

AlumaFeed™ Synergic Aluminum Welding System

Issued Mar. 2009 • Index No. DC/34

MIG Arc Welding Power Source 

Quick Specs

Industrial Applications

Boat, Ship and Yacht Building
Recreational Vehicles
Trucks and Trailer
Sign Manufacturers
Emergency Vehicles

Processes

MIG (GMAW)
Pulsed MIG (GMAW-P)
Synergic Pulsed MIG

XR-AlumaFeed

Input Power 24 VAC, 50/60 Hz
Wire Feed Speed 70–780 IPM (1.8–20 m/min)
Weight 42-1/2 lb (19.2 kg)
Dimensions H: 16 in (406 mm)
W: 9-1/2 in (241 mm)
D: 21-1/4 in (540 mm)

AlumaPower 350 MPa

Input Power 3- or 1-Phase Power, 50/60 Hz
Rated Output 10–38 V, 5–425 A
Weight 80 lb (36.3 kg)
Dimensions H: 17 in (432 mm)
W: 12-1/2 in (318 mm)
D: 24 in (610 mm)

The Power of Blue.®

The XR-AlumaFeed™ and AlumaPower™ 350 MPa combine for a synergic system that simplifies and improves MIG and Pulsed MIG welding applications for aluminum welding.

Ultra portable and versatile.

The slim ergonomic design of the XR-Aluma-Pro torch allows access into the tightest of quarters. Coupled with the XR-AlumaFeed feeder and the AlumaPower 350 MPa synergic power supply it has the features for all of your aluminum fabrication needs.

Synergic welding mode offers the simplicity of single knob control. The machine will select the correct voltage and amperage based on the wire feed speed (WFS) set by the operator.

Profile Pulse™ — Achieve “stacked dime” weld bead appearance without back-stepping. See page 2 for more information.

Parameter and system lock provides three levels of protection to prevent accidental modification of welding parameters or manipulation of setup menu items.

New!



AlumaFeed Synergic Aluminum Welding System with XR-Aluma-Pro gun shown.

Comes Complete With:

- XR-AlumaFeed™ push-pull wire feeder
- AlumaPower™ 350 MPa power source
- XR-Aluma-Pro™ **OR** XR™-Pistol Grip push-pull welding gun
- .035 and 3/64 in (0.9 and 1.2 mm) contact tips and liners for gun
- .035 and 3/64 in (0.9 and 1.2 mm) drive rolls for wire feeder

Note: All AlumaFeed systems come set up out of the box to run 3/64 in (1.2 mm) 5356 wire.

True push-pull wire feed system ensures smooth, consistent feeding and improved arc performance, while reducing the problems normally associated with feeding aluminum.



AlumaFeed Synergic Aluminum Welding System also available with XR-Pistol Grip gun.

TRUE BLUE
3YR. WARRANTY

Welder/generator is warranted for 3 years, parts and labor.
Original main power rectified parts are warranted for 5 years.
Gun warranted for 1 year, parts and labor.

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



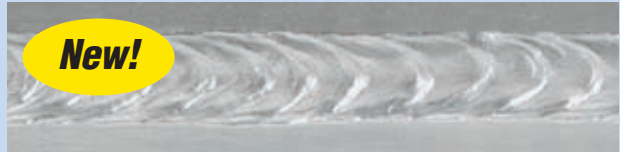
Miller Electric Mfg. Co.
An Illinois Tool Works Company
1635 West Spencer Street
Appleton, WI 54914 USA

Equipment Sales US and Canada
Phone: 866-931-9730
FAX: 800-637-2315
International Phone: 920-735-4554
International FAX: 920-735-4125

Web Site
www.MillerWelds.com



AlumaFeed™ Synergic Aluminum Welding System Features



Profile Pulse™ — Achieve “stacked dime” weld bead appearance without back-stepping. Profile Pulse frequency can be changed to increase or decrease the spacing between the ripple pattern to achieve the desired weld appearance.

Weld Cross Section



Hot Start Off

Hot Start On

Begin and end welds with ease and confidence. **Hot Start™** eliminates incomplete fusion at the beginning of a weld, a common issue with aluminum welding. **Crater** gradually decreases weld current at the end of a weld to eliminate crater defects. Adjustable pre- and post-flow rates ensure that the puddle always has adequate gas coverage.



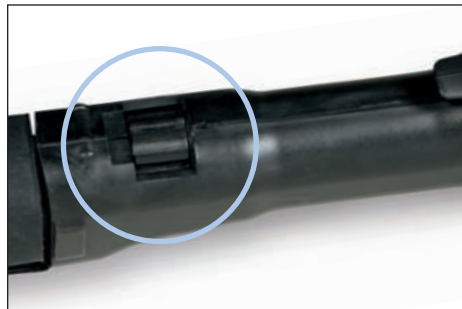
Flowmeter — Standard integrated flowmeter helps to regulate and maintain proper gas flow rate. Helpful when feeder is located long distances from gas supply. Helps ensure weld quality.



Gun Bushing — Improved gun connection uses a bushing that captures the power end of gun to ensure correct alignment to drive rolls and provides exceptional ruggedness and durability.



Drive Assembly — Improved drive assembly with numeric scale for different wire sizes prevents wire slippage and deformation. Helps improve wire feeding by making sure the proper drive roll tension is used. Comes factory-installed with 3/64 in drive rolls.



Synergic "One-Knob" Control — Set the wire feed speed control on the gun and the system handles the rest, greatly simplifying set-up and reducing training time. No need to travel back to the power source to change multiple parameters.

XR-AlumaFeed™ Wire Feeder

Dual schedule allows a quick selection of procedure A or B while welding. The selection of a procedure memory works in coordination with a dual procedure switch, or with quick release/pull on the gun.

4 Step trigger operation provides “trigger interlock” capability and the ability to control the amount of time spent in the arc start and arc crater steps.

Gun calibration allows control box to sync with the welding gun for precise wire feed control that is critical for reducing weld defects and providing flawless synergic operation.



Setup guide on inner panel of feeder has quick tips to get your system up and running quickly. Also provides a good reference that won't get misplaced like an owner's manual.

Rugged steel case holds up in the harshest environments and protects wire from dirt and moisture. Also has a large carrying handle for improved durability.

Bright digital displays are easy to read and display voltage or arc length and wire feed speed or amperage. Also have indicators for start and crater, setup, dual schedule and advanced trigger operations. Two-knob, three-button panel layout makes it simple to change parameters and reduces training time.

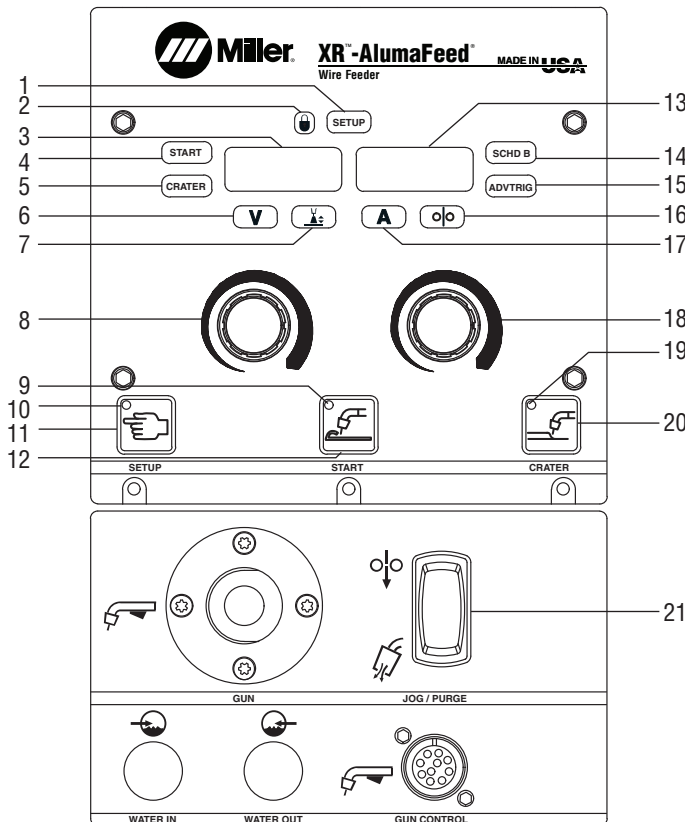
XR-AlumaFeed™ Specifications (Subject to change without notice.)



Input Power	Input Welding Circuit Rating	Electrode Wire Diameter Capacity	Wire Speed	Wire Diameter Range	Maximum Spool Size Capacity	Dimensions	Net Weight
24 VAC, 5 A, 50/60 Hz	400 A at 100% Duty Cycle*	.023–5/64 in (0.6–2 mm)	70–780 IPM (1.8–22.2 m/min)	.035 – .062 in (0.9 – 1.6 mm)	12 in (305 mm)	H: 16 in (406 mm) W: 9-1/2 in (241 mm) D: 21-1/4 in (540 mm)	42.5 lb (19.2 kg)

*System duty cycle is limited to gun rating

XR-AlumaFeed™ Control Panel



1. Setup Menu Indicator
2. Lock Indicator
3. Left Display
4. Start Menu Indicator
5. Crater Menu Indicator
6. Volts Indicator
7. Arc Length Indicator
8. Left Adjust Knob
9. Start On Indicator
10. Setup Indicator
11. Setup Button
12. Start Button
13. Right Display
14. Schedule B Indicator
15. Advanced Trigger Indicator
16. Wire Speed Indicator
17. Amps Indicator
18. Right Adjust Knob
19. Crater On Indicator
20. Crater Button
21. Jog/Purge Switch

XR-Aluma-Pro™ Guns Specifications (Subject to change without notice.)

Model	Welding Output Range with 100% Argon and Peak Amperages	Electrode Wire Diameter Capacity	Wire Speed	Dimensions	Net Weight (Torch only)
XR-Aluma-Pro A Gun (Air-Cooled)	300 A at 100% Duty Cycle with 15, 25, or 35 ft (4.6, 7.6, or 10.6 m) gun	.030–1/16 in (0.8–1.6 mm) aluminum wire Wire kit #230 708 required to run 1/16 in (1.6 mm) wire	70–900 IPM (1.8–23 m/min) (Dependent on feeder used.)	H: 5 in (127 mm) W: 2-1/2 in (64 mm) D: 17 in (432 mm)	2.5 lb (1.1 kg)
XR-Aluma-Pro W Gun (Water-Cooled)	400 A at 100% Duty Cycle with 15, 25, or 35 ft (4.6, 7.6, or 10.6 m) gun	.030–1/16 in (0.8–1.6 mm) aluminum wire Wire kit #230 708 required to run 1/16 in (1.6 mm) wire	70–900 IPM (1.8–23 m/min)	H: 5 in (127 mm) W: 2-1/2 in (64 mm) D: 17 in (432 mm)	2.9 lb (1.3 kg)

A=Air-Cooled W=Water-Cooled



Certified to both the Canadian and U.S. Standards for welding equipment.

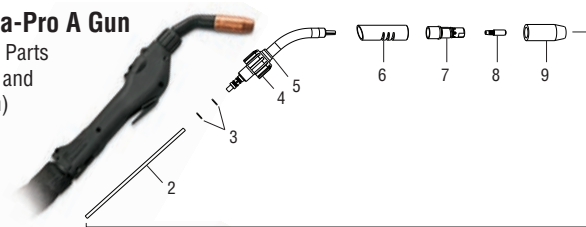


Conforms to European standards.

XR-Aluma-Pro Guns Parts Breakdown

XR-Aluma-Pro A Gun

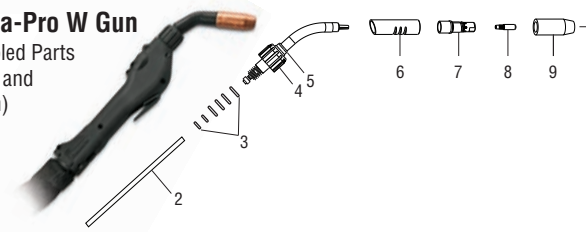
(Air-Cooled Parts Breakdown and Gun Shown)



- | | | | |
|----------------------------|-------------------|--|--|
| 1. Air-Cooled Assembly | | | |
| Short Head Tube, 4 in | #231 519 | | |
| Long Head Tube, 6 in | #231 518* | | |
| 2. Head Tube Liner | (See chart below) | | |
| 3. Head Tube O-Rings | #230 969 | | |
| 4. Lock Nut | #227 168 | | |
| 5. Insulator Ring Rear | #227 416 | | |
| 6. Outer Insulating Jacket | | | |
| Short | #227 159 | | |
| Long | #229 673 | | |
| 7. Gas Diffuser | #229 670 | | |
| 8. FasTip™ Contact Tip | (See chart below) | | |
| 9. Nozzle | #198 855 | | |
| | *Optional | | |

XR-Aluma-Pro W Gun

(Water-Cooled Parts Breakdown and Gun Shown)



- | | | | |
|----------------------------|-------------------|--|--|
| 1. Water-Cooled Assembly | | | |
| Long Barrel, 6 in | #231 517 | | |
| 2. Head Tube Liner | (See chart below) | | |
| 3. Head Tube O-Rings | #230 970 | | |
| 4. Lock Nut | #229 889 | | |
| 5. Insulator Ring Rear | #227 416 | | |
| 6. Outer Insulating Jacket | #230 420 | | |
| 7. Gas Diffuser | #229 670 | | |
| 8. FasTip™ Contact Tip | (See chart below) | | |
| 9. Nozzle | #199 618 | | |

Important: A wider selection of Miller and Centerfire™ Series consumables are available — see Gooseneck-Style Guns spec sheet (Lit. Index No. M/1.71).

XR-Aluma-Pro Standard Consumables (Order from Miller Service Parts.)

Aluminum Wire Size	FasTip Contact Tip (Qty. 25)	Drive Rolls	Idler Rolls	Inlet Guides	Air-Cooled Head Tube Liner Short Barrel 4 in (102 mm)	Air- and Water-Cooled Head Tube Liner Long Barrel 6 in (152 mm)
.030 in (0.8 mm)	#206 186 .041 in ID	#227 434	#230 439	#227 408	#227 161	#229 674
.035 in (0.9 mm)	#206 187 .047 in ID	#227 434	#230 439	#227 408	#227 161	#229 674
.040 in (1.0 mm)	#206 188 .053 in ID	#227 434	#230 439	#227 408	#227 161	#229 674
3/64 in (1.2 mm)	#206 189 .061 in ID	#227 434	#230 439	#227 408	#230 239	#229 431
1/16 in (1.6 mm)	#206 191 .071 in ID	#227 434	#230 710	#230 711	#230 239	#229 431

Cable Liners	
#229 887	15 ft (4.6 m)
#229 891	25 ft (7.6 m)
#232 321	35 ft (10.6 m)

XR-Aluma-Pro Genuine Miller Accessories

Leather Cable Cover

#234 109 15 ft (4.6 m)

#234 110 25 ft (7.6 m)

#234 111 35 ft (10.6 m)

Protects gun hose and cable assembly from wear and abrasion. Features a full length velcro seam.

Short Leather Gun Cover #234 416

Cover is 17 in (432 mm).

1/16 Inch (1.6 mm) Wire Kit #230 708

Specially designed for 1/16 in wire. Includes idler roll, head tube liner and inlet guide. Required when running 1/16 in wires. Not included with standard Aluma-Pro Gun.

Long Air-Cooled Head Tube Assembly

#231 518

6-inch (152 mm) barrel includes liner.

Phosphorous Bronze Liner (Optional)

#233 999 Long Head Tube (air or water)

#233 998 Short Head Tube (air only)

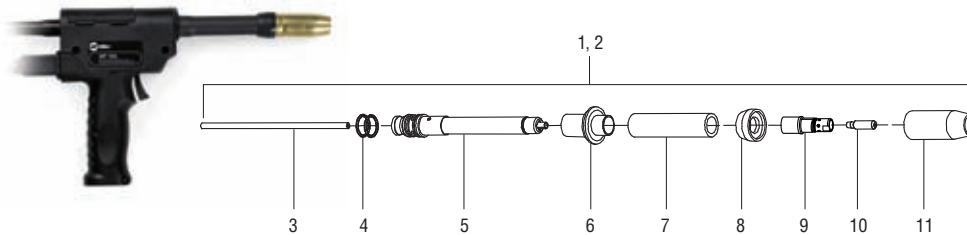
XR™-Pistol Grip Gun Specifications (Subject to change without notice.)



Model	Welding Output Rating	Electrode Wire Diameter Capacity	Wire Speed	Dimensions	Net Weight with Cable Assembly
XR-A Pistol	200 A at 100% Duty Cycle 250 A at 60% Duty Cycle	.030 – .062 in (0.8–1.6 mm) aluminum wire	70–875 IPM (1.8–22.2 m/min)	H: 7-3/8 in (187 mm) W: 1-7/8 in (48 mm) D: 10-5/8 in (270 mm)	15 ft Cable: 13 lb (5.9 kg) 30 ft Cable: 21 lb (9.5 kg)
XR-W Pistol	400 A at 100% Duty Cycle				15 ft Cable: 14 lb (6.4 kg) 30 ft Cable: 21.5 lb (9.8 kg)

A=Air-Cooled W=Water-Cooled Certified to both the Canadian and U.S. Standards for welding equipment. Conforms to European standards.

XR-Pistol Grip Gun Parts Breakdown (Air-Cooled shown.)



- | | |
|----------------------------|-------------------|
| 1. Air-Cooled Assembly | Kit #231 523 |
| 2. Water-Cooled Assembly* | Kit #231 524 |
| 3. Head Tube Liner | #212 156 |
| 4. O-Ring .614 ID | #134 800 |
| 5. Head Tube (Air-cooled) | #221 087 |
| Head Tube (Water-cooled)* | #221 519 |
| 6. Barrel Pistol Insulator | #219 795 |
| 7. Outer Insulating Jacket | #219 794 |
| 8. Nozzle Insulator | #232 284 |
| 9. Diffuser | #227 749 |
| 10. Contact Tip | (See chart below) |
| 11. Nozzle | #199 613 |

*Order water-cooled parts from Miller Service Parts.

Important: A wider selection of Miller and Centerfire™ Series consumables are available — see Pistol Grip Guns spec sheet (Lit. Index No. M/1.73).

XR-Pistol Grip Standard Consumables (Air-Cooled Only) (Order from Miller Service Parts.)

Aluminum Wire Size	FasTip Contact Tip (Qty. 25)	Drive Rolls	All-Wire Dual Groove Drive Rolls	Head Tube Liner
.030 in (0.8 mm)	#206 186 .041 in ID	#183 357	#136 135	#212 156
.035 in (0.9 mm)	#206 187 .047 in ID	#183 357	#136 135	#212 156
.040 in (1.0 mm)	#206 188 .053 in ID	#183 357	#136 135	#212 156
3/64 in (1.2 mm)	#206 189 .061 in ID	#183 358	#136 135	#212 156
1/16 in (1.6 mm)	#206 191 .071 in ID	#183 358	#136 135	#212 156

Cable Liners
#191 065 15 or 30 ft (4.6 or 9 m)

AlumaPower™ 350 MPa Power Supply

Auto-Line™ Power Management Technology allows for any input voltage hook-up (208–575 V) with no manual linking required, providing convenience in any job setting. Ideal solution for dirty or unreliable input power.

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

Large, dual digital meters are easy to view and are presettable to ease setting weld output.

Inverter arc control technology provides greater puddle control for outstanding MIG weld performance.

Line voltage compensation keeps welding output constant even if input power varies by +/-10%. XMT 350 models further expand line voltage compensation on 460 VAC to an amazing +37%, -59%.

Lightweight, aerospace-grade aluminum case offers protection with the benefit of reduced weight.

Ultra-tough, polycarbonate-blended cover for control panel protects front controls from damage.

Easy setup for MIG and Pulsed MIG applications.



Weld Cross Section



SharpArc 0

SharpArc 50

SharpArc™ changes welding arc characteristics in Pulsed MIG (GMAW-P) welding mode. Lower SharpArc™ settings widen the arc cone, increase puddle fluidity and flatten the weld bead. If a gas is used other than Ar 100% (Argon), SharpArc™ can be adjusted to help customize your arc to the gas being used.

Additional Features

Exceptional electrical efficiency.
At 400 A, efficiency is 87.24%!

350 A of welding output at 60% duty cycle with superior low-end aluminum welding performance.

Power factor of .95 enables smaller fuses/breakers and primary wiring. Primary amperage draw at rated output is 25% less than the competition.

Built-in synergic or standard Pulsed MIG capabilities. See the list below of built-in Pulsed MIG (GMAW-P) aluminum programs.

Wire Type	Gas Type
.035 AL 4043	Ar 100% (Argon)
.040 AL 4043	Ar 100% (Argon)
3/64 AL 4043	Ar 100% (Argon)
1/16 AL 4043	Ar 100% (Argon)
.035 AL 5356	Ar 100% (Argon)
.040 AL 5356	Ar 100% (Argon)
3/64 AL 5356	Ar 100% (Argon)
1/16 AL 5356	Ar 100% (Argon)

AlumaPower 350 MPa Specifications (Subject to change without notice.)

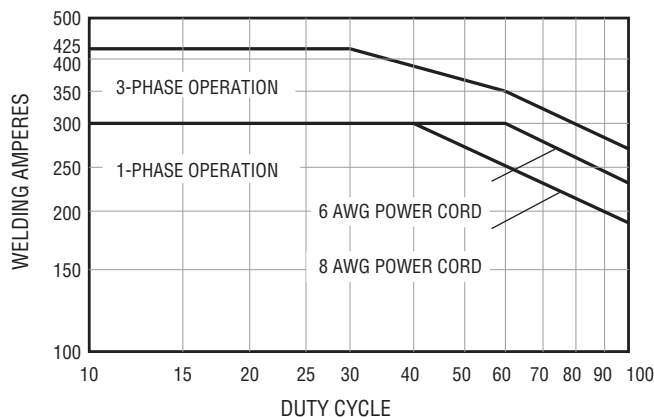


Input Power	Rated Output at 60% Duty Cycle	Voltage Range in CV Mode	Amperage Range in CC Mode	Max. Open-Circuit Voltage	Amps Input at Rated Load Output, 60 Hz,								Dimensions	Weight
					208 V	230 V	400 V	460 V	575 V	KVA	KW			
Three-Phase	350 A at 34 VDC	10–38 V	5–425 A	75 VDC	40.4	36.1	20.6	17.8	14.1	14.2	13.6	H: 17 in (432 mm) W: 12-1/2 in (318 mm) D: 24 in (610 mm)	80 lb (36.3 kg)	
Single-Phase	300 A at 32 VDC	10–38 V	5–425 A	75 VDC	60.8	54.6	29.7	24.5	19.9	11.7	11.2			

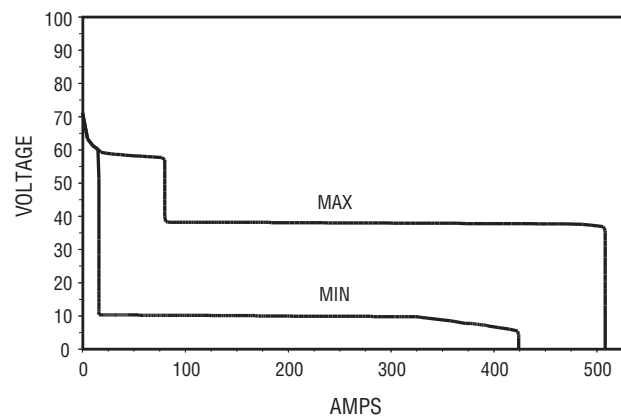
Certified to both the Canadian and U.S. Standards for welding equipment.

AlumaPower 350 MPa Performance Data

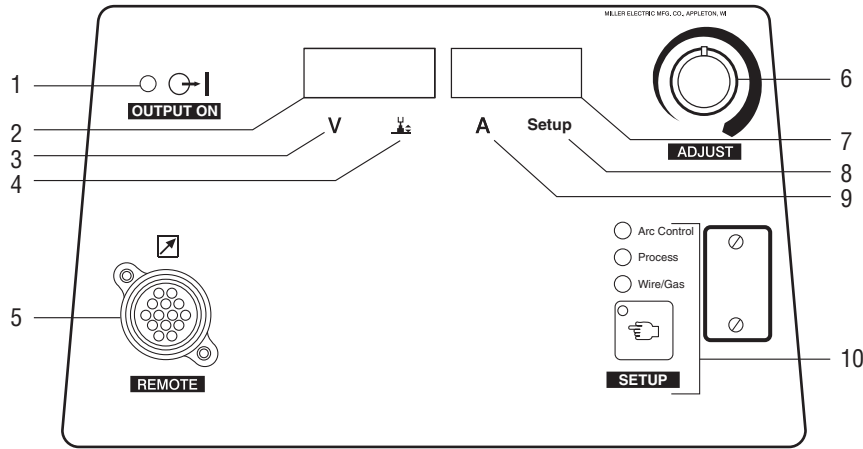
DUTY CYCLE CHART



CV VOLT/AMP CURVE



AlumaPower™ 350 MPa Control Panel



- | | | |
|------------------------------|-----------------------|----------------------------|
| 1. Output ON Indicator Light | 6. Adjustment Control | 10. Setup Indicator Lights |
| 2. Left Display | 7. Right Display | • Arc Control Indicator |
| 3. Voltage Indicator | 8. Setup Indicator | • Process Indicator |
| 4. Arc Length Indicator | 9. Amperage Indicator | • Wire/Gas Type Indicator |
| 5. Wire Feeder Receptacle | | • Setup Button |

MPa

MPa: M (MIG), P (Pulse), a (Advanced Arc Control). Advanced arc control enables an improved pulse welding arc. The operator has more control over puddle and bead characteristics using SharpArc™. In addition, the unit provides a more robust and stable arc at very low arc length, reducing heat input, and providing the ability to weld on a wider range of material thickness.

What are some benefits of Synergic-Pulsed MIG?

1. Easier to set up
2. No more changing wire speed, and then having to go back to reset the welding output.

AlumaPower 350 MPa Genuine Miller Accessories



Industrial MIG 4/0 Kit with Dinse Connector #300 405

This useful pulse-ready MIG kit can be purchased separately. Includes Smith® flowmeter/regulator with 10 ft (3 m) gas hose, 10 ft (3 m) 4/0 feeder weld cable with Dinse connector on one end and a lug on the other, 15 ft (4.6 m) work cable with Dinse connector on one end and 600-amp C-clamp on the other.

Remote Control Extension Kits

- #043 725 25 ft (7.6 m)
- #043 726 50 ft (15 m)
- #043 727 75 ft (23 m)

Fully-loaded 14-pin extension cords for remote controls or 24 V and 115 V feeders.

International-Style Connectors

Note: AlumaPower 350 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/Tweco® Adapter #042 465
- International/Cam-Lok Adapter #042 466

One-piece adapter with International-style male plug (to power source) on one end and female receptacle (Tweco or Cam-Lok for weld cable connection) on other end.

International-Style Connector Kit

- #042 418 50 mm
Accepts #4 or #1/0 AWG cable size. Required if male plugs shipped with power source must be replaced, or 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 #4 or #1/0 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.

AlumaFeed™ System Genuine Miller Accessories



MIGRunner™ Cart #195 445
Small footprint and easily maneuverable, with cylinder rack low enough that you do not have to lift bottles.



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.

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

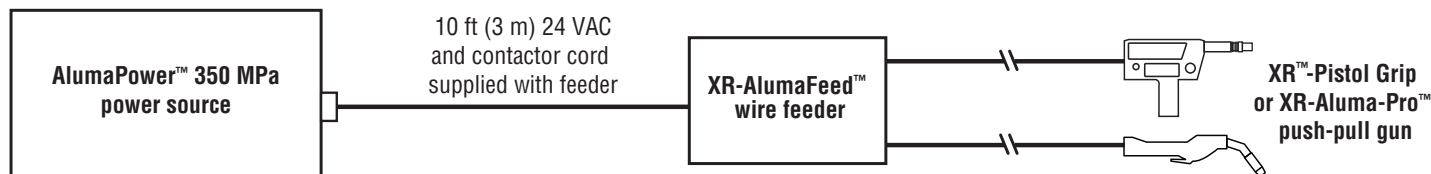
For use with water-cooled torches rated up to 600 amps. Tough molded polyethylene case with carrying handle.

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.

Typical Installations

Note: Cords and cables are supplied unless noted otherwise on drawings below. Refer to Owner's Manual for complete installation instructions.



Ordering Information

Power Source and Options	Stock No.	Description	Qty.	Price
AlumaFeed™ Synergic Aluminum Welding System (Includes gun and feeder drive rolls and consumables to run .035–3/64 in (0.9–1.2 mm) wire. 1/16 inch consumables not included—order separately below.)	#951 147	With air-cooled XR-Aluma-Pro push-pull gun, 25 ft (7.6 m)		
	#951 148	With water-cooled XR-Aluma-Pro push-pull gun, 25 ft (7.6 m)		
	#951 149	With air-cooled XR-Pistol Grip push-pull gun, 30 ft (9 m)		
	#951 150	With water-cooled XR-Pistol Grip push-pull gun, 30 ft (9 m)		
Gun Accessories				
XR-Aluma-Pro™ 1/16 Inch (1.6 mm) Wire Kit	#230 708			
Cable Covers		See page 4		
Tube Assemblies and Liners		See page 4		
Feeder and Power Supply Accessories				
XR-AlumaFeed™ 1/16 Inch (1.6 mm) Drive Roll Kit	#195 591	Order from Miller Service Parts		
Industrial MIG 4/0 Kit with Dinse Connector	#300 405			
Remote Control Extension Kits (For 24 VAC wire feeder)	#043 725	25 ft (7.6 m)		
	#043 726	50 ft (15 m)		
	#043 727	75 ft (23 m)		
International-Style Connectors		See page 7		
System Accessories				
MIGRunner™ Cart	#195 445			
Universal Carrying Cart and Cylinder Rack	#042 934			
Water Coolant Systems		See above. See Lit. Index No. AY/7.2		

Date:

Total Quoted Price:

Distributed by:

