

# Dimension™ Sub Arc Series

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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** **652/812:** 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** **652/812:** 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).



Dimension 652 Sub Arc

**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



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**Web Site**  
www.MillerWelds.com



# Dimension™ 652/812 Sub Arc Specifications (Subject to change without notice.)



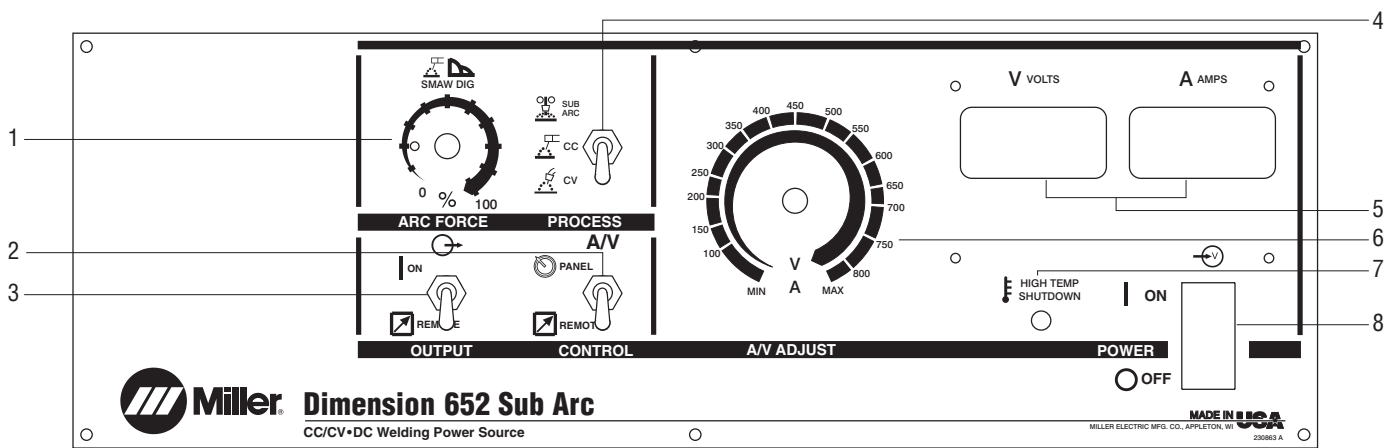
Rated Output	Amperage/Voltage Range	Max. Open-Circuit Voltage*	Amps Input at Rated Output, 50/60 Hz										Dimensions	Net Weight
			230 V	380 V	400 V	440 V	460 V	520 V	575 V	KVA	KW			
650 A at 44 VDC, 100% Duty Cycle	50–815 A in CC mode	72 VDC	126	77	73	66	63	54	50.4	50	34.8	H: 27-1/4 in (692 mm) including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

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

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

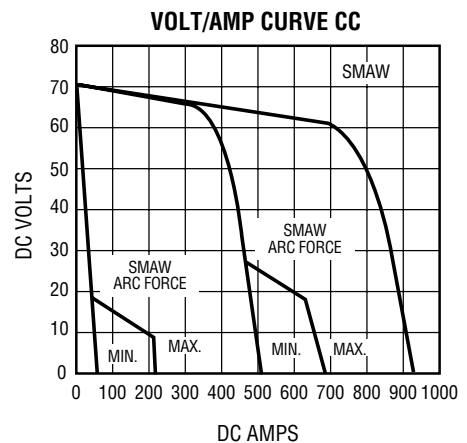
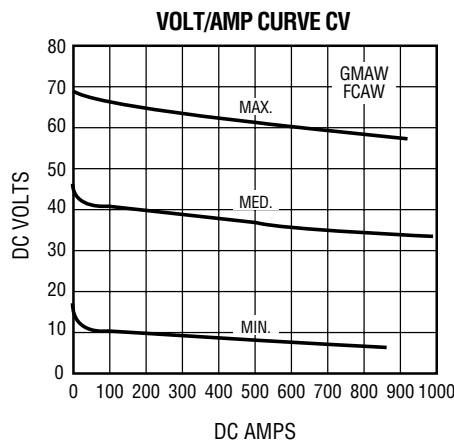
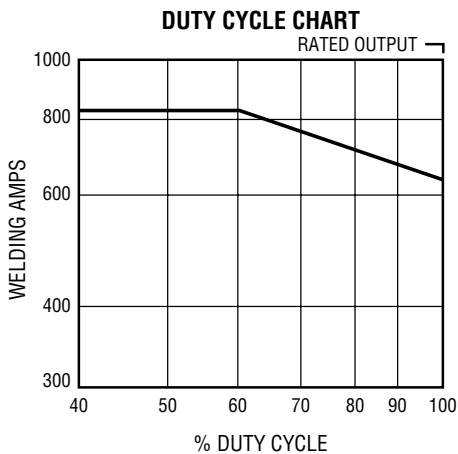
50 Hz models with CE Specifications are manufactured according to the Standard IEC 60974-1.

## 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



# Dimension™ 1000/1250 Sub Arc Specifications (Subject to change without notice.)



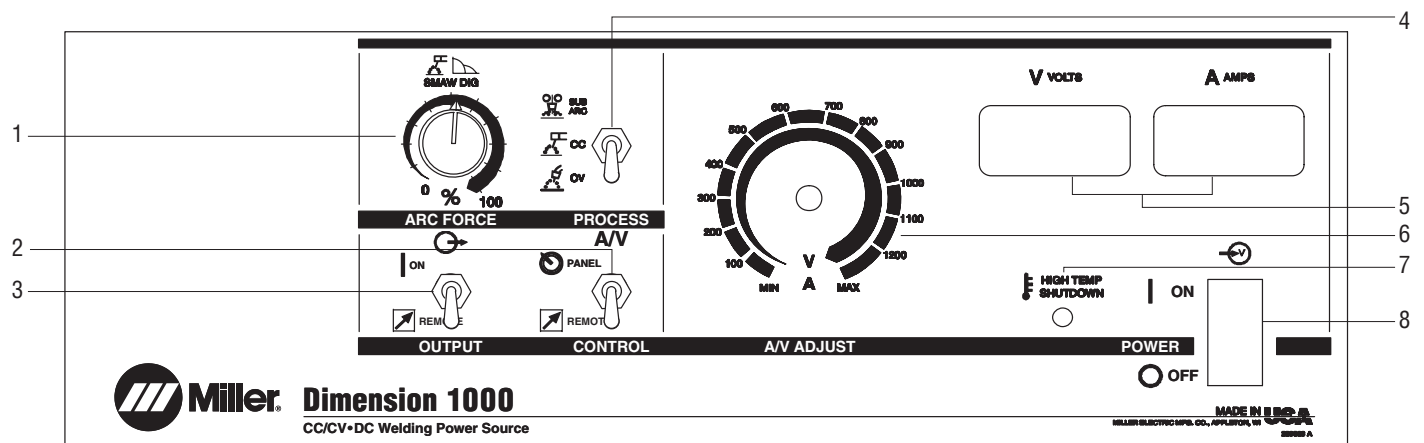
Model	Rated Output	Amperage/Voltage Range	Max. Open-Circuit Voltage*	Amps Input at Rated Output, 50/60 Hz								Dimensions	Net Weight
				230 V	380 V	400 V	440 V	460 V	575 V	KVA	KW		
1000 A	1000 A at 44 VDC, 100% Duty Cycle	100–1250 A in CC mode	66 VDC	180	109	104	94	90	72	73	53	H: 27-1/4 in (692 mm) including lift eye W: 22-1/4 in (565 mm) D: 36 in (914 mm) including strain relief	644 lb (292 kg)
1250 A	1250 A at 44 VDC, 60% Duty Cycle	10–65 V in CV mode	38 VDC	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.

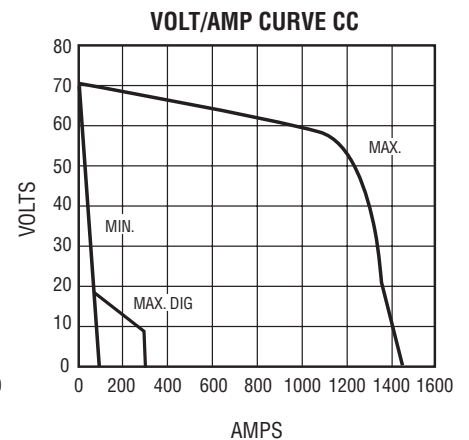
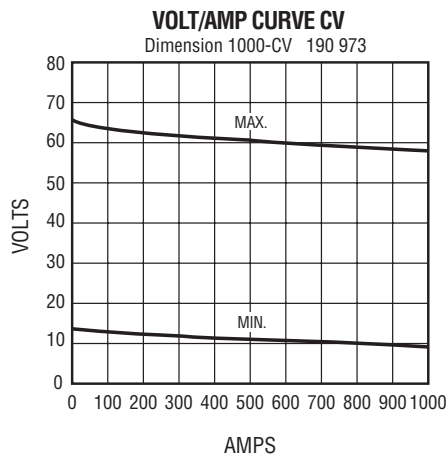
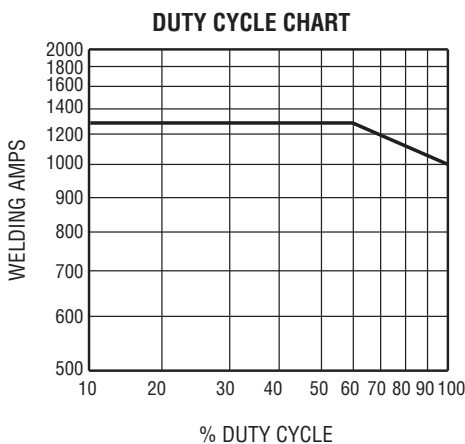
50 Hz models with CE Specifications are manufactured according to the Standard IEC 60974-1.

## 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

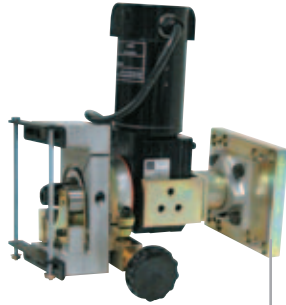
## Performance Data



# 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



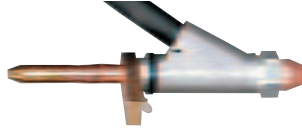
**Flux Hopper with Valve**  
#300 188

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 1-508-839-9875  
American Vacuum 1-800-321-2849  
Invincible 1-800-282-6999

## Submerged Arc Torches

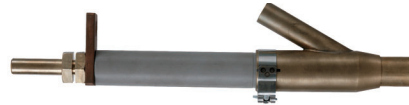


**OBT 600** #043 923

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)

**Cross Slide** #195 411\*

Allows 6 inches of travel adjustment. Two units can be stacked to provide vertical and horizontal movement.

**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 supplied in kit #195 308.

**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.

\*Swivel mount, 90° angle mounting bracket and cross slide have 4-1/4" x 4-1/4" bolt-hole pattern. **Not recommended for tandem.**







## Recommended Power Sources

Summit Arc™ 1000

#903 530 460 V

#903 599 575 V

Summit Arc™ 1250

#903 570 400 V, 50/60 Hz

Dimension™ 652 Sub Arc

Dimension™ 812 Sub Arc

Dimension™ 1000

Dimension™ 1250

#903 379-01-12 230/460/575 V, 60 Hz

#907 289-01-2 380/400/440 V, 50/60 Hz w/CE

#903 650 230/460/575 V, 60 Hz

#903 691 380/400/440 V, 50/60 Hz

#903 691-01-1 380/400/440 V, 50/60 Hz w/CE

## Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
HDC 1500 A	#195 302 #195 302-01-1	With CE		
HDC 1500 DX	#195 215 #195 215-01-1	With CE		
<b>RAD Drive Motors</b>				
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		
<b>Flux Handling Equipment</b>				
Flux Hopper with Valve	#300 188	25 lb capacity		
Flux Recovery Systems		See page 4		
<b>Torches</b>				
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		
<b>Accessories</b>				
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:



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