

Dimension™ Series

Issued April 2003 • Index No. DC/19.2

**Multiprocess Welding
Power Source** 

Quick Specs



Heavy Industrial Applications

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

Processes

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

Input Power 3-Phase Power on all models

Rated Output **302:** 300 A at 32 VDC, 100% Duty Cycle
452/562: 450 A at 38 VDC, 100% Duty Cycle
652/812: 650 A at 44 VDC, 100% Duty Cycle
1000: 1000 A at 44 VDC, 100% Duty Cycle
1250: 900 A at 44 VDC, 100% Duty Cycle

Weight **302:** 361 lb (164 kg)
452/562: 424 lb (192 kg)
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 CV (MIG) and CC (Stick, TIG).

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 452/562

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 feeder.

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.

PC board protection prevents the wire feeder power or other stray voltages (less than 115 VAC) from harming the power source PC board.

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**



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An Illinois Tool Works Company
1635 West Spencer Street
Appleton, WI 54914 USA

International Headquarters
Phone: 920-735-4505
USA FAX: 920-735-4134
Canadian FAX: 920-735-4169
International FAX: 920-735-4125

Web Site
www.MillerWelds.com



Dimension™ 302 Specifications (Subject to change without notice.)



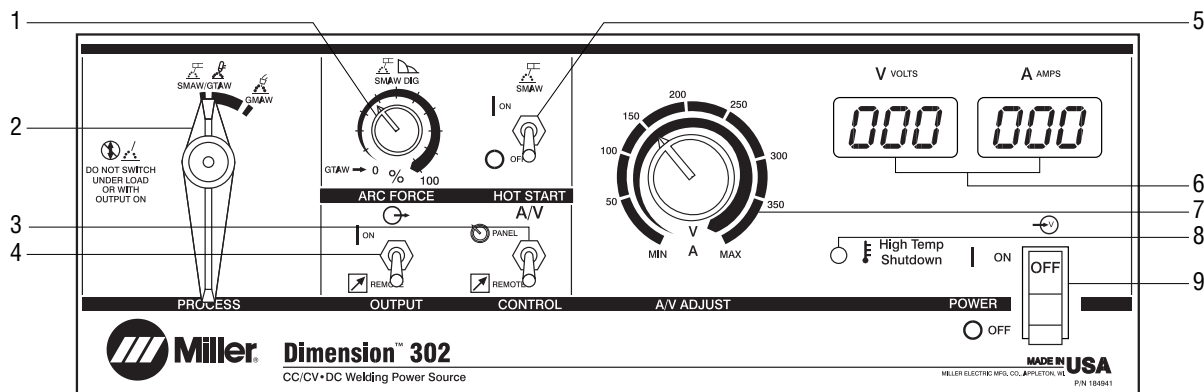
Rated Output	Amperage/Voltage Range	Max. Open-Circuit Voltage*	Amps Input at Rated Output, 50/60 Hz										Dimensions	Net Weight
			200 V	230 V	380 V	400 V	440 V	460 V	575 V	KVA	KW			
300 A at 32 VDC, 100% Duty Cycle	15–375 A in CC mode	60 VDC	57.5	50	30	28	26	25	20	20	12.9	H: 30 in (762 mm) including lift eye W: 23 in (585 mm) D: 30-1/2 in (775 mm) including strain relief	361 lb (164 kg)	
	10–32 V in CV mode		69	60	36	34	31	30	24	23.7	13.4			

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

SP® Dimension 302 (without CE) certified by Canadian Standards Association to both Canadian and U.S. Standards.

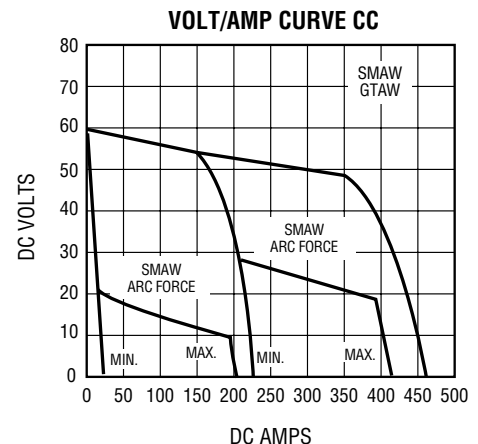
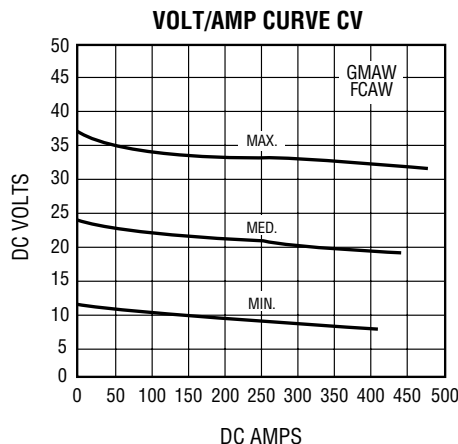
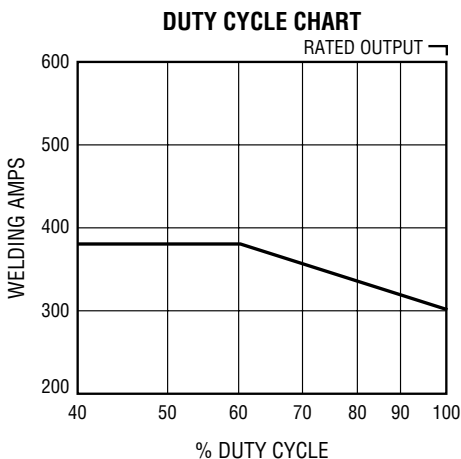
50/60 Hz models with CE Specifications are manufactured according to the Standards IEC-974-1 and EN-60974-1.

Control Panel



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

Performance Data



Dimension™ 452/562 Specifications (Subject to change without notice.)



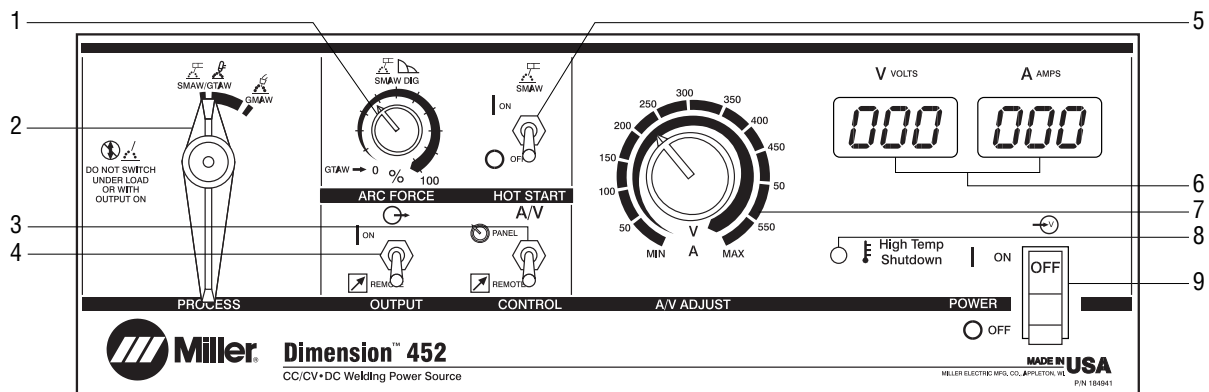
Rated Output	Amperage/Voltage Range	Max. Open-Circuit Voltage*	Amps Input at Rated Output, 50/60 Hz										Dimensions	Net Weight
			200 V	230 V	380 V	400 V	440 V	460 V	520 V	575 V	KVA	KW		
450 A at 38 VDC, 100% Duty Cycle	20–565 A in CC mode	65 VDC	91	79	48	46	41	39	34	31	31.4	22	H: 30 in (762 mm) including lift eye W: 23 in (585 mm) D: 38 in (966 mm) including strain relief	424 lb (192 kg)
	10–38 V in CV mode		104	90	52.5	51	46	45	38	36	35.3	22.3		

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

CSA® Dimension 452 and 562 (without CE) certified by Canadian Standards Association to both Canadian and U.S. Standards.

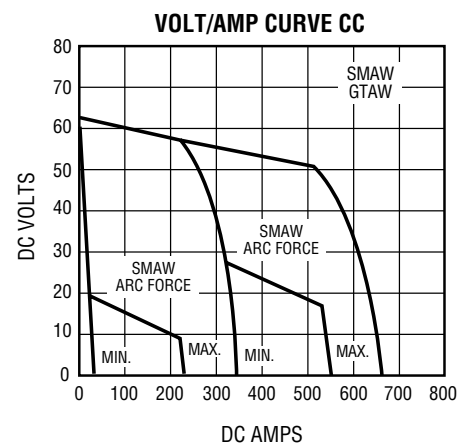
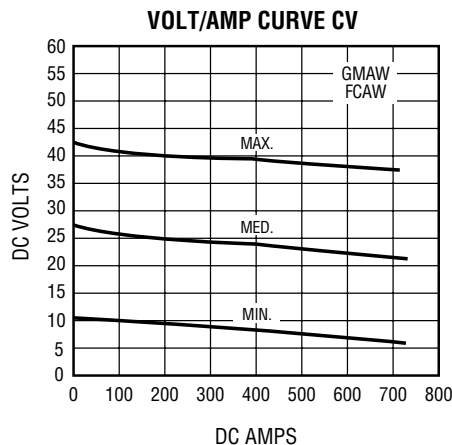
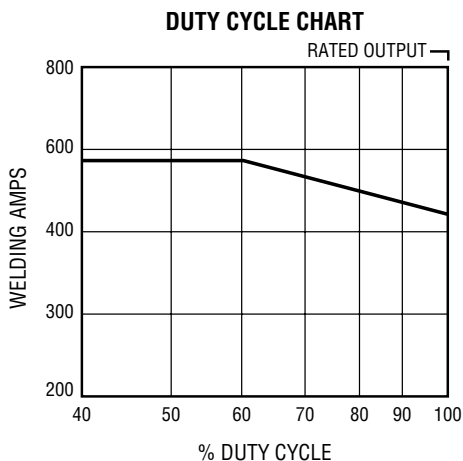
50/60 Hz models with CE Specifications are manufactured according to the Standards IEC-974-1 and EN-60974-1.

Control Panel



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

Performance Data



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



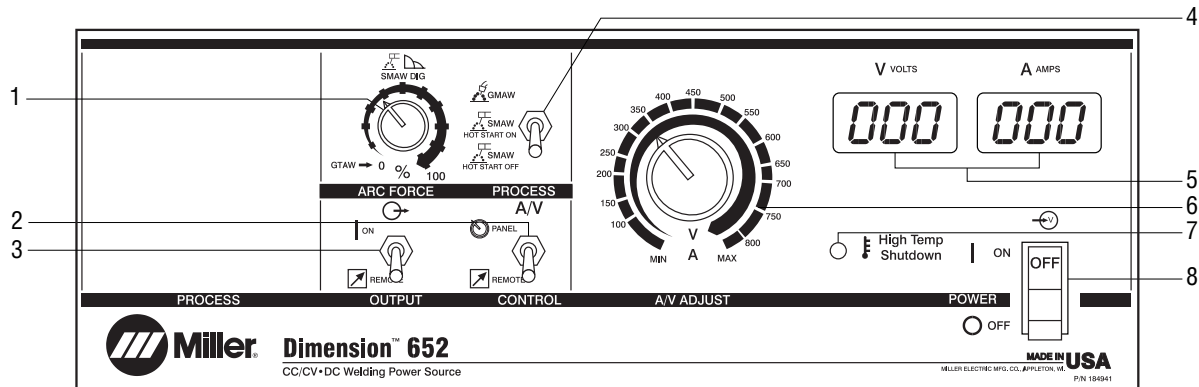
Rated Output	Amperage/Voltage Range	Max. Open-Circuit Voltage*	Amps Input at Rated Output, 50/60 Hz								Dimensions	Net Weight	
	50–815 A in CC mode 10–65 V in CV mode		230 V	380 V	400 V	440 V	460 V	520 V	575 V	KVA			KW
650 A at 44 VDC, 100% Duty Cycle		72 VDC	126	77	73	66	63	54	50.4	50	34.8	H: 30 in (762 mm) including lift eye W: 23 in (585 mm) D: 38 in (966 mm) including strain relief	545 lb (247 kg)

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

SR® Dimension 652 and 812 (without CE) certified by Canadian Standards Association to both Canadian and U.S. Standards.

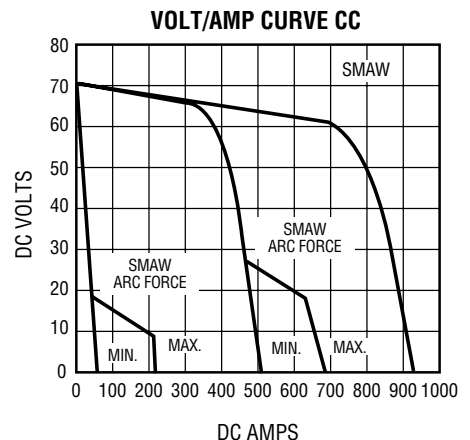
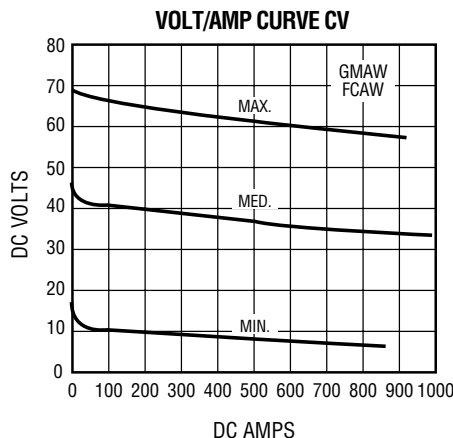
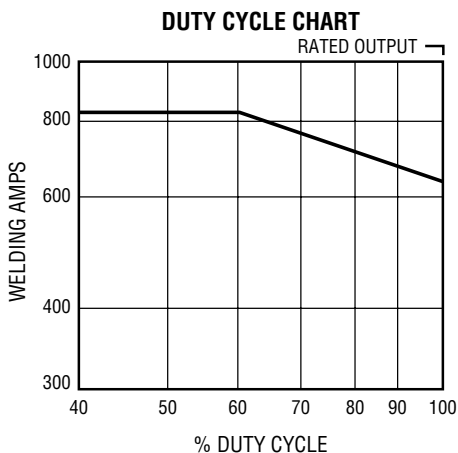
50/60 Hz models with CE Specifications are manufactured according to the Standards IEC-974-1 and EN-60974-1.

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 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	111	105	96	90	72	73	53	H: 30 in (762 mm) including lift eye W: 23 in (585 mm) D: 38 in (966 mm) including strain relief	644 lb (292 kg)
1250 A	900 A at 44 VDC, 100% Duty Cycle	10–60 A in CV mode		—	101	96	87	—	—	66.3	48.4		
				5.8**	4.9**	4.7**	4.2**	2.9**	2.4**	3.2**	0.5**		
				—	5.2**	5.0**	4.5**	—	—	3.4**	0.56**		

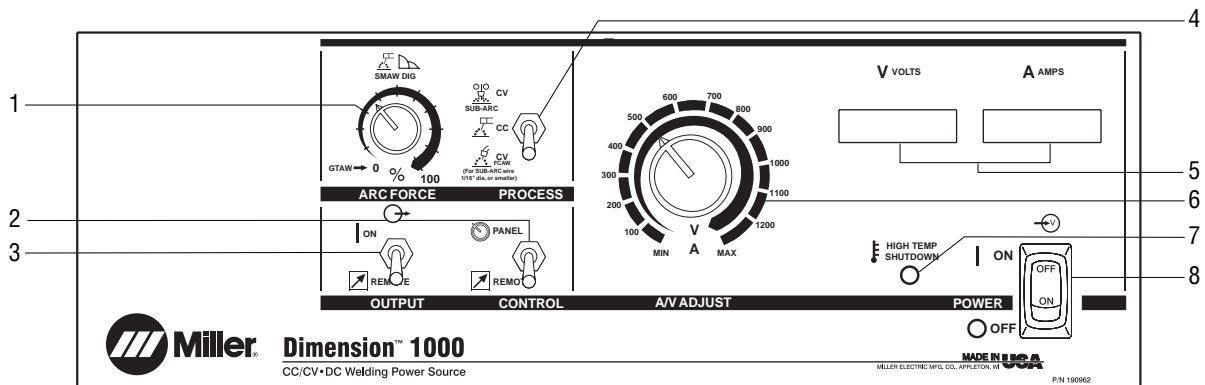
*Open-circuit voltages in CV mode are factory set at values less than indicated for CC.

**While idling.

CS® Dimension 1000 and 1250 (without CE) certified by Canadian Standards Association to both Canadian and U.S. Standards.

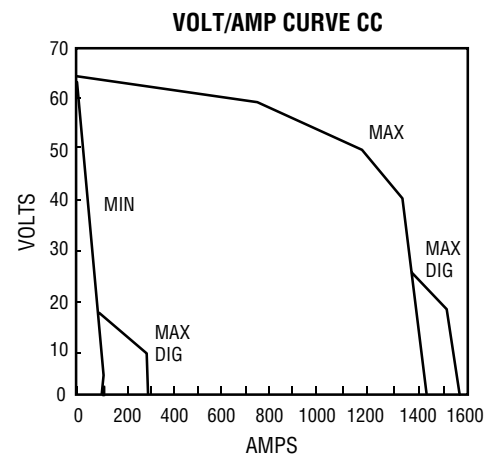
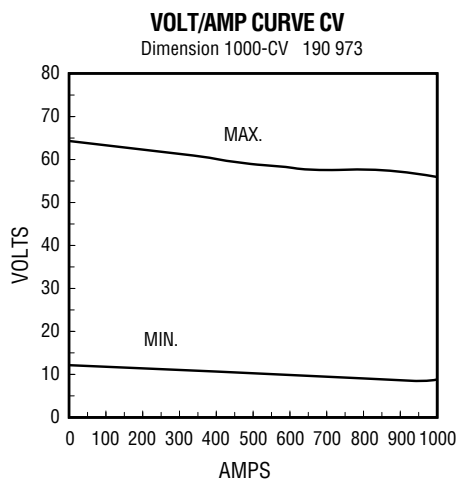
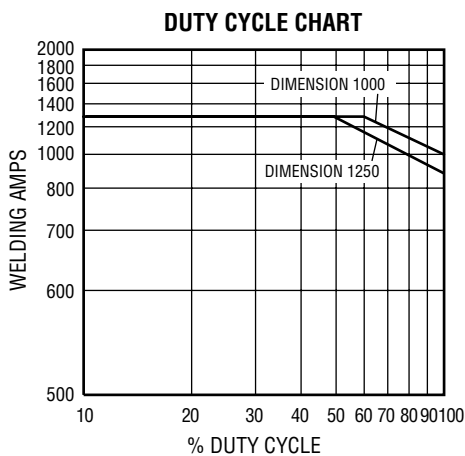
50/60 Hz models with CE Specifications are manufactured according to the Standards IEC-974-1 and EN-60974-1.

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



Genuine Miller Options

Air Filter Kit #042 939 Field
Reusable air filter helps protect internal components from dust and dirt, reducing need for maintenance and providing extended service life. Easily attaches and detaches from front of the power source.

Ground Current Sensor #195 048 Field
Disables power source if weld current is present on primary ground.

Genuine Miller Accessories



NEW! Industrial MIG Kit #195 197
Includes 15 ft, 2/0 power cable and work lead with clamp, regulator/flow meter with 15 ft gas hose, Roughneck C-4015 MIG gun and consumable kit.

Polarity Control #042 871
This dual-function control is designed for use with dual wire feeders or any application where electrical isolation and/or polarity reversing of weld current is required. Both functions can be used at the same time.

Process Control Selector #042 872
Allows you to easily change weld processes without changing cables—from TIG to MIG or TIG to Stick. Also includes features of Polarity Control. Can be used with any constant-current, constant-voltage or multiprocess CC/CV welding power source.

Extension Cables for 14-Pin Plugs to 14-Pin Sockets

- #122 973 25 ft (7.6 m)
- #122 974 50 ft (15.2 m)
- #122 975 75 ft (22.8 m)

This extension cord makes a direct connection between the power source and the accessory control or wire feeder. No messy splicing or adapting required.

International Cable Adapter

Note: Order from Miller Service Parts

- #168 077 Female, Qty 1
Dinse brand insulated female twist lock connector installs on output stud, providing quick disconnect of secondary weld cables.
- #042 418 Male, Qty 1
Cable-mounted Dinse brand insulated male twistlock connector accepts #1 or #2 AWG cable sizes.



Standard Running Gear #042 886
The large 10 in (254 mm) rear wheels and 5 in (127 mm) front casters on this running gear provide excellent mobility on the shop floor, making it easier to move the power source around and over cables and cracks. Very easy to install. Handles double as weld cable holder.



(Note: Both sides lift as shown.)

Cylinder Rack/Lift #043 005
Miller's patent pending cylinder rack features a lift which moves the cylinders up onto the rack and into position without manual lifting! The rack accommodates two cylinder bottles, and can be attached directly to the Standard Running Gear.

Standard Cylinder Rack #042 887
Holds two cylinders. Only installs on Standard Running Gear.



Rough Terrain Running Gear #043 043
This two-wheel running gear features pneumatic tires for extra mobility. Handles double as a cable holder. (Not compatible with cylinder rack.)

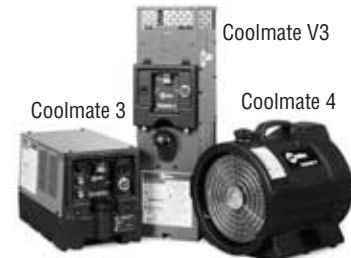


HF-251D-1 High-Frequency Arc Starter/Stabilizer #042 388

This portable 250 amp, 60% duty cycle unit adds high frequency to the welding circuit to help start the arc when using the TIG (GTAW) process. Operates on 115 VAC 50/60/100 Hz. See Lit. Index No. AY 5.1.

Water Coolant Systems

For more information, see Miller Coolant Systems Lit. Index No. AY/7.2.



Coolmate™ 3 #043 007 115 VAC
#043 008 230 VAC

For use with water-cooled torches rated up to 600 amps. Unique paddle-wheel indicator, external filter and easy fill spout.

Coolmate™ V3 #043 009 115 VAC
For use with water-cooled torches rated up to 500 amps. Vertical design conveniently mounts to Miller cylinder rack in place of one cylinder.

Coolmate™ 4 #042 288 115 VAC
For use with water-cooled torches rated up to 600 amps. Tough molded polyethylene case with carrying handle.

Coolant #043 810
Sold in cases of four 1-gallon recyclable plastic bottles. Miller coolants contain a base of ethylene glycol and deionized water to protect against freezing to -37°F (-38°C) or boiling to 227°F (108°C). Also contains a compound that resists algae growth.

Wire Feeders



70 Series Wire Feeders

S-74S #195 057

S-74D #195 058

S-74DX #195 059

D-74S #195 060

D-74D #195 061

D-74DX #195 062

Heavy-duty, industrial, constant-speed 24 VAC semiautomatic wire feeders in dual or single models, with available digital meters. Ideal for high-duty-cycle MIG welding (GMAW) and Flux Cored welding (FCAW). Accommodates a wide variety of wire sizes and types. See Lit. Index No. M/3.0.



22A Wire Feeder #193 066

Simple, reliable, 24 VAC constant-speed semiautomatic wire feeder, best suited for small diameter wires. Accommodates up to 60 lb (27.2 kg) spool of welding wire when using optional wire reel assembly. See Lit. Index No. M/11.0.



SuitCase™ 8VS #194 890

SuitCase™ 12VS #194 941

Lightweight, portable wire feeder for a variety of wires up to .062 in. Holds up to an 8 in or 12 in spool of wire. See Lit. Index No. M/6.4.



XR™-Control #181 538

Push-pull wire feed system offers unparalleled performance for aluminum MIG welding. See Lit. Index No. M/1.7.



Swingarc™ Boom-Mounted Wire Feeders

Single and dual 24 VAC semiautomatic wire feeders are available with 12 ft (3.7 m) and 16 ft (4.9 m) booms. Ideal for long reach and complete maneuverability when working on large weldments, or in hard-to-reach areas. See Lit. Index No. M/13.0.

Roughneck™ Guns

See Lit. Index No. AY/11.0.

Remote Controls and Switches

Remote On/Off Control #042 869

Allows you to turn your power source on or off from a distance of 20 ft (6 m). This is especially useful if your power source is located up in a mezzanine.



RMLS-14 #129 337

Momentary- and maintained-contact rocker switch for contactor control. Push forward for maintained contact and back for momentary contact. Includes 20 ft (6 m) cord and 14-pin plug.



RCC-14 Remote Contactor and Current Control #151 086

Rotary-motion (side to side) fingertip control. Fastens to TIG torch using two Velcro strips. Allows complete current and contactor control at operator's fingertips. Includes 28 ft (8.5 m) cord and plug.



RCCS-14 Remote Contactor and Current Control #043 688

Up-and-down rotary-motion fingertip control. Great for applications that require a finer amperage control. Includes 28 ft (8.5 m) control cord.



RHC-14 Hand Control #129 340

Miniature hand control for remote current and contactor control. Dimensions: 4 x 4 x 3-1/4 in (102 x 102 x 82 mm). Includes 20 ft (6 m) cord and 14-pin plug.



RFCS-14 Foot Control #043 554

Heavy-duty foot current and contactor control. Includes 20 ft (6 m) cord and 14-pin plug.

Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
Power Source				
Dimension® 302	#903 215* #903 216*	200-208/230/460 V, 60 Hz 230/460/575 V, 60 Hz		
Dimension® 452	#903 254* #903 255*	200-208/230/460 V, 60 Hz 230/460/575 V, 60 Hz		
Dimension® 562	#903 256* #903 256-01-6** #903 481*	380/400/440 V, 50/60 Hz 380/400/440 V, 50/60 Hz w/CE 380/520 V, 50/60 Hz		
Dimension® 652	#903 379* #903 379-01-12*	230/460/575 V, 60 Hz 230/460/575 V, 60 Hz w/Sub Arc upgrade		
Dimension® 812	#903 259* #903 259-01-4** #903 482*	380/400/440 V, 50/60 Hz 380/400/440 V, 50/60 Hz w/CE 380/520 V, 50/60 Hz		
Dimension® 1000	#903 650*	230/460/575 V, 60 Hz		
Dimension® 1250	#903 691* #903 691-01-1**	380/400/440 V, 50/60 Hz 380/400/440 V, 50/60 Hz w/CE		
Air Filter Kit	#042 939	Field		
Ground Current Sensor	#195 048	Field		
Wire Feeders				
70 Series		See page 7		
22A	#193 066	See Lit. Index No. M/11.0		
SuitCase™ 8VS/12VS	#194 890/#194 941	See Lit. Index No. M/6.4		
XR™-Control	#181 538	See Lit. Index No. M/1.7		
Swingarc™ Boom Feeders		See Lit. Index No. M/13.0		
Roughneck™ Guns		See Lit. Index No. AY/11.0		
Remote Controls				
Remote On/Off Control	#042 869			
RMLS-14	#129 337	Rocker switch		
RCC-14	#151 086	Fingertip control (side to side)		
RCCS-14	#043 688	Fingertip control (up and down)		
RHC-14	#129 340	Hand control		
RFCS-14	#043 554	Foot control		
Miscellaneous				
NEW! Industrial MIG Kit	#195 197	Includes 15 ft, 2/0 power cable and work lead with clamp, regulator/flow meter with 15 ft gas hose, Roughneck C-4015 MIG gun and consumables kit		
Polarity Control	#042 871			
Process Control Selector	#042 872			
Extension Cables		See page 6		
International Cable Adapter (Order from Miller Service Parts)	#168 077 #042 418	Female Male		
Standard Running Gear	#042 886			
Cylinder Rack/Lift	#043 005			
Standard Cylinder Rack	#042 887			
Rough Terrain Running Gear	#043 043	Not compatible with cylinder rack		
HF-251D-1 Starter/Stabilizer	#042 388	See Lit. Index No. AY/5.1		
Coolant Systems		See page 6		
Coolant	#043 810			
Primary Power Cable				
Secondary Welding Cables				
Work Cable and Clamp				

Date:

Total Quoted Price:

*CSA® Certified by Canadian Standards Association to both Canadian and U.S. Standards.

**NRTL/C CE 50/60 Hz models with CE Specifications are manufactured according to the Standards IEC-974-1 and EN-60974-1.

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