

SOLUTION

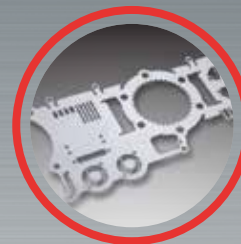
LASER CUTTING



LCG 3015



HIGHLY TUNED, DIRECT DRIVE CO₂ LASER



AMADA

LCG 3015

HIGHLY TUNED, DIRECT DRIVE CO₂ LASER

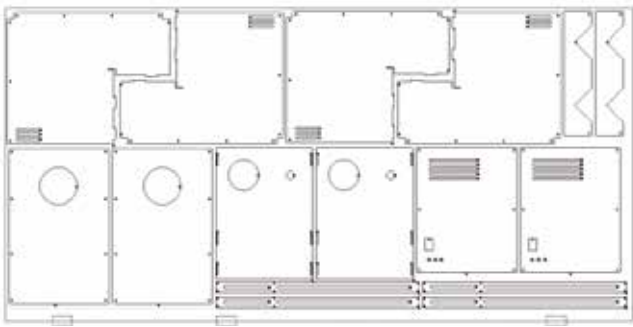
PROCESSING THIN TO MEDIUM THICK MATERIALS WITH HIGH SPEED AND HIGH PRODUCTIVITY

THE NEW STANDARD IN LASER CUTTING MACHINES

AMADA, a worldwide laser machine pioneer, has developed a new highly tuned, direct drive laser cutting machine, the LCG-3015. This machine delivers higher speed and faster acceleration processing by utilizing a carriage with a lower centre of gravity and the latest motion system incorporating high torque motors and helical rack drives. Combined with a CO₂ oscillator designed with a cutting mode similar to a fibre laser, the LCG-3015 enhances processing speeds and productivity in the thin to medium thick material range.



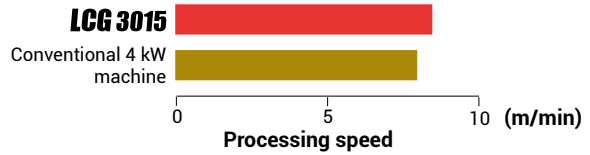
TYPICAL PROCESSING SAMPLES



Material: stainless steel 304, 1.0 mm
 Dimension: 2000 x 1000 mm
 Assist gas: nitrogen

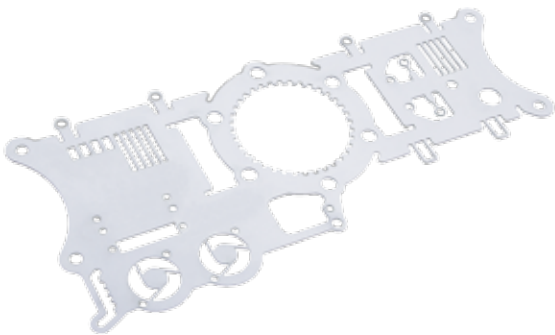
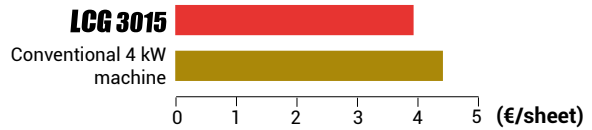
PRODUCTIVITY COMPARISON

13% TIME REDUCTION



RUNNING COST COMPARISON

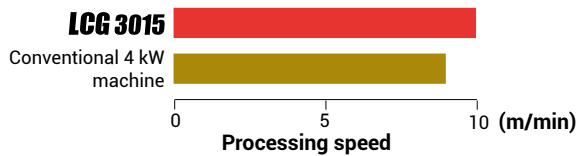
10% COST REDUCTION PER SHEET



Material: mild steel 1.0 mm
 Dimension: 280.0 x 125.0 mm

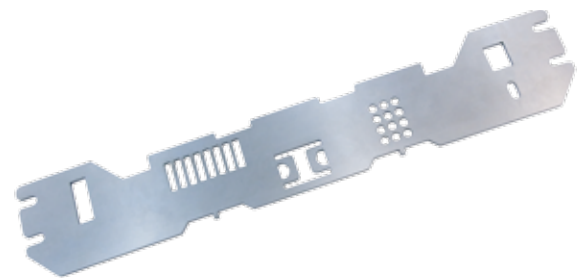
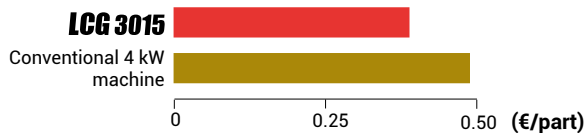
PRODUCTIVITY COMPARISON

21.7% TIME REDUCTION



RUNNING COST COMPARISON

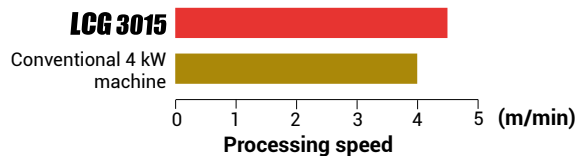
20.4% COST REDUCTION PER PART



Material: mild steel 3.2 mm
 Dimension: 400.0 x 70.0 mm

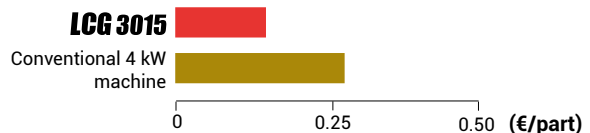
PRODUCTIVITY COMPARISON

38.4% TIME REDUCTION



RUNNING COST COMPARISON

46.5% COST REDUCTION PER PART

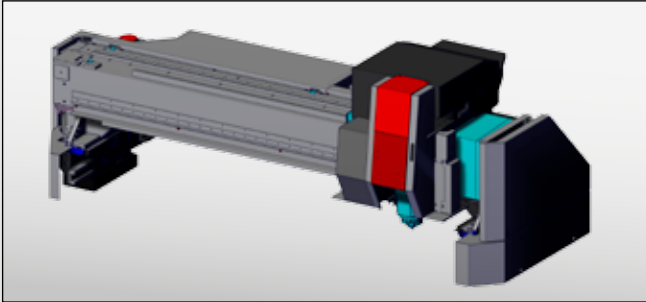


Running costs include assist gases, electricity and consumables. Cost of electricity for compressor added where appropriate when air is used as an assist gas.

LCG 3015

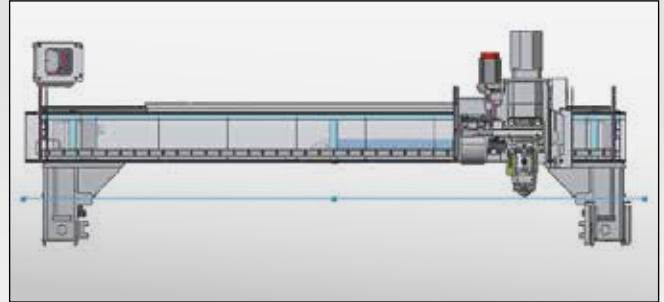
HIGH SPEED PROCESSING OF THIN TO MEDIUM THICK MATERIALS

A CARRIAGE WITH A LOW CENTRE OF GRAVITY AND THE LATEST DRIVE MECHANISM



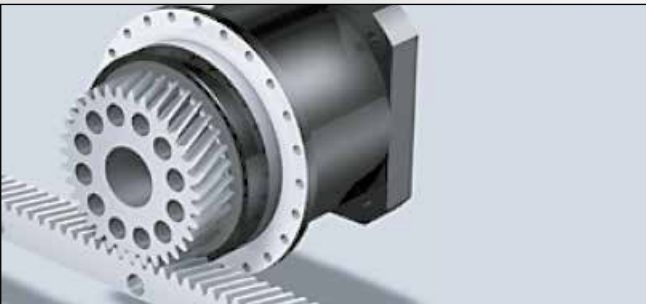
Lightweight Y-axis carriage

Higher speed is achieved by a 30% reduction in mass of the Y-axis carriage compared with a conventional laser machine.



Carriage with a low centre of gravity

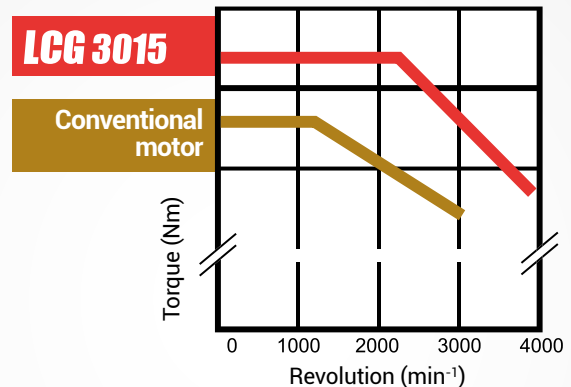
The Y-axis carriage has a low centre of gravity due to a Z-axis height of 100 mm, allowing high speed processing of thin materials.



High torque motors and helical rack drive

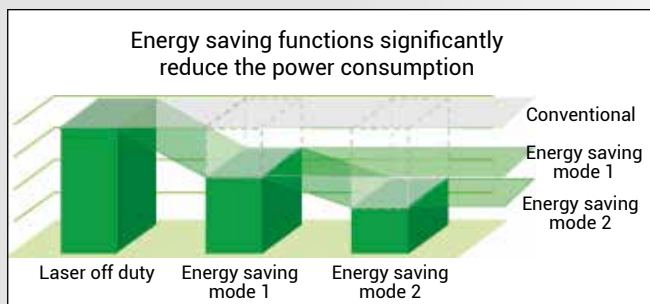
The latest motion system incorporating high torque motors and a helical rack drive is utilized to ensure high speed, smooth acceleration.

Rapid feed rate: 170 m/min (combined X&Y axes). The fastest in class.



POWER & MAINTENANCE SAVING FUNCTIONS

ENERGY SAVING AND REDUCED SERVICING



Multiple power reduction modes while idling

The LCG-3015 is equipped as standard with a system to dramatically reduce the power required in 2 stages when the machine is at idle.

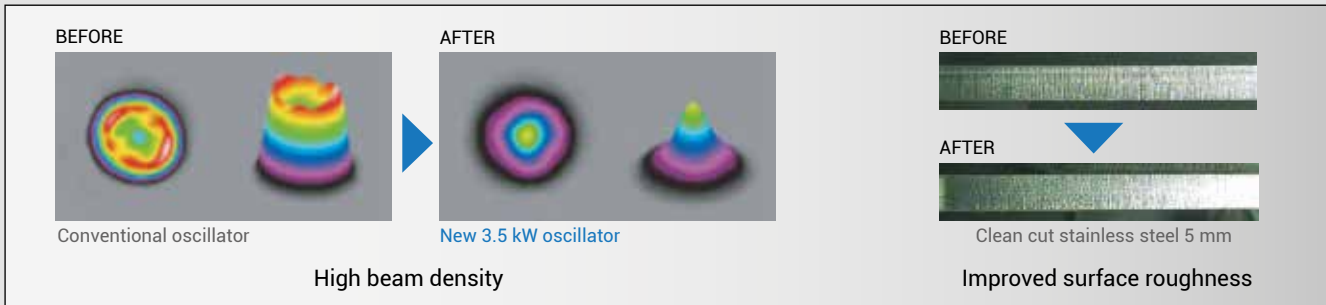


Reduced servicing

The interval of mirror cleans and changes have been doubled through the use of long life optics.

HIGH QUALITY AND STABLE PROCESSING

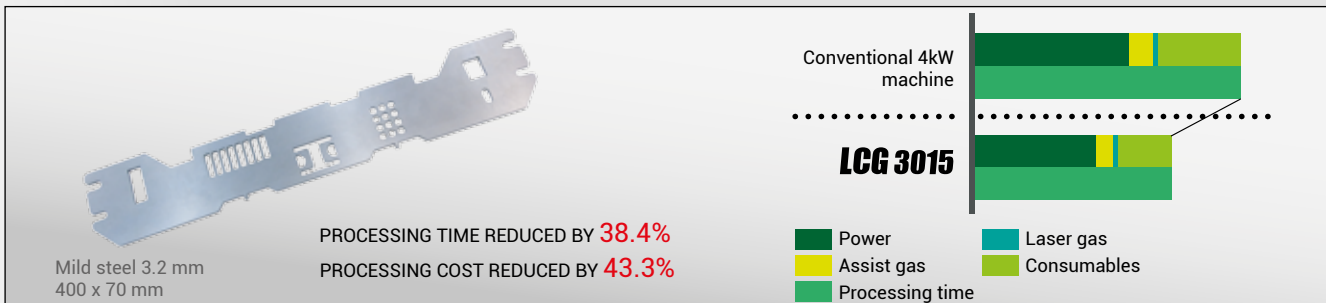
NEW AF3500i-C OSCILLATOR



The new, AMADA tuned, 3.5 kW oscillator utilized in the LCG-3015 has been designed with a higher beam density for the processing of thin to mid-thickness materials. This 30% improvement in beam density (compared to a conventional machine) also improves the surface roughness of cut parts.

ENERGY SAVING, STABLE PROCESSING

ECO CUT

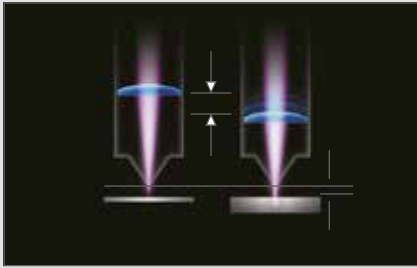


AMADA's ECO Cut standard feature is an energy saving, high speed oxygen-assisted cutting process using small nozzle sizes to reduce processing times, processing costs and assist gas consumption.



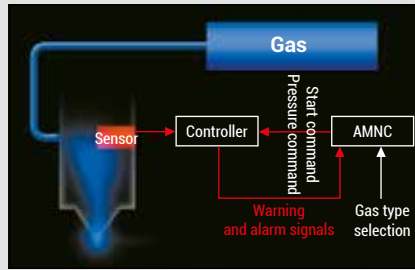
LCG 3015

FUNCTIONS AND OPTIONAL EQUIPMENT



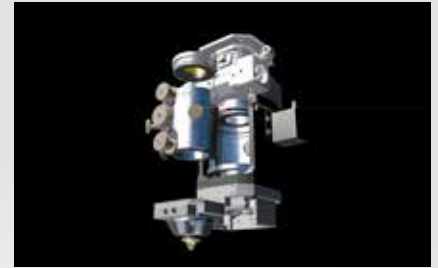
Motorised Auto Focus Control System

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 LCG-3015 is equipped with simple, quick change lens and nozzle cartridges.



Oil Shot

Before piercing medium thickness sheets, oil is sprayed on the material to prevent spatter build-up, improve processing quality and achieve stable processing.



Cutting Lenses

The LCG-3015 is supplied with 2 cutting lenses as standard. The 5 inch lens is used for thin sheet cutting, while the 7.5 inch lens is used for thicker materials. The 7.5 inch lens can be used to cut the entire material range if required.



OVS IV

The OVS IV system measures the pitch of two readout holes and automatically compensates for the process origin deviation from the NCT for combination process of NCT and Laser. The pitch and circularity of the cut holes are measured. When the measured values fall outside the specified limits, an alarm condition appears on NC.

AUTOMATION OPTIONS

The machine is supplied with a 2 pallet shuttle table as standard



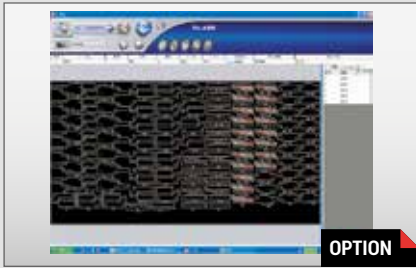
Single Pallet Load/Unload System (MPF)

A simple, fully automated system incorporating a single material pack and front unload table to allow continuous scheduled processing. Material is automatically loaded into the cutting beds and finished parts unloaded with a fork style manipulator.



Load/Unload Tower

A fully automated tower system incorporating multiple raw material and finished parts pallets to allow continuous scheduled processing. Parts and material can be loaded/unloaded without interrupting the laser cutting cycle.



CAD/CAM

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.



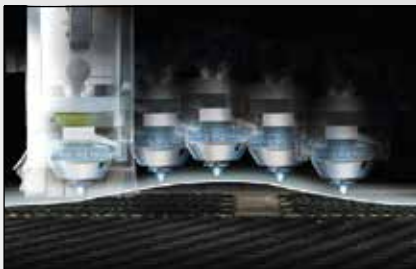
Advanced AMNC/PC Control

This user friendly, network-ready NC control is full of AMADA's time saving, production orientated features.



Dust Collector

Efficiently collects any dust and particles generated during the cutting process to ensure a clean working environment.



HS Capacitance Head

In order to ensure reliable processing, the LCG-3015 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.



Electronic Hand Wheel

The standard electronic hand wheel device allows quick, easy, incremental manual positioning of the laser cutting head. All axes of the machine can be positioned with an accuracy of 0.001mm if required.



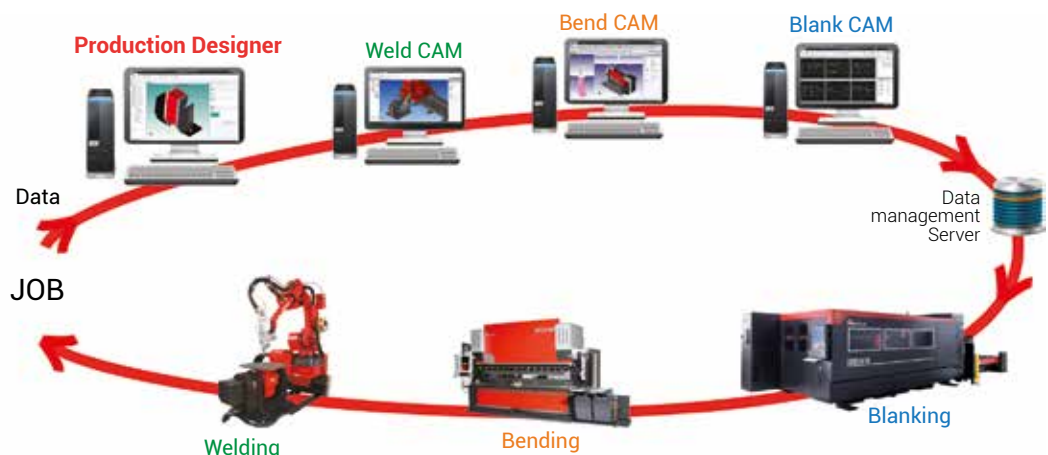
Bar Code Reader

The LCG-3015 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).

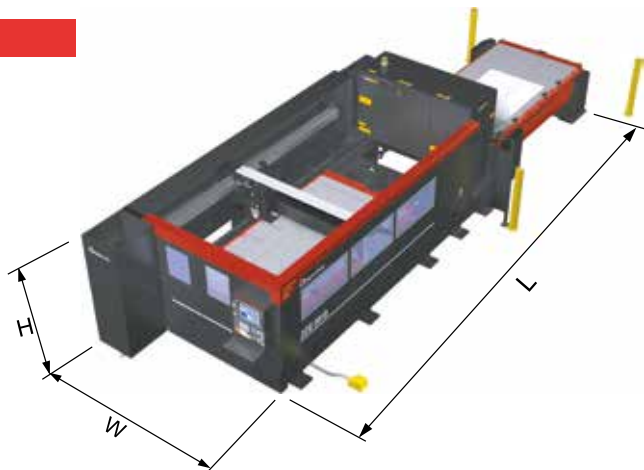
All data is created in the office and utilised in the workshop via a network.



DIMENSIONS

LCG-3015 + shuttle table (LST)
(L) 9997 x (W) 2840 x (H) 2166

Unit : mm



MACHINE SPECIFICATIONS

LCG-3015			
Numerical Control			AMNC/PC
Controlled axis			X, Y, Z axes (three axes controlled simultaneously) + B axis
Axis travel distance	X x Y x Z	mm	3070 x 1550 x 100
Maximum processing dimensions	X x Y	mm	3070 x 1550
Maximum simultaneous feed rate	X / Y	m/min	170
Positioning accuracy		mm	± 0.1
Maximum material mass		kg	920
Processing surface height		mm	840
Mass of machine (main unit only)		kg	8200

OSCILLATOR SPECIFICATIONS

AF3500i-C			
Beam generation			HF electric discharge excitation, high speed axial flow CO ₂ laser
Maximum power	W		3500
Wavelength	µm		10.6
Maximum processing thickness*	Mild steel Stainless steel Aluminium	mm	20 10 8

* Maximum value depends on material quality and environmental conditions

SHUTTLE TABLE SPECIFICATIONS

LST-3015		
Maximum material dimensions	mm	3070 x 1550
Number of pallets		2

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.



Laser class 1 when operated in accordance with CE Regulations.

The official model names of the machines and units described in this catalogue are non-hyphenated like LCG3015. Use this registered model names when you contact the authorities for applying for installation, exporting, or financing.
The hyphenated spellings like LCG-3015 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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