



M-MOOS



**boring and milling  
machines**

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Company M-MOOS Ltd. was established in 1993. It deals with general repairs of centre lathes, milling machines, drilling machines, surface grinding machines since its birth. These repairs are made in two plants, in Lipník nad Bečvou and in Uherský Ostroh. The company has 100 employees and its turnover is around 3 mil. EUR.

Advantages of our company are first long time experiences with machine tools production, technical facilities, high-quality service, high-qualifications of M-MOOS workers and low prices. In addition to repairs, the company makes modernizations of used machine tools which consist of:

- installation of digital readout systems
- old electric motors are replaced with drives controlled by frequency converter and gear boxes are adjusted.
- general reconstruction of classical machine tool to CNC machine. The classical popular centre lathe SV 18 RA was modernized to SV 18 CNC this way, further then centre lathe SN 50 to SN 50 CNC. The choice of control system type is controlled by customer's request, control systems from company SIEMENS, FANUC and HEIDENHAIN are mounted most often. After managing this reconditions company starts to make modernizations and reconstructions of heavy machine tools, for example heavy centre lathes ŠKODA with type marking SUA 125/5000 and SRM 125/6000, horizontal boring and milling machine WD 130 A CNC.

Purpose: Corporate purpose of the company M-MOOS Ltd. is to place reasonable priced product of horizontal boring and milling machines in conventional and CNC version on the market in Middle and East Europe. The base of project is import of cast iron skeletons of machines from our long time partners from Asia, their fitting with ball screws, control systems, drives concerning customer's request, machine activation and handover to final user in requested quality and CE version. The share of M-MOOS Ltd. work on the final product is higher than 50 % which is profitable for relevant investment purchase from EU funds.

***Please contact us with your requirements and let us to make an offer for you!***

## ***Approach to your satisfaction***

- Short delivery time and quality service
- Built to European standards
- Wide product range – 6 production ranges
- Machines with typical Czech quality
- Solid casting iron structure
- Attractive price – definitely, you save money



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# WHM 110R

## manual operatin horizontal boring mill

Classically conceived horizontal boring mill with crosswise table, spindle head vertical, and a live workspindle. The machine is most effective in one off or small batch production. The machine is aimed for machining of all kinds of materials including cast iron alloy by means of all kinds of cutting tools including ceramics. The machine is especially aimed for machining of box shaped parts.

### Main features

- rigid cast iron construction
- hardened grinding guide ways
- telescopic covers at longitudinal and cross sliding ways
- ball screws in axis X, Y, W (in axe Z trapezial screw)
- headstock balancing
- central stepless controlled traverse drive
- max. weight of workpiece 2500 kg
- pneumatic hardening of rotary table
- hydraulic hardening of axis X, Y, Z
- spindle located in accurate antifriction bearings
- workspindle with diameter 110 mm, with travel till 400 mm (axe W)
- stepless spindle speed control in 2 steps mechanically geared
- pneumatic toll clamping
- automatic guide ways lubrication
- possibility of travel control by means of crossbar switch from panel
- possibility of digital readout system mounting for axis X, Y, Z, W
- possibility of mounting square drive system HEIDENHAIN TNC 124 (version WHM 110 NCP)



### Standard version of machine

- with automatic lubrication
- with pneumatic table stabilization ,
- with hydraulic stabilization of axis X, Y, Z
- automatic pneumatic toll clamping
- cooling system
- stepless speed and feed control
- anchoring material

### Optional machine version

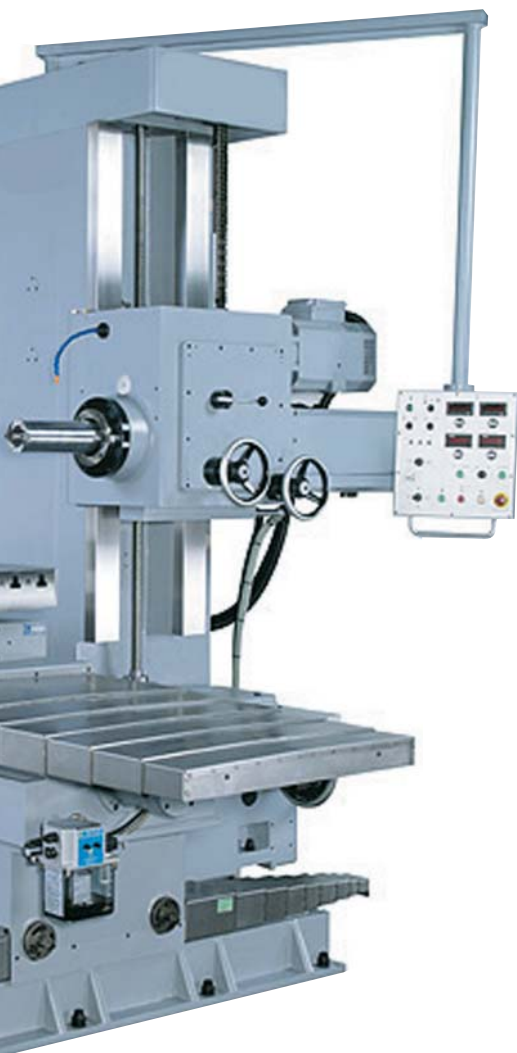
- with digital readout system NEWALL in axis X, Y, Z, W
- with square drive control HEIDENHAIN TNC 124 (version WHM 110 NCP)

### Optional accessories

- square milling head
- universal milling head
- spindle support sleeve
- milling angles







## Machine parameters WHM 110R

### Worktable

worktable diameters	mm	1000 × 800
rotary table positioning (360°)	°	1°
T slots – wide × amount × pitch	mm	22H8 × 7 × 100
max. weight of workpiece	kg	2 500

### Travels

X axe (table transverse)	mm	1 600
Y axe (spindle head vertical)	mm	1 000
Z axe (table longitudinal)	mm	1 250
W axe (spindle stroke)	mm	400
distance between spindle centre and camping table surface	mm	0–1 000
distance between spindle end and table centre	mm	362–1612

### Spindle

spindle taper		ISO 50
diameter of a live spindle	mm	110
spindle speeds – stepless in 2 steps	n.min <sup>-1</sup>	20–1 500

### Feed speeds

working feeds X, Y, Z	mm.min <sup>-1</sup>	1–950
working feed W	mm.min <sup>-1</sup>	100–950
rapid traverse X, Y, Z	mm.min <sup>-1</sup>	2 800
rapid traverse W	mm.min <sup>-1</sup>	2 000
number of speeds		stepless control

### Motors

main motor (regulated)	kW	15
feed motor for axis X, Y, Z (servo)	kW	2,9
feed motor for axe W (servo)	kW	1,3

### Machine dates

machine dimensions – width × depth × height	mm	3874 × 4317 × 3715
machine weight	kg	12 500
max. acoustic noise level	dBA	80
max. sound power level	dB	97,5
total input required	kVA	20



# M-MOOS

## HM 800 horizontal machining centre

Horizontal machining centre has classical feed distribution, etc. longitudinal and cross feed is made by table, vertical feed is made by spindle head. Spindle head has stepless speed control in 2 steps

The machine in addition with modern driving systems enable machining of all kinds of materials including cast iron alloy by means of all kinds cutting tools including ceramics.

### Main features

- rigid cast iron construction
- hardened grinding guide ways, mating faces covered with plastic
- telescopic covers at longitudinal and cross sliding ways
- ball screws in all axis
- direct position measuring by means of electro-optical scales
- 60-positioning tool magazine ISO 50
- rotary table indexed 1° by 1° in range 360°
- max. weight of workpiece 3000 kg
- stepless spindle speed control in 2 steps mechanically geared till 3000 n.min<sup>-1</sup>
- spindle cooling
- automatic slide ways lubrication
- spindle located in accurate antifriction bearings
- control systems HEIDENHAIN iTNC 530 or FANUC 18i-MB



### Standard version of machine

- spindle cooling
- automatic central lubrication
- cooled electric box
- workplace lightning
- screw chips conveyer
- hand wheel
- cooling system
- programmed blower
- anchor material
- 60-positioning tool magazine ISO 50
- safety cover of work place (CE)
- drive system HEIDENHAIN iTNC 530
- electro-optical linear direct readout system in axis X, Y, Z, W

### Optional machine version

- control system FANUC 18i-MB
- other control system

### Optional accessories

- milling angles



## Machine parameters HM 800

### Worktable

worktable dimensions	mm	800 × 800
automatic worktable positioning (360°)	°	1°
T slots – width × number × pitch	mm	22H8 × 7 × 100
max. workpiece weight	kg	3 000
table rotation speed	n.min <sup>-1</sup>	4

### Travels

X axis (table transverse)	mm	2000
Y axis (spindle head vertical)	mm	1200
Z axis (longitudinal table travel)	mm	1200
distance between spindle centre and clamping table surface	mm	0–1200
distance between spindle end and table centre	mm	275–1475

### Spindle

spindle taper		ISO 50
spindle speeds – stepless in 2 steps	n.min <sup>-1</sup>	30–3000
max. torque	Nm	503

### Travel speeds

working feeds X, Y, Z	mm.min <sup>-1</sup>	1–6000
apid traverse X, Y, Z	m.min <sup>-1</sup>	15, 12, 15

### Tool changing

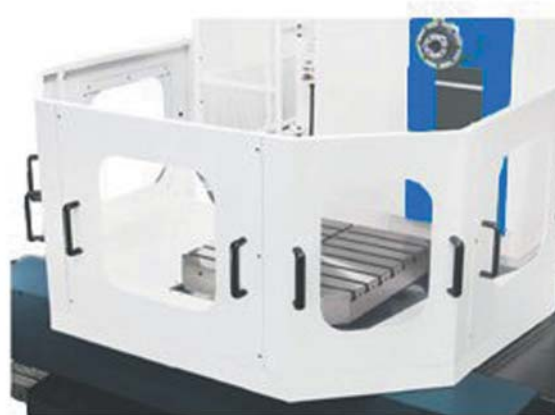
capacity	ks	60
type DIN 69 871		ISO 50
max. tool length	mm	400
max. tool weight	kg	25
max. tool diameter	mm	125/250
changing time	s	15

### Motors

main motor (adjustable) S1/S6	kW	15/18,5
travel motor for axis X, Y, Z, B (servo)	kW	7, 7, 7, 4

### Machine details

machine dimensions – width × depth × height	mm	4900 × 5510 × 3250
machine weight	kg	18000
max. acoustic noise level	dBA	80
max. sound power level	dB	97,5
air pressure	bar	6
total input required	kVA	22





# M-MOOS CNC horizontal boring and milling machine with movable stand

Horizontal boring and milling machine with characteristic travels laying – longitudinal motion is made by table, cross motion is made by stand and vertical motion is made by spindle head. Spindle head has stepless speed control in 2 steps.

The machine in addition with modern driving systems enable machining of all kinds of materials including cast iron alloy by means of all kinds cutting tools including ceramics. The machine is especially aimed for machining of complicated box shaped parts or forms.

## Main features

- rigid cast iron construction
- hardened grinding guide ways, mating faces covered with plastic
- telescopic covers in longitudinal and cross sliding ways
- ball screws in all axis
- direct position measuring by means of electro-optical scales, angular reader in axe B
- 60-positioning toll magazine ISO 50
- rotary table min. step 0,001°, in positions 0-90-180-270° mechanical indexed.
- max. weight of workpiece 5000 kg
- hydraulic stabilization of rotary table.
- spindle located in accurate antifriction bearings
- spindle cooling
- workspindle with diameter of 110 mm, traveled till 550 mm (axe W)
- stepless spindle speed control in 2 steps mechanically geared
- hydraulic stabilization of axe W
- pneumatic shield against liquid entry or dirtiness entry into spindle head
- automatic slide way lubrication



## Standard machine version

- precise angle reader in axe B
- spindle cooling
- automatic central lubrication
- cooled electro box
- working place lightning
- cross screw chip conveyer
- hand wheel
- cooling system
- anchor material
- 60-positioning tool magazine ISO 50
- longitudinal travel 2000 mm – WHM 110-20T
- hydraulic stabilization of W axe
- safety working place cover (CE)
- table indexing (axe B) in 0-90-180-270°
- control system HEIDENHAIN iTNC 530
- electro-optical linear direct readout system in axis X, Y, Z, W





## Machine parameters WHM 110-20T a WHM 110-30T

### Working table

working table dimensions	mm	1500 × 1200
automatic rotary table positioning (360°)	°	0,001°/jako B-osa
T slots – width × number × pitch	mm	22H8 × 7 × 150
max. weight of workpiece	kg	5000
speed of B-axis rotation	Nm	2

### Travels

X axe (table transverse)		
WHM 110-20T	mm	2000
WHM 110-30T	mm	3000
Y axe (spindle head vertical)	mm	1500
Z axe (longitudinal stand travel)	mm	1500
W axe (spindle travel)	mm	550
distance between spindle centre and c table surface	mm	0–1 500
distance between spindle end and table centre	mm	-130–1920

### Spindle

spindle taper		ISO 50
a live spindle diameter	mm	110
spindle speeds – stepless in 2 steps	n.min <sup>-1</sup>	5–625
	n.min <sup>-1</sup>	626–2500
max. torque	Nm	1350

### Travel speeds

working feeds X, Y, Z,	mm.min <sup>-1</sup>	1–6000
working feed W	mm.min <sup>-1</sup>	1–5000
rapid travel X, Y, Z, W		10, 10, 10, 5
ball screws X, Y, Z	mm	63 × 10
ball screws W	mm	40 × 10

### Tool changing

capacity	ks	60
type DIN 69 871		ISO 50
max. tool length	mm	400
max. tool weight	kg	25
max. tool diameter	mm	125/250
changing time	s	15

### Motors

main motor (adjustable) S1/S6	kW	22/26
travel motor for axis X, Y, Z, B, W (servo)	kW	6, 6, 6, 7, 7

### Machine details

machine dimensions– width × depth × height	mm	4480 × 5510 × 3720
machine weight	kg	23 500
max. acoustic noise level	dBA	80
max. sound power level	dB	97,5
air pressure	bar	6
total input required	kVA	32

### Optional machine version

- longitudinal travel 3000 mm–WHM 110-30T
- control system FANUC 18i-MB
- other control system
- cooling through spindle centerline
- article chip conveyer

### Optional accessories

- rectangular milling head
- universal milling head
- spindle support sleeve
- milling angles



# CNC

## horizontal boring and milling machine

Horizontální vyvrtávačka má klasicky řešené pojezdy, tj. podélný a příčný pohyb vykonává stůl, svislý pohyb vřeteník. Výsuvné vřeteno má plynulou regulaci otáček ve 2-stupních.

Stroj ve spojení s moderními souvislými řídicími systémy umožňuje opracování všech druhů materiálů včetně slitin hliníku, všemi druhy řezných nástrojů včetně keramických materiálů. Stroj je zvláště vhodný pro opracování složitých tvarových skříňovitých výrobků nebo forem.

Horizontal machining centre has classical feed distribution, etc. longitudinal and cross feed is made by table, vertical feed is made by spindle head. A live spindle head has stepless speed control in 2 steps

The machine in addition with modern driving systems enable machining of all kinds of materials including cast iron alloy by means of all kinds cutting tools including ceramics. The machine is especially aimed for machining of complicated box shaped parts or forms.

### Main features

- rigid cast iron construction
- hardened grinding slide ways, mating faces cover with plastic and unweighted by rolling blocks
- telescopic covers in longitudinal and cross sliding ways
- ball screw in all axis
- direct position measuring by means of electro-optical scales in X, Y, Z, rotary reader in axe W, precise angle reader in axe B
- 40-positioning tool magazine ISO 50
- rotary table as axe B
- workpiece till the weight of 5000 kg (WHM 130-K – 8000 kg)
- spindle located in accurate antifriction bearings
- spindle cooling
- working spindle with diameter of 110 mm (WHM 130-K 130 mm), traveled till 600 mm (800mm) – axe W
- stepless spindle speed control in steps mechanically geared
- automatic slide ways lubrication
- spindle head balancing
- control systems HEIDENHAIN iTNC 530 or FANUC 18i-MB

### Standard machine version

- electro-optical linear direct measuring in axis X, Y, Z, rotary reader in W
- safety cover of working place (CE)
- precise angle reader in axe B
- spindle cooling
- automatic central lubrication
- cooled electro box
- 40-positioning tool magazine ISO 50
- control system HEIDENHAIN iTNC 530
- working place lightning
- hand wheel
- cooling system
- anchor material

### Optional machine version

- control system SIEMENS 840 D
- control system FANUC 18i-MB
- another control system
- cooling through spindle center line (WHM 110-K)
- article chip conveyer

### Optional accessories

- universal milling head (it is impossible to use automatic tool changing)
- spindle support sleeve (it is impossible to use automatic tool changing)
- milling angles

### Control system and electric system

Electric system and control system is fully in line with European norms and standards. All electric components are from worldwide known producers as Siemens, Telemachanique, HEIDENHAIN etc.



## Machine parameters WHM 110-K, WHM 130.2, WHM 130.4

Worktable		WHM 110-K	WHM 130.2	WHM 130.4
worktable dimension	mm	1400 × 1400	1600 × 1800	2000 × 2000
accuracy of rotary table positioning (360°)	sec	5	5	6
T- slots – width × pinch	mm	28H8 × 200	28H8 × 200	28H8 × 200
Max. workpiece weight	kg	5000	10000	20000
rotation speed of B – axe	n.min <sup>-1</sup>	2	2	2
Travels				
X-axe (table traverse)	mm	1700	2000	4000
Y-axe (Spindle head vertical)	mm	1400	2000	2500
Z-axe (longitudinal table travel)	mm	1400	1250	2000
W-axe (Spindle travel)	mm	600	800	800
Spindel				
A live spindle diameter	mm	90	110	130
Spindle taper		ISO 50	ISO 50	ISO 50
Spindle speeds – stepless in 2 steps	n.min <sup>-1</sup>	5–3000	5–2500	5–2500
Max. torque	Nm	1100	2865	2865
Rapid travels				
working feeds X, Y, Z	mm.min <sup>-1</sup>	1–6000	1–4500	1–4500
working feeds W-Achse	mm.min <sup>-1</sup>	1–2000	1–2000	1–2000
rapid travers X, Y, Z, W	m.min <sup>-1</sup>	10, 10, 10, 3	9, 9, 9, 3	9, 9, 9, 3
Motors				
main motor (adjustable) S1; S6	kW	22/26	26/30	26/30
travel motor X, Y, Z, (Servo)	Nm/kW	40/5,5	40/5,5	40/5,5
travel motor B, W (Servo)	Nm/kW	22/4,0	22/4,0	22/4,0
Tools changing				
capacity	Nr.	40	40	40
type DIN 69 871		ISO 50	ISO 50	ISO 50
max. tool lenght	mm	350	350	350
max. tool weight	kg	25	25	25
max. tool diameter	mm	125/250	125/250	125/250
changing time	s	18	18	18
Machine deatils				
machine dimension – widht	mm	6400	4820	7500
– depht	mm	4000	5115	5115
– height	mm	3700	4365	4365
machine weight	kg	25000	34000	43000
max. acoustic noise level	dBA	80	80	80
max. sound power level	dB	97,5	97,5	97,5
air pressure	bar	6	6	6
total input required	kVA	60	80	80



### Controlling of single axis

Single axis are set up with precious ball screws. Electro-optical linear scales HEIDENHAIN in axis X, Y, Z, rotation encoder in W axe are used for positioning reading, which guarantee precise positioning of the machine in the long term.

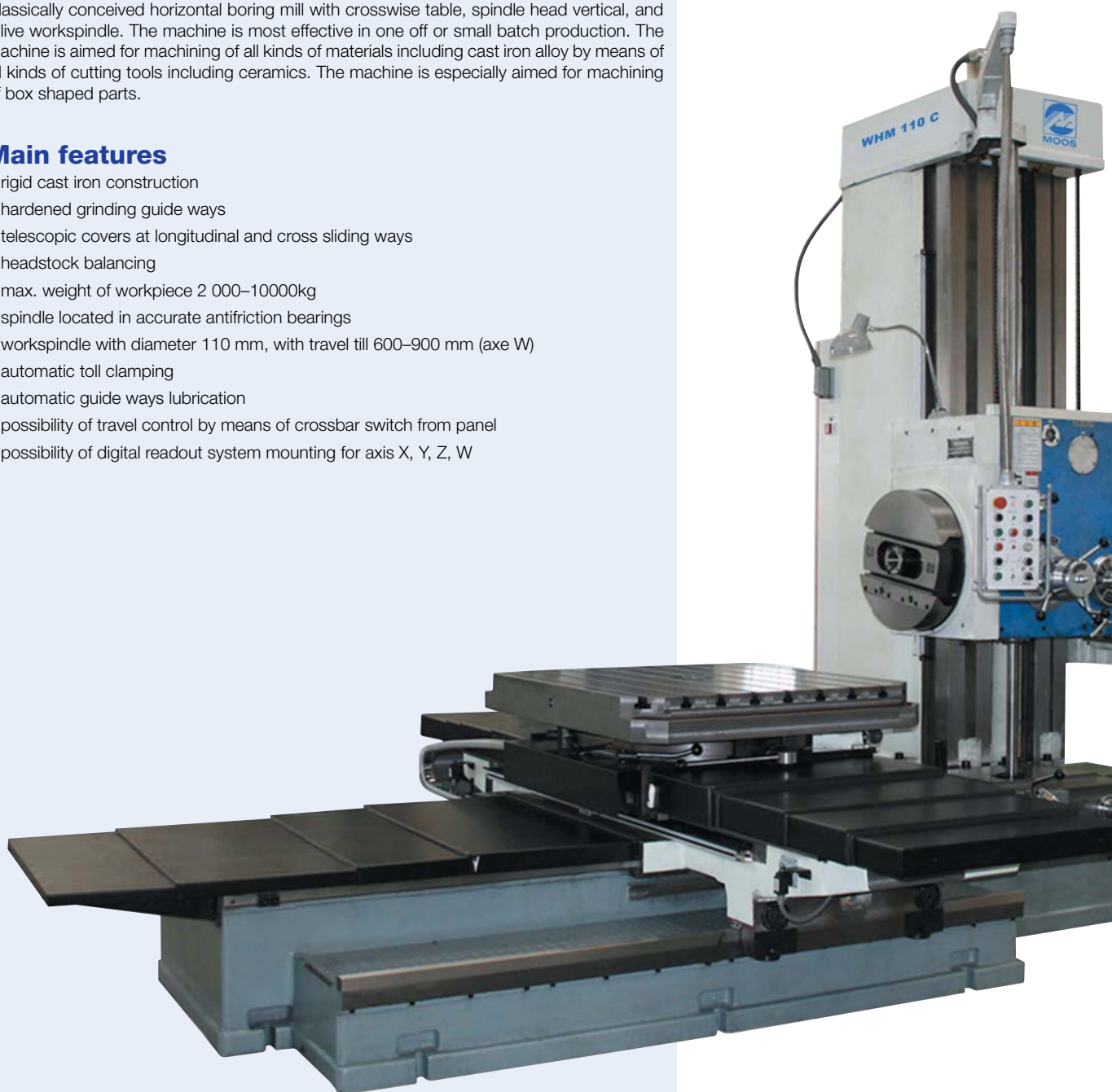
# WHM

## manual operatin horizontal boring mill

Classically conceived horizontal boring mill with crosswise table, spindle head vertical, and a live workspindle. The machine is most effective in one off or small batch production. The machine is aimed for machining of all kinds of materials including cast iron alloy by means of all kinds of cutting tools including ceramics. The machine is especially aimed for machining of box shaped parts.

### Main features

- rigid cast iron construction
- hardened grinding guide ways
- telescopic covers at longitudinal and cross sliding ways
- headstock balancing
- max. weight of workpiece 2 000–10000kg
- spindle located in accurate antifriction bearings
- workspindle with diameter 110 mm, with travel till 600–900 mm (axe W)
- automatic toll clamping
- automatic guide ways lubrication
- possibility of travel control by means of crossbar switch from panel
- possibility of digital readout system mounting for axis X, Y, Z, W



### Standard version of machine

- with automatic lubrication
- with pneumatic table stabilization ,
- with hydraulic stabilization of axis X, Y, Z
- automatic pneumatic toll clamping (without WHM 90T)
- cooling system
- stepless speed and feed control
- with digital readout NEWALL in axis X,Y
- anchoring material

### Optional machine version

- with digital readout system NEWALL in axis X, Y, Z, W
- with square drive control HEIDENHAIN TNC 124 (version WHM 110 NCP)



## Machine parameters WHM 90T, WHM 110C/3, WHM 130C/2

Worktable		WHM 90T	WHM 110C/3	WHM 130C/2
worktable diameters	mm	1000 × 800	1200 × 1100	1600 × 1400
rotary table positioning (360°)	°		4 × 90	continuous 360
T slots – wide × amount × pitch	mm		22H8	
max. weight of workpiece	kg	2000	4000	10000
Travels				
X axe (table longitudinal)	mm	850	1600	2000
Y axe (spindle head vertical)	mm	755	1300	1600
Z axe (table transverse)	mm	1080	1400	2000
W axe (spindle stroke)	mm	600	600	900
Spindle				
spindle taper		MORSE 5	ISO 50	ISO 50
diameter of a live spindle	mm	90	110	130
spindle speeds - stepless in 2 steps	n.min <sup>-1</sup>	20–1000	9–1000	6,6–750
speed of facing chuck	n.min <sup>-1</sup>	10–200	6–221	4,4–165
max. drilling capacity of spindle	mm	65	65	80
max. boring capacity of spindle	mm	240	300	350
max. boring capacity of facing chuck	mm	450	600	700
travel of facing chuck slide	mm	170	170	200
Feed speeds				
working feeds X, Y, Z	mm.ot <sup>-1</sup>	0,025–8	0,04–6	0,04–6
working feed W	mm.ot <sup>-1</sup>	0,05–16	12	12
number of spindle speed steps			18	
Motory				
main motor S1/S6	kW	6,5/8,0	7,5	11
Údaje o stroji				
machine dimensions – width × depth × height	mm	5075 × 2345 × 2730	5200 × 3500 × 3300	7520 × 4560 × 4085
machine weight	kg	12000	18300	36500
max. acoustic noise level	dBA	80	80	80
max. sound power level	dB	97,5	97,5	97,5
total input required	kVA	15	18	22

### Optional accessories

- square milling head
- universal milling head
- spindle support sleeve
- milling angles

# CNC

## floor-type boring and milling machine

Floor-type boring and milling machine with characteristic travels laying – longitudinal motion is made by mobile stand, which travel around fixed plate table built in foundation or around rotary table with cross travel. Vertical motion is made by spindle head whose construction is balanced by counterweights. Cross travel is solved in two alternates. The first alternate is solved only with draw-out spindle (Machine can be equipped with face plate), the second alternate is provided with sliding head and draw out spindle, these machines are equipped with fixed milling spindle. Spindle has stepless speed control in 2 steps.

The machine in addition with modern driving systems enable machining of all kinds of materials including cast iron alloy by means of all kinds cutting tools including ceramics. The machine is especially aimed for machining of complicated box shaped parts or forms.

### Main features

- rigid cast iron construction
- hardened grinding slide ways, mating faces covered with plastic and unweighted by rolling blocks
- telescopic covers in longitudinal and cross sliding ways, eventually in cross slide ways
- ball screw in all axis (eventually rack in axe X and a pinion gearbox )
- direct position measuring by means of electro-optical scales
- 40-positioning tool magazine ISO 50, extendable to 100 tools
- spindle located in accurate antifriction bearings
- spindle cooling
- working spindle with diameter of 110–250 mm
- stepless spindle speed control in 2 steps mechanically geared
- spindle head balancing
- automatic slide ways lubrication
- continuous control systems HEIDENHAIN iTNC 530 or FANUC 18i-MB



### Standard machine version

- electro-optical linear direct measuring in axis X, Y, Z, W
- ball screws in all axis (eventually rack in axe X and a pinion gearbox)
- spindle head balancing
- spindle cooling
- automatic central lubrication
- cooled electro box
- working place lightning
- cooling system
- anchoring material
- 40-positioning tool magazine ISO 50
- safety working space guard (CE)
- control system HEIDENHAIN iTNC 530

## Machine parameters

### Travels

X axe (sliding head)	mm	3000–12000
Y axe (spindle head vertical)	mm	1600–5000
Z axe (longitudinal stand travel)	mm	800–1800
W axe (spindle travel)	mm	800–1600

### Spindle

spindle taper		ISO 50, ISO 60
diameter of a live drilling spindle	mm	130–250
diameter of a fixed milling spindle	mm	221,44–380
diameter of face plate	mm	670–800
spindle speeds – stepless in 2 steps	n.min <sup>-1</sup>	dle provedení
max. torque of a live drilling spindle	Nm	2000–8000
max. torque of a fixed milling spindle	Nm	3500–27000

### Travel speeds

working feeds X, Y, Z	mm.min <sup>-1</sup>	2–6000
working feed W	mm.min <sup>-1</sup>	2–2000, 3000, 4000
rapid travel X, Y, Z, W	m.min <sup>-1</sup>	2–8

### Tool changing

capacity	ks	40, 60, 80, 100
type DIN 69 871		ISO 50
max. tool length	mm	400
max. tool weight	kg	25
max. tool diameter	mm	125/250
changing time	s	18–38

### Motors

main motor (adjustable) S1	kW	15–129
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### Machine details

machine weight	kg	18000–230000
max. acoustic noise level	dBA	80
max sound power level	dB	97,5
air pressure	bar	6
total input required	kVA	30–200



### Optional machine version

- control system SIEMENS 840 D
- control system FANUC 18i-MB
- control system FAGOR 8055 M
- another control system
- cooling through spindle centerline
- table board in the size and version according request
- rotary table with cross travel

### Optional accessories

- vertical milling head
- rectangular prolonged milling head
- two way prolonged milling head
- universal milling head
- spindle support sleeve
- additional face plate mechanically controlled
- CNC additional face plate
- support end bearing
- milling angle
- chip conveyer
- cooling with tank 1000 l
- reduction ISO 60/ISO 50

# Modernization of Machinetools

Since year 2001, we have provided the complete modernization of machinetool and control systems. The base of modernization is old used machinetool with or without control system. Many times, the final product has a same or better charektiristics than new machine.

## WD 130 CNC

### Horizontal Boring and Milling Machine

Horizontal Boring and Milling Machine WD 130 with control system SIEMENS SINUMERIK 840D.

## Lathe SUA 125 CNC

### Heavy duty CNC lathe

Heavy duty CNC lathe SUA 125 CNC with modern control system HEIDENHAIN Manualplus 4110 This machine meets all requirement and technologies of heavy machining of huge workpieces.



Basically, we are able to arrange modernization of wide range and types of machinetool such as lathes, milling machines, horizontal boring and milling machine, grinding machines, radial drilling machines etc.

## FGS 40CNC

### CNC Milling Machine

The modernization of CNC Milling Machine FGS 40 CNC with control system HEIDENHAIN iTNC 530 was made for Skoda Auto.





# Our services

S  
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## Machine repairs

**M-MOOS, Ltd. carries out general repairs in a customary extent at following machinetools:**

- universal lathes of turning diameter up to 1250 mm
- knee-type and bed-type milling machines
- drilling machines
- surface grinding machines of table
- sawing machines
- shearing machines and bending machines

We are also able to carry out mean repairs, eventually inspections in an arranged extent.

## Control machine performance

### XL-80 laser measurement system

Used for comprehensive accuracy assessment of machine tools. System accuracy  $\pm 0,05$  ppm. Thanks this system you can increase linear position and working accuracy of machine.

## Quick and powerful testing

### QC 10 ballbar system

Quick powerfull and accurate check on machine performance. You save: Time, Money and Waste. During 15 minutes we can increace quality, productivity and your company's competitiveness.



# Machinetool accessories

## Digital read out system

We are a supplier of wide range digital read out systems. Our experience shows that DRO Newall is the best solution for operation with exacting condition as dust, oil and chips.

Measurement Systems is dedicated to providing the automation, machine tool and other machinery and production industries with leading edge technologies that increase productivity and machine tool efficiency

## Main features of Digital read out system Newall

- Quick and easy installation
- IP67 (NEMA 6)
- No mechanical wear characteristics
- Withstands dust, dirt, oil and other environmental conditions
- Requires no cleaning or maintenance
- High tolerance to shock and vibration

## Straight-cut control for milling, drilling and boring machines HEIDENHAIN TNC 124

Not every machining task requires a contouring control and all the advanced features of a CNC machine. In many cases a straight cut control and the features offered on the TNC 124 are fully adequate. With the TNC 124 you don't have to write NC programs for simple manual machining tasks. You can move the machine axes either continuously with the axis buttons, or in jog increments if you have an electronic handwheel. Or simply enter the target position and start axis motion with the touch of a key.

The TNC 124 takes into account the tool length and radius for up to 99 different tools. Standard cycles are provided for machining bolt hole circles and linear hole patterns as well as for the milling of rectangular pockets. For more complicated machining tasks or for series production you can generate an NC program with the TNC 124. This is done either by keying in the positions or by transferring the actual positions directly into the program (teach-in mode). The TNC 124 can store up to 20 programs and a total of 2000 program blocks. If you need even more program memory, the data interface enables you to use an external storage device. The programs you create are executed by the TNC either block by block or automatically (full sequence). The feed rate override control allows you to adjust the programmed feed rate depending on the momentary machining conditions. The TNC 124 is easy to use and features on-screen operating instructions (HELP) to assist you when you're not sure how to proceed. Other support features include a cutting data calculator, pocket calculator and stopwatch.



TNC 124



DRO Newall



### LaserControl NT

Laser technology in the 3rd generation

- tool setting, in length and radius
- tool monitoring and wear control
- tool identification
- compensation of machine axes
- single cutting edge control

### Touch Probe TC50

Probe system for workpiece measurement and zero offset location

- very high acceleration and measuring speed
- precise, non-lobing touch characteristics
- extended battery life
- opto-electronic signal generation
- robust design
- infrared data transmission



### Touch Probe TC54-20

Probe system for tool measurement

- tool setting, in length and radius
- flexible solution for machining centers and milling machines
- infrared data transmission

### Touch Probe Z-3D

Probe system for tool measurement

- tool setting, in length and radius
- cable solution for vertical machining centers



## Blum Measuring Solutions for your Machine Tool



### Blum worldwide

Ravensburg, Germany (Headquarters)  
 Willich, Germany (Novotest)  
 Hulin, Czech Republic  
 Como, Italy  
 Birmingham, England  
 Bordeaux, France  
 Cincinnati, USA  
 Nagoya, Japan  
 Seoul, Korea  
 Taichung, Taiwan  
 Singapore, Singapore  
 Shanghai, China

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 focus on productivity



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