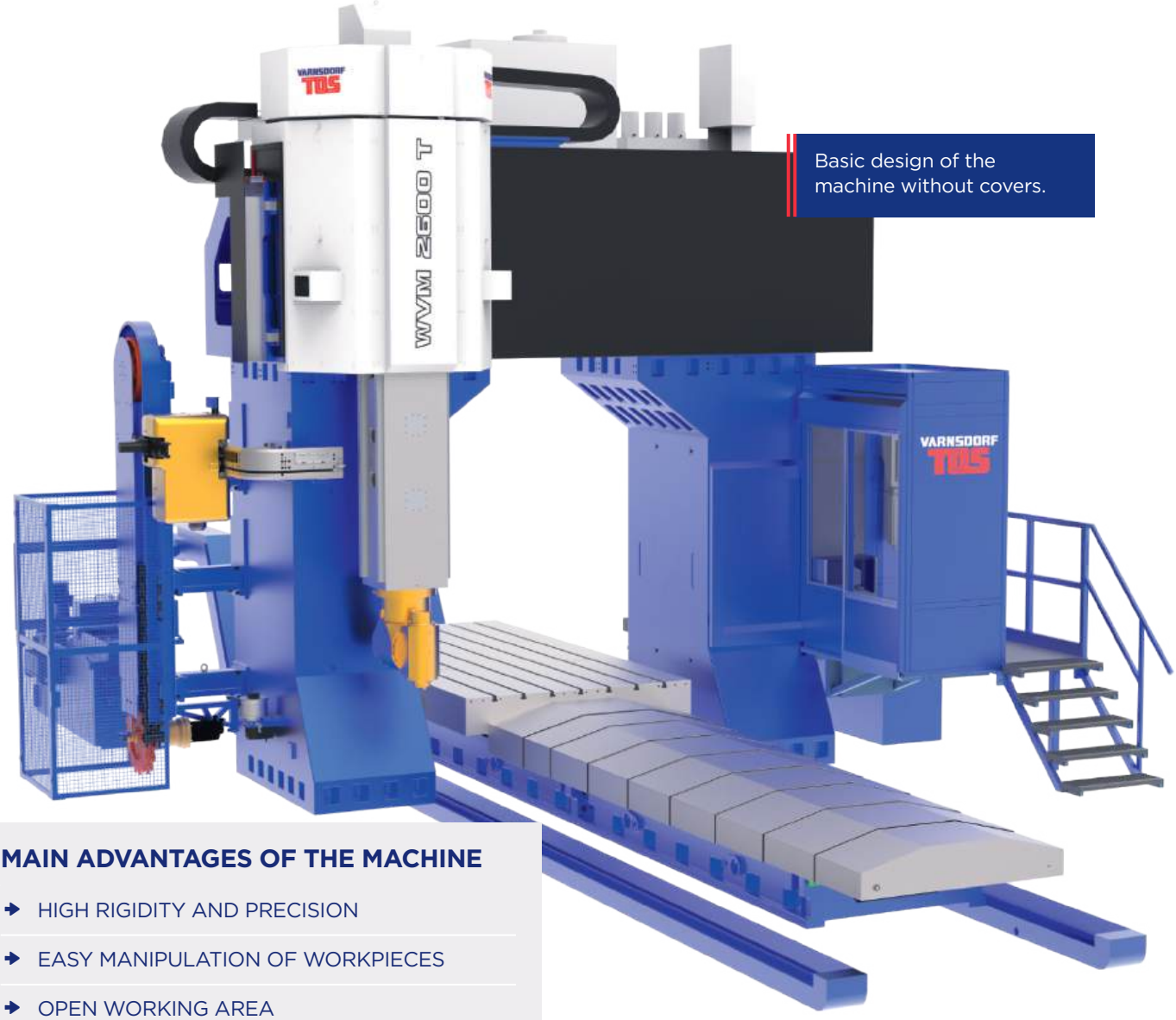
Juan Pablo Collantes Quispe
Gerente de Mantenimiento
mantenimiento@tawaheavyindustries.com
www.tawaheavyindustries.com

WVM 2600/3600 T



Basic design of the machine without covers.

MAIN ADVANTAGES OF THE MACHINE

- HIGH RIGIDITY AND PRECISION
- EASY MANIPULATION OF WORKPIECES
- OPEN WORKING AREA
- VERTICAL WORK AXIS OF SPINDLE
- TABLE LENGTH UP TO 10 m

Vertical machining centers of the **WVM 2600/3600 T** series are designed as a unified series of machines for universal machining of steel and cast iron parts especially in the general engineering segment. Thanks to its unique construction of a solid portal with a mobile headstock (Y), a vertically traveling RAM (Z) and a sliding table (X), the machines stand out with high precision and stiffness. The high installed output of the machine (53 kW) is especially designed for force and productive machining.

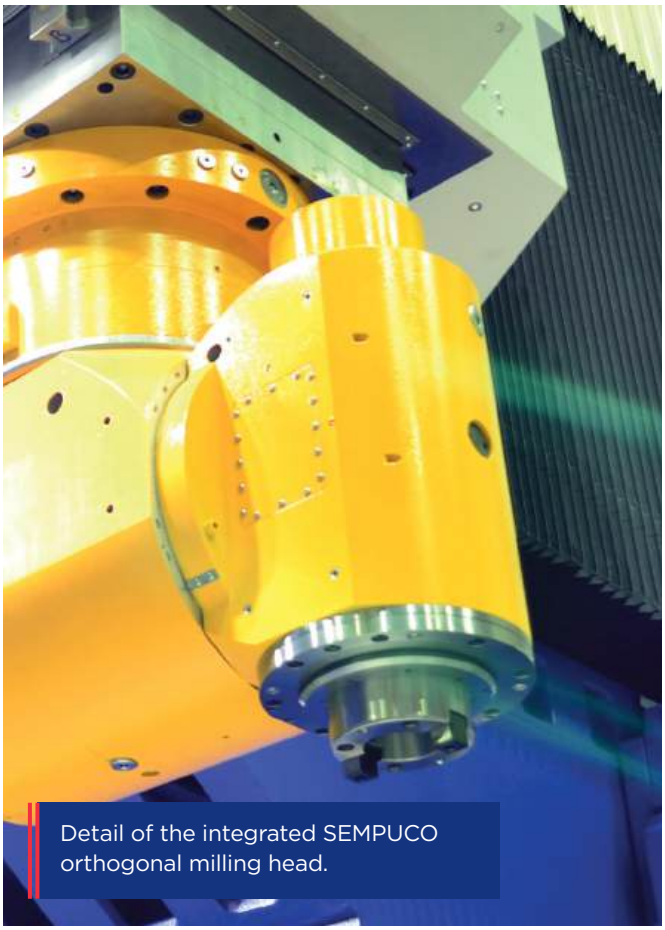
The machines can be equipped with different types of milling heads, which are automatically placed and thus enable even further extension of the technological possibilities of the machine. Machines can be supplemented by other types of accessories to increase machine efficiency, such as cooling system or tool change system.

Machine control is managed from the operators platform installed on the side of one of racks, and the machines can also be equipped with the covers around the table axis (X) to minimise chip flashing and fluid splashing.

Total view of the machine with the horizontal travelling headstock and vertically traversing quill.

View of the orthogonal 2 axis automatically indexed milling head.

Detail of the automatic tool replacement tool that exchanges the tools in the horizontally positioned milling head.



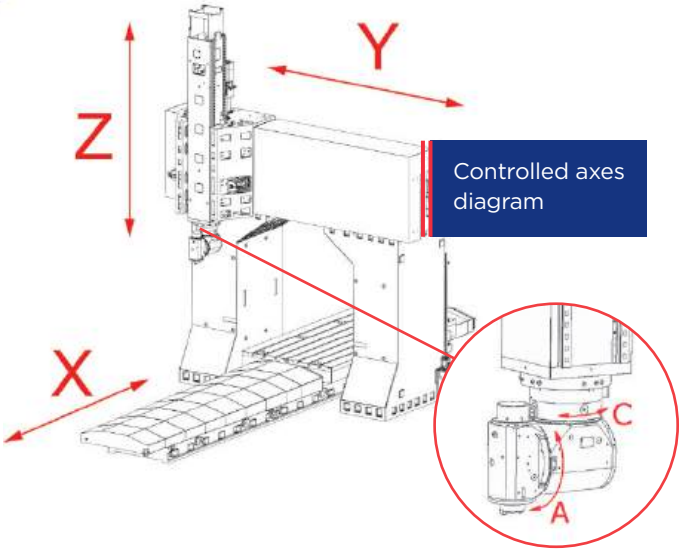
Detail of the integrated SEMPUCO orthogonal milling head.

WVM 2600/3600 T

MACHINE CONFIGURATION

- machine with integrated milling head
- machine equipped with automatic tool exchanger
- machine equipped with special accessory exchanger
- wide range of work table designs

Basic design of the machine with covers.

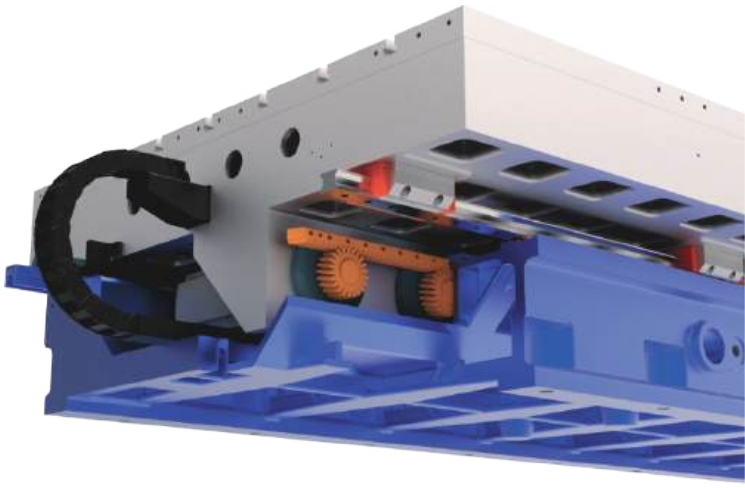


Controlled axes diagram

TECHNICAL PARAMETERS

HEADSTOCK		WVM 2600 T			WVM 3600 T		
END OF THE RAM BY AN INTERFACE FOR APPLICATION OF TECHNOLOGICAL ACCESSORIES							
RAM size	mm (in)	500 x 500 (19.6850 x 19.6850)					
Main motor speed range	RPM	10–5,000					
Max. power of the main motor (S1)	kW (HP)	53 (72.1)					
Max. torque on driving shaft (S1)	Nm (ft lb)	1,375 (1,014.1)					
RAM stroke Z	mm (in)	1,500 (59.0551)					
Headstock vertical travel Y	mm (in)	3,200 (125.9843)			4,200 (165.3543)		
– with APC and ATC system	mm (in)	4,900 (192.9134)			5,900 (232.2835)		
HEADSTOCK WITH INTEGRATED ORTHOGONAL MILLING HEAD							
Spindle taper		ISO 50					
Max. spindle speed range	RPM	5,000					
Max. transmitted power	kW (HP)	40 (53.6)					
Max. torque on spindle	Nm (ft lb)	1,200 (885)					
Basic positioning increment of both dividing planes	°	1					
A-axis rotation range	°	±180					
C-axis rotation range	°	±180					
WORK TABLE FOR WVM 2600 T							
Table longitudinal traverse X	mm (in)	4,000, 5,000, 6,000, 7,000, 9,000, (157.4803, 196.8503, 236.2204, 275.5905, 354.3307)					
Distance between the columns	mm (in)	2,600 (102.3622)					
Width of table clamping area	mm (in)	2,000 (78.7401)					
Length of the table clamping area	mm (in)	3,000 (118.1102)	4,000 (157.4803)	5,000 (196.8503)	6,000 (236.2204)	8,000 (314.9606)	–
Maximum workpiece weight	tonnes (tons)	16 (17.6)	20 (22)	24 (26.5)	28 (30.9)	36 (39.7)	–
Size of the clamping T-slots	mm (in)	28H8 (1.1023)					
Spacing of the clamping T-slots	mm (in)	250 (9.8425)					
WORK TABLE FOR WVM 3600 T							
Table longitudinal traverse X	mm (in)	4,000, 5,000, 6,000, 7,000, 9,000, 11,000 (157.4803, 196.8503, 236.2204, 275.5905, 354.3307, 433.0708)					
Distance between the columns	mm (in)	3,600 (141.7322)					
Width of table clamping area	mm (in)	3,000 (118.1102)					
Length of the table clamping area	mm (in)	3,000 (118.1102)	4,000 (157.4803)	5,000 (196.8503)	6,000 (236.2204)	8,000 (314.9606)	10,000 (22,046.2)
Maximum workpiece weight	tonnes (tons)	20 (22)	24 (26.5)	28 (30.9)	32 (35.3)	40 (44.1)	40 (44.1)
Size of the clamping T-slots	mm (in)	28H8 (1.1023)					
Spacing of the clamping T-slots	mm (in)	250 (9.8425)					
FEEDS							
Range of feeds (working and rapid traverse) – X, Y, Z	mm/min (ipm)	1–25,000 (0.0393–984.2519)					
Max. traverse forces in the X, Y, Z, W axes	kN (lbf)	20 (4,496.2)					
AUTOMATIC TOOL CHANGE (ATC)							
Number of storage sites – chain type magazine	pcs	60, 80, 120					
Tool change time	s	20					

WVM 2600/3600 T



X, Y, Z AXES DRIVES

The drives of all linear axes are equipped with separate electric regulating actuators. The Z axis is driven via a ball screw with pre-loaded nuts. The X and Y axes are driven via a rack and two pre-loaded pinion gears controlled by a Master & Slave system.

MACHINE FRAME

The frame consists of a bed with a travelling table, above which a transversely housed headstock moves on the crossbeam that is attached to two vertical stands. All the frame parts are designed as rigid and optimally sized castings.

GUIDING OF MOVEABLE GROUPS

Linearly traversing groups of the X, Y, and Z machine axes are guided using linear roller guides. Bed guideways are covered with telescopic steel covers. A crossbeam guideway is protected by folded fabric bellows.

HEADSTOCK

The basic body is a rigid casting of ductile cast iron, in which a vertically traversing RAM made of cast steel is mounted. The main spindle rotation drive is transmitted from a powerful electric drive via a robust two-speed gearbox with automatic shifting.

BALANCING

Ram weight is compensated hydromechanically (with a hydraulic cylinder) using a standalone hydraulic unit.

AUTOMATIC TOOL AND TECHNOLOGICAL ATTACHMENT CHANGE

Automatic tool change consists of a chain tool magazine, a manipulator guideway on the stand, and a custom manipulator that allows the tool to be exchanged in the milling head.

Machine could be also equipped by the automatic attachment change system. It contains moveable magazine for up to 3 technological attachments.

WVM 2600/3600 T

EXAMPLES OF USAGE

The first implementation of the WVM 2600 T machine for a Czech customer.

X = 4,500 mm (177.1653 inch)
Y = 3,200 mm (125.9842 inch)
Z = 1,500 mm (59.0551 inch)

ATC 60
Work table
= 4,000 x 2,000 mm (20 tonnes)
157.4803 x 78.7401 inch (22 tons)