TRU-TECH VALVE

SIMPLIFY YOUR WORLD

12.2015 A

“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.”

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 products and services, 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, diversity and inclusion, ethics, and compliance. A major paramount to the success of Tru-Tech Valve is its philosophy of “Quality, Integrity, and Innovation”.

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SIMPLIFY YOUR WORLD.

TABLE OF CONTENTS

COMPANY PROFILE

Tru-Tech Valve is a premier supplier of diaphragm 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 on- site coating materials allow us the capability of promptly meeting our customer's needs, while still maintaining our reputation for delivering high quality, innovative valve solutions. Through both standard and custom construction, Tru-Tech Valve is committed to helping the industrial market 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 and your goals, while simplifying your world.

Tru-Tech Valve designs and manufacturers an extensive line of special automatic control valves used in various types of applications. Typical applications include Industrial/ Municipal Water and Wastewater Treatment, Power, Chemical, Mining, Pulp and Paper, Process, and General Industrial. Product offering includes Enhanced Weir Diaphragm Valves, Straight Thru Weir Diaphragm Valves, Series 100 Municipal Valves and Heavy Duty Pneumatic Actuators. 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.

TRU-TECH'S HISTORY

Tru-Tech Valve, LLC was founded in December of 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 manufacturers and serves the industrial valve market with this patented diaphragm valve. Our products are manufactured, assembled, tested, and shipped from the Tru-Tech Valve Plant in New Castle, Pennsylvania.

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. Edward W. Wynn, of England, designed and developed a new diaphragm valve 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 extensive maintenance due to constant clogging. The new design solved this issue, as well as other problems with a distinctive "Tru-Flow" body, which was patented in 1958. The unique shape provided the laminar flow characteristics of a venturi while static head pressure remained almost unchanged. The ingenuity of these original engineers still flows through the veins of Tru-Tech Valve today. New improvements and expansions to the original line of products continues to evolve accommodating the ever-expanding market for diaphragm valves.

Today, Tru-Tech Valve has installations throughout the world, normally marketed through sales representatives in most countries. Our 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 is comprised of approximately 12,000 combined square feet, 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 a capacity to accommodate a large range of valve sizes. 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 its history. The ability to precisely trace all orders and transactions allows us to develop and maintain a better relationship with our suppliers and customers, which in turn allows us to better serve their needs and wants.

All materials received at the shop are checked for conformity to specifications and conditions. When receiving valve bodies from the supplying foundry, we periodically check the pour's composition against the composition standards set forth for that particular material.

Our personnel undergo technical training, while many have technical and engineering backgrounds. Instilled in Tru-Tech's values is a policy encouraging continuance of personnel education, which is extended to all employees. Tru-Tech Valve continuously invests in their employees' growth assets to assure highly skilled workers, and to maintain competency in the evolving industrial market in order to provide quality services that 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.

MADE IN AMERICA

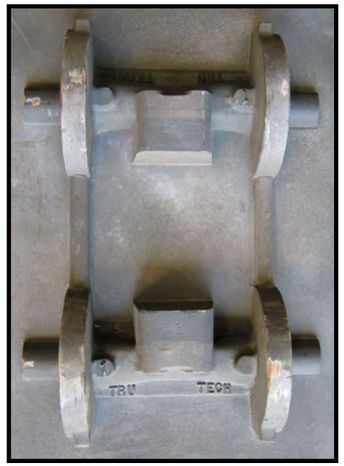
Quality and economics are of extreme importance to us at Tru-Tech Valve. We aim to compete effectively by means of excellence, safety, and efficiency, and to make every effort to display this in the products we outsource.

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 employ both a domestic rubber manufacturer for our molded diaphragm needs as well as local foundries for our valve bodies.

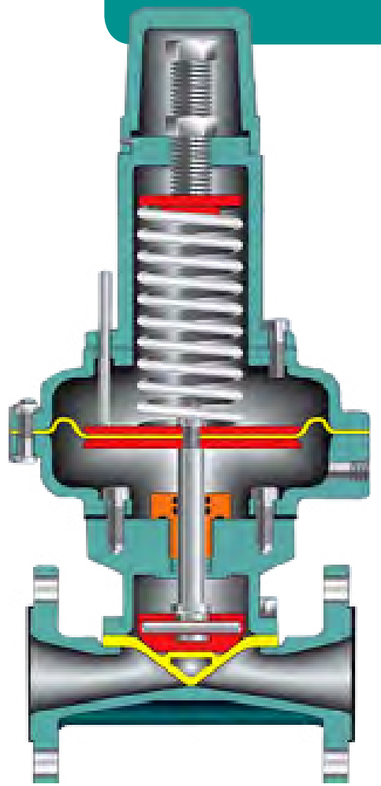
By utilizing domestic suppliers, we are afforded the opportunity to keep a closer control on the quality of our patterns and castings. We are also able to diligently regulate the process from start to finish. The close proximity makes it easy for us to enhance our valves above and beyond our competitors.

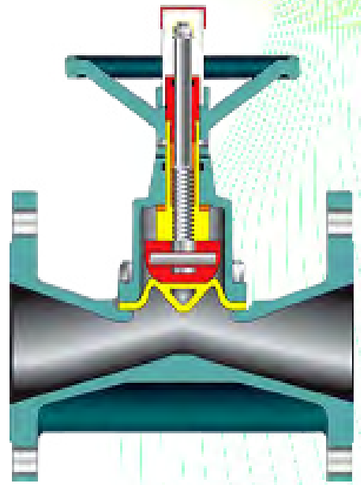
Not only is the utilization of USA manufacturers important for Tru-Tech Valve to produce an excellent product, but it is also important to the American economy and society. We strive to enrich Tru-Tech Valve's culture as well as the American culture.



TRU-TECH DESIGN

Tru-Tech's valves are designed using the latest engineering technology, ensuring 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% interchageable with parts made 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 best for O.E.M.'s and other usage on new projects. Straight thru valves are referred to as Tru-Flow and Weir valves are referred to as Tru-Trol.

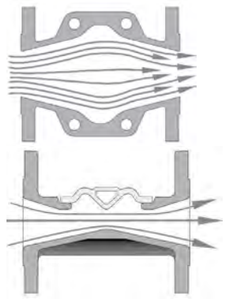
Standard Diaphragm Valves have a face to face that is interchangeable with most brands of diaphragm valves using MSS SP-88 as a standard. These valves are used on replacement projects where existing piping integrity must be maintained. Straight thru valves are referred to as Maxi-Flow and Weir valves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

VALVE BODY STYLES

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

WHY DO TRU-TECH VALVES LAST LONGER?

The Tru-Tech valve reduces diaphragm flex by contracting the vertical height of the flow area and expanding the width. The resultant body shape provides the laminar flow characteristics of a venturi, and allows 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 pneumatically 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 utilized in 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 processes, chemical, and water treatment. Tru-Tech STRAIGHT THRU Diaphragm Valves would normally be used for slurry services such as lime, mud, and titanium dioxide lines. Installations include both manual and pneumatically actuated valves.

STANDARD FEATURES AND ADVANTAGES

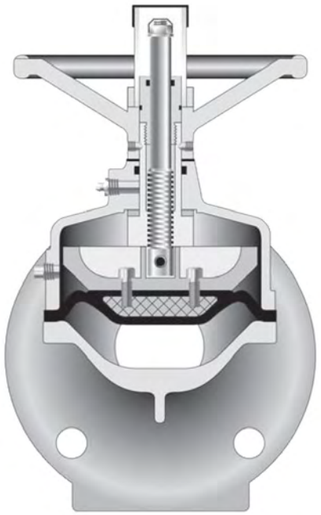
Diaphragm valves have unique design features not offered in other types of valves. These unique advantages include in-line maintenance, positive bubble-tight closure, bonnet isolation, streamlined flow passage without recesses or pockets, and no packing glands.

A fully functioning rubber diaphragm seals leak-tight against the valve body, completely isolating all the mechanical working parts of the valve's operating mechanism from the fluid. This total separation, 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 body linings and diaphragm materials provide a cost effective solution to readily handling corrosive and abrasive liquids as well as liquids with suspended solids.

Another advantage of the diaphragm valve is that it does not seize up like eccentric plug valves and is an excellent solution for replacing problem valves.

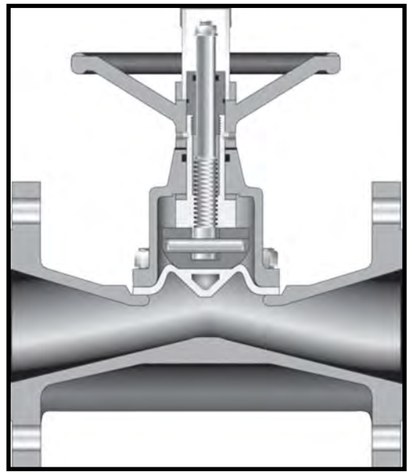
Providing simplified in-line maintenance has become increasingly more important in valve selection. All sizes and types of diaphragm valves provide this important feature.



TRU-TECH SPECIFICS

In addition to many features found in all diaphragm valves, Tru-Tech's valves have some added advantages of their own.

Our diaphragm valves are available in two face to face configurations, MSS and ANSI. Tru-Tech Valve meets MSS SP-88 standards, permitting direct replacement of most other brands of diaphragm valves, allowing our 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 a TFE faced diaphragm which expands the range of applications that can be handled. This feature is not offered by any other brand of diaphragm valves.

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

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

Tru-Tech's 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 Valve 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.

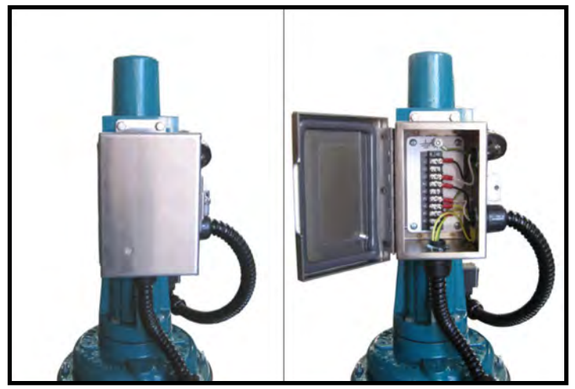
Unlined valve bodies, and all operators, are powder coated, inside and out, with a TGIC polyester powder formulated for maximum chemical and weather resistance. Plastic lined valves are furnished with bodies completely encapsulated with the latest state-of-the-art fusion-bonded liner. Each and every valve body lining is spark tested to ensure lining thickness and integrity.

CUSTOMIZED SOLUTIONS

Tru-Tech Valve 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 of process flow devices.

Let Tru-Tech Valve develop a custom solution to your 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 can 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 valve is a common practice.

Tru-Tech Valve offers several options for manually operating our valves with a hand wheel bonnet assembly, nut, or operated/pneumatic with a manual override.

The hand wheel operated valve may be basic, but its simplicity does not take away from its performance. The hand wheel is fashioned to the bonnet, whereas no cheater bar is needed to create a tight shut-off.

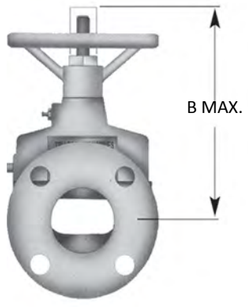
The nut operated valves are typical for buried services, but can be above ground. A device is used to turn the nut to operate the valve.

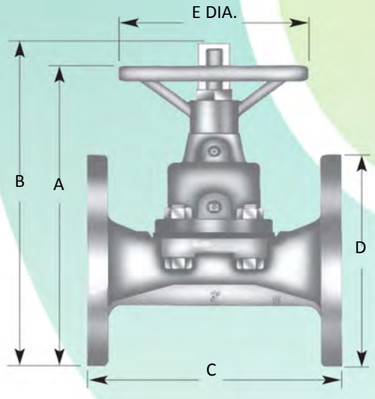
Pneumatic valves with a manual override are geared for emergencies. If the power source is interrupted, the manual override gives the operator the ability to manually position the valve in the absence of power.

MANUALLY OPERATED

Enhanced Weir Diaphragm Valves

	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)					
Flanged Ends	½	4.00	4.69	5.75*	5.75*	7.00	5.00	6.50	3.50	3.50	200
	¾	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 ¼	5.50	6.13	5.75*	5.75*	14.00	5.00	12.00	5.00	5.00	175
	1 ½	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 ½	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





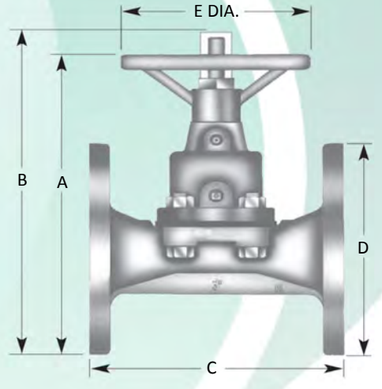
Tolerances: Unlined - 1/16", Lined - 1/8" All dimensions are in inches NA - Not Available
*Valve length does not meet either MSS or ANSI specifications.
ANSI face to face dimensions does not apply to screwed (NPT) or SW ends. The use of gaskets for plastic lined valves is strongly recommended.
ANSI face to face valves interchange with most gate, plug, and ball valves.
MSS face to face valves interchange with most other brands of diaphram valves.
Valves may have a combination of drilled holes and threaded holes on flanges. Contact factory for additional information.

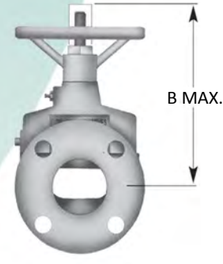
DIAPHRAGM VALVES

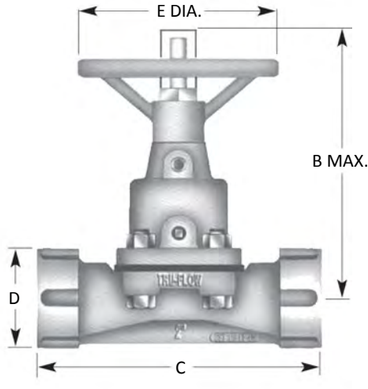
Straight Thru Diaphragm Valves

	SCREWED END - VALVE GENERAL DIMENSIONS							
	Valve Size	A	B	C	Weight (lbs)	D	E	Body Pressure Rating (PSI)
Screwed Ends	½	4.00	4.69	7.25	5.00	1.88	3.50	200
	¾	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 ½	5.50	6.13	8.50	13.00	3.25	7.00	175
	2	5.50	6.13	8.50	13.00	3.25	7.00	175
	2 ½	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

	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)					
Flanged Ends	½	4.00	4.69	5.75*	5.75*	11.00	5.00	10.00	3.50	3.50	200
	¾	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 ¼	4.00	4.69	5.75*	5.75*	11.00	5.00	10.00	3.50	3.50	200
	1 ½	7.25	9.00	7.88*	7.88*	27.00	7.00	25.00	6.00	7.00	175
	2	7.25	9.50	7.88	7.88	27.00	7.00	25.00	6.00	7.00	175
	2 ½	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







Tolerances: Unlined - 1/16", Lined - 1/8" All dimensions are in inches NA - Not Available
*Valve length does not meet either MSS or ANSI specifications.
ANSI face to face dimensions does not apply 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 diaphram valves.
Valves may have a combination of drilled holes and threaded holes on flanges. Contact factory for additional information.

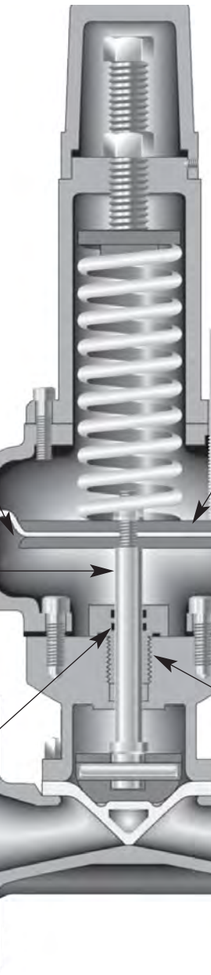
AIR OPERATED

Tru-Tech's actuated valves are offered in many configurations with analog and digital instrumentation. If required, we can also supply valves 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 Valve can help you through the most complex diaphragm valve automation requirements.

Accessories are easily field mounted.



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

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

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

Position Indicator is furnished as standard.

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

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

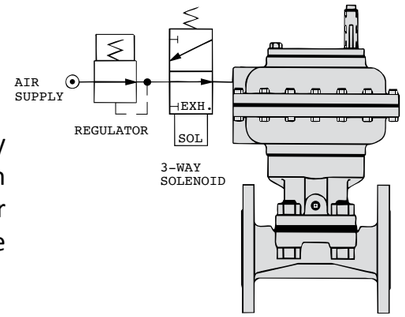
BONNET: Designed of high strength cast iron with generous area flat top for precision/super high strength coupling between actuator and valve.

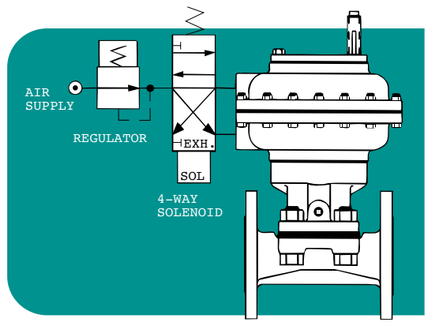
SHAFT BEARING: Precision machined from non-metallic self-lubricating material.

DIAPHRAGM VALVE

"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.



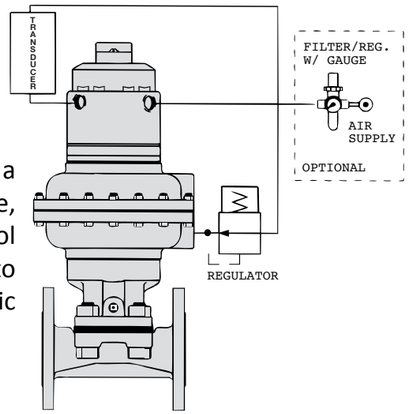


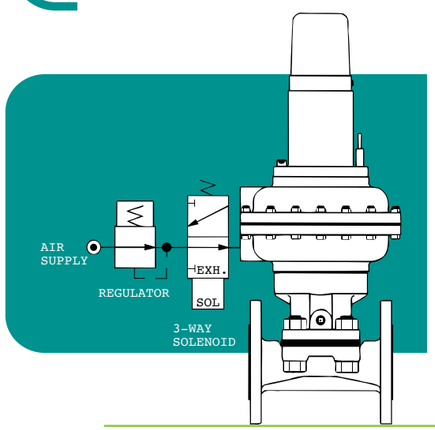
"AA" AIR-AIR, DOUBLE ACTING
(ON - OFF CONTROL)

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).



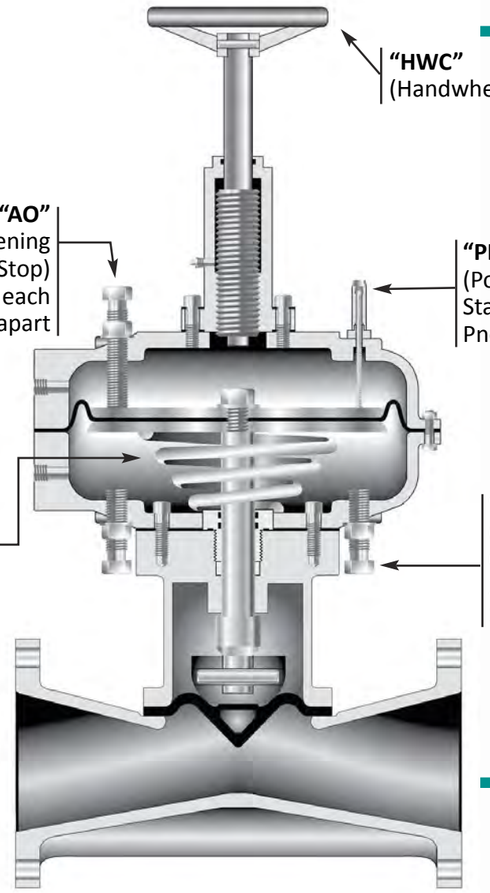


"SC" SPRING TO CLOSE
(ON - OFF CONTROL or AUTOMATIC THROTTLING-not shown)

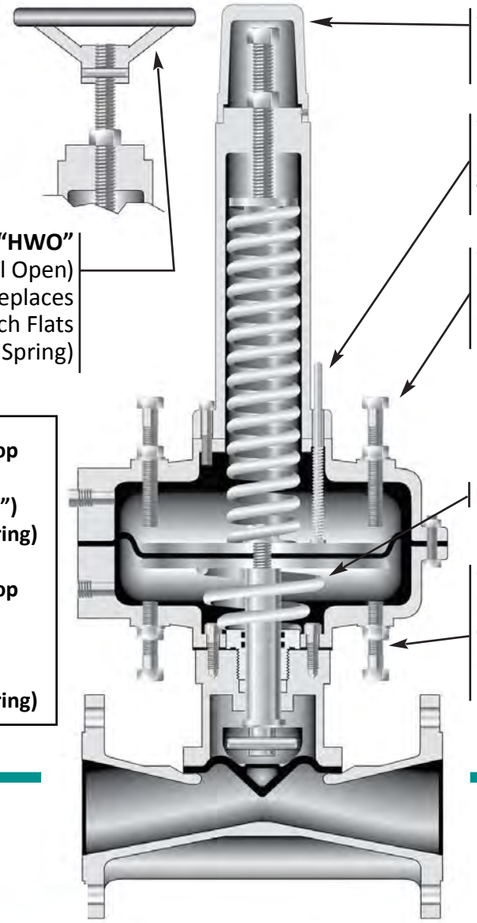
This actuator/accessory package is designed to normally position the valve closed. The valve will open when compressed air is admitted into the lower actuator chamber, and the actuator spring will close the valve when the air is exhausted.

PNUEMATIC ACTUATOR

TO = **ATS + AO**
THC = **ATS + HWC**
TOHC = **ATS + AO + HWC**



VALVE OPTIONS



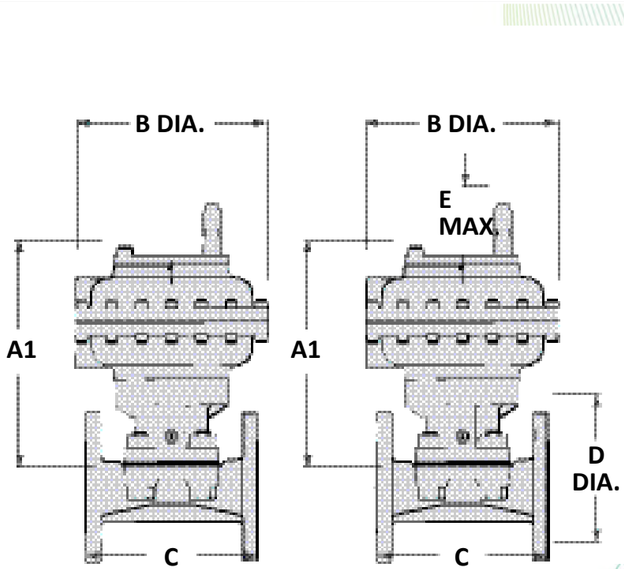
TOWO = **Adjustable Open Stop ("AO") + Wrench Open ("WO") (Requires Lower Spring)**

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

PNEUMATIC ACTUATOR

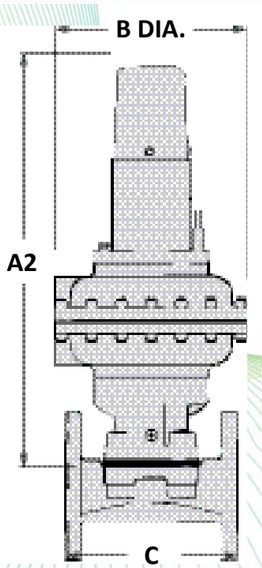
Actuator Sizes 10 - 20 - 35

Pneumatic Actuator Dimensions and Technical Data														
Valve Size	C	D	E	#10 Actuator			#20 Actuator			#30 Actuator			Valve Stroke	
				A1	A2	B	A1	A2	B	A1	A2	B	TF	TT
½	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
¾	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 ¼	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 ½	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	10.1	19.8	6.3	10.2	24.6	7.8	11.4	26.4	9.5	0.75	0.47
2 ½	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										



"AA"
AIR TO OPEN
AIR TO CLOSE

"SO"
SPRING TO OPEN
AIR TO CLOSE



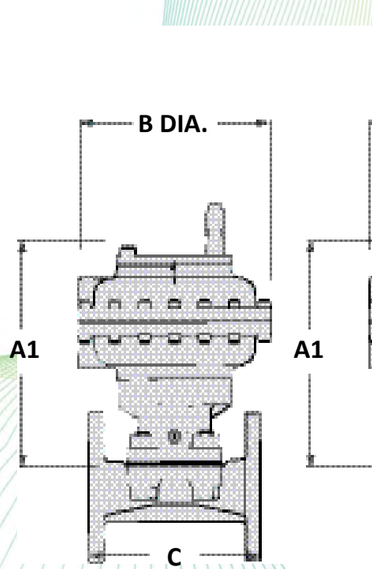
"SC"
SPRING TO CLOSE
AIR TO OPEN

Dimensions are approximate only.
Valves may have a combination of drilled and threaded holes on flanges.
Contact Tru-Tech Vavle for additional information.

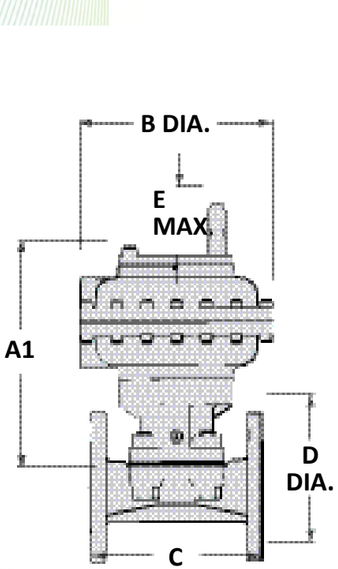
VALVE DIMENSIONS

Actuator Sizes 60 - 90 - 140 - 280

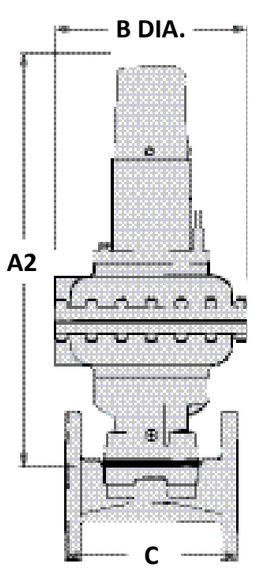
Pneumatic Actuator Dimensions and Technical Data																			
Valve Size	C	D	E	#60 Actuator			#90 Actuator			#140 Actuator			#280 Actuator			Valve Stroke	
				A1	A2	B	A1	A2	B	A1	A2	B	A1	A2	B	TF	TT
1 ½	7.0	2.6	2.8	12.1	27.1	12.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.75	0.47
2	7.0	2.6	2.8	12.1	27.1	12.3	12.1	41.5	15.0	NA	NA	NA	NA	NA	NA	0.75	0.47
2 ½	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	27.2	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 are approximate only.
Valves may have a combination of drilled and threaded holes on flanges.
Contact Tru-Tech Vavle for additional information.

THE DIAPHRAGM

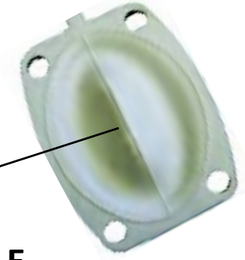
The rubber diaphragm seals leak-tight against the valve body, and completely isolates all the mechanical working parts of the valve's operating mechanism. This total separation between the media passing through the valve and the bonnet also eliminates troublesome stem seal and packing gland problems 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 provide a cost effective solution to readily handling corrosive and abrasive liquids as well as liquids with suspended solids. The variety of diaphragm materials we maintain in stock ranges from Teflon faced to soft natural rubber. For every application you may encounter, 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
EPDM is the most popular general purpose material. It possesses excellent chemical resistance to a wide variety of corrosive elements including acids, caustics, and hot water. EPDM is abrasion resistant, good for high temperature service, and is satisfactory for intermittent steam sterilization, but has poor oil resistance.

NEOPRENE (CR) -20 degrees to + 200 degrees F
Neoprene is widely used in wastewater applications. It is a good choice for general purpose chemical resistance where the media contains entrained oils. It is abrasion resistant, and also resists aldehydes, certain alcohols, fertilizers, explosives, petroleum, air, acids, and alkalis.

Note: Additional diaphragm materials available; contact Tru-Tech for more information.

VALVE ACCESSORIES

Tru-Tech Valve 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 and Proximity Switches**
- **P/P and 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.

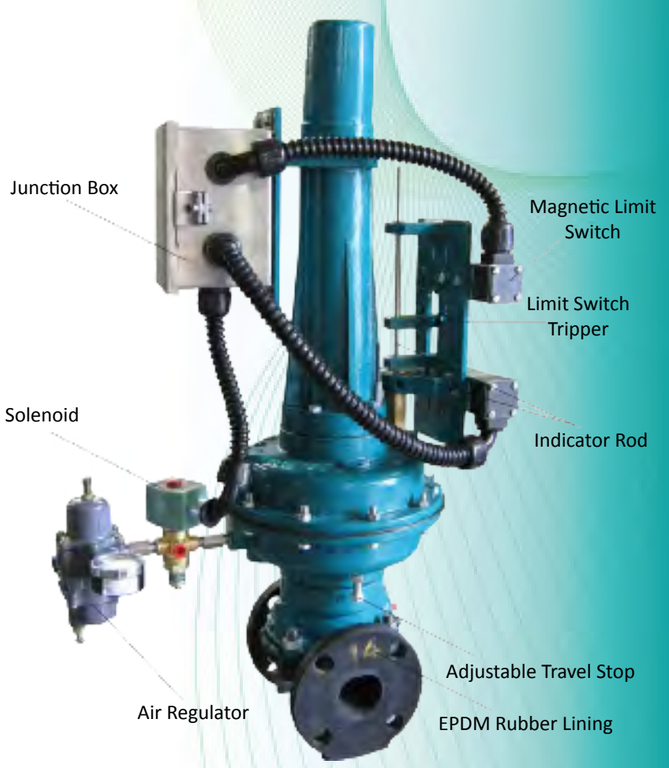
The Intelligent Valve Positioner puts forth the most advanced technology available. It is easily configured and displays advanced diagnostics on a LCD screen.

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 Valve accessorized the "Spring to Close, Air to Open" Pneumatic Actuator valve. This is just one of many valve examples loaded with accessories. Instrumentation is 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. Limit switches operate through the use of magnetic attraction, reacting to limit any switch trippers coming into the sensing range when the valve is active. An air regulator and solenoid are also implemented in the make-up of this valve.



BODY LINING

The Starting Line

Reliability and life expectancy start at the beginning. Selecting the right material for the inside of the your valve, for its particular service, is paramount in the valve's life expectancy.

Our material compatibility experts can assist you in selecting the correct material for the service the valve will come in contact with. With our wide variety of available lining materials, and our ability to provide special linings, customers can be assured that Tru-Tech will provide them with the proper body lining.

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 making it a great choice for many applications.

Tefzel® is a coating that keeps chemical resistance equivalent to PTFE and other fluoropolymers, while also providing 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.

Whatever your lining needs, Tru-Tech Valve offers an arsenal of distinctive materials 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 synonymous 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 each valve is manufactured, including the coating 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 coating is solvent-free and applied electrostatically, producing a more aesthetically pleasing valve.

BODY LINING OPTIONS

SOFT NATURAL RUBBER: Soft Natural Rubber is good in either wet or dry abrasive services, water, and some acids and alkalis. It has one of the best abrasion resistances when strong chemicals are not present. Temperature range is from -30° F 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 range is from -30° F to 200° F.

GRAPHITE BASED HARD RUBBER: Graphite Based Hard Rubber has a good chemical resistance at higher temperatures than the normal hard and soft natural rubbers. Maximum use temperature is 250° F.

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

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

BUNA-N: (Nitrile Butadiene Rubber) Buna-N is a general-purpose oil resistant polymer known as Nitrile Rubber. It is a copolymer of butadiene and acrylonitrile. Buna-N has good resistance to solvents, oil, water, and hydraulic fluid. It displays good compression set, abrasion resistance, and tensile strength. Buna-N 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. Maximum use temperature is 275° F.

BUTYL: Butyl is a good choice for gases because it has very low vapor and gas permeability. It is also good for many acids, alkalis, and applications involving steam sterilization. Temperature range is -20° F to 250° F.

CHLOROBUTYL: Chlorobutyl has excellent abrasion and corrosion resistant properties. Maximum recommended temperature is 180° F.

POLYPROPYLENE: Polypropylene is a general purpose lining with good chemical and temperature resistance. It is utilized for water treatment, chemical processing, most plating fluids, steel mill pickling lines, food stuff, and drinking water. Temperature range is from -10° F to 200° F.

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

ETFE (TEFZEL): (Ethylene Tetrafluoroethylene) ETFE has outstanding resistance to chemicals and strong acids. It also has high abrasion resistance for tough services. ETFE has no known solvent below 350° F.

PTFE (XYLAN): (Polytetrafluoroethylene) PTFE has good wear resistance, fair corrosion resistance, and low coefficient of friction. Temperature range is from 450° F to 500° F.

PFA: (Perfluoroalkoxy) PFA has good wear and abrasion qualities, excellent corrosion resistance, excellent release capabilities, and low coefficient of friction. Maximum us temperature is 525° F.

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

FEB: (Fluorinated Ethylene Propylene) FEB has good wear and abrasion qualities, excellent corrosion resistance, excellent release characteristics, and low coefficient of friction. Maximum use temperature is 400° F.

VITON: 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. Temperature range is from -20° F to 300° F.

BLUE GLASS (CHEM): Blue Glass is intended for strong chemical applications such as acids and caustics where a non-porous lining is necessary.

GREEN GLASS (NON-CHEM): Green Glass is 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 range is from -30° F to 150° F.

FDA EPOXY: FDA Epoxy has good wear and abrasion qualities, and good corrosion resistance. Maximum use temperature is 212° F.

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

VALVE BODY

Pattern Availability

ENHANCED WEIR		½	¾	1	1 ½	2	2 ½	3	4	6	8	10
ANSI FLANGE BODIES	Ductile Iron	A	A	✓	A	✓	A	✓	✓	✓	✓	NA
	Cast Steel	A	A	✓	A	✓	SO	SO	SO	SO	SO	NA
	316 STST	A	A	✓	A	✓	SO	SO	SO	SO	SO	NA
	Alloy 20	A	A	✓	A	✓	SO	SO	SO	SO	SO	NA
	Bronze	A	A	✓	A	✓	SO	SO	SO	SO	SO	NA
	Cast Iron	A	A	✓	A	✓	A	✓	✓	✓	✓	NA
MSS FLANGE BODIES	Cast Iron	NA	✓	✓	✓	✓	A	✓	✓	✓	✓	✓
	Ductile Iron	NA	✓	✓	✓	✓	A	✓	✓	✓	✓	NA
SCREWED END BODIES	316 STST	A	A	A	A	A	SO	SO	NA	NA	NA	NA
	Cast Steel	A	A	A	A	A	SO	SO	NA	NA	NA	NA
	Alloy 20	A	A	A	A	A	SO	SO	NA	NA	NA	NA
	Bronze	A	A	A	A	A	SO	SO	NA	NA	NA	NA
SOCKET WELD BODIES	316 STST	A	A	A	A	A	SO	SO	NA	NA	NA	NA
	Cast Steel	A	A	A	A	A	SO	SO	NA	NA	NA	NA
	Alloy 20	A	A	A	A	A	SO	SO	NA	NA	NA	NA
	Bronze	A	A	A	A	A	SO	SO	NA	NA	NA	NA

A = Available; does not meet std. face to face
NA=Not Available
SO=Special Order
✓=Bodies available; meets standards

WEIR DESIGN

STRAIGHT THRU DESIGN

STRAIGHT THRU		½	¾	1	1 ½	2	2 ½	3	4	6	8
ANSI FLANGE BODIES	Ductile Iron	A	A	✓	A	✓	A	✓	✓	✓	NA
	Cast Steel	A	A	✓	A	✓	A	✓	SO	SO	NA
	316 STST	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 STST	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 STST	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; does not meet std. face to face
NA=Not Available
SO=Special Order
✓=Bodies available; meets standards

Note: All valves designed and manufactured by Tru-Tech Valve 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. Tru-Tech Valve reserves the right to substitute materials, which in our opinion, are of equal or superior quality in the construction of any valve.

VALVE BODY

Material Availability

CAST IRON **ASTM A-126**

Cast Iron is 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. Cast iron can be lined with a wide variety of rubbers and plastics to handle almost any process media.

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

Ductile Iron is a general purpose material with usage similar to cast iron. However, it 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. It can be lined with a wide variety of rubbers and/or plastics to handle almost any process media.

CAST STEEL **ASTM A-126 GR WCB**

Cast Steel is another general purpose material somewhat less resistant to corrosion than cast iron, especially where water is the media. It 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. Cast steel valves are expensive and are normally only used where specified by the end user. Cast steel valves 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**

316 Stainless Steel is an alloy of iron, carbon, nickel, and chromium. It is suitable for most foods, beverages, pharmaceuticals, solvents, sea water, oils, and some acids and alkalis.

ALLOY 20 STST **ASTM A-351 GRADE CN-7M**

Alloy 20 Stainless Steel has higher amounts of nickel and chromium than the 300 Series Stainless Steel. It is more resistant to sulfuric acid and is widely used in chemical processing and water treatment.

Note: Other body materials are available as an option; call our Sales Department for details.

QUALITY CONTROL AND ASSURANCE

Tru-Tech Valve 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 Valve 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 the customer. The major elements of Tru-Tech Valve's Quality Assurance Program are: established policies, organization, fixed procedures, uniform records, effective means for maintaining quality standards, and correcting occurrences of nonconforming articles and services. All elements and their implementation are continuously monitored to ensure correct and ongoing 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 that perform the function required by the application, under conditions for which it was 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 Valve's Engineering Division develops new and unique product designs, representing the 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. Once approved they are incorporated into our catalogued line or a special proprietary product line.

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

QUALIFIED SUPPLIERS

Tru-Tech Valve's 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 that continuously make use of the best available parts that conform to our set criteria.

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 performed on specific work where the "standards" referred to in the customer's order require it and where certification is requested.

VALVE TESTING PROVIDES DURABILITY

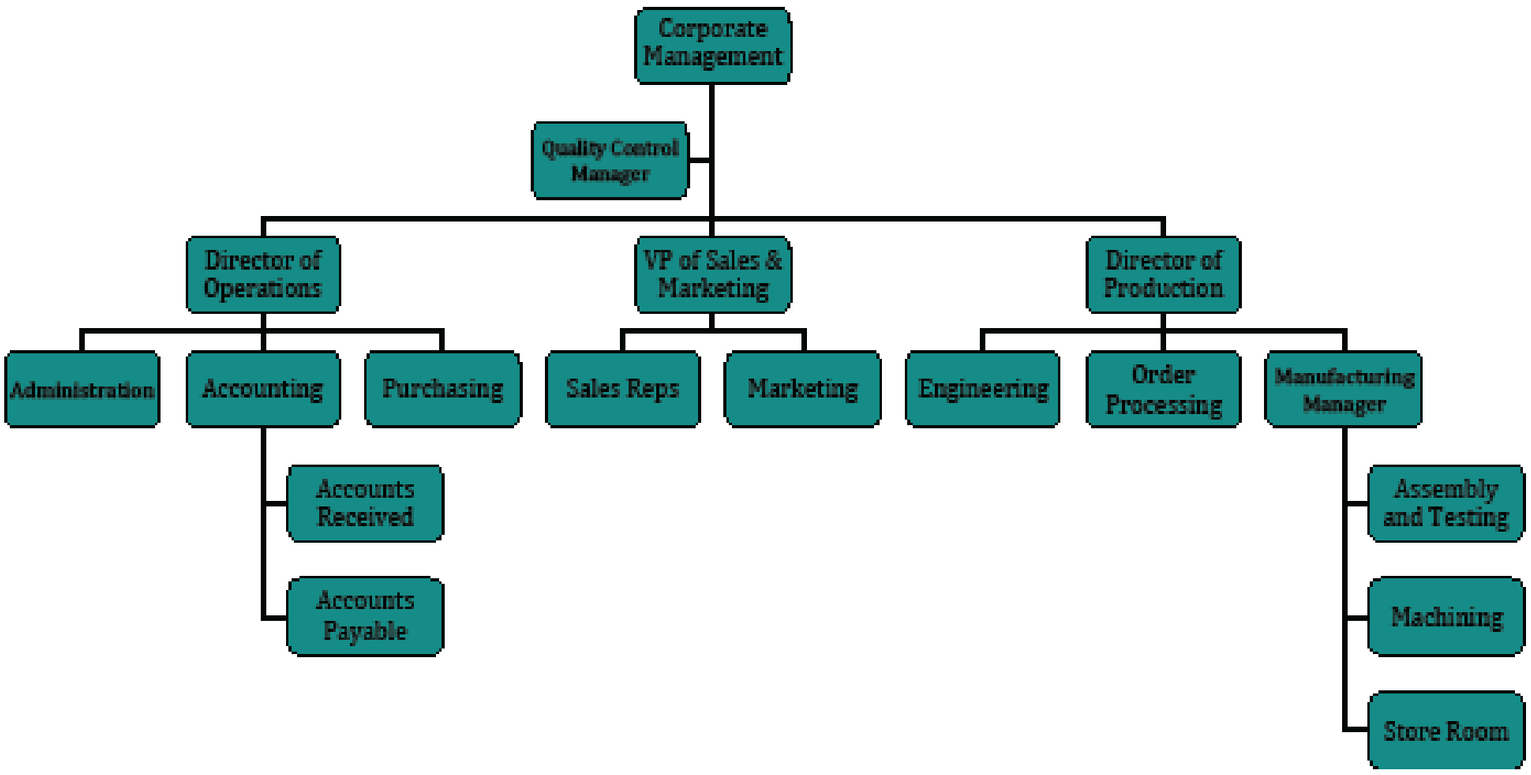
What makes a good valve is a valve that performs well. To yield such performance in our valves at Tru-Tech Valve, we must diligently put each one through certain testing procedures.

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 the customer's specifications. All nonconforming performance factors are reported; the appropriate changes are made to correct the issue.

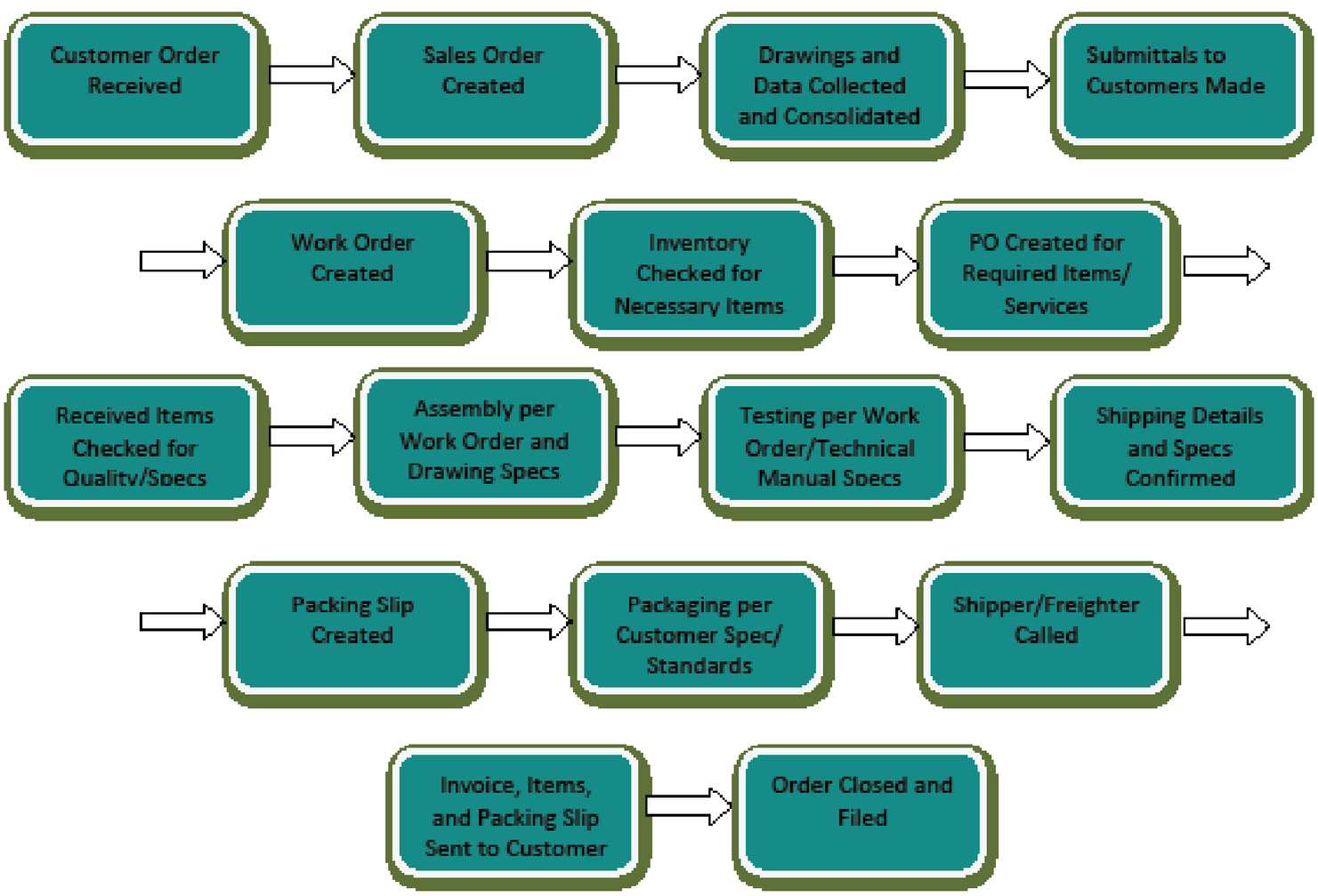
Hydrostatic Shell and Seat Leakage Tests are a key proponent to the final stage of a Tru-Tech valve. These tests, applied to each valve, are required as stated in our Tru-Tech Quality Assurance Manual. The testing of the diaphragm valve is a way to apply similar conditions of service that the particular 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.

NOTES

Production Organizational Chart



Order Routing



TRU-TECH VALVE
SIMPLIFY YOUR WORLD.
3287 Perry Hwy • New Castle, PA 16101
p.724.916.4805 • f.724.916.4806

Sales Order

Date	S.O. No.
7/27/2010	183

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
2AAAG-GA-A-3	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

TRU-TECH VALVE
SIMPLIFY YOUR WORLD
3287 Perry Hwy • New Castle, PA 16101
p. 724.916.4805 • f. 724.916.4806
www.ttvlv.com

Work Order

Date	W.O. No.
7/27/2010	183

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
2AAAG-GA-A-3	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.			

TRU-TECH VALVE
SIMPLIFY YOUR WORLD.
3287 Perry Hwy • New Castle, PA 16101
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 161 577 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-55 SVR Diaph...	19-E-55 Size "E" Soft Natural Rubber Diaphragm OLD Code E-55	1	16.24	TT40668	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 you are unable to ship complete order by date specified.
Your acceptance of this order is your warranty to us that you are complying with the U.S. Fair Labor Standards Act of 1938, as amended, and we reserve the right to refuse merchandise not in strict accordance with this order.

Total $17.99

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Part Number Codes

TRU-TECH Valve Part Number
(number 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 3/8"	B 1/2"	C 1"	D 1-1/4"	E 1-1/2"	F 2"	G 2-1/2"	H 3"	I 4"	J 6"	K 8"	L 10"	M 12"
		H 10MM	J 15MM	K 20MM	L 25MM	M 32MM	N 40MM	O 50MM	P 65MM	Q 80MM	R 100MM	S 125MM	T 150MM
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 Fig. ANSI 125 (Rubber Lined) B FDR, ANSI, SS, 1 (NPT)		C Fig. ANSI 150 (Lined, Glass, Thermoplastic)		D Butt-weld E Socket Weld		F Victaulic Style G DIN				H JIS I Special	
4	Body Material Code	A Ductile Iron B 316 SST C Cast Steel		D Bronze E 304 SST F Alloy 20		G 340L H Cast Iron		J Carbon Steel K 316L				M Solid CPVC X Special	
5	Body Lining Code:	A Unlined (Powder Coated Polyester) B Polypropylene C Soft Natural Rubber D Hard Rubber		E Neoprene F PVDF (SOLID) G Green Glass (Non-Glass) H ETFE (SOLID)		I EPDM K PVC L Butyl M Hypalon		N BUNA-N O Modified PTFE/EPDM P PFA		Q FDA Epoxy R Nylon 11 S Halar T PTFE		U Special	

Bonnet Codes

6	Operator Bonnet	B Optional Handwheel Operator with Position Indicator, and Travel Stop C Handwheel Operator with Position Indicator, Travel Stop and Clear Plastic Indicator Cover D Standard Flat-Top Bonnet for Pneumatic Actuator Mounting			E Optional Flat-Top Bonnet for Operator Mounting F 2" Square Nut Operator
7	Description Code:	A Standard Wallaxpod Bonnet B Optional Gated Bonnet Y Adapter for Bonnet Operator X Special	Pneumatic Operator: D 10 AA E 20 AA F 30 AA G 40 AA H 50 AA I 60 AA	Pneumatic Operator: J 10-80 K 20-80 L 30-80 M 40-80 N 50-80 O 60-80	Pneumatic Operator: P 10-90 Q 20-90 R 30-90 S 40-90 T 50-90 U 60-90
	Pneumatic Actuator Type:	AA – Air to Open/Close Normally Fail Open	80 – Spring to Close/Open Normally Closed	90 – Spring to Open, Air to Close Normally Open	

Diaphragm Codes

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

9 Thru A3	A – Pressure Regulator B – Filter/Regulator C – Gauge D – 3 way Solenoid (NC) E – 4 Way Solenoid (NC) F – 3 Way Solenoid (NO) G – 4 Way Solenoid (NO) H – Single Limit Switch; 1 Open I – Single Limit Switch; 1 Closed J – Double Limit Switch; 1 Open/1 Closed K – With Accessory Tube and Bracket and Bracket L – Bürkert Digital *Smart* Positioner M – Customer Supplied Transducer	N – Bürkert Electronic Option with Chain P – Emergency Closing Device (Handwheel) Q – Adjustable Opening Travel Stop R – Adjustable Closing Travel Stop S – Handwheel Locking Device T – Mamac 750 Positioner for Open Valve (Discontinued) U – Honeywell (SSM Type) Electric Motor Operator V – Light Duty (VCM 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 Flgs. 2 – Powder Coat Bonnet/Operator/Bonnet Flgs. (Standard) 3 – Stainless Steel Bonnet Bolt/Studs 4 – Emergency Opening/Closing Device (Manual or Hyd) 5 – SST Pipe Fittings 6 – Mamac 6780 Positioner 3-15 PSI 7 – Mamac 6780 Positioner 3-15 PSI/Transducer 4-20MA 8 – Mamac 6780 Positioner 3-15 PSI/Transducer 4-20MA with dual limit switches 9 – Special Interior or Exterior Paint 0 – 3780 Feedback Option

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 Nylcil	
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	

*Recommended Spare Parts

Bill of Materials

Body ☐ Bonnet ☐ Diaphragm ☐ Actuator ☐

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

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

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TRU-TECH VALVE

Quality Assurance Manual Register

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

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)
<=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 %

Sulfur (S)
<=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)
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 %

Phosphorous (P)	Silicon (Si)	Sulfur (S)
<=0.030 %	1.80 - 2.80 %	<= 0.0020 %

PART:_____ PASS _____ FAIL_____

MATERIAL FROM: _____ DATE:_____ TESTER:_____

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: _____

SCRAP

TRU-TECH VALVE p. 724.816.4805 s. www.ttvlv.com

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

REWORK

TRU-TECH VALVE p. 724.816.4805 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
p. 724.816.4805 s. www.ttvlv.com

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

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

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

for Tru-Tech Valve, LLC 577 West Pike Street Canonsburg, PA 15317 (Name and Address of Shipper) declares

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 13 day of July

Dated at Canonsburg, PA this 13 day of July

(Signature of Shipper 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

Testing Certificate

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p.724.916.4805 • f.724.916.4806
www.ttvlv.com

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 ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
2				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
3				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
4				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
5				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
6				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
7				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
8				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
9				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
10				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
11				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
12				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
13				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
14				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ Pass			Date:_____ By:_____
15				Pass ☐ Fail	Retest ☐ Pass			Pass ☐ Fail	Retest ☐ 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 1.10% 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

External Vendor Certification

Precision Technology, Inc.
551 Old Swede Road - P.O. Box 185 - Douglassville, PA 19518
P (610)385-6001 F (610)385-8859

* * * 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
Part Name: 1/2" & 3/4" NPT Tru-Trol Body
Alloy: CF8
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	0.35	0.031	0.009	0.39	0.09

Heat #	Yield KSI @ 0.2%	Tensile KSI	% Elongation in 1 Inch	% Reduction of Area	Hardness
879-M	37.1	86.6	58	--	--

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 & H INDUSTRIES, INC.

3828 OLD EASTON ROAD
P.O. BOX 969
DOYLESTOWN, PA 18902
215-348-2950 or 1-800-424-4078
215-348-1251 (FAX)

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:

APPLICATORS OF PROTECTIVE COATINGS AND LININGS

TRU-TECH VALVE

Jeff Ruffing
jruffing@ttvlv.com
Corporate Management

Mark Valvano
mvalvano@ttvlv.com
Corporate Management

Alan D'Achille
adachille@ttvlv.com
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Sales & Purchasing

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Tom Deems
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Computer Support/ Information Technology

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