INSTRUMENT

High Pressure Ball Valves
VB6F

High Pressure Ball Valves VB6F

CONTENTS

Features

Pressure rating up to 6000psig (413bar) @21℃ (70℉) with standard PCTFE seats

Temperature rating from -54℃(-65℉) to 177℃ (350℉) with standard PCTFE seats

Compact forged body design

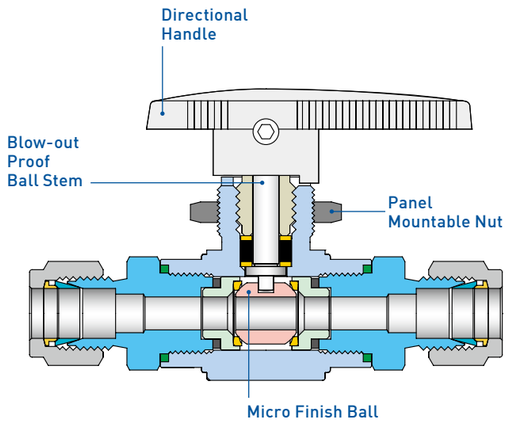
Micro finished 316SS ball to provide a positive seal

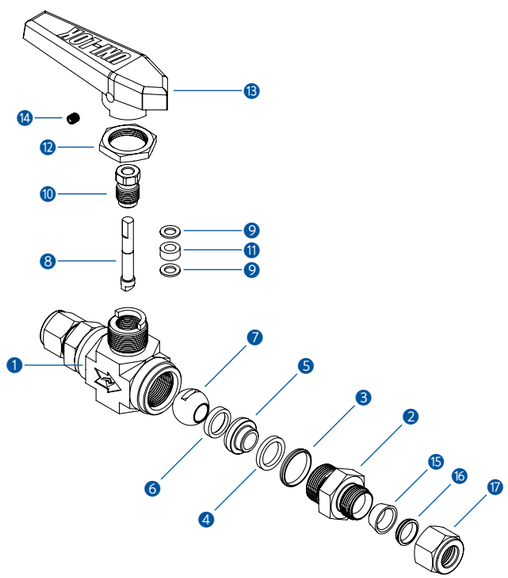
Blow-out proof design with internally loaded ball stem

Low operating torques and positive handle stops

Panel mounting for easy installation

2 way shut off valves and 3 way switching valves are available





Materials of Construction

No.	Description	Materials
1	Body	316SS
2	Connector	316SS
3	Connector O-ring	PTFE
4	Retainer Seal	PTFE
5	Seat Retainer	316SS
6	Ball Seat	PCTFE
7	Ball	316SS
8	Stem	316SS
9	Washer	304SS
10	Packing Bolt	304SS
11	Packing	PTFE
12	Panel Nut	316SS
13	Handle	Nylon
14	Bolt	304SS
15	Front Ferrule	316SS
16	Back Ferrule	316SS
17	Nut	316SS

Application

VB6F series valves are requiring in a wide range onshore and offshore applications to offer a safe and reliable performance.

Sour Environment Services

UNILOK valves are comply with NACE MR-0175/ISO 15156 for sour oilfield application or NACE MR-0103 for petroleum refining operations.

To order, add-N to the end of part number

Testing

Every valve is 100% factory tested with air and nitrogen at 1000psig(69bar) for leakage at the seat and packing. Each test is performed to a maximum allowable leak rate of 0.1scc/min.

Hydrostatic shell test to be performed at 1.5 time of the working pressure with optional.

Cleaning

UNILOK valves are free from machine oils, loose particles and grease throughout the close cleaning process.

Important Notification

UNILOK ball valves are designed to be operated in a fully open or fully closed position.

The packing adjustment may be required during the valve's service life.

Proper installation, materials compatibility, operation and maintenance of these valves are the responsibility of the user. The total system design must be taken into consideration to ensure optimal performance and safety.

How To Order

UNILOK VB6F series ball valves are ordered by part number as shown below.

Example: The following part number, ***VB6F2U-04T-SS-PK*** is designated for VB6F series ball valve with both 1/4" UNILOK tube fitting, 316SS, PEEK seat.

V	B6F2	U	-	04T	-	SS	-	PK
UNILOK Valve	Valve Type	Connection Type		Connection Size		Body Materials		Seat Materials
						Other alloys are available upon request		

Valve Type	
B6F	2 Way Type
B6FX	3 Way Type

Connection Type	
U	UNILOK Tube Fitting
F	Female NPT or ISO7/1(PT)
M	Male NPT or ISO7/1(PT)

Connection Size						
Fractional(Inch) Tube O.D. Designation						
Tube O.D.	inch	1/8	1/4	3/8	1/2	3/4
	mm	3.17	6.35	9.53	12.70	19.05
Designator		02T	04T	06T	08T	12T

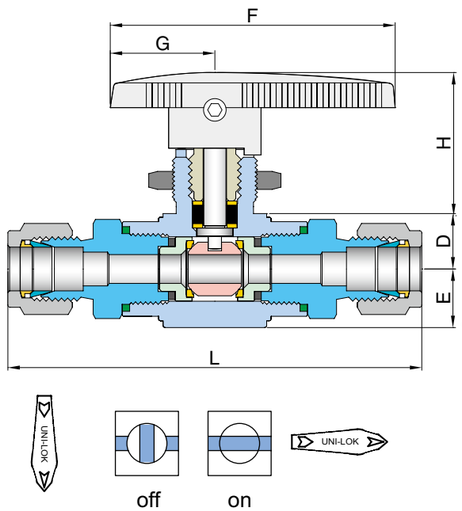
Metric Tube O.D. Designation						
Tube O.D.	mm	3	6	8	10	12
Designator		M03T	M06T	M8T	M10T	M12T

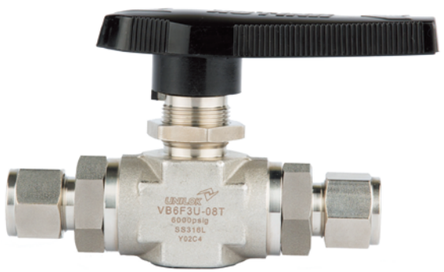
Pipe Size Designation (NPT or ISO7/1-PT)				
Pipe Size	1/8	1/4	3/8	1/2
Designator	02N/R	04N/R	06N/R	08N/R

Seat Materials	
None	PCTFE
PK	PEEK

VB6F series

(2 Way, Shut-Off Both UNILOK Tube Fittings or Both Female or Male Threads)





Ordering Information & Dimensions

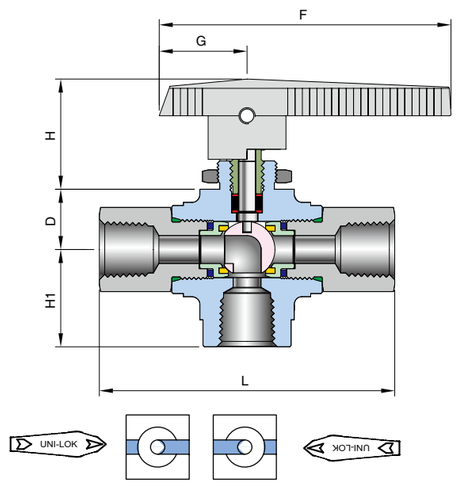
Part Number		End Connections		Orifice	CV	Dimensions (mm)						Panel Hole Drill Size
		Inlet	Outlet			L	E	D	H	F	G	
VB6F1	U-04T-	1/4" UNILOK		4.2	0.93	74.4	9.5	8.4	23.2	46.0	17.4	14.7
	F-02N-	1/8" Female NPT				54.2						
	M-04N-	1/4" Male NPT				68.6						
VB6F2	U-04T-	1/4" UNILOK		4.8	1.04	88.7	13.0	12.3	31.8	63.2	23.2	19.6
	U-06T-	3/8" UNILOK		6.4	2.34	91.4						
	U-M06T-	6mm UNILOK				88.7						
	U-M08T-	8mm UNILOK				91.0						
	U-M10T-	10mm UNILOK				92.3						
	F-04N-	1/4" Female NPT				77.0						
	M-04N-	1/4" Male NPT				82.2						
	M-06N-	3/8" Male NPT				82.2						
VB6F3	U-08T-	1/2" UNILOK		10.3	6.42	118.8	18.5	17.0	46.1	108.0	32.5	22.9
	U-12T-	3/4" UNILOK				118.4						
	U-M12T-	12mm UNILOK		9.5	5.57	118.9						
	F-06N-	3/8" Female NPT		10.3	6.42	98.9						
	F-08N-	3/8" Female NPT				109.2						
	M-08N-	1/2" Male NPT				112.8						

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VB6F series valves.
Add "R" as a suffix instead of "N".

Dimensions are for reference only and are subject to change without prior notice.

VB6FX series

(3 Way, Switching UNILOK Tube Fittings or Female or Male Threads)



Ordering Information & Dimensions

Part Number		End Connections		Orifice	CV	Dimensions (mm)						Panel Hole Drill Size
		Inlet	Outlet			L	H1	D	H	F	G	
VB6FX1	U-04T-	1/4" UNILOK		4.2	0.93	74.6	39	8.4	23.2	46.0	17.6	14.7
	F-02N-	1/8" Female NPT				54.2	28.8					
	M-04N-	1/4" Male NPT				68.6	29.9					
VB6FX2	U-04T-	1/4" UNILOK		4.8	1.04	88.7	40.3	12.3	31.8	63.2	23.2	19.6
	U-06T-	3/8" UNILOK		6.4	2.34	91.4	40.3					
	U-M06T-	6mm UNILOK				88.7	40.4					
	U-M08T-	8mm UNILOK				91.0	40.5					
	U-M10T-	10mm UNILOK				93.0	40.6					
	F-04N-	1/4" Female NPT				77.0	33.0					
	M-04N-	1/4" Male NPT				82.2	33.0					
	M-06N-	3/8" Male NPT				82.2	33.0					
VB6FX3	U-08T-	1/2" UNILOK		10.3	6.42	118.8	57.1	22.3	41.8	108.0	32.5	22.9
	U-12T-	3/4" UNILOK				118.4	57.1					
	U-M12T-	12mm UNILOK		9.5	5.57	118.8	57.1					
	F-06N-	3/8" Female NPT		10.3	6.42	98.9	47.0					
	F-08N-	1/2" Female NPT				109.2	36					
	M-08N-	1/2" Male NPT				112.8	47.0					

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VB6FX series valves.
Add "R" as a suffix instead of "N".

Dimensions are for reference only and are subject to change without prior notice.

Pressure - Temperature Ratings

Valve Group	Sealing Materials			Pressure Rating	Temperature Rating
	Seat	Stem Packing	End Seal		
2 Way					
VB6F1 VB6F2 VB6F3	PCTFE	PTFE	PTFE	6000psig(413bar)	-22°F~355°F (-30℃~180℃)
	PEEK			6000psig(413bar)	-65°F~446°F (-54℃~230℃)
3 Way					
VB6FX1	PCTFE	PTFE	PTFE	4000psig(275bar)	-22°F~355°F (-30℃~180℃)
	PEEK			6000psig(413bar)	-65°F~446°F (-54℃~230℃)
VB6FX2 VB6FX3	PCTFE	PTFE	PTFE	3000psig(206bar)	-9°F~320°F (-23℃~160℃)
	PEEK			4000psig(275bar)	-54°F~410°F (-35℃~210℃)

Flow Rates

Pressure Drop(△p) to Atmosphere in psig		Cv													
		0.06	0.18	0.21	0.26	0.63	0.7	0.87	0.93	1.04	2.34	3.46	3.62	5.57	6.42
Air @70°F(21℃) SCFM	10	5.9	17.7	20.7	25.6	62.0	68.9	85.6	91.5	102.4	230.3	340.6	356.3	548.2	631.9
	50	13.2	39.6	46.2	57.2	138.7	154.1	191.5	204.7	228.9	515.0	761.5	796.7	1225.9	1413.0
	100	18.7	56.0	65.4	80.9	196.1	217.9	270.8	289.5	323.7	728.3	1077.0	1126.8	1733.7	1998.3
Water @60°F(16℃) US GPM	10	0.2	0.6	0.7	0.8	2.0	2.2	2.8	2.9	3.3	7.4	10.9	11.5	17.6	20.3
	50	0.4	1.3	1.5	1.8	4.5	4.9	6.2	6.6	7.4	16.5	24.5	25.6	39.4	45.4
	100	0.6	1.8	2.1	2.6	6.3	7.0	8.7	9.3	10.4	23.4	34.6	36.2	55.7	64.2

Flow rate calculated with 1000psig(69bar) inlet pressure.
To determine m3/hr, multiply SCFM by 1.69 and US GPM by 0.227.
SCFM : Standard Cubic Feet per Minute. US GPM : Gallons Per Minute