

PROFESSIONAL IN WELDING

**ProMIG**

**High Speed Pulse MIG Welding**

Ultra High Deposition Rate, Ultra High Welding Performance



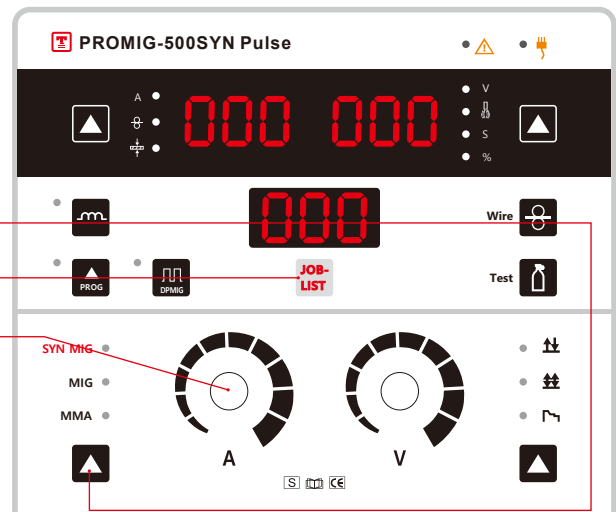
**Pulse Series** | Carbon Steel, Stainless Steel

**DPulse Series** | Aluminum, Stainless Steel, Carbon Steel

# Simple Operation

## 3 Steps to achieve weld perfection

1. Select operation mode
2. Select Job-list No.
3. Adjust welding current  
(always the perfect setting by the synergic function using the material thickness)



## Synergy control with job-list

The Job-lists display is easily and intuitively controlled through its graphical user interface. We assembled the perfect welding curve in every Job-No. for highly efficient multi-process welding of carbon steels and stainless steel and aluminum alloys. Operation is easier than ever before.

JOBs-list							
	Material	Gas	Wire				
			0.8	1.0	1.2	1.6	
JOBs No.							
No Pulse	M.S	100%CO <sub>2</sub>	101	102	103	104	
		82%Ar 18%CO <sub>2</sub>	201	202	203	204	
	Flux Cored	100%CO <sub>2</sub>	301	302	303	304	
Pulse	M.S	82%Ar 18%CO <sub>2</sub>	401	402	403	404	
			S.S	98%Ar 2%CO <sub>2</sub>	501	502	503
	308	601			602	603	604
	Al	100%Ar	4043	701	702	703	704
			5356	801	802	803	804

## Specifications

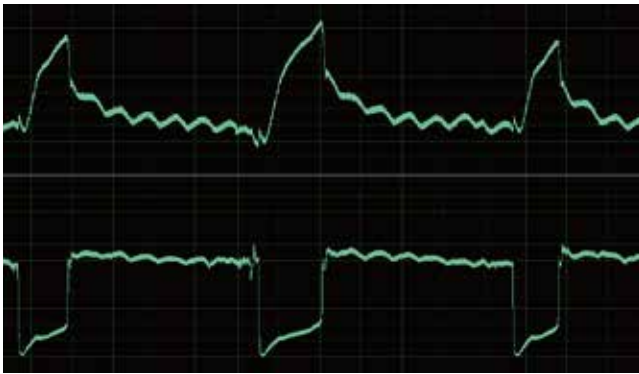
	PROMIG-350SYN Pulse/DPulse	PROMIG-500SYN Pulse/DPulse
Mains voltage(V)	3PH~380V 15% (50/60Hz)	3PH~380V 15% (50/60Hz)
Max.Load Power Capacity	14.09KVA	24.08KVA
Output Property	CV	CV
Open Circuit Voltage	70V	70V
Voltage	Synergy/NO	Synergy/NO
Welding range(A)	DC 10~350	DC 10~500
Process	CO <sub>2</sub> /MAG/ MIG/FCAW-G	CO <sub>2</sub> /MAG/ MIG/FCAW-G
Duty cycle at 40°C(105°F)	60%	30A/15.5V~350A/31.5V
	100%	30A/15.5V~300A/32V
Wire feed unit	4 rollers	4 rollers
Wire feed speed range	0~25m/min	0~25m/min
Wire Spool Capacity	300mm(15kg)	300mm(15kg)
Weldable wires steel	0.6~1.6mm	0.6~1.6mm
Weldable wires Aluminum	1.0~1.6mm	1.0~1.6mm
Flux Cored:	0.8~1.6mm	0.8~1.6mm
Standard	EN 60974-1	EN 60974-1
Protection class(EN 60529)	IP23S	IP23S
Insulation class	F	F
Designation	CE,ROHS	CE,ROHS

## Ultra Low-Spatter Performance in CO<sub>2</sub> welding process

**Short-Arc** is a wire transfer method which is frequently used for welding thin materials less than 3mm and is by nature is a welding process that produces spatter which can adhere to parts, welding jigs, inside the nozzle requiring additional clean up time. Most of the spatter is produced when the process changes state between shorting and arcing which can occur over one hundred times per second. This change results in huge changes in are to control the volatility during the change of state between short and arc to control the amount and size of the spatter generated.

### A waveform control that stabilizes droplet transfer in CO<sub>2</sub> welding

• **Initial Short Control** reduces the amperage immediately after the wire shorts which stabilizes the short, minimizing the spatter caused by wire chattering.



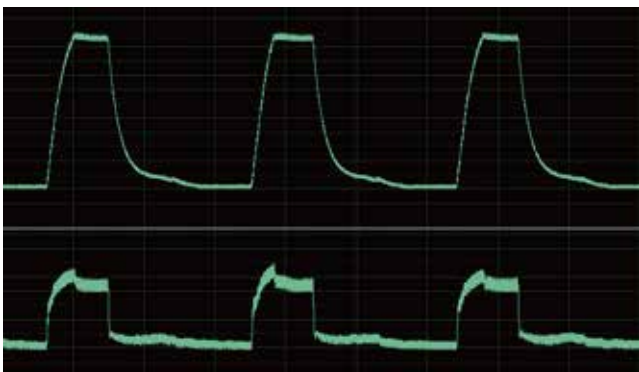
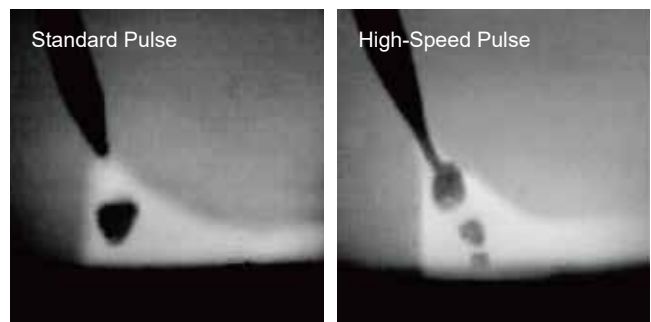
• **Neck Control** detects the moment droplet detachment begins to neck then quickly reduces the amperage before short releases. Releasing the short at a lower amperage reduces fuse effect energy.

• **Stable Transfer Control** increased amperage directly after the short release. Adding amperage quickly burns the wire to prevent secondary shorting. The faster burn off creates the droplet faster and reduces total arc time which increases the frequency and provides a crisp and clean arc. For CO<sub>2</sub> process that suppresses weld pool vibration preventing secondary shorting.

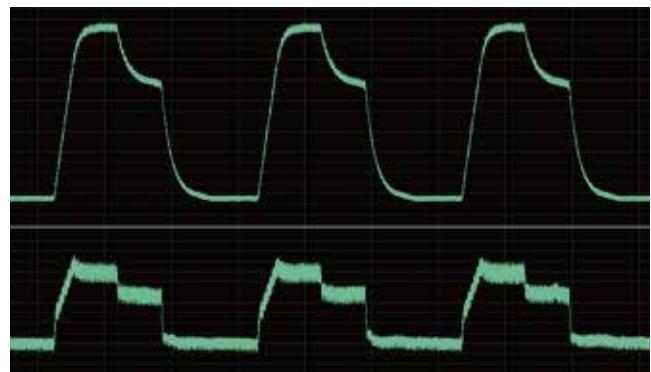
## High Speed Pulse MAG/MIG process

Specifically designed for demanding workshop use, the deposition rate can increase 25~30% for various materials, whether used in manufacturing thick materials or sheet metal.

The High-Speed Pulse(HSP) process enables you to save time, money, and energy compared to traditional pulse welding. This process is ready to raise pulse welding to a whole new level!



Standard Pulse



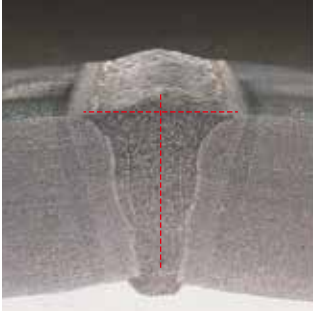
High-Speed pulse

In general, One pulse melt one droplet, but we increase the submission of these droplets by TOPWELL's New High-Speed pulse process. The transition will be faster, narrower HAZ zone and deeper penetration!

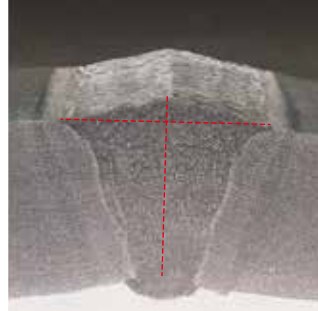
## Save More Welding Materials

In general, welding 15mm plates, we need to process '60 ° V groove', now TOPWELL's HSP only need '40 ° groove' to achieve a perfect welding quality.

High-Speed Pulse



MIG/MAG



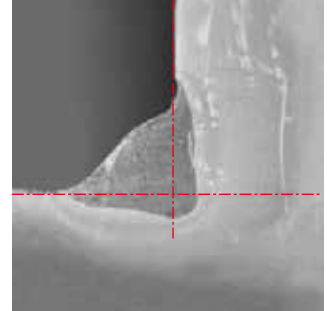
## Get Higher Welding Strength

Deeper penetration, No Undercut defects, Higher strength.

High-Speed Pulse

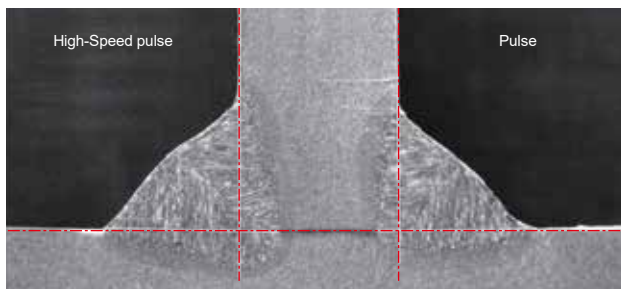


MIG/MAG



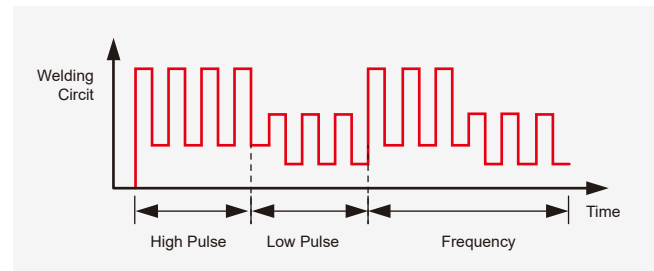
## Improve the Welding Efficiency Up-to 30%

Compared with the conventional MAG/MIG, The HSP MAG/MIG has a higher arc energy density, thus the welding speed increases up to 30%.



## High Speed Double Pulse MIG process

Compared with the traditional DoublePulse, High Speed Double Pulse process can increase the welding speed by about 25%. Welding quality is comparable to TIG process.



## HSP Vertical-up Welding Process

The HSP optimised for fillet welds (FW) completed using PF welding (in vertical up position); can also be used to great benefit in other weld positions. For Topwell ProMIG Series, HSP is approx 70 % faster, an enormous progress for everyone welding a vertical seam. A whole new level!

No need to swing! No undercuts or other defects!  
The speed of PF welding by HSP is twice that of the traditional pulse welding.



No need to swing, You can easily get a cosmetically pleasing weld seam, with significantly lower and more controller heat input into the workpiece. It results in much lower distortion and less rework, very suitable for welding the thin Aluminum or S.S sheets.

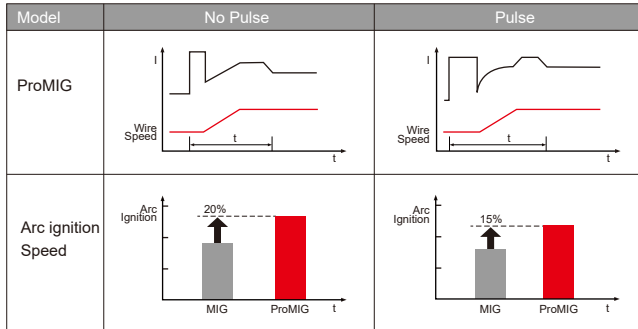
By High-Speed Double Pulse process, the heat input of arc is alternating, effectively reducing the heat input of base metal. It reduces the occurrence of welding defects such as crack.



## Improved Operation Process & Controls

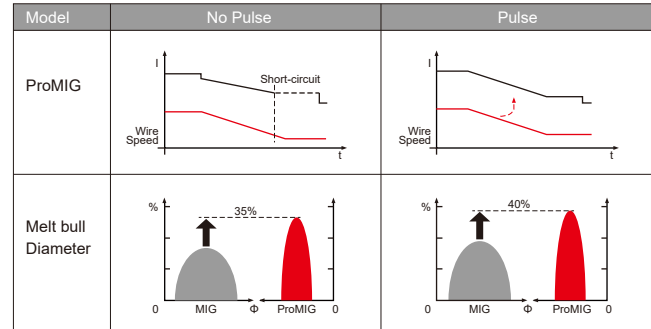
### Initial Arc control

We control the arc energy by welding waveform, so the success rate of arc ignition can be improved and quickly establish a molten pool.



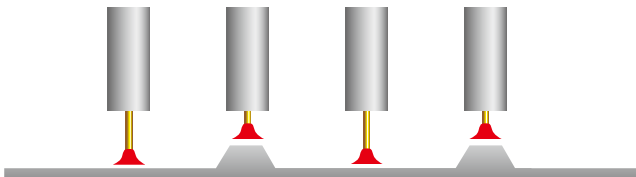
### Burn Back control

Adjustable time delay between turning off the arc and the wire feed to prevent wire sticking to the puddle.



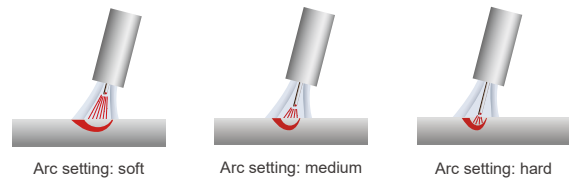
### Arc Length control

By changing the distance between torch and workpiece. You can now react much more easily to control the arc, such as changing gap dimensions or arc blow, more intuitively and with greater efficiency !



### Dynamic control

Dynamic control allows the welder, for the first time, to variably adjust a pulse welding machine to a wide range of jobs and welding positions as well as to his personal preferences. The welder can use a controller to directly access the arc characteristic and change it from soft to hard.



### Capable to connect with Robot: \* 2.0 Version \*





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