



# World-Class Battery Welding Solutions



**sunstone**

The Micro Welder Experts

## Weld Copper Tabs and Boost Battery Efficiency

*The Preferred Battery Welding System for Copper, Nickel, Aluminum Tabs!*

The Sunstone Omega PA250i battery welding system can attach copper to steel or aluminum. By using a pure copper tab to connect your batteries, you'll significantly boost power cell efficiency. Available in three different configurations, the Omega fits any production floor: In your shop, in an automated production line, or anywhere in between.

### Key Features

- **Dissimilar Welding Capabilities.** Copper to steel, copper to aluminum, nickel to steel, nickel to aluminum, aluminum to steel.
- **3 Available Configurations:** Stylus only, weld head, or CNC table.
- **250 Ws Max Energy.** The most powerful Sunstone pulse arc micro welder yet!
- **Weld materials 0.003-.030" (0.075-0.75mm) in thickness.** Perfect for welding copper tabs.
- **Digital Control.** Adjust and control all energy attributes with color touch screen.
- **Visual Waveform Graphs.** View energy waveforms and histograms.
- **PLC-Ready.** With 5 outputs/2 inputs easily integrates into your production process.
- **CNC Compatibility.** Attaches to any CNC table, like the Janome Cartesian Robot.
- **127 Remote Schedules.** Saves time with access to saved welds.
- **Import/Export Saved Welds.** Easily transfer settings to other units.
- **Lock-Out Mode.** Prevent unwanted changes to production settings.
- **Alarms and Warnings.** Avoid time-consuming errors or potentially hazardous conditions.
- **Built-in Training.** How-to videos always at your fingertips.
- **WiFi Software Upgrades.** On-board software is easily maintained.
- **1-Year or Forever Warranties Available.** Enjoy the standard warranty or join the Sunstone Circle and protect your welder for as long as you own it!

### Available in Three Configurations:



#### Stylus

For R&D labs or smaller shops, the stylus configuration with 5x micro-scopic optics is a sure fit.



#### Weld Head

Mid-size production facilities will prefer the weld head configuration optimal.



#### CNC Table

The CNC table option, using a Janome Cartesian Robot, fits any large-scale production process.

# Take a Closer Look at the Omega's Touchscreen Interface!

The Omega is 100% PLC ready and can significantly boost your production levels.

The waveform graphically displays the current weld's characteristics.

The touchscreen display and proprietary software interface makes it easy to make quick adjustments.

You can fine tune any weld characteristic, from agitation to gas to ignition and more!

Crystal clear 5x microscopic optics are a must for R&D purposes.



Save any weld, load any saved weld, or clone any saved weld to another Omega welder.

For added versatility, choose three different weld modes: Weld head, Pulse arc, or Tack.

The Omega does the thinking for you! Simply choose materials and thicknesses and enjoy perfect welds.

Choose from three waveforms and three agitation options for optimum results.

Dial in the power you need down to 1/100th of a Ws.

Dependable welding technology from the world's expert in micro welding.

Power Supply Specifications		Weld Head Specifications	
ENERGY (MIN-MAX)	0.01 - 250 JOULES	COLLETS	1.0 mm
CURRENT (MIN-MAX)	6 - 1000A	PRESSURE RANGE	30-90psi (120psi max)
PULSE ARC WELD CURRENT	1-1000 Amps	HEIGHT ADJUSTMENT	0-7" (17.8 cm)
LENGTH (MIN-MAX)	0.2 - 100ms	FORCE WEIGHT	1-14 lbf (4.5-62N)
LENGTH SETTINGS	6000	PREFERRED WORKING DISTANCE	1/8-1/2"
WELD SPOT DIAMETER RANGE	≈ 0.1 - 4.5mm	WELD CYCLE RATE	30 welds per minute
HIGH FREQUENCY AGITATION	MULTIPLE/ADVANCED	WEIGHT/SHIPPING WEIGHT	28 lbs. (12.7 kg)/ 36 lbs. (16.33 kg)
PULSE SHAPING	ADVANCED		
*MAX WELDING SPEED (HZ)	30Hz		
*MAX CHARGING TIME	1.2 s		
FREQUENCY	1 Weld/0.5 Sec • 1-5 Welds/Sec • 1-30 Welds/Sec		
MICROSCOPE MAGNIFICATION	5x		
MICROSCOPE UV/IR PROTECTION	>UV 16/>IR 16 w/ Auto Variable Darkening Lens		
INTERNAL WELD MONITORING	YES		
DISPLAY (TOUCH SCREEN)	10" COLOR TOUCH SCREEN		
LANGUAGES	25 +		
WELDER (L X W X H)	17.5" x 5" x 11" (43.2 x 12.7 x 27.9 cm)		
WELD PROGRAMS	16		





## The Sunstone™ CDDP-A

Now available in Four Models:

- 200
- 400
- 600
- 1200 **NEW!**

## Advanced CD Fine-Spot Resistance Welders

Precise, Repeatable Control Over Every Aspect of Every Weld

- Touchscreen, Full-color Interface
- Visual Graph of Weld Waveform
- High-precision Energy Adjustment
- Histogram
- Comparator with Voltage, Current, Power
- Alarms and Warnings
- Timestamp Data Feedback
- Import/Export Weld Data
- Multiple Languages
- Software Updates with WiFi Connectivity
- Save Settings
- Built-in Training Videos, Documentation
- Full Welder Cloning Capabilities
- Easy-to-Reach Emergency Stop
- PLC Ready
- Dual Weld Head Control
- Roll-spot Welding
- Lock-out Mode

## Recommended Weld Head for Battery Applications: WH2

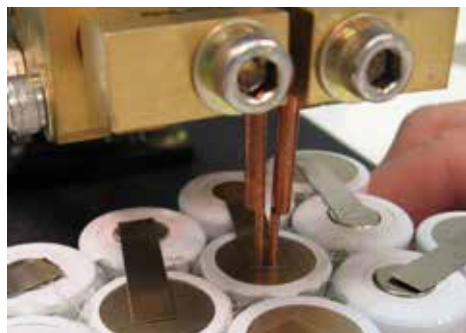


- Manual or Pneumatic Actuation
- Adjustable Pressure from 1-15 lbs of Weld Force
- Adjustable Weld Head Height from 0-20.3 cm
- Accepts 1/4" Electrodes
- Adjustable Force-Firing
- Adjustable Up/Down Stroke Velocity
- Quick Release Height Adjustment Handles

# Specifications

	CD200DP-A	CD400DP-A	CD600DP-A	CD1200DP-A <sup>NEW!</sup>
TABLETOP FOOTPRINT (L X W X H)	22.8x48.2x30.5 cm	22.8x48.2x30.5 cm	22.8x48.2x30.5 cm	30.5x33x48.2 cm
UNIT WEIGHT	19.6 kg	20.2 kg	20.8 kg	30.4 kg
INPUT VOLTAGE	85 - 260 VAC	85 - 260 VAC	85 - 260 VAC	85 - 260 VAC
FREQUENCY RANGE	47 - 63 Hz	47 - 63 Hz	47 - 63 Hz	47 - 63 Hz
POWER FACTOR (typ.) *	PF>0.94/230 VAC PF>.99/115 VAC	PF>0.94/230 VAC PF>.99/115 VAC	PF>0.94/230 VAC PF>.99/115 VAC	PF>0.94/230 VAC PF>.99/115 VAC
AC CURRENT (typ.)	8.5A/115 VAC 5A/230 VAC	8.5A/115 VAC 5A/230 VAC	8.5A/115 VAC 5A/230 VAC	17A/119 VAC 10A/230 VAC
POTENTIAL PEAK INPUT ACTUAL AVERAGE CURRENT (welding)	5A/115 VAC 3A/230 VAC	5A/115 VAC 3A/230 VAC	5A/115 VAC 3A/230 VAC	8.9A/119 VAC 5A/230 VAC
SINGLE AND DUAL PULSE	YES	YES	YES	YES
PULSE 1 ENERGY ADJUSTMENT	0-30%	0-30%	0-30%	0-30%
PULSE 2 ENERGY ADJUSTMENT	0-100%	0-100%	0-100%	0-100%
<b>WELD PULSE CHARACTERISTICS</b>				
MIN AND MAX OUTPUT	0.2 ws - 200 ws	0.2 ws - 400 ws	0.2 ws - 600 ws	0.2 ws - 1,200 ws
MIN AND MAX PULSE WIDTH	0.27 ms - 19.5 ms	0.29 ms - 30 ms	0.31 ms - 40.5 ms	1.13 ms - 60 ms
RISE TIME (to max voltage)	0.2 ms	0.2 ms	0.2 ms	0.2 ms
MIN AND MAX PULSE HEIGHT	1.1 V - 15.8 V	0.9 V - 18.3 V	0.8 V - 19.4 V	0.3 V - 19.4 V
<b>WELDS PER MINUTE BY % OF TOTAL WELD ENERGY (IN DUAL PULSE MODE, MAX ENERGY, PULSE WIDTH AT 100%)</b>				
0.10% with both pulses enabled	650 (0.2 ws)	600 (0.4 ws)	530 (0.6 ws)	460 (1.2 ws)
0.10%	550 (0.2 ws)	530 (0.4 ws)	500 (0.6 ws)	260 (1.2 ws)
1%	450 (2 ws)	290 (4 ws)	240 (6 ws)	214 (12 ws)
5%	250 (10 ws)	160 (20 ws)	130 (30 ws)	120 (60 ws)
10%	190 (20 ws)	120 (40 ws)	90 (60 ws)	85 (120 ws)
25%	130 (50 ws)	70 (100 ws)	60 (150 ws)	52 (300 ws)
50%	90 (100 ws)	50 (200 ws)	40 (300 ws)	36 (600 ws)
100%	60 (200 ws)	30 (400 ws)	30 (600 ws)	23 (1200 ws)
<b>PEAK WELD CURRENT* (BY EXTERNAL CABLING GAUGE NUMBER, AWG. FOUR AND EIGHT AWG IS TYPICAL FOR HAND-HELD ATTACHMENTS)</b>				
1 AWG 8ft	6583	7625	8080	8500
4 AWG 8ft	4575	4910	5225	5800
8 AWG 8ft	3038	3520	3730	3960

\*MINIMUM LOAD = 1m0hm. USING A SMALLER LOAD MAY DAMAGE THE WELDER.



# The Sunstone™ Dual Pulse CD Spot Welder

Available in Three Models:  
200 • 400 • 600



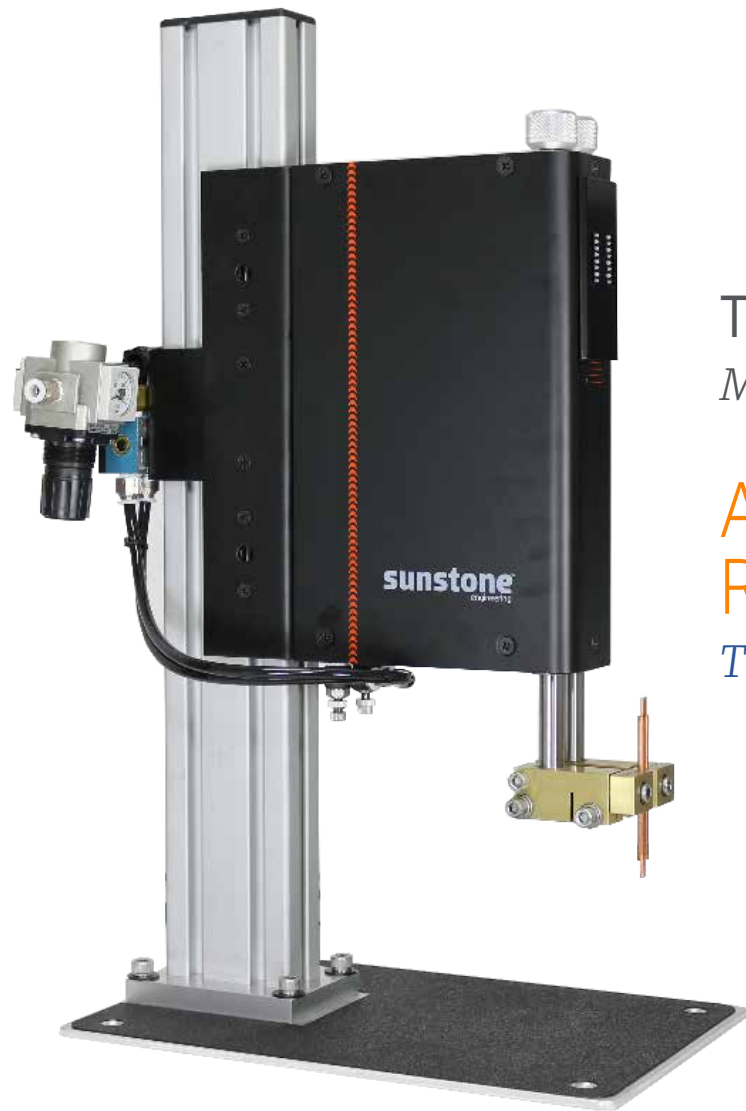
## Time Tested and Proven Fine-Spot Welders Dual Pulse Capabilities for Clean, Strong Welds!

- Go-to Solution for Battery Pack Manufacturing, Custom Battery Packs, Re-builds, and Tabbing
- Built for Alkaline, Ni-Cd, NiMH, Lithium, or Other Specialty Metals
- Digital Energy Display for Precision Welds
- Single or Dual Pulse Operation
- Infinitely Adjustable Pulse Width
- 200, 400, and 600 W Models
- Easy-to-Reach Terminals and Controls
- Quick Performance: Up to 164 welds per minute
- Roll Spot Capable

### Specifications

	CD200DP	CD400DP	CD600DP
WELDER (L X W X H)	34.3X30.5X26.7 cm	34.3X30.5X26.7 cm	34.3X30.5X26.7 cm
WEIGHT	16kg	18kg	20kg
PULSE 1 ENERGY ADJUSTMENT (% OF SET-POINT ENERGY)	0% - 30%	0% - 30%	0% - 30%
PULSE 2 ENERGY ADJUSTMENT (% OF SET-POINT ENERGY)	0% - 99%	0% - 99%	0% - 99%
PEAK CURRENT	7905 - 11,180 Amps	7905 - 11,180 Amps	7905 - 11,180 Amps
INPUT VOLTAGE	85 - 260 VAC	85 - 260 VAC	85 - 260 VAC
FREQUENCY RANGE	47 - 63 Hz	47-63 Hz	47-64 Hz
POWER FACTOR (TYP.)	PF>0.94/230 VAC PF>0.99/115 VAC	PF>0.94/230 VAC PF>0.99/115 VAC	PF>0.94/230 VAC PF>0.99/115 VAC
AC CURRENT (TYP.)	8.5A/115 VAC or 5A/230 VAC	8.5A/115 VAC or 5A/230 VAC	8.5A/115 VAC or 5A/230 VAC
10% PULSE WIDTH (WELD ENERGY AT 100% FOR ALL)	164 welds/min (20ws)	156 welds/min (40ws)	90 welds/min (60ws)
25% PULSE WIDTH (WELD ENERGY AT 100% FOR ALL)	116 welds/min (50ws)	113 welds/min (100ws)	67 welds/min (150ws)
50% PULSE WIDTH (WELD ENERGY AT 100% FOR ALL)	89 welds/min (100ws)	62 welds/min (200ws)	46 welds/min (300ws)
100% PULSE WIDTH (WELD ENERGY AT 100% FOR ALL)	63 welds/min (200ws)	40 welds/min (400ws)	32 welds/min (600ws)
1 AWG 4 FT PEAK CURRENT (0.99m0hm)*	7600 Amps	8775 Amps	10750 Amps
4 AWG 6 FT PEAK CURRENT (1.49m0hm)*	6125 Amps	7075 Amps	8675 Amps
8 AWG 6 FT PEAK CURRENT (3.77m0hm)*	3250 Amps	3750 Amps	4600 Amps
MIN AND MAX OUTPUT	5 ws - 200 ws	5 ws -400 ws	5 ws - 600 ws
PULSE WIDTH (MIN-MAX)	0.53 - 43.2 ms	0.37 - 48.1 ms	0.29 - 51.1 ms
RISE TIME (TO MAX VOLTAGE)	0.2 ms	0.2 ms	0.2 ms
PULSE HEIGHT (MIN-MAX)	2.5 - 15.8 V	2.04 - 18.3 V	2.04 - 22.4 V

\*MINIMUM LOAD = 1m0hm. USING A SMALLER LOAD MAY DAMAGE THE WELDER.



## The Sunstone™ WH2 Weld Head

*Manual or Air Actuated Options*

**A Weld Head with a Proven Reputation for Dependability**  
*The Perfect Delivery of Energy Ends Here!*

- Manual or Pneumatic Actuation
- Adjustable Pressure from 1-15 lbs of Weld Force
- Adjustable Weld Head Height from 0-20.3 cm
- Included Foot Pedal for Easy Operation
- Accepts 1/4" Electrodes
- Adjustable Force-Firing
- Adjustable Up/Down Stroke Velocity
- Quick Release Height Adjustment Handles

### Specifications



	MANUAL	PNEUMATIC (AIR)
WELD HEAD (L X W X H)	30.5X11.45X49.5 cm	30.5X17.8X49.5 cm
WEIGHT	11.35kg	11.35kg
WELD FORCE	1 - 15 lbs	1 -15 lbs
MAX ELECTRODE STROKE	1 in	1 in
ELECTRODE DIAMETER	1/8 in	1/8 in
ELECTRODE DIAMETER UPGRADES	3/16 in, 1/4 in	3/16 in, 1/4 in
ELECTRODE CONFIGURATION	Opposed	Opposed
ELECTRODE HOLDER TYPE	In Line	In Line
MAX THROAT SIZE (HXD)	5.25 x 6.5 in	5.25 x 7.5 in
WELD CABLE SIZE/LENGTH	1 AWG/24 in	1 AWG/24 in
FOOT PEDAL TYPE	Manual Cable	AC, 3-prong Foot Pedal
AIR PRESSURE FOR MAX FORCE	N/A	60 - 80 PSI
AIR CYLINDER INSIDE DIAMETER BORE	N/A	0.75 in
CYCLE RATE (STROKE)	1 in	1 in



**sunstone**<sup>™</sup>

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