

# TKD Series 3-Way Automated Ball Valves

## Product Data Sheet



## introduction

### < STANDARDS >



ASTM D1784  
ASTM D2464  
ASTM D2466  
ASTM D2467  
ASTM F1498



ANSI B1.20.1

IPEX TKD Series 3-Way Automated Ball Valves can be used for flow diverting, mixing, or on/off isolation. They offer a variety of advanced features such as the patented seat stop carrier, a high quality stem and ball support system, and the new DUAL BLOCK® system which locks the union nuts preventing back-off due to vibration or thermal cycling. Deep grooves, thick o-rings, and cushioned Teflon® seats contribute to strong seals at pressures up to 232psi while an integral mounting flange and support bracketing combine for simple adaptation for actuation and anchoring. Actuators can be configured for 90° or 180° operation. TKD Series 3-Way Automated Ball Valves are part of our complete systems of pipe, valves, and fittings, engineered and manufactured to our strict quality, performance, and dimensional standards.

#### Valve Availability

Body Material:	PVC
Size Range:	1/2" through 2"
Pressure:	232psi
Seats:	Teflon® (PTFE)
Seals:	EPDM or Viton® (FKM)
End Connections:	Socket (IPS), Threaded (FNPT)
Actuator Control:	Double Acting Pneumatic, Spring Return Pneumatic, Electric

# TKD Series 3-Way Automated Ball Valves

## Sample Specification



### 1.0 Ball Valves - TKD

#### 1.1 Material

- The valve body, stem, ball, end connectors and unions shall be made of PVC compound which shall meet or exceed the requirements of cell classification 12454 according to ASTM D1784.

#### 1.2 Seats

- The ball seats shall be made of Teflon® (PTFE).

#### 1.3 Seals

- The o-ring seals shall be made of EPDM.  
or The o-ring seals shall be made of Viton® (FKM).

- 1.4 All other wetted parts of the valves shall comply with standards that are equivalent to NSF Standard 61 for potable water.

### 2.0 Connections

#### 2.1 Socket style

- The IPS socket PVC end connectors shall conform to the dimensional standards ASTM D2466 and ASTM D2467.

#### 2.2 Threaded style

- The female NPT threaded PVC end connectors shall conform to the dimensional standards ASTM D2464, ASTM F1498, and ANSI B1.20.1.

### 3.0 Design Features

- All valves shall be true union at all three ports.
- All valves shall be full port.
- Valve design shall permit positive shutoff of any of the three ports.
- Balls shall be of T-port or L-port design (specifier must select one).
- The valve shall have blocking seat supports at all three ports.
- The threaded carrier (ball seat support) shall be adjustable with the valve installed.
- The valve body, union nuts and carrier shall have deep square style threads for increased strength.
- The ball shall be machined smooth to minimize wear on valve seats.
- All valve seats shall have o-ring backing cushions to compensate for wear and prevent seizure of the ball.
- The thickness of the valve body shall be the same at all three ports.
- The valve shall include the Dual Block® union nut locking mechanism.
- The stem design shall feature a shear point above the o-ring to maintain system integrity in the unlikely event of a stem breakage.
- All valves shall have integrally molded mounting flanges for support and actuation.

# TKD Series 3-Way Automated Ball Valves

## *Sample Specification (cont'd)*



### 3.1 Pressure Rating

- All valves shall be rated at 232psi at 73°F (23°C).

### 3.2 Markings

- All valves shall be marked to indicate size, material designation, and manufacturers name or trade mark.

### 3.3 Color Coding

- All PVC valves shall be color-coded dark gray.

4.0 All valves shall be Xirtec®140 by IPEX or approved equal.

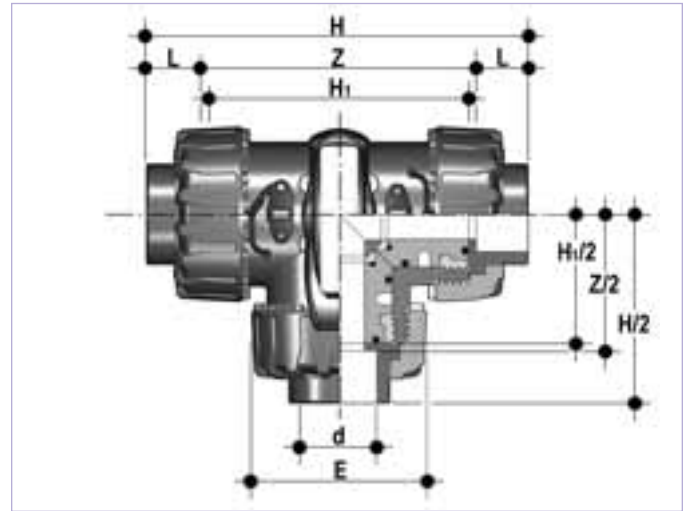
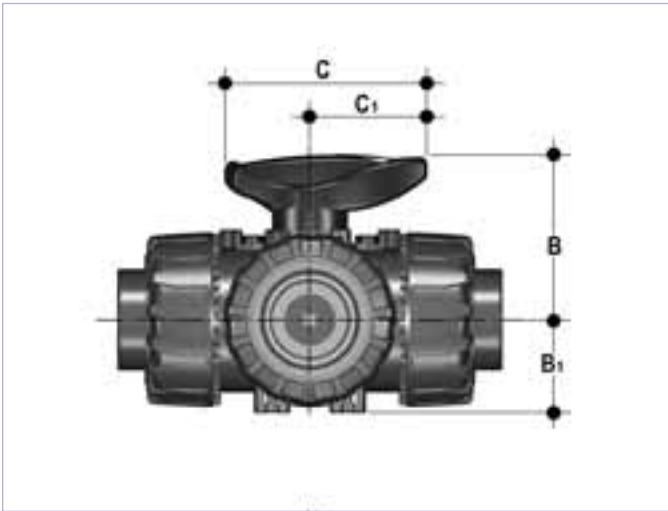
### 5.0 Actuators

- All actuators shall be factory installed by IPEX.
- Pneumatic actuators shall be dual piston rack and pinion design, sized for 80psi control air pressure.
- Electric actuators shall have 110 VAC reversing motors, torque limiters, thermal protection and NEMA 4 or equivalent housings.

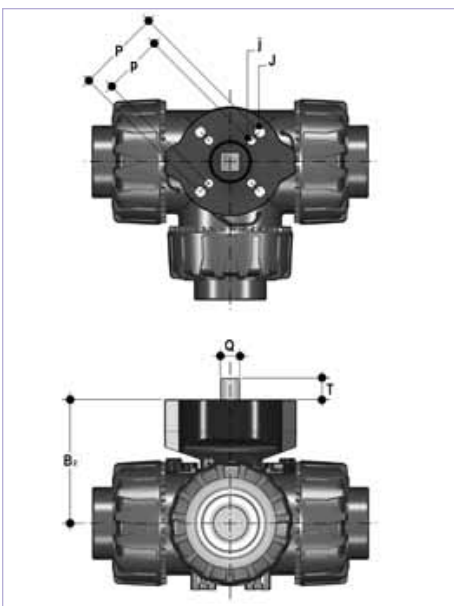
# TKD Series 3-Way Automated Ball Valves

## Technical Data

### dimensions



Dimensions (inches)										
Size	d	C	C <sub>1</sub>	B	B <sub>1</sub>	L	Z	H	H <sub>1</sub>	E
1/2	0.84	2.64	1.57	2.13	1.14	0.91	3.43	5.20	3.15	2.13
3/4	1.05	3.35	1.93	2.56	1.36	1.00	4.26	6.27	3.94	2.56
1	1.32	3.35	1.93	2.74	1.54	1.13	4.59	6.85	4.33	2.87
1-1/4	1.66	4.25	2.52	3.25	1.81	1.26	5.55	8.07	5.16	3.39
1-1/2	1.90	4.25	2.52	3.50	2.05	1.38	6.20	8.96	5.83	3.86
2	2.38	5.28	2.99	4.25	2.44	1.50	7.50	10.51	7.05	4.80



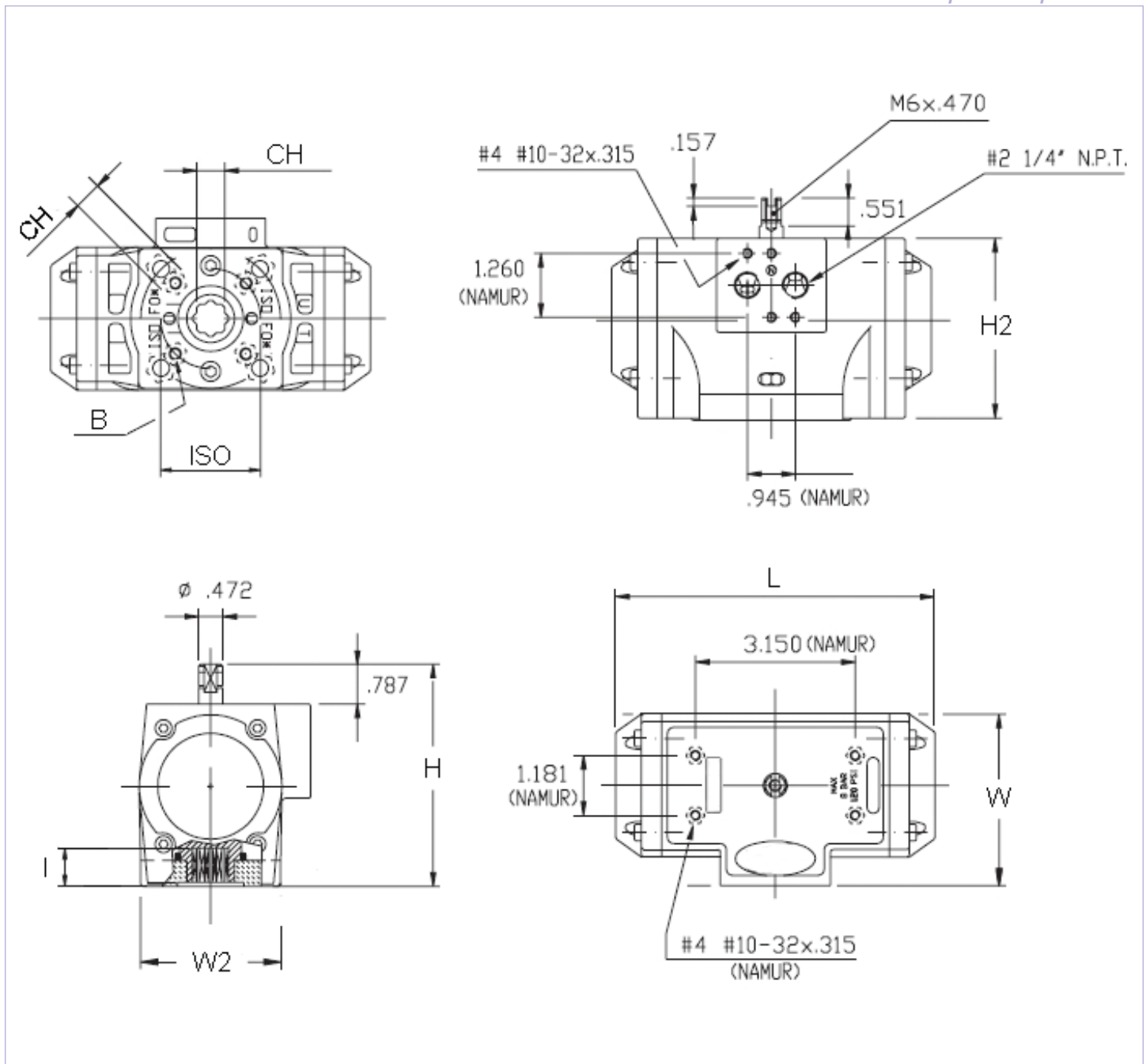
Dimensions (inches)					
Size	a	T	Q	p / P	j / J
1/2	2.28	0.47	0.43	F03 / F04	0.22
3/4	2.89	0.47	0.43	F03 / F05 or F04	0.22 / 0.26 or 0.22
1	2.91	0.47	0.43	F03 / F05 or F04	0.22 / 0.26 or 0.22
1-1/4	3.82	0.63	0.43 or 0.55	F05	0.26
1-1/2	4.09	0.63	0.43 or 0.55	F05	0.26
2	4.49	0.63	0.43 or 0.55	F05 / F07	0.26 / 0.33

# TKD Series 3-Way Automated Ball Valves

## Technical Data (cont'd)

### pneumatic actuator dimensions

models UT11, UT14, UT19

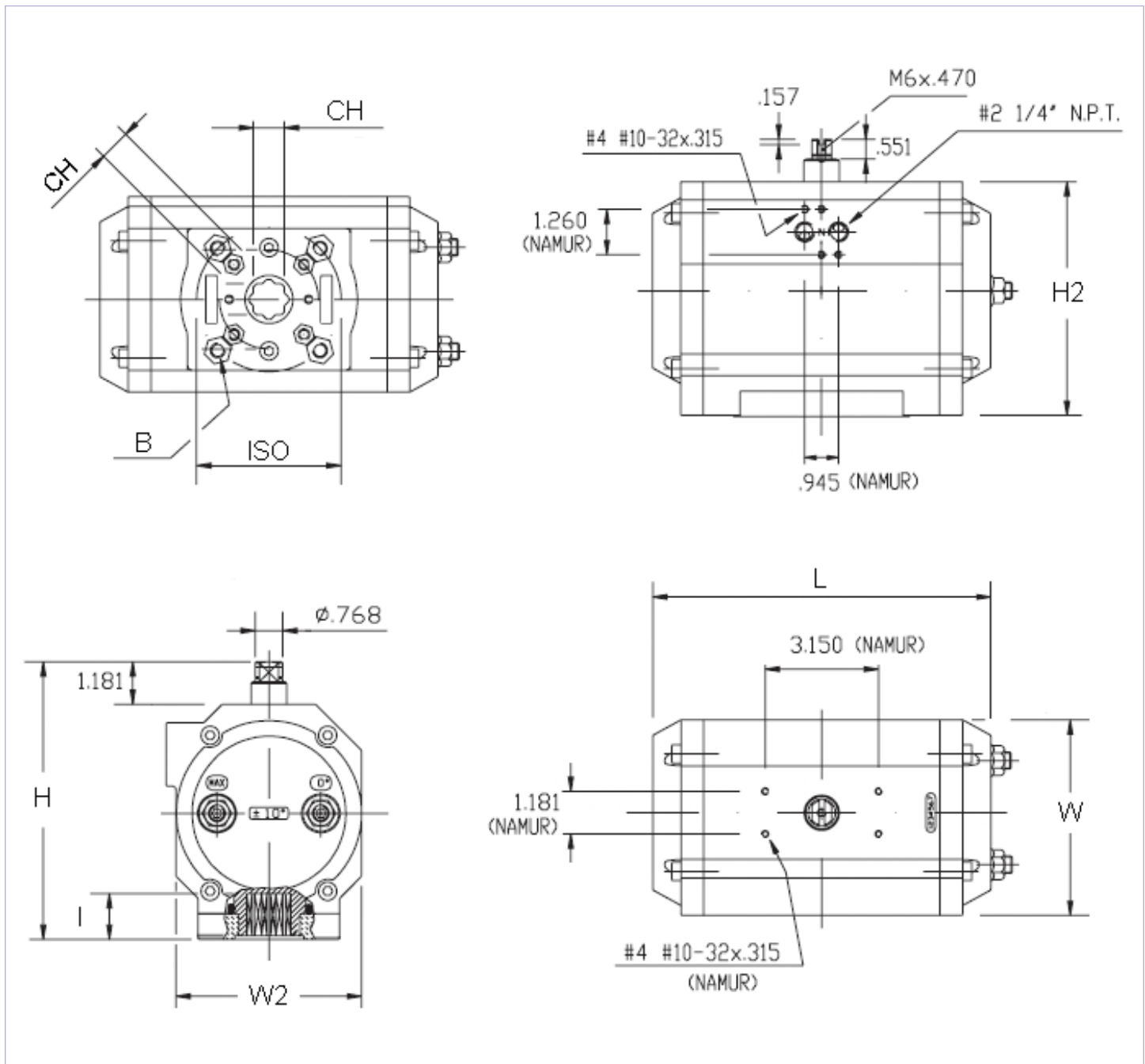


# TKD Series 3-Way Automated Ball Valves

## Technical Data (cont'd)

### pneumatic actuator dimensions (cont'd)

model UT26



# TKD Series 3-Way Automated Ball Valves

## Product Data Sheet

### pneumatic actuator dimensions (cont'd)

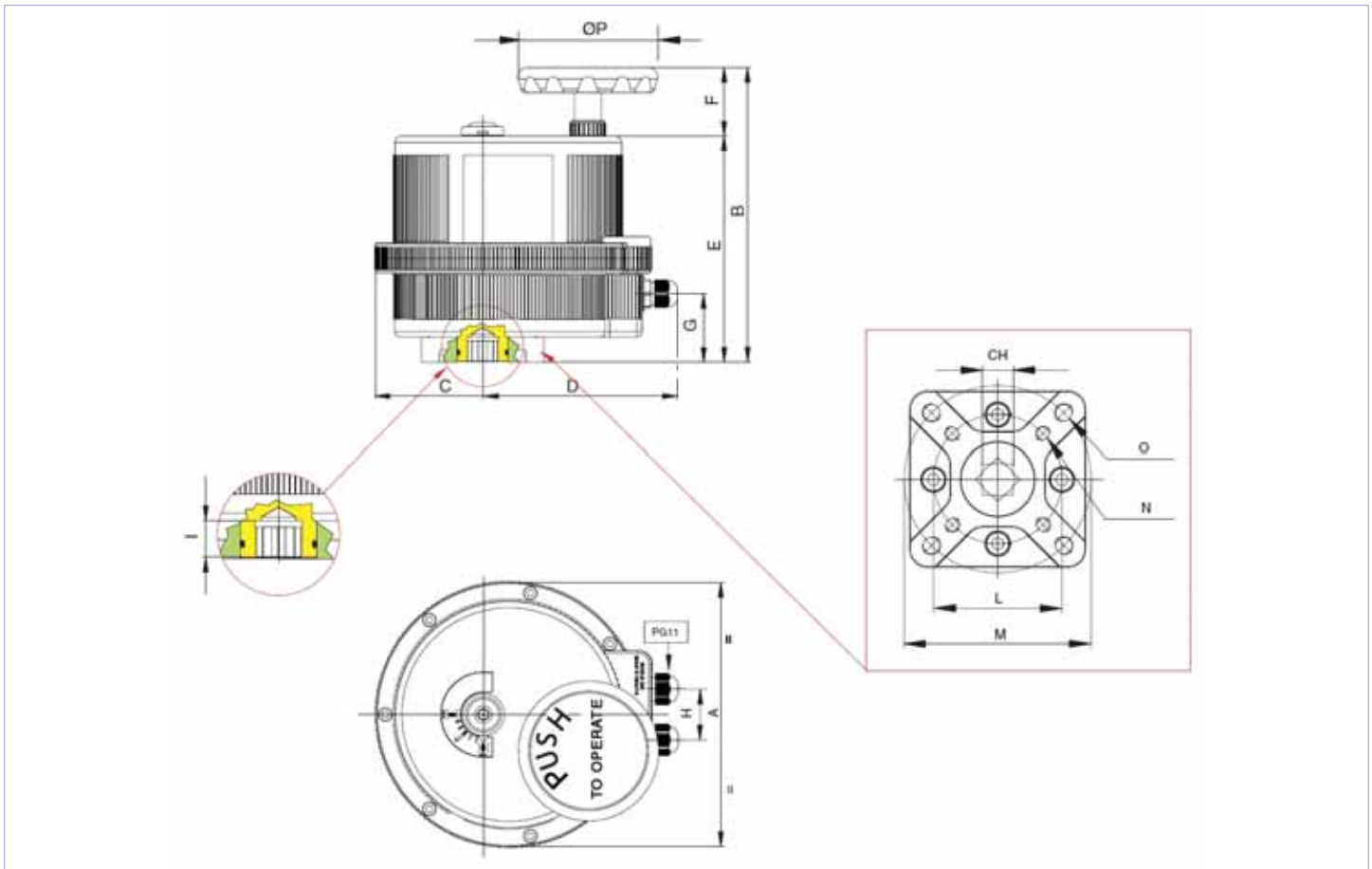
Dimensions (inches)										
Valve Size	Double Acting Model	ISO	CH	L	W	W2	H	H2	I	B
1/2	UT11DA	F04	0.43	4.69	2.64	2.09	3.58	2.76	0.49	10-32 UNF x 0.40
3/4	UT14DA	F05 / F07	0.55	6.30	3.39	2.76	4.37	3.54	0.75	1/4-20 UNC x 0.51
1	UT14DA	F05 / F07	0.55	6.30	3.39	2.76	4.37	3.54	0.75	1/4-20 UNC x 0.51
1-1/4	UT14DA	F05 / F07	0.55	6.30	3.39	2.76	4.37	3.54	0.75	1/4-20 UNC x 0.51
1-1/2	UT14DA	F05 / F07	0.55	6.30	3.39	2.76	4.37	3.54	0.75	1/4-20 UNC x 0.51
2	UT14DA	F05 / F07	0.55	6.30	3.39	2.76	4.37	3.54	0.75	1/4-20 UNC x 0.51

Dimensions (inches)										
Valve Size	Spring Return Model	ISO	CH	L	W	W2	H	H2	I	B
1/2	UT11S2	F04	0.43	4.69	2.64	2.09	3.58	2.76	0.49	10-32 UNF x 0.40
3/4	UT14S4	F05 / F07	0.55	6.30	3.39	2.76	4.37	3.54	0.75	1/4-20 UNC x 0.51
1	UT14S4	F05 / F07	0.55	6.30	3.39	2.76	4.37	3.54	0.75	1/4-20 UNC x 0.51
1-1/4	UT19S5	F05 / F07	0.67	6.89	3.98	2.76	5.22	4.39	0.91	5/16-18 UNC x 0.51
1-1/2	UT19S5	F05 / F07	0.67	6.89	3.98	2.76	5.22	4.39	0.91	5/16-18 UNC x 0.51
2	UT26S4	F05 / F07	0.67	9.41	3.78	3.39	5.63	4.41	0.91	5/16-18 UNC x 0.51

# TKD Series 3-Way Automated Ball Valves

## Technical Data (cont'd)

### electric actuator dimensions



Dimensions (inches)																
Valve Size	Actuator Model	ISO	CH	A	B	C	D	E	F	G	H	I	L	M	N	O
1/2	VB015	F03 / F05	0.43	4.84	6.28	1.67	4.78	5.67	0.61	4.35	1.26	0.47	1.42	1.97	10-24 UNC x 0.55	1/4-20 UNC x 0.55
3/4	VB015	F03 / F05	0.43	4.84	6.28	1.67	4.78	5.67	0.61	4.35	1.26	0.47	1.42	1.97	10-24 UNC x 0.55	1/4-20 UNC x 0.55
1	VB015	F03 / F05	0.43	4.84	6.28	1.67	4.78	5.67	0.61	4.35	1.26	0.47	1.42	1.97	10-24 UNC x 0.55	1/4-20 UNC x 0.55
1-1/4	VB015	F03 / F05	0.43	4.84	6.28	1.67	4.78	5.67	0.61	4.35	1.26	0.47	1.42	1.97	10-24 UNC x 0.55	1/4-20 UNC x 0.55
1-1/2	VB030	F03 / F05	0.43	6.18	7.39	2.38	5.01	5.75	1.64	1.30	1.42	0.47	1.42	1.97	10-24 UNC x 0.55	1/4-20 UNC x 0.55
2	VB030	F03 / F05	0.43	6.18	7.39	2.38	5.01	5.75	1.64	1.30	1.42	0.47	1.42	1.97	10-24 UNC x 0.55	1/4-20 UNC x 0.55



# TKD Series 3-Way Automated Ball Valves

## Technical Data (cont'd)

### actuator technical data



**Note:**  
Pneumatic actuator performance is based on 80 psi available control air pressure.

Valve Size (inches)	Dimensions		
	Double Acting Pneumatic	Actuator Model Spring Return Pneumatic	Electric
1/2	UT11DA	UT11S2	VB015
3/4	UT14DA	UT14S4	VB015
1	UT14DA	UT14S4	VB015
1-1/4	UT14DA	UT19S5	VB015
1-1/2	UT14DA	UT19S5	VB030
2	UT14DA	UT26S4	VB030

### pneumatic actuator torque data

Valve Size (inches)	Double Acting		Model	Spring Set (standard)	Spring Torque (in-lbs)		Air Torque (in-lbs)	
	Model	Torque (in-lbs)			Start	End	Start	End
1/2	UT11DA	125	UT11S2	S2	66	44	81	59
3/4	UT14DA	275	UT14S4	S4	150	107	168	125
1	UT14DA	275	UT14S4	S4	150	107	168	125
1-1/4	UT14DA	275	UT19S5	S5	307	230	270	193
1-1/2	UT14DA	275	UT19S5	S5	307	230	270	193
2	UT14DA	275	UT26S4	S4	392	247	503	358

### pneumatic actuator weights and air consumption

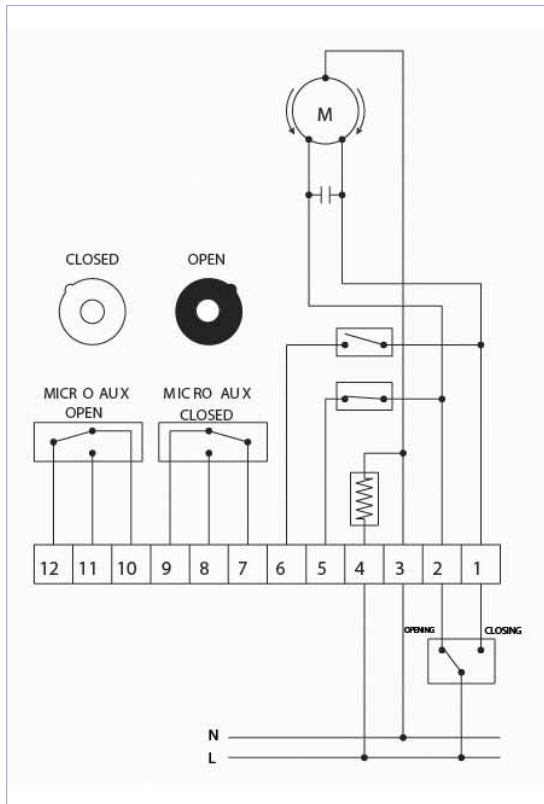
Valve Size (inches)	Dimensions					
	Model	Double Acting		Spring Return		
		Weight (lbs)	Air Cons. (in <sup>3</sup> )	Model	Weight (lbs)	Air Cons. (in <sup>3</sup> )
1/2	UT11DA	1.26	13.5	UT11S2	1.44	8.0
3/4	UT14DA	2.62	22.0	UT14S4	3.06	10.8
1	UT14DA	2.62	22.0	UT14S4	3.06	10.8
1-1/4	UT14DA	2.62	22.0	UT19S5	5.16	17.5
1-1/2	UT14DA	2.62	22.0	UT19S5	5.16	17.5
2	UT14DA	2.62	22.0	UT26S4	9.88	30.0

# TKD Series 3-Way Automated Ball Valves

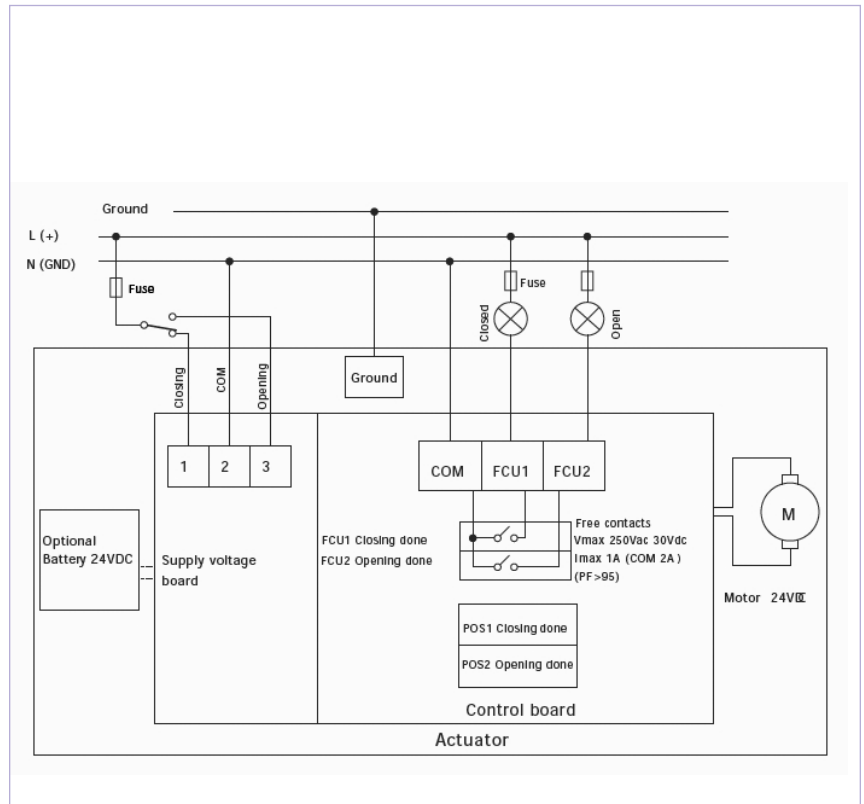
## Technical Data (cont'd)

### electrical actuator

#### model VB015



#### models VB030



Electrical Actuator Data

Model	VB015	VB030
Maximum Working Torque (in-lbs)	133	266
1 Voltage	110 VAC	100 - 240 VAC
2 Absorbed Current	50 mA	0.3 - 0.2 A
3 Absorbed Power	6.6 VA	30 - 48 VA
4 Working Time	25 sec	8 sec
5 Torque Limiter	STD	STD
6 Duty Rating	50%	75%
7 Protection	IP 65-67	IP 65 - 67
8 Rotation	90°	90°
9 Manual Override	STD	STD
10 Position Indicator	STD	STD
11 Working Temperature	-4°F / +131°F	-4°F / +131°F
12 Heater	STD	STD
13 Additional Limit Switches	2 STD	2 STD
14 ISO 5211 Mounting	F03 - F05	F03 - F05
15 Square (in)	0.43	0.43
16 Electrical Connections	PG11	PG11
17 Weight (lbs)	3.09	5.07

# TKD Series 3-Way Automated Ball Valves

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IPEX is a leading supplier of thermoplastic piping systems. We provide our customers with one of the largest and most comprehensive product lines. All IPEX products are backed by over 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers, the IPEX name is synonymous with quality and performance.

Our products and systems have been designed for a broad range of customers and markets. Contact us for information on:

- PVC, CPVC, PP, FR-PVDF, ABS, PEX and PE pipe and fittings (1/4" to 48")
- Industrial process piping systems
- Double containment systems
- Acid waste systems
- High purity systems
- Industrial, plumbing and electrical cements
- Municipal pressure and gravity piping systems
- Plumbing and mechanical pipe systems
- Electrical systems
- Telecommunications systems
- Irrigation systems
- PE Electrofusion systems for gas and water
- Radiant heating systems

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