

FZ40 COMPACT

5-AXIS PORTAL MILLING MACHINE

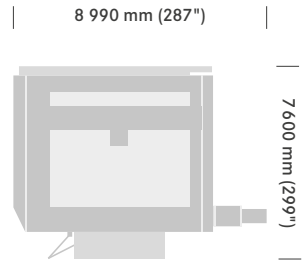
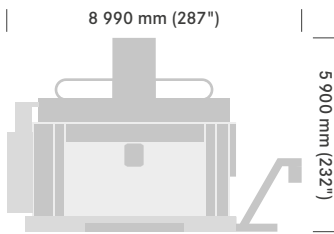
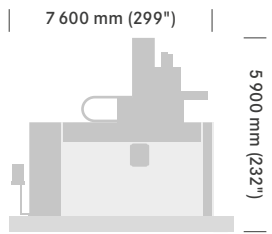


Illustration similar.
We reserve the right to make technical changes without prior notice.

THE 5-AXIS POWERHOUSE. THE FZ40 COMPACT.

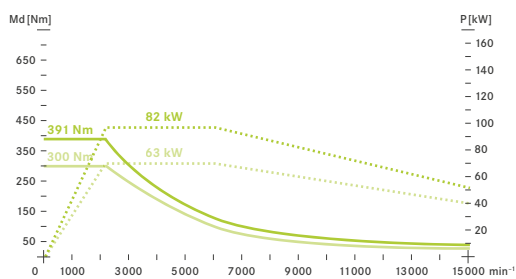
The CNC portal milling machine FZ40 compact is designed for the machining of hard materials as well as aluminum. The inherently **rigid machine structure** allows for simultaneous 5-axis high speed machining. This compact machine, with its solid cast base does not require a foundation and can be set up on any solid shop floors. The machine table is integrated into the cast baseplate, which allows up to 16 metric tons of table load. Eight mounting elements of the FZ40 compact reduce vibration – the basic requirement for high accuracy and optimum surface quality of the work pieces. In addition, the sidewalls are filled with a special dampening concrete mix to further enhance performance. The machine has a **fully enclosed working space** with a fixed machine table. The **structural sound overhead gantry** with a reinforced Z-ram make up the moving masses. By adding our **new dynamic milling head VH60**, Zimmermann has created a powerful performer. The combination of high strength and rigidity, constant moving masses and dynamic drives, will meet the industries high demands.

Compact, powerful and an optimal ratio of stiffness and dynamics: the FZ40 compact.

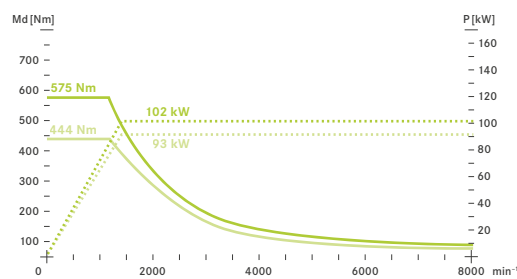


THE HEART OF THE FZ40 COMPACT: THE 2-AXIS MILLING HEAD VH60.

The newly developed **dynamic 2-axis VH60 milling head** is very temperature stable, due to the cast monolithic fork design. Furthermore, oscillation and vibration dampening are reduced to a minimum, to ensure even more precise machining results. Up to 102 kW (137 Hp), up to 575 Nm (424 ft lb) of torque and HSK A 100 will deliver optimal performance. The backlash-free drives achieves a precise positioning accuracy and repeatability in the A- and C-axis. The VH60 is designed for high speed machining of tough materials such as steel and titanium, as well as aluminum.



Torque/output diagram VH60 – 63 kW (84 hp)



Torque/output diagram VH60 – 93 kW (125 hp)

TECHNICAL DATA

FZ40 COMPACT

Working Ranges

X-axis	2 500 mm (98")
Y-axis	2 900 / 3 000 mm (114" / 118")
Z-axis	1 250 / 1 500 mm (49" / 59")

Table Size

Length	2 500 mm (98")
Width	3 250 mm (128")
Height	600 mm (24")
Table Load	8 000 kg/m ² (max. 16 000 kg)
T-slots (longitudinal)	18 ^{H12}
Pitch of T-slots	250 mm (10")

Drives – Linear Axes

Feed Rate	X-, Y-, Z-axis	60 m/min (2362 ipm)
Acceleration	X-, Y-, Z-axis	up to 5 m/s ² (up to 197 in/s ²)

Dimensions, Weight

Required Space (without peripherals)	Length	7 600 mm (299")
	Width	8 990 mm (287")
	Height	5 900 mm (232")

Total Weight	62 000 kg
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Accuracy

Standard accuracy	in accordance to VDI/DGQ 3441 or ISO 230-2.
Special accuracy	on request.

MILLING HEAD VH60

Performance

Torque Rotary Axes	in control	A-, C-axis: min. 3 000 Nm (min. 2213 ft lb)
	clamped	A-axis: 5 600 Nm (4130 ft lb) C-axis: 6 000 Nm (4425 ft lb)

Swivelling Range

A-axis	+125° / -95°
C-axis	± 300°

Drives – Rotary Axes

Rate of Feed	A-, C-axis	360°/s
Acceleration	A-, C-axis	700°/s ²
Resolution	A-, C-axis	0,0001°

Accuracy

Positioning Accuracy	A-, C-axis	10"
Repeatability	A-, C-axis	6"

Milling Spindle – 63 kW (84 hp)

Spindle Power	S1 (100 %)	63 kW (84 hp)
	S6 (40 %/2 min)	82 kW (110 hp)
Spindle Speed		15 000 min ⁻¹ (15000 rpm)
Torque	S1 (100 %)	300 Nm (221 ft lb)
	S6 (40 %/2 min)	391 Nm (288 ft lb)
Constant Power	S1 (100 %)	2 100 – 6 000 min ⁻¹
Swivel Axis - Spindle Nose		385 mm (15")
Tool Holder		HSK-A100
Tool Clamping		Spring Clamp
Tool Release		hydraulic
Lubrication		oil-mist lubrication
Coolant Supply,		external and through tool
Minimum-quantity Lubrication		
Air Blowing		external

Milling Spindle – 93 kW (125 hp)

Spindle Power	S1 (100 %)	93 kW (125 hp)
	S6 (40 %/2 min)	102 kW (137 hp)
Spindle Speed		8 000 min ⁻¹ (8000 rpm)
Torque	S1 (100 %)	444 Nm (327 ft lb)
	S6 (40 %/2 min)	575 Nm (424 ft lb)
Constant Power	S1 (100 %)	2 100 – 8 000 min ⁻¹
Swivel Axis - Spindle Nose		385 mm (15")
Tool Holder		HSK-A100
Tool Clamping		Spring Clamp
Tool Release		hydraulic
Lubrication		oil-mist lubrication
Coolant Supply		external and through tool
Minimum-quantity Lubrication		internal
Air Blowing		external and through tool