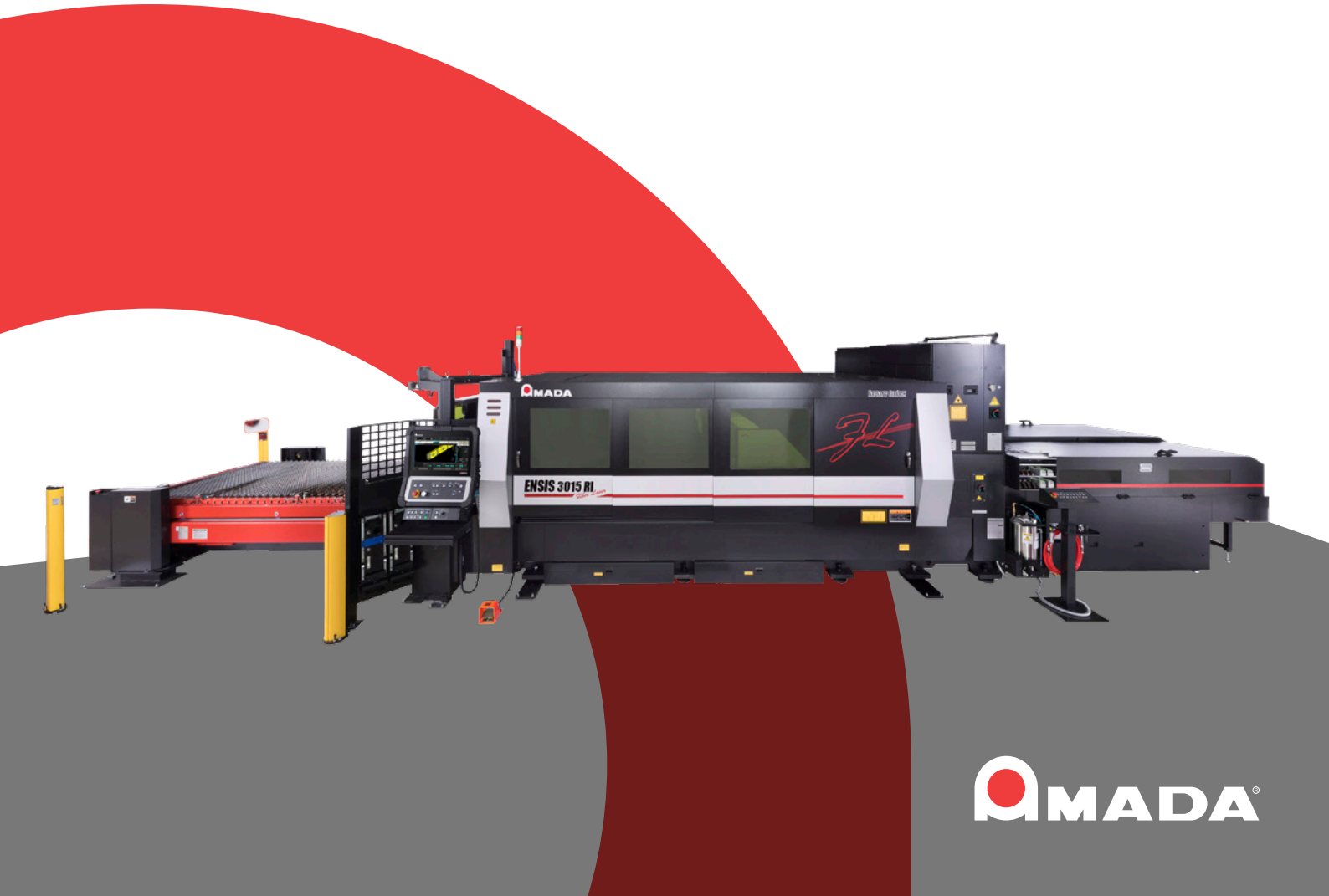
SOLUTION

ENSIS 3015 RI *Fiber Laser*

NEW OPPORTUNITIES WITH
SHEET AND TUBE PROCESSING



AMADA®

ENSIS 3015 RI Fiber Laser

NEW OPPORTUNITIES WITH SHEET AND TUBE PROCESSING

HIGHER POWER VARIANTS INCREASE SHEET PROCESSING CAPABILITIES

FAST CHANGEOVER FROM SHEET TO TUBE FOR INCREASED PRODUCTIVITY

Utilising all the benefits of the ENSIS-AJ fibre laser series, the ENSIS-RI adds the capability to process tube, channel and angle profiles.

With a fast changeover between flat sheet and tubes plus many functions to decrease setup and increase efficiency, the ENSIS-RI provides the perfect platform to expand your business opportunities.

Now available as 3kW, 6kW, 9kW and 12kW variants, the ENSIS-RI can fit into any production environment, bringing improvements for piercing times and cutting speeds.

With the addition of the STRI and AS LUL storage tower solution, the flat sheet processing can now be fully automated to provide 24/7 production.

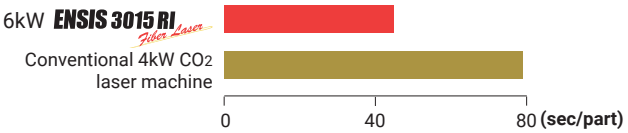
Photograph may include optional equipment

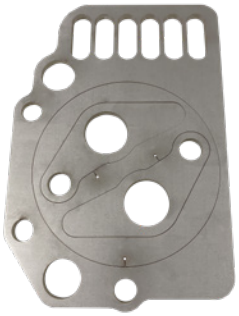
TYPICAL PROCESSING SAMPLES

Mild steel 8.0 mm
180.0 x 180.0 mm

PROCESSING TIME REDUCTION

42.0% **REDUCTION PER PART**

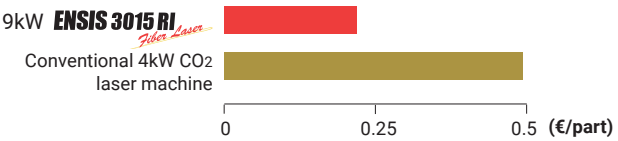




Stainless steel 6.0 mm
155.0 x 228.0 mm

RUNNING COST COMPARISON

57.0% **COST REDUCTION PER PART**

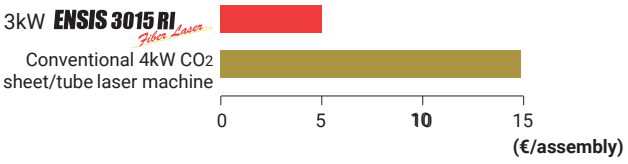


21 parts

Mild steel 1.6 mm sheet
Mild steel 16.0 mm plate
Mild steel tube 50.0 mm x 50.0 mm
Mild steel tube 100.0 mm x 100.0 mm

RUNNING COST COMPARISON

66% **COST REDUCTION PER ASSEMBLY**

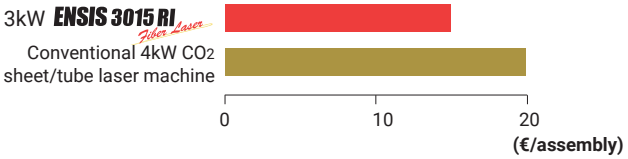


13 parts

Stainless steel 6.0 mm sheet
Stainless steel 50.0 mm x 50.0 mm angle
200.0 mm x 200.0 mm x 300.0 mm

RUNNING COST COMPARISON

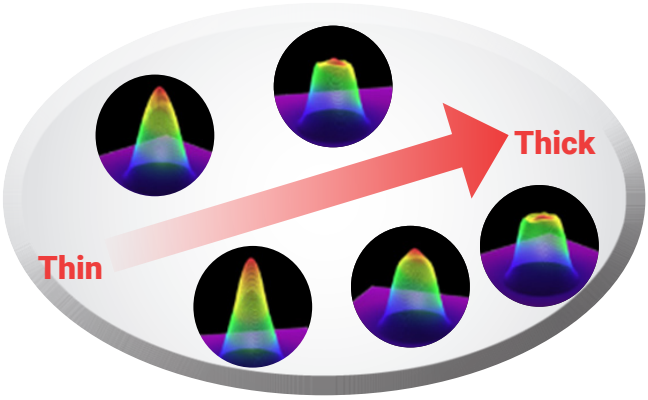
24% **COST REDUCTION PER ASSEMBLY**



ENSIS 3015 RI Fiber Laser

VARIABLE BEAM CONTROL TECHNOLOGY

COMPLETE BEAM MODE CONTROL



ADAPTING THE BEAM TO SUIT EVERY MATERIAL COMBINATION

AMADA's original Variable Beam Control technology automatically adapts the laser beam mode to match the specific material being processed. It is not simply a 'thin' or 'thick' mode system. It incrementally adjusts the beam to provide complete control over the entire material range.

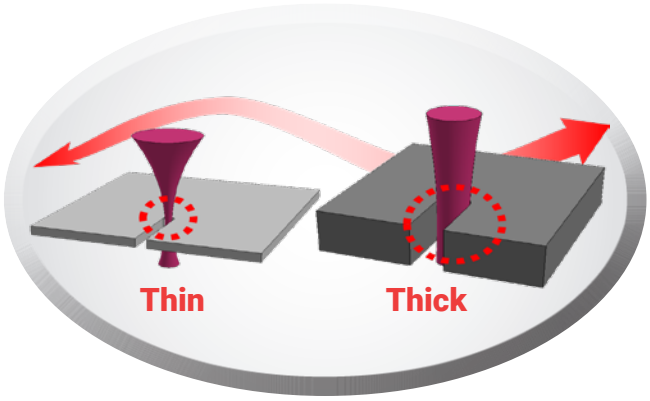
The beam mode can also be adjusted between the pierce and cut, allowing high speed piercing and optimum cutting speed.

This technology also allows a single cutting lens to be used for the entire material range, saving setup times and costs.

BEAM SHAPE IMAGES

AUTO COLLIMATION TECHNOLOGY

COMPLETE SPOT SIZE CONTROL



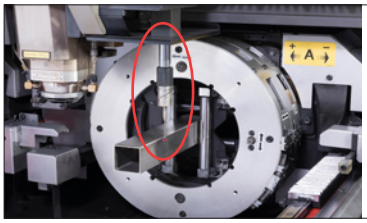
OPTIMUM BEAM DIAMETER AND FOCUS POINT

Auto Collimation technology offers the ability to precisely control the laser beam spot size and focal position, ensuring efficient molten material removal. This results in high cutting speeds, even in thick materials.

Improved cut edge quality, greatly reduced bevel angles and wider cutting kerfs to assist the removal of thicker parts from the sheet are some of the other benefits.

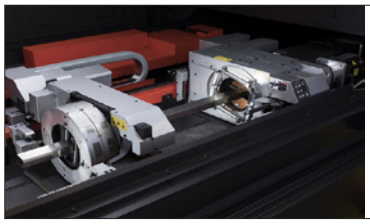
Auto Collimation is utilized on 6kW, 9kW and 12kW ENSIS-RI variants.

STANDARD EQUIPMENT AND FUNCTIONS



Touch Probe

This system is used to automatically compensate for any deviation (such as bowing or twisting) of the tube being processed, to provide accurate hole positioning and allow trouble-free assembly operations.

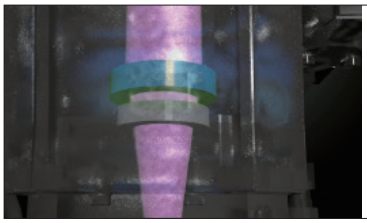


Dual Synchronous Chucks

Both the main drive chuck and secondary support chuck are driven to avoid the problems of introducing twist into square and rectangular tube. It also provides higher quality round tube results by avoiding the problem of scratching that can occur with passive chuck systems.

Nozzle Changer & Single Lens

To ensure uptime is maximized, the ENSIS-RI is equipped with a 16 station automatic nozzle changer for fast changeover times. To further maximize productivity, all materials can be cut with a single lens.



i-Optics Sensor

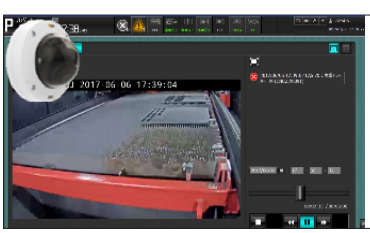
The single processing lens used on the ENSIS-RI is protected by a glass shield which is monitored to alert the operator if there is any contamination that could interrupt production. This glass shield can then be cleaned or replaced as necessary.

Low Cost Cutting Technologies

Clean Fast Cut (CFC) nitrogen processing uses lower gas pressures but increases cutting speeds. Compressed air cutting is possible on many materials with cutting speeds similar to nitrogen. Both are standard features and provide lower cost-per-metre cutting benefits.

WACS II

AMADA's original Water Assisted Cutting System (WACS) has been updated and improved to provide more functionality and thick mild steel processing capability. Higher sheet utilization can be achieved, which is especially important in times when material costs are increasing.

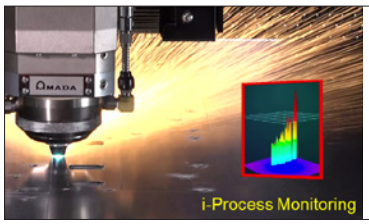


V-Monitor & IoT

Check the real-time machine status remotely on your smart device. Additionally, whenever an alarm occurs, V-Monitor will also record HD video to enable diagnosis of the issue. This links in perfectly with AMADA's IoT support strategy for increased customer profitability.

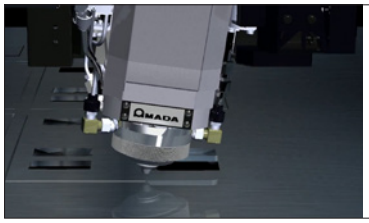
ENSIS 3015 RI Fiber Laser

STANDARD EQUIPMENT AND FUNCTIONS



i-Process Monitoring

This upgraded system is capable of monitoring piercing and cutting results of all thicknesses of mild steel, stainless steel and aluminium. Faster pierce times are possible, depending on the material quality, and cutting issues can be solved automatically for higher productivity.

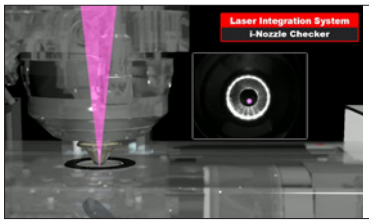


Automatic Head Collision Recovery

If there is a collision when processing flat sheet, the machine stops and the cutting head will automatically retract and realign itself. In conjunction with the i-Nozzle Checker, the nozzle centring is confirmed and the nozzle is replaced automatically, allowing processing to continue.

V-Remote

V-Remote allows remote connection to the AMNC 3i Plus control from anywhere using the internet and a compatible i-Pad device. Schedules, machine status and processing history can be checked. For safety reasons, the machine cannot be started remotely.

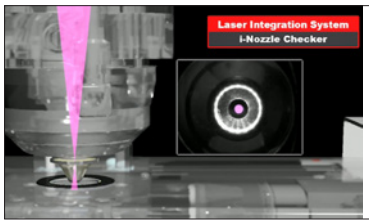


i-Nozzle Checker: Automatic beam to nozzle centring

The i-Nozzle Checker will determine if the beam to nozzle centring requires adjusting. A system within the cutting head will automatically modify the beam position until it is in the correct position. This is completed during every nozzle change.

i-Nozzle Checker: Automatic nozzle condition check

The i-Nozzle Checker will also check the condition of the nozzles before and after a nozzle change. It checks the nozzle shape, position and symmetry to ensure reliable processing. If the nozzle is damaged or sub-standard, it will be automatically changed for another nozzle.



i-Nozzle Checker: Automatic focus position check

Another check that can be completed by the i-Nozzle Checker is to check the laser beam focus position to ensure it is in its optimal position for reliable processing. Once selected, this test is automatically performed and the result registered in the NC control.

i-Camera Assisted System (i-CAS)

i-CAS allows the operator to utilize remnant materials to produce one-off parts or simple nests of parts. A centrally positioned camera captures an image of the whole cutting area, making it a simple task to load parts from the central database and process them on the machine.

AUTOMATION

Automated sheet load/unload functions for the ENSIS-RI can be achieved using the STRI + AS LUL system.

The STRI replaces the standard pallet changer and sits between the ENSIS-RI and the AS LUL tower system. It allows the flat sheets to be transferred from the storage tower to the machine and returned back to the tower after processing. It also allows the safety shield to be quickly and easily moved into position for tube cutting.

Available as single or double tower variants, the AS LUL tower has a very compact design to keep floor space requirements to a minimum. Suction cups are used for the loading operations and the unloading forks use a chain drive to gently unload parts to the finished part pallets. A raw material capacity of 3000 kg on each of the material pallets ensures long, uninterrupted production runs.

AMNC 3i PLUS

The upgraded AMNC 3i Plus system introduces several new features. One of these is the Intelligent Head Control system which can reduce processing times by up to 20% by looking ahead at the next profile to cut and making a decision regarding head retract height. Faster processing times bring cost saving benefits.

Another new feature allows microjoints to be adjusted on the screen, rather than having to change them in the offline software. This can help reduce processing defects and scrap part rates.

SOFTWARE SOLUTIONS

CAD, CAM and ERP connection software modules are all part of AMADA's software eco system, with the necessary ones supplied as standard with the ENSIS-RI.

V-factory is AMADA's gateway into Industry 4.0 and IoT applications. The VC Box allows all the machine data to be collected, which can then be viewed remotely on a smart device. IoT support further enhances machine uptime with remote diagnostics and real-time assistance.

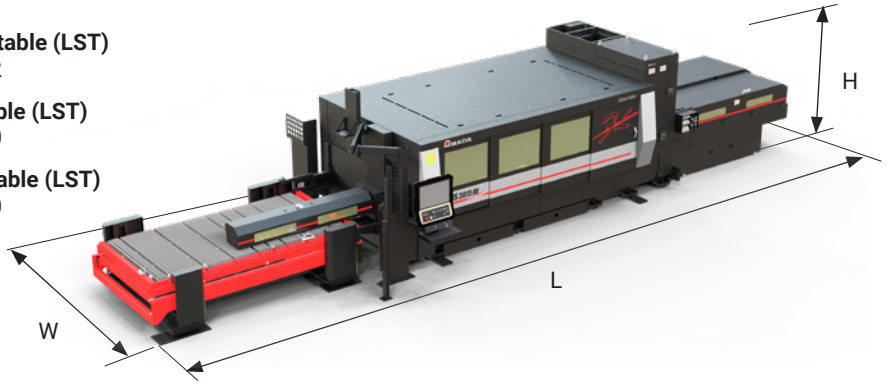
DIMENSIONS

Unit : mm

ENSIS-3015RI 3/6kW + shuttle table (LST)
(L) 12505 x (W) 2915 x (H) 2532

ENSIS-3015RI 9kW + shuttle table (LST)
(L) 12505 x (W) 2915 x (H) 2830

ENSIS-3015RI 12kW + shuttle table (LST)
(L) 12505 x (W) 2915 x (H) 2600



MACHINE SPECIFICATIONS

ENSIS-3015RI			
Numerical control			AMNC 3i PLUS
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 200
Maximum simultaneous feed rate	X/Y	m/min	170
Maximum flat sheet material mass		kg	920
Processing surface height		mm	940

OSCILLATOR SPECIFICATIONS

			ENSIS-3000	ENSIS-6000	ENSIS-9000	ENSIS-12000
Beam generation			Laser diode-pumped fibre laser			
Maximum power		W	3000	6000	9000	12000
Wavelength		µm	1.08			
Maximum processing thickness*	Mild steel Stainless steel Aluminium Brass Copper	mm	25 15 12 8 6	25 25 25 15 12	25 25 25 18 12	25 25 25 18 12

* Maximum value depends on material quality and environmental conditions

ROTARY INDEX SPECIFICATIONS

Chuckable diameter	Round tube Square tube	mm	Ø 19 to 220 □ 19 to 150
	Channels Angles	mm	19 to 150 19 to 130
Diameter through chuck		mm	Ø 19 to 220
Maximum pipe mass		kg	200
Maximum pipe length		mm	6000
Pipe thickness		mm	1 - 9
Angle/channel thickness		mm	1 - 12

SHUTTLE TABLE SPECIFICATIONS

LST-RI		
Max. material dimensions X x Y	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 to EN 60825-1

The official model name of the machines and units described in this catalogue are non-hyphenated like ENSIS RI. Use this registered model names when you contact the authorities for applying for installation, exporting, or financing. The hyphenated spellings like ENSIS-RI are used in some portions of the catalogue for sake of readability.

Hazard prevention measures are removed in the photos used in this catalogue.

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