VIBRATION WELDER

911

COMPACT AND FLEXIBLE

CEMAS elettra

YOUR PARTNER
IN PLASTIC JOINING

Cutting edge technology and full equipment as a standard

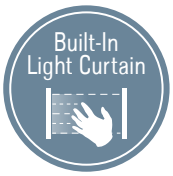
NO COMPROMISE FOR QUALITY

All components used by CEMAS are from world leading suppliers and never sub-brands.
Safety is our ultimate goal, as well as a prompt availability of spares worldwide.

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.

SAFE



Light curtains are fitted as a standard to ensure maximum operator safety, further to decreasing 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.

WIDE REAR OPENING

Since the very beginning, all our vibration range was conceived to get tool change from the back of the machine, as maintenance door opening size always exceeds the width of the press bed.

COMPACT BUT COMPLETE

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

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.

EASY MAINTENANCE

The use of the latest-generation electronic components has resulted in a remarkably smaller control panel, and in positioning the hydraulic unit below the control panel for the 240 Hz machines. This change has totally cleared an inner compartment and has made tooling maintenance and set up operations easier.

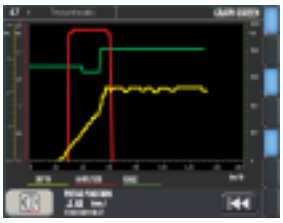
CLEAN AND QUIET

Hydraulic power-plant outside the working area.

INNOVATIVE OPERATOR INTERFACE SYSTEM

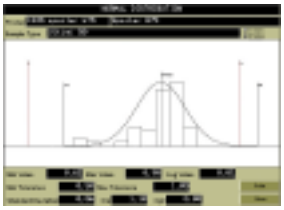
Accurate does not mean complicated: no other machine on the market is so "user friendly".
We have made a big effort in designing our video graphic to simplify any operation. Actually, there would be no need for operator's training.

- 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


Graph screen


Tool programming


Production screen


Statistical analysis

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.

ALWAYS AVAILABLE

Our standard machines are always available and can be rent to face even the most stringent production requirement in case of sudden demand increase.

Prompt Delivery

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.

ENERGY SAVING TECHNOLOGY

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

A
B
C

QUICK VIBRATION STOP

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

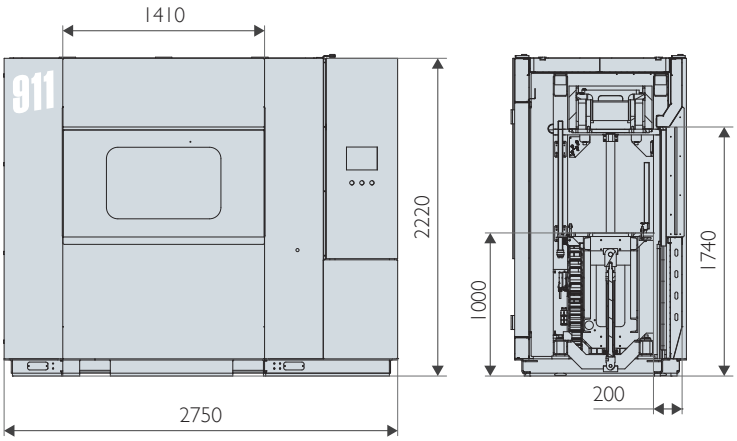
STOP

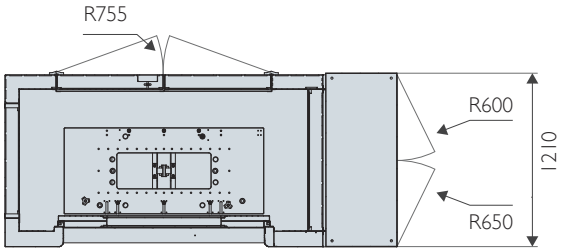
Top quality and cost-effectiveness

		ST	HL	SC	IR
INPUT					
Power supply	[50HzThree-phases+N+GND]	a.c. 400V	a.c. 400V	a.c. 400V	a.c. 400V
Pneumatic power (min.)	[bar]	5	5	5	5
Maximum power required (peak load)	[KW]	20	20	20	65
OUTPUT					
Upper tool weight	[Kg]	30÷75	30÷90	30÷75	30÷75
Generator power	[KW]	18	18	18	18
Vibration frequency	[Hz]	220÷245	220÷245	220÷245	220÷245
Vibration amplitude	[mm]	0,4÷1,8	0,4÷1,8	0,4÷1,8	0,4÷1,8
PP equivalent welding area	[cm^2]	400	500	400	400
MECHANICAL DATA					
Vibration plate dimensions	[mm]	945×540	945×540	945×540	945×540
Lifting table stroke	[mm]	500	500	500	600
Lifting table maximum speed	[mm/s]	250	250	500	500
Clamp net force (Gross)	[KN]	18 net. (23,5)	18 net. (23,5)	21 net. (26,5)	21 net. (26,5)
Lifting table dimensions	[mm]	1400×600	1400×600	1400×600	1400×600
Lifting table height	[mm]	1000	1000	1000	1000
Front-door span	[mm]	1400×750	1400×750	1400×750	1400×750
Upper door threshold	[mm]	1720	1720	1720	1720
Lower tool weight	[up to Kg]	-	-	-	-
Clearance between planes	[mm]	700	700	700	850
Overall dimensions	[W×D×H mm]	2750×1210×2240	2750×1210×2240	2750×1210×2240	2750×2010×2440
Total weight	[Kg]	4500	4500	4500	5500
Hydraulic oil tank	[Lt/ISO32]	80	80		
CONTROL					
PLC Control		Siemens IM 151 - ET200	Siemens IM 151 - ET200	Siemens S7-CPU 1512SP	Siemens S7-CPU 1512SP
Operating panel		Siemens TP 1200	Siemens TP 1200	Siemens TP 1200	Siemens Pc Panel IPC 477D/447E
Vibration frequency tuning *		Continuous REALTIME	Continuous REALTIME	Continuous REALTIME	Continuous REALTIME
Welding steps	[pressure, amplitude]	8	8	8	8
Welding depth sensitivity	[mm]	0,01	0,01	0,01	0,01
Work settings memory		31 automatic equipment + 32 manual	31 automatic equipment + 32 manual	31 automatic equipment + 32 manual	31 automatic equipment + 32 manual
Type of communication		Profinet/Profibus	Profinet/Profibus	Profinet/Profibus	Profinet/Profibus
REFERENCES					
Noise level **	[dB din 45635]	≤ 80	≤ 80	≤ 80	≤ 80
Work outcome definition		Automatic (good/reject)	Automatic (good/reject)	Automatic (good/reject)	Automatic (good/reject)
Work outcome printer		Custom Plus	Custom Plus	Custom Plus	Custom Plus
Holes on planes compatible with		Branson M-522H, M-622H and M6i3	Branson M-522H, M-624H and M6i3	Branson M-522H, M-624H and M6i3	Branson M-522H, M-624H, M6i3 and GVX3
Work pneumatic movements		2 (opt up to 10) valves + 1 (opt up to 2) vacuum circuits	4 (opt. up to 10) valves and 2 vacuum circuits	4 (opt. up to 10) valves and 2 vacuum circuits	4 (opt. up to 10) valves and 2 vacuum circuits
Remote-assistance		Optional	Included	Included	Optional
Automatic rear door (for rear loading/unloading)		Optional	Optional	Optional	

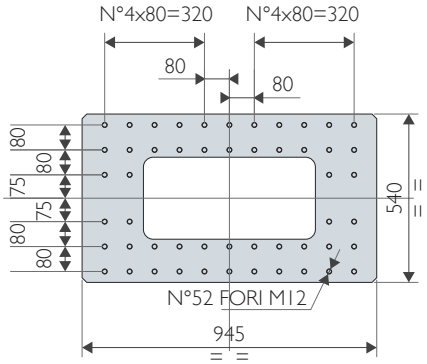
* Thanks to our third-generation controller we have been able to eliminate the necessity of the auto-tuning cycle: the machine can adapt to the vibration frequency in real-time following the mechanical reactions of the vibrating system. Therefore, the outcome is a neater and more efficient vibration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

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

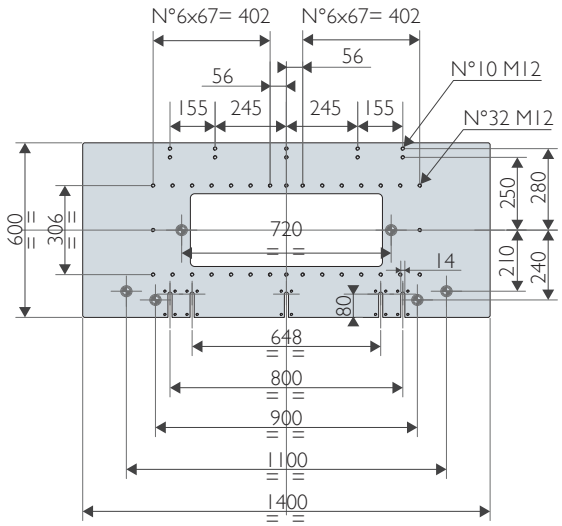




UPPER PLATE



LOWER PLATE



ST STANDARD VERSION

The most popular machine of its range.
Ideal for welding large taillights and intake manifolds, spoilers, etc.
The most versatile of its range, the machine comes in 4 versions and can be customized with 50 different accessories to meet the most stringent requirements for full customer's satisfaction.
One of the strengths of this welding machine is the capability of handling highly sophisticated operating cycles while still being extremely user's friendly.
Such features, common to all the other CEMAS vibration machines, are acknowledged and valued by all our customers worldwide.
For its unrivalled speed performances, the SC (Servo Controlled) model is the best choice for heavy production volumes.

HL HI LEVEL

The HL version is different to the standard one as it includes some features making the machine even more flexible an powerful than ever. Just to mention some of the major changes, the welding power has been increased, more complex equipment and cycles can now be controlled, a teleservice module and a heavy duty vibrating plate have been included to make the machine suitable to frequent equipment changes.

SC SERVO CONTROLLED

FULL ELECTRIC

Have a look to the speed and thrust features: this machine is as fast and powerful as a rocket, for an unequalled production rate capability. Some of the HL features are also included. Further to the improved performances, the machine is clean and efficient from the point of view of power consumption and by far the best when compared to the traditional hydraulic machines.

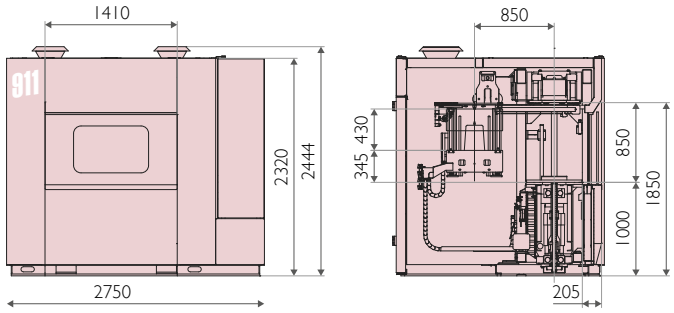
IR INFRA RED

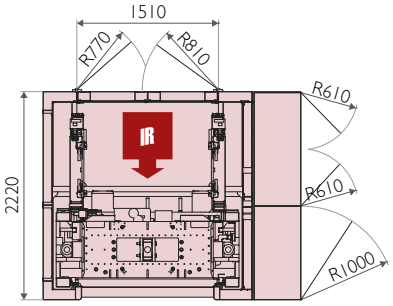
As everybody knows, the IR pre-heating process is the solution to some major criticalities in the traditional vibration process. Listing the pros of this technology is simply pointless as you have probably opted for it because you know exactly what we are talking about.

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.

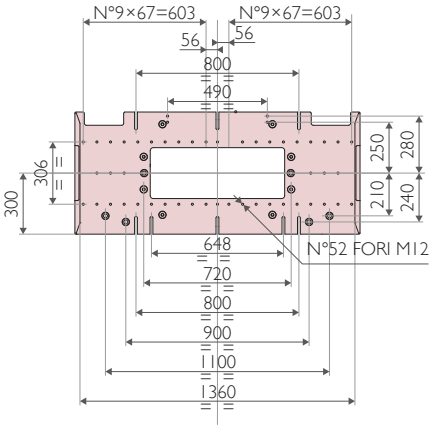
Every detail has been accurately considered and designed for our machine, to include the IR sources, the control units, the power supply units and the interface software: all this is now part of our highly innovative modular system aimed at improving the IR heating system and to make it cost-effective,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

Each 911 IR can be equipped with up to 16 Infrared Modules IRM, take a look here below.

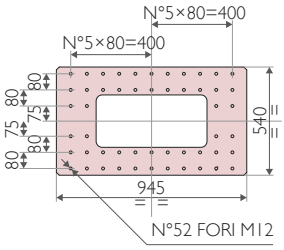




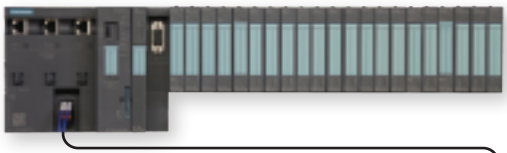
BOTTOM PLATE



UPPER PLATE



Vibration Goes Hybrid!



Each medium wave emitter is operated by its own IRM controller

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

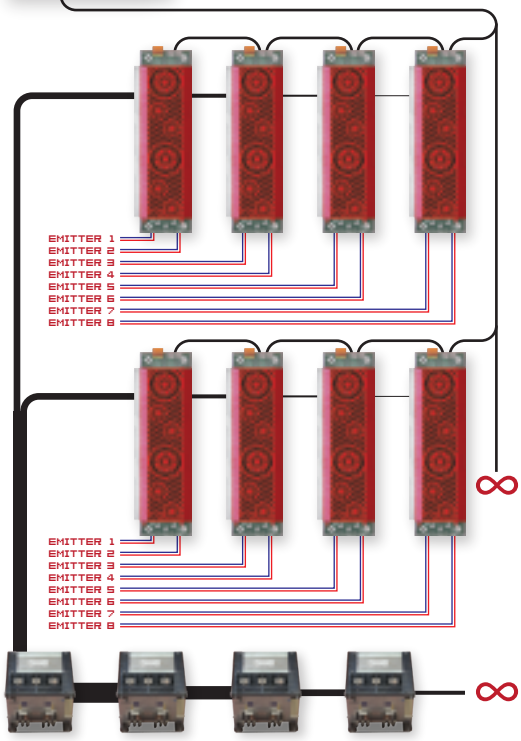
Proprietary technology that allows the IRM to retrofit existing third party machines via serial I/O sockets

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	ST	HL	SC	IR	
	Vacuum on upper tool	1	2	2	2	1
	Pneumatic valves for tool movements	2	5	5	8	2
	Part detection - signals	2	5	5	up to 8	3
	Clearance between upper and lower plates	700	700	700	850	4
	Opening for rear toolchange (180°)	●	●	●	●	5
	Safety light curtain	●	●	●	●	6
	Quick Vibration stop	●	●	●	●	7
	LED lighting	●	●	●	●	8
	31 automatic tool detections & up to 63 tools memories	●	●	●	●	9
	IR heating zones				8	10
	Noise level ≤80dB	●	●	●	●	11
	Quick pneumatic connection by Staubli - (8 lines RMC)	☐	☐	☐	☐	12
	Quick pneumatic connection by Staubli - (12 lines RMC)	☐	☐	☐	☐	13
	Additional pneumatic valve-up to 5	☐	●	●		14
	2° valve pack (+ N.5 valves / + N.3 for IR machines) - Festo	☐	☐	☐	●	15
	Second vacuum circuit - VADMI 140 Festo (upper or lower) [1]	☐	●	●	●	16
	Third vacuum circuit - VADMI 140 Festo (upper or lower) [1]	☐	☐	☐	☐	17
	Vacuum pump (Brand Becker) with remote digital vacuometer - (VX 4.10 Becker) [2]	☐	☐	☐	☐	18
	Additional vacuum circuit with remote digital vacuometer - Festo SDE [3]	☐	☐	☐	☐	19
	Remote digital vacuometer [4]	☐	☐	☐	☐	20
	Air gun outlet	☐	●	☐	☐	21
	Air gun outlet with ionized air	☐	☐	☐	☐	22
	Automatic tool coupling system ×2 (for quick lower tool changing) [5]	☐	☐	☐	☐	23
	Low pressure valve up to 300 Kg [6]	☐	☐			24
	High pressure valve up to 2300 Kg [7]	☐	●			25
	Extractable hidraulic unit	☐	☐			26
	Additional hydraulic unit for tool coupling			☐	☐	27
	Hydraulic Unit cooling system	☐	☐			28
	Upper plate with special insert [8]	☐	●	☐	☐	29
	Torsion bar	☐	●	☐	●	30
	Ball transfer units on lifting table ×8	☐	●	☐	●	31
	Ball transfer arms for rear toolchange	☐	☐	☐		32
	Trolley interface for toolchange on front & rear side	☐	☐	☐	☐	33
	Trolley interface for toolchange on front side + sicurity	☐	☐	☐	☐	34
	Trolley interface for toolchange on rear side + estension roller conveyor				●	35
	Enlarged clearence between upper and lower plates = 750mm [9]	☐	☐	☐		36
	Metal hinges	☐	☐	☐	☐	37
	Horizontal servo axe for "IR mirror"				☐	38
	"GVX 3" compatibility				☐	39
	Advanced HMI (SPC, hystoric data saving, USB data download)	☐	☐	☐	☐	40
	EPS Enhanced Power Supply (upper tool up to 90 Kg) [10]	☐	☐	☐	☐	41
	Traceability system (parameters recording into machine memory) [11]	☐	☐	☐	☐	42
	Voltage stabilizer (VARAT 400V -25% +15% / 30000 VA)	☐	☐			43
	Voltage stabilizer (VARAT 400V -25% +15% / 40000 VA)			☐	☐	44
	UPS power backup	☐	☐	☐	☐	45
	Electrical cabinet cooling system [12]	☐	☐	●	●	46
	Power transformer (440-480V)	☐	☐	☐	☐	47
	Digital modem for teleservice (EWON)	☐	●	●	☐	48
	Ethernet card/wireless module for remote connections	☐	☐	☐	☐	49
	USB plug for production data downloading and parameter recording	☐	●	☐	☐	50
	Badge reader	☐	☐	☐	☐	51
	External label printer (Modello Zebra S4M)	☐	☐	☐	☐	52
	Integrated mini printer (Ticket with welding parameters)	☐	●	●	●	53
	Robot connection setup	☐	●	☐	☐	54
	Part detection management - Additional signal up to 8° (each)	☐	☐	☐	☐	55
	Acoustic alarm warning	☐	●	☐	☐	56
	Light column [13]	☐	☐	☐	☐	57
	Light column (Balluff Smart Light)	☐	☐	☐	☐	58
	Second push-buttons panel	☐	☐	☐	☐	59
	External lighting high performance (sun light 5000-7000°K - 1000 LUX)	☐	☐	☐	☐	60
	External lighting normal LED	☐	☐	☐	☐	61
	230V Power socket on front side (each)	☐	☐	☐	☐	62
	Plugged electric cabinet	☐	☐	☐	☐	63
	Additional 4 IR controllers (up to 16 zones) [14]				☐	64
	Rear operative panel into left door	☐	☐	☐	☐	65
	Manual Bar Code reader (cable)	☐	☐	☐	☐	66
	Rear operative panel into electrical cabinet	☐	☐	☐	☐	67
	Start cycle optical button	☐	☐	☐	☐	68
	Special color	☐	☐	☐	☐	69
	Automatic vertical door on rear side	☐	☐	☐		70
	Rear door with transparent window	☐	☐	☐	☐	71
	Enlarged soundproof cabinet +200mm	☐	☐	☐		72
	Enlarged soundproof cabinet +1000mm	☐	☐	☐	●	73
	Soundproof cabin with electrical cabinet and OP on left side	☐	☐	☐	☐	74

1 Venturi system

2 1 vacuum circuit

3 Optional with vacuum pump. Up to 3 circuits

4 Optional with venturi system

5 Mechanical stops + sensors + hydraulic clamping system

6 Allow fine regulation when pressure is lower than 300 Kg

7 Allow fine regulation for pressure to 2300 Kg

8 Suggested for frequent toolchange operations

9 Enlarged clearance between upper and lower planes = 750

10 Welding surface > 500 mm^2 (PP)

11 According to customer requirements

12 On electrical cabinet and hydraulic unit

13 4 colors

14 IR line has already 8 controllers

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