SOLUTION

COMBINATION

LC 2515 G1 AJ

Fiber Laser

ENERGY SAVING, FIBRE LASER COMBINATION MACHINE




AMADA

LC 2515 C1 AJ Fiber Laser

PUNCH/FIBRE LASER COMBINATION MACHINE

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

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

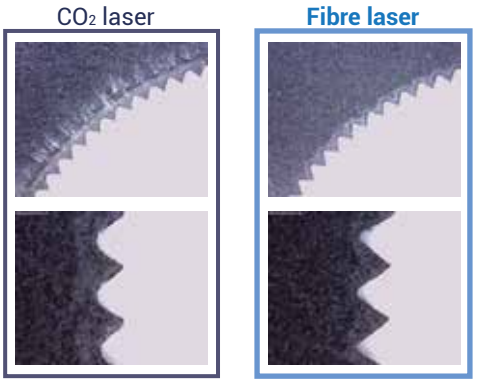
An innovative table cabin design reduces the machine area and provides full laser beam protection. Shorter lead times can be realised when combined with Amada's compact automation systems.

Photograph includes optional equipment

TYPICAL PROCESSING SAMPLES

- Number of tools used: 5
- Number of punching hits: 19
- Number of tapping hits: 2

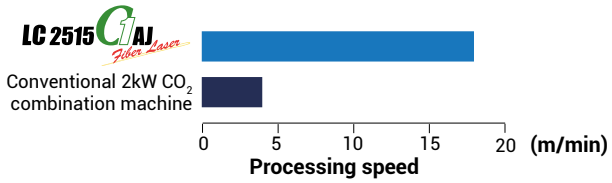
Material: galvanised steel 0.8 mm
Dimension: 100.0 x 47.0 mm



Fibre laser processing reduces the melt effect on coated surfaces and cut edges

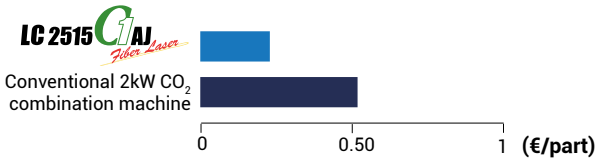
PRODUCTIVITY COMPARISON

27% TIME REDUCTION



RUNNING COST COMPARISON

56% COST REDUCTION PER PART



- Number of tools used: 9
- Number of punching hits: 485
  (including 461 center punching hits)
- Number of tapping hits: 12

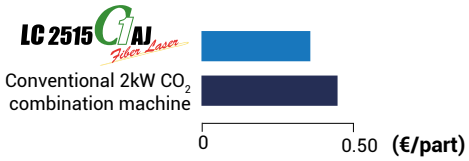
* Marking produced with center punch tooling

Material: mild steel 6.0 mm
Dimension: Ø52 mm

The LC-2515 C1 AJ can cut highly reflective materials that are difficult to cut with a CO_2 laser.

RUNNING COST COMPARISON

25% COST REDUCTION PER PART



MAXIMUM MATERIAL THICKNESSES

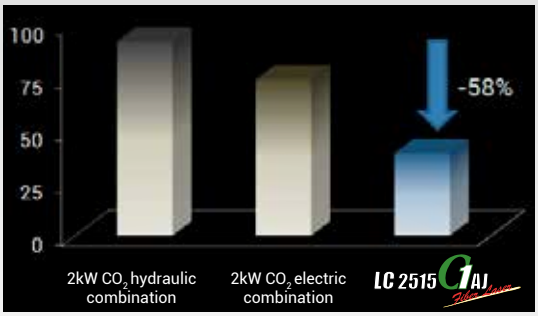
	LC 2515 C1 AJ Fiber Laser	Conventional 2kW CO_2 combination machine
Aluminium	6 mm	6 mm
Brass	5 mm	
Copper	4 mm	

Running costs include assist gases, electricity and consumables.

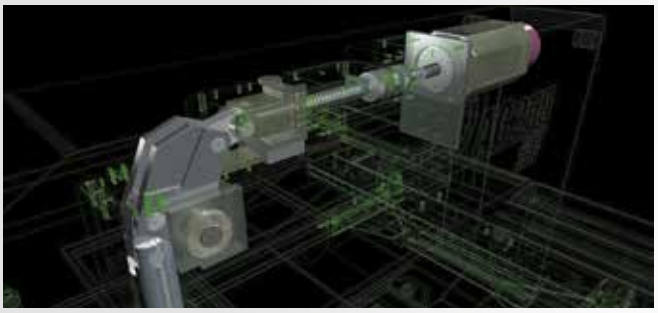
HIGH PRODUCTIVITY, ENERGY-SAVING PROCESSING

ENERGY CONSERVATION AND COST REDUCTION

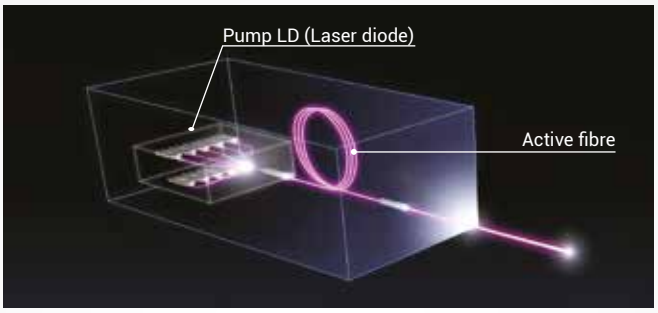
- The construction of the fibre laser oscillator and optical transport of the laser beam is less complex than a CO_2 system. This drastically reduces the maintenance requirements of the oscillator and optical parts.
- Amada's fibre laser has a higher energy conversion and 3 times higher energy efficiency than a CO_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-2515 C1 AJ 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-2515 C1 AJ requires less power than a hydraulically driven punch machine.



Servo drive mechanism



Laser Module

A concept illustration

Photograph includes optional equipment

SAFE OPERATION AND EASY MATERIAL LOADING

THE FIBRE LASER COMBINATION MACHINE WITH NO COMPROMISE ON SAFETY

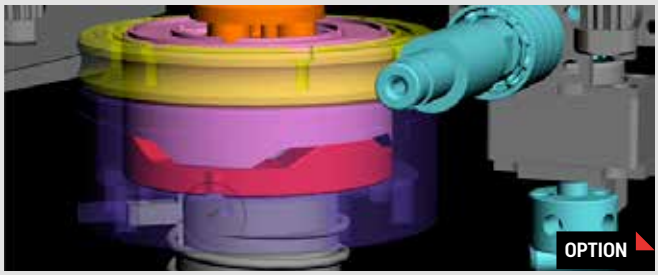
Innovative, unique table cabin and shutter design
The hybrid type sheet movement of Amada combination machines, where the material moves in the X axis only during laser cutting while the laser head moves in the Y axis, allows a space saving table cabin design to be utilised.

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-2515 C1 AJ 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.



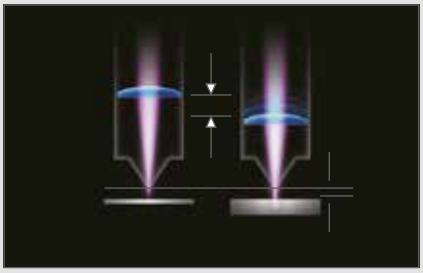
Die lift-up station
To eliminate processing problems associated with high forming dies, such as scratching, the Die Lift-Up stations keep them below the sheet passline during material movement.

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.

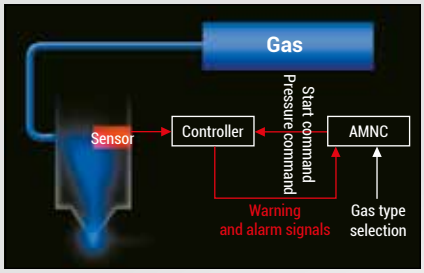
LC 2515 C1 AJ Fiber Laser

FUNCTIONS AND OPTIONAL EQUIPMENT



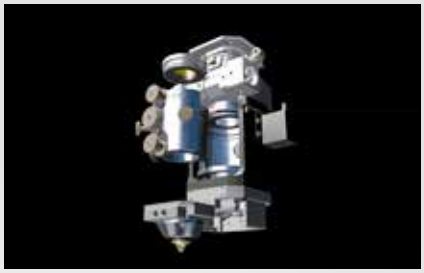
Motorised Auto Focus Control System

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.



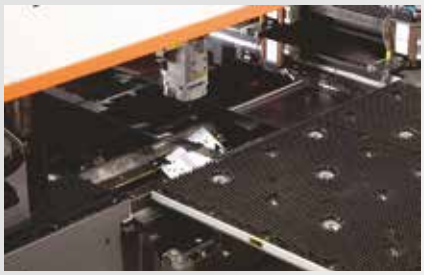
High Pressure NC Gas Control System

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-2515 C1 AJ is equipped with simple, quick change lens and nozzle cartridges.



Work Chute

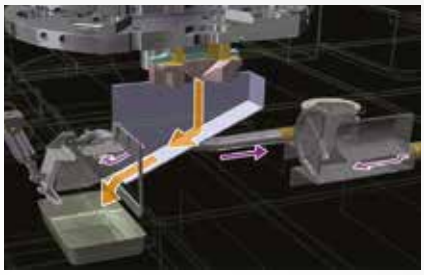
A large 400 x 1525 mm work chute is configured into the machine to enable highly efficient, microjoint-free processing.

Cutting Lenses

The LC-2515 C1 AJ is supplied with 3 cutting lenses as standard:

-150 mm lens assembly*
- 190 mm lens assembly*
-190 mm (AX) lens assembly*

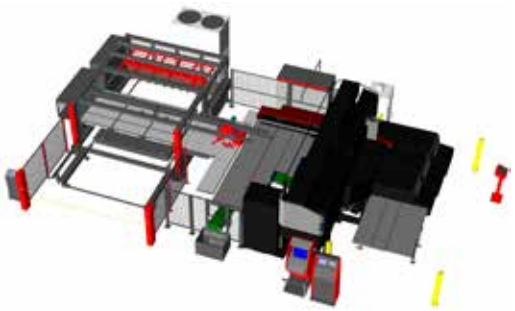
* including lens holder



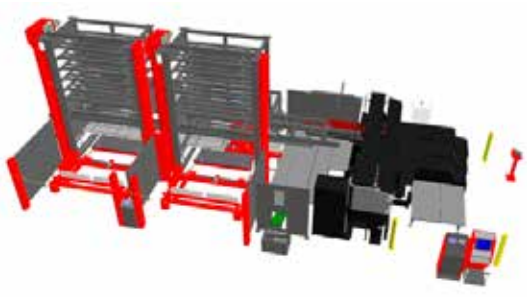
Slug Pull Prevention System

The LC-2515 C1 AJ has a vacuum slug suction unit design which prevents even large diameter slug pulling.

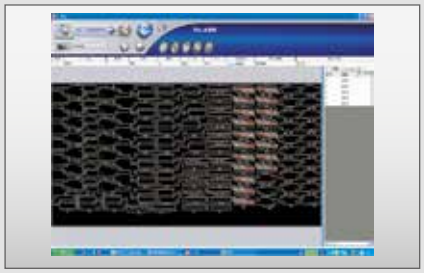
AUTOMATION OPTIONS



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.



Dr. ABE Blank

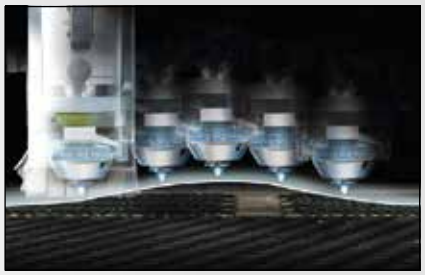
This fully automatic CAM system nests all the user defined parts and quantities, applies punch tooling/laser profiles, defines the processing sequence and generates the NC program. Increase productivity for your punch, laser or combination machines.

AMNC 3i NC

The LC-2525 C1 AJ is equipped with the AMNC 3i NC 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.

High density brush bed

In order to reduce scratching of the underside of the material, the LC-2515 C1 AJ is supplied with a high density brush bed capable of supporting 6 mm thick material.



HS Capacitance Head

In order to ensure reliable processing, the LC-2515 C1 AJ 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.

Large Capacity, Versatile Turret

Including the 4 station tapping unit, the LC-2515 C1 AJ 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.

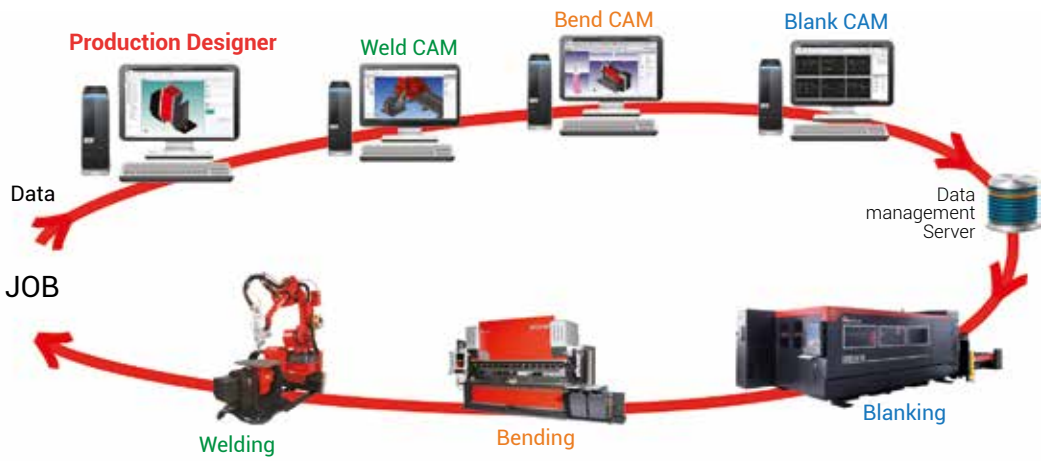
Bar Code Reader

The LC-2515 C1 AJ 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.

THE SHEET METAL DIGITAL FACTORY

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.



DIMENSIONS

Unit : mm

LC-2515 C1 AJ
(L) 6296 x (W) 6927 x (H) 2397

MACHINE SPECIFICATIONS

LC-2515 C1 AJ			
NC			AMNC 3i
Punch	Press capacity	kN	200
	Drive method		AC servo drive
	Turret specification		46 station MPT (4 tapping, 4 Auto Index)
Processing range	Punch, X/YP	mm	3050 x 1525
	Laser, X/YL	mm	2500 x 1525
	Combination, X/Y	mm	2500 x 1525
Maximum axis feed rate	Punch	m/min	(X/YP) 100/80
	Laser	m/min	(X/YL) 100/80
Maximum material mass		kg	220
Combined processing accuracy		mm	±0.07
Slug pulling prevention unit			Slug suction (all stations)
Least input increment		mm	0.001
Work chute size, X/Y		mm	400 x 1525

OSCILLATOR SPECIFICATIONS

AJ-2000		
Beam generation		Laser diode-pumped fibre laser
Maximum power	W	2000
Stability	%	+/- 2.00
Pulse peak power	W	2000
Pulse frequency	Hz	1 ~ 10000
Duty	%	1~100
Wavelength	µm	1.08

TURRET LAYOUT

Range	Tool size	Punch size mm	Number of stations
A	1/2"	Ø 1.6 - 12.7	21
B	1-1/4"	Ø 12.8 - 31.7	16
C	2"	Ø 31.8 - 50.8	4
D	3-1/2"	Ø 50.9 - 88.9	1
G	1-1/4"	Ø 12.8 - 31.7	3
H	2"	Ø 31.8 - 50.8	1
Total			46

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

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.

This laser product uses a Class 4 invisible laser for processing and a Class 3R visible laser for positioning.
Class 4 invisible laser: avoid eye or skin exposure or direct or scattered radiation. Never look into the laser beam or allow skin contact.
Class 3R visible laser: avoid direct eye exposure.

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.

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