

Hybrid Laser GMAW

The Next Generation of Welding Technology

Technology

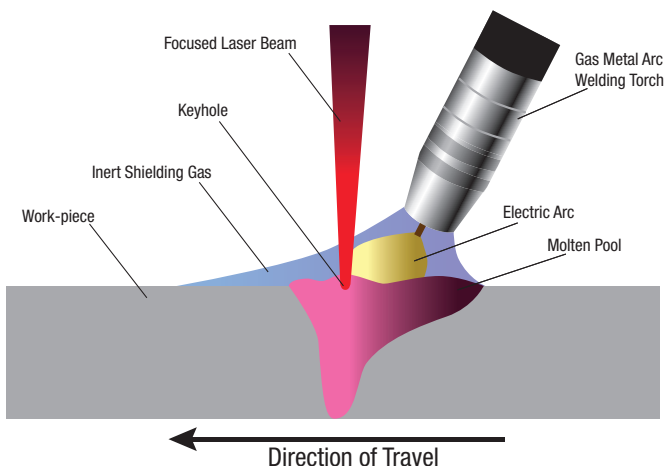


What is Hybrid Laser GMAW?

Hybrid Laser GMAW welding is an automated, high-performance welding process which results in a very narrow heat-affected zone (HAZ) with deep penetration and high travel speeds relative to traditional processes. This breakthrough approach combines the highly focused intensity of a laser with the joint filling capability of the traditional MIG process. By combining the two, hybrid laser welding provides a unique opportunity for thicker welds with less filler metal or higher travel speeds than typical welding, depending on the material thickness.

As an extension of the revolutionary Power Wave® Waveform Control Technology®, Lincoln Electric's patent-pending Hybrid Laser GMAW process allows for the use of a single controller to manage the synergistic operation of BOTH welding current and laser power, unlike conventional offerings. This seamless control architecture and synchronized starting and ending results in increased productivity and a higher quality weld than with other Hybrid Laser GMAW systems.

Hybrid Laser GMAW Welding Process
(Laser Leading Arc)



»» SYNERGIC WAVEFORM CONTROL™

Both welding current and laser power are precisely controlled for optimal results.

»» EASY INTEGRATION

Seamless Adaptive Control Architecture™ provides integration of the power source, laser, robotics, hard automation and many other elements through one process controller.

»» PRECISION CONTROL

Heat input, deposition and travel speed are all tightly monitored and controlled for seamless operation and the highest quality welds.

»» DEDICATED EQUIPMENT

Lincoln's state-of-the-art Power Wave® i400L is designed specifically for Hybrid Laser GMAW applications.

»» HIGHEST QUALITY CONSUMABLES

Lincoln's commitment to quality standards is unmatched in the welding industry. With welding consumables available to match any application, you're sure to get a high-quality weld that meets your specific demands.

»» INDUSTRY-LEADING APPLICATION KNOWLEDGE & SUPPORT

As the Welding Experts®, Lincoln Electric is the global leader in the development of custom arc welding solutions and processes for your application to help improve your bottom line.

»» STRONG INDUSTRY PARTNERSHIPS

Working closely with companies like FANUC Robotics, IPG Lasers and II-VI/HighYAG processing heads and optics allows Lincoln Electric to offer flexible and comprehensive solutions.

Industry Applications:

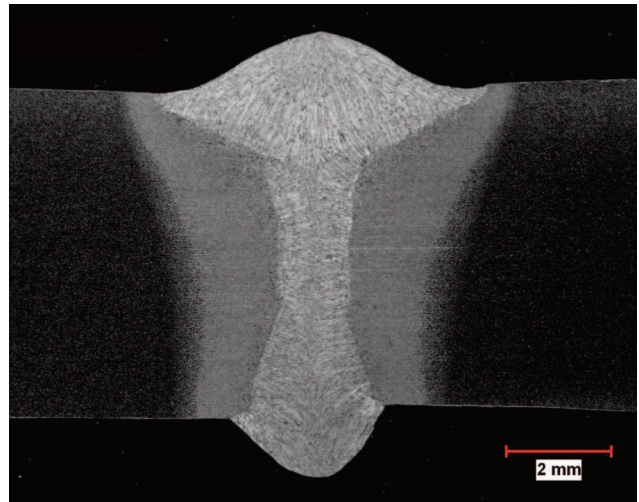
- Automotive & Transportation
- Heavy Fabrication
- Power Generation & Process (Cladding and Piping)
- Shipbuilding

Benefits of Lincoln Electric's Patent Pending Technology for Hybrid Laser GMAW welding

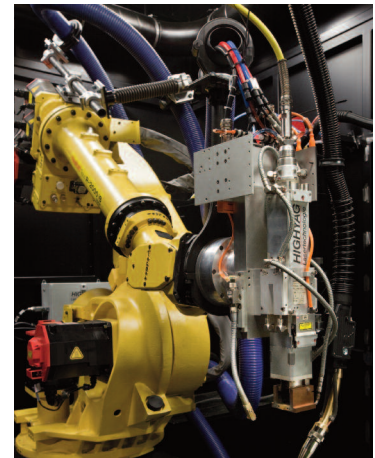
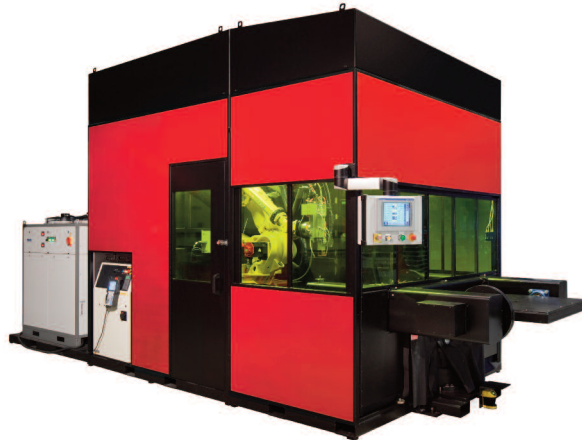
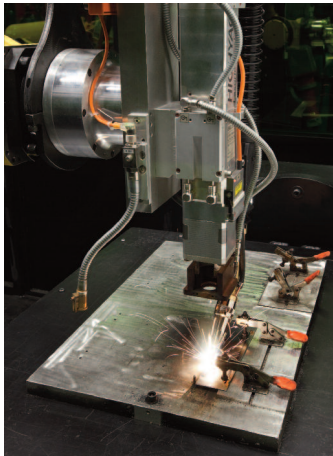
- Synergic operation of both welding current & laser power
- Single point of control for seamless integration
- Precise control over total heat input
- High-performance, even on thick materials
- Excellent gap bridging capabilities
- Very high travel speed
- Very narrow heat-affected zone (HAZ)
- Low distortion
- Spatter-free

Put Our Experts to Work for You

Whether you're looking to take advantage of an existing Hybrid Laser GMAW application or have a completely new challenge that you think might benefit from this revolutionary technology, let us know! The Welding Experts® at Lincoln Electric are the only welding resource you will ever need.



Power Wave® i400L



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.

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 these types of fabrication methods and service requirements.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.com for any updated information.

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THE WELDING EXPERTS[®]

THE LINCOLN ELECTRIC COMPANY

22801 St. Clair Avenue • Cleveland, OH • 44117-1199 • U.S.A.
Phone: +1.216.481.8100 • www.lincolnelectric.com