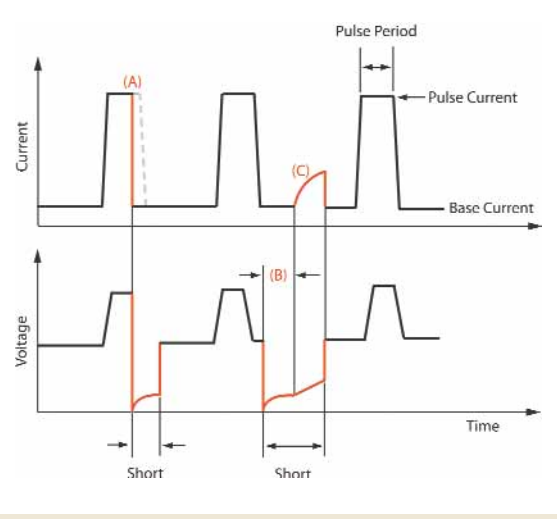
DP400 / DM350

Digital Controlled DC Inverter Arc Welding Machines

Simple Operation and Perfect Welds from Arc Start to End

Advancing the Science of GMAW Applications

Synchro Short-Pulse Control for Hard Wire Applications



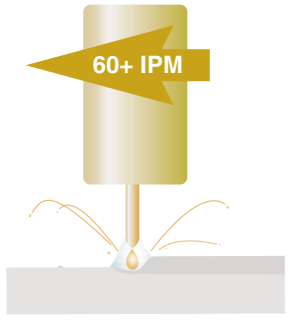
Synchro Short-Pulse Waveform

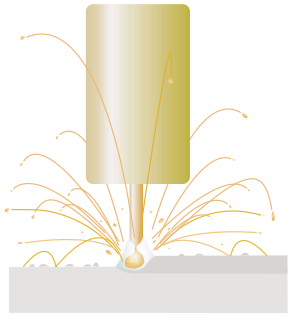
(A) Current control at pulse period short-circuit time

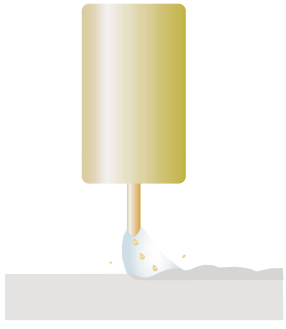
(B) Instantaneous short-circuit current control

(C) Automatic digital reactor control

1/8" (3.2 mm) Mild Steel Fillet Weld with .045" (1.2 mm) E70S-3 Mild Steel Wire at 64 in./min.







Synchro Short-Pulse

Allows the use of a very short and rigid arc length enabling very high travel speeds with minimal spatter and consistent droplet transfer

Conventional Pulsed GMAW

Reduced arc length

Conventional machines cannot control the intrinsic short circuiting spikes that occur with a reduced arc length, thereby creating excessive spatter with irregular droplet size and transfer.

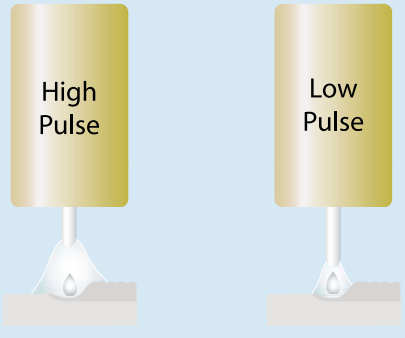
Increased arc length

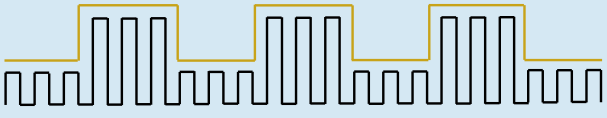
The use of a longer arc length minimizes spatter, however the arc becomes softer and tends to drag creating inconsistent bead profiles and penetration

Wave Pulse for Aluminum

- Wave Pulse utilizes a superimposed low frequency pulse for hard and soft aluminum
- The most obvious benefit is the TIG bead appearance as shown in the weld photo below
- Wave frequency is adjustable from 0.5 to 30 Hz
- Proven to reduce porosity and crack susceptibility

16 gauge (1.6 mm) A5052 Aluminum Plate Butt Welded With 3/64" (1.2 mm) A5356 Aluminum Wire





Superimposed low frequency pulse waveform

DP400

DP400 ULTRA HIGH QUALITY PULSE & CV GMAW

- 400 Amp @ 50% duty cycle
- 100 Job memory
- Digital CAN buss interface with OTC DAIHEN robots
- Smaller & lighter 80 kHz IGBT digital inverter
- Three phase automatic input voltage selection
- Factory optimized pulse waveforms
- Adjustable pulse waveform via function key
- Synergic or individual control of voltage and wire feed speed
- Wave Pulse function for TIG like welds on aluminum
- Large 7 segment digital LED numeric display
- Function key for advanced programming
- Cooling fan control: High, Low, and Off
- Very stable pulsed arc as low as 25 amp
- Digital Turbo start and digital burn-back control improves arc starting
- Consistent arc length despite changes in wire extension
- Industrial HMI (Key Pad) operation panel
- Optional pre-set modes available for a variety of wire alloys
- Tool-Free Dinse twist lock connectors for secondary output

Digital Meters are Easy to Read in Dim Areas

Both Current and Voltage are displayed during welding, with the average current and voltage being displayed after welding is terminated. Additionally, Digital Diagnostics or error codes are displayed to assist troubleshooting.

Welding Condition Memory

Storage Function (100 conditions)
Welding Memory Play Back Function of welding conditions can be accessed by one-touch control to repeat or recall weld conditions.

Function Key

Front Panel Control allows setting of special functions by the operator without having to go inside the Welding Power Source.

Choice of Welding Modes

Setting of weld conditions such as weld-wire type and wire diameter are easily accomplished by the Touch Panel and reading the LED indications.

DP400 Key Pad Operation Panel

Operators Can Easily Set Conditions

Precise setting of Amps and Volts can be accurately achieved to 1.0 Amp and 0.1 Volt, in addition to other parameters.

Arc Characteristics

Hard to soft arc characteristics can be chosen for a variety of applications.

A Variety of Functions

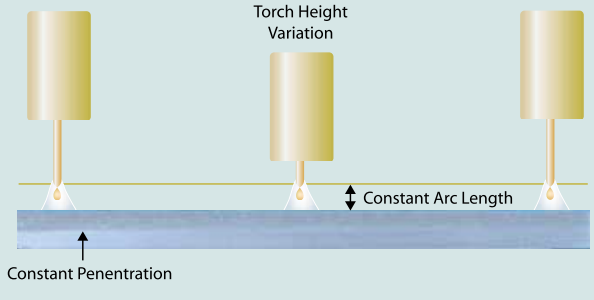
Touch panel control for various user-friendly functions to achieve high quality welding.

Optional Modes

Software is available for exotic alloys or special applications.

Constant Penetration Control for Hard Wire Applications

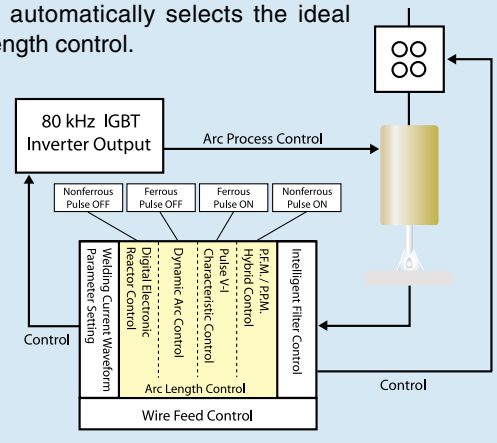
Simply switch it on and it keeps the depth of penetration at a constant level even when tip-to-work distance fluctuates as shown. (Not applicable for aluminum.)
Conventional GMAW machines typically incorporate only constant voltage (CV) characteristics. When tip-to-work distance fluctuates amperage will fluctuate causing changes in penetration.



Newly Developed T-MAC System Supports Multiple Arc Length Characteristic Controls

Tailor Made Arc Control

Complete digitalization delivers four (4) types of arc length control for every welding process. Select the welding process on the front panel and the microcomputer automatically selects the ideal arc length control.

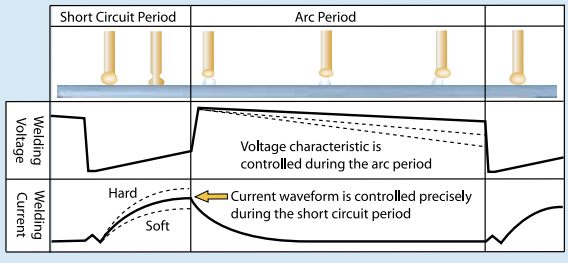


DM350 CV GMAW WITH REDUCED SPATTER

- 350 Amp @ 60% duty cycle
- 30 program memory
- Digital CAN buss interface with OTC - DAIHEN robots
- Smaller & lighter 80 kHz IGBT digital inverter
- Single & three phase automatic voltage selection
- High speed digital reactor drastically reduces spatter
- Cooling fan: High, Low, and Off
- Industrial HMI (Key Pad) operation panel
- Synergic or individual control of voltage and current (wire feed speed)
- Combination of digital start and digital burn-back control function improves arc starting
- Large 7 segment digital LED numeric display
- Simple push buttons for JOB storage/call-up, and process programming
- Function key for advanced programming
- Consistent arc length despite changes in wire extension
- Tool-Free Dinse twist lock connectors for secondary output

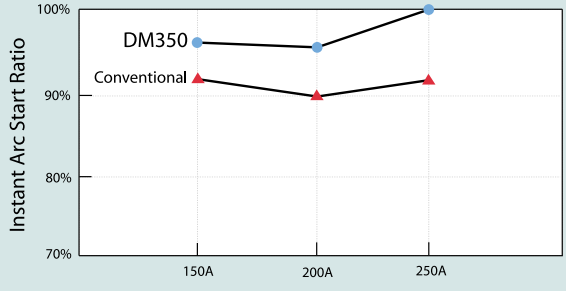
DM350 Key Pad Operation Panel

Newly Developed Digital Reactor



Precisely controlled output current and waveform are very effective for reducing spatter.

Instantaneous Arc Starting



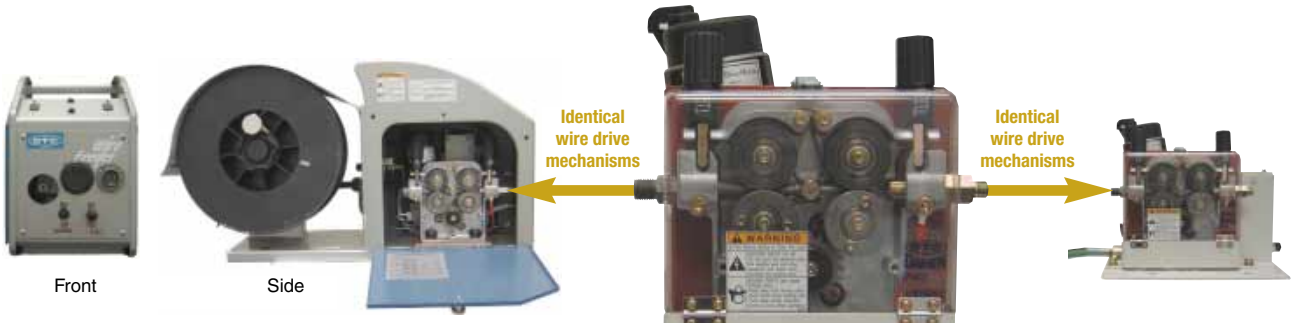
Analog Remote Pendant
Takes priority over the HMI key pad on the power source for setting weld current (WFS), arc voltage, and wire inching. 10 ft. cable with optional extensions.

Digital Remote Pendant
Provides the ability to set all welding parameters from this unit or the front panel of the power source. 10 ft. cable with optional extensions.

(DM350 pendants shown)

WIRE FEEDERS

D-SERIES WIRE FEEDERS



CM-741 Semiautomatic Wire Feeder

AF-4001 OTC- DAIHEN Robot Wire Feeder

CMRE-741 Automatic / Robot Retrofit Wire Feeder

- 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…

- K5517A00 Aluminum Wire Kit
- K5439E00 Fully Enclosed Wire Reel Cover
- K5516A00 Water Cooled Hardware Kit

ROBOTIC WELDING SOLUTIONS

OTC DAIHEN Arc Welding Robot Package

AX-Series Controller

AF-4001 Wire Feeder

D-Series Power Source

AX-Series Robot

Existing Robot Retrofit Packages

CMRE-741 Wire Feeder

D-Series Power Source

Get the total robotic welding solution by combining the D-Series with one of our AX-Series arc welding robots offering seamless integration and advanced features such as Retract start, Synchro MIG & TIG, Feed Control MIG, networking, arc data monitoring and much more.

The D-Series can also easily adapt to a multitude of other manufacturers robots. Our universal interface and retrofit wire feeder options make combining either the DP400 or DM350 a snap.

Call and ask how we can integrate a system for you.

SPECIFICATIONS

Power Sources

ITEM	DP400		DM350	
Mode	Pulse CV (Standard CV Ratings not shown)		CV	
Number of Phases	Three Phase		Three Phase	Single Phase
Rated Frequency	50/60 Hz		50/60 Hz	
Rated input Voltage (Auto Select)	208V / 230V	460V	208V / 230V / 460V	230V / 460V
Input Voltage Range	187–253V	414–506V	187–253V, 414–506V	207–253V, 414–506V
Rated Input kVA	21.4	23.6	16.3	11.6
Rated Input kW	19.7	21.5	13.8	8.6
Rated Input Current	59.4A	29.6A	40.8A / 36.9A / 20.5A	45.2A / 25.3A
Rated Output Current	400A		350A	250A
Rated Load Voltage	34V		31.5V	26.5V
Rated Output Current Range	30–400A		30–350A	30–250A
Rated Output Voltage Range	12–38V		12–36V	12–31V
Max. No-Load Voltage	92V	80V	65V	
Rated Duty Cycle	50% (60% Standard CV)		60%	
Max. Program Storage	100		30	
Temperature Rise	+320°F (+160°C)		+320°F (+160°C)	
Useable Temperature Range	+14°F ~ 104°F (+10°~ +40°C)		+14°F ~ 104°F (+10°~ +40°C)	
External Dimensions (W x D x H) (without handles)	9.8 in. x 25.2 in x 21.4 inches 250 mm x 640 mm x 544 mm)		9.8 in x 25.2 in. x 21.6 inches 250 mm x 640 mm x 544 mm)	
Weight	99.2 lb (46 kg)		85.8 lb (39 kg)	

Specifications subject to change withjout notice.

Wire Feeders

ITEM		CM-741	CMRE-741	AF-4001
Style		Semiautomatic	Auto & Robot Retrofit	OTC-DAIHEN Robots
Wire Feed Speed		866 in. / min. (22 m/min.)		
Useable Wire Diameters	Mild Steel	.024 ~ 1/16 in. (0.6 ~ 1.6 mm)		
	Stainless Steel	.030 ~ 1/16 in. (0.8 ~ 1.6 mm)		
	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)	8.8 lb (4 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 withjout notice.

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

DAIHEN INC.
1400 Blauser Drive
Tipp City, OH 45371-2471
Ph: 937-667-0800
Fax: 937-667-0885

DAIHEN INC.
Charlotte, NC 28269