



Copilot™

Collaborative Welding Systems

Quick Specs

Industrial Applications

Contract and OEM manufacturing of components for automotive, recreational vehicles, farm and construction machinery, marine, furniture, and more. Confab, jobsite, and field fabrication.

Processes

MIG (GMAW), Accu-Pulse®, Versa-Pulse™* and RMD®

*With Auto-Continuum power source only.

Product Type

Collaborative welding robot or cobot provides a combined station for:

- A) Welding envelope
- B) Loading and unloading
- C) Programming
- D) Tool installation and change

MIG Gun Options

Air-cooled and water-cooled

Input Power

Copilot: 110 V
See pages 4 or 6 for Auto Deltaweld™ and Auto-Continuum™ requirements

Copilot and Copilot Builder are our entry-level welding cobots, designed for intuitive ease of use for various skilled welders that are new to robotic welding. They include advanced features to tackle more challenging welding applications and come in both air-cooled and water-cooled versions.

Miller recommends



Visit **HobartBrothers.com** for your filler metal solutions.

Table-based Copilot models feature a 48 x 48 inch tooling surface with roller-casters and leveling feet for portability and quick setup.



Air-cooled Copilot shown with Auto Deltaweld 350, touch sensing and through-arc seam tracking.



Water-cooled Copilot Builder shown with Auto Deltaweld 500, touch sensing and through-arc seam tracking.

Reconfigurable Copilot Builder models come on a pallet, allowing components to be detached and rearranged to suit the challenges of your application. Further customize your Builder with accessories (cables).



Major components except torches, consumables, and power supplies. Refer to specific component warranty for more information.



Evolve Your Welding™



Miller Welding Automation

An ITW Welding Company
281 E. Lies Rd.
Carol Stream, IL 60188 USA

Equipment Sales

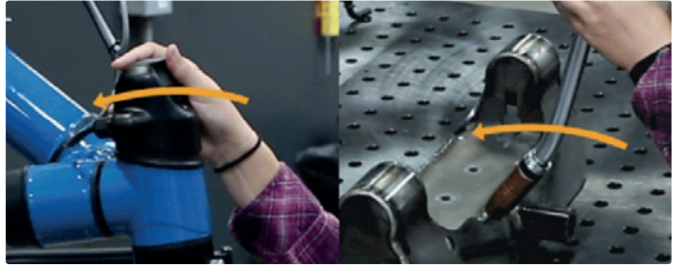
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MillerWelds.com



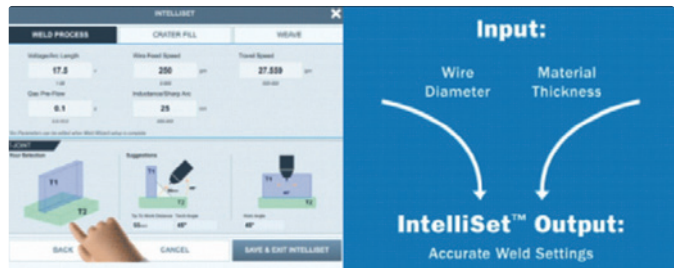
AccuGuide™ (Standard on all systems)

AccuGuide positioning control allows the welder to fine-tune the position of the torch during programming versus only using the free-jogging feature of the cobot.



IntelliSet™ (Standard on all systems)

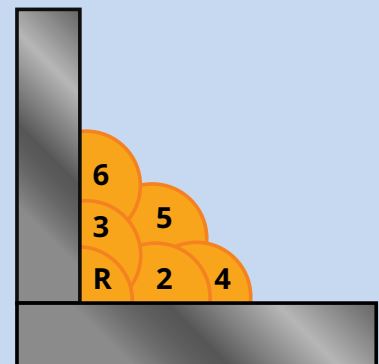
IntelliSet setting management system reduces the steps required while programming by simplifying the process of choosing or revising settings.



Multipass (Standard on all systems)

Multipass welding is a technique used in welding processes where a weld joint requires more than one pass to achieve the desired weld size, strength and quality. This method is often employed in applications where the joint thickness is greater than what can be effectively welded in a single pass.

Cross section of a weld created with a multipass procedure.



Touch Sensing (Standard on all Auto Deltaweld™ Copilot™ systems)

Touch sensing provides a means of detecting welding workpiece location by utilizing voltage sensing along with programmed torch “sweeps” to positively locate the workpiece position prior to welding.

Retrofit of touch sensing to existing systems is available by contacting Miller for a quote.



Through-Arc Seam Tracking (Available on select Auto Deltaweld™ Copilot™ systems)

Through-arc seam tracking corrects the robot arc path to accommodate subtle variations in the workpiece geometry. Using feedback from the arc, combined with a weave pattern, the robot can compensate for subtle irregularities from the intended weld path to successfully weld the joint with proper bead appearance and penetration.

Retrofit of through-arc seam tracking to existing systems is available by contacting Miller for a quote.



Water-Cooling (Available on 500-amp Copilot™ systems)

Water-cooled Copilot provides the power for hotter and heavier welding challenges requiring up to 500 amps at 100% duty cycle.

Tregaskiss® TOUGH GUN® CA3 robotic MIG gun with I.C.E.® technology and AccuLock™ consumables is engineered for accurate, reliable and repeatable performance that maximizes production uptime and throughput.

Coolmate™ 1.3 provides added cooling for hotter applications. Water-cooled Copilot systems ship with four gallons of coolant 11. Includes pull-out shelf on table-based models.



Copilot™ System (Table-Based)

Programming puck reduces the need to interact with the pendant.

Tregaskiss® TOUGH GUN® CA3 robotic MIG gun with AccuLock™ R consumables is engineered for accurate, reliable and repeatable performance that maximizes production uptime and throughput.

Weld-ready tool surface is 48 x 48 inches and outfitted with 5/8-inch tooling holes that are spaced 2 x 2 inches in a 42 x 30 inch pattern on center. Compatible with Bluco® and Strong Hand Tools®, among others.

Note: Bluco® is a registered trademark of Bluco® Corporation. Strong Hand Tools® is a registered trademark of Strong Hand Tools®.

Debris catch trays

Through-arc seam tracking (see page 3 for description).

46-piece Strong Hand Tools® kit (not shown) including clamps and stops for flexible fixturing needs (see page 5).

Shelves for storage or to hold extra components.

Easy to relocate with caster wheels and leveling feet.
Relocate your cobot workstation in four easy steps: unplug equipment and raise leveling feet, push by hand, re-level feet, and plug in equipment.

Air-cooled Copilot shown with Auto Deltaweld 350, touch sensing and through-arc seam tracking.

AccuGuide™ (see page 2 for description).

Teach pendant carriage allows for convenient hands-free viewing.

Andon light stack communicates messages to operator, including if system is in auto or teach mode, robot is moving, and error.

Portable operator pendant used for starting and stopping programs in production.

Wire drive mounted behind cobot works with spool holder (included) or bulk wire.

Full complement of capabilities with Auto Deltaweld™ or Auto-Continuum™.
GMAW power sources with Accu-Pulse®, RMD® and waveform capability. Systems with Auto-Continuum add Versa-Pulse™.

Lift truck fork pockets

Copilot™ System Specifications

Power Supply	Input Power	Rated Output	Wire Feed Speed	Payload Capacity	Approximate Dimensions		Approximate Shipping Weight
Auto Deltaweld 350	208/230/460 V, 3-phase, or 230 V, 1-phase, 60 Hz	350 A at 31.5 V 60% duty cycle	50–780 ipm (1.3–19.8 m/min.)	1,500 lb. (680 kg) with feet 750 lb. (340 kg) with casters	H: 84 in. (2,134 mm)	Max. tool height: Contact Miller Load height: 37 in. (940 mm)	1,700 lb. (771 kg)
Auto Deltaweld 500	208/230/460 V or 575 V, 3-phase, 60 Hz	500 A at 39 V 100% duty cycle			W: 48 in. (1,219 mm)		
Auto-Continuum 350	Auto-Line™ 230–575 V 3-phase, 50/60 Hz	350 A at 31.5 V 100% duty cycle	50–1,000 ipm (1.27–25.4 m/min.)		D: 52 in. (1,321 mm)		
Auto-Continuum 500	Auto-Line™ 230–575 V 3-phase, 50/60 Hz	500 A at 39 V, 100% duty cycle					

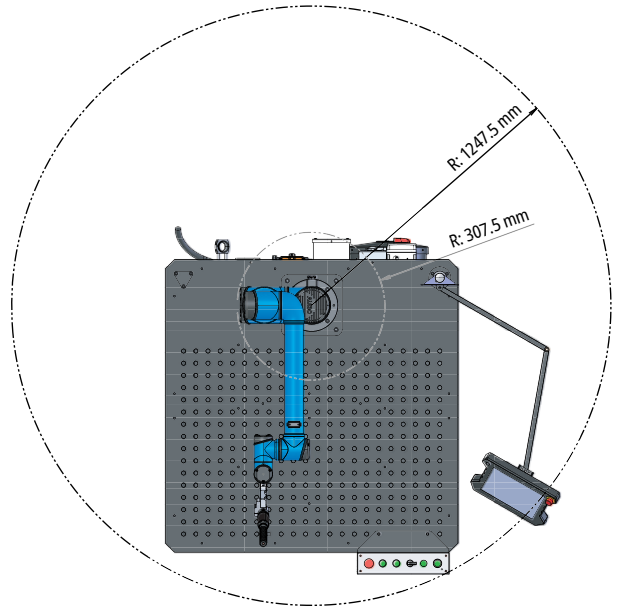
Note: Some filler metal wires with lower column strength may need additional considerations for feeding. Discuss with our team what challenges the Copilot is ready to tackle.

Strong Hand Tools® Kit



Copilot systems (table-based only) ship with a 46-piece Strong Hand Tools® kit that includes locating pins, pliers, clamps, edges, and blocks.

Copilot™ Work Envelope



Note: Approximate dimensions, contact us if you are building tooling.

Copilot™ System Ordering Information

Systems	Stock No.	Description	Qty.	Price
Air-Cooled	Copilot™ with Auto Deltaweld™ 350	951000110 With Auto Deltaweld Basic fixed wire drive, plus touch sensing		
		951000115 Same as 951000110 plus through-arc seam tracking		
	Copilot™ with Auto Deltaweld™ 500 (575 V) (Available in Canada only)	951000111 With Auto Deltaweld Basic fixed wire drive, plus touch sensing		
		951000131 Same as 951000111 plus through-arc seam tracking		
	Copilot™ with Auto Continuum™ 350	951000108 With Auto-Continuum wire drive motor assembly		
Water-Cooled	Copilot™ with Auto Deltaweld™ 500 (208/230/460 V)	951000134 With Auto Deltaweld Basic fixed wire drive, plus touch sensing		
		951000135 Same as 951000134 plus through-arc seam tracking		
	Copilot™ with Auto Deltaweld™ 500 (575 V) (Available in Canada only)	951000132 With Auto Deltaweld Basic fixed wire drive, plus touch sensing		
		951000133 Same as 951000132 plus through-arc seam tracking		
	Copilot™ with Auto Continuum™ 500	951000105 With Auto-Continuum wire drive motor assembly		

Air-cooled systems include welding robot, TOUGH GUN® CA3 robotic MIG gun, integrated welding table, Strong Hand Tools® kit, and all required interconnecting cables

Water-cooled systems add I.C.E.® technology to the TOUGH GUN® CA3 robotic MIG gun, Coolmate™ 1.3 (301617) with four gallons of coolant 11, pullout shelf for Coolmate, water lines, and cable sleeve

Date:

Total Quoted Price:

To order, call us toll-free at 888-843-7693 or email MWA.Sales@Millerwelds.com.

Copilot™ Builder System (Reconfigurable)

AccuGuide™
(see page 2 for description).

Programming puck (partially hidden) reduces the need to interact with the pendant.

Portable operator pendant used for starting and stopping programs in production.

Touch sensing wire clip station (not shown)
(see page 3 for description).

Coolmate™ 1.3 provides added cooling for hotter applications. Water-cooled Copilot systems ship with four gallons of coolant 11. Includes pull-out shelf.

Through-arc seam tracking (see page 3 for description).

Lift truck fork pockets

Tregaskiss® TOUGH GUN® CA3 robotic MIG gun with I.C.E.® technology and AccuLock™ R consumables is engineered for accurate, reliable and repeatable performance that maximizes production uptime and throughput.

Wire drive can remain in place or be mounted behind the cobot. Works with spool holder (included) or bulk wire.

Cobot controller unit coordinates communications and functionality among Copilot arm and Auto Deltaweld power supply.

Full complement of capabilities with Auto Deltaweld™. GMAW power source with Accu-Pulse®, RMD® and waveform capability.

Teach pendant with easel allows for convenient hands-free viewing.

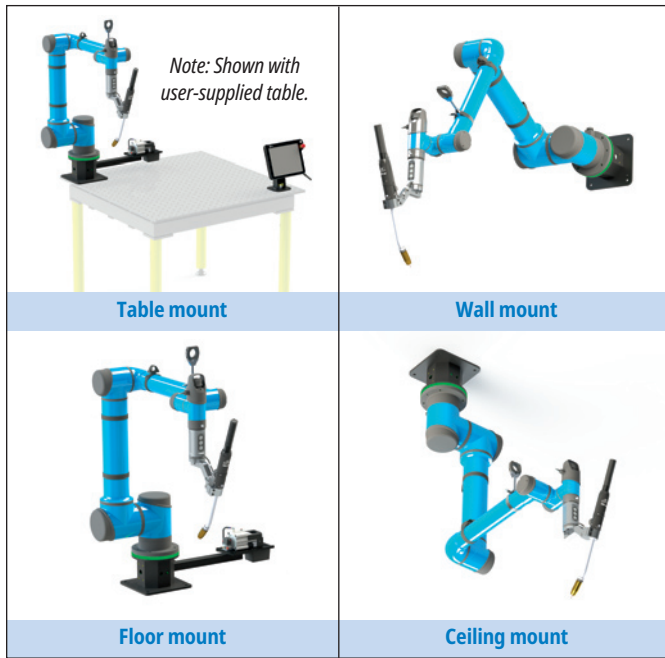
Water-cooled Copilot Builder shown with Auto Deltaweld 500, touch sensing and through-arc seam tracking.

Copilot™ Builder System Specifications

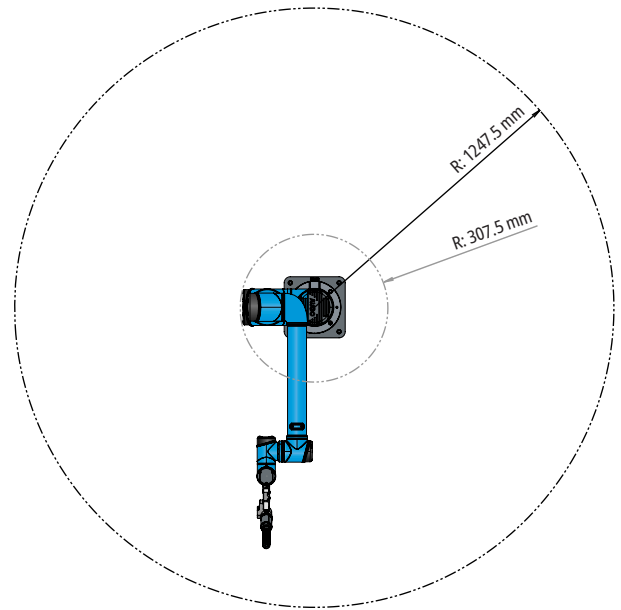
Power Supply	Input Power	Rated Output	Wire Feed Speed	Pallet Dimensions	Approximate Shipping Weight
Auto Deltaweld 350	208/230/460 V, 3-phase, or 230 V, 1-phase, 60 Hz	350 A at 31.5 V 60% duty cycle	50–780 ipm (1.3–19.8 m/min.)	48 x 38 in. (1,219 x 965 mm)	700 lb. (318 kg)
Auto Deltaweld 500	208/230/460 V or 575 V, 3-phase, 60 Hz	500 A at 39 V 100% duty cycle			

Note: Some filler metal wires with lower column strength may need additional considerations for feeding. Discuss with our team what challenges the Copilot is ready to tackle.

Copilot™ Builder Mounting Options



Copilot™ Builder Work Envelope



Note: Approximate dimensions, contact us if you are building tooling.

Copilot™ Builder System Ordering Information

Systems	Stock No.	Description	Qty.	Price
Air-Cooled	Copilot™ with Auto Deltaweld™ 350 (208/230/460 V)	951000161 With 16.4 ft. (5 m) cables and touch sensing		
		951000179 Same as 951000161 plus through-arc seam tracking		
		951000162 With 26.2 ft. (8 m) cables and touch sensing		
		951000180 Same as 951000162 plus through-arc seam tracking		
	Copilot™ with Auto Deltaweld™ 350 575V (Available in Canada only)	951000164 With 16.4 ft. (5 m) cables and touch sensing		
		951000182 Same as 951000164 plus through-arc seam tracking		
		951000165 With 26.2 ft. (8 m) cables and touch sensing		
		951000183 Same as 951000165 plus through-arc seam tracking		
	Copilot™ with Auto Deltaweld™ 500 (208/230/460 V)	951000167 With 16.4 ft. (5 m) cables and touch sensing		
		951000185 Same as 951000167 plus through-arc seam tracking		
		951000168 With 26.2 ft. (8 m) cables and touch sensing		
		951000186 Same as 951000168 plus through-arc seam tracking		
Water-Cooled	Copilot™ with Auto Deltaweld™ 500 (208/230/460 V)	951000170 With 16.4 ft. (5 m) cables and touch sensing		
		951000188 Same as 951000170 plus through-arc seam tracking		
		951000171 With 26.2 ft. (8 m) cables and touch sensing		
		951000189 Same as 951000171 plus through-arc seam tracking		
	Copilot™ with Auto Deltaweld™ 500 (575 V) (Available in Canada only)	951000173 With 16.4 ft. (5 m) cables and touch sensing		
		951000191 Same as 951000173 plus through-arc seam tracking		
		951000174 With 26.2 ft. (8 m) cables and touch sensing		
		951000192 Same as 951000174 plus through-arc seam tracking		
	Copilot™ with Auto Deltaweld™ 500 (575 V) (Available in Canada only)	951000176 With 16.4 ft. (5 m) cables and touch sensing		
		951000194 Same as 951000176 plus through-arc seam tracking		
		951000177 With 26.2 ft. (8 m) cables and touch sensing		
		951000195 Same as 951000177 plus through-arc seam tracking		

Air-cooled systems include Auto Deltaweld Basic fixed wire drive, welding robot, TOUGH GUN® CA3 robotic MIG gun, and all required interconnecting cables

Water-cooled systems add I.C.E.® technology to the TOUGH GUN® CA3 robotic MIG gun, Coolmate™ 1.3 (301617) with four gallons of coolant 11, water lines, and cable sleeve

Date:

Total Quoted Price:

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Accessories

To order or inquire about accessories, call us toll-free at 888-843-7693 or email MWA.Sales@Millerwelds.com.

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