



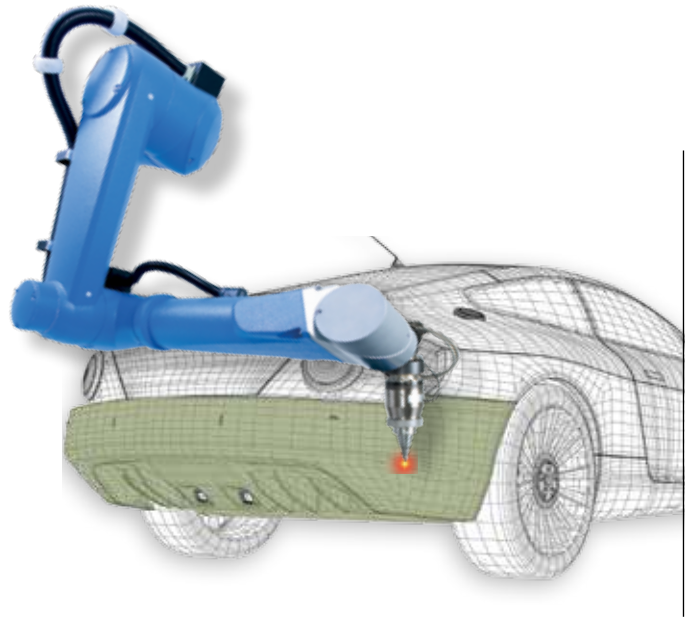
MORE LIGHT

JENOPTIK-VOTAN® W

3D laser solutions for lightweight  
automotive exterior components.

# 3D bumper cutting with JENOPTIK-VOTAN® BIM

The JENOPTIK-VOTAN® BIM offers you a flexible solution for 3D laser cutting. The robot-based laser cutting machine provides a sophisticated way to manufacture a variety of products with high efficiency at lower cost of ownership. The unique robot integrated beam delivery ensures necessary precision at highest speeds.



## Highest flexibility for volume series

- Precise cut edges on painted plastics of holes for park distance control, turn lights, mounting openings etc.
- Dedicated software for high accuracy hole circularity
- No surface contamination
- No rework necessary
- Brilliant contour accuracy at highest repeatability
- Increased throughput on the same floor space by using a double robot system
- Offers higher flexibility than punch process
- One fixture for several bumper variations

## Technical specification

- Materials to be cut
- Materials like PP, ABS
  - Material thickness: 1.5 mm – 5 mm
- Performance
- Typical cutting time 1sec/hole
  - Position repeatability down to  $\pm 50 \mu\text{m}$



Laser machine JENOPTIK-VOTAN® BIM

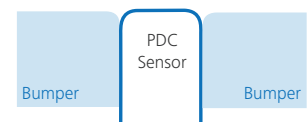
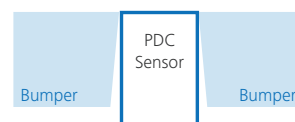
## Design benefits due to laser cutting



Laser cut without taper

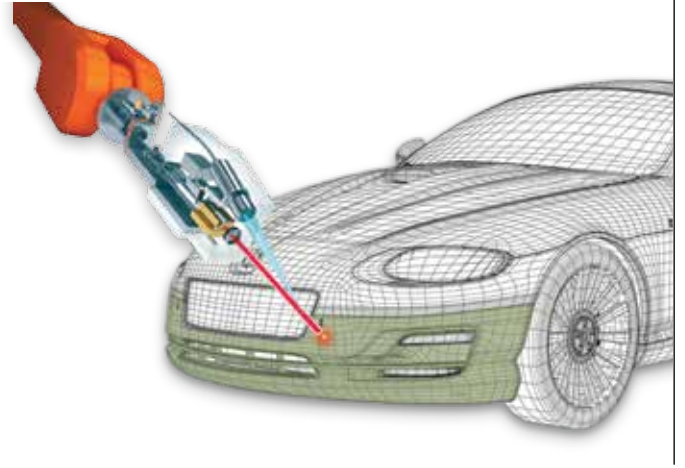


Punched with taper



# 3D bumper welding with JENOPTIK–VOTAN® W

In order to expand the applications of laser beam welding, Jenoptik has developed a unique welding technology by using diode lasers. The JENOPTIK–VOTAN® W offers you a flexible solution for laser welding of components, e.g. sensor holders for parking & side-line assistance (PDC, SLA), for headlight cleaning systems (SRA) and many more. The laser welding machine provides a sophisticated way to process thinner and lighter bumpers with no visible marks on the A-surface.



## Automotive trend – lightweight bumper

- Thin wall technology for significant savings
- Weight reduction of several 100 g
- High tensile strength without any markings on already painted parts (class A surfaces)
- Highly flexible manufacturing solution for the constantly increasing product variety
- Increased throughput on the same floor space by using a double robot system

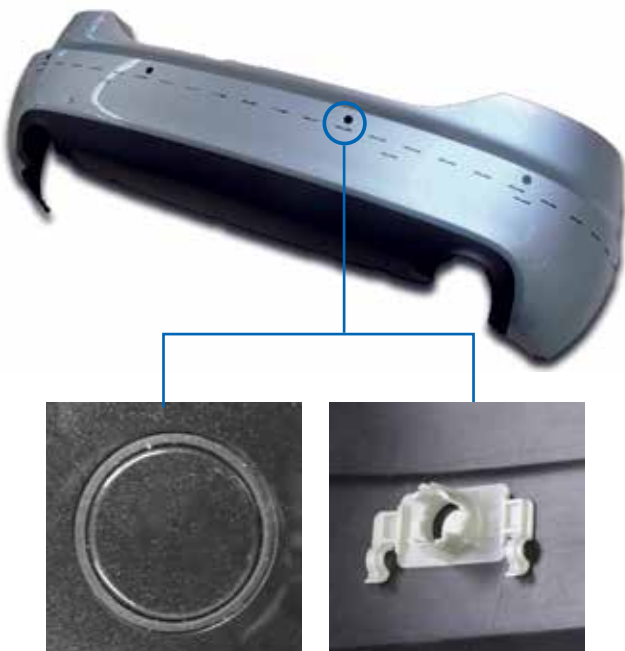
## Technical specification

Materials to be welded

- Materials like PP, EPDM, TPO
- Free of markings from material thickness of bumper > 2 mm

Performance

- Welding speed up to 50 mm/s
- Pull forces for sensor holder up to 800 N for lamp brackets up to 2000 N



Bumper with laser welded sensor holders



Laser welding head

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