Ritmo
PLASTIC WELDING TECHNOLOGY

POLYFUSION 3
POLYFUSION 4
SHEET WELDING MACHINES

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Pneumatic sheet welding machines

CNC welding cycle

Compliant with welding standards DVS 2207

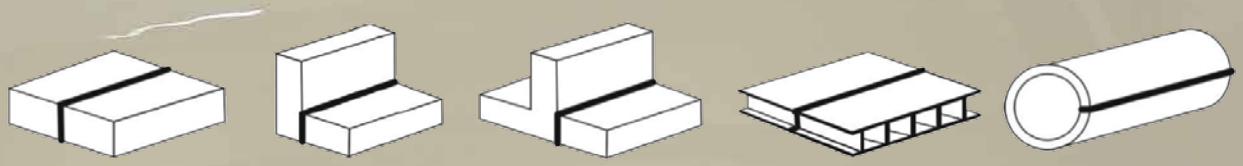
PE (DVS 2207-1); PP (DVS 2207-11); PVC-U (DVS 2207-12); PVC-C (DVS2207-13); PVDF (DVS 2207-15)

Weldable materials: PVC, PE, PP, PVDF; and PE, PP twin wall sheet

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

- Folding lateral supports with bearing balls for easy sheet movements
- High density of locking clamps: they provide an homogeneous pressure distribution capable of stopping both thick and thin 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 sets of welding parameters (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 ”Technical Features” and “Performances”.



VERSATILE

- **Polyfusion 3**
  welds up to 3 mt width
  Working pressures:
  minimum 7 bar - maximum 9,5 bar

- **Polyfusion 4**
  welds up to 4 mt width
  Working pressures:
  minimum 7 bar - maximum 8 bar

- Materials: PVC, PE, PP, PVDF
- Disegned for both solid and twin wall sheets
- Welds from 3 mm to 50 mm thickness; 60 mm twin wall sheet
- Suitable for small size sheets welding

PRECISE

- High density locking clamps that provide an homogeneous pressure distribution
- Three configurable clamps heights
- Led lights through the entire welding area
- Graduated scales to set the sheet in position
- Constant stabilizing pressure control

COMPLETE

- Type of butt fusion welding:
  Straight
  90 ° welding **
  T welding **
  Circular welding **
- 4 independent welding areas
- CNC welding cycle
- Set of parameters store and recall
- PLC control panel
- 12” touch screen
- Remote control and analysis
- Diagnostic feature
- Software update via USB

** Accessory on request

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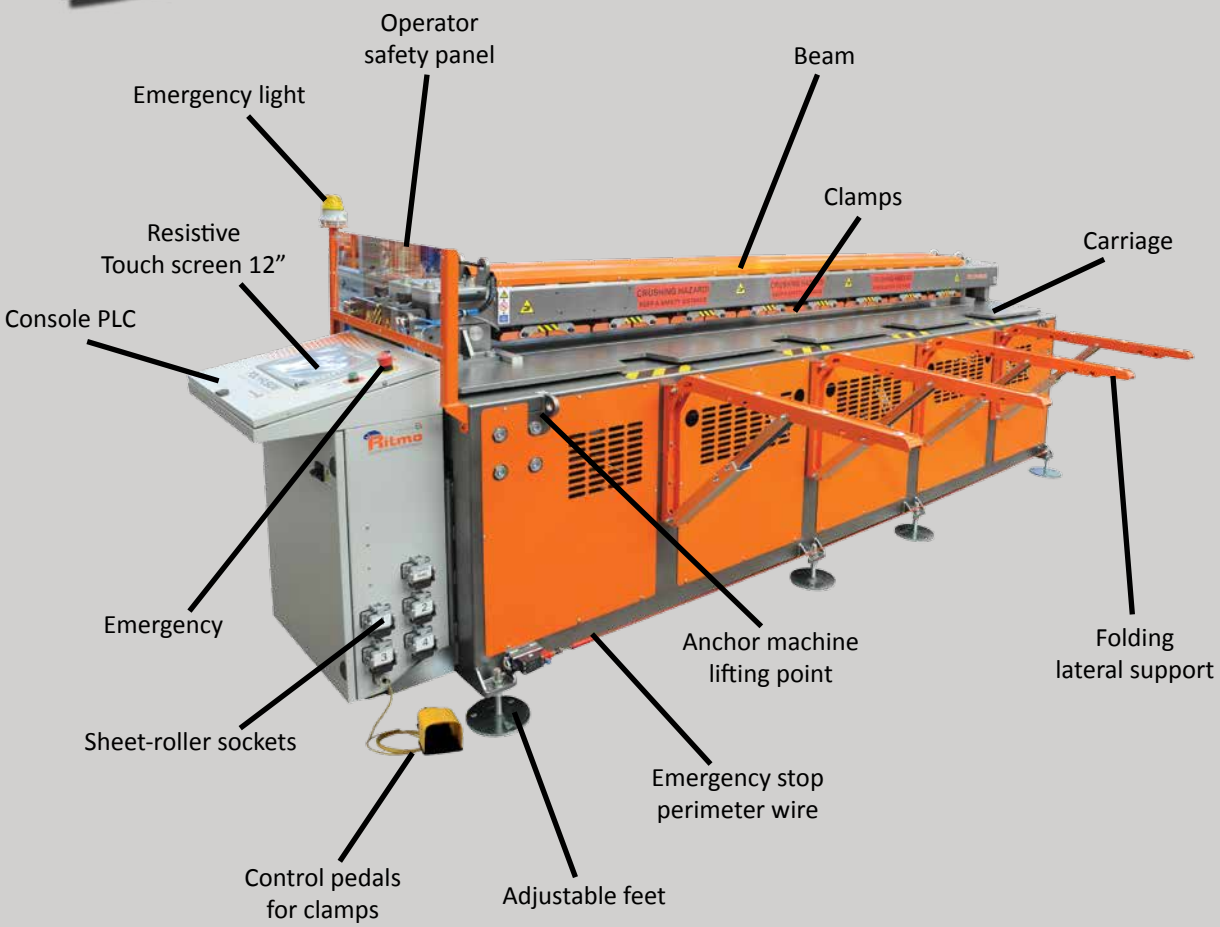

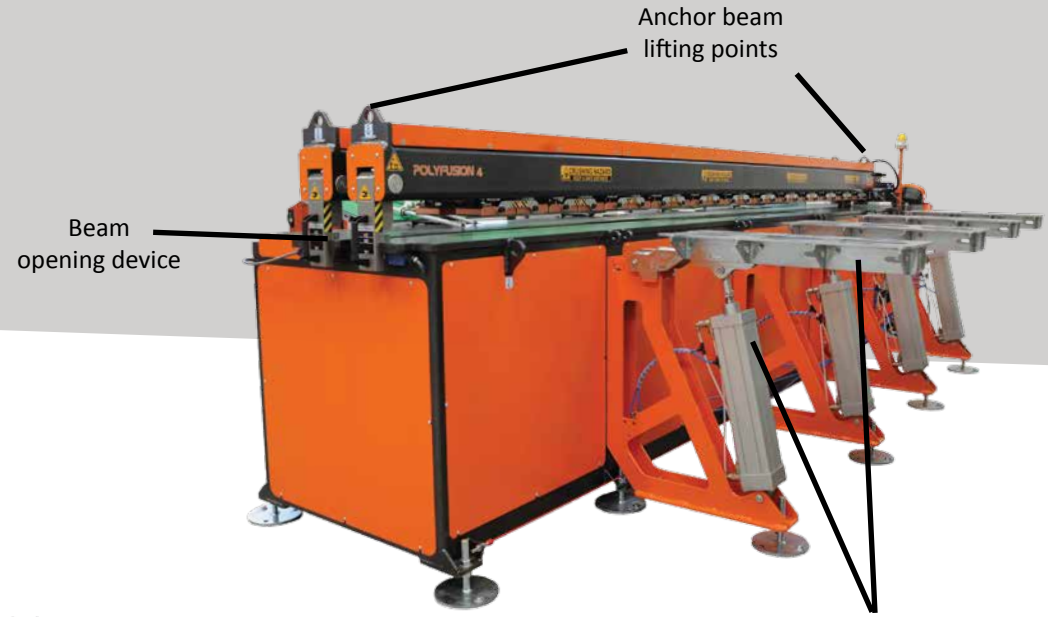

CONTROL PANEL

- PLC Console
- 12” colour touch screen
- VPN - Virtual Private Network
- Remote Diagnostic available
- USB port
- Unlimited store of welding reports
- Unlimited store of parameter sets 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 (DVS2207-13)
- 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

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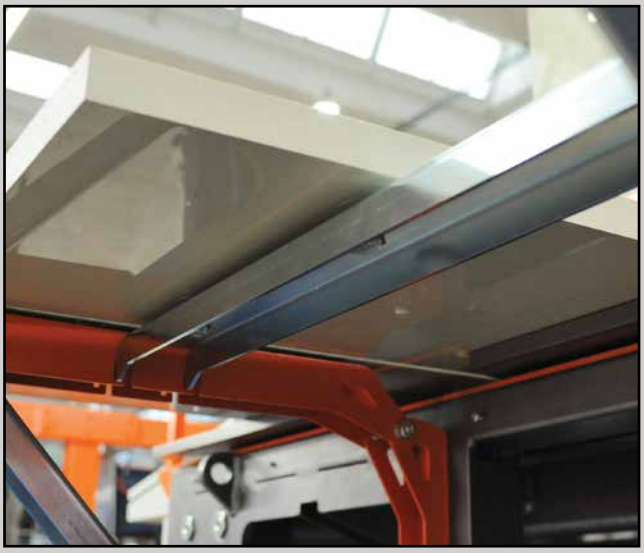
LATERAL SUPPORTS

Folding lateral supports with bearing balls for easy sheet movements



Connecting beams for lateral supports, allow positioning of 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!
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ACCESSORIES

90° WELDING KIT
ON REQUEST

90° welding kit is composed of 4 independent elements working together to support one or more sheets in vertical position.
A pump provides a constant vacuum to lock the sheet.

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

Vacuum system for vertical sheet support

Horizontal positioning frame

Vertical positioning and fixing for the sheet

Sheet in place and ready to be welded

EVERYTHING YOU NEED

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

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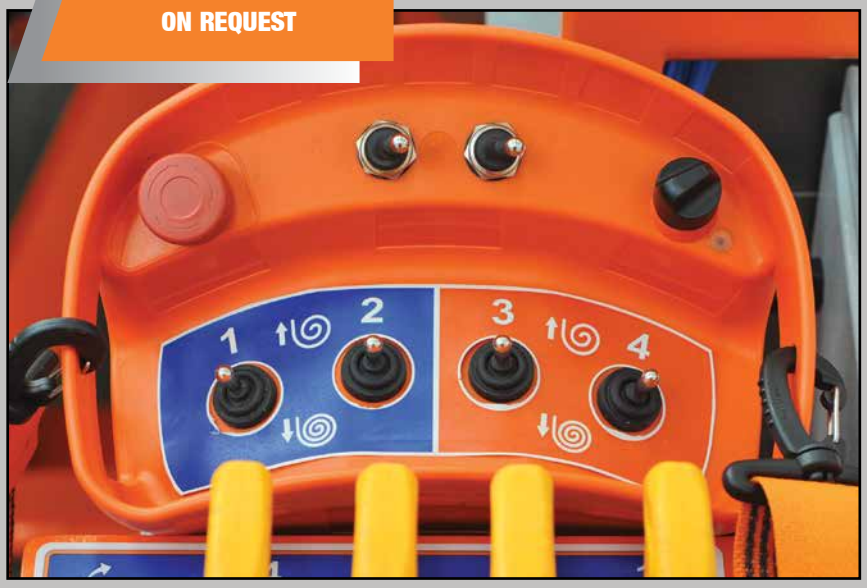
SHEET ROLLING DEVICE

BASIC KIT

ON REQUEST

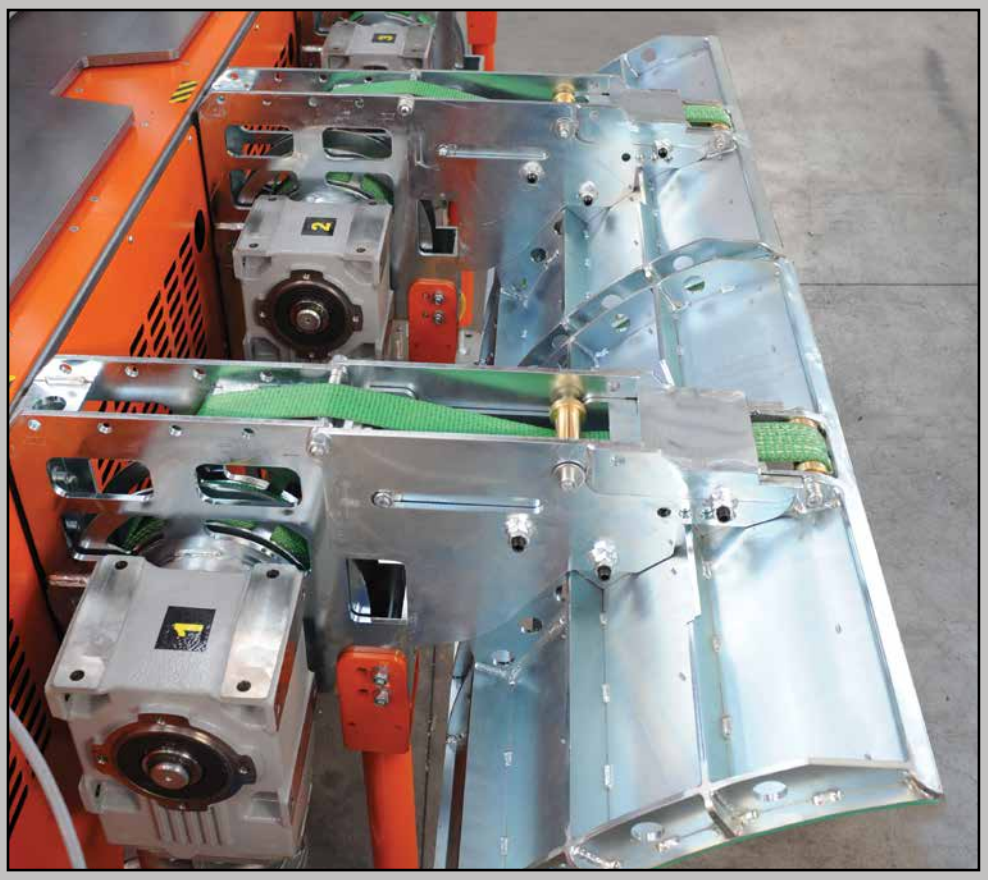


Removable control panel manages different working combinations of the four pulling belts operated by four independent electric motors

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

Curved slides for sheets up to 15 mm* thickness

* depending on the diameter of the cylinder



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

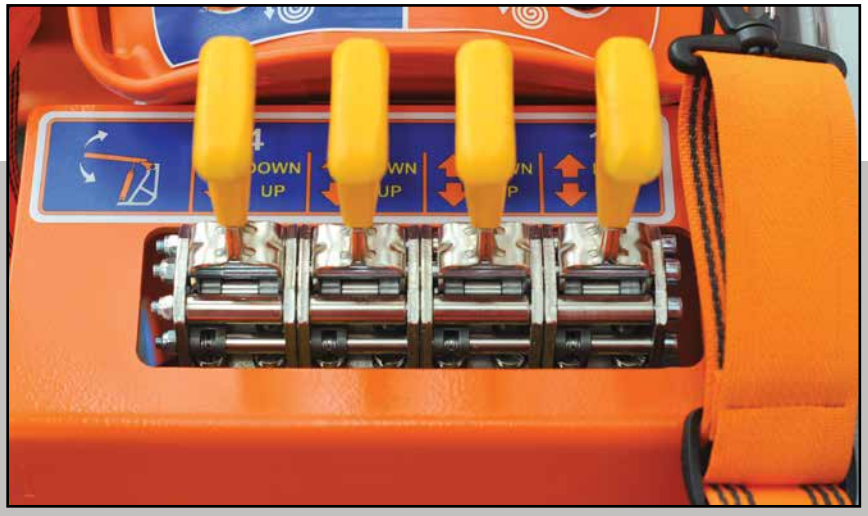
PLUS KIT
ON REQUEST

Flat slides for sheets thicker than 15 mm

Pulling belts in action


POLYFUSION

TOP KIT
ON REQUEST



Control panel for push-up the lateral pneumatic

Pushing device works also as lateral supports

DETAILS AND SOLUTIONS THAT MAKE THE DIFFERENCE

TECHNICAL FEATURES

	POLYFUSION 3	POLYFUSION 4
Weldable materials	PE; PP; PVDF; PVC-C; PVC-U***	PE; PP; PVDF; PVC-C; PVC-U***
Sheet type	Solid wall, twin wall	Solid wall, twin wall
Sheet max. width	3050 mm	4050 mm
Min. weldable thickness	3 mm	3 mm
Max. Welding thickness (straight and 90° welding only). Thickness in circular welding, may vary depending on the mechanical setting of the beam hight configuration	Solid wall up to 50 mm** Twin wall up to 60 mm	Solid wall up to 50 mm Twin wall up to 60 mm
Straight butt-fusion	√	√
90° or T shape butt-fusion *	√ (solid wall only)	√ (solid wall only)
Circular welding * Contact Ritmo for more information	√ (solid wall only)	√ (solid wall only)
Sheet clamping	pneumatic in 4 sectors	pneumatic in 4 sectors
Sheet clamping for 90° welding	vacuum and pneumatic in 4 sectors	vacuum and pneumatic in 4 sectors
Sheet clamping for circular welding	pneumatic in 4 sectors	pneumatic in 4 sectors
Control Panel	PLC in fixed position	PLC in fixed position
Coloured Display	LCD 12”	LCD 12”
Welding cycle	CNC	CNC
Pre-set recall	√	√
Reports	CSV	CSV
Memory	limitless	limitless
Power supply	400 V Three Phases 50÷60 Hz	400 V Three Phases 50÷60 Hz
Absorbed power	11.5 kVA	13.6 kVA
Working temperature	180° ÷ 250° C	180° ÷ 250° C
Minimum thrust	600 N	1000 N
Maximum thrust at 7 bar	15.65 kN	28.15 kN
Maximum thrust:	9,5 bar - 22.87 kN	8 bar - 32.17 kN
Minimum requirements pneumatic supply	7 bar capacity= 300 l/min	7 bar capacity= 300 l/min
Maximum requirements pneumatic supply	9,5 bar	8 bar
Machine sizes (standard configuration with opened supports)	4307 x 2673 x 1508 mm	5320 x 2673 x 1508 mm
Weight	2550 Kg	3200 Kg

* on request

** at 7 bar the 50 mm PE (0.15N / mm2) can be welded with max width = 2 m. The 50 mm PP (0.10N / mm2) can be welded with max width = 3 m
at 9.5 bar the 50 mm PE (0.15N / mm2) can be welded with max width = 3 m. The 50 mm PP (0.10N / mm2) can be welded with max width = 3 m

*** **PVC - C/U** max weldable thickness 15 mm

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PERFORMANCES
DVS 2207 STANDARDS

Max. Weldable thickness (solid wall only)					
Model		**POLYFUSION 3**		**POLYFUSION 4**	
Material	**Interface pressure**	**7 Bar Max weldable area mm² (sheet width) x (thickness)**	**9,5 Bar Max weldable area mm² (sheet width) x (thickness)**	**7 bar Max weldable area mm² (sheet width) x (thickness)**	**8 bar Max weldable area mm² (sheet width) x (thickness)**
PE	(0,15 N/mm²)	104337	152492	187600	214400
PP	(0,10 N/mm²)	156505	228738	281500	321600
PVDF	(0,10 N/mm²)	156505	228738	281500	321600
PVC - C (max thickness 15 mm)	(0,50 N/mm²)	31301	45748	56300	64300
PVC - U (max thickness 15 mm)	(0,60 N/mm²)	26084	38123	46900	53600

EXAMPLE: **POLYFUSION 3**

- **PE** material - welding pressure 9,5 bar - DVS 2207-1 : 2015 standard
  152492 mm² (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

POLYFUSION 4

- **PE** Material - welding pressure 8 bar - DVS 2207-1 : 2015 standard
  214400 mm² (Max weldable area) : 4050 mm (sheet width) = 52,93 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.*

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DESIGNED TO ACHIEVE YOUR GOALS

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