

## WSweld IN A NUTSHELL

**WSweld** is the machine add-on you have been waiting for. The Laser Welding Head TC08 turns your TRUMPF **flatbed laser cutter into a laser welder**.

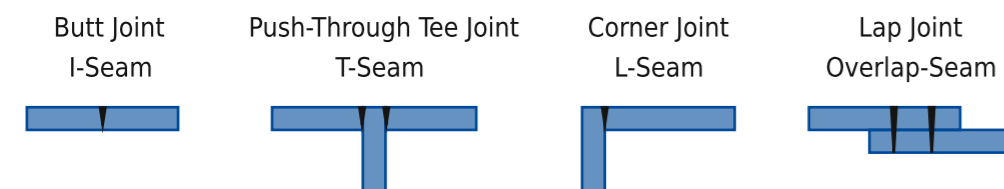
### YOUR ADVANTAGES

Laser welding offers clear advantages over conventional welding. The **seam does not require any re-working** because of the laser's extreme precision. Because of this preciseness, energy is put into the workpiece much more locally. Together with the almost perfectly parallel outside borders of the laser welding seam, this means that there is **basically zero deformation** of the welded workpiece. The laser's **very high processing speed** furthermore allows for very small working times per workpiece. You can utilize all this fully automatically, with highest reproducibility.

**Heat conduction** and **deep penetration welding** are both possible with this one welding head and enable you to produce perfectly laser welded parts of highest quality.

**The complete package WSweld consists of the Laser Welding Head TC08, the Modular Processing Table, the 3D Programming-Suite and the Starter Kit.**

### Possible Seams



### Materials that can be laser welded

Material	Suitability	Max. penetration depth
1.0330	Very good	4,5 mm
1.0037	Very good	4,5 mm
1.0976	Very good	4,0 mm
1.0577+N	Very good	4,0 mm
1.4301	Very good	3,5 mm
1.4316	Very good	3,5 mm
1.4571	Good	3,5 mm

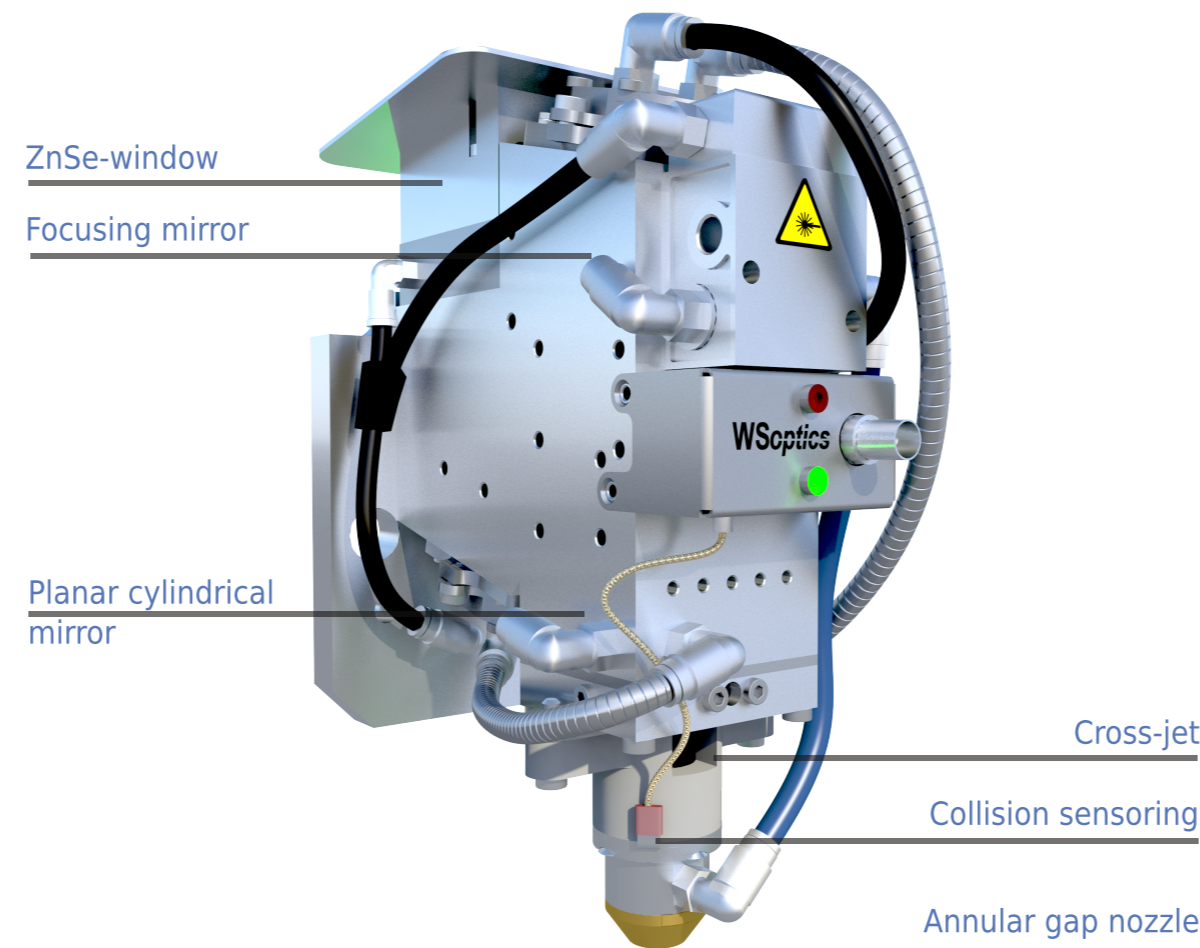
We are happy to assist you if you have questions about different materials.

The maximum possible penetration depth depends on the power of your laser. Approximately 1mm to 1.5mm of depth are possible per 1 kW laser power.

## YOUR LASER WELDING HEAD TC08

### Technical Specifications

- ◆ Z-folded optical layout resulting in perfect laser welding results
- ◆ Protection of the laser source with a ZnSe-window that is automatically monitored by the machine's automatic lens control system
- ◆ Active cooling of all optical elements such as planar cylindrical mirror, focusing mirror, and ZnSe-window using the machine's cutting gas supply
- ◆ Active collision sensing that automatically shows any contact of the nozzle
- ◆ Cross-jet preventing particles from entering the optics. The machine's cutting gas is used for this.
- ◆ Coaxial flow of the welding gas via a specially designed annular gap nozzle. Use of Argon or optionally Helium (recommended at laser powers of 2500 Watts and above) for perfect laser welding seams.



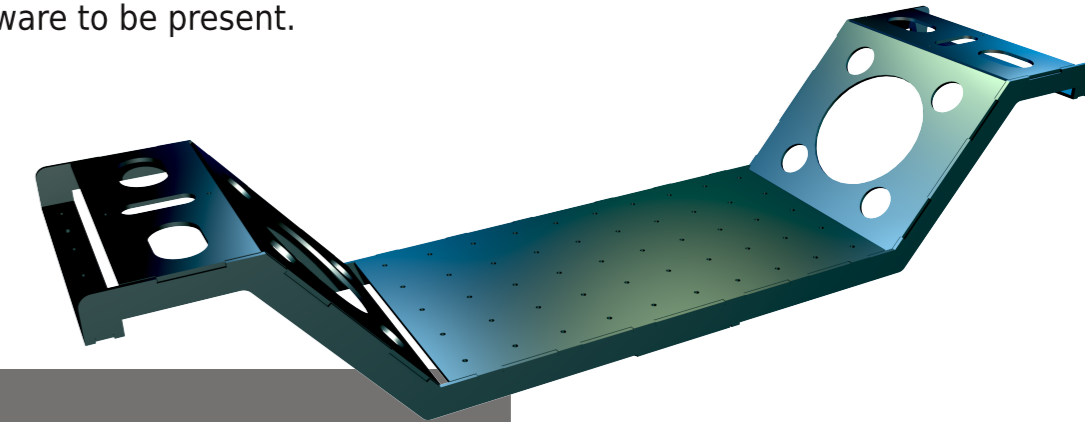
## YOUR NC PROGRAM

The **3D Programming-Suite** takes charge of creating machine programs for you.

Your 3D model is imported as a **STEP-file**. You then place your workpiece together with its fixture on the Modular Processing Table. After selecting the workpiece's material, **by simple point and click** you **select the contours** you want to weld along with their welding type (heat conduction or deep penetration) and their depth or width.

By doing a full **simulation** of the movement of the axes, the 3D Programming-Suite **verifies** the whole program automatically. It emits an **NC program** the you can run directly on your flatbed machine.

The 3D Programming-Suite is entirely independent and does not require any further software to be present.



## YOUR WORK PREPARATION

The **Modular Processing Table** offers a simple yet clever design. A fixed-grid mounting hole system allows you to precisely position your fixtures on it. The Modular Processing Table itself is **fixed precisely** relative to the machine by alignment pins. The two open sides allow the machine's extraction system to work properly.

With the Modular Processing Table, you can **mount fixtures while the machine is in use**. You might cut or weld with one Modular Processing Table while another one is available for mounting in parallel. Furthermore, several Modular Processing Tables can be **combined** in one machine, allowing its **whole interior space** to be utilized for workpieces. This allows for a great **variety** of possibilities.

For the first installation, a centering cone is mounted on the Modular Processing Table. With a special teaching nozzle, the Laser Welding Head TC08 is then positioned against the centering cone. This position is entered into the 3D Programming-Suite, which thereafter knows the exact position of the Modular Processing Table and thus all fixtures and parts mounted on it.



## IT'S AS SIMPLE AS THAT

**Changing** the Laser Welding Head TC08 is as simple as changing two cutting heads. Only one additional hose carrying the welding gas is connected.

**Changing from cutting** to welding or back is done **in under 10 minutes**. You do not have to change the machine's settings as the 3D Programming-Suite automatically generates the necessary **laser technology tables** for you! Personnel familiar with your flatbed laser cutter can **start laser welding in no time**. You insert the workpiece, close the door and press start.

## THE FOLLOWING MACHINES SUPPORT LASER WELDING WITH WSweld

- ◆ TRUMPF TruLaser 3030 classic
- ◆ TRUMPF TruLaser 5030 classic
- ◆ TRUMPF Trumatic L2530
- ◆ TRUMPF Trumatic L3030
- ◆ TRUMPF Trumatic L3040
- ◆ TRUMPF Trumatic L3050

If you have a different type of machine and are interested in our laser welding solution, we are happy to discuss your possibilities with you.

## EXTRAS

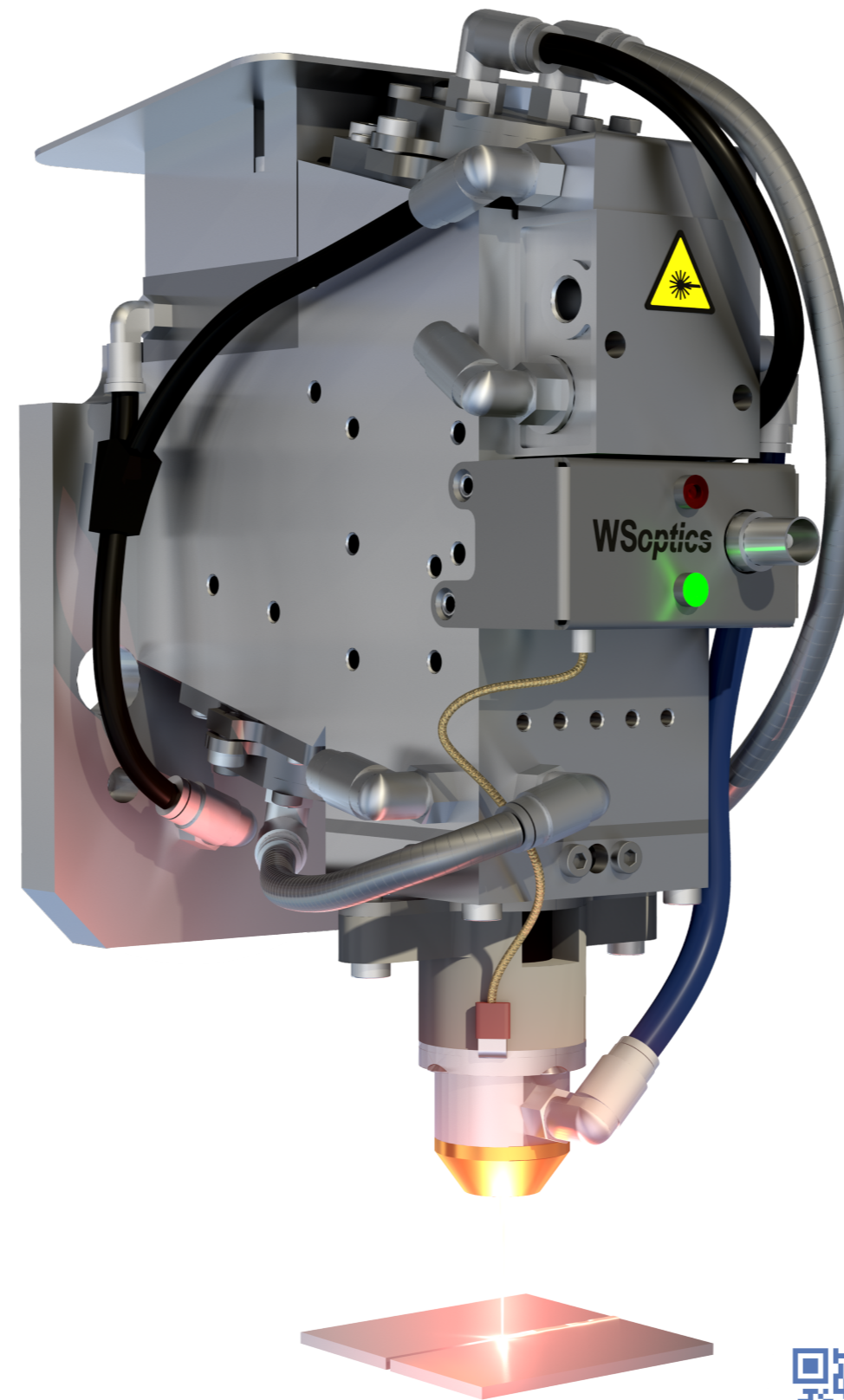
For a smooth start into laser welding, we offer a special **Starter Kit**. It contains three annular gap nozzles, one planar cylindrical mirror, one focusing mirror, and one ZnSe-window.

If necessary, we can always supply you with **spare parts**, support you in your **fields of laser** welding applications, or discuss **custom solutions** for you.

## WSweld

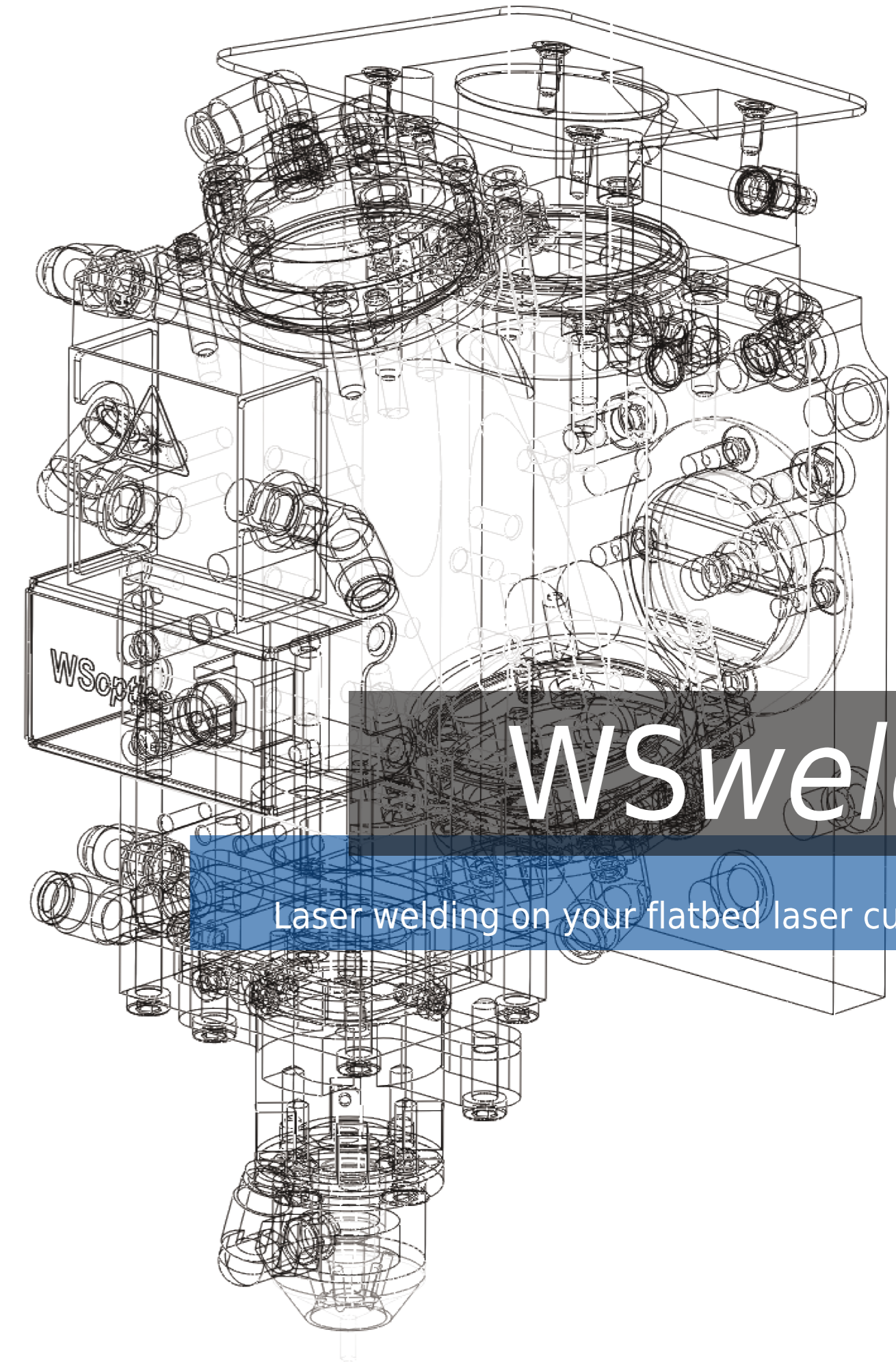
With a **minimal investment** and through the change of heads you benefit from a **change of technologies**. This change is fully reversible within minutes, allowing you to use your flatbed laser cutter both for cutting and laser welding. WSweld makes it possible to gain a **technological lead** with your existing machine!

## WSweld LASER WELDING HEAD TC08



# WSoptics

# WSoptics



# WSweld

Laser welding on your flatbed laser cutter

PLEASE FEEL FREE TO CONTACT US



WSoptics GmbH | Zugspitzstraße 9 | 86972 Altenstadt | Germany  
☎ +49 8868 1819970 ✉ info@wsoptics.com 🏠 www.wsoptics.com