

Maxstar® 200 Series

Issued Jan. 2010 • Index No. DC/32.0

TIG/Stick Welding
Power Source 

Quick
Specs



Industrial Applications

Precision Fabrication
Petro/Chemical
Aerospace
Food/Beverage Industry
Dairy
Shipboard

Processes

TIG (GTAW)
Pulsed TIG (GTAW-P)
Stick (SMAW)
Air Carbon Arc (CAC-A)
5/32 in maximum

Input Power 115–460 V, 3- or 1-Phase Power

Amperage Range 1–200 A

Rated Output 200 A at 28 V, 20% Duty Cycle

Weight 37 lb (16.8 kg)

The Power of Blue.®



Allows for any input voltage hookup (115–460 V) with no manual linking, providing convenience in any job setting. Ideal solution for dirty or unreliable power.

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

NEW! Complete Packages — See page 5 for more information.

Lift-Arc™ starting provides x-ray clean welds without the use of high frequency.

Blue Lightning™ — High Frequency Arc Starter for non-contact arc initiation.

More consistent arc starts compared to traditional HF arc starters.

Greater reliability and no maintenance on solid state components. Preset parameters for tungsten sizes from .020–1/8 inch provide optimized starting for applications from thick to micro thin material. For unique applications, custom settings are programmable.

Maxstar 200 DX
Fingertip Complete
Package

Maxstar 200 SD



DC TIG Features

Exceptionally smooth and precise arc for welding exotic materials.

Stick Features (DC)

Tailored arc control (DIG) allows the arc characteristic to be changed for specific applications and electrodes. Smooth running 7018 or stiffer, more penetrating 6010.

Hot Start™ adaptive control provides positive arc starts without sticking.

TRUE BLUE
3YR. WARRANTY

Power source is warranted for 3 years, parts and labor.
Original main power rectifier parts are warranted for 5 years.
Water cooler is warranted for 1 year, parts and labor.

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



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An Illinois Tool Works Company
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Appleton, WI 54914 USA

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International Phone: 920-735-4554
International FAX: 920-735-4125

Web Site
www.MillerWelds.com



Specifications (Subject to change without notice.)



Welding Mode	Welding Amperage Range	Max. Open-Circuit Voltage	Input Power	Rated Output	Amps Input at Rated Load Output, 50/60 Hz,						Dimensions	Net Weight
					115 V	230 V	400 V	460 V	KVA	KW		
TIG (GTAW)	DC 1–150 A (115 VAC)	75 VDC 9–14 VDC**	3-Phase	175 A at 17 V, 60% Duty Cycle	—	10.5	6.0	5.2	4.2	4.0	H: 13-1/2 in (343 mm) W: 7-1/2 in (191 mm) D: 17-1/2 in (445 mm) with TIGRunner® H: 46-1/4 in (1,175 mm) W: 23-1/2 in (597 mm) D: 22-1/4 in (565 mm)	37 lb (16.8 kg) with Contractor Kit 69 lb (31.3 kg) with TIGRunner® 129 lb (58.5 kg)
			1-Phase	175 A at 17 V, 60% Duty Cycle	—	17.4	—	—	4.0	4.0		
			150 A at 16 V, 70% Duty Cycle	29.7	—	—	—	3.4	3.4			
			125 A at 15 V, 100% Duty Cycle	23.0	—	—	—	2.6	2.6			
Stick (SMAW)	DC 1–90 A (115 VAC)	75 VDC 9–14 VDC**	3-Phase	150 A at 26 V, 60% Duty Cycle	—	13.1	7.4	6.4	5.2	5.0		
			1-Phase	150 A at 26 V, 60% Duty Cycle	—	21.7	—	—	5.0	5.0		
			125 A at 25 V, 50% Duty Cycle	34.1	—	—	—	4.0	3.8			
			90 A at 24 V, 100% Duty Cycle	25.0	—	—	—	4.0	3.8			
	DC 1–200 A (200–460 VAC)											

* Indicates idle draw. ** Sense voltage for Stick and Lift-Arc TIG.

CSA approval. All CE models conform to the applicable parts of the IEC 60974 series of standards.

Performance Data

DUTY CYCLE

110–120 V INPUT VOLTAGE

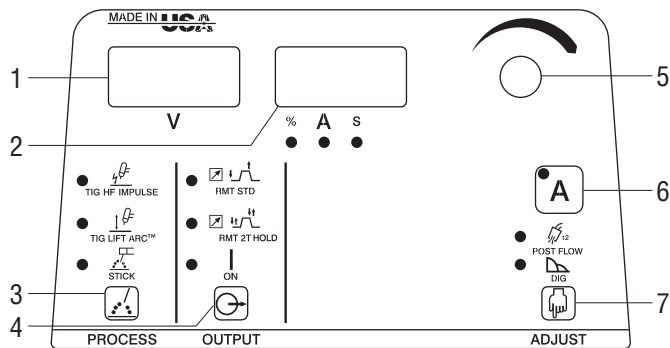
%	TIG	STICK
40%	150 A	125 A
70%	150 A	110 A
100%	125 A	90 A

200–460 V INPUT VOLTAGE

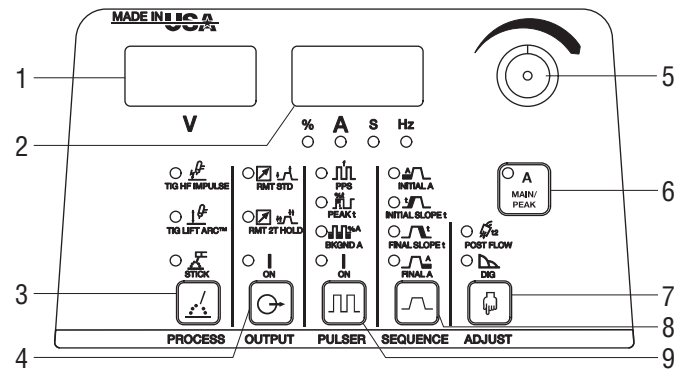
%	TIG	STICK
30%	200 A	200 A
40%	200 A	175 A
60%	175 A	150 A
100%	150 A	125 A

Control Panel

Maxstar 200 SD



Maxstar 200 DX/LX



Control Panel Parameter Values

- 1. Ammeter Display**
- 2. Voltmeter Display**
- 3. Process/ Arc Starting** TIG: HF Impulse, Lift Arc
STICK: Adaptive Hot Start
- 4. Output Control** Standard Remote, 2T Trigger Hold, Output ON
- 5. Encoder Control**
- 6. Amperage Control**
- 7. Adjust Postflow** 0.0–50 Seconds
DIG 0–100%

Advanced features on the Maxstar LX and DX:

- 8. Sequencer Control**
 - Initial Amps 1–200 A
 - Initial Slope 0.0–25.0 Seconds
 - Final Slope 0.0–25.0 Seconds
 - Final Amps 1–200 A
- 9. Pulsar Control**
 - Pulses per Second DC: 0.1–500 PPS
 - Peak Time 5–95%
 - Background Amps 5–95%

Additional Setup Parameter Values

- Preprogrammed Starts** .040 – 1/8 in Tungsten
- Programmable Starts**
 - Amperage 5–200 A
 - Time 1–200 Milliseconds
 - Ramp Time 0–250 Milliseconds
 - Minimum Amperage 1–20 A
- Additional Triggers** 3T, 4T, Mini Logic, 4T Momentary
- Spot/Timer** 0.1–25.0 Seconds
- OCV** Low OCV, Normal OCV
- Stick Stuck Check** On/Off
- Lockouts** Four levels
- Arc Timer** 0.0–9999 Hours and 0–59 Min
- Cycle Counter** 0–999,999 Cycles

Available in Three Models:

SD— Provides the basic features that are required for most TIG or Stick welding applications.

DX— When the job demands greater control the DX provides pulse on/off, pulse frequency, peak % time, background amperage, initial amperage, initial slope time, final slope time and final amperage control.

LX— Automation made simple. With the **Automation Interface Connector**, the integrator can quickly interface to the output disable, weld start/stop, gas start/stop inputs; valid arc, pulse lock out, and end of weld sequence outputs.

LX Additional Features:

- Initial start time 0.0–25.0 Seconds
- Weld cycle time 0.0–999 Seconds
- Final current time 0.0–25.0 Seconds

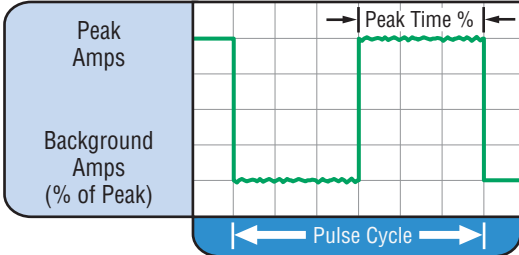
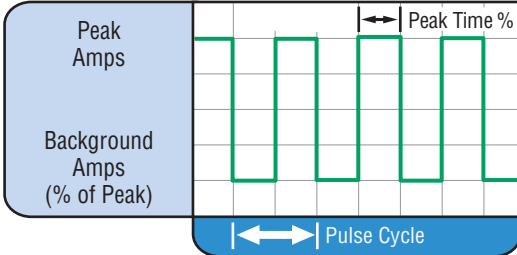
10-Pin Remote Connection Features:

- Weld cycle start/stop
- Gas start/stop
- Final slope output signal
- Pulse output signal
- Valid arc output signal

Pulse TIG Controls

High Speed DC TIG-Pulse Controls

- **PPS Pulses per second (Hz):** DC = 0.1 – 500 PPS
- **% ON – % Peak Time:** 5 - 95% (Controls the amount of time during each pulse cycle at the PEAK amperage.)
- **Background Amps:** 5 – 99% (Sets the low-pulse amperage value as a % of the Peak Amps.)

CONVENTIONAL PULSED TIG	HIGH SPEED PULSED TIG
 <p>The graph shows a single pulse cycle on a grid. The y-axis is labeled 'Peak Amps' and 'Background Amps (% of Peak)'. The pulse rises to a peak level and stays there for a duration labeled 'Peak Time %'. The background level is significantly lower than the peak. A blue bar at the bottom indicates the 'Pulse Cycle' duration.</p> <p>Typically from 1 to 10 PPS. Provides a heating and cooling effect on the weld puddle and can reduce distortion by lowering the average amperage. This heating and cooling effect also produces a distinct ripple pattern in the weld bead. The relationship between pulse frequency and travel speed determines the distance between the ripples. Slow pulsing can also be coordinated with filler metal addition and can increase overall control of the weld puddle.</p>	 <p>The graph shows multiple pulse cycles on a grid. The y-axis is labeled 'Peak Amps' and 'Background Amps (% of Peak)'. The pulses are much narrower and more frequent than in the conventional graph. The background level is lower than the peak. A blue bar at the bottom indicates the 'Pulse Cycle' duration.</p> <p>In excess of 40 PPS, Pulsed TIG becomes more audible than visible — causing increased puddle agitation for a better as-welded microstructure. Pulsing the weld current at high speeds — between a high Peak and a low Background amperage — can also constrict and focus the arc. This results in maximum arc stability, increased penetration and increased travel speeds (Common Range: 100 – 500 PPS).</p>

Packages



Maxstar® 200 Power Sources

- Maxstar® 200 SD #903 701 (CSA)
- Maxstar® 200 DX #903 701-01-1 (CSA)
- Maxstar® 200 DX #907 354 (CE ROHS)
- Maxstar® 200 LX #903 701-01-2 (CSA)

Includes:

- Adjustable shoulder strap
- 10 ft (3 m) primary power cord

- (2) international (Dinse 50) connectors
- (1) air-cooled TIG torch adapter (#195 378). *SD and DX models only*
- (1) 14-pin and 10-pin receptacle with mating plug. *LX model only*

Note: See page 6 for recommended Contractor Torch Kit

Maxstar® 200 DX Contractor Kit Packages (Air Cooled)

Maxstar 200 DX Foot Pedal Contractor Package #951 172 (CSA)

Maxstar 200 DX Fingertip Contractor Package #951 173 (CSA)

Packages include:

- Maxstar® 200 DX (#903 701-01-1)
- Adjustable shoulder strap
- 10 ft (3 m) primary power cord
- (2) international (Dinse 50) connectors
- Protective carrying case
- RFCS-14 HD foot pedal (#194 744) *or* RCCS-14 fingertip control (#043 688)

- Weldcraft® 25 ft (7.6 m) WP17 TIG torch with adapter
- Smith® flow gauge regulator with 12 ft (3.7 m) gas hose
- AK2C accessory kit
- .040", 1/16" and 3/32" cerium tungsten
- Collets and cups
- 200 amp, 15 ft (4.6 m) Stick electrode holder
- Work clamp with 15 ft (4.6 m) #4 cable
- (1) air-cooled TIG torch adapter (#195 378)



TIGRunner® Package (Water Cooled)

Maxstar® 200 DX TIGRunner® #903 701-02-2 (CSA)

Completely assembled.

Package includes:

- Maxstar® 200 DX (#903 701-01-1)
- Coolmate™ 1, 120 VAC (#300 360)
- (2) international (Dinse 50) connectors
- 1 gallon of pre-mixed, low conductivity Coolant (#043 810)
- 2-Wheel Trolley Cart (#300 480) with the following features: easy-to-maneuver

single-cylinder cart with cable and torch holders. Easy to release and remove welder from cart for even more portability. Convenient tray for consumable storage and filler rod holders.

Notes: TIG Torch Adapter must be ordered separately. See page 6 for recommended 250 A Water-Cooled Torch Kit (#300 185)

The Coolmate 1 requires a separate source for electricity. The Maxstar 200 does not contain auxiliary power.



Complete Packages (Water Cooled)

Maxstar® 200 DX Foot Pedal Complete #951 137 (CSA)

Maxstar® 200 DX Fingertip Complete #951 138 (CSA)

Completely assembled.

Package includes:

- Maxstar® 200 DX TIGRunner® (#903 701-01-1)
- Coolmate™ 1, 120 VAC (#300 360)
- (2) international (Dinse 50) connectors
- 1 gallon of pre-mixed, low conductivity Coolant (#043 810)

- 2-Wheel Trolley Cart (#300 480) with the following features: easy-to-maneuver single-cylinder cart with cable and torch holders. Easy to release and remove welder from cart for even more portability. Convenient tray for consumable storage and filler rod holders.
- RFCS-14 HD foot pedal (#194 744) *or* RCCS-14 fingertip control (#043 688)
- 250 A Water-Cooled Torch Kit and Accessories (#300 185) See pg. 6 for more details.

Note: The Coolmate 1 requires a separate source for electricity. The Maxstar 200 does not contain auxiliary power.



Genuine Miller Accessories

Running Gear



2-Wheel Trolley Cart #300 480

Easy-to-maneuver two-wheel cart features single-cylinder rack, chain for cylinder, straps (quick and easy to detach and carry machine), cable holders, torch holder, storage area, and filler rod storage area. Works with Dynasty® or Maxstar® 200 and Coolmate™ 1.

Contact your local distributor for filler material holders.



Universal Carrying Cart and Cylinder Rack #042 934

Holds power source, and gas cylinder up to 56 in (142.2 cm) high measuring 6 to 9 in (15.2 to 22.8 cm) in diameter.



Coolmate™ 1

#300 360 120 VAC 60 Hz CSA

#300 360-00-1 120 VAC 60 Hz CE

#300 459 240 VAC 50/60 Hz CSA

#300 459-00-1 240 VAC 50/60 Hz CE

1-gallon water cooler designed for 200 amp portable welders. Features include: Fin-and-Tube heat exchanger, back-lit power switch, external filter, polyethylene tank and coolant level sight gauge.



250 A Water-Cooled Torch Kit #300 185

- 25 ft (7.6 m) Weldcraft® WP20 torch
- Torch cable cover
- AK4C torch accessory kit includes shielding cups, collets, collet bodies and 2% cerium tungsten electrodes (1/16, 3/32 and 1/8 in)
- Smith® regulator/flowmeter HM2051A-580
- 12 ft (3.7 m) rubber gas hose (regulator to machine)
- Water-cooled Dinse torch adapter
- 15 ft (4.6 m) 1/0 weld lead with clamp (work or ground lead) and Dinse connector



TIG Coolant

#043 810

Sold in multiples of 4. Pre-mixed low-conductivity Miller coolant contains ethylene glycol

and deionized water to protect from freezing and boiling -37° to 227°F (-38° to 108°C). 1-gallon plastic recyclable bottles.



Water-Cooled Dinse #195 377

Used to adapt WP20, WP18, and CS310 to dinse-style connector. Order from Miller Parts.



Contractor Kits

#195 054 Foot Pedal Kit

#195 055 Fingertip Kit

RFCS-14HD foot or RCCS-14 fingertip control, protective carrying case, 150 Amp WP17 25 ft (7.6 m) TIG Torch with adapter, Smith® flow gauge regulator and 12 ft (3.7 m) gas hose, AK2C Accessory Kit (.040, 1/16, and 3/32 in cerium tungsten, collets and cups), Stick electrode holder, 200 Amp, 15 ft (4.6 m) #4 cable, and work clamp with 15 ft (4.6 m) #4 AWG cable.



200 Amp Air-Cooled Torch

#WP2612RM (12 ft)

#WP2625RM (25 ft)

Torch body gas valve models are available

Note: Adapter #195 379 required for WP26. Order from Miller Parts.



Air-Cooled Torch Adapters

#195 378 WP17, WP9, WP50, WP23

#195 379 WP26

Order from Miller Parts.

TIG Welding Gloves

#227 813 Small #227 815 Large

#227 814 Medium #227 816 X-Large

Made from soft grain goatskin. Sewn with Kevlar® thread. Order from Miller Parts.

Genuine Miller Accessories (continued)

Tungsten

Tungsten is 7 in length and available in pkgs of 10. Order from Miller Parts.

2% Ceriated (orange) for AC/DC applications

- #WC040X7 .040 in, 10–80 A
- #WC116X7 1/16 in, 70–150 A
- #WC332X7 3/32 in, 140–250 A
- #WC018X7 1/8 in, 225–400 A
- #WC532X7 5/32 in, 300–500 A

1.5% Lanthanum (gold) for AC/DC applications

- #WL040X7 .040 in, 10–80 A
- #WL116X7 1/16 in, 70–150 A
- #WL332X7 3/32 in, 140–250 A
- #WL018X7 1/8 in, 225–400 A
- #WL532X7 5/32 in, 300–500 A

Educational Material

Gas Tungsten Arc (TIG) Welding Book #170 555

To order, distributors can call the Miller Literature Distribution Center at 1-920-735-4356, or FAX 1-920-735-4011.

Ron Covell TIG Welding Basics DVD

To order go to MillerWelds.com

Remote Controls and Switches



RCCS-14 Remote Contactor and Current Control #043 688 14-pin plug North/south rotary-motion fingertip control fastens to TIG torch using two Velcro® straps. Includes 26.5 ft (8 m) control cord.



RFCS-14 HD Foot Control #194 744 Maximum flexibility is accomplished with a reconfigurable cord that can exit the front, back or either side of the pedal. Foot pedal provides remote 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 83 mm). Includes 20 ft (6 m) cord and 14-pin plug.



RMLS-14 Switch #129 337 Momentary- and maintained-contact rocker switch for contactor control. Push forward for maintained contact and backward for momentary contact. Includes 26.5 ft (8 m) cord and 14-pin plug.



RMS-14 On/Off Control #187 208 Momentary-contact switch for contactor control. Rubber-covered pushbutton dome switch ideal for repetitive on-off applications. Includes 26.5 ft (8 m) cord and 14-pin plug.

Extension Cords for 14-Pin Remote Controls
#122 973 25 ft (7.6 m)
#122 974 50 ft (15.2 m)
#122 975 75 ft (23 m)

Multi-Operator Rack



4-Pack Rack (empty) #195 051

Appropriate fuses required.

- Rugged enclosure provides a simple means for protecting and transporting multiple welding power sources for construction, power plant turn-arounds, and shipbuilding applications.
- Light weight and small footprint for easy transportation. Low weight enables the use of elevators to move the rack.
- Top cover protects machines from falling debris.
- Lifting eye simplifies transportation using crane or overhead lifting device.
- Lift truck side and end fork pockets.
- One main disconnect box with fused circuit breaker switches for each machine.
- Common output ground connection (for same polarity use only).



4-Pack Rack Running Gear #195 114

Large 5-inch diameter wheels enable the rack to be moved over grating and driveway gravel.

Power Source	Rack Capacity	Input Power to Rack	Generator kW (Required)	Rack Fuse Size (3 per Power Source Required)*	Dimensions	Net Weight
Maxstar 200	4	230 V @ 74 A	20 kW	30 A (#199 795)	H: 59-3/8 in (1508 mm) W: 43 in (1092 mm) D: 34-3/8 in (873 mm)	Rack only 239 lb (108 kg)
		460 V @ 36 A	20 kW	15 A (#220 514)		with Power Sources 387 lb (176 kg)

*Rack comes with 25 A fuses. Order appropriate fuses for primary voltage

Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
Maxstar® 200 SD	#903 701	Auto-Line™ 115–460 VAC, 50/60 Hz, CSA . 10 ft primary cord		
Maxstar® 200 DX	#903 701-01-1	Auto-Line™ 115–460 VAC, 50/60 Hz, CSA . 10 ft primary cord		
Maxstar® 200 DX International	#907 354	Auto-Line™ 115–460 VAC, 50/60 Hz, CE ROHS . 10 ft primary cord.		
Maxstar® 200 LX	#903 701-01-2	Auto-Line™ 115–460 VAC, 50/60 Hz, CSA . 10 ft primary cord		
Air-Cooled Systems				
Maxstar® 200 DX Foot Pedal Contractor Kit	#951 172	Auto-Line™ 115–460 VAC, 50/60 Hz, CSA . 10 ft primary cord		
Maxstar® 200 DX Fingertip Contractor Kit	#951 173	Auto-Line™ 115–460 VAC, 50/60 Hz, CSA . 10 ft primary cord		
Water-Cooled Systems				
Maxstar® 200 DX TIGRunner®	#903 701-02-2	Auto-Line™ 115–460 VAC, 50/60 Hz, CSA . 10 ft primary cord. (Torch kit and accessories sold separately.)		
Maxstar® 200 DX Foot Pedal Complete	#951 137	Auto-Line™ 115–460 VAC, 50/60 Hz, CSA . 10 ft primary cord		
Maxstar® 200 DX Fingertip Complete	#951 138	Auto-Line™ 115–460 VAC, 50/60 Hz, CSA . 10 ft primary cord		
TIG Torch Kits				
Weldcraft® 250 A Water-Cooled Torch Kit	#300 185	See page 6		
Contractor Kit Foot Pedal (Air-Cooled)	#195 054	See page 7		
Contractor Kit Fingertip (Air-Cooled)	#195 055	See page 7		
Remote Controls				
RCCS-14	#043 688	North/south fingertip control		
RFCS-14 HD	#194 744	Heavy-duty foot control		
RHC-14	#129 340	Hand control		
RMLS-14	#129 337	Momentary/maintained rocker switch		
RMS-14	#187 208	Momentary rubber dome switch		
Extension Cords	#122 973	25 ft (7.6 m)		
	#122 974	50 ft (15.2 m)		
	#122 975	75 ft (22.9 m)		
Accessories				
4-Pack Rack (empty)	#195 051	<i>Order power source and fuses separately</i>		
4-Pack Rack Running Gear	#195 114	(4) 5-in diameter wheels and brackets		
Fuses	#199 795	230 V, 30 A Individual fuse. 12 required for 4 Pack		
	#220 514	460 V, 15 A Individual fuse. 12 required for 4 Pack		
2-Wheel Trolley Cart	#300 480	See page 6		
Universal Carrying Cart and Cylinder Rack	#042 934	See page 6		
Coolmate™ 1	#300 360	120 VAC, 60 Hz, CSA . <i>Requires coolant</i>		
	#300 360-00-1	120 VAC, 60 Hz, CE . <i>Requires coolant</i>		
	#300 459	240 VAC, 50/60 Hz, CSA . <i>Requires coolant</i>		
	#300 459-00-1	240 VAC, 50/60 Hz, CE . <i>Requires coolant</i>		
TIG Coolant	#043 810	Sold in multiples of 4. 1-gallon plastic bottles		
Gas Tungsten Arc (TIG) Welding Book	#170 555	<i>Order at MillerWelds.com/resources/tools/</i>		
Ron Covell TIG Welding Basics DVD		<i>Order at MillerWelds.com/resources/tools/</i>		
Water-Cooled Dinse <i>Order from Miller Parts</i>	#195 377	Used to connect water-cooled torch to Dinse terminal machine. For WP20, WP18 and SC310 (adapter included in Complete Package)		
Air-Cooled Dinse <i>Order from Miller Parts</i>	#195 378	Used to connect WP17, WP9 and WP23 torch to Dinse terminal machine		
	#195 379	Used to connect WP26 torch to Dinse terminal machine		
Dinse Connector 50 mm (1 male)	#042 418	Used to connect weld lead to Dinse terminal machine		
Dinse Connector 50 mm (1 male, 1 female)	#042 419	Used to extend weld cables		
Tweco® Terminal Adapter	#042 465	Male Dinse to female Tweco		
Cam-Lok Terminal Adapter	#042 466	Male Dinse to female Cam-Lok		

Date:

Total Quoted Price:

Distributed by:

