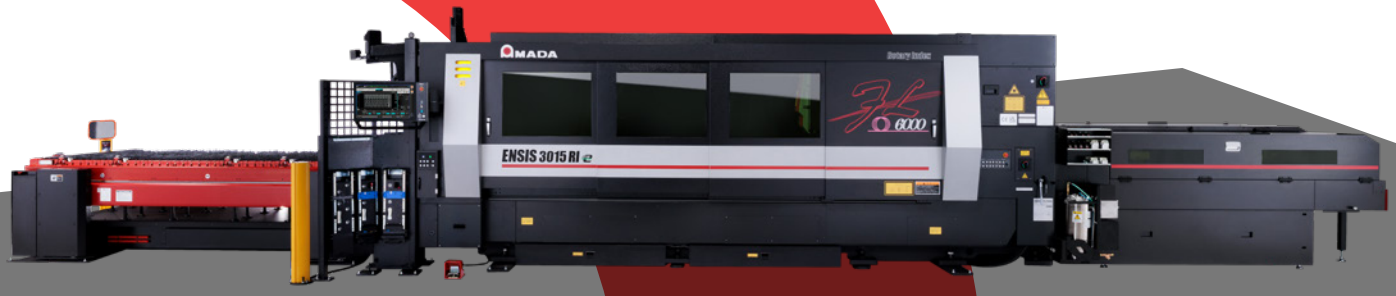
SOLUTION

ENSIS 3015 RI e

SHEET AND TUBE
PROCESSING CENTRE



AMADA

ENSIS 3015 RI e

SHEET AND TUBE PROCESSING CENTRE

HIGH ACCURACY TUBE PROCESSING WITH QUICK CHANGEOVER

FEATURES AND PROCESSES FOR HIGHER PROFITABILITY

Utilising all the benefits of the ENSIS-AJe fibre laser series, the ENSIS-RIe 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-RIe provides the perfect platform to expand your business opportunities.

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

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

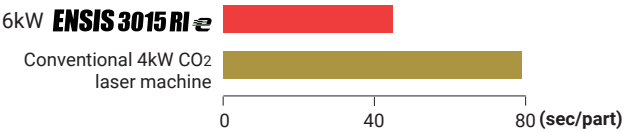
Photograph may include optional equipment

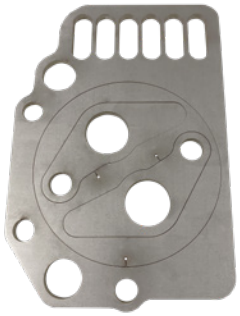
TYPICAL PROCESSING SAMPLES

Mild steel 8.0 mm
180.0 x 180.0 mm

PROCESSING TIME REDUCTION

42.0% **REDUCTION PER PART**

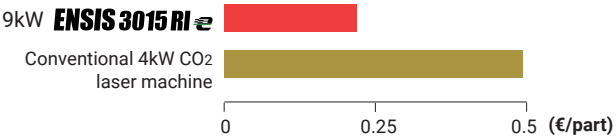




Stainless steel 6.0 mm
155.0 x 228.0 mm

RUNNING COST COMPARISON

57.0% **COST REDUCTION PER PART**

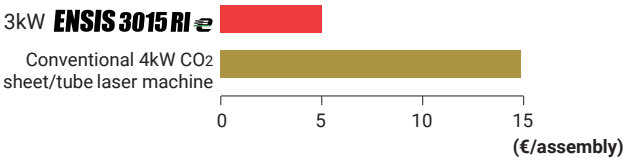


21 parts

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**

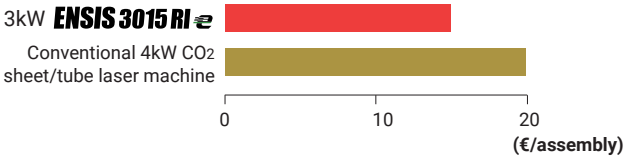


13 parts

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

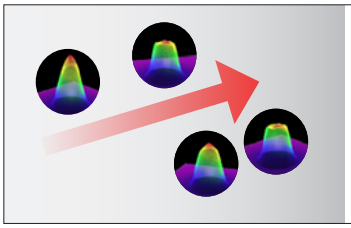
RUNNING COST COMPARISON

24% **COST REDUCTION PER ASSEMBLY**



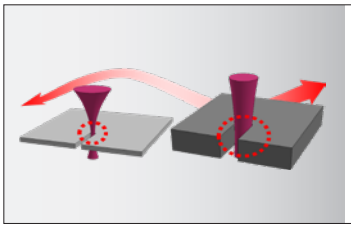
ENSIS 3015 RI e

STANDARD EQUIPMENT AND FUNCTIONS



The Original Variable Beam Control

With the ability to seamlessly change the laser beam mode (not only the spot size and focus point), AMADA's original Variable Beam Control technology automatically matches the most suitable beam shape to the cutting task.



Auto Collimation Technology

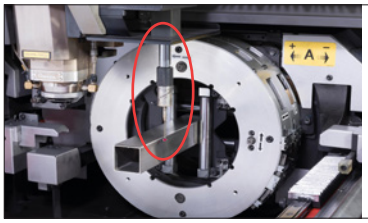
Used on every power except 3kW, AMADA's Auto Collimation technology provides automatic spot size control for the most efficient cutting applications.

V-monitor

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.

AMNC 4ie

The AMNC 4ie numerical control used on the ENSIS-RIe is a 21.5" HD touch screen system that provides simple, intuitive operation for higher productivity. Facial recognition to set access levels, service tutorial videos and connection to AMADA's IoT service systems helps increase machine uptime.

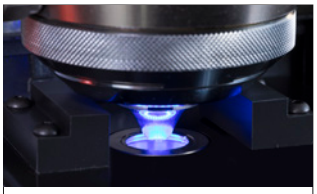


Touch Probe

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.

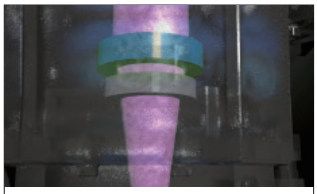
LASER INTEGRATION SYSTEM

As standard, the ENSIS-RIe series includes several automatic functions to increase machine autonomy and reduce operator intervention:



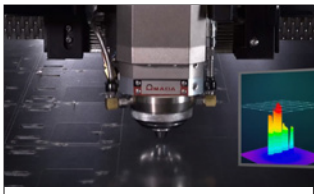
i-Nozzle Checker

Nozzle damage detection + auto centring. Checks nozzle diameter, concentricity and condition.



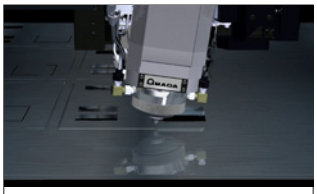
i-Optics Sensor

Protection glass monitoring. Detects abnormalities and informs the operator.



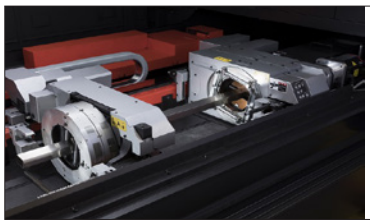
i-Process Monitoring

Pierce and cut failure assistance. Checks all thicknesses of mild/ stainless steel and aluminium.



Auto Head Collision Recovery

Increased uptime. Realigns cutting head, checks nozzle and restarts processing.

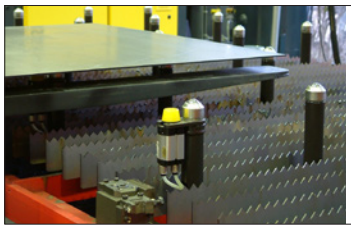


Dual Synchronous Chucks

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.

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.



Free Bearing Table

In order to make material loading easier and safer for a single operator, a free bearing table is included with the standard LSTe pallet changer. This is especially useful when loading and positioning thicker materials.

Quick Change Jaws

To facilitate a wide range of tube and profile processing, the ENSIS-RIe is equipped with a quick change jaw system, allowing tool-free setup and maximising production time.

Beam Shield

To ensure full compliance with EU regulations, the ENSIS-RIe has, as standard, a beam shield to protect operators when longer tubes are processed. When not in use, the shield is stored above from pallet changer.

Automatic Nozzle Changer

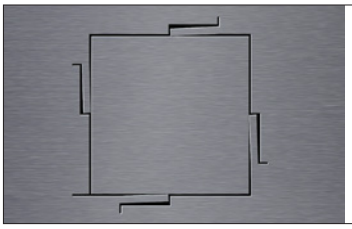
To ensure uptime is maximised, the ENSIS-RIe is equipped with a 16 station automatic nozzle changer for fast changeover times..

Side Access

The ENSIS-RIe has wide opening side doors, allowing quick access to the cutting area to remove parts immediately after cutting.

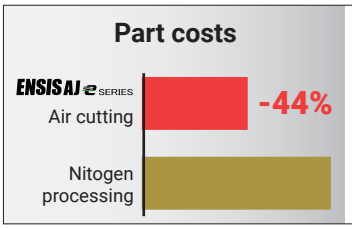
ENSIS 3015 RI e

PROCESS SOLUTIONS



Soft Joint

AMADA has developed the unique Soft Joint function to allow microjoint free part processing and drastically reduce secondary grinding operations.



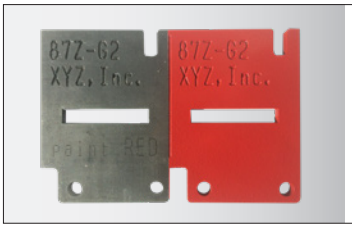
Compressed Air Cutting

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.

Fiber Silky Cut*

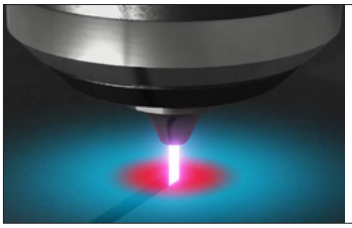
For stainless steel processing, AMADA developed the automatic Fiber Silky Cut function, giving CO2 type quality and maintaining the fibre laser savings for electrical consumption (typically 70% less than an equivalent CO_2 laser).

**Only for 9kW version.*



Deep Etch

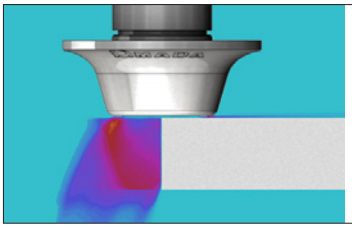
The Deep Etch function, completed in a single pass of the laser beam, allows part identification to be readable even after coating. This provides part traceability through the manufacturing process.



Dual Gas*

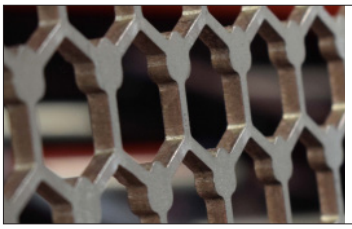
The new Dual Gas function uses a shroud of compressed air to focus the oxygen assist gas into the cutting kerf, improving bevel angles and reducing oxygen consumption when processing thicker mild steel.

**Not available on 3kW version.*



Clean Fast Cut (CFC)

CFC cutting can increase processing speeds for stainless steel and mild steel up to 90%, whilst also reducing assist gas consumption by up to 70% per metre compared to conventional processing.



ECO 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.

** Not available for 3kW version*

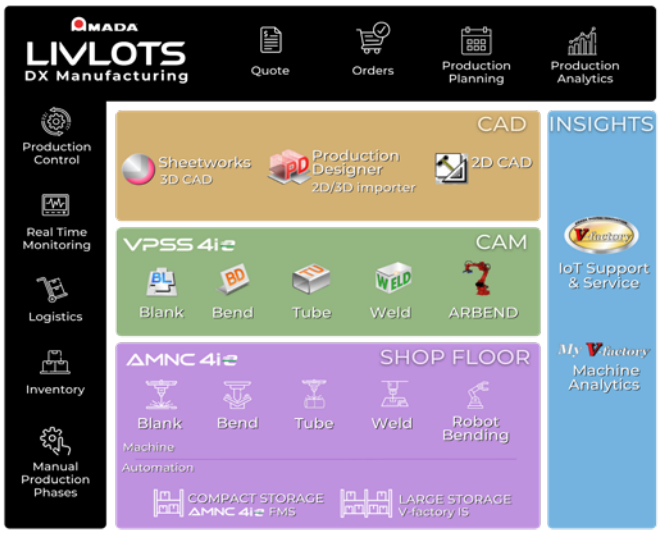
AUTOMATION

Automated sheet load/unload functions for the ENSIS-RIe can be achieved using the STRI + ASF II EU RI system.

The STRI replaces the standard pallet changer and sits between the ENSIS-RIe and the ASF II EU RI 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 tower has a 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.

LIVLOTS



With the brand-new software solution LIVLOTS (LIve Variable LOT production System), AMADA demonstrates how digital transformation can make production processes more efficient and reliable.

Particularly noteworthy is the deep integration into innovative machine technologies, the VPSS 4ie CAD CAM software solution for virtual prototype manufacturing, complemented by predictive support from technical services, which reduces downtime and increases machine availability.

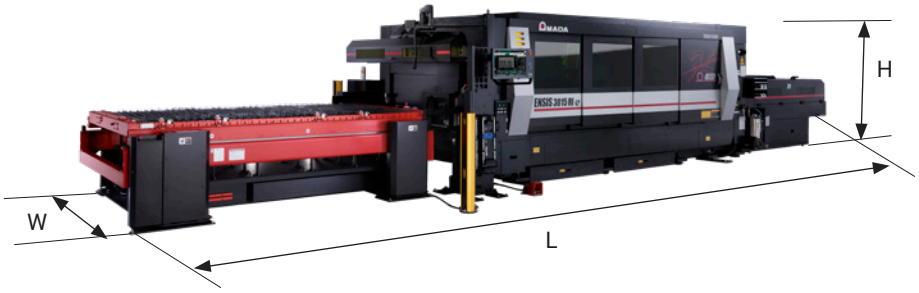
V-FACTORY

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-3015RIe + shuttle table (LST)
(L) 12505 x (W) 2915 x (H) 2532



MACHINE SPECIFICATIONS

ENSIS-3015RIe			
Numerical control			AMNC 4ie
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
Beam generation			Laser diode-pumped fibre laser		
Maximum power		W	3000	6000	9000
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

* 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 - 12
Angle/channel thickness		mm	1 - 9

* Maximum power in Rotary Index mode = 3kW

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 EN3015RIE. Use this registered model names when you contact the authorities for applying for installation, exporting, or financing. The hyphenated spellings like ENSIS-RIe 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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