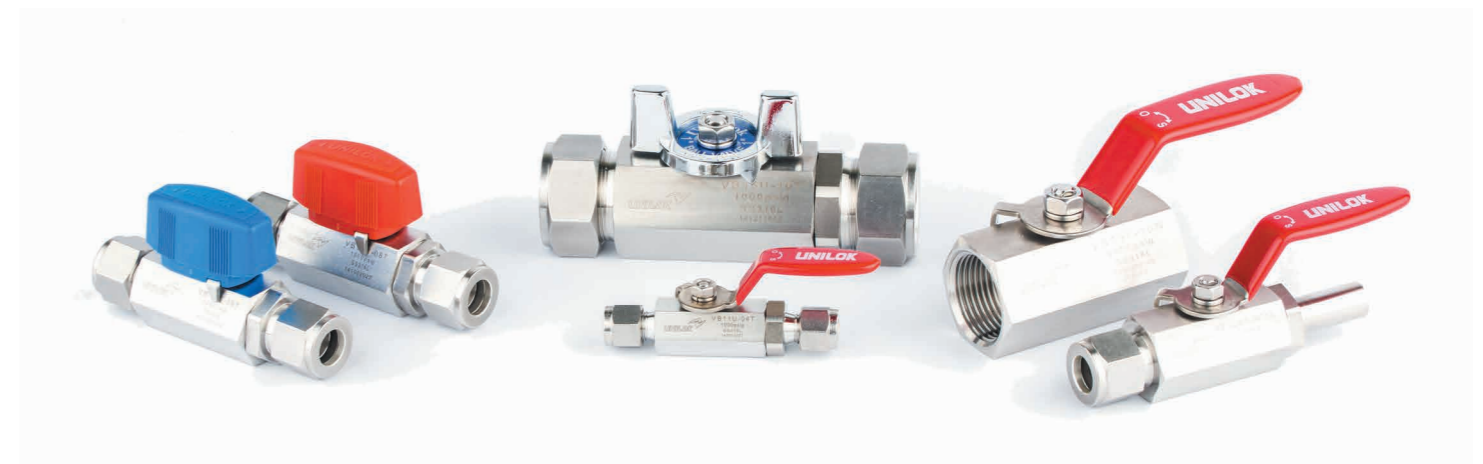


INSTRUMENT

Hex Ball Valves VB1



Hex Ball Valves VB1

CONTENTS

Application	116	Materials of Construction	117
Protection Cover	116	Important Notification	117
Features	116	How To Order	118
Type of Handle	116	Ordering Information & Dimension	119
Testing	117	Protection Cover Size	122
Cleaning	117	Pressure-Temperature Ratings	122

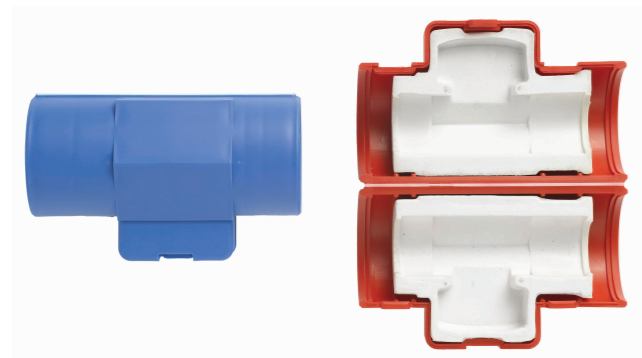
Application

Steam, water, air lines in onshore and offshore application
Utility lines in semiconductor and display panel industries.

Protection Cover

Maintain the temperature of fluids, keep handle position and distinguish in-out lines visually, to keep the temperature of flow and to distinguish the line.

VB1 series ball valve with both 3/4" UNILOK end connection and plastic bar handle. 1/2" is available only with the different size of inner cover.



Features

Pressure rating up to 1000psig (69bar) with PTFE seats and 2000psig(137bar) with TFM only for VB1F series ball valves with lever handle Easy to operate owing to low torque quarter turn actuation

All valve body's made from 316SS bar stock to secure the high integrity

Compact designed one piece hexagonal body

Micro finished 316SS balls not to occur the leakage

Blow-out proof design with internally loaded stem

Various selection of handles

Wide choice of end connections : UNILOK tube fittings, Female NPT or ISO7/1(PT) threads, Weld

Systems

Type of Handle



Lever Handle (standard)

Butterfly Handle

Bar handles offer visual distinguishment of in-out lines at high purity applications.



Red

Blue

Black

(up to ~1/2")

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.

Cleaning

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

The special cleaning for high purity application is available upon request.

Important Notification

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

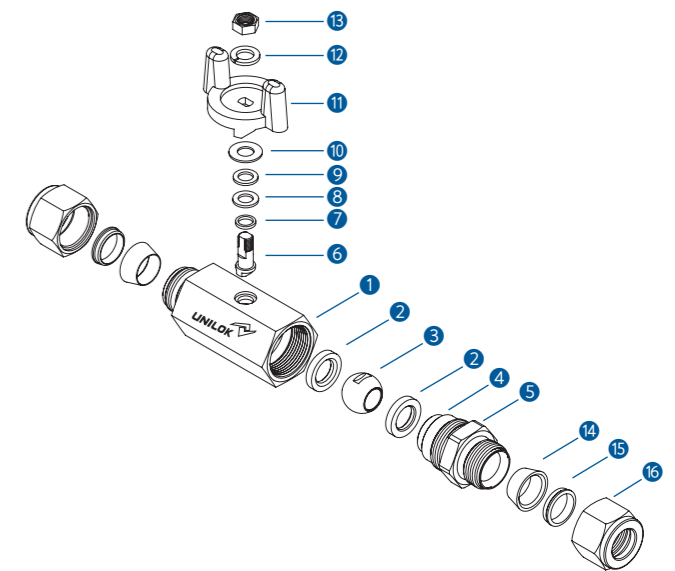
The packing adjustment may be required during the valve's service life.

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.

Materials of Construction

No.	Description	Materials
1	Body	316SS
2	Ball Seat	Reinforced PTFE
3	Ball	316SS
4	O-Ring	Viton
5	Connector	316SS
6	Stem	316SS
7	Inner Packing	PTFE
8	Outer Packing	PTFE
9	Gland	316SS
10	Washer	316SS
11	Handle	Zinc
12	Spring Washer	304SS
13	Nut	304SS
14	Front Ferrule	316SS
15	Back Ferrule	316SS
16	Nut	316SS

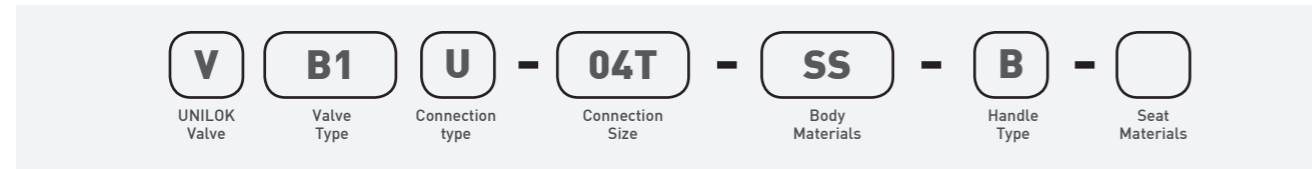
Handle Materials :
Lever - 304SS+PVC Coat
Bar - Nylon



How To Order

UNILOK VB1 series ball valves are ordered by part number as shown below.

Example: The following part number, *VB1U-04T-SS-B* is designated for VB1 series ball valve with both 1/4" UNILOK tube fitting, 316SS, PTFE seat, butterfly handle.



Connection Type	
U	UNILOK Tube Fitting
F	Female NPT or ISO7/1(PT)
WB-*T	Butt Weld-Tube
WB-*P	Butt Weld-Pipe

Connection Size						
Fractional(Inch) Tube O.D. Designation						
Tube O.D.	inch	1/4	3/8	1/2	3/4	1
	mm	6.35	9.52	12.70	19.05	25.40
Designator		04T	06T	08T	12T	16T

Metric Tube O.D. Designation						
Tube O.D.	mm	6	8	10	12	25
	Designator	M06T	M08T	M10T	M12T	M25T

Pipe Size O.D. Designation				
Pipe O.D.	Normal	15A	20A	25A
	mm	21.7	27.2	34.0
Designator		15A	20A	25A

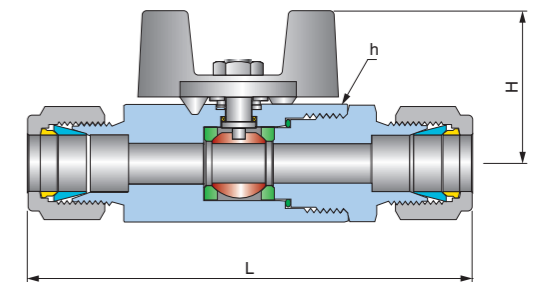
Pipe Size Designation (NPT or ISO7/1-PT)						
Pipe Size	1/8	1/4	3/8	1/2	3/4	1
Designator	02N/R	04N/R	06N/R	08N/R	12N/R	16N/R

Handle Type	
None	Lever Handle
B	Butterfly Handle
PR	Red
PS	Blue
PB	Black

Seat Materials	
None	PTFE
TFM	TFM
PK	PEEK

VB1U series (Both UNILOK Tube Fittings)

- Max Operating Pressure
1000psig (69bar) at 38 °C(100 °F) with PTFE seat
1000psig(69bar) at 170 °C(338 °F) with PEEK seat
- Connection Type
Both UNILOK tube fittings
- Handle Type
Lever, Butterfly and Bar



Ordering Information & Dimensions

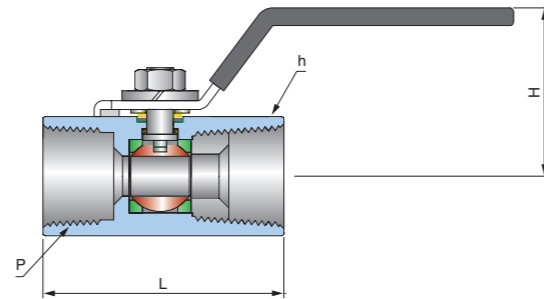
Part No.	End Connections		Orifice	Dimensions (mm)		
	Inlet	Outlet		h(Hex)	L	H
VB11	U-04T-	1/4" UNILOK	5.0	17.46	79.0	26.5
	U-M06T-	6mm UNILOK			82.0	
	U-M08T-	8mm UNILOK				
VB12	U-06T-	3/8" UNILOK	7.5	22.22	89.5	32.5
	U-M10T-	10mm UNILOK				
VB13	U-08T-	1/2" UNILOK	9.0	26.98	101.6	35.0
	U-M12T-	12mm UNILOK				
VB14	U-12T-	3/4" UNILOK	12.5	31.75	107.5	37.5
VB15	U-16T-	1" UNILOK	16.0	38.10	132.6	44.5
	U-M25T-	25mm UNILOK				

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

VB1F series

(Both Female Threads)

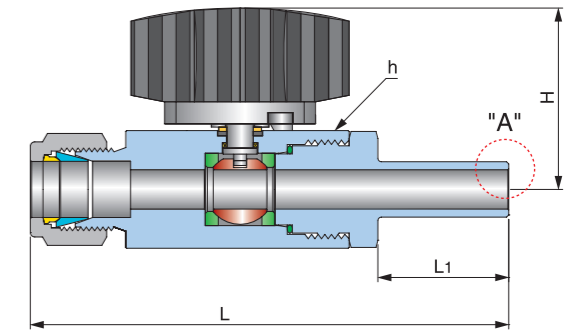
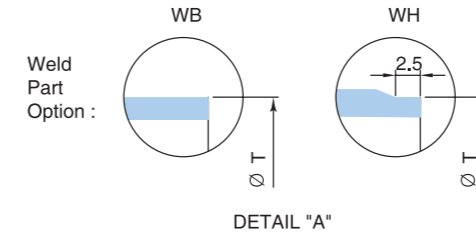
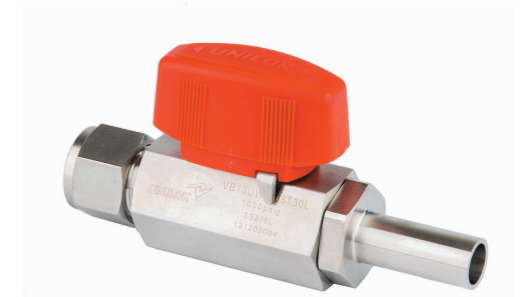
- Max Operating Pressure
1000psig (69bar) at 38 °C(100 °F) with PTFE seat
2000psig(138bar) at 38 °C(100 °F) with TFM seat
- PEEK seats not applicable
- Connection Type
Both NPT or ISO7/1(PT) female threads
- Handle Type
Lever, Butterfly and Bar



VB1W series

(Pipe or Tube Butt Weld and UNILOK Tube Fitting)

- Max Operating Pressure
1000psig (69bar) at 38 °C(100 °F) with PTFE seat
- Connection Type
Pipe Butt or Tube Butt Weld and
UNILOK Tube Fitting
- Handle Type
Lever, Butterfly and Bar



Ordering Information & Dimensions

Part No.	End Connections		Orifice	Dimensions (mm)		
	Inlet	Outlet		h(Hex)	L	H
VB11	F-04N-	1/4" Female NPT	5.0	17.46	40.0	29.0
VB12	F-06N-	3/8" Female NPT	7.5	22.22	45.0	35.7
VB13	F-08N-	1/2" Female NPT	9.0	26.98	54.5	38.1
VB14	F-12N-	3/4" Female NPT	12.5	31.75	61.0	44.5
VB15	F-16N-	1" Female NPT	16.0	38.10	75.0	48.0

Female ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VB1F series valves.
Add "R" as a suffix instead of "N".

Ordering Information & Dimensions

Part No.	End Connections		Orifice	Dimensions (mm)				
	Inlet	Outlet		h(Hex)	L	L ₁	H	
VB13	UWB-08T08T	1/2" Tube	1/2" UNILOK	9.0	26.98	109.7	30.0	41.6
	UWB-15AP08T	15A Pipe	1/2" UNILOK			114.7	35.0	
VB14	UWB-12T12T	3/4" Tube	3/4" UNILOK	12.5	31.75	129.2	43.0	44.2
	UWB-20AP12T	20A Pipe	3/4" UNILOK			121.2	35.0	
VB15	UWB-16T16T	1" Tube	1" UNILOK	16.0	38.10	137.3	31.0	53.8
	UWB-25AP16T	25A Pipe	1" UNILOK			146.3	40.0	

Length of L₁ can be adjusted upon the customer's request

VB1 Protection Cover

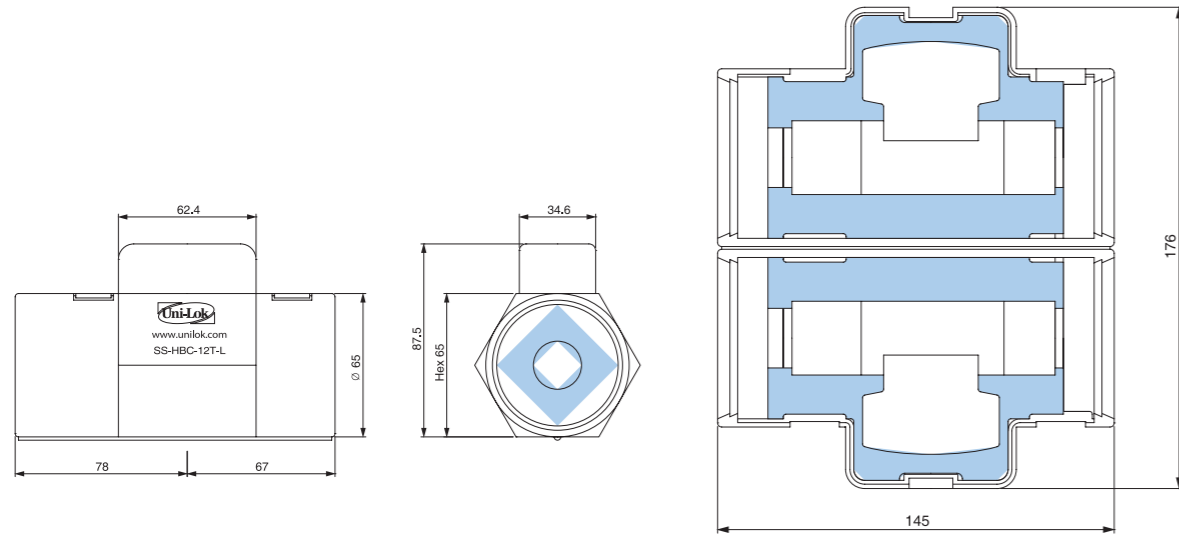
Maintain the temperature of fluids, keep handle position and distinguish in-out visually.

VB1 series ball valve with both 3/4" UNILOK end connection and plastic bar handle. 1/2" is available only with the different size of inner cover.

Ordering Number

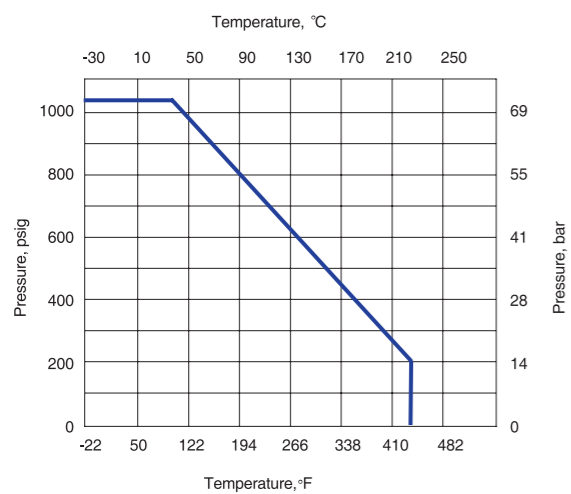
VB1-PC-R : Red

VB1-PC-S : Blue

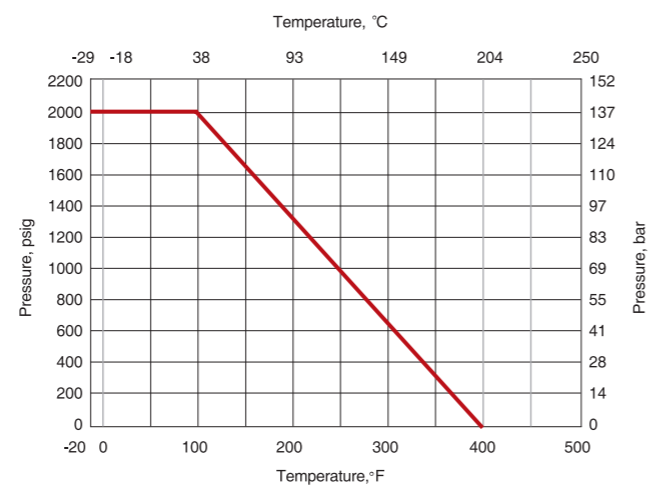


Pressure - Temperature Ratings

PTFE Seat



TFM Seat



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

INSTRUMENT

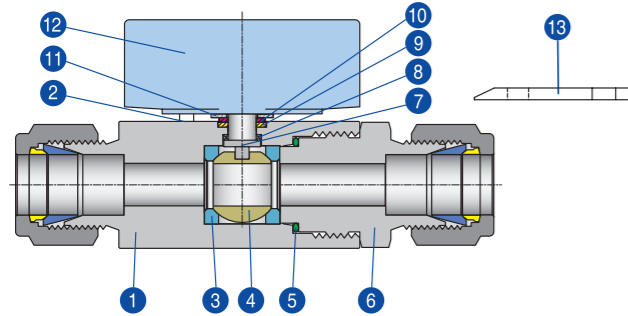
Master key Hex Ball Valves VBM1



Features

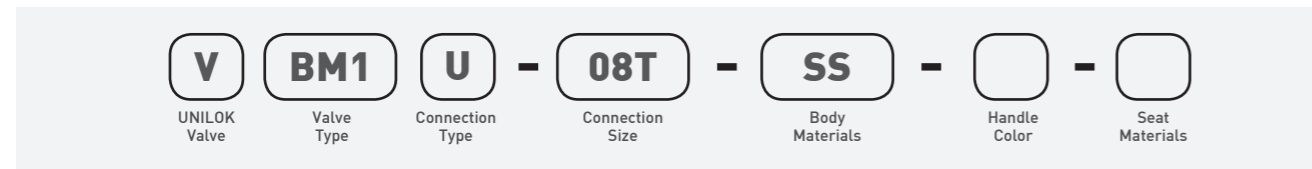
- Locking handle on open or Close Positions
- Body Materials : Standard 316 stainless steel
- Compact handle design
- Handle Low operating torques

Material of Construction



How To Order

UNILOK VBM1 series ball valves are ordered by part number as shown belows.



Valve Type	
BM1*	Master Key Hex Ball VALVE

Connection Type	
U	UNILOK Tube Fitting
F	Female NPT or ISO7/1(PT)
WB-	Butt Weld-Tube
WB-	Butt Weld-Pipe

Connection Size				
Fractional(Inch) Tube O.D. Designation				
Tube O.D.	inch	1/2	3/4	1
	mm	12.70	19.05	25.40
Designator		08T	12T	16T

Metric Tube O.D. Designation				
Tube O.D.	mm	12	20	25
	Designator	M12T	M20T	M25T

Pipe Size Designation (NPT or ISO7/1-PT)			
Pipe Size	1/2	3/4	1
Designator	08N/R	12N/R	16N/R

Weld Size Designation			
Pipe Size	15A	20A	25A
Designator	15A	20A	25A

Handle Color	
S	BLUE
R	RED

Seat Materials	
None	PTFE
PK	PEEK

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.

Materials

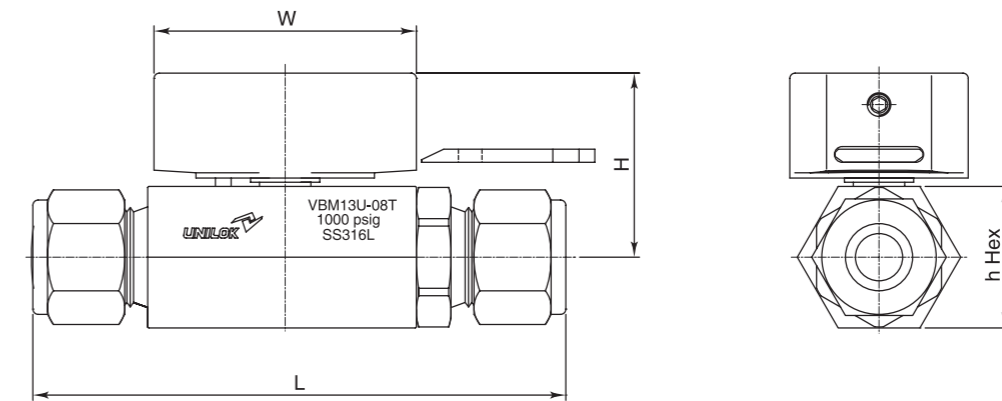
No.	Description	Materials
1	Body	316SS
2	Guide Pin	316 SS
3	Ball Seat	PTFE
4	Ball	316 SS
5	O-Ring	FKM
6	Connector	316SS
7	Stem	316SS
8	Inner Packing	PTFE
9	Outer Packing	PTFE
10	Gland	316SS
11	Washer	316SS
12	Handle	Zinc
13	Key	Zinc

Specifications

- Max Operating Pressure
1000 Psig (69 bar) at 38 °C(100 °F) with PTFE Seat
- Connection Type
UNILOK Tube Fittings
- Orifice
9.0mm to 16.0mm



Ordering Information & Dimensions



Part No.	End Connections		Orifice	Dimensions (mm)			
	Inlet	Outlet		h(Hex)	L	H	W
VBM13	U-08T	1/2" UNILOK	9.0	26.98	101.6	35.0	50.0
	U-M12T	12mm UNILOK					
VBM14	U-12T	3/4" UNILOK	12.5	31.75	107.5	41.6	60.0
VBM15	U-16T	1" UNILOK	16.0	38.1	132.6	44.7	60.0
	U-M25T	25mm UNILOK					

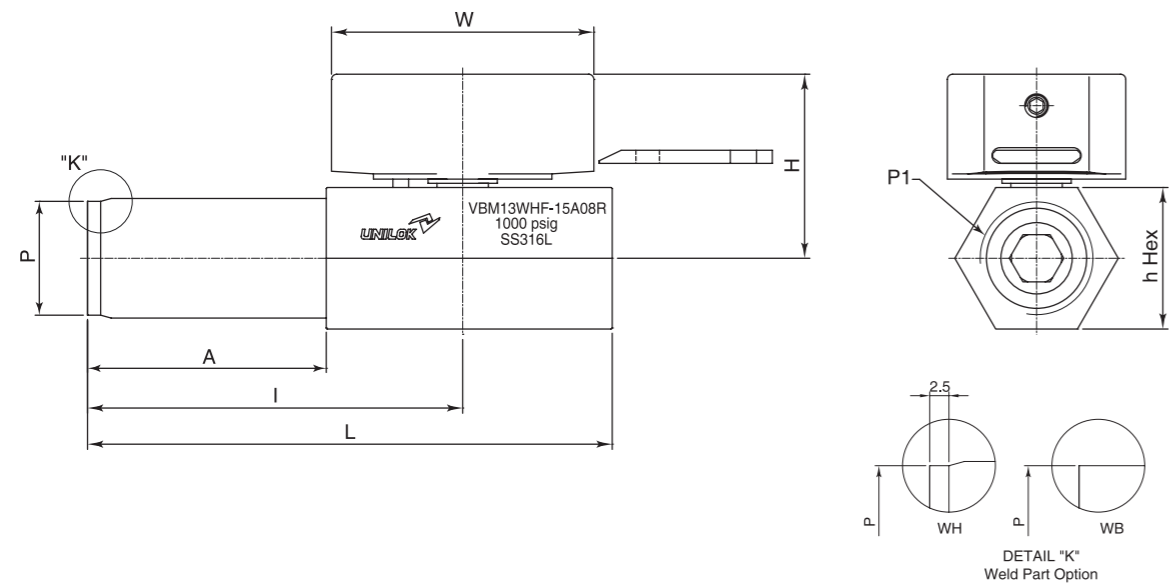
Dimensions are for reference only and are subject to change without prior notice.

Specifications

- Max Operating Pressure
1000 Psig (69 bar) at 38 °C(100 °F) with PTFE Seat
- Connection Type
Pipe Butt or Tube Butt Weld
Both NPT or ISO 7/1(PT) Female Threads
- Orifice
9.0mm to 16.0mm



Ordering Information & Dimensions



Part No.		End Connections		Orifice	Dimensions (mm)					
		Inlet(P)	Outlet(P1)		h (Hex)	A	I	L	H	A
VBM13	WHF-15A08R	15A Butt Weld	1/2 Female PT	9.0	26.98	45.5	71.5	100.0	35.0	50.0
VBM14	WHF-20A12R	20A Butt Weld	3/4 Female PT	12.5	31.75	44.0	73.5	105.0	41.6	60.0
VBM15	WHF-25A16R	25A Butt Weld	1 Female PT	16.0	38.1	45.0	81.0	120.0	44.7	60.0

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