

# KHA NEW ACC. ISO15848-1



As announced in previous releases, the KHA NEW in standard version for all line sizes (DN15 to DN125) and all process connections has now passed the test acc. EN ISO 15848-1.

The EN ISO 15848-1 standard:

[Industrial valves - Measurement, test and qualification procedures for fugitive emissions - Part 1: Classification system and qualification procedures for type testing of valves \(ISO 15848-1:2017\)](#)

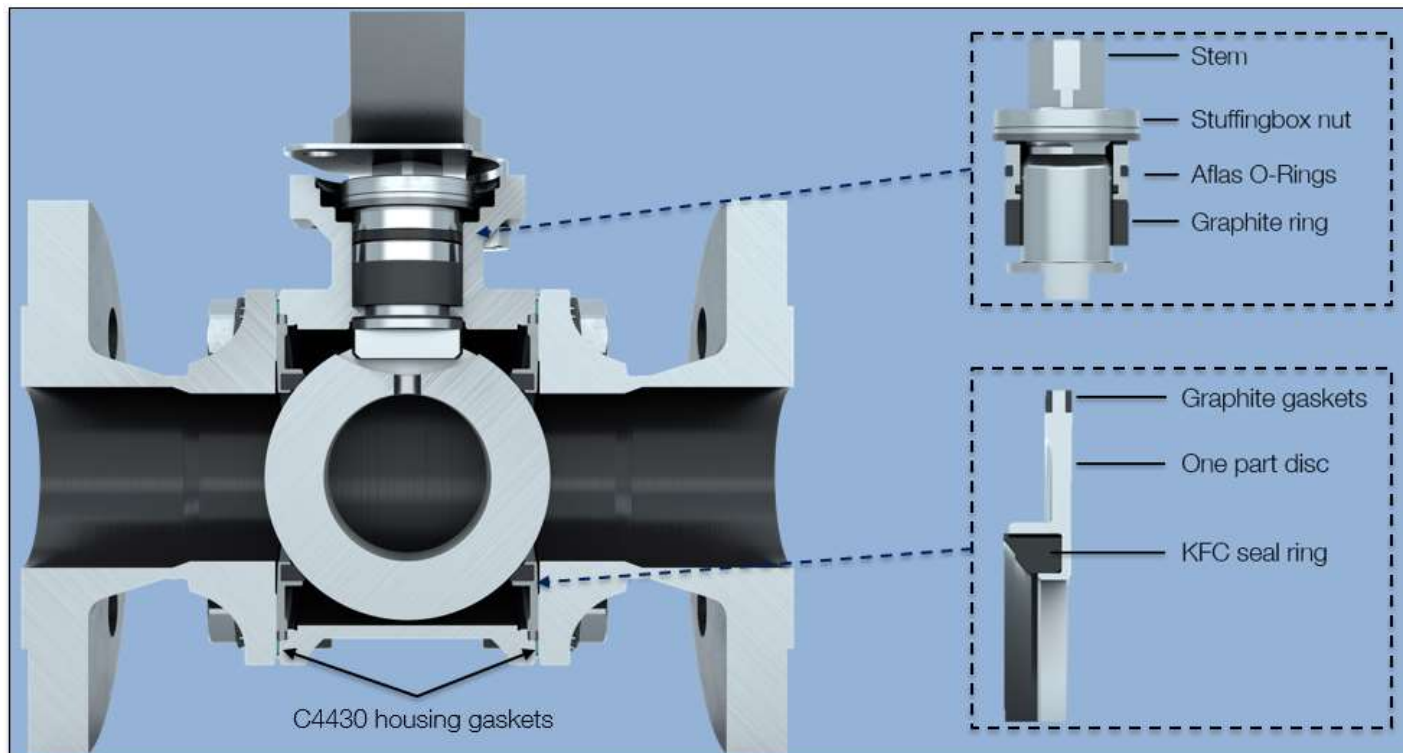


# STANDARD VERSION FOR ISO 15848-1



The ISO 15848-1 certificate is only valid for the standard version of the KHA NEW.  
Standard configuration of the KHA NEW version:

- » DN15 to DN125
- » All process connections: flanged, weld ends, threaded ends or mixed
- » Housing material carbon or stainless steel
- » One part sealing elements fire safe with KFC seal ring and graphite gaskets on outer diameter of sealing element
- » Aflas / graphite stuffingbox
- » C4430 gaskets on housing pitch



# TEST DETAILS – ISO 15848-1

The intention of the investigation was the determination of the performance class of the KHA NEW ball valve series acc. to EN ISO15848:2017. The performance class of the tested valve is defined by the coaction of the following criteria:

- » A) tightness class
- » B) endurance class
- » C) temperature class

Tightness classes are defined only for stem sealing systems. The leak rate in mg/(s.m) is specific to the circumference of the stem. The tightness classes for helium as test medium are:

- » Class AH: leak rate  $<1 \times 10^{-5}$  mg/(s.m)
- » Class BH: leak rate  $<1 \times 10^{-4}$  mg/(s.m)
- » Class CH: leak rate  $<1 \times 10^{-2}$  mg/(s.m)

Leakage from body seals are measured with the sniffing method and the concentration shall be  $<50$  ppmv in every case.

Endurance class CO1 requires 205 full stroke mechanical cycles and two thermal cycles. To extend to endurance class CO2, another 1295 full stroke cycles and one additional thermal cycle are necessary. To extend to CO3, another 1000 full stroke cycles and one additional thermal cycle are necessary.

There are 6 temperature classes given in the standard, ranging from  $-196^{\circ}\text{C}$  to  $+400^{\circ}\text{C}$ . The manufacturer has to define at which temperature the valve should be tested.

## Test data:

- » 1500 mechanical cycles
- » 3 thermal cycles between room temperature and  $120^{\circ}\text{C}$
- » Test medium helium
- » Leakage measurements at a pressure of 40bar at room temperature and  $120^{\circ}\text{C}$  at the shaft and the body sealing

The measured leak rates of the shaft sealing were in tightness class „BH“ (BH = leak rate  $< 1 \times 10^{-4}$  mg/(s.m). No shaft sealing adjustments during the test were done. The measured concentrations at the body were less than 50 ppmv. The temperature class of the valve is in the range from RT to  $120^{\circ}\text{C}$  and the endurance class is „CO2“.

# TEST DETAILS – ISO 15848-1

## Endurance class CO<sub>2</sub>:

As first step 795 full stroke mechanical cycles at room temperature were performed with a pneumatic actuator. After the shaft cycles, a leakage measurement of the shaft sealing was performed. The leak rate detected with a helium leak detector at room temperature and 40 bar after 1000 mechanical cycles was total was  $4.6 \times 10^{-6}$  mg/(s.m). Next step was a third thermal cycle with heating up and stabilization at 120°C. The helium pressure was reduced. After temperature stabilization, the pressure was adjusted to 40 bar. The leak rate of the shaft was detected with a helium leak detector and vacuum method. Subsequently, 500 further mechanical cycles at 120°C were performed. The leak rate after 1500 cycles in total was  $6.7 \times 10^{-5}$  mg/(s.m). After cooling down to ambient temperature without external cooling, the pressure was increased to 40 bar and the last shaft leakage measurement for endurance class CO<sub>2</sub> was performed. The leak rate detected with the helium leak detector at 25°C after 3 thermal cycles and 1500 mechanical cycles was  $6.2 \times 10^{-5}$  mg/(s.m).

The tightness of the body sealings was checked with the sniffing method. A concentration of 15 ppmv was detected with the sniffer line of the leak detector. After this measurement, the endurance class CO<sub>2</sub> was finished and a tightness class of „BH“ was reached.

The valve can be designated with following performance class:

ISO FE BH – CO<sub>2</sub> – SSA 0 – tRT (120°C) – (40/40 bar) – ISO 15848-1

