

PRODUCT CATALOG

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TWO ENGINEERED
TWO PRODUCTS

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Compliant with:



American
Petroleum
Institute

American Society
of Mechanical
Engineers

European
Conformity (CE)

National Fire
Protection
Association

International
Organization For
Standardization

Underwriters
Laboratories

Det Norske
Veritas (DNV)

United States
Coast Guard

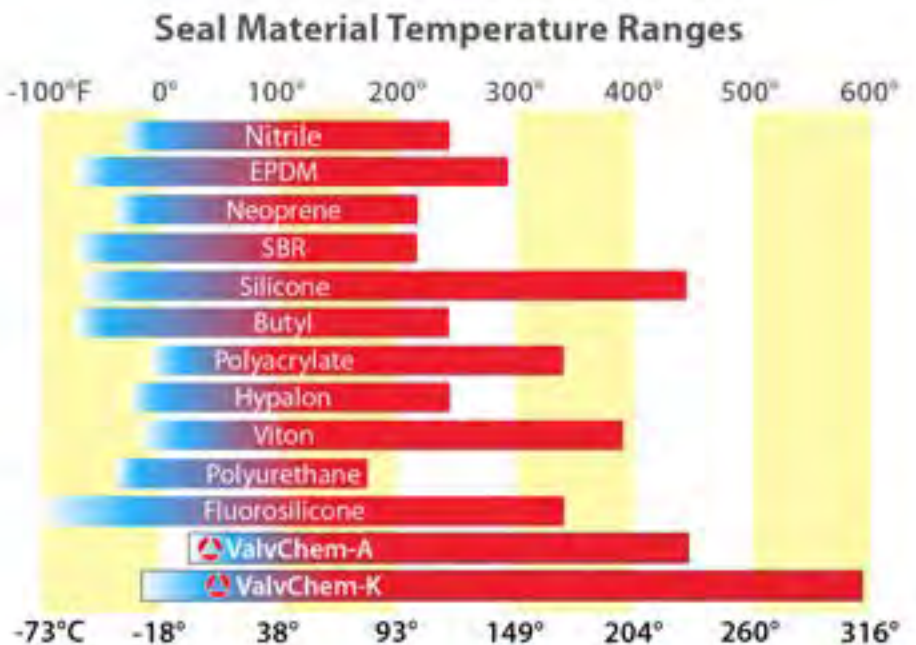
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ValvChem™

Our own line of fluorinated Valve Seals. FFKM and FEPM compounds available to offer you unparalleled advantages.



O-rings and other seals made from thermoset fluorinated elastomers, such as Kalrez® (FFKM) and Aflas® (FEPM) are exceptionally well suited for a wide range of severe service applications. The challenge to the use of these specialized materials has always been cost and availability, especially recently with production and shipping delays. TVS Engineered Products' is addressing both of these issues with our new ValvChem™ premium fluoroelastomer valve sealing compounds that offer both competitive pricing and immediate availability.



Worldwide supply chain disruptions have led to a chronic shortage of perfluoroelastomer (FFKM) seal materials. In response, the technical engineering team at Total Valve Systems has launched a proprietary range of FFKM (compare to Kalrez® from DuPont) and FEPM (compare to Aflas® from AGC) O-rings designed for challenging valve applications. Our materials meet or exceed the specs of the market leading compounds and our O-rings are manufactured in our hometown of Broken Arrow, Oklahoma.

Options: ValvChem™ -K (FFKM) & ValvChem™ -A (FEPM)

Total Analytix™

Dependable performance and service monitoring of your key equipment.

TOTAL ANALYTIX reliability system's remote monitoring of critical equipment gives you a complete picture of what is happening with your equipment in the field. You can now create and optimize maintenance and repair schedules based on service, repair history, and equipment usage. Tracking and recording critical equipment information to monitor lifts, vibrations, pressure, and temperature. Total Analytix™ can help ensure your facility is running properly, and help you plan and execute maintenance before a failure occurs.



VibeTemp 1.0

- Reduces outages by assessing changes in equipment
- Track and notify when a device has been impacted
- See which device was triggered to dispatch for needed repair



TA-Bridge 1.0

- Bridge between VibeTemp 1.0 devices and Cloud storage system
- LTE cellular communication for superior data speed and storage
- Designed for safe outdoor use



Temp R1

- Supports all standard sensors with an external temperature probe option
- Ease of connectivity to other devices



VibeTemp Micro

- Reduces outages by monitoring changes in equipment
- Monitors temperature and vibration in our smallest device yet
- See which device was triggered to dispatch when repair is needed

LiftTrack™

Capture and store data on Pressure Safety Valve lift events.

With our patented PSV lift event indicator, customers capture data on the various lift events that occur within a PSV. Our LiftTrack™ devices record data on lift events as well as other critical PSV system data and stores the information, so customers can better understand the PSV and overall system reliability.

LIFTTRACK



- Small out of site device located under the valve cap
- Detects all lift events within a specific valve
- Records data on lift events and stores the information
- Reliability data in our Total Valve Live System

LIFTTRACK 2.0



- ISA 100 connection for wireless monitoring and data tracking
- Track and store data for all lift events
- Reliability data in our Live System
- Solar-Powered device
- Mobile App for tracking events

Excess Flow Valves

Excess Flow Valves (EFVs) prevent excessive flow or surges in flow caused by line breaks, power disruptions, or pressure spikes. EFVs internally sense flow and close automatically. Standard valves do not have a reset.



Styles:

Wafer - Double Flanged - Threaded/ Welded
Internal to Tank

Options:

Automatic Reset - Manual Bypass - Gauges
Soft Seats

Industries:

Chemical Processing - Refineries - Drilling Rigs
Pharmaceutical Bio Tech - Food Plants

Benefits:

Stop flow surges - Flow shut-off on line ruptures
Reset options - Fire safe design to API 6FA
Multiple flange ratings - Bi-directional normal flow
Preset factory closing flow rate in one direction
Vertical or horizontal installation - Proven reliability

Alternate Names:

Velocity check - Emergency shutdown device
Seismic valve - Shutdown valve - Surge preventer
Earthquake valve - Line rupture valve



Excess Flow Valves



Model 2105

Wafer:

Designed to easily insert into piping, between ASME/ANSI flanges. These valves are durable and provide generous flow paths. The closing rates are factory preset to the customer's specifications.

Available Models:

2100 (standard) , 2105 (high flow),
2106 (low shut-off flow)

Basic options include carbon steel bodies and stainless steel internals
Other materials available upon request.



Model 2120

Double flanged

Designed with standard ASME/ANSI flanges. Closing flow rates are factory preset to customer's specifications.

Optional components include: Automatic reset
External manual bypass
Weld-on or internal flanged body
Differential of static pressure gauges
Exotic materials upon request

Available Models:

Model 2120 - Standard ASME/ANSI flanges for 150#, 300#, and 600# class. The most widely used product we offer due to its versatility and reliability.

Model 2125 - High flow version of the Model 2120. Heavily constructed to withstand years of service. Standard ASME/ANSI flanges for 150#, 300#, and 600# class.

Model 2600 - Externally adjustable EFV with a top entry design, which enables ease of adjustment and maintenance.



Model 2600

Excess Flow Valves

Threaded and Welded:

Designed and manufactured with standard National Pipe Threaded (NPT) connections. ASME B16.34 wall thickness - Closing flow rates are factory preset to the customer's specifications.



Model 2170



Model 2190

Models and Options:

Model 2130 - Male inlet x Female outlet Standard Rating: 300#

Model 2140 - Female inlet x Male outlet Standard Rating: 300#

Model 2150 - Female inlet x Female outlet Standard Rating: 600#

Model 2155 - Female inlet x Female outlet Standard Rating: 600# (High flow, Low dP)

Model 2160 - Male inlet x Male outlet Standard rating: 300#

Model 2170 - Socket Weld Standard Rating: 600#

Model 2180 - Female inlet x Female outlet Standard Rating: 600#
Selectable Flow in Field Service

Model 2190 - Butt weld Standard Rating: 600#

Excess Flow Valves

Internal to Tank:

NFPA 58 compliant - API 6FA rating
Seat internal to tank

Low pressure Drops High Cv models
All nozzle mounting options available
ASME B16.5 (standard)

Wafer - Through hole - Double Flanged



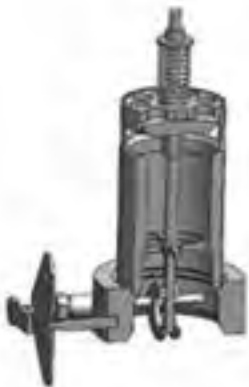
Standard

Heavy duty spring and seat design,
Optional weep hole



Actuated Reset

Pneumatic or hydraulic reset



Manual

Manual external handle
with locking device



Custom

Custom inlets and outlets, start-up
and shutdown options available



Model 2400

Basic options include carbon steel bodies and stainless steel internals,
with other materials and pressure classes available upon request.

Check Valves

Check valves are designed to provide protection in liquid, gas or vapor services where flow is required in one direction. All of our check valve designs are non-slam, have high capacity, and are designed per API 6FA standards. Cracking pressure rates are factory preset to the specifications of the customer.

Models:

Model 3200 - Wafer design with high flow capacity
Designed for API 6FA standards

Model 3220 - Double flanged with soft or metal seat designs

Model 3255 - Threaded end connection with high flow capacity

Model 3400 - Internal to tank with soft or metal seat designs

Model 3600 - Top entry, field servicable valve with adjustable cracking pressure and turn down shut-off capability

Applications:

One direction flow - Reverse flow change
Bulk storage - Vessel inlets - Custom cracking pressure

Alternative Names:

Vacuum valve - Low pressure relief valve
Vent valve - Non-slam - Critical check
Back flow preventer - Nozzle check



Model 3200



Model 3220



Model 3600

Emergency Shutdown Valves

Emergency Shutdown Valves detect and immediately stop the flow of potentially hazardous materials. Shutdown options can be custom built to fit the customer's needs.



Model 6200

Models:

6200 - A automated reverse flow check valve designed to immediately halt the flow of fluid during an emergency. Standard sizes are 4" and up. Features: Rapid closing, reverse flow, local and remote monitoring and reset options. Low emission design.

6250 - A manual spring loaded, reverse flow check valve designed to immediately halt the flow of fluid during an emergency. Features: Fusible thermal device for tripping valve. Rapid closing, reverse flow, remote monitoring, with a low emission design.

Options: Hydraulic, pneumatic or manually operated. Thermal, remote, manual or local shutdown. Loss of supply closing.

Applications: Pipelines and storage facilities, tank farms, LPG, chemical and power plants, shipyards, rail loading facilities, pumping stations.

The Model 6810 features an API 607 ball valve, actuator and module. The valve's module controls a pneumatic/hydraulic operated valve. This model coupled with the Model 2400 meets the specifications of NFPA 58.

Options: gauges, valve position sensors, manual override, NAMUR & ISO interfaces fire proof blanket.

Standard Features: Pneumatic or hydraulic actuator, NFPA 58 manifold assembly



Model 6810

Relief Valves

The 6820 TRV is TVS Engineered Products' proprietary system to open or close a valve at a desired set pressure. This patented system includes the TRV Module, an actuator, and an isolation valve, typically a triple offset butterfly valve, due to performance and durability. The 6820 TRV allows the user to operate within 90% of the valve's desired set pressure with no fatigue. The relief capacity is much greater than typical relief systems on the market, allowing for lower overall system costs. No external power is required for this device with required pneumatic source and back pressure independent models are available.

Options: Available in sizes ranging from 6" to 84"
Classes 150#, 300#, 600#. Set Pressure: 1PSI to 1500 PSI
Remote closure system, accumulator.

Advantages: Class 5/Class 6 shut-off performance or better
Instant reset with manual or remote options. Partial stroke
option to meet plant reliability requirements. No pins required,
proven performance with factory testing. ASME and API certified.
Cert No. TVO-M00606

TRV's technology provides outstanding resistance to operating pressure conditions. System performance in our independent model is not impacted by system back pressures. This system has superior performance to pin type valves and rupture discs due to the TRV module's advanced design. The system does not rely on a prediction of a material failure as in buckling or rupture pin valves and rupture discs. The unit's optional field test connection port affords in-the-field testing. New settings can be reset in the field if a desired set pressure change is required. The feature allows smoother start-ups and quicker resets (as low as 3 seconds) when the device opens, versus the process for other valve types.



TRV Module

Our patented technology allows for complete control of valve set pressures down to 2% for certain pressure ranges. Set pressures can be adjusted. Key options for dual sensing lines and fluid media filters provide industry leading system reliability.

Triple Offset Valve

Triple offset butterfly valves deliver proven performance across the spectrum of temperature, pressure and sealing classes. They operate from -450 F to 1500 F in accordance with valve specifications. Non-rubbing seat design offers bubble tight sealing performance. Options include all standard pressure classes.

Actuation System with Key System Options

Proven pneumatic actuation systems are integrated to the valve and TRV module. The modular design allowed the use of special valve features including accumulator tanks, thermal protection plugs and other devices according to customer specifications.



Isolation Valves

Isolation valves are designed to stop or re-direct flow, allowing for maintenance or process operations.



Model 7400

The Model 7400 isolation valve is designed for use with slurry, coarse media, or viscous fluids. The valve has an excellent shut-off performance due to a self-lapping twin disc design.

Options: Fail-safe actuation systems available, steam traces body and internals, PTFE internal coating, and live position feedback

Applications: Gas, steam, liquid, coarse material

Features: Slurry valve with metal seating. Triple port purge system, and low emission design.

6" to 20" sizes available, ASME B16.34 - 150#, 300#, 600#, Temp. up to 1200 F. ASME B16.5 end connections, hydraulic actuation and lifting lugs, fire safe design to API 6FA

The Model 8000 changeover valve grants continues production while the relief device is being serviced. The valve is designed to incorporate two relief devices to protect in an overpressure emergency.

Standard Features: Automatic pressure balance at start of position change. Pressure bleed valve at each position. Safety handle locks in either position with an external indicator. Low profile design. Low pressure drop conforms to API RP520 PT 2, and ASME Section VIII Div. 1, App. M. Field servicable with modular body.

Sizes ranging from 0.5" to 4". Flanged or threaded connections. Temp. from -250°F to 700°F.



Model 8000

Isolation Valves

The Model 8800 Changeover Valve is designed to incorporate two safety relief valves installed on a single vessel system to protect in an over pressure emergency.



Model 8800

With the Model 8800 you have two safety relief valves installed, but only one is in operation at a time, the other is an interactive back-up.

If a problem occurs with the first safety relief valve, such as a leak, you then can switch to the other relief valve and remove the faulty one for repairs or replacement.

Standard Features: Optimized flow coefficient (Cv) to ensure less than 3% drop per API RP520 Pt. II. Designed for gas/vapor, liquid, mixed phase and steam service, including ASME BPCV Section 1 boiled applications.

Low profile design for easy installation. Designed to API 622 and API 624 standards for low fugitive emissions.

Pressure bleed valves installed at both outlets.

Engineered, manufactured, and testing in Broken Arrow OK, USA.

Technical Information: Sizes ranging from 2" to 10" RF, RTJ end connections (others offered)

ANSI 150-2500 pressure classes

Temperatures from -250 F up to 1200 F

Complies with API RP520 Pt II, ASME BPVC Section VIII, ASME BPVE Section I code case 2254, ASME B16.34, API 598, API 622, API 624.





Valve Warranties

Standard Products and Services

L6, Inc. d/b/a Total Valve Systems, TVS Engineered Products warrants as follows: (a) That each new TVS product and service is free from defects in material and workmanship if installed and used in accordance with ASME or accredited symbol has no implied or express warranty. Any valve repair/service not performed under ASME or accredited symbol has no implied or express warranty. (b) That each new TVS product and service is fit for the purpose for which similar type product and services are ordinarily intended. Purchaser shall be solely responsible for determining suitability for use and in no event shall TVS Engineered Products be liable in this respect.

Duration

The warranty period shall begin on the date of shipment to the first purchaser and extend for twelve (12) months.

Exclusive Remedy

TVS Engineered Products will repair or replace at its sole discretion, any product and service it finds to be defective under this warranty, upon return of the product and service, prepaid, to Total Valve at 1300 East Memphis, Broken Arrow, Oklahoma 74012 or any warehouse designated by Total Valve. Such repairs or replacements are clients exclusive remedy and Total Valve SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM BREACH OF THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY OR ANY OTHER THEORY OR RECOVERY.

Disclaimer

TVS Engineered Products excludes from this warranty failures due to corrosion, erosion, abrasion, cavitations, or other application related failures. Further, it is the end user's responsibility to account for environmental influences such as traffic, wind, earthquake or other external loadings, decomposition of unstable fluids, simultaneous loadings or loadings due to fluid weight. There are no warranties that extend beyond the terms hereof and no one is authorized to assume for TOTAL VALVE any other liability in connection with the sale of TOTAL product and services. This warranty supersedes all previous warranties.

Custom Valve Warranty (manufactured valves to customer specifications)

Total Valve personnel shall perform the services in accordance with the care, skill and diligence of applicable industry standards currently recognized as of the date of the execution of this agreement. Total Valve disclaims all other warranties, presentations and statements, express or implied, statutory or otherwise. No oral or written information or advice given by Total Valve or its agents, representatives or employees, shall create a warranty or in any way increase the scope of these warranties and the client may not rely on any such information or advice unless it is set forth in writing signed by an authorized officer of Total Valve.

Design

We reserve the right to make design changes without notice.

CAUTION: Users should consult tvsengineeredproducts.com to see complete specifications for the product selected from this catalog.

WARNING: Improper selection or use of products and related items in this catalog can cause death, serious injury, or property damage. As industry requirements change, Total Valve reserves the right to modify the contents of this catalog and program parameters without notification. Updates on this program can be obtained online at tvsengineeredproducts.com or by calling 1-800-324-7035, or by contacting your local TVS Engineered Products representative or distributor.

TWO ENGINEERED TWO PRODUCTS

QUALIFIED

QC Dimensional Inspections
PMI Technology Utilized for Raw & WIP Materials
ASME Certifications for Valve Manufacturing & Assembly
Critical Dimensions Measured with Precision Measuring Equipment
Established ISO QC Systems & Processes
PED & CRN Registrations, UL when Required

ENGINEERED & TESTED

Latest Modeling with Flow (CFD) & Stress (FEA) Analysis
Solid Modeling & System Modeling for Projects
Vibration & Acoustic Modeling / Physical Testing Capabilities
Years of Technical & Engineering Valve Experience Using a Wide Range of Materials
All Types of Custom Valves Engineered to Meet Unique Customer Requirements
Calibrated Flow Lab Testing / Real Time Test Results on Total Valve Live Website
LabView Equipment Capturing Flow, Pressure, Temperature, & Video
PTC 19.5, ANSI, ASME & UL Testing are Standard Operating Procedures
Spring Manufacturing & Testing / ASME Welding & Hard Facing

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