CERAMIC LINED BALL VALVES
CERAVALVE®
FEATURES & BENEFITS

SOLID CERAMIC INTERNAL PARTS

- CERAVALVE® utilizes only solid ceramic internal valve parts (no coatings)
- Ceramic liners are a minimum of ¼” thick for ultimate protection against abrasion
- The ceramic components protect the entire flow path from valve inlet to outlet

CERAVALVE® MODULAR DESIGN

- Several flange and body size combinations are available to meet specific application requirements
- A wide range of Cv values are available to meet various control applications
- Simplified spare parts allow for easy on-site valve maintenance

DESIGN OPTIONS AVAILABLE

- Floating and trunnion mounted ball versions
- High temperature versions
- Various body and ceramic liner/ball material options
- Low emission shaft sealing available for strict environmental requirements

SAMSON ACTUATORS AND ACCESSORIES

- Standard ISO 5211 actuator mounting dimensions
- SAMSON’s entire range of valve accessories such as positioners, solenoid valves, limit switches, volume boosters, pneumatic lock-up valves, etc. are available to meet any requirements

MODULATING (CONTROL) VALVE VERSIONS

Reduced bore design:

- Improved throttling of medium
- Smaller valve ball reduces overall valve cost
- Maximum opening angle reduces wear on internal valve parts

ISOLATION (ON/OFF) VALVE VERSIONS

- Full bore design provides a straight through unrestricted flow path for minimal pressure loss
COMMON APPLICATIONS

Coal Fired Power Plants
Flue gas desulphurisation (FGD), lime/gypsum slurry process water with high chlorides and solids content

Iron & Steel
Injection of coal powder (PCI), injection of carbon powder in electric arc furnaces (EAF), raw iron desulphurisation (supply of additives: CaC, MgO...)

Polysilicon
$\text{Si}_3\text{Cl}_4$, TCS, raw silicon, splitting of silicon with acids, conveying of silicon powder

Waste Incineration Plants
HCl-prewashers, limestone suspension for pH regeneration, corrosive washing water (HF loaded)

Pulp & Paper
Kaolin, bentonite, fillers, dyes, bleachers, talcum, pulp residue, lime suspension, MgO, green liquor, wood particles in suspension

Mining
Splitting of ore with H2SO4, copper residues in suspension, concentrated copper slurries (“floatation”) to the filter, pneumatic conveying of copper powder to smelter, air bleed valve on the pneumatic conveying container

Pneumatic Conveying
All types of dry bulk material (quartz, silicon, lime, coal, glass, cement, PP pellets ...)

Petrochemical
FCC aluminium oxide powder as the catalyst, catalyst slurry

Fertilizer
Ammonium nitrate slurry, phosphoric acid with solids (lime), dolomite, washing water with hydrofluoric acid content

Chemical
$\text{TiO}_2$ suspension, $\text{Ti}_3\text{Cl}_4$, $\text{H}_2\text{SO}_4 + \text{TiO}_2$, $\text{FeCl}_2$
CERAMIC MATERIALS

Hardness and Wear Resistance

Abrasion from entrained solids in liquid flows, high viscosity slurries, pneumatic conveying, and many other demanding services can drastically reduce the life of most traditional valve styles. Lined valves utilizing ceramic materials that exhibit hardness values substantially higher than most metals can maximize the life of the valve.

Corrosion Resistance

Compared to other wear resistant materials, ceramic materials are much more corrosion resistant and can be used in a broad range of corrosive applications. Ceramics are completely resistant to most solvents, aqueous brines, and acids, even at relatively high temperatures.

Thermal Shock Resistance

Ceramic components maintain their shape and strength as well as physical characteristics up to extremely high temperatures. However, rapid changes in temperature (thermal shock) can prove challenging for ceramics. CERAVALVE® ceramic ball valves are available in several materials to handle even the most demanding applications.

Flexural Strength

Static and dynamic friction as well as operating and shut-off differential pressures often lead to high required torque loads on the ceramic ball. The use of certain ceramic ball materials with higher flexural strength, such as zirconium dioxide and silicon nitride, allow CERAVALVE® ceramic ball valves to be used in a broad range of applications.
(KGT) - Trunnion mounted ceramic ball for high differential pressures

(KST) - For control & on/off applications

(KST-HT) - High temperature applications

(BR26CERA) - Ceramic ball & seat rings for on/off service

(KSV) - HALAR® coated flanges for control of abrasive and corrosive fluids
## TECHNICAL DETAILS

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<th>KST / KAT / KGT / KZT / KSV / KAV</th>
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<tbody>
<tr>
<td><strong>Flange Size</strong></td>
<td>NPS ½ to 12</td>
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<tr>
<td><strong>Valve Body Size</strong></td>
<td>NPS ½, 1, 1½, 2½, 3, 4, 5 and 6</td>
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<tr>
<td><strong>Pressure Rating</strong></td>
<td>ANSI Class 150 and 300 (higher pressure classes available on request)</td>
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<tr>
<td><strong>Flow Capacity</strong></td>
<td>Cv 11 to 3091</td>
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<tr>
<td><strong>Internal Leakage Rate</strong></td>
<td>Class IV (class V on request)</td>
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<tr>
<td><strong>Temperature Range</strong></td>
<td>-22 to 590 °F (-30 to 310 °C)*</td>
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<tr>
<td><strong>Face-to-Face</strong></td>
<td>ASME (custom version also available on request)</td>
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**KST-HT** (main features as above)

| **Temperature Range** | up to 1740 °F (950 °C)* |

**BR26CERA**

| **Flange / Nominal Size** | NPS ½ to 4 |
| **Pressure Rating** | ANSI Class 150 and 300 |
| **Internal Leakage Rate** | Class IV |
| **Temperature Range** | 14 to 392 °F (-10 to 200 °C) |
| **Face-to-Face** | ASME short or long pattern |

*See valve data sheet for permissible temperatures for each material and valve type

**CERA SYSTEM** is the leading technological pioneer in industrial valves and pipe components with ceramic linings. Conventional valve materials cannot meet the demands of all industrial applications. Where they fail, high-performance ceramic materials open up new opportunities. Ceramics prove to be beneficial wherever standard materials reach their limits with respect to wear resistance, corrosion, and high temperatures.