

MPWOS 500/800 - MOST Precision Welding Orbital System



MPWOS 500/800 is a unique welding system of new generation, characterized by the perfect ergonomics. Suitable for PLASMA WELD, TIG welding methods. The maximal diameter of the welded material is 340 mm, maximal length of weldment – 500 mm. The unit was designed as a stand-table positioner, equipped with the rotating arm and double-precise wire feeders, with tailstock and the moving arm of welding torch applied in. The spindle construction allows use of the universal torch 125 mm with hole of 28 mm. The support arm can be tilted mechanically in range of 0-90°, what enables to set the precise position in order to optimize the welding process. The arm of welding torch is positioned pneumatically and controlled by the control system. The MCS-X control system provides the full access to all functions, including the digital communication with the welding machine. The control system is placed on the left side of machine, considering the perfect ergonomics..



Model	MPWOS-500	MPWOS-800
Max. static load	25 kg	25 kg
Between shank and tailstock (operating)	max 500 mm	max 800 mm
Max. diameter of the product	340 mm	340 mm
Tilt angle range	0-90°	0-90°
Rotational inertia of the spindle in driven section	v01: 33,7 Nm v02: 98,1 Nm v03: 193,1 Nm	v01: 33,7 Nm v02: 98,1 Nm v03: 193,1 Nm
Rotational inertia of tailstock (sync with main drive)- optional	v01: 33,7 Nm v02: 98,1 Nm v03: 193,1 Nm	v01: 33,7 Nm v02: 98,1 Nm v03: 193,1 Nm
Range of the main spindle speed (active section alternatively)	v01: 0,05-25 rpm v02: 0,02-8,3 rpm v03: 0,01-4,2 rpm	v01: 0,05-25 rpm v02: 0,02-8,3 rpm v03: 0,01-4,2 rpm
Spindle passage hole	28 mm	28 mm
Welding method	MIG/MAG, TIG, Plasma,	MIG/MAG, TIG, Plasma,
Duty rate	100%	100%
Motor power	350 A (DC), 270 A (AC)	350 A (DC), 270 A (AC)
Voltage	1x230V 50/60 Hz	1x230V 50/60 Hz
Protection class	IP21	IP21
Weight	155 kg	155 kg
Dimensions	850x820x1500 mm	850x820x1500 mm
Control system	MCS-X – MOST Control System	MCS-X – MOST Control System

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The MCS-X control system provides a clear and easily understandable user interface with full programming capabilities and results in a higher level of production throughout the entire process.

Some of control features:

- process control,
- diameter of the product, the way of rotation, angle of turning (maximal 720°, exactness 0,1°),
- axis rotation,
- delay/acceleration of the rotation before welding (time after the confirmation of the stable arc is sent by the welding machine),
- the precise closing/opening sequence and defect-free connection of beginning and end of the weld (angle and number),
- O-point – exact return to the start point,
- points (automatic calculation of angles on the basis of entering information, entering the number of tack welds).

Axis motoric:

- in rotary mode of welding – the setting of the longitudinal welding position on the X axis and its acting during the operating cycle,
- in longitudinal mode of welding – the setting of the welding position, the delay of activity after the welding process has started, the final time of welding, finishing of the sequence, the acting during the operating cycle and radial position of the weld on the rotary axis,
- the angle of tailstock's spindle 0- 90°, the fluent movement using the extract drive of tailstock's tilt or with pneumatically controlled stroke.

Torch axis – pneumatic or electric supports.

Oscillation:

- the delay of starting the oscillation after the sign of the stable arc is sent (sec),
- frequency of the oscillatory movement (Hz),
- right/centre/left divergence, in mm, separately for each sides, (exactness 0,1 mm).

Welding system with digital communication system equipped-CAN BUS

Forming gas – pre-blowing and after-blowing of forming gas functions

Programs – Memory Box:

the machine can memorize the own settings including the whole operating cycle. Programs saved in Memory boxes can be arbitrarily combined into the functional lines and create even the difficult operating cycle..

Optional accessories:

- f AVC control when TIG and PLASMA welding (automated regulation of arc height),
- f joints/seam tracing (electromechanical indicator),
- f camera viewing system.

Standard applications:

The machine is universal and sophisticated production unit which can be used in industry. It is possible to weld rotary circumferential welds, angular welds in position PA/PB using the tilting tailstock and also fully-fledged welds can be done.

The production of pressure and non-pressure vessels from all materials and by using all the welding methods of arc welding (except SAW method) is really typical. Because of high exactness of the machine the machine parts, flanges, shafts, heat exchangers and tube sheets can be welded on this machine.

The machine is able to work in screw welding mode on the surface of the cylinder even on the surface of the operating plate (tilting 90°). A special kind of used software provides the possibility to weld each layer separately by using the controlled axis of the torch stroke.

