Founded in 1947
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In January 2000 KLN Ultraschall has joined the Crest Ultrasonics Corp., USA/Trenton, New Jersey, a group with international activities. All over the world a staff of more than 1.000 employees works on 20 locations in 12 countries.

The complex technologies of plastics welding and ultrasonic cleaning are the main activities of the Crest Group. Currently at the German locations in Heppenheim and Fürth an expert team of 280 employees works on complex customer projects.

Plastic welding technology

Standard machines for ultrasonic welding, ultrasonic multi-head machines, ultrasonic continuous welding for aluminum foil or thermoplastics, special machines, vibration welders, spin welders, hot plate welders, cross laser beam welding (quasi simultaneous).

Ultrasonic cleaning technology

Ultrasonic vibration tanks, compact machines with drying feature, special machines, modular tank systems with agitation, rinsing, drying and rust inhibiting.

Special brochures

Additional brochures on our product range can be downloaded from our homepage or be ordered by e-mail info@kln.de).

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Intertek

KLN Ultraschall
A Crest Group Company

L A S E R W E L D I N G

Q S W 400 L

P L A S T I C W E L D I N G T E C H N O L O G Y

Thermo Ultrasonic Vibration SpinWelding Infrared Laser

Laser welding

The KLN **QSW 400 L** is a quasi-simultaneous laser welding machine using the principle cross laser beam welding.

QSW 400 L
Lifting door open

Bild: KLN

The quasi-simultaneous welding combines contour welding and simultaneous welding.
A scanner consisting of mirror and collimation unit (optical module to create a parallel beam path) leads the focussed laser beam with high speed several times over the welding contour.
Due to this high speed all welding contour areas are almost simultaneously heated and melted.
Here the irradiated part gets in contact with the melt of the other part.
Then by thermal conduction also the irradiated part is melted in the welding area.
By simultaneous welding pressure on both partners the parts are pressed together and connected stoffschlüssig (welded)

Laser welding

For your notes:

Laser welding

QSW 400 L
Lifting door open

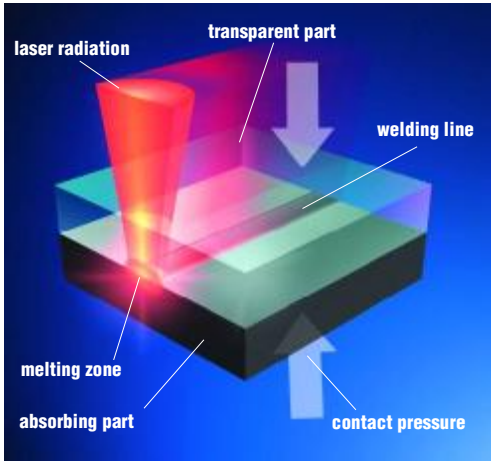
Bild: KLN

Example:
Lower laser toolig

Pic.: KLN

Laser welding

The KLN **QSW 400 L** is a modular laser welding machine.
The advantage of the modular structure is that the central laser welding machine can remain unchanged in the various welding tasks and only
the housing and its frame structure must be adapted to the actual welding task.
Thus, a well-tried laser welding unit can always be used.
Moreover, adaptions to other welding tasks can be easily integrated,
e. g. with rotary table, tool carrier, conveyeor or sliding table.



Scheme cross laser beam welding

Laser welding

Technical data

Laser:

- Water-cooled diode laser with 300 W optical output power
- Wave length 980 nm ±10 nm
- Pilot beam at 650 nm ±15 nm (<1 mW)
- Optical fibre suitable for wave length 780-1030 nm
- Focal distance of collimation 58 mm
- Focal distance f-theta objective 635 mm
- Operating distance 728 mm
- Operating field (scan field) 415 mm x 415 mm

Camera for observation of interior machine

(an additional inspection window in the lifting door is possible)

Pic.: KLN

Laser welding

Crank for vertical height adjustment of scanner

Pic.: KLN

Scale for vertical height adjustment of scanner

Pic.: KLN

General characteristics

- Welding force created by servo-electrical drive
- Max. welding force (holding-down clamp) 2000 N
- Max. weight of upper tooling 30 kg
- Useful height adjustment range scanner 190 mm
- Standard machine dimensions without control cabinet) WxHxD 120 cm x 230 cm x 160 cm
- Door opening standard machine (width and height) WxH 800 mm x 600 mm
- Height clamping surface to bottom 980 mm
- Possible height adjustment of the machine ±40 mm
- Pneumatic connection 6 bar
- Electrical connection: 400/230 V 50 Hz nominal current 10 A (max. backup 25 A)