

Kunzmann WF 650 - MS



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 MS version WF 650 is delivered with a high performance motor spindle, which can be swivelled manually. On request the milling spindle can also be executed with an automatic swivelling B-axis.

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

Major characteristics are:

- Sophisticated ripped cast iron construction with high inherent stiffness in modern massive block design
- High performance motor spindle incl. coolant system manual or automatic swivelling range $-5/+95^{\circ}$
- Tolerance-free profile roller guideways
- Distance-coded linear measuring systems
- 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

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
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	P _{max} 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	