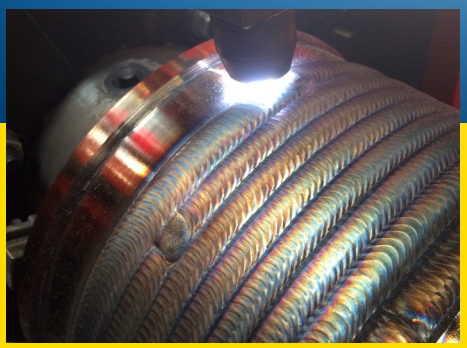
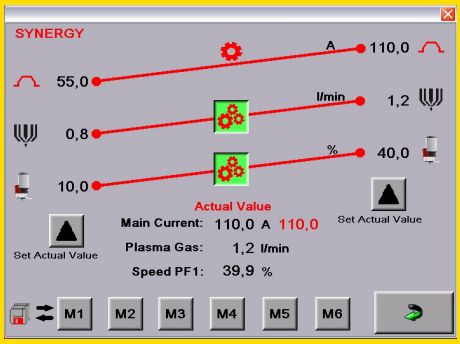
EuTronic®

GAP 2511 DC • GAP 3511 DC Synergic
GAP 5011 DC Synergic

WELDING





- Plasma welding, TIG welding, MMA welding
- For joining, coating and brazing
- Synergic lines available
- User friendly touch screen control panel
- Spot/Impulse welding mode
- Versatile and flexible due to the modular construction

Castolin Eutectic®
Eutectic Castolin

The EuTronic® GAP is the choice for automated and manual applications

The Eutronic® GAP range is ideal for welding applications that require precision and high deposit quality. The welding units are available with various features. Each system is dedicated for different type of applications.

The Eutronic® GAP 2511 DC is the perfect choice for manual application. The efficient inverter provides up to 250 A suitable for most manual applications however automation is also possible. A user friendly 8.4" touch screen control panel gives the operator a simple interface to select welding parameters even when wearing welding gloves.

The EuTronic® GAP 3511 DC Synergic is designed for both manual operation and integration into automated processes. Advanced functions like synergic mode and pulse welding give even more precise control of the welding process. All settings are displayed on the touch screen and up to 1000 welding parameters can be saved to the memory. The powerful inverter delivers up to 350 A which is sufficient for almost all powder applications. Various optional features are available for the EuTronic® GAP 3511 DC Synergic such as fully electonic gas control, second motor control card to operate a second powder feeder and an extended automation interface for full integration in an automated process.

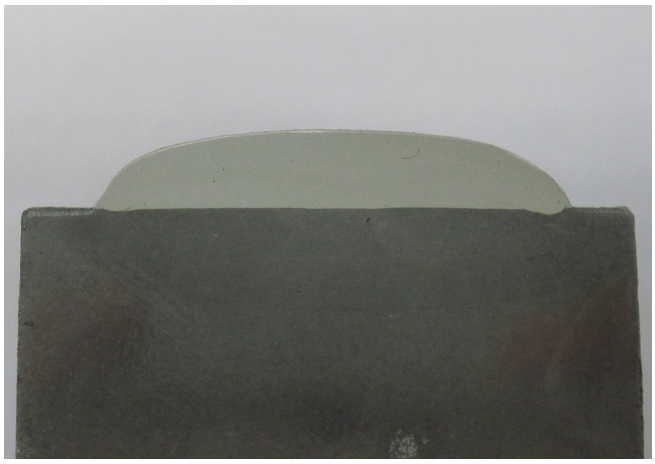
The EuTronic® GAP 5011 DC Synergic is the most powerful equipment from our range which allows for welding up to 500 A. This equipment is developed for fully automated applications and includes as standard the extended automation interface which can provide both digital and analogue signals allowing easy integration with any external system.

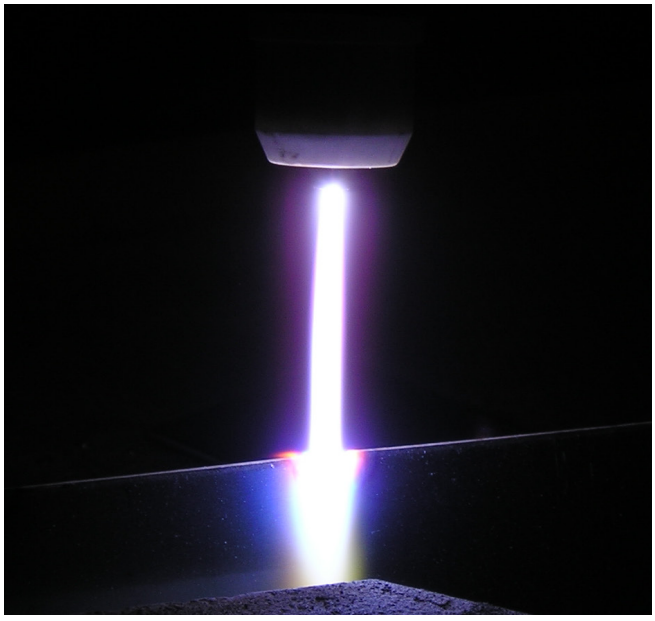
Additionally EuTronic GAP 5011 DC Synergic includes special Process Recording Software (PRS) which allows real time monitoring and reading of all welding parameters. The system is designed to work with our EP3 Powder Feeder and our dedicated IMPA torch.

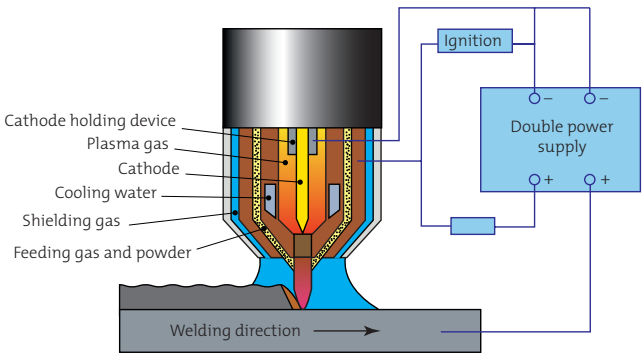
Castolin Eutectic has been the world leader in Plasma Transferred Arc (PTA) technology since 1972 when the first EuTronic GAP (Gas Arc Process) equipment was introduced. Continuous innovation and development has maintained this lead.
The original plasma powder coating process has been expanded to include plasma joining and brazing using both powders and wires. Castolin can offer equipment and consumables for any application together with individually tailored automation solutions.

In the GAP process, the plasma is focused while forced through the heat resistant anode, causing a considerable increase of the arc density, energy and temperature.

PTA process can be started by preliminary use of inner pilotarc. The pilot arc is burning between the gas cooled cathodic tungsten electrode and liquid-cooloed anodic copper nozzle.







The welding filler metal (gas atomised powder or cold wire) is fed into the weld pool where a hielding gas protects it from the atmosphere. The plasma arc is much more controllable than conventional electric arc welding equipment and can be set so that almost all the arc energy is used to melt the filler metal allowing for very low heat input and minimal dilution from the base metal.

GAP 2511 DC

TECHNICAL DATA	GAP 2511 DC
ESC code	765733
Supply voltage:	3x400V ± 10%
Supply frequency:	50/60 Hz
Supply fuse:	32 A
Max. power consumption:	18 kVA
Maximum rated value of the power supply current:	25 A
Effective value of the maximum power supply current:	20 A
max. welding current (35%ED):	250 A
max. welding current (60%ED):	200 A
max. welding current (100%ED):	160 A
Pilot current (100%ED):	30 A
Amperage range for plasma welding:	2 A ÷ 250 A
Amperage range for TIG welding:	5 A ÷ 200 A
Amperage range for Electrode welding:	5 A ÷ 160 A
Amperage range for pilot current:	2 A ÷ 50 A
Open circuit voltage pilot inverter:	95 V DC
Open circuit voltage main inverter:	95 V DC
Protection class:	IP 21S
Continuous sound-pressure level:	< 70 dB (A)
Dimensions (L x W x H)	815 x 445 x 635 mm
Total weight:	95 kg

GAP 3511 DC Synergic

TECHNICAL DATA	GAP 3511 DC Synergic
ESC code	763890
Supply voltage:	3x400 V ± 10% 3x460 V ± 5%
Supply frequency:	50/60 Hz
Supply fuse:	32 A
Max. power consumption:	20 kVA
Maximum rated value of the power supply current:	32 A
Effective value of the maximum power supply current:	25 A
Cosφ	0,99
max. welding current (35%ED):	350 A
max. welding current (60%ED):	280 A
max. welding current (100%ED):	250 A
Pilot current (100%ED):	30 A
Amperage range for plasma welding:	10 A ÷ 350 A
Amperage range for TIG welding:	10 A ÷ 350 A
Amperage range for Electrode welding:	10 A ÷ 280 A
Amperage range for pilot current:	2 A ÷ 50 A
Open circuit voltage pilot inverter:	95 V DC
Open circuit voltage main inverter:	95 V DC
Protection class:	IP 21S
Continuous sound-pressure level:	< 70 dB (A)
Dimensions (L x W x H)	815 x 445 x 635 mm
Total weight:	105 kg

GAP 5011 DC Synergic

TECHNICAL DATA	GAP 5011 DC Synergic
ESC code	767018
Supply voltage:	3x400 V ± 10% 3x460 V ± 5%
Supply frequency:	50/60 Hz
Supply fuse:	63 A
Max. power consumption:	32 kVA
Maximum rated value of the power supply current:	45 A – 400 V 39 A – 460 V
Effective value of the maximum power supply current:	45 A – 400 V 39 A – 460 V
max. welding current (35%ED):	450 A
max. welding current (60%ED):	360 A
max. welding current (100%ED):	300 A
Pilot current (100%ED):	80 A
Amperage range for plasma welding:	10 A ÷ 500 A
Amperage range for TIG welding:	10 A ÷ 500 A
Amperage range for Electrode welding:	10 A ÷ 300 A
Amperage range for pilot current:	6 A ÷ 160 A
Open circuit voltage pilot inverter:	90 V DC
Open circuit voltage main inverter:	90 V DC
Protection class:	IP 21S
Continuous sound-pressure level:	< 70 dB (A)
Dimensions (L x W x H)	815 x 445 x 635 mm
Total weight:	125 kg

The Eutronic® GAP technology offers a wide range of benefits compared with conventional arc welding processes

Major factors are:

- High energy density in an extremely focussed arc
- High deposition rates for shorter welding times
- Homogeneous, porosity and spatter free coatings
- Dilution, heat input, distortion and heat-affected zones are lower than for any other arc welding process
- Maximum purity and performance of the applied alloy even in the first layer
- Possible multipass overlays
- Smoother surface for less rework
- Precise control of the weld deposit thickness
- Exceptionally good reproducibility
- Optionally suitable for fully automated processes

With all these advantages, the GAP process is designed for work that requires extra precision, low heat generation and minimal distortion. The GAP technology also provides an exceptionally high purity and quality of the welding bead from the very first layer.

In conjunction with the high efficiency of the process, the precise control of the layer thickness and the smooth weld beads, these advantages generate considerable economies by cutting both operating costs and welding consumable requirements.

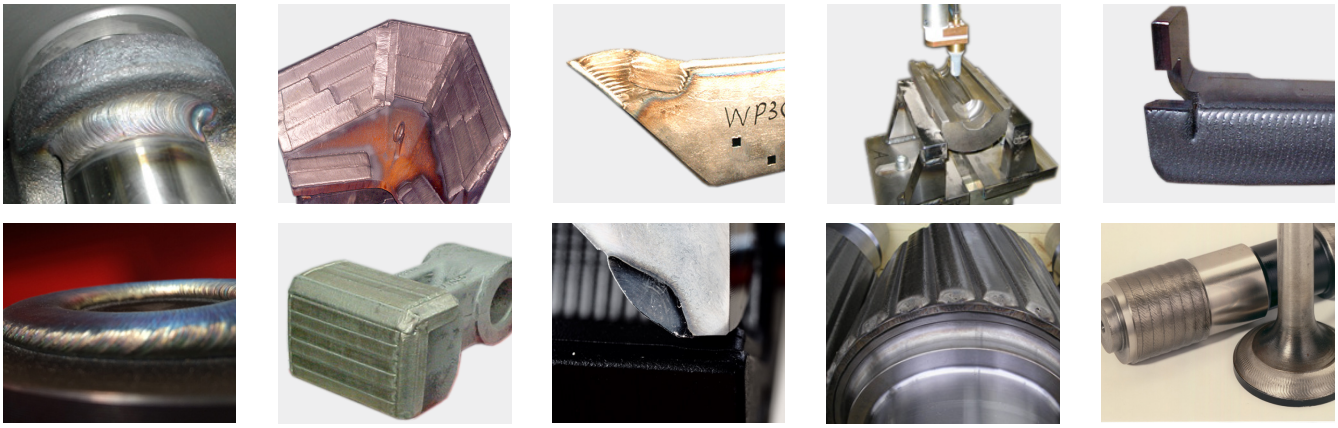
Application-oriented

Castolin Eutectic develops and manufactures GAP welding units and accessories in various designs and sizes, as both standard and special models. Our technical team can develop the most cost-eff ective solution tailored to your practical application. From the power source, through feed/ transport equipment and welding torches, up to and including handling devices or robots – we will take care of all the details.

Let yourself be surprised by our specialists – we never talk about products, but about applications and solutions that will meet your needs and your requirements.

Application examples

- Repairs on tool steels, rebuilding of cutting edges, forging, stamping dies, aluminium die casting moulds
- Repairs on cast iron, glass moulds
- Feeding screws repairs
- Hard-facing on drilling tools, valve seats and valves, mining machinery, milling tools



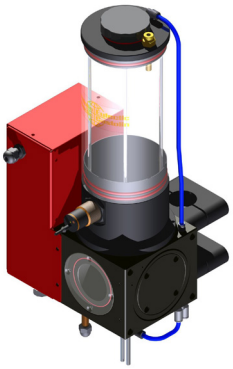
Equipment and Accessories for every application

The EuTronic® GAP range, due to its modular design, can be adapted to any application just choosing the right accessories. Mentioned below is an abstract of the available equipment and accessories. Additional equipment, accessories and PTA torches can be developed on request.

TECHNICAL DATA	Powder Feeder EP2
Carrier gas:	Ar, Ar-H2
Carrier gas flow rate:	0 – 4 l/min
Powder reservoir:	2 l capacity
Protection class:	IP 23
Weight (without powder):	7,5 kg
Dimensions (L x W x H):	200 x 170 x 470 mm
ESC code	260229
Powder feed rate 3 – 120 g/min, depending on feeding wheel configuration, torch, anode and powder density.	

TECHNICAL DATA	Powder Feeder EP3
Carrier gas:	Ar, Ar-H2
Carrier gas flow rate:	0-7 l/min
Powder reservoir:	2,5 l
Powder feed rate*:	Up to 21,5 kg/h (nickel-based-powder) / 30 kg/h (tungsten-carbide-powder)
Protection class:	IP 65
Weight (without powder):	9,5 kg
Dimensions (L x W x H):	235 x 260 x 580 mm
ESC code	750805

*Depending on torch configuration and powder density



TECHNICAL DATA	RC-H manual remote control
ESC code	260231
including 8 metres connecting cable.	

TECHNICAL DATA	Cooling GAP
Weight:	40 kg
Dimensions (L x W x H):	900 x 445 x 360 mm
ESC code	260058
Cooling with air/water heat exchanger.	

TECHNICAL DATA	Cooling GAP Chiiler
Weight:	50 kg
Dimensions (L x W x H):	915 x 445 x 400 mm
ESC code	754273
Cooling with integrated chiller.	

TECHNICAL DATA	Trolley
Weight:	45 kg
Dimensions (L x W x H):	1.190 x 740 x 1.415 mm
ESC code	260056
Holds gas cylinders, powder feeder, power source and cooler.	

TECHNICAL DATA	GAP E 150 P
Type of torch:	Powder manual torch
Construction:	Hand-held 70° torch
Max. current at 100% duty-cycle:	150 A
Powder flow rate*:	5 – 30 g/min
Weight with hose pack:	2 kg (3 m)
ESC code 3 m hose pack:	260434
ESC code 4 m hose pack:	260435
* Max feeding rate depending also on powder density, powder feedersettings and type of anode.	

TECHNICAL DATA	GAP E 52
Type of torch:	Powder machine torch
Construction:	Vertical
Max. current at 100% duty-cycle:	200 A
Powder flow rate*:	3 – 80 g/min
Weight with hose pack:	4,8 kg (4 m)
ESC code 4 m hose pack:	400204
* Max feeding rate depending also on powder density, powder feedersettings and type of anode.	

TECHNICAL DATA	GAP E 54
Type of torch:	Powder machine torch
Construction:	horizontal
Max. current at 100% duty-cycle:	200 A
Powder flow rate*:	3 – 80 g/min
Weight with hose pack:	4.8 kg (4 m)
ESC code E54 S 4 m (330 mm):	400861
ESC code E54 M 4 m (550 mm):	402272
Powder machine torch for inner coatings of parts with diameter > 80 mm. Available in four different lengths (models): 330 (S), 550 (M), 920 (D) and 1770 (DL) mm.	
* Max feeding rate depending also on powder density, powder feedersettings and type of anode.	

TECHNICAL DATA	IMPA 100
Type of torch:	Powder machine torch
Construction:	Vertical
Max. pilot current at 100% duty-cycle	200 A
Max. current at 100% duty-cycle	400 A
Melting performance	22 kg/h (W_2C 60%)
Cooling	Double cooling required
ESC code (without hose package)	753966

Castolin Eutectic PTA consumables

Castolin Eutectic manufactures and offers a wide and complete range of alloys, available in different forms, that covers almost every application and any plasma welding process:

- Microatomised Ni, Co, Fe or Cu based powders for wear resistant coatings
- Solid and flux cored wires for cold wire plasma welding

Ask your local Castolin Eutectic representative for more information.
GAP range is ideal for welding applications that require precision and high deposit quality. The welding units are available with various features.
Each system is dedicated for different type of applications.

Your resource for protection, repair and joining solutions

Castolin Eutectic
Eutectic Castolin

eutectic.com

castolin.com