

TRUSTED SOLUTIONS FOR OVER 30 YEARS



# PRODUCT CATALOG

Excess Flow Valves • Check Valves • Emergency Shutdown Relief Valves • Isolation Valves

# CONTENTS

#### Any model can be customized for your specific a



The trade marks and logos displayed are registered trademarks and copyright protected by each of the respective owners.

YEARS Experience serving industries with SAFETY & RELIABILITY



pplications. VALVE SELECTION GUIDE	4-5
tandard Flow	6
ligh Flow	6
xcess Flow Vent, High Flow Check 2106	6
tandard Flow 2120	7
ligh Flow	8
djustable Closing Flow 2600	8
tandard Flow Male Inlet x Female Outlet 2130	9
tandard Flow Female Inlet x Male Outlet 2140	9
tandard Flow Female Inlet x Female Outlet	9
tandard Flow Male Inlet x Male Outlet 2160	9
tandard Flow Socket Weld 2170	9
ligh Flow Female Inlet x Female Outlet 2155	9
electable Flow Female Inlet x Female Outlet 2180	9
nternal shut-off for NFPA 58 tanks 2400	10
Vacuum Valve, Low Pressure Relief, Vent Valve, Non-Slam, Back Flow Preventer Bulk Storage, Vessel Inlets, One Direction Flow, Custom Cracking Pressure, Reverse Flow Change	11
Hydraulic thermal shutdown	12
nergency shutdown	13
ed, thermal shutdown	13
607 Fire safe ball valve, thermal/emergency shutdown 6810	13
TRV module, an actuator, and an isolation valve	14-15
rry valve	16
fety valve system	17
inty Info	18-19

### VALVE **SELECTION** GUIDE

### **GAS STORAGE**



### CHEMICAL PROCESSING



### **GAS PIPELINES**



4



# TYPICAL INDUSTRY APPLICATIONS

### BULK MATERIAL PROCESSING

TC TA LValve Systems



### FLARE SYSTEMS



## **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 have no reset.

#### STYLES

Wafer Double Flanged Threaded/Welded Internal to Tank

Line Rupture Valve

**ALTERNATIVE NAMES** 

#### BENEFITS

Velocity Check • Emergency Shutdown Device • Seismic Valve

Shutdown Valve • Surge Preventer • Earthquake Valve

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

#### Automatic Reset Manual Bypass

OPTIONS

Soft Seats

INDUSTRIES

Chemical Processing • Refineries Drilling Rigs • Pharmaceutical Biotech and Food Plants

### WAFER

- 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

**MODEL 2100** [Shown with automatic reset option]





**MODEL 2105** 





• 2100 • 2105 • 2	106 •	NOMINAL SIZE	A * WIDTH	B DIA.	C INSERT DIA.
		0.75"	0.625"	1.69"	0.70"
NORMAL		1	0.625	2.00	0.90
FLOW OPTIONS CONTINUES		1.5	0.625	2.88	1.50
	-	2	0.625	3.62	1.90
		3	0.75	5.00	2.88
		4	0.75	6.19	3.75
	1	6	1.00	8.50	5.69
		8	1.00	10.62	7.50
	A	10	1.25	12.75	9.63
	, T	12	1.30	15.00	11.50
Р В —		14	1.50	16.25	12.88
Basic options include carbon steel bodies &	& stainless internals	These di	mensions are for standar	d designs as reference or	

6

\* Valves with bypasses may have different dimensions. Please contact customer support.

**MODEL 2106** 



#### **MODEL 2120**

steel tubing and a needle valve

• Differential or static pressure gauges

This valve comes standard with 150#, 300#, or 600# ANSI/ASME class flanges. It is Total Valve's most widely used product due to its versatility and reliability.

7

FLANGE	150# 300#						
SIZE	А	В	С	A	В	С	А
0.75"	4.50"	3.88"	0.44"	4.50"	4.62"	0.56"	5.00'
1	4.50	4.25	0.50	4.50	4.88	0.62	5.00
1.5	4.75	5.00	0.62	5.00	6.12	0.75	5.50
2	5.00	6.00	0.69	5.75	6.50	0.81	6.50
3	6.25	7.50	0.88	6.50	8.25	1.06	7.50
4	6.30	9.00	0.88	7.44	10.00	1.19	8.25
6	8.00	11.00	0.94	9.00	12.50	1.38	10.50
8	12.00	13.50	1.06	12.50	15.00	1.56	13.00
10	13.50	16.00	1.12	14.25	17.50	1.81	15.00
12	18.00	19.00	1.19	19.00	20.50	1.94	20.00
14	22.00	21.00	1.31	24.00	23.00	2.06	26.00
These dimensions are for standard designs as reference only. Valves can be custom-engineered as needed.							

Optional Components:

Automatic Reset

## T\_TALValve Systems

### **DOUBLE FLANGED**

#### • Designed and manufactured with standard ASME/ANSI flanges

• External manual bypass consisting of stainless

• Weld On [standard] or Integral Flanged Body

• Exotic materials available upon request • Closing flow rates are factory preset to customer specifications • See table below for dimensions of common sizes





Basic



### **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.

### **DOUBLE FLANGED** cont.

#### **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.



back to

## **THREADED/WELDED**

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



#### **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 2160** Male Inlet x Male Outlet Standard Rating: 300#



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



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#

NPS	2130	2140	2150	2160	2170	2155	2180
0.75"	4.00"	4.00"	4.00"	4.00"	4.00"	6.00"	4.00"
1	4.00	4.00	4.00	4.00	4.00	6.00	4.00
1.5	4.50	4.50	4.50	4.50	4.50	6.50	4.50
2	5.63	5.63	5.63	5.63	5.63	7.63	5.63
3	7.25	7.25	7.25	7.25	7.25	9.25	7.25
4	9.00	9.00	9.00	9.00	9.00	11.00	9.00

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

	FLANGE		150#			300#			600#	
	SIZE	А	В	С	А	В	С	А	В	С
NORMAL FLOW OPTIONS	1"	5.00"	4.25"	0.50"	8.00"	4.88"	0.62"	8.50"	4.88"	0.69"
	1.5	6.50	5.00	0.62	9.00	6.12	0.75	9.50	6.12	0.88
	2	8.00	6.00	0.69	10.50	6.50	0.81	11.50	6.50	1.00
	3	9.50	7.50	0.88	12.50	8.25	1.06	14.00	8.25	1.25
	4	11.50	9.00	0.88	14.00	10.00	1.19	17.00	10.75	1.50
B B B B B B B B B B B B B B B B B B B	6	16.00	11.00	0.94	17.50	12.50	1.38	22.00	14.00	1.88
CLUSING FLUW	8	19.50	13.50	1.06	22.00	15.00	1.56	26.00	16.50	2.19
	10	24.50	16.00	1.12	24.50	17.50	1.81	31.00	20.00	2.50
	12	27.50	19.00	1.19	28.00	20.50	1.94	33.00	22.00	2.62
⊢ AI	14	31.00	21.00	1.31	33.00	23.00	2.06	35.00	23.75	2.75
ntions include carbon steel hodies & stainless internals		The	se dimens	sions are f	or standar	d designs :	as referen	ne only		

8

with other materials & pressure classes available upon request.

Valves can be custom-engineered as needed.

## TC TA LValve Systems







0

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



### **EXCESS** FLOW & CHECK

### **INTERNAL TO TANK: MODEL 2400**

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



**Actuated Reset** Custom



#### MANUAL [MAN] & ACTUATED RESET [ACT]

TOP LEFT Pneumatic or hydraulic reset

**TOP RIGHT** Custom inlets and outlets Start-up and shutdown options available

воттом Manual external handle with locking device

		STAN	IDARD	MAN & ACT		
● 2400 ●	SIZE	<b>150</b> # A	<b>300</b> # A	<b>150# &amp; 300</b> # A	B B	LENGTH C
NORMAL	2"	0.75"	0.88"	2.50"	1.90"	
FLOW	3	0.94	1.13	2.50	2.50	0.25"
	4	0.94	1.25	3.13	3.50	increments
	6	1.00	1.44	3.13	5.56	added over
Maaaaaaa Bu B	8	1.13	1.63	11.25	7.63 the	the customer
	10	1.19	1.88	13.68	8.63	8.63 to desired
CI OSING	12	1.25	2.00	12.50	10.75	clearance.
FLOW	14	1.38	2.13	16.00	12.75	
	16	1.44	2.25	18.50	14.00	
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.					

## **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**

Wafer design High flow capacity Designed API 6FA standards









#### **MODEL 3255** Threaded end connections High flow capacity









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 2600 on pg.9



## TC TALValve Systems



For dimensions, see table for Model 2120 on pg.7



Soft or metal seat designs







## **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



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

- Thermal

- Manual

#### **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**

12

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.

61	Π	Π	



Basic options include carbon steel bodies & stainless internals with other materials & pressure classes available upon request. VALVE SIZE в С D F Α 2.07" 9.00" 1.06" 3.50" 2.00" 6.50" 2" З 3.07 10.78 1.19 4.41 3.00 8.25 10.00 4x3 3.07 10.78 1.31 4.41 3.00 4 4.03 11.74 1.31 5.78 4.00 10.00 6x4 4.03 11.74 1.50 5.78 4.00 12.50 6 6.07 14.22 1.50 7.91 6.00 12.50 6.07 14.22 1.69 7.91 6.00 15.00 8x6 7 98 16.41 1.69 9.56 8.00 15.00 8

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



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.

Fusible thermal device for tripping valve  $\circ$ 





### **MODEL 6200**

• Rapid closing, reverse flow • Local and remote monitoring and reset options • Low emission design

#### **CLOSING/TRIPPING OPTIONS**

• Loss of instrument air • Local and remote

### **MODEL 6250**

#### STANDARD FEATURES

- **Rapid closing, reverse flow**  $\circ$
- **Remote monitoring options** 
  - Low emission design o



TCTA LValve Systems

#### **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

## **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.

#### **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 • Cert. No.: TVO-M00606

Pulp & Paper Mills 

 Special Application Gas Processing 

Oil & Gas / Refining 

Municipal Service 

Midstream/Pipeline

APPLICATIONS

### **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

14

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.



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 guicker resets (in less than 3 seconds) when the device opens, versus the processes required for pin type valves or rupture discs.

#### Valve Activation

TOC

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** 

## TWIN DISC **MODEL 7400**

This model is used with slurry, coarse media, or viscous fluids. The valve has an excellent shut-off performance due to a self-lapping twin disc design.



#### **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"
- ASME B16.34 | 150, 300, 600#
- Temperatures to 1200°F
- ASME 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



- SPECIFICATIONS • Size options: 1/2", 3/4", 1", 11/2", 2", 3" & 4"
- Flanged or threaded connections available
- **Temperature:** –250°F to 700°F
- **MAWP:** Up to 6000 psig. on threaded connections
- Seal 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







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.

The Diverter

#### 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





CV CHART





## **VALVE WARRANTIES**

#### STANDARD PRODUCTS AND SERVICES

L6, Inc. d/b/a 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.

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.





# **TOTAL VALVE IS**

#### 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

Toll Free: 1.800.324.7035 • Phone: 918.258.7035 • Fax: 918.251.6426 • Email: sales@totalvalve.com 1300 East Memphis • Broken Arrow, Oklahoma 74012

#### TOTALVALVE.COM

PC12016R1