

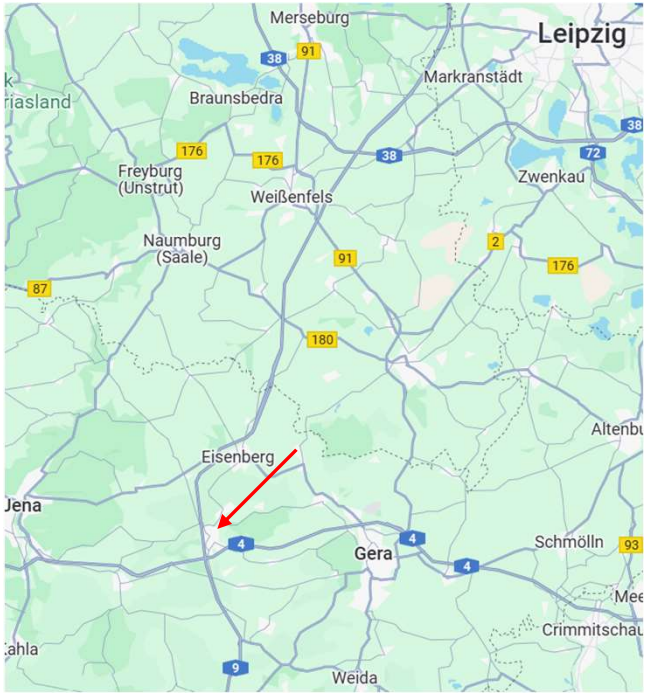
AND
EVERYTHING
FLOWS

SAMSON CERA, PRODUCTS AT A GLANCE



- **CERASYSTEM became part of the SAMSON A.G. in 2012**
- **App. 100 employees**
- **Plant area: 21.500m² Production floor: 7.101m² Office space: 1.426 m²**
- **Production located in 07629-Hermsdorf, Germany**
- **Manufactures ceramic valves since 1992**
- **Supplies ceramic valves and pipes all over the world with the SAMSON network**

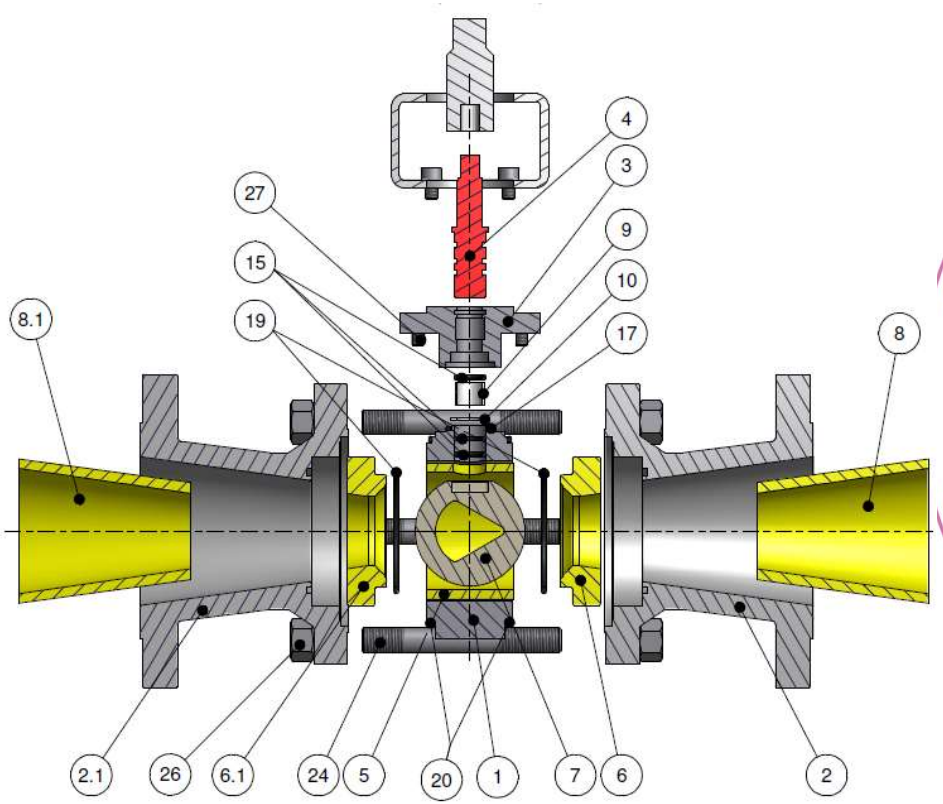




THE BASICS ABOUT THE CERAVALVE TYPE KST

- Body sizes DN15 … DN150 / 0.5“ … 6“
- Flange sizes DN15 … DN250 / 0.5“ … 10“
- Temp. ratings -30°C to 180°C (850°C type KST-XHT)
- Ratings PN10 to PN40 (standard)
  ANSI class 150 / 300 and higher

- Flange standards DIN / ANSI / JIS / special
- Face-to-face DIN (EN558-1) / ANSI B16.10 / special
- Leakage rate ANSI class IV, V (gas-tight on request)
- Fugitive Emission TA-Luft / ISO 15848-1 as option



WHY CERAMIC MATERIALS?

Ceramic valves can solve problems of:

- Abrasion
- Abrasion & corrosion
- Abrasion & corrosion & very high temperatures



What are the advantages of ceramic valves?

- Longer service times = no unexpected shutdowns
- Less maintenance = less plant downtime
- Changeable wear & spare parts = less costs

CERAMIC MATERIALS APPLIED

Al_2O_3 – Aluminium oxide
- standard seat rings and wear sleeves

ZrO_2 – Zirconium oxide
- ceramic balls with high fracture toughness

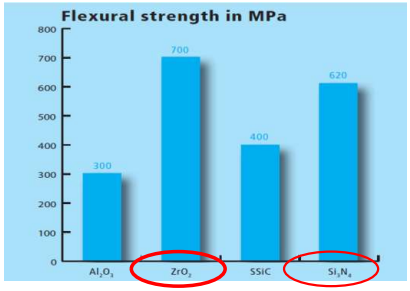
SiC – Silicon carbide
- for extremely corrosive & abrasive applications

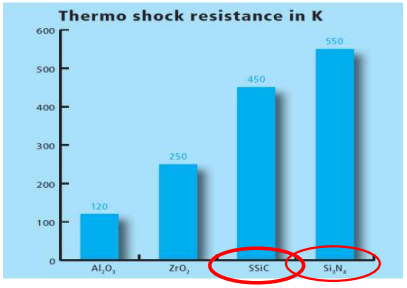
Si_3N_4 – Silicon nitride
- for applications with high temperature shocks



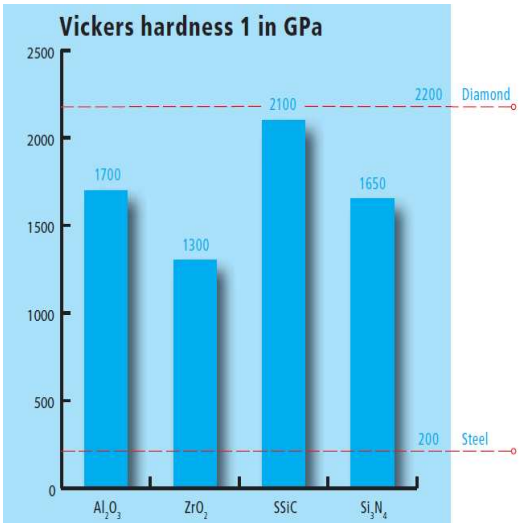








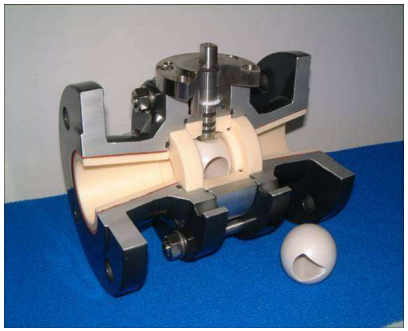
HARDNESS VERSUS TENSILE STRENGTH



Material	Tensile strength	Max. thermal shock (Δt: instant)
Al_2O_3	>250 MPa	120 °C
ZrO_2	>700 MPa	220 °C
SiC	>300 MPa	320 °C
Si_3N_4	>600 MPa	450 °C
AISI 316	>600 MPa	

Liners and seats of Al_2O_3

Hardness more important than tensile strength



Ball of ZrO_2

Tensile strength more important than hardness



BASIC MATERIALS

Valve flanges, body and bonnet

- Stainless steel AISI 304 / AISI 316Ti
- Carbon steel with HALAR® coating
- Plastic materials PP and PVDF
- Hastelloy® and other special alloys
- Titanium
- ...





Valve shaft

- 1.4462 / ASTM 2205 (Duplex steel)
- 2.4605 / Alloy 59 (Hastelloy®)
- Titanium
- Tantallum
- ...

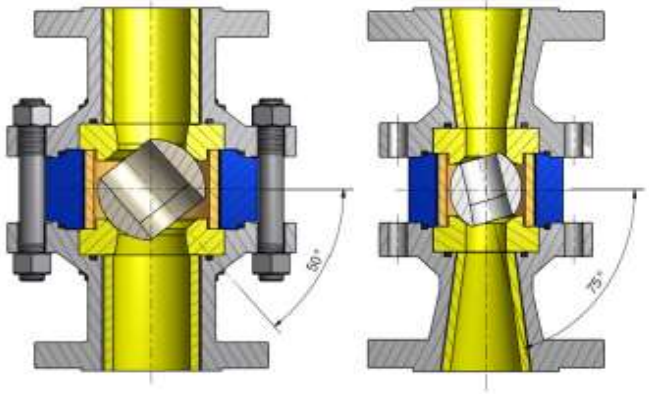
O-Rings

- FKM
- KALREZ®
- ...

CONTROL BORES AND REDUCED CENTER BODY

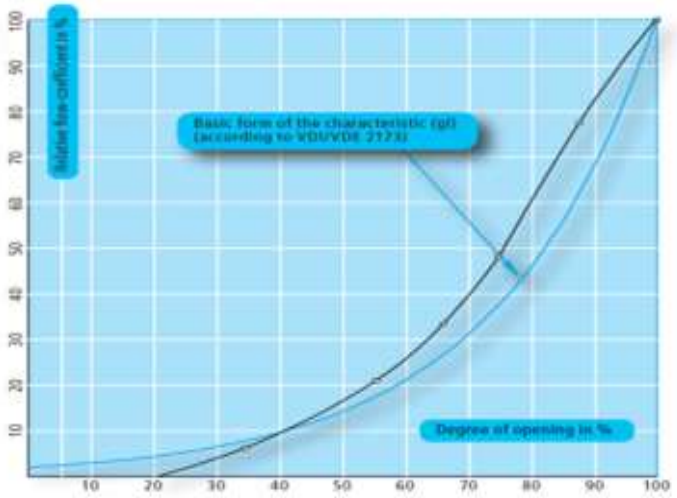


Different ball sizes control the same K_V/C_V.



The right selection of the center body size and the ball bore shape ensure the large valve opening angle. This improves the control behavior and reduces wear.

- Reduced center body size
- Full or triangular bore
- Long face-to-face dimensions

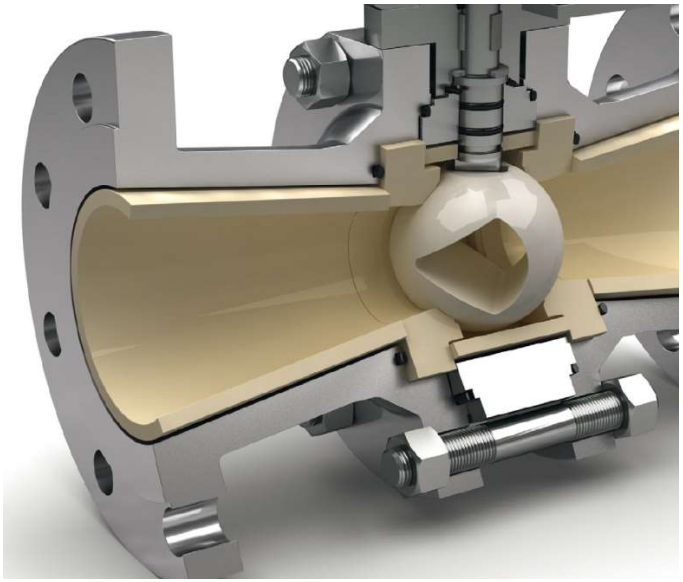


CERAVALVE SERIES KSV AND KST



CERAVALVE KSV

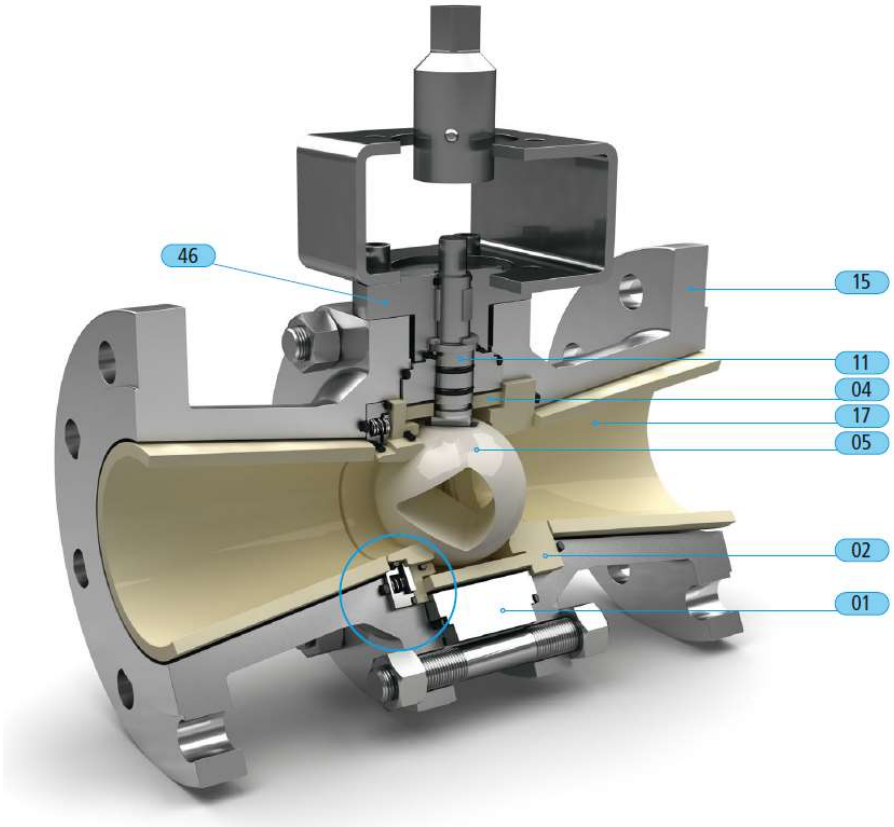
- HALAR® coated flanges
- Flanges and shaft are wetted by fluid
- Shaft material similar Hastelloy®
- Max. temperature ... +160 °C

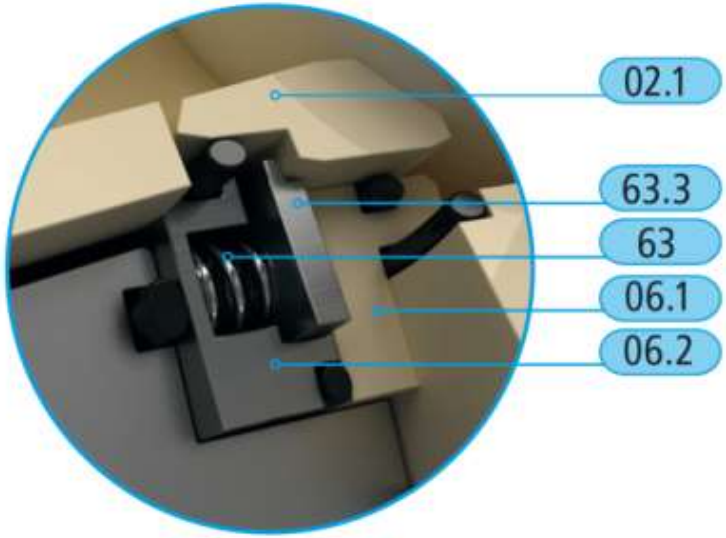


CERAVALVE KST

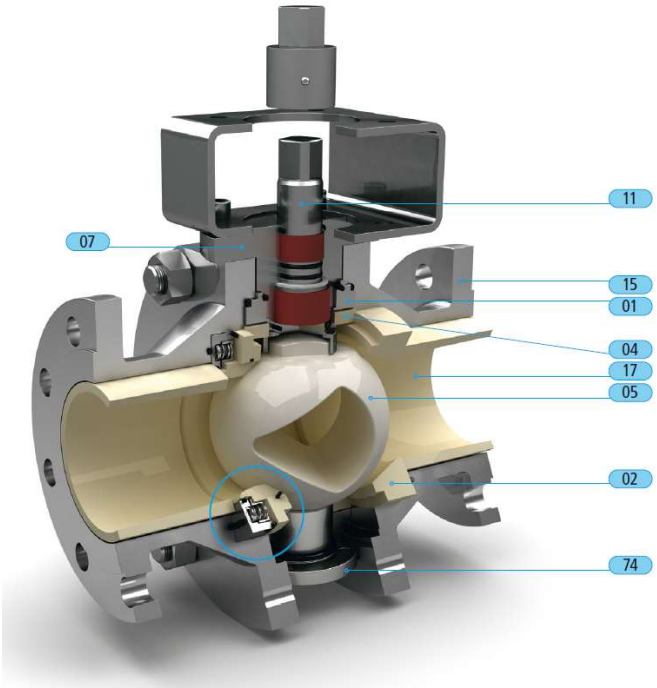
- Metal/Plastic/Alloy flanges
- Flanges, center body and shaft are wetted by fluid
- Duplex steel shaft
- Max. temperature +180 °C

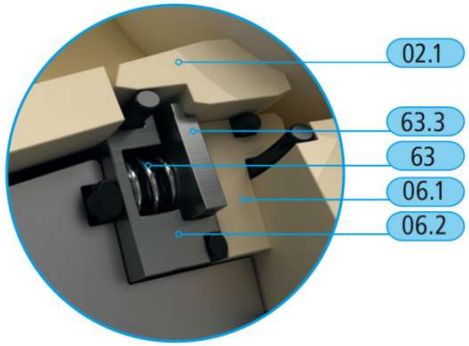
CERAVALVE KAT SPRING - LOADED INLET SEAT FOR BETTER SEAT-LEAKAGE CLASSES (V)

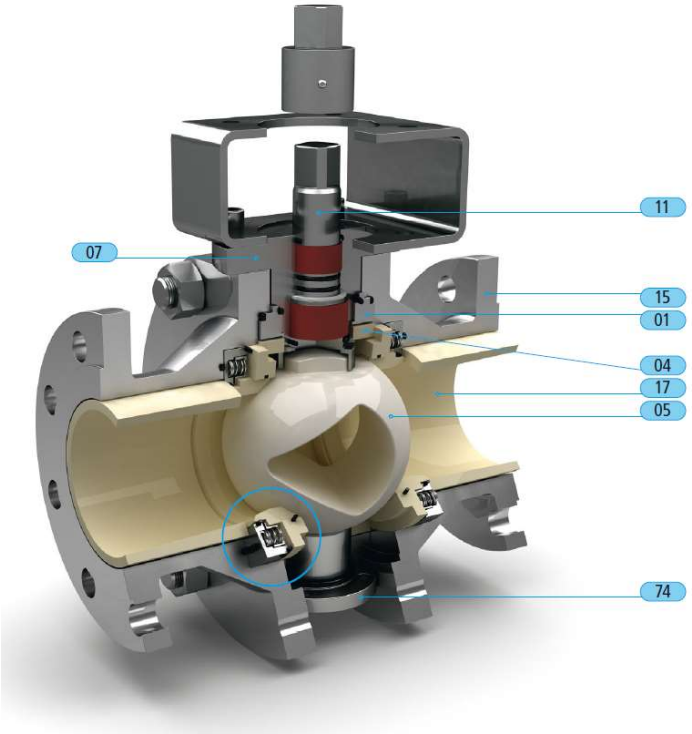




CERAVALVE KGT AND KZT, TRUNNION MOUNTED BALL FOR HIGHER DP







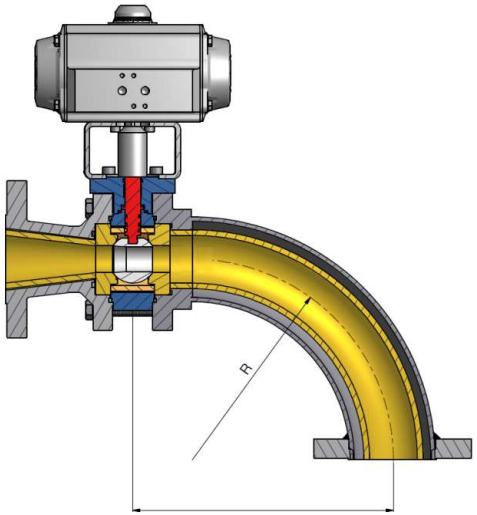
CERAVALVE KGT
Inlet: spring-loaded seat ring
Outlet: wear protection only

CERAVALVE KZT
with 2 spring-loaded seat rings

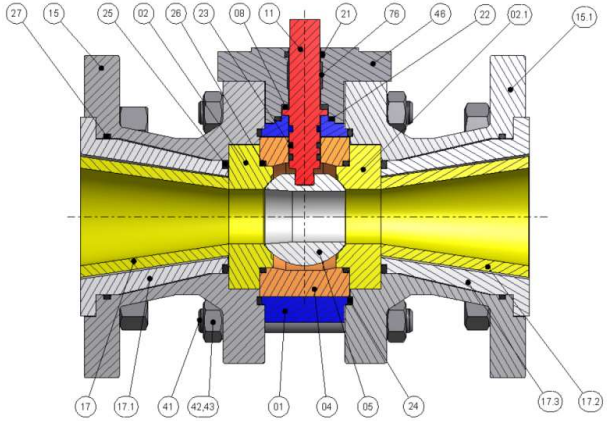
CUSTOMIZED CERAVALVES FOR SPECIAL NEEDS



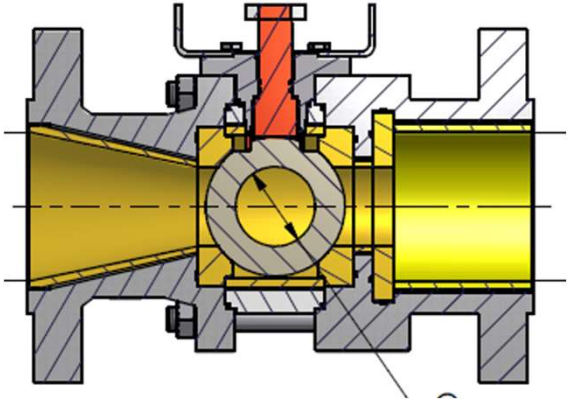
HIGH TEMPERATURE, 850°C



SPECIAL DESIGN AND DIMENSIONS

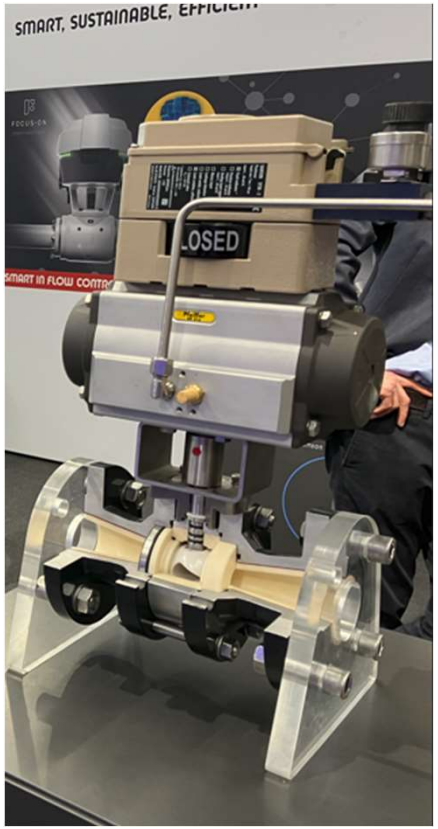


EXTREMELY CORROSIVE FLUIDS



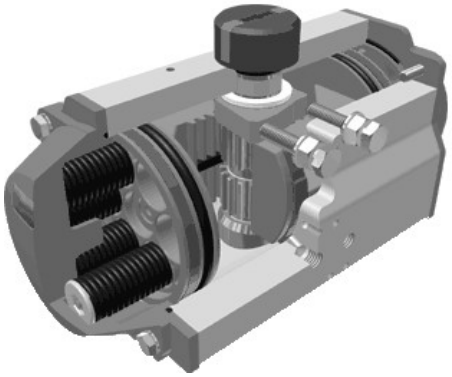
FLASHING

ACTUATORS & POSITIONERS FOR CERAVALVE



- Standard interface DIN ISO 5211 (specials on request)
- Pneumatic double-acting actuators
- Pneumatic single-acting actuators
- Electric actuators
- Positioners
- Hand levers / gear operators









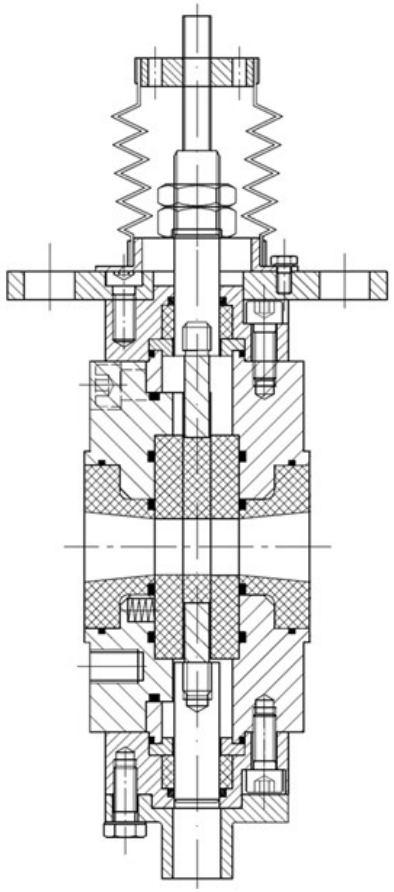


CERAMIC SLIDING DISC VALVE SSC TYPE



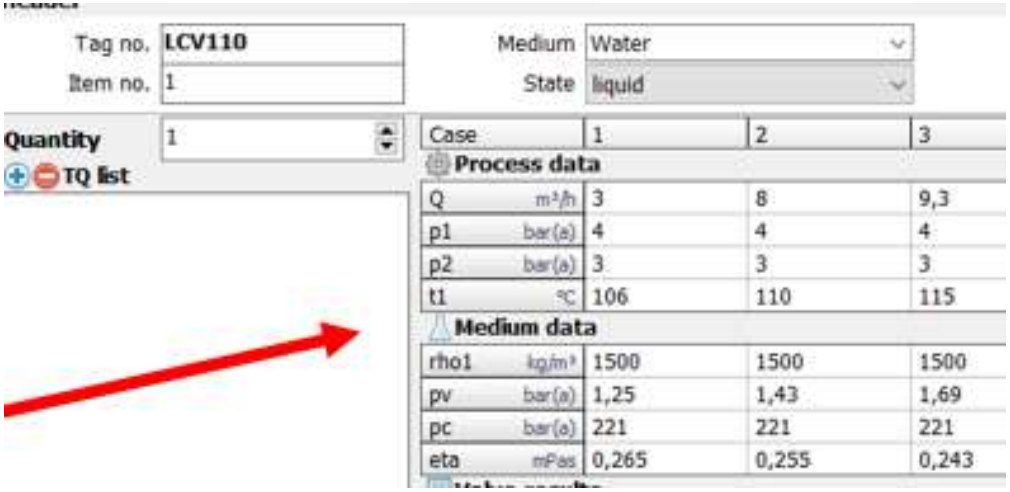
- Fully ceramic lined
- Sizes up DN10-80 (**max bore: 28mm**)
- Ratings PN40
- T max 310°C
- For extremely corrosive fluids
- Low flow rates
- Linear actuator
- Option with bellow and safety stuffing box acc. ISO15848-1
- Leakage rate DIN EN 60534-4 class VI (gastight)

FLOW



MINIMAL INFO NEEDED FROM YOU TO SIZE /SELECT THE RIGHT VALVE:

- **Fluid**
- **Pressure (p1; p2)**
- **Temperature**
- **Flow (min.; nom.; max.)**
- **Density**



Tag no.	LCV110	Medium	Water	
Item no.	1	State	liquid	
Quantity	1			
TQ list				
Case		1	2	3
Process data				
Q	m³/h	3	8	9,3
p1	bar(a)	4	4	4
p2	bar(a)	3	3	3
t1	°C	106	110	115
Medium data				
rho1	kg/m³	1500	1500	1500
pv	bar(a)	1,25	1,43	1,69
pc	bar(a)	221	221	221
eta	mPas	0,265	0,255	0,243

CERTIFICATES



CERTIFICATE

TIC TÜV International Certification TÜV CERT

for the management system according to ISO 9001:2015

The proof of the conforming application with the regulation was furnished and in accordance with certification procedure it is certified for the company

SAMSON

CERA SYSTEM Verschleißschutz GmbH
Am Globus 2
07629 Hermsdorf / Germany

Scope

Development and industrial manufacturing of electroceramics and engineered ceramics, especially of wear resistant systems; furthermore sale and trade of these systems and service supply

Certificate Registration No.: TIC 15 100 31654
Valid until: 2026-05-06
Valid from: 2023-05-07

Audit Report No.: 3330 224M W0

This certification was conducted in accordance with the TIC auditing and certification procedures and is subject to regular surveillance audits.

TÜV Thüringen e.V.
Certification body for systems and personnel

TÜV THÜRINGEN

Jena, 2023-04-24

IAF DAkkS Deutsche Akkreditierungsstelle D-ZM-16006-05-01

TIC

Original certificates are branded with a hologram.



CERTIFICATE

The Certification Body for Pressure Equipment of TÜV Thüringen e.V.

certifies, that

CERA SYSTEM Verschleißschutz GmbH
Am Globus 2
D-07629 Hermsdorf

has established and applies a quality system according to Directive 2014/68/EU Module H

type of pressure equipment : **industrial steel / austenitic cast steel fittings, piping with ceramic lining**
site : **D-07629 Hermsdorf, Am Globus 2**
assessment report no. : **CH08/65306/24**
certificate no. : **0090 151 0003**
certificate expires : **August 31, 2025**
initial certification in May 2002

TÜV Thüringen e.V. Notified Body ÜTV 15 0090

Erfurt, August 30, 2024

TÜV THÜRINGEN

C. Lange
Certification Body for Pressure Equipment
TÜV Thüringen e.V.
Notified Body 0090



CERTIFICATE

TIC TÜV International Certification TÜV CERT

for the management system according to ISO 50001:2018

The proof of the conforming application with the regulation was furnished and in accordance with certification procedure it is certified for the company

SAMSON

CERA SYSTEM Verschleißschutz GmbH
Am Globus 2
07629 Hermsdorf
Germany

Scope

Development and industrial manufacture of products in the field of electrical and engineering ceramics, in particular systems for minimising wear, and the sale of these products as well as the provision of services.

Certificate Registration No.: 1527525321
Valid until: 2028-02-02
Valid from: 2025-02-03

Audit Report No.: 3330/3GIZ/A0

This certification was conducted in accordance with the TIC auditing and certification procedures and is subject to regular surveillance audits.

TÜV Thüringen e.V.
Certification body for systems and personnel

TÜV THÜRINGEN

Jena, 2025-02-03

DAkkS Deutsche Akkreditierungsstelle D-ZM-16006-01-00

TIC

Original certificates are branded with a hologram.

SAMSON AT A GLANCE

STAFF

- Worldwide 4,500
- Europe 3,600
- Asia 700
- Americas 200
- Frankfurt am Main, Germany 1,900

WORLDWIDE MARKETS AND APPLICATIONS

- Chemicals and petrochemicals
- Food and beverages
- Pharmaceuticals and biotechnology
- Oil and gas
- Power and energy distribution
- Industrial gases, Cryogenic application
- Metallurgy and mining
- Pulp and paper
- Water and wastewater
- Industrial applications

PRODUCTS

- Valves
- Self-operated regulators
- Actuators
- Valve accessories
- Signal converters
- Controllers and automation systems
- Sensors and thermostats
- Digital solutions

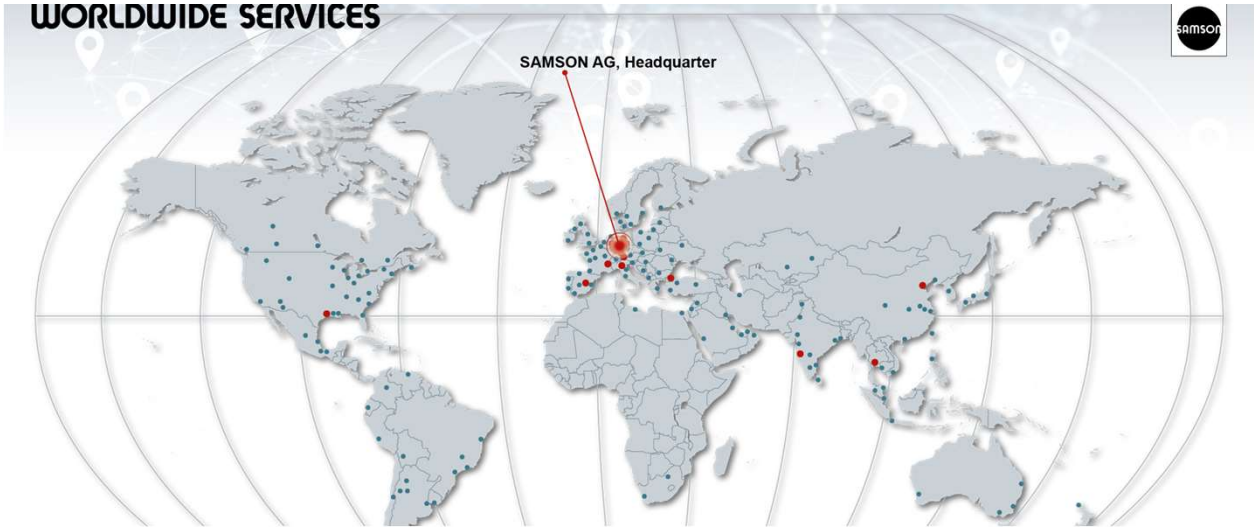
SALES SITES

- More than 50 subsidiaries in over 40 countries
- More than 200 representatives

PRODUCTION SITES

- SAMSON Germany, Frankfurt, established 1916 · Total area: 150,000 m²
- SAMSON France, Lyon, established 1962 · Total area: 23,400 m²
- SAMSON Turkey, Istanbul established 1984 · Total area: 11,100 m²
- SAMSON India, Pune district, established 1999 · Total area: 28,000 m²
- SAMSON USA, Baytown, TX, established 1992 · Total area: 20,000 m²
- SAMSON China, Beijing, established 1998 · Total area: 47,000 m²
- SAMSON AIR TORQUE, Bergamo, Italy · Total area: 27,000 m²
- SAMSON CERA SYSTEM, Hermsdorf, Germany · Total area: 14,700 m²
- SAMSON KT-ELEKTRONIK, Berlin, Germany · Total area: 1,100 m²
- SAMSON LEUSCH, Neuss, Germany · Total area: 18,400 m²
- SAMSON PFEIFFER, Kempen, Germany · Total area: 20,300 m²
- SAMSON RINGO, Zaragoza, Spain · Total area: 19.000 m²
- SAMSON SED, Bad Rappenau, Germany · Total area: 10,400 m²
- SAMSON STARLINE, Bergamo, Italy · Total area: 27,000 m²
- SAMSON VDH PRODUCTS, the Netherlands · Total area: 12,000 m²
- SAMSON VETEC, Speyer, Germany · Total area: 27,100 m²

SAMSON AKTIENGESELLSCHAFT



SAMSON

AND
EVERYTHING
FLOWS