

# POWER MIG™ 255

**Power MIG. The Professional's Choice.**



Wire Feeder / Welder

# POWER MIG™ 255



Why are more and more professional welders making Power MIG their choice? It's because of the superior welding performance plus the little "extras" that set the Power MIG apart from the others. It is also Lincoln Electric's commitment to being a welding solutions company, not just a supplier of commodity welding equipment. What this means is that careful consideration, thought and design ingenuity went into the development of the Power MIG. We did the work to make your job easier.

**Superior Starting.** From the moment you strike the arc, you will appreciate the outstanding starting performance of the Power MIG.

**Soft, Stable Arc.** Throughout the entire welding process, you will benefit from the Power MIG's soft, controllable arc that produces welds with reduced spatter. The arc is also very tolerant to stick-out variations.

**Flexibility.** As a welder, you want the flexibility to change parameters instantly to quickly react to changing welding conditions. The robust design of the Power MIG allows for a wide "sweet spot," to permit a broad

range of voltage adjustment. With this attribute, the Power MIG provides control and flexibility for fine tuning procedures, especially in critical applications.

**Innovative Technology.** The Power MIG is equipped with the latest industry-leading technology from Lincoln Electric – Diamond Core Technology™. This new and innovative technology enables the machine to provide the best aluminum, stainless and mild steel welding performance available in its class.

**Attention to Details.** In addition to performance, Power MIG pays special attention to fine details in quality, features and appearance. With Power MIG, you get the little "extras" that are not in other welders.

**Rugged Design.** Power MIG's new aluminum cast, rugged, industrial design can take the punishment of even the most grueling work sites.

**Wire Feeding Reliability.** With dual driven drive rolls for precise feeding and split wire guides that support the wire through the entire feeding process, you have a professional

system that offers the best feeding reliability and performance on the market. The Power MIG features a quick locking wire reel spindle with tool-less brake adjustment that makes the machine convenient and easy to use.

**Quick Changeover.** Our quick-change tooling allows you to spend more time welding and less time setting up. Features like digital meters and an easy turn tension indicator makes changing between procedures and wire sizes effortless and repeatable.

**Power MIG Extras.** Power MIG was built with the welder in mind. Each time you load a gas bottle without having to lift the cylinder, or verify the input voltage connection without removing a sheet metal cover, you will be reminded of how much thought went into each feature. At the end of a hard day of welding when you store the gun in the built-in holster and lock your tools in the tool storage compartment, you'll be glad you made the professional's choice.

The Power MIG 255 package includes:

- Lockable storage compartment with tool tray for keeping tools safe.
- Built-in gun holster and contact tip tray for easy gun and parts storage.
- Magnum® 250L gun and 12 ft. (3.6m) "quick-connect" cable assembly equipped with fixed gas nozzle assembly.
- Gas regulator and hose kit for CO<sub>2</sub> or Argon blend gases.
- Work clamp and 10 ft. (3.0m) cable.
- 10 ft. (3.0m) input power cable with plug and receptacle (208/230V model only).
- Dual driven drive rolls and split wire guides to support the wire 100%.



Easy load gas cylinder platform.



Easy load wire compartment.

## ADVANTAGE LINCOLN

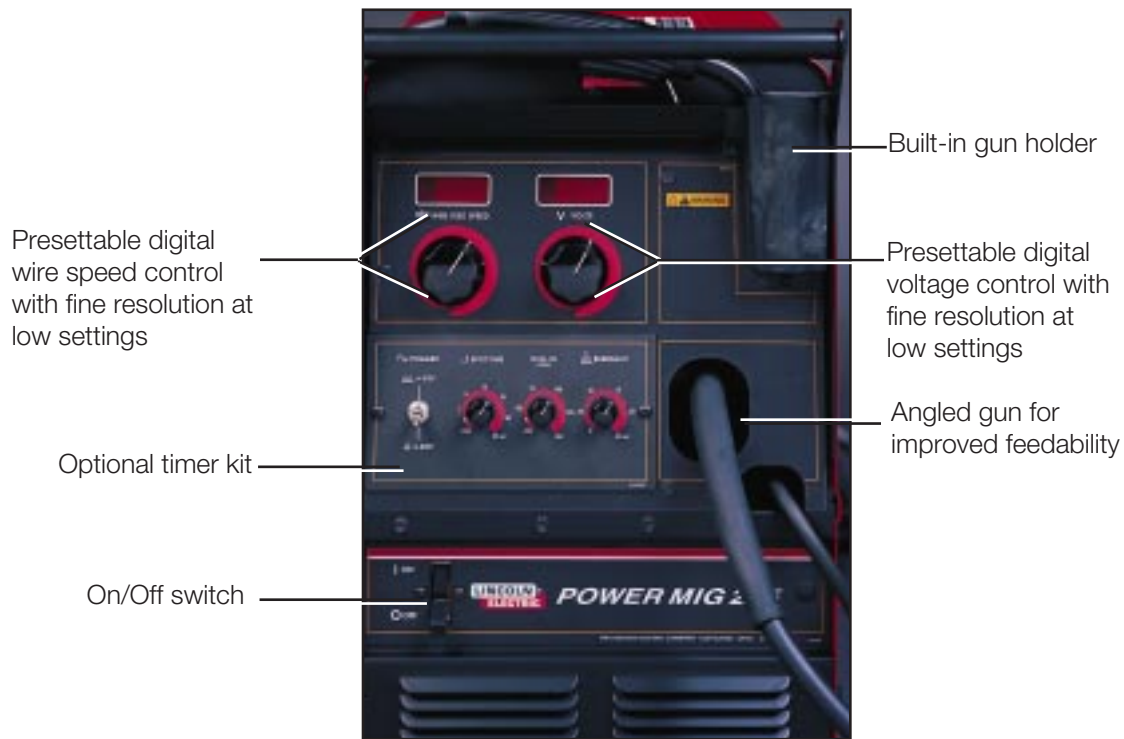
- Large, easy to set knobs with pre-set/actual digital meters provide continuous, precise and repeatable control of both wire speed and voltage procedures.
- Easy turn tension indicator makes changing between procedures and wire sizes effortless and repeatable.
- Dual driven wire drive system for positive wire feeding.
- Quick locking wire reel spindle with tool-less brake adjustment provides trouble-free wire loading.
- Easy setup instructions for MIG welding on mild steel, aluminum and stainless, located inside the Power MIG 255 door.
- Built-in gun holster conveniently stores welding gun.
- Lockable storage compartment with tool tray.
- Selectable slow or fast wire feed run-in for smooth arc starting.
- Lowest input current draw for energy-efficient low cost operation.



Lockable storage compartment with tool tray.

- Fan-As-Needed (F.A.N.) provides cooling of transformer and other components when required, reducing power consumption, noise and extending welder life.
- Electronic and thermostatic protection from current overload and excessive temperatures.
- Power source line voltage regulation holds voltage setting constant to maintain weld quality even when the input voltage fluctuates  $\pm 10\%$ .
- Built-in undercarriage with heavy duty wheels and handle for easy maneuverability. Also includes "easy-load" gas cylinder platform.
- Large, clear cover door permits easy viewing of input voltage reconnect panel.
- 3 year warranty on parts and labor.
- Manufactured under a quality system certified to ISO9002 requirements.

## A CLOSER LOOK



Presettable digital wire speed control with fine resolution at low settings

Built-in gun holder

Presettable digital voltage control with fine resolution at low settings

Optional timer kit

Angled gun for improved feedability

On/Off switch

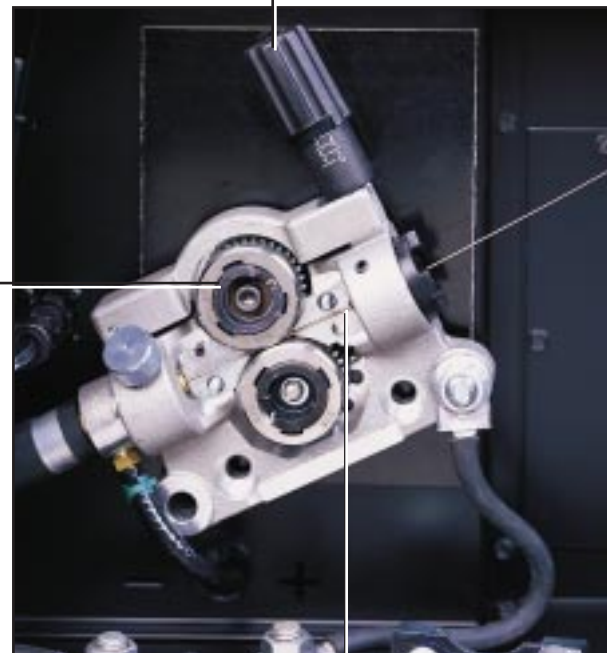
## PROFESSIONAL WIRE DRIVE

New rugged cast alloy drive system includes:

- Dual driven drive rolls and split wire guide system that delivers the most reliable wire feeding capability in the market.
- Excellent for feeding steel, stainless steel, aluminum, and cored wires.
- Tool-less quick-change drive rolls and wire guides make set-up fast and simple.
- Designed for .025" (0.6mm) through 3/64" (1.2mm) wire sizes.

Dual driven drive rolls

Easy turn numeric tension indicator



Split wire guides provide 100% wire support (shown with outer guide removed)

### DRIVE ROLL KITS

	Wire Size	Order No.
Solid	.023"-.030" (0.6-0.8 mm)	KP1696-030S
	.035" (0.9 mm)	KP1696-035S <sup>(1)</sup>
	.045" (1.2 mm)	KP1696-045S <sup>(1)</sup>
Cored	.035" (0.9 mm)	KP1697-035C
	.045" (1.2 mm)	KP1697-045C
Aluminum	3/64" (1.2 mm)	KP1695-3/64A <sup>(2)</sup>

<sup>(1)</sup> Included with Power MIG 255.

<sup>(2)</sup> Included in K1703-1 Aluminum Feeding Kit.

# TECHNICAL SPECIFICATIONS

Product Name	Ordering Information	Input AC Voltage	Rated DC Output Amps/Volts/Duty Cycle	Input Amps at Rated DC Output				Output Range (continuous)	Weight with Gun (net)	Dimensions HxWxD
				208	230	460	575			
Power MIG 255	K1693-1	208/230 1 Phase 60 Hz	250A / 26V / 40%	50	46	---	---	OCV 10-40V  WFS 50-700 ipm (1.3 - 17.7 m/min)	220 lbs (100 kg)	31.8 x 18.9 x 38.8 in. (808 x 480 x 985mm)
			200A / 28V / 60% <sup>(1)</sup>	42	38	---	---			
			145A / 26V / 100%	34	31	---	---			
	K1693-2	230/460/575 1 Phase 60 Hz	250A / 26V / 40%	---	50	24	19	AMPS 30-300		
200A / 28V / 60% <sup>(1)</sup>			---	41	20	16				

<sup>(1)</sup> NEMA Class I Rated Output / Based on a 10 min. Period.

## PROCESS CAPABILITIES



Diamond Core Technology is a patent-pending innovative choke design that yields the most responsive welding performance in this class of machine! Diamond Core produces the best welding performance available on mild steel, stainless and aluminum. While traditional choke designs have a fixed inductance, Diamond Core produces the best inductance across the entire welding range. The result is superior starting, a soft stable arc, low spatter, a wide “sweet spot,” and greatly enhanced aluminum and stainless welding.

Process	Electrode Wire	Electrode Polarity	Shielding Gas	Minimum Thickness	Maximum Thickness
Mild Steel MIG	.025, .030, .035, .045” SuperArc L-50, L-56 wire	Positive (DC+)	CO <sub>2</sub> or Blended	22 ga. (.031 in/0.8mm)	5/16” (.312 in/7.9mm) <sup>(1)</sup>
Stainless MIG	.030, .035” BlueMax™ 308LSi, 309LSi, 316LSi	Positive (DC+)	ArCO <sub>2</sub> Blended or Tri Mix	20 ga. (.036 in/0.9mm)	5/16” (.312 in/7.9mm)
Aluminum MIG	3/64” SuperGlaze™ 4043 and 5356	Positive (DC+)	100% Argon	3/16” ga. (.187 in/4.7mm)	5/16” (.312 in/7.9mm)
Mild Steel FCAW Gas-Shielded	.045” Outershield® 71M and MC-710	Positive (DC+)	CO <sub>2</sub> or Blended	12 ga. (.109 in/2.7mm)	5/16” (.312 in/7.9mm)
Mild Steel FCAW Self-Shielded	.035 and .045” Innershield® NR®-211-MP and NR-212	Negative (DC-)	None required (self-shielded)	18 ga. (.050 in/1.2mm)	5/16” (.312 in/7.9mm)

<sup>(1)</sup> Use of the MIG process on thicker materials than recommended may result in poor welds. The welds may “look” good, but may just be “sitting” on the top of the plate. This is called “cold casting” and will result in weld failure.

# MAGNUM® 250L

The Magnum 250L gun and cable assembly, shipped with the Power MIG 255 is equipped to feed .035-.045" (0.9-1.2mm) solid steel wire.

The fiberglass handle with non-slip grooves is designed to minimize size and maximize comfort and control. The gun

cable is lightweight and flexible for easy maneuverability. The heavy duty gun trigger switch is designed for positive electrical contact and long life. Magnum replacement parts are fully compatible with other leading brands. Industry reference numbers are provided for ease of interchangeability.



## REPLACEMENT PARTS

Description	Order No.	Industry Ref. No.	Description	Order No.	Industry Ref. No.
<b>Magnum 250L Gun and Cable Assemblies</b> Fixed gas nozzle model. <i>For .035" and .045" (0.9-1.2mm) wire sizes:</i> 12 ft. (3.6m) cable length K533-7 <sup>(1)</sup> Adjustable gas nozzle model. <i>For .035" and .045" (0.9 and 1.2mm) wire sizes:</i> 10 ft. (3.0m) cable length K533-1 12 ft. (3.6m) cable length K533-2 15 ft. (4.5m) cable length K533-3 <i>For .025" and .030" (0.6 and 0.8mm) wire sizes:</i> 10 ft. (3.0m) cable length K533-4 12 ft. (3.6m) cable length K533-5 15 ft. (4.5m) cable length K533-6			<b>Fixed Gas Nozzles/Diffuser Asbly.</b> <i>Fixed (flush):</i> 3/8" (9.5mm) M16081-1 23-37-F 1/2" (12.7mm) M16081-2 <sup>(1)</sup> 23-50-F 5/8" (15.9mm) M16081-3 23-62-F <i>Fixed (recessed):</i> 3/8" (9.5mm) M16080-1 23-37 1/2" (12.7mm) M16080-2 23-50 5/8" (15.9mm) M16080-3 23-62  Requires: Gas Diffuser Asbly. .025-.045" (0.6-1.2mm) S19418-3 <sup>(1)</sup> 52FN		
<b>Cable Liners</b> (for all gun cable lengths) .025-.030" (0.6-0.8mm) M16087-2 42-23-15 .035-.045" (0.9-1.2mm) M16087-1 <sup>(1)</sup> 42-4045-15 3/64" (1.2mm) Aluminum M17714-1 <sup>(2)</sup> 42N-3545-15			<b>Adj. Gas Nozzles/Diffuser Asbly.</b> <i>Adjustable Slip-On:</i> 1/2" (12.7mm) M16093-2 22-50 5/8" (15.9mm) M16093-1 22-62  Requires: Nozzle Insulator Asbly. S19417-1 32 Gas Diffuser Asbly. .023-.030" (0.6-0.8mm) S19418-2 52-23 .035-.045" (0.9-1.2mm) S19418-1 52		
<b>Contact Tips</b> <i>Standard Duty:</i> .025" (0.6mm) S19391-6 14-23 .030" (0.8mm) S19391-7 14-30 .035" (0.9mm) S19391-1 <sup>(1)</sup> 14-35 .040" (1.0mm) S19391-8 14-40 .045" (1.2mm) S19391-2 <sup>(1)</sup> 14-45 <i>Heavy Duty:</i> .035" (0.9mm) S19392-1 14H-35 .040" (1.0mm) S19392-6 14H-40 .045" (1.2mm) S19392-2 14H-45 <i>Tapered:</i> .025" (0.6mm) S19393-5 14T-23 .030" (0.8mm) S19393-6 14T-30 .035" (0.9mm) S19393-1 14T-35 .040" (1.0mm) S19393-7 14T-40 .045" (1.2mm) S19393-2 14T-45 Aluminum: 3/64" (1.2mm) S18697-46 <sup>(2)</sup>			<b>Gasless Nozzle/Diffuser Asbly.</b> (Innershield Nozzle) M16938 Requires: Gas Diffuser Asbly. S19418-1 52		
			<b>Gun Tube Assemblies</b> Standard (60°) S18920 <sup>(1)</sup> 45° S19890 <sup>(2)</sup>		

<sup>(1)</sup> Included with Power MIG 255 (K1693-1 and K1693-2).

<sup>(2)</sup> Included in K673-1 Aluminum Feeding Kit.

# PRINCE® XL SPOOL GUN

The Prince Spool Gun is lightweight, well-balanced. It is ideal for aluminum and stainless welding with the Power MIG 255.

The feeding distance of the self-contained wire supply to the arc is only several inches, eliminating the wire feeding problems typically associated with feeding soft aluminum electrode through a conventional gun and cable assembly.

The Spool Gun Features:

- On-demand control. No need to flip a switch when changing between spool gun and Magnum gun.
- Patented braking system minimizes wire unraveling and tangling.
- The only spool gun available with a 3-3/4 turn potentiometer for fine adjustment of wire feed speed.
- Wire feed speeds up to 1000 IPM.
- No special tools required when changing contact tips.
- Zippered cable jacket is standard.
- 4 sets of ball bearings in the motor provides reliability and long life.
- EZ Lock™ Barrel allows the optional 45° barrel to rotate 360° for difficult joint locations.

Note: EZ Lock and Prince are trademarks of MK Products, Inc.



Spool Gun with patented braking system



Gas Cup



Air-Cooled Contact Tip



Barrel Liners



Straight Barrel



45° Barrel

Description in. (mm)	Lincoln Part No.
<b>TIPS</b>	
Air Cooled:	
.035" (0.9)	S23978-1M
3/64" (1.2)	S23987-2M
1/16" (1.6)	S23978
<b>CUPS/ADAPTERS</b>	
0.5" (0.2) Gas Cup	S23978-4
Kool Cup Adapter	S23978-18
0.5" (0.2) A/C Gas Cup for Kool Cup Adapter	S23978-17
0.5" (0.2) HD Finned Gas Cup	S23978-20
<b>BARREL LINERS</b>	
Torch Liner Straight	S23978-15
Torch Liner for 45° Barrel	S23978-26
<b>BARRELS</b>	
Prince A/C Straight Barrel	S23978-23
Prince A/C 45° Barrel	S23978-25

## SPOOL GUN EQUIPMENT

Product Name	Description	Order No.
Prince Spool Gun and Adapter Module	Spool gun with remote wire speed control. 25 ft. cable length.	K1692-1
Optional Spool Gun Holder	Provides neat storage of spool gun cable, and gas hose on Power MIG. Also provides hardware for routing gas hose inside Power MIG.	K1738-1

# OPTIONS AVAILABLE

## Dual Cylinder Mounting Kit

Permits side-by-side mounting of two full size gas cylinders, with easy loading. Attaches easily to Power MIG 255 undercarriage.

Order **K1702-1**.

## Aluminum Feeding Kit

Conversion kit for welding with 3/64" (1.2mm) aluminum wire. Includes tension spring, drive rolls, contact tips (qty. 2), non-metallic wire guides and cable liner. Order **K1703-1**.

## Spool Gun Holder

Provides neat storage of spool gun cable, and gas hose on Power MIG. Also provides hardware for routing gas hose inside Power MIG. Order **K1738-1**.

## Timer Kit

Adds 4-step trigger interlock, spot mode, adjustable run-in speed for smoother arc starting, and burnback time for controlled stopping. Easy to install. Order **K1701-1**.

## Readi-Reel® Adapter

Allows Power MIG 255 to be used with 30 lbs. (13.6 kg) Lincoln Readi-Reels. Order **K363P**.



## Magnum Connection Kit

Permits use of Magnum 200, 300 and 400 gun and cable assemblies on Power MIG 255. Order **K466-6**.



### Customer Assistance Policy

The business of The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for advice or information about their use of our products. We respond to our customers based on the best information in our possession at that time. Lincoln Electric is not in a position to warrant or guarantee such advice, and assumes no liability, with respect to such information of advice. We expressly disclaim any warranty of any kind, including any warranty of fitness for any customer's particular purpose, with respect to such information or advice. As a matter of practical consideration, we also cannot assume any responsibility for updating or correcting any such information or advice once it has been given, nor does the provision of information or advice create, expand or alter any warranty with respect to the sale of our products.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying this type of fabrication methods and service requirements.



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