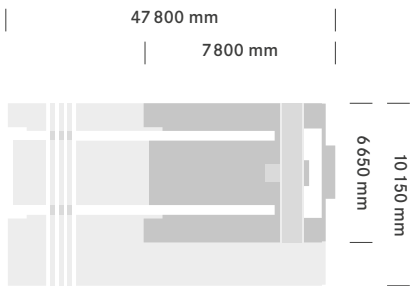
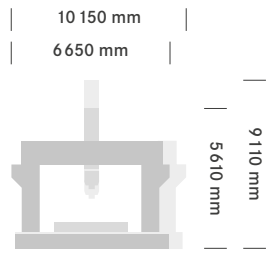
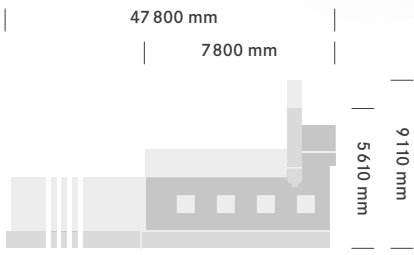


FZ42

5-AXIS PORTAL MILLING MACHINE



Illustrations are similar.
Subject to technical modifications.

THE 5-AXIS MILLING CHAMPION: THE FZ42.

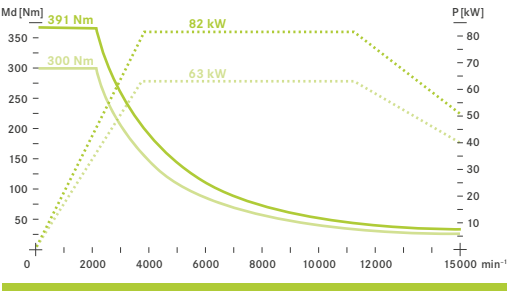
Dynamics, strength and precision:
the FZ42 from Zimmermann.

The FZ42 CNC portal milling machine has a modular design which allows the combination of different operating ranges, travel distances, milling heads and CNC controls. The **gantry construction with fixed side walls**, fixed clamping table and overhead portal that travels in the X-direction makes it possible to machine components of all kinds. The machine table of the FZ42 is firmly anchored to the machine base, which means that workpieces do not have to be moved. The milling process is highly precise, regardless of weight and size. The moving parts, consisting of the **structurally rigid portal**, the cross- and Z-slides and the **dynamic VH60 milling head**, facilitate a consistent, efficient milling process. Thanks to its combination of high stability and rigidity this versatile 5-axis machine is able to meet all the requirements of model making, tool and mold construction, including the demands of the aerospace and automotive industries. It is also suitable for machining of workpieces in shipbuilding and the alternative energy industry.

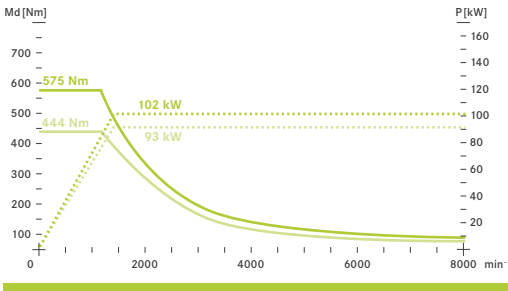


AT THE HEART OF THE FZ42: OUR VH60 MILLING HEAD.

The FZ42 compact is equipped with the **dynamic 2-axis VH60 milling head** (A-axis and C-axis). This extremely efficient milling head features a flexible MuST® spindle change system for precise execution of complex milling jobs. Roughing and finishing of various workpieces can be carried out without reclamping, which considerably reduces setup times. Different milling processes can be performed in a single setup. The VH60 can be fitted with three MuST® milling spindles. The drives, which incorporate zero-play torque motors, ensure outstanding dynamic behavior and maximum material removal rates in the machining of different materials. The VH60 is designed for high-performance machining of hard and tough materials, such as titanium, steel, light metals and cast iron.



Torque / Output diagram VH60 – 63 kW



Torque / Output diagram VH60 – 93 kW

TECHNICAL DATA.

FZ42

Working Ranges*

X-axis	3 000 – 40 000 mm (118"–1575")
Y-axis	2 500 – 6 000 mm (98"–236")
Z-axis	1 000 – 3 000 mm (39"–118")

Table Size

Length	3 000 – 40 000 mm (118"–1575")
Width	2 500 – 6 000 mm (98"–236")
Height	250 mm (10")
Table load	max. 15 000 kg/m ²
T-Slots (longitudinal)	18 ^{H12}
Pitch of T-slots	250 mm (10")

Drives – Linear Axes

Feed rate	X-, Y-, Z-axis	up to 60 m/min (2 362 ipm)
Acceleration	X-, Y-, Z-axis	up to 4 m/s ² (157.4 in/s ²)

Dimensions

Required space (without peripherals)	Length	7 800 – 47 800 mm (307"–1882")
	Width	6 650 – 10 150 mm (262"–400")
	Height	5 610 – 9 110 mm (221"–359")

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: 3 000 Nm (2213 ft lb)
	clamped	A-axis: 5600 Nm (4130 ft lb)
		C-axis: 6 000 Nm (4425 ft lb)

Swivelling Range

A-axis	± 110°
C-axis	± 360°

Drives – Rotary Axes

Rate of feed A-, C-axis	A-, C-axis	360°/s
Acceleration A-, C-axis	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 HEAD VH60

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 rpm	
	Torque	
Torque	S1 (100 %)	300 Nm (221 ft lb)
	S6 (40 %/2 min)	392 Nm (289 ft lb)
Constant power	S1 (100 %)	
	2 100 – 6 000 rpm	
Swivel axis – spindle nose	385 mm (15")	
	Tool holder	
Tool holder		HSK-A100
Tool clamping		spring clamp
Tool unclamping		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 rpm	
	Torque	
Torque	S1 (100 %)	444 Nm (327 ft lb)
	S6 (40 %/2 min)	575 Nm (424 ft lb)
Constant power	S1 (100 %)	
	2 000 – 8 000 rpm	
Swivel axis – spindle nose	385 mm (15")	
	Tool holder	
Tool holder		HSK-A100
Tool clamping		spring clamp
Tool unclamping		hydraulic
Lubrication		oil mist lubrication
Coolant supply		external and through tool
Minimum-quantity lubrication		internal
Air blowing		external and through tool

MuST® Spindle Changing System

Roughing Spindle 1 – 44 kW (59 hp)

Spindle power	S1 (100 %)	44 kW (59 hp)
	S6 (40 %/2 min)	44 kW (59 hp)
Spindle speed	10 000 rpm	
	Torque	
Torque	S1 (100 %)	200 Nm (148 ft lb)
	S6 (40 %/2 min)	230 Nm (170 ft lb)

Roughing Spindle 2 – 45 kW (60 hp)

Spindle power	S1 (100 %)	45 kW (60 hp)
	S6 (40 %/2 min)	60 kW (80 hp)
Spindle speed	5 000 rpm	
	Torque	
Torque	S1 (100 %)	344 Nm (254 ft lb)
	S6 (40 %/2 min)	454 Nm (335 ft lb)

Universal Spindle – 50 kW (67 hp)

Spindle power	S1 (100 %)	50 kW (67 hp)
	S6 (40 %/2 min)	58 kW (78 hp)
Spindle speed	24 000 rpm	
	Torque	
Torque	S1 (100 %)	95 Nm (70 ft lb)
	S6 (40 %/2 min)	125 Nm (92 ft lb)

* Other spindle dimensions on request.

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

F. Zimmermann GmbH

A Bernhäuser Straße 35
73765 Neuhausen a. d. F.
Germany

T +49 7158 948955-0
E info@f-zimmermann.com
W www.f-zimmermann.com