



**Ritmo**  
PLASTIC WELDING TECHNOLOGY

# POLYFUSION 3

## PNEUMATIC SHEET WELDING MACHINE





## **Pneumatic sheet welding machine POLYFUSION 3**

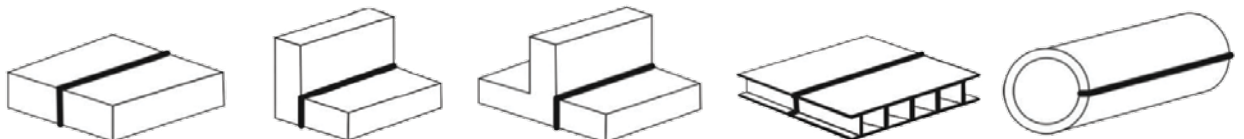
### **CNC welding cycle**

#### **Compliant with welding standards DVS 2207**

PE (DVS 2207-1); PP (DVS 2207-11); PVC-U (DVS 2207-12); PVC-C (DVS2207-13); PVDF (DVS 2207-15)

**Weldable materials: sheet in PVC, PE, PP, PVDF; twin walls in PE and PP.**

**Welding range\* 3 ÷ 50 mm solid wall; max 60 mm twin walls**



- Folding lateral supports with bearing balls for the easy sheet movements
- High density of locking clamps: they provide an homogeneous pressure distribution capable of stopping both large and thin thicknesses sheets, and working with long or short sheets
- Led lights through the entire welding area
- New Ritmo "AirPlus" system allows to complete a welding cycle even in the event of an unexpected fault of the air supply in your building
- A PLC control panel allows the operator to program the working cycle quickly with the help of an intuitive touch screen
- The "Adjusty" system automatically adjusts the distance between heating plate and machine edge according to the thickness of the sheets. With thin sheets the system permits a welding without overlapping while for thick sheets enough space for the bead is guaranteed
- Internal memory for unlimited number of welds
- Download report in CSV format
- USB port
- Unlimited welding pre-setting (customized or preferred) easy to be recalled
- Wide range of optionals and accessories to expand its functionality

\* For more details on the working range, see tables on pages 17 and 18



## VERSATILE

- Welds up to 3 mt length
- Materials: PVC, PE, PP, PVDF
- Designed for both Solid-wall and twin-wall
- Three configurable clamps heights
- Welds from 3 mm to 60 mm thickness
- Suitable for small size sheets welding
- Working pressures: nominal 7 bar - maximum 9,5 bar
- Type of butt fusion welding:  
Straight  
90 ° welding \*\*  
T welding \*\*  
Circular welding \*\*

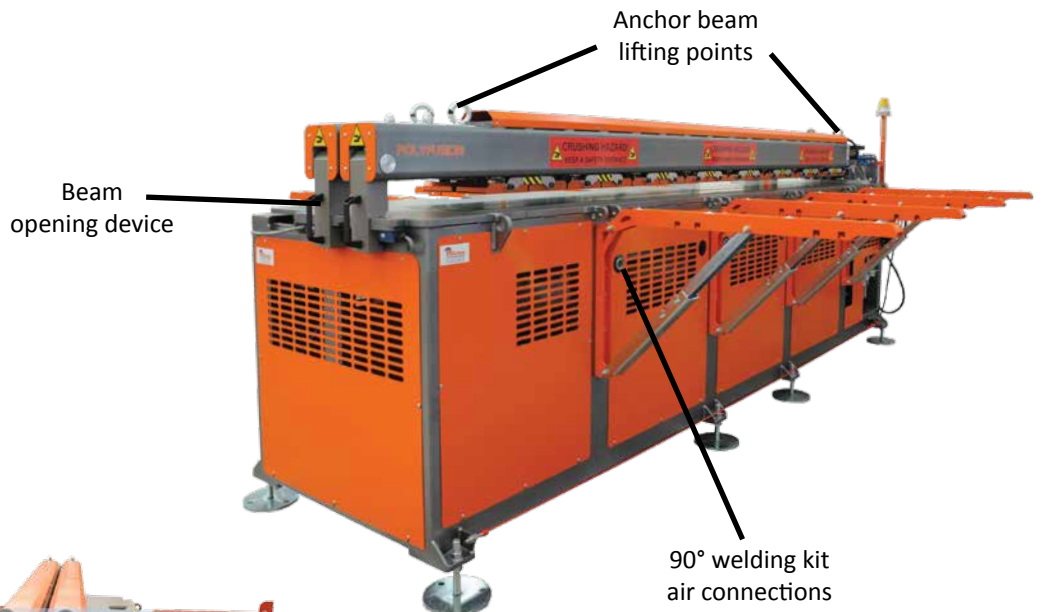
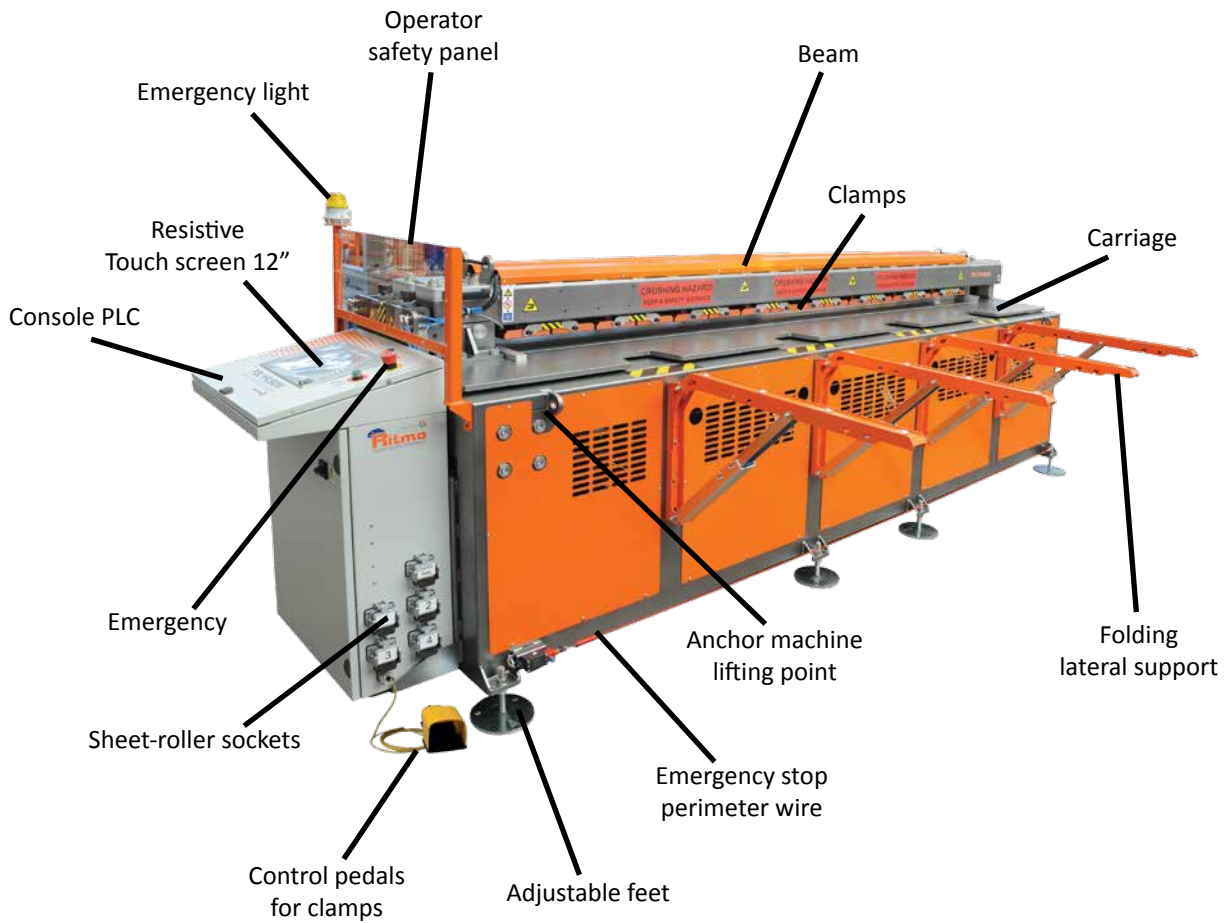
## PRECISE

- High density locking clamps that provide an homogeneous pressure distribution
- Led lights through the entire welding area
- Graduated scales to set the sheet in position
- Constant stabilizing pressure control
- Additional overboost to reach 9,5 bar configuration\*\*

## COMPLETE

- 4 independent welding areas
- CNC welding cycle
- Pre-setting store and recall parameters
- PLC control panel
- 12" touch screen
- Remote control and analysis
- Diagnostic feature
- Upgradable Software via USB

\*\* Accessory on request





## CONTROL PANEL

- PLC Console
- 12" colour touch screen
- VPN - Virtual Private Network
- Remote Diagnostic available
- USB port
- Unlimited store of welding report
- Unlimited store of pre-setting parameters and possibility to recall them
- Welding cycles management according to the standards or customizable

Pre-set welding standards:

- PE (DVS 2207-1)
- PP (DVS 2207-11)
- PVC-U (DVS 2207-12)
- PVC-C (DVS 2207-13)
- PVDF (DVS 2207-15)

Twin wall pre-set parameters on suggested values:

PANELTIM - RÖCHLING - SIMONA



## CLAMPS

- Pneumatic clamps
- 4 clamping areas for 4 working areas
- High density of clamps homogeneous pressure distribution
- Suitable for small size sheets welding



## LATERAL SUPPORTS



Folding lateral supports with bearing balls for easy sheet movements



Connecting beams for lateral supports, allow positioning short sheets

## SPACERS



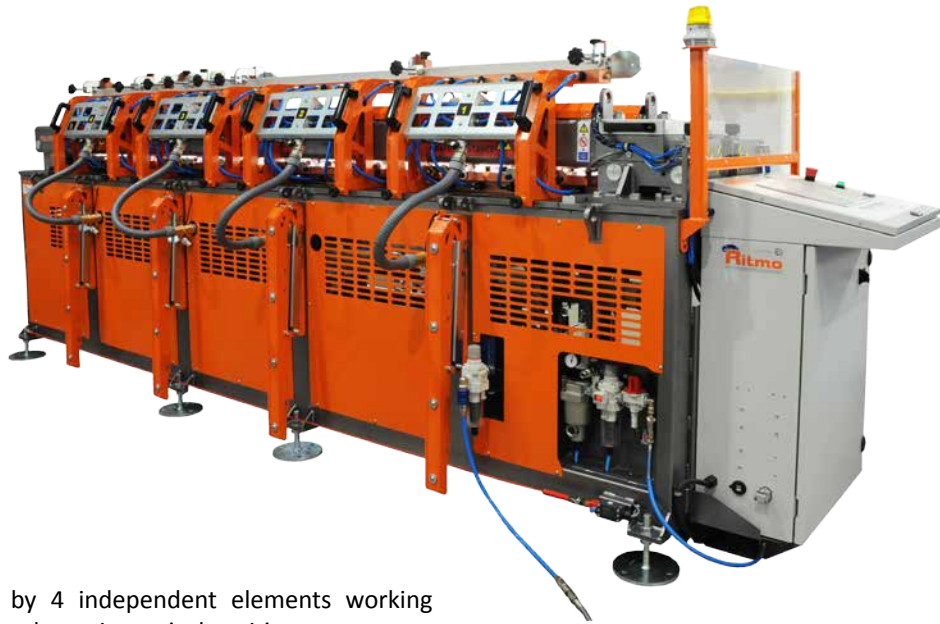
Spacers to increase the welding range allow different welding thicknesses divided in three areas:

- 1 - from 3 mm to 20 mm
- 2 - from 25 mm to 40 mm
- 3 - from 50 mm to 60 mm



**EXPERIENCE  
TECHNOLOGY  
QUALITY**

## 90° WELDING KIT ON REQUEST



90° welding kit is composed by 4 independent elements working together to support one or more sheets in vertical position. A remoted control vacuum pump hold the sheets firmly.

Graduated scales allow quick and precise centering of the sheets to be welded.

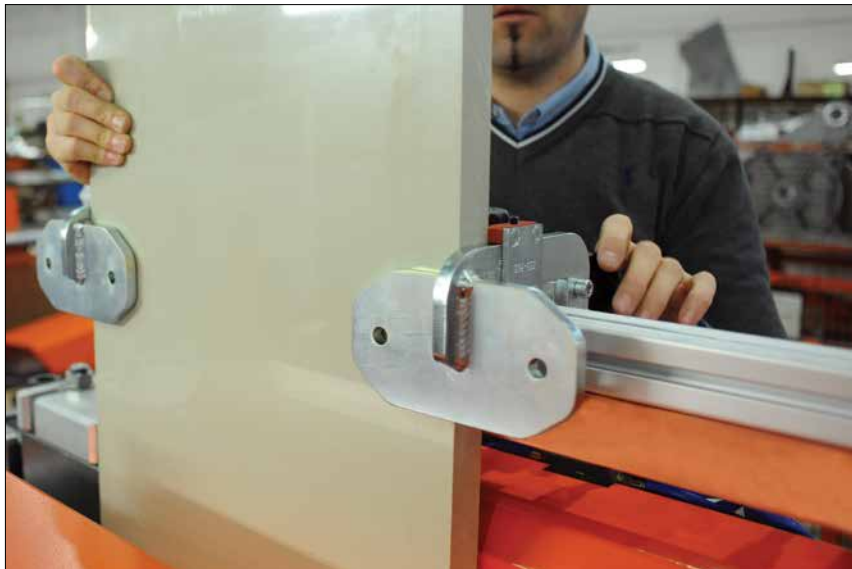


Vacuum holding system sheets supports



Horizontal positioning frame





Vertical positioning and fixing for the sheet



Sheet in place and ready to be welded



**CIRCULAR  
WELDING KIT  
ON REQUEST**



Made up of a set of accessories that can be supplied with “add-ons” to allow a customized configuration of the machine according to your needs.

**SHEET ROLLING  
DEVICE  
BASIC KIT**

BASIC Kit  
indispensable for circular welding.

**SHEET ROLLING  
DEVICE  
PLUS KIT**

PLUS Kit  
it needs the sheet rolling device BASIC Kit

**SHEET ROLLING  
DEVICE  
TOP KIT**

TOP Kit  
it needs the sheet rolling device BASIC Kit

**SHEET ROLLING  
DEVICE  
BASIC KIT  
ON REQUEST**



Removable control panel manage different working combinations of the four pulling belts operated by four independent electric motor



Four independent electric motors pull the belts to help in rolling the sheet



The curved slides help sheets up to 15 mm\* thick to roll and set in place to be clamped

\* depending on the diameter of the circle



The curved slides can overturn to be used as flat lateral supports



**PLUS KIT**  
ON REQUEST



Flat slides for sheets higher  
15 mm to roll in place



Pulling belts in action



**TOP KIT**  
ON REQUEST



Control panel for push-up the lateral pneumatic cylinders to help the sheet to roll.



Pushing cylinder works also as lateral support



**DETAILS  
AND SOLUTIONS  
THAT MAKE THE DIFFERENCE**



## TECHNICAL FEATURES

Weldable materials	PE; PP; PVDF; PVC-C; PVC-U***
Sheet type	Solid wall, twin wall
Sheet max. width	3050 mm
Min. weldable thickness	3 mm (minimum width = 2 m)
Max. Welding thickness (straight and 90° welding only). Thickness in circular welding, may vary depending on the mechanical setting of the mean beam	Solid wall up to 50 mm* Twin wall up to 60 mm
Straight butt-fusion	v
90° or T shape butt-fusion **	v (solid wall only)
Circular welding ** Contact Ritmo for more information	v (solid wall only)
Sheet clamping	pneumatic in 4 sectors
Sheet clamping for 90° welding	vacuum and pneumatic in 4 sectors
Sheet clamping for circular welding	pneumatic in 4 sectors
Control Panel	PLC in fixed position
Coloured Display	LCD 12"
Welding cycle	CNC
Pre-set recall	v
Reports	CSV
Memory	limitless
Power supply	400 V Three Phases 50÷60 Hz
Absorbed power	11.5 kVA
Working temperature	180° ÷ 250° C
Minimum thrust	600 N
Maximum thrust at 7 bar	15.65 kN
Maximum thrust at 9,5 bar	22.87 kN
Minimum requirements pneumatic supply	7 bar capacity= 300 l/min
Maximum requirements pneumatic supply	9,5 bar
Machine sizes (standard configuration with opened supports)	4307 x 2673 x 1508 mm
Weight	2550 Kg

\*\*\* PVC - C/U material - welding pressure min 8,25 bar, max weldable thickness 15 mm

\*\* on request

\* at 7 bar the 50 mm PE (0.15N / mm<sup>2</sup>) can be welded with max width = 2 m. The 50 mm PP (0.10N / mm<sup>2</sup>) can be welded with max width = 3 m  
at 9.5 bar the 50 mm PE (0.15N / mm<sup>2</sup>) can be welded with max width = 3 m. The 50 mm PP (0.10N / mm<sup>2</sup>) can be welded with max width = 3 m

## PERFORMANCES

### DVS 2207 STANDARDS



#### Max. Weldable thickness (solid wall only)

Material	Interface pressure	7 Bar Max weldable area mm <sup>2</sup> (sheet width) x (thickness)	9,5 Bar Max weldable area mm <sup>2</sup> (sheet width) x (thickness)
PE	(0,15 N/mm <sup>2</sup> )	104337	152492
PP	(0,10 N/mm <sup>2</sup> )	156505	228738
PVDF	(0,10 N/mm <sup>2</sup> )	156505	228738
PVC - C (max thickness 15 mm)	(0,50 N/mm <sup>2</sup> )	31301	45748
PVC - U (max thickness 15 mm)	(0,60 N/mm <sup>2</sup> )	26084	38123

Example: PE Material - welding pressure 9,5 bar - DVS 2207-1 : 2015 standard  
 152492 mm<sup>2</sup> (Max weldable area) : 3050 mm (sheet width) = 50 mm max weldable thickness  
 PVC - C/U material - welding pressure min 8,25 bar, max weldable thickness 15 mm

#### \*\*\* Example of circular welding

Material	thickness	min diameters	Accessories on request sheet rolling device
pp	6 mm	500 mm	BASIC Kit
	10 mm	600 mm	BASIC Kit
	15 mm	800 mm	BASIC Kit
	20 mm	2000 mm	BASIC Kit + PLUS Kit + TOP Kit
	30 mm	3000 mm	BASIC Kit + PLUS Kit + TOP Kit
PE	12 mm	500 mm	BASIC Kit + TOP Kit

\*\*\* The minimum diameter is calculated based on the geometric characteristics of the machine. The range of diameters that can be produced and their thickness are bound to the use of external systems such as overhead cranes, forklifts etc. and the permissible strain of the outer fibers of the material. Refer to the material datasheet of the manufacturer for further information in this regard.

# DESIGNED TO ACHIEVE YOUR GOALS

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