

# LAPRISS. AUTOMATED LASER WELDING

Panasonic offers a laser welding process based on proven and optimally matched components. The process is easy to program via the integrated laser navigation system.



**WORLDWIDE UNIQUE  
LASER SOURCE WITH A  
WAVE LENGTH OF 975 nm**



**DIRECT DIODE LASER –  
INSTANT WAVELENGTH  
UNIFORMING**



**THE ONLY DIRECT DIODE  
LASER WORLDWIDE WHICH  
ALLOWS 2D / 3D CUTTING  
AND DISTANCE WELDING**



**DEEP, STRONG &  
CONSISTENT  
WELD BEADS**



**NEW SEAM GEOMETRIES  
POSSIBLE WITH TREPANNING,  
WITHOUT ROBOT MOVEMENT!**



**HIGHER COST EFFICIENCY  
AND LOWER  
OPERATING COSTS!**

# LAPRISS. AUTOMATED LASER WELDING



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# LASER PROCESSING ROBOT INTEGRATED SYSTEM SOLUTION

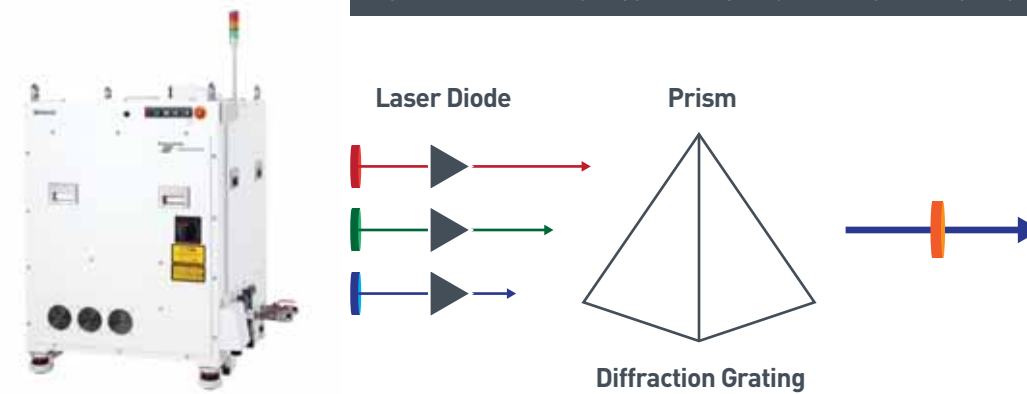
Thanks to this unique and innovative concept, in which all components involved in the process are controlled by the central CPU in the robot controller, a significantly faster communication speed between the subsystems without interfacing problems has been achieved.



## LAPRISS. LASER OSCILLATOR

Laser oscillator equipped with Wavelength Beam-Combining (WBC) Technology: The WBC technology does not require an additional medium for laser beam generation as compared to conventional fiber lasers! The output beam has the same quality as the wavelength of the laser diode. This results in laser wavelengths of 950 ~ 990 nm. Fiber splicing is completely eliminated! LAPRISS offers you the world's highest beam quality of all direct diode lasers in the kW class.

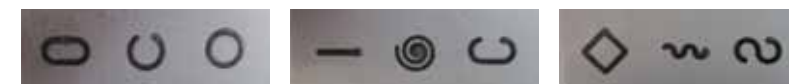
LASER BEAM WAVELENGTH COMBINATION = ULTRA BRIGHT DIRECT DIODE LASER



## LAPRISS. TREPANNING LASER HEAD

Lightweight and compact 4.5 kg laser head: Due to the low weight of the laser head, it is possible to integrate the fast and lightweight robots from our TM series. Trepanning speeds of up to 75m / min can also be achieved! Furthermore, servo-motor-adjustable water-cooled lenses are installed within the laser head, which allow for new weld seam geometries without additional robot movement (Trepanning). These lenses are protected with a Ø3cm glass, which can be exchanged very easily, inexpensively and without tools. The protective glass as well as the use of a Jet-Nozzle additionally prevent contamination and damage to the lenses caused through welding spatter as well as smoke & dust.

NEW WELD SEAM GEOMETRIES THANKS TO TREPANNING WITHOUT ROBOT MOVEMENT!



## LAPRISS. LASER ROBOT AND ROBOT CONTROLLER

Complete control using 1 single hand-held programmer: The entire LAPRISS solution, laser oscillator, laser head and robots are controlled by 1 single hand-held programmer. Unnecessary interface problems are a thing of the past! The control system is equipped with a laser-dedicated software and thus allows a combined communication of all components. All supply cables are routed through the robot arm. This minimizes the effects of mass inertia and possible interference due to interconnecting lead movement!



Welding with the laser spinning process from Panasonic allows you to reduce cycle times, prevent undercut at high penetration depths as well as achieve very good gap bridging and very low thermal distortion.

REDUCED CYCLE TIMES



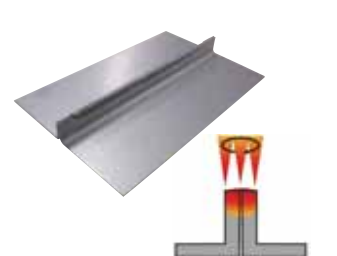
The achievable penetration with laser welding in combination with Panasonic's innovative laser spinning process allows a blind double fillet weld with full penetration in a single pass.

BURN THROUGH PREVENTION



The concentrated heat input in combination with the innovative laser spinning process allows an optimum, consistent welding quality and gap bridging for thin plates.

REDUCED DISTORTION



The concentrated heat input prevents unnecessary heating of the surrounding material and thus reduces overall heat input and thermal distortion.