

A photograph of an industrial facility featuring a complex network of yellow pipes and grey valves. A prominent pressure gauge is visible in the center. The background shows a white building with a red roof and a tall tower under a clear blue sky.

ORBITAL MIG WELDING SYSTEM

QUALITY ASSURANCE FOR ORBITAL MIG WELDS



LINCOLN
ELECTRIC

M85
HELIX

APEX™

PROGRAM # 0122

0.0

0.0

5.9

V 0.94

V 1.48

A 165.1

AUTO



Superior Orbital MIG Welds

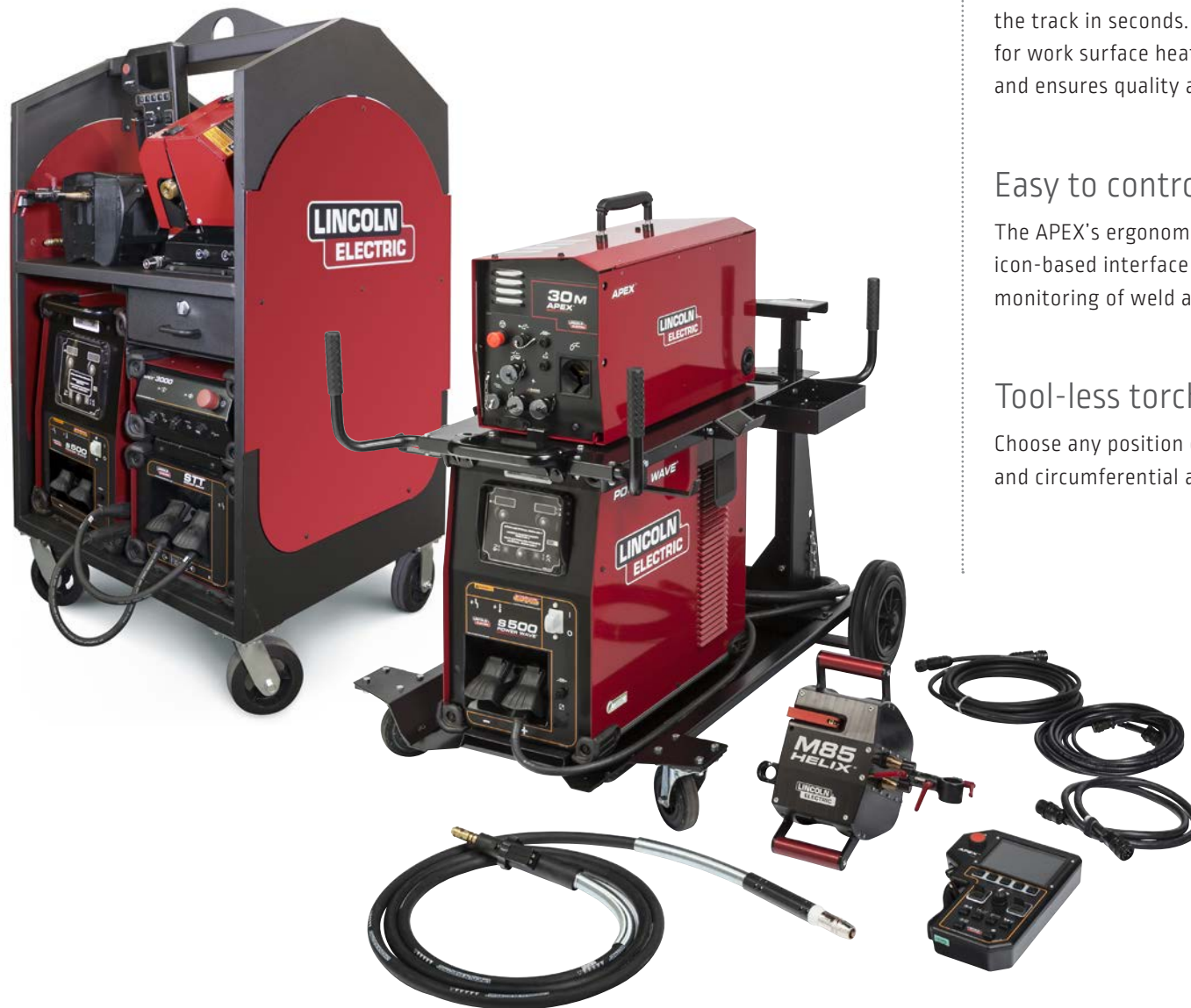
The First Time,
Every Time.

The one thing that orbital MIG welding applications have in common is that they're mission critical. Whether the work at hand involves cross-country transmission pipelines, process piping, or similar applications, orbital welds need to meet exceptionally high standards. Count on meeting and exceeding those standards with an orbital MIG welding system from the one company that brings more than 100 years of welding experience and expertise to the table.

The mechanized HELIX® M85 welding system sets up quickly and delivers precision calculation and control of travel time, weld distance, weld speed and other essential variables. The result is consistent, high-quality welds with little or no time wasted on setup or rework.

The system is driven by Lincoln Electric's APEX® MechanizedController. Each system power supply is interchangeable with an ArcLink®-enabled third-generation Lincoln Electric Power Wave® machine.





Setup and Process: Maximizing Control

Takes the heat

The new track ring design allows the operator to install or remove the track in seconds. It also eliminates binding and compensates for work surface heat expansion. The gear-driven track resists wear and ensures quality and consistency.

Easy to control

The APEX's ergonomic hand-held pendant with icon-based interface and full-color screen simplifies the control and monitoring of weld activity in direct sunlight or dark environments.

Tool-less torch adjustments

Choose any position on three axes, with in/out, up/down and circumferential adjustment.

PRODUCT SPECIFICATIONS

Product Name	Product Number	Input Power	Input Current	Travel Speed ipm	Wire Feed Speed ipm (cmpm)	Clearance - in (mm)		Oscillation Stroke in (mm)	Arc Voltage Control (ARC) Stroke - in (mm)	Torch Center to Front in (mm)	Lead/Lag	Torch Tilt		Manual Torch Height Adjustment in (mm)
						Radial	Axial					In	Out	
HELIX® M85 Weld Head	K52101-1	24V DC	9A	0.1 min – 120 max	50-1200 (127-3,048)	8.5 (215.9)	8.9 (226.1)	2 (50.8)	2 (50.8)	1.7 (43.2)	360°	+60° max	-30° max	4.5 (114.3)

DESCRIPTION

PRODUCT NUMBER

HELIX M85 WELD HEAD AND ACCESSORIES

HELIX M85 Weld Head	K52101-1
Mechanized Torch 550A, 25 ft. (7.6 m)	K52106-25
Mechanized Torch 550A, 15 ft. (4.6 m)	K52106-15
Spatter Shield	KP52112-1
Oscillation Cover Kit	KP52135-1
Torch Height Belt	KP52136-1
Oscillation Belt	KP52137-1
Diffuser	KP2747-1

HELIX M85 TRACK RING & SHOE EXTENSIONS

HELIX Quick Release Track Ring [xx = pipe diameter]	K52000-xx
HELIX Flat Track	K52083-48
HELIX Magnetic Shoes	K52089-1
HELIX Flat Track with Magnetic Shoes	K52090-1
HELIX Shoe Extension 0.5 in. (12.7 mm)	K52060-05
HELIX Shoe Extension 1.0 in. (25.4 mm)	K52060-10
HELIX Shoe Extension 2.0 in. (50.8 mm)	K52060-20
HELIX Shoe Extension 3.0 in. (76.2 mm)	K52060-30

PRODUCT SPECIFICATIONS

Product Name	Product Number	Input Power	Rated Output	Input Current	Dimensions H x W x D in (mm)	Net Weight lb (kg)
APEX® 3000 Control	K52102-1	40 VDC +120 VAC from Power Wave®	24V / 9A	5A AC / 9A DC	7.35 x 13.85 x 24.4 (186.7 x 351.8 x 619.8)	13.6 (6.2)
APEX® 3000 Pendant	K52113-1	40 VDC	—	250MA	11.33 x 7.80 x 2.71 (287.8 x 198.1 x 68.8)	2.65 (1.2)
APEX® 30M Portable Mechanized Controller and Feeder	K52160-1	40 VDC	5-350	—	15.3 x 25 x 10.9 (387.6 x 635 x 276.9)	49.2 (22.3)

WHAT'S INCLUDED	Product Number	Ready-Pak with Power Wave® S350 (shipped fully assembled) K52103-1	Ready-Pak with Power Wave® S500 (shipped fully assembled) K52103-2	Orbital Portable Welding System Ready-Pak with Power Wave® S500 (shipped fully assembled) K52165-2
HELIX M85 Weld Head	K52101-1	•	•	•
APEX 3000 Control Module	K52102-1	•	•	
APEX Control Pendant	K52113-1	•	•	•
APEX Operator Pendant	K52147-1	•	•	•
APEX 30M Portable Mechanized Controller and Feeder	K52160-1			•
AutoDrive® 4R220 Wire Feeder with Spool Mount	K52132-1	•	•	
Power Wave S350	K2823-3	•	•	
Power Wave S500	K2904-1	•	•	•
Vantage® 520 SD	K4107-1			•
Vantage 600 SD	K3239-1			•
Air Vantage 600 SD	K3242-1			•
Power Wave Advanced Module	K2912-1	•	•	•
Power Wave STT® Module	K2902-1	•	•	•
Mechanized Torch 550A, 15 ft. (4.6 m)*	K52106-15	•	•	•
APEX 3000 System Cart	K52114-1	•	•	
APEX 30M System Cart	K52166-1			•
HELIX Control Cable, 15 ft. (4.6 m)	K52107-15	•	•	•
HELIX Control Cable, 25 ft. (7.6 m)	K52107-25	•	•	•
Pendant Control Cable, 25 ft. (7.6m)	K52130-25	•	•	•
Pendant Control Cable, 15 ft. (4.6m)	K52130-15	•	•	•
ArcLink® Wire Drive Cable 14-pin, 3 ft. (0.9 m)	K2709-3	•	•	
ArcLink/Linc-Net Cable Assembly 5-pin, 8 ft. (2.4 m)	K1543-8	•	•	•
ArcLink/Linc-Net Cable Assembly 5-pin, 25 ft. (7.6 m)	K1543-25			•
ArcLink/Linc-Net Cable Assembly 5-pin, 50 ft. (15.2 m)	K1543-50			•
Torch Pivot Assembly	KP52139-1	•	•	•

* Includes 0.045 in (1.1 mm) contact tip, liner and nozzle

• Included • Optional

DESCRIPTION	PRODUCT NUMBER
CONTACT TIPS, NOZZLES AND LINERS	
Magnum® PRO Copper Plus® 550A Contact Tip 0.035 in (0.9 mm)	KP2745-035R
Magnum PRO Copper Plus 550A Contact Tip 0.40 in (1.0 mm)	KP2745-040R
Magnum PRO Copper Plus 550A Contact Tip 0.045 in (1.1 mm)	KP2745-045R
Magnum PRO Copper Plus 550A Contact Tip 0.052 in (1.4 mm)	KP2745-052R
Magnum PRO Copper Plus 550A Contact Tip 0.068-0.072 in (1.7 -1.8 mm)	KP2745-072R
Magnum Pro Copper Plus 550A Contact Tip 1/16 in (1.6 mm)	KP2745-116R
Magnum PRO Copper Plus 550A Contact Tip 3/32 in (2.0 mm)	KP2745-332R
Magnum PRO Copper Plus 550A Contact Tip 5/64 in (1.98 mm)	KP2745-564R
Magnum PRO Copper Plus 550A Tapered Contact Tip 0.035 in (0.9 mm)	KP52108-035R
Magnum PRO Copper Plus 550A Tapered Contact Tip 0.040 in (1.0 mm)	KP52108-040R
Magnum PRO Copper Plus 550A Tapered Contact Tip 0.045 in (1.2 mm)	KP52108-045R
Magnum PRO Copper Plus 550A Tapered Contact Tip 0.052 in (1.4 mm)	KP52108-052R
Magnum PRO Copper Plus 550A Tapered Contact Tip 1/16 in (1.6 mm)	KP52108-116R
Replacement Nozzle 1/8 in. (3.2 mm) Recessed	KP2743-1-62R
Replacement Nozzle 1/8 in. (3.2 mm) Stick Out	KP2743-1-62S
Wire Liner 0.030-0.045 in (0.7 - 1.1 mm) 15 ft (4.6 m)	KP45-3545-15
Wire Liner 0.030-0.045 in (0.7 - 1.1 mm) 25 ft (7.6 m)	KP45-3545-25
Wire Liner 0.052-1/16 in (1.3 - 1.6 mm) 15 ft (4.6 m)	KP45-116-15
Wire Liner 0.052-1/16 in (1.3 - 1.6 mm) 25 ft (7.6 m)	KP45-116-25
Wire Liner 5/64-3/32 in (2.0 - 2.4 mm) 15 ft (4.6 m)	KP45H-332-15
Wire Liner 5/64-3/32 in (2.0 - 2.4 mm) 25 ft (7.6 m)	KP45H-332-25

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 information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

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