MEGMEET
WELDING TECHNOLOGY

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Follow us:

MEGMEET's strong technical strength, extensive industry application experience, relentless attention to customer needs, and the spirit of continuous innovation enable us to bring tailor-made products and solutions to help customers achieve greater success.

2024-08

Megwave S Series

Full Digital IGBT Inverter Multi-functional MIG Welding Machine

www.megmeet-welding.com

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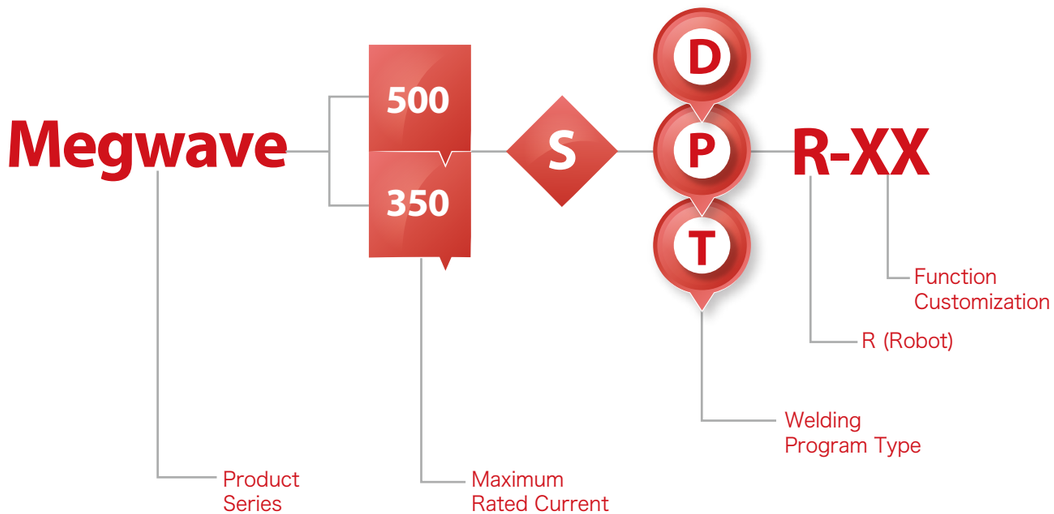
Megwave S Series

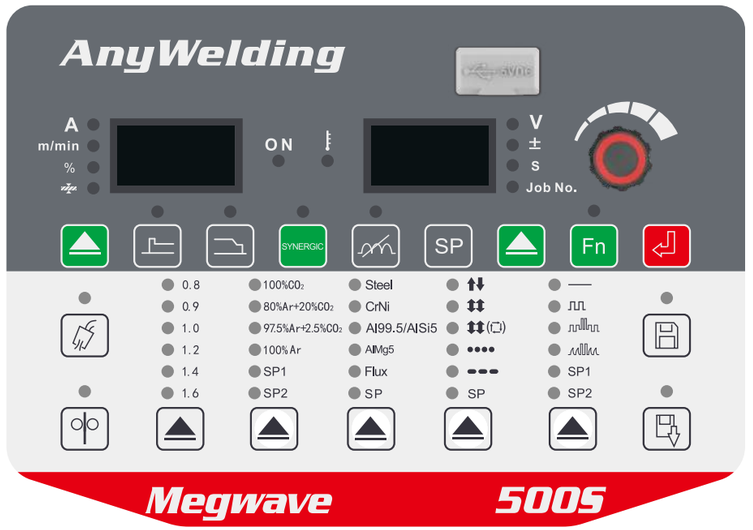
Full Digital IGBT Inverter Multi-functional MIG Welding Machine

DC | 380 3PH | 40~70 Hz | CV | 110 kHz



Features

- Optimal welding programs in LSA (low-spatter-arc welding realized by software algorithm), quick pulse, high-speed weld and others. Be weldable in multiple materials: carbon steel, stainless steel, aluminum alloy and others;
- "Chopper" control technology is applied in software to precisely control droplet, and reduce spatter by more than 50%;
- Unique quick pulse process integrates advantages of pulse and DC short circuit, and welding speed is increased by more than 20% compared with conventional pulse welding;
- Wider voltage range, high current and low voltage, lower heat input, higher fusion efficiency, thin plate welding is comparable to TAP-TYPE machine;
- Adaptive arc-start retraction technology increases arc start success rate to almost 100%;
- Inverter frequency up to 110KHz enables higher control precision and more stable arc;
- Comprehensive communication interfaces are able to communicate with different brands of robots;
- Touch sensing function with 80-400 voltage is easier to break down the rust on the surface of workpiece;
- Acting national standard of first-level energy efficiency;
- IOT interface is reserved to connect with Megmeet SMARC cloud system;
- U-disk upgrade function ensures customers to easily obtain Megmeet's most cutting-edge welding technology;
- Application industries: engineering machinery, steel structures, special vehicles, auto parts, two/tricycles, containers, petroleum and petrochemical industries, etc.



Megwave 500SD/350SD

- ☑ LSA(Low Spatter Arc) CO_2/MAG
- ☐ Pulse MAG/MIG
- ☐ Quick Pulse MAG/MIG
- ☑ Flux Core Carbon Steel/DC
- ☑ Stainless Steel
- ☐ Aluminum Alloy
- ☑ U-disk Interface
- ▣ IOT Interface
- ▣ Other Customization

Megwave 500SP/350SP

- ☑ LSA(Low Spatter Arc) CO_2/MAG
- ☑ Pulse MAG/MIG
- ☑ Quick Pulse MAG/MIG
- ☑ Flux Core Carbon Steel/DC
- ☑ Stainless Steel
- ☐ Aluminum Alloy
- ☑ U-disk Interface
- ▣ IOT Interface
- ▣ Other Customization

Megwave 500ST/350ST

- ☑ LSA(Low Spatter Arc) CO_2/MAG
- ☑ Pulse MAG/MIG
- ☑ Quick Pulse MAG/MIG
- ☑ Flux Core Carbon Steel/DC
- ☑ Stainless Steel
- ☑ Aluminum Alloy
- ☑ U-disk Interface
- ▣ IOT Interface
- ▣ Other Customization

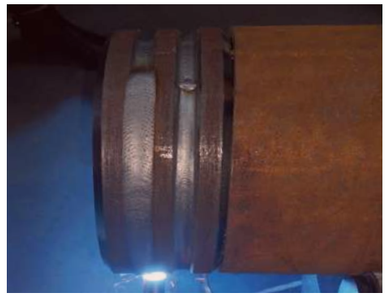
☑ Standard ☐ N/A ▣ Customization

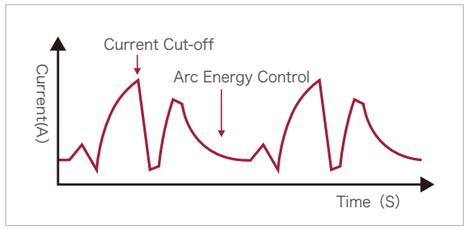
LSA (Low Spatter Arc by Software Algorithm)

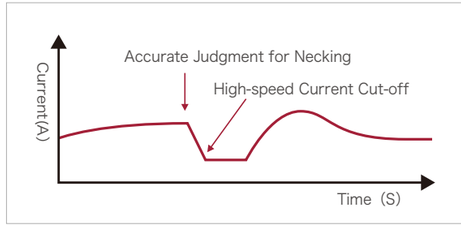
Fine management in droplet transfer through software algorithm so that short-circuit transfer of droplet is softly cut off, which greatly reduces spatter caused by liquid-bridge bursting and electromagnetic repulsion, and helps fusion pool more stable and weld shape more beautiful.

Welding Features:

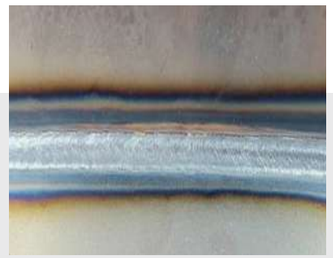
- Compared with conventional DC welding, spatter quantity is cut down by 50%, which reduces cleaning and grinding time and improves production efficiency;
- Fluctuation of fusion pool is small, weld surface is more delicate, and weld shape is more beautiful;
- Lower heat input and less deformation;
- Stronger gap adaptability.







Normal DC (many spatters)



LSA (low spatter and low heat input)

Quick Pulse Technology(QPT)

Unique quick pulse welding technology adopts three-level main power topology. High-speed sampling and control advantages, brought by the inverter frequency up to 110kHz, can reach critical state between short circuit and pulse spray transition.

With shorter droplet transition distance, lower arc and faster welding speed, pulse speed is increased by more than 20%. Service life of wearing parts is lengthened and weld shape is better, meeting actual needs of manual welding.

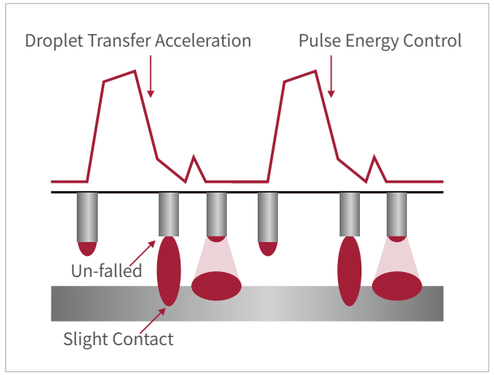
Pain Points in Conventional Pulse Welding

- Speed is slow: 30% slower than DC welding;
- Weld formation is difficult to control: high heat input, long arc and many undercuts;
- High Requirements in Mixed Gas: high requirement in the 80/20 gas ratio and resulted higher cost ;
- Accessories Loss: high voltage and high pulse peak value bring serious heating to torch, and high cost of accessories and shorter service life.

VS

Megmeet Quick Pulse Technology(QPT)

- Welding speed is faster and welding speed is increased by 20%, compared with conventional pulse;
- Short arc length, good stiffness, strong anti-interference ability, more suitable for high-speed welding of medium and thick plates, supporting concentrated arc energy and better penetration;
- Low arc heat input increases service life of accessories;
- Wide voltage range, strong welding adaptability, simpler operation, more popular by welders.



Construction Machinery

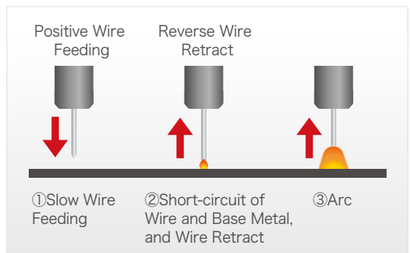
Boiler Membrane Wall

High Speed DC Welding

- With wider adaptive range of voltage, the same current is able to match lower voltage (10% lower than other welding machines);
- Lower heat input, higher deposition efficiency, thin-plate welding performance be comparable with tap-type machine.

Wire Retraction Function in Arc Starting

- When welding machine detects arc starting signal, wire will retract in high speed, which greatly improves the quality and success rate of arc starting, and greatly reduces various arc staring issues.



Up-down Torch (optional)

- Up-down torch is optional to conveniently adjust welding parameters on the torch(current, voltage, etc).

High Reliability

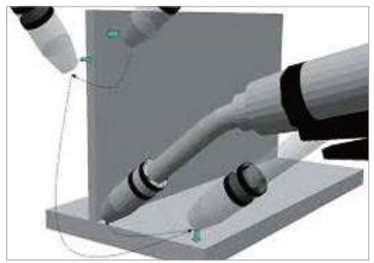
Strong environmental adaptability, suitable for working under tough environment;

Stable and reliable: stability is the base of intelligent welding machines!

Consistency: consistent performance by any machine, our quality is consistent anytime and anywhere!

400V High-voltage Touch Sensing Function

- Built-in high-voltage touch sensing function with adjustable range 80–400V, no need to separately buy high-voltage touch sense device;
- High reliability and effective penetration of oil stains, rust, water stains, etc., fast touch-sense with high precision, and strong adaptability to robots;
- Current-limiting design ensures welding within safe current range, effectively protecting the safety of welders and welding machines;



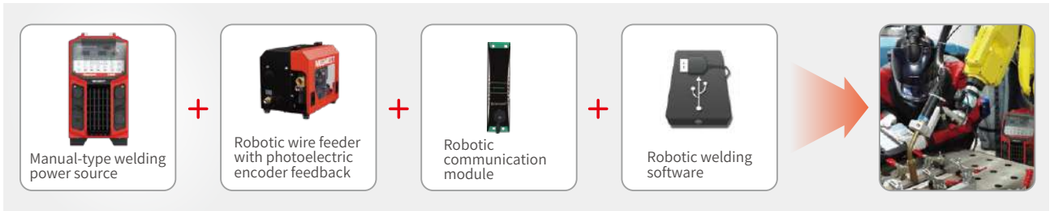
U-disk Interface

- To ensure customers conveniently obtaining Megmeet's foremost welding programs and function customization;

  New software can be programmed into welding machines through U disk.

Intelligent Upgrade

- With additional robotic accessories package, manual-type welding power source can be expanded to robotic welding power source to help users save money.



Water Cooler (Optional)

Circulating Water Cooler AnyCool-66	
Water cooler power supply	Powered by welding machine
Rated power	370W
Rated voltage	380V AC
Cooling water capacity	6.8L
Cooling water flow	3.5L/min
Cooling water maximum lift	20m
Flow alarm	√

Product Specification

● Standard ○ Optional

Manual type	Megwave 500SD	Megwave 350SD	Megwave 500SP	Megwave 350SP	Megwave 500ST	Megwave 350ST
Robotic type	Megwave 500SDR	Megwave 350SDR	Megwave 500SPR	Megwave 350SPR	Megwave 500STR	Megwave 350STR
Welding Programs						
LSA (Low Spatter Arc by Software)	●	●	●	●	●	●
DC	●	●	●	●	●	●
Standard pulse	-	-	●	●	●	●
Quick pulse	-	-	●	●	●	●
Flux Core Carbon Steel/DC	●	●	●	●	●	●
Carbon steel	●	●	●	●	●	●
Stainless steel	●	●	●	●	●	●
Aluminum alloy	-	-	-	-	●	●
Function						
U-disk interface	●	●	●	●	●	●
SMARC interface	○	○	○	○	○	○
Push-pull welding torch interface	○	○	○	○	○	○
Wire feeder AV LED display (manual type)	○	○	○	○	○	○
Technical Parameters						
Control Method	Digital IGBT Control		Digital IGBT Control		Digital IGBT Control	
Input voltage	3-phase AC 380 V (±25%)		3-phase AC 380 V (±25%)		3-phase AC 380 V (±25%)	
Input frequency	40~70Hz	40~70Hz	40~70Hz	40~70Hz	40~70Hz	40~70Hz
Inverter switching frequency	110kHz	110kHz	110kHz	110kHz	110kHz	110kHz
Rated input capacity	23.3KVA/21.4KW	13.4KVA/12.3KW	23.3KVA/21.4KW	13.4KVA/12.3KW	23.3KVA/21.4KW	13.4KVA/12.3KW
No-load voltage	77V	77V	77V	77V	77V	77V
Rated output current	500A	350A	500A	350A	500A	350A
Rated output voltage	39V	31.5V	39V	31.5V	39V	31.5V
Duty cycle	100%@500A	100%@350A	100%@500A	100%@350A	100%@500A	100%@350A
Power factor	0.92	0.92	0.92	0.92	0.92	0.92
Efficiency	91%@500A	89%@350A	91%@500A	89%@350A	91%@500A	89%@350A
Output characteristics	CV	CV	CV	CV	CV	CV
Wire feeding speed	0.5~28m/min	0.5~28m/min	0.5~28m/min	0.5~28m/min	0.5~28m/min	0.5~28m/min
Parameter JOB	50 sets	50 sets	50 sets	50 sets	50 sets	50 sets
Operating temperature	-10°C~40°C (welding power source can be started at -39°C)					
Dimension(L×W×H)	647×291×572mm					
Weight	37kg	37kg	37kg	37kg	37kg	37kg
Enclosure rating	IP23 S	IP23 S	IP23 S	IP23 S	IP23 S	IP23 S
Insulation class	H	H	H	H	H	H
Cooling method	Forced air cooling	Forced air cooling	Forced air cooling	Forced air cooling	Forced air cooling	Forced air cooling

Embedded-Type communication module supports multiple types of communication protocols

Analog DeviceNet EtherNet/IP PROFINET EtherCAT CANopen MEGMEET CAN

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Megwave Series Communication Protocols with Robots

Function	TAST(Thru-arc Seam Tracking)	Touch Sensing	Communication Protocols with Robots						
		80-400V	Analog	DeviceNet	CANopen	MEGMEET CAN	EtherNet/IP	EtherCAT	Profinet
	●	●	○	○	○	○	⊛	⊛	⊛

● Standard ○ Optional ⊛ Customized

Robotic Wire Feeder Selection

	Model Name	Wire feeding drive control mode	Dimensions (L×W×H)	Welding Torch Interface	Weight	
Non Push-pull Application	WF1-50ZE	Worm Gear	230×170×170mm	European type	6kg	
	WF1-50ZER	Worm Gear	230×170×170mm	Asian type	6kg	
	WF1-50PW-7	Worm Gear	223×152×221mm	European type	7kg	
	WF1-50PWR-7	Worm Gear	223×152×221mm	Asian type	7kg	
Push-pull Application	WF1-50PW-T7	Worm Gear	277×191×223mm	European type	8kg	

Manual Wire Feeder Selection

	Push-pull Application	Non Push-pull Application		
	Enclosed wire feeder	Enclosed wire feeder	Open wire feeder	
				
Model Name	WF22-50PW-T7	WF22-50PW-D7D	WF2-50PW-D7D	WF2-50PWR-MD-7
V/A LED display	Yes	Yes	Yes	N/A
Wire feeding drive control mode	Code disc control Back electromotive force	Back electromotive force	Back electromotive force	Back electromotive force
Wire feeder rated voltage	24V	24V	24V	24V
Wire feeding speed	0.5～28m/min	0.5～28m/min	0.5～28m/min	0.5～28m/min
Wire feeding roller diameter	ϕ0.8～1.6mm	ϕ0.8～1.6mm	ϕ0.8～1.6mm	ϕ0.8～1.6mm
Wire spool type	Standard wire spool	Standard wire spool	Standard wire spool	Standard wire spool
Drive unit	Double drive four rollers	Double drive four rollers	Double drive four rollers	Double drive four rollers
Wire feeder torch interface	European interface	European interface	Asian interface	Asian interface
Dimension (L×W×H)	680×300×400mm	680×300×400mm	500×215×357mm	500×215×357mm
Weight	19kg	19kg	9kg	9kg