



INDUSTRIAL WELDING MACHINES



MODULAR VERSION OF SYNERGIC, PULSE INVERTERS

SVAROG 320 HD PULSE modular
modular version of synergic,
pulse inverters

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, offer economical operation, energy efficiency and a durable construction for tough conditions. The digital control of the source ensures an extremely stable arc that guarantees excellent welding results. Simple and intuitive operation makes everyday work easier. All ALFA IN welding inverters 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. Welding inverters are used in metalworking operations for light and heavy structures, in repairs, maintenance in service and automotive workshops, in the production 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

Basic description 4

Why Svarog? 5

Additional features and benefits 6 - 10

Torches 11

Build your Svarog 12 - 13

Order numbers 14

Technical parameters 15

WELDING MACHINES FOR HIGH PERFORMANCE AND A WIDE RANGE OF APPLICATIONS

Made in Czech Republic

We are traditional manufacturers of welding technology and cutting technology in the Czech Republic

SVAROG 320 HD PULSE modular

is a 320A welding machine with a wide range of applications:

- For MIG/MAG welding, where it is possible to choose manual, synergic and pulse welding process
- Excellent welding properties in mixed gas and CO₂
- Wire Ø 0.6 – 0.8 mm, or 1.0 – 1.2 mm from various metal materials and alloys (carbon and alloy steels, aluminium alloys, zinc, etc.)
- Smooth voltage regulation
- Pre-gas, post-gas, burn back and initial wire speed regulable
- Enables welding with tubular wire (watch out for polarity reversal)
- 4 rollers wire feed, electronic choke, ecological cooling mode
- Modular concept
- Lighting of the interior space of the feeder
- Front braked wheel
- Optional liquid cooling and many other accessories and functions
- Czech prices for spare parts and service work



WHY SVAROG?

Modular machines SVAROG 320 HD PULSE modular brings you a new concept that will help you handle demanding welding work. The concept of modularity allows the machine to be configured according to current needs

- A simple small chassis with no space for a gas bottle
- Robust and elaborate chassis with space for transporting a gas cylinder
- Robust and sophisticated chassis with the option of a practical pull-out storage box or a cooling unit
- The option of easily adding a cooling unit for heavy jobs

Advantages of the modular concept

For demanding jobs, for example in the field, you can easily and quickly disconnect the welding inverter itself from the chassis, or the liquid cooling of the welding torch. You immediately have a light, compact welding power source with a power of 320A. The stand-alone welding source weighs only 31.7 kg.

How do you dismantle it all easily and quickly?

Using solid metal locks that you open without the use of tools!



If you choose a robust chassis with a pull-out storage box, you have everything you need immediately available. In a spacious and easily accessible pull-out box, you can store gloves, tools, consumables for the torch or electrodes for the MMA method.

Low acquisition costs

You don't have to immediately spend money on the purchase of a machine with liquid cooling for the torch. A big advantage of the SVAROG 320 HD PULSE modular modular concept is the possibility to supplement the machine with liquid cooling at any time and without the need for a specialist workshop. You can easily connect using basic tools and prepared connecting material (which is part of the supplied cooling kit). A control connector is provided as standard on the source, which you simply connect.





Economy and sustainability

Inverter technology

ensures low power consumption at a constant output power and thus reduces electricity consumption.

Efficiency 89%

According to standardised measurement methods, Svarog achieves 89% efficiency. This means that a large part of the power input from the mains is converted into arc energy without loss.

Cooling

ACL-10 coolant achieves exceptional sustainability due to its composition and extends the life of the system.

Filter

In the basic equipment, a filter is placed in the cooling circuit, which captures any impurities. It protects the entire cooling system and the welding torch, is easy to check and can be repeatedly cleaned.

EASY PULSE mode setup!

With just one push of a button, everything is set for pulse welding mode...



Easy JOBS setup

Direct storage of 6 JOBS by long holding the button and direct recall of JOBS by short pressing of the button. We reserved a separate button for each JOB out of 6.

Calibration of the welding circuit

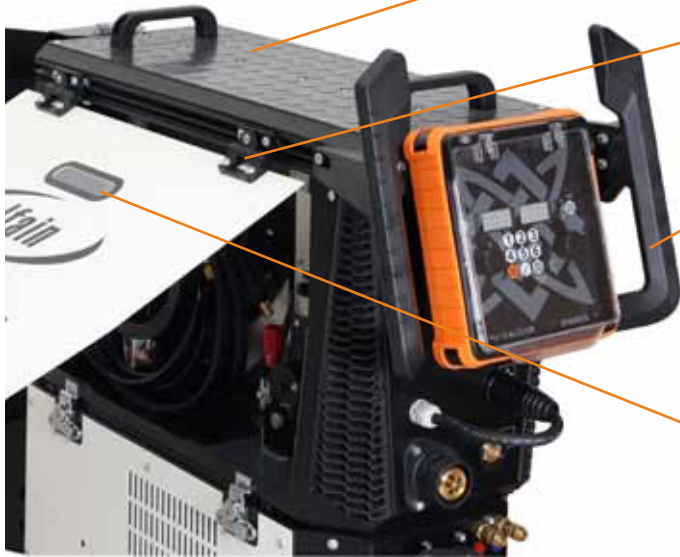
The welding properties of the synergic curve depend on many factors, such as the length of the welding torch, the length of the grounding cable, the quality of the grounding, the distance of the weldment from the grounding point, etc. Therefore, it is advisable to calibrate the welding circuit for the current welding conditions. The function of calibration of the welding circuit will make it possible to eliminate these effects.

The upper part of the machine is protected by a **practical rubber pad**.

Hinges with locking fix the opening cover well in the desired position.

The robustness of the handles provides reliable protection of the control elements against possible impact and enables good handling of the machine.

The window in the side cover enables easy and quick control of the amount of additional material.



The possibility of changing the polarity

Optimal for welding with self-shielding wire..



Container

The neck of the coolant tank is easily accessible for re-filling. The pouring spout is partially transparent and works as a watermark - you can immediately check the liquid level. Additionally, the level is illuminated for easy level identification. Thanks to the lower drain cap, it is possible to easily replace the special cooling liquid.

Eyelets for fastening allow easy relocation or loading of the machine.



The chassis is equipped with a holder for, for example, a network cable or a welding torch.

A wheel with a brake enables easy braking of the machine.

Clarity when replace rollers

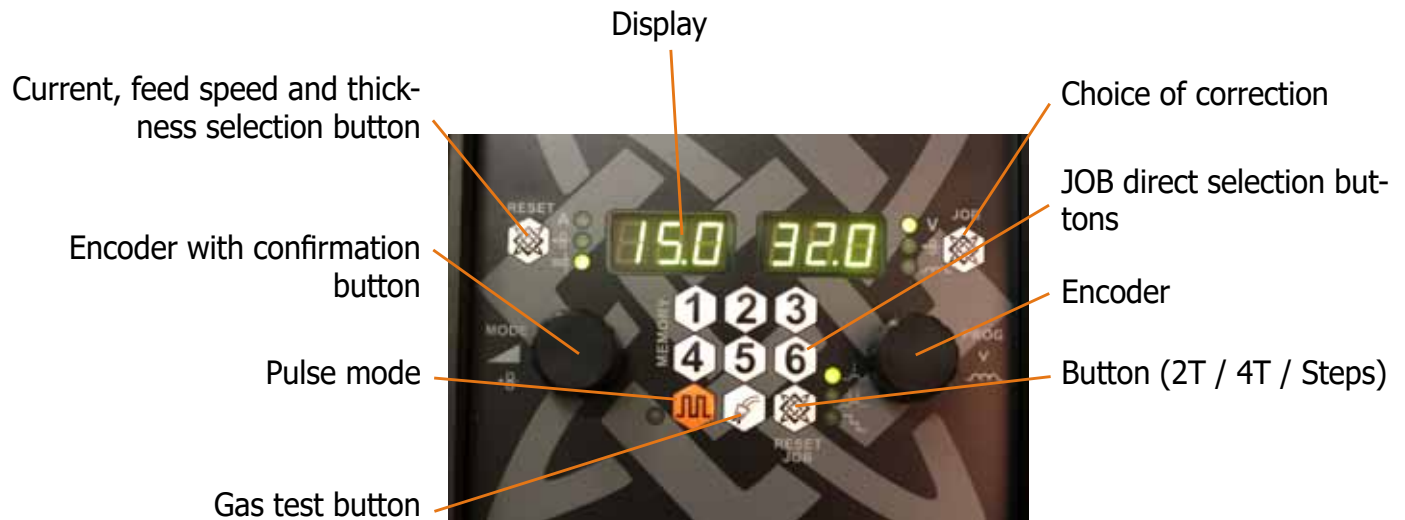
Thanks to the colour markings and pictograms on the pulleys, you can quickly choose the right pulley that matches your purposes. The table that can be found on the inside of the slide cover will help you. Handling when changing the rollers is easy and fast thanks to the appropriate design of the sliding unit.

Higher feed class - four- large roller feed and an incremental sensor guides the welding wire safely and reliably.



EASY PULSE mode setup!

With just one push of a button, everything is set for pulse welding mode...



70% less finishing work

Thanks to the pulse function, it is possible to avoid the difficult-to-control transition arc, which is loaded with high spatter. Less welding spatter generation reduces finishing work by up to 70%.

A large selection of synergistic programs

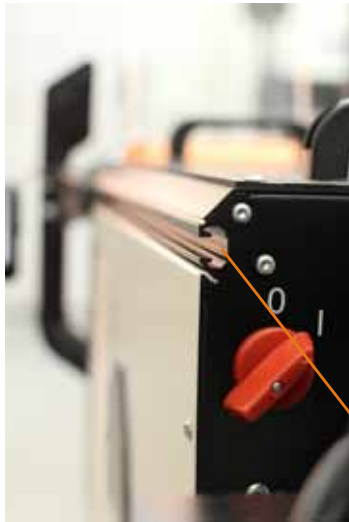
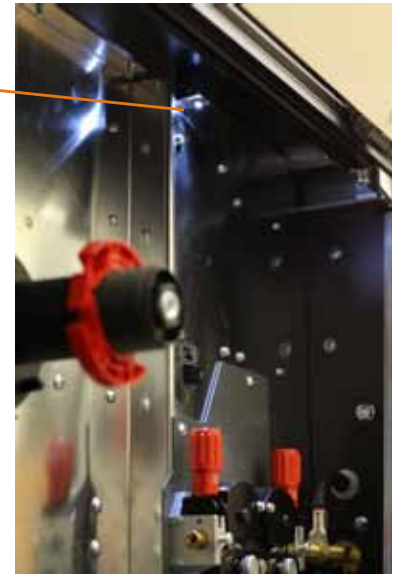
Steel SG/Fe, Cr/Ni, AlSi, AlMg, wire diameters 0.8; 1.0; 1.2 mm various gas mixtures

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 92 % CO ₂ 8 %	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*
CuSi 3	Ar 100 %	15*	-	-
AlMg	Ar 100 %	-	16**	17**
AlSi	Ar 100 %	-	18**	19**

(n) no pulse
 (*) pulse & no pulse
 (**) only pulse with AL type machine

Illumination of the interior space of the wire feeder.

A strong LED diode effectively illuminates the interior space and ensures easy replacement of the wire in poor light conditions.

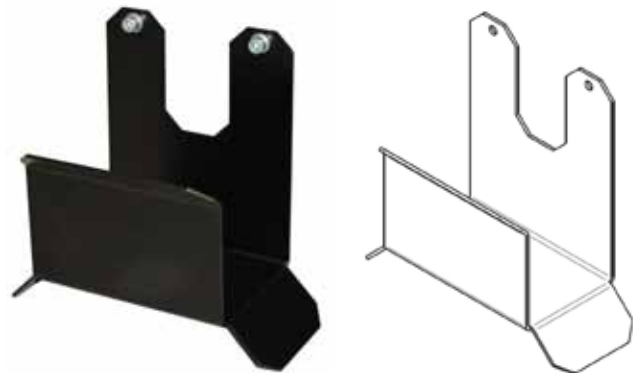


Groove for attachment of accessories

The inverters are equipped with a practical groove, where you can easily attach, for example, a cable holder (see picture below)

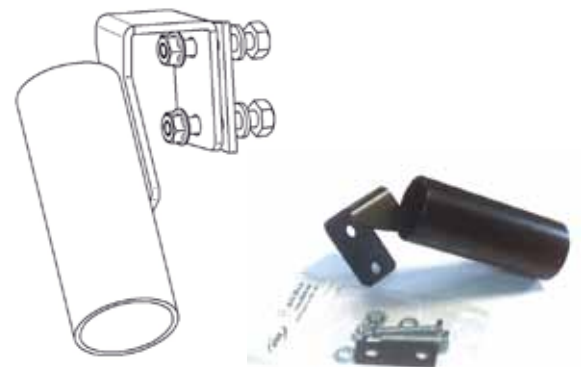
Cable holder

Thanks to this tool, you can store the torch cable or connection and extension cables in the holder. It's practical and simple, the cables won't „tangle“ dangerously on the ground. The holder is mounted using a screw in the upper rail of the machine.



Practical torch holder

An accessory for all welders. The holder can be easily attached to the handle. This way, your tools won't be lying around at your workplace, you can always conveniently put the torch away in the stand.



MIG/MAG torches for SVAROG

Ease of use thanks to ARC M Torch

The Up/Down buttons enable power change, program recall, operating modes, control lock and Up/Down function.

Lots of benefits with the new ARC M Torches

New key technologies significantly extend the lifetime of the torches and the quality of the weld.

You can see all the advantages of torches here: QR code



gas cooled torch M22



M6W

M6W Pistol

Innovative industrial torch, liquid-cooled ARC M6W with remote control included. Thanks to it, the time spent on maintenance of the torch will decrease by up to $\frac{2}{3}$.

- welding nozzles are up to 75% cooler and last up to 3 times longer than with equally powerful torches
- the torch tubes are up to 35% cooler
- cutting tips last up to 6 times longer
- spacers last up to 5 times longer







Key technologies used





BUILD YOUR MODULAR SVAROG AS YOU WANT

EXPLANATORY NOTES:

The two letters at the end of the name mean:

First letter - equipment	Second letter - chassis
<p>W - liquid cooled</p>  <p>E.408 CU-M H2O Cooling unit SVAROG modular</p>	<p>L - large (Large) chassis with space for placing 1 gas bottle</p>  <p>E.462 Carriage XL SVAROG 320 HD modular</p>
<p>B - storage pull-out Box possibility of additional insertion of KIT E.466 (i.e. cooling)</p>  <p>E.463 CU-M tool box SVAROG modular</p>	<p>S - small (Small) chassis without space to place the gas bottle</p>  <p>E.467 Carriage XS SVAROG 320 HD modular</p>
<p>P - with Platform without cooling and without box - possibility of additional insertion of KIT E.466 (i.e. cooling)</p>  <p>E.468 CU-M platform SVAROG modular</p>	<p>Cooling KIT for retrofitting modular B or P - E.466 CU-M KIT H2O cooling unit SVAROG modular</p> 

POSSIBLE OPTIONS:

<p>NS - E.500NS just a generator without cooling, without a chassis, without preparation for adding a KIT</p>  <p>and with chassis without bottle</p>	<p>no marking - E.500 just a generator without cooling, without a chassis, without preparation for adding a KIT</p> 
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POSSIBLE OPTIONS:

SVAROG 320 HD PULSE MODULAR WITH WATER COOLING:

E.500WL SVAROG 320 HD PULSE modular **WL**



and with chassis for 1 bottle

E.500WS SVAROG 320 HD PULSE modular **WS**



and with chassis without bottle

SVAROG 320 HD PULSE MODULAR WITH STORAGE PULL-OUT BOX

E.500BL SVAROG 320 HD PULSE modular **BL**



and with chassis for 1 bottle

E.500BS SVAROG 320 HD PULSE modular **BS**



and with chassis without bottle

SVAROG 320 HD PULSE MODULAR WITH PLATFORM

E.500PL SVAROG 320 HD PULSE modular **PL**



and with chassis for 1 bottle

E.500PS SVAROG 320 HD PULSE modular **PS**



and with chassis without bottle

Information for ordering the machine

Illustration	Item #	Description
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The SVAROG set codes listed below are possible variants of the sets as described on page 10. We deliver the machines including the grounding cable, gas hose and reducer - coil adapter



E.500	Svarog 320 HD PULSE modular
E.500BL	Svarog 320 HD PULSE modular BL
E.500BS	Svarog 320 HD PULSE modular BS
E.500PL	Svarog 320 HD PULSE modular PL
E.500PS	Svarog 320 HD PULSE modular PS
E.500WL	Svarog 320 HD PULSE modular WL
E.500WS	Svarog 320 HD PULSE modular WS

Information for ordering accessories

Illustration	Item #	Description
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VM0023	Grounding cable 3 m 400 A 35mm ² 35-50
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VM0183	Cable with E holder E 3 m 300 A 35-50
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E.466	CU-M KIT H2O Cooling unit SVAROG modular
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E.420-1	Torch holder SVAROG
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E.419	Cable holder SVAROG
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M22-3M	Torch ARC M22 3m 250/220/145A - gas cooled
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M22-4M	Torch ARC M22 4m 250/220/145A - gas cooled
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M22-5M	Torch ARC M22 5m 250/220/145A - gas cooled
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M6W-DM3-3M	Torch ARC M6W 3m DIGIMIG - Liquid cooled
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M6W-DM3-4M	Torch ARC M6W 4m DIGIMIG - Liquid cooled
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M6W-DM3-5M	Torch ARC M6W 5m DIGIMIG - Liquid cooled
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M6WP-DM3-3M	Torch ARC M6W 3m DIGIMIG PISTOL - Liquid cooled
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M6WP-DM3-4M	Torch ARC M6W 4m DIGIMIG PISTOL - Liquid cooled
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M6WP-DM3-5M	Torch ARC M6W 5m DIGIMIG PISTOL - Liquid cooled
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M6OSW-DM3-3M	Torch ARC M6OSW 3m DIGIMIG na hliník - Liquid cooled
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M6OSW-DM3-4M	Torch ARC M6OSW 4m DIGIMIG na hliník - Liquid cooled
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M6OSW-3M	Torch ARC M6OSW 3m na hliník - Liquid cooled
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M6OSW-4M	Torch ARC M6OSW 4m na hliník - Liquid cooled
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VM0151-1	Gas hose 3m G1/4-G1/4
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4299	Roller 0.6-0.8 19/37 / Roll 0.6-0.8 19/37
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4300	Roller 0.8-1.0 19/37 / Roll 0.8-1.0 19/37
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4301*	Roller 1.0-1.2 19/37 / Roll 1.0-1.2 19/37
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4302	Roller 1.2-1.6 19/37 / Roll 1.2-1.6 19/37
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4306	Roller 1.0-1.2 19/37 AL / Roll 1.0-1.2 19/37 AL Roller pro Al drát / Roll for Al wire
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4307	Roller 1.2-1.6 19/37 AL / Roll 1.2-1.6 19/37 AL Roller pro Al drát / Roll for Al wire
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4308	Roller 1.6-2.0 19/37 AL / Roll 1.6-2.0 19/37 AL Roller pro Al drát / Roll for Al wire
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4309	Roller 2.4-3.2 19/37 AL / Roll 2.4-3.2 19/37 AL Roller pro Al drát / Roll for Al wire
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4303	Roller 1.0-1.2 19/37 TD / Roll 1.0-1.2 19/37 tube wire
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4304	Roller 1.2-1.6 19/37 TD / Roll 1.2-1.6 19/37 tube wire
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4305	Roller 2.4-3.2 19/37 TD / Roll 2.4-3.2 19/37 tube wire
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S7SUN9B	Welding Helmet samost. S9B Shooting Blue Shark
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S777	Welding Helmet Barracuda S777
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S7S	Welding Helmet ALFA IN S7S, S7SU
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* the machine is equipped with these rolls

Technical data

ENGLISH	U.	SVAROG 320 HD PULSE MODULAR	
Method		MIG/MAG	MMA
Mains voltage	V/Hz	3x400/50-60	
Welding current range	A/V	30 - 320	20 - 300
Open-circuit voltage U_{20}	V	60	60
Mains protection	A	16 @	
Max. effective current $I_{1\text{eff}}$	A	15,1	14,1
Welding current (DC=100%) I_2	A	240	200
Welding current (DC=60%) I_2	A	280	240
Welding current (DC=x%) I_2	A	35%=320	30%=300
Insulation class		IP 23S	
Standards		ČSN EN IEC 60974-1, ČSN EN 60974-10 cl. A	
Dimensions	mm	534 x 1141 x 943	
Weight with cooling	kg	84	
Weight without cooling	kg	77	
Maximum load of the pull-out storage box	kg	25	
Weight without chassis	kg	31,7	
Wire speed	m/min	1,0 - 20,0	-
Spool diameter	mm	300	-
Spool weight	kg	18	-
Cooling power ($Q=1\text{l/min}$)	kW	0,8	-
Total liquid content	l	4,0	-
Max. pressure	Bar	3,5	-
Max. flow	l/min	8,0	-





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