TRU-TECH VALVE

SIMPLIFY YOUR WORLD.

TTV 2015
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NOTES

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TRU-TECH VALVE

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COMPANY PROFILE

Tru-Tech Valve is a premier supplier of valves and actuators that are internationally recognized for quality, durability, and performance. We offer solutions for the critical containment of abrasive slurries and corrosive fluids for many industries. Local machining centers and coating materials on site allow us the capability of meeting the needs of our customers promptly, while still maintaining our reputation for delivering high quality, innovative valve solutions. Through both standard and custom construction, Tru-Tech is committed to helping the industrial markets operate more effectively, efficiently, and safely. With a variety of diaphragms in stock, we are dedicated to providing you with products that meet your standards, your goals, and simplifying your world.

Tru-Tech Valve designs and manufacturers an extensive line of special automatic control valves used in many applications. Typical applications include Industrial/Municipal Water and Wastewater Treatment, Power, Chemical, Mining, Pulp and Paper, Process and General Industrial. Product offering include Enhanced Weir Type Diaphragm Valves, Straight Thru Diaphragm Valves, Heavy Duty Pneumatic Actuators, and Series 100 Municipal Valves. Tru-Tech Valve products meet or exceed the quality standards of AWWA, WEF, ASTM, ASA, DIN, ASTM, ISO, BS, ANSI, and other world recognized quality-referenced standards.

H I S T O R Y

Tru-Tech Valve, LLC was founded in December 2008 to acquire the assets and patent of Tru-Tech Industries, Inc. Tru-Tech Industries was established in 1992 by acquiring the Daleng Corporation. The Daleng Corporation was the original licensee of the famous Arco-Wynn diaphragm valve. Tru-Tech Valve currently manufactures and serves the industrial valve market with the patented diaphragm valve. Our products are manufactured, assembled, tested, and shipped from the Tru-Tech Valve Plant in New Castle, Pa.

Tru-Tech Valve has a rich history that can be traced back to the need for a new, lower maintenance, durable valve body designed for use in the gold mines of South Africa. These new diaphragm valve designs were developed by Edward W. Wynn of England and were patented in 1958. They were created to replace the conventional "weir" type diaphragm valves used at the time, for the process of separating gold from rock slurry. Traditional weir type valves required much maintenance because of constant clogging. The new design solved this problem and more with a specially patented "Tru-Flow" body. The unique shape provides the laminar flow characteristics of a venturi and static head pressure remains almost unchanged. The ingenuity of these original engineers still flows through the veins of Tru-Tech today. New improvements and expansions to the original line of products continue to evolve to accommodate the ever-expanding market for diaphragm valves.

Today, the company has installations throughout the world, normally marketed through sales representatives in most countries. Tru-Tech's global capabilities, outstanding operating track record, and world-class employees are dedicated to premier customer service, innovation, and delivering value now and well into the future.

THE SHOP

The Tru-Tech Valve plant comprises approximately 12,000 combined sq. ft. and includes a testing and research center capable of testing valves for flow, head loss, function, etc. The shop contains a variety of equipment with capacity to accommodate a large range of valve diameters. Most equipment such as our valve bodies, bonnets, actuator casings, and compressors are CNC identifiable and of relatively recent vintage.

Tru-Tech Valve employs the latest in technology along with organized records to accurately monitor and trace all items procured, produced, and sold throughout it's history. The ability to accurately trace all orders and transactions allows us to develop and maintain a better relationship with our suppliers and customers, allowing us to better serve your needs and wants.

All materials recieved at the plant are checked for conformity to specifications and conditions. When recieiving valve bodies from the supplying foundry, the pour's composition is periodically checked against the composition standards set for that particular material.

Our personnel are trained in technical and engineering backgrounds. Instilled in Tru-Tech's values is a policy that encourages continuance of personnel education extended to all employees. Tru-Tech continuously invests in their employees growth and assets to assure highly skilled workers and to maintain competency in the evolving industrial markets in order to provide services to meet customer demand.

The shop's storeroom facility is responsible for proper receipt, storage, and dispatching of parts, small tooling, sub-assemblies, etc. to be used in our products. A perpetual inventory is maintained to keep our shop organized for effective and efficient assembly of goods.

"To exceed every expectation in a timely and professional manner, while providing a quality product, at the highest level of service to simplify your world."

MISSION AND VALUES

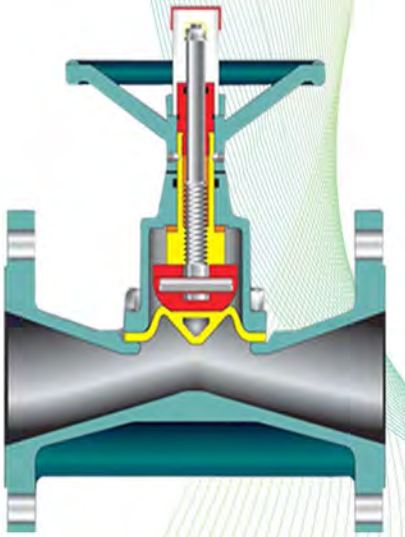
Tru-Tech Valve strives to be a leading world- class manufacturer and provider of diaphragm valves in all regions of the world. By providing the customer with outstanding service and products, we are able to develop long-term relationships, which can be leveraged for future success. We also strive to sustain our knowledge base and skill set with emphasis on leadership development, inclusion and diversity, and ethics and compliance. A major paramount to the success of Tru-Tech Valve is its philosophy of "Quality, Integrity, and Innovation".

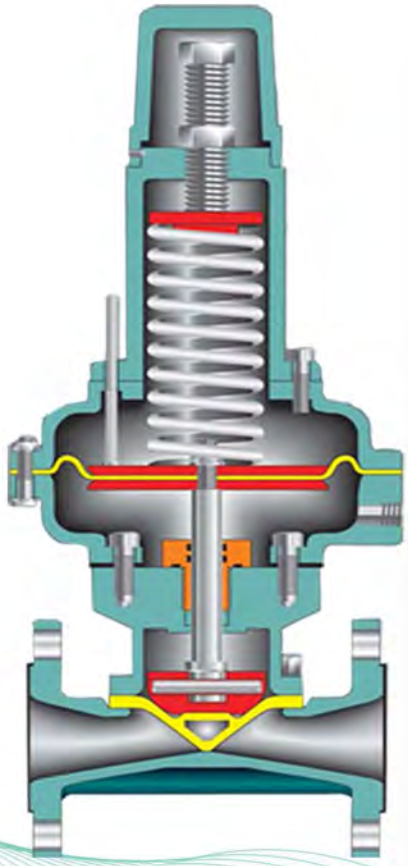
TRU-TECH VALVE

SIMPLIFY YOUR WORLD.

TRU-TECH DESIGN

Tru-Tech valves were designed using the latest engineering technology, which insures customers that the valves installed in their system will provide the maximum degree of performance and the longest possible service life. Valve parts are manufactured on the latest state-of-the-art machining and turning centers. This assures our customers of the highest possible quality products. Parts manufactured today are 100% interchangeable with parts made many years ago and well into the future.





PRODUCTS

Compact Diaphragm Valves have a face to face that is interchangeable with most solid wedge, double disc, and resilient wedge gate valves as well as most short pattern plug and ball valves using ANSI B.16.10 as a standard. These valves are the best for O.E.M.'s and other usage on new projects. Straight thru valves are referred to as Tru-Flow and Weir valves as Tru-Trol.

Standard Diaphragm Valves have a face to face that is interchangeable with most other brands of diaphragm valves using MSS SP-88 as a standard. These valves are used on replacement projects where existing piping integrity must be maintained. Straight thru valves are referred to as Maxi-Flow and Weir valves as Maxi-Trol.

VALVE BODY STYLES

Tru-Flow
Tru –Trol
Maxi-Flow
Maxi-Trol

WHY DO TRU-TECH DIAPHRAGM VALVES LAST LONGER?

The Tru-Tech valve reduces diaphragm flex by contracting the vertical height of the flow area by expanding the width. The resultant body shape provides the laminar flow characteristics of a venturi and less turbulence to the flow media. In addition, the reduced flex results in a longer diaphragm life.

TYPICAL APPLICATIONS

INDUSTRIAL/MUNICIPAL WATER & WASTEWATER TREATMENT

Tru-Tech ENHANCED WEIR Diaphragm Valves provide an inexpensive means of fluid control for reverse osmosis, deionization, filtration, chemical feeders and demineralizers. STRAIGHT THRU valves are used in slurry and/or abrasive applications. Installations include manual, pneumatically, and electrically actuated valves

POWER

Tru-Tech ENHANCED WEIR Diaphragm Valves are commonly utilized in chemical and demineralizer systems. STRAIGHT THRU rubber lined valves are used for flue gas desulfurization. Installations include both manual and pneumatically actuated valves.

CHEMICAL

Tru-Tech ENHANCED WEIR Diaphragm Valves are available in a wide variety of body linings and diaphragm materials. This versatility makes them suitable for handling a wide variety of acids and other corrosive fluids. Installations include both manual and pneumatic actuated valves.

MINING

Tru-Tech STRAIGHT THRU, rubber lined Diaphragm Valves are normally used for handling abrasive and/or slurry applications. ENHANCED WEIR valves are normally used for chemical and process feed lines.

PULP & PAPER

Tru-Tech ENHANCED WEIR Diaphragm Valves are normally used in clean fluid service such as bleaching and coating process, chemical, and water treatment. Tru-Tech STRAIGHT THRU Diaphragm Valves would normally be used for slurry services like lime mud and titanium dioxide lines. Installations include both manual and pneumatically actuated valves.

DIAPHRAGM VALVE STANDARD FEATURES AND ADVANTAGES

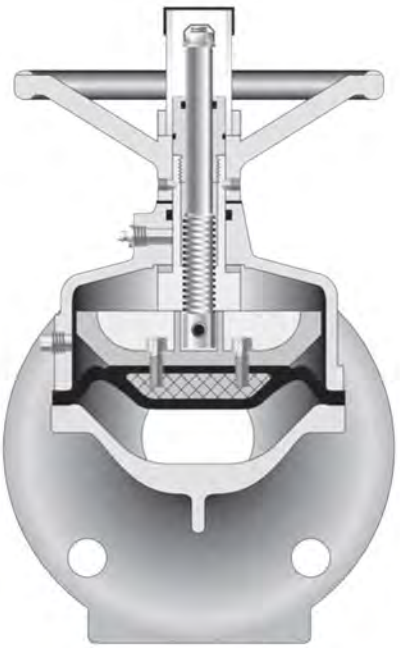
Diaphragm valves have common design features that are unavailable in other types of valves. These unique advantages include in-line maintenance, positive bubble-tight closure, bonnet isolation, no packing glands, and a streamlined flow passage without recesses or pockets.

A fully functioning rubber diaphragm seals leak-tight against the valve body and at the same time completely isolates all the mechanical working parts of the valve's operating mechanism from the fluid. This total seperation between the media passing through the valve and the bonnet also eliminates troublesome stem seal and packing gland problems as well as providing "fugitive emission" protection.

A wide range of rubber and plastic body linings and diaphragm materials provides a cost - effective solution to readily handling corrosive and abrasive liquids as well as liquids with suspended solids.

Providing simplified in-line maintenance has become increasingly more important in valve selection. All sizes and types of diaphragm valves provide this important feature.

Diaphragm valves do not seize up like eccentric plug valves and are excellent for replacing problem valves.



TRU-TECH SPECIFICS

In addition to many features found in all diaphragm valves, Tru-Tech has some extra advantages of its own.

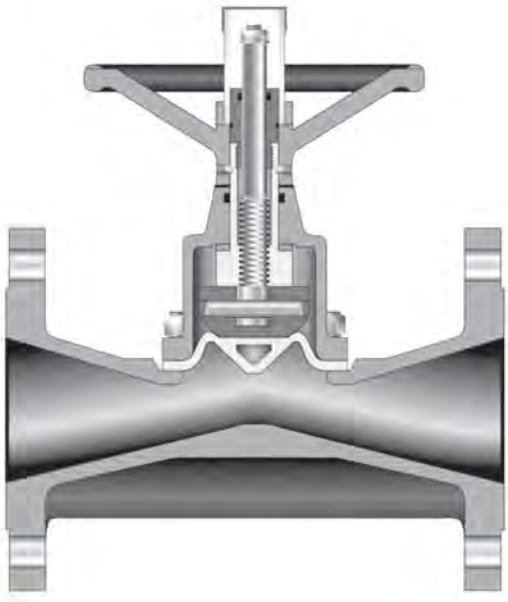
Our diaphragm valves are available in two face to face configurations. Tru-Tech meets MSS SP-88 standards, permitting direct replacement of most other brands of diaphragm valves to be used where customers are upgrading existing systems utilizing diaphragm valves. Tru-Tech also meets ANSI B16.10 standards, permitting direct replacement of most brands of gate, plug, and ball valves.

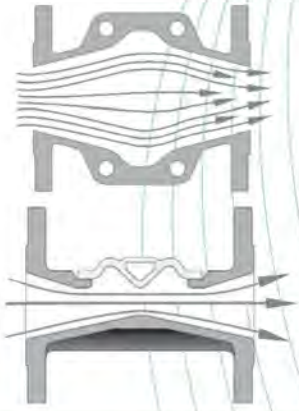
Tru-Tech STRAIGHT THRU valves are available with TFE faced diaphragm which expands the range of applications that can be handled. This is a feature not offered by other brands of diaphragm valves.

All Tru-Tech manual valves are furnished standard with travel stops. Travel stops help to prevent the number one cause of failure and reduced life in diaphragm valves, mainly "over-closure by zealous operators." All pneumatically operated valves are available with optional travel stops and are furnished as standard where our engineering department feels the operator may be oversized.

All diaphragms are double studded providing a extra margin of performance, especially in vacuum service. Stud pull out is the number two cause of failure in other brands of diaphragm valves.

All Tru-Tech "manual valve operators" are supplied with "heavy duty acme threads" capable of providing heavy thrusts and thousands of operations. Some other brands use limited duty v-threads not recommended for a great number of operations. All Tru-Tech valves can be "rodded out" where clogging occurs. Tru-Tech manufactures its own pneumatic actuators providing our customers with one source responsibility for the total package. All Tru Tech valves are furnished with position indicators showing whether the valve is open, closed, or throttling. Unlined valve bodies and all operators are powder epoxy coated inside and out with a hybrid flex/epoxy powder formulated for maximum chemical as well as weather resistance. Plastic lined valves are furnished with bodies completely encapsulated with the latest state of the art fusion-bonded liner. Each and every valve body lining is spark tested to insure lining thickness and integrity.



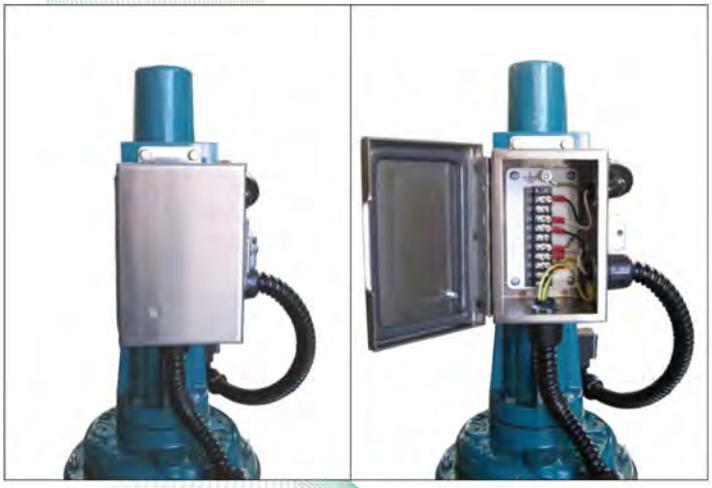


CUSTOMIZED SOLUTIONS

Tru-Tech is happy to provide customized solutions for the dynamic automated world. New offerings in Tru-Tech's electrical/automated product lineup have successfully handled the ever-changing industrial demand for automated regulating and controlling process flow devices.

Let Tru-Tech Valve find a custom solution to the problems that arise due to changing valve automation needs. After all, a highly durable, reliable, and competitively priced product is what you need.

Below is an example of a custom fabricated design by Tru-Tech to meet specific needs of a customer. The wire runs are terminated in one conveniently located Stainless Steel box. This arrangement will simplify installation and start up.



Customized solutions allow Tru-Tech Valve to SIMPLIFY YOUR WORLD.

MANUALLY OPERATED DIAPHRAGM VALVES

Constantly improving the techniques that enhance the performance of our valves is a common practice. Tru-Tech Valve presents the many ways of manually operating our valves with a hand wheel bonnet assembly, nut, operated or pneumatic with a manual override.

The nut operated valves are typical for buried services but can be above ground. A device is used to turn the nut to operate the valve.

Pneumatic valves with a manual override are geared for emergencies. If the power source is interrupted, the manual override gives the operator the ability to manually position the valve in the absense of power.

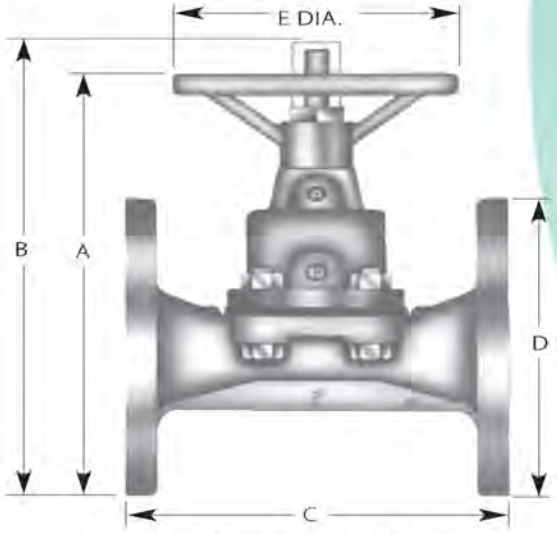
The hand wheel operated valve may be basic, but it's simplicity doesn't take away from it's performance. The hand wheel is fashioned to the bonnet, whereas no cheater bar is needed to create a tight shut off.

MANUALLY OPERATED

ENHANCED WEIR DIAPHRAGM VALVES

Flanged Ends

MAXI-TROL AND TRU-TROL VALVE GENERAL DIMENSIONS										
Valve Size	A	B	C MAXI-TROL (MSS LENGTH)			C TRU-TROL (ANSI LENGTH)	Weight (LBS)	D	E	Body Pressure Rating (PSI)
			Plastic Lined	Rubber Lined	Weight (LBS)					
1/2	4.00	4.69	5.75*	5.75*	7.00	5.00	6.50	3.50	3.50	200
3/4	4.00	4.69	5.75	5.75	7.00	5.00	6.50	3.50	3.50	200
1	4.00	5.75	5.75	5.75	7.00	5.00	6.50	4.25	3.50	200
1 1/4	5.50	6.13	5.75*	5.75*	14.00	5.00	12.00	5.00	5.00	175
1 1/2	5.50	7.00	7.88*	7.88*	12.00	7.00	14.00	5.00	5.00	175
2	7.00	8.00	7.88	7.88	25.00	7.00	21.00	6.00	5.00	175
2 1/2	7.25	9.00	10.25*	10.25*	55.00	8.00	35.00	7.00	7.00	150
3	7.25	9.50	10.25	10.25	55.00	8.00	35.00	7.50	7.00	150
4	8.38	10.50	12.88	12.75	80.00	9.00	51.50	9.00	9.00	150
6	11.00	14.50	16.38	16.25	104.00	10.50	80.00	11.00	12.00	125
8	17.88	17.88	20.88	20.88	231.00	11.50	165.00	13.75	14.00	100
10	17.88	17.88	25.38	25.75	265.00	NA	NA	16.00	14.00	65



Flanged Body

Tolerances: Unlined 1/16", Lined 1/8" All dimensions in inches NA - Not Available

* Valve length does not meet either MSS or ANSI Specifications

ANSI face to face dimension does not appy to screwed (NPT) or SW ends. The use of gaskets for plastic lined valves is strongly recommended.

ANSI face to face valves interchange with most gate, plug, and ball valves. MSS face to face valves interchange with most other brands of diaphragm valves. Valves may have a combination of drilled holes and threaded holes on flanges. Contact factory for additional information.

DIAPHRAGM VALVES

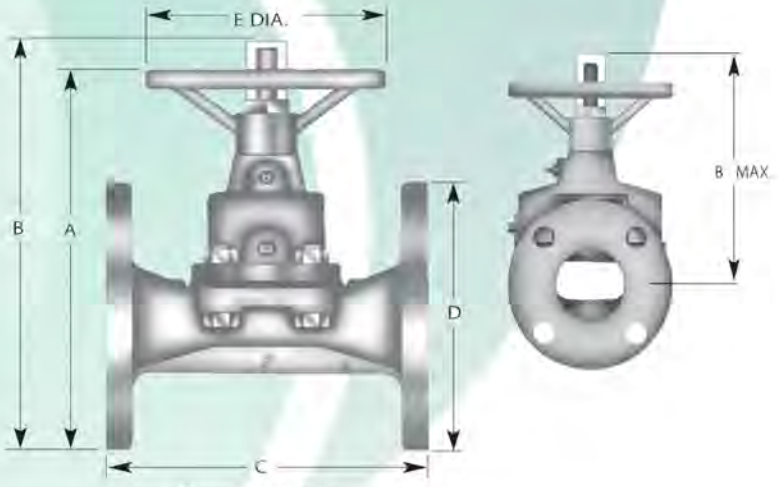
STRAIGHT THRU DIAPHRAGM VALVES

Screwed Ends

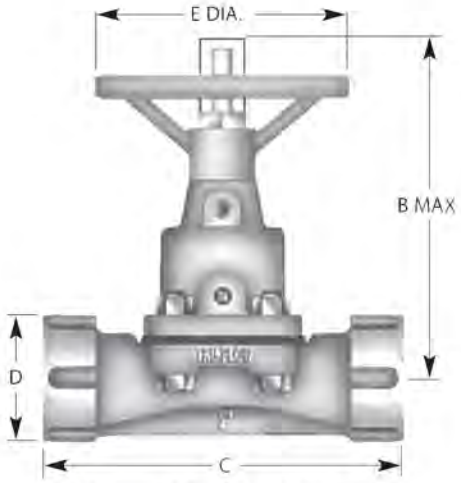
SCREWED END - VALVE GENERAL DIMENSIONS							
Valve Size	A	B	C	Weight (lbs)	D	E	Body Pressure Rating (PSI)
1/2	4.00	4.69	7.25	5.00	1.88	3.50	200
3/4	4.00	4.69	7.25	5.00	1.88	3.50	200
1	4.00	4.69	7.25	5.00	1.88	3.50	200
1 1/2	5.50	6.13	8.50	13.00	3.25	5.00	175
2	5.50	6.13	8.50	13.00	3.25	5.00	175
2 1/2	8.38	10.50	10.50	35.00	4.50	9.00	150
3	8.38	10.50	10.50	35.00	4.50	9.00	150

Flanged Ends

MAXI-FLOW AND TRU-FLOW VALVE GENERAL DIMENSIONS										
Valve Size	A	B	C MAXI-FLOW (MSS LENGTH)			C TRU-FLOW (ANSI LENGTH)	Weight (LBS)	D	E	Body Pressure Rating (PSI)
			Plastic Lined	Rubber Lined	Weight (LBS)					
1/2	4.00	4.69	5.75*	5.75*	11.00	5.00	10.00	3.50	3.50	200
3/4	4.00	4.69	5.75	5.75	11.00	5.00	10.00	3.50	3.50	200
1	4.00	4.69	5.75	5.75	11.00	5.00	10.00	3.50	3.50	200
1 1/4	4.00	4.69	5.75*	5.75*	11.00	5.00	10.00	3.50	3.50	200
1 1/2	7.25	9.00	7.88*	7.88*	27.00	7.00	25.00	6.00	5.00	175
2	7.25	9.50	7.88	7.88	27.00	7.00	25.00	6.00	7.00	175
2 1/2	8.38	10.50	10.25*	10.25*	35.00	8.00	45.00	7.00	9.00	150
3	8.38	10.38	10.25	10.25	52.00	8.00	45.00	7.50	9.00	150
4	11.25	14.00	12.88	12.75	80.00	9.00	70.00	9.00	12.00	150
6	17.88	22.00	16.38	16.25	160.00	10.50	125.00	11.13	14.13	125



Flanged Body



Screwed End Body and Socket & Butt Weld Body

Tolerances: Unlined 1/16", Lined 1/8" All dimensions in inches NA - Not Available

* Valve length does not meet either MSS or ANSI Specifications

ANSI face to face dimension does not appy to screwed (NPT) or SW ends. The use of gaskets for plastic lined valves is strongly recommended.

ANSI face to face valves interchange with most gate, plug, and ball valves. MSS face to face valves interchange with most other brands of diaphragm valves.

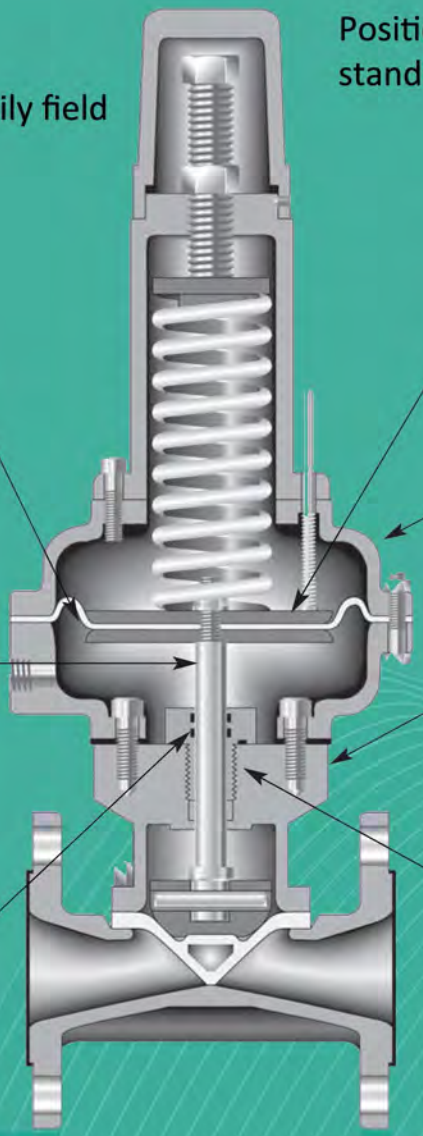
Valves may have a combination of drilled holes and threaded holes on flanges. Contact factory for additional information.

AIR OPERATED

Our actuated valves are offered in many configurations with analog and digital instrumentation. If required, we can also supply them with instrumentation mounted and calibrated from all major valve instrument manufacturers.

Automated diaphragm valves have become a standard requirement of today's computerized plant control systems. Tru-Tech Valve specializes in getting your valve set up with the right positioners, switches, feedback transmitters, etc., by utilizing qualified instrumentation and personnel.

With our experts, Tru-Tech can help you through most complex diaphragm valve automation requirements.



Position Indicator furnished standard.

Accesories easily field mounted.

DIAPHRAGM PLATES: Manufactured from heavy section cast iron and steel plate to withstand higher air pressure.

DIAPHRAGM: Molded of nylon reinforced oil-resistant elastomer to provide longer life and high operating pressures.

DIAPHRAGM CASE: Rugged high strength cast iron with bosses and pads to facilitate the mounting of accessories.

SHAFT(Stem): Precision machined from stainless steel for corrosion and wear resistance. Unique collar controls opening stroke and extends cycle life under load.

BONNET: Designed of high strength cast iron with generous area flat top for precision/super high strength coupling between actuator and valve.

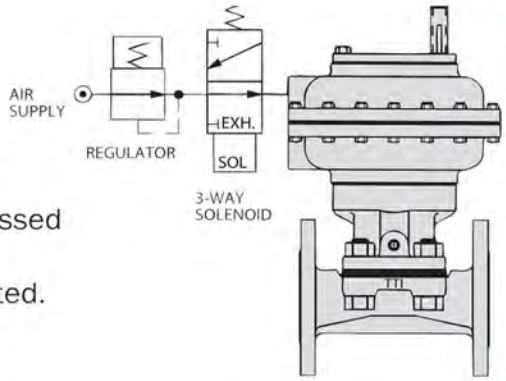
SHAFT SEAL: Furnished standard with two (2 each) O-Rings for longer trouble free performance.

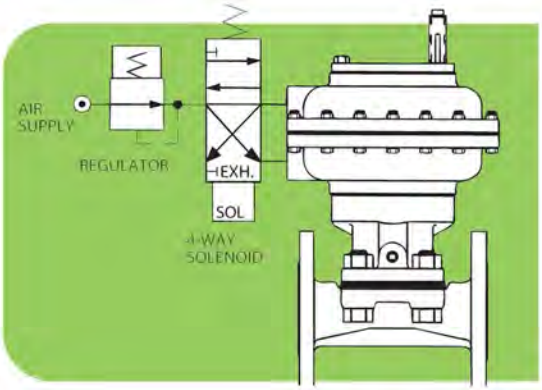
SHAFT BEARING: Precision machined from non-metallic self-lubricating material.

DIAPHRAGM VALVES

"SO" SPRING TO OPEN
(ON - OFF Control)

This actuator/accessory package is designed to normally position the valve open. The valve will close when compressed air is admitted into the upper actuator chamber and the actuator spring will open the valve when the air is exhausted.



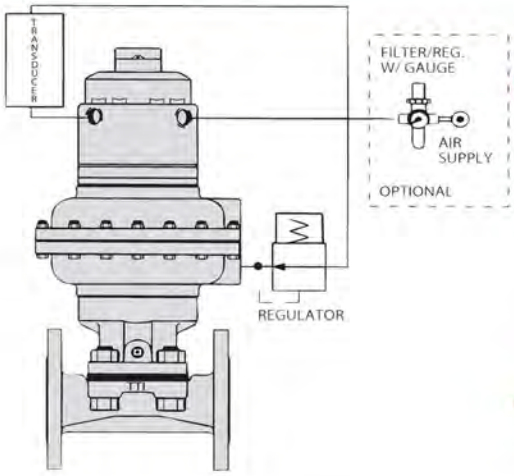


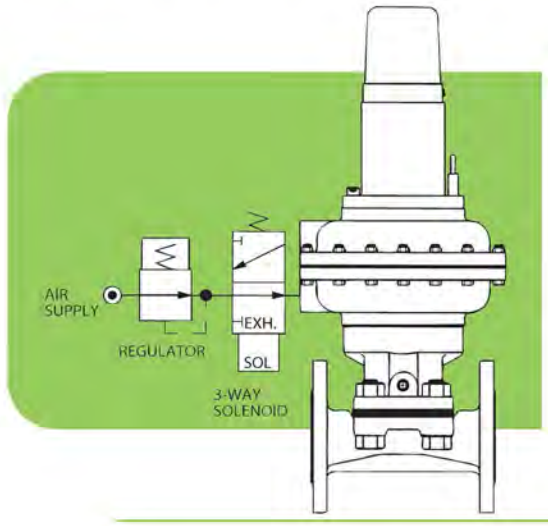
"AA" AIR-AIR, DOUBLE ACTING
(ON - OFF Control)

This actuator/accessory package is designed to open the valve when compressed air is admitted into the lower chamber and closes the valve when compressed air is admitted into the upper chamber.

"AA" AIR-AIR, DOUBLE ACTING
(AUTOMATIC THROTTLING)

This actuator/accessory package is provided with a positioner to accurately throttle the valve for pressure, liquid level, flow, temperature, and other control requirements. A transducer is generally supplied to provide valve modulation proportional to an electric signal (most often 4-20 ma).

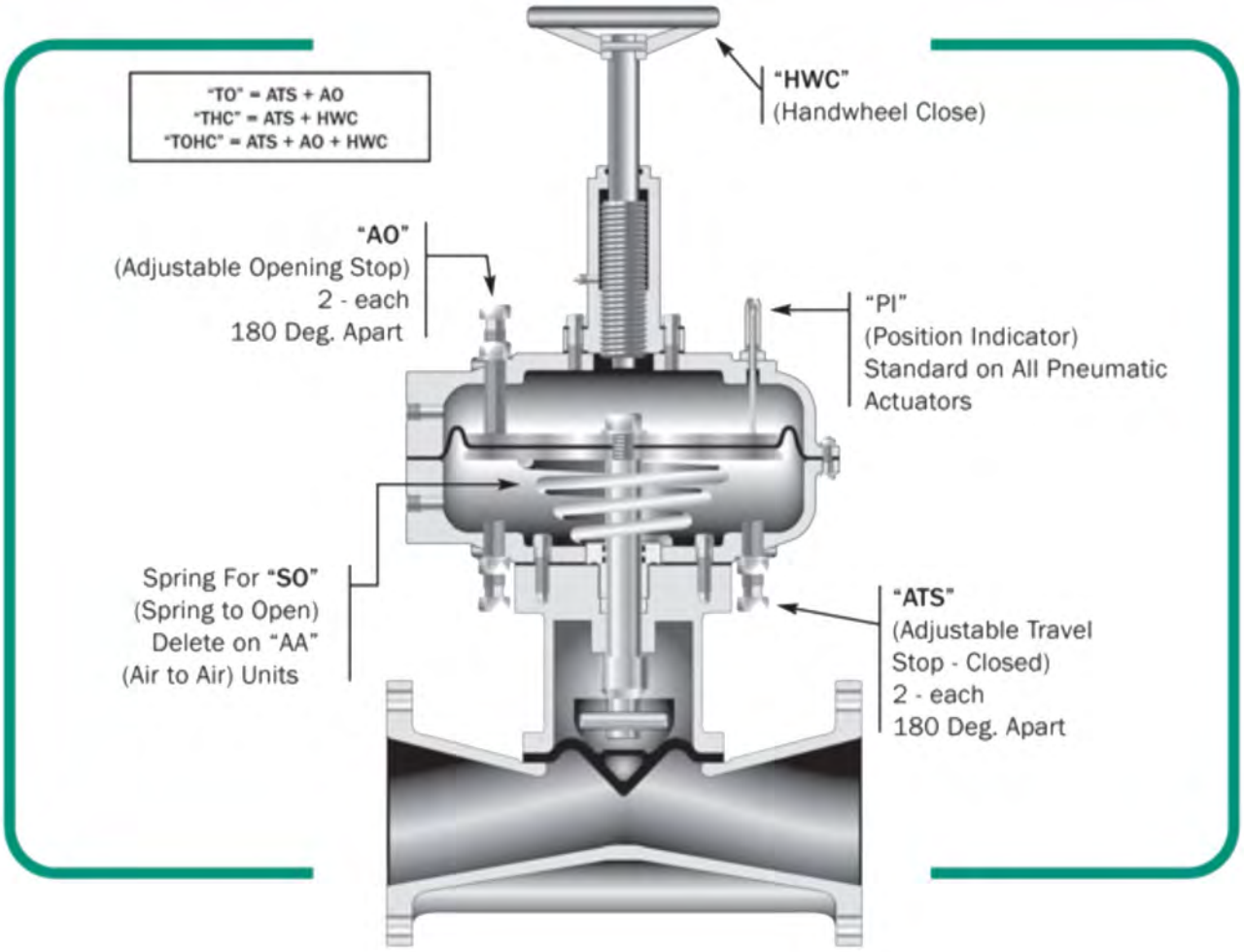




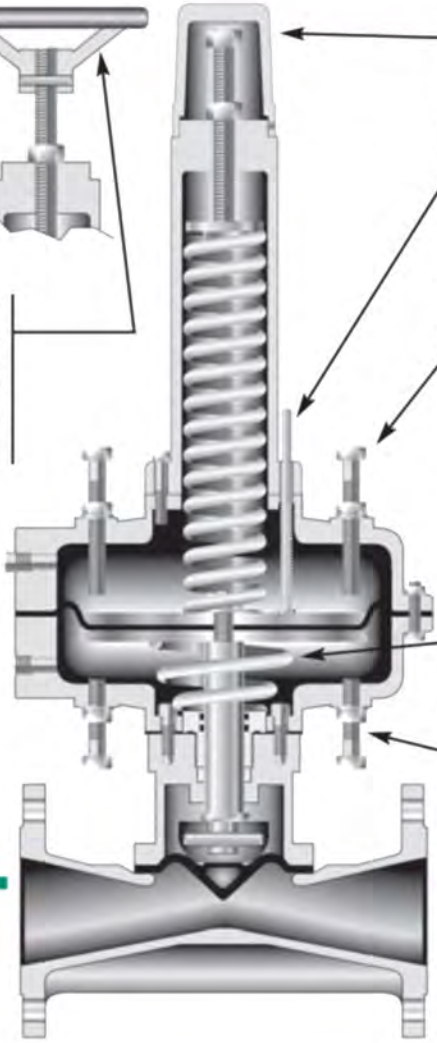
"SC" SPRING TO CLOSE
(ON - OFF Control)

Or Automatic Throttling (not shown)
This actuator/accessory package is designed to normally position the valve closed. The valve will open when compressed air is admitted into the lower actuator chamber and the actuator spring will close the valve when the air is exhausted.

PNEUMATIC ACTUATOR



VALVE OPTIONS



"WO"
(Wrench Open)
Requires Lower Spring

"PI"
(Position Indicator)
Standard on All
Pneumatic Actuators

"HWO"
(Handwheel Open)
A Handwheel Replaces
Wrench Flats
(Requires Lower Spring)

"AO"
(Adjustable Open Stop)
2 - each
180 Deg. Apart

TOWO =	**Adjustable Open Stop ("AO") +** Wrench Open ("WO") **(Requires Lower Spring)**
TOHO =	**Adjustable Open Stop ("AO") + Handwheel Open ("HWO") (Requires Lower Spring)**

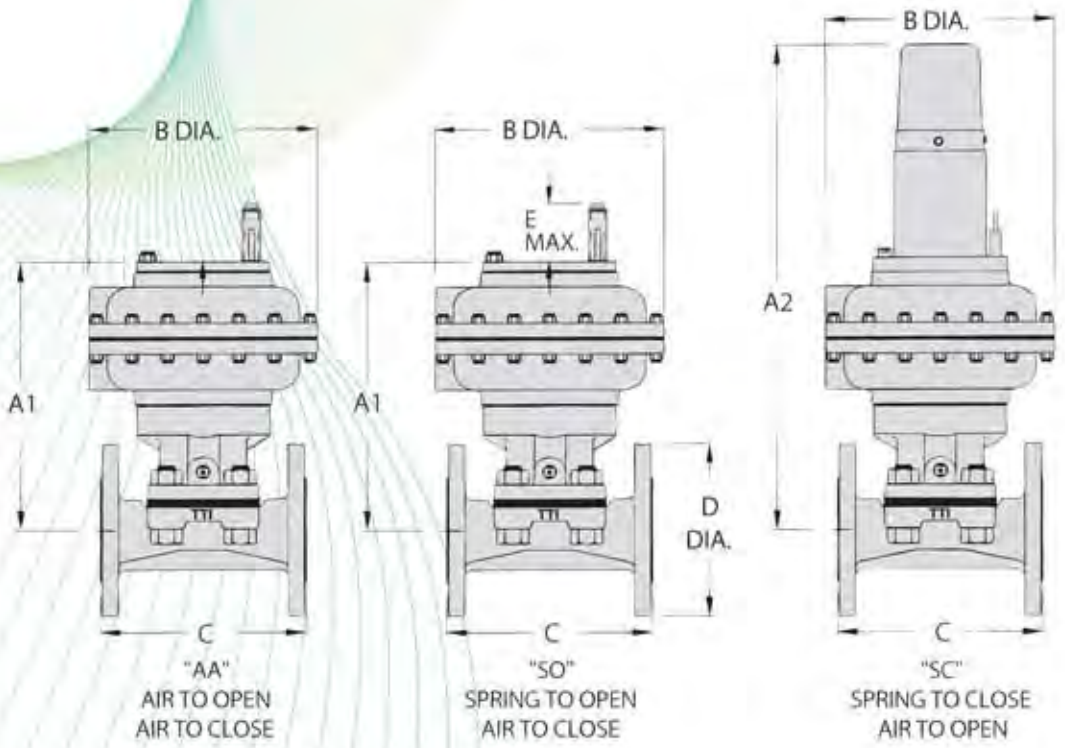
Lower Spring

"ATS"
(Adjustable Travel Stop - Closed)
2 - each
180 Deg. Apart

PNEUMATIC ACTUATOR

Actuator Sizes 10 - 20 - 35

Pneumatic Actuator Dimensions and Technical Data														
Valve Size	C	D	E	#10 Actuator			#20 Actuator			#35 Actuator			Valve Stroke	
				A1	A2	B	A1	A2	B	A1	A2	B	TF	TT
1/2	5.0	2.6	2.8	9.3	19.1	6.3	9.4	19.2	7.8	11.1	20.9	9.5	0.33	0.33
3/4	5.0	2.6	2.8	9.3	19.1	6.3	9.4	19.2	7.8	11.1	20.9	9.5	0.33	0.33
1	5.0	2.6	2.8	9.3	19.1	6.3	10.1	19.9	7.8	11.8	21.7	9.5	0.47	0.33
1 1/4	7.0	2.6	2.8	10.1	19.8	6.3	10.2	24.6	7.8	11.4	26.4	9.5	0.75	0.47
1 1/2	7.0	2.6	2.8	10.1	19.8	6.3	10.2	24.6	7.8	11.4	26.4	9.5	0.75	0.47
2	7.0	2.6	2.8	9.6	19.8	6.3	10.2	24.6	7.8	11.4	26.4	9.5	0.75	0.47
2 1/2	8.0	3.3	3.5	NA	NA	NA	10.6	25.6	7.8	12.4	27.3	9.5	1.19	0.75
3	8.0	3.3	3.5	NA	NA	NA	10.6	25.6	7.8	12.4	27.3	9.5	1.19	0.75
4	9.0	3.3	3.5	NA	NA	NA	NA	NA	NA	13.9	28.9	9.5	1.78	1.19
Actuator Stroke (IN.)				1.75			2.25			2.75				
Effective Area (SQ.IN.)				14			19			34				
Maximum Air Pressure (PSI)				100										

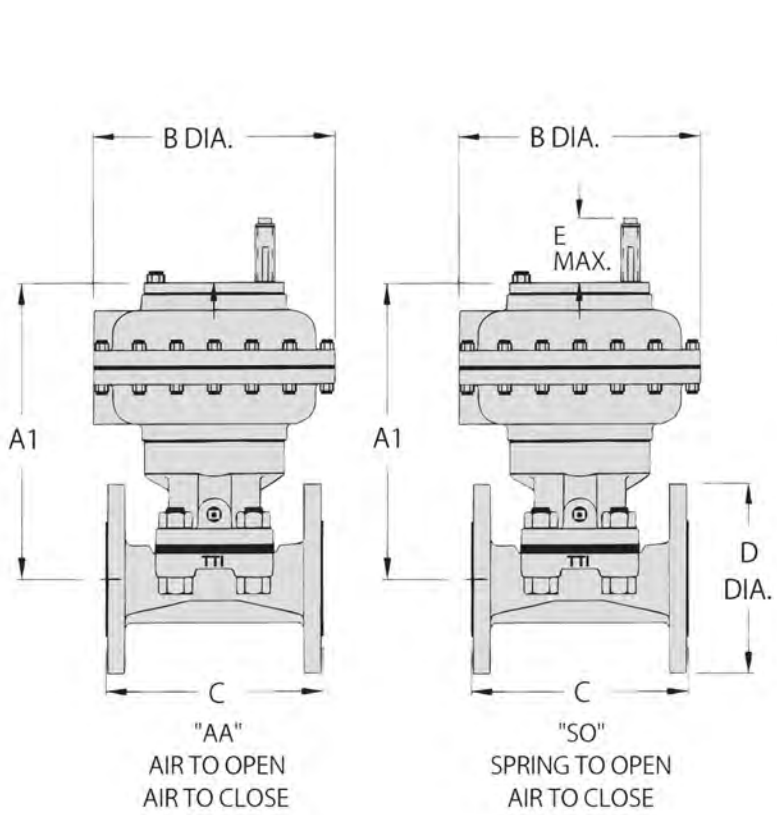


Dimensions approximate only.
Valves may have a combination of drilled holes and threaded holes on flanges.
Contact factory for additional information.

VALVE DIMENSIONS

Actuator Sizes 60 - 90 - 140

Pneumatic Actuator Dimensions and Technical Data																	
Valve Size	C	D	E	#60 Actuator			#90 Actuator			#140 Actuator			#280 Actuator			Valve Stroke	
				A1	A2	B	A1	A2	B	A1	A2	B	A1	A2	B	TF	TT
1 1/2	7.0	2.6	2.8	12.1	27.1	12.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.75	0.47
2	7.0	2.6	2.8	12.1	27.1	12.3	12.1	41.5	15.0	NA	NA	NA	NA	NA	NA	0.75	0.47
2 1/2	8.0	3.3	3.5	13.1	28.1	12.3	13.1	42.5	15.0	14.2	43.8	18.0	NA	NA	NA	1.19	0.75
3	8.0	3.3	3.5	13.1	28.1	12.3	13.1	42.5	15.0	14.2	43.8	18.0	NA	NA	NA	1.19	0.75
4	9.0	3.3	3.5	14.7	29.7	12.3	14.8	44.0	15.0	15.8	45.8	18.0	27.7	57.3	18.0	1.78	1.19
5	10.5	4.8	5.0	18.2	33.2	12.3	18.3	47.6	15.0	19.3	48.9	18.0	31.2	60.8	18.0	2.63	1.78
6	10.5	4.8	5.0	18.2	33.2	12.3	18.3	47.6	15.0	19.3	48.9	18.0	31.2	60.8	18.0	2.63	1.78
8	11.5	4.8	5.0	18.2	33.2	12.3	18.3	47.6	15.0	19.3	48.9	18.0	31.2	60.8	18.0	-	2.63
Actuator Stroke (IN.)				3.13			4.10			5.00			5.00				
Effective Area (SQ.IN.)				59			85			141			281				
Maximum Air Pressure (PSI)				100													



"AA"
AIR TO OPEN
AIR TO CLOSE

"SO"
SPRING TO OPEN
AIR TO CLOSE

"SC"
SPRING TO CLOSE
AIR TO OPEN

Dimensions approximate only.
Valves may have a combination of drilled holes and threaded holes on flanges.
Contact factory for additional information.

THE DIAPHRAGM

The rubber diaphragm seals leak-tight against the valve body and completely isolates all the mechanical working parts of the valve's operating mechanism. This total seperation between the media passing through the valve and the bonnet also eliminates troublesome stem seal and packing glands as well as preventing "fugitive emission" problems.

Stud pull out is a leading cause of failure in other brands of diaphragm valves. Tru-Tech Valve's patented diaphragms are molded around a "double bolted" insert providing an extra margin of performance, especially in vacuum service.

A wide range of diaphragm materials provides a cost effective solution to readily handling corrosive and abrasive liquids as well as liquids with suspended solids. The variety of diaphragm materials we have in stock ranges from Teflon faced to soft, natural rubber. For every application you may confront, Tru-Tech Valve has a diaphragm that will work for you.

All diaphragms are double studded

Teflon face (PTFE) diaphragm, the most chemical resistant

DIAPHRAGM MATERIALS AVAILABLE

ETHYLENE PROPYLENE (EPDM) -30 degrees to +300 degrees F

The most popular general purpose material. Excellent chemical resistance to a wide variety of corrosive elements including acids, caustics, and hot water. It is abrasion resistant and good for high temperature service. EPDM has poor oil resistance. It is also satisfactory for intermittent steam sterilization.

NEOPRENE (CR) -20 degrees to +200 degrees F

Widely used in wastewater applications. A good choice for general purpose chemical resistance where the media contains entrained oils. It also resists aldehydes, certain alcohols, fertilizers, explosives, petroleum, air, acids, alkalies, and is abrasion resistant.

Note: Additional diaphragm materials available. Contact factory for more info.

VALVE ACCESSORIES

Tru-Tech offers a wide range of accessories geared to help you through the most complex diaphragm valve requirements. Our accessories are readily available to add to any valve making our devices multifaceted and refined.

- **Limit & Proximity Switches**
- **P/P & I/P Positioners**
- **Solenoids**
- **Regulators**
- **Travel Stops**

KNOW YOUR POSITION

An intelligent positioner on a double - acting actuated valve is a great accessory offered by Tru-Tech Valve.

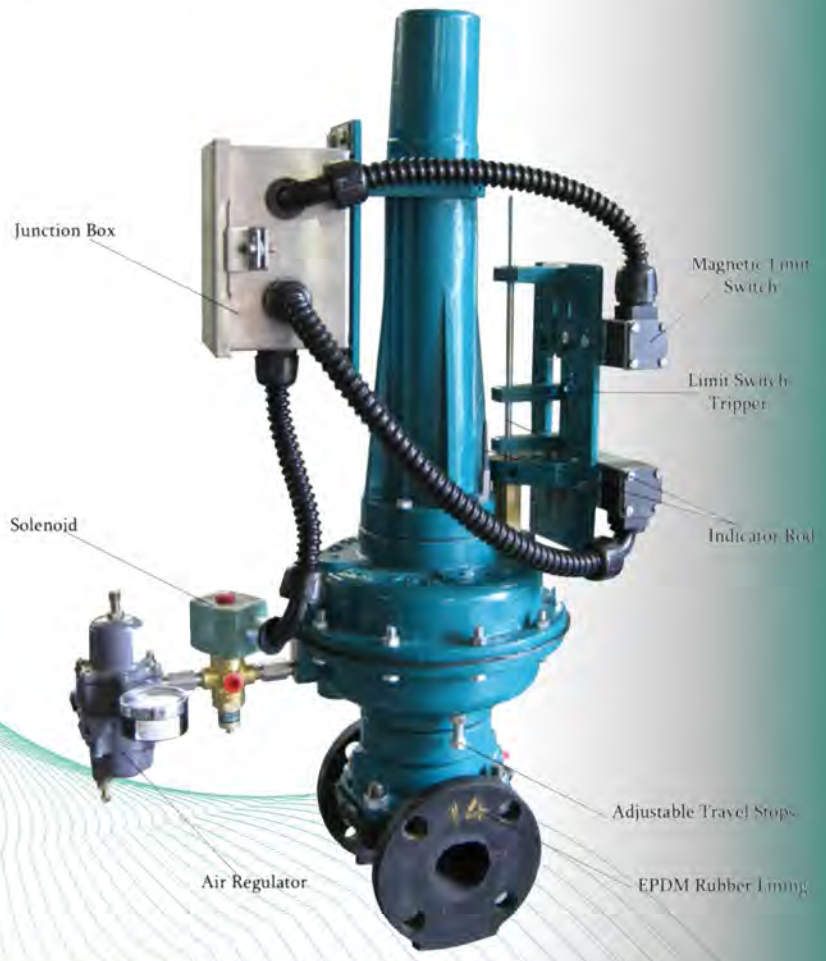
The Intelligent Valve Positioner puts forth the most advanced technology available. It is easily configured and displays advanced diagnostics on an LCD screen.

Displaying the position and response enhances the capability to control a Partial Stroke Test giving the operators a tool to identify the trouble-proof function of ESD (Emergency Shut Down) valves.

THE LAWS OF ATTRACTION

Tru-Tech accessorizes the "Spring to Close, Air to Open" Pneumatic Actuator valve. This valve is one of many examples of valves loaded with accessories. It has instrumentation mounted and calibrated to meet today's computerized plant control/safety systems.

The stainless steel junction box provides a housing for the wire runs and terminations. The limit switches operate through the use of magnetic attraction reacting to limit switch trippers that come into the sensing range when the valve is active. An air regulator and solenoid are also implemented in the makeup of this valve.



BODY LINING
The Starting line

The reliability and life expectancy start at the beginning . Getting the right material inside of your valve for its particular service is paramount in the life expectancy of your valve. Tru-Tech is capable of getting the job done right.

First, our material compatibility experts can assist you in selecting the right material for the service the valve is going to see.

Secondly, our wide variety of lining materials available and our ability to do special linings, insure that once the required material is defined, Tru-Tech can properly line the valve efficiently and effectively.

One of our lining materials, Tefzel®, has unique features and characteristics that make this a great choice for many applications.

Tefzel® is a coating that keeps chemical resistance equivalent to PTFE and other fluoropolymers, while also giving excellent mechanical strength, stiffness, and abrasion defiance.

This lining is superior in situations involving physical impact with objects or abrasive materials where other linings might exhibit wear and degradation at a much higher rate.

Whichever your lining needs, Tru-Tech offers an arsenal of distinctive materials that are appropriate for a broad variety of applications.

BODY LINING
Truly Going Green

Known as the "standard coat," the Tru-Tech green powder coating is a trademark of this company and is synonmous with superior quality.

We want you to think of quality and craftsmanship when you see a Tru-Tech valve. Every precaution is taken into consideration when a valve is manufactured including the lining of the valve.

Powder coating is more environmentally friendly than liquid paint and contains zero or no volatile organic compounds, which are harmful to the environment and human health. Our powder is solvent-free and applied electrostatically. It also produces a more aesthetically pleasing valve.

Body Lining Options

SOFT NATURAL RUBBER: *Good in either wet or dry abrasive services, water, and some acids and alkalis. Soft natural rubber has one of the best abrasion resistances when strong chemicals are not present. Temperature -30 to 180°F*

HARD RUBBER: *Hard rubber is a good general chemical resistant lining that can be used in higher temperatures than its soft counterpart. Temperature -30 to 200°F*

GRAPHITE BASED HARD RUBBER: *Graphite hard rubber has a good chemical resistance at higher temperatures than the normal hard and soft natural rubbers. Max Temperature 250°F*

EPDM: (Ethylene Propylene Diene Monomer) *The most popular general-purpose material. Excellent chemical resistance to a wide variety of corrosive elements including acids, caustics and hot water. It is abrasion resistant and good for high temperature services. EPDM has poor oil resistance. It is also satisfactory for intermittent steam sterilization. Temp -30 to 300°F*

NEOPRENE: *Widely used in wastewater applications. A good choice for general-purpose chemical resistance where the media contains entrained oils. It also resists aldehydes, certain alcohols, fertilizers, explosives, petroleum, air, acids alkalis, and is abrasive resistant. Finally, in most cases is interchangeable with Buna-N (Nitrile) Rubber. Temperature -30 to 200°F*

BUNA-N: (Nitrile Butadiene Rubber) *is a general-purpose oil resistant polymer known as nitrile rubber. It is a copolymer of butadiene and acrylonitrile. Buna-N has a good solvent, oil, water, and hydraulic fluid resistance. It displays good compression set, abrasion resistance, and tensile strength. Nitrile should not be used in highly polar solvents such as acetone and methyl ethyl ketone, nor should it be used in chlorinated hydrocarbons, ozone, or nitro hydrocarbons. In most cases it is interchangeable with Neoprene. Max Temperature 275°F*

BUTYL: *A good choice for gases because it has a very low vapor and gas permeability. Also good for many acids and alkalis. Good for applications involving steam sterilization. Temperature -20 to +250°F*

CHLOROBUTYL: *Chlorobutyl has excellent abrasion and corrosion resistant properties. The maximum recommended temperature for Chlorobutyl is 180°F.*

POLYPROPYLENE: *A general purpose lining with good chemical and temperature resistance. Utilized for water treatment, chemical processing, most plating fluids, and steel mill pickling lines, foodstuff, and drinking water. Temp: -10 to +200°F*

ECTFE (HALAR): (Ethylene Chlorotrifluoroethylene) *Excellent wear and abrasion qualities, excellent corrosion resistance, low coefficient of friction, and excellent electrical properties. Maximum use temperature 350°F*

ETFE (TEFZEL): (Ethylene Tetrafluoroethylene) *Outstanding resistance to chemicals and strong acids. Also has high abrasion resistance for tough services. Below 350°F has no known solvent.*

Body Lining Options

PTFE (XYLAN): (Polytetrafluoroethylene) *Good wear resistance, low coefficient of friction, and fair corrosion resistance. Use Temperature 450-500°F*

PFA: (Perfluoroalkoxy) *Good wear and abrasion qualities, excellent corrosion resistance, low coefficient of friction, and excellent release capabilities. Max use temperature 525°F*

PVDF (KYNAR): (Polyvinylidene Fluoride) *Offers very low permeability. A strong, tough abrasion resistant fluorocarbon material resistant to most acids, bases, and organic solvents. It is ideally suited to handling wet or dry chlorine, bromine, and other halogens. Temperature -10 to +275°F.*

FEP: (Fluorinated Ethylene Propylene) *Good wear and abrasion qualities, excellent corrosion resistance, low coefficient of friction, and excellent release characteristics. Max use temperature 400°F*

VITON: *Offers exceptional resistance to oils, most chemicals, and many solvents at elevated temperatures. It can be used in most applications involving mineral acids, salt solutions, and chlorinated hydrocarbons. Viton is not recommended for ammonia, its derivatives or polar solvents, e.g. Acetone. -20 to 300°F*

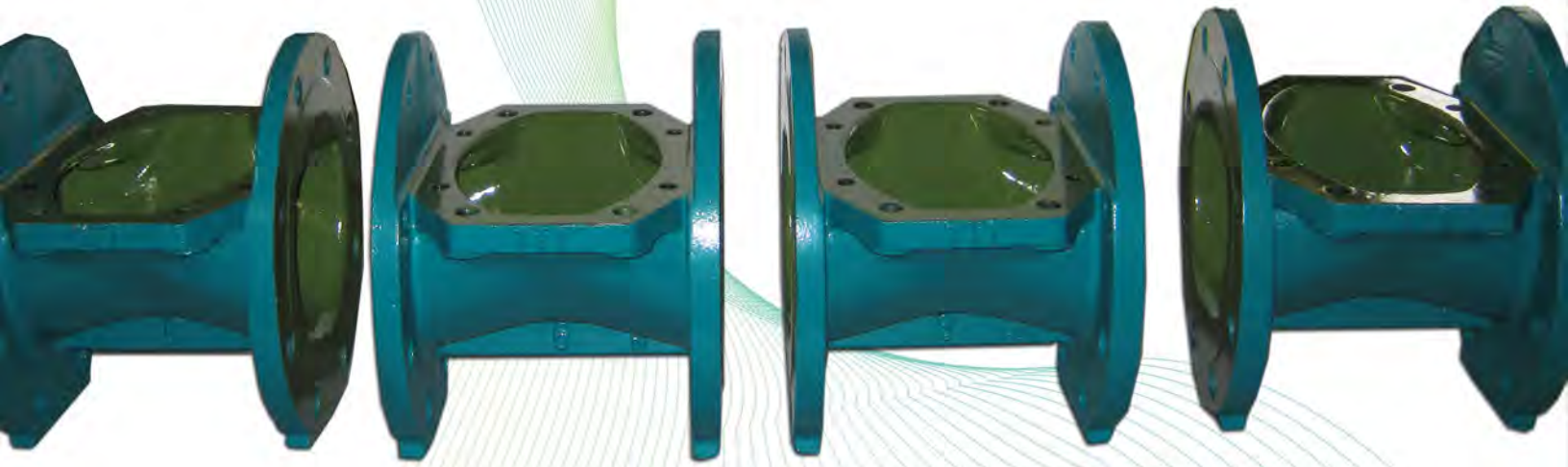
BLUE GLASS (CHEM): *Intended for viscous chemical applications such as wastewaters where a smooth lining is necessary to prevent process media from sticking to the walls of the valve.*

GREEN GLASS (NON-CHEM): *Intended for non-chemical applications such as wastewaters where a smooth lining is necessary to prevent viscous fluids from sticking to the walls.*

POLYURETHANE: *Polyurethane has excellent abrasion resistance. Temperature -30-150°F*

FDA EPOXY: *Good wear and abrasion qualities, good corrosion resistance. Max use temperature 212°F.*

PVC: *PVC has resistance to a variety of chemicals including oxidizing acids and provides excellent abrasion resistance. Max use temperature 160°F.*



Valve Body Pattern Availability

WEIR DESIGN

NOTE: All valves designed and manufactured by TTV are guaranteed for satisfactory and durable service. All designs are the property of this company. The material specifications shown herein conform to the most recently published standards. We reserve the right to substitute materials, which in our opinion, are of equal or superior quality in the construction of any valve.

STRAIGHT THRU DESIGN

ENHANCED WEIR		1/2	3/4	1	1½	2	2½	3	4	6	8
ANSI FLANGE BODIES	DUCTILE IRON	A	A	✓	A	✓	A	✓	✓	✓	✓
	CAST STEEL	A	A	✓	A	✓	SO	SO	SO	SO	SO
	316 SST	A	A	✓	A	✓	SO	SO	SO	SO	SO
	ALLOY 20	A	A	✓	A	✓	SO	SO	SO	SO	SO
	BRONZE	A	A	✓	A	✓	SO	SO	SO	SO	SO
	CAST IRON	A	A	✓	A	✓	A	✓	✓	✓	✓
MSS FLANGE BODIES	CAST IRON	NA	✓	✓	✓	✓	A	✓	✓	✓	✓
	DUCTILE IRON	NA	✓	✓	✓	✓	A	✓	✓	✓	✓
SCREWED END BODIES	316 SST	A	A	A	A	A	SO	SO	NA	NA	NA
	CAST STEEL	A	A	A	A	A	SO	SO	NA	NA	NA
	ALLOY 20	A	A	A	A	A	SO	SO	NA	NA	NA
	BRONZE	A	A	A	A	A	SO	SO	NA	NA	NA
SOCKET WELD BODIES	316 SST	A	A	A	A	A	SO	SO	NA	NA	NA
	CAST STEEL	A	A	A	A	A	SO	SO	NA	NA	NA
	ALLOY 20	A	A	A	A	A	SO	SO	NA	NA	NA
	BRONZE	A	A	A	A	A	SO	SO	NA	NA	NA

A=AVAILABLE - but does not meet std. face to face. SO=SPECIAL ORDER
NA=NOT AVAILABLE ✓=BODIES AVAILABLE, MEETS STANDARDS

STRAIGHT THRU		1/2	3/4	1	1½	2	2½	3	4	6	8
ANSI FLANGE BODIES	DUCTILE IRON	A	A	✓	A	✓	A	✓	✓	✓	NA
	CAST STEEL	A	A	✓	A	✓	A	✓	SO	SO	NA
	316 SST	A	A	✓	A	✓	A	✓	SO	SO	NA
	ALLOY 20	A	A	✓	A	✓	A	✓	SO	SO	NA
	BRONZE	A	A	✓	A	✓	AA	✓	SO	SO	NA
	CAST IRON	A	A	✓	✓	✓		✓	✓	✓	NA
MSS FLANGE BODIES	CAST IRON	A	✓	✓	✓	✓	✓	✓	✓	✓	NA
	DUCTILE IRON	A	✓	✓	✓	✓	✓	✓	✓	✓	NA
SCREWED END BODIES	316 SST	A	A	A	A	A	A	A	NA	NA	NA
	CAST STEEL	A	A	A	A	A	A	A	NA	NA	NA
	ALLOY 20	A	A	A	A	A	A	A	NA	NA	NA
	BRONZE	A	A	A	A	A	A	A	NA	NA	NA
SOCKET WELD BODIES	316 SST	A	A	A	A	A	A	A	NA	NA	NA
	CAST STEEL	A	A	A	A	A	A	A	NA	NA	NA
	ALLOY 20	A	A	A	A	A	A	A	NA	NA	NA
	BRONZE	A	A	A	A	A	A	A	NA	NA	NA

A=AVAILABLE - but does not meet std. face to face. SO=SPECIAL ORDER
NA=NOT AVAILABLE ✓=BODIES AVAILABLE, MEETS STANDARDS

VALVE BODY MATERIAL AVAILABILITY

CAST IRON ASTM A-126 Class B

A general purpose material suitable for water, air, petroleum products, most solvents, dry powders, and a wide variety of chemicals when used in the unlined state. Can be lined with a wide variety of rubbers and plastics to handle almost any process media. (low cost)

DUCTILE IRON ASTM A-536-GR 65-45-12

A general purpose material with usage similar to cast iron. Ductile iron however is much stronger and more capable where there may be high pipeline stresses, danger from impact, or concern from leakage upon line or valve fracture. Normally ductile iron can be used as a direct replacement for steel valves. Can be lined with a wide variety of rubbers and/or plastics to handle almost any process media. (medium cost)

CAST STEEL ASTM A-126, GR WCB

Another general purpose material somewhat less resistant to corrosion than cast iron especially where water is the media. Steel is much stronger and like ductile iron much more capable where there may be high pipeline stresses, danger from impact, or concern from leakage upon line or valve fracture. Steel valves are expensive and normally only used where specified by the end user. Can be lined with a wide variety of rubbers and/or plastics to handle almost any process media.

316 STAINLESS STEEL ASTM A-351 GR CF8M

An alloy of iron, carbon, nickel and chromium. Suitable for most foods, beverages, pharmaceuticals, solvents, sea water, oils, and some acids and alkalies.

ALLOY 20 ST.ST. ASTM A-351 GRADE CN-7M

Has higher amounts of nickel and chromium than 300 series stainless steels. It is more resistant to sulfuric acid and is used widely in chemical processing and water treatment.

Note: Other "Body Materials" are available as an option; call our Sales Department for details.

MADE IN AMERICA

Quality and economics are extremely important to us at Tru-Tech Valve. We aim to compete effectively by means of excellence, safety, and efficiency, and make every effort to display this in the products that we outsource.

At Tru-Tech Valve, we find that using domestic foundries and suppliers compliment the high quality valve we aim to manufacture.

We are very proud to use both a domestic rubber manufacturer for our molded diaphragm needs as well as local foundries for our valve bodies.

By utilizing domestic suppliers, we are afforded the opportunity to have closer control on the quality of our patterns and castings. We are able to diligently regulate the process from start to finish.The close proximity makes it easy for us to enhance our valves above and beyond our competitors.

Not only is the utilization of USA manufacturers important for Tru-Tech to produce an excellent product, but also it is important to the American economy and society. We strive to enrich Tru-Tech's culture as well as the American culture

TRU-TECH VALVE

SIMPLIFY YOUR WORLD.

QUALITY CONTROL

Tru-Tech employs the latest in technology and maintains physical records to accurately monitor and trace all items procured, produced, and sold. The ability to trace all orders and transactions allows us to develop streamlined standards which in turn creates a better relationship with customers and suppliers.

Tru-Tech has a basic quality procedure system which involves the inspection, examination, and testing of articles and services in order to determine conformance with requirements set forth by customers. The major elements of Tru-Tech's Quality Assurance program are; established policies, organization, fixed procedures, uniform records, effective means for maintaining quality standards, and correcting occurences of nonconforming articles and services. All elements and their implementation are continuously monitored to ensure correct and on going utilization.

The objective of Quality Assurance within this company is to provide adequate confidence that products and services will prove satisfactory in actual operations. We strive to provide valves which perform the function required by the application, under conditions for which it is designed and constructed. Further, to perform the function in a consistent fashion over a long period of time with minimum maintenance. This is achieved through consistent application of planned and systematic procedures of all actions necessary to implement the program.

Tru-Tech's Engineering division develops new and unique designs of products representing latest state of the art diaphragm valves and parts. Prototypes of products evolving from this department are thoroughly tested to ensure unique and advantageous characteristics to be incorporated into our catalogued line or a special proprietary product line.

AND ASSURANCE

Quality control and assurance is a tantamount at Tru-Tech Valve. We take pride in a finished product that not only looks good, but operates even better.

QUALIFIED SUPPLIERS

Our quality specifications begin at purchasing superior materials to build our valves. We set specific standards for articles purchased from an external supplier. This is designed to ensure our valves will be built to standards continuously using the best available parts that conform to our set standards.

EVIDENCE OF INSPECTION

Micrometers, Gauges and other measuring instruments used by Tru-Tech Valve are periodically returned to their manufacturer, to be tested and checked for accuracy. This provides complete documentation on the condition of our instruments. Testing, checking and adjustment of any and all instruments is done on specific work where the "standards" referred to in the customer's order require it, and certification is requested.

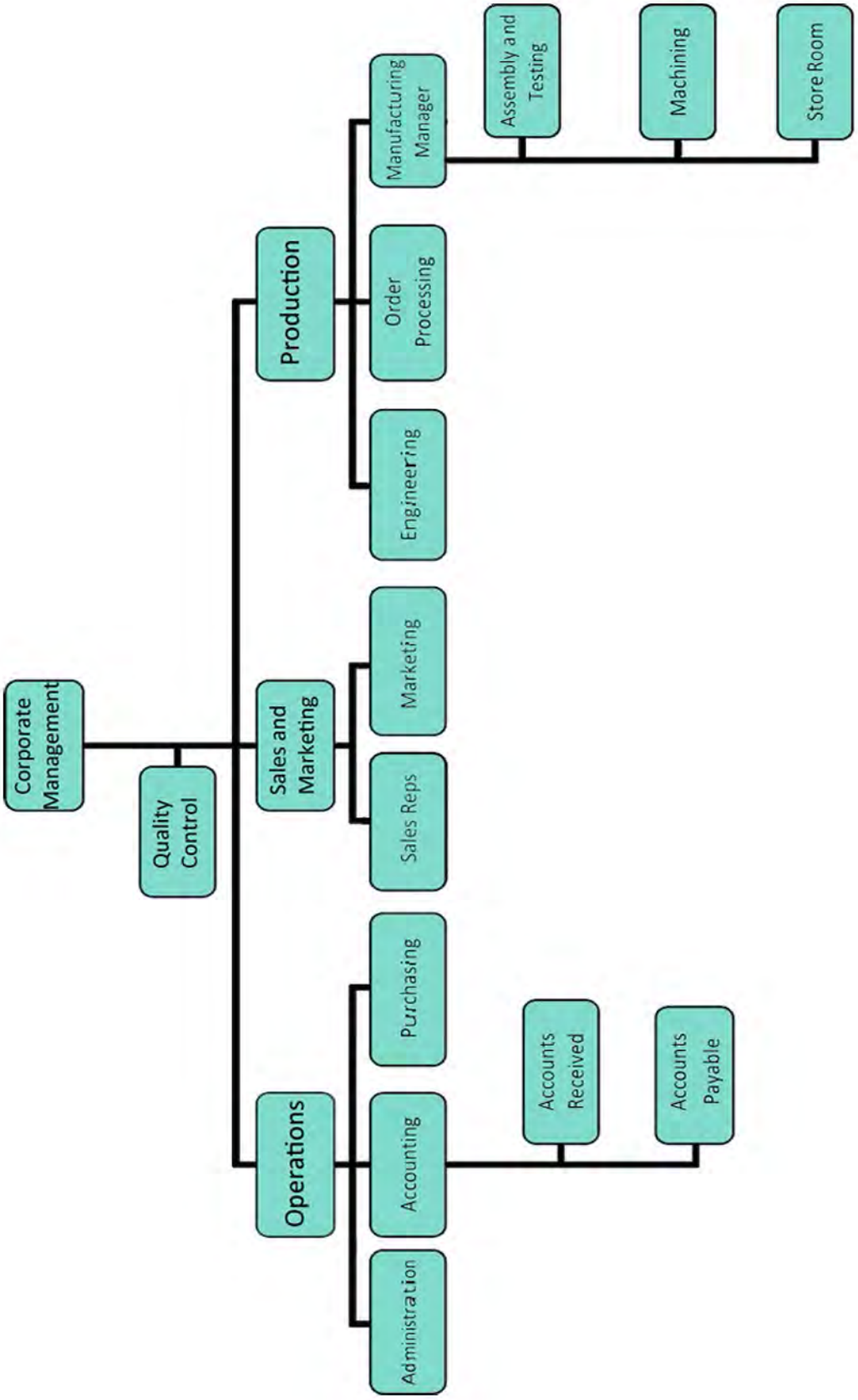
VALVE TESTING PROVES DURABILITY

What makes a good valve is a valve that performs well. To yield such performance in our valves at Tru-Tech, we must put them through the diligence of certain testing procedures.

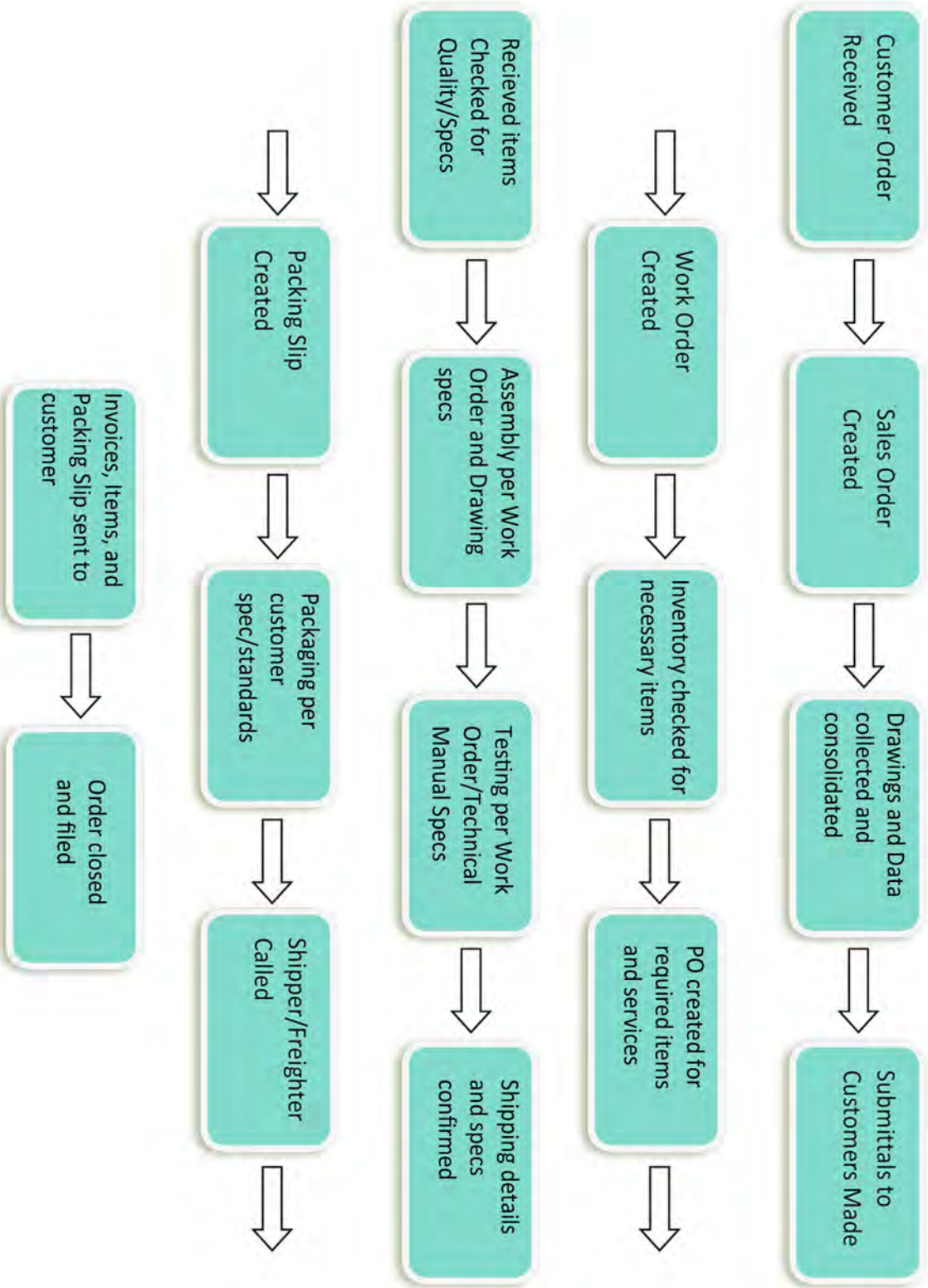
All valves are inspected and tested in the final manufacturing stage. Components and parts are not only checked as they are being assembled, but also as a completed product for quality and conformity to customer's specifications. All nonconforming performance factors will be reported and the appropriate changes will be made to correct the issue.

Hydrostatic Shell and Seat Leakage Tests are a key proponent to the final stage of a Tru-Tech valve. These tests applied to each valve are required by Tru-Tech Quality Assurance Manual. The testing of the diaphragm valve is a way to apply similar conditions of service that the particular valve will experience in the field as well as maintain our quality standards. Any special test procedure or condition of test for which certification is specified by the customer is executed accordingly. A signed certification of testing is provided with all finished products.

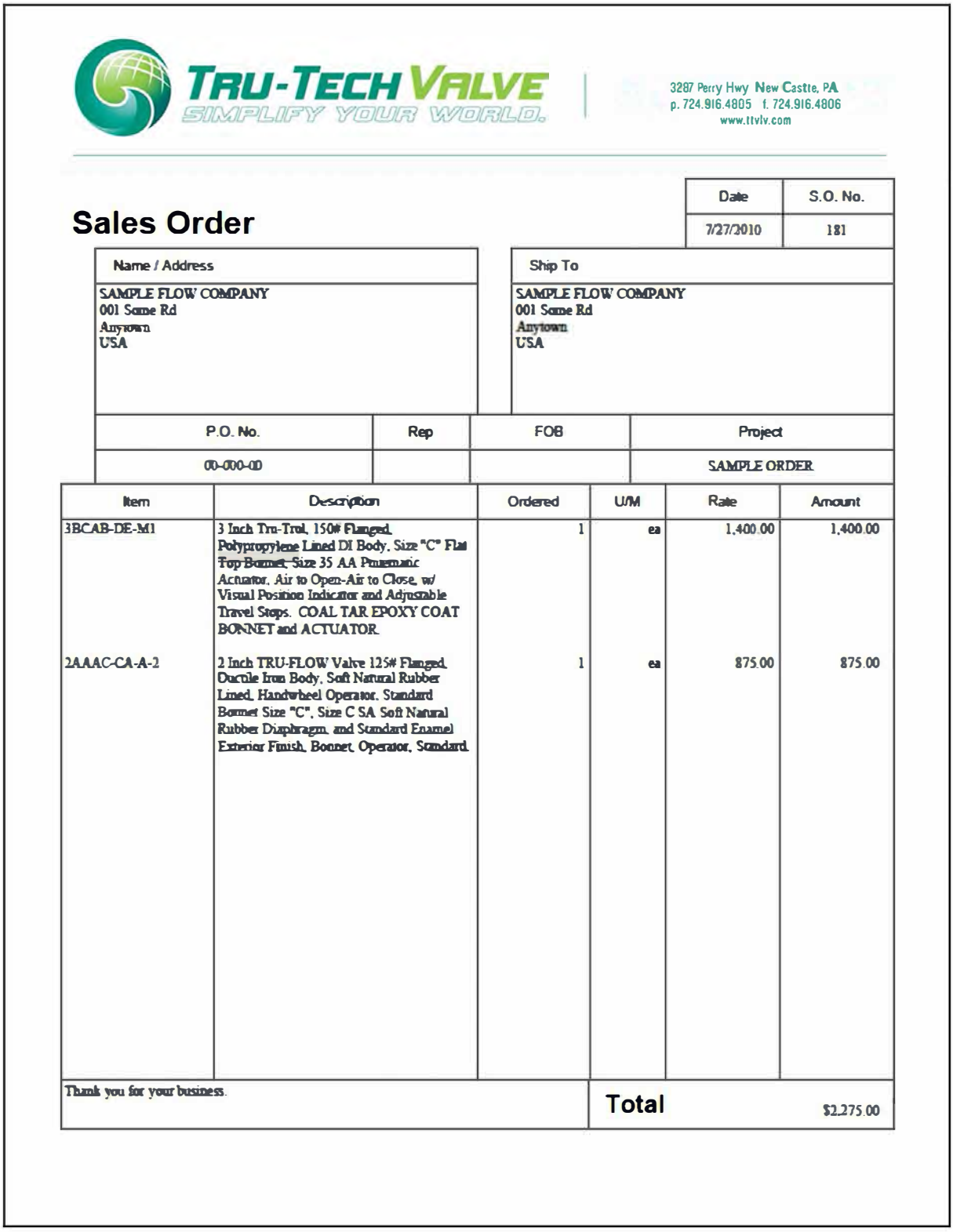
Production Organizational Chart



Order Routing



Sales Order



TRU-TECH VALVE
SIMPLIFY YOUR WORLD.

3287 Perry Hwy New Castle, PA
p. 724.916.4805 f. 724.916.4806
www.ttvlv.com

Sales Order

Date	S.O. No.
7/27/2010	181

Name / Address	Ship To
SAMPLE FLOW COMPANY 001 Some Rd Anytown USA	SAMPLE FLOW COMPANY 001 Some Rd Anytown USA

P.O. No.	Rep	FOB	Project
00-000-00			SAMPLE ORDER

Item	Description	Ordered	U/M	Rate	Amount
3BCAB-DE-M1	3 Inch Tru-Trol, 150# Flanged, Polypropylene Lined DI Body, Size "C" Flat Top Bonnet, Size 35 AA Pneumatic Actuator, Air to Open-Air to Close, w/ Visual Position Indicator and Adjustable Travel Stops. COAL TAR EPOXY COAT BONNET and ACTUATOR.	1	ea	1,400.00	1,400.00
2AAAC-CA-A-2	2 Inch TRU-FLOW Valve 125# Flanged, Ductile Iron Body, Soft Natural Rubber Lined, Handwheel Operator, Standard Bonnet Size "C", Size C SA Soft Natural Rubber Diaphragm, and Standard Enamel Exterior Finish, Bonnet, Operator, Standard.	1	ea	875.00	875.00
Thank you for your business.				Total	$2,275.00

Work Order

TRU-TECH VALVE
SIMPLIFY YOUR WORLD
3287 Perry Hwy New Castle, PA
p. 724.916.4805 | f. 724.916.4806
www.ttvtv.com

Work Order

Date	W.O. No.
7/27/2010	181

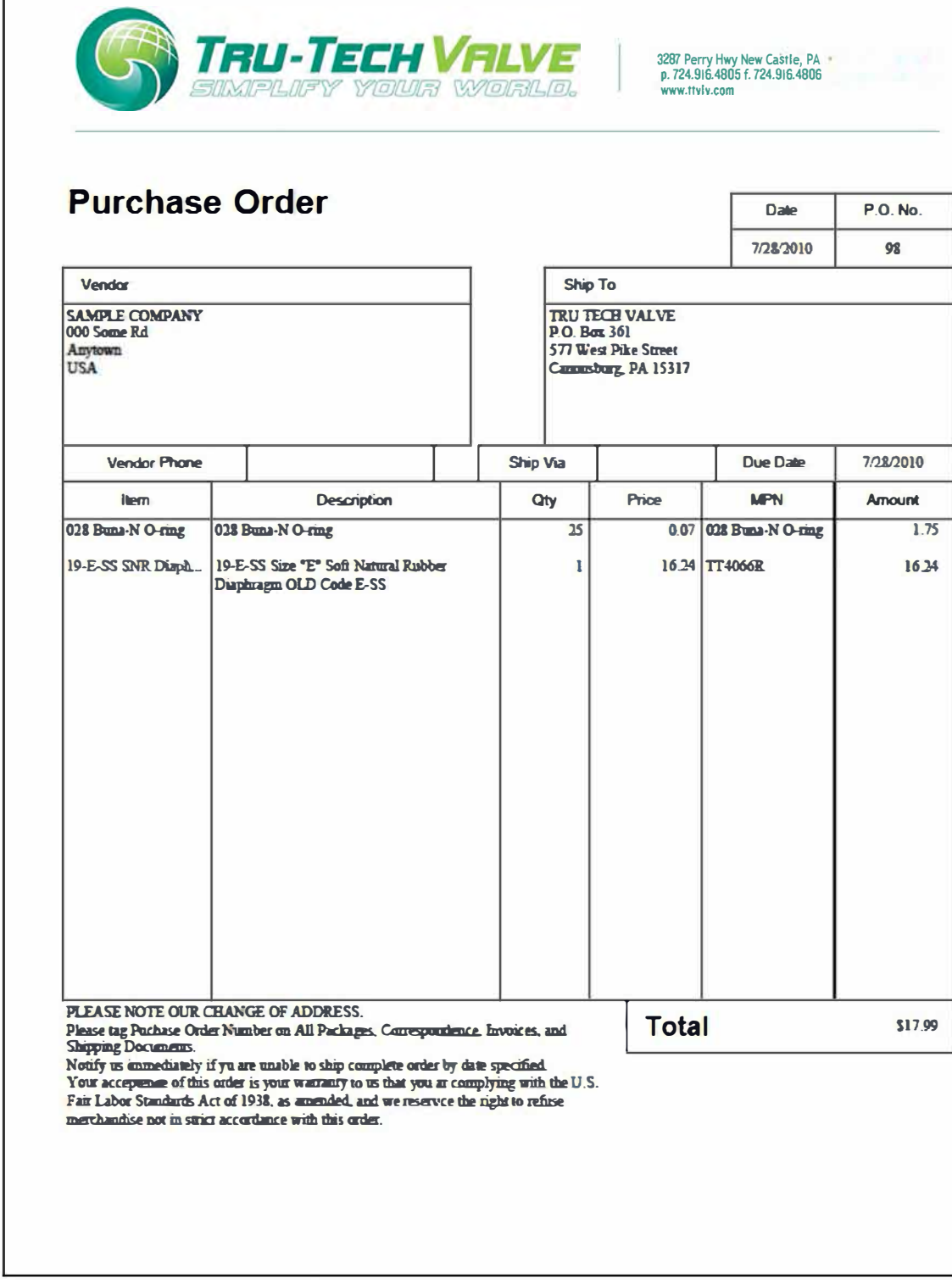
Name / Address	Ship To
SAMPLE FLOW COMPANY 001 Some Rd Anytown USA	SAMPLE FLOW COMPANY 001 Some Rd Anytown USA

P.O. No.	Project
00-000-00	SAMPLE ORDER

Item	Description	Ordered	U/M
3BCAB-DE-M1	3 Inch Tru-Trol, 150# Flanged, Polypropylene Lined DI Body, Size "C" Flat Top Bonnet, Size 35 AA Pneumatic Actuator, Air to Open-Air to Close, w/ Visual Position Indicator and Adjustable Travel Stops. COAL TAR EPOXY COAT BONNET and ACTUATOR.	1	ea
2AAAC-CA-A-2	2 Inch TRU-FLOW Valve 125# Flanged, Ductile Iron Body, Soft Natural Rubber Lined, Handwheel Operator, Standard Bonnet Size "C", Size C SA Soft Natural Rubber Diaphragm, and Standard Enamel Exterior Finish, Bonnet, Operator, Standard.	1	ea

Thank you for your business.

Purchase Order



TRU-TECH VALVE
SIMPLIFY YOUR WORLD.

3287 Perry Hwy New Castle, PA
p. 724.916.4805 f. 724.916.4806
www.ttvlv.com

Purchase Order

Date	P.O. No.
7/28/2010	98

Vendor	Ship To
SAMPLE COMPANY 000 Some Rd Anytown USA	TRU TECH VALVE P.O. Box 361 577 West Pike Street Canonsburg, PA 15317

Vendor Phone		Ship Via		Due Date	7/28/2010

Item	Description	Qty	Price	MPN	Amount
028 Buna-N O-ring	028 Buna-N O-ring	25	0.07	028 Buna-N O-ring	1.75
19-E-SS SNR Diaph...	19-E-SS Size "E" Soft Natural Rubber Diaphragm OLD Code E-SS	1	16.24	TT4066R	16.24

PLEASE NOTE OUR CHANGE OF ADDRESS.
Please tag Purchase Order Number on All Packages, Correspondence, Invoices, and Shipping Documents.
Notify us immediately if yu are unable to ship complete order by date specified.
Your acceptense of this order is your warranty to us that you ar complying with the U.S. Fair Labor Standards Act of 1938, as amended, and we reservce the right to refuse merchandise not in strict accordance with this order.

Total $17.99

List of Materials

List of Materials

Body Size:		Bonnet Size:		Actuator Size and Type:	
Description:				Assembly Dwg:	
				Date:	

	Part #:	Description:	Material:	Notes:
1	01	Body	Ductile Iron A536, Gr. 65-45-12, EPDM Lined	
2	02	Bonnet	Cast Iron A126 Class B, Powder Coated	
3	03	Handwheel	Cast Iron A126 Class B, Powder Coated	
4	05	Indicator Rod	316 Stainless Steel	
5	06	Bushing Cap	316 Stainless Steel	
6	07	Bushing Cap Seal	BUNA-N	
7	08	Thrust Washer	Nylon	
8	11A	Enclosure Cap Seal	BUNA-N	
9	12	Bonnet Seal	BUNA-N	
10	13A	Tell-Tale Pipe Plug	Polyurethane	
11	14	Thrust Bearing	Nycast Nyloil	
12	15	Bushing	Steel 12L14, Zinc Yellow Chromate Finish	
13	16	Compressor	Cast Iron, A126 Class B, Powder Coated	
14	17	Compressor Pin	303 Stainless Steel	
15	19	Diaphragm*	EPDM	
16	20	Diaphragm Capscrews	303 Stainless Steel	
17	21/22	Bonnet Studs/Bolts	Steel Grade 2, Zinc Yellow Chromate Finish	
18	23	Bonnet Nuts	Steel Grade 2, Zinc Yellow Chromate Finish	
19	26	Travel Stop Screw	303 Stainless Steel	
20	27	Locknut	303 Stainless Steel	
21	28	Grease Fitting	Steel, Zinc Plated	
22	29	Washer	303 Stainless Steel	
23	36	Bushing Cap Lower Seal	BUNA-N	
24	63	Enclosure Cap	Polyurethane	
25	65	Clear Enclosure	Clear PVC	
26	73	Handwheel Setscrew	Alloy Steel, Black Oxide Finish	
27				
28				

Bill of Materials

Bill of Materials

Body ☐ **Bonnet** ☐ **Diaphragm** ☐ **Actuator** ☐

Body Size:		Bonnet Size:		Actuator Size and Type:	
Description:				Date:	

	Part #:	Description:	DWG #:	Material:	Qty:	Patt. #:	Item #:	Notes:
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

TRU-TECH VALVE
SIMPLIFY YOUR WORLD.

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p. 724.916.4805 f. 724.916.4806
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Quality Assurance Manual Register

TRU-TECH VALVE

QUALITY ASSURANCE MANUAL REGISTER

Copy #	Released to: (Organization, Address, Person)	Release Date	Released By

Tags

SCRAP

TRU-TECH VALVE
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TTV Part #: _____
Description: _____
Customer: _____ Vendor: _____ PO #: _____
Reason: _____
Disposition: _____ Charge to Account #: _____
Inspected By: _____ Date : _____
Approved By: _____ Date : _____
Additional Information: _____
_____
_____
_____
_____

REWORK

TRU-TECH VALVE
p. 724.916.4805 s. www.ttvlv.com

TTV Part #: _____
Description: _____
Customer: _____ Vendor: _____ PO #: _____
Defect: _____
Rework as follows: _____
_____
Charge to Account #: _____
Inspected By: _____ Date : _____
Approved By: _____ Date : _____
Additional Information: _____
_____
_____

TRU-TECH VALVE

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SO #: _____
TTV #: _____
Seat Test Pressure: _____ PSI: _____
Shell Test Pressure: _____ PSI: _____
Stroke Test: Handwheel: _____
Actuator: _____ Air Pressure (PSI): _____
Date Tested: _____
By: _____
Additional Information: _____
_____
_____
_____

Body Material Conformance Check

ELEMENTAL BODY MATERIAL CONFORMANCE CHECK

CN7M (Alloy 20) Cast Stainless Steel

Carbon (C)	Chromium (Cr)	Copper (Cu)	Iron (Fe)	Manganese (Mn)	Molybenum (Mo)	Nickel (Ni)	Phosphorous (P)	Silicon (Si)	Sulfur (S)
<= 0.070 %	19.0 - 22.0 %	3.0 - 4.0 %	37.3 - 48.5 %	<= 1.50 %	2.0 - 3.0 %	27.5 - 30.5 %	<= 0.040 %	<= 1.50 %	<= 0.040 %

304 Stainless Steel

Carbon (C)	Chromium (Cr)	Iron (Fe)	Manganese (Mn)	Nickel (Ni)	Phosphorous (P)	Silicon (Si)	Sulfur (S)
<= 0.080 %	18.0 - 20.0 %	66.345 - 74.0 %	<= 2.0 %	8.0 - 10.5 %	<= 0.045 %	<= 1.0 %	<= 0.030 %

CF8M 316 Stainless Steel

Carbon (C)	Chromium (Cr)	Iron (Fe)	Manganese (Mn)	Molybenum (Mo)	Nickel (Ni)	Phosphorous (P)	Silicon (Si)	Sulfur (S)
<= 0.080 %	18.0 - 21.0 %	60.8 - 71.0 %	<= 1.50 %	2.0 - 3.0 %	9.0 - 12.0 %	<= 0.040 %	<= 1.50 %	<= 0.040 %

Ductile Iron Grade 65-45-12

Carbon (C)	Cerium (Ce)	Chromium (Cr)	Copper (Cu)	Iron (Fe)	Magnesium (Mg)	Manganese (Mn)	Molybenum (Mo)	Nickel (Ni)	Phosphorous (P)	Silicon (Si)	Sulfur (S)
3.60 - 3.80 %	0.0050 - 0.20 %	0.030 - 0.070 %	0.15 - 1.0 %	90.738 - 94.175 %	.030 - .060 %	0.15 - 1.0 %	0.010 - 0.10 %	0.050 - 0.20 %	<= 0.030 %	1.80 - 2.80 %	<= 0.0020 %

PART:_____ PASS _____ FAIL_____

MATERIAL FROM:_____ DATE:_____ TESTER:_____

TRU-TECH VALVE

Performance Test Report

PERFORMANCE TEST REPORT

Date: _____

VALVE:	ACTUATOR:
ADJUSTING SCREW LENGTH:	SPRING #:
ADJUSTING SCREW LENGTH @ CONTACT W/ SPRING (ZERO COMPRESSION):	DIAPHRAGM:

Test #	Process Pressure	Adjusting Screw Length @ Shut Off	Air Pressure to Initiate Stroke	Air Pressure @ Full Stroke	Valve Stroke
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Tested By: _____

Testing Certification

Diaphragm Valve Testing Certificate

Customer:	PO #:

	Valve Tag #:	Diaphragm Valve Type	Service Pressure (PSI)	Seat Test Test Pressure: _____ PSI	Shell Test Test Pressure: _____ PSI	Passed Date
1				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
2				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
3				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
4				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
5				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
6				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
7				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
8				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
9				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
10				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
11				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
12				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
13				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
14				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____
15				Pass ☐ Retest ☐ Fail ☐ Pass	Pass ☐ Retest ☐ Fail ☐ Pass	Date:_____ By:_____

Shell Test
Each valve assembly shall be given a shell test in the full open position at a pressure not less than 1.5 times the service pressure rating rounded up to the next 10 PSI increment. The test shall be with water for a duration of 1 minute with no visible leakage

Seat Test
Each valve shall be given a seat test at a pressure not less than 110% of the service pressure rating rounded up to the next 10 PSI increment. The test shall be with water for a duration of 30 seconds. The valve diaphragm will be in the closed position with no visible leakage permitted through the valve diaphragm seat.

I hereby certify the following diaphragm valves meet or exceed the conditions made above.

General Manager Tru-Tech Valve, LLC:_____

Sheet 1 of 1

TRU-TECH VALVE
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CERTIFICATE OF ORIGIN

Customer Name and Address

Reference Purchase Order #XX

PRODUCT DESCRIPTION: Size D Viton Diaphragm for Diaphragm Valve

Date:

Tru-Tech Valve hereby certify that the materials contained in order number XX conform to specifications as per the customer requirements, and were manufactured and assembled in the USA, at Tru-Tech Valve, Canonsburg, PA. 15317.

Regards,

Tru-Tech Valve

CERTIFICATION OF QUALITY

Customer Name and Address

Date:

Ref. Contract Number: EXAMPLE

Tru-Tech Valve SO #XX

Description of items:

Dear Ma'am/Sir:

Tru-Tech Valve herby certifies that the materials contained in Tru-Tech Valve SO #XX conform as for the quality standards per the required specifications contained in the Contract Number EXAMPLE.

Sincerely yours,

Tru-Tech Valve

Certificate of Origin

CERTIFICATE OF ORIGIN

The undersigned Tru-Tech Valve, LLC
(Owner or Agent, or Co.)

for Tru-Tech Valve, LLC 3287 Perry Highway New Castle, PA 16101 declares
(Name and Address of Shipper)

that the following mentioned goods shipped on S/S _____
(Name of Ship)

on the date of _____ consigned to _____

_____ are the product of the United States of America.

MARKS AND NUMBERS	NO. OF PKGS., BOXES OR CASES	WEIGHT IN KILOS GROSS	WEIGHT IN KILOS NET	DESCRIPTION
ABBEA-CA-R-23	2 PCS.			1/2" Tru-Trol Handwheel Valve
1BBEA-CA-R-23	18 PCS.			1" Tru-Trol Handwheel Valve
DBBEA-CA-R-23	3 PCS.			1-1/2" Tru-Trol Handwheel Valve
2BCEA-CA-R-23	3 PCS.			2" Tru-Trol Handwheel Valve
3ACEA-CA-R-23	1 PC.			3" Tru-Flow Handwheel Valve

Sworn to before me this 15 day of July 20 11
Dated at ITV on the 15 day of July 20 11

(Signature of owner or agent)

The Washington County Chamber of Commerce, a recognized Chamber of Commerce under the laws of the State of Pennsylvania, has examined the manufacturer's invoice or shipper's affidavit concerning the origin of the merchandise, and, according to the best of its knowledge and belief, finds that the products named originated in the United States of North America.

Secretary _____

Form No. 10-906 Printed and Sold by LANCO 700 Central Ave., New Providence, NJ 07974 • (800) 631-3095

3287 Perry Hwy New Castle, PA
p. 724.916.4805 f. 724.916.4806
www.ttvlv.com

Part Number Codes

TRU-TECH Valve Part Number
(Number is on valve tag and packing list)

1	2	3	4	5	–	6	7	–	8	–	9	10	11	12	13
Body Code						Bonnet Code			Diaphragm Code		Accessory Code				

Body Codes

1	Valve Size Code	A ½"		B ¾"		1 1"		C 1¼"		D 1½"		2 2"		E 2½"		3 3"		4 4"		5 5"		6 6"		8 8"		F 10"		G 12"	
		H 15MM		J 20MM		K 25MM		L 32MM		M 40MM		N 50MM		P 65MM		Q 80MM		R 100MM		S 125MM		T 150MM		V 200MM		Y 250MM		Z 300MM	
2	Valve Type Code	A TRU-FLOW (ANSI Straight Thru)						B TRU-TROL (ANSI Enhanced Weir Straight Thru)						C MAXI-FLOW (MSS Straight Thru)						D MAXI-TROL (MSS Enhanced Weir Straight Thru)						E Series 100 (Municipal Series Thru)			
3	End Connection Type	A FF Flg. ANSI, 125 (Rubber Lined)						C Flg. ANSI, 150 (Unlined, Glass, Thermoplastics)						D Butt-weld						F Victaulic Ends						J JIS			
		B SCR. ANSI, B2. 1 (NPT)												E Socket Weld						G DIN						X Special			
4	Body Material Code	A Ductile Iron						D Bronze						G 340L						J Carbon Steel						M Solid CPVC			
		B 316 SST						E 304 SST						H Cast Iron						L 316L						X Special			
		C Cast Steel						F Alloy 20																					
5	Body Lining Code	A Unlined (Powder Coat Polyester)						E Neoprene						J EPDM						N BUNA–N			S FDA Epoxy		W Chlorobutyl				
		B Polypropylene						F PVDF (KYNAR)						K PVC						P Graphited HR			T Nylon 11		X Special				
		C Soft Natural Rubber						G Green Glass (Non-Chem)						L Butyl						Q Blue Glass (Chem)			U Urethane						
		D Hard Rubber						H ETFE (TEFZEL)						M Hypalon						R PFA			V Viton						

Bonnet Codes

6	Operator/ Bonnet	B Optional Handwheel Operator with Position Indicator, and Travel Stop			E Optional Flat-Top Bonnet for Operator Mounting
		C Handwheel Operator with Position Indicator, Travel Stop and Clear Plastic Indicator Cover			W 2" Square Nut Operator
		D Standard Flat-Top Bonnet for Pneumatic Actuator Mounting			
7	Description Code	A Standard Weatherproof Bonnet	Pneumatic Operator	Pneumatic Operator	Pneumatic Operator
		B Optional Sealed Bonnet	C 10AA U 90AA	I 10 SC V 90 SC	O 10 SO W 90 SO
		Y Adapted for Electric Operator	D 20 AA G 140 AA	J 20 SC M 140 SC	P 20 SO S 140 SO
		X Special	E 35 AA H 280 AA	K 35 SC N 280 SC	Q 35 SO T 280 SO
			F 60 AA	L 60 SC	R 60SO
	Pneumatic Actuator Type	AA – Air to Open/Close; Normally Part Open	SC – Spring to Close/Open; Normally Closed	SO – Spring to Open, Air to Close; Normally Open	

Diaphragm Codes

8	Diaphragm Material	A Soft Natural Rubber	C Hypalon	N BUNA–N (Nitrile) FDA	T Neoprene	X Special
		B Black Butyl	M EPDM	R Modified PTFE/EPDM Backed	V Viton	

Accessory Codes

9 Thru 13	A – Pressure Regulator B – Filter/Regulator C – Gauge D – 3 way Solenoid (AC) E – 4 Way Solenoid (AC) F – 3 Way Solenoid (DC) G – 4 Way Solenoid (DC) H – Single Limit Switch; Trips Open I – Single Limit Switch; Trips Closed J – Double Limit Switch; Trips Open/Closed K – With Accessory Take-off Bushing and Bracket L – Siemens' Digital "Smart" Positioner M – Customers Supplied Transducer	N – Babbitt Chainwheel Option with Chain P – Emergency Closing Device (Handwheel) Q – Adjustable Opening Travel Stop R – Adjustable Closing Travel Stop S- Handwheel Locking Device T – Heavy Duty (Auma) Electric Actuator U – Heavy Duty (EIM Type) Electric Motor Operator V – Light Duty (RCS Type) Electric Motor Operator W – Single Proximity Switch (Open) X – Special Y – Single Proximity Switch (Closed) Z – Double Proximity Switch (Open/Closed)	1 – Coal Tar Epoxy Coat Bonnet/Operator/Body if app. 2 – Powder Coat Bonnet/Operator/Bonnet if app. (Standard) 3 – Stainless Steel Bonnet Bolts/Nuts 4 – Emergency Opening/Closing Device (Wrench or HW) 5 – SST Pipe Fittings 6 – Moore #760 Positioner 3-15 PSI 7 – Moore #760 Positioner 3-15 PSI/Transducer 4-20MA 8 – Moore #760 Positioner 3-15 PSI/Transducer 4-20MA with dual limit switches 9 – Special Interior or Exterior Paint 0 – #760 Feedback Option

Precision Technology, Inc.
551 Old Swede Road - P.O. Box 185 - Douglassville, PA 19518
P (610)385-6091 F (610)385-6959

External Vendor Certification

* * * Chemical and Mechanical Test Report * * *

Customer: Tru-Tech Valve

Date: 06/17/2011
Sales Order#: S11889
Customer PO#: 224
Quantity: 2
Rev: 1

Customer Part#: 01-1/2 TT NPT
Our Part#: F0886115304
Alloy: CF8
Part Name: 1/2" & 3/4" NPT Tru-Trol Body
Specification: ASTM A351, Grade CF8

Heat #	C	Mn	Si	Cr	Ni	Mo	P	S	Cu	V
878-M	0.03	0.94	0.77	18.75	9.25	0.36	0.031	0.009	0.39	0.09

Heat #	Yield KSI @ 0.2%	Tensile KSI	% Elongation in 1 inch	% Reduction of Area	Hardness
878-M	37.1	86.6	66	-	-

REMARKS:
We hereby certify that all requirements of the stated specification have been met.

ISO 9001 Certified Quality Management System

****

Quality Assurance System meets the requirements of Section 4.3 of Annex I of the Pressure Equipment Directive 97/23/EC

arbonite
A DIVISION OF P & R INDUSTRIES, INC.

3826 OLD EASTON ROAD
P.O. BOX 888
DOYLESTOWN, PA 18902
215-348-2950 or 1-800-424-4978
215-345-1251 (FAX)
www.arbonite.com

MATERIAL CERTIFICATION OF COMPLIANCE

JANUARY 5, 2012

TRU-TECH VALVE
577 WEST PIKE STREET
CANONSBURG, PA 15317

PURCHASE ORDER # 327– COMPLETE

QUANTITY/DESCRIPTION: TWO (2) 3" TRU TROL VALVES

MATERIAL/EXTERIOR: 1/8" # VE-518 EPDM RUBBER LINED

THIS IS TO CERTIFY THAT ALL MATERIAL HAS BEEN HANDLED AND APPLIED PER MANUFACTURERS' INSTRUCTION/SPECIFICATIONS. ALL MATERIAL HAS BEEN SPARK TESTED AT 15,000 VOLTS AND NO LEAKS WERE FOUND.

TEST CERTIFIED BY

_____

Walker Machine and Foundry Corporation

PO Box 4587 Roanoke VA 24015
(540) 344-6265 Fax: (540) 342-CAST
custserv@walkerfoundry.com

TRU-TECH VALVE
PO BOX 361
577 WEST PIKE STREET
CANONSBURG PA 15317

Shipped To SAME

Date Shipped

Number of Pieces

Customer Order Numbe

Our Order Number

Pattern Number **DIA 3000A**

Cast Date **3/8/11**

This is to certify that the castings listed above were made in accordance with specifications **65-45-12** and we obtained the following results

Laboratory Test Results

% Silicon	**2.68**	Tensile PSI	**79,000**
% Sulfur	**0.017**	Yield	**54,250**
% Manganese	**0.46**	% Elongation	**13.5**
% Phosphorus	**0.018**	% Reduction of area	**4.7**
% Total Carbon	**3.81**	HBW / BHN – bar	**167**
% Copper	**0.16**	HBW / BHN – casting	

STATE OF VIRGINIA - CITY OF ROANOKE

Subscribed and sworn before me this _____day of _____2011

Notary Public

NOTES

TRU-TECH VALVE

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