



# Ritmo

PLASTIC WELDING TECHNOLOGY



# ELECTROFUSION MACHINES

## LOW PRESSURE / DRAINAGE ELECTROFUSION MACHINES

Low pressure / drainage electrofusion machines for PE couplings.

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## HIGH PRESSURE ELECTROFUSION MACHINES

Universal bar-code reader electrofusion machines for PE, PP, PP – R couplings 8 ÷ 48 V.

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Universal manual electrofusion machines for PE, PP, PP – R couplings 8 ÷ 48 V.

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Electrofusion machines for one single brand.of PE, PP, PP – R couplings

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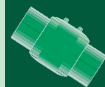
## LOW AND HIGH PRESSURE ELECTROFUSION MACHINES

Universal manual electrofusion machines for PE, PP, PP – R couplings 8 ÷ 48 V and for Low Pressure / drainage couplings.

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MUSTANG 160 S



Machine body



Transport bag



Manual scraper

## MUSTANG 160 S

This electrofusion machine is suitable for welding electrical couplers in Polyethylene (PE) from Ø 32 to Ø 160 mm, for low-pressure conduits. The **MUSTANG 160 S** is made in compliance with the current safety standards and Directives. This welding machine's structure is light weight, so it is extremely easy to carry around. It is distinguished by the automatic setting of the welding parameters, by the self-compensation of the current supplied (according to the ambient temperature) and by the self-diagnosis, in the event of any malfunction that could occur before or during welding. The machine features **cables with pins, a transport bag and a manual scraper**, most useful to remove the layer of oxidation from the pipe (which could undermine the good result of the welding).

### SUPPLIED WITH

- **Welding machine** complete with **cables with pins, Trevira bag and manual scraper**.

### TECHNICAL FEATURES

Working range	32 ÷ 160 mm
Electrical couplers brands (low pressure HDPE)	Akatherm-Euro, Co.e.s., Geberit, Valsir, Waviduo, Eurofusion
Power supply	230 V - Single phase - 50/60 Hz
Maximum output current	5 A
Maximum absorbed power	900 W
Outside temperature range	-5 ÷ +40°C
Temperature compensation	Automatic electronic
Dimensions (W x D x H)	300 x 120 x 280 mm
Weight	3,00 Kg

## UNIVERSAL

This electrofusion machine is suitable for welding electrical couplers in Polyethylene (PE) from Ø 32 mm to Ø 315 mm, for low pressure conduits. The **UNIVERSAL** is made in compliance with the current safety standards and Directives. This welding machine's structure is light weight, so it is extremely easy to carry around. It is controlled by a microprocessor that allows the recognition of three different types of cable with pins, identified by a code (written on each one of them), which the operator can confirm by looking at the display. The different cables are necessary to adapt to the different kinds of electrical coupler available in the market. The main features include self-compensation of the current supplied (according to the ambient temperature) and self-diagnosis of any malfunction that could occur before or during welding.

The machine features **three cables with pins, a transport bag and a manual scraper**, most useful to remove the layer of oxidation from the pipe (which could undermine the good result of the welding).

### SUPPLIED WITH

- **Welding machine** complete with **three cables with pins, Trevira bag and manual scraper**.

### TECHNICAL FEATURES

Working range	Ø 32 ÷ 160 mm
Electrical couplers brands (low pressure HDPE)	Valsir, Akatherm, Eurofusion Geberit, Waviduo, Coes.
Working range	Ø 200 ÷ 315 mm
Electrical couplers brands (low pressure HDPE)	Valsir, Akatherm, Eurofusion, Geberit.
Power supply	230 V-Single phase-50/60 Hz
Maximum output current	10,7 A
Maximum absorbed power	2470 W
Outside temperature range	-5 ÷ +40°C
Temperature compensation	Automatic electronic
Dimensions (W x D x H)	280 x 260 x 200 mm
Weight	6,00 Kg



UNIVERSAL



Machine body



Cables with pins



Manual scraper





ELEKTRA



Scanner and optical pen



USB storage device

## ELEKTRA

**Elektra** is an universal electrofusion machine, suitable for welding PE and PP couplings (from 8 to 48 V). It is available in three versions: **Elektra 400 Entry (\*)**, **Elektra 400**, **Elektra 800**. The Elektra machine is made in compliance with Italian and international standards, and is composed of:

- a versatile **machine body**, capable of adapting to different operational needs, inside and outside the trench; the control panel can be turned upward or be positioned horizontally to the ground
- **an optical pen - barcode reading system** (or optical scanner, upon request) that allows the automatic setting of the welding parameters. There are nonetheless two manual settings available: by setting the welding tension/time parameters, and by input the numerical code indicated under the bar code
- **an in built memory** with 4000 welding cycles, featuring the possibility of transferring data to a PC , to an external USB storage device, or to a serial printer RS-232
- **a large graphic display;**

The machine is supplied with a cable provided with  $\varnothing$  4mm connectors, a set of  $\varnothing$  4,7 mm adapters, a manual scraper and a transport case.

(\*) **ELEKTRA 400 ENTRY** is the basic model of the Elektra product line. It features a bar code reading system with an optic pen which allows the machine to acquire the welding parameters automatically. Welding certification is printable through a RS232 serial port.

### SUPPLIED WITH

- terminals  $\varnothing$  4,0 mm, adapters  $\varnothing$  4,7 mm
- transport case
- manual scraper

### ON REQUEST (ACCESSORIES)

- transfer kit for transferring welding data from the welding machine to a portable serial printer (it includes serial printer and cable)
- connecting cable for welding machine/PC transfer
- data transfer software (Ritmo Transfer)
- optical scanner, for reading barcodes

## TECHNICAL FEATURES

	ELEKTRA 400 ENTRY		ELEKTRA 400		ELEKTRA 800
Working range	20 ÷ 400 mm			20 ÷ 800 mm	
Welding output voltage	8 ÷ 48 V				
Single phase power supply	230 V 50/60 Hz	110 V 50/60 Hz	230 V 50/60 Hz	230 V 50/60 Hz	
Max. absorbed power	2700 W	2500 W	2700 W	3500 W	
Max. output current	100 A			120 A	
60% Duty Cycle output	70 A	65 A	70 A	90 A	
Operating mode	Barcode/Manual (numerical code or tension/time)				
Connections	RS 232 serial printer	USB for external memory and RS 232 serial printer			
Memory capacity	-	4000 reports			
Protection degree	IP 54				
External T° reading probe precision	± 1° C				
Outside T° range	- 10 ÷ + 50° C				
Display	128 x 64 graphic backlighted LCD				
Welding hose length	3 mt				
Connectors diameter	4,0 mm				
Adapters diameter	4,7 mm				
Dimensions	358 x 285 x 302 mm				
Weight	19,5 Kg				



Manual scraper



Adapter



Serial printer



Software Ritmo transfer



Transport case





POLYWELD MAN



Manual scraper



Transport case



Ø 4,0 / 4,7 mm adapters



Serial printer data transfer kit

## POLYWELD MAN

Universal electrofusion machine designed for low voltage Polyethylene (PE) and Polypropylene (PP) couplers (from 8 to 44 Volts) for high pressure conduits.

The **POLYWELD MAN** machine is made in compliance with the current European Standards and Directives. The machine is extremely easy to use due to its software that can be managed by a display and four buttons.

The welding parameters (Tension and Time) are set in manually by the operator depending on the coupler technical features. A serial port makes it possible to connect a printer in order to obtain a report at the end of the weld (to certify some relevant data from the welder and to confirm if the cycle has been correctly performed or not). Malfunctions occurring before or during the welding are shown as error message codes at the display and at the printed report. The machine is supplied with a cable and Ø 4,0 mm connectors, a set of Ø 4,7 mm adapters and a manual scraper, most useful to remove the layer of oxidation from the pipe surface (which could undermine the good result of the welding).

### SUPPLIED WITH

- **Welding machine** complete with Ø 4,0 mm connectors and Ø 4,7 mm adapters;
- **Manual scraper**;
- **Transport case**.

### ON REQUEST (ACCESSORIES)

- **Serial printer data transfer kit, to transfer the welding data from machine directly to a yard serial printer** (includes a printer and a connecting cable).

### TECHNICAL FEATURES

		POLYWELD MAN	
Working range	20 ÷ 315 mm PE-HD 20 ÷ 125 mm PP-R		
Electrical couplers (High pressure HDPE)	Different brand (*)		
Power supply	230 V Single phase 50 Hz	110 V Single phase	45 ÷ 60 Hz
Maximum output current	75 A (peak at 100 A)		
<b>Maximum absorbed power</b>	<b>3500 W</b>		
Welding output voltage	8 ÷ 44 V OUTPUT		
Protection degree	IP 54		
External T° reading probe precision	± 1 ° C		
Outside temperature range	-10 ÷ +50°C		
Display	7 segments display		
Welding hose length	3 m		
Connectors diameter	4,0 mm (*)		
Adapters diameter	4,7 mm (*)		

DIMENSIONS (W x D x H)	
Welding machine	195 x 325 x 270 mm
Transport wooden case	390 x 265 x 335 mm

WEIGHT	
Welding machine	17,00 Kg
Transport wooden case	4,00 Kg

(\*) Any other brand not mentioned in this list but with the same design features, that is, a constant welding voltage (ranging between 8 and 44V), with or without a bar code, and with standard Ø 4,0 or Ø 4.7 mm connectors, can be welded with these machines

## TOP

This monovalent electrofusion machine is suitable for welding "ROLLMAPLAST" couplers, for Polyethylene (up to Ø 160 mm) and Polypropylene (up to Ø 110 mm) high pressure conduits.

The **TOP** is made in compliance with the current safety standards and directives. The machine's structure is light weight, so it is extremely easy to carry around. The TOP supplies a constant current to the coupler (with an automatic current self-compensation, according to the ambient temperature), and makes a self-diagnosis of any malfunction that can occur before or during the welding.

The machine is supplied with cables with pins, a transport bag and a manual scraper, most useful to remove the layer of oxidation from the pipe (which could undermine the good result of the welding).



TOP



Machine body

### SUPPLIED WITH

- Welding machine complete with **cables with pins, Trevira bag and manual scraper.**

### TECHNICAL FEATURES

		Working range
Electrical couplers brands	<b>ROLLMAPLAST</b> (Wavin)	I Series Ø 20 ÷ 160 mm - PE 80 LI Series Ø 20 ÷ 160 mm - PE 80 LI Series Ø 20 ÷ 110 mm - PE 100 Ø 20 ÷ 110 mm - PP, PP-R
Power supply		230 V - Single phase - 50/60 Hz
Maximum output current		5 A
Maximum absorbed power		890 W
Room temperature range		-5 ÷ +40°C
Temperature compensation		Automatic electronic
Dimensions (W x D x H)		280 x 280 x 110 mm
Weight		2,75 Kg



ROLLMAPLAST couplers



Manual scraper





MULTIPLA



Control panel

## MULTIPLA

Multipla is a universal/manual electrofusion machine, built with inverter technology, which can weld any kind of electrofusion fitting available in the market, made of PE, PP, PPR, for low or high pressure pipes, up to Ø 315 mm in diameter. Multipla is built in compliance with the current safety regulations, and it can guarantee the use also in case of instable tension, without risking damaging the machine. The electronics adopted allow the automatic identification of the necessary cables, designed for the different types of fittings. After connecting a specific cable, identified by a specific color, the next step is to press the key to start the fusion process. Manual setting of fusion parameters (tension and time) is necessary only for low tension fittings (8 to 48 V), normally marked with bar code. It is provided with an in-built memory of 800 welding cycles, and the possibility of transferring them to a PC, or to a RS-232 printer. It is supplied with all necessary connecting cables, a manual scraper, and an aluminum transport case.

### SUPPLIED WITH

- **Welding machine complete of 8 connecting cables;**
- **connectors and adapters Ø 4,0 - 4,7 mm;**
- **aluminum transport case.**

### ON REQUEST (ACCESSORIES)

- **transfer data kit, for transferring data from the welding machine to the yard serial printer (it includes a printer and a connecting cable)**



## TECHNICAL FEATURES

Dimensions	375 x 190 x 415 mm	
Weight	14 Kg	
Power supply	230 V $\pm$ 10% 50-60 Hz	
<b>Max. absorbed power</b>	<b>3500 W</b>	
Welding output voltage	8 $\div$ 48 V	
Max. output current	75 A (peak at 85 A)	
Protection degree	IP 65	
Ambient temperature	- 10 $\div$ 50° C	
Connectors diameter	4,0 mm	
Adapters diameter	4,7 mm	
Constant tension 8 $\div$ 48 V	20 $\div$ 315 mm – PE, PP, PPR Any brand that uses a constant welding tension (*)	
Constant current	A00	40 $\div$ 160 mm (PE) Coes, Akatherm, Eurofusion, Geberit, Valsir, Wavin (Waviduo)
	A01	200 $\div$ 315 mm (PE) Akatherm, Eurofusion, Valsir, Wavin
	A02	200 $\div$ 315 mm (PE) Geberit
	A03	40 $\div$ 160 mm (PE) Wavin (Wavisolo)
	A04	200 $\div$ 315 mm (PE) Coes (Coestilen)
	A05	20 $\div$ 63 mm (PPR) Coes (Coestilen)
	A06	20 $\div$ 160 mm (PE 80) Wavin (I) 20 $\div$ 125 mm (PE 100 - PPR) Wavin (LI – Tigris Green)
	A07	126 $\div$ 315 mm (PE 100) Wavin (LI)



Cables

(\*) Any other brand not mentioned in this list but with the same design features, that is, a constant welding voltage (ranging between 8 and 48V), with or without a bar code, and with standard  $\varnothing$  4,0 or  $\varnothing$  4.7 mm connectors, can be welded with these machines.





PIPE SCRAPERS



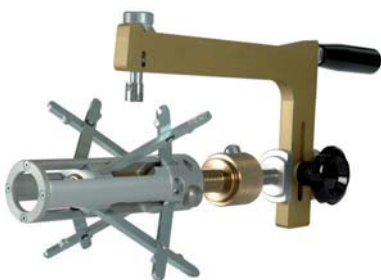
RTC 710



RTC 160



RTC 315



PS 180

## PIPE SCRAPERS

RTC 160 - RTC 315 - RTC 710 - PS 180

These professional rotary scrapers, designed and patented by Ritmo, are essential to prepare the plastic pipes and fittings before electrofusion welding. Practical and handy, the pipe scrapers remove the oxidation layer caused by weather and ultraviolet rays. If not removed, the oxidation layer would severely compromise the quality of the joint. Among the main construction features there is a device that makes it possible to maintain the thickness of the continuous chip constant, even if the pipe is misshaped, and to adjust the length of the surface to scrape according to the depth of the electrical coupler. The RTC 710 features an extendable arm to scrape the exact length of the electrical coupler, which is an advantage when having to perform maintenance/repair jobs in the building site. The main chuck has four extendable arms that clamps directly the inside diameter of the pipe. The PS 180 is composed of a settable chuck to cover the full range of working diameters, and of an orbital arm where the blade is attached. The orbital arm of **PS 180** can scrape the exact length of the electrical coupler, which is an advantage when having to perform maintenance/repair jobs in the building site.

### SUPPLIED WITH

Both models are supplied with:

- **Pipe scraper;**
- **adapters kit** (except for RTC 710);
- **spare blade;**
- **handwheel key** (for RTC 315);
- **aluminum transport case;**
- **screwdriver and small cutter;**
- **transport bag** (for PS 180).

## MANUAL SCRAPER

This manual tool is used with the same principle as the RTC pipe scrapers. The **MANUAL SCRAPER** features a practical plastic handle and a carbon steel blade, interchangeable with four cutting edges.

### SUPPLIED WITH

- Scraper complete with a four-cutting edges blade.

## TECHNICAL FEATURES

	RTC 160	RTC 315	RTC 710
Working range:			
EXTERNAL	Ø 50 ÷ 160 mm	Ø 75 ÷ 315 mm	Ø 355 ÷ 710 mm
INTERNAL	Ø 38 ÷ 154 mm	Ø 58 ÷ 300 mm	Ø 290 ÷ 675 mm
Scraping length	70 mm	137 mm	530 mm

DIMENSIONS (W x D x H)	RTC 160	RTC 315	RTC 710
Max. RTC dimensions when working	380x120x250 mm	510x310x410 mm	595x272x190 mm
Transport case	390x210x135 mm	230x500x270 mm	800x580x350 mm

WEIGHT			
Pipe scraper	2,50 Kg	4,50 Kg	16,00 Kg
<b>Total (with accessories)</b>	5,65 Kg	9,20 Kg	26,60 Kg

### PS 180

Working range:	
EXTERNAL	Ø 75 ÷ 200 mm
INTERNAL	Ø 61 ÷ 180 mm
Max. scraping length	Max. 129 mm Min. 120 mm

DIMENSIONI (W x D x H)	
Max. RTC dimensions when working	595 x 272 x 190 mm
Dimensions in the transport bag	453 x 185 x 63 mm
<b>WEIGHT</b>	2,8 Kg

### MANUAL SCRAPER

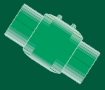
Recommended working range	Max Ø 63 mm
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Transport case



Manual scraper





Pipe support



Locking system



## PIPE SUPPORT

With this practical piece of equipment, the pipe can be locked to let the operator carry out quickly and with precision all operations previous to the welding cycle, like cutting, pickling, scraping, etc.

This support's particular structure helps reach several inclination angles and heights, in order to better adapt to the requirements of the building site. Furthermore, a belt and a jack system helps a quick locking and releasing of the pipe.

### SUPPLIED WITH

- **Base structure** complete with **locking belt and service spanner**.

### TECHNICAL FEATURES

Working range	Ø 40 ÷ 400 mm
<b>DIMENSIONS (W x D x H)</b>	
While being transported	870 x 365 x 785 mm
While being used (lowest position)	630 x 365 x 760 mm
While being used (highest position)	1100 x 365 x 660 mm
<b>WEIGHT</b>	15,00 Kg

## ROLLERS

This device is essential for supporting the pipes while they are being welded with the DELTA machines. The rollers minimise pipe friction and drag force no matter which is the construction site condition.

This series features three different models:

- **LIGHTWEIGHT ROLLER UNIT** which can sustain pipes up to Ø 315 mm. Its particular structure allows the operator to adjust the height, and makes it easier to put it/remove it from under the pipe;
- **560 ROLLER UNIT** which can sustain pipes up to Ø 560 mm. With the help of the hydraulic jacks, this roller can be adjusted in height, and since the structure is divided in two parts, its width can also be adjusted;
- **1600 ROLLER UNIT** with a working range up to Ø 1600 mm and a structure/features similar to the 560 version.

### SUPPLIED WITH

All models are supplied with:

- Base **structure complete** with roller(s).

### TECHNICAL FEATURES

	<b>LIGHTWEIGHT ROLLER UNIT</b>	<b>560 ROLLER UNIT</b>	<b>1600 ROLLER UNIT</b>
Working range	Max. Ø 315 mm	Max. Ø 560 mm	Max. Ø 1600 mm
Overall dimensions (W x D x H)	400x290x240 mm	900x690x450 mm	920x730x520 mm
Weight	6,00 Kg	65,00 Kg	76,00 Kg



Lightweight roller



560 & 1600 rollers

## SQUEEZER 63

The **SQUEEZER 63** is a manual tool. Easy and fast to apply, the SQUEEZER is useful in the worksite to stop the gas or water flow in the Polyethylene pipelines from Ø 16 to 63 mm / S5 – SDR 11. The squeezing action runs by a movable cylindrical bar and by an opposite one.

The second bar can be removed to permit the pipe insertion. Two special stop templates with 4 positions (on the movable bar sides) assure a safe pipe squeeze on all working range diameters.

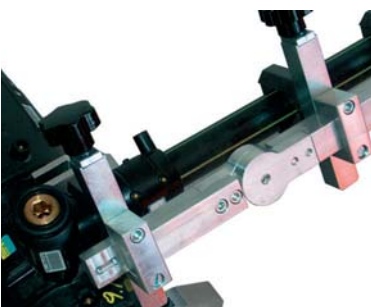
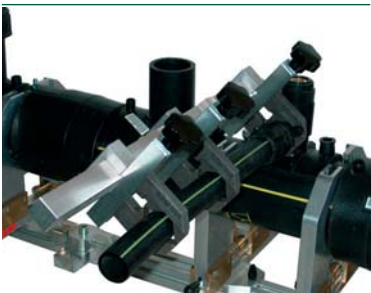
### TECHNICAL FEATURES

	<b>SQUEEZER 63</b>
Working range	Ø 20 ÷ 63 mm S5/SDR11
Operation	Manual
Overall dimensions (W x D x H)	325 x 70 x 330 mm
Weight	5,3 Kg



Squeezzer 63





## UNIVERSAL ALIGNER 63

This professional tool is essential to hold pipes still and aligned during electrofusion.

The **UNIVERSAL ALIGNER 63** is made almost entirely in a special Aluminium alloy and features a central joint for the fixed positions at 45° and 90°, four self-centering clamps that require no adapters.

The possibility to remove one part of the axis that carries the clamps and one clamp itself, allows the use of tapping tees during the fusion.

The Aligner is supplied with a handy carrying bag and service spanner.

### SUPPLIED WITH

- Aligner complete with four clamps, service spanner and transport bag.

### TECHNICAL FEATURES

Working range	Ø 20 ÷ 63 mm
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DIMENSIONS (W x D x H)	
Aligner (max. overall dimensions)	<b>straight:</b> 600x160x116 mm
	<b>45°:</b> 515x320x116 mm
	<b>90°:</b> 405x405x405 mm
Transport bag	440 x 190 x 140 mm

WEIGHT	
Aligner	3,40 Kg
Transport bag	0,50 Kg
<b>Total</b>	<b>3,90 Kg</b>

## UNIVERSAL ALIGNER 160 Light

This professional tool is essential to hold pipes still and aligned during electrofusion (from Ø 63 to Ø 160 mm).

The **UNIVERSAL ALIGNER 160 Light** is made almost entirely in a special Aluminium alloy and features a central joint for the fixed positions at 45° and 90°, four self-centring clamps that require no adapters, and on request an additional axle complete with two clamps for welding the tees. Its special quick release clamps grants a rapid extraction of the pipe once it has been welded.

The Aligner is supplied with service spanner, with a handy carrying bag or with a wooden transport case.

### SUPPLIED WITH

- **Aligner** complete with **four clamps**;
- **service spanner**;
- **Transport bag or wooden transport case**

### ON REQUEST (ACCESSORIES)

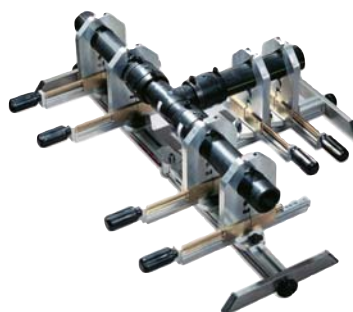
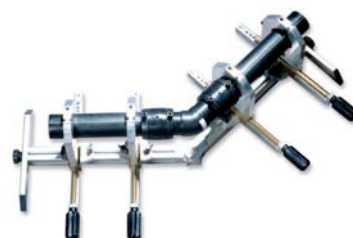
- **A 3rd axle** complete with **two clamps** (for welding “Tees”)

### TECHNICAL FEATURES

Working range	Ø 63 ÷ 160 mm
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DIMENSIONS (W x D x H)	
Aligner (maximum overall dimensions)	<b>straight:</b> 980x430x260 mm <b>45°:</b> 900x650x260 mm <b>90°:</b> 780x780x260 mm
While being used	1000 x 450 x 270 mm
Transport case	530 x 320 x 500 mm

WEIGHT	
Aligner without 3rd axle	13,00 Kg
3rd axle with clamps	6,50 Kg
Transport bag	1,55 Kg
Wooden transport case	14,00 Kg



Transport bag



Wooden transport case