



DAIHEN Inc.

ADVANCED WELDING & ROBOTIC SYSTEMS

DA-300P Digital AC + DC Hybrid Pulsed TIG Welding Machine

Inverter D SERIES



The DA-300P

Variable AC Frequency Control

The DA-300P features an all-new AC Frequency variable control system that provides the ideal conditions for various aluminum thin plate welding applications. The AC Frequency has a greater arc concentration when compared with conventional machines, making it possible to obtain the desired weld penetration and heat input.

The AC Frequency control can be set between 50 and 200 Hz for desired frequency and bead shape, while keeping noise in the production environment to a minimum.

AC Frequency Control

Even when the AC frequency is increased, there is only a slight decrease in welding current, resulting in consistent weld quality.

Features & Benefits

- Improved arc concentration improves overall welding capabilities, from fillet welds to thin plate materials.
- Several different welding modes (Aluminum, Steel, Stainless) that improve weld quality.
- Silent Pulse function improves thin plate weld material.
- AC frequency range from 50 ~ 200 Hz improves heat input control.
- Improved instant arc starts.
- AC+DC Hybrid mode provides long life for Tungsten electrode.
- Capable of Standard, Hard, and Soft AC waveforms for high quality aluminum welding.
- Support for both manual and robotic applications.
- User-friendly touch panel.
- Analog and digital remote pendants optionally available.
- Improved crater fill repeat function that prevents damage to the electrode and base material.

Variable AC Frequency Control Examples

The DA-300P comes equipped with new AC Frequency Variable Control, which provides the following features:

- Improved arc concentration improves overall welding capabilities, from fillet welds to thin plate materials
- Controllable heat input allows for increased bead width in thin plate butt welding, and easier control of preventing burn-through for thin plate materials

Even if the AC frequency increases, the weld current remains largely unchanged, providing uniform welding quality.

AC Frequency and Weld Penetration Comparison

Frequency	50Hz	100Hz	200Hz
Cross Section			
	Wide Bead	Narrow Bead Increased Penetration)	

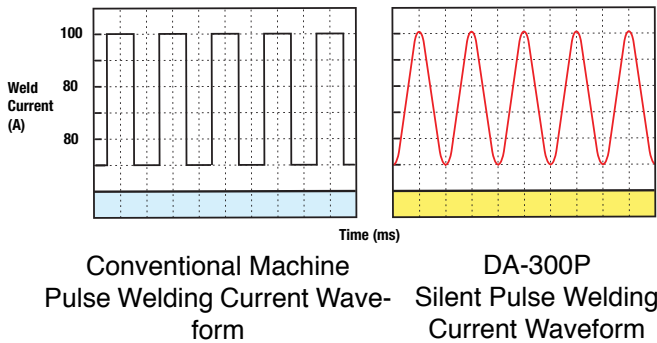
Weld Current: 200A, Travel Speed: 40 cm/min, Plate Thickness: 6mm (A5052)

Advanced AC + DC Hybrid TIG Welding Technology

Silent Pulse Feature

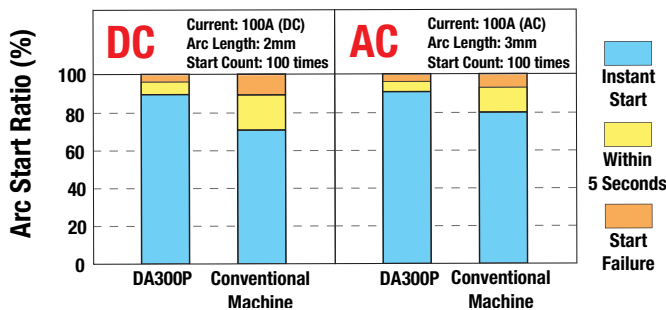
The new Silent Pulse Feature of the DA-300P reduces the arc noise from the DC pulse wave, resulting in the following key advantages:

- Prevention of burn-through and heat distortion of thin materials through heat input control.
- Concentrated welding arc since average welding current is not reduced.
- Substantially improved working environment due to reduced arc noise.



Instant Arc Start Improvements

Higher rate of successful instant arc starts: the digital reactor of the DA-300P improves over previous generations of TIG welding machines.



STANDARD SPECIFICATIONS

Item	Specification		
Model Name	DA-300P		
Rated Input Voltage	460 ± 10% (50 / 60 Hz)		
Number of Phases	Three Phase		
Rated Input	AC TIG	12.6kVa (9.5kW)	
	DC TIG	12.1kVa (9.1kW)	
	Stick Welding	12.9kVa (9.7kW)	
Rated Duty Cycle	40%		
Maximum No-Load Voltage	66 V		
Rated Load Voltage	AC TIG	22 V	
	DC TIG	22 V	
	Stick Welding	30 V	
DC Output Current	DC TIG	4 ~ 300 A	
	Stick Welding	10 ~ 250 A	
AC TIG Output Current	AC Wave Type	Hard	10 ~ 300 A
		Normal	10 ~ 300 A
		Soft	10 ~ 200 A
AC+DC Hybrid Output Current	AC Wave Type	Hard	10 ~ 300 A
		Normal	10 ~ 300 A
		Soft	10 ~ 200 A
Initial - Crater Fill Current (TIG only)	AC Wave Type	Hard	10 ~ 300 A
		Normal	10 ~ 300 A
		Soft	10 ~ 200 A
	DC	4 ~ 300 A	
Gas Pre-flow Range	0.1 ~ 20 sec		
Gas Post-flow Range	0.1 ~ 30 sec		
Up-slope Range	0.1 ~ 10 sec		
Down-slope Range	0.1 ~ 10 sec		
Pulse Frequency Range	0.1 ~ 500 Hz		
Pulse Width	50 % (Adjustable to 5~95%)		
AC Frequency Range	50 ~ 200 Hz		
Cleaning Width Adjust	-30 ~ 30 (Electrode Positive Duration 5~50%)		
AC+DC Change-over Frequency	0.1 ~ 50 Hz		
Crater Fill Control	On, Off, Repeat		
Arc Spot Timer	0.1 ~ 10 sec		
Max. Program Storage	100 programs		
Temperature Rise	+320° F (+160° C)		
External Dimensions	9.8" x 25.2" x 21.5" (250mm x 640mm x 545mm)		
Weight	101.0 lbs. (45.8 kg)		



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