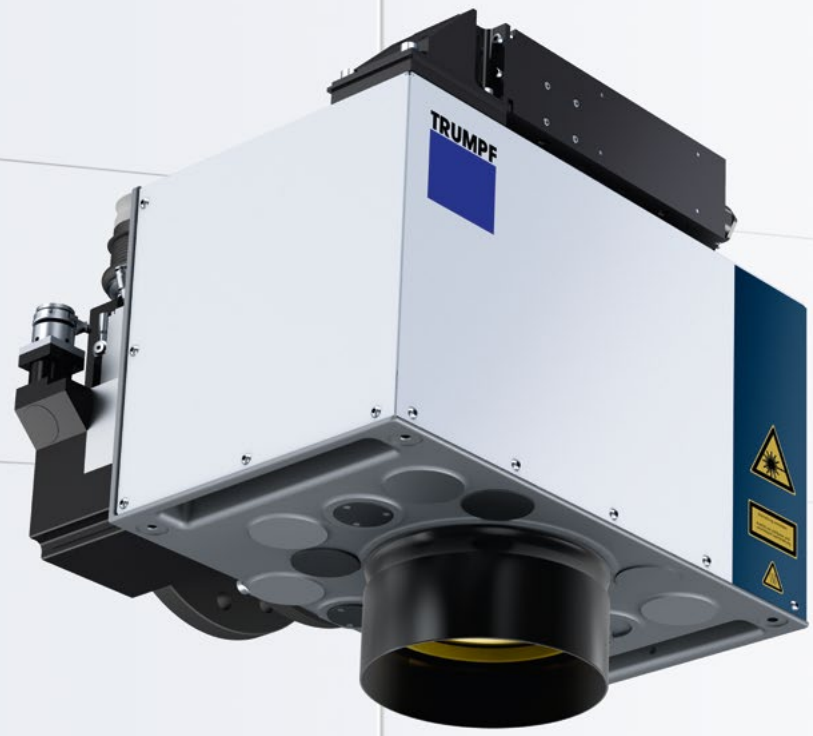
OCT seam position control and monitoring

Perfect vehicle body construction



01

Compact and multifunctional

02

Welding high-precision fillet seams

03

Save process time

04

Integrated monitoring

TRUMPF

Machine tools/Power tools
Laser technology/Electronics

01

Compact and multifunctional

The scanner optics PFO 3D with the integrated OCT sensor system is a compact universal tool for vehicle body construction. The number of work stations needed goes from three down to just one: because lap and fillet seams can be welded with one single tool. What's more, the integrated seam geometry monitor replaces the quality assurance station.

02

Welding high-precision fillet seams

The reduction of weight in vehicle construction plays a large role in the lowering of fuel consumption in vehicles. Ever smaller flanges are an important objective in body construction. Small flanges require fillet seam welds and require high precision positioning of the laser beam relative to the seam point. Thanks to the OCT seam position control, this poses no problem.

03

Save process time

The OCT sensor system knows the direction of movement of the robot and reacts to changes in direction immediately. Complex axis motions can be prevented, because the reorientation of the processing head is not necessary, in contrast to the light section measuring procedure which is bound to direction. This greatly simplifies the path planning of the robot, ensures a constant path velocity and, in so doing, saves process time.

04

Integrated monitoring

The seam geometry is measured while welding. The system issues a message if limit values are not reached or are exceeded. Corrections to the process can be made quickly and effectively. The integrated check software provides an assessment of the entire part quality and offers comprehensive documentation of measured values.

High-value weld seams with the OCT seam position control from TRUMPF

The robust OCT seam position control for 3D scanners is the ideal tool for the remote laser processing of automotive body parts. The optical coherence topography (OCT) forms the basis for the imaging process. The OCT measuring beam is guided by a compact small-field scanner around the processing beam and scans its surroundings.

TRUMPF OCT seam position control	
Available optics	PFO 3D
Available focal lengths	f = 450 mm
Laser class of OCT	Laser class 3B
Wavelength spectrum of OCT	λ = 820–860 nm
Measurement rate of OCT	70 kHz
Frequency of seam position control	100 Hz
Lateral measurement range	Y = ±10 mm
The measuring accuracy of seam position control	< ±50 µm

Subject to alteration. Only specifications in our offer and order confirmation are binding.

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