

THERMOPLASTIC VALVES

Manual & Actuated Thermoplastic Valves

IPEX offers one of the most comprehensive ranges of high quality, high performance thermoplastic valves and actuation products available today. With more than 50 years of design and manufacturing experience, our lightweight, long life, maintenance free valves will save you time and money.

Material options such as PVC, CPVC, PP, PVDF, and ABS make our corrosion resistant valves ideal for use in a wide variety of applications. Quarter turn pneumatic and electric actuation, pneumatically actuated diaphragm valves, and many options and accessories allow for fully automated control. Whether a valve is required for isolation, diversion, control, or throttling, IPEX has a solution to meet your needs.

APPLICATIONS

- Acid products handling for refineries, metal works, etc.
- Alum and ferric chloride handling
- Aquariums and aquatic animal life support systems
- Bleach, dye and acid lines
- Brine and seawater systems
- Chlorine injection, chlorine dioxide and chloralkali plant piping
- Pharmaceutical
- Plant chemical distribution lines
- Plant water supply and distribution
- Swimming pools
- Wash water recovery systems
- Water and wastewater treatment



WHAT TYPE OF VALVE TO USE	Ball Valves	Butterfly Valves	Diaphragm Valves	Check & Vent Valves	Specialty Valves
On/Off Service	✓	✓			
High Capacity	✓	✓			
Throttling	✓	✓	✓		✓
Quick & Frequent Cycling	✓				✓
Slurries/Dirty Fluids		✓	✓		
Filtering					✓
Back Flow Prevention				✓	
Air & Gas Release				✓	
Electro-Mechanical Control					✓
Actuation	✓	✓	✓		



QUARTER TURN AUTOMATION

Quarter Turn Automation – Pneumatic / Electric

Automation is an ideal solution for precise control of many valves in a system, when valves are remotely located, or when the process requires constant monitoring and adjustment. Pneumatic and electric actuators can be easily fitted on our ball, multi-port, and butterfly valves. Some features and functions include normally closed, normally open, or double-acting operation; corrosion resistant aluminum bodies, pre-loaded springs, and adjustable cams. Many accessories such as visual position indicators, limit switches, 3 and 4-way solenoids, and positioners are also available. For further information, please refer to the IPEX *Industrial Technical Manual Volume IX* entitled, "Quarter Turn Automation".

PNEUMATIC ACTUATORS OVERVIEW

Pneumatic actuators are the most common choice for quarter turn plastic valves in process applications. Compressed air systems are readily available in any plant, and the cost of the actuator itself is generally lower than that of an electric unit with a comparable torque output. Typical quarter turn automation seldom requires positioning (something achieved more easily with an electric actuator), therefore the cycle life of a pneumatic unit will be substantially greater, and will be intrinsically safer than an electric actuator in volatile environments. While there are many different kinds of pneumatic actuators, a rack and pinion style is the preferred choice within the plastic piping industry. This type of actuator is quite tough and rugged, and has a high cycle life. They generally have a compact, simple construction, and certain models can be quite light in weight. The design also allows the same basic actuator to be used as a double acting or (with minor additions) a spring return unit.



i DID YOU KNOW?

The three basic control functions available through quarter turn automation are:

- 1. Double Acting** – This requires external power for each stroke. For example, power to open the valve, then power to close the valve.
- 2. Normally Closed** – Also referred to as “fail safe closed”, the default position is closed and the actuator requires power to open the valve.
- 3. Normally Open** – Also referred to as “fail safe open”, the default position is open and the actuator requires power to close the valve.

ELECTRICAL ACTUATORS OVERVIEW

Although slightly more expensive than pneumatics, electric actuators have certain desirable benefits. They are the preferred choice when cycle time is an issue, as a quick closing pneumatically actuated valve could cause a damaging pressure surge condition (water hammer). The use of an electric actuator may also be preferred when the distance from the power source is considerable. The friction losses in long runs of compressed air line may result in reduced efficiency and/or additional compressor stations. In addition, electric actuators are the preferred (if not the only) choice when a quarterturn valve like a multi-port is used. In this case, it is possible that the travel required is not just 0° to 90° but 0° to 90° to 180°. A rack and pinion actuator would need four separate pistons and a multiplicity of related air chambers, whereas this is easily accomplished with an electric unit. Most electric actuators have a cam/limit switch arrangement which allows the unit to be set up for a variety of rotations. The two standard limit switches can be used to provide a remote location with an open or closed signal. A multitude of voltages both for AC and DC current are also typically available.



TKD SERIES PVC 3-WAY BALL VALVE – TRUE UNION, PNEUMATIC

Size (in)	Body Material	Diaphragm Material	Product Code	Universal Number
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TKD w PTFE Seats, T-PORT

Pneumatic – DOUBLE ACTING – SOCKET/THREADED

Size (in)	Body Material	Diaphragm Material	Product Code	Universal Number
1/2	PVC	EPDM	253803	TKDTBV103-DA
		FPM	253809	TKDTBV203-DA
1/2	CPVC	EPDM	254055	TKDTBC103-DA
		FPM	254007	TKDTBC203-DA
3/4	PVC	EPDM	253804	TKDTBV104-DA
		FPM	253810	TKDTBV204-DA
3/4	CPVC	EPDM	254056	TKDTBC104-DA
		FPM	254008	TKDTBC204-DA
1	PVC	EPDM	253805	TKDTBV105-DA
		FPM	253811	TKDTBV205-DA
1	CPVC	EPDM	254057	TKDTBC105-DA
		FPM	254009	TKDTBC205-DA
1-1/4	PVC	EPDM	253806	TKDTBV106-DA
		FPM	253812	TKDTBV206-DA
1-1/4	CPVC	EPDM	254058	TKDTBC106-DA
		FPM	254010	TKDTBC206-DA
1-1/2	PVC	EPDM	253807	TKDTBV107-DA
		FPM	253813	TKDTBV207-DA
1-1/2	CPVC	EPDM	254059	TKDTBC107-DA
		FPM	254011	TKDTBC207-DA
2	PVC	EPDM	253808	TKDTBV108-DA
		FPM	253814	TKDTBV208-DA
2	CPVC	EPDM	254054	TKDTBC108-DA
		FPM	254012	TKDTBC208-DA

Pneumatic – SPRING RETURN, NORMALLY CLOSED – SOCKET/THREADED

Size (in)	Body Material	Diaphragm Material	Product Code	Universal Number
1/2	PVC	EPDM	253779	TKDTBV103-NC
		FPM	253785	TKDTBV203-NC
1/2	CPVC	EPDM	254067	TKDTBC103-NC
		FPM	254019	TKDTBC203-NC
3/4	PVC	EPDM	253780	TKDTBV104-NC
		FPM	253786	TKDTBV204-NC
3/4	CPVC	EPDM	254068	TKDTBC104-NC
		FPM	254020	TKDTBC204-NC
1	PVC	EPDM	253781	TKDTBV105-NC
		FPM	253787	TKDTBV205-NC
1	CPVC	EPDM	254069	TKDTBC105-NC
		FPM	254021	TKDTBC205-NC
1-1/4	PVC	EPDM	253782	TKDTBV106-NC
		FPM	253788	TKDTBV206-NC
1-1/4	CPVC	EPDM	254070	TKDTBC106-NC
		FPM	254022	TKDTBC206-NC
1-1/2	PVC	EPDM	253783	TKDTBV107-NC
		FPM	253789	TKDTBV207-NC
1-1/2	CPVC	EPDM	254050	TKDTBC107-NC
		FPM	254023	TKDTBC207-NC
2	PVC	EPDM	253784	TKDTBV108-NC
		FPM	253790	TKDTBV208-NC
2	CPVC	EPDM	254072	TKDTBC108-NC
		FPM	254024	TKDTBC208-NC



Size (in)	Body Material	Diaphragm Material	Product Code	Universal Number
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TKD w PTFE Seats, T-PORT

Pneumatic – SPRING RETURN, NORMALLY OPEN – SOCKET/THREADED

Size (in)	Body Material	Diaphragm Material	Product Code	Universal Number
1/2	PVC	EPDM	253756	TKDTBV103-NO
		FPM	253762	TKDTBV203-NO
1/2	CPVC	EPDM	253834	TKDTBC103-NO
		FPM	254031	TKDTBC203-NO
3/4	PVC	EPDM	253757	TKDTBV104-NO
		FPM	253763	TKDTBV204-NO
3/4	CPVC	EPDM	253835	TKDTBC104-NO
		FPM	254032	TKDTBC204-NO
1	PVC	EPDM	253758	TKDTBV105-NO
		FPM	253764	TKDTBV205-NO
1	CPVC	EPDM	283836	TKDTBC105-NO
		FPM	254033	TKDTBC205-NO
1-1/4	PVC	EPDM	253759	TKDTBV106-NO
		FPM	253765	TKDTBV206-NO
1-1/4	CPVC	EPDM	253837	TKDTBC106-NO
		FPM	254034	TKDTBC206-NO
1-1/2	PVC	EPDM	253760	TKDTBV107-NO
		FPM	253766	TKDTBV207-NO
1-1/2	CPVC	EPDM	253838	TKDTBC107-NO
		FPM	254035	TKDTBC207-NO
2	PVC	EPDM	253761	TKDTBV108-NO
		FPM	253815	TKDTBV208-NO
2	CPVC	EPDM	253839	TKDTBC108-NO
		FPM	254036	TKDTBC208-NO

Note: 24 VDC, 4-20 mA Positioner, Fail Safe Battery Backup available. Consult IPEX Corrosion Resistant Thermoplastic Valves Price List or IPEX Representative