INDUSTRIAL WELDING MACHINES

MIG/MAG INVERTERS

SVAROG 420, 520 HD H2O PULSE
SVAROG 330, 530 HD H2O HSL
available in SEPARATE or COMPACT version

Industrial welding machines ALFA IN

The perfect solution for even the most demanding welding jobs

The demands in the field of manual welding are often very high, the welding equipment must enable the achievement of exceptional quality of the weld joint and efficient operation. The machines must be variable, ergonomic, reliable, long-lasting and serviceable.

The perfect answer to all these challenges are ALFA IN industrial welding inverters, which use the latest technology with the highest level of quality, they offer economical operation, energy efficiency and a durable construction for tough conditions.

The digital control of the power source ensures an extremely stable arc that guarantees excellent welding results. Simple and intuitive operation makes everyday work easier. All ALFA IN welding welders are innovative and powerful solutions, with which you can handle any welding work.

Whether it is welding with a coated electrode, the MIG/MAG or TIG method, ALFA IN a.s. , as one of the leading manufacturers in the field of welding technology, offers the ideal solution for every welding process. Welders are used in metalworking operations for light and heavy structures, in repairs, maintenance in service and automotive workshops, in the manufacture of industrial equipment and in educational institutions.

The quality and performance provided by ALFA IN welding machines are chosen by users all over the world.

CONTENT

HIGH PERFORMANCE WELDING MACHINES WITH WIDE RANGE OF APPLICATION

Made in Czech Republic
We are a traditional manufacturer of welding equipment and transformers in the Czech Republic.

Modern and ergonomic design,
Functional and intuitive user interface

SVAROG welding machines with an innovative and imaginative design, fulfil everything required in demanding industrial operations.

Variable machines

You can easily configurate your machine by choosing of many options and accessories to meet your needs.
You can have a compact version or version with separate wire feeder, without pulse or with pulse mode or with double pulse mode.

Why to choose SVAROG?

User interface

It can be placed wherever you need. You can easily place it at a distance up to 12 m (the length of the extension cable is 6 m) on any ferromagnetic material or simply leave it on the generator, thanks to the strong magnet.

High welding performance

Very High duty cycle 500A = 60%, 420 A = 100% in comparison with similar machines with lower output.

Easy welding readiness

Intuitive operation allows welders to start the machine immediately without prior knowledge of settings. All important parameters are clear and easily adjustable. Readiness for the welding requires choice of basic settings only: gas, wire diameter, material thickness.

70% less finish works, 30% faster welding

Thanks to Pulse mode is possible to avoid uncontrollable transition welding arc accompanied by high production of spatter. Lower production of spatter brings 70% less finish works. Increase of welding speed by using of Pulse arc mode is 30% and by using of HSL arc mode is in average of 35% comparing to standard welding arc.

Huge selection of Synergic program

For Steel SG/Fe, Stainless steel Cr/Ni, Aluminium alloy AlSi, AlMg , wire diameters 0,8; 1.0; 1,2 mm different gas mixtures.

SYNERGY PROGRAMS		ø 0.8 mm	ø 1.0 mm	ø 1.2 mm
SG/Fe	Ar 82 % CO_2 18 %	0	1	2
SG/Fe	Ar 90 % CO_2 10 %	3	4	5
SG/Fe	CO_2 100 %	6	7	8
Cr/Ni 308	Ar 97,5 % CO_2 2,5 %	9	10	11
Cr/Ni 316	Ar 97,5 % CO_2 2,5 %	12	13	14
AlSi	Ar 100 %	-	15	16
AlMg	Ar 100 %	-	17	18
SYNERGY PROGRAMS PULSE		**ø 0.8 mm**	**ø 1.0 mm**	**ø 1.2 mm**
SG/Fe	Ar 82 % CO_2 18 %	19	20	21
SG/Fe	Ar 90 % CO_2 10 %	22	23	24
Cr/Ni 308	Ar 97,5 % CO_2 2,5 %	25	26	27
Cr/Ni 316	Ar 97,5 % CO_2 2,5 %	28	29	30
AlSi	Ar 100 %	-	31	32
AlMg	Ar 100 %	-	33	34

Savings Economy and Sustainability

Invertor technology
Ensures low power consumption at constant output power and at the same time reduce electricity consumption.

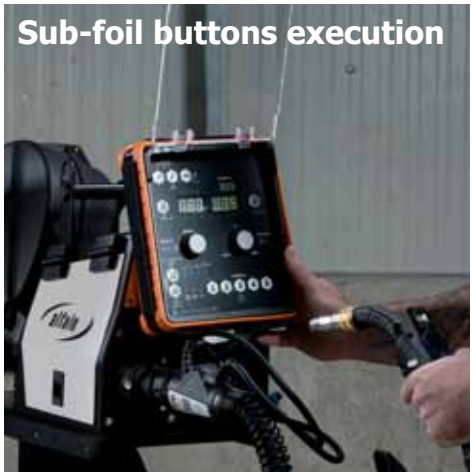
Efficiency 89%
Svarog achieves 89%, according to standard methods of efficiency measuring. It means, that large part of the power input supply from the networks is converted to arc energy without any losses.

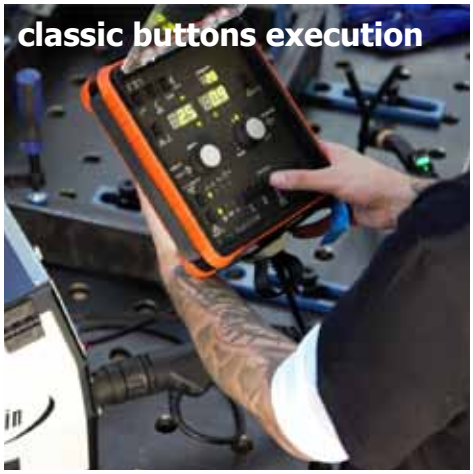
Cooling
The composition of coolant ACL-10 ensures exceptional sustainability and prolonged life time of the cooling system.

Cooling liquid filter
The filter is basically placed into the cooling circuit with function to catch any dirt, which protects the burner from clogging. The Filter construction ensures easy inspection and periodic cleaning.

Easy jobs setting
Direct storage of JOBs is activated by long pressing of the button and direct recall of JOBs is activated by short pressing of the button. There are 5 buttons on the remote control designed for saving of 5 JOBs independently.

The user interface panel can be equipped **by classic or sub-foil buttons** as optional. The Classic buttons can give a sense of security to some welders during setting of the welding machine.


Sub-foil buttons execution


classic buttons execution

The Torch calibration
The accuracy of the synergy depends on the resistance of the welding circuit. Different lengths of a torch cable, cable bundle and earthing cable or grounding point location can have affect to the accuracy of the synergy curve. The torch calibration function allows welder to eliminate above mentioned effects.

User interface panel with lock function
Easy activation of user interface panel lock and unlock function by pressing of the button combination. It protects from unintentional change of parameters.

Variable wire feeder position
The wire feeder in the execution separé, can be freely replaced from the machine holder to surroundings area near the welding site. It allows to use torches with different lengths and to control and set all machine parameters and functions from the welding site.

Colour marked diameter of the rools
Easy choice of the right roll, thanks to the colour markings and pictograms. The table of rolls placed on the inside part of wire feeder cover, will help you. Installation of rolls is easy and quick thanks to suitable design of wire feeder.

Coolant tank
The neck of the coolant tank is easily accessible for refilling. The neck is partially transparent and has watermark, which serves for quick coolant level comtrol.

Lifting handles enables moving and loading of machine.

Reliable force
The four-roll feeder with big diameter rolls and incremental encoder, shifts the welding wire safely and reliably.

Storage space for accessories
The compact execution offers the possibility of lockable clean space for small accessories and consumables with easy access.

MIG/MAG torches for SVAROG

Easy operation by ARC M torches
The torch buttons with Up/Down function enable change of power output, call up of programs, change of operating modes and lock and unlock of the Up / Down function.

Huge advantages with new ARC M torches
New core technologies significantly extend the life time of torches and ensure the quality of the weld.
See QR code for all advantages and parameters:

Inovative industrial torch, Liquid- Cooled ARC M6W with U/D function buttons (in the price included), with up to 2/3 less time of maintenance thanks to used core technologies.
Parameters in comparison with similar torches:

- nozzles run up to 75% cooler and last up to 3 times longer
- swan necks run up to 35% cooler
- Contact tips last up to 6 times longer
- Tip adaptors last up to 5 times longer

Core Technologies

BI FLOW TECHNOLOGY · FORCE COOL TECHNOLOGY · NRS TECHNOLOGY · SIC TECHNOLOGY · OSW TECHNOLOGY

Technical parameters of liquid-cooled torches M6W / M6W PISTOL

	M6W / M6W PISTOL
Cooling Method	Liquid-cooled
Rating CO_2	550 A
Rating: Mixed Gas	530 A
Duty Cycle	100 %
Wire Size Fe, Fe-MC / FC	0,9 - 2,0 mm
Wire Size Ss, Ss-MC /FC	0.9-1.6mm
Wire Size Al	1.0-2.0mm
Min. liquid flow rate	1,5 l/min
Min. liquid inlet pressure	3,0 bar
Max. liquid inlet pressure	5,0 bar
Min. request. cooling	900 W
Max. liquid inlet temperature	50 °C
Operating temperature range	-10 až 40 °C

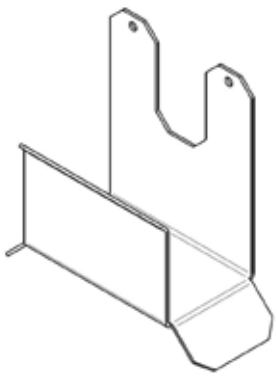
Modularity of undercarriage for gas cylinders – execution with one cylinder holder, two cylinders holder or without cylinder holder. It is possible to choose a machine with wide or narrow undercarriage. You can also choose the diameter of the wheels or the variant without wheels (placed on a pallet).

Big wheels – front - diameter 200 mm, rear - diameter 300mm

Small wheels – front - diameter 125 mm, rear diameter - 250mm

Cables holder

It serves for storage - holding of the torch cable, cable bundle and extension cables. It is practical and simple and the cables will not „tangle" dangerously on the ground. The holder is mounted by a screw in the upper rail of the machine case.



Practical torch holder

Accessory for all welders. The holder can be easily attached to the plastic case handle. The tool will not be lying the workplace surroundings and the torch will be always conveniently stored in the holder.

User interface extension cable

Available 2x6m extension cable for user interface. You can set welding parameters and functions up to 12m from the welding machines or wire feeder.

CONFIGURE SVAROG BY YOUR IDEAS

EXAMPLE:

SVAROG 520 HD H2O PULSE separé A B

BASIC TYPE:
330, 420, 520, 530

LINE:
HD - standard

COOLING:
GAS - gas cooled
H2O - water cooled

MODES:
unmarked - no Pulse
PULSE - Pulse mode
Dpulse - Double Pulse mode
HSL - Double Pulse mode, with hight speed welding

DESIGN EXECUTIONS:
separé - generator with separate wire feeder
compact - compact execution
modular - modular solution

see. Picture below

TYPES OF UNDER CARRIGE AND WHEELS:
See – next page

COOLING UNITS EXECUTIONS:

A* - 4607 ccool. unit TIG, EURO -outlets on the rear side only

B - **4608** cool. unit. TIG ST - outlets on the front and rear side

C - 4610 cool. unit.- outlets on the middle of front side – compact

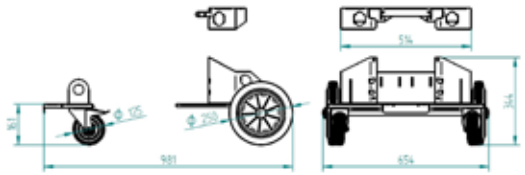
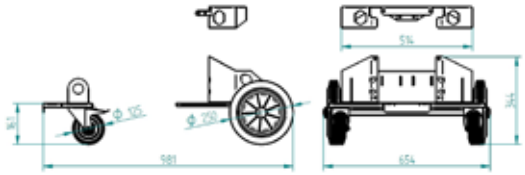
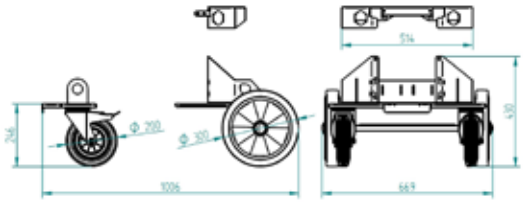
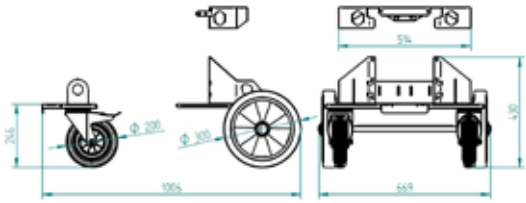
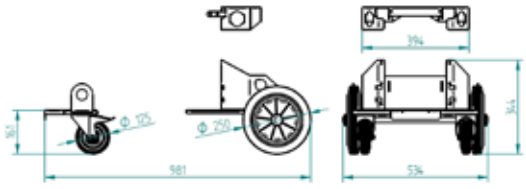
Z - 4611 not cool. unit., GAS cooled version

* version with chl. unit A is not possible for compact

separé - generator with separate wire feeder

compact - kcompact execution (built in wire feeder) with availability of user interface execution

Undercarriage and cylinder holders execution - optional

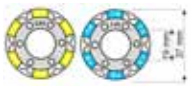
Ilustration	Code (2 positions – items)	Description
	**A**	4625 Undercarriage for cylinders wide (front+rear) SVAROG (1 cylinder, front wheels 125, rear wheels 250)
	**B**	4620 Undercarriage for cylinders wide (front+rear) SVAROG (2 cylinders, front wheels 125, rear wheels 250)
	**C**	4627 Undercarriage for cylinders wide (front+rear) SVAROG (1 cylinder, front wheels 200, rear wheels 300)
	**D**	4624 Undercarriage for cylinders wide (front+rear) SVAROG (2 cylinders, front wheels 200, rear wheels 300)
	**E**	4628 Undercarriage without cylinders narrow (front+rear) SVAROG (front wheels 125)
	**X**	4621 Undercarriage for one cylinder narrow (front+rear) SVAROG (front wheels 125, rear wheels 250)
	**Y**	4622 Undercarriage without cylinders narrow (front+rear) SVAROG
	**Z**	4623 Undercarriage for pallet placing (front+rear) SVAROG

Ordering Information

Ilustration	Ord. number	Description
Bellow mentioned SVAROG machines codes are for the basic versions. Configure the type of cooling unit and undercarriage according to the options shown on page 12. SVAROG's are delivered incl. wire feeder unit.		
	E.441CA	SVAROG 520 HD H2O compact
	E.442CA	SVAROG 520 HD H2O PULSE compact
	E.440AA	SVAROG 520 HD GAS PULSE separé
	E.443AA	SVAROG 520 HD H2O separé
	E.444AA	SVAROG 520 HD H2O PULSE separé
Choose user interface for your SVAROG with classic or sub-foil buttons execution.		
	E.404	DOV SVAROG HD user interface with sub.-foil buttons
	E.404-TL	DOV SVAROG HD user interface with classic buttons
	E.418-1	Extension cable 6m DOV SVAROG
Níže uvedené kódy strojů jsou standardní verze strojů s vysokorychlostním svařováním. Druh chladící jednotky a podvozku si můžete změnit dle možností uvedených na straně 12. Svarogy se dodávají včetně posuvové jednotky.		
	E.457CA	SVAROG 330 HD H2O HSL compact
	E.445AA	SVAROG 530 HD H2O HSL separé
Below mentioned cable bundles are integral part of the separé execution. Standard cable bundle length is 1,2m. Other lengths are optional.		
	E.402-01270H	Cable bundle 1,2m 70mm2 H2O SVAROG HD
	E.402-0270H	Cable bundle 2m 70mm2 H2O SVAROG HD
	E.402-0570H	Cable bundle 5m 70mm2 H2O SVAROG HD
	E.402-1095H	Cable bundle 10m 95mm2 H2O SVAROG HD
	E.402-1595H	Cable bundle 15m 95mm2 H2O SVAROG HD
	E.402-2095H	Cable bundle 20m 95mm2 H2O SVAROG HD

ORDERING INFORMATION

Ordering Information

Ilustration	Ord. number	Description
	4626	Undercarrige PS SVAROG complete
	VM0025-2	Earthing cable 3 m 500 A 70 mm2 SVAROG
	VM0185	Cable with E holder 3 m 500 A 35-70
	E.420-1	Torch holder SVAROG
	E.419	Cables holder SVAROG
	M6W-DM3-3M	Torch ARC M6W 3m DIGIMIG
	M6W-DM3-4M	Torch ARC M6W 4m DIGIMIG
	M6W-DM3-5M	Torch ARC M6W 5m DIGIMIG
	M6WP-DM3-3M	Torch ARC M6W 3m DIGIMIG PISTOL
	M6WP-DM3-4M	Torch ARC M6W 4m DIGIMIG PISTOL
	M6WP-DM3-5M	Torch ARC M6W 5m DIGIMIG PISTOL
	VM0151-1	Hose Gas 3m G1/4-G1/4
	T4W4EURO	Torch T4W 4m 35-50 arc EURO semi-finished
	4299	Roll 0.6-0.8 19/37
	4300	Roll 0.8-1.0 19/37
	4301*	Roll 1.0-1.2 19/37
	4302	Roll 1.2-1.6 19/37
	4306	Roll 1.0-1.2 19/37 AL Roll for Al wire
	4307	Roll 1.2-1.6 19/37 AL Roll for Al wire
	4308	Roll 1.6-2.0 19/37 AL Roll for Al wire
	4309	Roll 2.4-3.2 19/37 AL Roll for Al wire
	4303	Roll 1.0-1.2 19/37 tube wire
	4304	Roll 1.2-1.6 19/37 tube wire
	4305	Roll 2.4-3.2 19/37 tube wire
	S7SUN9B	Welding Helmet S9B Shooting Blue Shark
	S777	Welding Helmet Barracuda S777
	S7S	Welding Helmet ALFA IN S7S, S7SU

* the machine is equipped with these rolls

ENGLISH	U.	SVAROG 420 HD H2O PULSE separé		
Method		MIG/MAG	MMA	TIG - DC
Mains voltage	V/Hz		3x400/50-60	
Welding current range	A/V	20 - 400	10 - 400	10 - 400
Open-circuit voltage U_{20}	V	94	103	100
Mains protection	A		32 @	
Max. effective current I_{1eff}	A	27,6	29,3	22,2
Welding current (DC=100%) I_2	A	380	380	380
Welding current (DC=60%) I_2	A	400	400	400
Welding current (DC=x%) I_2	A	60% = 400	60% = 400	60% = 400
Insulation class			IP 23S	
Standards			ČSN EN IEC 60974-1, ČSN EN 60974-10 cl. A	
Dimensions (wxlxh) comp./gen.	mm		650 x 1140 x 1090	
Weight - compact/generator	kg		100	
Wire speed	m/min	1,0 - 20,0		
Spool diameter	mm	300		
Spool weight	kg	18		
Dimensions (w x l x h) feeder	mm	270 x 660 x 390		
Weight - feeder	kg	16		
Cooling power (Q=1l/min)	kW	0,74		0,74
Total liquid content	l	5,0		5,0
Max. pressure	Bar	3,5		3,5
Max. flow	l/min	9		9

ENGLISH	U.	SVAROG 520 HD H2O PULSE separé		
Method		MIG/MAG	MMA	TIG - DC
Mains voltage	V/Hz		3x400/50-60	
Welding current range	A/V	20 - 500	10 - 500	10 - 500
Open-circuit voltage U_{20}	V	94	103	100
Mains protection	A		32 @	
Max. effective current I_{1eff}	A	32,0	31,4	27,0
Welding current (DC=100%) I_2	A	420	400	420
Welding current (DC=60%) I_2	A	500	450	500
Welding current (DC=x%) I_2	A	60% = 500	55% = 500	60% = 500
Insulation class			IP 23S	
Standards			ČSN EN IEC 60974-1, ČSN EN 60974-10 cl. A	
Dimensions (wxlxh) comp./gen.	mm		650 x 1140 x 1090	
Weight - compact/generator	kg		100	
Wire speed	m/min	1,0 - 20,0		
Spool diameter	mm	300		
Spool weight	kg	18		
Dimensions (w x l x h) feeder	mm	270 x 660 x 390		
Weight - feeder	kg	16		
Cooling power (Q=1l/min)	kW	0,74		0,74
Total liquid content	l	5,0		5,0
Max. pressure	Bar	3,5		3,5
Max. flow	l/min	9		9

ENGLISH	U.	SVAROG 330 HD H2O HSL compact	SVAROG 530 HD H2O HSL separé		
Method		MIG/MAG	MIG/MAG	MMA	TIG - DC
Mains voltage	V/Hz	3x400/50-60		3x400/50-60	
Welding current range	A/V	20/15,0 - 320/30,0	10/14,5 - 500/39,0	10/20,4 - 500/40,0	5/10,2 - 500/30,0
Open-circuit voltage U_{20}	V	71,0	70	70	70
Mains protection	A	16 @		32 @	
Max. effective current I_{1eff}	A	14,2	23,3	24,3	18,4
Welding current (DC=100%) I_2	A	230	400	400	400
Welding current (DC=60%) I_2	A	280	450	450	450
Welding current (DC=x%) I_2	A	45% = 320	50% = 500	50% = 500	50% = 500
Insulation class		IP 23S		IP 23S	
Standards		ČSN EN IEC 60974-1, ČSN EN 60974-10 cl. A		ČSN EN IEC 60974-1, ČSN EN 60974-10 cl. A	
Dimensions (wxlxh) comp./gen.	mm	650 x 1140 x 1270		650 x 1140 x 1090	
Weight - compact/generator	kg	115		98	
Wire speed	m/min	1,0 - 24,0	1,5 - 24,0		
Spool diameter	mm	300	300		
Spool weight	kg	18	18		
Dimensions (w x l x h) feeder	mm		270 x 660 x 390		
Weight - feeder	kg		16,3		
Cooling power (Q=1l/min)	kW	0,74	0,74		0,74
Total liquid content	l	5,0	5,0		5,0
Max. pressure	Bar	3,5	3,5		3,5
Max. flow	l/min	9	9		9

SVAROG 520 HD H2O PULSE
Sub-foil buttons execution

SVAROG 520 HD H2O PULSE
classic buttons execution

SVAROG 330 HD H2O HSL
Sub-foil buttons execution

SVAROG 530 HD H2O HSL
with touch display

OVERVIEW OF FUNCTIONS

Name of the machine	Quantity of josbs	Manual mode welding of steel, aluminium, stainless steel, MIG brazing of zinc-coated	Synergiy welding of steel, stainless steel, MIG brazing of zinc-coated (pulse/non-pulse)	Synergiy welding of aluminium (pulse/non-pulse)	UP Down (control from the torch)	Cooling unit	Pulse mode	Double puls	HSL	HC Puls	Power focus	Power root	Adjustable initial speed, pregas, postgas, burn back Start current, bilevel, End current up and down slope Start current, end current	Gauging	Pulse mode	HOT START ARC FORCE , ANTISTICK	TIG LA	Pulse mode	TIG HF
	MIG / MAG													MMA			TIG		
SVAROG 420 HD H2O	99	✓	✓	✓	✓	✓	X	X	X	X	X	X	✓	✓	X	✓	✓	X	X
SVAROG 520 HD H2O	99	✓	✓	✓	✓	✓	X	X	X	X	X	X	✓	✓	X	✓	✓	X	X
SVAROG 420 HD PULSE H2O	99	✓	✓	✓	✓	✓	✓	X	X	X	X	X	✓	✓	✓	✓	✓	✓	X
SVAROG 520 HD PULSE H2O	99	✓	✓	✓	✓	✓	✓	X	X	X	X	X	✓	✓	✓	✓	✓	✓	X
SVAROG 420 HD Dpulse H2O	99	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	✓	✓	✓	✓	✓	✓	X
SVAROG 520 HD Dpulse H2O	99	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	✓	✓	✓	✓	✓	✓	X
SVAROG 330 HD H2O HSL	99	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	X	X
SVAROG 530 HD H2O HSL	100	✓	✓	✓	✓*	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	X	X

*torch control on the SVAROG 530 HD H2O HSL only with certain torches types

Special functions for SVAROG 330, 530 HSL

HSL Pulse

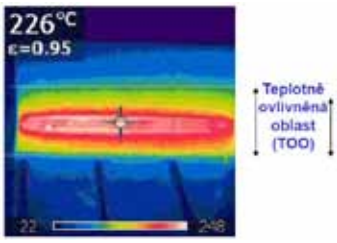
Higher execution speed
High dynamics applied to the pulsation of HS Pulse arc gives an extremely and focused arc that increases the fluidity and pression of transfer as well as the wettability of joints.
This allows the operator (or automatism) to proceed faster with the torch and a time saving of 35%.

Higher deposition rate
High dynamics applied to the pulse of Pulse HS arc allows to increase wire's speed while keeping same current value when welding in Standard Pulse. The increase of wire quantity in the pool increases consequently the weight of deposit in the unit of time (Kg/h).

Lower heat input and less plastic deformation
In Pulse HS heat input is lower (35%) than Standard Pulse

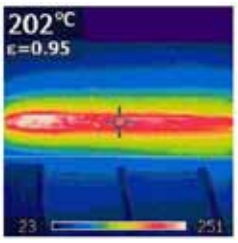
Better mechanical properties
From our tests we obtain that tensile strengths values in the Pure Deposit and Heat Affected Zone (HAZ) are much higher in Standard Pulse. This means that a higher heat input increased considerably tensile strengths. In HS Pulse,
hardness and tensile strengths are in line
with the class of metal the base material
belongs to, therefore the heat input is non
influential in the welded material.

Fillet welding 10,0 mm
Standard Plus



Temperature at the end
of welding 226 °C

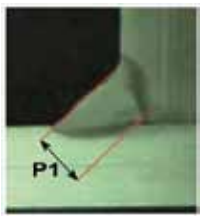
Fillet welding 10,0 mm
HS Plus



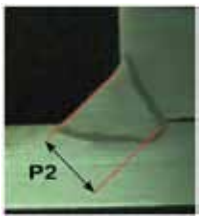
Temperature at the end
of welding 202 °C

Higher penetration, lower risk of lack of fusion
Penetration obtained in HS Pulse (P2is considerably higher compare to Standard Pulse (P1).
Moreover weld face is smoother thanks to the excellent joints' wettabiltiy.

Fillet welding 10,0 mm
Standard Plus



Fillet welding 10,0 mm
HS Plus



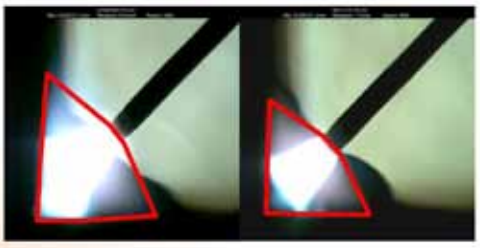
Lower production costs and depreciation
The higher execution speed combined with the higher deposition rate reduce remarkably both times and working costs. Less
defects on the material and almost no need of reworking allow a always better amortization.

HC pulse

The new Pulsed HC (High Control) boasts a very quick arc control in order to optimize drop detachment with greatly reduced power. The most remarkable welding advantages are as follows:

more stable welding arc, with almost no spatter or micro-projections
very reactive arc to the torch movement
reduced energy transmitted to the welded workpiece
very linear transfer with optimal edge wetting at a very high speed of execution

Standard pulse HC pulse

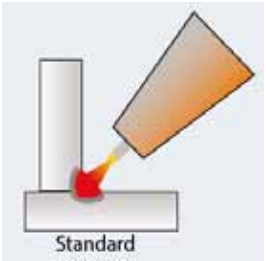


heat affected zone

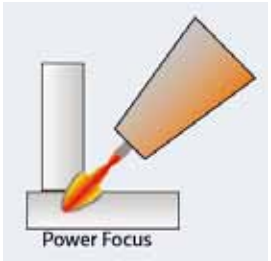
See video with HC puls:

Power Focus

The solution that allows a higher productivity
The difference between Standard Mig Mag welding and Power Focus
The difference between Standard Mig Mag welding and Power Focus is to be found on the concentration and precision of the arc. The concentration on the Power Focus mode allows to focalize the high arc temperature precisely on the middle of the deposition, avoiding overheating on theweld edges.



The heat affected zone (HAZ) is by Power Focus mode less expanded.



See the video Power Focus

Specifications of Standard Arc

The main property of the Standard Arc is to be found on its high stability both during the Short Arc and the Spray Arc phase. In most of the commercialized welding machines, a transition phase called Globular phase is present. This welding area is normally characterized by unstable arcs, very difficult to be handled, thus normally causes a lot of spatters.

Specifications of Standard Arc

In case of butt weld, if the plates caulker presents narrow angles, the standard arc has the tendency to get out from the bevel joint and to focus only on one of the two plate corners. In this situation, it is normally necessary to increase the bevel joint angle degree (during the preparation) with consequent need of more filling passes.

Power Focus Arc Specifications

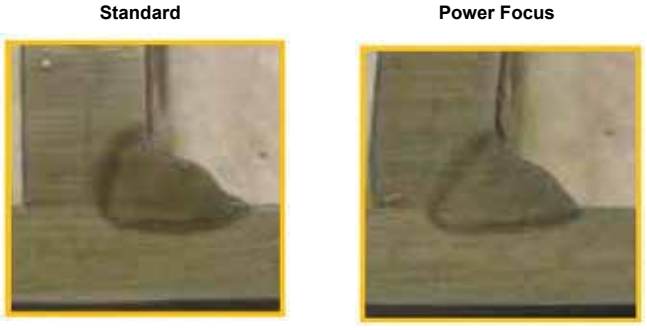
The Power Focus arc improves all the three arc phases. In short arc we obtain an extremely stable and viscous arc with very linear transfer and with TOTAL ABSENCE OF SPATTERS. In globular by Power Focus the arc maintains a very stable and ordered spatters' transfer, as a result of this, it is possible to obtain a very regular weld.

Power Focus Arc Specifications

On the butt welding applications the Power Focus Arc keeps on staying concentrated in the exact middle of the bevel joint, so that full penetration is granted. In this way, it is possible to work on very narrow bevel joints, which demands less mechanical preparation and of course, also less filling passes.

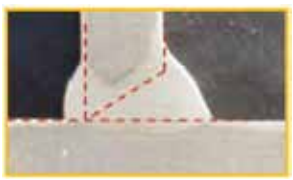
Differences between Power Focus and Standard Arc

Beyond a deeper penetration (see the picture), a significant difference is also to be found on the heated affected zone's extension (HAZ). This area is by Power Focus mode reduced, because of the higher execution's speed.



Penetration by Power Focus

Penetration by Power Focus on a T joint (10 mm thickness), when welded on the two sides, it comes up to interesect crossing.



Thickness 8mm
Angle 30°
No gap between edges

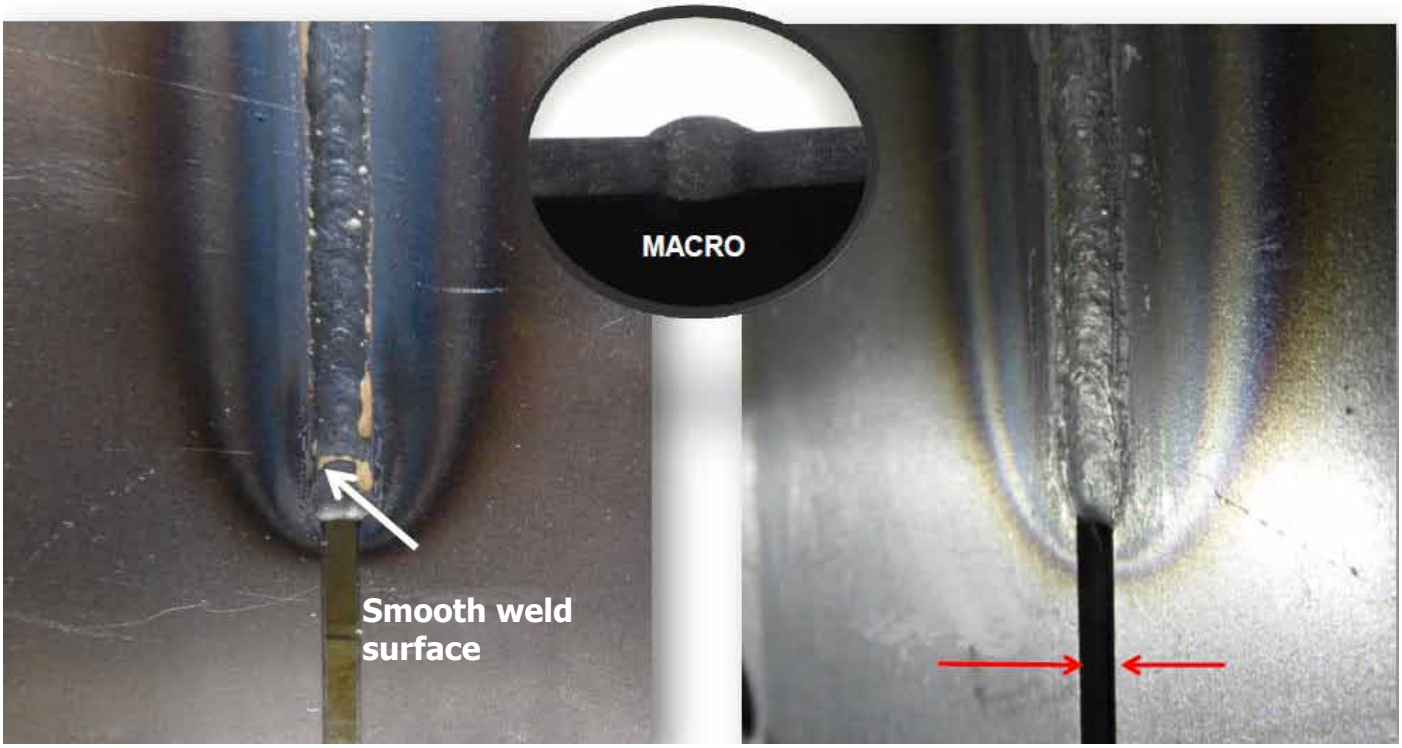
Power Root

Power Root is an optimized short arc welding process with a cold droplet transfer. It allows unique weld quality for root pass welding.

Optimized root pass welding
Vertical down in sound weld quality
Better modelability
„Cold" droplet transfer
Thinsheet welding

Gap bridging

The cold droplet transfer provides process stable welding even with wide gaps. The modelability is significant improved. The weld puddle is smooth, combined with a high viscousity.



Gap 2mm vertical position / wire size Ø 1mm

No root concavity

See video Power root:

Notes

MIG/MAG INVERTERS

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