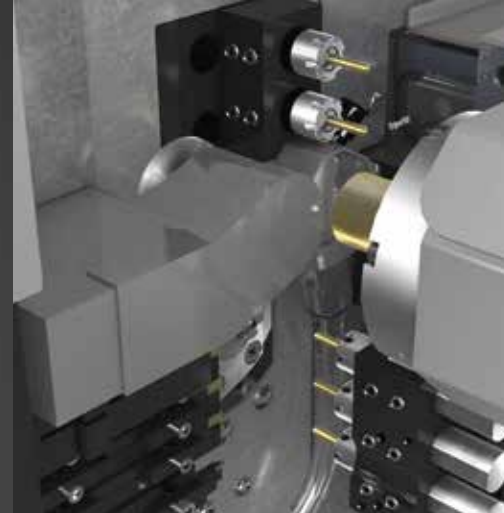
*Kit to work without a bushing*



# SWISSNANO EQUIPMENT



*Gear hobbing*



*Polygon milling*

SwissNano easily adapts to the user's needs and in option can also be fitted with the following equipment:

- HF spindles
- Carousel collection system
- Vacuum
- Fire extinguishing device
- Oil mist extractor

# UNIQUE MACHINING OPERATIONS

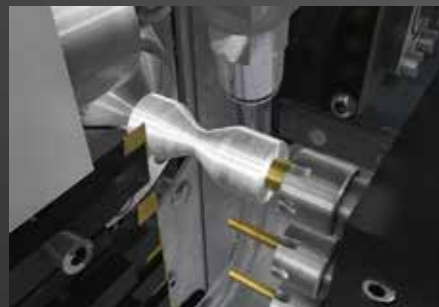
The SwissNano kinematic has been specifically studied to produce small parts of highest precision. The symmetrical cast iron base gives the machine an outstanding rigidity which allows to obtain excellent surface finishes.



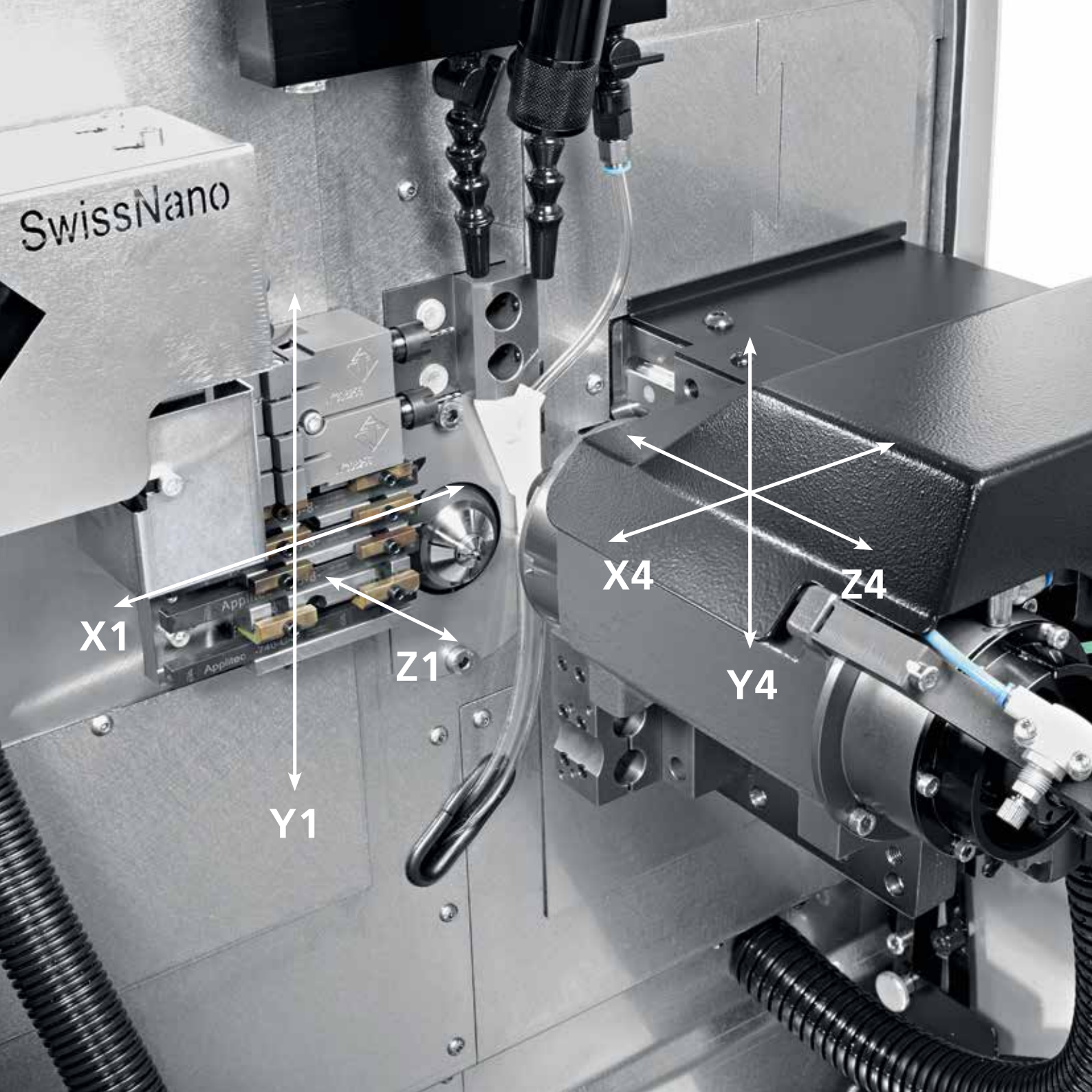
*Gear hobbing and deburring*



*Rough finishing*



*Turning and drilling*



SwissNano

X1

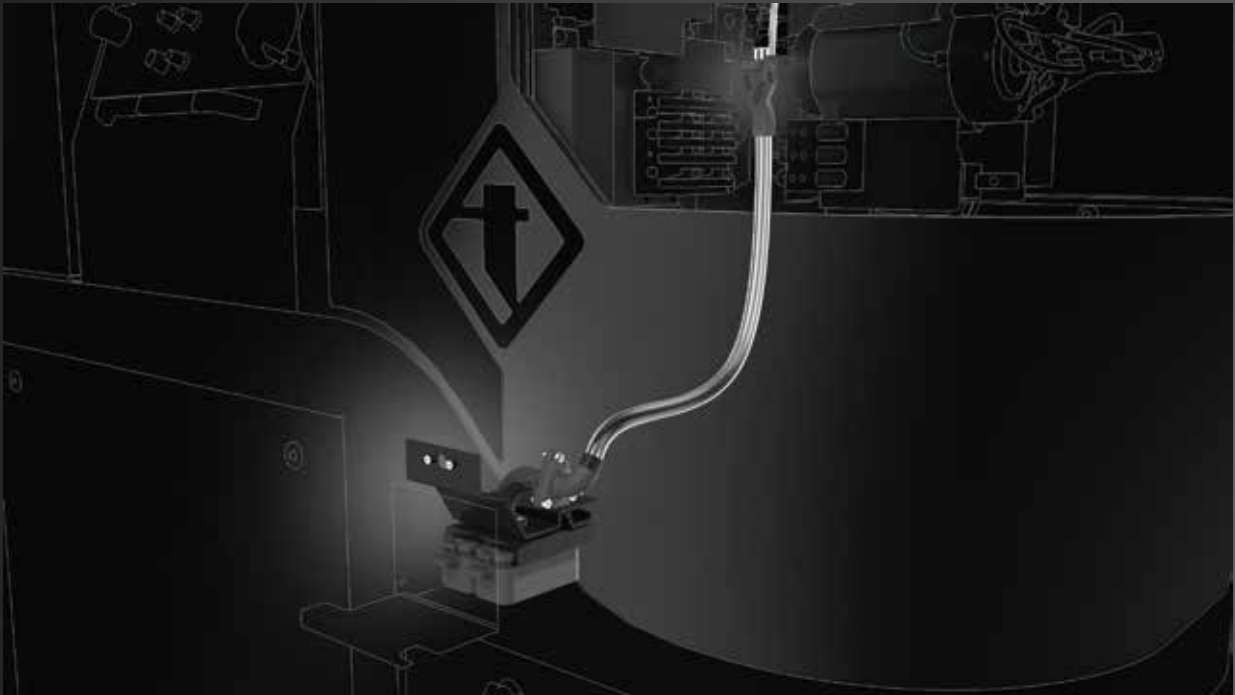
Y1

Z1

X4

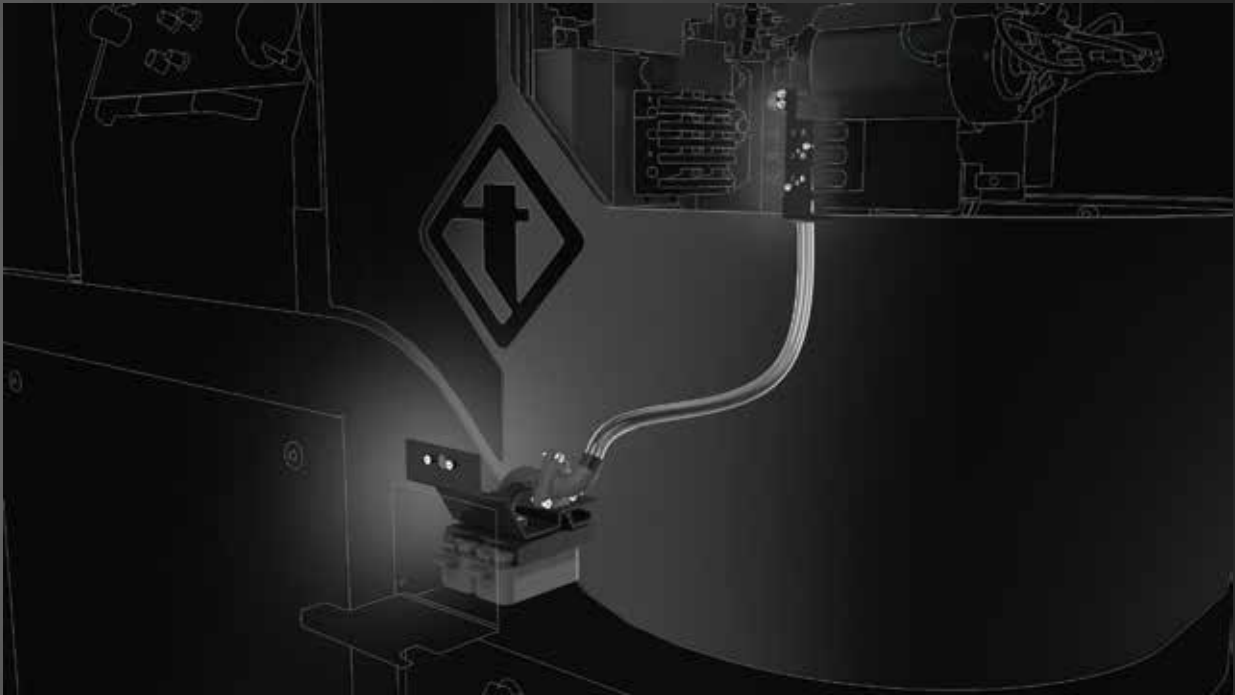
Y4

Z4

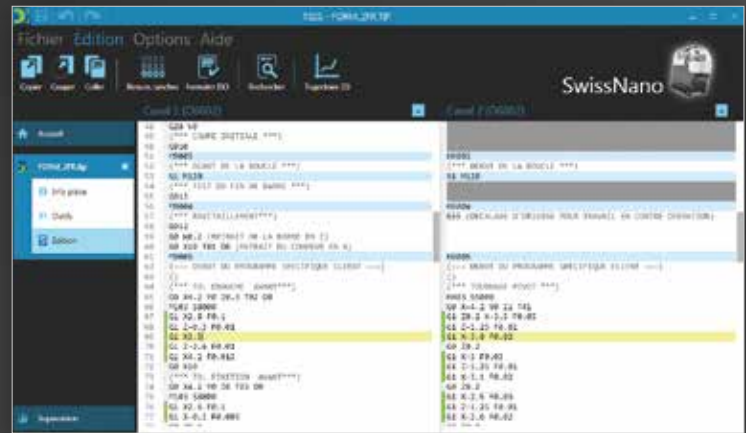


Part pick up by vacuum in counter operations.

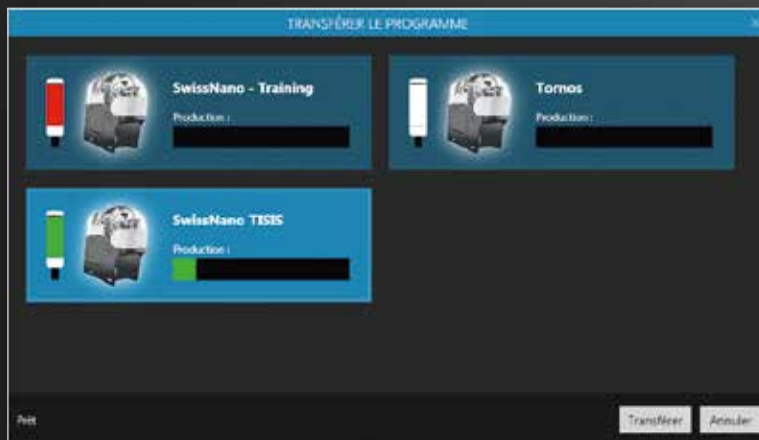
## PART PICK UP – VACUUM



Part pick up by vacuum in main operations.

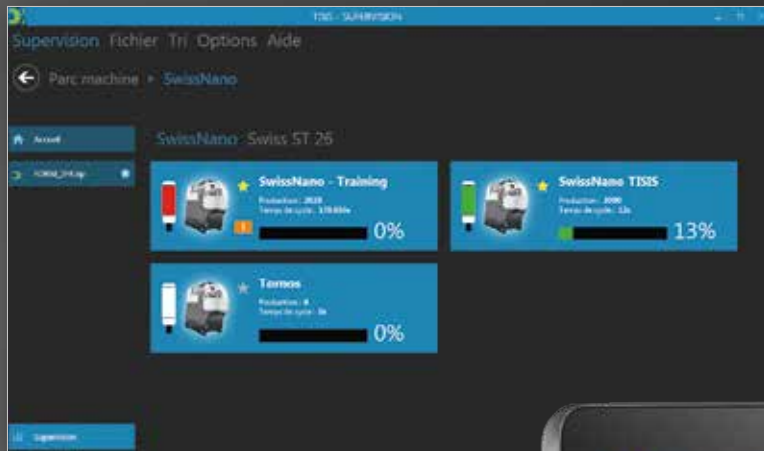


Program your SwissNano machine



Transfer\* your part programs  
through your network

# TISIS: PROGRAM AND COMMUNICATE WITH YOUR SWISSNANO MACHINE



Monitoring\*

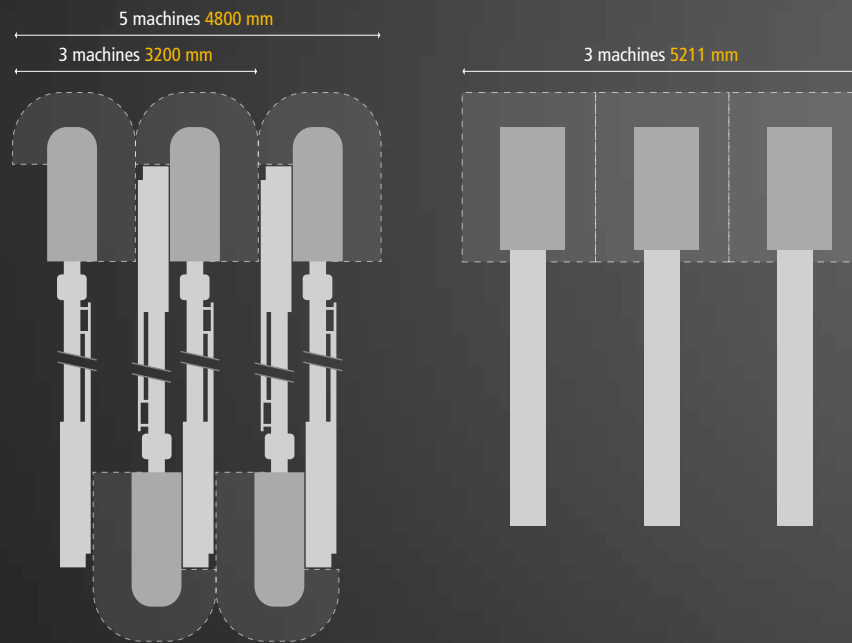


Place your tools in an interactive manner



\* Requires the connectivity pack

Thanks to its intelligent design and reduced size, SwissNano fits the space of a Tornos M7 cam machine in your workshop. What is more, you only need a width of 3.2 meters for 3 SwissNanos, whilst the equivalent competing numerical control machines take up more than 5 meters. This will help you increase your productivity and reduce costs.

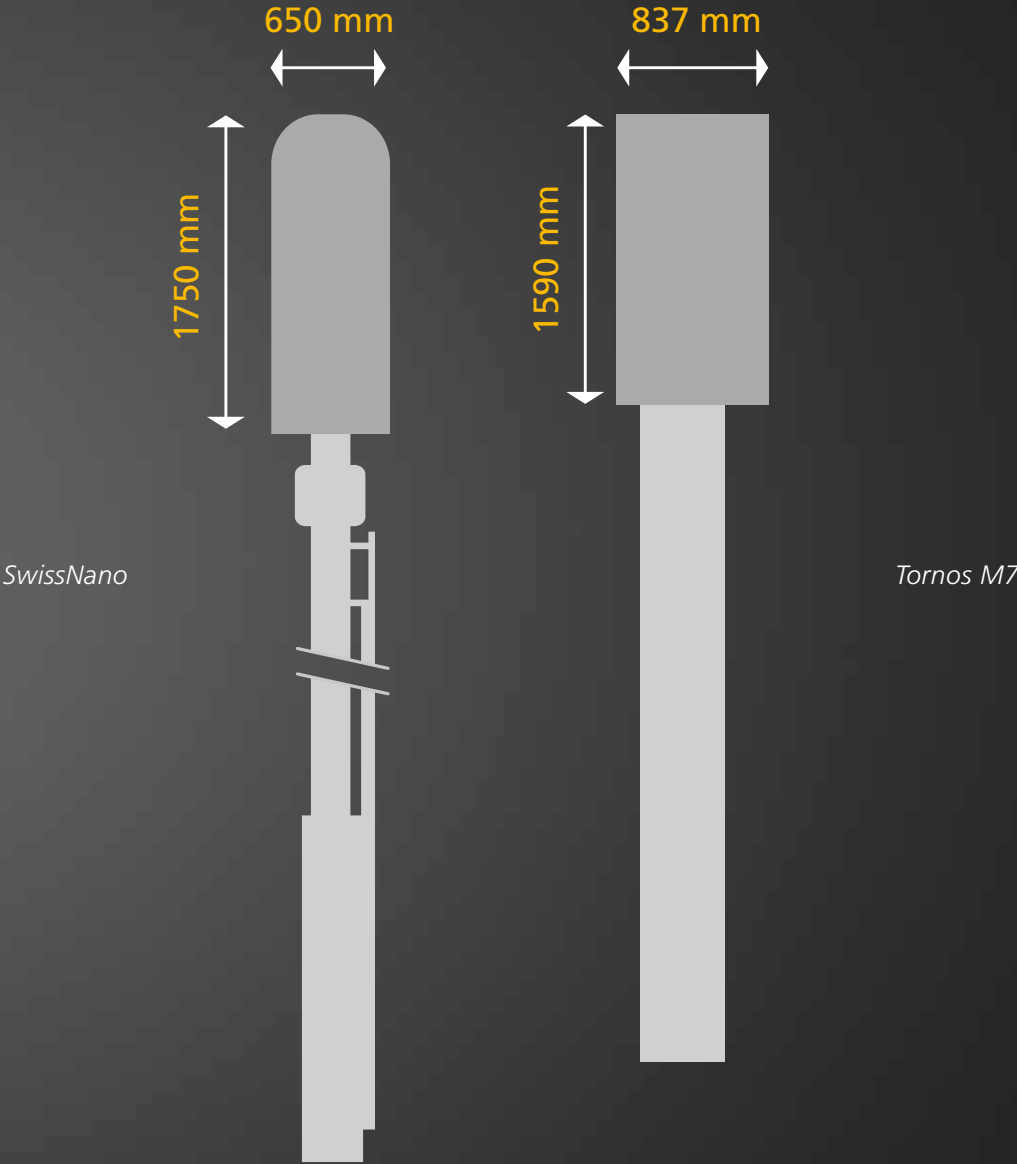


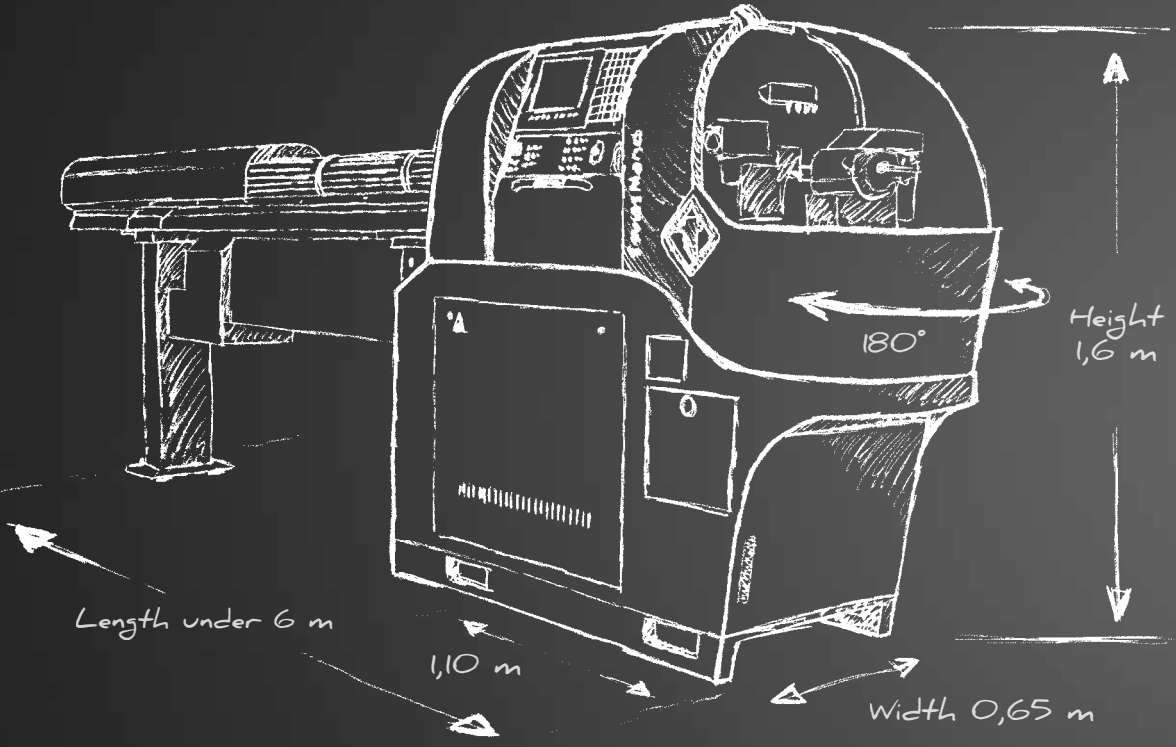
*SwissNano*

*Concurrency*



SWISSNANO: COMPACT AND ERGONOMIC





# TECHNICAL SPECIFICATIONS

## MAIN SPINDLE (Z1 / S1 / C1)

SwissNano 4/6

Max. bar capacity	mm	4
Standard workpiece length with fixed guide bush	mm	28
Spindle rotation speed	t/min	0-16000
Spindle power (nominal/max)	kW	1/2
Torque (nominal/max)	Nm	0.65/2

## GUIDE BUSH HOLDER (X1 / Y1 / S11)

Number of tool positions on guide bush		7
Turning tool section		8x8
Positions for radial rotating tools (option)		2
Rotating tool speed of rotation	t/min	8000
Rotating tool power	kW	0.5

## END ATTACHMENT AND COUNTER SPINDLE (X4 / Y4 / Z4 / S4)

Number of tool positions		3x Ø 16
Positions for rotating tools		3
Max. bar capacity	mm	4
Insertion length of workpiece into counter spindle	mm	26
Spindle rotation speed	t/min	0-16000
Spindle power (nominal/max)	kW	1/2
Torque (nominal/max)	Nm	0.65/2
Counter spindle ejector stroke	mm	10

## BASIC MACHINE EQUIPMENT

Fixed guide bush + oil filter	✓
Front platten rotating tool motor	✓
C1 axis	✓
Polygon operation (and gear hobbing) function programming	✓
Thread milling device	option
Gear hobbing device	option
Radial drills	option
Adjustment of S4 counter spindle end of clamping	✓
Pneumatic ejection of workpiece + air/oil cleaning of collet	✓
Automatic centralized lubrication cycle	✓
Beacon (1 color)	✓
Fire extinguisher interface	✓

# TECHNICAL SPECIFICATIONS

## SECONDARY OPERATION

Number of tool positions	2x Ø 16
Total number of basic machine tools	12
Operation/secondary operation tool distribution	10/2

## GENERAL SPECIFICATIONS

Max. length	mm	1800
Length with LNS Tryton 3m	mm	5900
Max. width	mm	650
Height (without signalling lamp)	mm	1575
Spindle height	mm	1150
Weight	kg	700
Cutting oil tray capacity	l	45
Coolant pump power	kW	0.18
Colors: RAL 9006 grey, RAL 9011 graphite black		
CE/CEM certified		



TABLE 1: Sample Data from the Control Panel Screen

Item	Value	Unit
1	10.00	mm
2	20.00	mm
3	30.00	mm
4	40.00	mm
5	50.00	mm
6	60.00	mm
7	70.00	mm
8	80.00	mm
9	90.00	mm
10	100.00	mm

SwissNano





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**Conforms to the European CE/CEM Safety Standards**

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