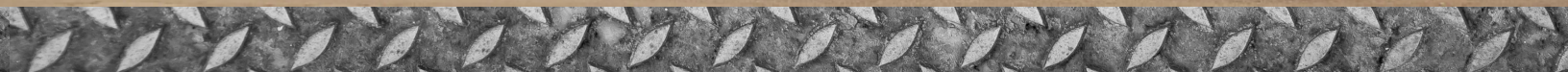




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ENGINEERING YOUR UPTIME.

SYNTHETIC FUELS VALVE SOLUTION GUIDE



Synthetic Fuels

Synthetic fuel plants operate under extreme temperatures, abrasive catalyst environments, high solids loading, and high-pressure syngas conditions.

Key challenges include where conventional ball, gate, and plug valves fail due to catalyst erosion, coke buildup, thermal cycling, and chemical attack.

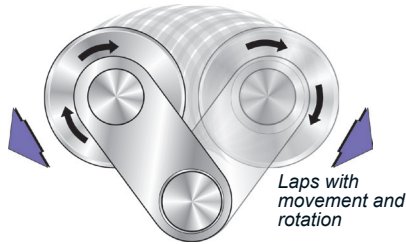
Everlasting's rotating-disc technology provides unmatched reliability because the disc wipes the seat clean each cycle, seals tighter over time, and withstands the harshest slurry and solids-laden flows.



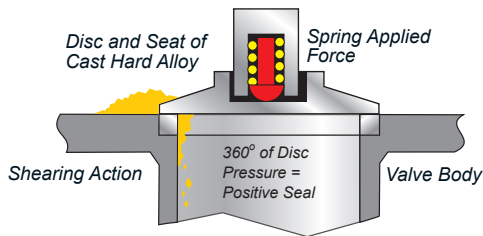
Biomass Gasifier Feed, 100F - 500 psi

Everlasting Valves & Diverters Features:

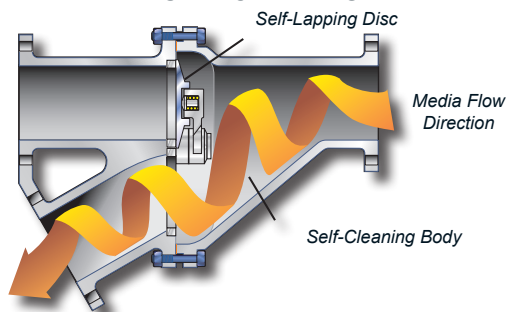
SELF-LAPPING SEALING SURFACES



POSITIVE SHUT-OFF



SELF-CLEANING



Fischer-Tropsch (FT) Reactors

Location: Wax slurry loops, reactor circulation systems, catalyst recirculation lines

Media: FT wax slurry, catalyst fines (iron, cobalt), heavy hydrocarbons

Valve Type: Process

Why EV Works: Handles high-viscosity wax slurry with solids loading, rotating disc prevents catalyst buildup and seizure, and seals remain tight during constant thermal cycling.

Syn-gas Compression & Conditioning Systems

Location: After gasification, before FT reactor

Media: H₂-rich syn-gas, CO, CO₂, particulates, condensate

Valve Type: Process

Why EV Works: No clogging from particulates in raw syn-gas, excellent performance under high pressure and temperature and superior sealing in dirty gas-phase service.

Slurry & Catalyst Transport Loops

Location: Catalyst preparation units, slurry hydrocarbon transfer, and fines removal systems

Media: Catalyst slurry, solids-laden hydrocarbons, wax/oil mixtures

Valve Type: Process

Why EV Works: Zero seat cavity → no catalyst packing or bridging, disc wipes clean every stroke and maintains sealing under abrasive wear.

Gasifier Ash & Char Handling (CTL & BTL Plants)

Location: Gasifier blowdown, lock-hoppers, ash cooling and removal systems

Media: Ash, char, slag, water/ash slurry

Valve Type: Process

Why EV Works: Stable performance in abrasive ash and fine solids, excellent sealing even with hot, gritty media and outlasts knife-gate and metal-seated ball valves.

Hydro-cracking / Upgrading Units

Location: Wax upgrading, hydro-cracker feed, residue handling, purge systems

Media: Heavy hydrocarbons, wax, slurry, catalyst fines

Valve Type: High-Temperature Process

Why EV Works: Handles extreme viscosity and abrasive fines, resistant to coke deposition and fouling and robust sealing during repeated startup/shutdown.

Steam & Utility Blowdown

Location: Syn-gas coolers, heat exchangers, utility boilers

Media: Hot water, steam, condensate, particulate

Valve Type: Blowdown

Why EV Works: Multi-decade reliability in high-cycle blowdown, serviceable packing reduces maintenance downtime.

Why Everlasting Valves Excel in Synthetic Fuels Plant Operations

- Self-cleaning rotating disc eliminates build-up of catalyst, wax, or char
- Wear-in, not wear-out sealing improves performance over time
- No seat cavities → no packing with solids
- Packing is serviceable → minimal downtime
- Proven in GTL/CTL/BTL and Fischer-Tropsch operations worldwide

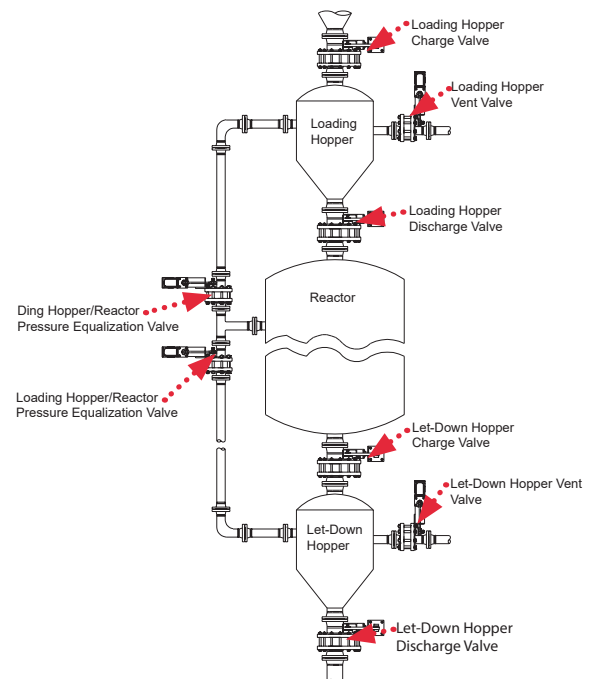
Application and Everlasting Valve Product Fit:

- Reactor load & discharge
- Bio-Mass lock-hopper load & discharge
- Hot gas clean up, cyclone discharge
- Hot gas clean up, candle filter discharge
- Coal lock-hopper load & discharge
- Gasifier inlet & outlet
- Calciner inlet & outlet
- Bed ash/sand drain
- Char discharge
- Pyrolysis reactor inlet & outlet
- Fischer-Tropsch catalyst slurry



Bio-fuels: Fluid bed sand & ash, 400F - 15 psi

Application Fit Diagram



Functional Specifications

| Process Area | Media | Everlasting Valve Type | Function |
|------------------------|-----------------|------------------------|-------------------|
| FT Reactor Slurry Loop | Wax, catalyst | Process Valve | Isolation |
| Syn-gas Systems | Gas + fines | | |
| Catalyst Transport | Slurry, solids | | |
| Gasifier Ash/Char | Abrasive solids | | On/off, switching |
| Hydro-cracker/Upgrader | Heavy oil, wax | Blowdown Valve | Isolation |
| Utilities | Steam, water | | Purge/clean-out |



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Service Excellence in Action

When you choose Everlasting Valve Company, you're not just selecting a product—you're gaining a partner dedicated to long-term performance and support. Our commitment to service extends far beyond standard maintenance or repair. It means timely access to our knowledgeable team of engineers and service professionals—ready to respond anytime, anywhere your operations demand.

At Everlasting, we pride ourselves on becoming an extension of your team. You can count on us to take ownership of every challenge and deliver practical, lasting solutions. When issues arise, our technical experts go beyond the symptoms to uncover the true cause. We evaluate your complete system to identify and resolve problems with precision and care.

Our comprehensive service approach is designed to maximize equipment reliability, enhance operational efficiency, and reduce total cost of ownership.

Contact us today for your next project!



Whether you are requesting a quote, need more information, or want to discuss customized valves that address your specific requirements, just let us know. Everlasting Valve is committed to providing prompt, responsive service, every time.

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