

240Hz

# 918

## BIG INSIDE



YOUR PARTNER  
IN PLASTIC JOINING

# Cutting edge technology and full equipment as a standard

## NO COMPROMISE FOR QUALITY

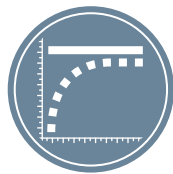
All the components used by CEMAS are from the world leading suppliers and never from sub-brands.

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



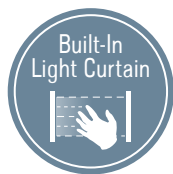
## REALTIME TUNING

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.



## 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.



## 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.



135 Kg  
240 Hz

## COMPACT BUT COMPLETE

CEMAS machines are the most compact machines available on the market, keeping engineering and vibration features unchanged, thus favoring ergonomics. The 918, in particular, is designed to have a broadened working surface (1700x650 mm lift table) and an upper tooling weight capacity up to 135 kg, but still working at 240 Hz.

## QUICK VIBRATION STOP

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



## EASY MAINTENANCE

The use of the latest-generation electronic components has resulted in a remarkably small 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.



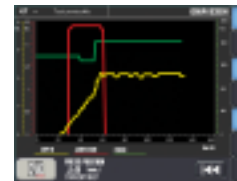
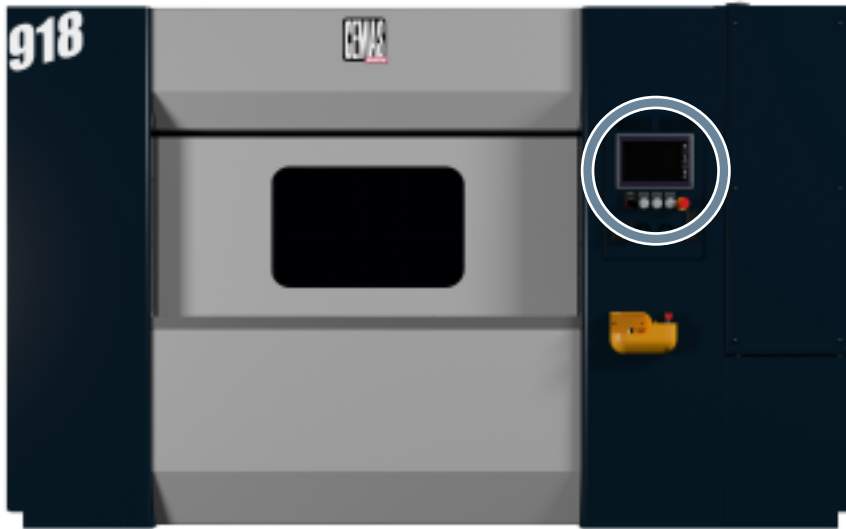


## INNOVATIVE OPERATOR INTERFACE SYSTEM

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



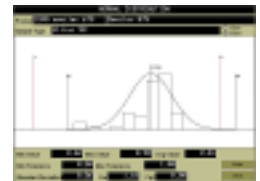
Graph screen



Tool programming



Production screen



Statistical analysis

## 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.



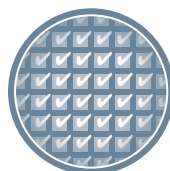
## WIDE REAR OPENING

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.



## 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.



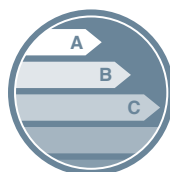
## CLEAN AND QUIET

Hydraulic power-plant outside the working area.



## ENERGY SAVING TECHNOLOGY

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



**Top quality  
and cost-effectiveness**

ST

IR

## INPUT

Power supply	[50HzThree-phases+N+GND]
Pneumatic power (min.)	[bar]
Maximum power required (peak load)	[KW]

a.c. 400V
5
20

a.c. 400V
5
25

## OUTPUT

Upper tool weight	[Kg]
Generator power	[KW]
Vibration frequency	[Hz]
Vibration amplitude	[mm]
PP equivalent welding area	[cm²]

90
18
220÷245
0,4÷1,8
500

90
18
220÷245
0,4÷1,8
500

## MECHANICAL DATA

Vibration plate dimensions	[mm]
Lifting table stroke	[mm]
Lifting table maximum speed	[mm/s]
Clamp net force (Gross)	[KN]
Lifting table dimensions	[mm]
Lifting table height	[mm]
Front-door span	[mm]
Upper door threshold	[mm]
Lower tool weight	[up to Kg]
Clearance between planes	[mm]
Overall dimensions	[W×D×H mm]
Total weight	[Kg]
Hydraulic oil tank	[Lt/ISO32]

945×540
500
250
17 net. (23,5)
1700×650
1000
1750×750
1720
-
200/700
3420×1310×2220
5200
80

945×540
500
500
20 net. (26,5)
1700×650
1000
1750×750
1720
-
250/850
3420×2310×2540
6400



## CONTROL

PLC Control	
Operating panel	
Vibration frequency tuning *	
Welding steps	[pressure, amplitude]
Welding depth sensitivity	[mm]
Work settings memory	
Type of communication	

Siemens IM 151 - ET200
Siemens TP 1200
Continuous REALTIME
8
0,01
31 automatic equipment + 32 manual
Profinet/Profibus

Siemens CPU 15125P
Siemens Pc Panel IPC 477D/477E
Continuous REALTIME
8
0,01
31 automatic equipment + 32 manual
Profinet/Profibus

## REFERENCES

Noise level **	[dB din 45635]
Work outcome definition	
Work outcome printer	
Holes on planes compatible with	
Work pneumatic movements	
Remote-assistance	

≤ 80
Automatic (good/scrap)
Custom Plus
Branson M-522H, M-624H and M6i3
4 (opt up to 10) valves and 2 vacuum circuits
Optional

≤ 80
Automatic (good/scrap)
Custom Plus
Branson M-522H, M-624H and M6i3
10 valves and 2 vacuum circuits
Optional

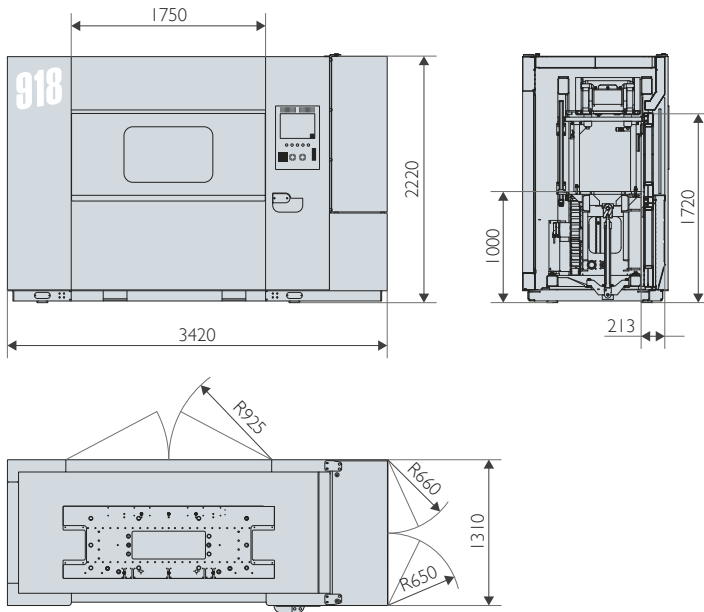
\* Thanks to our third-generation controller we have been able to eliminate the necessity of the auto-tuning cycle: the machine can adapt to the vibration frequency in real-time following the mechanical reactions of the vibrating system. Therefore, the outcome is a neater and more efficient vibration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

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

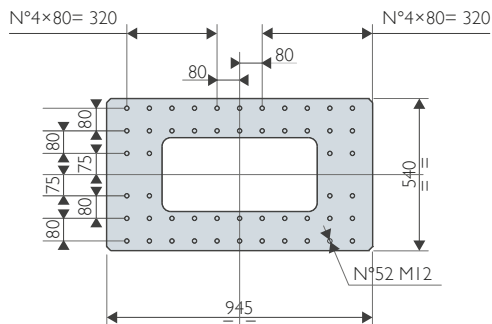
# ST STANDARD VERSION

The 918 embodies the best technology in the field of vibration welding, combining the versatility typical of our 901 and 911 welding machines (240Hz) with the extreme power of the 950 and 999 welding machines (100Hz). Stems from the need to weld those same products welded by 901 and 911 machines, but that, given their special features, require a strong welding force within an increased workspace: big components (spoilers), prestigious parts (PAB chutes), double figure (intake manifolds and rear lamps).

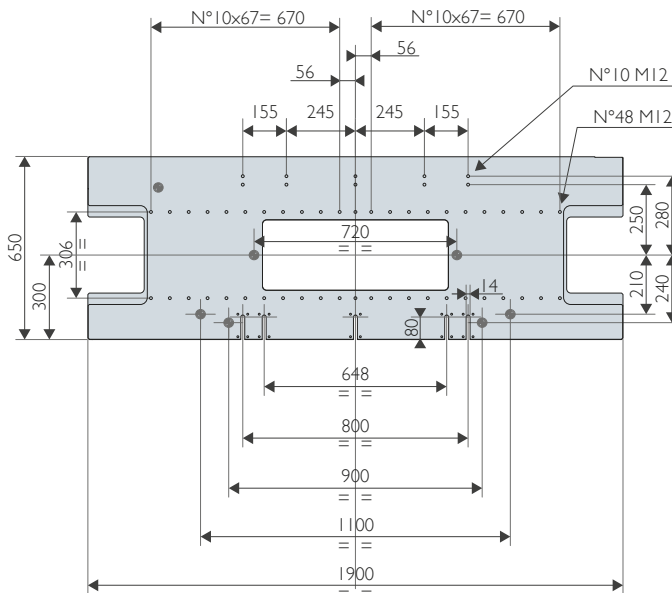
Therefore we have thought and designed a machine with the same technical characteristics of the 911 HL, with a broadened working surface; essentially, a larger and more capacious welding machine, that still works at 240Hz.



## UPPER PLATE



## LOWER PLATE



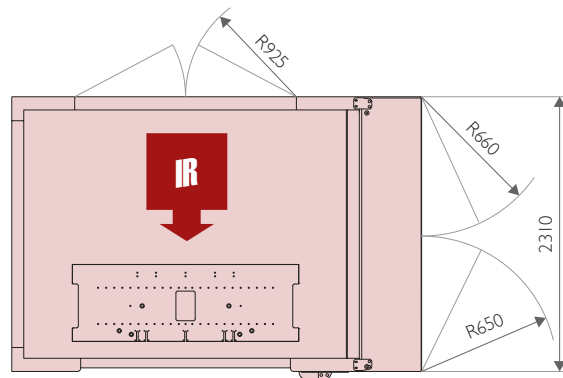
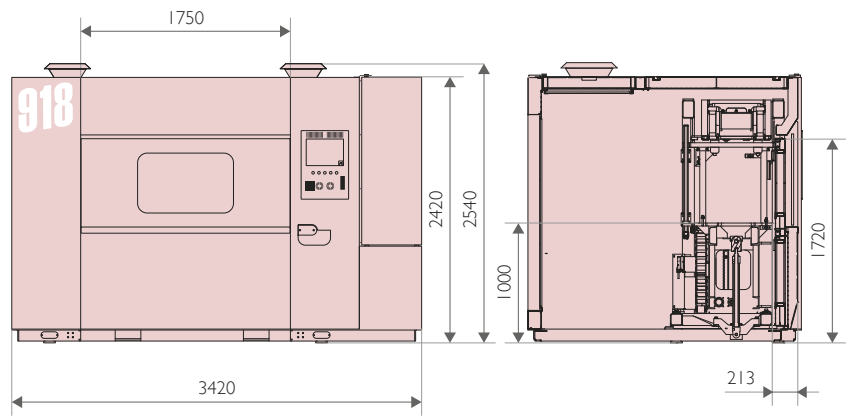
# IR INFRA RED

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 918 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

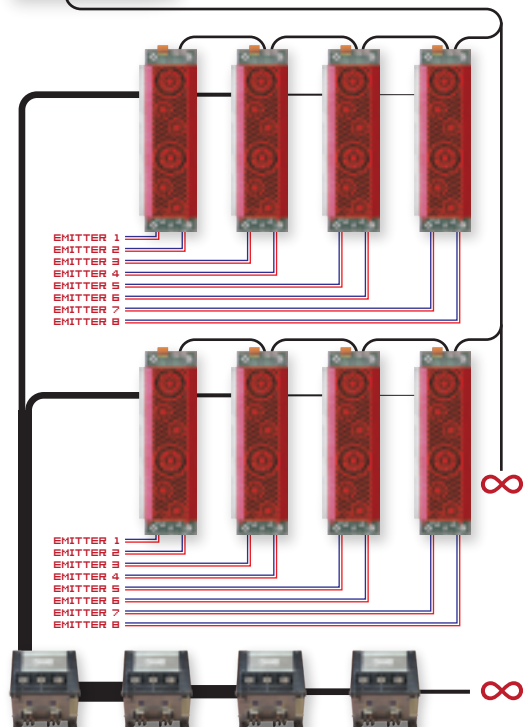
Proprietary technology that allows the **IRM** to retrofit existing third party machines via serial I/O sockets

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 specific power needs with VIRTUALLY NO LIMITS



# OPTIONALS

● Included

□ Optional

## DESCRIPTION

	ST	IR	
Vacuum on upper tool	1	2	1
Pneumatic valves for tool movements	2	10	2
Part detection - signals	2	up to 8	3
Clearance between upper and lower plates	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		12	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 <sup>1</sup>	□	●	15
Second vacuum circuit - VADMI 140 Festo (upper or lower) <sup>1</sup>	□	●	16
Third vacuum circuit - VADMI 140 Festo (upper or lower)	□	□	17
Vacuum pump (Brand Becker) with remote digital vacuumeter - (VX 4.10 Becker) <sup>2</sup>	□	□	18
Additional vacuum circuit with remote digital vacuumeter - Festo SDE <sup>3</sup>	□	□	19
Remote digital vacuumeter <sup>4</sup>	□	□	20
Air gun outlet	□	□	21
Air gun outlet with ionized air	□	□	22
Automatic tool coupling system ×2 for small machines (for quick lower tool changing) <sup>5</sup>	□	□	23
Low pressure valve up to 300 Kg	□		24
High pressure valve up to 2300 Kg <sup>6</sup>	□		25
Extractable hydraulic unit	□		26
Additional hydraulic unit for tool coupling		□	27
Hydraulic Unit cooling system	□		28
Upper plate with special insert for small machines <sup>7</sup>	□	□	29
Torsion bar	●	●	30
Ball transfer units on lifting table ×8 (for small machine)	□	●	31
Ball transfer arms for rear toolchange	□		32
Trolley interface for toolchange on front and rear side	□	□	33
Trolley interface for toolchange on front side + security	□	□	34
Trolley interface for toolchange on rear side + extension roller conveyor		●	35
Enlarged clearance between upper and lower plates = 750mm <sup>8</sup>	□		36
Metal hinges	□	□	37
Horizontal servo axe for "IR mirror"		□	38
Advanced HMI (SPC, hystoric data saving N.xxx, USB data download)	□	□	39
EPS Enhanced Power Supply (upper tool up to 90 Kg)	●	●	40
Traceability system (parameters recording into machine memory) <sup>9</sup>	□	□	41
Voltage stabilizer (VARAT 400V -25% +15% / 30000 VA)	□		42
Voltage stabilizer (VARAT 400V -25% +15% / 40000 VA)		□	43
UPS power backup	□	□	44
Electrical cabinet cooling system <sup>10</sup>	□	●	45
Power transformer (440-480V)	□	□	46
Digital modem for teleservice (EWON)	□	□	47
Ethernet card/wireless module for remote connections	□	□	48
USB plug for production data downloading and parameter recording	□	□	49
BADGE reader	□	□	50
External label printer (Modello Zebra S4M)	□	□	51
Integrated mini printer (Ticket with welding parameters)	□	●	52
Robot connection setup	□	□	53
Part detection management - Additional signal up to 8° (each)	□	□	54
Acoustic alarm warning	□	□	55
Light column <sup>11</sup>	□	□	56
Light column (Balluff Smart Light)	□	□	57
Second push-buttons panel	□	□	58
External lighting high performance (sun light 5000-7000°K - 1000 LUX)	□	□	59
External lighting normal LED	□	□	60
230V Power socket on front side (each)	□	□	61
Plugged electric cabinet (only for SC/IR version)	□	□	62
Additional 4 IR controllers (up to 16 zones) <sup>12</sup>		□	63
Rear operative panel into left door	□	□	64
Manual Bar Code reader (cable)	□	□	65
Rear operative panel into electrical cabinet	□	□	66
Start cycle optical button	□	□	67
Special color	□	□	68
Automatic vertical door on rear side	□		69
Rear door with transparent window	□	□	70
Enlarged soundproof cabinet +100mm	□		71
Enlarged soundproof cabinet +1000mm	□	●	72
Soundproof cabin with electrical cabinet and OP on left side	□	□	73

<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 + hydraulic clamping system

<sup>6</sup> Allow fine regulation for pressure to 2300 Kg

<sup>7</sup> Suggested for frequent toolchange operations

<sup>8</sup> Enlarged clearance between upper and lower planes = 750

<sup>9</sup> According to customer requirements

<sup>10</sup> On electrical cabinet and hydraulic unit

<sup>11</sup> 4 colors

<sup>12</sup> IR line has already 8 controllers



## ● PRODUCTION PLANTS



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