

## Advanced KÜHME stem sealing technology

Advantageous stainless steel bellow design optimized for heavy duty application and high cycling operation

Since company's founding back in 1967 KÜHME established stem sealing with stainless steel bellow as a key feature for the safety quick closing shut-off and control valve technology. The stainless steel bellow ensures most durable as well premium tightness even in high cycling operation under heavy duty conditions.

Each bellow for KÜHME make safety shut-off valve is designed for 500.000 cycles and calculated for the max. operation limits in regards to pressure and temperature. This high performance design is verified by respective testing carried out in course of the type approval through independent as well as accredited notified body (e.g. TÜV Rheinland). The type approval along with the related test process in accordance to latest applicable standards and law base is documentary proven by a type approval certificate.

The design criteria for the bellow elements are:

- Pressure
- Temperature
- Valve stroke
- Amount of cycles



### Advantages

- Constantly friction-free over complete component lifetime which is a major key feature for safety quick closing shut-off valves to:
  - secure safety shut-off function
  - guarantee quick closing in less than 1 second
- Leakage-free design which ensures the applicability to meet with the requirements fixed for state of the art valve technology in respect to fulfill the ambitious targets of emission reduction.
- Broad application range for various types of operating media as well as for pressure range from low up to high pressures. In addition the stainless steel bellows are qualified for the use in a wide temperature span from - 60 up to + 400°C.
- Testing of the bellow element is possible during plant operation by means of the provided test connection.
- Bellow element and valve stem are inextricably linked.
- For increased safety the connection interface of the stainless steel bellow is equipped with a secondary sealing. This redundant safety element ensures that the basic prime safety level is still lifted.

