CEA
resistance welding catalogue
2024

SINCE 1950

RESTECH
CEA RESISTANCE WELDING DIVISION

RESTECH
CEA RESISTANCE WELDING DIVISION

A STORY WHICH STARTED IN 1950

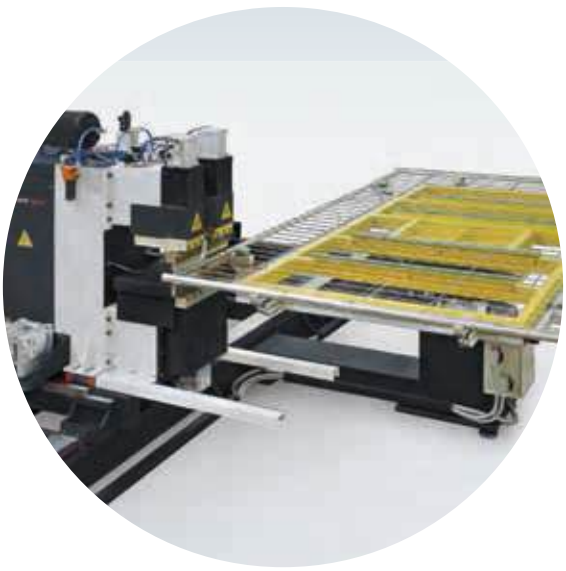
Even before its inception in 1950 CEA machines had garnered a reputation for quality craftsmanship prior to World War II and today CEA is renowned in the sector as a steadfast partner to its worldwide distributor network.

HERITAGE AND PRIDE

CEA being a well-structured company is ideally positioned to face the current global market challenges but also takes great pride in its roots and connection to the territory which has allowed for consistent growth in the years.

KNOW-HOW AND VERTICALIZATION OF THE MANUFACTURING PROCESS

CEA takes great pride in the ability to control machine production, from research and design stages, to development and in-house manufacture of all parts up to final assembly of the finished product.



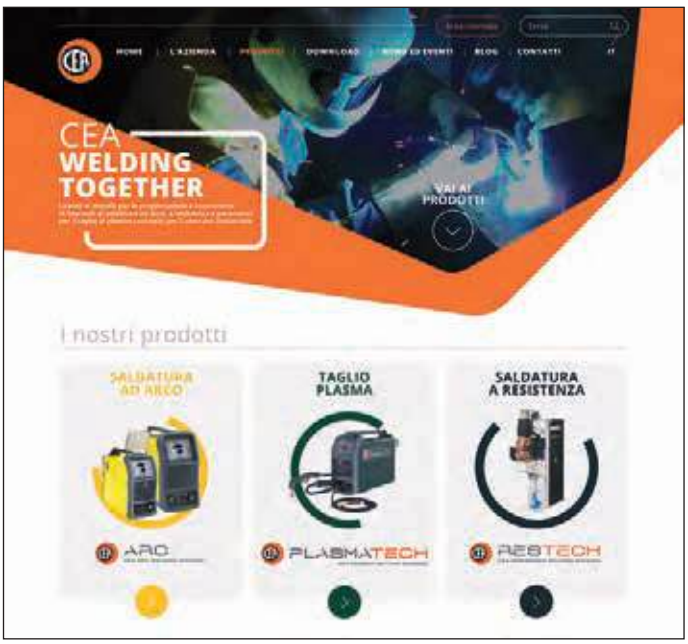
SPECIAL APPLICATION EXPERIENCE

Besides a wide range of standard products, CEA has always worked with its customers in the solutions and development of special welding applications. Now in partnership with TECNOROBOT we enter a new phase which allows us to offer advanced solutions to complex automation and robotized procedures.

www.ceaweld.com...

USER FRIENDLY WEBSITE

Take advantage of the growing opportunities offered by the network, in order to build a closer dialogue with the customers. With this objective in mind, all contents, images and CEA web surfing criteria have been redefined. For more detailed information and stay up-to-date please visit www.ceaweld.com in order to find latest news, upcoming events, an innovative product selector, images, videos and many other details.
The web Reserved Area is particularly rich of substantial contents: an intranet with dedicated customized services for all CEA partners.



CEA: A LOW-ENERGY IMPACT FIRM

Care for the environment has always been a fundamental value in the CEA corporate philosophy.
This is proven by a keen attention towards an eco-sustainable production process, care in the selection of components, use of paints with low environmental impact and so on. The evolution of CEA's manufacturing trend, focusing towards inverter technology, has allowed to greatly improve the energy efficiency of the products.
CEA GOES GREEN is the hallmark of this approach and is reflected into latest generation inverter power sources which, versus traditional equipment, ensure a considerable energy saving:

- low energy consumption
- compliance with "green" environment-friendly norms (e.g. RoHS)
- reduced weight and dimensions for lower shipping costs, disposal and recycling (WEEE)

An additional investment in the pursuit of "eco-sustainability" is represented by an important 200 kWp photovoltaic plant, which has made the company virtually self-sufficient from an energetic perspective.

CERTIFICATION AND STANDARDS

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ISO 9001
Always concerned about quality, CEA has its quality management system ISO 9001 certified since 1994. This is a guarantee of an ongoing commitment of the entire company for a continuous improvement in its products and business processes, leading to the full satisfaction of its customers.

CE MARKING
All CEA products are CE marked, therefore compliant with all EU Directives and Standards imposing such utilization from design, manufacture and installation of the equipment up to its final disposal.
In particular CE marking implies the conformity to the following main Directives:

2014/35/EU (LUD)
The Low Voltage Directive (LVD) defines the compliance with numerous regulations to safeguard health and safety for the operator and also regarding the electrical dimensioning of the equipment.

2014/30/EU (EMC)
The Directive on Electromagnetic compatibility (EMC) defines the effects of electromagnetic emissions and the immunity degree. This means that the equipment shall not emit any electromagnetic disturbances and, in turn, must be immune to any interference from other equipment or from the mains supply.

2011/65/EU (ROHS)
The Directive defines the restriction of certain hazardous substances in electrical and electronic equipment.

2006/42/EEC (MD – MACHINE DIRECTIVE)
Machine Directive (MD) defines the essential requirements related to design, manufacture and installation in order to improve safety of the products placed on the market.
CEA products have been designed and built according to the following harmonized standards:

IEC 62135-1:2015 - Safety requirements for design, manufacture and installation

IEC 62135-2:2015 - Electromagnetic compatibility (EMC)

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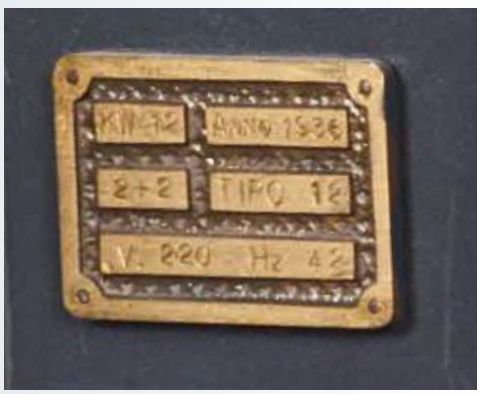

CEA origins dates back to 1936 when Alessandro Annettoni, an expert creative electrician, together with his son Ezio, the founder of CEA, started to build first rocker arms spotwelders. The "TIPO 12" model shown in the above picture belongs to a series of three units built on that that year.

Z / ZP

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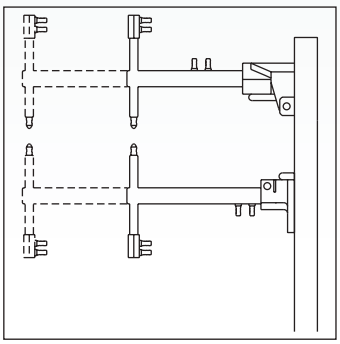
ROCKER ARM SPOT WELDERS WITH ADJUSTABLE ARM LENGTH

The Z and ZP series resistance spot welders, versatile, robust and easy-to-use, ensure best welding results on all weldable metals. Thanks to their adjustable length feature they represent the ideal solution in a large variety of spot-welding applications. Z models are mechanical pedal operated, whilst ZP's are pneumatically operated by an electric pedal.

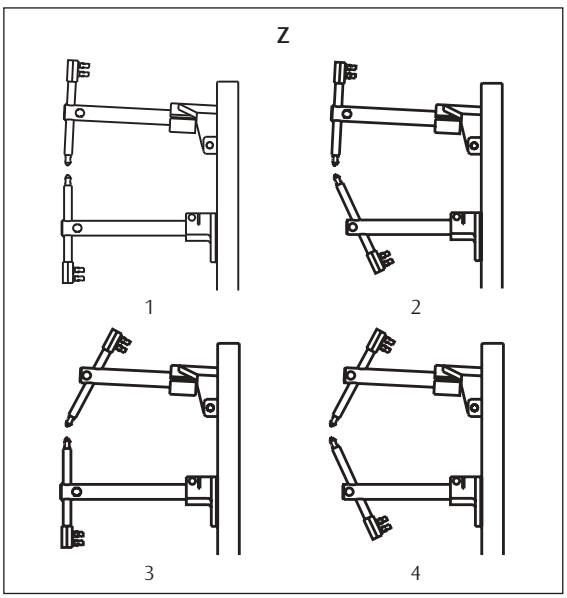
ZP

Z



1~ AC DIGITAL 888

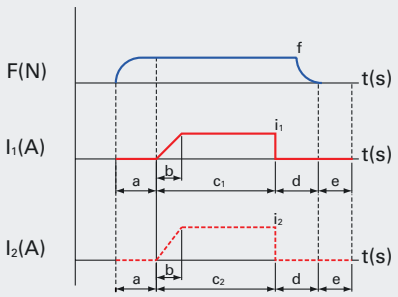
- Excellent welding on all weldable metals
- Welding current and time electronic adjustments
- Synchronous ignition SCR group with phase shift welding current adjustment to eliminate initial transient
- Reduced consumption
- Water cooled arms
- Water cooled copper electrodeholders with adjustable height
- Self-lubricated pneumatic components to eliminate oil deposits and to safeguard the environment from contaminants (ZP)
- High versatility thanks to all different possible work configurations



WS 402 ELECTRONIC CONTROL

- Welding time adjustable by periods
- Single or repeated spotting facility
- Automatic compensation of mains voltage fluctuation
- Error display during the welding cycle
- Weld/no Weld selector key
- 24 V DC supply solenoid valve
- 50/60 Hz frequency automatic identification
- 24 V AC supply electronic control
- 2 welding program (2 times 2 currents) facility by using a double pedal (optional)

Z - ZP



	FUNCTIONS	WS 402
a	Squeeze time	•
	Pressure contact	•
b	Slope up time	•
c_1 - c_2*	Welding time	•
i_1 - i_2*	Welding current	•
d	Holding time	•
e	Pause time	•

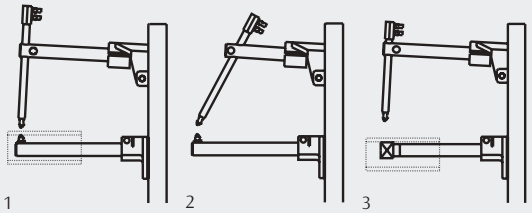
* i_2 - c_2 available only whenever using a double pedal

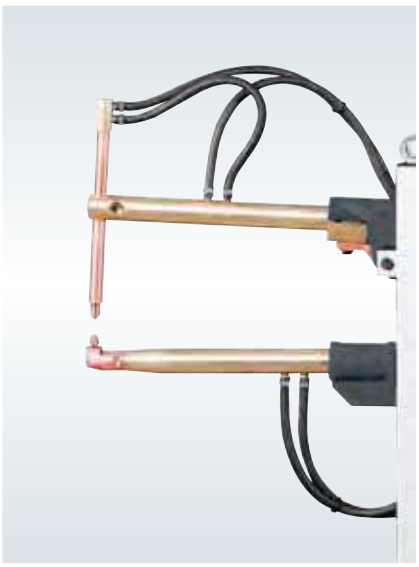
- Electrode force adjustable by spring nut and, for ZP, also by air pressure regulation manometer
- Easy electrode gap adjustment without moving the electrodeholders

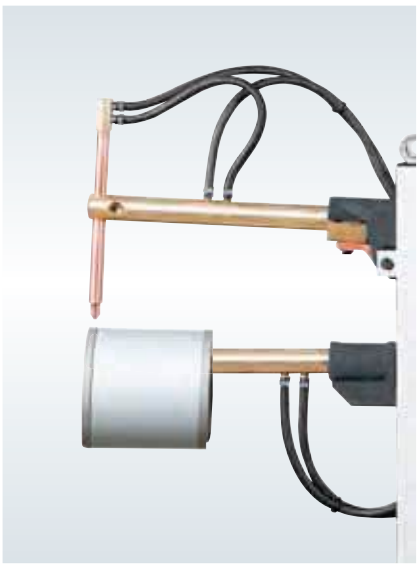
Z – ZP LOWER ARM FITTED WITH PRESSED-IN ELECTRODE

Whenever the lower arm is fitted with a pressed-in electrode, also a long electrodeholder is necessary on the upper arm.

Z - ZP OPTION





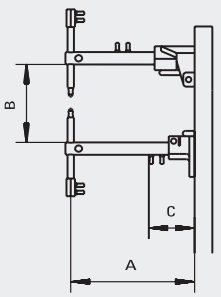
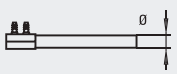
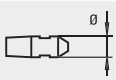


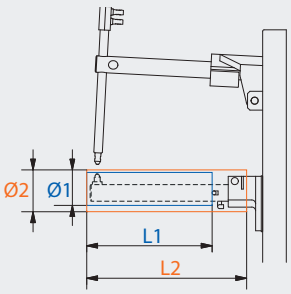
ACCESSORIES

- IR 14 water cooling equipment (for all Z's and ZP's)
- Special electrodes (on request)
- 65 mm offset electrode holders
- Long electrode holders
- Barholders with 100 mm bars
- Possibility of a two-step pedal: squeeze without welding and welding after pressing the second step
- Possibility of a double pedal for quick use of two different welding programs



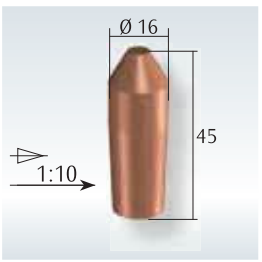



Z - ZP			Z 18 ZP 18	Z 28 ZP 28
	A MIN.	mm	250	250
	A MAX.	mm	600	600
	B	mm	215	215
	C	mm	135	135
		Ø mm	40	40
		Ø mm	21	21
		Ø mm	16	16
			10%	10%

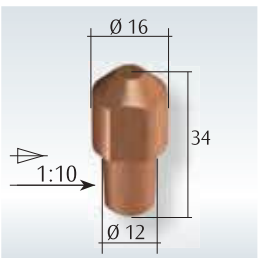
			Z 18 ZP 18	Z 28 ZP 28
	L1	mm	492	492
	Ø1 Min	mm	60	60
	L2	mm	570	570
	Ø2 Min	mm	85	85

TECHNICAL DATA		Z 18 ZP 18	Z 28 ZP 28
Single phase input 50/60 Hz	V	400	400
Rated power	kVA	15	25
Max. welding power	kVA	23	41,6
Installed power	kVA	11	14
Cross section connecting cables	mm^2	10	10
Delayed fuse	A	32	40
Open Circuit Voltage	V	2,6	3,5
Short circuit current	kA	10,2	13,8
Max. welding current	kA	8,2	11
Max. electrode force (6 bar)	daN	300	300
Water consumption at 300 kPa (3 bar)	l/min	3,8	3,8
Dimensions	↗ mm	760	760
	→ mm	330	330
	↑ mm	1200	1200
Weight	kg	104	118

Other voltages on request



Standard electrode



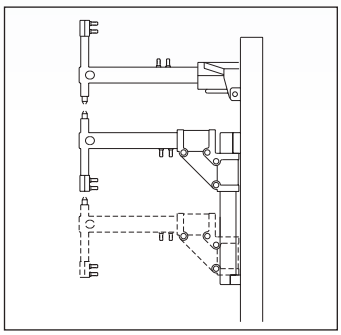
Electrode for lower arm in pressed-in electrode version

K / KP

ROCKER ARM SPOT WELDERS WITH ADJUSTABLE HEIGHT LOWER ARM

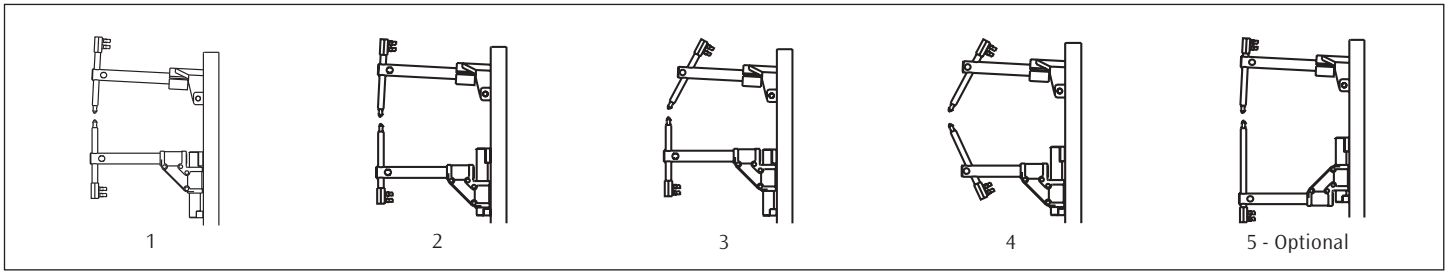
The K and KP series resistance spot welders, versatile, robust and easy-to-use, ensure best welding results on all weldable metals and represent the ideal solution in a large variety of spot-welding applications. K's and KP's allow to adjust lower arm both in height and also laterally. K models are mechanical pedal operated, whilst KP's are pneumatically operated by an electric pedal.

K KP



1~ AC DIGITAL 888

- Excellent welding on all weldable metals
- Welding current and time electronic adjustments
- Synchronous ignition SCR group with phase shift welding current adjustment to eliminate initial transient
- Reduced consumption
- Water cooled arms
- Water cooled copper electrodeholders with adjustable height
- Self-lubricated pneumatic components to eliminate oil deposits and to safeguard the environment from contaminants (KP)
- High versatility thanks to all different possible work configurations
- Lower arm with adjustable height which can be rotated for use with a longer electrodeholder (Optional K/KP fig.5)

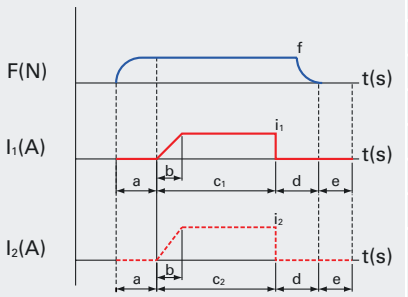


1 2 3 4 5 - Optional

WS 402 ELECTRONIC CONTROL

- Welding time adjustable by periods
- Single or repeated spotting facility
- Automatic compensation of mains voltage fluctuation
- Error display during the welding cycle
- Weld/no Weld selector key
- 24 V DC supply solenoid valve
- 50/60 Hz frequency automatic identification
- 24 V AC supply electronic control
- 2 welding program (2 times 2 currents) facility by using a double pedal (optional)

K - KP



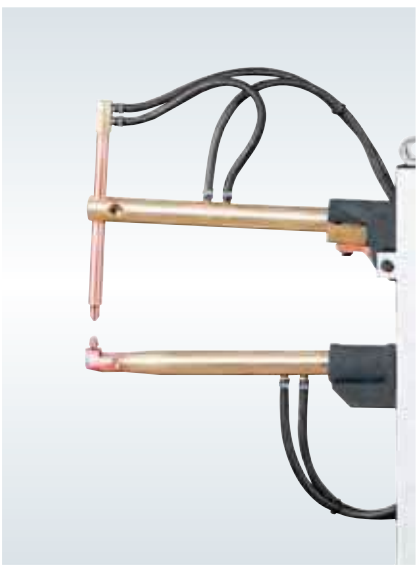
	FUNCTIONS	WS 402
a	Squeeze time	•
	Pressure contact	•
b	Slope up time	•
c_1 - c_2*	Welding time	•
i_1 - i_2*	Welding current	•
d	Holding time	•
e	Pause time	•

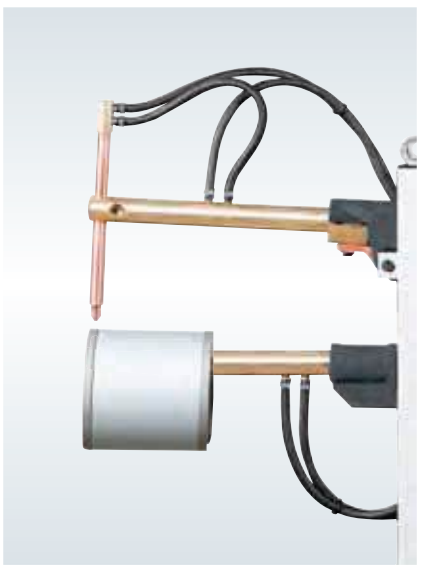
* i_2 - c_2 available only whenever using a double pedal

- Electrode force adjustable by spring nut and, for KP, also by air pressure regulation manometer
- Easy electrode gap adjustment without moving the electrodeholders

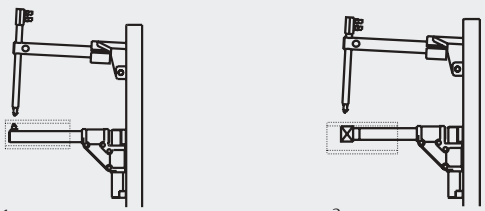
K – KP LOWER ARM FITTED WITH PRESSED-IN ELECTRODE

Whenever the lower arm is fitted with a pressed-in electrode, also a long electrodeholder is necessary on the upper arm.





K - KP OPTIONAL



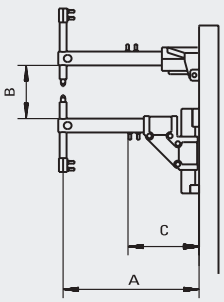
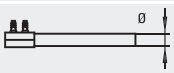
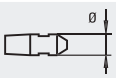
1 2

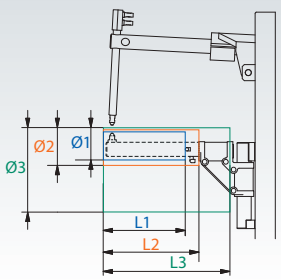
ACCESSORIES

- IR 14 water cooling equipment (only for K / KP 22 and 28)
- Special electrodes (on request)
- 65 mm offset electrode holders
- Long electrode holders
- Barholders with 100 mm bars
- Possibility of a two-step pedal: squeeze without welding and welding after pressing the second step
- Possibility of a double pedal for quick use of two different welding programs






K - KP				K 22 KP 22	K 28 KP 28	K 48 KP 48
	A		mm	455	455	490
	A (Optional)		mm	600	600	700
			mm	800	800	1000
	B	MIN.	mm	173	168	163
		MAX.	mm	410	443	438
	C		mm	255	255	285
			Ø mm	40	45	50
			Ø mm	21	21	25
			Ø mm	16	16	16
				10%	10%	10%



		K 22 KP 22	K 22 KP 22	K 28 KP 28	K 28 KP 28	K 48 KP 48	K 48 KP 48	K 48 KP 48
A	mm	455	600	455	800	490	700	1000
L1	mm	252	397	252	597	257	467	767
Ø1 Min	mm	60	60	63	63	65	65	65
L2	mm	280	429	289	643	295	505	805
Ø2 Min	mm	85	85	90	90	98	98	98
L3	mm	397	542	402	747	427	637	937
Ø3 Min	mm	180	180	185	185	205	205	205

TECHNICAL DATA		K 22 KP 22	K 28 KP 28	K 48 KP 48
Single phase input 50/60 Hz	V	400	400	400
Rated power	kVA	20	25	45
Max. welding power	kVA	36,5	54,7	75
Installed power	kVA	12	14	24
Cross section connecting cables	mm^2	10	16	25
Delayed fuse	A	25	36	63
Open Circuit Voltage	V	3,5	4,2	5,2
Short circuit current	kA	11,6	14	17,8
Max. welding current	kA	9,3	11,2	14,2
Max. electrode force (6 bar)	daN	180	300	280
Water consumption at 300 kPa (3 bar)	l/min	3,8	3,8	3,8
Dimensions	↗ mm	980	980	1020
	→ mm	330	390	390
	↑ mm	1200	1250	1250
Weight	kg	120	167	194

Other voltages on request

PPS

RESTECH
CEA RESISTANCE WELDING DIVISION

VERTICAL STROKE SPOT WELDERS

PPS models, developed appositely for spot welding jobs, fully satisfy a wide range of the heaviest large production industrial applications. Equipped with a microprocessor control, upon request they can be supplied in special configurations or fitted with an optional safety concomitant push button external unit.

PPS 125

1~ AC DIGITAL 888

PPS 35 - 60

- Lower round arm with adjustable height and lateral adjustment
- Lower arm holder can be adjusted for use with larger arm gap

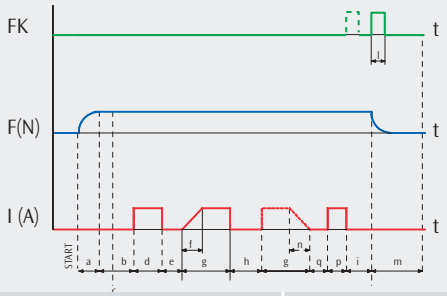
PPS 125

- Upper head low friction driving system for precision welding

- Excellent welding on all weldable metals
- Synchronous ignition SCR group with phase shift welding current adjustment to eliminate initial transient
- Thermostatic protection on the SCR group
- High welding currents with low consumption
- Self-lubricated pneumatic components to eliminate oil deposits and to safeguard the environment from contaminants
- Water cooled secondary circuit, i.e. electrodes, electrodeholders and transformer, to avoid overheating
- Water cooled copper electrodeholders with adjustable height
- Electrode force adjustable by pressure reducer group equipped with a manometer and filter for automatic air impurity expulsion
- Upper electrode movement by self-lubricated double effect pneumatic cylinder fitted with speed regulator, end stroke shock-absorber and silencer for compressed air discharge
- Manual valve for upper head descent without pressure for cleaning, centering and ordinary maintenance of the electrodes
- Solenoid valve to control welding cylinder
- Cycle stop emergency button

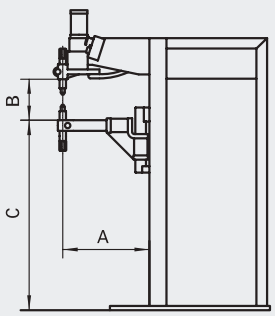
WS 708 ELECTRONIC CONTROL

- 8 programs
- Half period welding time
- Pre-heating current
- Two 24 V DC solenoid valves
- 50/60 Hz frequency
- Mains voltage compensation
- Error message
- Weld/no weld switch
- Single or multi spot



	FUNCTIONS	WS 708
a	Pre-squeeze time	•
b	Squeeze time	•
c	Pressure contact	•
d	Preheating time	•
e	Cooling time	•
f	Slope up time	•
g	Welding time	•
	Welding current	•
h	Pulse interval time	•
i	Holding time	•
l	Cycle end contact	•
m	Pause time	•

PPS



			PPS 35	PPS 60	PPS 125
A		mm	395	435	500
A (Optional)		mm	-	650	700
B	MIN.	mm	140	180	170
	MAX.	mm	400	510	320
C	MIN.		690	615	710
	MAX.		950	945	860
		Ø mm	50	60	88
		Ø mm	30	35	35

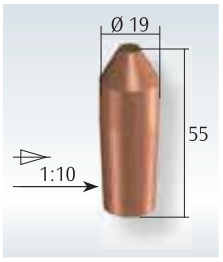
TECHNICAL DATA		PPS 35	PPS 60	PPS 125
Single phase input 50/60 Hz	V	400	400	400
Rated power at 50%	kVA	35	60	125
Short circuit power	kVA	86	142	368
Max. welding power	kVA	69	113	294
Installed power	kVA	20	38	80
Cross section connecting cables	mm^2	25	35	95
Delayed fuse	A	63	100	250
Open Circuit Voltage	V	4,5	5,9	11,5
Short circuit current	kA	19	24	32
Max. welding current	kA	15,2	19,2	25,6
Thermal secondary current at 100%	kA	3,9	7,2	7,68
Work stroke	mm	60	65	100
Max. electrode force (6 bar)	daN	230	470	900
Water consumption at 300 kPa (3 bar)	l/min	6	7	8
Dimensions	↗ mm	1005	1070	1370
	→ mm	410	430	420
	↑ mm	1425	1520	1750
Weight	kg	200	335	700

Other voltages on request

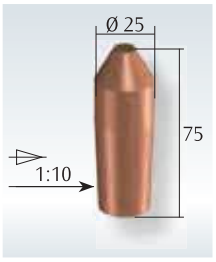
OPTIONAL

- Safety concomitant push button external unit (optional)
- Different length arms (optional)
- Lower arms with pressed-in electrode (for entering pipes or boxes) and longer electrodeholder on the upper arm (Optional)

Push button external unit



Electrode PPS 35/60



Electrode PPS 125

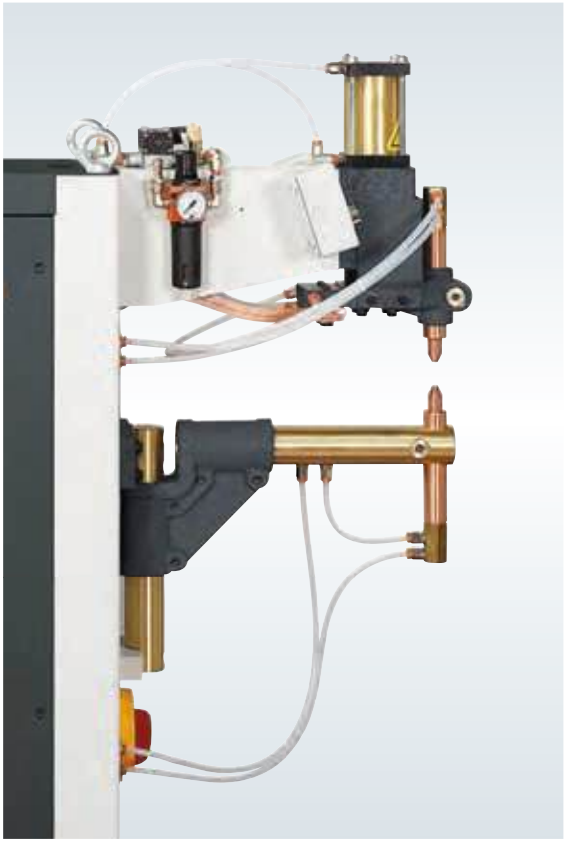
PPN

RESTECH
CEA RESISTANCE WELDING DIVISION

VERTICAL STROKE SPOT AND PROJECTION WELDERS

Being suitable for both spot and projection welding jobs, PPN models fully satisfy an extremely large variety of the heaviest mass production industrial applications. Equipped with a microprocessor control and safety concomitant side buttons, upon request they can also be supplied fitted with special controls and in different configurations.

1~ AC DIGITAL 888



- Excellent welding on all weldable metals
- Synchronous ignition SCR group with phase shift welding current adjustment to eliminate initial transient
- Thermostatic protection on the SCR group
- High welding currents with low consumption
- Set up time reduction thanks to quick and easy modification of electrodeholders platens opening without any intervention on the secondary circuit (patent pending)
- Self-lubricated pneumatic components to eliminate oil deposits and to safeguard the environment from contaminants
- Water cooled secondary circuit, i.e. electrodes, electrodeholders, platens and transformer, to avoid overheating
- Water cooled copper electrodeholders with adjustable height
- Electrode force adjustable by pressure reducer group equipped with a manometer and filter for automatic air impurity expulsion
- Upper electrode movement by self-lubricated double effect pneumatic cylinder fitted with speed regulator, end stroke shock-absorber and silencer for compressed air discharge
- Solenoid valve to control welding cylinder
- Safety cycle start by means of concomitant side buttons or, alternatively only if the operator can work in safe conditions, by electric pedal. Either option can be chosen by a selector with removable key
- Cycle stop emergency button

PPN 63

THEY ARE EQUIPPED WITH:

- Lower round arm with adjustable height and lateral adjustment
- Electrodeholders with electrodes for spotwelding and ability to easily fit barholders for projection welding
- Lower arm holder can be adjusted for use with larger arm gap
- Spotwelding (A)
- Projection welding with bars for mesh (B)

UPON REQUEST ALSO AVAILABLE WITH:

- Different length arms (optional)
- Lower arms with pressed-in electrode (for entering pipes or boxes) and longer electrodeholder on the upper arm (optional)
- Special version with platens only for projection welding (PPN 63) (C)


A)

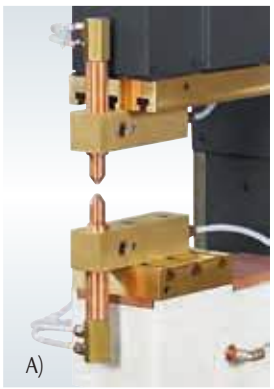

B)


C)

PPN 83 - 103 - 153 - 253

All supplied with lower platen adjustable in height and fitted with T-slots, enabling the quick assembly of barholders, electrodeholders or any dedicated tooling for a specific application. Platens gap is easily and quickly adjustable without any intervention on the secondary circuit (patent pending).

- Manual valve for upper head descent without pressure for cleaning, centering and ordinary maintenance of the electrodes
- Upper head low friction driving system for precision welding (except PPN 83)


A)


B)

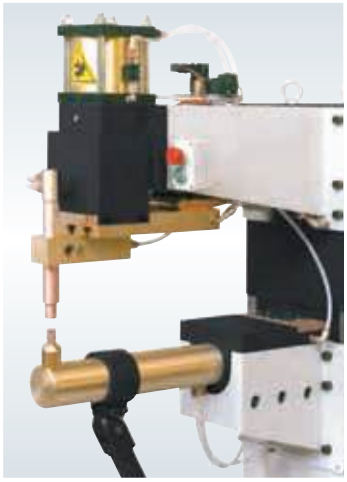

C)

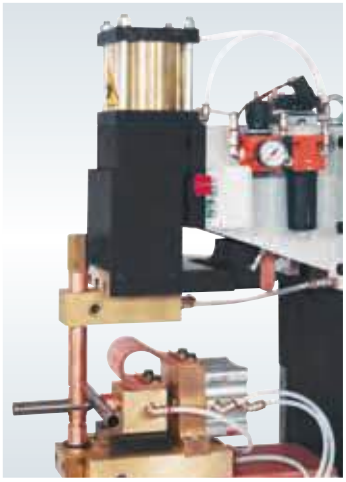
A) Spotwelding

B) Barholder welding for mesh

C) Projection welding

CUSTOMIZED VERSIONS

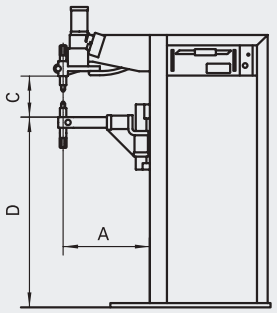




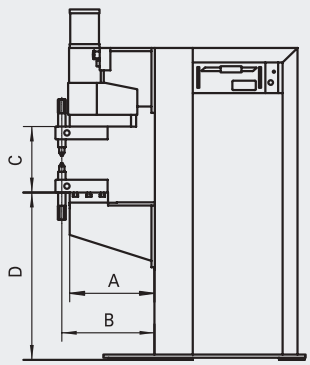

ELECTRONIC CONTROLS

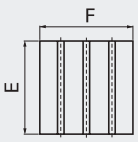
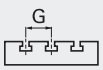
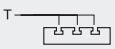
FUNCTIONS	WS 708	WS 3000 AC	FILIUS MULTI
Pre-squeeze time	●	●	
Squeeze time	●	●	●
Preheating time	●	●	●
Preheating current	●	●	●
Cooling time	●	●	●
Slope up	●	●	●
Welding time	●	●	●
Welding current	●	●	●
½ period welding time	●	●	●
Welding time 2 (2 pedal version)	●	●	●
Welding current 2 (2 pedal version)	●	●	●
Pulse interval time	●	●	●
Pulse number	●	●	●
Post heating time		●	●
Post heating current		●	●
Holding time	●	●	●
Pause time	●	●	●
Auto-repeat	●	●	●
Program no.	8	100	32
Welding current display		●	●
Limit monitoring		●	●
Constant current			●
Mains voltage compensation	●	●	●
Error message	●	●	●
Spot counter		●	●
Pressure contact	●	●	●
Cycle end contact	●	●	●

PPN 63



PPN 83 -103 - 153 - 253



PPN			63	83	103	153	253
A		mm	435	400	400	400	445
A (Optional)	MIN.	mm	650	650	650	650	650
	MAX.	mm	750	---	---	---	---
B		mm	---	445	445	445	490
C	MIN.	mm	180	145	145	145	200
	MAX.	mm	510	300	300	300	330
D	MIN.		615	800	800	800	865
	MAX.		945	955	955	955	995
		Ø mm	60	---	---	---	---
		Ø mm	35	30	35	35	35
		Ø mm	19	19	25	25	25
		E mm	---	150	180	180	200
		F mm	---	150	180	180	200
		G mm	---	63	63	63	63
		T	---	2	3	3	3

TECHNICAL DATA		PPN 63	83	103	153	253
Single phase input 50/60 Hz	V	400	400	400	400	400
Rated power at 50%	kVA	60	80	100	150	250
Short circuit power	kVA	142	266	366	575	763
Max. welding power	kVA	113	210	293	460	610
Installed power	kVA	38	65	78	120	195
Cross section connecting cables	mm^2	35	50	50	95	120
Delayed fuse	A	100	150	200	300	500
Open Circuit Voltage	V	5,9	8,3	9,4	11,5	12,5
Short circuit current	kA	24	32	39	50	61
Max. welding current	kA	19	25	31,2	40	49
Thermal secondary current at 100%	kA	7,2	6,8	7,5	10,1	14,2
Work stroke	mm	65	100	100	100	100
Max. electrode force (6 bar)	daN	470	736	900	1200	1884
Water consumption at 300 kPa (3 bar)	l/min	7	8	8	8	8
Dimensions	↗ mm	1070	1115	1115	1170	1210
	→ mm	430	400	400	400	460
	↑ mm	1520	1650	1650	1800	1800
Weight	kg	335	560	580	610	900

Other voltages on request

MF

RESISTANCE MEDIUM FREQUENCY THREE PHASE SPOT/PROJECTION WELDERS

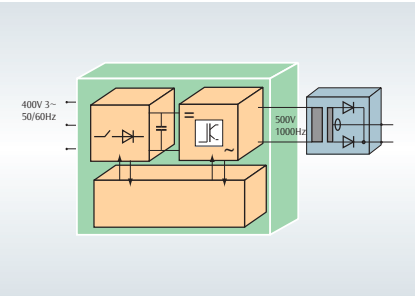
The MF range of medium-frequency inverter resistance welders is the ultimate answer to increasing demand for quality in resistance welding applications. Constant current control, fast millisecond current regulation, high quality and perfect control of the energy transferred to the weld nugget are the main advantages versus traditional 50 Hz equipment. MF models fully meet the toughest mass production industrial applications. Thanks to their features, they represent the ideal solution for resistance spot welding of thin thickness and of hardly weldable material, such as copper, brass, alluminium alloys, zinc plated and other coated steel.

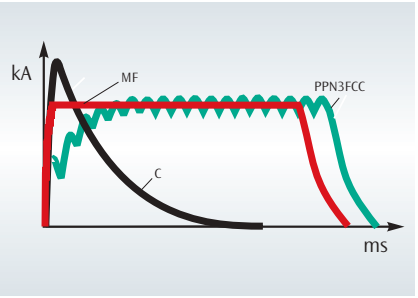
- All MF equipment can be converted into bench version types (BSW) or utilized in seamwelding applications too.
- High welding quality and process reliability
- Direct current welding
- Large power for welding with increased arm lengths
- Possibility of monitoring the welding process each 1ms (1000 Hz) or even each 0,2 ms with MF5040 versus 20 ms of traditional 50 Hz equipment.
- The presence of magnetic materials between the arms does not affect welding
- Self-lubricated pneumatic components to eliminate oil deposits and to safeguard the environment from contaminants
- Water cooled secondary circuit
- Low tendency for welding spatters
- Less imprint and deformation
- Very long electrode life

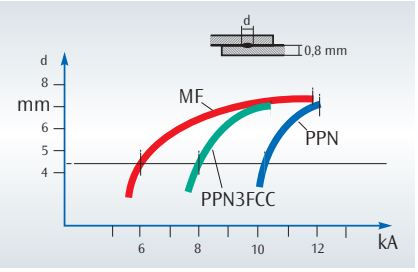
- High power factor and efficiency
- Balanced power absorption on the three mains phases
- Low primary consumption
- Lower energy consumption costs
- Ability to produce quality joints on hardly weldable materials
- Ability to reduce welding time to a few milliseconds with a consequent saving in welding time
- Welding tasks previously solved by capacitor discharge welding are now possible by MF range in a more economical way
- Quick upsloping to the preset welding current
- The energy converts mostly in the weld nugget
- Nugget temperature comparison between single phase machines (PPN) and MF equipment
- Less thermal loss through the workpiece and the electrodes
- Weld nugget quality indirect control
- Ability to modify the current waveform with dedicated inverter controls

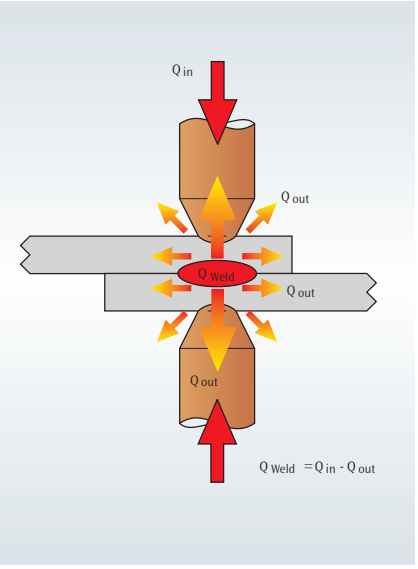
CEA MFI

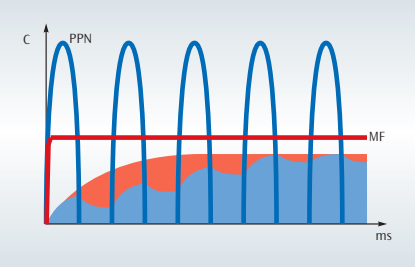
H+W MF

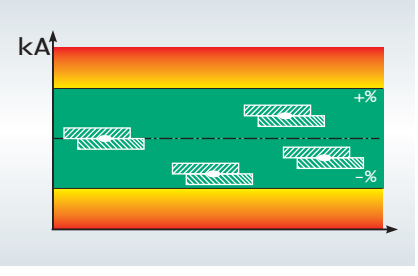


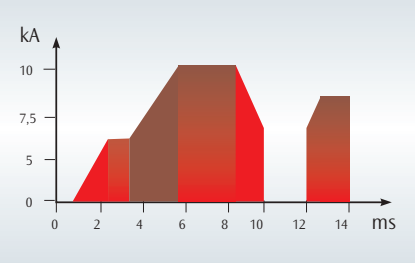












MF 1040 - MF 1041

The most enhanced inverter technology for medium frequency spotwelding available for everyone. These equipment , fitted with new inverters with WSI 100 or FILIUS COMPACT controls, represent a valid solution for anybody looking for all Medium Frequency benefits in both spotwelding applications and nut projection welding too.

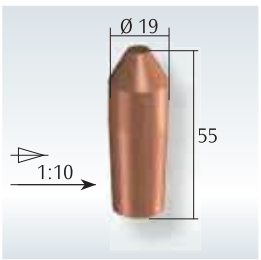
MF 1040 and 1041 models allow to monitor the whole welding process every 1 ms (1000 Hz).

- Lower round arm with adjustable height and lateral adjustment
- Electrodeholders with electrodes for spotwelding
- Lower arm can be lowered and adjusted for use with larger arm gap

UPON REQUEST ALSO AVAILABLE WITH:

- Different length arms (optional)
- Lower arms with pressed-in electrode (for entering pipes or boxes) and longer electrodeholder on the upper arm (optional)

Electrodeholder set



Standard Electrode

Concomitant push button unit

Offset electrode holder set

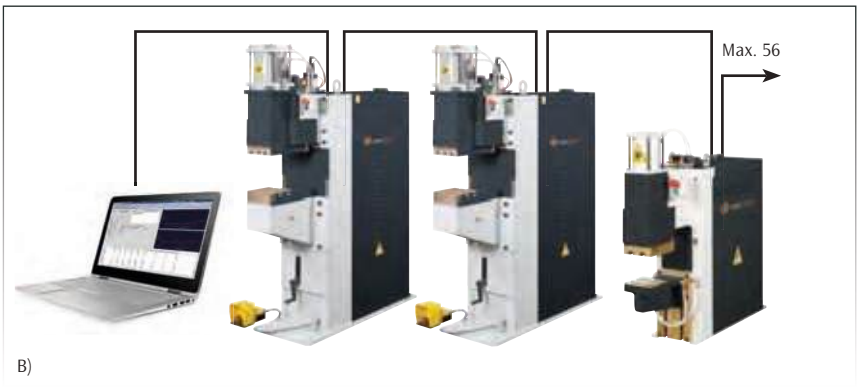
Barholder sets with bars

MF 100 - MF 160 - MF 200

Medium frequency (1000 Hz) MF 100 - 160 - 200 are particularly suitable for projection welding applications requiring high welding current and force and also for spotwelding special material and alloys to be joined with elevated currents and short welding time.

- High power spot and projection welding
- Lower platen adjustable in height and fitted, like the upper one, with T-slots, enabling the quick assembly of barholders, electrodeholders or any dedicated tooling for specific applications
- Platens gap is easily and quickly adjustable without any intervention on the secondary circuit
- Safety cycle start by means of concomitant side buttons or, as alternative only if the operator can work in safe conditions, by electric pedal. Either option can be chosen by a selector with removable key
- Upper head linear low friction driving system for very precise welding
- Manual valve for upper head descent without pressure for cleaning, centering and ordinary maintenance of the electrodes
- Solenoid valve to stop water circulation whenever the machine is switched off from the mains supply

A)



B)

INTEGRATED CONTROL PANEL (A)

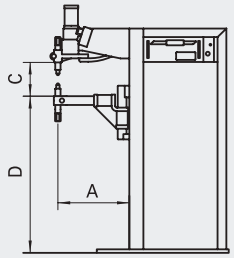
- 64/128 programs
- Constant current facility
- Limit current monitoring
- Preheating current
- Annealing current
- Linearized stepper function
- Two 24 V DC solenoid valves
- Proportional valve
- Weld/no weld switch
- Error message logbook
- Weld counter
- Main voltage compensation
- Single or multi spot
- Liquid crystal display

REMOTE CONTROL BY PERSONAL COMPUTER (B)

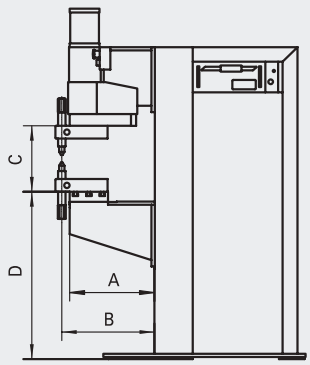
- Network up to 56 machines
- 128 programs
- Constant current facility
- Limit current monitoring
- Preheating current
- Annealing current
- Linearized stepper function
- Two 24 V DC solenoid valves
- Proportional valve
- Production monitoring
- Error message logbook
- Weld counter
- Mains voltage compensation
- Single or multi spot
- Stored data files
- Back up file
- Operating parameter software

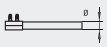
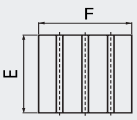
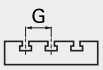
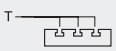
FUNCTIONS	WSI 100	FILIUS MF CLASSIC
Pre-squeeze time	●	
Squeeze time	●	●
Preheating time	●	●
Preheating current	●	●
Cooling time	●	●
Slope up	●	●
Welding time	●	●
Welding current	●	●
Welding time adjustable in ms	●	●
Welding time 2 (2 pedal version)	●	●
Welding current 2 (2 pedal version)	●	●
Pulse interval time	●	●
Pulse number	●	●
Post heating time	●	●
Post heating current	●	●
Holding time	●	●
Pause time	●	●
Auto-repeat	●	●
Program no.	64	128
Welding current display	●	●
Limit monitoring	●	●
Constant current	●	●
Mains voltage compensation	●	●
Error message	●	●
Spot counter	●	●
Pressure contact	●	●
Cycle end contact	●	●
Proportional valve	●	●

MF 1040 - 1041



MF 100 - 160 - 200



			MF				
			1040	1041	100	160	200
A		mm	435	435	400	400	445
A (Optional)		mm	650	650	650	650	650
		mm	750	750	---	---	---
B		mm	---	---	445	445	490
C	MIN.	mm	180	180	145	145	200
	MAX.	mm	510	510	300	300	330
D	MIN.	mm	615	615	800	800	865
	MAX.	mm	945	945	955	955	995
		Ø mm	60	60	---	---	---
		Ø mm	35	35	30	35	35
		Ø mm	19	19	25	25	25
		E mm	---	---	180	180	200
		F mm	---	---	180	180	200
		G mm	---	---	63	63	63
		T	---	---	3	3	3

TECHNICAL DATA		MF				
		1040	1041	100	160	200
Three phase input 50/60 Hz	V	400	400	400	400	400
Rated power at 50%	kVA	40	40	100	160	200
Installed power	kVA	40	40	50	70	100
Cross section connecting cables	mm^2	35	35	35	50	70
Delayed fuse	A	63	63	63	100	160
Open Circuit Voltage	V	5,0	5,0	10	10	12
Short circuit current	kA	22	22	28	45	55
Max. welding current	kA	20	20	23	36	44
Thermal secondary current at 100%	kA	5,4	5,4	6,5	12,0	12,0
Work stroke	mm	65	65	100	100	100
Max. electrode force 600 kPa (6 bar)	daN	470	470	900	1200	1800
Water consumption at 300 kPa (3 bar)	l/min	6	6	20	20	20
Dimensions	↗ mm	1070	1070	1115	1115	1210
	→ mm	430	430	400	400	460
	↑ mm	1520	1520	1650	1650	1800
Weight	kg	260	260	530	550	850

Other voltages on request

PPN 3F CC

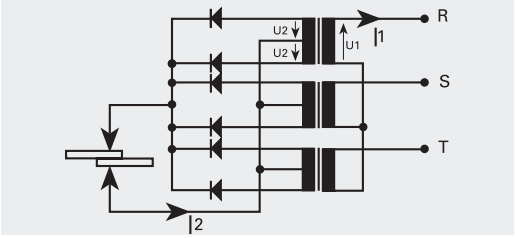
DIRECT CURRENT THREE PHASE RESISTANCE SPOT/PROJECTION WELDERS

Suitable for both spot and projection welding, PPN 3F CC models fully meet the most sophisticated and toughest mass production industrial applications. Thanks to their features, they represent the ideal solution for resistance spot welding of aluminium and other material not easily weldable by conventional resistance equipment. Equipped with microprocessor control, concomitant safety side buttons and solenoid valve, upon request, they can be supplied with special controls in various configurations.

DIRECT CURRENT

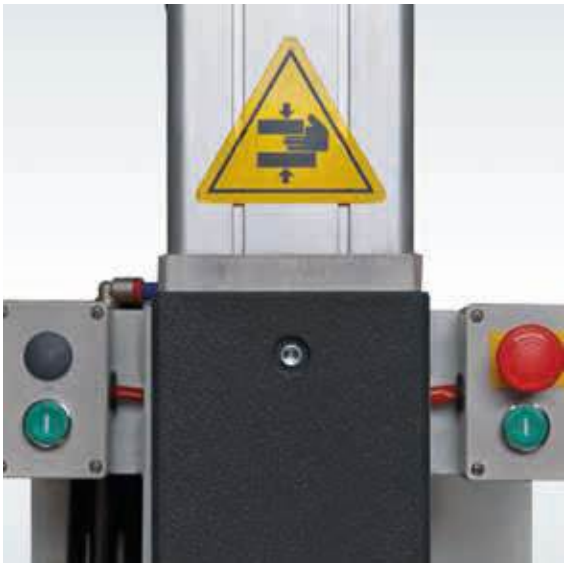
- High quality joints
- Large power for projection welding
- Large power for welding with increased arm lengths
- The presence of magnetic materials between the arms does not affect welding
- Long electrode life
- Highest efficiency
- Reduced welding time

3-PHASE MAINS SUPPLY



- Balanced power absorption on the three mains phases
- Low primary consumption
- High power factor and output
- Lower cost for electric power
- Water cooled secondary circuit to avoid electrical parts overheating
- Self-lubricated pneumatic components to eliminate oil deposits and to safeguard the environment from contaminants
- Safety cycle start by means of concomitant side buttons or, as alternative only if the operator can work in safe conditions, by electric pedal. Either option can be chosen by a selector with removable key
- Cycle stop emergency button
- All the machines are supplied with lower platen adjustable in height and fitted with T-slots, enabling the quick assembly of barholders, electrodeholders or any dedicated tooling for each application

- Platens gap is easily and quickly adjustable without any intervention on the secondary circuit (patent pending)
- Upper head low friction linear driving system for very precise welding
- Manual valve for upper head descent without pressure for cleaning, centering and ordinary maintenance of the electrodes
- Solenoid valve to stop water circulation whenever the machine is switched off from the mains supply
- Suitable for applications requiring high welding power, such as mesh welding
- High welding quality and process reliability
- Synchronous ignition SCR group with phase shift welding current adjustment to eliminate initial transient
- Thermostatic protection on the SCR group
- Six phase rectifier bridge with diodes protected against overheating and overvoltage



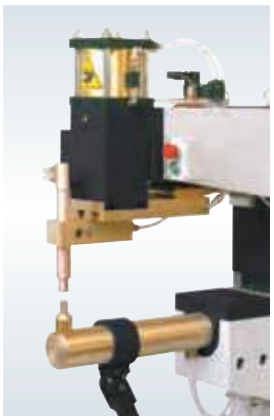
OPTIONAL AND SPECIAL VERSIONS

A. Adjustable double stroke cylinder

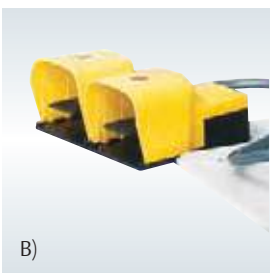
B. Double set of concomitant side buttons and double pedal for 2 program welding cycles

C. Welding program quick selector

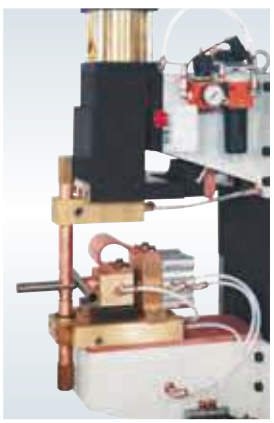
- Flowmeter stopping the welding process in case of insufficient water flow
- Two step pedal for squeeze without welding and welding after pushing the second step
- 0,5 bar low pressure solenoid valve for applications requiring so
- Proportional valve to select and control two pressure levels



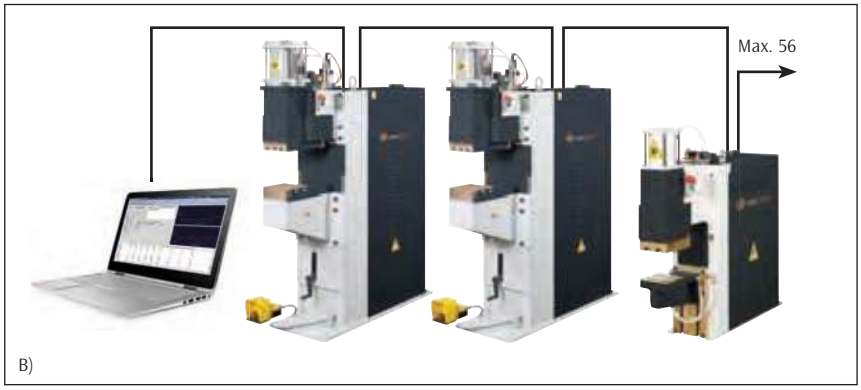

A)


B)


C)




A)



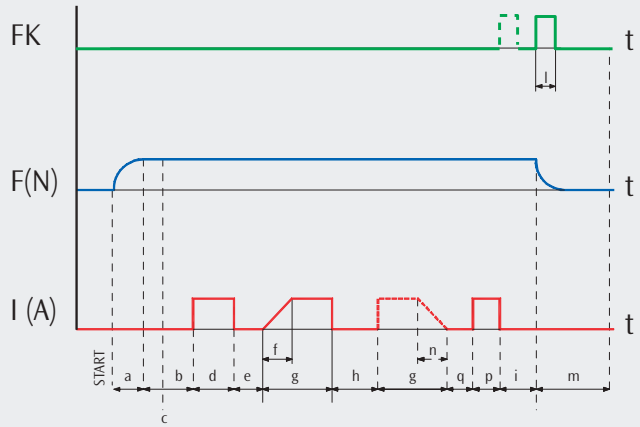
B)

INTEGRATED CONTROL PANEL (A)

- 32 / 64 programs
- Constant current facility
- Limit current monitoring
- Preheating current
- Annealing current
- Linearized stepper function
- Two 24 V DC solenoid valves
- Proportional valve
- Weld/no weld switch
- Error message logbook
- Weld counter
- Main voltage compensation
- Single or multi spot
- Liquid crystal display

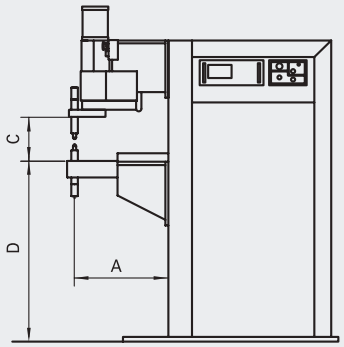
REMOTE CONTROL BY PERSONAL COMPUTER (B)

- Network up to 56 machines
- 64 programs
- Constant current facility
- Limit current monitoring
- Preheating current
- Annealing current
- Linearized stepper function
- Two 24 V DC solenoid valves
- Proportional valve
- Production monitoring
- Error message logbook
- Weld counter
- Mains voltage compensation
- Single or multi spot
- Stored data files
- Back up file
- Operating parameter software

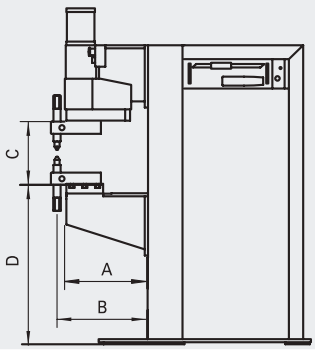


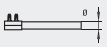
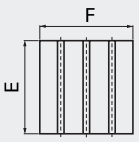
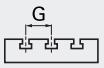
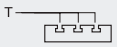
	FUNCTIONS	A - B
a	Pre-squeeze time	•
b	Squeeze time	•
c	Pressure contact	•
d	Preheating time	•
e	Cooling time	•
f	Slope up time	•
g	Welding time	•
h	Pulse interval time	•
n	Slope down time	•
q	Cooling time	•
p	Annealing time	•
i	Holding time	•
l	Cycle end contact	•
m	Pause time	•

PPN 100 3F CC



PPN 160 - 260 - 360 - 460 3F CC



PPN 3F CC			100	160	260	360	460
A		mm	500	445	445	445	445
A (Optional)		mm	700	650	650	650	650
B		mm	---	490	490	490	490
C	MIN.	mm	235	200	200	200	250
	MAX.	mm	390	330	332	350	400
D	MIN.	mm	900	852	852	900	942
	MAX.	mm	1055	982	982	1050	1092
		Ø mm	88	---	---	---	---
		Ø mm	35	---	---	---	---
		Ø mm	25	---	---	---	---
		E mm	---	200	200	250	250
		F mm	---	200	200	250	250
		G mm	---	63	63	63	63
		T	---	3	3	4	4

TECHNICAL DATA		PPN 3F CC				
		100	160	260	360	460
Three phase input 50/60 Hz	V	400	400	400	400	400
Rated power at 50%	kVA	100	160	250	350	450
Power at 100%	kVA	71	113	177	247	318
Short circuit power	kVA	560	716	878	1350	2200
Max. welding power	kVA	448	572	702	1080	1760
Cross section connecting cables	mm^2	50	70	95	120	2 x 120
Delayed fuse	A	160	200	250	300	400
Open Circuit Voltage	V	6,3	6,8	8	8,8	10
Short circuit current	kA	60	72	90	106	140
Max. welding current	kA	48	58	72	85	112
Thermal secondary current at 100%	mm	100	100	100	100	100
Work stroke	daN	900	1200	1880	2400	3600
Max. electrode force 600 kPa (6 bar)	l/min	20	20	20	20	25
Water consumption at 300 kPa (3 bar)	↗ mm	1480	1540	1540	1610	1610
	→ mm	430	480	480	530	530
	↑ mm	1800	1890	1890	2170	2300
Weight	kg	1100	1210	1300	1410	1800

Other voltages on request

BSW

VERTICAL STROKE SPOT AND PROJECTION BENCH WELDERS DIRECT CURRENT THREE PHASE RESISTANCE SPOT/PROJECTION WELDERS

BSW bench welders, thanks to their reduced dimensions, are suitable to build customised multispot welding equipment.BSW 25 is particularly suitable for precision spot welding and, fitted with special accessories, can be used to weld small size parts. BSW 50 and 100, thanks to their rigid structure, allow high quality projection welding.

- Upper head low friction driving system for very precise and quality welding
- Secondary circuit low impedance to grant high welding currents with low consumption
- BSW 50 and 100, with a platens adjustable in height and fitted with T-slots, enable the quick assembly of barholders, electrodeholders and any dedicated tooling for a specific application
- Safety cycle start by means of concomitant side buttons or, as alternative only if the operator can work in safe conditions, by electric pedal. Either option can be chosen by a selector with removable key
- Cycle stop emergency button

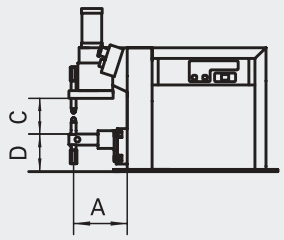
ELECTRONIC CONTROLS

FUNCTIONS	WS 708	WS 3000 AC	FILIUS MULTI
Pre-squeeze time	●	●	
Squeeze time	●	●	●
Preheating time	●	●	●
Preheating current	●	●	●
Cooling time	●	●	●
Slope up	●	●	●
Welding time	●	●	●
Welding current	●	●	●
½ period welding time	●	●	●
Welding time 2 (2 pedal version)	●	●	●
Welding current 2 (2 pedal version)	●	●	●
Pulse interval time	●	●	●
Pulse number	●	●	●
Post heating time		●	●
Post heating current		●	●
Holding time	●	●	●
Pause time	●	●	●
Auto-repeat	●	●	●
Program no.	8	100	32
Welding current display		●	●
Limit monitoring		●	●
Constant current			●
Mains voltage compensation	●	●	●
Error message	●	●	●
Spot counter		●	●
Pressure contact	●	●	●
Cycle end contact	●	●	●

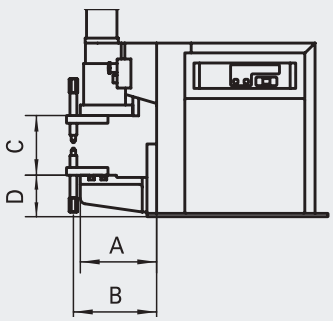
OPTIONAL

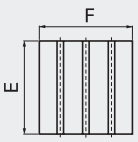
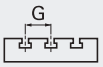
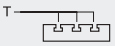
- Double pedal for the 2 time 2 current feature on the same workpiece
- Adjustable double stroke cylinder
- Barholder set with bars
- Two step pedal for squeeze without welding and welding after pushing the second step
- 0,5 bar low pressure solenoid valve for applications requiring so

BSW 25



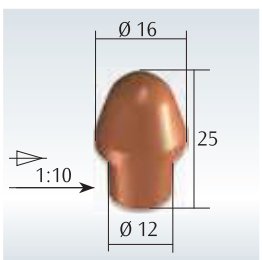
BSW 50 - 100



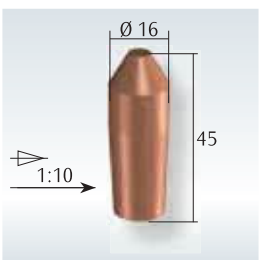
BSW			25	50	100
A		mm	192	276	335
B		mm	---	301	370
C	MIN.	mm	---	100	130
	MAX.	mm	129	225	300
D	MIN.	mm	---	140	163
	MAX.	mm	136	265	334
		Ø mm	40	---	---
		Ø mm	18	25	30
		Ø mm	16	16	19
		E mm	---	90	150
		F mm	---	130	150
		G mm	---	45	63
		T	---	2	2

TECHNICAL DATA		BSW 25	BSW 50	BSW 100
Single phase input 50/60 Hz	V	400	400	400
Rated power at 50%	kVA	25	50	100
Short circuit power	kVA	65	160	414
Max. welding power	kVA	52	128	331
Installed power	kVA	14	38	78
Cross section connecting cables	mm^2	16	25	50
Delayed fuse	A	40	100	200
Open Circuit Voltage	V	3,7	5,5	9,4
Short circuit current	kA	18	29	45
Max. welding current	kA	14,4	23,2	36
Thermal secondary current at 100%	kA	4,8	6,4	7,5
Work stroke	mm	50	75	100
Max. electrode force (6 bar)	daN	187	470	900
Water consumption at 300 kPa (3 bar)	l/min	4	7	7
Dimensions	↗ mm	800	900	1080
	→ mm	300	300	325
	↑ mm	590	770	1015
Weight	kg	96	210	380

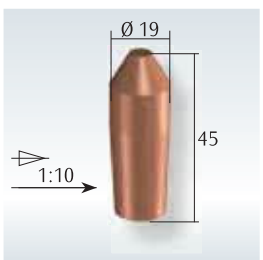
Other voltages on request



Electrode BSW 25



Electrode BSW 50



Electrode BSW 100

DUAL

TWIN SPOT WELDING UNIT

The twin spot welding units are the most suitable solution for single side welding and they ensure the possibility to realise multi spot welding equipment in a simple and economical way. Each twin spot unit is fitted with its own welding control, thus allowing independent operation or, by connecting more units together, the operator can weld either in electric or pneumatic cascade or simultaneously.

1~ AC DIGITAL 888

TECHNICAL DATA		DUAL 30
Single phase input 50/60 Hz	V	400
Rated power at 50%	kVA	30
Max. welding power	kVA	96
Installed power	kVA	20
Delayed fuse	A	63
Open Circuit Voltage	V	6
Short circuit current	kA	20
Max. welding current	kA	16
Work stroke	mm	60
Distance between electrodes	mm	40 - 180
Max. electrode force (6 bar)	daN	2 x 180
Water consumption at 300 kPa (3 bar)	l/min	4
Dimensions	↗ mm	380
	→ mm	162
	↑ mm	630
Weight	kg	68

Other voltages on request

PUSH-PULL

The “push-pull” system allows to operate on thicker thickness; it’s obtained, as shown in the left picture, by connecting a special version of DUAL 30 to another opposite unit without any control.

X-GUN / C-GUN

X-GUN

C-GUN

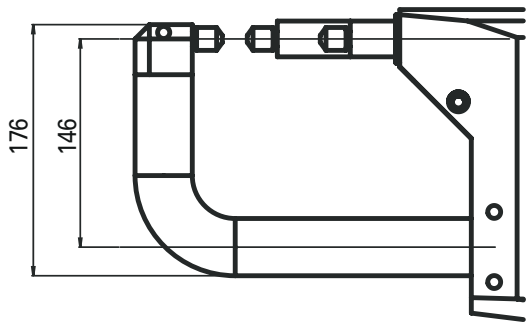
1~ AC DIGITAL 888

SPOT WELDING GUNS WITH BUILT-IN TRANSFORMER

The X-Gun and C-Gun series pneumatic operated suspended guns, versatile, robust and easy-to-use, ensure best welding results on any weldable metal and are the most ideal solution for any spotwelding job.

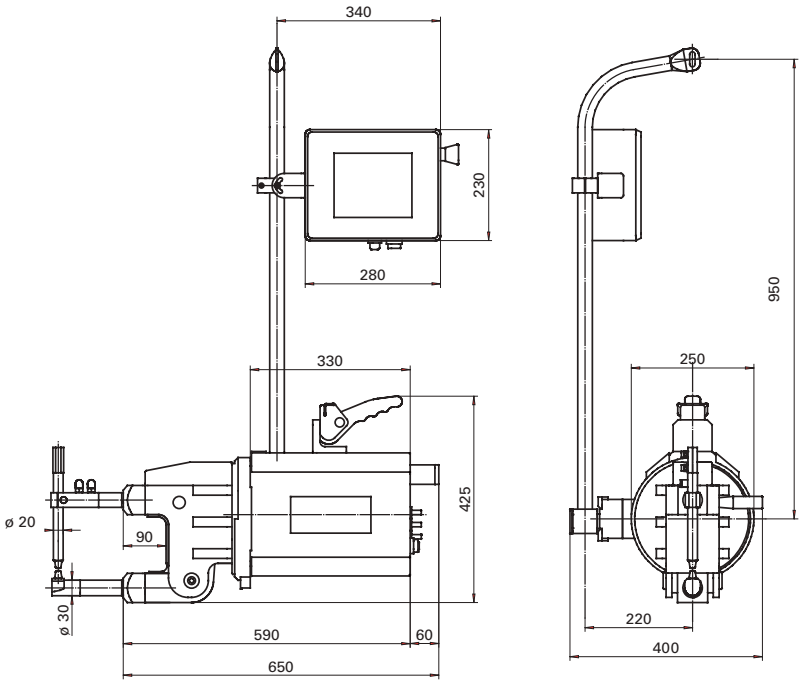
- Welding control in a separate cabinet with circuit breaker with residual current device and cycle stop emergency button
- Synchronous ignition SCR group with phase shift welding current adjustment to eliminate initial transient
- Reduced consumption
- Water cooled transformer
- Water cooled arms, electrode holders and electrodes
- Gyroscope suspension on sealed bearings for easy gun rotation and manoeuvrability in any position
- Adjustable working stroke
- Temporary extra stroke to easily reach workpiece areas also getting over obstacles
- High versatility in all applications thanks to all possible configurations
- Self-lubricated pneumatic components to eliminate oil deposits and to safeguard the environment from contaminants

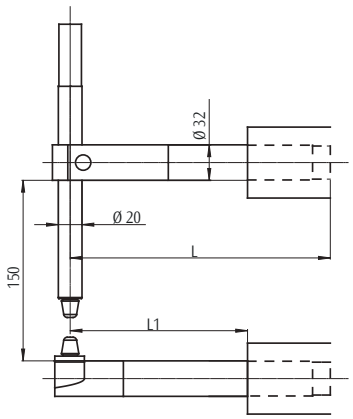
C-GUN

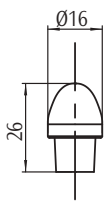


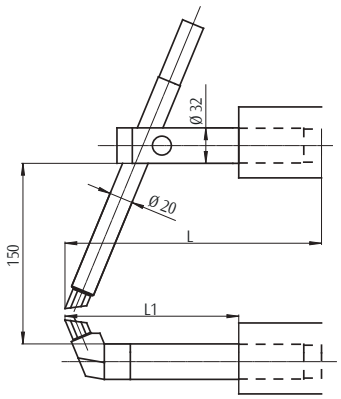
X-GUN

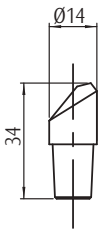
Both straight (version 1) and angled (version 2) arms are available in a large variety and different lengths from 200 up to 600 mm.









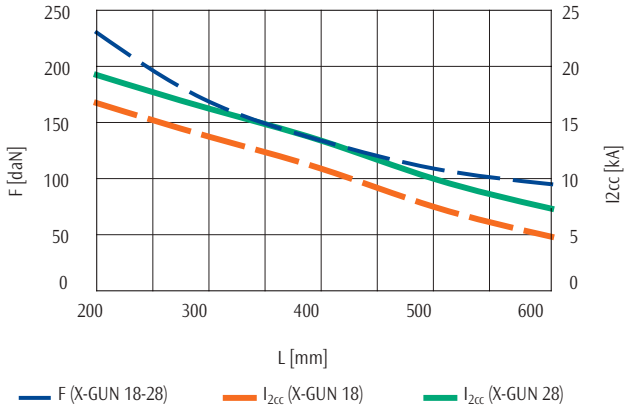


X-GUN VERSION 1					
L (mm)	220	300	400	500	600
L1 (mm)	155	235	335	435	535
(1) F (daN)	230	170	135	110	95
(2) P (kg)	2,7	3,5	4,6	5,7	6,7
(3) Cs (mm)	0-24	0-30	0-38	0-46	0-55
(4) CI (mm)	57	73	93	112	131

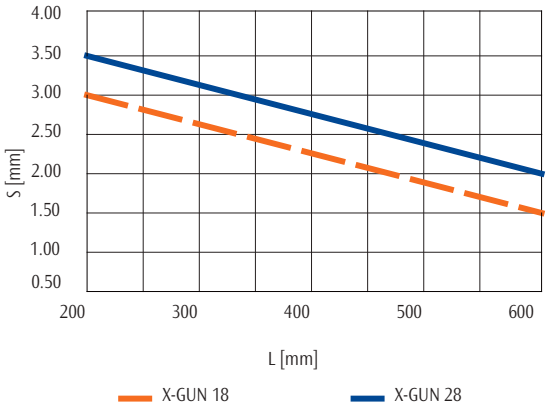
1. Electrode force at 600 kPa (6bar)
2. Arm set weight
3. Welding stroke
4. Temporary extra stroke

X-GUN VERSION 2					
L (mm)	220	300	400	500	600
L1 (mm)	155	235	335	435	535
(1) F (daN)	230	170	135	110	95
(2) P (kg)	2,7	3,5	4,6	5,7	6,7
(3) Cs (mm)	0-24	0-30	0-38	0-46	0-55
(4) CI (mm)	57	73	93	112	131

FORCE - SHORT CIRCUIT CURRENT

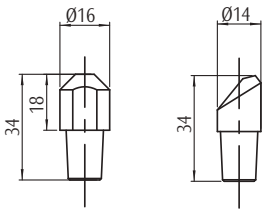


WELDING CAPACITY (MILD STEEL)



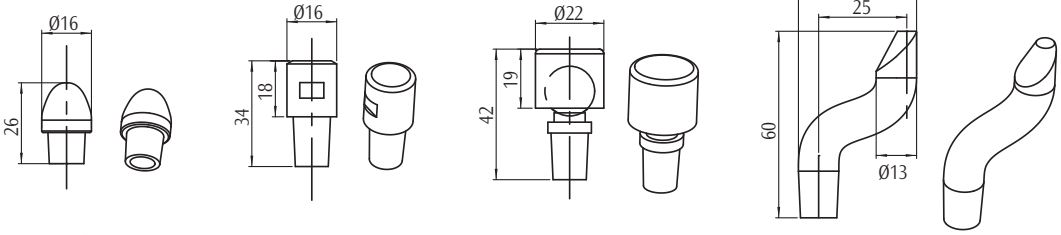
X-GUN ELECTRODES

Standard



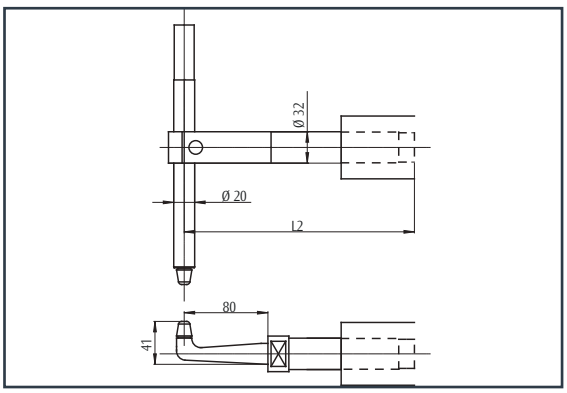
A B

Special

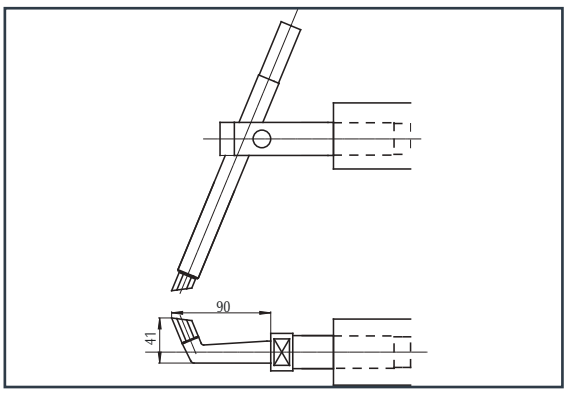


C D E F

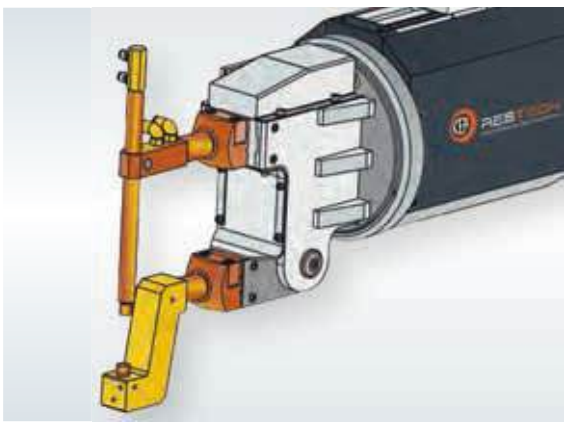
X-GUN SPECIAL VERSIONS



Version 3

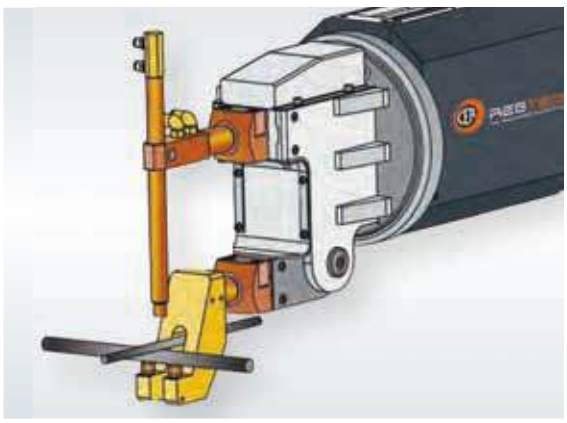


Version 4



Version 5

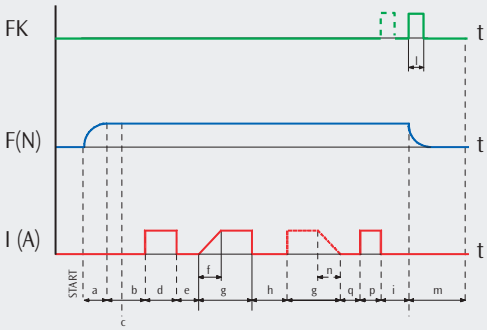
Suitable for rod welding in building industry (8mm Ø max.)



Version 6

WS 708
WELDING CONTROL

- Half period welding time
- Single or multi spot
- Mains voltage automatic compensation
- 2 programs retrievable from the handle switch selector
- 8 programs to be activated and used from the control keyboar
- Error messages
- Weld/no weld switch
- 24 V DC solenoid valve
- 50/60 Hz frequency automatic recognition
- 24 V AC mains supply for the control



	FUNCTIONS	WS 708
a	Pre-squeeze time	•
b	Squeeze time	•
c	Pressure contact	•
d	Preheating time	•
e	Cooling time	•
f	Slope up time	•
g	Welding time	•
	Welding current	•
h	Pulse interval time	•
i	Holding time	•
l	Cycle end contact	•
m	Pause time	•

TECHNICAL DATA		X-GUN 18	X-GUN 28	C-GUN 28
Single phase input 50/60 Hz	V	400	400	400
Rated power at 50%	kVA	18	28	28
Max. welding power	kVA	58	88	98
Installed power	kVA	15	25	25
Delayed fuse	A	32	40	40
Open Circuit Voltage	V	4,8	5,8	5,8
Short circuit current	kA	15	19	21
Max. welding current	kA	12	15,2	16,8
Work stroke	mm	50	50	50 + 20
Max. electrode force (6 bar)	daN	230	230	300
Water consumption at 300 kPa (3 bar)	l/min	4	4	4
Dimensions	↗ mm	650	650	800
	→ mm	250	250	250
	↑ mm	425	425	425
Weight	kg	47	53	58

Other voltages on request

ACCESSORIES

- Gun spring balancer
- Reducer with filter and manometer

BUTT WELDERS FOR WIRE DRAWING MILLS

N 3, N 9, N 12 and N 22 butt welders have been particularly designed for wire drawing mills for joining steel, brass, aluminium and copper rods and are suitable for all low-cadence applications.
All models are available with annealing facility. Jaws opening and closing is by means of foot pedals only in N 9, whilst it is operated by manual levers in N 3, N 12 and N 22.

N 3, N 9 and N 12 are standard supplied with a 4 wheel trolley for easy manoeuvrability, whilst N 22, on request, may be supplied with optional transport wheels.

Upon request all models of the N series can be supplied with a burr-removing grinding wheel. Lighted magnifying glass is additionally available for N 3 only.

- ▶ Manually operated
- ▶ Welding upset adjustment
- ▶ Welding power adjustment
- ▶ Movable jaw by bearing guides
- ▶ Graduated scale to easily adjust jaws opening (N 3, N 9 and N 12)
- ▶ Electronic control for welding parameter adjustment (N 22)


N 22 (B)


N12 - N 22 (D)


N 3 (C)


N 9 (E)

OPTIONAL

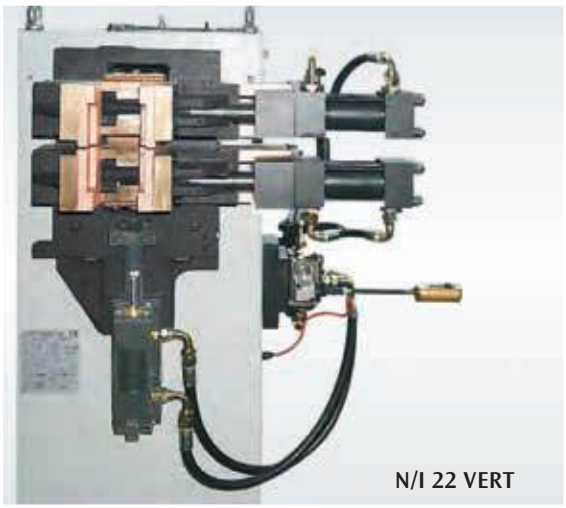
- Grinding wheel with magneto-thermal switch and blackout safety protection device (see A on next page and B)
- Four wheel trolley for N 22 (see B)
- Lighted magnifying glass for N 3 (see C)
- Integrated IMET Circular Saws with special trolley for N 12 and N 22 (see D)
- Integrated manual shears with reinforced trolley (N9) (see E)

N 22

			N 3		N 9		N 12		N 22	
			min	max	min	max	min	max	min	max
Fe	●	ø mm	0,5	2,5	0,8	8	2	14	3	18
	■	mm²		4,9		50		150		250
CrNi	●	ø mm	0,5	1,2	0,8	6	2	9	3	16
	■	mm²		1,1		28		65		200
Al	●	ø mm	0,8	2	2	5	2	8	4	12
	■	mm²		3,1		20		50		110
Cu	●	ø mm	0,5	1,8	1,5	3,5	2	6	4	8
	■	mm²		2,5		10		28		50
CuZn	●	ø mm	0,5	1,8	1,5	3,5	2	6	4	14
	■	mm²		2,5		10		28		150

SPECIAL VERSIONS

▶ Vertical up wire welding (N/I 22 VERT)



N/I 22 VERT

TECHNICAL DATA			N 3	N 9	N 12	N 22
Single phase input 50/60 Hz		V	400	400	400	400
Rated power at 50%		kVA	0,8	3	4	20
Max. welding power		kVA	2	9,6	18	93
Installed power		kVA	1	3	4	15
Cross section connecting cables		mm²	2,5	2,5	2,5	16
Delayed fuse		A	10	10	10	40
Open Circuit Voltage		V	2	2,6	2,4	4,2
Short circuit current		kA	1,2	4,4	10	28
Clamping force		daN	10	80	200	1000
Upsetting force		daN	1,3	20	80	300
Max. welding capacity on mild steel		mm²	4,9	50	150	250
Wire diameter	MIN.	mm	0,5	0,8	2	3
	MAX.	mm	2,5	8	14	18
Dimensions		↗ mm	518	565	770	800
		→ mm	515	565	660	600
		↑ mm	1145	1100	1120	1550
Weight		kg	52	80	80	280

Other voltages on request

Grinding wheel

N 20

RESTECH
CEA RESISTANCE WELDING DIVISION

CONCRETE REBAR BUTT WELDERS

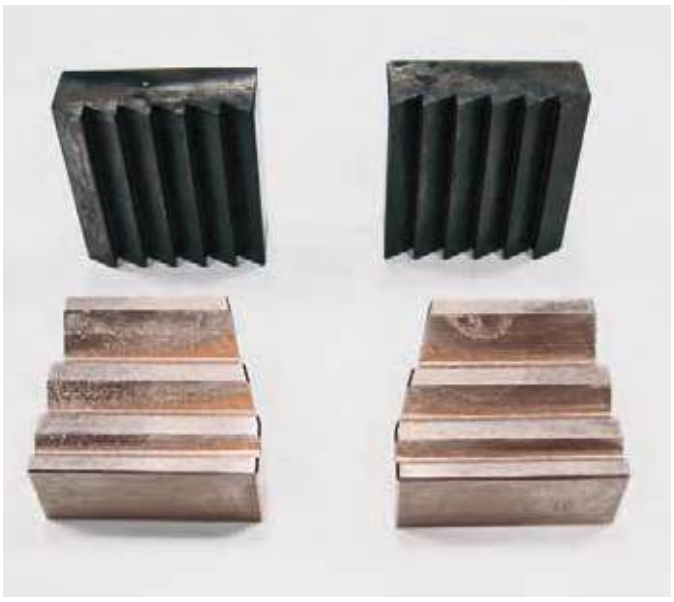
Manually operated buttwelder especially developed for joining concrete reinforcing steel rods. Working height adjustable on two levels, pedals accessible from the rear of the machine, powerful upsetting force: this equipment has been developed carefully considering all daily needs of the typical user.
N20 is standard equipped with annealing facility and four wheels for easy transportability.

- Easy-to-use
- High reliability
- Movable jaw by bearings for very precise low friction sliding to achieve quality welding

1~ AC DIGITAL 888

TECHNICAL DATA			N 20
Single phase input 50/60 Hz		V	400
Rated power at 50%		kVA	20
Max. welding power		kVA	88
Installed power		kVA	15
Cross section connecting cables		mm²	16
Delayed fuse		A	63
Open Circuit Voltage		V	4,4
Short circuit current		kA	25
Clamping force		daN	400
Upsetting force		daN	250
Wire diameter	MIN.	mm	8
	MAX.	mm	22
Dimensions		↗ mm	800
		→ mm	880
		↑ mm	1650
Weight		kg	320

Other voltages on request



Set of jaws for N 20

SRT - SQ/A

MASS PRODUCTION BUTT WELDERS

SRT and SQ/A butt welders, air operated with completely automatic cycle, allow high productivity and are suitable for welding wire-manufactured goods. SRT 11, due to its welding speed, is particularly recommended for high-cadence applications. SRT and SQ/A equipment, being fitted with welding controls with the pulse facility, enable to obtain much better finishing joints, slightly expanded with reduced burr.

- Air operated
- Electronic control for adjusting the welding parameters
- Movable jaw by bearing guides

SRT 11 SQ/A 121

1~ AC DIGITAL 888

TECHNICAL DATA			SRT 11	SQ/A 121	SQ/A 62	SQ/A 100
Single phase input 50/60 Hz		V	400	400	400	400
Rated power at 50%		kVA	4	25	60	100
Max. welding power		kVA	18	122	168	350
Installed power		kVA	4	15	80	120
Cross section connecting cables		mm²	2,5	16	70	95
Delayed fuse		A	10	40	200	300
Open Circuit Voltage		V	2,2	5,1	6	10,8
Short circuit current		kA	10	30	35	40
Clamping force		daN	150	900	3000	5150
Upsetting force		daN	58	350	1800	2400
Max. welding capacity on mild steel		mm²	50	200	450	620
Wire diameter	MIN.	mm	1,5	3	6	6
	MAX.	mm	8	16	24	28
Dimensions		↗ mm	620	830	850	850
		→ mm	600	640	1750	1750
		↑ mm	1100	1460	1900	2100
Weight		kg	84	280	1200	1300

Other voltages on request

SQ/A 62

SQ / AS

RESTECH
CEA RESISTANCE WELDING DIVISION

FLASH BUTT WELDERS

SQ/AS models are suitable for flash butt welding solid material, profiles and hollow sections and mostly pipes, whenever water tight joints are needed, by obtaining very high quality welding results. Particularly suitable for mass production with fully automatic controls aiding speed and efficiency.

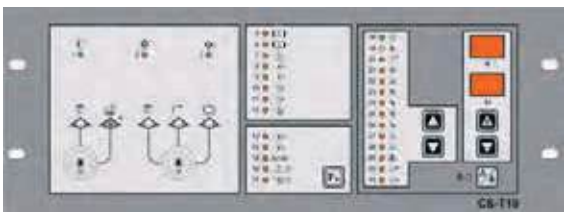
SQ/AS machines start the welding operation by slowly approaching, at a reduced pressure, the two parts to be joined; when they are close one another, an electric arc strikes between them and, in a very short time, they are brought to a pre-melting condition; at this point the two ends, in a semi-solid status, are heavily pressed one against the other by the upsetting force. This will result into a totally impurity-free high quality joint.

- Easy-to-use
- Air operated
- Electronic control for adjusting the welding parameters
- Movable jaw by bearing guides

SQ/AS 121 SQ/AS 62

1~ AC DIGITAL 888

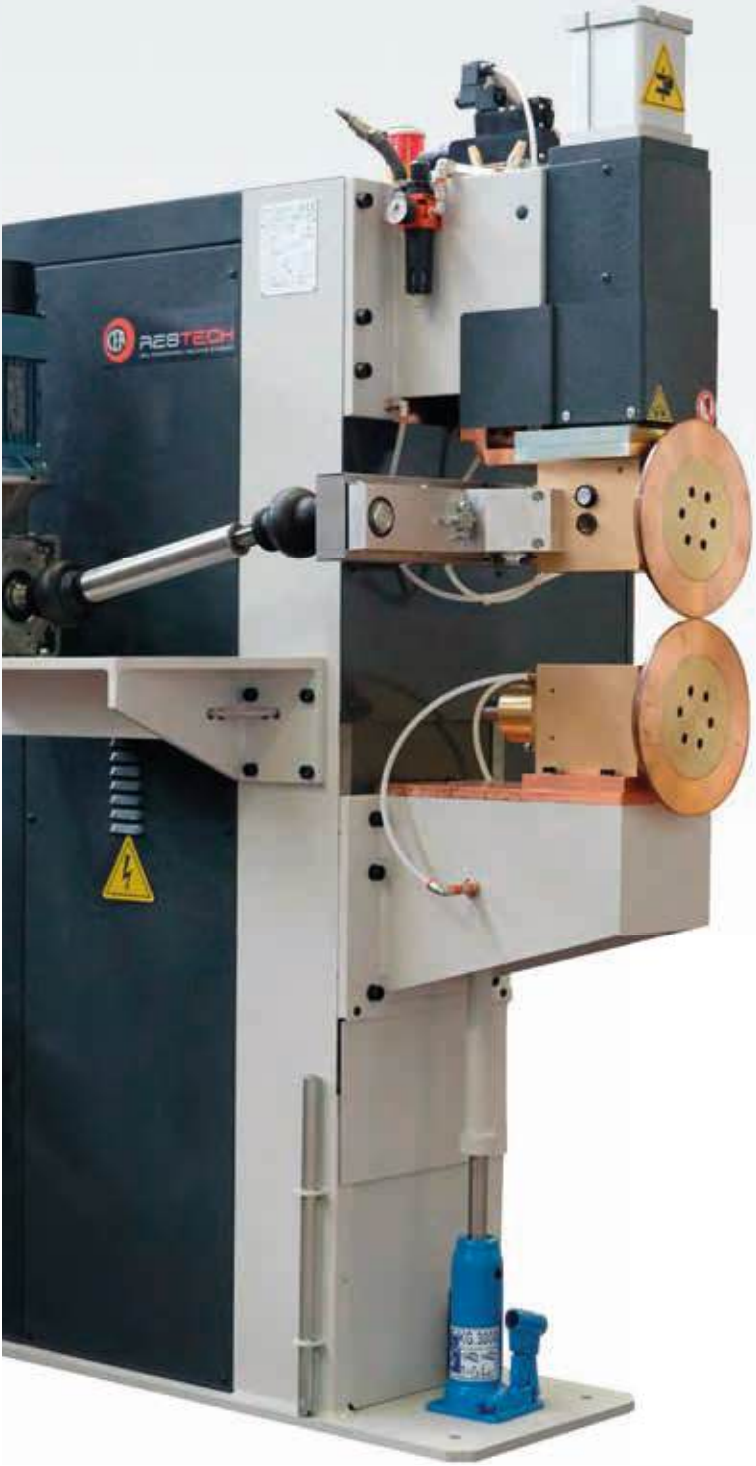
TECHNCAL DATA		SQ/AS 121	SQ/AS 62	SQ/AS 100
Single phase input 50/60 Hz	V	400	400	400
Rated power at 50%	kVA	25	60	100
Max. welding power	kVA	122	168	350
Installed power	kVA	15	60	100
Cross section connecting cables	mm^2	16	70	95
Delayed fuse	A	40	160	250
Open Circuit Voltage	V	5,1	6	10,8
Short circuit current	kA	30	35	40
Clamping force	daN	1350	3000	5150
Upsetting force	daN	450	1800	2400
Max. welding capacity on mild steel	mm^2	250	350	550
Wire diameter	mm	5	8	8
	mm	16	20	26
Dimensions	↗ mm	830	850	850
	→ mm	920	1750	1750
	↑ mm	1600	1900	2100
Weight	kg	300	1200	1300

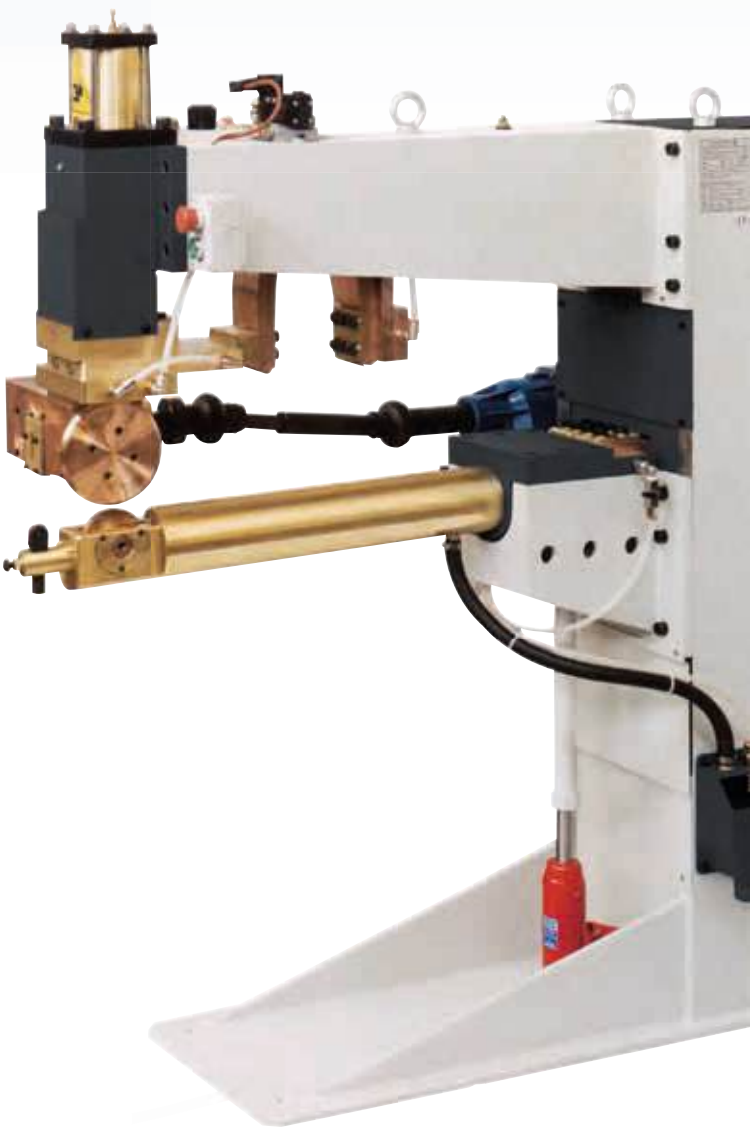


Other voltages on request

RT / RL

RESTECH
CEA RESISTANCE WELDING DIVISION





RT / RL

RESTECH
CEA RESISTANCE WELDING DIVISION

RT 180 2T

RT 80

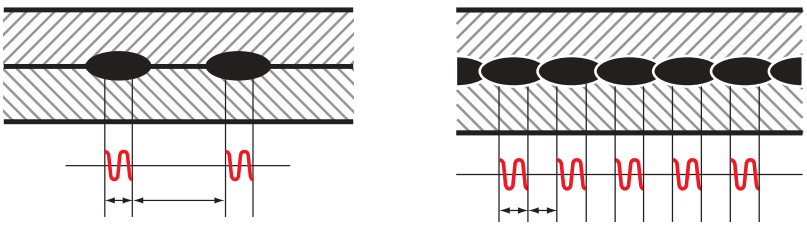
1~ AC DIGITAL 888

SEAM WELDERS

This range of resistance machines permits the joining of metals by a sequence of welds, made one after the other, achieved by the rotation of copper alloy discs. These welders allow either longitudinal or transversal seamwelding - also water tight - of cylindrical containers, fire extinguishers, radiators, heaters, tanks, filters and similar items with excellent quality results. Customised equipment are built to fully meet any specific welding need: also D.C. three phase supply and/or D.C. Medium Frequency (1000 Hz) three phase inverter versions are available on request. In particular Medium Frequency seam welders enable extremely high quality welds at greatly increased welding speeds and represent the ideal solution for joining thin sheets and/or filter nets with very contained deformations.

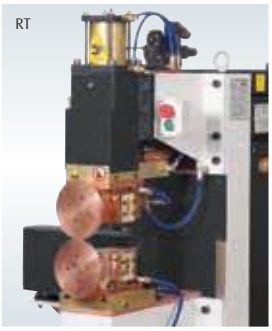
Seam welding is a welding process by electric resistance. In such joining process overlapped metals are welded under pressure by a sequence of spots made by copper alloy rotating discs. Depending on the choice of the parameters, such as spot frequency and rotation speed of the electrodes, two typical joints are usually achieved.

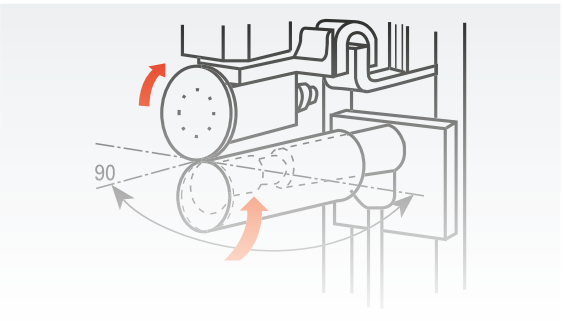
- Fig. A represents the welding pattern made by choosing a short welding time with a long pause time. This is for joining two metals without water tight welding.
- Fig. B shows the welding pattern made by adjusting welding and pause times in a way that each spot is overlapped by the next one. This joint allows water tight welding.



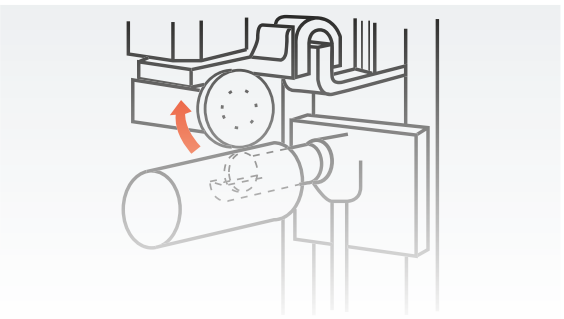
- RT version for transversal welding only
- RL version for longitudinal welding only
- Water cooled seam heads with silver contacts, ensuring a good current transmission from the static part to the shaft
- Reduced maintenance costs
- Self-lubricated pneumatic components to eliminate oil deposits and to safeguard the environment from contaminants
- Frequency converter to adjust the welding speed of the discs

RT





RL



TECHNICAL DATA		RT				RL
		80	80 2T	81	180 2T	81
Single phase input 50/60 Hz	V	400	400	400	400	400
Rated power at 50%	kVA	60	60	80	180	80
Installed power	kVA	60	60	80	180	80
Delayed fuse	A	150	150	200	400	200
Open Circuit Voltage	V	5,1	5,1	6,7	9,5	6,7
Arm length	mm	450	450	800	450	800
Work stroke	mm	80	80	80	100	80
Max. disc force 600 kPa (6 bar)	daN	470	470	470	1200	470
Water consumption at 300 kPa (3 bar)	l/min	6	6	6	7	6
Welding speed	m/min	0,6 - 4,2	0,6 - 4,2	0,6 - 4,2	0,8 + 5	0,6 - 4,2
Max. welding capacity on mild steel	mm	1,2 + 1,2	1,2 + 1,2	1,2 + 1,2	2 + 2	1,2 + 1,2
Max. welding capacity on stainless steel	mm	1,5 + 1,5	1,5 + 1,5	1,5 + 1,5	3 + 3	1,5 + 1,5
Dimensions	↗ mm	1150	1150	1450	1450	1450
	→ mm	800	800	800	800	800
	↑ mm	2020	2020	2100	2100	2100
Weight	kg	800	800	900	1540	900
Drive head		A	A + B	B	A + B	B
Driving system		C	E	D	E	D

Drive head

A = lower

B = upper

Driving system

C = toothed belt

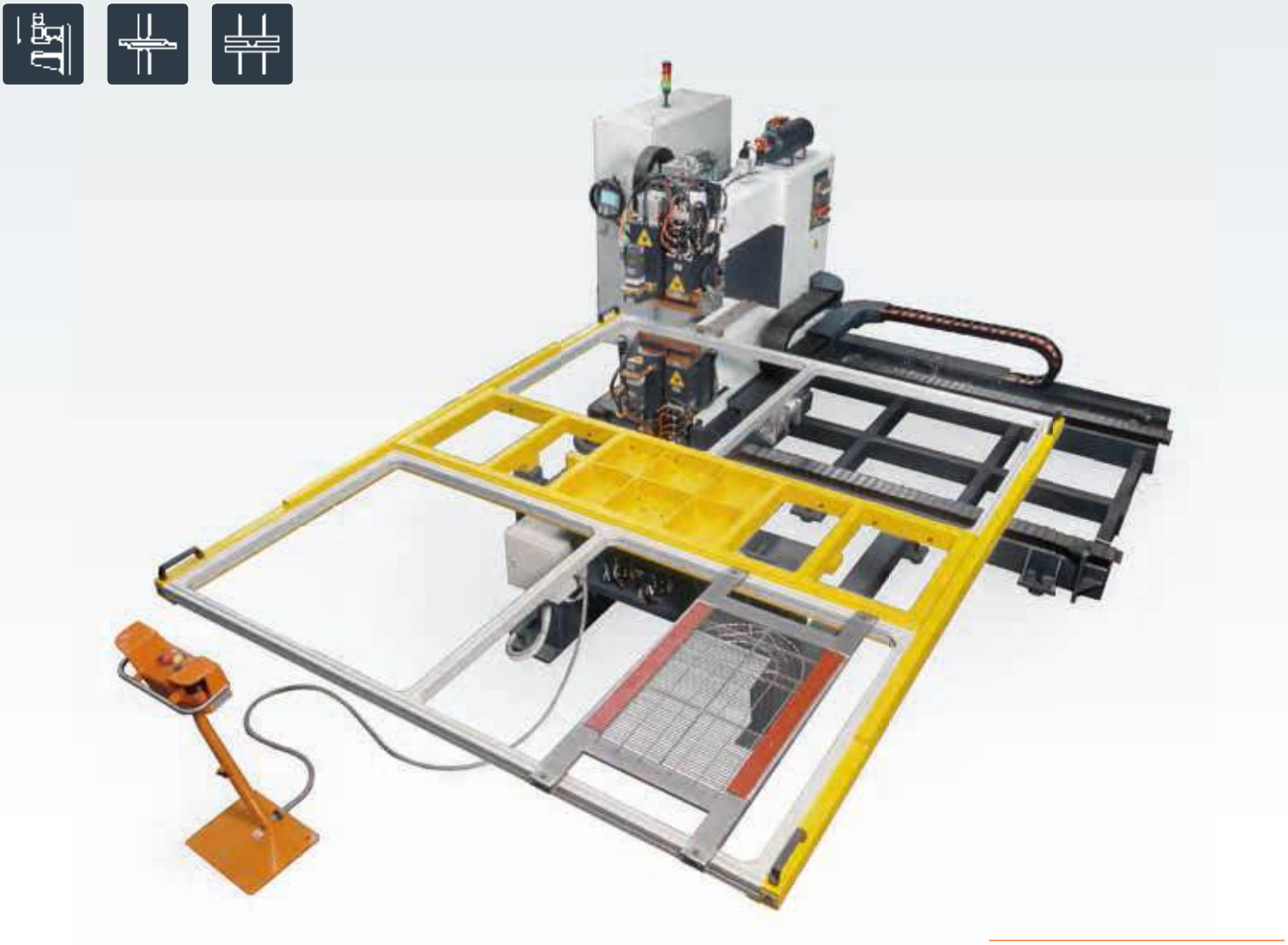
D = direct with Hooke's joint

E = Differential

Other voltages on request

VOYAGER

RESTECH
CEA RESISTANCE WELDING DIVISION



3~ DC DIGITAL

RESISTANCE WELDING EQUIPMENT

VOYAGER equipment is a robotized system working on more axes for resistance spot or projection welding of workpieces placed in proper jigs. Flexibility, productivity and easy programming are the main features of VOYAGER equipment, suitable not only for small series mesh applications but also for lamination spotwelding of all materials, such as mild steel, stainless steel and aluminium.

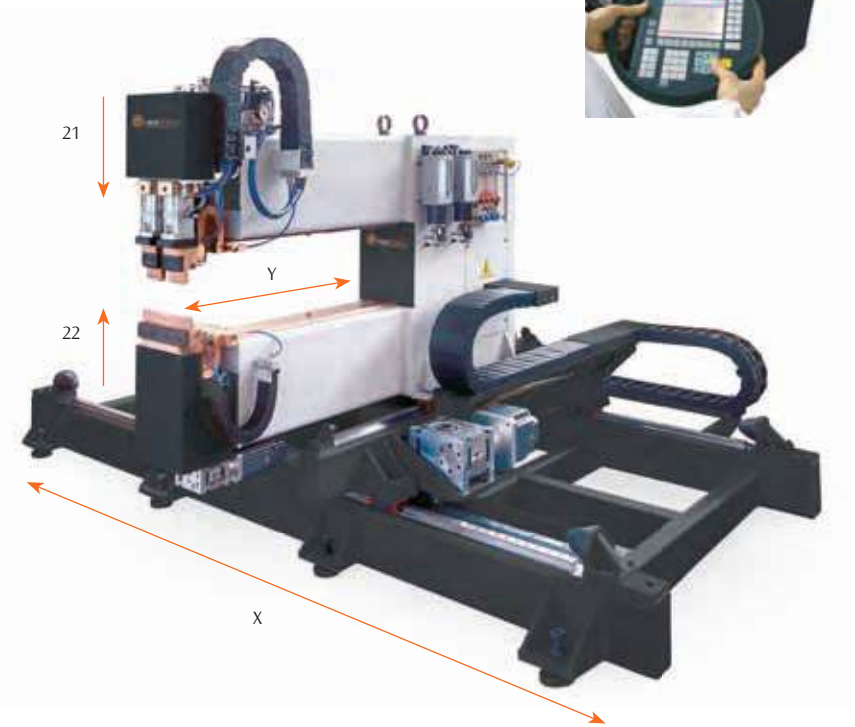
- Flexible programmable CNC system for positioning and welding at high and constant productivity.
- Easy programming thanks to CNC control teach-in function.
- Programmable independent welding parameters for each single spot.
- Possibility of welding at different heights thanks to programmable axes: Z1 (pre-stroke of upper electrode) and Z2 (stroke of the lower counterelectrode).

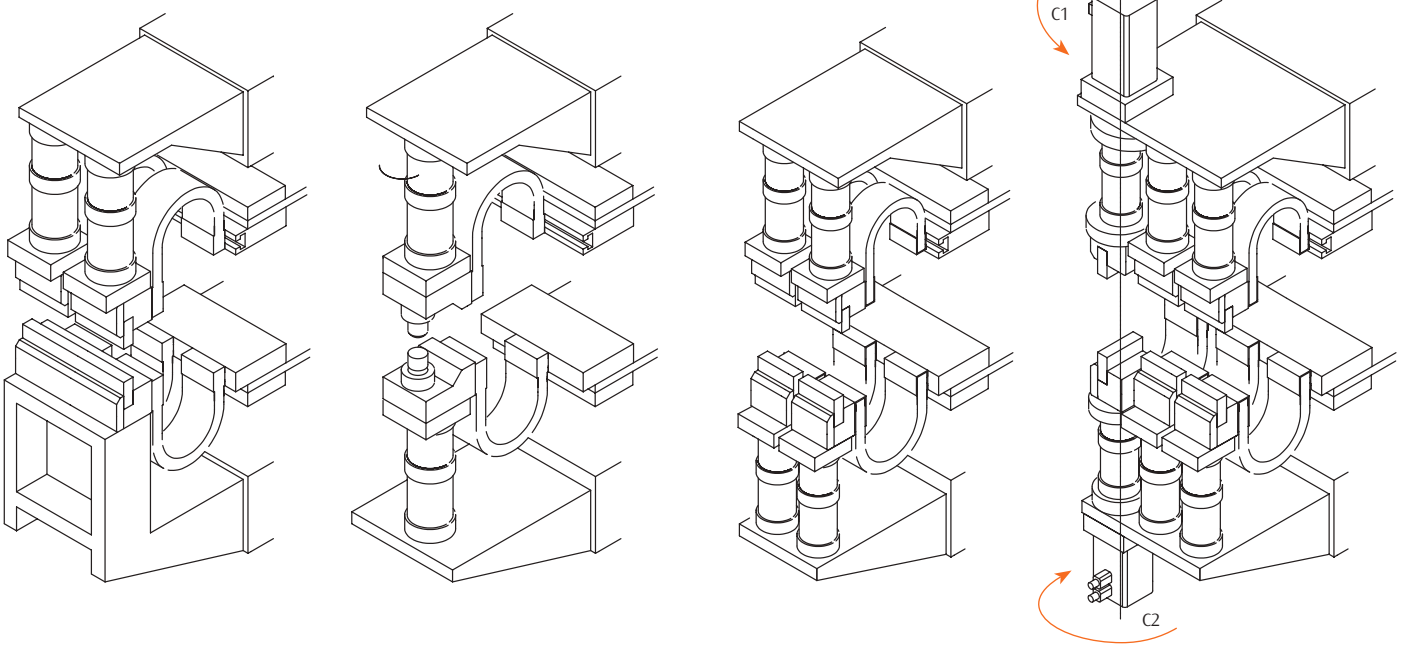
- Easy-to-operate and quick production shifting
- Shorter work cycle: workpiece loading/offloading during hidden time, by means of two station rotating table
- Working by servo operated brushless motors
- Robust and silent operation equipment

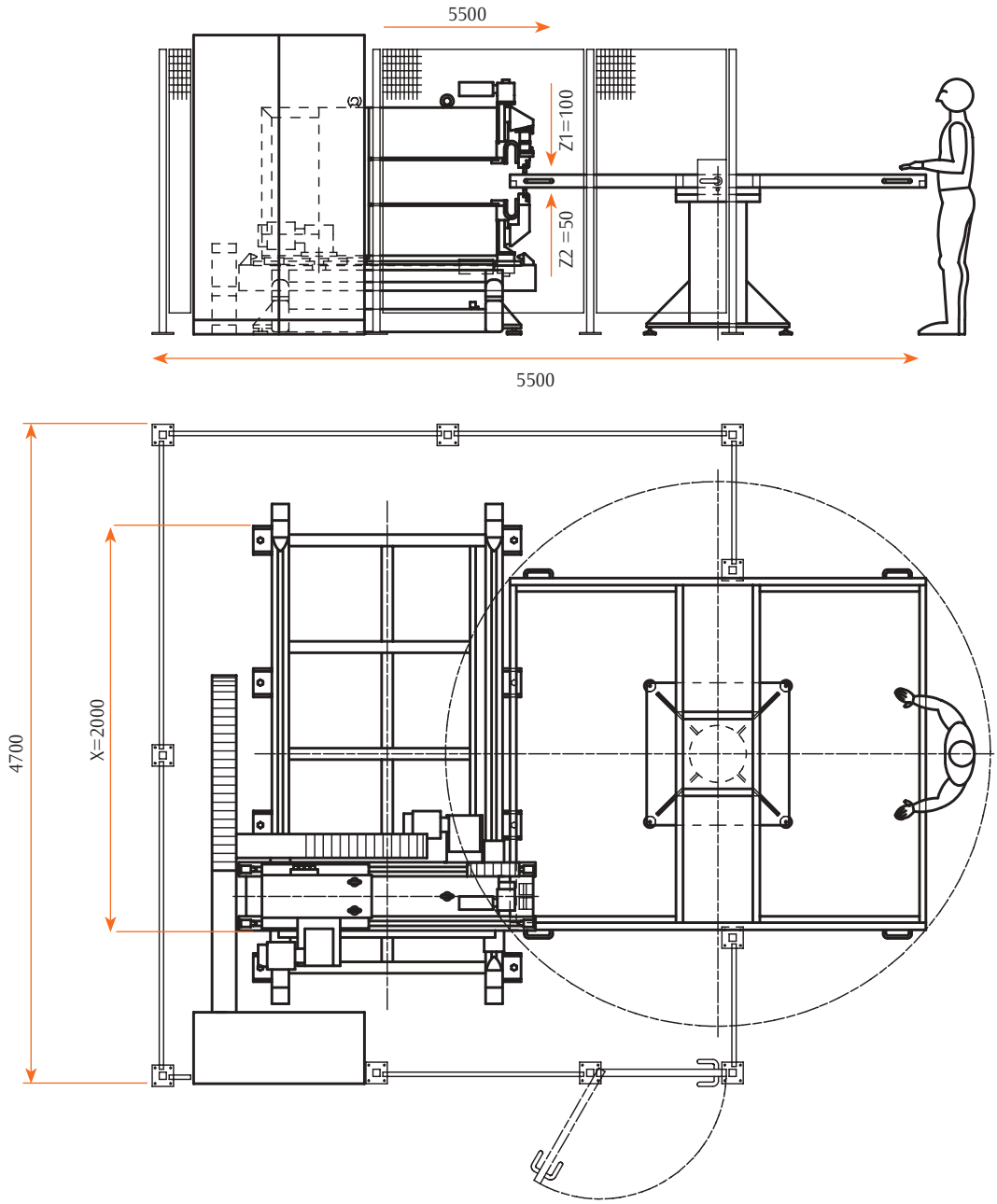
EQUIPMENT CONFIGURATION

The equipment can be customized on customer's needs. Several options are available.

- Welding mode:
  - Spotwelding
  - Projection welding
- Welding technology:
  - Medium Frequency inverter
  - Traditional 50 Hz
- Axis number
- Axis stroke length
- Welding head number
- Rotating electrodes (C1 – C2)
- Welding gun







Other version on request

▶ Handheld remote control unit

OPTIONAL

- Operator panel for program monitoring and job storing

CUSTOMIZED EQUIPMENT

RESTECH
CEA RESISTANCE WELDING DIVISION

CEA also designs and manufactures special resistance machines, either fully automated or developed as purpose-built fully customized special versions. According to specific requirements from the clients and on the basis of the quoted drawings of the components to be welded, CEA resistance engineers are able to propose the best solutions most suiting any need of resistance equipment or automation.

CEA RESTECH new catalogue offers a complete range of electronic controls and component kits suitable for integrators, special machine manufacturers and also for any retrofit job to upgrade any old generation resistance equipment. The resistance specialists will be able to find a really large variety of components for single phase, three phase and latest generation inverter based technologies with related electronic controls, power panels and transformers able to fully meet any industrial needs.

50 HZ COMPONENT KIT

WS 402

WS 708

WS 3000 AC

FILIUS

ACT TRANSFORMERS

50 HZ TRANSFORMERS

DESCRIPTION	S_n	U_2	I_{2P}
ACT 63	63 kVA	7,1 V	6,3 kA
ACT 100	100 kVA	10,0 V	7,1 kA
ACT 125	125 kVA	11,1 V	8,0 kA
ACT 150	150 kVA	13,1 V	8,1 kA
ACT 200	200 kVA	10,5 V	13,5 kA
ACT 250	250 kVA	12,1 V	14,6 kA

S_n= rated power at 50%
U_2= open circuit voltage
I_{2P}= permanent thermal current

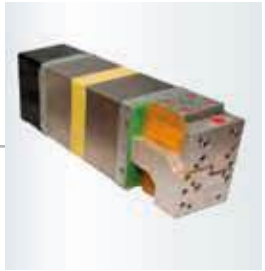
MEDIUM FREQUENCY KITS

MF POWER UNIT	WT	@	MEDIUM FREQUENCY TRANSFORMERS				
			MFT 40	MFT 75	MFT 100	MFT 170	MFT 200
406	100 ms	**5%**	14 kA	12 kA			
408	100 ms	**5%**		14 kA	20 kA		
413	100 ms	**5%**		14 kA	20 kA	30 kA	
416	100 ms	**5%**			20 kA	35 kA	36 kA
424	100 ms	**5%**				35 kA	36 kA

I2 = welding current @ = duty cycle WT = max. welding time

WSI 100

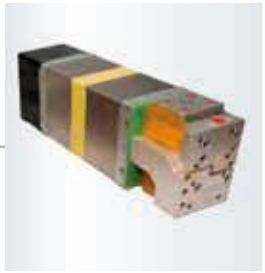
CEA MFI



MFT

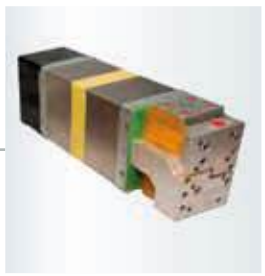
FILIUS

H + W MF



MFT

H + W MF



MFT

1KHZ MEDIUM FREQUENCY TRANSFORMERS

DESCRIPTION	S_n	U_2
MFT 40	40 kVA	5,0 V
MFT 75	75 kVA	8,4 V
MFT 100	100 kVA	10,0 V
MFT 170	170 kVA	10,0 V
MFT 200	200 kVA	12,0 V

S_n = rated power at 50% U_2 = open circuit voltage

RESTECH
CEA RESISTANCE WELDING DIVISION

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Technical characteristics might
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