SWH GmbH
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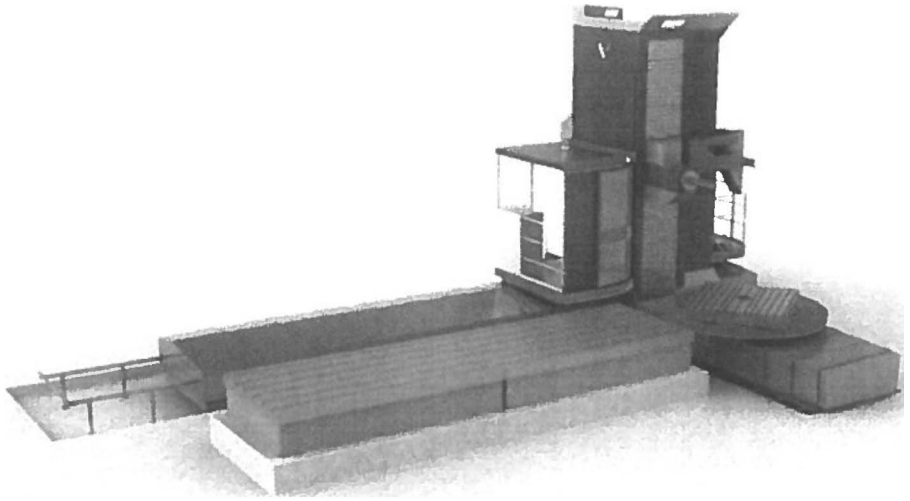
Technical specification and machine order

Floor type horizontal boring machine WRF 160 CNC



X axis [mm] - column travel	**13 500**
Y axis [mm] - headstock travel	**4 100**
Z axis [mm] - ram travel	**1100**
W axis [mm] - spindle out travel	**1000**
CNC rotary table size [mm]	**2500 x 3500**
CNC rotary table load capacity [kg]	**40 000**
V axis [mm] - table travel	**2400**

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General Technical Specification

FERMAT's **Horizontal Boring Mill WRF 160** represents the newest technology and concept of floor-type horizontal boring mills that are currently on the global marketplace. Its powerful headstock consists of a movable slide ram (Z-axis) and a moveable live spindle (W-axis). **WRF 160** has excellent accuracy of circular interpolation and high precision of the additional CNC Rotary Table.

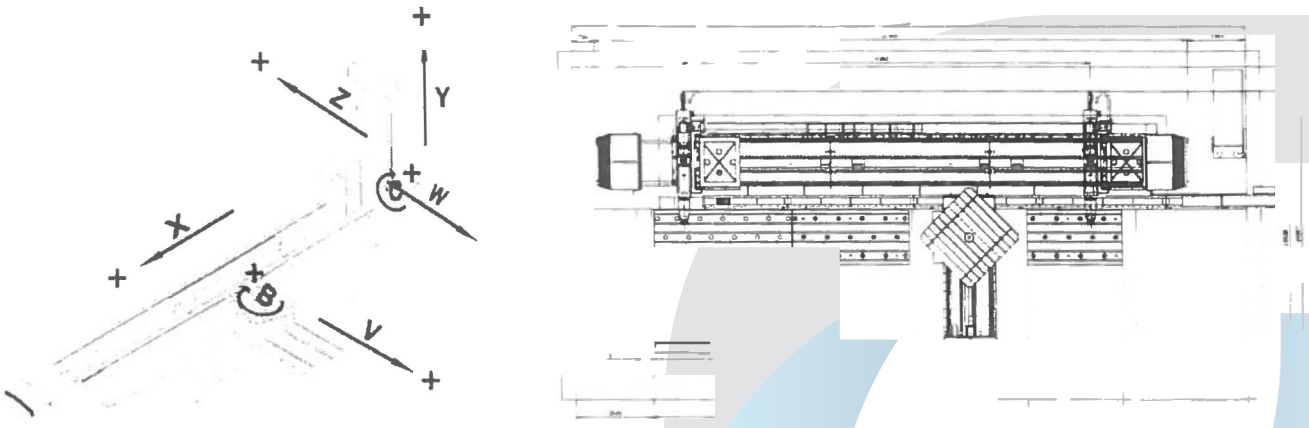
Because of its modern design, **WRF 160** is a universal boring and milling machine that allows efficient processing of large and heavy workpieces while conserving high precision and quality of the operation.

The machine column adopts a crosswise movement (along the X-axis) while rotary table moves longitudinally (V-axis/B-axis).

Fully integrated modular design lets our customers configure their machine to their requirements, including X-travel from 2 400 mm to 28 100 mm, Y-axis travel from 2 000 mm to 6 000 mm, with a variety of headstocks, tables and floor plates.

The CNC Rotary Tables T15/T20/T25/ T40/T50, with table sizes from 1600x1800 to 3 500 x 3 500 mm, can hold heavy work pieces of up to 15 000kg/20 000 kg/25 000 kg/ 40 000 kg/50 000 kg. Even heavier work pieces can be clamped on floor plates or specially designed tables.

All components of the machine are from renowned manufacturers.



Example of a layout and axis system of WRF160 CNC

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Headstock		
Spindle Diameter	Ø160	mm
Spindle Taper	DIN 69871, ISO 50	
Pull Studs	DIN 69872	
Spindle RPM	10 – 2500	RPM
Spindle Motor Power for Heidenhain /Siemens(S1 Continuous/ S6-40%)	60 / 80	kW
Maximum Spindle Torque for Heidenhain/Siemens (S1 Continuous/S6-40%)	2 655 / 4 008	Nm
Headstock Dimension	460x500	Mm
Working Ranges		
Column Travel (X-axis)	2 400 – 28 100	Mm
Headstock Travel (Y-axis)	2 000 – 6 000	mm
Ram Travel (Z-axis)	1000 (1100,1200 optional)	mm
Spindle Travel (W-axis)	1000	mm
Operation Travel All Axis	1 – 10 000	mm/min
Rapid Travel X-axis	20 000	mm/min
Rapid Travel Y-axis	15 000	mm/min
Rapid Travel Z-axis, W-axis	8 000	mm/min
Max. Axial Force X-axis, Y-axis	40	kN
Max. Axial Force Z-axis, W-axis	40	kN
Positioning Accuracy X, Y, Z, W	0.01	mm
Repeatable Positioning Accuracy X, Y, Z, W	0.005	mm
Positioning of X, Y, Z	Linear electro-optical	
Positioning of W	From the Encoder	
Hydraulic And Pneumatic System		
Tool Unclamping Pressure	10 – 15	MPa
Ancillary Circuit Pressure	8	MPa
Tool Clamping Force	24	kN
Tool Clamping	Hydro-mechanic	
Incoming Air Pressure	0,6	MPa
Volume Of Incoming Air (Tool Cooling)	400	l/min
Electricity (According to Local Requirements)		
Power Requirement	To be specified	kVA
Operation Voltage	3 x 400	V
Operation Voltage Allowance	5 %	
Operation And Control Voltage	24	V
Operation Voltage Frequency	50	Hz
Maximal Noise Level At Operator's Location	72	dB
Other Specifications		
Hydraulic Unit Volume	15	l
Lubrication Unit Volume	2	l

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Machine Specification

- Spindle Diameter 160 mm, Spindle Taper ISO 50
- Heidenhain iTNC 530Control System
- Siemens Spindle Motor Power 60 kW, Hand Wheel HR 520, Separate Control Panel with 15" LCD Screen
- CNC Rotary Table on Cross Roller Taper Bearing with 2 Pinions and 2 Servomotors. Maximum Table Load 40 Tons, 2500x3500 mm, V axis travel 2400 mm with Rotary Scale and Encoder Heidenhain for B-Axis. Table will be equipted by additional hydraulic brakes for table rotation – B axis.
- Heidenhain Scales for X, Y, Z, V Axes
- Automatic Lubrication System
- Hydraulic System with Bosch Rexroth valves.
- Headstock Oil Chiller
- Outside coolant system 4 bars
- Coolant through spindle 30 bars (CTS)
- ATC 60, ISO50
- Pick up station with 3 positions (for 2 angular heads)
- PHA 37, automatic right angular head with 2.5° steps.
- Connection of UHM
- Chip conveyor belt type
- Air condition of the distribution box
- Work Lamp on the Column, operator's cabin
- Remote Diagnostics (WiFi ready, connection to be done by the customer; service must)
- Moveable Operator's cabin
- Leveling Bolts & Seal Pads, X axis and table will be anchored every 305 mm.
- CE Standard with TÜV Certificate (Safety Fence is Option), EC Declaration of Conformity, Electro Revision Certificate
- Documentation (operator and Service Manuals; machine Documentation: Control System Programming, Service and Operator Manuals; geometric Measuring Documentation)
- Installation (geometry accuracy gauging as per the valid international standards ISO 230-1:1996; ISO 3070-3.4:19)
- One day training (operation and maintenance)
- Packing
- Transport
- 12 months guarantee
- Connection of Demmeler tilting table including separate cabinet, cables, drives, control system, profi bus. Demmeler supplies servomomotors. Delivery time of Demmeler table in not known. Because of that, delivery time of the machine is without connection of this table.

WRF 160 CNC (X=13 500, Y=4100, Z=1100, W=1000, V=2400)