

Auto Deltaweld™ 500/600

Automated MIG
Welding Systems



QUICK SPECS

General Manufacturing

Heavy industrial manufacturing
General fabrication
Structural steel fabrication
Transportation
Sheet metal fabrication
Light-gauge tube and sheet

Processes

MIG (GMAW)
Flux-cored (FCAW)
Metal-cored (GMAW-C)
Accu-Pulse® MIG (GMAW-P)
RMD® (Regulated Metal Disposition)
Versa-Pulse™ (GMAW-P)
High-deposition MIG (GMAW)
Profile Pulse™

Auxiliary Power 115 V standard

Input Power

208/230/460 V or 575 V, three-phase, 60 Hz

Rated Output

500: 500 A at 100% duty cycle
600: 600 A at 100% duty cycle

Output Range

500: 30–650 A, 10–44 V
600: 30–750 A, 10–44 V

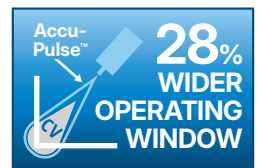
Designed for integrators, Auto Deltaweld is your direct path to incorporate Miller welding technology into your portfolio.



Auto Deltaweld 500 shown with user-supplied cobot.



Auto Deltaweld 500 shown with Auto Elite wire drive on user-supplied robot.



Easy to use

Programming and operation is driven by the automation system controller. Weld process settings can also be accessible via the webpage interface.

Advanced welding processes

Specific applications require specific welding processes, utilize the advanced welding processes provided in the Auto Deltaweld to improve quality and boost productivity.

Easy to integrate

Auto Deltaweld provides both Modbus TCP and EtherNet/IP for direct communications to your automation system.



Power source is warranted for three years, parts and labor.
Original main power rectifier parts are warranted for five years.



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An ITW Welding Company
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Appleton, WI 54912-1079 USA

Equipment Sales US and Canada
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International Phone: 920-735-4554

MillerWelds.com



Auto Deltaweld™ 500/600 Features



Ethernet communication receptacle allows webpage display and access for weld set up, troubleshooting, and power supply configuration

USB access for software updates, and fault information downloading.



Status indicator LED lights indicate communication and connectivity.

Wind Tunnel Technology™. Internal air flow that protects electrical components and PC boards from dirt, dust and debris — greatly improving reliability.

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

Standard 115-volt auxiliary power provides 15 amps of circuit-breaker-protected power.



Ethernet communication receptacle allows for both Modbus TCP and EtherNet/IP communication protocols to directly communicate with your automation system.



ArcConnect™ is a next generation communication that utilizes high speed signals to improve weld performance and allow point-of-use controls to be located at the feeder.

Auto Deltaweld™ 500/600 Specifications (Subject to change without notice.)



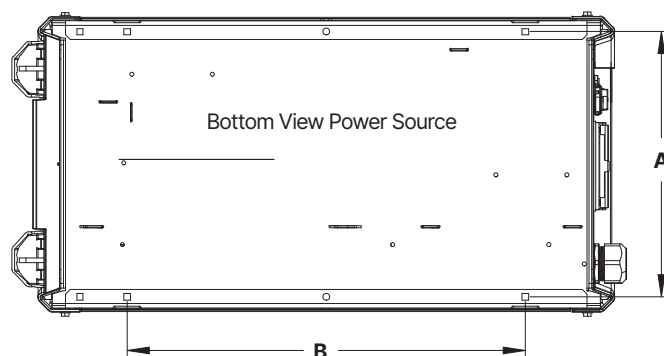
MODEL	MODE	AMP/VOLT RANGES	RATED OUTPUT	AMPS INPUT AT RATED OUTPUT, 60 HZ, 3-PHASE 208 V 230 V 460 V 575 V KVA KW							DIMENSIONS	NET WEIGHT
Auto Deltaweld 500	MIG (GMAW)	30–650 A, 10–44 V	500 A at 39 VDC, 100% duty cycle	64.2	58.1	30.4	24.8	24.2 (24.7**)	21.7 (21.7**)		H: 18.55 in. (471 mm) W: 15.35 in. (390 mm) D: 31.65 in. (804 mm)	145 lb. (65.8 kg)
			575 A at 42.75 VDC, 60% duty cycle	80.2	73.5	38.0	30.4	30.3 (30.2**)	27.2 (27.2**)			
			650 A at 44 VDC, 25% duty cycle	94.2	84.9	43.9	34.9	35.0 (34.8**)	31.6 (31.7**)			
Auto Deltaweld 600	MIG (GMAW)	30–750 A, 10–44 V	600 A at 44 VDC, 100% duty cycle	64.2	58.1	40.6	32.3	29.1 (29.2**)	32.3 (32.2**)		H: 18.55 in. (471 mm) W: 15.35 in. (390 mm) D: 31.65 in. (804 mm)	145 lb. (65.8 kg)
			700 A at 44 VDC, 60% duty cycle	80.2	73.5	47.7	37.6	34.2 (34.1**)	38.1 (37.4**)			
			750 A at 44 VDC, 40% duty cycle	94.2	84.9	51.1	40.5	36.7 (40.5**)	40.8 (40.4**)			

*On 208 and 230 V input power, Auto Deltaweld 600 operates at the same output ratings as Auto Deltaweld 500. **KVA and KW for 575-volt model.



Certified by Canadian Standards Association to both the Canadian and U.S. Standards.

Mounting Specifications



A. 14 in. (356 mm)

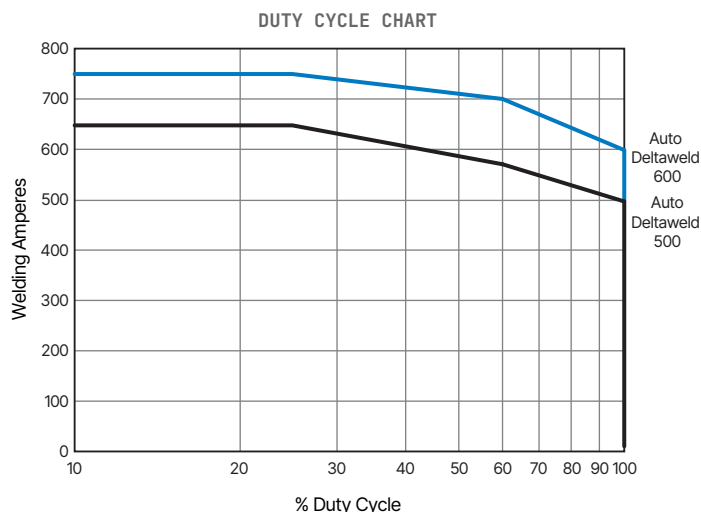
B. 21 in. (533 mm)

Height: 18.55 in. (471 mm)

Width: 15.35 in. (390 mm)

Depth: 31.65 in. (804 mm)

Performance Data



System Processes

BEST FOR	STANDARD SPRAY	HD MIG	ACCU-PULSE	VERSA-PULSE	SHORT CIRCUIT	RMD
Deposition	A	A	A	B	D	D
Gap filling	D	D	B	B	A	A
Low heat input	D	C	B	A	A	A
Out-of-position welds			A	B	B	B
Low spatter	A	A	A	B	C	B
Thick metals	A	A	A	C	D	D
Thin metals			B	A	A	A
Increased travel speed	A	A	A	A	B	C

HOT COLD

Ratings A, B, C, and D are relative values. An "A" rating indicates a best fit between your performance needs and process. A "blank" rating indicates that the process is not recommended for that application.

For more information on advanced welding processes visit:
MillerWelds.com/technologies/advanced-welding-processes

MIG

- Lower spatter than traditional MIG welders

Accu-Pulse®

- The most popular process for majority of industrial welding applications
- Most adaptive arc on 16 gauge (1.6 mm) and thicker
- Designed for all weld positions

Versa-Pulse™

- Fast, low-heat, low-spatter process — for materials 1/4 inch (6.35 mm) and thinner
- Great for gap filling
- Shortest arc length/lowest pulse voltage for lower heat and lower spatter at higher speeds

High-deposition MIG (HD MIG)

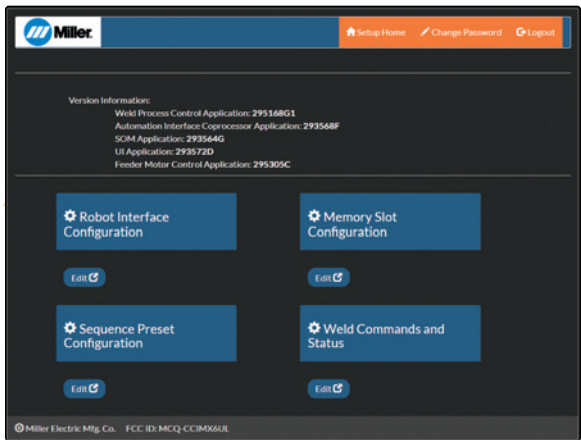
- Higher deposition rates than standard spray transfer on thicker materials
- Designed for welding applications in which spray transfer is preferred

RMD®

- Lowest heat process, best for gap handling
- Limited travel speed

Webpages

Webpages are an easy way to initialize and configure your automation welding system.



The use of webpage interface connection to the Auto Deltaweld power source:

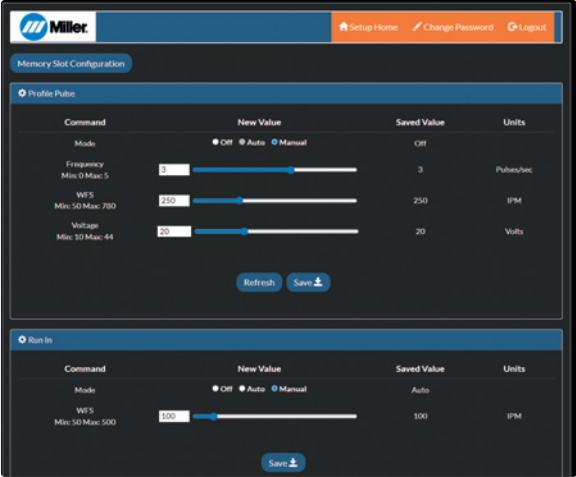


Direct connect to PC via Ethernet cable

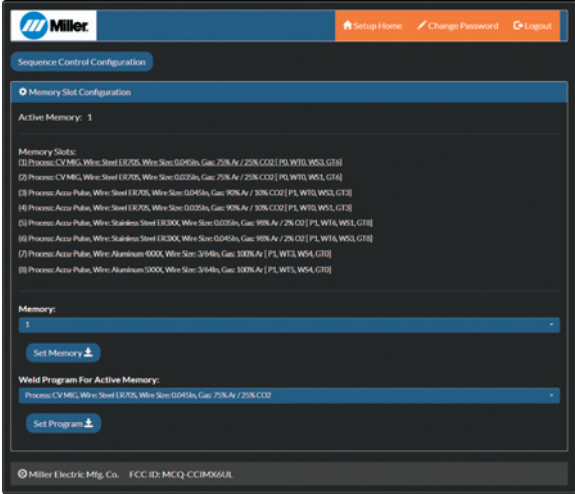


Direct connect through robot controller (if applicable)

MQTT-capable via webpage interface setup



Sequencing and control pages provide the user with more control and improved troubleshooting capabilities



Memory slot configuration provides control of allowable material type, wire diameter and weld process selection

System Features



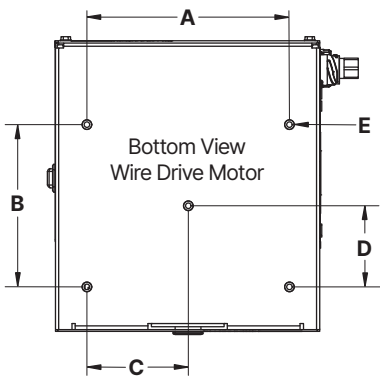
Quick release bracket on the Auto Elite Wire Drive allows rapid exchange of wire drives and easy access to torch liner, resulting in reduced downtime.



Auto Deltaweld™ Fixed Wire Drive Specifications (Subject to change without notice.)



Mounting Specifications

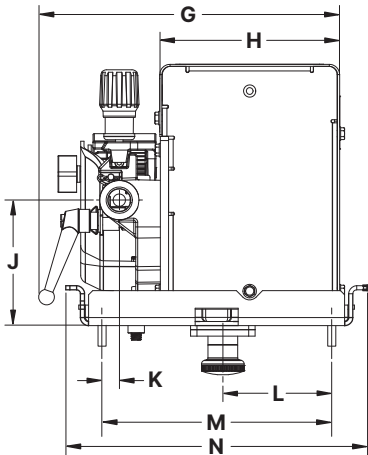
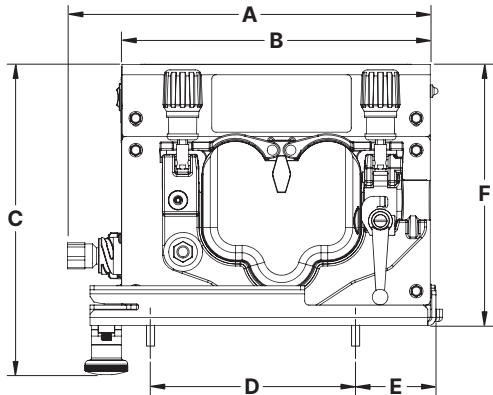


- A. 7.5 in. (190.5 mm)
 - B. 6 in. (152.4 mm)
 - C. 3.75 in. (95.25 mm)
 - D. 3 in. (76.2 mm)
 - E. (5) 1/4"-20 threaded holes
- Height: 9.7 in. (246 mm)
Width: 11.8 in. (300 mm)
Depth: 10.8 in. (274 mm)

INPUT POWER	WELDING POWER SOURCE	INPUT WELDING CIRCUIT RATING	WIRE FEED SPEED	WIRE DIAMETER CAPACITY	MAXIMUM SPOOL SIZE CAPACITY	DIMENSIONS	NET WEIGHT
50 VDC	Auto Deltaweld 350/500/600	600 A at 113 VDC, 60% duty cycle	50–780 ipm (1.3–19.8 m/min.)	.023–5/64 in. (0.6–2.0 mm)	18 in. (457 mm) 60 lb. (27 kg)	H: 9.7 in. (246 mm) W: 11.8 in. (300 mm) D: 10.8 in. (274 mm)	21.2 lb. (9.6 kg)

Certified by Canadian Standards Association to both the Canadian and U.S. Standards.

Auto Elite Wire Drive Specifications (Subject to change without notice.)



Mounting Specifications

- A. 11.054 in. (281 mm)
 - B. 9.4 in. (239 mm)
 - C. 9.456 in. (240 mm)
 - D. 6.25 in. (159 mm)
 - E. 2.451 in. (62 mm)
 - F. 7.961 in. (202 mm)
- G. 9.169 in. (233 mm)
 - H. 5.479 in. (139 mm)
 - J. 3.821 in. (97 mm)
 - K. 0.532 in. (13.5 mm)
 - L. 3.312 in. (84 mm)
 - M. 7 in. (178 mm)
 - N. 9.2 in. (234 mm)

INPUT POWER	WELDING POWER SOURCE	INPUT WELDING CIRCUIT RATING	WIRE FEED SPEED	WIRE DIAMETER CAPACITY	DIMENSIONS	NET WEIGHT
50 VDC	Auto Deltaweld 350/500/600	600 A at 113 VDC, 60% duty cycle	50–780 ipm (1.3–19.8 m/min.)	.023–5/64 in. (0.6–2.0 mm)	H: 7.69 in. (202 mm) W: 9.17 in. (233 mm) D: 11.054 in. (281 mm)	16.6 lb. (7.5 kg)

Certified by Canadian Standards Association to both the Canadian and U.S. Standards.

Genuine Miller® Accessories

Mounting And Spool Support

301752 Fixed wire drive base and spool support

301753 Upright with HUB and spindle

Volt-Sense Cable 242212050

50 ft. (15.2 m) cable for Miller® automation power sources.

Ethernet Cables

300734 9.8 ft. (3 m)

300736 32.8 ft. (10 m)

Industrial-grade 360-degree-shielded Cat 5 Ethernet cable with conventional RJ45 overmolded four-pole connector on one end to connect to factory network, and industrial M12 overmolded connector on the other end to attach to Auto Deltaweld power source. Cable supports 10/100 Mb/s-per-second transmission rate.

Note: Power source includes a 6.7 ft. (2 m) Ethernet cable.



Tregaskiss® High-Deposition MIG Consumables

401-9-75 Nozzle

D-ATSH Diffuser



Wire Straightener

141580 For .035–.045 in. (0.9–1.1 mm) wire.

141581 For 1/16–1/8 in. (1.6–3.2 mm) wire.

Helps reduce the cast in wire to improve wire feeding performance and increase the service life of the gun liner and contact tip.

Coolant Systems



Industrial Water Cooler 301759 115 V

2.5-gallon cooler for use with water-cooled torches rated up to 600 amps. Plugs directly into the 115-volt receptacle on the back of the Auto Deltaweld power source. Features easy front fill, external filter, and power and flow indicators.

Additional Cooler Options

043007 Coolmate™ 3 (115 V)

043008 Coolmate™ 3 (230 V)

042288 Coolmate™ 4 (115 V)

See literature AY/7.2.

Coolant 043809

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

Drive Roll Kits and Guides

Select drive roll kits from chart below according to type and wire size being used.

Drive roll kits include four drive rolls, necessary guides and feature an anti-wear sleeve for inlet guide.

WIRE SIZE	V-GROOVE FOR HARD WIRE 	U-GROOVE FOR SOFT WIRE OR SOFT-SHELLED CORED WIRES 	V-KNURLED FOR HARD-SHELLED CORED WIRES 	U-COGGED FOR EXTREMELY SOFT WIRE OR SOFT-SHELLED CORED WIRES, (I.E., HARD FACING TYPES) 
.023/.025 in. (0.6 mm)	087132	—	—	—
.030 in. (0.8 mm)	046780	—	—	—
.035 in. (0.9 mm)	046781	044750	046792	—
.035 and .045 in. (0.9 and 1.2 mm)	227061*	244293**	—	—
.040 in. (1.0 mm)	191917	—	—	—
.045 in. (1.1/1.2 mm)	046782	046785	046793	083319
.052 in. (1.3/1.4 mm)	046783	046786	046794	—
1/16 in. (1.6 mm)	046784	046787	046795	046800
.068/.072 in. (1.8 mm)	—	—	—	—
5/64 in. (2.0 mm)	—	046788	046796	046801

*Drive roll is dual-size reversible with one .035-inch and one .045-inch groove.

**Drive roll is dual-size reversible with one .035-inch and one .045-inch groove which also accommodates .047-inch (3/64-inch) wire.

Wire Guides

WIRE SIZE	INLET GUIDE	INTERMEDIATE GUIDE
.023–.040 in. (0.6–1.0 mm)	221030	056206
.045–.052 in. (1.2–1.3 mm)	221030	056207
1/16–5/64 in. (1.6–2.0 mm)	221030	056209
5/64–1/8 in. (2.0–3.2 mm)	229919	056211

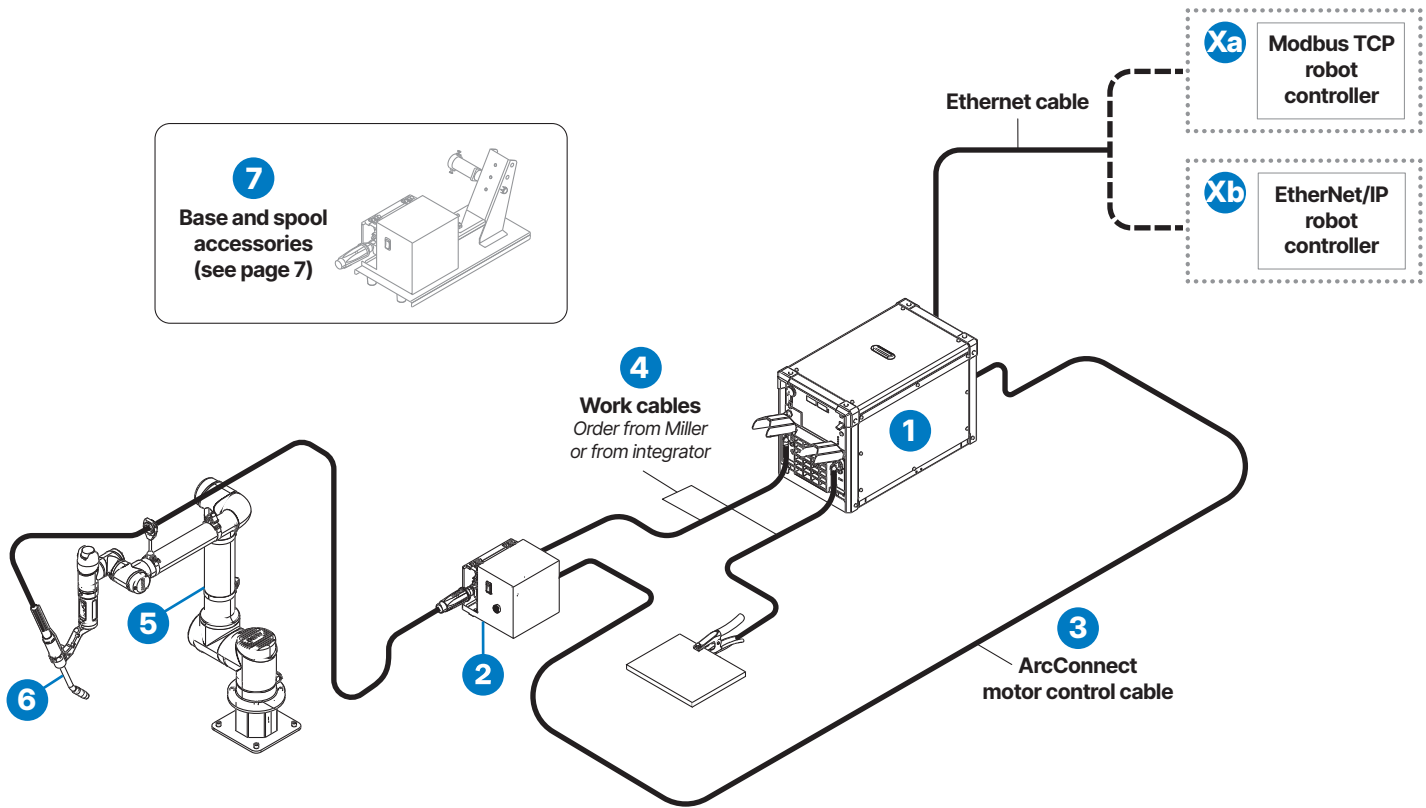
Note: When ordering hard wire kits, retain factory-supplied inlet guide.

Nylon Guides for Feeding Aluminum

WIRE SIZE	INLET GUIDE AND INTERMEDIATE GUIDE KITS
.035 in. (0.9 mm)	293928
.047 in. (1.2 mm)	293929
1/16 in. (1.6 mm)	293930

Note: U-groove drive rolls are recommended when feeding aluminum wire.

Typical Cobot Installations (Cobot and fixed/automation pulsed MIG or conventional MIG.)



1 Power Source

See page 9. All power sources are equipped with both Modbus TCP and EtherNet/IP communication, and include a 6.7-foot (2 m) Ethernet communication cable.

2 Wire Drive Motor Assembly

See page 9. Auto Deltaweld only operates with a Miller Wire Drive.

3 ArcConnect Motor Control Cable

See page 9 for available ArcConnect cables.

4 Work Cables

Order work cables separately from Miller or from your integrator.

5 Cobot

User-supplied cobot.

6 Cobot MIG Torch

See page 9 for torch options and accessories.

7 Base and Spool Accessories

See page 9 for Miller spool assembly or alternative.

X Robot Controller Connection

- a** **Modbus TCP** — Requires Ethernet cable. 6.7-foot (2 m) cable included with power source. See page 9 for individual cables.
- b** **EtherNet/IP™** — Requires Ethernet cable. 6.7-foot (2 m) cable included with power source. See page 9 for individual cables.

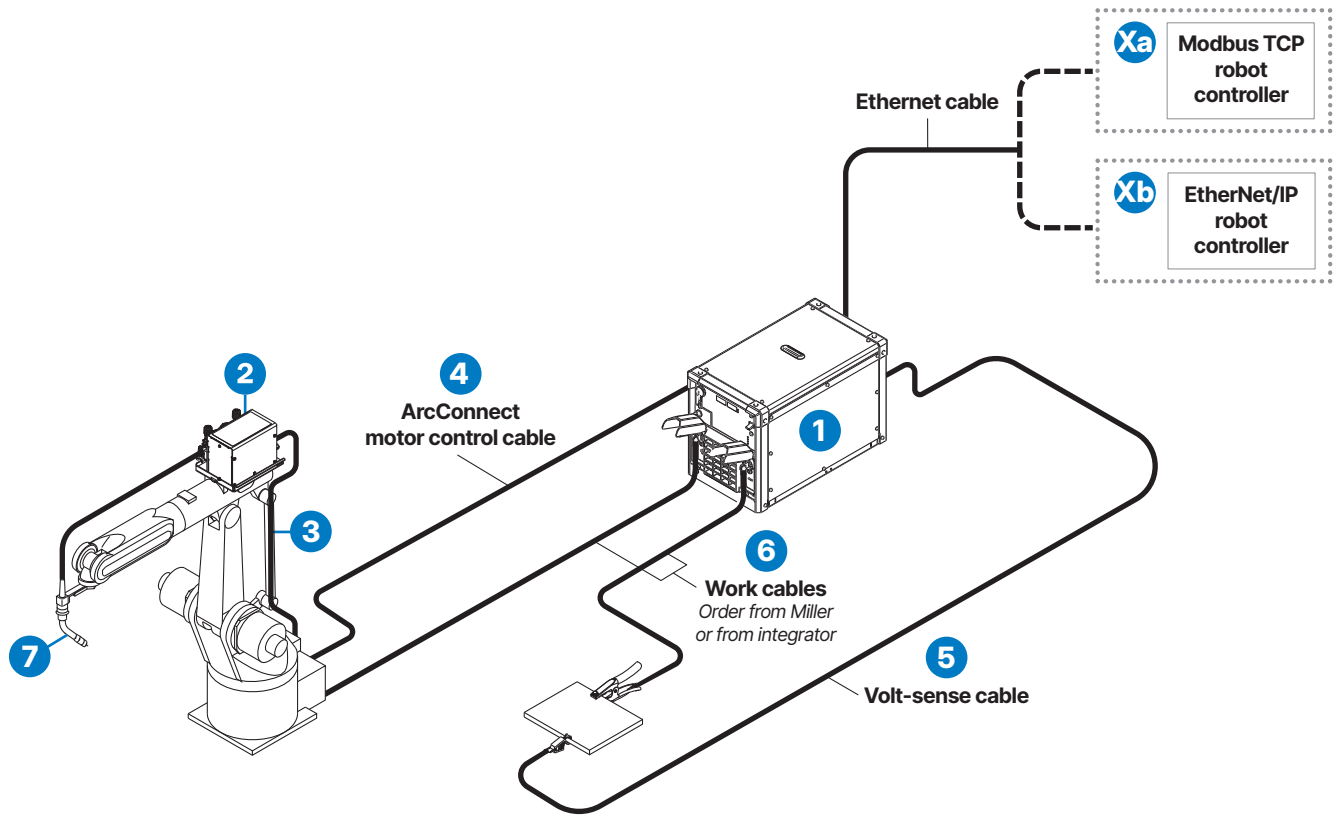
Cobot Ordering Information

EQUIPMENT AND OPTIONS	STOCK NO.	DESCRIPTION	QTY.	PRICE
1 Power Source				
Auto Deltaweld™ 500	907863	500 A, 208/230/460 V, for Modbus or EtherNet/IP™ robot controller		
	907864	500 A, 575 V, for Modbus or EtherNet/IP™ robot controller		
Auto Deltaweld™ 600	907944	600 A, 208/230/460 V, for Modbus or EtherNet/IP™ robot controller		
	907945	600 A, 575 V, for Modbus or EtherNet/IP™ robot controller		
2 Wire Drive Motor Assembly				
Auto Deltaweld Fixed Wire Drive	301881	Left-hand fixed wire drive		
3 ArcConnect™ Motor Control Cable (Choose One)				
90 Degree ArcConnect Cable	294080006	6 ft. (1.8 m)		
Standard ArcConnect Cable	280471009	9 ft. (2.7 m)		
	280471015	15 ft. (4.6 m)		
	280471025	25 ft. (7.6 m)		
4 Work Cables		Order work cables separately from Miller or from your integrator		
5 Cobot		User-supplied		
6 Cobot MIG Torch				
XR-Aluma-Pro™ CB	301889	See XR-Aluma-Pro CB literature AU/62.0 for required torch mounting arm and insulating disk options		
Push-Pull MIG Torch (Air-Cooled)				
XR-W Aluma-Pro™ CB	301912	See XR-Aluma-Pro CB literature AU/62.0 for required torch mounting arm and insulating disk options		
Push-Pull MIG Torch (Water-Cooled)				
Tregaskiss® Robotic MIG Torches		Visit BernardTregaskiss.com for information on torch models, peripherals, liners and consumables		
Accessories				
7 Base and Spool Support	301752			
Upright with Hub and Spindle	301753			
Spool Cover	295231			
Volt-Sense Cable	242212050	50 ft. (15.2 m)		
Ethernet Cables	300734	9.8 ft. (3 m)		
	300736	32.8 ft. (10 m) <i>Note: power source includes a 6.7 ft. (2 m) Ethernet cable.</i>		
Tregaskiss® High-Deposition MIG Consumables	401-9-75	Nozzle		
	D-ATSH	Diffuser		
Wire Straightener	141580	For .035–.045 in. (0.9–1.1 mm) wire		
	141581	For 1/16–1/8 in. (1.6–3.2 mm) wire		
Coolant Systems		See page 7		
Coolant	043809	Sold in cases of four one-gallon recyclable plastic bottles		
Drive Rolls		See page 7		

DATE :

TOTAL QUOTED PRICE :

Traditional Robot Installations (Robot and fixed/automation pulsed MIG or conventional MIG.)



1 Power Source

See page 11. All power sources are equipped with both Modbus TCP and EtherNet/IP communication, and include a 6.7-foot (2 m) Ethernet communication cable.

2 Wire Drive

See page 11. The Auto Elite Wire Drive is designed for traditional robotic applications. Quick release is standard on feeder.

3 Robot Arm Mounting Kits

See page 11. Kit includes all mounting brackets, power cable, shielding gas line and motor control cable.

Note: "Generic" listing is only for the motor control cable from base of robot to the feeder.

4 ArcConnect Motor Control Cable

See page 11 for available ArcConnect cables.

5 Volt-Sense Cable

See page 11 for 50 ft. (15.2 m) cable.

6 Work Cables

Order work cables separately from Miller or from your integrator.

7 Tregaskiss® Robotic MIG Torch

Visit BernardTregaskiss.com for information on torch models, peripherals, liners and consumables.

X Robot Controller Connection

- a Modbus TCP** — Requires Ethernet cable.
6.7-foot (2 m) cable included with power source.
See page 11 for individual cables.
- b EtherNet/IP™** — Requires Ethernet cable.
6.7-foot (2 m) cable included with power source.
See page 11 for individual cables.

Traditional Robot Ordering Information

EQUIPMENT AND OPTIONS	STOCK NO.	DESCRIPTION	QTY.	PRICE
1 Power Source				
Auto Deltaweld™ 500 (volt-sense cable not included)	907863 907864	500 A, 208/230/460 V, for Modbus or EtherNet/IP™ robot controller 500 A, 575 V, for Modbus or EtherNet/IP™ robot controller		
Auto Deltaweld™ 600 (volt-sense cable not included)	907944 907945	600 A, 208/230/460 V, for Modbus or EtherNet/IP™ robot controller 600 A, 575 V, for Modbus or EtherNet/IP™ robot controller		
2 Wire Drive				
Auto Elite Wire Drive	301768	Left-hand wire drive		
3 Robotic Arm Mounting Kits (Choose One)				
FANUC	301896	100ID and 120ID		
Kawasaki	301893 301894 301895	BA006L BA013L RS010L		
KUKA	301890 301891	KR6 R1440 KR6 R2010		
Panasonic	301864	TM G3		
Generic (motor control cable from base of robot to feeder only)	297815010 297815012	10 ft. (3 m) 12 ft. (3.6 m)		
4 ArcConnect™ Motor Control Cable (Choose One)		Distance between power source and robot		
90 Degree ArcConnect Cable	294080006	6 ft. (1.8 m)		
Standard ArcConnect Cable	280471009 280471015 280471025 280471050 280471075 280471100 280471150	9 ft. (2.7 m) 15 ft. (4.6 m) 25 ft. (7.6 m) 50 ft. (15.2 m) 75 ft. (22.9 m) 100 ft. (30.5 m) 150 ft. (45.7 m)		
5 Volt-Sense Cable	242212050	50 ft. (15.2 m)		
6 Work Cables		Order work cables separately from Miller or from your integrator		
7 Tregaskiss Robotic MIG Torch		Visit BernardTregaskiss.com for information on torch models, peripherals, liners and consumables		
Accessories				
Upright with Hub and Spindle	301753			
Spool Cover	295231			
Ethernet Cables	300734 300736	9.8 ft. (3 m) 32.8 ft. (10 m) <i>Note: power source includes a 6.7 ft. (2 m) Ethernet cable.</i>		
Tregaskiss® High-Deposition MIG Consumables	401-9-75 D-ATSH	Nozzle Diffuser		
Wire Straightener	141580 141581	For .035–.045 in. (0.9–1.1 mm) wire For 1/16–1/8 in. (1.6–3.2 mm) wire		
Coolant Systems		See page 7		
Coolant	043809	Sold in cases of four one-gallon recyclable plastic bottles		
Drive Rolls		See page 7		

DATE:

TOTAL QUOTED PRICE:

Distributed by:

