

DIGISTEEL 420

MIG/MAG equipment
for superior welding results.



DIGISTEEL 420



DIGISTEEL 420 is the a new product on the MIG/MAG welding market offering superior quality welding and advanced welding processes with a simple interface at a competitive price. Moreover DIGISTEEL 420 is designed in a modular system to fit with all users' requirements.

Superior quality welding Advanced processes and features

- Fully digital controlled inverter: for process repeatability and consequently higher welding quality with simpler regulation
- In Synergic mode, more than 80 synergies are available for flat current
- Soft switching inverter (increasing efficiency of the power source)
- Full range of processes
 - Standard MIG/MAG
 - Speed Short Arc™ (for high quality thin sheet welding & root passes)
 - Very high quality welds on thin material)
 - MIG brazing
 - Gouging (up to 6.3 mm diameter electrode)
 - MMA coated electrodes
- Powerful installation up to 420 A at 60%
- Storage of 100 welding programs (with expert wire feeder DVU P500 or advanced remote control RC JOB)
- Parameter locking with a digit code (with expert wire feeder DVU P500 or advanced remote control RC JOB).
When this function is activated, the welder can still fine-tune the parameters in a +/- 20% range



DIGISTEEL 420 is mainly dedicated to carbon steel application for example : infrastructure, boiler making or waste and earthmoving machinery.



A user designed interface for a really easy to use front panel

- Power source and wire feeder

A modular concept to fit with all users' requirements

Specify and build your own installation:

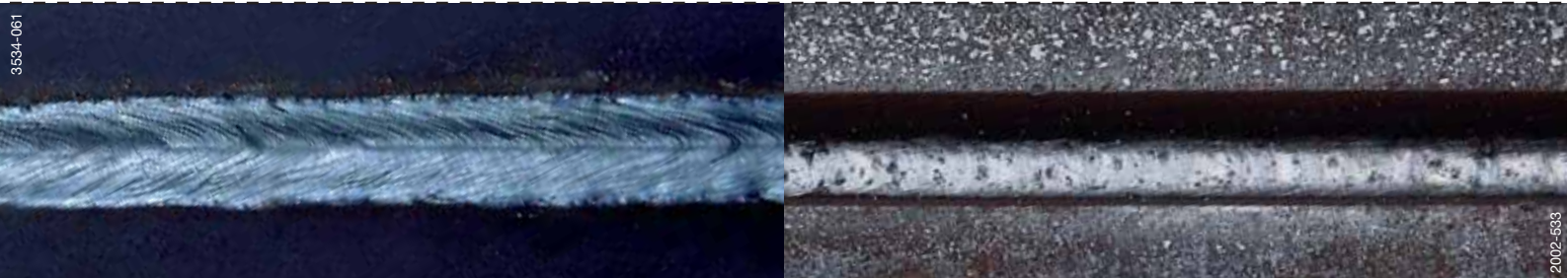
- Power sources
- Wire feeders
- Cooling unit
- Harnesses (up to 50 m for shipbuilding applications)
- Trolleys for the installation and the wire-feeder
- Remote control
- Torches (standard, with potentiometer, push-pull, automatic...)

More benefits for the user

- Small machine for easier access
- Light installation (37 kg for the power source)
- Compatible with motor generator
- A powerful 4-wheel feeder unit

Focus on advanced processes

3534-067



Speed Short Arc™ (SSA™)

Root pass with flux cored wire

DIGISTEEL 420 integrated advanced welding processes in an easy to use interface.

Speed Short Arc™ (SSA™)

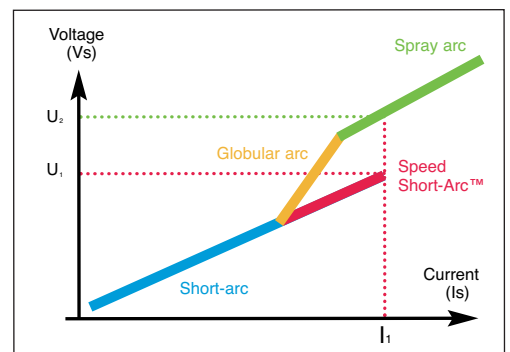
Speed Short Arc™ provides a transfer mode using short circuits in a wire speed domain usually governed by globular conditions.

The current values used in this mode are very different from those used in conventional “short arc” operation.

Faster wire speeds require a medium current together with a large peak current in order to form and detach the droplet quicker.

This is done by programming a digitally-regulated inverter where the current is controlled and where, for wire speeds governed by globular conditions, a specific current profile is required (particularly the rise and fall gradients of the current as well as the maximum peak current).

This means the appearance of short-circuits is “forced” in a mode where, under natural conditions, they appear only erratically.



As seen in the diagram, by applying Speed Short Arc™ to the welding of medium-thickness sheet (2mm), the large increase in travel speed induces a much lower linear energy than that of the conventional mode.

SSA™ advantages

- Large increase in travel speed
- Reduction in distortion
- Reduction of adhering spatter
- Reduction of fume

Main applications:

Parts and products in alloy steels; Containers, steel trailers, infrastructure, agricultural trailers, public works plant.

Flux cored wire

From the beginning, it has become day after day an essential process in all construction applications.

The use of digital technology increases the performance of this process both from the point of view of the quality of the joint produced and the productivity obtained.

Flux cored wire advantages

- Large joint tolerance
- Good mechanical characteristics

Main applications:

Cranes, earthmoving machinery, truck, train construction and repair, boilers, hard facing, galvanised sheet for ventilation ducting.

Segment Activities

The DIGISTEEL 420 high tech MIG/MAG equipment fits perfectly with the needs of the most demanding welding applications in various segments. Whatever your requirements, you will find with the DIGISTEEL 420 a superior welding quality with advanced processes with simple settings through an easy to use interface.

Infrastructure



Cranes and heavy lifting construction



- For infrastructure, cranes and heavy lifting equipment construction, DIGISTEEL 420 is a high tech MIG/MAG power source; light and robust delivering a good short arc for angle high penetration welding

Boiler Making



Earthmoving machinery construction and repair



- For earth machinery construction and heavy boiler making DIGISTEEL 420 high power is dedicated to use flux cored wires for steel and stainless steels applications
- For agriculture DIGISTEEL 420 is dedicated for hardfacing applications

Truck construction and repair



Railway construction



- In addition gouging electrode up to 6.3 mm diameter can be used for maintenance and repair

Hydroelectric



Shipbuilding



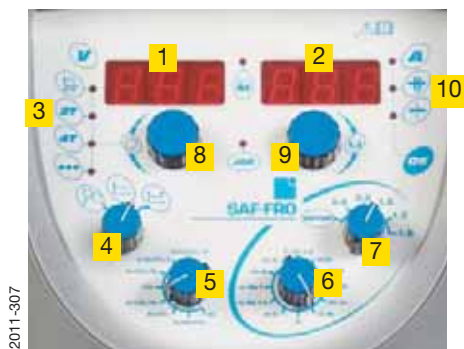
- For outside applications, the machine is IP 23S and can be equipped with long harnesses (up to 50 m). In addition for shipbuilding or building a trolley used with the light YARD PC D200 wire feeder is easy to move and friendly use

Front panels are easy to understand and use



DIGISTEEL 420 power source and wire feeder have been designed to improve welding processes. They are built with a user interface designed for a really easy to understand and to use front panel.

Power source



2011-307

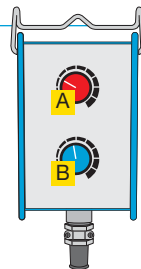
- 1 Welding voltage and set up parameter display
- 2 Welding current or wire speed or thickness display
- 3 Mode and welding cycle selection LEDs
- 4 Process choice selector
- 5 Gas selector
- 6 Wire grade selector
- 7 Wire diameter selector
- 8 Scrolling of set up parameters
- 9 Parameter setting
- 10 Selector for wire speed or thickness display

Remote control



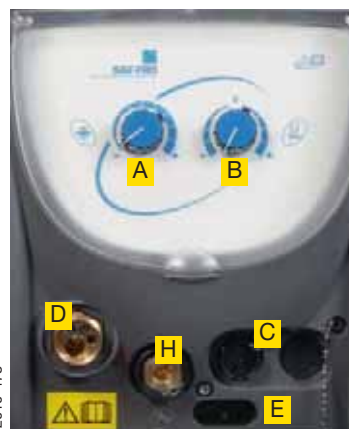
2008-778

- A Wire speed regulation
- B Arc length setting
- G Program selection and advance parameters display and buttons



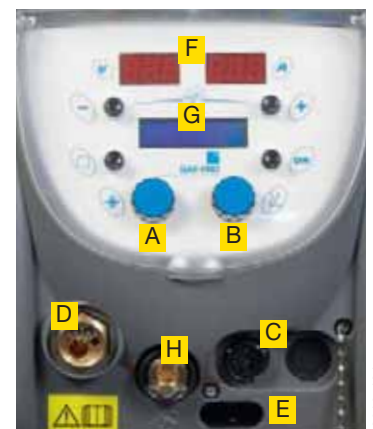
Wire feeders

DVU P400



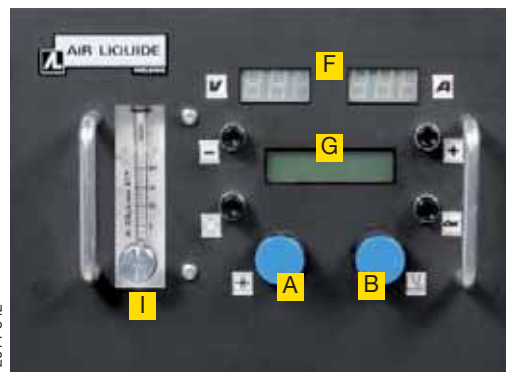
2010-478

DVU P500



2010-484

DV YARD PC D200



2011-342

- A Wire speed regulation
- B Arc length setting
- C Remote control and push-pull connector
- D Torch connector
- E Coolant connections
- F Display of welding parameters
- G Program selection and advance parameters display and buttons
- H MMA electrode holder connection
- I Flowmeter



Power source	DIGISTEEL 420
PRIMARY	
Power supply – 3 Phases - 50/60 Hz	400 V (+ 15% / - 20%)
Maximum primary consumption (100%)	29 A
Temporised fuses	32 A
SECONDARY	
Open circuit voltage	86 V
Welding range	15 A - 420 A
Duty cycle 60%	420 A
Duty cycle 100%	350 A
APPLICATION	
Processes	MIG-MAG / Speed Short Arc™ / MIG Brazing / MMA / Gouging
Additional Feature	Synergic machine
Programs	100 (with expert wire feeder or RC JOB)
GENERAL	
Standard	EN 60974-1 - EN 60974-10
Protection index	IP 23S
Dimensions (l x w x h)	738 x 273 x 521 mm
Weight	37 kg

Wire feeder	DVU P400	DVU P500 expert	YARD PC D200
Rollers	4 drive rollers		
Wire speed	1 to 25 m/min		
Wire Ø - Stainless steel	0.6 - 1.6 mm		
Wire Ø Cored wires	1.0 - 1.6 mm		
Wire Ø Aluminium	1.0 - 1.6 mm		
Regulation	2 potentiometers	2 encoders	
Additional feature	Program management		
Display	-	3 LCD displays	3 LCD displays + flowmeter
GENERAL			
Protection / Insulation	IP 23S - H		In progress
Standards	EN 60974-5 - EN 60974-10		
Dimensions (l x w x h)	265 x 590 x 383 mm		230 x 650 x 400 mm
Weight	17.5 kg		11 kg

Cooling unit	COOLER II
Cooling power	1.3 kW
Maximum pressure	4.5 bar
Dimensions (l x w x h)	720 x 280 x 270 mm
Weight	16 kg

This equipment is designed for industrial and professional use only and does not comply with EN 61000-3-2/12. If it is connected to a public low voltage system, it is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment may be connected. (See also the instruction manual)

References

The modular concept of DIGISTEEL 420 allows you to build the perfect configuration for your requirement. From offshore & shipbuilding to boiler makers, train production and small workshops.

1 Power sources



2011-300

420 A @ 60 % | DIGISTEEL 420 | W000371513

2 Wire feeders



2010-480

2010-483

Standard

Expert

DVU P400 (Standard) | W000275266
DVU P500 (Expert) | W000275267

- 100 programs
- possibility to lock welding parameters
- LCD display



2011-346

YARD PC D200 | W000372373

3 Cooling unit



2010-464

COOLER II | W000273516

4₁ Trolley for installation



2010-862

TROLLEY II | W000279927

4₂ Trolley extension



2010-861

ARMS TROLLEY II | W000279930

5 Trolley On site



2011-377

Trolley On site | W000372274

6 Trolley for wire feeder



2010-462

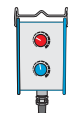
TROLLEY WF II | W000275908

9 Remote control



2008-778

RC JOB (10 m) | W000273134



RC SIMPLE (10 m) | W000275904

7 Swivel



2010-860

SWIVEL TROLLEY II | W000279932

8 Harnesses

Length	Air	Water
2 M	W000275894	W000275898
5 M	W000275895	W000275899
10 M	W000275896	W000275900
15 M	W000275897	W000275901
25 M	W000276902	-
30 M	W000271246	-
40 M	W000271245	-
50 M	W000271244	-



10 Push-pull Puls II electronic circuit



Push-pull puls II | W000275907

Allowing to connect a push-pull torch or gun.

11 Adaptator for exhaust fume arm



W000371976

12 Flowmeter to measure gas flowrate

Flowmeter | W000275905



13 Anti-dust filter for power source protection

W000370925

Examples of configuration

DIGISTEEL 420 air - DVU P400 2 m long harness

Is composed of:

- 1 Power source
DIGISTEEL 420
W000371513
- 2 Wire feeder
DVU P400
W000275266
- 8 Harness II air
2 m long
W000275894



DIGISTEEL 420 water - DVU P400 2 m long harness

Is composed of:

- 1 Power source
DIGISTEEL 420
W000371513
- 2 Wire feeder DVU P400
W000275266
- 3 Cooling unit
W000273516
- 8 Harness II water
2 m long
W000275898



DIGISTEEL 420 "on site" air 25 m long harness + Trolley

Is composed of:

- 1 Power source DIGISTEEL 420
W000371513
- 2 DV YARD PC D 200 - W000372373
- 5 On site trolley for power source
W000372274
- 8 Harness II air 25 m long
W000276902



DIGISTEEL 420 Expert water - DVU P500 10 m long harness + Trolley + Swivel

Is composed of:

- 1 Power source
DIGISTEEL 420
W000371513
- 2 Wire feeder
DVU P500 expert
W000275267
- 4₁ Trolley for power
source
W000279927
- 4₂ Trolley extension
W000279930
- 3 Cooling unit
W000273516
- 7 Swivel
W000279932
- 8 Harness II water
10 m long
W000275900



Torches



Although it is true that welding performance is linked to the technology of the current source and the correct regulation of the wire speed, the welding torch makes an equally important contribution. The parameters sent by the power source must be very accurately transferred by the torch to the arc.

Conventional torches

SAF-FRO propose a complete range of manual MIG-MAG torches **PROMIG NG** which are innovative, powerful and suited to quality applications in the various market sectors. Torches comply with the EN 60974-7 standard and use the European standard connector.



Torches with integrated potentiometer

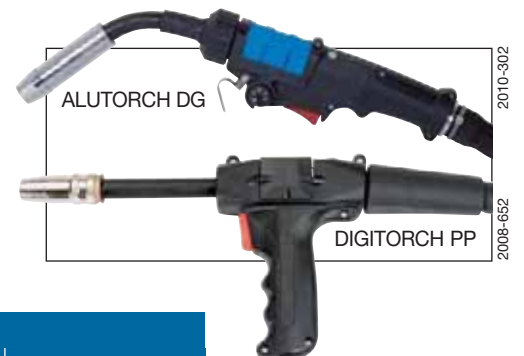
The **DIGITORCH P** range meets the challenge of making the torch as small and easy to handle as a conventional torch with the inclusion of remote control facilities.



Designation	Duty Cycle Ar+CO ₂	Cooling	Ordering information		
			3 m long	4 m long	5 m long
Conventional torches					
PROMIG NG 341	320A @ 60%	Air	W000345066	W000345067	W000345068
PROMIG NG 441	380A @ 60%	Air	W000345072	W000345073	W000345074
PROMIG NG 341W	320A @ 100%	Water	W000345069	W000345070	W000345071
PROMIG NG 441W	380A @ 100%	Water	W000345075	W000345076	W000345077
PROMIG NG 450W	450A @ 100%	Water	W000274865	W000274867	W000274866
Torches with potentiometer					
DIGITORCH P 341	320A @ 60%	Air	-	W000345014	-
DIGITORCH P 341W	320A @ 100%	Water	-	W000345016	-
DIGITORCH P 441W	380A @ 100%	Water	-	W000345018	-

Push-pull torches and guns

Several push-pull systems are available for use with **DIGISTEEL 420**. The **ALUTORCH (torches)** and **DIGITORCH PP (guns)** ranges have excellent operation due to the miniaturization of the wire drive system in line with the push-pull wire feeding axis. These torches and guns give an excellent wire feeding quality, and therefore an excellent weld quality and are particularly recommended for aluminium applications or use with small diameter wires. They can be easily adapted with a push-pull kit.



Designation	Duty Cycle Ar+CO ₂	Cooling	Ordering information		
			8 m long curved 45°	8 m long straight	10 m long curved
Push-Pull Torches					
ALUTORCH DG 342	300 A @ 40%	Air	-	-	W000264913
ALUTORCH DG 441W	450 A @ 60%	Water	-	-	W000265067
Push-Pull Guns					
DIGITORCH PP 352	270 A @ 60%	Air	W000267606	-	-
DIGITORCH PP 451W	450 A @ 60%	Water	W000267607	W000271006	-



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Air Liquide is the world leader in gases for industry, health and the environment, and is present in over 80 countries with 43 600 employees. Oxygen, nitrogen, hydrogen and rare gases have been at the core of Air Liquide's activities since its creation in 1902. Using these molecules, Air Liquide continuously reinvents its business, anticipating the needs of current and future markets. The Group innovates to enable progress, to achieve dynamic growth and a consistent performance. Air Liquide combines many products and technologies to develop valuable applications and services not only for its customers but also for society.