



APEX® & HELIX®

Advanced Mechanized Controllers and Weld Heads





Simple. Flexible. Intelligent.

We get it. You need your welding to be simple... flexible... and above all, precise. With Lincoln Electric's APEX and HELIX mechanized welding solutions – all three of those requirements become easier to achieve. Engineered from decades of real-world, in-field application experience, our mechanized welding solutions make it easier than ever to tap into the true performance and quality of mechanized welding with the out-of-box ease of use that allow operators of all skill levels to use. When you're looking to take your welding operations to the next level, look no further.



Mechanized Orbital and Flat Track Welding Solutions

One Platform, Unparalleled Performance

Lincoln Electric's versatile platform of mechanized controllers and weld heads were designed to deliver unparalleled performance and quality. So whether you're running MIG, Flux-Cored, TIG, orbital, or plate - we have you covered with a single platform that is second to none.

Mechanized Innovation

Easily tap into the true benefits of mechanized welding with Lincoln Electric's advanced, fully-automated AutoPilot technology. A standard feature in all APEX control systems, APEX AutoPilot features multiple automated capabilities that provide intelligent digital control for unmatched mechanized performance and ease-of-use.

Field Proven Components

Engineered and field-tested to withstand the harshest conditions you can throw at it, the APEX 3 Series controllers and line-up of HELIX M weld heads were specifically engineered to withstand any shop or field welding environment without sacrificing operator ease-of-use.

Trusted Expertise & Support

When it comes to mechanized welding equipment, no one can match Lincoln Electric's trusted experience and support. With a worldwide network of sales offices, support personnel, and technical application facilities - Lincoln Electric can provide the global support you can count on.

One Platform, Unparalleled Performance

APEX 3 Series Platform

The command center of it all, the APEX 3 Series Control platform delivers the most innovative, adaptive mechanized system in the industry. Engineered for simplicity, the APEX 3 series provides one platform that can deliver plug-and-play compatibility with the HELIX M Series for versatility with orbital or flat track applications.

- One control platform to run GMAW, GTAW, FCAW, and advanced weld processes such as Hot Wire GTAW, STT, and HyperFill
- PowerConnect® Technology allows flexible input power from 200V-600V
- Intelligent, operator-focused controls for ultimate ease-of-use and minimal training requirements.
- Easily program, save, and recall weld settings for weld-to-weld consistency and repeatability.

Intuitive, Digital Control

With the use of the APEX pendant, operators have full control over the mechanized process. With a large, well-lit screen and intuitive control layout, the pendant maximizes operator ease-of-use and allows for on-the-fly corrections and adjustments to the weld head and the welding parameters.

Advanced Programming

Easily program, save, and recall weld settings for weld-to-weld consistency and repeatability.



Covered for any Application

The Apex 3 Series comes in two offerings to fit a variety of shop and field applications



APEX 30S

- Performance, innovation, and digital control in a small, modular package
- Easily coupled with a Power Wave unit for the ideal mechanized shop solution
- Multiple gas solenoids and flow sensors for increased multi process control and validation.
- Embedded AutoPilot Technology sets the standard for mechanized automation



APEX 30M

- Ideal all-in-one solution for taking mechanized welding to the field
- Rugged, suitcase design incorporates APEX 3 series control with an integrated wire feeder
- Lightweight, portable design for mobility on jobsite or the right of way
- Proven MAXTRAC, 4 geared drive roll system to handle a variety of wire diameters and types.



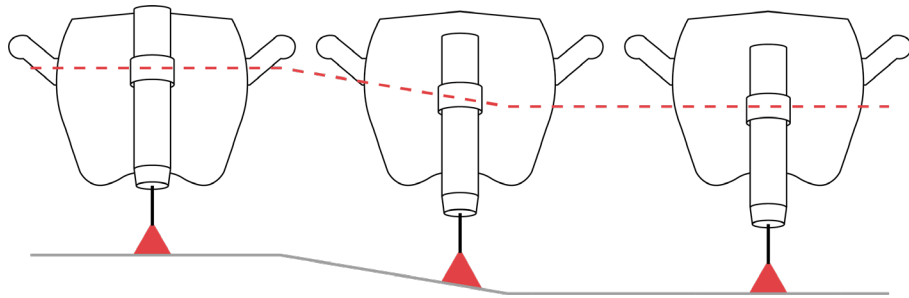
APEX Pendants

- Intuitive layout provides precise, real time control
- Easily store and recall weld programs, with the ability to set parameter limits
- Large, well-lit display works in low light and bright sunlight conditions
- Consistent screen layouts for MIG and TIG process for simple operation
- Optional operator pendant provides key weld process control in rugged conditions

True Mechanized Innovation

APEX® AutoPilot Technology

APEX® AutoPilot Technology brings the true benefits of automated, digital controls to Lincoln Electric's line of portable mechanized solutions. Providing multiple advanced process control capabilities, APEX AutoPilot transforms the welding process and allows you to easily utilize mechanized equipment in applications such as orbital pipe, structural, shipbuilding, and more.

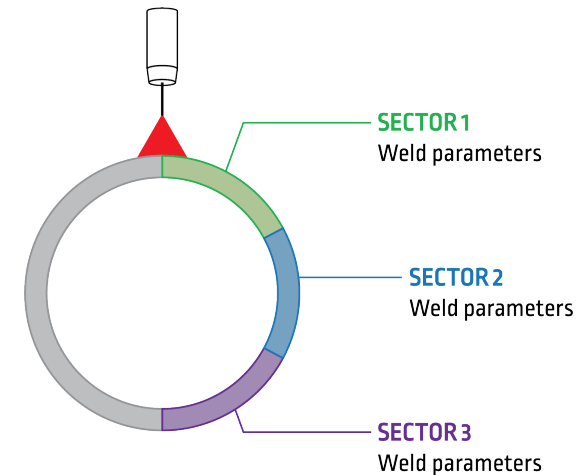


Auto Height

With APEX Auto Height Control, you can now access the next generation of automated height control for multiple process types. So whether your running MIG or TIG, Auto Height control automatically adjusts the torch height based on the set amperage (MIG) or voltage (TIG) parameters..

Key Benefits:

- Improves tracking and control when transiting across changes in surface height.
- Prevents over shooting when minor offsets are detected
- No external sensors needed - run the welding process in it native control to easily adapt procedures and improve training.
- Dials in the ideal height for improved heat input control and improved operator ease-of-use.

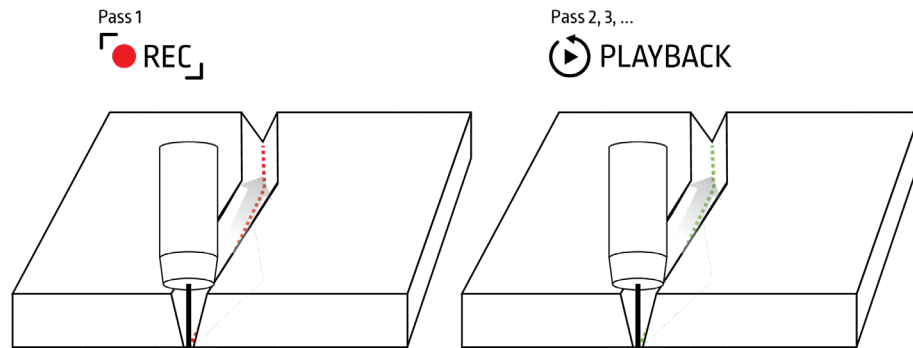


Auto Sector

With APEX Auto Sector, operators can reduce the risk of welding with the wrong values at the wrong time by utilizing embedded inclinometer control, allowing the system to automate weld parameters based on preprogrammed settings for a specific section of the weld sequence.

Key Benefits:

- Automates parameter control and can change any aspect of the welding process on the fly, including WFS, Amps, Volts, Travel, oscillation width, speed, left and right dwell, welding mode and waveform control. As well as output and wave controls for hot wire processes.
- Works for double up, double downs, and 360 degree welding with up to 1 degree of resolution
- Reduces operator fatigue and risk of missing a setting at a critical time in the weld sequence.

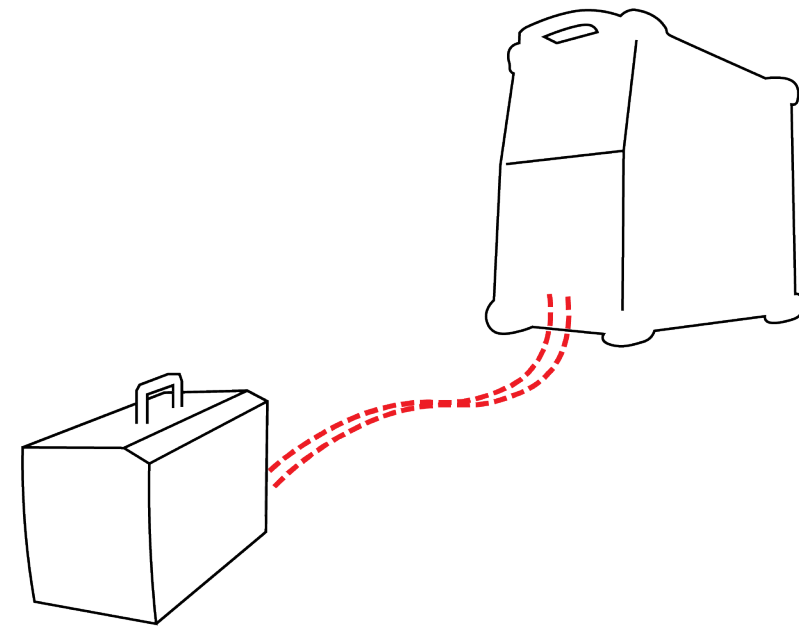


Auto Path

Designed to decrease operator interaction during long welds, APEX Auto Steer allows operators to record weld head adjustments during a first pass and then initiate playback capabilities on the following weld pass – automatically adjusting the weld head to follow the same initial path. In return, this frees up operators to run multiple systems at once or attend to other pre or post weld needs.

Key Benefits:

- Easily initiate welds on multi-pass applications by recording weld head path adjustments and play back the weld path for subsequent passes.
- Can playback the recorded track in either forward or reverse directions for improved efficiency
- Automatically stops welding process when the system detects issues such as running out of wire
- Automatically senses and stops welding process when head reaches the end of the track



Auto Sense

The first step to making a great weld is to make sure your system is properly connected. Thanks to APEX Auto Sense, operators can receive automatic feedback if system connections need attention – such as polarity settings – before a specific welding process is initiated.

Key Benefits:

- Validates welding circuit is properly connected.
- Validates welding polarity is correctly connected
- For applications that require precise voltage control, voltage sense leads are validated before the operator can strike an arc.

Field-Proven Components

HELIX M Series Weld Heads

The HELIX M Series delivers a range of reliable, flexible weld head tractors that can easily adapt to your application needs. Configured for easy plug-and-play capability with the APEX 3 Series controller, the line-up of HELIX M weld heads allow for intelligent, precise mechanized welding that can withstand any shop or field welding environment.

- Servo driven controls & embedded inclinometers for smooth, consistent operation.
- Easily interchange weld heads for true multi-process versatility
- Color-coded adjustment points for enhanced operator ease-of-use



Helix M85 Weld Head

Designed for multi-process use in flat, orbital, or 1G applications, the HELIX M85 delivers the ideal solution for precise arc performance and weld quality

- Configures for GMAW, FCAW, GTAW, and Hot Wire GTAW
- Adapts for bench, suitcase, or on-board wire feed options
- Enclosed design for rugged field or shop environments
- Auto-configures to APEX 3 Series Controllers and AutoPilot Technology



Helix M45 Weld Head

Designed with application flexibility in mind, the HELIX M45 is the ideal solution for tight spaces - providing a low profile design with up to 45 degrees of inward and outward adjustment.

- All the multi-process and digital features of HELIX M85, but with flexible, low-profile design
- Low radial clearance of 4.5 in (114mm)
- Can be setup 5in (127mm) away from weld joint without affecting performance.
- Auto-configures to APEX 3 Series Controllers and AutoPilot Technology



Helix M627 Clamp-on Weld Head

Engineered to simplify small pipe and tube GTAW applications, the HELIX M627 clamp-on weld head combines complete process control with an operator friendly design for the ultimate weld quality.

- GTAW weld head for pipe diameters ranging from 1.9 - 6.6 in (48 - 168mm)
- Low radial clearance of 2.87 in (68.5mm)
- Proven, versatile clamping mechanism for easy attachment and positioning
- Integrated water-cooled housing and torch help eliminate overheating
- Auto-configures to APEX 3 Series Controllers and AutoPilot Technology



Helix Flat and Orbital Tracks

Whether the application is pipe or plate, the HELIX mechanized tracks have a solution. With rugged steel construction and enhanced operator-focused features, these tracks are built to keep you focused more on welding, and less on setup.

- Available in flat, orbital outside (OD), and orbital inside (ID) options
- Quick release track rings with magnetic, vacuum cup, or bolt-on mounting options
- Gear-driven, spring-loaded system for stable, consistent travel of the weld head eliminating gear slip
- Various standard tracks sizes available with the ability to easily adapt to various diameters or lengths.
- Orbital tracks designed to utilize shoe extensions allowing for a single track to cover a range of pipe diameters.

Modular Design

Built for the shop to the jobsite

The full APEX and HELIX mechanized weld solution allows operators to easily adapt their equipment to fit their applications needs. From the shop floor to the jobsite, Lincoln Electric provides a complete modular solution that delivers the performance and quality benefits of mechanized welding wherever you need it.



Trusted Expertise & Support

Mechanized Welding Experts

High-quality products and great customer service are important aspects of the Lincoln Electric story, but it's our unmatched welding expertise, from the construction site to the right of way, that truly sets us apart. If there's a better way for you to weld, we'll help you find it.

Global Support

With a worldwide network of distributor and sales offices reaching over 160 countries, and 36 global technical application facilities, Lincoln Electric can provide trusted global support you can count on.

Trusted Protection

All Advanced Welding Equipment comes standard with an industry-leading 5-year factory limited warranty, providing no out-of-pocket cost for repairs and full coverage on parts and labor for the life of the warranty.

INDUSTRY LEADING
5-YEAR
STANDARD
WARRANTY



Ready-Pak Options



APEX® 30M HELIX® M85 MIG Ready-Pak® K52165-2

- Power Wave® S500 K2904-1
- APEX® 30M Portable Controller & Feeder K52160-1
- HELIX® M85 Weld Held K52101-1
- APEX® 3 Series MIG Pendant K52113-1
- 550A Gun Assembly K52106-15
- APEX® 30M System Cart K52166-1
- HELIX® Control Cable K52130-25
- Pendant Cable K52130-25
- ArcLink® Cable K1543-8
- Power Cable M24307-96



APEX® 30S HELIX® M85 TIG Ready-Pak® K52260-1

- Power Wave® S500 K2904-1
- APEX® 30S Mechanized Controller K52217-1
- HELIX® M85 Weld Held K52101-1
- HELIX® SF70A-1 Onboard Wire Feeder K52230-1
- APEX® 3 Series TIG Pendant K52216-1
- 500A Mechanized TIG Torch Assembly K52229-25C
- Torch Holder Assembly K52222-138
- Wire Manipulator Assembly K52231-1
- Wire Guide Torch Clamp Kit K52232-1
- Cool Arc® 55 S Water Cooler K3086-2
- Inverter Wire Feeder Cart K3059-4
- Pendant Cable K52130-25



APEX® 30S HELIX® M85 MIG Ready-Pak® K52257-1

- Power Wave® S500 K2904-1
- APEX® 30S Mechanized Controller K52217-1
- HELIX® M85 Weld Held 52101-1
- HELIX® SF70A-1 Onboard Wire Feeder K52230-1
- APEX® 3 Series MIG Pendant K52113-1
- 550A Gun Assembly K52223-25C
- Inverter Wire Feeder Cart K3059-4
- Pendant Cable K52130-25



APEX® 30S M45 TIG Ready-Pak® K52265-1

- Power Wave® S500 K2904-1
- APEX® 30S Mechanized Controller K52217-1
- HELIX® M45 Weld Held K52224-1
- HELIX® SF70C-1 Onboard Wire Feeder K52248-1
- APEX® 3 Series TIG Pendant K52216-1
- 500A Mechanized TIG Torch Assembly K52249-25C
- Wire Manipulator Assembly K52254-1
- Cool Arc® 55 S Water Cooler K3086-2
- Inverter Wire Feeder Cart K3059-4
- Pendant Cable K52130-25



APEX® 30S HELIX® M45 MIG Ready-Pak® K52264-1

- Power Wave® S500 K2904-1
- APEX® 30S Mechanized Controller K52217-1
- HELIX® M45 Weld Held K52224-1
- HELIX® SF70C-1 Onboard Wire Feeder K52248-1
- APEX® 3 Series MIG Pendant K52113-1
- 550A Gun Assembly K52250-25C
- Cool Arc® 55 S Water Cooler K3086-2
- Inverter Wire Feeder Cart K3059-4
- Pendant Cable K52130-25



APEX® 30S HELIX® M627 TIG Ready-Pak® K52285-1

- Power Wave® S500 K2904-1
- APEX® 30S Mechanized Controller K52217-1
- HELIX® M627 Clamp-On TIG Weld Held K52283-1
- APEX® 3 Series TIG Pendant K52216-1
- Cool Arc® 55 S Water Cooler K3086-2
- Helix M Clamp Expendables Kit
- Inverter Wire Feeder Cart K3059-4
- Pendant Cable K52130-25
- Pelican Storage Case with:
 - Clamp Shoe 6.625 in [168.3 mm] K52093-663
 - Clamp Shoe 5.563 in [141.3 mm] K52093-556
 - Clamp Shoe 4.5 in [114.3 mm] K52093-450
 - Clamp Shoe 4.0 in [101.6 mm] K52093-400
 - Clamp Shoe 3.5 in [88.9 mm] K52093-350
 - Clamp Shoe 2.875 in [73.0 mm] K52093-288
 - Clamp Shoe 2.375 in [60.3 mm] K52093-238
 - Clamp Shoe 1.9 in [48.3mm] K52093-190



APEX® 30S M85 Hot Wire TIG Ready-Pak® K52266-1

- Power Wave® S500 K2904-1
- Power Wave® Advanced Module K3685-1
- APEX® 30S Mechanized Controller K52217-1
- HELIX® M85 Weld Held K52101-1
- HELIX® SF70A-1 Onboard Wire Feeder K52230-1
- APEX® 3 Series TIG Pendant K52216-1
- 500A Mechanized TIG Torch Assembly K52229-25C
- Torch Holder Assembly K52222-138
- Wire Manipulator Assembly K52231-1
- Wire Guide Torch Clamp Kit K52232-1
- Cool Arc® 55 S Water Cooler K3086-2
- APEX® Lift Cart K52236-1
- Pendant Cable K52130-25
- ArcLink® Cable K1543-8
- Hot Wire TIG Sense Lead Adapter K52228-1
- Hot Wire TIG Weld Cable M23131-28



APEX® 30S M45 Hot Wire TIG Ready-Pak® K52267-1

- Power Wave® S500 K2904-1
- Power Wave® Advanced Module K3685-1
- APEX® 30S Mechanized Controller K52217-1
- HELIX® M45 Weld Held K52224-1
- HELIX® SF70C-1 Onboard Wire Feeder K52248-1
- APEX® 3 Series TIG Pendant K52216-1
- 500A Mechanized TIG Torch Assembly K52249-25C
- Wire Manipulator Assembly K52254-1
- Cool Arc® 55 S Water Cooler K3086-2
- APEX® Lift Cart K52236-1
- Pendant Cable K52130-25
- ArcLink® Cable K1543-8
- Hot Wire TIG Sense Lead Adapter K52228-1
- Hot Wire TIG Weld Cable M23131-28



Customer Assistance Policy

The business of Lincoln Electric is manufacturing and selling high quality welding equipment, automated welding systems, consumables, and cutting equipment. Our challenge is to meet the needs of our customers, who are experts in their fields, and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or technical information about their use of our products. Our employees respond to inquiries to the best of their ability based on information and specifications 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, or to provide engineering advice in relation to a specific situation. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or communications. Moreover, the provision of such information or technical information does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or technical information, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose or any other equivalent or similar warranty is specifically disclaimed.

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For product information: visit www.LincolnElectric.com/VRTEX or email VRTEX@LincolnElectric.com

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