

INSTRUMENT

Union Bonnet Valves VU6



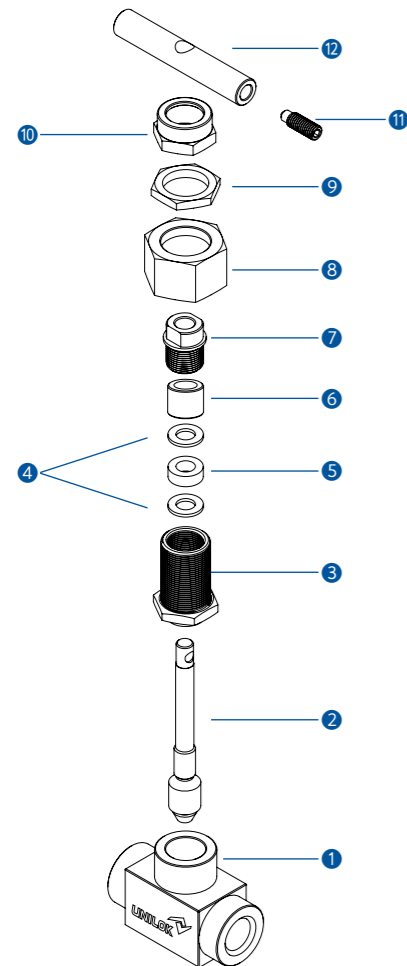
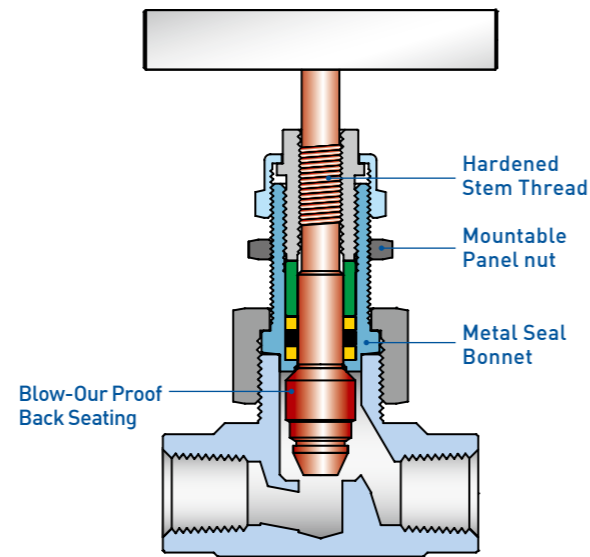
Union Bonnet Valves VU6

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Features

- Pressure rating up to 6000psig (413bar) @38°C (100°F)
- Temperature rating from -53°C(-65°F) to 232°C (450°F) with standard PTFE packing, up to 648°C (1200°F) with Grafoil packing
- Roll threaded and hardened stem for long cycle life
- Union bonnet design to ensure high integrity seal under severe environments
- Panel mounting without packing disruption



Materials of Construction

No.	Description	Materials	
	Body Material	316SS	Alloy 400
1	Body	316SS	Alloy 400
2	Stem	316SS	Alloy R-405/B164
3	Bonnet	316SS	Alloy R-405/B164
4	Packing Support	Glass-filled PTFE	
5	Packing	PTFE	
6	Gland	316SS	Ally R-405/B164
7	Packing Bolt	316SS	Alloy R-405/B164
8	Panel Nut	316SS	Alloy R-405/B164
9	Union Nut	316SS	Alloy R-405/B164
10	Lock Nut	316SS	Alloy R-405/B164
11	Set Screw	304SS	
12	Handle	304SS	

Application

Severe service application, high pressure sampling and shut-down systems, test stands

Sour Environment Services

UNILOK valves 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.

Cleaning

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

How To Order

UNILOK VU6 series union bonnet valves are ordered by part number as shown below.

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.

Important Notification

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

Example: The following part number, *VU62F-04N-SS* is designated for VU6 series union bonnet valve with 1/4" female NPT to 1/4" female NPT, 316SS.



Valve Type	
U6	Straight Pattern
U6A	Angle Pattern

Connection Size							
Fractional(Inch) Tube O.D. Designation							
Tube O.D.	inch	1/8	1/4	3/8	1/2	3/4	1
	mm	3.17	6.35	9.52	12.70	19.05	25.40
Designator		02T	04T	06T	08T	12T	16T

Body Materials	
SS	316SS
MO	Alloy 400

Other alloys are available upon request.

Connection Type	
U	UNILOK Tube Fitting
F	Female NPT or ISO7/1(PT)
M	Male NPT or ISO7/1(PT)
WS-	Socket Weld -Tube
WS-	Socket Weld - Pipe

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

Stem Type	
None	Lee Stem
R	Regulating
S	Soft-seat
B	Ball

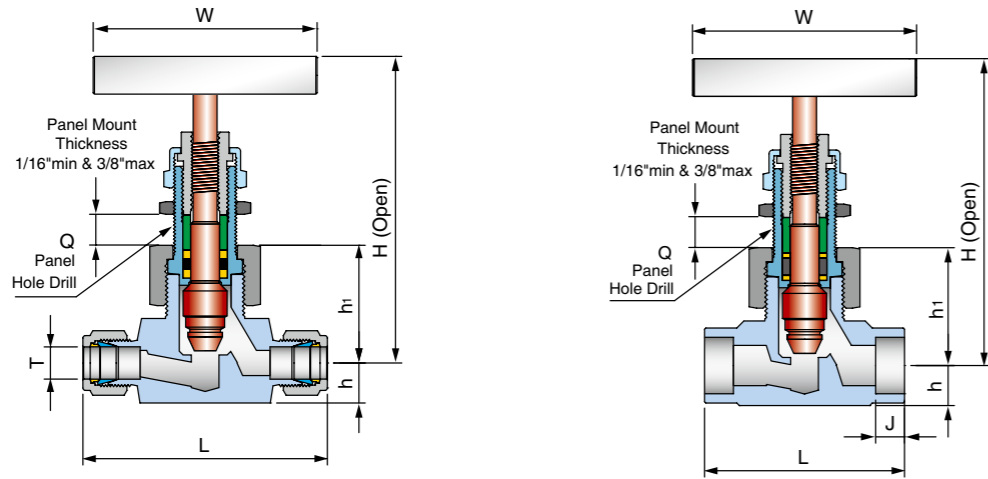
Pipe Size Designation (NPT or ISO7/1-PT)						
Pipe Size	1/8	1/4	3/8	1/2	3/4	1
Designator	02N/R	04N/R	06N/R	08N/R	12N/R	16N/R

Packing Materials	
None	PTFE
PK	PEEK
GF	Grafoil

Weld Size Designation				
Tube Size	1/4	3/8	1/2	3/4
Designator	04T	06T	08T	12T
Pipe Size	1/4	3/8	1/2	
Designator	04P	06P	08P	

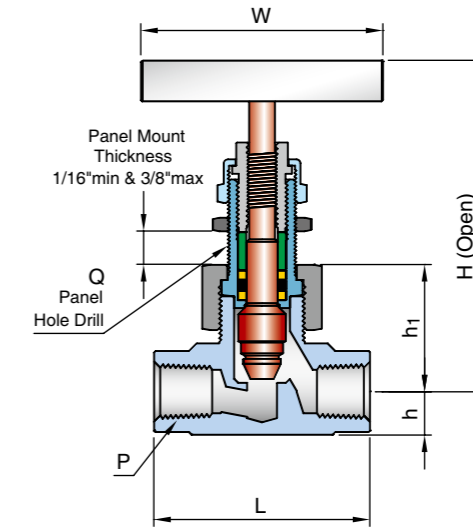
VU6 series

(Straight or Angle Pattern, Both UNILOK Tube Fittings or Both Tube or Pipe Socket Welds)



VU6 series

(Straight or Angle Pattern Both Female or Male Threads or Male/Female Thread)



Ordering Information & Dimensions

Part No.	End Connections		Orifice	CV	Dimensions (mm)								
	Inlet	Outlet			L	L ₁	h	h ₁	H _(open)	W	Q	J	
VU61	U-04T-	1/4" UNILOK	4.0	0.35	61.9	31	9.6	27.8	77.8	45.0	15.1	-	
	U-M06T-	6mm UNILOK											
	U-M08T-	8mm UNILOK											
	WS-04T	1/4" Tube SW			46.0	23							7.2
VU62	U-06T-	3/8" UNILOK	6.4	0.86	72	36	12.7	34.1	93.7	64.0	19.9	-	
	U-08T-	1/2" UNILOK			77.8	38.9							
	U-M10T-	10mm UNILOK			73.0	33.3							
	U-M12T-	12mm UNILOK			78	39							
	WS-06T	3/8" Tube SW			57.2	25.4						8.0	
	WS-08T	1/2" Tube SW			57.2	25.4						9.6	
	WS-04P	1/4" Pipe SW			57.2	28.6							
VU63	U-08T-	1/2" UNILOK	9	2.20	97	48.5	15.9	46.0	121.5	89.0	26.2	-	
	U-12T-	3/4" UNILOK											
	U-16T-	1" UNILOK	11		100.0	-	17.5	47.6					
	U-M12T-	12mm UNILOK			98.0	43.7							
	WS-08T	1/2" Tube SW	10		79.4	39.7	15.9	46.0					9.6
	WS-12T	3/4" Tube SW			79.4	-							11.1
	WS-08P	1/2" Pipe SW	11		79.4	39.7							9.6

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

Ordering Information & Dimensions

Part No.	End Connections		Orifice	CV	Dimensions (mm)							
	Inlet	Outlet			L	L ₁	h	h ₁	H _(open)	W	Q	
VU61	F-02N-	1/8" Female NPT	4.0	0.35	50.8	23.0	9.6	27.8	77.8	45.0	15.1	
	F-04N-	1/4" Female NPT			52.4	26.2						
	M-04N-	1/4" Male NPT			50.8	25.4						
	MF-04N-	1/4" Male NPT 1/4" Female NPT			52.4	23.0						
VU62	F-04N-	1/4" Female NPT	6.4	0.86	57.2	28.6	12.7	34.1	93.7	64.0	19.9	
	F-06N-	3/8" Female NPT										
VU63	F-08N-	1/2" Female NPT	11.0	2.20	79.6	39.8	15.9	46.0	121.5	89.0	26.2	
	F-12N-	3/4" Female NPT										
	F-16N-	1" Female NPT			92.1	-	25.4	54.0				
	MF-08N-	1/2" Male NPT 1/2" Female NPT			79.4	33.3	15.9	46.0				
	MF-12N-	3/4" Male NPT 3/4" Female NPT			82.6	-	19.9	48.4				
	MF-16N-	1" Male NPT 1" Female NPT			92.1	-	25.4	54.0				

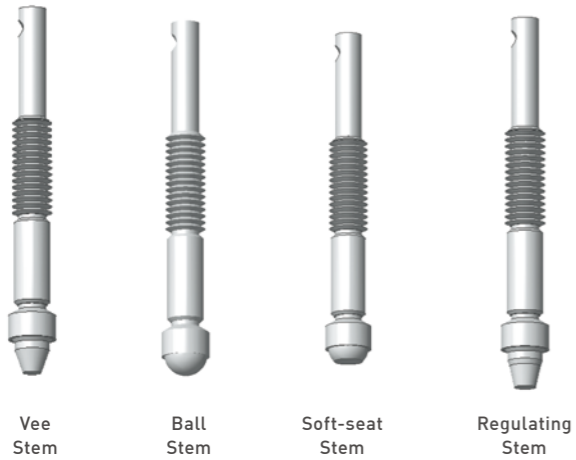
ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VU6 series valves. Add "R" as a suffix instead of "N".

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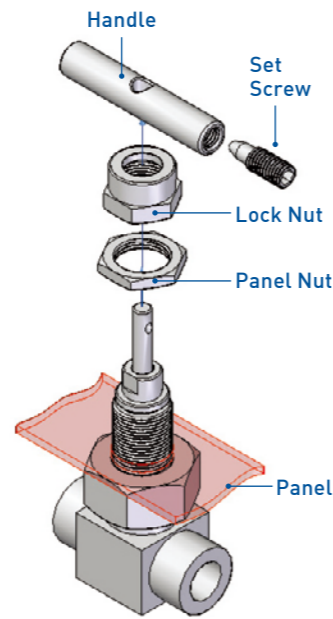
Stem Types

Metal to metal vee stem is standard for pressure tightness even at elevated temperature. Regulating stem, ball stem and soft-seat stem with KEL-F are available as optional. The excessive force when closing valve may damage both seat and stem tip, particularly soft-seat stem.

Vee, regulating, ball and soft-seat are non-rotating stems.



Panel Mounting Procedure



Loose handle set screw using appropriate allen key.

Disassemble Lock nut and panel nut.

Insert the valve into the panel hole.

Tighten panel nut and Lock nut onto the valve bonnet.

Reassemble handle.

Tighten panel nut when fully closing of the valve.

Pressure -Temperature Rating

Body Material	Stem	PTFE packing			
		Temperature Rating		Pressure Rating @ 38°C	
		°C	°F	psig	bar
316SS	Vee, Ball, Regulating	-54~232	-65~450	6000	413
	Soft-seat (Kel-F)	-54~93	-65~200		
Alloy 400	Vee, Ball, Regulating	-54~232	-65~450	5000	345
	Soft-seat (Kel-F)	-54~93	-65~200		

Packing Material	Body Material	Temperature Rating		Pressure Rating @ Max. Temperature	
		°C	°F	psig	bar
PTFE	316SS	-54~232	-65~450	4130	285
	Alloy 400	-54~232	-65~450	3970	274
PEEK	316SS	-54~315	-65~600	3760	260
	Alloy 400	-54~260	-65~500	3960	273
Grafoil	316SS	-54~648	-65~1200	1715	119
	Alloy 400	-54~260	-65~500	3960	273

Alloy 400/Monle is not applicable over 260°C(500°F)

For the service with aromatic heat transfer fluids or concentrated sulfuric and nitric acids, PEEK is not recommended.