Engineered Products for the Process Industries

Critical Service Solutions
Applications.
ValvTechnologies’ valves are built to withstand the most severe applications. High-temperature, high-pressure, high-cycling, abrasive, corrosive and caustic media have all been considered in the design of our product line.

Refining
- Delayed coking
  - Drum isolation
  - Heater isolation
  - Cutting water isolation
- Reforming
  - Catalyst handling (lockhopper service)
  - Hydrogen isolation
- Hydrocracking (fixed and ebulating bed)
  - Catalyst handling
  - Pump isolation
  - Filter isolation
  - Hydrogen isolation
  - “Chopper” valves
  - Reactor vent and “blow-off” valves
- FCCU
  - Catalyst withdrawal
  - Slurry loop isolation
  - Fractionator bottom emergency isolation
- Upgrading
  - Heavy oil (coking service)
  - Solids slurry
  - Rhinoite® lined valves for erosive service

Petrochemical and chemical processing
- Polyethylene and polypropylene
  - Reactor withdrawal and isolation valves
  - Gas isolation (zero-leakage)
  - Pump isolation
- Ethylene production
  - Furnace isolation and de-coke valves
  - Start-up vents (zero-leakage)
  - High-temperature instrument isolation and sampling valves
- Polysilicone
  - Reactor isolation
  - Solids handling
  - Gas isolation (zero-leakage)
  - Chlorosilane service

Coal and pet coke gasification
- Slurry handling
  - Powder and slurry feed
  - Reactor “dump” valves
  - Lockhopper services
  - Black water and ash water isolation
- Gas isolation
  - High-temperature syngas isolation
  - Hydrogen isolation
  - Oxygen isolation
  - SIL rated ESD packages
  - High-speed, high-cycle pulse valves

Steam applications
- Steam generators
  - Zero-leakage steam isolation
  - High-pressure heater water side drain to condenser isolation
  - Auxiliary steam isolation
  - Turbine extraction isolation
- Combined cycle HRSG
  - Intermediate and reheat pressure ERV
  - Intermediate and reheat pressure drains and drain header isolation
  - Plant natural gas isolation
  - Dew point fuel gas heaters
  - Performance fuel gas heaters
Low Emission, Metal Seated Ball Valves.
The next generation in emission reduction technology™

PulseJet with EcoPack® Fugitive Emissions Packing

ValvTechnologies’ is leading the charge in the reduction of fugitive emissions with the development of the pulsejet valve with EcoPack®, a fast-acting, high-cycle fugitive emissions valve designed to send a pulse of gas through a pipeline system. A trunnion-mounted ball valve, capable of 90° or 180° rotation in speeds as low as 0.5 seconds or faster, this fast actuation speed is what creates the gas “pulse” through the pipeline system. Pulsejet systems can be used to clean system filters, spray chemicals in an injection type system, or pulse debris/media through a pipeline to prevent clogging.

These systems cycle many thousands of times per day. Conventional packing systems cannot handle the abuse of the fast cycle speed, combined with the high cycle count. ValvTechnologies’ EcoPack® solution was designed to address this challenge. The EcoPack® seal has been lab-tested at high pressure and line temperature to 450°F for over 500,000 cycles, requiring zero adjustments or maintenance. This equals longer plant operation between maintenance intervals, improved site safety and less emissions from the stem packing.

<table>
<thead>
<tr>
<th>PulseJet Key Performance Features and Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Features</strong></td>
</tr>
<tr>
<td>Guaranteed tight shut-off</td>
</tr>
<tr>
<td>True metal-to-metal sealing without using secondary elastomeric seals</td>
</tr>
<tr>
<td>Two piece, split-body design</td>
</tr>
<tr>
<td>HVOF RiTech® coating technology</td>
</tr>
<tr>
<td>Grafoil® seals</td>
</tr>
<tr>
<td>Double block-and-bleed capability</td>
</tr>
<tr>
<td>High-cycling capability</td>
</tr>
<tr>
<td>Bi-directional sealing by design</td>
</tr>
<tr>
<td>Single-piece anti blow-out stem design</td>
</tr>
<tr>
<td>Impervious to high thermal cycling</td>
</tr>
<tr>
<td>Live-load stem packing (four-bolt design)</td>
</tr>
<tr>
<td>Stem fugitive emissions per ISO 15848-1 Class B</td>
</tr>
<tr>
<td>Fire safe certification: API-607</td>
</tr>
</tbody>
</table>
Solids resistance.
In addition to the carbide coatings which will allow the valve to function in highly abrasive applications, the individual valve parts have additional seals to prevent interference from solids in the system. This provides for outstanding performance in catalyst systems, streams with solids contamination and polymers.

Carbide sealing surfaces.
The sealing surfaces are overlaid with tungsten or chromium carbide using our exclusive HVOF RiTech® coating process. These surfaces have a hardness of 68 - 72 Rc to allow long periods of operation in the most severe conditions.

Live-loaded gland area.
The NexTech® gland packing design features a four stud, live-loaded assembly designed for heavy industrial applications. The packing material is high purity Grafoil® surrounded by carbon fiber / inconel anti-extrusion rings. The six Belleville® springs (per stud) provide constant load pressure through extreme thermal shocks and prevent wear leaks in high-cycle service.

High-integrity seat surfaces.
To prevent leaks around the seats, ValvTechnologies has developed an innovative double seal design for high-temperature operation and/or high-cycling applications. In low temperature, high-cycling service, a secondary elastomer seal is installed on the seat perimeter.

Solids resistance.
# NexTech® Series Key Performance Features and Benefits

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guaranteed tight shut-off</td>
<td>Enhanced process safety, repeatable sealing</td>
</tr>
<tr>
<td>True metal-to-metal sealing without using secondary</td>
<td>Inherent fire safety</td>
</tr>
<tr>
<td>elastomeric seals</td>
<td></td>
</tr>
<tr>
<td>Solid-proofed by design</td>
<td>Process reliability</td>
</tr>
<tr>
<td>HVOF RiTech® coating technology</td>
<td>Process reliability</td>
</tr>
<tr>
<td>High-density Grafoil® seals</td>
<td>Reduced maintenance costs</td>
</tr>
<tr>
<td>Double block-and-bleed capability</td>
<td>Enhanced process safety</td>
</tr>
<tr>
<td>High-cycling capability</td>
<td>Process reliability</td>
</tr>
<tr>
<td>Bi-directional sealing by design</td>
<td>Enhanced process safety, lower maintenance, less downtime</td>
</tr>
<tr>
<td>Single piece anti-blow-out stem design</td>
<td>Enhanced process safety</td>
</tr>
<tr>
<td>Impervious to high thermal cycling</td>
<td>Enhanced process safety</td>
</tr>
<tr>
<td>Certified to use in SIL-3 and SIL-4 loops</td>
<td>Enhanced process safety</td>
</tr>
<tr>
<td>Live-load gland system (four stud design)</td>
<td>Lower emissions</td>
</tr>
<tr>
<td>Stem fugitive emissions per ISO 15848-1 Class B</td>
<td>Lower emissions, enhanced process safety</td>
</tr>
<tr>
<td>Fire safe certification: API-607</td>
<td>Enhanced process safety</td>
</tr>
<tr>
<td>Low emission packing: API 622</td>
<td>Most effective technology</td>
</tr>
</tbody>
</table>
**V Series Metal Seated Ball Valves.**
The flagship of the ValvTechnologies’ product line

1. **Integral metal seat.**
   With our patented HVOF RiTech® coating technology, the integral seat in ValvTechnologies’ valves is resistant to the attack of abrasive magnetite and ferrous oxides that may be seen in the steam flow.

2. **Body seal ring.**
   ValvTechnologies employs a field proven seal ring technology to ensure sealing under all operating conditions, up to 1400°F. The body seal ring is loaded at a pressure higher than 20,000 psi. In addition, valves sized 3” and above contain a secondary Grafoil® seal to further guarantee reliability.

3. **Patented coating process.**
   The sealing surfaces are overlaid with tungsten or chromium carbide using our HVOF RiTech® coating process. These surfaces have a hardness of 68 - 72 Rc to provide uninterrupted operation in the most severe conditions.

4. **Live-loaded gland area.**
   The V Series’ sealing design features a four stud, live-loaded assembly designed for heavy industrial applications. The sealing material is high purity Grafoil® surrounded by stainless steel wire mesh anti-extrusion rings. The six Belleville® springs (per stud) provide constant load pressure through extreme thermal shocks and prevent wear leaks in high-cycle service.

5. **Blow-out proof stem.**
   ValvTechnologies’ design utilizes a one-piece, hard-coated, blow-out proof stem that is inserted through the inside of the body cavity eliminating the possibility of blow-out through the gland area. There are no pins, collars or other devices used to retain the stem in the valve body.
### V Series Key Performance Features and Benefits

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guaranteed tight shut-off</td>
<td>Enhanced process safety</td>
</tr>
<tr>
<td>Quarter turn operation - readily automated</td>
<td>Increased safety, ease of operation, reduced space requirements</td>
</tr>
<tr>
<td>Low pressure drop - high Cv</td>
<td>Process efficiency</td>
</tr>
<tr>
<td>Custom engineered</td>
<td>Process optimization</td>
</tr>
<tr>
<td>Dimensions to ANSI B16.10</td>
<td>Interchangeable with equivalent valves</td>
</tr>
<tr>
<td>Low emission packing and seals</td>
<td>Reduced emissions</td>
</tr>
<tr>
<td>Single piece anti-blow-out stem design</td>
<td>Enhanced process safety</td>
</tr>
<tr>
<td>Resistant to solids</td>
<td>Reduced maintenance costs, minimum downtime</td>
</tr>
<tr>
<td>Certified to use in SIL-3 and SIL-4 loops</td>
<td>Enhanced process safety</td>
</tr>
<tr>
<td>Live-loaded gland system (four stud design)</td>
<td>Reduced emissions</td>
</tr>
<tr>
<td>Stem fugitive emissions per ISO 15848-1 Class B</td>
<td>Reduced emissions, enhanced process safety</td>
</tr>
<tr>
<td>Fire safe certification: API-607</td>
<td>Enhanced process safety</td>
</tr>
</tbody>
</table>
Valves for the Process Industries.

ValvTechnologies, Inc. is a global leader in the design and manufacturing of flow control devices. Founded in 1987 and headquartered in Houston, Texas, ValvTechnologies remains focused on helping customers meet their daily production and process challenges safely and efficiently.

Having built a global reputation for superior quality and dependability across multiple industries, ValvTechnologies’ products are designed to exceed both the standard and most sophisticated, severe-service processes application requirements. ValvTechnologies meets the demands for total flow control solutions, whether one valve at a time, or system-wide.

Bringing together the best people and the latest in technological design and manufacturing processes, ValvTechnologies has created an atmosphere where quality and dependability are built into every product, start to finish.

Worldwide Office Locations

Headquarters & Manufacturing
ValvTechnologies, Inc.
5904 Bingle Road
Houston, Texas 77092 U.S.A.
Telephone +1 713 860 0400
Fax +1 713 860 0499
info@valv.com.

To locate a distributor or satellite office near you, visit us online at: www.valv.com.

To contact sales anywhere in the world, email sales@valv.com.

Australia
australia@valv.com

Brazil
brazil@valv.com

Canada
canada@valv.com

China
china@valv.com

Colombia
colombia@valv.com

Eastern Europe
poland@valv.com

India
india@valv.com

Japan
japan@valv.com

Korea
korea@valv.com

Malaysia
malaysia@valv.com

Middle East
middle.east@valv.com

Peru
peru@valv.com

Singapore
singapore@valv.com

Spain
spain@valv.com

United Kingdom
europe@valv.com