

SOLUTION

LASER CUTTING

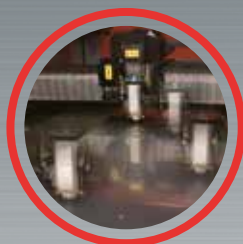


FOL 3015 AJ

Fiber Laser



A NEW BENCHMARK FOR CUT SPEED AND QUALITY



AMADA

FOL 3015 AJ

Fiber Laser

A NEW BENCHMARK FOR CUT SPEED AND QUALITY

AMADA FOL-3015 AJ LASER CUTTING MACHINE SETS A NEW BENCHMARK FOR CUT SPEED AND QUALITY

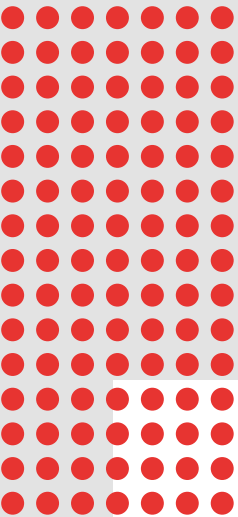
COMPETENCE THROUGH EXPERIENCE. A LASER REVOLUTION!

Drawing on an extensive experience in laser technology and software solutions, Amada introduce a new generation of laser processing; the FOL-3015 AJ.

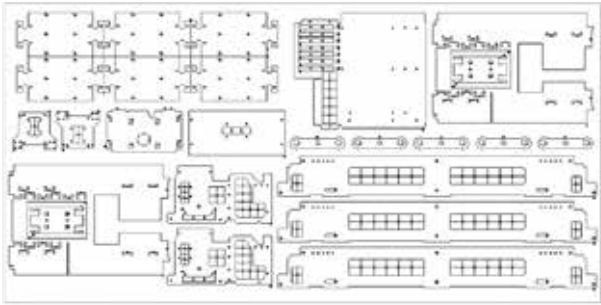
Axis speeds of 340m/min and high quality laser cutting at superfast speeds are delivered from a compact footprint. Both machine and beam generation are designed and developed by Amada, providing perfectly synchronised components for optimum performance. To further increase capacity and efficiency a proven range of automation systems can be added to suit production requirements.

The short wavelength fibre laser beam also provides an expanded process range for materials including copper, brass and titanium with additional benefits of low energy consumption and long maintenance cycles.





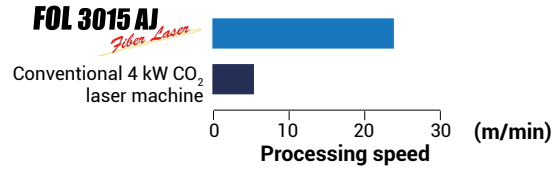
TYPICAL PROCESSING SAMPLES



Material: Galvanised Steel, 1.6 mm
 Dimension: 1830 x 915 mm
 Number of part types: 11
 Total number of parts: 27

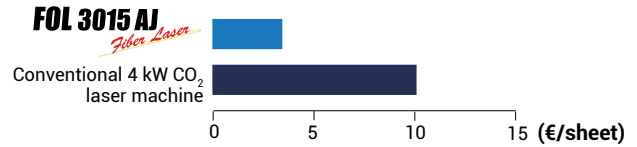
PRODUCTIVITY COMPARISON

57% TIME REDUCTION



RUNNING COST COMPARISON

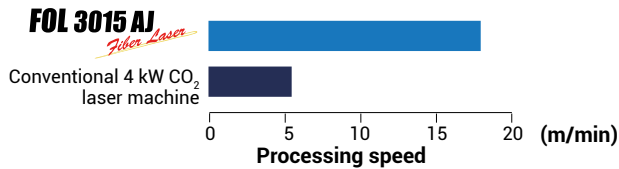
66% COST REDUCTION PER PART



Material: Stainless steel, 2 mm
 Dimension: 471.7 X 121.8 mm

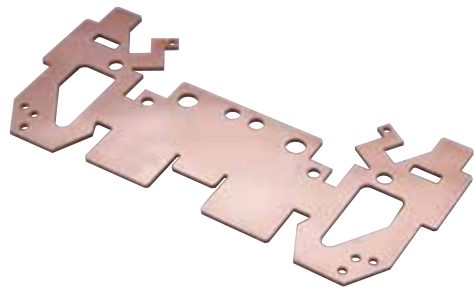
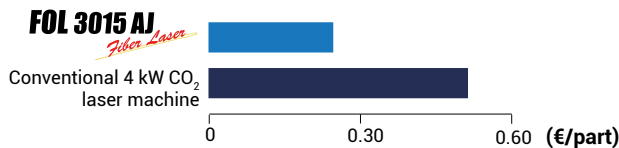
PRODUCTIVITY COMPARISON

59.5% TIME REDUCTION



RUNNING COST COMPARISON

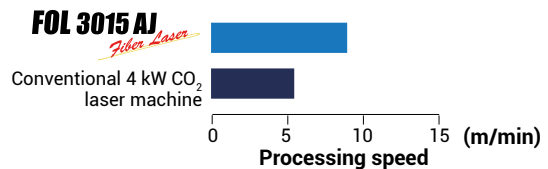
52.1% COST REDUCTION PER PART



Material: Copper, 2 mm
 Dimension: 183 x 88 mm

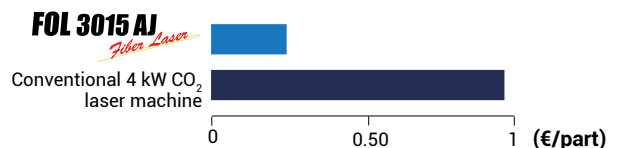
PRODUCTIVITY COMPARISON

76.5% TIME REDUCTION



RUNNING COST COMPARISON

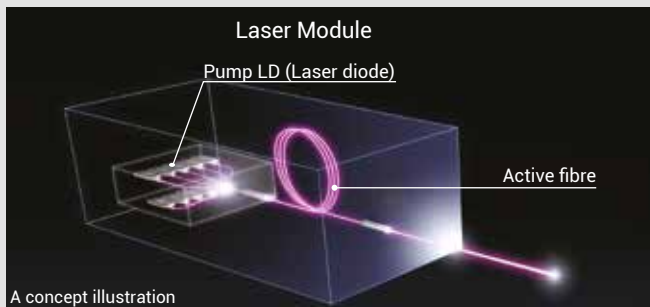
83.2% COST REDUCTION PER PART



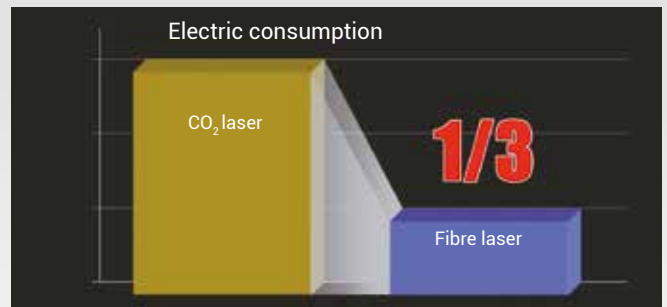
Running costs include assist gases, electricity and consumables. Cost of electricity for compressor added where appropriate when air is used as an assist gas.

ENERGY SAVINGS

THE FOL-3015 AJ SOLVES MANY CONVENTIONAL LASER PROCESSING PROBLEMS



The construction of the fibre laser oscillator and optical transport of the laser beam is less complex than a CO₂ 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 CO₂ 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%.

AMADA DEVELOPED FIBER LASER OSCILLATOR

DEVELOPED IN-HOUSE BY AMADA AS THE WORLD'S FIRST LASER MACHINE MANUFACTURER

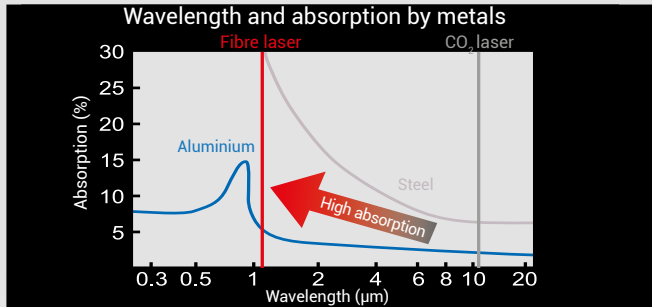
Amada was the first laser manufacturer to develop its own fibre laser oscillator. Unlike a CO₂ laser, a fibre laser has no need for mirrors or laser gas inside the oscillator. The monolithic structure allows the laser power produced by the individual laser diode banks to be combined into a single fiber optic cable for direct delivery to the cutting head.

In order to enhance the production of fibre laser oscillators at Amada's Fujinomiya facility and to meet ever increasing demand, 18 clean rooms have been created specifically for production and assembly operations.



HIGH QUALITY PROCESSING OF HIGHLY REFLECTIVE MATERIALS

PROCESS RANGE EXPANSION



The fibre laser has a shorter wavelength and is 3 to 4 times more easily absorbed than traditional CO₂ lasers.



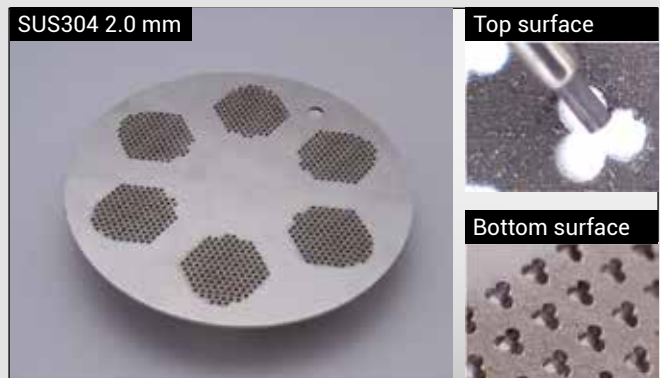
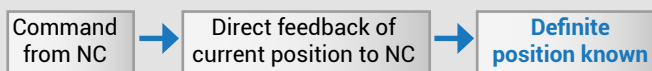
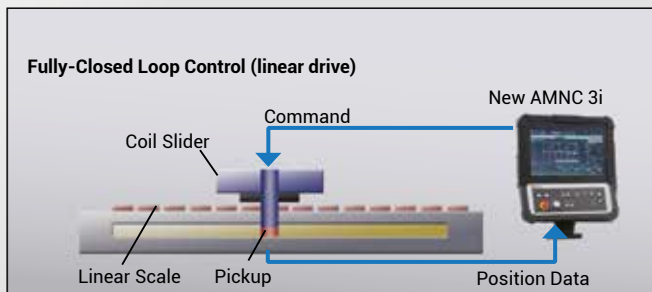
This enables high-quality processing of highly-reflective, difficult to process materials such as aluminium, brass, copper and titanium.

HIGH SPEED AND HIGH ACCURACY PROCESSING

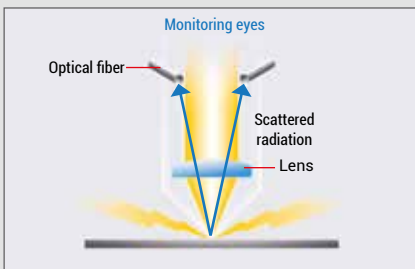
THE MAXIMUM PROCESSING SPEED IS FIVE TIMES HIGHER THAN A CONVENTIONAL CO₂ LASER

The FOL-3015 AJ is equipped with an extremely fast three-axis linear drive system reducing processing time.

The small diameter of the fiber laser combined with the high processing accuracy of the three-axis linear drive minimises the penetration and thermal strain of material allowing the processing of small components.



FUNCTIONS AND OPTIONAL EQUIPMENT



Process Monitoring System

The laser cutting process is constantly monitored for piercing, gouging, plasma, and other cutting defects to ensure constant and stable cutting.



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.



WACS

While cutting a thick material, water is sprayed on the material to reduce the thermal effect of cutting, prevent cutting defects, and improve the material yield.



Nozzle changer

The most suitable nozzle is automatically chosen based on the material type and cutting data required. The nozzle changer can carry eight different types of nozzles to cover the entire material range.



X-Direction Conveyor

Small parts and scrap are quickly and easily transferred to the end of the machine during processing using this conveyor system which starts automatically when the cutting cycle begins.



Top Dust Collector

As well as the more usual extraction under the cutting bed, there are also 2 extra sections in the roof of the machine to ensure complete dust and fume extraction.

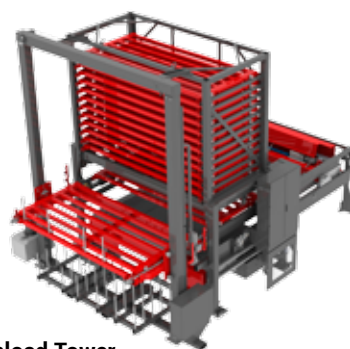
AUTOMATION OPTIONS

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



Single Pallet Load/Unload System

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.



OPTION

OVS IV

The OVS IV system measures the pitch of two reference holes and automatically compensates for any origin deviation when transferring a sheet of parts from the punch machine. The pitch and circularity of the cut holes are also measured. When the measured values fall outside the specified limits, an alarm is activated.



Cutting Lenses

The FOL-3015 AJ is supplied with 3 cutting lenses as standard:

- 150 mm lens assembly*
- 190 mm lens assembly*
- 220 mm lens assembly*

* including lens holder



Dust Collector

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



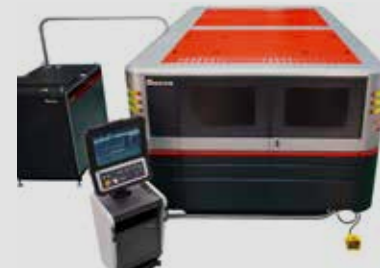
Electronic Hand Wheel

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.



Advanced AMNC 3i Control

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



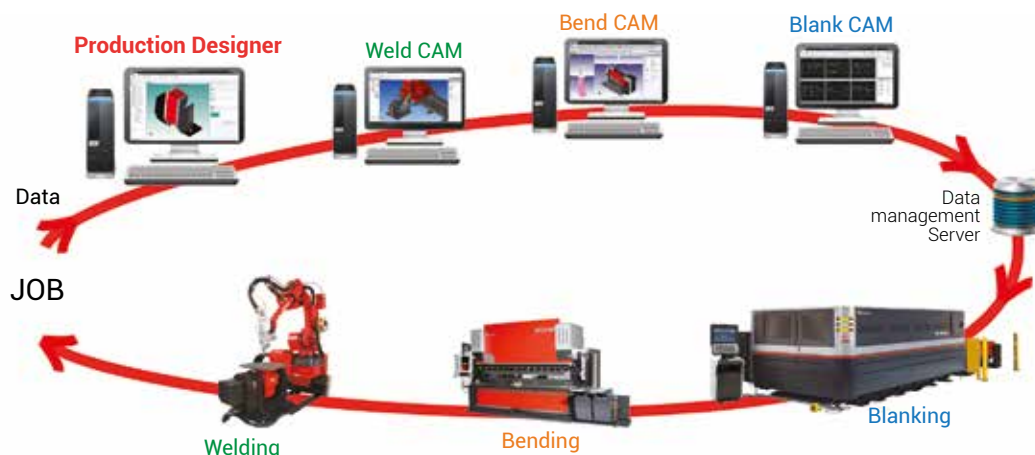
Fully Enclosed

The machine is completely enclosed to prevent dust from scattering outside the machine and to provide full laser protection.

THE SHEET METAL DIGITAL FACTORY

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

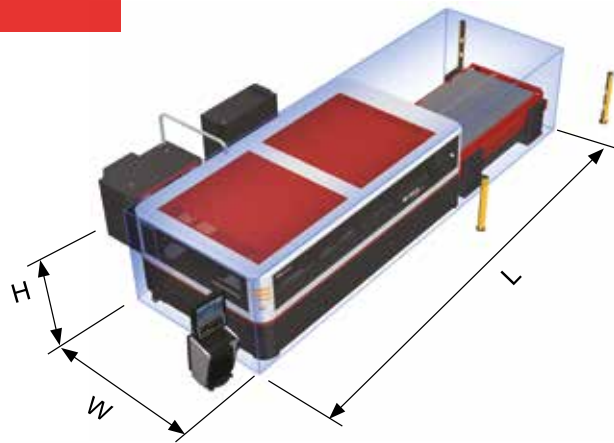
All data is created in the office and utilised in the workshop via a network.



DIMENSIONS

Unit : mm

FOL-3015 AJ + shuttle table (LST)
(L) 9205 x (W) 2990 x (H) 2000



MACHINE SPECIFICATIONS

FOL-3015 AJ			AMNC 3i
Numerical control			
Controlled axes			X, Y, Z axes (three axes controlled simultaneously) + B axis + CF axis
Axis travel distance	X x Y x Z	mm	3100 x 1550 x 100
Maximum processing dimensions	X x Y	mm	3070 x 1550
Maximum simultaneous feed rate	X / Y	m/min	340
Positioning accuracy			± 0.05
Maximum material mass			920
Processing surface height			940
Machine mass (main unit only)			13400

OSCILLATOR SPECIFICATIONS

AJ-4000			
Beam Generation		Laser diode-pumped fibre laser	
Maximum power		W	4000
Wavelength		µm	1.08
Maximum processing thickness	Mild Steel	mm	20
	Stainless steel		18
	Aluminium		16
	Brass		8
	Copper		8

SHUTTLE TABLE SPECIFICATIONS

LST-3015		
Maximum material dimensions X x Y	mm	3050 x 1525
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.



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 FOL3015AJ. Use this registered model names when you contact the authorities for applying for installation, exporting, or financing.

The hyphenated spellings like FOL-3015 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.

AMADA UK LTD.

Spennells Valley Road,
Kidderminster,
Worcestershire DY10 1XS
United Kingdom
Tel: +44 (0)1562 749500
Fax: +44 (0)1562 749510
www.amada.co.uk

AMADA SA

Paris Nord II
96, avenue de la Pyramide
93290 Tremblay en France
France
Tél : +33 (0)149903000
Fax : +33 (0)149903199
www.amada.fr

AMADA GmbH

Amada Allee 1
42781 Haan
Germany
Tel: +49 (0)2104 2126-0
Fax: +49 (0)2104 2126-999
www.amada.de

AMADA ITALIA S.r.l.

Via Amada I., 1/3
29010 Pontenure (PC)
Italia
Tel: +39 (0)523-872111
Fax: +39 (0)523-872101
www.amada.it

