TOTAL Valve Systems

TRUSTED SOLUTIONS FOR OVER 30 YEARS

PRODUCT CATALOG

Excess Flow Valves • Check Valves • Emergency Shutdown
Relief Valves • Isolation Valves
The valves listed above represent only Total Valve’s most popular valves according to their respective applications. Fire safe designs per API 6FA on most products.

**CHEMICAL PROCESSING**

- **Models 2100 & 2105**
  - Slim Wafer profile
  - Optional bypass
  - Internal piping and flanges
  - Exclusive to 2105: High flow, Low dP

- **Models 2120 & 2125**
  - Double Flanged
  - Optional bypass
  - Fits between flanges
  - Exclusive to 2125: High flow, Low dP

- **Models 2150 & 2155**
  - Threaded
  - Optional bypass
  - Multiple mounting configurations available
  - Exclusive to 2155: High flow, Low dP

- **Model 2400**
  - Internal to Tank / Vessel
  - Multiple reset options
  - Fire tested to API 6FA

- **Model 2600**
  - Double Flanged
  - Adjustable closing flow
  - Fire tested to API 6FA
  - Optional bypass & remote shutdown

**GAS STORAGE**

- **Models 6100, 6200, 6250, 6810**
  - Emergency Shutdown
  - Quick closing
  - Available shutdown methods:
    - Pressure Switch
    - Thermal
    - Manual
    - Remote

**GAS PIPELINES**

- **Model 6820**
  - Remote or manual reset
  - Fire safe
  - ASME Non-reclosing Relief Device
  - High capacity, set pressures 2-1480 PSI

- **Model 7400**
  - Slurry and coarse media
  - Multiple metal seating options
  - Triple port purge system
  - Low emission system design

- **Model 8000**
  - Steer/Decolonation Valve
  - Low profile design (actuated or manual)
  - Fire safe design
  - Visual indicator and lockout feature
  - Low emissions design

**FLARE SYSTEMS**

**BACK TO TOC**
EXCESS FLOW VALVES

Excess Flow Valves (EFVs) prevent excessive flow or surge in flow caused by line breaks, power disruptions, or pressure spikes. EFVs internally sense flow and close automatically.

**STYLES**
- Wafer
- Double Flanged
- Threaded/Welded
- Internal to Tank

**ALTERNATIVE NAMES**
- Velocity Check
- Emergency Shutdown Device
- Seismic Valve
- Shutdown Valve
- Surge Preventer
- Earthquake Valve
- Line Rupture Valve
- Velocity Check
- Emergency Shutdown Device
- Seismic Valve
- Shutdown Valve
- Surge Preventer
- Earthquake Valve
- Line Rupture Valve

**OPTIONS**
- Automatic Reset
- Manual Bypass
- Gauges
- Soft Seats
- Optional Components:
  - External manual bypass consisting of stainless steel tubing and a needle valve
  - Weld On (standard) or Integral Flanged Body
  - Differential or static pressure gauges
  - Exotic materials available upon request

**BENEFITS**
- Designed to easily insert into piping, between ASME/ANSI flanges
- Valves are durable and provide generous flow paths
- Closing flow rates are factory preset to customer specifications
- See table below for dimensions of common sizes

**INDUSTRIES**
- Chemical Processing
- Refineries
- Drilling Rigs
- Pharmaceutical
- Biotech and Food Plants

**EXCESS FLOW VALVES**

**APPLICATIONS**
- Soft Seats
- Gauges

**DIMENSIONS**

**NOMINAL SIZE**
- 0.625" - 3.000"

**FLANGE**
- 150#, 300#, 600#

**CLOSED**
- 1/16” to 1/2”

**Flows**
- 0.90 – 1.00 m³/min

**Options**
- Automatic Reset
- Manual Bypass

**Additional Features**
- Designed and manufactured with standard ASME/ANSI flanges
- Optional Components:
  - Automatic Reset
  - External manual bypass consisting of stainless steel tubing and a needle valve
  - Weld On (standard) or Integral Flanged Body
  - Differential or static pressure gauges
  - Exotic materials available upon request

**Closing Flow Rates**
- Factory preset to customer specifications

**Valves are durable and provide generous flow paths**

**Designed to easily insert into piping, between ASME/ANSI flanges**

**Reset Options**
- Standard: no reset

**Contact Total Valve**
- 1.800.324.7035

**See table below for dimensions of common sizes**

**Back to TOC**
THREADED/WELDED

- Designed and manufactured with standard National Pipe Threaded (NPT) and connections
- ASME B16.34 Wall Thickness
- Closing flow rates are factory preset to customer specifications
- See table below for dimensions of common sizes

**MODEL 2125**
This high flow version of the Model 2120 is heavily constructed and can withstand years of service. Comes standard with 150#, 300#, or 600# ANSI/ASME class flanges. Face-to-face dimensions are ASME B16.10 globe valve standard.

**MODEL 2600**
An externally adjustable EFV with a top entry design, which enables ease of adjustment and maintenance. Face-to-face dimensions are ASME B16.10 globe valve standard.

**NORMAL FLOW OPTIONS**

<table>
<thead>
<tr>
<th>FLANGE</th>
<th>150#</th>
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**EXCESS FLOW OPTIONS**

- Basic options include carbon steel bodies & stainless internals with other materials & pressure classes available upon request.
- These dimensions are for standard designs, reference only. Valves can be custom engineered as needed.

**OVERALL LENGTH**

2.34"

**Threaded Welded**

- Male Inlet x Female Outlet
  - Standard Rating: 300#

- Female Inlet x Male Outlet
  - Standard Rating: 600#

- Socket Weld
  - Standard Rating: 600#

- Selectable flow during field service

**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 Male Outlet
Standard Rating: 600#

**MODEL 2170**
Socket Weld
Standard Rating: 600#

MODEL 2155
Female Inlet x Female Outlet
High flow, Low dP
Standard Rating: 600#

MODEL 2180
[Shown with bypass]
Female Inlet x Female Outlet
Selectable flow during field service
Standard Rating: 600#
INTERNAL TO TANK: MODEL 2400

- NFPA 58 Compliant
- API 6FA Rating
- Seat internal to tank
- All nozzle mounting options available
  - ASME B16.5 (Standard)
  - Flanged
  - Through Hole
  - Double Flanged
- Low pressure drops, High Cv models

CHECK VALVES

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

ALTERNATIVE NAMES

- Vacuum Valve
- Low Pressure Relief
- Vent Valve
- Non-Slam
- Back Flow Preventer

APPLICATIONS

- Bulk Storage
- Vessel Inlets
- One Direction Flow
- Custom Cracking Pressure
- Reverse Flow Change

MODEL 3200

- Double Flanged
- Soft or metal seat designs
- For dimensions, see table for Model 2100 on pg.5

MODEL 3200

- Water design
- High flow capacity
- Designed API 6FA standards

MODEL 3220

- Soft or metal seat designs
- Internal to Tank
- Adjustable cracking pressure
- Turn down shut-off capability
- Threaded end connections
- For dimensions, see table for Model 2155 on pg.9

MODEL 3255

- Soft or metal seat designs
- High flow capacity
- For dimensions, see table for Model 2100 on pg.5

MODEL 3400

- Double Flanged
- Soft or metal seat designs
- Internal to Tank
- Adjustable cracking pressure
- Turn down shut-off capability
- For dimensions, see table for Model 2400 on pg.9

MODEL 3600

- Top entry, field serviceable
- Adjustable cracking pressure
- Turn down shut-off capability
- For dimensions, see table for Model 2500 on pg.9

Size | STANDARD | MAN & ACT | PIPE | LENGTH
--- | --- | --- | --- | ---
"2" | 0.75" | 0.84" | 2.00" | 1.96"
3 | 0.84" | 1.13" | 2.50" | 2.50"
4 | 0.94" | 1.25" | 3.13" | 3.13"
6 | 1.00" | 1.44" | 3.13" | 5.56
8 | 1.13" | 1.60" | 11.25" | 7.60
10 | 1.19" | 1.88" | 13.68" | 8.60
12 | 1.25" | 2.00" | 12.50" | 10.75
14 | 1.36" | 2.13" | 16.00" | 12.75
16 | 1.44" | 2.25" | 18.50" | 14.90

0.25" increments added over the customer nozzle length to ensure clearance.

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

These dimensions are for standard designs as reference only. Valves can be custom engineered as needed.

For dimensions, see table for Model 2100 on pg.5

For dimensions, see table for Model 2155 on pg.9

For dimensions, see table for Model 2400 on pg.9

For dimensions, see table for Model 2500 on pg.9
**EMERGENCY SHUTDOWN VALVES**

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

**OPTIONS**
- Hydraulic, Pneumatic, or Manually Operated
- Thermal, Remote, Manual, or Local Shutdown
- Loss of Supply Closing

**APPLICATIONS**
- Pipelines & Storage Facilities
- LPG, Chemical, & Power Plants
- Rail Loading Facilities
- Pumping Stations
- Tank Farms
- Shipyards

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**MODEL 6100**

This model can be used in both “in-line” and “in-tank” applications. The valve is installed on the mounting flange of a barge or pipeline, preventing unauthorized tampering with valve actuators. It is spring loaded in a power fail-safe closed position and is opened through the introduction of hydraulic or pneumatic pressure. When the pressure is removed, the valve closes, resulting in complete flow shut-off.

**FIRE SAFETY**

The Model 6100 is ideally suited for applications where fire safety is a consideration. With a fusible plug installed on each valve, the element material will melt at the specified temperature, thus releasing the actuating pressure and causing the valve to close automatically.

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**MODEL 6200**

This model is an automated, reverse flow check valve designed to immediately halt the flow of fluid during an emergency. Standard sizes are 4” and up.

**STANDARD FEATURES**
- Rapid closing, reverse flow
- Local and remote monitoring and reset options
- Low emission design

**CLOSING/TRIPPING OPTIONS**
- Thermal
- Loss of instrument air
- Local and remote
- Manual

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**MODEL 6250**

This model is a manual, spring-loaded, reverse flow check valve designed to immediately halt the flow of fluid during an emergency. Standard sizes are 4” and up.

**STANDARD FEATURES**
- Rapid closing, reverse flow
- Remote monitoring options
- Low emission design
- Fusible thermal device for tripping valve

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**MODEL 6810**

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

**STANDARD FEATURES**
- Pneumatic or hydraulic actuator
- NFPA 58 manifold assembly

**OPTIONAL ACCESSORIES**
- Gauges
- Valve position sensors
- Manual override
- NAMUR and ISO interfaces
- Fire proof blanket

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**VALUES**

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<th>VALVE SIZE</th>
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RELIEF VALVES: MODEL 6820 TRV

6820 TRV is Total Valve's proprietary system to open or close a valve at desired set pressure. This patented system includes the TRV module, an actuator, and an isolation valve. The typical isolation valves are triple-offset butterfly valves due to performance and durability. This system allows the user to operate within 1-3% of the valve's desired set pressure. 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 the device; it is independent of system back pressure. When coupled with a ball valve, it offers a pigging capability and provides overpressure or shutdown protection.

**Applications**
- Municipal Service
- Pulp & Paper Mills
- Gas Processing
- Chemical Processing
- Midstream/Pipeline
- Special Application
- Oil & Gas / Refining
- Nuclear Power

**Advantages**
- Class 5/Class 6 shut-off performance
- Instant reset with manual or remote options
- Partial stroke option to meet plant reliability requirements
- No pins required - proven performance with factory testing
- ASME & API certified

**Key Components**
- TRV Module
  - Our patented technology allows for complete control of valve set pressures (+/- 2%). Set pressures can be adjusted. Key options for dual sensing lines and fluid media filters provide industry leading system reliability. Suitable for severe service where dirt, hydrates and high moisture levels occur in the fluid media.
- Triple-Offset Valve
  - Triple-offset 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 and hydraulic actuation systems are integrated to the valve and TRV module. The modular design allows the use of special valve features including accumulator tanks, thermal protection plugs and other devices according to customer specifications.

**Set Pressure Capability, Certification and Tolerance**
All 6820 TRV’s are calibrated before shipment to meet the user’s required set or differential pressure and tolerance with a set point reliability of +/- 2%.

**Operating Pressure Ratio**
TRV's technology provides outstanding resistance to operating pressure conditions. System performance is not impacted by system backpressures.

**Pressure Cycling Service**
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 pin valves and rupture discs.

**Installation**
The TRV 6820 is designed for “in line” installation between pipe flanges. Each device is a “full face” design with pipe flange bolting for lug, wafer and short pattern body configurations.

**Field Testing and Resetting**
The unit’s 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 (in less than 3 seconds) when the device opens, versus the processes required for pin type valves or rupture discs.

**Valve Activation**
The 6820 TRV has two basic configurations the 6820 TRV-DP model for positive differential pressure applications. The 6820 TRV-SP is the model for single positive sensing line pressure applications.

**Other Options Include**
- Accumulator / Remote Closure System / Weatherproof Enclosure

**Sizes from 6” to 48” are available with the 6820 TRV System**
- Flange Ratings: 150, 300, 600
- Set Pressures: 3 psi to 1500 psi
- Temperatures: -450°F to 1500°F
- Accuracy: +/- 2% of set pressure

Largest low pressure relief device in production today.

Patent Number 9,169,939
Isolation Valves

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

**Options**
- Bleed Valves
- Bypass
- Lock Out
- Steam Purge
- Visual Indicator

**Applications**
- Gas
- Steam
- Liquid
- Coarse Materials

**Features**
- Slurry Valve:
  - For abrasives, corrosives, coking, cement, viscous thermal fluids, etc.
- Metal Seating:
  - Shearing action of disc to seat cuts through slurries
  - Self-lapping due to rotation of disc to seat
- Triple Port Purge System:
  - Flushes body cavity during opening and closing
- Low Emission System Design:
  - Rotating stem coupled with live loaded packing
  - Ejection port to assure low emissions and stem lubricity

**Specifications**
- 6” to 20”
- ANSI B16.34 | 150, 300, 600#
- Temperatures to 1200°F
- ANSI B16.5 | End Connections
- Hydraulic Actuation & Lifting Lugs
- Fire safe design to API 6FA

**Options**
- Fail-safe actuation system available
- Steam traced body and internals
- PTFE internal coating
- Live Position Feedback
- Other items available upon request

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**Model 8000**

This diverter valve grants continued production while the relief device is being serviced. The valve is designed to incorporate two relief devices to protect in an overpressure emergency. Only one relief device is in service at a time while the other serves as a back-up. If a problem occurs, such as a leak, simply switch to the alternate safety device and remove the faulty valve. This ensures that one relief device is in service at all times. It is field serviceable with a modular body, allowing for replacement of isolation valve seals without removal of safety relief valves from body.

**Standard Features**
- Automatic pressure balance at start of position change
- Pressure bleed valve at each position also serves for in-line testing
- Safety handle locks in either position with external indicator
- Low profile design for easy installation in tight areas
- Low pressure drop conforms to API RP 520 Part 2 and ASME Section VIII, Division 1, Appendix M

**Specifications**
- Size options: ½", ¾", 1", 1½", 2", 3" & 4"
- Flanged or threaded connections available
- Temperature: -250°F to 700°F
- MAWP: Up to 6000 psig on threaded connections
- Seat Options: Buna-N, EPDM, Neoprene, FKM, Silicon, PTFE, FFKM
- Low E Design available for low emission requirements
- Trim: Stainless Steel [standard material] - other material options available
- Body: Carbon Steel [standard material] - other material options available
**NOTE**: Typical lead time on a project is 8-16 weeks. Please contact us to verify lead time.

**CAUTION**: Users should consult TotalValve.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 TotalValve.com or by calling 1-800-324-7035, or by contacting your local Total Valve representative or distributor.

**STANDARD PRODUCTS AND SERVICES**

Lif, Inc., dba Total Valve Systems, hereinafter called “Total Valve” warrants as follows: (a) That each new Total Valve product and service is free from defects in material and workmanship if installed and used in accordance with ASME and other accredited agency certifications. Any valve repair/service not performed under ASME or accredited symbol has no implied or express warranty. (b) That each new Total Valve 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 Total Valve 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**

Total Valve 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**

Total Valve 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.
QUALIFIED
QC Dimensional Inspections
PMI Technology Utilized for Raw & WIP Materials
ASME Certifications for Valve Manufacturing & Assembly
Critical Dimensions Measured with Key Equipment & Gauges
Established ISO QC Systems & Processes
CE & CRN Registrations, UL as Required

ENGINEERED & TESTED
Latest Modeling with Flow (CFD) & Stress (FEA) Analysis
Solid Modeling & System Modeling for Projects
Vibration & Acoustic Modeling
Years of Technical & Engineering Valve Experience using a Wide Range of Materials
All types of Custom Valves Engineered to meet Unique Customer Requirements

MANUFACTURED & SHIPPED
ASME Certified Flow Lab Testing
Real Time Test Results on “Live” Website
LabView Equipment Capturing Flow, Pressure, Temperature, & Video
PTC 19.5, ASME & UL Testing is Standard Operating Procedures
Vertically Integrated 65,000 Sq. Ft. Manufacturing Facility
CNC, Lathes & Mills with 4-Axis Capability
72” Turning Capability for Larger Valves
Spring Manufacturing & Testing
ASME Welding & Hard Facing
Worldwide Expedited Shipments
Container Shipments Status Reporting
International Offices Support
Order to On Site Delivery

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