



DAIHEN Inc.

CAT. NO. 458

# ADVANCED WELDING & ROBOTIC SYSTEMS

*DW-300 Digital AC / DC MIG Pulse Arc Welding Machine*

## D Inverter SERIES



The DW-300

### Features & Benefits

- Designed for both manual and robotic applications.
- Capable of welding very thin materials less than .030" (0.8mm).
- Controllable heat input and penetration to avoid burn-through even when gaps exist.
- Reduces heat input 30~40% at the same wire feed rate as DC MIG processes to minimize distortion.
- Greater gap tolerance makes parameter setting less sensitive.
- Capable of 5 weld processes: AC Wave Pulse MIG, DC Wave Pulse MIG, AC Pulse MIG, DC Pulse MIG, DC Pulse MAG.
- Less welding fumes and cleaner bead appearances for aluminum applications.
- Digital turbo startup function improves arc starting performance.
- 36 pre-optimized pulse wave forms for different wire types and diameters.
- Custom wave forms can also be stored to memory.
- Wave pulse mode offers a TIG-like bead appearance on aluminum.
- Controllable penetration ratios.
- Synchro MIG feature (via taught weaving function for Daihen robots) allows for optimal welding of thin-to-thick material.
- Ability to switch between AC and DC robotic processes on-the-fly for materials that vary in thickness.

### Revolutionary AC MIG Technology

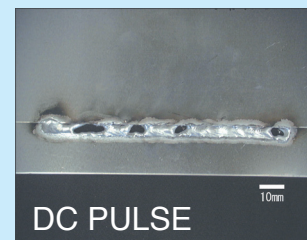
Are you tired of burn-through during thin plate welding? Do parts suffer from gaps that cannot be bridged? Do you spend a lot of time cleaning parts afterwards? Need to find a solution? Look no further than the DW-300 from OTC DAIHEN.

The DW-300 is the most advanced welding power supply to enter the market. By utilizing special AC waveforms that allow adjustment of the electrode negative (EN) half cycle, the DW-300 is capable of controlling the heat input. These features realize welding of thin plate material with greatly reduced heat distortion, and incredible gap bridging technology.

For welding thicker materials, the DW-300 supports a maximum output current of 300 Amps, which allows for stable welding and penetration for medium-thick plates.

### DC vs. AC Comparison

Below is a comparison of welds run on thin material with the exact same weld settings. The difference is the AC Pulse MIG process is much cooler and therefore does not burn-through.

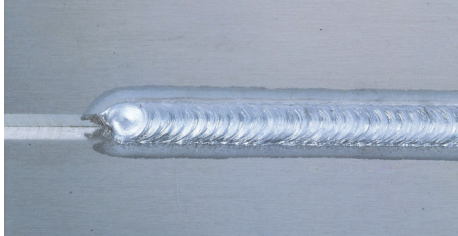


**Weld Current: 50A, Weld Voltage: 15V, Travel Speed: 31.5 IPM, Material: A5052 Aluminum, Gap: 1mm (.040")**

# Advanced AC MIG Welding Technology

## AC MIG Welding at 300A

Previous generation AC MIG welding machines were capable of achieving weld currents up to 200 Amps, which limited the welding current range. The DW-300 has a maximum rated output current of 300A, which provides more extensible usage in your production environment.



**Weld Current: 210A,  
Weld Voltage: 23V,  
Travel Speed: 21.7 IPM,  
Weld Wire: A5183  
Aluminum, 1/16"**

## Incredible Gap Bridging Technology

The DW-300 adopts a new synergic AC pulse arc control system that simplifies parameter setting. The EN current, time, welding voltage, and welding current are all automatically set by directly changing the EN ratio. Weld deposition can be individually adjusted since changing EN ratio does not change the set weld current, and heat input to the base material does not change.

EN Ratio	Bead Appearance	Cross Section
0%		
10%		
20%		

**Weld Current: 80A, Travel Speed: 31.5 IPM, Base Metal: A5083, Plate Thickness: .059", Weld Wire: A5356, 1/16" diameter**

## Included Welding Modes

Welding Method	Applicable Wire	Wire Diameter
AC Wave Pulse	Hard Aluminum	.040", 3/64", 1/16" (1.0mm, 1.2mm, 1.6mm)
	Soft Aluminum	1/16" (1.6mm)
DC Wave Pulse	Hard Aluminum	.040", 3/64", 1/16" (1.0mm, 1.2mm, 1.6mm)
	Soft Aluminum	1/16" (1.6mm)
AC Pulse MIG	Hard Aluminum	.040", 3/64", 1/16" (1.0mm, 1.2mm, 1.6mm)
	Soft Aluminum	1/16" (1.6mm)
	Stainless Steel	.030", .035", .040", .045" (0.8, 0.9, 1.0, 1.2mm)
	Mild Steel	.030", .035", .040", .045" (0.8, 0.9, 1.0, 1.2mm)
DC Pulse MIG	Hard Aluminum	.040", 3/64", 1/16" (1.0mm, 1.2mm, 1.6mm)
	Soft Aluminum	1/16" (1.6mm)
	Stainless Steel	.030", .035", .040", .045" (0.8, 0.9, 1.0, 1.2mm)
DC Pulse MAG	Mild Steel	.030", .035", .040", .045" (0.8, 0.9, 1.0, 1.2mm)

OTC DAIHEN Inc. reserves the right to change specifications without notice.

## STANDARD SPECIFICATIONS

### DW-300 Welding Power Supply

Item	Specification
Model Name	DW-300
Welding Modes	AC Wave Pulse MIG, DC Wave Pulse MIG, AC Pulse MIG, DC Pulse MIG, DC Pulse MAG
Rated Input Voltage	460 ± 10% (50 / 60 Hz)
Number of Phases	3-phase
Rated Input	18 kVA (16 kW)
Rated Duty Cycle	80%
Rated Output Current	300 A
Rated Load Voltage	29 V
Output Current Range	30 ~ 300 A
Output Voltage Range	12 ~ 36 V
Maximum No-Load Voltage	81 V
Max. Program Storage	100 programs
Temperature Rise	+320° F (+160° C)
External Dimensions	11.8" x 27.8" x 23.4" (300mm x 705mm x 595mm)
Weight	145.5 lbs. (66.0 kg)

### D-Series Wire Feeders

Item	Specification		
Model Name	CM-741	CMRE-741	AF-4001
Style	Semi-automatic	Automatic & Robotic Retrofit	OTC DAIHEN Robots
Wire Feed Speed	866 in. / min (22 m/min)		
Usable Wire Diameters	Mild Steel	.024" ~ 1/16" (0.6mm ~ 1.6mm)	
	Stainless Steel	.030" ~ 1/16" (0.8mm ~ 1.6mm)	
	Hard Alum.	.040", .3/64", 1/16" (1.0mm, 1.2mm, 1.6mm)	
	Soft Alum.	1/16" (1.6mm)	
Weight	28.6 lbs. (13 kg)	15.4 lbs. (7 kg)	8.8 lbs. (4 kg)
External Dimensions	8.5" x 21.4" x 13.6" (215mm x 543mm x 350 mm)	N/A	N/A



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