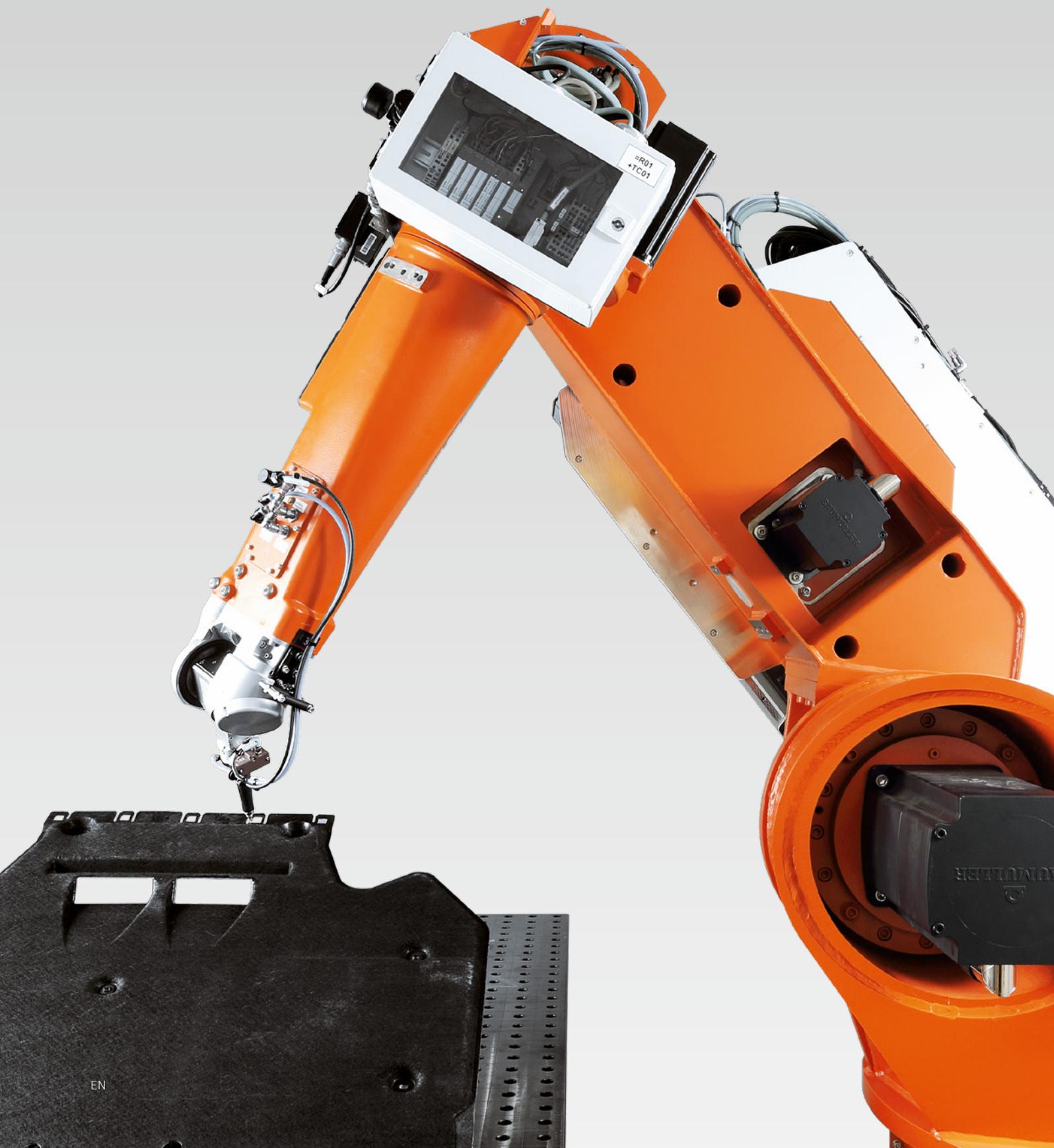


KUKA



Technology_CO₂ laser robot



3D cutting and perforating

Cost-effectiveness and quality are the decisive factors in modern production. Laser machining is an innovative variant in this context. The speed of the process and the low heat input contribute to high productivity and reduced finishing requirements compared with conventional processes. The CO₂ laser is the optimal tool in this area – especially for processing plastics.

Extremely fine, virtually radius-free contours, burr-free edges with no need for finishing, and consistently high cutting quality without tool wear are just some of the advantages. Combination with a KUKA robot as a powerful and precise guiding machining for 3D processing opens up new possibilities. The key factors are the innovative technology of the integrated beam guidance system for CO₂ laser systems and the expertise in the implementation of turnkey automation cells.

As one of the leading suppliers of laser robots with integrated beam guidance, KUKA Industries delivers complete machining cells tailored to the individual task. Various processes can be used, from laser cutting to perforation for vacuum lamination and also airbag perforation.

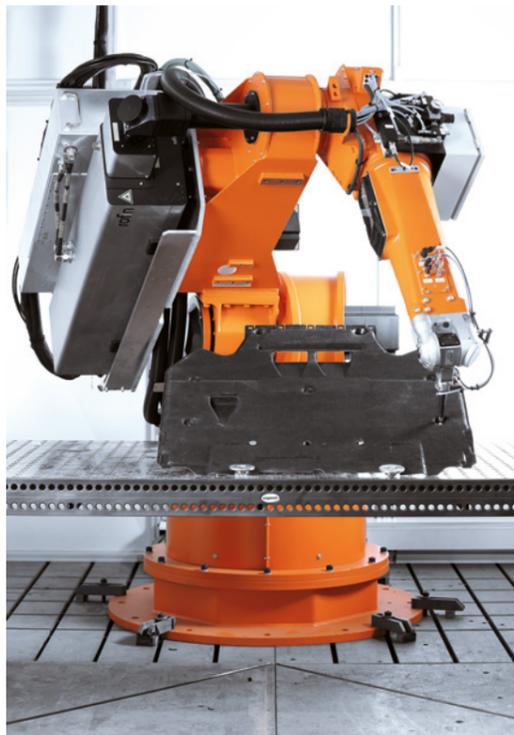
Your advantages at a glance

- Laser robot optimized for 3D cutting and perforating
- Designed for CO₂ laser
- Laser power of up to 1 kW possible through side mounting of the CO₂ laser
- Outstanding dynamics and accuracy thanks to adaptation of the laser with no change in weight
- Fully enclosed beam guidance system integrated into the robot arm
- Dirt and crack monitoring for online control of the lens condition (LCU)
- High flexibility
- Non-contact process
- No tool wear
- Complex geometries possible
- Easy expansion with further derivatives

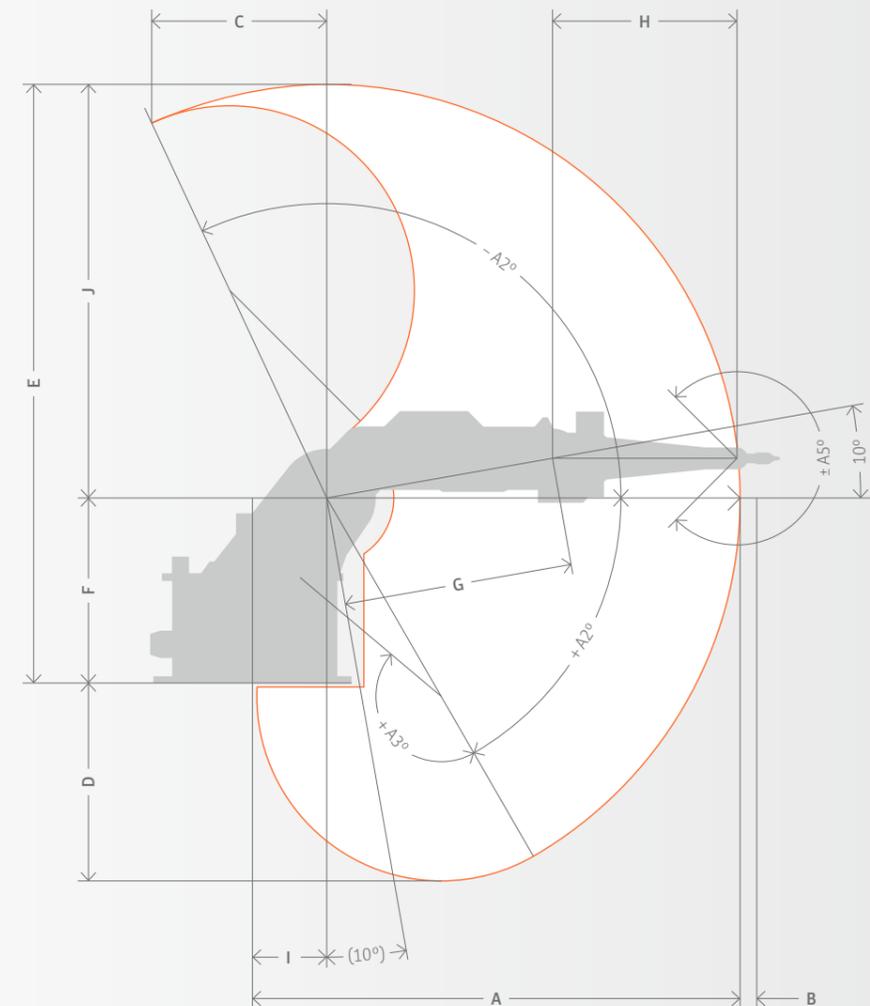
Areas of application

With the CO₂ laser robot, a wide variety of materials can be cut and perforated. These include:

- Polyethylene
- Polypropylene
- Carbon-fiber reinforced plastics
- Glass-fiber reinforced plastics
- Wood



CO₂ laser robot



Workspace

Motion range of axis 1 to 5

A1	+150° / -180° *
A2	+60° / -115°
A3	+160° / -0°
A4	±210°
A5	±135°

Work envelope

A	2,300
B	80
C	824
D	935
E	2,820
F	870
G	1,080
H	870
I	350
J	1,950

* Restricted due to external cable guiding

Technical data

RV6L-CO₂

Max. weight processing optics / process accessories	6 kg
Additional load A3 incl. process-specific installation	10 kg
Max. weight laser	400 kg
Repeatability	± 0.05 mm
Weight (without control cabinet, laser and base)	960 kg
Connected load (without laser)	7.1 kVA
Mains fusing	Max. 3 × 25 A fuse slow blowing

Axis data

Speed

Axis 1 – A1	140 °/s
Axis 2 – A2	105 °/s
Axis 3 – A3	200 °/s
Axis 4 – A4	700 °/s
Axis 5 – A5	750 °/s

The conditions for installation from the laser beam source manufacturer have to be observed.

Together with our affiliated companies, KUKA Robotics and KUKA Systems, we can be found locally all over the world:

Argentina	Malaysia
Australia	Mexico
Austria	New Zealand
Belgium	Norway
Brazil	Poland
Canada	Portugal
Chile	Russia
China	Sweden
Czech Republic	Switzerland
Germany	Singapore
Hungary	Slovakia
France	Spain
Great Britain	South Africa
India	Taiwan
Italy	Thailand
Japan	Turkey
Korea	USA

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