

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, L-PORT

Pneumatic – DOUBLE ACTING – SOCKET/THREADED

Size (in)	Body Material	Diaphragm Material	Product Code	Universal Number
1/2	PVC	EPDM	253791	TKDLBV103-DA
		FPM	253797	TKDLBV203-DA
1/2	CPVC	EPDM	254071	TKDLBC103-DA
		FPM	254001	TKDLBC203-DA
3/4	PVC	EPDM	253792	TKDLBV104-DA
		FPM	253798	TKDLBV204-DA
3/4	CPVC	EPDM	254049	TKDLBC104-DA
		FPM	254002	TKDLBC204-DA
1	PVC	EPDM	253793	TKDLBV105-DA
		FPM	253799	TKDLBV205-DA
1	CPVC	EPDM	254051	TKDLBC105-DA
		FPM	254003	TKDLBC205-DA
1-1/4	PVC	EPDM	253794	TKDLBV106-DA
		FPM	253800	TKDLBV206-DA
1-1/4	CPVC	EPDM	254052	TKDLBC106-DA
		FPM	254004	TKDLBC206-DA
1-1/2	PVC	EPDM	253795	TKDLBV107-DA
		FPM	253801	TKDLBV207-DA
1-1/2	CPVC	EPDM	254053	TKDLBC107-DA
		FPM	254005	TKDLBC207-DA
2	PVC	EPDM	253796	TKDLBV108-DA
		FPM	253802	TKDLBV208-DA
2	CPVC	EPDM	254060	TKDLBC108-DA
		FPM	254006	TKDLBC208-DA



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

Pneumatic – SPRING RETURN, NORMALLY OPEN – SOCKET/THREADED

Size (in)	Body Material	Diaphragm Material	Product Code	Universal Number
1/2	PVC	EPDM	253744	TKDLBV103-NO
		FPM	253750	TKDLBV203-NO
1/2	CPVC	EPDM	253828	TKDLBV103-NO
		FPM	254025	TKDLBC203-NO
3/4	PVC	EPDM	253745	TKDLBV104-NO
		FPM	253751	TKDLBV204-NO
3/4	CPVC	EPDM	253829	TKDLBV104-NO
		FPM	254026	TKDLBC204-NO
1	PVC	EPDM	253746	TKDLBV105-NO
		FPM	253752	TKDLBV205-NO
1	CPVC	EPDM	253830	TKDLBV105-NO
		FPM	254027	TKDLBC205-NO
1-1/4	PVC	EPDM	253747	TKDLBV106-NO
		FPM	253753	TKDLBV206-NO
1-1/4	CPVC	EPDM	253831	TKDLBV106-NO
		FPM	254028	TKDLBC206-NO
1-1/2	PVC	EPDM	253748	TKDLBV107-NO
		FPM	253754	TKDLBV207-NO
1-1/2	CPVC	EPDM	253832	TKDLBV107-NO
		FPM	254029	TKDLBC207-NO
2	PVC	EPDM	253749	TKDLBV108-NO
		FPM	253755	TKDLBV208-NO
2	CPVC	EPDM	253833	TKDLBV108-NO
		FPM	254030	TKDLBC208-NO

Pneumatic – SPRING RETURN, NORMALLY CLOSED – SOCKET/THREADED

Size (in)	Body Material	Diaphragm Material	Product Code	Universal Number
1/2	PVC	EPDM	253767	TKDLBV103-NC
		FPM	253773	TKDLBV203-NC
1/2	CPVC	EPDM	254061	TKDLBC103-NC
		FPM	254013	TKDLBC203-NC
3/4	PVC	EPDM	253768	TKDLBV104-NC
		FPM	253774	TKDLBV204-NC
3/4	CPVC	EPDM	254062	TKDLBC104-NC
		FPM	254014	TKDLBC204-NC
1	PVC	EPDM	253769	TKDLBV105-NC
		FPM	253775	TKDLBV205-NC
1	CPVC	EPDM	254063	TKDLBC105-NC
		FPM	254015	TKDLBC205-NC
1-1/4	PVC	EPDM	253770	TKDLBV106-NC
		FPM	253776	TKDLBV206-NC
1-1/4	CPVC	EPDM	254064	TKDLBC106-NC
		FPM	254016	TKDLBC206-NC
1-1/2	PVC	EPDM	253771	TKDLBV107-NC
		FPM	253777	TKDLBV207-NC
1-1/2	CPVC	EPDM	254065	TKDLBC107-NC
		FPM	254017	TKDLBC207-NC
2	PVC	EPDM	253772	TKDLBV108-NC
		FPM	253778	TKDLBV208-NC
2	CPVC	EPDM	254066	TKDLBC108-NC
		FPM	254018	TKDLBC208-NC

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