



MULTI-PROCESS

## MULTI-PROCESS

STC-205AC/DC

81

STC-205Di

85



PROFESSIONAL IN WELDING

# STC-205AC/DC

## 4-IN-1 Multi-process: AC/DC TIG + Plasma Cutting



### Quick Specs



#### Processes:

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

#### Applications:

Metal Fabrication  
Maintenance and Repair  
Auto Body  
Light Industrial

#### Input Power:

230V or 115/230V, 1-Phase

#### Amperage Range:

TIG: 5-205A/PAC: 20-50A/MMA: 10-160A

#### Rated Output at 40 ° C (104°F):

TIG: 200A at 18V @60% Duty Cycle  
PAC: 50A at 100V @60% Duty Cycle  
MMA: 160A at 26.4V @60% Duty Cycle

#### Weight : 25.7 kg

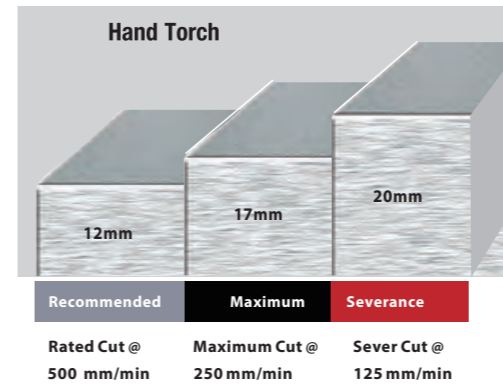
### TOP Features:

- **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.
- **Pilot Arc for superior arc performance and easy start.**
- **Rapid Arc Restrike:** fast cutting through gaps, even expanded metal.
- **Powerful with heavy duty: 50A @60%.**
- **Fast, precise, clean arc ignition and arc ending.**

### CUT PERFORMANCE

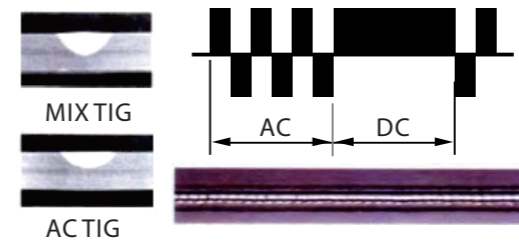


Big cutting power in a small package - the industry's most portable and powerful 50-amp plasma cutter offers 10mm mild steel cutting.



### 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.

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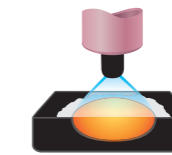
### AC WAVESHAPES OPTIONS

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

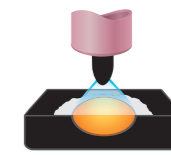
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### AC Waveshape Controls

#### AC Frequency control



Wider bead, good penetration ideal for buildup work

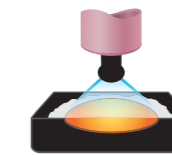


Narrower bead for fillet welds and automated applications

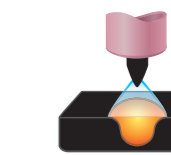
Controls the width of the arc cone. Increasing the AC Frequency provides a more focused arc with increased directional control.

*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

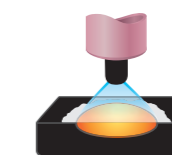


Narrower bead, good penetration ideal for buildup work

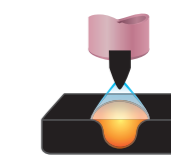
Controls arc cleaning action. Adjusting the % EN of the AC wave controls the width of the etching zone surrounding the weld.

*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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# STC-205AC/DC

## Technical specifications

Item No	STC-250AC/DC
Rated Input Voltage	1PH ~ 230V ±15%
Max. Load Power Capacity	TIG:5.63KVA MMA: 6.60KVA PAC: 8.20KVA
Rated Duty Cycle(40°C)	60%
	100%
Welding Current/Voltage Range	TIG: 200A/18V MMA: 160A/26.4V PAC: 50A/105V
	TIG: 160A/16.4V MMA: 130A/25.2V PAC: 40A/100V
	TIG: 5A/10.2V~200A/18V MMA: 10A/20.4V~160A/26.4V PAC: 20A/90A~50A/105V
Open Circuit Voltage	TIG/MMA:70V~80V PAC:260V~290V
Power Factor	0.8
Efficiency	80%
TIG Pulse Peak Current	5A~200A
Base Current	5A~200A
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~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
Spot Arc Time	0.1S~10S
MMA Arc Force	10A~160A
Hot Start Time	10A~160A
Hot Start Current	0.1~3S
PAC Required Air Pressure	0.3~0.5MPa
Gas Pro-flow/Retard Time	0.1S~15S
Quality Cutting Thickness(500mm/min)	12mm
Severance Cutting Thickness(125mm/min)	22mm
Dimension (LxWxH)	410x190x305mm
Weight (KG)	25.7KG

### Accessories

#### Multi MIG-200Di/200MV

##### For Standard accessories



TIG torch: TIG-26



Electrode holder and Earth clamp



Plasma torch: HT-50CB

##### For Optional accessories



Argon gas regular



TIG torch: TIG-26



Water-cooling unit: WC-100



Foot Pedal



Plasma torch: PT-60



Trolley: WT-100



Hand-hold Remote Controller for TIG torch

# STC-205Di

## 3-IN-1 Multi-process: DC TIG + Plasma Cutting



### Quick Specs



**Processes:**  
DC TIG, MMA(Stick)  
Plasma Cutting

**Applications:**  
Metal Fabrication  
Maintenance and Repair  
Auto Body  
Light Industrial

**Input Power:** 230V, 1-Phase

**Amperage Range:**  
TIG: 5-200A  
PAC: 20-50A  
MMA: 10-160A

**Rated Output at 40°C (104°F):**  
TIG: 200A at 18V @60% Duty Cycle  
PAC: 50A at 100V @60% Duty Cycle  
MMA: 160A at 26.4V @60% Duty Cycle

**Weight :** 15KG

### CUT PERFORMANCE



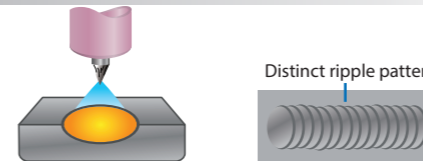
Big cutting power in a small package - the industry's most portable and powerful 50-amp plasma cutter offers 10mm mild steel cutting.

Hand Torch		
Recommended	Maximum	Severance
12mm	17mm	20mm
Rated Cut @ 500 mm/min	Maximum Cut @ 250 mm/min	Sever Cut @ 125 mm/min

### Pulsed TIG Controls

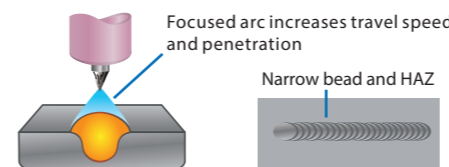
The Pulsed TIG function switches the amperage from a high(peak) to a low(background) at a set rate(PPS). Pulsing can reduce heat input by lowering the average amperage, increasing control of the weld puddle, penetration and distortion. The following parameters can be adjusted for desired results:

#### 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.

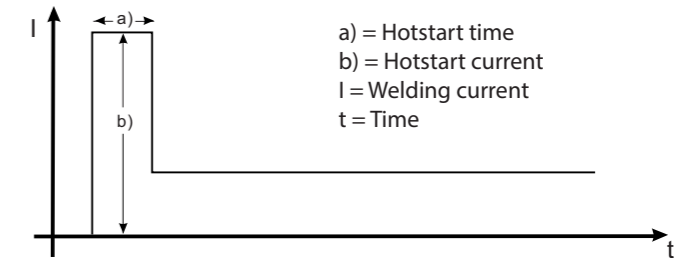
#### High-Speed Pulse



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



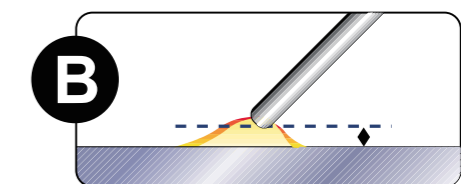
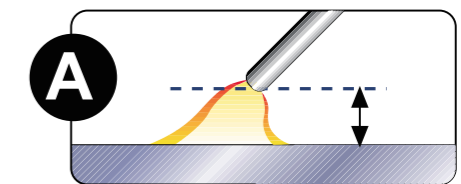
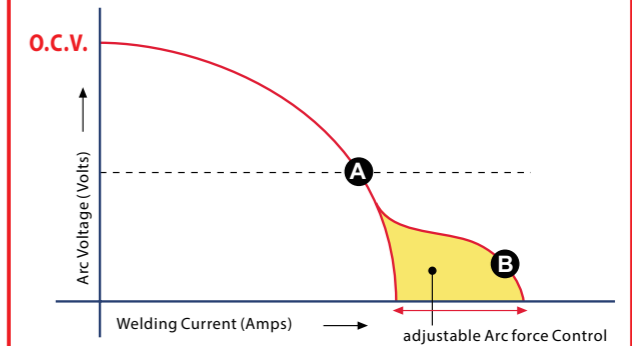
### Arcforce correction (welding characteristics)

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

### 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.**
- **Pilot Arc for superior arc performance and easy start.**
- **Rapid Arc Restrike:** fast cutting through gaps, even expanded metal.
- **Powerful with heavy duty: 50A @60%.**
- **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**

### ARC FORCE CONTROL



# STC-250Di

## Technical specifications

Item No	STC- 250Di
Rated Input Voltage	1PH ~ 230V ±15%
Max. Load Power Capacity	TIG: 5.63KVA MMA: 6.60KVA PAC:8.20KVA
Rated Duty Cycle(40°C) 60%	TIG: 200A/18V MMA: 160A/26.4V PAC: 50A/105V
100%	TIG: 160A/16.4V MMA: 130A/25.2V PAC: 40A/100V
Welding Current/Voltage Range	TIG: 5A/10.2V~200A/18V MMA: 10A/20.4V~160A/26.4V PAC: 20A/90A~50A/105V
Open Circuit Voltage	TIG/MMA:70V~80V PAC:260V~290V
Power Factor	0.8
Efficiency	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
Spot Arc Time	0.1S~10S
MMA Arc Force	10A~160A
Hot Start Time	10A~160A
Hot Start Current	0.1~3S
PAC Required Air Pressure	0.3~0.5MPa
Gas Pro-flow/Retard Time	0.1S~15S
Quality Cutting Thickness(500mm/min)	12mm
Severance Cutting Thickness(125mm/min)	22mm
Dimension (LxWxH)	410X190X305mm
Weight (KG)	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

## Accessories

### STC-205Di

#### For Standard accessories



TIG torch: TIG-26



Electrode holder and Earth clamp



Plasma torch: HT-50CB

#### For Optional accessories



Argon gas regular



TIG torch: TIG-26



Water-cooling unit: WC-100



Foot Pedal



Plasma torch: PT-60



Trolley: WT-100



Hand-hold Remote Controller for TIG torch