NORTH AMERICAN MADE

Severe Service Valves for Fly Ash and Bottom Ash Applications

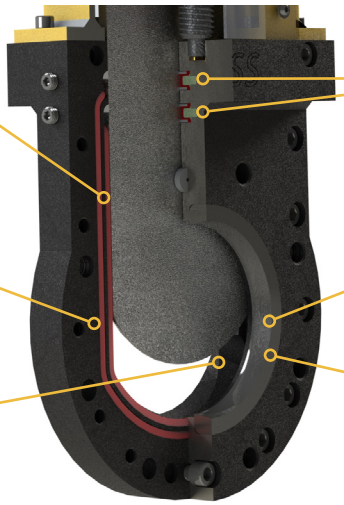
Fly Ash and Bottom Ash are two types of residues that are produced during combustion in coal-fired power plants. They play a significant role in the coal ash industry, which involves managing and repurposing them.

DSS Valves' Severe Service Knife Gate Valves (SSKGVs) and Severe Service Check Valves (SSCKVs) are excellent options in both Fly Ash and Bottom Ash Applications.

Internal radial seat is resilient and mechanically retained, allowing for zero leakage isolation regardless of flow direction.

Redundant sealing by means if secondary body seals on 4" and larger.

Internal flush outs aid in the removal of media from seat sealing surfaces.



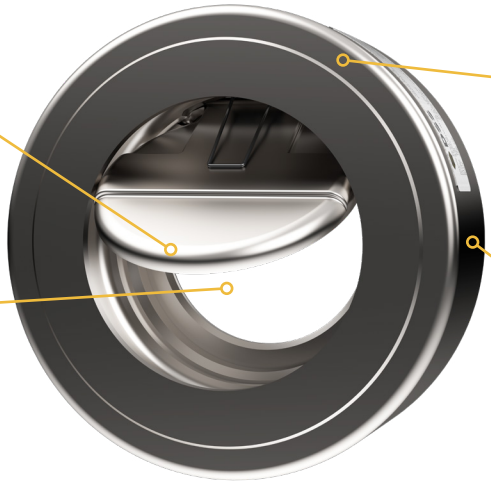
Resilient cavity seals include phenolic gate cleansers that protect the seal from harmful contaminants. Packable under full service pressures.

Replaceable hard metallic wear rings are optional.

Full round port minimizes pressure drop.

One-piece Disc/Shaft/Hinge eliminates disc breakage.

Large bore minimizes pressure drop.

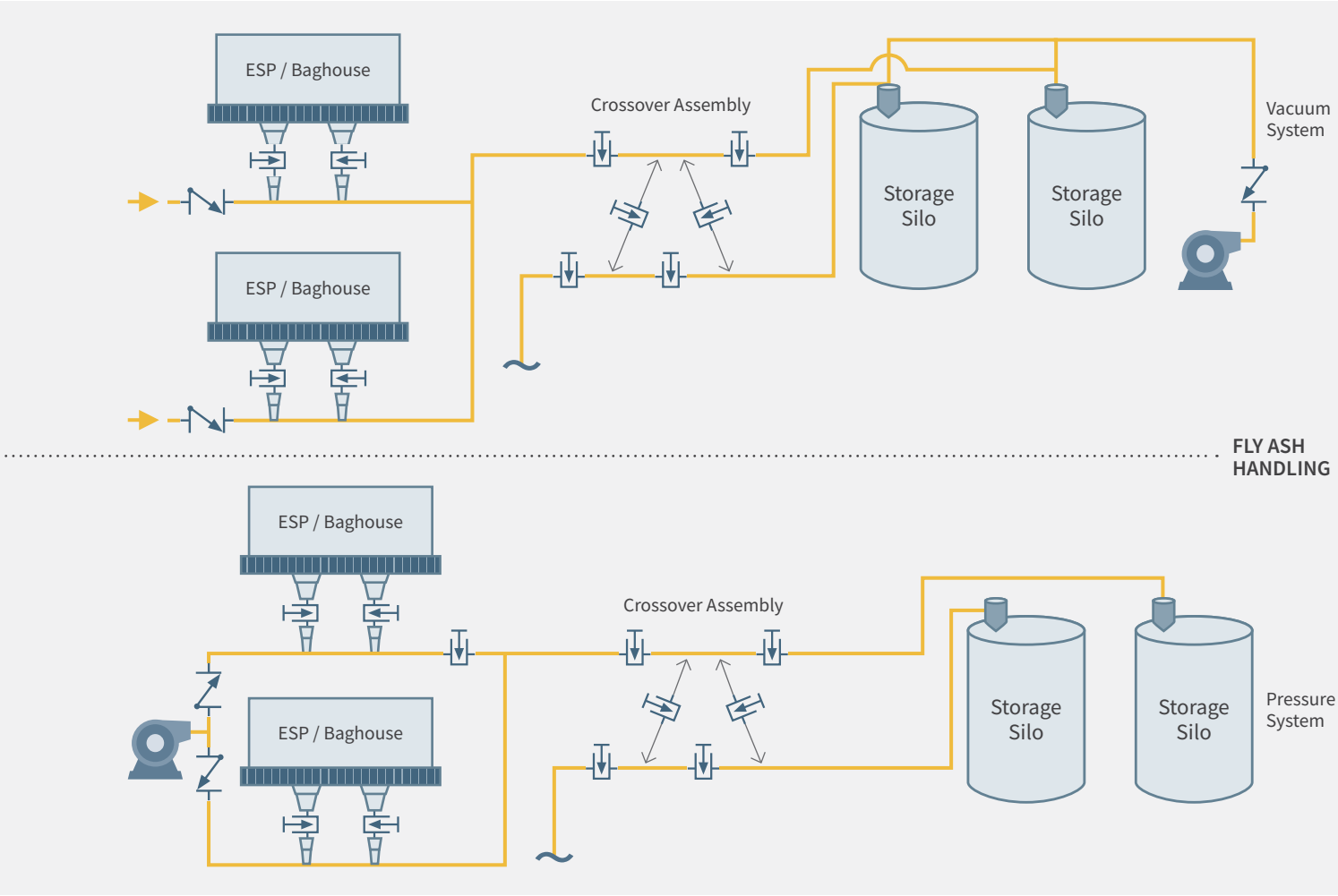


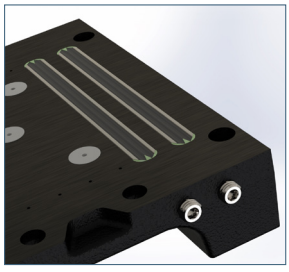
Engineered body/seat insert interference fit. Rebuildable design.

Retainerless body eliminates fugitive emissions.

Fly Ash

Fly ash is the fine powder byproduct produced and amassed in large quantities at coal-fired power plants. The fly ash is collected and transferred to storage silos from where it can be transported away for disposal or reuse. Given its fine particle size, fly ash can be a difficult material to handle reliably.



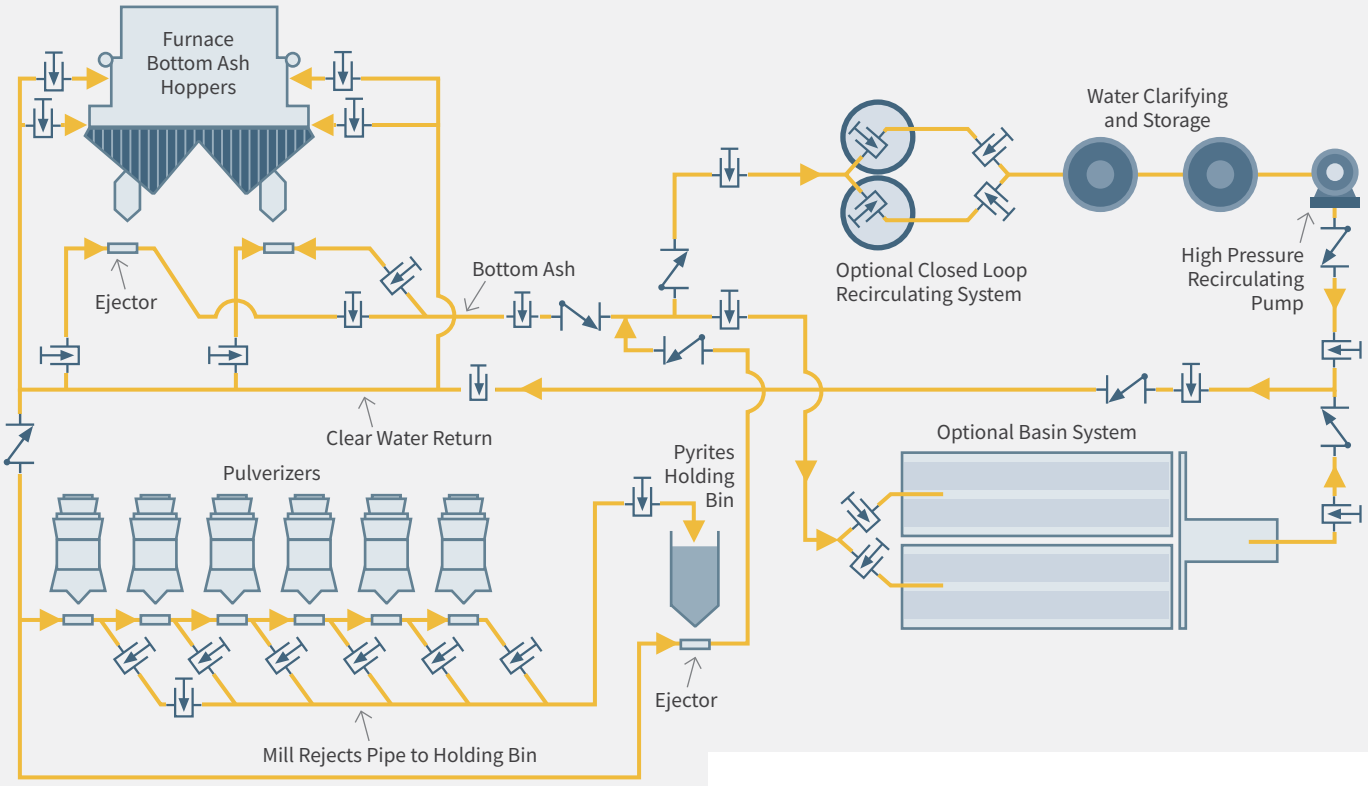


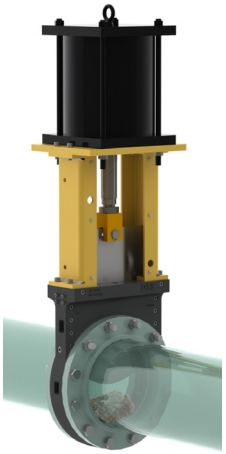
A critical feature of the DSS SSKGV design is the **dual transverse seals** and **primary and secondary body seals**. Not only do these features eliminate leakage to atmosphere, but the greatly improve efficiency of the loading/unloading of the ash silos.

Often, ash is pneumatically transported by pulling a vacuum. Typical packing leakage that occurs with lesser knife gate valve designs makes maintaining a vacuum much more difficult. This leads to slower transportation of the ash and higher operational cost for the vacuum pumps.

Bottom Ash

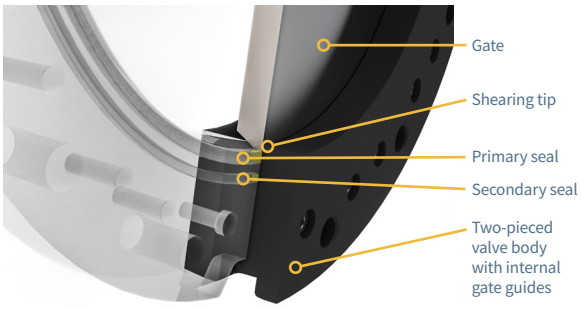
Bottom ash, also known as clinker ash or slag, is a heavier, coarser residue that settles at the bottom of the combustion chamber. It is typically collected using water-filled hoppers or ash ponds. Bottom ash consists of larger particles and may contain unburned carbon.





As odd as it sounds, traditional knife gate valves cannot cut through material on a repeatable basis. Solids in the pipeline such as Bottom Ash cause traditional gates to deflect, warp and leak to atmosphere.

Our Guided Shear Gate design consists of two key elements: a shearing tip and internal gate guides. From open to close the gate is guided the entire way



removing any option to deflect when Bottom Ash is encountered. It is struck, fractured, and angled away by the shearing tip. Because of this, our SSKGVs maintain zero leakage in this difficult application.

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Recommended SSV Builds in Fly Ash and Bottom Ash Applications

Severe Service Knife Gate Valve

- SV1S or SV3S
- Ni-Resist body
  (316SS optional in corrosive environments)
- 17-4PH gate
- AFLAS seals
- Phenolic scrapers
- Stellite tipped gate
- Inlet wear ring
- Xylan coating on body and gate

Severe Service Check Valve

- 2”-12” CL150 and CL300
- Carbon Steel wafer body
- 316SS seat insert and disc
- AFLAS seals (more common)
  Metal-to-metal seals (less common)
- Inconel X750 spring

Ready When You Are

Located in Niles, Michigan, our manufacturing facility is primed and ready to serve your severe service needs. With over 90,000 square feet of manufacturing space and a dedicated crew in operation around the clock, we take pride in our ability to deliver a *cutting edge valve* at an industry leading pace.

To learn more, contact us at **info@dssvalves.com** directly.
We look forward to working with you.

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