



Valves for Ash

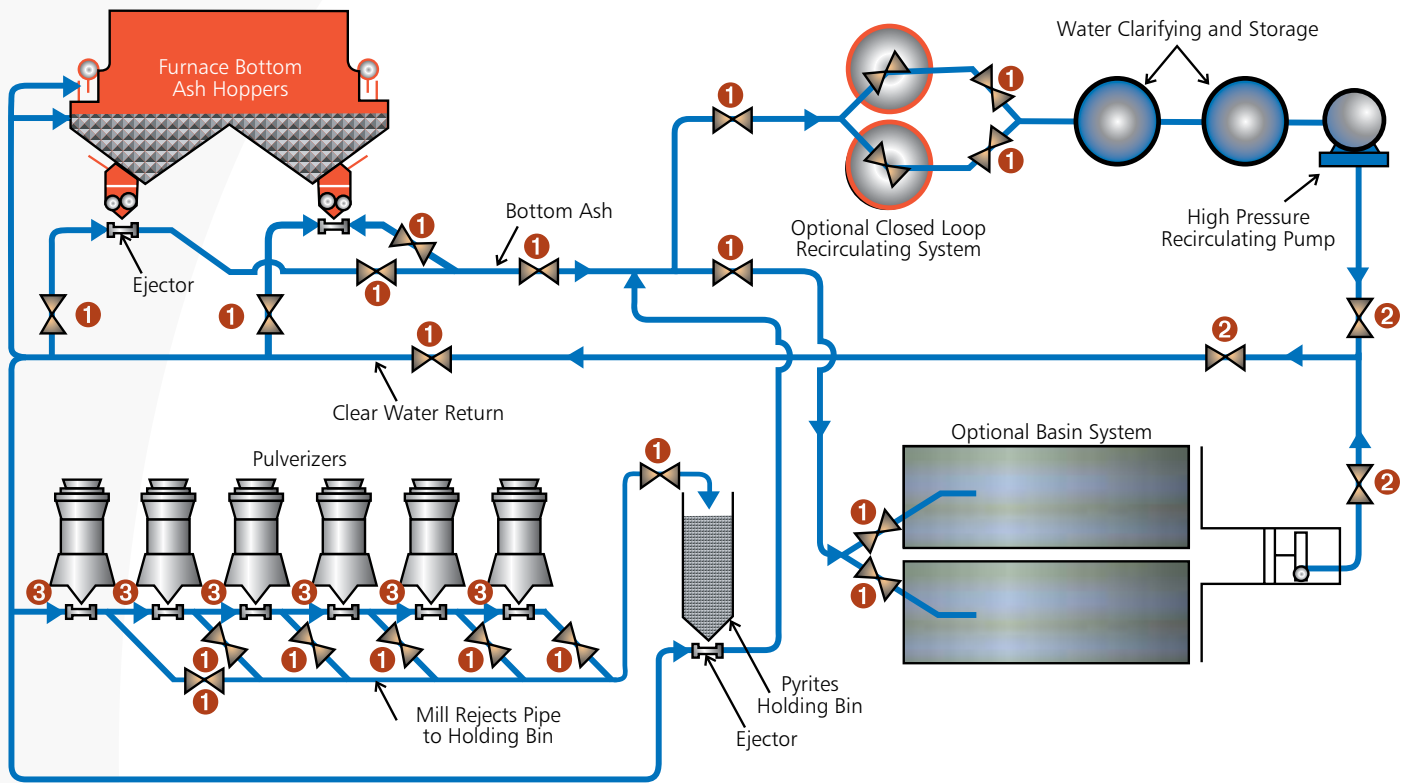
Quality valve products designed specifically for ash handling in the power industry



ITT

ENGINEERED FOR LIFE

Bottom Ash Handling



Bottom Ash Sluice Valve



Fabri-Valve OM150

Bottom Ash Sluice Valve - High Pressure



Fabri-Valve XS150

Pyrite / Mill Rejects



Fabri-Valve C/F37

ITT Fabri-Valve® OM150 Urethane Lined Knife Gate Valve

The Fabri-Valve OM150 provides bubble-tight, bi-directional shutoff in bottom ash / pyrite sluicing / mill rejects service in sizes 2 inch to 24 inch to 170° F and 150 psi. The OM150 features locked-in urethane liners and a replaceable, one-piece perimeter seal.

The rugged urethane urethane liner features triple gate scrapers in the chest area to inhibit solids and abrasives from entering the gate seal area. The perimeter seal is double locked in the valve body to securely retain the seal in the seal groove during cycling and has an injectable packing feature which provides for packing adjustments to be made under line pressure without valve disassembly or removal of the valve from the pipeline.

Actuated assemblies for automatic or remote operation are available in pneumatic, electric and hydraulic configurations.

Additional advantages of the OM150 include:

- True full port
- Built in “gate guides” provide maximum gate support for 150 psi bi-directional rated performance
- A taper added to the body’s interior eliminates material collection points found in conventional urethane lined and unlined knife gate valves and ball valves
- Low profile, non-rising stem design allow for installation in areas of minimum clearance. Provisions for open / closed lockouts are standard
- The one-piece perimeter and chest seal allows for quick and easy maintenance

ITT Fabri-Valve XS150 ANSI Class Knife Gate Valve

The Fabri-Valve XS150 ANSI Class 150 rated (285 psi) high performance knife gate valve provides bubble-tight, bi-directional shutoff in high pressure bottom ash / pyrite sluicing service, where increased pumping distances or higher solid content call out for pump pressures which exceed the capabilities of 150 psi rated valves.

The XS150 features a perimeter seal which is double locked in the valve body to securely retain the perimeter seal in the seal groove even during the most demanding applications. This perimeter seal technology allows for injectable packing adjustments on-line. Dual scrapers blades clean gate during operation and protect the seals from abrasives such as those found in sluice lines and bottom ash water service. The XS150 is available in sizes 2" to 24" and performs in services to 400° F. Actuated assemblies for automatic or remote operation are available in pneumatic, electric and hydraulic configurations.

Additional advantages of the XS150 include:

- True full port
- Built in “gate guides” and modified TFE bearing surfaces provide maximum gate support for true ANSI pressure rated performance
- A taper added to the body’s interior eliminates material collection points found in conventional knife gates and ball valves
- Low-profile, non-rising stem design allow for installation in areas of minimum clearance. Open / closed lockouts are standard
- Available hardened ID and wear liners offer added abrasion protection
- The one-piece perimeter and chest seal allows for quick and easy maintenance

ITT Fabri-Valve C/F 37 Knife Gate Valve

The Fabri-Valve cast C37 knife gate valve features machined integral seats and gate wedges for tight shut off to 150 PSI in sizes 2 inch to 24 inch and service to 1500° F. The true full port Fabri-Valve C37 is ideally suited for isolation of material airlock valves, rotary valves and automatic material handling valves installed as OEM equipment on the outlet of hoppers including ESP and baghouse hoppers. Available with gate backing rings, these rings allow for “seat side up” installation of the C37 which eliminates collection pockets for ash and other solids as is common in other valves. Preventing build up prevents gate jamming and provides reliable isolation when needed.* The word “seat” is cast into the body for a permanent reference to assist proper installation orientation. The C37 is also a solid choice for the mill reject / pyrite discharge valve on pulverizers. Specifying this valve as an F37 allows the user to specify non-standard ports, bolt patterns, and body styles such as square and rectangle. This versatility is often needed when retrofitting existing mills. Because of the built-in design flexibility of the F37, the F37 is available in 1.5 inch through 96 inch including 5 inch.

A partial list of options available on the C/F37 include:

- Actuation for automatic and remote operation
- Body materials: 304, 316, 317L, 2205, Inconel 800HT, S309, Hastelloy C276 and other cast or weldable materials
- Hardened gates such as 17-4 pH stainless and 400 series stainless
- Replaceable drop-in seats (single and dual) of hardfaced metal, elastomers, UHMW-P or PTFE are available
- Deflection cones protect the seat face by deflecting away flowing media
- Surface protection via Stellite overlay, tungsten carbide coating or nitriding
- High temperature packing
- Non-rising stems to allow for installations in areas of minimum clearance.
- Flush ports

*For isolation service in static columns of solid particle and powders, specify ITT Fabri-Valve F39.

Ductile Iron is also available. Specify ITT Fabri-Valve C45.

ITT Fabri-Valve F39 Ported Slide Gate for Hopper Isolation

The Fabri-Valve Figure F39 slide gate valve is available in sizes 1.5 inches to 96 inches and is designed for shut off and throttling in difficult dry abrasives and/or high solids slurry service. The standard round port configuration is used for on / off service and the optional diamond port configuration is used for throttling.

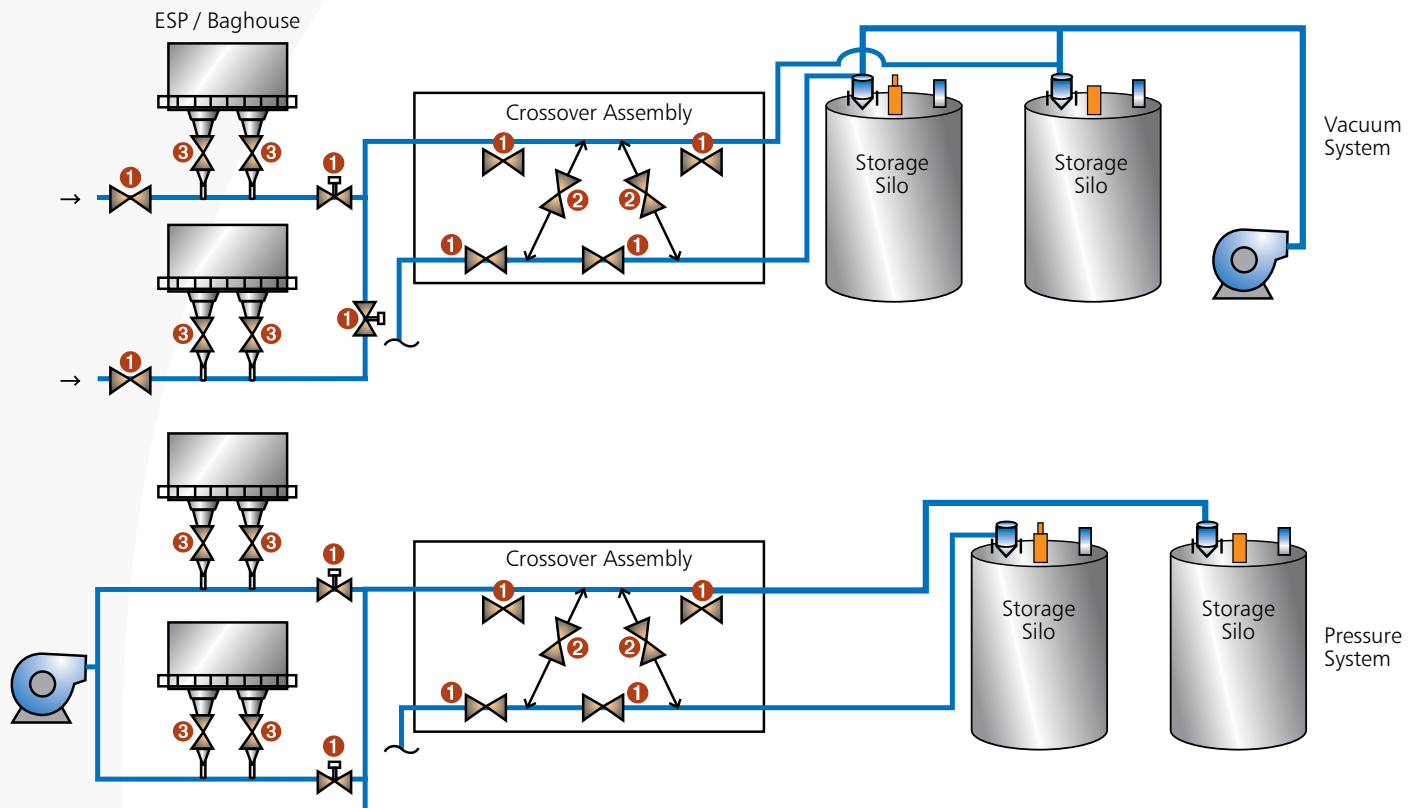
Available with a handwheel or automated, the Figure F39 has the unique ability to operate in a static column of solid particles and powders. The opening in the slide gate merely moves a disc of material laterally then returns it when the slide gate is reversed. Consult factory for shut off capability with standard and optional seats.

All Figure 39 slide gate valves with handwheels include a provision for a locking device. Consult factory for details.



Fabri-Valve F39

Fly Ash Handling



Branchline / Pneumatic

Crossover Valve

Isolation Valve for Material Handling and Airlock Valves



Fabri-Valve C45



Fabri-Valve C67



Fabri-Valve C/F37

ITT Fabri-Valve C45 Cast Knife Gate Valve

The Fabri-Valve C45 features a solid ductile or carbon steel* body with a machined integral seat and gate wedges for tight shut to 150 psi in sizes 2 inch to 24 inch and service to 650° F.

The Fabri-Valve C45 is built for long, dependable service. Being full ported, Fabri-Valve C45 cast knife gate valves are routinely used as OEM equipment by the OEM's who design and build vacuum, pressure and combination vacuum / pressure ash conveying systems. Designed for on / off service and ash flow in one direction, the Fabri-Valve C45 provides reliable branchline isolation and pipeline isolation for dry applications. The C45 is rugged and easy to maintain. The word "Seat" is cast into the body for a permanent reference to assist proper installation orientation. The Fabri-Valve C45 is available with interchangeable components which are used to customize your valve to a specific application.

Some of these available components are:

- Actuation for automatic or remote operation.
- Drop-In style replaceable metal seats with hard facing or hardened IDs. Having a larger cross section and seating area than conventional knife gate style seats, service life is increased. This unique design also allows these replaceable seats to be available in various elastomers.
- Deflection cones, sometimes referred to as wear or flow cones, which divert abrasive flow from the seat to extend seat life.
- PTFE / Graphite Kevlar® ** packing for the ultimate in packing performance
- Gate shrouds or covers.

*For Bodies in stainless steel, see details on the Fabri-Valve C37.

** Kevlar is a registered trademark of DuPont™.

ITT Fabri-Valve C67 Bi-Directional Knife Gate Valve

The ITT Fabri-Valve C67 is available in sizes 2 inch to 24 inch for 150 psi (30 inch – 100 psi, 36 inch – 80 psi) service to 400° F. The ITT C67 features a unique, patented* perimeter seal that provides bubble-tight shut off for applications such as cross over valves where material can flow through the valve in either direction and Bi-Directional shut-off it required.

The seal is retained in the valve body by its trapezoidal shape. A relief has been cut in the valve body behind the seal. This relief reduces compression set; the shape of the seal eliminates leakage due to seat roll-over, eliminates seal pull out, and eliminates grooves that collect material which prevent the valve from sealing properly. To assist packing performance, packing support bars are standard in sizes 6" and larger and work as scrapers to inhibit fly ash from flowing to the valve packing.

Available C67 options include:

- Actuation for automatic or remote operation
- Seal materials of EPDM (280° F), Viton (350° F) or AFLAS® (400°F). Other material available upon request.
- Hardened gate materials for applications close to tees and laterals, including ceramic overlays
- Chest Liners which inhibit ash build up in the chest area of the valve
- PTFE / Graphite Kevlar® packing
- Spring loaded packing follower for automated valves.

*US Patent #5,154,397

ITT Fabri-Valve C/F 37 Knife Gate Valve

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A partial list of options available on the C/F37 include:

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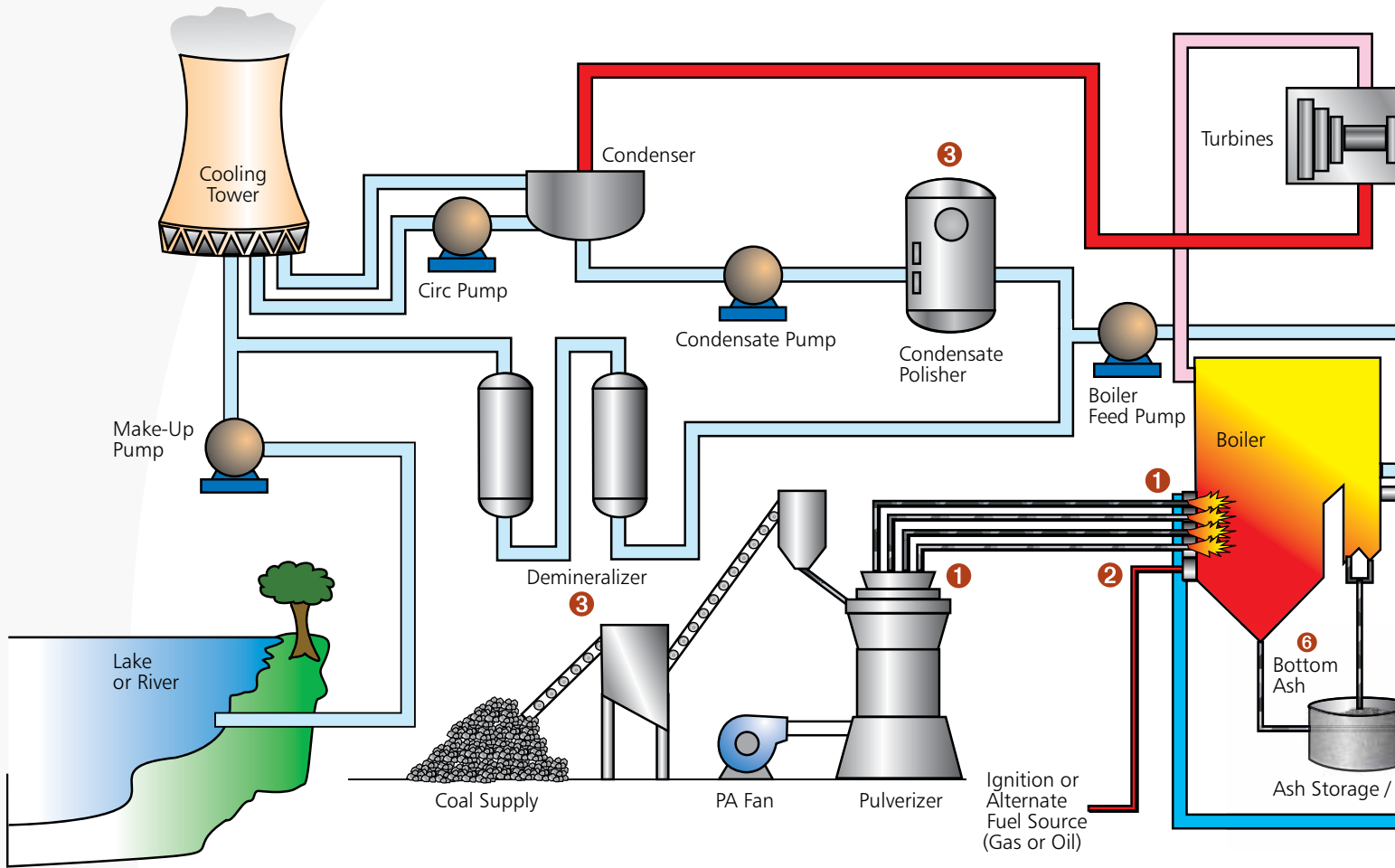
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All Figure 39 slide gate valves with handwheels include a provision for a locking device. Consult factory for details.



Fabri-Valve F39

ITT Valves for Your Power Plant System



PULVERIZER / COAL BURNER ISOLATION

- "Pop-in" style replaceable seats available in a variety of materials
- Optional hard facing seats / gates for additional abrasion resistance
- Exceeds NFPA 85 dust-tight requirements
- Custom-engineered designs for retrofit applications



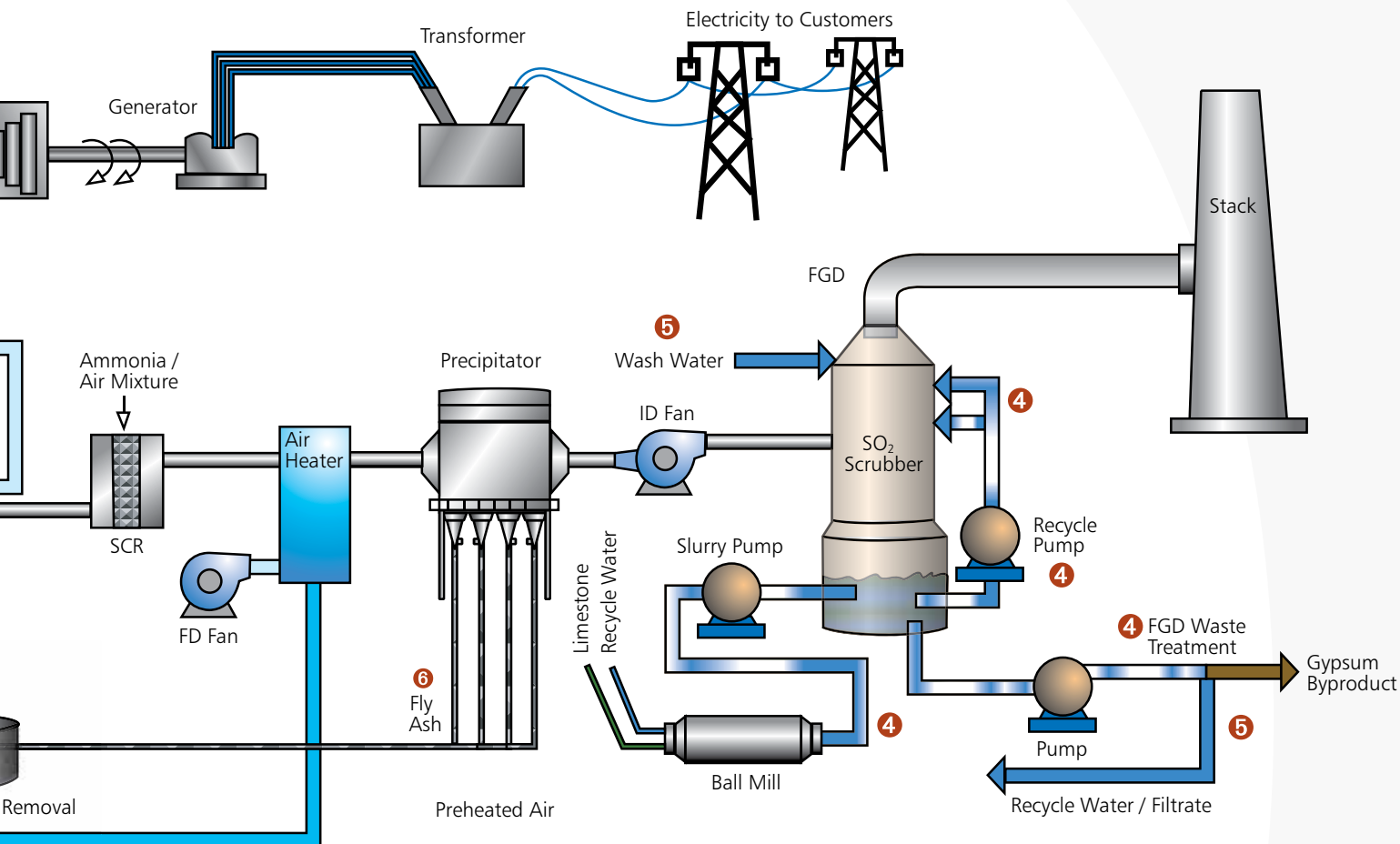
BURNER & IGNITER SAFETY SHUTOFF VALVE

- Compact 3-in-1 design requires less space and reduced installation time and labor.
- Oil shutoff, atomizing shutoff, and purge in single valve system
- Gas double block and vent in single valve system
- Factory Mutual (FM) approved



DEMINERALIZER / CONDENSATE

- 50+ years of proven service for demineralizer and condensate systems
- Reliable long-term life
- Easy in-line maintenance
- Modulating and control capabilities
- No packing glands to maintain



FGD SLURRY

- Limestone and gypsum slurries
- Zero-discharge options available
- Urethane and rubber lined designs available
- Wide selection of special alloy materials for high chlorides



FGD WATER / WASTE WATER

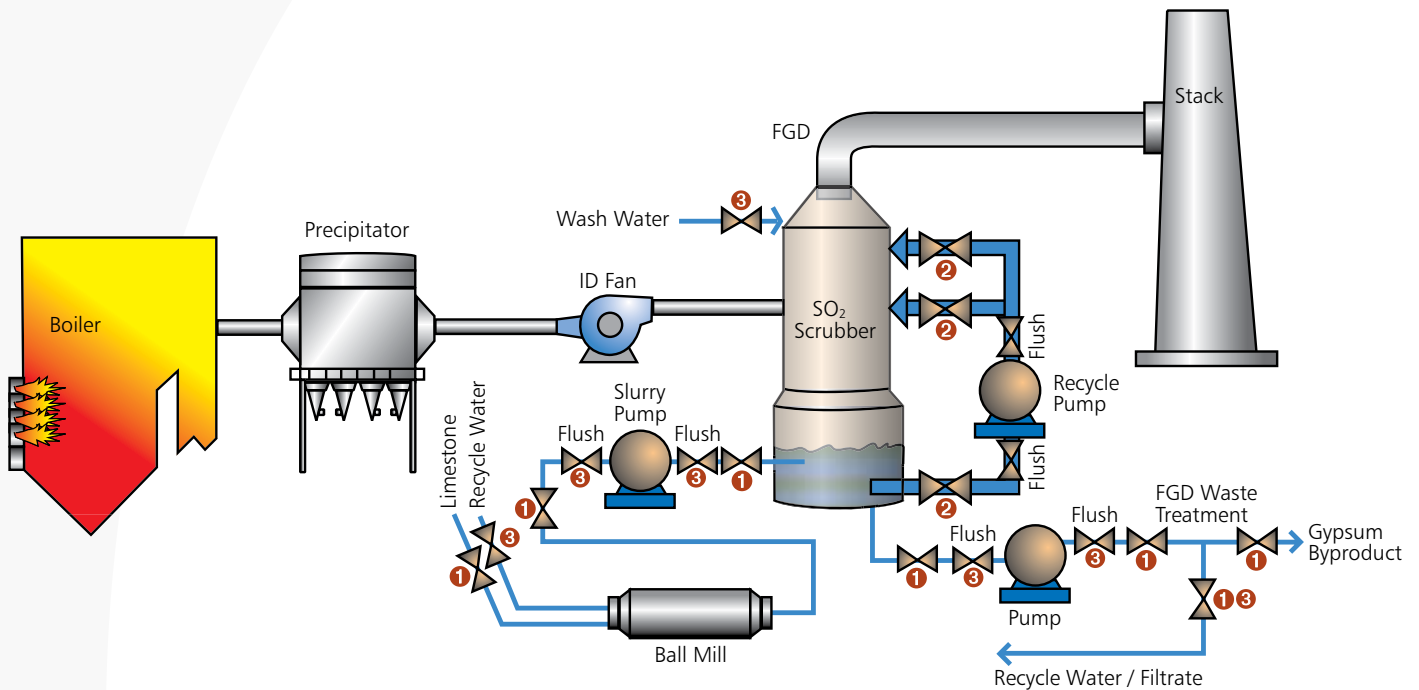
- Filtrate, reclaim, mist eliminator wash, dewatering
- Rugged design for reliable, long-term life
- Easy in-line maintenance
- Diaphragm able to close over suspended solids
- Modulating and control capabilities



ASH HANDLING

- Bottom ash and fly ash service (wet or dry systems)
- Designs available up to 1600°F (871°C)
- Bubble-tight, bi-directional shutoff
- Upgraded seats and gates available for more abrasive applications

Flue Gas Desulphurization



Gypsum and Limestone Slurry



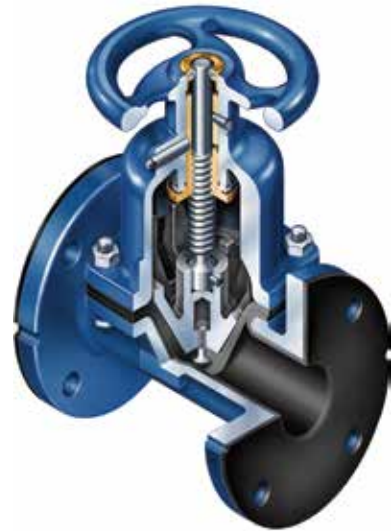
Fabri-Valve OM150

Gypsum Slurry Recycle Pump Isolation



Fabri-Valve S16

Water / Wastewater Pump



Dia-Flo Valve

Fabri-Valve OM150

For FGD slurry applications, the Fabri-Valve OM150 urethane lined valve provides an economical solution to corrosion protection without discharging media to the environment. Valve sizes available are 2 inch through 24 inch with temperature rating of 170° F and 150 psig. The OM150 design is an excellent choice for high cycling applications found in limestone and gypsum slurries.

The perimeter seal provides bubble-tight, bi-directional shutoff. The one-piece perimeter seal includes a packing chamber that allows easy packing adjustments to be made under line pressure without valve disassembly or removal of the valve from the pipeline.

The OM150 features locked-in urethane liners and a replaceable, one-piece perimeter seal. The rugged urethane liner features triple gate scrapers in the chest area to inhibit solids and abrasives from entering the gate seal area.

The taper added to the body's interior eliminates material collection point found in conventional urethane lined and unlined knife gates.

The advantages of the design include:

- Zero discharge
- Zero leakage
- Liner is not used for sealing
- One-piece perimeter seal provides bubble-tight, bi-directional shutoff
- Injectable packing allows easy packing adjustments made while valve is in service

Fabri-Valve S16-ULV

For larger gypsum pump isolation valves, the S16-ULV urethane lined valve is an excellent choice in sizes 30 inch through 60 inch. The perimeter seated valves provides bi-directional shutoff with zero leakage. The Fabri-Valve S16-ULV does not discharge any media to the environment. Valves can be equipped with electric or hydraulic actuators and a variety of limit switches/ position indicators. Additional accessories like hydraulic power units (HPU) can be provided.

The Fabri-Valve S16-ULV provides full port flow with the following operational conditions:

- 30" through 42" (75 psig maximum differential pressure at 170° F)
- 48" through 60" (50 psig maximum differential pressure at 170° F)

Dia-Flo® Rubber Lined Valves

The use of diaphragm valves in light slurry service is an economical alternative in high chloride applications since there are no high alloy gates or discs required. The valve is easily maintained in line and there are no packing glands to maintain. The diaphragm is able to close over suspended solids.

Diaphragm valves are also an excellent choice for the numerous flushing and draining requirements of FGD systems. Since there are no wetted parts which are metal, sizes 1/2" through 6" provide economical savings versus other valve designs.

Electric and pneumatic actuation packages are available along with a full complement of switches and sensors that can provide position feedback

Dia-Flo diaphragm valves have also been used successfully in slurry throttling applications. The unique weir and straight-through design valve bodies coupled with thick rubber liner provide excellent life in these difficult applications. The weir style valve is available with the patented Dual-Range bonnet, which provides excellent throttling characteristics from 0% to 80% full stroke..

Dia-Flo Diaphragm Valves for Waste Water

After the flue gas has been desulphurized the waste steam may contain heavy metals such as selenium, mercury, and arsenic. Depending on the local water quality criteria and current environmental guidelines, the waste stream will need to be further treated before it is discharged. Dia-Flo diaphragm valves have been used extensively on these waste treatment systems, which are typically supplied by major water treatment OEM companies. The simplicity in design and low maintenance cost of the diaphragm valve make it an excellent choice for waste treatment.

ITT Engineered Valves: 65 years of Providing Quality, Innovative Solutions

ITT Engineered Valves has earned the reputation for delivering the highest quality, innovative valve solutions for a wide range of industrial fluid control needs. These best in-class quality valves have been the foundation for industries such as Mining, Power Generation, Pollution Control, Pulp and Paper, Chemical Processing, Water Treatment, Pharmaceutical, Food and Beverage, and Bio-Processing.

Through both standard and custom designed valve assemblies, ITT Engineered Valves is your partner in providing the best quality and value engineered solutions for your unique flow control needs.

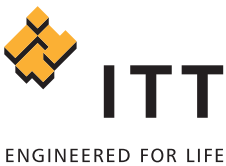
- Dia-Flo® Diaphragm Valves
- Fabri-Valve® Knife Gate, Slide Gate, Wedge Gate and Custom-Fabricated Valves
- Cam-Tite® Hazardous and Critical Duty Ball Valves
- Cam-Line® Plastic Lined Ball Valves
- Skotch® Burner Safety Shut-Off valves



Lancaster, PA Facility



Amory, MS Facility



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