

VKD Series Automated Ball Valves

Product Data Sheet



introduction

< STANDARDS >



ASTM D1784
ASTM D2464
ASTM D2466
ASTM D2467
ASTM D4101
ASTM F1498
ASTM F437
ASTM F439



ANSI B1.20.1



ISO 11922-1

IPEX VKD Series Automated Ball Valves 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. VKD Series 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, CPVC, PP, ABS
Size Range:	1/2" through 4"
Pressure:	232psi, 150psi (PP)
Seats:	Teflon® (PTFE)
Seals:	EPDM or Viton® (FKM)
End Connections:	Socket (IPS), Threaded (FNPT), Socket (Metric)
Actuator Control:	Double Acting Pneumatic, Spring Return Pneumatic, Electric

VKD Series Automated Ball Valves

Sample Specification



1.0 Ball Valves - VKD

1.1 Material

- The valve body, stem, ball and unions shall be made of PVC compound which shall meet or exceed the requirements of cell classification 12454 according to ASTM D1784.
- or The valve body, stem, ball and unions shall be made of Corzan® CPVC compound which shall meet or exceed the requirements of cell classification 23447 according to ASTM D1784.
- or The valve body, stem, ball and unions shall be made of stabilized PP homo-polymer compound, also containing a RAL 7032 pigment, which shall meet or exceed the requirements of Type I Polypropylene according to ASTM D4101.
- or The valve body, stem, ball and unions shall be made of Duraplus® ABS compound compound, which shall meet or exceed the requirements of cell classification 43234 according to ASTM D3965.

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.
- or The IPS socket CPVC end connectors shall conform to the dimensional standard ASTM F439.
- or The Metric socket PP end connectors shall conform to the dimensional standard ISO 11922-1.

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.
- or The female NPT threaded CPVC end connectors shall conform to the dimensional standards ASTM F437, ASTM F1498, and ANSI B1.20.1.
- or The female NPT threaded PP end connectors shall conform to the dimensional standards ASTM F1498, and ANSI B1.20.1.

3.0 Design Features

- The valve shall be double blocking with union ends.
- All valves shall be full port.
- All valves shall allow for bi-directional flow.

VKD Series Automated Ball Valves

Sample Specification (cont'd)



- The valve body shall be single end entry with a threaded carrier (ball seat support).
- The threaded carrier shall be adjustable with the valve installed.
- The valve body shall have an expansion and contraction compensating groove on the molded end.
- The valve body, union nuts and carrier shall have deep square style threads for increased strength.
- The ball and stem shall be machined smooth to minimize wear on valve seats and seals.
- All valve seats shall have o-ring backing cushions to compensate for wear and prevent seizure of the ball.
- The stem design shall feature double o-ring seals as well as a safety shear point above the o-rings.
- All valves shall have integrally molded mounting features for actuation.
- All valves shall have integrally molded support bracketing for anchoring.
- The valve shall include the Dual Block® union nut locking mechanism.

3.1 Pressure Testing

- All valves shall have been pressure tested in both the open and closed positions by the manufacturer.

3.2 Pressure Rating

- All PVC, CPVC and ABS valves shall be rated at 232psi at 73°F.
- All PP valves shall be rated at 150psi at 73°F.

3.3 Markings

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

3.4 Color Coding

- All PVC valves shall be color-coded dark gray.
- or All CPVC valves shall be color-coded light gray.
- or All PP valves shall be color coded beige gray.
- or All ABS valves shall be color coded light gray.

4.0 All valves shall be Xirtec® 140, Corzan®, SFPP or Duraplus® by IPEX or approved equal.

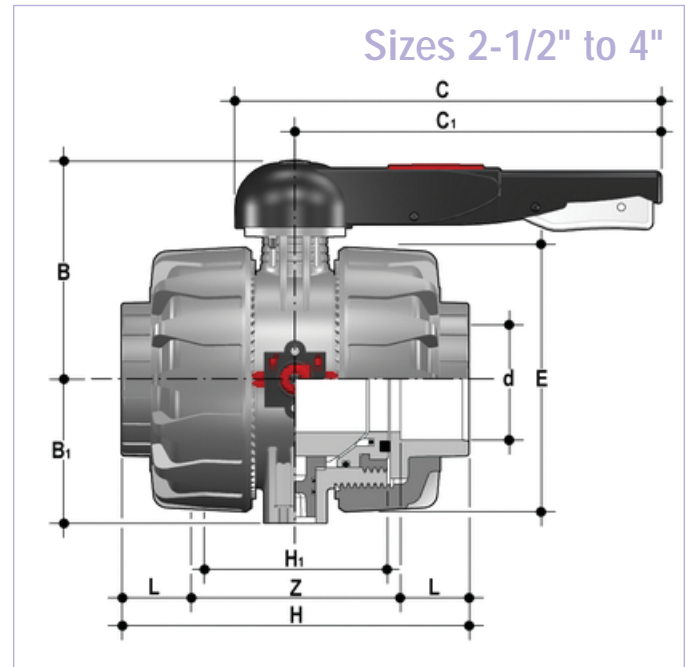
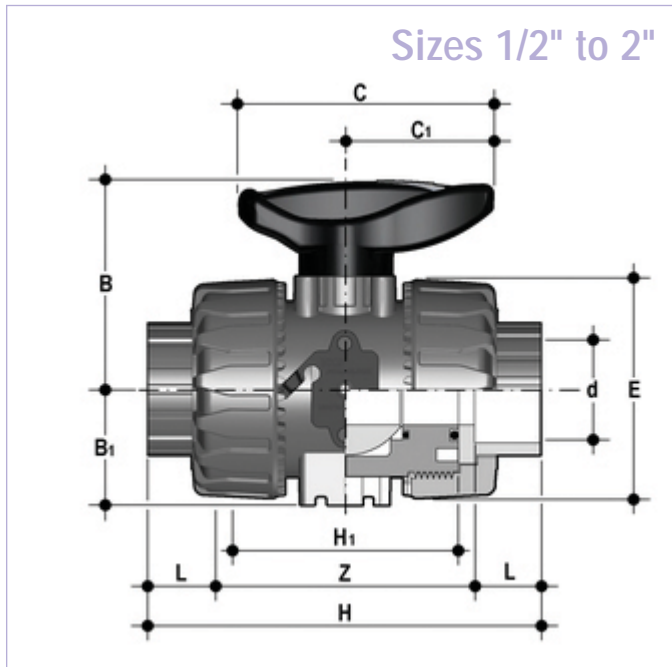
5.0 Actuators

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

VKD Series Automated Ball Valves

Technical Data

dimensions

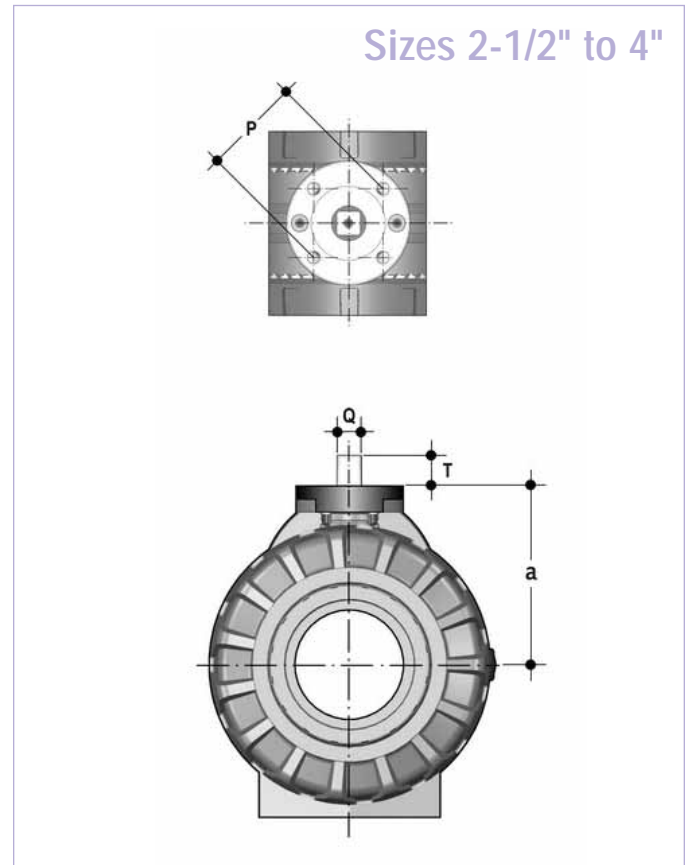
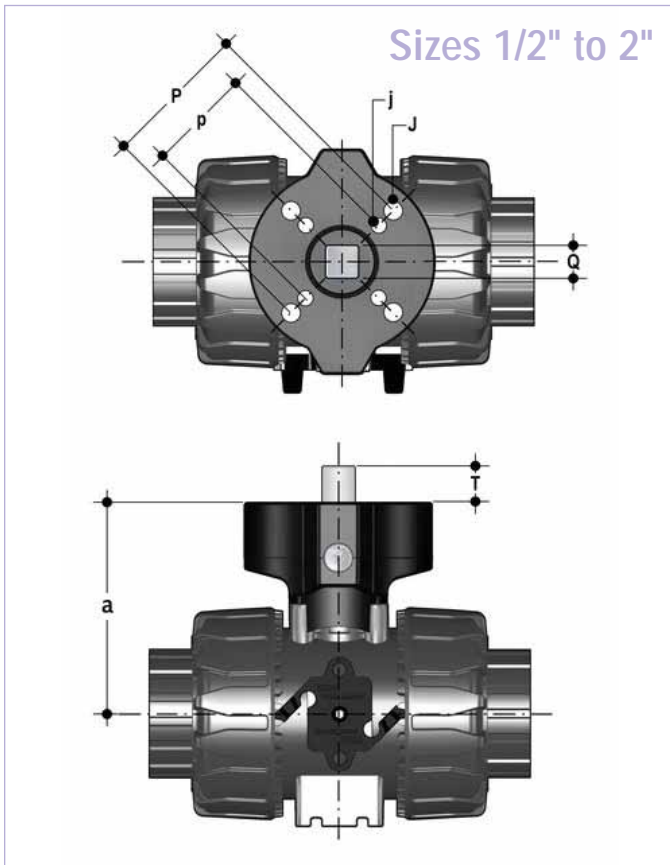


Dimensions (inches)										
Size	d	L	Z	H	H ₁	E	B ₁	B	C ₁	C
1/2	0.84	0.89	2.83	4.61	2.56	2.13	1.14	2.13	1.57	2.64
3/4	1.05	1.00	3.07	5.08	2.76	2.56	1.36	2.56	1.93	3.35
1	1.32	1.13	3.33	5.59	3.07	2.87	1.54	2.74	1.93	3.35
1-1/4	1.66	1.26	3.86	6.38	3.46	3.39	1.81	3.25	2.52	4.25
1-1/2	1.90	1.38	4.02	6.77	3.66	3.86	2.05	3.50	2.52	4.25
2	2.38	1.50	4.83	7.83	4.37	4.80	2.44	4.25	2.99	5.28
2-1/2	2.88	1.75	5.75	9.25	5.24	6.46	3.43	6.46	6.89	8.86
3	3.50	1.89	6.85	10.63	5.87	7.99	4.13	6.97	10.71	12.87
4	4.50	2.26	7.60	12.13	6.57	9.37	5.08	7.80	12.99	15.16

VKD Series Automated Ball Valves

Technical Data (cont'd)

dimensions (cont'd)



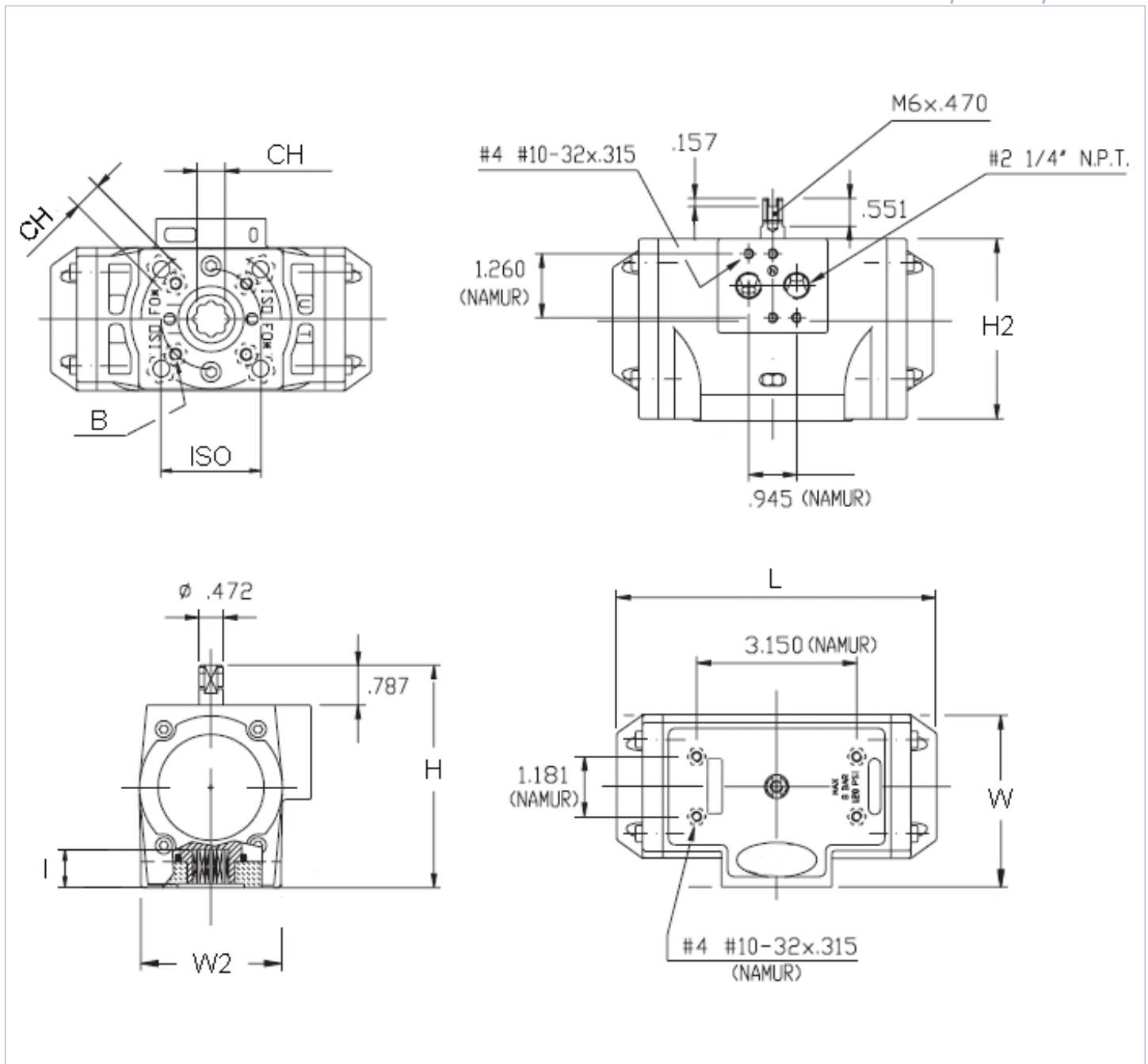
Size	Dimensions (inches)				
	a	T	Q	p / P	j / J
1/2	2.28	0.47	0.43	F03 / F04	0.22
3/4	2.89	0.47	0.43	F03 / F05 or F04	0.22 / 0.26 or 0.22
1	2.91	0.47	0.43	F03 / F05 or F04	0.22 / 0.26 or 0.22
1-1/4	3.82	0.63	0.43 or 0.55	F05	0.26
1-1/2	4.09	0.63	0.43 or 0.55	F05	0.26
2	4.49	0.63	0.43 or 0.55	F05 / F07	0.26 / 0.33
2-1/2	4.69	0.63	0.55	F07	-
3	5.20	0.63	0.55	F07	-
4	5.91	0.75	0.67	F07	-

VKD Series Automated Ball Valves

Technical Data (cont'd)

pneumatic actuator dimensions

models UT11, UT14, UT19

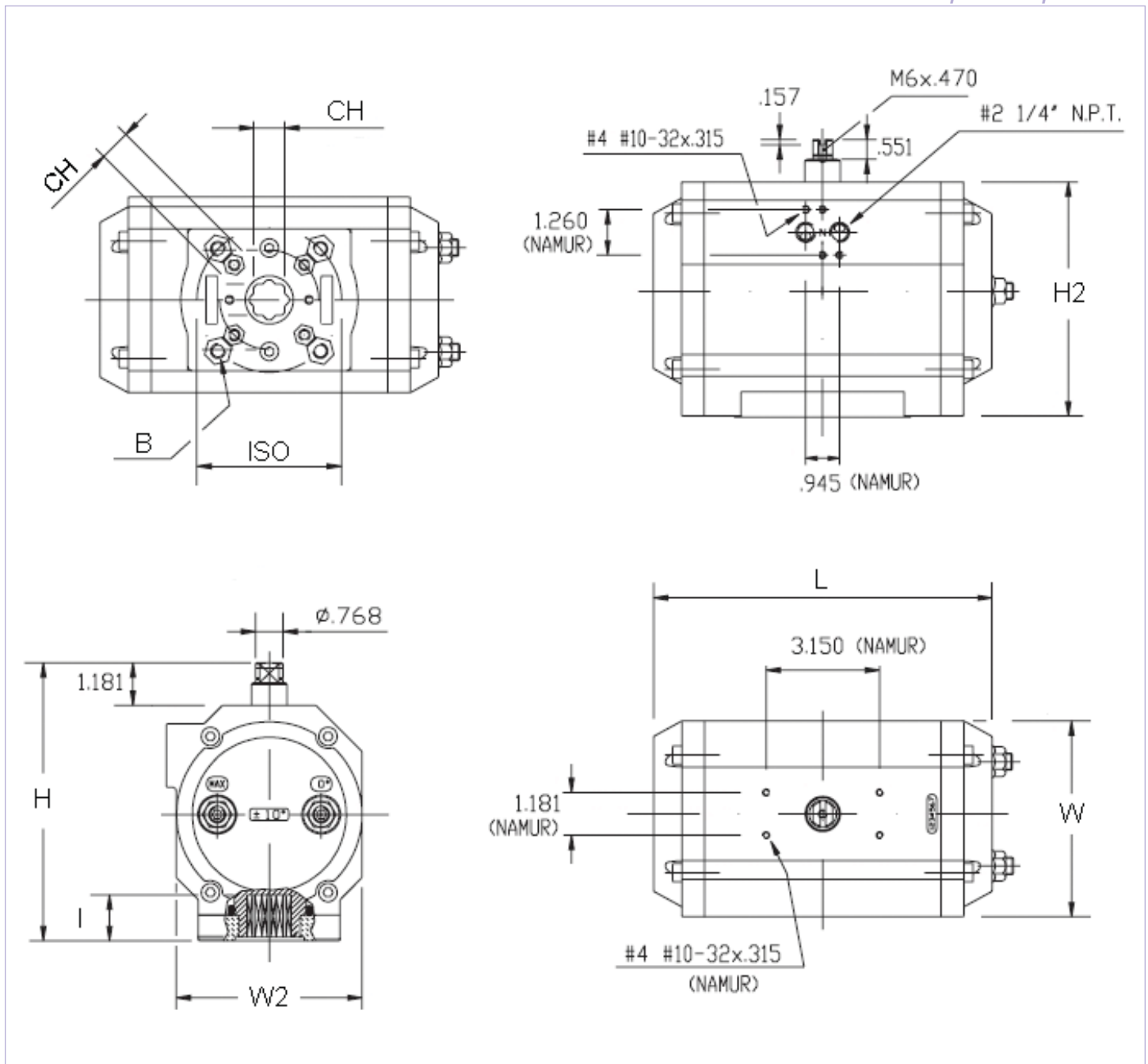


VKD Series Automated Ball Valves

Technical Data (cont'd)

pneumatic actuator dimensions (cont'd)

models UT26, UT31, UT36



VKD Series Automated Ball Valves

Product Data Sheet

pneumatic actuator dimensions (cont'd)

Valve Size	Double Acting Model	ISO	Dimensions (inches)							
			CH	L	W	W ₂	H	H ₂	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	UT11DA	F04	0.43	4.69	2.64	2.09	3.58	2.76	0.49	10-32 UNF x 0.40
1	UT11DA	F04	0.43	4.69	2.64	2.09	3.58	2.76	0.49	10-32 UNF x 0.40
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
2-1/2	UT19DA	F05 / F07	0.67	6.89	3.98	2.76	5.22	4.39	0.91	5/16-18 UNC x 0.51
3	UT19DA	F05 / F07	0.67	6.89	3.98	2.76	5.22	4.39	0.91	5/16-18 UNC x 0.51
4	UT26DA	F05 / F07	0.67	9.41	3.78	3.39	5.63	4.41	0.91	5/16-18 UNC x 0.51

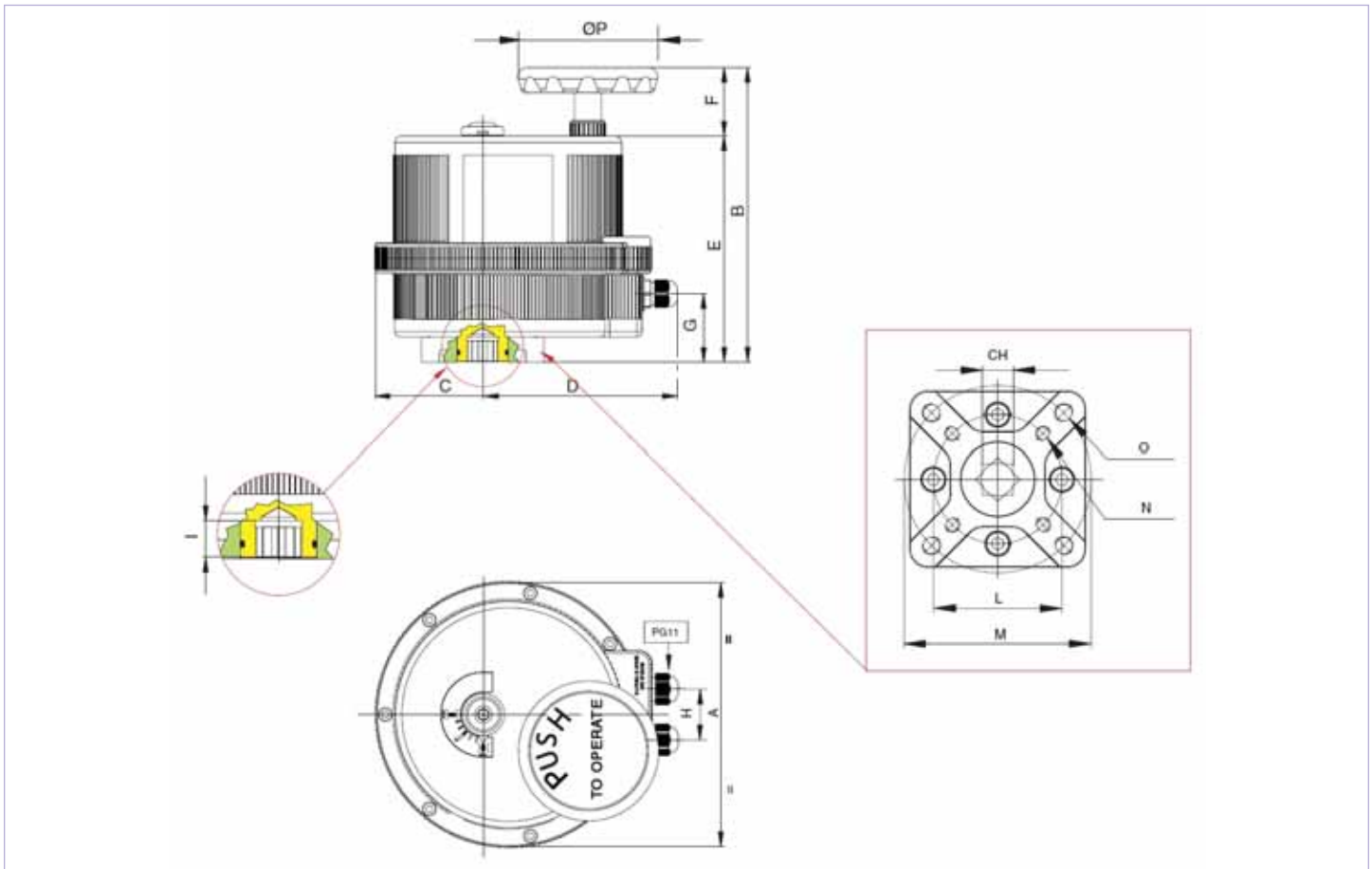
Valve Size	Spring Return Model	ISO	Dimensions (inches)							
			CH	L	W	W ₂	H	H ₂	I	B
1/2	UT11S2	F04	0.43	4.69	2.64	2.09	3.58	2.76	0.49	10-32 UNF x 0.40
3/4	UT11S2	F04	0.43	4.69	2.64	2.09	3.58	2.76	0.49	10-32 UNF x 0.40
1	UT14S4	F05 / F07	0.55	6.30	3.39	2.76	4.37	3.54	0.75	1/4-20 UNC x 0.51
1-1/4	UT14S4	F05 / F07	0.55	6.30	3.39	2.76	4.37	3.54	0.75	1/4-20 UNC x 0.51
1-1/2	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	UT19S5	F05 / F07	0.67	6.89	3.98	2.76	5.22	4.39	0.91	5/16-18 UNC x 0.51
2-1/2	UT31S4	F05 / F07	0.67	9.06	4.45	4.09	6.38	5.16	0.91	5/16-18 UNC x 0.51
3	UT31S4	F05 / F07	0.67	9.06	4.45	4.09	6.38	5.16	0.91	5/16-18 UNC x 0.51
4	UT36S4	F05 / F07	0.87	9.69	5.43	5.16	7.72	6.50	1.18	3/8-16 UNC x 0.71



VKD Series 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
2-1/2	VB060	F05 / F07	0.55	7.28	8.46	2.66	5.77	6.81	1.65	2.01	1.42	0.63	1.97	2.76	1/4-20 UNC x 0.67	5/16-18 UNC x 0.67
3	VB060	F05 / F07	0.55	7.28	8.46	2.66	5.77	6.81	1.65	2.01	1.42	0.63	1.97	2.76	1/4-20 UNC x 0.67	5/16-18 UNC x 0.67
4	VB110	F07 / F10	0.67	8.19	9.14	3.31	6.02	7.01	2.13	2.13	1.57	0.75	2.76	4.02	5/16-18 UNC x 0.79	3/8-16 UNC x 0.79

VKD Series 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	UT11DA	UT11S2	VB015
1	UT11DA	UT14S4	VB015
1-1/4	UT14DA	UT14S4	VB015
1-1/2	UT14DA	UT19S5	VB030
2	UT14DA	UT19S5	VB030
2-1/2	UT19DA	UT31S4	VB060
3	UT19DA	UT31S4	VB060
4	UT26DA	UT36S4	VB110

pneumatic actuator torque data

Valve Size (inches)	Dimensions							
	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	UT11DA	125	UT11S2	S2	66	44	81	59
1	UT11DA	125	UT14S4	S4	150	107	168	125
1-1/4	UT14DA	275	UT14S4	S4	150	107	168	125
1-1/2	UT14DA	275	UT19S5	S5	307	230	270	193
2	UT14DA	275	UT19S5	S5	307	230	270	193
2-1/2	UT19DA	500	UT31S4	S4	502	374	626	498
3	UT19DA	500	UT31S4	S4	502	374	626	498
4	UT26DA	750	UT36S4	S4	824	614	986	776

pneumatic actuator weights and air consumption

Valve Size (inches)	Dimensions					
	Model	Double Acting		Spring Return		
Weight (lbs)		Air Cons. (in ³)	Model	Weight (lbs)	Air Cons. (in ³)	
1/2	UT11DA	1.26	13.5	UT11S2	1.44	8.0
3/4	UT11DA	1.26	13.5	UT11S2	1.44	8.0
1	UT11DA	1.26	13.5	UT14S4	3.06	10.8
1-1/4	UT14DA	2.62	22.0	UT14S4	3.06	10.8
1-1/2	UT14DA	2.62	22.0	UT19S5	5.16	17.5
2	UT14DA	2.62	22.0	UT19S5	5.16	17.5
2-1/2	UT19DA	4.34	40.6	UT31S4	12.3	40.6
3	UT19DA	4.34	40.6	UT31S4	12.3	40.6
4	UT26DA	8.82	68.7	UT36S4	19.9	75.0

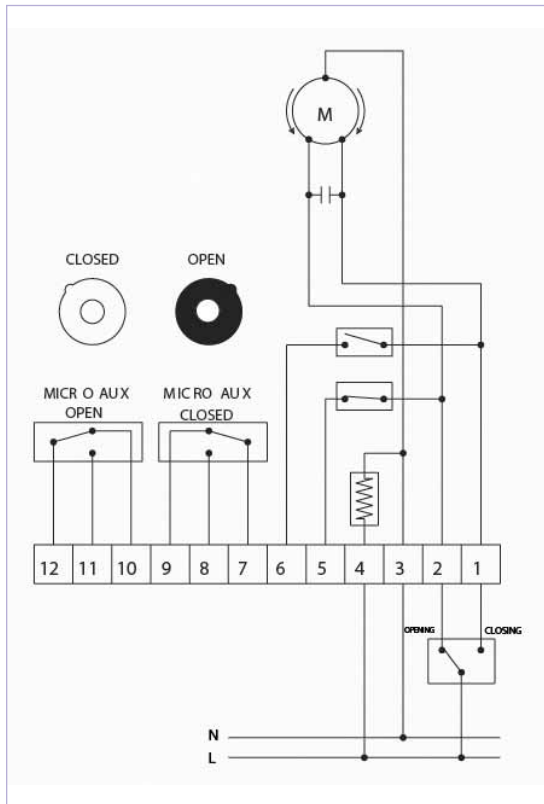


VKD Series Automated Ball Valves

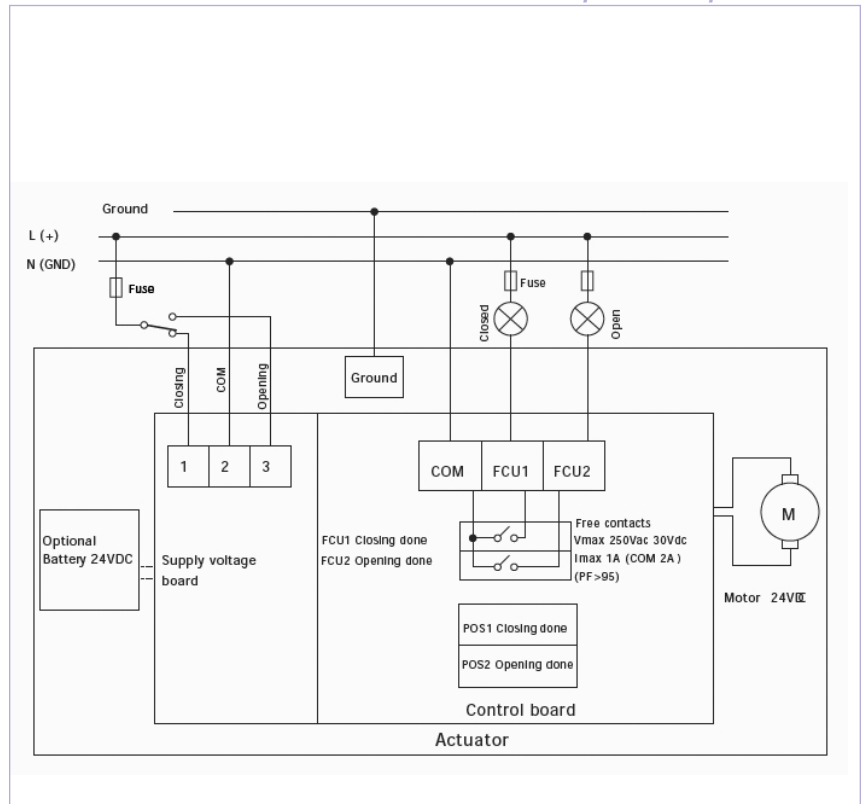
Technical Data (cont'd)

electrical actuator

model VB015



models VB030, VB060, VB110



Electrical Actuator Data

Model	VB015	VB030	VB060	VB110
Maximum Working Torque (in-lbs)	133	266	530	975
1 Voltage	110 VAC	100 - 240 VAC	100 - 240 VAC	100 - 240 VAC
2 Absorbed Current	50 mA	0.3 - 0.2 A	0.6 - 0.3 A	0.6 - 0.3 A
3 Absorbed Power	6.6 VA	30 - 48 VA	60 - 72 VA	60 - 72 VA
4 Working Time	25 sec	8 sec	9 sec	27 sec
5 Torque Limiter	STD	STD	STD	STD
6 Duty Rating	50%	75%	75%	75%
7 Protection	IP 65-67	IP 65 - 67	IP 65 - 67	IP 65 - 67
8 Rotation	90°	90°	90°	90°
9 Manual Override	STD	STD	STD	STD
10 Position Indicator	STD	STD	STD	STD
11 Working Temperature	-4°F / +131°F	-4°F / +131°F	-4°F / +131°F	-4°F / +131°F
12 Heater	STD	STD	STD	STD
13 Additional Limit Switches	2 STD	2 STD	2 STD	2 STD
14 ISO 5211 Mounting	F03 - F05	F03 - F05	F05 - F07	F07 - F10
15 Square (in)	0.43	0.43	0.55	0.67
16 Electrical Connections	PG11	PG11	PG11	PG11
17 Weight (lbs)	3.09	5.07	7.28	10.80

VKD Series Automated Ball Valves

About IPEX

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

WARRANTY: All IPEX products are guaranteed against defects resulting from faulty workmanship or materials. If any such product is found to be defective by reason of faulty workmanship or materials, upon written notice and return of the product, the defective product will be replaced by IPEX free of charge, including shipping charges for the replacement product. Claims for labor costs and other expenses required to replace such defective product or to repair any damage resulting from the use thereof will not be allowed by IPEX. Our liability is limited to the price paid for the defective product. IPEX will not be bound by any warranty, other than the above set forth, unless such warranty is in writing.

This literature is published in good faith and is believed to be reliable. However, IPEX does not represent and/or warrant in any manner the information and suggestions contained in this brochure. Data presented is the result of laboratory tests and field experience.

IPEX maintains a policy of ongoing product improvement. This may result in modification of features and/or specifications without notice.

