

ALT 304

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**Multiprocess Welding
Power Source** 

Quick Specs

Heavy Industrial Applications

Construction
Fabrication
Light Manufacturing
MRO

Processes

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

*With optional controls only

Input Power 1-Phase, 3-Phase

Rated Output 400 A Maximum Output
300 A at 32 VDC, 60% Duty Cycle
225 A at 29 VDC, 60% Duty Cycle

Max. Open-Circuit Voltage 85

Weight 78 lb (32 kg)

The Power of Blue.®

New!

400 amps maximum output
(1-phase and 3-phase).

Miller's exclusive **Auto-Line™** technology (ALT) allows for any input voltage hook-up (208–575 V) with no manual linking, providing convenience in any job setting.

Enhanced low-end performance for stainless steel and thin-metal applications.

Process selector switch reduces the number of control set-up combinations without reducing features. The operator can make quick and easy changes to the ALT 304 when changing processes.

Lift-Arc™ for TIG arc starts without the use of high frequency. Starts the arc at any amperage without contaminating the weld with tungsten.

Adaptive Hot Start™ for Stick arc starts automatically increases the output amperage at the start of a weld should the start require it. Eliminates sticking of the electrode at arc start.



Superior 6010 stick electrode performance with inverter arc control technology provides the ALT 304 the puddle control demanded especially by the pipe welding industry.

Dual digital meters display both volts and amps for quick and easy viewing by operator. Meters are presettable for ease of setting weld output. Hold function lets the operator view actual welding output when the arc is broken.

Fan-On-Demand™ cooling system operates only when needed reducing noise, energy usage, and the amount of airborne contaminants pulled through the machine.

Optional gas solenoid for TIG welding.

Optional 115 VAC auxiliary power provides 10 amps circuit-breaker-protected auxiliary power for water circulators or other such devices.

Lightweight, durable aluminum case offers protection with the benefit of reduced weight.

Weld cable connections are made easy with high-quality **International-style quick disconnects**. (Two connectors supplied with each unit.)

Wind Tunnel Technology™ protects electrical components and PC boards from contamination, significantly improving reliability.

TRUE BLUE
3 YR. WARRANTY

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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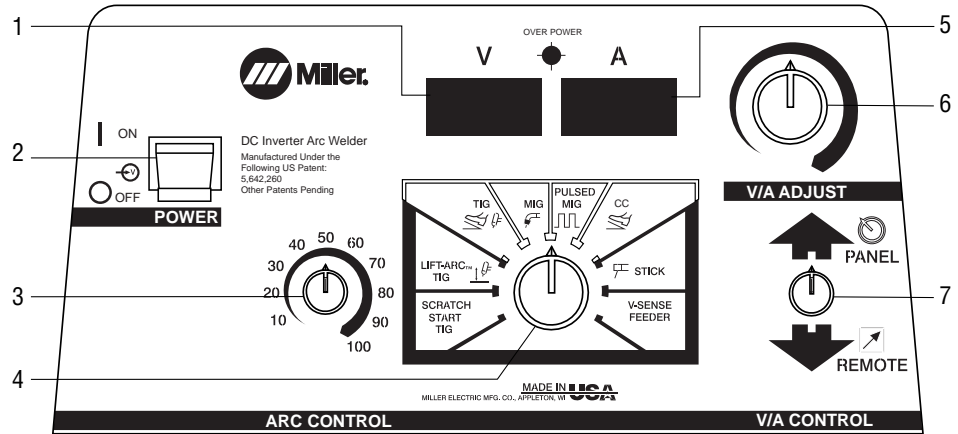
Specifications (Subject to change without notice.)



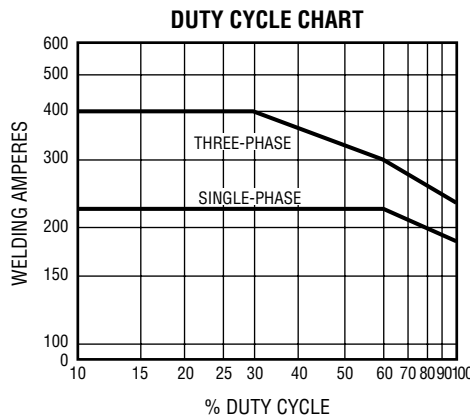
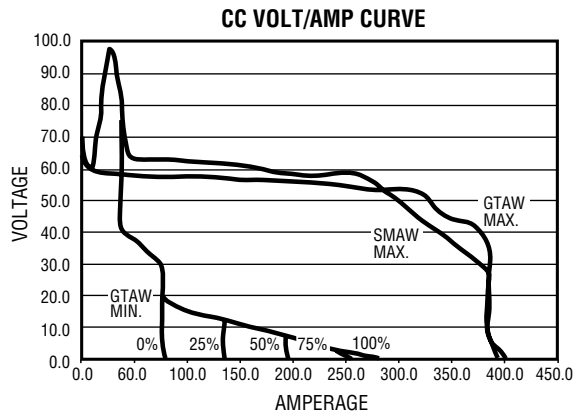
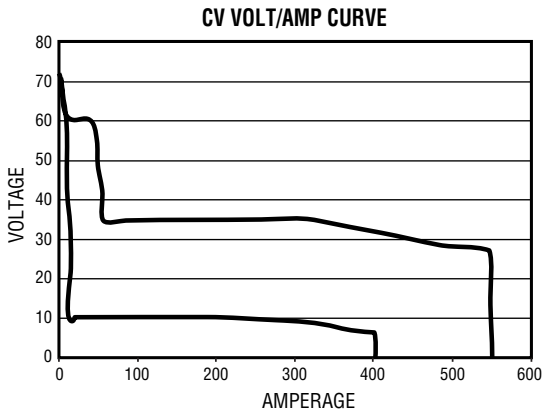
Input Power	Rated Output at 60% Duty Cycle	Voltage Range in CV Mode	Amperage Range in CC Mode	Max. Open-Circuit Voltage	RMS Amps Input at Rated Load Output, 60 Hz, 3-Phase at NEMA Load Voltages and Class I Rating							Dimensions	Weight
					208 V	230 V	400 V	460 V	575 V	KVA	KW		
3-phase	300 A at 32 VDC	10–35 V	5–400 A	85 VDC	33.27	30	17	14.79	11.72	12	11.5	H: 17 in (432 mm) W: 12-1/2 in (318 mm) D: 24 in (610 mm)	Net: 78 lb (32 kg)
1-phase	225 A at 29 VDC	10–35 V	5–400 A	85 VDC	41.2	37.3	—	15.5	—	8.56	7.94		

Control Panel

1. Voltmeter
2. Power On/Off Switch
3. Inductance/Dig Control
4. Process Selector Switch (Rotary Switch)
5. Ammeter
6. Voltage/Amperage Adjustment Control
7. Voltage/Amperage Control Switch



Performance Data



Genuine Miller Options and Accessories



Optima™ #043 389

A multipurpose, microprocessor-based pulse control for both synergic MIG (wire welding or GMAW) or manual MIG pulsing. Use this control with the ALT 304 CC/CV power source and any Miller wire feeder, including automatic feeders and spool guns. Includes a 25 ft (7.6 m) cord with 14-pin plug. Features of the control include:

- Manual MIG pulse mode allowing operator to individually control peak amperage, background amperage, pulses per second and pulse width
- Synergic MIG pulse mode provides synergic pulse spray programs
- Pulse spray transfer eliminates spatter associated with the short circuit or globular transfer process
- Both adaptive and non-adaptive pulsing modes for a wide range of applications
- Standard MIG (GMAW) mode for non-pulsed applications
- Microprocessor-based technology for easy setup
- Convenient digital readout for better repeatability. Readout displays program number, pulse mode (adaptive or non-adaptive), arc length (0–100) and volts (for MIG only).
- Voltage-sensing leads are not required, resulting in less cord clutter
- Includes a 25 ft (7.6 m) cord with 14-pin plug
- For best pulsing performance, use 4/0 weld cable and no more than 50 ft (15.2 m) of total cable

Extension Cords for Optima

- #043 725 25 ft (7.6 m)
- #043 726 50 ft (15.2 m)
- #043 727 75 ft (22.9 m)



WC-24 Weld Control #137 549

Packaged in a compact, lightweight, non-metallic enclosure, the WC-24 easily mounts directly on the power source.

It's designed for use with

Miller CV power sources supplying 24 VAC and 14-pin receptacles. The control includes a board-mounted potentiometer which can alter the drive motor acceleration rate to optimize arc starting performance. For use with Spoolmatic 30A spool gun.



WC-115A Weld Control #137 546

This control operates on 115 VAC, and is designed primarily for CC DC power sources. It can also be used with CV power sources or DC engine drives supplying 115 VAC. When used with a CC source, the control circuit functions in a voltage-sensing mode. When used with a CV source, it functions as a constant-speed circuit. Standard features include a wire run-in control and a drive motor acceleration control which ensure optimum arc starting performance, regardless of the type of power source being used. The WC-115A comes with a 10 ft (3 m), wall-type plug power cord, and a 14-pin contactor cord.

Process Selector Control #042 872

This control is designed for use with dual wire feeders, applications where electrical isolation and/or polarity reversing of weld current is required, and for easy welding process changes.

Includes 115 VAC, 2 amp receptacle, two 14-pin receptacles and a 10 ft (3 m) 14-pin cord.



PC-300 Pulsed TIG (DC GTAW) Control #042 297

Can be used with power sources that have a built-in or external high-frequency unit. The control has two internally switchable scales: a 0.5–20 pulses-per-second scale for both inverter and non-inverter type power sources, and a 10–300 pulses-per-second scale for inverter power sources only. Control includes 8 ft (2.4 m) inter-connecting cord and 115 VAC power cord.

Front panel controls provide:

- Peak amperage adjustment
- Background amperage adjustment
- Pulses-per-second adjustment (0.5–20 pulses-per-second scale or 10–300 pulses-per-second scale)
- Percent-on-time control
- Amperage remote/panel control
- Output contactor on/off control
- Pulser on/off
- Power on/off
- Remote control receptacle (for remote hand or foot controls)



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 DC TIG (GTAW) process. Operates on 115 VAC 50/60/100 Hz. See Lit. Index No. AY/5.1.

Extension Cords for Remote Controls and 24 VAC Wire Feeders

- #122 973 25 ft (7.6 m)
 - #122 974 50 ft (15.2 m)
 - #122 975 75 ft (22.8 m)
- 14-pin plug to a 14-pin socket.

Note: Not for use with Optima, 60M, or XR-M.

Extension Cords (115 VAC)

- #043 725 25 ft (7.6 m)
- #043 726 50 ft (15.2 m)

Remote Controls



RFCS-14 Foot Control #043 554
Heavy-duty foot current and contactor control. Includes 20 ft (6 m) cord and 14-pin plug.



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.



RMLS-14 #129 337 14-pin plug
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.



RCC-14 Remote Contactor and Current Control #151 086 14-pin plug
Rotary-motion fingertip control fastens to TIG torch using two Velcro® straps. Includes 28 ft (8.5 m) control cord.



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.

Running Gear



MIGRunner™ Cart #195 445
Small footprint and easily maneuverable, with cylinder rack low enough that you do not have to lift bottles. Durable, heavy-duty ergonomic handles are designed for comfort.

Inverter MIGRunner™ Kit #195 088
Includes Roughneck C-4015 15-ft gun, weld cable, work cable, regulator/flowmeter, gas hose, .035 and .045 in V-groove 4-drive roll kits, and Roughneck consumable kit.

Water Coolant Systems

For more information, see the Miller Coolant Systems literature sheet, 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.



Spoolmatic® 30A #130 831

A 1-lb, air-cooled spool gun that extends the weld process range by adding a handy portable system for small wire MIG. Rated 200 A at 100% duty cycle. Includes 30 ft (9.1 m) cable assembly. (WC-24 #137 549 for 14 pin.)

Wire Feeders



XR® Control #181 538

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



S-74D #195 058

Wire feeder features process and weld control and handles a variety of wires up to 1/8 in. See Lit. Index No. M/3.0.



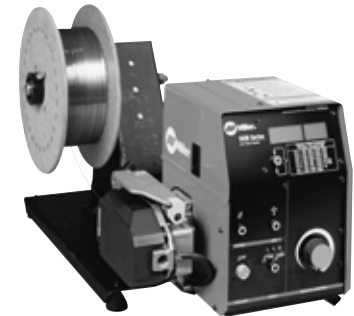
S-22P12 Wire Feeder #125 616

Compact, lightweight 24 VAC constant-speed semi-automatic wire feeder provides portability in outdoor environments. Primarily designed for gas-shielded wires. Accommodates up to a 30 lb (13.6 kg), 12 in (304 mm) diameter spool. See Lit. Index No. M/6.3.



Super S-32P Wire Feeder #159 928

A compact, portable, voltage-sensing wire feeder for .035 – 5/64 in (0.6 – 2.0 mm) flux cored wire. See Lit. Index No. M/6.3.



60M Series

S-60M #131 794

D-60M #131 796

See Lit. Index No. M/2.4.



22A Wire Feeder #193 006

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



SuitCase 8VS™ Wire Feeder #194 890

An ergonomically sound, lightweight wire feeder for .023 – .052 in (0.6 – 1.3 mm) 8 in spools. See Lit. Index No. M/6.4.



Inverter Guard #195 045

Rugged frame that will protect the machine from damage in transit. Connects easily with four screws under the machine.

Genuine Miller Options and Accessories (continued)

Guns



Roughneck™ C-Series Guns

See Lit. Index No. AY/17.0 for guns and consumables.



Ironmate™ FC-1260 (FCAW)

#195 732 10 ft (3 m)

#195 729 15 ft (4.6 m)

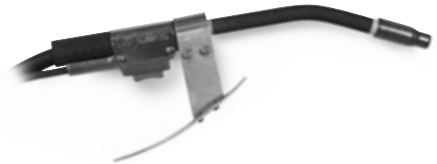
See Lit. Index No. AY/16.0.

Ironmate™ FC-1260LM (FCAW)

#194 912 10 ft (3 m)

#194 911 15 ft (4.6 m)

See Lit. Index No. AY/16.0.



Ironmate™ FC-1150 (FCAW)

#194 864 10 ft (3 m)

#194 863 15 ft (4.6 m)

See Lit. Index No. AY/16.0.

International-Style Connectors (Will accept Dinse™ or other International connectors.)

Note: All ALT 304 power sources are equipped with International-style connectors for secondary connections. (Power source is shipped with two 50-mm male International-style plugs for use with #1 or #2 AWG size cable.)

International-Style Connector Kit

#042 418 50 mm

Accepts #1 or #2 AWG cable size. Required if male plugs shipped with power source must be replaced, if additional plugs are needed.

#042 533 70 mm

Accepts #1/0 or #2/0 AWG cable size. Required if #1/0 or #2/0 AWG size cable is to be used.

Kit includes one International-style male plug which attaches to the work and/or weld cables and plugs into the International-style receptacles on the power source.

Extension Kit for International-Style Cable Connectors

#042 419 50 mm

Accepts #1 or #2 AWG size cable.

#042 534 70 mm

Accepts #1/0 or #2/0 AWG size cable.

Used to adapt or extend weld and/or work cables. Kit includes one male International-style plug and one in-line female International-style receptacle.



International/Tweco® Adapter #042 465

A one-piece adapter which has an International-style male plug (to power source) on one end and a female Tweco receptacle (for weld cable connection) on other end.



International/Cam-Lok Adapter #042 466

A one-piece adapter which has an International-style male plug (to power source) on one end and a Cam-Lok receptacle (for weld cable connection) on other end.

Ordering Information

Power Source and Options	Stock No.	Description	Qty.	Price
ALT 304	#903 846 #903 846-01-1	208-575 VAC with Auto-Line 208-575 VAC with Auto-Line and Auxiliary Power		
MIG Accessories				
Optima™ MIG Pulse Control	#043 389	For ALT 304 CC/CV model only		
Optima™ Extension Cords	#043 725 #043 726 #043 727	25 ft (7.6 m) 50 ft (15.2 m) 75 ft (22.9 m)		
WC-24	#137 549	For use with ALT 304 and Spoolmatic 30A		
WC-115A	#137 546	For use with ALT 304		
Process Selector Control	#042 872			
TIG Accessories				
Gas Solenoid Kit	#195 444			
PC-300 Pulsed DC TIG Control	#042 297			
HF-251D-1 HF Starter/Stabilizer	#042 388	See Lit. Index No. AY/5.1		
RFCS-14	#043 554	Foot control		
RHC-14	#129 340	Hand control		
RMLS-14	#129 337	Rocker switch		
RCC-14	#151 086	Fingertip control		
RCCS-14	#043 688	Fingertip control		
Accessories				
Extension Cords (For 24 VAC wire feeders and remote controls. Not to be used with Optima™, 60M or XR-M)	#122 973 #122 974 #122 975	25 ft (7.6 m) 50 ft (15.2 m) 75 ft (22.8m)		
Extension Cords (115 VAC)	#043 725 #043 726	25 ft (7.6 m) 50 ft (15.2 m)		
MIGRunner Cart	#195 445			
Inverter MIGRunner Kit	#195 088			
Inverter Guard	#195 045			
Coolmate™ 3	#043 007 #043 008	115 VAC 230 VAC		
Coolmate™ V3	#043 009	115 VAC		
Coolmate™ 4	#042 288	115 VAC		
Coolant	#043 810			
Wire Feeders				
Spoolmatic® 30A	#130 831	See Lit. Index No. M/1.2		
S-22P12	#125 616	See Lit. Index No. M/6.3		
22A	#193 066	See Lit. Index No. M/11.0		
XR® Control	#181 538	See Lit. Index No. M/1.7		
Super S-32P	#159 928	See Lit. Index No. M/6.3		
SuitCase 8VS	#194 890	See Lit. Index No. M/6.4		
S-74D	#195 058			
60M Series S-64M D-64M	#131 794 #131 796	See Lit. Index No. M/2.4		
Guns				
Roughneck™ C-Series Guns		See Lit. Index No. M/17.0		
Ironmate™ FC-1260 Flux Cored Gun	#195 732 #195 729	10 ft (3 m). See Lit. Index No. M/16.0 15 ft (4.6 m).		
Ironmate™ FC-1260LM Flux Cored Gun	#194 912 #194 911	10 ft (3 m). See Lit. Index No. M/16.0 15 ft (4.6 m).		
Ironmate™ FC-1150 Flux Cored Gun	#194 864 #194 863	10 ft (3 m). See Lit. Index No. M/16.0 15 ft (4.6 m).		
International-Style Connectors				
Connector Kit	#042 418 50 mm #042 533 70 mm			
Extension Kit for Cable Connectors	#042 419 50 mm #042 534 70 mm			
International/Tweco® Adapter	#042 465	A one-piece adapter with International-style male plug		
International/Cam-Lok Adapter	#042 466	A one-piece adapter with International-style male plug		

Date:

Total Quoted Price:

Distributed by:

