



CAT. NO. A446C

ADVANCED WELDING & ROBOTIC SYSTEMS

DP-400/DP-500/DM-350/DM-500 Digital Controlled DC Inverter Arc Welding Machines

Simple Operation and Perfect Welds from Arc Start to End

D Inverter **SERIES**

Total Solutions from the
Single Source Provider

DP-400 and DP-500
PULSED MAG - PULSED MIG
CO₂ - MAG - MIG - FCAW

DM-350 and DM-500
CO₂ - MAG - MIG - FCAW

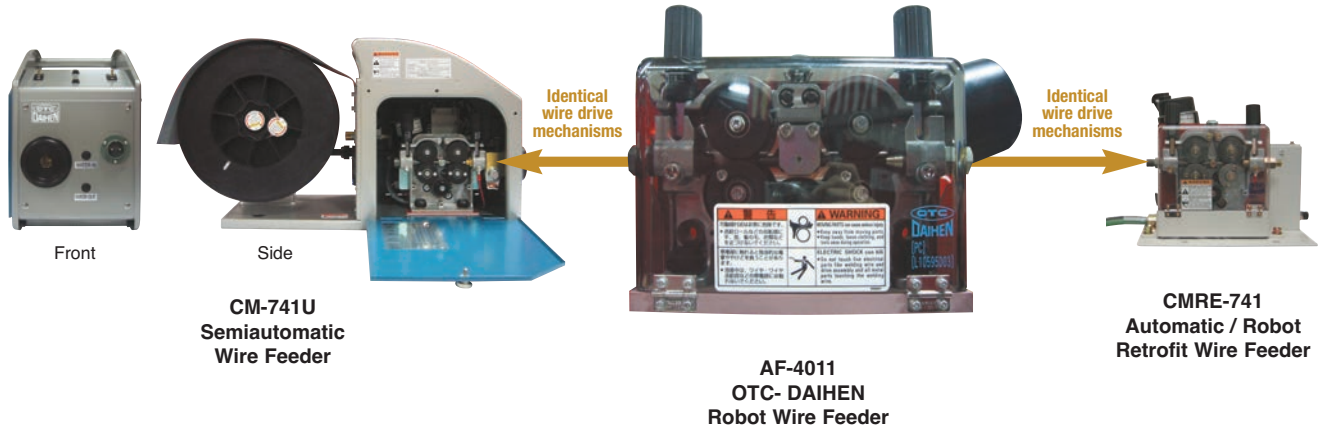


CM-741U
SEMI-AUTOMATIC
WIRE FEEDER

Smaller & Lighter
80 kHz IGBT
Digital Inverters

WIRE FEEDERS

D-SERIES WIRE FEEDERS




- All wire feeders feature 4-feed rolls for increased drive force for any wire alloy including soft aluminum
- All control circuits are built-in the power source offering incredible durability
- Fully enclosed wire drive mechanism keeps out dirt and grime
- Standard wire cover flap keeps dirt and grime away from the welding wire
- Fully enclosed wire reel cover available as an option
- Suitable for OTC-DAIHEN MIG guns or any other major brand

OTC-DAIHEN wire feeders come set up for hard wires and air cooled torches as standard features. The following items are available as options...

- K5735E00 Aluminum Wire Kit
- K5439E00 Fully Enclosed Wire Reel Cover
- K5735000 Water Cooled Hardware Kit

Wire Feeders			
ITEM	CM-741U	CMRE-741	AF-4011
Style	Semiautomatic	Auto & Robot Retrofit	OTC-DAIHEN Robots
Wire Feed Speed	866 in. / min. (22 m/min.)		
Usable Wire Diameters	Mild Steel	inch (.030), .035, .040, .045, (.052), (1/16); mm (0.8), .09, 1.0, 1.2, (1.4), (1.6)	
	Stainless Steel	inch (.030), .035, .040, .045, (.052), (1/16); mm (0.8), .09, 1.0, 1.2, (1.4), (1.6)	
	Hard Alum (AL/MG)	.040, 3/64, 1/16 in. (1.0, 1.2, 1.6 mm)	
	Soft Aluminum	3/64, 1/16 in. (1.2, 1.6 mm)	
Weight	28.6 lb (13 kg)	15.4 lb (7 kg)	9.3 lb (4.2 kg)
External Dimensions (W x D x H)	8.5 x 21.4 x 13.6 inches (215 x 543 x 350 mm)	N/A	N/A

Specifications subject to change without notice.

For more information on  brand products from DAIHEN INC. visit our web site at daihen-usa.com, or send us E-mail at sales@daihen-usa.com



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DL-350 Digital Low Spatter / Low Heat Input Arc Welding Machine

Inverter D SERIES



The DL-350

Features & Benefits

- Significant reduction in spatter for CO₂ / MIG / Stainless Steel DC welding applications.
- Support for low-alloy, high-strength steels.
- Thin plate welding mode greatly improves welding quality for thin plate applications.
- Capable of welding very thin materials less than .030" (0.8mm).
- Greater gap tolerance for thin optimized automation settings.
- Less welding fumes and cleaner bead appearances.
- Digital turbo startup function improves arc starting performance.
- 27 pre-optimized wave forms for different wire types and diameters, and different gases.
- Custom wave forms can also be saved.
- Improves penetration ratios.
- Reduces arc outage, prevalent in older machines.

Revolutionary Spatter Reduction Control

Would you like to reduce your overhead costs by reducing the amount of wire used and labor required for cleaning up spatter? Wouldn't it be nice to reduce the amount of spatter in your facility while producing cleaner welds? Look no further than the DL-350 from OTC DAIHEN.

The DL-350 is the world's first CO₂ / MIG / Stainless Steel welding machine to feature a dedicated Spatter Reduction Control, which reduces the amount of spatter generated by up to 75% when compared with conventional welding machines. The results are much cleaner welds with virtually no spatter, which greatly improves production efficiency in terms of overhead costs (wire, cleaning labor) and improved part appearance.

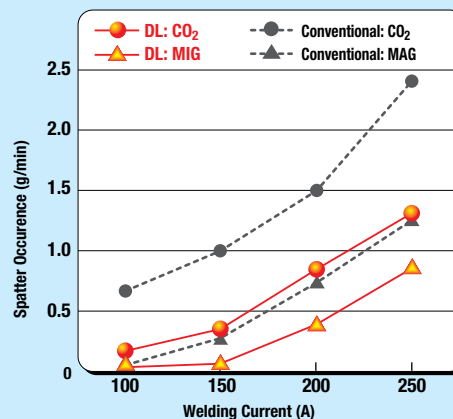


Conventional Welder

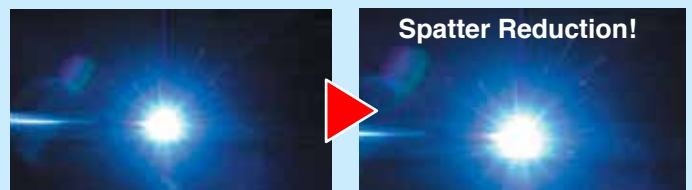
DL-350

Shield Gas: CO₂, Weld Current: 250A, Weld Voltage: 25.5V, Travel Speed: 80 cm/min, Plate Thickness: 4.5mm

DL-350 vs. Conventional Inverter Machine



Reduction of spatter by as much as 3/4 when compared to conventional welding machines.



Conventional Welder





DL-350

Advanced CO₂ / MAG / MIG Welding Technology

EN Thin Plate Welding Mode

Welds even very thin plate materials: the DL-350 utilizes an Electrode Negative (EN) welding mode to limit the heat input to the material. EN welding mode improves the welding of thin plates by:

- Protecting from burn-through of thin plate materials (less than 1mm in thickness).
- Providing higher rates of deposition at the (see below).
- Reducing the heat input to the material, which results in less heat distortion.

Gap	Bead Appearance	Cross Section Macro
0mm		
1mm		

EN Thin Plate Plate Welding Mode for 0.7mm Material

STANDARD SPECIFICATIONS

DL-350 Welding Power Supply

Item	Specification
Model Name	DL-350
Welding Modes	CO ₂ / MAG / MIG (Stainless Steel), available in Electrode Positive (Standard & High Speed) and Electrode Negative
Rated Input Voltage	208 ± 10% (50 / 60 Hz)
Number of Phases	3-phase
Rated Input	18.2 kVA (16.6 kW)
Rated Duty Cycle	60%
Rated Output Current	350 A
Rated Load Voltage	36 V
Output Current Range	30 ~ 350 A
Output Voltage Range	12 ~ 36 V
Maximum No-Load Voltage	85 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	126 lbs. (57.2 kg)

D-Series Wire Feeders

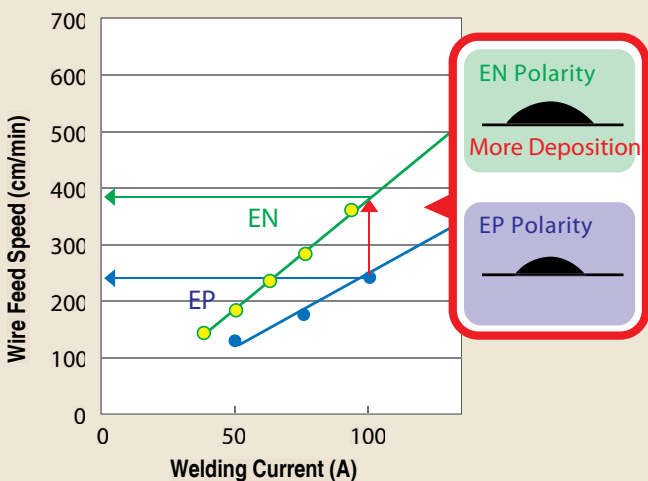
Item	Specification	
Model Name	CMRE-741	AF-4001/AF4011
Wire Feed Speed	866 in. / min (22 m/min)	
Usable Wire Diameters	Mild Steel	.024" ~ 1/16" (0.6mm ~ 1.6mm)
	Stainless Steel	.030" ~ 1/16" (0.8mm ~ 1.6mm)
Weight	28.6 lbs. (13 kg)	
External Dimensions	8.5" x 21.4" x 13.6" (215mm x 543mm x 350mm)	



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Deposition Rates of EN Mode vs. EP Mode



At the same current, EN Polarity has about 1.5 times more deposition as an EP Polarity weld, which makes EN mode ideal for welding gaps of thin plate materials.



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)	

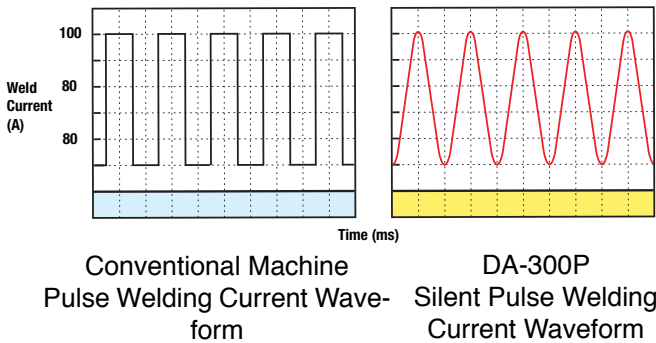
Weld Current: 200A, Travel Speed: 40 cm/min, Plate Thickness: 6mm (A5052)

Advanced AC + DC Hybrid TIG Welding Technology

Silent Pulse Feature

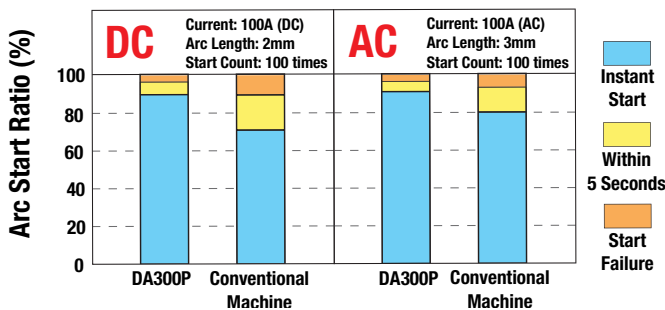
The new Silent Pulse Feature of the DA-300P reduces the arc noise from the DC pulse wave, resulting in the following key advantages:

- 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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MIG-135

DC Constant Voltage Spool-Gun Arc Welding Machine



IDEAL FOR SMALL WELDING APPLICATIONS



INCREDIBLE WELDING PERFORMANCE

Ideal for Thin Sheet Metal Welding

The MIG-135 utilizes small diameter wires (.025" and .030"), which allows for high speed welding of extremely thin materials.

Incredible welding performance, and the eliminated need for slow, more tedious TIG processes!

Smooth Welding at Incredible Lengths

Got a job that requires a long reach? No problem!

The WTG-43 spool gun allows users to weld at distances up to 60 feet (with optional cable) from the welder for total versatility on any job.

Standard cable length of the WTG-43 is 25 feet.

Four Weld Mode Versatility

The MIG-135 comes with four separate welding modes:

1. MAG Welding of Mild Steel
2. MIG Welding of Aluminum
3. MIG Welding of Stainless Steel
4. Arc Spot Welding

Possible Applications

- Auto body repair
- Sign channel letters
- Steel furniture
- Air conditioning ducts
- Control cabinets
- Kitchen appliances
- Aluminum doors and sashes
- Hand railing
- Ornamental iron

High Stability with Less Operator Fatigue

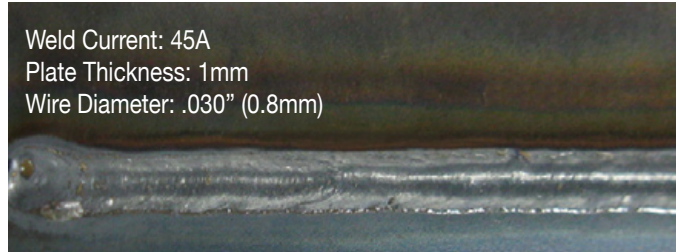
SIMPLE OPERATION



Simple Selection of Welding Conditions
Want high performance? Getting the optimal welding parameters with the MIG-135 couldn't be any easier.

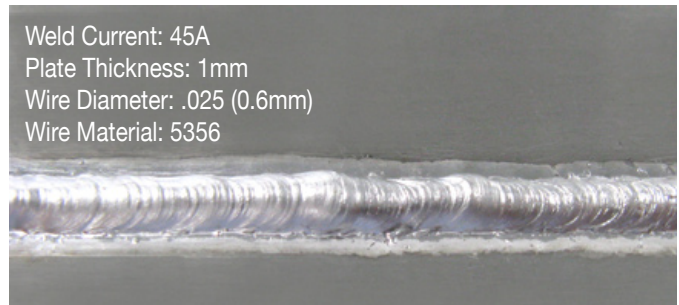
Simply set the control knobs to the appropriate plate thickness and wire diameter, and the machine automatically provides optimal output.

Amazing Welding Results



Mild Steel

Weld Current: 45A
Plate Thickness: 1mm
Wire Diameter: .030" (0.8mm)



Aluminum

Weld Current: 45A
Plate Thickness: 1mm
Wire Diameter: .025 (0.6mm)
Wire Material: 5356

SPECIFICATIONS

MIG-135 Welding Power Source

Rated Output Current	135A						
Rated Input Voltage	Single Phase 230 / 460 / 575V						
Rated Max. Input Current	19.1 / 9.6						
Rated Input kVA	4.4 kVA						
Rated Duty Cycle	20%						
Output Current	<table border="1"> <tr> <td>Mild Steel</td> <td>20 ~ 135A</td> </tr> <tr> <td>Aluminum</td> <td>40 ~ 80A</td> </tr> <tr> <td>Stainless Steel</td> <td>40 ~ 90A</td> </tr> </table>	Mild Steel	20 ~ 135A	Aluminum	40 ~ 80A	Stainless Steel	40 ~ 90A
Mild Steel	20 ~ 135A						
Aluminum	40 ~ 80A						
Stainless Steel	40 ~ 90A						
Dimensions	13.5" x 25" x 17.8" (342 mm x 635 mm x 452mm)						
Weight	154 lbs. (60kg)						

WTG-43 Spool Gun

Applicable Wire Diameter	Mild Steel	.025", .030" (0.6mm, 0.8mm)
	Aluminum	.025", .030" (0.6mm, 0.8mm)
	Stainless Steel	.025" (0.6mm)
Rated Current	135A	
Rated Duty Cycle	20%	
Cooling Method	Air Cooling	
Cable Length	25 ft. (8m) 60 ft (18m) with optional extension.	
Weight of Main Body	2.5 lbs (1.1 kg)	

Spooled Wire for the MIG-135

Mild Steel Wire	MB-50-025	.025" (0.6mm)	1.1 lbs. (500g)
	MB-50-030	.030 (0.8mm)	1.1 lbs. (500g)
Aluminum (4043) Wire	MB-4043-025	.025" (0.6mm)	0.44 lbs (200g)
	MB-4043-030	.030" (0.8mm)	0.44 lbs (200g)
	MB-4043-040	.040" (1.0mm)	0.44 lbs (200g)
Aluminum (5356) Wire	MB-5356-025	.025" (0.6mm)	0.44 lbs (200g)
	MB-5356-030	.030" (0.8mm)	0.44 lbs (200g)
Stainless Steel Wire	MB-308L-025	.025" (0.6mm)	1.1 lbs (500g)
	MB-308L-030	.030" (0.8mm)	1.1 lbs (500g)
	MB-309LSI-023	.023" (0.6mm)	1.1 lbs (500g)
	MB-316L-025	.025" (0.6mm)	1.1 lbs (500g)
Silicon Bronze Wire	MB-SIB-025	.025" (0.6mm)	0.44 lbs (200g)
	MB-SIB-030	.030" (0.8mm)	0.44 lbs (200g)



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