Issued Mar. 2022 • Index No. AU/10.0

Auto-Continuum™ Systems

Automated MIG Welding Systems

Quick Specs

Industrial Automation
- Construction equipment
- Automotive components
- Recreational vehicles
- Farm machinery
- Office furniture
- Mining machinery

Processes
- Advanced MIG processes:
  - Versa-Pulse™
  - Accu-Pulse® MIG (GMAW-P)
  - RMD®
- MIG (GMAW)
- High-deposition MIG (GMAW)
- Flux-cored (FCAW)

Input Power Auto-Line™ 230–575 V 3-phase, 50/60 Hz

Rated Output at 104°F (40°C)
350: 350 A at 31.5 V, 100% duty cycle
500: 500 A at 39 V, 100% duty cycle

Output Range
350: 20–400 A, 10–44 V
500: 20–600 A, 10–44 V

Take your welding to the next level.

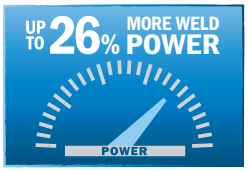
Next generation automation welding solution delivers advanced arc performance to improve throughput and weld quality.

The Auto-Continuum system features an adaptive arc with less spatter and improved gap handling, providing increased travel speeds and high-quality welds on a variety of base materials. Simple integration with fixed and flexible automation systems.

Insight

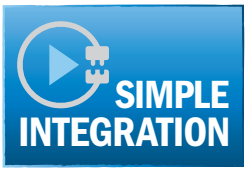
Integrated Welding Intelligence™ solutions. Delivers information to measure and improve your welding operation. See page 4 for more information.

Auto-Continuum 350 and Auto-Continuum wire drive motor assembly shown.

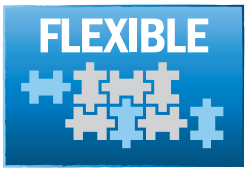


More power, better reliability

Better weld quality



Easy to set up and install for EtherNet/IP™, DeviceNet or Analog protocols



Easy to add capabilities

TRUE BLUE® 3 YR. WARRANTY

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

Miller®

ISO 9001 Quality

More power. Better reliability.

For demanding industrial applications.

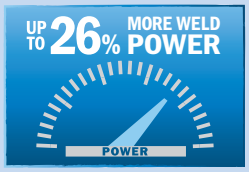
Power source design

Smart and powerful digital design has the fast response needed to deliver the most stable welding performance for better welding results.

Developed as a platform to meet current and future needs with integrated expansion capabilities.

Produces more power at higher duty cycles and temperature ratings than competitive models.

- More power maximizes reliability in demanding automation applications by keeping all internal components operating cooler regardless of the jobs to be done.
- More power ensures better welding results regardless of application or weld process.



More power, better reliability

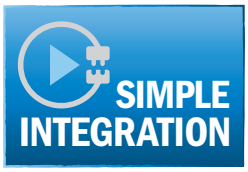
Auto-Continuum 350: up to 26% more weld power
11,000 watts versus 8,700 watts = 2,300 watts more!
(Continuum: 350 A x 31.5 V at 100% duty cycle = 11,000 watts)
(Competitor: 300 A x 29 V at 100% duty cycle = 8,700 watts)

Auto-Continuum 500: up to 18% more weld power
19,500 watts versus 16,425 watts = 3,075 watts more!
(Continuum: 500 A x 39 V at 100% duty cycle = 19,500 watts)
(Competitor: 450 A x 36.5 V at 100% duty cycle = 16,425 watts)

Wire drive motor assembly

Low-inertia motor provides faster response for the best arc starts with the least amount of spatter.

Reduced-weight design allows for quicker point-to-point arm movement and provides improved servo motor life.

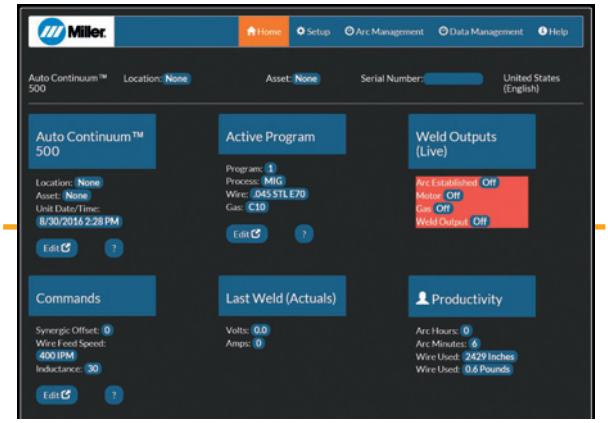


Easy to set up and install

- **Easy communication** from robot and power source
- **Wire drive motor assembly design** utilizes common Miller mounting configurations
- **Designed for easy integration** with fixed and flexible automation systems
- **Integrates** with major industrial robot brands
- **Simple retrofit** to existing automation systems

Webpages

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

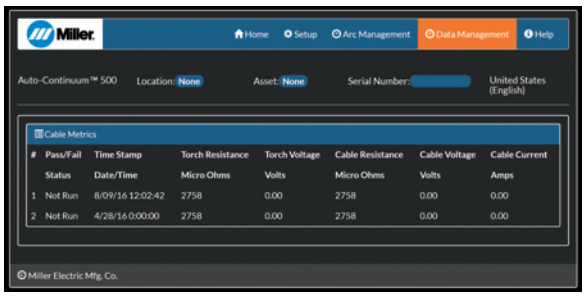


To use the webpage interface connect to the Auto-Continuum™ power source one of three ways:

- Connect to factory network via Wi-Fi
- Connect to factory network via Ethernet cable
- Direct connect to PC via Ethernet cable (see page 11 for recommended Ethernet cable)

Configure your robot settings to establish communication. Options include:

- EtherNet/IP™
- DeviceNet
- Analog



System status / event logs

- Access system logs to help identify weld cell issues (Example: can identify weld cable degradation)

Insight Welding Intelligence™

Insight Welding Intelligence is a portfolio of solutions that manage weld data to help our customers get more done, produce higher-quality welds and control costs. Learn more at MillerWelds.com/insight

Insight Core™ (Standard)

Insight Core reports welding productivity from a web-based application to measure and improve your operation.

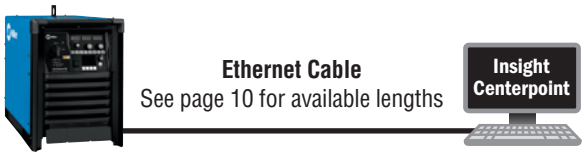
- **Measure welding productivity.** See each welder's arc-on time to set baselines, plan improvements and measure goals.
- **View easy-to-understand reports.** Dashboards show trends and develop reports. Compare welders, cells and plants.
- **Identify welding costs.** Make improvements to reduce expenses.
- **Easily install and use.** Just connect it to the internet. View secure data on any web-connected device anywhere.

Insight Centerpoint™ (Optional)

Insight Centerpoint is the real-time welder feedback solution that provides arc data monitoring, guidance and control within the weld cell.

- **Reduce training time.** Guide welders through the weld sequence in real time.
- **Ensure quality welds.** Contain weld defects early and control your weld operation by monitoring every parameter of every weld.
- **Reduce costs.** Alert welders if a weld is missed or is outside of acceptable parameters, allowing it to be corrected cost-effectively.

Insight Centerpoint ordering information

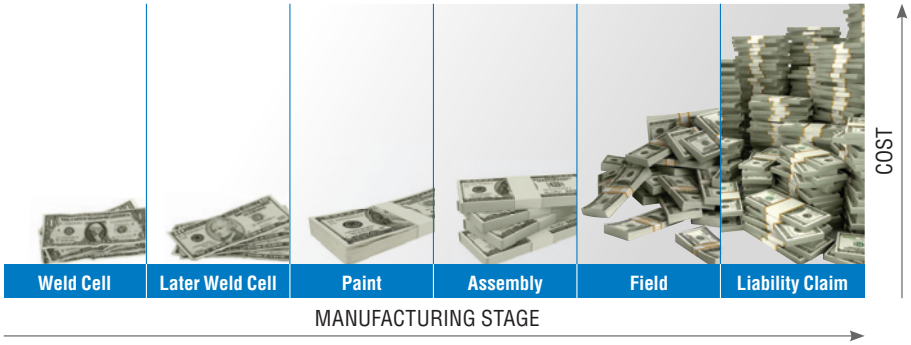


Centerpoint 10 License and Activation 951809

Gas Flow Sensor 301478
Continuum wire drive sensor kit with gas sensor for boom-mounted wire drive motors (works with Insight Core and Centerpoint).

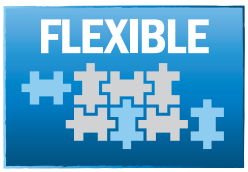
Cost of a missed weld or defect

Insight Centerpoint provides real-time guidance in the weld cell so welders can correctly complete even complex weld sequences. It also delivers control of weld operations by monitoring every weld and immediately alerting welders to missed/out-of-parameter welds — so weld operations can contain weld errors and minimize the cost of rework.



- Guide new inexperienced welders through the manufacturing process by presenting them with visual work instructions, reducing training time and out-of-date work instructions
- Centerpoint can prevent the next weld from occurring if missing or out-of-spec welds are detected, to alert and direct the operator to which weld(s) are out of parameter, reducing inspection time
- Repair can be done at the weld cell before paint, final assembly, or finished product delivery, which significantly reduces the cost of rework and improves overall parts quality

Flexibility



Easy to add capabilities

Fleet standardization. Auto-Continuum™ can be used for both automation and hand-held applications.
Note: To convert Auto-Continuum for manual weld applications, order feeder base (301431) and wire feeder drive (301216).

Adaptable to a variety of fixed and flexible automation configurations and requirements.

Welding Intelligence.™ Improve your welding operations by increasing productivity, improving quality and managing costs with Insight Core™ (standard) and Insight Centerpoint™ (optional) welding information management systems.

Easily add new processes and custom programs via the USB interface.

Parameter flexibility allows the system to be set for voltage and wire feed speed control, or for voltage and amperage control.

Communication protocol options:
- EtherNet/IP™
- DeviceNet
- Analog

Automation applications

Hand-held applications

Auto-Continuum™ System Processes

Each weld program is designed for specific wire and gas combinations — for optimized performance.

Low spatter levels at high travel speeds is a requirement in automated welding. The Versa-Pulse process precisely controls the welding arc, significantly reducing spatter size and quantity over traditional processes.

Better weld quality

The adaptive arcs of Versa-Pulse™ and Accu-Pulse® instantly make adjustments to handle weld tacks, large gaps and inconsistent parts. The result is higher quality welds and fewer weld defects.

Versa-Pulse™

- Fast, low-heat, low-spatter process — for high-speed automation on 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

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

RMD®

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

High-deposition MIG

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

MIG

- Lower spatter than traditional MIG welders
- Better arc performance with silicon bronze and coated materials

Best for	Standard Spray	High-Deposition MIG	Accu-Pulse	Versa-Pulse	MIG Short Circuit	RMD
Deposition	A	A	A	B	D	D
Gap Filing	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	A	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

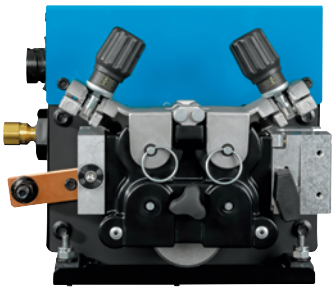
***Ratings A, B, C, and D** are relative values. An "A" rating indicates a best fit between your performance needs and process. A "blank" rating indicates that the process is not recommended for that application.*

Auto-Continuum™ System Features

Tru-Feed™ technology provides precise feeding operation for stable arc performance.

- **Low-inertia motor** provides faster response for the best arc starts with the least amount of spatter.
- **Balanced-pressure drive-roll design and tensioners** feed wire in its truest and straightest form for consistent feedability.

Spring-loaded Accu-Mate™ connection prevents the gun from being pulled loose.



Quick-change dual-bearing drive rolls give you more consistent wire feeding.

Drive rolls and guides are common with other Miller industrial feeders (use existing, not new parts).

Inlet guide installation is toolless.

Wind Tunnel Technology.™ Internal air flow that protects electrical components and PC boards from dirt, dust, 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.

AUTO-LINE™ TECHNOLOGY Allows for any input voltage hookup (230–575 V) with no manual linking. Provides convenience in any job setting and eliminates weld defects caused by dirty or unreliable power.

Control display for easy reference of weld parameters.

Parameter flexibility allows the system to be set for voltage and wire feed speed control, or for voltage and amperage control.

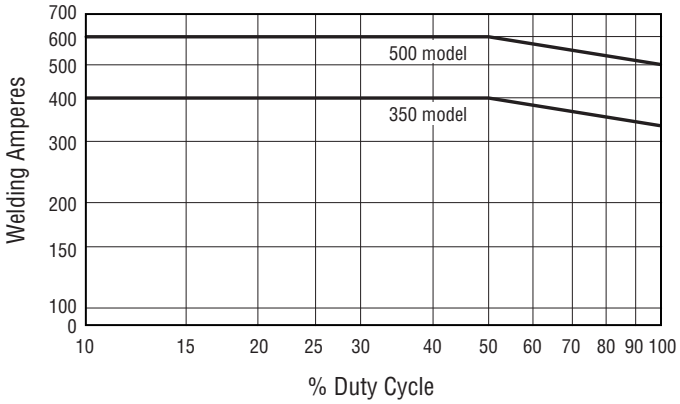
Auto-Continuum™ Specifications (Subject to change without notice.)

Model	Amp/Volt Ranges	Rated Output	Amps Input at Rated Output, 50/60 Hz, 3-Phase 230 V	380 V	400 V	460 V	575 V	KVA	KW	Max. Open-Circuit Voltage	Dimensions	Net Weight
Auto-Continuum 350	20–400 A 10–44 V	350 A at 31.5 VDC, 100% duty cycle	36.7 0–1*	21.8 0–1*	20.8 0–1*	18.8 0–1*	14.6 0–1*	14.4 0.8*	13.8 0.17*	72 VDC	H: 27.19 in. (691 mm) *(including lift eye)* W: 17.5 in. (444 mm) D: 28.22 in. (717 mm)	130 lb. (59.4 kg)
Auto-Continuum 500	20–600 A 10–44 V	500 A at 39 VDC, 100% duty cycle	57.6 0–1*	34.7 0–1*	33.2 0–1*	28.9 0–1*	23.3 0–1*	23.1 0.8*	21.9 0.17*	72 VDC		150 lb. (69 kg)

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

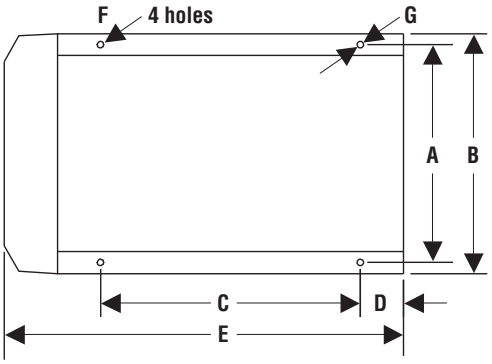
Performance Data

Duty Cycle Chart



Mounting Specifications

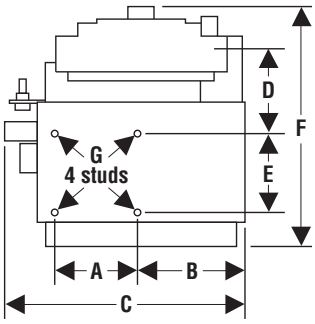
Bottom View Power Source



A. 16.093 in. (409 mm)
B. 17.5 in. (444 mm)
C. 17.375 in. (441 mm)
D. 2.281 in. (58 mm)
E. 26.172 in. (665 mm)
F. .468 in. (12 mm) dia.
G. .468 in. x 1 in. (12 x 25 mm)

Height: 27.187 in. (691 mm)
Width: 17.5 in. (444 mm)
Depth: 28.125 in. (714 mm)

Bottom View Wire Drive Motor



A. 3.5 in. (89 mm)
B. 4.36 in. (111 mm)
C. 10 in. (254 mm)
D. 3.56 in. (101 mm) (distance from mounting studs to power pin hole)
E. 3.25 in. (83 mm)
F. 10 in. (254 mm)
G. 1/4 in.-20 mounting studs

Height: 8.75 in. (222 mm)
Width: 10 in. (254 mm)
Depth: 10 in. (254 mm)

Wire Drive Motor Assembly Specifications (Subject to change without notice.)

Auto-Continuum™ Wire Drive Motor Assembly
301207 Left-hand drive
301208 Right-hand drive

Input Power	Welding Power Source	Input Welding Circuit Rating	Wire Feed Speed	Wire Diameter Capacity	Dimensions	Net Weight
50 VDC	Auto-Continuum 350 or 500	500 A at 100% duty cycle	**Standard** 50–1,000 ipm (1.27–25.4 m/min.)	.035–5/64 in. (0.9–2.0 mm)	H: 8.75 in. (222 mm) W: 10 in. (254 mm) D: 10 in. (254 mm)	16.5 lb. (7.5 kg)

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

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)	U-groove for aluminum wires contains nylon guides
.035 in. (0.9 mm)	**151026**	—	**151052**	—	**265255**
.035 and .045 in. (0.9 and 1.2 mm)	**235336***	—	**151052**	—	**265255**
.040 in. (1.0 mm)	**161190**	—	—	—	—
.045 in. (1.1/1.2 mm)	**151027**	**151037****	**151053**	**151070**	**265256****
.052 in. (1.3/1.4 mm)	**151028**	—	**151054**	—	—
1/16 in. (1.6 mm)	**151029**	**151039**	**151055**	**151072**	**265257**
.068/.072 in. (1.8 mm)	—	—	**151056**	—	—
5/64 in. (2.0 mm)	—	—	**151057**	—	—
3/32 in. (2.4 mm)	—	**151041**	**151058**	—	—

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

Nylon Wire Guides for Feeding Aluminum Wire

Wire Size	Inlet Guide	Intermediate Guide
.035 in. (0.9 mm)	**221912**	**242417**
.047 in. (1.2 mm)	**221912**	**205936**
1/16 in. (1.6 mm)	**221912**	**205937**

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

Wire Guides

Wire Size	Inlet Guide	Intermediate Guide
.023–.040 in. (0.6–1.0 mm)	**221030**	**149518**
.045–.052 in. (1.1–1.4 mm)	**221030**	**149519**
1/16–5/64 in. (1.6–2.0 mm)	**221030**	**149520**
3/32–7/64 in. (2.4–2.8 mm)	**229919**	**149521**

Genuine Miller® Accessories

Auto-Continuum™ with DeviceNet

DeviceNet Communication Cable
300021 20 ft. (6.1 m)

Auto-Continuum Digital Peripheral Cable
301104 20 ft. (6.1 m)

Auto-Continuum Analog

Analog Receptacle Kits
194793 ABB®
194791 FANUC®
194790 Motoman®
195002 Universal
One required per machine. 12-inch (305 mm) length. For analog communication with robot controls via 72-pin Harting connector on Auto-Continuum.

DeviceNet to Analog Adapter 301547
Adapts DeviceNet to analog communication. Includes 9-foot (2.7 m) DeviceNet communication cable.

Analog Robot Simulator 195030
Device simulates the analog commands of typical robots. It can be used as a diagnostic tool to determine power source functionality and isolate robot, power source or cable issues.

For All Auto-Continuum Models

ADAM DI/O Module (Use model ADAM-6050-D available from advantech.com)
Provides a digital I/O interface for communication between a robot /PLC and Auto-Continuum power supply. The interface allows for the interaction of a robot or PLC and the Insight Centerpoint™ application. This module is **required** for all DeviceNet and analog Auto-Continuum models to run Insight Centerpoint.

Wire Drive Motor Mounting Brackets
300013 Universal – FANUC®/KUKA®/Motoman®
300483 FANUC® 100 and 120 IC

Welding Guns
Manual — see BernardWelds.com
Automation — see Tregaskiss.com

Motor Control Cables
263368025 25 ft. (7.6 m)
263368050 50 ft. (15.2 m)
263368080 80 ft. (24.4 m)
263368100 100 ft. (30.5 m)

90-degree Motor Control Extension Cables
281554015 15 ft. (4.6 m), 90 degree
281554025 25 ft. (7.6 m), 90 degree
Includes overmolded connections on high-flex cables for optimal service life.

Volt-Sense Cable 242212050
Replacement 50 ft. (15.2 m) cable. One cable supplied with Auto-Continuum power source.

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-Continuum power source. Cable supports 10/100 Mbits-per-second transmission rate.

Continuum Feeder Base and Spool Support 301431
Sheet metal construction. Allows mounting of Auto-Continuum wire drive motor for manual welding operations.

Wire Feeder Drive (Left) 301216
Use with feeder base and spool support when converting to a manual weld system.

Hub and Spindle Assembly 072094

Spool Cover
057607

Wire Reel Assembly
108008

Reel Cover 195412
For 60-pound (27 kg) coil. Helps to protect the welding wire from dust and other contaminants.

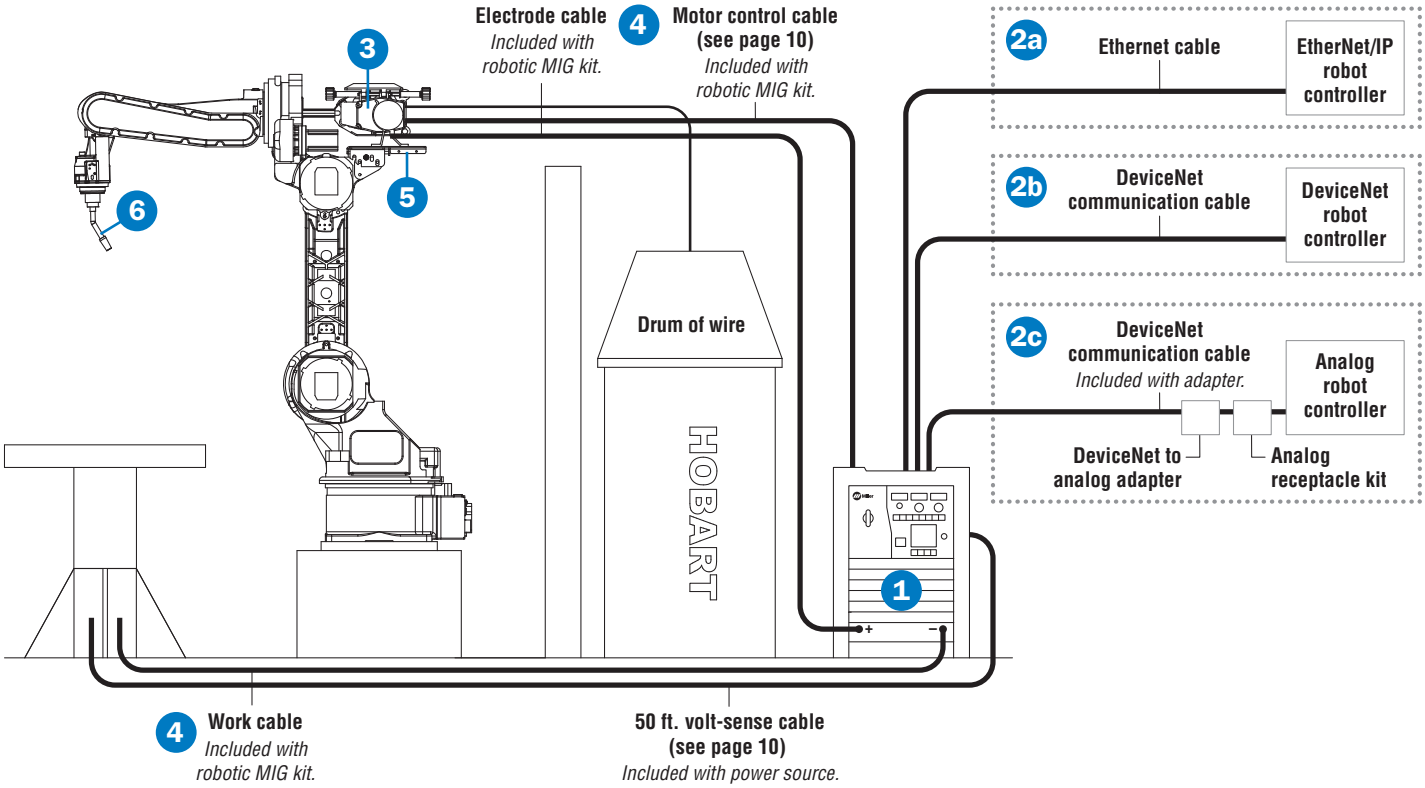
Wire Straightener
141580 For .035–.045 in. (0.9–1.1 mm) wire.
141581 For 1/16–1/8 in. (1.6–3.2 mm) wire.
Helps reduce the cast in wire to improve wire feeding performance and increase the service life of the gun liner and contact tip.

Coolant Systems

Continuum™ Cooler 301214
For use with water-cooled torches rated up to 500 amps. Integrated coolant flow switch ensures coolant is flowing in the system. The Continuum cooler mounts to the bottom of the Continuum power source. Power is supplied via an internal connection with the power source.

Low-Conductivity Coolant 043810
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.

Typical Installations (Robotic/automation pulsed MIG or conventional MIG.)



1 Power Source

See page 12 for available models. All power sources are equipped with both EtherNet/IP™ and DeviceNet communication and include a 50-foot (15.2 m) volt-sense cable.

2 Robot Controller Connection (choose one)

- **a** **EtherNet/IP™** — Requires Ethernet cable. 9.8-foot (3 m) cable included with Auto-Continuum robotic MIG kit. See page 10 for individual cables.
- **b** **DeviceNet** — Requires DeviceNet communication cable (300021). See page 10.
- **c** **Analog** — Requires DeviceNet to analog adapter (301427) and analog receptacle kit (see page 10).

3 Wire Drive Motor Assembly

See page 9 for available drive motor options.

4 Auto-Continuum™ Robotic MIG Kit

Includes all cables, hoses and hardware for outfitting a robot arm. See description at right for details.

5 Motor Mounting Bracket

See page 10 for available brackets. Motor mounting brackets from other brands must be supplied by robot manufacturer or system integrator.

6 Tregaskiss® Robotic MIG Gun

Must be ordered separately. Visit Tregaskiss.com for additional torch information.

Auto-Continuum Robotic MIG Kit 301455

Kit includes the following:

- 25-foot (7.6 m) motor control cable
- 15-foot (4.6 m) 90-degree motor control extension cable
- One 15-foot (4.6 m) weld cable
- Flowmeter regulator
- 30-foot (9.1 m) gas hose
- 9.8-foot (3 m) Ethernet cable
- .035/.045-inch V-groove drive roll kit with guides
- 30-foot (9 m) weld wire conduit assembly
- 10-foot (3 m) conduit and clamps for mounting motor control cable, weld cable and gas hose

Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
1 Power Sources				
Auto-Continuum™ 350	**907656** **907658**	Power source only Power source with auxiliary power		
Auto-Continuum™ 500	**907657** **907659**	Power source only Power source with auxiliary power		
Robot Controller Connection				
2a Ethernet Cables	**300734** **300736**	9.8 ft. (3 m) 32.8 ft. (10 m)		
2b DeviceNet Communication Cable	**300021**	20 ft. (6.1 m)		
2c DeviceNet to Analog Adapter	**301547**	Field-installed option. Adapts DeviceNet to analog communication. Includes 9 ft. (2.7 m) DeviceNet communication cable		
Analog Receptacle Kit *(one required per machine)*	**194793** **194791** **194790** **195002**	ABB® analog communication FANUC® analog communication Motoman® analog communication Universal analog communication		
Wire Drive Motor Assemblies and Accessories				
3 Auto-Continuum Wire Drive Motor Assembly	**301207** **301208**	Left-hand drive Right-hand drive		
4 Auto-Continuum Robotic MIG Kit	**301455**	Includes all cables, hoses and hardware for outfitting a robot arm. See page 11 for complete list		
5 Wire Drive Motor Mounting Brackets	**300013** **300483**	Universal — fits FANUC®/KUKA®/Motoman® FANUC® 100 and 120 IC		
6 Tregaskiss® Robotic MIG Guns, Peripherals and Consumables		Order separately. Visit Tregaskiss.com for models and information on TOUGH GUN® robotic MIG guns, TOUGH GUN® reamers, QUICK LOAD® liners and TOUGH LOCK® consumables		
Welding Intelligence™ Software				
Insight Centerpoint™	**951809**	Centerpoint 10 license and activation		
Gas Flow Sensors	**301478**	Adds gas flow sensing capability for Insight Core and Insight Centerpoint to Auto-Continuum wire drives		
Accessories				
Continuum™ Cooler	**301214**	Integrated 2-gallon capacity cooler for water-cooled MIG guns		
Low-Conductivity Coolant	**043810**	1-gallon plastic bottle *(must be ordered in quantities of 4)*		
Continuum Feeder Base and Spool Support	**301431**			
Wire Feeder Drive (Left)	**301216**	For use with feeder base and spool support when converting to a manual weld system		

For EtherNet/IP,™ DeviceNet or Analog Robot Controller

Date: **Total Quoted Price:**

Distributed by:

lastek

Miller®
The Power of Blue®

© 2022 Miller Electric Mfg. LLC DeviceNet™ is a trademark of the Open DeviceNet Vendor Association.