



TIG DA300P

AC+DC Hybrid Pulse TIG Welding Machine

D Digital Inverter
Welding Machine
SERIES

AC+DC Hybrid Pulse TIG Welding Machine

Redefining the meanings of
“High Quality” and “Ease of Use”

- Easily regulate current via hand torch switch
- Improve quality at every welding place through a wide variety of welding modes
- Improve welding performance of thin plates with silent pulse function
- Improved arc concentration allows for better workability of fillet and butt welding



DAIHEN Corporation

Redefining the meanings of "High Quality" and "Ease of Use"

AC+DC Hybrid Pulse TIG Welding
DA300P

The DA300P was designed to meet our users requests for high quality results and ease of use.

We have met this challenge by providing improved weld modes, weldtime current control, and crater-time oxidation prevention.

High Quality

Improved & Added Features Provide the Highest Quality of Welding

High quality

1 New AC Frequency Variable Control (50-200 Hz)

Increase Weld Performance of Thin Aluminum Plates via High AC Frequency

- Improved arc concentration allows for better workability of fillet and butt welding
- By controlling heat input (via improved heat input efficiency), bead width increases in thin plate butt welding, and melt through becomes easier to control.



Pulsed current 200A, Base current 20A, Pulse frequency 2Hz
AC frequency: 150Hz, Welding speed: 20cm/minute, Plate thickness: 4mm (A6062)



Welding current: 130A, AC frequency: 150Hz
Welding speed: 25cm/minute, Plate thickness: 3mm (A6063 + Casting)

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

(Relationship between AC frequency and depth of penetration)

| Frequency | 50Hz | 100Hz | 200Hz |
|---------------------------|---------------|--|-------|
| Macroscopic cross section | | | |
| | Bead is wide. | Bead is narrow (The depth of penetration is fixed.). | |

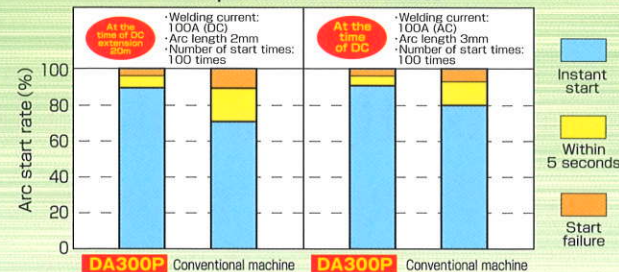
Welding current: 200A, Welding speed: 40cm/minute, Plate thickness: 6mm (A5052)

High quality

2 Assured Arc Starts

- Instant arc starts are improved, even when extension cables are used.
- Effectively eliminates start failures that occur during multi-pass aluminum AC welding.

Comparison of start rate



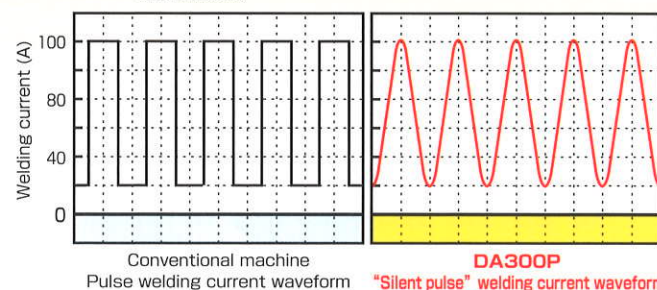
High quality

3 Realizing high-quality welding results

Newly-developed "Silent Pulse Function"

(Available only during DC Pulse mode)

- By using the restrictive effects of heat input, you can also prevent from melt-through of thin plates.
- The sound of the arc is reduced, improving the work environment.



Ease of Use

1

I Want to Regulate the Current During Welding!

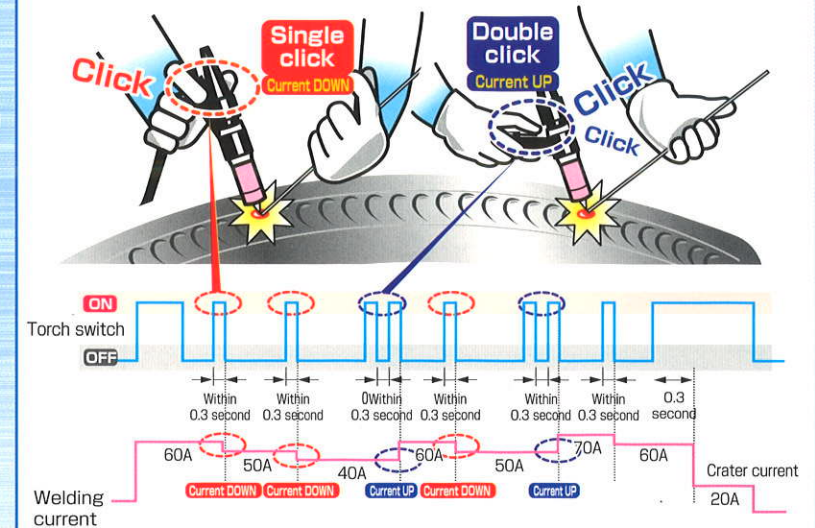
User Request

Weld Current Regulating Function via Torch Switch

The DA300P comes with a newly-developed weld current regulating function that allows the user to change the output weld current during mid-weld. By clicking on a switch on the torch, the user can increase or decrease weld output, allowing for optimal welding conditions. The step amount of current change is arbitrarily defined by the user.

This feature provides optimal control for more delicate metals, such as Aluminum, which typically requires slight current regulation.

Ideal for Varying Plate Thickness or Large Gaps



Ease of Use

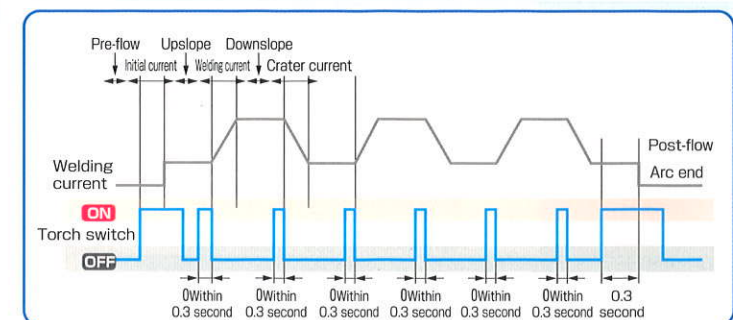
2

I Want to Prevent the Oxidation of Craters!

User Request

Crater (Repeat) Function

It is now possible to send the command for the Crater (Repeat) Function at the end of the weld via the torch switch. This helps prevent from oxidation at the crater and on the Tungsten electrode, which created problems in conventional methods.



User-friendly Touch Panel Provides Improved Operability & Feedback

One Key - One Operation Touch Panels and Large LED Panels Provide Improved Operability & Visibility

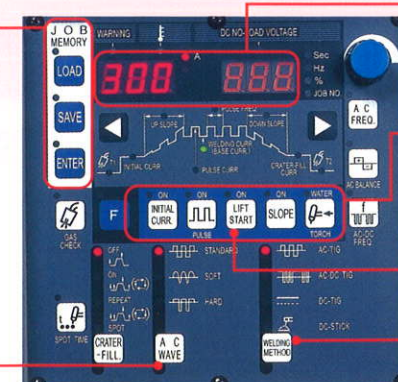
Recordable Welding Conditions for Optimal Reproduction (Stores up to 100 Conditions)

The DA300P is capable of storing up to 100 different welding conditions for reproducing of welding conditions. Custom tailor your own welding conditions to meet your needs.

Optimized AC Waveform Modes for High-Quality Aluminum Welding

AC Waveform Modes and Feature Examples

| Basic welding waveform | Appearance of bead | Welding speed | Arc sound | Thin plate butt joint corner | Thin plate fillet welding | Thick plate | Use of filler rod | Penetration | Electrode consumption |
|------------------------|--------------------|---------------|-----------|------------------------------|---------------------------|-------------|-------------------|-------------|-----------------------|
| AC-DC hybrid TIG | Standard | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| AC rectangular wave | Hard | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| AC sine wave | Soft | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| AC frequency | High | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Low | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |



Large LED Display

Monitors current during weld and displays average output current after welding ends. Also displays program number and error codes.

Plentiful Welding Functions

Start Method Selection

In addition to high frequency starts, touch start is also included as a standard feature.

Four Types of Welding Processes (Standard)

Corresponds to various kinds of welding needs.

Unique, User-Friendly Design

Advanced Double Operation System

OTC's unique control allows for system operation via both the machine panel and remote controls. Both analog and digital remote controls are offered as an option. In addition to the conventional analog remote control, OTC now offers a fully digital remote control for full weld condition control.



Analog remote control

Part number : K5048B00



Digital remote control

Type : E-2452

Simplified Connections of Dedicated Torch

OTC standard TIG torches now utilize DINSE connectors, thereby making torch switching a breeze. Conventional torches may also be attached with dedicated adapters.

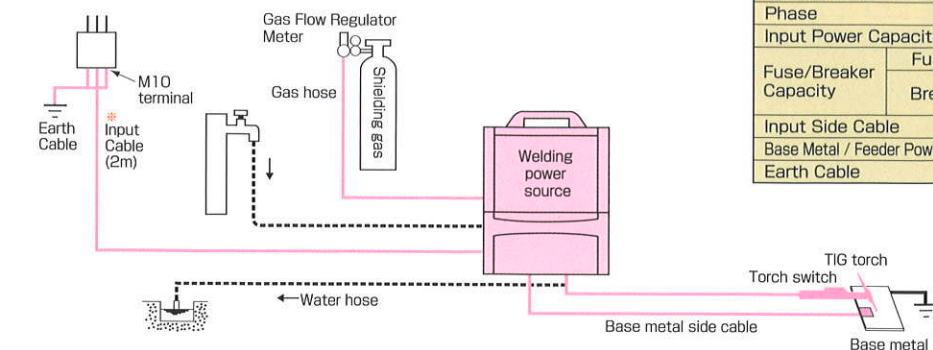


Dust-Proof Filters

Eliminates harmful dust and grime from entering the body of the DA300P, which helps prolong the machines life.

● Connection Diagram

Colors indicate standard composition



*2m Input Cable is attached to Welding Power Source.

■ Input Power Capacity and Cable Specifications

| Item | Model name | DA-300P |
|---------------------------------|-----------------|----------------|
| Power Source Voltage | V | 400±15% |
| Phase | — | 3 phase |
| Input Power Capacity | kVA | more than 13.2 |
| Fuse/Breaker Capacity | Fuse | A |
| | Breaker | A |
| Input Side Cable | mm ² | more than 4 |
| Base Metal / Feeder Power Cable | mm ² | more than 38 |
| Earth Cable | mm ² | more than 4 |

● Standard Specifications

| General Names | | DA300P |
|---------------------------------|----------|---|
| ● Welding Power Source | Type | DA-300P |
| Phase | | 3 phase |
| Rated Input Voltage | V | 400±15% |
| Rated Input | AC TIG | 12.5 (9.4kW) |
| | DC TIG | 11.9 (8.9kW) |
| | DC STICK | 13.2 (10.0kW) |
| Rated Duty Cycle | % | 40 |
| Max. No-load Voltage | V | 58 |
| Rated Load Voltage | AC TIG | 22 |
| | DC TIG | 22 |
| | DC STICK | 30 |
| Range of Output Current (DC) | DC TIG | 4~300 |
| | DC STICK | 10~250 |
| Range of Output Current (AC) | Hard | 10~300 |
| | Standard | 10~300 |
| | Soft | 10~200 |
| AC+DC Hybrid Output Current | Hard | 10~300 |
| | Standard | 10~300 |
| | Soft | 10~200 |
| Initial/Crater Filler Current | Hard | 10~300 |
| | Standard | 10~300 |
| | Soft | 10~200 |
| | D | 4~300 |
| | C | 10~200 |
| Gas Pre-Flow | Sec. | 0.1~20 |
| Gas Post Flow | Sec. | 0.1~30 |
| Up-slope | Sec. | 0.1~10 |
| Down-slope | Sec. | 0.1~10 |
| Pulse Frequency | Hz | 0.1~500 |
| Pulse Width | % | 50 (Possible to change functionkey 5~95%) |
| AC Frequency | Hz | 50~200 |
| AC Balance | | -20~20 (Percentage of positive electrode period, 5~50%) |
| AC+DC Switching Frequency | Hz | 0.1~50 |
| Crater Filler Control | | [on] [off] [Repeat] change type |
| Arc Spot | Sec. | 0.1~10 |
| Max. Program Storage | | 100 |
| External Dimensions (W x D x H) | mm | 250×640×544 (Except handle) |
| Weight | kg | 44 |
| Start Type | | High frequency start/Touch start |
| ● Welding Torch | Type | AWD-17 AWD-26 AWD-18 |
| Rated Current | A | 150 (DC), 130 (AC) 200 (DC), 160 (AC) 300 (DC), 260 (AC) |
| Rated Duty Cycle | % | 50 50 100 |
| Cooling Method | | Air cooling Air cooling Water cooling |
| Applicable Electrode Diameter | mm | (05), (1.0), (1.6), (2.0), (2.4) *1 (05), (1.0), (1.6), (2.0), (2.4), (3.2), (4.0) *2 |
| Cable Length | m | 4, 8 |

*1 Option is necessary to use Tungsten electrode except for 1.6.

*2 Option is necessary to use Tungsten electrode except for 2.4.

● Welding torch



* Please contact your distributor for questions regarding combinations of other torches

Option

■ Remote control

Convenient for operating away from power source.

● Analog remote control

| | Part number |
|-----------------------|-------------|
| Analog remote control | K5048B00 |

● Digital remote control (Need the following 3-piece set)

| | Part number |
|-------------------------|-------------|
| Digital remote control | E-2452 |
| Control cable (10m) | BKCAN-0410 |
| Control cable (20m) | BKCAN-0420 |
| CAN Communication Board | K5422B00 |



Analog remote control



Digital remote control

■ Torch adapter

Necessary to connect a conventional torch to the welding power source.

| | Part number |
|------------------------|-------------|
| For air-cooled AW-17 | BBAWD-1701 |
| For air-cooled AW-26 | BBAWD-2601 |
| For water-cooled AW-18 | BBAWD-1801 |

■ Torch extension cable

The conventional extension cable can be used for both AW and AWD model torches, however, the AW requires the above mentioned Torch Adapter.

| Type | For 4m | For 11m | For 16m |
|------------------------|-----------|-----------|-----------|
| Air-cooled AW (D)-17 | BAWE-1504 | BAWE-1511 | BAWE-1516 |
| Air-cooled AW (D)-26 | BAWE-2004 | BAWE-2011 | BAWE-2016 |
| Water-cooled AW (D)-18 | BAWE-3004 | BAWE-3011 | BAWE-3016 |

■ Extension remote control cable

| For 4m | For 11m | For 16m |
|------------|------------|------------|
| BKCPJ-0404 | BKCPJ-0411 | BKCPJ-0416 |

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.

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