

**varstroj**<sup>®</sup>

[www.varstroj.si](http://www.varstroj.si)



# CATALOGUE

## Welding machines





[www.varstroj.si](http://www.varstroj.si)



<b>MMA welding with coated electrode</b>	<b>2</b>
<b>MMA welding machines</b>	<b>3</b>
VARIN welding inverters	
VARIN 1305, VARIN 1505	3
VARIN 1705, VARIN 1705 TIG	3
VARIN 2005, VARIN 2005 TIG	3
VARIN 2505, VARIN 3005	3
VARUS welding rectifiers	
VARUS 300, VARUS 450, VARUS 650	4
<b>TIG welding</b>	<b>5</b>
<b>Machines for TIG welding</b>	<b>6</b>
Machines for TIG DC welding	
VARTIG 1705 DC, VARTIG 2005 DC	6
VARTIG 2505 DC	6
VARTIG 3500 DC Synergy	7
Machines for TIG AC/DC welding	
VARTIG 2005 AC/DC, VARTIG 2205 AC/DC	8
VARTIG 3500 AC/DC digit	9
<b>TIG Torches</b>	<b>11</b>
<b>Accessories, spare parts</b>	<b>12</b>
<b>MIG/MAG welding</b>	<b>14</b>
<b>Machines for MIG/MAG welding</b>	<b>15</b>
VARMIG	
VARMIG 1400, VARMIG 1600	15
VARMIG 1800, VARMIG 190 Profimig	15
VARMIG Supermig	
VARMIG 191 Supermig, VARMIG 211 Supermig	16
VARMIG 271 Supermig, VARMIG 331 Supermig	16
VARMIG Synergy	
VARMIG 251 Synergy, VARMIG 301 Synergy	17
VARMIG 401K Synergy, VARMIG 451K Synergy	18
VARMIG 401-DG Synergy, VARMIG 401-DW Synergy	19
VARMIG 451-D44 Synergy, VARMIG 600-D44 Synergy	19
VARMIG 600-T44 Synergy	20
VARMIG Inverter	
VARMIG 1800 Inverter, VARMIG 2100 Inverter	22
VARMIG 2350 Inverter Pulse	22
VARMIG Synergy Inverter	
VS 3200 digit, VS 4000 digit	23
VPS 3000 K digit, VPS 3200 digit	25
VPS 4000 digit, VPS 5000 digit	26
VPS 3000 AC/MIG PLUS	29
<b>MIG/MAG Torches</b>	<b>31</b>
<b>Accessories, spare parts</b>	<b>32</b>
<b>Plasma welding</b>	<b>34</b>
<b>Welding tables</b>	<b>38</b>
<b>Extraction-filter devices</b>	<b>39</b>
<b>Notices</b>	<b>40</b>



## Characteristics:

- is universal method of welding, suitable for outdoor welding
- is user friendly when welding rough and dirty materials
- no special preparations are needed
- suitable for welding and fixing strong constructions



Product name	Suitable for	MMA rutile	MMA basic	MMA CEL	TIG DC	Brasing	Welding current (A)	Welding electrode diameter (mm)	Materials	Specialities	Code
VARIN 1305	■ ■	●	●				5 - 120	1,5 - 2,5	Construction steel, CrNi steel	Inverter Anti Sticking	602008
VARIN 1505	■ ■	●	●				5 - 160	1,5 - 3,25		601522	
VARIN 1705	■ ■	●	●	○			5 - 180	1,5 - 4,0		601493	
VARIN 1705 TIG	■ ■	●	●		○		5 - 180	1,5 - 4,0		601654	
VARIN 2005	■ ■	●	●				5 - 200	1,5 - 4,0		602480	
VARIN 2005 TIG	■ ■	●	●	●			5 - 200	1,5 - 4,0		602492	
VARIN 2505	■ ■	●	●	●	○		5 - 250	1,5 - 5,0		603641	
VARIN 3005	■	●	●	●			5 - 300	1,5 - 6,0		603642	
VARUS 300	■ ■	●	●	●			5 - 300	1,5 - 6,0		694355	
VARUS 450	■	●	●	●			5 - 450	1,5 - 8,0		694356	
VARUS 650	■	●	●	●		●	5 - 650	1,5 - 8,0	694357		

Suitable for: ■... hobby ■...workshops ■...industry ■...heavy industry  
 Welding quality: ●... excellent ○... good DC...direct current AC... alternate current

## Inverter welding rectifiers

Welding inverters Varin are portable welding machines which are using direct current. Mostly used for welding construction and stainless steel by using rutile, basic and cellulose electrode. They are also suitable for repairs, building yards and workshops.

**VARIN 1305**



**VARIN 1505**



DC

230 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Duty cycle			Welding electrode diameter	Weight	Dimensions DxWxH	Ordering code
				35%	60%	100%				
VARIN 1305	1~230 V / 50 Hz	16 AT	5 – 120 A	110 A	70 A	55 A	1,5 – 2,5 mm	3,4 kg	120x270x200 mm	602008
VARIN 1505	1~230 V / 50 Hz	16 AT	5 – 160 A	/	150 A	110 A	1,5 – 3,25 mm	6 kg	360x155x245 mm	601522

**VARIN 1705  
VARIN 1705 TIG\***



**VARIN 2005  
VARIN 2005 TIG\***



**VARIN 2505  
VARIN 3005**



DC

230 V

3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Duty cycle			Welding electrode diameter	Weight	Dimensions DxWxH	Ordering code
				20%	60%	100%				
VARIN 1705	1~230 V / 50 Hz	16 AT	5 – 180 A	180 A	160 A	135 A	1,5 – 4,0 mm	7 kg	405x155x245 mm	601493
VARIN 1705 TIG	1~230 V / 50 Hz	16 AT	5 – 180 A	180 A	160 A	135 A	1,5 – 4,0 mm	7 kg	405x155x245 mm	601654
VARIN 2005	1~230 V / 50 Hz	16 AT	5 – 200 A	200 A	170 A	145 A	1,5 – 4,0 mm	7,5 kg	405x155x245 mm	602480
VARIN 2005 TIG	1~230 V / 50 Hz	16 AT	5 – 200 A	200 A	170 A	145 A	1,5 – 4,0 mm	7,5 kg	405x155x245 mm	602492
VARIN 2505	3x400 V / 50 - 60 Hz	16 AT	5 – 250 A	250 A (35%)	220 A	170 A	1,5 – 5,0 mm	25 kg	440x222x480 mm	603641
VARIN 3005	3x400 V / 50 - 60 Hz	16 AT	5 – 300 A	300 A (35%)	240 A	195 A	1,5 – 6,0 mm	27 kg	480x270x380 mm	603642

\* Machine also enables welding by TIG method (arc ignition by electrode contact) of construction steel and stainless steel (TIG set can be purchased additionally).

### Characteristics:

- MMA welding with coated electrode
- Welding with rutile, basic and cellulose electrodes
- HOT START- increased welding current by arc ignition
- ANTI STICKING- automatic current power cut if electrode sticks to material
- ARC FORCE – prevents electrode sticking
- DC TIG welding (scratch TIG welding) with shielding gas
- Enclosed TIG set for DC-TIG welding by machines VARIN 1705 TIG and VARIN 2005 TIG



## VARUS welding rectifiers

Thyristor rectifiers Varus are welding machines of higher amperage and enable high quality welds. Rutile and basic electrodes of highest diameters can be used. Area of usage is wide: shipyards, machine building, metal processing industry... Very suitable for repair welding-brasing (VARUS 650) with C electrode. Robust design enables reliability and high endurance in very hard conditions.

VARUS 300



VARUS 450



VARUS 650



AC

3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Welding current regulation	Duty cycle		
					35%	60%	100%
VARUS 300	3~400 V / 50 Hz	20 AT	5 – 300 A	no step	300 A	230 A	180 A
VARUS 450	3~400 V / 50 Hz	50 AT	5 – 450 A	no step	450 A	340 A	260 A
VARUS 650	3~400 V / 50 Hz	63 AT	5 – 650 A	no step	650 A	490 A	380 A

Technical data, welding source	Welding electrode diameter	Mechanical protection	Source cooling	Weight	Dimensions DxWxH	Ordering code
VARUS 300	1,5 – 6,0 mm	IP 23	fan	95 kg	980x450x550 mm	694355
VARUS 450	1,5 – 8,0 mm	IP 23	fan	221 kg	1465x740x655 mm	694356
VARUS 650	1,5 – 8,0 mm	IP 23	fan	268 kg	1465x740x655 mm	694357

### Characteristics:

- Welding method with coated electrode
- Use of rutile and basic electrode
- Possibility of brasing with VARUS 650
- Possibility to use remote regulator

Remote control unit for thyristor rectifiers Varus.



## TIG-DC welding with Wolframe electrode – direct current:

- suitable method for all metals except of aluminium and magnesium
- suitable method for less thick materials
- very high quality of welds
- used by most demanding welds
- welder should have some more experience, pieces should be carefully prepared

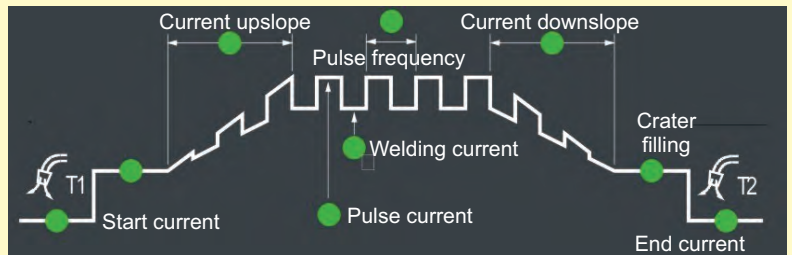


## TIG-DC welding with Wolframe electrode – alternate current:

- suitable for aluminium welding, aluminium alloys and magnesium
- suitable method for less thick materials
- enables high quality welds
- demands precise preparations and skilled welders

## TIG – pulse welding:

- special procedure by AC and DC TIG welding, suitable for highest quality welds
- power input is controlled
- suitable for welding the thinnest metal sheets
- final weld surface is very estetic



Product name	Suitable for	MMA	TIG DC	TIG DC-P	TIG AC	TIG AC-P	TIG AC-DC	Welding current (A)	Materials	Specialities		Code
										G	W	
VARTIG 1705 DC	■ ■	●	●	●				TIG 4 - 160 MMA 4 - 140	Construction steel, CrNi steel	Hot Start Anti Sticking HF Ignition 2/4 stroke working	G	600888
VARTIG 2005 DC	■ ■	●	●	●				TIG 5 - 200 MMA 5 - 160			G	603643
VARTIG 2505 DC	■ ■	●	●	●				TIG 5 - 250 MMA 5 - 250			G W	603644 603645
VARTIG 3500 DC Synergy digit	■ ■	●	●	●				TIG 4 - 300 MMA 10 - 250			G W	601846 601845
VARTIG 2005 AC/DC	■ ■	●	●	●	●	●		TIG DC 5 - 200 TIG AC 5 - 200 MMA 5 - 170	Construction steel, CrNi steel, Aluminium	Hot Start Anti Sticking HF Ignition 2/4 stroke working Pulse welding	G W	603646 603647
VARTIG 2205 AC/DC	■ ■	●	●	●	●	●		TIG DC 4 - 190 TIG AC 4 - 220 MMA 4 - 200			G W	602112 602113
VARTIG 3500 digit AC/DC	■ ■	●	●	●	●	●	●	TIG DC 4 - 300 TIG AC 10 - 300 TIG AC/DC 10 - 300 STICK DC 10 - 250			G W	600351 600350

Suitable for: ■...workshops ■...industry ■...heavy industry  
 Welding quality: ●... excellent ○... good  
 DC...direct current AC... alternate current

G - air cooled torch  
 W - water cooled torch

Welding machines Vartig are intended for welding by TIG procedure. They also enable welding with coated electrodes. They can be found in workshops as well in wide variety of metal industry. We recommend them for welding construction steel, stainless steel and aluminium. They are user friendly as they have quality digital indicator of various welding parameters.

## Machines for TIG DC welding

VARTIG 1705 DC



VARTIG 2005 DC



VARTIG 2505 DC



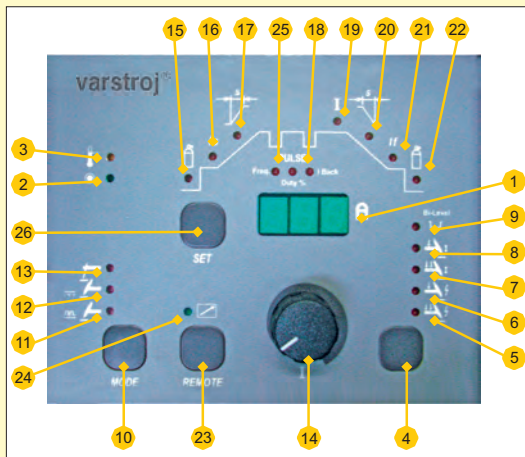
DC

230 V

3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current		Welding voltage		Duty cycle TIG			Duty cycle MMA		
			TIG DC	MMA (REO)	TIG DC	MMA (REO)	25%	60%	100%	25%	60%	100%
VARTIG 1705 DC (G)	1-230 V / 50 Hz	16 AT	4 – 160 A	4 – 140 A	10,2 – 16,4 V	20,2 – 26 V	160 A	/	100 A	140 A	/	70 A
VARTIG 2005 DC (G)	1-230 V / 50 Hz	16 AT	5 – 200 A	5 – 160 A	10,2 – 18 V	21 – 26 V	/	200 A	160 A	/	/	/
VARTIG 2505 DC	G	3x400 V / 50 - 60 Hz	5 – 250 A	5 – 250 A	10,2 – 20,2 V	20,2 – 30 V	250 A (35%)	220 A	170 A	250 A (35%)	220 A	170 A
	W											

Technical data, welding source	Welding electrode diameter MMA (REO)	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
VARTIG 1705 DC (G)	1,5 – 3,25 mm	7 kg	330x135x280 mm	600888	TIG-B 150 G (PVT-P7) 4m	600871
VARTIG 2005 DC (G)	1,5 – 4,0 mm	12 kg	510x205x345 mm	603643	TIG-B 200 G (PVT-20) 4m	600129
VARTIG 2505 DC	1,5 – 5,0 mm	25 kg	440x222x480 mm	603644	TIG-B 200 G (PVT-20) 4m	600129
				603645	TIG-B 450 w (PVT-20) 4m	600137



### VARTIG 2005 DC front panel functions

1. Welding parameters indicator
2. Machine power on indicator
3. Indicator of thermoswitch
4. Working method selection
5. 4 stroke working + HF ignition
6. 2 stroke working + HF ignition
7. 4 stroke working + scratch arc ignition
8. 2 stroke working + scratch arc ignition
9. Main and end pulse main current indicator
10. Button for changing welding method
11. TIG pulse indicator
12. TIG standard indicator
13. MMA electrode welding indicator
14. Encoder for welding parameters regulation
15. Indicator of gas preflow
16. Starting current indicator
17. Time scale of current increase indicator
18. DC pulse frequency indicator
19. Indicator of main current adjustment
20. S Indicator of current downslope
21. If End current indicator
23. Button for connecting remote regulator
24. Remote control usage indicator
25. Pulse welding parameter indicator (frequency, pulse width, basic current)
26. Button for switching between welding parameters

### Characteristics:

- Digital indicator of all functions
- HF – High frequency no contact ignition
- 2 and 4 stroke working
- Upslope & downslope of AC pulse and DC welding current
- HOT START- increased welding current by arc ignition
- ANTI STICKING- automatic current power cut if electrode sticks to material



Welding power source VARTIG 3500 digit DC is a welding machine of digital generation used for highly demanding welding by DC procedure. The machine enables selection and saving welding programmes (JOBS).

VARTIG 3500 DC Synergy



## The variety of pulse functions makes the solution of diverse welding demands possible

### LOW SPEED PULSE (20Hz)

Uniform and beautiful bead appearance is obtained by heat input controlling. Excellent feature for use in different plate thickness or materials having gaps.

Stainless steel pipe



Plate thickness: 2 mm,  
Welding current: 150 A,  
Pulse frequency: 5 Hz

Titanium



Plate thickness: 2 mm,  
Welding current: 120 A,  
Pulse frequency: 5 Hz

### HIGH SPEED PULSE (20 - 500Hz)

Convergence of arc in low current and efficiency of corner and fillet welding of thin plate is substantially improved.

Copper



Plate thickness: 0,3 mm,  
Welding current: 50 A,  
Pulse frequency: 100 Hz

Stainless steel



Plate thickness: 0,3 mm,  
Welding current: 10 A,  
Pulse frequency: 500 Hz

DC

3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current		Welding voltage		Duty cycle TIG		
			TIG DC	MMA (REO)	TIG DC	MMA (REO)	40%	100%	
VARTIG 3500 DC Synergy	G W	3-400 V / 50 - 60 Hz	16 AT	4 - 300 A	10 - 250 A	10,1 - 20,4 V	20,1 - 30,4 V	300 A	200 A

Technical data, welding source	Duty cycle MMA	Welding electrode diameter MMA (REO)	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
VARTIG 3500 DC Synergy	G	1,5 - 4,0 mm	35 kg	640x250x370 mm	601846	TIG-B 200G (digit) 4m	600133
	W						

### Digital Meter easily read in dark places

Digital Display of current and voltage while welding, along with the average current or voltage when welding is complete. Digital Diagnostic Display or error codes for troubleshooting.

### Welding condition memory function

Welding memory play back function of welding conditions by one touch control. Repetability of welding conditions and for TIG welding efficiency.

### Function Key

Special functions are set through the user friendly Touch Control Panel:  
- Pulse current  
- Key Lock function



### Easy to set the conditions by Dial

Setting is accurate by 1A with repeatability.

### Welding Waveform Indication

Easy set up of the Welding waveform by touch panel with LED indications of present setting at a glance.

### Variety Welding Functions

All welding functions can be set and confirmed by one button.

### Start type choice

Standard Lift Start without high frequency start

## Machines for TIG AC/DC welding

VARTIG 2005 AC/DC



VARTIG 2205 AC/DC

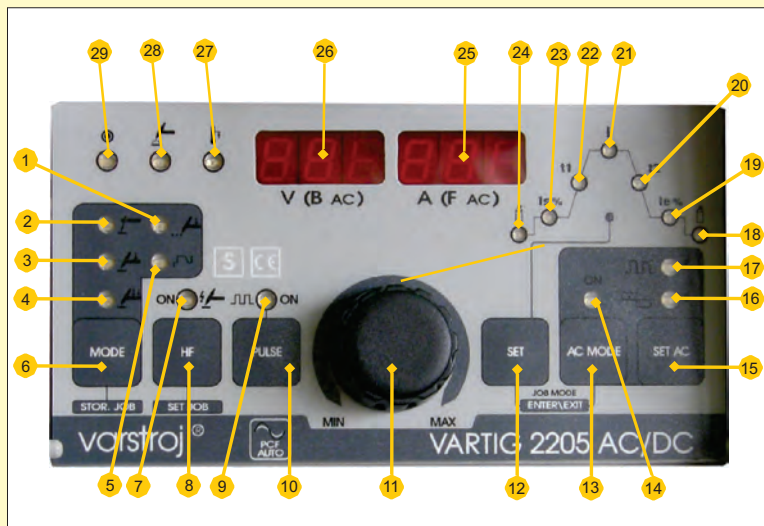


AC/DC

230 V

Technical data, welding source	Mains connection	Fuse slow	Welding current			Welding voltage		Duty cycle TIG AC/DC			
			TIG DC	TIG AC	MMA (REO)	TIG	MMA (REO)	40%	60%	100%	
VARTIG 2005 AC/DC	G	1-230 V / 50 Hz	20 AT	5 – 200 A	5 – 200 A	5 – 170 A	10 – 16,8 V	20 – 26,8 V	200 A / 200 A	180 A / 175 A	155 A / 145 A
	W										
VARTIG 2205 AC/DC	G	1-230 V / 50 Hz	35 AT	4 – 190 A	4 – 220 A	4 – 190 A	10,2 – 18,8 V	20,2 – 28 V	220 A (35%)	165 A	145 A
	W										

Technical data, welding source	Welding electrode diameter MMA	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code	
VARTIG 2005 AC/DC	G	1,5 – 4,0 mm	18 kg	440x222x480 mm	603646	TIG-B 200G (PVT-20) 4m	600129
	W				603647	TIG-B 450W ( PVT-20 4m)	600137
VARTIG 2205 AC/DC	G	1,5 – 5,0 mm	18,8 kg	500x190x400 mm	602112	TIG-B 200G (PVT-20) 4m	600129
	W				602113	TIG-B 450W ( PVT-20 4m)	600137



### VARTIG 2205 AC/DC front panel functions

1. TIG SPOT welding mode indicator
2. MMA welding mode indicator
3. TIG 2 stroke welding mode indicator
4. TIG 4 stroke welding mode indicator
5. TIG RESET welding mode indicator
6. Welding mode selecting button
7. High - frequency start indicator
8. High - frequency start selecting button
9. Pulse mode indicator
10. Pulse mode selecting button
11. Current / Functions regulating encoder
12. Functions selecting button
13. AC mode indicator
14. AC mode selecting button
15. AC frequency / balance selecting button
16. AC balance selecting indicator
17. AC frequency selecting indicator
18. Post - Gas indicator
19. Base current indicator
20. Slope down indicator
21. Slope up indicator
22. Welding current indicator
23. Base current indicator
24. Pre - Gas indicator
25. AC current / frequency showing display
26. AC voltage / balance showing display
27. Thermal protection intervention indicator
28. Arc lit indicator
29. Machine live indicator

PFC - Power Factor Correction  
Minor current and power consumption - larger efficiency

V.R.D. - Voltage Reduction System  
Output voltage reduction on the connectors to <25V for safer work with the machine





Welding power source VARTIG 3500 digit AC/DC is a welding machine of digital generation used for highly demandable welding by AC, DC and AC/DC procedures. The machine also enables selection and saving welding programmes (JOBS).

VARTIG 3500 AC/DC digit



## Increased weld performance of thin aluminium plates

By controlling heat input the welding of thin plates and the melt through becomes easier to control.

I - joint



Pulse current: 200 A, Base current: 20 A,  
Pulse frequency: 2 Hz, AC frequency: 150 Hz,  
Welding speed: 20 cm/min,  
Plate thickness: 4 mm

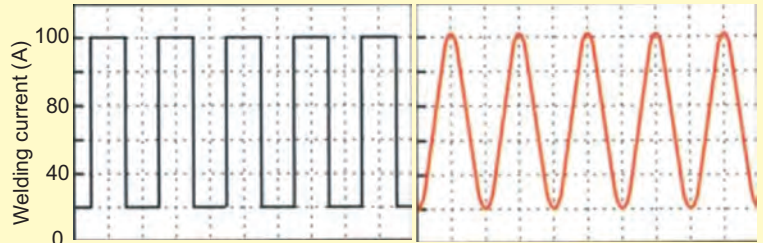
Corner joint



Welding current: 130A,  
AC frequency: 150 Hz,  
Welding speed: 25 cm/min,  
Plate thickness: 3 mm

## Newly - developed "Silent PULSE" function

Prevents a melt - through of thin plates and reduces the sound of the arc.



Standard welding machine  
Pulse current  
SQUARE SIGNAL

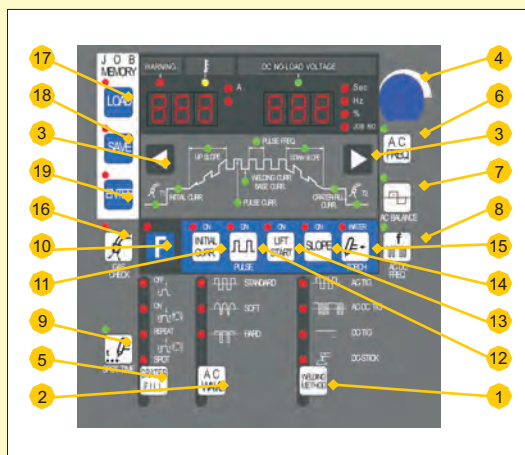
VARTIG 3500 AC/DC  
Current with "Silent PULSE" function  
SINUS SIGNAL

AC/DC

3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current				Welding voltage		Duty cycle TIG			
			TIG DC	TIG AC	TIG AC/DC	MMA	TIG	MMA	40%	60%	100%	
VARTIG 3500 AC/DC digit	G	3-400 V / 50 Hz	20 AT	4 - 300 A	10 - 300 A	10 - 300 A	10 - 250 A	10,2 - 22 V	21 - 30,5 V	300 A	245 A	190 A
	W											

Technical data, welding source	Duty cycle MMA (REO)			Welding electrode diameter MMA	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code	
	40%	60%	100%							
VARTIG 3500 AC/DC digit	G	250 A	204 A	160 A	1,5 - 5,0 mm	43 kg	640x250x544 mm	600351	TIG-B 200G (digit) 4m	600133
	W									



## VARTIG 3500 AC/DC digit front panel functions

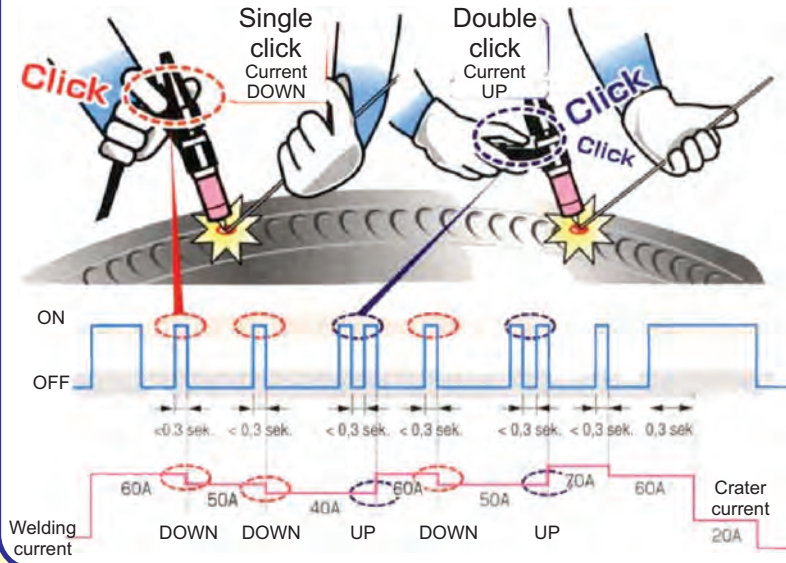
1. Welding method selection
2. AC-WAVE function
3. Welding parameter selection
4. Button for adjusting parameters
5. Working regime adjustment
6. AC frequency adjustment
7. AC BALANCE adjustment
8. AC/DC TIG welding ON
9. Adjustment of SPOT welding
10. Adjustment of internal functions
11. Starting current adjustment
12. Pulse welding ON
13. ARC ignition mode
14. Button for current UPSLOPE, DOWNSLOPE adjustment
15. Water cooled torch selection
16. Gas control
17. Loading of saved programmes
18. Saving of programmes and parameters
19. Confirming saves

### Characteristics:

- Excellent weld quality
- Possibility to save up to 100 welding programmes
- Digital indicator of all functions
- HF – high frequency contactless arc ignition
- 2 or 4 stroke working
- DC, AC, AC/DC pulse welding
- Possibility to set up starting, main and end current
- HOT START - increased welding current by arc ignition
- ANTI STICKING - automatic current power cut if electrode sticks to material



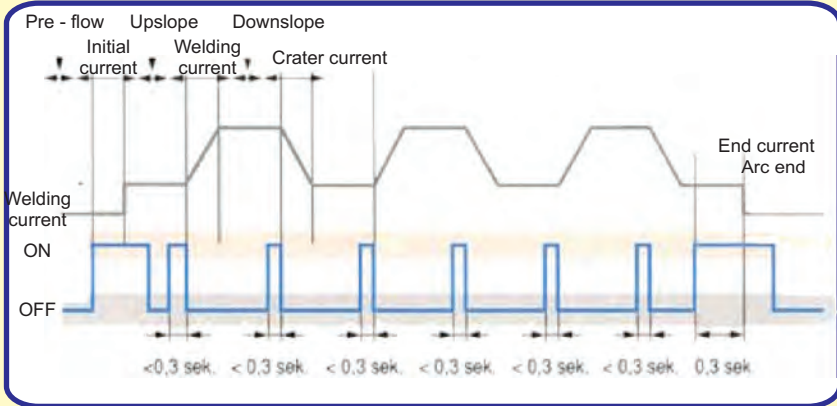
## Ideal for varying plate thickness or large gaps



## Weld current regulating function via torch switch

The VARTIG 3500 AC/DC digit comes with a newly - developed function that allows the user to change the output weld current during mid - weld. By clicking on a switch on the torch, the user can increase or decrease weld output, allowing for optimal welding conditions. The step amount of current change is arbitrarily defined by the user.

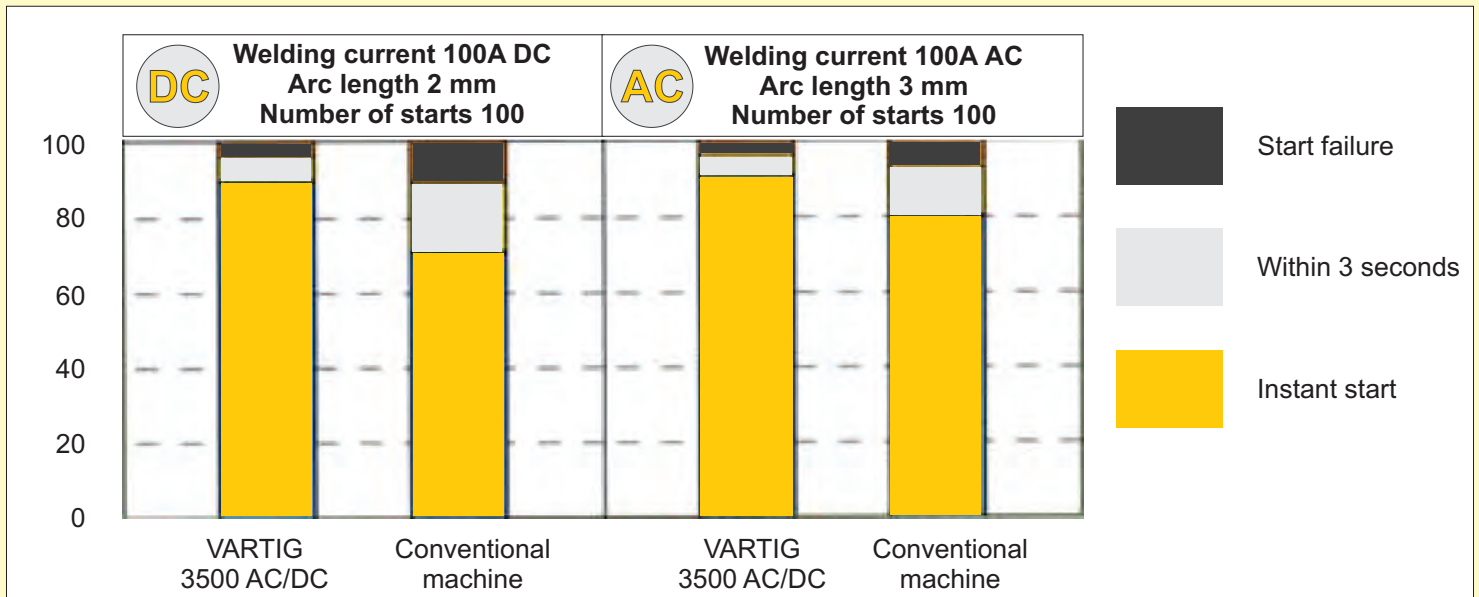
This feature provides optimal control for more delicate metals, such as Aluminium, which typically requires slight current regulation.



## Crater (repeat) function

The command for the crater (repeat) function at the end of the weld is send via the torch switch. This functions prevents an oxidation at the crater and on the electrode.

## Assured arc start - comparison of start rate



## Remote controls

Two available types of remote controls: analog and digital.

The digital version enables the adjustment of all parameters and the making of JOB - s. (saving, calling).



Analogue remote control



Digital remote control

### TIG torches - generation PVT-P7 (VARTIG 1605 DC, VARTIG 1705 DC)

Code	Torch description	Length	AC welding current	DC welding current	W - electrode	Additional demands
600871	TORCH TIG-B 150 G	4 m	150 A / 35%ED	105 A / 35%ED	1,0 – 2,4 mm	
600872	TORCH TIG-B 200G	4 m	200 A / 35%ED	140 A / 35%ED	1,0 – 4,0 mm	
600873	TORCH TIG-F 1600 G	4 m	160 A / 35%ED	120 A / 35%ED	1,0 – 3,2 mm	Adapter (600097)**
600874	TORCH TIG-F 2200 G	4 m	220 A / 35%ED	180 A / 35%ED	1,0 – 4,0 mm	Adapter (600097)**



### TIG torches - generation PVT-20 (VARTIG 2005 DC, 2500 DC, 2005 AC/DC, 2205 AC/DC)

Code	Torch description	Length	AC welding current	DC welding current	W - electrode	Additional demands
600875	TORCH TIG-B 150 G	4 m	150 A / 35%ED	105 A / 35%ED	1,0 – 2,4 mm	
600876	TORCH TIG-B 150 POT G	4 m	150 A / 35%ED	105 A / 35%ED	1,0 – 2,4 mm	
600877	TORCH TIG-B 260 W	4 m	220 A / 100%ED	160 A / 100%ED	1,0 – 2,4 mm	
600878	TORCH TIG-B 260 POT W	4 m	220 A / 100%ED	160 A / 100%ED	1,0 – 2,4 mm	
600129	TORCH TIG-B 200 G	4 m	200 A / 35%ED	140 A / 35%ED	1,0 – 4,0 mm	
600130	TORCH TIG-B 200 G	8 m	200 A / 35%ED	140 A / 35%ED	1,0 – 4,0 mm	
600137	TORCH TIG-B 450W W	4 m	450 A / 100%ED	320 A / 100%ED	1,0 – 4,0 mm	
600138	TORCH TIG-B 450W W	8 m	450 A / 100%ED	320 A / 100%ED	1,0 – 4,0 mm	
600162	TORCH TIG-F 1600 G	4 m	160 A / 35%ED	120 A / 35%ED	1,0 – 3,2 mm	Adapter (600097)**
600163	TORCH TIG-F 1600 G	8 m	160 A / 35%ED	120 A / 35%ED	1,0 – 3,2 mm	Adapter (600097)**
600101	TORCH TIG-F 2200 G	4 m	220 A / 35%ED	180 A / 35%ED	1,0 – 4,0 mm	Adapter (600097)**
600102	TORCH TIG-F 2200 G	8 m	220 A / 35%ED	180 A / 35%ED	1,0 – 4,0 mm	Adapter (600097)**
600103	TORCH TIG-F 3000 W	4 m	230 A / 100%ED	190 A / 100%ED	1,0 – 3,2 mm	Adapter (600097)**
600104	TORCH TIG-F 3000 W	8 m	230 A / 100%ED	190 A / 100%ED	1,0 – 3,2 mm	Adapter (600097)**



### TIG torches - generation DIGIT (VARTIG 3500 AC/DC digit, VARTIG 35 00 DC Synergy)

Code	Torch description	Length	AC welding current	DC welding current	W - electrode	Additional demands
600881	TORCH TIG-B 150 G	4 m	150 A / 35%ED	105 A / 35%ED	1,0 – 2,4 mm	
600882	TORCH TIG-B 150 POT G	4 m	150 A / 35%ED	105 A / 35%ED	1,0 – 2,4 mm	
600883	TORCH TIG-B 260 W	4 m	220 A / 100%ED	160 A / 100%ED	1,0 – 2,4 mm	
600133	TORCH TIG-B 200 G	4 m	200 A / 35%ED	140 A / 35%ED	1,0 – 4,0 mm	
600884	TORCH TIG-B 200 POT G	4 m	200 A / 35%ED	140 A / 35%ED	1,0 – 4,0 mm	
600134	TORCH TIG-B 200 G	8 m	200 A / 35%ED	140 A / 35%ED	1,0 – 4,0 mm	
600141	TORCH TIG-B 450W W	4 m	450 A / 100%ED	320 A / 100%ED	1,0 – 4,0 mm	
600142	TORCH TIG-B 450W W	8 m	450 A / 100%ED	320 A / 100%ED	1,0 – 4,0 mm	
600623	TORCH TIG-B 450W POT W	4 m	450 A / 100%ED	320 A / 100%ED	1,0 – 4,0 mm	
600113	TORCH TIG-F 2200 G	4 m	220 A / 35%ED	180 A / 35%ED	1,0 – 3,2 mm	Adapter (600097)**
600114	TORCH TIG-F 2200 G	8 m	220 A / 35%ED	180 A / 35%ED	1,0 – 4,0 mm	Adapter (600097)**
600115	TORCH TIG-F 2600 G	4 m	220 A / 100%ED	160 A / 100%ED	1,0 – 4,0 mm	Adapter (600097)**
600116	TORCH TIG-F 2600 G	8 m	220 A / 100%ED	160 A / 100%ED	1,0 – 4,0 mm	Adapter (600097)**
600121	TORCH TIG-F 3000 W	4 m	230 A / 100%ED	190 A / 100%ED	1,0 – 3,2 mm	Adapter (600097)**
600122	TORCH TIG-F 3300 W	8 m	230 A / 100%ED	190 A / 35%ED	1,0 – 3,2 mm	Adapter (600097)**
600123	TORCH TIG-F 4000 W	4 m	300 A / 100%ED	190 A / 270%ED	1,0 – 4,0 mm	Adapter (600097)**
600124	TORCH TIG-F 4000 W	8 m	300 A / 100%ED	190 A / 270%ED	1,0 – 4,0 mm	Adapter (600097)**



### TIG torches - generation VARIN (VARIN 1705 TIG, 2005 TIG)

Code	Torch description	Length	AC welding current	DC welding current	W - electrode	Additional demands
699738	TORCH TIG SRT-26V 4m G	4 m	220 A / 60%ED	190 A / 60%ED	1,0 – 4,0 mm	
696599	TORCH UNITIG-17V 4m G	4 m	140 A / 60%ED	125 A / 60%ED	1,0 – 3,2 mm	



remarks: \*\* when using these torches a special adapter is needed. Please specify the code of adapter when ordering. W – water cooled G – air cooled

Cooling unit HA-3



Cart T

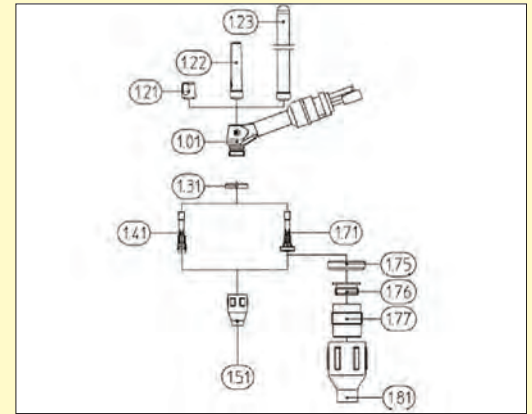


Cart TM



Torch group TIG - B

- TIG - B 150 G
- TIG - B 200 G
- TIG - B 260 W
- TIG - B 450 W



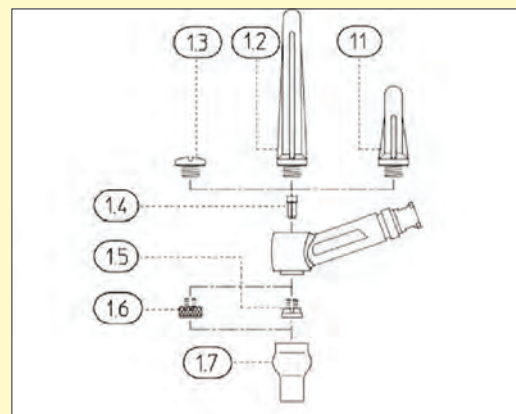
Consumables and spare parts

Position	Position description	Position details	TIG - B 150 G	TIG - B 200 G	Remarks
			TIG - B 260 W	TIG - B 450 W	
			Ordering code	Ordering code	
1.21	TORCH CAP	SHORT	600999	600049	
1.22		MEDIUM	601000		
1.23		LONG	601001	600050	
1.31	ISOLATOR		601002	600051	
1.41	COLLET	Ø 1,0 mm for TIG-B	601003		
		Ø 1,6 mm for TIG-B	601004	600052	
		Ø 2,0 mm for TIG-B	601005	600053	
		Ø 2,4 mm for TIG-B	601006	600054	
		Ø 3,2 mm for TIG-B	601007	600055	
		Ø 4,0 mm for TIG-B		600056	
1.51	CERAMICAL NOZZLE	26 mm, NW 6,5 mm	601008		
		26 mm, NW 8,0 mm	601009		
		26 mm, NW 10,0 mm	601010		
		26 mm, NW 11,5 mm	601011		
		36 mm, NW 6,5 mm	601012		
		36 mm, NW 8,0 mm	601013		
		36 mm, NW 10,0 mm	601014		
		36 mm, NW 11,5 mm	601015		
		37.4 mm, NW 7,5 mm		600058	
		37.4 mm, NW 10,5 mm		600059	
		37.4 mm, NW 13,0 mm		600060	
		37.4 mm, NW 13,0 mm strenghten		600061	
		37.4 mm, NW 15,0 mm		600062	
		37.4 mm, NW 15,0 mm strenghten		600063	
		51.5 mm, NW 7,5 mm		600064	
51.5 mm, NW 10,0 mm		600065			
51.5 mm, NW 13,0 mm		600066			
51.5 mm, NW 16,0 mm		600067			
1.71	GAS RECTIFIER WE	Ø 1,0 mm	601016		
		Ø 1,6 mm	601017	600068	
		Ø 2,0 mm	601018	600069	
		Ø 2,4 mm	601019	600070	
		Ø 3,2 mm	601020	600071	
		Ø 4,0 mm		600072	
		Ø 4,8 mm		600073	
1.75	ISOLATOR 4	FOR GAS RECTIFIER	601021	600074	
1.76	INTERCONNECTION RING		601022		
1.77	GAS RECTIFIER 4 WE	Ø 1,6 mm	600075	600075	
		Ø 2,4 mm	600076	600076	
		Ø 3,2 mm	600077	600077	
		Ø 4,0 mm		600078	
		Ø 4,8 mm		600079	
1.81	CERAMICAL NOZZLE	50.0 mm, NW 12,5 mm	600080	600080	
		50.0 mm, NW 16,0 mm	600081	600081	
		50.0 mm, NW 19,5 mm	600082	600082	
		34.0 mm, NW 24,0 mm		600083	
		26.5 mm, NW 10,0 mm		600084	
		26.5 mm, NW 13,0 mm		600085	



Torch group TIG - F

TIG - F 1600 G  
 TIG - F 3000W  
 TIG - F 2200 G  
 TIG - F 4000 W



Consumables and spare parts

Position	Position description	Position details	TIG - F 1600 G TIG - F 3000 W	TIG - F 2200 G TIG - F 4000 W	Remarks
			Ordering code	Ordering code	
1.1	TORCH CAP	MEDIUM	689893		
1.2		LONG	689892	676953	
1.3		SHORT	689894	682519	
1.4	COLLET	1,0/5,3X12,7	689888		
		1,6/5,3X12,7	689889		
		2,4/5,3X12,7	689890		
		3,2/5,3X12,7	689891		
		1,0 D=7,2X60		674484	
		1,6 D=7,2X60		674485	
		2,4 D=7,2X60		674486	
1.5	FASTENING NUT	Ø 1,0	676948	676948	
		Ø 1,6	676949	676949	
		Ø 2,0	676950	676950	
		Ø 2,4	676951	676951	
		Ø 3,2		676952	
1.6	GAS RECTIFIER	1,0	691898	691898	
		1,6	691899	691899	
		2,4	691900	691900	
		3,2	691901	691901	
1.7	CERAMIC GAS NOZZLE	11 X33 AW 32	691917		
		11 X64		692591	
		6,5X64		692588	
		6,5X33	692731		
		8 X33	691916		
		8 X64		692589	
		9,5X33	691915		
		9,5X64		692590	
		6,5X22	689895		
		8,0X22	689896		
		9,5X22	689897		
		11,0X22	689898		
		6,5 20,5X44		676378	
		9,5 20,5X44		676374	
		13 20,5X44		676375	
		16 20,5X44		676376	
		18 20,5X44		676377	
GR 8 D20 X44		674481			
GR11 D20,5X44		674482			
GR14 D20,5X44		674483			

## MIG/MAG welding with shielding gas:

- is very productive and economical welding
- mostly used method in industry
- universal method of welding enables welding of different thick materials
- MAG procedure (shielding with active gas) is used for welding all kind of construction steels
- MIG procedure (shielding with inert gas) is used for welding stainless steel, aluminium and precious metals
- by welding, the weld stays clean with no spatter, so extra cleaning is not necessary



Product name	Suitable for	MIG/MAG	Flux cored wire	Spot welding	Interval welding	Synergy welding	Welding current (A)	Welding wire diameter (mm)	Materials	Specialities	Code
VARMIG 1400	■	●					30 - 140	0,6 - 0,8	Construction steel (thin plates and profiles)	Weld with no spatter, large welding speed	694411
VARMIG 1600	■	●				30 - 160	0,6 - 0,8	694295			
VARMIG 1800	■	●		●		30 - 160	0,6 - 0,8	695709			
VARMIG 190 Profimig	■ ■	●	●			25 - 190	0,6 - 0,8	602324			
VARMIG 191 Supermig	■ ■	●	●	●	●	25 - 190	0,6 - 0,8	Construction steel, CrNi steel, AlMg, AISi	Additional: welding with flux cored wire	603233	
VARMIG 211 Supermig	■ ■	●	●	●	●	20 - 220	0,6 - 1,0			603234	
VARMIG 271 Supermig	■ ■	●	●	●	●	15 - 250	0,6 - 1,2			603235	
VARMIG 331 Supermig	■ ■	●	●	●	●	15 - 300	0,6 - 1,2			603236	
VARMIG 251 Synergy	■ ■	●	●	●	●	15 - 250	0,8 - 1,2	Construction steel, CrNi steel, AlMg, AISi	Welding programs 2/4 stroke working, pre - gas, after - gas, soft start	G	603237
VARMIG 301 Synergy	■ ■	●	●	●	●	15 - 300	0,8 - 1,2			G	603238
VARMIG 401K Synergy	■ ■	●	●	●	●	30 - 380	0,8 - 1,2			G	603239
VARMIG 451K Synergy	■ ■	●	●	●	●	30 - 380	0,8 - 1,2			G	603229
VARMIG 401 DG Synergy	■ ■	●	●	●	●	30 - 380	0,8 - 1,2			W	603240
VARMIG 401 DW Synergy	■ ■	●	●	●	●	30 - 380	0,8 - 1,2			G	603241
VARMIG 451 D44 Synergy	■ ■	●	●	●	●	40 - 450	0,8 - 1,6			W	603242
VARMIG 600 D44 Synergy	■ ■	●	●	●	●	60 - 600	0,8 - 1,6			W	603243
VARMIG 600 T44 Synergy	■ ■	●	●	●	●	60 - 600	1,0 - 1,6			W	600749
VARMIG 600 T44 Synergy	■ ■	●	●	●	●	60 - 600	1,0 - 1,6			Additional: Start current and end current	W

Suitable for: ■ ... hobby ■ ...workshops ■ ...industry ■ ...heavy industry  
 Welding quality: ● ... excellent ○ ... good

G - air cooled torch  
 W - water cooled torch

## VARMIG

Welding machines Varmig are intended to weld by MIG/MAG method and by using shielding gas. They are suitable for use in workshops and repairs, especially by thin metal plates. Varmig machines enable excellent weld quality and possibility to use flux cored wire.

**VARMIG 1400**



**VARMIG 1600**



230 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Welding voltage	Duty cycle			Welding wire diameter	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
					10%	60%	100%						
VARMIG 1400	1~230 V / 50 Hz	16 AT	30 – 140 A	15,5 – 21,0 V	140 A (8%)	60 A	45 A	0,6 – 0,8 mm	26 kg	600x330x420 mm	694411	FBV 14/2m	694884
VARMIG 1600	1~230 V / 50 Hz	16 AT	30 – 160 A	15,5 – 22,0 V	160 A	65 A	50 A	0,6 – 0,8 mm	28 kg	600x330x420 mm	694295	FBV 14/2m	694884

**VARMIG 1800**



**VARMIG 190 Profimig**



230 V

400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Welding voltage	Duty cycle			Welding wire diameter	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
					10%	60%	100%						
VARMIG 1800	1~230 V / 50 Hz	16 AT	30 – 160 A	15,5 – 22,0 V	160 A	65 A	50 A	0,6 – 0,8 mm	40 kg	780x310x600 mm	695709	PAG 180/4 - K3 B	602755
VARMIG 190 Profimig	1~230 V / 50 Hz 2~400 V / 50 Hz	16 AT	25 – 150 A 80 – 190 A	15,0 – 21,5 V 18,0 – 23,5 V	150 A (15%) 190 A (15%)	75 A 94 A	58 A 73 A	0,6 – 0,8 mm	34 kg	600x300x420 mm	602324	PAG 180/4 - K3 B	602755



## VARMIG Supermig

Welding machines VARMIG Supermig are intended to weld by MIG/MAG method and by using shielding gas. They are used in workshops, repairs and industry. Mostly used for welding construction steel, and also aluminium and CrNi steel if using appropriate accessories and welding wire. Excellent welding quality can be achieved, also by using flux cored wire.

VARMIG 191 Supermig



VARMIG 211 Supermig



230 V

2x400 V

3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Welding voltage	Duty cycle			Welding wire diameter	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
					20%	60%	100%						
VARMIG 191 Supermig	1-230 V / 50 Hz 2-400 V / 50 Hz	16 AT	25 – 150 A 80 – 190 A	15,0 – 21,5 V 18,0 – 23,5 V	150 A 190 A	60 A 75 A	50 A 60 A	0,6 – 0,8 mm	54 kg	690x310x600 mm	603233	PAG 180/4 - K3B G	602755
VARMIG 211 Supermig	3-400 V / 50 Hz	16 AT	20 – 220 A	15,0 – 25,0 V	220 A	115 A	90 A	0,6 – 1,0 mm	61 kg	690x310x600 mm	603234	PAG 250/4 - K3 B (G)	602756

VARMIG 271 Supermig



VARMIG 331 Supermig



3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Welding voltage	Duty cycle		Welding wire diameter	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
					35%	100%						
VARMIG 271 Supermig	3-400 V / 50 Hz	16 AT	15 – 250 A	14,8 – 26,5 V	280 A	220 A	0,6 – 1,2 mm	65 kg	800x405x720 mm	603235	PAG 250/4 - K3 B (G)	602756
VARMIG 331 Supermig	3-400 V / 50 Hz	20 AT	15 – 300 A	14,8 – 31,5 V	300 A	180 A	0,6 – 1,2 mm	93 kg	800x405x720 mm	603236	PAG 250/4 - K3 B (G)	602756

## VARMIG Synergy

Welding machines Varmig synergy are intended for welding by MIG/MAG method by using shielding gas. Recommended to be used for welding construction steel, CrNi steel and aluminium. Varmig Synergy machines are mostly found in car industry, machine and ship building as well in various workshops. Microprocessor control enables synergy working, possibility to set programmed or manual welding parameters, soft start, digital indicator of welding voltage and wire feeding speed.

VARMIG 251 Synergy

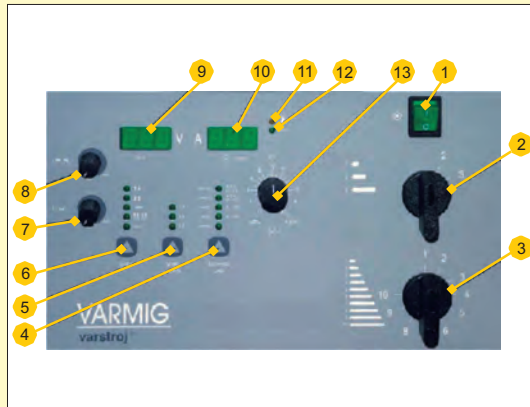


VARMIG 301 Synergy



3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Welding voltage	Duty cycle		Welding wire diameter	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
					35%	100%						
VARMIG 251 Synergy	3~400 V / 50 Hz	20 AT	15 – 250 A	14,8 – 26,5 V	250 A	150 A	0,8 – 1,2 mm	80 kg	880x410x720 mm	603237	PAG 250/4 - K3 B (G)	602756
VARMIG 301 Synergy	3~400 V / 50 Hz	20 AT	15 – 300 A	14,8 – 29,0 V	300 A	230 A	0,8 – 1,2 mm	93 kg	880x410x720 mm	603238	PAG 250/4 - K3 B (G)	602756



### VARMIG Synergy front panel functions

1. ON/OFF switch
2. Switch for rough regulation of welding current voltage (only Varmig 350 Synergy)
3. Switch for fine regulation of welding current voltage
4. Button for selecting material and shielding gas
5. Button for selecting welding wire diameter
6. Button for changing welding method
7. Potentiometer for selecting welding interval
8. Potentiometer for SPOT welding time adjustment
9. Voltage indicator
10. Current indicator
11. Indicator of thermoswitch
12. Indicator for external adjustment
13. Potentiometer for adjustment of welding wire feeding speed

#### Characteristics:

- 4 roll wire feeding drive
- Possibility to weld by using flux cored wire
- Synergy working
- Microprocessor control
- Selection of manual or programmed working
- Adjustment of interval and spot welding
- 2 or 4 stroke working
- Soft ignition
- Digital indication
- Welding wire burn back control
- Gas pre-flow, post-flow adjustment

VARMIG 401K Synergy



VARMIG 451K Synergy



3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Welding voltage	Duty cycle			Welding wire diameter	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
					40%	60%	100%						
VARMIG 401 K Synergy	3~400 V / 50 Hz	20 AT	30 – 380 A	15,5 – 33,0 V	380 A	320 A	250 A	0,8 – 1,2 mm	105 kg	850x540x780 mm	603239	PAG 400/4 - K4 B	602758
VARMIG 451K Synergy	3~400 V / 50 Hz	35 AT	30 – 450 A	15,5 – 36,5 V	450 A	400 A	310 A	0,8 – 1,2 (1,6) mm	180 kg	1050x750x1480 mm	603240	PAG 500/3N - 4M	603114

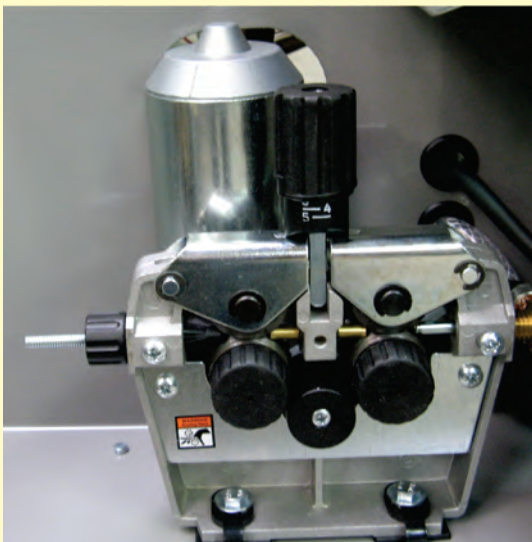
### Characteristics:

- 4 roll wire feeding drive
- Possibility to weld by using flux cored wire
- Synergy working
- Microprocessor control
- Selection of manual or programmed working
- Adjustment of interval and spot welding
- 2 or 4 stroke working
- Soft ignition
- Digital indication
- Welding wire burn back control
- Gas pre-flow, post-flow adjustment

### VARMIG Synergy front panel functions

- Switch for fine and rough regulation of welding current
- Button for selecting material and shielding gas
- Button for selecting welding wire diameter
- Button for changing welding method
- Potentiometer for selecting welding interval
- Potentiometer for setting the spot welding time
- Voltage indicator
- Current indicator
- Display - thermoprotection ON
- Display - external settings
- Button for setting the welding wire feeding speed

4 - roll wire feeding drive



VARMIG Synergy front panel





**VARMIG 401 DG Synergy**  
**VARMIG 401 DW Synergy**



**VARMIG 451 D44 Synergy**

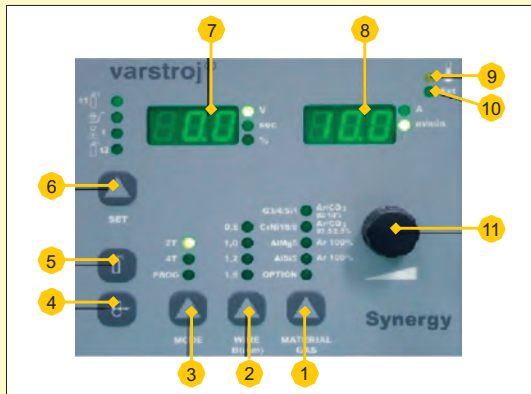


**VARMIG 600 D44 Synergy**



**3x400 V**

Technical data, welding source	Mains connection	Fuse slow	Welding current	Welding voltage	Duty cycle			Welding wire diameter	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
					40%	60%	100%						
VARMIG 401 DG Synergy VARMIG 401 DW Synergy	3-400 V / 50 Hz	25 AT	30 – 380 A	15,0 – 33,0 V	380 A	320 A	250 A	0,8 – 1,2 mm	150 kg	1050x650x1400 mm	600746 600747	PAG 400/4 - K4 B PAG 500/3N - 4M	602758 603114
VARMIG 451 D44 Synergy	3-400 V / 50 Hz	35 AT	40 – 450 A	16,0 – 36,5 V	450 A	400 A	310 A	0,8 – 1,6 mm	192 kg	1050x750x1480 mm	600159	PAG 600/3N	602851
VARMIG 600 D44 Synergy	3-400 V / 50 Hz	50 AT	60 – 600 A	17,0 – 44,0 V	/	600 A	460 A	0,8 – 1,6 mm	210 kg	1050x750x1480 mm	600749	PAG 600/3N	602851



### VARMIG Synergy front panel functions

1. Button for choosing material and shielding gas
2. Button for selecting welding wire diameter
3. Button for selecting welding mode
4. Button for setting additional functions
5. Button for setting shielding gas flow
6. Button for wire lead in

7. Voltage indicator
8. Current indicator
9. Thermo switch ON indicator
10. Indicator for external adjustment
11. Encoder for setting speed of wire feeding

### Characteristics:

- 4 - roll wire drive mechanism
- Possibility to weld by using flux cored wire
- Synergy working
- Microprocessor control
- Possibility to select manual or programmed welding parameters
- Interval and SPOT welding adjustment
- 2 and 4 stroke working mode
- Soft start
- Digital indicator
- ECO MODE – minimum energy consumption in standby mode
- Welding wire burn back control
- Button for setting and control of gas flow

- Voltage control (arc height)
- Portable wire feeder
- Interconnection cable of 1,2 m (possibility to choose between additional 5, 10 and 15 m)



## VARMIG 600 T44 Synergy



### Characteristics:

- Robust design for the hardest working conditions
- Synergy working mode
- DSP microprocessor technology
- Possibility to weld by using flux cored wire up to 2,4 diameter
- Improved function ARC START for easier arc ignition
- 30 programme places for saving individual welding programmes
- ECO MODE working mode - minimum energy use by preparation state
- EXT digital remote outer digital remote control connection possible
- External UP/DOWN - welding power regulation through torch keys
- PPN-D5 special version for better field movement
- Interconnection cables up to 40m (above 15m only water cooled versions)

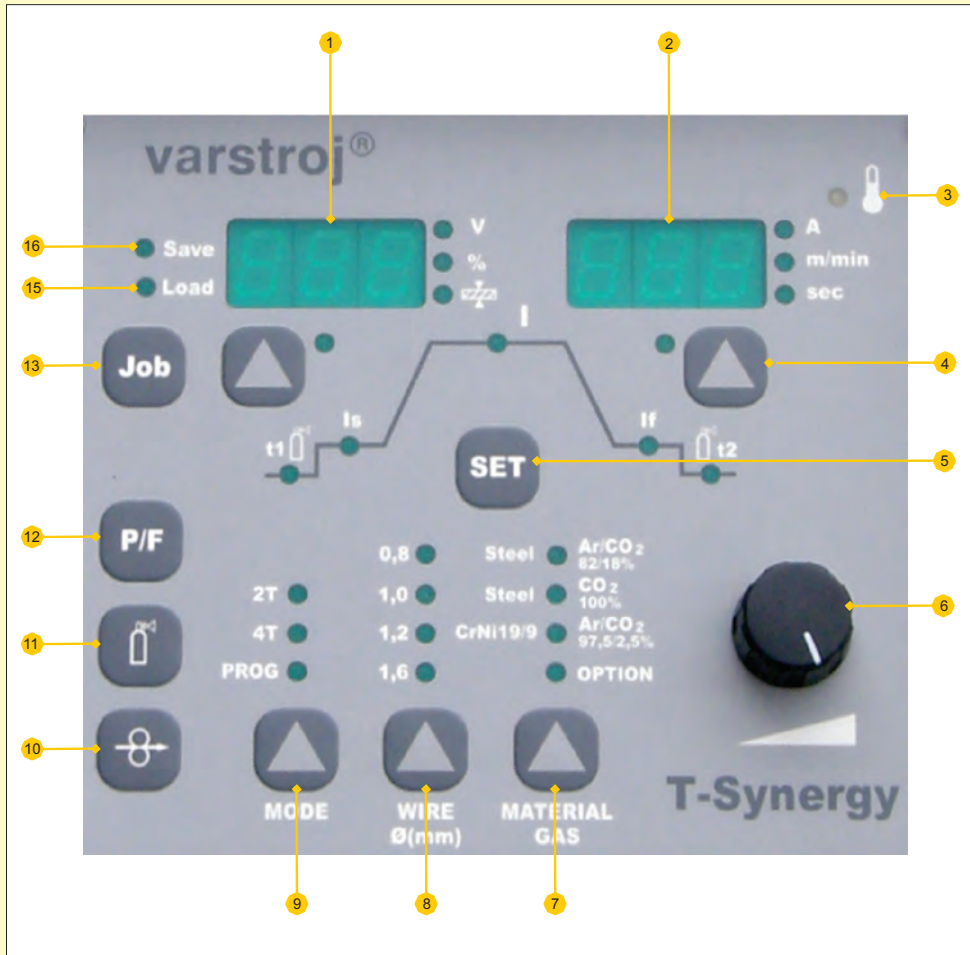
### Options:

- ARC TIMER - effective welding time measurement
- ARC LIMITER - welding current limitation



3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Welding voltage	Duty cycle			Welding wire diameter	Weight	Dimensions DxWxH mm	Ordering code	Torch type	Torch code
					40%	60%	100%						
VARMIG 600 T44 Synergy	G/W 3-400 V / 50 Hz	50 A	60 – 600 A	17,0 – 44,0 V	/	600 A	460 A	1,0 – 1,6 mm	210 kg	1050x750x1480 mm	602374	PAG 600/3N	602851



### VARMIG T44 Synergy front panel functions

1. Welding current indicator
2. Welding voltage indicator
3. Thermoswitch indicator
4. Function selection key
5. Welding parameters selection key
6. Welding parameters regulation button
7. Material and shielding gas selection key
8. Welding wire diameter selection key
9. Welding method selection key
10. Wire LEAD IN key
11. Shielding gas flow regulation key
12. Additional welding parameters and funkcij regulation key
13. JOB selection key
14. JOB call indicator
15. JOB save indicator

## MIG/MAG pulse welding:

- advantage of pulse welding is completely controlled arc and consequently high quality of weld
- pulse welding method is specially suitable for welding thin metal sheets



Product name	Suitable for	MIG/MAG	Flux cored wire	Spot welding	Interval welding	Synergy welding	Pulse welding	Welding current (A)	Welding wire diameter (mm)	Materials	Specialities	Code	
VARMIG 1800 Inverter	■ ■	●	●	●	●			20 - 180	0,6 - 1,0	Construction steel, CrNi steel, AlMg, AlSi	Welding programs 2/4 stroke working, pre - gas, after - gas, soft start	G	602652
VARMIG 2100 Inverter	■ ■	●	●	●	●			15 - 210	0,6 - 1,0			G	602709
VARMIG 2350 Inverter Pulse	■ ■	●	●	●	●	●		15 - 235	0,6 - 1,2			G	602653
VS 3200 digit	■ ■	●	●	●	●			30 - 300	0,8 - 1,2		Additional: Remote regulation and programming	G	601657
VS 4000 digit	■ ■	●	●	●	●			30 - 380	0,8 - 1,4			W	601658
VPS 3000K digit	■ ■	●	●	●	●		●	30 - 270	0,8 - 1,2*		Additional: WAVE puls	G	601659
VPS 3200 digit	■ ■	●	●	●	●		●	30 - 300	0,8 - 1,2*			W	601660
VPS 4000 digit	■ ■	●	●	●	●		●	30 - 400	0,8 - 1,2*			G	601927
VPS 5000 digit	■	●	●	●	●		●	30 - 500	0,8 - 1,6			W	601928
VPS 3000 AC/MIG PLUS	■ ■	●	●	●	●		●	30 - 300	0,8 - 1,2*			W	601826
											W	601825	
											G	699453	
											W	699454	
											W	600407	
											W	602493	

Suitable for: ■...workshops ■...industry ■...heavy industry  
 Welding quality: ●... excellent ○... good  
 DC...direct current AC... alternate current

G - air cooled torch  
 W - water cooled torch

\* ... when welding Aluminium up to 1,6 mm



## VARMIG Inverter

Microprocessor controlled inverter welding machines for MIG/MAG and MMA methods. Recommended to be used for welding construction steel, CrNi steel and aluminium.

**VARMIG 1800 Inverter**



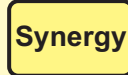
**VARMIG 2100 Inverter**



**VARMIG 2350 Inverter Pulse**

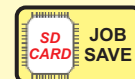


**Additional:**

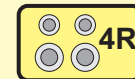


Sinergy working

**Additional:**



Saving welding programmes



4 - roll wire drive mechanism



Advanced pulse stream control system



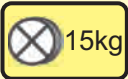
Microprocessor control



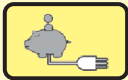
Digital display of parameters



5kg roll for wire



With the optional bracket upgrade option for 15kg roll



Energy saving



Electronic emission control



Advanced control interface

**Characteristics:**

- Optional connection to generator
- Remote control
- High mobility
- MMA welding with coated electrode
- HOT START- increased welding current by arc ignition
- ANTI STICKING- automatic current power cut if electrode sticks to material
- ARC FORCE – prevents electrode sticking

**230 V**

Technical data, welding source	Mains connection	Fuse slow	Welding current MIG/MAG	Welding voltage MIG/MAG	Duty cycle MIG/MAG			Welding current MMA	Welding voltage MMA	Duty cycle MMA			Welding wire diameter
					35%	60%	100%			35%	60%	100%	
VARMIG 1800 Inverter	1-230 V / 50 Hz	20 AT	20 – 180 A	15,5 – 21,5 V	175 A	155 A	120 A	20 – 130 A	20,8 – 25,2 V	130 A	120 A	100 A	0,6 – 1,0 mm
VARMIG 2100 Inverter	1-230 V / 50 Hz	20 AT	15 – 210 A	17,75 – 24,5 V	190 A	165 A	130 A	20 – 130 A	20,8 – 25,2 V	130 A	120 A	100 A	0,6 – 1,0 mm

Technical data, welding source	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
VARMIG 1800 Inverter	13 kg	420x220x560 mm	602652	PAG 180/4 - K3 G	602755
VARMIG 2100 Inverter	17 kg	420x220x560 mm	602709	PAG 250/4 - K3 G	602756

Technical data, welding source	Mains connection	Fuse slow	Welding current MIG/MAG	Welding voltage MIG/MAG	Duty cycle MIG/MAG			Welding current TIG	Welding voltage TIG	Duty cycle TIG		
					35%	60%	100%			35%	60%	100%
VARMIG 2350 Inverter Pulse	1-230 V / 50/60 Hz	20 AT	15 – 235 A	14,75 – 25,75 V	220 A	160 A	130 A	15 – 235 A	15,0 – 19,4 V	220 A	160 A	130 A

Technical data, welding source	Welding current MMA	Duty cycle MMA			Welding wire diameter	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
		35%	60%	100%						
VARMIG 2350 Inverter Pulse	20 – 130 A	185 A	138 A	109 A	0,6 – 1,2 mm	13 kg	480x270x560 mm	602653	PAG 250/4 - K3 G	602756

## VS and VPS

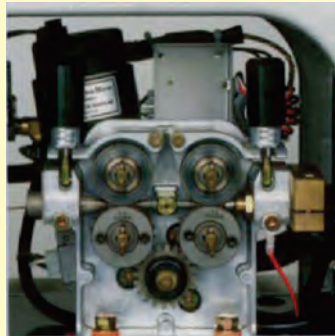
Welding machines VS and VPS enable three different welding methods: MIG/MAG classic, MIG/MAG pulse (VPS) with use of shielding gas and MMA electrode welding (optional by VPS). VS and VPS machines are suitable for welding construction steel, CrNi steel, aluminium and alloys. They can be found in car industry, machine and ship building, also as a power source for robotic welding.

VS 3200 digit  
VS 4000 digit



### Characteristics:

- Robust design
- Synergy working mode
- Less spatter generation
- Stable arc control within full range of current
- 4 – roll feeder type
- Digital electronic reactor control for high quality welding
- Adjustment of arc characteristics
- Encoder feedback type with newly developed adjustable Inertia control
- Improved ARC START function for reliable welding operations
- JOB selection through the torch
- Welding current regulation through the torch key in synergy and standard mode
- MMA and TIG welding as standard configuration



3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Welding voltage	Duty cycle		Welding wire diameter	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
					50%	100%						
VS 3200 digit	G	3-400 V / 50 Hz	20 AT	30 – 300 A	12,0 – 32,0 V	300 A	232 A	0,8 – 1,2 mm	30 kg	640x250x430 mm	PAG 400/4-K4B	602758
	W					(60%)						603047
VS 4000 digit	G	3-400 V / 50 Hz	25 AT	30 – 380 A	15,5 – 34 V	380 A	270 A	0,8 – 1,4 mm	30 kg	640x250x430 mm	PAG 400/4-K4B	602758
	W											603047



### VS front panel characteristics

- Digital display easily read in dark places
- High resolution for accurate parameters adjustment
- Arc characteristic electronic adjustment
- Additional functions (arc start control and crater fill function) are part of the serial equipment
- Transparent adjustment of the desirable characteristics
- Function keys for access to other parameters
- Program saving

Stable welding control from 30 to 400 A - excellent for complicated joint welding

Bead appearance



40 A, 16 V, 50 cm/min



180 A, 21 V, 65 cm/min



## New functions for high quality welding

**Digital "TURBO START FUNCTION" and digital antistick -** for substantially improved instantaneous arc start

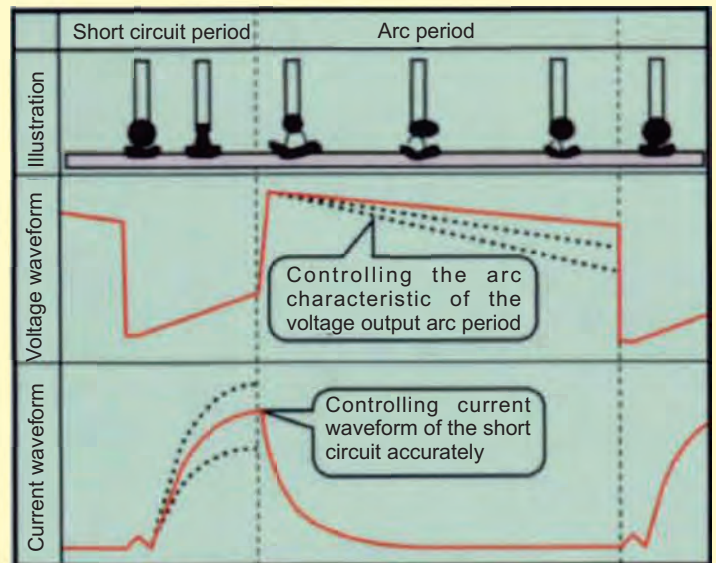
VS 4000 - The wire points are small and same size



Conventional welding machine - The wire points are irregular and not same size

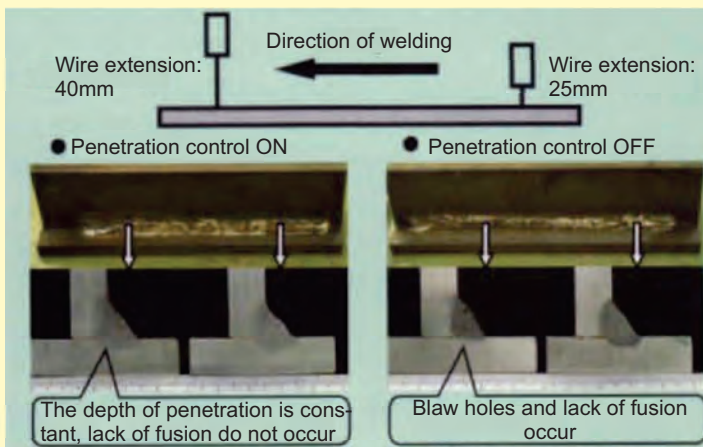


**Digital electronic reactor control -** controls output voltage accurately not only in the short circuit period, but also in the arc period



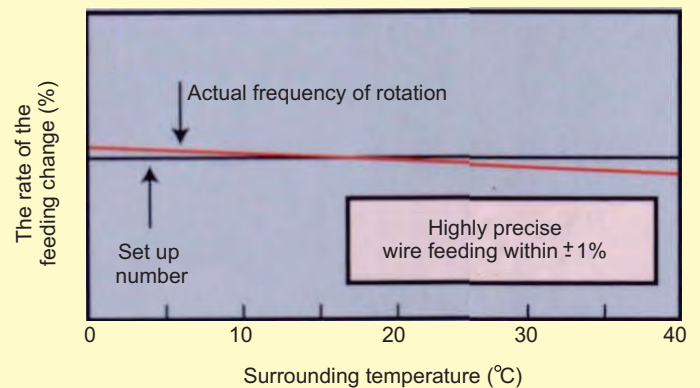
**Penetration adjustment function -**

contributes to the stabilization of the welding quality



**Highly precise wire feeding -**

contributes to the stabilization of the welding quality



**5 welding types can correspond with 16 types wire diameter. With option soft, also aluminium can be weld.**

Shielding gas (welding mode)	Wire type		Shielding gas (welding mode)	Wire type	
	Material	Diameter		Material	Premer
CO2 (MAG)	Steel	0,8 – 1,2	CO2 (MAG)	Steel (flux cored wire)	0,8 – 1,2
	Steel (flux cored wire)	1,2	2%O <sub>2</sub> (MIG)	Stainless steel	
	Stainless steel (flux cored wire)	1,4			
	Stainless steel (flux cored wire)	0,9			
		1,2			



VPS 3000K digit



VPS 3200 digit



3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Welding voltage	Duty cycle		Welding wire diameter	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
					40%	100%						
VPS 3000K digit	G	3-400 V / 50 Hz	25 AT	30 – 270 A	12 – 27,5 V	270 A	170 A	0,8 – 1,2 mm	51 kg	653x300x664 mm	PAG 400/4-K4B	602758
	W											
VPS 3200 digit	G	3-400 V / 50 Hz	30 AT	30 – 320 A	12 – 30 V	320 A (50%)	226 A	0,8 – 1,2 mm	45 kg	640x250x544 mm	PAG 400/4-K4B	602758
	W											



### VPS 3000K digit front panel characteristics

- Digital display easily read in dark palces
- High resolution for accurate parameters adjustment
- Arc characteristic electronic adjustment
- Additional functions (arc start control and crater fill function) are part of the serial equipment
- Extensive software equipment for welding titanium, magnesium...
- Transparent adjustment of the desirable characteristics: welding wire diameter, material, shielding gas...
- Function keys for access to other parameters: pulse current, base current, pulse width...
- Saving up to 99 programs

### Various combinations between welding modes and welding wires

Welding mode	Material	Welding wire diameter (mm)
Wave Pulse	Al/Si	1,2; 1,6
	Al/Mg	1,0; 1,2; 1,6
Pulsed MIG	Brazing	0,8; 0,9; 1,0; 1,2
	Inconel	0,9; 1,2
	Titanium	1,0; 1,2
	Magnesium	1,2

### Characteristics:

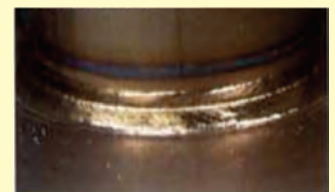
- Optimal welding capacities in pulse and clasical mode enable quality welding of thin plates
- Completely synergy operation and microprocesor control
- Wave-Pulse function
- New front panel for rough industry enviroment
- JOB selection through the torch
- Swithc between pulse and standard welding through the torch
- Welding current regulation throught a torch key in synergy and standard mode
- MMA and TIG welding in standard configuration

Magnesium (MIG pulse)



Welding current: 145 A,  
welding voltage: 20 V,  
welding speed: 70 cm/min,  
welding wire diameter: 1,2 mm,  
material thickness: 6,0 mm

Titanium (MIG pulse)



Welding current: 100 A,  
welding voltage: 19 V,  
welding speed: 60 cm/min,  
welding wire diameter: 1,0 mm,  
material thickness: 3,0 mm

VPS 4000 digit



VPS 5000 digit

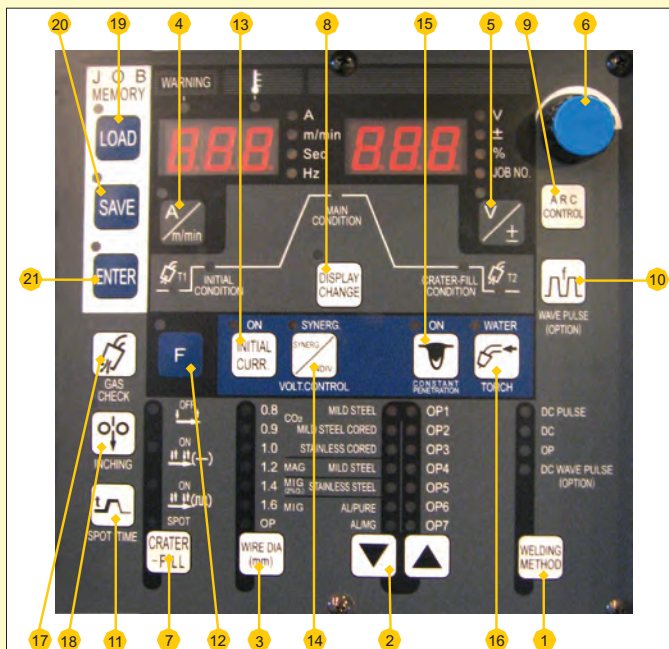


3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Welding voltage	Duty cycle		Welding wire diameter	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code	
					50%	100%							
VPS 4000 digit	G	3-400 V / 50 Hz	30 AT	30 – 400 A	15,5 – 34 V	400 A	283 A	0,8 – 1,2 mm	45 kg	653x300x595 mm	699453	PAG 600/3N	602851
	W												
VPS 5000 digit		3-400 V / 50 Hz	35 AT	30 – 500 A	15,5 – 39 V	500 A	350 A	0,8 – 1,6 mm	55 kg	653x300x595 mm	600407	PAG 600/3N	602851

**Characteristics:**

- Inverter welding source
- Digital regulation
- DC pulse welding
- Possibility to use preprogrammed synergy welding parameters
- Possibility to manually correct welding parameters
- Possibility to programme and save up to 100 programmes
- Possibility to synchronise external control unit (automation and robotic welding)
- Possibility to use analogue and digital remote control
- Programmed adjustment of the start, base and end current
- JOB selection through the torch
- Switch between pulse and standard welding through the torch
- Welding current regulation through a torch button in synergy and standard mode
- MMA and TIG welding in standard configuration



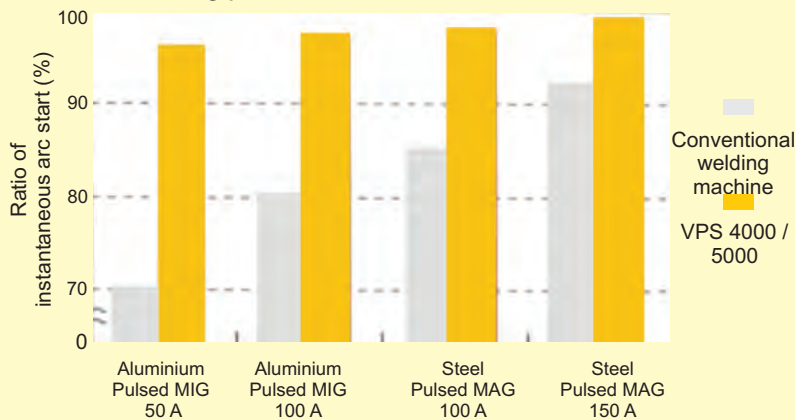
**VPS 4000 digit front panel functions**

1. Welding process selection
2. Welding material and shielding gas selection
3. Welding wire diameter selection
4. Indicator selection: current (A) or welding wire feeding (m/min)
5. Indicator selection: voltage (V) and correction (±)
6. Button for selection of parameters
7. Selection of working regime
8. Indicator of welding process functions
9. Adjustment of welding arc characteristics
10. WAVE PULSE function (optional)
11. SPOT welding time
12. F (function button)
13. Starting arc ignition
14. Switching between synergy and manual welding
15. Setting constant depth of weld
16. Selection of water cooled torch
17. Gas control
18. Welding wire lead in
19. Loading of saved programmes
20. Saving of welding programme
21. Confirmation of selected parameters



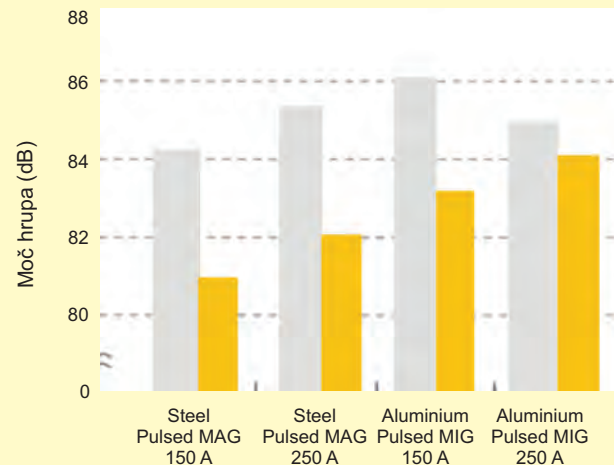
## New digital Turbo Start substantially improves arc starting

By utilizing capacitor discharge method, instantaneous arc starts are possible regardless of base metal type being welded; thereby further enhancing semi - automatic and automatic welding processes.



## New characteristics reduce arc sound

Reduced arc sound in pulse welding lightens the burden on operators.



## Highly efficient wire feeding

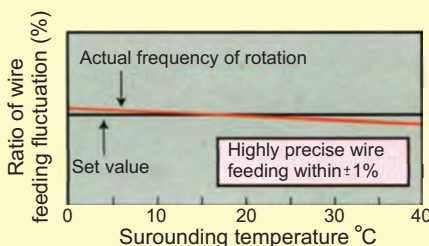
### Wire feeders for manual and automatic welding

Steel CM-7401  
Aluminium CMA-7401

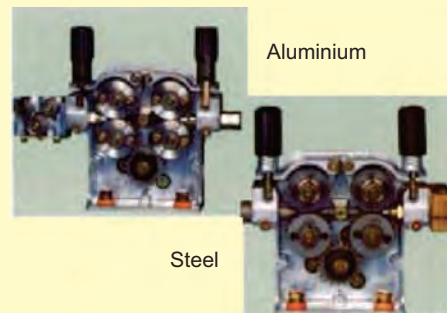


Robot drive CMRE-741

### Encoder feedback type with adjustable inertia control



### Standard 4 - roll wire feeder



## Optional Wave - Pulse function

Bead - like appearance of TIG welding



Macro cross section (material thickness 2 mm)



### Analogue remote control

- Remote control of welding voltage
- Remote control of welding current
- Remote control of welding wire feeding

### Digital remote control

- Remote control of welding voltage
- Remote control of welding current
- Remote control of welding wire feeding
- Possibility to set welding parameters parallel on power source and on remote control
- Possibility to recall JOBS





## 32 various characteristics for various welding needs

Welding mode	Material	Welding wire diameter	
		VPS 4000	VPS 5000
Pulsed MAG	Steel	0,9	1,2
		1,0	1,4
		1,2	1,6
Pulsed MIG	Al/Si	1,2	1,2
		1,6	1,6
	Al/Mg	1,0	-
		1,2	1,2
		1,6	1,6
	Stainless steel	0,9	-
		1,0	-
1,2		1,2	

Welding mode	Material	Welding wire diameter	
		VPS 4000	VPS 5000
CO2	Steel	0,8	-
		0,9	1,2
		1,0	1,4
		1,2	1,6
	Steel Cored	1,0	1,2
		1,2	1,4
MAG	Stainless steel Cored	0,9	1,2
		1,2	1,6
	Steel	0,8	-
		0,9	-
		1,0	-
		1,2	1,2
		-	1,4
-	1,6		

Welding mode	Material	Welding wire diameter	
		VPS 4000	VPS 5000
MIG	Al/Si	1,2	1,2
		1,6	1,6
	Al/Mg	1,0	-
		1,2	1,2
	Stainless steel	1,6	1,6
		0,8	-
		0,9	-
		1,0	-
-	1,2	1,2	
-	-	1,6	

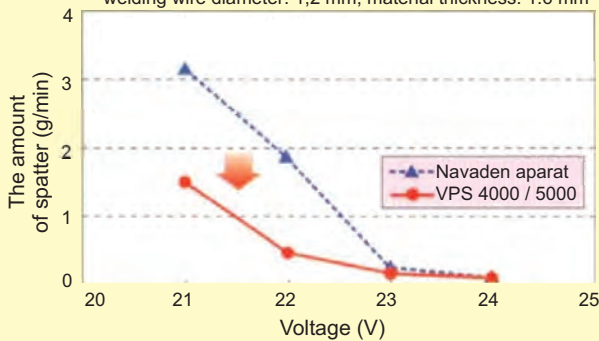
### Steel and stainless steel welding

#### Pulsed MIG/MAG welding

Offers high - quality galvanized steel welding, with less generation of undercut. Because of a very low voltage feature it generates much less spatter as the earlier models. Arc convergence improves arc - stability.

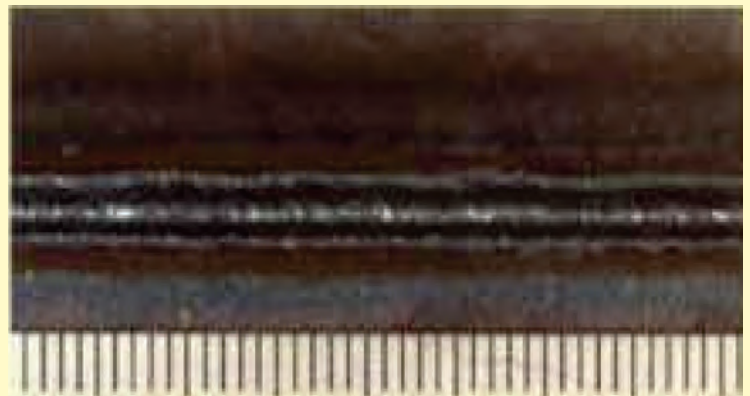


Welding current: 170 A, welding speed: 100 cm/min, welding wire diameter: 1,2 mm, material thickness: 1.6 mm



#### CO<sub>2</sub>/MIG/MAG welding

A low heat input results in high - quality welding with minimal melt - through.



Welding current: 125 A, welding voltage: 18 V, welding speed: 150 cm/min, welding wire diameter: 1,2 mm, material thickness: 1,0 mm

### Aluminium welding

#### Pulsed MIG welding

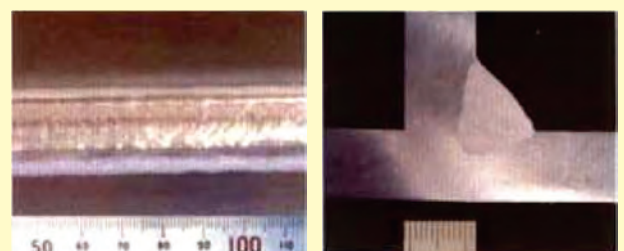
High stability even at low current. Pulsed MIG welding at 25 A with Ø 1,2 wire has become possible for thin sheet of 0,8 - 1,0 mm.



Welding process: pulsed MIG, welding current: 25 A, welding voltage: 17 V, welding speed: 70 cm/min, joint: lap fillet welding, welding wire diameter: 1,2 mm, material thickness: 0,88 mm

#### MIG welding

Soft arc ideal for aluminium improves efficiency especially at high current. DC MIG welding of thick aluminium plate achieves stable soft arc providing excellent weld quality.



Welding process: DC MIG, welding current: 250 A, welding voltage: 27 V, welding speed: 40 cm/min, joint: T type fillet welding, welding wire diameter: 1,2 mm, material thickness: 0,88 mm, shielding gas: Ar 20l/min

## VPS 3000 AC/MIG

The digital pulse welding machine VPS 3000 AC/MIG is the ideal solution for thin plate welding. It enables the following welding methods: AC Wave - Pulse MIG, DC Wave - Pulse MIG, AC Pulse MIG, DC Pulse MIG and DC Pulse MAG. It is suitable for welding thinner construction and alloy steel, aluminium and alloys.

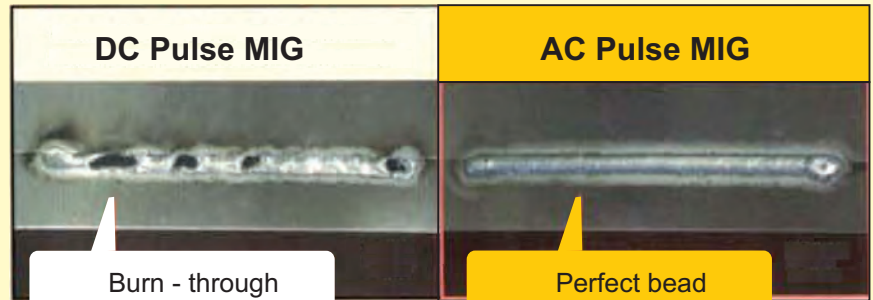
VPS 3000 AC/MIG  
VPS 3000 AC/MIG PLUS



### Značilnosti:

- Greater gap tolerance for optimized automation
- Quality welding between thinner and thicker materials
- Improved characteristics by welding thinner plates
- Improved efficiency by welding aluminium
- Less welding fumes and cleaner bead appearances
- Digital turbo startup function improves arc starting performance
- Ideal for connection with a robot
- JOB selection through the torch
- Switch between pulse and standard welding through the torch
- Welding current regulation in the synergy and in the standard mode through the torch
- MMA and TIG welding in the standard configuration

Reducing the heat input by the AC pulse effects the welding of extremely thin plates (0,8mm)



3x400 V

Technical data, welding source	Mains connection	Fuse slow	Welding current	Welding voltage	Duty cycle		Welding wire diameter	Weight	Dimensions DxWxH	Ordering code	Torch type	Torch code
					80%	100%						
VPS 3000 AC/MIG PLUS	3-400 V / 50 Hz	20 AT	30 - 300 A	12,0 - 36,0 V	300 A	283 A	0,8 - 1,2 mm	66 kg	705x300x595 mm	602493	PAG 501/4	600251

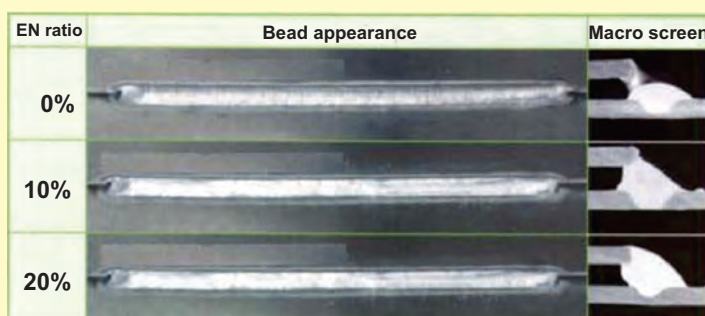
The maximum output of 300 A expands the range of applications

Welding process	Applicable wire	Diameter (mm)
AC Wave-Pulse MIG	Al/Mg	1,0/1,2/1,6
	Al/Si	1,2/1,6
DC Wave-Pulse MIG	Al/Mg	1,0/1,2/1,6
	Al/Si	1,2/1,6
AC Pulse MIG	Al/Mg	1,0/1,2/1,6
	Al/Si	1,2/1,6
	Stainless steel	0,8/0,9/1,0/1,2
	Jeklo	0,8/0,9/1,0/1,2
	Inconel	1,0/1,2
	Titan	1,0/1,2
DC Pulse MIG	Al/Mg	1,0/1,2/1,6
	Al/Si	1,2/1,6
	Stainless steel	0,8/0,9/1,0/1,2
	Inconel	1,0/1,2
DC Pulse MAG	Titan	1,0/1,2
	Steel	0,8/0,9/1,0/1,2

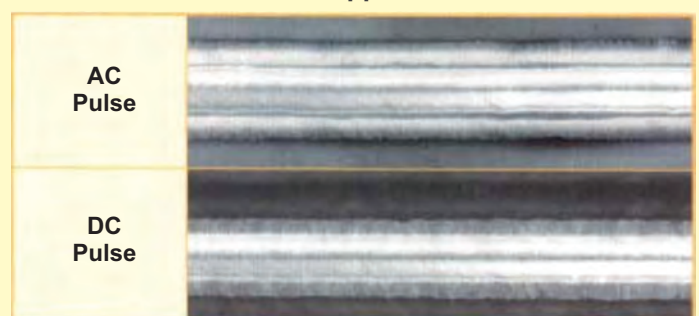
Unique Wave - Pulse function, up to 30Hz



Significant increase in gap tolerance allows for powerful automation



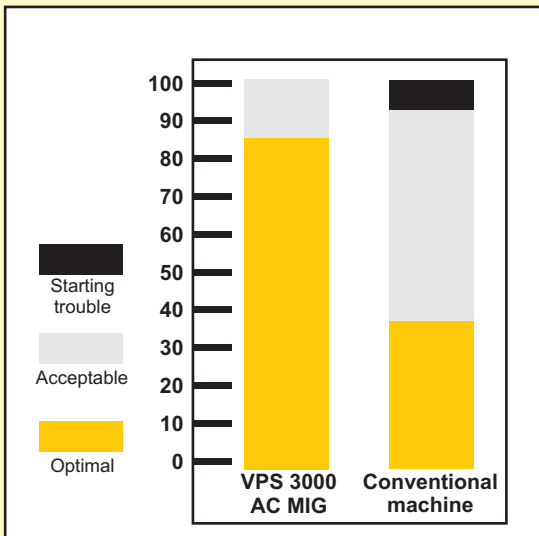
Less weld fumes and soot provides clean bead appearance





## Improved arc start performance

The VPS 3000 AC MIG includes a newly developed digital turbo start function that provides outstanding arc start performance, specially in aluminium welding.



## AC Wave - Pulse function

The unique Wave - Pulse function reduces crack sensitivity and blowholes. This is particularly effective for aluminium alloys.

Reduction of blowholes

Reduction of crack sensitivity

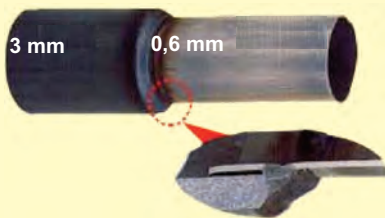
Effective for joints with different plate thickness



## Improved weld characteristics for thin mild steel and stainless steel plates

Stainless steel with different plate thickness

Galvanized sheet iron butt - welding



Welding method: AC pulse,  
welding current: 100 A,  
welding voltage: 18 V,  
welding speed: 60 cm/min



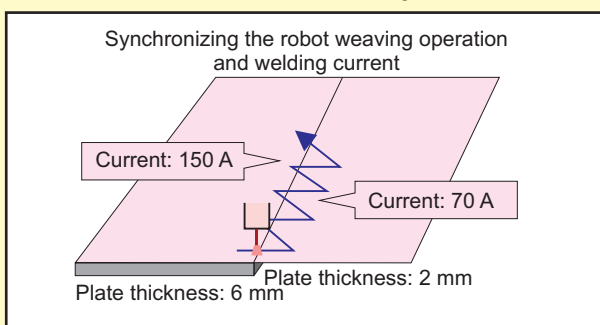
Welding method: AC pulse,  
welding current: 65 A,  
welding voltage: 16 V,  
welding speed: 90 cm/min

## Ideal for a connection with a robot

- The unique "Synchro-MIG" technique provides high - quality welding.
- A dedicated interface board allows the VPS 3000 AC/MIG to be used as a Dedicated power supply for the All robot.
- The teach pendant allows direct setup of parameters required for welding and easy setup of appropriate welding conditions, thereby insuring the highest welding quality for even the most difficult applications.
- Included arc monitoring function allows for supervision of welding conditions. This prevents possible welding failures and at the same time can be utilized to check error history.



"SYNCHRO-MIG" welding



Welding results using "SYNCHRO-MIG" welding

	Bead appearance	Macro screen
Synchro MIG		GOOD
Standard MIG		EXCESSIVE



Code	Torch type	Cooling	Torch length	Welding current /CO <sub>2</sub> 60%ED	Welding current /ArCO <sub>2</sub> 60%ED	Welding wire diameter (Ø mm)
602754	PAG 160/4-K3D G	Air	3 m	160 A	115 A	0,6 – 0,8
602795	PAG 180/4-K1.5B G	Air	1,5 m	160 A	115 A	0,6 – 1,0
602755	PAG 180/4-K3B G		3 m			
602796	PAG 180/4-K4B G		4 m			
602797	PAG 250/4-K1.5B G	Air	1,5 m	250 A	230 A	0,6 – 1,2
602756	PAG 250/4-K3B G		3 m			
602798	PAG 250/4-K4B G		4 m			
602799	PAG 350/4-K1.5B G	Air	1,5 m	350 A	300 A	0,6 – 1,2
602757	PAG 350/4-K3B G		3 m			
602758	PAG 400/3-K4B G	Air	4 m	400 A	300 A	0,6 – 1,2
603047	PAG 400/3N W	Water	4 m	400 A	380 A	1,0 – 1,2
603114	PAG 500/3N W			500 A	450 A	
602851	PAG 600/3N W			600 A		
600251	PAG 501 W	Water	4 m	500 A	500 A	1,2 – 1,6
696992	PAG 600/2NF-2AL W	Water	4 m	600 A	450 A	1,2 – 1,6
696775	RV 13/2m	Air	2 m	160 A / 10%ED	160 A / 10%ED	0,6 – 0,8
600186	RV 13/2m P (porbeles huzalnak)					0,6 – 0,8 (0.9)



Torch PAG 350

Torch PAG 501

Torch PAG 600

Machine torch PAG 600

Machine torch PAG 600 - flat

## Additional equipment for MIG/MAG machines

	VMG 401Synergy		VMG 451-D44 Synergy	VMG 601-D44 Synergy	VS 4000 digit G VPS 4000 digit G	VS 4000 digit W VPS 4000 digit W	VPS 5000 digit
	G	W					
Interconnection cable 5m	601195	601199	600179	601142	600183	699679	600451
Interconnection cable 10m	601196	601200	600180	601143	600184	699680	600452
Interconnection cable 15m	601197	601201	600181	601144	600185	699681	600453
Analog remote control	600886		600886	600886	600886	600886	-
Digital remote control	-		-	-	-	-	600939
Balance arm	600343		600343	600343	600343	600343	600343
Cooling unit HA-IV	-		-	-	699568	699568	699568
Cooling unit HA-V	-		-	-	-	-	600392
Cart for PPN	-		600013	600013	600113	600113	600113
Cart for TM	-		-	-	699684	699684	699684

Cooling unit HA-IV



Cart PPN

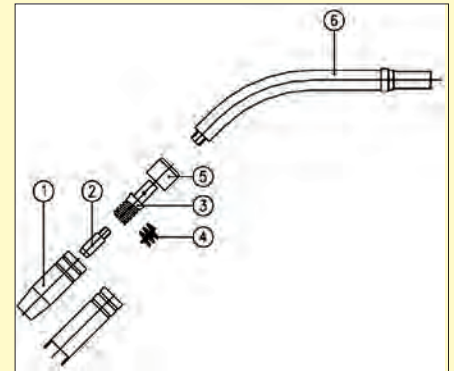


Cart TM



Torch group MIG/MAG

<b>602754 PAG 160/4-K3D G</b>	<b>3 m</b>
<b>602795 PAG 180/4-K1.5B G</b>	<b>1,5 m</b>
<b>602755 PAG 180/4-K3B G</b>	<b>3 m</b>
<b>602796 PAG 180/4-K4B G</b>	<b>4 m</b>

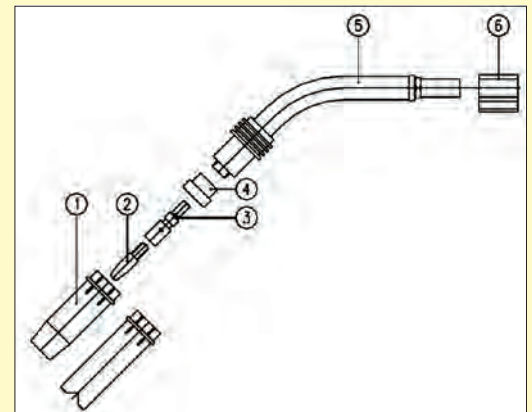


Consumables and spare parts

Position	Position description	Position details	PAG 160 G	PAG 180 G
			Ordering code	Ordering code
1	Gas nozzle	Conoid (C18x53)	677695	677695
		For spot welding (C18x60)	677692	677692
2	Contact nozzle	0,6	677693	677693
		0,8	677696	677696
		1,0	680635	680635
3	Contact nozzle adapter		677589	677589
4	Spring	12,4 / 10X15	677588	677588
5	C20x15 teflon isolator		677590	677590
6	Torch body	45°	692440	692440

Torch group MIG/MAG

<b>602797 PAG 250/4-K1.5B G</b>	<b>1,5 m</b>
<b>602756 PAG 250/4-K3B G</b>	<b>3 m</b>
<b>602798 PAG 250/4-K4B G</b>	<b>4 m</b>
<b>602799 PAG 350/4-K1.5B G</b>	<b>1,5 m</b>
<b>602757 PAG 350/4-K3B G</b>	<b>3 m</b>
<b>602758 PAG 400/4-K4B G</b>	<b>4 m</b>

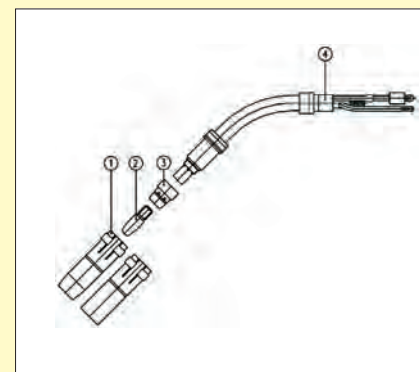


Consumables and spare parts

Position	Position description	Position details	PAG 250 G	PAG 350 G	PAG 400 G
			Ordering code	Ordering code	Ordering code
1	Gas nozzle	Conoid (C22x65)	677264	677264	677264
		For spot welding (C22x60)	672160	672160	672160
2	Contact nozzle	0,6	023797	23797	23797
		0,8	024157	24157	24157
		1,0	024158	24158	24158
		1,2	024190	24190	24190
3	Contact nozzle adapter	C10	021107	21107	21107
4	C20x15 teflon isolator		680912	680912	680912
5	Torch body	45°	692581	692581	692581
6	Clamp of nut		622993	622993	622993

Torch group MIG/MAG

600251 PAG 501 W 4 m  
 696292 PAG 600/2NF-2AL W 4 m

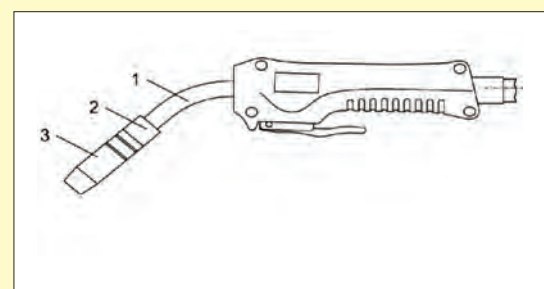


Consumables and spare parts

Position	Position description	Position details	PAG 501 W	PAG 600/2N-F W
			Ordering code	Ordering code
1	Gas nozzle	Conoid (C16x76)	696874	
		Conoid (C14x76)	600356	
		Conoid (C25x79)		677427
		For spot welding (C20x76)	696873	
		For spot welding (C25x79)		677430
2	Contact nozzle	0,6	600362	
		0,8	696871	679284
		1,0	696872	677438
		1,6	600363	679452
3	Isolator		696870	677426
3	Ceramical isolator		600355	
4	Torch body		600352	693927

Torch group MIG/MAG

696775 RV 13/2m  
 600186 RV 13/2m P



Consumables and spare parts

Position	Position description	Position details	RV 13 B	RV 13 P B	FBV 14
			Ordering code	Ordering code	Ordering code
3	Gas nozzle	Conoid	677695	677695	677695
		For spot welding	677692	677692	677692
-3	Contact nozzle	0,6	677696	677696	677696
		0,8	677693	677693	677693
		0,9		600199	
-2	Nozzle adapter		695058	695058	695058
2	Bush		695057	695057	695057
1	Torch body		699243	699243	699243
-2	Spring		695059	695059	695059
3	Protective cap			600200	

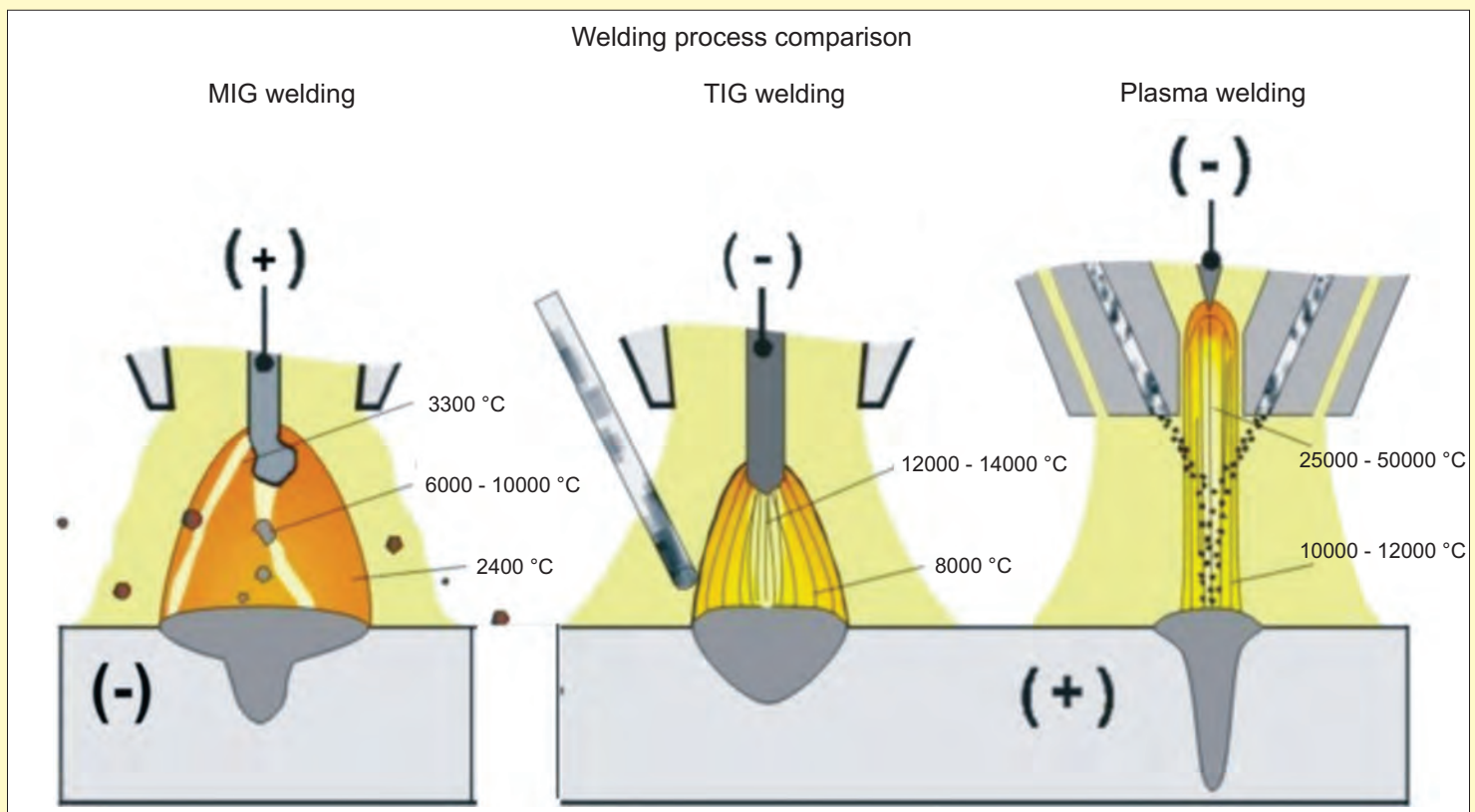
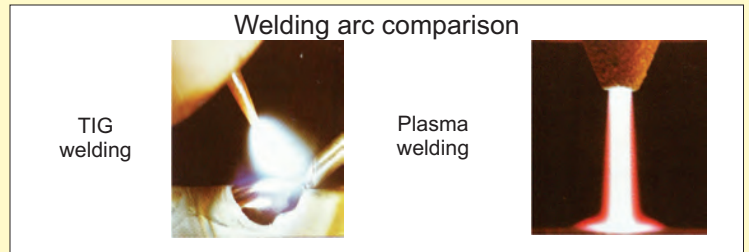


Plasma welding, a development of the TIG technique, also has decisive advantages and offers an attractive alternative to laser welding where high quality is required, particularly for metal sheets and other components.

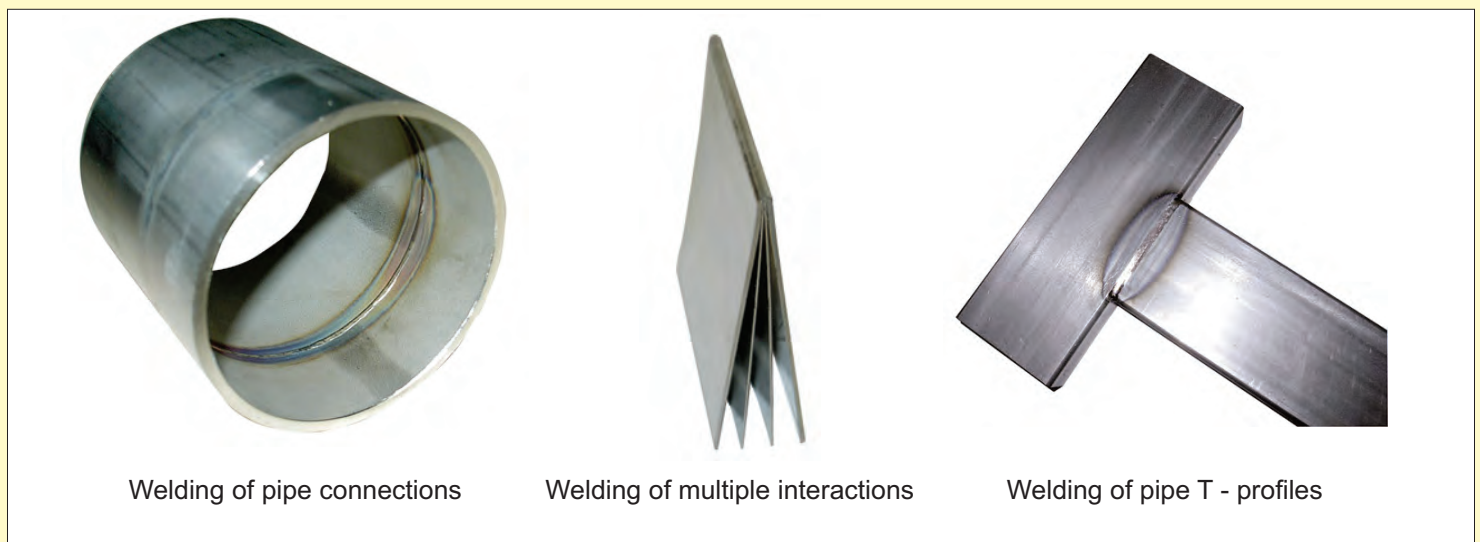
However, unlike TIG welding, the arc is fed through the welding torch via a copper nozzle which achieves a far higher power density. The higher welding speed not only saves time and money, but also ensures deeper weld penetration. The Tungsten electrode also has a far longer life as it is encased in the plasma nozzle. Another advantage of plasma welding is that ignition is triggered by an auxiliary arc (pilot arc), ensuring reliable ignition even for automated applications, without HF interference.

**Advantages:**

- High quality weld
- Highly reliable process
- High degree of automation
- High productivity through high welding speeds



**Applications**



## PMI series- Plasma Multi Inverter

Plasma Multi Inverter 20DC  
160DC



Plasma Multi Inverter 280DC  
380AC/DC

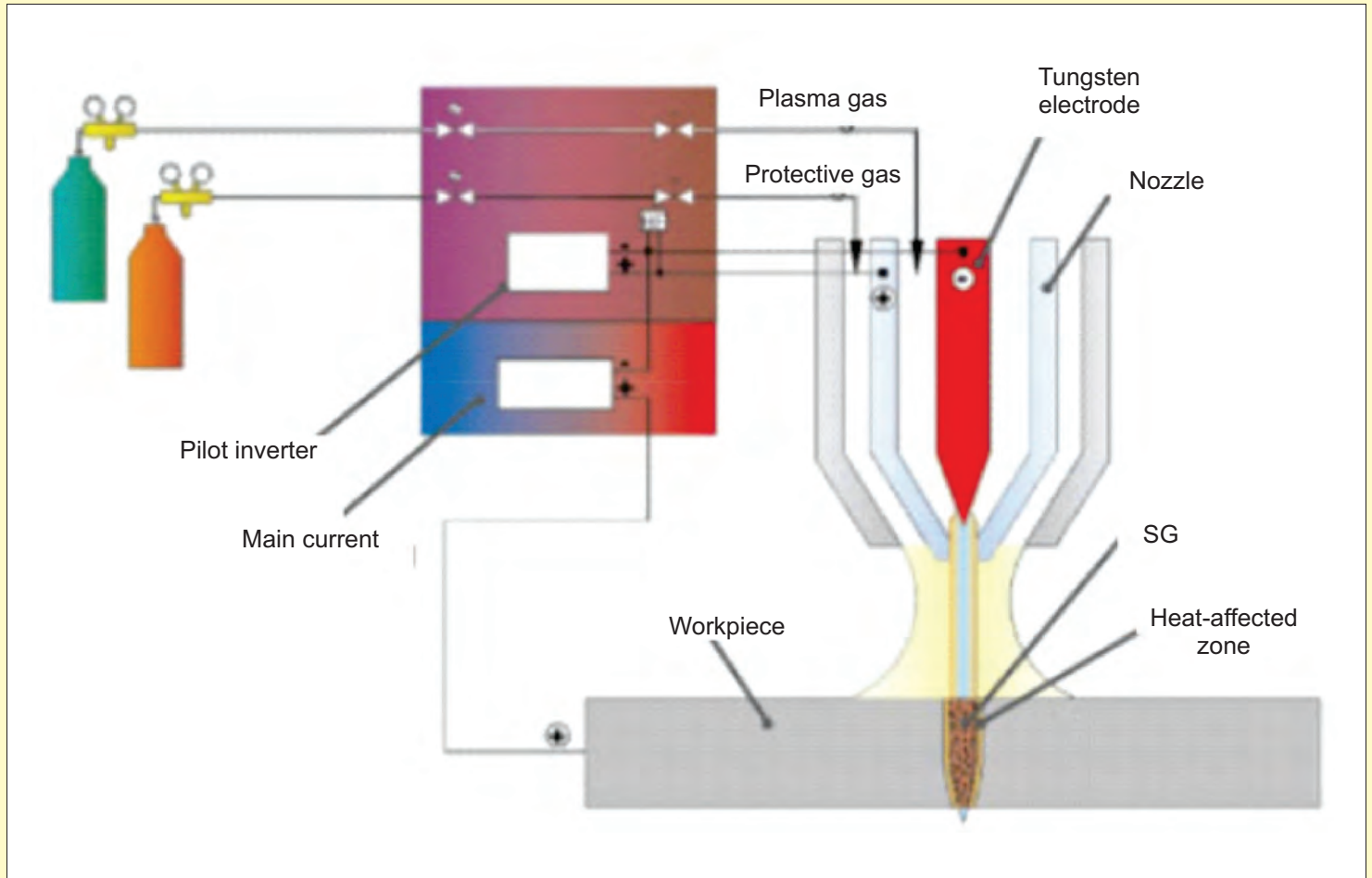


Plasma Multi Inverter 500DC



Technical data, welding source	Mains connection	Fuse slow	Max. power consumption	Welding current	Duty cycle		Control range		Weight	Dimensions DxVxH	Ordering code
					60%	100%	Plasma gas	Protective gas			
PMI 20DC	1~230 V / 50 Hz	16 AT	1,4 kVA	0,5 – 20 A	20 A	15 A	0,1 – 0,9 l/min	0,5 – 5,0 l/min	45 kg	620x300x455 mm	
PMI 160 DC	3~400 V / 50 Hz	5x32 AT	5,6 kVA	5 – 160 A	160 A	100 A	0,2 – 2,5 l/min	2,0 – 20,0 l/min	48 kg	620x300x555 mm	
PMI 280 DC	3~400 V / 50 Hz	5x32 AT	16,0 kVA	6 – 280 A	280 A	220 A	0,2 – 2,5 l/min	2,0 – 20,0 l/min	75 kg	1050x360x750 mm	
PMI 380 AC/DC	3~400 V / 50 Hz	5x32 AT	20,0 kVA	6 – 380 A	380 A (35%)	280 A	0,2 – 2,5 l/min	2,0 – 20,0 l/min	120 kg	1120x580x860 mm	
PMI 500 DC	3~400 V / 50 Hz	5x32 AT	20,0 kVA	6 – 500 A	350 A	250 A	0,2 – 2,5 l/min	2,0 – 20,0 l/min	70 kg	1050x360x750 mm	

## Parts of a plasma welding system



## Plasma spot welding

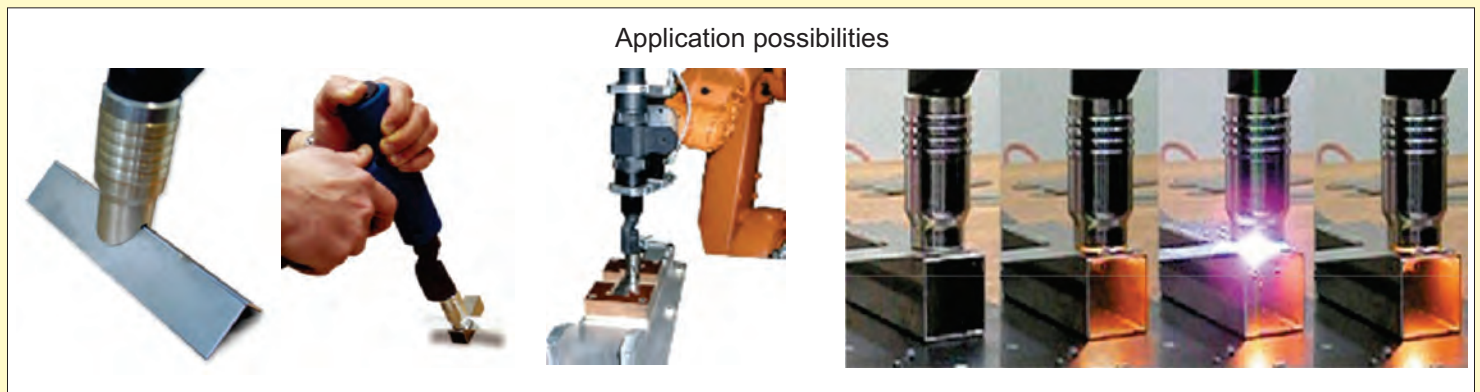
The Plasma spot welding is carried out without filler materials. For starting the spot welding process, the gas flow distance between the cathodic tungsten electrode and the anodic work piece becomes ionized by HF high voltage pulses. As a result of this the electric arc starts between electrode and work piece. The energy density and the welding arc temperature are significantly higher from the values of TIG welding arc. This contributes to results comparable to laser welding. The arc temperature depends on the type and consumption of the used plasma gas (for example argon 14.000 – 20.000°C).

### Advantages compared to other welding processes:

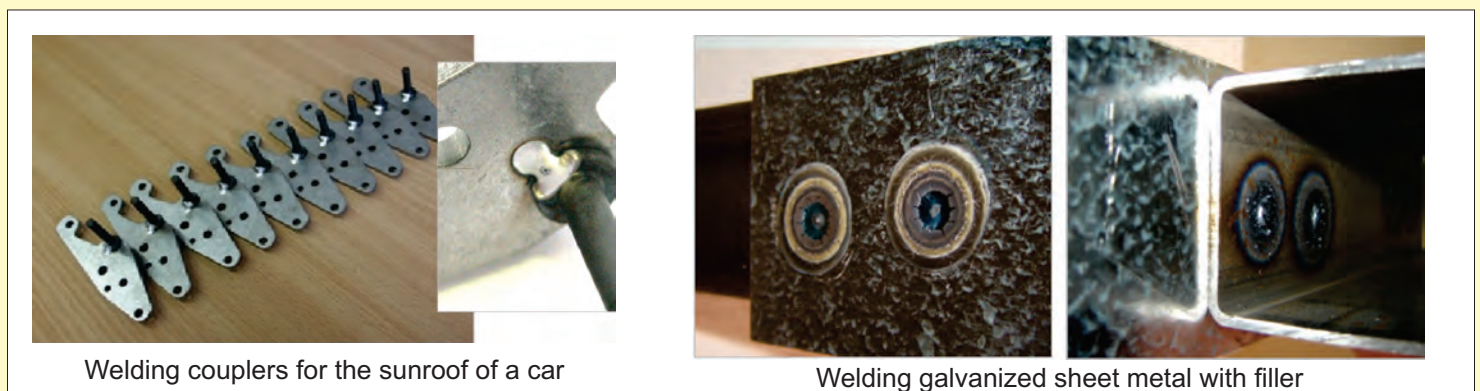
- Suitable also for welding of workpieces accessible only from one side (the use of clamps or other grip tool is not required), for example tubes and hollow bodies.
- Even surfaces after welding, optically faultless appearance of the weld, at correct settings undamaged rear side of the workpiece.
- Impressions of the electrodes do not cause any deformation of the material or sectional impairment.
- Thin plasma torch - as well as a hand gun - reduces investment costs.
- Appropriate software for parameter setting, documentation and process control enables proper dosage of energy amounts and welding reproduction.
- Reduce material deformation due to the shorter welding time.
- Suitable for welding various alloy steels and non-metals (copper, zinc, aluminum, bronze, brass).
- Welding is carried out with minimal pressure force, which prevents unwanted deformation of the workpiece.
- Low cost of wear and spare parts - the only wearing part is the Tungsten electrode.
- Integrated water cooling (closed system).
- At an appropriate mass connected also the welding of plates with one-sided protective foil possible.
- Oiled or greasy surfaces do not affect the quality of welding.
- Low power consumption and high efficiency.
- Low emissions.
- Possible use in each welding position.
- Low investment costs compared with laser and other electric welding processes.

### Advantages compared to TIG welding:

- Even at worn out electrode form of the arc remains unchanged.
- High arc stability even at low welding currents.
- Deviation of the arc from the welding direction because of the edges and other aspects of the workpiece is negligible.
- Result of a higher energy density, a deeper penetration and a higher welding speeds, are a narrow melting zone and less deformation of the workpiece.



### Fields of application





## PSW series - Plasma Spot Welding

PSW is a specially for spot and fusion welding developed plasma welding machine. The plasma is ignited with high voltage and is through the welding arc transferred to the workpiece. Automatic control unit allows the use in combination with a robot.

Plasma Spot Welding 280DC

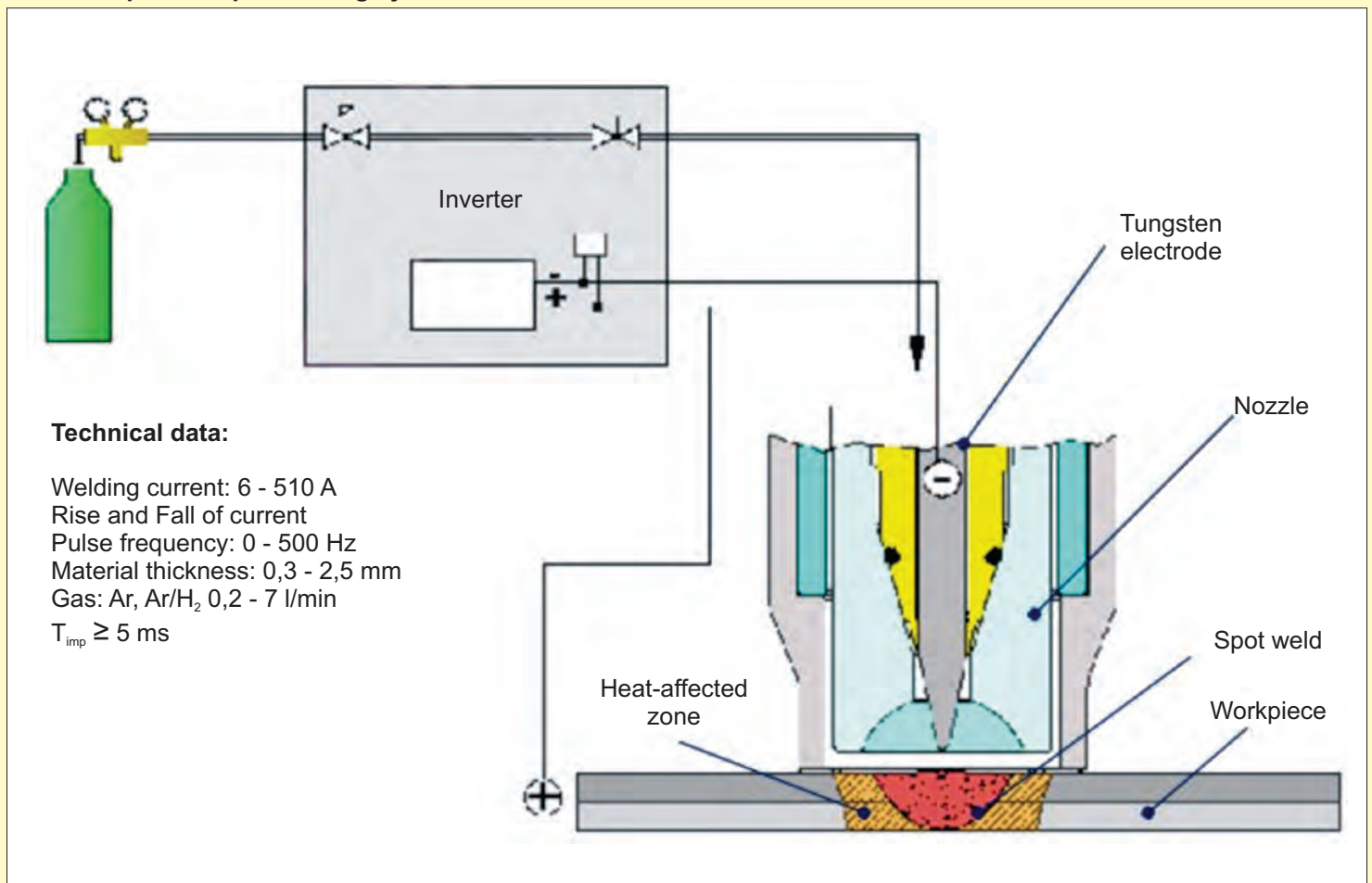


Plasma Spot Welding 500DC

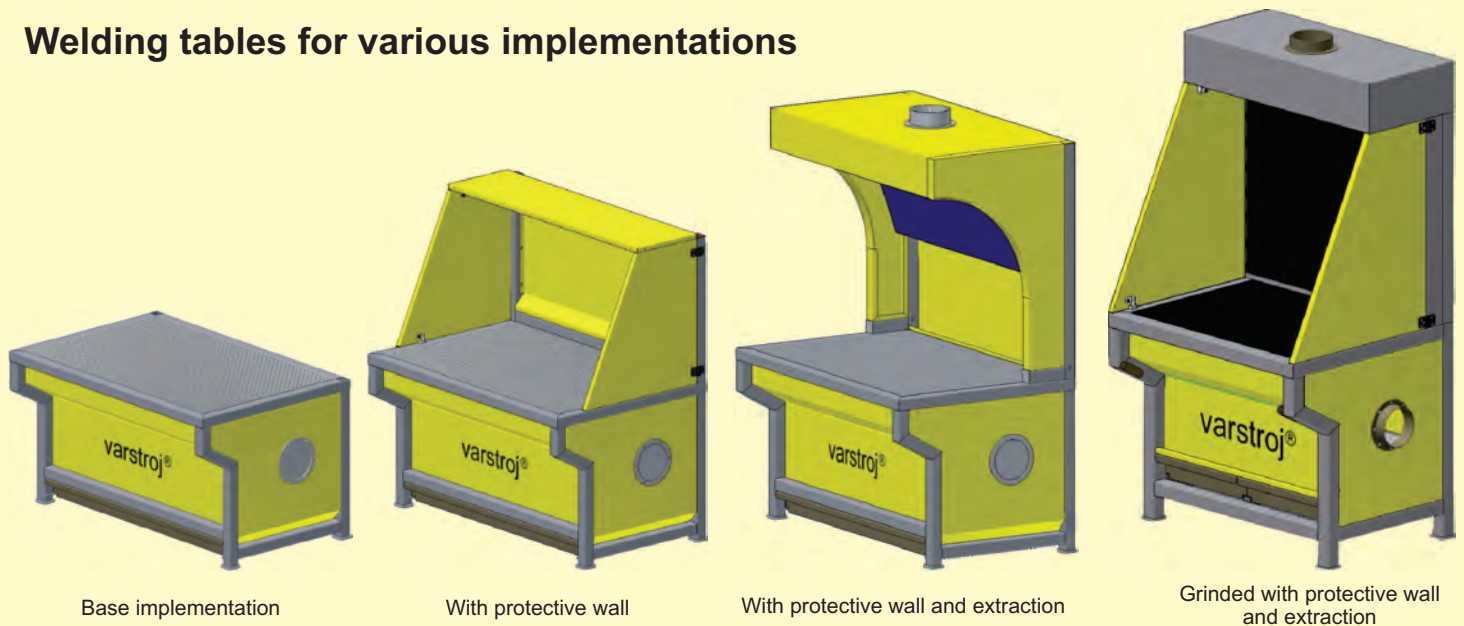


Technical data, welding source	Mains connection	Fuse slow	Max. power consumption	Welding current	Duty cycle		Control range		Weight	Dimensions DxWxH	Ordering code
					60%	100%	Plasma gas	Protective gas			
PSW 280DC	3~400 V / 50 Hz	5x32 AT	16,0 kVA	6 – 280 A	280 A	220 A	0,2 – 2,5 l/min	2,0 – 20,0 l/min	75 kg	620x300x455 mm	
PSW 500DC	3~400 V / 50 Hz	5x32 AT	20,0 kVA	6 – 500 A	350 A	250 A	0,2 – 2,5 l/min	2,0 – 20,0 l/min	80 kg	1050x360x750 mm	

## Parts of a plasma spot welding system



## Welding tables for various implementations



Base implementation

With protective wall

With protective wall and extraction

Grinded with protective wall and extraction

	Base implementation			With protective wall			With protective wall and extraction		
	M10	M15	M20	M10 ZS	M15 ZS	M20 ZS	M10 ZSO	M15 ZSO	M20 ZSO
Width	1000 mm	1500 mm	2000 mm	1000 mm	1500 mm	2000 mm	1000 mm	1500 mm	2000 mm
Depth	850 mm								
Height	850 mm			1700 mm			2030 mm		
Working height	850 mm								
Extraction tube connection	Side left or right						Side left or right and up		
	Ø 160			Ø 224			Ø 160		
Ordering code	643381	643382	643383	643384	643385	643386	643387	643388	643389

	Grinded with protective wall and extraction			Scholl implementation
	M10 BZSO	M15 BZSO	M20 BZSO	M10 SZS
Width	1000 mm	1500 mm	2000 mm	1000 mm
Depth	850 mm			
Height	1875 mm			1470 mm
Working height	850 m			
Extraction tube connection	Side left or right			
	Ø 160		Ø 224	
Ordering code	643418	643419	643420	643414



School implementation





Mobile extraction device



Type	ECO-AIR M-1/ES Version with one extraction tube
Main filter	1 x patron BIA-C
Filter effect	>99,9% (DIN 24184)
Fan capacity	1400 m <sup>3</sup> /h
Extraction effect	1x1200 m <sup>3</sup> /h
Mains connection	230 V / 50 Hz
Noise level	Up to 70 dB (A)
Weight	cca. 169 kg
Cleaning method	Automatically with air
Compr. air (part/max. pressure)	5 bar / 6 bar
Filter congestion control	Visual



Stable filter devices for central extraction systems

Name	Ordering code	Motor power (kW)	Filter surface (m <sup>2</sup> )	Filter capacity (m <sup>3</sup> )	Pressure (Pa)
ECO – AIR 60/4 MDB - 4	641580	4	60	4000	2500
ECO – AIR 90/5,5 MDB - 6	641581	5,5	90	5000	2500
ECO – AIR 120/7,5 MDB - 8	641582	7,5	120	6200	2500
ECO – AIR 180/11 MDB - 12	641583	11	180	9000	2500









Varstroj is a medium sized manufacturing company with headquarters in town Lendava, located near the Hungarian, Croatian and Austrian border. Our production consists of large range of products like welding machines, CNC machines for plasma and flame cutting and microprocessor controled machines for automatic and robotic welding. We export our products to European and many other markets in the world.

Our products are manufactured according to the EU valid legislation (CE sign demands). We achieved certificate ISO 9001 in year 1999 and certificate ISO 9001:2000 in year 2002.

Wide offer of quality products, forty years of tradition, advantageous geographic position, suitable production and efficient personel management are guarantee for successfull business relations..



Varstroj d.d.  
Industrijska ulica 4, 9220 Lendava  
T.: 00 386 (0)2 57 88 820  
F.: 00 386 (0)2 57 51 277  
info@varstroj.si

