

VALVTECHNOLOGIES



ValvXpress®

Automated Valve Packages

Applications

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



Fossil Fuel

- Above and below seat drains
- Ash handling
- Attenuator spray control
- Boiler drains
- Boiler feed pump isolation
- Continuous boiler blowdown
- Electronic relief
- Feedwater heater drains
- Feedwater isolation
- Instrument isolation
- Main steam stop
- Recirculation
- Seal steam regulators
- Sight/gauge glass drains
- Soot blower regulators
- Startup vents
- Steam dump
- Turbine bypass systems
- Turbine drain



Nuclear Generation

- Boiler feedwater
- Circulating water system
- Component cooling
- Condensate extraction
- Condensate cooling water
- Emergency feedwater
- Fire protection system
- HP safety injection
- HP and LP heater drains
- Heat exchanger vent and drains
- Main steam system isolation, drain and vent
- Power operated relief valve (PORV)
- Pressurizer drain and vent
- Rad waste system
- Reactor coolant pump drain and vent
- Reactor head vents
- Reactor water cooling vents and drains
- Safety injection system
- Secondary system isolation, drain and vent
- Service water system isolation
- Steam generator system
- Turbine bypass
- Turbine drain and vent
- Fukushima tie ins
- Reliable hardened vents



Upstream Oil and Gas

- Wellhead choke isolation
- HIPPS
- Emergency shutdown
- Compressor recycle and isolation
- Sour gas isolation and control
- Steam, water and gas injection
- Steam chokes
- SAG-D isolation
- Pig launcher and receiver
- Mud drilling isolation and check
- Lean and rich amine isolation
- Molecular sieve regeneration isolation
- Molecular sieve absorber isolation
- First and second stage separator isolation

ValvTechnologies provides field-proven solutions for severe service applications.



Downstream and Chemical Processing

Coking (delayed and flexi)

- Switching
- Feed isolation
- Overhead vapor line
- Cutting water isolation

Fluidized catalytic cracking

- Catalyst handling
- Slurry isolation and control steam

Ethylene

- Steam decoke isolation
- Furnace isolation
- Steam vent
- Quench oil isolation and control

Polyethylene

- Isolation
- High cycle (PTO)
- Reactor block

Heavy oil upgrading and hydrocracking

(H-oil and LC fining)

- Catalyst addition and withdrawal
- Filter and pump isolation
- Overhead vapor isolation and control
- High ΔP isolation and control

Reforming (CCR)

- Lockhopper
- Isolation



Mining and Minerals Processing

High-pressure slurry Transportation systems

- Pump discharge isolation
- Pipeline isolation stations
- Pipeline choke stations
- Rupture disc isolation
- Instrument isolation

Autoclaves

- Vessel feed and discharge
- Acid injection
- Gas injection
- Steam injection

Mineral concentrators

- Thickener underflow
- Discharge isolation
- Filter press manifold isolation
- Slurry transfer systems
- PRV isolation

Polyethylene

- Isolation
- High cycle (PTO)
- Reactor block

Waste disposal

- Tailings pipelines
- Paste backfill



Pulp and Paper

- Boiler vent and drain
- Liquor isolation and control
- Rapid drain
- Steam isolation
- Sky vents
- Dryer pressure control
- Digester steam control
- Lime mud isolation and control

ValvXpress® Automated Valve Packages

ValvXpress®

ValvXpress® is perfect for customers who demand quick delivery of a zero-leakage automated valve solution for severe service steam and water applications. The package includes the superior quality of the V1-1 valve and ValvTechnologies' actuator, backed with the best four-year guarantee in the industry. ValvXpress® preengineered, automated packages are compact, robust and ready to ship.

Pre-engineered package includes:

- 1/2 - 4" metal seated V1-1 ball valve
- Socket weld and butt weld end connections
- A105, F22, F91 body materials
- ANSI/ASME Class 900 - 4500 pressure classes
- Valve operating conditions to 1400°F (760°C)
- High-cycle pneumatic rack and pinion actuator
- High-cycle mounting hardware
- Limit switch with position indicator - 2-SPDT, quick set cam, IP67, NEMA 4/4X
- * NAMUR solenoid - 110V/120V, 230V, 24VDC coils
- Filter/regulator with gauge
- Retainer prevents stem driving into ball



*Quality and dependability in
one package - guaranteed*

V Series Metal Seated Ball Valves

The flagship of the ValvTechnologies' product line

The V1-1 proven seat design provides improved performance, far beyond the wear-prone, corrosion-prone crevices of conventional seats. Engineered to eliminate leak paths and maximize direct flow, these units' enhanced rotary design and construction also deliver the extra safety margin crucial to maintaining peak productivity.

1. Integral metal seat

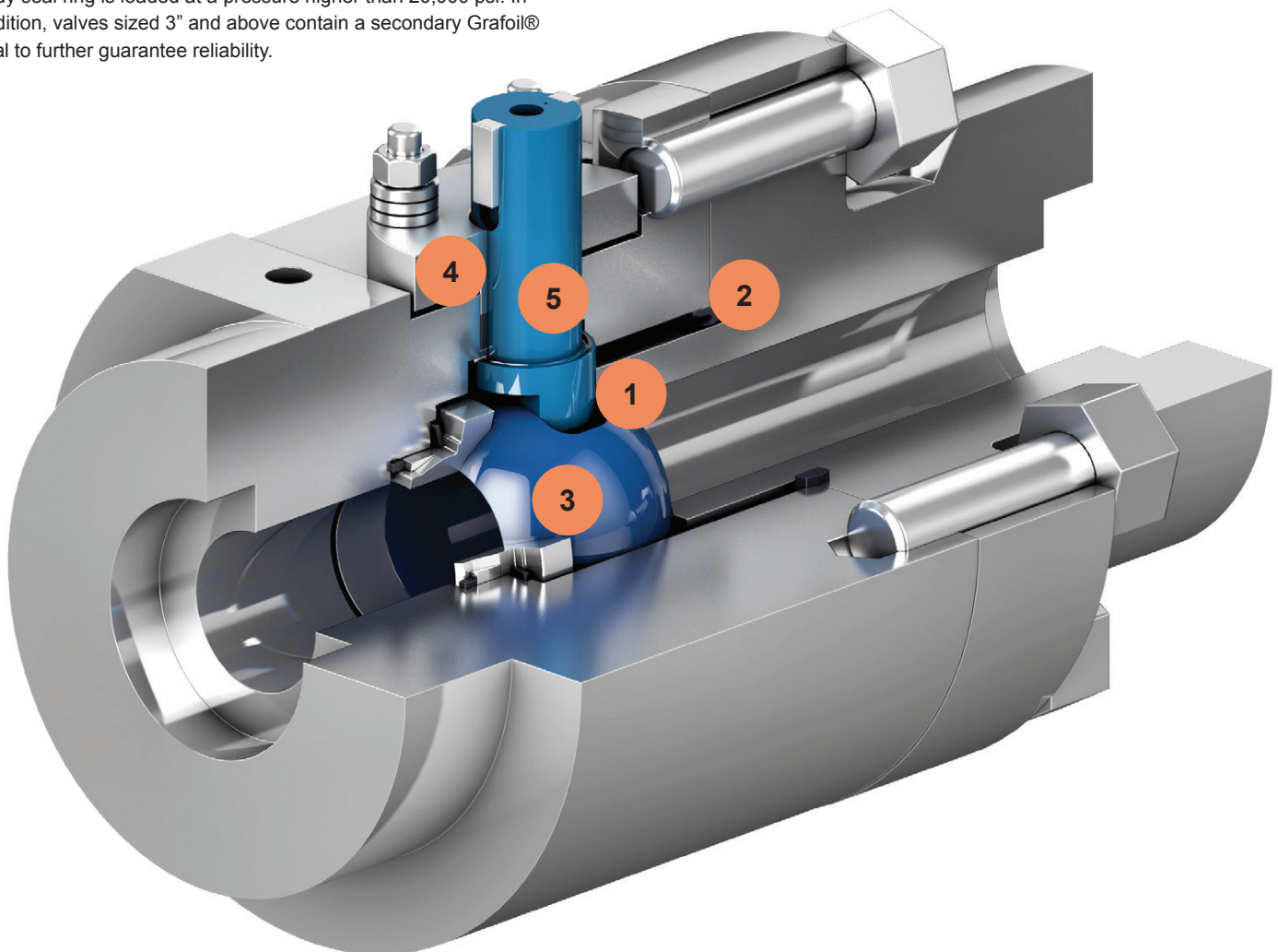
With our patented HVOF RiTech® coating technology, the integral seat in ValvTechnologies' valves is resistant to the attack of abrasive and corrosive production applications.

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 with zero-leakage.



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

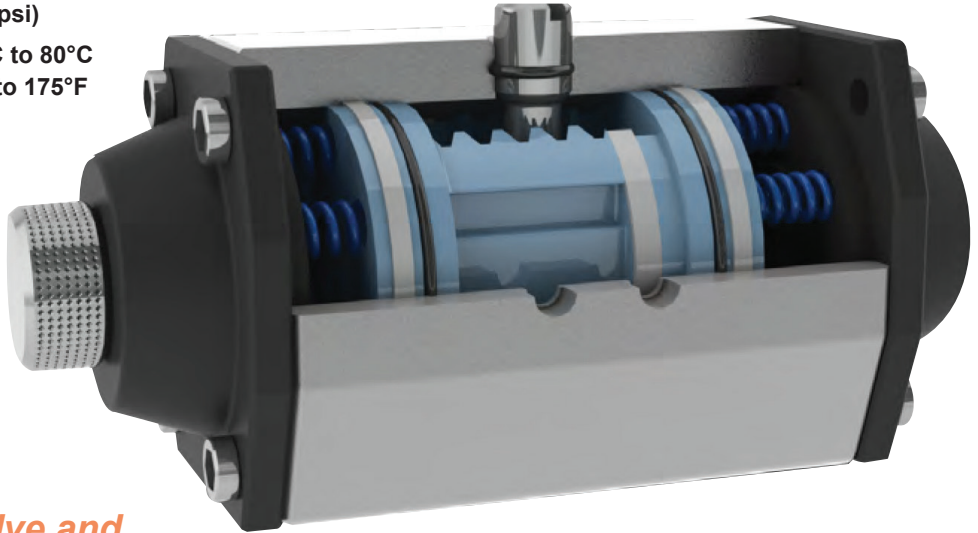
ValvTechnologies' design utilizes a one-piece, hard-coated, blow-out proof stem that is inserted through the inside of the body cavity eliminating the possibility of blow-out through the gland area. There are no pins, collars or other devices used to retain the stem in the valve body.

ValvXpress® Actuators

ValvXpress® automation can be used with any ValvTechnologies' valve up to 4" in size with the added bonus of our innovative mounting kit with integral stop and actuator supplied as a complete package.

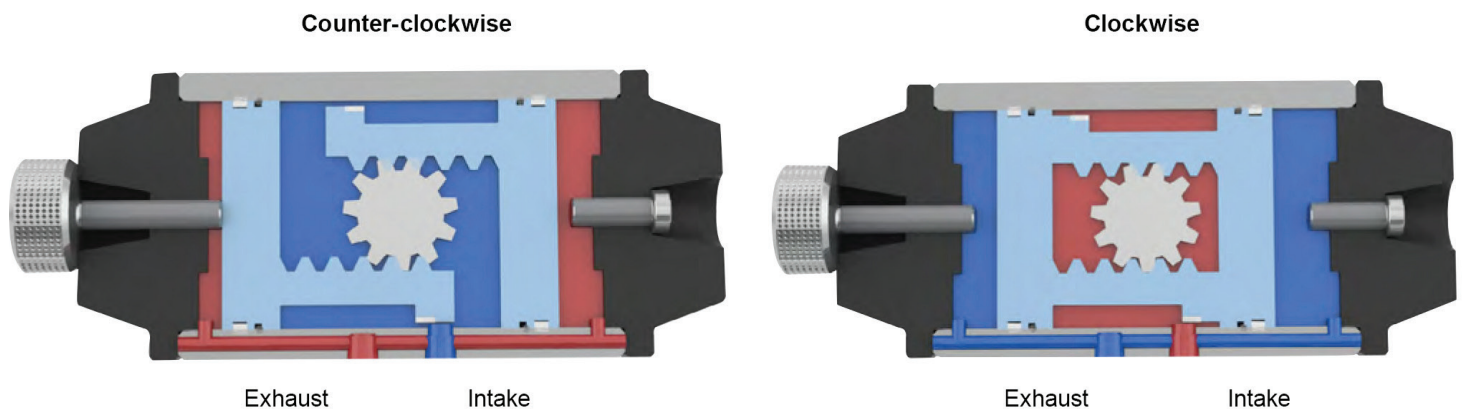
The actuators utilize a rack and pinion design which provides constant torque output in a compact package. The torque output is proportional to the air supply pressure. Twin horizontally opposed cylinders incorporate piston guides to ensure engagement between the rack and pinion. Double acting and spring return models are of comparable compact dimensions.

- Hard anodized body with high-temperature seals
- Pressure range: DA = 2 - 8 bar (29 - 116 psi)
SA = 3 - 8 bar (43 - 116 psi)
- Operating temperature (standard): -20°C to 80°C
-4°F to 175°F
- High temperature: 20°C to 145°C
68°F to 293°F



Four-year guarantee on valve and actuator automation packages. Available for quick delivery.

Actuator Operation



Counter clockwise output operation is achieved by inserting pressure into the intake to force the pistons apart thus rotating the actuator pinion counter clockwise. During the operation, air from the outer chambers is exhausted. Clockwise output operation is achieved by reverse of the above.

Mounting and Accessories



Mounting Kit

- Air gap for heat dissipation
- Retainer prevents stem driving into ball
- Cast WCB top plate and bottom plate
- Integral stop
- Drive sleeve

Limit Switch

- Enclosure rated to IP67
- Quick-set cam
- 2-DPST switches
- 2-DPDT switches
- Multi-point terminal strip
- Visual open/closed beacon



NAMUR Solenoid

- Interchangeable 110V / 120V, 230V, 24VDC coils
- Anodized aluminum housing
- Differential pressure: 2 - 10,4 bar (29 - 150 psi)

Filter/Regulator

- High-efficiency water and particle removal
- Full-flow gauge ports
- Balanced design for optimum control



Manual Override

- Declutchable gearbox with handwheel

ValvXpress® Actuator Sizing

ValvXpress® zero-leakage valves are the premier solution where isolation is required for critical and severe service applications, providing increased safety and reliability, while reducing emissions, contributing to a cleaner environment.

| Imperial | | | | | | |
|----------------|--------------------------|---------------|----------------------|----------------|---------------|---------------|
| Model | Torque Output (in-lbs.f) | | Cycle time (seconds) | | Weight (lbs) | |
| | *Spring return | Double acting | Spring return | Double acting | Spring return | Double acting |
| ValvXpress® 04 | 410 | 1,163 | Less than 1 | Less than 1 | ≈ 14 | ≈ 11 |
| ValvXpress® 05 | 963 | 2,725 | 10 | Less than 1.25 | ≈ 28 | ≈ 23 |
| ValvXpress® 55 | 1,263 | 3,867 | Less than 2 | Less than 1.5 | ≈ 39 | ≈ 32 |
| ValvXpress® 06 | 1,864 | 5,561 | 2 - 3 | 1.5 - 2 | ≈ 53 | ≈ 44 |
| ValvXpress® 08 | 3,568 | 10,436 | 4 - 6 | 3 - 4 | ≈ 100 | ≈ 82 |
| ValvXpress® 10 | 10,704 | 26,443 | 7 - 8 | 5 - 6 | ≈ 224 | ≈ 171 |
| ValvXpress® 12 | 18,088 | 46,125 | 7 - 8 | 5 - 6 | ≈ 430 | ≈ 337 |

| Metric | | | | | | |
|----------------|--------------------|---------------|----------------------|----------------|---------------|---------------|
| Model | Torque Output (Nm) | | Cycle time (seconds) | | Weight (kg) | |
| | *Spring return | Double acting | Spring return | Double acting | Spring return | Double acting |
| ValvXpress® 04 | 46 | 130 | Less than 1 | Less than 1 | ≈ 6 | ≈ 5 |
| ValvXpress® 05 | 108 | 305 | 10 | Less than 1.25 | ≈ 13 | ≈ 10 |
| ValvXpress® 55 | 142 | 433 | Less than 2 | Less than 1.5 | ≈ 18 | ≈ 14 |
| ValvXpress® 06 | 209 | 623 | 2 - 3 | 1.5 - 2 | ≈ 24 | ≈ 20 |
| ValvXpress® 08 | 400 | 1,170 | 4 - 6 | 3 - 4 | ≈ 45 | ≈ 37 |
| ValvXpress® 10 | 1,090 | 2,964 | 7 - 8 | 5 - 6 | ≈ 102 | ≈ 78 |
| ValvXpress® 12 | 1,842 | 5,171 | 7 - 8 | 5 - 6 | ≈ 195 | ≈ 153 |

NOTES:

- Weights are for actuator only; excludes accessories
- ValvXpress® 04 spring return for low ΔP applications only
- *Spring return is sized with 5 springs
- Cycle times at 80 psi

While ValvXpress® is most commonly supplied as a valve, mounting kit and actuator package, ValvTechnologies realizes different customers have different needs. Depending on their specific needs, customers can choose between three different packages:

- **The Total Package**
- **Build-Your-Own**
- **Actuator Only**

| The Total Package | Build-Your-Own | Actuator-Only |
|--|---|--|
| The Total ValvXpress® package includes the superior quality of the V1-1 valve, integral stop mounting kit and ValvTechnologies' actuator, backed with the best four-year guarantee in the industry. | Build-Your-Own ValvXpress® includes the superior quality of any ValvTechnologies' valve, integral stop mounting kit allows customers to choose custom accessories based on their specific needs. | Select your ValvXpress® actuator and pair it with any ValvTechnologies' valve and integral mounting kit. |
| | Included | |
| The Total package includes: <ul style="list-style-type: none"> • Complete pre-engineered V1-1 valve, mounting kit and actuator fully assembled, tested and ready to install • Standard delivery two weeks • Four-year warranty* on the total package • Four-year warranty* on the total package | Build-your-own package includes: <ul style="list-style-type: none"> • Complete valve and integral stop mounting kit • Your choice of actuator (spring-return, double-acting or fast-acting) • Your choice of accessories. Select from our standard accessories for us to assemble or specify your own make and model for us to assemble. Or buy your own limit switches, filter/regulators and solenoids and assemble to a plain actuator. • Standard delivery four+ weeks • Four-year warranty* on the total package | Build-your-own package includes: <ul style="list-style-type: none"> • Integral stop mounting kit • Your choice of actuator (springreturn, double-acting) • Buy your own limit switches, filter/regulators and solenoids and assemble to a plain actuator • Standard delivery four+ weeks • Four-year warranty* on the total package, excluding accessories |
| | Benefits | |
| ValvXpress® Total package benefits <ul style="list-style-type: none"> • Fastest leadtime - in time for your outage • Quick shipment • Fully assembled, tested, ready to install • 100% pre-engineered for speed | ValvXpress® Build-your-own benefits <ul style="list-style-type: none"> • Short leadtime • Customized to meet your specific needs • Fully assembled, tested, ready to install • Engineered to order | ValvXpress® Actuator-only benefits <ul style="list-style-type: none"> • Fully customized actuator based on your specifications • Pair with any ValvTechnologies' valve • Benefit from the reliability of the integral stop mounting kit |

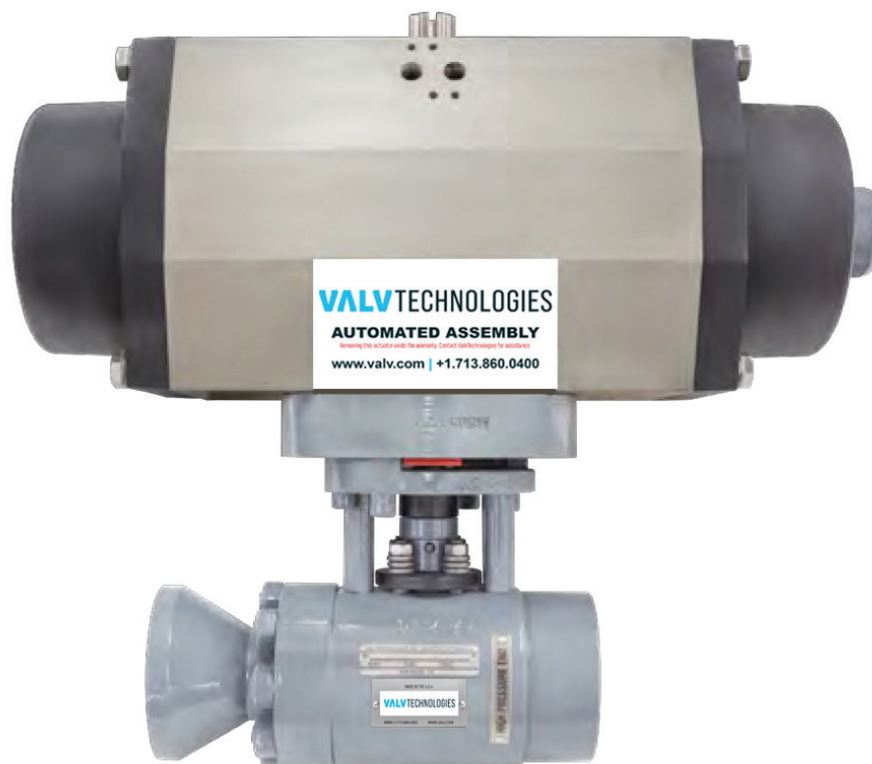
*Steam and water applications

The Benefits of a ValvXpress® Solution

ValvXpress®

ValvTechnologies' ValvXpress® valves are the premier solution where isolation is required for critical and severe service applications, providing increased safety and reliability, while reducing emissions, contributing to a cleaner environment.

| Features | Benefits |
|---|---|
| Integral seat | Most effective technology for thermal cycling and solids containing processes |
| Inconel forged Belleville® spring | Reliable process isolation due to the high loading between the ball and integral seat |
| HVOF RiTech® hard coatings | State-of-the-art computerized applied hard coatings on ball and seat extending isolation capabilities for expected operational performance goals |
| Short leadtime | Delivery in time for your outage |
| Fully assembled, tested, ready to install | Reduced maintenance, reduced leadtime, increased safety and reliability |
| Simplicity of design | Ease of installation and maintenance, increased system reliability, increased efficiencies, ease of use, reduced maintenance |
| Stringent testing | Every valve is tested, documented and serialized. Enjoy increased reliability, increased safety, total traceability |
| Four-year warranty for steam and water applications | The very best in the industry, ensuring lower cost-of-ownership and increased reliability. Performance guarantee covering material and labor costs for any leaks past the integral seat and/or leaks through the packing. |





At Your Service

ValvTechnologies is committed to helping our global network of customers maintain peak valve performance. With authorized repair centers around the world, ValvTechnologies can address virtually any service or repair challenge that may arise, 24 hours a day, seven days a week.

While the ValvTechnologies' Service department is headquartered in Houston, Texas, its capabilities extend globally. ValvTechnologies' experienced, factory-trained field service engineers and technicians can troubleshoot, diagnose and repair valve and actuator-related problems not only in ValvTechnologies' products, but other manufacturers as well.

With more than 30 years experience, ValvTechnologies has not only designed the world's best highperformance valves, they also developed a system of service that maintains the performance and value of your investment, reducing total cost-of-ownership. Our range of services includes complete factory repairs, inhouse or on-site, as well as maintaining an extensive stock of spare parts. In addition, our proprietary in-house ball and seat coating repairs allows the ValvTechnologies' service team to respond quickly to our customer's needs and ensure the performance and value of their severe service valve investment

ValvTechnologies' quality policy is to provide superior, defect-free products and services to our customers that meet or exceed all legal and regulatory requirements.

To locate an authorized repair center near you, visit www.valv.com.

Zero-leakage Valve Solutions



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VALVTECHNOLOGIES