



Cutting Head DS1.5"

Processing head for bevel cutting and for 3D applications



The DS1.5" Cutting Head is designed for bevel cutting and for 3D applications in modern sheet metal processing with CO₂ lasers. It can be used for the burr-free processing of corners, initial cuts, cut sections and radial edges, or for creating bevels in various angled positions. No reworking is necessary and the quality is faultless. In addition to the non-contact distance sensors, several other sensors have been integrated for the automation of the cutting process. The head is equipped with the time-tested Precitec cartridge replacement system, enabling fast changing of the preadjustable focusing optics.

>> EFFICIENT

- high cutting speeds with integrated distance sensors
- short conversion times with fast changing of focal lengths
- preadjustable focusing optics
- burr-free cutting, even in the case of complex 3D components

>> FLEXIBLE

- cutting of different material thicknesses
- 3D or bevel cutting
- focal lengths tailored to your application

>> USER FRIENDLY & SAFE

- simple and safe cartridge replacement system with TCP retention
- different coolers
- temperature monitoring of the sensor insert
- all media connections in the upper part

Features and fitments

System types / lasers

>> The DS1.5" Cutting Head is used in pipe cutting and in laser systems with 5 linear drives which work with CO₂ lasers.

Integrated sensors

>> The DS1.5" Cutting Head is equipped with an integral non-contact distance sensor system, which guarantees consistently high cutting quality and speed. Integrated sensors record errors like collision, cable breaks (or when measuring area tolerances are exceeded) and send a relevant error signal or an EMERGENCY STOP signal to the laser equipment system.

The DS1.5" also has a temperature detector on the sensor insert.

Cooling system

>> The housing of the cutting head is water-cooled. All water-guiding parts are made of highly corrosion-resistant stainless steel. Air cooling of the lens (by means of cutting gas and auxiliary gas) and concentric nozzle cooling are possible.

CAN version

The DS1.5" Cutting Head can be equipped with additional electronics. This version, DS1.5" CAN has

- electronic cartridge detection, which detects the cartridge and the focal length being used,
- temperature monitoring of the cutting head housing, the cartridge and the sensor insert,
- a cutting gas pressure sensor,
- detection of the extension adapter for 7.5" focal length.

The electronic connection of the sensor system takes place via I/Os (with I/O box CAN converter), CAN OPEN or PROFIBUS DP (with additional interface).

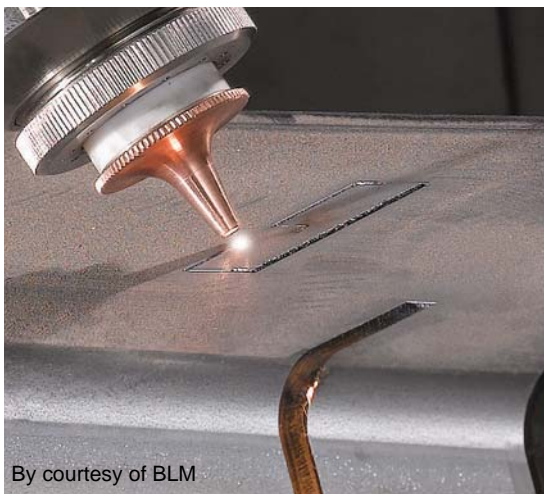
Examples of Application



Cutting of rectangular pipes

>> The DS1.5" Cutting Head is used in pipe cutting systems.

It can be used to cut angles of up to 46°, depending on the type and thickness of the workpiece.



Bevel cutting

>> Various laser cutting equipment models work with additional rotation axes; these enable the laser beam to strike the workpiece surface at a defined angle. This process is mainly used to chamfer workpieces in preparation for welding processes or for pipe work. Endlessly-rotating linear drives can also be used since Precitec distance sensors can easily transmit signals via slip rings.



- 1 hand wheel for vertical adjustment (focal position)
- 2 quick-fastening nuts
- 3 viewing window for vertical adjustment
- 4 focal length detection
- 5 exchangeable cartridge
- 6 gas and water connections
- 7 extension adapter 7.5"
- 8 sensor insert with ceramic part and nozzle

Technical specifications of the DS1.5" Cutting Head

max. laser power	6 kW
electronics	Lasermatic®
focal lengths	5" and 7.5"
lens diameter	1.5"
max. free aperture	34 mm
axial length	187 mm ⁽¹⁾ , 251 mm ⁽²⁾
mass	3.0 kg ⁽¹⁾ , 4.1 kg ⁽²⁾
max. diameter	110 mm
max. cutting edge	46°
vertical adjustment range	-8 to +2 mm ⁽¹⁾ , (2)
vertical adjustment range (with shortened adapter)	-6 to -16 mm ⁽²⁾ (optional)

(1) at focal length of 5", (2) at focal length of 7.5"

The given data was generated for a typical application and may be different given other circumstances. Furthermore misprints, changes and/or innovations may lead to differences in the listed measurements, technical data and features. Therefore **all information is non-binding and technical data, measurements as well as features are not guaranteed by information in this product information.**

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