

240Hz

# 912

## BORN HYBRID



YOUR PARTNER  
IN PLASTIC JOINING

# Cutting edge technology and full equipment as a standard

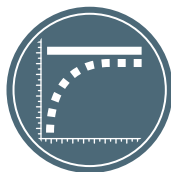
## DOUBLE-SIDED MACHINE

The machine is provided with two sliding doors (frontal and rear). In this way, the machine can be used by two operators or can be interfaced with automated external devices (such as robots).



## REALTIME TUNING

Our innovative generator is able to adjust the vibration frequency with no autotuning procedure. Internal values are checked and updated every 5ms to constantly ensure a perfect match of the equipment with the machine.



## COMPACT BUT COMPLETE

CEMAS machines are the most compact machines available on the market, keeping engineering and vibration features unchanged, thus favoring ergonomics.



## ERGONOMIC LOADING STATION

Special care was devoted to the manual loading steps of the process, both for small and large machines: to minimize effort on the backbone, the loading/unloading area was kept as close as possible to operator. There are no machines of the same class available on the market where this distance is so small.



## NO COMPROMISE FOR QUALITY

All the components used by CEMAS are from the world leading suppliers and never from sub-brands.

Safety is our ultimate goal, as well as a prompt availability of spares worldwide.



## SAFE

Light curtains are fitted as a standard to ensure maximum operator safety and to further decrease the total cycle time of each welding. Light curtains are integrated to protect them against collisions and as a result of an extremely accurate and well defined design.



## EASY MAINTENANCE

The use of the latest-generation electronic components has resulted in a remarkably small control panel. This change has totally cleared an inner compartment and has made tooling maintenance and set up operations easier.



## QUICK VIBRATION STOP

This cutting edge feature can zero the vibration in less than 50 ms, for a more homogeneous and resistant joint.





## INNOVATIVE OPERATOR INTERFACE SYSTEM

Accurate does not mean complicated: no other machine on the market is so "user friendly".

We have made a big effort in designing our video graphic to simplify any operation. Actually, there would be no need for operator's training.

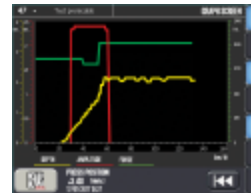
- Switching to your language is as simple as pressing a key
- Parameters can be set to include up to 8 different welding steps
- Tool movement graphic programming: no need to call us for a new tool!
- Monitoring of the "just in time" process by displaying welding diagrams
- Constantly linked to CEMAS through the Teleservice system for diagnostics and customer's service on line



Statistical analysis



Tool programming



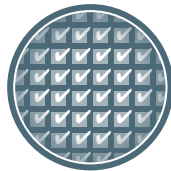
Graph screen



Production screen

## 63 TOOL MEMORIES

The machine can store up to 63 different equipment parameters, of which 31 are automatically acknowledged. Data can be easily copied to other machines if needed.



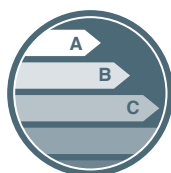
## HIGHLY CUSTOMIZABLE

Many standard features included in our machines are optionals for competitors and, should this not be enough, just turn the page to discover a full range of over 60 optionals for your tailor-made machines.



## ENERGY SAVING TECHNOLOGY

Big welding area and low power required: this is energetic efficiency!



## FULL ELECTRIC

Thanks to an "user friendly" electrical engine, able to meet even the most stringent requirements, the machines are cleaner, faster and really efficient from a power consumption point of view, especially if compared to the traditional hydraulic machines. This ensures an incomparable production rate capability.



**Top quality  
and cost-effectiveness**



## INPUT

Power supply	[50HzThree-phases+N+GND]	a.c. 400V
Pneumatic power (min.)	[bar]	5
Maximum power required (peak load)	[KW]	25

## OUTPUT

Upper tool weight	[Kg]	30÷75
Generator power	[KW]	18
Vibration frequency	[Hz]	220÷240
Vibration amplitude	[mm]	0,4÷1,8
PP equivalent welding area	[cm²]	400

## MECHANICAL DATA

Vibration plate dimensions	[mm]	945 × 540
Lifting table stroke	[mm]	500
Lifting table maximum speed	[mm/s]	500
Clamp net force (Gross)	[KN]	21 net (26)
Lifting table dimensions	[mm]	1400 × 750
Lifting table height	[mm]	1000
Front-door span	[mm]	1400 × 750
Upper door threshold	[mm]	1720
Lower tool weight	[up to Kg]	-
Clearance between planes	[mm]	700
Overall dimensions	[W×D×H mm]	3420 × 1830 × 2340
Total weight	[Kg]	6200
Movement type		

## CONTROL

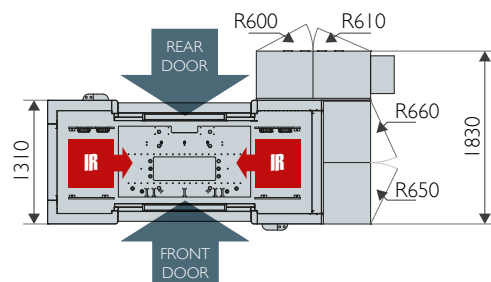
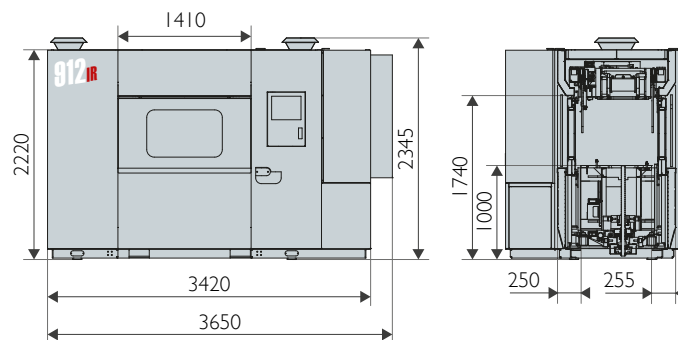
PLC Control	Siemens CPU I5125P
Operating panel	Siemens Pc Panel IPC 477D
Vibration frequency tuning *	Continuous REALTIME
Welding steps [pressure, amplitude]	8
Welding depth sensitivity [mm]	0,01
Work settings memory	31 automatic equipment + 32 manual
Type of communication	Profibus/Ethernet

## REFERENCES

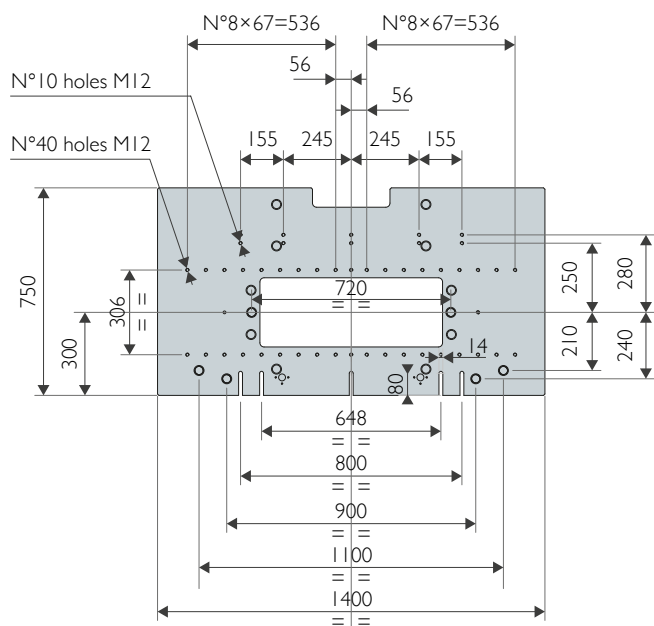
Noise level **	[dB din 45635]	≤ 80
Work outcome definition		Automatic (good/scrap)
Work outcome printer		Custom Plus
Holes on planes compatible with		Branson M-522H, M-624H and M6i3
Work pneumatic movements		4 (opt. up to 8) valves and 2 vacuum circuits
Remote-assistance		Optional

\* Thanks to our third-generation controller we have been able to eliminate the necessity of the auto-tuning cycle: the machine can adapt to the vibration frequency in real-time following the mechanical reactions of the vibrating system. Therefore, the outcome is a neater and more efficient vibration than the one obtained employing second-generation old systems.

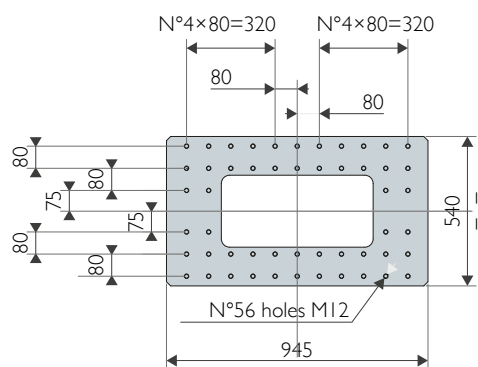
\*\* Peak values can be higher for short periods depending on the application.



## BOTTOM PLATE



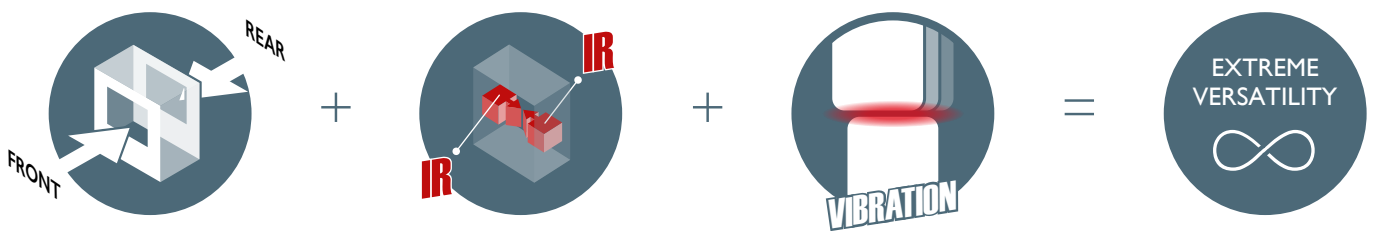
## UPPER PLATE



# DOUBLE OPENING FOR DOUBLE PRODUCTIVITY

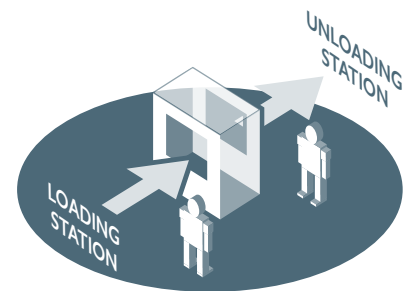
Thanks to the integration of two of the most complex welding technologies (vibration and infrared) in a **single, slim and compact body**, this unique machine, produced and patented solely by CEMAS ELETTRA, can weld, with **excellent aesthetic results**, components that would not be possible to weld only by vibration technology.

Designed especially for rear lamps (that can be welded up to 4 cavities), air intake manifolds and spoilers, this machine is equipped with **infrared emitters, housed on the right and on left of the press** which, moving only in horizontal, leave the backside of the machine free and accessible. All the movements are driven by electric, servo controlled motors, and this allows the machine not only to meet the highest standards of cleanliness, but also to achieve unmatched levels of speed and accuracy.



## 1. TWO OPERATORS

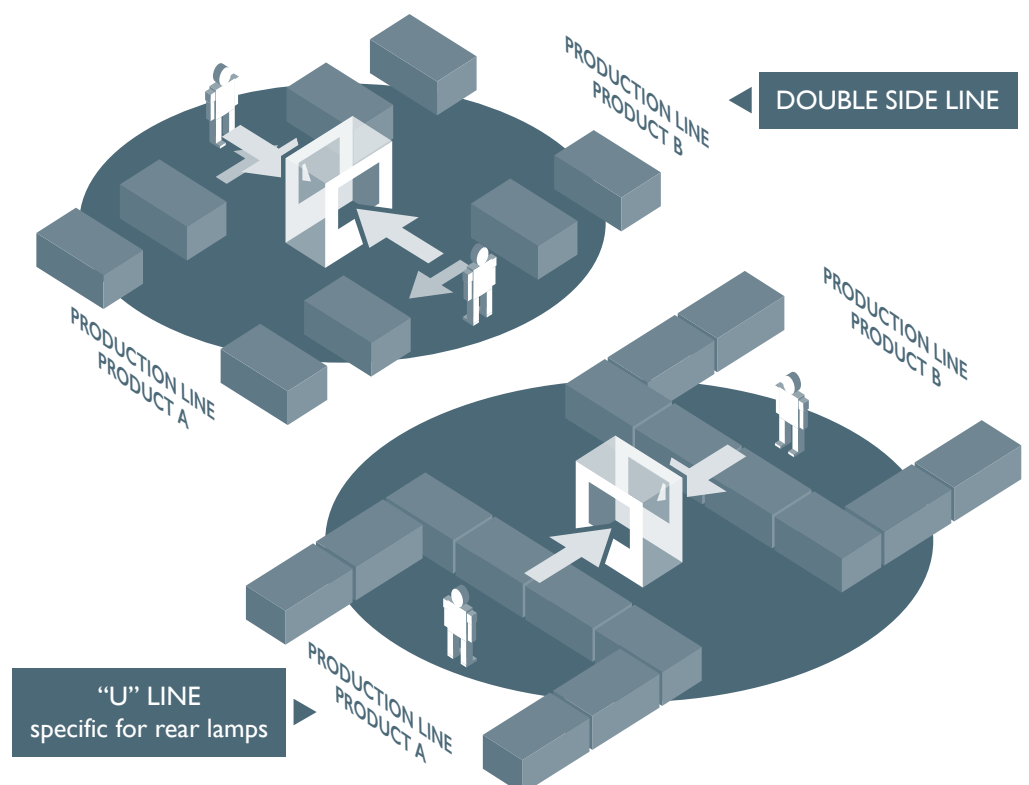
If required, it is **possible to insert a rear sliding door** to facilitate the operations of loading and unloading of the components. The machine can be used by two operators or can be interfaced with automated external devices (such as robots), and, in this way, achieve significantly reduced cycle times.



## 2. TWO DIFFERENT PRODUCTION LINES

This is a double-sided machine, around which may be developed even **two different, perfectly specular, production lines** (besides to the classical ones in a row).

Furthermore, its hybrid nature, both extremely versatile and very precise, makes this machine one-of-a-kind, the first one designed to be **placed in highly productive lines**. Indeed, in case of need, it is **usable as standard pure vibration machine** (compatible with all the standards vibration tools).



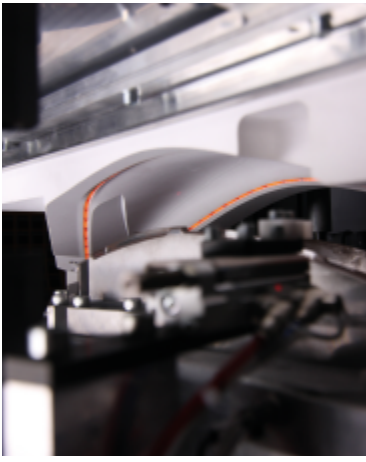
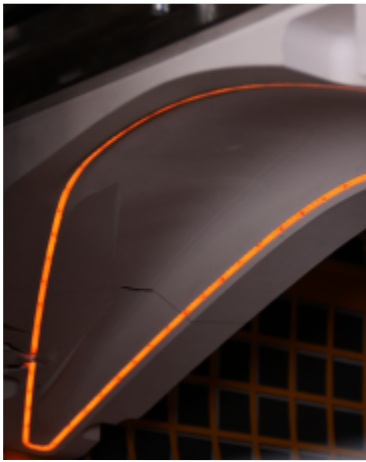


As everybody knows, the IR pre-heating process is the solution to some major criticalities in the traditional vibration process. Listing the pros of this technology is simply pointless as you have probably opted for it because you know exactly what we are talking about.

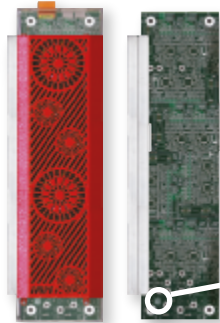
Therefore, we would like to focus on HOW CEMAS has been dealing with it; this is not simply a matter of adjusting previous components to current needs but to devote our best effort to research & development until achieving a technology and an electronic system able to meet even the most stringent requirements.

Every detail has been accurately considered and designed for our machine, to include the IR sources, the control units, the power supply units and the interface software: all this is now part of our highly innovative modular system aimed at improving the IR heating system and to make it cost-effective, user's friendly and highly reliable.

Each 912 IR can be equipped with up to 16 Infrared Modules **IRM**, take a look here below.



# Vibration Goes Hybrid!



Each medium wave emitter is operated by its own **IRM** controller



- ✓ Space saving solution
- ✓ Fully modular
- ✓ Smart design
- ✓ Easy maintenance

Proprietary technology that allows the **IRM** to retrofit existing third party machines via serial I/O sockets

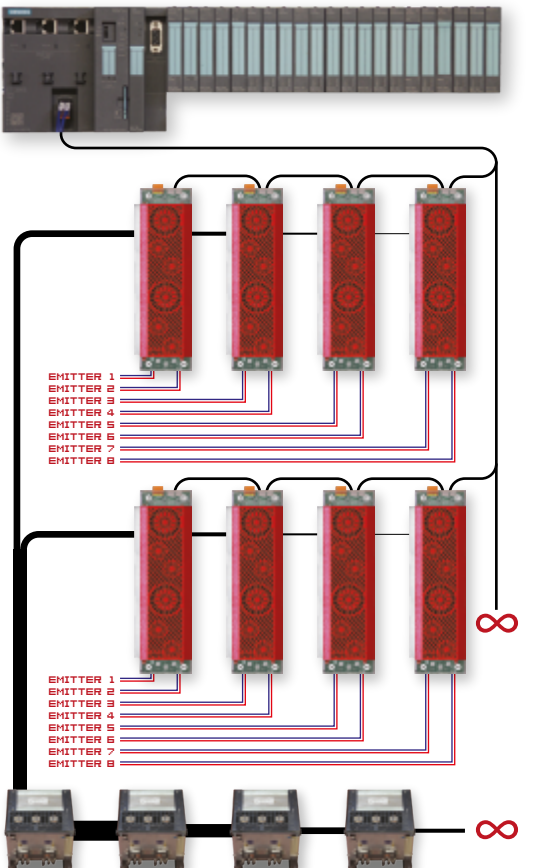


The ultra fast protocol communication enables a FULLY DIGITAL MODULAR ARCHITECTURE

For unrivaled management, diagnostic and flexibility

Any application can be satisfied

The **IRM** control modules are powered by specifically designed power units



Even the electrical power system is COMPLETELY MODULAR and can be freely configured based on your specifical power needs with VIRTUALLY NO LIMITS

# OPTIONALS

● Included

□ Optional

## DESCRIPTION

IR

Vacuum on upper tool	2	1
Pneumatic valves for tool movements	5	2
Part detection - signals	5	3
Automatic sliding back door	●	4
Safety light curtain front and back	●	5
Quick Vibration stop	●	6
LED lighting	●	7
31 automatic tool detections & up to 63 tools memories	●	8
Noise level ≤80dB	●	9
Quick pneumatic connection by Staubli - (8 lines RMI)	□	10
Quick pneumatic connection by Staubli - (12 lines RMI)	□	11
Pneumatic foot switch	□	12
Third vacuum circuit - VADMI Festo <sup>1</sup>	□	13
Vacuum pump (Brand Becker) with remote digital vacuumeter - (VT 4.10 Becker) <sup>2</sup>	□	14
Additional vacuum circuit with remote digital vacuumeter <sup>3</sup>	□	15
Remote digital vacuumeter <sup>4</sup>	□	16
Air gun outlet	□	17
Air gun outlet with ionized air	□	18
Automatic tool coupling system X2 (For quick lower tool changing) with additional hydraulic unit <sup>5</sup>	□	19
Upper plate with special insert <sup>6</sup>	□	20
Ball transfer units on lifting table	□	21
Trolley interface for toolchange on front side	□	22
Trolley interface for toolchange on rear side	□	23
Enlarged clearance between upper and lower plates = 750mm	□	24
EPS Enhanced Power Supply (upper tool up to 90 Kg) <sup>7</sup>	□	25
Traceability system (Included module wifi+barcode reader) <sup>8</sup>	□	26
Voltage stabilizer	□	27
UPS power backup	□	28
Power transformer	□	29
Modem digital/analogic for teleservice	□	30
Ethernet card/wireless module for remote connections	□	31
USB plug for production data downloading	□	32
BADGE reader	□	33
External label printer (Modello Zebra S4M)	□	34
Integrated mini printer (Ticket with welding parameters)	□	35
Robot connection setup	□	36
Part detection management - Additional signal up to 8°	□	37
Acoustic alarm warning	□	38
Light column <sup>9</sup>	□	39
Second push-buttons panel	□	40
External lighting high performance	□	41
220V Power socket on front side	□	42
Plugged electric cabinet	□	43
Additional 4 IR controllers (up to 16 zones)	□	44
Bar Code reader	□	45
Rear operative panel into electrical cabinet	□	46
External lighting normal neon	□	47
Start cycle optical button	□	48
Power transformer	□	49
Special color	□	50
Soundproof cabin with electrical cabinet and OP on left side	□	51

<sup>1</sup> Venturi system

<sup>2</sup> 1 vacuum circuit

<sup>3</sup> Optional with vacuum pump. Up to 3 circuits

<sup>4</sup> Optional with venturi system

<sup>5</sup> Mechanical stops + sensors + 2 hydraulic clamping system

<sup>6</sup> Suggested for frequent toolchange operations

<sup>7</sup> Welding surface > (400 mm² (PP) 901) - (500 mm² (PP) 911)

<sup>8</sup> According to customer requirements

<sup>9</sup> 4 colors