

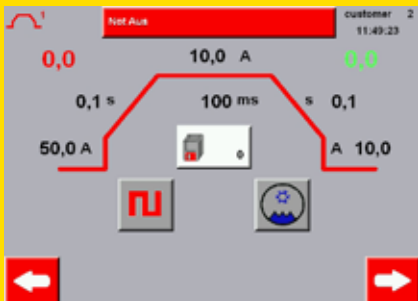
Plasma welding with transferred arc

# MICRO GAP 50 DC

*Stronger, with  
Castolin Eutectic*



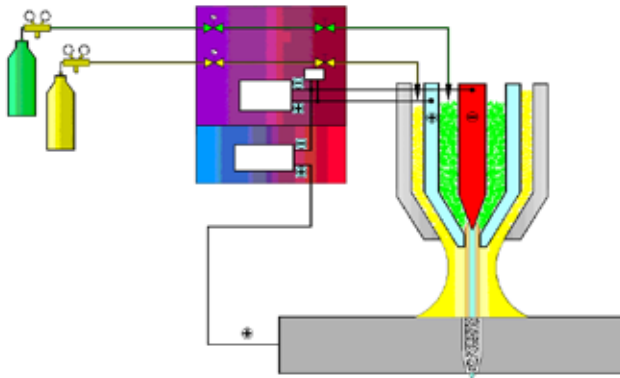
- For manual applications with low welding currents
- Plasma welding, plasma spot welding, TIG welding
- Clearly laid-out control panel
- Simple pre-selection of the welding parameters
- Compact design



PLASMA TECH



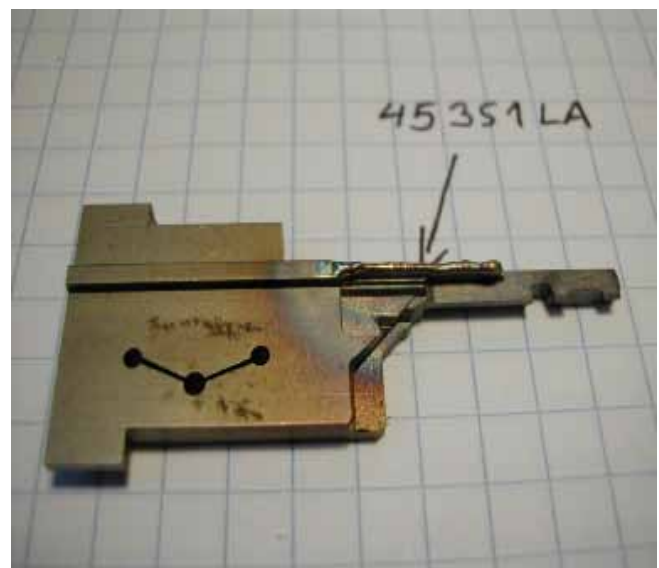
# Why Micro GAP 50 DC?



Micro GAP 50 DC stands for plasma welding with transferred electric arc (PTA technique). The CAP procedure is ideally suitable for jointing and coating work. Through the constriction of the electric arc by means of a cooled anode, a plasma beam with a very high energy density is created. The transferred plasma arc melts the surface of the work piece, which is flushed with inert gas, very quickly in localised areas. The energy input and the supply of welding filler material in powder or wire form are decoupled; there are thereby many options for influencing the heat input to the work piece and the mixing with the base material..

The CAP technology offers a wide range of advantages over conventional arc welding procedures:

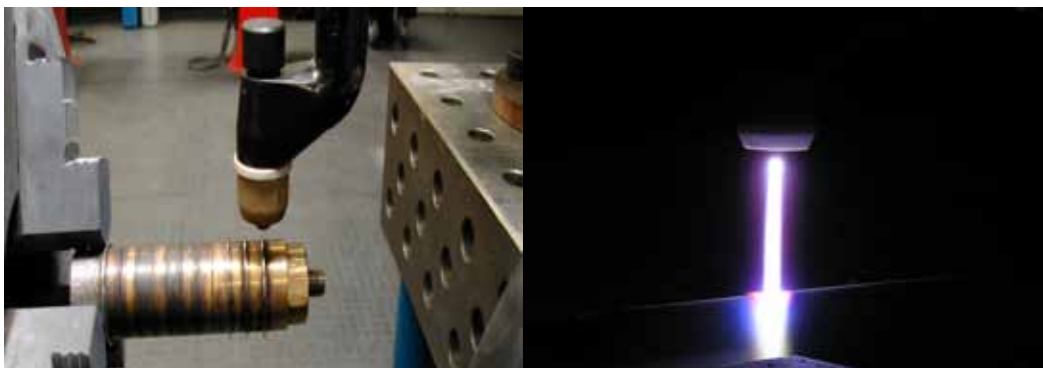
- high energy density in an extremely focussed arc
- high melting performance for short welding times
- homogenous coating, free of pores and splashes
- mixing, heat input, distortion and heat-affected zones are lower than for any other arc welding procedure
- ideal control of the weld deposit thickness
- highest purity and quality of the alloy
- smoother surface for less rework
- exceptionally good reproducibility



The CAP procedure provides particularly smooth, splash-free welding seams: rework and welding material costs are minimised.

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

In conjunction with the high efficiency of the procedure, the good control of the layer thickness and the smooth weld beads, these advantages make consistent cost savings possible through lower processing costs and lower consumption of welding alloys.



The focused plasma arc can be controlled precisely: it is therefore possible to achieve the lowest dilution level that is possible with an arc welding procedure.

## For all manual applications with low welding currents

Micro GAP 50 DC is ideal for welding applications that require precision, high-quality layer quality and low dilution; in particular when fully automatic welding is impractical or inapplicable due to low numbers or the diversity of the tasks. The welding units are available with various features. The operation is carried out via pushbutton selector switches and knobs on the front display. Micro GAP 50 DC is designed for manual and semi-automatic welding tasks in which frequent parameter changes are required. All the settings are displayed on the LCD display in plain text, and up to 100 memory locations are available for storing the welding parameters. The extremely powerful inverter delivers 15 A at a 100% duty cycle, which is also sufficient for micro-plasma welding.



Micro GAP 50 DC	ESC: 757806
Mains voltage:	3x 400V±15%
Mains frequency:	50/60 Hz
Mains fuse:	max. 16 A
Max. power consumption:	3.5 kVA
RMS value of the largest main current:	9.6 A
Cosphi:	0.99
Protection class:	IP 23
No-load voltage pilot inverter:	85V DC
No-load voltage main current inverter:	100V DC
Max. welding current (100% ED):	33 A
Max. welding current (60% ED):	40 A
Max. pilot current (100% ED):	5 A
Adjustment range for plasma welding/ TIG welding / spot welding:	0.5 ÷ 50 A
Adjustment range of the pilot current:	0.5 ÷ 50 A
Dimensions (L x B x H):	655 x 310 x 605 mm
Weight:	46.5 kg

## Application-oriented development

Castolin Eutectic develops and builds CAP welding units and accessories in various designs and sizes, as both standard and special models. Our technical team can develop the most cost-effective 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.



### Burner E5N / ESC 757807

A wide range of anodes, powder and gas tips have been developed, and are being continually improved in order to allow for optimum accessibility.

## Castolin Eutectic GAP-Welding Alloys

For more than a century, Castolin Eutectic has been the market leader and application specialist in the field of wear protection and melt technology. We produce the widest range of special alloys for the welding, coating and solder technology that is currently available on the market. We offer you a comprehensive selection of GAP welding alloys in various forms, which covers nearly every application in the field of plasma welding with transferred arc: EuTroLoy powder on a Ni, Co, Fe or Cu basis for wear-resistant coatings; EuTroLoy powder on a Ni basis, mixed with DIAMAX hard materials for the highest abrasion and erosion resistance; laser wires and round laser TIG rods for manual and micro-plasma welding; Solid and flux-cored wires for plasma cold-wire welding; solders and powder for plasma soldering.

Below, you will find welding materials from the LaserTech article series for laser and micro-plasma welding. Further information about the other listed forms of welding alloys can be obtained on enquiry from your respective local Castolin Eutectic representative.

Article	Material	Applications
LaserTech 45273 LA X	1.5424	For the surfacing of hardened parts, e.g. made from 1.2311 or 1.2312 materials, and also suitable for the subsequent structural etching.
LaserTech 45301 LA X	1.2567	For surfacing on hot working tools. With laser welding, the first layer is prone to cracking. Preheating and buffer layer recommended.
LaserTech 45303 LA X	1.3348	For the hard surfacing of parts and edges of tools that are prone to wear. Preheating recommended. Also on very critical steels (e.g., 1.2379) free of cracking in the first layer.
LaserTech 45351 LA X	1.4718	For high wear-resistant surfacing on, for example, cutting, bending and drawing tools, as well as various hot working tools. Repairs of edges through laser welding.
LaserTech 45353 LA X	1.4115	For welding on corrosion and scale resistant chrome steels with ferritic or martensitic structure. High resistance to abrasion, adhesion and cavitation, as well as combined wear mechanisms.
LaserTech 45355 LA X	1.6356	High-alloy, martensitic hardened wire for, for example, aluminium die casting moulds and trimming tools for machine cutting. Very suitable for the materials 1.2343 and 1.2344
LaserTech 45366 LA X	≈ X 35 CrMoMn 7-2-1	For medium hardness surfacing on tools for hot and cold work, above all on plastic injection moulding tools.
LaserTech 45367 LA X	≈ X 25 CrMo 5-4	For hot working tools, e.g. flood welding of forging dies, crack-proof build-up in multiple layers through laser welding.
LaserTech 45368 LA X	≈ X 10 CrMo 6-3	Like LaserTech 45367 LA, but even less more resistant to cracking. For the closing of cracks, e.g. between contour and cooling. Can be machined with cutting tools.
LaserTech 45369 LA X	1.4122	Corrosion resistant protective coatings for operating temperatures up to 450°C.
LaserTech 45553 LA X	1.4576	For welding on stainless components with low hardness and high toughness.
LaserTech 45612 LA X	2.4806	Nickel-based wire, non-scaling up to 1000 °C, heat resistant to 850 °C, tough at low temperatures down to -196 °C. Crack and corrosion resistant against many media.
LaserTech 45658 LA X	2.4839	Nickel-based wire, high corrosion resistance in reducing, and also above all in oxidising media.
LaserTech 45860	3.7036	For joint and surfacing welding of identical and similar titanium alloys.

Your partner for wear protection, repair work and joint technology



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