

VK Series Ball Valves

Submittal Data Sheet



Job or Customer: _____

Engineer: _____

Contractor: _____

Submitted by: _____ Date _____

Approved by: _____ Date _____

Order No: _____ Date _____

Specification: _____

introduction

IPEX VK Series Ball Valves are ideal for industrial and automated applications. These high quality valves feature a compact double block design, and full port bi-directional operation. A patented seat stop carrier allows for in-line micro-adjustment of the ball seating, and provides o-ring cushioning to minimize wear and prevent seizing. The true union design allows the valve to be easily removed from the piping system while the removable tool allows for simple ball seat adjustment. VK Series Ball Valves are part of our complete systems of pipe, valves, and fittings, engineered and manufactured to our strict quality, performance, and dimensional standards.

< STANDARDS >



ASTM D1784
ASTM D4101-86
ASTM D3222
ASTM D2466
ASTM D2467
ASTM F439
ASTM D2464
ASTM F437
ASTM F1498



ISO 3609
ISO 10931



ANSI B1.20.1
ANSI B16.5

Valve Availability

Body Material:	PVC, CPVC, PP, PVDF
Size Range:	1/2" through 6" (PVC, CPVC), 1/2" through 2" (PP, PVDF)
Pressure:	232 psi (1/2" to 2") 150 psi (2 1/2" to 6") 150 psi (all sizes of PP)
Seats:	Teflon® (PTFE)
Seals:	EPDM, or Viton® (FPM)
End Connections:	Socket (IPS) Threaded (FNPT) Flanged (ANSI 150) Socket (Metric)

VK Series Ball Valves

Valve Selection

Size (inches)	Body Material	O-ring Material	IPEX Part Number			Pressure Rating @ 73°F
			IPS Socket	FNPT Threaded	ANSI Flanged	
1/2	PVC	EPDM	053563	053673	232 psi for Socket or Threaded	
		Viton®	053564	053683		
	CPVC	EPDM	053600	053696		
		Viton®	053601	053706		
3/4	PVC	EPDM	053565	053674		
		Viton®	053566	053684		
	CPVC	EPDM	053602	053697		
		Viton®	053603	053707		
1	PVC	EPDM	053567	053675	150 psi for Flanged	
		Viton®	053568	053685		
	CPVC	EPDM	053604	053698		
		Viton®	053605	053708		
1-1/4	PVC	EPDM	053569	053676		
		Viton®	053570	053686		
	CPVC	EPDM	053606	053699		
		Viton®	053607	053709		
1-1/2	PVC	EPDM	053571	053677	150 psi for all joint types	
		Viton®	053572	053687		
	CPVC	EPDM	053693	053700		
		Viton®	053609	053710		
2	PVC	EPDM	053573	053678		
		Viton®	053574	053688		
	CPVC	EPDM	053610	053701		
		Viton®	053611	053711		
2-1/2	PVC	EPDM	053575	n/a	053679	
		Viton®	053576	n/a	053689	
	CPVC	EPDM	053588	n/a	053702	
		Viton®	053589	n/a	053712	
3	PVC	EPDM	053579	n/a	053680	
		Viton®	053580	n/a	053690	
	CPVC	EPDM	053592	n/a	053703	
		Viton®	053593	n/a	053713	
4	PVC	EPDM	053584	n/a	053681	
		Viton®	053585	n/a	053691	
	CPVC	EPDM	053596	n/a	053704	
		Viton®	053597	n/a	053714	
6	PVC	EPDM	053671	n/a	053682	
		Viton®	053672	n/a	053692	
	CPVC	EPDM	053694	n/a	053705	
		Viton®	053695	n/a	053715	

Size (inches)	Metric Size	Body Material	O-ring Material	IPEX Part Number			Pressure Rating @ 73°F
				IPS Socket	FNPT Threaded	ANSI Flanged	
1/2	20mm	PP	EPDM	053716	053728	053740	150 psi
			Viton®	053722	053734	053746	232 psi
	25mm	PP	EPDM	053717	053729	053741	150 psi
			Viton®	053723	053735	053747	232 psi
3/4	25mm	PVDF	EPDM	053753	053759	053765	232 psi
			Viton®	053754	053760	053766	232 psi
1	32mm	PP	EPDM	053718	053730	053742	150 psi
			Viton®	053724	053736	053748	232 psi
	40mm	PP	EPDM	053719	053731	053743	150 psi
			Viton®	053725	053737	053749	232 psi
1-1/4	40mm	PVDF	EPDM	053755	053761	053767	232 psi
			Viton®	053720	053732	053744	150 psi
1-1/2	50mm	PP	EPDM	053720	053732	053744	150 psi
			Viton®	053726	053738	053750	232 psi
	63mm	PP	EPDM	053756	053762	053768	232 psi
			Viton®	053721	053733	053745	150 psi
	63mm	PVDF	EPDM	053727	053739	053751	150 psi
			Viton®	053757	053763	053769	232 psi

Body Material:

- PVC PP
 CPVC PVDF

Size (inches):

- 1/2 2
 3/4 2-1/2
 1 3
 1-1/4 4
 1-1/2 6

- 20mm 40mm
 25mm 50mm
 32mm 63mm

Seals:

- EPDM
 Viton® (FPM)

End Connections:

- Socket (IPS)
 Threaded (FNPT)
 Flanged (ANSI 150)
 Socket (Metric)

IPEX Part Number:

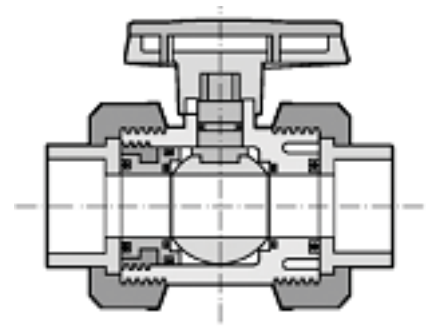
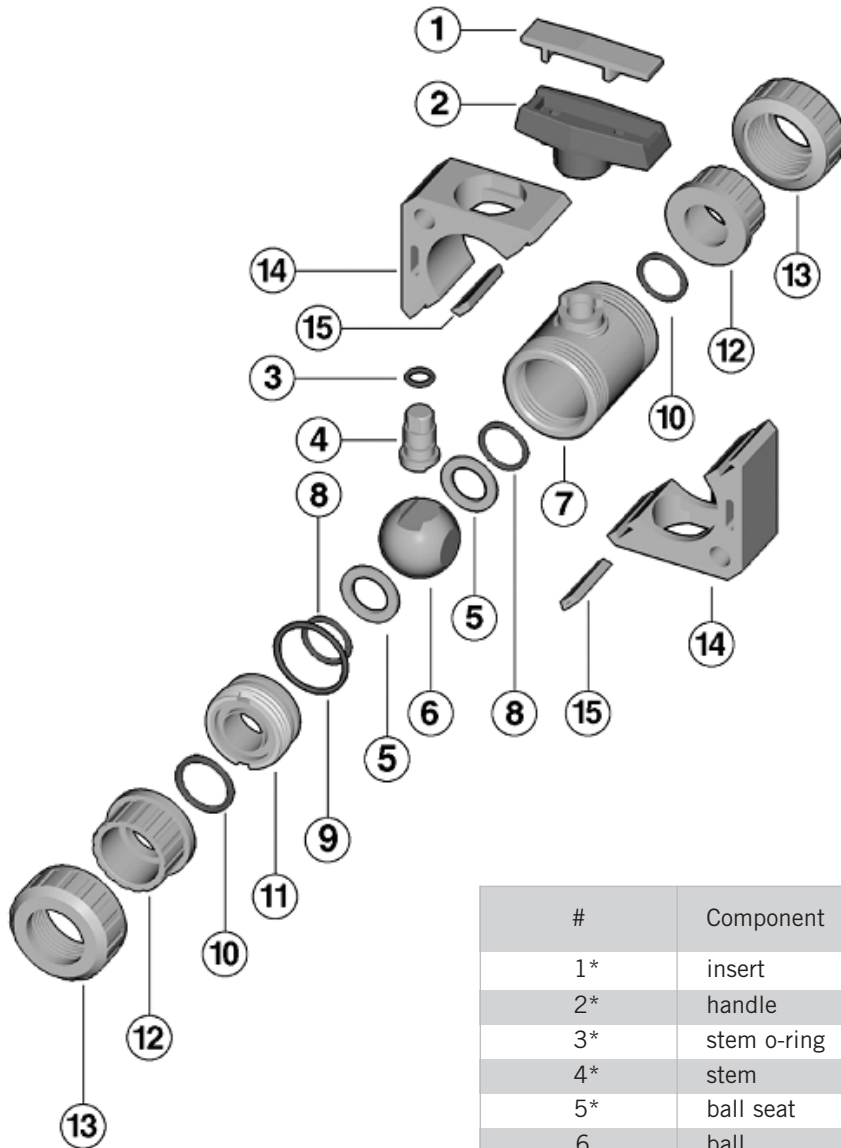
Flanged valves are rated at 150 psi at 73°F



VK Series Ball Valves

Components

sizes 1/2" through 2"



#	Component	Material	Qty
1*	insert	PVC	1
2*	handle	PVC	1
3*	stem o-ring	EPDM or FPM	1
4*	stem	PVC / CPVC / PP / PVDF	1
5*	ball seat	PTFE	2
6	ball	PVC / CPVC / PP / PVDF	1
7	body	PVC / CPVC / PP / PVDF	1
8*	ball seat o-ring	EPDM or FPM	2
9*	body o-ring	EPDM or FPM	1
10*	socket o-ring	EPDM or FPM	2
11	carrier w/ stop-ring	PVC / CPVC / PP / PVDF	1
12*	end connector	PVC / CPVC / PP / PVDF	2
13*	union nut	PVC / CPVC / PP / PVDF	2
14	half-bracket	Technopolymer	2
15	wedge	Technopolymer	2

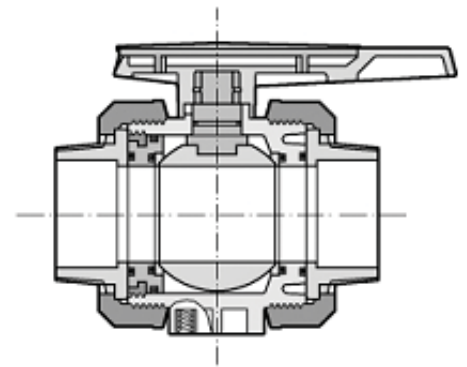
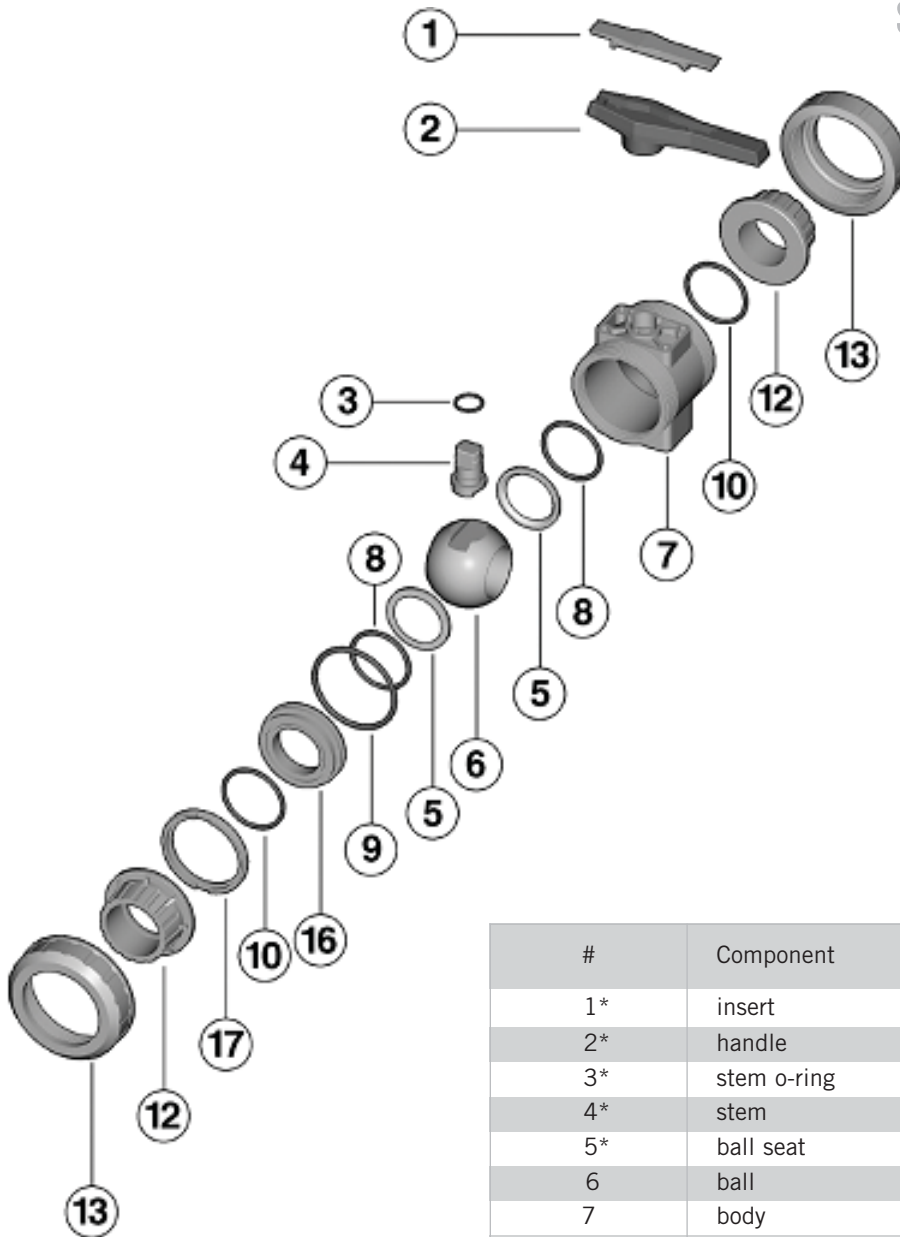
* Spare parts available.



VK Series Ball Valves

Components (cont'd)

sizes 2-1/2" through 3"



#	Component	Material	Qty
1*	insert	PVC	1
2*	handle	PVC	1
3*	stem o-ring	EPDM or FPM	1
4*	stem	PVC / CPVC / PP / PVDF	1
5*	ball seat	PTFE	2
6	ball	PVC / CPVC / PP / PVDF	1
7	body	PVC / CPVC / PP / PVDF	1
8*	ball seat o-ring	EPDM or FPM	2
9*	body o-ring	EPDM or FPM	1
10*	socket o-ring	EPDM or FPM	2
12*	end connector	PVC / CPVC / PP / PVDF	2
13*	union nut	PVC / CPVC / PP / PVDF	2
16	carrier	PVC / CPVC / PP / PVDF	1
17	stop-ring	PVC / CPVC / PP / PVDF	1

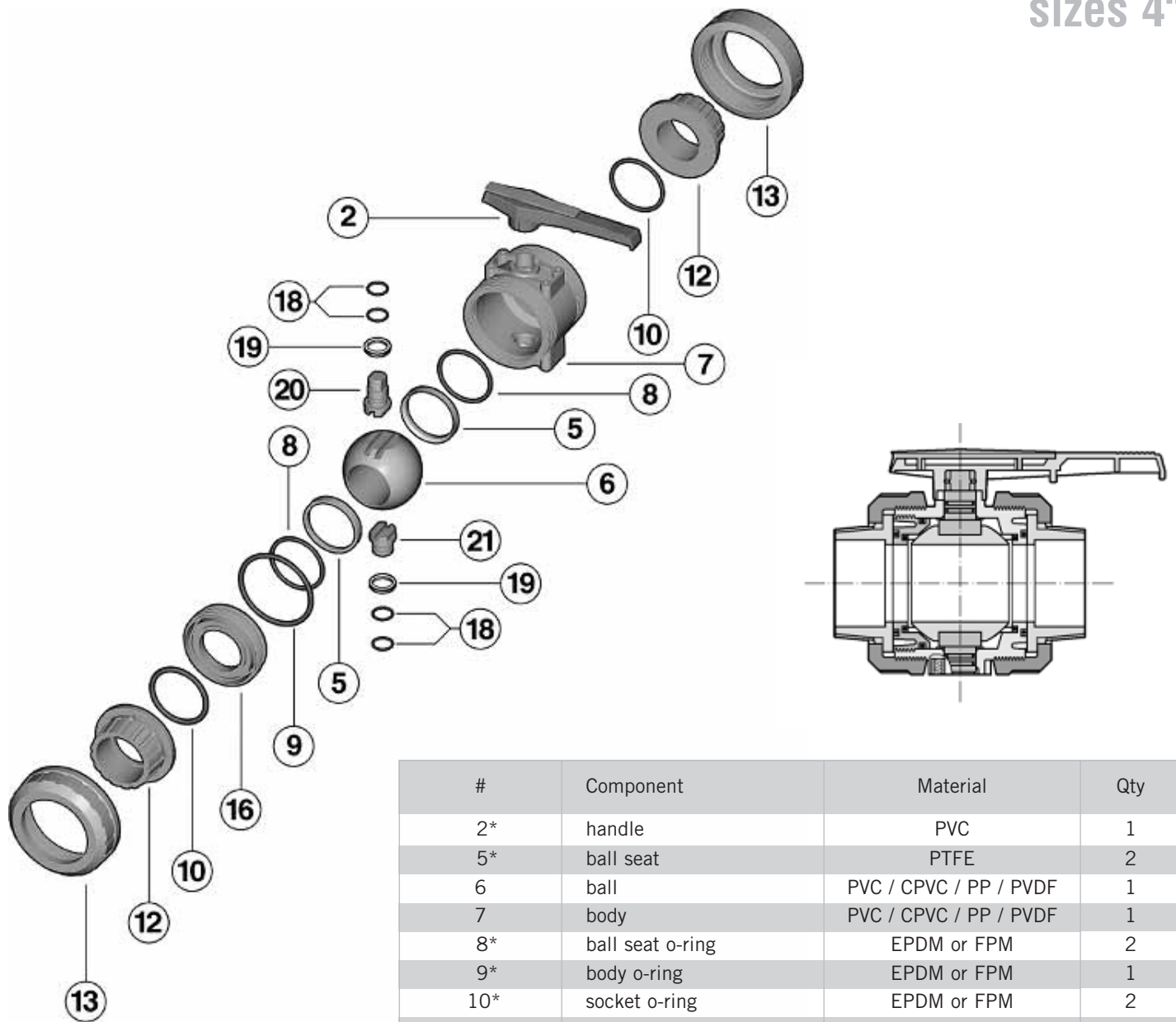
* Spare parts available.



VK Series Ball Valves

Components (cont'd)

sizes 4"



#	Component	Material	Qty
2*	handle	PVC	1
5*	ball seat	PTFE	2
6	ball	PVC / CPVC / PP / PVDF	1
7	body	PVC / CPVC / PP / PVDF	1
8*	ball seat o-ring	EPDM or FPM	2
9*	body o-ring	EPDM or FPM	1
10*	socket o-ring	EPDM or FPM	2
12*	end connector	PVC / CPVC / PP / PVDF	2
13*	union nut	PVC / CPVC / PP / PVDF	2
16	carrier	PVC / CPVC / PP / PVDF	1
18*	stem o-rings	EPDM or FPM	2
19*	bushing	PTFE	2
20	upper stem	PVC / CPVC / PP / PVDF	1
21	lower stem	PVC / CPVC / PP / PVDF	1

* Spare parts available.



VK Series Ball Valves

Installation Procedures



1. For socket and threaded style connections, remove the union nuts (part #13 on previous pages) and slide them onto the pipe. For flanged connections, remove the union nut / flange assemblies from the valve.
2. Please refer to the appropriate connection style sub-section:
 - a. For socket style, solvent cement the end connectors (12) onto the pipe ends. For correct joining procedure, please refer to the section entitled, "Joining Methods – Solvent Cementing" in the IPEX Industrial Technical Manual Series, "Volume I: Vinyl Process Piping Systems". **Be sure to allow sufficient cure time before continuing with the valve installation.**
 - b. For threaded style, thread the end connectors (12) onto the pipe ends. For correct joining procedure, please refer to the section entitled, "Joining Methods – Threading" in the IPEX Industrial Technical Manual Series, "Volume I: Vinyl Process Piping Systems".
 - c. For flanged style, join the union nut / flange assemblies to the pipe flanges. For correct joining procedure, please refer to the section entitled, "Joining Methods – Flanging" in the IPEX Industrial Technical Manual Series, "Volume I: Vinyl Process Piping Systems".
3. Open and close the valve to ensure that the carrier (11 or 16) is at the desired adjustment. If adjustment is required, ensure that the valve is in the closed position then remove the insert tool (1) from the handle (2). Line up the moldings on the tool with the slots in the carrier. Tighten or loosen to the desired position then replace the tool on the handle.
4. Ensure that the valve is in the closed position, and that the socket o-rings (10) are properly fitted in their grooves. Carefully place the valve in the system between the two end connections. If anchoring is required, proceed as follows:
 - a. For sizes 1/2" through 2":
 - i. Fix the bottom half-bracket (14) to the supporting structure using the 4 mounting holes.
 - ii. Remove the handle (2) from the valve by pulling upwards.
 - iii. Position the valve body (7) onto the bottom half-bracket.
 - iv. Position the upper half-bracket onto the valve body and replace the handle on the stem (4).
 - v. Insert the two wedges (15) into the brackets and drive home until fully locked.
 - b. For sizes 2-1/2" through 6":
 - i. Fix the valve to the supporting structure using the 4 mounting holes on the bottom of the valve body.
5. Tighten the union nut on the side opposite to that which is marked "ADJUST". Hand tightening is typically sufficient to maintain a seal for the maximum working pressure. **Over-tightening may damage the threads on the valve body and/or the union nut, and may even cause the union nut to crack.**
6. Tighten the union nut on the side marked "ADJUST". Tightening the union nuts in this order results in the best possible valve performance due to optimum positioning and sealing of the ball and seat support system.
7. Open and close the valve to again ensure that the cycling performance is adequate. If adjustment is required, place the valve in the closed position, loosen the union nuts, remove the valve from the system, and then continue from Step 3.



VK Series Ball Valves

Testing and Operating



The purpose of system testing is to assess the quality of all joints and fittings to ensure that they will withstand the design working pressure, plus a safety margin, without loss of pressure or fluid. Typically, the system will be tested and assessed in sub-sections as this allows for improved isolation and remediation of potential problems. With this in mind, the testing of a specific installed valve is achieved while carrying out a test of the overall system.

An onsite pressure test procedure is outlined in the IPEX Industrial Technical Manual Series, “*Volume I: Vinyl Process Piping Systems*” under the section entitled, “*Testing*”. The use of this procedure should be sufficient to assess the quality of a valve installation. **In any test or operating condition, it is important to never exceed the pressure rating of the lowest rated appurtenance in the system.**

Important points:

- Never test thermoplastic piping systems with compressed air or other gases including air-over-water boosters.
- When testing, do not exceed the rated maximum operating pressure of the valve.
- Avoid the rapid closure of valves to eliminate the possibility of water hammer which may cause damage to the pipeline or the valve.

For safety reasons, please contact IPEX customer service and technical support when using volatile liquids such as hydrogen peroxide (H₂O₂) and sodium hypochlorite (NaClO). These liquids may vaporize causing a potentially dangerous pressure increase in the dead space between the ball and the valve body. Special VK ball valves are available for these types of critical applications.

Please contact IPEX customer service and technical support with regard to any concern not addressed in this data sheet or the technical manual.

