

CNC Gantry Laser Cutting Systems

Precision Laser Cutting. Engineered for Your Process.

American Laser Enterprises (ALE) designs and integrates **CNC gantry-based laser cutting systems** for high-precision industrial manufacturing. Combining CNC motion control with advanced fiber or CO₂ laser technology, ALE develops application-specific solutions engineered around the material, part geometry, production requirements, and laser power needed for the job.

Our modular approach allows the laser source, beam delivery system, cutting head, motion platform, controls, sensing, and process monitoring to be configured for your application. ALE's fiber laser cutting heads are designed for fast, precise processing and can incorporate features such as autofocus and process viewing.

Key Capabilities

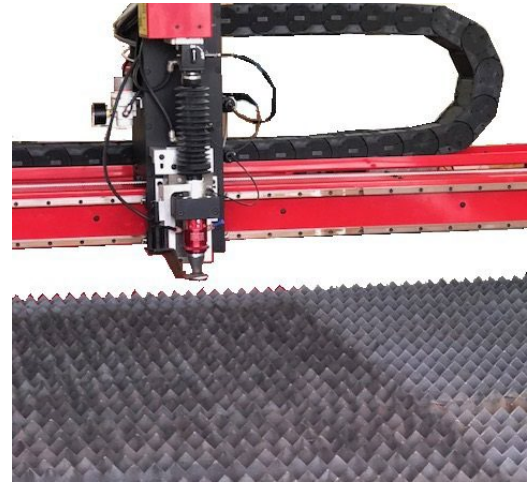
- **CNC-controlled X-Y-Z gantry motion**
- **Fiber and CO₂ laser integration**
- High-speed precision cutting
- Application-specific laser power and optics
- Modular laser cutting heads
- Autofocus capability
- Process monitoring and operator viewing
- Custom beam delivery
- CNC and machine-control integration
- Retrofit and upgrade capability
- Engineering, application development, and system integration

Built Around Your Application

Rather than forcing your process into an off-the-shelf machine, **ALE engineers the laser system around your manufacturing requirements.** From beam delivery and process-head design to CNC integration and automation, ALE can provide the engineering expertise required to develop a complete laser cutting solution.

Cut complex geometries. Reduce secondary operations. Improve repeatability. Increase production flexibility.

With decades of industrial laser engineering experience, American Laser Enterprises provides the technology and application expertise to turn a CNC gantry platform into a **production-ready laser processing system.** ALE specializes in industrial laser beam delivery and processing heads and provides custom solutions for cutting, welding, surface treatment, drilling, and other laser applications.



American Laser Enterprises, LLC — Engineering Laser Solutions for the Real World.



CO₂ laser cutting system: full 4x8' sheet capacity

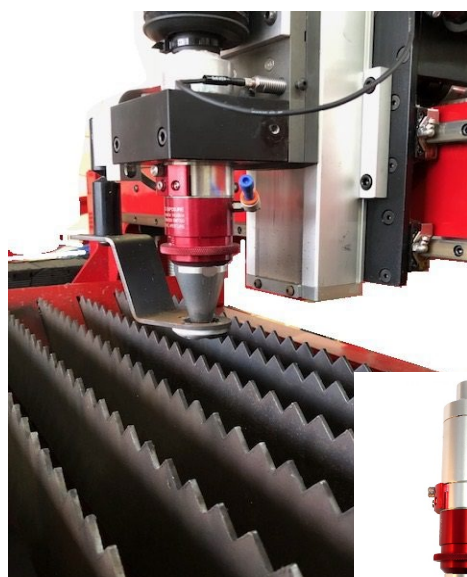
This 4 x 8 cutting machine is a clean sheet design made specifically for the smaller CNC machine market. It combines high-end machine features and capabilities, in a smaller package, with high speed and precision of laser cutting. Using Servo drives for speed, control, and smooth operation along with ground linear bearings and linear belt drives results in smoothness and speed that is unrivaled in the industry.

Welded Steel and Linear Bearings

The frame is welded steel and the machine rides on linear bearings on all axis just like the best high end CNC machines. DC Servo drives with encoder feedback closes the loop on control for always accurate cuts and high-speed performance. Closed loop feedback is performed as the machine is cutting, unlike hybrid systems that make error corrections at the end of each cut, which could result in a jog between cuts, with travel speeds up to 1000 inches/min and large part contouring speeds of 400 inches/min, the it sets the bar far above the competition.

Z Axis Slide Assembly and CNC Servo Motor Software

The precision ball screw and bearings are sealed in a milled assembly for long service life. The operating software is the most user-friendly and easy-to-learn and use system with an abundance of features. You can operate our systems with a laptop. We don't need parallel or serial ports.



Modular CO₂ laser processing head

This high-power cutting head provides a versatile solution to laser cutting of a variety of materials including metals, wood, plastics, or fabric. The cartridge style optics holders allow for an in-the-field service or replacement with standard off-the-shelf optics. Modular design makes this cutting machine customizable to many cutting applications. A mechanical fuse device prevents damage in the event of a crash. An adjustable vernier gas manifold with a precision scale provides repeatable focus settings and immediate focal changes. Requiring minimal maintenance, this reliable cutting head ensures precision, consistency, high repeatability and productivity.

