

A NEW GENERATION OF RELIABILITY

FOM2 NT

FO3015M2NT
Laser Cutting System



DEVELOPMENT CONCEPT



Proven Machine. Leading-Edge Technology.

The FOM2NT laser represents the third generation of Amada's proven FO series that was introduced in 1999. The FOM2 combines features available on the FO series of lasers as well as some of the leading-edge technology available on Amada's FI linear drive systems. Equipped with a solid-cast frame, water assisted cutting, and a high-precision motion system, the FOM2 boasts new features such as automatic nozzle changer, cut process monitoring, and auto-pierce detection. The FOM2 is engineered to meet the high quality and shorter lead time demands of today's fabricating companies. Additional enhanced features include the new Amada tuned oscillator from Fanuc as well as spatter free pierce for higher quality piercing in thicker material.

The goal of the FOM2 is simple:

- Increase Capabilities
- Reduce Setup
- Increase Throughput
- Increase Part Quality
- Reduce Secondary Operations
- Increase Consistency

IMPROVED RESONATOR DESIGN



Designed for Better Quality and Less Maintenance.

At the heart of the FOM2 is the Amada/Fanuc RF excited resonator. This fast axial laser was designed specifically for Amada to produce the highest edge quality by improving the overall shape and stability of the laser beam itself. In addition to superior edge quality, the FOM2 delivers faster cutting speeds than previous generations of lasers. The advanced features of the Fanuc resonator have made it the most reliable resonator available today. Improved life of the internal components significantly reduces downtime. A key benefit to the Amada/Fanuc resonator is the reliable and predictable maintenance intervals which also help to eliminate unexpected downtime.

Every component within the resonator is engineered for optimum performance. All elements work together to enhance the cutting power and speed of this technologically advanced laser cutting system.



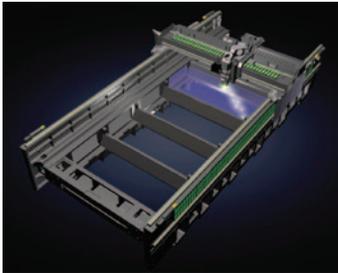
ENCLOSURE & DRIVE SYSTEM

The FOM2 includes an interlocked enclosure that surrounds the cutting area. This design protects the operator from gantry movement. The enclosure also helps to contain fumes for better dust collection and ensures a cleaner shop environment. The telescoping doors provide easy access to the cutting area from both sides of the machine.



The FOM2 incorporates a rack and pinion drive system in the X-axis and high-precision ball screws in the Y and Z-axis. For over ten years, the FO series has established and earned a worldwide reputation for unparalleled accuracy and reliability. As the latest generation, the FOM2 series continues to set new standards for precision and performance.

DUST COLLECTION



Sectionalized Dust Collection System

Attention to detail is a common theme with the FOM2 design – the dust collection system is no exception. Specifically designed to handle high-speed operation, the FOM2 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.

HIGH-SPEED SHUTTLE TABLE & CAST FRAME

The high-speed shuttle table design improves overall machine utilization by externalizing the material setup process. The ability to switch tables at high speed, ensures faster spark-to-spark times while greatly increasing uptime.



A stable base is crucial in order to maintain proper beam alignment. Vibration from a shop environment or thermal expansion/contraction from extreme changes in temperature can cause the laser beam to shift during the cutting process. This results in inconsistent part quality and increased machine maintenance. FOM2's solid cast iron frame eliminates these issues, adding to the overall precision and reliability of this advanced laser cutting system.



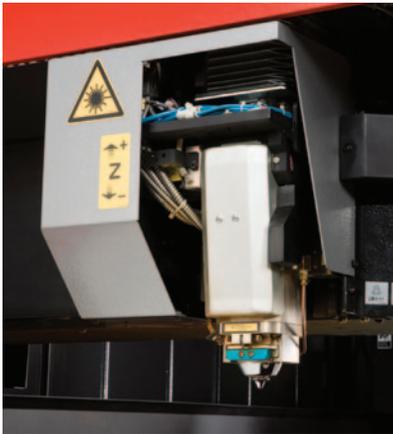
AMNC/PC

AMNC/PC Control – Features and Benefits

- Network-ready
- Touch-screen with intuitive graphic display
- Maintenance scheduler with e-mail notification of alerts, and jobs in progress
- Complete cutting library
- Quick and easy control of feed, power, duty cycle, frequency, gas selection and pressure control
- B-axis focal adjustment eliminates time-consuming manual adjustment
- Cutting head movement selection
- Compact flash drive instead of hard drive improves hardware reliability in shop environment



HIGH-SPEED CUTTING HEAD



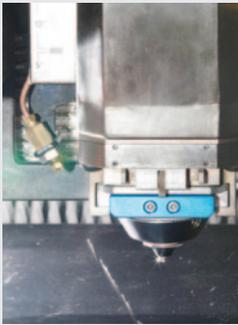
Features and Benefits of the High-Speed Capacitance Cutting Head

- Increased sensing speed for faster cutting and plasma resistance in thin material.
- Lens burn detection to stop the machine and alert the operator to possible burn damage to the cutting lens.
- Cut Process Monitoring for automatic pierce detection as well as plasma detection for thick stainless steel and aluminum.
- Auto-focus control (B-axis)
- SFP (Spatter Free Pierce) function for cleaner high-speed piercing in thicker material.
- WACS™ (Water Assist Cutting System) for cooling the surface when cutting plate.



Quick Setup

Engineered for simplified setup, the FOM2's lens and nozzle are easily removed or installed **WITHOUT TOOLS** wires or air lines. Costly downtime and extended setup are eliminated.



Spatter Free Pierce (SFP)

When utilizing the SFP feature, a small amount of liquid is sprayed onto the sheet an instant before the laser beam pierces the metal. This prevents the molten metal from adhering to the surface of the sheet and allows for small diameter holes to be processed cleanly and consistently.



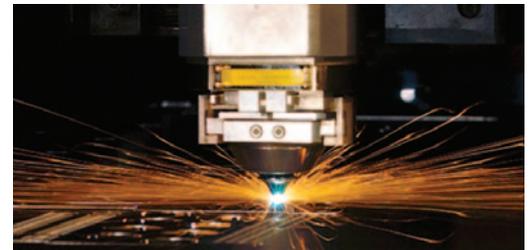
Water Assisted Cutting System (WACS™)

Most commonly used when cutting plate, WACS provides an effective solution for the prevention of heat build up. It is no longer necessary to shift around the sheet allowing time for the metal to cool. Instead, parts can be nested closely together and processed continuously. The result is better sheet utilization and faster processing time. Cooling provided by WACS – as well as a reduction in assist gas contamination from the shop atmosphere at the surface of the material – combine to provide exceptional edge quality when cutting plate.

CUT PROCESS MONITORING

Benefits of Cut Process Monitoring

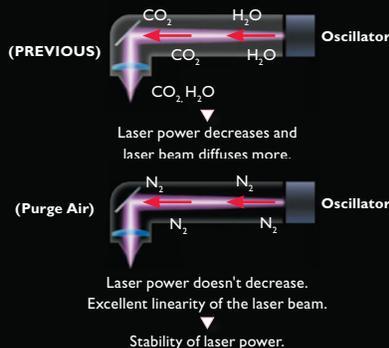
1. **Plasma Detection** – Constantly monitor cut error factors such as piercing, gouging and plasma to support constant, stable cutting. If a problem is detected, the machine will make the necessary speed adjustments or clean the nozzle and automatically reprocess.
2. **Pierce Detection** – during the pierce process of heavier plate, this feature will monitor the instant the laser beam is through the material and immediately begin the cut process. This saves valuable time, especially in lower quality plate.



HIGH-QUALITY BEAM DELIVERY

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.

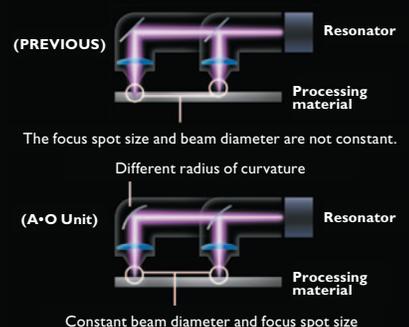
Diffusion of the beam is reduced and external mirror life is extended, increasing cutting performance and reducing operating cost.



The FOM2 has also adopted the latest in optical technology by utilizing Active Cut.

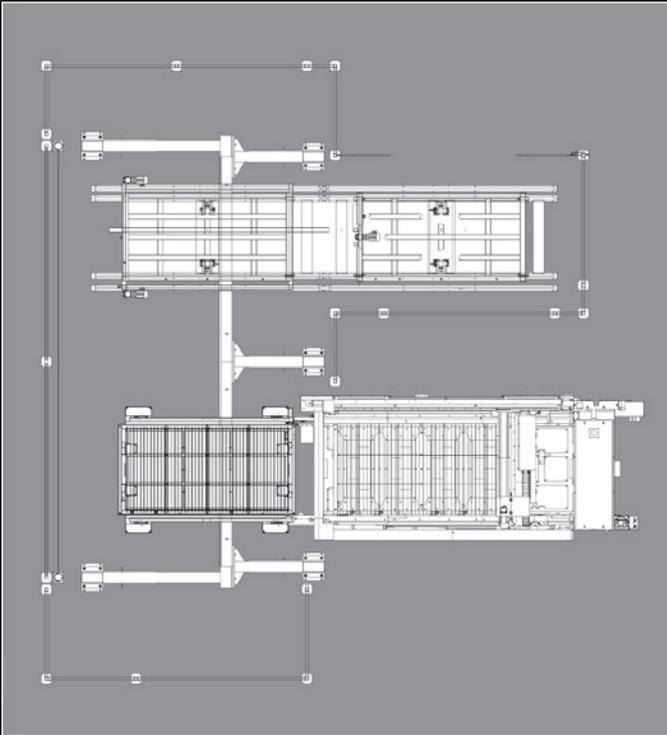
This feature combined with beam collimation allows for a constant beam diameter at the lens.

Active Cut improves cut quality and pierce processing.



FLEXIBLE AUTOMATION FOR AN EVER-CHANGING MARKET

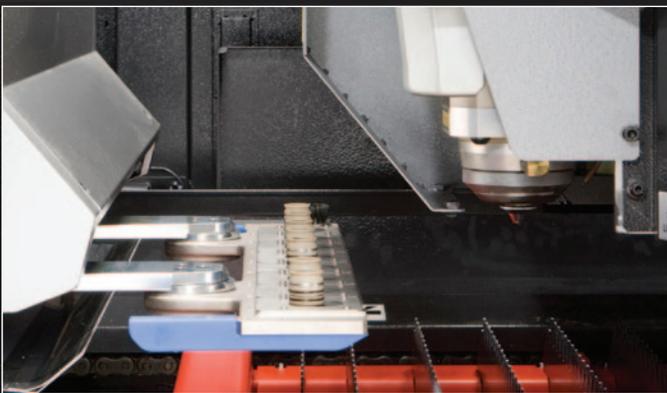
Amada offers a diverse assortment of automation options that let you configure your system according to your specific operational requirements. All are designed to help you improve productivity and increase profits by reducing lead-time and cutting costs.



AMS laser automation is a flexible system engineered to expand as your business expands. The system's modular design allows you to custom configure additional laser cutting systems, extensions, and towers based on your current demands while allowing you to prepare for future growth.

The AMS system is also designed to work seamlessly with Amada's EM turret punch press and EML punch/laser combination machines. Optional software can automatically create nests, manage job priorities, manage multiple lasers by machine setup, allow for job interruption, and even integrate with MRP systems.

AUTOMATIC NOZZLE CHANGER



An optional nozzle changer promotes continuous, unattended operation. The 8-station changer automatically changes, cleans, and calibrates the nozzle and head based on the requirements for the material to be processed. This feature increases machine utilization while reducing overall processing time.

PIPE INDEXING STATION



Providing for quick and efficient processing of round and square tubing, an optional rotary axis further enhances the capabilities of the FOM2.

