LASERHEAD-S

HIGH FUNCTIONAL HIGH-POWER SCANNER PROCESS HEAD

The LASERHEAD-S is a versatile scanning process head designed for a wide range of surface processing tasks. It enables complex laser hardening applications, as well as laser welding and laser soldering tasks, including gap bridging, on a scan field with a maximum edge length of 250 mm. To address specific process requirements, various wobble patterns can be selected or customized, which proves beneficial in mitigating crack formation in challenging materials.

One notable feature of the LASERHEAD-S is its comprehensive temperature control system, which ensures precise regulation of the area-wide workpiece surface temperature. This is achieved through the integration of an infrared (IR) camera that operates coaxially with the laser beam. Additionally, a coaxially guided Ethernet camera is employed for visual observation, fine-tuning, and image processing, enhancing the overall control and accuracy of the process.

The scanner optics are characterized by a compact and lightweight design. The complete control as well as the electronic components are accommodated in the process head. The LASERHEAD-S has a completely water-cooled housing and is protected against possible laser-induced damage thanks to suitable sensor technology - continuous operation under high performance is thus guaranteed.

In addition, the LASERHEAD-S has add-on components such as a cross-jet with a process gas nozzle.

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Technical data

Laser	*max. 4,000 W multi mode (CW or pulse) or 3000 W single mode (CW)*
Laser type	*Fiber laser (1,070 nm)*
Spot size	*Ø 0.01–5 mm*
Focusing lens	*250 mm/500 mm (standard) – 150 mm (optional)*
Collimation	*60 mm (standard) – 90 mm (optional), motorized focus adjustment*
Process monitoring	*Ethernet camera*
Temperature control	*IR-camera*
Cooling	*Water*
Process gas	*Ar or N_2*
Dimensions (W × D × H)	*260 × 160 × 350 mm*
Weight	*approx. 8 kg*
Mounting type	*Machine connection via direct flange or Schunk quick clamping adapter*

V1.0