



TIG(GTAW)

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PROFESSIONAL IN WELDING

AC WAVEFORMS



Standard Square Wave: Travel faster



Soft Square Wave: Max puddle control



Sine Wave: Traditional arc



Triangle Wave: Reduced heat input

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

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

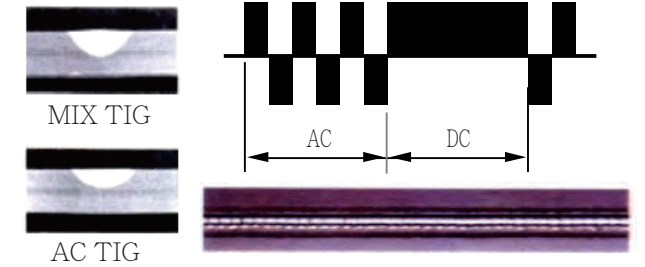
The Triangular Wave peak amperage while reducing overall heat input into the weld. This leads to quick puddle formation, low weld distortion, and fast travel speeds. It is especially good for welding thin aluminum.

MIX TIG Control

Features of MIX TIG:

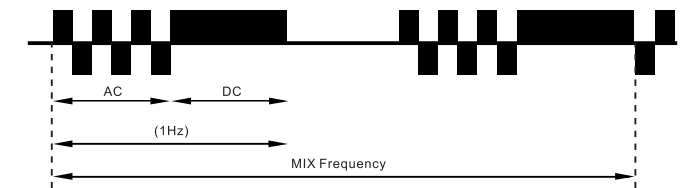
The AC current can get a very good clearance, and DC current can get a deeper penetration. Use the MIX TIG we can get an excellent Arc Concentration, can be carried out the excellent welding performance from thin to thick plate.

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



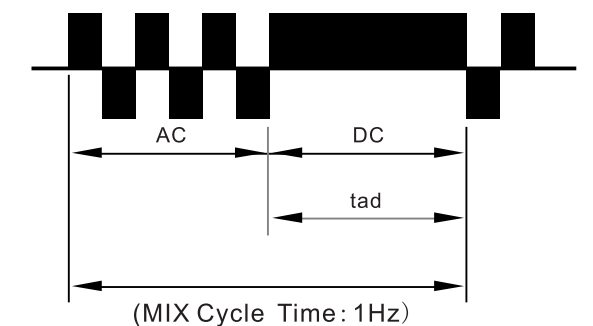
MIX TIG Frequency (Hz):

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



MIX TIG Balance (DC) %:

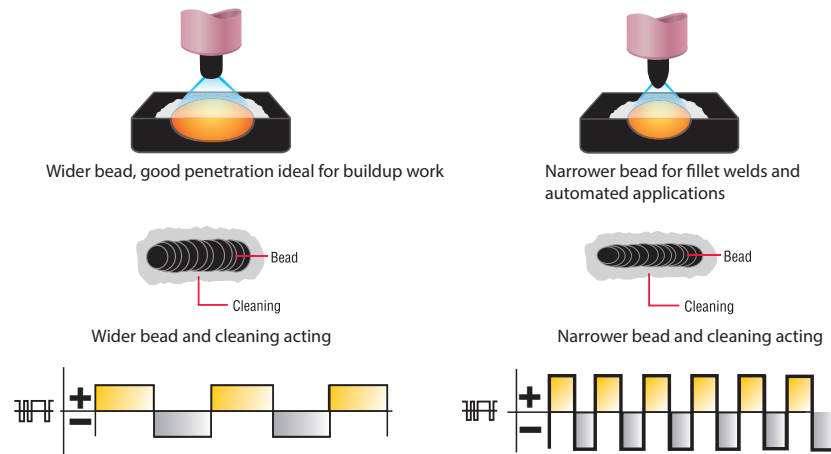
DC Balance (%) = $(t_{ad}/T_{mix}) \times 100$



AC Waveshape Controls

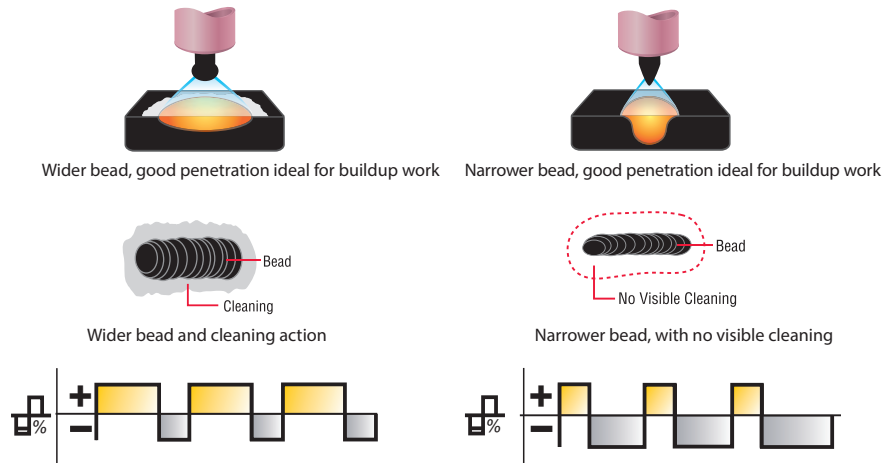
AC Frequency control
Controls the width of the arc cone. Increasing the AC Frequency provides a more focused arc with increased directional control.

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



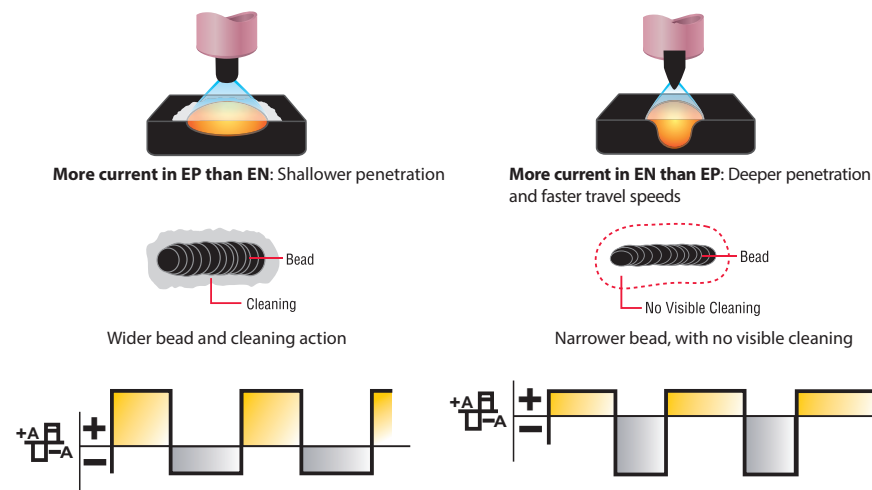
AC Balance Control
Controls arc cleaning action. Adjusting the % EN of the AC wave controls the width of the etching zone surrounding the weld.

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.



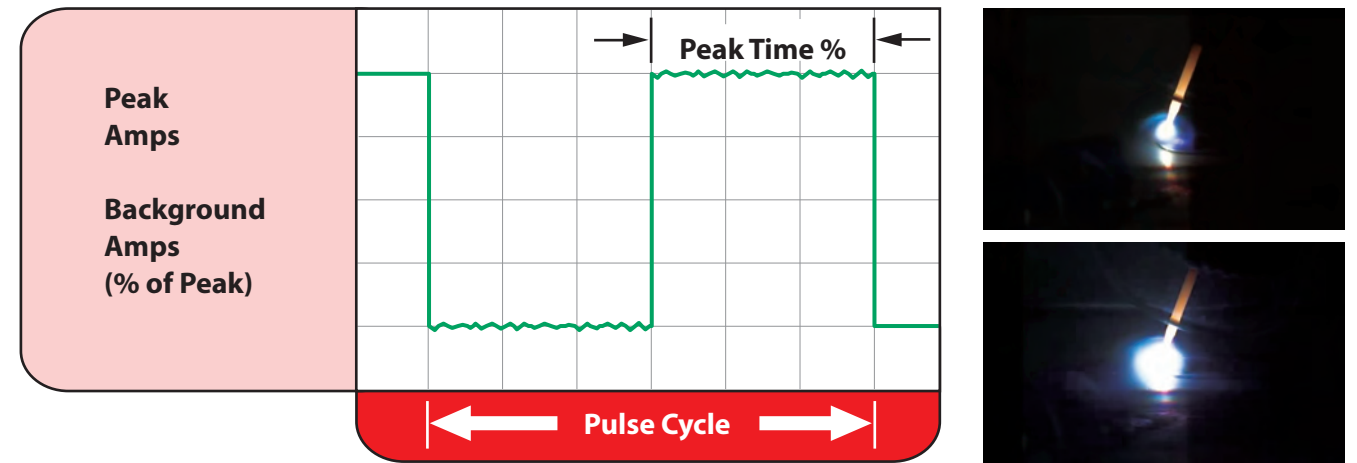
Amplitude Control
Adjusts the ratio of EN to EP amperage to precisely control heat input to the work and the electrode.

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



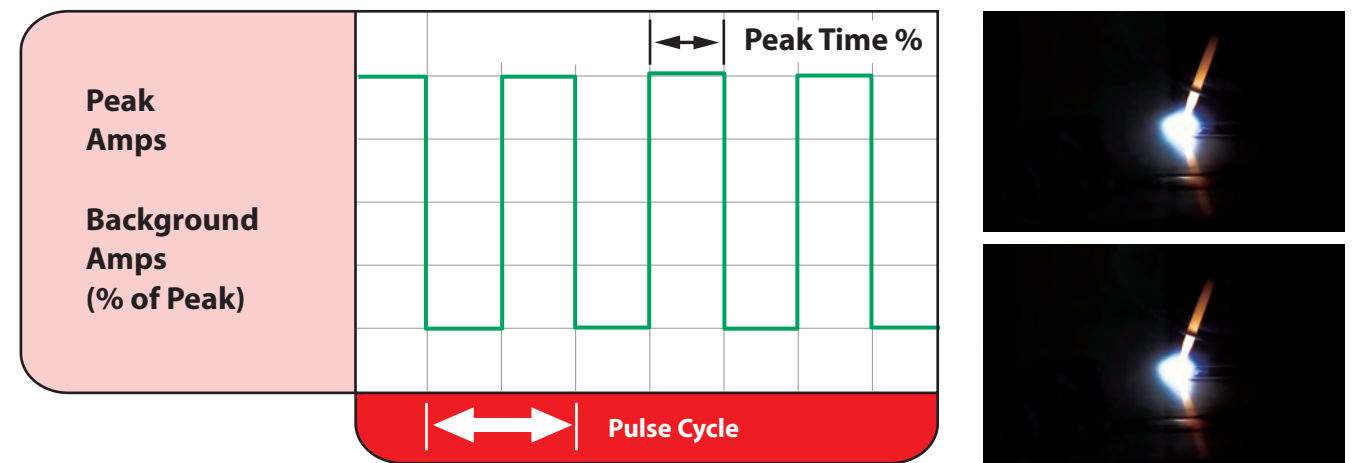
Pulse TIG

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.

MASTERTIG 200AC/250AC/315AC/400CT/500CT

The total solution of TIG welding



Quick Specs



Processes:

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

Applications:

Mastertig-200AC/250AC:
Metal Fabrication
Maintenance and Repair,
Auto Body
Light Industrial
Mastertig-400CT/500CT:
Metal fabrication workshops
Shipyards and offshore industry
Chemical and process industry
Installation and set-up
Mechanized welding

Input Power:

200AC: 230V, 1-Phase/250AC: 230V, 1-Phase
400CT: 400V, 3-Phase/ 500CT: 400V, 3-Phase

Amperage Range:

200AC: 5-200A/250AC:5-250A
400CT: 20-400A/ 500CT:20-500A

Rated Output at 40 ° C (104°F):

200AC: 200A at 18V @60% Duty Cycle
250AC: 250A at 20V @60% Duty Cycle
400CT: 400A at 26V @60% Duty Cycle
500CT: 500A at 30V @60% Duty Cycle

Weight :

200AC/250AC: 23KG
400CT/500CT: 80KG

TOP Features:

• Multiple Waveshapes:

Standard Square wave for fast travel speeds and excellent puddle control

Sine wave for a traditional softer sounding arc

• **MIX TIG:** have both DC current and AC current in one duty cycle. It can get an excellent Arc Concentration and reduce the heat input.

• **Adjustable AC output frequency** allows the operator to focus the arc minimizing the heat affected zone.

• **Extended AC Balance Control** helps maintain a pointed tungsten to direct the arc in the weld joint.

• **AC Amplitude control** precisely control heat input to the work and electrode.

• **DC+/DC-:** Improved TIG starting. Now starts DC(-) to maintain a sharp tungsten.

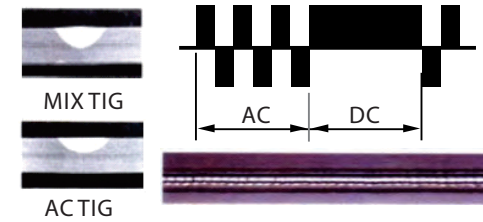
• **HF Arc ignition:** reliable arc initiation with high frequency.

• **Fast, precise, clean arc ignition and arc ending.**

• **10 channels memory capacity.**

MIX TIG Control

Features of MIX TIG:



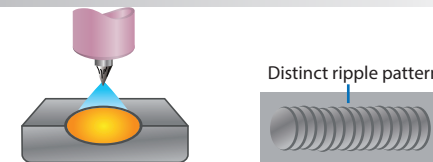
The AC current can get a very good clearance, and DC current can get a deeper penetration. Use the MIX TIG we can get an excellent Arc Concentration, can be carried out the excellent welding performance from thin to thick plate.

- 1) Nice weld appearance, deep penetration.
 - 2) Excellent Arc Concentration.
 - 3) Substantially reduce the electrode consumption.
- See page 32

Pulsed TIG Controls

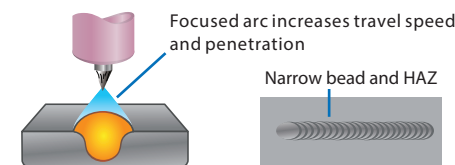
The Pulsed TIG function switches the amperage from a high(peak) to a low(background) at a set rate(PPS). Pulsing can reduce heat input by lowering the average amperage, increasing control of the weld puddle, penetration and distortion. The following parameters can be adjusted for desired results:

Low-Speed Pulse



1 to 10 pulses per second(PPS) will produce a distinct ripple pattern in the weld bead. Can be used to time filler addition, reduce distortion and improve control.

High-Speed Pulse



100 pulses per second(PPS) and higher helps to focus the arc for increased stability, penetration and travel speed. Increased puddle agitation improves weld microstructure.
See page 34

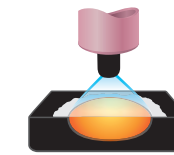
AC Waveshape Options

AC waveshape options	
Standard Square Wave	Sine Wave
fast freezing puddle, deep penetration and fast travel speeds.	Sine wave for customers that like a traditional arc. Quiet with good wetting.

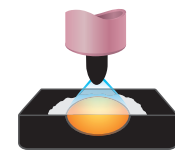
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AC Waveshape Controls

AC Frequency control



Wider bead, good penetration ideal for buildup work

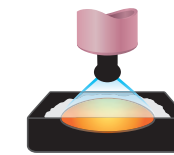


Narrower bead for fillet welds and automated applications

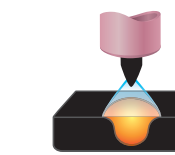
Controls the width of the arc cone. Increasing the AC Frequency provides a more focused arc with increased directional control.

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

AC Balance Control



Wider bead, good penetration ideal for buildup work

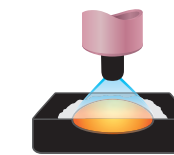


Narrower bead, good penetration ideal for buildup work

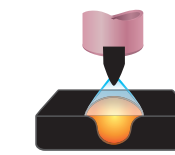
Controls arc cleaning action. Adjusting the % EN of the AC wave controls the width of the etching zone surrounding the weld.

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



More current in EP than EN: Shallower penetration



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

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.

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MASTER TIG-200AC/250AC/315AC

Technical specifications

Item No	MASTER TIG-200AC	MASTER TIG-250AC	MASTER TIG-315AC	
Rated Input Voltage	1PH ~ 230V ±15%	1PH ~ 230V ±15%	3PH ~ 400V ±15%	
Max. Load Power Capacity	TIG: 5.63KVA MMA: 6.60KVA	TIG: 7.81KVA MMA: 8.75KVA	TIG: 9.85 KVA MMA: 10.38 KVA	
Rated Duty Cycle(40°C)	60%	TIG: 200A/18V MMA: 160A/26.4V	TIG: 250A/20V MMA: 200A/28V TIG: 315A/22.6V MMA: 250A/30V	
	100%	TIG: 160A/16.4V MMA: 130A/25.2V	TIG: 200A/18V MMA: 160A/26.4V MMA: 200A/28V	
		TIG: 5A/10.2V~200A/18V MMA: 20A/20.8V~160A/26.4V	TIG: 5A/10.2V~250A/20V MMA: 20A/20.8V~200A/28V	
Welding Current/Voltage Range	TIG: 5A/10.2V~200A/18V MMA: 20A/20.8V~160A/26.4V	TIG: 5A/10.2V~250A/20V MMA: 20A/20.8V~200A/28V	TIG: 20A/10.8V~315A/22.6V MMA: 10A/20.4V~250A/30V	
Open Circuit Voltage	70V~80V	70V~80V	70V	
Power Factor	0.8	0.8	0.85	
Efficiency	80%	80%	85%	
TIG Pulse	Peak Current	5A~200A	5A~250A	20A~315A
	Pulse Frequency	0.2Hz~200Hz	0.2Hz~200Hz	0.2Hz~50Hz
	Pulse Width (Ratio)	1~100%	1~100%	1~100%
AC TIG	AC Frequency Range	20Hz~250Hz	20Hz~250Hz	20Hz~250Hz
	AC Clean Width (AC Balance)	+40~-40	+40~-40	+40~-40
	AC Clean Ratio (AC Bias) %	+30~-50	+30~-50	+30~-50
MIX TIG	MIX Frequency:	1Hz~5Hz	1Hz~5Hz	0.1Hz~5Hz
	DC Balance: (%)	20-80	20-80	10-90
Arc-starting Current	5A~200A	5A~250A	10A~315A	
Crater-filling Current	5A~200A	5A~250A	5A~315A	
Current Up-slope Time	0.1S~15S	0.1S~15S	0.1S~15S	
Current Down-slop Time	0.1S~15S	0.1S~15S	0.1S~15S	
Pre-Gas Time	0.1S~15S	0.1S~15S	0.1S~15S	
Flow-Gas Time	0.1S~15S	0.1S~15S	0.1S~15S	
Spot Arc Time	0.1S~10S	0.1S~10S	0.1S~10S	
MMA Arc Force	Arc Force	10A~160A	10A~200A	10A~250A
	Hot Start Time	0.1-3S	0.1-3S	2S
	Hot Start Current	10A-160A	10A-200A	5A~250A
Dimension (LxWxH)	490X230X385mm	490X230X385mm	490X230X385mm	
Weight (KG)	23KG	23KG	45KG	

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

MASTER TIG-200AC/250AC

For Standard accessories



TIG torch: TIG-26



Electrode holder and Earth clamp

For Optional accessories



Argon gas regular



TIG torch: TIG-25



Trolley: WT-100



Water-cooling unit: WC-100



Foot Pedal



Hand-hold Remote Controller for TIG torch

MASTER TIG-400CT/500CT

Technical specifications

Item No	MASTER TIG-400CT	MASTER TIG-500CT	
Rated Input Voltage	3PH ~ 400V ±15%	3PH ~ 400V ±15%	
Max. Load Power Capacity	TIG: 14.39 KVA MMA: 14.21 KVA	TIG: 20.76KVA MMA: 19.93KVA	
Rated Duty Cycle(40°C) 60%	60%	TIG: 400A/26V MMA: 315A/32.6V	
	100%	TIG: 315A/22.6V MMA: 250A/30V	
		TIG: 5A/10.2V~400A/26V MMA: 20A/20.8V~315A/32.6V	
Welding Current/Voltage Range	TIG: 5A/10.2V~400A/26V MMA: 20A/20.8V~315A/32.6V	TIG: 5A/10.2V~500A/30V MMA: 20A/20.8V~400A/36V	
Open Circuit Voltage	70V~80V	70V~80V	
Power Factor	0.85	0.85	
Efficiency	85%	85%	
TIG Pulse	Peak Current	5A~400A	5A~500A
	Pulse Frequency	0.2Hz~200Hz	0.2Hz~200Hz
	Pulse Width (Ratio)	1~100%	1~100%
AC TIG	AC Frequency Range	20Hz~250Hz	20Hz~250Hz
	AC Clean Width (AC Balance)	+40~-40	+40~-40
	AC Clean Ratio (AC Bias) %	+30~-50	+30~-50
MIX TIG	MIX Frequency:	1Hz~5Hz	1Hz~5Hz
	DC Balance: (%)	20-80	20-80
Arc-starting Current	5A~400A	5A~500A	
Crater-filling Current	5A~400A	5A~500A	
Current Up-slope Time	0.1S~15S	0.1S~15S	
Current Down-slop Time	0.1S~15S	0.1S~15S	
Pre-Gas Time	0.1S~15S	0.1S~15S	
Flow-Gas Time	0.1S~15S	0.1S~15S	
Spot Arc Time	0.1S~10S	0.1S~10S	
MMA Arc Force	Arc Force	10A~315A	10A~400A
	Hot Start Time	0.1-3S	0.1-3S
	Hot Start Current	10A~315A	10A~400A
Dimension (LxWxH)	960x420x1100mm	960x420x1100mm	
Weight (KG)	80KG	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

MASTER TIG-400CT/500CT

For Standard accessories



TIG torch: TIG-18



Electrode holder and Earth clamp



Water-cooling unit: WC-150

For Optional accessories



TIG torch: TIG-26



Argon gas regular



Trolley: WT-150



Foot Pedal



Hand-hold Remote Controller for TIG torch

PROTIG 200Di/250Di/315Di/400CT/500CT

Powerful, Excellent DC Pulse TIG



Quick Specs



Processes:

DC TIG
MMA(Stick)

Applications:

Metal Fabrication
Maintenance and Repair
Auto Body
Light Industrial

Input Power:

200Di/250Di : 230V, 1-Phase
315Di: 380V, 3-Phase
400CT/500CT: 400V, 3-Phase

Amperage Range:

200Di: 3-200A/250AC: 3-250A
315Di: 3-315A/400CT: 3-400A/ 500CT: 3-500A

Rated Output at 40 ° C (104°F):

200Di: 200A at 18V @60% Duty Cycle
250Di: 250A at 20V @60% Duty Cycle
315Di: 315A at 22.6V @60% Duty Cycle
400CT: 400A at 26V @60% Duty Cycle
500CT: 500A at 30V @60% Duty Cycle

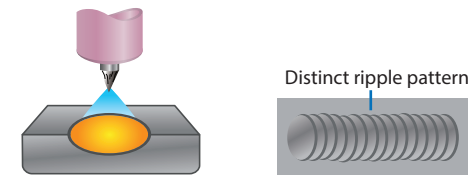
Weight :

200Di/250Di: 15KG
315Di: 23KG
400CT/500CT: 70KG

PULSED TIG CONTROLS

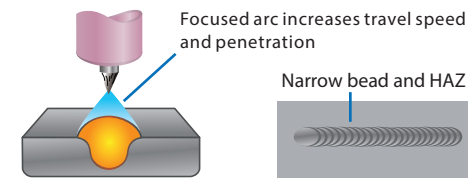
The Pulsed TIG function switches the amperage from a high(peak) to a low(background) at a set rate(PPS). Pulsing can reduce heat input by lowering the average amperage, increasing control of the weld puddle, penetration and distortion. The following parameters can be adjusted for desired results:

Low-Speed Pulse



1 to 10 pulses per second(PPS) will produce a distinct ripple pattern in the weld bead. Can be used to time filler addition, reduce distortion and improve control.

High-Speed Pulse

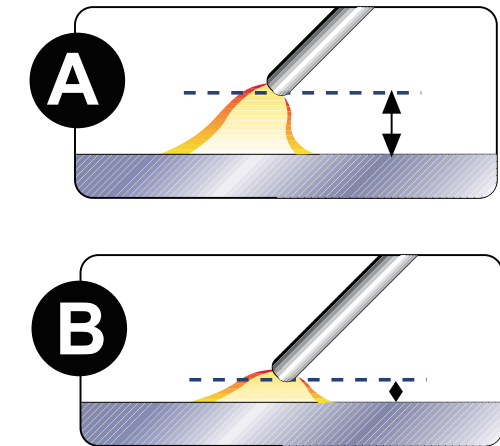
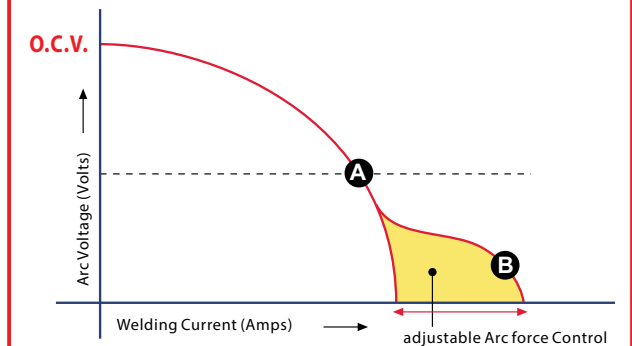


100 pulses per second(PPS) and higher helps to focus the arc for increased stability, penetration and travel speed. Increased puddle agitation improves weld microstructure. See page 34

Arcforce correction (welding characteristics)

Arcforce is a setting that allows you to adjust the arc to soft smooth arc to a more aggressive digging arc. Setting high is to bump up amperage when you have a really tight arc so that you keep welding. See page 56

ARC FORCE CONTROL



TOP Features:

• Pulse control:

Built in pulsing functions help minimize heat input on thin materials, and provide for a faster freezing weld puddle for uphill welding on curved surfaces such as process piping. The TIG pulse also helps moderate filler metal deposition for consistent bead appearance.

• High-frequency TIG starting:

Makes it easy to establish an arc under a variety of conditions. Enhances quality by minimizing the potential for weld contamination created by tungsten inclusions in the weld.

• Refined arc ignition from 3A.

• **Hot Start Function** reliably ignites the electrode and melts perfectly to ensure the best quality even at the start of the seam.

• **Arc Force** makes it easier to weld large-drop melting electrode types at low current strengths with a short arc in particular.

• **Fast Spot Arc system** simply controls the spot arc parameter and offers a stable arc.

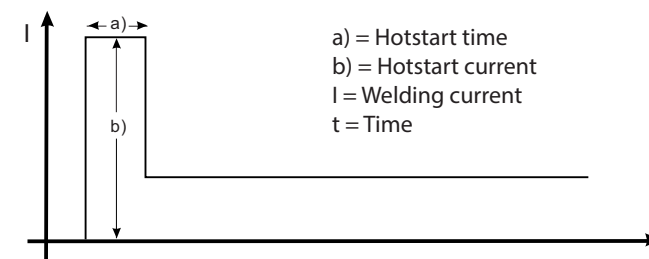
• **4T Trigger Hold** allows to hold the present current by user until press the trigger again.

• **Fast, precise, clean arc ignition and arc ending.**

• **10 channels memory capacity**

HOT START

Hot Start adaptive control provides positive arc start without sticking. See page 55



PROTIG-200Di/250Di

Technical specifications

Item No	PROTIG-200Di	PROTIG-250Di
Rated Input Voltage	1PH ~ 230V ±15%	1PH ~ 230V ±15%
Max. Load Power Capacity	TIG: 5.62 KVA MMA: 6.60 KVA	TIG: 7.81 KVA MMA: 5.63KVA
Rated Duty Cycle(40°C)	60%	60%
	TIG: 200A/18V MMA: 160A/26.4V	TIG: 250A/20V MMA: 200A/28V
	100%	100%
	TIG: 160A/16.4V MMA: 130A/25.2V	TIG: 200A/18V MMA: 160A/26.4V
Welding Current/Voltage Range	TIG: 3A/10.1V~200A/18V MMA: 20A/20.8V~160A/26.4V	TIG: 3A/10.1V~250A/20V MMA: 20A/20.8V~200A/28V
Open Circuit Voltage	70V~80V	70V~80V
Power Factor	0.8	0.8
Efficiency	80%	80%
TIG		
Pulse Frequency	0.2Hz~200Hz	0.2Hz~200Hz
Pulse Width (Ratio)	1~100%	1~100%
Arc-starting Current	5A~200A	5A~250A
Crater-filling Current	5A~200A	5A~250A
Current Up-slope Time	0.1S~15S	0.1S~15S
Current Down-slop Time	0.1S~15S	0.1S~15S
Pre-Gas Time	0.1S~15S	0.1S~15S
Flow-Gas Time	0.1S~15S	0.1S~15S
Spot Arc Time	0.1S~10S	0.1S~10S
MMA		
Arc Force	10A~160A	10A~200A
Hot Start Time	0.1~3S	0.1~3S
Hot Start Current	10A~160A	10A~200A
Dimension (LxWxH)	410x190x305mm	410x190x305mm
Weight (KG)	15KG	15KG

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

PROTIG-315Di

Technical specifications

Item No	MASTER TIG-315Di
Rated Input Voltage	3PH ~ 380V ±15%
Max. Load Power Capacity	TIG: 11.63KVA MMA: 10.38 KVA
Rated Duty Cycle(40°C)	60%
	TIG: 350A/24V MMA: 250A/30V
	100%
	TIG: 315A/22.6V MMA: 200A/28V
Welding Current/Voltage Range	TIG:3A/10.1V~350A/24V MMA: 20A/20.8V~250A/30V
Open Circuit Voltage	70V~80V
Power Factor	0.85
Efficiency	85%
TIG	
Pulse Frequency	0.2Hz~200Hz
Pulse Width (Ratio)	1%~100%
Arc-starting Current	5A~315A
Crater-filling Current	5A~315A
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~250A
Hot Start Time	0.1~3S
Hot Start Current	10A~250A
Dimension (LxWxH)	540x240x480mm
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

PROTIG-400CT/500CT

Technical specifications

Item No	PROTIG-400CT	PROTIG-500CT
Rated Input Voltage	3PH ~ 400V ±15%	3PH ~ 400V ±15%
Max. Load Power Capacity	TIG: 14.39 KVA MMA: 14.21 KVA	TIG: 20.76 KVA MMA: 19.93 KVA
Rated Duty Cycle(40°C)	60%	TIG: 400A/26V MMA: 315A/32.6V
	100%	TIG: 315A/22.6V MMA: 250A/30V
		TIG: 400A/26V MMA: 315A/32.6V
Welding Current/Voltage Range	TIG: 3A/10.1V~400A/26V MMA: 20A/20.8V~315A/32.6V	TIG: 3A/10.1V~500A/30V MMA: 20A/20.8V~400A/36V
Open Circuit Voltage	70V~80V	70V~80V
Power Factor	0.85	0.85
Efficiency	85%	85%
TIG	Pulse Frequency	0.2Hz~200Hz
	Pulse Width (Ratio)	1~100%
	Arc-starting Current	5A~400A
	Crater-filling Current	5A~400A
	Current Up-slope Time	0.1S~15S
	Current Down-slope 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
Hot Start Time		0.1~3S
Hot Start Current		10A~315A
Dimension (LxWxH)	960x420x900mm	960x420x900mm
Weight (KG)	70KG	70KG

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

PROTIG-200Di/250Di

For Standard accessories



TIG torch: TIG-26

For Optional accessories



Water-cooling unit: WC-100



Argon gas regular



Foot Pedal



Electrode holder and Earth clamp



TIG torch: TIG-26



Trolley: WT-100



Hand-hold Remote Controller for TIG torch

Accessories

PROTIG-315Di

For Standard accessories



TIG torch: TIG-18

For Optional accessories



Water-cooling unit: WC-100



Argon gas regular



Foot Pedal

For Optional accessories



Electrode holder and Earth clamp



TIG torch: TIG-26



Trolley: WT-100



Hand-hold Remote Controller for TIG torch

Accessories

PROTIG-400CT/500CT

For Standard accessories



TIG torch: TIG-18



Electrode holder and Earth clamp



Water-cooling unit: WC-150

For Optional accessories



Argon gas regular



Trolley: WT-150



Hand-hold Remote Controller for TIG torch



Foot Pedal

ALUTIG 200P/200MV/200HD/250HD

All TIG Functions included



Quick Specs



Processes:

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

Applications:

Metal Fabrication
Maintenance and Repair
Auto Body
Light Industrial

Input Power:

200P/200HD/250HD: 230V, 1-Phase
200MV: 110-220V, 1-Phase

Amperage Range:

200P/200MV: 5-200A

200HD: 5-200A

250HD: 5-250A

Rated Out put at 40°C (104°F):

200P/200MV: 200A at 18V @60% Duty Cycle

200HD: 200A at 18V @60% Duty Cycle

250HD: 250A at 20V @60% Duty Cycle

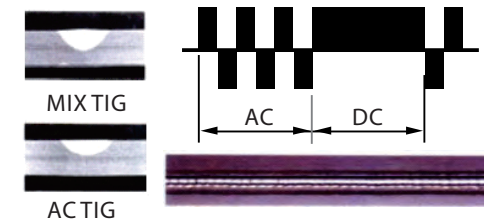
Weight : 23 KG

TOP Features:

- **Multiple Waveshapes:**
 - Standard Square wave** for fast travel speeds and excellent puddle control
 - Soft Square wave** for a soft buttery arc with maximum puddle control and good wetting action
 - Sine wave** for a traditional softer sounding arc
 - Triangular wave** to reduce the heat input into the weld at low amperage
- **MIX TIG:** have both DC current and AC current in one duty cycle. It can get an excellent Arc Concentration and reduce the heat input.
- **Adjustable AC output frequency** allows the operator to focus the arc minimizing the heat affected zone.
- **Extended AC Balance Control** helps maintain a pointed tungsten to direct the arc in the weld joint.
- **AC Amplitude control** precisely control heat input to the work and electrode.
- **DC+/DC-:** Improved TIG starting. Now starts DC(-) to maintain a sharp tungsten.
- **HF Arc ignition:** reliable arc initiation with high frequency.
- **Fast, precise, clean arc ignition and arc ending.**
- **10 channels memory capacity.**

MIX TIG Control

Features of MIX TIG:



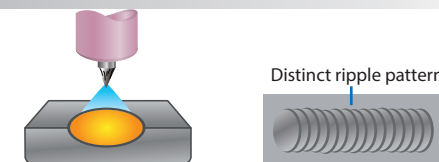
The AC current can get a very good clearance, and DC current can get a deeper penetration. Use the MIX TIG we can get an excellent Arc Concentration, can be carried out the excellent welding performance from thin to thick plate.

- 1) Nice weld appearance, deep penetration.
 - 2) Excellent Arc Concentration.
 - 3) Substantially reduce the electrode consumption.
- See page 32

Pulsed TIG Controls

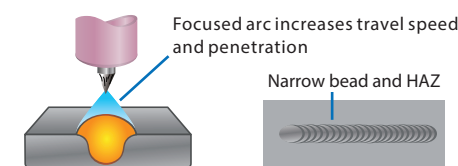
The Pulsed TIG function switches the amperage from a high(peak) to a low(background) at a set rate(PPS). Pulsing can reduce heat input by lowering the average amperage, increasing control of the weld puddle, penetration and distortion. The following parameters can be adjusted for desired results:

Low-Speed Pulse



1 to 10 pulses per second(PPS) will produce a distinct ripple pattern in the weld bead. Can be used to time filler addition, reduce distortion and improve control.

High-Speed Pulse



100 pulses per second(PPS) and higher helps to focus the arc for increased stability, penetration and travel speed. Increased puddle agitation improves weld microstructure. See page 34

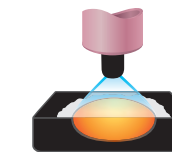
AC WAVESHAPES OPTIONS

AC waveshape options	
Standard Square Wave fast freezing puddle, deep penetration and fast travel speeds.	Soft Square Wave For a soft buttery arc with maximum puddle control and good wetting action.
Sine Wave For customers that like a traditional arc. Quiet with good wetting.	Triangle Wave Reduces the heat input and is good on thin aluminum. Fast travel speeds.

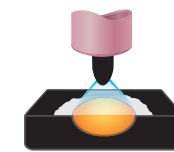
See page 31

AC Waveshape Controls

AC Frequency control



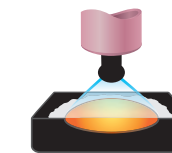
Wider bead, good penetration ideal for buildup work



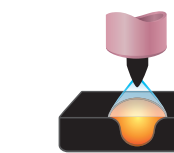
Narrower bead for fillet welds and automated applications

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



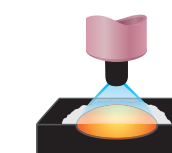
Wider bead, good penetration ideal for buildup work



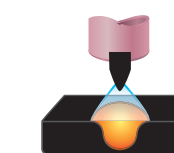
Narrower bead, good penetration ideal for buildup work

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



More current in EP than EN: Shallower penetration



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

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. See page 33

ALUTIG-200P/200MV

Technical specifications

Item No	ALUTIG-200P	ALUTIG-200MV
Rated Input Voltage	1PH ~ 230V ±15%	1PH ~115/230V ±15%
Max. Load Power Capacity	TIG: 5.62KVA MMA: 6.60KVA	TIG: 4.55KVA MMA: 5.33KVA
Rated Duty Cycle(40°C) 60%	TIG: 200A/18V MMA: 160A/26.4V	TIG: 200A/18V MMA: 160A/26.4V
100%	TIG: 160A/16.4V MMA: 130A/25.2V	TIG: 160A/16.4V MMA: 130A/25.2V
Welding Current/Voltage Range	TIG: 5A/10.2V~200A/18V MMA:20A/20.8V~160A/26.4V	TIG: 5A/10.2V~200A/18V MMA:20A/20.8V~160A/26.4V
Open Circuit Voltage	70V~80V	70V~80V
Power Factor	0.8	0.99
Efficiency	80%	80%
TIG Pulse Peak Current	5A~200A	5A~200A
Pulse Frequency	0.2Hz~200Hz	0.2Hz~200Hz
Pulse Width (Ratio)	1~100%	1~100%
AC TIG AC Frequency Range	20Hz~250Hz	20Hz~250Hz
AC Clean Width (AC Balance)	+40~-40	+40~-40
AC Clean Ratio (AC Bias) %	+30~-50	+30~-50
MIX TIG MIX Frequency:	1Hz~5Hz	1Hz~5Hz
DC Balance: (%)	20~80	20~80
Arc-starting Current	5A~200A	5A~200A
Crater-filling Current	5A~200A	5A~200A
Current Up-slope Time	0.1S~15S	0.1S~15S
Current Down-slop Time	0.1S-15S	0.1S-15S
Pre-Gas Time	0.1S-15S	0.1S-15S
Flow-Gas Time	0.1S-15S	0.1S-15S
Spot Arc Time	0.1S-10S	0.1S-10S
MMA Arc Force	10A~160A	10A~160A
Hot Start Time	0.1~3S	0.1~3S
Hot Start Current	10A~160A	10A~160A
Dimension (LxWxH)	540x240x480mm	540x240x480mm
Weight (KG)	23KG	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

ALUTIG-200HD/250HD

Technical specifications

Item No	ALUTIG-200HD	ALUTIG-250HD
Rated Input Voltage	1PH ~ 230V ±15%	1PH ~ 230V ±15%
Max. Load Power Capacity	TIG: 5.63KVA MMA: 6.60KVA	TIG:7.81KVA MMA: 8.75KVA
Rated Duty Cycle(40°C) 60%	TIG: 200A/18V MMA: 160A/26.4V	TIG: 250A/20V MMA: 200A/28V
100%	TIG: 160A/16.4V MMA: 130A/25.2V	TIG: 200A/18V MMA: 160A/26.4V
Welding Current/Voltage Range	TIG: 5A/10.2V~200A/18V MMA:20A/20.8V~160A/26.4V	TIG: 5A/10.2V~250A/20V MMA:20A/20.8V~200A/28V
Open Circuit Voltage	70V~80V	70V~80V
Power Factor	0.8	0.8
Efficiency	80%	80%
TIG Pulse Peak Current	5A~200A	5A~250A
Pulse Frequency	0.2Hz~200Hz	0.2Hz~200Hz
Pulse Width (Ratio)	1~100%	1~100%
AC TIG AC Frequency Range	20Hz~250Hz	20Hz~250Hz
AC Clean Width (AC Balance)	+40~-40	+40~-40
AC Clean Ratio (AC Bias) %	+30~-50	+30~-50
MIX TIG MIX Frequency:	0.1Hz~5Hz	0.1Hz~5Hz
DC Balance: (%)	20-80	20-80
Arc-starting Current	5A~200A	5A~250A
Crater-filling Current	5A~200A	5A~250A
Current Up-slope Time	0.1S~15S	0.1S~15S
Current Down-slop Time	0.1S~15S	0.1S~15S
Pre-Gas Time	0.1S~15S	0.1S~15S
Flow-Gas Time	0.1S~15S	0.1S~15S
Spot Arc Time	0.1S~10S	0.1S~10S
MMA Arc Force	10A~160A	10A~200A
Hot Start Time	0.1-3S	0.1-S
Hot Start Current	10A-160A	10A-200A
Dimension (LxWxH)	540x240x480mm	540x240x480mm
Weight (KG)	23KG	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

ALUTIG-200P/200MV, ALUTIG-200HD/250HD

For Standard accessories



TIG torch: TIG-26



Electrode holder and Earth clamp

For Optional accessories



Argon gas regulator



TIG torch: TIG-26



Trolley: WT-100



Water-cooling unit: WC-100



Foot Pedal



Hand-hold Remote Controller for TIG torch

HANDY TIG 200Di/200MV

Portable design, High quality, Great performance



Quick Specs



Processes:
DC TIG, MMA(Stick)
Applications:
Metal Fabrication
Maintenance and Repair
Auto Body
Light Industrial

Input Power:
200Di: 230V, 1-Phase
200MV: 115/230V, 1-Phase
Amperage Range: 3-200A
Rated Output at 40°C (104°F):
200A at 18V @60% Duty Cycle
Weight: 12 kg

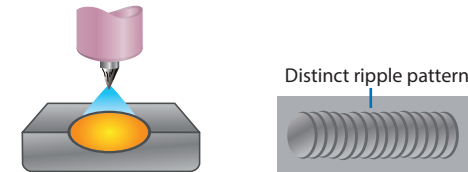
TOP Features:

- **Pulse control:** Built in pulsing functions help minimize heat input on thin materials, and provide for a faster freezing weld puddle for uphill welding on curved surfaces such as process piping. The TIG pulse also helps moderate filler metal deposition for consistent bead appearance.
- **High-frequency TIG starting:** Makes it easy to establish an arc under a variety of conditions. Enhances quality by minimizing the potential for weld contamination created by tungsten inclusions in the weld.
- **Refined arc ignition from 3A.**
- **Hot Start Function** reliably ignites the electrode and melts perfectly to ensure the best quality even at the start of the seam.
- **Arc Force** makes it easier to weld large-drop melting electrode types at low current strengths with a short arc in particular.
- **Fast Spot Arc system** simply controls the spot arc parameter and offers a stable arc.
- **Powerful with heavy duty power sources at maximum output current: 200A @60%.**
- **Easy operation and full functions:** from the control panel allowing fast adjustment of all necessary controls for DC Pulse TIG welding with either HF or contact ignition.
- **4T Trigger Hold** allows to hold the present current by user until press the trigger again.
- **Fast, precise, clean arc ignition and arc ending.**
- **10 channels memory capacity**

PULSED TIG CONTROLS

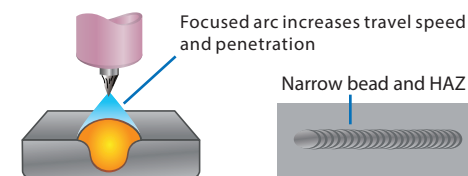
The Pulsed TIG function switches the amperage from a high(peak) to a low(background) at a set rate(PPS). Pulsing can reduce heat input by lowering the average amperage, increasing control of the weld puddle, penetration and distortion. The following parameters can be adjusted for desired results:

Low-Speed Pulse



1 to 10 pulses per second(PPS) will produce a distinct ripple pattern in the weld bead. Can be used to time filler addition, reduce distortion and improve control.

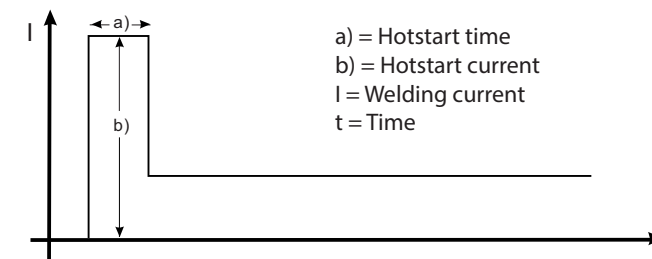
High-Speed Pulse



100 pulses per second(PPS) and higher helps to focus the arc for increased stability, penetration and travel speed. Increased puddle agitation improves weld microstructure. See page 34

HOT START

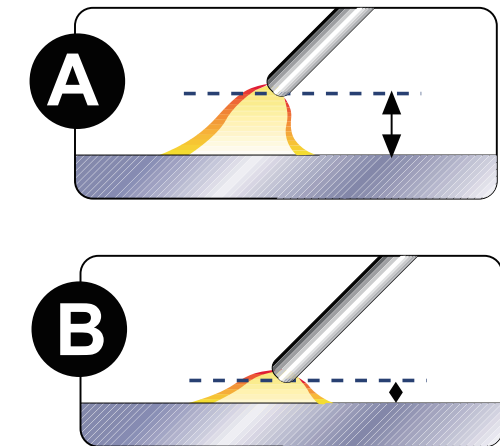
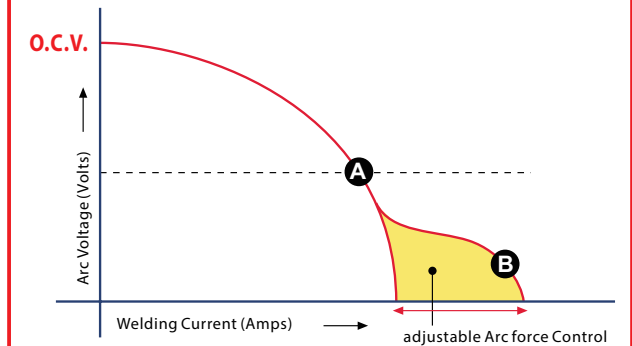
Hot Start adaptive control provides positive arc start without sticking. See page 55.



Arcforce correction (welding characteristics)

Arcforce is a setting that allows you to adjust the arc to soft smooth arc to a more aggressive digging arc. Setting high is to bump up amperage when you have a really tight arc so that you keep welding. See page 56.

ARC FORCE CONTROL



HANDY TIG-200Di/200MV

Technical specifications

Item No	HANDY TIG-200Di	HANDY TIG-200MV	
Rated Input Voltage	1PH ~ 230V ±15%	1PH ~ 115/230V ±15%	
Max. Load Power Capacity	TIG: 5.63KVA MMA: 6.60KVA	TIG: 4.55KVA MMA: 5.33KVA	
Rated Duty Cycle(40°C)	60%	TIG: 200A/18V	
		MMA: 160A/26.4V	
		TIG: 160A/16.4V	
	100%	MMA: 130A/25.2V	
		TIG: 160A/16.4V	
		MMA: 130A/25.2V	
Welding Current/Voltage Range	TIG: 3A/10.1V~200A/18V MMA: 20A/20.8V~160A/26.4V	TIG: 3A/10.1V~200A/18V MMA: 20A/20.8V~160A/26.4V	
Open Circuit Voltage	70V~80V	70V~80V	
Power Factor	0.8	0.99	
Efficiency	80%	80%	
TIG	Pulse Frequency	0.2Hz~200Hz	
	Pulse Width (Ratio)	1%~100%	
	Arc-starting Current	5A~200A	
	Crater-filling Current	5A~200A	
	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	
	MMA	Arc Force	10A~160A
		Hot Start Time	0.1~3S
Hot Start Current		10A~160A	
Dimension (LxWxH)	410x185x310mm	410x185x310mm	
Weight (KG)	12KG	12KG	

Accessories

HANDY TIG-200Di/200MV

For Standard accessories



TIG torch: TIG-26



Electrode holder and Earth clamp

For Optional accessories



Argon gas regulator



Foot Pedal

