

Kunzmann WF 650 - FK



KUNZMANN[®]
FRÄSMASCHINEN

A cutting-edge, all-round high performance milling machine for modern production of precision single parts as well as variable series manufacturing.

The FK version WF 650 is delivered with a manual swivelling milling head including an extending quill and a gear box.

An extensive selection of accessories makes it easy to adapt the WF 650 – FK to individual customer needs.

Major characteristics are:

- Sophisticated ripped cast iron construction with high inherent stiffness in modern massive block design
- Vertical milling head, swivelling range $-5/+95^{\circ}$ with manual extending quill
- Vertical milling head with integrated collision absorber
- High-torque main drive with gear box
- Tolerance-free profile roller guideways
- Distance-coded linear measuring systems
- Circulating oil injection lubrication system in the ram
- Ergonomically designed machine with large front and side door, providing direct access to working area
- High performance contouring control Heidenhain TNC 640 or Siemens 840 D sl ShopMill for 3-D processing

Control:

HEIDENHAIN TNC 640 CONTOURING CONTROL

Modern CNC-high performance control for 3-D-processing of complex workpieces with a fast block processing time.

The control provides a hard disk as well as USB/Fast-Ethernet-Interfaces for a fast program management.

Extensive functions for graphics and simultaneous possibilities.

Especially Heidenhain TNC 640:

- Programming with Heidenhain conversational, DIN/ISO-Code
- Making of angular boring holes automatically / machining of cylindrical contours (option)
- DXF-Converter (option), load directly and convert DXF-files

SIEMENS 840 D sl ShopMill COUNTOURING CONTROL

Modern CNC-high performance control for 3-D-processing of complex workpieces with a fast block processing time.

The control provides a memory card as well as USB/Fast-Ethernet-Interfaces for a fast program management.

Extensive functions for graphics and simultaneous possibilities.

Especially Siemens 840 D sl:

- ShopMill user interface - Wide range of programming possibilities in the DIN/ISO code

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WF 650 _ Technical Data

TECHNICAL DATA:			STANDARD EQUIPMENT:	
Working range	longitudinal cross vertical	X-axis Y-axis Z-axis	650 mm 500 mm 450 mm	<ul style="list-style-type: none"> ▶ Vertical milling head with extending quill ▶ Massive block design with roller guideways in all axes ▶ Ground ballscrews ▶ Hydr./mech. tool clamping ▶ Collision absorber in vertical milling head ▶ Circulating oil lubrication system for gearbox and milling head ▶ Full-protection cabin ▶ Coolant system, 160 l ▶ Levelling elements ▶ Electronic hand wheel ▶ Contouring control Heidenhain iTNC 530
Main spindle drive	A.C. motor Power rating at 100% duty cycle Power rating at 40% duty cycle		9.0 kW 13.0 kW	
Spindle speed range	Infinitely variable by gear stages with option motor spindle		1 – 6,500 rpm 1 – 12,000 rpm	
Feed drives	AC-drives		digital	
Feed rate	X-, Y-axis Z-axis		25.0 m/min 20.0 m/min	
Rapid traverse	X-, Y-axis Z-axis		25.0 m/min 20.0 m/min	
Tool taper			ISO 40	
Linear measuring systems	direct, distance-coded		resolution < 0.001 mm	
Machine accuracy	Pmax as per VDI/DGQ 3441		0.010 mm	
Tool changer	positions		20	
Tool change time			5 sec	
Chip-to-chip-time			10 sec	
Operating voltage			400 Volt, 50 Hz	
Power consumption			18 kVA	
Weight			approx. 5,300 kg	

STANDARD EQUIPMENT:

- ▶ Vertical milling head with extending quill
- ▶ Massive block design with roller guideways in all axes
- ▶ Ground ballscrews
- ▶ Hydr./mech. tool clamping
- ▶ Collision absorber in vertical milling head
- ▶ Circulating oil lubrication system for gearbox and milling head
- ▶ Full-protection cabin
- ▶ Coolant system, 160 l
- ▶ Levelling elements
- ▶ Electronic hand wheel
- ▶ Contouring control Heidenhain iTNC 530

OPTIONS:

- ▶ Angular table 1100 x 600 mm
- ▶ NC rotary table Ø 510 mm integrated in angular table 950 x 600 mm
- ▶ 20-pocket tool changer
- ▶ Chip conveyor (worm- or slat band)
- ▶ Coolant supply through spindle at 25/40 bar
- ▶ Motor spindle, spindle speed range 1 – 12,000 rpm
- ▶ B-axis with digital display
- ▶ Controlled CNC milling head (B-axis)
- ▶ Touch probe systems
- ▶ CNC dividing units – 4th/5th-axis
- ▶ Contouring control Siemens 840 D with ShopMill

