



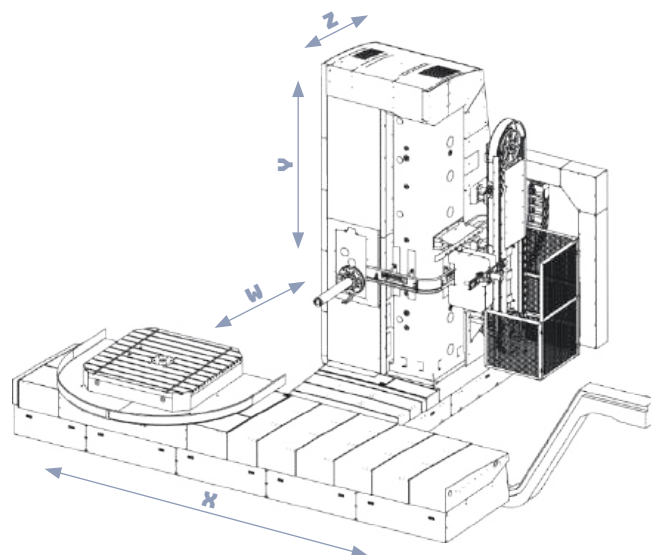
Juan Pablo Collantes Quispe
Gerente de Mantenimiento
mantenimiento@tawaheavyindustries.com
www.tawaheavyindustries.com



WHN 13/15

MAIN ADVANTAGES OF THE MACHINE

- VERIFIED AND RIGID STRUCTURAL DESIGN
- LONG SERVICE LIFE AND RELIABILITY
- SUITABLE FOR CUSTOMIZED PRODUCTION
- VARIABLE HEADSTOCK DESIGN
- OPTION TO USE ATC/APC



The horizontal milling and boring machine **WHN 13/15** is a universal machine designed for precise milling, line-coordinate drilling, boring and thread cutting of box- and board-type workpieces as well as complicated workpieces from cast-iron, steel cast-iron and steel with the weight of up to 25,000 kg. **WHN 13/15** is the most successful machine from the company production. The first model of the machine was produced in 1968. The success of this machine can be documented by the fact that almost 2,800 pieces of these machines have been sold up to now.

It particularly excels in the ratio between capacity and the purchasing costs. The users value the structure of the machine, which guarantees high rigidity and reliability as well as high technical parameters and a broad range and comfort of the technological features. They can be extended with a wide selection of technological accessories that significantly widen the machine technological utility value.



TECHNICAL PARAMETERS

HEADSTOCK		R	R4	15
Work spindle diameter	mm (in)	130 (5.1181)	130 (5.1181)	150 (5.9055)
Spindle taper		ISO 50 / ISO 50 BIG+		
Spindle speed range	RPM	10-3,000	10-4,500	10-3,000
Main motor power (S1 / S6 - 60%)	kW (HP)	41 (55.7) / 49 (66.6)		53 (72.1) / 55 (74.8)
Torque on spindle (S1 / S6 - 60%)	Nm (ft lb)	2,508/3,111 (1,849.8/2,294.6)	1,518/1,800 (1,119.6/1,327.6)	3,114/3,720 (2,296.8/2,743.7)
Spindle stroke W	mm (in)	800 (31.4960)		900 (35.4330)
COLUMN				
Headstock vertical travel Y	mm (in)	2,000, 2,500, 3,000, 3,500 (78.7401, 98.4251, 118.1102, 137.7952)		
Longitudinal column adjustment Z	mm (in)	1,250, 1,600, 2,200, 3,200 (49.2125, 62.9921, 86.6141, 125.9842)		
ROTARY TABLE				
Transverse table travel X	mm (in)	3,500, 4,000, 5,000, 6,000 (137.7952, 157.4803, 196.8503, 236.2204)		
Max. workpiece weight	kg (lbs)	12,000 / 16,000 / 18,000 / 25,000 (26,455.5 / 35,273.9 / 39,683.2 / 55,115.6)		
Table clamping area	mm (in)	1,800 x 1,800 / 1,800 x 2,200 / 1,800 x 2,500 (70.8661 x 70.8661 / 70.8661 x 86.6141 / 70.8661 x 98.4251 / 78.7401 x 118.1102 / 98.4251 x 118.1102)		
FEEDS				
Range of feeds (working and rapid traverse) - Y, Z	mm/min (ipm)	4-10,000 (0.1574-393.7007)		
- W	mm/min (ipm)	4-10,000 (0.1574-393.7007)		
- X = 3,500 mm (137.7952 inch) / capacity 12,000 kg	mm/min (ipm)	4-10,000 (0.1574-393.7007) / 12,000 (472.4409)		
- X = 3,500 mm (137.7952 inch) / other tables	mm/min (ipm)	4-8,000 (0.1574 - 314.9606)		
- X = 4,000, 5,000, 6,000 mm (157.4803, 196.8503, 236.2204 inch)	mm/min (ipm)	4-8,000 (0.1574 - 314.9606)		
- B capacity 12,000 kg (26,455.5 lbs) / other tables	RPM	0.003-2/1.5		



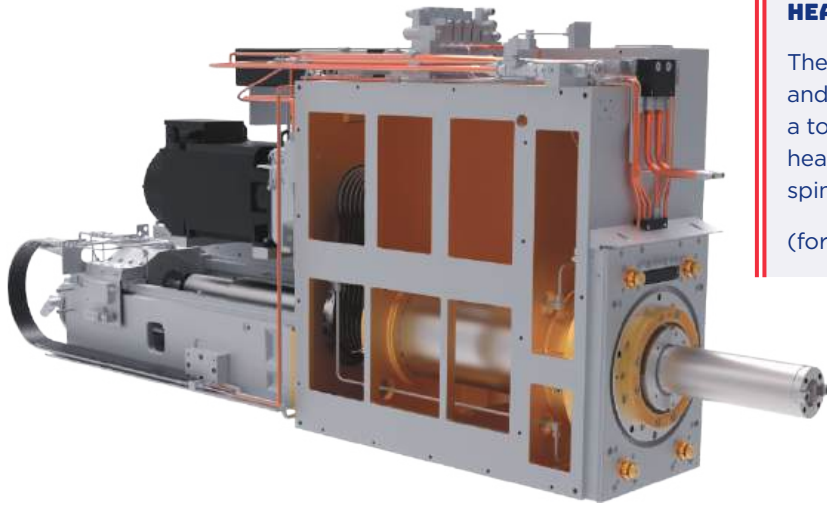
MACHINE CONFIGURATION

- + **WHN 13** - basic version with work spindle diameter 130 mm
- + **WHN 15** - basic version with work spindle diameter 150 mm
- + version with an automatic tool change
- + machine with a character of a machining centre (automatic tool change and automatic pallet change)
- + wide range of work table designs

The machine has been manufactured for more than 50 years with almost 2,800 pieces sold.



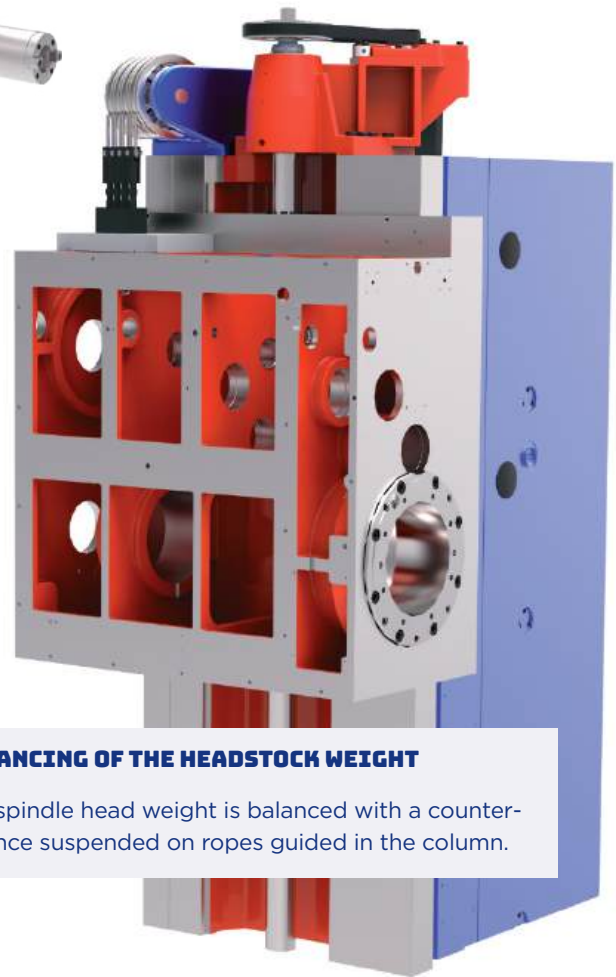
WHN 13/15



HEADSTOCK

The headstock contains the spindle drive motor and gearbox together with the W axis drive system a tool clamping system. The main housing of spindle heads consists of an assembly of hollow and work spindles.

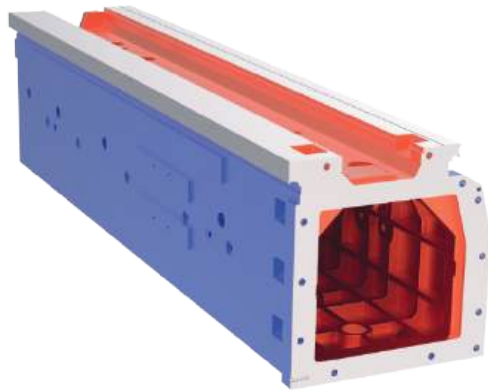
(for more information see page 85 - Headstocks)



BALANCING OF THE HEADSTOCK WEIGHT

The spindle head weight is balanced with a counterbalance suspended on ropes guided in the column.



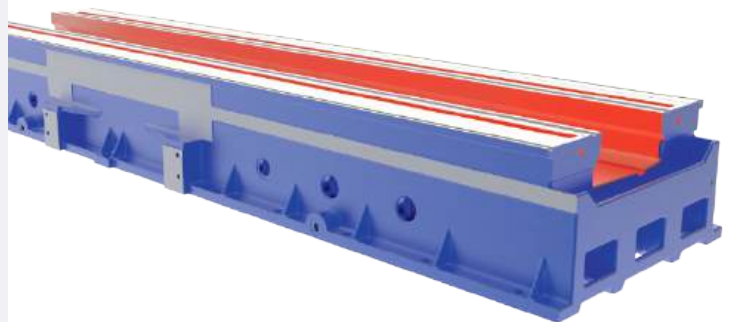


COLUMN

The basic part of the **WHN 13/15** machines are made of high-quality grey cast-iron made in the Czech Republic, which forms a cast-iron skeleton. The structure and the ribbing of the frame guarantee high rigidity.

GUIDES OF ADJUSTABLE GROUPS

Guides of all linear groups are sliding. The main guideways are laser-hardened. Hardened steel rails on guideways are placed under the bearings and on the other stressed places. The counter-surfaces are provided with artificial sliding low-friction materials. In addition, the table carriage slightly lifted by the use of four roller units. Guides on the beds are protected against dirt with telescopic covers, while the machine frame guiding surfaces are protected with bellows covered with steel slats. The table is laid on external circular sliding housing and near the centre on a circular bearing.

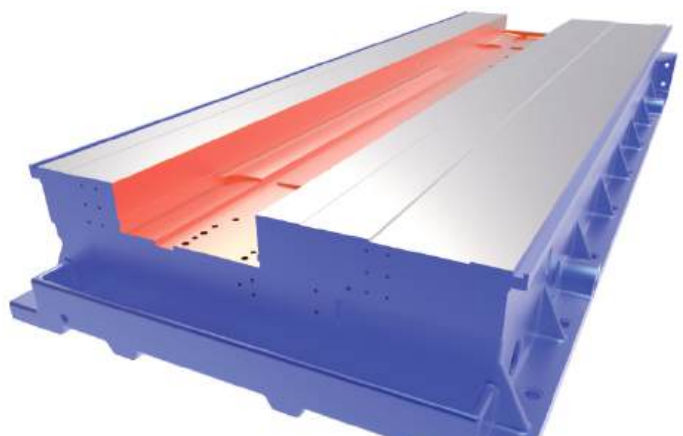


BED

We use the GG 25 cast iron for production of the support sections because of high demands for vibration absorption in the horizontal boring machines. High rigidity of an optimally dimensioned cast-iron frame guarantees high efficiency and productivity of the milling machine while securing top geometrical accuracy of the workpiece.

ROTARY TABLE

It is equipped with a rotation sensor, which allows automatic positioning of the table with an increment of 0.001° . After reaching the target position, the table is automatically fixed. Turning of the table is provided as a two-motor drive with two pinions that are engaged in the gear ring.



DRIVES OF FEEDS

The travel units are driven by digitally controlled AC servo drives Siemens. To reach higher travel forces, an allowance-free gear is inserted between the servo drive and the ball screw.

