

Laser Gas Regulator for laser cutting machines

System for high-speed laser applications


HOERBIGER
because performance counts



Entering new dimensions...

Piezo actuators successfully applied by the millions – the solution for advanced laser cutting

The consistent use of piezo-electric advantages combined with precision engineering, electronics and sensors is setting new standards for speed and precision in cutting processes.



Piezo actuator

- Dynamic response in the millisecond range
- Infinite resolution
- Power consumption in the milliwatt range
- Weight < 10 grams

Maximum responsiveness coupled with minimized weight – the foundation for high-speed lasers

The cutting gas control system from HOERBIGER merges the features that are crucial for future-oriented laser cutting:

- High gas pressure
- Fast, precise gas pressure control
- High flow rate and low valve weight
- Low power consumption

These factors push the limits regarding speed, precision, and stability in the cutting process.

Gas pressure control valve with pilot valves:

- Maximum dynamics
- Gas-tight pilot valves
- Back-pressure resistant gas selector valves (no check valves)
- Rapid gas pressure changes (approx. 200 ms)
- Extremely stable gas control performance ($\pm 0,03$ bar)
- Entire cutting gas function in one unit (0,4-28 bar)
- Compact design and low weight

...of high-speed laser cutting



Version EtherCAT

Technical data:

- Inlets for cutting gases: nitrogen, oxygen and compressed air
- Inlet pressure: up to 30 bar
- Controlled output pressure: 0,4 to 28 bar
- Flow rate: > 1.600 NI/min
- Weight (inclusive 3 pilot valves): approx. 2,8 kg
- Dimensions LxWxH [mm]: 175 x 139 x 76,5
- Control and communication analog or EtherCAT (further interfaces on request).

Precise gas pressure control – the perfect solution for the entire material thickness spectrum

Cutting gas control systems from HOERBIGER are electrically controlled proportional pressure regulators with 3 integrated distribution valves for gas selection. The control and pilot valves as well as the control and communications electronics form a compact unit.

A piezo element weighing just a few grams acts as an actuator and ensures maximum responsiveness. The low weight and compact design allow the valve to be installed in the vicinity of the cutting head, resulting in rapid pressure changes and low loss of gas due to short lines. The high accuracy and the gas pressure stability of the HOERBIGER cutting gas control system create a stable and precise cutting process for flat-bed laser cutting machines – especially important for thin metal sheets. Pressures as high as 28 bar at the output also allow thick sheets to be cut safely. Given the generously dimensioned valve cross-section, cutting with large cutting nozzle diameters is not subject to any drop in pressure at the cutting head even when the input pressure is low and conserves resources.

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We set standards.

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