SynerBot® series

SYNERBOT CB SERIES. MIG-MAG / TIG

SynerBot CB Series

Collaborative Robotic Welding Units

INDEX

COLLABORATIVE ROBOTIC WELDING UNITS

This catalogue presents the range of welding units ready to be integrated into collaborative robotic units and projects.

This new product line allows manufacturing companies to increase the productivity of welding processes that are currently being carried out manually.

Options for robotic welding with continuous wire in MIG-MAG, TIG DC and TIG AC/DC processes, with and without cold wire input, are presented.

We offer a line of products and services that allow you to implement:

-Simplicity, security and technical support.
-Integrate the unit into the production area
-CE marking
-Easy to program and use

We have a complete range of Packs of standard welding equipment units to integrate and implement with Universal Robots UR5/UR10 collaborative Robot in its C and E ranges:

- MIG/MAG,
- MIG/MAG + TIG
- TIG DC
- TIG ACDC

ADVANTAGES

Productivity increases far superior to those obtained with manual cell operation with welder-independent results. Guaranteed process repeatability.

EXPERIENCE - As a manufacturer of welding equipment, we know and master welding, and we have our own highly qualified personnel, who guarantees the correct implementation of Robotic Welding Processes.

PROFITABILITY - Reduction of skilled workers, together with low consumption of electricity, wires, gas, etc., optimised cycle time for continuous operation.

PRODUCTION - Optimisation of manufacturing times with significant increases in quality and productivity, with a low rejection rate.

> Example: Assembly manufactured in 8 hours, assembly and welding with several operators, robotised in just 3 hours and 20 minutes with just one machine and operator.

EFFICIENCY - Reduction of rework and possible incidences of manual production, independent of personal situations.

RELIABILITY - Robust installation optimised to your needs.

TRANQUILITY - National manufacturer with high experience in welding and process programmation, together with first level partners in Robotics.

QUALITY - Consistent quality at all times with correct and reproducible welding seams. (Compliant with existing quality standards).

TRACEABILITY - Production control, welding data, welding programme management, etc.

SIMPLICITY - We carry out a preliminary study process, programmation and training of your staff.

AUTONOMY - Complete training of assigned personnel for total control of robotic cell handling adjusted to your production.

LOGISTIC - The entire manufacturing and delivery process is controlled in terms of number of parts per hour, manufacturing times, production costs, etc.

AMORTIZATION - Reduction of Return on Investment times. Positive R.O.I.

> INDEPENDENT OF QUALIFIED PERSONNEL, ADJUSTED AND PLANNED TO YOUR PRODUCTION CONSTANT AND REPRODUCIBLE QUALITY IN INDUSTRIALISATION

SYNERBOT WELDING PACKS FOR COLLABORATIVE ROBOTS

Based on the ADVANCED synergic-pulsed power source, we offer equipment with the highest level of arc welding technology in order to provide a welding solution with the modular SYNERBOT® welding package.

In the MIG-MAG process, the synergic-pulsed technology equipment is offered in 400 and 500 amperes, with the possibility of devices with or without cooling and in compact format and with an independent wire feeder.

All these options offer a programme package that allows their application in a wide spectrum of industrial welding processes with steels, galvanised steels, stainless steels and aluminium.

Special speed arcs, penetration arcs, root welds and low spatter welds with low heat transfer can be introduced in these machines.

In TIG process we have two power sources, 400 Ampere equipment for stainless steels (TIG DC), and another TIG AC/DC solution with 320 Ampere, which allows the welding of stainless steels and aluminium.

Both applications allow the installation of cold wire feeder synchronised with the power source.

The EDR torches incorporated in these units are specifically designed for collaborative robot welding solutions and are perfectly suited for their low weight and functionality.

Robust, lightweight necks are calibrated to maintain a stable TCP for the life of the torch, and the stainless steel structure gives excellent rigidity and prevents temperature rise in the rear areas of the neck, allowing it to be handled more easily.

TFT SCREEN - ADVANCED

MAIN MENU

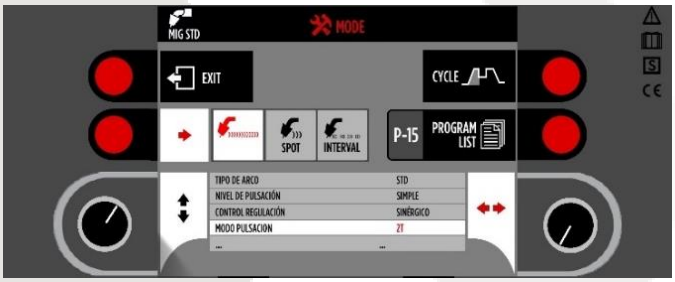
OPERATING MODE

SEVERAL LANGUAGES

STD – PULSE – SCA – MIXED ARCS

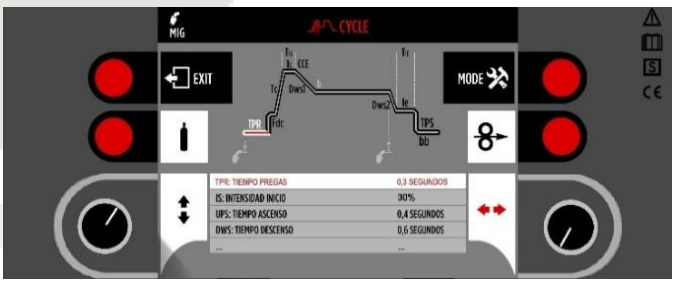
SIMPLE AND DOUBLE ARC

SYNERGIC AND MANUAL MODE



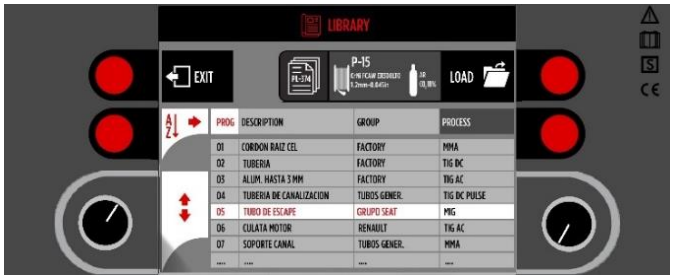
CYCLE PARAMETERS

INTUITIVE BY GRAPHICAL INTERFACE AND TEXT EXPLANATION.
FULL CONTROL OF PRIMING CYCLE AND CRATER FILL PARAMETERS.



PROGRAM LIBRARY

CONFIGURABLE FOR QUERYING, COPYING, PASTING, DIFFERENT CLASSIFICATIONS, ETC.



SYNERWELD SPECIAL WELDING ARCS

Modular pack for industrial application in robotic welding, with synergic pulsed MIG-MAG equipment.

All the proposed options offer a pack of welding programmes that allows its application in a wide spectrum of industrial welding processes with different base materials, such as:

- Carbon Steels
- Galvanised Steel
- Stainless Steel
- Aluminium

All our MIG-MAG equipment can be optimised by loading specific software in order to improve the quality and productivity of the robotisation process, using our SPECIAL ARCS from the SYNERWELD family.

This specific technology, developed exclusively for our SYNERBOT WELDING equipment, provides different working characteristics such as speed, penetration, root welds and low spatter welds with low heat transfer.

	**PACK_ARC SCA-COLD *(Special low heat input arc),* Ref.- 42370100** • Up to 35% reduction of heat input, less deformation due to heating. • Drop transfer without projections in the contact and opening process. • Increase in the speed of the process.
	**PACK_ ROOT ARC *(Perfect for penetration control),* Ref-42370095** • Root-arc welding with pipe application. • Increased arc stability and travel speed. (+55% vs TIG)
	**PACK_ARCO SPEED (Mayor velocidad de avance), Ref-42370050** • Increase in speed. Between 30% and 50%. • Welding speed up to 25mm/s depending on material, thickness and position.
	**PACK_POWER ARC *(Increasing penetration, maintaining quality)* Ref-42370060** • Incresed penetration in 47%. • Improved bead geometry, reduction of notches and risk of porosity. • Reduced welding time by decreasing oscillation or torch movement.
	**PACK_SPEED UP *(Special Vertical up, without oscillation)* Ref-42370055** • Vertical Up Welding. • Easier to execute, straight line welding without oscillation. • Reduced cord time by avoiding oscillation - 30%.
	**PACK_ARCO SPEED UP+ *(18% faster than SPEED UP alone),* Ref-42370057** • Vertical Up Welding. • Speed increase up to 18% over the SPEED UP arc. • Exclusive application on carbon steels.
	**PACK_CEILING ARC *(Easy welding in roof position)* Ref-42370065** • Easier to execute, straight line welding without oscillation. • Reduced welding time by avoiding oscillation.
	**PACK_EDITION ARC *(Customisation and full control, EXPERT MODE)* Ref-42370015** • Customisation and creation of new programmes. • Necessary training process for handling

INSTALLATION SETUPS TI-CB SERIES

SYNERBOT 4000 ADV CS – SB - MIG/MAG

Ref. R061130

- 400A synergic power supply with built-in wire feeder and gas-cooled torch.
- For MIG/MAG welding of carbon steel, stainless steel and aluminium.
- Allows the incorporation of special SynerWeld arcs.

SYNERBOT 4000 ADV CW – SB - MIG/MAG

Ref. R061230

- 400A synergic power source with built-in wire feeder and liquid-cooled torch.
- For MIG/MAG welding of carbon steel, stainless steel and aluminium.
- Allows the incorporation of special SynerWeld arcs.

SYNERBOT 4000 ADV DW – MIG/MAG

Ref. R061330

- 400A synergic power source with separate wire feeder and liquid-cooled torch.
- For MIG/MAG welding of carbon steel, stainless steel and aluminium.
- Allows the incorporation of special SynerWeld arcs.

SYNERBOT 5000 ADV DW – MIG/MAG

Ref. R061430

- 500A synergic power source with separate wire feeder and liquid-cooled torch.
- For MIG/MAG welding of carbon steel, stainless steel and aluminium.
- Allows the incorporation of special SynerWeld arcs.

SYNERBOT 4000 ADV DW – MIXTE - MIG/MAG-TIG DC

Ref. R061340

- MIXED synergic power source - 400A.
- MIG/MAG mode with dedicated wire feeder and liquid-cooled torch for welding carbon steel, stainless and aluminium.
- Allows incorporation of special SynerWeld arcs.
- DC TIG mode with dedicated wire feeder, high-frequency (HF) ignition and liquid-cooled torch for welding carbon steel and stainless steel.
- Incorporates standard DC TIG, Pulsed and Bi-pulse modes, which additionally includes TACK and M-TACK welding systems.

SYNERBOT 4000 ADV DW – TIG DC

Ref. R061345

- 400A synergic power source with separate wire feeder, high frequency (HF) ignition and liquid-cooled torch.
- For DC TIG welding of carbon and stainless steel.
- Incorporates standard DC TIG, Pulsed and Bi-pulse modes, which additionally includes TACK and M-TACK welding systems.

SYNERBOT 3200 GTS DW – TIG ACDC

Ref. R061540

- 320A power source for AC/DC - HF TIG welding.
- Can be completed with DTCW cold wire feeder.
- For AC/DC TIG welding of carbon steel, stainless steel and aluminium.
- Incorporates standard DC TIG, Pulse and Bi-pulse modes, which additionally includes TACK and M-TACK welding systems.
- Incorporates standard AC, Pulsed and Bi-pulse and mixed AC-DC TIG modes.

SYNERBOT WELDING COMPONENTS

SYNERBOT-GPS and GTS power sources

MIG MAG

- Compact air-cooled 400 A – 45%
- Compact water-cooled 400 A – 45%
- Modular separate wire feeder 400 A – 45%
- Modular separate wire feeder 500 A – 45%

MIG MAG and TIG DC

- Modular separate wire feeder 400 A – 45%

TIG DC

- Modular separate wire feeder 400 A – 45%

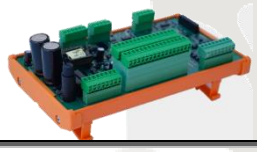
TIG AC/DC

- Modular separate wire feeder 320 A – 35%

Remote control

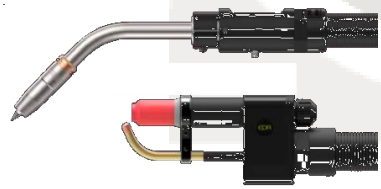
Universal control of main welding parameters

- Amps and Volts
- Plate thickness
- Arc and wire feed correction
- Gas and wire purges



Power source robotic interface

Model IR-50000, Wired Analogue-to-Digital Interface



Robotic torch EDR TORCHES

Specially designed equipment for COBOT systems

- 42G torch - 300 A. 100% CO2 and 250 A MIX
- 52W torch - 500 A. 100% CO2 and 400 A MIX
- T4W torch - 400 A. 100% TIG DC and 300 A 100% AC/DC

Torch cleaning station -EDR

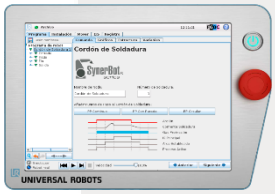
Equipment with TCP control point and three working functions in the cleaning process:

- Cutting
- Milling
- Anti-spattering

Robot unit - UNIVERSAL ROBOT

Robot range with models UR5 and UR10

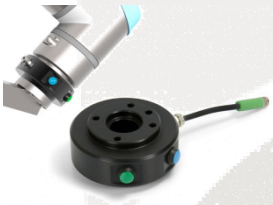
- CB3 Series
- E-Series



Console de programmation avec URCAP

Welding software developed by Gala Gar for the Universal Robots Software. Programming welding seams and welding points gets much easier.

Additional Programming Disc control option



Programming disc with URCAP

Control disc for UR collaborative robot wrist.

Its two pushbuttons with LED lighting allow the robot axes to be released and waypoints to be recorded in a comfortable and ergonomic way.

They can also be used as user program inputs.

Operating remote control and pedal

It includes the following functions:

- Start and Stop the programme
- Emergency button
- Reset of machine errors
- Welding simulation mode and release of machine parameters.
- Two additional buttons for free configuration.

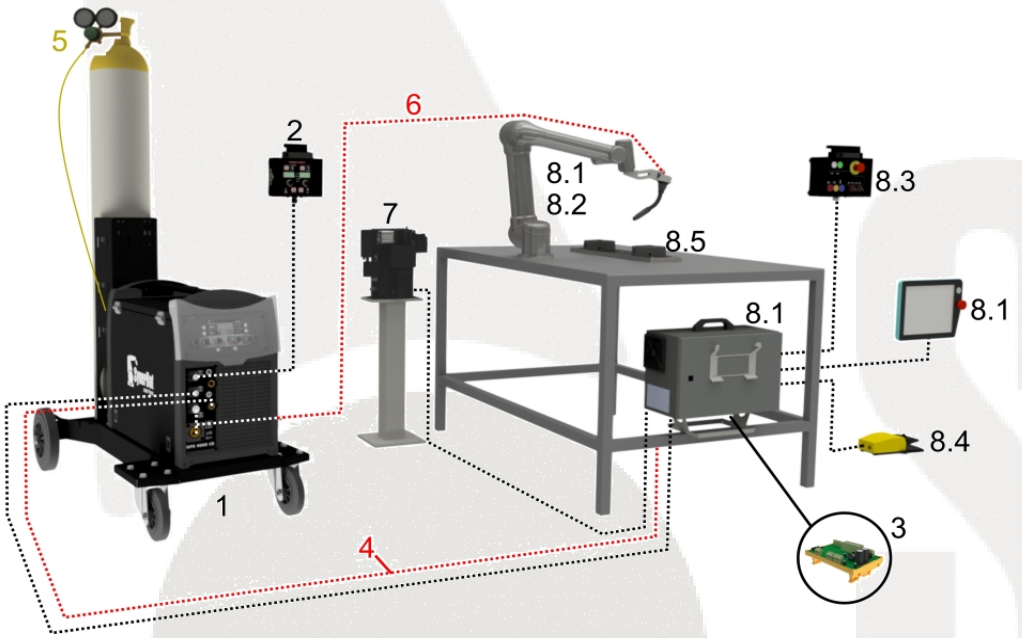
Cobot protective cover

Protection against incandescent spatter typical of welding or aggressive environments.

- Thermal Radiation Protection
- UVA Radiation Protection
- High temperature resistant

REF. R061310 - SYNERBOT 4000 CS - CB – MIG/MAG

COMPACT SET 400 A. DRY TORCH.



Steel/Stainless/Alu. (Wire 1.0 mm-1.2 mm)

1- SynerBot 4000 CS ADVANCED Compact Welding Package

- Compact 400 A Air-Cooled equipment with Pulse arc, Bi-Pulse and Bi-Level package.
- Pack of Synerweld welding arc programmes **(Optional)**.

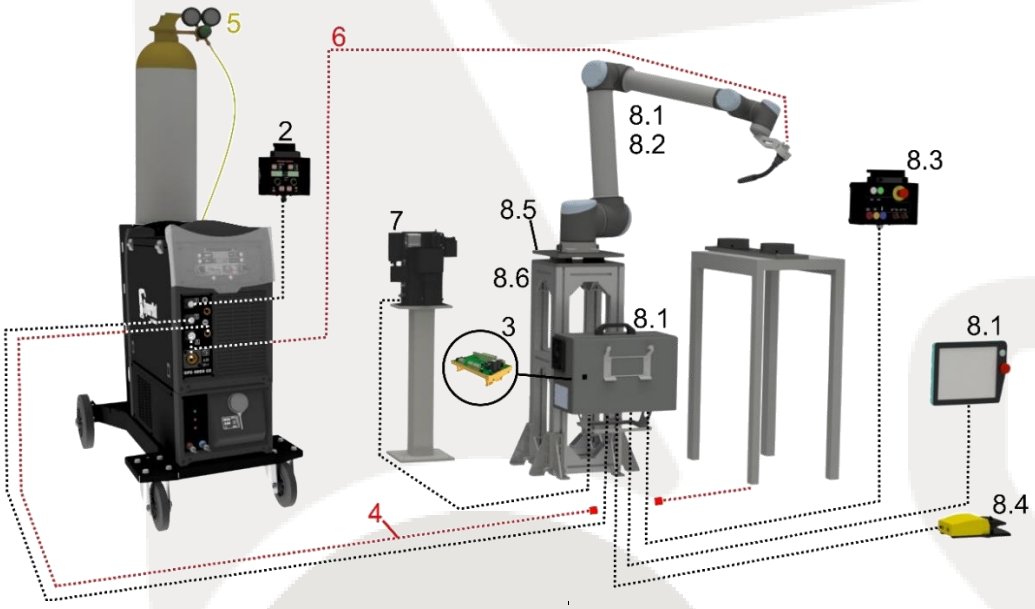
2.- Remote control of welding parameters **(Optional)**.
3- IR-5000 interface for Machine-Robot communication integrated in the robot computer.
4.- Wiring sets mass, machine-robot, etc.
5.- Economizer gas regulator.
6- Torch: EDR BASIC 42 G, Euro connection. Complete with flange and disc.
7- Cleaning station **(Optional)**. Pneumatic motor, 3 phases milling, cutting and antispatter spray.
8- Collaborative robot integration elements.

- URcap Welding technology.
- Controls, safety devices and release pedal.
- Protective cover **(Optional)**
- Robot support base **(Optional)**
- Base plate for clamping **(Optional)**

(*) Table and tools not included.

REF. R061230 - SYNERBOT 4000 CW - CB – MIG/MAG

MODULAR SET 400 A. COOLED TORCH.



Steel/Stainless/Alu. (Wire 1.0 mm-1.2 mm)

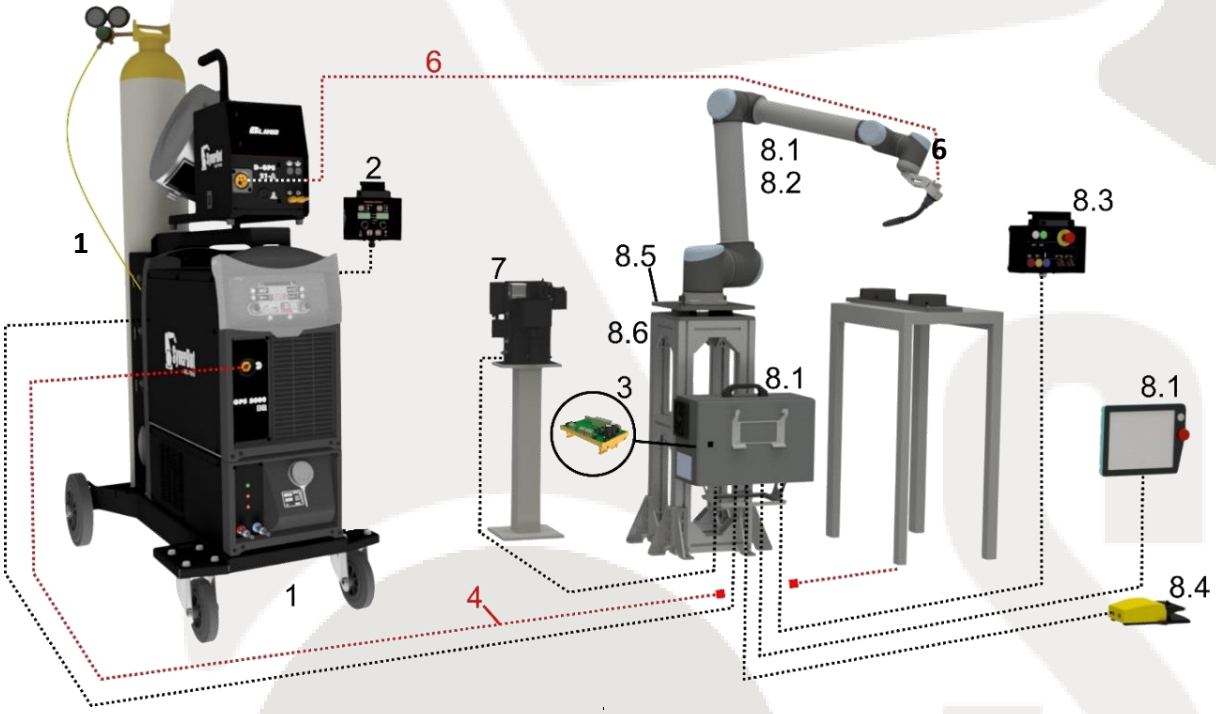
1- SynerBot 4000 CW ADVANCED Compact Welding Package
- Compact 400 A REFRIGERATED equipment with Pulse arc, Bi-Pulse and Bi-Level package.
- Pack of Synerweld welding arc programmes **(Optional).**

2.- Remote control of welding parameters **(Optional).**
3- IR-5000 interface for Machine-Robot communication integrated in the robot computer.
4.- Wiring sets mass, machine-robot, etc.
5.- Economizer gas regulator.
6- Torch: EDR BASIC 52 W with double cooling circuit, Euro connection. Complete with flange and disc.
7- Cleaning station **(Optional).** Pneumatic motor, 3 phases milling, cutting and antispatter spray.
8- Collaborative robot integration elements.
- URcap Welding technology.
- Controls, safety devices and release pedal.
- Protective cover **(Optional)**
- Robot support base **(Optional)**
- Base plate for clamping **(Optional)**

(*) Table and tools not included.

REF. R061330 - SYNERBOT 4000 DW - CB – MIG/MAG

MODULAR SET 400 A. COOLED TORCH.



Steel/Stainless/Alu. (Wire 1.0 mm-1.2 mm)

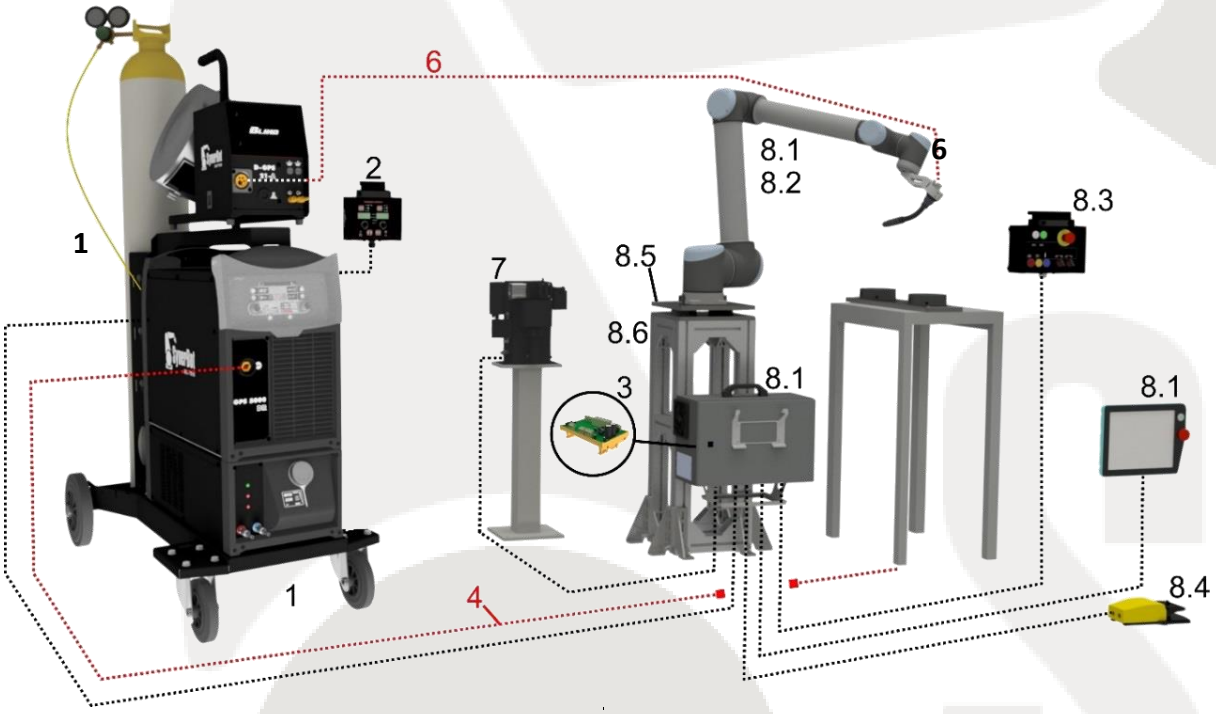
1- Modular welding pack with separate wire feeder SynerBot 4000 CW ADVANCED
- Modular 400 A REFRIGERATED equipment with Pulse arc, Bi-Pulse and Bi-Level package.
- Pack of Synerweld welding arc programmes **(Optional).**

2.- Remote control of welding parameters **(Optional).**
3- IR-5000 interface for Machine-Robot communication integrated in the robot computer.
4.- Wiring sets mass, machine-robot, etc.
5.- Gas economizer regulator.
6.- BLIND Rewinder with torch: EDR BASIC 52 W with double cooling circuit, Euro connection. Complete with flange and disc.
7- Cleaning station **(Optional)**. Pneumatic motor, 3 phases milling, cutting and antispatter spray.
8- Collaborative robot integration elements.
- URcap Welding technology.
- Controls, safety devices and release pedal.
- Protective cover **(Optional)**
- Robot support base **(Optional)**
- Base plate for clamping **(Optional)**

(*) Table and tools not included.

REF. R061430 - SYNERBOT 5000 DW - CB – MIG/MAG

MODULAR SET 500 A. COOLED TORCH.



Steel/Stainless/Alu. (Wire 1.0 mm-1.2 mm)

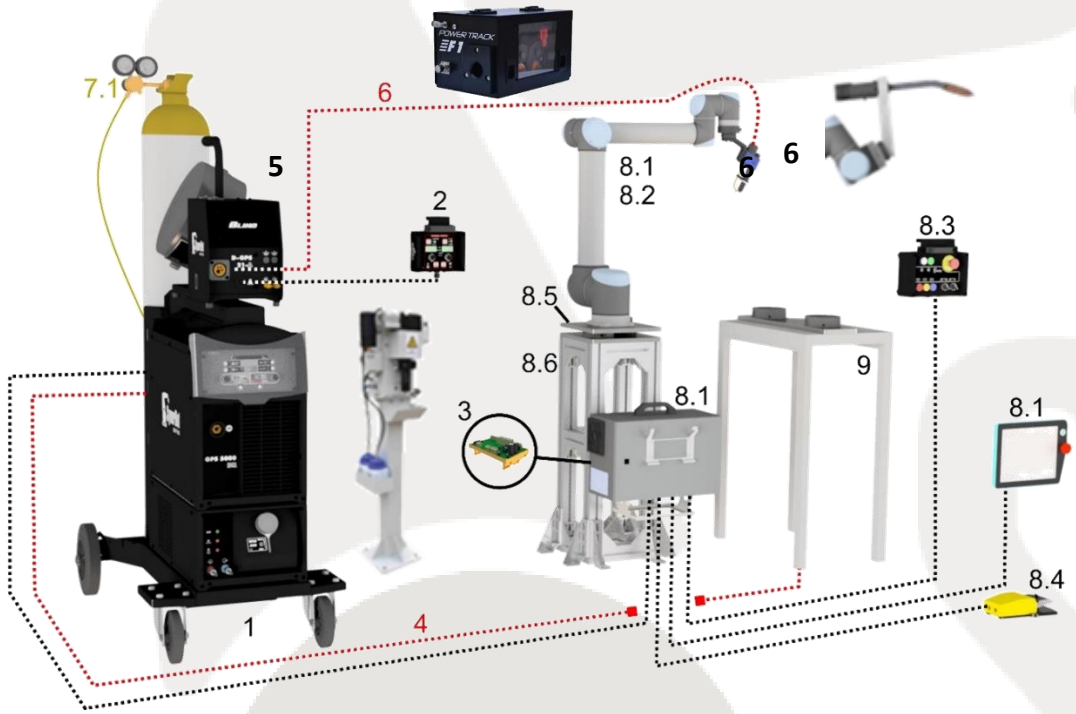
1.Modular welding pack with separate wire feeder SynerBot 5000 DW ADVANCED
- Modular 500 ampere A COOLED Modular equipment with Pulse arc, Bi-Pulse and Bi-Level package.
- Pack of Synerweld welding arc programmes **(Optional).**

2.- Remote control of welding parameters **(Optional).**
3- IR-5000 interface for Machine-Robot communication integrated in the robot computer.
4.- Wiring sets mass, machine-robot, etc.
5.- Gas economizer regulator.
6- BLIND wire feeder with torch: EDR BASIC 52 W with double cooling circuit, Euro connection. Complete with flange and disc.
7- Cleaning station **(Optional).** Pneumatic motor, 3 phases milling, cutting and antispatter spray.
8- Collaborative robot integration elements.
- URcap Welding technology.
- Controls, safety devices and release pedal.
- Protective cover **(Optional)**
- Robot support base **(Optional)**
- Base plate for clamping **(Optional)**

(*) Table and tools not included.

REF. R061340 - SYNERBOT 4000 DW - CB – MIGMAG +TIG DC

MODULAR SET 400 A. COOLED TORCH.



TIG DC TCW (Tig Cold wire/ Steel/ Stainless Steel 0,8-1.0 -1.2mm)

1- SynerBot 4000 DR-W power source.
- Modular equipment 400A. MIG-MAG and TIG DC Pulsed, Double Pulsed and TIG COLD WIRE.
- Cooling WCS 520. Coolant and transport trolley.

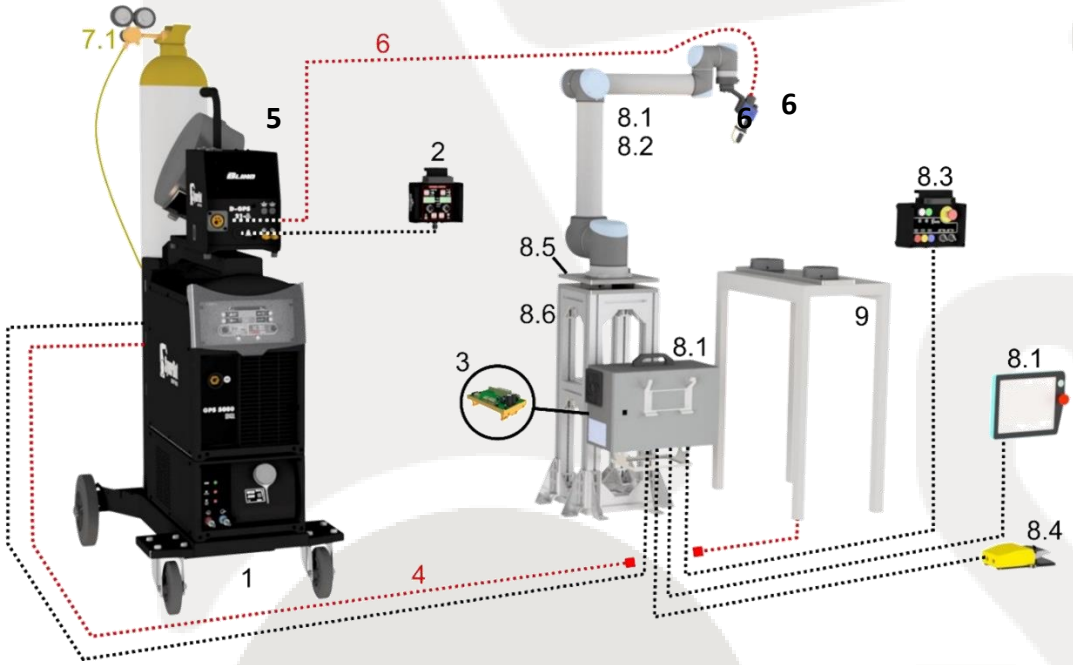
2.- Remote control of welding parameters **(Optional).**
3- Interface IR-5000 of communication Machine-Robot integrated in the robot computer.
4.- Wiring sets mass, machine-robot, etc.
5.- Cold wire feeder and MIG MAG wire feeder.
6- Torches: EDR BASIC 52W and T4W water-cooled. Euro connection. Complete with flange and disc.
7- Gas regulator

8- Collaborative robot with computer and programming console.
- URcap Welding technology.
- Protective cover for Robot **(Optional).**
- Operation controls, safety devices and release pedal.
- Robot support base **(Optional)**
- Base plate for clamping **(Optional)**
- Torch cleaning unit **(Optional MIG-MAG process).**

(*) Table and tools not included.

REF. R061380 - SYNERBOT 4000 DW - CB - TIG DC

MODULAR SET 400 A. COOLED TORCH.



TIG DC TCW (Tig Cold wire/ Steel/ Stainless Steel 0,8-1.0 -1.2mm)

1- SynerBot 4000 DR-W power supply.
- Modular equipment 400A. TIG DC Pulsed, Double Pulsed and TIG COLD WIRE.
- Cooling WCS 520. Coolant and transport trolley.

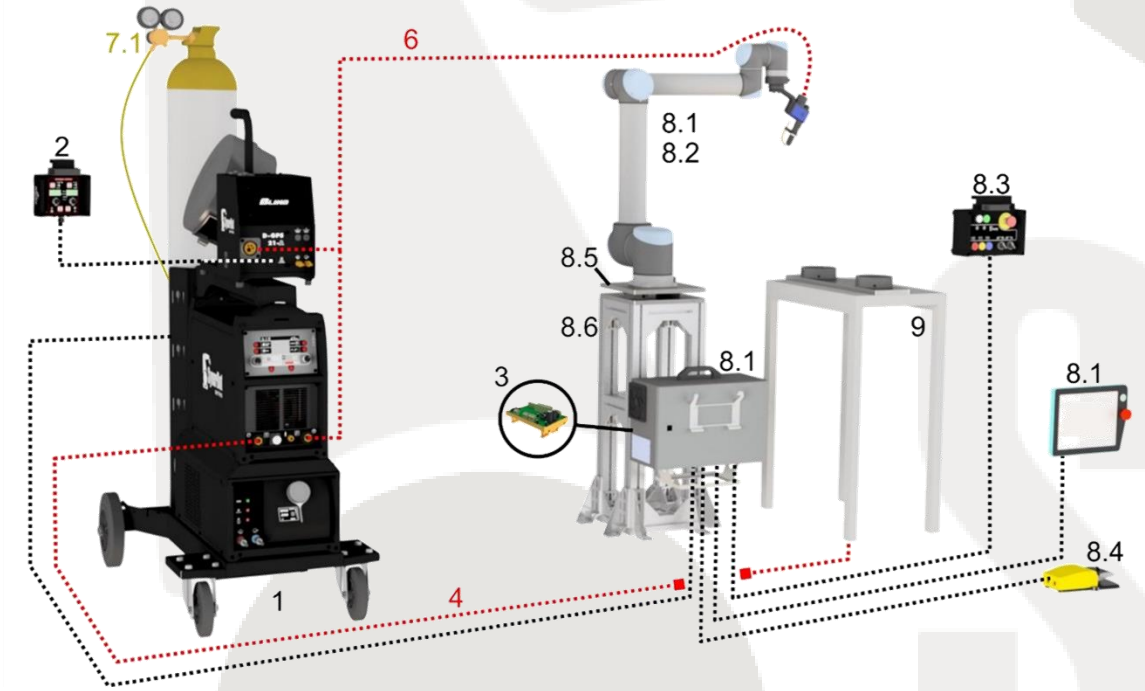
2.- Remote control of welding parameters **(Optional).**
3- IR-5000 interface for Machine-Robot communication integrated in the robot computer.
4.- Wiring sets mass, machine-robot, etc.
5.- Cold wire feeder.
6- Torch: EDR T4W water-cooled. Euro connection. Complete with flange and adapter disc.
7- Gas regulator.

8- Collaborative robot with computer and programming console.
- URcap Welding technology.
- Protective cover for Robot **(Optional).**
- Operation controls, safety devices and release pedal.
- Robot support base **(Optional)**
- Base plate for clamping **(Optional)**

(*) Table and tools not included.

REF. R061380TI - SYNERBOT 4000 DW - CB - TIG ACDC

MODULAR SET 320 A. COOLED TORCH



TCW Steel/ Stainless steel/Alu. (Wire 0,8 -1.0- 1.2 mm)

1- SynerBot GTS 3200 DR-W separate welding and wire feeding package with synergic library of predefined programs.

- Modular GTS 3200 equipment. TIG AC/DC Pulsed, Double Pulsed and Tig Cold Wire.
- WCS 520 cooling. Coolant and transport trolley.

2.- Remote control of welding parameters **(Optional).**
3- Interface IR-5000 of communication Machine-Robot integrated in the robot computer.
4.- Wiring sets mass, machine-robot, etc.
5.- Cold wire feeder.
6- Torch: EDR T4W water-cooled. Euro connection. Complete with flange and adapter disc.
7- Gas regulator.

8- Collaborative robot integration elements.

- URcap Welding technology.
- Protective cover for Robot **(Optional).**
- Operation controls, safety devices and release pedal.
- Robot support base **(Optional)**
- Base plate for clamping **(Optional)**

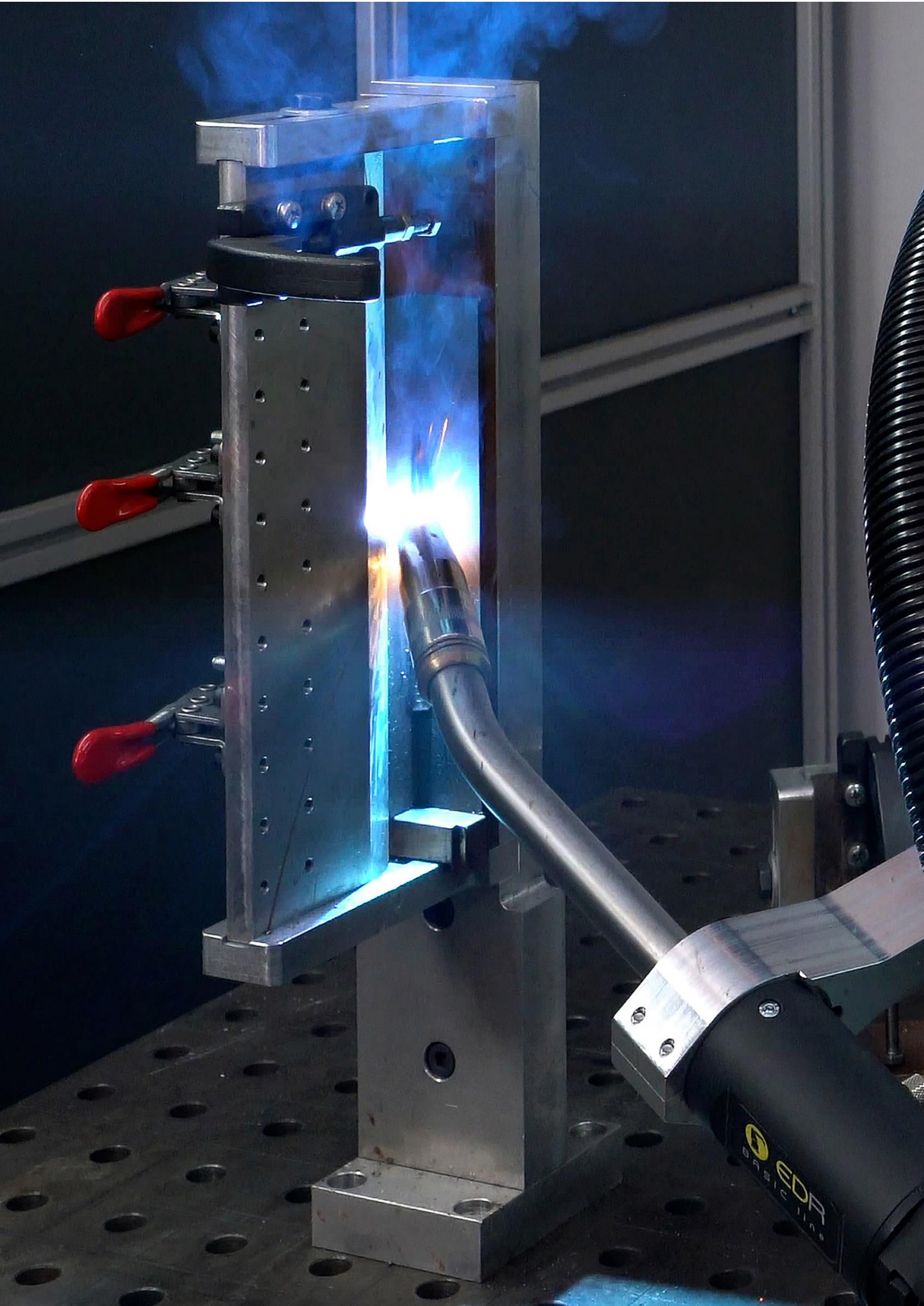
(*) Table and tools not included.

ADVANTAGES OF THE SYNERBOT ROBOTIC WELDING SOLUTION

Partners and our own staff aimed at an effective solution focused on the rapid industrialisation of the production process.

- **ENGINEERING**. Study and advice on installation, preliminary project, cost and investment data. Preliminary project for the installation of robotised welding equipment, study of optimised cycle times for continuous work.
- **SIMULATION**. Accessibility studies, torch movements, trajectories, cycle times, etc.
- **MANUFACTURING**. Mechanical engineering and access to the catalogue of products and services of Synerbot Partners, to increase the performance of the Robotic Cell by means of auxiliary elements, external axes, Linear Track, Gantries, possible Tooling, etc.
- **INTEGRATION**. Assembly and prior integration for validation and viability of the cell, at mechanical, electrical and electronic level of the robot, accessories and machinery.
- **TRAINING AND INITIAL PROGRAMMATION**. Training actions of machine welding engineering, robot, the optimisation of complete handling and cycle time management, providing autonomy to the personnel in charge of the robotised cell.
- **ASSEMBLY AND INSTALLATION**. Partners equipment and own personnel that can be moved to the place of implementation.
- **TRAINING**. Continuation of the training process at the customer's facilities to optimise cycle times, providing autonomy to the personnel who will handle the robotised cell in production - continuous training of personnel in processes, quality, productivity, etc.
- **PARAMETERISATION SERVICE**. Possibility of managing the programming of trajectories and welds, optimising production cycle times on your parts to be industrialised.
- **CYCLE TIME OPTIMISATION**. Cell cycle time study and debugging service for the continuous improvement of robotic cells.

WE KNOW WHAT WE TALK ABOUT AND WE TALK ABOUT WHAT WE KNOW


EDR
BASIC line

SynerBot® series

by gala gar®

Gala Gar, S.L. c/ Jaime Ferrán, 19 (Políg. Cogullada)
Tel.: (+34) 976 47 34 10 | 50014 ZARAGOZA
www.galagar-robotics.com