

Sub Arc DC Series

Issued June 2009 • Index No. DC/19.8

**Submerged Arc Welding
Power Source**



Quick Specs



Heavy Industrial Applications

Fabrication and Construction
Heavy Manufacturing
Pressure Tank/Vessel Fabrication
Pipe Welding
Shipbuilding
Refineries and Foundries
Railcar Manufacturing
Earth-Moving Equipment
Manufacturing

Processes

Submerged Arc (SAW)
Air Carbon Arc (CAC-A)
Cutting and Gouging
Stick (SMAW)
Flux Cored (FCAW)

Input Power 3-Phase Power on all models

Rated Output **650/800:** 650 A at 44 VDC, 100% Duty Cycle
1000: 1000 A at 44 VDC, 100% Duty Cycle
1250: 1000 A at 44 VDC, 100% Duty Cycle

Weight **650/800:** 545 lb (247 kg)
1000/1250: 644 lb (292 kg)

The Power of Blue.®

DC multiprocess capability

provides versatility and outstanding arc performance in SAW (Submerged Arc) and CC (Stick, Carbon Arc Gouging).

Internal digital voltage control

(DVC) enables operator to preset weld voltage in the CV mode before striking an arc.

Built-in arc control lets you get in tight without sticking the electrode. An electrode compensation circuit ensures consistent arc control performance regardless of the electrode size.

Hot Start™ makes it easier to start difficult-to-start Stick electrodes such as E-6010 and E-7018.

Line voltage compensation

ensures consistent weld performance by keeping output power constant even if primary input power varies by $\pm 10\%$.

Simple control panel features single range amperage/voltage adjustment. Provides easy, efficient operation.

Digital voltmeter and ammeter are easy to read, even at 30 ft (9.2 m).



Sub Arc DC 650

Thermal overload protection light indicates power shutdown. Helps prevent machine damage if the duty cycle is exceeded or airflow is blocked.

14-pin receptacle provides quick, direct connection to Miller 14-pin wire feeders and accessories.

115 V duplex receptacle provides 15 amps of auxiliary power.

Remote on/off capabilities allow operator to turn power source on/off from a distance.

Remote voltage control allows operator to change voltage from SAW Control.

Power efficient for exceptional value and return on your investment.

Fan-On-Demand™ operates only when needed reducing noise, power consumption, and the amount of airborne contaminants pulled through the machine.

Enclosed circuit boards provide additional protection from contaminants resulting in longer service life.

Power cord strain relief provided for your convenience at installation.



Power source is warranted for 3 years, parts and labor.
Original main power rectified parts are warranted for 5 years.

MADE IN **USA**
APPLETON, WI **USA**



Miller Electric Mfg. Co.
An Illinois Tool Works Company
1635 West Spencer Street
Appleton, WI 54914 USA

Equipment Sales US and Canada
Phone: 866-931-9730
FAX: 800-637-2315
International Phone: 920-735-4554
International FAX: 920-735-4125

Web Site
www.MillerWelds.com



Sub Arc DC 650/800 Specifications (Subject to change without notice.)



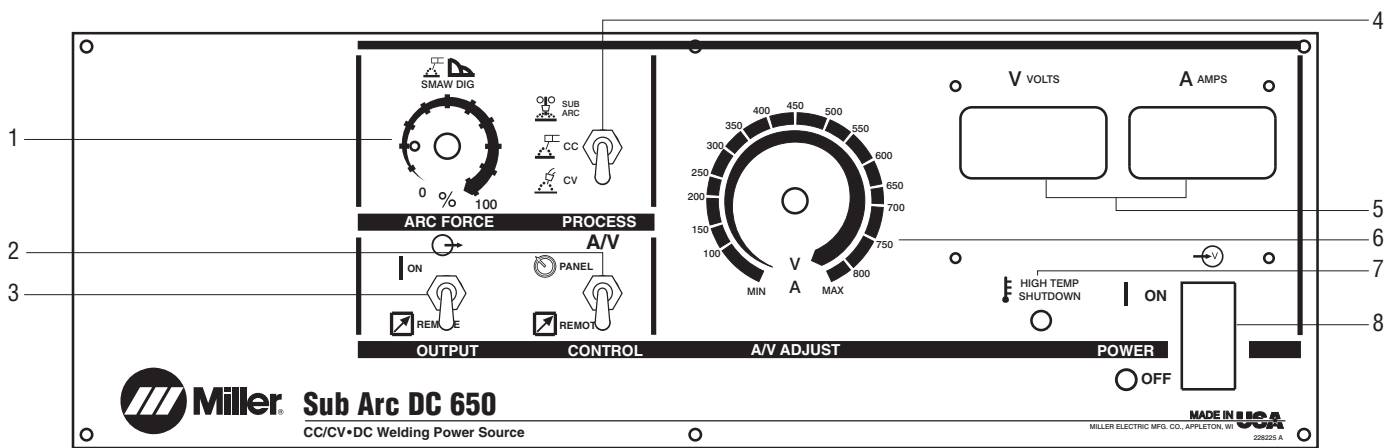
Model	Rated Output	Amperage/Voltage Range	Max. Open-Circuit Voltage*	Amps Input at Rated Output, 50/60 Hz	Dimensions	Net Weight
650 A	650 A at 44 VDC, 100% Duty Cycle	50–815 A in CC mode	72 VDC	230 V 380 V 400 V 440 V 460 V 520 V 575 V KVA KW	H: 27-1/4 in (692 mm) including lift eye W: 22-1/4 in (565 mm) D: 36 in (914 mm) including strain relief	545 lb (247 kg)
800A	650 A at 44 VDC, 100% Duty Cycle	10–65 V in CV mode		126 77 73 66 63 54 50.4 50 34.8 3.8** 1.9** 1.8** 1.6** 1.9** 1.1** 1.4** 1.52** 0.76**		

*Open-circuit voltages in CV mode are factory set at values less than indicated for CC. **While idling.

Certified to both the Canadian and U.S. Standards for welding equipment.

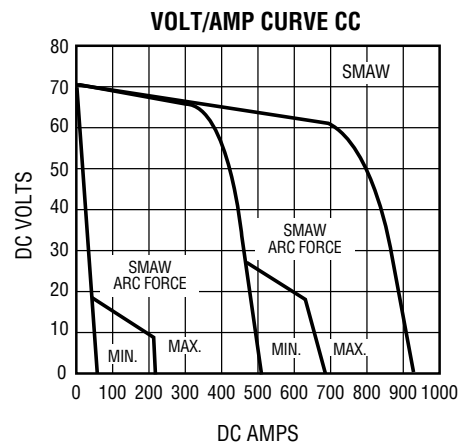
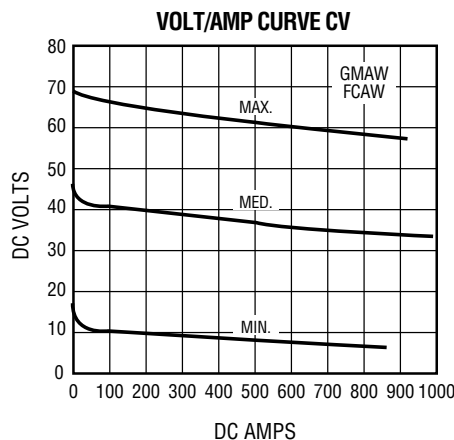
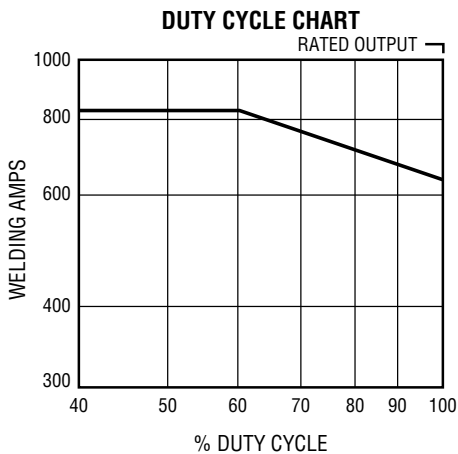
50 Hz models with CE Specifications are manufactured according to the Standard IEC 60974-1.

Control Panel



- Arc Force (DIG) Control
- Remote Amperage/Voltage Control Switch
- Output Switch (Contactor)
- Process Selector Switch
- Digital Meters
- Amperage/Voltage Adjustment Control
- High Temperature Shutdown Light
- Power Switch with Indicator Light

Performance Data



Sub Arc DC 1000/1250 Specifications (Subject to change without notice.)



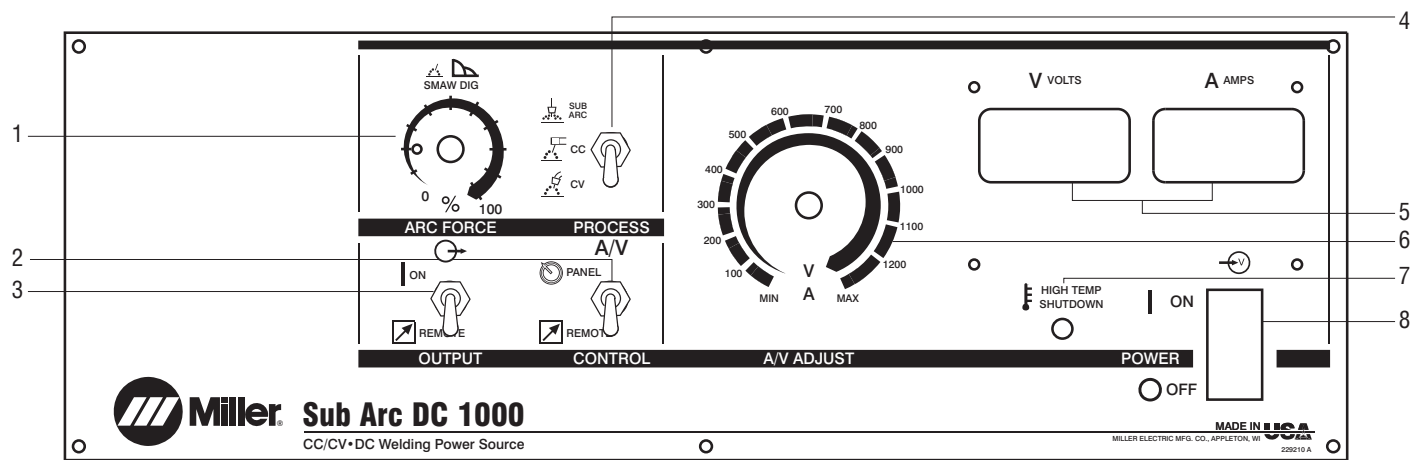
Model	Rated Output	Amperage/Voltage Range	Max. Open-Circuit Voltage*	Amps Input at Rated Output, 50/60 Hz								Dimensions	Net Weight
				230 V	380 V	400 V	440 V	460 V	575 V	KVA	KW		
1000 A	1000 A at 44 VDC, 100% Duty Cycle	100–1250 A in CC mode	66 VDC	180	109	104	94	90	72	73	53	H: 27-1/4 in (692 mm) including lift eye W: 22-1/4 in (565 mm) D: 36 in (914 mm) including strain relief	644 lb (292 kg)
1250 A		10–60 V in CV mode		5.8**	5.2**	5.0**	4.5**	2.9**	2.4**	3.2**	0.5**		

*Open-circuit voltages in CV mode are factory set at values less than indicated for CC. **While idling.

Certified to both the Canadian and U.S. Standards for welding equipment.

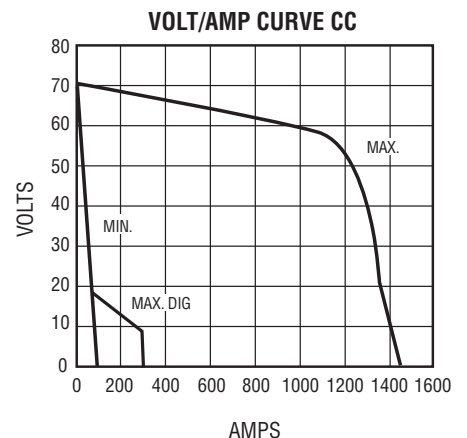
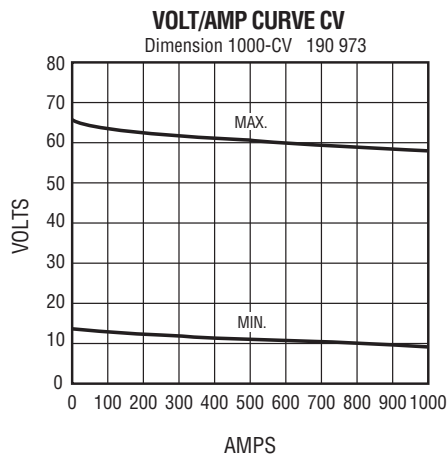
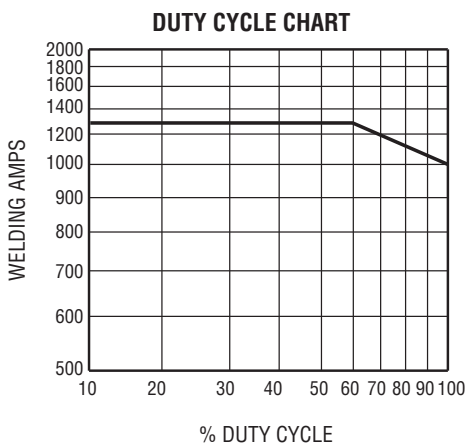
50 Hz models with CE Specifications are manufactured according to the Standard IEC 60974-1.

Control Panel



- 1. Arc Force (DIG) Control
- 2. Remote Amperage/Voltage Control Switch
- 3. Output Switch (Contactor)
- 4. Process Selector Switch
- 5. Digital Meters
- 6. Amperage/Voltage Adjustment Control
- 7. High Temperature Shutdown Light
- 8. Power Switch with Indicator Light

Performance Data



Components and Accessories

RAD Wire Drive Assemblies

Miller offers either standard- or high-speed 115-volt heavy-duty wire drive assemblies. The RAD-400 has a wire feed speed range of 20–400 inches per minute (0.5–10 MPM). The RAD-780 has a wire feed speed range of 30–780 inches per minute (0.7–19.8 MPM). Included adapter plate allows mounting to 2-1/2, 4-1/4, and 4-5/8 inch bolt-hole patterns.



RAD-400
#195 265
Standard-speed, right-angle wire drive assembly.

RAD-780
#195 266
High-speed, right-angle wire drive assembly.

Included adapter plate allows mounting to 2-1/2, 4-1/4, and 4-5/8 inch bolt hole patterns.

Drive Rolls

“V” Knurled drive rolls for use with hard-shelled cored wires.

- 1/16 in (1.5 mm) #132 955
- 5/64 in (2.0 mm) #132 960
- 3/32 in (2.4 mm) #132 961
- 7/64 in (2.8 mm) #132 962
- 1/8 in (3.2 mm) #132 963
- 5/32 in (3.9 mm) #193 700
- 3/16 in (4.7 mm) #193 701
- 7/32 in (5.5 mm) #193 702



Flux Handling Equipment

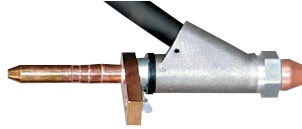


Flux Hopper with Valve
#194 775
Flux hopper with automatic flux valve will carry 25 lb of flux. The opening is sized to allow hook-up of any flux-hopper-mounted recovery system. A slag screen is also provided.

Flux Recovery Systems

- Weld Engineering 1-508-842-2224
- American Vacuum 1-800-321-2849
- Invincible 1-800-282-6999

Submerged Arc Torches



OBT 600 #043 923
600 amp, 100 percent duty cycle torch with concentric flux flow nozzle. Can be used with 1/16–7/32 in (1.6–5.5 mm) wire.

OBT 600 Torch Body Extensions
1 inch #043 967
2 inch #043 969
4 inch #043 973
6 inch #043 975



OBT 1200 #043 900
1200 amp, 100 percent duty cycle torch with concentric flux flow nozzle. Can be used with 1/16–7/32 in (1.6–5.5 mm) wire. OBT 1200 features a replaceable breakaway adapter end to prevent costly damage should torch run into an obstruction.

OBT 1200 Torch Body Extension #043 981
Overall length with extension is 9 in. Actual length of extension is 8-1/2 in.

Torch Contact Tips

Wire Size	OBT 600	OBT 1200
1/16 in (1.6 mm)	#192 700	#192 141
5/64 in (2.0 mm)	#192 701	#199 026
3/32 in (2.4 mm)	#192 702	#192 142
7/64 in (2.8 mm)	#192 703	#200 771
1/8 in (3.2 mm)	#192 704	#192 143
5/32 in (4.0 mm)	#192 705	#192 144
3/16 in (4.8 mm)	#192 706	#192 136
7/32 in (5.6 mm)	#192 707	#200 756

Accessories

Wire Straightener #199 733
For RAD-400 (standard-speed) or RAD-780 (high-speed) wire drive assembly.
For wires 1/16–7/32 in (1.6–5.6 mm)

Light-Duty Cross Slide #195 411
Allows 6 inches of travel adjustment. Two units can be stacked to provide vertical and horizontal movement. **Not recommended for tandem.**

Heavy-Duty Cross Slide #194 783
One-inch diameter, precision, hardened and ground guide rods provide a perfect path for the sealed linear bushings, and smooth accurate movement of the weld head. Allows for 6 inches of travel adjustment and has a load capacity of 200 lb. **Recommended for tandem.**



Wire Reel
#108 008
For 60 lb (27 kg) coil of wire. Requires Spool Support Assembly (#119 438).

Spool Support Assembly #119 438
For 60 lb (27 kg) wire reel.

Cable Kit for HDC 1500 Controllers
#195 308
Includes 30 ft (9 m) 14-pin interconnect cable and 10 ft (3 m) motor cable.

Motor Extension Cable #195 342
25 ft (7.6 m) extension for the motor cable.

Extension Cables
25 ft (7.6 m) #043 725
50 ft (15 m) #043 726
75 ft (23 m) #043 727
14-pin welding power source control cable. Extends distance between power source and controller.

Recommended Power Sources

Summit Arc™ 1000

#903 530 460 V, 60 Hz

#903 599 575 V, 60 Hz

Summit Arc™ 1250

#903 570 400 V, 50/60 Hz

Sub Arc DC 650

Sub Arc DC 800

Sub Arc DC 1000

Sub Arc DC 1250

#907 338 230/460/575 V, 60 Hz

#907 344 380/400/440 V, 50/60 Hz w/CE

#907 342 230/460/575 V, 60 Hz

#907 343 380/400/440 V, 50/60 Hz w/CE

Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
HDC 1500 A	#300 439	With CE		
HDC 1500 DX	#300 438	With CE		
RAD Drive Motors				
RAD-400	#195 265	Standard-speed right-angle drive motor		
RAD-780	#195 266	High-speed right-angle drive motor		
Drive Rolls		See chart on page 4		
Flux Handling Equipment				
Flux Hopper with Valve	#194 775	25 lb capacity		
Flux Recovery Systems		See page 4		
Torches				
OBT 600	#043 923	600 amp, 100% duty cycle, air-cooled		
OBT 600 Torch Body Extensions	#043 967	1 inch		
	#043 969	2 inch		
	#043 973	4 inch		
	#043 975	6 inch		
OBT 1200	#043 900	1200 amp, 100% duty cycle, air-cooled		
OBT 1200 Torch Body Extension	#043 981	9 inch		
Contact Tips		See chart on page 4		
Accessories				
Wire Straightener	#199 733	For 1/16–7/32 in (1.6–5.6 mm) wire		
Cross Slide	#195 411	Provides 6-in travel adjustment, load capacity of 150 lb		
Heavy-Duty Cross Slide	#194 783	Provides 6-in travel adjustment, load capacity of 250 lb		
Wire Reel	#108 008	For 60 lb (27 kg) coil, requires Spool Support Assembly #119 438		
Spool Support Assembly	#119 438	Support for 60 lb reels		
Cable Kit for HDC 1500 Controllers	#195 308	Includes 30 ft (9 m) 14-pin interconnect cable and 10 ft (3 m) motor cable		
Motor Extension Cable	#195 342	25 ft (7.6 m) motor cable extension		
Extension Cables	#043 725	25 ft (7.6 m), 14-pin		
	#043 726	50 ft (15.2 m), 14-pin		
	#043 727	75 ft (22.9 m), 14-pin		

Date:

Total Quoted Price:

Distributed by:

