

# ALV

## The compact laser machine with tailored laser properties

The compact ALV laser welding device with laser-proof working chamber is available with various laser sources, controls and laser power options for the different applications.

The ALV's advantages become visible for fine welding work and build-up welding in tool and mold manufacture.

Thanks to its large vertical movement range and the large doors, even large work pieces can be welded easily in the roomy working chamber.

For open welding of larger work pieces, the working chamber housing can be removed. In that case, additional laser safety measures are required, such as wearing laser protection goggles.

Automatic welding is possible with the optional *WINLaserNC* model.



### Components of the laser system

- Laser  
Fiber laser or Nd:YAG laser  
with 100 W, 150 W or 300 W  
of average power
- Laser-proof working chamber  
(removable)  
with large doors, hand holes,  
viewing window, height-adjustable  
workbench, shielding gas feed,  
dimmable halogen spotlights
- Touch screen
- Microscope attachment
- Two-level foot switch
- Integrated smoke exhaustion
- Laser safety system

### Options

- *WINLaserNC*  
CNC controller for automatic welding  
when producing serial parts
- Rotating axis with chuck  
for rotating cylindrical work pieces
- Ergo wedge for adjusting individual viewing height
- Micro welding function  
for welding spot  $\varnothing < 100\mu\text{m}$  (Nd:YAG only)
- Large selection of objectives,  
e.g. tilt/swing objective, objective  
with LED ring light
- Camera system  
for showing the welding process on a monitor

## Technical Data

		ALV 100 Standard	ALV 100 WINLaserNC	ALV 150 Standard	ALV 150 WINLaserNC	ALV 150 F Standard	ALV 150 F WINLaserNC	ALV 300 F Standard	ALV 300 F WINLaserNC
	Item number:	000-0841A	000-0842A	000-0843A	000-0844A	000-0845A	000-0846A	000-0847A	000-0848A
	Laser type	Nd:YAG, flash lamp pumped				Fiber laser			
	Automatic operation	-	Yes	-	Yes	-	Yes	-	Yes
Dimensions	External dimensions (W x D x H)	65 x 109 x 140 cm							
	weight	approx. 260 kg							
Working chamber	size (W x D x H)	58 x 42 x 49 cm							
	Mounting plate (W x D)	36 x 35.5 cm							
	Work piece weight	max. 50 kg, central load							
Electrical connection	1- or 3-phase	1-phase <sup>1</sup>		3-phase <sup>2</sup>		1-phase <sup>1</sup>			
Laser	wavelength	1064 nm (invisible, near-IR)				1070 nm (invisible, near-IR) + pilot laser			
	laser protection class	4							
	Average power	100 W		150 W		150 W		300 W	
	Peak pulse power	9 kW				CW - 1.5 kW		CW - 3 kW	
	pulse duration	0.2 - 20 ms				0.2 - 50 ms or CW <sup>3</sup>			
	Pulse energy	75 J				15 J		30 J	
	pulse frequency	Single pulse - 50 Hz		Single pulse - 100 Hz		Single pulse - 100 Hz			
	Pulse shaping	6 pulse types				10 fixed, 5 var.	10 fixed, 10 var.	10 fixed, 5 var.	10 fixed, 10 var.
	Laser cooling system	Water cooled				Air cooled			
Welding	Focal spot Ø	0.2 - 2 mm With fine welding function (optional): < 100 µm				0.2 - 2 mm			
	Focal length	f = 150 mm							
Movement system	Travel range (X, Y, Z)	100 x 85 x 250 mm							
	Travel speed	0-25 mm/s							
Miscellaneous	Welding gas feed	Contained							
	Welding smoke extraction	Integrated							

<sup>1</sup> 1-phase: 1 x 230 V, 50 - 60 Hz, 1 x 16 A + grounding conductor

<sup>2</sup> 3-phase: 3 x 400 V, 50 - 60 Hz, 3 x 10 A + neutral and grounding conductor

<sup>3</sup> CW = continuous wave

ALV  
without working  
chamber housing  
and with rotating axis

