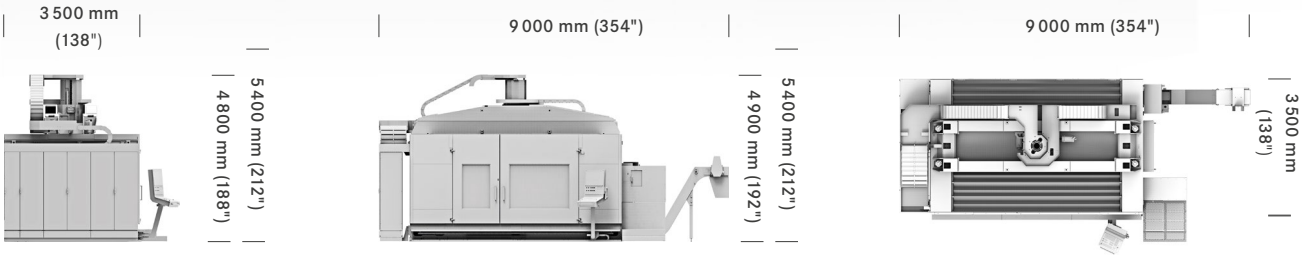
ZIMMERMANN
milling solutions

FZU

5-AXIS PORTAL MILLING MACHINE

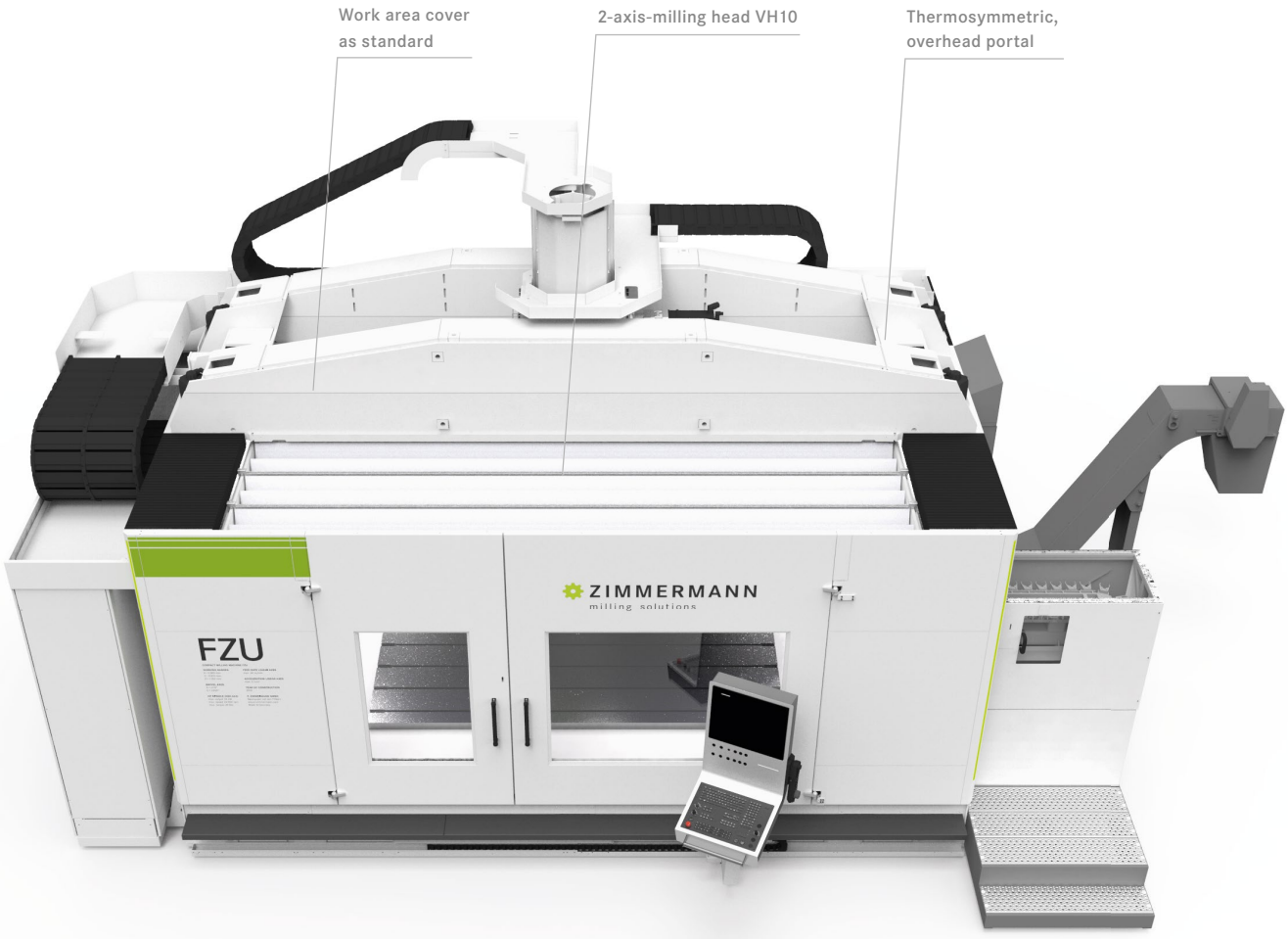


Additional variants available.
Illustrations are similar.
Subject to technical modifications.

OPTIMAL PRICE/PERFORMANCE DENSITY: THE PORTAL MILLING MACHINE FZU.

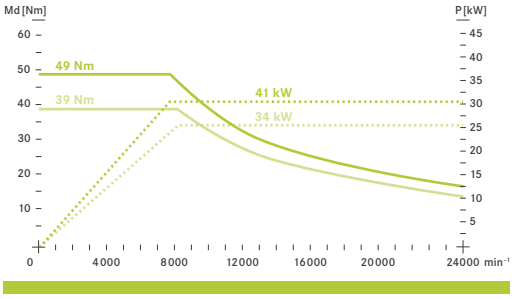
Thermosymmetric.
Ergonomic.
Universal.
The Portal Milling Machine
FZU from Zimmermann.

The FZU is a remarkably compact 5-axis gantry milling machine for machining aluminum, fiber composite materials, plastics and Ureol. The particularly rigid and **newly developed center lead portal** enables us to meet the ever growing requirements in the model and mold making industry. The **thermo-symmetrical construction** makes the FZU less susceptible to adverse ambient conditions. The modular design of the mono-block hook machine offers **different lengths and height versions**, as well as extensive equipment options, such as process cooling with cooling lubricants and/or minimum quantity lubrication. The great flexibility in material handling, the highest surface quality and accuracy result in optimum price/performance density.



THE HEART OF THE MACHINE: THE ZIMMERMANN MILLING HEAD VH10.

The FZU is equipped with the **newly developed dynamic** 2-axis milling head VH10. Due to its **slim design**, the VH10 only has minimal interference contours. The fork head is a mono block cast version. Despite its small size, the VH10 reached high clamping forces and thus allows a stable component processing. In order to minimize lead times, the VH10 is available with a powerful 34 kW spindle (at 24,000 rpm). An effective **process cooling with cooling lubricants and/or minimum quantity lubrication** are optionally available. Furthermore, the milling head can be used for the ultrasonic cutting processes. In particular, the VH10 is suitable for aluminum and composite material, plastics, UREOL and clay milling.



Torque / Output diagram VH10 – 34 kW (46 hp)

TECHNICAL DATA.

FZU

Working Ranges		
X-axis		2 000 / 4 000 / 6 000 mm (79" / 157" / 236")
Y-axis		3 000 mm (118")
Z-axis		1 250 / 1 500 mm (49"/ 59")
Table Size		
Length		2 000 / 4 000 / 6 250 mm (79" / 157" / 236")
Width		3 000 mm (118")
Height		560 mm (21")
Table load		6 000 kg/m² (max. 10 000 kg)
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 3 m/s² (118 in/s²)
Dimensions, Weight		
Required space (without peripherals)	Length	3 500 / 5 900 / 8 100 mm (138" / 232" / 318")
	Width	7 500 mm (295")
	Height	4 800 / 5 400 mm (188" / 208")
Total weight		approx. 35 000 kg (X=2000 mm)
Accuracy		
Standard accuracy	in accordance to VDI / DGQ 3441 or ISO 230-2	
Special accuracy	on request	
Options		
CNC control	Heidenhain TNC 640 Siemens Sinumerik 840D sl	
Tool probe	Renishaw RMP 60 Q (optional) m&h 20.41- multi (optional)	
Tool measuring system	Blum Control NT – Micro (optional)	
Work area cover	included	
Tool changer	Chain Magazine 31 tools (included) / 62 tools (optional)	
Chip conveyor	optional (chip box included)	
Coolant supply, minimum-quantity lubrication, air blowing	external and through tool	

MILLING HEAD VH10

Performance		
Torque rotary axes	in control	A-axis: 600 Nm (443 ft lb) C-axis: 608 Nm (448 ft lb)
	clamped	A-axis: 1 380 Nm (1 017 ft lb) C-axis: 1 321 Nm (974 ft lb)
Swivelling Range		
A-axis		±110° +125° / -95°
C-axis		300° [Z = 1 250 mm] 360° [Z = 1 500 mm]
Drives - Rotary Axes		
Rate of feed	A-, C-axis	180°/s
Acceleration	A-, C-axis	700°/s²
Resolution	A-, C-axis	0.0001°
Accuracy		
Positioning accuracy	A-, C-axis	10"
Repeatability	A-, C-axis	6"
Milling Spindle – 34 kW (46 hp)		
Spindle power	S1 (100 %) S6 (40 %/2 min)	34 kW (46 hp) 41 kW (55 hp)
Spindle speed		24 000 rpm
Torque	S1 (100 %) S6 (40 %/2 min)	39 Nm (29 ft lb) 49 Nm (36 ft lb)
Constant power		8 260 – 24 000 rpm
Swivel axis – spindle nose		250 mm (10")
Tool holder		HSK-A63
Tool clamping		spring clamp
Tool unclamping		hydraulic
Lubrication		permanent grease lubrication

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