

# XR™ Control

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**Push-Pull  
Wire Feed System** 

## Quick Specs



### Heavy Industrial Applications

Emergency Vehicles	Recreational Vehicles
Shipbuilding	Tool Boxes
Trucks and Trailers	Heat Exchangers
Railcars	Sign Manufacturers
Fabrication	

### Processes

MIG (GMAW) Welding

**Rated Output** Air: 250 A at 100% Duty Cycle  
Water: 400 A at 100% Duty Cycle

**Input Power** 24 VAC, 50/60 or 100 Hz

**Wire Speed** 70–875 IPM (1.8–22.2 m/min)

**Weight** 38 lb (17.2 kg)

## The Power of Blue.®

Unique **solid-state control** permits XR systems to work with most CC, CV, or CC/CV, DC welding power sources.

**Digital display** indicates wire feed speed or weld voltage.

**Push-pull design** feeder motor provides continuous push force to the wire while the gun motor controls wire feed speed at the arc, together providing accurate and positive wire feed speed.

**Master/gun wire feed speed control** improves resolution by limiting speed range available at the gun, making it easier to fine-tune arc conditions.

**Unique arc starting control** can be adjusted to tune arc starting, reducing wire stubbing or arc flaring which can result in burnbacks to the contact tip.

**Gear-driven, smooth groove drive rolls** reduce deformation of the wire and provide positive feeding performance by having both rolls driving the wire, helping to reduce burnbacks and enhancing arc starts.

**Replaceable feed cable liner** reduces parts cost and service time by allowing a simple means of removing and replacing liner and not the complete feed cable.

**Easy access to drive assembly and removable head tube** reduces service time by allowing a simple means of changing drive rolls and head tube or performing routine maintenance without disassembly of gun.



Control shown with optional voltage control and gas flowmeter.

### A Complete System Consists of the Following:

- Control
- Gun
- Fastip™/Drive Roll Kit

*(Kits must be ordered separately and consist of gun drive rolls, control box drive rolls and five FasTip™ contact tips.)*

*See back page for more information on 3-step process used to order and assemble a complete system.*



Wire feeder is warranted for 3 years, parts and labor.  
Guns are warranted for 1 year.

**Trigger hold** reduces fatigue by allowing operator to weld without holding trigger.

**Wire jog control** allows wire to be threaded through gun cable without energizing weld output.

**Adjustable gun barrel** allows operator to easily vary contact tip to nozzle position.

**Patented quick-change, single-turn contact tip** provides excellent performance and ease of replacement.



XR-Pistol Gun

Select from either an XR-Pistol gun or an XR-Edge gooseneck-style gun. Both feature a quick-connect to the Control and are available in air- and water-cooled versions with 15 or 30 ft cable lengths. XR-Edge gun also available in 50 ft.

The XR-Pistol and XR-Edge guns have a patented gas delivery that reduces weld cleanup and repair by improving gas shielding coverage through reduction of atmospheric contamination.



XR-Edge Gun

The XR-Edge gun also features a toolless 360 degree rotating head tube that reduces operator fatigue by providing a simple means of positioning gun comfortably for various welding positions.



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MADE IN USA  
APPLETON, WI



# XR Control Specifications (Subject to change without notice.)

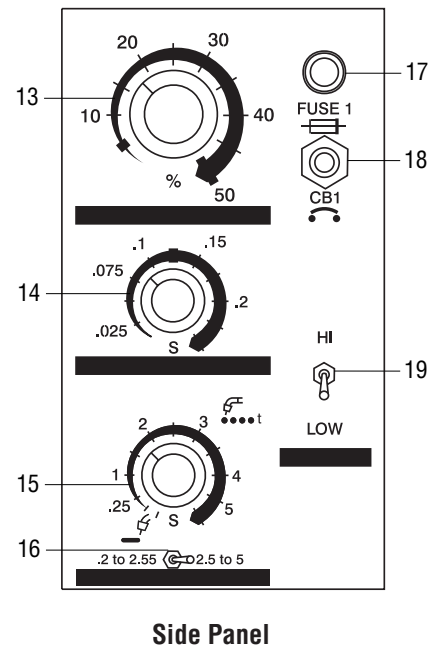
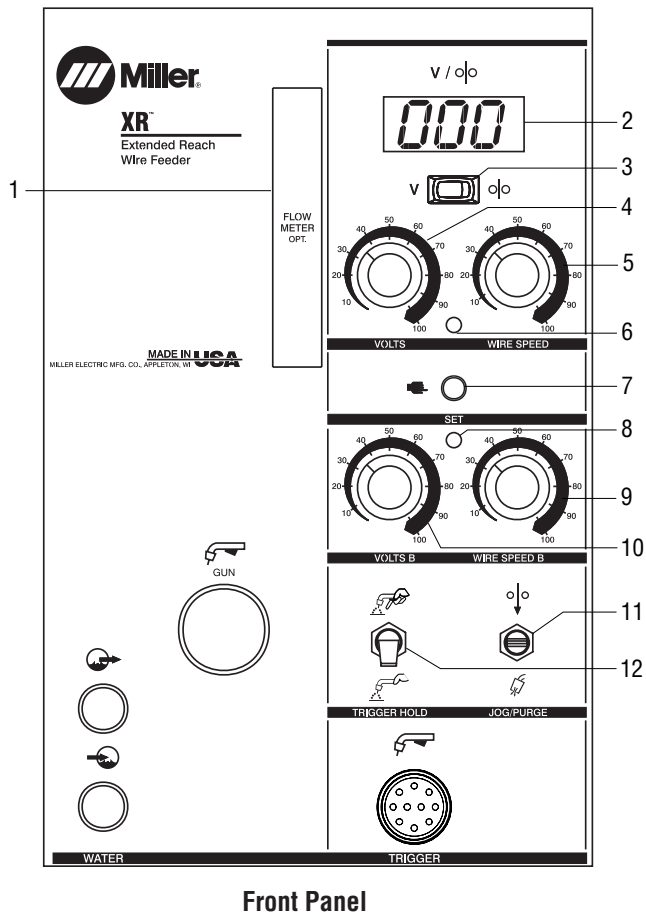


(Use with CC/CV, DC Power Sources.)

Input Power	Wire Speed	Maximum Spool Size Capacity	Dimensions	Net Weight
24 VAC, 50/60 or 100 Hz	70–875 IPM (1.8–22.2 m/min)	12 in (305 mm)	H: 16 in (406 mm) W: 9-1/4 in (235 mm) D: 21-1/4 in (540 mm)	38 lb (17.2 kg)

Certified by Canadian Standards Association to both Canadian and U.S. Standards. Conforms to European standards.

## XR Control Panel



- 1. Gas Flowmeter\*
  - 2. Voltage/Wire Speed Meter
  - 3. Voltage/Wire Speed Switch
  - 4. Voltage Control\*
  - 5. Wire Speed Control
  - 6. Schedule A Indicator LED\*
  - 7. Press To Set Push Button\*
  - 8. Schedule B Indicator LED\*
  - 9. Wire Speed B Control\*
  - 10. Remote Volts B Control\*
  - 11. Wire Jog/Gas Purge Switch
  - 12. Trigger Hold Switch
  - 13. Run-In Speed Control
  - 14. Burnback Time Control\*
  - 15. Continuous/Spot Time Control\*
  - 16. Spot Time Range Switch\*
  - 17. Fuse F1
  - 18. Circuit Breaker CB1
  - 19. Motor Torque Switch
- \* Optional

## XR Control Genuine Miller Options

\*Factory option available only in XR Control packages  
—see Ordering Information on page 8.



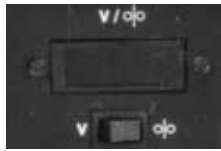
**Voltage Control\***  
**#194 027** Field  
Allows voltage adjustment at the current XR Control when used with Miller electrically controlled, constant-voltage DC power sources that have a 14-pin receptacle.



**Dual Schedule Control\*** **#193 276** Field  
Allows two different welding conditions (voltage and wire feed speed) to be used on the same wire. This is ideal

when different heat settings are required or when the need arises to change conditions while welding, i.e. different material thickness, out of position welding, etc. Is also ideal for use as a start control or crater fill control.

*Note: The Digital Display is required to use the Dual Schedule. Only for use with Miller CV or CC/CV power sources. Dual Schedule Switch required.*



**Digital Display V/WFS\***  
**#193 274** Field  
For XR Control prior to serial #LC122752.

*Note: Voltage Sense Lead (#209 867) required for voltage display when used with non-solid-state Miller and competitive power sources.*

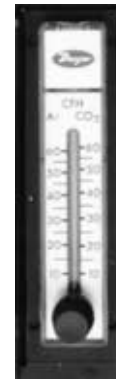
Allows wire feed speed to be preset and displayed. Will also monitor voltage while welding. If used with current manufactured Miller CV or CC/CV power sources (excluding CPs) and the optional voltage control or dual schedule control is used, the arc voltage can also be preset on the digital display. Includes back-lit LCD digital display that is easy to read in virtually any lighting condition. A selector switch allows the display to switch between wire feed speed and voltage.

### Dual Schedule Switch

**DSS-30 #193 271** Field  
For 15 ft (4.6 m) and 30 ft (9 m) guns

**DSS-50 #193 272** Field  
For 50 ft (15.2 m) gun

Required to operate the dual schedule control. A two position slide switch that can be positioned at the XR-Edge gun to remotely select schedule A or B conditions.



**Gas Flowmeter\***  
**#193 278** Field  
**#197 793** Field w/CE  
Monitors and adjust gas flow at the XR Control.

*Note: Gas pressure must be controlled at the primary gas supply with the use of a regulator.*



**Spot Weld/Burnback Control #193 279** Field  
Provides up to 5 seconds of spot weld time and 0 (zero) to 0.25 seconds of burnback time.

### Water Flow Shutdown Switch

**#194 039** Field  
For use with water-cooled guns only. Protects the water-cooled gun from overheating if water is not present or water stops flowing to the gun.

## XR Control Genuine Miller Accessories



**Optima™ MIG (GMAW) Pulse Control #043 389**  
For Invision and XMT 304 CC/CV. A multipurpose, microprocessor-based pulse control for synergic MIG (wire welding or GMAW), manual MIG pulsing or standard MIG

welding. Use this control with all above power sources and any Miller wire feeder. Includes 25 ft (7.6 m) cord with 14-pin plug.



**PSA-2 Control #141 604**  
Required when using the XR Control with power sources having only 115 VAC available. Mounts at power source and includes a 10 ft (3 m) 115 VAC cord and

contactor cord with Hubbell connectors. A simple modification in the PSA-2 control also allows it to be used with competitive

constant voltage power sources requiring a contact closure for contactor control. The PSA-2 includes a 14-pin receptacle for direct connection of the standard interconnecting cord and optional extension cords. Bracket included for side mounting to the power source.

*Note: When using the PSA-2 control, the optional Remote Voltage Control is not functional.*

### Extension Cords

**#122 973** 25 ft (7.6 m)

**#122 974** 50 ft (15.2 m)

**#122 975** 75 ft (22.9 m)

Provides 14-pin, 24 VAC, contactor and voltage control. Can be added to the standard 10 ft (3 m) feeder cord to extend feeder farther from power source.

## Water Coolant Systems



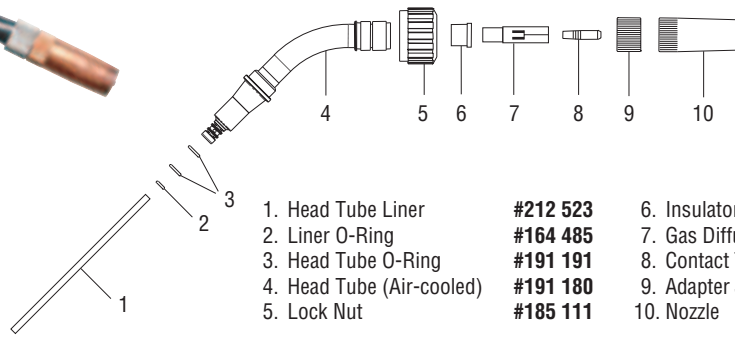
**Coolmate™ 3 #043 007** 115 VAC  
**Coolmate™ 3 #043 008** 230 VAC  
**Coolmate™ V3 #043 009** 115 VAC  
**Coolmate™ 4 #042 288** 115 VAC

For use with water-cooled guns. Refer to Lit. Index No. AY/7.2 for additional coolant system information.

### Coolant #043 809

Sold in cases of four 1-gallon recyclable plastic bottles.



## XR-Edge Gun (Note: Air-cooled gun shown.)



- |                           |          |                    |                     |
|---------------------------|----------|--------------------|---------------------|
| 1. Head Tube Liner        | #212 523 | 6. Insulator       | #185 097            |
| 2. Liner O-Ring           | #164 485 | 7. Gas Diffuser    | #209 875            |
| 3. Head Tube O-Ring       | #191 191 | 8. Contact Tip     | (See chart on pg 5) |
| 4. Head Tube (Air-cooled) | #191 180 | 9. Adapter Jam Nut | #185 102            |
| 5. Lock Nut               | #185 111 | 10. Nozzle         | (See below)         |

## XR-Edge Gun Specifications (Subject to change without notice.)

Model	Welding Output Range	Electrode Wire Diameter Capacity	Wire Speed	Dimensions	Net Weight
XR-A Edge Gun	Air: 250 A at 100% Duty Cycle	.030–.062 in (0.8–1.6 mm) aluminum wire	70–875 IPM (1.8–22.2 m/min)	H: 5 in (127 mm) W: 2-1/2 in (64 mm) D: 17 in (432 mm)	2.5 lb (1.1 kg)
XR-W Edge Gun	Water: 400 A at 100% Duty Cycle				

A=Air-Cooled W=Water-Cooled  Certified by Canadian Standards Association to both Canadian and U.S. Standards.  Conforms to European standards.

Note: See back page for ordering XR-Edge FasTip™/Drive Roll Kits (one required).

## XR-Edge and XR-Pistol Nozzles (Order from Miller Service Parts.)



**#197 728**  
5/8 in (16 mm)  
orifice (Standard)



**#193 790**  
1/2 in (13 mm)  
orifice



**#009 925**  
Spot outside  
corner  
*Note: Nozzle adapter  
kit #193 794 required.*



**#000 443**  
Spot inside  
corner  
*Note: Nozzle adapter  
kit #193 794 required.*

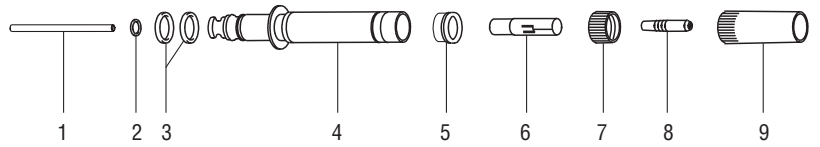


**#000 442**  
Spot flat 15/16 in  
(24 mm) orifice  
*Note: Nozzle adapter  
kit #193 794 required.*



**#004 466**  
Spot flat 1-3/8 in  
(35 mm) orifice  
*Note: Nozzle adapter kit  
#193 794 required.*

## XR-Pistol Gun (Note: Air-cooled gun shown.)



- |                           |          |                         |                   |
|---------------------------|----------|-------------------------|-------------------|
| 1. Head Tube Liner        | #212 156 | 6. Gas Diffuser         | #209 875          |
| 2. O-Ring .176 ID         | #134 800 | 7. Jam Nut (Air-cooled) | #185 102          |
| 3. O-Ring .614 ID         | #164 485 | 8. Contact Tip          | (See chart below) |
| 4. Head Tube (Air-cooled) | #210 511 | 9. Nozzle               | (See pg 4)        |
| 5. Insulator              | #185 097 |                         |                   |

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

Model	Welding Output Range	Electrode Wire Diameter Capacity	Wire Speed	Dimensions	Net Weight
XR-A Gun	Air: 250 A at 100% 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)	2.4 lb (1.1 kg)
XR-W Gun	Water: 400 A at 100% Duty Cycle				2.9 lb (1.3 kg)

A=Air-Cooled W=Water-Cooled  Certified by Canadian Standards Association to both Canadian and U.S. Standards.  Conforms to European standards.

Note: See back page for ordering XR-Pistol FasTip™/Drive Roll Kits (one required).

## XR-Edge and XR-Pistol Replacement Consumables (Air-Cooled Only) (Order from Miller Service Parts.)

Wire Size	FasTip Contact Tip	Standard XR-Edge Drive Rolls	Optional Isolated XR-Edge Drive Rolls	XR-Pistol Drive Rolls	XR-Pistol All-Wire Dual Groove Drive Rolls
.030 in (0.8 mm)	.041 in ID #206 177	#194 114	#198 434	#183 357	#136 135
.035 in (0.9 mm)	.047 in ID #206 178	#194 115	#198 435	#183 357	#136 135
.040 in (1.0 mm)	.053 in ID #206 179	#196 302	#198 436	#183 357	#136 135
.047 in (1.2 mm)	.061 in ID #206 180	#194 116	#198 437	#183 358	#136 135
.062 in (1.6 mm)	.071 in ID #206 181	#194 117	#198 438	#183 358	#136 135

Head Tube Liners	Part #	Cable Liners	Part #	XR Control Drive Rolls	Part #
XR-Pistol	#212 156	15 ft (4.6 m) or 30 ft (9.1 ft)	#191 065	.030 in (0.8 mm)	#194 118
XR-Edge	#212 523	50 ft (15.2 m)	#191 066	.035 in (0.9 mm)	#194 118
				.040 in (1.0 mm)	#196 301
				.047 in (1.2 mm)	#194 119
				.062 in (1.6 mm)	#195 591

Note: These are replacement consumables. See back page for initial setup kits.

## XR Gun Genuine Miller Accessories

### Cable Cover

#118 677 15 ft #118 678 30 ft  
50 ft cable cover is not available. Protects gun hose and cable assembly from wear and abrasion. Features a full length zipper.

### Hardwire Liner Kits for Steel and Stainless

#198 377 For 15 or 30 ft guns  
For XR-Pistol and XR-Edge guns. Kits consist of gun head tube liner and feed cable liner. Recommend using .030–.045 in mild steel, flux cored, or stainless steel electrode wire.



### 1 lb (0.5 kg) Spool Canister #132 230

Ideal for use with XR guns if a small job arises requiring a different wire size and/or wire type that does not justify a 12 in (305 mm) spool of wire. The XR feed cable is removed if the spool canister is being used. (Canister accommodates 4 in [102 mm] spools of wire.)

## XR-Pistol Gun Barrels (Air-Cooled)



### 50 Degree Curved Barrel-A

#195 229 6 in (152 mm)  
Used with .030–1/16 in (0.8–1.6 mm) wire. Kits supplied with liner that accommodates all wire sizes.



### 10 in Flex Head-A #195 228

For .030–1/16 in (0.8–1.6 mm) wire. Used in place of the standard straight barrel. Flexible head tube bends 60 degrees in any direction for easier joint access and improved operator comfort. Supplied with liners. Uses FasTip™ contact tips.



### 10 in Head Tube-A #195 227

Ideal when a longer reach is required.

### Replacement Liners for Air-Cooled Barrels

(Order from Miller Service Parts.)

#### For 6 in Curved Barrel

#212 411 .030 thru 1/16 in  
(0.8 thru 1.6 mm) wire

#### For Flex Head or 10 in Head Tube

#212 401 .030 thru 1/16 in  
(0.8 thru 1.6 mm) wire



### 50 Degree Curved Nozzle Kit-A #147 174

Attaches to standard gun barrel assembly for access to confined weld joint areas. Used with .030–1/16 in (0.8–1.6 mm) wire. Kit includes two of each size contact tips to accommodate all wire sizes, Nozzle Adapter Kit (#193 794) and curved nozzle. Uses standard straight barrel head tube liner.

### Replacement Contact Tips for Curved Nozzle

(Order from Miller Service Parts.)

#148 155 .030 and .035 in  
(0.8 and 0.9 mm) wire

#148 154 .047 in (1.2 mm) wire

#148 156 1/16 in (1.6 mm) wire

## XR-Pistol Gun Barrels (Water-Cooled)



### 50 Degree Curved Barrel-W

#130 843 6 in (152 mm)  
Used with .030–1/16 in (0.8–1.6 mm) wire. Kits supplied with liner that accommodates all wire sizes.

### Replacement Liners for Water-Cooled Barrels

(Order from Miller Service Parts.)

#### For 6 in Curved Barrel

#212 411 .030 thru 1/16 in  
(0.8 and 1.6 mm) wire

#### For 10 in Straight Barrel

#212 401 .030 thru 1/16 in  
(0.8 and 1.6 mm) wire



### 10 in Straight Barrel-W #130 841

Used with .030–1/16 in (0.8–1.6 mm) wire. Kits supplied with liner that accommodates all wire sizes.

# Typical Welding Systems for Aluminum MIG Welding



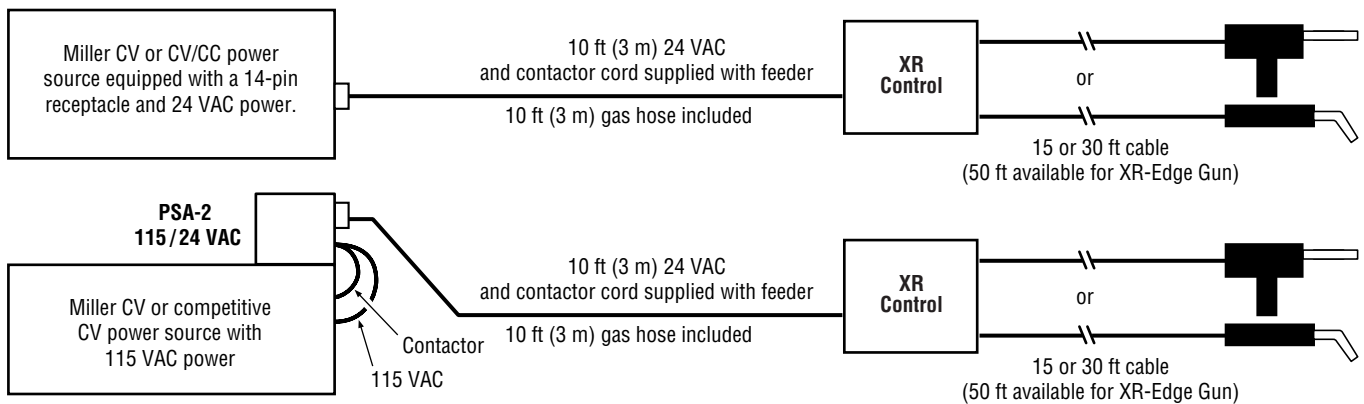
**Conventional Aluminum MIG System**  
 CP-252TS with XR™ Control and 30 ft XR-A Edge Gun  
**#950 704**



**Aluminum MIG and Pulsed MIG System**  
 Invision™ 354MP with XR™ Control and 30 ft XR-A Edge Gun  
**#950 705**

*Note: For high-current pulse welding, water-cooled system recommended.*

## Typical Installations



# Ordering Information (Use the 3-step process below to assemble a complete system.)

## How to Assemble a System

**1** Pick a Control  
Standard or with Options



Equipment	Stock No.	Description	Qty.	Price
<b>Important: The XR Control and specific type and length gun must be ordered separately. Also order proper FasTip™/Drive Roll Kit below for the size wire being used.</b>				
<b>XR™ Control</b>	<b>#181 538</b>	Standard model w/digital display		
	<b>#181 538-01-1</b>	Standard model w/digital display & w/CE		
	<b>#181 538-03-3</b>	W/digital display, voltage control & gas flow meter		
	<b>#181 538-04-2</b>	W/digital display, voltage control & gas flow mtr w/CE		
<b>CP-252TS with XR™ Control and XR-Edge Gun Package</b>	<b>#950 704</b>	Conventional aluminum MIG package Gun included — Drive roll kit required		
<b>Invision™ 354MP with XR™ Control and XR-Edge Gun Package</b>	<b>#950 705</b>	Aluminum MIG and pulsed MIG package Gun included — Drive roll kit required		
XR-A Edge Gun (Air-Cooled)	<b>#181 534</b> <b>#181 535</b> <b>#181 537</b>	15 ft (4.6 m) cable 30 ft (9 m) cable 50 ft (15.2 m) cable	<i>All XR-Edge guns have CE approval.</i>	
XR-W Edge Gun (Water-Cooled)	<b>#181 531</b> <b>#181 532</b> <b>#181 533</b>	15 ft (4.6 m) cable 30 ft (9 m) cable 50 ft (15.2 m) cable		
XR-A Pistol Gun (Air-Cooled)	<b>#198 127</b> <b>#198 128</b>	15 ft (4.6 m) cable 30 ft (9 m) cable		
XR-W Pistol Gun (Water-Cooled)	<b>#198 129</b> <b>#198 130</b>	15 ft (4.6 m) cable 30 ft (9 m) cable		
XR-Edge Gun FasTip™/Drive Roll Kits (One required— See page 5 for Isolated Drive Rolls)	<b>#195 208</b> <b>#195 207</b> <b>#195 206</b> <b>#195 205</b> <b>#195 204</b>	.030 in (0.8 mm) .035 in (0.9 mm) .040 in (1.0 mm) .047 in (1.2 mm) .062 in (1.6 mm)		
XR-Pistol Gun FasTip™/Drive Roll Kits (One Required)	<b>#195 213</b> <b>#195 212</b> <b>#195 211</b> <b>#195 210</b> <b>#195 209</b>	.030 in (0.8 mm) .035 in (0.9 mm) .040 in (1.0 mm) .047 in (1.2 mm) .062 in (1.6 mm)		

**2** Pick a Gun Style  
Gooseneck or Pistol  
15, 30 or 50 ft Cable  
Air- or Water-Cooled



**3** Pick a FasTip™/Drive Roll Kit  
.030, .035, .040, .047 or .062 in  
(Kits consist of gun drive rolls, control box drive rolls and five FasTip contact tips.)

## Recommended Power Sources\*

Regency® 250	Lit. Index No. DC/12.6
CP-252TS	Lit. Index No. DC/13
Deltaweld® Series	Lit. Index No. DC/16.2
XMT® 304	Lit. Index No. DC/18.8
Invision™ 354 MP	Lit. Index No. DC/23
Trailblazer® 301 G	Lit. Index No. ED/4.77
Big Blue Air Pak™	Lit. Index No. ED/10.5
PipePro™	Lit. Index No. ED/10.6
Trailblazer® 301 D	Lit. Index No. ED/4.8

\*Other power sources may be used.

**Important note:** The products and descriptions mentioned in this literature are for use with XR Control systems with serial #KK309906 or higher. To confirm compatibility of any products listed here with older equipment, please contact the factory at 1-920-735-4505.

## Options

Voltage Control	<b>#194 027</b>	Field		
Dual Schedule Control	<b>#193 276</b>	Field		
Digital Display V/WFS	<b>#193 274</b>	Field. For XR Control prior to serial #LC122752		
Remote Volt Sense Lead	<b>#209 867</b>	Field. Required for CC, competitive or non-solid-state Miller power sources		
Dual Schedule Switch	<b>#193 271</b> <b>#193 272</b>	Field. For 15 ft (4.6 m) and 30 ft (9 m) guns Field. For 50 ft (15.2 m) gun		
Gas Flowmeter	<b>#193 278</b> <b>#197 793</b>	Field Field w/CE		
Spot Weld/Burnback Control	<b>#193 279</b>	Field		
Water Flow Shutdown Switch	<b>#194 039</b>	Field		

## Accessories

Optima MIG Pulse Control	<b>#043 389</b>			
PSA-2 Control	<b>#141 604</b>	For older power sources w/ 115 V feeder power		
Extension Cords		See XR Control Accessories on page 3		
Water Coolant Systems		See Lit. Index No. AY/7.2		
Cable Cover	<b>#118 677</b> <b>#118 678</b>	15 ft (4.5 m) 30 ft (9 m)		
Spool Canister	<b>#132 230</b>			
XR-Pistol Gun Barrels		See page 6		

Date:

Total Quoted Price:

Distributed by:

