

NEW



The new laser handwork-station **ALS 100**

Latest technology in modern design

The latest welding laser generation in well-proven quality: powerful and reliable

The **ALS 100** is a powerful, universal laser welding machine. It can be used in the creation and repair of **jewellery** and **dentures**, for welding **fine mechanical parts** and **components for medical technology** but also in the production of **sensors and electronic components**. Material deposit on **small moulds** is a further typical application for this laser.

All weldable metals, including **silver** and **titanium** can be joined in a reliable and efficient manner.

The laser offers an even, powerful but nevertheless soft welding behaviour. The mean power of 100 Watts allows a fast pulse frequency (up to 25 Hz) even with high energy settings. This guarantees a homogeneous fusion of the materials and speedy work.

With the new resonator concept of the **ALS 100** the working area in the vertical axis (depth of focus) is extended and thus



Photo: Yasui

minimizes welding mistakes. This is a big advantage for "welding novices" when starting with this new joining technology.

The welding process can be observed optimally through the high-quality optical viewing system with Leica binocular. While working with a high pulse frequency, the enhanced shutter-control offers good visibility during the welding process

A fixed Argon nozzle provides a continuous and even supply of protection gas which guarantees an oxide free weld seam. A second flexible nozzle can be turned on if required. The argon consumption is very low.

The **ALS 100** has a pulse shaping function for welding complex alloys.

Optionally it can be equipped with a **Micro Welding Device**. This allows the joining of very fine parts such as thin foils or wires

The **ALS 100** possesses a high-capacity welding fumes extraction with an amply dimensioned exhaust filter, laid out for long time welding.

The **internal cooling circuit** is made for heavy duty and thus always maintains the required operating temperature. Maintenance work is basically limited to filter and lamp changes.

It takes its power from a standard 230 V socket.

The ergonomic design of the machine and the well-thought-out placement of the display, the key pad and the joysticks allow fatigue free work over a long period of time.

This laser is suited for demanding **manual welding** as well as for welding tasks in the **industrial small batch production**.



Laser welding in handicraft and small batch production

ALS 100



Technical Data

Mechanical Dimension (W x D x H)	570 mm x 800 mm x 1260 mm
Total weight	approx. 70 kg
Electrical supply	1-phase 200 V–240 V / 50–60 Hz / 16 A

Laser

Laser crystal	Nd:YAG, lamp pumped
Wave length	1064 nm
Average power	100 W
Peak pulse power	7 kW
Pulse energy	60 J
Pulse frequency	single pulse 25 Hz
Pulse duration	0.5 ms – 20 ms
Welding spot Ø	0.2 mm – 2,0 mm
Focus adjustment	integrated, motorized
Optical viewing system	Binocular Magnification 15-fold, visual field Ø 16 mm, high quality laser objective with long focal length for optimal welding characteristics and a very good image
Pulse shape	3 preset pulse shapes
Programming memory	39 storable parameter sets
Cooling air nozzle	integrated
Protection gas supply	1 fixed and 1 flexible protection gas nozzle, can be locked individually
Extraction	integrated, with a special mechanical filter class EU 13/K2
Cooling	air-cooled with integrated cooling water circuit, no external cooler required

Options

- Ergo Wedge
- Camera System
- Micro Welding Device for welding spot Ø < 100µm

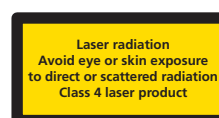
Laser welding with the ALS 100 is done:

- contact free and precise
- with minimal heat affected zone
- without noticeable material distortion
- without endangering temperature sensitive materials

Laser welding with the ALS 100 is:

- stable and firm, similar to the original material
- oxide- and pore-free
- biocompatible without material mix
- free of crevice corrosion

Laser welding with the ALS 100 can reduce the expenditure of time by up to 80% in comparison to conventional joining technologies.



This laser product complies with standard EN 60825 (IEC 825-1) and with FDA Performance radiation Standards 21 CFR Chapter 1 Part 1040.10

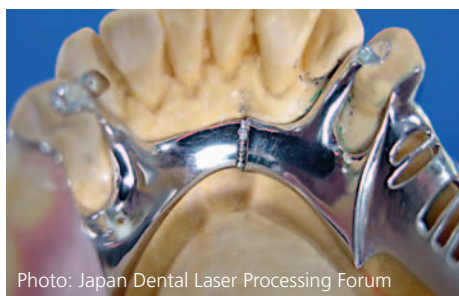


Photo: Japan Dental Laser Processing Forum

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