An Evolution in Punch/CO₂ Laser Technology

EML 3610 NT
Maximum Machine Flexibility That Reduces Secondary Operations

The EML NT represents an evolution of punch/laser combination technology. Amada first introduced the Apelio punch/laser machine in 1991. Since that time, Amada has become the world leader in the engineering of seamless process integration by incorporating the latest advances in punching and laser cutting technology. The EML combines Amada’s revolutionary EM (Electric Motor) punching technology with the reliability of Amada’s hybrid laser motion system. The result is one of the fastest, most productive fabricating machines on the market that delivers unequaled precision and flexibility. With multiple automation options including part removal and stacking, the EML can instantly become the centerpiece of any manufacturing operation.

Innovative Punching Technology

High-Speed & Low Maintenance

- World’s highest hit rates
- Eliminates need for complex hydraulics and oil-cooling chillers
- Requires substantially fewer parts than hydraulic systems
- Eliminates the possibility of hydraulic leaks
- Reduces tool wear and noise while providing long-lasting performance
- Reduces operating cost by conserving electrical consumption
- EM technology stores and reuses energy generated during ram deceleration

The EML starts with Amada’s famous bridge-frame design. The increased mass of the side plates provide the stability required for less flex, yaw, and twist. Twin AC servos directly coupled to an eccentric shaft provide high hit rates at the optimum stroke length.

Turret

Simple Setup Combined with Advanced Technology

The EML comes standard with Amada’s 58-station King turret that includes two 4½” and two 1¼” auto-indexing stations.

- Laser hardened turret bores
- Increased feed clearance of 0.984” between upper and lower turret
Simple Tool Change

- Punches drop directly into upper turret station
- Easy-change die holders reduce setup by allowing up to three dies to be changed at once

Power Vacuum Die

- For use with ½” & 1¼” stations
- Powerful vacuum pulls slugs through the die
- Punch penetration can be reduced to 0.039” resulting in higher hit rates and reduced wear

Large Brush Table

- Table size on EML 3610 NT allows for 5’ x 10’ sheet processing
- Brush design results in scratch-free processing
- Reduces noise level
- Designed to support up to ¼” material

17” x 60” Trap Door

- Allows for instant access to finished parts
- Drop larger parts or multiple parts at one time
- Powered roller ensures all parts drop through

Sheet Jam Detector

- Automatically detects raised, bowed, or buckled material if the workpiece triggers the detection device

Hybrid Laser Motion System

- Cutting head moves in the Y direction while material moves in the X direction
- Improves speed and accuracy
- Prevents material from crossing turret area during laser cutting to keep laser dust and slag away from tooling

Laser Cutting Head

- Quick and simple setup
- Lens and nozzle are easily removed or installed resulting in less downtime
- No tools, wires, or air lines are required
AMNC-PC

PC Control with Network Capabilities
Amada's AMNC-PC control with touchscreen offers many productivity enhancing features and benefits.

- Network-ready
- Maintenance scheduler with email notification
- Email notification of alerts, jobs in progress, and more
- Complete cutting library
- Ready to connect with vFactory® software

Intelligent Turret Setup
When opening a program on the AMNC-PC, the user can be prompted to change material, clamp positions, tool type, tool angle, tool size, and tool location.

G-Code Editor/Simulator
Another powerful feature is the G-code editor and simulator. Features in the editor make it easy to quickly review, edit, and simulate a program. The simulator graphically plots the G-code tool patterns, provides zoom and pan functions, and highlights the associated G-code when a graphic pattern is selected on the touch screen display.

Laser Resonator

FANUC Resonator Technology
The proven performance and reliability of a FANUC resonator makes the EML NT one of the most dependable punch/laser combination systems in the industry.

- 4kW CO₂ resonator
- Operator has complete control over all parameters of beam output including power, frequency, and duty cycle
- The inherent design makes maintenance easy, predictable, and cost-effective throughout the life of the machine

High-Quality Beam Delivery

The Latest Beam Purge Technology Comes Standard
- Allows the internal beam delivery path, from the resonator to the cutting head, to remain clear of dirt and CO₂
- Diffusion of the beam is reduced and the external mirror life is extended, increasing cutting performance while reducing operating cost

Conventional
- Laser power decrease
- Laser beam diffuses more

Purge Air
- Laser power doesn't decrease
- Excellent linearity of the laser beam
- Stable laser power

Oscillator
CO₂, H₂O, CO₂

Oscillator
N₂, N₂, N₂

Oscillator
N₂, N₂, N₂
Productivity

The EML NT can seamlessly integrate with Amada’s flexible AMS laser automation system.

- ASR and RMP rear-loading and unloading options allow for better machine accessibility
- The ASR and RMP can be ordered with TK specification for single-part removal and stacking
- Intelligent system allows for the hottest parts to be accessed quickly for downstream operations
- MARS (Material Automated Retrieval System) provides the most flexible and comprehensive automated environment
- MP 1530 front load/unload is our most affordable automation option
### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>EML 3610 NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tonnage</td>
<td>33</td>
</tr>
<tr>
<td>Turret Configuration</td>
<td>58-Station 4A/I King Turret</td>
</tr>
<tr>
<td>Motion Axis</td>
<td>X, Y, TL, Z, B, T &amp; C</td>
</tr>
<tr>
<td>Work Area X</td>
<td>100” (Laser), 120” (Punching)</td>
</tr>
<tr>
<td>Work Area Y</td>
<td>60” (Laser), 60” (Punching)</td>
</tr>
<tr>
<td>Work Area Z</td>
<td>14.9”</td>
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<tr>
<td>Maximum Thickness</td>
<td>1/4” M.S., 1/4” S.S., 1/4” Alu.</td>
</tr>
<tr>
<td>Maximum Work Weight</td>
<td>330 lbs.</td>
</tr>
<tr>
<td>Rapid Traverse X</td>
<td>X = 3,937”, Y = 3,149” Simultaneous = 5,051”/min.</td>
</tr>
<tr>
<td>Rapid Traverse Z</td>
<td>Z = 2,362”/min.</td>
</tr>
<tr>
<td>Maximum Cutting Speed X</td>
<td>780”/min.</td>
</tr>
<tr>
<td>Maximum Cutting Speed Y</td>
<td>780”/min.</td>
</tr>
<tr>
<td>Hit Rate</td>
<td>1800 hpm high speed marking, 400 hpm on 1” moves</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.00027”</td>
</tr>
<tr>
<td>Positioning Accuracy</td>
<td>±0.0012” / 39.37”</td>
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<tr>
<td>Punching Accuracy</td>
<td>±0.004”</td>
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<td>Z Axis Sensor</td>
<td>HS - 2003</td>
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<tr>
<td>CNC</td>
<td>AMNC-PC - OS: Windows</td>
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<tr>
<td>Laser</td>
<td>AF-4000E - 4kW</td>
</tr>
<tr>
<td>Machine Weight</td>
<td>66,139 lbs.</td>
</tr>
</tbody>
</table>

### Accessories

**Standard Accessories**
- 58-Station King Turret
- 17” x 60” trap door
- ECO Cut
- 5” Lens, 7.5” Lens NC
- Focus NC Assist Gas
- AITS – ID Tooling System

**Optional Accessories**
- 58-Station Z-turret
- P&F (Punch & Form)

**P&F (Punch & Form) System**