

# Automatic Welding Global Propos



Thanks to our wealth of experience, Air Liquide Welding is able to offer more than just a bundle of machinery. We offer a complete range of solutions to improve your performance. By providing the complete package, we can cover all your production-related problems

## Not just the hardware: the complete package

### 1 - Processes

Here at Air Liquide Welding, we offer you our knowledge of processes gained over many years of experience.

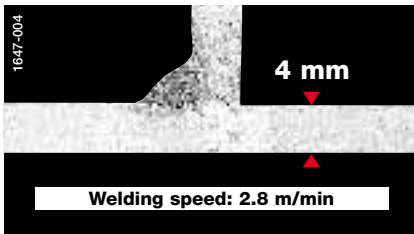
We offer "Process support" as an additional guarantee of long-term production line quality.

### 2 - Equipment

All our equipment is factory assembled and tested before delivery, thus ensuring total quality management. User-friendly commands allow operators to adapt to the equipment quickly. Robust designs, high-performance and equipment reliability guarantee non-stop production.

### 3 - Consumables

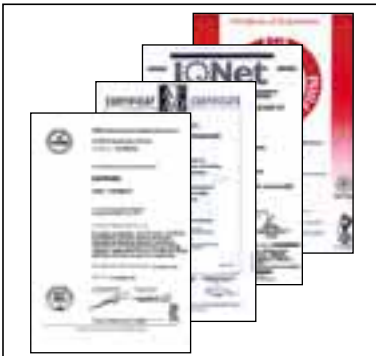
The mechanical strength of any weld depends strictly on the wire/flux or wire/gas combination. Air Liquide Welding provides you with the best combinations for optimal result.



and associated issues, whilst providing an effective solution that is also easy to operate. The global offer is based on five major areas above and beyond the simple provision of equipment. We also provide quality management solutions for any problems you may come across.

#### 4 - Quality standards

Just like us, one of your requirements is customer satisfaction. To ensure this, Air Liquide Welding is committed to satisfying ISO quality management standards. To improve your performance levels, we provide you with high quality products and equipment. All of our manufacturing units are ISO certified.



#### 5 - Service levels

- Process-related manufacturing support.
- Equipment-related maintenance and servicing support.

Our worldwide sales network provides a rapid response, whilst their proximity ensures short call-out times. We also provide commissioning and user training facilities so that you can make the most of your first-class production levels.

#### Related Services

Air Liquide Welding offer you a wide range of services to support production in order to ensure that your automated welding equipment meets your future requirements.

#### Feasibility studies and testing

Air Liquide Welding can provide you with specialist engineers and equipment resources.

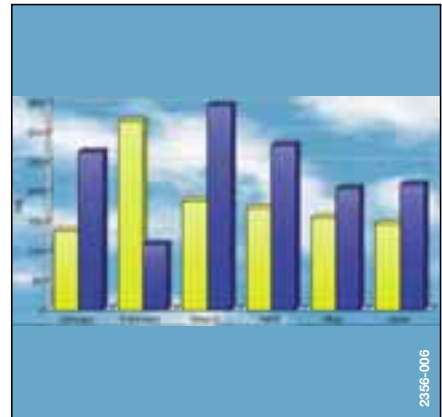
We can work out your machinery requirements together if you need to find the best welding process for a given application, build a prototype or pre-production model or specify a weld type.

#### Support

By means of our range of services, Air Liquide Welding is able to work with you to support production.

For instance, our solutions:

- **provide you with** on-site support during the equipment's production launch phase,
- **allow you to certify** your welding process (WPS, PQR, weld parameters and physical requirements),
- **allow you to optimise** your productivity (raising weld speeds and improving quality standards),
- **allow you to train** your welders, operators and maintenance staff in the use of the equipment,
- **allow you to contract** out maintenance tasks.



2356-006

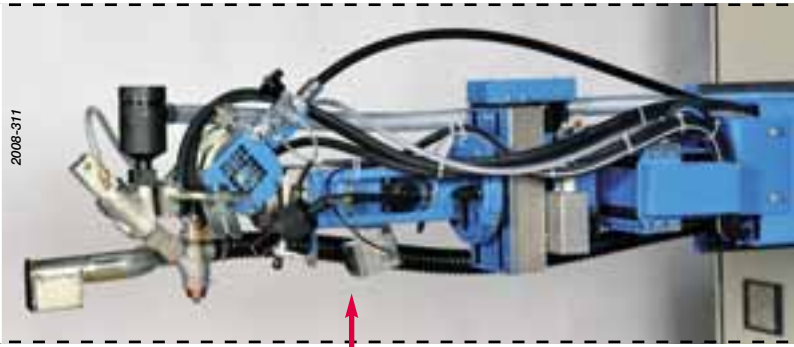


2356-005



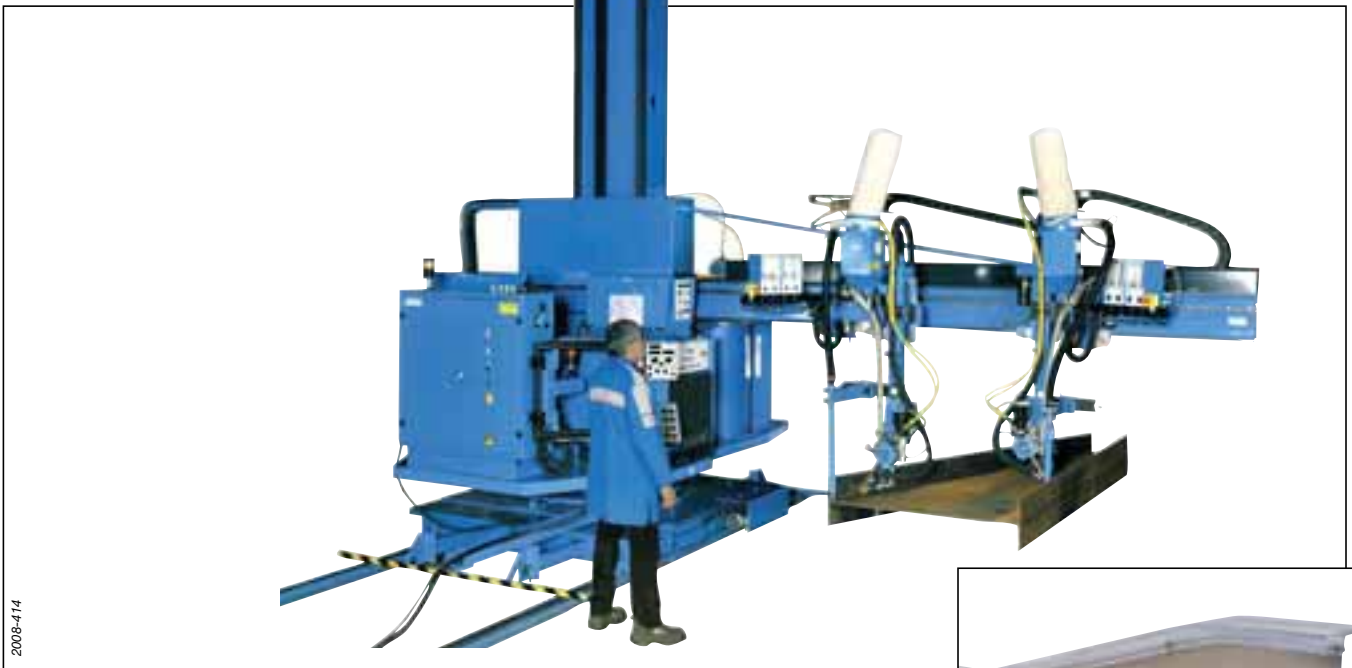
2356-002

# ALW submerged arc solutions



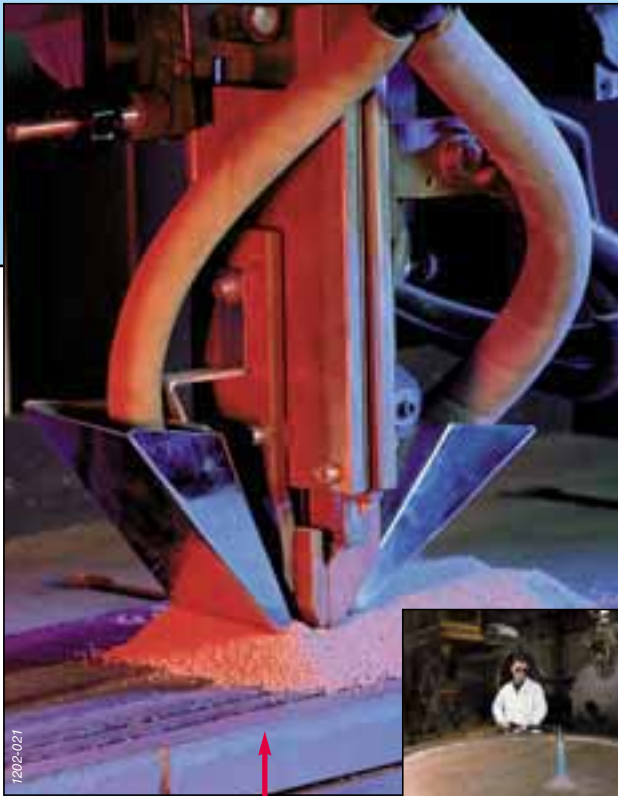
Internal and external welding for circular and longitudinal parts

Internal butt welding applications



PRS System for restructured beams.





1202-021

Strip cladding



0105-022



2008-465



2008-455

LPG bottles



3100-003



2008-466

Heavy duty  
(up to 70 mm wall thickness)



2008-457



2008-458

Single and tandem narrow gap  
up to 250 mm wall thickness



2366-068

# SUBARC standard welding heads

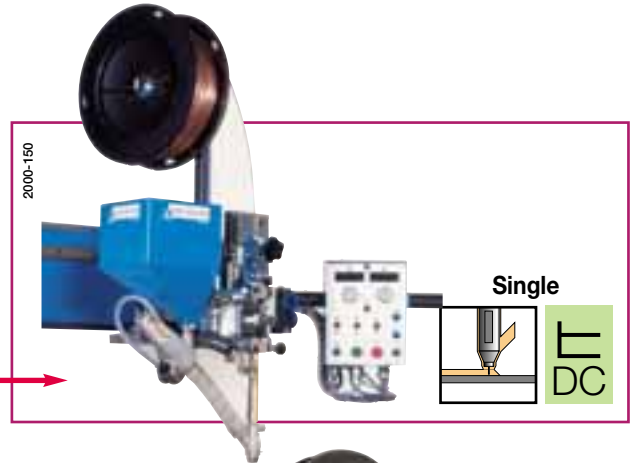


Welding and hard surfacing of low-alloyed carbon steel, stainless steel or refractory steel. Thickness of 1.8 up to 16 mm butt joint welding. Thicknesses greater than 16 mm require special preparation and weld head.

**Welding heads: a complete range of high-performance equipment using microprocessor technology to combine performance, flexibility of use and guaranteed high reliability in welding cycle management.**

## With SUBARC 2:

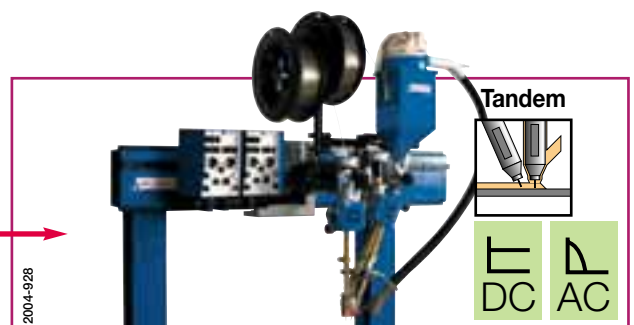
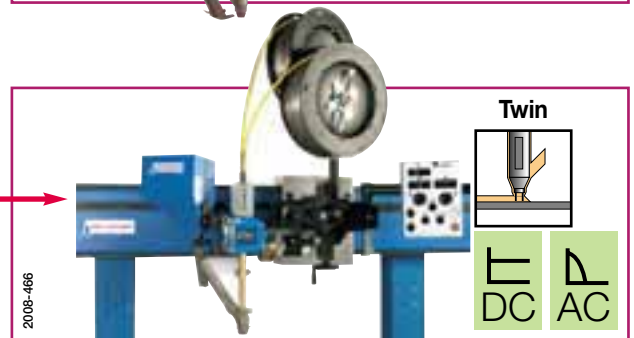
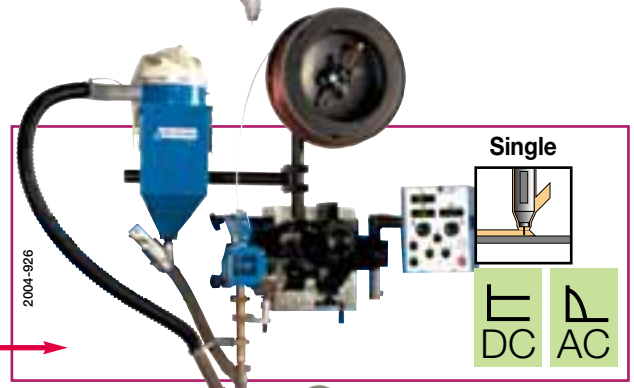
The SUBARC 2 installation is designed to allow quick and economic integration of direct current MIG and submerged arc welding depending of the horizontal power source characteristics. Direct current DC single.



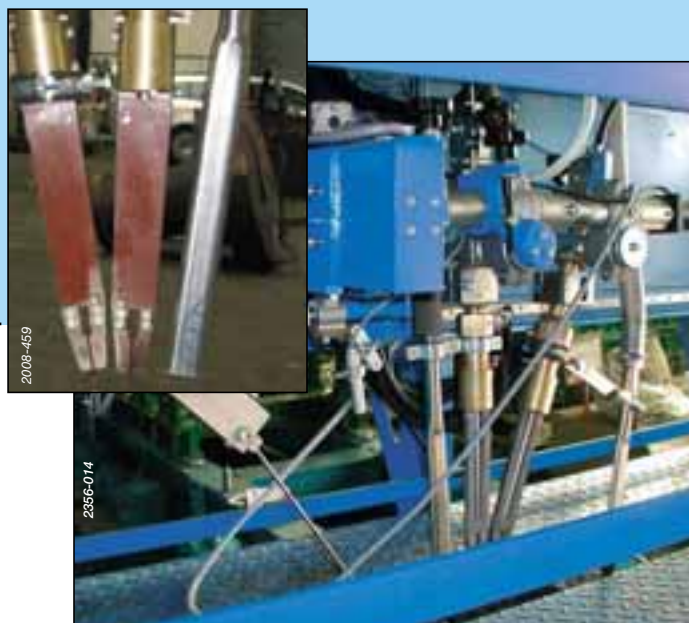
## With SUBARC 5:

For the most demanding applications, SUBARC 5 is a compact welding and hard surfacing installation. It allows accurate pre-setting and pre-selection of the actual welding current and voltage parameters for excellent arc striking every time. SUBARC 5 carries out:

- submerged arc welding:
  - direct current: flat or drooping power source characteristics.
  - alternating current: drooping power source characteristic.
- MIG/MAG (spray-arc transfer).
- Single, twin and tandem options with flux recycling system.



# Submerged Arc special welding heads



## Single or tandem narrow-gap torch.

**Cat. no.: on request**

- Narrow-gap torch/holding device up to 250 mm wall thicknesses.
- Changeable head (standard heads up to 180 mm available).
- Thermal and nuclear applications.
- Self-centring head on floating bearing.
- Ceramic coating.



## Single or twin heavy duty torch.

- Big thicknesses up to 70 mm.
- Kit to retrofit on SUBARC installations.
- Adjustable nozzle.
- 2.4-3.0-5.0-6.0 mm single wire diameter.
- 2 x 1.6-2 x 2.0 mm twin wire diameter.



## Strip cladding weld head.

- 1 - Process used to deposit a fine layer of a material that is generally costly and has highly specific properties (corrosion resistance, high hardness, etc) onto a non-alloyed or low-alloy base material of relatively low cost.
- 2 - Manufacturing of large components (heat exchangers, Chemical storage tanks, etc...) for use in a difficult environment at lower cost than replacing them (cladding continuous casting rollers).
- 3 - Strip cladding, using an agglomerated flux, leads to very high productivity.
- 4 - Fully automated and wide strip is used which reduces the number of weld passes.
- 5 - The ability to use strips with widths in the range 30-80 mm and 0.5 mm thick.



# MIG/MAG and submerged arc tractors

The submerged arc and MIG MAG processes are used for automatic and semiautomatic welding of large work pieces. These self-propelled tractors carry the welding equipments and offer practical, efficient and not expensive solutions

**NEW**

## MIG-MAG tractor



2049-008

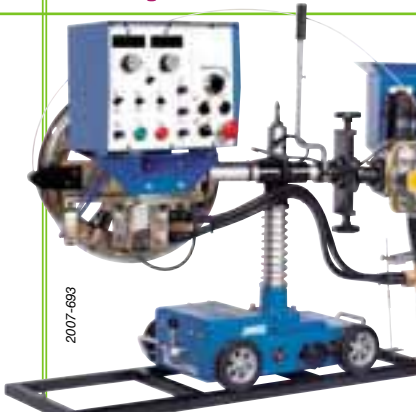
### WELDYCAR NV

Autonomous carriage with rechargeable battery. MIG/MAG welding with manual equipment. All positions (permanent magnet). Exists in three models:

- WELDYCAR NV: speed 5 to 70 cm/min
- WELDYCAR S NV: speed 15 to 140 cm/min
- WELDYCAR SP NV: speed 15 to 140 cm/min with programming (continuous welding or not).

**In option:**  
**pendular oscillation unit**

## Submerged arc tractors



2007-693

### MEGATRAC 5

- Modular carriage which can be adapted to numerous applications.
- Flat and angle assembly of plates in all grades.
- Wire feeding speed 0.2 up to 2.2 m/min.
- Adjustable height of cross beam = 100 mm.
- Adjustable range of tractor head = 100 x 100 x 70 mm. (vertically, horizontally, forward and backward).
- Rotatable angle of cross beam = 90°.
- Flux container volume = 6 l.
- Wire spool capacity = 25 kg.
- Wire diameters = 3.2 - 4.0 - 5.0 mm
- Simultaneous drive of front and rear wheels.
- SUBARC 2 + MECACYCLE S control box.
- Laser spot included.
- Flux recycling system option.



2008-337

### MEGATRAC 6 SUBARC 3C

- Modular S.A. carriage which can be adapted to numerous applications.
- Flat and angle assembly of plates in all grades and thicknesses.
- Wheels diameter: 150 mm.



<b>Applications</b>	Angle, butt and vertical welding with guidance by crabbing arm.	Flat and angle welding assembly of plate in all grades and with medium thicknesses. Site and shop work.	Flat and angle assembly of plate in all grades and thicknesses. Site and shop work.
---------------------	---	---	---

Outline specifications			
<b>Welding process</b>	MIG / MAG	SUBMERGED ARC	SUBMERGED ARC
<b>Speed</b>	15 to 140 or 5 to 70 cm/min	0.2 to 2.2 m/min.	0.1 to 2 m/min.
<b>Dimensions (l x h x w)</b>	250 x 300 x 260 mm	1 020 x 480 x 740 mm	1 000 x 900 x 650 mm
<b>Net weight</b>	10 kg (12 for the SP)	54 kg	100 kg
<b>Cat. no.</b>	NV: W 000 315 589 S NV: W 000 315 588 SP NV: W 000 315 587	W 000 315 720	Single-wire: W 000 315 718 Twin-wire: W 000 315 719
<b>Oscillation unit</b>	W 000 315 474	-	-

# STARMATIC power sources



3670-003



2006-780



2006-781



2000-357

- Rugged, reliable, suitable for aggressive industrial surroundings.
- Fan-cooled, fitted with thermal cut-out, easy to move using crane or forklift.
- Quick connection to the core of the installation by simple and accessible connectors.
- Remote control system.
- Function type:
  - 1 - SAW direct current (DC).
  - 2 - SAW alternative current (AC).
  - 3 - SAW gouging arc.



	STARMATIC 650 DC	STARMATIC 1003 DC	STARMATIC 1303 DC	STARMATIC 1003 AC/DC	
Designation					
Cat. no.	W 000 315 877	W 000 315 019	W 000 315 021	W 000 315 677	
Duty cycle at 100%	650 A - 44 V	1 000 A - 44 V	1 300 A - 44 V	1 000 A - 44 V	
Welding range	1	2	2	1 AC - 1 DC	
Primary power supply	240/400-440 V 50/60 Hz* three-phase	400-440 V 50/60 Hz* three-phase	400-440 V 50/60 Hz* three-phase	380/400/415 V 50/60 Hz* three-phase	
Technology	Thyristors	Thyristors	Thyristors	Thyristors	
Primary current at 100% duty cycle	72 A	95 A	143 A	137 A	
Power at 100% duty cycle	34.5 kVA	65.8 kVA	99 kVA	64.6 kVA	
External-static characteristics				AC	DC
- flat	■	■	■	■	■
- drooping	■	■	■	■	■
Protection	IP 21	IP 23	IP 23	IP 21	
Insulation	H	H	H	H	
Cooling	AF	AF	AF	AF	
Net weight	247 kg	394 kg	483 kg	540 kg	

\* For other primary power supply three-phase, consult Air Liquide Welding.



1266-000

**For Arc Gouging applic.:**  
Amphenol 14 pins plug  
**Cat. no.: W 000 315 878**



2006-780

**For 230V Version:**  
ST. 1003 DC-230/400/440V  
**Cat. no.: W 000 315 020**

# Submerged arc flux installations

Our big range of complements and accessories for Submerged arc welding installations like the different options to centralized the flux recovery or the different possibilities to guide the joints, are doing our Submerged arc global solutions the most advanced and competitive one in the actual local and international markets.



2356-037

## Flux supply system

The welding flux supply system is designed to provide the flux required during the welding process, if the environment does not allow for a standard flux tank.

Version for installation with recovery:

- a pressurised tank assembly
- a 10-litre buffer tank with recovery above the torch.
- a set of pneumatic and air-flux connections for distributing flux and pressurising the main tank

**Cat. no.: W 000 315 691**

Version for installation without recovery:

- a pressurised tank assembly
- a small buffer tank
- a set of pneumatic and air-flux connections for distributing flux and pressurising the main tank.

**Cat. no.: W 000 315 690**



2356-032

## Low level detector

The option contains a level detector and a luminous signal. It requires a 24V 50 Hz power supply.

**Cat. no.: W 000 315 689**

## Flux recovery system

**Cat. no.: W 000 315 097**

Flux suction system designed to efficiently reduce the manual operations for filling the flux supply tank, with a Venturi device with a 5 to 7 bar compressed air supply. System supplied with a 2 m suction pipe and a flat suction sensor.

## Standard flux recovery system

**Cat. no.: W 000 315 097**



2356-030



2356-029

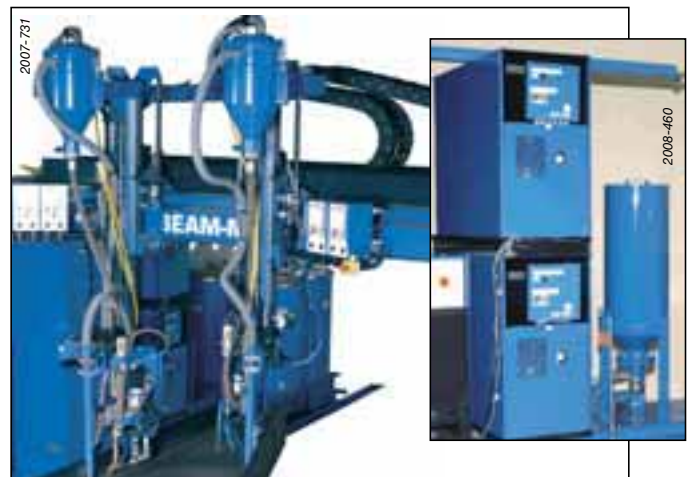
**Angle suction device**  
**Cat. no.:**  
**W 000 315 879**



2356-033

**Air supply for SUBARC 5**  
**Cat. no.:**  
**W 000 315 066**

## Centralized flux recovery system



2007-731

2008-460

# Submerged arc guide systems

- Submerged arc video system
- Sensortrack system
- Submerged arc spot laser



## S.A. video system kit (viso pro monitor + VP2)

**NEW**

- Video Kit to follow submerged arc welding joints.
- A spotlight provided with the kit, gives illumination over viewed area, indispensable for welding inside a tube for example.
- The video kit is associated with a colour LCD industrial screen 15 inches, high definition with a protection box.

**Cat. no.: W 000 315 880**

**Screen video Cat. no.: W 000 315 704**

**Camera video Cat. no.: W 000 315**



**Commercial  
documentation:  
W 000 268 282**



## Sensortrack system

The proportional probe is a positioning tool used to follow up joints. It is mounted on a (submerged arc) or MIG welding head. Probing is mono-directional when the finger is connected to one unit and becomes bi-directional with two units.



## S.A. spot laser

**Cat. no.: W 000 315 883**

The function of the laser spot guiding system is to mark out the location of the wire point of impact in relation to the joint to be welded, as the joint is hidden by the flux during submerged arc welding. The spot projects an illuminated point in front of the electrode wire for guiding.

The support is designed to be fitted on the wire feeds of the automatic welding heads. The spot is fixed on a ball that makes it possible to direct the assembly quickly and easily.

The combination of two spots and the use of the supplied fasteners also make it possible to monitor the distance between the nozzle and the workpiece. Constant height can be maintained by adding an electrical slide fitted on the welding head.





**NEW**

Designed by Air Liquide Welding, the 3A welding system is a major innovation in automatic welding. Based on digital technology, the 3A welding system modular concept gives modern industry the quality, the productivity and the flexibility essential to remain competitive.

# 3A WELDING SYSTEM®

Advanced Automatic Architecture

## Advanced mobile console

- Centralized console
- Mobile plug & play system
- User friendly-interface

## Automatic machine management

- Process management
- Machine cycle control
- Integrated peripherals

## Architecture based on new concept

- Modular and flexible solutions
- Full digital control
- Ready for networking and communication

**Mobile console:** browsing on the screens with a graphic representation of the machine.



The plug & play Mobile Console gives the operator complete mobility and permits the management of both machine and process. This new generation user-friendly interface is easy to use and operators are rapidly able to program the machine efficiently. The multipurpose 3A welding system concept is designed for all arc welding processes, and the equipment remains upgradable with the open architecture.

**3A welding system is particularly suited to the Submerged Arc Welding industrial applications.**

Single wire and twin arc applications



Single and tandem wire for vessel welding



Hard-surfacing of mill rolls with strip cladding



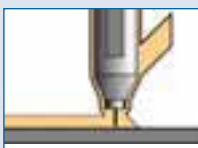
Single-wire welding for shipbuilding



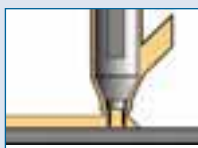
Single wire for structural welding

With the **3A welding system**, Air Liquide Welding brings its customers all the benefits of its expertise in automatic welding. Submerged Arc Welding process is proposed on column and boom configurations, on seamer solutions, on mechanized machines and on autonomous tractors.

**SAW heads configurations for 3A welding system**



**Single wire**  
1 300 A\* 100% DC



**Twin arc**  
1 300 A\* 100% DC



**Tandem arcs**  
1 300 A\* 100% DC  
1 000 A 100% AC



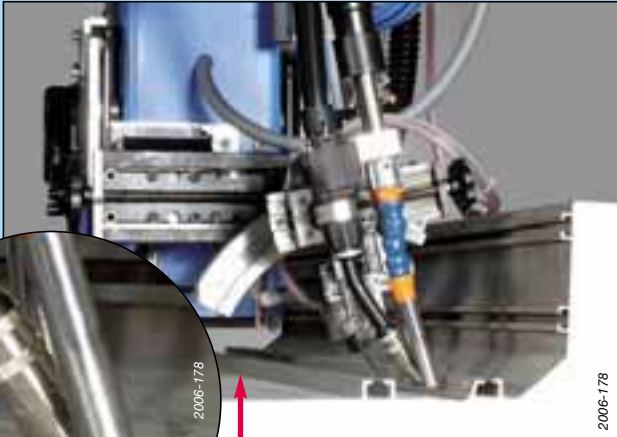
**Strip cladding**  
1 300 A\* 100% DC

A complete range of STARMATIC power sources supplies the DC or AC current for the various SAW applications.



\* Maximum current with single power source, possibility to connect power sources in parallel

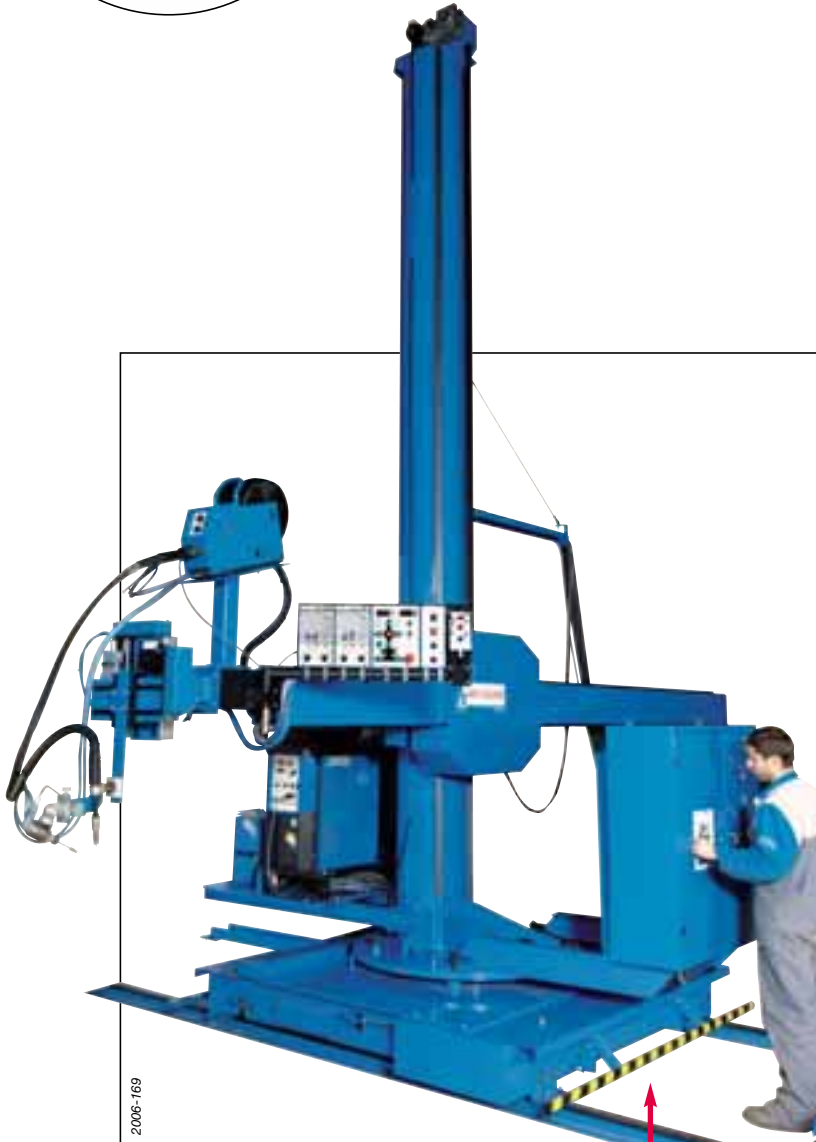
# ALW MIG-MAG solutions



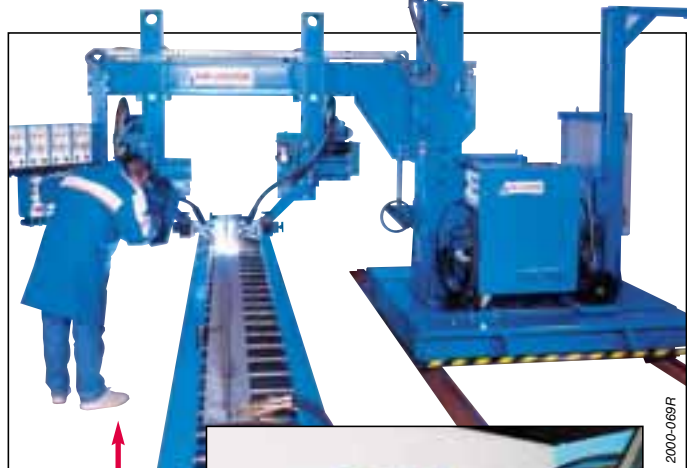
Longitudinal Aluminium welds for automotive and railway industries.



Fire extinguishers and LPG Gas Bottles.



Circular welding for standard and special vessels



MIG PRS



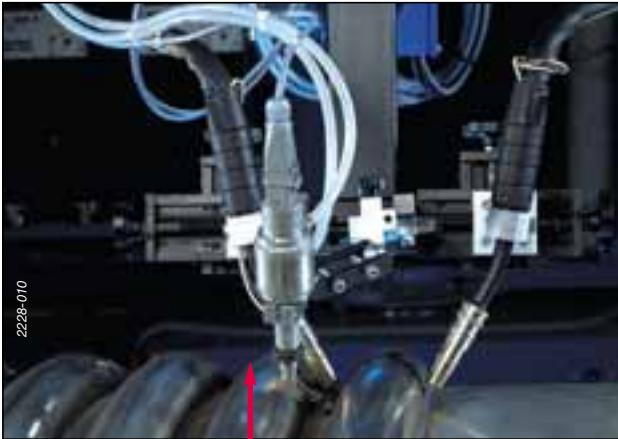


2003-173

Stiffeners welding installations



1311-018



2228-010

Helicoidal welding



MANATEC EX 22

2008-461

Longitudinal welding

TOPMAG circular welding



2001-330

# DIGI@WAVE and DIGI@PULS solut

Provided with the latest digital technology, the DIGI@WAVE and DIGI@PULS power sources offer new welding methods that respond perfectly to the technical developments taking place in industry. These innovative processes guarantee the quality and productivity levels demanded by modern welding applications.

## Short Arc

The Short Arc has a low spatter rate with good wetting and is suited to welding thin steel plate, working in position and penetration passes. This regime is characterized by alternating short circuits and light arc.

## Speed Short Arc™ (SSA™)

The Speed Short Arc allows a high travel speed due to a rigid arc and a cold regime. It is very effective for welding thin steel plates, working in position and in closed angle and filling bevels. The SSA™ is used for short circuit welding though the normal globular regime travel speed domain.

**NEW**

### SSA™ advantages

- Increase in travel speed
- Reduced distortion (thin steel sheets)
- Suited to welding in position
- Tolerance and usability

### Main applications of SSA™:

Earth Moving Plant



Infrastructure



Agricultural machines, Trailers



## Pulsed

The pulsed system is recommended for welding stainless steel and aluminium. It guarantees the mechanical characteristics of the joint and limits spatter. The pulsed regime is a waveform which forces the drops of metal to become detached, the hot period projects the drop and the cold period allows the weld pool to cool.

## Soft Silence Pulse™ (SSP™)\*

The Soft Silence Pulse is a quieter pulsed mode mainly intended for stainless steel welding applications. The SSP™ produces a softer but very stable arc with good wetting of the weld bead. This waveform significantly reduces spatter and gives a very fine appearance to the weld bead.

**NEW**

### SSP™ advantages

- Reduction of noise
- Good wetting of the weld bead
- Reduction of spatter
- Good weld bead appearance

### Main applications of SSP™:

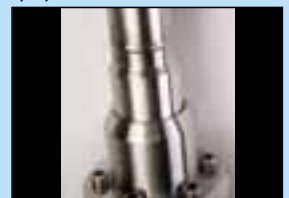
Tanks, containers



Boiler making



Foodstuff and chemical equipment





## Cold Double Pulse™ (CDP™)




Cold Double Pulse produces very high quality welds on thin material while avoiding distortion. CDP™ gives a TIG appearance to the weld and is very effective on very thin aluminium or stainless steel sheet (< 2mm). The operating technique is made easier due to good control of the weld pool even on badly-prepared sheets. This sequencer mode automatically chains hot arc and cold arc regimes together.

**CDP™ advantages**

- Effective on thin sheets
- Reduces distortion
- Easy operating technique
- TIG appearance weld bead

NEW

**Main applications of CDP™:**

<p>Naval</p> 	<p>Rail</p> 
<p>Fine metalwork</p> 	


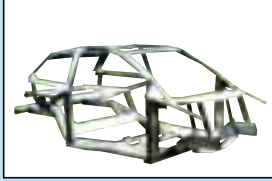


## MIG Brazing

MIG Brazing is extremely effective on thin sheets and accepts large joint tolerances. This process is widely used in the automobile industry as it gives good mechanical characteristics and conserves the coating of galvanized sheets. It is an advantageous replacement for flame brazing processes with the productivity of semi-automatic welding.

**MIG Brazing advantages**

- Effective on thin coated sheets
- Reduces distortion
- Large joint tolerance
- Good mechanical characteristics

**Main applications of MB:**

<p>Automobile, heavy vehicles</p>	
	
<p>Metal furniture.</p> 	<p>Air conditioning</p> 




## Spray-MODAL™ (SM™)\*

Spray-MODAL™ is a process that strongly reduces micro porosity and increases penetration. It can be used in all positions and is particularly effective on aluminium sheets greater than 3 mm. Spray-MODAL™ uses a low-frequency modulated current which has the effect of removing most hydrogen bubbles from the weld pool before solidification.

**Spray-MODAL™ advantages**

- Reduces porosity
- Increases penetration
- All-position welding
- Higher travel speed

**Main applications of SM™:**

<p>Naval</p> 	<p>Rail</p> 
<p>Boiler making</p> 	

# MIG-MAG power sources

DIGI@WAVE and DIGI@PULS machines are designed to perfectly answer most demanding automatic applications.

The three different automatic levels A1, A2 and A3 allow the machine to communicate with a simple or more sophisticated machine equipped with controlled network.

## DIGI@PULS 320 and CITOPULS 320

Separate air / water cooling



## DIGI@PULS 420 and CITOPULS 420

Separate water cooling



## DIGI@PULS and CITOPULS range DIGI@PULS and CITOPULS A1 with auto machine

- User-friendly and quick setting
- Main transfer modes
- Torch with potentiometers
- 10 programs with remote control
- A1 auto (standard)
- Innovative and modern design
- Powerfull new inverter
- Full digital regulation
- New transfer modes
- High quality manufacturing
- Hot plug and play remote control
- Duty cycle at 40 °C at 100%:
  - DIGI@PULS/CITOPULS 320 = 320 A
  - DIGI@PULS/CITOPULS 420 = 420 A

### Advantages:

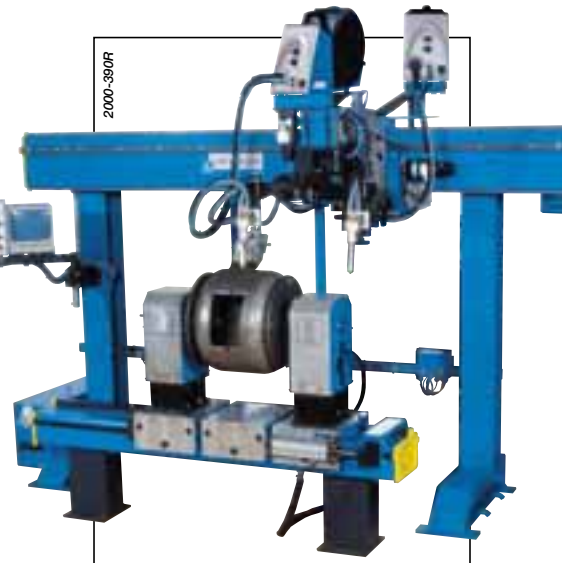
- Standard manual generator
- Simple and no option interfacing
- Controlled or manual modes

### Working modes:

- Manual setting on wire feeder
- Control of welding parameters

### Installation:

- DIGI@PULS power source
- DV 400 CDR wire feeder **A**
- Auto torch
- Harness



### Front panels



## DIGI@WAVE 400 and CITOWAVE 400

Separate, water cooling



2006-135

2006-113

## DIGI@WAVE 500 and CITOWAVE 500

Separate, water cooling



2006-135F

2006-113F

## DIGI@WAVE and CITOWAVE range DIGI@WAVE and CITOWAVE A2 with auto machine

- Graphic screen with help key
- All transfer modes
- Level welding mode
- Torch with display
- 100 programs
- Saving on USB key
- A2 -A3 auto (options)
- Innovative and modern design
- Powerfull new inverter
- Full digital regulation
- High quality manufacturing
- Hot plug and play remote control
- Duty cycle at 40 °C at 100%:
  - DIGI@WAVE/CITOWAVE 420 = 350 A
  - DIGI@WAVE/CITOWAVE 500 = 440 A

### Advantages:

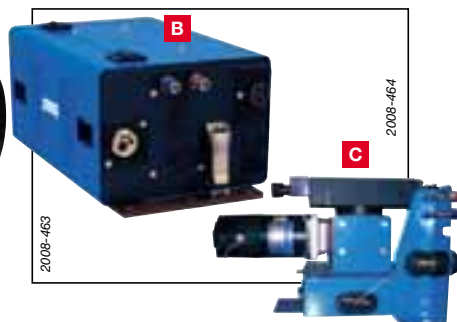
- Options easily connectable
- 100 programs available
- Controlled or programs modes

### Working modes:

- Control of welding parameters
- Calling on programs
- Chaining of programs

### Installation:

- DIGI@WAVE power source
- DVR 500 **B** or DVR 600HD **C** auto wire feeders
- Auto torch
- Harness
- Auto-Card



2008-463

2008-464



1311-018



2000-068

### Front panels

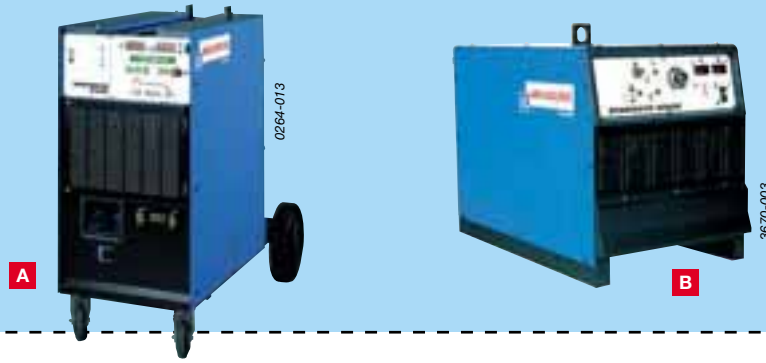


2006-112



2006-134

# MIG-MAG power sources and torches



## STARMATIC range

### STARMATIC R and A 450\*

Power source using transistor chopper technology for welding steel and light alloys.

- Synergic - Pulsed
- Built-in Hot-Start
- 50 storable programs
- Crater filler
- Burn back
- Display of welding parameters
- Monitoring of welding parameters
- Loading/unloading of welding parameters to/from PC.

### STARMATIC 650 DC

It has a full use range:

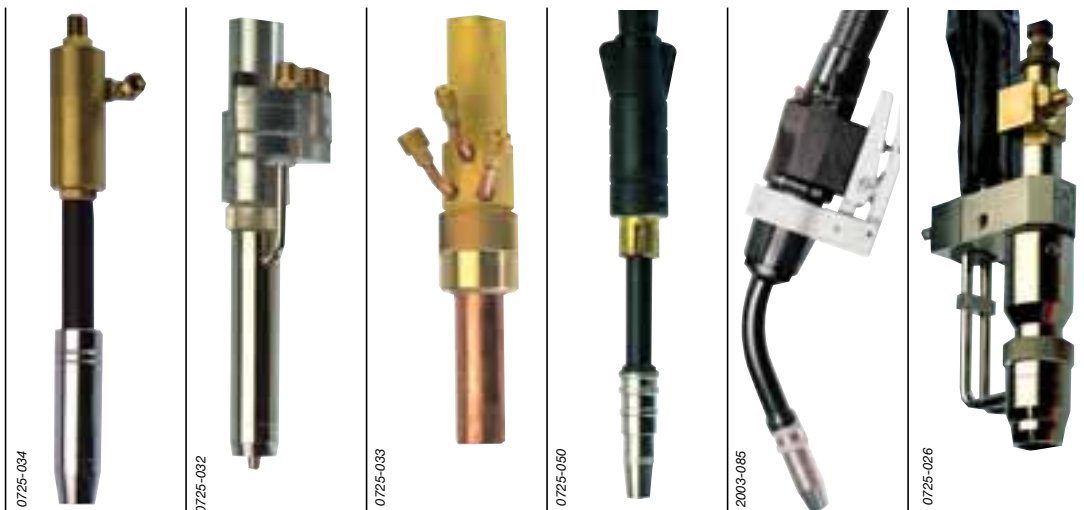
- solid wires
- flux-cored wires dia. 0.8 to 1.6 mm,
- steel,
- stainless steel,
- light alloys up to dia. 2.4 mm.

Smooth welding possible up to 650 A, 100% duty cycle.

\* Use R450 for robotic applications and A450 for automated applications.

Désignation	STARMATIC		
	A R 450	A A 450*	B 650 DC
<b>3-phase primary power supply</b>	230/400/415/440 V + 20% - 15% 50-60 Hz		230/400/440 V 50-60 Hz
<b>Welding voltage</b>	14 at 44 V		18 at 44 V
<b>No-load voltage</b>	70 V		72 V
<b>Duty cycle at 100%</b>	450 A		650 A
<b>Pulse frequency</b>	10 to 500 Hz		-
<b>Power technology</b>	Transistor		Thyristor
<b>Max primary power requirement</b>	24 kVA		50 kVA
<b>Protection index</b>	IP 21		IP 21
<b>Insulation class</b>	H		H
<b>Welding set cooling</b>	AF		AF
<b>Weight</b>	230 kg		247 kg
<b>Dimensions (L x w x h)</b>	1010 x 625 x 1030 mm		914 x 565 x 692 mm
<b>Cat. no.</b>	<b>W 000 315 014</b>	<b>W 000 315 015</b>	<b>W 000 315 877</b>

## Special torches for automatic welding MIG/MAG installations



Torches	TM 250	TM 84R	TM 15	TR 400**	TR 600**	TM 700
<b>Performance</b>	250 A - 100%	300 A - 100%	320 A - 100%*	400 A - 100%	400 A - 100%	700 A - 100%
<b>Cooling</b>	Air	Cooling liquide	Cooling liquide	Cooling liquide	Cooling liquide	Cooling liquide
<b>Straight Cat. no.</b>	<b>W 000 315 884</b>	<b>W 000 315 885</b>	<b>W 000 315 886</b>	<b>W 000 315 887</b>	<b>W 000 315 889</b>	<b>W 000 315 892</b>
<b>22° curved Cat. no.</b>	-	-	-	<b>W 000 315 888</b>	<b>W 000 315 890</b>	-
<b>45° curved Cat. no.</b>	-	-	-	-	<b>W 000 315 891</b>	-

\* Capacity of TM 15 torch can be upgraded to 500 A (100%) when equipped with cooling nozzle option - Cat. no. 9150-3062.

\*\* Available according to different harness lengths (0.5 m to 4.0 m).  
Length of harness of TR 400 torches, standard = 2 m.

# MIG-MAG wire feeders

- DVR 400
- DVR 500
- DVR 600 HD
- D7 auto

## Advantages DVR 400

- Compact wire feeder
- Easy access to the unwinding device
- Reversible mounting
- With DIGI@PULS
- Duty cycle: 250 A at 100% - 350 A at 60%



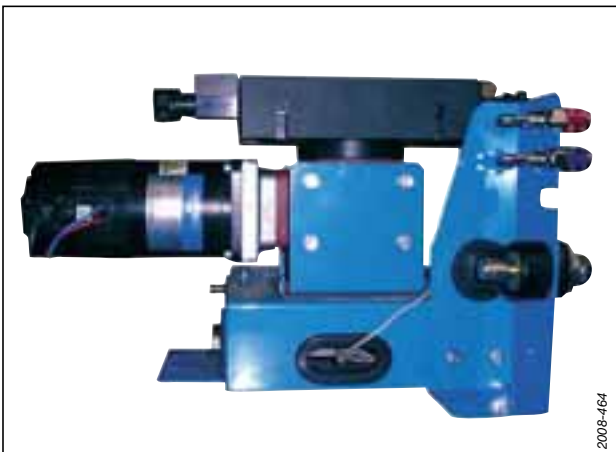
## Advantages DVR 500

- Quick mounting device
- Peripheral sockets
- Compatible with options
- With DIGI@WAVE
- Duty cycle: 250 A at 100% - 350 A at 60%



## Advantages DVR 600 HD

- Quick mounting device
- Peripheral sockets
- Compatible with options
- Heavy duty applications
- With DIGI@PULS
- Duty cycle: 450 A at 100% - 500 A at 60%



## Advantages D7 auto

Electrically insulated from the enclosure's exterior.

- Motor: 50 V DC, 4 000 rpm
- Feed speed: 0 to 20 m/min
- Solenoid valve: 24 V AC
- Dimensions (L x w x h): 240 x 145 x 300 mm
- Weight: 9.5 kg



# Double wire processes: TOPMAG

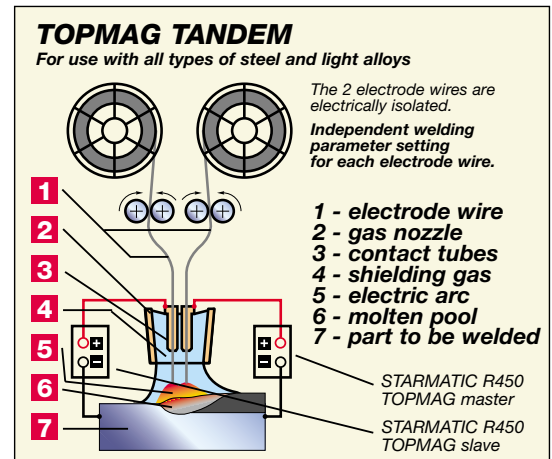


The TOPMAG offer in automatic and robotic double wire welding: fast welding speed, two to three times standard single wire speeds, high-quality bead, excellent penetration, easy to implement and versatile (depending on your application, these facilities can be used in single wire mode).



Welding of aluminium silo panels.  
Edge-to-edge assembly on reinforcement flanges.

- Thickness: 8 mm.
- Solid wire diameter 1.2 mm.
- Double wire Tandem welding speed (2 wires of 1.2 mm): 1.2 m/min.

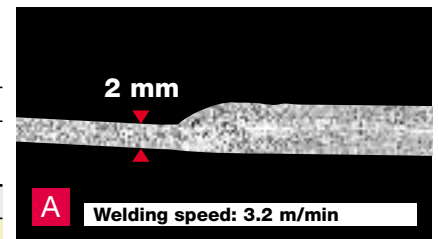


## TOPMAG TANDEM - Spray arc + pulsed arc

### Carbon steel

Double wire test conditions:  
ARCAL 14 (M 14) gas - ER 70 S 3 solid wire, diameter 1.2 mm

Example	A	B
Thickness	2 mm	4 mm
Position	flat lap joint on support	flat fillet weld
Single wire welding speed	1.1 m/min	0.5 m/min
<b>Double wire welding speed</b>	<b>3.2 m/min</b>	<b>2.8 m/min (2.8 mm channel)</b>

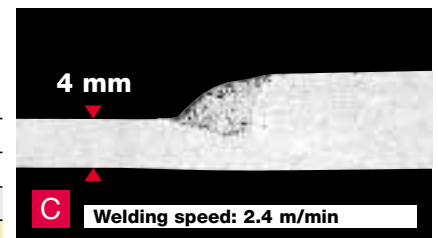


## TOPMAG TANDEM - Pulsed arc + pulsed arc

### Austenitic stainless steel

Double wire test conditions:  
ARCAL 12 (M 12) gas - ER 308 L Si solid wire, diameter 1.2 mm

Example	C	D
Thickness	4 mm	4 mm
Position	lap joint	butt joint
Single wire welding speed	0.9 m/min	0.7 m/min
<b>Double wire welding speed</b>	<b>2.4 m/min (4.5 mm channel)</b>	<b>2.4 m/min</b>

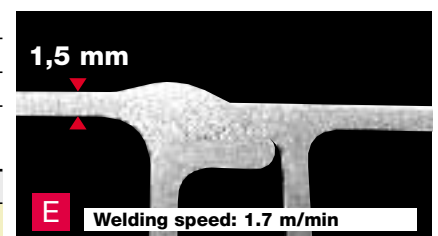


## TOPMAG TANDEM - Pulsed arc + pulsed arc

### Light alloys

Double wire test conditions:  
ARCAL 1 (I 1) gas - ER 1100, ER 5356 solid wire, diam. 1.2 mm

Example	E	F
Material	AG 3	AG 4
Thickness	1.5 mm	3 mm
Position	butt (special profile)	flat fillet weld
Single wire welding speed	0.85 m/min	0.9 m/min
<b>Double wire welding speed</b>	<b>1.7 m/min</b>	<b>1.5 m/min (2.8 mm channel)</b>

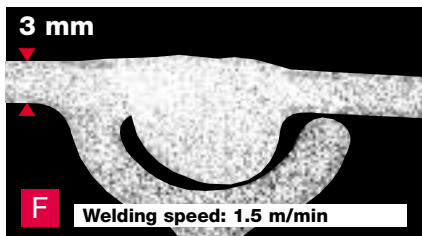
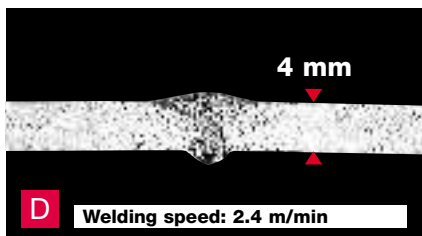
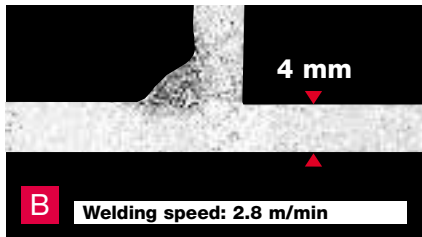




TOPMAG welding installations specifically for high productivity work: high welding speed, high deposition rates. Equipment mainly composed of two STARMATIC R450 power sources, two motorised reducers four roller feed and one double wire torch with coaxial harness to be used on a mechanization machine or on a robot and one TOPMAG control unit.

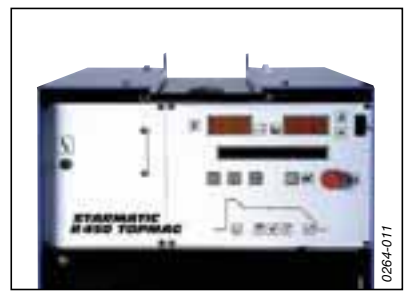
**Your application:**

- fire extinguishers,
- small tanks,
- metal framework,
- automotive and railway construction,
- construction vehicles,
- mechanically-welded casing,
- welded composite girders and metal framework.



**Double wire torch  
TOPMAG Tandem TTA 900**

TTA 900 (2 x 450 A at 100%)



**STARMATIC R 450 TOPMAG**  
The STARMATIC 450 welding equipment allows you to resolve all the applications of modern MIG/MAG welding.  
**Cat. no.: W 000 315 014**



Construction of aluminium railway carriage roofs.