# TruLaser Cell Series 7000

## TruLaser Cell Series 7000: Benefits at a glance.

1. Modular design and customized retrofit options.
2. Flexible processing options.
3. The best processing quality.
4. Cost-efficient manufacturing.
5. Easy, ergonomic operation.

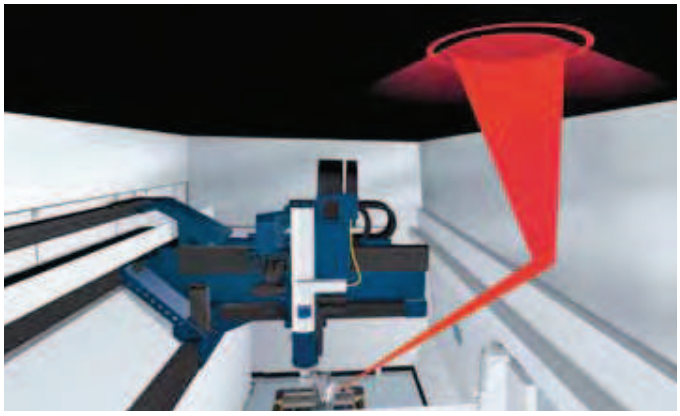
With a flexible laser system from the TruLaser Cell Series 7000, you have everything you need – regardless of whether you want to process two or three-dimensional components or tubes. This applies to manufacturing prototypes as well as high-volume production. You can cut or weld thin and thick metal components, or even specifically change surfaces with deposition welding. Virtally any type of metal can be processed including mild steel, galvanized sheet metal, aluminum, or even stainless steel.

## Modular design and customized retrofit options.

The TruLaser Cell Series 7000 gives entry level users easy and low cost access to laser processing. Different components can be combined according to a modular principle and easily upgraded when needs change. You can be sure to find the machine you need and the appropriate laser in the TRUMPF product portfolio. Its configuration depends on your specific application - for example, if your application would be best served with a $CO_2$ or solid-state laser. In addition, you can choose from different working ranges and adapt the modular welding optics to the widest variety of tasks.

Numerous automation modules increase productivity. To set up and produce simultaneously, the right choice is a two-station operation with a partition that divides the workspace into two areas. The perfectly attuned safety concept allows you to implement a two-station solution, even when using solid-state lasers which require greater safety precautions. The linear changer's movable worktables make it easy to exchange parts. The rotary changer is particularly well suited for high quantities and simplifies component handling in the loading and unloading stations. If requested, robots can handle component loading and unloading.


Two-station operation: loading and unloading while processing.



Two-station operation with a solid-state laser: highly reflective side panels and an absorbent canopy.

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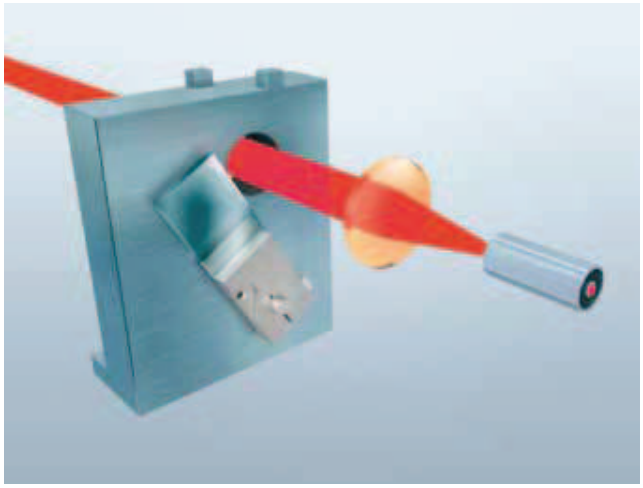
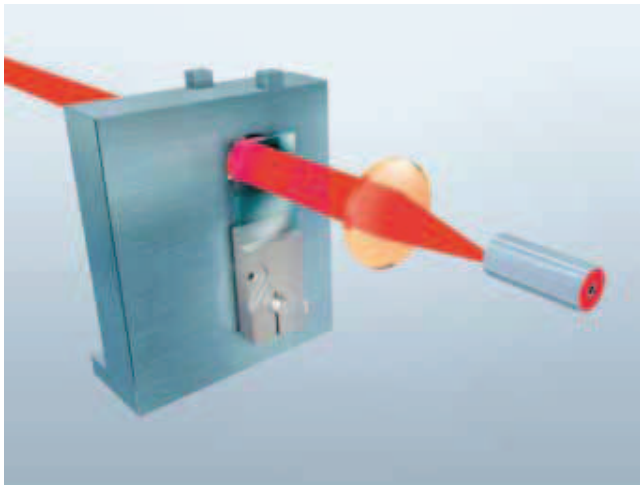




**Top and bottom:** Automatic switching of optical parameters using the 2in1 fiber.

## Flexible processing options.

The TruLaser Cell Series 7000 can be used for cutting, welding and deposition welding. The 2in1 fiber solution for solid-state lasers enables the same optical cable to be used for both welding and cutting operations. The innovative fiber consists of an inner core and an outer ring. For cutting applications, the laser beam is coupled into the fiber core, while in welding applications it is coupled into the outer ring. In each case the appropriate depth of field and the optimum beam focal diameter are guaranteed. To switch from cutting to welding or vice versa, it is merely necessary to replace the processing optics– the system controls will automatically adjust the output. Therefore, you not only achieve the optimum processing results, but also benefit from owning a system that is easy to operate and can be used in a wider range of applications.

## The best processing quality.

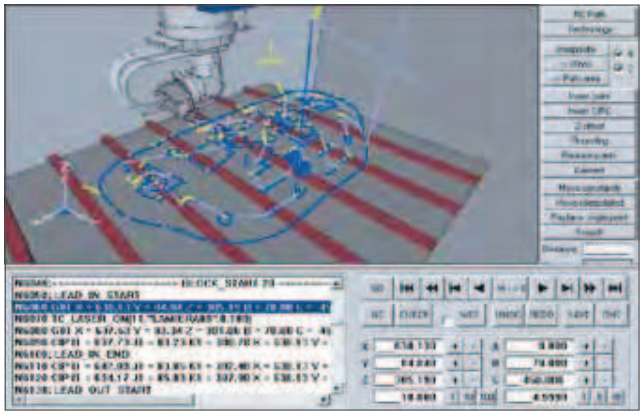
Uniform processing results are guaranteed by the automatic raw beam adjustment of $CO_2$ lasers across the entire operating range. Additionally, all of TRUMPF's laser expertise is stored in the technology tables so you can quickly modify your machines to different materials and sheet thicknesses for cutting and welding. All mirrors are water-cooled to guarantee stable processes and constant optical conditions.

## Cost-efficient manufacturing.

The TRUMPF TruLaser Cell Series 7000 sets new standards in terms of speed and production efficiency. A major contributing factor is unrivaled positioning speeds and axis acceleration rates. On-the-fly piercing when cutting with the FastLine Cell reduces unproductive time by up to 40%. The dynamic cutting optics allow very high acceleration rates and ensure a constant distance between the nozzle and the workpiece. The magnetic coupling on the processing head reduces downtime by cutting the contact between the optics and the Z axis in the event of a collision, triggering a safety shutdown. A simple manual intervention is all that is needed to reestablish a precise connection. The LensLine function monitors the focusing lens and disconnects the laser before it emits any contaminating vapor, preventing contamination of the beam guidance system and increasing availability.

## Easy, ergonomic operation.

A number of innovations make operating a TruLaser Cell Series 7000 extremely comfortable. The ergonomic control panel is suspended from the machine enclosure saving space. It can be rotated, operated from the enclosure or, as an option, moved to the ideal position along the front side of the machine. The 6D mouse makes it easy to run-in, teach-in and move the axes quickly. Using the TruTops Cell Basic software, programs can be adjusted quickly and easily directly on the machine – without requiring changes to be made via the offline programming system. The control unit itself detects which processing optics is installed. The optics can be exchanged quickly and without errors.



**Top photo:** Always in the right location: the movable control panel.
**Center photo:** Rapid run-in and teach-in using the 6D mouse.
**Bottom photo:** Change programs on the machine using TruTops Cell Basic software.


**TruLaser Cell Series 7000**

| | TruLaser Cell 7040 | TruLaser Cell 7020 | TruLaser Cell 7006 |
|---|---|---|---|
| **Working range** | | | |
| X axis | 160 in. | 80 in. | 26 in. |
| Y axis | 60 in./80 in. | 60 in./80 in. | 60 in./80 in. |
| Z axis | 30 in. | 30 in. | 30 in. |
| B axis | ± 135° | ± 135° | ± 135° |
| C axis | n x 360° | n x 360° | n x 360° |
| Dynamic cutting optics | ± 0.4 in. | ± 0.4 in. | ± 0.4 in. |
| **Axis speed** | | | |
| Simultaneous | 6811 in/min | 6811 in/min | 6811 in /min |
| X\|Y\|Z linear axis | 3937 in/min | 3937 in/min | 3937 in/min |
| B\|C axis | 90 $min^{-1}$ | 90 $min^{-1}$ | 90 $min^{-1}$ |
| **Axis acceleration** | | | |
| Simultaneous | 1.6 g | 1.6 g | 1.6 g |
| X\|Y\|Z linear axis | 0.9 g\|1.0 g\|1.0 g | 0.9 g\|1.0 g\|1.0 g | 0.9 g\|1.0 g\|1.0 g |
| B\|C axis | 200\|100 $rad/s^2$ | 200\|100 $rad/s^2$ | 200\|100 $rad/s^2$ |
| Dynamic cutting optics | 4 g | 4 g | 4 g |

| | |
|---|---|
| **TRUMPF laser** | |
| Max. output of TruFlow $CO_2$ laser | 15000 W |
| Max. output of TruDisk solid-state laser | 6600 W |
| **Precision**[1] | |
| Lowest programmable path measurement | 0.00004 in. |
| **Max. repeatability**[2] | |
| Linear axes X\|Y\|Z | 0.001 in. |
| Rotation axes B\|C | 0.005° |
| **Max. position deviation**[2] | |
| Linear axes X\|Y\|Z | 0.003 in. |
| Rotation axes B\|C | 0.015° |

[1] The achievable accuracy in the workpiece depends on the type of workpiece, its pretreatment, sheet size, material type, and position in the work area among other things. Due to the modular program of the TruLaser Cell Series 7000, the technical data is based on a variety of components which result from the options selected.

[2] Pure mechanical precision without control compensation, measured in accordance with VDI 3441 through the total length of axis travel.