

ISO 9001 Registered



CAT. NO. KB49809

# ACCUTIG 300P · 500P

IC·Thyristor Controlled  
AC/DC Pulsed TIG Welding Machines



DAIHEN Corporation

2002/01/11

# Functions including pulse function

- DC Stick
- Rectangular Wave AC Stick
- TIG Arc Spot

Rectangular Wave AC·DC  
Pulsed TIG Welding Machines

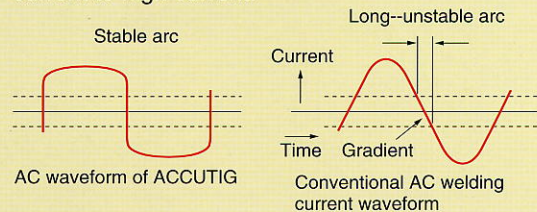
**ACCUTIG**

**300P·500P**

## Stability of welding current and TIG welding function are sought after to achieve stable welding.

### Dynamic reactor control rectangular wave AC

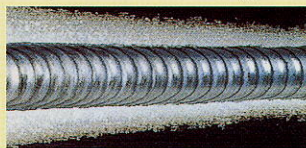
In addition to OTC's original "IC thyristor control", using the newly developed dynamic reactor control, stable rectangular wave AC current is obtained in the whole range from low current to high current.



### Adjustable cleaning width function (rectangular wave AC balance control)

Cleaning action of arc is indispensable in aluminum welding, which has a large effect on welding quality such as bead appearance and penetration, etc.

ACCUTIG can continuously adjust the cleaning width by utilizing a single knob to balance control of rectangular wave AC. An optimum cleaning width can be obtained to conform to the material and groove shape.



Wide ← Normal → Narrow  
Example of adjustment of cleaning width

### Arc spot timer function

The arc spot timer can make spot welding of stainless steel or mild steel easy.

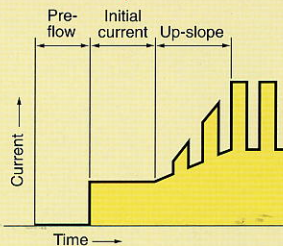
### Double operation function

The welding conditions (base current, pulse current) can be set either by the front panel or by the optional remote control box. Either control may be selected depending on the working environments or convenience of use.



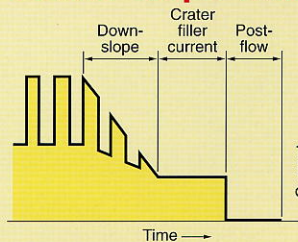
Easy-to-see and Easy-to-use Control Panel

### Preflow, initial current, and up-slope function



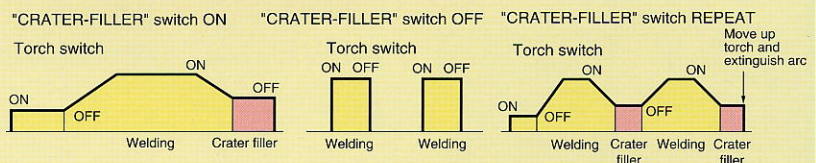
A favorable arc start is obtained by utilizing the preflow function and high frequency start circuit. Standard equipment also includes initial current and up-slope function to prevent melt-down of thin plates during the welding start or defective penetration or defect in thick plates.

### Down-slope function/crater filler function



Crater filler function is to prevent caving a crater or crack due to shrinking of the crater at end of TIG weld, the down-slope function is for transferring the welding current gradually to the crater filler current and both are included in the standard equipment.

### 3 kinds of crater-filler function



### Power saving function

The input circuit is cut off automatically by the power saving circuit when welding is over, and energy is saved substantially.

### User-friendly design

- Ammeter included in standard equipment
- Easy-to-connect output terminal
- Pressure detecting function of cooling water when using water-cooled torch

# High quality welding achieved with many TIG welding func

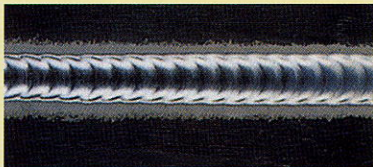
## 7 welding modes

- DC PULSED TIG
- Rectangular Wave AC Pulsed TIG
- DC TIG
- Rectangular Wave AC TIG

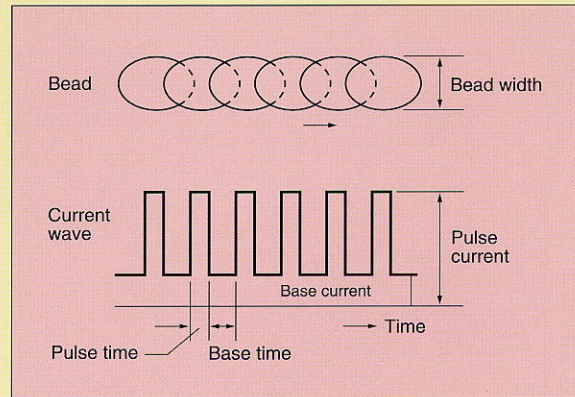
## High performance, high quality welding

### High quality welding is achieved by pulsed TIG welding.

In ACCUTIG P, the welding current is changed in pulses at specific intervals. The base metal is melted while the pulse current is flowing, and while the base current is flowing, the molten pool is cooled and solidified. Welding spots formed periodically are joined to perform TIG welding at high performance and high quality.



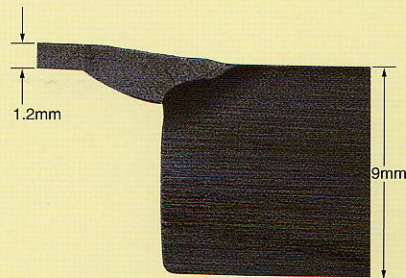
Bead Appearance in Rectangular Wave AC Pulsed TIG Welding of Aluminum



### Difficult welding done easily by pulsed TIG.

#### Powerful in dissimilar metals, different plate thicknesses, or gap welding.

Outstanding power while welding copper and mild steel, stainless steel and mild steel, or joints widely different in plate thickness. Joints with gaps or misalignment can be easily welded by the pulse arc function.

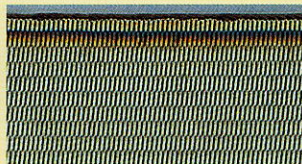
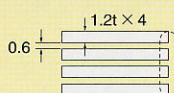


Macrostructure of joints welding section different in plate thickness

#### Also easy to weld edge joints, corner joints, or lap joints.



Macrostructure of edge joint welding section



Appearance of edge joint welding of stainless steel wire mesh

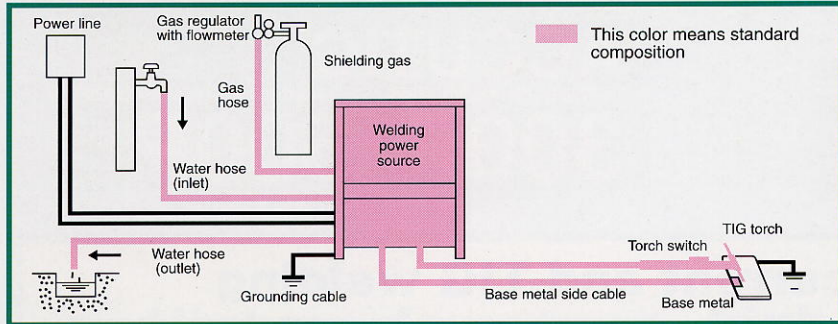
The pulse current allows the arc spread properly, and the fusion of bead and base metal is excellent. Edge corners or lap joints of thin plates can be welded easily, and a uniform result is obtained.

#### Easy to maintain uniform penetration in welds which is indispensable for pipe welding.

The molten pool can be controlled freely by the pulse current and base current adjustment. High quality welding results are obtained in penetration welding, overhead welding and vertical welding where drooping of the bead is a problem.

Welding heat input can be controlled easily, and thermal distortion is less, and it is capable of preventing welding defects such as improper fusion, lack of penetration, cracks or blowholes.

## Connection Diagram



## Specifications and Standard Accessories

Model	ACCUTIG 300P		ACCUTIG 500P	
<b>●Welding Power Source</b>				
Specifications				
Input Voltage	V	Indicate input voltage when ordering		
TIG Arc Starting Method	High Frequency			
Phase	Single-phase			
Rated Frequency	Hz	50/60		
Rated Input	TIG	KVA	28.8 (12.9KW)	47.0 (27.9KW)
	Stick	KVA	23.8 (15.1KW)	40.2 (26.7KW)
Rated Duty Cycle	%	*1	40	*1 60
Max. No-load Voltage	V		78	79
Initial Voltage (DC TIG)	V		100	100
DC Output	TIG	A	5-300	5-500
	Stick	A	20-300	20-500
AC Output	TIG	A	20-300	20-500
	Stick	A	20-300	20-500
Rated Load Voltage	TIG	V	22	30
	Stick	V	32	40
Initial - Crater-Filler Current (TIG)	DC TIG	A	5-300	5-500
	AC TIG	A	20-300	20-500
Crater-Filler Control	ON, OFF, Repeat change-over system			
Time Interval	Up-slope	Sec.	0.1-5	
	Down-slope	Sec.	0.1-5	
	Gas Pre-flow	Sec.	0.3	
	Gas Post-flow	Sec.	3-20	3-50
Arc Spot Timer		Sec.	0.2-5	
		Sec.	0.03-1.2	
Pulse TIG Function	Pulse	Sec.	0.05-2.5	
	Base	Sec.		
Cleaning Width Adjustment	Cleaning width is adjusted by changing the electrode ⊕ time			
Torch Cooling	Air-cooled/Water-cooled			
Outside Dimensions (W×D×H)	mm		460×663×859	508×724×895
Mass	Kg		176	273

### Standard Accessories

Glass Enclosed Fuse 5A			1	
Glass Enclosed Fuse 10A			2	
Cartridge Fuse 10A			1	
<b>●Welding Torch</b>				
Specifications				
Rated Welding Current	DC	A	300	500
	AC	A	260	400
Duty Cycle	%		100	
Cooling Method	Water-cooled			
Electrode	mm φ		*2 (0.5), (1.0), (1.6), (2.0), (2.4), (3.0), 3.2, (4.0)	*2 (1.0), (1.6), (2.4), 3.2, 4.0, (4.8), (6.4)
Cable Length	m		4 or 8	
Standard Accessories				
Torch Switch			1	
Metal Nozzle No.10			—	1
Collet 4.0			—	1
Tungsten Electrode 4.0			—	1
<b>●Cable Hose</b>				
			BAB-3501	BMRH-5001

\*1 In case of using AC BALANCE "MAX. PENETRATION" in AC TIG welding, Duty Cycle is 30% (AEP-300) and 50% (AEP-500).  
\*2 When electrode size shown in parenthesis is used, proper optional accessories suited to the chosen electrode should be used.

In accordance with DAIHEN's policy to make continuing improvements, design and/or specifications are subject to change without notice and without any obligation on the part of manufacturer.

## DAIHEN Corporation

5-1, Minamisenrioka, Settsu, Osaka 566-0021, Japan  
Phone: (Country code 81) 6-6317-2506  
Fax : (Country code 81) 6-6317-2583

## Options

### ●Welding Torch

Model		AW(F)-17	AW-2041	AW-2081	AW(F)-26
Rated Welding	DC	A	150	200	
Current	AC	A	130	160	
Duty Cycle	%		50	35	50
Cooling Method	Air-cooled				
Electrode	mm φ	0.5~2.4		0.5~4.0	
Cable Length	m	4 or 8	4	8	4 or 8

### ●Extension Cable for Torch

Model	4m	11m	16m
AW(F)-17	BAWH-1504	BAWH-1511	BAWH-1516
AW-2041-2081			
AW(F)-26	BAWH-2004	BAWH-2011	BAWH-2016
AW-18	BAWS-3004	BAWS-3011	BAWS-3016
AW-12	BAWS-5004	BAWS-5011	BAWS-5016

### ●Remote Control Box with 4m cable

For AEP-300 : P6699Z00  
For AEP-500 : K5111C00

### ●Foot Current Control (Part No. K1104F00)

### ●Foot Switch (Part No. 4259-004)



## OTC TIG welding machine line-up

**Inverter Control AC/DC Pulsed TIG Welding Machines**

**INVERTER ACCUTIG 300P·500P**

Highest-quality AC/DC Pulsed TIG welding machine achieve high quality welding of aluminum by varied AC TIG current waveforms and pulse functions.





**Inverter Control DC Pulsed TIG Welding Machines**

**INVERTER ARGO 200P·300P**

Highest-quality DC pulsed TIG welding machine for high quality welding of stainless steel and nonferrous metals

**Inverter Control Ultra-compact, Light-weight DC Pulsed TIG Welding Machine**

**INVERTER MINI TIG 200P**

Only A4 size small and 8kg light, ultra-compact, light-weight DC pulsed TIG Welding Machine for on-site welding jobs



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