Capacitive Discharge, Fine-Spot Resistance Welder

Data Sheet

CD150DP / CD300DP / CD450DP / CD750DP

- Dual Pulse operation removes surface inconsistencies and contaminants
- Single or Dual Pulse operation
- Adjustable pulse width
- Available in 150ws, 300ws, 450ws and 750ws
- Adjustable from 1% to 100% energy discharge
- Up to 166 welds/min
- Simple, user-friendly interface

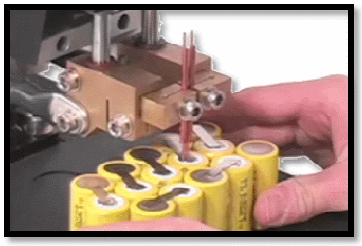
Sunstone Dual Pulse Resistance Welders

Capacitive resistance welders, also called capacitive discharge or CD welders, have many advantages over other welder types:

- Quick energy release for welding highly conductive metals such as copper
- Small heat effected weld zones
- Repeatable energy release independent of line voltage fluctuations
- Capable of extremely fine energy adjustment

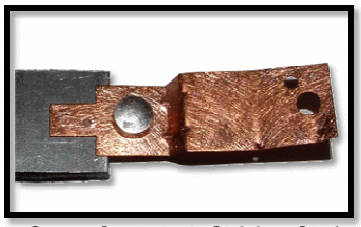
Weld nugget formation takes place during the first few milli-seconds of the welding process. A CD welder allows extremely fast energy release with large peak currents. More of the energy goes into weld formation and less into heating surrounding material. The heat affected zone, where the properties of the metal have been changed by rapid heating and cooling, is localized to a small area around the weld spot. The quick discharge rate of CD welders also allows electrically and thermally conductive materials, such as copper or aluminum, to be welded. Capacitive welders deliver repeatable welds even during line voltage fluctuations because weld energy is stored before use. Weld very small parts by turning down the weld energy to less than 1% of its full value. Tables 1-4 give additional technical details.

Typical Applications



Battery Pack Welding

Stranded Copper to Copper Crimp



Copper Contactor to Stainless Steel

Table 1: Sunstone Dual Pulse general technical specifications.

Feature	CD150DP / CD300DP / CD450DP / CD750DP
Dual Pulse	Yes
Pulse 1 Energy Adjustment (% of set-point energy)	1% - 35%
Pulse 2 Energy Adjustment (% of set-point energy)	1%-100%
Peak Current	4000-6000 Amps

Table 2: Weld speed in welds per minute by Dual Pulse model number at maximum energy set-point.

Pulse width (max energy set-point)	**Rep Rate CD150DP welds/min (pulse energy)**	**Rep Rate CD300DP welds/min (pulse energy)**	**Rep Rate CD450DP welds/min (pulse energy)**	**Rep Rate CD750DP welds/min (pulse energy)**
5%	166 (7.5ws)	166 (15ws)	166 (23ws)	166 (38ws)
25%	166 (38ws)	166 (75ws)	166 (113ws)	166 (188ws)
50%	166 (75ws)	166 (150ws)	150 (225ws)	120 (375ws)
100%	166 (150ws)	89 (300ws)	59 (450ws)	36 (750ws)

Table 3: Weld pulse characteristics.

Model	Min and Max Output	Pulse Width		Rise Time (to max voltage)	Min Pulse Height
CD150DP	0.2 ws - 150 ws	Min	0.1 ms	0.4 ms	0.5 V
		Max	10 ms	0.4 ms	0.5 V
CD300DP	0.4 ws - 300 ws	Min	0.1 ms	0.4 ms	0.5 V
		Max	20 ms	0.4 ms	0.5 V
CD450DP	0.6 ws - 450 ws	Min	0.1 ms	0.4 ms	0.5 V
		Max	30 ms	0.4 ms	0.5 V
CD750DP	0.6 ws - 750 ws	Min	0.1 ms	0.6 ms	0.5 V
		Max	30 ms	0.6 ms	0.5 V

Table 4: Sunstone Dual Pulse welder physical characteristics.

	CD150DP		CD300DP		CD450DP		CD750DP	
	Inches	cm	Inches	cm	Inches	cm	Inches	cm
Height	10.5	26.7	10.5	26.7	10.5	26.7	10.5	26.7
Width	12.0	30.5	12.0	30.5	12.0	30.5	12.0	30.5
Depth	13.5	34.3	13.5	34.3	13.5	34.3	13.5	34.3
Weight	35 lbs	(16 kg)	38 lbs	(17 kg)	40 lbs	(18 kg)	45 lbs	(21 kg)

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