SOLUTION

REGIUS AJ e SERIES

HIGHEST ACCURACY, MAXIMUM PERFORMANCE

AMADA

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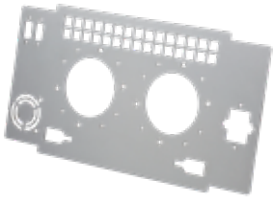
MORE AUTONOMOUS PROCESSING

INTELLIGENT FEATURES TO MAXIMISE UPTIME

The REGIUS-AJe series fibre laser cutting machines utilize AMADA's in-house designed fibre laser engine and incorporate several new technologies aimed at more autonomous processing. These are combined with high speed, 3-axis linear drives and intelligent head control, providing a fusion of technologies which results in ultra high-speed, high accuracy processing capabilities in an ever more demanding market.

Utilising AMADA's Laser Integration System (LIS), the REGIUS-AJe series includes automatic nozzle centring, automatic nozzle checking, automatic focus position checking, automatic protection glass monitoring, automatic head collision recovery and an advanced process monitoring system. The new Fiber Silky Cut function which can provide CO_2 laser type stainless steel cutting quality is also standard on every model except 6kW.

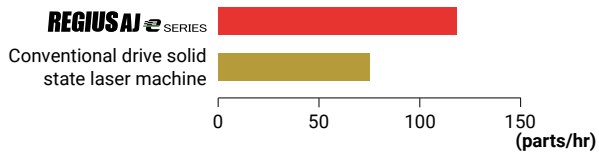
TYPICAL PROCESSING SAMPLES

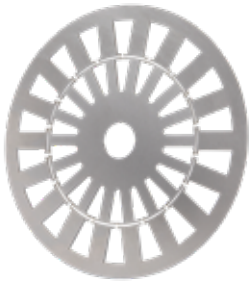


Electro galvanised steel 1.2 mm
286.0 mm x 152.0 mm

RUNNING COST & PRODUCTIVITY COMPARISON

29.0% COST REDUCTION PER PART

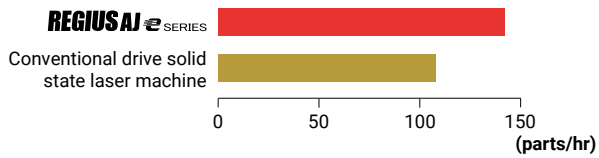




Mild steel 1.2 mm
150.0 mm x 150.0 mm

RUNNING COST & PRODUCTIVITY COMPARISON

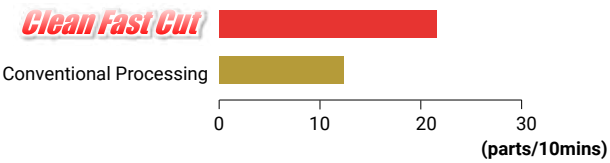
16.0% COST REDUCTION PER PART



Stainless steel 6 mm
246.5 mm x 157.0 mm

RUNNING COST & PRODUCTIVITY COMPARISON

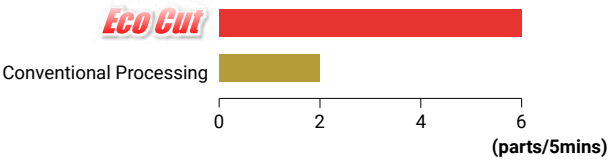
47.0% COST REDUCTION PER PART



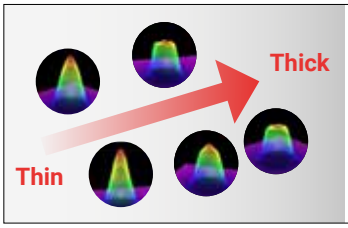
Mild steel 20 mm
125.0 mm x 125.0 mm

RUNNING COST& PRODUCTIVITY COMPARISON

65.0% COST REDUCTION PER PART

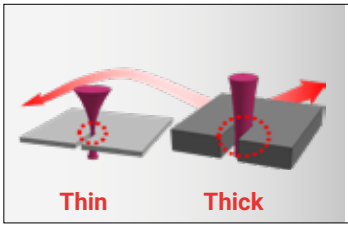


STANDARD EQUIPMENT AND FUNCTIONS



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.

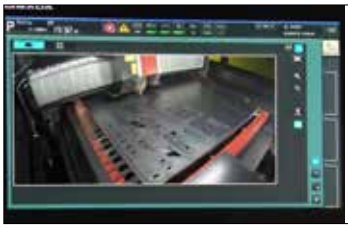


Auto Collimation Technology

Utilised on every model of the REGIUS-AJe, AMADA's Auto Collimation technology provides automatic spot size control for the most efficient cutting applications.

3-Axis Linear Drive

High speed linear drives on all 3 axes of the REGIUS-AJe provide rapid acceleration / deceleration and high accuracy positioning. Combined with the newly developed intelligent head control system, ultra high productivity can be achieved.



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 REGIUS-AJe 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.

LASER INTEGRATION SYSTEM

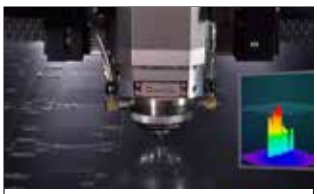
As standard, the REGIUS-AJe series includes several automatic functions to increase machine autonomy and reduce operator intervention:

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.



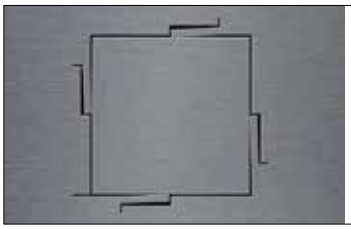
i-Process Monitoring

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.

PROCESS SOLUTIONS



Soft Joint

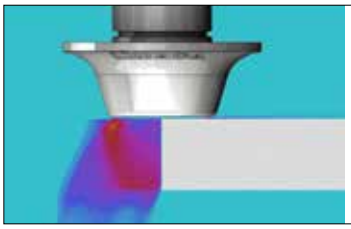
AMADA has developed the unique Soft Joint function to allow microjoint free part processing and drastically reduce secondary grinding operations.

Compressed Air Cutting

The REGIUS-AJe has the ability to process stainless steel, aluminium and mild steel with compressed air, significantly reducing the cost-per-part versus nitrogen processing, especially as cutting speeds for stainless steel and mild steel are generally the same as nitrogen cutting.

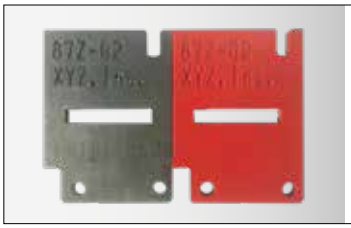
Fiber Silky Cut

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



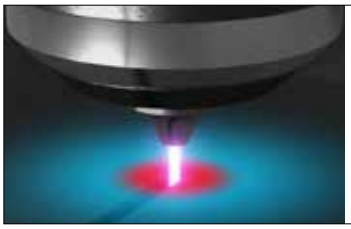
Clean Fast Cut (CFC)

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.



Deep Etch

AMADA's Deep Etch function, completed in a single pass of the laser beam, allows part identification to be readable even after coating and without any secondary operation, allowing part traceability through the whole 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.

ECO WACS II

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

OPTIONAL EQUIPMENT AND FUNCTIONS

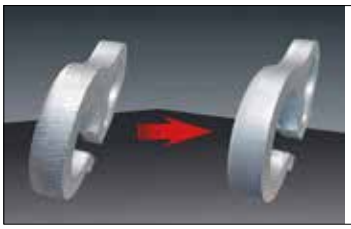
Y-Axis Conveyor*

Increase machine productivity using this Y-axis conveyor that can be positioned towards the front or back of the machine for easier scrap removal, in conjunction with the standard X-axis conveyor.

**Container not included.*

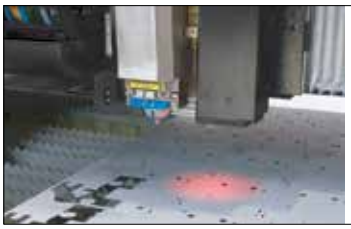
Free Bearing Table

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



Gas Mixer

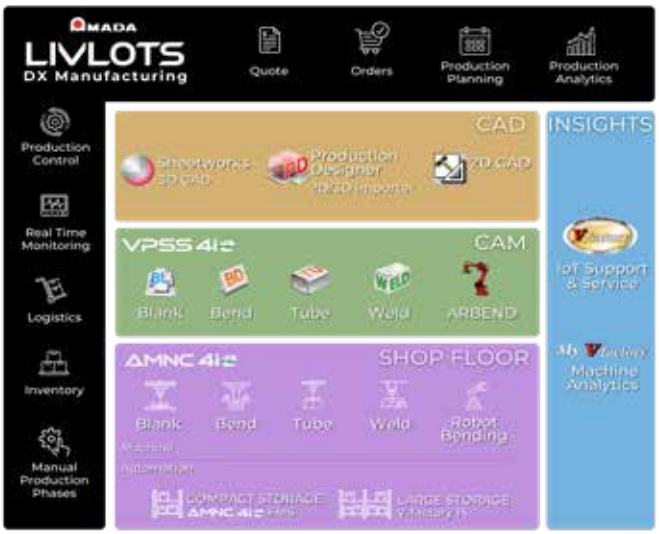
When processing aluminium or mild steel, a mix of nitrogen and oxygen allows the perfect combination of improving the cut quality compared to nitrogen, while keeping the weldability of the material, which can be a problem when processing with oxygen.



OVS-D

The OVS-D 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 of the cut holes are also measured. When the measured values fall outside the specified limits, an alarm is activated.

PRODUCTION PLANNING AND PROACTIVE SERVICE



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.

AUTOMATION SOLUTIONS

MPF 3015
Single pallet 3m L/UL

MP 4020
Dual pallet 4m L/UL

TK Part removers
3m / 4m

ASF II (3m) / ASLUL II (4m)
Single Tower

ASF II (3m) / ASLUL II (4m)
Double towers

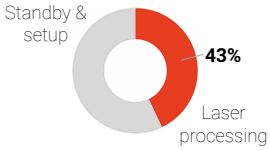
Second output station
3m / 4m

CS II
Stockyard systems 3m

LASER UTILISATION RATE COMPARISON

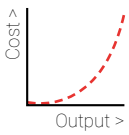
WITHOUT AUTOMATION
Laser utilising the LST pallet changer*

Laser utilisation



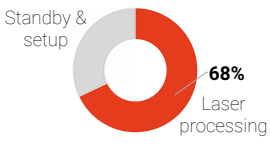
Operators needed

Cost/Output

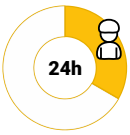


WITH AUTOMATION
Laser utilising an automated tower solution*

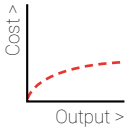
Laser utilisation



Operators needed



Cost/Output



** Utilisation rate based on representative EU customer data in 2022.*

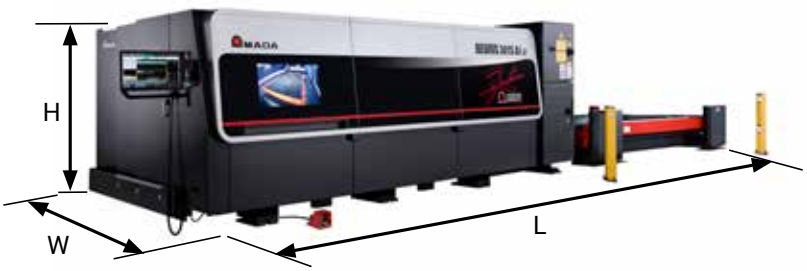
DIMENSIONS

Unit: mm

L x W x H

REGIUS-3015AJe + shuttle table (LST E)
6kW-12kW: 10346 x 2990 x 2450
15kW: TBC
26kW: TBC

REGIUS-4020AJe + shuttle table (LST E)
6kW-12kW: 12174 x 3199 x 2450
15kW: TBC
26kW: TBC



MACHINE SPECIFICATIONS

			REGIUS-3015AJe	REGIUS-4020AJe
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 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	340	
Repeatable positioning accuracy		mm	± 0.01	
Maximum material mass		kg	920	1570
Processing surface height		mm	940	
Machine mass	6kW 9kW 12kW 15kW 26kW	kg	11900 12000 12100 TBC TBC	14900 15000 15100 TBC TBC

** 26kW model does not have B-axis.*

OSCILLATOR SPECIFICATIONS

			ENSIS-6000	ENSIS-9000	ENSIS-12000	ENSIS-15000	ENSIS-26000
Beam generation			Laser diode-pumped fibre laser				
Maximum power		W	6000	9000	12000	15000	26000
Wavelength		µm	1.08				
Maximum processing thickness*	Mild steel Stainless steel Aluminium Brass Copper	mm	25 25 25 15 12	25 25 25 18 12	25 25 25 18 12	30** 25 25 18 15	30** 25 25 18 15

** Maximum value depends on material quality and environmental conditions*
*** To be confirmed - 30mm thickness for LST 3015 E. 25mm for LST 4020 E.*

SHUTTLE TABLE SPECIFICATIONS

		LST 3015 E	LST 4020 E
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 to EN 60825-1

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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