HC/HF

HORIZONTAL MILLING MACHINES

4 – 7-axis

TRIMILL®
machine tools

TRIMILL - Your partner for PORTAL MILLING MACHINES

The development and manufacture of portal milling machines with goals of QUALITY - PERFORMANCE - RELIABILITY - PRICE is our main mission.
A sophisticated system of warranty as well as post-warranty service is also an important part of our services.

The comprehensive range of TRIMILL machines includes vertical and horizontal portal milling machines, which are distinguished by high stiffness and accuracy. They are intended for the machining of tools, moulds and accurate workpieces in single piece production:

- **Travels from (x,y,z) 1,200/1,200/800 mm to 3,500/2,000/1,000 mm**
- **Three-, five- and multi-axial versions**

Partnership with our customers is based on the following pillars

- Expertise, experience, professionalism
- Custom-made solutions
- Development and innovation
- Top service and immediate availability of spare parts

Figures and facts

- 9,300 m^2 of manufacturing area and more than 170 specialists in the areas of development, design, assembly and technology
- We have been active on the worldwide market since the year 2000, when our family company was established
- 400 portal milling machines at 180 satisfied customers in 25 countries around the world

Our customers

- Tool shops
- Automotive industry
- Aircraft industry
- Electric power industry

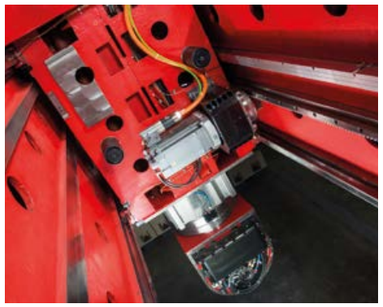
The most frequently machined materials on our machines

- Tool steel
- Aluminium alloys
- Cast iron
- Structural materials

TRIMILL PRINCIPLE: BOX-IN-BOX

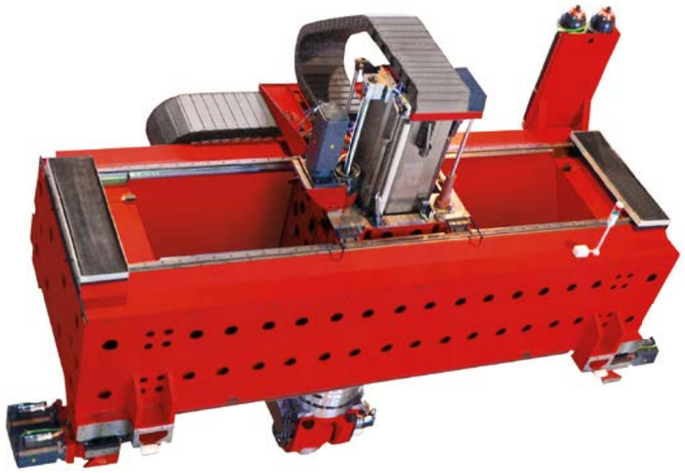
BOX IN BOX

"BOX-IN-BOX" is a unique system with closed construction of the cross-beam and cross-slide with internally positioned and guided ram unit (axis Y and Z).

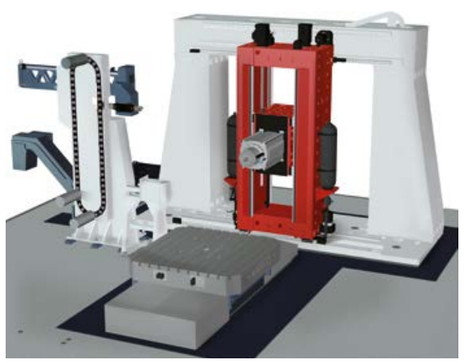


THE ADVANTAGES OF THE TRIMILL PRINCIPLE:

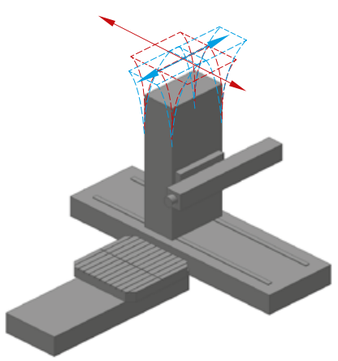
- Consistent milling results due to the stable thermo-symmetrical design
- Always 4 placements of the cross and vertical support for the machine, preventing the occurrence of the so-called "banana effect" which deforms/bends the machine horizontal support
- Increased rigidity of the machine in the X axis by +60 %, in the Y axis by +30 %, and in the Z axis by +90 %

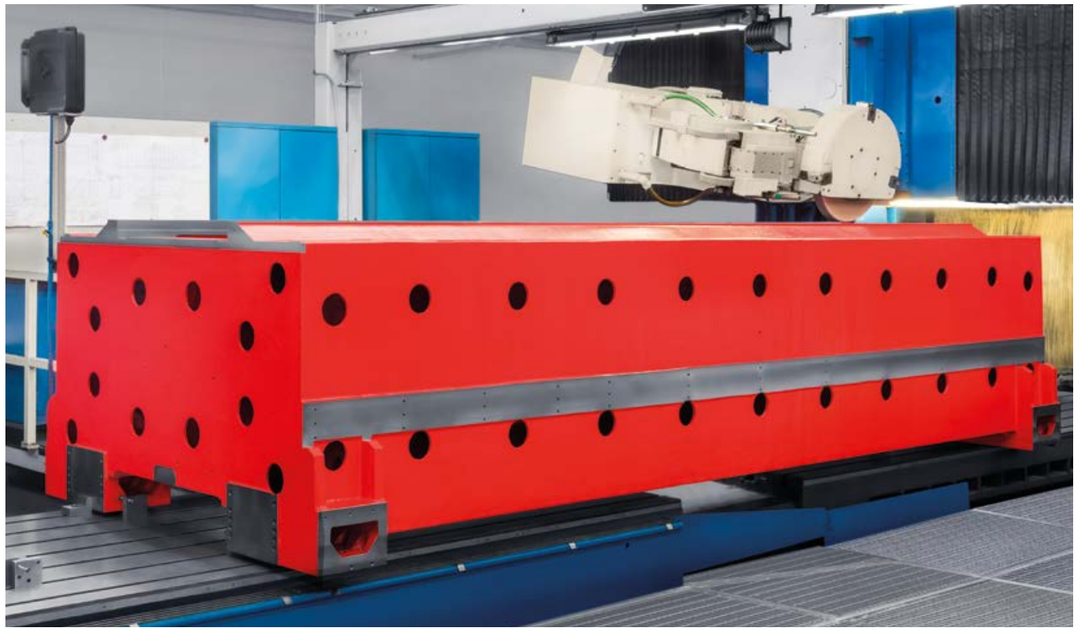


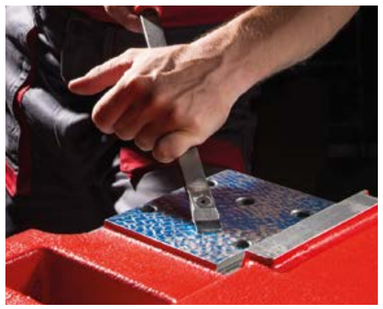
TRIMILL horizontal portal centre



Conventional horizontal centre







Milling in 4 axes with the application of a rotary table.
Workpiece is stationary with the aim to achieve high surface quality.
Complete squaring up a block of material (formatting) in just two set ups.

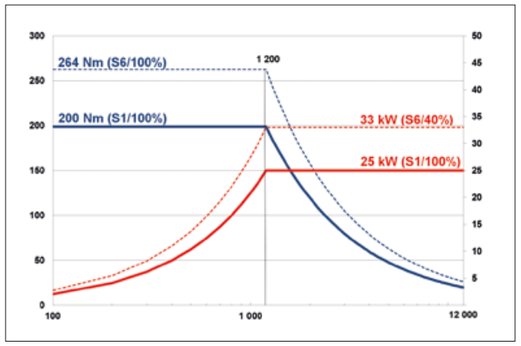
The machine is designed and configured as a horizontal gantry for high dynamics and accuracy of milling.

High productivity of production - the machine is intended for roughing and finishing with only one clamp.

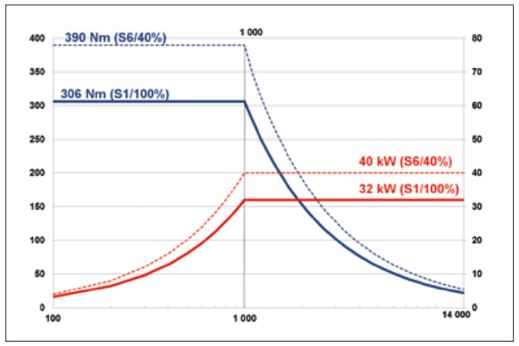
	X	x	Y	x	Z
HC 1212	1.200	x	1.200	x	800
HC 1612	1.600	x	1.200	x	800
HC 2012	2.000	x	1.200	x	800
HC 2516	2.500	x	1.600	x	1.000
HC 2520	2.500	x	2.000	x	1.000

TRIMILL *SPINDLE CHARACTERISTICS – HC*

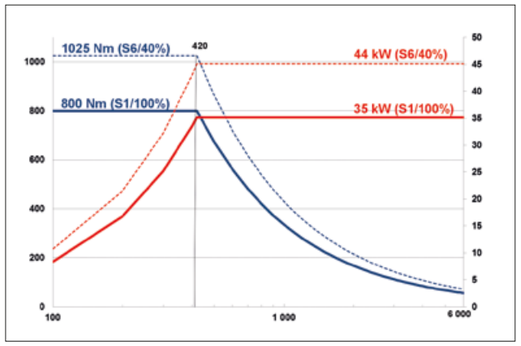
Basic spindle: 25 kW, 200 Nm, 12,000 rpm,
HSK - A100



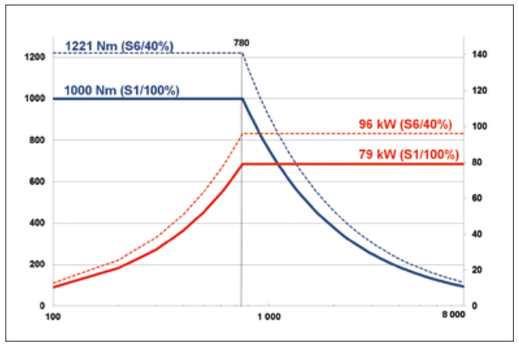
Optional spindle: 32 kW, 306 Nm, 14,000 rpm,
HSK - A100



Optional spindle: 35 kW, 800 Nm, 6,000 rpm,
ISO 50 (only for HC 2516, HC 2520)



Optional spindle: 79 kW, 1,000 Nm, 8,000 rpm,
HSK - A 100 (only for HC 2516, HC 2520)

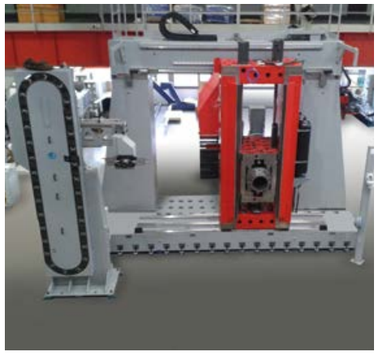


Milling head F2F

Rigid 7-axis machine that is purposely designed for the milling of pressing tools, moulds and dies. Five-side milling is achieved by traversing rotary table and fork-type head.

Unique closed construction of the cross-beam (X axis) and the cross support with iternally positioned ram and a milling head (Y and Z axes)

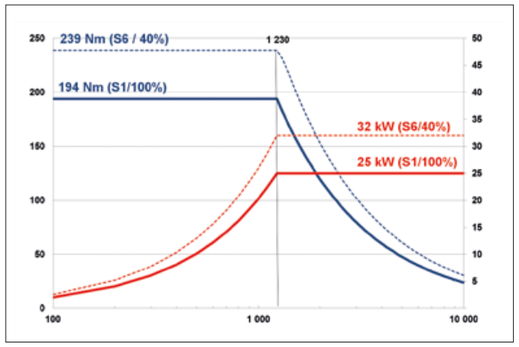
Consistent milling results due to the stable thermo-symmetrical design

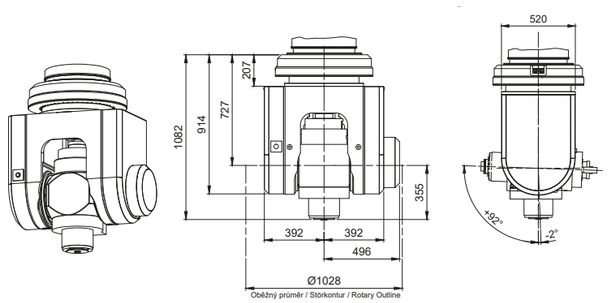


	X	x	Y	x	Z
HF 1212	1.200	x	1.200	x	800
HF 1612	1.600	x	1.200	x	800
HF 2012	2.000	x	1.200	x	800
HF 2516	2.500	x	1.600	x	1.000
HF 2520	2.500	x	2.000	x	1.000

TRIMILL *HEADS – HF*

F2F





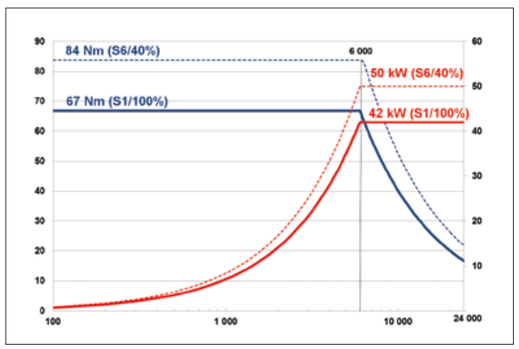
25 kW, 194 Nm, 10,000 rpm, HSK-A100

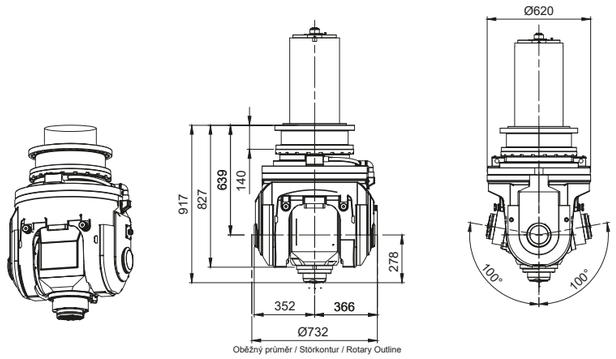
B axis (milling head): -2/+92°

C axis (milling head): +/-240°

F2F – positional milling 0.001°

T21C





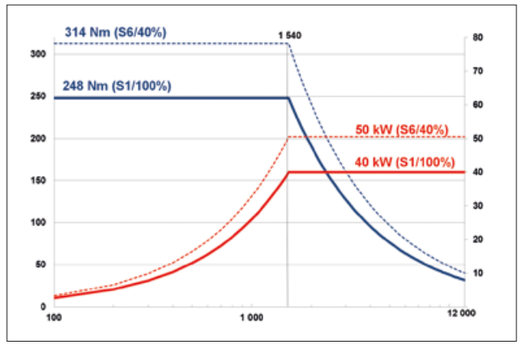
42 kW, 67 Nm, 24,000 rpm, HSK-A63

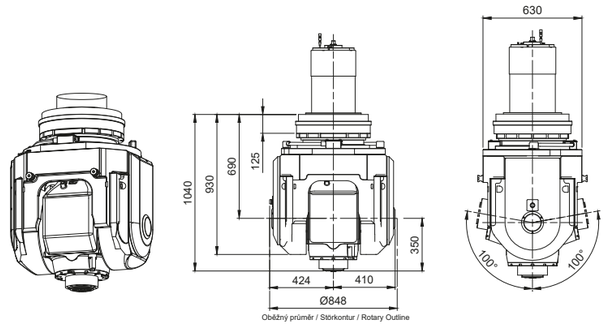
B axis (milling head): -100/+100°

C axis (milling head): +/-240°

T21C – continuous milling

T30C



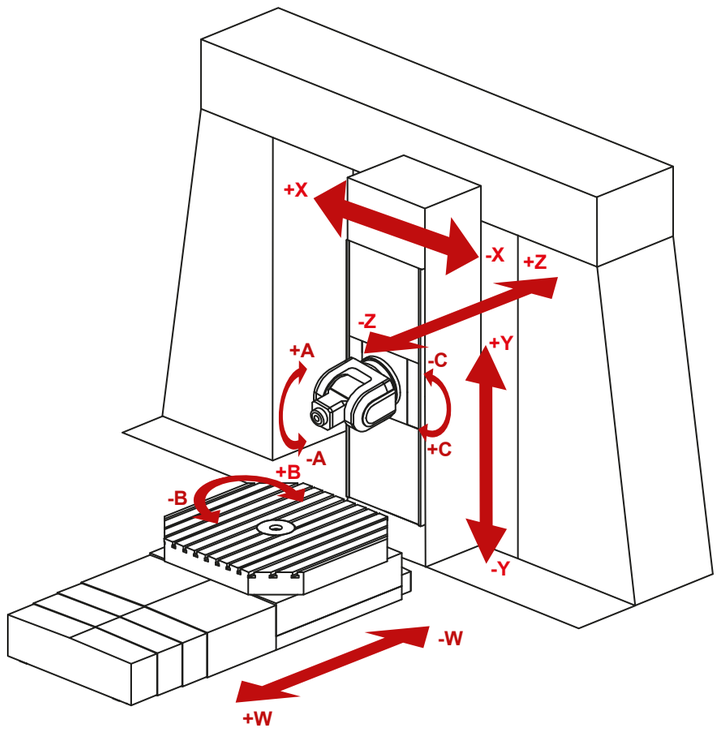


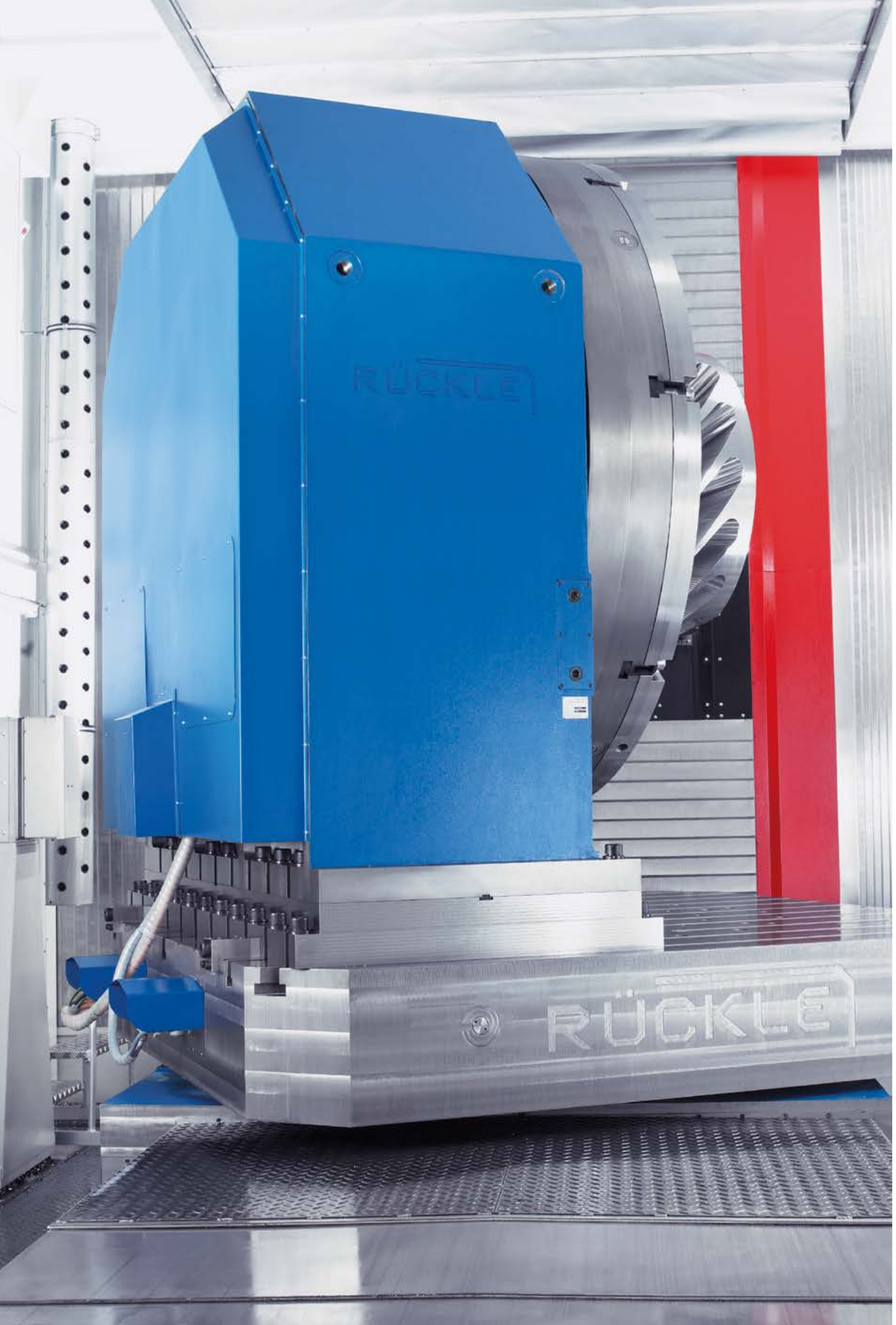
40 kW, 248 Nm, 12,000 rpm, HSK-A100

B axis (milling head): -100/+100°

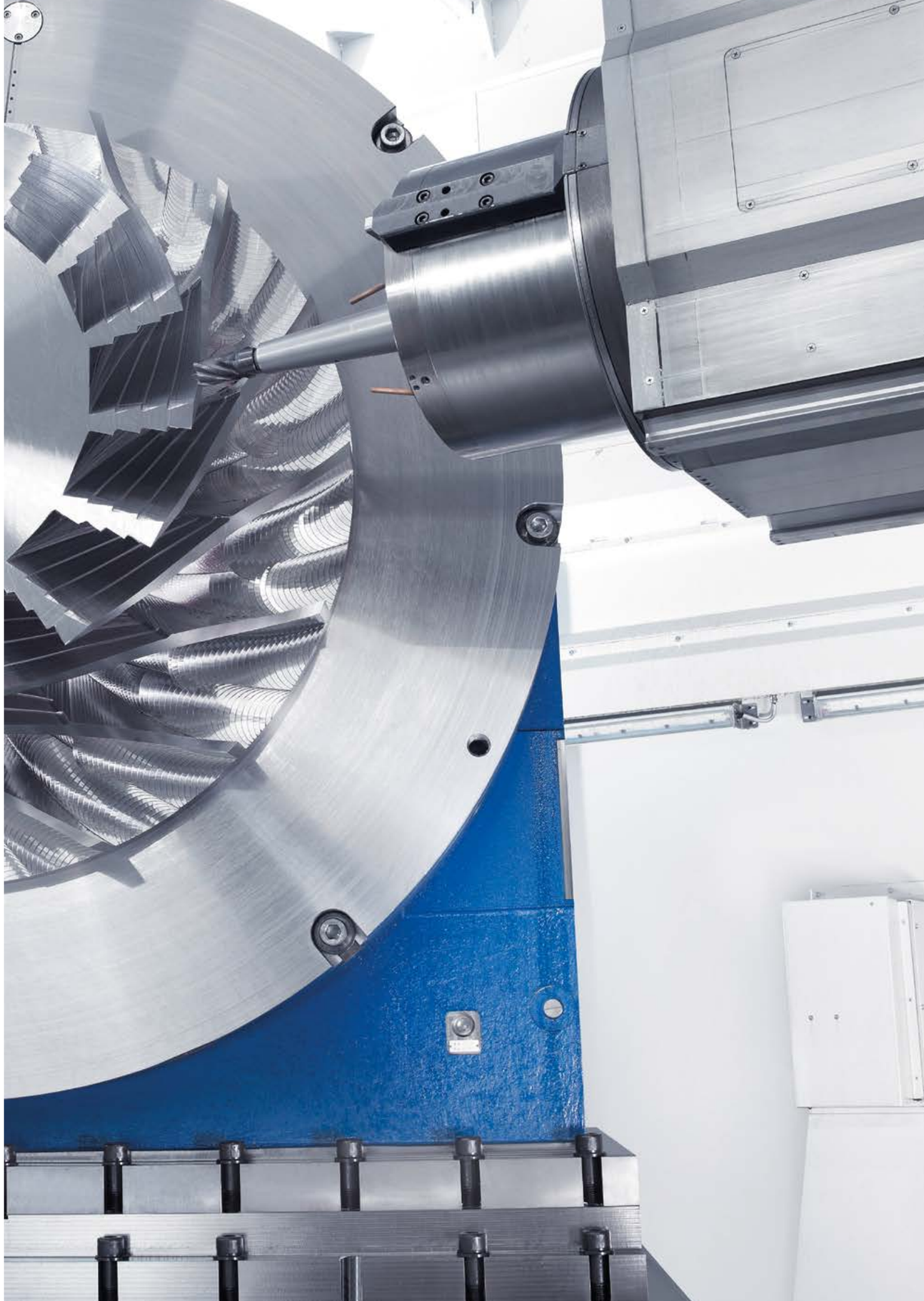
C axis (milling head): +/-240°

T30C – continuous milling




RÜCKLE
RÜCKLE

		HC 1212 | HC 1612 | HC 2012	HC 2516 | HC 2520	HF 1212 | HF 1612 | HF 2012	HF 2516 | HF 2520
Travels					
X axis	mm	1.200 | 1.600 | 2.000	2.500	1.200 | 1.600 | 2.000	2.500
Y axis	mm	1.200	1.600 | 2.000	1.200	1.600 | 2.000
Z axis	mm	800	1.000	800	1.000
Rotary table	°	n x 360	n x 360	n x 360	n x 360
Table traverse	mm		1.500	1.500	1.500
Main parametres	mm				
Clamping surface	mm	1.600 x 1.600	2.300 x 2.300	1.600 x 1.600	2.300 x 2.300
Workpiece weight	kg	20.000	40.000	20.000	40.000
Feed rate	mm/min	30.000	30.000	30.000	30.000
Acceleration	m/s^2	2,5	3 | 2,5	2,5	3
Basic spindle / head				F2F	T30C
Power (S1/100%)	kW	25	25	25	40
Power (S6/40%)	kW	33	33	32	50
Torque (S1/100%)	Nm	200	200	194	248
Torque (S6/40%)	Nm	262	262	248	314
RPM	1/min	12.000	12.000	10.000	12.000
Clamping cone		HSK - A100	HSK - A100	HSK - A100	HSK - A100
Spindle swivel	°			-2/+92	-100/+100
Head rotation	°			-182/+182	-240/+240
Clamping (of swivel axis)	Nm			17.200	8.000
Clamping (of rotary axis)	Nm			15.000	8.000
Positioning step	°			0,001	continuous
Optional spindle / head				T21C	T21C
Power (S1/100%)	kW	32	32	42	42
Power (S6/40%)	kW	40	40	50	50
Torque (S1/100%)	Nm	306	306	67	67
Torque (S6/40%)	Nm	390	390	84	84
RPM	1/min	14.000	14.000	24.000	24.000
Clamping cone		HSK - A100	HSK - A100	HSK - A63	HSK - A63
Spindle swivel	°			-100/+100	-100/+100
Head rotation	°			-240/+240	-240/+240
Clamping (of swivel axis)	Nm			4.000	4.000
Clamping (of rotary axis)	Nm			4.000	4.000
Positioning step	°			continuous	continuous
Optional spindle / head				T30C	
Power (S1/100%)	kW		35	40	
Power (S6/40%)	kW		44	50	
Torque (S1/100%)	Nm		800	248	
Torque (S6/40%)	Nm		1.025	314	
RPM	1/min		6.000	12.000	
Clamping cone			ISO 50	HSK - A100	
Spindle swivel	°			-100/+100	
Head rotation	°			-240/+240	
Clamping (of swivel axis)	Nm			8.000	
Clamping (of rotary axis)	Nm			8.000	
Positioning step	°			continuous	
Optional spindle					
Power (S1/100%)	kW		79		
Power (S6/40%)	kW		96		
Torque (S1/100%)	Nm		1.000		
Torque (S6/40%)	Nm		1.221		
RPM	1/min		8.000		
Clamping cone			HSK- A100		
Machine dimensions					
Length	mm	8.335	10.284	8.335	10.284
Width	mm	6.670 | 7.070 | 7.470	10.520	6.670 | 7.070 | 7.470	10.520
Height	mm	3.749 | 3.749 | 3.777	5.510 | 5.910	3.749 | 3.749 | 3.777	5.510 | 5.910
Approx. machine weight	kg	38.000 | 38.800 | 39.600	108.000 | 114.000	47.500 | 48.300 | 49.100	108.000 | 114.000



STANDARD MACHINE COMPONENTS

STANDARD COMPONENTS	MANUFACTURER
Electric spindle	Weiss – Germany, Fischer – Switzerland
Control system	Heidenhain, Siemens – Germany
Electric motors	Siemens – Germany
Gauging	Heidenhain – Germany
Toothed racks	Schneeberger – Germany
Linear guides	THK – Japan, Schneeberger – Germany
Table	Zollern (Rückle) – Germany
Switchboard	Rittal – Germany

OPTIONAL EQUIPMENT *(SELECTION)*

TRIMILL Inform

TRIMILL Teleservice

Tool magazine ATC 12, 32, 50, 60, 100

Tool cooling by internal + external liquid

Workpiece probe

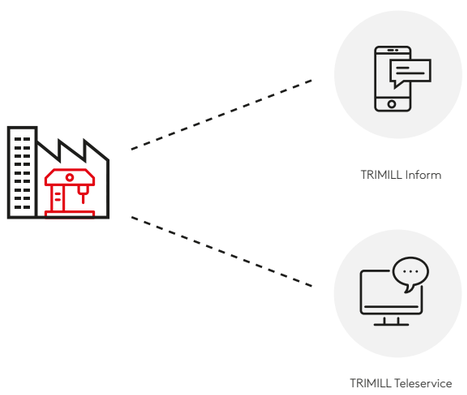
Tool probe

Micro-lubrication by oil mist – internal, external

TRIMILL – Kinematics

HR 550 – wireless manual wheel

Extraction of aerosol or dust



ATC 50 tool magazine

Tool cooling by liquid external + internal

Workpiece probe

Tool probe

Micro-lubrication by oil mist - internal, external

TRIMILL – Kinematics

HR 550 – wireless manual wheel

Extraction of oil mist and cooling emulsion

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