

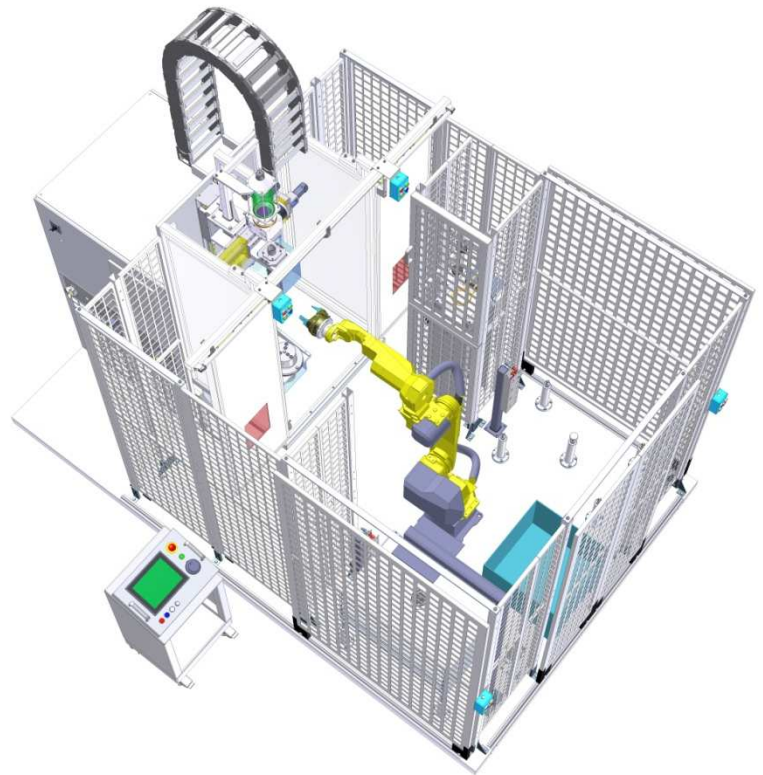
PTA200 ROT HR

**ROBOTIZED MACHINE
FOR PTA WELDING
AND PRE-HEATING**

PTA200ROTHR is an automatic installation for hardfacing with technology PTA powder integrated with an induction pre-heating and a pick and place articulated robot. It is suitable for **rings and cylindrical pieces** of small size (max weight of the piece 10 kg)

The machine is studied to be very compact and it is formed by:

- a PTA welding machine with cartesian motion
- a 6 KW induction pre-heating system
- an industrial articulated robot for pick and place



PTA WELDING AND MOTION

It's about the type *PTA200i* produced by Commersald (see the related technical sheet), complete of cooled welding torch and powder feeder. The welding machine gives an output current of 200A at 100% and it can be used in single pass for welding **thickness from 1 to 3,5 mm, till 40 mm wide, and deposition rate till 2 kg/h** respecting severe metallurgical parameters.

The system torch/workpiece is moved by four axis (two Cartesian axis moving the torch and two rotating axis for the workpiece) that guarantee:

- **smooth powder outlet**, thanks to the possibility to place the powder feeder closed to the welding point and in axis with the torch;
- **high precision in positioning**, even after years of use;
- **quick shifts**, thanks to the reduced motion.

INDUCTION PRE-HEATING

It is a 6 Kw induction system for the pre-heating before welding; it has a fixed inductor and a system of temp reading by means of a pyrometer. The quick and efficient pre-heating allow to feed the working cycle in a time that is equal or shorter than the welding time.

ARTICULATED ROBOT

The automatic pick and place is done with an articulated robot that is able to pick up the workpiece in a multi-pallet stocking system, thanks to a camera.

Also during the cycle, the operator can load the pieces on one or more trays and the system automatically identifies them and it completes the cycle with pickup, preheating, welding and unload in a dedicated container.



OPERATOR'S CONSOLE

The software of the PLC of the console can store up to 100 cycles complete of all parameters of motion, welding and pre-heating.

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TECHNICAL FEATURES PTA200ROT HR			
GENERAL FEATURES OF THE MACHINE			
Size (door closed)	Size (lxdxh)	mm	2200x3500x3300
Workpiece	Max Ø of the hardfacing	mm	350
	Max height of the hardfacing	mm	400
	Max weight of the workpiece	Kg	10
Deposition rate		Kg/h	0,5 - 2,0
FEATURES OF THE WELDING MACHINE PTA200i			
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
Welding torch YZR250	Ø tungsten electrode	mm	4
Cooler	Given power (water at 20°C)	W	8700
Power		KVA	16,7
FEATURE OF MOTION/PRE-HEATING			
Structure	Vertical axis strock	mm	500
Oscillator	Osc amplitude max	mm	40
	Useful stroke	mm	300
Rotating table	Tilting	deg.	0° - 90°
Induction pre-heating	Power	KW	6
Total power of the machine		KVA	28
Tension		400V 50 Hz (3ph + ground)	
FEATURES OF THE PICK AND PLACE ROBOT			
Payload		Kg	12
Reach		mm	1420
Vision system by means of a camera and of a dedicated software to avoid the construction of different trays for each diameter of the workpiece.			

