ALUTIG-250HD

All TIG functions in one package







Quick Specs ce

Processes:

DC TIG. AC TIG. MIX TIG, MMA(Stick)

• Input Power: 200-240V/1-PH/50-60Hz

Rated Output at 40°C (104°F): 250HD: 250A at 20V @60%

Duty Cycle

٠ Applications:

Metal Fabrication Maintenance and Repair Auto Body Light Industrial

TOP Features:

DC TIG Features With the Pulse function, it can reduce heat input and increase control of the weld puddle, penetration and distortion.

AC TIG Features 1

4 AC Waveforms

Standard Square Wave ---- fast freezing puddle, deep penetration and fast travel speeds.

For a soft buttery arc with

Sine Wave

For customers that like a traditional arc. Quiet with good wetting.

Soft Square Wave ~~

maximum puddle control and good wetting action.

Triangle Wave

Reduces the heat input and is good on thin aluminum. Fast travel speeds.

3 AC Waveshape Controls

· Balance control provides adjustable oxide removal which is essential for creating the highest quality aluminum welds.

- Frequency controls the width of the arc cone and can improve directional control of the arc.
- · Amplitude controls the heat input to the work piece and the electrode.
- MIX TIG Features AC current and DC current in one duty cycle, easily get an excellent ~ arc concentration and reduce heat input.
- HF start and Lift-Arc start are both available 1
- DC+/DC-: Improved TIG starting
- ~ Pre-flow and post-flow adjustment
- 2T and 4T selection \checkmark
- Capable to remote control
- 10 channels memory capacity

Pulse TIG

Conventional Pulsed TIG



Typically from 0.2 to 10 PPS. Provides a heating and cooling effect on the weld puddle and can reduce distortion by lowering the average amperage. This heating and cooling effect also produces a distinct ripple pattern in the weld bead. The relationship between pulse frequency and travel speed determines the distance between the ripples. Slow pulsing can also be coordinated with filler metal addition and can increase overall control of the weld puddle.

High Speed Pulsed TIG



In excess of 40 PPS, Pulsed TIG becomes more audible than visible—causing increased puddle agitation for a better as-welded microstructure. Pulsing the weld current at high speeds — between a high Peak and a low Background amperage — can also constrict and focus the arc. This results in maximum arc stability, increased penetration and increased travel speeds.

AC Waveforms

◆ Standard Square Wave

The Standard Square Wave offers fast transitions between EN and EP for a responsive, dynamic, and focused arc with better directional control. It forms a fast-freezing puddle with deep penetration and fast travel speeds.

Soft Square Wave

The Soft Square Wave provides a smooth, soft, "buttery" arc with a fluid puddle and good wetting action. The puddle is more fluid than with standard square wave and more controllable than with sine wave.

Sine Wave

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The Sine Wave a soft arc with the feel of a conventional power source. It provides good wetting action and actually sounds quieter than other waves. Its fast transition through the zero amperage point also eliminates the need for continuous high frequency.

Triangle Wave



The Triangular Wave peak amperage while reducing overall heat input into the weld. This leads to quick puddle formation, low weld distortion, and fast travel speeds. It is especially good for welding thin aluminum.

MIX TIG Control

Features of MIX TIG:

The AC current can get a very good clearance, and DC current can get a deeper penetration. Use the MIX TIG we can get an excellent Arc Concentration, can be carried out the excellent welding performance from thin to thick plate.



- 1) Nice weld appearance, deep penetration.
- 2) Excellent Arc Concentration.
- 3) Substantially reduce the electrode consumption.

• MIX TIG Frequency (Hz):

the cycle time of MIX TIG in 1 second. Adjustable range: 1-5Hz. AC DC (1Hz) MIX Frequency

MIX TIG Balance (DC) %:

DC Balance (%) = (tad/Tmix) x 100



(MIX Cycle Time: 1Hz)

AC Waveshape Controls



AC Frequency control Controls the width of the arc cone. Increasing the AC Frequency provides a more focused arc with increased directional control.

Note: Decreasing the AC Frequency softens the arc and broadens the weld puddle for a wider weld bead.



Wider bead, good penetration ideal for buildup work





Wider bead and cleaning acting





Narrower bead for fillet welds and automated applications



Narrower bead and cleaning acting





AC Balance Control Controls arc cleaning action. Adjusting the % EN of the AC wave controls the width of the etching zone surrounding the weld.

Note: Set the AC Balance control for adequate arc cleaning action at the sides and in front of the weld puddle. AC Balance should be fine tuned according to how heavy or thick the oxides are.



Wider bead, good penetration ideal for buildup work



Wider bead and cleaning action





Narrower bead, good penetration ideal for buildup work Bead

..... No Visible Cleaning

Narrower bead, with no visible cleaning





Amplitude Control

Adjusts the ratio of EN to EP amperage to precisely control heat input to the work and the electrode.

EN amperage controls the level of penetration, while EP amperage dramatically effects the arc cleaning action along with the AC Balance control.



More current in EP than EN: Shallower penetration



Wider bead and cleaning action





More current in EN than EP: Deeper penetration and faster travel speeds



Narrower bead, with no visible cleaning



Technical Specifications

Item N	lo		ALUTIG-250HD
Rated I	nput Voltage		1PH ~ 230V ±15%
Max. Lo	bad Power Ca	pacity	TIG: 7.81KVA
			MMA: 8.75KVA
Rated [Duty Cycle(40°	C) 60%	TIG: 250A/20V
			MMA: 200A/28V
100%			TIG: 200A/18V
			MMA: 160A/26.4V
Welding	g Current/Volta	ige Range	TIG: 5A/10.2V~250A/20V
			MMA: 20A/20.8V~200A/28V
Open C	Circuit Voltage		70V~80V
Power I	Factor		0.8
Efficien	су		80%
TIG	Pulse	Peak Current	5A~250A
		Pulse Frequency	0.2Hz~200Hz
		Pulse Width (Ratio)	1~100%
	AC TIG	AC Frequency Range	20Hz~250Hz
		AC Clean Width (AC Balance)	+40~-40
		AC Clean Ratio (AC Bias) %	+30~-50
	MIX TIG	MIX Frequency	1Hz~5Hz
		DC Balance (%)	20~80
	Arc-starting Current		5A~250A
	Crater-filling Current Current Up-slope Time Current Down-slop Time		5A~250A
			0.1S~15S
			0.1S~15S
	Pre-Gas Tir	ne	0.1S~15S
	Flow-Gas T	ime	0.1S~15S
	Spot Arc Tir	ne	0.1S-10S
MMA	Arc Force		10A~200A
	Hot Start Ti	me	0.1~3S
	Hot Start C	urrent	10A~200A
Dimens	sion (LxWxH)		560x230x480mm
Weight	(KG)		23KG

Water-cooling Unit: WC-100 (optional)				
Operating Voltage	230V 50/60Hz			
Rated Power	260W			
Cooling Power	1.5KW(1L/MIN)			
Maximum Pressure	0.3MPA/60HZ			
Recommended Cooling Liquid	20%~40% ethanol/water			
Tank Volume	6.5L			

Accessories

Standard accessories



Consumables: Image: Sector of the s

Technical data (EN 60 974-	iechnical data (EN 60 974-7):		
Type of cooling:	Gas cooled		
Rating:	180A DC		
	150A AC		
Duty cycle:	35%		
Tungsten electrodes:	Ø 0.5–4 mm		



Electrode holder with cable 2M Earth clamp with cable 2M

Optional accessories



Technical data (EN 60 974	Technical data (EN 60 974-7):			
Type of cooling:	air cooled			
Rating:	180A DC			
	130A AC			
Duty cycle:	35%			
Tungsten electrodes:	Ø 0.5–4.0 mm			





Trolley:WT-100



Water-cooling unit: WC-100



Foot Pedal