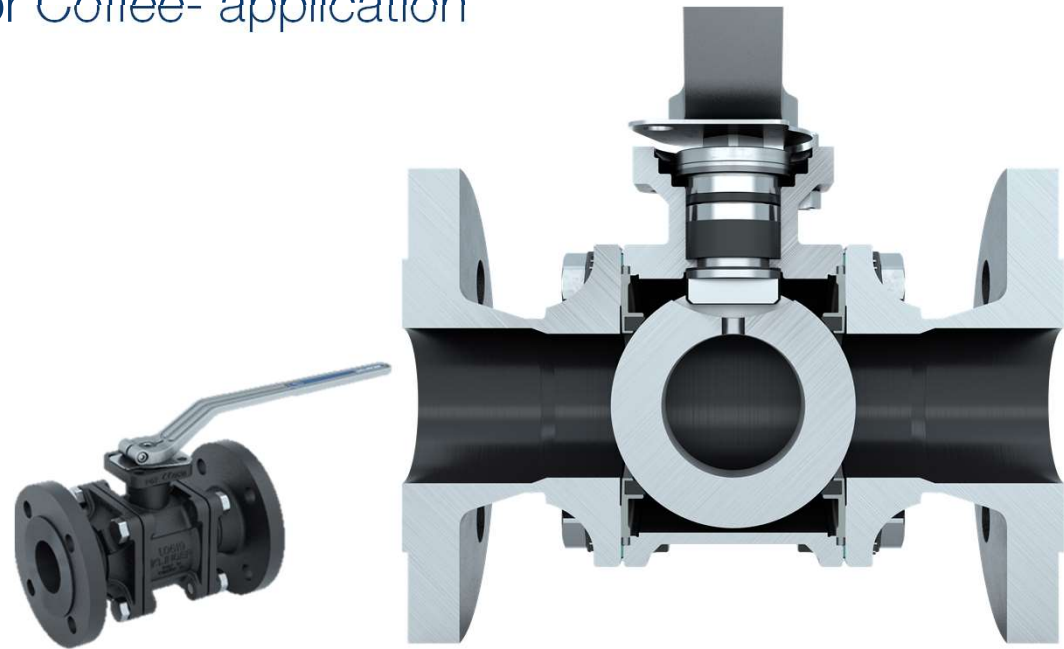


KHA HACO DESIGN FOR “COFFEE” APPLICATIONS:

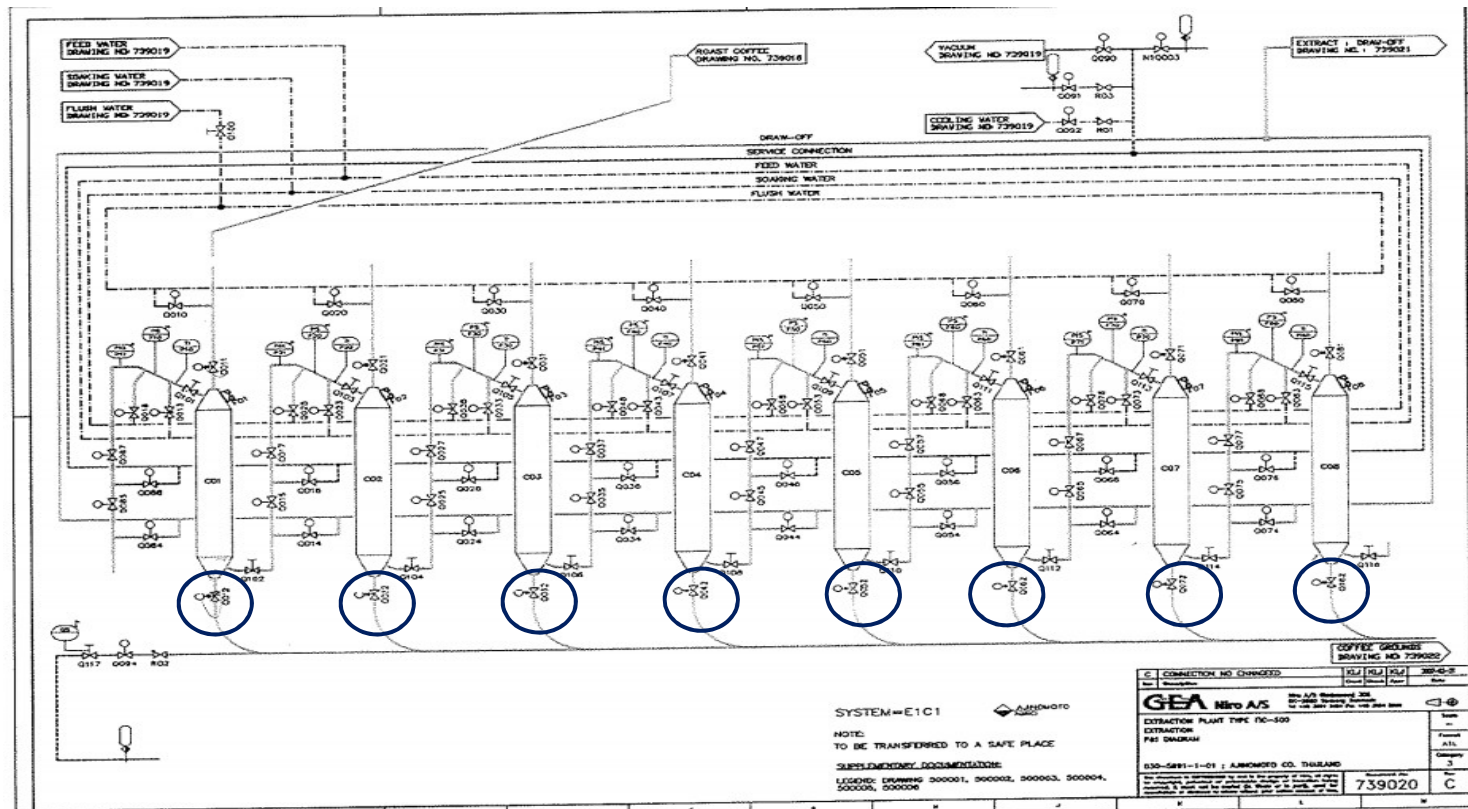
- » Process conditions
- » KHA Design „HACO“ for Coffee- application
- » References



PROCESS CONDITIONS:

Process description (example) for coffee application:

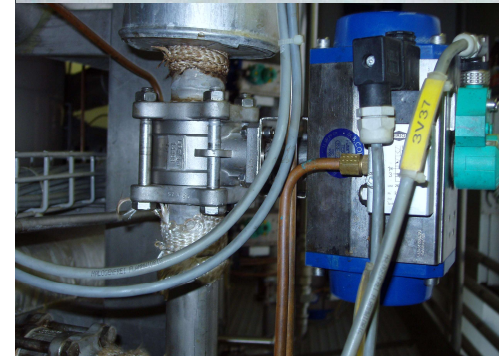
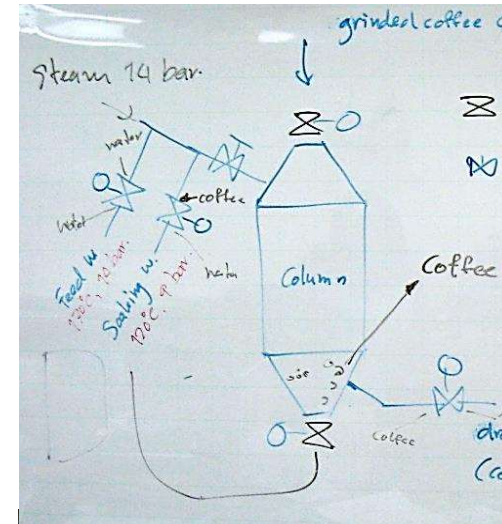
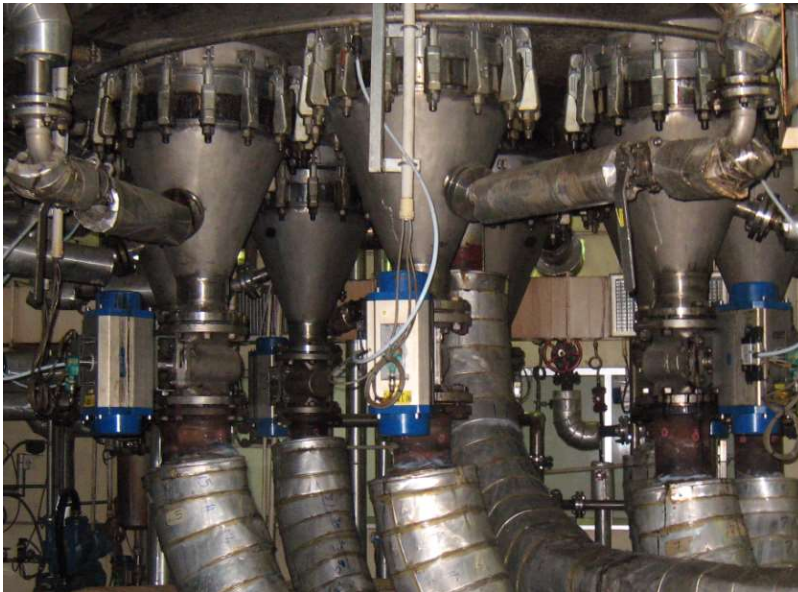
- » Valves will be used on the bottom of large coffee mills where raw coffee beans were grinded with hot water and steam to coffee powder. The installed valves will be operated in very short time intervals with pneumatic actuators (fast opening and closing). This challenging process requires valves which are applicable for abrasive solids in the media and for high operating cycles.



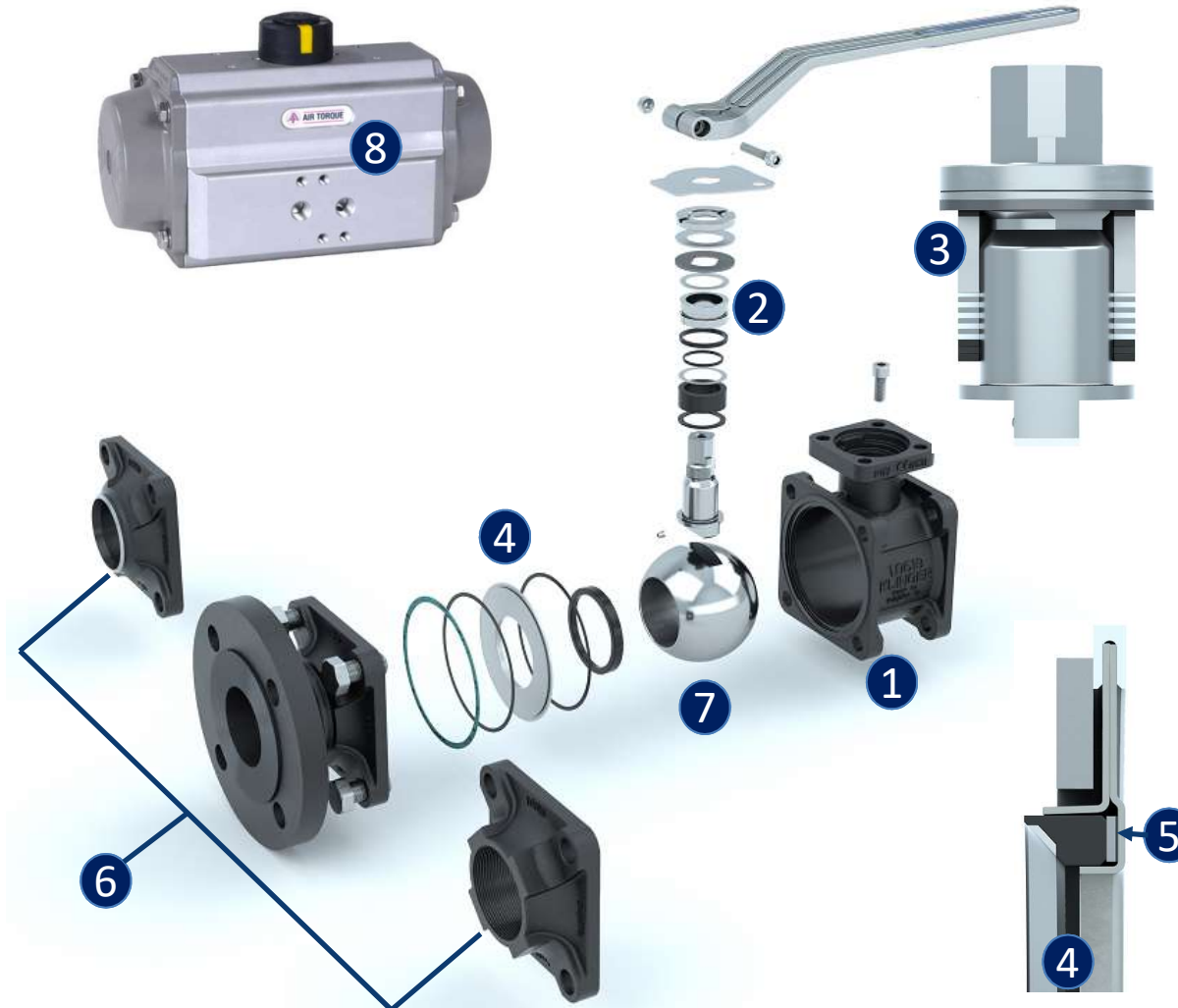
PROCESS CONDITIONS:

Typical process data (can be different):

- » Media: Coffee powder, steam, hot water
- » Working pressure: 6 to 20 Bar
- » Working temperature: 175°C
- » Valve sizes: DN32 to DN50
- » Operating cycles: approx. 5 times/minute



KHA HACO DESIGN:



- » (1) Body material carbon & stainless steel
- » (2) Stuffingbox Labyrinth with additional PEEK washer for high operating cycles
- » (3) Brass pressure ring in the stuffing box
- » (4) Sealing element metal (one part)
- » (5) With TOP-CHEM washer behind the sealing ring
- » (6) Connections: F, S, G
- » (7) Ball stainless steel chrome plated
- » (8) Pneumatic actuator single acting

KHA HACO DESIGN - ADVANTAGES:

A typical coffee application is a high demanding issue for a ball valve.

Influences on a ball valve:

- » **Abrasive media:** Coffee powder combined with hot water or / and steam is acting like a „sand paper“ on the sealings and wetted parts. This can lead to a damage of soft seated sealings and the ball.
- » **Many operating cycles:** Ball valves in this application normally will be operated several times in a minute the whole day. This can lead to an early wear of all wetted parts and the stem sealing (stuffingbox) which causes a blockage of the valve.
- » Valves in coffee applications are hard to change in case of failure because the whole process must be stopped. Only durable and long lasting ball valves are satisfactory.

Advantages of the „HACO“ valve version KHA:

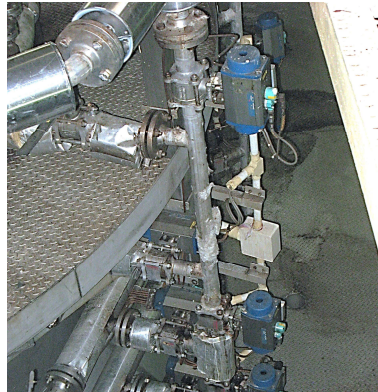
- » **Stuffingbox:** A „PEEK“ friction washer and a brass pressure ring will be added in the stuffingbox. Both, PEEK washer and brass ring showed outstanding abilities for abrasive medias and enhance the life time of the valve under high operating cycles. An too early wear of the stuffingbox therefore is avoided.
- » **Sealing elements:** Metal sealing elements with a TOP CHEM washer behind the metal ring are installed. This makes the valve more resistant against abrasive medias with solids. Soft seated materials like PTFE, reinforced PTFE, etc. will be simply „grinded away“ which leads to a leakage.
- » **Ball:** The ball is made of stainless steel, chrome coated. The chrome layer on the ball surface protects the ball from scratches due to the solids in the media.

Conclusion:

- » The „HACO“ version of the KHA showed a much longer life time in coffee applications compared to standard soft seated ball valves. This helped the customer to reduce maintenance works and unplanned shut downs.

REFERENCES:

- » Company „Ajinomoto“
- » Country: Thailand
- » Media: Coffee powder + steam+ hot water
- » KHA line sizes DN32 – 50
- » KHA in HACO version stainless steel
- » Working pressure 10 bar
- » Working temperature 175°C
- » Accessories: pneum. actuator, solenoid valve, limit switch box



- » Company „Haco“
- » Country: Switzerland
- » Media: Coffee powder + steam+ nitrogen
- » KHA line sizes DN25 and 32
- » KHA in HACO version stainless steel
- » Working pressure 6 bar
- » Working temperature 150°C
- » Accessories: pneum. actuator, solenoid valve, limit switch box

