SOLUTION

LASER CUTTING

ENSIS AJ SERIES

FIBRE LASER CUTTING WITH EXPANDED CAPABILITIES




AMADA

ENSIS AJ SERIES

FIBRE LASER CUTTING WITH EXPANDED CAPABILITIES

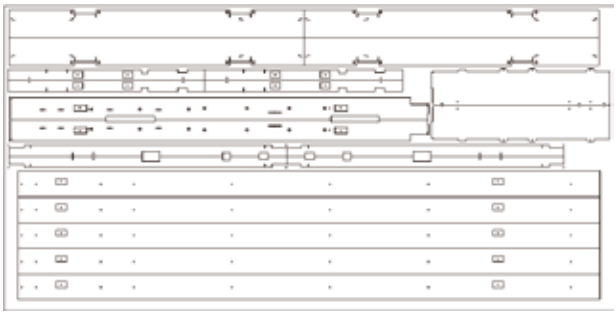
A FIBRE LASER RANGE PROCESSING THIN TO THICK MATERIALS WITH RESULTS COMPARABLE TO HIGH POWER CO_2 LASERS

AMADA'S PATENT APPLICATION FILED VARIABLE BEAM CONTROL UNIT ALLOWS WIDE RANGE FIBRE LASER CUTTING CAPABILITIES

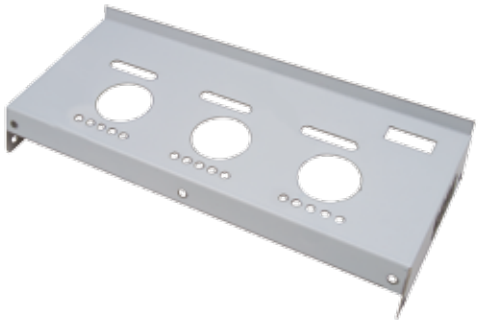
The fibre laser beam has many advantages over conventional laser technology in thin material cutting applications. The ENSIS machine expands the thickness range achievable with 2 or 3 kW of laser power, while retaining the thin material cutting capabilities. The conventional wisdom about fibre lasers has been overturned by AMADA's patent application filed beam control technology installed on the ENSIS.

Photograph includes optional equipment

TYPICAL PROCESSING SAMPLES



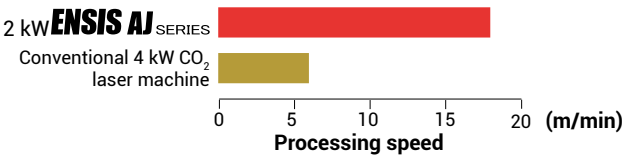
Material: Stainless steel 1.5 mm
Dimension: 2438.0 x 1219.0 mm



Material: Stainless steel 1.0 mm
Dimension: 478.3 x 188.7 mm

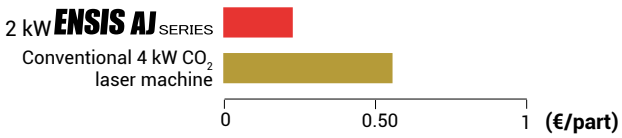
PRODUCTIVITY COMPARISON

53% TIME REDUCTION



RUNNING COST COMPARISON

59% COST REDUCTION PER PART

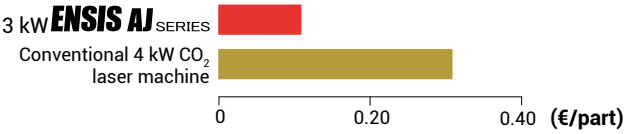


Material: Mild steel 9 mm
Dimension: 116.2 x 138.4 mm

Material: Mild steel 16.0 mm
Dimension: 110.0 x 38.8 mm

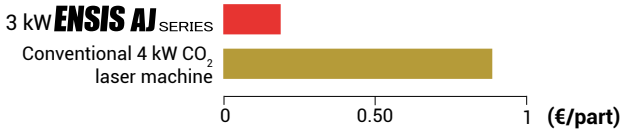
RUNNING COST COMPARISON

64.7% COST REDUCTION PER PART



RUNNING COST COMPARISON

79.2% COST REDUCTION PER PART

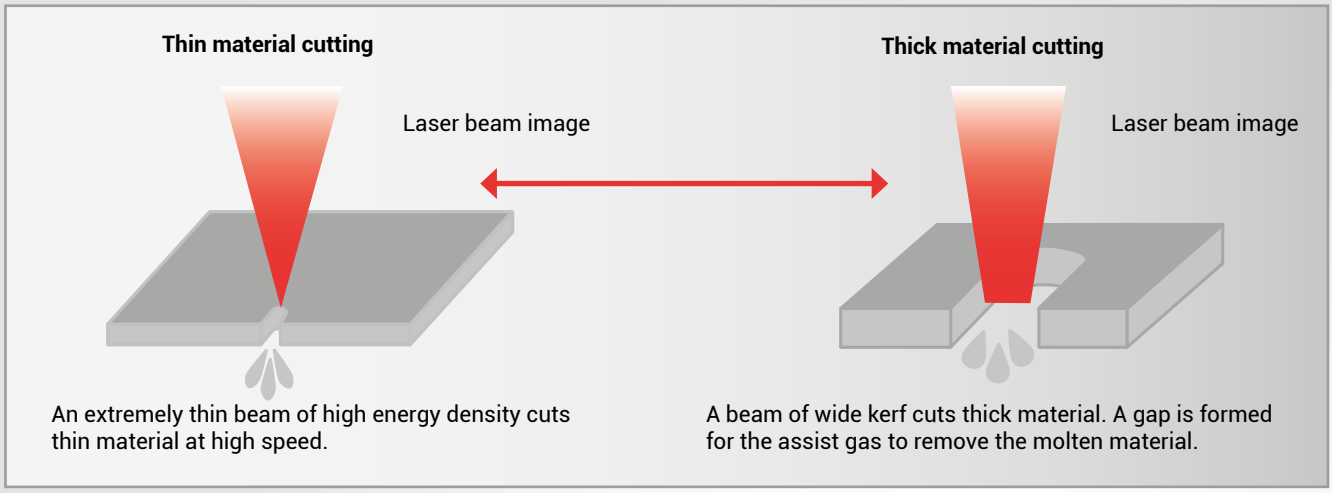


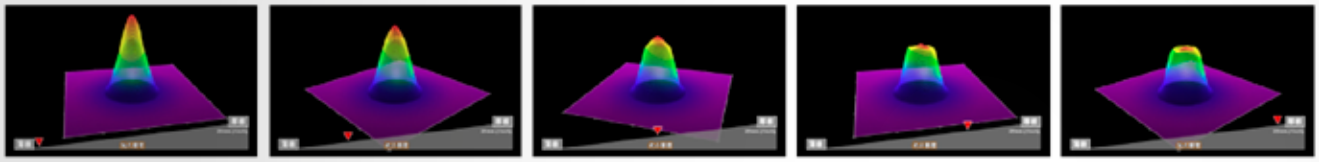
Running costs include assist gases, electricity and consumables.

THIN TO THICK MATERIAL PROCESSING WITH REDUCED FIBRE LASER POWER

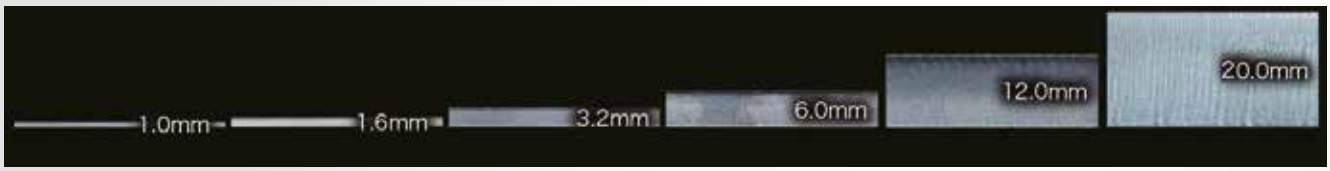
TOTAL BEAM CONTROL

AMADA's patent application filed Variable Beam Control Unit allows the complete manipulation of the fibre laser beam so that it is perfectly matched to the material\thickness being processed.





Laser beam images

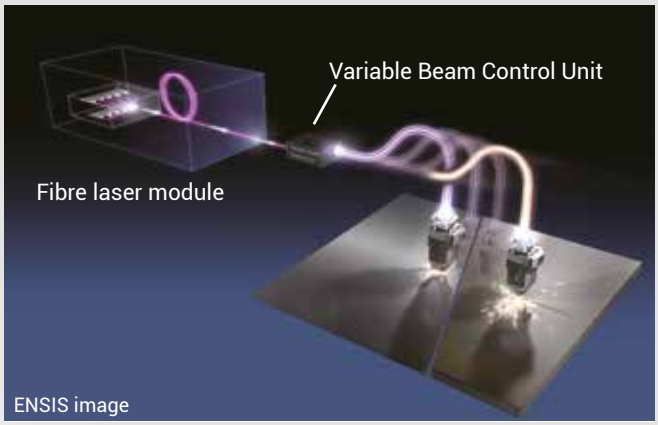


2 kW cut samples

Photograph includes optional equipment

AMADA'S LATEST FIBRE LASER OSCILLATORS

ADVANCED DEVELOPMENT OF OUR IN-HOUSE FIBRE LASER SYSTEM

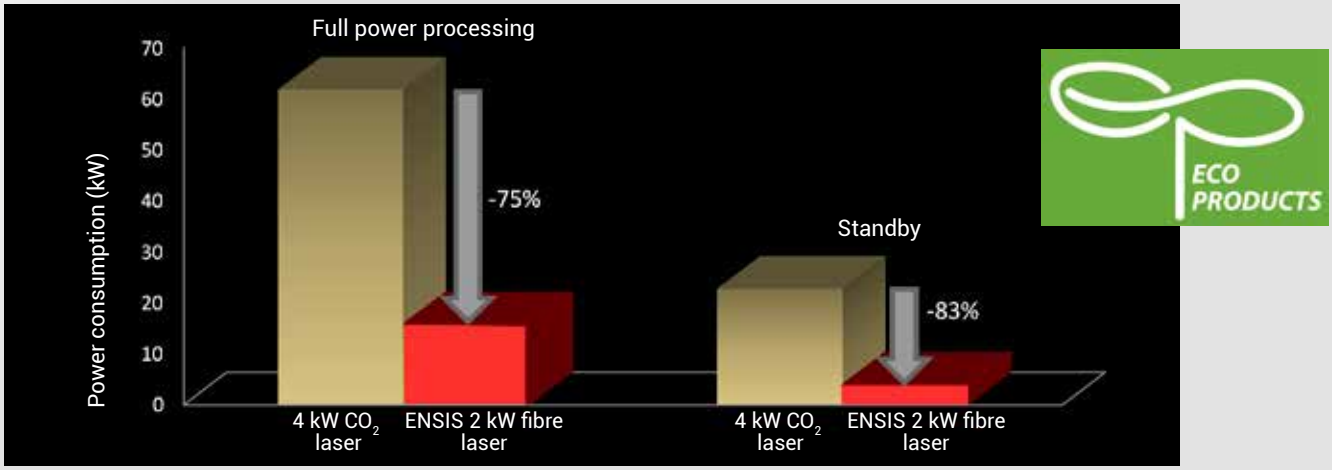


New ENSIS AJ fibre laser source
Built on the successful AMADA AJ fibre laser system, the dedicated, small footprint ENSIS-2000 & ENSIS-3000 oscillators produce a very high quality beam tuned specifically for sheet metal processing.

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

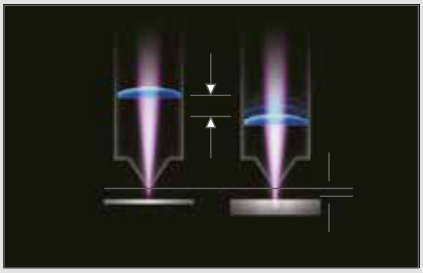
EFFICIENCY THROUGH ENERGY SAVING

FULL RANGE PROCESSING WITH REDUCED POWER CONSUMPTION



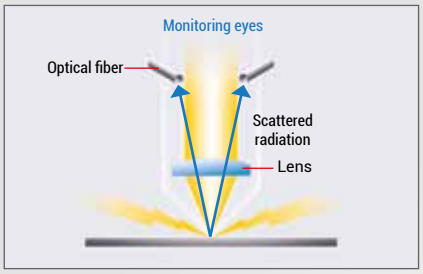
Less is more
The ENSIS fibre laser achieves an industry first – high performance laser cutting with a low power oscillator. For mild steel processing, the high quality\thickness capabilities of the ENSIS-AJ series lasers are comparable to that of conventional high power CO_2 lasers.

FUNCTIONS AND OPTIONAL EQUIPMENT



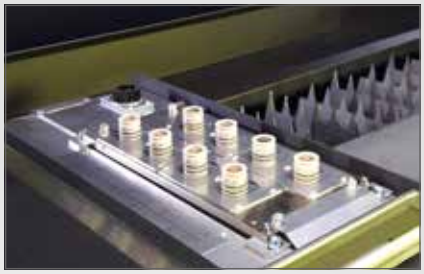
Motorised Auto Focus Control System

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.



Laser Cutting Process Monitoring

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



Automatic Nozzle Changer

To ensure fully automatic operation, the ENSIS-AJ is equipped with a multiple station nozzle change system which includes a nozzle cleaning and head calibration unit.

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 II

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

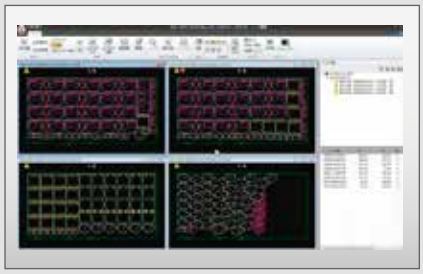
OVS IV

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.

AUTOMATION OPTIONS

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. Available only on ENSIS-3015AJ.

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

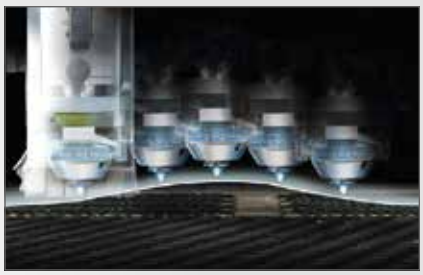
This fully automatic CAM system nests all the user defined parts and quantities, applies punch tooling/laser profiles, defines the processing sequence and generates the NC program. Increase productivity for your punch, laser or combination machines.

AMNC 3i NC

The ENSIS-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.

X-Direction Conveyor

Scrap and small parts are unloaded in the X direction by the conveyor installed in the frame of the laser machine.

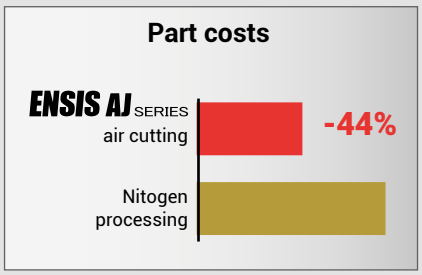


HS Capacitance Head

In order to ensure reliable processing, the ENSIS-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.

Front and Side Access

To allow the most flexible access to the cutting area, the ENSIS fibre laser is equipped with front and side opening doors.



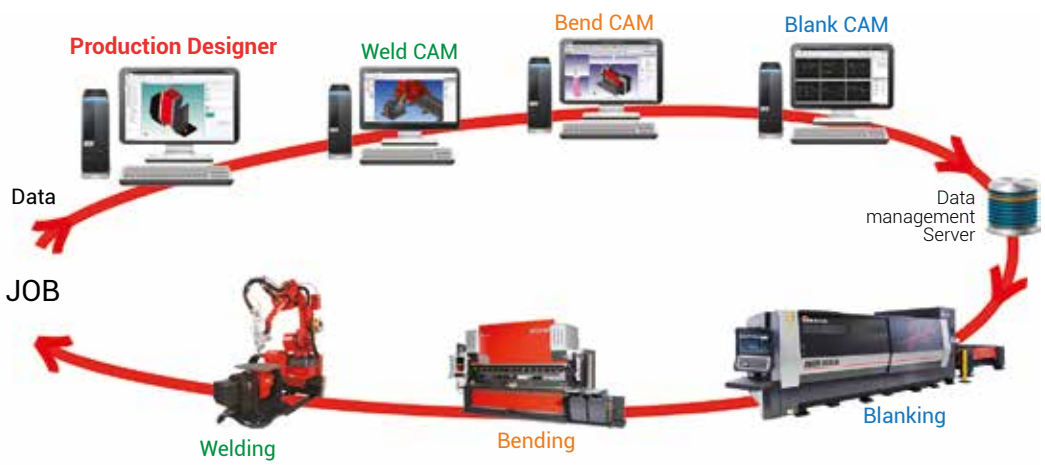
Compressed Air Cutting

To keep part cost to a minimum, AMADA fibre lasers allow you to process many materials with the standard compressed air cutting system, giving high quality results. Assist gas costs are, therefore, zero.

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

ENSIS-3015AJ + shuttle table (LST)
(L) 10136x (W) 2860 x (H) 2432

ENSIS-4020AJ + shuttle table (LST)
(L)12080 x (W) 3360 x (H) 2240

Unit: mm

MACHINE SPECIFICATIONS

			ENSIS-3015AJ	ENSIS-4020AJ
Numerical Control			AMNC 3i	
Controlled axes			X, Y, Z axes (three axes controlled simultaneously) + B axis	
Axis travel distance	X x Y x Z	mm	3070 x 1550 x 100	4070 x 2050 x 100
Maximum processing dimensions	X x Y	mm	3070 x 1550	4070 x 2050
Maximum simultaneous feed rate	X/Y	m/min	170	
Repeatable positioning accuracy		mm	± 0.01	
Maximum material mass		kg	920	1570
Processing surface height		mm	940	
Machine mass		kg	9100	12200

OSCILLATOR SPECIFICATIONS

ENSIS-AJ			2000	3000
Beam generation			Laser diode-pumped fibre laser	
Maximum power		W	2000	3000
Wavelength		µm	1.08	
Maximum processing thickness*	Mild steel Stainless steel Aluminium Brass Copper	mm	20 (25) 10 (12) 8 5 4	25 15 12 8 6

* Maximum value depends on material quality and environmental conditions

SHUTTLE TABLE SPECIFICATIONS

LST		ENSIS-3015 AJ	ENSIS-4020 AJ
Max. material dimensions X x Y	mm	3070 x 1550	4070 x 2050
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 name of the machines and units described in this catalogue are non-hyphenated like ENSIS3015AJ. Use this registered model names when you contact the authorities for applying for installation, exporting, or financing.
The hyphenated spellings like ENSIS-3015AJ 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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