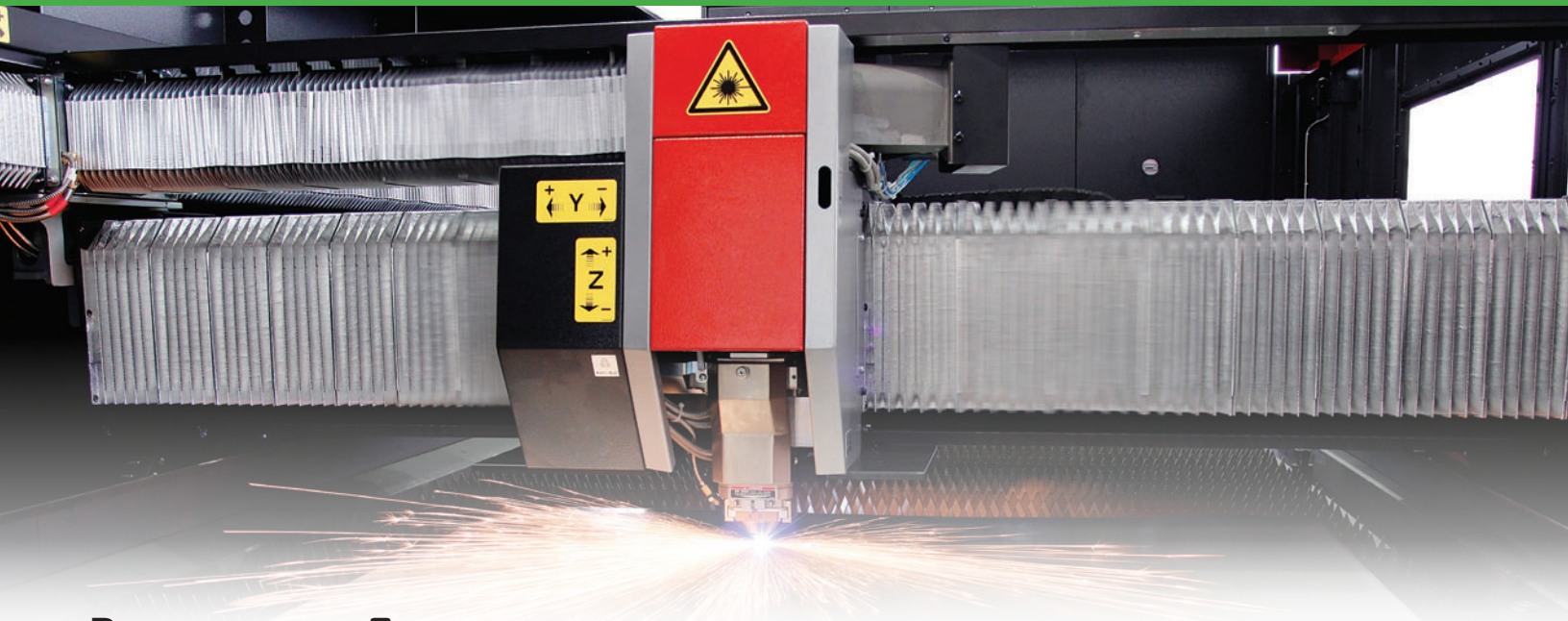


THE NEXT GENERATION IN RELIABILITY

LCG 3015

CO₂ Laser Cutting System





DEVELOPMENT CONCEPT

The LCG 3015 is the latest addition to Amada's CO₂ line of laser machines. The LCG was developed after listening to the voice of our customers who wanted a low-cost laser machine to meet their budget, but refused to compromise on cut quality, machine accuracy, and overall expandability. Amada took these requests and achieved a machine that has a lower capital investment with a cutting edge resonator and an advanced motion system.

The LCG is a true flying optic laser system — the material remains stationary as the cutting head moves in all three axes (X, Y & Z) to process the sheet. This translates into faster overall production and more accurate parts at higher cutting speeds.

Additionally, the LCG can be fully automated with a variety of material handling options, designed and built by Amada, or it can be equipped with a shuttle table system.

The LCG is built to adapt to the evolving production environment of manufacturers. The cutting head is propelled by a high-dynamic motion system that achieves the accelerations and rapid traverse speeds of some, more expensive linear drive motion systems.

With an advanced 3.5kW CO₂ Amada/Fanuc resonator, the LCG is a high-end, high-production laser system for the thin to mid-thick material market.

IMPROVED RESONATOR DESIGN

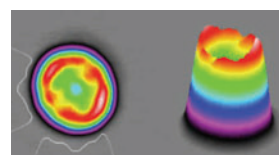
Amada/Fanuc 3500i-C resonator

The AF3500i-C resonator was specifically developed for the LCG laser. It utilizes an improved mode structure that creates an enhanced beam quality value that allows for higher cutting speeds in thin materials. Beam stability was also enhanced, resulting in higher edge quality.

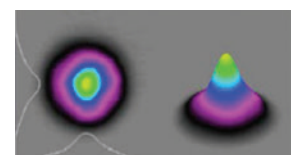
Thin to mid-thick material processing capabilities were critical in the design of this resonator. The LCG achieves the same cut quality as a higher-powered CO₂ machine with the capability to process 3/4" mild steel, 3/8" stainless, and 5/16" aluminum with superb edge quality.

This CO₂ resonator is the least expensive to operate. Its standard Power Save Function reduces electrical consumption by over 60% during standby operation.

Other key benefits include reliable and predictable maintenance intervals and the improved life of the internal components. These features significantly enhance the reliability of this resonator.

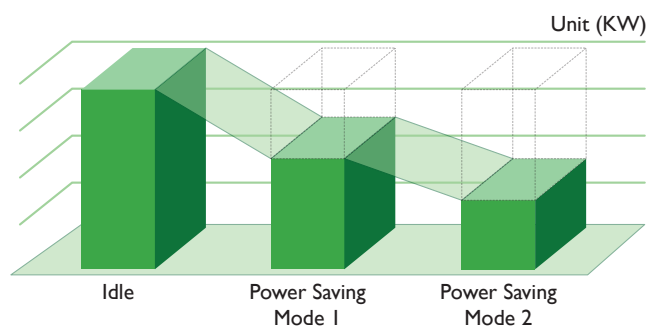


Mode structure on a conventional resonator



Improved mode structure of the AF3500i-C

AF3500i-C - Power Save Function



ENCLOSURE & DRIVE SYSTEM

The LCG includes an enclosure that surrounds the entire cutting area of the machine with access for part removal. This design protects the operator from gantry movement. Also, the enclosure helps contain fumes for more efficient dust collection and ensuring a cleaner shop environment.

The LCG utilizes a helical rack and pinion drive system for both the X and Y-axis. This innovative system allows for higher acceleration and faster rapid traverse speeds compared to traditional rack and pinion systems. The helical design also ensures smooth and quiet movements. The Z-axis utilizes a high-precision ball screw. The overall result is a faster machine than the conventional motion systems of the past.



Helical rack & pinion drive system

DUST COLLECTION



Sectionalized Dust Collection System

Attention to detail is a common theme with the LCG design — the dust collection system is no exception. Specifically designed to handle high-speed operation, the LCG is also engineered to maximize safety. The area beneath the cutting table is divided into four sections. During the cutting process, only the ducts directly beneath the cutting head are open for fume extraction. The ducts in the other sections remain closed to improve dust collection.

AMNC/PC

AMNC/PC Control – Features and Benefits

- Swivels for operator viewing
- 50% faster than previous versions of this control
- Network-ready
- Touch-screen with intuitive graphic display
- Cutting data library
- Maintenance scheduler with e-mail notification of alerts, and jobs in progress
- Quick and easy control of feed, power, duty cycle, frequency, gas selection, and pressure control
- Compact flash drive, instead of a hard drive, improves hardware reliability in a shop environment



Ergonomic control is attached to the machine to save floor space



NC code editor



Cutting data library



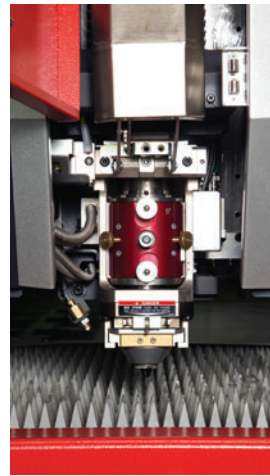
Maintenance tracking

HIGH-SPEED CUTTING HEAD



Features and Benefits of the High-Speed Capacitance Cutting Head

- Increased sensing speed for faster cutting and plasma resistance in thin material
- Lens burn detection stops the machine and alerts the operator of possible burn damage to the cutting lens
- Auto-focus control (B-axis)
- Auto nozzle cleaning and head calibration



Quick Setup

Engineered for simplified setup, the lens and nozzle are easily removed or installed without tools wires or air lines. Costly downtime and extended setup are eliminated.



TURN-KEY SOLUTION

The LCG 3015 is a complete, turn-key package. All of the items necessary for installation, training, and production are included with the purchase of the machine. Any custom requirements can be purchased either through Amada or directly from an appropriate supplier.

Items Included

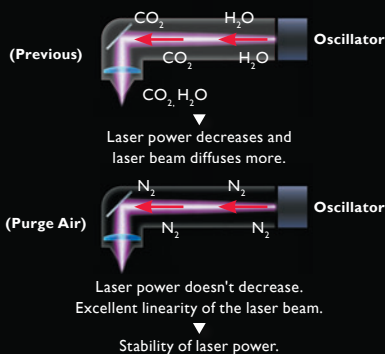
- AMNC-PC control
- NC assist gas
- B-axis NC focus
- Integrated beam purge
- 5" lens, 7.5" lens
- High-speed cutting head
- Active Cut
- Clean Cut™
- Dust collector
- Chiller
- Hoses
- Standard duct kit
- Standard gas lines and regulator
- Interlocked enclosure



HIGH-QUALITY BEAM DELIVERY

Integrated beam purge technology allows the inside of the beam delivery path (from the resonator to the cutting head) to remain clear of CO₂ and dirt.

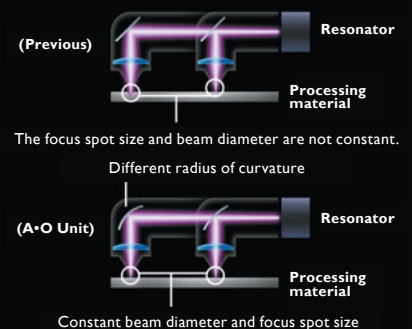
Diffusion of the beam is reduced and external mirror life is extended, increasing cutting performance and reducing operating cost.



The LCG utilizes the latest in optical technology by utilizing Active Cut.

This feature combined with beam collimation allows for a constant beam diameter at the lens.

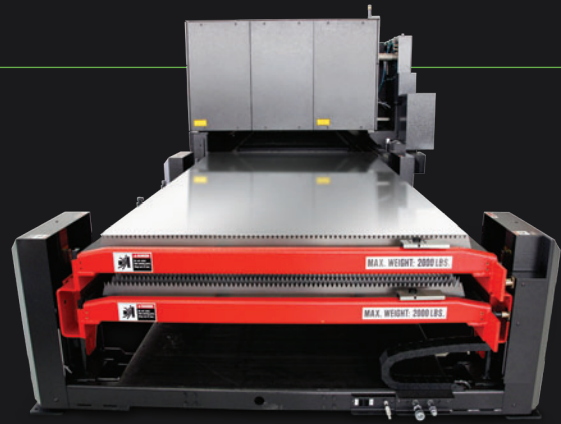
Active Cut improves cut quality and pierce processing.



HIGH-SPEED SHUTTLE TABLE

The high-speed shuttle table design improves overall machine utilization by externalizing the material setup process. This system allows one table to be manually loaded and unloaded while the second table is in the cutting area with material being processed. The ability to switch tables at high speed, ensures faster spark-to-spark times while greatly increasing uptime.

As production requirements evolve, the LCG is equipped with all the necessary components to retrofit a variety of flexible automation systems.



FLEXIBLE AUTOMATION FOR AN EVER-CHANGING MARKET

Amada offers a diverse assortment of automation options that let you configure your system according to your specific operational requirements. All are designed to help you improve productivity and increase profits by reducing lead-time and cutting costs.

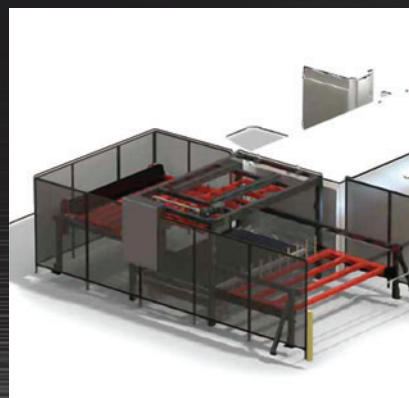
ASLUL / ASFH

- Automated load/unload for a single laser
- Smallest footprint
- Expandable to Material Storage Systems for additional capacity
 - Compact loading/unloading utilizing the area above the shuttle table
 - Single tower or twin towers



MP-F / MPL 3015

- Automated load/unload for a single laser
- Offers small footprint at low cost
- Expandable to Material Storage Systems for additional capacity
 - Provides fast, efficient loading/unloading in a small footprint and low cost
 - Approximately 70 seconds for load/unload



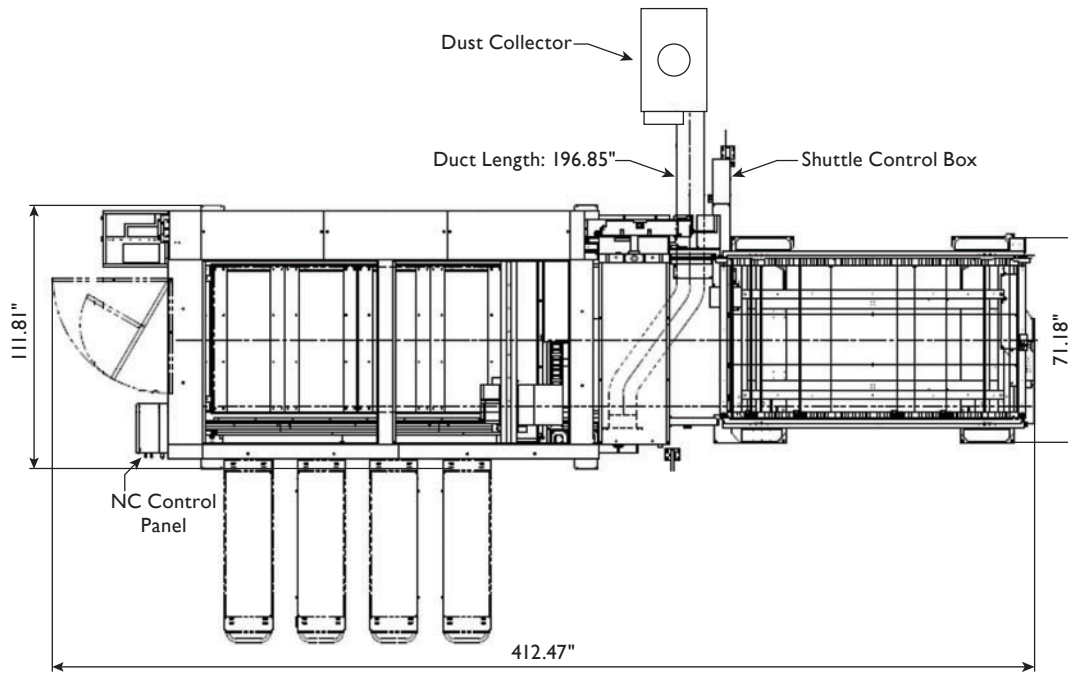
AMS

- Provides maximum flexibility for multiple lasers
- Best expandability options
 - Allows modules to be configured to meet each customer's individual layout, expansion plans and changing needs
 - Engineered to accommodate multiple towers and lasers
 - Equipped with multiple methods of ensuring precise sheet separation



In addition to automated load/unload systems, Amada also offers Material Storage systems. Offering single or dual row configurations with unlimited expansion capabilities, Amada's storage systems ensure the most flexible and comprehensive automated environment. Material Storage Systems organize the manufacturing process so that machine up-time and machine efficiency are tremendously increased — providing for continuous, on-demand production with minimal supervision.

DIMENSIONS (INCHES)



SPECIFICATIONS

Technical Data	LCG 3015
Travel Method	Material remains stationary. X, Y and Z-axis movement
Drive Method	X and Y-axis helical rack and pinion. Z-axis ball screw
Axis Travel Cutting Head	121" x 61" x 3.93"
Maximum Thickness	3/4" mild steel, 3/8" stainless steel, 5/16" aluminum
Maximum Work Weight	2,000 lbs.
Rapid Traverse	X, Y = 4,724"/min. simultaneous = 6,693"/min. Z = 4,724"/min.
Repeatability	± 0.0002"
Z-Axis	High-speed capacitive sensing
CNC	AMNC-PC-OS: Windows Embedded
Assist Gas Control	Automatic select
Resonator	AF3500i-C
Machine Weight	28,000 lbs. (including shuttle table)
Power Requirements	200/220V ±10% 50/60Hz

Some safety equipment may have been removed for illustrative purposes.



AMADA
Amada America, Inc.