

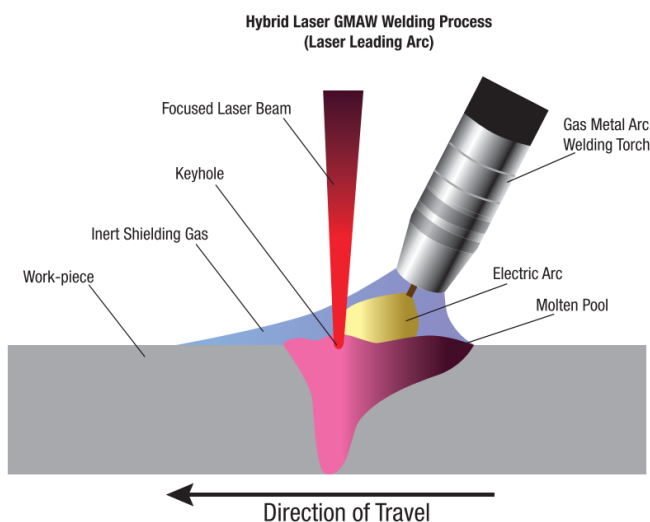
# Hybrid Laser GMAW

The Next Generation of Welding 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® feature, 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 can help increase productivity and improve weld quality compared to other Hybrid Laser GMAW systems.



### » SYNERGIC WAVEFORM CONTROL™ FEATURE

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

### » EASY INTEGRATION

The Seamless Adaptive Control Architecture™ feature 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 to facilitate seamless operation.

### » DEDICATED EQUIPMENT

Lincoln Electric's state-of-the-art Power Wave® R450 robotic power source includes an extensive library of waveforms that can be used with the Hybrid Laser GMAW process.

### » HIGH-QUALITY CONSUMABLES

Lincoln's commitment to quality standards is unmatched in the welding industry. Welding consumables are available to support various applications.

### » 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.

## 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.



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### 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 or application. 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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