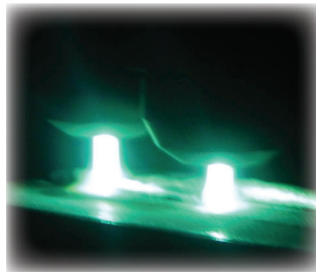




**AUTOMATIC WELDING MACHINES FOR  
WELDED COATINGS USING THE  
PTAW - GMAW & PTAW-  
TANDEM PROCESSES**



**COMMERSALD IMPIANTI**

### With PLASMIG TANDEM you may coat :

Nickel based alloys (Inconel, Hastelloy, Udimet)  
 Cobalt based (Stellite 12,6,21,25)  
 Austenitic, ferritic, refractory, stainless steels, Duplex, etc.  
 Rapid steels and chrome cast iron

## CONTROL AND MANAGEMENT COMPUTER SYSTEM

A complete system has been designed and integrated with handling, welding, alarms, temperature control features organised by an ISO NC on a Windows platform with a touch-screen that is capable of continuously monitoring all the phases and may keep the entire system under control.

A parametered subprogram permits you to make a complete check up on sizes on 52 points beforehand, during and after welding by simply digiting the size of the ball valve.

The system is capable of giving out size, temperature and traceability reports.

In order to simplify programming in the system, there is a file in which ~10 working blocks are stored, each block contains welding parameters referring to the various positions of the ball valve. The new programs may be filled in by dragging the various blocks into the preset grid.



NC tactile monitor screens

Program keyboard



Power generators



Small fed PAW



Commersald Impianti is equipped with a Plasmig Tandem machine available for any potential clients that wish to visit our plant for demonstration tests carried out on their pieces directly.

**ROBOSFERA** is an automatic welding work station with performances equal to those of a tool machine (positioning precision = 0,1 mm - positioning repetitivity = 0,05 mm) aimed at coating ball valves and other manufactured products for the Petrochemical Industry with Inconel 625 . Some advanced technical features make this Commersald Impianti product unique in the field of coated weldings as far as the quality of the deposit, containing of costs, trustworthiness and flexibility of the process are concerned.

## MAIN FEATURES OF THE HANDLING CHARGE MACHINE

Robosfera is based on a cartesian 3 axes handling system for ball valves weighing up to 1320 Kg (corresponds to a 26" Class 600 ball valve), and 2 axes plus an oscillator for handling the welding torches. Long automatic stick-out throughout the whole welding route. Programmed maintenance and predetermined halts for cleaning torches. Emergency stop programmed on 2 levels (end of block and immediate interruption). Tracer point for checking sizes before, during and after welding. Programmed survey of the temperature of the piece. Videocam to see and remote control the process plus the possibility of filming the entire welding cycle that may be enclosed to the traceability report



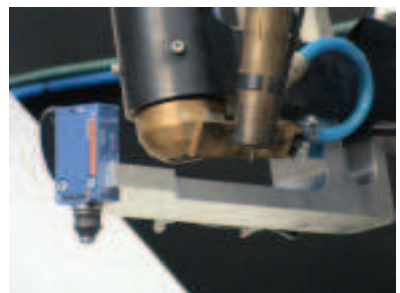
### PIECE DEFORMATION CONTROL AND MACHINING REFERENCES

The automatic welding machine **ROBOSFERA** allows you to frequently move entire **welding blocks** towards cooler positions maintaining thus a uniform temperature. This contributes to containing deformation and permits you to decrease welding thicknesses resulting in an overall advantage in welding times, lower welding consumable costs and a reduction in machining costs.

With Robosfera you may weld the ball valve entirely without having to dismantle it, therefore **positioning it one time only**. The plant is equipped with a beak adjustment device that allows you to target the piece for machining that follows on after it. Before dismantling the piece from the machine, a "control cycle" is launched in order to check the **thickness of the deposit**. If necessary, it is possible to weld the missing part onto the piece that is still hot.



Temperature survey head



Size survey head

## WELDING PROCESS FEATURES

In order to handle in the best way possible the coating of valves of all kinds and accessories, increasing deposit rates, Robosfera is equipped with a group of **PLASMIG** torches for coating Inconel 625 , stainless steel, Duplex and similar materials, and also with a **Plasmatwin** group for coating in **TANDEM** con leghe with Cobalt based materials (Stellites).

The extraordinary metallurgical quality of the deposit of the process is proven by tests and procedure qualifications. In order to evaluate the trustworthiness of a process, it must be remembered that of the two welding processes the one that is more common is the MIG process whereas the PAW process (PTA) is well renowned throughout the world for high quality standards. Our company is a world leader in the field of PTA technology.

## MANUFACTURED ARTICLES WELDED WITH ROBOSFERA

Robosfera may be used as a rotating positioner with three axes or as a traditional positioner (rotation and flexibility of the table).

With the traditional **three axes** configuration between the tip and footstock, **ball valves measuring up to 26"** may be coated internally and externally.

**Cylindrical shells** of the following sizes (max) may be completely coated, without the pieces having to be dismantled from the machine:

Diameter	mm.	700
Height	mm.	1 000
Weight	kg	1 600

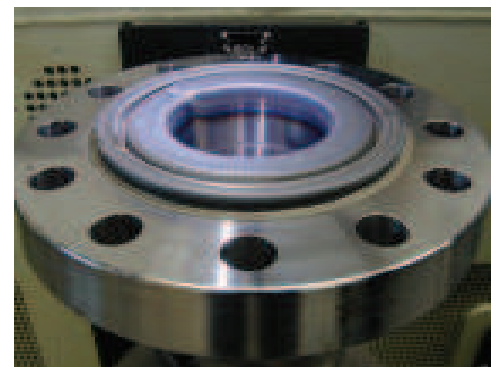
You may completely coat **wedges with a max 800mm diameter** up to 1600kg in weigh and on both sides without having to dismantle them from the machine and in a completely automatic cycle.



In the **2 axes with platform configuration** assembled onto the intermediate fork, all types of coatings that are manually done with the use of traditional methods may be carried out (anthropomorphous robot + rotating platform scale positioner) i.e.:

- Valve shells up to **16"**
- Flanges up to **16"**
- Seals up to **60"**
- Internal and external coating for cylindrical pieces, shaping included.

Maximum external diameter	mm	800
Length	mm	1 100
Maximum weight	Kg	1 800



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