WELDING
TOGETHER

ARC WELDING

2018

SINCE 1950

WELDING TOGETHER

ARC WELDING CATALOGUE

CEA

CEA Spa, founded by Ezio Annettoni in 1950, is one of the worldwide leaders for the design and manufacture of Arc and Resistance welding machines and Plasma cutting equipment conceived for the industrial market.

INNOVATION AND TECHNOLOGY

Unique for its extensive range, CEA is always ahead in technological innovation, being large resources constantly invested in research and development. Excellent welding characteristics, continuous innovation, reliability, design, strict adherence to the international standards are the secret of CEA's growing worldwide success.

PRODUCT CARE

Severe controls in the entire manufacturing process, from incoming material reception to the final strict computerized quality checks on the finished product, ensure the maximum care in the production, fully satisfying the Total Quality criteria; as a matter of facts CEA, first among the Italian welding companies, reached the prestigious ISO 9001 certification since early 1994.

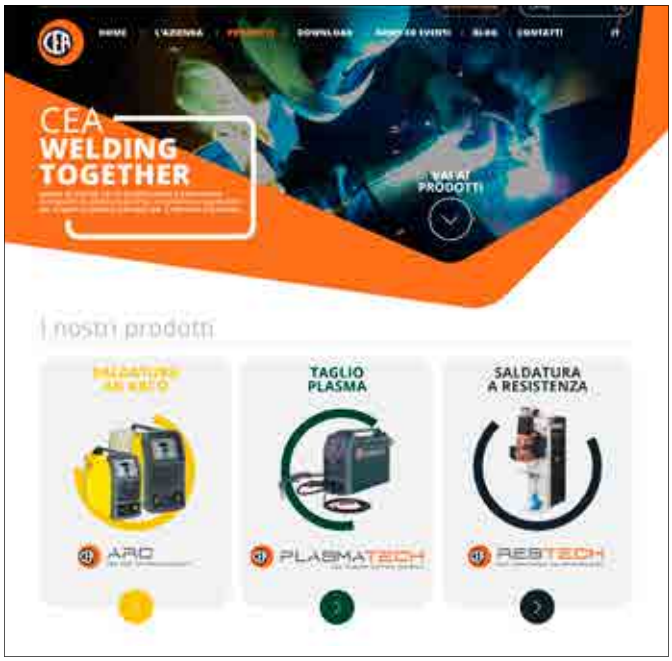
PEOPLE

People are no doubt number one resource for CEA and a strong team spirit – easily detectable at all levels in the entire organization - characterizes anybody working in CEA. All customers, dealers and after sale service centers become real partners for CEA. "Welding together", CEA's pay off, well emphasizes the company philosophy committed to establish a solid and long lasting relationship, as in a partnership, with all dealers and users of CEA products.

WORLDWIDE PRESENCE

Thanks to its worldwide experience, CEA works together with its worldwide distributors and service centres scattered in over 70 countries in order to satisfy, as main objective, all the various needs of all markets.
CEA's service centres, highly qualified and constantly updated by means of a meticulous on-line communication network, ensure a prompt and efficient after sale intervention, with the primary goal of immediately solving any problem and providing the final user best possible service.

www.ceaweld.com



... USER FRIENDLY WEB SITE

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 pls. 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.

RESPECT FOR THE ENVIRONMENT

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 comsumption
- 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.

GOES GREEN

CERTIFICATION AND STANDARDS

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 (LVD)

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.
CEA power sources are designed for use in industrial environments: **EMC (CISPR 11) A Class.**

2011/65/EU (RoHS)

The Directive defines the restriction of certain hazardous substances in electrical and electronic equipment.

CEA products have been designed and built according to the following harmonised standards:

- IEC 60974-1 EN 60974-1 – Welding power sources.
- IEC 60974-2 EN 60974-2 – Liquid cooling systems.
- IEC 60974-3 EN 60974-3 – Arc striking and stabilising devices.
- IEC 60974-5 EN 60974-5 – Wire feeders.
- IEC 60974-7 EN 60974-7 – Torches.
- IEC 60974-10 EN 60974-10 – Electromagnetic compatibility (EMC).

INDEX

CEA

ARC WELDING

AUTOMATION AND ROBOTICS

SOFTWARE AND SERVICES

Technical features might change without notice.


A
V
237
221
MIG
SYNERGIC
PROGRAM
Fe G3 Si1 Ø 1.2 Ar
PROCESS
PROGRAM
MODE
PRG
MATERIAL
Ø
GAS
2412 Al Mg5 S Al 5356 1.0
2413 Al Mg5 S Al 5356 1.2
2414 Al Mg5 S Al 5356 1.6
2422 Al Si5 S Al 4043A 1.0
2423 Al Si5 S Al 4043A 1.2
33/48
2T
2413 Al Mg5 S Al 5356 Ø 1.2 Ar 99.9%
Fx
SET UP
INITIAL ARC LENGTH
0
DEFAULT
0033 Fe G3 Si1 Ø 1.2 Ar 8-10% CO2
HT5
DIGITECH 4000 MPE

MIG/MAG INVERTER

TREOSTAR
CONVEX MOBILE
CONVEX

QUBOX
DIGITECH VP2

	Ø 1,6 mm Ø 1,2 mm SG 2 Ø 1,0 mm Ø 0,8 mm 0,6 mm	1~	3~						
TREOSTAR									
TREOSTAR 1800	175 A 20%	■		■		■	■		■
TREOSTAR 2000 PULSE	200 A 15%	■		■		■	■	■	■
CONVEX Mobile									
CONVEX Mobile 251	250 A 40%		■	■		■	■		■
CONVEX Mobile 255 PULSE	250 A 40%		■	■		■	■	■	■
CONVEX									
CONVEX 321	320 A 40%		■	■		■	■		■
CONVEX 325 PULSE	320 A 40%		■	■		■	■	■	■
CONVEX 401	400 A 40%		■	■		■	■		■
CONVEX 405 PULSE	400 A 40%		■	■		■	■	■	■
QUBOX									
QUBOX 400	400 A 40%		■	■	■	■	■		■
QUBOX 400 W	400 A 40%		■	■	■	■	■		■
QUBOX 500 W	500 A 50%		■	■	■	■	■		■
DIGITECH VP2									
DIGITECH 3200 VP2	320 A 40%		■	■		■	■	■	■
DIGITECH 3300 VP2	330 A 40%		■	■	■	■	■	■	■
DIGITECH 4000 VP2	400 A 60%		■	■	■	■	■	■	■
DIGITECH 5000 VP2	500 A 50%		■	■	■	■	■	■	■

I2 @ 100% I2 @ 60% I2 @ X% ☐ optional

FURTHER JUMP INTO THE FUTURE

Enter the future of welding with TREOSTAR, CONVEX MOBILE, CONVEX, QUBOX, DIGITECH and, for robotized applications, ROBOCASE : perfect arc striking and a welding puddle always continuously optimized, thanks to the steady perfect control of the arc in any condition, the product of years of research and more than 65 years of experience. Extremely precise welding with repeated results in time, flexibility and the user-friendly simplicity, combined with an exceptionally stable welding arc, are the basic goals of the philosophy which have led to the development of such high tech products.

These power sources enable to weld in MIG/MAG, MMA and TIG with a “lift” type striking; for even easier use, all machines have been provided with the possibility of memorizing up to 99 personalized JOBS, saving the welding parameters as wished.

Their operating facility makes them suitable for numerous applications from civil and naval constructions, petrochemical and automotive industries, to heating and air conditioner systems, as well as all small, medium and large metal work , whenever precision and quality welding are required.

But there is more: these equipment have been designed to keep up with the evolution of welding technology over time: both firmware and software are designed to be always updatable.

Particular care has been given to energy savings: very high energy efficiency and a high power factor level ensure lower annual energy expenses, at the same utilization levels of conventional machines. The special “Energy Saving” function helps prevent waste, activating auxiliary power supplies, fan motor and torch cooling, if any, only when necessary. Besides these equipment comply with the latest regulations on electromagnetic pollution and are in line with the RoHS directive environmental standards.

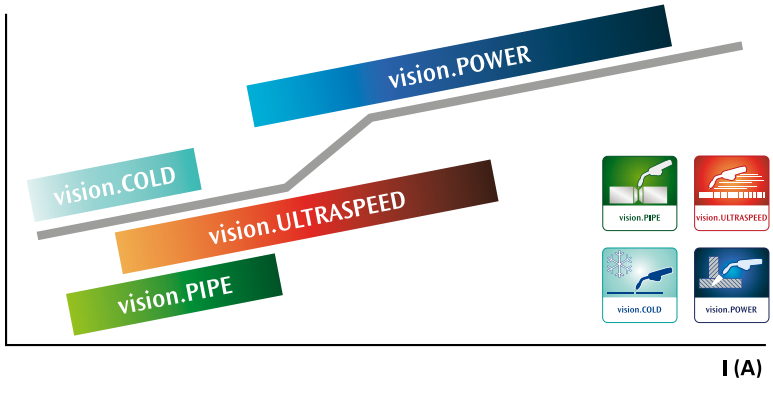
vision.ARC

TREOSTAR, CONVEX MOBILE, CONVEX and QUBOX power sources distinguish themselves by their vision.ARC, the innovative arc control which ensures outstanding welding performances with greater wire deposit, higher speed and reduced thermal dilatation.
65 years’ experience in welding technology allowed CEA to develop a new digital system for controlling arc dynamics, vision.ARC, which guarantees excellent performances in all MIG-MAG and MIG PULSE situations.

The vision.ARC electric arc is monitored continuously by the microprocessor which manages the welding process in real time: all the parameters are processed and modified immediately, in a few microseconds, by the control that digitally manages the short circuits that are typical of MIG-MAG welding, keeping the arc stable and precise in spite of any change of the external conditions.
This way, torch movement, irregularities of parts to be welded and other factors do not influence the final result at all. Welding process is always under control from arc striking, by Wire Start Control (WSC), to when the arc is interrupted by Burn Back Control.

vision.ARC is the support basis for special welding software such as:

- ▶ vision.PIPE for more accurate welding in pipe first root pass
- ▶ vision.COLD for low heat transfer MIG-MAG welding
- ▶ vision.ULTRASPEED to weld small and medium thickness at a far higher speed
- ▶ vision.POWER to obtain deeper penetration on medium and large thickness material



vision.ARC 2

vision.ARC2 is the evolution of the vision.ARC software for the arc control, developed by CEA to achieve a more perfect and stable arc, together with a superior correction in the control of the welding pulse impulse.

Available not only for all DIGITECH VP2 equipment, but also – in robotized applications – for ROBOCASE power sources, new innovative vision.ARC2 allows to better monitor and manage in a far more efficient way all unwished physical phenomena, which may often negatively affect the arc stability and, consequently, the control capacity of the power source.

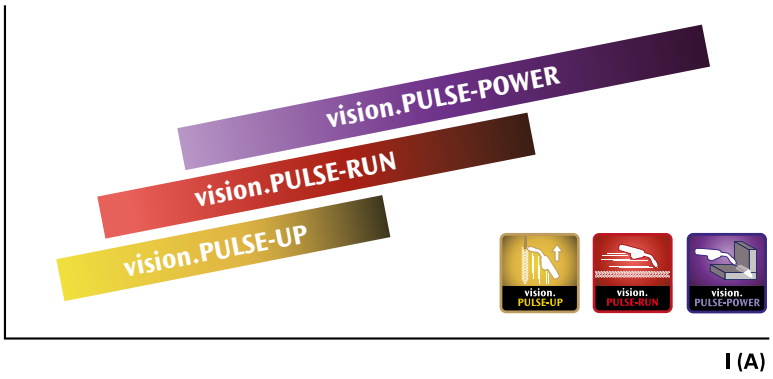
New vision.ARC2 allows the power source control to operate in a very precise and faster way, thus granting an absolute constant arc and a perfect detachment of the droplet, mostly in MIG PULSED and DUAL PULSED.

Main advantages of vision.ARC2 versus previous version are the following:

- ▶ better arc stability
- ▶ optimization of the impulse characteristics
- ▶ quick and precise control of the shortcircuits, whenever welding with a very short arc
- ▶ faster welding speed
- ▶ furher reduced heat input

vision.ARC2, besides perfectly supporting all special welding processes, i.e. vision.COLD, vision.PIPE, vision.ULTRASPEED and vision.POWER, is the software platform which enabled the development of the herebelow listed new special pulsed processes, i.e.

- ▶ Vision.PULSE-UP for a faster and more precise vertical up welding
- ▶ Vision.PULSE-RUN for a faster and colder pulse welding
- ▶ Vision.PULSE-POWER for a deeper and more flattened welding bead on medium large thickness



SPECIAL WELDING PROCESSES

MIG/MAG WELDING

vision.COLD for low heat transfer MIG/MAG welding

VISION.ARC
VISION.ARC2

vision.ULTRASPEED to weld small and medium thickness at a far higher speed

VISION.ARC
VISION.ARC2

vision.POWER to obtain deeper penetration on medium and large thickness material

VISION.ARC
VISION.ARC2

vision.PIPE for more accurate welding in pipe first root pass

VISION.ARC
VISION.ARC2

PULSED MIG WELDING

vision.PULSE-UP for a quicker and more precise vertical up welding

VISION.ARC2

vision.PULSE-RUN for a colder and faster pulsed welding

VISION.ARC2

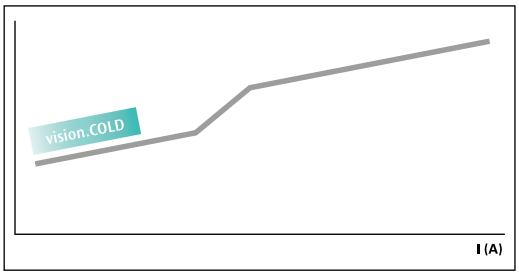
vision.PULSE-POWER for a more penetrated and smoothly shaped welding on medium large thickness

VISION.ARC2

vision.COLD

LOW HEAT TRANSFER MIG/MAG WELDING

vision.COLD is an innovative low heat transfer MIG/MAG process, developed by CEA for welding thin thickness lamination sheets and for MIG brazing in all welding positions.
Thanks to supplied synergic programs, vision.COLD allows very high quality welding of thin sheets and its optimized arc ensures no deformation with minimal modification of the metallurgical characteristics of the joints.
vision.COLD software is also an excellent solution for welding open gap joints.



ADVANTAGES

- Welding of high carbon and highly alloyed steel thin sheets
- High speed in welding joints versus traditional short arc MIG/MAG
- Very contained damage to zinc coated layer in Mig Brazing
- Significant reduction of heat input in welding joints with minimal deformation of the workpieces
- Lack of spatters and projections during the short circuit phase
- Vertical up or vertical down welding with perfect edge joints

APPLICATIONS

- Welding of thin thickness laminations with low heat transfer
- Open gap joints in all positions
- MIG brazing with low heat transfer
- Welding of stainless steel

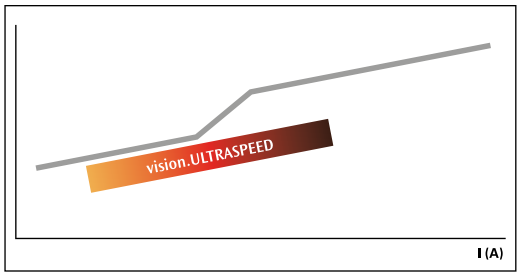
FRONT

BACK

vision.ULTRASPEED

HIGH SPEED MIG/MAG WELDING

vision.ULTRASPEED is an innovative MIG/MAG process developed by CEA for welding steel and non ferrous materials which, thanks to the arc increased magnetic strength and a narrower arc cone, allows a remarkable increase in welding speed. This process grants an inferior overheating of the base material with less shrinkage tension and consequently less workpiece reworking and finishing job.
vision.ULTRASPEED allows to replace short-arc and mixed-arc MIG/MAG with a remarkable increase in the welding job completion.



ADVANTAGES

- Very high welding speed
- Welding of medium thickness carbon steel, stainless and aluminium
- Narrower welding beads with less filler material and shielding gas
- Reduction of heat input in the welding puddle
- Lack of spatters and projections in wire deposition

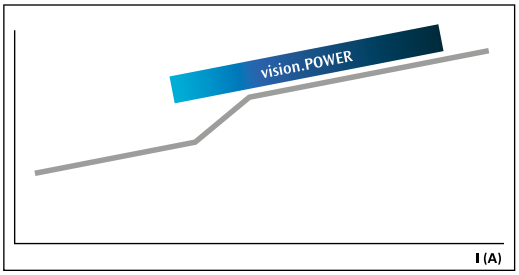
APPLICATIONS

- Light and medium fabrication work
- Manufacture of mild and stainless steel and aluminium
- Automotive industry
- Petrochemical industry
- Food industry
- Railway wagon manufacturing
- Small medium size tank and container construction

UP TO
50%
FASTER

HIGH PENETRATION MIG/MAG WELDING

vision.POWER is the innovative MIG/MAG process developed by CEA for welding medium large thickness steel and non ferrous materials (aluminium, copper, etc.), whenever high penetration is required.
By means of this special welding process, the arc cone becomes narrower, therefore its pressure is concentrated on a smaller area of the workpiece, thus heavily increasing the penetration.
vision.POWER more concentrated arc is ideal for fillet welding and to enter into very narrow joints requiring a very long stick-out.
vision.POWER enables to replace MIG/MAG spray arc welding with a remarkable increase in penetration and faster welding execution too.



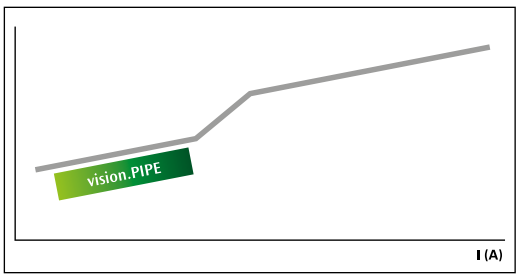
ADVANTAGES

- Deeper penetration at same welding current being used
- Far higher welding speed versus spray-arc MIG/MAG process
- Less consumption of filler material and shielded gas
- Heat transfer heavy reduction to eliminate hot cracking in the workpiece material
- Less welding passes thanks to reduced angle sizes in the edge bevelling
- Far less risk of different solid material inclusion into the welding bead
- Lack of porosity and blow holes
- No filler material overdepositing in butt joints
- Total lack of spatters and metallic projections

APPLICATIONS

- Medium and heavy fabrication work
- Mild steel, stainless large erection works
- Ideal for welding in narrow gaps, where longer stick out is necessary
- "T" fillet welding
- Manufacture of heavy duty trucks and vehicles
- Shipyards
- Railway wagon manufacture
- Fabrication of large size tanks and containers

vision.PIPE



PIPE FIRST ROOT PASS AND OPEN GAP MIG/MAG WELDING

vision.PIPE is the innovative MIG/MAG process developed by CEA for first root pass whenever butt-joining pipes in all positions.
The supplied vision.PIPE synergic programs grant extremely high quality performance with an optimized arc for welding pipes in a precise and safe way also whenever having to deal with larger size open gap joints.
vision.PIPE process enables to replace MMA and TIG processes with a far shorter welding time.
vision.PIPE package is also an ideal solution for welding laminations with open gap joints.

ADVANTAGES

- Perfect and safe welding in first root pass
- Far higher welding performance speed versus TIG & MMA processes
- Precise arc control in welding pipes and laminations with any thickness and in all positions
- Significant reduction of heat input in welding joints
- Possibility of first root pass welding without any backing
- Less care in edge bevelling preparation prior to welding
- Easy welding process, easy to learn and use
- No longer obligation of employing highly qualified personnel as imposed by TIG and MMA processes
- Welding process continuity
- Vertical up or vertical down welding with perfect edge joints

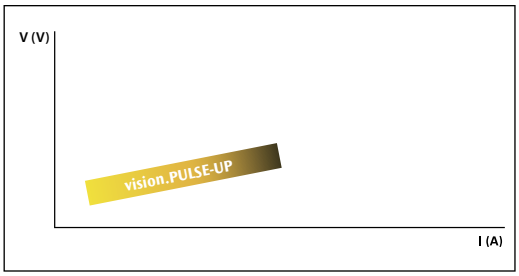
APPLICATIONS

- Pipe first root pass
- Welding open gap laminations on all positions.

vision.PULSE-UP

VERTICAL UP PULSED WELDING

vision.PULSE-UP is the newly developed special process dedicated to vertical up welding.
Thanks to the fine-tuned and well-balanced combination between MIG Pulse and a special MIG process it is now possible to effect this type of welding in an easy and economical way too, with a far greater travel speed if compared to the traditional and typical triangular welding up technique, the so called “Christmas tree”.
By using vision.PULSE-UP special process , MIG Pulse grants the perfect melting of the material without any spatter or shortcircuits, whilst MIG process, thanks to its low heat input, allows to properly solidify and smoothly shape deposited material. Final result consists of a narrower, well-dimensioned and defect-free bead.



ADVANTAGES

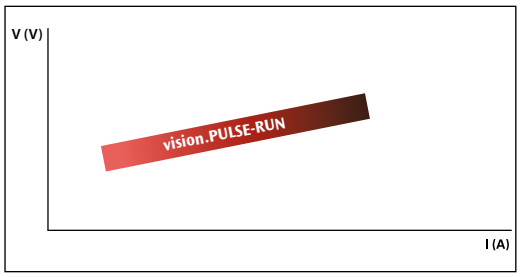
- Faster welding speed and excellent performances in vertical up
- Straightforward welding instead of the “Christmas tree” technique
- Perfect melting of the top edge
- Low heat transfer on low thickness material
- Faster welding speed versus TIG welding for first root passes
- Perfect heat transfer control with edge contained deformation
- Easy-to-use also for less skilled welders

APPLICATIONS

- Vertical up welding of all metals
- Positional welding of medium-small thickness material
- Large gap joint welding
- MIG brazing with low heat transfer
- Stainless steel welding
- Petrochemical industry
- Food industry

UP TO
40%
FASTER

vision.PULSE-RUN



HIGH SPEED PULSED WELDING

vision.PULSE-RUN is the new special process appositely conceived in order to combine the advantages of pulse welding together with a faster travel speed while welding alloyed or low alloyed steel and aluminium.
The fine-tuned and well-balanced combination between MIG Pulse and vision. ULTRASPEED processes now enables to greatly increase welding job completion, while maintaining unchanged both aesthetic and metallurgical characteristics of pulse welding.
By using vision.PULSE-RUN special process, MIG Pulse grants the perfect melting of the material without any spatter or shortcircuits, whilst the combined use of vision. ULTRASPEED allows to reduce the heat input and to increase welding speed, thus resulting into a well-dimensioned defect-free bead obtained in a far quicker time versus traditional pulse welding.

ADVANTAGES

- Faster welding speed (40% more versus traditional MIG pulse)
- Better control of the puddle at high speed welding
- Low heat transfer to the workpiece
- Better penetration
- Lower deformation of the workpiece (stainless steel)
- Lack of spatters and projections

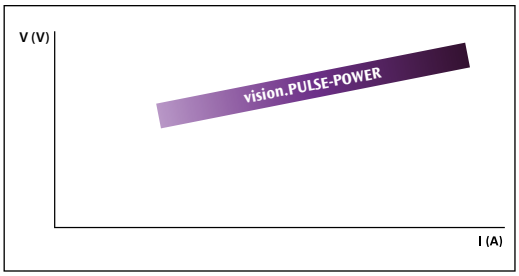
APPLICATIONS

- Steel, stainless and aluminium component welding
- Fabrication work
- Steel erection
- Petrochemical
- Food industry
- Railway wagon manufature
- Small dimension tanks and containers

vision.PULSE-POWER

HIGH PENETRATION PULSED WELDING

vision.PULSE-POWER is the new special process developed for welding medium large thickness steel and non ferrous materials, whenever high penetration, coupled with a very smooth bead, is required.
The fine-tuned and well-balanced combination between MIG Pulse and vision.POWER processes now allows to perform the welding operation in a simple and quick way with a substantial reduction of any melting defects in the puddle and even the heat affected area is greatly reduced to the minimum.
By utilizing vision.PULSE-POWER special process, MIG Pulse grants the perfect melting of the material without any spatter or shortcircuits, whilst vision.POWER favours a greater penetration and an increase in the welding speed, coupled with a minor heat input and an easier control on the deposited material.
The result is a very smooth, well-penetrated and defect-free bead.
Besides, by using this new process, the operator will be able to simply weld straightforward, i.e. without any torch manipulation at all.



ADVANTAGES

- ▶ Deeper penetration
- ▶ Wide and smoothly shaped welding bead
- ▶ Faster welding speed
- ▶ Low heat transfer and less deformation of the workpiece material
- ▶ No undercut at all and improved edge finishing
- ▶ Straightforward welding technique without any torch manipulation
- ▶ Less consumption of both filler materials and shielding gas
- ▶ Less fume emission

APPLICATIONS

- ▶ Positional welding of medium large thickness material
- ▶ "T" fillet welding
- ▶ Medium and large fabrication work
- ▶ Heavy duty truck and vehicle manufacture
- ▶ Shipyards
- ▶ Railway wagon fabrication
- ▶ Large size tank and container manufacture

TREOSTAR / TREOSTAR PULSE

TREOSTAR

TREOSTAR PULSE

SINGLE PHASE SYNERGIC MULTIPROCESS INVERTER COMPACT POWER SOURCES

Great flexibility in use and portability are main features of TREOSTAR 1800 and TREOSTAR 2000 PULSE, multiprocess (MIG/MAG, MMA and TIG "Lift") synergic inverter equipment, whilst only the latter additionally enables the PULSE/ DUAL PULSE facility.

Both of them offer high quality welding characteristics on all materials and mostly on stainless steel, aluminium and zinc coated steel, by really minimizing any reworking job due to spatters.

Innovative, versatile, light, easy-to-carry and user friendly, TREOSTAR power sources, because of their very high technological conception, are absolutely unique in any external and internal maintenance application, car body repair, agriculture and light fabrication work

- ▶ Multiprocess power sources: MMA - TIG Lift - MIG/MAG Synergic & Manual and, only for TREOSTAR 2000 PULSE, MIG PULSE and DUAL PULSE
- ▶ Digital control of the welding parameters with synergic curves preset according to used type of material, gas and wire diameter
- ▶ User friendly and easy-to-use selection and recalling of the parameters and welding programs
- ▶ Ability to store personalized welding parameters up to 99 JOBS
- ▶ Built-in polarity changeover facility for most common gas and gasless wires
- ▶ Control rack protection cover
- ▶ Smart "PROGRAM" key for quickly selecting any program
- ▶ Professional wire feeding mechanism with 37 mm large rolls
- ▶ Double groove rolls replaceable without any tool
- ▶ "Energy saving" function to operate the power source cooling fan only when necessary
- ▶ Possibility of using 300 mm Ø coils by means of the Retrofit Kit (optional)
- ▶ VRD – Voltage Reduction Device

vision.ARC is the innovative welding arc control developed by CEA granting a short arc extremely stable and precise in spite of any change of the external conditions. vision.ARC ensures outstanding performances, impossible to be obtained by traditional power sources.

VISION.PULSE (TREOSTAR 2000 PULSE)

vision.PULSE permits a short arc pulse welding, constantly controlled, by optimizing the results of traditional pulse welding. This enables to reduce the high heat input, typical in pulse welding, with a consequent reduction in distortions, an improvement in the puddle and considerable increase in welding speed too.

DUAL.PULSE (TREOSTAR 2000 PULSE)

Dual Pulse favours a further reduction in the heat transfer to the workpiece by minimizing its deformation and produces premium quality aesthetic beads similar to TIG finishing.
Dual Pulse is extremely useful mostly when welding aluminium and stainless steel.

ACCESSORIES

- Retrofit kit adaptor for Ø 300 mm wire spool
- Gas cylinder trolley

TECHNICAL DATA		TREOSTAR 1800			TREOSTAR 2000 PULSE		
		MIG/MAG	TIG	MMA	MIG/MAG	TIG	MMA
Single phase input 50/60 Hz	V +15% -15%	230			230		
Input Power @ I_2 Max	kVA	8,1	6,4	7,8	9,7	6,4	7,8
Delayed Fuse (I_{eff})	A	16	16	16	16	16	16
Power Factor / cos φ		0,63/0,99	0,63/0,99	0,63/0,99	0,64/0,99	0,64/0,99	0,64/0,99
Efficiency Degree		0,83	0,8	0,83	0,83	0,8	0,83
Open circuit voltage	V	60	60	60	60	60	60
Current range	A	10 - 175	5 - 175	10 - 150	10 - 200	5 - 175	10 - 150
Duty cycle at (40°C)	A 100%	100	100	90	100	100	90
	A 60%	115	115	110	115	115	110
	A X%	175 (20%)	175 (20%)	150 (25%)	200 (15%)	175 (20%)	150 (25%)
Wires	Ø mm	0,6 - 1,2	---	---	0,6 - 1,2	---	---
Coil	Ø mm	200 max (300 opt.)	---	---	200 max (300 opt.)	---	---
Standards		EN 60974-1 • EN 60974-5 • EN 60974-10 S			EN 60974-1 • EN 60974-5 • EN 60974-10 S		
Protection Class	IP	23 S			23 S		
Insulation class		H			H		
Dimensions		500X220X425 mm			500X220X425 mm		
Weight	kg	16			16		

Other voltages available on request

CONVEX MOBILE / CONVEX MOBILE PULSE

CONVEX MOBILE

CONVEX MOBILE PULSE

SYNERGIC MULTIPROCESS INVERTER COMPACT POWER SOURCES

Powerful three phase welding equipment in the size of just one wire feeder unit: this is the main peculiarity of CONVEX MOBILE series, innovative multiprocess synergic power sources for welding in MIG/MAG, MMA and TIG with "Lift" mode.

Versatile, easy-to-carry and user friendly, CONVEX MOBILE equipment are greatly appreciated, also thanks to their very high technological conception, anywhere high quality welding is required and are ideal for on-site work, maintenance job, car body repair and light fabrication work.

CONVEX MOBILE 255 PULSE, because of its additional Pulse and Dual Pulse facility, grants very high quality performance on all materials and particularly on stainless steel, zinc coated and aluminium, by greatly minimizing any reworking job due to spatters

3~ CC CV inverter DC + - SYN DIGITAL 888 GREEN

- Multiprocess power sources: MMA - TIG LIFT - MIG/MAG Synergic & Manual and for CONVEX MOBILE 255 PULSE, PULSED MIG and DUAL PULSE
- Digital control of the welding parameters with synergic curves preset according to used type of material, gas and wire diameter
- User friendly and easy-to-use selection and recalling of the parameters and welding programs
- Ability to store personalized welding parameters up to 99 JOBS
- " Smart PROGRAM" key for quickly selecting any program
- Built-in polarity changeover facility for most common gas and gasless wires
- Very contained size and weight
- Suitable for 300 mm Ø coils
- Professional double groove feeding mechanism with 4 rolls of 37 mm diameter replaceable without any tool
- "Energy saving" function to operate the power source cooling fan only when necessary
- Excellent arc striking always precise and efficient
- Reduced energy consumption
- Trouble shooting auto-diagnosis feature
- Metallic main structure with shockproof fibre compound front panel
- Initial and final crater control
- VRD – Voltage Reduction Device
- Possibility to use Up/Down torches

CT40 gas cylinder trolley for HR 32/30 watercooling and optional storage compartment

vision.COLD

SPECIAL WELDING PROCESS

vision.COLD for MIG/MAG welding small thickness with reduced heat input

VISION.ARC

vision.ARC is the innovative welding arc control developed by CEA granting a short arc extremely stable and precise in spite of any change of the external conditions. vision.ARC ensures outstanding performances, impossible to be obtained by traditional power sources.

VISION.PULSE (CONVEX MOBILE 255 PULSE)

vision.PULSE permits a short arc pulse welding, constantly controlled, by optimizing the results of traditional pulse welding. This enables to reduce the high heat input, typical in pulse welding, with a consequent reduction in distortions, an improvement in the puddle and considerable increase in welding speed too.

DUAL.PULSE (CONVEX MOBILE 255 PULSE)

Dual Pulse favours a further reduction in the heat transfer to the workpiece by minimizing its deformation and produces premium quality aesthetic beads similar to TIG finishing.

Dual Pulse is extremely useful mostly when welding aluminium and stainless steel.

TECHNICAL DATA		CONVEX MOBILE 251 / CONVEX MOBILE 255 PULSE		
		MIG/MAG	TIG	MMA
Three phase input 50/60 Hz	V +15% -15%	400	400	400
Input Power @ I_2 Max	kVA	10	8,5	11
Delayed Fuse (I_{eff})	A	16	10	16
Power Factor / cos φ		0,74/0,99	0,69/0,99	0,77/0,99
Efficiency Degree		0,89	0,86	0,90
Open circuit voltage	V	60	60	60
Current range	A	10 - 250	5 - 250	10 - 250
Duty cycle at (40°C)	A 100%	180	180	180
	A 60%	200	200	200
	A X%	250 (35%)	250 (35%)	250 (35%)
Wires	Ø mm	0,6 - 1,2	---	---
Standards		EN 60974-1 • EN 60974-5 • EN 60974-10		
		S		
Protection Class	IP	23 S		
Insulation Class		H		
Dimensions	↗ mm	650		
	→ mm	300		
	↑ mm	388		
Weight	kg	21		

Other voltages available on request

CONVEX / CONVEX PULSE

CONVEX

CONVEX PULSE

3~ CC CV inverter DC + - SYN DIGITAL 888

SYNERGIC MULTIPROCESS INVERTER COMPACT POWER SOURCES

Futuristic design and inverter technology with latest generation digital control are main characteristics of CONVEX and CONVEX PULSE multiprocess compact power sources for welding in MIG-MAG, MMA and TIG with "Lift" mode. Technologically ahead, robust and easy-to-use, they offer excellent quality welding in MIG/MAG and, only for CONVEX PULSE models, also in PULSED MIG and in DUAL PULSE.

The CONVEX and CONVEX PULSE equipment also allow less experienced operators to easily adjust all welding parameters in an intuitive way. Once the wished program is selected, the welding control automatically determines the best parameters based on the material type, wire diameter and gas being used, fruit of CEA's know-how acquired in over 65 years' experience.

These power sources represent the best choice in all industrial fields for all qualified applications requiring high precision and repeatability of the welding results especially in light fabrication work and car body repair.

WHY TO CHOOSE CONVEX AND CONVEX PULSE?

- Multiprocess power sources: MMA - TIG LIFT - MIG/MAG Synergic & Manual and for CONVEX PULSE : PULSED MIG and DUAL PULSE
- Digital control of the welding parameters with synergic curves preset according to used type of material, gas and wire diameter
- Ability to store personalized welding parameters up to 99 JOBS
- Smart PROGRAM" key for quickly selecting any program
- Feeding mechanism with 4 rolls of large diameter for a precise and constant wire driving
- Double groove rolls replaceable without any tool
- "Energy saving" function to operate the power source cooling fan and torch water cooling only when necessary
- Excellent arc striking always precise and efficient
- Ability to partially or totally lock the equipment with access key by password
- Reduced energy consumption
- Trouble shooting auto-diagnosis feature
- Metallic main structure with shockproof fibre compound front panel
- Control rack protection cover
- Initial and final crater control
- VRD – Voltage Reduction Device

TWO AVAILABLE VERSIONS

CONVEX and CONVEX PULSE models are available in either STANDARD configurations, designed for the most standardized welding applications, or PREMIUM configurations, also providing the innovative Vision.COLD and vision.ULTRASPEED processes, dedicated to anyone looking for a higher performance welding equipment with maximum flexibility on different materials.

STANDARD PACKAGE

SYNERGIC PROGRAMS:

Fe - CrNi - AlMg - AlSi

PREMIUM PACKAGE

STANDARD FITTED WITH:

vision.COLD for MIG/MAG welding small thickness with reduced heat input

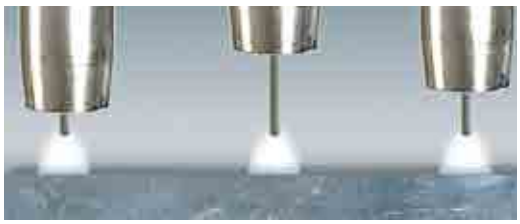
vision.ULTRASPEED for high speed MIG/MAG welding

SYNERGIC PROGRAMS:

Fe – CrNi – AlMg – AlSi - CuSi3 – AlBz8 – FCW (Rutil –Basic – Metal) – Duplex – Super Duplex AND OTHER CURVES FROM EXTRA CURVE PACKAGE (ECP).

VISION.ARC

vision.ARC is the innovative welding arc control developed by CEA granting a short arc extremely stable and precise in spite of any change of the external conditions. vision.ARC ensures outstanding performances, impossible to be obtained by traditional power sources.



VISION.PULSE (CONVEX PULSE)

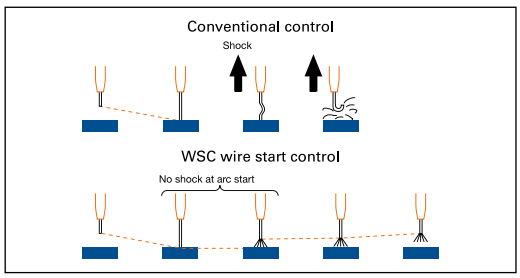
vision.PULSE permits a short arc pulse welding, constantly controlled, by optimizing the results of traditional pulse welding. This enables to reduce the high heat input, typical in pulse welding, with a consequent reduction in distortions, an improvement in the puddle and considerable increase in welding speed too.

DUAL-PULSED (CONVEX PULSE)

Dual Pulse favours a further reduction in the heat transfer to the workpiece by minimizing its deformation and produces premium quality aesthetic beads similar to TIG finishing.
Dual Pulse is extremely useful mostly when welding aluminium and stainless steel.

WSC - WIRE START CONTROL

WSC wire start control prevents any possible wire sticking to the workpiece or torch nozzle, by always ensuring a precise and “soft” arc striking.

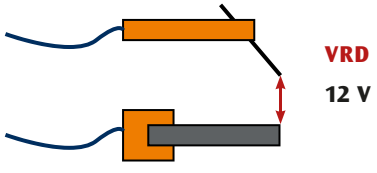


BURN BACK CONTROL

At the end of each weld, in any condition and with any metal, the digital control ensures a perfect wire cut thus avoiding the formation of the typical “wire globule” by ensuring the subsequent best arc striking.

VRD - VOLTAGE REDUCTION DEVICE

VRD device reduces open circuit voltage below 12 V and grants additional safety protection for the operator in all highly hazardous environments.



OPEN TO THE FUTURE

CONVEX and CONVEX PULSE are systems open to evolving technology: both control firmware and software are designed to be always updatable.

ACCESSORIES

- CT 45 trolley
- CT 70 trolley
- HR 32/HR 30 water cooling equipment
- Autotransformer


CT 45


CT 70


HR 32/30

TECHNICAL DATA		CONVEX		CONVEX PULSE	
		321	401	325	405
Three phase input 50/60 Hz	V +20% -20%	400	400	400	400
Input Power @ I_2 Max	kVA	13	17,8	17	23,7
Delayed Fuse (I_{eff})	A	20	25	25	25
Power Factor / cos φ		0,87/0,99	0,92/0,99	0,66/0,99	0,70/0,99
Efficiency Degree		0,86	0,85	0,86	0,85
Open circuit voltage	V	63	63	63	63
Current range	A	10 - 320	10 - 400	10 - 320	10 - 400
Duty cycle at (40°C)	A 100%	280	300	280	300
	A 60%	300	350	300	350
	A X%	320 (40%)	400 (40%)	320 (40%)	400 (40%)
Wires	Ø mm	0,6 - 1,2	0,6 - 1,2	0,6 - 1,2	0,6 - 1,2
Standards		EN 60974-1 • EN 60974-5 • EN 60974-10			
		S			
Protection Class	IP	23 S	23 S	23 S	23 S
Insulation Class		H	H	H	H
Dimensions	↗ mm	660	660	660	660
	→ mm	290	290	290	290
	↑ mm	515	515	515	515
Weight	kg	41	42	42	43

Other voltages available on request

QUBOX

SYNERGIC MULTIPROCESS INVERTER EQUIPMENT WITH SEPARATE WIRE FEEDER

QUBOX series multiprocessor equipment are characterized by a synergic digital control and inverter technology integrated into a sturdy and functional metallic structure, with a separate wire feeder. Technologically ahead, robust and easy-to-use, they allow high quality welding in MIG-MAG, MMA and TIG with "Lift" mode.

QUBOX equipment also allow less experienced operators to easily adjust all welding parameters in an intuitive way. Once the wished program is selected, the welding control automatically determines the best parameters based on the material type, wire diameter and gas being used, fruit of CEA's know-how acquired in over 65 years' experience.

These power sources represent the best choice in all industrial fields for all qualified applications requiring high precision and repeatability of the welding results, such as medium and large fabrication work, shipyards and steel erection.

QUBOX W equipment are fitted with integrated water cooling unit.

FEATURES

- ▶ Multiprocess power sources: MMA - TIG LIFT - MIG/MAG Synergic & Manual
- ▶ Parameter control directly from the wire feeder
- ▶ Digital control of the welding parameters with synergic curves preset according to used type of material, gas and wire diameter
- ▶ Ability to store personalized welding parameters up to 99 JOBS
- ▶ Smart PROGRAM" key for quickly selecting any program
- ▶ Feeding mechanism with 4 rolls of large diameter for a precise and constant wire driving
- ▶ Double groove rolls replaceable without any tool
- ▶"Energy saving" function to operate the power source cooling fan and torch water cooling only when necessary
- ▶ Excellent arc striking always precise and efficient
- ▶ Ability to partially or totally lock the equipment with access key by password
- ▶ Reduced energy consumption
- ▶ Trouble shooting auto-diagnosis feature
- ▶ Great robustness due to solid metallic main structure
- ▶ Control rack protection cover on the wire feeder
- ▶ Initial and final crater control
- ▶ VRD – Voltage Reduction Device
- ▶ Water cooling equipment integrated into the power source (W version)

QF 4 AND QF 4W WIRE FEEDER

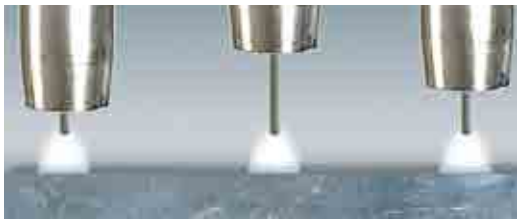
The digital control of all parameters, duly protected by a cover, is located directly on the QF4 (air cooled) and QF4W wire feeders (water cooled).

- Professional wire feeding mechanism with 4 rolls of large diameter for a precise and constant wire driving
- Graduated knob to achieve the most correct value of the wire pressure, which remains unchanged also after any arm opening and closing
- Double groove rolls replaceable without any tool
- Lodging for wire spools up to 300 mm diameter maximum

QUBOX equipment in the air cooled version offer the possibility of utilizing up to 50 m long interconnecting cables from the power source to the feeder.

VISION.ARC

vision.ARC is the innovative welding arc control developed by CEA granting a short arc extremely stable and precise in spite of any change of the external conditions. vision.ARC ensures outstanding performances, impossible to be obtained by traditional power sources.



OPEN TO THE FUTURE

QUBOX equipment are systems open to evolving technology: both control firmware and software are designed to be always updatable.

ETHERNET LAN

Possibility of having a special version fitted with an external Ethernet socket to interface the equipment to a remote device and support software

SIMPLE AUTOMATION

Standard equipped with analogic-digital I/O, QUBOX power sources can be easily integrated into automated welding equipment without any expensive and sophisticated external interfaces usually necessarily supplied for robotics.

WSC - WIRE START CONTROL

WSC wire start control prevents any possible wire sticking to the workpiece or torch nozzle, by always ensuring a precise and “soft” arc striking.

BURN BACK CONTROL

At the end of each weld, in any condition and with any metal, the digital control ensures a perfect wire cut thus avoiding the formation of the typical “wire globule” by ensuring the subsequent best arc striking.

UP/DOWN

Possibility of working by means of up/down torches to easily adjust main welding parameters at the work place.

SPECIAL PROCESSES (OPTIONAL)

vision.ARC2 , available on QUBOX, is the software platform which enables to weld by means of the following special processes:

vision.PIPE for a more accurate welding in pipe first root pass

vision.ULTRASPEED for high speed welding

vision.COLD to weld thin thickness laminations with low heat transfer

vision.POWER for a more concentrated arc and deeper penetration on medium and thick thickness

ACCESSORIES

- Up/Down torches
- WK1 kit of standard wheels/WK2 kit of extra large wheels
- Adjustable torch support
- Wire feeder holding support
- Dust filter
- Remote control RC 178


RC 178


WK1


WK2

TECHNICAL DATA		QUBOX		
		400	400W	500W
Three phase input 50/60 Hz	V +20% -20%	400	400	400
Input Power @ I_2 Max	kVA	21,5	22	29
Delayed Fuse (I_{eff})	A	32	32	40
Power Factor / cos φ		0,75/0,99	0,75/0,99	0,79/0,99
Efficiency Degree		0,85	0,85	0,85
Open circuit voltage	V	62	62	62
Current range	A	10 - 400	10 - 400	10 - 500
Duty cycle at (40°C)	A 100%	330	330	380
	A 60%	360	360	460
	A X%	400 (50%)	400 (50%)	500 (50%)
Wires	Ø mm	0,6 - 1,6	0,6 - 1,6	0,6 - 1,6
Standards		EN 60974-1 • EN 60974-5 • EN 60974-10		
		S		
Protection Class	IP	23 S	23 S	23 S
Insulation Class		H	H	H
Dimensions	↗ mm	1030	1030	1030
	→ mm	950	950	950
	↑ mm	515	515	515
Weight	kg	62	72	78

Other voltages available on request

DIGITECH VP2 VISION PULSE 2

VISION.ARC2

3~ CC CV Inverter SYN DC + - DIGITAL 888 GREEN

SYNERGIC MULTIPROCESS INVERTER PULSED POWER SOURCES

Synergic multiprocess pulsed equipment of DIGITECH VP2 (VISION PULSE 2) series are the evolution of DIGITECH VISION PULSE.

The use of a very latest generation microprocessor and of a new arc control software vision.ARC2 allow to obtain an incredibly far superior premium quality welding performance unthinkable till this day.

DIGITECH VP2 equipment are characterized by a synergic digital control to automatically determine the best welding parameters, based on the used type of material, wire diameter and gas.

DIGITECH VP2 innovative digital control with colour display fully meets the needs of combining synergy with the total control of all the welding parameters, for a far more modern and effective approach to welding.

Technologically ahead, robust and easy-to-use, they offer premium welding quality at high speed, in PULSED MIG, DUAL PULSED, MIG-MAG, MMA and TIG with “lift” arc striking and represent the best solution in any industrial field requiring high precision and repeatability of the achieved results.

DIGITECH 3300, 4000 e 5000 VP2 are supplied with a separate wire feeder, whilst DIGITECH 3200 VP2 is designed with a built-in feeder.

WHY TO CHOOSE DIGITECH VP2?

- Multiprocess equipment with exceptional performance in PULSED MIG, DUAL PULSED, MIG/MAG, MMA e TIG.
- Digital control of the welding parameters with preset synergic curves according to the type of material, gas and wire diameter being used
- vision.ARC2 guarantees a constant arc in all conditions and the perfect droplet detachment , mostly in PULSED MIG and DUAL PULSED, to achieve superior welding performances
- Interface with LCD colour display to keep under control the whole welding process
- Possibility of integrating special MIG and PULSED MIG welding processes
- Welding process always under control by means of the digital adjustment of all parameters
- User friendly and easy-to-use selection and recalling of the parameters and welding programs
- Ability to store personalized welding parameters up to 99 JOBS
- Excellent arc striking always precise and efficient
- Initial and final crater control
- Ability to partially or totally lock the equipment with access key by password
- Monitoring and repeatability of the welding parameters
- Low energy consumption
- Energy Saving" function to operate the power source cooling fan and torch water cooling when necessary
- Welding parameter adjustments directly from up/down MIG torch
- Mains voltage fluctuation automatic compensation within +20% -20%
- Data storing and data printing ability (Optional)
- VRD Voltage Reduction Device for the operator's maximum safety

DIGITECH VP2 SYNERGIC CONTROL

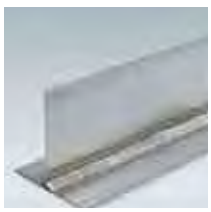
DIGITECH VP2 control, fitted with the innovative colour display with icons and easily-read graphics, allows even less expert welders to very easily adjust all the welding parameters in an intuitive way with extreme simplicity. After choosing the program type according to used material, wire diameter and gas, the control automatically selects the best welding parameters, fruit of CEA's know-how acquired in over 65 years' experience. At the same time DIGITECH VP2 power sources offer also most expert welders the possibility of fine tuning and customizing the welding process control, thanks to the ability to access clear, simple and complete under menus for the best possible configuration and optimization of the equipment.

VISION.ARC 2

vision.ARC2 is the latest evolution of the software for the arc control, developed by CEA to achieve a more perfect and stable arc, together with a superior correction in the control of the welding pulse impulse.
The innovative vision.ARC2 allows to better monitor and manage in a far more efficient way all unwished physical phenomena, which may often negatively affect the arc stability and, consequently, the control capacity of the power source.
New vision.ARC2 allows the power source control to operate in a very precise and faster way, thus granting an absolute constant arc and a perfect detachment of the droplet, mostly in MIG PULSED and DUAL PULSED.

VISION.PULSE

vision.PULSE permits a short arc pulse welding, constantly controlled, by optimizing the results of traditional pulse welding. This enables to reduce the high heat input, typical in pulse welding, with a consequent reduction in distortions, an improvement in the puddle and considerable increase in welding speed too.



DUAL-PULSED

Dual Pulse favours a further reduction in the heat transfer to the workpiece by minimizing its deformation and produces premium quality aesthetic beads similar to TIG finishing.
Dual Pulse is extremely useful mostly when welding aluminium and stainless steel.

SPECIAL PROCESSES (OPTIONAL)

vision.ARC2 , available on DIGITECH VP2, is the software platform which enables to weld by means of the following special processes:

MIG/MAG

vision.PIPE for a more accurate welding in pipe first root pass

vision.ULTRASPEED for high speed welding

vision.COLD to weld thin thickness laminations with low heat transfer

vision.POWER for a more concentrated arc and deeper penetration on medium and thick thickness

MIG PULSED

vision.PULSE-UP for a quicker and more precise vertical up welding

vision.PULSE-RUN for a colder and faster pulsed welding

vision.PULSE-POWER for a more penetrated and smoothly shaped welding on medium large thickness

- Metallic main structure with shock-proof fibre compound front frames
- Control rack protection cover
- Easy to read and adjust sloping front control panel, highly visible from any direction
- IP 23 S protection class and dust-proof electronic components, thanks to the innovative “Tunnel” fan cooling system, allow operation in the toughest work environments

DIGITECH 3300, 4000 and 5000 VP2 offer the possibility of using interconnecting cables up to 50 m in order to control the parameters directly from the feeder

HT 5 WIRE FEEDER

Also HT 5 duplicates main selection and control keys as given in the main power source. The available 4 independent displays, feeder plus power source, provide the possibility of contemporarily visualizing and monitoring 4 different parameters at the same time.

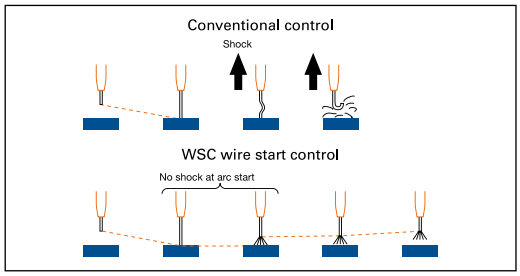
- Professional wire feeding mechanism with 4 rolls of large diameter for a precise and constant wire driving
- Graduated knob to achieve the most correct value of the wire pressure, which remains unchanged also after any arm opening and closing
- Double groove rolls replaceable without any tool
- Lodging for wire spools up to 300 mm Ø maximum

DOUBLE FEEDER

DIGITECH VP2 in the version with double feeder represent the ideal solution whenever a greater flexibility is needed in all applications using two different types of material.
Thanks to the double feeder it is possible to greatly reduce process change time with a consequent large increase in productivity.

WSC - WIRE START CONTROL

This arc striking control device prevents any possible wire sticking to the workpiece or torch nozzle, by always ensuring a prompt and precise arc striking



BURN BACK CONTROL

At the end of each weld, in any condition and with any material, the digital control ensures a perfect wire cut, thus avoiding the formation of the typical “wire globule”, so ensuring the subsequent best arc restriking

DIGITORCH

DIGITORCH’s allow the operator readily see on the wide torch display and adjust main welding parameters, i.e. welding current, material thickness, wire speed, arc length, electronic inductance and memorized program number. Besides, depending on the selected welding mode, it is possible to switch from one program to the other or increase/decrease the parameters of the synergic curve in use.

SIMPLE AUTOMATION

Standard equipped with analogic-digital I/O, DIGITECH VP2 can be easily integrated into automated welding equipment without any expensive and sophisticated external interfaces usually necessarily supplied for robotics.

ROBOT INTERFACE

DIGITECH VP2 power sources can be easily connected to any Robot by means of a CEA Robot Interface which can handle several analogic, fieldbus digital protocols depending on the features of the Robot to be used.

OPEN TO THE FUTURE

DIGITECH VP2 equipment are systems open to evolving technology: both control firmware and software are designed to be always updatable.

ETHERNET LAN

Possibility of having a special version fitted with an external Ethernet socket to interface the equipment to a remote device and support software.

ACCESSORIES

- Up/Down torches
- CT 70 / CT 75 water cooling and gas cylinder trolley
- CT 72 large trolley to carry HR 30 / 31 / 32 water cooling, two gas cylinders and/or autotransformer
- WK 1 kit of standard wheels/ WK 2 kit of extra large wheels
- SP feeder sliding supports
- Adjustable torch support
- RC 178 remote control
- Autotransformer
- HR 30/31/32 water cooling equipment









TECHNICAL DATA		DIGITECH VP2			
		3200	3300	4000	5000
Three phase input 50/60 Hz	V +20% -20%	400	400	400	400
Input Power @ I_2 Max	kVA	19	19,6	25,5	31,2
Delayed Fuse (I_{eff})	A	20	25	32	40
Power Factor / cos φ		0,62/0,99	0,62/0,99	0,65/0,99	0,69/0,99
Efficiency Degree		0,82	0,82	0,85	0,85
Open circuit voltage	V	62	62	70	70
Current range	A	10 - 320	10 - 330	10 - 400	10 - 500
Duty cycle at (40°C)	A 100%	240	280	350	380
	A 60%	270	300	400	460
	A X%	320 (40%)	330 (40%)	-	500 (50%)
Wires	Ø mm	0,6 - 1,6	0,6 - 1,6	0,6 - 1,6	0,6 - 1,6
Standards		EN 60974-1 • EN 60974-10			
		S			
Protection Class	IP	23 S	23 S	23 S	23 S
Insulation Class		H	H	H	H
Dimensions	↗ mm	660	660	660	660
	→ mm	290	290	290	290
	↑ mm	515	515	515	515
Weight	kg	41	35	40	44

Other voltages available on request

MIG/MAG CONVENTIONAL

SMARTMIG
COMPACT
COMPACT SYN
MAXI
ECHO

	SG 2 Ø 1,6 mm Ø 1,2 mm Ø 1,0 mm Ø 0,8 mm 0,6 mm	1~	3~					SYN		
SMARTMIG										
SMARTMIG M 20	180 A 15%	■								
SMARTMIG T 25	200 A 25%		■			■				
COMPACT										
COMPACT 240 M	250 A 20%	■				■				
COMPACT 310	300 A 35%		■			■				
COMPACT 364	350 A 35%		■			■				
COMPACT 410	400 A 35%		■			■				
COMPACT SYN										
COMPACT 3100 SYN	300 A 35%		■			■		■		
MAXI										
MAXI 315	300 A 35%		■		■	■				
MAXI 405	400 A 35%		■		■	■				
MAXI 505	500 A 35%		■		■	■				
ECHO										
ECHO 5000 CV	500 A 40%		■		■		■			
ECHO 7000 CV	700 A 40%		■		■		■			

I2 @ 100% I2 @ 60% I2 @ X%

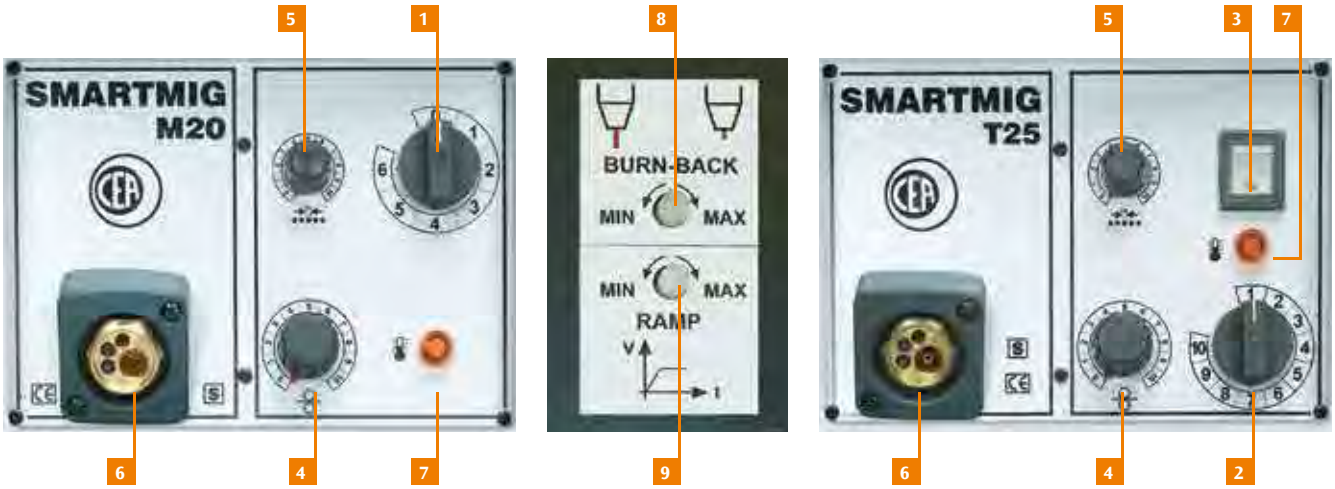
SMARTMIG

1~ 3~ CV DC

STEP ADJUSTMENT SEMIAUTOMATIC COMPACT WELDING EQUIPMENT

Semi-automatic welding machines with undergear and built-in professional wire feeder, suitable to be used with CO_2 gas and mixture. SMARTMIG's are recommended for light fabrication work, car body repairs, agriculture and maintenance. Robust, easy to use and with innovative design, SMARTMIG M's (single phase) and SMARTMIG T's (three phase) provide excellent welding performance also with aluminium and stainless steel wires.

- Excellent welding performance on any metal and thin lamination sheets
- QBS feeding motor Quick Brake System for constant and repeated arc striking
- Burn Back and motor ramp are integrated on M 20 and externally adjustable on T 25
- Control panel protected against accidental hits
- Sloping front panel easy to read and adjust, highly visible from any direction
- Standard supplied with cylinder carriage and robust wheels for an easy manoeuvrability
- Quick connection for the ground cable T 25
- Large inner lodging to easily accommodate also metallic coils (up to 300 Ø mm)
- Professional double hook spool support and adjustable brake spindle to provide steady and trouble free wire feeding
- Professional feeding system to ensure a precise and constant wire feeding



CONTROL PANELS

1. Mains and voltage adjustment switch (M 20).
2. Voltage adjustment switch (T 25).
3. Mains switch (T 25).
4. Electronic wire speed adjustment.
5. Spot timer on all models.
6. EURO central connection for the torch.
7. Thermostatic protection pilot light.
8. External burn back adjustment (T 25).
9. External motor ramp adjustment for a precise arc striking (T 25)

TECHNICAL DATA		SMARTMIG	
		M 20	T 25
Single phase input 50/60 Hz	V	230	---
Three phase input 50/60 Hz	V	---	230/400
Input Power @ I_2 Max	kVA	11,5	9,7
Delayed Fuse (I_2 @ 60%)	A	25	16/10
Power Factor / cos φ		0,63	0,75
Efficiency Degree		0,66	0,76
Open circuit voltage	V	19,5 - 40	17 - 38
Adjustament positions	N°	6	10
Current range	A	30 - 180	25 - 250
Duty cycle at (40°C)	A 100%	70	120
	A 60%	95	160
	A 35%	125	210
	A X%	180 (15%)	250 (25%)
Wires	Ø mm	0,6 - 1,0	0,6 - 1,2
Standards		EN 60974 - 1 • EN 60974 - 5 • EN 60974 - 10	
		S	
Protection Class	IP	23 S	23 S
Dimensions	↗ mm	830	830
	→ mm	400	400
	↑ mm	615	615
Weight	kg	42	53

Other voltages available on request

M20

T25

COMPACT - COMPACT SYN

STEP ADJUSTMENT SEMIAUTOMATIC COMPACT WELDING MACHINES

A series of industrial semiautomatic welding equipment with built-in wire feeder, suitable for professional and industrial applications. COMPACT power sources, in their innovative and user friendly design, ensure excellent welding characteristics on any material, aluminium and stainless steel included, by granting a very stable arc in any welding position. Robust and easy-to-use, COMPACT power sources are suitable to be used in industry, fabrication work, car body repair, agriculture and maintenance.

1~ 3~ CV DC + -

DESIGNER: SPREAFICO DESIGN - ITALY

COMPACT SYN

COMPACT SYN power sources represent an evolution towards the simplification process of the welding operations by allowing, in a user friendly way, also non expert users to very easily adjust the welding parameters. Equipped with an innovative synergic control, based on the most modern microprocessor digital technology, COMPACT SYN equipment have got several pre-set welding programs, which, depending on used material, gas and wire diameter, will automatically select the best parameters according to the preset welding voltage. The synergic function may be easily excluded by changing the way of setting the parameters like in traditional MIG's. Depending on used material thickness, an easy-to-read table shows in which position to set both commutator switches to automatically obtain the best welding result.

- Arc striking always precise
- Excellent MIG-MAG welding characteristics on any material and with any gas
- Control panel protected against accidental hits
- Double inductance connection for a better welding pool in any position (COMPACT 364 – 410)
- Robust ergonomic handle and integrated cylinder carriage with robust wheels for an easy manoeuvrability
- Large inner lodging to easily accommodate also metallic coils (300 mm Ø max.)
- Professional feeding system to ensure a precise and constant wire feeding

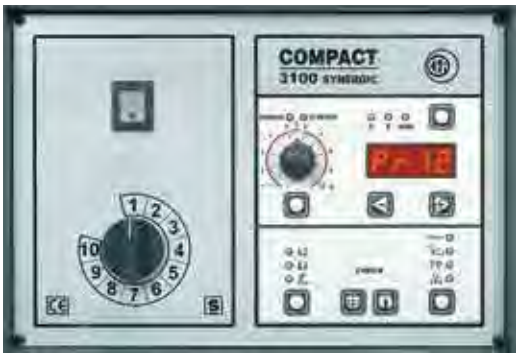
COMPACT 240M - 310

COMPACT 364 - 410
COMPACT SYN 3100

COMPACT

- ▶ Mains switch (COMPACT 364 - 410) and welding voltage fine adjustment
- ▶ 2 – 4 stroke mode selector switch and spot timer
- ▶ Burnback adjustment
- ▶ Motor ramp for a precise arc striking

COMPACT SYN



- ▶ Welding "process" selector: Manual/Synergic
- ● Synergic: best welding parameters are adjusted in a synergic way according to the chosen program
- ● Manual: the panel potentiometer adjusts the wire speed like in traditional equipment
- ▶ "Display" selector : Voltmeter/Ammeter – Wire speed
- ▶ Digital display to show preset welding programs and also acting as a Voltmeter/Ammeter with wire speed display and Hold Function of the last read value
- ▶ 2 /4 stroke /Spotting welding mode selector
- ▶ Gas Purge/ Wire Inch selector
- ▶ Motor Ramp /Burn Back / Spot Timer adjustment selector

TECHNICAL DATA		COMPACT				COMPACT
		240M	310	364	410	3100 SYN
Single phase input 50/60 Hz	V	230	---	---	---	---
Three phase input 50/60 Hz	V	---	230/400	230/400	230/400	230/400
Input Power @ I_2 Max	kVA	11,9	13,3	17,3	18,5	13,3
Delayed Fuse (I_2 @ 60%)	A	25	25/16	25/20	35/20	25/16
Power Factor / cos φ		0,96	0,96	0,96	0,96	0,96
Efficiency Degree		0,58	0,70	0,68	0,77	0,70
Open circuit voltage	V	22 - 50	18 - 43,5	18,5 - 45	20 - 44	18 - 43,5
Adjustament positions	N°	7	10	14	20	10
Current range	A	50 - 250	30 - 300	45 - 350	60 - 400	30 - 300
Duty cycle at (40°C)	A 100%	110	170	200	240	170
	A 60%	150	225	260	300	225
	A 35%	200	300	350	400	300
	A 20%	250	---	---	---	
Wires	Ø mm	0,6 - 1,2	0,6 - 1,2	0,6 - 1,2	0,6 - 1,6	0,6 - 1,2
Standards		EN 60974-1 • EN 60974-5 • EN 60974-10 • S				
Protection Class	IP	23 S	23 S	23 S	23 S	23 S
Dimensions	↗ mm	860	860	860	1060	860
	→ mm	540	540	540	600	540
	↑ mm	790	790	790	780	790
Weight	kg	59	70	83	109	71

Other voltages available on request

ACCESSORIES

- ● IR 14 water cooling equipment (COMPACT 410)

MAXI

DESIGNER: SPREAFICO DESIGN - ITALY

STEP ADJUSTMENT SEMI-AUTOMATIC WELDING MACHINES WITH SEPARATE WIRE FEEDER

Semi-automatic welding equipment, with separate wire feeder, recommended for industrial applications, medium and large fabrication work.
MAXI power sources, usable with a wide selection of wire feeders and different length interconnecting cables, are the most complete solution for any job and ensure excellent welding performances on any thickness by granting a very stable arc in any welding position.

1~ 3~ CV DC + -

- ▶ Excellent welding characteristics on any material and with any gas type
- ▶ Ideal for welding any metal in any industrial application
- ▶ Metallic main structure with shockproof fibre compound front frames
- ▶ Standard version supplied with cylinder carriage and robust wheels
- ▶ Control panel protected against accidental impact
- ▶ Large ergonomic handle for an easy manoeuvrability

TR - WF

- ▶ External Burn-Back and motor ramp adjustments for a precise arc striking
- ▶ 2/4 stroke selector switch
- ▶ Water and gas quick connections
- ▶ Professional wire feeding mechanism for a precise and constant wire driving
- ▶ Double groove rolls replaceable without any tool

SWF STRONG FEEDER

SWF feeders, with robust polypropylene suitcase, ideal for site jobs and harshest environments. They can be used for wires spools up to 300 mm Ø.
(V/Ameter available on request).

CONTROL PANEL

- ▶ Mains switch and welding voltage range switch
- ▶ Voltage fine adjustment switch
- ▶ Optional digital ammeter/voltmeter with hold function of the last welding parameters
- ▶ Double inductance connection for a better welding pool in any position

TECHNICAL DATA		TR 2	TR 4	SWF	WF 4 - WF 5
Single phase input 50/60 Hz	V	48	48	48	48
Motor power	W	100	100	100	100
Rolls	N°	2	4	4	4
Feeding speed	m/min	0,5 - 24	0,5 - 24	0,5 - 20	0,5 - 20
Solid wire (steel)	Ø mm	0,6 - 2,4	0,6 - 2,4	0,6 - 2,4	0,6 - 2,4
Dimensions	↗ mm	450	450	540	570
	→ mm	230	230	235	275
	↑ mm	315	315	485	400
Weight	kg	11,5	11,5	14	17


TR 2


TR 4


SWF - WF 5


WF 4

TECHNICAL DATA		MAXI		
		315	405	505
Three phase input 50/60 Hz	V	230/400	230/400	230/400
Input Power @ I_2 Max	kVA	13,8	19	24,2
Delayed Fuse (I_2 @ 60%)	A	16/10	35/20	40/25
Power Factor / cos φ		0,95	0,96	0,97
Efficiency Degree		0,70	0,77	0,78
Open circuit voltage	V	18 - 43,5	20 - 44	19 - 51
Adjustament positions	N°	10	20	30
Current range	A	30 - 300	60 - 400	60 - 500
Duty cycle at (40°C)	A 100%	170	230	300
	A 60%	225	300	370
	A 35%	300	400	500
	A 20%	---	---	---
Wires	Ø mm	0,6 - 1,2	0,6 - 1,6	0,8 - 2,0
Standards		EN 60974-1 • EN 60974-10		
		S		
Protection Class	IP	23 S	23 S	23 S
Insulation Class		H	H	H
Dimensions	↗ mm	1020	1060	1060
	→ mm	540	600	600
	↑ mm	790	780	780
Weight	kg	70	99	113

ACCESSORIES

- Wheel kit for TR feeders
- Spool cover for TR feeders
- Wheel kit for WF feeders
- IR 14 water cooling equipment (MAXI 405 - 505)

ECHO

MIG-MAG SEMI-AUTOMATIC EQUIPMENT WITH ELECTRONIC ADJUSTMENT

Three phase MIG-MAG semi-automatic equipment suitable for any industrial application, i.e. medium and large fabrication work, shipyard and steel erection. ECHO power sources, usable with a wide selection of wire feeders and different length interconnecting cables, allow the remote control facility of all welding parameters directly from the feeder.

3~ CV DC + -

- Voltage electronic adjustment
- Remote voltage control facility directly from the WF, DF and SWF feeders used with interconnecting cables up to 50 meters
- Excellent welding performance with any material and different gases
- Lower energy consumption in respect of step adjustment power sources
- High reliability and reduced maintenance costs, lacking any electromechanical adjustment components
- Automatic "Hot Start" to always get a precise arc striking
- P.C.B. in an isolated rack for protection against dust and dirt
- Standard equipped with cylinder holder undercarriage fitted with large wheels for easy handling
- Two inductance positions for an excellent welding pool in any situation
- "Energy Saving" function to operate the power source cooling fan and torch water cooling when necessary

WF - DF

- Voltage electronic adjustment
- External Burn-Back and motor ramp adjustment for a precise arc striking
- Digital ammeter/voltmeter with hold function of the last welding parameters (DF 5)
- Sloping lodging for wire spools (up to 300 mm Ø maximum)
- Water and gas quick connections
- Double groove rolls replaceable without any tool
- Professional wire feeding mechanism for a precise and constant wire driving

DESIGNER: SPREAFICO DESIGN - ITALY

STRONG FEEDER SWF

These feeders, having a robust polypropylene suitcase, represent the ideal solution for shipyards and all harshest applications. Developed for use with solid and flux cored wires, SWF feeders can lodge wire spools up to 300 mm Ø.
Voltmeter/Ammeter and gas flowmeter upon request.

SWF

WF 4

DF 5 - SWF

TECHNICAL DATA		WF 4	DF 5	SWF
Single phase input 50/60 Hz	V	48	48	48
Motor power	W	100	100	100
Rolls	N°	4	4	4
Feeding speed	m/min	0,5 - 20	0,5 - 20	0,5 - 20
Solid wire (steel)	Ø mm	0,6 - 2,4	0,6 - 2,4	0,6 - 2,4
Dimensions	↗ mm	570	570	540
	➔ mm	275	275	235
	↑ mm	400	400	485
Weight	kg	17	17	14
V/A		---	●	Optional

TECHNICAL DATA		ECHO	
		5000 CV	7000 CV
Three phase input 50/60 Hz	V	230/400	230/400
Input Power @ I_2 Max	kVA	29,2	46
Delayed Fuse (I_2 @ 60%)	A	63/35	85/50
Power Factor / cos φ		0,91 - 0,94	0,88 - 0,90
Efficiency Degree		0,76	0,76
Open circuit voltage	V	17 - 51	22 - 56
Current range	A	25 - 500	25 - 700
Duty cycle at (40°C)	A 100%	310	460
	A 60%	400	600
	A 40%	500	700
Wires	Ø mm	0,6 - 1,6	0,8 - 2,4
Standards		EN 60974-1 • EN 60974-10	
		S	
Protection Class	IP	23 S	23 S
Insulation Class		H	H
Dimensions	↗ mm	1060	1060
	➔ mm	600	600
	↑ mm	780	780
Weight	kg	116	170

Other voltages available on request

ACCESSORIES

- IR 14 water cooling equipment
- Adjustable torch support


MATRIX 3000 AC/DC
VRD
MEM
PRG
A
V
HF AC
HF DC
DC
WAVE
CYCLE
SYN
FAST
SLOW
PULSE
HOT START
ARC FORCE
I1
I2
CYCLE
Ip
Ib
Tb
Tp
f

TIG

RAINBOW 182 HF PRO - 201 HF - 202 HF PRO
MATRIX 2200 HF
MATRIX HF
MATRIX 2200 AC/DC
MATRIX AC/DC

TIG MMA	I2	1~	3~		DC	AC	DIGITAL				cold TACK
RAINBOW HF											
RAINBOW 182 HF PRO	180 A 25%	■		■	■		■	■	■	■	
RAINBOW 201 HF	200 A 25%	■		■	■		■		■		
RAINBOW 202 HF PRO	200 A 25%	■		■	■		■	■	■	■	
MATRIX HF											
MATRIX 2200 HF	220 A 30%	■		■	■		■	■	■	■	■
MATRIX 2600 HF	260 A 40 %		■	■	■		■	■	■	■	■
MATRIX 3000 HF	300 A 35%		■	■	■		■	■	■	■	■
MATRIX 3001 HF	300 A 35%		■	■	■		■		■		
MATRIX 4200 HF	420 A 40%		■	■	■		■	■	■	■	■
MATRIX AC/DC											
MATRIX 2200 AC/DC	220 A 30%	■		■	■	■	■	■	■	■	■
MATRIX 3000 AC/DC	300 A 35%		■	■	■	■	■	■	■	■	■
MATRIX 4100 AC/DC	400 A 35%		■	■	■	■	■	■	■	■	■
MATRIX 5100 AC/DC	500 A 35%		■	■	■	■	■	■	■	■	■

I2 @ 100% I2 @ 60% I2 @ X%

RAINBOW HF

SINGLE PHASE TIG DC INVERTER WELDING EQUIPMENT

RAINBOW 182 HF PRO - 202 HF PRO and RAINBOW 201 HF represent the latest evolution of inverter technology DC welding machines for professional applications.
Equipped with a digital control, these powerful 100 kHz power sources, based on the very latest IGBT technology and fitted with flat transformer, can be used for TIG welding of any metal, excluding aluminium and its alloys.
RAINBOW 182 HF PRO - 202 HF PRO and RAINBOW 201 HF, also very well performing in MMA welding, due to their lightness and portability, are the ideal solution for excellent quality welding in maintenance, assembly and light fabrication works.

- ▶ Digital control of all the welding parameters
- ▶ TIG arc striking by high frequency or "lift arc"
- ▶ High performance on thin metal sheets
- ▶ Low energy consumption and high efficiency
- ▶ Energy Saving function to operate the power source cooling fan when necessary only
- ▶ Control panel protected against accidental impact
- ▶ Sloping front control panel, easy to read and adjust and highly visible from any direction
- ▶ IP 23 protection class and dust-proof electronic components, thanks to the innovative "Tunnel" fan cooling system, allow their use in the toughest work environments
- ▶ Use of up/down TIG torches will enable to adjust directly from the torch the welding parameters

"EASY PULSE" - SYN
(RAINBOW 182 HF PRO - 202 HF PRO)

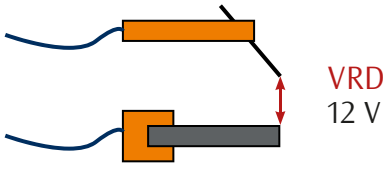
"EASY PULSE" feature, in function of the chosen peak current, in a simple and automatic way will synergically generate an adequate pulse frequency (between 0.5 and 500 Hz) and a base current, both readjustable in a synergic way.
Pulse parameter values preselected in the control will save setting time, by ensuring the best possible pulse parameter combinations, ideal for less skilled welders.

"CYCLE" FUNCTION
(RAINBOW 182 HF PRO - 202 HF PRO)

"CYCLE" function allows, by simply pressing the torch trigger, to continuously switch between two current values, previously preselected. This function is most suitable for welding different thickness profiles, requiring a continuous current adjustment change.

VRD - VOLTAGE REDUCTION DEVICE

VRD device reduces the open circuit voltage to values below 12 V, by enabling the use of the machine in highly hazardous environments for the operator's maximum safety.



DESIGNER: SPREAFICO DESIGN - ITALY

RAINBOW 201 HF

- ▶ Digital control of all the welding parameters
- ▶ Welding process selector:
  TIG DC • TIG DC "Lift" • MMA
- ▶ Welding Mode Selector:
  2T/4T • Spotting
- ▶ Digital ammeter with welding current presetting and hold function of the last read welding parameter
- ▶ Digital display for presetting all the welding parameters

RAINBOW 182 HF PRO - 202 HF PRO

- ▶ Welding "Mode" CYCLE
- ▶ 3 Pulse mode TIG:
  - SYN: automatic pulse parameters setting in function of chosen peak current
  - FAST: up to 500 Hz in TID DC
  - SLOW: to have both peak and base current time adjustments
- ▶ Storing and recalling up to 99 personalized welding programs
- ▶ Monitoring of all welding parameters.

RAINBOW FUNCTION		182 HF PRO		201 HF		202 HF PRO	
		TIG DC	MMA	TIG DC	MMA	TIG DC	MMA
Pre Gas		•		•		•	
Initial current		•				•	
Up Slope		•		•		•	
Welding current		•	•	•	•	•	•
2nd welding current	"CYCLE"	•				•	
Pulse cycle	"PULSE"	•				•	
Down Slope		•		•		•	
Final current		•				•	
Post gas		•		•		•	
Spot time		•		•		•	
Automatic Hot Start			•		•		•
Automatic Arc Force			•		•		•
Automatic Antisticking			•		•		•

TECHNICAL DATA		RAINBOW 182 HF PRO		RAINBOW 201 HF		RAINBOW 202 HF PRO	
		TIG DC	MMA	TIG DC	MMA	TIG DC	MMA
Single phase input 50/60 Hz	V +20% -20%	230	230	230	230	230	230
Input Power @ I_2 Max	kVA	6,9	8,3	8,5	9	8,5	9
Delayed Fuse (I_{eff})	A	16	16	20	20	20	20
Power Factor / cos φ		0,67/ 0,99	0,67/0,99	0,67/0,99	0,67/0,99	0,67/ 0,99	0,67/0,99
Efficiency Degree		0,82	0,84	0,82	0,84	0,82	0,84
Open circuit voltage	V	90	90	88	88	88	88
Current range	A	5 - 180	5 - 160	5 - 200	5 - 160	5 - 200	5 - 160
Duty cycle at (40°C)	A 100%	110	80	120	110	120	110
	A 60%	130	100	140	130	140	130
	A X%	180 (25%)	160 (20%)	200 (25%)	160 (30%)	200 (25%)	160 (30%)
Standards		EN 60974-1 • EN 60974-3 • EN 60974-10 • S					
Protection Class	IP	23 S		23 S		23 S	
Insulation Class		H		H		H	
Dimensions	↗ mm	390		390		390	
	→ mm	135		135		135	
	↑ mm	300		300		300	
Weight	kg	7,5		7,5		7,5	

Other voltages available on request


CD 6


PSR 7

ACCESSORIES

- CD6 remote control
- PSR 7 foot remote control
- Up/Down torches
- Carrying belt

MATRIX 2200 HF

TIG INVERTER WELDING EQUIPMENT

Powerful, handy, compact and lightweight MATRIX 2200 HF's are the most innovative, high-performing and technologically ahead single phase power sources ever developed for TIG welding.
Their PFC Power Factor Correction device optimizes the amount of energy consumption by allowing the use of these powerful power sources, without problems, with 16 A fuse mains and with power generator sets.
The user-friendly and advanced function digital control ensures an extraordinary perfect stability of the welding parameters thus granting very high quality welding both in TIG and MMA with any electrodes.
MATRIX 2200 HF's are the ideal choice for all qualified welding applications and maintenance jobs, whenever power and portability are needed.
MATRIX 2200 HF's allow TIG DC welding of mild and stainless steel, copper and its alloys.

- Built-in innovative PFC Power Factor Correction
- Digital adjustment of all the welding parameters
- High duty cycle (40°C) 220 A @ 30%
- Low current consumption (-30%)
- High reliability when used with generator sets
- Suitable to be used with mains cable lengths over 100 m
- Automatic compensation for mains voltage fluctuations within +/- 20%
- Excellent welding characteristics in TIG and MMA with any type of electrodes, cellulosic included
- High frequency arc striking, precise and efficient even from long distance
- Energy Saving function to operate the power source cooling fan and the torch water cooling only when necessary
- Possibility of activating the VRD function
- Possibility of memorizing welding parameters (7 JOBS)
- Use of up/down TIG torches will enable to adjust directly from the torch both welding parameters and memorized JOBS
- Auto-diagnostic feature for trouble shooting
- Control rack protection cover
- IP 23 protection class and dust-proof electronic components, thanks to the innovative “tunnel” fan cooling system, allow operation in the toughest work environments
- Compact water cooling equipment integrable with the power source (optional)

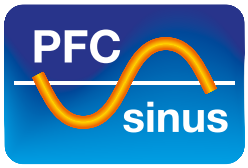
- Digital control of all the welding parameters
- Digital Ammeter and Voltmeter with welding current presetting and Hold Function of the last read value
- Digital display for the presetting of the welding parameters
- Full monitoring of the welding parameters
- Welding process selector: TIG DC • TIG DC “Lift” • MMA
- Welding mode selector: 2 Stroke / 4 Stroke • Cycle • Spot Timer
- Personalised welding program storing and recalling
- Pulse TIG welding adjustable from 0,5 up to 2000 Hz with available “SYN PULSE” facility

MMA FUNCTIONS

- Adjustable Arc Force for choosing the best welding arc dynamics
- Adjustable Hot Start to improve the arc striking with difficult electrodes
- Electrode Antisticking function

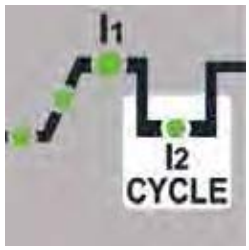
PFC POWER FACTOR CORRECTION

The wave shape of the current drawn from the mains is made sinusoidal by the PFC device with a consequent total lack of harmonic disturbances in the mains and consumption optimization, which enables to utilize the power source at full range on a 16A fuse.
The PFC circuit gives the machine a wider protection against mains voltage fluctuations, by also making it safer whenever being operated by power generator sets.



"CYCLE" FUNCTION

"CYCLE" function allows, by simply pressing the torch trigger, to continuously switch between two current values, previously preselected. This function is most suitable for welding different thickness profiles, requiring a continuous current adjustment change.

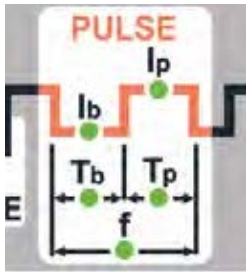


"SYN PULSE"

"SYN PULSE" facility, in function of the chosen peak current, in a simple and automatic way will synergically generate both an adequate pulse frequency and a base current, both readjustable in a synergic way. Pulse parameter values, preselected in the control, will save setting time, by ensuring the best possible pulse parameter combinations, ideal for less skilled welders.

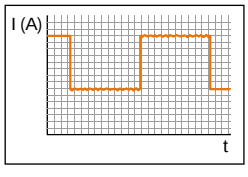
SLOW

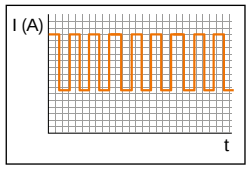
To have both peak and base current time individual adjustments for an optimal filler deposition and good finishing!



ULTRA FAST - HIGH PULSE FREQUENCY IN DC

Pulse TIG welding grants better control of the arc and less material deformation.
Possibility of utilizing high pulse frequency, up to 2000 Hz ideal for thin thickness, allows greater reduction of both arc cone and thermally altered area with an arc more stable and concentrated, thus favoring an increase in welding penetration and speed.





coldTACK

Innovative spot welding device to achieve precise and safe joining with a minimal thermal input.
"Multi-coldTACK" function grants cold spotting in a rapid sequence, thus further widening the benefits of the single spot.
Thanks to **"Perfect-Point"** function, coldTACK allows to obtain the most precise spot positioning.

ACCESSORIES

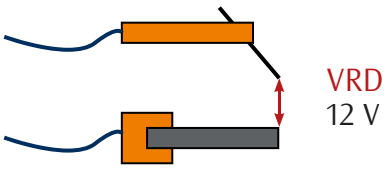
- CD 6 remote control
- Carrying belt
- VT 100 trolley for lodging gas cylinder and water cooling equipment
- Up/Down torches
- PSR 7 foot remote control
- HR 22 water cooling equipment

PSR 7

CD 6

TECHNICAL DATA		MATRIX 2200 HF	
		TIG	MMA
Single phase input 50/60 Hz	V +20% -20%	230	
Input Power @ I_2 Max	kVA	6,0	6,6
Delayed Fuse (I_{eff})	A	16	
Power Factor / cos φ		0,99	0,99
Efficiency Degree		0,77	0,80
Open circuit voltage	V	100	100
Current range	A	5 - 220	5 - 180
Duty cycle at (40°C)	A 100%	160	120
	A 60%	190	150
	A 30%	220	180
Standards		EN 60974-1 • EN 60974-3 • EN 60974-10	
		S	
Protection Class	IP	23 S	
Insulation Class		F	
Dimensions	↗ mm	465	
	→ mm	185	
	↑ mm	390	
Weight	kg	14	

Other voltages available on request



VRD - VOLTAGE REDUCTION DEVICE

VRD device reduces the open circuit voltage to values below 12 V, by enabling the use of the machine in highly hazardous environments for the operator's maximum safety.

MATRIX HF

coldTACK

TIG INVERTER WELDING EQUIPMENT

Based on the very latest IGBT inverter technology, TIG power sources with high frequency arc striking of the MATRIX series are equipped with an innovative digital panel for the complete control of all the welding parameters.
The excellent technical characteristics of these welding machines, coupled with the high technology of their digital control, allow high quality TIG welding, suitable for the toughest industrial applications and maintenance.
These highly advanced technology power sources are robust and user friendly: MATRIX HF's, DC output only, enable TIG welding of mild and stainless steel, copper and its alloys.
MATRIX series power sources also offer excellent performance in MMA welding with the most difficult basic and cellulosic electrodes.

coldTACK

Innovative spot welding device to achieve precise and safe joining with a minimal thermal input.
"Multi-coldTACK" function grants cold spotting in a rapid sequence, thus further widening the benefits of the single spot.
Thanks to **"Perfect-Point"** function, coldTACK allows to obtain the most precise spot positioning.

- Standard equipped with pulse mode integrated into the control with available “Easy Pulse” facility
- Excellent TIG welding characteristics
- High frequency Arc Striking, precise and efficient even from long distance
- “Energy Saving” function to operate the power source cooling fan and the torch water cooling only when necessary
- Low energy consumption
- Electromagnetic disturbance reduction because of high frequency used at arc striking only
- Electrode type selection (MMA - MATRIX 3001 HF only)
- Use of special TIG torches will enable the remote control of the welding parameters directly from the torch
- Overheating thermostatic protection
- Metallic main structure with shock-proof fibre compound front panel
- Control panel protected against accidental impact
- Robust handle integrated into the chassis
- Sloping front panel easy to read and adjust and highly visible from any direction
- Reduced weight and size, easy-to-carry
- IP 23 protection class and dust proof electronic components, thanks to the innovative “tunnel” fan cooling system, allow their use in the toughest environments

MATRIX 3001 HF

- Digital adjustment of all the welding parameters
- Digital Ammeter and Voltmeter with welding current presetting and Hold Function of the last read value
- Digital display for the presetting of the welding parameters
- Full monitoring of the welding parameters
- Welding process selector switch: TIG DC • TIG DC “Lift” • MMA
- Welding mode selector switch: 2T/ 4T • Spot Timer

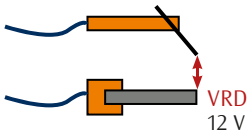
MMA FUNCTIONS

- Adjustable Arc Force for choosing the best welding arc dynamics
- Adjustable Hot Start to improve the arc striking with difficult electrodes
- Electrode Antisticking function

MATRIX 2600 HF - 3000 HF - 4200 HF

- Welding mode “cycle”
- Personalised welding program storing and recalling
- 4 Pulse mode TIG:
  - SYN: automatic pulse parameters setting in function of chosen peak current
  - FAST: up to 500 Hz in TID DC
  - ULTRA FAST: up to 2000 Hz in TIG DC with contained deformation on very thin sheet.
  - SLOW: to have both peak and base current time adjustments

MATRIX 4200 HF
CT400



VRD - VOLTAGE REDUCTION DEVICE

VRD device reduces the open circuit voltage to values below 12V, by enabling the use of the machine in highly hazardous environments for the operator's maximum safety.

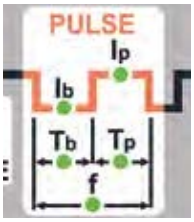
FUNCTIONS		MATRIX			
		3001 HF		2600 HF • 3000 HF • 4200 HF	
		TIG	MMA	TIG	MMA
High Frequency striking		•		•	
"Lift" mode striking		•		•	
Pre Gas		•		•	
Initial Current				•	
Up Slope		•		•	
Welding current		•		•	
2nd welding current	"CYCLE"			•	
Base current	"PULSE"			•	
Base current time	"PULSE"			•	
Peak current	"PULSE"			•	
Peak current time	"PULSE"			•	
Pulse frequency	"PULSE"			•	
Down Slope		•		•	
Final current				•	
Post gas		•		•	
Spot time		•		•	
Hot Start			•		•
Arc Force			•		•
Electrode type selection			•		

"CYCLE" FUNCTION

"CYCLE" function allows, by simply pressing the torch trigger, to continuously switch between two current values, previously preselected. This function is most suitable for welding different thickness profiles, requiring a continuous current adjustment change.

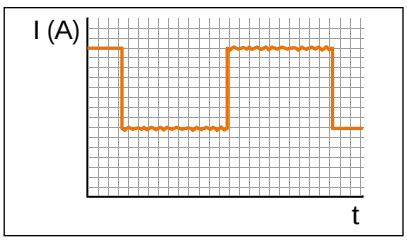
"EASY PULSE"- SYN FUNCTION

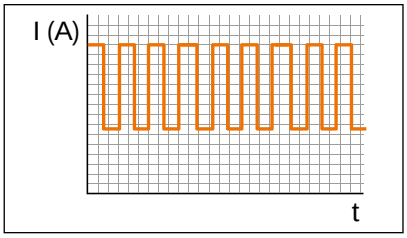
"EASY PULSE-SYN" facility, in function of the chosen peak current, generates, in a simple and automatic way, an adequate pulse frequency and base current, both readjustable in a synergic way. Pulse parameter values preselected in the control will save setting time, by ensuring the best possible pulse parameter combinations, ideal for less skilled welders.



ULTRA FAST HIGH PULSE FREQUENCY

Pulse TIG welding allows a better arc control and less deformation of the workpiece. The possibility of utilizing very high pulse frequency, up to 2000 Hz, ideal for welding thin thickness, enables to obtain a remarkable reduction in the arc cone and in the thermally altered area, by also having a more stable and concentrated arc together with an increase in both penetration and speed too.






VT 100


VT 200


CT 400


HR 23


HR 32 - 30


PSR 7


DC 6

ACCESSORIES

- VT 100 trolley for lodging gas cylinder and water cooling equipment
- VT 200 trolley for lodging gas cylinder and water cooling equipment (for MATRIX 4200HF)
- CT 400 trolley for lodging gas cylinder and water cooling equipment
- HR 23 and HR 32/30 water cooling equipment
- PSR 7 foot remote control
- CD 6 remote control
- Up/Down torches

TECHNICAL DATA		MATRIX 2600 HF		MATRIX 3000 HF		MATRIX 3001 HF		MATRIX 4200 HF	
		TIG	MMA	TIG	MMA	TIG	MMA	TIG	MMA
Three phase input 50/60 Hz	V +20% -20%	400		400		400		400	
Input Power @ I_2 Max	kVA	7,1	9,6	9,1	9,2	9,1	9,8	13,3	17,4
Delayed Fuse (I_{eff})	A	10	10	10	10	10	10	16	16
Power Factor / cos φ		0,95/0,99	0,95/0,99	0,95/0,99	0,95/0,99	0,95/0,99	0,95/0,99	0,76/0,99	0,82/0,99
Efficiency Degree		0,80	0,82	0,78	0,83	0,78	0,83	0,85	0,88
Open circuit voltage	V	100	100	100	100	100	100	100	100
Current range	A	5 - 260	10 - 250	5 - 300	10 - 270	5 - 300	10 - 270	5 - 420	10 - 400
Duty cycle at (40°C)	A 100%	200	190	210	200	210	200	270	270
	A 60%	230	220	250	230	250	230	340	340
	A X%	260 (40%)	250 (40%)	300 (35%)	270 (35%)	300 (35%)	270 (35%)	420 (40%)	400 (40%)
Standards		EN 60974-1 • EN 60974-3 • EN 60974-10							
		S							
Protection Class	IP	23 S		23 S		23 S		23 S	
Insulation Class		F		F		F		F	
Dimensions	↗ mm	495		495		495		560	
	→ mm	185		185		185		220	
	↑ mm	390		390		390		425	
Weight	kg	17,5		17,5		17,5		25	

Other voltages available on request

MATRIX 2200 AC/DC

1~ CC inverter AC DC DIGITAL PULSED GREEN

TIG INVERTER WELDING EQUIPMENT

Powerful, handy, compact and lightweight MATRIX 2200 AC/DC's are the most innovative, high-performing and technologically ahead single phase power sources ever developed for TIG welding.
Their PFC Power Factor Correction device optimizes the amount of energy consumption by allowing the use of these powerful power sources, without problems, with 16 A fuse mains and with power generator sets.
The user-friendly and advanced function digital control ensures an extraordinary perfect stability of the welding parameters, thus granting very high quality welding both in TIG and MMA with any electrodes.
MATRIX 2200 AC/DC's are the ideal choice for all qualified welding applications and maintenance jobs, whenever power and portability are needed.
MATRIX 2200 AC/DC's are suitable for TIG welding all metals, aluminium and its alloys included.

- Built-in innovative PFC Power Factor Correction
- Digital control of all the welding parameters
- Possibility of memorizing personalized welding parameters (7 JOBS)
- High duty cycle (40°C) 220 A @ 30%
- Low current consumption (-30%)
- High reliability when used with generator sets
- Suitable to be used with mains cable lengths over 100 m
- Automatic compensation for mains voltage fluctuations within +/- 20%
- Excellent welding characteristics in TIG and MMA with any type of electrodes, cellulosic included
- High frequency TIG arc striking, precise and efficient even from long distance
- "Energy Saving" function to operate the power source cooling fan and the torch water cooling only when necessary
- Use of up/down TIG torches will enable to adjust directly from the torch both welding parameters and memorized JOBS
- Auto-diagnostic feature for trouble shooting
- Control rack protection cover
- IP 23 protection class and dust-proof electronic components, thanks to the innovative "tunnel" fan cooling system, allow operation in the toughest work environments
- Compact water cooling equipment integrable with the power source (optional)
- Possibility of activating the VRD function

- Digital adjustment of all the welding parameters
- Digital Ammeterand Voltmeter with welding current presetting and Hold Function of the last read value
- Digital display for the presetting of the welding parameters
- Full monitoring of the welding parameters
- Welding process selector: TIG AC • TIG DC • TIG DC "Lift" • MMA Welding
- Mode selector: 2 Stroke / 4 Stroke • Cycle • Spot Timer
- Personalised welding program storing and recalling
- Pulse TIG welding adjustable from 0,5 up to 2000 Hz with available "SYN PULSE" facility

AC TIG FUNCTIONS

- AC square wave balance
- AC square wave frequency adjustment to concentrate the arc cone and reduce the electrode wearing
- Tungsten electrode diameter presetting for a better control of the arc striking and dynamics
- Wave selector: Square • Mixed • Sinusoidal • Triangular

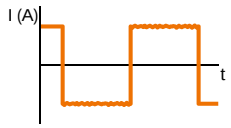
MMA FUNCTIONS

- Adjustable Arc Force for choosing the best welding arc dynamics
- Adjustable Hot Start to improve the arc striking with difficult electrodes
- Electrode Antisticking function

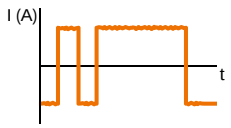
PFC POWER FACTOR CORRECTION

The wave shape of the current drawn from the mains is made sinusoidal by the PFC device with a consequent total lack of harmonic disturbances in the mains and consumption optimization, which enables to utilize the power source at full range on a 16 A fuse. The PFC circuit gives the machine a wider protection against mains voltage fluctuations, by also making it safer whenever being operated by power generator sets.

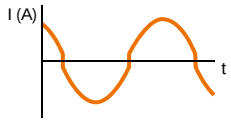
WAVE SHAPES
SPECIAL TIG FUNCTIONS



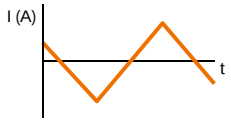
DYNAMIC TIG



SPEED TIG



SOFT TIG



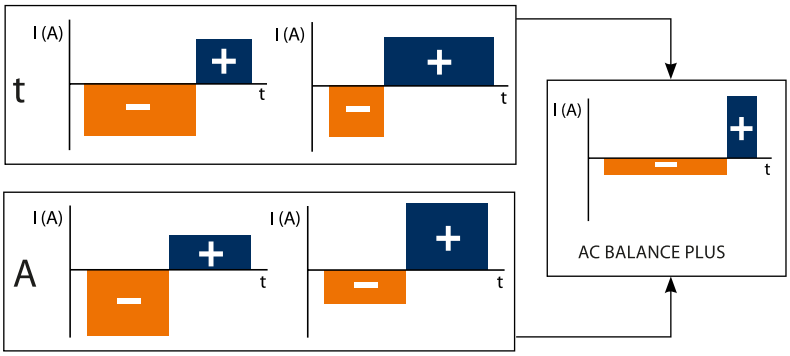
COLD TIG

WAVE SHAPE CONTROL IN AC

- **DYNAMIC TIG** – Square wave: high arc dynamics for all applications
- **SOFT TIG** – Sinusoidal wave: smoother and softer arc with a reduced noise, ideal for medium thickness
- **SPEED TIG** – Mixed wave: optimal penetration at high welding speed and low consumption of the electrode
- **COLD TIG** – Triangular wave: low heat transfer with reduced deformation, ideal for small thickness

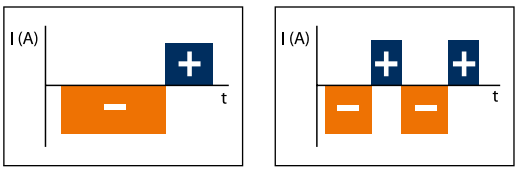
BALANCE PLUS

Possibility of independently adjust both **current time (t)** and **its amplitude (A)** while staying in either positive or negative polarity, by offering a perfect control of penetration and arc cleaning with a drastic reduction in lateral undercuts.



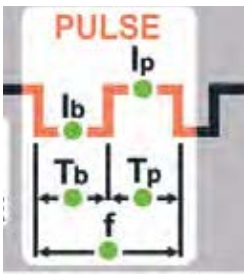
FREQUENCY CONTROL IN AC

Frequency adjustment of the various AC wave shapes for better directional control, reduction of the thermally altered area, deeper penetration and electrode lower wearing out.
High level frequency enables to weld very thin material with excellent results. Low frequency is ideal for medium thickness or whenever edge preparation is not accurate.



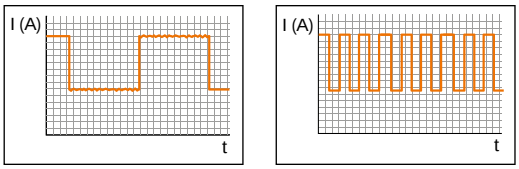
"SYN PULSE"

"SYN PULSE" facility, in function of the chosen peak current, in a simple and automatic way will synergically generate both an adequate pulse frequency and a base current, both readjustable in a synergic way. Pulse parameter values, preselected in the control, will save setting time, by ensuring the best possible pulse parameter combinations, ideal for less skilled welders.



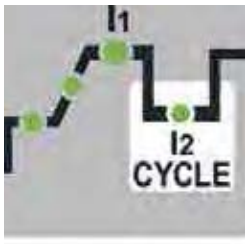
ULTRA FAST - HIGH PULSE FREQUENCY IN DC

Pulse TIG welding grants better control of the arc and less material deformation. Possibility of utilizing high pulse frequency, up to 2000 Hz ideal for thin thickness, allows greater reduction of both arc cone and thermally altered area with an arc more stable and concentrated, thus favoring an increase in welding penetration and speed.



"CYCLE" FUNCTION

"CYCLE" function allows, by simply pressing the torch trigger, to continuously switch between two current values, previously preselected.
This function is most suitable for welding different thickness profiles, requiring a continuous current adjustment change. In welding aluminium, the ability of using a higher start current favors the workpiece preheating

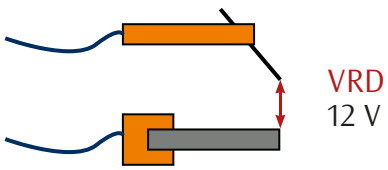


coldTACK

Innovative spot welding device to achieve precise and safe joining with a minimal thermal input.
"Multi-coldTACK" function grants cold spotting in a rapid sequence, thus further widening the benefits of the single spot.
Thanks to **"Perfect-Point"** function, coldTACK allows to obtain the most precise spot positioning.

VRD - VOLTAGE REDUCTION DEVICE

VRD device reduces the open circuit voltage to values below 12 V, by enabling the use of the machine in highly hazardous environments for the operator's maximum safety.



TECHNICAL DATA		MATRIX 2200 AC/DC	
		TIG	MMA
Single phase input 50/60 Hz	V +20% -20 %	230	
Input Power @ I_2 Max	kVA	6,5	7,0
Delayed Fuse (I_{eff})	A	16	
Power Factor / cos φ		0,99	0,99
Efficiency Degree		0,77	0,77
Open circuit voltage	V	100	100
Current range	A	5 - 220	5 - 180
Duty cycle at (40°C)	A 100%	140	120
	A 60%	180	150
	A 30%	220	180
Standards		EN 60974-1 • EN 60974-3 • EN 60974-10	
		S	
Protection Class	IP	23 S	
Insulation Class		F	
Dimensions	↗ mm	465	
	→ mm	185	
	↑ mm	390	
Weight	kg	15,5	

Other voltages available on request

ACCESSORIES

- PSR 7 foot remote control
- CD 6 remote control
- HR 22 water cooling equipment
- Up/Down torches
- VT 100 trolley for lodging gas cylinder and water cooling equipment


PSR 7


CD 6

MATRIX AC/DC

TIG INVERTER WELDING EQUIPMENT

Based on the very latest IGBT inverter technology, TIG power sources with high frequency arc striking of the MATRIX series are equipped with an innovative digital panel for the complete control of all the welding parameters.

The excellent technical characteristics of these welding machines, coupled with the high technology of their digital control, allow high quality TIG welding, suitable for the toughest industrial applications and maintenance.

Highly technologically advanced, robust and user friendly, MATRIX AC/DC's can be used for TIG welding of all metals, including aluminium and its alloys.

MATRIX series power sources also offer excellent performance in MMA welding with the most difficult basic and cellulosic electrodes.

3~ CC inverter AC DC DIGITAL PULSED GREEN

- Digital control of all the welding parameters
- Standard equipped with pulse mode integrated into the control with available "EASY PULSE" facility
- Excellent TIG welding characteristics
- High frequency Arc Striking, precise and efficient even from long distance
- "Energy Saving" function to operate the power source cooling fan and the torch water cooling only when necessary
- Low energy consumption
- Ability of storing and recalling personalised welding programs
- Electromagnetic disturbance reduction being high frequency used at arc striking only
- Use of special TIG torches will enable the remote control of the welding parameters directly from the torch
- Overheating thermostatic protection
- Metallic main structure with shockproof fibre compound front panel
- Control panel protected against accidental impact
- Robust handle integrated into the chassis
- Sloping front panel easy to read and adjust and highly visible from any direction
- Reduced weight and size, easy-to-carry
- IP 23 protection class and dust proof electronic components, thanks to the innovative "tunnel" fan cooling system, allow their use in the toughest environments.

- Digital adjustment of all the welding parameters
- Digital Ammeter and Voltmeter with welding current presetting and Hold Function of the last read value
- Digital ammeter with welding current presetting
- Digital display for the presetting of the welding parameters
- Full monitoring of the welding parameters
- Welding process selector: TIG AC • TIG DC • TIG DC "Lift" • MMA
- Welding mode selector: 2 Stroke • 4 Stroke • Cycle • Spot Timer
- Personalised welding program storing and recalling
- Pulse TIG welding adjustable from 0,5 up to 2000 Hz with available "EASY PULSE" facility
- AC square wave balance and Balance Plus
- AC square wave frequency adjustment
- Tungsten electrode diameter presetting for a better control of the arc striking and arc dynamics
- Wave Selector: Square • Mixed • Sinusoidal •Triangular

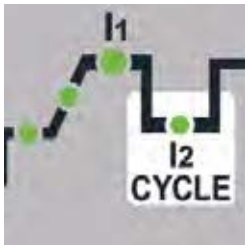
MMA FUNCTIONS

- Adjustable Arc Force for choosing the best welding arc dynamics
- Adjustable Hot Start to improve the arc striking with difficult electrodes
- Electrode Antisticking function

FUNCTION		TIG AC	TIG DC	MMA
High Frequency striking		•	•	
"Lift" mode striking			•	
Pre Gas		•	•	
Initial Current		•	•	
Up Slope		•	•	•
Welding current		•	•	
2nd welding current	"CYCLE"	•	•	
Base current	"PULSE"	•	•	
Peak current	"PULSE"	•	•	
Pulse frequency	"PULSE"	•	•	
Down Slope		•	•	
Final current		•	•	
Post gas		•	•	
Spot time		•	•	
Square wave balance		•		
Square wave frequency		•		
Hot Start				•
Arc Force				•

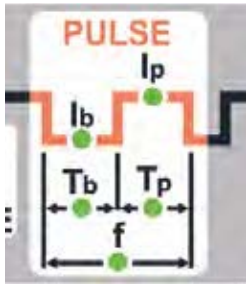
"CYCLE" FUNCTION

"CYCLE" function allows, by simply pressing the torch trigger, to continuously switch between two current values, previously preselected. This function is most suitable for welding different thickness profiles, requiring a continuous current adjustment change.
In welding aluminium, the ability of using a higher start current favours the workpiece preheating.



"EASY PULSE" - SYN

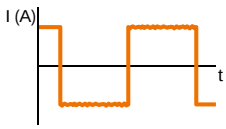
"EASY PULSE"- SYN facility, in function of the chosen peak current, generates, in a simple and automatic way, an adequate pulse frequency and base current, both readjustable in a synergic way.
Pulse parameter values preselected in the control will save setting time, by ensuring the best possible pulse parameter combinations, ideal for less skilled welders.



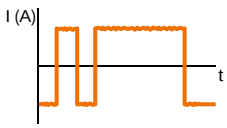
WAVE SHAPES
SPECIAL TIG FUNCTIONS

WAVE SHAPE CONTROL IN AC

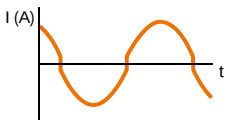
- **DYNAMIC TIG** – Square wave: high arc dynamics for all applications
- **SOFT TIG** – Sinusoidal wave: smoother and softer arc with a reduced noise, ideal for medium thickness
- **SPEED TIG** – Mixed wave: optimal penetration at high welding speed with electrode low consumption
- **COLD TIG** – Triangular wave: low heat transfer with reduced deformation, ideal for small thickness.



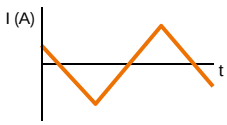
DYNAMIC TIG



SPEED TIG



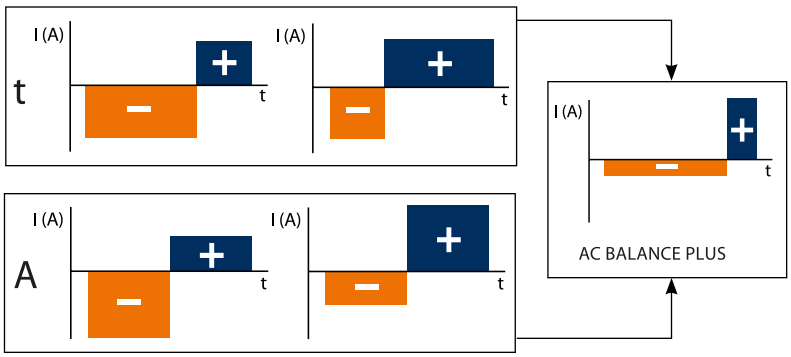
SOFT TIG



COLD TIG

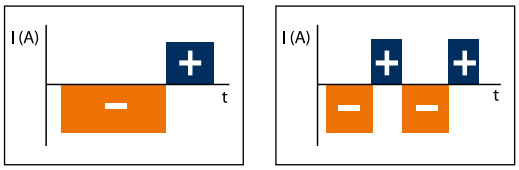
BALANCE PLUS

Possibility of independently adjust both **current time (t)** and **its amplitude (A)** while staying in either positive or negative polarity, by offering a perfect control of penetration and arc cleaning with a drastic reduction in lateral undercuts.



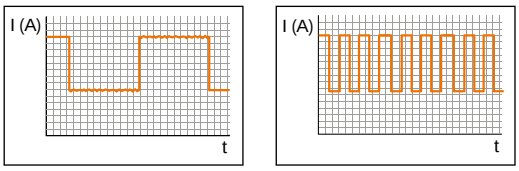
FREQUENCY CONTROL IN AC

Frequency adjustment of the various AC wave shapes for better directional control, reduction of the thermally altered area, deeper penetration and electrode lower wearing out.
High level frequency enables to weld very thin material with excellent results. Low frequency is ideal for medium thickness or whenever edge preparation is not accurate.



ULTRA FAST - HIGH PULSE FREQUENCY IN DC

Pulse TIG welding grants better control of the arc and less material deformation.
Possibility of utilizing high pulse frequency, up to 2000 Hz ideal for thin thickness, allows greater reduction of both arc cone and thermally altered area with an arc more stable and concentrated, thus favoring an increase in welding penetration and speed.



coldTACK

Innovative spot welding device to achieve precise and safe joining with a minimal thermal input.

"Multi-coldTACK" function grants cold spotting in a rapid sequence, thus further widening the benefits of the single spot.
Thanks to **"Perfect-Point"** function coldTACK allows to obtain the most precise spot positioning.

ACCESSORIES

- VT 100 trolley for lodging gas cylinder and water cooling equipment
- CT 400 trolley for lodging gas cylinder and water cooling equipment
- CT 70 trolley for lodging gas cylinder and water cooling equipment
- HR 23 - HR 30/32 water cooling equipment
- PSR 7 foot remote control
- CD 6 remote control
- Up/Down torches


VT 100


CT 400


CT 70


HR 23

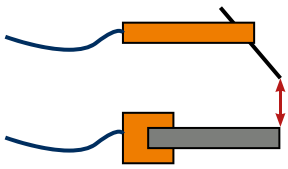

HR 30-32


PSR 7


CD 6

TECHNICAL DATA		MATRIX		
		3000 AC/DC	4100 AC/DC	5100 AC/DC
Three phase input 50/60 Hz	V	400 + 20% – 20%	400 + 15% – 20%	400 + 15% – 20%
Input Power @ I_2 Max	kVA	9,6	19	26
Delayed Fuse (I_{eff})	A	10	32	40
Power Factor / cos φ		0,95/0,99	0,65/0,99	0,70/0,99
Efficiency Degree		0,76	0,82	0,82
Open circuit voltage	V	100	70	70
Current range	A	5 - 300	5 - 400	5 - 500
Duty cycle at (40°C)	A 100%	210	350	380
	A 60%	250	400	500
	A 35%	300	-	-
Standards		EN 60974-1 • EN 60974-3 • EN 60974-10		
		S		
Protection Class	IP	23 S	23 S	23 S
Insulation Class		F	H	H
Dimensions	↗ mm	495	660	660
	→ mm	185	290	290
	↑ mm	390	515	515
Weight	kg	19	47	51

Other voltages available on request



VRD - VOLTAGE REDUCTION DEVICE

VRD device reduces the open circuit voltage to values below 12 V, by enabling the use of the machine in highly hazardous environments for the operator's maximum safety.


PROJECT 1600
MATRIX 2200 E
220

MMA

PROJECT
RAINBOW
MATRIX E

CONVEX YARD
ARC - TRIARC
ARCTRONIC

	Ø 6,0 mm Ø 5,0 mm Ø 4,0 mm Ø 3,2 mm Ø 2,5 mm Ø 2,0 mm	1~	3~		DC	Rutile	Low Hydrogen	Cellulosic	CrNi
PROJECT									
PROJECT 1600	160 A 25%	■		■	■	●	●		▲
PROJECT 2100	210 A 30%	■		■	■	●	●		▲
PROJECT 1650	160 A 30%	■		■	■	●	●		▲
RAINBOW									
RAINBOW 150	150 A 30%	■		■	■	●	●		●
RAINBOW 153 Cell	150 A 20%	■		■	■	●	●	●	●
RAINBOW 180	180 A 20%	■		■	■	●	●		●
RAINBOW 183 Cell	180 A 20%	■		■	■	●	●	●	●
MATRIX E									
MATRIX 2200 E	180 A 30%	■		■	■	●	●	●	●
MATRIX 2700 E SV (400 V)	270 A 30%		■	■	■	●	●	●	●
MATRIX 2800 E	270 A 30%		■	■	■	●	●	●	●
MATRIX 4200 E	420 A 40%		■	■	■	●	●	●	●
CONVEX YARD									
CONVEX 420 YARD	400 A 40%		■	■	■	●	●	●	●
ARC - TRIARC									
ARC 253	220 A 35%		■		■	●	▲		▲
ARC 303	260 A 35%		■		■	●	▲		▲
ARC 403	350 A 35%		■		■	●	▲		▲
ARC 503	400 A 35%		■		■	●	▲		▲
TRIARC 306/L	260 A 35%		■		■	●	●	●	●
TRIARC 406/L	400 A 35%		■		■	●	●	▲	●
TRIARC 506/L	500 A 35%		■		■	●	●	▲	●
ARCTRONIC									
ARCTRONIC 426	400 A 35%		■		■	●	●	●	●
ARCTRONIC 626	600 A 35%		■		■	●	●	●	●

I2 @ 100% I2 @ 60% I2 @ X% ● excellent ▲ good

PROJECT

INVERTER POWER SOURCES FOR ELECTRODE WELDING

PROJECT 1600, 2100, 1650 are DC latest generation 100 kHz inverter power sources, built in an innovative, ergonomic and robust chassis standard equipped with a carrying belt for easy transportation. Their very compact structure, lightness and user friendly feature make them ideal for any professional use with any type of basic and rutile electrodes for maintenance and light fabrication works.
The excellent welding characteristics in MMA and TIG welding with "Lift" mode arc striking, coupled with IP 23 protection class, enable their use in any work environment.

1~ CC inverter DC + -

- ▶ Excellent welding characteristics with any type of electrode
- ▶ Low energy consumption and high electrical efficiency
- ▶ 2 available welding processes: MMA - TIG
- ▶ Possibility to work with adequate size power generator sets
- ▶ Shock-proof fibre compound main structure
- ▶ Control panel protected against accidental impact
- ▶ Carrying belt for easy transportation
- ▶ Reduced weight and size and easy-to-carry
- ▶ Automatic Hot Start to improve the arc striking with the most difficult electrodes
- ▶ Built-in Arc Force to automatically select the best welding arc dynamics
- ▶ Electrode Antisticking function

PFC - POWER FACTOR CORRECTION
(Project 1650)

The wave shape of the current drawn from the mains is made sinusoidal by the PFC device with a consequent total lack of harmonic disturbances in the mains and consumption optimization, which enables to utilize the power source at full range on a 16 A fuse. The PFC circuit gives the machine a wider protection against mains voltage fluctuations, by also making it safer whenever being operated by power generator sets.

PFC sinus

CONTROL PANEL

1. Welding current electronic adjustment
2. Mains voltage LED
3. Thermostatic protection LED
4. Welding process selector switch
   - MMA: welding of coated electrodes: rutile, basic and stainless steel
   - TIG: by the innovative “Lift” mode system, quick and precise striking is achieved, by minimising any tungsten inclusion and avoiding any incision onto the workpiece

ACCESSORIES

- Fiber carry case with accessories
- Bag for power source and accessories

TECHNICAL DATA		PROJECT		
		1600	2100	1650 PFC sinus
Single phase input 50/60 Hz	V +10% -10%	230	230	230
Input Power @ I_2 Max	kVA	9,8	9,9	5,5
Delayed Fuse (I_{eff})	A	16	25	16
Power Factor / cos φ		0,67/0,99	0,68/0,99	0,99/0,99
Efficiency Degree		0,82	0,86	0,81
Open circuit voltage	V	60	60	68
Current range	A	5 - 160	5 - 210	5 - 160
Duty cycle at (40°C)	A 100%	90	120	100
	A 60%	105	145	115
	A X%	160 (25%)	210 (30%)	160 (30%)
Standards		EN 60974-1 • EN 60974-10		
		S		
Protection Class	IP	23 S	23 S	23 S
Dimensions	↗ mm	315	365	400
	→ mm	135	135	135
	↑ mm	230	230	230
Weight	kg	6,3	7,6	8,9

Other voltages available on request

RAINBOW

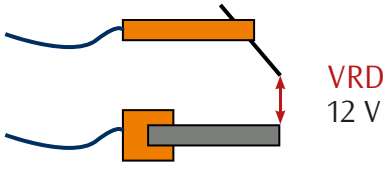
INVERTER POWER SOURCES FOR ELECTRODE WELDING

RAINBOW's represent the latest evolution in inverter technology DC welding equipment. These powerful 100 KHz power sources are based on latest generation IGBT's and fitted with a flat transformer. RAINBOW's, with their lightness, reduced size and their excellent characteristics in electrode MMA and TIG welding with "Lift" mode arc striking, are the most suitable solution for maintenance and light fabrication works. RAINBOW 153 CELL and 183 CELL VRD are special versions for cellulosic electrodes.

- ▶ Superior exceptionally high welding characteristics with any type of electrode
- ▶ Three available welding processes
- ▶ Possibility to work with adequate size power generator sets.
- ▶ Low energy consumption and high electrical efficiency
- ▶ All the data are referred to 40° C environment temperature
- ▶ Suitable to be used with 100 m length cable without power loss
- ▶ Shock-proof fibre compound main structure with protected control panel
- ▶ Dust-proof electronic components, thanks to the innovative "Tunnel" fan cooling system, allow its use in the toughest work environments
- ▶ Sloping front control panel, easy to read and adjust and highly visible from any direction
- ▶ Built-in Arc Force to automatically select the best welding arc dynamics
- ▶ Automatic Hot Start to improve the arc striking with the most difficult electrodes
- ▶ Electrode Antisticking function

VRD - VOLTAGE REDUCTION DEVICE

RAINBOW 150 VRD and 183 CELL VRD, fitted with Voltage Reduction Device to make the maximum open circuit voltage less than 12 V, grants additional safety protection in all highly hazardous environments



DESIGNER: SPREAFICO DESIGN - ITALY

CONTROL PANEL

1. Welding current electronic adjustment
2. Mains voltage LED
3. Thermostatic protection LED
4. Welding process selector switch

- MMA: welding of coated electrodes: rutile, basic, cast iron and aluminium (Hot Start and Arc-Force functions are on)
- MMA CrNi: welding of stainless steel with a smooth and very stable arc for high quality welding
- TIG: by the innovative “Lift” mode arc striking with thermic control (TCS), quick and precise striking is achieved, by minimising any tungsten inclusion and avoiding any incision onto the workpiece

ACCESSORIES

- Carrying belt
- RAINBOW bag
- RAINBOW 150 fiber carry case kit

TECHNICAL DATA		RAINBOW				
		150	150 VRD	153 CELL	180	183 CELL VRD
Single phase input 50/60 Hz	V +20% -20%	230	230	230	230	230
Input Power @ I_2 Max	kVA	7,6	7,6	7,9	11,3	11,3
Delayed Fuse (I_{eff})	A	16	16	16	20	20
Power Factor / cos φ		0,64/0,99	0,64/0,99	0,64/0,99	0,67/0,99	0,67/0,99
Efficiency Degree		0,84	0,84	0,82	0,82	0,82
Open circuit voltage	V	88	12	103	88	12
Current range	A	5 - 150	5 - 150	5 - 150	5 - 180	5 - 180
Duty cycle at (40°C)	A 100%	100	100	90	110	100
	A 60%	120	120	110	130	120
	A X%	150 (30%)	150 (30%)	150 (20%)	180 (20%)	180 (20%)
Standards		EN 60974-1 • EN 60974-10				
		S				
Protection Class	IP	21 S	21 S	21 S	23 S	23 S
Dimensions	↗ mm	340	340	340	390	390
	→ mm	115	115	115	135	135
	↑ mm	260	260	260	300	300
Weight	kg	4,2	4,2	4,2	6	6,5

Other voltages available on request

MATRIX E

INVERTER POWER SOURCES FOR ELECTRODE WELDING

Powerful, compact and lightweight MATRIX E's thanks to their innovative digital control of the welding process are the most high performing and technologically advanced products ever manufactured. Built according to the very latest IGBT based inverter technology, these DC power sources thanks to their excellent arc characteristics, are recommended for highest standard applications with any electrode. Suitable to be used in shipyards, steel construction, pipe welding and maintenance, MATRIX E's ensure an extraordinary stability of the welding parameters and their "fast dynamic characteristic" enables to achieve quality results even with the most difficult cellulosic and basic electrodes, and also in TIG with "Lift" mode arc striking.

MATRIX 2700 E SV is standard supplied with 230/400 V three phase input voltage.

MATRIX 2200 E, single phase unit, thanks to PFC can be use with 16 A fuse mains, thus becoming the ideal choice for all qualified welding applications and maintenance jobs, whenever power and portability are needed.

- Digital control of all the welding parameters
- Excellent welding characteristics in MMA with any kind of electrodes, including cellulosic, and in TIG with "Lift" mode
- Low energy consumption
- High reliability when used with generator sets
- Suitable to be used with mains cable lengths over 100 m
- Digital Ammeter and Voltmeter
- ENERGY SAVING function to operate the power source cooling fan only when necessary
- Possibility of activating the VRD function
- Possibility of memorizing welding parameters (99 JOBS)
- STAND BY function on the remote control
- Auto-diagnostic feature for trouble shooting
- Control panel protected against accidental impact
- Control rack protection cover
- IP 23 protection class and dust-proof electronic components, thanks to the innovative "Tunnel" fan cooling system, allow operation in the toughest work environments
- Electrode Antisticking function

ENERGY SAVING

The built-in "Energy Saving" function activates the machine fan motor only when necessary, not only obtaining a significant energy saving, but also ensuring less maintenance for the power source.

PFC POWER FACTOR CORRECTION - MATRIX 2200 E

The wave shape of the current drawn from the mains is made sinusoidal by the PFC device with a consequent total lack of harmonic disturbances in the mains and consumption optimization, which enables to utilize the power source at full range on a 16 A fuse. The PFC circuit gives the machine a wider protection against mains voltage fluctuations, by also making it safer whenever being operated by power generator sets.

CONTROL PANEL

1. Welding current electronic adjustment
2. Digital adjustable ARC FORCE and HOT START
3. Digital Ammeter and Voltmeter with welding current presetting and Hold Function of the last read value
4. Welding process selector switch
   - MMA: welding of coated electrodes: rutile, basic, cast iron and aluminium
   - MMA Cell: for welding of cellulosic electrodes
   - MMA CrNi: for welding of stainless steel
   - TIG: by the innovative “Lift” mode arc striking with thermic control (TCS), quick and precise striking is achieved, by minimising any tungsten inclusion and avoiding any incision onto the workpiece. The SWS (Smart Welding Stop) synergic system reduces the electrode wearing and avoids any oxidation on the welded joint.

ACCESSORIES

- Trolley (MATRIX 4200 E)
- Roll bar protection (MATRIX 4200 E)
- CD 6 remote control with cable from 8 to 25m
- Polarity changeover




TECHNICAL DATA		MATRIX 2200 E		MATRIX 2700 E SV		MATRIX 2800 E	MATRIX 4200 E
		MMA	TIG				
Single phase input 50/60 Hz	V +20% -20%	230		---		---	---
Three phase input 50/60 Hz	V +20% -20%	---		230	400	400	400
Input Power @ I_2 Max	kVA	6,6	6,0	8,0	10,5	10,5	17,4
Delayed Fuse (I_{eff})	A	16		16	10	10	16
Power Factor / cos φ		0,99/0,99		0,98/0,99		0,95/0,99	0,95/0,99
Efficiency Degree		0,80		0,82	0,84	0,83	0,88
Open circuit voltage	V	100		100		100	100
Current range	A	5 - 180	5 - 220	5 - 220	5 - 270	5 - 270	5 - 420
Duty cycle at (40°C)	A 100%	120	140	150	180	190	270
	A 60%	150	180	180	220	210	340
	A X%	180 (30%)	220 (30%)	220 (30%)	270 (30%)	270 (30%)	420 (40%)
Standards		EN 60974-1 • EN 60974-10 • S					
Protection Class	IP	23 S		23 S		23 S	23 S
Insulation Class		F		F		F	F
Dimensions	↗ mm	430		465		465	500
	→ mm	185		185		185	220
	↑ mm	390		390		390	425
Weight	kg	12		16,5		15	20

Other voltages available on request

CONVEX 420 YARD

MULTIVOLTAGE MULTIPROCESS INVERTER POWER SOURCES

Multivoltage CONVEX YARD equipment, thanks to their highly electrical efficient inverter with digital control of all the parameters, can be connected to mains voltage supply ranging from 200 V to 460 V. These multiprocess power sources have been optimized in MMA welding to be suitable with any kind of electrodes, cellulosic included. They also enable TIG welding with "lift" mode and can be utilized in gouging jobs. Combined with HS 5 or SHS feeders, they offer premium welding quality in MIG-MAG.
CONVEX YARD power sources , innovative, robust and easy-to-use, are the ideal solution whenever looking for a modern welding equipment for site or other harsh applications.

WPQR EN 1090 APPROVED

3~ CC CV inverter DC + - DIGITAL 888 GREEN

WHY TO CHOOSE CONVEX YARD?

- Multivoltage equipment for 220/230/240 V 3ph 50/60 Hz 380/400/440 V 3ph 50/60 Hz
- Mains voltage fluctuation automatic compensation within +20% -20%
- Optimized in MMA welding with all electrodes, cellulosic included
- Inverter with high electrical efficiency (=0.86) and elevated Power Factor (PF=0,95)
- Excellent welding quality
- Welding process always under control thanks to the digital adjustment of all parameters
- Multiprocess equipment with excellent welding characteristics in MIG/MAG, MMA, GOUGING and TIG
- User friendly and easy-to-use selection and recalling of the parameters and welding programs
- Ability to store personalized welding parameters up to 99 JOBS
- Initial and final crater control
- Monitoring and repeatability of the welding parameters
- Low energy consumption
- "Energy Saving" function to operate the power source cooling fan when necessary
- Digital adjustments of all the welding parameters
- Digital Voltmeter and Ammeter with Hold Function of the last parameter for both welding voltage and current
- VRD Voltage Reduction Device for the operator's maximum safety

- Metallic main structure with shock-proof fibre compound front frames
- Control rack protection cover
- Easy to read and adjust sloping front control panel, highly visible from any direction
- IP 23 S protection class and dust-proof electronic components thanks to the innovative "tunnel" fan cooling system, allow operation in the toughest work environment

MMA WELDING

- Adjustable Arc Force to select the best welding arc dynamics
- Adjustable Hot Start to improve the arc striking with the most difficult electrodes
- Electrode Antisticking function

TIG WELDING

- Saldatura TIG in corrente continua mediante innesco tipo “Lift” che permette di ridurre al minimo le inclusioni di tungsteno

MIG WELDING

- CONVEX 420 YARD equipment offer the possibility of using interconnecting cables up to 50 m in order to control the parameters directly from the feeder

HS5 – SHS WIRE FEEDERS

- Professional wire feeding mechanism with 4 rolls of large diameter for a precise and constant wire driving
- Graduated knob to achieve the most correct value of the wire pressure
- Double groove rolls replaceable without any tool
- Lodging for wire spools up to 300 mm Ø maximum

SHS

MINI SHS

SHS AND MINI SHS STRONG FEEDERS

These wire feeders, fitted with a robust polypropylene suitcase, are the ideal solution for site jobs and harshest environments. Developed for use with solid and flux cored wires, SHS can lodge spools up to 300 mm Ø, whilst more compact and lighter MINI SHS (8,6 kg only) can only take spools up to 200 mm Ø. Voltmeter/ Ammeter only available on request in a special equipment version.

FACTORY CONFIGURATION

ON SITE CONFIGURATION

TECHNICAL DATA		CONVEX 420 YARD	
Three phase input 50/60 Hz	V +20% -20%	220/230/240	380/400/440
Input Power @ I_2 Max	kVA	14,3	17,0
Delayed Fuse (I_{eff})	A	30	20
Power Factor / cos φ		0,95/0,99	0,95/0,99
Efficiency Degree		0,84	0,86
Open circuit voltage	V	72	72
Current range	A	10 - 350	10 - 400
Duty cycle at (40°C)	A 100%	270	330
	A 60%	310	360
	A 40%	350	400
Wires	Ø mm	0,6 - 1,2	0,6 - 1,6
Standards		EN 60974-1 • EN 60974-5 • EN 60974-10	
		S	
Protection Class	IP	23 S	23 S
Insulation Class		H	H
Dimensions	↗ mm	660	660
	→ mm	290	290
	↑ mm	515	515
Weight	kg	42	42

Other voltages available on request

ACCESSORIES

- CD 14/8 Remote control
- RC 176 Remote control
- Polarity changeover

ARC - TRIARC

DC THREE PHASE ELECTRODE WELDERS WITH ADJUSTMENT BY MAGNETIC SHUNT

Excellent arc characteristic, product sturdiness and reliability are the main features of TM, ARC and TRIARC models. Suitable for heavy duty application in maintenance, fabrication works, shipyards and steel construction, these machines ensure a great welding arc stability.
TRIARC's, fitted with smoothing inductance, grant more stable and soft arc and are also suitable for welding cellulosic electrodes.

- Continuous welding current adjustment by magnetic shunt
- Suitable for welding any electrode (cellulosic electrodes only with TRIARC models)
- Sturdy and reliable
- Standard delivered with large wheels and strong handles for easy manoeuvrability
- Easy change over of mains supply voltage by switch
- Welding current and electrode indicator

TECHNICAL DATA		ARC				TRIARC		
		253	303	403	503	306/L	406/L	506/L
Three phase input 50/60 Hz	V	230/400	230/400	230/400	230/400	230/400	230/400	230/400
Input Power @ I_2 Max	kVA	16,8	20,5	26,8	32,5	19,7	29,8	38,2
Delayed Fuse (I_2 @ 100%)	A	32/20	40/25	50/32	63/35	40/25	50/32	63/40
Power Factor / cos φ		0,73	0,75	0,71	0,71	0,75	0,75	0,79
Open circuit voltage	V	65	65	71	75	65	75	75
Current range	A	55 - 250	70 - 300	60 - 370	70 - 450	45 - 270	60 - 400	80 - 500
Duty cycle at (40°C)	A 100%	135	145	200	230	145	230	290
	A 60%	170	180	260	300	180	300	380
	A 35%	230	260	350	400	260	400	500
Electrodes	Ø mm	2 - 5	2 - 5	2 - 6	2,5 - 8	1,6 - 5	2 - 8	2,5 - 8
Standards		EN 60974-1 • EN 60974-10				EN 60974-1 • EN 60974-10		
		S	S	---	---	S	---	---
Protection Class	IP	23 S	23 S	23 S	23 S	23 S	23 S	23 S
Insulation Class		H	H	H	H	H	H	H
Dimensions	↗ mm	880	880	1120	1120	880	1120	1120
	→ mm	425	425	570	570	425	570	570
	↑ mm	690	690	725	725	690	725	725
Weight	kg	53	64	95	117	82	122	139

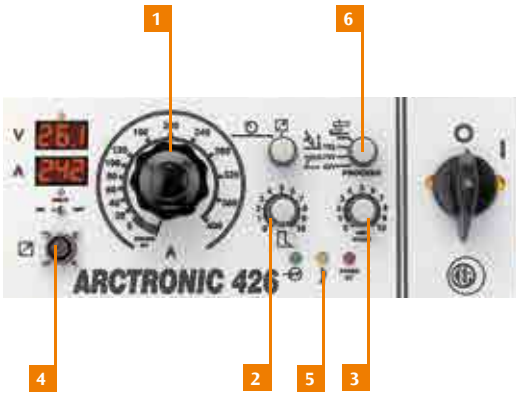
Other voltages available on request

ARCTRONIC

DC THREE-PHASE ELECTRODE WELDING EQUIPMENT WITH ELECTRONIC CURRENT ADJUSTMENT

Sturdy, reliable, with excellent arc characteristics and recommended for highest standard applications with any electrode, they are suitable to be used in shipyards, steel construction and pipe welding.
ARCTRONIC's ensure an extraordinary stability of the welding parameters and their "fast dynamic characteristic" allows to obtain quality results also with the most difficult cellulosic and basic electrodes.

- ▶ Adjustable Arc Force for choosing the best welding arc dynamic characteristic
- ▶ Adjustable Hot Start to improve the arc striking with difficult electrodes
- ▶ Electrode Antisticking Function
- ▶ Lift arc mode TIG welding striking
- ▶ Gouging facility with carbon electrodes (special version)
- ▶ Low noise highly efficient fan motor
- ▶ "Stand by" function switching off the power source also from distance when not in use
- ▶ PCB in an isolated rack for protection against dust and dirt
- ▶ Standard equipped with large wheels and robust handles for easy manoeuvrability
- ▶ External door for easy supply voltage changeover



CONTROL PANELS

1. Electronic Welding Current Adjustment through easy-to-set calibrated output knob
2. Adjustable Arc Force
3. Adjustable Hot Start
4. CD 3 remote control connector
5. Thermostatic protection LED
6. MMA / TIG / Gouging Process switch (special version)

TECHNICAL DATA		ARCTRONIC	
		426	626
Three phase input 50/60 Hz	V +10% -10%	230/400	230/400
Input Power @ I_2 Max	kVA	32,5	47,4
Delayed Fuse (I_2 @ 100%)	A	50/32	80/45
Power Factor / cos φ		0,70/0,80	0,75/0,80
Open circuit voltage	V	64	64
Current range	A	5 - 400	5 - 600
Duty cycle at (40°C)	A 100%	220	330
	A 60%	290	430
	A 35%	400	600
Electrodes	Ø mm	1,6 - 8	1,6 - 8
Standards		EN 60974-1 • EN 60974-10	
		S	
Protection Class	IP	23 S	23 S
Insulation Class		H	H
Dimensions	↗ mm	1260	1260
	→ mm	730	730
	↑ mm	615	615
Weight	kg	147	196

Other voltages available on request

OPTIONS

- Digital Ammeter/Voltmeter with hold function of the last welding parameter
- 48V auxiliary socket up to 1500 W

ACCESSORIES

- CD 3 remote control with cable from 8 up to 50m
- Polarity changeover

AUTOMATION AND ROBOTICS

CEA has developed several products and interfaces for automation and robotics for MIG/MAG, pulsed MIG, TIG and PLASMA processes, by using its power sources. A team of experts is always able to suggest and propose the solutions better suiting different applications in line with the customer's needs.

DeviceNet

EtherNet/IP

PROFINET

ROBOCASE

ROBOCASE synergic inverter power sources have been designed with a digital control appositely built to fully satisfy all robotized MIG MAG and MIG PULSE welding applications.

Developed on the basis of the very latest Digitech VP2 technology, ROBOCASE power sources are standard supplied with a built-in EtherNet/IP digital interface and, upon request, can be provided with other fieldbus interfaces, such as DeviceNet and ProfiNet.

ROBOCASE power sources are standard equipped with the following integrated items:

- Control PCB for the external RBS 15 wire feeder
- Touch sensing PCB for a very precise control on the arc striking point
- Ethernet socket to directly interface the Robot control
- Ethernet additional socket to enable the clients to connect ROBOCASE to their local area network for monitoring welding data and for any necessary updating.

In function of the required robotized solution, additional different configurations are also possible such as:

- Double wire feeder for applications imposing different material or gas types
- Two wire feeders in Master-Slave configuration, whenever large heavy wire coils are utilized

ROBOCASE can be either supplied in air cooled version or fitted with integrated water cooling unit for the torch.

ROBOCASE, upon request, may be supplied equipped with special welding processes optimized for robotics.

RBS 15

Wire feeder to be fitted on both hollow wrist robots and traditional ones with external device.
Compact and light (only 6.2 kg) RBS 15 represents the ideal solution for any robotized application, being equipped with a 4 roll feeding mechanism, easily accessible also for roll replacements without any tooling, and having a double solenoid valve for gas and air

DIGITECH VP2

VISION.ARC 2

MIG/MAG PULSED DUAL PULSED

DIGITECH equipment allow a flexible and economic integration with all major welding robots available on the market; thanks to the availability of feeders and versatile interfaces - digital and analogic/digital – these power sources can be either connected to new robotized equipment or utilized as a retrofit to existing robots.

RBS 15

Wire feeder to be fitted on both hollow wrist robots and traditional ones with external device.
Compact and light (only 6.2 kg) RBS 15 represents the ideal solution for any robotized application, being equipped with a 4 roll feeding mechanism, easily accessible also for roll replacements without any tooling, and having a double solenoid valve for gas and air.

DeviceNet

EtherNet/IP

PROFINET

MCB 3
Control box for the wire feeder and auxiliary functions purpose-designed to be fitted either inside the power source, or inside the external robot control or even on the robot structure depending on the integrator's needs.

RI-A 1
Analogic/Digital interface.
Usable on robots with analogic/digital control.

RI-D
DeviceNet interface.
Usable on robots with field bus controller.

SPECIAL PROCESSES FOR ROBOCASE AND DIGITECH VP2

The specific utilization of special welding processes is an ideal choice for automation and allows to optimize specific welding applications, by granting far better performances in terms of quality and welding speed.

SPECIAL PROCESSES (OPTIONAL)

vision.ARC 2, available on ROBOCASE and DIGITECH VP2 equipment, is the support basis in order to weld by means of the herebelow listed special processes, i.e.

MIG/MAG

vision.PIPE for a more accurate welding in pipe first root pass

vision.ULTRASPEED for high speed welding

vision.COLD to weld thin thickness laminations with low heat transfer

vision.POWER for a more concentrated arc and deeper penetration on medium and thick thickness

PULSED MIG

vision.PULSE-UP for a quicker and more precise vertical up welding

vision.PULSE-RUN for a colder and faster pulsed welding

vision.PULSE-POWER for a more penetrated and smoothly shaped welding on medium large thickness

TECHNICAL DATA		ROBOCASE		
		3300	4000	5000
Three phase input 50/60 Hz	V +20% -20%	400	400	400
Input Power @ I_2 Max	kVA	19,5	25,5	31,2
Delayed Fuse (I_{eff})	A	25	32	40
Power Factor / cos φ		0,65/0,99	0,65/0,99	0,69/0,99
Efficiency Degree		0,85	0,85	0,85
Open circuit voltage	V	70	70	70
Current range	A	10 - 330	10 - 400	10 - 500
Duty cycle at (40°C)	A 100%	300	350	380
	A 60%	320	400	460
	A X%	330 (50%)	-	500 (50%)
Wires	Ø mm	0,6 - 1,2	0,6 - 1,6	0,6 - 1,6
Standards		EN 60974-1 • EN 60974-10		
		S		
Protection Class	IP	23 S	23 S	23 S
Insulation Class		H	H	H
Dimensions	↗ mm	600	600	600
	→ mm	670	670	670
	↑ mm	810	810	810
Weight (with water cooling unit)	kg	98	98	104

TECHNICAL DATA		DIGITECH VP2	
		4000	5000
Three phase input 50/60 Hz	V +20% -20%	400	400
Input Power @ I_2 Max	kVA	25,5	32
Delayed Fuse (I_{eff})	A	32	40
Power Factor / cos φ		0,65/0,99	0,69/0,99
Efficiency Degree		0,85	0,85
Open circuit voltage	V	70	70
Current range	A	10 - 400	10 - 500
Duty cycle at (40°C)	A 100%	350	380
	A 60%	400	460
	A X%	-	500 (50%)
Wires	Ø mm	0,6 - 1,6	0,6 - 1,6
Standards		EN 60974-1 • EN 60974-10	
		S	
Protection Class	IP	23 S	23 S
Insulation Class		H	H
Dimensions	↗ mm	660	660
	→ mm	290	290
	↑ mm	515	515
Weight	kg	40	44

SIMPLE AUTOMATION

While conceiving QUBOX and DIGITECH VP2 equipment, CEA has also taken into account the needs of small and medium industry where, to reduce costs, it is a must to automate the welding process without necessarily resorting to robots.

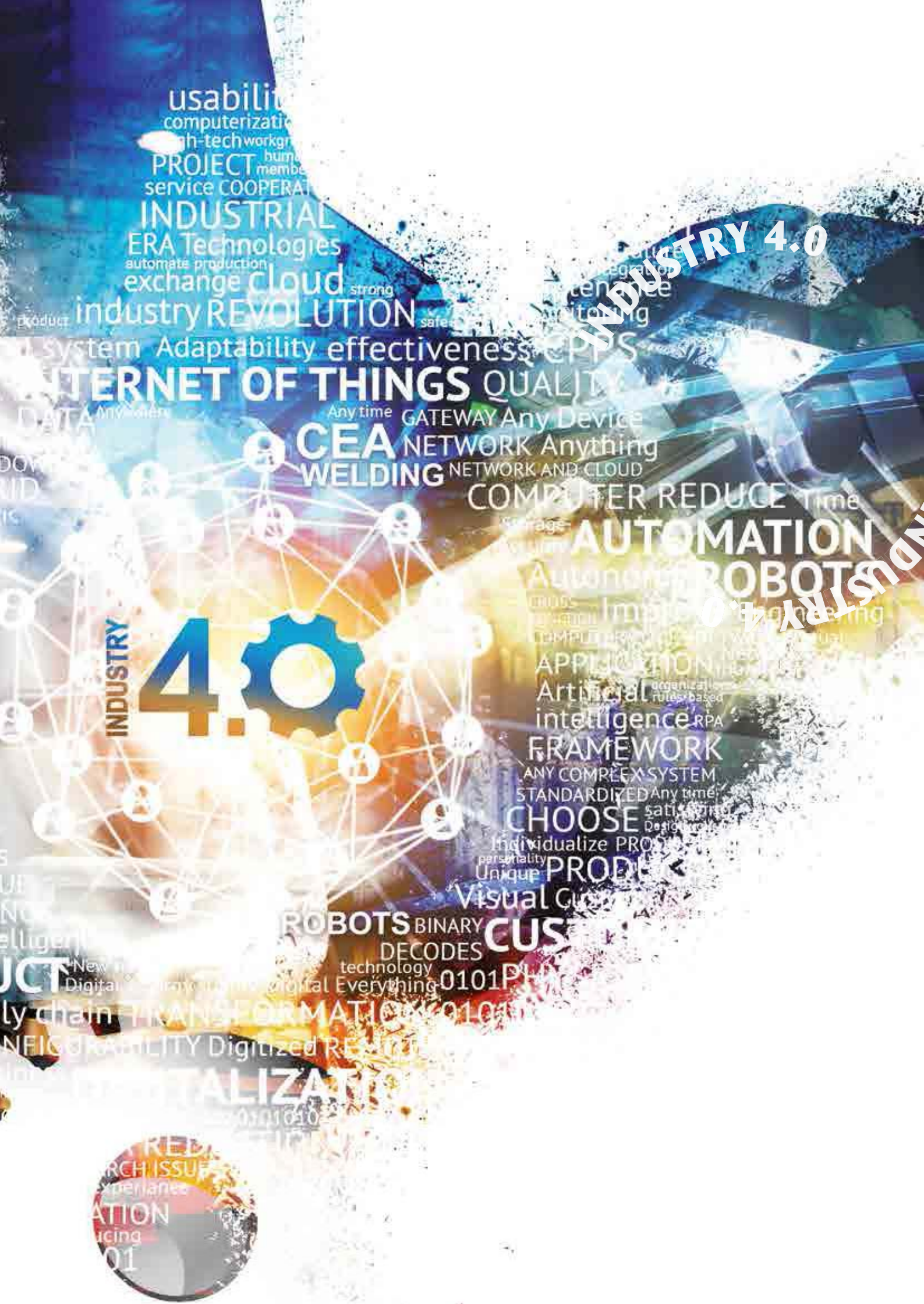
QUOBOX and DIGITECH VP2 power sources, being all standard equipped with analogic-digital I/O, can manage the essential signals for simple automation solutions, such as positioners and rotating tables, and can be easily integrated into automated welding equipment, without the addition of more sophisticated external interfaces usually indispensable for robotics.

TIG

MATRIX series three-phase power sources, in the special “R” version, can be easily integrated in TIG welding automated equipment by means of ROBOMAT 1 interface which handles both all the start/stop signals of the process and main welding parameter adjustments.

ROBOMAT 1 represents a flexible and efficient interface system that fully meets all Analogic/Digital connections.

ROBOMAT 1


INDUSTRY 4.0
INDUSTRY 4.0
usability
computerization
high-tech
PROJECT
service
INDUSTRIAL
ERA Technologies
automate production
exchange
cloud
strong
industry
REVOLUTION
safety
system
Adaptability
effectiveness
CPS
INTERNET OF THINGS
QUALITY
DATA
Any time
GATEWAY
Any Device
CEA
NETWORK
Anything
WELDING
NETWORK AND CLOUD
COMPUTER
REDUCE
Time
AUTOMATION
ROBOTS
INDUSTRY
4.0
APPLICATION
Artificial
intelligence
RPA
FRAMEWORK
ANY COMPLEX SYSTEM
STANDARDIZED
Any time
CHOOSE
Individualize
personality
Unique
PRODUCT
Visual
ROBOTS
BINARY
CUSTOMIZATION
DECODES
technology
0101
Digitized
REALIZATION

For Industry 4.0 we mean the transformation of manufacturing processes based on the digitalization of the factory, the connection between physical and digital systems and the interconnectivity of more equipment. Industry 4.0 certainly represents the fourth industrial revolution.

The main hubs around which this “revolution” revolves are represented by:
Interconnectivity between equipment in the production cycle.
Continuous monitoring of work conditions by means of appropriate set of sensors and adaptive capacity versus any process drift.
Equipment remote control, maintenance and diagnosis.
Machines viewed as networked objects (IOT Internet of things).

CEA EQUIPMENT FOR INDUSTRY 4.0

In order to face the challenge of this philosophy, CEA has developed the new DIGITECH VP2 (VISION PULSE 2) equipment and a series of support software, which, no doubt, allow these equipment to be fully complying with INDUSTRY 4.0 concepts.

The features of DIGITECH VP2 equipment can be briefly summarized as follows:

- Digital electronic control managed by a microprocessor.
- Graphical interface with user friendly and intuitive LCD display.
- Unique identifiability of the equipment through an IP address.
- Possibility of being connected to other equipment by an Ethernet or Wifi network.
- Possibility of remote activating programs or JOBS via Ethernet or Wifi.
- Possibility of interconnecting several networked equipment.
- Low energy consumption thanks to latest generation inverter power sources.
- Remote auto-diagnostic system.

QUALITY CONTROL AND PARAMETER PRINTING

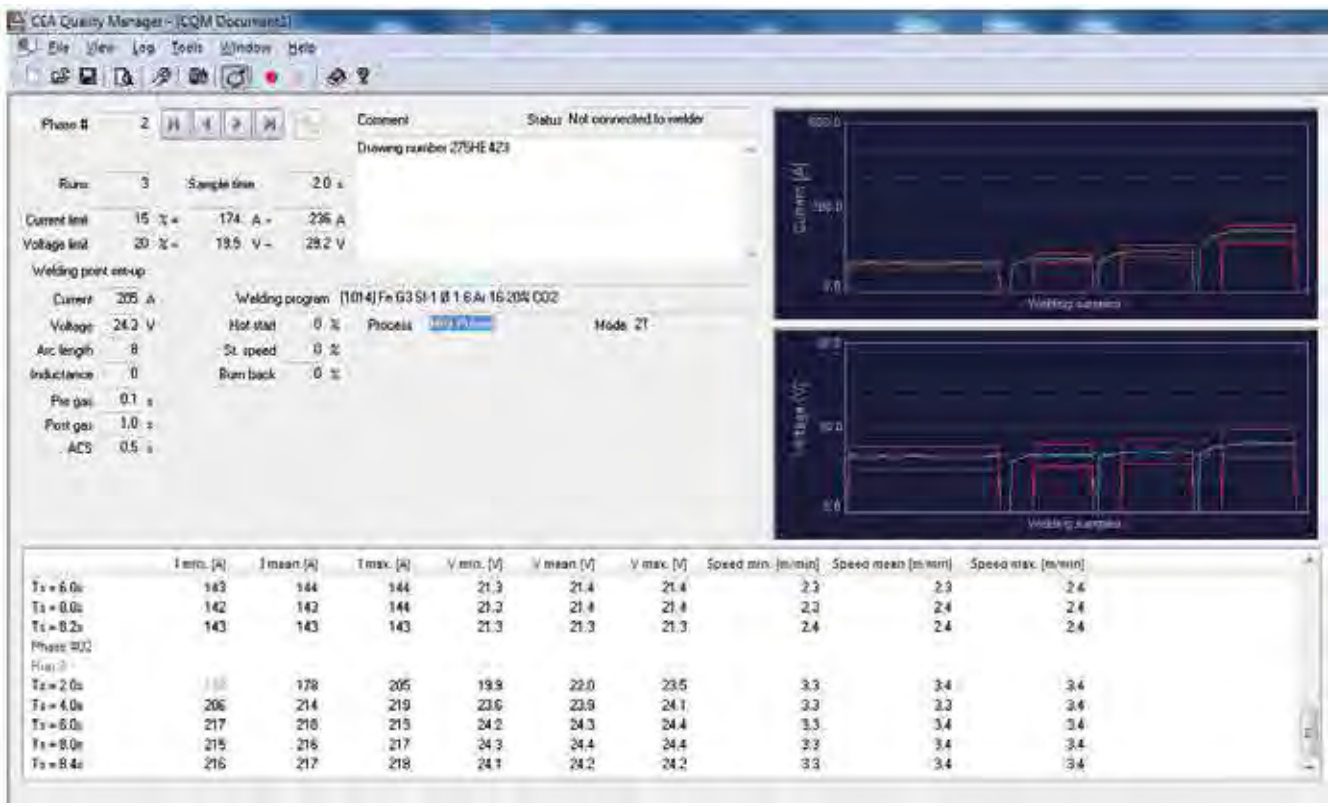
CQM "CEA QUALITY MANAGER" software has been developed by CEA to enable welding data recording, monitoring and printing by means of an external computer connected to one or more power sources of QUBOX and DIGITECH VP2 series.

Ideal for monitoring production and satisfying quality needs of the market, CEA QUALITY MANAGER enables to create customized detailed reports related to welding jobs made on various workpieces by several operators using different materials.

CEA QUALITY MANAGER is a very useful tool for:

- ▶ satisfying welding documentation requirements as prescribed by the buyers and by international norms such as EN 1090
- ▶ checking and monitoring the welding process
- ▶ creating sheets and work procedures from laboratory to be transferred to production
- ▶ generating welding job printout sheets

CEA QUALITY MANAGER takes advantage from current, voltage and wire speed sensors integrated into the welding equipment, without utilizing any additional complex and expensive detecting instrument and interface systems. To make it work, it is enough to simply use an Ethernet connection and the welding data recording program is ready to operate, enabling the monitoring of one or more power sources connected via Ethernet to your computer.



ETHERNET LAN

After all data related to the welding process are inserted (operator, power source model, used material, gas etcetera), this software, for each welding operation, will enable to:

- ▶ Decide welding parameter minimum and maximum acceptable values
- ▶ Detect real minimum, average and maximum values for welding current, voltage and wire speed within the defined sample interval.
- ▶ Generate quality graphics updated in real time
- ▶ Save and store detected welding parameters
- ▶ Generate welding operation printing reports

CEA Quality Manager - 1.5.2 (build 1792)

CEA S.p.A. - COSTRUZIONI ELETTROMECCANICHE AUTOMATISMI

Piece:	CRANES AB 1456	COD:	B71235478
Description:	TEST N. 471		
Notes:	NOTES		
Operator:	Paul Smith - U 503		
Welder:	Digitech Vision 5000	S/N:	AG107005
Firmware:	H04-03.04 F03-04.06-BETA1012 C04-28.01 500A		

Phase # 1

Description DIGITECH 5000 VISION
Sampling time 1.0 s *Current limit* 10 % *Voltage limit* 10 %

Run 1

Curve	[1011] Fe G3 SI-1 Ø 0.8 Ar 16-20% CO2	Inductance	0
Process	MIG Pulsed	Pre gas	0.1 s
Mode	4T	Post gas	1.0 s
Current	200 A	Burn back	0 %
Voltage	27.5 V	Hot start	0 %
Starting speed	0 %	Job slope	0.5 s
Arc	0		

Started: 18/03/2016 11:10:43 Terminated: 18/03/2016 11:10:43

Sample #	T [s]	Current [A]			Voltage [V]			Wire speed [m/min]		
		Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
1	0.20	109	111	112	19.80	20.30	20.80	17.10	17.10	17.10

Run 2

Started: 18/03/2016 11:10:52 Terminated: 18/03/2016 11:11:38

Sample #	T [s]	Current [A]			Voltage [V]			Wire speed [m/min]		
		Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
2	1.00	92	101	112	15.00	17.50	20.80	17.00	17.10	17.20
3	2.00	84	87	91	12.50	13.40	14.60	17.00	17.10	17.10
4	3.00	80	81	83	11.50	11.90	12.40	17.00	17.10	17.20
5	4.00	78	79	80	11.10	11.20	11.40	17.00	17.00	17.10
6	5.00	78	78	78	11.00	11.00	11.10	17.00	17.00	17.10
7	6.00	78	78	79	11.00	11.00	11.10	17.00	17.10	17.10
8	7.00	78	78	78	10.90	10.90	11.00	17.00	17.10	17.20
9	8.00	78	78	78	10.90	10.90	11.00	16.90	17.00	17.10
10	9.00	78	78	79	10.90	11.00	11.00	17.00	17.10	17.20
11	10.00	78	78	79	10.90	11.00	11.00	17.00	17.10	17.20
12	11.00	78	78	78	10.90	10.90	10.90	17.00	17.10	17.20
13	12.00	73	77	78	10.80	10.90	11.00	17.00	17.00	17.20
14	13.00	66	69	72	10.70	10.90	12.20	17.00	17.10	17.10

CEA Quality Manager - 1.5.2 (build 1792)

Sample #	T [s]	Current [A]			Voltage [V]			Wire speed [m/min]		
		Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
189	16.00	185	185	185	25.00	25.00	25.10	9.90	10.00	10.00
190	17.00	185	185	185	25.00	25.00	25.00	9.90	10.00	10.00
191	18.00	185	185	185	25.00	25.00	25.00	9.90	9.90	10.00
192	19.00	185	185	186	25.00	25.00	25.00	9.90	10.00	10.10
193	20.00	185	185	186	24.90	25.00	25.00	9.90	9.90	10.00
194	21.00	185	185	185	24.90	25.00	25.00	9.90	9.90	10.00
195	22.00	185	185	186	24.90	25.00	25.00	9.90	9.90	10.00
196	23.00	185	185	186	24.90	24.90	25.00	9.90	10.00	10.10
197	24.00	185	185	186	24.90	25.00	25.00	9.90	10.00	10.00
198	25.00	185	186	186	25.00	25.00	25.00	9.90	9.90	10.00
199	26.00	185	186	186	25.00	25.00	25.00	9.90	10.00	10.00
200	27.00	185	186	186	25.00	25.00	25.00	9.90	9.90	10.00
201	27.40	185	185	186	25.00	25.00	25.00	9.90	10.00	10.10

Run 11

Started: 18/03/2016 11:15:05 Terminated: 18/03/2016 11:15:11

Sample #	T [s]	Current [A]			Voltage [V]			Wire speed [m/min]		
		Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
202	1.00	89	93	97	14.60	16.60	19.20	9.90	10.00	10.00
203	2.00	88	90	100	14.10	20.80	27.20	9.90	10.00	10.00
204	3.00	108	134	153	25.80	26.40	27.10	9.90	9.90	10.00
205	4.00	156	166	173	25.30	25.50	25.80	9.90	10.00	10.00
206	5.00	174	178	181	25.10	25.20	25.30	9.90	10.00	10.00
207	6.00	181	183	184	25.00	25.10	25.10	9.90	10.00	10.00
208	6.80	184	184	185	25.00	25.00	25.00	9.90	9.90	10.00

Run 12

Started: 18/03/2016 11:15:23 Terminated: 18/03/2016 11:15:27

Sample #	T [s]	Current [A]			Voltage [V]			Wire speed [m/min]		
		Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
209	1.00	89	93	98	14.70	16.80	19.50	9.90	10.00	10.00
210	2.00	86	87	89	12.60	13.40	14.40	9.90	10.00	10.00
211	3.00	85	90	105	12.40	18.60	24.60	9.90	10.00	10.00
212	4.00	112	136	155	24.60	24.80	24.90	9.90	9.90	10.00
213	5.00	158	167	174	24.90	24.90	25.00	9.90	10.00	10.00
214	5.30	175	176	177	25.00	25.00	25.00	9.90	10.00	10.00

Total weld time: 0h, 3m, 27s

CEA Quality Manager, version 1.5.2 (build 1792)

CEA Costruzioni Elettromeccaniche Automatismi S.p.A.

CEA WELDER MANAGER

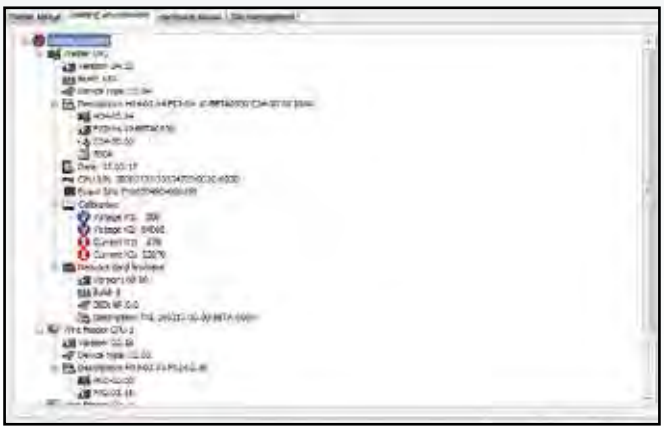
WELDER STATUS CONTROL AND WELDING JOB DUPLICATION

CWM: CEA WELDER MANAGER is a software which allows to monitor the status of one or more QUBOX and DIGITECH VP2 welding equipment, one another connected via Ethernet (or via Wifi as optional) by means of an external computer in the same network.
Ideal for the remote monitoring of the welding equipment status, including any faced anomaly, CEA WELDER MANAGER enables to save and duplicate JOBS from one equipment to another, by allowing to copy and paste exactly same setting on all available power sources, thus obtaining a perfect equality in their welding quality.

CEA WELDER MANAGER takes advantage from resources integrated into the welding equipment without utilizing any additional complex and expensive instruments and interface systems. To make it work, it is enough to simply use an Ethernet connection and the program is ready to operate.

CEA WELDER MANAGER is a very useful tool for:

- ▶ remote monitoring the welding equipment status any time
- ▶ quickly identifying any suffered anomaly
- ▶ remote activating welding JOBS
- ▶ copying and pasting JOBS from one welding equipment to the other
- ▶ controlling and monitoring the whole welding process combined with CQM (CEA QUALITY MANAGER).



JOB SAVE AND DUPLICATION

More and more there is the need of a very high quality in welding and repeatability of the results. Once a series of JOBS has been created and memorized in one welding equipment, it would be a long and tiring task to manually re-input exactly same parameters into other power sources, with the risk of making involuntary mistakes.
CEA WELDER MANAGER allows to transfer JOBS from one equipment to others, by granting the reproducibility of the welding operations from one working place to another.

By connecting an external computer - onto which this software has been installed - to a welding equipment, it is possible to download all memorized JOBS (DOWNLOAD FROM WELDER) and create a file, which, thenafter, can be transferred to one or more power sources, by simply clicking onto UPLOAD TO WELDER icon.

CEA WELDER MANAGER is very useful to also make a JOB BACKUP and therefore safely keep memorized JOBS data onto an external unit from where, in case of failure or necessity, they can be retrieved.

This is a professional and guaranteed service able to provide all clients the calibration of all the measuring instruments fitted in the welding equipment.

WHAT'S CALIBRATION?

In arc welding process, welding quality itself is strictly subordinated, in addition to the experience and professionality of the operator, to the precision in adjusting and repeating same parameters, such as welding current, voltage and wire speed (MIG/MAG welding).
Calibration means to verify the measuring precision of the instruments being utilized in your own welding equipment. This must fully meet what prescribed by EN 50504 norm, which clearly states methods, instruments and allowed tolerances as necessary for each operation.

WHAT FOR CALIBRATING?

To calibrate means to periodically check the measuring precision of the instruments provided into the welding equipment. Such a control grants the full compliance of the parameter tolerances and, therefore, allows you to repeat welding results by granting an unchanged quality while welding the workpiece.
It also allows you to cope with instructions as prescribed in your WPS's related to the workpiece being welded.

CEA CALIBRATION

CEA calibration is obtained by connecting the power source to a conventional load in order to measure by means of precise and certified instruments both current and voltage as performed by the machine. In MIG/MAG also welding wire speed is to be controlled in the same way.
Whenever such a test is positive, a proper certificate is also released complete with all detected data and the power source is to be fitted with a sticker stating the test result together with its validity date.
Such a service has got various options ranging from calibration made in CEA factory just after the machine is completed on the assembly line, to calibration made directly at the final user's.

CEA
Costruzioni Elettromeccaniche Annettoni S.p.A.
C.so Emanuele Filiberto, 27
23900 Lecco • Italia
Tel. +39 0341 22322
Fax +39 0341 422646

Issued date:	**27/10/2015**
Calibrated date:	**27/10/2015**
Approved date:	**27/10/2015**
Calibration due date:	**27/10/2016**

Calibration certificate No:	**CEA 2015 001**
Customer:	
Addresses:	

BASIC INFORMATIONS

Type of unit:	MIG / MAG welding machine with separate wire feeder		
Power source:	DIGITECH 5000 VISION PULSE	**Serial number:**	YB 107 011
Control panel:	DH 50	**Serial number:**	FX 00206104080100
Wire feeder:	HT 5	**Serial number:**	YD 251 020
General notes:	Wire Fe d=1.0mm – Connection cable 10mt – Torch C350 4mt		

CALIBRATION SPECIFICATIONS

Equipment function under test:	VOLTAGE CURRENT WIRE SPEED DISPLAYS						
Validation method:	Conventional load resistor – MIG/MAG (CV) / rotary transducer						
Validation type:	Accuracy	x	Consistency				
Validation grade:	Standard	x	Precision		**Validation range:**	Full range	
Power source rated max current:	500A	**Power source rated min current:**	10A	**Power source no_load voltage:**	70V		
Max allowed error of display A (±2.5 %):	± 12.5 A	**Max allowed error of display V (±2.5 %):**	± 1.75 V				
Wire feed speed rated min value:	0.6 m/min	**Wire feed speed rated max value:**	25 m/min	**Max allowed error of wire feed speed:**	± 10 % of set value		

TEST CONDITIONS

Ambient temperature:	25°C	**Input voltage:**	400V	**Input voltage frequency:**	50Hz

SET POINTS			VOLTMETER					AMMETER				
V_2	I_2		MEASURED VOLTAGE	AVERAGE MEASURED VOLT	DISPLAY V IND	AVERAGE DISP IND	ERROR V	MEASURED CURRENT	AVERAGE MEASURED CURRENT	DISPLAY A IND	AVERAGE DISP IND	ERROR A
[V]	[A]		[V]	[V]	[V]	[V]	[V]	[A]	[A]	[A]	[A]	[A]
14,0	10	**MEAS 1,1**	13,35	13,11	13,3	13,15	0,04	9,34	9,27	9	9,0	-0,27
		MEAS 1,2	12,87		13,0			9,20		9		
20,25	125	**MEAS 2,1**	20,82	20,82	20,8	20,80	-0,02	125,80	125,67	125	125,0	-0,67
		MEAS 2,2	20,82		20,8			125,54		125		
26,5	250	**MEAS 3,1**	27,33	27,24	27,3	27,25	0,01	251,20	251,00	250	250,0	-1,00
		MEAS 3,2	27,15		27,2			250,80		250		
32,75	375	**MEAS 4,1**	33,00	32,90	32,9	32,85	-0,05	375,80	375,50	375	375,0	-0,50
		MEAS 4,2	32,80		32,8			375,20		375		
39,0	500	**MEAS 5,1**	40,40	40,15	40,5	40,25	0,10	499,60	499,50	500	500,0	0,50
		MEAS 5,2	39,90		40,0			499,40		500		

SET POINTS		WIRE SPEED METER					
WIRE SPEED		MEASURED WIRE SPEED	AVERAGE WIRE SPEED	DISPLAY WIRE SPEED	AVERAGE DISP IND	MAX ALLOWED ERROR	ERROR
[m/min]		[m/min]	[m/min]	[m/min]	[m/min]	[m/min]	[m/min]
0,6	**MEAS 1,1**	0,5	0,50	0,6	0,6	± 0,06	0,05
	MEAS 1,2	0,5		0,5			
6,7	**MEAS 2,1**	6,6	6,60	6,6	6,6	± 0,67	0,00
	MEAS 2,2	6,6		6,6			
12,8	**MEAS 3,1**	12,5	12,60	12,8	12,8	± 1,28	0,20
	MEAS 3,2	12,7		12,8			
18,9	**MEAS 4,1**	18,3	18,40	18,9	18,9	± 1,89	0,50
	MEAS 4,2	18,5		18,9			
25,0	**MEAS 5,1**	24,3	24,30	25,0	25,0	± 2,50	0,65
	MEAS 5,2	24,3		24,9			

CALIBRATION EQUIPMENT

REF	DESCRIPTION	CAL DATE EXPIRE
CEA E153	SMP 1286 - LOAD RESISTOR AND ROTARY TRANSDUCER	JAN 2016
CEA MD39	FLUKE 77 – MULTIMETER FOR WELDING VOLTAGE	OCT 2016
CEA E138	CURRENT SENSOR – 1000A 5V 1%	JAN 2016
CEA MD47	METRAHITPRO – MULTIMETER FOR WELDING CURRENT	JAN 2016

CALIBRATION RESULT

RESULT:	Passed	x	Failed	

WORK PERFORMED BY:	R. VALSECCHI	**SIGNATURE:**	
APPROVED BY:	A. VALSECCHI	**SERVICE MANAGER:**	

With effect from 1st July 2014 it is compulsory to comply with new EN1090 standard which, in civil engineering, imposes that all on-site construction welded products must be CE marked as foreseen by CPR 305/2011 (Construction Products Regulation) and by Directive 89/106/EEC.

EN 1090 standard consists of 3 parts, i.e.

EN 1090-1
defining the requirements for component compliance (CE marking)

EN 1090-2
defining the technical requirements for steel structures

EN 1090-3
defining technical requirements for aluminium structures

EN 1090-2 norm provides that the construction design engineer should also define the job risk level actually called “Execution Class” (EXC): EXC types are classified by an increasing number from 1 to 4, where 4 is to indicate the structure technically more complex.

EXC 1:
steel structures with strength class up to S275, e.g. agricultural construction such as barns

EXC 2:
steel structures with strength class up to S700, e.g. civil buildings such as homes and offices from 2 to 15 storeys.

EXC 3:
structures subjected to high degree of stress, e.g. buildings higher than 15 storeys or bridges.

EXC 4:
special structures with extreme degree of resistivity, e.g. road or rail viaducts.

HOW CEA CAN HELP YOU

CEA has produced a collection of qualifying welding procedures called WPQR (Welding Procedure Qualification Record) from which other welding procedure specification are derived, i.e. the so called WPS (Welding Procedure Specification), which will help CEA customers, who will buy them, to satisfy one of the EN 1090 requirements for the erection of steel constructions according to EXC1 and EXC2 classes.

Supplied WPQR's and WPS's have been released and certified by the German competent authority SLV according to material composition, its thickness, type of joint, welding position, filler material, protective gas and valid for CONVEX and DIGITECH VISION PULSE power sources only.

FAQ

CAN GIVEN WPS BE USED BY ANY WELDING EQUIPMENT?

Yes, but only if the used model is also clearly specified in the supplied WPS chosen to do the job.

WILL WPQR'S AND WPS'S ENABLE USE OF FILLER MATERIAL AND/OR GAS OF ANY BRAND?

Yes, provided that used products are supplied with certifications fully matching what prescribed in the given specifications.

ARE CEA SUPPLIED WPQR AND WPS "PACKAGES" SUFFICIENT TO ENABLE THE OPERATOR TO APPLY CE MARKING ON THE MANUFACTURED ITEM?

No, they are not. WPQR's and WPS's are just a help, in terms of costs and time, to reach a certification according to EN 1090 norm. Each client will have to comply with his obligations by carrying out the job after employing qualified welders and by granting adequate quality controls of the whole manufacturing process according to what specified by EN 3834. It will be also necessary to carry out a periodic maintenance program of the welding power source being used, by using - as said - certified consumable material, strictly adhering what prescribed in the chosen welding specifications.

LIMITATION OF LIABILITY

CEA supplied WPS's and WPQR's will facilitate the qualification of the welding process (point 4 of CE certification). WPQR's, made in cooperation with SLV, are in conformity with current standards for the qualification of WPS's. WPS's supplied by CEA are valid for the execution of steel constructions made according to EXC 1 and EXC 2 above referred, as foreseen by EN 1090-2 standard with related application areas. The use of CEA supplied WPQR / WPS packages will not entitle the user to disregard the additional steps, as prescribed by EN 1090 and by CPR 305/2011, he will have to fully fulfil himself.

CEA is not liable in case of improper or poor use of any WPS, of any incorrect utilization of CEA power sources, of any mismatch between the welding equipment prescribed in WPQR and WPS and the one wrongly used during the welding process, of any mistake made by the user in the execution of WPQR/WPS and of the utilization of non-qualified personnel during the welding job.

It must be clear that only the user, manufacturing the welded structure, will be responsible for the correct application of CEA supplied WPS's and of the full compliance of that herein specified.

The user is fully liable and responsible for the CE marking for the finished manufactured product.

By purchasing CEA WPS's the buyer accepts all that is contained within this document.

PROFESSIONAL WELDING APPAREL

CEA has developed a new professional welding protection apparel which meets great protection and wearing comfort too, requirements of every welder's daily work.

Standards	UNI EN ISO 11611:2008 (Protective clothing for use in welding and allied processes)
	UNI EN ISO 11612:2009 (Protective clothing against heat and flame)
Material type	100% flame retardant cotton
Rugged fabric	330 g /m^2
Extra protection	highly wear-prone points are double-layered
Colour	Grey / Yellow

ADF WELDING HELMET

UltraLUX Welding helmet affords reliable protection for the eyes and face during electric arc welding.

It offers permanent protection against UV/IR rays, heat and sparks in any state from clear to dark. The protection shades of ultraLUX welding helmet have been chosen to avoid eye damage caused by the welding arc.

ultraLUX helmet allows the welder to see the point of the arc strike more precisely. This leads to a real time saving. The helmet does not to have to be flipped up and down during welding, both hands are kept free and because of the helmet light weight fatigue is reduced.

- Robust - low weight solution for the most demanding tasks
- Fitted with a Twisted Nematic (TN) technology based 4/9-13 ADF with external shade control and a screw-in lens retainer system for a more secure fastening
- Fitted with a comfort head gear, easy to adjust mechanism
- CE approved to EN 175

ADF filter characteristics

- Standard 90 x 110mm cartridge size and 96 x 42mm viewing area
- Powered by a combination of a solar cell and 2 x Li-ion internal batteries.
- Fitted with 3 sensors and adjustable sensitivity and delay
- True colour definition for a clear state shade 4 and internally controlled dark shade range from 9 to 13

WELDING PROCESS	Welding current / cutting A																					
		10		20		40		80		125		175		225		275		350		450		
	5		15		30		60		100		150		200		250		300		400		500	
MMA					9		10		11				12				13				14	
MIG									10	11			12				13				14	
MAG							10		11		12		13				14			15		
TIG/WIG		9			10		11			12			13			14						
PLASMA CUTTING								11				12				13						

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Technical characteristics might
change wiyhout notice.

Concept
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Print
Arti Grafiche Cattaneo - Oggiono

Printed in
September 2017