

COMMERSALD IMPIANTI

ROBO 600H

NC INSTALLATION
FOR PTA WELDING
AND HEATING

ROBO 600H is an installation fully managed by an NC for the heating and welding (or hardfacing) with technology Plasma Transferred Arc. It is equipped with six cartesian axis and it is useful for shaped workpieces weight till 30 kg.

The plant is assembled on a main platform where there are:

- the welding section with cartesian motion
- the induction heating
- the NC and the operator console.

PTA WELDING

The electric panel is comprising of an inverter welding machine produced by Commersald under the same basis as the standard type PTA200i. The system is complete of cooled welding torch and powder feeder. The welding machine grants an output current of 200A at 100% and it allows to make single pass **welding of thickness from 1 to 3,5 mm and width till 30 mm with a deposition rate till 2 kg/h** respecting severe metallurgical parameters.

MOTION

The system is formed by six axis: three cartesian axis, two rotating axis to move the workpiece and one oscillator for the welding torch. This last one is mounted on a rotating pneumatic support with two positions (RPO 0-90°) used for oscillated welding in the two cartesian directions X and Y.

Thanks to its planning and construction features, this motion grants:

- **smooth exit of the powder**, because it is possible to place the powder feeder closed and perpendicular to the torch;
- **high precision in positioning**, even after years of working;
- **quick displacements** thanks to the strong and powerful system;
- **nearness of the operator** to the welding point, and consequent good visibility of the arc, even with closed barriers.



INDUCTION HEATING

The induction heating system is integrated in the main structure of the machine, based on the standard Commersald machine HEAT12F. The main advantage of the induction heating, if compared with a traditional furnace is the high efficiency, for a quick and uniform pre-heating in a time shorter than the welding time. This version is useful to pre-heat pieces having **maximum size Ø 150 x 100 mm**

NUMERICAL CONTROL

The programming is done by means of a Mitsubishi numerical control developed especially for Commersald, with program language ISO implemented and integrated with the welding and heating parameters. The same NC controls both heating and welding.



TECHNICAL FEATURES ROBO 600 H			
FEATURS OF THE MOTION			
Structure	Stroke Z axis	mm	580
	Stroke X axis	mm	800
	Stroke Y axis	mm	230
	RPO pneumatic axis, two positions	deg.	0° - 90°
Oscillator	Max oscillation amplitude	mm	40
Rotating table	Tilting	deg.	-20° + 135°
Workpiece	Max diameter of the coating	mm	360
	Max height of the coating	mm	300
	Max weight of the workpiece	kg	30
FEATURES OF THE WELDING MACHINE			
Pilot arc generator	Output current	A	70 at 100%
Transferred arc generator	Output current	A	200 at 100%
Powder feeder	Delivery	kg/h	0,5 - 3,5
	Capacity	kg	7
Deposition rate		kg/h	0,5 - 2,0
FEATURES OF THE HEATING SECTION			
Power of the generator		kW	12
Working frequency		kHz	30 - 50
Max heating temperature		°C	600
Temperature control		thermocouple type K	
Max size of the workpiece		mm	Ø 150 x 100
GENERAL FEATURES OF THE INSTALLATION			
Overall size	Dimensions (lxdxh)	mm	3000x2200x2150
	Weight	kg	3000
Installed power		kVa	37
Tension		400V 50/60 Hz (3F+N+T)	
Compressed air		bar	> 6
Cooler	Given power (water at 20°C)	W	13300
Gas (two available input)		bar	> 5