

MASTER TIG-400CT



The master of TIG welding



Quick Specs

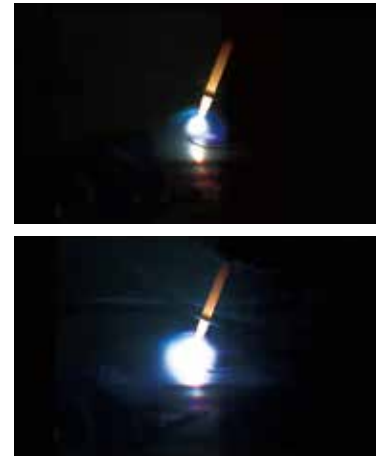
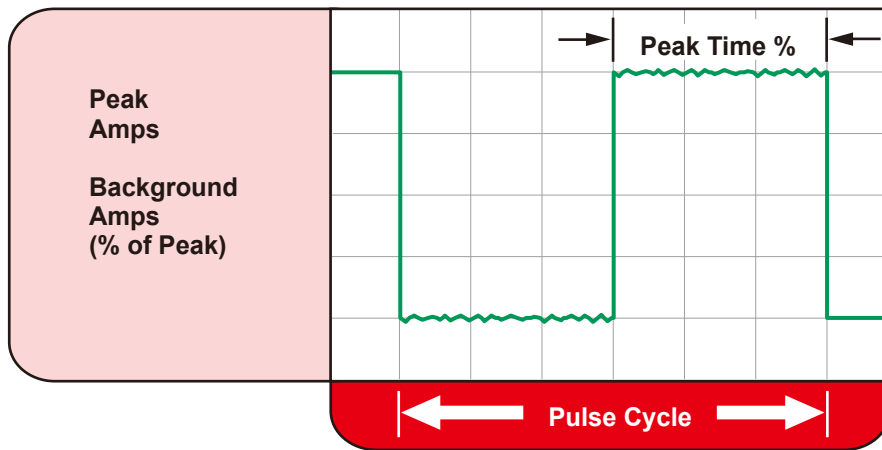
- ◆ **Processes:**
DC TIG,
AC TIG,
MIX TIG,
MMA(Stick)
- ◆ **Input Power:**
340-460V/3-PH/50-60Hz
- ◆ **Rated Output at 40°C (104°F):**
400CT: 400A at 26V @60%
Duty Cycle
- ◆ **Applications:**
Metal fabrication workshops
Shipyards and offshore industry
Chemical and process industry
Steel structure workshops

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**
 - 2 AC Waveforms**
 -  **Standard Square Wave**
fast freezing puddle, deep penetration and fast travel speeds.
 -  **Sine Wave**
For customers that like a traditional arc. Quiet with good wetting.
 - 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
- ✓ DC+/DC-: Improved TIG starting
- ✓ Pre-flow and post-flow adjustment
- ✓ 2T and 4T selection
- ✓ Capable to remote control
- ✓ 10 channels memory capacity

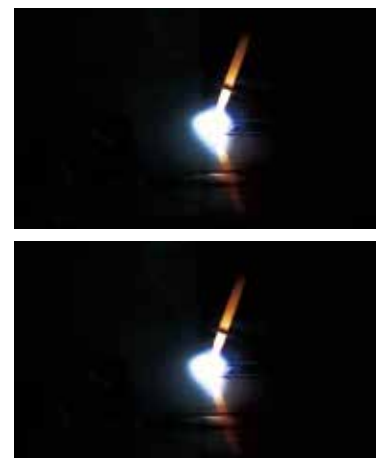
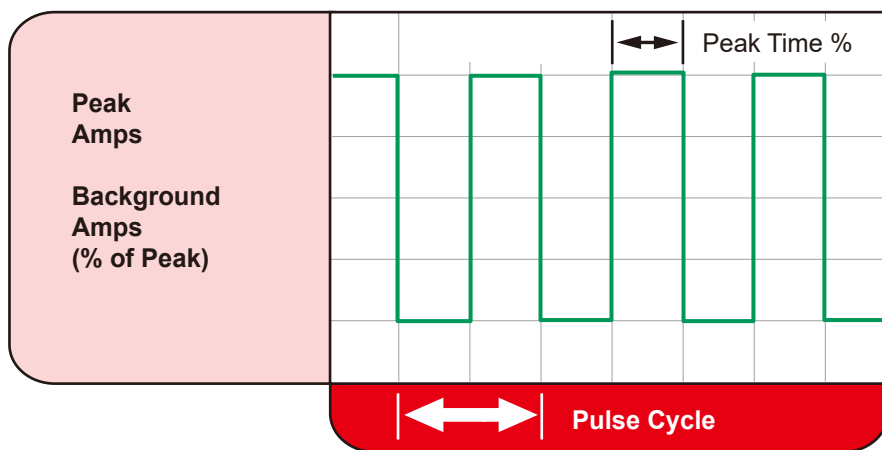
Pulse TIG

◆ 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.

◆ Sine Wave

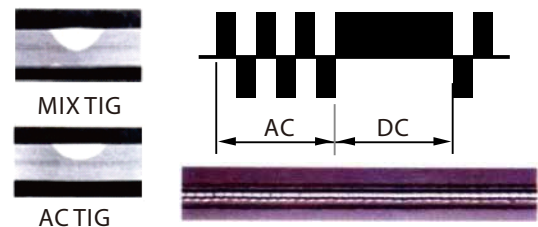
The Sine Wave a soft arc with the feel of a conventional power source. It provides good wetting action and actually sounds quieter than other waves. Its fast transition through the zero amperage point also eliminates the need for continuous high frequency.

MIX TIG Control

◆ Features of MIX TIG:

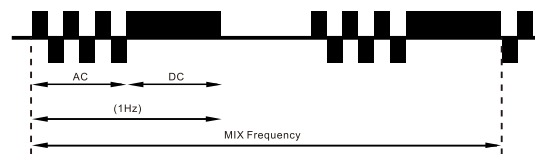
The AC current can get a very good clearance, and DC current can get a deeper penetration. Use the MIX TIG we can get an excellent Arc Concentration, can be carried out the excellent welding performance from thin to thick plate.

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



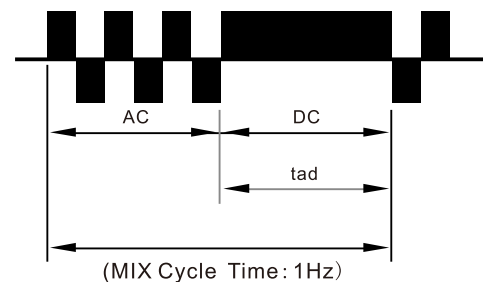
◆ MIX TIG Frequency (Hz):

the cycle time of MIX TIG in 1 second. Adjustable range: 1-5Hz.



◆ MIX TIG Balance (DC) %:

DC Balance (%) = $(t_{ad}/T_{mix}) \times 100$



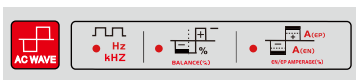
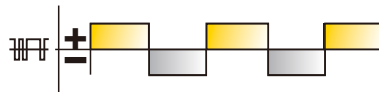
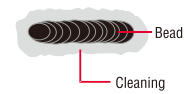
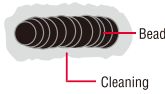
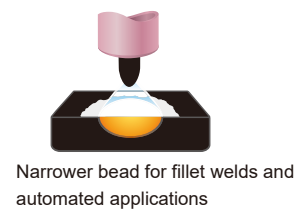
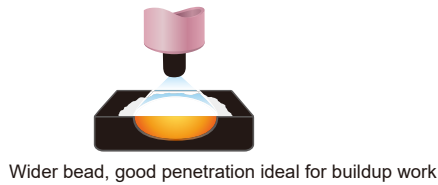
AC Waveshape Controls



AC Frequency control

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

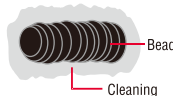
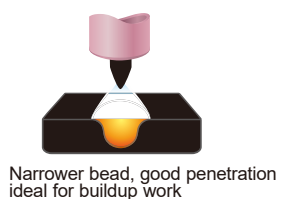
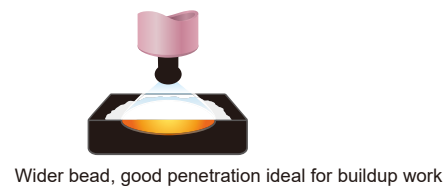
Note: Decreasing the AC Frequency softens the arc and broadens the weld puddle for a wider weld bead.



AC Balance Control

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

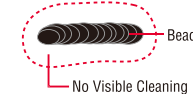
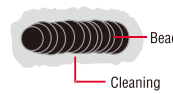
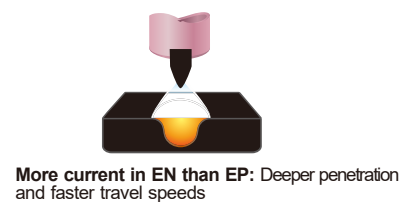
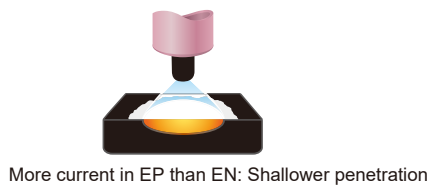
Note: Set the AC Balance control for adequate arc cleaning action at the sides and in front of the weld puddle. AC Balance should be fine tuned according to how heavy or thick the oxides are.



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.



Technical Specifications

Item No	MasterTig-400CT	
Rated Input Voltage	3PH ~ 400V ±15%	
Max. Load Power Capacity	TIG: 14.39KVA MMA: 14.21KVA	
Rated Duty Cycle(40°C) 60%	TIG: 400A/26V MMA: 315A/32.6V	
100%	TIG: 315A/22.6V MMA: 250A/30V	
Welding Current/Voltage Range	TIG: 5A/10.2V~400A/26V MMA: 20A/20.8V~315A/32.6V	
Open Circuit Voltage	70V~80V	
Power Factor	0.85	
Efficiency	85%	
TIG	Pulse	Peak Current
		5A~400A
		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~400A
		Crater-filling Current
		5A~400A
		Current Up-slope Time
		0.1S~15S
		Current Down-slop Time
		0.1S~15S
		Pre-Gas Time
		0.1S~15S
		Flow-Gas Time
		0.1S~15S
		Spot Arc Time
		0.1S-10S
MMA	Arc	Force
		10A~315A
		Hot Start Time
		0.1~3S
		Hot Start Current
		10A~315A
Dimension (LxWxH)	960x420x900mm	
Weight (KG)	80KG	

Water-cooling Unit: WC-150

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



TIG-12




Technical data (EN 60 974-7):	
Type of cooling:	Water Cooled
Rating:	350A DC
	250A AC
Duty cycle:	100%
Tungsten electrodes:	Ø 1.6–4.0 mm

Consumables:

-  Back cap
-  Collet
-  Insulating ring/Adaptor
-  Collet body
-  Gas nozzle, ceramic

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


-  Water-cooling unit: WC-100


Optional accessories

BINZEL ABITIG® GRIP 12



Technical data (EN 60 974-7):	
Type of cooling:	liquid cooled
Rating:	350A DC
	250A AC
Duty cycle:	100%
Tungsten electrodes:	Ø 1.6–4.0 mm

-  Argon gas regular

-  Trolley: WT-100

-  Foot Pedal