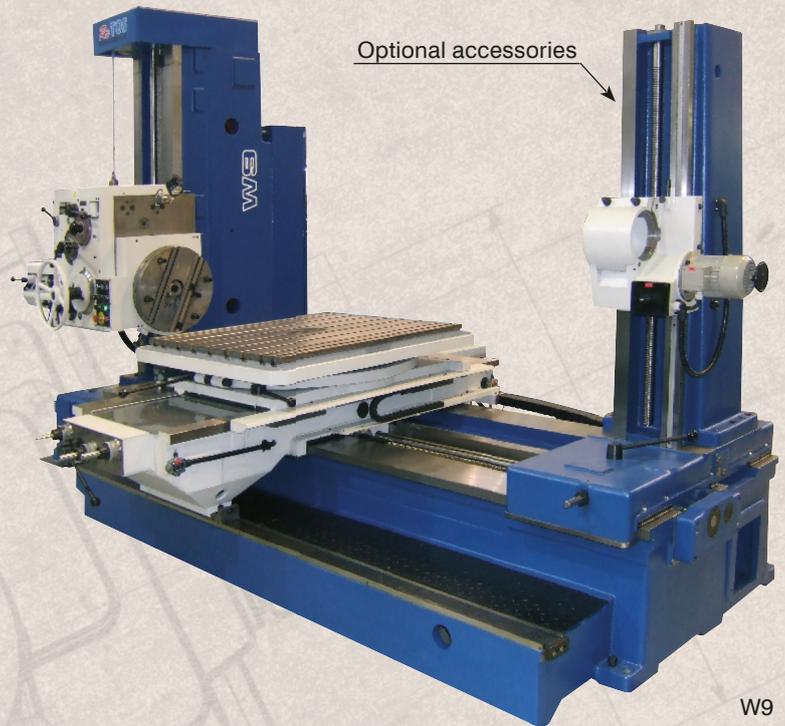


ReTOS Varnsdorf s.r.o., The Czech Republic, followed up with 40 years tradition in the field of horizontal boring machines overhauls. We use the most modern technologies as our parent company TOS Varnsdorf a.s.



W9

## Features

- manually controlled horizontal boring machine
- fixed column, crosswise travelling table
- 4 linear axes, rotary table
- sliding workspindle
- facing head with tool slide (it is optional equipment when we speak about machines with removable facing head)
- machine designed for piece and low-volume engineering production
- suitable for roughing as well as for finishing
- digital optical admeasuring of linear axes and table rotation with DROs
- optionally can be fitted by f.e. tool cooling kit (CHZ), outboard support, spindle clamping / guiding support, rectangular milling head etc.

## Configuration

### Travelling groups

- X - travel of rotary table slide on saddle
- Z - travel of saddle on bed
- Y - vertical headstock travel on column
- W - spindle travel
- U - travel of tool slide of facing head
- B - table rotation
- S - rotation of workspindle and facing head

### Group guidance

- guideways on all linear axes are grinded, counterways casted by plastic
- guideways on bed and saddle are reinforced with hardened steel plates (up client request, if machine has not

already been equipped with it)

- guideways of rotary table and facing head are scrapped

### Lubrication

- HYTOS lubrication set
- central, time powered by PLC in electric cabinet
- lubricates X, Y, Z, W, B axes
- U axis lubricated by grease nipples

### Clamping

- X, Y, Z, W, B axes - manually by levers

### Headstock

- sliding workspindle + facing head
- motorical tool clamping ISO 40 (up client request, if machine has not already been equipped with it)
- asynchronous motor for driving of spindle speed and of feeds of all axes

- spindle speed and feeds driven by mechanical lines - gears
- mechanical shifting of spindle speed and feeds
- electrohydraulic shifting of feed groups - only W9 with distance control
- most of controls placed on headstock
- headstock balancing - chain and counterweight led in column

### Admeasurement of position

- HEIDENHAIN digital optical admeasuring and DROs
- DRO PT 880 for admeasuring of X, Y, Z, W, B axes
- DRO ND 780 for admeasuring of X, Y, Z axes
- X, Y, Z axes - LS 688 rules

- W axis - LS 388 rule
- B axis - ROD 480
- 4x90° optical readout

### Energy distribution

- X, Z, W axes - IGUS chain energy carriers
- Y axis - protective tube

### Coverage of machine

- bed guideways between column and saddle partly protected by telescopic way cover

### CE - valid only for the European Union

- comprehensive safety elements according to the applicable legislation and technical standards
- original spoke hand wheel replaced by new filled one
- stairs to headstock
- working area of the machine is fenced off

### Tension options

- 50Hz - 3 x 400V, 3 x 415V, 3 x 500V
- 60Hz - 3 x 220V, 3 x 440V, 3 x 460V, 3 x 480V, 3 x 575V
- parameters of electric parts given in the tables are valid for option 3 x 400V / 50Hz

### Optional accessories

- portable control panel PP-100 (necessary to order together with the machine)
- outboard support
- LD-90 facing head
- CHZ-9 tool cooling kit
- VP-9N, VP-9S spindle guiding supports
- SP-9N, SP-9S spindle clamping supports
- FP-40-9 rectangular milling head (designed for Morse 5 / ISO 40 taper)
- UPF-40-9 universal milling head (designed for Morse 5 / ISO 40 taper)
- change gear kit for thread cutting
- TD50 telescopic tool holder
- VT50-1600-ISO40 smooth boring bar
- VT70-1600-ISO40 smooth boring bar
- VT70-2000-ISO40 smooth boring bar
- VT70-2500-ISO40 smooth boring bar
- VT90-2000-ISO40 smooth boring bar
- VT90-2500-ISO40 smooth boring bar
- VT90-3200-ISO40 smooth boring bar
- VT110-3200-ISO40 smooth boring bar
- LLK-150/50 sliding bush of the outboard support
- LLK-150/70 sliding bush of the outboard support
- LLK-150/90 sliding bush of the outboard support
- LLK-150/110 sliding bush of the outboard support

### Machine parameters

	W9	W9A	
Workspindle diameter	90	90	mm
Clamping taper	40	40	ISO
	5	5	Morse
Spindle speed range - unremovable facing head - 21 gears	14 - 1400	---	rpm
Spindle speed range - removable facing head - 18 gears	28 - 1400	28 - 1400	rpm
Main motor power	7,5	7,5	kW
Speed of main motor	1455	1455	rpm
X...transversal travel of table	1000 / 1250	1250	mm
Z...longitudinal travel of table	800 / 1400	1400	mm
Y...vertical travel of headstock	900 / 1120	1120	mm
W...spindle stroke	710	710	mm
Table clamping surface	1000 x 1120	1000 x 1120	mm x mm
Table loading capacity	3000	3000	kg
Width of T-slots	23 H8	23 H8	mm
Centring hole diameter / depth	180H6 / 10	180H6 / 10	mm
Feeds...X, Y, Z, W, U - 18 gears	12,5 - 600	12,5 - 600	mm / min
Feeds...X, Y, Z, W, U - 18 gears	0,016 - 0,8	0,016 - 0,8	mm / rev
Thread feeds...X, Y, Z, W, U - metric - 18 gears	0,25 - 12	0,25 - 12	mm / rev
Thread feeds...X, Y, Z, W, U - inch - 24 gears	120 - 2	120 - 2	threads / 1"
Rapid traverse...X, Y, Z, W, U	2400	2400	mm / min
Microfeeds...X, Y, Z, W, U - secondary panel only	5	---	mm / min
Rapid traverse of table rotation...B	2,6	2,6	rpm
Total power consumption	11	11	kVA
Machine weight	9000 - 11000	11000	kg
Total area including CE - approximate	5500 x 7500	5500 x 7500	mm x mm

### Facing head parameters

	W9	W9A	
Facing head diameter	480	480	mm
U...tool slide travel	170	170	mm
Maximal facing diameter	710	710	mm
Facing head speed range	14 / 28 - 180	28 - 180	rpm

### Outboard support parameters

	W9	W9A	
Face of facing head to bearing of outboard support - unremovable facing head	2300 / 2715	---	mm
Face of facing head to bearing of outboard support - removable facing head	2405 / 2820	---	mm
Face of hollow spindle to bearing of outboard support	---	2820	mm
Bearing axis above table	14 - 900 / 14 - 1120	20 - 1120	mm
Rapid traverse of bearing	1620	1620	mm / min
Bearing bore	150 H7	150 H7	mm
Motor power of outboard support	0,55	0,55	kW
Motor speed of outboard support	2780	2780	rpm

List of the optional accessories is noted for completeness, some of them are very hardly available and their delivery could not be guaranteed.

- UK500 clamping cube
- UU800, UU950 clamping angle plates
- spares kit for 3-year operation
- 2D touch probe KT 130 HEIDENHAIN
- transport bars (in the container necessary)

- Machine design can be tailored to suit the needs of the client