LOW ENERGY CONSUMPTION AND LOWER COST PER PART ACHIEVED THROUGH EFFICIENT PROCESS INTEGRATION

IN-HOUSE DEVELOPED FIBRE LASER COMBINED WITH SERVO ELECTRIC PUNCHING TECHNOLOGY

An innovative table cabin design reduces the machine area and provides full laser beam protection. Shorter lead times can be realised when combined with AMADA’s compact automation systems.
**TYPICAL PROCESSING SAMPLES**

Material: galvanised steel 0.8 mm  
Dimension: 100.0 x 47.0 mm

**PRODUCTIVITY COMPARISON**

- **27% TIME REDUCTION**

<table>
<thead>
<tr>
<th>Processing speed (m/min)</th>
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**RUNNING COST COMPARISON**

- **56% COST REDUCTION PER PART**

<table>
<thead>
<tr>
<th>Cost reduction per part (€/part)</th>
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<tbody>
<tr>
<td>0</td>
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</table>

The LC-2515 C1 AJ can cut highly reflective materials that are difficult to cut with a CO₂ laser.

**RUNNING COST COMPARISON**

- **25% COST REDUCTION PER PART**

<table>
<thead>
<tr>
<th>Cost reduction per part (€/part)</th>
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<tbody>
<tr>
<td>0</td>
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</table>

**MAXIMUM MATERIAL THICKNESSES**

- **Aluminium**: 6 mm  
- **Brass**: 5 mm  
- **Copper**: 4 mm

Running costs include assist gases, electricity and consumables.
HIGH PRODUCTIVITY, ENERGY-SAVING PROCESSING

ENERGY CONSERVATION AND COST REDUCTION

- The construction of the fibre laser oscillator and optical transport of the laser beam is less complex than a CO\textsubscript{2} system. This drastically reduces the maintenance requirements of the oscillator and optical parts.

- AMADA’s fibre laser has a higher energy conversion and 3 times higher energy efficiency than a CO\textsubscript{2} laser. Power consumption of the oscillator is also substantially reduced. There is no need for warm-up operations or laser gas, providing a running cost saving of at least 70%.

- The LC-2515C1AJ is also equipped with a highly energy efficient AC servo press drive providing energy recovery features to reduce the overall power requirements. This means the LC-2515C1AJ requires less power than a hydraulically driven punch machine.

Photograph includes optional equipment
SAFE OPERATION AND EASY MATERIAL LOADING

THE FIBRE LASER COMBINATION MACHINE WITH NO COMPROMISE ON SAFETY

Innovative, unique table cabin and shutter design
The hybrid type sheet movement of AMADA combination machines, where the material moves in the X-axis only during laser cutting while the laser head moves in the Y-axis, allows a space saving table cabin design to be utilised.

Secondary X gauge position
This simple but effective system means the operator does not need to open the table cabin when manually loading a sheet of material.

PROCESS INTEGRATION AND STABLE PROCESSING

INNOVATIONS FOR ENHANCED TOOL PROCESSING

MPT tapping tools (tapping stations)
The Multi Purpose Turret installed in the LC-2515C1AJ contains 4 tapping stations, allowing integration of punching and tapping operations traditionally processed separately. Overall processing and programming times are therefore reduced as a result.

Die lift-up station
To eliminate processing problems associated with high forming dies, such as scratching, the Die Lift-Up stations keep them below the sheet passline during material movement.

Floating brush table
After down forming, the brush table around the turret raises to lift the material clear of the die before moving to the next position.

Prevention of tool setup mistakes
The tool identification is marked on each individual tool so each one can be digitally managed. When a tool is installed, the machine automatically checks the ID to ensure the correct tool is used.
**Motorised Auto Focus Control System**

The optimum focal point is automatically set from the cutting database to suit each material. A constant focus is maintained, ensuring optimum laser beam quality and reduced assist gas costs.

**High Pressure NC Gas Control System**

The assist gas pressure is automatically controlled for the entire range of materials and thicknesses being processed.

**‘One Touch’ Lens and Nozzle Exchange**

To allow faster machine setup, the cutting head on the LC-2515C1AJ is equipped with simple, quick change lens and nozzle cartridges.

**Work Chute**

A large 400 x 1525 mm work chute is configured into the machine to enable highly efficient, microjoint-free processing.

**Cutting Lenses**

The LC-2515C1AJ is supplied with 2 cutting lenses as standard:
-190 mm lens assembly
-190 mm (AX) lens assembly
* including lens holder

**Slug Pull Prevention System**

The LC-2515C1AJ has a vacuum slug suction unit design which prevents even large diameter slug pulling.

**AUTOMATION OPTIONS**

**Rear Manipulator**

This system allows high speed, safe and reliable load/unload operations, ensuring maximum productivity. The ‘Open Front’ concept allows for rapid one-off production, whilst the rear manipulator facilitates high volume manufacture.

**Two-storage tower specification**

(Material and part storage towers)

The two-storage tower specification, composed of a material storage tower and a part \ skeleton storage tower, allows the continuous processing of multiple materials and parts at the same time.
This fully automatic CAM system nests all the user-defined parts and quantities, applies punch tooling/laser profiles, defines the processing sequence and generates the NC program. Increase productivity for your punch, laser or combination machines.

In order to ensure reliable processing, the LC-2515C1AJ is equipped with AMADA’s latest HS capacitance sensing head. This smoothly and quickly follows the sheet profile to maintain a consistent cut even when the sheet is not 100% flat.

The LC-2515C1AJ is equipped with the AMNC 3i and a new touch screen interface providing comfortable operation and impressive ergonomics. It enables simple, intuitive ease of use and fits perfectly into the VPSS 3i digital suite concept.

The LC-2515C1AJ has a large capacity, 46 (4 Auto Index) station turret designed to allow flexibility in the manufacturing process. Option: 49 (1 Auto Index, 3 Die Lift-Up) station turret with die lifter stations.

In order to reduce scratching of the underside of the material, the LC-2515C1AJ is equipped with a high density brush bed capable of supporting 6 mm thick material.

The LC-2515C1AJ is equipped with a bar code reader to allow reliable recall of programming data on the shop floor. By scanning the setup sheet from the CAM system, the operator ensures the correct, latest version of the program is loaded into the machine control.

AMADA proposes digital manufacturing using VPSS (Virtual Prototype Simulation System).

All data is created in the office and utilised in the workshop via a network.
For your safe use
Be sure to read the user manual carefully before use.
When using this product, appropriate personal protection equipment must be used.

Laser class 1 when operated in accordance to EN 60825-1

The official model name of the machines and units described in this catalogue are non-hyphenated like LC2515C1AJ. Use this registered model names when you contact the authorities for applying for installation, exporting, or financing. The hyphenated spellings like LC-2515 C1 AJ are used in some portions of the catalogue for sake of readability. This also applies to other machines. Hazard prevention measures are removed in the photos used in this catalogue.

Specifications, appearance and equipment are subject to change without notice by reason of improvement.

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LC-2515C1AJ
(L) 6420 x (W) 6927 x (H) 2377

Dimension:

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Unit: mm</th>
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<tbody>
<tr>
<td>L</td>
<td></td>
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<tr>
<td>W</td>
<td></td>
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<tr>
<td>H</td>
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</table>

+ Without safety equipments

MACHINE SPECIFICATIONS

<table>
<thead>
<tr>
<th>LC-2515C1AJ</th>
<th>AMNC 3i</th>
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</thead>
<tbody>
<tr>
<td>Numerical Control</td>
<td>AMNC 3i</td>
</tr>
<tr>
<td>Punching force</td>
<td>kN</td>
</tr>
<tr>
<td>Drive system</td>
<td>AC servo drive</td>
</tr>
<tr>
<td>Turret</td>
<td>Number of stations</td>
</tr>
<tr>
<td>Controlled axes</td>
<td>Laser, X, Y, Z, CF</td>
</tr>
<tr>
<td>Axis travel distance</td>
<td>X x Y</td>
</tr>
<tr>
<td>Maximum simultaneous feed rate</td>
<td>Punch, X/Y</td>
</tr>
<tr>
<td>Maximum punching hit rate</td>
<td>5 mm stroke / 25.4 mm pitch</td>
</tr>
<tr>
<td>Positioning accuracy</td>
<td>mm</td>
</tr>
<tr>
<td>Work range without reposition</td>
<td>Punch, X x Y</td>
</tr>
<tr>
<td>Maximum sheet thickness (for punching)</td>
<td>mm</td>
</tr>
<tr>
<td>Maximum material mass</td>
<td>kg</td>
</tr>
<tr>
<td>Work chute size</td>
<td>X x Y</td>
</tr>
<tr>
<td>Machine mass</td>
<td>kg</td>
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</tbody>
</table>

OSCILLATOR SPECIFICATIONS

<table>
<thead>
<tr>
<th>AJ-2000</th>
<th>AJ-3000</th>
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<tbody>
<tr>
<td>Beam generation</td>
<td>Laser diode-pumped fibre laser</td>
</tr>
<tr>
<td>Maximum power</td>
<td>W</td>
</tr>
<tr>
<td>Wavelength</td>
<td>μm</td>
</tr>
<tr>
<td>Maximum processing thickness*</td>
<td>Mild steel, Stainless steel, Brass, Copper, Titanium</td>
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</tbody>
</table>

* Maximum value depends on material quality and environmental conditions