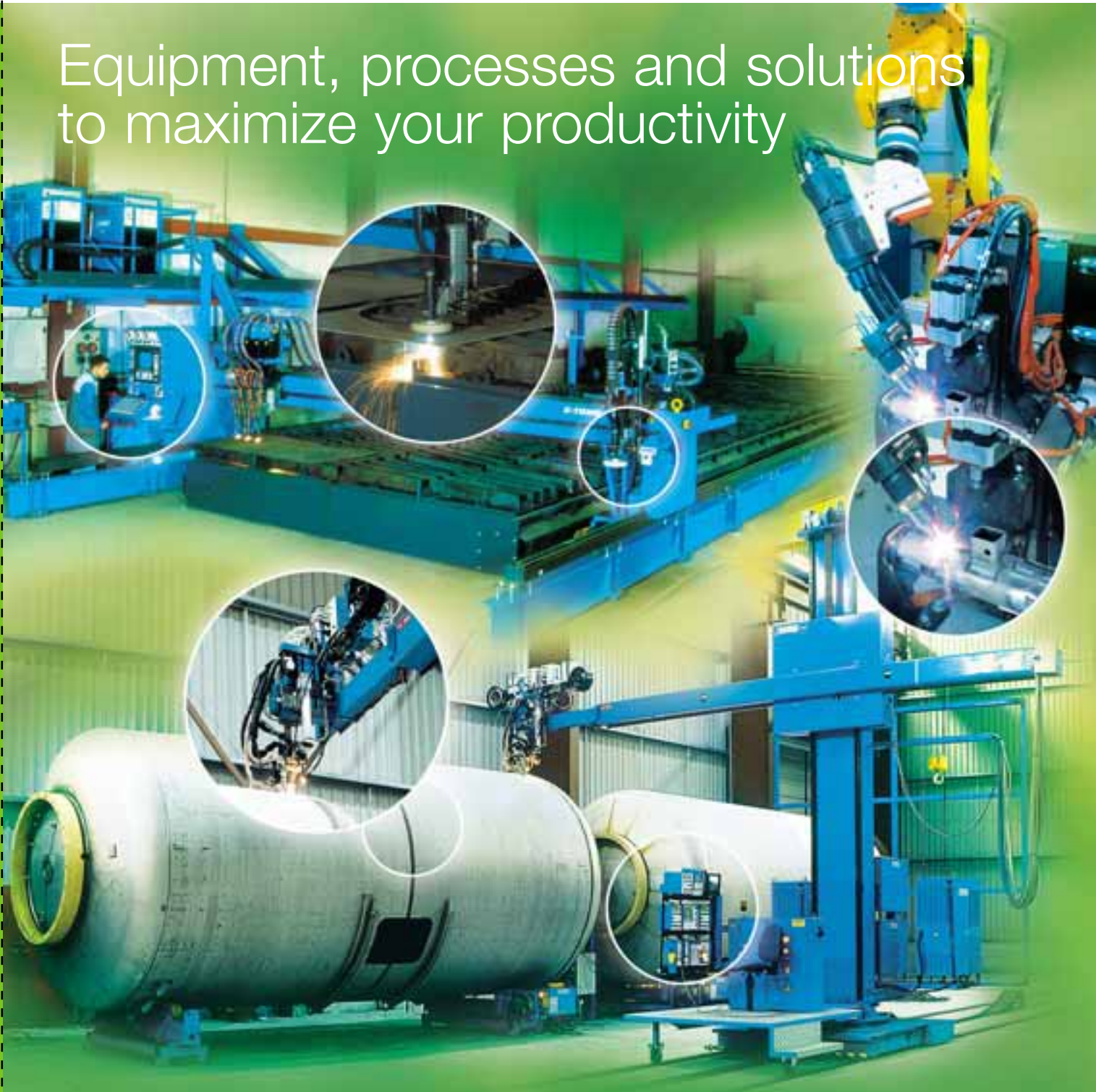


Automatic welding and cutting

Equipment, processes and solutions to maximize your productivity





AIR LIQUIDE

TM
WELDING

With this new edition of the Automatic Welding and Cutting catalogue, Air Liquide Welding offers a range of equipment for a wide variety of applications of cutting, welding and robotic installations.

Our most recent innovations concerning processes and their implementation, and also new equipment for welding and cutting, are presented through these pages.

You will discover the benefits of our new cutting machines, the automated process of PRESTOJET 4 on an automatic cutting machine, the TOPTIG welding process without spatter, the MEGATRAC 5 carriage, the new 3A WELDING SYSTEM to manage and control automatic welding installations, the robotic TOPWAVE process, coupling the performance of the DIGI@WAVE and CITOWAVE power sources to OTC robotics and using the TEACH remote control to combine welding and robot adjustment programs.



Improve your productivity and the quality of your welding and cutting applications with the automatic solutions that Air Liquide Welding group can offer you. Whatever the welding process (Submerged Arc, MIG/MAG, TIG, Plasma...) or the cutting process (Oxyflame, Plasma), our experience is at your service. You will find in the present catalogue not only equipments for your applications but solutions that provide a better quality and productivity enhancement.

Summary



Automatic cutting

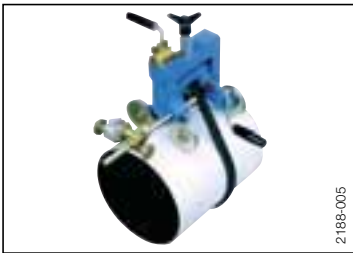
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Portable carriages

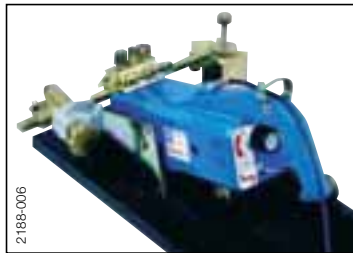
Portable carriages: three practical and functional carriages for ancillary cutting jobs in the workshop and on site.



2188-005

TAGLIATUBI 397

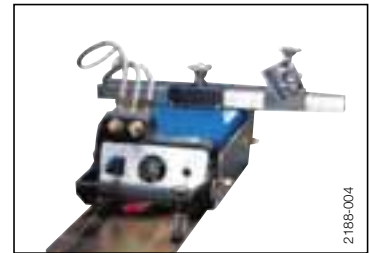
- Oxycutting of tubes with outside diameter varying from 150 mm (6") to 1 200 mm (48").
- Straight and bevel cutting $\pm 45^\circ$ with a torch.
- X or Y bevel cutting $\pm 30^\circ$ with two torches (option).



2188-006

PRATIC

For ancillary cutting work on site and in the workshop, oxycutting. Reversible, regulated speed, includes a clutch with the controls grouped together below the handle. Straight, curved, circular and parallel, square and bevelled cuts. A light and highly manoeuvrable tool.



2188-004

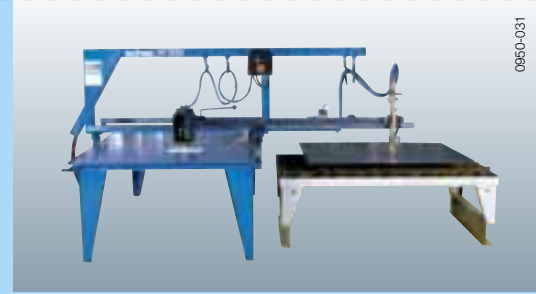
PYROTOME SE

Oxycutting, plasma cutting, welding, tempering and mechanisation for the craft and manufacturing industries. Reversible, electronic speed regulation, includes a clutch and an optional remote control of speed, direction and torch height, cutting and welding oxygen (subject to availability of connections). A versatile and powerful tool.

Cat. no.	W 000 209 422 + W 000 259 004	W 000 209 421 + W 000 259 004	W 000 138 864 + 1 torch to add
Speed	manual	up to 100 cm/min	up to 125 cm/min
Cutting thickness	5 to 50 mm	8 to 150 mm	3 to 250 mm
Basic composition	<ul style="list-style-type: none"> • 1 basic carriage with gas distributor • 1 rack bar • 1 mobile torch holder • 1 torch and hoses • Chain of 8 elements 	<ul style="list-style-type: none"> • 1 basic carriage • 1 G1N short torch with hoses and connectors • 1 mobile torch support • 1 rack • 1 counterweight with compass point • 1 heat screen • 1 supply cable 220 V with plug • 1 transformer 220 V/42 V with cable • 1 kit of tools 	<ul style="list-style-type: none"> • 1 automotorised carriage • 1 torch support equipment • 1 gas unit • 1 heat screen • 1 transformer 230/400/24 V - 160 VA-50 Hz
Add-ons	<ul style="list-style-type: none"> • Cutting tip with G1 cone • Set of 3 Y connectors needed for torch's feed • Complementary torch • Set of three hoses to feed the second torch • Pack of reamers • Gas ignitor • Hoses for gas 	<ul style="list-style-type: none"> • Support with torch and hoses • Y connectors with 2 torches • Rack • Rack joint • Cutting device for 45/85 mm \varnothing • Heat screen • Pack of 4 reamers • Gas ignitor • Hoses for gas • Pack of 4 reamers • Gas ignitor • Hoses for gas 	<ul style="list-style-type: none"> • Add one torch to OXYCUT: • G1 torch: W 000 164 839 • MACH AC torch: W 000 209 446 • MACH GPL torch: W 000 209 449 • 2 m track • Compass • Turret • 2nd torch system • Heat screen • Roller system • Lateral guide • Cutting gas solenoid valve

Cantilever type machines

NOVITOME C, MULTITOME C and OXYTOME 5 C: a wide range of machines which responds to the needs of both industry and craftsmen. Choice of control mode: opto-electronic reader only, or combined with numerical control. Choice of process: oxyflame or plasma arc cutting.



00950-031

NOVITOME C

NOVITOME C

For easy and economic cutting by using a simple opto-electronic reader.

OXYFLAME AND PLASMA

OUTLINE SPECIFICATION Dimensions in mm	Cat. no.	W 000 325 284	W 000 325 587
	Cutting process	oxy/plasma	oxy/plasma
	Rate of advance (cm/min.)	300	300
	A = Reading width	1 250	1 250
	B =		
	• cutting width with one torch	1 250	1 250
	• cutting width with two torches	2 x 750	2 x 750
	C = max. parallel cutting width	1 500	1 500
	D = min. parallel cutting width	95	95
	Usable length of cut (basic version)	1 900	1 900
	Maximum number of torches	4	4
	Gas feed (hose Ø x N)	9 x 3	9 x 3
	Electrical power supply	220 V 50 - 60 Hz	220 V 50 - 60 Hz
	Floor area (L x W)	3 280 x 3 100	3 280 x 3 100
Package dimensions (wooden crate)	3 000 x 1 550 x 550	3 000 x 1 550 x 550	
Net weight (kg)	300	310	
COMPOSITION - EQUIPMENT included in basic version ■ optional	Traceur XY opto-electronic reader	■ (T. 1030)	■ (T. 1030)
	Numerical control	■	■ (D 2.5 ⁺)
	Gas manifolds with oxygen solenoid valves	■	■
	Heating system with solenoid valves	-	-
	Uprated heating system with solenoid valves	-	-
	Soft start	■	■
	Plasma power source interface	■	■
	Manual tool-holder	■ ■ ■ ■	■ ■ ■ ■
	Motorised tool holder collar	■ ■ ■ ■	■ ■ ■ ■
	Motorised tool holder	-	-
	Electric start	-	-
	Arc voltage sensor (plasma cutting)	■	■
	Capacitive sensor (oxygas torch)	-	-
	Track - Long. 4 000	-	-
	Track - Long. 3 000	■	■
	Track - Long. 2 000	-	-
	Mobile template table	■ (fixed)	■ (fixed)
	Rail with hose carriages	■	■
NERTAJET 50 plasma power source	■	■	

0950-032

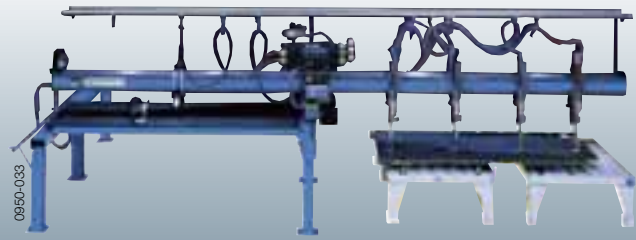
**MULTITOME C****MULTITOME C**

Performing and economical machines with a cutting width up to 2 metres.

OXYFLAME AND PLASMA

W 000 325 335	W 000 325 336	W 000 325 264
oxy/plasma	oxy/plasma	oxy/plasma
300	300	300
1 550	1 550	2 500
1 550	1 550	2 500
2 x 1 025	2 x 1 025	2 x 1 250
2 350	2 350	3 000
95	95	95
2 200	2 200	3 000
4	4	6
9 x 3	9 x 3	12 x 3
220 V 50 - 60 Hz	220 V 50 - 60 Hz	220 V 50 - 60 Hz
4 450 x 3 000	4 450 x 3 000	6 200 x 4 300
3 800 x 1 200 x 700	3 800 x 1 200 x 700	6 500 x 1 200 x 1 550
310	385	795
■ (T. 1503)	■ (T. 1503)	■ (T. 1520)
■	■ (D 2.5+)	■ (D 2.5+)
■	■	■
■	■	■
■	■	■
■	■	■
■	■	■
■ ■ ■ ■	■ ■ ■ ■	-
■ ■ ■ ■	■ ■ ■ ■	-
-	-	■ ■ ■ ■ ■ ■
-	-	■ x N
■ x 1	■ x 1	■ x 1
-	-	-
-	-	■ ■ x N
■ ■ x N	■ ■ x N	-
-	-	■ x 1
■ ■	■ ■	■ ■
■	■	■
■	■	■

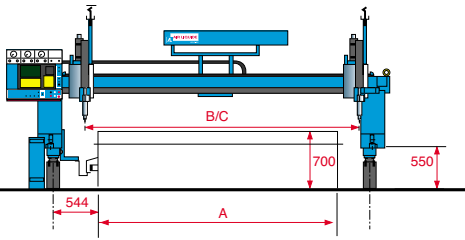
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**OXYTOME 5 C****OXYTOME 5 C**

Economical and high capacity machines: cutting width up to 3 metres and up to 6 torches, modular, open-ended design for increased productivity.

OXYFLAME AND PLASMA

Gantry machines



OXYTOME, OXYTOME HPC: a range of machines destined for oxycutting and plasma cutting piloted by numerically controlled machines with the possibility of computer assistance to improve flexibility.

		OXYTOME			
		OXYTOME 20	OXYTOME 25	OXYTOME 30	OXYTOME 40 (double drive)
OUTLINE SPECIFICATION Dimensions in mm.	Cat. no. without NC/ single motor/ 1 oxy torch	W 000 325 377	W 000 325 378	W 000 325 379	W 000 325 381
	Process maxi 6 oxy torches and/ or 1 plasma	oxy/plasma	oxy/plasma	oxy/plasma	oxy/plasma
	Speed (m/min.) fast/ single motor work/ double motor work	15/04/10	15/04/10	15/04/10	15/-/10
	A = • cutting width with 1 torch without additional torch • cutting width with 1 torch with 5 parked torches	2 400 1 625	2 900 2 125	3 400 2 625	4 400 3 625
	B = Max. parallel cutting width	2 400	2 900	3 400	4 400
	C = Min. parallel cutting width⁽¹⁾	155	155	155	155
	Usable cutting length (basic version)	3 000	3 000	3 000	3 000
	Maximum number of oxy torches	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■
	Gas feed (hose Ø x N)	12 x 3	12 x 3	12 x 3	12 x 3
	Electrical power supply (single-phase)	230 V 50 - 60 Hz	230 V 50 - 60 Hz	230 V 50 - 60 Hz	230 V 50 - 60 Hz
	Double driven	■	■	■	■
	Cutting solenoid valves on oxy torch	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■
	Piloted gas panel	■	■	■	■
	COMPOSITION - EQUIPMENT included in basic version ■ optional	Automatic gas control	■	■	■
D 2.5+, D 510, D 610 numerical control optional or HPC		■	■	■	■
Gas manifold, cut oxygen valves		■	■	■	■
Heating kit with solenoid valves, without pilot gas		■	■	■	■
Uprated heating system with solenoid valves, without pilot gas		■	■	■	■
Soft start without pilot gas		■	■	■	■
Plasma interface		■	■	■	■
Marking torch gas circuit*		■ if piloted gas	■ if piloted gas	■ if piloted gas	■ if piloted gas
Motorised oxygas toolholder		■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■
Electric ignition		■ x N	■ x N	■ x N	■ x N
Mechanical capacitive sensor (oxygas torch)⁽²⁾		-	-	-	-
Automatic indexation⁽³⁾		-	-	-	-
4th axis for 2nd motorized carriage⁽⁴⁾		-	-	-	-
Marker HF*		■	■	■	■
Pneumatic marker*		■	■	■	■
Additional track of 3 m		■ x N	■ x N	■ x N	■ x N
Additional track of 1.5 m		■ x 1	■ x 1	■ x 1	■ x 1
Hose support system feed		■ ■ x N	■ ■ x N	■ ■ x N	■ ■ x N
NERTAJET 50/HP 125/300/420/600/720 plasma power source	■ ■	■ ■	■ ■	■ ■	
Extraction table	■	■	■	■	

*others markers on demand

⁽¹⁾ Minimum 80 with option torch support parallel cut.

⁽²⁾ Either sensor or capacitive sensor.

⁽³⁾ Need sensor and electric ignition.

⁽⁴⁾ Either indexing or 4th axis not together.

0255-043



OXYTOME



2005-783

OXYTOME HPC

OXYTOME HPC

OXYTOME 15 HPC	OXYTOME 20 HPC	OXYTOME 25 HPC	OXYTOME 30 HPC	OXYTOME 35 HPC (double drive)	OXYTOME 40 HPC (double drive)
W 000 263 035	W 000 260 752	W 000 260 753	W 000 260 754	W 000 260 755	W 000 260 756
oxy/plasma	oxy/plasma	oxy/plasma	oxy/plasma	oxy/plasma	oxy/plasma
15/04/10	15/04/10	15/04/10	15/04/10	15/-/10	15/-/10
1 900	2 400	2 900	3 400	3 900	4 400
1 125	1 625	2 125	2 625	3 125	3 625
1 900	2 400	2 900	3 400	3 900	4 400
155	155	155	155	155	155
3 000	3 000	3 000	3 000	3 000	3 000
	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■
12 x 3	12 x 3	12 x 3	12 x 3	12 x 3	12 x 3
230 V 50 - 60 Hz	230 V 50 - 60 Hz	230 V 50 - 60 Hz	230 V 50 - 60 Hz	230 V 50 - 60 Hz	230 V 50 - 60 Hz
■	■	■	■	■	■
■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■
-	-	-	-	-	-
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
■	■	■	■	■	■
■	■	■	■	■	■
■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■
■ x N	■ x N	■ x N	■ x N	■ x N	■ x N
■ x N	■ x N	■ x N	■ x N	■ x N	■ x N
■	■	■	■	■	■
■ x 1	■ x 1	■ x 1	■ x 1	■ x 1	■ x 1
■	■	■	■	■	■
■	■	■	■	■	■ ■
■ x N	■ x N	■ x N	■ x N	■ x N	■ x N
■ x 1	■ x 1	■ x 1	■ x 1	■ x 1	■ x 1
■ ■ x N	■ ■ x N	■ ■ x N	■ ■ x N	■ ■ x N	■ ■ x N
■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
■	■	■	■	■	■

Gantry machines dedicated to

Powerful CNC (computer numerical control) machines specially designed for high productivity plasma cutting. With these dedicated machines you obtain all the benefits of plasma cutting: quality, speed, accuracy, repetition and flexibility of production.

Their common features: high speed, Air Liquide Welding NERTAJET plasma torch and power source with integral automatic cycle control, motorised torch-holder with electronic height sensor (no contact with the workpiece). Complete ready use installations.

OPTITOME 15

The OPTITOME 15 is a portal plasma cutting machine (in option single torch oxy-gas cutting) designed for the cutting applications in the thin sheets industries, in the ventilation, stove setting and air-conditioning industries.

The design of the installation, the possibilities of equipment, the multi-use and the cutting capacities on non-alloyed steels, stainless steels and light alloys make the OPTITOME 15 the ideal tool for small and medium fabrication series.

		NEW PRESTOJET 4	OPTITOME 15 NERTAJET 50	NERTAJET HP 125	
OUTLINE SPECIFICATION Dimensions in mm	Cat. no. without NC	W 000 325 312	W 000 325 312	W 000 132 865	
	Cutting width with 1 torch	1 500 mm	1 500 mm	1 500 mm	
	Cutting thickness	• plasma	1 to 8 mm	1 to 40 mm	0.4 to 30 mm
		• oxy-cutting (option)	3 to 50 mm	3 to 50 mm	3 to 50 mm
	Advance rate	• cutting	1 000 cm/min	1 000 cm/min	1 000 cm/min
		• fast	1 500 cm/min	1 500 cm/min	1 500 cm/min
	Usable cutting length (basic version)	1 500/3 000 mm	1 500/3 000 mm	3 000 mm	
	Max. number of plasma torches	1	1	1	
	Maximum number of open ended plasma bevelling torches	-	-	-	
	Cutting gas	Compressed air	Compressed air/N ₂ /Ar+H ₂	O ₂ /Ar+H ₂ /N ₂ +(1)	
	Pilot gas	Compressed air	Compressed air/N ₂ /Ar+H ₂	Ar	
	Electrical power supply (single phase)	230 V - 50/60 Hz	230 V - 50/60 Hz	230 V - 50/60 Hz	
	COMPOSITION - EQUIPMENT included in basic version ■ optional	Numerical control	■ D 2.5+, D 510 or D 610	■ D 2.5+, D 510 or D 610	■ HPC DIGITAL PROCESS
Motorised torch holder		■ POC 75	■ POC 75	■ POC 100	
Electronic sensor		■	■	■	
Detector with auto. cycling		■	■	■	
Automatic indexing device		-	-	-	
4th axis for 2nd motorized carriage⁽⁴⁾		-	-	-	
Twin motor drive		-	-	-	
Additional track		-	-	-	
Hose support system		-	-	-	
Smoke extractor		■ on cutting table	■ on cutting table	■ on cutting table	
Cutting table		■ fume extracting	■ fume extracting	■ fume extracting	
Extraction unit		■	■	■	
Marker H.F.*		■	■	■	
Integrated marker with cutting torch		-	-	■	
Plasma power source		■ PRESTOJET 4	■ NERTAJET 50	■ NERTAJET HP 125	
Isolating box		■	■	■	
Cutting torch		OCP 100	CPM 15	OCP 150	
Plasma bevelling torch	-	-	-		
Oxy-gas cutting	■ 1 torch maximum	■ 1 torch maximum	■ 1 torch maximum		

*others markers on demand

⁽¹⁾ With NERTAJET HP 125 you can choose every process except Water vortex.

⁽²⁾ Either sensor or capacitive sensor.

⁽³⁾ Need sensor and electric ignition.

⁽⁴⁾ Either indexing or 4th axis not together.

plasma cutting process



OPTITOME 15

PLASMATOME

ALPHATOME

PLASMATOME 20, 25, 30, 40

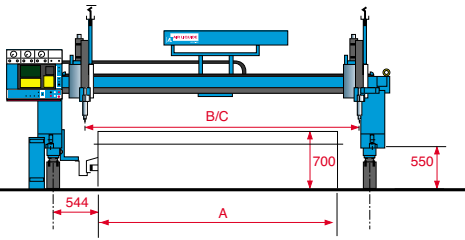
Single or twin torch for high quality plasma cutting for all metals with a thickness range from 0.4 to 130 mm according to the processes chosen and with a choice of different markers according to your application.

ALPHATOME 20/25/30/35/40

High accuracy installation for plasma cutting. High quality cuts for metallic plates with thicknesses from 0.4 to 70 mm. Single or bi-torch this machine is an alternative solution to laser cutting with lower investment cost. Positioning accuracy ± 0.1 mm.

PLASMATOME				ALPHATOME				
20	25	30	40	20	25	30	35	40
W 000 325 390	W 000 325 391	W 000 325 393	W 000 325 394	W 000 236 057	W 000 236 058	W 000 236 059	On request	On request
2 400 mm	2 900 mm	3 400 mm	4 400 mm	2 000 mm	2 500 mm	3 000 mm	3 500 mm	4 400 mm
0.4 to 130 mm				0.4 to 70 mm				
-				-				
1 000 cm/min				1 000 cm/min				
1 500 cm/min				2 200 cm/min				
3 000 mm (base)				500 mm (base)				
2				2				
-				1				
Multi-gas (O ₂ / N ₂ / N ₂ + H ₂ O / Ar + H ₂)				Multi-gas				
Argon				Argon				
230 V - 50/60 Hz				230 V - 50/60 Hz				
■ D 2.5+, D 510, D 610 or HPC DIGITAL PROCESS				■ HPC DIGITAL PROCESS				
■ PO 251/ POC 250 (course 250 mm)				■ POC 150 (course 150 mm)				
■				■				
■				■				
■				■				
■ x 1 (HPC only)				■ x 1 (HPC only)				
■				■				
■ per 1.5 or 3 m				■ per 2 or 3 m				
■				■				
■				■				
■				■				
■				■				
■				■				
■ ■ NERTAJET 50 / HP 125/300/420/600/720				■ ■ NERTAJET HP 125 / 300 / 420				
■				■				
■ ■ CPM 15/OCP 150/CPM 300/CPM 360/CPM 720				■ ■ OCP 150 / CPM 360				
-				■				
-				-				

Heavy duty custom machines



OXYTOME/PLASMATOME RS & TWIN RS - CYBERTOME open the way to all oxycutting and plasma arc cutting operations that require the use of machines capable of cutting very wide plates and implementing more complex options.

Reinforced structure for Oxytome / Plasmatome (RS)

For plates wider than 4 m or for certain equipment, a reinforced structure is used to ensure movement stability and precision.

OUTLINE SPECIFICATION Dimensions in mm	OXYTOME RS HPC 30-65**			PLASMATOME RS	
	35	50	60	50	W
Cat. No. without NC / double motor / 1 oxy torch	W 000 265 064	W 000 263 036	W 000 263 037	W 000 263 038	W
Process maxi 8 oxy torches	Oxycutting			-	
Process maxi 6 oxy torches and/or 2 plasma	Oxy/Plasma			Plasma	
Process maxi 12 oxy torches and/or 2 plasma	-			-	
Speed (m/min.) fast/double motor work	15/10			15/10	
A =					
• cutting width with 1 torch without additional torch	3 900	5 400	6 400	5 400	
• cutting width with 1 torch with 7 parked torches	2 815	4 315	5 315	-	
• cutting width with 1 torch with 1 parked torch	3 745	5 245	6 245	5 245	
B = Max. parallel cutting width	3 900	5 400	6 400	5 400	
C = Min. parallel cutting width⁽¹⁾		155		155	
Usable cutting length (basic version)		3 000		3 000	
Maximum number of oxy torches		■ ■ ■ ■ ■ ■ ■ ■		-	
Maximum number of plasma torches		■ ■		■ ■	
Maximum number of plasma bevelling open ended		■ (size 45 maxi)		■ (size 45 maxi)	■
Gas feed (hose Ø x N)		12 x 3		-	
Electrical power supply (single-phase)		230 V - 50/60 Hz		230 V - 50/60 Hz	230
3-gases electronic valves module on oxy torch		■ ■ ■ ■ ■ ■ ■ ■		-	
Automatic gas control		■		■	
D 2.5', D 510, D 610 numerical control optional or HPC		■ HPC		■ HPC	
Gas manifold, cut oxygen valves		■ x N		-	
Heating kit with solenoid valves		■ x N		-	
Uprated heating system with solenoid valves		■ x N		-	
Soft start		■ x N		-	
Plasma interface		■		■	
Marking torch gas circuit		■		-	
Motorised oxygas toolholder		■ ■ ■ ■ ■ ■ ■ ■		-	
Electric ignition		■ x N		-	
Mechanical capacitive sensor (oxygas torch)⁽²⁾		■ x N		-	
Automatic indexing⁽³⁾		■		■	
4th axis for 2nd motorized carriage⁽⁴⁾		■ x 1		■ x 1	
Marker HF*		■		■	
Pneumatic marker*		■		■	
Drilling unit⁽⁵⁾		■		■	
Bevel system VXX oxy HPC endless rotation		-		-	
Additional track of 6 m		-		-	
Additional track of 3 m		■ x N		■ x N	
Additional track of 1.5 m		■ x 1		■ x 1	
Track height		550		550	
Hose support system feed		■ ■ x N		■ ■ x N	
Nertajet 50/HP125/HP300/HP420/ HP600/HP720 plasma power source		■ ■		■ ■	
Extraction table		■		■	

COMPOSITION - EQUIPMENT
■ included in basic version
■ optional

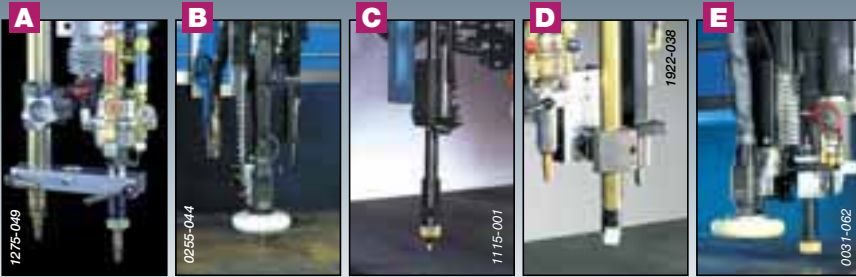
*others markers on demand
**other sizes or capacitive sensor.

⁽¹⁾ Minimum 80 with option torch support parallel cut.
⁽²⁾ Either sensor or capacitive sensor.

⁽³⁾ Need sensor and electric ignition.
⁽⁴⁾ Either indexing or 4th axis not together.

⁽⁵⁾ On request.

Additional equipment



These other devices are used according to the versions of the machine types, OXYTOME, PLASMATOME, RS, TWIN RS and CYBERTOME.

Marking, tracing and tacking

A Powder marking

Deposits grey zinc powder using an oxy/gas flame (for use only with the gas control panel)

B HF marker pen

This pneumatic vibrator engraves sheet metal by slightly scoring the surface finish. Recommended for use on thin plates.

C Felt-tip marking

Gravity-operated felt tip for marking stainless steels and light alloys. It operates by gravity and does not alter the surface finish of the material.

D Pneumatic marking

For punching or engraving plates. The depth of marking is controlled by varying the compressed air pressure and the speed. Recommended for use on plates thicker than 5 mm.

E Plasma arc marking

Low-power plasma arc for engraving or tracing on all materials. The depth of marking is controlled by the plasma arc power. The height is servo-controlled by the arc voltage.

Other marking possibilities on request (micro marker, inkjet, etc...)

Beveling system



Plasma longitudinal

This system allows the operator to manually tilt the torch in order to work plasma bevels along the longitudinal axis.



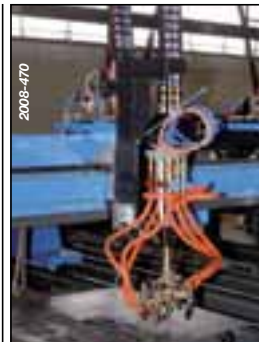
Plasma straight

This system is used to work bevels along the axes using a plasma torch. For further details on this option, please contact us.



Plasma beveling head

System rotation and tilting are entirely servo-controlled by the HPC digital process controller which makes it possible to program a bevel angle change during a run. This light but rugged system guarantees excellent cutting results.



V X K Straight line beveling unit

For beveling along the machine axes with mechanical sensing.



V X K endless rotation beveling unit

Can be fitted on Cybertome Numerical control programs the blowtorches positions. It can work V, X, or K type bevels from 0 to 45° for plates up to 60mm thick (other possibilities on request).

Automatic indexing

The arrival of automatic indexing has encouraged an upward trend in multi-torch applications. This option uses the HPC digital process control to adjust the spacing between torches. This means that the machine can be programmed to cut identical parts or one-off parts without the need for operator intervention. This option also allows entirely automatic use of a machine equipped with 2 identical or 2 different accessories.

Home positioning

(not shown) Used as a reference point from which all programs are started.

Emergency stop cable

Can be used to trigger an emergency stop from any point within the operating area of the machine. There is a cable at the front and at the rear of the machine.



Wide beveling system



Narrow strip cutting system

Capable of cutting strips from 80 to 155 mm wide, using independent blowtorches to give a better quality cut on request).



Tool holder PO 150 HPC with capacitive sensor



AZURMATIC tables



3 models of table adapted to the process of cutting

Extraction table for dry cutting

The AZURMATIC table with air extraction offers unrivalled efficiency in terms of fume extraction thanks to its unique system of transverse extraction ducts. Robustly designed in one-piece or modular form, the table is divided over its length into 1 metre sections, extraction taking place across the full width of the table on the module in operation only. Mechanical grills actuated by the displacement of the machine provide suction under the sheet at the place of cutting only.

This principle of operation guarantees optimum extraction, irrespective of the size of the sheet being cut, while maintaining a modest extraction air-flow rate.

Technical characteristics:

- transverse duct extraction system,
- division into 1 metre sections over the

- length of the table (500 and 750 mm sections on demand for intensive use),
- removable slag boxes,
- removable workpiece supporting frame with flat irons (section 100 x 6 mm) and wire mesh grid (50 x 50 x 5 mm),
- maximum capacity: sheet up to 300 mm thick.

Constant water level extraction table

Various processes, especially plasma cutting with non-immersed water vortex, require a cutting table with water recovery and fume extraction.

This table provides both possibilities.

This process (which is patented) avoids the need for filtering equipment upstream of fume extraction.

Technical characteristics:

- one-piece design divided into 630 mm sections,

- standard lengths of 3 to 12 m,
- standard widths: 1.5 - 2 - 2.5 and 3 m,
- height: 700, 800 or 920 mm
- maximum capacity: sheet thickness 50 mm.

Variable water level tables

Variable water level tables are specifically intended for immersed plasma cutting. This procedure limits pollution by solid or gaseous matter and gives protection against audible and visual stress. It improves accuracy of cutting while limiting distortions caused by heating of the workpiece.

Technical characteristics:

- modular construction in lengths of 1.5, 1.75 and 2 m,
- widths to demand,
- pivoting workpiece support frame for easier, faster cleaning.

Tables height 700 mm for OXYTOME, OXYTOME HPC and PLASMATOME (1 000 mm sections)*

Cat. no.	Width	Length*
W 000 325 233	1 500	3 000
W 000 325 234	1 500	6 000
W 000 325 235	2 000	3 000
W 000 325 236	2 000	4 000
W 000 325 237	2 000	6 000
W 000 325 238	2 000	9 000
W 000 325 239	2 500	3 000
W 000 325 240	2 500	6 000
W 000 325 241	2 500	9 000
W 000 325 242	3 000	3 000
W 000 325 243	3 000	6 000
W 000 325 244	3 000	9 000

Tables height 920 mm for ALPHATOME (500 mm sections)*

Cat. no.	Width	Length*
W 000 242 111	2 000	3 000
W 000 242 112	2 000	6 000
W 000 242 114	2 000	9 000
-	2 000	4 000
W 000 242 115	2 000	12 000
W 000 242 116	2 500	3 000
W 000 242 117	2 500	6 000
W 000 242 118	2 500	8 000
W 000 242 120	2 500	12 000
W 000 242 121	3 000	6 000
W 000 242 123	3 000	12 000
-	-	-

* Other lengths and sections on request, consult Air Liquide Welding.

Numerical controllers

Perfectly integrated into Air Liquide Welding machines, the D 2.5⁺, 510, 610 or HPC DIGITAL PROCESS offers you even better accuracy, productivity and return on investment. The diversity of the offer covers all user expectations. Interactive operation via menus and messages provides continuously operator guidance.



D 2.5⁺

Contains 50 standard shapes and can be connected to a programming software via a serial link.



D 510

Numerical controller based on an open architecture PC with Windows NT-based movement control software for improved performance and in particular very high performance in multitasking operations. A touch-sensitive 15" colour screen provides access to a user-friendly man-machine interface and the entire controller is built around a 266 MHz Pentium processor. Using 50 standard shapes and the most modern modes of communication, the D 510 is a numerical controller perfectly suited to automatic cutting applications.



D 610

This numerical controller developed under Windows 2000 integrates a sophisticated path algorithm that ensures dynamic, real-time trajectory and I/O control.

The high-performance, user-friendly, man-machine interface integrates a high-quality, touch-sensitive screen giving access to the main control functions of the numerically controlled cutting machines.

Management of the 50 standard shapes library, and in particular the innovative and diversified I/O management system enhances its performances. The D 610 is also one of the key functions in thermal cutting processes.

The D 610 comes with a high-performance graphics screen.

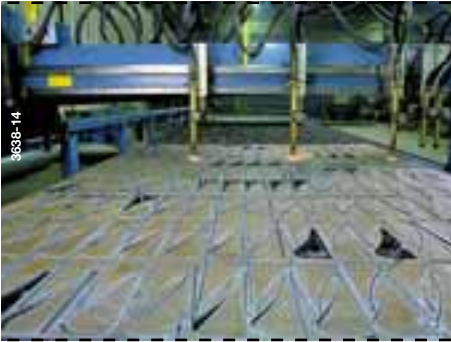


HPC DIGITAL PROCESS

This new control concept for cutting machines has been specially created for easier workshop integration of modern, state-of-the-art machines implementing the latest features in flame cutting and/or plasma cutting and/or plasma marking processes. HPC DIGITAL PROCESS operates under WINDOWS 2000 installed on an industrial computer. The system features: numeric control, process control, a Human Machine Interface, a touch screen, a control console for all start-up and emergency stop operations.

Easier workshop integration means: benefiting from a tool adapted to your various cutting jobs, specially designed as a utilization support for the operator, simple implementation of the flame and/or plasma cutting machine, benefiting from a modern, innovative and user-friendly design.

Cutting softwares



A well adapted computerized help increases the automation and the return on investment of machines fitted with the CNC. Air Liquide Welding can supply software specially designed for thermal cutting CAD, pressure vessel shapes developed flat, interleaving, plate stock control, communication, translation of external files and files produced by other CAD systems (DXF, DWG...).



MAGICNEST Software range: Four products that run with the latest Windows operating systems to enable to prepare and control thermal cutting production. The software is designed to be intuitive, simple and user-friendly, while offering powerful and effective functions.

1 MAGICNEST JUNIOR

Principally designed for small or medium sized cutting machines, MAGICNEST JUNIOR is an intuitive and easy-to-use CAD software that integrates 2D designing tools. Its cutting technology, simulation, quote and simplified manual nesting modules complement the product for the fuss-free control of the machine. It can also read and modify all types of drawing - DXF, DWG, DSTV etc. The serial transmission module WINRS supplements the functionalities of the product.

Cat. no.: W 000 325 351



2 MAGICNEST 01

MAGICNEST 01 includes MAGICNEST JUNIOR and a nesting module that allows to manage quotes, orders, sheet stock and piece nesting.

Its database makes it possible to obtain accurate quotes in a very short time, offer the best cutting strategy, save know-how and generate machine programs.

Its many tools – common cutting, multiple-torch cutting, junctions, bridges, scrap recovery – will enable you to fully control production and retain simplicity and intuitiveness of use.

Cat. no.: W 000 325 349



2 MAGICNEST 10

This is the top end version of MAGICNEST 01 for automating the following operations:

- nesting pieces using the best strategy for maximising material savings.
- IT application of the cutting technology – cutting entry/exit, bridges, micro-junctions etc.
- tool path and machine program

Cat. no.: W 000 325 348



3 Optional MAGICNEST BEVEL

Optional MAGICNEST BEVEL

This product is used to supplement the functions of MAGICNEST 10 and control



open-ended bevelling units that use plasma technology.

It may be used for all types of bevel - V, Y, X and K - in multiple pass processes. It can handle micro-junctions on bevels and makes it possible to obtain quotes for bevelled pieces.

Cat. no.: on request

Optional MAGICNEST table converter ESSI / ISO (for HPC-D610)

Cat. no.: on request

4 LOGITRACE

Boiler-making module

Fully compatible with and complementary to MAGICNEST.

Software for making calculations for boiler works. Trunk cones, intersections, cylindrical, cylinders, etc. Complements MAGICNEST for all your development needs.

Cat. no.: W 000 325 350

5 CAMDUCT

For HVAC applications

Powerful software meeting the needs of ventilation, air conditioning and space heating industries. Calculating developments, nesting and remote loading of machines.

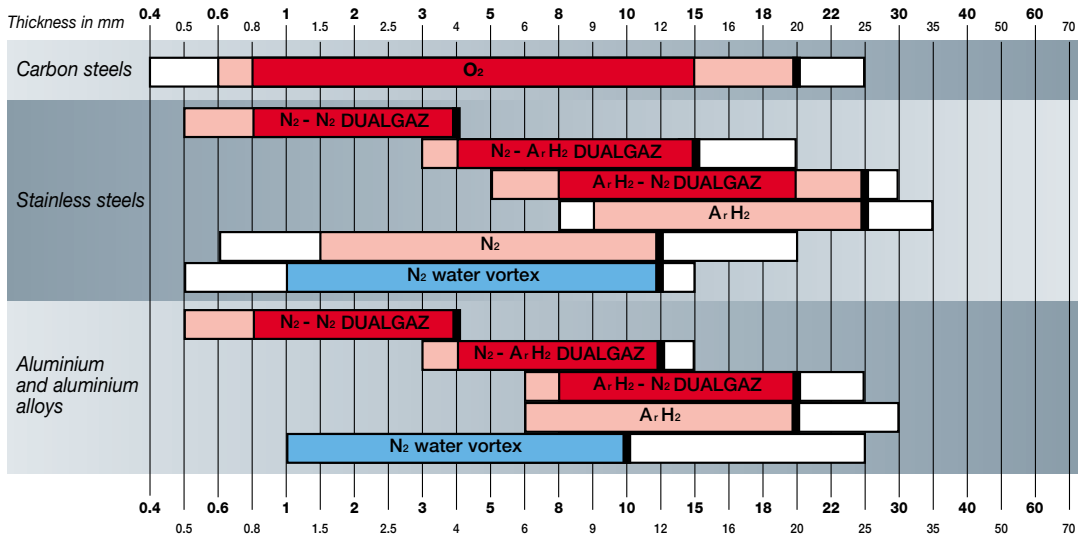
Cat. no.: on request

NERTAJET HP plasma cutting

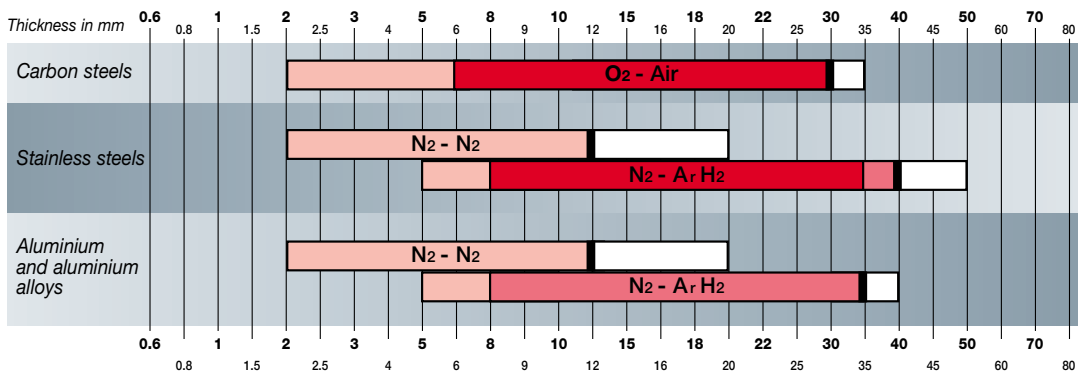
The performances of this process are mainly determined by the power that is used in the torch and the choice of the gas or gas mixture. With the NERTAJET HP installations these performances are optimized:

- the control by microprocessor of all parameters,
- the diversity of applications of each installation,
- Air Liquide Welding's complete mastery of all aspects of the equipment (machine, plasma installation, torch).

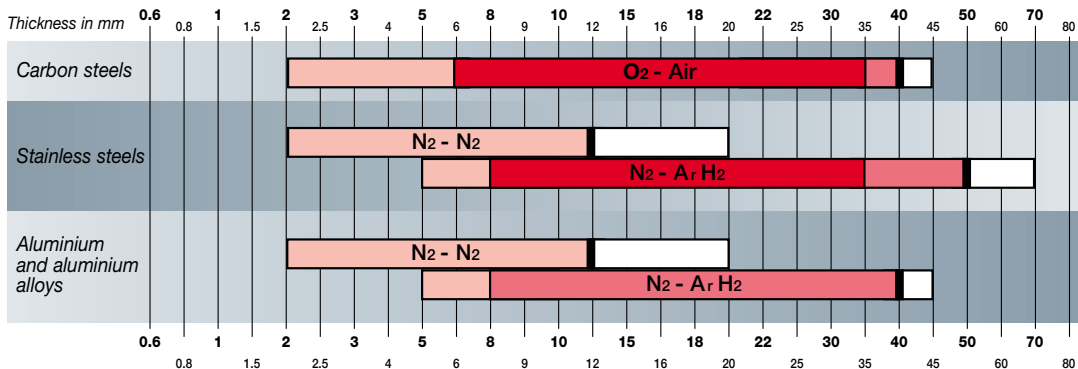
NERTAJET HP 125 - OCP 150

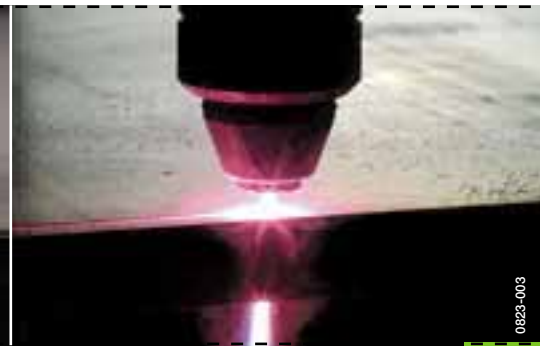


NERTAJET HP 300-CPM 360

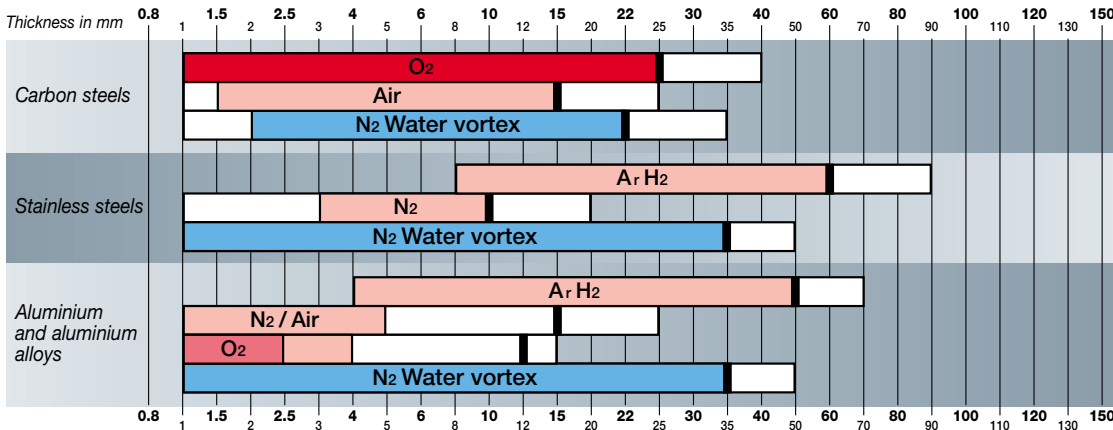


NERTAJET HP 420-CPM 360

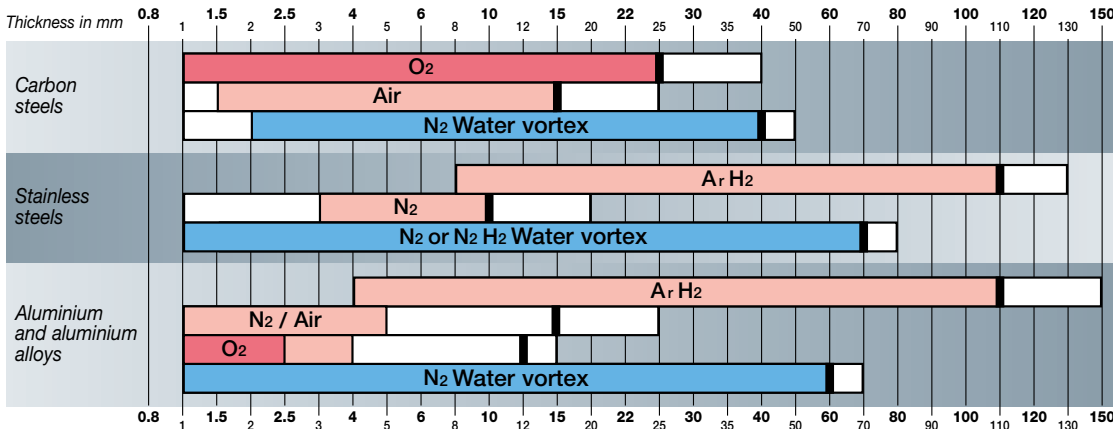




NERTAJET HP 300 - CPM 300 and NERTAJET HP 300E - CPM 720

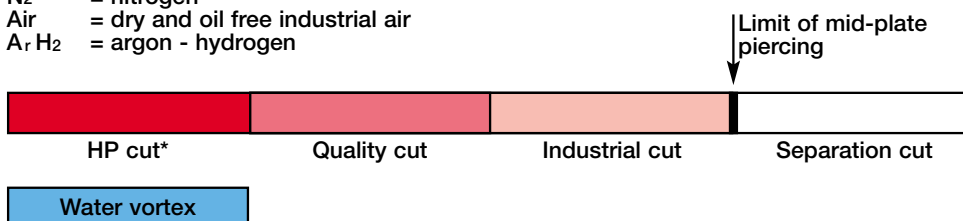


NERTAJET HP 600 - CPM 720



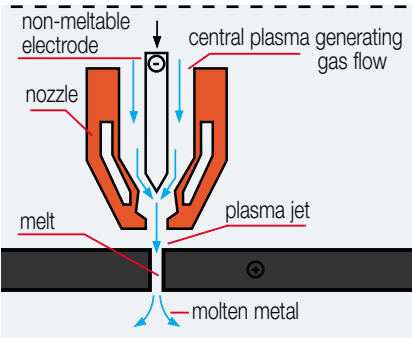
Key:

- O₂ = oxygen
- N₂ = nitrogen
- Air = dry and oil free industrial air
- Ar H₂ = argon - hydrogen



* HP cut: range 3 or 4 ISO 9013 (depend on the material).

PRESTOJET 4 and NERTAJET



This cutting process uses a refractory electrode in which a gas plasma generated by the electrical arc is constricted through a cooled nozzle. This process is used for thermal cutting of all electrically conductive metals including mild and low-alloyed steel, stainless steel, aluminium and light alloys, copper alloys etc...

Air compressed mechanised manual installation

Mechanised manual installation for multigas plasma cutting.

Automatic, autonomous and evolved installations for plasma cutting with torches High plasma.

Since the birth of our NERTAJET plasma cutting range in 1960, our materials always have been in constant evolution,

NEW



2007-114R



2007-281



2006-772

PRESTOJET 4
Designed for thin materials.


NERTAJET 50
Designed for small and medium scale fabrication.

NERTAJET HP 125
Adapted for thin and medium thicknesses.

Principal specifications:	PRESTOJET 4	NERTAJET 50	HP 125	HP 125 with HPC	HP 125 with HPC
With tool-holder	POC 75	According machine type	POC 50	POC 101	POC 250
With automatic torch	OCP 100	GPM 15	OCP 150		
Thickness* according to plasma generating gas	O ₂	-	0.4 to 25 mm		
	O ₂ (Air)	-	-		
	Air	1 to 8 mm	0.5 to 40 mm	-	
	N ₂	-	0.8 to 15 mm	0.6 to 20 mm	
	N ₂ (N ₂)	-	0.5 to 15 mm	0.5 to 4 mm	
	N ₂ (ArH ₂)	-	-	3 to 20 mm	
	ArH ₂ (N ₂)	-	6 to 50 mm	5 to 30 mm	
	ArH ₂	-	6 to 30 mm	8 to 35 mm	
water vortex	-	-	0.5 to 15 mm		
Electrical power supply	400 V 50/60 Hz	230/400/415/440 V - 50 or 60 Hz	230/400/440 V - 50 and 60 Hz		
Absorbed power	23 kVA	43 kVA	36.6 kVA		
Cutting intensity	30/50/70/100 A	20/40/60/100/150 A	15/30/40/60/90/120 A		
Duty cycle	100%	100%	100%		
Recommended machines	OPTITOME	NOVITOME / MULTITOME / OXYTOME 5 C OPTITOME/ OXYTOME / PLASMATOME CYBERTOME	Special ROBOT	OPTITOME	OXYTOME / PLASMATOME/ ALPHATOME / CYBERTOME

Key
O₂ = oxygen | N₂ = nitrogen
Air = dry and oil free industrial air | Ar H₂ = argon - hydrogen

* Industrial thicknesses and separation thicknesses. These information are given for all kinds of metals.

 Soft start of pilot arc without H.F.

plasma installations



and, We take great care to propose you the product best adapted to your production needs. These plasma cutting installations can equip other types of machines: do not hesitate to consult Air Liquide Welding.



NERTAJET HP 300

Adapted to work on medium and heavy thickness

NERTAJET HP 420

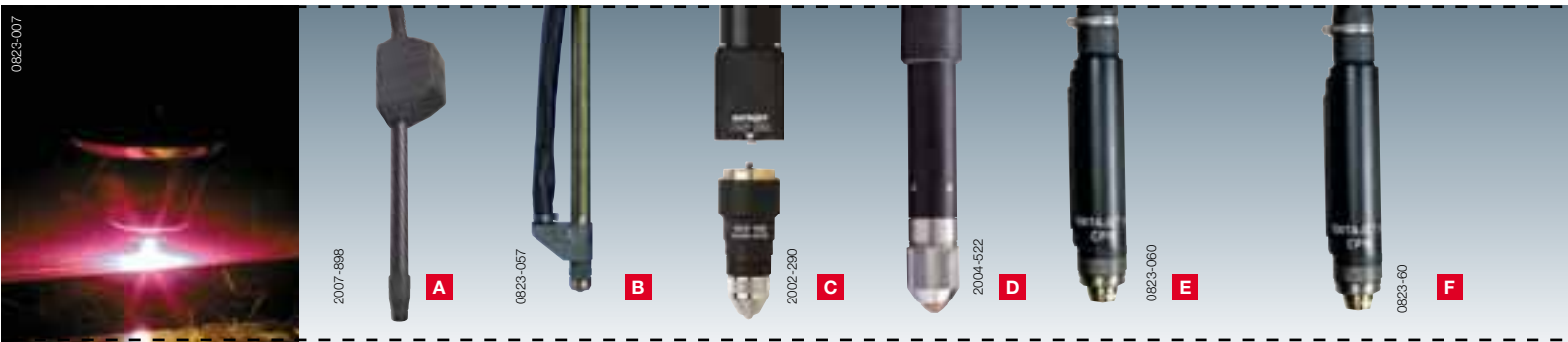
NERTAJET HP 300 parallel connected to NERTAJET HP 125

NERTAJET HP 600

Two parallel connected NERTAJET HP 300 power sources

HP 300 with HPC	HP 300	HP 300 E	HP 420	HP 600
POC 250	PO 251		POC 250	PO 251
CPM 360	CPM 300	CPM 720	CPM 360	CPM 720
-	1 to 40 mm	1 to 40 mm	-	1 to 40 mm
2 to 35 mm	-	-	2 to 45 mm	-
-	1 to 25 mm	-	-	1 to 25 mm
-	1 to 20 mm	-	-	1 to 20 mm
2 to 20 mm	-	-	2 to 20 mm	-
5 to 50 mm	-	-	5 to 70 mm	-
-	-	-	-	-
-	8 to 90 mm	-	-	8 to 150 mm
-	1 to 50 mm	-	-	1 to 80 mm
230/400/440 V - 50 and 60 Hz				
85 kVA		122 kVA		170 kVA
80/100/120/140/200/260/280 A	30/60/90/120/180/240/300 A		80/100/120/140/200/260/280/360/400 A	30/60/90/120/180/240/300/420/510/600 A
100%				
OXYTOME/PLASMATOME ALPHATOME/CYBERTOME			OXYTOME/PLASMATOME CYBERTOME	

NERTAJET plasma torches



Torches		A OCP 100	B CPM 15	C OCP 150	D CPM 360	E CPM 300	F CPM 720	
Length of torch harnesses	2.5 m	-	-	-	W 000 234 543	-	-	
	4 m	-	-	W 000 325 145	-	W 000 325 088	W 000 325 095	
	7 m	-	W 000 325 066	W 000 325 144	W 000 234 542	W 000 325 089	W 000 325 096	
	15 m	W 000 257 452	W 000 325 071	-	-	-	-	
Tool-kit		-	-	W 000 325 127	-	W 000 325 114	W 000 325 114	
Use with NERTAJET inst.		PRESTOJET 4	NERTAJET 50	HP 125	HP 300 / HP 420	HP 300	HP 300 E	HP 600
Installation with dry gas	O₂	-	-	W 000 138 371	-	W 000 325 075	W 000 325 075	W 000 325 075
	Air	-	W 000 325 062	-	-	W 000 325 075	W 000 325 075	W 000 325 075
	ArH₂	-	W 000 325 062	W 000 325 132	-	W 000 325 081	W 000 325 081	W 000 325 085
	N₂	-	W 000 325 062	W 000 325 132	-	W 000 325 074	W 000 325 074	W 000 325 074
Installation with water vortex	N₂	-	-	W 000 325 123	-	W 000 325 082	W 000 325 082	W 000 325 086
Installation with DUALGAZ	N₂ + ArH₂	-	-	W 000 138 435	W 000 238 022	-	-	-
	O₂ + Air	-	-	-	W 000 236 951	-	-	-
Torch cooling		-	Integrated	FRIOJET 10/30	FRIOJET 30/70	FRIOJET 30	FRIOJET 70	FRIOJET 70

Key O ₂ = Oxygen	Air = dry and oil free industrial air	N ₂ = Nitrogen	ArH ₂ = Argon - Hydrogen
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OCP 150

Thanks to a soft start of the pilot arc without high frequency

(patent), the installation can go on the environments possessing electronic and informatic material without interference.

Thanks to a removable body structure (patent)

replacing consumable parts or changing the process is a simple and quick action.

FRIOJET 10-30-70

Power supply: 230 V single phase
FRIOJET 10

(freezing power 1 000 W):

- 50 Hz: Cat. no. Z0409-1175.

FRIOJET 30

(freezing power 2 500 W):

- 50 Hz: Cat. no. W 000 264 716.

FRIOJET 70

(freezing power 6 000 W):

- 50 Hz: Cat. no. W 000 264 387.

Cooling liquid for FRIOJET:

can of 20 l
Cat. no. W 000 010 168



Necessary quantity

FRIOJET 10	1 can
FRIOJET 30	1 can
FRIOJET 70	4 cans

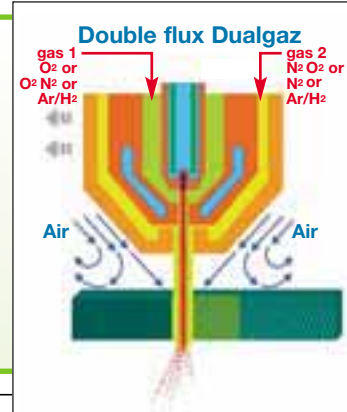
Cutting stainless steels

DUALGAZ process

With the NERTAJET HP DUALGAZ plasma process, Air Liquide Welding brings you a high quality solution for cutting mild steel and stainless steels in thicknesses from 0.8 to 50* mm. DUALGAZ is a new technology successfully developed by Air Liquide Welding engineers, bringing to bear their profound knowledge of every aspect (the electronics, mechanics, gaseous physics and chemistry, metallurgy, etc.) of the plasma procedure. This innovation combines the characteristics of arc control provided by NERTAJET HP technology with the advantages offered by special gas mixtures. By introducing special constituents into the gas mixtures, it is possible to act upon the physical and chemical aspects of the procedure. As a function of the grade and thickness of the stainless steel to be cut, the type and proportion of the different constituents is adjusted in order to attain the highest possible quality of cut. In this way, every individual case is defined to furnish a personalized solution for the work of each customer.

Advantages to customers

- **Flexibility:** DUALGAZ is suitable for all grades of stainless steel, including titanium stabilized grades.
- **Quality:** no flashes, even in zones where the machine slows down (angles, etc.) Cut parts can be used directly without any retouching.
- **Quality:** low surface roughness (less than that obtained by Laser cutting).
- **Quality:** light colour of cut surfaces.
- **Quality:** very good control of relief.
- **Reproducibility:** excellent consistency of cut throughout the life of wearing components (nozzles and electrodes).
- **Ease of use:** can be employed on all common digitally controlled gantry machines. Its use on high precision equipment such as ALPHATOME, displays the potential of the procedure to the full (high quality geometry of parts).



Oxygen gives good quality cuts with excellent weldability of cut edges.

The air must be dry and oil-free.

Argon/hydrogen mixtures give cuts of good bright appearance, especially in stainless steel.

Nitrogen is mainly used for small thicknesses and stainless steels.

The use of a water vortex enables cutting under water which strongly attenuates noise, radiation and fumes.

The use of an annular gas (nitrogen) enables quality improvement of stainless steel plates cutting.

NERTAJET tool-kit



Examples of NERTAJET toolcases corresponding to different mountings.



NERTAJET case for OCP



NERTAJET case for CPM

* 40 mm for carbon steel.

Machine oxycutting

Oxycutting of non or low-alloyed steels from 3 mm up to 300 mm, used with OXYCUT G1, IC or MACH cutting torches, with semi automatic (Cantilever machines) or full automatic machines (portal machine type OXYTOME HPC). According to your needs, you will choose, mixing nozzles with the OXYCUT G1 or IC cutting torch, premix nozzles with high speed and high quality with OXYCUT MACH torch. With the OXYCUT G2 you will be able to cut thicknesses from 200 mm up to 900 mm.

Torches and cutting tips with gas mixing in the tip

Oxycutting is a thermal process which enables the cutting of non-alloyed and low-alloyed steels.



0876-023

OXYCUT G2

Use G2 cutting tips.



1160-002

OXYCUT G1

Use G1 cutting tips.



0264-054

OXYCUT MACH

To be used with:
MACH OXY cutting tips,

Heating gas	Acetylene, Crylene	Propane, Natural gas, Tetrene	Acetylene, Crylene	Propane, Natural gas, Tetrene	Acetylene, Crylene	Propane, Natural gas, Tetrene
Cat. no.	W 000 139 651		W 000 164 839		W 000 209 446	W 000 209 449
Cutting capacity (mm)	200 to 900		3 to 300		6 to 300	
Rack rail track (mm)	-		350		350	
Torch length (mm)	720		580		580	
Barrel diameter (mm)	45		32		32	
Inlet couplings/ Internal hose diameter (mm)	OX cutting	M20 x 150 RH / 14	3/8 G RH / 10		3/8 G right / 10	
	OX heating	3/8 RH / 10	3/8 G RH / 10		3/8 G right / 10	
	AD heating	3/8 LH / 10	3/8 G LH / 10		3/8 G left / 10	
	water cooling	M16 x 150 LH / 10	-		-	
Options:						
Flash back arrestors	OX cutting	-	0712-1637		-	
	OX heating	W 000 290 700	W 000 290 912		W 000 290 912	
	AD heating	W 000 290 701	W 000 290 913		W 000 290 913	
Cleaning kit for cutting tips	W 000 290 901		W 000 290 901		W 000 325 285	
Spare parts:						
Nut for cutting tips	7609-0042		W 000 139 652		-	
Screw for cutting tips	-		-		W 000 139 623	
Cleaning product for MACH OXY	-		-		W 000 325 555	



OXYCUT cutting tips

Thickness (mm)	Gauge	OXYCUT G2		OXYCUT G1		
		Acetylene	Propane	Acetylene	Tetrene	Propane natural gas
3-10	7/10	-	-	W 000 325 007	W 000 325 580	W 000 325 548
10-25	10/10	-	-	W 000 325 536	W 000 325 542	W 000 325 549
25-50	12/10	-	-	W 000 325 537	W 000 325 543	W 000 325 550
50-80	16/10	-	-	W 000 325 538	W 000 325 544	W 000 325 551
80-120	20/10	-	-	W 000 325 539	W 000 325 545	W 000 325 552
120-200	25/10	-	-	W 000 325 540	W 000 325 546	W 000 325 553
200-300	30/10	7020-0101	7020-0221	W 000 325 541	W 000 325 547	W 000 325 554
300-400	35/10	7020-0102	7020-0222	-	-	-
400-550	40/10	7020-0103	7020-0223	-	-	-
550-700	45/10	7020-0104	7020-0224	-	-	-
700-900	55/10	7020-0105	7020-0225	-	-	-

MACH OXY cutting tips

Thickness	Gas	MACH OXY
6-10	Acetylene	W 000 208 508 + W 000 208 517
10-25		W 000 208 509 + W 000 208 517
25-50		W 000 208 510 + W 000 208 517
50-80		W 000 208 511 + W 000 208 517
80-120		W 000 208 512 + W 000 208 517
120-200		W 000 208 513 + W 000 208 518
200-250		W 000 208 514 + W 000 208 518
250-300		W 000 208 515 + W 000 208 518
6-10	Propane and Natural gas	W 000 208 485 + W 000 208 494
10-25		W 000 208 486 + W 000 208 494
25-50		W 000 208 487 + W 000 208 494
50-80		W 000 208 488 + W 000 208 494
80-120		W 000 208 489 + W 000 208 494
120-200		W 000 208 490 + W 000 208 495
200-250		W 000 208 491 + W 000 208 495
250-300		W 000 208 492 + W 000 208 495
6-10	Tetrene	W 000 208 497 + W 000 208 506
10-25		W 000 208 498 + W 000 208 506
25-50		W 000 208 499 + W 000 208 506
50-80		W 000 208 500 + W 000 208 506
80-120		W 000 208 501 + W 000 208 506
120-200		W 000 208 502 + W 000 208 507
200-250		W 000 208 503 + W 000 208 507
250-300		W 000 208 504 + W 000 208 507

Accumulates the savings:

- best cutting quality,
- very little gas consumption,
- high cutting speed,
- possibility of working far from the plate, possibility of mounting on different torches (adapter).



Chemical cleaning kit for MACH.



Adapters for using MACH OXY cutting tips with following machine torches:

Torch		Acetylene	Tetrene Propane Natural gas
OXYCUT G1	adapter + screw	W 000 139 627	W 000 139 640
	screw	W 000 139 623	W 000 139 623
OXYCUT IC	adapter + screw	W 000 139 023	W 000 139 623
	screw	W 000 139 630	W 000 139 623

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.

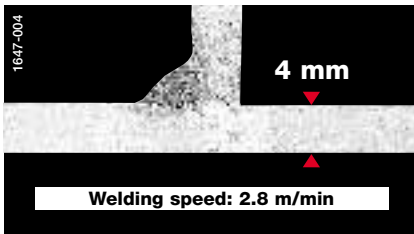
We offer "Process support" as an additional guarantee of long-term production line quality.

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

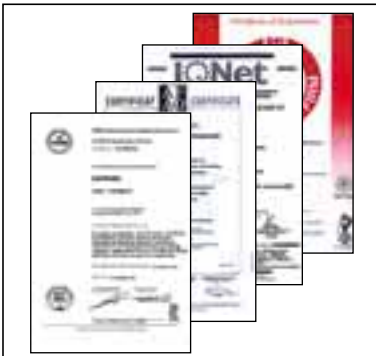
The mechanical strength of any weld depends strictly on the wire/flux or wire/gas combination. Air Liquide Welding provides you with the best combinations for optimal result.



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.

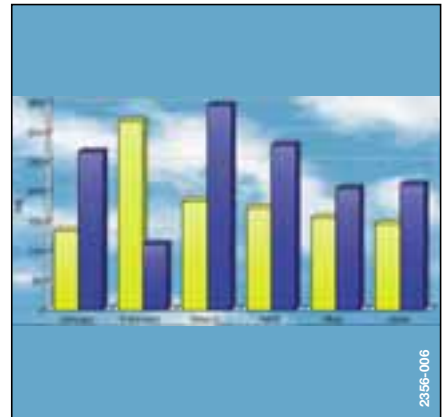
We can work out your machinery requirements together if you need to find the best welding process for a given application, build a prototype or pre-production model or specify a weld type.

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

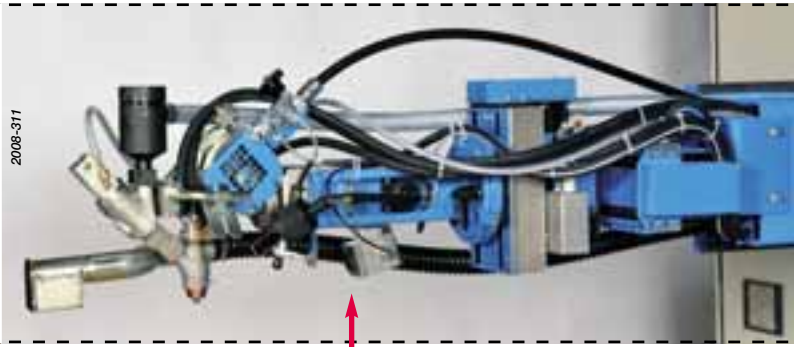


2356-002

ALW submerged arc solutions



1806-106



2008-317

Internal and external welding for circular and longitudinal parts

Internal butt welding applications



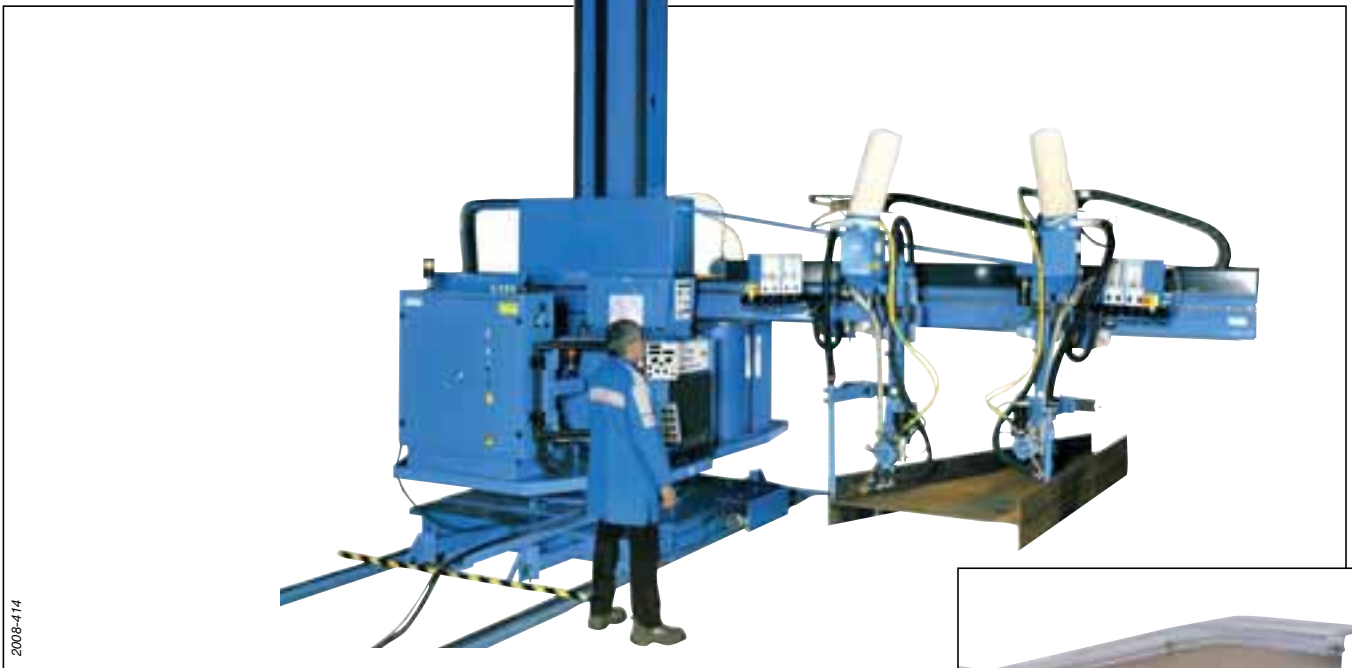
1806-107



1806-110



1806-109

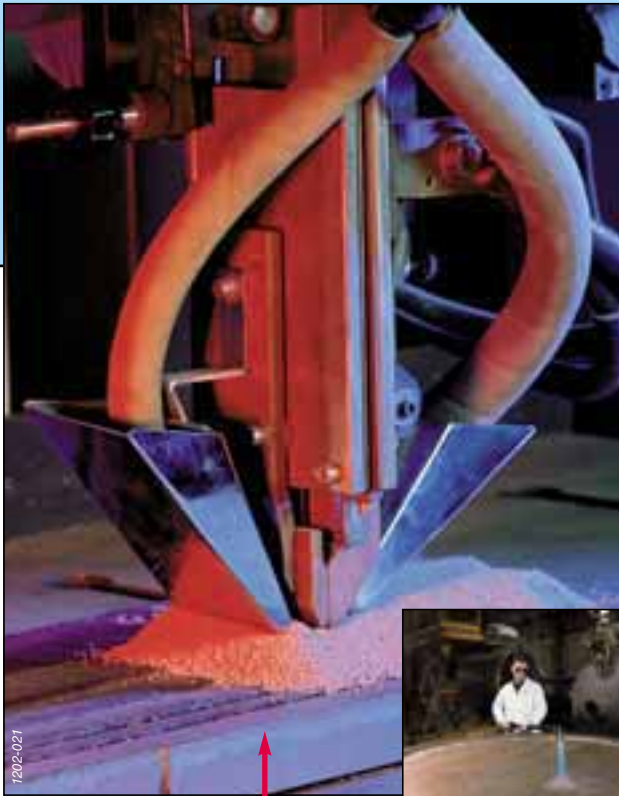


2008-414

PRS System for restructured beams.



2000-007



Strip cladding



2008-465



LPG bottles



3100-003



0105-022



Heavy duty
(up to 70 mm wall thickness)

2009-466



2009-457



Single and tandem narrow gap
up to 250 mm wall thickness

2008-458



2366-068

SUBARC standard welding heads

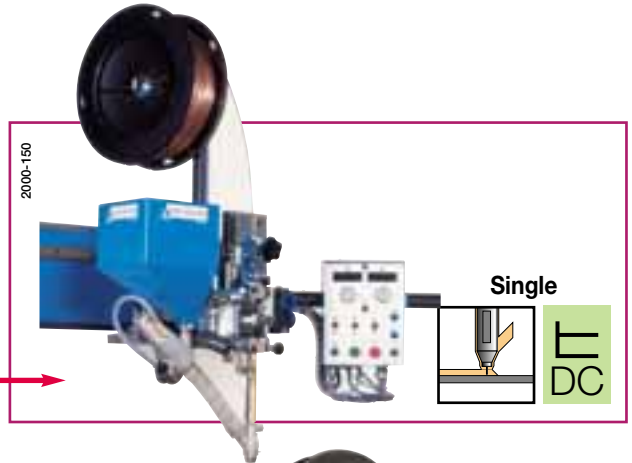


Welding and hard surfacing of low-alloyed carbon steel, stainless steel or refractory steel. Thickness of 1.8 up to 16 mm butt joint welding. Thicknesses greater than 16 mm require special preparation and weld head.

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:

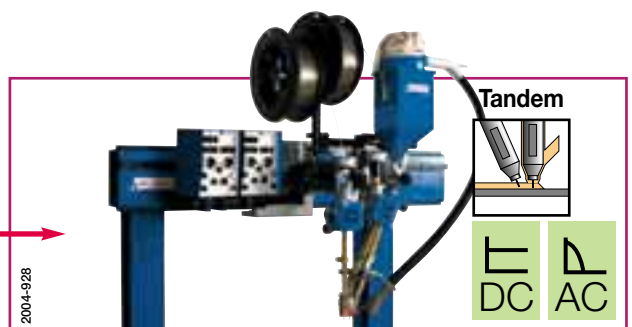
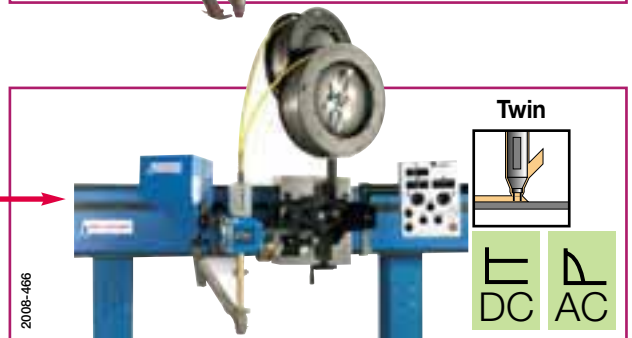
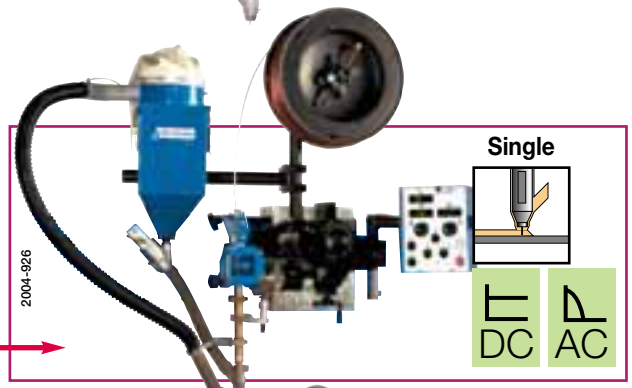
The SUBARC 2 installation is designed to allow quick and economic integration of direct current MIG and submerged arc welding depending of the horizontal power source characteristics. Direct current DC single.



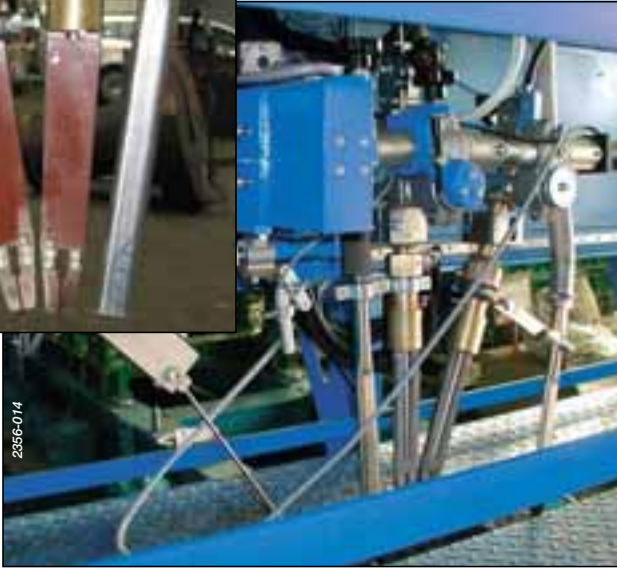
With SUBARC 5:

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.



NEW

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

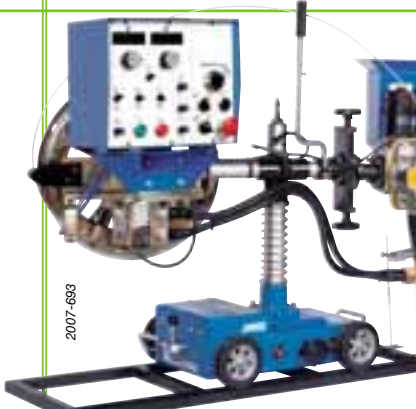
NEW

MIG-MAG tractor

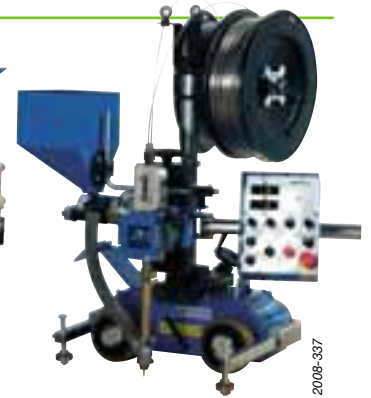


2049-008

Submerged arc tractors



2007-693



2008-337

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

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.

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.



Applications	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.
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Outline specifications			
Welding process	MIG / MAG	SUBMERGED ARC	SUBMERGED ARC
Speed	15 to 140 or 5 to 70 cm/min	0.2 to 2.2 m/min.	0.1 to 2 m/min.
Dimensions (l x h x w)	250 x 300 x 260 mm	1 020 x 480 x 740 mm	1 000 x 900 x 650 mm
Net weight	10 kg (12 for the SP)	54 kg	100 kg
Cat. no.	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
Oscillation unit	W 000 315 474	-	-

STARMATIC power sources



- 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.



Designation	STARMATIC 650 DC	STARMATIC 1003 DC	STARMATIC 1303 DC	STARMATIC 1003 AC/DC	
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 - flat - drooping	■ ■	■ ■	■ ■	AC ■ ■	DC ■ ■
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.



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



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



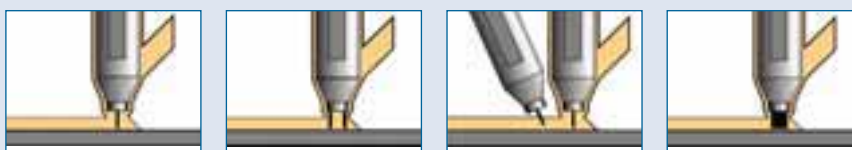
Single-wire welding for shipbuilding



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

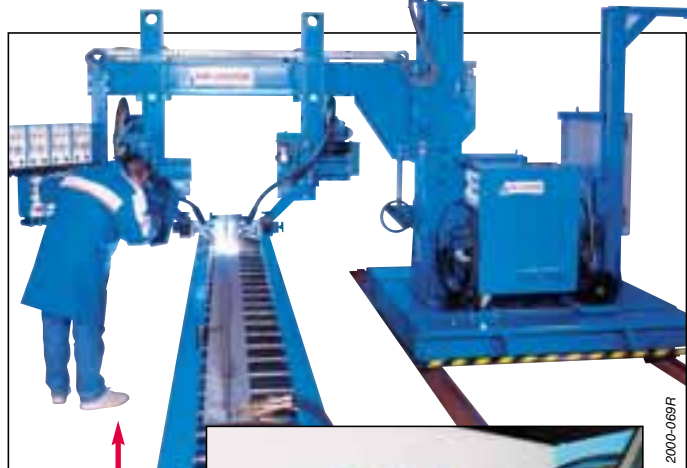
ALW MIG-MAG solutions



Longitudinal Aluminium welds for automotive and railway industries.



Fire extinguishers and LPG Gas Bottles.



MIG PRS



Circular welding for standard and specials vessels

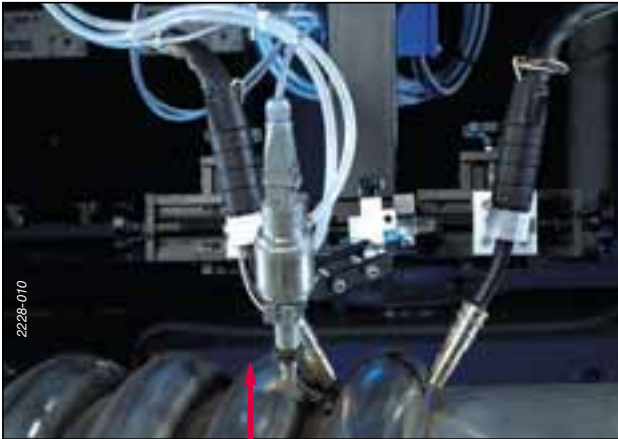


2003-173

Stiffeners welding installations



1311-018



2228-010

Helicoidal welding



TOPMAG circular welding

MANATEC EX 22

2008-461

Longitudinal 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> 	


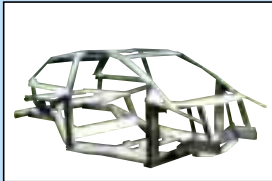


MIG Brazing

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:

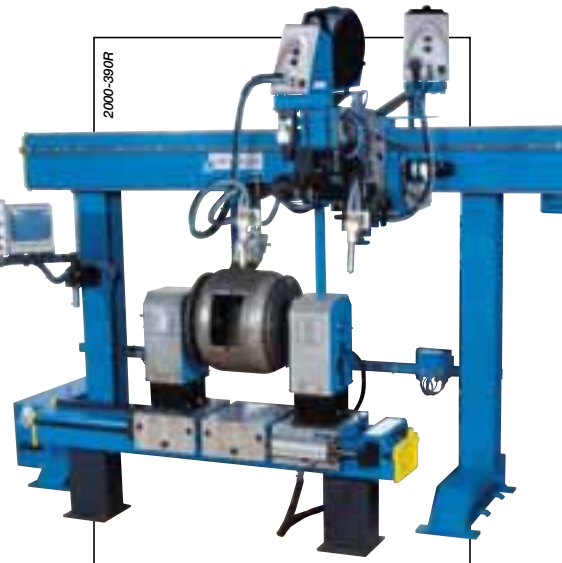
- Standard manual generator
- Simple and no option interfacing
- Controlled or manual modes

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:

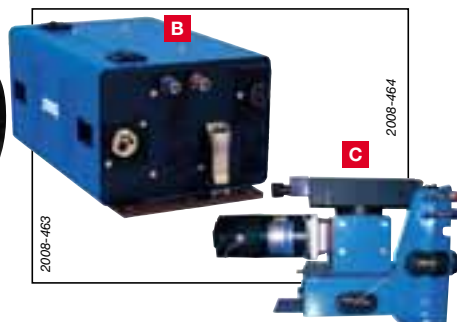
- Options easily connectable
- 100 programs available
- Controlled or programs modes

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

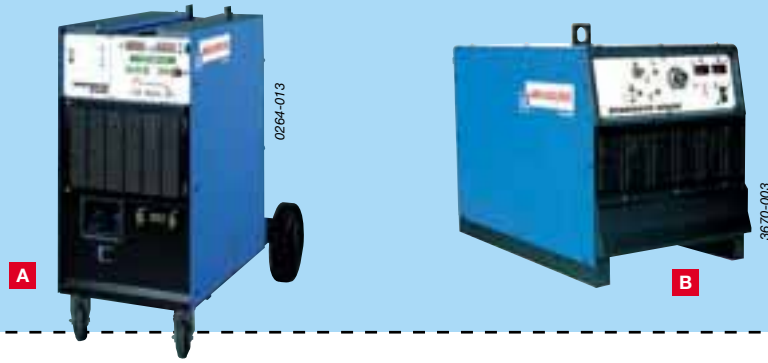


2006-112



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:

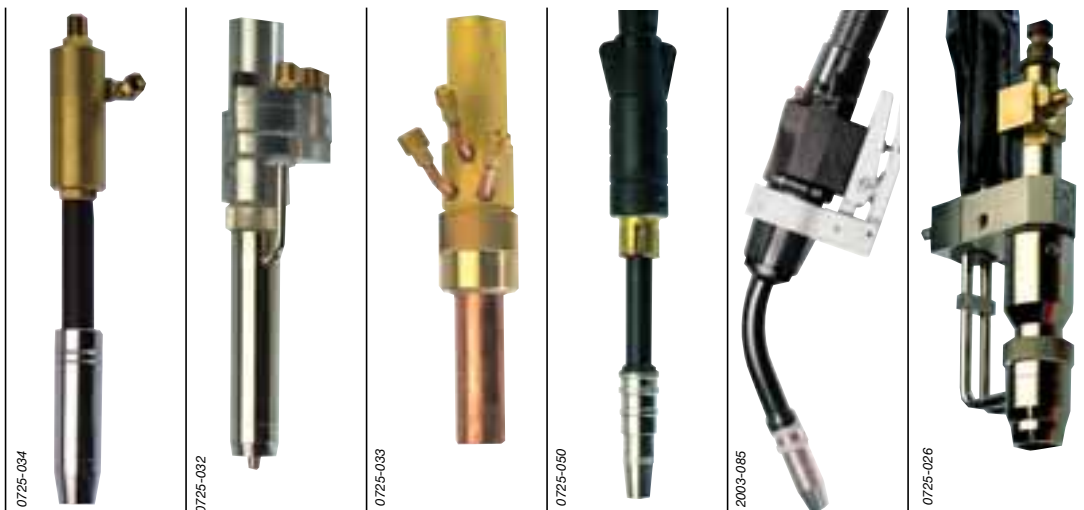
- solid wires
- flux-cored wires dia. 0.8 to 1.6 mm,
- steel,
- stainless steel,
- light alloys up to dia. 2.4 mm.

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

Special torches for automatic welding MIG/MAG installations



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

* 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%



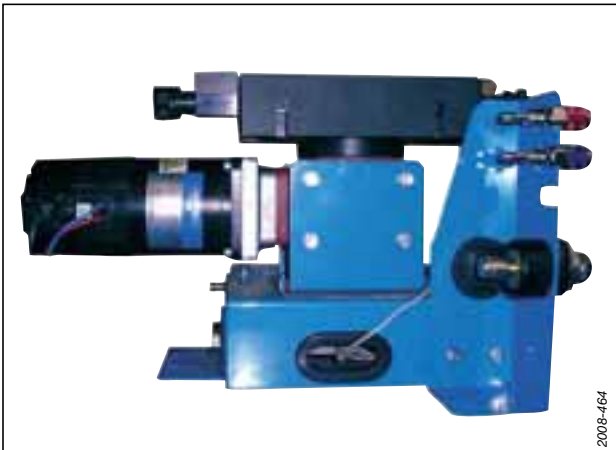
Advantages DVR 500

- 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

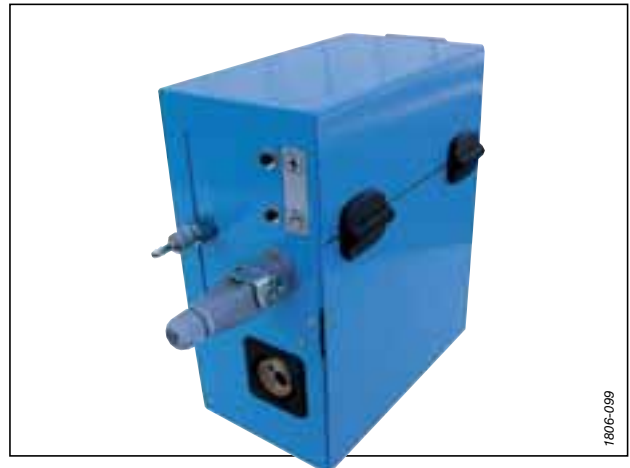
- Quick mounting device
- Peripheral sockets
- Compatible with options
- Heavy duty applications
- With DIGI@PULS
- Duty cycle: 450 A at 100% - 500 A at 60%



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

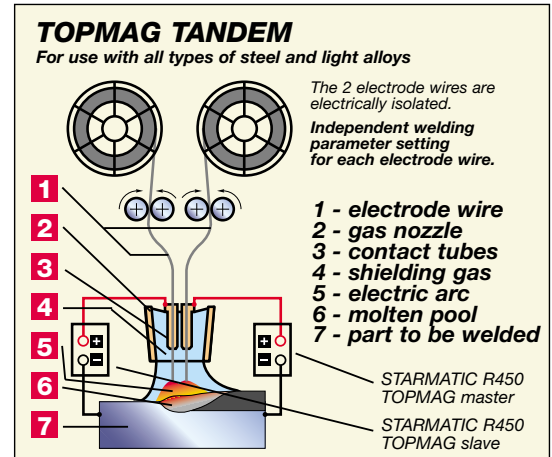


The TOPMAG offer in automatic and robotic double wire welding: fast welding speed, two to three times standard single wire speeds, high-quality bead, excellent penetration, easy to implement and versatile (depending on your application, these facilities can be used in single wire mode).



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.

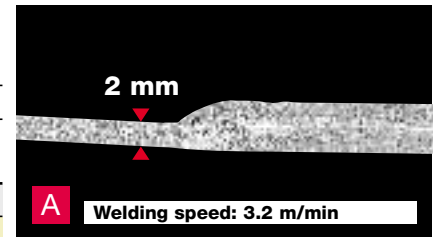


TOPMAG TANDEM - Spray arc + pulsed arc

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
Double wire welding speed	3.2 m/min	2.8 m/min (2.8 mm channel)

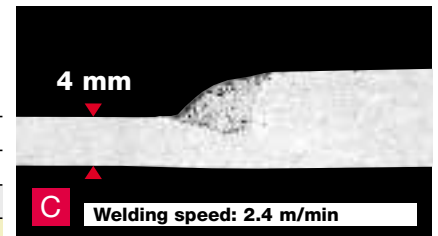


TOPMAG TANDEM - Pulsed arc + pulsed arc

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
Double wire welding speed	2.4 m/min (4.5 mm channel)	2.4 m/min

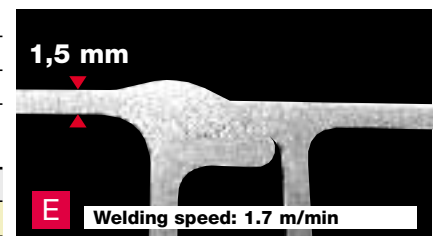


TOPMAG TANDEM - Pulsed arc + pulsed arc

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
Double wire welding speed	1.7 m/min	1.5 m/min (2.8 mm channel)

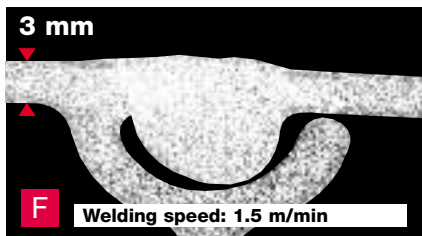
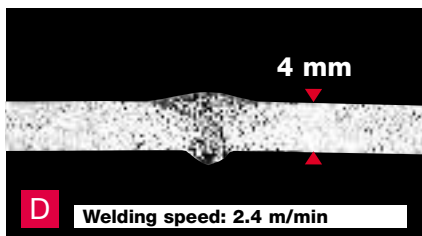
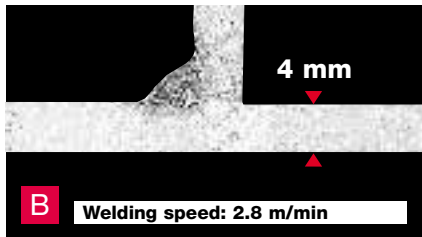




TOPMAG welding installations specifically for high productivity work: high welding speed, high deposition rates. Equipment mainly composed of two STARMATIC R450 power sources, two motorised reducers four roller feed and one double wire torch with coaxial harness to be used on a mechanization machine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

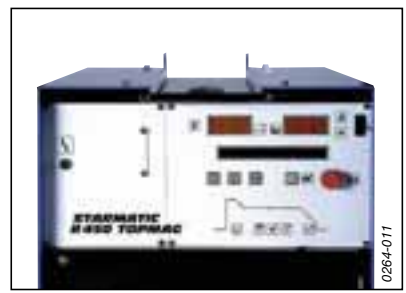
Your application:

- 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.