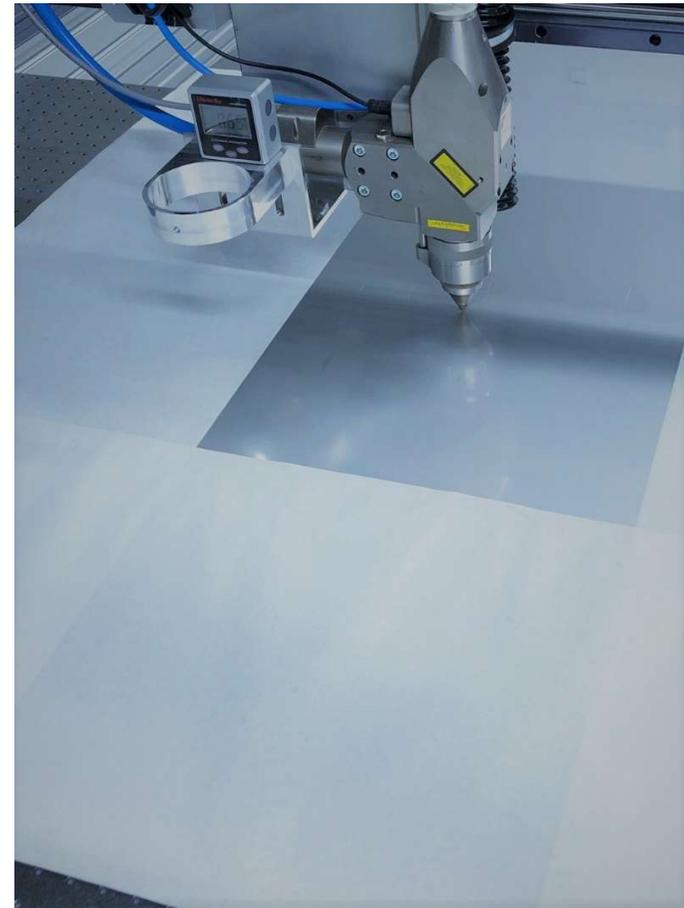


**MKF 2000**  
**High Precision Laser Welding**  
**System for Sleeves and Sheets**



# MKF 2000

## General specifications

<b>Sleeve Dimensions</b>	up to 2,000 x 1,600 mm
<b>Cutting width</b>	20-30 $\mu\text{m}$
<b>Seam width</b>	75 – 200 $\mu\text{m}$ (depending on material thickness)
<b>Laser system</b>	CW Fiber YAG laser, specially designed for sleeve manufacturing - transfer step: 1 $\mu\text{m}$ - transfer area: 2000 x 1600 mm - special alignment table - quick change of cutting and welding heads
<b>Table work-frame and linear stages</b>	High quality jigs and tools with necessary adjustments
<b>Machine dimensions</b>	Length      3000 mm Width        2500 mm Height       2000 mm Weight       1,200 kg



# MKF 2000



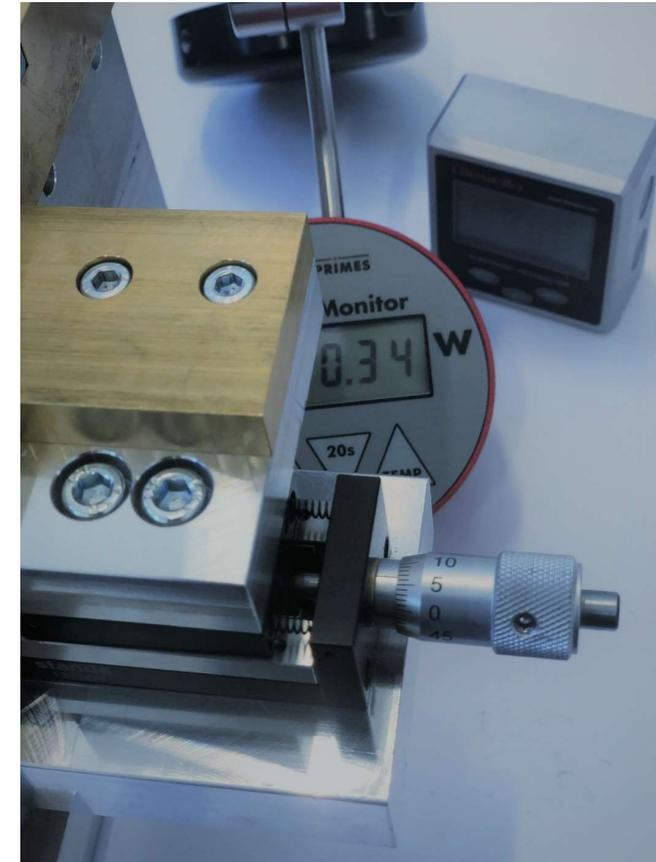
## Detailed specifications of the system

- |                            |  |  |   |
|----------------------------|--|--|---|
| <b>1. Laser equipment</b>  | <ul style="list-style-type: none"><li>- Continues wave (CW) laser supply for cutting and welding</li><li>- Cutting and welding optics and heads</li><li>- Fiber, parameter control</li></ul> | <b>6. CAD / post-processing programs</b> | <ul style="list-style-type: none"><li>- CAD version</li><li>- Post-processing program for G code creation</li></ul>   |
| <b>2. Laser work frame</b> | <ul style="list-style-type: none"><li>- Laser table mechanics</li><li>- X-Y-Z motions and rotation table</li></ul>   | <b>7. Characterization</b>               | <ul style="list-style-type: none"><li>- Measuring devices</li><li>- Microscope</li></ul>  |
| <b>3. Laser control</b>    | <ul style="list-style-type: none"><li>- Control, servomotors (5) and drivers</li><li>- Electronics cabinet</li></ul>   | <b>8. Laser safety</b>                   | <ul style="list-style-type: none"><li>- Exhaust piping from laser to house ventilation system</li><li>- Safety goggle</li><li>- Warning lights</li><li>- Training</li></ul> |
| <b>4. Laser monitoring</b> | <ul style="list-style-type: none"><li>- Camera</li><li>- 38" / 43" screen</li><li>- Hair cross generator</li></ul>   | <b>9. Other</b>                          | <ul style="list-style-type: none"><li>- Cut/weld gas system</li></ul>   |
| <b>5. Jigs</b>             | <ul style="list-style-type: none"><li>- Cutting jigs</li><li>- Welding jigs</li></ul>  |  |   |

## Main advantages of MKF 2000

### Technical

<b>Welded plates/sleeves to each other</b>	< 10 $\mu\text{m}$
<b>Alignment accuracy</b>	< 10 $\mu\text{m}$
<b>Height variation of the plates</b>	< 10 $\mu\text{m}$
<b>Roughness of seam</b>	- standard process: < 10 $\mu\text{m}$ - laser smoothed: < 5 $\mu\text{m}$
<b>Seam width</b>	75 – 200 $\mu\text{m}$ (depending on material thickness)
<b>Sleeve/plate thickness</b>	up to 300 $\mu\text{m}$ , recommended minimum thickness 150 $\mu\text{m}$
<b>Plates per sleeve</b>	up to 30 plates can be connected
<b>Welding speed</b>	Typical speed 0.5 – 1 m/min



# A transverse profile of the laser smoothed seam



A transverse profile of the laser smoothed seam