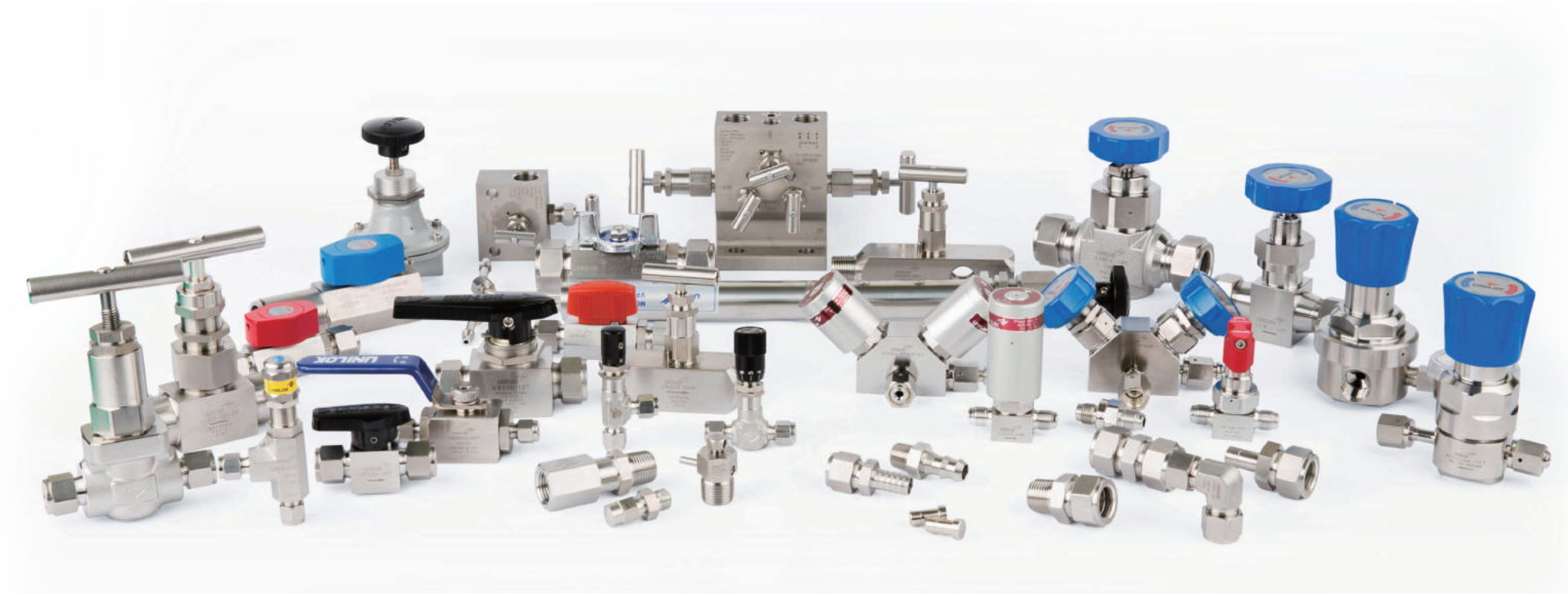


PRODUCTS CATALOG

Catalog Aug. 2016

/BSO



UNILOK Corporation

UNILOK was established in 1984.

We have distinguished ourselves in the design and manufacturing of a high performance "Twin Ferrule Compression Tube Fittings" and "Instrumentation Valves" range.

UNILOK has been able to capitalize on our expert knowledge, oriented towards the new expectations of customers worldwide in the industrial, petrochemical, offshore, ship building, power plant and environmental industries.

Due to our outstanding capacity for innovation and our policy of investment in Research and Development as well as Quality Control.

Our well-trained staff are dedicated to providing our customers with the very best service possible, and this service is backed up by our Performance Guarantee.

Systematic Control is fully committed to utilizing the latest technology and information advancements to provide our customers with maximum support.

UNILOK Corporation

Catalog Aug. 2016

본사 및 제 1공장

인천광역시 남동구 남동동로 64번길 37
남동공단 152블럭 12롯데
Tel 032-822-6600 / Fax 032-822-6604

Headquarters&1st Factory

152 Block-12 Lot, Namdong Indus-Park, 37, Namdongdong-ro
64beon-gil, Namdong-Gu, Incheon, Korea
Tel +82-32-821-6673 / Fax +82-32-822-6604

제 2공장

인천광역시 남동구 남동서로 83번길 87
남동공단 114블럭 8롯데
Tel 032-433-6601 / Fax 032-441-7600

2nd Factory

114 Block-8 Lot, Namdong Indus-Park, 87, Namdongseo-ro
83beon-gil, Namdong-Gu, Incheon, Korea
Tel +82-32-433-6601 / Fax +82-32-441-7600





Fittings

- Tube Fittings, Pipe Fittings, GGR, PTFE Fittings, Hose Connectors, Hose Fittings, Quick Connector
- Size: 1/16"~2" OD, 2mm~50mm OD
- End Connection: UNILOK Port, Pipe Threads, Welded System and other special threads
- 316SS, Brass, Alloy
- Excellent finish level
- UNILOK own special hardening and heat treatment process



Valves

- Ball Valve, Needle Valve, Manifolds Valve, Check Valve, Metering Valve
- Size: 1/8" ~ 1-1/2"
- End Connection : UNILOK Port, Pipe Threads, Welded System and other special threads
- 316SS, Brass, Alloy
- Increased Durability



Fittings

- Weld & UCR Fitting, Bend Fitting, Cylinder Connectors
- Size: Pipe 8A~500A, Tube 1/4"~2"
- End Connection: UNILOK Port, UCR, Butt Weld, Pipe Threads
- UHP Grade 304SS, 316SS, 316LSS
- BA, EP Grades
- Superior finished inner surface by UNILOK's own EP and special cleaning process
- Exact dimensional tolerance



Valves

- Diaphragm Valves, Bellows Valves, Check Valves
- Size: 1/4" ~ 1" , 15A ~ 450A
- End Connections: UNILOK Port, UCR, Butt Weld, Flanged
- UHP Grade 316LSS Materials
- BA, EP Grades
- Manual & Pneumatic Operation
- MWP 3045psig / 210bar
- Low & High Pressure Models



Filter & Regulator

- In-Line & Tee Filter & Regulator
- Size: 1/8" ~ 1/2"
- End Connection: UNILOK Port, Pipe Threads, Welded System and other special threads
- 316SS
- Max Working Pressure : 6000psig
- VFI series In-Line type and VFT series Tee type
- Excellent stability, accuracy, sensitivity



Others

- Seamless & Welded Tubing
- Size: 1/8" ~ 1-1/2" OD, 6mm ~ 25mm OD
- 304SS, 316SS, Alloy
- Excellent finished inner & outer surface
- Exact dimensional tolerance



Filter & Regulator

- UHP gas Filter, UHP Regulator
- Size: 1/4" ~ 1/2" UCR, Butt Weld
- UHP Grade 316LSS Materials
- Low internal volume
- Max Inlet Pressure : 3500psig
- Excellent stability, accuracy, sensibility



Others

- Vacuum Generator
- MWP 150psig
- Size : 1/4" ~ 1/2" UCR, Butt Weld
- UHP Grade 316LSS Materials
- Improve effectiveness of cycle purging
- Compact and sturdy design

Instrument

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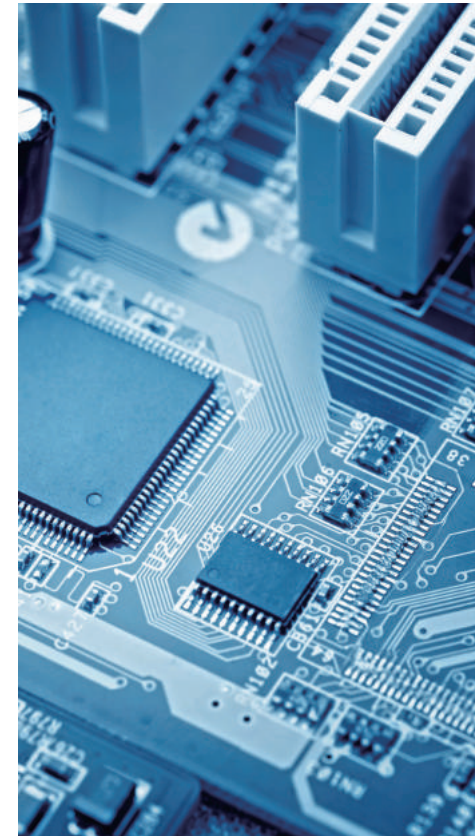
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UHP



Fittings

Valves

Filter, Regulator

Others



Instrument

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INSTRUMENT



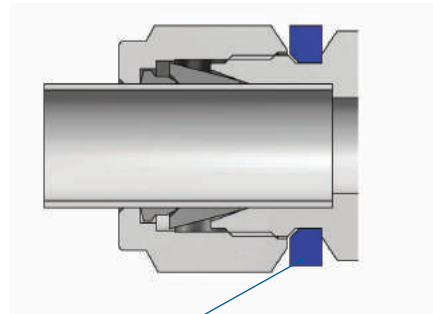
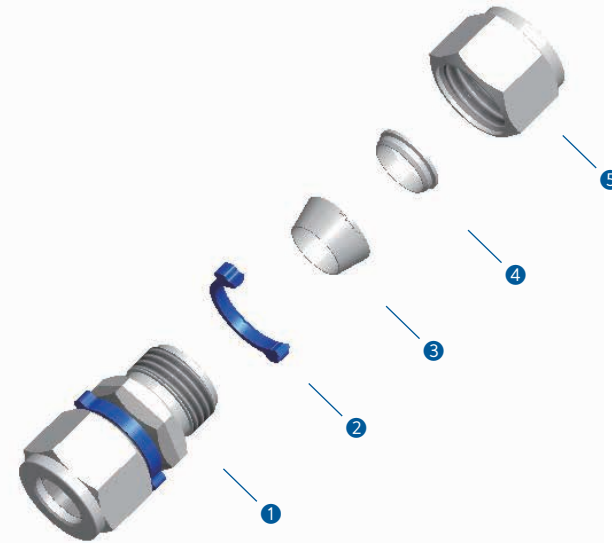
GGR (Gap Gauge Ring)



Local Patent Number : 10-2015-0059416
Global Patent : US, JAPAN, CHINA, GERMANY

Features

- GGR(GAP GAUGE RING) is designed for perfect installation of piping and tubing. With the UNILOK's GGR, no more GAP GAUGE is needed.
- GGR ensures sufficient tightening and protects over-tightening.
- assure visually inspected your process lines.
- Repeatable assembly
- GGR is prepared with various color for identifying your process lines.
- Fabricated in precision process for smooth tightening.
- Easy, Fast & Economical installation for your facility.



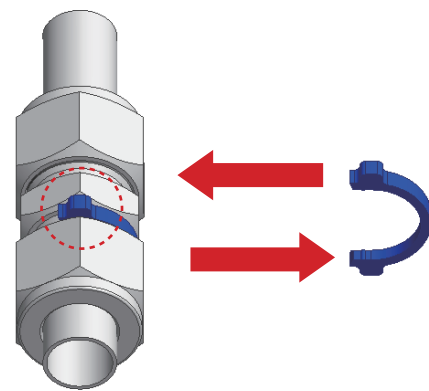
GGR Prevent over and less tightening.

Material Standards

No.	Description	Materials
1	Body	316 SS
2	GGR	304 SS
3	Front Ferrule	316 SS
4	Back Ferrule	316 SS
5	Nut	316 SS

GGR Color Coding

Color	Designator
Blue	S
Red	R
Black	B
Yellow	Y



Easy to insert

Tubing Information

Instruction for installation of fitting is not need any more.

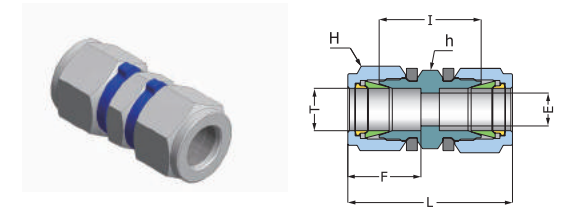
Just touch the GGR, for checking proper installation of fitting.

When tighten of nut enough, GGR is not turned around body.

GGR do not mix fitting components from various manufacturers.

UU-G

Union

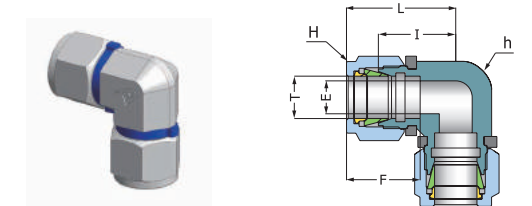


Connects Fractional(Inch) Tube

Part No.	Tube OD T		Dimensions (mm)							
	inch	mm	E Min.	h		H		F	I	L
				inch	mm	inch	mm			
UU-04-G	1/4	6.35	4.8	1/2	12.70	9/16	14.28	15.2	26.2	40.9
UU-06-G	3/8	9.52	7.1	5/8	15.87	11/16	17.46	16.8	30.2	45.0
UU-08-G	1/2	12.70	10.4	13/16	20.63	7/8	22.22	22.9	31.0	51.3
UU-12-G	3/4	19.05	15.7	1-1/16	26.98	1-1/8	28.57	24.4	33.3	53.6
UU-16-G	1	25.40	22.4	1-3/8	34.92	1-1/2	38.10	31.2	40.4	64.8

UEU-G

Union Elbow

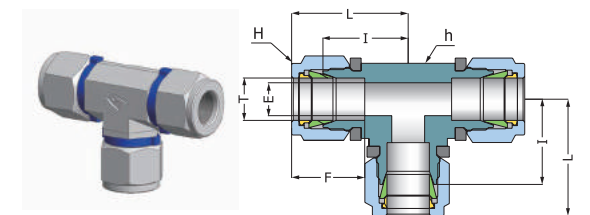


Connects Fractional(Inch) Tube

Part No.	Tube OD T		Dimensions (mm)							
	inch	mm	E Min.	h		H		F	I	L
				inch	mm	inch	mm			
UEU-04-G	1/4	6.35	4.8	1/2	12.70	9/16	14.28	15.2	19.6	26.9
UEU-06-G	3/8	9.52	7.1	5/8	15.87	11/16	17.46	16.8	23.1	30.5
UEU-08-G	1/2	12.70	10.4	13/16	20.63	7/8	22.22	22.9	25.9	36.1
UEU-12-G	3/4	19.05	15.7	1-1/16	26.98	1-1/8	28.57	24.4	29.7	39.9
UEU-16-G	1	25.40	22.4	1-3/8	34.92	1-1/2	38.10	31.2	36.8	49.0

UUT-G

Union Tee



Connects Fractional(Inch) Tube

Part No.	Tube OD T		Dimensions (mm)							
	inch	mm	E Min.	h		H		F	I	L
				inch	mm	inch	mm			
UUT-04-G	1/4	6.35	4.8	1/2	12.70	9/16	14.28	15.2	19.6	26.9
UUT-06-G	3/8	9.52	7.1	5/8	15.87	11/16	17.46	16.8	23.1	30.5
UUT-08-G	1/2	12.70	10.4	13/16	20.63	7/8	22.22	22.9	25.9	36.1
UUT-12-G	3/4	19.05	15.7	1-1/16	26.98	1-1/8	28.57	24.4	29.7	39.9
UUT-16-G	1	25.40	22.4	1-3/8	34.92	1-1/2	38.10	31.2	36.8	49.0

Dimensions are for reference only and are subject to change without prior notice. E is minimum opening. F and L are typical finger tight.

**Tube
Fittings**



Tube Fittings

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Tube to Tube

-  **UU** ²⁴
Union
-  **URU** ^{25 26}
Reducing Union
-  **UBU** ²⁷
Bulkhead Union
-  **UEU** ²⁸
Union Elbow
-  **UUT** ²⁹
Union Tee
-  **URBT** ³⁰
Reducing Union Branch Tee
-  **URRT** ³⁰
Reducing Union Run Tee
-  **UUC** ³¹
Union Cross



Tube to Male Pipe


-  **UMC** ^{32 33}
Male Connector
-  **UTMC** ³⁴
Thermocouple Male Connector
-  **UMC-G** ^{35 36}
Male Connector for Bonded Seal
-  **UMC-GM** ^{37 38}
Male Connector for Metal Gasket
-  **UBMC** ³⁹
Bulkhead Male Connector
-  **UME** ^{40 41}
Male Elbow
-  **UMVE** ⁴²
45° Male Elbow
-  **UMBT** ⁴³
Male Branch Tee
-  **UMRT** ⁴⁴
Male Run Tee

Tube to Female Pipe

-  **UFC** ^{45 46}
Female Connector
-  **UGC** ⁴⁷
Gauge Connector
-  **UBFC** ⁴⁸
Bulkhead Female Connector
-  **UFE** ⁴⁹
Female Elbow
-  **UFBT** ⁵⁰
Female Branch Tee
-  **UFRT** ⁵¹
Female Run Tee

Stub Tube Connector

-  **UR** ^{52 53}
Reducer
-  **UBR** ⁵⁴
Bulkhead Reducer

-  **UER** ⁵⁴
Elbow Reducer
-  **UMA** ⁵⁵
Male Adapter
-  **UFA** ⁵⁶
Female Adapter
-  **UPC** ⁵⁷
Port Connector

Tube to Welded System

-  **UWBC** ⁵⁸
Pipe Butt Weld Connector
-  **UWBE** ⁵⁹
Pipe Butt Weld Elbow
-  **UWSC** ⁵⁹
Tube Socket Weld Connector
-  **UWSE** ⁵⁹
Tube Socket Weld Elbow
-  **UWBA** ⁶⁰
Pipe Butt Weld Adapter
-  **UWSA** ⁶⁰
Tube Socket Weld Adapter

Tube to AN Tube

-  **UUA** ⁶¹
AN Union

-  **UBUA** ⁶¹
AN Bulkhead Union
-  **UAA** ⁶¹
AN Adapter

Tube to SAE/MS O-Ring Seal

-  **UMCS** ⁶²
SAE/MS Male Connector
-  **UMES** ⁶²
SAE/MS Male Elbow Positionable
-  **UMVES** ⁶³
SAE/MS 45° Male Elbow Positionable


-  **UMBTS** ⁶³
SAE/MS Male Branch Tee Positionable

-  **UMRTS** ⁶³
SAE/MS Male Run Tee Positionable

-  **UMOS** ⁶⁶
O-Seal Straight Thread Connector

-  **UMOP** ⁶⁶
O-Seal Pipe Thread Connector

Plug/Cap/Others

-  **UC** ⁶⁸
Tube Cap

-  **UP** ⁶⁹
Tube Plug

-  **UVP** ⁶⁹
Vent Protector

-  **UI** ⁷⁰
Tube Inset

-  **UBHR** ⁷¹
Bulkhead Retainers


-  **UFL** ⁷²
Flange Connector

-  **ULFC** ⁷³
Lapped Flange Connector

Spare Parts

-  **UFF** ⁷⁴
Front Ferrule

-  **UBF** ⁷⁴
Back Ferrule

-  **UN** ⁷⁴
Nut

-  **UFS** ⁷⁵
Ferrule Set

-  **UFNS** ⁷⁵
Ferrule & Nut Set

We, UNILOK corporation, have distinguished ourselves in the design and manufacturing of a high performance “Twin Ferrule Compression Tube Fittings” and “Instrumentation Valves” range since 1984.

In addition, we have been manufacturing “the fittings and valves for UHP (Ultra High Purity) application” with our own design and technology since 2000.

Due to our outstanding capacity for innovation and our policy of investment in research and development as well as quality control, UNILOK has been able to capitalize on our expert knowledge, oriented towards the new expectations of customers worldwide in oil, gas, petro-chemical, on-offshore, ship building, power plant, semiconductor, flat panel display and solar industries.

Our well-trained staffs are dedicated to providing our customers with the very best service possible, and this service is backed up by our performance guarantee as well as quality assurance.

Systematic control is fully committed to utilizing the latest technology and information advancements to provide our customers with the maximum supports.

Features

Gaugeability

UNILOK tube fittings are produced in accordance with the exact and tight tolerance. Without such close tolerance, the interaction of the nut, the ferrules and the body would not be interacted properly.

Interchangeability

UNILOK tube fittings can be interchanged with the tube fittings which are manufactured by the international standard.

Corrosion Resistance

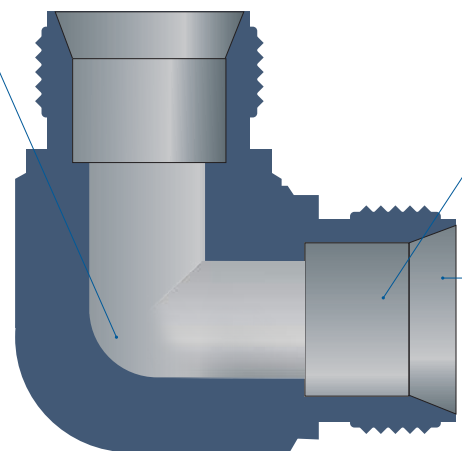
UNILOK ferrules have the strongest corrosion resistance by our own special hardening process. It has been proved in various of industrial areas for some decades.

Less Torque and Anti Distortion

When the nut is tightened, both ferrules are driven forward between the nut and the body. This axial movement doesn't transfer any torque from the fitting to the tubing when original tubing's mechanical properties are maintained.

Radius Junction In Every Piece of Elbows

To eliminate entrapment areas and to allow smooth flow transition for all elbows including pipe fittings



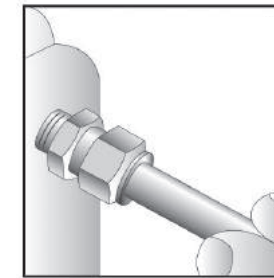
Excellent Finish Level

To allow smooth flow transition

Special Hardening Process

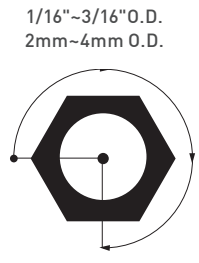
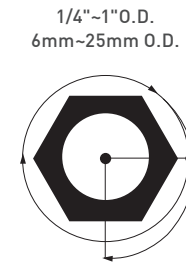
Not only to ensure leak tight assembly but also to ensure remake-up

UNILOK Tube Fittings Installation Instruction



1. Firmly insert the tubing until it bottoms in the fitting body.
2. Finger tighten the nut.
3. Mark the nut at the 6 o'clock position, with pencil or scribe.
4. Hold the body with a backup wrench, or vice, then tighten nut.
5. 1-1/4 turns to the 9 o'clock position.
6. The above applies to all fittings from 1/4" to 1" (6mm to 25mm).
7. Fittings from 1/16" to 3/16" (3mm to 4mm), only 3/4 turn is required.

Reassembly - Simply insert tube assembly into fitting body, tighten nut to the original position as indicated by the previous mark, then snug up slightly with a wrench.



Materials

UNILOK fittings are available in various kinds of materials as below. Straight fittings are machined from cold finished bar stock and shaped fittings from forgings. For more details or special application, contact your local distributors.

Materials	Bar Stock	Forgings
316 SS or 316L SS	ASTM A479 ASME SA479	ASTM A182 ASME SA182
Brass®	ASTM B16 ASTM B453	ASTM B283
Alloy 400 (Monel®)	ASTM B164	ASTM B564 ASME SB564
Alloy 600 (Inconel®)	ASTM B166	
Alloy 625 (Inconel®)	ASTM B446	
Alloy 825 (Incoloy®)	ASTM B425	
Alloy C-276 (Hastelloy C®)	ASTM B574	ASTM B564
PTFE	ASTM D1710	ASTM D3294
Duplex (SAF 2205®) UNS S31803 / S32205	ASTM A479	ASTM A182
Super Duplex (SAF 2507®) UNS S32750	ASTM A479	
UNS 31254 (Incoloy 25-6MO®)	ASTM B649	-

①Nickel plating is available as optional.

*Monel, Inconel, Incoloy, Incoloy 25-6MO are the trade marks of Special Metals.

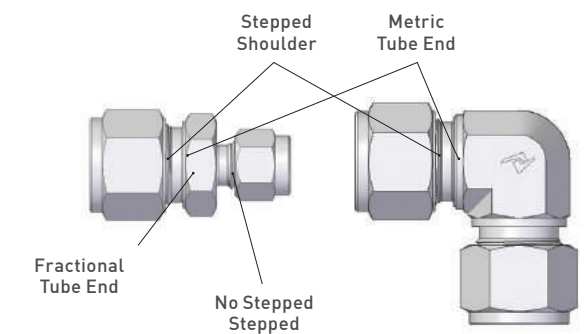
*Hastelloy C is the trade mark of Haynes International.

Sour Environment Services

UNILOK tube fittings 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.

Identification of Metric UNILOK Tube Fittings

Every UNILOK tube fittings with metric tube end have a stepped shoulder to distinguish the fittings with fractional tube end.



Cleaning

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

UNILOK tube fittings for oxygen enriched systems are available by the special cleaning procedure. To order, add OX to the part number.

Tubing Information

The proper selection of tubing is essential to assure maximum fitting reliability and performance. When choosing tubing material, size and wall thickness, consider system's pressure, flow rate, temperature, environment and compatibility with great care.

Maximum Allowable Working Pressure

Stainless Steel Tubing

Fully annealed and seamless stainless steel tubing to comply with ASTM A269 or equivalent.

Hardness should not exceed Rb 80.

Tubing should be free from scratched and suitable for bending and flaring.

Fractional(Inch) Tubing

Tube O.D. (inch)	Tube Wall Thickness (inch)											
	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.156	0.188	
1/8	8550	10950										
3/16	5500	7100	10300									
1/4	4100	5200	7600	10300								
5/16		4100	5900	8100								
3/8		3350	4850	6550								
1/2		2650	3750	5150	6750							
5/8			2950	4050	5250	6050						
3/4			2450	3350	4250	4950	5850					
4/8			2050	2850	3650	4250	4850					
1				2400	3100	3600	4200	4700				
1-1/4					2400	2800	3300	3600	4100	4900		
1-1/2						2300	2700	3000	3400	4000	4900	
2							2000	2200	2500	2900	3600	

Metric Tubing

Tube O.D. (mm)	Tube Wall Thickness (inch)											
	0.8	1.0	1.2	1.5	2.0	2.2	2.5	3.0	3.5	4.0	4.5	
3	9700											
4	7900	11500										
6	4500	6100	7850	10300								
8		4500	5650	7500								
10		3500	4350	5800	8400							
12		2900	3600	4800	6800							
14		2300	2900	4000	5500	6250						
15		200	2750	3650	5200	5800						
16			2450	3350	4800	5350	5800					
18			2150	2950	4200	4650	5350					
20			2030	2600	3750	4200	4800					
22			1750	2300	3350	3750	4350					
25					2900	3350	3750	4650				
38						2030	2300	2900	3500	3900	4500	

For gas service application, use only tubing with wall thickness on outside of gray areas. Allowable stress of 20000 psig between -29°C(-20°F) and 37°C(100°F) based on ultimate tensile strength to be 74000 psig.

Copper Tubing

Fully annealed and seamless stainless steel tubing to comply with ASTM B75 or equivalent.

Hardness should not exceed Rb 60.

Fractional(Inch) Tubing

Tube O.D. (inch)	Tube Wall Thickness (inch)							
	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120
1/4	1300	1600	2500	3500				
3/8		1000	1600	2200				
1/2		800	1100	1600	2200			
5/8			900	1200	1600	1900		
3/4			700	1000	1300	1500	1800	
1			500	700	900	1100	1300	1500

Metric Tubing

Tube O.D. (mm)	Tube Wall Thickness (inch)				
	1.0	1.5	2.0	2.5	30
6	2350	3670			
8	1710	2680	Working pressure in psig		
10	1350	2090			
12	1100	1710	2350		
20		990	1350	1710	
25		780	1060	1350	1640

For gas service application, use only tubing with wall thickness on outside of gray areas. Allowable stress of 6000 psig between -29°C(-20°F) and 37°C (100°F) based on ultimate tensile strength to be 30000 psig.

Monel Tubing

Fully annealed and seamless stainless steel tubing to comply with ASTM B165 or equivalent.

Hardness should not exceed Rockwell Rb 75.

Fractional(Inch) Tubing

Tube O.D. (inch)	Tube Wall Thickness (inch)						
	0.035	0.049	0.065	0.083	0.095	0.109	0.120
1/4	4800	7000	9500				
3/8	3100	4400	6100				
1/2	2300	3200	4400				
3/4		2200	3000	4000	4600		
1			2200	2900	3400	3900	4300

For gas service application, use only tubing with wall thickness on outside of gray areas. Allowable stress of 6000 psig between -29°C(-20°F) and 37°C (100°F) based on ultimate tensile strength to be 30000 psig.

Determination Factors of MAWP at High Temperature Application

To determine allowable working pressure at elevated temperature, multiply allowable working pressure and factors which are shown in the table.

Example:

316SS Tubing, 1/2"ODx0.049"WT at 310°C

AWP: 3750 x 0.85 = 3187 psig.

* MAWP: Maximum Allowable Working Pressure
* AWP: Allowable Working Pressure

Temperature		Materials		
°C	°F	316SS	Copper	Monel
90	194	1.00	0.80	0.88
200	392	0.96	0.50	0.79
310	590	0.85	-	0.79
480	802	0.79	-	0.75
536	996	0.76	-	-
644	1227	0.37	-	-

Pipe End Thread Information

The end connections with the lower pressure rating is the determining factor of pressure rating for the fittings with both UNILOK tube ends and pipe thread ends.

Pressure Rating for Pipe End Thread

Tapered Pipe Threads - NPT or ISO 7/1(BSPT)

Allowable pressure ratings for male and female threads are based on ASME B31.3 at ambient temperature.

Pipe Size	316SS				316SS				UNILOK Designator
	Male		Female		Male		Female		
inch	bar	psig	bar	psig	psig	bar	psig		
1/16	760	11000	460	6700	5500	230	3300	-01N/R	
1/8	690	10000	440	6500	5000	220	3200	-02N/R	
1/4	550	8000	450	6600	4000	220	3300	-04N/R	
3/8	540	7800	360	5300	3900	180	2600	-06N/R	
1/2	530	7700	330	4900	3800	160	2400	-08N/R	
3/4	500	7300	320	4600	3600	160	2300	-12N/R	
1	370	5300	300	4400	2600	150	2200	-16N/R	
1-1/4	410	6000	350	5000	3000	170	2500	-20N/R	
1-1/2	340	5000	310	4600	2500	150	2300	-24N/R	
2	270	3900	270	3900	1900	130	1900	-32N/R	

Designator for NPT pipe thread is N, ISO 1/7 is R

ISO 228/1 Parallel Thread (BSPP)

The pressure ratings are at ambient temperature.

Male Pipe Size	316SS		UNILOK Designator
	bar	psig	
1/8	315	4568	-02G
1/4	315	4568	-04G
3/8	315	4568	-06G
1/2	160	2320	-08G

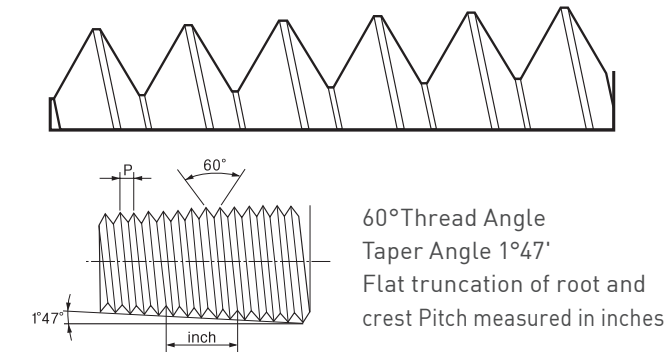
O-Seal Fittings

Rated to 206 bar (3000 psig) for 316SS fittings up to 1 inch and 25mm

Kinds of Pipe End Thread

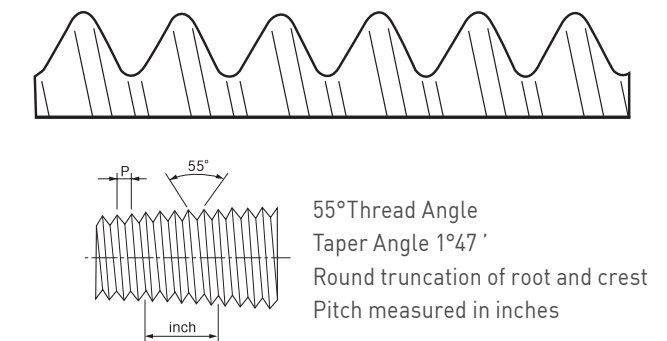
NPT Pipe Thread

NPT (National Pipe Thread) is based on ANSI B1.20.1.



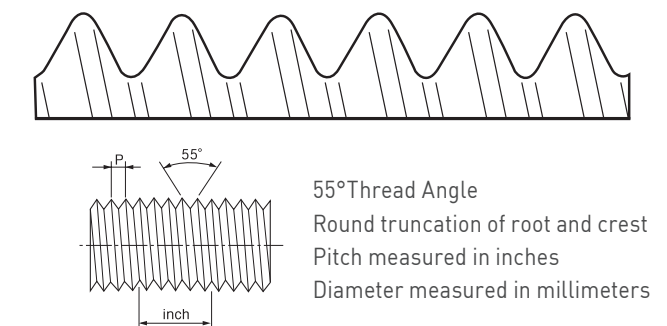
ISO 7/1 Tapered Pipe Thread

International Organization for Standard (ISO 7/1) Tapered (PT) Equivalent to BSPT (British Standard Pipe Taper Thread), DIN 2999, JIS B0203



ISO 228/1 Parallel Pipe Thread

International Organization for Standard (ISO 228/1) Parallel (PF) Equivalent to BSPP (British Standard Pipe Parallel Thread), DIN ISO228/1, JIS B0202 Gasket or O-ring is normally used to seal into the parallel female threaded components.

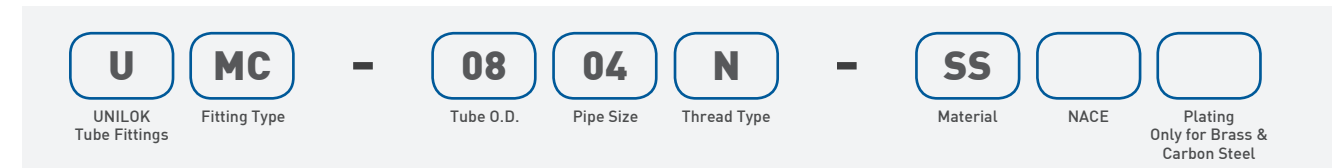


How To order

Fractional(Inch)Tube fittings

UNILOK fractional(inch) size tube fittings are ordered by part number as shown below.

Example: The following part number, *UMC-0804N-SS*, is designated for Male Connector, 1/2"OD x 1/4" Male NPT, 316SS.



Fractional(inch) Tube Designation																
Tube O.D.	inch	1/16	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1-1/8	1-1/4	1-1/2	2
	mm	1.50	3.17	4.76	6.35	7.93	9.52	12.70	15.88	19.05	22.22	25.40	28.57	31.75	38.10	50.80
Designator		01	02	03	04	05	06	08	10	12	14	16	18	20	24	32

Pipe Size Designation									
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Designator	02	04	06	08	12	16	20	24	32

Thread Type Designation		
Designator	Thread Type	
N	NPT	National Standard Pipe Thread
R	ISO 7/1	Taper Pipe Thread
G	ISO 228/1	Parallel Pipe Thread
U	SAE J1926	Straight Thread Boss
S	SAE J514	37° Flared
T		Tube End
None		UNILOK Port

NACE Application	
None	-
N	NACE Application

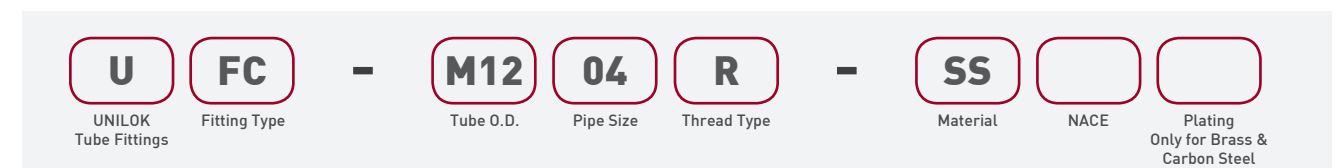
Plating Designation	
NP	Nickel
BP	Black Phosphorized

Material Designation	
Designator	Materials
SS	316SS
BS	Brass
CS	Carbon Steel
MO	Alloy 400
IN60	Alloy 600
IN65	Alloy 625
IN85	Alloy 825
HC	Alloy C-276
TF	PTFE
DP	Duplex
SD	Super Duplex
6MO	6MO/SM0254

Metric Tube Fittings

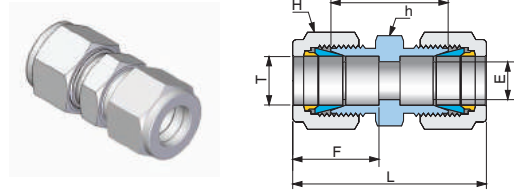
UNILOK metric size tube fittings are ordered by part number as shown below.

Example: The following part number, *UMC-M1204R-SS* is designated for Male Connector, 12mmOD x 1/4" Male BSPT, 316SS.



Metric Tube O.D Designation																		
Tube OD	mm	2	3	4	6	8	10	12	14	15	16	18	20	22	25	28	32	38
Designator		M02	M03	M04	M06	M08	M10	M12	M14	M15	M16	M18	M20	M22	M25	M28	M32	M38

UU Union



Connects Fractional(Inch) Tube

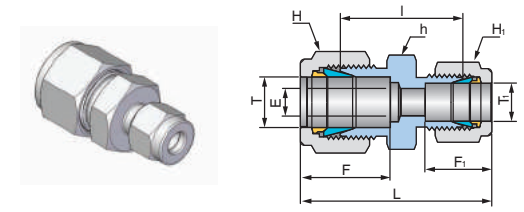
Part No.	Tube OD T		Dimensions (mm)							
	inch	mm	E Min.	h		H		F	I	L
				inch	mm	inch	mm			
UU-01	1/16	1.58	1.3	5/16	7.93	5/16	7.93	8.6	17.5	25.1
UU-02	1/8	3.17	2.3	7/16	11.11	7/16	11.11	12.7	22.4	35.6
UU-03	3/16	4.76	3.0	7/16	11.11	1/2	12.70	12.7	24.1	37.3
UU-04	1/4	6.35	4.8	1/2	12.70	9/16	14.28	15.2	26.2	40.9
UU-05	5/16	7.93	6.4	9/16	14.28	5/8	15.87	16.3	28.2	42.9
UU-06	3/8	9.52	7.1	5/8	15.87	11/16	17.46	16.8	30.2	45.0
UU-08	1/2	12.70	10.4	13/16	20.63	7/8	22.22	22.9	31.0	51.3
UU-10	5/8	15.87	12.7	15/16	23.81	1	25.40	24.4	31.8	52.1
UU-12	3/4	19.05	15.7	1-1/16	26.98	1-1/8	28.57	24.4	33.3	53.6
UU-14	7/8	22.22	18.3	1-3/16	30.16	1-1/4	31.75	25.9	35.1	55.4
UU-16	1	25.40	22.4	1-3/8	34.92	1-1/2	38.10	31.2	40.4	64.8
UU-20	1-1/4	31.75	27.7	1-3/4	44.45	1-7/8	47.63	41.1	48.0	92.2
UU-24	1-1/2	38.10	34.0	2-1/8	53.97	2-1/4	57.15	50.0	53.6	108.0
UU-32	2	50.80	46.0	2-3/4	69.85	3	76.20	67.6	74.7	149.4

Connects Metric Tube

Part No.	Tube OD T	Dimensions (mm)							
	mm	E Min.	h	H	F	I	L		
			inch	mm					
UU-M02	2	1.7	11.11	11.11	12.9	22.4	35.6		
UU-M03	3	2.4	11.11	11.11	12.9	22.1	35.3		
UU-M04	4	2.4	11.11	12.70	13.7	24.1	37.3		
UU-M06	6	4.8	12.70	14.28	15.3	26.2	41.0		
UU-M08	8	6.4	14.28	15.87	16.2	28.2	43.2		
UU-M10	10	7.9	17.46	19.05	17.2	31.0	46.2		
UU-M12	12	9.5	20.63	22.22	22.8	31.0	51.2		
UU-M14	14	11.1	23.81	25.40	24.4	31.8	52.0		
UU-M15	15	11.9	23.81	25.40	24.4	31.8	52.0		
UU-M16	16	12.7	23.81	25.40	24.4	31.8	52.0		
UU-M18	18	15.1	26.98	30.16	24.4	33.3	53.5		
UU-M22	22	18.3	30.16	31.75	26.0	34.8	55.0		
UU-M25	25	21.8	34.92	38.10	31.3	40.4	65.0		
UU-M28	28	21.8	44.45	47.63	36.6	43.4	85.0		
UU-M30	30	26.2	44.45	50.80	39.6	49.5	92.7		
UU-M32	32	28.6	44.45	50.80	42.0	51.3	97.3		
UU-M38	38	33.7	55.56	57.15	49.4	58.4	114.0		

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

URU Reducing Union

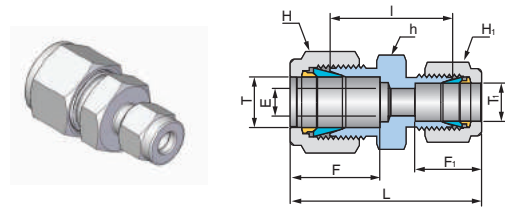


Connects Fractional(Inch) Tube

Part No.	Tube OD T		Tube OD T ₁		Dimensions (mm)										
	inch	mm	inch	mm	E Min.	h		H		H ₁		F	F ₁	I	L
						inch	mm	inch	mm	inch	mm				
URU-0201	1/8	3.17	1/16	1.58	1.3	7/16	11.11	7/16	11.11	5/16	7.93	12.7	8.6	20.6	31.0
URU-0301	3/16	4.76	1/16	1.58	1.3	7/16	11.11	1/2	12.70	5/16	7.93	13.7	8.6	21.9	32.3
URU-0302	3/16	4.76	1/8	3.17	2.3	7/16	11.11	1/2	12.70	7/16	11.11	13.7	12.7	23.4	36.6
URU-0401	1/4	6.35	1/16	1.58	1.3	1/2	12.70	9/16	14.28	5/16	7.93	15.2	8.6	23.1	34.3
URU-0402	1/4	6.35	1/8	3.17	2.3	1/2	12.70	9/16	14.28	7/16	11.11	15.2	12.7	24.6	38.6
URU-0403	1/4	6.35	3/16	4.76	3.0	1/2	12.70	9/16	14.28	1/2	12.70	15.2	13.7	25.4	39.4
URU-0502	5/16	7.93	1/8	3.17	2.3	9/16	14.28	5/8	15.87	7/16	11.11	16.3	12.7	25.9	39.6
URU-0504	5/16	7.93	1/4	6.35	4.8	9/16	14.28	5/8	15.87	9/16	14.28	16.3	15.2	27.4	42.2
URU-0601	3/8	9.52	1/16	1.58	1.3	5/8	15.87	11/16	17.46	5/16	7.93	16.8	8.6	25.4	36.6
URU-0602	3/8	9.52	1/8	3.17	2.3	5/8	15.87	11/16	17.46	7/16	11.11	16.8	12.7	26.9	40.9
URU-0604	3/8	9.52	1/4	6.35	4.8	5/8	15.87	11/16	17.46	9/16	14.28	16.8	15.2	28.4	43.2
URU-0605	3/8	9.52	5/16	7.93	6.4	5/8	15.87	11/16	17.46	5/8	15.87	16.8	16.3	29.5	44.2
URU-0802	1/2	12.70	1/8	3.17	2.3	13/16	20.63	7/8	22.22	7/16	11.11	22.9	12.7	28.4	45.2
URU-0804	1/2	12.70	1/4	6.35	4.8	13/16	20.63	7/8	22.22	9/16	14.28	22.9	15.2	29.5	47.0
URU-0806	1/2	12.70	3/8	9.52	7.1	13/16	20.63	7/8	22.22	11/16	17.46	22.9	16.8	31.0	48.5
URU-1006	5/8	15.87	3/8	9.52	7.1	15/16	23.81	1	25.40	11/16	17.46	24.4	16.8	31.8	49.3
URU-1008	5/8	15.87	1/2	12.70	10.4	15/16	23.81	1	25.40	7/8	22.22	24.4	22.9	31.8	52.1
URU-1204	3/4	19.05	1/4	6.35	4.8	1-1/16	26.98	1-1/8	28.57	9/16	14.28	24.4	15.2	31.8	49.3
URU-1206	3/4	19.05	3/8	9.52	7.1	1-1/16	26.98	1-1/8	28.57	11/16	17.46	24.4	16.8	33.3	50.8
URU-1208	3/4	19.05	1/2	12.70	10.4	1-1/16	26.98	1-1/8	28.57	7/8	22.22	24.4	22.9	33.3	53.6
URU-1210	3/4	19.05	5/8	15.87	12.7	1-1/16	26.98	1-1/8	28.57	1	25.40	24.4	24.4	33.3	53.6
URU-1608	1	25.40	1/2	12.70	10.4	1-3/8	34.92	1-1/2	38.10	7/8	22.22	31.2	22.9	40.9	63.2
URU-1612	1	25.40	3/4	19.05	15.7	1-3/8	34.92	1-1/2	38.10	1-1/8	28.57	31.2	24.4	40.9	63.2

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

URU Reducing Union



Connects Metric Tube

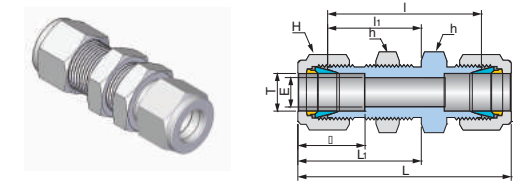
Part No.	Tube OD T	Tube OD T ₁	Dimensions (mm)							
			E Min.	L mm	H mm	h ₁ mm	F	F ₁	I	L
URU-M06M03	6	3	2.4	12.70	14.28	11.11	15.3	12.9	24.6	38.6
URU-M06M04	6	4	2.4	12.70	14.28	12.70	15.3	13.7	25.4	39.4
URU-M08M06	8	6	4.8	14.28	15.87	14.28	16.2	15.3	27.4	42.3
URU-M10M06	10	6	4.8	17.46	19.05	14.28	17.2	15.3	29.5	44.5
URU-M12M06	12	6	4.8	20.63	22.22	14.28	22.8	15.3	29.5	47.0
URU-M12M08	12	8	6.4	20.63	22.22	15.87	22.8	16.2	30.2	47.8
URU-M12M10	12	10	7.9	20.63	22.22	19.05	22.8	17.2	31.0	48.7
URU-M16M10	16	10	7.9	23.81	25.40	19.05	24.4	17.2	31.8	49.5
URU-M16M12	16	12	9.5	23.81	25.40	22.22	24.4	22.8	31.8	52.0
URU-M18M12	18	12	9.5	26.98	30.16	22.22	24.4	22.8	33.3	53.5
URU-M25M18	25	18	15.1	34.92	38.10	30.16	31.3	24.4	38.6	61.0
URU-M25M20	25	20	15.9	34.92	38.10	31.75	31.3	26.0	39.9	62.3

Connects Metric Tube to Fractional(Inch) Tube

Part No.	Tube OD T		Tube OD T ₁	Dimensions (mm)								
	mm	inch		E Min.	L mm	H mm	h ₁ inch	mm	F	F ₁	I	L
URU-M0402	4	1/8	3.17	2.4	11.11	12.70	7/16	11.11	13.7	12.7	23.4	36.5
URU-M0404	4	1/4	6.35	2.4	12.70	12.70	9/16	14.28	13.7	15.2	25.4	39.4
URU-M0602	6	1/8	3.17	2.4	12.70	14.28	7/16	11.11	15.3	12.7	24.6	38.5
URU-M0604	6	1/4	6.35	4.8	12.70	14.28	9/16	14.28	15.3	15.2	26.2	41.0
URU-M0605	6	5/16	7.93	4.8	14.28	14.28	5/8	15.87	15.3	16.3	27.4	42.3
URU-M0804	8	1/4	6.35	4.8	14.28	15.87	9/16	14.28	16.2	15.2	27.4	42.3
URU-M1004	10	1/4	6.35	4.8	17.46	19.05	9/16	14.28	17.2	15.2	29.5	44.5
URU-M1006	10	3/8	9.52	7.1	17.46	19.05	11/16	17.46	17.2	16.8	31.0	45.9
URU-M1206	12	3/8	9.52	7.1	20.63	22.22	11/16	17.46	22.8	16.8	31.0	48.4
URU-M1208	12	1/2	12.70	9.5	20.63	22.22	7/8	22.22	22.8	22.9	31.0	51.2
URU-M1508	15	1/2	12.70	10.4	23.81	25.40	7/8	22.22	24.4	22.9	31.8	52.0

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

UBU Bulkhead Union



Connects Fractional(Inch) Tube

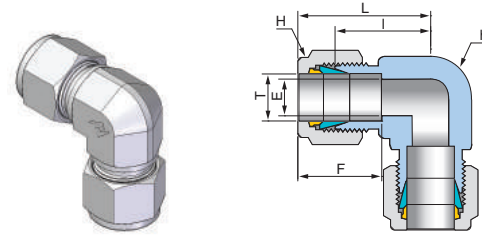
Part No.	Tube OD T		Dimensions (mm)											
	inch	mm	E Min.	h inch	mm	H inch	mm	F	I	I ₁	L	L ₁	Panel Hole Size	Max Panel thickness
UBU-01	1/16	1.68	1.3	5/16	7.93	5/16	7.93	8.6	23.9	13.5	31.5	17.3	5.2	3.1
UBU-02	1/8	3.17	2.3	1/2	12.70	7/16	11.11	12.7	38.1	24.6	51.3	31.2	8.3	12.7
UBU-03	3/16	4.76	3.0	9/16	14.28	1/2	12.70	13.7	40.4	25.4	53.6	32.0	9.9	12.7
UBU-04	1/4	6.35	4.8	5/8	15.87	9/16	14.28	15.2	42.9	26.2	57.7	33.5	11.5	10.2
UBU-05	5/16	7.93	6.4	11/16	17.46	5/8	15.87	16.3	46.0	28.4	60.7	35.8	13.1	11.2
UBU-06	3/8	9.52	7.1	3/4	19.05	11/16	17.46	16.8	47.5	29.5	62.2	36.8	14.7	11.2
UBU-08	1/2	12.70	10.4	15/16	23.81	7/8	22.22	22.9	50.8	31.8	71.1	41.9	19.4	12.7
UBU-10	5/8	15.87	12.7	1-1/16	26.98	1	25.40	24.4	52.3	32.5	72.6	42.7	22.6	12.7
UBU-12	3/4	19.05	15.7	1-3/16	30.16	1-1/8	28.57	24.4	58.7	37.3	79.0	47.5	25.8	16.8
UBU-14	7/8	22.22	18.3	1-3/8	34.92	1-1/4	31.75	25.9	64.3	42.9	84.6	53.1	29.0	19.1
UBU-16	1	25.40	22.4	1-5/8	41.27	1-1/2	38.10	31.2	71.4	45.2	95.8	57.4	33.7	19.1
UBU-20	1-1/4	31.75	27.7	1-7/8	47.63	1-7/8	47.63	41.1	78.9	47.8	123.2	69.9	41.7	19.1
UBU-24	1-1/2	38.10	34.0	2-1/4	57.15	2-1/4	57.15	50.0	84.8	49.3	139.2	76.5	49.6	19.1
UBU-32	2	50.80	46.0	2-3/4	69.85	3	76.20	67.6	105.7	56.4	180.3	93.7	67.1	19.1

Connects Metric Tube

Part No.	Tube OD T	Dimensions (mm)										
		E Min.	h mm	H mm	F	I	I ₁	L	L ₁	Panel Hole Size	Max Panel thickness	
UBU-M03	3	2.4	14.28	11.11	12.9	38.1	24.6	51.3	31.2	8.3	12.7	
UBU-M04	4	2.4	14.28	12.70	13.7	40.4	25.4	53.6	32.0	9.9	12.7	
UBU-M06	6	4.8	15.87	14.28	15.3	42.9	26.2	57.7	33.6	11.5	10.2	
UBU-M08	8	6.4	17.46	15.87	16.2	46.0	28.6	61.0	36.1	13.1	11.2	
UBU-M10	10	7.9	22.22	19.05	17.2	48.5	29.4	63.7	37.0	16.2	11.2	
UBU-M12	12	9.5	23.81	22.22	22.8	50.8	31.8	71.0	41.9	19.5	12.7	
UBU-M14	14	11.1	26.98	25.40	24.4	52.3	32.5	72.5	42.6	22.8	12.7	
UBU-M15	15	11.9	26.98	25.40	24.4	52.3	32.5	72.5	42.6	22.8	12.7	
UBU-M16	16	12.7	26.98	25.40	24.4	52.3	32.5	72.5	42.6	22.8	12.7	
UBU-M18	18	15.1	30.16	30.16	24.4	58.7	37.3	78.9	47.4	26.0	16.8	
UBU-M20	20	15.9	34.92	31.75	26.0	64.3	42.9	84.5	53.0	29.0	17.0	
UBU-M22	22	18.3	34.92	31.75	26.0	64.3	42.9	84.5	53.0	29.0	19.1	
UBU-M25	25	21.8	41.27	38.10	31.3	71.4	45.2	96.0	57.5	33.7	19.1	
UBU-M32	32	28.6	50.80	50.80	42.0	82.3	49.5	128.3	72.5	42.5	19.0	
UBU-M38	38	33.7	60.30	57.15	49.4	89.8	51.9	145.0	79.5	50.5	19.0	

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E is minimum opening. F and L are typical finger tight.

UEU Union Elbow



Connects Fractional(Inch) Tube

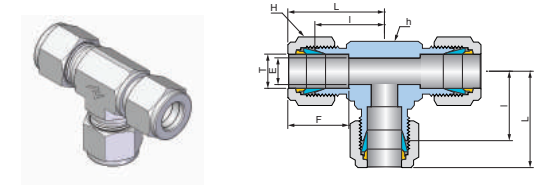
Part No.	Tube OD T		Dimensions (mm)							
	inch	mm	E Min.	h		H		F	I	L
				inch	mm	inch	mm			
UEU-01	1/16	1.68	1.3	3/8	9.52	5/16	7.92	8.6	14.0	17.8
UEU-02	1/8	3.17	2.3	3/8	9.52	7/16	11.11	12.7	15.7	22.4
UEU-03	3/16	4.76	3.0	1/2	12.70	1/2	12.70	13.7	17.8	24.4
UEU-04	1/4	6.35	4.8	1/2	12.70	9/16	14.28	15.2	19.6	26.9
UEU-05	5/16	7.93	6.4	9/16	14.28	5/8	15.87	16.3	21.3	28.7
UEU-06	3/8	9.52	7.1	5/8	15.87	11/16	17.46	16.8	23.1	30.5
UEU-08	1/2	12.70	10.4	13/16	20.63	7/8	22.22	22.9	25.9	36.1
UEU-10	5/8	15.87	12.7	15/16	23.81	1	25.40	24.4	28.7	38.8
UEU-12	3/4	19.05	15.7	1-1/16	26.98	1-1/8	28.57	24.4	29.7	39.9
UEU-14	7/8	22.22	18.3	1-3/16	30.16	1-1/4	31.75	25.9	34.5	44.7
UEU-16	1	25.40	22.4	1-3/8	34.92	1-1/2	38.10	31.2	36.8	49.0
UEU-20	1-1/4	31.75	27.7	1-11/16	42.86	1-7/8	47.63	41.1	44.5	66.5
UEU-24	1-1/2	38.10	34.0	2	50.80	2-1/4	57.15	50.0	50.8	78.0
UEU-32	2	50.80	46.0	2-3/4	69.85	3	76.20	67.6	69.8	107.2

Connects Metric Tube

Part No.	Tube OD T		Dimensions (mm)				
	mm	E Min.	h	H	F	I	L
			inch	mm			
UEU-M03	3	2.4	9.52	11.11	12.9	15.7	22.3
UEU-M04	4	2.4	12.70	12.70	13.7	18.8	25.4
UEU-M06	6	4.8	12.70	14.28	15.3	19.6	27.0
UEU-M08	8	6.4	14.28	15.87	16.2	21.3	28.8
UEU-M10	10	7.9	17.46	19.05	17.2	23.9	31.5
UEU-M12	12	9.5	20.63	22.22	22.8	25.9	36.0
UEU-M14	14	11.1	23.81	25.40	24.4	28.7	38.8
UEU-M15	15	11.9	23.81	25.40	24.4	28.7	38.8
UEU-M16	16	12.7	23.81	25.40	24.4	28.7	38.8
UEU-M18	18	15.1	26.98	30.16	24.4	29.7	39.8
UEU-M20	20	15.9	34.92	31.75	26.0	34.5	44.6
UEU-M22	22	18.3	34.92	31.75	26.0	34.5	44.6
UEU-M25	25	21.8	34.92	38.10	31.3	36.8	49.1
UEU-M28	28	21.8	42.86	47.63	36.6	43.2	64.0
UEU-M30	30	26.2	47.63	50.80	39.6	48.3	69.9
UEU-M32	32	28.6	47.63	50.80	42.0	49.3	72.3
UEU-M38	38	33.7	55.56	57.15	49.4	56.4	84.0

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E is minimum opening. F and L are typical finger tight.

UUT Union Tee



Connects Fractional(Inch) Tube

Part No.	Tube OD T		Dimensions (mm)							
	inch	mm	E Min.	h		H		F	I	L
				inch	mm	inch	mm			
UUT-01	1/16	1.68	1.3	3/8	9.52	5/16	7.93	8.6	14.0	17.8
UUT-02	1/8	3.17	2.3	3/8	9.52	7/16	11.11	12.7	15.7	22.4
UUT-03	3/16	4.76	3.0	1/2	12.70	1/2	12.70	13.7	17.8	24.4
UUT-04	1/4	6.35	4.8	1/2	12.70	9/16	14.28	15.2	19.6	26.9
UUT-05	5/16	7.93	6.4	5/8	15.87	5/8	15.87	16.3	21.3	28.7
UUT-06	3/8	9.52	7.1	5/8	15.87	11/16	17.46	16.8	23.1	30.5
UUT-08	1/2	12.7	10.4	13/16	20.63	7/8	22.22	22.9	25.9	36.1
UUT-10	5/8	15.87	12.7	15/16	23.81	1	25.40	24.4	28.7	38.8
UUT-12	3/4	19.05	15.7	1-1/16	26.98	1-1/8	28.57	24.4	29.7	39.9
UUT-14	7/8	22.22	18.3	1-3/16	30.16	1-1/4	31.75	25.9	34.5	44.7
UUT-16	1	25.4	22.4	1-3/8	34.92	1-1/2	38.10	31.2	36.8	49.0
UUT-20	1-1/4	31.75	27.7	1-11/16	42.86	1-7/8	47.63	41.1	44.5	66.5
UUT-24	1-1/2	38.1	34.0	2	50.80	2-1/4	57.15	50.0	50.8	78.0
UUT-32	2	50.8	46.0	2-3/4	69.85	3	76.20	67.6	69.8	107.2

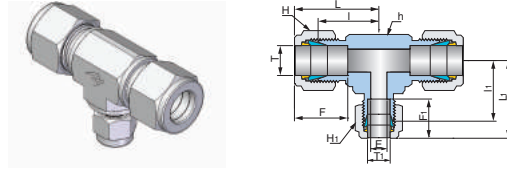
Connects Metric Tube

Part No.	Tube OD T		Dimensions (mm)				
	mm	E Min.	h	H	F	I	I ₁
			mm	mm			
UUT-M02	2	1.7	9.52	12.70	12.9	15.7	22.3
UUT-M03	3	2.4	9.52	11.11	12.9	15.7	22.3
UUT-M04	4	2.4	12.70	12.70	13.7	18.8	25.4
UUT-M06	6	4.8	12.70	14.28	15.3	19.6	27.0
UUT-M08	8	6.4	14.28	15.87	16.2	21.3	28.8
UUT-M10	10	7.9	17.46	19.05	17.2	23.9	31.5
UUT-M12	12	9.5	20.63	22.22	22.8	25.9	36.0
UUT-M14	14	11.1	23.81	25.40	24.4	28.7	38.8
UUT-M15	15	11.9	23.81	25.40	24.4	28.7	38.8
UUT-M16	16	12.7	23.81	25.40	24.4	28.7	38.8
UUT-M18	18	15.1	26.98	30.16	24.4	29.7	39.8
UUT-M20	20	15.9	34.92	31.75	26.0	34.5	44.6
UUT-M22	22	18.3	34.92	31.75	26.0	34.5	44.6
UUT-M25	25	21.8	34.92	38.10	31.3	36.8	49.1
UUT-M28	28	21.8	42.86	47.63	36.6	43.2	64.0
UUT-M30	30	26.2	47.63	50.80	39.6	48.3	69.9
UUT-M32	32	28.6	47.63	50.80	42.0	49.3	72.3
UUT-M38	38	33.7	55.56	57.15	49.4	56.4	84.0

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URBT

Reducing Union Branch Tee

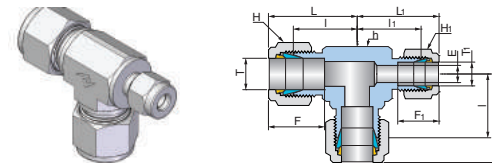


Connects Fractional(Inch) Tube

Part No.	Tube OD T		Tube OD T ₁		Dimensions (mm)												
	inch	mm	inch	mm	E Min.	h		H		H ₁		F	F ₁	I	I ₁	L	L ₁
						inch	mm	inch	mm	inch	mm						
URBT-0604	3/8	9.52	1/4	6.35	4.8	5/8	15.87	11/16	17.46	9/16	14.28	16.8	15.2	23.1	21.6	30.5	29.0
URBT-0804	1/2	12.7	1/4	6.35	4.8	13/16	20.63	7/8	22.22	9/16	14.28	22.9	15.2	25.9	24.4	36.1	31.8
URBT-0806	1/2	12.7	3/8	9.52	7.1	13/16	20.63	7/8	22.22	11/16	17.46	22.9	16.8	25.9	25.9	36.1	33.3
URBT-1006	5/8	15.87	3/8	9.52	7.1	15/16	23.81	1	25.40	11/16	17.46	24.4	16.8	28.7	28.7	38.9	36.1
URBT-1204	3/4	19.05	1/4	6.35	4.8	1-1/16	26.98	1-1/8	28.57	9/16	14.28	24.4	15.2	29.7	29.7	39.9	37.1
URBT-1206	3/4	19.05	3/8	9.52	7.1	1-1/16	26.98	1-1/8	28.57	11/16	17.46	24.4	16.8	29.7	29.7	39.9	37.1
URBT-1208	3/4	19.05	1/2	12.7	10.4	1-1/16	26.98	1-1/8	28.57	7/8	22.22	24.4	22.9	29.7	29.7	39.9	39.9
URBT-1604	1	25.4	1/4	6.35	4.8	1-3/8	34.92	1-1/2	38.10	9/16	14.28	31.2	15.2	36.8	33.0	49.0	40.4
URBT-1606	1	25.4	3/8	9.52	7.1	1-3/8	34.92	1-1/2	38.10	11/16	17.46	31.2	16.8	36.8	34.5	49.0	41.9
URBT-1608	1	25.4	1/2	12.7	10.4	1-3/8	34.92	1-1/2	38.10	7/8	22.22	31.2	22.9	36.8	34.5	49.0	44.7
URBT-1612	1	25.4	3/4	19.05	15.7	1-3/8	34.92	1-1/2	38.10	1-1/8	28.57	31.2	24.4	36.8	34.5	49.0	44.7
URBT-2416	1-1/2	38.1	1	25.4	22.4	2	50.8	2-1/4	57.15	1-1/2	38.10	50.0	31.2	50.8	47.8	78.7	59.9

Connects Metric Tube

Part No.	Tube OD T		Tube OD T ₁		Dimensions (mm)													
	mm	mm	mm	mm	E Min.	h		H		H ₁		F	F ₁	I	I ₁	L	L ₁	
						inch	mm	mm	mm	mm	mm							
URBT-M08M06	8	6	6	6	4.8	14.28	15.87	14.28	16.2	15.3	21.3	21.3	28.8	28.7				
URBT-M10M06	10	6	6	6	4.8	17.46	19.05	14.28	17.2	15.3	23.9	22.3	31.5	29.7				
URBT-M12M06	12	6	6	6	4.8	20.63	22.22	14.28	22.8	15.3	25.9	24.4	36.0	31.8				
URBT-M16M12	16	12	12	12	9.5	26.98	25.40	22.22	24.4	22.8	28.7	28.7	38.8	38.8				
URBT-M18M12	18	12	12	12	9.5	26.98	30.16	22.22	24.4	22.8	29.7	29.7	39.8	39.8				
URBT-M22M12	22	12	12	12	9.5	34.92	31.75	22.22	26.0	22.8	34.5	34.5	44.6	44.6				
URBT-M25M12	25	12	12	12	9.5	34.92	38.10	22.22	31.3	22.8	36.8	34.5	49.1	44.6				



URRT

Reducing Union Run Tee

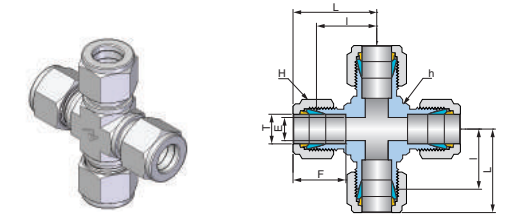
Connects Fractional(Inch) Tube

Part No.	Tube OD T		Tube OD T ₁		Dimensions (mm)												
	inch	mm	inch	mm	E Min.	h		H		H ₁		F	F ₁	I	I ₁	L	L ₁
						inch	mm	inch	mm	inch	mm						
URRT-0604	3/8	9.52	1/4	6.35	4.8	5/8	15.87	11/16	17.46	9/16	14.28	16.8	15.2	23.1	21.6	30.5	29.0
URRT-0804	1/2	12.7	1/4	6.35	4.8	13/16	20.63	7/8	22.22	9/16	14.28	22.9	15.2	25.9	24.4	36.1	31.8
URRT-0806	1/2	12.7	3/8	9.52	7.1	13/16	20.63	7/8	22.22	11/16	17.46	22.9	16.8	25.9	25.9	36.1	33.3
URRT-1006	5/8	15.87	3/8	9.52	7.1	1	25.40	1	25.40	11/16	17.46	24.4	16.8	28.7	28.7	38.9	36.1
URRT-1206	3/4	19.05	3/8	9.52	7.1	1-1/16	26.98	1-1/8	28.57	11/16	17.46	24.4	16.8	29.7	29.7	39.9	37.1
URRT-1208	3/4	19.05	1/2	12.7	10.4	1-1/16	26.98	1-1/8	28.57	7/8	22.22	24.4	22.9	29.7	29.7	39.9	39.9
URRT-1608	1	25.4	1/2	12.7	10.4	1-3/8	34.92	1-1/2	38.10	7/8	22.22	31.2	22.9	36.8	34.5	49.0	44.7
URRT-1612	1	25.4	3/4	19.05	15.7	1-3/8	34.92	1-1/2	38.10	1-1/8	28.57	31.2	24.4	36.8	34.5	49.0	44.7

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UUC

Union Cross



Connects Fractional(Inch) Tube

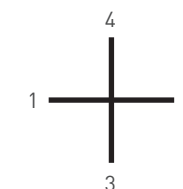
Part No.	Tube OD T		Dimensions (mm)							
	inch	mm	E Min.	h		H		F	I	L
				inch	mm	inch	mm			
UUC-02	1/8	3.17	2.3	3/8	9.52	7/16	11.11	12.7	15.7	22.4
UUC-03	3/16	4.76	3.0	1/2	12.70	1/2	12.70	13.7	17.8	24.4
UUC-04	1/4	6.35	4.8	1/2	12.70	9/16	14.28	15.2	19.6	26.9
UUC-05	5/16	7.93	6.4	5/8	15.87	5/8	15.87	16.3	21.3	28.7
UUC-06	3/8	9.52	7.1	5/8	15.87	11/16	17.46	16.8	23.1	30.5
UUC-08	1/2	12.7	10.4	13/16	20.63	7/8	22.22	22.9	25.9	36.1
UUC-10	5/8	15.87	15.9	1-1/16	26.98	1	25.40	24.4	28.7	38.8
UUC-12	3/4	19.05	12.7	1-1/16	26.98	1-1/8	28.57	24.4	29.7	39.9
UUC-14	7/8	22.22	18.3	1-3/8	34.92	1-1/4	31.75	25.9	34.5	44.7
UUC-16	1	25.4	22.4	1-3/8	34.92	1-1/2	38.10	31.2	36.8	49.0

Connects Metric Tube

Part No.	Tube OD T		Dimensions (mm)					
	mm	mm	E Min.	h		F	I	L
				mm	mm			
UUC-M03	3	3	2.4	9.52	11.11	12.9	15.7	22.3
UUC-M06	6	6	4.8	12.70	14.28	15.3	19.6	27.0
UUC-M08	8	8	6.4	15.87	15.87	16.2	21.3	28.8
UUC-M10	10	10	7.9	17.46	19.05	17.2	23.9	31.5
UUC-M12	12	12	9.5	20.63	22.22	22.8	25.9	36.0
UUC-M16	16	16	12.7	26.98	25.40	24.4	28.7	38.8
UUC-M18	18	18	15.1	26.98	30.16	24.4	29.7	39.8
UUC-M20	20	20	15.9	34.92	31.75	26.0	34.5	44.6
UUC-M22	22	22	18.3	34.92	31.75	26.0	34.5	44.6
UUC-M25	25	25	21.8	34.92	38.10	31.3	36.8	49.1

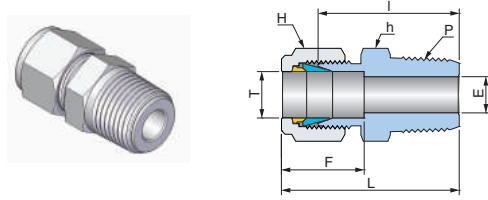
Part Numbers of Tee & Cross

Firstly, indicate the size of 1 to 2 as run.
Secondly, indicate the size of 3 to 4 as branch.
(3 for Tee and Cross, 4 for Cross only.)



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UMC Male Connector



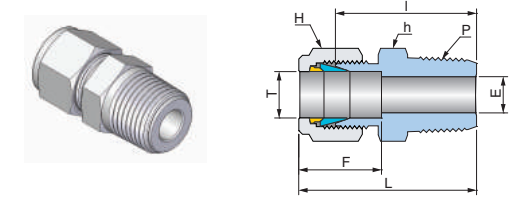
Connects Fractional(Inch) Tube to Female NPT Thread

Part No.	Tube OD T		P NPT	Dimensions (mm)							
	inch	mm		E Min.	h		H		F	I	L
					inch	mm	inch	mm			
UMC-0101N	1/16	1.58	1/16	1.3	5/16	7.93	5/16	7.93	8.6	20.0	23.8
UMC-0102N	1/16	1.58	1/8	1.3	7/16	11.10	5/16	7.93	8.6	22.4	26.2
UMC-0104N	1/16	1.58	1/4	1.3	9/16	14.28	5/16	7.93	8.6	27.2	31.0
UMC-0201N	1/8	3.17	1/16	2.3	7/16	11.10	7/16	11.10	12.7	23.1	29.7
UMC-0202N	1/8	3.17	1/8	2.3	7/16	11.10	7/16	11.10	12.7	23.9	30.5
UMC-0204N	1/8	3.17	1/4	2.3	9/16	14.28	7/16	11.10	12.7	29.0	35.6
UMC-0206N	1/8	3.17	3/8	2.3	11/16	17.46	7/16	11.10	12.7	29.2	35.8
UMC-0208N	1/8	3.17	1/2	2.3	7/8	22.22	7/16	11.10	12.7	35.6	42.2
UMC-0302N	3/16	4.76	1/8	3.0	7/16	11.10	1/2	12.70	13.7	24.6	31.2
UMC-0304N	3/16	4.76	1/4	3.0	9/16	14.28	1/2	12.70	13.7	29.7	36.3
UMC-0401N	1/4	6.35	1/16	3.0	1/2	12.70	9/16	14.28	15.2	25.4	32.8
UMC-0402N	1/4	6.35	1/8	4.8	1/2	12.70	9/16	14.28	15.2	25.4	32.8
UMC-0404N	1/4	6.35	1/4	4.8	9/16	14.28	9/16	14.28	15.2	30.5	37.8
UMC-0406N	1/4	6.35	3/8	4.8	11/16	17.46	9/16	14.28	15.2	31.0	38.4
UMC-0408N	1/4	6.35	1/2	4.8	7/8	22.22	9/16	14.28	15.2	37.3	44.7
UMC-0412N	1/4	6.35	3/4	4.8	1-1/16	26.98	9/16	14.28	15.2	38.9	46.2
UMC-0502N	5/16	7.93	1/8	4.8	9/16	14.28	5/8	15.87	16.3	26.7	34.0
UMC-0504N	5/16	7.93	1/4	6.4	9/16	14.28	5/8	15.87	16.3	31.2	38.6
UMC-0506N	5/16	7.93	3/8	6.4	11/16	17.46	5/8	15.87	16.3	31.8	39.1
UMC-0602N	3/8	9.52	1/8	4.8	5/8	15.87	11/16	17.46	16.8	27.9	35.3
UMC-0604N	3/8	9.52	1/4	7.1	5/8	15.87	11/16	17.46	16.8	32.5	39.9
UMC-0606N	3/8	9.52	3/8	7.1	11/16	17.46	11/16	17.46	16.8	32.5	39.9
UMC-0608N	3/8	9.52	1/2	7.1	7/8	22.22	11/16	17.46	16.8	38.9	46.2
UMC-0612N	3/8	9.52	3/4	7.1	1-1/16	26.98	11/16	17.46	16.8	40.4	47.8
UMC-0616N	3/8	9.52	1	7.1	1-3/8	34.92	11/16	17.46	16.8	47.0	54.4
UMC-0802N	1/2	12.70	1/8	4.8	13/16	20.63	7/8	22.22	22.9	28.7	38.9
UMC-0804N	1/2	12.70	1/4	7.1	13/16	20.63	7/8	22.22	22.9	33.3	43.4
UMC-0806N	1/2	12.70	3/8	9.7	13/16	20.63	7/8	22.22	22.9	33.3	43.4
UMC-0808N	1/2	12.70	1/2	10.4	7/8	22.22	7/8	22.22	22.9	38.9	49.0
UMC-0812N	1/2	12.70	3/4	10.4	1-1/16	26.98	7/8	22.22	22.9	40.4	50.5
UMC-0816N	1/2	12.70	1	10.4	1-3/8	34.92	7/8	22.22	22.9	47.0	57.2
UMC-1006N	5/8	15.87	3/8	9.7	15/16	23.81	1	25.40	24.4	34.0	44.2
UMC-1008N	5/8	15.87	1/2	11.9	15/16	23.81	1	25.40	24.4	38.9	49.0
UMC-1012N	5/8	15.87	3/4	12.7	1-1/16	26.98	1	25.40	24.4	40.4	50.5
UMC-1206N	3/4	19.05	3/8	10.4	1-1/16	26.98	1-1/8	28.57	24.4	35.4	45.6
UMC-1208N	3/4	19.05	1/2	11.9	1-1/16	26.98	1-1/8	28.57	24.4	40.4	50.5
UMC-1212N	3/4	19.05	3/4	15.7	1-1/16	26.98	1-1/8	28.57	24.4	40.4	50.5
UMC-1216N	3/4	19.05	1	15.7	1-3/8	34.92	1-1/8	28.57	24.4	47.0	57.2
UMC-1412N	7/8	22.22	3/4	15.7	1-3/16	30.16	1-1/4	31.75	25.9	40.4	50.5
UMC-1416N	7/8	22.22	1	18.3	1-3/8	34.92	1-1/4	31.75	25.9	47.0	57.2
UMC-1608N	1	25.40	1/2	11.9	1-3/8	34.92	1-1/2	38.10	31.2	45.2	57.4
UMC-1612N	1	25.40	3/4	15.7	1-3/8	34.92	1-1/2	38.10	31.2	45.2	57.4
UMC-1616N	1	25.40	1	22.4	1-3/8	34.92	1-1/2	38.10	31.2	50.0	62.2
UMC-2016N	1-1/4	31.75	1	22.4	1-3/4	44.45	1-7/8	47.63	41.1	55.1	77.2
UMC-2020N	1-1/4	31.75	1-1/4	27.7	1-3/4	44.45	1-7/8	47.63	41.1	55.1	77.2
UMC-2424N	1-1/2	38.10	1-1/2	34.0	2-1/8	53.97	2-1/4	57.15	50.0	61.7	88.9
UMC-3232N	2	50.80	2	46.0	2-3/4	69.85	3	76.20	67.6	76.2	113.5

ISO Tapered threads are available for all fractional UMC. To order, add "R" as a suffix instead of "N".

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

UMC Male Connector



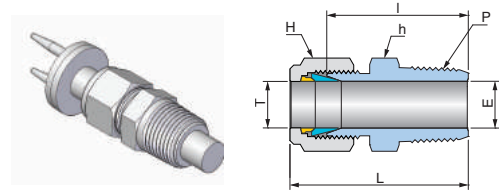
Connects Metric Tube to Female ISO Tapered Thread

Part No.	Tube OD T mm	P ISO7/1	Dimensions (mm)					
			E Min.	h mm	H mm	F	I	L
UMC-M0202R	2	1/8	1.7	11.11	11.11	12.9	23.9	30.5
UMC-M0302R	3	1/8	2.4	11.11	11.11	12.9	23.9	30.5
UMC-M0304R	3	1/4	2.4	14.28	11.11	12.9	29.0	35.6
UMC-M0402R	4	1/8	2.4	11.11	12.70	13.7	24.6	31.2
UMC-M0404R	4	1/4	2.4	14.28	12.70	13.7	29.7	36.3
UMC-M0602R	6	1/8	4.8	12.70	14.28	15.3	25.4	32.8
UMC-M0604R	6	1/4	4.8	14.28	14.28	15.3	30.5	37.9
UMC-M0606R	6	3/8	4.8	17.46	14.28	15.3	31.0	38.4
UMC-M0608R	6	1/2	4.8	22.22	14.28	15.3	37.3	44.7
UMC-M0802R	8	1/8	4.8	14.28	15.87	16.2	26.7	34.2
UMC-M0804R	8	1/4	6.4	14.28	15.87	16.2	31.2	38.7
UMC-M0806R	8	3/8	6.4	17.46	15.87	16.2	31.8	39.3
UMC-M0808R	8	1/2	6.4	22.22	15.87	16.2	38.1	45.6
UMC-M1002R	10	1/8	4.8	17.46	19.05	17.2	28.7	36.3
UMC-M1004R	10	1/4	7.1	17.46	19.05	17.2	33.3	40.9
UMC-M1006R	10	3/8	7.9	17.46	19.05	17.2	33.3	40.9
UMC-M1008R	10	1/2	7.9	22.22	19.05	17.2	38.9	46.5
UMC-M1202R	12	1/8	4.8	20.63	22.22	22.8	28.7	38.8
UMC-M1204R	12	1/4	7.1	20.63	22.22	22.8	33.3	43.4
UMC-M1206R	12	3/8	9.5	20.63	22.22	22.8	33.3	43.4
UMC-M1208R	12	1/2	9.5	22.22	22.22	22.8	38.9	49.0
UMC-M1212R	12	3/4	9.5	26.98	22.22	22.8	40.4	50.5
UMC-M1404R	14	1/4	7.1	22.22	25.40	24.4	34.0	44.1
UMC-M1406R	14	3/8	9.5	22.22	25.40	24.4	34.0	44.1
UMC-M1408R	14	1/2	11.1	23.81	25.40	24.4	38.9	49.0
UMC-M1508R	15	1/2	11.9	23.81	25.40	24.4	38.9	49.0
UMC-M1606R	16	3/8	9.5	23.81	25.40	24.4	34.0	44.1
UMC-M1608R	16	1/2	11.9	23.81	25.40	24.4	38.9	49.0
UMC-M1612R	16	3/4	12.7	26.98	25.40	24.4	40.4	50.5
UMC-M1808R	18	1/2	11.9	26.98	30.16	24.4	40.4	50.5
UMC-M1812R	18	3/4	15.1	26.98	30.16	24.4	40.4	50.5
UMC-M2008R	20	1/2	11.9	30.16	31.75	26.0	42.2	52.3
UMC-M2012R	20	3/4	15.9	30.16	31.75	26.0	42.2	52.3
UMC-M2208R	22	1/2	11.9	30.16	31.75	26.0	42.2	52.3
UMC-M2212R	22	3/4	15.9	30.16	31.75	26.0	42.2	52.3
UMC-M2508R	25	1/2	11.9	34.92	38.10	31.3	45.2	57.5
UMC-M2512R	25	3/4	15.9	34.92	38.10	31.3	45.2	57.5
UMC-M2516R	25	1	21.8	34.92	38.10	31.3	50.0	62.3
UMC-M2816R	28	1	21.8	44.45	47.63	36.6	51.6	72.4
UMC-M2820R	28	1-1/4	21.8	47.63	47.63	36.6	52.3	73.1
UMC-M3020R	30	1-1/4	26.2	47.63	50.80	39.6	55.6	77.2
UMC-M3220R	32	1-1/4	28.6	47.63	50.80	42.0	56.6	79.6
UMC-M3824R	38	1-1/2	33.7	55.56	57.15	49.4	64.0	92.6

NPT threads are available for all metric UMC. To order, add "N" as a suffix instead of "R".

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E is minimum opening. F and L are typical finger tight.

UTMC Thermocouple Male Connector



Connects Fractional(Inch) Tube to Female NPT Thread

Part No.	Tube OD T		P NPT	Dimensions (mm)						
	inch	mm		E Min.	h		H		I	L
					inch	mm	inch	mm		
UTMC-0204N	1/8	3.17	1/4	3.4	9/16	14.28	7/16	11.11	29.0	35.6
UTMC-0206N	1/8	3.17	3/8	3.4	11/16	17.46	7/16	11.11	29.2	35.8
UTMC-0406N	1/4	6.35	3/8	6.5	11/16	17.46	9/16	14.28	31.0	38.4
UTMC-0408N	1/4	6.35	1/2	6.5	7/8	22.22	9/16	14.28	37.3	44.7
UTMC-0608N	3/8	9.52	1/2	9.7	7/8	22.22	11/16	17.46	38.9	46.2
UTMC-0812N	1/2	12.70	3/4	12.9	1-1/16	26.98	7/8	22.22	40.4	50.5
UTMC-0816N	1/2	12.70	1	12.9	1-3/8	34.92	7/8	22.22	47.0	57.2

ISO Tapered threads are available for all fractional UTMC. To order, add "R" as a suffix instead of "N".

Connects Metric Tube to Female ISO Tapered Thread

Part No.	Tube OD T		P ISO7/1	Dimensions (mm)				
	mm	E Min.		h		I	L	
				inch	mm			
UTMC-M0404R	4	4.2	1/4	14.28	12.70	29.7	36.3	
UTMC-M0606R	6	6.2	3/8	17.46	14.28	31.0	38.4	
UTMC-M0608R	6	6.2	1/2	22.22	14.28	37.3	44.7	
UTMC-M0806R	8	8.2	3/8	17.46	15.87	31.8	39.3	
UTMC-M0808R	8	8.2	1/2	22.22	15.87	38.1	45.6	
UTMC-M1008R	10	10.2	1/2	22.22	19.05	38.9	46.5	
UTMC-M1212R	12	12.2	3/4	26.98	22.22	40.4	50.5	

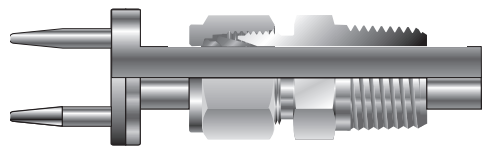
NPT threads are available for all metric fractional UTMC. To order, add "N" as a suffix instead of "R".

Bored - Through Fittings

Bored-through male connectors handle thermocouples or tip tubes easily. Most UNILOK male connectors can be bored-through fittings.

The following fittings are impractical to make boredthrough fittings.

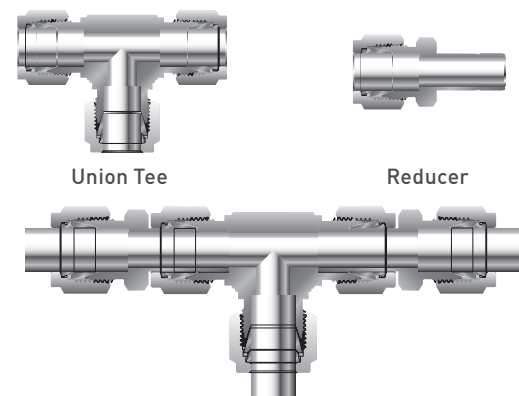
- Male connector with small pipe thread end as 1/8"
- Male connectors which tube fitting end is larger than pipe thread end such as UMC-0602R- or UME-M1204N-.



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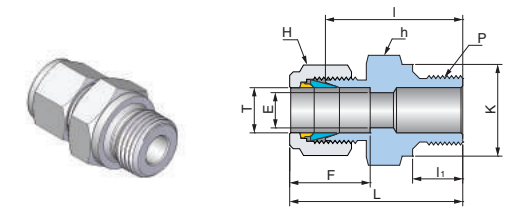
Heat Exchanger Tee

UNILOK union tees and reducers can make heat exchange tees.



Heat Exchanger Tee

UMC-G Male Connector for Bonded Seal



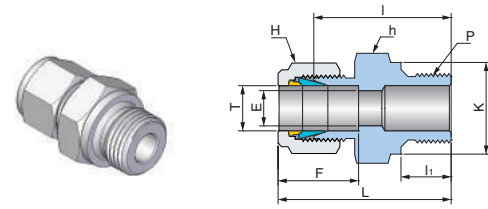
Connects Fractional(Inch) Tube to Female ISO Parallel Thread

Part No.	Tube OD T		P ISO 228/1	Dimensions (mm)									
	inch	mm		E Min.	h		H		F	I	I ₁	L	K
					inch	mm	inch	mm					
UMC-0202G	1/8	3.17	1/8	2.3	9/16	14.28	7/16	11.11	12.7	23.4	7.1	30.0	13.8
UMC-0204G	1/8	3.17	1/4	2.3	3/4	19.05	7/16	11.11	12.7	28.7	11.2	35.3	18.0
UMC-0206G	1/8	3.17	3/8	2.3	7/8	22.22	7/16	11.11	12.7	29.7	11.2	36.3	21.8
UMC-0402G	1/4	6.35	1/8	4.1	9/16	14.28	9/16	14.28	15.2	24.9	7.1	32.3	13.8
UMC-0404G	1/4	6.35	1/4	4.8	3/4	19.05	9/16	14.28	15.2	30.2	11.2	37.6	18.0
UMC-0406G	1/4	6.35	3/8	4.8	7/8	22.22	9/16	14.28	15.2	31.5	11.2	38.9	21.8
UMC-0408G	1/4	6.35	1/2	4.8	1-1/16	26.98	9/16	14.28	15.2	37.3	14.2	44.7	26.0
UMC-0604G	3/8	9.52	1/4	5.8	3/4	19.05	11/16	17.46	16.8	31.8	11.2	39.1	18.0
UMC-0606G	3/8	9.52	3/8	7.1	7/8	22.22	11/16	17.46	16.8	33.0	11.2	40.4	21.8
UMC-0608G	3/8	9.52	1/2	7.1	1-1/16	26.98	11/16	17.46	16.8	38.9	14.2	46.2	26.0
UMC-0802G	1/2	12.70	1/8	4.8	7/8	22.22	7/8	22.22	22.9	28.5	7.1	38.7	13.8
UMC-0804G	1/2	12.70	1/4	5.8	13/16	20.63	7/8	22.22	22.9	32.5	11.2	42.7	18.0
UMC-0806G	1/2	12.70	3/8	7.9	7/8	22.22	7/8	22.22	22.9	33.0	11.2	43.2	21.8
UMC-0808G	1/2	12.70	1/2	10.4	1-1/16	26.98	7/8	22.22	22.9	38.9	14.2	49.0	26.0
UMC-1208G	3/4	19.05	1/2	11.9	1-1/16	26.98	1-1/8	28.57	24.4	38.9	14.2	49.0	26.0
UMC-1212G	3/4	19.05	3/4	15.7	1-3/8	34.92	1-1/8	28.57	24.4	42.7	15.7	52.8	32.0
UMC-1612G	1	25.40	3/4	16.0	1-3/8	34.92	1-1/2	38.10	31.2	45.2	15.7	57.4	32.0
UMC-1616G	1	25.40	1	19.8	1-5/8	41.27	1-1/2	38.10	31.2	47.8	18.3	59.9	39.0

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UMC-G

Male Connector for Bonded Seal



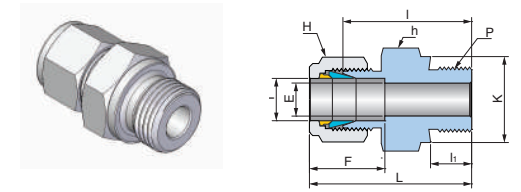
Connects Metric Tube to Female ISO Parallel Thread

Part No.	Tube OD T mm	P ISO 228/1	Dimensions (mm)							
			E Min.	h mm	H mm	F	I	I ₁	L	K
UMC-M0202G	2	1/8	1.7	14.28	12.70	12.9	23.4	7.1	30.0	13.8
UMC-M0302G	3	1/8	2.4	14.28	11.11	12.9	23.4	7.1	30.0	13.8
UMC-M0304G	3	1/4	2.4	19.05	11.11	12.9	28.7	11.2	35.3	18.0
UMC-M0402G	4	1/8	2.4	14.28	12.70	13.7	24.1	7.1	30.7	13.8
UMC-M0404G	4	1/4	2.4	19.05	12.70	13.7	29.4	11.2	36.0	18.0
UMC-M0602G	6	1/8	4.0	14.28	14.28	15.3	24.9	7.1	32.3	13.8
UMC-M0604G	6	1/4	4.8	19.05	14.28	15.3	30.2	11.2	37.6	18.0
UMC-M0606G	6	3/8	4.8	22.22	14.28	15.3	31.5	11.2	38.9	21.8
UMC-M0608G	6	1/2	4.8	26.98	14.28	15.3	37.3	14.2	44.7	26.0
UMC-M0802G	8	1/8	4.0	15.87	15.87	16.2	25.7	7.1	33.2	13.8
UMC-M0804G	8	1/4	6.4	19.05	15.87	16.2	31.0	11.2	38.5	18.0
UMC-M0806G	8	3/8	6.4	22.22	15.87	16.2	32.3	11.2	39.8	21.8
UMC-M0808G	8	1/2	6.4	26.98	15.87	16.2	38.1	14.2	45.6	26.0
UMC-M1004G	10	1/4	5.9	19.05	19.05	17.2	31.8	11.2	39.4	18.0
UMC-M1006G	10	3/8	7.9	22.22	19.05	17.2	33.0	11.2	40.6	21.8
UMC-M1008G	10	1/2	7.9	26.98	19.05	17.2	38.9	14.2	46.5	26.0
UMC-M1204G	12	1/4	5.9	22.22	22.22	22.8	32.5	11.2	42.6	18.0
UMC-M1206G	12	3/8	7.9	22.22	22.22	22.8	33.0	11.2	43.1	21.8
UMC-M1208G	12	1/2	9.5	26.98	22.22	22.8	38.9	14.2	49.0	26.0
UMC-M1212G	12	3/4	9.5	34.92	22.22	22.8	42.7	15.7	52.8	32.0
UMC-M1508G	15	1/2	11.9	26.98	25.40	24.4	38.9	14.2	49.0	26.0
UMC-M1606G	16	3/8	7.9	23.81	25.40	24.4	33.8	11.2	43.9	21.8
UMC-M1608G	16	1/2	11.9	26.98	25.40	24.4	38.9	14.2	49.0	26.0
UMC-M1808G	18	1/2	11.9	26.98	30.16	24.4	38.9	14.2	49.0	26.0
UMC-M1812G	18	3/4	15.1	34.92	30.16	24.4	42.7	15.7	52.8	32.0
UMC-M2008G	20	1/2	11.9	30.16	31.75	26.0	40.4	14.2	50.5	26.0
UMC-M2012G	20	3/4	15.9	34.92	31.75	26.0	42.7	15.7	52.8	32.0
UMC-M2208G	22	1/2	11.9	30.16	31.75	26.0	40.4	14.2	50.5	26.0
UMC-M2212G	22	3/4	15.1	34.92	31.75	26.0	42.7	15.7	52.8	32.0
UMC-M2512G	25	3/4	15.9	34.92	38.10	31.3	45.2	15.7	57.5	32.0
UMC-M2516G	25	1	19.8	41.27	38.10	31.3	47.8	18.3	60.1	39.0
UMC-M2816G	28	1	19.8	44.45	47.63	36.6	49.3	18.3	70.1	39.0
UMC-M2820G	28	1-1/4	21.8	50.80	47.63	36.6	53.1	19.8	73.9	49.0
UMC-M3220G	32	1-1/4	28.6	50.80	50.80	42.0	55.9	19.8	78.9	49.0
UMC-M3824G	38	1-1/2	31.8	55.56	57.15	49.4	63.2	22.1	90.8	54.7

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

UMC-GM

Male Connector for Metal Gasket



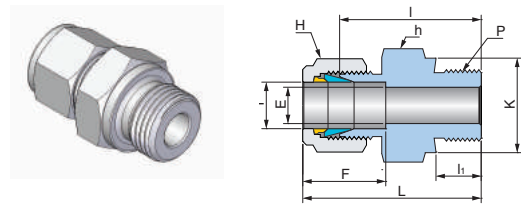
Connects Fractional(Inch) Tube to Female ISO Parallel Thread

Part No.	Tube OD T		P ISO 228/1	Dimensions (mm)									
	inch	mm		E Min.	h		H		F	I	I ₁	L	K
					inch	mm	inch	mm					
UMC-0202GM	1/8	3.17	1/8	2.3	9/16	14.28	7/16	11.11	12.7	23.4	7.1	30.0	13.8
UMC-0204GM	1/8	3.17	1/4	2.3	3/4	19.05	7/16	11.11	12.7	28.7	11.2	35.3	18.0
UMC-0206GM	1/8	3.17	3/8	2.3	7/8	22.22	7/16	11.11	12.7	29.7	11.2	36.2	21.8
UMC-0402GM	1/4	6.35	1/8	4.1	9/16	14.28	9/16	14.28	15.2	24.9	7.1	32.3	13.8
UMC-0404GM	1/4	6.35	1/4	4.8	3/4	19.05	9/16	14.28	15.2	30.2	11.2	37.6	18.0
UMC-0406GM	1/4	6.35	3/8	4.8	7/8	22.22	9/16	14.28	15.2	31.5	11.2	38.9	21.8
UMC-0408GM	1/4	6.35	1/2	4.8	1-1/16	26.98	9/16	14.28	15.2	37.3	14.2	44.7	26.0
UMC-0604GM	3/8	9.52	1/4	5.8	3/4	19.05	11/16	17.46	16.8	31.8	11.2	39.1	18.0
UMC-0606GM	3/8	9.52	3/8	7.1	7/8	22.22	11/16	17.46	16.8	33.0	11.2	40.4	21.8
UMC-0608GM	3/8	9.52	1/2	7.1	1-1/16	26.98	11/16	17.46	16.8	38.9	14.2	46.2	26.0
UMC-0804GM	1/2	12.70	1/4	5.8	13/16	20.63	7/8	22.22	22.9	32.5	11.2	42.7	18.0
UMC-0806GM	1/2	12.70	3/8	7.9	7/8	22.22	7/8	22.22	22.9	33.0	11.2	43.2	21.8
UMC-0808GM	1/2	12.70	1/2	10.4	1-1/16	26.98	7/8	22.22	22.9	38.9	14.2	49.0	26.0
UMC-1208GM	3/4	19.05	1/2	11.9	1-1/16	26.98	1-1/8	28.57	24.4	38.9	14.2	49.0	26.0
UMC-1212GM	3/4	19.05	3/4	15.7	1-5/16	33.33	1-1/8	28.57	24.4	42.7	15.7	52.8	32.0
UMC-1612GM	1	25.40	3/4	16.0	1-3/8	34.92	1-1/2	38.10	31.2	45.2	15.7	57.4	32.0
UMC-1616GM	1	25.40	1	19.8	1-5/8	41.27	1-1/2	38.10	31.2	47.8	18.3	59.9	39.0

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

UMC-GM

Male Connector for Metal Gasket



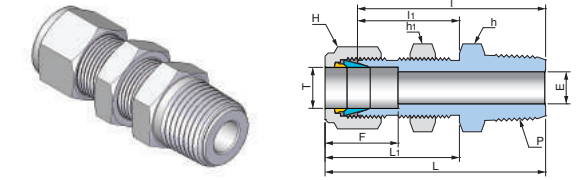
Connects Metric Tube to Female ISO Parallel Thread

Part No.	Tube OD T mm	P ISO 228/1	Dimensions (mm)							
			E Min.	h mm	H mm	F	I	I ₁	L	K
UMC-M0302GM	3	1/8	2.4	14.28	11.11	12.7	23.4	7.1	30.0	13.8
UMC-M0304GM	3	1/4	2.4	19.05	11.11	12.7	28.7	11.2	35.3	18.0
UMC-M0402GM	4	1/8	2.4	14.28	12.70	13.7	24.1	7.1	30.7	13.8
UMC-M0404GM	4	1/4	2.4	19.05	12.70	13.7	29.4	11.2	36.0	18.0
UMC-M0602GM	6	1/8	4.0	14.28	14.28	15.3	24.9	7.1	32.3	13.8
UMC-M0604GM	6	1/4	4.8	19.05	14.28	15.3	30.2	11.2	37.6	18.0
UMC-M0606GM	6	3/8	4.8	22.22	14.28	15.3	31.5	11.2	38.9	21.8
UMC-M0608GM	6	1/2	4.8	26.98	14.28	15.3	37.3	14.2	44.7	26.0
UMC-M0802GM	8	1/8	4.0	15.87	15.87	16.3	25.7	7.1	33.2	13.8
UMC-M0804GM	8	1/4	6.4	19.05	15.87	16.3	31.0	11.2	38.5	18.0
UMC-M0806GM	8	3/8	6.4	22.22	15.87	16.3	32.3	11.2	39.8	21.8
UMC-M0808GM	8	1/2	6.4	26.98	15.87	16.3	38.1	14.2	45.6	26.0
UMC-M1004GM	10	1/4	5.9	19.05	19.05	17.3	31.8	11.2	39.4	18.0
UMC-M1006GM	10	3/8	7.9	22.22	19.05	17.3	33.0	11.2	40.6	21.8
UMC-M1008GM	10	1/2	7.9	26.98	19.05	17.3	38.9	14.2	46.5	26.0
UMC-M1204GM	12	1/4	5.9	22.22	22.22	22.8	32.5	11.2	42.6	18.0
UMC-M1206GM	12	3/8	7.9	22.22	22.22	22.8	33.0	11.2	43.1	21.8
UMC-M1208GM	12	1/2	9.5	26.98	22.22	22.8	38.9	14.2	49.0	26.0
UMC-M1212GM	12	3/4	9.5	34.92	22.22	22.8	42.7	15.7	52.8	32.0
UMC-M1508GM	15	1/2	11.9	26.98	25.40	24.4	38.9	14.2	49.0	26.0
UMC-M1606GM	16	3/8	7.9	23.81	25.40	24.5	33.8	11.2	43.9	21.8
UMC-M1608GM	16	1/2	11.9	26.98	25.40	24.5	38.9	14.2	49.0	26.0
UMC-M1808GM	18	1/2	11.9	26.98	30.16	24.5	38.9	14.2	49.0	26.0
UMC-M1812GM	18	3/4	15.1	34.92	30.16	24.5	42.7	15.7	52.8	32.0
UMC-M2008GM	20	1/2	11.9	30.16	31.75	26.2	40.4	14.2	50.5	26.0
UMC-M2012GM	20	3/4	15.9	34.92	31.75	26.2	42.7	15.7	52.8	32.0
UMC-M2212GM	22	3/4	15.9	34.92	31.75	26.2	42.7	15.7	52.8	32.0
UMC-M2512GM	25	3/4	15.9	34.92	38.10	31.1	45.2	15.7	57.5	32.0
UMC-M2516GM	25	1	19.8	41.27	38.10	31.1	47.8	18.3	60.1	39.0
UMC-M2816GM	28	1	19.8	41.27	47.63	41.1	49.3	18.3	70.1	39.0
UMC-M2820GM	28	1-1/4	21.8	50.80	47.63	41.1	53.1	19.8	73.9	49.0
UMC-M3220GM	32	1-1/4	28.6	50.80	50.80	40.9	55.9	19.8	78.9	49.0
UMC-M3824GM	38	1-1/2	31.8	55.56	57.15	49.9	61.7	20.6	89.3	54.7

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

UBMC

Bulkhead Male Connector



Connects Fractional(inch) Tube to Female NPT Thread

Part No.	Tube OD T		P NPT	Dimensions (mm)													
				E Min.	h		h ₁		H		F	I	I ₁	L	L ₁	Panel Hole Size	Max Panel Thickness
	inch	mm			inch	mm	inch	mm	inch	mm							
UBMC-0202N	1/8	3.17	1/8	2.3	1/2	12.70	1/2	12.70	7/16	11.11	12.7	39.9	24.6	46.5	31.2	8.3	12.7
UBMC-0402N	1/4	6.35	1/8	4.8	5/8	15.87	5/8	15.87	9/16	14.28	15.2	42.2	26.2	49.5	33.5	11.5	10.2
UBMC-0404N	1/4	6.35	1/4	4.8	5/8	15.87	5/8	15.87	9/16	14.28	15.2	46.0	26.2	53.3	33.5	11.5	10.2
UBMC-0604N	3/8	9.52	1/4	7.1	3/4	19.05	3/4	19.05	11/16	17.46	16.8	50.0	29.5	57.4	36.8	14.7	11.2
UBMC-0606N	3/8	9.52	3/8	7.1	3/4	19.05	3/4	19.05	11/16	17.46	16.8	50.0	29.5	57.4	36.8	14.7	11.2
UBMC-0608N	3/8	9.52	1/2	7.1	15/16	23.81	15/16	23.81	11/16	17.46	16.8	56.4	29.5	63.8	36.8	14.7	11.2
UBMC-0806N	1/2	12.70	3/8	9.7	15/16	23.81	15/16	23.81	7/8	22.22	22.9	53.1	31.8	63.2	41.9	19.5	12.7
UBMC-0808N	1/2	12.70	1/2	10.4	15/16	23.81	15/16	23.81	7/8	22.22	22.9	58.7	31.8	68.8	41.9	19.5	12.7
UBMC-1212N	3/4	19.05	3/4	15.7	1-3/16	30.16	1-3/16	30.16	1-1/8	28.57	24.4	66.0	37.3	76.2	47.5	25.8	16.8
UBMC-1616N	1	25.40	1	22.4	1-5/8	41.27	1-5/8	41.27	1-1/2	38.10	31.2	81.0	45.2	93.2	57.4	33.7	19.1

ISO Tapered threads are available for all fractional UBMC. To order, add "R" as a suffix instead of "N".

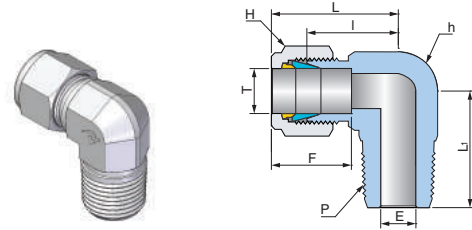
Connects Metric Tube to Female ISO Tapered Thread

Part No.	Tube OD T mm	P ISO7/1	Dimensions (mm)										
			E Min.	h mm	h ₁ mm	H mm	F	I	I ₁	L	L ₁	Panel Hole Size	Max Panel Thickness
UBMC-M0302R	3	1/8	2.4	14.28	14.28	11.11	12.9	39.8	24.6	46.5	31.2	8.3	12.7
UBMC-M0602R	6	1/8	4.8	15.87	15.87	14.28	15.3	42.2	26.2	49.6	33.6	11.5	10.2
UBMC-M0604R	6	1/4	4.8	15.87	15.87	14.28	15.3	46.2	26.2	53.6	33.6	11.5	10.2
UBMC-M0804R	8	1/4	6.4	17.46	17.46	15.87	16.2	49.0	28.6	56.5	36.1	13.1	11.2
UBMC-M1004R	10	1/4	7.1	22.22	22.22	19.05	17.2	52.0	29.5	59.7	37.0	16.2	11.2
UBMC-M1206R	12	3/8	9.5	23.81	23.81	22.22	22.8	53.1	31.8	63.2	41.9	19.5	12.7
UBMC-M1208R	12	1/2	9.5	23.81	23.81	22.22	22.8	58.7	31.8	68.8	41.9	19.5	12.7

NPT threads are available for all metric UBMC. To order, add "N" as a suffix instead of "R".

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

UME Male Elbow



Connects Fractional(Inch) Tube to Female NPT Thread

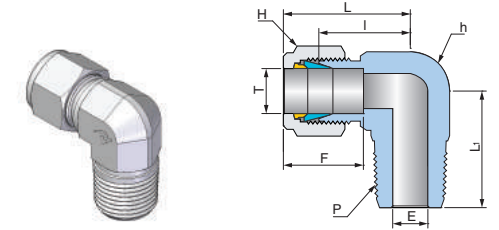
Part No.	Tube OD T		P NPT	Dimensions (mm)								
	inch	mm		E Min.	h		H		F	I	L	L ₁
					inch	mm	inch	mm				
UME-0101N	1/16	1.68	1/16	1.3	1/2	12.70	5/16	7.93	8.6	15.2	19.1	17.8
UME-0102N	1/16	1.68	1/8	1.3	1/2	12.70	5/16	7.93	8.6	15.2	19.1	17.8
UME-0202N	1/8	3.17	1/8	2.3	1/2	12.70	7/16	11.11	12.7	17.0	23.6	17.8
UME-0204N	1/8	3.17	1/4	2.3	1/2	12.70	7/16	11.11	12.7	18.0	24.6	23.4
UME-0206N	1/8	3.17	3/8	2.3	11/16	17.46	7/16	11.11	12.7	22.2	28.8	26.1
UME-0208N	1/8	3.17	1/2	2.3	13/16	20.63	7/16	11.11	12.7	22.9	29.5	33.0
UME-0302N	3/16	4.76	1/8	3.0	1/2	12.70	1/2	12.70	13.7	18.8	25.4	18.8
UME-0304N	3/16	4.76	1/4	3.0	1/2	12.70	1/2	12.70	13.7	18.8	25.4	23.4
UME-0401N	1/4	6.35	1/16	3.0	1/2	12.70	9/16	14.28	15.2	19.6	26.9	18.8
UME-0402N	1/4	6.35	1/8	4.8	1/2	12.70	9/16	14.28	15.2	19.6	26.9	18.8
UME-0404N	1/4	6.35	1/4	4.8	1/2	12.70	9/16	14.28	15.2	19.6	26.9	23.4
UME-0406N	1/4	6.35	3/8	4.8	11/16	17.46	9/16	14.28	15.2	22.4	29.7	26.2
UME-0408N	1/4	6.35	1/2	4.8	13/16	20.63	9/16	14.28	15.2	24.4	31.7	33.0
UME-0412N	1/4	6.35	3/4	4.8	1-1/16	26.98	9/16	14.28	15.2	28.3	35.6	36.8
UME-0502N	5/16	7.93	1/8	4.8	9/16	14.28	5/8	15.87	16.3	21.3	28.7	19.8
UME-0504N	5/16	7.93	1/4	6.4	9/16	14.28	5/8	15.87	16.3	21.3	28.7	24.4
UME-0506N	5/16	7.93	1/2	6.4	11/16	17.46	5/8	15.87	16.3	23.1	30.5	26.2
UME-0602N	3/8	9.52	1/8	4.8	5/8	15.87	11/16	17.46	16.8	23.1	30.5	20.8
UME-0604N	3/8	9.52	1/4	7.1	5/8	15.87	11/16	17.46	16.8	23.1	30.5	25.4
UME-0606N	3/8	9.52	3/8	7.1	11/16	17.46	11/16	17.46	16.8	23.9	31.2	26.2
UME-0608N	3/8	9.52	1/2	7.1	13/16	20.63	11/16	17.46	16.8	25.9	33.3	33.0
UME-0612N	3/8	9.52	3/4	7.1	1-1/16	26.98	11/16	17.46	16.8	29.7	37.1	36.8
UME-0802N	1/2	12.70	1/8	4.8	13/16	20.63	7/8	22.22	22.9	25.9	36.1	23.3
UME-0804N	1/2	12.70	1/4	7.1	13/16	20.63	7/8	22.22	22.9	25.9	36.1	28.3
UME-0806N	1/2	12.70	3/8	9.7	13/16	20.63	7/8	22.22	22.9	25.9	36.1	28.3
UME-0808N	1/2	12.70	1/2	10.4	13/16	20.63	7/8	22.22	22.9	25.9	36.1	33.0
UME-0812N	1/2	12.70	3/4	10.4	1-1/16	26.98	7/8	22.22	22.9	29.7	39.9	36.8
UME-0816N	1/2	12.70	1	10.4	1-3/8	34.92	7/8	22.22	22.9	34.6	44.8	46.5
UME-1006N	5/8	15.87	3/8	9.7	15/16	23.81	1	25.40	24.4	27.9	38.1	30.2
UME-1008N	5/8	15.87	1/2	11.9	15/16	23.81	1	25.40	24.4	27.9	38.1	35.1
UME-1012N	5/8	15.87	3/4	12.7	1-1/16	26.98	1	25.40	24.4	29.7	39.9	36.8
UME-1206N	3/4	19.05	3/8	9.7	1-1/16	26.98	1-1/8	28.57	24.4	29.7	39.9	31.9
UME-1208N	3/4	19.05	1/2	11.9	1-1/16	26.98	1-1/8	28.57	24.4	29.7	39.9	36.8
UME-1212N	3/4	19.05	3/4	15.7	1-1/16	26.98	1-1/8	28.57	24.4	29.7	39.9	36.8
UME-1216N	3/4	19.05	1	15.7	1-3/8	34.92	1-1/8	28.57	24.4	34.5	44.7	46.5
UME-1412N	7/8	22.22	3/4	15.7	1-3/8	34.92	1-1/4	31.75	25.9	34.5	44.7	41.7
UME-1608N	1	25.40	1/2	11.9	1-3/8	34.92	1-1/2	38.10	31.2	36.5	48.7	41.9
UME-1612N	1	25.40	3/4	15.7	1-3/8	34.92	1-1/2	38.10	31.2	36.8	49.0	41.7
UME-1616N	1	25.40	1	22.4	1-3/8	34.92	1-1/2	38.10	31.2	36.8	49.0	46.5
UME-2016N	1-1/4	31.75	1	27.7	1-11/16	42.86	1-7/8	47.63	41.1	44.0	66.0	51.3
UME-2020N	1-1/4	31.75	1-1/4	27.7	1-11/16	42.86	1-7/8	47.63	41.1	44.0	66.0	51.1
UME-2424N	1-1/2	38.10	1-1/2	34.0	2	50.80	2-1/4	57.15	50.0	50.8	78.0	60.5
UME-3232N	2	50.80	2	46.0	2-3/4	69.85	3	76.20	67.6	69.8	107.2	70.6

ISO Tapered threads are available for all fractional UME. To order, add "R" as a suffix instead of "N".

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

E is minimum opening. F and L are typical finger tight.

UME Male Elbow



Connects Metric Tube to Female ISO Tapered Thread

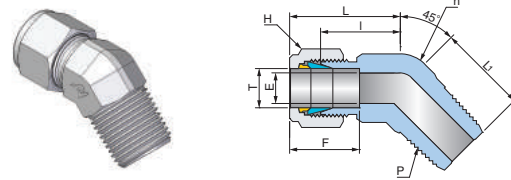
Part No.	Tube OD T mm	P ISO7/1	Dimensions (mm)						
			E Min.	h mm	H mm	F	I	L	L ₁
UME-M0304R	3	1/4	2.4	12.70	11.11	12.9	18.0	24.6	23.4
UME-M0402R	4	1/8	2.4	12.70	12.70	13.7	18.8	25.4	18.8
UME-M0404R	4	1/4	2.4	12.70	12.70	13.7	18.8	25.4	23.4
UME-M0602R	6	1/8	4.8	12.70	14.28	15.3	19.6	27.0	18.8
UME-M0604R	6	1/4	4.8	12.70	14.28	15.3	19.6	27.0	23.4
UME-M0606R	6	3/8	4.8	17.46	14.28	15.3	22.4	29.8	26.2
UME-M0608R	6	1/2	4.8	20.63	14.28	15.3	24.4	31.8	33.0
UME-M0802R	8	1/8	4.8	14.28	15.87	16.2	21.3	28.8	19.8
UME-M0804R	8	1/4	6.4	14.28	15.87	16.2	21.3	28.8	24.4
UME-M0806R	8	3/8	6.4	17.46	15.87	16.2	23.1	30.6	26.2
UME-M0808R	8	1/2	6.4	20.63	15.87	16.2	25.1	32.6	33.0
UME-M1002R	10	1/8	4.8	17.46	19.05	17.2	23.9	31.5	21.6
UME-M1004R	10	1/4	7.1	17.46	19.05	17.2	23.9	31.5	26.2
UME-M1006R	10	3/8	7.9	17.46	19.05	17.2	23.9	31.5	26.2
UME-M1008R	10	1/2	7.9	20.63	19.05	17.2	25.9	33.5	33.0
UME-M1202R	12	1/8	4.8	20.63	22.22	22.8	25.9	36.0	23.6
UME-M1204R	12	1/4	7.1	20.63	22.22	22.8	25.9	36.0	28.2
UME-M1206R	12	3/8	9.5	20.63	22.22	22.8	25.9	36.0	28.2
UME-M1208R	12	1/2	9.5	20.63	22.22	22.8	25.9	36.0	33.0
UME-M1212R	12	3/4	9.5	26.98	22.22	22.8	29.7	39.8	36.8
UME-M1408R	14	1/2	11.9	23.81	25.40	24.4	27.9	38.0	35.1
UME-M1508R	15	1/2	11.9	23.81	25.40	24.4	27.9	38.0	35.1
UME-M1606R	16	3/8	9.5	23.81	25.40	24.4	27.9	38.0	30.2
UME-M1608R	16	1/2	11.9	23.81	25.40	24.4	27.9	38.0	35.1
UME-M1612R	16	3/4	12.7	26.98	25.40	24.4	29.7	39.8	36.8
UME-M1808R	18	1/2	11.9	26.98	30.16	24.4	29.7	39.8	36.8
UME-M1812R	18	3/4	15.1	26.98	30.16	24.4	29.7	39.8	36.8
UME-M2008R	20	1/2	11.9	34.92	31.75	26.0	34.5	44.6	41.7
UME-M2012R	20	3/4	15.9	34.92	31.75	26.0	34.5	44.6	41.7
UME-M2212R	22	3/4	15.9	34.92	31.75	26.0	34.5	44.6	41.7
UME-M2512R	25	3/4	15.9	34.92	38.10	31.3	36.8	49.1	41.7
UME-M2516R	25	1	21.8	34.92	38.10	31.3	36.8	49.1	46.5
UME-M3020R	30	1-1/4	26.2	46.04	50.80	39.6	48.3	69.9	53.1
UME-M3220R	32	1-1/4	27.8	46.04	50.80	42.0	49.3	72.3	53.1
UME-M3832R	38	1-1/2	33.7	55.56	57.15	49.4	56.4	84.0	60.4

NPT threads are available for all metric UME. To order, add "N" as a suffix instead of "R".

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

E is minimum opening. F and L are typical finger tight.

UMVE 45° Male Elbow

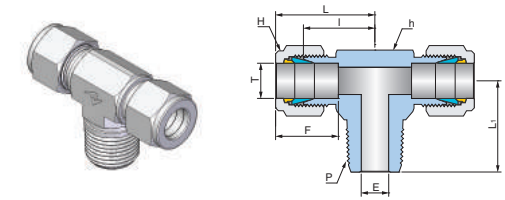


Connects Fractional(Inch) Tube to Female NPT Thread

Part No.	Tube OD T		P NPT	Dimensions (mm)								
	inch	mm		E Min.	h		H		F	I	L	L ₁
					inch	mm	inch	mm				
UMVE-0402N	1/4	6.35	1/8	4.8	1/2	12.70	9/16	14.28	15.2	17.3	24.6	16.5
UMVE-0404N	1/4	6.35	1/4	4.8	1/2	12.70	9/16	14.28	15.2	17.3	24.6	21.1
UMVE-0602N	3/8	9.52	1/8	4.8	5/8	15.87	11/16	17.46	16.8	20.6	27.9	18.3
UMVE-0604N	3/8	9.52	1/4	7.1	5/8	15.87	11/16	17.46	16.8	20.6	27.9	22.9
UMVE-0606N	3/8	9.52	3/8	7.1	13/16	20.63	11/16	17.46	16.8	21.8	29.2	24.1
UMVE-0806N	1/2	12.70	3/8	9.7	13/16	20.63	7/8	22.22	22.9	21.8	32.0	24.1
UMVE-0808N	1/2	12.70	1/2	10.4	13/16	20.63	7/8	22.22	22.9	21.8	32.0	29.0
UMVE-1212N	3/4	19.05	3/4	15.7	1-1/8	28.57	1-1/8	28.57	24.4	23.9	34.0	31.0
UMVE-1616N	1	25.40	1	22.4	1-3/8	34.92	1-1/2	38.10	31.2	28.2	40.3	37.8

ISO Tapered threads are available for all fractional UMVE. To order, add "R" as a suffix instead of "N".

UMBT Male Branch Tee



Connects Fractional(Inch) Tube to Female NPT Thread

Part No.	Tube OD T		P NPT	Dimensions (mm)								
	inch	mm		E Min.	h		H		F	I	L	L ₁
					inch	mm	inch	mm				
UMBT-0202N	1/8	3.17	1/8	2.3	1/2	12.70	7/16	11.11	12.7	17.0	23.6	17.8
UMBT-0204N	1/8	3.17	1/4	2.3	1/2	12.70	7/16	11.11	12.7	18.0	24.6	23.4
UMBT-0302N	3/16	4.76	1/8	3.0	1/2	12.70	1/2	12.70	13.7	17.8	24.4	17.8
UMBT-0402N	1/4	6.35	1/8	4.8	1/2	12.70	9/16	14.28	15.2	19.6	26.9	18.8
UMBT-0404N	1/4	6.35	1/4	4.8	1/2	12.70	9/16	14.28	15.2	19.6	26.9	23.4
UMBT-0502N	5/16	7.93	1/8	4.8	9/16	14.28	5/8	15.87	16.3	22.4	29.7	20.8
UMBT-0604N	3/8	9.52	1/4	7.1	5/8	15.87	11/16	17.46	16.8	23.1	30.5	25.4
UMBT-0606N	3/8	9.52	3/8	7.1	11/16	17.46	11/16	17.46	16.8	23.9	31.2	28.2
UMBT-0806N	1/2	12.70	3/8	9.7	13/16	20.63	7/8	22.22	22.9	25.9	36.1	28.2
UMBT-0808N	1/2	12.70	1/2	10.4	13/16	20.63	7/8	22.22	22.9	25.9	36.1	33.0
UMBT-1008N	5/8	15.87	1/2	11.9	1	25.40	1	25.40	24.4	28.7	38.9	35.8
UMBT-1212N	3/4	19.05	3/4	15.7	1-1/16	26.98	1-1/8	28.57	24.4	29.7	39.9	36.8

ISO Tapered threads are available for all fractional UMBT. To order, add "R" as a suffix instead of "N".

Connects Metric Tube to Female ISO Tapered Thread

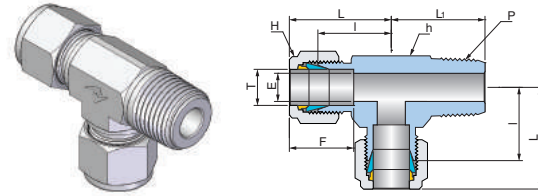
Part No.	Tube OD T	P ISO7/1	Dimensions (mm)									
	mm		E Min.	h		H	F	I	L	L ₁		
				mm	mm							
UMBT-M0302R	3	1/8	2.4	12.70	11.11	12.9	17.0	23.6	17.8			
UMBT-M0304R	3	1/4	2.4	12.70	11.11	12.9	18.0	24.6	23.4			
UMBT-M0402R	4	1/8	2.4	12.70	12.70	13.7	18.8	25.4	18.8			
UMBT-M0602R	6	1/8	4.8	12.70	14.28	15.3	19.6	27.0	18.8			
UMBT-M0604R	6	1/4	4.8	12.70	14.28	15.3	19.6	27.0	23.4			
UMBT-M0802R	8	1/8	4.8	14.28	15.87	16.2	21.3	28.8	19.8			
UMBT-M0804R	8	1/4	6.4	14.28	15.87	16.2	21.3	28.8	24.4			
UMBT-M1004R	10	1/4	7.1	17.46	19.05	17.2	23.9	31.5	28.2			
UMBT-M1006R	10	3/8	7.9	17.46	19.05	17.2	23.9	31.5	28.2			
UMBT-M1204R	12	1/4	7.1	20.63	22.22	22.8	25.9	36.0	28.2			
UMBT-M1206R	12	3/8	9.5	20.63	22.22	22.8	25.9	36.0	28.2			
UMBT-M1208R	12	1/2	9.5	20.63	22.22	22.8	25.9	36.0	33.0			
UMBT-M1606R	16	3/8	9.5	25.40	25.40	24.4	28.7	38.8	30.9			
UMBT-M1608R	16	1/2	11.9	25.40	25.40	24.4	28.7	38.8	35.8			
UMBT-M2012R	20	3/4	15.9	34.92	31.75	26.0	36.8	47.1	43.5			

NPT threads are available for all metric UMBT. To order, add "N" as a suffix instead of "R".

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UMRT Male Run Tee



Connects Fractional Tube to Female NPT Thread

Part No.	Tube OD T		P NPT	Dimensions (mm)								
	inch	mm		E Min.	h		H		F	I	L	L ₁
					inch	mm	inch	mm				
UMRT-0202N	1/8	3.17	1/8	2.3	1/2	12.70	7/16	11.11	12.7	17.0	23.6	17.8
UMRT-0204N	1/8	3.17	1/4	2.3	1/2	12.70	7/16	11.11	12.7	18.0	24.6	23.4
UMRT-0302N	3/16	4.76	1/8	3.0	7/16	11.11	1/2	12.70	13.7	17.8	24.4	17.8
UMRT-0402N	1/4	6.35	1/4	4.8	1/2	12.70	9/16	14.28	15.2	19.6	26.9	18.8
UMRT-0404N	1/4	6.35	1/8	4.8	1/2	12.70	9/16	14.28	15.2	19.6	26.9	23.4
UMRT-0502N	5/16	7.94	1/8	4.8	9/16	14.28	5/8	15.87	16.3	22.4	29.7	20.8
UMRT-0604N	3/8	9.52	1/4	7.1	5/8	15.87	11/16	17.46	16.8	23.1	30.5	25.4
UMRT-0606N	3/8	9.52	3/8	7.1	11/16	17.46	11/16	17.46	16.8	23.9	31.2	28.2
UMRT-0806N	1/2	12.70	3/8	9.7	13/16	20.63	7/8	22.22	22.9	25.9	36.1	28.2
UMRT-0808N	1/2	12.70	1/2	10.4	13/16	20.63	7/8	22.22	22.9	25.9	36.1	33.0
UMRT-1008N	5/8	15.87	1/2	11.9	1	25.40	1	25.40	24.4	27.9	38.1	35.1
UMRT-1212N	3/4	19.05	3/4	15.7	1-1/16	26.98	1-1/8	28.57	24.4	29.7	39.9	36.8

ISO Tapered threads are available for all fractional UMVE. To order, add "R" as a suffix instead of "N".

Connects Metric Tube to Female ISO Tapered Thread

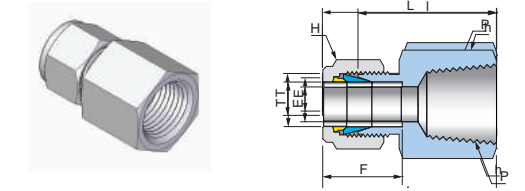
Part No.	Tube OD T		P ISO7/1	Dimensions (mm)								
	mm	mm		E Min.	h	H	F	I	L	L ₁		
					inch	mm						
UMRT-M0302R	3	3	1/8	2.4	12.70	11.11	12.9	17.0	23.6	17.8		
UMRT-M0304R	3	3	1/4	2.4	12.70	11.11	12.9	18.0	24.6	23.4		
UMRT-M0402R	4	4	1/8	2.4	12.70	12.70	13.7	18.8	25.4	18.8		
UMRT-M0602R	6	6	1/8	4.8	12.70	14.28	15.3	19.6	27.0	18.8		
UMRT-M0604R	6	6	1/4	4.8	12.70	14.28	15.3	19.6	27.0	23.4		
UMRT-M0802R	8	8	1/8	4.8	14.28	15.87	16.2	21.3	28.8	19.8		
UMRT-M0804R	8	8	1/4	6.4	14.28	15.87	16.2	21.3	28.8	24.4		
UMRT-M1004R	10	10	1/4	7.1	17.46	19.05	17.2	23.9	31.5	28.2		
UMRT-M1006R	10	10	3/8	7.9	17.46	19.05	17.2	23.9	31.5	28.2		
UMRT-M1204R	12	12	1/4	7.1	20.63	22.22	22.8	25.9	36.0	28.2		
UMRT-M1206R	12	12	3/8	9.5	20.63	22.22	22.8	25.9	36.0	28.2		
UMRT-M1208R	12	12	1/2	9.5	20.63	22.22	22.8	25.9	36.0	33.0		
UMRT-M1606R	16	16	3/8	9.5	25.40	25.40	24.4	27.9	38.0	30.2		
UMRT-M1608R	16	16	1/2	11.9	25.40	25.40	24.4	27.9	38.0	35.1		
UMRT-M2012R	20	20	3/4	15.9	34.92	31.75	26.0	34.5	44.6	41.7		

NPT threads are available for all metric UMRT. To order, add "N" as a suffix instead of "R".

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

E is minimum opening. F and L are typical finger tight.

UFC Female Connector



Connects Fractional Tube to Male NPT Thread

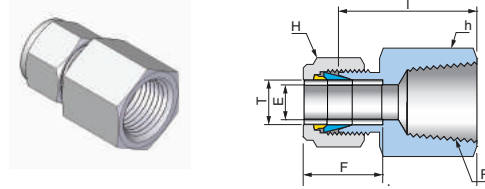
Part No.	Tube OD T		P NPT	Dimensions (mm)								
	inch	mm		E Min.	h		H		F	I	L	
					inch	mm	inch	mm				
UFC-0202N	1/8	3.17	1/8	2.3	9/16	14.28	7/16	11.11	12.7	22.1	28.7	
UFC-0204N	1/8	3.17	1/4	2.3	3/4	19.05	7/16	11.11	12.7	26.9	33.5	
UFC-0302N	3/16	4.76	1/8	3.0	9/16	14.28	1/2	12.70	13.7	23.1	29.7	
UFC-0402N	1/4	6.35	1/8	4.8	9/16	14.28	9/16	14.28	15.2	23.9	31.2	
UFC-0404N	1/4	6.35	1/4	4.8	3/4	19.05	9/16	14.28	15.2	28.4	35.8	
UFC-0406N	1/4	6.35	3/8	4.8	7/8	22.22	9/16	14.28	15.2	30.2	37.6	
UFC-0408N	1/4	6.35	1/2	4.8	1-1/16	26.98	9/16	14.28	15.2	35.1	42.4	
UFC-0502N	5/16	7.93	1/8	6.4	9/16	14.28	5/8	15.87	16.3	24.6	32.0	
UFC-0504N	5/16	7.93	1/4	6.4	3/4	19.05	5/8	15.87	16.3	29.5	36.8	
UFC-0602N	3/8	9.52	1/8	7.1	5/8	15.87	11/16	17.46	16.8	25.4	32.8	
UFC-0604N	3/8	9.52	1/4	7.1	3/4	19.05	11/16	17.46	16.8	30.2	37.6	
UFC-0606N	3/8	9.52	3/8	7.1	7/8	22.22	11/16	17.46	16.8	31.8	39.1	
UFC-0608N	3/8	9.52	1/2	7.1	1-1/16	26.98	11/16	17.46	16.8	36.6	43.9	
UFC-0612N	3/8	9.52	3/4	7.1	1-5/16	33.33	11/16	17.46	16.8	40.4	47.8	
UFC-0804N	1/2	12.70	1/4	10.4	13/16	20.63	7/8	22.22	22.9	30.2	40.4	
UFC-0806N	1/2	12.70	3/8	10.4	7/8	22.22	7/8	22.22	22.9	31.8	41.9	
UFC-0808N	1/2	12.70	1/2	10.4	1-1/16	26.98	7/8	22.22	22.9	36.6	46.7	
UFC-0812N	1/2	12.70	3/4	10.4	1-5/16	33.33	7/8	22.22	22.9	38.1	48.3	
UFC-1006N	5/8	15.87	3/8	12.7	15/16	23.81	1	25.40	24.4	31.8	41.9	
UFC-1008N	5/8	15.87	1/2	12.7	1-1/16	26.98	1	25.40	24.4	36.6	46.7	
UFC-1208N	3/4	19.05	1/2	15.7	1-1/16	26.98	1-1/8	28.57	24.4	36.6	46.7	
UFC-1212N	3/4	19.05	3/4	15.7	1-5/16	33.33	1-1/8	28.57	24.4	38.1	48.3	
UFC-1412N	7/8	22.22	3/4	18.3	1-5/16	33.33	1-1/4	31.75	25.9	39.6	49.8	
UFC-1612N	1	25.40	3/4	22.4	1-3/8	34.92	1-1/2	38.10	31.2	41.1	53.3	
UFC-1616N	1	25.40	1	22.4	1/5-8	41.27	1-1/2	38.10	31.2	50.0	62.2	
UFC-2020N	1-1/4	31.75	1-1/4	27.7	2-1/8	53.98	1-7/8	47.63	41.1	52.6	74.7	
UFC-2424N	1-1/2	38.10	1-1/2	34.0	2-3/8	60.33	2-1/4	57.15	50.0	56.1	83.3	
UFC-3232N	2	50.80	2	46.0	2-7/8	73.03	3	76.20	67.6	64.3	101.6	

ISO Tapered threads are available for all fractional UFC. To order, add "R" as a suffix instead of "N".

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

E is minimum opening. F and L are typical finger tight.

UFC Female Connector



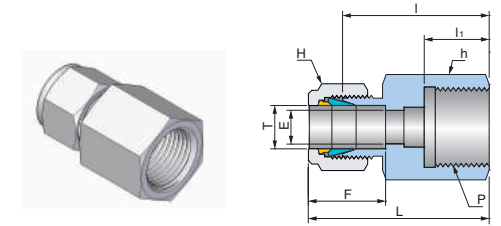
Connects Metric Tube to Male ISO Tapered Thread

Part No.	Tube OD T mm	P ISO7/1	Dimensions (mm)					
			E Min.	h mm	H mm	F	I	L
UFC-M0302R	3	1/8	2.4	14.28	11.11	12.7	22.1	28.7
UFC-M0304R	3	1/4	2.4	19.05	11.11	12.9	26.9	33.5
UFC-M0402R	4	1/8	2.4	14.28	11.11	12.9	23.1	29.7
UFC-M0602R	6	1/8	4.8	14.28	12.70	13.7	23.9	31.3
UFC-M0604R	6	1/4	4.8	19.05	14.28	15.3	28.4	35.8
UFC-M0606R	6	3/8	4.8	22.22	14.28	15.3	29.5	36.9
UFC-M0608R	6	1/2	4.8	26.98	14.28	15.3	35.1	42.5
UFC-M0802R	8	1/8	6.4	14.28	14.28	15.3	24.6	32.1
UFC-M0804R	8	1/4	6.4	19.05	15.87	16.2	29.5	37.0
UFC-M0806R	8	3/8	6.4	22.22	15.87	16.2	30.2	37.7
UFC-M0808R	8	1/2	6.4	26.98	15.87	16.2	35.8	43.3
UFC-M1002R	10	1/8	7.9	17.46	15.87	16.2	25.4	33.0
UFC-M1004R	10	1/4	7.9	19.05	19.05	17.2	30.2	37.8
UFC-M1006R	10	3/8	7.9	22.22	19.05	17.2	31.0	38.6
UFC-M1008R	10	1/2	7.9	26.98	19.05	17.2	36.6	44.2
UFC-M1202R	12	1/8	8.3	22.22	19.05	17.2	28.4	38.5
UFC-M1204R	12	1/4	9.5	22.22	22.22	22.8	30.2	40.3
UFC-M1206R	12	3/8	9.5	22.22	22.22	22.8	31.0	41.1
UFC-M1208R	12	1/2	9.5	26.98	22.22	22.8	36.6	46.7
UFC-M1212R	12	3/4	9.5	33.33	22.22	22.8	38.9	49.0
UFC-M1508R	15	1/2	11.9	26.98	22.22	22.8	36.6	46.7
UFC-M1608R	16	1/2	12.7	26.98	25.40	24.4	36.8	46.9
UFC-M2008R	20	1/2	15.9	30.16	25.40	24.4	37.8	47.9
UFC-M2012R	20	3/4	15.9	33.33	31.75	26.0	39.6	49.7
UFC-M2212R	22	3/4	18.3	34.92	31.75	26.0	39.6	49.7
UFC-M2216R	22	1	18.3	41.27	31.75	26.0	47.8	57.9
UFC-M2512R	25	3/4	21.8	34.92	31.75	26.0	41.1	53.4
UFC-M2516R	25	1	21.8	41.27	38.10	31.3	50.0	62.3

NPT threads are available for all metric UFC. To order, add "N" as a suffix instead of "R".

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E is minimum opening. F and L are typical finger tight.

UFC Gauge Connector



Connects Fractional Tube to ISO Parallel Thread (Gauge)

Part No.	Tube OD T		P ISO 228/1	Dimensions (mm)								
	inch	mm		E Min.	h		H		F	I	I ₁	L ₁
UFC-0402GG	1/4	6.35	1/8	4.8	9/16	14.28	9/16	14.28	15.2	26.3	12.0	33.6
UFC-0404GG	1/4	6.35	1/4	4.8	3/4	19.05	9/16	14.28	15.2	30.2	13.0	37.6
UFC-0406GG	1/4	6.35	3/8	4.8	15/16	23.81	9/16	14.28	15.2	30.2	14.2	37.6
UFC-0408GG	1/4	6.35	1/2	4.8	1-1/16	26.98	9/16	14.28	15.2	36.1	18.8	43.4
UFC-0504GG	5/16	7.93	1/4	5.6	3/4	19.05	5/8	15.87	16.3	31.0	13.0	38.4
UFC-0508GG	5/16	7.93	1/2	7.1	1-1/16	26.98	5/8	15.87	16.3	33.5	18.8	40.9
UFC-0604GG	3/8	9.52	1/4	5.6	3/4	19.05	11/16	17.46	16.8	31.8	13.0	39.1
UFC-0606GG	3/8	9.52	3/8	6.6	15/16	23.81	11/16	17.46	16.8	31.2	14.2	38.6
UFC-0608GG	3/8	9.52	1/2	7.1	1-1/16	26.98	11/16	17.46	16.8	34.5	19.0	41.9
UFC-0804GG	1/2	12.70	1/4	5.6	7/8	22.22	7/8	22.22	22.9	31.8	13.0	42.0
UFC-0806GG	1/2	12.70	3/8	6.6	15/16	23.81	7/8	22.22	22.9	34.3	14.2	44.5
UFC-0808GG	1/2	12.70	1/2	7.1	1-1/16	26.98	7/8	22.22	22.9	38.1	19.0	48.3

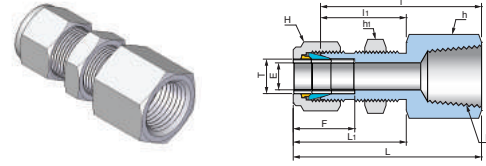
Connects Metric Tube to ISO Parallel Thread (Gauge)

Part No.	Tube OD T mm	P ISO 228/1	Dimensions (mm)						
			E Min.	h mm	H mm	F	I	I ₁	L
UFC-M0304GG	3	1/4	2.4	19.05	11.11	12.9	28.7	13.0	35.3
UFC-M0604GG	6	1/4	4.8	19.05	14.28	15.3	30.2	13.0	37.6
UFC-M0606GG	6	3/8	4.8	23.81	14.28	15.3	30.2	14.2	37.6
UFC-M0608GG	6	1/2	4.8	26.98	14.28	15.3	36.3	19.0	43.7
UFC-M0804GG	8	1/4	5.5	19.05	15.87	16.2	31.0	13.0	38.5
UFC-M0806GG	8	3/8	6.5	23.81	15.87	16.2	28.7	14.0	36.2
UFC-M0808GG	8	1/2	7.0	26.98	15.87	16.2	33.0	19.0	40.5
UFC-M1004GG	10	1/4	5.5	19.05	19.05	17.2	31.8	13.0	39.4
UFC-M1006GG	10	3/8	6.5	23.81	19.05	17.2	31.2	14.2	38.8
UFC-M1008GG	10	1/2	7.0	26.98	19.05	17.2	34.5	19.0	42.1
UFC-M1204GG	12	1/4	5.5	22.22	22.22	22.8	31.8	13.0	41.9
UFC-M1206GG	12	3/8	6.5	23.81	22.22	22.8	34.3	14.0	44.4
UFC-M1208GG	12	1/2	7.0	26.98	22.22	22.8	38.1	19.0	48.2
UFC-M2008GG	20	1/2	7.0	30.16	31.75	26.0	44.2	19.0	54.3
UFC-M2208GG	22	1/2	7.0	30.16	31.75	26.0	44.2	19.0	54.3

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

UBFC

Bulkhead Female Connector



Connects Fractional(Inch) Tube to Male NPT Thread

Part No.	Tube OD T		P NPT	Dimensions (mm)													
	inch	mm		E Min.	h		h ₁		H		F	I	I ₁	L	L ₁	Panel Hole Size	Max Panel Thickness
					inch	mm	inch	mm	inch	mm							
UBFC-0202N	1/8	3.17	1/8	2.3	9/16	14.28	1/2	12.70	7/16	11.11	12.7	38.1	24.6	44.7	31.2	8.3	12.7
UBFC-0402N	1/4	6.35	1/8	4.8	5/8	15.87	5/8	15.87	9/16	14.28	15.2	39.6	26.2	47.0	33.5	11.5	10.2
UBFC-0404N	1/4	6.35	1/4	4.8	3/4	19.05	5/8	15.87	9/16	14.28	15.2	44.5	26.2	51.8	33.5	11.5	10.2
UBFC-0604N	3/8	9.52	1/4	7.1	3/4	19.05	3/4	19.05	11/16	17.46	16.8	47.8	29.5	55.1	36.8	14.7	11.2
UBFC-0806N	1/2	12.70	3/8	10.4	15/16	23.81	15/16	23.81	7/8	22.22	22.9	51.6	31.8	61.7	41.9	19.4	12.7
UBFC-0808N	1/2	12.70	1/2	10.4	1-1/16	26.98	15/16	23.81	7/8	22.22	22.9	56.4	31.8	66.5	41.9	19.4	12.7
UBFC-1212N	3/4	19.05	3/4	15.7	1-5/16	33.33	1-3/16	30.16	1-1/8	28.57	24.4	63.6	37.3	73.7	47.4	25.8	16.8

ISO Tapered threads are available for all fractional UBFC. To order, add "R" as a suffix instead of "N".

Connects Metric Tube to Male ISO Tapered Thread

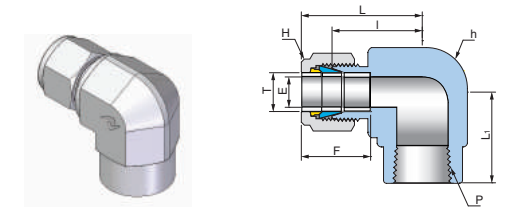
Part No.	Tube OD T		P ISO7/1	Dimensions (mm)													
	mm	mm		E Min.	h		h ₁		H		F	I	I ₁	L	L ₁	Panel Hole Size	Max Panel Thickness
					mm	mm	mm	mm									
UBFC-M0602R	6	1/8	4.8	15.87	15.87	14.28	15.3	39.6	26.2	47.0	33.6	11.5	10.2				
UBFC-M0604R	6	1/4	4.8	19.05	15.87	14.28	15.3	44.4	26.2	51.8	33.6	11.5	10.2				
UBFC-M0804R	8	1/4	6.4	19.05	17.46	15.87	16.2	46.7	28.6	54.2	36.1	13.1	11.2				
UBFC-M1208R	12	1/2	9.5	26.98	23.81	22.22	22.8	56.4	31.8	66.5	41.9	19.5	12.7				

NPT threads are available for all metric UBFC. To order, add "N" as a suffix instead of "R".

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

UFE

Female Elbow



Connects Fractional(Inch) Tube to Male NPT Thread

Part No.	Tube OD T		P NPT	Dimensions (mm)													
	inch	mm		E Min.	h		H		F	I	I ₁	L	L ₁	Panel Hole Size	Max Panel Thickness		
					inch	mm	inch	mm									
UFE-0202N	1/8	3.17	1/8	2.3	1/2	12.70	7/16	11.11	12.7	18.0	24.6	19.1					
UFE-0204N	1/8	3.17	1/4	2.3	11/16	17.46	7/16	11.11	12.7	20.8	27.4	22.4					
UFE-0302N	3/16	4.76	1/8	3.0	1/2	12.70	1/2	12.70	13.7	18.8	25.4	19.1					
UFE-0402N	1/4	6.35	1/8	4.8	1/2	12.70	9/16	14.28	15.2	19.6	26.9	19.1					
UFE-0404N	1/4	6.35	1/4	4.8	11/16	17.46	9/16	14.28	15.2	22.4	29.7	22.4					
UFE-0406N	1/4	6.35	3/8	4.8	13/16	20.63	9/16	14.28	15.2	24.4	31.8	22.4					
UFE-0408N	1/4	6.35	1/2	4.8	1	25.40	9/16	14.28	15.2	27.2	34.5	28.4					
UFE-0502N	5/16	7.93	1/8	6.4	9/16	14.28	5/8	15.87	16.3	21.3	28.7	19.1					
UFE-0504N	5/16	7.93	1/4	6.4	11/16	17.46	5/8	15.87	16.3	23.1	30.5	22.4					
UFE-0602N	3/8	9.52	1/8	7.1	5/8	15.87	11/16	17.46	16.8	23.1	30.5	19.1					
UFE-0604N	3/8	9.52	1/4	7.1	11/16	17.46	11/16	17.46	16.8	23.9	31.2	22.4					
UFE-0606N	3/8	9.52	3/8	7.1	13/16	20.63	11/16	17.46	16.8	25.9	33.3	22.4					
UFE-0608N	3/8	9.52	1/2	7.1	1	25.40	11/16	17.46	16.8	28.7	36.1	28.4					
UFE-0804N	1/2	12.70	1/4	10.4	13/16	20.63	7/8	22.22	22.9	25.9	36.1	22.4					
UFE-0806N	1/2	12.70	3/8	10.4	13/16	20.63	7/8	22.22	22.9	25.9	36.1	22.4					
UFE-0808N	1/2	12.70	1/2	10.4	1	25.40	7/8	22.22	22.9	28.7	38.9	28.4					
UFE-1006N	5/8	15.87	3/8	12.7	15/16	23.81	1	25.40	24.4	27.9	38.1	22.4					
UFE-1008N	5/8	15.87	1/2	12.7	1-1/16	26.98	1	25.40	24.4	29.7	39.9	28.4					
UFE-1208N	3/4	19.05	1/2	15.7	1-1/16	26.98	1-1/8	28.57	24.4	29.7	39.9	28.4					
UFE-1212N	3/4	19.05	3/4	15.7	1-3/8	34.92	1-1/8	28.57	24.4	34.5	44.7	31.8					
UFE-1412N	7/8	22.22	3/4	18.3	1-3/8	34.92	1-1/4	31.75	25.9	34.5	44.7	31.8					
UFE-1612N	1	25.40	3/4	22.4	1-3/8	34.92	1-1/2	38.10	31.2	36.8	49.0	31.8					
UFE-1616N	1	25.40	1	22.4	1-11/16	42.86	1-1/2	38.10	31.2	41.4	53.6	38.1					

ISO Tapered threads are available for all fractional UFE. To order, add "R" as a suffix instead of "N".

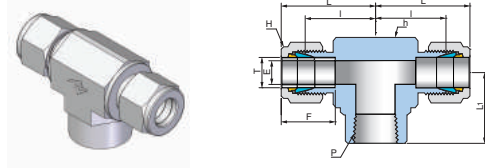
Connects Metric Tube to Male ISO Tapered Thread

Part No.	Tube OD T		P ISO7/1	Dimensions (mm)													
	mm	mm		E Min.	h		H		F	I	I ₁	L	L ₁	Panel Hole Size	Max Panel Thickness		
					mm	mm	mm	mm									
UFE-M0602R	6	1/8	4.8	12.70	14.28	15.3	19.6	27.0	19.0								
UFE-M0604R	6	1/4	4.8	17.46	14.28	15.3	22.4	29.8	22.4								
UFE-M0606R	6	3/8	4.8	20.63	14.28	15.3	24.4	31.8	22.4								
UFE-M0608R	6	1/2	4.8	25.40	14.28	15.3	27.2	34.6	28.4								
UFE-M0804R	8	1/4	6.4	17.46	15.87	16.2	23.1	30.6	22.4								
UFE-M0808R	8	1/2	6.4	25.40	15.87	16.2	28.0	35.5	28.4								
UFE-M1002R	10	1/8	7.9	17.46	19.05	17.2	23.9	31.5	19.0								
UFE-M1004R	10	1/4	7.9	20.63	19.05	17.2	25.9	33.5	22.4								
UFE-M1006R	10	3/8	7.9	20.63	19.05	17.2	25.9	33.5	22.4								
UFE-M1008R	10	1/2	7.9	25.40	19.05	17.2	28.7	36.3	28.4								
UFE-M1204R	12	1/4	9.5	20.63	22.22	22.8	25.9	36.0	22.4								
UFE-M1206R	12	3/8	9.5	20.63	22.22	22.8	25.9	36.0	22.4								
UFE-M1208R	12	1/2	9.5	25.40	22.22	22.8	28.7	38.8	28.4								
UFE-M1608R	20	1/2	12.7	26.98	25.40	24.4	29.7	39.8	28.4								

NPT threads are available for all metric UFE. To order, add "N" as a suffix instead of "R".

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

UFBT Female Branch Tee



Connects Fractional(Inch) Tube to Male NPT Thread

Part No.	Tube OD T		P NPT	Dimensions (mm)								
	inch	mm		E Min.	h		H		F	I	I ₁	L
					inch	mm	inch	mm				
UFBT-0202N	1/8	3.17	1/8	4.8	1/2	12.70	7/16	11.11	12.7	18.0	24.6	19.1
UFBT-0402N	1/4	6.35	1/8	4.8	11/16	17.46	9/16	14.28	15.2	19.6	26.9	19.1
UFBT-0404N	1/4	6.35	1/4	7.1	11/16	17.46	9/16	14.28	15.2	22.4	29.7	22.4
UFBT-0604N	3/8	9.52	1/4	10.4	13/16	20.63	11/16	17.46	16.8	23.9	31.2	22.4
UFBT-0804N	1/2	12.70	1/4	10.4	13/16	20.63	7/8	22.22	22.9	25.9	36.1	22.4
UFBT-0806N	1/2	12.70	3/8	10.4	1-1/16	26.98	7/8	22.22	22.9	25.9	36.1	22.4
UFBT-0808N	1/2	12.70	1/2	12.7	1-1/16	26.98	7/8	22.22	22.9	28.7	38.9	28.4
UFBT-1008N	5/8	15.87	1/2	15.7	1-3/8	34.92	1	25.40	24.4	28.7	38.9	28.4
UFBT-1212N	3/4	19.05	3/4	22.4	1-3/8	34.92	1-1/8	28.57	24.4	34.5	44.7	31.8
UFBT-1612N	1	25.40	3/4	22.4	1-11/16	42.86	1-1/2	38.10	31.2	36.8	49.0	31.8
UFBT-1616N	1	15.40	1	22.4	1-11/16	42.86	1-1/2	38.10	31.2	41.4	53.6	38.1

ISO Tapered threads are available for all fractional UFBT. To order, add "R" as a suffix instead of "N".

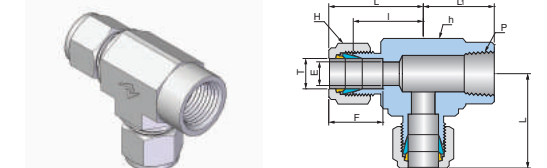
Connects Metric Tube to Male ISO Tapered Thread

Part No.	Tube OD T		P ISO7/1	Dimensions (mm)						
	mm	mm		E Min.	h mm	H mm	F	I	L	I ₁
UFBT-M0602R	6	1/8	4.8	12.70	14.28	15.3	19.6	27.0	19.0	
UFBT-M0604R	6	1/4	4.8	17.46	14.28	15.3	22.4	29.8	22.4	
UFBT-M0606R	6	3/8	4.8	20.63	14.28	15.3	24.4	31.8	22.4	
UFBT-M0608R	6	1/2	4.8	25.40	14.28	15.3	27.2	34.6	28.4	
UFBT-M0802R	8	1/8	6.4	15.87	15.87	16.2	22.4	29.9	19.0	
UFBT-M0804R	8	1/4	6.4	17.46	15.87	16.2	23.1	30.6	22.4	
UFBT-M0806R	8	3/8	6.4	20.63	15.87	16.2	25.2	32.7	22.4	
UFBT-M0808R	8	1/2	6.4	26.98	15.87	16.2	28.0	35.5	28.4	
UFBT-M1004R	10	1/4	7.9	20.63	19.05	17.2	25.9	33.5	22.4	
UFBT-M1006R	10	3/8	7.9	20.63	19.05	17.2	25.9	33.5	22.4	
UFBT-M1008R	10	1/2	7.9	26.98	19.05	17.2	28.7	36.3	28.4	
UFBT-M1204R	12	1/4	9.5	20.63	22.22	22.8	25.9	36.0	22.4	
UFBT-M1206R	12	3/8	9.5	20.63	22.22	22.8	25.9	36.0	22.4	
UFBT-M1208R	12	1/2	9.5	26.98	22.22	22.8	28.7	38.8	28.4	
UFBT-M1608R	16	1/2	12.7	26.98	25.40	24.4	28.7	38.8	28.4	

NPT threads are available for all metric UFBT. To order, add "N" as a suffix instead of "R".

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

UFRT Female Run Tee



Connects Fractional(Inch) Tube to Male NPT Thread

Part No.	Tube OD T		P NPT	Dimensions (mm)								
	inch	mm		E Min.	h		H		F	I	L	L ₁
					inch	mm	inch	mm				
UFRT-0202N	1/8	3.17	1/8	2.3	1/2	12.70	7/16	11.11	12.7	18.0	24.6	19.1
UFRT-0402N	1/4	6.35	1/8	4.8	9/16	14.28	9/16	14.28	15.2	19.6	26.9	19.1
UFRT-0404N	1/4	6.35	1/4	4.8	11/16	17.46	9/16	14.28	15.2	22.4	29.7	22.4
UFRT-0604N	3/8	9.52	1/4	7.1	11/16	17.46	11/16	17.46	16.8	23.9	31.2	22.4
UFRT-0806N	1/2	12.70	3/8	10.4	13/16	20.63	7/8	22.22	22.9	25.9	36.1	22.4
UFRT-0808N	1/2	12.70	1/2	10.4	1-1/16	26.98	7/8	22.22	22.9	28.7	38.9	28.4
UFRT-1212N	3/4	19.05	3/4	15.7	1-3/8	34.92	1-1/8	28.57	24.4	34.5	44.7	31.8
UFRT-1612N	1	25.40	3/4	22.4	1-3/8	34.92	1-1/2	38.10	31.2	36.8	49.0	31.8
UFRT-1616N	1	25.40	1	22.4	1-11/16	42.86	1-1/2	38.10	31.2	41.4	53.6	38.1

ISO Tapered threads are available for all fractional UFRT. To order, add "R" as a suffix instead of "N".

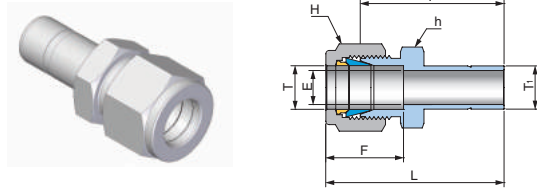
Connects Metric Tube to Male ISO Tapered Thread

Part No.	Tube OD T		P ISO7/1	Dimensions (mm)						
	mm	mm		E Min.	h mm	H mm	F	I	L	I ₁
UFRT-M0602R	6	1/8	4.8	12.70	14.28	15.3	19.6	27.0	19.0	
UFRT-M0604R	6	1/4	4.8	17.46	14.28	15.3	22.4	29.8	22.4	
UFRT-M0608R	6	1/2	4.8	26.98	14.28	15.3	27.2	34.6	28.4	
UFRT-M0802R	8	1/8	6.4	15.87	15.87	16.2	22.4	29.9	19.0	
UFRT-M0804R	8	1/4	6.4	17.46	15.87	16.2	23.1	30.6	22.4	
UFRT-M0806R	8	3/8	6.4	20.63	15.87	16.2	25.2	32.7	22.4	
UFRT-M0808R	8	1/2	6.4	26.98	15.87	16.2	28.0	35.5	28.4	
UFRT-M1004R	10	1/4	7.9	20.63	19.05	17.2	25.9	33.5	22.4	
UFRT-M1204R	12	1/4	9.5	20.63	22.22	22.8	25.9	36.0	22.4	
UFRT-M1206R	12	3/8	9.5	20.63	22.22	22.8	25.9	36.0	22.4	
UFRT-M1208R	12	1/2	9.5	26.98	22.22	22.8	29.7	39.8	28.4	
UFRT-M1608R	16	1/2	12.7	26.98	25.40	24.4	29.7	39.8	28.4	

NPT threads are available for all metric UFRT. To order, add "N" as a suffix instead of "R".

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

UR Reducer

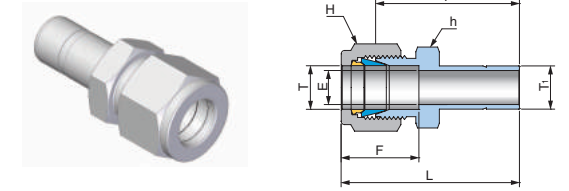


Connects Fractional(Inch) Tube to Fractional UNILOK Port

Part No.	Tube OD T		Tube OD T ₁		Dimensions (mm)							
	inch	mm	inch	mm	E Min.	h		H		F	I	L
						inch	mm	inch	mm			
UR-0202T	1/8	3.17	1/8	3.17	2.0	7/16	11.11	7/16	11.11	12.7	26.9	33.5
UR-0203T	1/8	3.17	3/16	4.76	2.3	7/16	11.11	7/16	11.11	12.7	27.7	34.3
UR-0204T	1/8	3.17	1/4	6.35	2.3	7/16	11.11	7/16	11.11	12.7	29.5	36.1
UR-0206T	1/8	3.17	3/8	9.52	2.3	7/16	11.11	7/16	11.11	12.7	31.0	37.6
UR-0208T	1/8	3.17	1/2	12.70	2.3	9/16	14.28	7/16	11.11	12.7	37.6	44.2
UR-0302T	3/16	4.76	1/8	3.17	2.0	7/16	11.11	1/2	12.70	13.7	28.2	34.8
UR-0304T	3/16	4.76	1/4	6.35	3.0	7/16	11.11	1/2	12.70	13.7	30.5	37.1
UR-0402T	1/4	6.35	1/8	3.17	2.0	1/2	12.70	9/16	14.28	15.2	29.5	36.8
UR-0403T	1/4	6.35	3/16	4.76	3.0	1/2	12.70	9/16	14.28	15.2	30.2	37.6
UR-0404T	1/4	6.35	1/4	6.35	4.3	1/2	12.70	9/16	14.28	15.2	31.8	39.1
UR-0405T	1/4	6.35	5/16	7.93	4.8	1/2	12.70	9/16	14.28	15.2	32.5	39.9
UR-0406T	1/4	6.35	3/8	9.52	4.8	1/2	12.70	9/16	14.28	15.2	33.3	40.6
UR-0408T	1/4	6.35	1/2	12.70	4.8	9/16	14.28	9/16	14.28	15.2	38.9	46.2
UR-0410T	1/4	6.35	5/8	15.87	4.8	11/16	17.46	9/16	14.28	15.2	40.6	48.0
UR-0412T	1/4	6.35	3/4	19.05	4.8	13/16	20.63	9/16	14.28	15.2	40.4	47.8
UR-0506T	5/16	7.93	3/8	9.52	6.4	9/16	14.28	5/8	15.87	16.3	34.5	41.9
UR-0508T	5/16	7.93	1/2	12.70	6.4	9/16	14.28	5/8	15.87	16.3	40.1	47.5
UR-0604T	3/8	9.52	1/4	6.35	4.3	5/8	15.87	11/16	17.46	16.8	34.0	41.4
UR-0606T	3/8	9.52	3/8	9.52	6.9	5/8	15.87	11/16	17.46	16.8	35.8	43.2
UR-0608T	3/8	9.52	1/2	12.70	7.1	5/8	15.87	11/16	17.46	16.8	41.1	48.5
UR-0610T	3/8	9.52	5/8	15.87	7.1	11/16	17.46	11/16	17.46	16.8	42.9	50.3
UR-0612T	3/8	9.52	3/4	19.05	7.1	13/16	20.63	11/16	17.46	16.8	42.9	50.3
UR-0804T	1/2	12.70	1/4	6.35	4.3	13/16	20.63	7/8	22.22	22.9	34.8	45.0
UR-0806T	1/2	12.70	3/8	9.52	6.9	13/16	20.63	7/8	22.22	22.9	36.6	46.7
UR-0808T	1/2	12.70	1/2	12.70	9.4	13/16	20.63	7/8	22.22	22.9	42.2	52.3
UR-0810T	1/2	12.70	5/8	15.87	10.4	13/16	20.63	7/8	22.22	22.9	43.7	53.8
UR-0812T	1/2	12.70	3/4	19.05	10.4	13/16	20.63	7/8	22.22	22.9	43.7	53.8
UR-0816T	1/2	12.70	1	25.40	10.4	1-1/16	26.98	7/8	22.22	22.9	50.0	60.2
UR-1012T	5/8	15.87	3/4	19.05	12.7	15/16	23.81	1	25.40	24.4	44.5	54.6
UR-1014T	5/8	15.87	7/8	22.22	12.7	15/16	23.81	1	25.40	24.4	46.0	56.1
UR-1016T	5/8	15.87	1	25.40	12.7	1-1/16	26.98	1	25.40	24.4	50.8	61.0
UR-1208T	3/4	19.05	1/2	12.70	9.4	1-1/16	26.98	1-1/8	28.57	24.4	44.5	54.6
UR-1216T	3/4	19.05	1	25.40	15.7	1-1/16	26.98	1-1/8	28.57	24.4	52.3	62.5
UR-1620T	1	25.40	1-1/4	31.75	22.4	1-3/8	34.92	1-1/2	38.10	31.2	68.3	80.5
UR-1624T	1	25.40	1-1/2	38.10	22.4	1-5/8	41.27	1-1/2	38.10	31.2	77.0	89.2
UR-2024T	1-1/4	31.75	1-1/2	38.10	27.7	1-7/8	47.63	1-7/8	47.63	41.1	82.0	104.1
UR-2032T	1-1/4	31.75	2	50.80	27.7	1-7/8	47.63	1-7/8	47.63	41.1	103.1	125.2
UR-2432T	1-1/2	38.10	2	50.80	34.0	2-1/4	57.15	2-1/4	57.15	50.0	104.1	131.3

Dimensions are for reference only and are subject to change without prior notice. E is minimum opening. F and L are typical finger tight.

UR Reducer



Connects Metric Tube to Metric UNILOK Port

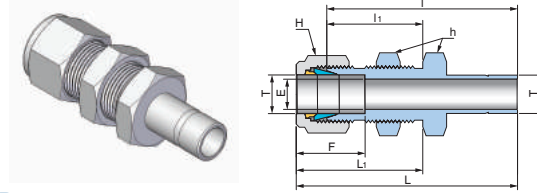
Part No.	Tube OD T	Tube OD T ₁	Dimensions (mm)					
			E Min.	h		F	I	L
	inch	mm		mm	mm			
UR-M03M04T	3	4	2.4	11.11	11.11	12.9	28.4	35.0
UR-M03M06T	3	6	2.4	11.11	11.11	12.9	29.5	36.1
UR-M06M08T	6	8	4.8	14.28	14.28	15.3	32.5	39.9
UR-M06M10T	6	10	4.8	14.28	14.28	15.3	33.3	40.7
UR-M06M12T	6	12	4.8	14.28	14.28	15.3	38.9	46.3
UR-M08M06T	8	6	4.1	15.87	15.87	16.2	32.8	40.3
UR-M08M10T	8	10	6.4	14.28	15.87	16.2	34.5	42.0
UR-M08M12T	8	12	6.4	15.87	15.87	16.2	40.1	47.6
UR-M10M06T	10	6	4.1	17.46	19.05	17.2	34.8	42.4
UR-M10M12T	10	12	7.9	17.46	19.05	17.2	42.2	49.8
UR-M12M06T	12	6	4.1	22.22	22.22	22.8	34.8	44.9
UR-M12M10T	12	10	7.1	22.22	22.22	22.8	36.6	46.7
UR-M12M16T	12	16	9.5	22.22	22.22	22.8	43.7	53.8
UR-M12M18T	12	18	9.5	22.22	22.22	22.8	43.7	53.8
UR-M16M12T	16	12	8.8	23.81	25.40	24.4	42.9	53.0
UR-M18M12T	18	12	8.8	26.98	30.16	24.4	44.5	54.6
UR-M18M16T	18	16	12.0	26.98	30.16	24.4	46.0	56.1
UR-M20M16T	20	16	12.0	30.16	31.75	26.0	47.8	57.9
UR-M20M18T	20	18	13.9	30.16	31.75	26.0	47.8	57.9
UR-M22M20T	22	20	15.5	30.16	31.75	26.0	49.3	59.4
UR-M22M25T	22	25	18.3	30.16	31.75	26.0	54.1	64.2
UR-M25M18T	25	18	13.9	34.92	38.10	31.3	50.8	63.1
UR-M25M20T	25	20	15.5	34.92	38.10	31.3	52.3	64.6

Connects Metric Tube to Fractional(Inch) UNILOK Port

Part No.	Tube OD T	Tube OD T ₁		Dimensions (mm)						
		inch	mm	E Min.	h mm	H		F	I	I ₁
	mm	inch	inch			mm				
UR-M0302T	3	1/8	3.17	2.0	12.70	1/2	12.70	12.9	26.9	33.5
UR-M0304T	3	1/4	6.35	2.4	12.70	1/2	12.70	12.9	29.5	36.1
UR-M0604T	6	1/4	6.35	4.3	12.70	9/16	14.28	15.3	31.8	39.2
UR-M0605T	6	5/16	7.93	4.8	14.28	9/16	14.28	15.3	32.5	39.9
UR-M0606T	6	3/8	9.52	4.8	14.28	9/16	14.28	15.3	33.3	40.7
UR-M0608T	6	1/2	12.70	4.8	14.28	9/16	14.28	15.3	38.9	46.3
UR-M0806T	8	3/8	9.52	6.4	14.28	5/8	15.87	16.2	34.5	42.0
UR-M0808T	8	1/2	12.70	6.4	15.87	5/8	15.87	16.2	40.1	47.6
UR-M1006T	10	3/8	9.52	6.9	17.46	3/4	19.05	17.2	36.6	44.2
UR-M1008T	10	1/2	12.70	7.9	17.46	3/4	19.05	17.2	42.2	49.8
UR-M1208T	12	1/2	12.70	9.4	20.63	7/8	22.22	22.8	42.2	52.3
UR-M1212T	12	3/4	19.05	9.5	20.63	7/8	22.22	22.8	43.7	53.8
UR-M1812T	18	3/4	19.05	14.7	26.98	1-3/16	30.16	24.4	46.0	56.1
UR-M1816T	18	1	25.40	15.1	26.98	1-3/16	30.16	24.4	52.3	62.4

Dimensions are for reference only and are subject to change without prior notice. E is minimum opening. F and L are typical finger tight.

UBR Bulkhead Reducer

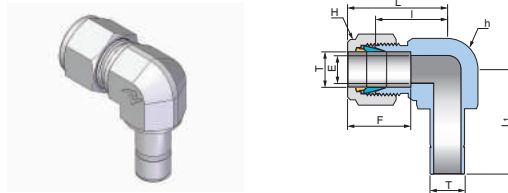


Connects Fractional(Inch) Tube to Fractional UNILOK Port

Part No.	Tube OD T		Dimensions (mm)											
	inch	mm	E Min.	h		H		F	I	I ₁	L	L ₁	Panel Hole Size	Max Panel Thickness
UBR-0202T	1/8	3.17	2.0	1/2	12.70	7/16	11.11	12.7	42.9	24.6	49.5	31.2	8.3	12.7
UBR-0404T	1/4	6.35	4.3	5/8	15.87	9/16	14.28	15.2	48.5	26.2	55.9	33.5	11.5	10.2
UBR-0606T	3/8	9.52	6.9	3/4	19.05	11/16	17.46	16.8	53.8	29.5	61.2	36.8	14.7	11.2
UBR-0808T	1/2	12.70	9.4	15/16	23.81	7/8	22.22	22.9	62.7	31.8	72.9	41.9	19.4	12.7

Connects- Metric Tube to Metric UNILOK Port

Part No.	Tube OD T	Dimensions (mm)										
	mm	E Min.	h	H	F	I	I ₁	L	L ₁	Panel Hole Size	Max Panel Thickness	
UBR-M03M03T	3	1.9	12.70	11.11	12.9	43.0	24.6	49.6	31.2	8.3	12.7	
UBR-M06M06T	6	4.1	15.87	14.28	15.3	48.5	26.2	55.9	33.6	11.5	10.2	
UBR-M08M08T	8	5.6	17.46	15.87	16.2	53.1	28.6	60.6	36.1	13.1	11.2	
UBR-M12M12T	12	8.8	23.81	22.22	22.8	62.7	31.8	72.8	41.9	19.5	12.7	



UER Elbow Reducer

Connects Fractional(Inch) Tube to Fractional UNILOK Port

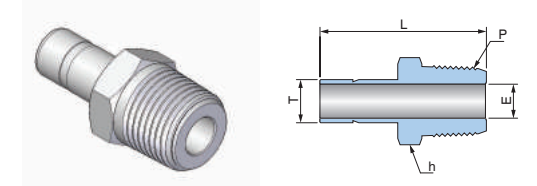
Part No.	Tube OD T		Dimensions (mm)									
	inch	mm	E Min.	h		H		F	I	L	L ₁	
UER-0202T	1/8	3.17	2.0	3/8	9.52	7/16	11.11	12.7	15.7	22.3	20.6	
UER-0404T	1/4	6.35	4.3	1/2	12.70	9/16	14.28	15.2	19.6	27.0	25.0	
UER-0606T	3/8	9.52	6.9	5/8	15.87	11/16	17.46	16.8	23.1	30.5	29.3	
UER-0808T	1/2	12.70	9.4	13/16	20.63	7/8	22.22	22.9	25.9	36.0	37.1	

Connects Fractional(Inch) Tube to Fractional UNILOK Port

Part No.	Tube OD T	Dimensions (mm)									
	mm	E Min.	h	H	F	I	L	L ₁			
UER-M03M03T	3	1.9	9.52	12.70	12.9	15.7	22.3	20.5			
UER-M06M06T	6	4.1	12.70	14.28	15.3	19.6	27.0	25.6			
UER-M08M08T	8	5.6	15.87	15.87	16.2	22.4	29.9	28.6			
UER-M10M10T	10	7.1	20.63	19.05	17.2	25.9	33.5	32.3			
UER-M12M12T	12	8.8	20.63	22.22	22.8	25.9	36.0	37.3			

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

UMA Male Adapter



Connects Fractional(Inch) UNILOK Port to Female NPT Thread

Part No.	Tube OD T		P NPT	Dimensions (mm)			
	inch	mm		E Min.	h		L
UMA-02T02N	1/8	3.17	1/8	2.0	7/16	11.11	29.5
UMA-03T02N	3/16	4.76	1/8	3.0	7/16	11.11	30.2
UMA-04T02N	1/4	6.35	1/8	4.3	7/16	11.11	31.8
UMA-04T04N	1/4	6.35	1/4	4.3	9/16	14.28	37.1
UMA-05T02N	5/16	7.93	1/8	4.8	7/16	11.11	32.8
UMA-05T04N	5/16	7.93	1/4	5.6	9/16	14.28	38.1
UMA-06T04N	3/8	9.52	1/4	6.9	9/16	14.28	38.9
UMA-06T06N	3/8	9.52	3/8	6.9	11/16	17.46	39.6
UMA-06T08N	3/8	9.52	1/2	6.9	7/8	22.22	45.2
UMA-08T04N	1/2	12.70	1/4	7.1	9/16	14.28	44.5
UMA-08T06N	1/2	12.70	3/8	9.4	11/16	17.46	45.2
UMA-08T08N	1/2	12.70	1/2	9.4	7/8	22.22	50.5
UMA-10T08N	5/8	15.87	1/2	11.9	7/8	22.22	52.3
UMA-12T12N	3/4	19.05	3/4	14.7	1-1/16	26.98	52.3
UMA-14T12N	7/8	22.22	3/4	15.7	1-1/16	26.98	54.3
UMA-16T16N	1	25.40	1	20.3	1-3/8	34.92	66.0
UMA-20T20N	1-1/4	31.75	1-1/4	25.9	1-3/4	44.45	80.3
UMA-24T24N	1-1/2	38.10	1-1/2	31.8	2-1/8	53.98	94.5
UMA-32T32N	2	50.80	2	43.7	2-3/4	69.85	119.4

ISO Tapered threads are available for all fractional UMA. To order, add "R" as a suffix instead of "N".

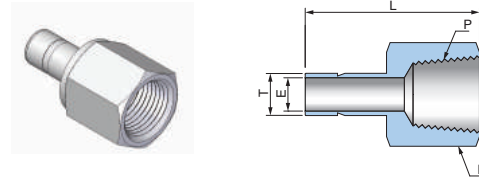
Connects Metric UNILOK Port to Female ISO Tapered Thread

Part No.	Tube OD T	P ISO7/1	Dimensions (mm)		
	mm		E Min.	h	L
UMA-M03T02R	3	1/8	1.9	12.70	29.4
UMA-M06T02R	6	1/8	4.1	11.11	32.8
UMA-M06T04R	6	1/4	4.1	14.28	38.1
UMA-M08T04R	8	1/4	5.6	14.28	39.1
UMA-M10T04R	10	1/4	7.1	14.28	39.9
UMA-M10T06R	10	3/8	7.1	17.46	40.6
UMA-M10T08R	10	1/2	7.1	22.22	45.2
UMA-M12T04R	12	1/4	7.1	14.28	46.5
UMA-M12T06R	12	3/8	8.8	17.46	46.2
UMA-M12T08R	12	1/2	8.8	22.22	52.0
UMA-M18T08R	18	1/2	11.9	22.22	53.2
UMA-M18T12R	18	3/4	13.9	26.98	53.2
UMA-M20T12R	20	3/4	15.5	26.98	58.0
UMA-M25T16R	25	1	19.5	34.92	70.7
UMA-M28T16R	28	1	22.2	34.92	74.7
UMA-M28T20R	28	1-1/4	22.5	46.04	76.2
UMA-M30T20R	30	1-1/4	24.3	46.04	80.0
UMA-M32T20R	32	1-1/4	26.5	46.04	81.0
UMA-M38T24R	38	1-1/2	31.6	55.56	92.2

NPT threads are available for all metric UMA. To order, add "N" as a suffix instead of "R".

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening.

UFA Female Adapter



Connects Fractional UNILOK Port to Male NPT Thread

Part No.	Tube OD T		P NPT	Dimensions (mm)			
	inch	mm		E Min.	h		L
					inch	mm	
UFA-02T02N	1/8	3.17	1/8	2.0	9/16	14.28	31.5
UFA-02T04N	1/8	3.17	1/4	2.0	3/4	19.05	35.3
UFA-03T02N	3/16	4.76	1/8	3.0	9/16	14.28	32.0
UFA-03T04N	3/16	4.76	1/4	3.0	3/4	19.05	35.8
UFA-04T02N	1/4	6.35	1/8	4.3	9/16	14.28	33.0
UFA-04T04N	1/4	6.35	1/4	4.3	3/4	19.05	37.1
UFA-04T06N	1/4	6.35	3/8	4.3	7/8	22.22	39.4
UFA-04T08N	1/4	6.35	1/2	4.3	1-1/16	26.98	45.5
UFA-05T02N	5/16	7.93	1/8	5.6	9/16	14.28	34.3
UFA-05T04N	5/16	7.93	1/4	5.6	3/4	19.05	37.6
UFA-06T02N	3/8	9.52	1/8	6.9	9/16	14.28	34.3
UFA-06T04N	3/8	9.52	1/4	6.9	3/4	19.05	38.1
UFA-06T06N	3/8	9.52	3/8	6.9	7/8	22.22	40.4
UFA-06T08N	3/8	9.52	1/2	6.9	1-1/16	26.98	46.7
UFA-08T04N	1/2	12.70	1/4	9.4	3/4	19.05	43.4
UFA-08T06N	1/2	12.70	3/8	9.4	7/8	22.22	45.5
UFA-08T08N	1/2	12.70	1/2	9.4	1-1/16	26.98	51.8
UFA-10T06N	5/8	15.87	3/8	11.9	7/8	22.22	48.3
UFA-10T08N	5/8	15.87	1/2	11.9	1-1/16	26.98	53.1
UFA-10T12N	5/8	15.87	3/4	11.9	1-1/4	31.75	55.4
UFA-12T08N	3/4	19.05	1/2	14.7	1-1/16	26.98	52.8
UFA-12T12N	3/4	19.05	3/4	14.7	1-1/4	31.75	54.9
UFA-12T16N	3/4	19.05	1	14.7	1-5/8	41.27	58.4
UFA-14T12N	7/8	22.22	3/4	15.7	1-1/4	31.75	57.2
UFA-16T12N	1	25.40	3/4	20.3	1-1/4	31.75	60.7
UFA-16T16N	1	25.40	1	20.3	1-5/8	41.27	64.3
UFA-20T20N	1-1/4	31.75	1-1/4	25.9	2-1/8	53.98	77.7
UFA-24T24N	1-1/2	38.10	1-1/2	31.8	2-3/8	60.33	88.9
UFA-32T32N	2	50.80	2	43.7	2-7/8	73.03	107.4

ISO Tapered threads are available for all fractional UMA. To order, add "R" as a suffix instead of "N".

Connects Metric UNILOK Port to Male ISO Tapered Thread

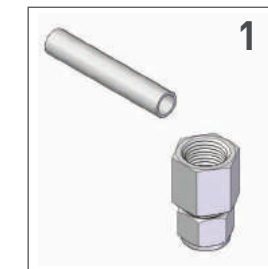
Part No.	Tube OD T		P ISO7/1	Dimensions (mm)			
	mm			E Min.	h		L
					mm		
UFA-M03T02R	3		1/8	1.9	14.28	31.2	
UFA-M06T02R	6		1/8	4.1	14.28	32.5	
UFA-M06T04R	6		1/4	4.1	19.05	37.1	
UFA-M08T04R	8		1/4	5.6	19.05	37.6	
UFA-M10T04R	10		1/4	7.1	19.05	38.1	
UFA-M10T06R	10		3/8	7.1	22.22	40.1	
UFA-M10T08R	10		1/2	7.1	26.98	46.5	
UFA-M12T04R	12		1/4	8.8	19.05	43.7	
UFA-M12T06R	12		3/8	8.8	22.22	46.0	
UFA-M12T08R	12		1/2	8.8	26.98	52.3	
UFA-M18T12R	18		3/4	13.9	34.92	54.8	

NPT threads are available for all metric UMA. To order, add "N" as a suffix instead of "R".

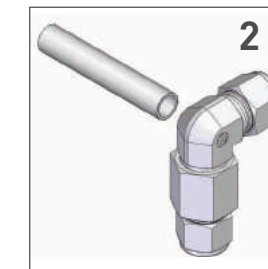
Dimensions are for reference only and are subject to change without prior notice.

E is minimum opening.

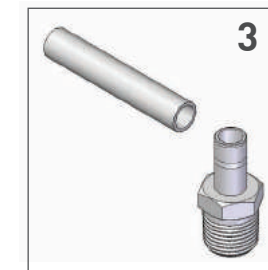
How To Eliminate Alignment Problem



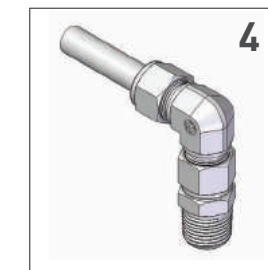
1 When the tubing is required to install to the female port in a desired direction as shown.



2 The male elbow (UME) could not be positioned in a desired direction.

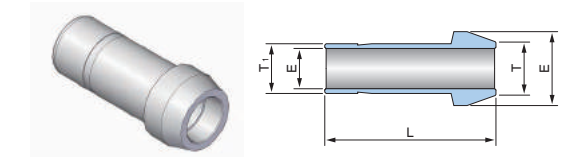


3 To correct the direction, assemble Male Adaptor (UMA) in the female port firstly.



4 Insert UNILOK port of Union Elbow (UEU) into the tube stub end of Male Adaptor (UMA). Set the direction and assemble Union Elbow (UEU) according to UNILOK assembly instruction.

UPC Port Connector



Connects Fractional UNILOK Port

Part No.	Tube OD T		Tube OD T ₁		Dimensions (mm)	
	inch	mm	inch	mm	E Min.	L
UPC-0202T	1/8	3.17	1/8	3.17	2.0	22.4
UPC-0402T	1/4	6.35	1/8	3.17	2.0	22.9
UPC-0404T	1/4	6.35	1/4	6.35	4.3	24.9
UPC-0505T	5/16	7.93	5/16	7.93	5.6	25.9
UPC-0602T	3/8	9.52	1/8	3.17	2.0	23.4
UPC-0604T	3/8	9.52	1/4	6.35	4.3	25.4
UPC-0606T	3/8	9.52	3/8	9.52	6.9	26.7
UPC-0804T	1/2	12.70	1/4	6.35	4.3	29.7
UPC-0806T	1/2	12.70	3/8	9.52	6.9	30.7
UPC-0808T	1/2	12.70	1/2	12.70	9.4	36.3
UPC-1208T	3/4	19.05	1/2	12.70	9.4	37.8
UPC-1212T	3/4	19.05	3/4	19.05	14.7	37.8
UPC-1616T	1	25.40	1	25.40	20.3	49.3

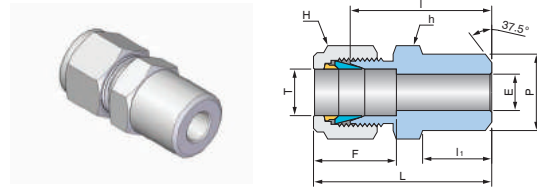
Connects Metric UNILOK Port

Part No.	Tube OD T		Tube OD T ₁		Dimensions (mm)	
	mm	mm	mm	mm	E Min.	L
UPC-M03M03T	3		3		1.9	22.2
UPC-M06M03T	6		3		1.9	22.9
UPC-M06M06T	6		6		4.1	25.0
UPC-M08M06T	8		6		4.1	25.4
UPC-M08M08T	8		8		5.6	26.0
UPC-M10M06T	10		6		4.1	25.8
UPC-M10M10T	10		10		7.1	27.1
UPC-M12M06T	12		6		4.1	29.6
UPC-M12M10T	12		10		7.1	30.6
UPC-M12M12T	12		12		8.8	36.2
UPC-M16M12T	16		12		8.8	37.5
UPC-M16M16T	16		16		12.0	37.8

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

E is minimum opening.

UWBC Pipe Butt Weld Connector



Connects Fractional Tube to Pipe Butt Welded System

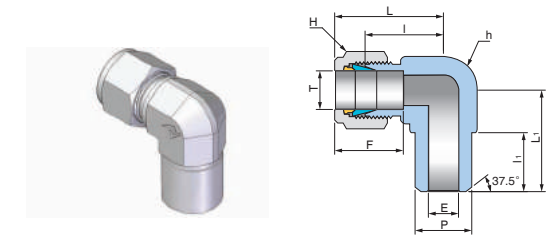
Part No.	Tube OD T		P (BW)		Dimensions (mm)								
	inch	mm	Nom	O.D.	E Min.	h		H		F	I	I ₁	L
						inch	mm	inch	mm				
UWBC-0202P	1/8	3.17	1/8	10.30	2.3	7/16	11.11	7/16	11.11	12.7	23.9	9.7	30.5
UWBC-0302P	3/16	4.76	1/8	10.30	3.0	7/16	11.11	1/2	12.70	13.7	24.6	9.7	31.2
UWBC-0402P	1/4	6.35	1/8	10.30	4.8	1/2	12.70	9/16	14.28	15.2	25.4	9.7	32.8
UWBC-0404P	1/4	6.35	1/4	13.70	4.8	9/16	14.28	9/16	14.28	15.2	30.5	14.2	37.8
UWBC-0502P	5/16	7.93	1/8	10.30	5.3	9/16	14.28	5/8	15.87	16.3	26.7	9.7	34.0
UWBC-0504P	5/16	7.93	1/4	13.70	6.4	9/16	14.28	5/8	15.87	16.3	31.2	14.2	38.6
UWBC-0604P	3/8	9.52	1/4	13.70	7.1	5/8	15.87	11/16	17.46	16.8	32.5	14.2	39.9
UWBC-0606P	3/8	9.52	3/8	17.10	7.1	11/16	17.46	11/16	17.46	16.8	32.5	14.2	39.9
UWBC-0608P	3/8	9.52	1/2	21.30	7.1	7/8	22.22	11/16	17.46	16.8	38.9	19.1	46.2
UWBC-0806P	1/2	12.70	3/8	17.10	10.4	13/16	20.63	7/8	22.22	22.9	33.3	14.2	43.4
UWBC-0808P	1/2	12.70	1/2	21.30	10.4	7/8	22.22	7/8	22.22	22.9	38.9	19.1	49.0
UWBC-0812P	1/2	12.70	3/4	26.67	10.4	1-1/16	26.98	7/8	22.22	22.9	40.4	19.1	50.5
UWBC-1008P	5/8	15.87	1/2	21.30	12.7	15/16	23.81	1	25.40	24.4	38.9	19.1	49.0
UWBC-1212P	3/4	19.05	3/4	26.67	15.7	1-1/16	26.98	1-1/8	28.57	24.4	40.4	19.1	50.5
UWBC-1616P	1	25.40	1	33.40	22.4	1-3/8	34.92	1-1/2	38.10	31.2	50.0	23.9	62.2

Connects Metric Tube to Pipe Butt Welded System

Part No.	Tube OD T		P (BW)		Dimensions (mm)								
	mm	Nom	O.D.	E Min.	h		H		F	I	I ₁	L	
					mm	mm	mm	mm					
UWBC-M0302P	3	1/8	10.3	2.4	11.11	11.11	12.9	23.1	9.7	29.7			
UWBC-M0402P	4	1/8	10.3	2.4	11.11	12.70	13.7	24.1	9.7	30.7			
UWBC-M0602P	6	1/8	10.3	4.8	12.70	14.28	15.3	25.4	9.7	32.8			
UWBC-M0604P	6	1/4	13.7	4.8	14.28	14.28	15.3	30.5	14.2	37.9			
UWBC-M0802P	8	1/8	10.3	5.4	14.28	15.87	16.2	26.7	9.7	34.2			
UWBC-M0804P	8	1/4	13.7	6.4	14.28	15.87	16.2	31.2	14.2	38.7			
UWBC-M0808P	8	1/2	21.3	6.4	22.22	15.87	16.2	37.3	19.0	44.8			
UWBC-M1004P	10	1/4	13.7	7.5	17.46	19.05	17.2	33.3	14.2	40.9			
UWBC-M1006P	10	3/8	17.1	7.9	17.46	19.05	17.2	33.3	14.2	40.9			
UWBC-M1008P	10	1/2	21.3	7.9	22.22	19.05	17.2	38.1	19.0	45.7			
UWBC-M1204P	12	1/4	13.7	7.5	20.63	22.22	22.8	33.3	14.2	43.4			
UWBC-M1206P	12	3/8	17.1	9.5	20.63	22.22	22.8	33.3	14.2	43.4			
UWBC-M1208P	12	1/2	21.3	9.5	22.22	22.22	22.8	38.9	19.0	49.0			
UWBC-M1508P	15	1/2	21.3	11.9	23.81	25.40	24.4	38.9	19.0	49.0			
UWBC-M1608P	16	1/2	21.3	12.7	23.81	25.40	24.4	38.9	19.0	49.0			
UWBC-M1808P	18	1/2	21.3	13.9	26.98	30.16	24.4	40.4	19.0	50.5			

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

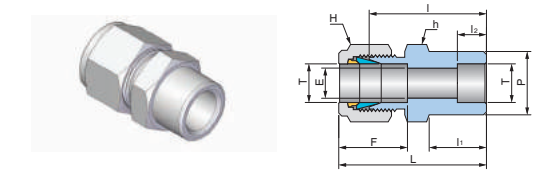
UWBE Pipe Butt Weld Elbow



Connects Fractional Tube to Pipe Butt Welded System

Part No.	Tube OD T		P (BW)		Dimensions (mm)									
	inch	mm	Nom	O.D.	E Min.	h		H		F	I	I ₁	L	L ₁
						inch	mm	inch	mm					
UWBE-0202P	1/8	3.17	1/8	10.30	2.3	1/2	12.70	7/16	11.11	12.7	18.3	9.7	24.9	18.8
UWBE-0404P	1/4	6.35	1/4	13.70	4.8	1/2	12.70	9/16	14.28	15.2	19.6	13.8	26.9	23.4
UWBE-0604P	3/8	9.52	1/4	13.70	7.1	5/8	15.87	11/16	17.46	16.8	23.1	14.0	30.5	25.4
UWBE-0808P	1/2	12.70	1/2	21.30	10.4	13/16	20.63	7/8	22.22	22.9	25.9	19.0	36.1	33.0
UWBE-1212P	3/4	19.05	3/4	26.67	15.7	1-1/16	26.98	1-1/8	28.57	24.4	29.7	19.0	39.9	36.8

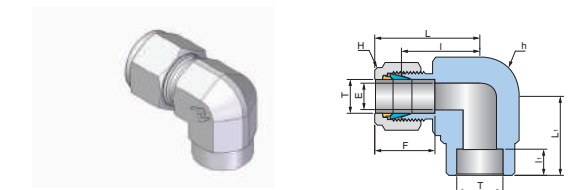
UWSC Tube Socket Weld Connector



Connects Fractional Tube to Tube Socket Welded System

Part No.	Tube OD T		Dimensions (mm)										
	inch	mm	E Min.	P	h		H		F	I	I ₁	I ₂	L ₁
					inch	mm	inch	mm					
UWSC-0202T	1/8	3.17	2.3	7.9	7/16	11.11	7/16	11.11	12.7	22.4	8.6	6.4	29.0
UWSC-0404T	1/4	6.35	4.8	11.2	1/2	12.70	9/16	14.28	15.2	26.2	10.4	7.9	33.5
UWSC-0606T	3/8	9.52	7.1	15.7	5/8	15.87	11/16	17.46	16.8	30.2	11.9	9.7	37.6
UWSC-0808T	1/2	12.70	10.4	19.1	13/16	20.63	7/8	22.22	22.9	31.0	11.9	12.7	41.1
UWSC-1212T	3/4	19.05	15.7	26.7	1-1/16	26.98	1-1/8	28.57	24.4	33.3	11.9	14.2	43.4
UWSC-1616T	1	25.40	22.4	34.5	1-3/8	34.92	1-1/2	38.10	31.2	40.4	14.2	19.1	52.6

UWSE Tube Socket Weld Elbow



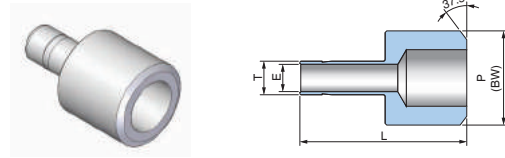
Connects Fractional Tube to Tube Socket Welded System

Part No.	Tube OD T		Dimensions (mm)									
	inch	mm	E Min.	h		H		F	I	I ₁	L	L ₁
				inch	mm	inch	mm					
UWSE-0404T	1/4	6.35	4.8	1/2	12.70	9/16	14.28	15.2	19.6	7.9	26.9	19.6
UWSE-0606T	3/8	9.52	7.1	5/8	15.87	11/16	17.46	16.8	23.1	9.7	30.5	23.1
UWSE-0808T	1/2	12.70	10.4	13/16	20.63	7/8	22.22	22.9	25.9	12.7	36.1	25.9

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

UWBA

Pipe Butt Weld Adapter

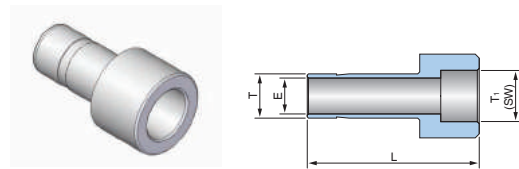


Connects Fractional UMNILOK Port to Pipe Butt Welded System

Part No.	Tube OD T		P (BW)		Dimensions (mm)	
	inch	mm	Nom	O.D.	E Min.	L
UWBA-04T04P	1/4	6.35	1/4	13.70	4.3	29.0
UWBA-06T08P	3/8	9.52	1/2	21.30	6.9	37.1
UWBA-08T08P	1/2	12.70	1/2	21.30	9.4	42.2
UWBA-08T12P	1/2	12.70	3/4	26.67	9.4	42.7
UWBA-12T12P	3/4	19.05	3/4	26.67	14.7	47.5

UWSA

Tube Socket Weld Adapter



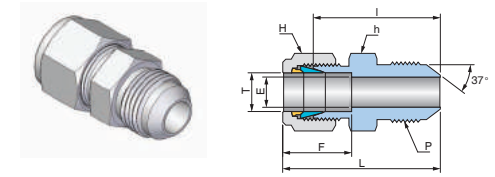
Connects Fractional UMNILOK Port to Tube Socket Welded System

Part No.	Tube OD T		T ₁ (BW)		Dimensions (mm)	
	inch	mm	Nom	O.D.	E Min.	L
UWSA-04T04T	1/4	6.35	1/4	6.35	4.3	29.0
UWSA-06T06T	3/8	9.52	3/8	9.52	6.9	37.1
UWSA-08T08T	1/2	12.70	1/2	12.70	9.4	42.2
UWSA-12T12T	3/4	19.05	3/4	19.05	14.7	47.5

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening.

UUA

AN Union



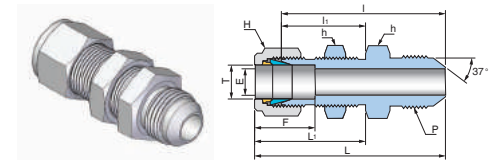
Connects Fractional Tube to An Flared Tube

Part No.	Tube OD T		AN Tube Flare Size		Straight Thread P(U)	Dimensions (mm)							
	inch	mm	inch	mm		E Min.	h		H		F	I	L
UUA-0202S	1/8	3.17	1/8	3.17	5/16-24	1.5	7/16	11.11	7/16	11.11	12.7	24.9	31.5
UUA-0204S	1/8	3.17	1/4	6.35	7/16-20	2.3	1/2	12.70	7/16	11.11	12.7	28.4	35.1
UUA-0404S	1/4	6.35	1/4	6.35	7/16-20	4.3	1/2	12.70	9/16	14.28	15.2	30.2	37.6
UUA-0505S	5/16	7.93	5/16	7.93	1/2-20	5.8	9/16	14.28	5/8	15.87	16.3	31.0	38.4
UUA-0604S	3/8	9.52	1/4	6.35	7/16-20	4.3	5/8	15.87	11/16	17.46	16.8	32.3	39.6
UUA-0606S	3/8	9.52	3/8	9.52	9/16-18	7.1	5/8	15.87	11/16	17.46	16.8	32.3	39.6
UUA-0808S	1/2	12.70	1/2	12.70	3/4-16	9.9	13/16	20.63	7/8	22.22	22.9	35.8	46.0
UUA-1212S	3/4	19.05	3/4	19.05	1-1/16-12	15.5	1-1/8	28.57	1-1/8	28.57	24.4	43.2	53.3
UUA-1616S	1	25.40	1	25.40	1-5/16/12	21.3	1-3/8	34.92	1-1/2	38.10	31.2	49.3	61.5

AN is Navy and Air Force standard for 37 degree flared fittings (SAE J514).

UBUA

AN Bulkhead Union

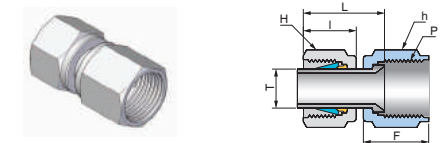


Connects Fractional Tube to An Flared Tube

Part No.	Tube OD T		AN Tube Flare Size		Straight Thread P(U)	Dimensions (mm)												
	inch	mm	inch	mm		E Min.	h		H		F	I	I ₁	L	L ₁	Panel Hole Drill Size	Max Panel Thickness	
UBUA-0404S	1/4	6.35	1/4	6.35	7/16-20	4.3	5/8	15.87	9/16	14.28	15.2	46.5	26.2	53.8	33.5	11.5	10.2	
UBUA-0606S	3/8	9.52	3/8	9.52	9/16-18	7.1	3/4	19.05	11/16	17.46	16.8	49.8	29.5	57.2	36.8	14.7	11.2	
UBUA-0808S	1/2	12.70	1/2	12.70	3/4-16	9.9	15/16	23.81	7/8	22.22	22.9	55.6	31.8	65.8	41.9	19.4	12.7	
UBUA-1212S	3/4	19.05	3/4	19.05	1-1/16-12	15.5	1-3/16	30.16	1-1/8	28.57	24.4	68.8	37.3	79.0	47.5	25.8	16.8	
UBUA-1616S	1	25.40	1	25.40	1-5/16-12	21.3	1-5/8	41.27	1-1/2	38.10	31.2	80.3	45.2	92.5	57.4	33.7	19.1	

UAA

AN Adapter

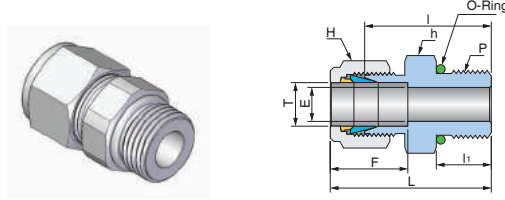


Connects Fractional Tube to An Flared Tube

Part No.	Tube OD T		AN Tube Flare Size		Straight Thread P(U)	Dimensions (mm)						
	inch	mm	inch	mm		h		H		F	I	L
UAA-0201S	1/8	3.17	1/8	3.17	5/16-24	3/8	9.52	7/16	11.11	13.7	13.5	18.5
UAA-0204S	1/8	3.17	1/4	6.35	7/16-20	9/16	14.28	7/16	11.11	15.7	13.5	19.1
UAA-0404S	1/4	6.35	1/4	6.35	7/16-20	9/16	14.28	9/16	14.28	15.7	15.7	21.3
UAA-0606S	3/8	9.52	3/8	9.52	9/16-18	11/16	17.46	11/16	17.46	18.3	17.5	24.9
UAA-0808S	1/2	12.70	1/2	12.70	3/4-16	7/8	22.22	7/8	22.22	21.6	23.1	31.8

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

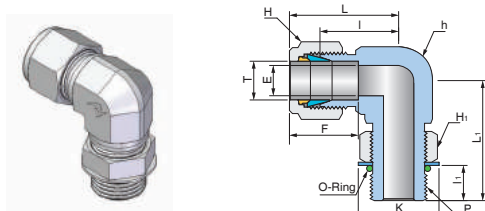
UMCS SAE/MS Male Connector



Connects Fractional Tube to SAE/MS Straight Thread Boss

Part No.	Tube OD T		Straight Thread P(U)	Dimensions (mm)								
	inch	mm		E Min.	h		H		F	I	I ₁	L
					inch	mm	inch	mm				
UMCS-0202U	1/8	3.17	5/16-24	2.3	7/16	11.11	7/16	11.11	12.7	23.3	7.6	30.0
UMCS-0404U	1/4	6.35	7/16-20	4.8	9/16	14.28	9/16	14.28	15.2	26.7	9.1	34.0
UMCS-0406U	1/4	6.35	9/16-18	4.8	11/16	17.46	9/16	14.28	15.2	28.2	9.9	35.6
UMCS-0408U	1/4	6.35	3/4-16	4.8	7/8	22.22	9/16	14.28	15.2	30.2	11.2	37.6
UMCS-0410U	1/4	6.35	7/8-14	4.8	1	25.40	9/16	14.28	15.2	33.3	12.7	40.6
UMCS-0505U	5/16	7.93	1/2-20	6.4	5/8	15.87	5/8	15.87	16.3	27.4	9.1	34.8
UMCS-0604U	3/8	9.52	7/16-20	4.6	5/8	15.87	11/16	17.46	16.8	28.2	9.1	35.6
UMCS-0606U	3/8	9.52	9/16-18	7.1	11/16	17.46	11/16	17.46	16.8	29.7	9.9	37.1
UMCS-0608U	3/8	9.52	3/4-16	7.1	7/8	22.22	11/16	17.46	16.8	31.8	11.2	39.1
UMCS-0610U	3/8	9.52	7/8-14	7.1	1	25.40	11/16	17.46	16.8	34.8	12.7	42.2
UMCS-0806U	1/2	12.70	9/16-18	7.1	13/16	20.63	7/8	22.22	22.9	29.0	9.9	39.1
UMCS-0808U	1/2	12.70	3/4-16	10.4	7/8	22.22	7/8	22.22	22.9	31.8	11.2	41.9
UMCS-0810U	1/2	12.70	7/8-14	10.4	1	25.40	7/8	22.22	22.9	34.8	12.7	45.0
UMCS-0812U	1/2	12.70	1-1/16-12	10.4	1-1/4	31.75	7/8	22.22	22.9	38.9	15.0	49.0
UMCS-1008U	5/8	15.87	3/4-16	10.7	15/16	23.81	1	25.40	24.4	31.8	11.2	41.9
UMCS-1010U	5/8	15.87	7/8-14	12.7	1	25.40	1	25.40	24.4	35.1	12.7	45.2
UMCS-1208U	3/4	19.05	3/4-16	10.7	1-1/16	26.98	1-1/8	28.57	24.4	35.8	11.2	46.0
UMCS-1212U	3/4	19.05	1-1/16-12	15.7	1-1/4	31.75	1-1/8	28.57	24.4	38.9	15.0	49.0
UMCS-1612U	1	25.40	1-1/16-12	16.8	1-3/8	34.92	1-1/2	38.10	31.2	41.1	15.0	53.3
UMCS-1616U	1	25.40	1-5/16-12	22.4	1-1/2	38.10	1-1/2	38.10	31.2	42.2	15.0	54.4

UMES SAE/MS Male Elbow Positionable

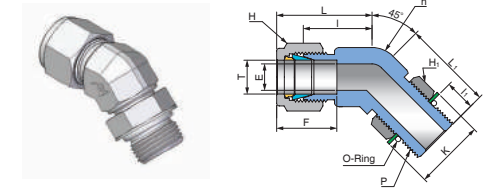


Connects Fractional Tube to SAE Straight Thread Boss

Part No.	Tube OD T		Straight Thread P(U)	Dimensions (mm)												
	inch	mm		E Min.	h		H		H ₁		F	I	I ₁	L	L ₁	K
					inch	mm	inch	mm	inch	mm						
UMES-0404U	1/4	6.35	7/16-20	4.8	1/2	12.70	9/16	14.28	9/16	14.28	15.2	21.1	9.9	28.4	28.4	16.5
UMES-0505U	5/16	7.93	1/2-20	5.8	9/16	14.28	5/8	15.87	5/8	15.87	16.3	22.9	9.9	30.2	39.5	18.3
UMES-0606U	3/8	9.52	9/16-18	7.1	5/8	15.87	11/16	17.46	11/16	17.46	16.8	24.6	11.2	32.0	32.3	20.1
UMES-0608U	3/8	9.52	3/4-16	7.1	13/16	20.63	11/16	17.46	7/8	22.22	16.8	27.4	12.7	34.8	37.8	25.7
UMES-0808U	1/2	12.70	3/4-16	10.4	13/16	20.63	7/8	22.22	7/8	22.22	22.9	27.4	12.7	37.6	37.8	25.7
UMES-1010U	5/8	15.87	7/8-14	12.7	1	25.40	1	25.40	1	25.40	24.4	29.5	14.2	39.6	43.4	29.5
UMES-1212U	3/4	19.05	1-1/16-12	15.7	1-1/16	26.98	1-1/8	28.57	1-1/4	31.75	24.4	31.2	16.8	41.4	48.8	36.6
UMES-1616U	1	25.40	1-5/16-12	22.4	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.2	38.4	16.8	50.5	53.6	43.9

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

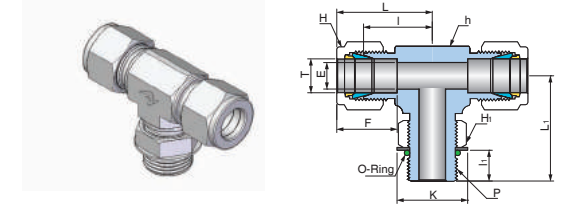
UMVES SAE/MS 45° Male Elbow Positionable



Connects Fractional Tube to SAE/MS Straight Thread Boss

Part No.	Tube OD T		Straight Thread P(U)	Dimensions (mm)												
	inch	mm		E Min.	h		H		H ₁		F	I	I ₁	L	L ₁	K
					inch	mm	inch	mm	inch	mm						
UMVES-0404U	1/4	6.35	7/16-20	4.8	1/2	12.70	9/16	14.28	9/16	14.28	15.2	18.3	9.9	25.7	25.7	16.5
UMVES-0606U	3/8	9.52	9/16-18	7.1	5/8	15.87	11/16	17.46	11/16	17.46	16.8	20.6	11.2	27.9	28.2	20.1
UMVES-0808U	1/2	12.70	3/4-16	10.4	13/16	20.63	7/8	22.22	7/8	22.22	22.9	21.8	12.7	32.0	32.3	25.7
UMVES-1212U	3/4	19.05	1-1/16-12	15.7	1-1/16	26.98	1-1/8	28.57	1-1/4	31.75	24.4	29.7	16.8	39.9	47.2	36.6
UMVES-1616U	1	25.40	1-5/16-12	22.4	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.2	35.3	16.8	47.5	50.5	43.9

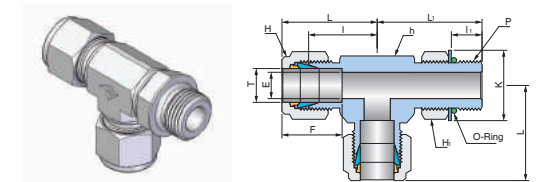
UMBTS SAE/MS Male Branch Tee Positionable



Connects Fractional Tube to SAE/MS Straight Thread Boss

Part No.	Tube OD T		Straight Thread P(U)	Dimensions (mm)												
	inch	mm		E Min.	h		H		H ₁		F	I	I ₁	L	L ₁	K
					inch	mm	inch	mm	inch	mm						
UMBTS-0404U	1/4	6.35	7/16-20	4.8	1/2	12.70	9/16	14.28	9/16	14.28	15.2	21.1	9.9	28.4	28.4	16.5
UMBTS-0606U	3/8	9.52	9/16-18	7.1	5/8	15.87	11/16	17.46	11/16	17.46	16.8	24.6	11.2	32.0	32.3	20.1
UMBTS-0808U	1/2	12.70	3/4-16	10.4	13/16	20.63	7/8	22.22	7/8	22.22	22.9	27.4	12.7	37.6	37.8	25.7
UMBTS-1212U	3/4	19.05	1-1/16-12	15.7	1-1/16	26.98	1-1/8	28.57	1-1/4	31.75	24.4	31.2	16.8	41.4	48.8	36.6
UMBTS-1616U	1	25.40	1-5/16-12	22.4	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.2	38.4	16.8	50.5	53.6	43.9

UMRTS SAE/MS Male Run Tee Positionable



Connects Fractional Tube to SAE/MS Straight Thread Boss

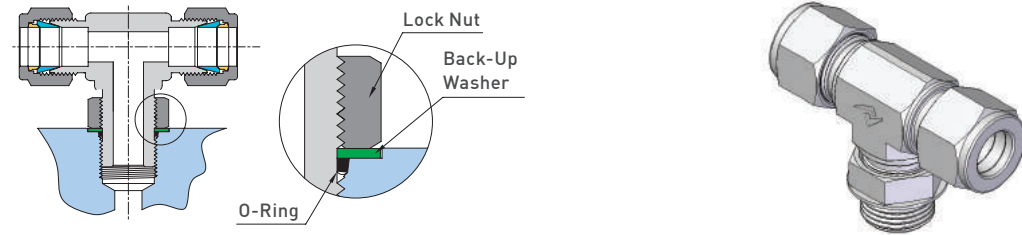
Part No.	Tube OD T		Straight Thread P(U)	Dimensions (mm)												
	inch	mm		E Min.	h		H		H ₁		F	I	I ₁	L	L ₁	K
					inch	mm	inch	mm	inch	mm						
UMRTS-0404U	1/4	6.35	7/16-20	4.8	1/2	12.70	9/16	14.28	9/16	14.28	15.2	21.1	9.9	28.4	28.4	16.5
UMRTS-0606U	3/8	9.52	9/16-18	7.1	5/8	15.87	11/16	17.46	11/16	17.46	16.8	24.6	11.2	32.0	32.3	20.1
UMRTS-0808U	1/2	12.70	3/4-16	10.4	13/16	20.63	7/8	22.22	7/8	22.22	22.9	27.4	12.7	37.6	37.8	25.7
UMRTS-1212U	3/4	19.05	1-1/16-12	15.7	1-1/16	26.98	1-1/8	28.57	1-1/4	31.75	24.4	31.2	16.8	41.4	48.8	36.6
UMRTS-1616U	1	25.40	1-5/16-12	22.4	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.2	38.4	16.8	50.5	53.6	43.9

Dimensions are for reference only and are subject to change without prior notice.
E is minimum opening. F and L are typical finger tight.

Positionable SAE/MS Straight Thread Fittings Information

Application

To orient UNILOK port of tube fittings in the certain direction to be desired, the positionable fittings are useful for the installation at tanks or vessels without welding or brazing.



Final assembly of adjustable fitting

Installation Instructions

1. Lubricate O-ring with a lubricant which is compatible with the O-ring material and the system fluid.
2. Back the locknut out.
3. Finger-tighten the fitting into the straight thread boss until the metal backup washer contacts the face of the boss.
4. Position the fitting by backing it out until the fitting end is positioned in the desired direction. But, no more than one turn backing out.
5. Hold the fitting in the direction and wrench-tighten the locknut until the washer contacts the face of the boss.

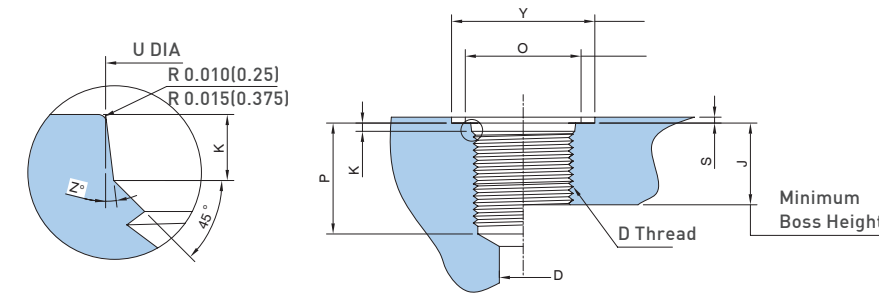
O-ring Ordering Information for SAE/MS Straight Thread Boss

O-Ring can be ordered with the part numbers as shown below. The standard material is Fluorocarbon FKM. Other Materials are available upon request.

Part No.	Tube O.D.	Uniform Size Number	Dimension (inch)	
			I.D.	Cross Section
OU-02-F	1/8	902	0.239	0.064
OU-03-F	3/16	903	0.301	0.064
OU-04-F	1/4	904	0.351	0.072
OU-05-F	5/16	905	0.414	0.072
OU-06-F	3/8	906	0.468	0.078
OU-08-F	1/2	908	0.644	0.087
OU-10-F	5/8	910	0.755	0.097

Part No.	Tube O.D.	Uniform Size Number	Dimension (inch)	
			I.D.	Cross Section
OU-12-F	3/4	912	0.924	0.116
OU-14-F	7/8	914	1.048	0.116
OU-16-F	1	916	1.171	0.116
OU-20-F	1-1/4	920	1.475	0.118
OU-24-F	1-1/2	924	1.720	0.118
OU-32-F	2	932	2.337w	0.118

SAE/MS Internal Straight Thread Boss Information



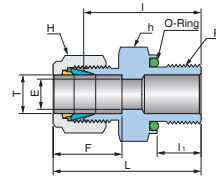
This dimension applies only when tap drill can not pass through entire boss.

Recommended Spot Face Diameter This surface shall be square with the thread pitch diameter within 0.010(0.25) FIR when measured at outside diameter.

Tube O.D.	Thread Size	D (Min)	J (Min)	K	O (Min)	P (Min)	U	Y	S (Max)	Z
1/8	5/16-24	1.6	10.0	1.9	11	12.0	9.1	17	1.6	12°
3/16	3/8-24	3.2	10.0	1.9	13	12.0	10.7	19	1.6	12°
1/4	7/16-20	4.4	11.5	2.4	15	14.0	12.4	21	1.6	12°
5/16	1/2-20	6.0	11.5	2.4	16	14.0	14.0	23	1.6	12°
3/8	9/16-18	7.5	12.7	2.5	18	15.5	15.6	25	1.6	12°
1/2	3/4-16	10.0	14.3	2.5	22	17.5	20.6	30	2.4	15°
5/8	7/8-14	12.5	16.7	2.5	26	20.0	23.9	34	2.4	15°
3/4	1-1/16-12	16.0	19.0	3.3	32	23.0	29.2	41	2.4	15°
7/8	1-3/16-12	18.0	19.0	3.3	35	23.0	32.3	45	2.4	15°
1	1-5/16-12	21.0	19.0	3.3	38	23.0	35.5	49	3.2	15°
1-1/4	1-5/8-12	27.0	19.0	3.3	48	23.0	43.5	58	3.2	15°
1-1/2	1-7/8-12	33.0	19.0	3.3	54	23.0	49.8	65	3.0	15°
2	2-1/2-12	70.0	19.0	3.3	70	23.0	65.7	88	3.2	15°

1. Diameter U shall be concentric with thread pitch diameter within 0.13 full indicator reading (FIR) and shall be free from longitudinal and spiral tool marks. Angular tool marks up to 2.5 Micro meter max shall be permissible.
2. Maximum recommended spot face depth to permit sufficient wrench grip for proper tightening of fitting or locknut.
3. If face of boss is on a machined surface, dimensions Y and S need not apply as long as R 0.25/0.375 is maintained to avoid damage to the O-ring during installation.
4. Tap drill depths given require use of a bottoming taps to produce the specified full thread lengths. Where standard taps are used, the tap drill depths must be increased accordingly.
5. Figures are for reference only, as any boss can be used for a tubing size depending upon other design criteria.

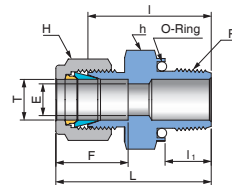
UMOS O-Seal Straight Thread Connector



Connects Fractional Tube to Female Straight Thread

Part No.	Tube OD T		Straight Thread P (U)	Dimensions (mm)								
	inch	mm		E Min.	h		H		F	I	I ₁	L
					inch	mm	inch	mm				
UMOS-0202U	1/8	3.17	5/16-24	2.3	9/16	14.28	7/16	11.11	12.7	26.2	8.6	32.8
UMOS-0303U	3/16	4.76	3/8-24	3.0	5/8	15.87	1/2	12.70	13.7	27.7	9.7	34.3
UMOS-0404U	1/4	6.35	7/16-20	4.8	3/4	19.05	9/16	14.28	15.2	31.0	10.4	38.4
UMOS-0505U	5/16	7.93	1/2-20	6.4	7/8	22.22	5/8	15.87	16.3	33.3	11.2	40.6
UMOS-0606U	3/8	9.52	9/16-18	7.1	15/16	23.81	11/16	17.46	16.8	35.1	11.9	42.4
UMOS-0808U	1/2	12.70	3/4-16	10.4	1-1/8	28.57	7/8	22.22	22.9	35.8	11.9	46.0
UMOS-1212U	3/4	19.05	1-1/16-12	15.7	1-1/2	38.10	1-1/8	28.57	24.4	42.2	14.2	52.3
UMOS-1616U	1	25.40	1-5/16-12	22.4	1-3/4	44.45	1-1/2	38.10	31.2	46.0	14.2	58.2

UMOP O-Seal Pipe Thread Connector



Connects Fractional Tube to Female NPT Thread

Part No.	Tube OD T		P (NPT)	Dimensions (mm)								
	inch	mm		E Min.	h		H		F	I	I ₁	L
					inch	mm	inch	mm				
UMOS-0202N	1/8	3.17	1/8	2.3	3/4	19.05	7/16	11.11	12.7	26.2	7.1	32.8
UMOS-0402N	1/4	6.35	1/8	4.8	3/4	19.05	9/16	14.28	15.2	27.7	7.1	35.1
UMOS-0404N	1/4	6.35	1/4	4.8	15/16	23.81	9/16	14.28	15.2	31.0	9.7	38.4
UMOS-0604N	3/8	9.52	1/4	7.1	15/16	23.81	11/16	17.46	16.8	32.5	9.7	39.9
UMOS-0606N	3/8	9.52	3/8	7.1	1-1/8	28.57	11/16	17.46	16.8	34.0	10.4	41.4
UMOS-0608N	3/8	9.52	1/2	7.1	1-5/16	33.33	11/16	17.46	16.8	39.6	13.5	47.0
UMOS-0808N	1/2	12.70	1/2	10.4	1-5/16	33.33	7/8	22.22	22.9	39.6	13.5	49.8

ISO Tapered threads are available for all fractional UMOP. To order, add "R" as a suffix instead of "N".

Dimensions are for reference only and are subject to change without prior notice. E is minimum opening. F and L are typical finger tight.

O-Seal Fittings Information

Application

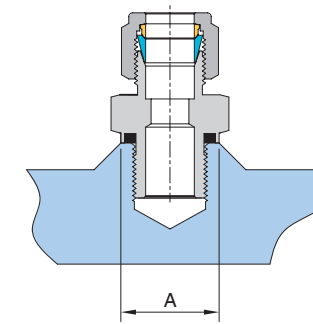
UNILOK O-Seal fittings can be directly installed into the existing pipe threads or straight thread ports. As they have short thread length, thread interference does not occur whereas it is common on tapered thread and the leak tightness is obtained by O-ring additionally. The standard Buna-N O-ring has a precision groove, the groove provides anti-extrusion of O-ring at high pressure and controlled squeeze for vacuum tight sealing. To attain a leak tight installation, smooth flat surface perpendicular to the axis of the threads is required.

Installation Instructions

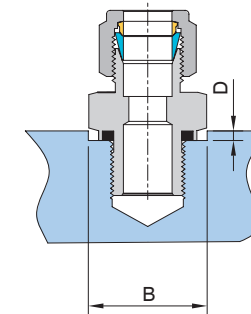
1. Hand tighten UNILOK O-Seal fittings into the port until the O-ring compresses on the port.
2. Wrench-tighten the fittings lightly until the fittings contacts the face of port.

Note : The fitting body is always held by back-up wrench when installing or disassembling tubing to or from UNILOK port end to get a proper sealing.

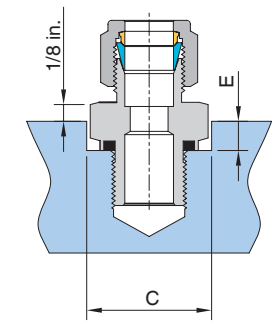
Mounting Dimensions of O-Seal Fittings



Raised Surface



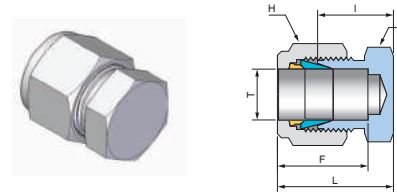
Recessed Hole to the round shoulder



Recessed Hole to the hex

Part No.	Straight Thread (U)	Pipe Thread (NPT)	Dimensions (mm)				
			A (Min)	B (Min)	C (Min)	D (Max)	E (Max)
UMOS-0202U	5/16-24	-	12.7	15.0	16.8	2.3	5.6
UMOP-0202N	-	1/8	17.5	19.8	22.4	4.1	7.1
UMOS-0303U	3/8-24	-	14.2	16.8	19.1	2.3	5.6
UMOS-0404U	7/16-20	-	17.5	19.8	22.4	4.1	7.1
UMOP-0402N	-	1/8					
UMOP-0404N	-	1/4	22.1	24.6	27.7		7.9
UMOS-0505U	1/2-20	-	19.1	23.1	26.2		7.9
UMOS-0606U	9/16-18	-	20.6	24.6	27.7	7.9	
UMOP-0606N	-	3/8	25.4	29.5	33.3	8.6	
UMOP-0608N	-	1/2	31.0	34.0	38.9	5.6	11.2
UMOS-0808U	3/4-16	-	25.4	29.5	33.3	4.1	8.6
UMOP-0808N	-	1/2	31.0	34.0	38.9	11.2	
UMOS-1212U	1-1/16-12	-	35.8	38.9	44.5	5.6	12.7
UMOS-1616U	1-5/16-12	-	42.9	45.2	51.6	14.2	

UC Tube Cap



Connects Fractional Tube

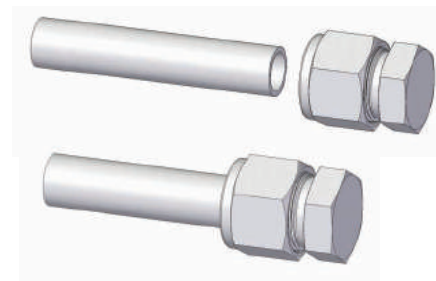
Part No.	Tube OD T		Dimensions (mm)						
	inch	mm	h		H		F	I	L
			inch	mm	inch	mm			
UC-02	1/8	3.17	7/16	11.11	7/16	11.11	12.7	13.5	20.1
UC-03	3/16	4.76	7/16	11.11	1/2	12.70	13.7	14.7	21.3
UC-04	1/4	6.35	1/2	12.70	9/16	14.28	15.2	16.0	23.3
UC-05	5/16	7.93	9/16	14.28	5/8	15.87	16.3	17.0	24.4
UC-06	3/8	9.52	5/8	15.87	11/16	17.46	16.8	18.3	25.7
UC-08	1/2	12.70	13/16	20.63	7/8	22.22	22.9	19.1	29.2
UC-10	5/8	15.87	15/16	23.81	1	25.40	24.4	19.8	30.0
UC-12	3/4	19.05	1-1/16	26.98	1-1/8	28.57	24.4	21.3	31.5
UC-14	7/8	22.22	1-3/16	30.16	1-1/4	31.75	25.9	23.9	34.0
UC-16	1	25.40	1-3/8	34.92	1-1/2	38.10	31.2	26.2	38.4
UC-20	1-1/4	31.75	1-3/4	44.45	1-7/8	47.62	41.1	31.2	53.3
UC-24	1-1/2	38.10	2-1/8	53.97	2-1/4	57.15	50.0	37.3	64.5
UC-32	2	50.80	2-3/4	69.85	3	76.20	67.6	49.3	86.6

Connects Metric Tube

Part No.	Tube OD T	Dimensions (mm)				
		h		F	I	L
		mm	inch			
UC-M03	3	11.11	11.11	12.9	13.5	20.1
UC-M04	4	11.11	12.70	13.7	14.7	21.3
UC-M06	6	14.28	14.28	15.3	15.7	23.1
UC-M08	8	15.87	15.87	16.2	17.0	24.5
UC-M10	10	17.46	19.05	17.2	19.0	26.6
UC-M12	12	22.22	22.22	22.8	19.0	29.1
UC-M15	15	23.81	25.40	24.4	19.8	29.9
UC-M16	16	23.81	25.40	24.4	19.8	29.9
UC-M18	18	26.98	30.16	24.4	21.3	31.4
UC-M20	20	30.16	31.75	26.0	23.9	34.0
UC-M22	22	30.16	31.75	26.0	23.9	34.0
UC-M25	25	34.92	38.10	31.3	26.2	38.5
UC-M28	28	41.27	47.63	36.6	27.7	48.5
UC-M30	30	47.63	50.80	39.6	31.8	53.4
UC-M32	32	47.63	50.80	42.0	32.8	55.8
UC-M38	38	55.56	57.15	49.4	37.8	65.4

Dimensions are for reference only and are subject to change without prior notice. E is minimum opening. F and L are typical finger tight.

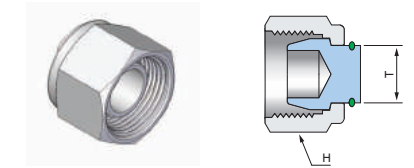
Installation Instruction



1. Insert tube end into the cap to bottom on the shoulder of the cap.
2. Finger-tighten the nut
3. Wrench-tighten the nut 1-1/4 turns, holding the body with a backup wrench, or vice.

Note
Tighten 3/4 turn for 1/16, 1/8, and 3/16 inch and 2, 3, and 4 mm size cap.

UP Tube Plug



Connects Fractional Tube

Part No.	Tube OD T		H	
	inch	mm	inch	mm
UP-03	3/16	4.76	1/2	12.70
UP-04	1/4	6.35	9/16	14.28
UP-05	5/16	7.93	5/8	15.87
UP-06	3/8	9.52	11/16	17.46
UP-08	1/2	12.70	7/8	22.22
UP-10	5/8	15.87	1	25.40
UP-12	3/4	19.05	1-1/8	28.57
UP-14	7/8	22.22	1-1/4	31.75
UP-16	1	25.40	1-1/2	38.10
UP-20	1-1/4	31.75	1-7/8	47.62
UP-24	1-1/2	38.10	2-1/4	57.15
UP-32	2	50.80	3	76.20

Connects Metric Tube

Part No.	Tube OD T	H
	mm	mm
UP-M03	3	11.11
UP-M04	4	12.70
UP-M06	6	14.28
UP-M08	8	15.87
UP-M10	10	19.05
UP-M12	12	22.22
UP-M15	15	25.40
UP-M16	16	25.40
UP-M18	18	30.16
UP-M20	20	31.75
UP-M22	22	31.75
UP-M25	25	38.10
UP-M28	28	47.63
UP-M30	30	50.80
UP-M32	32	50.80
UP-M38	38	57.15

Installation Instruction



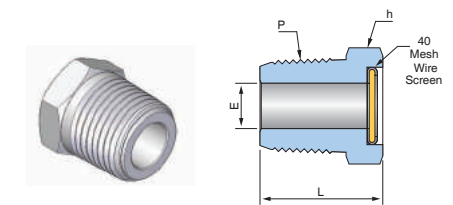
1. Remove the nut and ferrules from the UNILOK tube fitting body.
2. Finger-tighten the plug.
3. Tighten the plug 1/4 turn beyond the finger-tight position, holding the body with a backup wrench or vice.

Note
Do not tighten 1-1/4 turns as this has machined ferrule not the standard ferrules. Tighten 1/8 turn for 1/16, 1/8 and 3/16 inch and 2, 3 and 4 mm size plug, 1/2 turn turn over 1" and 25mm size plug.

UVP Vent Protector

Connects Fractional NPT Thread

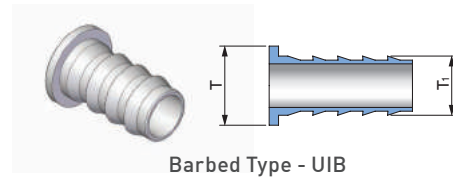
Part No.	Dimensions (mm)			
	E Min.	H		L
		mm	inch	
UVP-04N	7.0	9/16	14.28	19.8
UVP-06N	10.0	11/16	17.46	20.5
UVP-08N	12.0	7/8	22.22	26.2
UVP-12N	16.0	1-1/16	26.98	27.0



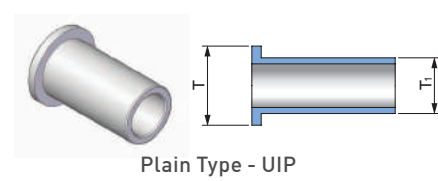
ISO Tapered threads are available for all fractional UVP. To order, add "R" as a suffix instead of "N".

Dimensions are for reference only and are subject to change without prior notice. E is minimum opening.

UI Tube Inset



Barbed Type - UIB



Plain Type - UIP

Connects Fractional Tube

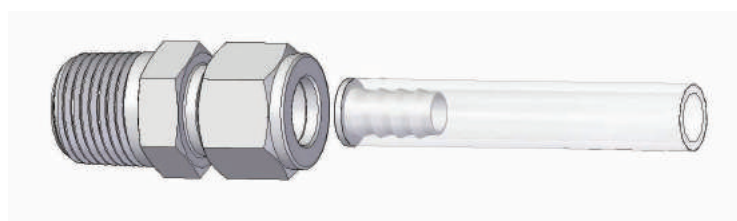
Part No.	Tube OD T		Tube ID T ₁	
	inch	mm	inch	mm
UI-0302	3/16	4.76	1/8	3.17
UI-0402	1/4	6.35	1/8	3.17
UI-0403	1/4	6.35	3/16	4.76
UI-0502	5/16	7.93	1/8	3.17
UI-0503	5/16	7.93	3/16	4.76
UI-0504	5/16	7.93	1/4	6.35
UI-0603	3/8	9.52	3/16	4.76
UI-0604	3/8	9.52	1/4	6.35
UI-0804	1/2	12.70	1/4	6.35
UI-0806	1/2	12.70	3/8	9.52
UI-1006	5/8	15.87	3/8	9.52
UI-1008	5/8	15.87	1/2	12.70
UI-1208	3/4	19.05	1/2	12.70
UI-1210	3/4	19.05	5/8	15.87
UI-1612	1	25.40	3/4	19.05

Connects Fractional Tube

Part No.	Tube OD T	Tube ID T ₁
	mm	mm
UI-M06M04	6	4
UI-M08M06	8	6
UI-M10M08	10	8
UI-M12M08	12	8
UI-M12M10	12	10

Installation Instruction

UNILOK Inserts are used for Nylon, soft plastic tubing as instructed below. The Insert supports the soft tubing internally and make them to be assembled to UNILOK port without any collapse.



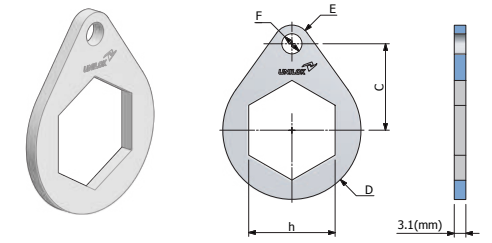
1. Fully insert the soft tubing into UNILOK Insert.
2. Insert them into UNILOK port.
3. Finger-tighten the nut.
4. Tight the nut 1-1/4 turns with a wrench, holding the body with a backup wrench, or vice.

Note

In 3/16 UNILOK tube fittings, tighten 3/4 turn.

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UBHR Bulkhead Retainers

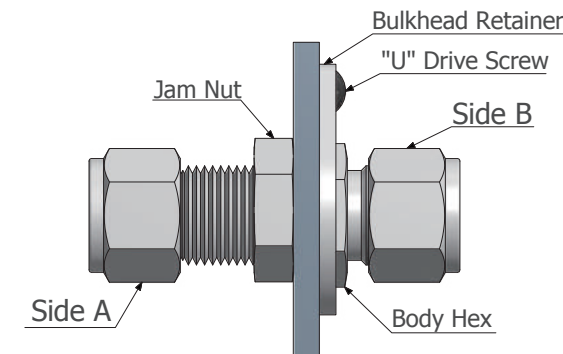


Connects Fractional Tube

Part No.	Fitting Size		Dimensions (mm)							Drill Hole Dia	Drill Number	U" Drive Screw
			h		C	D	E	F				
	inch	mm	inch	mm								
UBHR -01	1/16	-	5/16	7.93	9.5	7.9	4.0	4.0	3.04	31	6-3/8	
UBHR -02	1/8	-	1/2	12.70	12.7	10.3	5.6	4.0	3.04	31	6-3/8	
UBHR -03	3/16	3,4	9/16	14.28	14.3	11.9	6.4	4.0	3.04	31	6-3/8	
UBHR -04	1/4	6	5/8	15.87	15.9	12.7	7.1	4.0	3.04	31	6-3/8	
UBHR -05	5/16	-	11/16	17.46	17.5	14.3	7.9	4.0	3.04	31	6-3/8	
UBHR-M08	-	8	11/16	17.46	17.5	14.3	7.9	4.0	3.04	31	6-3/8	
UBHR-06	3/8	-	3/4	19.05	19.0	15.9	8.7	4.0	3.04	31	6-3/8	
UBHR-M10	-	10	7/8	22.22	22.2	19.0	10.3	5.6	3.65	27	10-1/2	
UBHR-08	1/2	12	15/16	23.81	23.8	19.0	10.3	5.6	3.65	27	10-1/2	
UBHR-10	5/8	15/16	1-1/16	26.98	25.4	20.6	10.3	5.6	3.65	27	10-1/2	
UBHR-12	3/4	18	1-3/16	30.16	27.0	23.0	11.9	5.6	3.65	27	10-1/2	
UBHR-14	7/8	-	1-3/8	34.92	28.6	26.2	13.5	5.6	3.65	27	10-1/2	
UBHR-16	1	-	1-5/8	41.27	32.5	29.4	14.3	5.6	3.65	27	10-1/2	

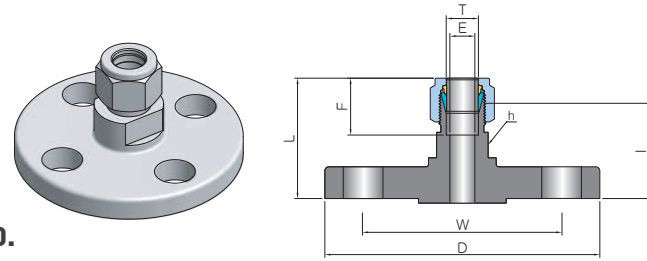
Installation Instruction

Bulkhead retainer is acted as a backup wrench, tubing can be installed on side A and side B by one person with one wrench.



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

UFL Flange Connector



ANSI B 16.5; Pressure Ratings class 150 to 1500.
Connects ANSI flange to Fractional(inch) tube.

Part No.	Tube OD T		ANSI Flange NPS	ANSI Class	Wrench Flat h		Dimensions(mm)					
	inch	mm			inch	mm	E Min.	F	I	L	W	D
UFL-0408-C150	1/4	6.35	1/2	150	13/16	20.64	4.8	15.2	33.5	40.9	60.5	88.9
UFL-0416-C150	1/4	6.35	1	150	13/16	20.64	4.8	15.2	36.4	43.7	79.2	108.0
UFL-0608-C150	3/8	9.52	1/2	150	13/16	20.64	4.8	16.8	34.9	42.2	60.5	88.9
UFL-0608-C300	3/8	9.52	1/2	300	13/16	20.64	7.1	16.8	38.1	45.5	66.5	95.3
UFL-0616-C150	3/8	9.52	1	150	13/16	20.64	7.1	22.9	37.9	45.2	79.2	108.0
UFL-0808-C150	1/2	12.70	1/2	150	13/16	20.64	10.4	22.9	30.1	45.2	60.5	88.9
UFL-0808-C300	1/2	12.70	1/2	300	13/16	20.64	10.4	22.9	37.9	48.0	66.5	95.3
UFL-0808-C1500	1/2	12.70	1/2	1500	13/16	20.64	10.4	22.9	46.1	56.2	82.6	121.0
UFL-0816-C150	1/2	12.70	1	150	13/16	20.64	10.4	22.9	38.1	48.3	79.2	108.0
UFL-0832-C150	1/2	12.70	2	150	13/16	20.64	10.4	22.9	42.9	53.9	82.6	121.0
UFL-1216-C150	3/4	19.05	1	150	1-1/4	31.75	15.7	24.4	40.1	50.3	79.2	108.0
UFL-1216-C900	3/4	19.05	1	900	1-1/4	31.75	15.7	24.4	46.1	56.2	101.6	149.0
UFL-1616-C150	1	25.40	1	150	1-3/4	34.93	22.4	31.2	48.3	60.5	79.2	108.0
UFL-2432-C150	1-1/2	38.10	2	150	2-1/8	53.98	34.0	50.0	59.2	86.4	120.7	152.4
UFL-3232-C150	2	50.80	2	150	2-3/4	69.85	46.0	67.6	67.1	104.4	120.7	152.4

DIN 2526 / DIN 2501; Pressure Ratings PN 40 to 150.
Connects DIN flange to metric tube.

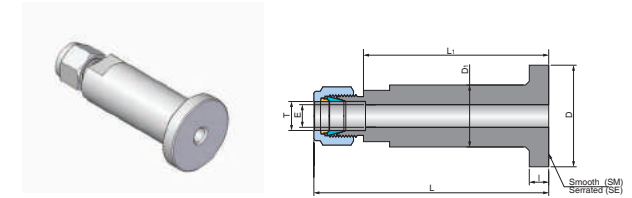
Part No.	Tube O.D. T	DIN Flange Size, DN	DIN PN	Wrench Flat h(mm)	Dimensions(mm)					
	mm				E Min.	F	I	L	W	D
UFL-M0625-P40	6	25	40	20	4.8	15.3	40.1	47.5	85.0	115.0
UFL-M1215-P40	12	15	40	20	9.5	22.8	38.4	48.5	65.0	95.0
UFL-M1225-P40	12	25	40	20	9.5	22.8	40.4	50.5	85.0	115.0
UFL-M1250-P40	12	50	40	20	9.5	22.8	45.2	55.3	125.0	165.0
UFL-M1815-P40	18	15	40	32	15.1	24.4	41.7	51.8	65.0	95.0
UFL-M1825-P40	18	25	40	32	15.1	24.4	43.7	53.8	85.0	115.0
UFL-M2525-P40	25	25	40	35	21.8	31.3	51.8	64.0	85.0	115.0
UFL-M3850-P40	38	50	40	55	33.7	49.4	62.7	90.4	125.0	165.0
UFL-M5050-P40	50	50	40	70	45.2	65.0	66.3	103.0	125.0	165.0

JIS B 2220; Pressure Ratings class 10 to 63K.
Connects JIS flange to fractional(inch) or metric tube.

Part No.	Tube OD T		JIS Flange Size, DN	JIS Class	Wrench Flat h		Dimensions(mm)					
	inch	mm			inch	mm	E Min.	F	I	L	W	D
UFL-0415-C10K	1/4	6.35	15	10K	15/16	23.81	4.8	15.2	34.8	42.2	70.1	95.0
UFL-0615-C10K	3/8	9.52	15	10K	15/16	23.81	7.1	16.8	36.3	43.7	70.1	95.0
UFL-0815-C10K	1/2	12.7	15	10K	15/16	23.81	10.4	22.9	36.3	46.5	70.1	95.0
UFL-1215-C10K	3/4	19.05	15	10K	1-1/4	31.75	15.7	24.4	38.4	48.5	70.1	95.0
UFL-1625-C10K	1	25.4	25	10K	1-3/4	34.93	22.4	31.2	48.8	61.0	89.9	125.0
UFL-3250-C10K	2	50.8	50	10K	2-3/4	69.85	46.0	67.6	64.5	101.9	119.9	155.0
UFL-M1215-C10K	-	12	15	10K	-	20.0	9.5	22.8	36.3	46.5	70.0	95.0
UFL-M1815-C10K	-	18	15	10K	-	32.0	15.1	24.4	38.4	48.5	70.0	95.0
UFL-M2525-C10K	-	25	25	10K	-	35.0	21.8	31.3	48.8	61.0	90.0	125.0

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

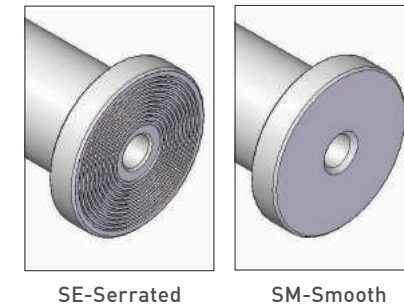
ULFC Lapped Flange Connector



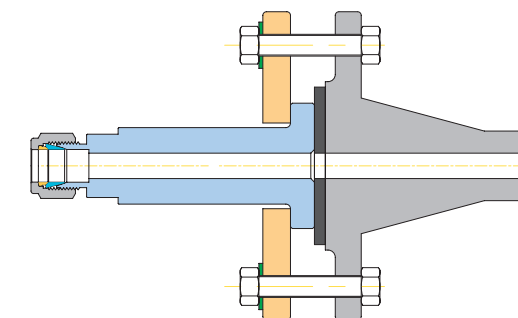
Connects Fractional Tube to Flange

Part No.	Tube OD T	Flange Seal	Dimensions (mm)						Flange Surface Finish (Ra, μm)
	inch		L	L ₁	I	D	D ₁	E (Min)	
ULFC-04-SM	1/4	SM	80.8	56.5	6.5	34.5	21.1	4.8	3.2 - 6.3
ULFC-04-SE	1/4	SE	80.8	56.5	6.5	34.5	21.1	4.8	6.3 - 12.5
ULFC-06-SM	3/8	SM	82.3	56.5	6.5	34.5	21.1	7.1	3.2 - 6.3
ULFC-06-SE	3/8	SE	82.3	56.5	6.5	34.5	21.1	7.1	6.3 - 12.5
ULFC-08-SM	1/2	SM	85.1	56.5	6.5	34.5	21.1	7.9	3.2 - 6.3
ULFC-08-SE	1/2	SE	85.1	56.5	6.5	34.5	21.1	7.9	6.3 - 12.5

UNILOK Lapped Flange Connector connects process flange to instrument. UNILOK port is constructed integrally out of ANSI B16.5 Class 2500 flange. The flange seal surface has Smooth (SM) and Concentric Serrated (SE).

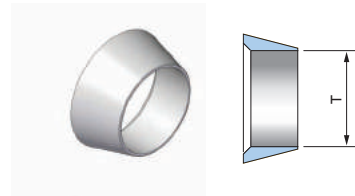


UNILOK Lapped Flange Connector is installed into slip-on and welding neck flanges, using sealing gasket on the flange seal face.

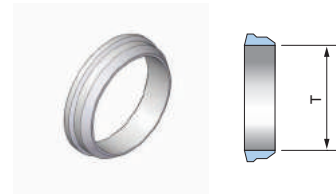


Dimensions are for reference only and are subject to change without prior notice.

UFF Front Ferrule



UBF Back Ferrule



UFS Ferrule Set



Fractional Tube

Part No.	Tube OD T	
	inch	mm
UFF-02	1/8	3.17
UFF-03	3/16	4.76
UFF-04	1/4	6.35
UFF-05	5/16	7.93
UFF-06	3/8	9.52
UFF-08	1/2	12.70
UFF-10	5/8	15.87
UFF-12	3/4	19.05
UFF-14	7/8	22.22
UFF-16	1	25.40
UFF-20	1-1/4	31.75
UFF-24	1-1/2	38.10
UFF-32	2	50.80

Metric Tube

Part No.	Tube OD T
	mm
UFF-M03	3
UFF-M04	4
UFF-M06	6
UFF-M08	8
UFF-M10	10
UFF-M12	12
UFF-M15	15
UFF-M16	16
UFF-M18	18
UFF-M20	20
UFF-M22	22
UFF-M25	25
UFF-M28	28
UFF-M30	30
UFF-M32	32
UFF-M38	38

Fractional Tube

Part No.	Tube OD T	
	inch	mm
UBF-02	1/8	3.17
UBF-03	3/16	4.76
UBF-04	1/4	6.35
UBF-05	5/16	7.93
UBF-06	3/8	9.52
UBF-08	1/2	12.70
UBF-10	5/8	15.87
UBF-12	3/4	19.05
UBF-14	7/8	22.22
UBF-16	1	25.40
UBF-20	1-1/4	31.75
UBF-24	1-1/2	38.10
UBF-32	2	50.80

Metric Tube

Part No.	Tube OD T
	mm
UBF-M03	3
UBF-M04	4
UBF-M06	6
UBF-M08	8
UBF-M10	10
UBF-M12	12
UBF-M15	15
UBF-M16	16
UBF-M18	18
UBF-M20	20
UBF-M22	22
UBF-M25	25
UBF-M28	28
UBF-M30	30
UBF-M32	32
UBF-M38	38

Fractional Tube

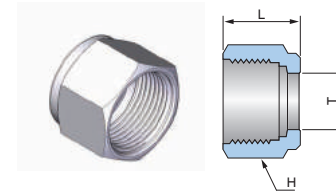
Part No.	Tube OD T	
	inch	mm
UFS-02	1/8	3.17
UFS-04	1/4	6.35
UFS-06	3/8	9.52
UFS-08	1/2	12.70

Metric Tube

Part No.	Tube OD T
	mm
UFS-M04	4
UFS-M06	6
UFS-M08	8
UFS-M10	10
UFS-M12	12

Ferrules can be ordered as a set with an arbor. Each arbor holds 10 ferrule sets.

UN Nut



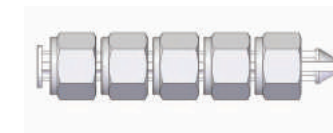
Fractional Tube

Part No.	Tube OD T		H		L
	inch	mm	inch	mm	mm
UN-02	1/8	3.17	7/16	11.11	11.9
UN-03	3/16	4.76	1/2	12.70	11.9
UN-04	1/4	6.35	9/16	14.28	12.7
UN-05	5/16	7.93	5/8	15.87	13.5
UN-06	3/8	9.52	11/16	17.46	14.2
UN-08	1/2	12.70	7/8	22.22	17.5
UN-10	5/8	15.87	1	25.40	17.5
UN-12	3/4	19.05	1-1/8	28.57	17.5
UN-14	7/8	22.22	1-1/4	31.75	17.5
UN-16	1	25.40	1-1/2	38.10	20.6
UN-20	1-1/4	31.75	1-7/8	47.63	31.7
UN-24	1-1/2	38.10	2-1/4	57.15	38.1
UN-32	2	50.80	3	76.20	52.3

Metric Tube

Part No.	Tube OD T	H	L
	mm	mm	mm
UN-M03	3	11.11	11.9
UN-M04	4	12.70	11.9
UN-M06	6	14.28	12.7
UN-M08	8	15.87	13.5
UN-M10	10	19.05	15.1
UN-M12	12	22.22	17.5
UN-M15	15	25.40	17.5
UN-M16	16	25.40	17.5
UN-M18	18	30.16	17.5
UN-M20	20	31.75	17.5
UN-M22	22	31.75	17.5
UN-M25	25	38.10	20.6
UN-M28	28	47.63	30.6
UN-M30	30	50.80	32.7
UN-M32	32	50.80	34.4
UN-M38	38	57.15	40.6

UFNS Ferrule & Nut Set



Fractional Tube

Part No.	Tube OD T	
	inch	mm
UFNS-02	1/8	3.17
UFNS-04	1/4	6.35
UFNS-06	3/8	9.52
UFNS-08	1/2	12.70

Metric Tube

Part No.	Tube OD T
	mm
UFNS-M04	4
UFNS-M06	6
UFNS-M08	8
UFNS-M10	10
UFNS-M12	12

Ferrules and nut can be ordered as a set with an arbor. Each arbor holds 5 ferrule and nut sets.

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

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

INSTRUMENT

PIPE Fittings



PIPE Fittings

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Male Pipe to Male Pipe

PCN ⁸² Close Nipple	PRA ⁸⁵ Reducing Adapter	PRC ⁸⁷ Reducing Coupling
PHN ⁸² Hex Nipple	PRB ⁸⁵ Reducing Bushing	PFE ⁸⁷ Female Elbow
PHLN ⁸³ Hex Long Nipple	PSE ⁸⁵ Street Elbow	PFT ⁸⁷ Female Tee
PHRN ⁸³ Reducing Hex Nipple	PRSE ⁸⁶ Reducing Street Elbow	PBJ ⁸⁷ Ball Joint Union
PME ⁸⁴ Male Elbow	PST ⁸⁶ Street Tee	PU ⁸⁸ Pipe Union
PMT ⁸⁴ Male Tee	PBT ⁸⁶ Branch Tee	

Female Pipe to Male Pipe

PA ⁸⁴ ⁸⁵
Adapter

Female Pipe to Female Pipe

PC ⁸⁶
Coupling

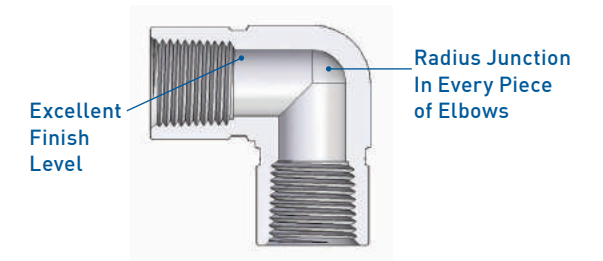
Components

PCP ⁸⁸
Pipe Cap

PPG ⁸⁸
Pipe Plug

Features

Excellent finish level to allow smooth flow transition
 Every pieces of elbows have radius junction to eliminate entrapment areas and to allow smooth flow transition for all elbows including pipe fittings
 Fine threads meets the requirement of ASME/ANSI B1.20.1 to ensure maximum thread engagement
 Working pressures are higher than the traditional piping class, 3000 pipe fittings to ASME B16.11



Materials

UNILOK pipe fittings are available in various kinds of materials as below. Straight fittings are machined from bar stock and shaped fittings from forgings. For more details or special application, contact your local distributors.

Materials	Bar Stock	Forgings
316 SS or 316L SS	ASTM A479 ASME SA479	ASTM A182 ASME SA182
Brass	ASTM B16 ASTM B453	ASTM B283
Alloy 400 (Monel®)	ASTM B164	ASTM B564 ASME SB564

Sour Environment Services

UNILOK pipe fittings 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.

Installation Instruction

Pipe thread sealant is recommended for a leak tight seal. PTFE tape is commonly used only for installation of the pipe fittings with male thread.

Make sure both male and female threads clean. Warp PTFE tape clockwise from the first thread. Two time of wrapping is recommended. Don't overhang tape on the first thread as it might be entered the system. Cut off excess tape.

Cleaning

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

Pipe End Thread Information

The end connections with the lower pressure rating is the determining factor of pressure rating for the fittings with both UNILOK tube ends and pipe thread ends.

Pressure Rating for Pipe End Thread

Tapered Pipe Threads - NPT or ISO 7/1(BSPT)

Allowable pressure ratings for male and female threads are based on ASME B31.3 at ambient temperature.

Pipe Size	316SS				Brass			UNILOK Designator
	Male		Female		Male	Female		
inch	bar	psig	bar	psig	psig	bar	psig	
1/16	760	11000	460	6700	5500	230	3300	-01N/R
1/8	690	10000	440	6500	5000	220	3200	-02N/R
1/4	550	8000	450	6600	4000	220	3300	-04N/R
3/8	540	7800	360	5300	3900	180	2600	-06N/R
1/2	530	7700	330	4900	3800	160	2400	-08N/R
3/4	500	7300	320	4600	3600	160	2300	-12N/R
1	370	5300	300	4400	2600	150	2200	-16N/R
1-1/4	410	6000	350	5000	3000	170	2500	-20N/R
1-1/2	340	5000	310	4600	2500	150	2300	-24N/R
2	270	3900	270	3900	1900	130	1900	-32N/R

Design for NPT pipe thread is N, ISO 7/1 is R.

ISO 228/1 Parallel Thread (BSPP)

The pressure ratings are at ambient temperature.

Male Pipe Size	316SS		UNILOK Designator
	bar	psig	
1/8	315	4568	-02G
1/4	315	4568	-04G
3/8	315	4568	-06G
1/2	160	2320	-08G

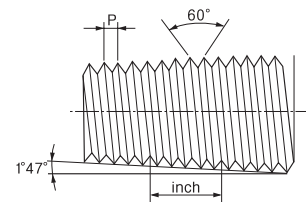
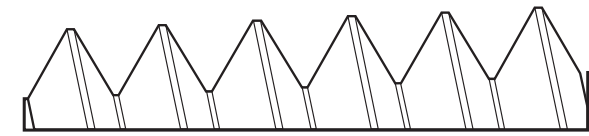
O-Seal Fittings

Rated to 206 bar (3000 psig) for 316SS fittings up to 1 inch and 25mm

Kinds of Pipe End Thread

NPT Pipe Thread

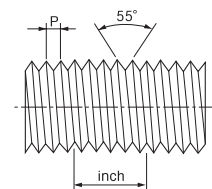
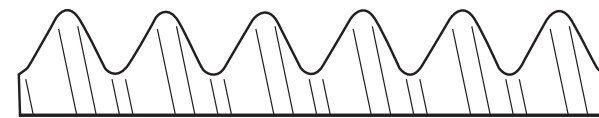
NPT (National Pipe Thread) is based on ANSI B1.20.1



60° Thread Angle
Taper Angle 1° 47'
Flat truncation of root and crest
Pitch measured in inches

ISO 7/1 Tapered Pipe Thread

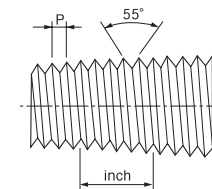
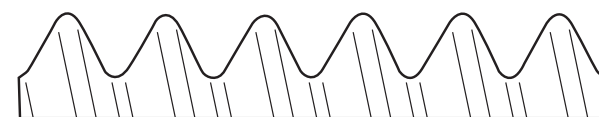
International Organization for Standard (ISO 7/1) Tapered (PT) Equivalent to BSPT (British Standard Pipe Taper Thread), DIN 2999, JIS B0203



55° Thread Angle
Taper Angle 1° 47'
Round truncation of root and crest
Pitch measured in inches

ISO 228/1 Parallel Pipe Thread

International Organization for Standard (ISO 228/1) Parallel(PF) Equivalent to BSPP (British Standard Pipe Parallel Thread), DIN ISO228/1, JIS B0202 Gasket or O-ring is normally used to seal into the parallel female threaded components.



55° Thread Angle
Round truncation of root and crest
Pitch measured in inches
Diameter measured in millimeters

How To order

UNILOK pipe fittings are ordered by part number as shown below.

Example: The following part number, *PHRN-08N04N-SS* is designated for Reducing Hex Nipple, 1/2 Male-NPT x 1/4 Male-NPT, 316SS.



Pipe Thread Size Designation						
Pipe Size	1/8	1/4	3/8	1/2	3/4	1
Designator	02	04	06	08	12	16

Thread Type Designation		
Designator	Thread Type	
N	NPT	National Standard Pipe Thread
R	ISO 7/1	Taper Pipe Thread
G	ISO 228/1	Parallel Pipe Thread
WS-*T		Socket Weld-Tube

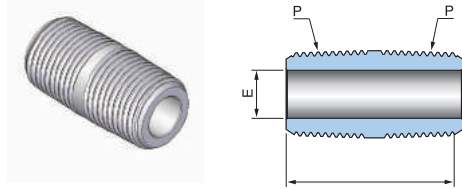
Material Designation	
Designator	Material
SS	316SS
BS	Brass
M0	Alloy400

Pressure Rating Designation	
Designator	Pressure Rating
6K	6000 psi
10K	10000 psi

Pipe fittings for high pressure application are available. The standard pressure ratings for each thread sizes are based on ASME B31.3 at ambient temperature.

For the availability of 6000psig and 10000psig, contact your local distributors.

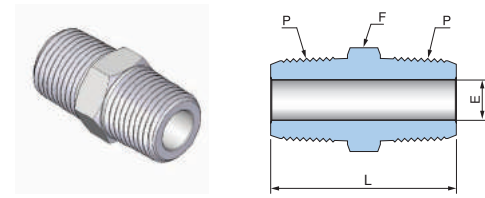
PCN Close Nipple



Male NPT to Male NPT

Part No.	P NPT	Dimensions (mm)	
		L	E
PCN-02N	1/8	21.8	4.8
PCN-04N	1/4	33.0	7.1
PCN-06N	3/8	34.0	9.6
PCN-08N	1/2	44.0	11.9
PCN-12N	3/4	38.1	15.7
PCN-16N	1	58.9	22.4

PHN Hex Nipple



Male NPT to Male NPT

Part No.	P NPT	Dimensions (mm)				
		L	E	F		
				inch	mm	
PHN-02N	1/8	25.6	4.8	7/16	11.11	
PHN-04N	1/4	35.6	7.1	9/16	14.28	
PHN-06N	3/8	36.3	9.6	11/16	17.46	
PHN-08N	1/2	46.7	11.9	7/8	22.22	
PHN-12N	3/4	46.7	15.7	1-1/16	26.98	
PHN-16N	1	58.9	22.4	1-3/8	34.92	

Male NPT to Male ISO Tapered Thread

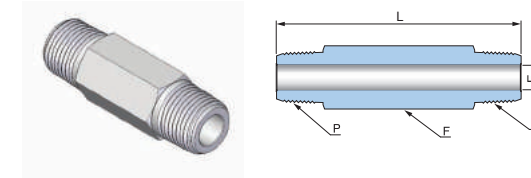
Part No.	P NPT	P1 ISO7/1	Dimensions (mm)			
			L	E	F	
					inch	mm
PHN-02N02R	1/8	1/8	25.6	4.8	7/16	11.11
PHN-04N04R	1/4	1/4	35.6	7.1	9/16	14.28
PHN-06N06R	3/8	3/8	36.3	9.6	11/16	17.46
PHN-08N08R	1/2	1/2	46.7	11.9	7/8	22.22
PHN-12N12R	3/4	3/4	46.7	15.7	1-1/16	26.98
PHN-16N16R	1	1	58.9	22.4	1-3/8	34.92

Male NPT to Male ISO Parallel Thread

Part No.	P NPT	P1 ISO 228/1	Dimensions (mm)						
			L	B	C	E	F		
							inch	mm	
PHN-02N02G	1/8	1/8	27.7	7.1	13.8	4.1	9/16	14.28	
PHN-04N04G	1/4	1/4	36.8	11.2	18.0	5.8	3/4	19.05	
PHN-06N06G	3/8	3/8	37.6	11.2	21.8	7.9	7/8	22.22	
PHN-08N08G	1/2	1/2	44.4	14.2	26.0	11.9	1-1/16	26.98	
PHN-12N12G	3/4	3/4	49.0	15.7	32.0	15.7	1-5/16	33.33	
PHN-16N16G	1	1	56.6	18.3	39.0	19.8	1-5/8	41.27	

ISO Tapered threads are available for all fractional PCN, PHN. To order, add "R" as a suffix instead of "N".
Dimensions are for reference only and are subject to change without prior notice

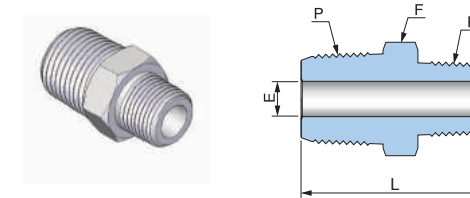
PHLN Hex Long Nipple



Male NPT to Male NPT

Part No.	P NPT	Dimensions (mm)			
		L	E	F	
				inch	mm
PHLN-02N-1.5	1/8	40	4.8	7/16	11.11
PHLN-02N-2.0		50			
PHLN-02N-2.5		65			
PHLN-02N-3.0		75			
PHLN-02N-4.0		100			
PHLN-04N-1.5	1/4	40	7.1	9/16	14.28
PHLN-04N-2.0		50			
PHLN-04N-2.5		65			
PHLN-04N-3.0		75			
PHLN-04N-4.0		100			
PHLN-04N-6.0	150				
PHLN-06N-2.0	3/8	50	9.6	11/16	17.46
PHLN-06N-3.0		75			
PHLN-06N-4.0		100			
PHLN-08N-2.0	1/2	50	11.9	7/8	22.22
PHLN-08N-3.0		75			
PHLN-08N-4.0		100			
PHLN-08N-6.0		150			
PHLN-12N-3.0	3/4	75	15.7	1-1/16	26.98
PHLN-12N-4.0		100			
PHLN-16N-3.0	1	75	22.4	1-3/8	34.92
PHLN-16N-4.0		100			

PHRN Reducing Hex Nipple

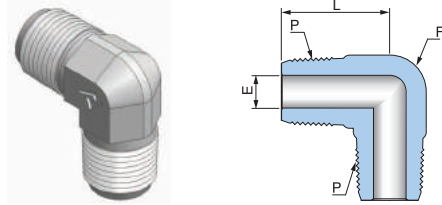


Male NPT to Reduced Male NPT

Part No.	P NPT	P1 NPT	Dimensions (mm)			
			L	E	F	
					inch	mm
PHRN-04N02N	1/4	1/8	31.0	4.8	9/16	14.28
PHRN-06N04N	3/8	1/4	36.3	7.1	11/16	17.46
PHRN-08N04N	1/2	1/4	41.9	7.1	7/8	22.22
PHRN-08N06N	1/2	3/8	41.9	9.6	7/8	22.22
PHRN-12N04N	3/4	1/4	41.9	7.1	1-1/16	26.98
PHRN-12N08N	3/4	1/2	46.7	11.9	1-1/16	26.98
PHRN-16N08N	1	1/2	54.1	11.9	1-3/8	34.92
PHRN-16N12N	1	3/4	54.1	15.7	1-3/8	34.92

ISO Tapered threads are available for all fractional PHLN, PHRN. To order, add "R" as a suffix instead of "N".
Dimensions are for reference only and are subject to change without prior notice

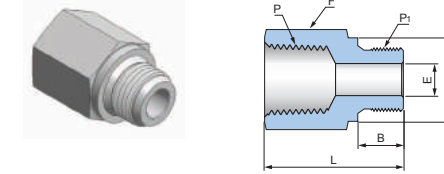
PME
Male Elbow



Male NPT to Male NPT

Part No.	P NPT	Dimensions (mm)			
		L	E	F	
				inch	mm
PME-02N	1/8	22.4	4.8	1/2	12.70
PME-04N	1/4	26.7	7.1	1/2	12.70
PME-06N	3/8	29.7	9.6	11/16	17.46
PME-08N	1/2	36.8	11.9	13/16	20.63

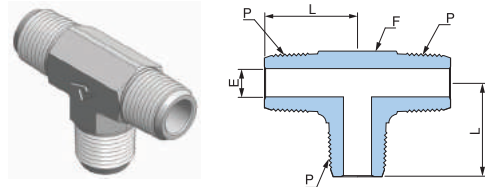
PA
Adapter



Female NPT to Male ISO Parallel Thread

Part No.	P NPT	P ₁ ISO 228/1	Dimensions (mm)					
			L	B	C	E	F	
							inch	mm
PA-02N02G	1/8	1/8	25.1	7.1	13.8	4.1	9/16	14.28
PA-04N04G	1/4	1/4	33.5	11.2	18.0	5.8	3/4	19.05
PA-06N06G	3/8	3/8	35.8	11.2	21.8	7.9	7/8	22.22
PA-08N08G	1/2	1/2	44.2	14.2	26.0	11.9	1-1/16	26.98
PA-12N12G	3/4	3/4	48.0	15.7	32.0	15.7	1-5/16	33.33
PA-16N16G	1	1	53.3	18.3	39.0	19.8	1-5/8	41.27

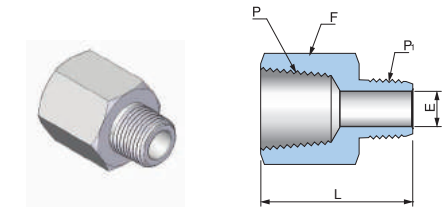
PMT
Male Tee



Male NPT to Male NPT

Part No.	P NPT	Dimensions (mm)			
		L	E	F	
				inch	mm
PMT-02N	1/8	22.4	4.8	1/2	12.70
PMT-04N	1/4	26.7	7.1	1/2	12.70
PMT-06N	3/8	29.7	9.6	11/16	17.46
PMT-08N	1/2	36.8	11.9	13/16	20.63

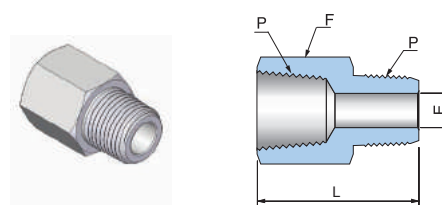
PRA
Reducing Adapter



Female NPT to Reduced Male NPT

Part No.	P NPT	P ₁ NPT	Dimensions (mm)			
			L	E	F	
					inch	mm
PRA-04N02N	1/4	1/8	32.0	4.8	3/4	19.05
PRA-06N04N	3/8	1/4	38.1	7.1	7/8	22.22
PRA-08N04N	1/2	1/4	44.7	7.1	1-1/16	26.98
PRA-08N06N	1/2	3/8	44.4	9.6	1-1/16	26.98
PRA-12N06N	3/4	3/8	46.2	9.6	1-5/16	33.33
PRA-12N08N	3/4	1/2	51.3	11.9	1-5/16	33.33
PRA-16N08N	1	1/2	54.9	11.9	1-5/8	41.27
PRA-16N12N	1	3/4	55.1	15.7	1-5/8	41.27

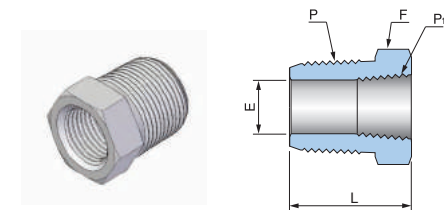
PA
Adapter



Female NPT to Male NPT

Part No.	P NPT	Dimensions (mm)			
		L	E	F	
				inch	mm
PA-02N	1/8	27.9	4.8	9/16	14.28
PA-04N	1/4	35.6	7.1	3/4	19.05
PA-06N	3/8	38.4	9.6	7/8	22.22
PA-08N	1/2	49.3	11.9	1-1/16	26.98
PA-12N	3/4	51.3	15.7	1-5/16	33.33
PA-16N	1	57.9	22.4	1-5/8	41.27

PRB
Reducing Bushing



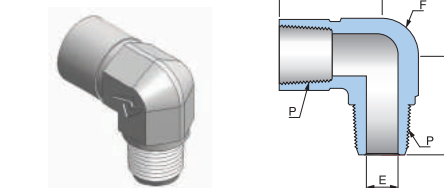
Male NPT to Reduced Female NPT

Part No.	P NPT	P ₁ NPT	Dimensions (mm)			
			L	E	F	
					inch	mm
PRB-04N02N	1/4	1/8	26.9	7.1	9/16	14.28
PRB-06N04N	3/8	1/4	30.2	9.6	3/4	19.05
PRB-08N04N	1/2	1/4	27.4	11.4	7/8	22.22
PRB-08N06N	1/2	3/8	35.8	11.9	7/8	22.22
PRB-12N04N	3/4	1/4	27.4	11.4	1-1/16	26.98
PRB-12N06N	3/4	3/8	27.4	15.0	1-1/16	26.98
PRB-12N08N	3/4	1/2	41.4	15.7	1-1/16	26.98
PRB-16N08N	1	1/2	34.8	18.5	1-3/8	34.92
PRB-16N12N	1	3/4	47.0	22.4	1-3/8	34.92

Female NPT to Male ISO Tapered Thread

Part No.	P NPT	P ₁ ISO 228/1	Dimensions (mm)			
			L	E	F	
					inch	mm
PA-02N02R	1/8	1/8	27.7	4.8	9/16	14.28
PA-04N04R	1/4	1/4	36.1	7.1	3/4	19.05
PA-06N06R	3/8	3/8	38.1	9.6	7/8	22.22
PA-08N08R	1/2	1/2	49.3	11.9	1-1/16	26.98
PA-12N12R	3/4	3/4	51.3	15.7	1-5/16	33.33
PA-16N16R	1	1	58.4	22.4	1-5/8	41.27

PSE
Street Elbow



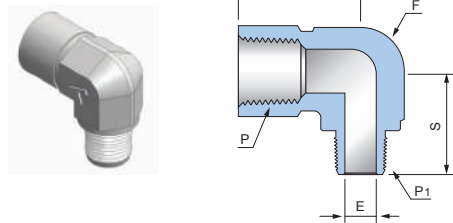
Female NPT to Male NPT

Part No.	P NPT	Dimensions (mm)				
		L	S	E	F	
					inch	mm
PSE-02N	1/8	26.4	22.1	4.8	1/2	12.70
PSE-04N	1/4	29.7	29.7	7.1	11/16	17.46
PSE-06N	3/8	36.1	32.0	9.6	13/16	20.63
PSE-08N	1/2	39.6	39.6	11.9	1	25.40

ISO Tapered threads are available for all fractional PME, PMT, PA. To order, add "R" as a suffix instead of "N".
Dimensions are for reference only and are subject to change without prior notice

ISO Tapered threads are available for all fractional PA, PRA, PRB, PSE. To order, add "R" as a suffix instead of "N".
Dimensions are for reference only and are subject to change without prior notice

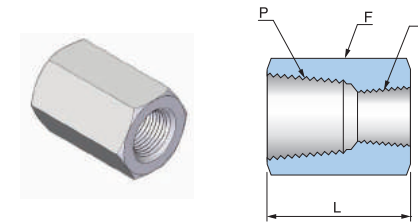
PRSE Reducing Street Elbow



Female NPT to Reduced Male NPT

Part No.	P NPT	P ₁ NPT	Dimensions (mm)				
			L	S	E	F	
						inch	mm
PRSE-04N02N	1/4	1/8	29.7	25.4	4.8	11/16	17.46
PRSE-06N04N	3/8	1/4	36.1	32.0	7.1	13/16	20.63
PRSE-08N04N	1/2	1/4	39.6	35.1	7.1	1	25.40
PRSE-08N06N	1/2	3/8	39.6	35.1	9.6	1	25.40

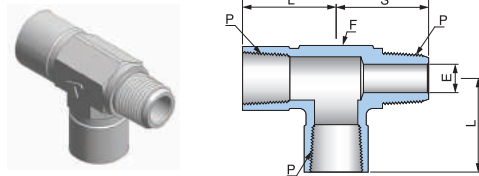
PRC Reducing Coupling



Female NPT to Reduced Female NPT

Part No.	P NPT	P ₁ NPT	Dimensions (mm)		
			L	F	
				inch	mm
PRC-04N02N	1/4	1/8	31.0	3/4	19.05
PRC-06N04N	3/8	1/4	35.1	7/8	22.22
PRC-08N04N	1/2	1/4	44.4	1-1/16	26.98
PRC-08N06N	1/2	3/8	45.2	1-1/16	26.98
PRC-12N04N	3/4	1/4	46.0	1-5/16	33.33
PRC-12N08N	3/4	1/2	52.3	1-5/16	33.33
PRC-16N08N	1	1/2	55.6	1-5/8	41.27
PRC-16N12N	1	3/4	57.2	1-5/8	41.27

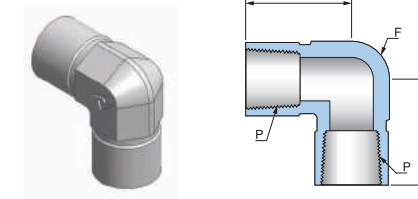
PST Street Tee



Female NPT to Male NPT

Part No.	P NPT	Dimensions (mm)				
		L	S	E	F	
					inch	mm
PST-02N	1/8	26.4	22.1	4.8	1/2	12.70
PST-04N	1/4	29.7	29.7	7.1	11/16	17.46
PST-06N	3/8	36.1	32.0	9.6	13/16	20.63
PST-08N	1/2	39.6	39.6	11.9	1	25.40

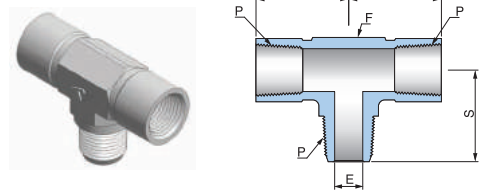
PFE Female Elbow



Female NPT to Female NPT

Part No.	P NPT	Dimensions (mm)		
		L	F	
			inch	mm
PFE-02N	1/8	26.4	1/2	12.70
PFE-04N	1/4	29.7	11/16	17.46
PFE-06N	3/8	36.1	13/16	20.63
PFE-08N	1/2	39.6	1	25.40

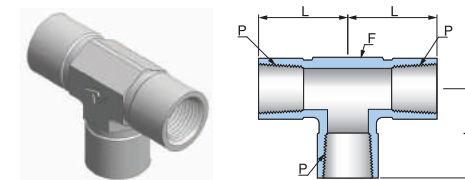
PBT Branch Tee



Female NPT to Male NPT

Part No.	P NPT	Dimensions (mm)				
		L	S	E	F	
					inch	mm
PBT-02N	1/8	26.4	22.1	4.8	1/2	12.70
PBT-04N	1/4	29.7	29.7	7.1	11/16	17.46
PBT-06N	3/8	36.1	32.0	9.6	13/16	20.63
PBT-08N	1/2	39.6	39.6	11.9	1	25.40

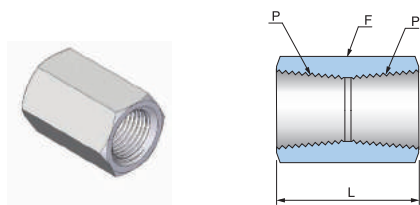
PFT Female Tee



Female NPT to Female NPT

Part No.	P NPT	Dimensions (mm)		
		L	F	
			inch	mm
PFT-02N	1/8	26.4	1/2	12.70
PFT-04N	1/4	29.7	11/16	17.46
PFT-06N	3/8	36.1	13/16	20.63
PFT-08N	1/2	39.6	1	25.40

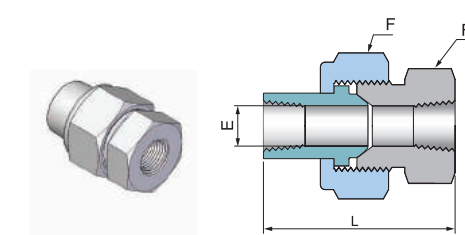
PC Coupling



Female NPT to Female NPT

Part No.	P NPT	Dimensions (mm)			
		L	F		F ₁
			inch	mm	
PC-02N	1/8	20.6	9/16	14.28	
PC-04N	1/4	30.2	3/4	19.05	
PC-06N	3/8	33.3	7/8	22.22	
PC-08N	1/2	39.6	1-1/16	26.98	
PC-12N	3/4	41.1	1-5/16	33.33	
PC-16N	1	50.8	1-5/8	41.27	

PBJ Ball Joint Union



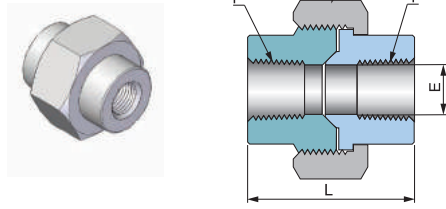
Female NPT to Female NPT

Part No.	P NPT	Dimensions (mm)					
		L	E	F		F ₁	
				inch	mm		inch
PBJ-04N	1/4	59.4	9.1	1-3/8	34.92	1-3/16	30.16
PBJ-06N	3/8	63.5	13.2	1-1/2	38.10	1-5/16	33.33
PBJ-08N	1/2	68.3	15.7	1-3/4	44.45	1-5/8	41.27
PBJ-12N	3/4	79.2	22.4	2-1/8	53.97	1-7/8	47.62
PBJ-16N	1	90.4	26.2	2-1/2	63.50	2-3/8	60.32

ISO Tapered threads are available for all fractional PRSE, PST, PBT, PC. To order, add "R" as a suffix instead of "N".
Dimensions are for reference only and are subject to change without prior notice

ISO Tapered threads are available for all fractional PRC, PFE, PFT, PBJ. To order, add "R" as a suffix instead of "N".
Dimensions are for reference only and are subject to change without prior notice

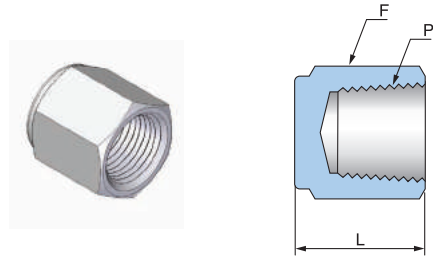
PU
Pipe Union



Female NPT to Female NPT

Part No.	P NPT	Dimensions (mm)		
		L	E	F
Pressure Rating, 3000psig				
PU-08N	1/2	49.2	17.2	46
PU-12N	3/4	57.2	21.5	54
PU-16N	1	62.2	27.5	63
Pressure Rating, 6000psig				
PU-08N-6K	1/2	58.3	17.2	54
PU-12N-6K	3/4	64.3	21.5	63
PU-16N-6K	1	72.4	27.5	82

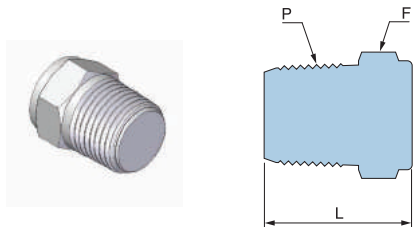
PCP
Pipe Cap



Female NPT

Part No.	P NPT	Dimensions (mm)		
		L	F	
			inch	mm
PCP-02N	1/8	19.1	9/16	14.28
PCP-04N	1/4	23.1	3/4	19.05
PCP-06N	3/8	26.2	7/8	22.22
PCP-08N	1/2	34.0	1-1/16	26.98
PCP-12N	3/4	36.6	1-5/16	33.33
PCP-16N	1	41.1	1-5/8	41.27

PPG
Pipe Plug



Male NPT

Part No.	P NPT	Dimensions (mm)		
		L	F	
			inch	mm
PPG-02N	1/8	19.1	7/16	11.11
PPG-04N	1/4	24.4	9/16	14.28
PPG-06N	3/8	25.1	11/16	17.46
PPG-08N	1/2	30.7	7/8	22.22
PPG-12N	3/4	30.7	1-1/16	26.98
PPG-16N	1	38.1	1-3/8	34.92

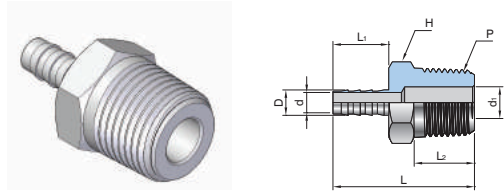
INSTRUMENT

Hose Connectors



ISO Tapered threads are available for all fractional PCP, PPG. To order, add "R" as a suffix instead of "N".
Dimensions are for reference only and are subject to change without prior notice

UHMC Hose Male Connector



Connects Hose to Female Pipe

Part No.	Hose I.D.	P	Dimensions (mm)						
			D	d	d ₁	H	L	L ₁	L ₂
UHMC-02H02N	1/8	1/8	0.15	0.08	0.19	7/16	1.08	0.40	0.38
UHMC-02H04N	1/8	1/4	0.15	0.08	0.28	9/16	1.26	0.40	0.56
UHMC-03H02N	3/16	1/8	0.23	0.12	0.12	7/16	1.27	0.59	0.38
UHMC-03H04N	3/16	1/4	0.23	0.12	0.28	9/16	1.45	0.59	0.56
UHMC-04H02N	1/4	1/8	0.30	0.19	0.19	7/16	1.47	0.79	0.38
UHMC-04H04N	1/4	1/4	0.30	0.19	0.19	9/16	1.65	0.79	0.56
UHMC-04H06N	1/4	3/8	0.30	0.19	0.19	11/16	1.66	0.79	0.56
UHMC-04H08N	1/4	1/2	0.30	0.19	0.49	7/8	1.85	0.79	0.75
UHMC-05H02N	5/16	1/8	0.38	0.19	0.19	7/16	1.55	0.87	0.38
UHMC-05H04N	5/16	1/4	0.38	0.19	0.19	9/16	1.73	0.87	0.56
UHMC-05H06N	5/16	3/8	0.38	0.19	0.19	11/16	1.74	0.87	0.56
UHMC-05H08N	5/16	1/2	0.38	0.19	0.47	7/8	1.96	0.87	0.75
UHMC-06H04N	3/8	1/4	0.45	0.30	0.30	9/16	1.73	0.87	0.56
UHMC-06H06N	3/8	3/8	0.45	0.30	0.30	11/16	1.74	0.87	0.56
UHMC-06H08N	3/8	1/2	0.45	0.30	0.30	7/8	1.96	0.87	0.75
UHMC-08H04N	1/2	1/4	0.60	0.38	0.28	11/16	1.80	0.94	0.56
UHMC-08H06N	1/2	3/8	0.60	0.38	0.38	11/16	1.81	0.94	0.56
UHMC-08H08N	1/2	1/2	0.60	0.38	0.38	7/8	2.03	0.94	0.75
UHMC-10H08N	5/8	1/2	0.75	0.47	0.47	1-1/16	2.07	0.98	0.75
UHMC-10H12N	5/8	3/4	0.75	0.50	0.63	1-1/16	2.07	0.98	0.75
UHMC-12H08N	3/4	1/2	0.90	0.63	0.47	1-1/16	2.14	1.05	0.75
UHMC-12H12N	3/4	3/4	0.90	0.63	0.63	1-1/16	2.14	1.05	0.75
UHMC-12H16N	3/4	1	0.90	0.63	0.88	1-3/8	2.43	1.05	0.94
UHMC-16H12N	1	3/4	1.20	0.88	0.63	1-3/8	2.38	1.19	0.75
UHMC-16H16N	1	1	1.20	0.88	0.88	1-3/8	2.57	1.19	0.94

How To Order

Standard materials is 316SS. To order, add - SS to the end of part number.

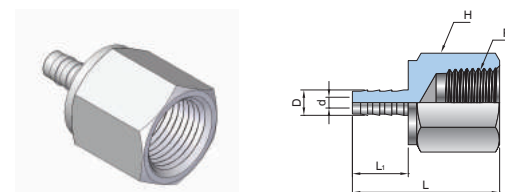
Example: UHMC-08H08N-SS

Cleaning

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

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

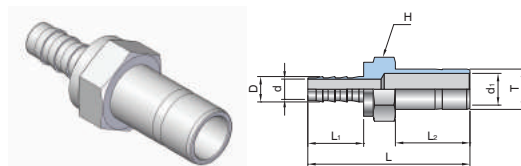
UHFC Hose Female Connector



Connects Hose to Male Pipe

Part No.	Hose I.D.	P	Dimensions (mm)					
			D	d	H	L	L ₁	
UHFC-02H02N	1/8	1/8	0.15	0.08	9/16	1.11	0.40	
UHFC-02H04N	1/8	1/4	0.15	0.08	3/4	1.26	0.40	
UHFC-03H02N	3/16	1/8	0.23	0.12	9/16	1.29	0.59	
UHFC-03H04N	3/16	1/4	0.23	0.12	3/4	1.44	0.59	
UHFC-04H02N	1/4	1/8	0.30	0.19	9/16	1.47	0.79	
UHFC-04H04N	1/4	1/4	0.30	0.19	3/4	1.64	0.79	
UHFC-04H06N	1/4	3/8	0.30	0.19	7/8	1.71	0.79	
UHFC-05H04N	5/16	1/4	0.38	0.19	3/4	1.73	0.87	
UHFC-05H06N	5/16	3/8	0.38	0.19	7/8	1.82	0.87	
UHFC-06H04N	3/8	1/4	0.45	0.30	3/4	1.69	0.87	
UHFC-06H06N	3/8	3/8	0.45	0.30	7/8	1.78	0.87	
UHFC-06H08N	3/8	1/2	0.45	0.30	1-1/16	2.03	0.87	
UHFC-08H08N	1/2	1/2	0.60	0.38	1-1/16	2.13	0.94	

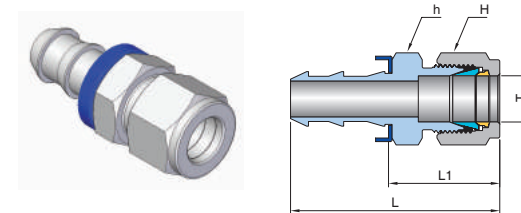
UHTA Hose Tube Adapter



Connects Hose to UNILOK Tube Fitting

Part No.	Hose I.D.	Tube O.D. T	Dimensions (mm)						
			D	d	d ₁	H	L	L ₁	L ₂
UHTA-02H02T	1/8	1/8	0.15	0.08	0.09	5/16	1.35	0.40	0.53
UHTA-02H04T	1/8	1/4	0.15	0.08	0.19	3/8	1.44	0.40	0.62
UHTA-04H04T	1/4	1/4	0.30	0.19	0.19	7/16	1.83	0.79	0.62
UHTA-04HM06T	1/4	6mm	0.30	0.19	0.18	7/16	1.86	0.79	0.62
UHTA-04H06T	1/4	3/8	0.30	0.19	0.28	7/16	1.90	0.79	0.69
UHTA-05H04T	5/16	1/4	0.37	0.19	0.19	7/16	1.91	0.87	0.62
UHTA-06H06T	3/8	3/8	0.45	0.30	0.28	9/16	1.98	0.87	0.69
UHTA-06H08T	3/8	1/2	0.45	0.30	0.39	5/8	2.20	0.87	0.91
UHTA-08H06T	1/2	3/8	0.60	0.38	0.28	11/16	2.05	0.94	0.69
UHTA-08H08T	1/2	1/2	0.60	0.38	0.39	11/16	2.27	0.94	0.91
UHTA-12H12T	3/4	3/4	0.90	0.63	0.59	1-1/16	2.44	1.05	0.97

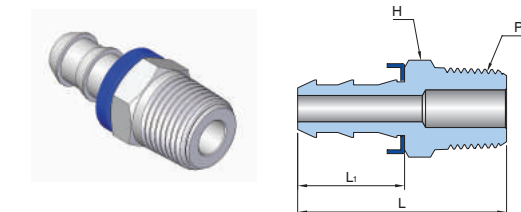
UHPTFA Push-On Hose Tube Fitting Adapter



Connects Hose to Tube

Part No.	Hose I.D.	Tube O.D. T	Dimensions (mm)			
			H	h	L	L ₁
UHPTFA-04H04	1/4	1/4	9/16	9/16	50.0	30.7
UHPTFA-06H06	3/8	3/8	11/16	11/16	53.6	31.5
UHPTFA-08H08	1/2	1/2	7/8	7/8	62.7	36.1

UHPMC Push-On Hose Male Connector



Connects Hose to Male Pipe

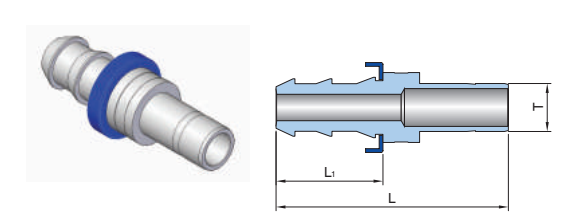
Part No.	Hose I.D.	P	Dimensions (mm)		
			H	L	L ₁
UHPMC-04H04	1/4	1/4	9/16	42.7	23.4
UHPMC-06H04	3/8	1/4	11/16	45.7	23.6
UHPMC-06H06	3/8	3/8	11/16	45.7	23.6
UHPMC-08H08	1/2	1/2	7/8	55.6	29.0
UHPMC-12H12	3/4	3/4	1-1/16	71.4	29.2

How To Order

Standard materials is 316SS. To order, add - SS to the end of part number.

Example: UHPTFA-08H08T-SS

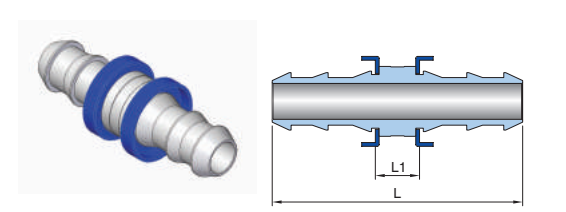
UHPTA Push-On Hose Tube Adapter



Connects Hose to UNILOK Tube Fitting

Part No.	Hose I.D.	Tube O.D. T	Dimensions (mm)	
			L	L ₁
UHPTA-04H04T	1/4	1/4	49.0	29.7
UHPTA-06H06T	3/8	3/8	51.6	29.5
UHPTA-08H08T	1/2	1/2	62.7	36.1
UHPTA-12H12T	3/4	3/4	79.8	37.6

UHPSU Push-On Hose Straight Union



Connects Hose

Part No.	Hose I.D.	Tube O.D. T	Dimensions (mm)	
			L ₁	L ₂
UHPSU-04H04H	1/4	1/4	52.6	14.0
UHPSU-06H06H	3/8	3/8	57.2	13.0
UHPSU-08H08H	1/2	1/2	69.4	13.0
UHPSU-12H12H	3/4	3/4	100.8	13.0

Cleaning

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

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

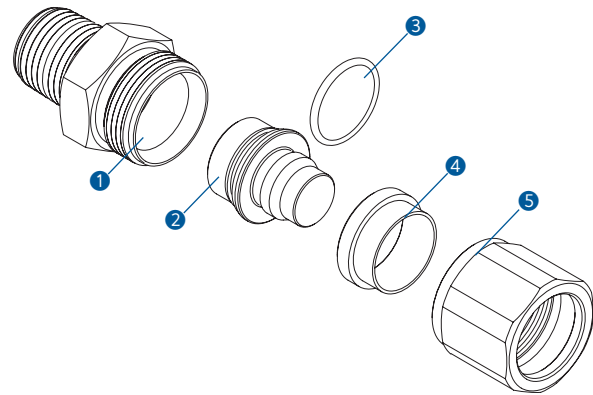
**Hose
Fittings**



Features

- UHFM the structure and assembly is simple.
- To prevent separation of the hose.
- The Body can be replaced with UMC or UME.
(UMC = Male Connector, UME = Male Elbow)
- It can be disassembled and reassembled.

Materials of Construction



No.	Description	Materials
1	BODY	316SS
2	INSERT	304SS
3	O-RING	FKM
4	SLEEVE	POLYCETAL
5	FEMALE NUT	316SS

Assembly Method

- Cut the hose surface evenly.
- Insert the nut and sleeve on the hose.
- Insert the hose in the insert parts.
(The surface of the hose should touch the wall at the end of insert parts.)
- Insert the nut and sleeve on the hose.
- The nut is assembled to touch the body wall.

Working Pressure

Hose Size (mm) I.D.*O.D.	Working Pressure (MPa)
6*11-10*16	0-1.0
12*18-15*22	0-0.8
19*26-25*33	0-0.6
32*41	0-0.4

- Available Hose : Soft PVC
- Use the hose size indicated in the catalog.
- Working pressure is can be changed by used hose.

Cleaning

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

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.

thread is applied depends on the body.

How To order

UNILOK UHFM series Hose Fitting are ordered by part number as shown below.

Example: The following part number, *UHFC-H0915-04R-SS* is designated for UHFM series Hose Fitting, Body Type UMC, Hose Size(I.D.*O.D) 09*15, Body thread 1/4"PT, 316SS.



Fitting Type	
Male Connector	HFMC
Male Elbow	HFME

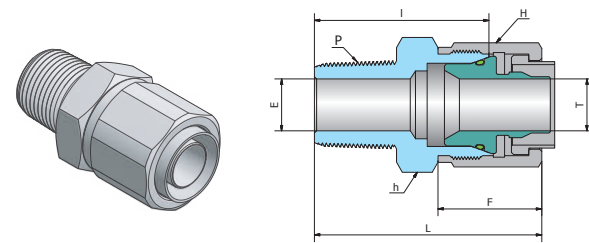
Hose Size								
Hose Size (I.D.*O.D.)	mm	8*13.5	9*15	10*16	12*18	15*22	19*26	25*33
Designator		H0813	H0915	H1016	H1218	H1522	H1926	H2533

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

Thread Type Designation		
Designator	Thread Type	
N	NPT	National Standard Pipe Thread
R	ISO 7/1	Taper Pipe Thread

Body Materials	
Designator	SS
Materials	316SS

UHFC

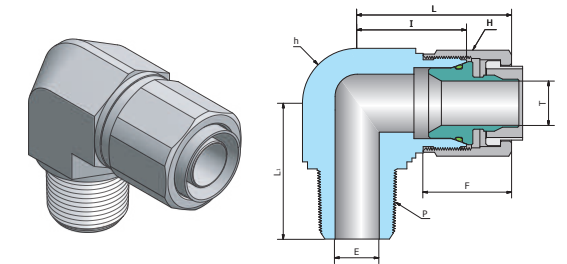


Part No.	P ISO7/1	Dimensions (mm)								
		E Min.	H		h		L	F	I	T
			inch	mm	inch	mm				
UHFC-H0611-02R	1/8	4.8	15/16	23.81	13/16	20.63	39.1	22.0	28.7	6.0
UHFC-H0611-04R	1/4	7.1	15/16	23.81	13/16	20.63	43.7	22.0	33.3	6.0
UHFC-H0611-06R	3/8	9.7	15/16	23.81	13/16	20.63	43.7	22.0	33.3	6.0
UHFC-H0611-08R	1/2	10.4	15/16	23.81	7/8	22.22	49.3	22.0	38.9	6.0
UHFC-H0611-12R	3/4	10.4	15/16	23.81	1-1/16	26.98	50.8	22.0	40.4	6.0
UHFC-H0611-16R	1	10.4	15/16	23.81	1-3/8	34.92	57.4	22.0	47.0	6.0
UHFC-H0813-02R	1/8	4.8	15/16	23.81	13/16	20.63	39.1	22.0	28.7	8.0
UHFC-H0813-04R	1/4	7.1	15/16	23.81	13/16	20.63	43.7	22.0	33.3	8.0
UHFC-H0813-06R	3/8	9.7	15/16	23.81	13/16	20.63	43.7	22.0	33.3	8.0
UHFC-H0813-08R	1/2	10.4	15/16	23.81	7/8	22.22	49.3	22.0	38.9	8.0
UHFC-H0813-12R	3/4	10.4	15/16	23.81	1-1/16	26.98	50.8	22.0	40.4	8.0
UHFC-H0813-16R	1	10.4	15/16	23.81	1-3/8	34.92	57.4	22.0	47.0	8.0
UHFC-H0915-04R	1/4	7.1	15/16	23.81	15/16	23.81	44.7	22.5	34.0	9.0
UHFC-H0915-06R	3/8	9.7	15/16	23.81	15/16	23.81	44.7	22.5	34.0	9.0
UHFC-H0915-08R	1/2	11.9	15/16	23.81	15/16	23.81	49.6	22.5	38.9	9.0
UHFC-H0915-12R	3/4	12.7	15/16	23.81	1-1/16	26.98	51.1	22.5	40.4	9.0
UHFC-H1016-04R	1/4	7.1	15/16	23.81	15/16	23.81	44.7	22.5	34.0	10.0
UHFC-H1016-06R	3/8	9.7	15/16	23.81	15/16	23.81	44.7	22.5	34.0	10.0
UHFC-H1016-08R	1/2	11.9	15/16	23.81	15/16	23.81	49.6	22.5	38.9	10.0
UHFC-H1016-12R	3/4	12.7	15/16	23.81	1-1/16	26.98	51.1	22.5	40.4	10.0
UHFC-H1218-06R	3/8	10.4	1-1/16	26.98	1-1/16	26.98	47.6	24.0	35.4	12.0
UHFC-H1218-08R	1/2	11.9	1-1/16	26.98	1-1/16	26.98	52.6	24.0	40.4	12.0
UHFC-H1218-12R	3/4	15.7	1-1/16	26.98	1-1/16	26.98	52.6	24.0	40.4	12.0
UHFC-H1218-16R	1	15.7	1-1/16	26.98	1-3/8	34.92	59.2	24.0	47.0	12.0
UHFC-H1522-12R	3/4	15.7	1-1/4	31.75	1-3/16	30.16	53.6	25.0	40.4	15.0
UHFC-H1522-16R	1	18.3	1-1/4	31.75	1-3/8	34.92	60.2	25.0	47.0	15.0
UHFC-H1926-08R	1/2	11.9	1-1/2	38.10	1-3/8	34.92	58.2	27.0	45.2	19.0
UHFC-H1926-12R	3/4	15.7	1-1/2	38.10	1-3/8	34.92	58.2	27.0	45.2	19.0
UHFC-H1926-16R	1	22.4	1-1/2	38.10	1-3/8	34.92	63.0	27.0	50.0	19.0
UHFC-H2533-16R	1	22.4	1-1/4	44.45	1-3/4	44.45	75.9	37.5	55.1	25.0
UHFC-H2533-20R	1-1/4	27.7	1-1/4	44.45	1-3/4	44.45	75.9	37.5	55.1	25.0

NPT threads are available for all metric UHFC. To order, add "N" as a suffix instead of "R".

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

UHFE



Part No.	P ISO7/1	Dimensions (mm)									
		E Min.	H		h		L	L ₁	F	I	T
			inch	mm	inch	mm					
UHFE-H0611-04R	1/4	7.1	15/16	23.81	13/16	20.63	36.3	28.3	22.0	25.9	6.0
UHFE-H0611-06R	3/8	9.7	15/16	23.81	13/16	20.63	36.3	28.3	22.0	25.9	6.0
UHFE-H0611-08R	1/2	10.4	15/16	23.81	13/16	20.63	36.3	33.0	22.0	25.9	6.0
UHFE-H0813-02R	1/8	4.8	15/16	23.81	13/16	20.63	36.3	23.3	22.0	25.9	8.0
UHFE-H0813-04R	1/4	7.1	15/16	23.81	13/16	20.63	36.3	28.3	22.0	25.9	8.0
UHFE-H0813-06R	3/8	9.7	15/16	23.81	13/16	20.63	36.3	28.3	22.0	25.9	8.0
UHFE-H0813-08R	1/2	10.4	15/16	23.81	13/16	20.63	36.3	33.0	22.0	25.9	8.0
UHFE-H0915-04R	1/4	7.1	15/16	23.81	15/16	23.81	37.6	30.2	22.5	26.9	9.0
UHFE-H0915-06R	3/8	9.7	15/16	23.81	15/16	23.81	37.6	30.2	22.5	27.9	9.0
UHFE-H1016-04R	1/4	7.1	15/16	23.81	15/16	23.81	37.6	30.2	22.5	26.9	10.0
UHFE-H1016-06R	3/8	9.7	15/16	23.81	15/16	23.81	37.6	30.2	22.5	27.9	10.0
UHFE-H1016-08R	1/2	11.9	15/16	23.81	15/16	23.81	37.6	35.1	22.5	27.9	10.0
UHFE-H1218-04R	1/4	7.1	1-1/16	26.98	1-1/16	26.98	41.9	31.9	24.0	29.7	12.0
UHFE-H1218-06R	3/8	9.7	1-1/16	26.98	1-1/16	26.98	41.9	31.9	24.0	29.7	12.0
UHFE-H1218-08R	1/2	11.9	1-1/16	26.98	1-1/16	26.98	41.9	36.8	24.0	29.7	12.0
UHFE-H1218-12R	3/4	15.7	1-1/16	26.98	1-1/16	26.98	41.9	36.8	24.0	29.7	12.0
UHFE-H1926-12R	3/4	15.7	1-1/2	38.10	1-3/8	34.92	49.8	41.7	27.0	36.8	19.0
UHFE-H1926-16R	1	22.4	1-1/2	38.10	1-3/8	34.92	49.8	46.5	27.0	36.8	19.0
UHFE-H2533-16R	1	22.4	1-3/4	44.45	1-11/16	42.86	64.8	51.3	37.5	44.0	25.0
UHFE-H2533-20R	1-1/4	27.7	1-3/4	44.45	1-11/16	42.86	64.8	51.1	37.5	44.0	25.0

NPT threads are available for all metric UHFE. To order, add "N" as a suffix instead of "R".

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

INSTRUMENT

Fusible Fittings

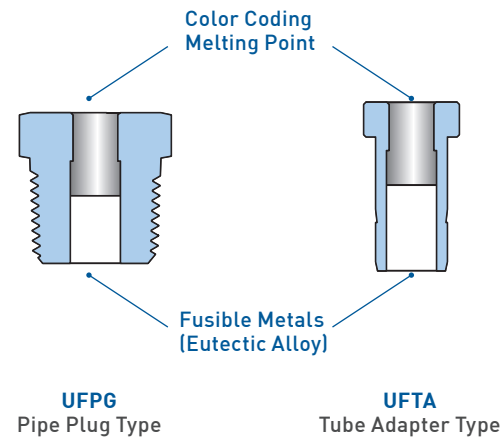
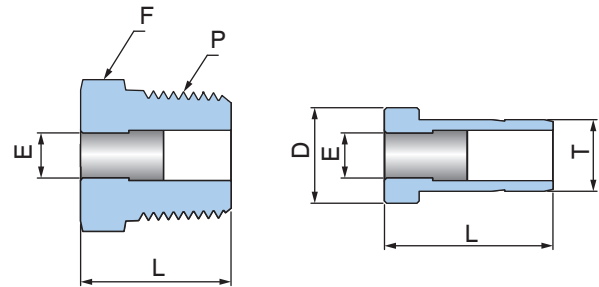


Features

Temperature rating from 71°C(160°F) to 138°C (281°F) with 4 temperature ranges
 Two types of fittings - Tube Adapters and Pipe Plugs with 316SS body

Application

When the fitting is exposed to the temperature at or above the melting point of fusible metals, the fusible metal will be melt and the inside pressure of fitting will be released to protect the systems.



Fusible Metal Option

Designator	Mark	Color Cording	Melting Point	
			°F	°C
160	160	Black	160	71
211	211	Orange	211	100
255	255	Green	255	124
281	281	Red	281	138

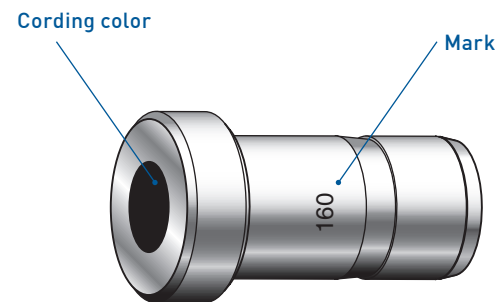
Ordering Information & Dimensions

Part No.	Tube O.D. T	Dimensions (mm)		
		E	L	D
UFTA-04T	1/4	4.3	20.6	9.53
UFTA-06T	3/8	6.4	22.4	12.70
UFTA-08T	1/2	6.4	28.4	15.90

Part No.	Pipe Size P	Dimensions (mm)		
		E	L	F (Hex.)
UFPG-04N	1/4	6.4	24.1	14.28
UFPG-06N	3/8	6.4	26.9	17.46
UFPG-08N	1/2	8.7	30.5	22.22

ISO 7/1 Tapered Threads [PT] are available for all fractional sizes of UFPG. Add "R" as a suffix instead of "N".

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



How To Order

Part number for fusible fitting which is tube adapter type, 3/8"OD, 316SS body, 160F melting point is **UFTA-06T-SS-160**

INSTRUMENT

Quick Connectors



Features

- It was designed to flow in both directions.
- Coupling and uncoupling enables quick, easy operation.
- Simply push and pull the line can be connected and disconnected.
- No tools needed was a compact and lightweight design.
- There are two kinds of stems.
- Single type stems have no valve.
- Double type stem have valve.

Operation

- When coupling and uncoupling, Should not be used to exceed the pressure of 250 psi (17.2 bar).
- Coupling
Placed on the stem and the body straight. Connect by inserting the stem in the body.
- Uncoupling
Pull the body sleeve to the stem direction. Remove the stem inserted in the body.

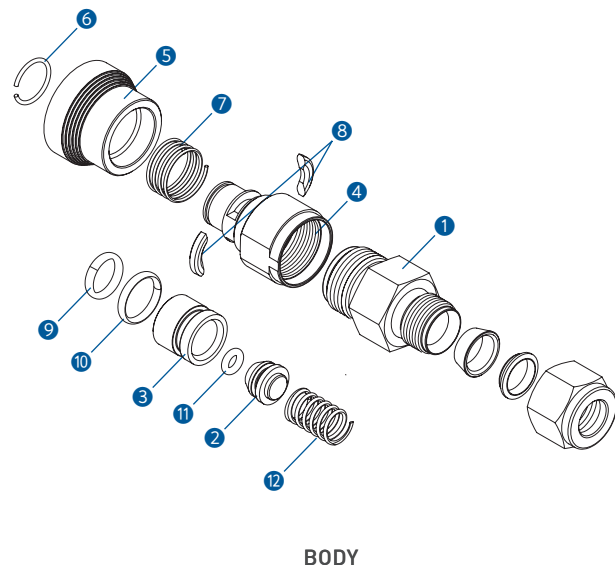
Materials of Construction

BODY

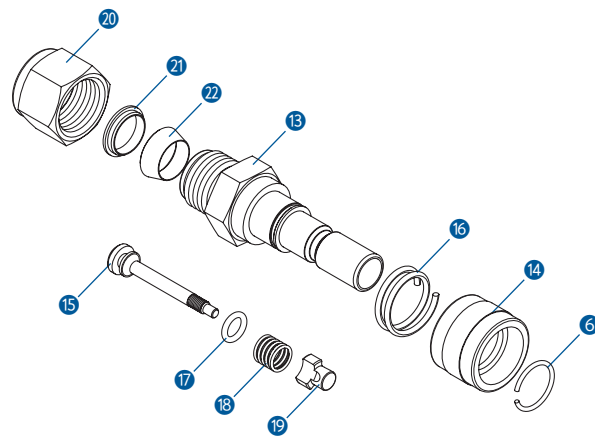
No.	Description	Materials
1	BODY	316SS
2	BODY POPPET	316SS
3	BODY INSERT	316SS
4	HOUSING	316SS
5	BODY SLEEVE	316SS
6	C-RING	304SS
7	SPRING	304SS
8	LOCKING DOGS	316SS Powdered metal
9	O-RING	FKM
10	O-RING	FKM
11	O-RING	FKM
12	SPRING	304SS

STEM

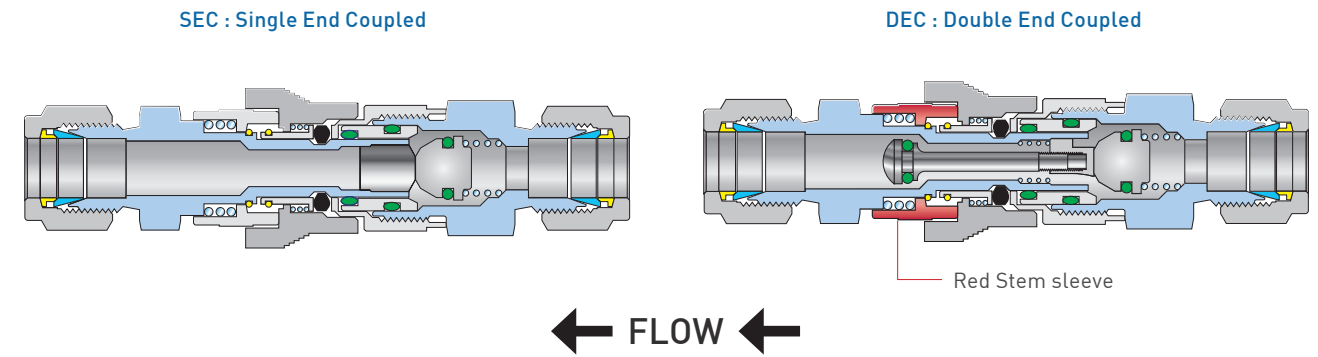
No.	Description	Materials
13	STEM	316SS
14	STEM SLEEVE	316SS
15	STEM VALVE	316SS
16	SPRING	304SS
17	O-RING	FKM
18	SPRING	304SS
19	VALVE INSERT	316SS
20	NUT	316SS
21	BACK FERRULE	316SS
22	FRONT FERRULE	316SS



BODY



STEM



Pressure-Temperature Ratings

UQ Stem and Body	316SS FKM O-rings			Brass NBR O-rings		
	UQ1	UQ2	UQ3	UQ1	UQ2	UQ3
	psi (bar) @ °F (°C)					
Coupled	3000 (206) @70 (21)	1500 (103) @70 (21)	750 (51.6) @70 (21)	2000 (137) @70 (21)	1000 (68.9) @70 (21)	500 (34.4) @70 (21)
Uncoupled	250 (17.2)@400 (204)			250 (17.2)@250 (121)		
When coupling and uncoupling	250 (17.2) @ 70 (21) Do not couple or uncouple at pressures exceeding 250 psig (17.2 bar).					

Spillage and Air Inclusion

UQ Series	Spillage (cm ³)	Air Inclusion (cm ³)
UQ1	0.3	0.3
UQ2	1.0	1.0
UQ3	3.0	3.0

- Spillage is the volume of system fluid that escapes while a quick connector is uncoupled. (Only double)
- Air inclusion is the volume of air trapped that comes in while a quick connector is coupled. (Only double)

Insertion depth

UQ Series	Depth mm (in)	
	SEC	DEC
UQ1	27.7(1.09)	29.2(1.15)
UQ2	30.0(1.18)	33.0(1.30)
UQ3	37.6(1.48)	42.7(1.68)

Insertion depth and Overall Length

- To obtain a combined length and add the length of the body and stem, subtract the insertion depth.

Cleaning

UNILOK quick connectors are free machine oil, loose particles and grease throughout the close cleaning process.

Testing

Every UQ series quick connector is 100% factory tested for proper functionality.

How To order

UNILOK UQ series Quick Connectors are ordered by part number as shown below.

Example: The following part number, *UQB3U-08T-SS* is designated for UQB3 series Quick Connector with both 1/2" UNILOK tube fitting, 316SS.



Valve Type		
Body	Body	QB
Stem	Single	QS
	Double	QD
Set	Single	QBS
	Double	QBD
Bulkhead-Body	Bulkhead-Body	BQB
Bulkhead -Stem	Single	BQS
	Double	BQD
Bulkhead -Set	Single	BQBS
	Double	BQBD

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

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.

Do not couple or uncouple at pressures exceeding 250 psig (17.2 bar).

Prohibit the together use with quick connectors of other companies.

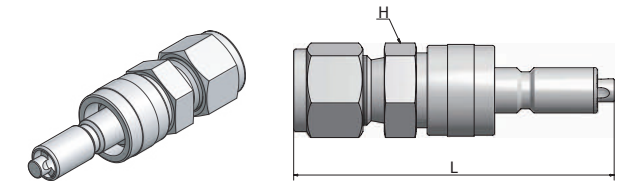
Connection Size					
Fractional(Inch) Tube O.D. Designation					
Tube O.D.	inch	1/8	1/4	3/8	1/2
	mm	3.17	6.35	9.52	12.7
Designator		02T	04T	06T	08T

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

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

Body Materials	
SS	316SS
BS	Brass

Ordering Information & Dimensions Stems



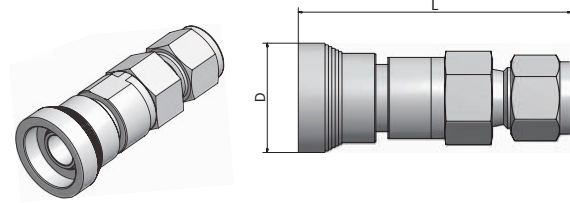
SEC : There's no a valve in the stem.
DEC: There's a valve in the stem.

Part Number Series (* = S or D)	End Connection	Cv			Dimensions (mm)					
		Inlet	Outlet	SEC	DEC	Full Flow	L		H	
							SEC	DEC	inch	mm
UQ*1	U-02T-	1/8" UNILOK		0.08	0.08	0.08	58.9	70.4	5/8	15.87
	U-04T-	1/4" UNILOK		0.3	0.2	0.4	59.9	61.5	5/8	15.87
	U-M06T-	6 mm UNILOK		0.3	0.2	0.4	59.9	61.5	5/8	15.87
	M-02N-	1/8" Male NPT		0.3	0.2	0.4	52.6	54.1	5/8	15.87
	M-04N-	1/4" Male NPT		0.3	0.2	0.4	56.4	57.9	5/8	15.87
	F-02N-	1/8" Female NPT		0.3	0.2	0.4	51.1	52.6	5/8	15.87
	F-04N-	1/4" Female NPT		0.3	0.2	0.4	57.4	58.9	3/4	19.05
UQ*2	U-06T-	3/8" UNILOK		1.0	0.5	1.5	64.0	67.1	3/4	19.05
	U-M10T-	10 mm UNILOK		1.0	0.5	1.5	67.3	70.4	3/4	19.05
	M-04N-	1/4" Male NPT		0.9	0.5	1.5	58.9	61.9	3/4	19.05
	M-06N-	3/8" Male NPT		0.8	0.5	1.6	59.7	62.7	3/4	19.05
	F-04N-	1/4" Female NPT		0.9	0.5	1.5	59.7	62.7	3/4	19.05
	F-06N-	3/8" Female NPT		0.8	0.5	1.6	59.7	62.7	7/8	22.22
	UQ*3	U-08T-	1/2" UNILOK		2.4	1.5	3.3	75.2	80.3	15/16
U-M12T-		12mm UNILOK		2.4	1.5	3.3	75.2	80.3	15/16	23.81
M-08N-		1/2" Male NPT		2.0	1.3	3.1	72.1	77.2	15/16	23.81
F-08N-		1/2" Female NPT		2.0	1.3	3.1	71.6	76.7	15/16	23.81

NPT threads are available for all STEM. To order, add "R" as a suffix instead of "N"

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

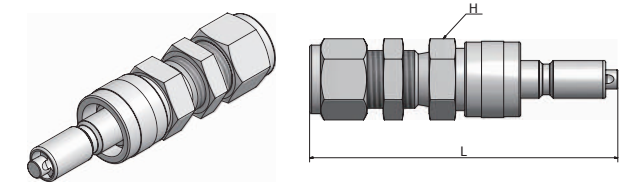
Ordering Information & Dimensions Bodies



Part Number	End Connection		Dimensions (mm)	
	Inlet	Outlet	L	D
UQ*1	U-02T-	1/8" UNILOK	57.4	23.1
	U-04T-	1/4" UNILOK	56.4	23.1
	U-M06T-	6mm UNILOK	58.4	23.1
	M-02N-	1/8" Male NPT	51.1	23.1
	M-04N-	1/4" Male NPT	54.9	23.1
	F-02N-	1/8" Female NPT	54.9	23.1
	F-04N-	1/4" Female NPT	61.5	23.1
UQ*2	U-06T-	3/8" UNILOK	65.5	26.2
	U-M10T-	10mm UNILOK	68.1	26.2
	M-04N-	1/4" Male NPT	60.5	26.2
	M-06N-	3/8" Male NPT	60.5	26.2
	F-04N-	1/4" Female NPT	64.5	26.2
	F-06N-	3/8" Female NPT	65.3	26.2
	UQ*3	U-08T-	1/2" UNILOK	78.5
U-M12T-		12mm UNILOK	78.5	30.7
M-08N-		1/2" Male NPT	75.4	30.7
F-08N-		1/2" Female NPT	81.8	30.7

NPT threads are available for all BODY. To order, add "R" as a suffix instead of "N"

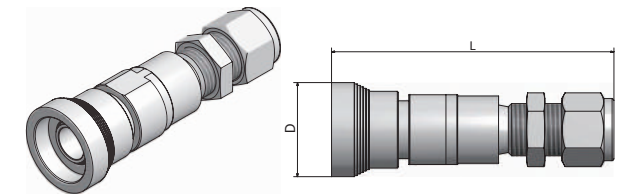
Ordering Information & Dimensions Stems-Bulkhead



SEC : There's no a valve in the stem.
DEC: There's a valve in the stem.

Part Number Series (* = S or D)	End Connection		Dimensions (mm)					
	Inlet	Outlet	Panel Thickness Max.	Panel Hole Dia Min.	L		H	
					SEC	DEC	inch	mm
UBQ*1	U-04T-	1/4" UNILOK	6.4	11.9	69.6	71.1	5/8	15.88
	U-M06T-	6mm UNILOK	6.4	11.5	69.6	71.1	11/16	17.46
UBQ*2	U-06T-	3/8" UNILOK	6.9	15.1	74.2	76.0	3/4	19.05
	U-M10T-	10mm UNILOK	6.9	16.7	77.7	78.7	7/8	22.22
UBQ*3	U-08T-	1/2" UNILOK	6.6	19.8	87.1	92.2	15/16	23.81
	U-M12T-	12mm UNILOK	6.6	19.4	87.1	92.2	1	25.40

Ordering Information & Dimensions Bodies-Bulkhead

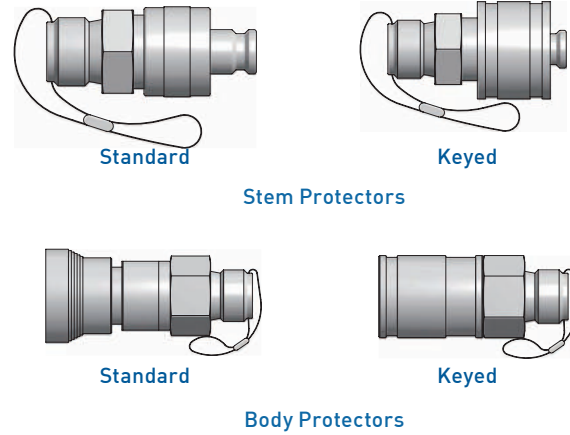


Part Number	End Connection		Dimensions (mm)			
	Inlet	Outlet	Panel Thickness Max.	Panel Hole Dia Min.	L	D
UBQB1	U-04T-	1/4" UNILOK	6.4	11.9	67.8	23.1
	U-M06T-	6mm UNILOK	6.4	11.9	67.8	23.1
UBQB2	U-06T-	3/8" UNILOK	6.9	15.1	75.7	26.2
	U-M10T-	10mm UNILOK	6.9	16.7	75.9	26.2
UBQB3	U-08T-	1/2" UNILOK	6.6	19.8	90.4	30.7
	U-M12T-	12mm UNILOK	6.6	19.4	90.4	30.7

Stem and Body Protectors

Features

- The protectors protect the uncoupling body and stem from contaminants and damage.
- Protectors are not a device for maintaining the pressure.



Materials

Component	Materials
Protector	316SS or Brass
Lanyard	316SS
Lanyard clamps	316SS

How to order

Series	Part Number		* = Materials
	Basic Ordering Numbers		
	Stem Protector	Body Protector	
UQ1	SP-*	BP-*	316SS=SS Brass=BS
UQ2			
UQ3			

Protectors

Example: UQ1SP-SS

Keyed Protectors

Add a key number from the table under table to the key number.

Example: UQ1SP-SS-KB

UQ color coded “Keyed” Quick Connectorst

Features

- UQ Keyed quick connectors provide a positive mechanical lockout system.
- A product to prevent the connection lines of different systems.
- This is useful when many lines in the system.

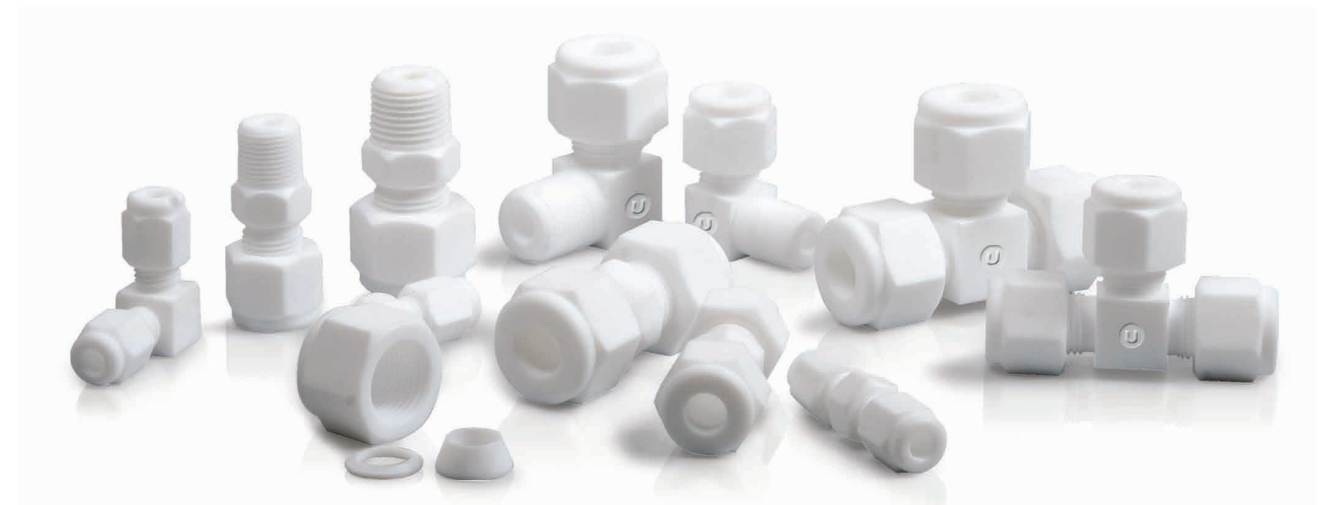
Ordering Information & Dimensions

Key Number	Key Color	UQ1				UQ2				UQ3			
		Body Sleeve		Stem Sleeve		Body Sleeve		Stem Sleeve		Body Sleeve		Stem Sleeve	
		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
KB	Black	0.96	24.5	0.82	20.9	1.13	28.7	0.99	25.1	1.26	32.0	1.10	27.9
KO	Orange	0.99	25.0	0.85	21.6	1.16	29.5	1.02	25.8	1.29	32.8	1.14	28.9
KG	Green	1.02	26.0	0.88	22.4	1.19	30.2	1.05	26.6	1.32	33.6	1.17	29.7
KY	Yellow	1.05	26.8	0.91	23.2	1.22	31.0	1.08	27.4	1.35	34.3	1.20	30.4
KS	Blue	1.08	27.5	0.94	23.9	1.24	31.5	1.11	28.1	1.38	35.1	1.23	31.2
KW	White	1.11	28.3	0.97	24.7	1.28	32.5	1.14	28.9	1.41	35.8	1.26	32.0
KP	Purple	1.14	29.1	1.00	25.4	1.31	33.3	1.17	29.7	1.44	36.6	1.29	32.7
KN	Brown	1.17	29.8	1.03	26.2	1.34	34.0	1.20	30.4	1.47	37.4	1.32	33.5
Standard UQ Body Sleeve Dia.		0.91	23.1			1.03	26.2			1.21	30.7		

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

INSTRUMENT

PTFE Fittings



Features

Maximum working pressure - 125 psi (8.6bar)
 Maximum working temperature - 100°C(212°F)
 Standard type fitting with simple structure and compact design
 Easy Assembly taper swaging sealing system
 Applicable sizes
 - 1/4"~1/2" O.D., 6mm~12mm O.D.

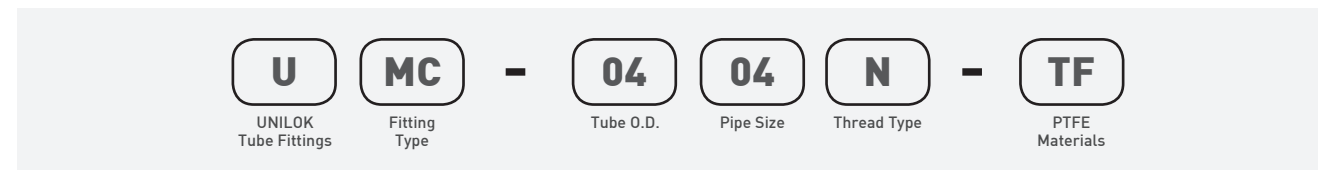
Applications

Ultracure or corrosive chemical applications

How To order

UNILOK PTFE fittings are ordered by part number as shown below.

Example: The following part number, *UMC-0404N-TF* is designated for Male Connector, 1/4"O.D. x 1/4" M-NPT, PTFE.



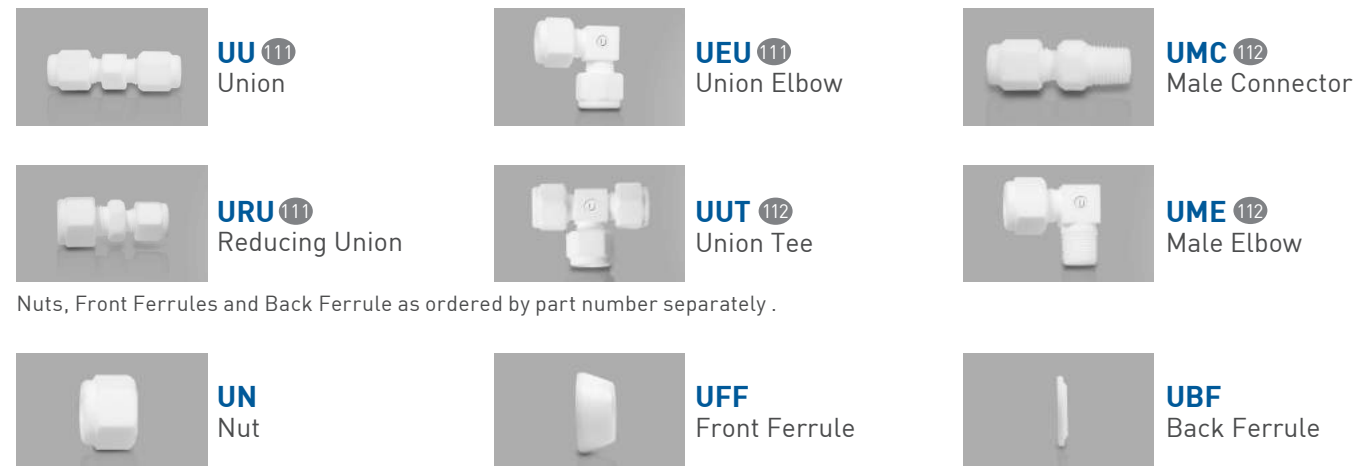
Fractional(Inch) Tube O.D. Designation				
Tube O.D.	inch	1/4	3/8	1/2
	mm	6.35	9.52	12.70
Designator		04	06	08

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

Metric Tube O.D. Designation					
Tube O.D.	mm	6	8	10	12
	Designator	M06	M08	M10	M12

Thread Type Designation		
Thread Type		Designator
NPT	National Standard Pipe Thread	N
ISO 7/1	Taper Pipe Thread	R

Visual Index



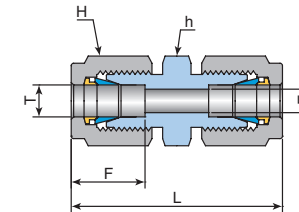
Nuts, Front Ferrules and Back Ferrule as ordered by part number separately .

Cleaning

UNILOK PTFE fittings 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.

UU Union



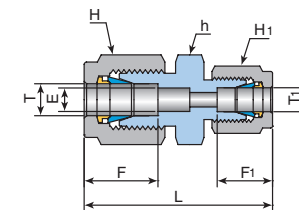
Connects Fractional Tube

Part No.	Tube O.D. T(inch)	Dimensions (mm)				
		E (Min)	h	H	F	L
UU-04-TF	1/4	4.8	15.87	15.87	15.2	43.2
UU-06-TF	3/8	7.0	20.63	20.63	17.0	45.7
UU-08-TF	1/2	10.0	25.40	25.40	22.9	52.1

Connects Metric Tube

Part No.	Tube O.D. T	Dimensions (mm)				
		E (Min)	h	H	F	L
UU-M06-TF	6	4.8	15.87	15.87	15.2	43.2
UU-M08-TF	8	6.4	17.46	17.46	16.2	43.5
UU-M10-TF	10	8.0	19.05	19.05	17.2	46.5
UU-M12-TF	12	9.5	25.40	25.40	22.9	52.1

URU Reducing Union



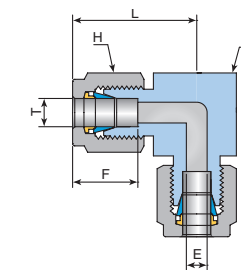
Connects Fractional Tube

Part No.	Tube O.D.		Dimensions (mm)						
	T ₁	T ₂	E (Min)	h	H	H ₁	F	F ₁	L
URU-0604-TF	3/8	1/4	4.8	20.63	20.63	15.87	17.0	15.2	45.0
URU-0804-TF	1/2	1/4	4.8	25.4	25.40	15.87	22.9	15.2	48.5
URU-0806-TF	1/2	3/8	7.0	25.4	25.40	20.63	22.9	17.0	49.3

Connects Metric Tube

Part No.	Tube O.D.		Dimensions (mm)						
	T ₁	T ₂	E (Min)	h	H	H ₁	F	F ₁	L
URU-M10M06-TF	10	6	4.8	19.05	19.05	15.87	17.20	15.2	45.4
URU-M12M06-TF	12	6	4.8	25.40	25.40	15.87	22.90	15.2	48.5
URU-M12M10-TF	12	10	7.0	25.40	25.40	19.05	22.90	17.2	49.7

UEU Union Elbow



Connects Fractional Tube

Part No.	Tube O.D. T	Dimensions (mm)				
		E (Min)	S	H	F	L
UEU-04-TF	1/4	4.8	15.87	15.87	15.2	28.7
UEU-06-TF	3/8	7.0	20.63	20.63	17.0	31.2
UEU-08-TF	1/2	10.0	25.40	25.40	22.9	36.8

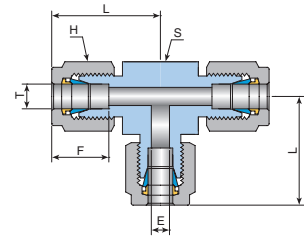
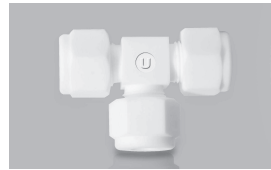
Connects Metric Tube

Part No.	Tube O.D. T	Dimensions (mm)				
		E (Min)	S	H	F	L
UEU-M06-TF	6	4.8	15.87	15.87	15.2	28.7
UEU-M08-TF	8	6.4	17.46	17.46	16.2	31.1
UEU-M10-TF	10	8.0	19.05	19.05	17.2	31.6
UEU-M12-TF	12	9.5	25.40	25.40	22.9	36.8

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

UUT

Union Tee



Connects Fractional Tube

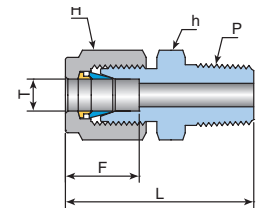
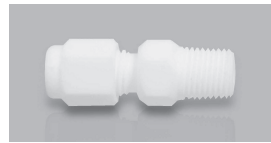
Part No.	Tube O.D. T (inch)	Dimensions (mm)				
		E (Min)	h	H	F	L
UUT-04-TF	1/4	4.8	15.87	15.87	15.2	28.7
UUT-06-TF	3/8	7.0	20.63	20.63	17.0	31.2
UUT-08-TF	1/2	10.0	25.40	25.40	22.9	36.8

Connects Metric Tube

Part No.	Tube O.D. T	Dimensions (mm)				
		E (Min)	h	H	F	L
UUT-M06-TF	6	4.8	15.87	15.87	15.2	28.7
UUT-M08-TF	8	6.4	17.46	17.46	16.2	31.1
UUT-M10-TF	10	8.0	19.05	19.05	17.2	31.6
UUT-M12-TF	12	9.5	25.40	25.40	22.9	36.8

UMC

Male Connector



Connects Fractional Tube to Female Pipe

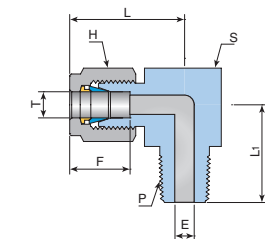
Part No.	Tube O.D. T (inch)	P (inch)	Dimensions (mm)				
			E (Min)	h	H	F	L
UMC-0404N-TF	1/4	1/4	4.8	15.87	15.87	15.2	39.1
UMC-0606N-TF	3/8	3/8	7.0	20.63	20.63	17.0	40.6
UMC-0808N-TF	1/2	1/2	10.0	25.40	25.40	22.9	49.0

Connects Metric Tube to Female Pipe

Part No.	Tube O.D. T	P (inch)	Dimensions (mm)				
			E (Min)	h	H	F	L
UMC-M0604N-TF	6	1/4	4.8	15.87	15.87	15.2	39.1
UMC-M0804N-TF	8	1/4	6.4	17.46	17.46	16.2	39.5
UMC-M1006N-TF	10	3/8	8.0	19.05	19.05	17.2	41.0
UMC-M1208N-TF	12	1/2	9.5	25.40	25.40	22.9	49.0

UME

Male Elbow



Connects Fractional Tube to Female Pipe

Part No.	Tube O.D. (inch)	P (inch)	Dimensions (mm)					L ₁
			E (Min)	h	H	F	L	
UME-0404N-TF	1/4	1/4	4.8	15.87	15.87	15.2	28.7	24.4
UME-0606N-TF	3/8	3/8	7.0	20.63	20.63	17.0	31.2	26.2
UME-0808N-TF	1/2	1/2	10.0	25.40	25.40	22.9	36.8	33.8

Connects Metric Tube to Female Pipe

Part No.	Tube O.D. T	P (inch)	Dimensions (mm)					L ₁
			E (Min)	h	H	F	L	
UME-M0604N-TF	6	1/4	4.8	15.87	15.87	15.2	28.7	24.4
UME-M0804N-TF	8	1/4	6.4	17.46	17.46	16.2	30.1	25.1
UME-M1006N-TF	10	3/8	8.0	19.05	19.05	17.2	31.6	26.6
UME-M1208N-TF	12	1/2	9.5	25.40	25.40	22.9	36.8	33.8

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



Instrument

Valves

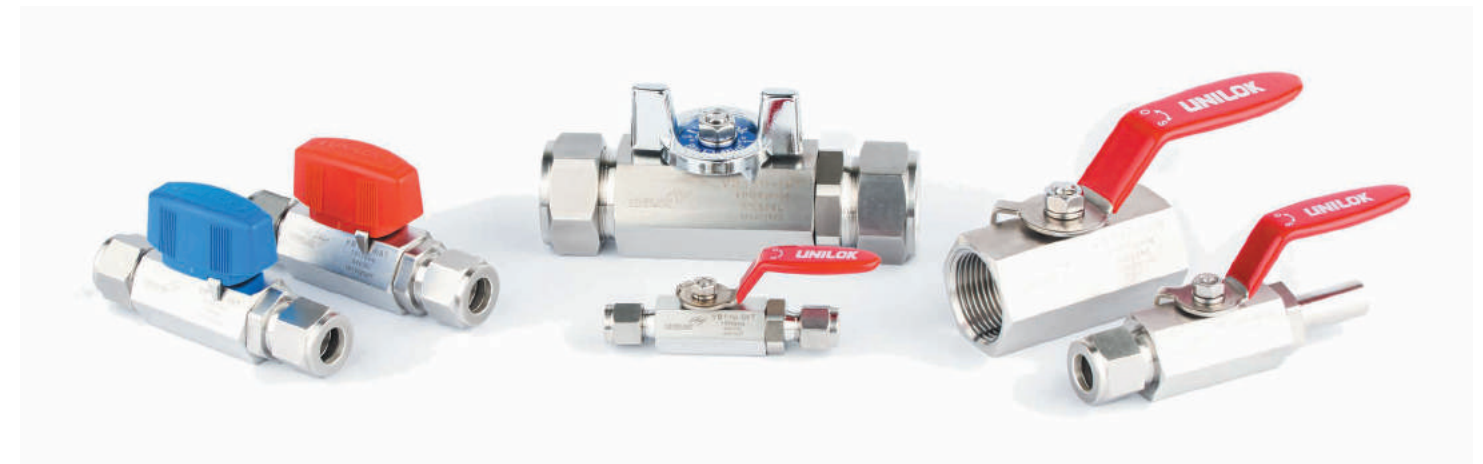
Ball Valves 114
 Needle Valves 148
 Metering Valves 167
 Check Valves 174

Manifolds Valves 190
 Relief Valves 211
 Other Valves 216

Hex Ball Valves VB1

Ball Valves

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VBM1 Master key Hex Ball Valves	123
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VB6B High Pressure Bar Stock Ball Valves	141



Hex Ball Valves VB1

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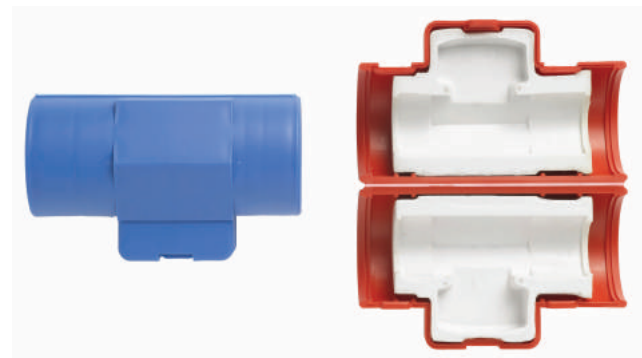
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Application

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



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.

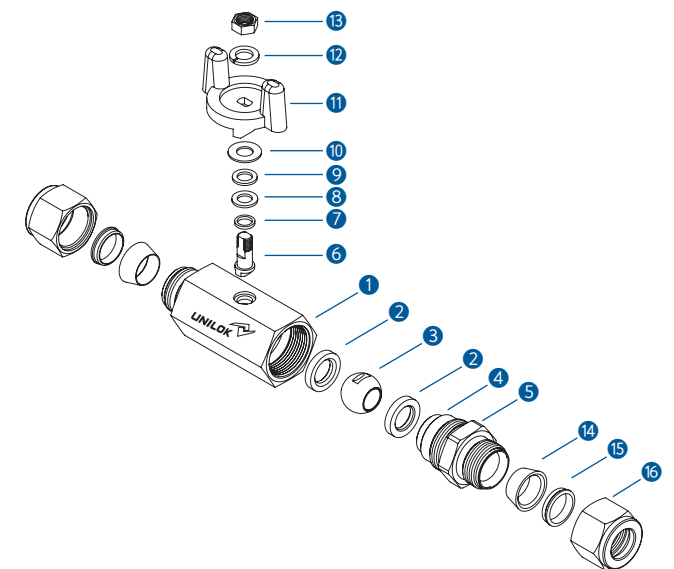
Important Notification

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

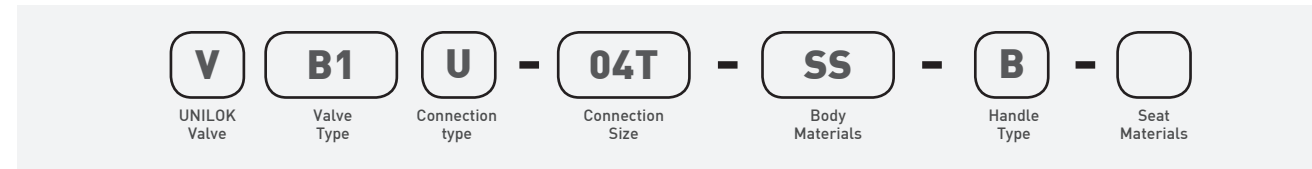
Handle Materials :
Lever - 304SS+PVC Coat
Bar - Nylon



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

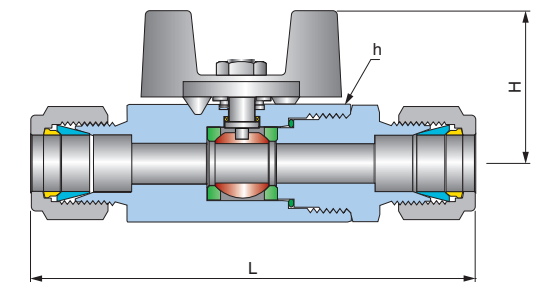
Pipe Size Designation (NPT or ISO7/1-PT)						
Pipe Size	1/8	1/4	3/8	1/2	3/4	1
Designator	02N/R	04N/R	06N/R	08N/R	12N/R	16N/R

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



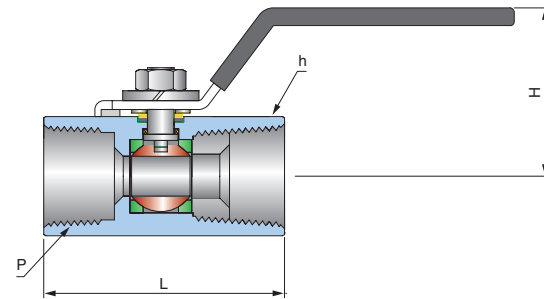
Ordering Information & Dimensions

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



Ordering Information & Dimensions

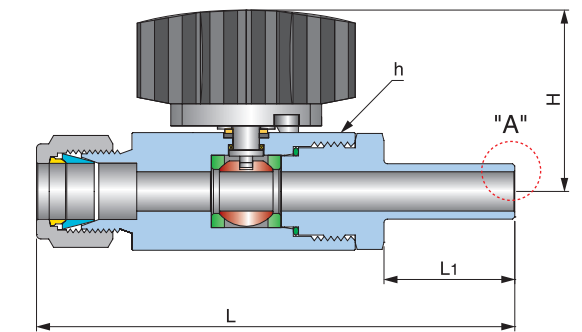
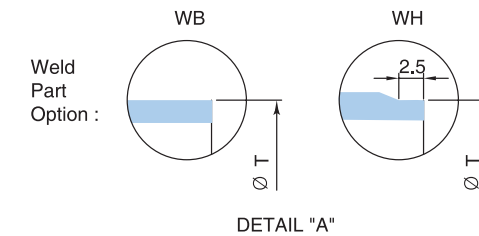
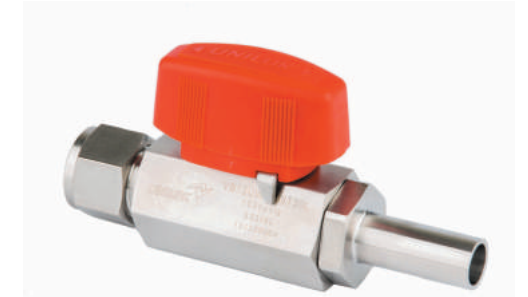
Part No.		End Connections		Orifice	Dimensions (mm)		
		Inlet	Outlet		h(Hex)	L	H
VB11	F-04N-	1/4" Female NPT		5.0	17.46	40.0	29.0
VB12	F-06N-	3/8" Female NPT		7.5	22.22	45.0	35.7
VB13	F-08N-	1/2" Female NPT		9.0	26.98	54.5	38.1
VB14	F-12N-	3/4" Female NPT		12.5	31.75	61.0	44.5
VB15	F-16N-	1" Female NPT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

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

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	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

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

VB1 Protection Cover

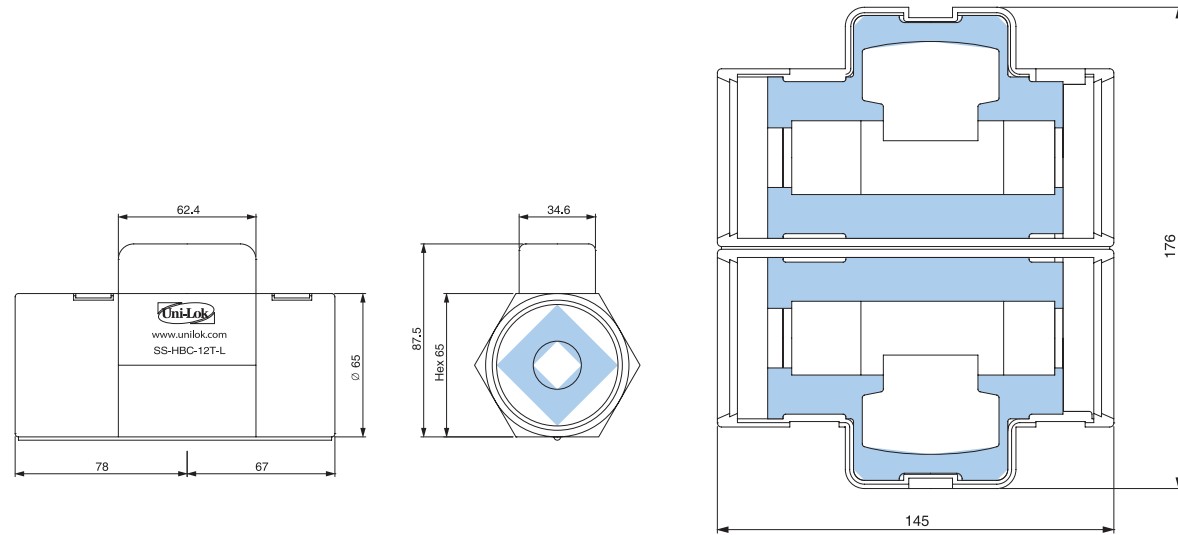
Maintain the temperature of fluids, keep handle position and distinguish in-out visually.

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

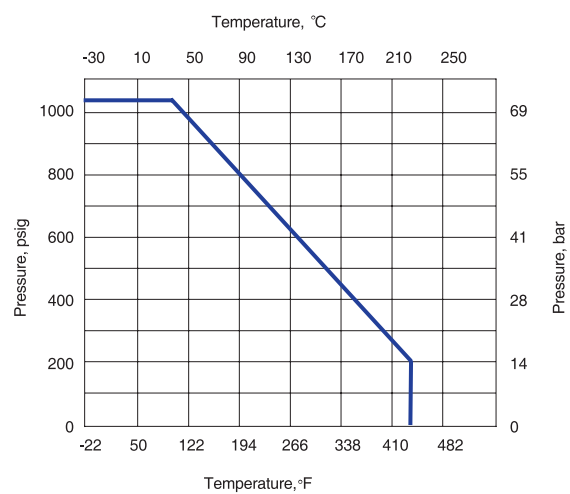
VB1-PC-R : Red

VB1-PC-S : Blue

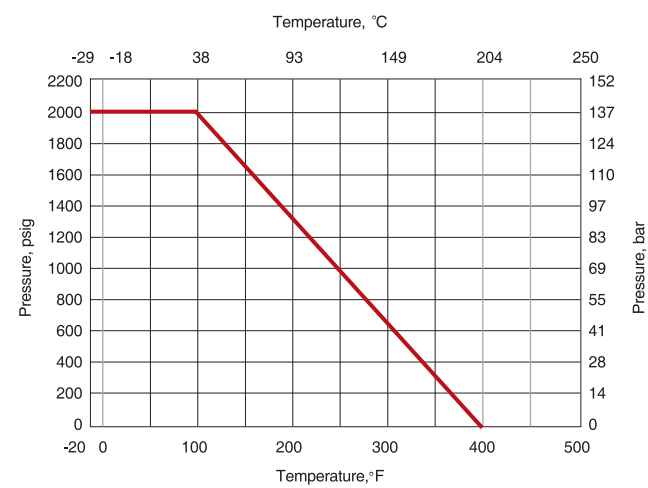


Pressure - Temperature Ratings

PTFE Seat



TFM Seat



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

INSTRUMENT

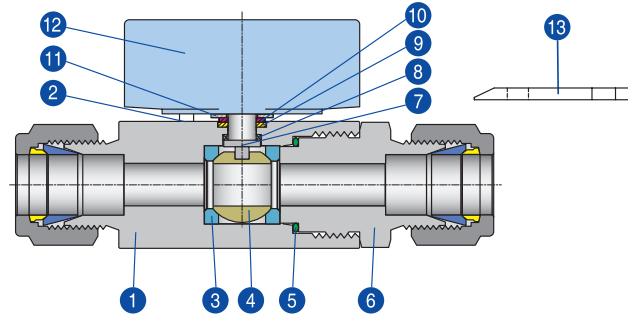
Master key Hex Ball Valves VBM1



Features

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

Material of Construction



Testing

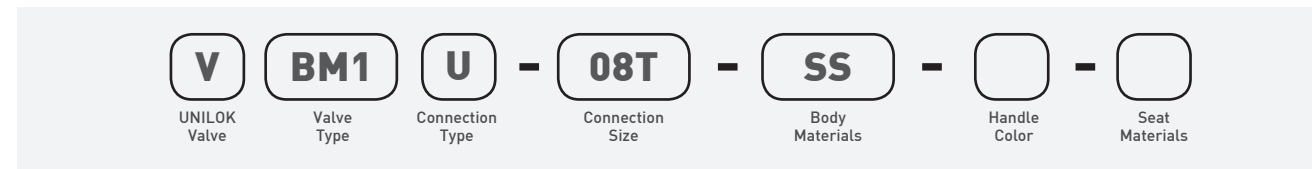
Every valve is 100% factory tested with air and nitrogen at 1000psig(69bar) for leakage at the seat and packing. Each test is performed to a maximum allowable leak rate of 0.1scc/min.

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

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

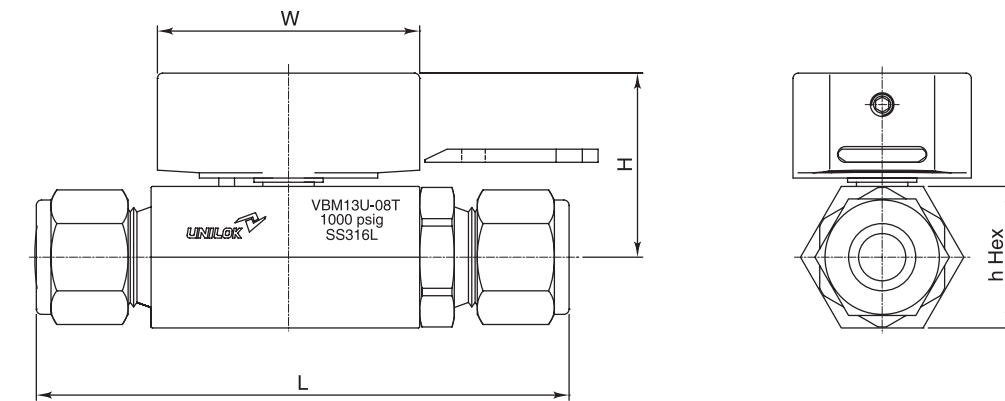
Seat Materials	
None	PTFE
PK	PEEK

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	9.0	1/2" UNILOK		26.98	101.6	35.0	50.0
	U-M12T		12mm UNILOK					
VBM14	U-12T	12.5	3/4" UNILOK		31.75	107.5	41.6	60.0
VBM15	U-16T	16.0	1" UNILOK		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

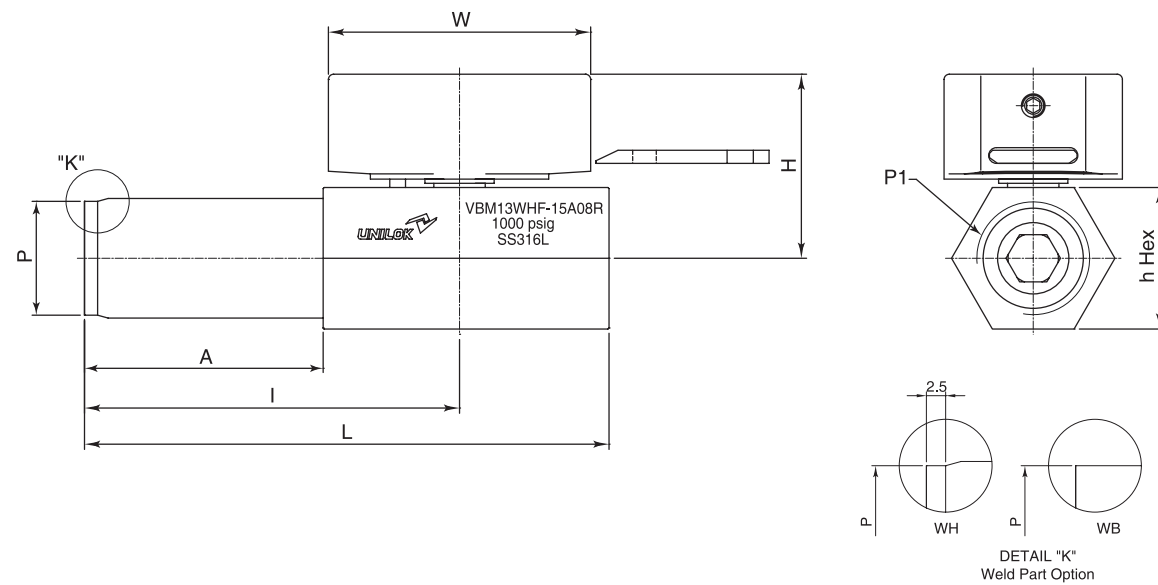
- Max Operating Pressure
1000 Psig (69 bar) at 38 °C(100 °F) with PTFE Seat
- Connection Type
Pipe Butt or Tube Butt Weld
Both NPT or ISO 7/1(PT) Female Threads
- Orifice
9.0mm to 16.0mm



INSTRUMENT

Ball Valves VB3

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.

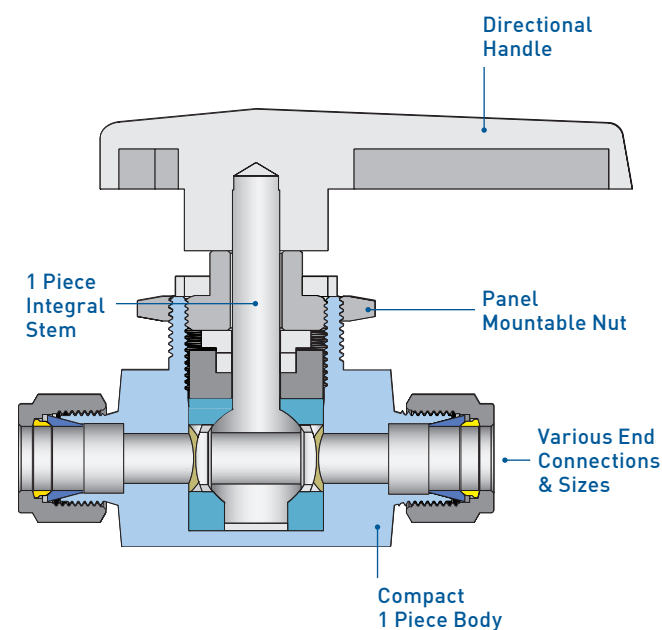
Ball Valves VB3

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Features

- Pressure rating with standard PTFE seats 3000psig (206bar) only for the valves with orifice 4.8
- 2500psig (172bar) for the other valves
- Temperature rating from 10 °C(50 °F) to 65 °C(150 °F) with standard PTFE packing
- Compact designed one piece body to reduce space and possible leak point
- One piece integral ball stem to eliminate backlash and to encapsulate ball seats perfectly
- Panel mounting for easy installation
- Wide choice of end connections : UNILOK tube fittings, Female NPT or ISO7/1(PT) thread
- 2 way shut off valves and 3 way switching valves are available



Application

VB3, VB3X series ball valves with lowest dead volume is required in analytical purpose to prevent fluid entrapment which can cause contamination.

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.

Cleaning

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

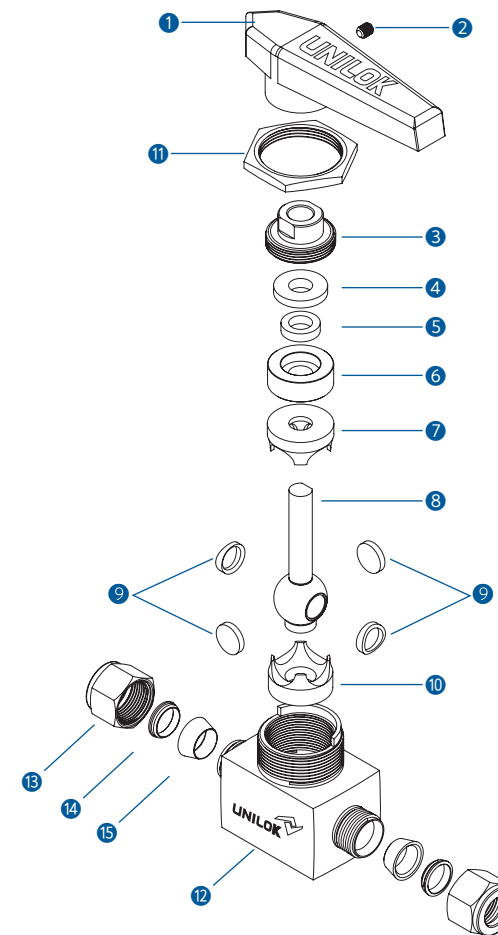
The special cleaning for high purity application is available upon request.

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.



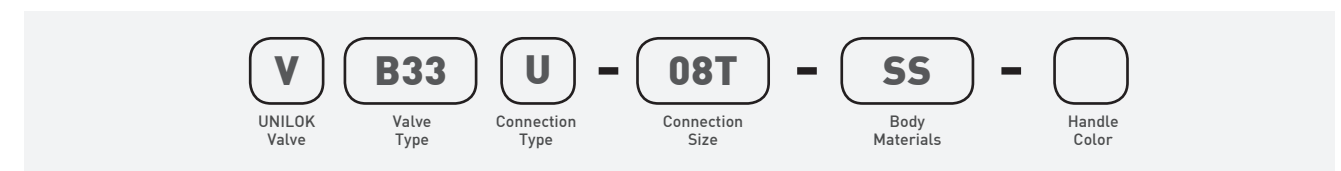
Materials of Construction

No.	Description	Materials	
		316SS	Brass
Body Material			
1	Handle	Nylon	
2	Set Screw	304SS	
3	Packing Bolt	316SS	Brass
4	Upper Gland	316 SS	
5	Lower Bushing	PTFE	
6	Lower Gland	316SS	
7	Upper Packing	PTFE	
8	Ball Stem	316 SS	
9	Side Disk	316 SS	
10	Lower Packing	PTFE	
11	Panel Nut	304SS	Brass
12	Body	316SS	Brass
13	Nut	316SS	Brass
14	Back Ferrule	316SS	Brass
15	Front Ferrule	316SS	Brass

How To Order

UNILOK VB3 series ball valves are ordered by part number as shown below.

Example: The following part number, **VB33U-08T-SS** is designated for VB3 series ball valve with both 1/2" UNILOK tube fitting, 316SS, PTFE seat.



Valve Type	
B3	2 Way Type
B3X	3 Way Type
B3C	Compact Type, 2 & 3 Way
B3CA	Compact Type, Angle Pattern

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

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

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

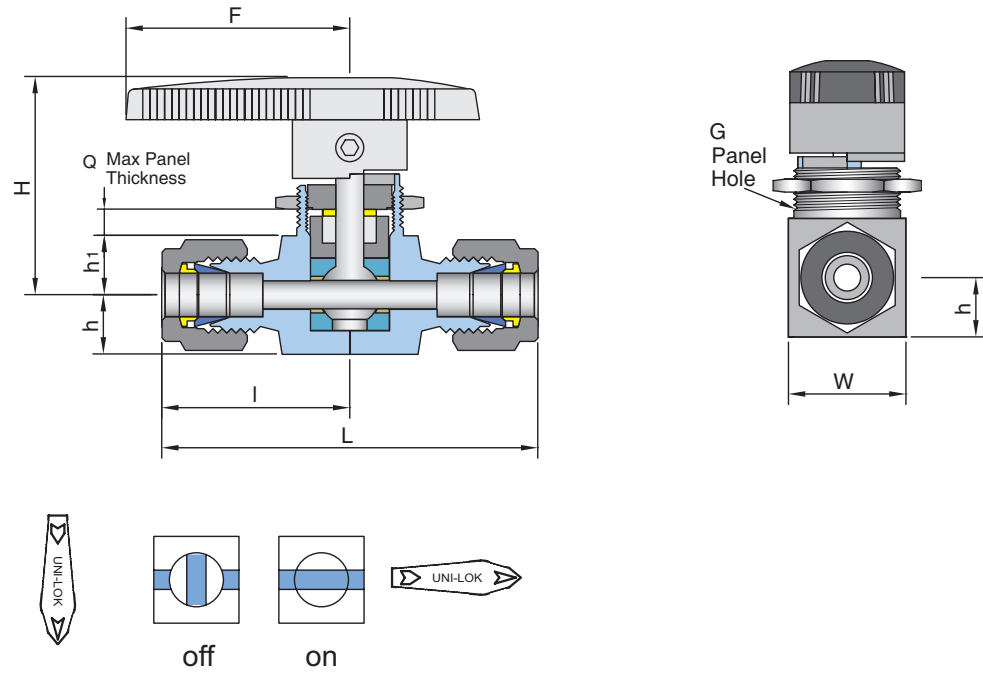
Pipe Size Designation (NPT or ISO7/1-PT)				
Pipe Size	1/8	1/4	3/8	1/2
Designator	02N/R	04N/R	06N/R	08N/R

Body Materials	
SS	316SS
BS	Brass

Colored directional handles are available only for VB3C series, compact type ball valves.

VB3 series

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



Ordering Information & Dimensions

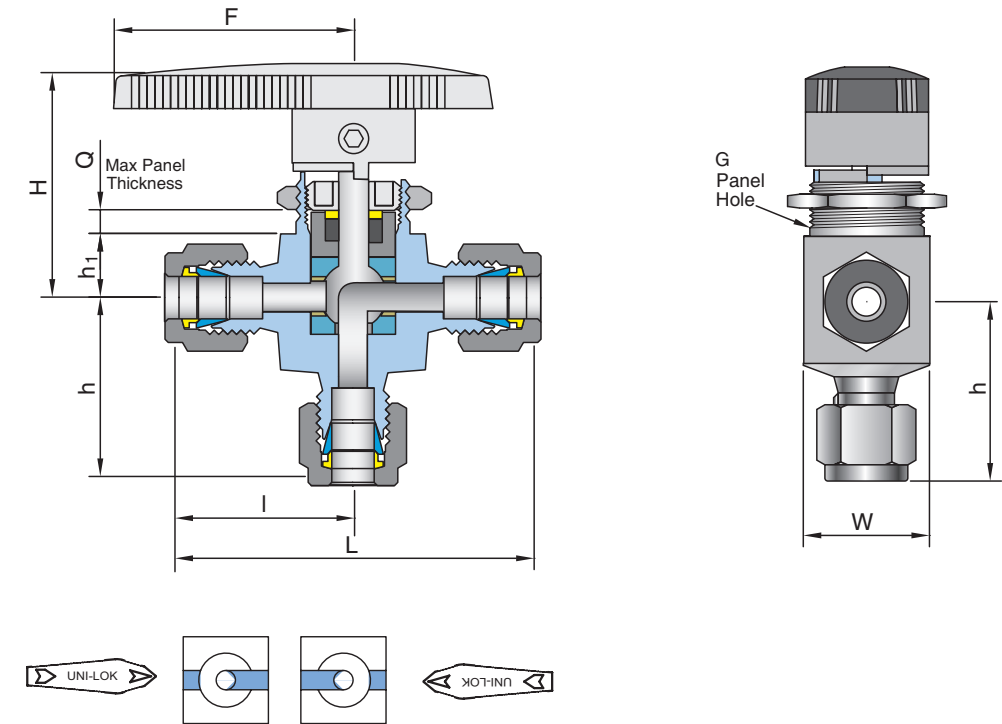
Part No.	End Connections		Orifice	CV	Dimensions (mm)								
	Inlet	Outlet			L	I	h	h1	H	G	Q	W	F
VB31	U-04T-	1/4" UNILOK	4.8	1.4	62.6	31.3	10.0	10.6	39.6	19.8	4.8	19.8	40.0
	U-06T-	3/8" UNILOK		1.5	66.6	33.3							
	U-M06T-	6mm UNILOK		1.4	62.6	31.3							
	U-M08T-	8mm UNILOK		1.5	63.2	31.6							
	F-02N-	1/8" Female NPT		1.2	50.8	25.4							
F-04N-	1/4" Female NPT	0.9	52.4	26.2									
VB32	U-06T-	3/8" UNILOK	7.1	6.0	77.8	38.9	14.3	14.5	52.8	28.0	9.0	28.6	51.0
	U-M10T-	10mm UNILOK		6.0	77.8	38.9							
	F-04N-	1/4" Female NPT		3.0	63.6	31.8							
	F-06N-	3/8" Female NPT		2.6	63.6	31.8							
VB33	U-08T-	1/2" UNILOK	10.3	12.0	98.6	49.3	18.0	17.5	61.9	38.1	9.4	38.1	76.2
	U-12T-	3/4" UNILOK		6.4	99.2	49.6							
	U-M12T-	12mm UNILOK		12.0	98.8	49.4							
	U-M20T-	20mm UNILOK		6.4	100.0	50.0							
	F-08N-	1/2" Female NPT		6.3	80.0	40.0							

Female ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VB3F series valves. Add "R" as a suffix instead of "N".

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

VB3X series

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



Ordering Information & Dimensions

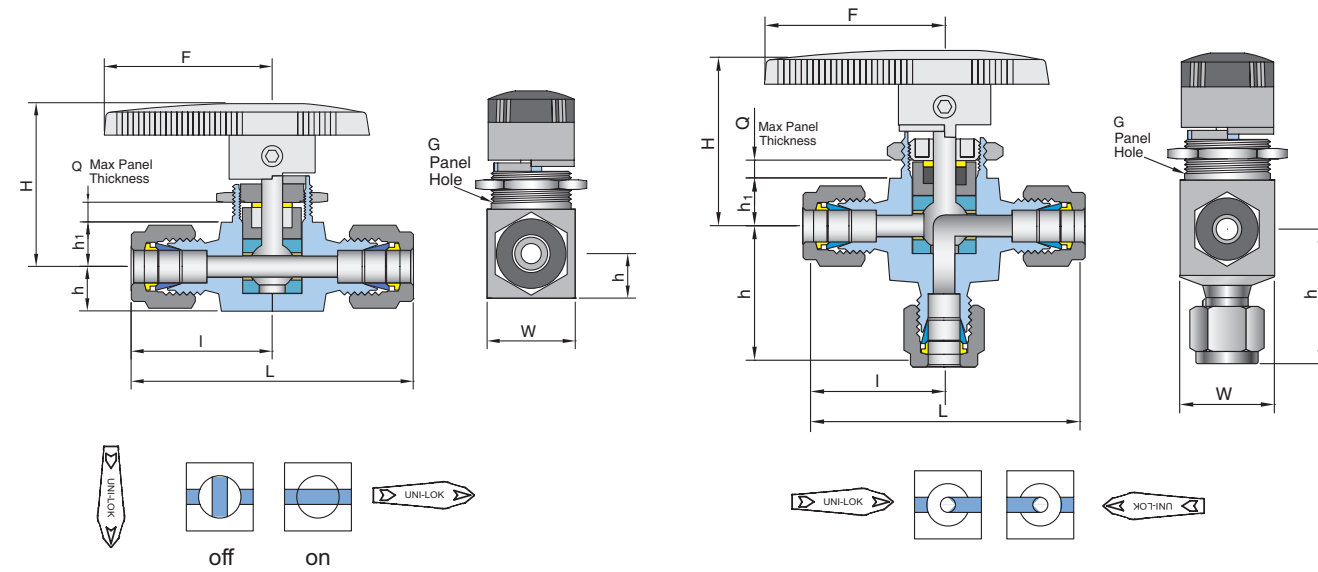
Part No.	End Connections		Orifice	CV	Dimensions (mm)								
	Inlet	Outlet			L	I	h	h1	H	G	Q	W	F
VB3X1	U-04T-	1/4" UNILOK	4.8	0.90	59.8	29.9	10.6	39.6	19.8	4.8	19.8	40.0	
	U-M06T-	6mm UNILOK		0.90	59.8	29.9							29.9
	U-M08T-	8mm UNILOK		0.80	62.6	31.3							31.2
	F-04N-	1/4" Female NPT		0.75	50.8	25.4							26.2
VB3X2	U-06T-	3/8" UNILOK	7.1	2.00	73.2	36.6	14.5	52.8	28.0	9.0	28.6	51.0	
	U-M10T-	10mm UNILOK		2.00	73.2	36.6							35.8
	F-04N-	1/4" Female NPT		1.70	63.6	31.8							31.8
	F-06N-	3/8" Female NPT		1.50	63.6	31.8							31.8
VB3X3	U-08T-	1/2" UNILOK	10.3	4.60	88.0	44.0	17.5	61.9	38.1	9.4	38.1	76.2	
	U-M12T-	12mm UNILOK		4.80	88.0	44.0							44.0
	F-08N-	1/2" Female NPT		3.50	79.2	39.6							39.6

Female ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VB3XF series valves. Add "R" as a suffix instead of "N".

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

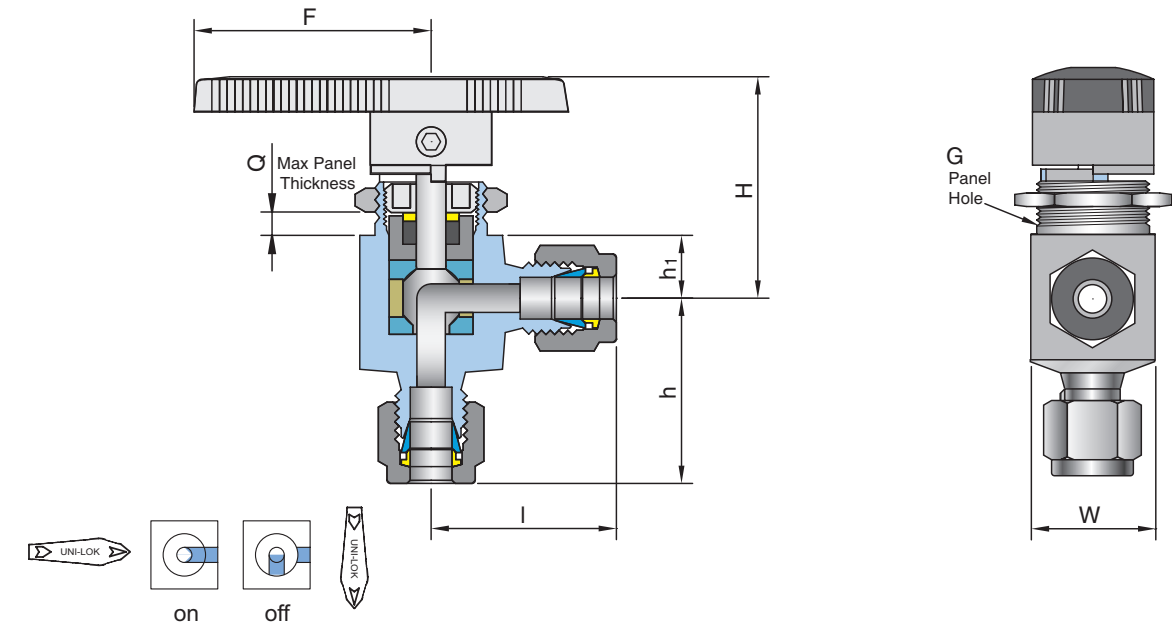
VB3C series

(Compact Type Ball Valve 2 Way, Shut Off & 3 Way, Switching)



VB3CA series

(Compact Type Ball Valve Angle Pattern)



Ordering Information & Dimensions

Part No.	End Connection		Orifice	CV	Dimensions (mm)								
	Inlet	Outlet			L	I	h	h ₁	H	G	Q	W	F
2 Way													
VB3CU-02T-	1/8" UNILOK		2.3	0.2	51.0	25.5	8.8	8.8	34.0	15.0	4.8	17.0	28.0
VB3CU-M03T-	3mm UNILOK			0.2	50.8	25.4							
VB3CU-04T-	1/4" UNILOK		0.6	55.4	27.7								
VB3CU-M06T-	6mm UNILOK		0.6	55.4	27.7								
VB3CF-02N-	1/8" Female NPT		0.5	41.2	20.6								
3 Way													
VB3CXU-02T-	1/8" Female NPT		2.3	0.15	51.0	25.5	8.8	34.0	15.0	4.8	17.0	28.0	
VB3CXU-M03T-	3mm Female NPT				50.8	25.4							25.4
VB3CXU-04T-	1/4" UNILOK		55.4	27.7	26.7								
VB3CXU-M06T-	6mm UNILOK		55.4	27.7	26.7								
VB3CXF-02N-	1/8" Female NPT		41.2	20.6	20.6								

Female ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VB3CF and VB3CXF series valves. Add "R" as a suffix instead of "N".

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			I	h	h ₁	H	G	Q	W	F
VB3CA	U-02T-	1/8" UNILOK	2.3	0.15	25.5	24.8	8.8	34.0	15.0	4.8	17.0	28.0
	U-M03T-	3mm UNILOK			25.4	25.4						
	U-04T-	1/4" UNILOK	3.2	0.35	26.7	26.7						
	U-M06T-	6mm UNILOK	26.7		26.7							
	F-02N-	1/8" Female NPT	20.6		20.6							

Female ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VB3CAF series valves. Add "R" as a suffix instead of "N".

Application

VB3C series valve with compact size, directional indication of flow and high flow capacity are required at sampling system, process instrument, equipment.

Color Coding Handle

Colored handle are available for VB3C series, compact type ball valves. To order, add the designator to the end of part number.

Color	Designator
Black	B
Blue	S
Red	R
Green	G
Yellow	Y

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

**High Pressure Ball Valves
VB6F**



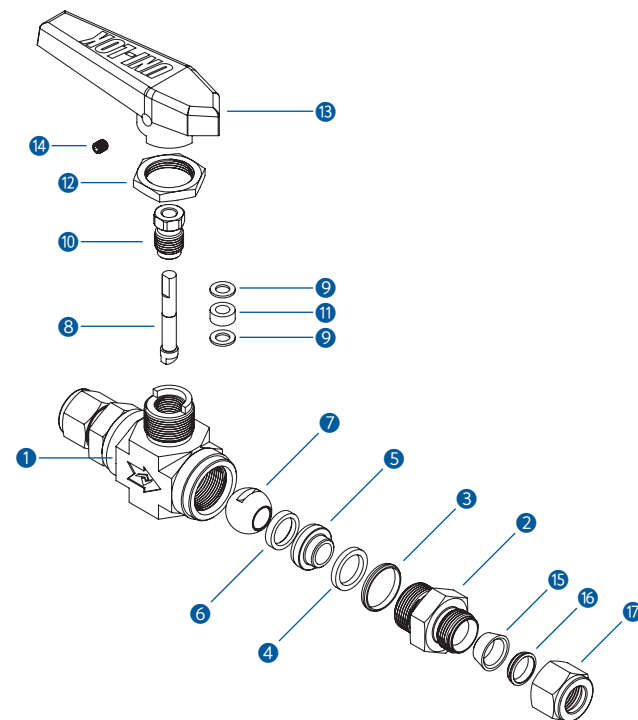
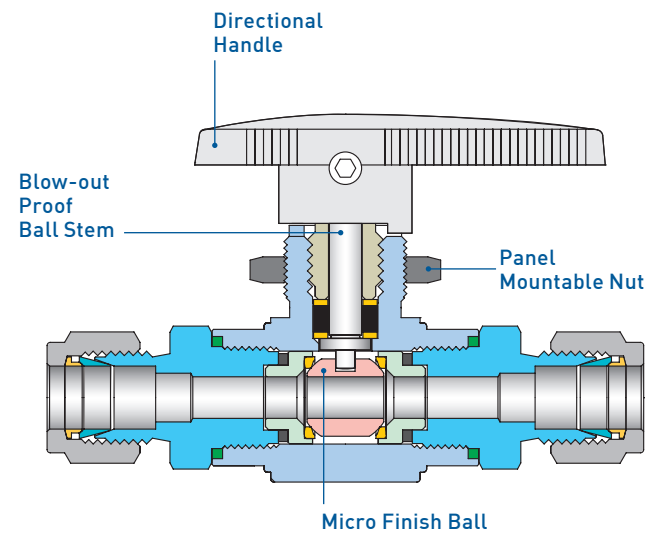
High Pressure Ball Valves VB6F

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Features

- Pressure rating up to 6000psig (413bar) @21°C (70°F) with standard PCTFE seats
- Temperature rating from -54°C(-65°F) to 177°C (350°F) 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.

How To Order

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

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.

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

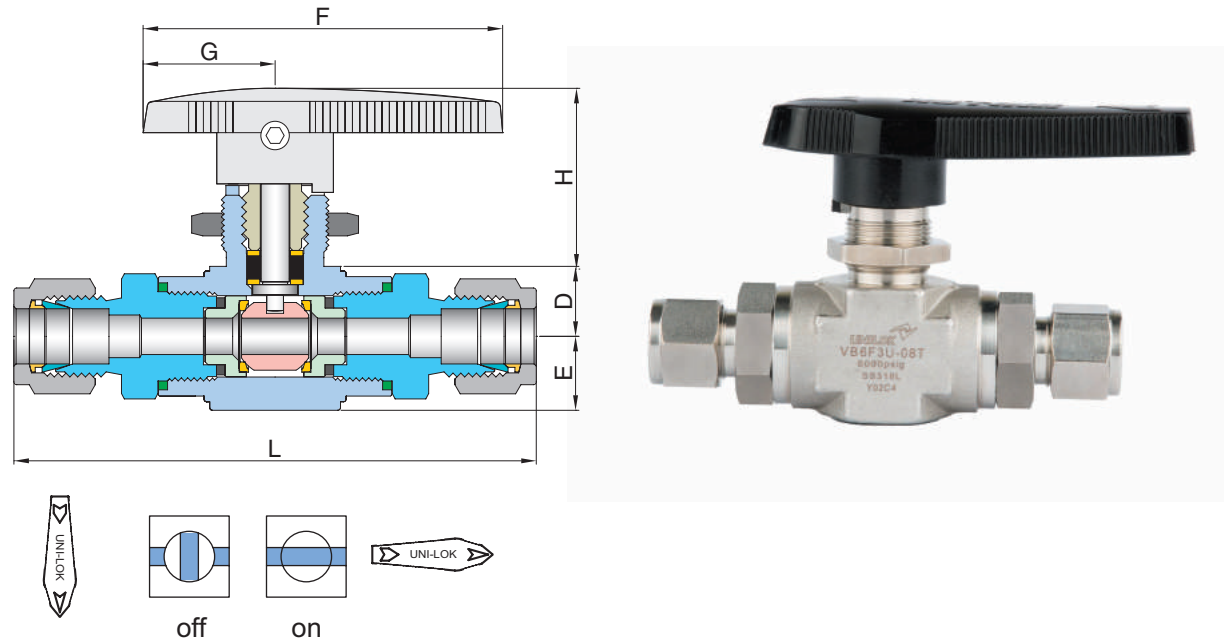
Metric Tube O.D. Designation						
Tube O.D.	mm	3	6	8	10	12
Designator		M03T	M06T	M8T	M10T	M12T

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

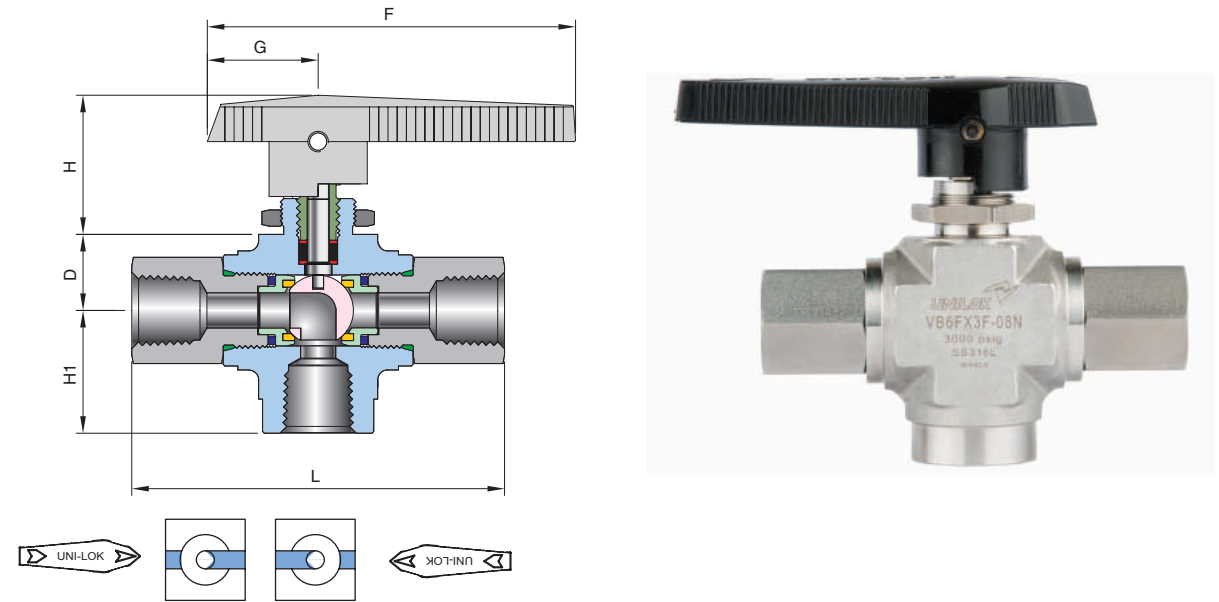
Part Number	End Connections		Orifice	CV	Dimensions (mm)						Panel Hole Drill Size
	Inlet	Outlet			L	E	D	H	F	G	
VB6F1	U-04T-	1/4" UNILOK	4.2	0.93	75.2	9.5	8.4	23.2	46.0	17.4	14.7
	F-02N-	1/8" Female NPT			54.4						
	M-04N-	1/4" Male NPT			68.6						
VB6F2	U-04T-	1/4" UNILOK	6.4	2.34	88.7	13.0	12.3	31.8	63.2	23.2	19.6
	U-06T-	3/8" UNILOK			91.4						
	U-M06T-	6mm UNILOK			88.7						
	U-M08T-	8mm UNILOK			91.0						
	U-M10T-	10mm UNILOK			93.0						
	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	118.8								
	F-06N-	3/8" Female NPT	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	75.2	37.2	8.4	23.2	46.0	17.4	14.7
	F-02N-	1/8" Female NPT			54.4	29.9					
	M-04N-	1/4" Male NPT			68.6	29.9					
VB6FX2	U-04T-	1/4" UNILOK	6.4	2.34	88.7	40.3	12.3	31.8	63.2	23.2	19.6
	U-06T-	3/8" UNILOK			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	17.0	46.1	108.0	32.5	22.9
	U-12T-	3/4" UNILOK			118.4	57.1					
	U-M12T-	12mm UNILOK	118.8	57.1							
	F-06N-	3/8" Female NPT	98.9	47.0							
	F-08N-	1/2" Female NPT	109.2	47.0							
	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	PCTFE	PTFE	PTFE	6000psig(413bar)	-22°F~355°F (-30°C~180°C)
VB6F2	PEEK				
VB6F3				6000psig(413bar)	-65°F~446°F (-54°C~230°C)
3 Way					
VB6FX1	PCTFE	PTFE	PTFE	4000psig(275bar)	-22°F~355°F (-30°C~180°C)
	PEEK			6000psig(413bar)	-65°F~446°F (-54°C~230°C)
VB6FX2	PCTFE	PTFE	PTFE	3000psig(206bar)	-9°F~320°F (-23°C~160°C)
VB6FX3	PEEK			4000psig(275bar)	-54°F~410°F (-35°C~210°C)

Flow Rates

Pressure Drop(Δp) 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°C) 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°C) 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

INSTRUMENT

High Pressure Bar Stock Ball Valves VB6B



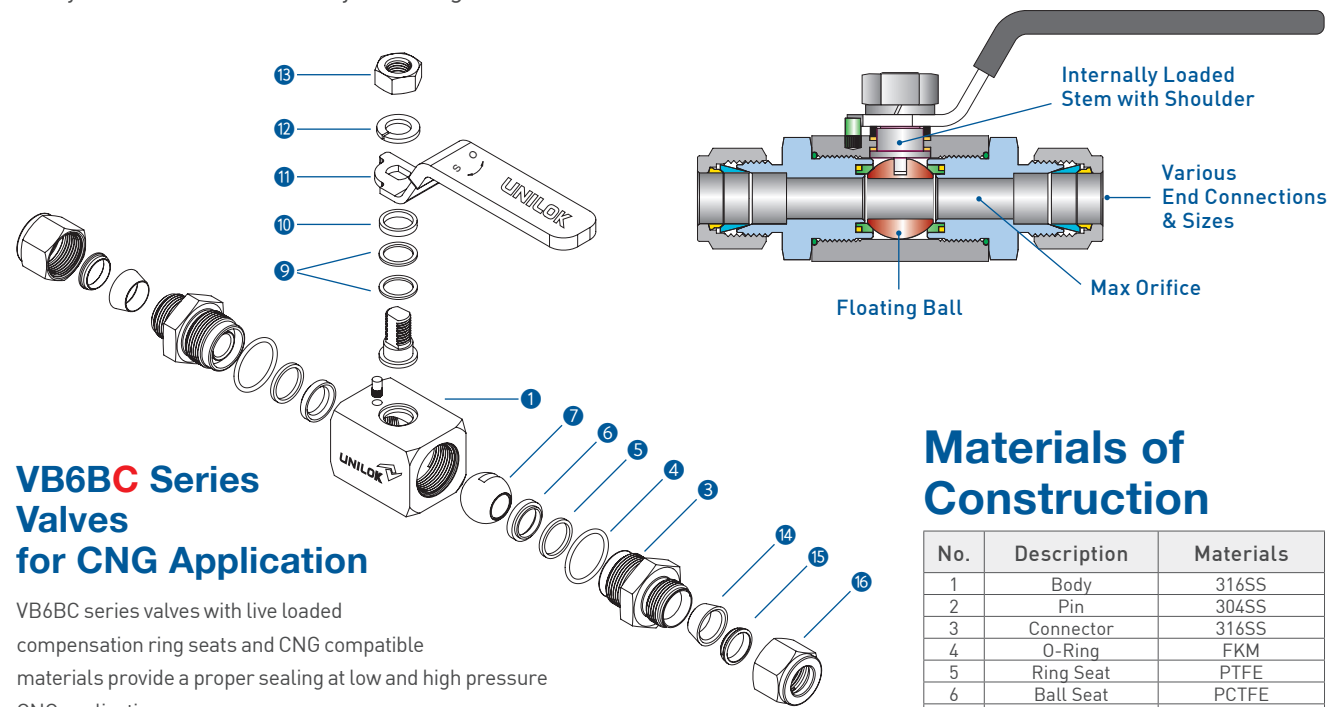
High Pressure Bar Stock Ball Valves VB6B

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Features

- Pressure rating up to 6000psig (413bar) @21°C(70) with standard PCTFE seats
- 10000psig (689bar) @21°C(70°F) with optional PEEK seats for CNG application
- Temperature rating from -30°C(-22°F) to 180°C (355°F) with standard PCTFE seats
- Robust body for high pressure application
- Floating ball design ensures leak proof shut-off at high pressure
- Blow-out proof design with internally loaded ball stem with shoulder
- Lever handle with PVC coat allows easy and quick operation with low torque and 1/4 turn to open and close
- Max orifice minimizes the pressure drop Panel mounting is available as optional
- 2 way shut off valves and 3 way switching valves are available



VB6BC Series Valves for CNG Application

VB6BC series valves with live loaded compensation ring seats and CNG compatible materials provide a proper sealing at low and high pressure CNG application. The CNG compatible materials listed in red are standard materials for VB6BC series valves.

⑥ PEEK : Ball Seats ⑤ PCTFE : Ring Seats ④ H-NBR : O-rings

To order, add **C** next to valve series number.

Example : VB6BC2U-12T-SS.

Materials of Construction

No.	Description	Materials
1	Body	316SS
2	Pin	304SS
3	Connector	316SS
4	O-Ring	FKM
5	Ring Seat	PTFE
6	Ball Seat	PCTFE
7	Ball	316SS
8	Stem	316SS
9	Packing	PTFE
10	Bushing	316SS
11	Handle	304SS+PVC
12	Spring Washer	304SS
13	Nut	304SS
14	Front Ferrule	316SS
15	Back Ferrule	316SS
16	Nut	316SS

Application

Internally live loaded ball stem to ensure sealing at low and high pressure CNG application .

PEEK and PCTFE seats are compatible with CNG

VB6B series valves are requiring in a wide range onshore and offshore applications to offer a safe and reliable perform.

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

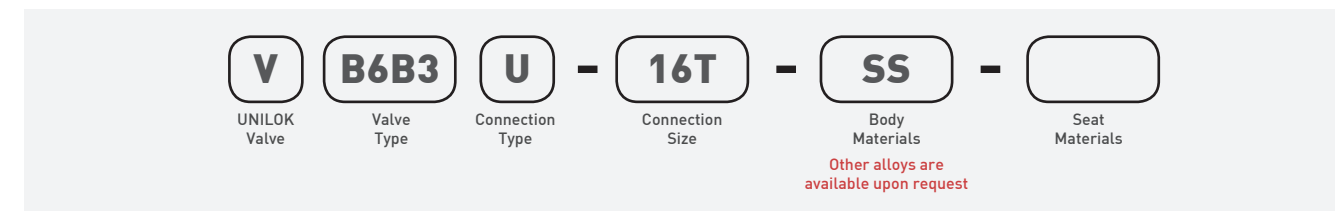
Every valve is 100% factory tested with air and nitrogen at 1000psig(69bar) for leakage at the seat and packing. Each test is performed to a maximum allowable leak rate of 0.1scc/min.

Hydrostatic shell test to be performed at 1.5 time of the working pressure is available as optional.

How To Order

UNILOK VB6B series ball valves are ordered by part number as shown below.

Example: The following part number, **VB6B3U-16T-SS** is designated for VB6B series ball valve with both 1" UNILOK tube fitting, 316SS, PCTFE seat.



Valve Type	
B6B	2 Way Type
B6BC	2 Way Type, CNG Application
B6BX	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	1/4	3/8	1/2	3/4	1
	mm	6.35	9.52	12.70	19.05	25.40
Designator		04T	06T	08T	12T	16T

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

Seat Materials	
None	PCTFE
PK	PEEK

Cleaning

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

Important Notification

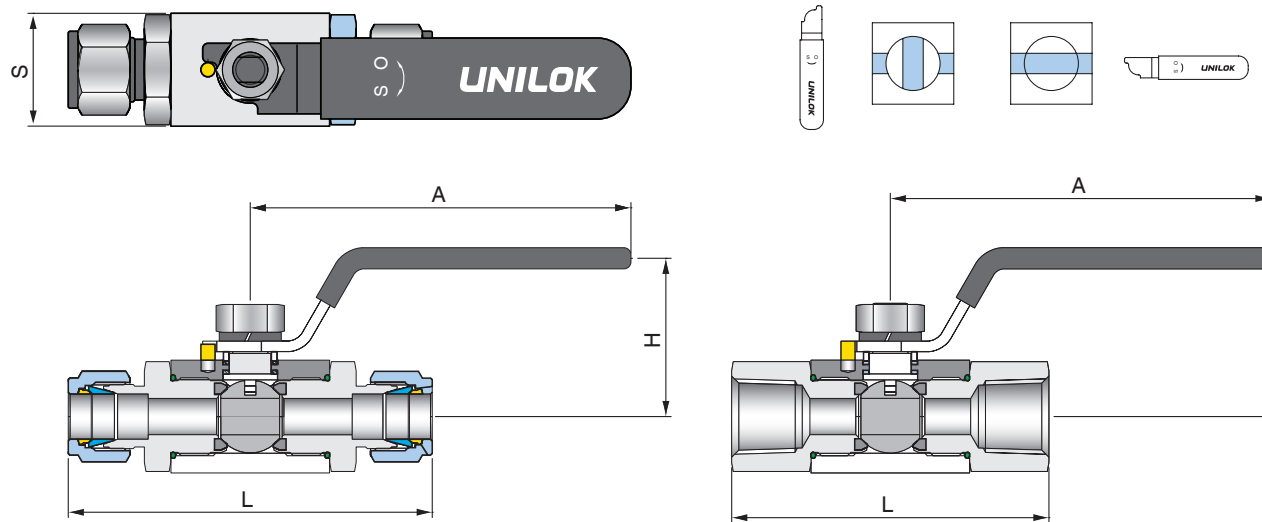
UNILOK ball valves are designed to be operated in a fully open or fully closed position.

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.

VB6B series

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



Ordering Information & Dimensions

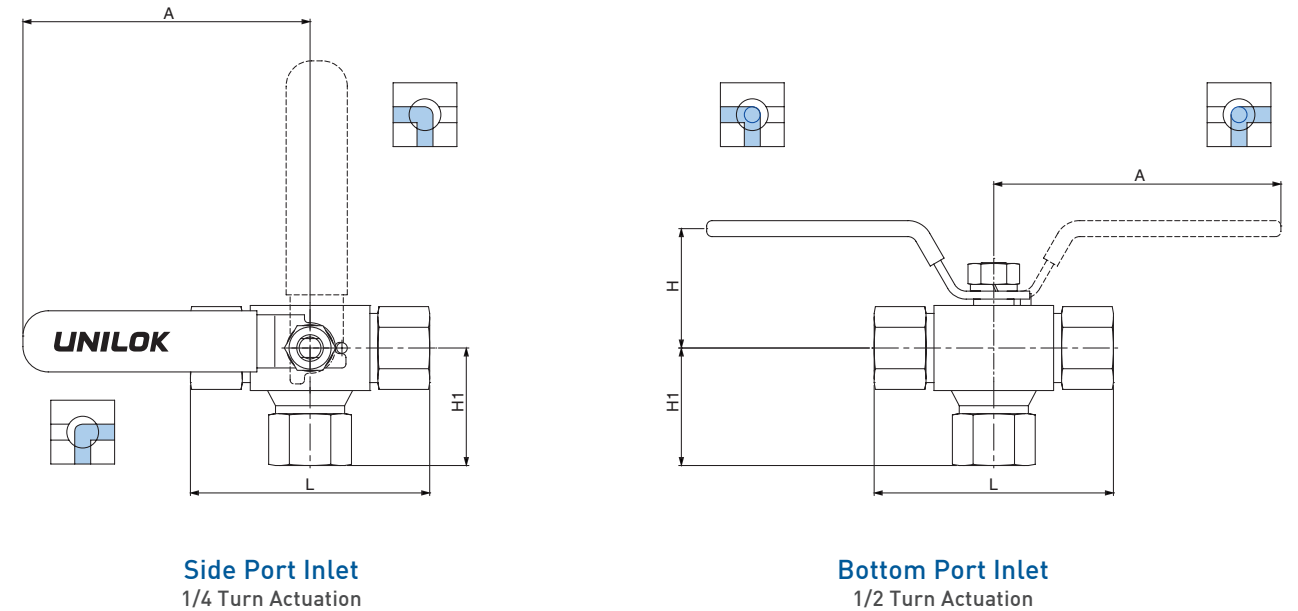
Part No.	End Connections		Orifice	CV	Dimensions (mm)					
	Inlet	Outlet			L	S	H	A		
VB6B1	U-04T-	1/4" UNILOK	4.8	1.2	92.0	32.0	45.0	108.0		
	U-06T-	3/8" UNILOK	7.1	3.7	95.0					
	U-08T-	1/2" UNILOK			103.0					
	F-04N-	1/4" Female NPT	10.0	7.5	70.0					
	F-06N-	3/8" Female NPT			75.0					
	F-08N-	1/2" Female NPT			90.0					
	M-04N-	1/4" Male NPT	7.1	3.7	85.0					
	M-06N-	3/8" Male NPT	9.7	7.2	85.0					
	M-08N-	1/2" Male NPT	10.0	7.5	85.0					
VB6B2	U-12T-	3/4" UNILOK	12.7	10.0	110.6	40.0	55.0	148.0		
	F-08N-	1/2" Female NPT			90.0					
	F-12N-	3/4" Female NPT			98.0					
	M-12N-	3/4" Male NPT			105.0					
VB6B3	U-12T-	3/4" UNILOK	19.0	30.0	118.6	50.0	60.0	148.0		
	U-16T-	1" UNILOK			127.5					
	F-12N-	3/4" Female NPT			15.8				19.0	95.0
	F-16N-	1" Female NPT			19.0				30.0	106.0
	M-12N-	3/4" Male NPT			15.8				19.0	115.0
	M-16N-	1" Male NPT			19.0				30.0	125.0

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VB6B series valves. Add "R" as a suffix instead of "N".

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

VB6BX series

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



Side Port Inlet
1/4 Turn Actuation

Bottom Port Inlet
1/2 Turn Actuation

Ordering Information & Dimensions

Part No.	End Connections		Orifice	Dimensions (mm)					
	Inlet	Outlet		L	S	H	H ₁	A	
VB6BxB1	U-04T-	1/4" UNILOK	4.8	92.0	32.0	44.9	53.5	108.0	
	U-06T-	3/8" UNILOK	7.1	95.0			55.0		
	U-08T-	1/2" UNILOK		106.0			57.5		
	F-04N-	1/4" Female NPT	10.0	72.0			36.7		
	F-06N-	3/8" Female NPT		75.0			40.2		
	F-08N-	1/2" Female NPT		89.0			44.2		
VB6BxB2	U-12T-	3/4" UNILOK	12.7	115.0	40.0	55.0	65.5	148.0	
	F-08N-	1/2" Female NPT		93.0			49.7		
	F-12N-	3/4" Female NPT		102.0			55.2		
VB6BxB3	U-12T-	3/4" UNILOK	15.8	125.0	50.0	60.0	70.0	148.0	
	U-16T-	1" UNILOK		134.0			76.6		
	F-12N-	3/4" Female NPT		20.0			119.0		56.7
	F-16N-	1" Female NPT					129.0		60.8

Female ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VB6BX series valves. Add "R" as a suffix instead of "N".

Bottom and Side Port Entry Valve Ordering Information

To order side port entry valve, replace B with S

Examples : VB6BxB1U-04T-SS, VB6BXS1U-04T-SS

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					
VB6B1	PCTFE	PTFE	FKM	6000psig(413bar)	-22°F~-320°F (-30°C~160°C)
	PEEK			10000psig(689bar)	-40°F~-446°F (-40°C~230°C)
VB6B2 VB6B3	PCTFE	PTFE	FKM	5000psig(344bar)	-10°F~-320°F (-23°C~160°C)
	PEEK			6000psig(413bar)	-10°F~-376°F (-23°C~191°C)
3 Way					
VB6BX1	PCTFE	PTFE	FKM	4000psig(275bar)	-22°F~-320°F (-30°C~160°C)
	PEEK			6000psig(413bar)	-40°F~-446°F (-40°C~230°C)
VB6BX2 VB6BX3	PCTFE	PTFE	FKM	3000psig(206bar)	-10°F~-320°F (-23°C~160°C)
	PEEK			4000psig(275bar)	-10°F~-376°F (-23°C~191°C)

Valve Actuation Torque

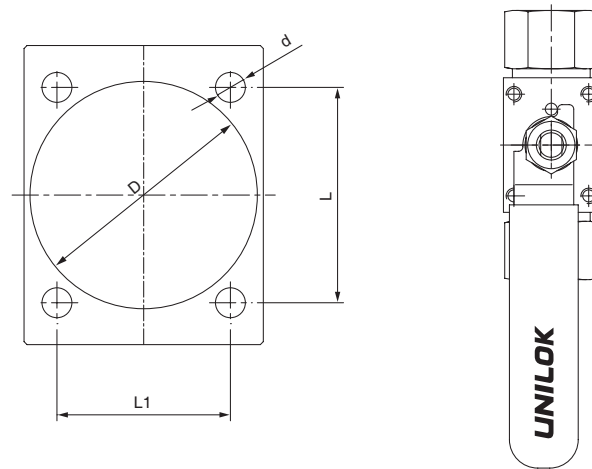
Valve Group	Pressure (psig)		
	0	5000	6000
Way	Torque (Nm)		
VB6B1	3.92	-	6.37
VB6B2	7.35	10.30	-
VB6B3	12.26	19.61	-
	0	3000	4000
3 Way	Torque (Nm)		
VB6BX1	3.92	-	4.90
VB6BX2	7.35	7.85	-

Panel Mounting

Screw hole panel mounting is available with four screw holes on the top of VB6B series valves, M4 x 6mm depth.

To order, add -M to end of part number.

Disassemble the handle before panel mounting.



Valve Group	Dimensions(mm)			
	L	L ₁	d	D
VB6B1	34	25	5	30
VB6B2	36	29	5	38
VB6B3	40	35	5	38

Best Engineering For You

Integral Bonnet Needle Valves VN5

Needle Valves

VN5 Needle Valve	149
VN6 Needle Valve	157
VU6 Union Bonnet Valve	161



Integral Bonnet Needle Valves VN5

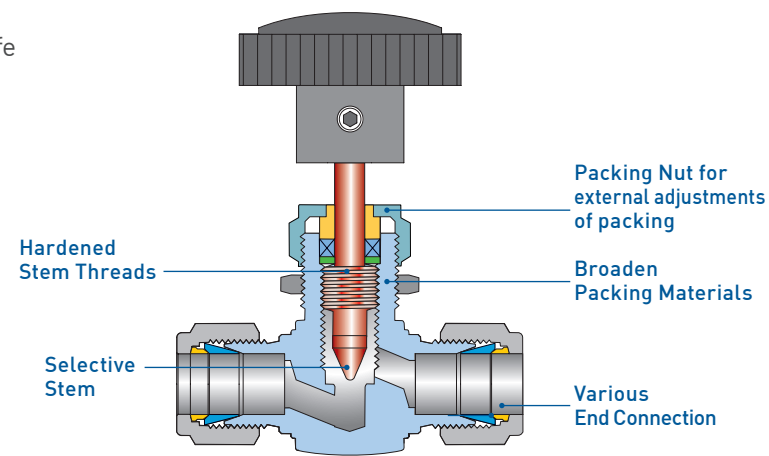
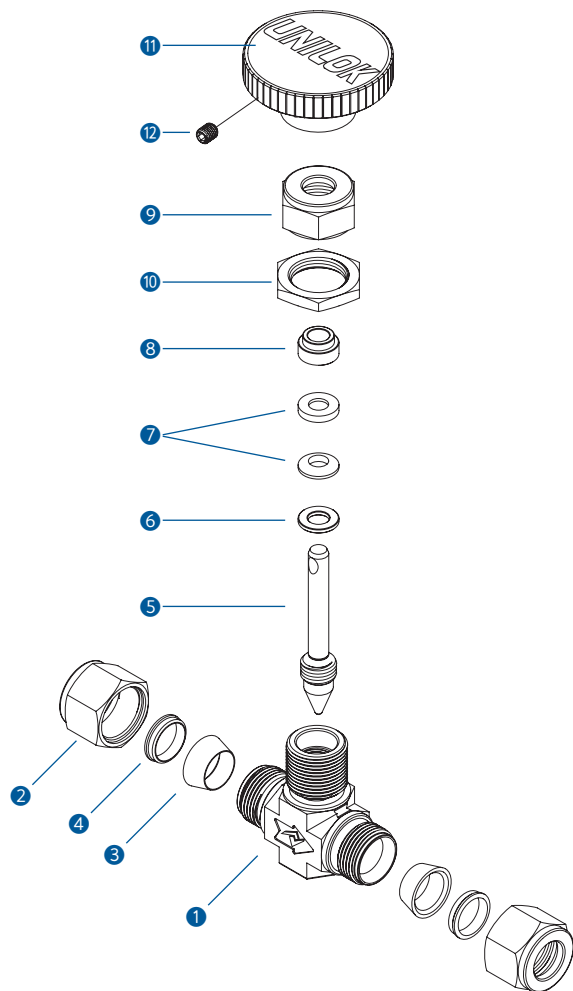
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Features

- Pressure rating up to 5000psig (340bar) @38°C (100°F)
- Temperature rating from -53°C(-65°F) to 232°C (450°F) with standard PTFE packing, up to 315°C(600°F) with PEEK packing
- Compact forged body with straight and angle pattern for design of miniaturized fluid systems
- Hardened stem threads and forged body for long cycle life

- Integral bonnet design to eliminate unintentional stem back-out
- Panel mounting without packing disruption
- Wide choices of port sizes and end connections



Materials of Construction

No.	Description	Materials		
	Body Material	316SS	Brass	Alloy 400
1	Body	316SS	Brass	Alloy 400
2	Nut	316SS	Brass	Alloy 400
3	Front Ferrule	316SS	Brass	Alloy 400
4	Back Ferrule	316SS	Brass	Alloy 400
5	Stem	316SS	Brass	Alloy R-405/B164
6	Packing Ring	316SS	Brass	Alloy R-405/B164
7	Packing	PTFE		
8	Packing Gland	316SS	Brass	Alloy R-405/B164
9	Packing Nut	316SS	Brass	Alloy R-405/B164
10	Panel Nut	316SS	Brass	316SS
11	Handle	Nylon with brass insert		
12	Handle Screw	304SS		

Application

Regulation and shut-off of fluids and gases for wide range of general purpose
 Sampling systems, laboratories, corrosive and high pressure service, valves - pressure gauge and cylinder, panel board instrumentation

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 VN5 series needle 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, *VN52U-04T-SS* is designated for VN5 series needle valve with both 1/4" UNILOK tube fitting, 316SS, round handle.



Valve Type	
N5	Straight Pattern
N5A	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
BS	Brass
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	16
	Designator	M06T	M08T	M10T	M12T	M16T

Stem Type	
None	Vee Stem
R	Regulating Stem
S	Soft-seat Stem

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

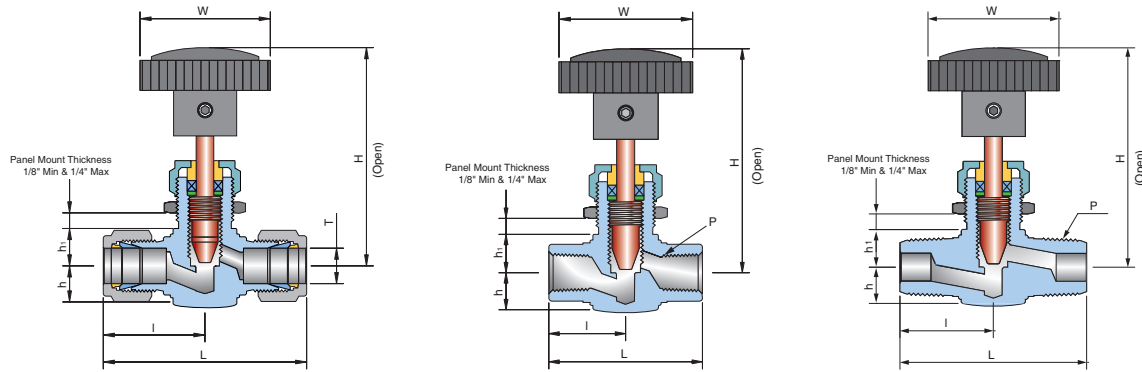
Packing Materials	
None	PTFE
PK	PEEK

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

Handle Type	
None	Nylon Round Handle
B	Bar Handle

VN5 series

(Straight Pattern, Both UNILOK Tube Fittings or Both Female or Male Threads)



Ordering Information & Dimensions

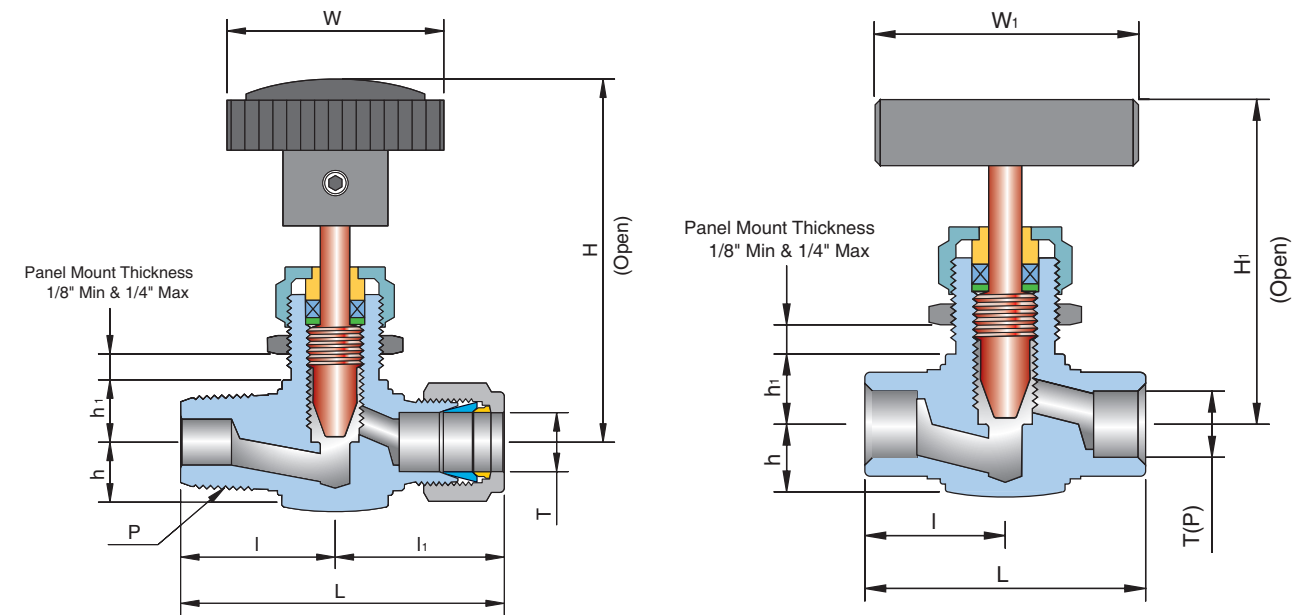
Part No.	End Connections		Orifice	CV	Dimensions (mm)					Panel Hole Drill Size	
	Inlet	Outlet			L	I	h	h ₁	Round Handle H(open) W		
VN51	U-02T-	1/8" UNILOK	2.0	0.09	49.3	24.9	11.2	7.9	57.9	25.4	11.9
	U-M03T-	3mm UNILOK			49.3	24.9					12.2
	F-02N-	1/8" Female NPT			47.8	23.9					11.9
	M-02N-	1/8" Male NPT			38.1	19.1					
VN52	U-04T-	1/4" UNILOK	4.3	0.37	56.3	28.2	9.5	9.5	65.9	34.7	13.5
	U-M06T-	6mm UNILOK			56.8	28.4					
	U-M08T-	8mm UNILOK			59.0	29.5					
	F-02N-	1/8" Female NPT			42.0	21.0					
	M-02N-	1/8" Male NPT			41.2	20.6					
	M-04N-	1/4" Male NPT			50.0	25.5					
VN53	U-06T-	3/8" UNILOK	6.3	0.73	67.8	33.9	12.5	13.5	80.6	46.7	20.0
	U-08T-	1/2" UNILOK			73.2	36.6					
	U-M10T-	10mm UNILOK			67.4	33.7					
	U-M12T-	12mm UNILOK			73.4	36.7					
	F-04N-	1/4" Female NPT			54.0	27.0					
	M-06N-	3/8" Male NPT			53.0	26.5					
	MF-04N-	1/4" Male NPT 1/4" Female NPT			55.6	26.5					
VN54	U-08T-	1/2" UNILOK	9.5	1.80	83.2	41.6	17.0	17.0	97.0	55.5	23.0
	U-12T-	3/4" UNILOK			83.2	41.6					
	F-06N-	3/8" Female NPT			65.0	30.0					
	F-08N-	1/2" Female NPT			65.0	32.5					
	M-08N-	1/2" Male NPT			66.0	33.0					
	MF-08N-	1/2" Male NPT 1/2" Female NPT			66.0	33.0					
VN55	U-16T-	1" UNILOK	12.7	3.20	99.2	49.6	20.0	20.0	86.7*	85*	29.0
	F-12N-	3/4" Female NPT			75.0	37.5					
	F-16N-	1" Female NPT			89.0	44.5					

* Dimensions for bar handle. Round handle for these sizes are not available.
ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VN5 series valves.
Add "R" as a suffix instead of "N".

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

VN5 series

(Straight Pattern, Male/UNILOK Tube Fitting or Both Tube or Pipe Socket Welds)



Ordering Information & Dimensions

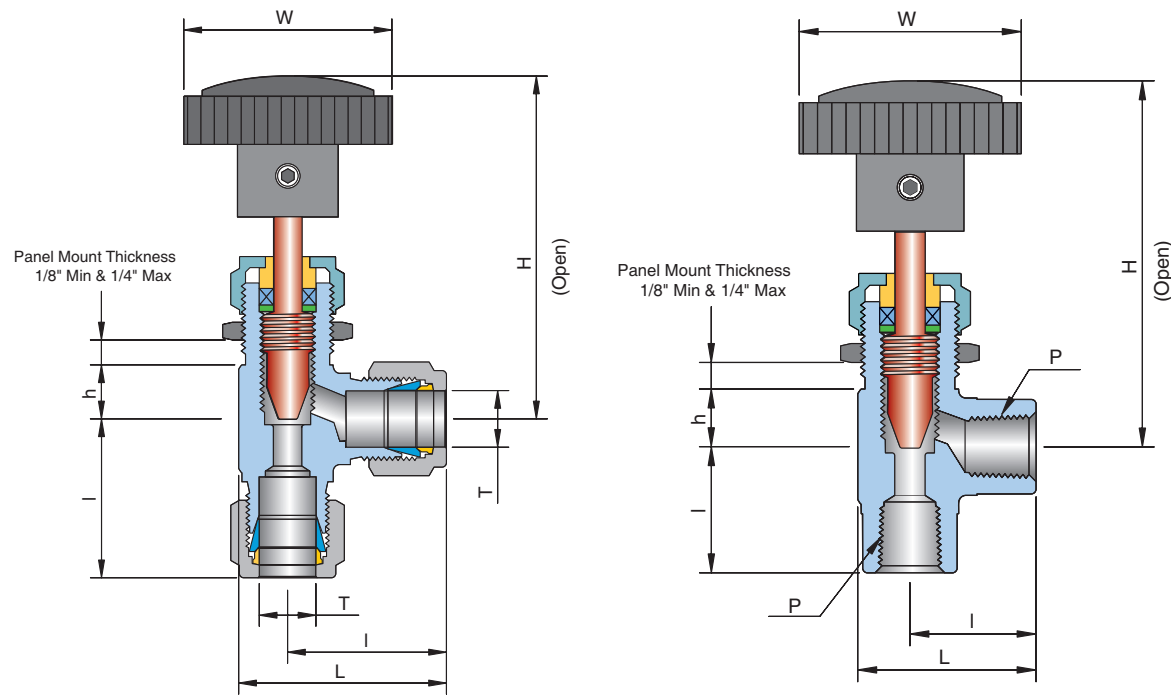
Part No.	End Connections		Orifice	CV	Dimensions (mm)					Panel Hole Drill Size	
	Inlet	Outlet			L	I	h	h ₁	Bar Handle H ₁ (open) W ₁		
VN52	MU-04N02T-	1/4" Male NPT 1/8" UNILOK	4.3	0.37	51.3	25.0	9.5	9.5	54.3	45.0	13.5
	MU-04N04T-	1/4" Male NPT 1/4" UNILOK			53.3	25.0					
	WS-04T	1/4" Tube			42.0	21.0					
VN53	MU-04N06T-	1/4" Male NPT 3/8" UNILOK	6.3	0.73	60.4	26.5	12.5	13.5	67.5	50.6	20.0
	MU-06N06T-	3/8" Male NPT 3/8" UNILOK			60.4	26.5					
	MU-06N08T-	3/8" Male NPT 1/2" UNILOK			63.1	26.5					
	WS-06P	3/8" Tube			54.0	27.0					
VN54	WS-08P	1/2" Tube	9.5	1.80	54.0	27.0	17.0	17.0	83.8	62.5	23.0
	WS-04P	1/4" Pipe			54.0	27.0					
	WS-06P	3/8" Pipe			60.0	30.0					
	WS-08P	1/2" Pipe			65.0	32.5					

Male ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VN5 series valves.
Add "R" as a suffix instead of "N".

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

VN5A series

(Angle Pattern, Both UNILOK Tube Fittings or Both Female Threads)



Ordering Information & Dimensions

Part No.	End Connections		Orifice	CV	Dimensions (mm)					Panel Hole Drill Size
	Inlet	Outlet			L	I	h	Round Handle		
								H(open)	W	
VN52A	U-04T-	1/4" UNILOK	4.3	0.37	38.9	30.2	10.1	61.1	34.7	13.5
	U-M06T-	6mm UNILOK			39.1	30.5				
	U-M08T-	8mm UNILOK			39.3	30.7				
	F-02N-	1/8" Female NPT			29.6	21.0				
VN53A	U-06T-	3/8" UNILOK	6.3	0.73	44.2	33.1	12.2	78.4	46.7	20.0
	U-08T-	1/2" UNILOK			46.9	35.8				
	U-M10T-	10mm UNILOK			44.8	33.7				
	U-M12T-	12mm UNILOK			46.9	35.8				
	F-04N-	1/4" Female NPT			37.0	26.0				
VN54A	F-06N-	3/8" Female NPT	9.5	1.80	53.5	39.7	15.9	92.2	55.5	23.0
	F-08N-	1/2" Female NPT								

Female ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VN5 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 by Packing Materials

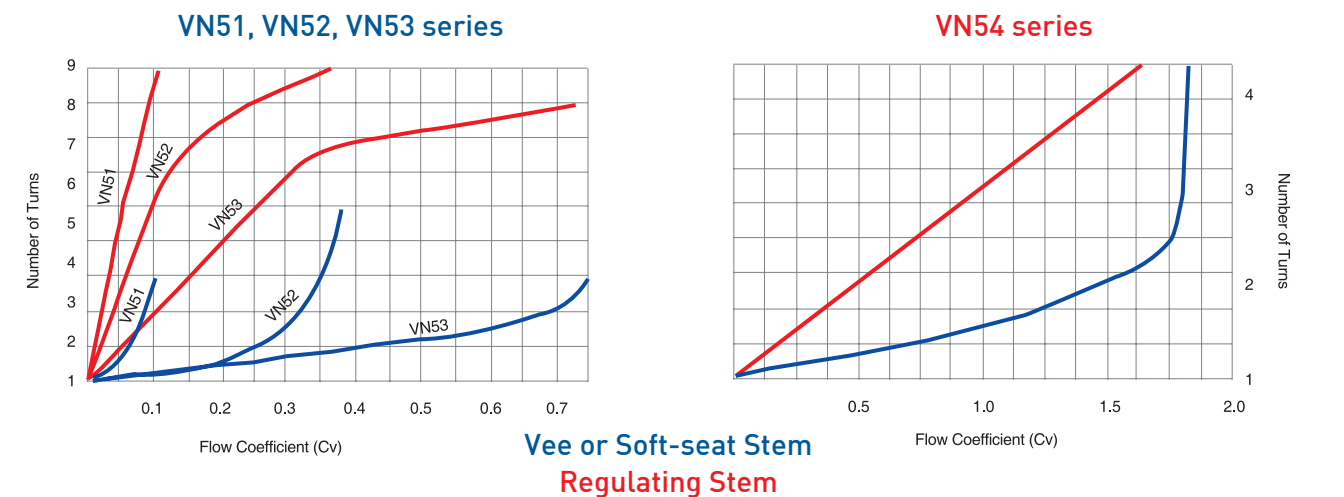
Body Material	Stem	PTFE packing				PEEK packing			
		Temperature Rating		Pressure Rating		Temperature Rating		Pressure Rating	
		°C	°F	psig	bar	°C	°F	psig	bar
316SS	metal to metal (vee & regulating)	-54~232	-65~450	5000	345	-54~315	-65~600	3130	215
	soft-seat (Kel-F)	-54~93	-65~200			-54~93	-65~200		
Brass	metal to metal (vee & regulating)	-54~204	-65~400	3000	207	-54~204	-65~400	3000	207
	soft-seat (Kel-F)	-54~93	-65~200			-54~93	-65~200		
Alloy 400	metal to metal (vee & regulating)	-54~232	-65~450	3000	207	-54~260	-65~500	2370	162
	soft-seat (Kel-F)	-54~93	-65~200			-54~93	-65~200		

Packing adjustment to be required for extreme temperature variations. For the service with aromatic heat transfer fluids or concentrated sulfuric and nitric acids, PEEK is not recommended.

Working Pressure at Temperature

	Temperature		Working Pressure						
	°C	°F	316SS		Brass		Alloy 400		
			psig	bar	psig	bar	psig	bar	
-54 to	38	-65 to	100	5000	345	3000	207	3000	207
	93		200	4290	296	2600	180	2640	183
	148		300	3870	267	2210	153	2470	171
	176		350	3710	256	1470	102	2430	168
	204		400	3560	246	740	52	2390	165
	232		450	3430	237	-	-	2380	165
Materials			316SS		Brass		Alloy 400		

Number of Handle Turns - Flow Coefficient (Cv)



Stem Types

Metal to metal vee stem is standard for pressure tightness even at elevated temperature. Regulating 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 Stem
Pressure tightness at elevated temperature



Regulating Stem
Flow rate control



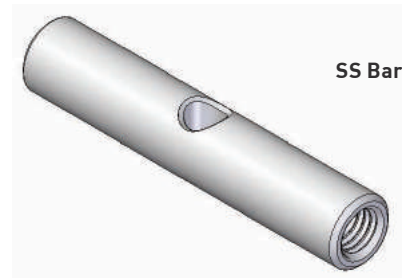
Soft-seat Stem
Repetitive shut-off for gas

Handle Types

Black nylon round handle is standard.

For the valves with brass body and soft-seat stem, standard round handle is recommended.

Optional stainless steel bar handle is available.



SS Bar Handle

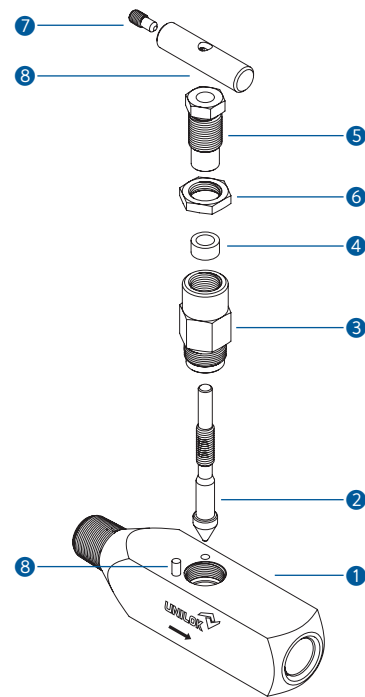
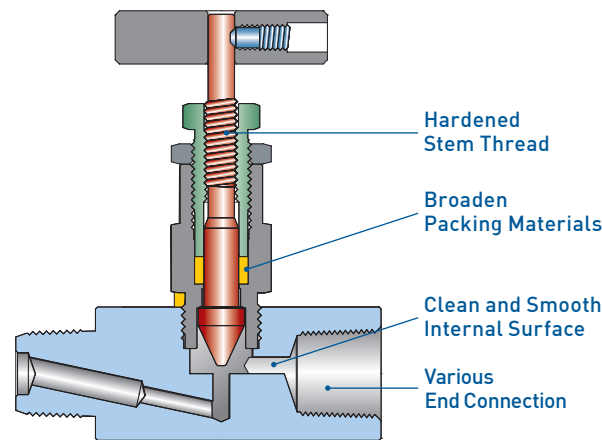
INSTRUMENT

High Pressure Bar Stock Needle Valves VN6



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 315°C(600°F) with PEEK packing
- High temperature application is available Grafoil packing, up to 648°C(1200°F)
- Compact body design
- Hardened stem threads and forged body for long cycle life
- Integral bonnet design to eliminate unintentional stem back-out
- Stop pin to prevent accidental bonnet disengagement



Materials of Construction

No.	Description	Materials	
Body Material		316SS	Alloy 400
1	Body	316SS	Alloy 400
2	Stem	316SS	Alloy R-405/B164
3	Body Bonnet	316SS	Alloy R-405/B164
4	Packing	PTFE	
5	Spindle Bushing	316SS	Alloy R-405/B164
6	Jam Nut	316SS	Alloy R-405/B164
7	Set Screw	304SS	
8	Bar Handle	304SS	
9	Stop Pin	304SS	

Pressure - Temperature Rating

Body Material	Stem	PTFE packing			
		Temperature Rating		Pressure Rating @ 38°C	
		°C	°F	psig	bar
316SS	Vee (metal to metal)	-54~232	-65~450	6000	413
	Soft-seat (Kel-F)	-54~93	-65~200		
Alloy 400	Vee (metal to metal)	-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			3970	274
PEEK	316SS	-54~315	-65~600	3760	260
	Alloy 400	-54~260	-65~500	3960	273

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

Application

Severe service application, steam service in power plant, hot condensates

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.

Cleaning

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

How To Order

UNILOK VN6 series needle 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, **VN62MF-04N-SS** is designated for VN6 series needle valve with 1/4" male NPT to 1/4" female NPT, 316SS.



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	1/4	3/8	1/2
	mm	6.35	9.52	12.70
Designator		04T	06T	08T

Body Materials	
SS	316SS
MO	Alloy 400

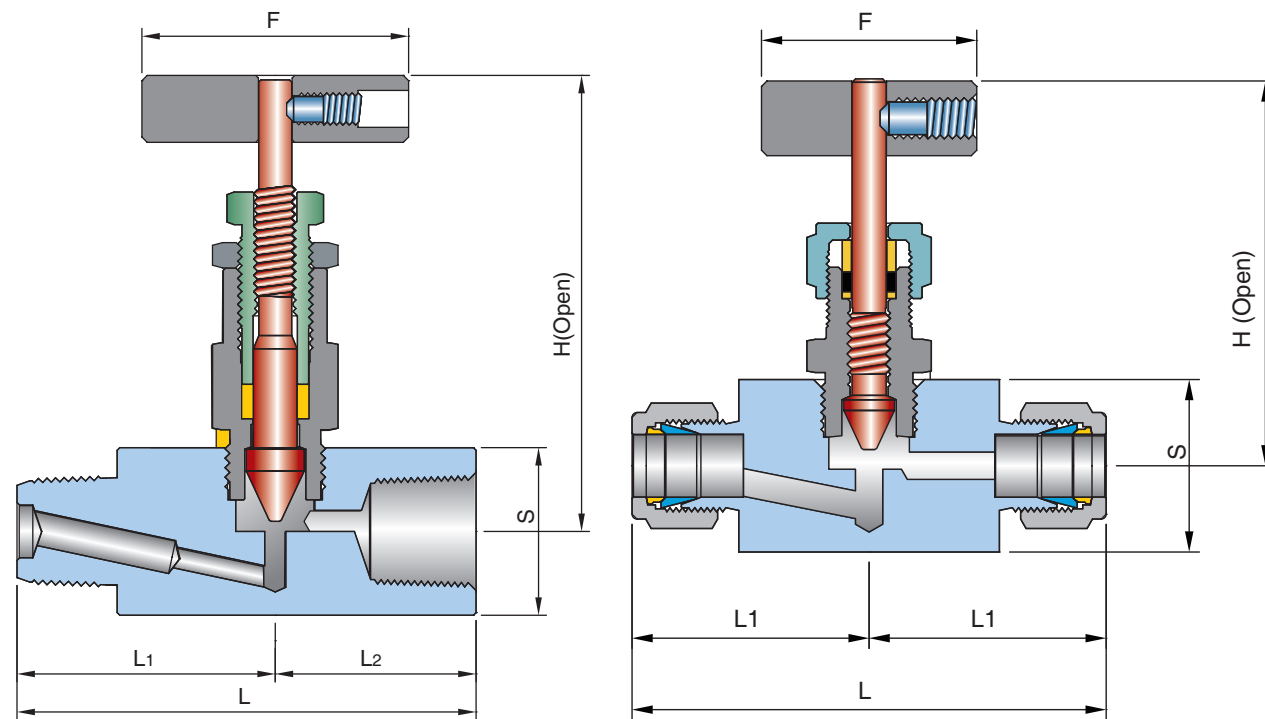
Metric Tube O.D. Designation					
Tube O.D.	mm	6	8	10	12
	Designator	M06T	M08T	M10T	M12T

Stem Type	
None	Vee Stem
S	Soft Seat Stem

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

Packing Materials	
None	PTFE
PK	PEEK
GF	Grafoil

VN6 series



INSTRUMENT

Union Bonnet Valves VU6

Ordering Information & Dimensions

Part No.	End Connections		Orifice	CV	Dimensions (mm)					
	Inlet	Outlet			L	L ₁	S	F	H	
VN61	U-04T-	1/4" UNILOK		4.0	0.35	76.2	38.1	25.4	45.0	56.7
	U-06T-	3/8" UNILOK								
	U-08T-	1/2" UNILOK								
	U-M06T-	6mm UNILOK								
	U-M08T-	8mm UNILOK								
	U-M10T-	10mm UNILOK								
	U-M12T-	12mm UNILOK								
VN62	F-04N-	1/4" Female NPT		4.0	0.35	76.2	38.1	32.0	50.6	86.5
	F-06N-	3/8" Female NPT								
	F-08N-	1/2" Female NPT								
	MF-04N-	1/4" Male NPT	1/4" Female NPT							
	MF-06N-	3/8" Male NPT	3/8" Female NPT							
	MF-08N-	1/2" Male NPT	1/2" Female NPT							

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VN6 series valves. Add "R" as a suffix instead of "N".

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



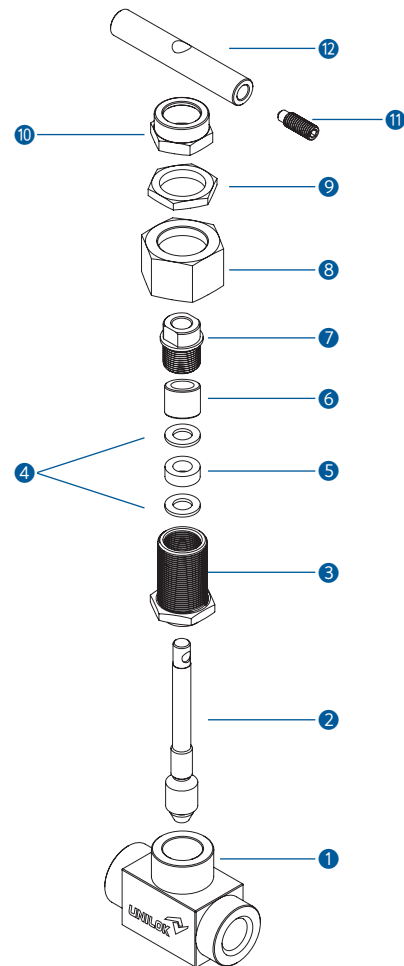
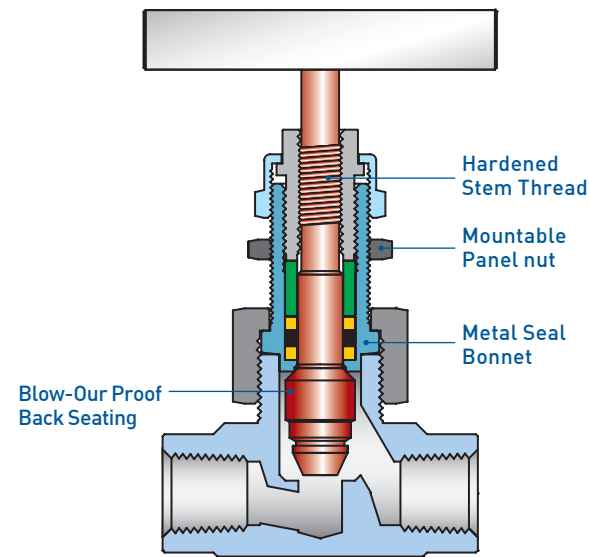
Union Bonnet Valves VU6

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Materials of Construction	162	Ordering information & Dimensions	164
Application	163	Stem Types	166
Cleaning	163	Panel Mounting Procedure	166
Testing	163	Pressure-Temperature Rating	166

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

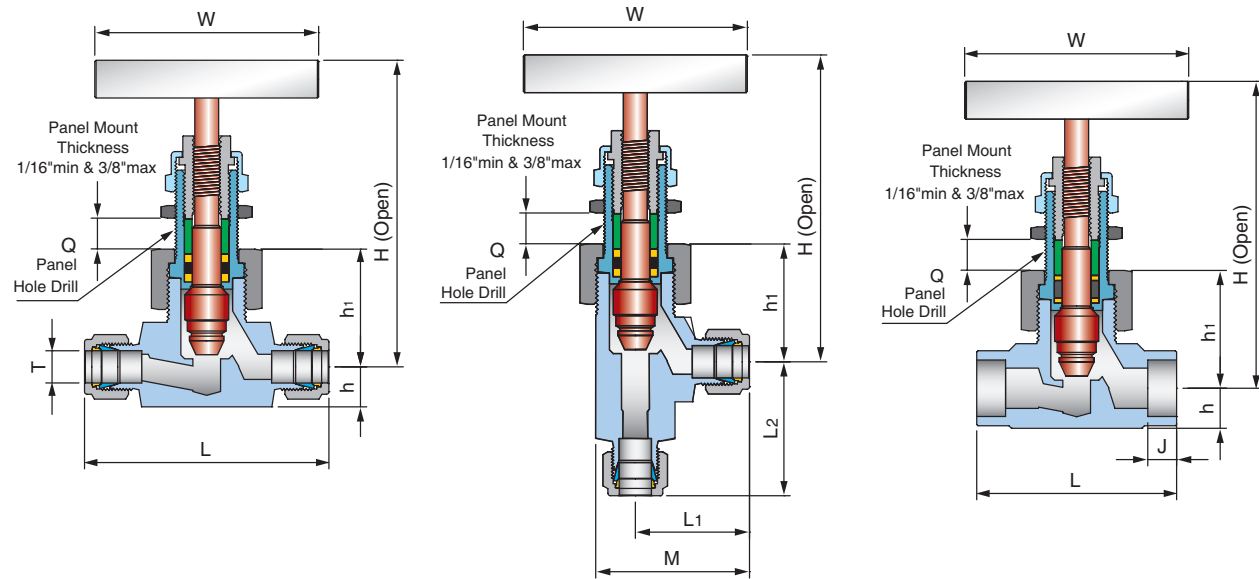
Pipe Size Designation (NPT or ISO7/1-PT)						
Pipe Size	1/8	1/4	3/8	1/2	3/4	1
Designator	02N/R	04N/R	06N/R	08N/R	12N/R	16N/R

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	

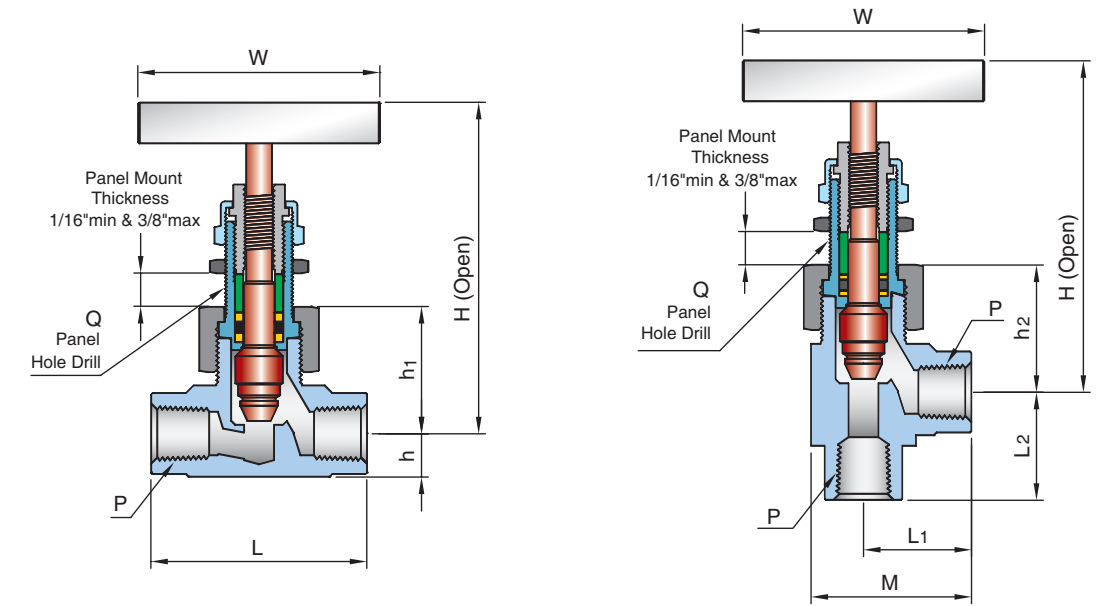
VU6 series

(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	L ₂	M	h	h ₁	h ₂	H _(open)	W	Q	J	
VU61	U-04T-	1/4" UNILOK	4.0	0.35	61.9	29.4	37.3	38.9	9.6	27.8	27.8	77.8	45.0	15.1	-	
	U-M06T-	6mm UNILOK			46.0	22.3	30.2	31.8							7.2	
	U-M08T-	8mm UNILOK														
	WS-04T	1/4" Tube SW														
VU62	U-06T-	3/8" UNILOK	6.4	0.86	73.0	32.5	42.9	45.3	12.7	34.1	34.2	93.7	64.0	19.9	-	
	U-08T-	1/2" UNILOK			77.8	34.9	42.1	47.6							31.0	34.2
	U-M10T-	10mm UNILOK			73.0	33.3	39.7	46.1							34.2	
	U-M12T-	12mm UNILOK			77.8	35.7	42.1	48.4							34.2	
	WS-06T	3/8" Tube SW			57.2	25.4	28.6	38.1							37.3	8.0
	WS-08T	1/2" Tube SW			57.2	25.4	25.4	38.1							35.7	9.6
	WS-04P	1/4" Pipe SW			57.2	25.4	28.6	38.1							37.3	
VU63	U-08T-	1/2" UNILOK	11.0	2.20	98.0	43.7	53.2	61.1	15.9	46.0	47.6	121.5	89.0	26.2	-	
	U-12T-	3/4" UNILOK			100.0	-	-	-							47.6	47.6
	U-16T-	1" UNILOK														
	U-M12T-	12mm UNILOK			98.0	43.7	53.2	61.1							47.6	47.6
	WS-08T	1/2" Tube SW			79.4	33.3	42.9	50.8							47.6	9.6
	WS-12T	3/4" Tube SW			79.4	-	-	-							-	11.1
WS-08P	1/2" Pipe SW	79.4	33.3	39.7	50.8	50.8	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	L ₂	M	h	h ₁	h ₂	H _(open)	W	Q			
VU61	F-02N-	1/8" Female NPT	4.0	0.35	50.8	23.0	25.4	32.6	9.6	27.8	32.6	77.8	45.0	15.1			
	F-04N-	1/4" Female NPT			52.4	26.2	23.0	32.6									
	M-04N-	1/4" Male NPT			50.8	25.4	25.4	35.0									
	MF-04N-	1/4" Male NPT 1/4" Female NPT			52.4	23.0	25.4	32.6									
VU62	F-04N-	1/4" Female NPT	6.4	0.86	57.2	25.4	28.6	38.1	12.7	34.1	37.3	93.7	64.0	19.9			
	F-06N-	3/8" Female NPT															
VU63	F-08N-	1/2" Female NPT	11.0	2.20	79.4	33.3	39.7	50.8	15.9	46.0	50.8	121.5	89.0	26.2			
	F-12N-	3/4" Female NPT			82.6	-	-	-							19.9	48.4	-
	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	39.7	50.8							15.9	46.0	50.8
	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	-

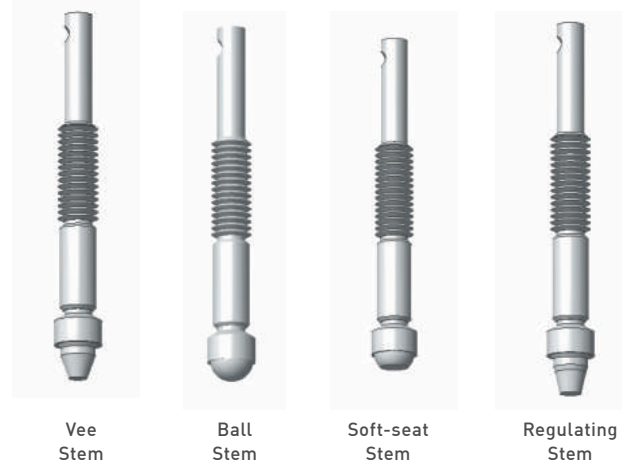
ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VU6 series valves. Add "R" as a suffix instead of "N".

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

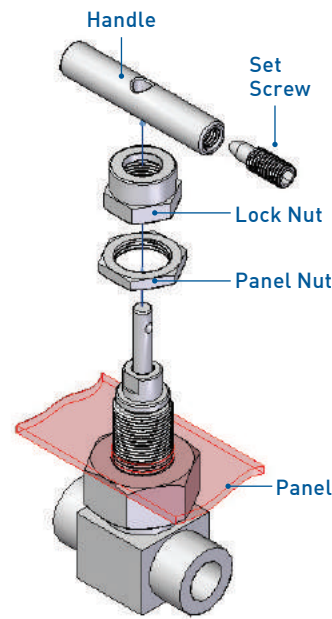
Stem Types

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.

INSTRUMENT

Metering Valves VMT

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.



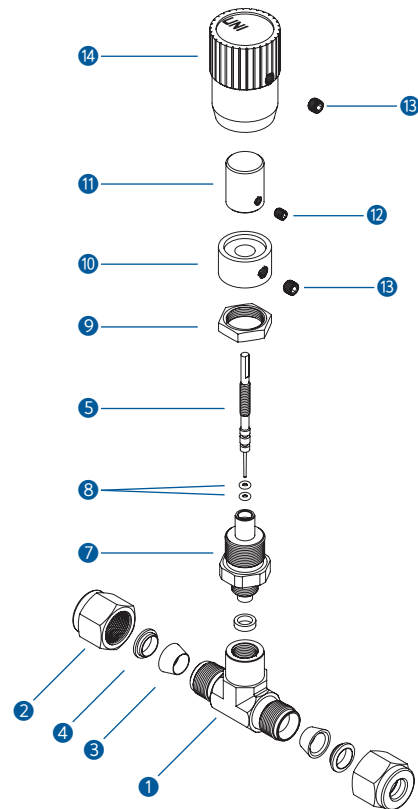
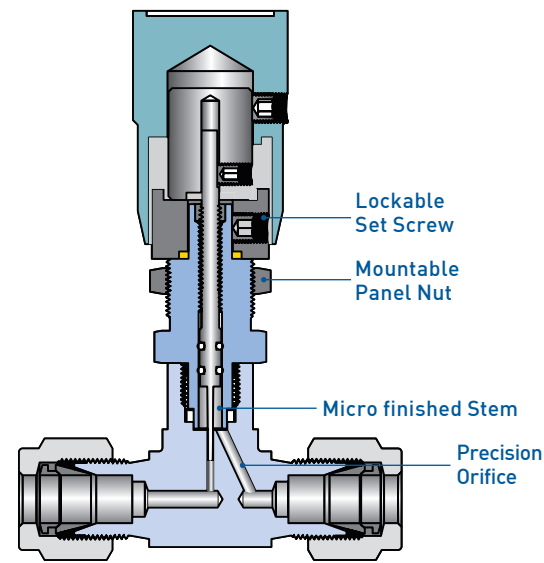
Metering Valves VMT

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Cleaning	169	Handle Types	172
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Features

- Pressure rating up to
VMTS series - 2000psig (137bar)
VMTL & VMTM series - 1000psig (69bar)
- Temperature rating
from -23°C(-10°F) to 204°C(400°F) with standard FKM o-ring
from -23°C(-10°F) to 148°C(300°F) with Buna-N o-ring
- Compact designed body
- Panel mounting for easy installation
- Fine orifice and close thread tolerances offers accurate control
- Various selection of handles



Materials of Construction

No.	Description	Materials
1	Body	316SS
2	Nut	316SS
3	Front Ferrule	316SS
4	Back Ferrule	316SS
5	Stem	316SS
6	Sealing Seal	PTFE
7	Bonnet	316SS
8	Stem Seal	FKM
9	Panel Nut	304SS
10	Vernier Scale	Aluminum
11	Handle Gland	Brass
12	Handle Gland Screw	304SS
13	Handle Set Screw	304SS
14	Handle	Aluminum

Specification

Valve Series	Orifice (mm)	Stem Taper incl. Angle	Shutoff Service	Temperature Rating		Pressure Rating	
				°C	°F	psig	bar
VMTS	0.81	1°	No	-23~204	-10~400	2000	137
VMTM	1.42	3°	No			1000	69
VMTL	3.25	5°	Yes				

Application

Sampling and analyzing systems, accurate and fine metering applications

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.

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.

VMTL series is tested at 100psig(7bar) differential pressure.

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.

How To Order

UNILOK VMT series metering valves are ordered by part number as shown below.

Example: The following part number, *VMTSU-04T-SS-V* is designated for VMTS series metering valve with both 1/4"UNILOK tube fittings, 316SS, vernier handle.



Valve Type	
MTS	Stem Taper Angel - 1°
MTM	Stem Taper Angel - 3°
MTL	Stem Taper Angel - 5°

Connection Type	
U	UNILOK Tube Fitting
F	Female NPT or ISO7/1(PT)
M	Male NPT or ISO7/1(PT)
C	UCR-Metal Face Seal

Connection Size			
Fractional(Inch) Tube O.D. Designation			
Tube O.D.	inch	1/8	1/4
	mm	3.17	6.35
Designator		02T	04T

Metric Tube O.D. Designation			
Tube O.D.	mm	3	6
	Designator	M03T	M06T

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

UCR Size Designation	
Tube Size	1/4
Designator	04M

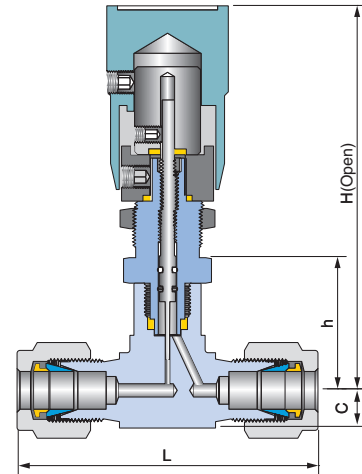
Handle Type	
V	Vernier Handle
R	Round Aluminum Handle
S	Slotted Handle

See the details in page 172.

Seal Materials	
None	FKM
N	Buna-N

VMTS series

(Stem Angle 1°, Orifice 0.81mm)

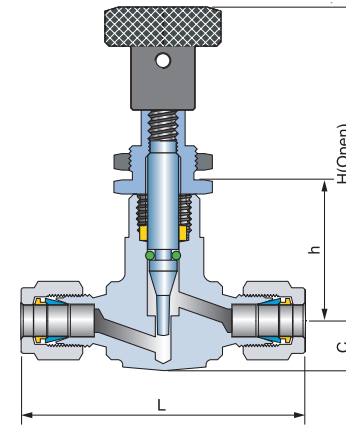


Ordering Information & Dimensions

Part No.	End Connections		Orifice	CV (Max)	Dimensions (mm)				Panel Hole Drill Size
	Inlet	Outlet			L	C	h	H (Open)	
U-02T-	1/8" UNILOK		0.81	0.005	48.3	6.8	23.4	69.1	11.5
U-04T-	1/4" UNILOK				51.8				
U-M03T-	3mm UNILOK				48.3				
U-M06T-	6mm UNILOK				51.8				
C-04M	1/4" Male UCR				52.3				

VMTL series

(Stem Angle 5°, Orifice 3.25mm)

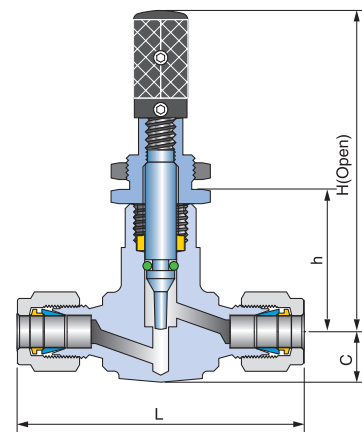


Ordering Information & Dimensions

Part No.	End Connections		Orifice	CV (Max)	Dimensions (mm)				Panel Hole Drill Size
	Inlet	Outlet			L	C	h	H (Open)	
U-04T-	1/4" UNILOK		3.25	0.155	58.3	9.7	28.9	67.0	15.0
U-06T-	3/8" UNILOK				58.6				
U-M06T-	6mm UNILOK				58.3				
M-04N-	1/4" Male NPT				50.0				

VMTM series

(Stem Angle 3°, Orifice 1.42mm)



Ordering Information & Dimensions

Part No.	End Connections		Orifice	CV (Max)	Dimensions (mm)				Panel Hole Drill Size
	Inlet	Outlet			L	C	h	H (Open)	
U-02T-	1/8" UNILOK		1.42	0.033	52.3	9.7	39.6	70.6	15.0
U-04T-	1/4" UNILOK				58.3				
U-M03T-	3mm UNILOK				52.3				
U-M06T-	6mm UNILOK				58.3				
F-02N-	1/8" Female NPT				42.0				
M-02N-	1/8" Male NPT				41.2				
M-04N-	1/4" Male NPT				50.0				

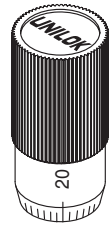
ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VMT series valves.
Add "R" as a suffix instead of "N".

Handle Types

Handle materials

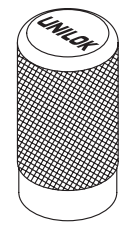
Vernier and Slotted handles - Aluminum with anodized color

Round handles - Aluminum



Vernier Handle

Enhance accurate flow adjustments



Slotted Handle

Keep flow setting adjustments with set screw



Round Handle

Make flow adjustments easily

Handle Options

Different types of aluminum handles are available depending on valve series.

Vavle Series	Handle Types		
	Vernier	Slotted	Round
VMTS	0	0	X
VMTM	0	0	X
VMTL	0	X	0

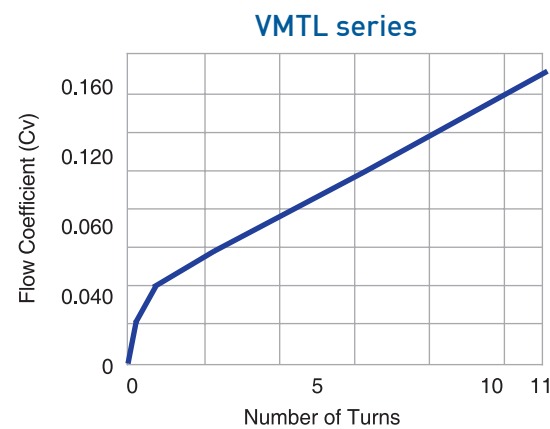
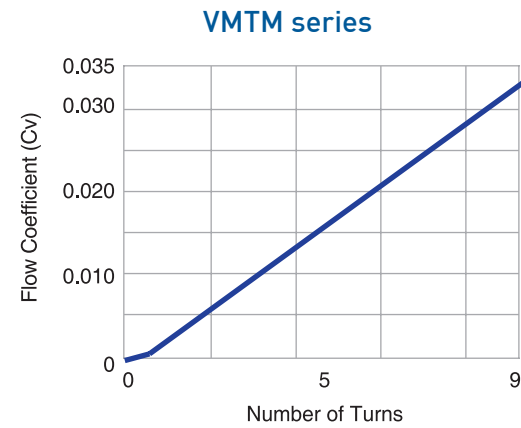
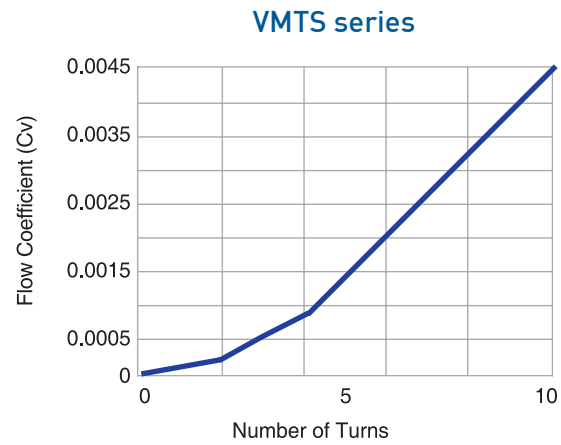
Standard color for all handles is black. Other colored are available upon request as option only with vernier and slotted handles.

To order, add color designator to the end of handle option.

Example : -VG shown as gold vernier handle

Color	Designator
Gold	G
Silver	S

Number of Handle Turns - Flow Coefficient (Cv)



Best Engineering For You

Check Valve VC

Check Valves

VC Check Valve	175
VLC Lift Check Valve	181
VE Excess Flow Valve	185



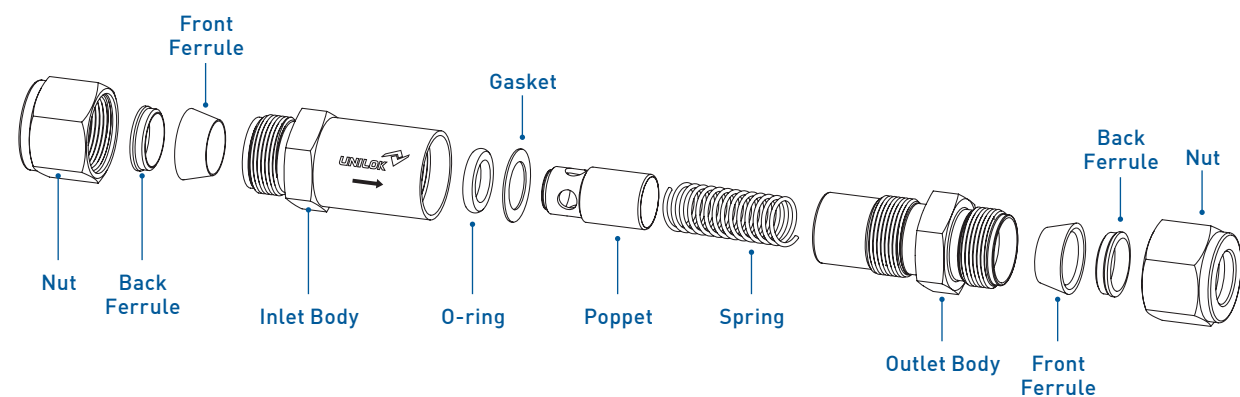
Check Valve VC

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Features

Valve Series		Cracking Pressure	Maximum Working Pressure
VC3	General Purpose	Fixed	3000 psig 207 bar
VC6	High Pressure	Fixed	6000 psig 413 bar
VC3C	Compact One Piece	Fixed	3000 psig 207 bar
VC3CA	Compact Adjustable Cracking Pressure	Adjustable	3000 psig 207 bar



Cleaning

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

Testing

Every check valve is 100% factory tested with nitrogen for cracking and reseal performance.

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

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.

UNILOK check valves are designed for directional flow control only.

How To Order

UNILOK VC series check valves are ordered by part number as shown below.

Example: The following part number, **VC31U-04T-SS-01** is designated for VC3 series check valve with both 1/4", UNILOK tube fitting, 1psig cracking pressure, 316SS.



Valve Type	
C3	3000psig Fixed CP
C6	6000psig Fixed CP
C3C	3000psig Compact Fixed CP
C3CA	3000psig Compact Adjustable CP

CP - Cracking Pressure

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	1
	mm	3.17	6.35	9.52	12.70	19.05	25.40
Designator		02T	04T	06T	08T	12T	16T

Metric Tube O.D. Designation							
Tube O.D.	mm	3	6	8	10	12	25
Designator		M03T	M06T	M08T	M10T	M12T	M25T

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

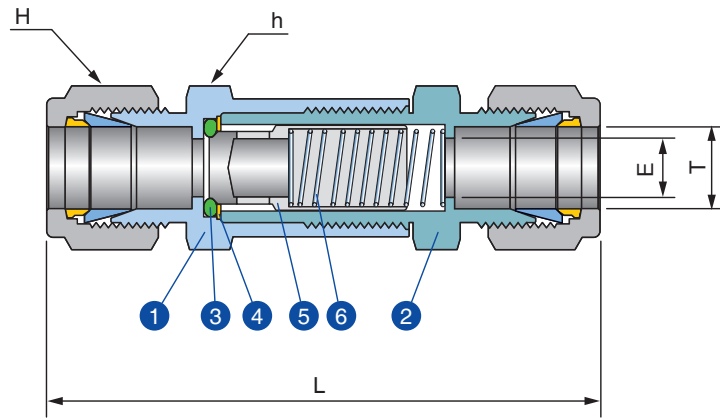
Body Materials	
SS	316SS
BS	Brass
MO	Alloy 400

Cracking Pressure	
1/3	1/3 psig
01	1 psig
03	3 psig
10	10 psig
25	25 psig
100	100 psig

O-ring Materials	
None	FKM
E	Ethylene Propylene
N	Buna N
P	Neoprene
K	Kalrez

Seal kits and spring kits are available for retrofit or maintenance. Contact UNILOK local distributors.

VC3 series (3000 psig, Fixed Cracking Pressure)



Materials of Construction

No.	Description	Materials	
		316SS	Brass
1	Inlet Body	316SS	Brass
2	Outlet Body	316SS	Brass
3	O-ring	FKM	NBR
4	Gasket	304SS	
5	Poppet	316SS	Brass
6	Spring	302SS	

Poppet - Silicone based lubricant
Inlet Body - Molybdenum dry film lubricant

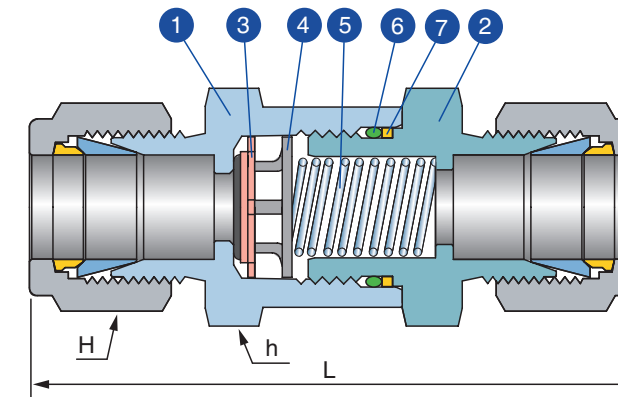
Ordering Information & Dimensions

Part No.	End Connections		CV	Dimensions (mm)	
	Inlet	Outlet		L	h
VC31	U-02T-	1/8" UNILOK	0.16	54.5	15.87
	U-04T-	1/4" UNILOK		59.0	
	U-M06T-	6mm UNILOK		59.0	
	F-02N-	1/8" Female NPT		46.5	
	M-02N-	1/8" Male NPT		47.3	
	M-04N-	1/4" Male NPT		52.6	
	MU-04N04T-	1/4" Male NPT 1/4" UNILOK		56.0	
	F-04N-	1/4" Female NPT		54.5	
VC32	U-06T-	3/8" UNILOK	1.48	80.4	19.05
	U-M10T-	10mm UNILOK		81.7	
	M-06N-	3/8" Male NPT		70.6	
VC33	U-08T-	1/2" UNILOK	1.70	85.6	22.22
	U-M12T-	12mm UNILOK		86.0	
	F-06N-	3/8" Female NPT		76.2	
	M-08N-	1/2" Male NPT		83.0	
	F-08N-	1/2" Female NPT		83.0	
VC34	U-10T-	5/8" UNILOK	2.60	88.0	28.58
	F-08N-	1/2" Female NPT		91.2	
VC35	U-12T-	3/4" UNILOK	5.20	91.8	31.75
	F-12N-	3/4" Female NPT		87.5	
	M-12N-	3/4" Male NPT		86.0	
VC36	U-16T-	1" UNILOK	8.00	106.3	34.93
	F-16N-	1" Female NPT		123.0	
	M-16N-	1" Male NPT		102.3	34.93

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VC3 series valves. Add "R" as a suffix instead of "N".

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

VC6 series (6000 psig, Fixed Cracking Pressure)



Materials of Construction

No.	Description	Materials
1	Inlet Body	316SS
2	Outlet Body	316SS
3	Poppet	FKM bonded 316SS
4	Poppet Stop	316SS
5	Spring	302SS
6	O-ring	FKM
7	Backup Ring	PTFE

Ordering Information & Dimensions

Part No.	End Connections		CV	Dimensions (mm)		
	Inlet	Outlet		L	h	
VC61	U-02T-	1/8" UNILOK	0.67	57.7	17.46	
	U-04T-	1/4" UNILOK		61.7		
	U-M06T-	6mm UNILOK		61.7		
	M-02N-	1/8" Male NPT		44.8		
	M-04N-	1/4" Male NPT		54.8		
VC62	U-06T-	3/8" UNILOK	1.80	69.9	25.40	
	U-08T-	1/2" UNILOK		75.2		
	U-M08T-	8mm UNILOK		68.6		
	U-M10T-	10mm UNILOK		71.1		
	U-M12T-	12mm UNILOK		75.2		
	F-06N-	3/8" Female NPT		64.8		
	F-08N-	1/2" Female NPT		77.0		26.98
	M-12N-	3/4" Male NPT		59.2		
	M-16N-	1" Male NPT		69.2		
VC63	U-12T-	3/4" UNILOK	4.70	110.0	31.75	
	U-16T-	1" UNILOK		120.0		
	U-M25T-	25mm UNILOK		120.0		
	F-12N-	3/4" Female NPT		104.0		31.75
	F-16N-	1" Female NPT		123.0		34.92

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VC6 series valves. Add "R" as a suffix instead of "N".

Pressure Rating at 70°F (21°C)

Series	316SS	
	psig	bar
VC61	6000	413
VC62	5000	344

O-ring Seal Temperature Rating

O-ring Materials	Temperature Rating	
	°C	°F
FKM	-28 ~ 204	-18 ~ 400
Ethylene Propylene	-45 ~ 135	-49 ~ 275
Buna N	-20 ~ 105	-4 ~ 221
Neoprene	-40 ~ 121	-40 ~ 250
Kalrez	-20 ~ 315	-22 ~ 599

CNG Application

UNILOK VC6 series, high pressure check valves are available for CNG application with CNG compatible HNBR O-ring.

To order, add -H to the end of part number.

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

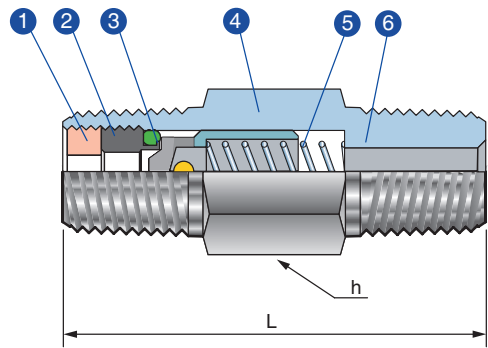
Pressure Rating at 70°F (21°C)

Series	316SS		Brass	
	psig	bar	psig	bar
VC31	3000	207	3000	207
VC32	3000	207	3000	207
VC33	3000	207	3000	207
VC34	2000	138	1500	103
VC35	2000	138	1500	103
VC36	2000	138	1500	103

Cracking - Reseal Pressure

Normal Cracking Pressure	Cracking Pressure Range		Reseal Pressure
	Min.	Max.	
1/3	0	3	up to 6
1	0	4	up to 5
3	2	7	up to 4
10	7	15	3
25	20	30	17
50	40	60	35
75	60	90	53
100	80	120	70

VC3C series (3000 psig, Fixed Cracking Pressure)



Materials of Construction

No.	Description	Materials
1	Insert Lock Screw	316SS
2	Insert	316SS
3	O-ring	FKM
4	Poppet	316SS
5	Spring	302SS
6	Body	316SS

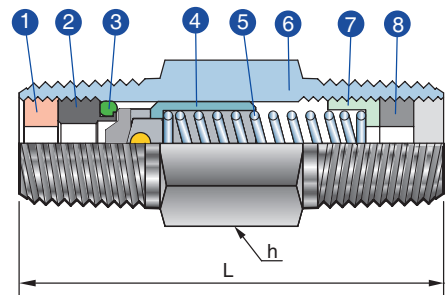
Ordering Information & Dimensions

Part No.	End Connections		CV	Dimensions (mm)	
	Inlet	Outlet		L	h
VC3C1	F-04N-	1/4" Female NPT	0.35	61.0	19.05
	M-04N-	1/4" Male NPT		41.0	14.28
	MF-04N-	1/4" Male NPT 1/4" Female NPT		44.0	19.05
	FM-04N-	1/4" Female NPT 1/4" Male NPT		58.0	19.05
VC3C2	F-08N-	1/2" Female NPT	1.20	94.0	26.98
	M-08N-	1/2" Male NPT		58.0	22.22
	MF-08N-	1/2" Male NPT 1/2" Female NPT		72.0	26.98

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VC3C series valves. Add "R" as a suffix instead of "N".

VC3CA series

(3000 psig, Compact, Adjustable Cracking Pressure)



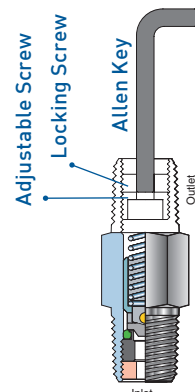
Materials of Construction

No.	Description	Materials
1	Insert Lock Screw	316SS
2	Insert	316SS
3	O-ring	FKM
4	Poppet	316SS
5	Spring	302SS
6	Body	316SS
7	Adjustable Screw	316SS
8	Locking Screw	316SS


Ordering Information & Dimensions

Part No.	End Connections		CV	Dimensions (mm)	
	Inlet	Outlet		L	h
VC3CA1	F-04N-	1/4" Female NPT	0.35	75.7	19.05
	M-04N-	1/4" Male NPT		41.1	14.28
VC3CA2	M-08N-	1/2" Male NPT	1.20	65.0	22.22

Adjustment of Cracking Pressure



1. Unscrew "locking screw" counter-clockwise.
2. Slide "allen key" up to "adjustable screw" position.
3. Turn "adjustable screw";

To decrease cracking pressure  To increase cracking pressure

4. Move out "allen key" up to "locking screw" position.
5. Turn "allen key" clockwise.

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

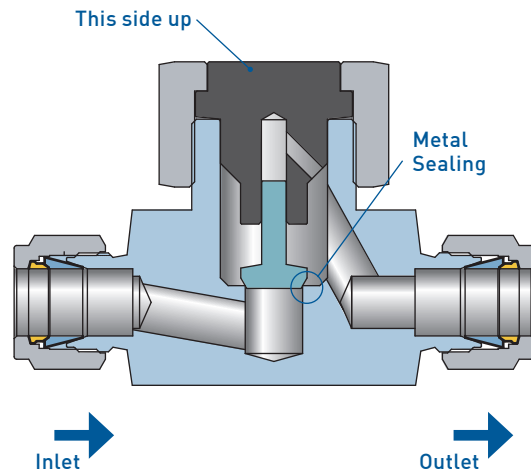
INSTRUMENT

Lift Check Valve VLC



Features

- Pressure rating up to 6000psig(413bar) @38°C(100°F)
- Temperature rating from -53°C(165°F) to 482°C(900°F)
- Compact body design.
- Metal to metal Sealing.
- Operation by Gravity.
- Lift check Valve must be mounted horizontally, placing the union nut on top.
- Reverse flow coefficient is limited to less than 0.1% of forward flow coefficient.



Cleaning

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

Testing

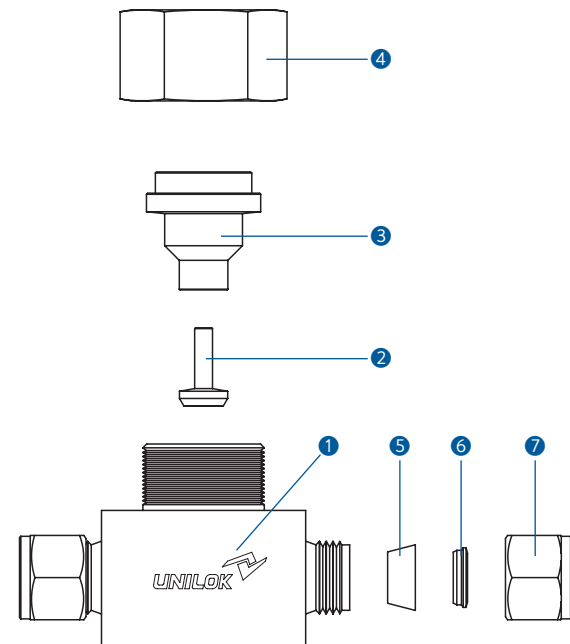
Every Lift check valve is 100% factory tested for proper functionality.

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.

Pressure – Temperature Ratings

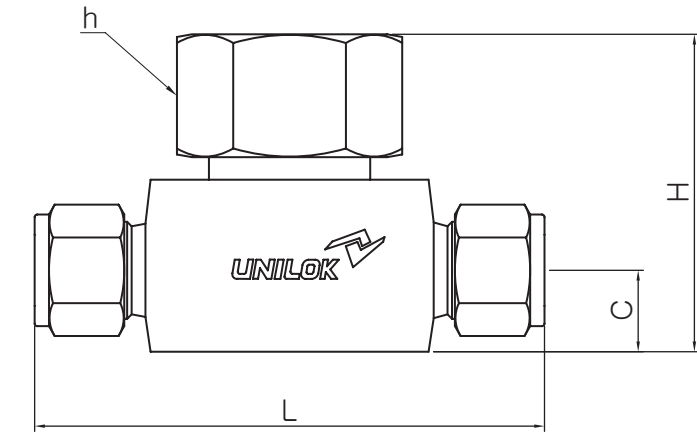
ASME Class	2500
Material Group	2.2
Material Name	316 SS
Temperature °C(°F)	Working Pressure bar (psig)
-53 to 37 (-65 to 100)	413 (6000)
93(200)	355(5160)
148(300)	321(4660)
204(400)	294(4280)
260(500)	274(3980)
315(600)	259(3760)
371(700)	248(3600)
426(800)	238(3460)
482(900)	225(3280)



Materials of Construction

No.	Description	Materials
1	BODY	316 SS
2	POPPET	630 SS
3	BONNET	316 SS
4	UNION NUT	316 SS
5	FRONT FERRULE	316 SS
6	BACK FERRULE	316 SS
7	NUT	316 SS

VLC series (6000 psig, No spring or elastomers)



Ordering Information & Dimensions

Part No.	End Connections		Orifice (mm)	CV	Dimensions (mm)				
	Inlet	Outlet			L	H	C	h	
								inch	mm
VLC1	U-04T-SS	1/4" UNILOK	4.0	0.3	61.0	37.3	9.9	7/8	22.22
	U-M06T-SS	6mm UNILOK			50.8				
	F-02N-SS	1/8" Female NPT			46.0				
	F-04N-SS	1/4" Female NPT							
	WB-04T-SS	1/4" Tube Butt Weld							
VLC2	U-04T-SS	3/8" UNILOK	6.4	0.64	71.9	47.0	12.7	1-1/4	31.75
	F-04N-SS	1/4" Female NPT			57.2				
	WB-06T-SS	3/8" Tube Butt Weld							
	WB-08T-SS	1/2" Tube Butt Weld							
VLC3	U-08T-SS	1/2" UNILOK	11.1	2.2	99.6	62.0	15.7	1-1/2	38.1
	U-12T-SS	3/4" UNILOK			79.2				
	F-06N-SS	3/8" Female NPT							
	F-08N-SS	1/2" Female NPT							
	WB-08T-SS	1/2" Tube Butt Weld			79.5				

Dimensions are for reference only and are subject to change without prior notice.
L is typical finger tight.

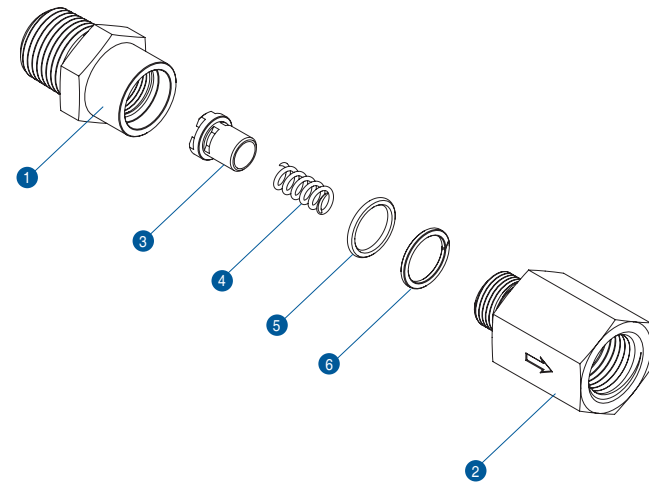
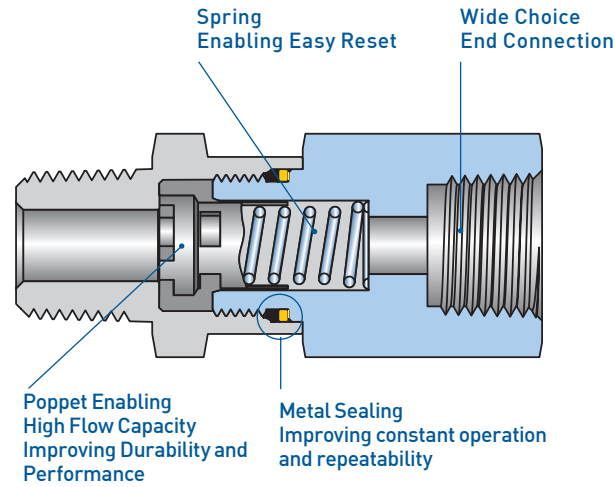
INSTRUMENT

Excess Flow Valve VE



Features

- Pressure rating up to 6000psig (413bar) @38°C (100°F)
- Temperature rating from -23°C(-10°F) to 204°C (400°F) with standard FKM o-ring
- Automatic reset by the bleed vent
- Simple spring and seal maintenance with 2 piece body design
- Limitless mounting orientation from spring loaded poppet actuation

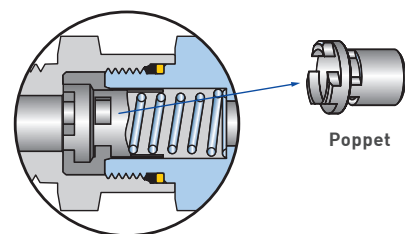


Materials of Construction

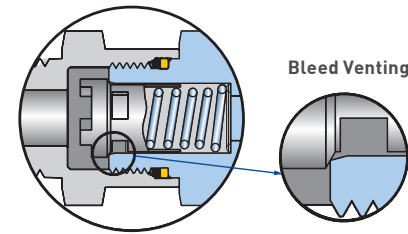
No.	Description	Materials	
Body Material		316SS	Alloy 400
1	Inlet Body	316SS	Alloy 400
2	Outlet Body	316SS	Alloy 400
3	Poppet	316SS	Alloy 400
4	Spring	302SS	Alloy 400
5	O-Ring	FKM	
6	Back-up Ring	PTFE	

Operation

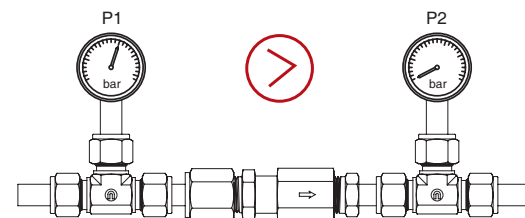
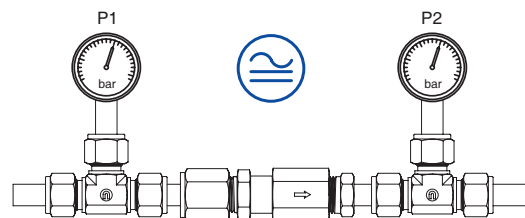
- The spring maintains the poppet in a normally opening position as long as the system pressure is balanced.
- If the system is unbalanced or the downstream pressure drops, the poppet will remain in closed position until the system pressure becomes equal.
- The bleed in the poppet will allow the pressure to slowly and automatically equalize if the downstream line is closed or repaired.
- When the pressure will be equal across the valve, the spring will reset the poppet to the open position.



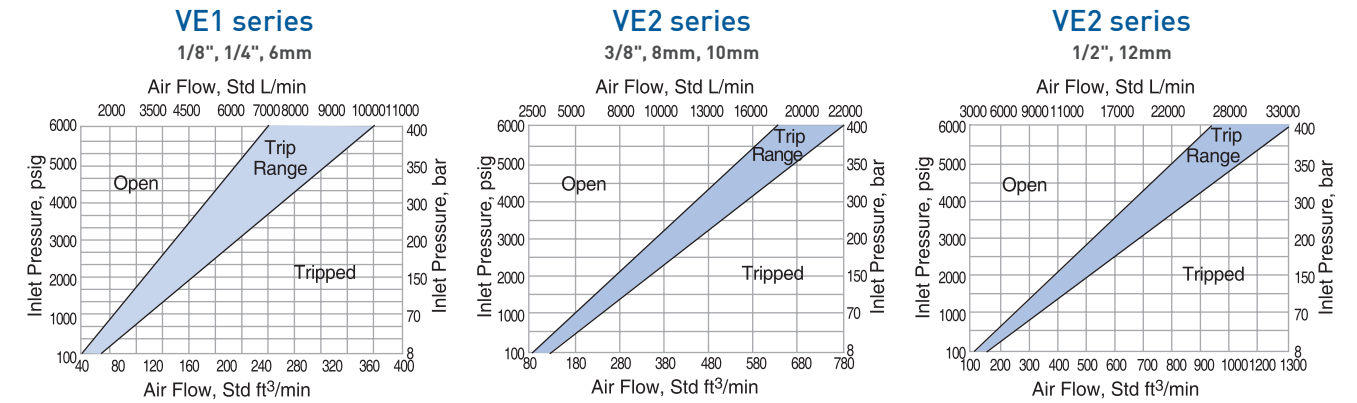
Open Position



Closed Position



Air Flow Data at 70°F(21°C)



Water Flow Data at 70°F(21°C)

Series	Connection Size	Cv	Trip Range	
			US gal/min	L/min
VE1	1/8", 1/4", 6mm	0.5	3.9~5.8	14.7~21.9
VE2	3/8", 8mm, 10mm	1.1	8.2~10.0	31.0~37.9
	1/2", 12mm	1.1	11.2~14.9	42.4~56.4

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.

Application

Prevent uncontrolled release of system fluid

Testing

Every VE series valve is 100% factory tested for proper functionality.

How To Order

UNILOK VE series excess flow valves are ordered by part number as shown below.

Example: The following part number, **VE1U-04T-SS** is designated for VE series excess flow valve with both 1/4", UNILOK tube fittings, 316SS.



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	1/4	3/8	1/2
	mm	6.35	9.52	12.70
Designator		04T	06T	08T

Body Materials	
SS	316SS
MO	Alloy 400

Other alloys are available upon request.

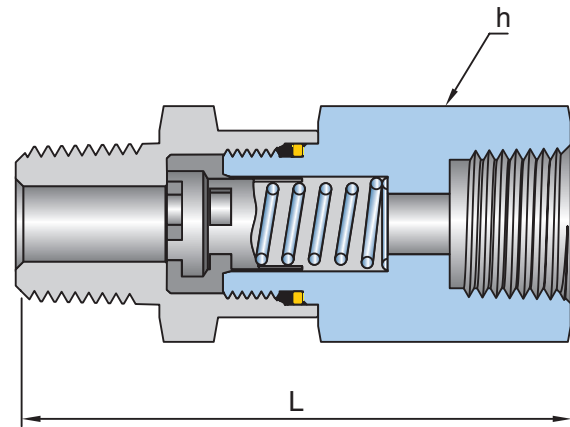
Metric Tube O.D. Designation					
Tube O.D.	mm	6	8	10	12
Designator		M06T	M08T	M10T	M12T

O-ring Materials	
None	FKM
E	Ethylene Propylene
N	Buna N
P	Neoprene
K	Kalrez

Seal kits are available for retrofit or maintenance. Contact UNILOK local distributors.

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

VE series



Temperature - Pressure Rating

Temperature Rating		Working Pressure	
°F	°C	psig	bar
100	37	6000	413
200	93	5160	355
250	121	4910	338
300	148	4660	321
400	204	4280	295

316SS body and Viton O-ring

VE2 series valves
 with 3/8" Female NPT - 5000psig(344bar)
 with 1/2" Female NPT - 4600psig(316bar)

Ordering Information & Dimensions

Part No.	End Connections		Dimensions (mm)		
	Inlet	Outlet	L	h	
VE1	U-04T-	1/4" UNILOK	61.7	17.4	
	U-M06T-	6mm UNILOK	61.7		
	F-02N-	1/8" Female NPT	47.5		
	F-04N-	1/4" Female NPT	53.8		
	M-02N-	1/8" Male NPT	45.5		
	M-04N-	1/4" Male NPT	55.1		
	MU-04N04T-	1/4" Male NPT	1/4" UNILOK		58.4
	MF-04N-	1/4" Male NPT	1/4" Female NPT		54.1
VE2	U-06T-	3/8" UNILOK	69.9	25.4	
	U-08T-	1/2" UNILOK	75.4		
	U-M08T-	8mm UNILOK	68.6		
	U-M10T-	10mm UNILOK	71.7		
	U-M12T-	12mm UNILOK	75.2		
	F-06N-	3/8" Female NPT	64.8		
	F-08N-	1/2" Female NPT	77.0	27.0	
	M-06N-	3/8" Male NPT	59.9		
	M-08N-	1/2" Male NPT	69.3		
	MU-06N06T-	3/8" Male NPT	3/8" UNILOK		65.0
	MU-08N08T-	1/2" Male NPT	1/2" UNILOK		72.4
	MF-06N-	3/8" Male NPT	3/8" Female NPT		62.5
	MF-08N-	1/2" Male NPT	1/2" Female NPT		73.4

Outlet body dimension (h) of VE2MF-08N-SS is 27mm.
 ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VE series valves. Add "R" as a suffix instead of "N"

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

O-ring Seal Temperature Rating

O-ring Materials	Temperature Rating	
	°C	°F
FKM	-28 ~ 204	-18 ~ 400
Ethylene Propylene	-45 ~ 135	-49 ~ 275
Buna N	-20 ~ 105	-4 ~ 221
Neoprene	-40 ~ 121	-40 ~ 250
Kalrez	-20 ~ 315	-22 ~ 599

Important Notification

Proper installation, materials compatibility, operation and maintenance of these valves are the responsibility of the user.

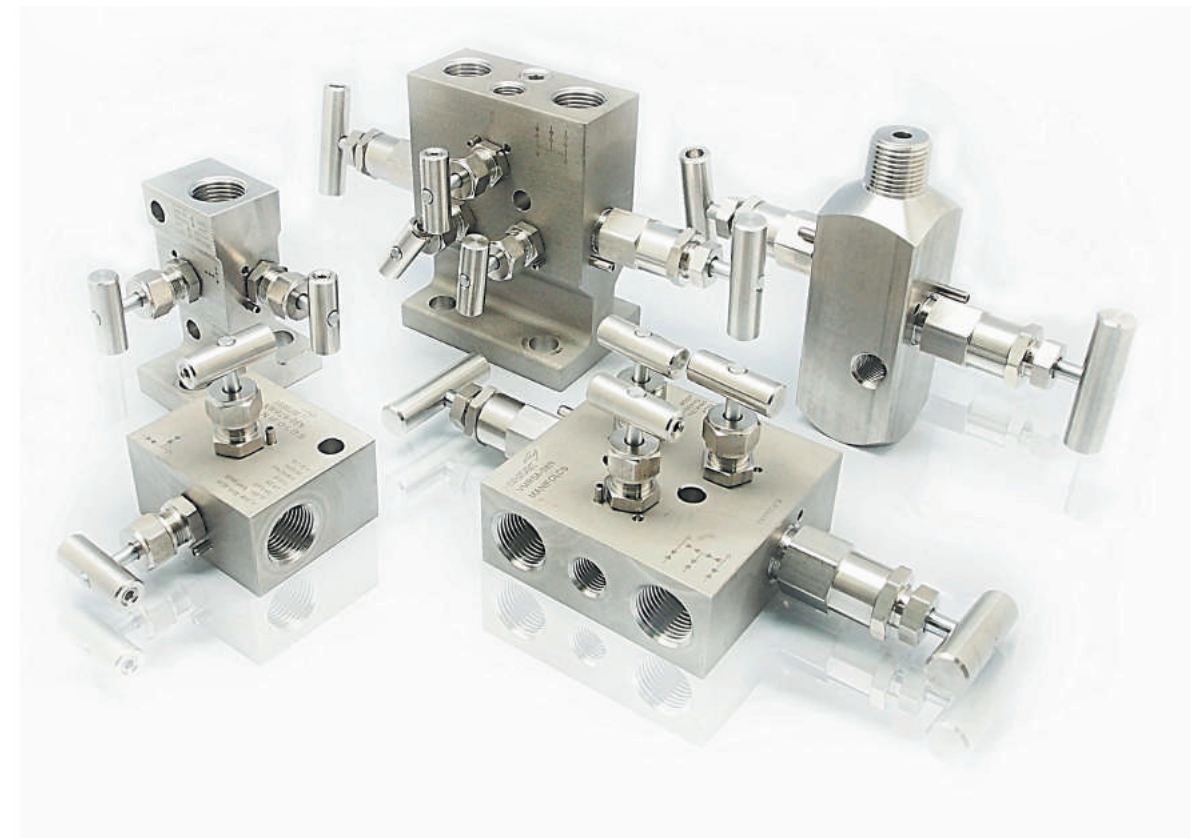
The total system design must be taken into consideration to ensure optimal performance and safety.

Best Engineering For You

Manifolds Valve VM

Manifolds Valves

VM Manifolds Valve	191
VG Gauge Root Valve	205
VL Bleed Valve	209



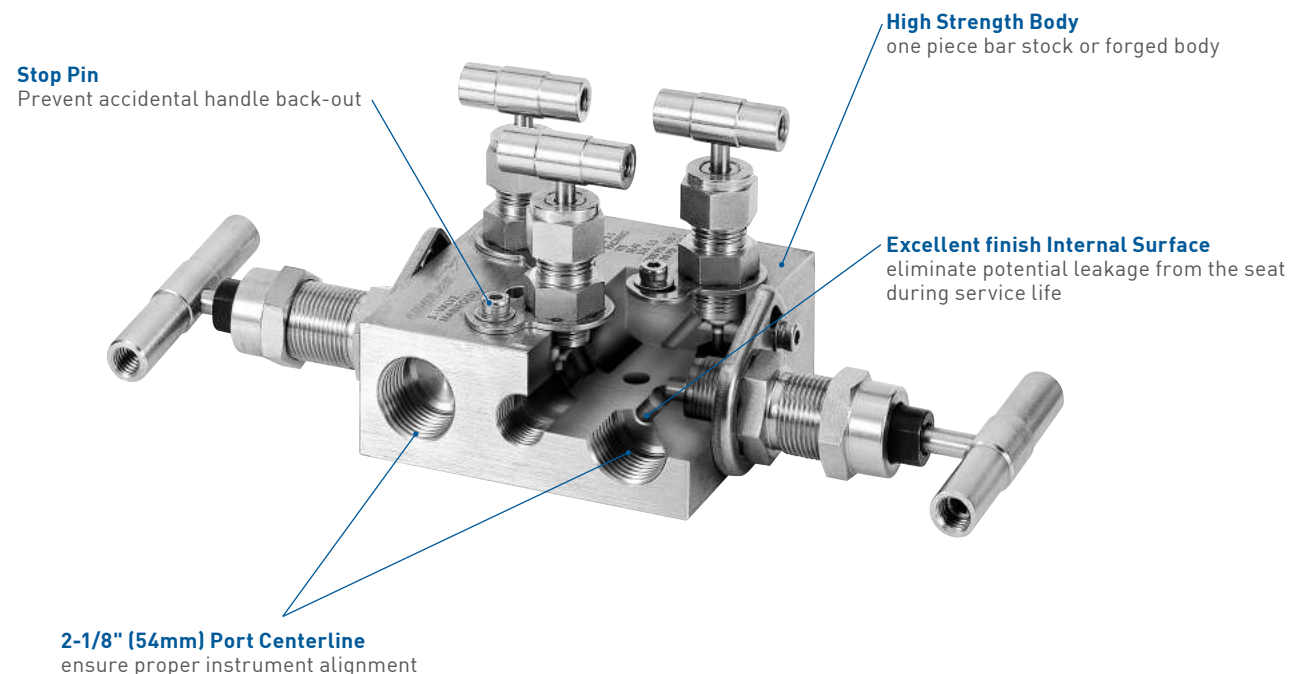
Manifolds Valve VM

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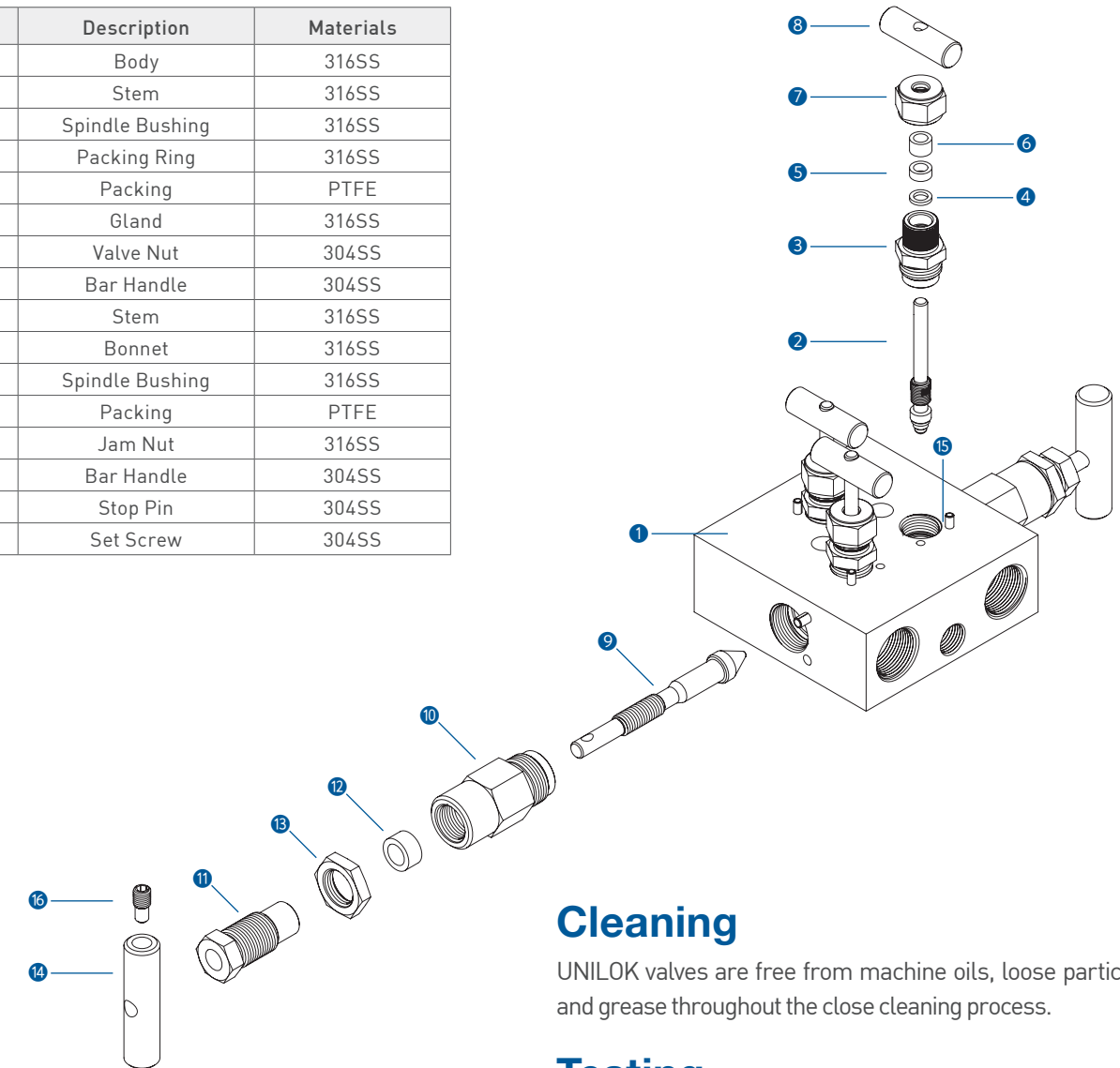
Features

- 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
- Hardened stem threads and one piece of bar stock or forged body for long cycle life
- Bonnet stop pin prevents accidental handle back-out
- Non-rotating stem for leak-tight shut-off and long cycle life
- Burr-free internal surface
- Manifold feature a 4:1 safety factor
- 2-1/8" (54mm) port centerline dimension for proper alignment



Materials of Construction

No.	Description	Materials
1	Body	316SS
2	Stem	316SS
3	Spindle Bushing	316SS
4	Packing Ring	316SS
5	Packing	PTFE
6	Gland	316SS
7	Valve Nut	304SS
8	Bar Handle	304SS
9	Stem	316SS
10	Bonnet	316SS
11	Spindle Bushing	316SS
12	Packing	PTFE
13	Jam Nut	316SS
14	Bar Handle	304SS
15	Stop Pin	304SS
16	Set Screw	304SS



Cleaning

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

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 is available as optional

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.

Application

2 Way Manifolds - Static pressure and liquid level applications

3 & 5 Way Manifolds - Most differential pressure transmitters with both female and flange process impulse line connections

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.

How To Order

UNILOK VM series manifolds valves are ordered by part number as shown below.

Example: The following part number, **VMR2A-08N-SS** is designated for VMR series manifolds valve with both 1/2" Female NPT Threads, 316SS, PTFE packing.



Valve Type	
MR	Remote Mounting
MD	Direct Mounting
MFL	Direct Mounting with Single Flange
MFLD	Direct Mounting with Double Flanges

Bonnet Valve Number & Configuration	
2	2 Way
3	3 Way
5	5 Way

For more details, refer to Visual Index of Manifolds Valve on page 195.

Connection Size		
Pipe Size Designation (NPT)		
Pipe Size	1/2	1/4
Designator	08N	04N

1/4" Female NPT, bleed port is available as optional.

Body Materials	
SS	316SS
MO	Alloy 400

Other alloys are available upon request.

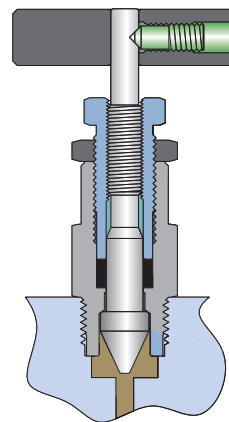
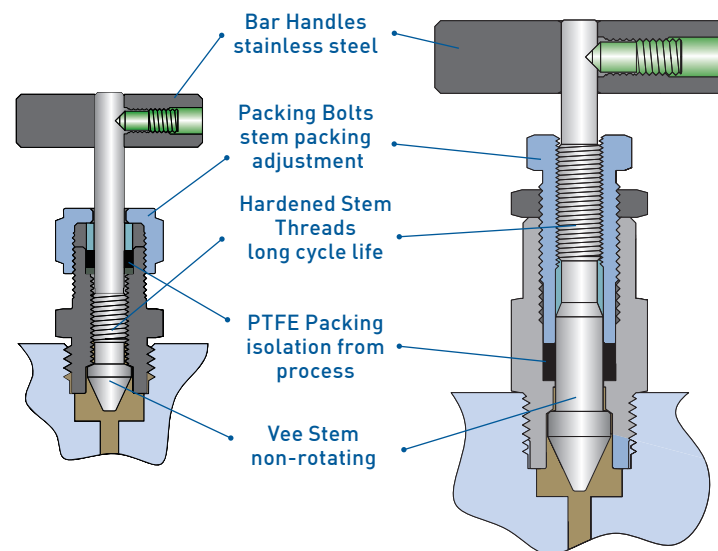
Packing Materials	
None	PTFE
GF	Grafoil

Bonnet Specification

Small Bonnet Valve
Orifice - 3.2

Large Bonnet Valve
Orifice - 6.4

Medium Bonnet Valve
Orifice - 5.0



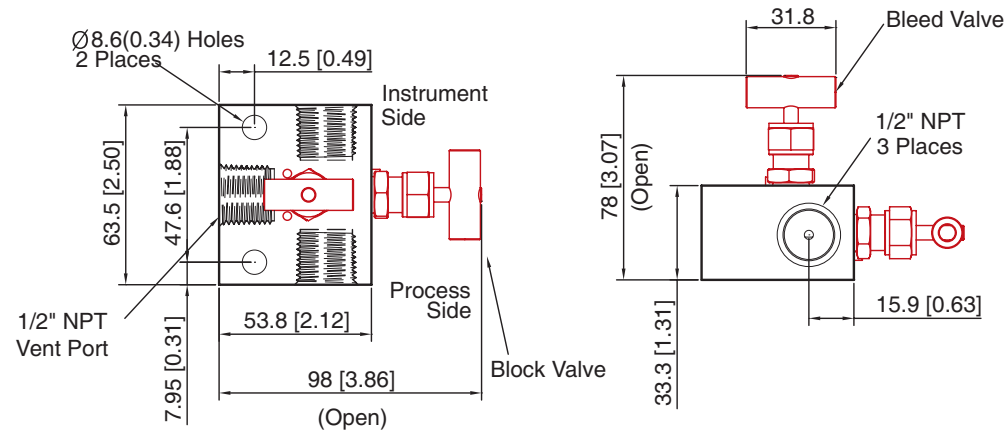
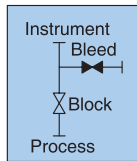
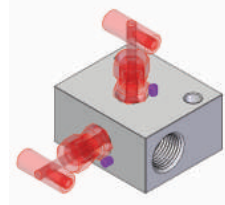
Visual Index of Manifolds Valve

	Remote Mounting	Direct Mounting
2 Way	<p>VMR2A VMR2B</p>	<p>VMD2A VMD2B VMFL2</p>
3 Way	<p>VMR3A</p>	<p>VMD3A VMD3B VMD3C VMFL3 VMFLD3</p>
5 Way	<p>VMR5A</p>	<p>VMD5A VMD5B VMFL5 VMFLD5</p>

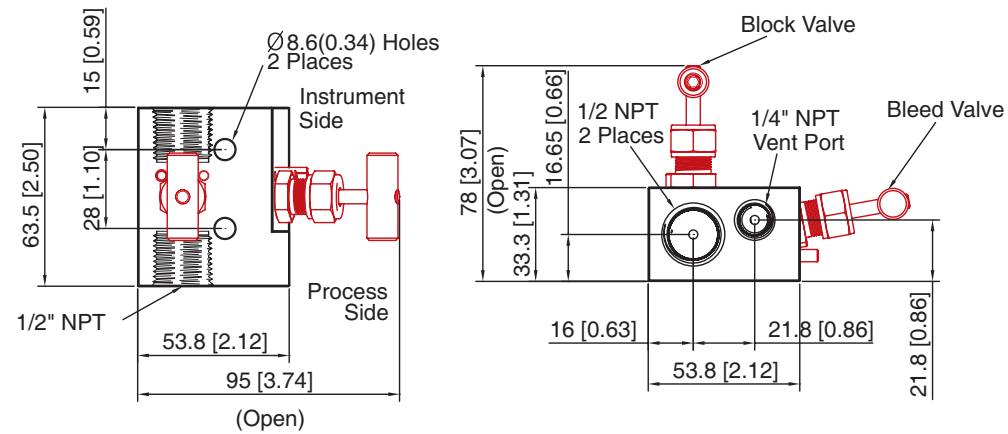
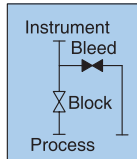
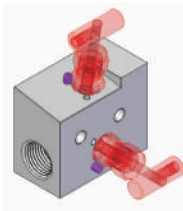
VMR series

(2 & 3 Way, Remote Mounting Type)

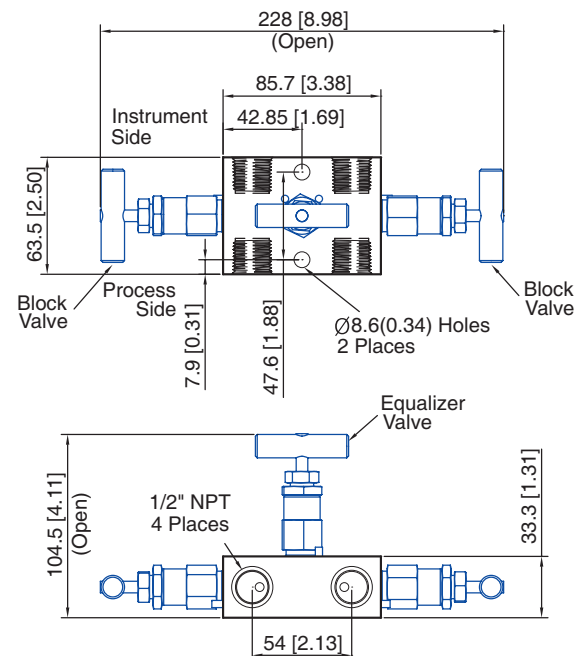
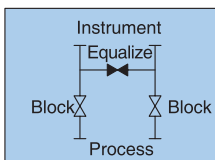
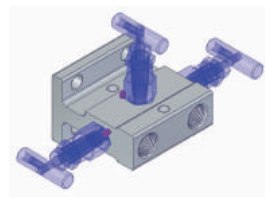
VMR2A-08N-



VMR2B-08N-



VMR3A-08N-

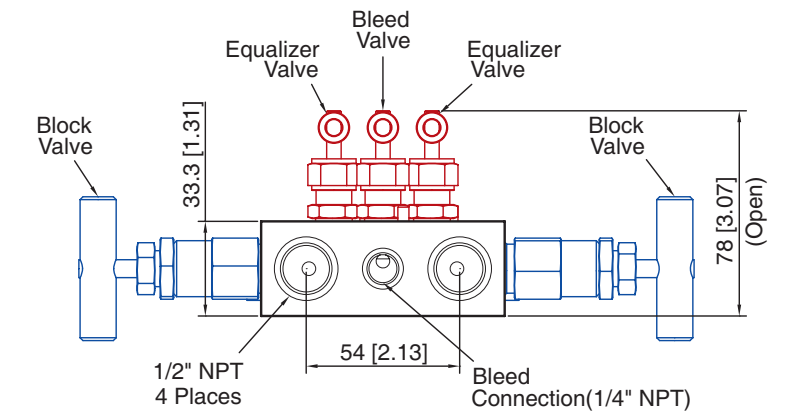
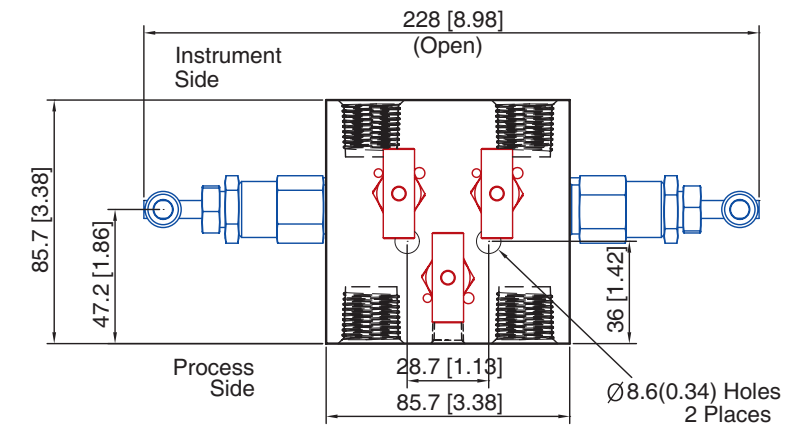
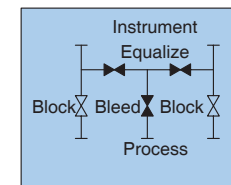
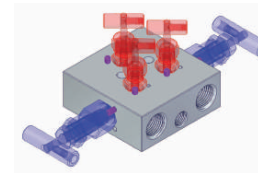


Dimensions are for reference only and are subject to change without prior notice.

VMR series

(5Way, Remote Mounting Type)

VMR5A-08N-



Pressure- Temperature Ratings by Packing Materials

Packing Material	Body Material	Temperature Rating		Pressure Rating at 37°C (100°F)		Pressure Rating at Maximum Temperature			
		°C	°F	psig	bar	psig	bar	°C	°F
PTFE	316SS	-54~232	-65~450	6000	413	4130	285	232	450
	Alloy 400	-54~232	-65~450	5000	345	3970	274	232	450
Grafoil	316SS	-54~648	-65~1200	6000	413	1715	118	648	1200
	Alloy 400	-54~260	-65~500	5000	345	3970	274	260	500

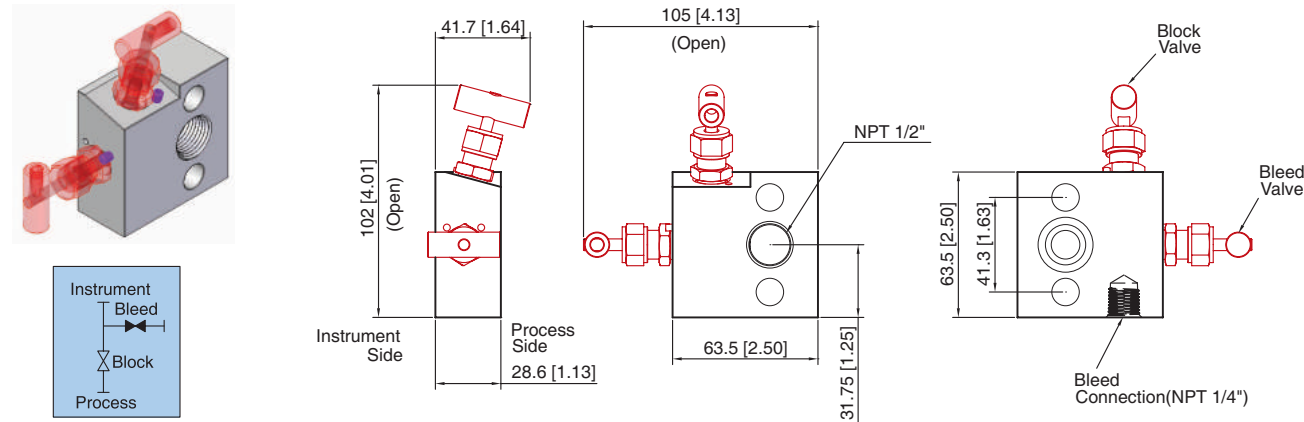
Alloy 400/Monel is not applicable over 260°C (500°F).

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

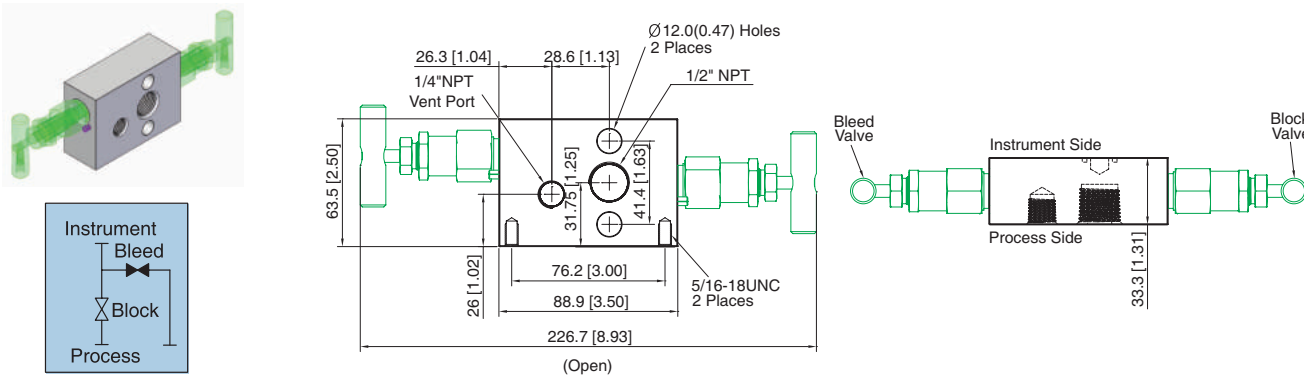
VMD series

(2 & 3 Way, Direct Mounting Type with Block Flange)

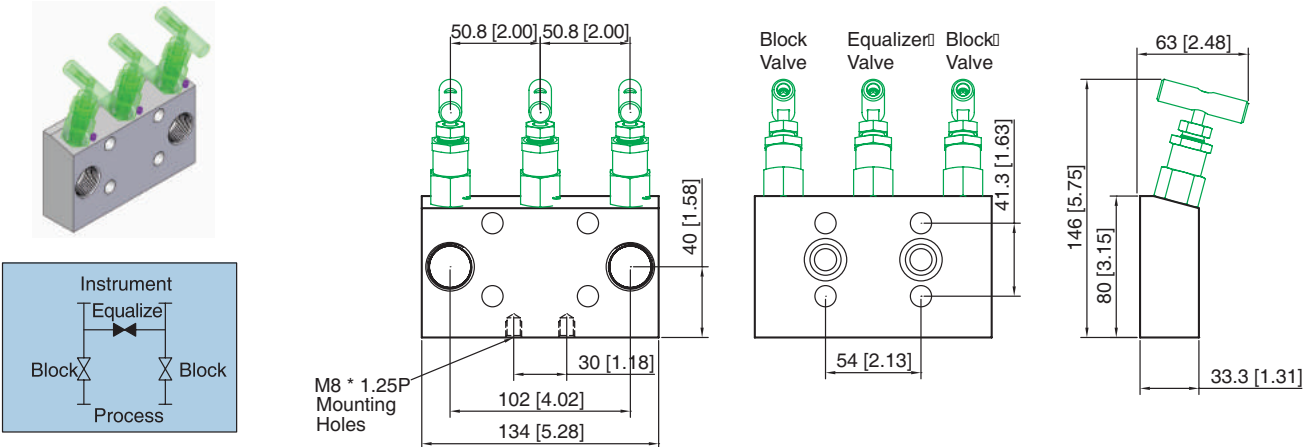
VMD2A-08N- (with single block flange)



VMD2B-08N- (with single block flange)



VMD3A-08N- (with single block flange)

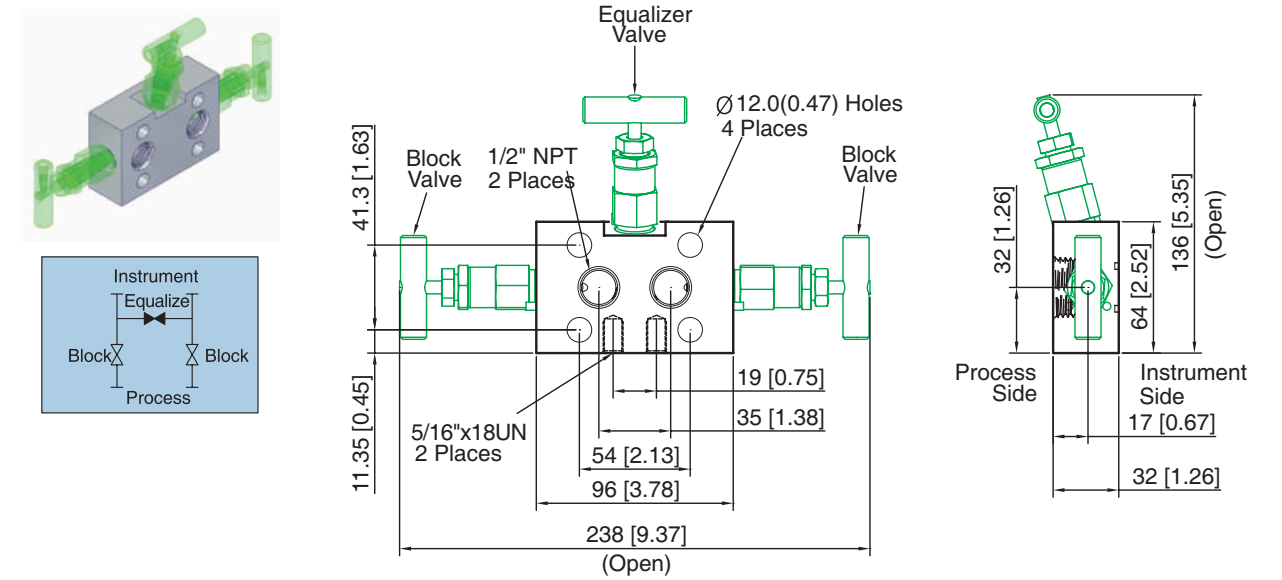


Dimensions are for reference only and are subject to change without prior notice.

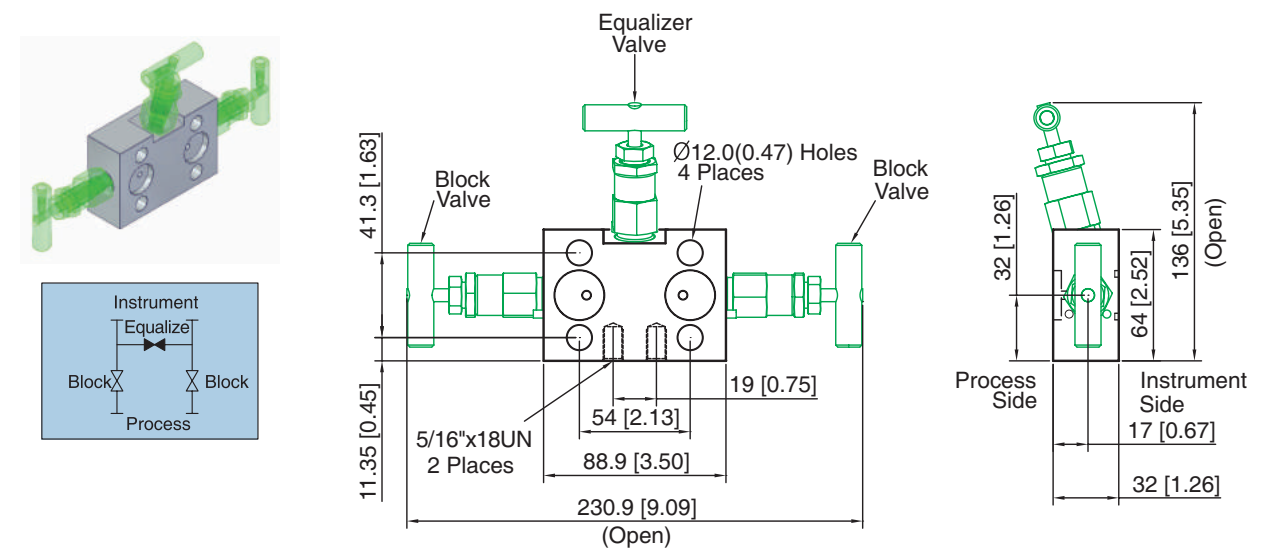
VMD series

(3Way, Direct Mounting Type with Block Flange)

VMD3B-08N- (with single block flange)



VMD3C- (with double block flange)

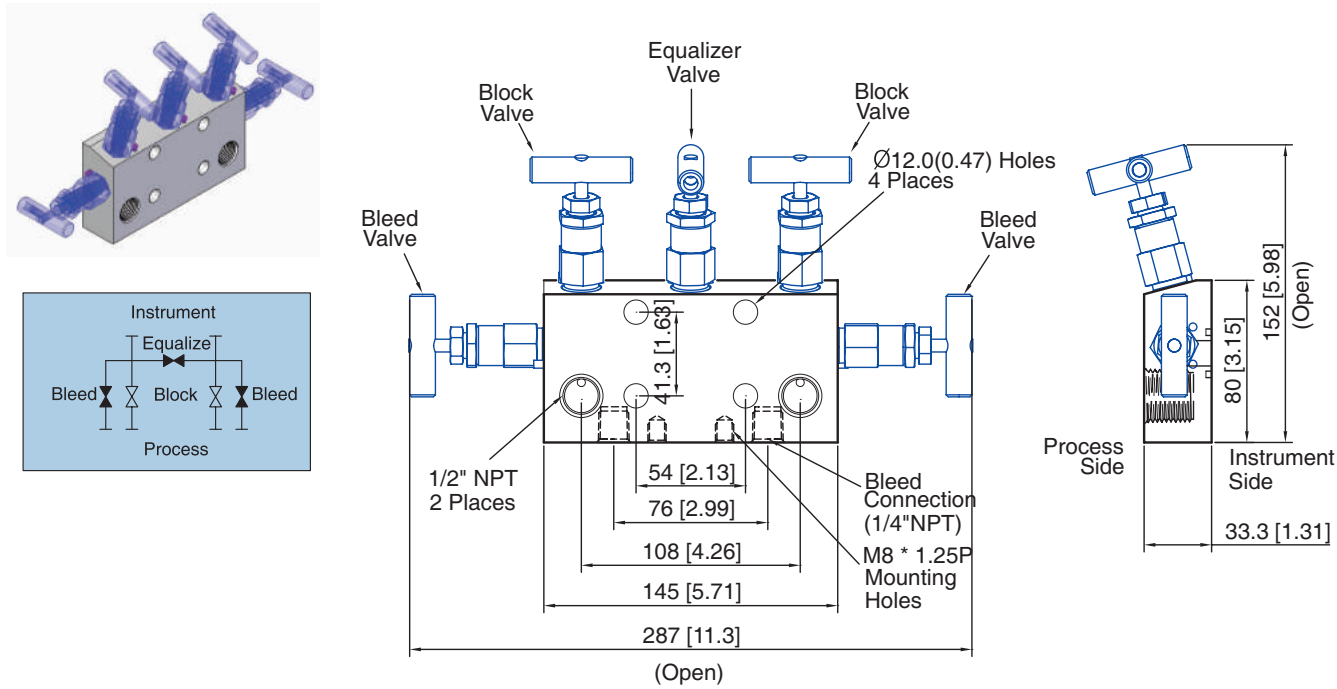


Dimensions are for reference only and are subject to change without prior notice.

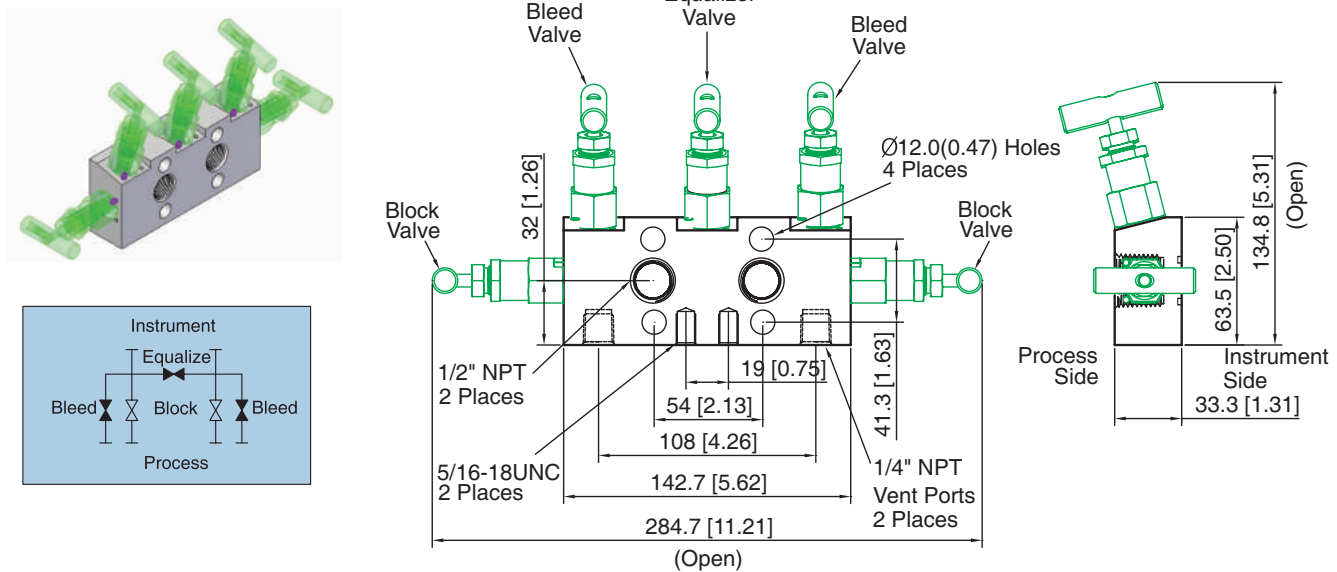
VMD series

(5Way, Direct Mounting Type with Block Flange)

VMD5A-08N- (with single block flange)



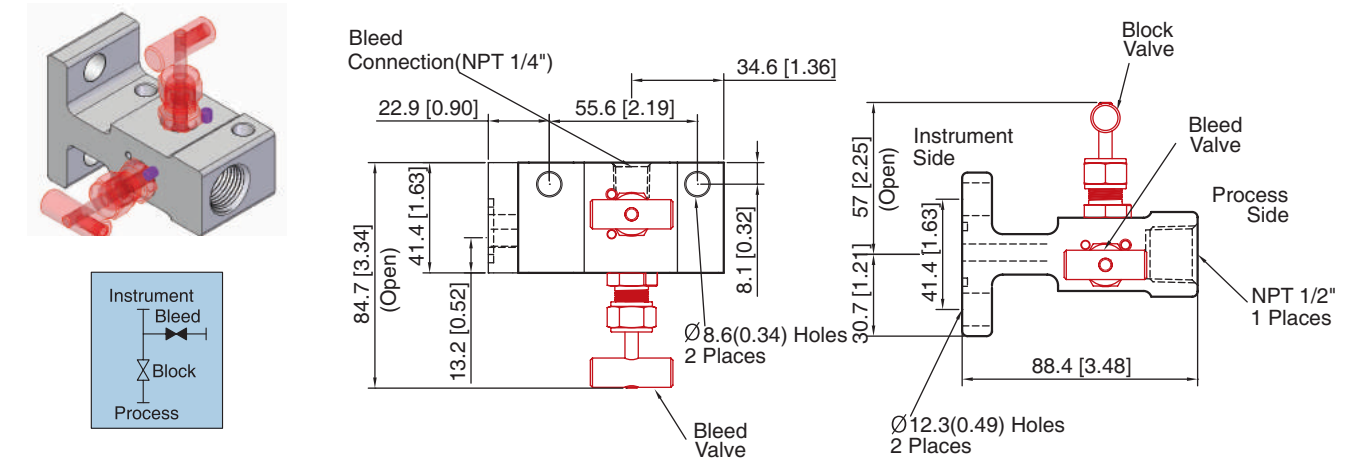
VMD5B-08N- (with single block flange)



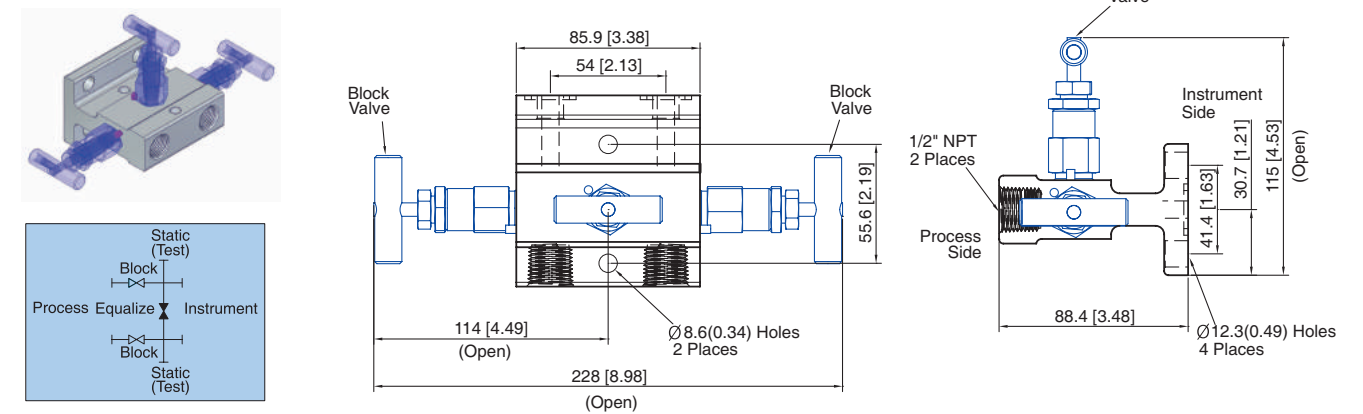
VMFL series

(2 & 3 Way, Direct Mounting Type with Flange)

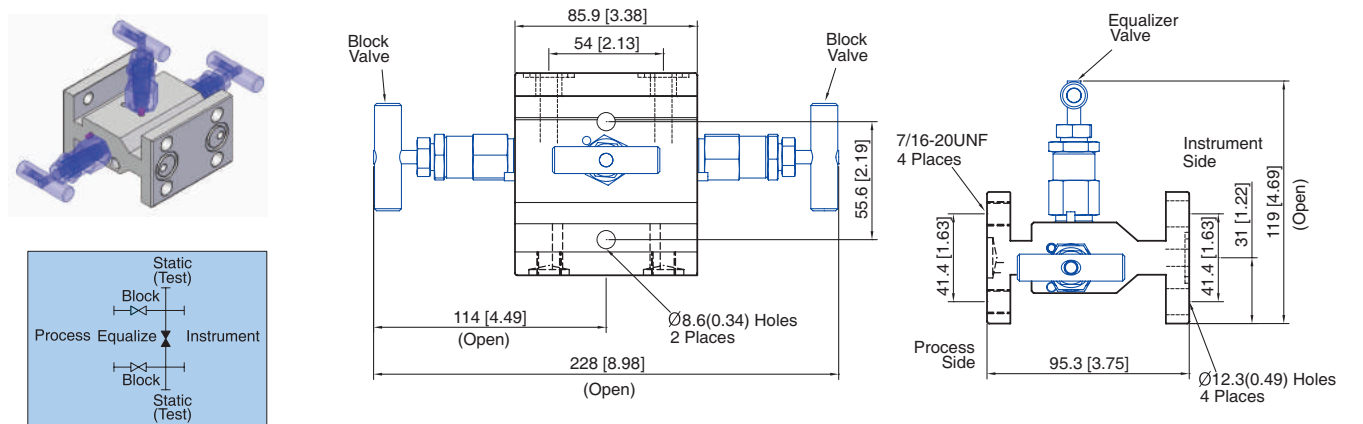
VMFL2-08N- (with single flange)



VMFL3-08N- (with single flange)



VMFLD3- (with double flange)



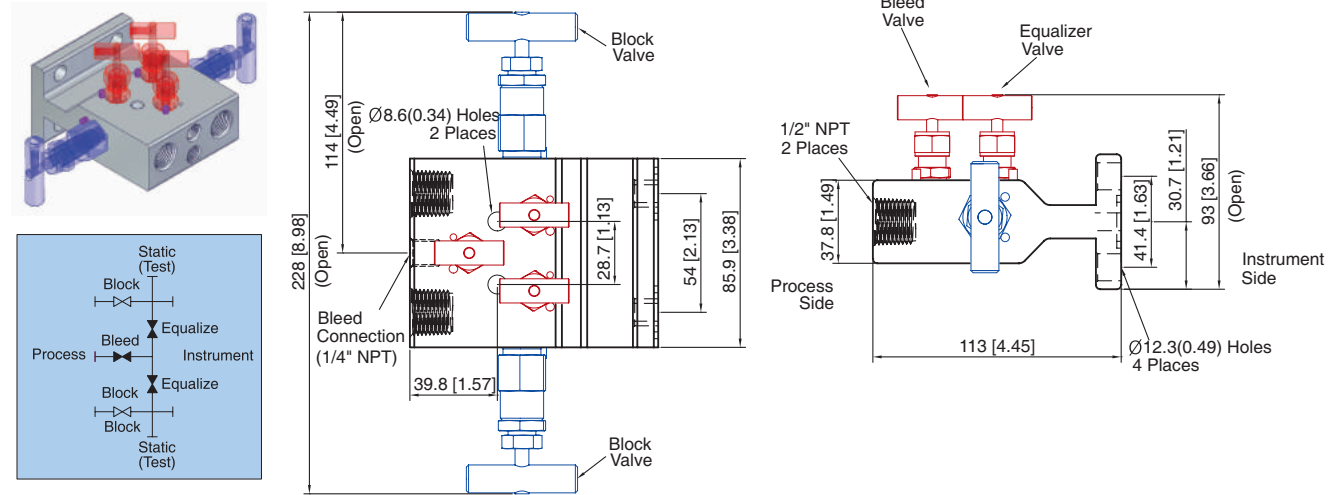
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Dimensions are for reference only and are subject to change without prior notice.

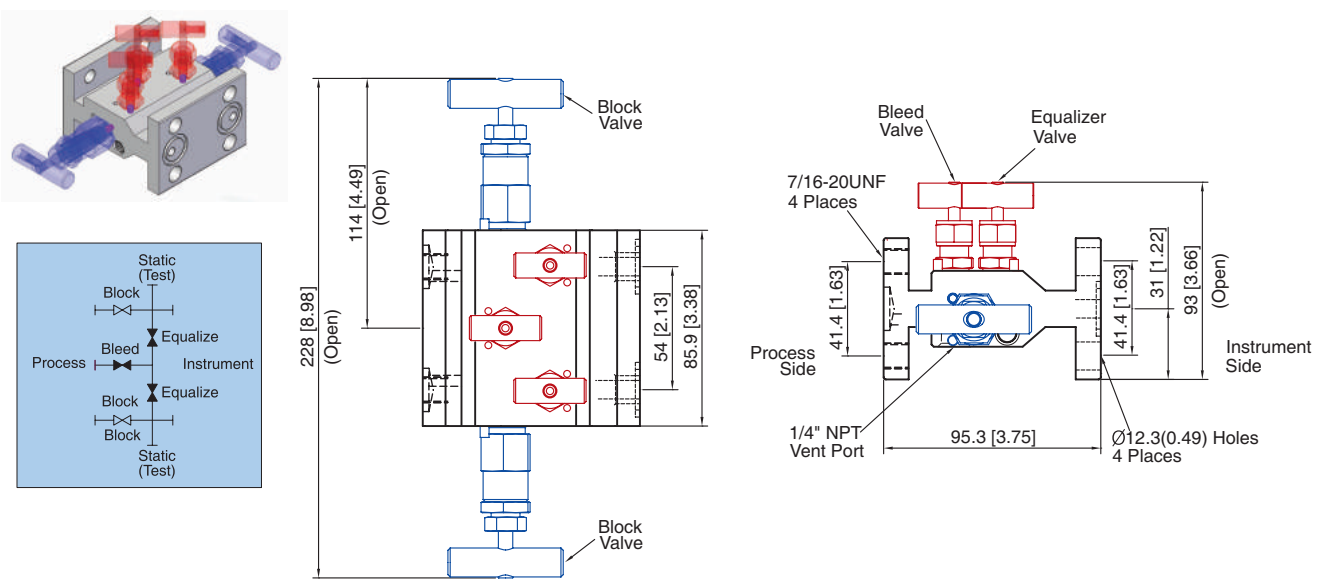
VMFL series

(5Way, Direct Mounting Type with Flange)

VMFL5-08N- (with single flange)



VMFLD5- (with double flange)



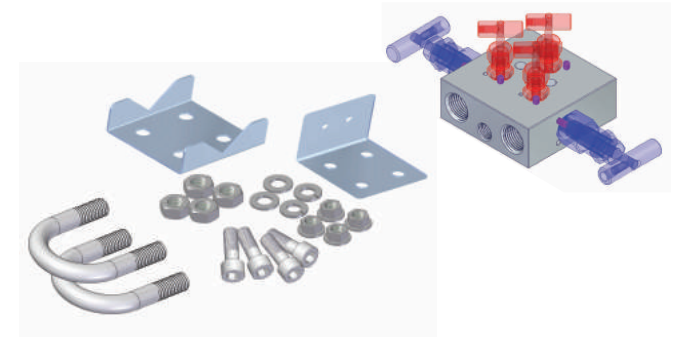
Dimensions are for reference only and are subject to change without prior notice.

Pressure - Temperature Ratings of 316SS Construction

Temperature		Working Pressure			
		PTFE		Grafoil	
°C	°F	psig	bar	psig	bar
37	100	6000	413	6000	413
93	200	5160	355	5160	355
121	250	4910	338	4910	338
148	300	4660	321	4660	321
176	350	4470	307	4470	307
204	400	4280	294	4280	294
232	450	4130	284	4130	284
260	500	-	-	3980	274
287	550	-	-	3870	266
315	600	-	-	3760	259
343	650	-	-	3700	254
371	700	-	-	3600	248
398	750	-	-	3520	242
426	800	-	-	3460	235
454	850	-	-	3380	232
482	900	-	-	3280	225
510	950	-	-	3220	221
537	1000	-	-	3030	208
565	1050	-	-	3000	206
593	1100	-	-	2685	184
621	1150	-	-	2285	157
648	1200	-	-	1715	118

Mounting Bracket Kit

Mounting bracket kit contains bracket, U-bolt and nut, bolt, nut and washer for horizontal and vertical manifold mounting. Materials are 304SS.



Part number for ordering is VMP-BK-SS.

Bonnet Valve Kit

Bonnet valves are available for replacement.

Part Number	Bonnet Valve Size	Packing Material
VMP-BV-S	Small	PTFE
VMP-BV-M	Medium	
VMP-BV-L	Large	

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

INSTRUMENT

Gauge Root Valve VG



Features

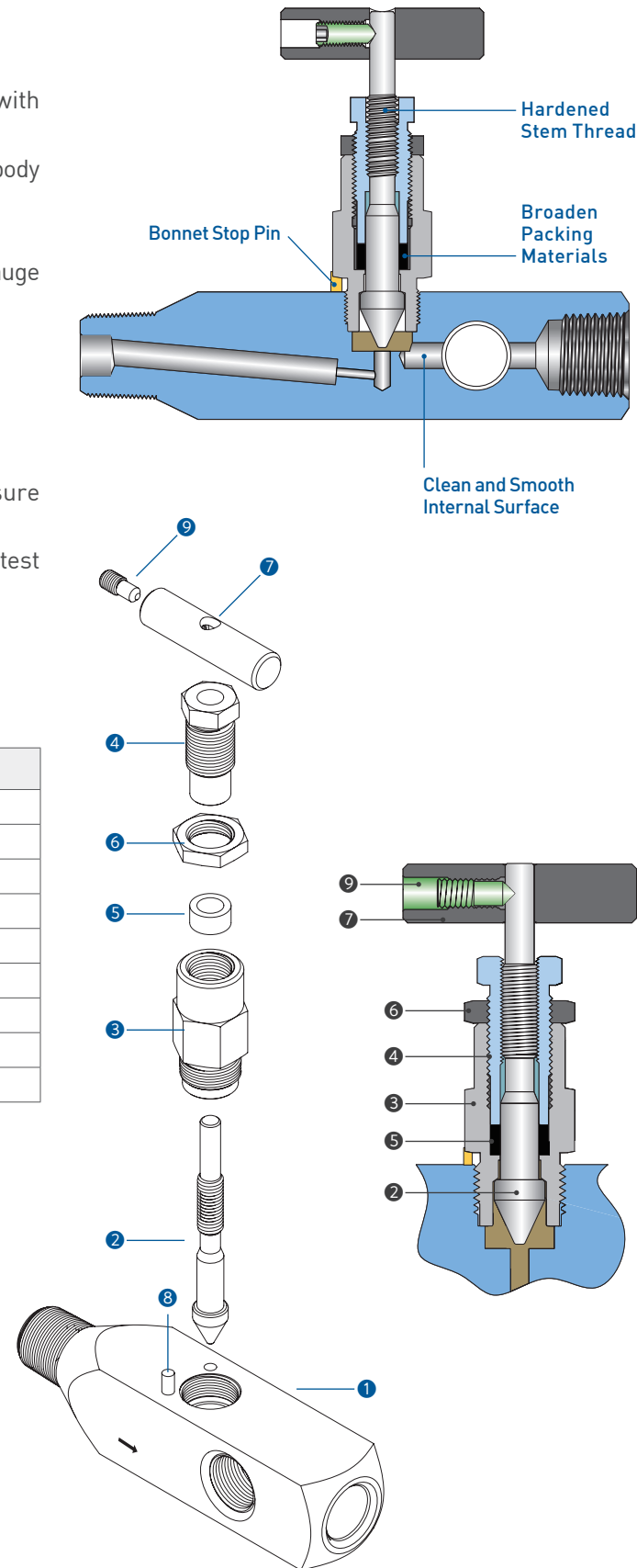
- Pressure rating up to 6000psig (413bar) @38°C (100°F)
- Temperature rating from -53°C(-65°F) to 232°C (450°F) with standard PTFE packing, up to 648°C(1200°F) with Grafoil packing
- Hardened stem threads and one piece of bar stock body for long cycle life
- Bonnet stop pin prevents accidental handle back-out
- Multiple outlets for accommodation of a variety of gauge positions

Application

- A safe and economical method of installing pressure switches, gauges and differential transmitters
- Block and bleed for purge valve, sampling line and test pressure source

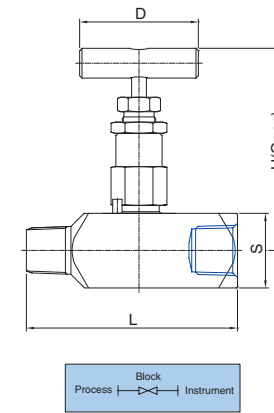
Materials of Construction

No.	Description	Materials
1	Body	316SS
2	Stem	316SS
3	Bonnet	316SS
4	Spindle Bushing	316SS
5	Packing	PTFE
6	Jam Nut	316SS
7	Bar Handle	304SS
8	Stop Pin	304SS
9	Set Screw	304SS



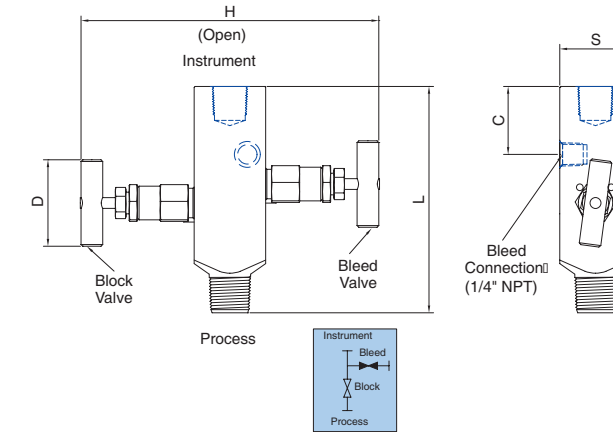
VG series

Gauge Valve



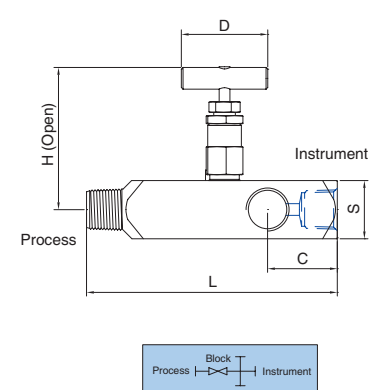
VG2 series

2 Gauge Valve



VGR series

Gauge Root Valve



Ordering Information & Dimensions

Part No.	End Connections		Dimensions (mm)				
	Inlet	Outlet	L	C	S	H	D
VG	MF-08N-SS	1/2" Male NPT	90.0	36.2	32.0	87.0	50.6
	MF-12N08N-SS	3/4" Male NPT					
VG2	MF-08N-SS	1/2" Male NPT	178.0	38.1	32.0	87.0	
VGR	MF-08N-SS	1/2" Male NPT	137.0				
VGRE	MF-08N-SS	1/2" Male NPT	184.0	38.1	32.0	87.0	
	MF-12N08N-SS	3/4" Male NPT					

VGRE - Extended body gauge root valve. L is only longer than VGR series.

Grafoil packing is available as option. To order, add-**GF** to the end of part number. Alloy 400/Monel is available upon request. But, it is not applicable 260°C (500°F).

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.

Cleaning

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

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.

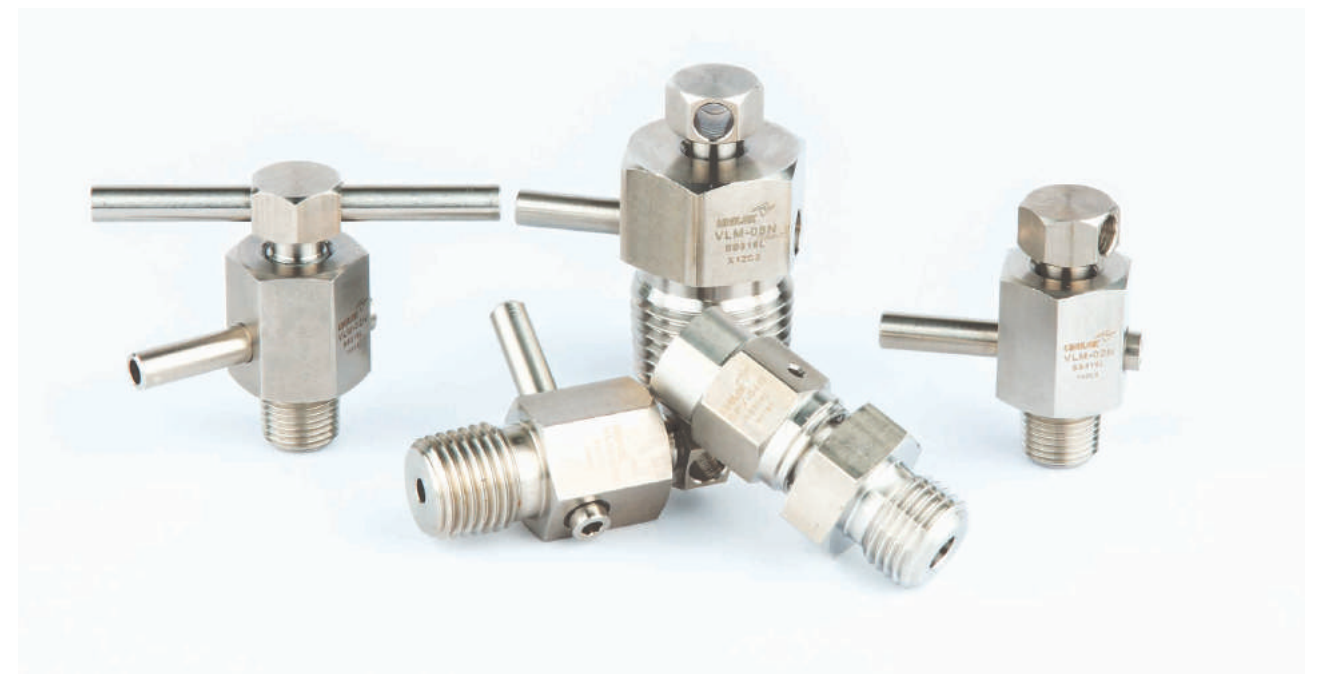
Important Notification

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.

INSTRUMENT

Bleed Valve VL



Features

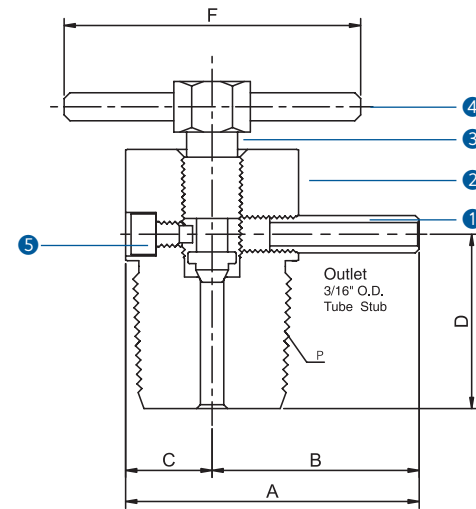
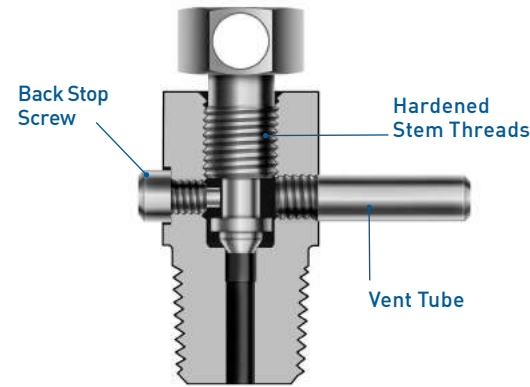
- Pressure rating up to 10000psig (689bar) @38°C (100°F)
- Temperature rating from -53°C(-65°F) to 454°C (850°F) with 316SS
- Hardened stem threads and stem for long cycle life
- Back stop screw prevents accidental stem back-out
- Vent tube directs excess liquid or gas from system lines

Application

Using with UNILOK Manifolds Valves or Gauge/Root Valves not only to vent before disassemble of instrument device but also to calibrate control device easily

Materials of Construction

No.	Description	Materials
1	Vent Tube	316SS
2	Body	316SS
3	Stem	316SS
4	Handle(Optional)	304SS
5	Back Stop Screw	316SS



Ordering Information & Dimensions

Part No.	End Connections	Dimensions (mm)					
		A	B	C	D	F	
VL	M-02N	1/8" Male NPT	34.0	23.9	10.4	19.1	51.8
	M-04N	1/4" Male NPT					
	M-06N	3/8" Male NPT	37.3	26.2	11.2	22.4	
	M-08N	1/2" Male NPT					

Bar Handle : add **-B**, VLM-08N-**B**-SS

Barbed Vent Tube : add **-V**, VLM-04N-**V**-SS

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.

Instrument

Relief Valve VR



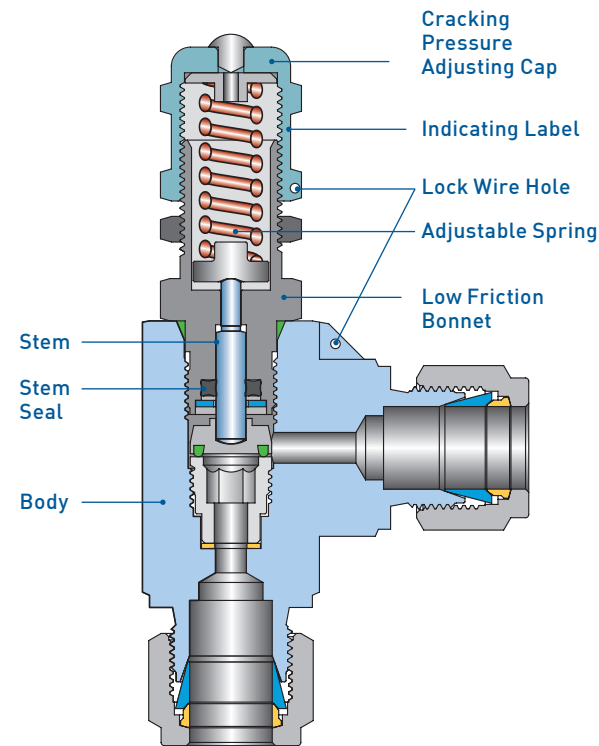
Relief Valve VR

CONTENTS

Features	212	How To Order	213
Materials of Construction	212	Ordering Information & Dimensions	214
Cleaning	213	Specification	214
Testing	213	Reseal Pressure	214
Important Notification	213	Cracking Pressure Range	214

Features

- Compact designed one piece body to reduce space
- Low friction bonnets to increase both accuracy and to improve consistency of cracking and reseal pressure
- Lock wire to secure a given pressure setting
- Identifying color coded springs and labels indicate spring cracking pressure
- Selective and replaceable springs with narrow pressure ranges
- RA3 series - One spring for all set pressure range
- RA6 series - 7 Replaceable springs for a variable pressure range

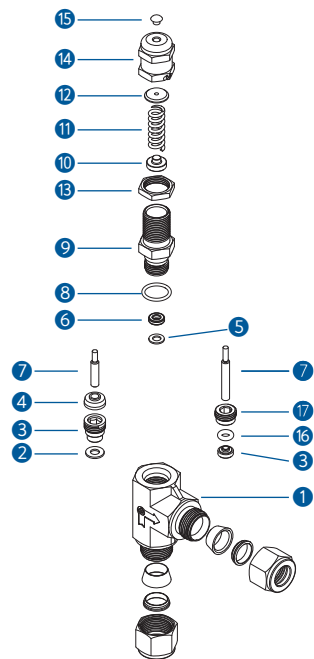


VR3 series

3000psig (207bar)

VR6 series

6000psig (413bar)



Materials of Construction

No.	Description	Materials	
		VR3	VR6
1	Body	304SS	316SS
2	Gasket	304SS Teflon coat	-
3	Seat	316SS	316SS
4	Bonded Disc	316SS	316SS
5	Washer	316SS	316SS
6	Stem Seal	FKM	FKM
7	Stem	316SS	316SS
8	O-ring	FKM	FKM
9	Bonnet	316SS	316SS
10	Lower Spring Support	316SS	316SS
11	Spring	302SS	302SS
12	Upper Spring Support	316SS	316SS
13	Lock Nut	304SS	304SS
14	Cap	316SS	316SS
15	Plug	316SS	316SS
16	O-ring	-	FKM
17	Insert	-	316SS

Cleaning

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

Testing

Every relief valve is 100% factory tested with nitrogen for cracking and reseal performance.

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.

UNILOK relief valves that were not actuated for some time may contain pressure higher than the set pressure.

Cracking pressure is not affected by the outlet pressure.

How To Order

UNILOK VR series relief valves are ordered by part number as shown below.

Example: The following part number, **VR3MU-08N08T-SS** is designated for VR3 series low pressure relief valve with 1/2" male NPT x 1/2" UNILOK tube fitting, 316SS.



Valve Type	
R3	Low Pressure, 300psig
R6	High Pressure, 6000psig

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	1/4	3/8	1/2
	mm	6.35	9.52	12.70
Designator		04T	06T	08T

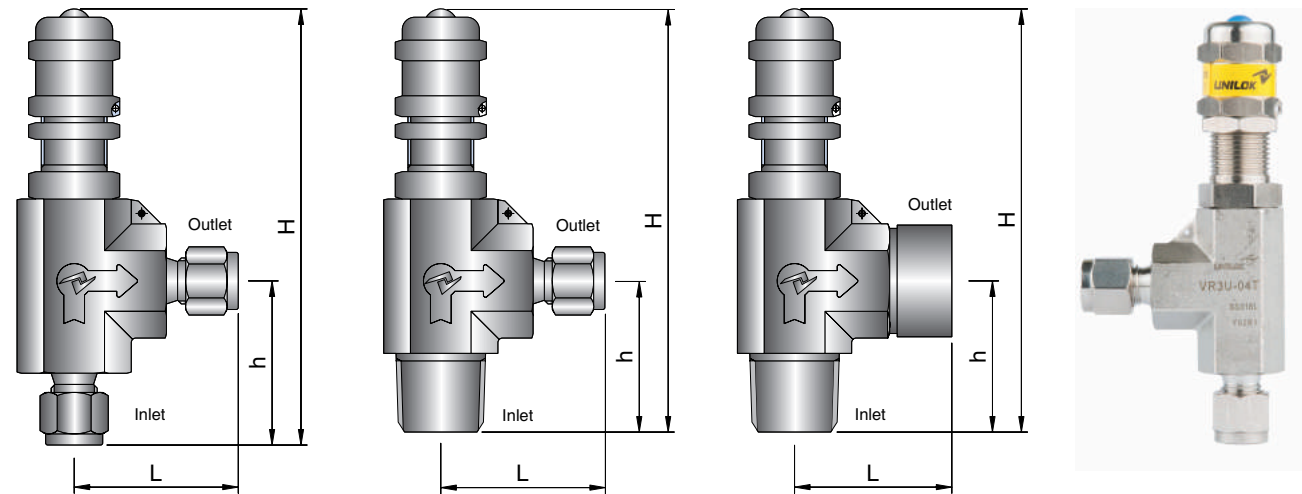
Metric Tube O.D. Designation				
Tube O.D.	mm	6	8	12
	Designator	M06T	M08T	M12T

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

Spring Type		
Designator	Color	Cracking Pressure (psig)
Y	Yellow	350 ~ 750
P	Purple	750 ~ 1500
O	Orange	1500 ~ 2250
B	Brown	2250 ~ 3000
W	White	3000 ~ 4000
R	Red	4000 ~ 5000
G	Green	5000 ~ 6000

Options are only for VR6 series. VR3 series spring is yellow color and cracking pressure range with 10~250psig.

VR series



Ordering Information & Dimensions

Part No.	End Connections		Dimensions (mm)				
	Inlet	Outlet	Orifice	L	h	H	
VR3 or VR6	U-04T- 1/4" UNILOK		VR3 : 4.8	39.6	39.6	109.4	
	U-06T- 3/8" UNILOK			43.8	43.8	113.6	
	U-08T- 1/2" UNILOK			46.5	46.5	116.4	
	U-M06T- 6mm UNILOK			39.6	39.6	109.4	
	U-M08T- 8mm UNILOK			46.5	46.5	116.4	
	U-M12T- 12mm UNILOK			46.5	46.5	116.4	
	MF-04N-	1/4" Male NPT	1/4" Female NPT	VR6 : 3.5	32.5	32.5	102.3
	MF-06N-	3/8" Male NPT	3/8" Female NPT		34.5		
	MF-08N-	1/2" Male NPT	1/2" Female NPT		38.0		
	MU-08N08T-	1/2" Male NPT	1/2" UNILOK	46.5	36.5	106.3	
MU-08NM12T-	1/2" Male NPT	12mm UNILOK					

Specification

Specification	VR3 series	VR6 Series
Maximum Working Pressure	300 psig 20.6 bar	6000 psig 413 bar
Temperature Range	-23 ~ 204°C -10 ~ 400°F	
Cracking Pressure Range	10~250 psig 0.7~18 bar	350~6000 psig 25~413 bar

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

Best Engineering For You

Reseal Pressure

0.3pt	Test Set Pressure		Minimum Resealing Pressure (%)
	psig	bar	
VR3	10 ~ 20	0.7 ~ 1.3	50
	175 ~ 225	12.0 ~ 15.5	90
VR6	100 ~ 200	6.8 ~ 13.7	50
	850 ~ 1000	58.5 ~ 68.9	84

Minimum Resealing Pressure - As a percentage of test set pressure

Spring Color Coding and Cracking Pressure Range

Series	Color	Cracking Pressure Range	
		psig	bar
VR3	Yellow	10 ~ 250	0.7 ~ 18
	Yellow	350 ~ 750	24 ~ 52
VR6	Purple	750 ~ 1500	52 ~ 103
	Orange	1500 ~ 2250	103 ~ 155
	Brown	2250 ~ 3000	155 ~ 206
	White	3000 ~ 4000	206 ~ 275
	Red	4000 ~ 5000	275 ~ 344
	Green	5000 ~ 6000	344 ~ 413

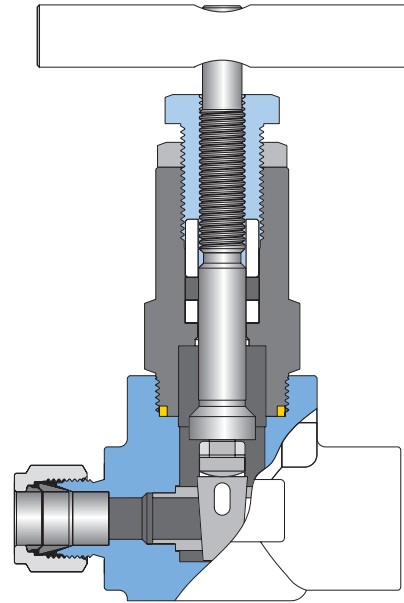
Dimensions are for reference only and are subject to change without prior notice.

Gate Valve VGT3

Other Valves

VGT3 Gate Valve	217
VP3 Plug Valve	221
VPR Pressure Reducing Valve	225



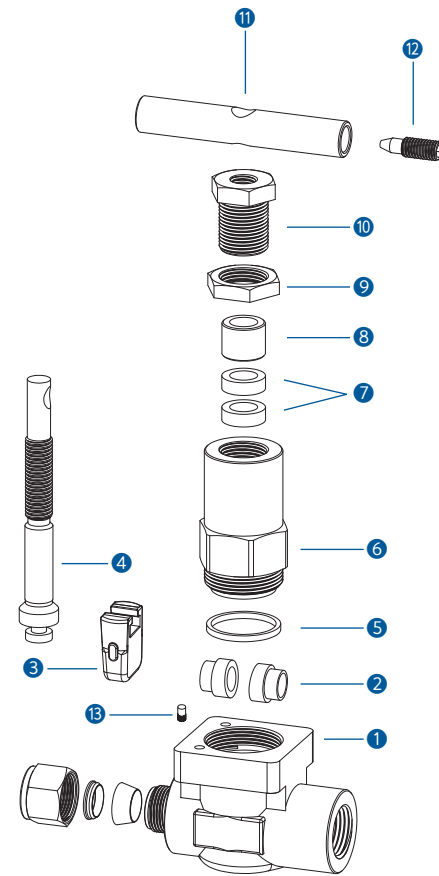


Features

- Design Spec : ANSI/ASME B16.34
- Pressure Rating : Up to 3,600 psig (248bar) @21°C
- Temperature Rating :
From -23°C to 232°C (-65°F to 350°F) with PTFE packing, up to 648°C (1200°F) with grafoil packing
- Body Materials : Standard 316 stainless steel, A105 and alloy400
- Compact forged body design
- Back seat design provides anti-blow out of stem and seal
- The hard faced seat ring and wedge enable longer life cycle
- Packing bolt allows easy packing adjustment for leak tight seal
- Handle Low operating torques

Materials of Construction

No.	Description	Materials		
		Body Material	316SS	A105
1	Body	316SS/A182	A105	Alloy 400/B564
2	SEAT RING	316SS/A479		Alloy 400 / B164
3	DISC	CF8M/A479		UNS N04400
4	STEM	316SS/A479		Alloy 400/B164
5	BONNET PACKING	Grafoil		
6	BONNET	316SS/A479	A105	Alloy 400/B164
7	PACKING	PTFE (Available Grafoil)		
8	GLAND	316SS/A479		
9	LOCK NUT	316SS/A479		
10	PACKING BOLT	316SS/A479		
11	HANDLE	316SS		
12	HANDLE SCREW	304SS		
13	PIN	304SS		



Cleaning

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

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.

Sour Environment Services

UNILOK tube 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.

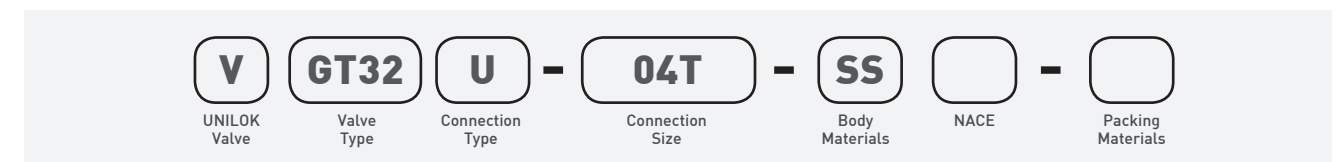
Sour Environment

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.

ServicesHow To Order

UNILOK VGT3 series gate valves are ordered by part number as shown below.



Valve Type	
GT3	INSTRUMENT GATE VALVE

Connection Type	
U	UNILOK Tube Fitting
F	Female NPT or ISO7/1-PT
WS-	Socket 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	10	12	20	25
	Designator	M06T	M10T	M12T	M20T	M25T

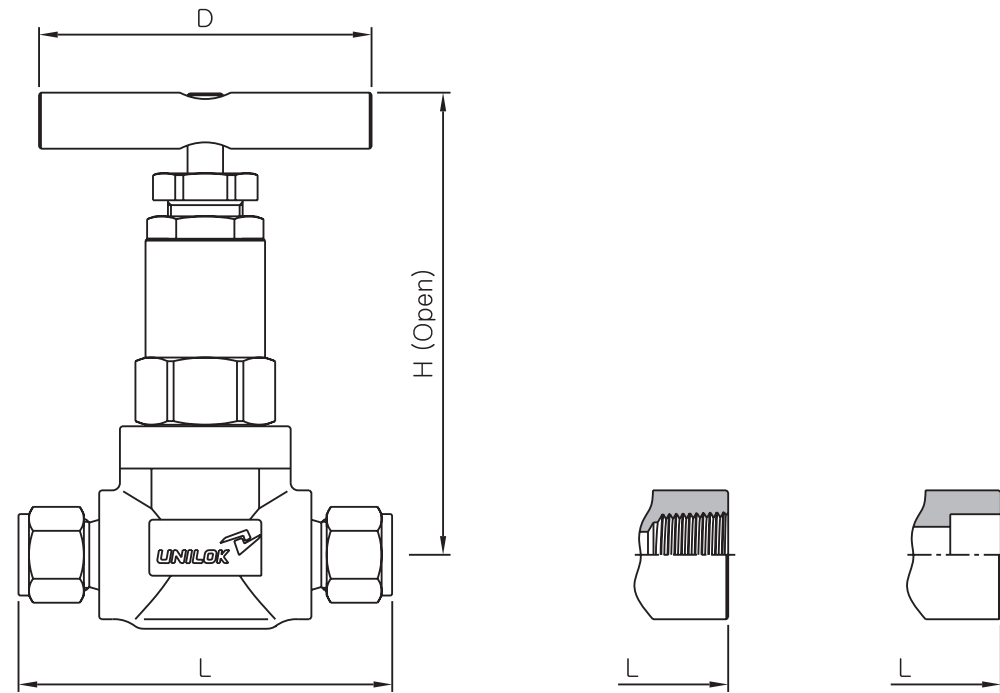
Pipe Size Designation (NPT or ISO7/1-PT)						
Pipe Size	1/4	3/8	1/2	3/4	1	
Designator	04N/R	06N/R	08N/R	12N/R	16N/R	

Weld Size Designation						
Pipe Size	1/4	3/8	1/2	3/4	1	
Designator	04P	06P	08P	12P	16P	

Body Materials	
SS	316 SS
MO	Alloy 400

NACE Application	
None	-
N	NACE Application

Packing Materials	
None	PTFE
GF	Grafoil



INSTRUMENT

Plug Valve VP3

Ordering Information & Dimensions

Part No.	End Connections		Port	Orifice	Cv	Dimensions (mm)		
	Inlet	Outlet				L	H	D
VGT31	F-04N-	1/4" Female NPT	Full	6.4	2.6	70.0	100.0	64.0
	F-06N-	3/8" Female NPT	Reduced					
	U-06T-	3/8" UNILOK	Full					
	U-08T-	1/2" UNILOK						
	WS-04P-	1/4" Pipe SW	Reduced					
	WS-06P-	3/8" Pipe SW						
VGT32	F-06N-	3/8" Female NPT	Full	10.0	6.1	86.0	140.0	89.0
	F-08N-	1/2" Female NPT	Reduced					
	U-08T-	1/2" UNILOK						
	U-10T-	5/8" UNILOK	Full					
	WS-06P-	3/8" Pipe SW						
	WS-08P-	1/2" Pipe SW						
VGT33	F-08N-	1/2" Female NPT	Full	12.7	11.3	100.0	170.0	110.0
	F-12N-	3/4" Female NPT	Reduced					
	U-12T-	3/4" UNILOK						
	U-16T-	1" UNILOK	Full					
	WS-08P-	1/2" Pipe SW						
	WS-12P-	3/4" Pipe SW						
VGT34	F-12N-	3/4" Female NPT	Full	19.0	26.3	127.0	210.0	140.0
	F-16N-	1" Female NPT	Reduced					
	U-16T-	1" UNILOK						
	WS-12P-	3/4" Pipe SW	Full					
	WS-16P-	1" Pipe SW	Reduced					

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VGT3 series valves. Add "R" as a suffix instead of "N"

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



Plug Valve VP3

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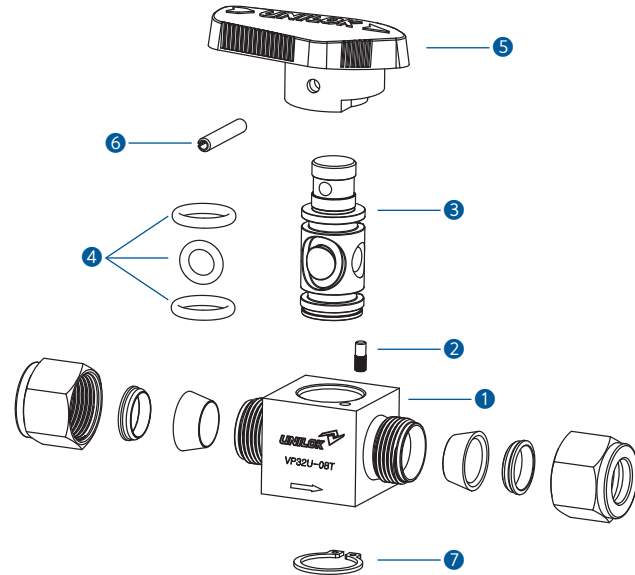
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Materials of Construction	222	Testing	223
Pressure Tempering Rating	222	How To Order	223
Flow Data	223	Ordering Information & Dimensions	224
Technical Data	223		

Features

- Working Pressure Rating up to 3000 psig (206 bar) @37°C(100°F)
- Temperature Rating from -23°C to 204°C (-10°F to 400°F)
- Quarter-turn operation
- Straight-through flow path
- 316 stainless steel and brass body materials
- Reliable simple design
- Handle Low operating torques
- 100% factor tested

Materials of Construction

No.	Description	Materials	
		316SS	A105
1	Body	316SS/A479	Brass/B16
2	Pin	316SS/A479	
3	Plug	316SS/A479	PTFE-Coated
		Brass/B16	PTFE-Coated
4	O-Ring	PTFE Coated FKM	
5	Handle	Nylon	
6	Spring Pin	316SS	
7	Snap Ring	Stainless Steel	



Pressure Temperature Rating

Series	VP31, VP32	VP31	VP32
Material	316 SS	Brass	
	PTFE Coated FKM		
Temperature, °C (°F)	Working Pressure, psig (bar)		
-23°C ~ 204°C (-10°F ~400°F)	3,000 psig (206 bar)	3,000 psig (206 bar)	2,000 psig (137 bar)
65°C (150°F)	3,000 psig (206 bar)	2,500 psig (172 bar)	2,000 psig (137 bar)
93°C (200°F)	3,000 psig (206 bar)	2,000 psig (137 bar)	2,000 psig (137 bar)
121°C (250°F)	2,000 psig (137 bar)	1,500 psig (103 bar)	1,500 psig (103 bar)
148°C (300°F)	1,000 psig (68.9 bar)	1,000 psig (68.9 bar)	1,000 psig (68.9 bar)
204°C (400°F)	1,000 psig (68.9 bar)	400 psig (27.5 bar)	400 psig (27.5 bar)

Flow Data

Part No.	End Connections	CV	Pressure Drop to Atmosphere, psi (bar)					
			Air Flow, std ft ³ /min (std L/min) @ 70°F (21°C)			Water Flow, US gal/min (std L/min) @ 70°F (21°C)		
			1 (0.068)	5 (0.34)	10 (0.68)	1 (0.068)	5 (0.34)	10 (0.68)
VP31	U-02T- 1/8" UNILOK	0.1	0.3 (8.4)	0.8 (22)	1.1 (31)	0.1 (8.4)	0.2 (0.75)	0.3 (1.1)
	U-04T- 1/4" UNILOK	1.6	0.6 (165)	13.0 (362)	18.0 (500)	1.6 (6.2)	3.6 (13.5)	5.1 (19.2)
	M-02N- 1/8" Male NPT	1.0	3.7 (102)	81.0 (225)	11.0 (315)	1.0 (3.7)	2.2 (8.5)	3.2 (12.1)
	M-04N- 1/4" Male NPT	1.0						
	F-02N- 1/8" Female NPT	1.2	4.4 (120)	9.7 (272)	13.0 (370)	1.2 (4.5)	2.7 (10.2)	3.8 (14.2)
	F-04N- 1/4" Female NPT	0.9	3.3 (93)	7.3 (205)	10.0 (285)	0.9 (3.4)	2.0 (7.5)	2.8 (10.4)
VP32	U-06T- 3/8" UNILOK	6.4	23.0 (660)	52.0 (1470)	72.0 (2040)	6.4 (24)	14.0 (53)	20.0 (76)
	U-08T- 1/2" UNILOK	4.4	16.0 (460)	35.0 (1000)	49.0 (1390)	4.4 (16.5)	9.8 (37)	13.0 (50)
	M-08N- 1/2" Male NPT	2.4	9.0 (252)	19.0 (540)	27.0 (765)	2.4 (9.0)	5.4 (20)	7.6 (28.5)
	F-08N- 1/2" Female NPT	2.7	10.0 (285)	21.0 (600)	30.0 (850)	2.7 (10)	6.0 (22)	8.5 (32)

Technical Data

Series	Material	Orifice	Pressure Rating @ 70°F (21°C)	Temperature Rating
VP31	316 SS	4.4	3,000 psig (206 bar)	-23°C ~ 204°C (-10°F ~ 400°F)
	Brass			
VP32	316 SS	7.2	3,000 psig (206 bar)	
	Brass		2,000 psig (137 bar)	

* Differential pressure is limited to 150 psig (10.3 bar) Maximum if reverse flow occurs Reverse-flow throttling may damage O-ring.

Cleaning

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

Testing

Every plug valve is 100% factory tested for shutoff at 600 psig (41.3 bar)

How To Order

UNILOK VP3 series Plug valves are ordered by part number as shown below.



Valve Type	
P31	Plug Valve (4.4mm Orifice)
P32	Plug Valve (7.2mm Orifice)

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

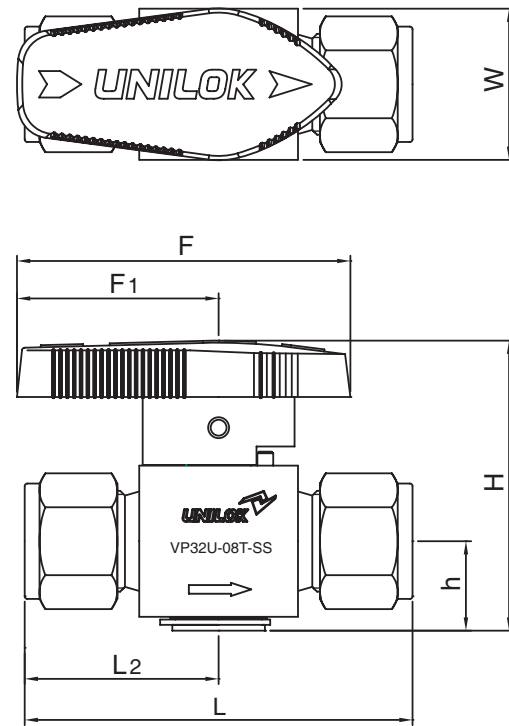
Connection Size					
Fractional(Inch) Tube O.D. Designation					
Tube O.D.	inch	1/8	1/4	3/8	1/2
	mm	3.17	6.35	9.52	12.70
Designator		02T	04T	06T	08T

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

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

Body Materials	
SS	316 SS
BS	Brass

O-ring Materials	
None	PTFE Coated FKM



INSTRUMENT

Pressure Reducing Valve VPR

Ordering Information & Dimensions

Part No.	End Connections		Dimensions (mm)							
	Inlet	Outlet	Orifice	L	L1	h	H	F	F1	W
VP31	U-02T- 1/8" UNILOK		4.4	50.6	25.3	11.7	39.2	46.5	29.0	19.0
	U-04T- 1/4" UNILOK			55.0	27.5					
	U-M06T- 6mm UNILOK			38.8	19.4					
	M-02N- 1/8" Male NPT			48.4	24.2					
	M-04N- 1/4" Male NPT			45.2	22.6					
	F-02N- 1/8" Female NPT			53.0	26.5					
	F-04N- 1/4" Female NPT			51.7	24.2					
	MU-04N04T- 1/4" Male NPT	1/4" UNILOK		50.7	24.2					
	MF-04N- 1/4" Male NPT	1/4" Female NPT								
VP32	U-06T- 3/8" UNILOK		7.2	67.6	33.8	16.9	54.4	61.3	38.1	28.5
	U-08T- 1/2" UNILOK			73.2	36.6					
	U-M08T- 8mm UNILOK			67.6	33.8					
	U-M10T- 10mm UNILOK			68.0	34.0					
	U-M12T- 12mm UNILOK			75.2	37.6					
	M-08N- 1/2" Male NPT			67.0	33.5					
	F-08N- 1/2" Female NPT			73.2	36.6					

ISO 7/1 Tapered Threads(PT) are available for all fractional sizes of VP3 series valves.
Add "R" as a suffix instead of "N".

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



Features

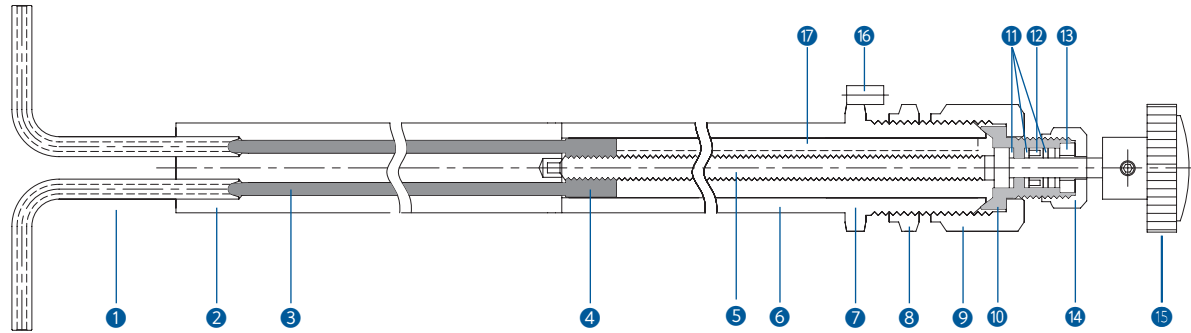
- No Plugging
- Easy Cleaning & Maintaining
- Simple adjusting under various pressure conditions
- No corrosion

Specification

- Max Operating Temperature : 50°C(122°F)~149°C(300°F)
- Max Operating Pressure : 5000psi at 149°C(300°F)
- Sample Flow Range : 150ml/min~4000ml/min
- Pressure Reducing Range : 5~5000 psi
- Installation : Panel Mounting
- Connection : Tube, Socket Weld, 37°Flare & Elbow



Materials of Construction

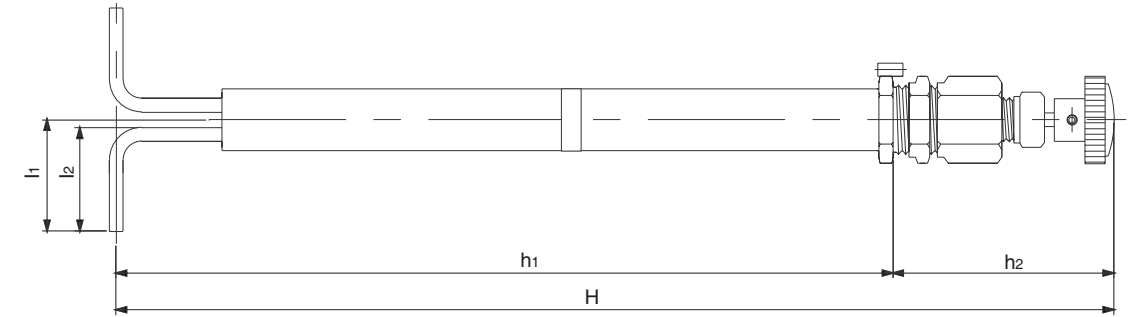


No.	Description	Materials	No.	Description	Materials	No.	Description	Materials
1	Tube	316SS	7	Bushing Body	316SS	13	Spindle Gland	Brass
2	Seat Body	304SS	8	Panel Nut	304SS	14	Spindle Nut	316SS
3	Long Stem	316SS	9	Body Nut	316SS	15	Handle	Xenoy
4	Stem Holder	316SS	10	Spindle Bushing	316SS	16	Loader	304SS
5	Spindle	316SS	11	Gasket Ring	Brass/PTFE	17	Holder Loader	316SS
6	Middle Body	316SS	12	Packing Seal	PTFE			

Application

In modern power generation plants & general industrial boilers, chemical analysis of water and steam samples requires precise control of flow and pressure. High pressure reduction occurs unique sampling problems.

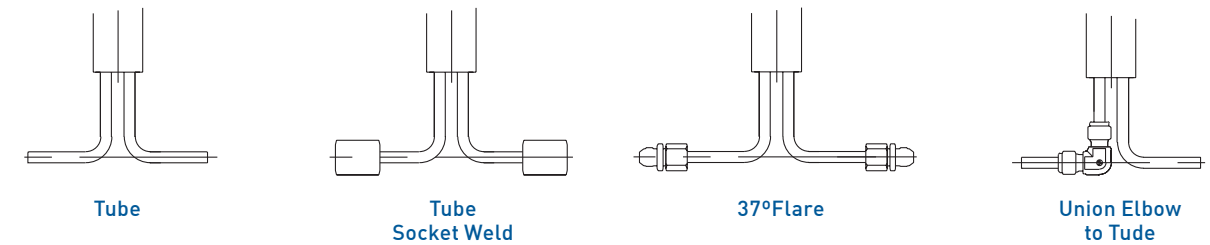
UNILOK VPR series is a valve specially designed to solve these kinds of problems.



Ordering Information & Dimensions

Part No.	End Connection	Materials					
		H	h ₁	h ₂	l ₁	l ₂	
VPR	04T-	1/4" UNILOK	461.0	359.0	102.0	51.6	48.0
	04P-	1/4" Tube SW					
	04F-	1/4" 37°Flare					
	04E-	1/4" Union Elbow					

End Connection Type



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.



Instrument

Filter, Regulator

VF In-Line & Tee Filter	231
RE Regulator	237
VBR Back Pressure Regulator	243

INSTRUMENT

In-Line & Tee Filter VF



In-Line & Tee Filter VF

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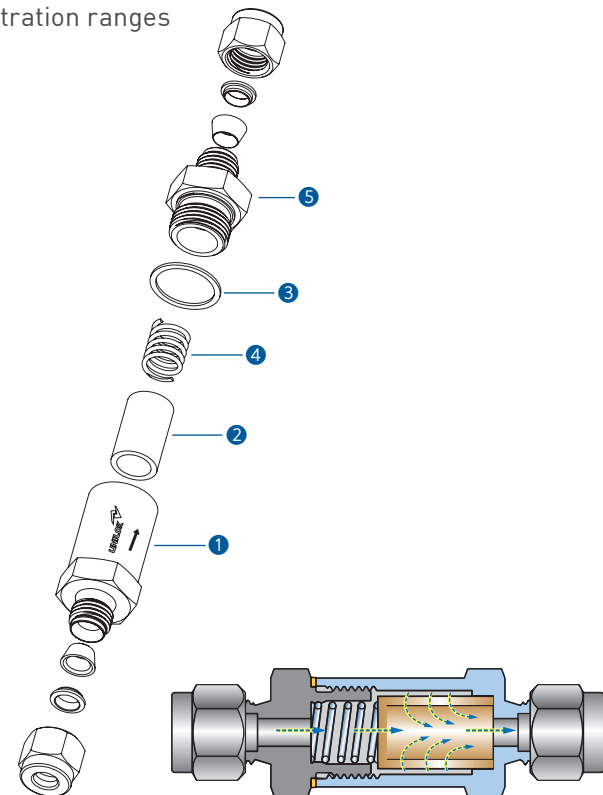
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Features

- Traps undesirable materials for protection of system components from fluid particles as well as contaminants
- Replaceable sintered 316SS filter element with micron filtering ranges - 0.5, 2, 7, 15, 60 & 90 microns
- Compact body design
- Wide choices of port sizes and end connections

VFI series In-line Filters

- Maximum working pressure up to 3000psig (206bar) at 100°F(37°C)
- For limited space and when filter element don t have to be replaced often Compact design with broaden filtration ranges

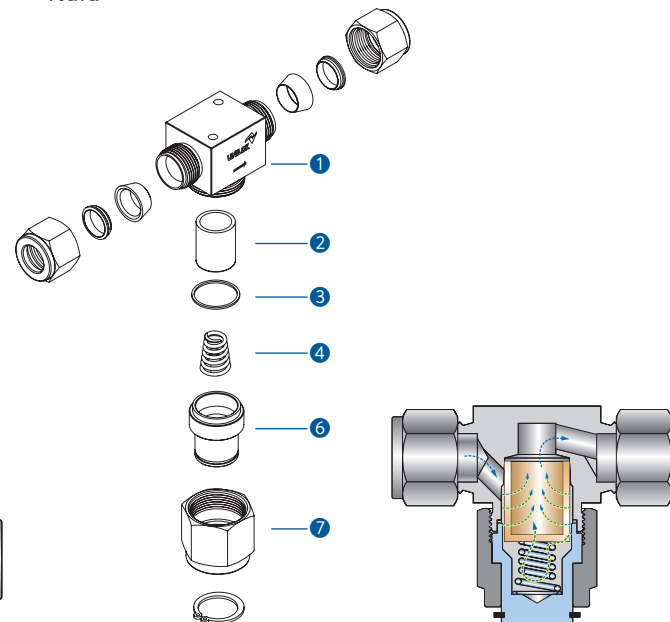


Materials of Construction

No.	Description	Materials	
		FT- T	FI - In-line
1	Body	316SS	
2	Sintered Filter	316SS	
3	Gasket	316SS plated with silver	
4	Spring	302SS	
5	Outlet Body	-	316SS
6	Bonnet	316SS	-
7	Nut	316SS	-

VFT series T Filters

- Maximum working pressure up to 6000psig (413bar) at 100°F(37°C)
- Easy replacement of filter element on-line
- Union bonnet design for safe high pressure application
- Bypass option for sampling or purging of process fluid



Definitions

Filter Element

Made of sintered stainless steel , porous with lots of tiny holes
Traps media contamination which is bigger than the porous in the filter element

Filtration Area

Actual surface area of the filter element to trap media contamination

Micron

Pore diameter of filter element or particle diameter of media contamination 1 micron = 0.001mm or 0.00004 inch

Cleaning

UNILOK filters 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

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

When undesirable contaminants are trapped by filter element, the system pressure build up occurs. It comes earlier when the flow volume is high and the media is not clean. In this case, the filter elements need to be replaced and clean metal components when replacement for minimal pressure drop as well as system purity.

Testing

Every VF series filter is 100% factory tested with air and nitrogen at 1000psig (69bar) to a requirement of no detectable leakage.

How To order

UNILOK VF series filters are ordered by part number as shown below.

Example: The following part number, *VFT3U-08T-SS-60-B02N* is designated for FT series filter with both 1/2 UNILOK tube fittings, 316SS, 60 micron filter element, 1/8 Female NPT by-pass option.



Thread Type Designation	
FI	In-line Filter
FT	T Filter

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

Filtration Ranges	
Designator	Norminal Micron
05	0.5
2	2
7	7
15	15
60	60
90	90

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

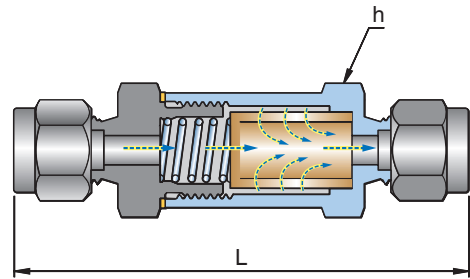
Metric Tube O.D. Designation						
Tube O.D.	mm	3	6	8	10	12
Designator		M03T	M06T	M08T	M10T	M12T

By-pass Option	
None	None
B02N	By-pass with Female 1/8"NPT
B04N	By-pass with Female 1/4"NPT

Body Materials	
SS	316SS
BS	Brass

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

VFI series (In-line Filters)



Maximum working pressure up to 3000psig (206bar) at 100°F(37°C)
 For limited space and when filter element don't have to be replaced often
 Compact design with broaden filtration ranges

Ordering Information & Dimensions

Part Number	End Connection		Orifice (mm)	Dimensions (mm)	
	Inlet	Outlet		L	h
VFI1	U-02T-	1/8" UNILOK	2.4	59.7	14.3
	U-M03T-	3mm UNILOK		60.5	
	F-02N-	1/8" Female NPT		54.9	
VFI2	U-04T-	1/4" UNILOK	4.7	74.9	19.0
	U-M06T-	6mm UNILOK		75.2	
	F-04N-	1/4" Female NPT		72.9	
	M-04N-	1/4" Male NPT		68.3	
VFI3	U-06T-	3/8" UNILOK	7.1	81.8	25.4
	F-06N-	3/8" Female NPT		77.2	
	M-06N-	3/8" Male NPT		71.6	
VFI4	U-08T-	1/2" UNILOK	10.3	86.9	
	U-M10T-	10mm UNILOK		82.2	

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

Effective Filtration Area

Series	Effective Filtration Area	
	sq. inch	sq. meter
VFI1	0.55	0.00035
VFI2	1.30	0.00083
VFI3, VFI4	2.00	0.00128

Filter Elements & Ordering Designator

The elements can trap 95% of undesirable particles larger than the nominal pore size.

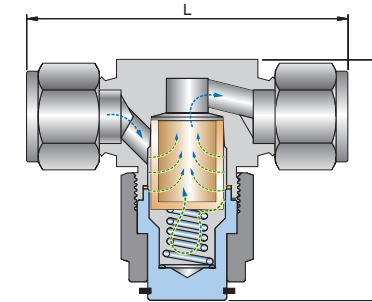
Ordering Designator	Normal Pore Size (µm)	Pore Size Range (µm)
05	0.5	0.5 ~ 2
2	2	1 ~ 4
7	7	5 ~ 10
15	15	11 ~ 25
60	60	50 ~ 75
90	90	75 ~ 100

Technical Data

Series	Max Working Pressure at 100°F(37°C)				Working Temperature Rating	
	316SS		Brass		316SS	Brass
	psig	bar	psig	bar		
VFI1	3000	206	3000	206	-20 ~ 900°F -28 ~ 482°C	-20 ~ 300°F -28 ~ 148°C
VFI2	3000	206	3000	206		
VFI3, VFI4	2500	172	2000	137		

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

VFT series (T Filters)



Maximum working pressure up to 6000psig (413bar) at 100°F(37°C)
 Easy replacement of filter element on-line
 Union bonnet design for safe high pressure application
 Bypass option for sampling or purging of process fluid

Ordering Information & Dimensions

Part Number	End Connection		Orifice (mm)	Dimensions (mm)	
	Inlet	Outlet		L	L ₁
VFI1	U-02T-	1/8" UNILOK	2.4	57.7	47.5
	U-04T-	1/4" UNILOK		62.7	
	U-M06T-	6mm UNILOK		62.5	
	F-02N-	1/8" Female NPT		50.8	
	F-04N-	1/4" Female NPT		54.1	
	M-02N-	1/4" Male NPT		54.1	
VFI2	U-06T-	3/8" UNILOK	5.4	72.1	56.0
	M-08N-	8mm UNILOK		72.1	
VFI3	U-08T-	1/2" UNILOK	6.4	77.2	56.0
	U-M10T-	10mm UNILOK		72.6	
	U-M12T-	12mm UNILOK		77.2	
	M-06N-	3/8" Male NPT		60.5	
	M-08N-	1/2" Male NPT		69.9	

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

Filter Elements & Ordering Designator

The elements can trap 95% of undesirable particles larger than the nominal pore size.

Ordering Designator	Normal Pore Size (µm)	Pore Size Range (µm)
05	0.5	0.5 ~ 2
2	2	1 ~ 4
7	7	5 ~ 10
15	15	11 ~ 25
60	60	50 ~ 75
90	90	75 ~ 100

Technical Data

Series	Max Working Pressure at 100°F(37°C)				Working Temperature Rating	
	316SS		Brass		316SS	Brass
	psig	bar	psig	bar		
VFT1, VFT2	6000	413	2000	137	-20 ~ 900°F -28 ~ 482°C	-20 ~ 300°F -28 ~ 148°C
VFI3						

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

Flow Data at 70°F(21°C) VFI series In-line Filters

Nominal Element Pore Size (µm)	Inlet Pressure psig/bar									Pressure Drop psig/bar								
	5psig/0.34bar			10psig/0.68bar			15psig/1.00bar			10psig/0.68bar			50psig/3.40bar			100psig/6.80bar		
	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm
Air Flow, L/min									Water Flow, L/min									
0.5	1.1	3.4	10	1.7	7.3	24	3.4	13	45	0.03	0.15	0.34	0.15	0.64	1.5	0.45	1.0	2.8
2	5.6	17	39	11	39	79	17	65	110	0.30	0.90	0.98	0.91	3.2	4.1	1.5	4.9	6.0
7	14	39	51	25	82	119	34	130	190	0.37	1.5	2.4	1.1	4.9	8.3	1.8	7.5	13
15	22	34	51	36	82	130	42	130	220	0.45	1.8	3.1	1.3	4.9	9.8	2.1	7.9	15
60	48	87	140	62	160	280	68	240	420	0.56	3.4	7.5	1.8	12	25	2.6	17	37
90	51	110	170	62	210	310	73	280	450	0.75	4.5	8.7	1.8	15	28	2.2	23	41

VFT series T Filters

Nominal Element Pore Size (µm)	Inlet Pressure psig/bar									Pressure Drop psig/bar								
	5psig/0.34bar			10psig/0.68bar			15psig/1.00bar			10psig/0.68bar			50psig/3.40bar			100psig/6.80bar		
	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm
Air Flow, L/min									Water Flow, L/min									
0.5	1.1	3.4	10	1.7	7.3	24	3.4	13	45	0.15	0.15	0.34	0.64	0.64	1.5	1.0	1.0	2.8
2	5.6	17	39	11	39	79	17	65	110	0.30	0.90	0.98	0.90	3.2	4.1	1.5	4.9	6.0
7	14	39	51	25	82	119	34	130	190	0.37	1.5	2.4	1.1	4.9	8.3	1.8	7.5	13
15	22	34	51	36	82	130	42	130	220	0.45	1.8	3.1	1.3	4.9	9.8	2.1	7.9	15
60	48	87	140	62	160	280	68	240	420	0.56	3.0	5.6	1.8	10	18	2.6	14	25
90	51	110	170	62	210	310	73	280	450	0.75	4.1	6.4	1.8	12	20	2.2	18	28

INSTRUMENT

Regulator RE



RE01 Series

Specification

Pressure Ratings

Per criteria of ANSI/ASME B31.3

Max. Inlet Pressure	3500 or 500 psig (241 or 34.5 bar)
Outlet Pressure Range	25, 50, 100, 250 and 500 psig (1.7, 3.5, 6.9, 17.3 and 34.5 bar)
Design Proof Pressure	150% of maximum rated

Operating Temperature

PCTFE Seat	-40 ~ 60°C (-40°F ~140°F)
Vespel® Seat	-40 ~ 177°C (-40°F ~350°F)

Flow Capacity

3500 psig / 241 bar	Cv = 0.06
500 psig / 41.4 bar	Cv = 0.2

Helium Leak Test

Inboard Leak Rate	2x10 ⁻⁸ atm cc/sec
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Media Contact Materials

Body	316L Stainless Steel
Diaphragm	316L Stainless Steel or Hastelloy®
Seat	PCTFE (Optional Vespel®)
Spring	316 Stainless Steel or Hastelloy®
Poppet, Retainer	316L Stainless Steel

Cleaning

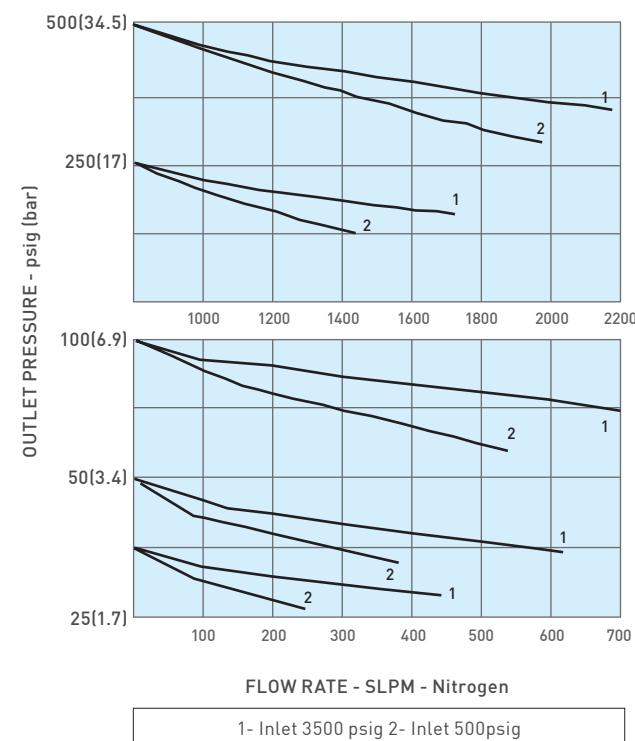
UNILOK Regulators are free from machine oils, loose particles and grease throughout the close cleaning process.



Features

- The RE01 series provides excellent stability of set pressure with accuracy, sensitivity.
- Metal to metal diaphragm seals provide enhanced leak integrity
- Optimum performance and cleanliness at a great value
- Low internal volume
- Adjustable stop to limit outlet pressure

Flow Chart



How To order

RE01 S F - 04N 12 0 - E
 Regulator Type Body Material Connection Type Connection Size Inlet/Outlet Pressure Gauge Port Option Diaphragm Material

Regulator Type	
RE01	RE01 Series

Connection Size	
04	1/4"

Gauge Port Option	
0	None (Fig. A)
1	1/4" Female NPT (Fig. B)
2	1/4" Female NPT (Fig. C)
3	1/4" Female NPT (Fig. D)

Body Material	
S	316L SS
B	BRASS

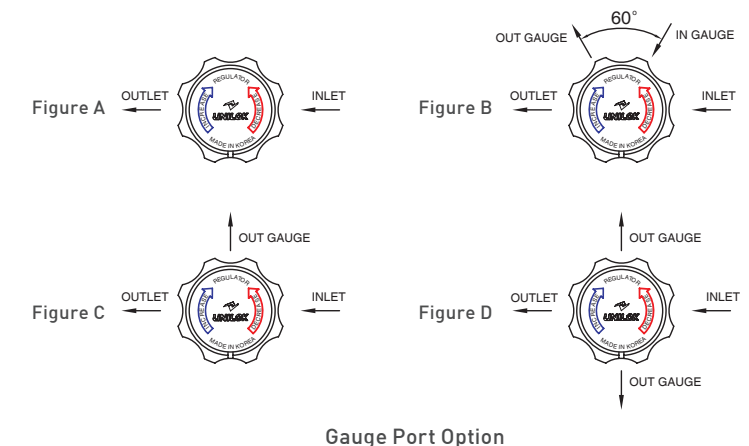
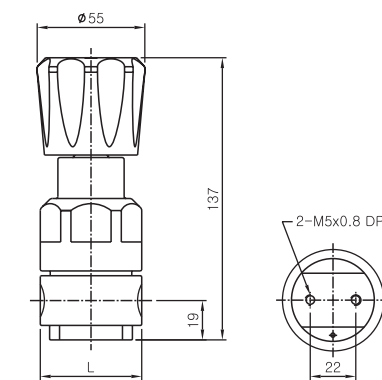
Maximum Inlet Pressure	
1	3500 psig / 241bar
2	500 psig / 34.5 bar

Diaphragm Material	
None	316L SS
E	Elgiloy
H	Hastelloy®

Connection Type	
F-*N	Female NPT
U-*T	UNILOK Tube Fitting

Outlet Pressure Range	
0	1 ~ 25 psig / 1 ~ 1.7 bar
1	1 ~ 50 psig / 1 ~ 3.5 bar
2	1 ~ 100 psig / 1 ~ 6.9 bar
3	1 ~ 250 psig / 1 ~ 17.3 bar
4	1 ~ 500 psig / 1 ~ 34.5 bar

Ordering Information & Dimensions



Part No.	End Connection		Dimensions(mm)
	Inlet	Outlet	L ± 1
RE01*	F-04N	1/4" Female NPT	49
	U-04T	1/4" UNILOK Tube Fitting	95

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

RE02 Series

Specification

Pressure Ratings

Per criteria of ANSI/ASME B31.3

Max. Inlet Pressure	3500 or 500 psig (241 or 34.5 bar)
Outlet Pressure Range	25, 50, 100, 250 and 500 psig (1.7, 3.5, 6.9, 17.3 and 34.5 bar)
Design Proof Pressure	150% of maximum rated

Operating Temperature

PCTFE Seat	-40 ~ 60°C (-40°F ~140°F)
Vespel® Seat	-40 ~ 177°C (-40°F ~350°F)

Flow Capacity

Flow Capacity	Cv = 1.0
---------------	----------

Helium Leak Test

Inboard Leak Rate	2x10 ⁻⁸ atm cc/sec
-------------------	-------------------------------

Media Contact Materials

Body	316L Stainless Steel
Diaphragm	316L Stainless Steel or Hastelloy®
Seat	PCTFE (Optional Vespel®)
Spring	316 Stainless Steel or Hastelloy®
Poppet, Retainer	316L Stainless Steel

Cleaning

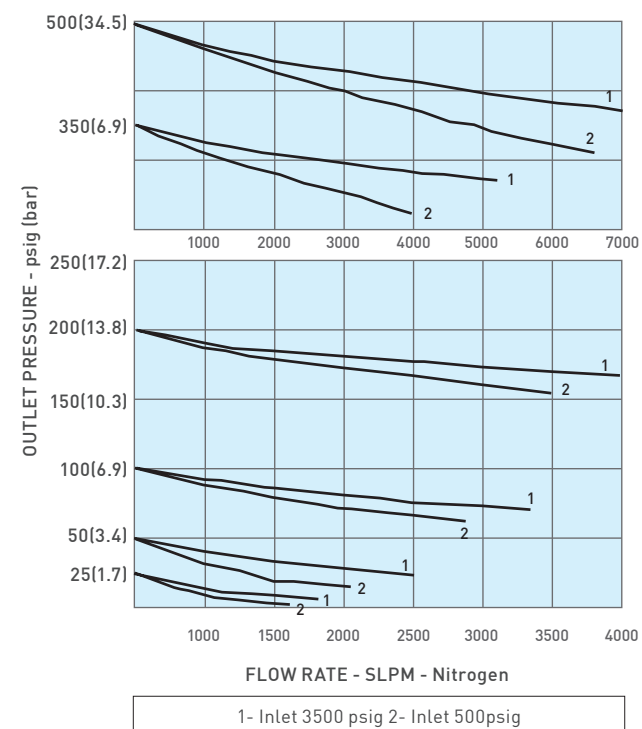
UNILOK Regulators are free from machine oils, loose particles and grease throughout the close cleaning process.



Features

- The RE02 series provides excellent stability of set pressure with accuracy, sensitivity.
- Metal to metal diaphragm seals provide enhanced leak integrity
- Optimum performance and cleanliness at a great value
- Low internal volume
- Adjustable stop to limit outlet pressure

Flow Chart



How To order

RE02 S F - 08N 12 0 - E
 Regulator Type Body Material Connection Type Connection Size Inlet /Outlet Pressure Gauge Port Option Diaphragm Material

Regulator Type	
RE02	RE02 Series

Body Material	
S	316L SS
B	BRASS

Connection Type	
06	3/8"
08	1/2"

Connection Size	
F-*N	Female NPT
U-*T	UNILOK Tube Fitting

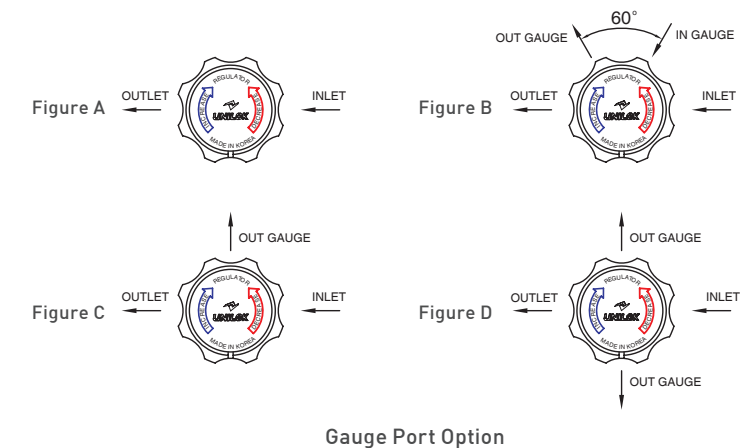
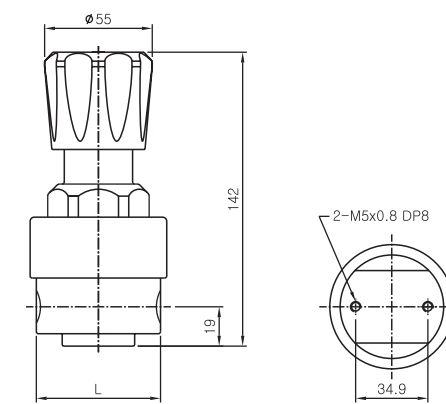
Maximum Inlet Pressure	
1	3500 psig / 241bar
2	500 psig / 34.5 bar

Outlet Pressure Range	
0	1 ~ 25 psig / 1 ~ 1.7 bar
1	1 ~ 50 psig / 1 ~ 3.5 bar
2	1 ~ 100 psig / 1 ~ 6.9 bar
3	1 ~ 250 psig / 1 ~ 17.3 bar
4	1 ~ 500 psig / 1 ~ 34.5 bar

Gauge Port Option	
0	None (Fig. A)
1	1/4 " Female NPT (Fig. B)
2	1/4 " Female NPT (Fig. C)
3	1/4 " Female NPT (Fig. D)

Diaphragm Material	
None	316L SS
E	Elgiloy
H	Hastelloy®

Ordering Information & Dimensions



Part No.	End Connection		Dimensions(mm)
	Inlet	Outlet	L ± 1
RE02*	F-08N	1/2" Female NPT	60.0
	U-06T	3/8" UNILOK Tube Fitting	116.4
	U-08T	1/2" UNILOK Tube Fitting	116.4

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

INSTRUMENT

Back Pressure Regulator VBR



Features

UNILOK Back Pressure Regulator is used to maintain a constant upstream pressure of gas, vapor or liquid. Designed for accurate regulation under low flow conditions, these units are widely used for protection of analysis instrumentation or as a relief valve in supply pressure lines to control valves.

Specification

Connection : 1/4 Female NPT

Operating Temperature : -29°C(-20°F) ~ 66°C(150°F)

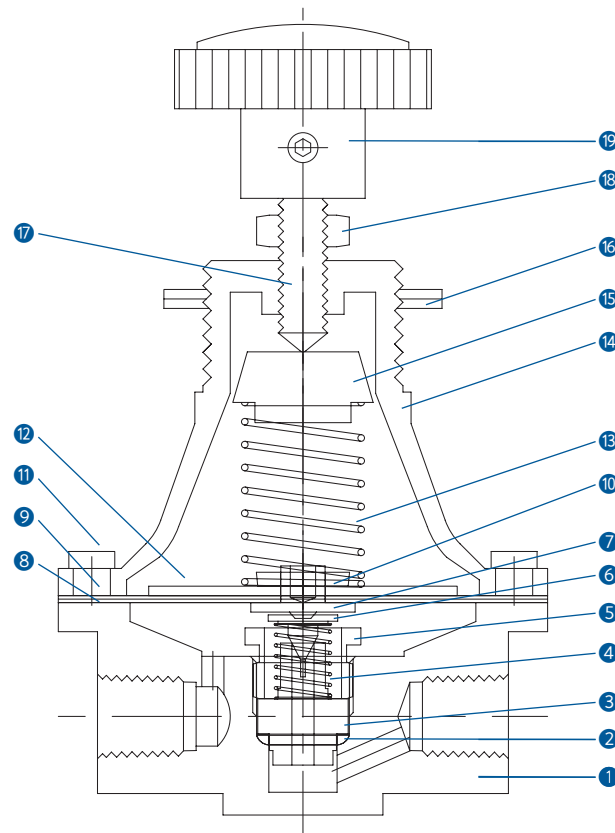
Sensitivity : 0.05psi

Regulated Back Pressure Ranges : 0~125psig as standard



Materials of Construction

No.	Description	Materials
1	Body	316SS
2	Body Seat	PTFE
3	Nozzle	316SS
4	Plug Spring	304SS
5	Nozzle Retaining Nut	316SS
6	Plug	316SS
7	Rivet	316SS
8	Packing Plate	PTFE
9	Rubber Seat	Rubber
10	Rivet Gland	316SS
11	Bolt	304SS
12	Rivet Plate	Brass
13	Range Spring	302SS
14	Bonnet	Aluminum
15	Spring Plug	Brass
16	Panel Nut	316SS
17	Handle Stem	316SS
18	Lock Nut	316SS
19	Handle	Xenoy



Principle of Operation

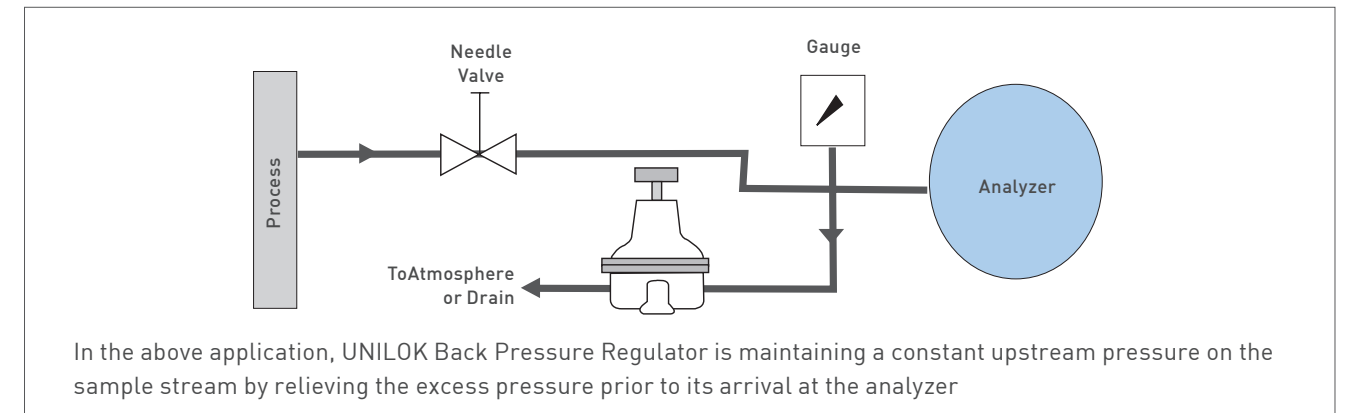
Turning the hand wheel changes the force exerted by the range spring on the diaphragm assembly. In equilibrium, the force exerted by the range spring is balanced by the force from back pressure acting underneath the diaphragm assembly.

If the back pressure rises above the set pressure, the diaphragm seat is lifted allowing the nozzle plug to open.

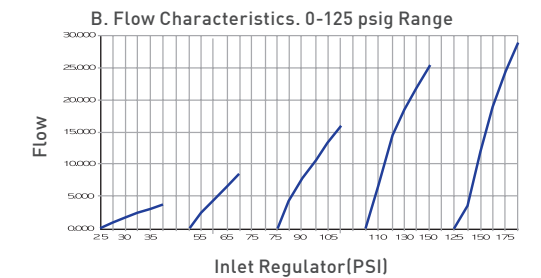
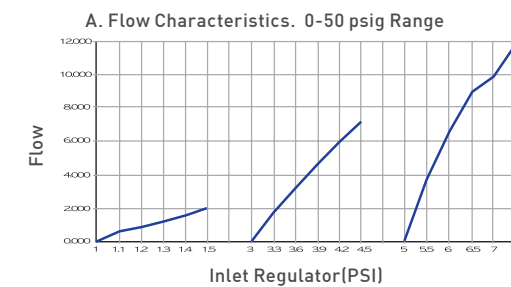
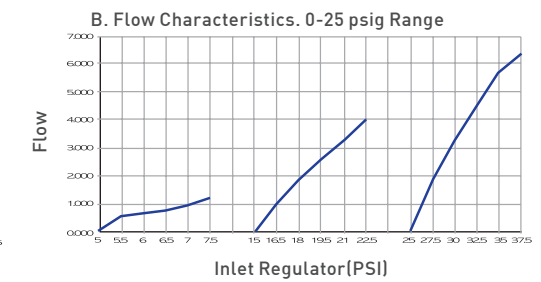
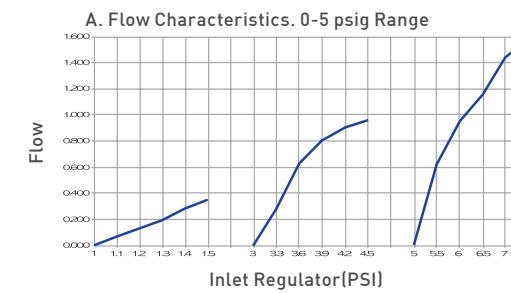
The excess pressure flows through the exhaust port until the back pressure is reduced to the set point.

While the back pressure is at or below the set point, the range spring holds the nozzle plug against its seat, shutting off the flow to the exhaust port.

Application



Range Selection



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.



Instrument

Others

Seamless & Welded Tubing 248



Product & Size Ranges

Seamless tubes in straight length, precision cut or coils.

1/8"~1-1/4" OD, 6mm~28mmOD.

Welded or semi-seamless (welded, drawn and bead reduced) tubes in straight length, precision cut or coils.

1/8"~2" OD, 6mm~50mmOD.

Materials of Construction

Grade	AP	BA	EP
Inside Surface Roughness	Ry ≤ 25 μm	Ry ≤ 3.0 μm	Ry ≤ 0.5 μm

Chemical Composition

Material Grade	Chemical Composition (%)							
	C	Si	Mn	P	S	Ni	Cr	Mo
304	0.08 max	0.75 max	2.00 max	0.04 max	0.03 max	8.00 ~ 11.00	18.00 ~ 20.00	-
304L	0.035 max	0.75 max	2.00 max	0.04 max	0.03 max	8.00 ~ 13.00	18.00 ~ 20.00	-
316	0.08 max	0.75 max	2.00 max	0.04 max	0.03 max	11.00 ~ 14.00	16.00 ~ 20.00	2.00 ~ 3.00
316L	0.035 max	0.75 max	2.00 max	0.04 max	0.03 max	10.0 ~ 15.0	16.00 ~ 18.00	2.00 ~ 3.00

Chemical Composition

Grade	Typical mechanical Properties (annealed)		
	Tensile Strength	Yield Strength (0.2% offset)	Elongation (%)
304	500~700	195	40
304L	460~680	180	40
316	510~710	205	40
316L	460~690	190	40

Features

- Quality mother pipes as raw materials.
- Excellent finished inner and outer surface by precision cold drawn.
- Strict size tolerance control in accordance with ASTM standards.
- Fully bright annealed for outstanding corrosion resistance for both seamless and welded tubing.
- Exact hardness for proper tubing.
- ECT (Eddy Current Test) for every piece of tubing
- Guaranteed application for all UNILOK tube fittings and valves with UNILOK ports.

Materials of Construction

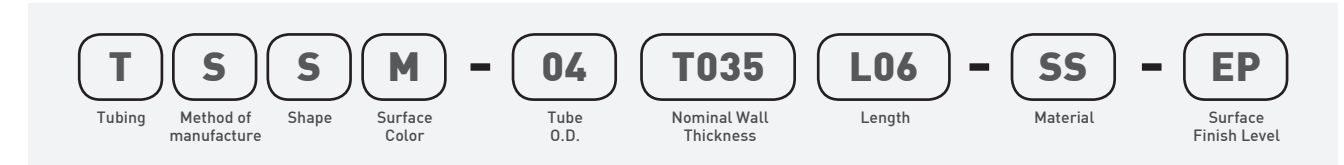
Grade	ASTM	UNS	ASME
304	A213/A269 TP304	S30400/S30403	SA213
304L	A213/A269 TP304L		
316	A213/A269 TP316	S31600/S31603	SA213
316L	A213/A269 TP316L		

Alloy 400(Monel), Alloy 625(Inconel 625)

Alloy 825, Alloy C276 (Hastelloy C-276)

Duplex, Super Duplex

How To order



Method of manufacture	
S	Seamless
W	Welded
HW	Semi-Seamless

Tube O.D. Designation										
Tube O.D.	inch	1/8	3/16	1/4	5/16	3/8	1/2	~	1	~
	mm	3.17	4.76	6.35	7.93	9.52	12.7	~	25.4	~
Designator		02	03	04	05	06	08	~	16	~

Shape	
S	Straight
C	Coil

Nominal Wall Thickness(in)	
T028	0.028
T035	0.035
T049	0.049
~	~

Materials	
S4	304 SS
S4L	304L SS
SS	316 SS
SL	316L SS

Surface Color	
N	Matt
G	Gloss

Length	
L02	2m
L03	3m
L06	6m

Surface Finish Level	
AP	Annealing & Pickling
BA	Bright Annealing
EP	Electro Polishing

Ordering Information & Dimensions

Part Number	Tube O.D	Nominal Wall Thickness (in)	Length
	(in)		(mm)
TSSM-	02T028L06-	1/8	6000
	04T035L06-		
	04T049L06-	1/4	
	04T065L06-		
	06T035L06-		
	06T049L06-	3/8	
	06T065L06-		
	08T035L06-		
	08T049L06-	1/2	
	08T065L06-		
	10T065L06-		
	12T065L06-	5/8	
	16T083L06-	3/4	
	20T095L06-	1	
	20T120L06-	1-1/4	
	24T120L06-		
	24T134L06-	1-1/2	
	32T134L06-		
	32T188L06-	2	

ASTM Tolerances

Tolerances according to ASTM A269 (Welded and Seamless Tube)

Outside Diam. (mm)	Tol. O.D (mm)	Tol. Wall (%)	Tol. Ovality (mm)	Tol. Cut Length (mm)
up to 12.7	±0.13	±15	-	+3.18/0
12.7 up to 38.1	±0.13	±10	max. 1.65	+3.18/0
38.1 up to 88.9	±0.25	±10	max. 2.41	+4.76/0

Cleaning

This tubing complies with ASTM G93. Special cleaning will be applied by customers request.

Packing

Tubing is packed in single polyethylene, Heat-sealed bags. In bundle with protective foil wrapping. In wooden crates cases.



UHP

Fittings

Weld & Metal Face Seal Fitting	253
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Cylinder Connectors	287

Weld & Metal Face Seal Fittings



Weld & Metal Face Seal Fittings

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Test	257	Metal Face Seal Fittings	264
Cleaning & Packaging	257		

Weld Fittings



CME ²⁶⁰
Micro Elbow 90°



CMRE ²⁶⁰
Reducing Micro Elbow 90°



CMVE ²⁶⁰
Micro Elbow 45°



CMT ²⁶⁰
Micro Tee



CMRT ²⁶¹
Reducing Micro Tee



CMTB ²⁶¹
Micro Tribow



CMC ²⁶¹
Micro Cross



CMRU ²⁶¹
Reducing Micro Union



CLE ²⁶²
Long Elbow 90°



CLRE ²⁶²
Reducing Long Elbow 90°



CLT ²⁶²
Long Tee



CLRT ²⁶³
Reducing Long Tee



CLRU ²⁶³
Reducing Long Union



CMGS ²⁶⁴
Micro Gland S



CMGL ²⁶⁴
Micro Gland L



CSGS ²⁶⁴
Short Gland S



CSGL ²⁶⁴
Short Gland L



CLGS ²⁶⁵
Long Gland S



CLGL ²⁶⁵
Long Gland L



CSGWS ²⁶⁶
Socket Weld Short Gland



CLGWS ²⁶⁶
Socket Weld Long Gland



CLGRWS ²⁶⁶
Reducing Socket Weld Long Gland



CBG ²⁶⁶
Blind Gland



CCP ²⁶⁷
UCR Cap



Metal Face Seal (UCR) Fittings Caps, Plugs, Nuts & Gaskets



CPG ²⁶⁷
UCR Plug



CFN ²⁶⁷
UCR Female Nut



CMN ²⁶⁷
UCR Male Nut



CGT ²⁶⁸
UCR Gasket



CGTR ²⁶⁸
UCR Gasket Retained



CGTB ²⁶⁸
UCR Gasket Blind

Metal Face Seal (UCR) Fittings High Flow Components



CHG ²⁶⁹
HR Gland



CHA ²⁶⁹
HR Adapter



CHBA ²⁶⁹
HR Bulkhead Adapter



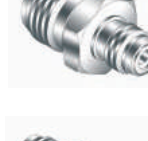
CHFN ²⁶⁹
HR Female Nut



CHMN ²⁶⁹
HR Male Nut



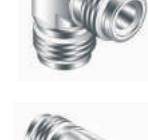
CDMU ²⁷⁰
Double Male Union



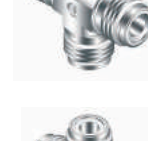
CDMRU ²⁷⁰
Reducing Double Male Union



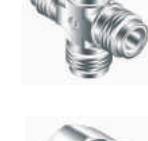
CBDMU ²⁷⁰
Bulkhead Double Male Union



CEU ²⁷⁰
Union Elbow



CUT ²⁷¹
Union Tee



CUC ²⁷¹
Union Cross



CDFRU ²⁷¹
Reducing Double Female Union



CRA ²⁷¹
Reducing Adapter



CRB ²⁷²
Reducing Bushing



CC ²⁷²
Coupling



CAWB ²⁷³
TBW Adapter



CBAWB ²⁷³
Bulkhead TBW Adapter



CULC ²⁷³
UNILOK Connector



CBULC ²⁷³
Bulkhead UNILOK Connector



CUMC ²⁷⁴
Male Connector



CUME ²⁷⁴
Male Elbow



CUFC ²⁷⁴
Female Connector

UCR Threaded Fittings UCR to UCR

UCR Threaded Fittings UCR to TBW

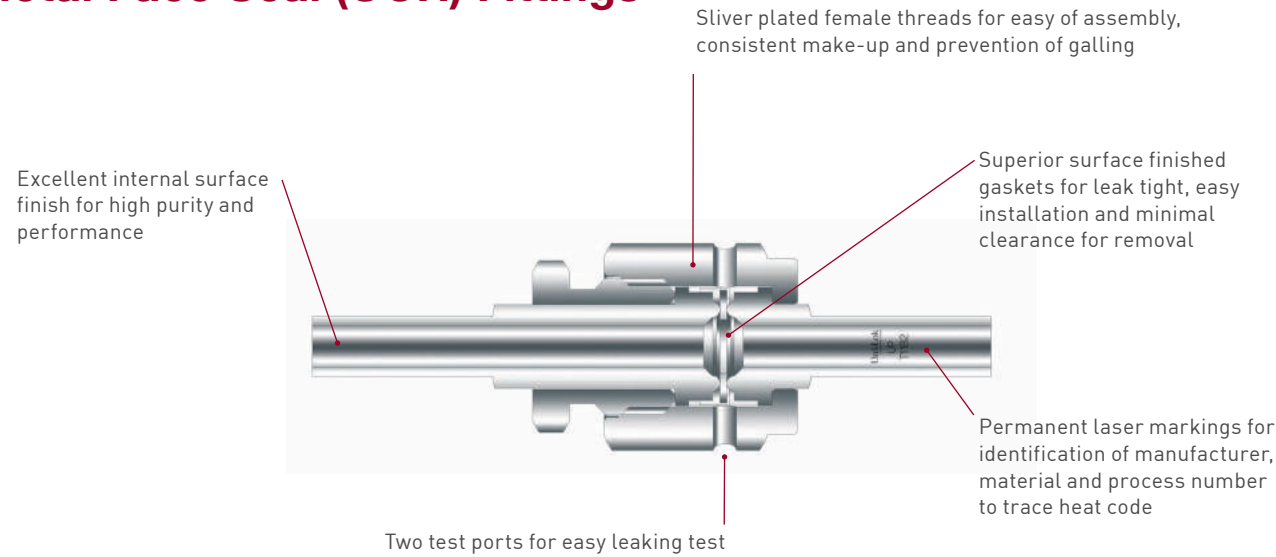
UCR Threaded Fittings UCR to UNILOK

UCR Threaded Fittings UCR to Thread

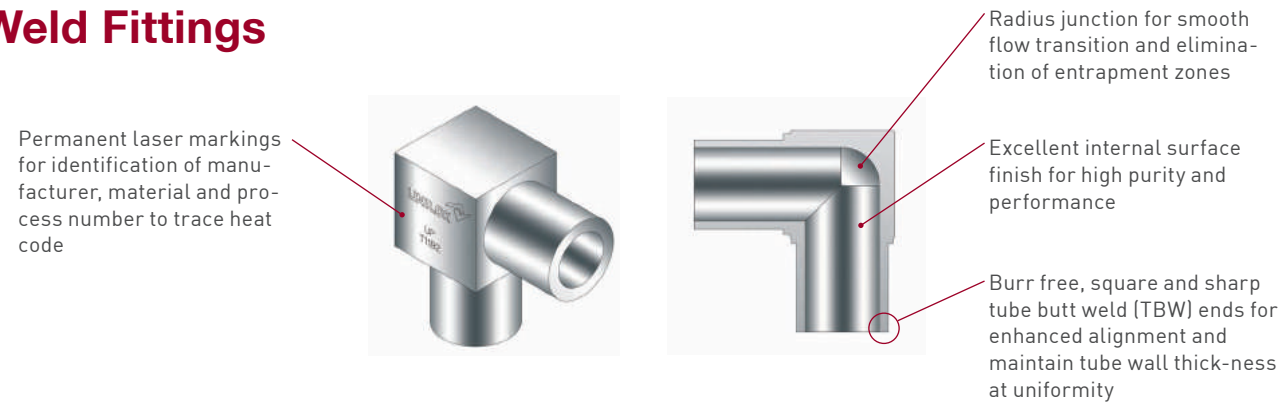
UNILOK® Weld & Metal Face Seal (UCR) fittings are designed and manufactured as high performance and high purity components by our own know-how to be accumulated throughout the years. UNILOK® guarantees high quality butt welding between tube and fittings as well as leak free assembly for critical applications.

Features

Metal Face Seal (UCR) Fittings



Weld Fittings



Internal Surface Finish Levels

Designator	Surface Finish(μm)	
	Average	Maximum
BA	< 0.4	< 1.6
EP	< 0.125	< 0.4

Reference Specification :
SEMA-90120400B

Surface Analysis

SEM, ESCA/XPS, AES analysis for all electro polished products are used to measure surface cleanliness and anticorrosion requirements in accordance with SEMA specifications.
SEM - SEMA 90120401B-STD
ESCA/XPS - SEMA 90120403B-STD
AES - SEMA 91060573B-STD

Plating

Female nuts are silver plated for easy of assembly, consistent make-up, prevention of galling and reduction of the torque required for fitting assembling.

Materials

Materials	Specification
Glands, Unions, Weld Fittings	
VIM/VAR	Forging - ASTM A182 Bar Stock - ASTM SA479
VCR/VAR	
316LSS	
Nuts, Plugs, Caps, UCR Threaded Fittings	
316LSS	Forging - ASTM A182 Bar Stock - ASTM SA479
Gaskets	
Nickel	ASTM B162
316LSS	ASTM A167

Both VCR/VAR and 316LSS are UHP(Ultra High Purity) 316LSS material with low Sulfur and Manganese in comply with SEMI F-20.

Pressure Ratings

Tube O.D.	Wall Thickness	Pressure Rating	
		psig	bar
1/4"	1.00mm	5200	359
	0.89mm		
3/8"	1.00mm	3350	231
	0.89mm		
1/2"	1.24mm	3750	259
3/4"	1.65mm	3350	231
1"	1.65mm	2400	265

0.89mm(0.035") wall thick fittings are available upon request. When ordering, be sure to add -A to the part number.

Pressure ratings are calculated in accordance with ANSI/ASME B31.3 for stainless steel pressure piping at room temperature.

Temperature Ratings

Components	Materials	°F	°C
Fittings	VIM/VAR	1000	537
	VCR/VAR		
	316LSS		
Gaskets	316LSS	1000	537
	Nickel	600	315

Helium Leak Test

UNILOK fittings are rated to a helium leak rate of less than 1x10⁻⁹ mbar.l/sec and tested in accordance with SEMA-90120391B-STD and SEMI F1-96.

Particle Contribution Test

According to ASTM F1394-92.

Moisture Contribution Test

According to SEMA-90120397B-STD.

Cleaning

All components are precisely cleaned with 18MΩ deionized water after the passivation procedure. Reference specification : SEMI E49.6.

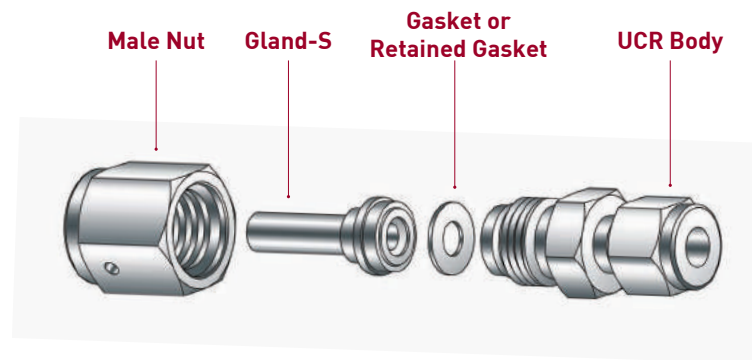
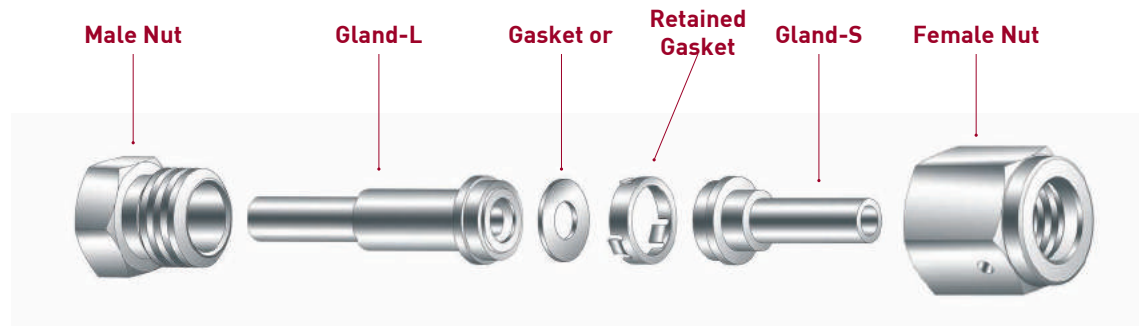
Assembling

According to SEMI E49.6.

Packaging

Each component is double bagged to ensure component cleanliness and to protect them from environmental contamination. Referenced specification : SEMI E49.1.

Typical Assemblies



Installation Instruction



Step A.
Place gasket into female nut.



Step C.
Tighten female nut 1/8 turn past finger tight holding the backup wrench stationary.



Step AA.
Guide retained gasket over gland UCR face.



Step D.
Confirm face seal and gasket's position again.



Step B.
Tighten female nut to male nut or UCR body finger tight.

Metal face seal connections are remakeable only using new gasket for each remake.

How To order

UNILOK weld fittings are ordered by part number as shown below.

Example: The following part number, *CLGS-0804-SM-EP* is designated for Long Gland S, 1/2"UCR x 1/4"TBW", Single Melting 316LSS, EP.



Connection Size & Type							
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		02	04	06	08	12	16

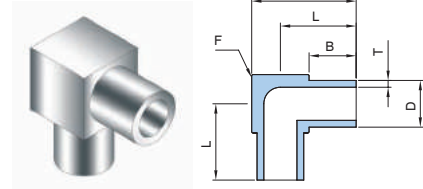
Materials	
DM	316LSS - Double Melting
SM	316LSS - Single Melting
SL	316LSS
NI	Nickel

UCR (Metal Face Seal) Size Designator				
Pipe Size	1/4	1/2	3/4	1
Designator	04	08	12	16

Surface Finish Level	
BA	BA - Bright Annealing
EP	EP - Electro Polished

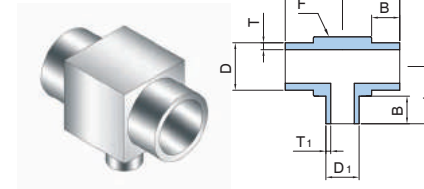
Pipe Size Designation (NPT or ISO7/1(PT))					
Pipe Size	1/4	3/8	1/2	3/4	1
Designator	04N/R	06N/R	08N/R	12N/R	16N/R

CME Micro Elbow 90°



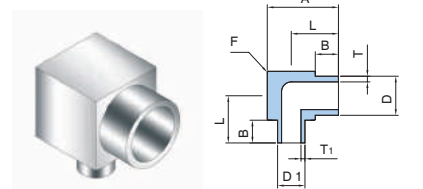
Part No.	Tube O.D. D		Tube W.T. T		Dimension (mm)				Body Cube
	inch	mm	inch	mm	A	B	L	F	
CME-02-	1/8	3.17	0.028	0.71	14.29	6.35	10.32	7.94	
CME-04-*A	1/4	6.35	0.035	0.89					
CME-04-	1/4	6.35	0.039	1.00	17.46	6.35	11.91	11.11	
CME-06-	3/8	9.52		1.00			17.46	11.91	11.11
CME-08-	1/2	12.70	0.049	1.24	20.64	6.35	13.50	14.29	
CME-12-	3/4	19.05	0.065	1.65	27.00	6.35	16.67	20.65	

CMRT Reducing Micro Tee



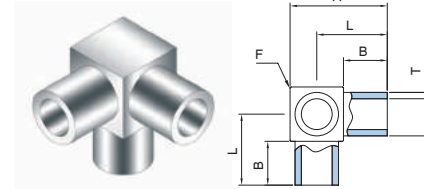
Part No.	Tube O.D. D		Tube W.T. T		Tube O.D. D ₁		Tube W.T. T ₁		Dimension (mm)				Body Cube
	inch	mm	inch	mm	inch	mm	inch	mm	A	B	L	F	
CMRT-0402-	1/4	6.35	0.039	1.00	1/8	3.17	0.028	0.71	20.64	6.35	10.32	7.94	
CMRT-0604-	3/8	9.52		1.00	1/4	6.35	1.00	23.81	10.32		7.94		
CMRT-0804-	1/2	12.70	0.049	1.24	1/4	6.35	0.039	1.00	26.99	6.35	11.91	11.11	
CMRT-0806-	1/2	12.70	0.049	1.24	3/8	9.52		1.00			11.91	11.11	

CMRE Reducing Micro Elbow 90°



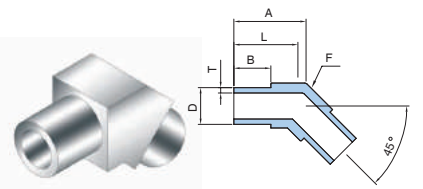
Part No.	Tube O.D. D		Tube W.T. T		Tube O.D. D ₁		Tube W.T. T ₁		Dimension (mm)				Body Cube
	inch	mm	inch	mm	inch	mm	inch	mm	A	B	L	F	
CMRE-0402-	1/4	6.35	0.039	1.00	1/8	3.17	0.028	0.71	14.29	6.35	10.32	7.94	
CMRE-0604-	3/8	9.52		1.00	1/4	6.35	1.00	17.46	10.32		7.94		
CMRE-0804-	1/2	12.70	0.049	1.24	1/4	6.35	0.039	1.00	20.64	6.35	11.91	11.11	
CMRE-0806-	1/2	12.70	0.049	1.24	3/8	9.52		1.00			11.91	11.11	

CMTB Micro Tribow



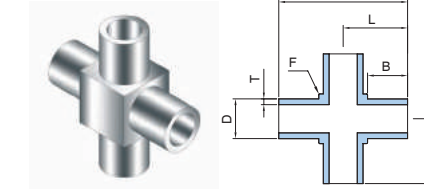
Part No.	Tube O.D. D		Tube W.T. T		Dimension (mm)			Body Cube
	inch	mm	inch	mm	B	L	F	
CMTB-04-*A-	1/4	6.35	0.035	0.89	6.35	10.32	7.94	
CMTB-04-	1/4	6.35	0.039	1.00				
CMTB-06-	3/8	9.52		1.00				
CMTB-08-	1/2	12.70	0.049	1.24				11.91

CMVE Micro Elbow 45°



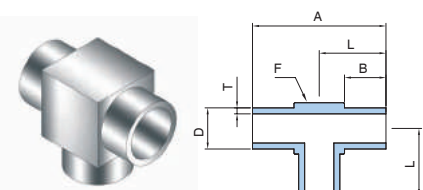
Part No.	Tube O.D. D		Tube W.T. T		Dimension (mm)				Body Cube
	inch	mm	inch	mm	A	B	L	F	
CMVE-04-*A-	1/4	6.35	0.035	0.89	11.96	6.35	10.32	7.94	
CMVE-04-	1/4	6.35	0.039	1.00					
CMVE-06-	3/8	9.52		1.00	14.21	11.91	11.11		
CMVE-08-	1/2	12.70	0.049	1.24	16.46	6.35	13.50	14.29	

CMC Micro Cross



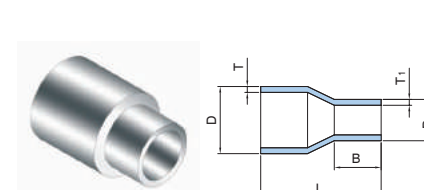
Part No.	Tube O.D. D		Tube W.T. T		Dimension (mm)				Body Cube
	inch	mm	inch	mm	A	B	L	F	
CMC-04-*A-	1/4	6.35	0.035	0.89	20.64	6.35	10.32	7.94	
CMC-04-	1/4	6.35	0.039	1.00					
CMC-06-	3/8	9.52		1.00	23.81	11.91	11.11		
CMC-08-	1/2	12.70	0.049	1.24	26.99	6.35	13.50	14.29	

CMT Micro Tee



Part No.	Tube O.D. D		Tube W.T. T		Dimension (mm)				Body Cube
	inch	mm	inch	mm	A	B	L	F	
CMT-02-	1/8	3.17	0.028	0.71	20.64	6.35	10.32	7.94	
CMT-04-*A	1/4	6.35	0.035	0.89					
CMT-04-	1/4	6.35	0.039	1.00	23.81	6.35	11.91	11.11	
CMT-06-	3/8	9.52		1.00			11.91	11.11	
CMT-08-	1/2	12.70	0.049	1.24	26.99	6.35	13.50	14.29	
CMT-12-	3/4	19.05	0.065	1.65	33.35	6.35	16.67	20.65	

CMRU Reducing Micro Union

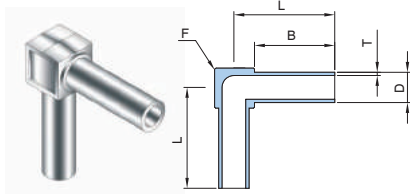


Part No.	Tube O.D. D		Tube W.T. T		Tube O.D. D ₁		Tube W.T. T ₁		Dimension (mm)	
	inch	mm	inch	mm	inch	mm	inch	mm	B	L
CMRU-0402-	1/4	6.35	0.039	1.00	1/8	3.17	0.028	0.71	6.35	19.05
CMRU-0604-	3/8	9.52		1.00	1/4	6.35	1.00			
CMRU-0804-	1/2	12.70	0.049	1.24	1/4	6.35	0.039	1.00		
CMRU-0806-	1/2	12.70	0.049	1.24	3/8	9.52		1.00		
CMRU-1204-	3/4	19.05	0.065	1.65	1/4	6.35	1.00			
CMRU-1206-	3/4	19.05	0.065	1.65	3/8	9.52	1.00			
CMRU-1208-	3/4	19.05	0.065	1.65	1/2	12.70	0.049	1.24		

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

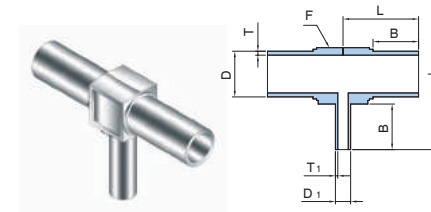
Dimensions are for reference only and are subject to change without prior notice.

CLE Long Elbow 90°



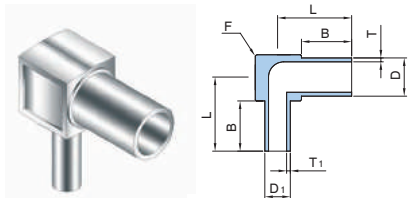
Part No.	Tube O.D. D		Tube W.T. T		Dimension (mm)			Body Cube
	inch	mm	inch	mm	B	L	F	
CLE-04-	1/4	6.35	0.039	1.00	19.00	20.00	25.00	9.00
CLE-06-	3/8	9.52		1.00			11.00	
CLE-08-	1/2	12.7	0.049	1.24		27.00	15.00	
CLE-12-	3/4	19.05	0.065	1.65		31.50	22.00	
CLE-16-	1	25.4	0.049	1.65		34.00	30.00	

CLRT Reducing Long Tee



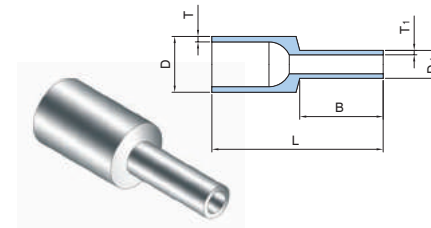
Part No.	Tube O.D. D		Tube W.T. T		Tube O.D. D ₁		Tube W.T. T ₁		Dimension (mm)			Body Cube
	inch	mm	inch	mm	inch	mm	inch	mm	B	L	F	
CLRT-0604-	3/8	9.52	0.039	1.00	1/4	6.35	0.039	1.00	19.00	27.00	11.00	15.00
CLRT-0804-	1/2	12.70	0.049	1.24	1/4	6.35		1.00				
CLRT-0806-	1/2	12.70	0.049	1.24	3/8	9.52		1.00				
CLRT-1204-	3/4	19.05	0.065	1.65	1/4	6.35		1.00				
CLRT-1206-	3/4	19.05	0.065	1.65	3/8	9.52		1.00				
CLRT-1208-	3/4	19.05	0.065	1.65	1/2	12.70	0.049	1.24	31.50	22.00		

CLRE Reducing Long Elbow 90°



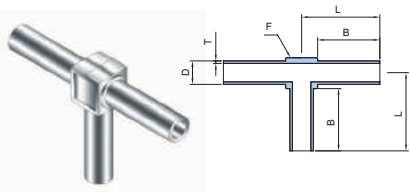
Part No.	Tube O.D. D		Tube W.T. T		Tube O.D. D ₁		Tube W.T. T ₁		Dimension (mm)			Body Cube
	inch	mm	inch	mm	inch	mm	inch	mm	B	L	F	
CLRE-0604-	3/8	9.52	0.039	1.00	1/4	6.35	0.039	1.00	19.00	25.00	11.00	15.00
CLRE-0804-	1/2	12.70	0.049	1.24	1/4	6.35		1.00				
CLRE-0806-	1/2	12.70	0.049	1.24	3/8	9.53		1.00				
CLRE-1204-	3/4	19.05	0.065	1.65	1/4	6.35		1.00				
CLRE-1206-	3/4	19.05	0.065	1.65	3/8	9.52		1.00				
CLRE-1208-	3/4	19.05	0.065	1.65	1/2	12.70	0.049	1.24	31.50	22.00		

CLRU Reducing Long Union



Part No.	Tube O.D. D		Tube W.T. T		Tube O.D. D ₁		Tube W.T. T ₁		Dimension (mm)		Body Cube
	inch	mm	inch	mm	inch	mm	inch	mm	B	L	
CLRU-0604-	3/8	9.52	0.039	1.00	1/4	6.35	0.039	1.00	19.00	39.00	42.90
CLRU-0804-	1/2	12.70	0.049	1.24	1/4	6.35		1.00			
CLRU-0806-	1/2	12.70	0.049	1.24	3/8	9.52		1.00			
CLRU-1204-	3/4	19.05	0.065	1.65	1/4	6.35		1.00			
CLRU-1206-	3/4	19.05	0.065	1.65	3/8	9.52		1.00			
CLRU-1208-	3/4	19.05	0.065	1.65	1/2	12.70	0.049	1.24	44.5		
CLRU-1604-	1	25.40	0.065	1.65	1/4	6.35	0.039	1.00	19.00	44.5	
CLRU-1606-	1	25.40	0.065	1.65	3/8	9.52		1.00			
CLRU-1608-	1	25.40	0.065	1.65	1/2	12.70		0.049			1.24
CLRU-1612-	1	25.40	0.065	1.65	3/4	19.05		0.065			1.65

CLT Long Tee



Part No.	Tube O.D. D		Tube W.T. T		Dimension (mm)			Body Cube
	inch	mm	inch	mm	B	L	F	
CLT-04-	1/4	6.35	0.039	1.00	19.00	20.00	25.00	9.00
CLT-06-	3/8	9.52		1.00			11.00	
CLT-08-	1/2	12.7	0.049	1.24		27.00	15.00	
CLT-12-	3/4	19.05	0.065	1.65		31.50	22.00	
CLT-16-	1	25.4	0.065	1.65		34.00	30.00	

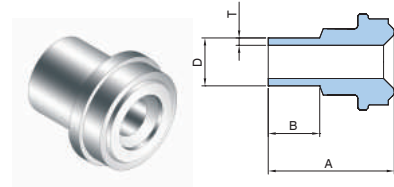
Dimensions are for reference only and are subject to change without prior notice.

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Glands

CMGS

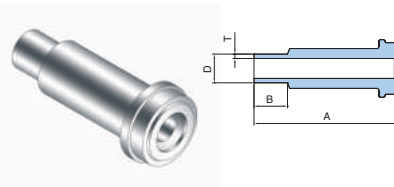
Micro Gland S



Part No.	UCR Size	Tube O.D. D		Tube W.T. T		Dimension (mm)	
	inch	inch	mm	inch	mm	A	B
CMGS-04-	1/4	1/4	6.35	0.039	1.00	15.30	6.35
CMGS-0804-	1/2	1/4	6.35		1.00		
CMGS-0806-	1/2	3/8	9.52		1.00		
CMGS-08-	1/2	1/2	12.70	0.049	1.24		

CMGL

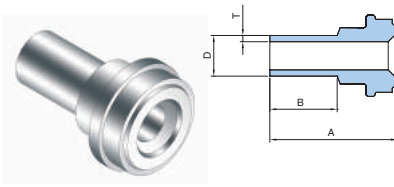
Micro Gland L



Part No.	UCR Size	Tube O.D. D		Tube W.T. T		Dimension (mm)	
	inch	inch	mm	inch	mm	A	B
CMGL-04-	1/4	1/4	6.35	0.039	1.00	30.50	6.35
CMGL-0804-	1/2	1/4	6.35		1.00		
CMGL-0806-	1/2	3/8	9.52		1.00		
CMGL-08-	1/2	1/2	12.70	0.049	1.24		

CSGS

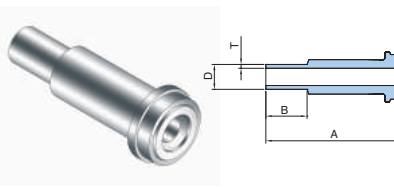
Short Gland S



Part No.	UCR Size	Tube O.D. D		Tube W.T. T		Dimension (mm)	
	inch	inch	mm	inch	mm	A	B
CSGS-04-	1/4	1/4	6.35	0.039	1.00	18.95	10.00
CSGS-0804-	1/2	1/4	6.35		1.00		
CSGS-0806-	1/2	3/8	9.52		1.00		
CSGS-08-	1/2	1/2	12.70	0.049	1.24		

CSGL

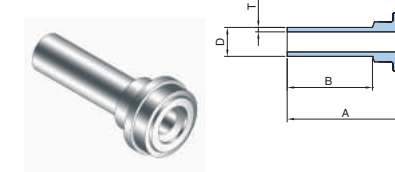
Short Gland L



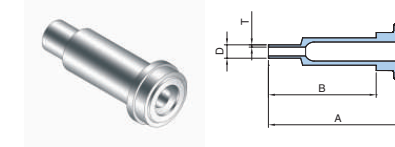
Part No.	UCR Size	Tube O.D. D		Tube W.T. T		Dimension (mm)	
	inch	inch	mm	inch	mm	A	B
CSGL-0402-	1/4	1/8	3.17	0.028	0.71	28.00	10.00
CSGL-04-	1/4	1/4	6.35	0.039	1.00	34.15	
CSGL-0804-	1/2	1/4	6.35		1.00		
CSGL-0806-	1/2	3/8	9.52		1.00		
CSGL-08-	1/2	1/2	12.70	0.049	1.24		

CLGS

Long Gland S



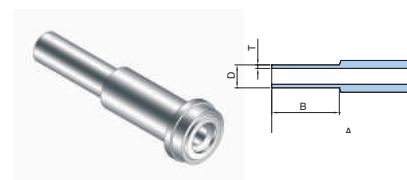
Part No.	UCR Size	Tube O.D. D		Tube W.T. T		Dimension (mm)	
	inch	inch	mm	inch	mm	A	B
CLGS-0402-	1/4	1/8	3.17	0.028	0.71	28.00	19.05
CLGS-04-	1/4	1/4	6.35	0.039	1.00		
CLGS-0804-	1/2	1/4	6.35		1.00		
CLGS-0806-	1/2	3/8	9.52		1.00		
CLGS-08-	1/2	1/2	12.70	0.049	1.24	28.50	
CLGS-12-	3/4	3/4	19.05	0.065	1.65	32.00	20.60
CLGS-16-	1	1	25.40	0.065	1.65	38.60	19.05



Part No.	UCR Size	Tube O.D. D		Tube W.T. T		Dimension (mm)	
	inch	inch	mm	inch	mm	A	B
CLGS-0402-33.5-	1/4	1/8	3.17	0.028	0.71	33.50	20.00

CLGL

Long Gland L



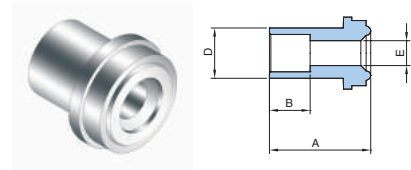
Part No.	UCR Size	Tube O.D. D		Tube W.T. T		Dimension (mm)	
	inch	inch	mm	inch	mm	A	B
CLGL-04-	1/4	1/4	6.35	0.039	1.00	43.20	19.05
CLGL-0804-	1/2	1/4	6.35		1.00		
CLGL-0806-	1/2	3/8	9.52		1.00		
CLGL-08-	1/2	1/2	12.70	0.049	1.24	45.50	
CLGL-12-	3/4	3/4	19.05	0.065	1.65	52.00	
CLGL-16-	1	1	25.40	0.065	1.65	58.90	19.05

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

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

CSGWS

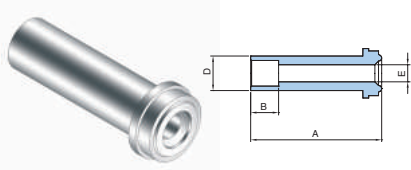
Socket Weld
Short Gland



Part No.	UCR Size	Tube O.D. D		Tube W.T. T		Dimension (mm)		
	inch	inch	mm	inch	mm	A	B	E
CSGWS-04T-	1/4	1/4	6.35	0.039	1.00	12.70	7.10	4.35

CLGWS

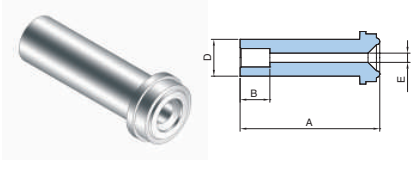
Socket Weld
Long Gland



Part No.	UCR Size	Tube O.D. D		Tube W.T. T		Dimension (mm)		
	inch	inch	mm	inch	mm	A	B	E
CLGWS-04-	1/4	1/4	6.35	0.039	1.00	33.30	7.10	4.35
CLGWS-0806-	1/2	3/8	9.52		1.00	38.10	7.90	7.53
CLGWS-08-	1/2	1/2	12.70	0.049	1.24		9.60	10.22
CLGWS-12-	3/4	3/4	19.05	0.065	1.65	50.80	11.20	15.75
CLGWS-16-	1	1	25.40	0.065	1.65	56.40	15.70	22.10

CLGRWS

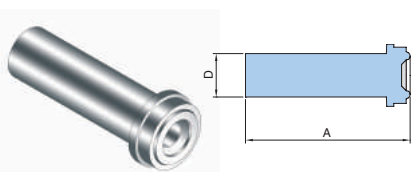
Reducing Socket Weld
Long Gland



Part No.	UCR Size	Tube O.D. D		Tube W.T. T		Dimension (mm)		
	inch	inch	mm	inch	mm	A	B	E
CLGRWS-0402-	1/4	1/8	3.17	0.028	0.71	33.30	2.50	2.30
CLGRWS-0804-	1/2	1/4	6.35	0.039	1.00	38.10	7.10	4.35

CBG

Blind Gland



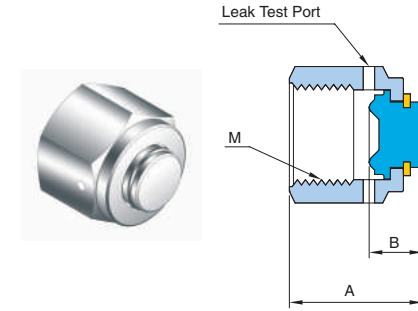
Part No.	UCR Size	Tube O.D. D		Dimension (mm)
	inch	inch	mm	A
CBG-04-	1/4	1/4	6.35	33.30
CBG-08-	1/2	1/2	12.70	38.10
CBG-12-	3/4	3/4	19.05	50.80
CBG-16-	1	1	25.40	50.40

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

Caps, Plugs, Nuts & Gaskets

CCP

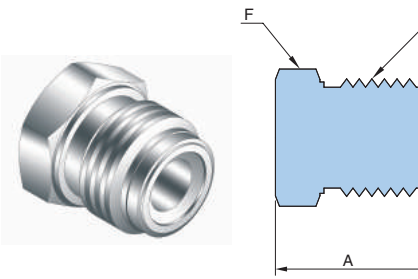
UCR Cap



Part No.	UCR Size	Dimension (mm)			M
	inch	A	B	F	
CCP-04-	1/4	22.90	11.30	19.05	9/16-18UNF
CCP-08-	1/2	25.60	12.20	26.98	7/8-14UNF
CCP-12-	3/4	32.80	13.70	38.10	1 1/4-18UNF
CCP-16-	1	39.40	16.00	46.04	1 1/2-20UNF

CPG

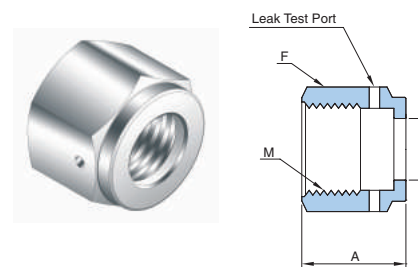
UCR Plug



Part No.	UCR Size	Dimension (mm)		M
	inch	A	F	
CPG-04-	1/4	23.20	17.46	9/16-18UNF
CPG-08-	1/2	27.30	23.81	7/8-14UNF
CPG-12-	3/4	36.30	34.92	1 1/4-18UNF
CPG-16-	1	38.60	47.68	1 1/2-20UNF

CFN

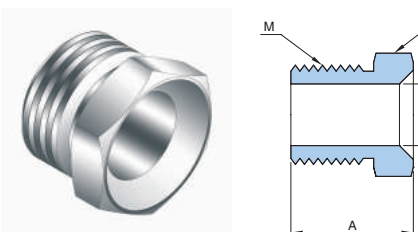
UCR Female Nut



Part No.	UCR Size	Dimension (mm)			M
	inch	A	E	F	
CFN-04-	1/4	20.50	9.00	19.05	9/16-18UNF
CFN-08-	1/2	22.50	15.30	26.98	7/8-14UNF
CFN-12-	3/4	28.40	22.60	38.10	1 1/4-18UNF
CFN-16-	1	34.00	30.50	46.04	1 1/2-20UNF

CMN

UCR Male Nut

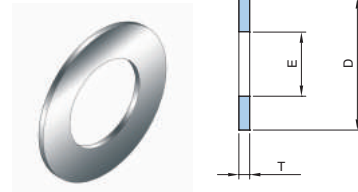


Part No.	UCR Size	Dimension (mm)			M
	inch	A	E	F	
CMN-04-	1/4	18.00	9.10	15.88	9/16-18UNF
CMN-08-	1/2	20.00	15.00	23.81	7/8-14UNF
CMN-12-	3/4	25.40	22.60	34.92	1 1/4-18UNF
CMN-16-	1	30.20	30.50	41.27	1 1/2-20UNF

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CGT

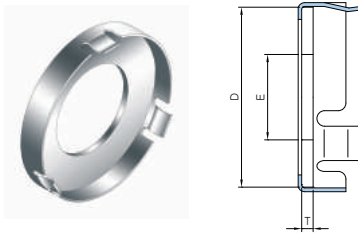
UCR Gasket



Part No.	UCR Size	Dimension (mm)		
	inch	E	D	T
CGT-04-	1/4	5.60	11.80	0.75
CGT-08-	1/2	11.00	19.30	
CGT-12-	3/4	17.00	28.10	
CGT-16-	1	22.60	34.80	

CGTR

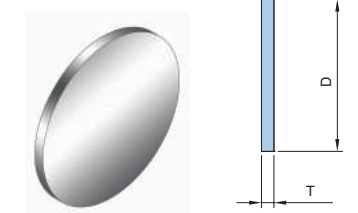
UCR Gasket Retained



Part No.	UCR Size	Dimension (mm)		
	inch	E	D	T
CGTR-04-	1/4	5.60	11.80	0.75
CGTR-08-	1/2	11.00	19.30	
CGTR-12-	3/4	17.00	28.10	
CGTR-16-	1	22.60	34.80	

CGTB

UCR Gasket Blind



Part No.	UCR Size	Dimension (mm)	
	inch	D	T
CGTB-04-	1/4	11.80	0.75
CGTB-08-	1/2	19.30	
CGTB-12-	3/4	28.10	
CGTB-16-	1	34.80	

Retainer Color Coding

Easy identification of gasket materials before assembly or throughout the leak test port of Female Nut after assembly



Materials of Gaskets

Every gaskets are available with Nickel and 316LSS. To order, add the material designator to the end of part number.

Examples :

CGT-04-NI Gasket, 1/4", Nickel

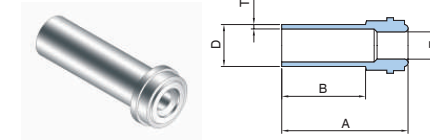
CGTR-08-SL Retained Gasket, 1/2", 316LSS

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High Flow Components

CHG

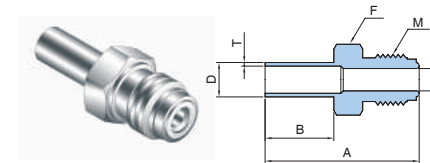
HR Gland



Part No.	UCR Size	Tube O.D.		Tube W.T.		Dimension (mm)		
	inch	inch	mm	inch	mm	A	B	E
CHG-0406B-	1/4	3/8	9.52	0.039	1.00	28.70	19.05	6.20
CHG-0406B-33.3-	1/4	3/8	9.52	0.039	1.00	33.30	28.50	6.20

CHA

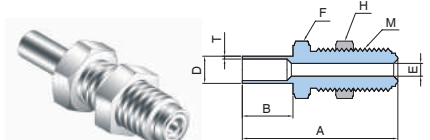
HR Adapter



Part No.	UCR Size	Tube O.D.		Tube W.T.		Dimension (mm)				M
	inch	inch	mm	inch	mm	A	B	E	F	
CHA-0406-	1/4	3/8	9.52	0.039	1.00	42.70	19.05	6.35	17.46	9/16-18UNF

CHBA

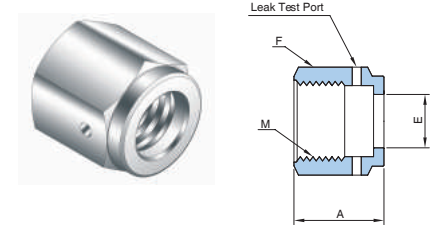
HR Bulkhead Adapter



Part No.	UCR Size	Tube O.D.		Tube W.T.		Dimension (mm)					M	Panel Hole Size
	inch	inch	mm	inch	mm	A	B	E	F	H		
CHBA-0406-	1/4	3/8	9.52	0.039	1.00	59.80	19.05	6.30	19.05	19.05	9/16-18UNF	15.00

CHF

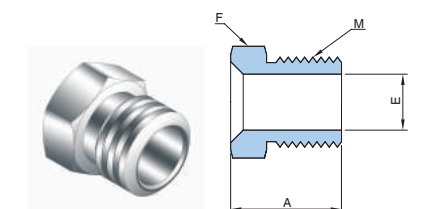
HR Female Nut



Part No.	UCR Size	Dimension (mm)			M
	inch	A	E	F	
CHF-04-	1/4	17.30	11.50	19.05	9/16-18UNF

CHMN

HR Male Nut



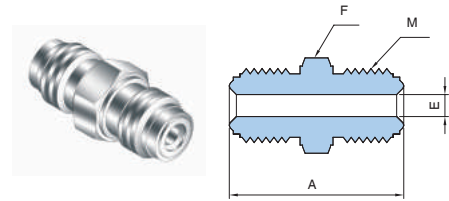
Part No.	UCR Size	Dimension (mm)			M
	inch	A	E	F	
CHMN-04-	1/4	18.00	9.90	15.88	9/16-18UNF

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UCR to UCR

CDMU

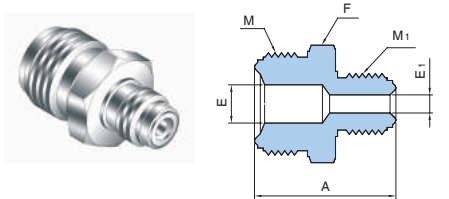
Double Male Union



Part No.	UCR Size	Dimension (mm)			M
	inch	A	E	F	
CDMU-04-	1/4	39.40	4.57	15.87	9/16-18UNF
CDMU-08-	1/2	47.20	10.22	23.80	7/8-14UNF
CDMU-12-	3/4	62.00	15.70	33.33	1 1/4-18UNF
CDMU-16-	1	65.80	22.10	41.27	1 1/2-20UNF

CDMRU

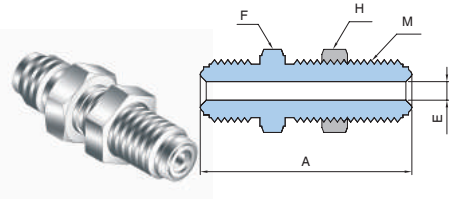
Reducing Double Male Union



Part No.	UCR Size	UCR Size	Dimension (mm)				M	M ₁
	inch	inch	A	E	E ₁	F		
CDMRU-0804-	1/2	1/4	43.40	10.22	4.57	23.80	7/8-14UNF	9/16-18UNF

CBDMU

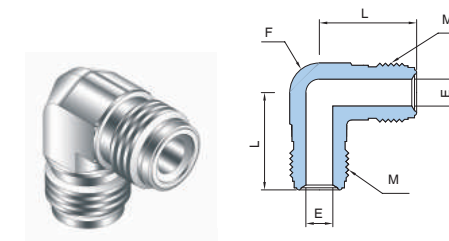
Bulkhead Double Male Union



Part No.	UCR Size	Dimension (mm)					M	Panel Hole Size
	inch	A	B	E	F	H		
CBDMU-04-	1/4	56.60	33.70	4.57	19.05	19.05	9/16-18UNF	15.00
CBDMU-08-	1/2	65.30	37.60	10.22	26.98	26.98	7/8-14UNF	23.00

CEU

Union Elbow

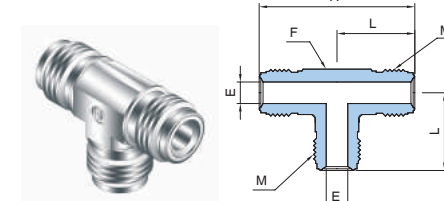


Part No.	UCR Size	Dimension (mm)			M
	inch	L	E	F	
CEU-04-	1/4	27.20	4.35	12.70	9/16-18UNF
CEU-08-	1/2	36.80	10.22	20.63	7/8-14UNF
CEU-12-	3/4	48.80	15.75	31.75	1 1/4-18UNF
CEU-16-	1	50.80	22.10	42.86	1 1/2-20UNF

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CUT

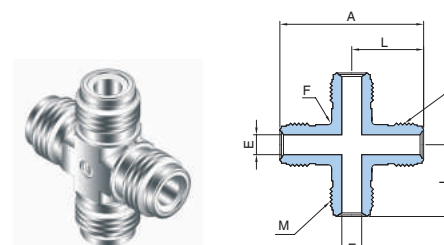
Union Tee



Part No.	UCR Size	Dimension (mm)				M
	inch	A	E	L	F	
CUT-04-	1/4	54.40	4.35	27.20	12.70	9/16-18UNF
CUT-08-	1/2	73.87	10.22	36.80	20.63	7/8-14UNF
CUT-12-	3/4	97.50	15.75	48.80	31.75	1 1/4-18UNF
CUT-16-	1	102.00	22.10	50.80	42.86	1 1/2-20UNF

CUC

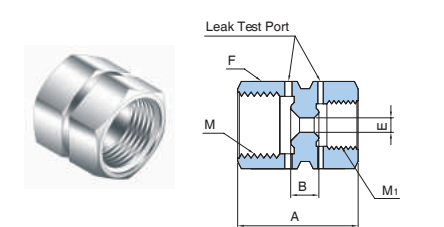
Union Cross



Part No.	UCR Size	Dimension (mm)				M
	inch	A	E	L	F	
CUC-04-	1/4	54.40	4.35	27.20	12.70	9/16-18UNF
CUC-08-	1/2	73.87	10.22	36.80	20.63	7/8-14UNF
CUC-12-	3/4	97.50	15.75	48.80	31.75	1 1/4-18UNF
CUC-16-	1	102.00	22.10	50.80	42.86	1 1/2-20UNF

CDFRU

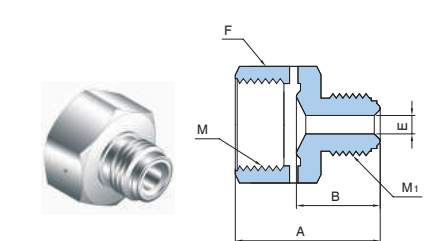
Reducing Double Female Union



Part No.	UCR Size	UCR Size	Dimension (mm)				M	M ₁
	inch	inch	A	B	E	F		
CDFRU-0804-	1/2	1/4	34.60	6.00	4.35	26.98	7/8-14UNF	9/16-18UNF

CRA

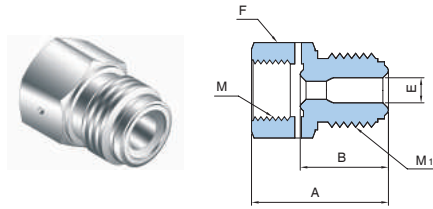
Reducing Adapter



Part No.	UCR Size	UCR Size	Dimension (mm)				M (Female)	M ₁ (Male)
	inch	inch	A	B	E	F		
CRA-0804-	1/2	1/4	35.80	21.60	4.35	26.98	7/8-14UNF	9/16-18UNF

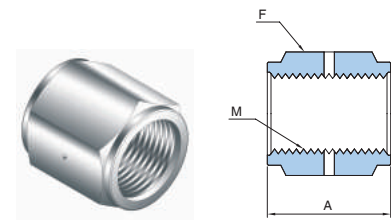
Dimensions are for reference only and are subject to change without prior notice.

CRB Reducing Bushing



Part No.	UCR Size	UCR Size	Dimension (mm)				M (Female)	M ₁ (Male)
	inch	inch	A	B	E	F		
CRB-0804-	1/2	1/4	35.80	23.10	4.35	23.81	9/16-18UNF	7/8-14UNF

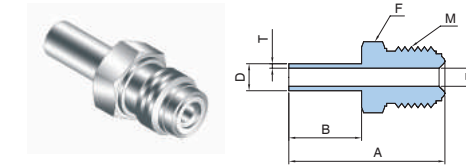
CC Coupling



Part No.	UCR Size	Dimension (mm)		M (Female)
	inch	A	H	
CC-04-	1/4	30.20	19.05	9/16-18UNF
CC-08-	1/2	33.30	26.98	7/8-14UNF
CC-12-	3/4	42.70	38.10	1 1/4-18UNF
CC-16-	1	51.80	44.45	1 1/2-20UNF

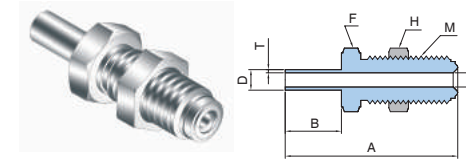
UCR to TBW (Tube Butt Weld)

CAWB TBW Adapter



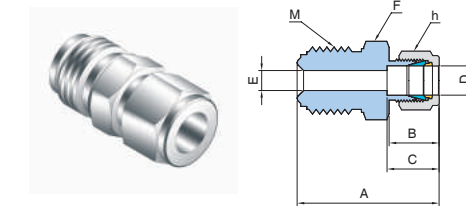
Part No.	UCR Size	Tube O.D. D	Tube W.T. T		Dimension (mm)				M (Male)
	inch	inch mm	inch mm	A	B	E	H		
CAWB-04-	1/4	1/4	6.35	0.039 1.00	42.65	19.05	4.35	15.88	9/16-18UNF
CAWB-0806-	1/2	3/8	9.52	1.00	46.70		10.22	23.81	7/8-14UNF
CAWB-08-	1/2	1/2	12.70	0.049 1.24	46.70	10.22	23.81	7/8-14UNF	

CBAWB Bulkhead TBW Adapter



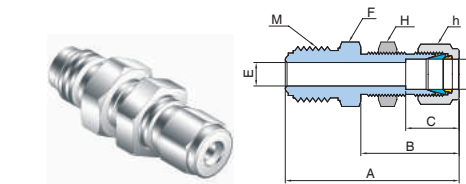
Part No.	UCR Size	Tube O.D. D	Tube W.T. T		Dimension (mm)				M (Male)	Panel Hole Size
	inch	inch mm	inch mm	A	B	F	H			
CBAWB-04-	1/2	1/4	6.35	0.039 1.00	59.85	19.05	19.05	19.05	9/16-18UNF	15.00
CBAWB-0804-	1/2	3/8	9.52	1.00	65.25		26.98	26.98	7/8-14UNF	23.00
CBAWB-08-	1/2	1/2	12.70	0.049 1.24	71.30	38.10	38.10	1 1/4-18UNF	32.00	

CULC UNILOK Connector



Part No.	UCR Size	Tube O.D. D	Dimension (mm)							M (Male)
	inch	inch mm	A	B	C	E	F	h		
CULC-0402-	1/4	1/8	3.17	38.90	15.20	12.70	2.30	15.87	11.11	9/16-18UNF
CULC-04-	1/4	1/4	6.35	41.10	17.80	15.20	4.60	15.87	14.28	9/16-18UNF
CULC-0806-	1/2	3/8	9.52	46.70	19.30	16.80	7.10	23.81	17.46	7/8-14UNF
CULC-08-	1/2	1/2	12.70	49.50	21.80	22.90	10.20	23.81	22.22	7/8-14UNF

CBULC Bulkhead UNILOK Connector



Part No.	UCR Size	Tube O.D. D	Dimension (mm)								M (Male)	Panel Hole Size
	inch	inch mm	A	B	C	E	F	H	h			
CBULC-04	1/4	1/4	6.35	57.20	33.50	15.20	4.60	15.87	15.87	14.28	9/16-18UNF	11.50
CBULC-0806-	1/2	3/8	9.52	64.50	36.80	16.80	7.10	23.81	23.81	17.46	7/8-14UNF	14.70
CBULC-08-	1/2	1/2	12.70	69.60	41.90	22.90	10.20	23.81	23.81	22.22	7/8-14UNF	19.40

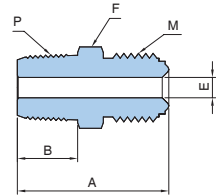
Dimensions are for reference only and are subject to change without prior notice.

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

UCR to Thread

CUMC

Male Connector

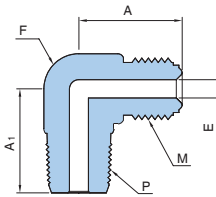


Part No.	UCR Size	Thread Size P-NPT	Dimension (mm)				M
	inch	inch	E	L	E	F	
CUMC-0402N-	1/4	1/8	33.30	9.60	4.35	15.90	9/16-18UNF
CUMC-0404N-	1/4	1/4	37.84	14.22	4.35	15.90	9/16-18UNF
CUMC-0804N-	1/2	1/4	41.87	14.22	10.22	23.80	7/8-14UNF
CUMC-0806N-	1/2	3/8	41.87	14.22	7.53	23.80	7/8-14UNF
CUMC-0808N-	1/2	1/2	46.74	19.05	10.22	23.80	7/8-14UNF
CUMC-1212N-	3/4	3/4	55.63	19.05	15.75	33.30	1 1/4-18UNF
CUMC-1616N-	1	1	62.74	23.88	22.10	42.40	1 1/2-20UNF

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

CUME

Male Elbow

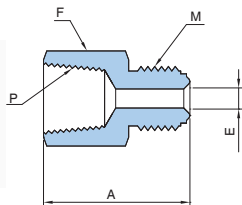


Part No.	UCR Size	Thread Size P-NPT	Dimension (mm)				M
	inch	inch	A	A ₁	E	F	
CUME-0404N-	1/4	1/4	27.18	27.18	4.35	15.95	9/16-18UNF
CUME-0806N-	1/2	3/8	36.83	32.00	10.22	23.80	9/16-18UNF
CUME-0808N-	1/2	1/2	36.83	36.83	10.22	23.80	7/8-14UNF
CUME-1212N-	3/4	3/4	48.80	43.50	15.75	33.30	7/8-14UNF

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

CUFC

Female Connector



Part No.	UCR Size	Thread Size P-NPT	Dimension (mm)			M
	inch	inch	A	B	F	
CUFC-0402N-	1/4	1/8	35.80	4.35	15.90	9/16-18UNF
CUFC-0404N-	1/4	1/4	39.10	4.35	19.05	9/16-18UNF
CUFC-0806N-	1/2	3/8	44.70	7.53	23.81	7/8-14UNF
CUFC-0808N-	1/2	1/2	50.50	10.22	26.98	7/8-14UNF
CUFC-1212N-	3/4	3/4	59.90	15.75	33.33	1 1/4-18UNF
CUFC-1616N-	1	1	63.80	22.10	41.27	1 1/2-20UNF

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

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

UHP

Clean Pipe/Tube Fittings & Flanges



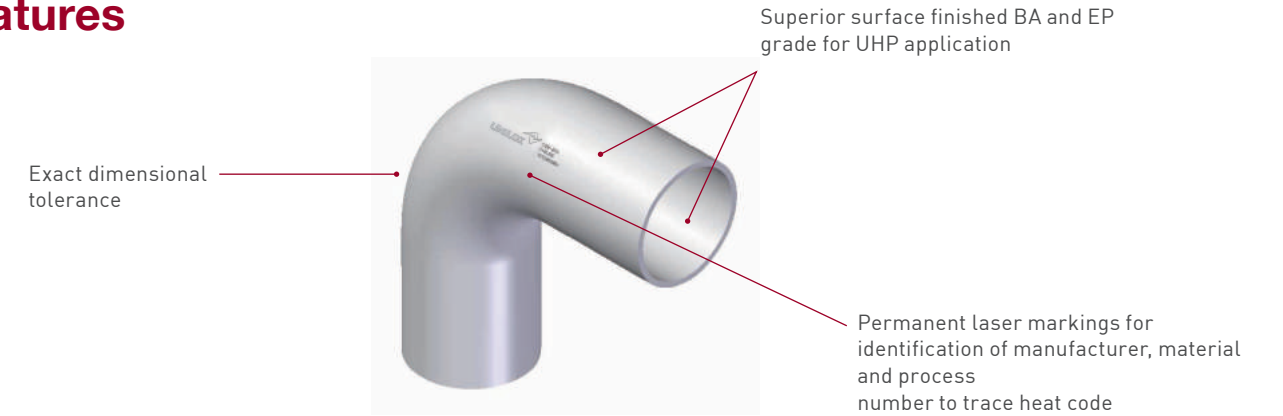
Clean Pipe/Tube Fittings & Flanges

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UNILOK® Clean Pipe/Tube fittings are designed and manufactured as high performance and high purity components by our own know-how to be accumulated throughout the years.

Features



Clean Pipe & Tube Fittings



CBE ²⁷⁹
Elbow 90°



CBVE ²⁷⁹
Elbow 45°



CBT ²⁸⁰
Tee



CBTR ²⁸⁰
Reducing Tee



CBCR ²⁸¹
Concentric Reducer



CBCA ²⁸¹
Cap



CBCAR ²⁸¹
Cap Reducer



CBTJ ²⁸²
Joint Tee



CBRJ ²⁸²
Joint Reducer



CBCJ ²⁸³
Joint Cap



CBTM ²⁸⁴
Multi Header Tee

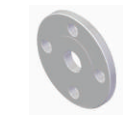


CBTMJ ²⁸⁴
Multi Header Joint Tee

Clean Flanges



CFL ²⁸⁵
Lab Joint Flange



CFJR ²⁸⁵
JIS RF Flange



CFP ²⁸⁵
Pipe Flange

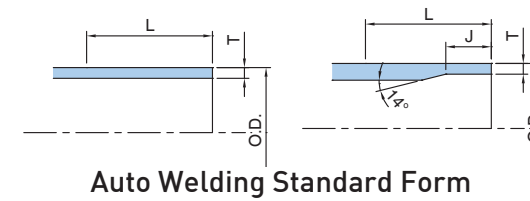


CFJB ²⁸⁵
JIS Blind Flange



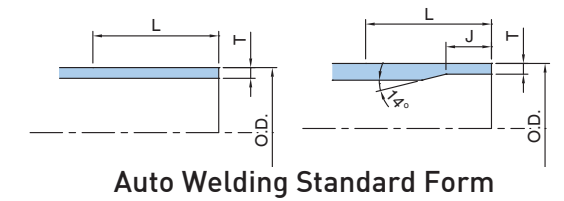
CFJG ²⁸⁶
JIS Flange Gasket

Pipe Size & Weld Bevel End Manufacture Form



Auto Welding Standard Form

Tube Size & Weld Bevel End Manufacture Form



Auto Welding Standard Form

Pipe Size O.D.		Wall Thickness T		Straight End Length L	Thinning Length J	
		5S	10S		5S	10S
Normal	mm	mm		mm	mm	
8A	13.80	1.20	1.65	29	4	7
10A	17.30	1.20	1.65	36	4	7
15A	21.70	1.65	2.10	36	5	7
20A	27.20	1.65	2.10	36	5	7
25A	34.00	1.65	2.80	36	5	7
32A	42.70	1.65	2.80	46	5	7
40A	48.60	1.65	2.80	46	5	7
50A	60.50	1.65	2.80	46	5	7
65A	76.30	2.10	3.00	51	6	11
80A	89.10	2.10	3.00	51	6	11
100A	114.30	2.10	3.00	51	6	11
125A	139.80	2.80	3.40	-	7	-
150A	165.20	2.80	3.40	-	7	-
200A	216.30	2.80	4.00	-	7	-
250A	267.40	3.40	4.00	-	-	-
300A	318.50	4.00	4.50	-	-	-
350A	355.60	4.00	4.80	-	-	-
400A	406.40	4.20	4.80	-	-	-

Pipe Size O.D.		Wall Thickness T	Straight End Length L	Thinning Length J
1/4	6.35	1.00(0.89)	29	7
3/8	9.53	1.00(0.89)	29	7
1/2	12.70	1.00(1.24/1.65)	29	7
5/8	15.88	1.00(1.24)	36	7
3/4	19.05	1.65(1.24)	36	7
1	25.40	1.65(1.24)	36	7
1 1/4	31.80	1.65	36	7
1 1/2	38.10	1.65	46	7
2	50.80	1.65	46	7
2 1/2	63.50	1.65	51	7
3	76.20	1.65	51	11
4	101.60	2.11	51	11
5	127.00	2.77(3.05)	56	11
6	152.40	2.77(3.05)	56	11

The tube wall thickness which are indicated in black colors are the standard. The red colored wall thicknesses are available upon request.

The pipe sizes larger than 100A are welded by manual welding. For more details, contact your local distributor.

Materials

	Materials	Specification
Pipe	304SS	JIS SUS304
	304LSS	JIS SUS304L
	316SS	JIS SUS316
	316LSS	JIS SUS316L
Tube	316LSS	ASTM A269 TP316/316L

Internal Surface Finish Levels

Grade	Size	Internal Surface Finish Level Ra (µinch)
BA	1/4" ≤ O.D. ≤ 1"	≤ 20
	25A ≤ O.D. ≤ 100A	≤ 25
EP	1/4" ≤ O.D. ≤ 80A	≤ 10
	O.D. ≥ 100A	

How To Order

UNILOK Clean Pipe & Tube Fittings are ordered by part number as shown below.



Example: The following part number, *CBE-25A S05-SLS-EP* is designated for 90° Elbow, 25A Pipe Size, 316LSS, EP.

Connection Size														
Fractional(Inch) Tube O.D. Designation														
Tube O.D.	inch	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	3	4	5	6
Designator	02	04	06	08	12	16	20	24	32	48	64	80	96	

Connection Size																			
Tube O.D.	Normal	8A	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A	350A	400A
mm		13.8	17.3	21.7	27.2	34.0	42.7	48.6	60.5	76.3	89.1	114.3	139.8	165.2	216.3	267.4	318.5	355.6	406.4
Designator		8A	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A	350A	400A

Pipe and tube sizes larger than 100A and 2" are available upon request

Wall Thickness										
Normal or inch	Pipe		Tube							
	5S	10S	0.035	0.039	0.049	0.065	0.083	0.109	0.120	
mm	-	-	0.89	1.00	1.24	1.65	2.11	2.77	3.05	
Designator	S05	S10	T035	T100	T049	T065	T083	T109	T120	

Refer to sizes in page 277 for more details.

Particle Contribution Test

According to ASTM F1394-92.

Moisture Contribution Test

According to SEMA-90120397B-STD.

Cleaning

All components are precisely cleaned with 18MΩ deionized water after the passivation procedure. Reference specification : SEMI E49.6.

Assembling

According to SEMI E49.6.

Packaging

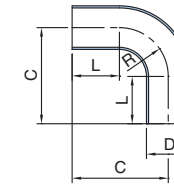
Each component is double bagged to ensure component cleanliness and to protect them from environmental contamination.

Referenced specification : SEMI E49.1.

Clean Pipe & Tube Fittings

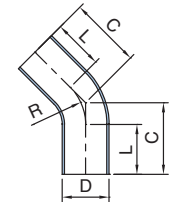
CBE

Elbow 90°



CBVE

Elbow 45°



Pipe Size - Long Radius

Part No.	Pipe O.D. D		Dimension (mm)		
	N.S.	mm	C	R	L
CBE-8A-	8A	13.80	55.0	25.4	29.0
CBE-10A-	10A	17.30	62.0	25.4	36.0
CBE-15A-	15A	21.70	75.0	38.1	36.0
CBE-20A-	20A	27.20	75.0	38.1	36.0
CBE-25A-	25A	34.00	75.0	38.1	36.0
CBE-32A-	32A	42.70	94.0	47.6	46.0
CBE-40A-	40A	48.60	104.0	57.2	46.0
CBE-50A-	50A	60.50	123.0	76.2	46.0
CBE-65A-	65A	76.30	115.0	63.5	51.0
CBE-80A-	80A	89.10	128.0	76.2	51.0
CBE-100A-	100A	114.30	153.0	101.6	51.0

Pipe Size - Long Radius

Part No.	Pipe O.D. D		Dimension (mm)		
	N.S.	mm	C	R	L
CBVE-20A-	20A	27.20	52.0	38.1	36.0
CBVE-25A-	25A	34.00	52.0	38.1	36.0
CBVE-32A-	32A	42.70	66.0	47.6	46.0
CBVE-40A-	40A	48.60	70.0	57.2	46.0
CBVE-50A-	50A	60.50	78.0	76.2	46.0
CBVE-65A-	65A	76.30	91.0	95.3	51.0
CBVE-80A-	80A	89.10	99.0	114.3	51.0
CBVE-100A-	100A	114.30	115.0	152.4	51.0

Tube Size - Long Radius

Part No.	Tube O.D. D		Dimension (mm)		
	inch	mm	C	R	L
CBE-04-	1/4	6.35	49.0	20.0	29.0
CBE-06-	3/8	9.52	52.0	23.0	29.0
CBE-08-	1/2	12.70	54.0	25.0	29.0
CBE-12-	3/4	19.05	66.0	30.0	36.0
CBE-16-	1	25.40	69.0	33.0	36.0
CBE-20-	1 1/4	31.80	84.0	47.6	36.0
CBE-24-	1 1/2	38.10	104.0	57.2	46.0
CBE-32-	2	50.80	123.0	76.2	46.0

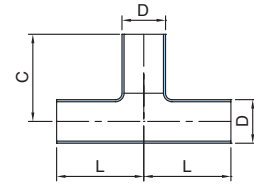
Tube Size - Long Radius

Part No.	Tube O.D. D		Dimension (mm)		
	inch	mm	C	R	L
CBVE-08-	1/2	12.70	40.0	25.0	29.0
CBVE-12-	3/4	19.05	49.0	30.0	36.0
CBVE-16-	1	25.40	50.0	33.0	36.0
CBVE-20-	1 1/4	31.80	56.0	47.6	36.0
CBVE-24-	1 1/2	38.10	70.0	57.2	46.0
CBVE-32-	2	50.80	78.0	76.2	46.0

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

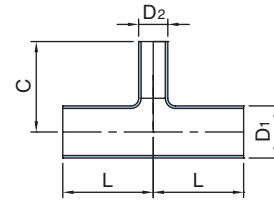
CBT

Tee



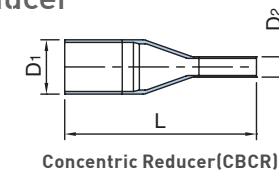
CBTR

Reducing Tee

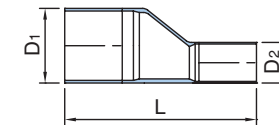


CBCR

Concentric Reducer



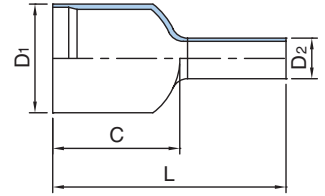
Concentric Reducer(CBCR)



Eccentric Reducer(CBER)

CBCAR

Cap Reducer



Pipe Size

Part No.	Pipe O.D. D		Dimension (mm)	
	N.S.	mm	L	C
CBT-8A-	8A	13.80	42.0	42.0
CBT-10A-	10A	17.30	49.0	49.0
CBT-15A-	15A	21.70	59.0	59.0
CBT-20A-	20A	27.20	65.0	65.0
CBT-25A-	25A	34.00	68.0	68.0
CBT-32A-	32A	42.70	88.0	88.0
CBT-40A-	40A	48.60	95.0	95.0
CBT-50A-	50A	60.50	102.0	102.0
CBT-65A-	65A	76.30	121.0	121.0
CBT-80A-	80A	89.10	130.0	130.0
CBT-100A-	100A	114.30	145.0	145.0

Pipe Size

Part No.	Pipe O.D. D								Dimension (mm)		
	D ₁	D ₂							L	C	
CBTR-8A-*-	8A	1/4"	3/8"	1/2"					42.0	42.0	
CBTR-10A-*-	10A	8A	1/4"	3/8"	1/2"				47.0	44.0	
CBTR-15A-*-	15A	8A	1/4"	3/8"	1/2"				47.0	44.0	
		10A	15A	3/4"	5/8"				52.0	52.0	
CBTR-20A-*-	20A	8A	1/4"	3/8"	1/2"				47.0	47.0	
		10A	15A	3/4"	5/8"	1"			55.0	55.0	
CBTR-25A-*-	25A	8A	1/4"	3/8"	1/2"				47.0	50.0	
		10A	15A	20A	3/4"	5/8"	1"		59.0	59.0	
CBTR-32A-*-	32A	8A	1/4"	3/8"	1/2"				57.0	54.0	
		10A	15A	20A	25A	3/4"	5/8"	1"	1-1/4"	68.0	62.0
CBTR-40A-*-	40A	8A	1/4"	3/8"	1/2"				57.0	57.0	
		10A	15A	20A	25A	3/4"	5/8"	1"	1-1/4"	68.0	65.0
CBTR-50A-*-	50A	8A	1/4"	3/8"	1/2"				57.0	63.0	
		10A	15A	20A	25A	3/4"	5/8"	1"	1-1/4"	68.0	71.0
CBTR-65A-*-	65A	8A	1/4"	3/8"	1/2"				61.0	71.0	
		10A	15A	20A	25A	3/4"	5/8"	1"	1-1/4"	72.0	79.0
CBTR-80A-*-	80A	8A	1/4"	3/8"	1/2"				61.0	77.0	
		10A	15A	20A	25A	3/4"	5/8"	1"	1-1/4"	72.0	85.0
CBTR-100A-*-	100A	32A	40A	50A	1-1/2"	2"			88.0	96.0	
		65A								103.0	103.0
CBTR-100A-*-	100A	8A	1/4"	3/8"	1/2"				61.0	90.0	
		10A	15A	20A	25A	3/4"	5/8"	1"	1-1/4"	72.0	98.0
		32A	40A	50A	1-1/2"	2"				88.0	109.0
		65A	80A							116.0	116.0

Tube Size

Part No.	Tube O.D. D		Dimension (mm)	
	inch	mm	L	C
CBT-04-	1/4	6.35	35.0	35.0
CBT-06-	3/8	9.52	37.0	37.0
CBT-08-	1/2	12.70	39.0	39.0
CBT-12-	3/4	19.05	52.0	52.0
CBT-16-	1	25.40	55.0	55.0
CBT-20-	1 1/4	31.80	59.0	59.0
CBT-24-	1 1/2	38.10	74.0	74.0
CBT-32-	2	50.80	77.0	77.0

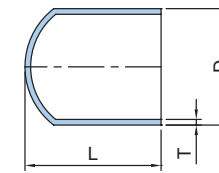
Pipe Size

Part No.	Pipe O.D.					Dimension (mm)
	D ₁	D ₂				L
CBCR-20A-*-	20A	15A				105.0
CBCR-25A-*-	25A	15A	20A	3/8"	1/2"	120.0
CBCR-32A-*-	32A	15A	20A	25A	1/2"	125.0
CBCR-40A-*-	40A	20A	25A	32A	1/2"	130.0
CBCR-50A-*-	50A	25A	32A	40A	1/2"	140.0
CBCR-65A-*-	65A	32A	40A	50A	1/2"	165.0
CBCR-80A-*-	80A	40A	50A	65A	1/2"	170.0
CBCR-100A-*-	100A	50A	65A	80A	1/2"	180.0

Order to eccentric reducer, replace **C** with **E**
 Examples : CBER-25AS05-20AS05-SLS-EP

CBCA

Cap



Pipe Size

Part No.	Pipe O.D. D		Dimension (mm)	
	N.S.	mm	L	T
CBCA-8A-	8A	13.80	12.7	1.20
CBCA-10A-	10A	17.30	19.1	1.20
CBCA-15A-	15A	21.70	25.4	1.65
CBCA-20A-	20A	27.20	25.4	1.65
CBCA-25A-	25A	34.00	38.1	1.65
CBCA-32A-	32A	42.70	38.1	1.65
CBCA-40A-	40A	48.60	38.1	1.65
CBCA-50A-	50A	60.50	38.1	1.65
CBCA-65A-	65A	76.30	38.1	2.10
CBCA-80A-	80A	89.10	50.8	2.10
CBCA-100A-	100A	114.30	63.5	2.10

Pipe Size

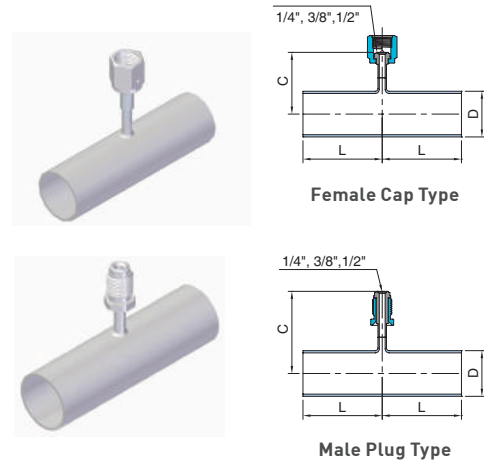
Part No.	Pipe O.D. D								Dimension (mm)	
	D ₁	D ₂							L	C
CBCAR-8A-*-	8A	1/4"	3/8"	1/2"					-	-
CBCAR-10A-*-	10A	8A	1/4"	3/8"	1/2"				-	-
CBCAR-15A-*-	15A	8A	1/4"	3/8"	1/2"				60.0	25.4
		10A	15A	3/4"	5/8"				[67.0]	
CBCAR-20A-*-	20A	8A	1/4"	3/8"	1/2"				60.0	25.4
		10A	15A	3/4"	5/8"	1"			67.0	
CBCAR-25A-*-	25A	8A	1/4"	3/8"	1/2"				73.0	38.1
		10A	15A	20A	3/4"	5/8"	1"		[80.0]	
CBCAR-32A-*-	32A	8A	1/4"	3/8"	1/2"				73.0	38.1
		10A	15A	20A	25A	3/4"	5/8"	1"	1-1/4"	
CBCAR-40A-*-	40A	8A	1/4"	3/8"	1/2"				73.0	38.1
		10A	15A	20A	25A	3/4"	5/8"	1"	1-1/4"	
CBCAR-50A-*-	50A	32A	40A	1-1/2"					[90.0]	38.1
		8A	1/4"	3/8"	1/2"				73.0	
CBCAR-65A-*-	65A	8A	1/4"	3/8"	1/2"				73.0	38.1
		10A	15A	20A	25A	3/4"	5/8"	1"	1-1/4"	
CBCAR-80A-*-	80A	32A	40A	1-1/2"	2"				[90.0]	50.8
		8A	1/4"	3/8"	1/2"				85.0	
CBCAR-100A-*-	100A	10A	15A	20A	25A	3/4"	5/8"	1"	1-1/4"	92.0
		32A	40A	50A	1-1/2"	2"				102.0
CBCAR-100A-*-	100A	65A	80A						[110.0]	63.5
		8A	1/4"	3/8"	1/2"				98.0	
CBCAR-100A-*-	100A	10A	15A	20A	25A	3/4"	5/8"	1"	1-1/4"	105.0
		32A	40A	50A	1-1/2"	2"				115.0
		65A	80A							125.0

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

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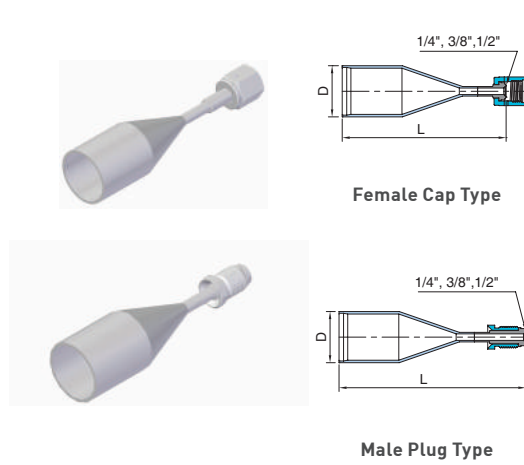
CBTJ

Joint Tee



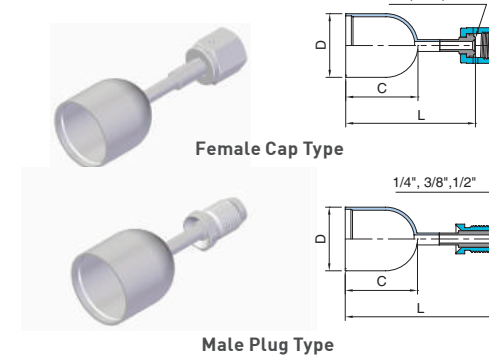
CBRJ

Joint Reducer



CBCJ

Joint Cap



Joint Fittings Ordering Information

Every joint fittings are available with 1/4", 3/8" and 1/2" of UNILOK UCR Cap or UCR Plug.

To order, add the designators next to part number.

Example : CBCJ-25AS05-04CP

Designator	Joint Type
-04CP	1/4" UCR Female Cap
-06CP	3/8" UCR Female Cap
-08CP	1/2" UCR Female Cap
-04PG	1/4" UCR Male Plug
-06PG	3/8" UCR Male Plug
-08PG	1/2" UCR Male Plug

Pipe Size

Part No.	Pipe O.D. D		Dimension (mm)		
	N.S.	mm	L	Female C	Male C
CBTJ-10A-	10A	17.30	52.0	37.0	47.0
CBTJ-15A-	15A	21.70	52.0	39.5	49.5
CBTJ-20A-	20A	27.20	55.0	42.5	52.5
CBTJ-25A-	25A	34.00	59.0	46.5	56.5
CBTJ-32A-	32A	42.70	68.0	51.0	61.0
CBTJ-40A-	40A	48.60	68.0	54.0	64.0
CBTJ-50A-	50A	60.50	68.0	60.0	70.0
CBTJ-65A-	65A	76.30	72.0	68.0	78.0
CBTJ-80A-	80A	89.10	72.0	74.5	84.5
CBTJ-100A-	100A	114.30	72.0	87.0	97.0

Pipe Size

Part No.	Pipe O.D. D		Dimension (mm)	
	N.S.	mm	Female L	Male L
CBRJ-10A-	10A	17.30	100.0	110.0
CBRJ-15A-	15A	21.70	110.0	120.0
CBRJ-20A-	20A	27.20	115.0	125.0
CBRJ-25A-	25A	34.00	130.0	140.0

Tube Size

Part No.	Tube O.D. D		Dimension (mm)	
	inch	mm	Female L	Male L
CBRJ-08-	1/2	12.70	85.0	95.0
CBRJ-12-	3/4	19.05	110.0	120.0
CBRJ-16-	1	25.40	115.0	125.0

Tube Size

Part No.	Tube O.D. D		Dimension (mm)		
	inch	mm	L	Female C	Male C
CBTJ-08-	1/2	12.70	45.0	35.0	45.0
CBTJ-12-	3/4	19.05	52.0	38.0	48.0
CBTJ-16-	1	25.40	55.0	42.0	52.0
CBTJ-20-	1 1/4	31.80	59.0	45.5	55.5
CBTJ-24-	1 1/2	38.10	68.0	48.0	58.0
CBTJ-32-	2	50.80	68.0	55.0	65.0

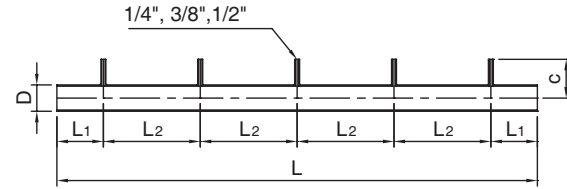
Pipe Size

Part No.	Pipe O.D. D		Dimension (mm)		
	N.S.	mm	C	Female L	Male L
CBCJ-10A-	10A	17.30	19.1	48.0	58.0
CBCJ-15A-	15A	21.70	25.4	55.0	65.0
CBCJ-20A-	20A	27.20	25.4	55.0	65.0
CBCJ-25A-	25A	34.00	38.1	68.0	78.0
CBCJ-32A-	32A	42.70	38.1	68.0	78.0
CBCJ-40A-	40A	48.60	38.1	68.0	78.0
CBCJ-50A-	50A	60.50	38.1	68.0	78.0
CBCJ-65A-	65A	76.30	38.1	68.0	78.0
CBCJ-80A-	80A	89.10	50.8	81.0	91.0
CBCJ-100A-	100A	114.30	63.5	94.0	104.0

Tube Size

Part No.	Tube O.D. D		Dimension (mm)		
	inch	mm	C	Female L	Male L
CBCJ-08-	1/2	12.70	12.7	41.2	58.2
CBCJ-12-	3/4	19.05	19.1	48.0	58.0
CBCJ-16-	1	25.40	25.4	55.0	65.0
CBCJ-20-	1 1/4	31.80	38.1	68.0	78.0
CBCJ-24-	1 1/2	38.10	38.1	68.0	78.0
CBCJ-32-	2	50.80	38.1	68.0	78.0

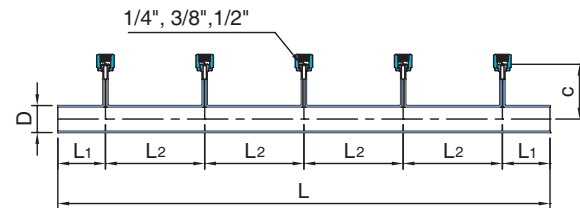
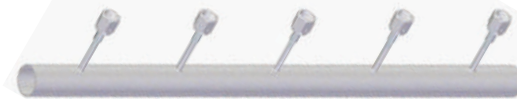
CBTM Multi Header Tee



Pipe Size

Part No.	Pipe O.D. D		Dimension (mm)						
	N.S.	mm	L				L ₁	L ₂	Tube-End C
			Number of Branches						
			2	3	4	5			
CBTM-10A-	10A	17.30	245.0	370.0	495.0	620.0	60.0	125.0	44.0
CBTM-15A-	15A	21.70							44.0
CBTM-20A-	20A	27.20							47.0
CBTM-25A-	25A	34.00							50.0
CBTM-32A-	32A	42.70							54.0
CBTM-40A-	40A	48.60							57.0
CBTM-50A-	50A	60.50							63.0
CBTM-65A-	65A	76.30	285.0	430.0	575.0	720.0	70.0	145.0	71.0
CBTM-80A-	80A	89.10							77.0
CBTM-100A-	100A	114.30							90.0

CBTMJ Multi Header Joint Tee



Pipe Size

Part No.	Pipe O.D. D		Dimension (mm)						
	N.S.	mm	L				L ₁	L ₂	Female C
			Number of Branches						
			2	3	4	5			
CBTMJ-10A-	10A	17.30	308.0	433.0	558.0	683.0	29.0	125.0	37.0
CBTMJ-15A-	15A	21.70	312.0	437.0	562.0	687.0	31.0		39.5
CBTMJ-20A-	20A	27.20	318.0	443.0	568.0	693.0	34.0		42.5
CBTMJ-25A-	25A	34.00	334.0	459.0	584.0	709.0	42.0		46.5
CBTMJ-32A-	32A	42.70	342.0	467.0	592.0	717.0	46.0		51.0
CBTMJ-40A-	40A	48.60	348.0	473.0	598.0	723.0	49.0		54.0
CBTMJ-50A-	50A	60.50	370.0	495.0	620.0	745.0	60.0		60.0
CBTMJ-65A-	65A	76.30	426.0	571.0	716.0	861.0	68.0	145.0	68.0
CBTMJ-80A-	80A	89.10	439.0	584.0	729.0	874.0	74.5		74.5
CBTMJ-100A-	100A	114.30	460.0	605.0	750.0	895.0	85.0		87.0

Multi Header Tee, Multi Header Joint Tee Ordering Information

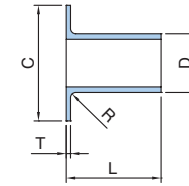
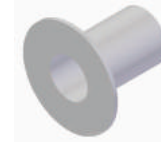
To order, add -branches size and -number of branches.

Example : CBTM-25AS05-04T-5

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

Clean Flanges

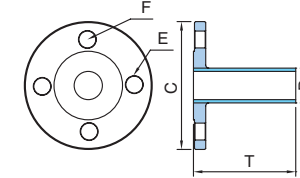
CFL Lab Joint Flange



Pipe Size

Part No.	Pipe O.D. D		Dimension (mm)				
	N.S.	mm	L	JIS 10K		R	T
				JIS 5K	C		
CFL-10A-	10A	17.3	55.0	46.0	39.0	3.0	2.5
CFL-15A-	15A	21.7	55.0	51.0	44.0	3.0	2.5
CFL-20A-	20A	27.2	55.0	56.0	49.0	3.0	2.5
CFL-25A-	25A	34.0	55.0	67.0	59.0	3.0	2.5
CFL-32A-	32A	42.7	70.0	76.0	70.0	3.0	2.5
CFL-40A-	40A	48.6	70.0	81.0	75.0	3.0	2.5
CFL-50A-	50A	60.5	70.0	96.0	85.0	4.0	2.5
CFL-65A-	65A	76.3	75.0	116.0	110.0	4.0	2.5
CFL-80A-	80A	89.1	75.0	126.0	121.0	5.0	2.5
CFL-100A-	100A	114.3	75.0	151.0	141.0	5.0	2.5

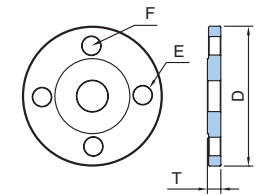
CFP Pipe Flange



Pipe Size

Part No.	Pipe O.D. D		Dimension (mm)			
	N.S.	mm	L	C	E	F
CFP-10A-	10A	17.3	100.0	90.0	M12	4.0
CFP-15A-	15A	21.7	100.0	95.0	M12	4.0
CFP-20A-	20A	27.2	100.0	100.0	M12	4.0
CFP-25A-	25A	34.0	100.0	125.0	M16	4.0
CFP-32A-	32A	42.7	100.0	135.0	M16	4.0
CFP-40A-	40A	48.6	100.0	140.0	M16	4.0
CFP-50A-	50A	60.5	100.0	155.0	M16	4.0
CFP-65A-	65A	76.3	100.0	175.0	M16	4.0
CFP-80A-	80A	89.1	100.0	185.0	M16	4.0
CFP-100A-	100A	114.3	100.0	210.0	M16	4.0

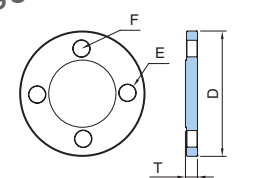
CFJR JIS RF Flange



Pipe Size

Part No.	Pipe O.D. D			Dimension (mm)							
	JIS	5K		5K				10K			
		mm	mm	D	E	F	T	D	E	F	T
CFJR-10A-	10A	75	90	75.0	M10	4.0	9.0	90.0	M12	4.0	12.0
CFJR-15A-	15A	80	95	80.0	M10	4.0	9.0	95.0	M12	4.0	12.0
CFJR-20A-	20A	85	100	85.0	M10	4.0	10.0	100.0	M12	4.0	14.0
CFJR-25A-	25A	95	125	95.0	M10	4.0	10.0	125.0	M16	4.0	14.0
CFJR-32A-	32A	115	135	115.0	M12	4.0	12.0	135.0	M16	4.0	16.0
CFJR-40A-	40A	120	140	120.0	M12	4.0	12.0	140.0	M16	4.0	16.0
CFJR-50A-	50A	130	155	130.0	M12	4.0	14.0	155.0	M16	4.0	16.0
CFJR-65A-	65A	155	175	155.0	M12	4.0	14.0	175.0	M16	4.0	18.0
CFJR-80A-	80A	180	185	180.0	M16	4.0	14.0	185.0	M16	8.0	18.0
CFJR-100A-	100A	200	210	200.0	M16	8.0	16.0	210.0	M16	8.0	18.0

CFJB JIS Blind Flange



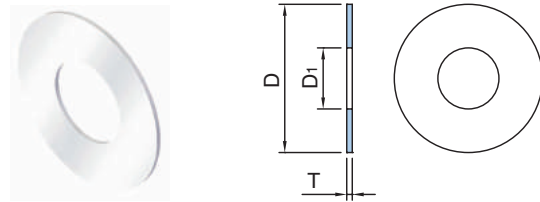
Pipe Size

Part No.	Pipe O.D. D			Dimension (mm)							
	JIS	5K	10K	5K				10K			
	mm	mm	mm	D	E	F	T	D	E	F	T
CFJB-10A-	10A	75	90	75.0	M10	4.0	9.0	90.0	M12	4.0	12.0
CFJB-15A-	15A	80	95	80.0	M10	4.0	9.0	95.0	M12	4.0	12.0
CFJB-20A-	20A	85	100	85.0	M10	4.0	10.0	100.0	M12	4.0	14.0
CFJB-25A-	25A	95	125	95.0	M10	4.0	10.0	125.0	M16	4.0	14.0
CFJB-32A-	32A	115	135	115.0	M12	4.0	12.0	135.0	M16	4.0	16.0
CFJB-40A-	40A	120	140	120.0	M12	4.0	12.0	140.0	M16	4.0	16.0
CFJB-50A-	50A	130	155	130.0	M12	4.0	14.0	155.0	M16	4.0	16.0
CFJB-65A-	65A	155	175	155.0	M12	4.0	14.0	175.0	M16	4.0	18.0
CFJB-80A-	80A	180	185	180.0	M16	4.0	14.0	185.0	M16	8.0	18.0
CFJB-100A-	100A	200	210	200.0	M16	8.0	16.0	210.0	M16	8.0	18.0

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

CFJG

JIS Flange Gasket - PTFE



Pipe Size

Part No.	Pipe O.D. D			Dimension (mm)			
	JIS	5K	10K	5K		10K	
		mm	mm	D ₁	T	D ₁	T
CFJG-10A-	10A	45	53	18	2	18	2
CFJG-15A-	15A	50	58	22	2	22	2
CFJG-20A-	20A	55	63	28	2	28	2
CFJG-25A-	25A	65	74	35	2	35	2
CFJG-32A-	32A	78	84	43	2	43	2
CFJG-40A-	40A	83	89	49	2	49	2
CFJG-50A-	50A	93	104	61	2	61	2
CFJG-65A-	65A	118	124	77	2	77	2
CFJG-80A-	80A	129	134	90	2	90	2
CFJG-100A-	100A	149	159	115	2	115	2

JIS Flange Ordering Information

Part Number - Pressure Rating-

Example : CFJR-32AS05-5K

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

UHP

Cylinder Connectors



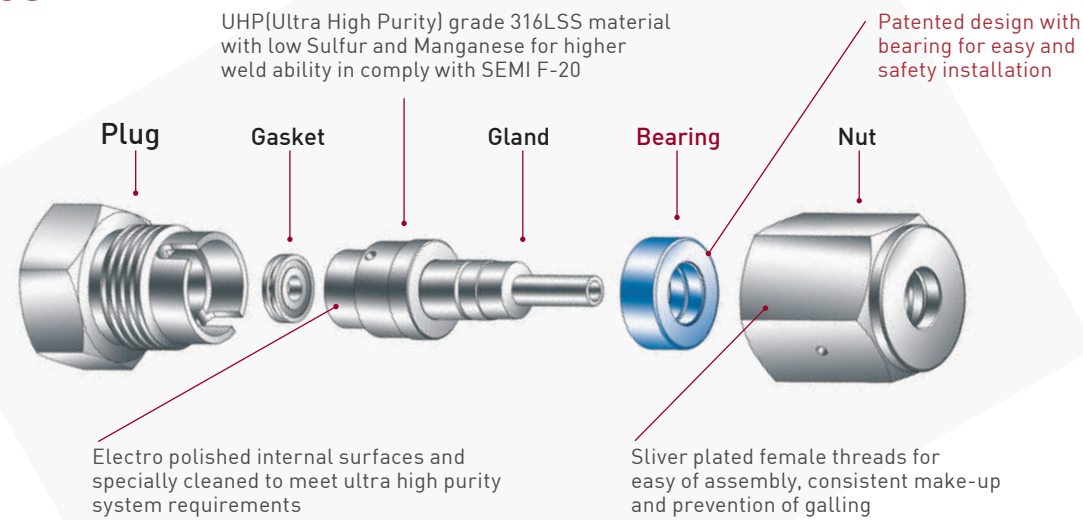
Cylinder Connectors

CONTENTS

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Test	288	CGA and JIS series	290
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UNILOK® Cylinder Connectors are designed and manufactured for the connection of high purity gases in process applications.

Features



Helium Leak Test

UNILOK fittings are rated to a helium leak rate of less than 1×10^{-9} mbar.l/sec and tested in accordance with SEMA-90120391B-STD and SEMI F1-96.

Cleaning

All components are precisely cleaned with 18M Ω deionized water after the passivation procedure. Reference specification : SEMI E49.6.

Particle Contribution Test

According to ASTM F1394-92.

Assembling

According to SEMI E49.6.

Moisture Contribution Test

According to SEMA-90120397B-STD.

Packaging

Each component is double bagged to ensure component cleanliness and to protect it from environmental contamination. Referenced specification : SEMI E49.1.

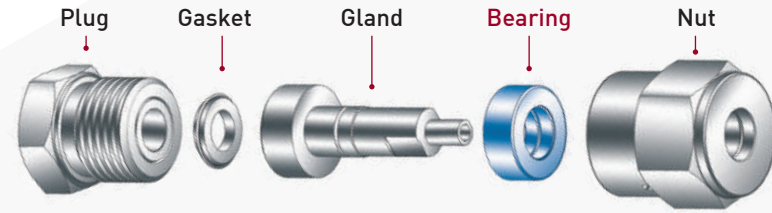
Gases Assignment Table

GAS	DISS	CGA	JIS	GAS	DISS	CGA	JIS
Ammonia	720	660	22-R	Hydrogen	724	350	22-L
Argon	718	580	22/23-R	Hydrogen Bromide	634	330	26-R
Arsenic Pentafluoride	642			Hydrogen Chloride	634	330	26-R
Arsine	632	350	22-L	Hydrogen Fluoride	638	660	26-R
Boron Trichloride	634	660	22-L	Hydrogen Iodide	670	330	
Boron Trifluoride	642	330	22-L	Hydrogen Selenide	632	350	
Bromochlorodifluoromethane		660		Hydrogen Sulfide	722	330	
Bromotrifluoromethane		660		Isobutane		510	
Butane		510	23-L	Isobutylene		510	23-L
Carbon Dioxide	716	320		Krypton	718	510	22/23-R
Carbon Monoxide	724	350	22-L	Neon	718	580	22/23-R
Carbonyl Sulfide		330		Nitrogen	718	580	22/23-R
Chlorine	728	660	26-R	Nitrous Oxide	712	580	
Chlorine Trifluoride		670	26-L	Oxygen	714	740	22/23-R
Chlorodifluoromethane		660		Perfluonopropane	716	660	
Chlorotrifluoromethane		660		Phosgene		660	26-R
Diborane	632	350	22-L	Phosphine	632	350	
Dichlorodifluoromethane	716	660		PhosphorusPentafluoride	642	330	
Dichlorofluoromethane		660		Silane	632	350	
Dichlorosllane	636	678		Silicon Tetrachloride	636		
Dichlorotetrafluoroethane		660		Silicon Tetrafluoride	642	330	
Diethylzine	726	510		Sulphur Dioxide	660	10, 16	
Difluoroethylene		350	22-L	Sulphur Hexafluoride	716	326	
Dimethylzinc	726			Trichorosilane		636	
Dimethylamine		705	22/26-L	Trichlorotrifluoroethane	716	660	
Dimethylether		510	26-L	Trichlorofluoromethane		660	
Disllane		632		Triethylaluminium	726	510	
Ethane		350	22-L	Trifluoromethane		660	
Ethyl Chloride		300	26-L	Trimethylamine		705	26-L
Ethylene		350	22-L	Tungsten Hexafluoride	638	670	
Fluorine		679	22-R	Vinyl Bromide		510	26-L
Germane	632	350		Vinyl Chloride		510	26-L
Halocarbons	716	660		Vinyl Fluoride		350	22-L
Helium	718	326	22/23-R	Xenon	718	580	22/26-L

Sources : CGA V1 2005, JIS B8244/B8246 1989, ISO/DOS 407 1983
This table is the reference only.

CGA and JIS Series

Materials of Construction



Ordering Information

Every cylinder connectors are ordered as assembled set . Also each parts of cylinder connector are ordered separately with the part numbers as shown below.

CGA Series

CGA No.	Ordering Part Number					
	Assembled Set	Gland	Bearing	Nut	Gasket	Plug
296	UCC-C296	BUGL-08S	X	EMN-0803R	X	EPG-296
320	UCC-C320	BUGL-01S	EBR-01	EFN-0830R	CGT-01A	EPG-320
326	UCC-C326	BUGL-04S	EBR-01	EFN-0830R	X	EPG-326
330	UCC-C330	BUGL-01S	EBR-01	EFN-0830L	CGT-01A	EPG-330
350	UCC-C350	BUGL-05S	EBR-01	EFN-0830L	X	EPG-350
510	UCC-C510	BUGL-06S	X	EMN-0880L	X	EPG-510
540	UCC-C540	BUGL-09S	EBR-01	EFN-0908R	X	EPG-540
580	UCC-C580	BUGL-06S	X	EMN-0960R	X	EPG-580
590	UCC-C590	BUGL-06S	X	EMN-0960L	X	EPG-590
660	UCC-C660	BUGL-03S	EBR-02	EFN-1035R	CGT-03A	EPG-660
670	UCC-C670	BUGL-03S	EBR-02	EFN-1035L	CGT-03A	EPG-670
678	UCC-C678	BUGL-07S	EBR-02	EFN-1035L	CGT-01B	EPG-678
679	UCC-C679	BUGL-10S	EBR-02	EFN-1035L	CGT-05B	EPG-679

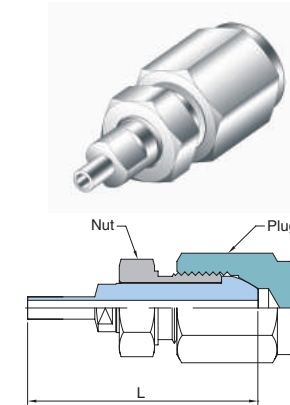
JIS Series

JIS No.	Ordering Part Number					
	Assembled Set	Gland	Bearing	Nut	Gasket	Plug
21-14L	UCC-J2114L	BUGL-11S	EBR-01	EFN-JS21L	CGT-02A	EPG-21L
21-14R	UCC-J2114R	BUGL-11S	EBR-01	EFN-JS21R	CGT-02A	EPG-21R
22-14L	UCC-J2214L	BUGL-02S	EBR-01	EFN-JS22L	CGT-02A	EPG-22L
22-14R	UCC-J2214R	BUGL-02S	EBR-01	EFN-JS22R	CGT-02A	EPG-22R
23-14R	UCC-J2314R	BUGL-02S	EBR-01	EFN-JS23R	CGT-02A	EPG-23R
26-14L	UCC-J2614L	BUGL-03S	EBR-02	EFN-JS26L	CGT-03A	EPG-26L
26-14R	UCC-J2614R	BUGL-03S	EBR-02	EFN-JS26R	CGT-03A	EPG-26R

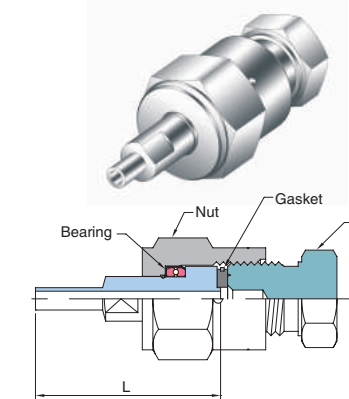
Dimensions are for reference only and are subject to change without prior notice.

Typical Assembly

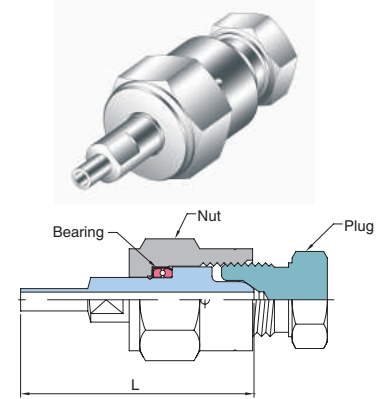
Type A
Gland + Male Nut + Female Plug



Type B
Gland + Female Nut + Male Plug + Bearing + Gasket



Type C
Gland + Female Nut + Male Plug + Bearing



CGA Series

CGA No.	Type	Part No.	Overall Length		Nut		Plug	Gasket
			inch	mm	Thread	Hex Flat	Thread	Material
296	A	UCC-C296	2.57	65.3	0.803-14UNS-2A-RH-EXT	23.81	0.803-14UNS-2B-RH-INT	X
320	B	UCC-C320	2.07	52.5	0.830-14NGO-RH-INT	30.16	0.825-14NGO-RH-EXT	PCTFE/R
326	C	UCC-C326	2.61	66.2	0.830-14NGO-RH-INT	30.16	0.825-14NGO-RH-EXT	X
330	B	UCC-C330	2.07	52.5	0.830-14NGO-LH-INT	30.16	0.825-14NGO-LH-EXT	PCTFE/R
350	C	UCC-C350	2.63	66.8	0.830-14NGO-LH-INT	30.16	0.825-14NGO-LH-EXT	X
510	A	UCC-C510	2.57	65.3	0.880-14NGO-LH-EXT	23.81	0.885-14NGO-LH-INT	X
540	C	UCC-C540	2.63	66.7	0.908-14NGO-RH-INT	30.16	0.903-14NGO-RH-EXT	X
580	A	UCC-C580	2.57	65.3	0.960-14NGO-RH-EXT	26.98	0.965-14NGO-RH-INT	X
590	A	UCC-C590	2.57	65.3	0.960-14NGO-LH-EXT	26.98	0.965-14NGO-LH-INT	X
660	B	UCC-C660	2.28	58.0	1.035-14NGO-RH-INT	31.75	1.030-14NGO-RH-EXT	PCTFE/R
670	B	UCC-C670	2.28	58.0	1.035-14NGO-LH-INT	31.75	1.030-14NGO-LH-EXT	PCTFE/R
678	B	UCC-C678	2.60	66.0	1.035-14NGO-LH-INT	31.75	1.030-14NGO-LH-EXT	PCTFE
679	B	UCC-C679	2.63	66.7	1.035-14NGO-LH-INT	31.75	1.030-14NGO-LH-EXT	PCTFE

JIS Series

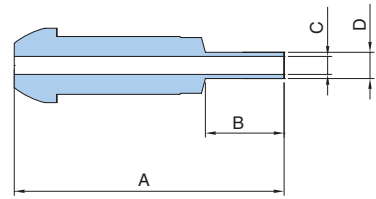
CGA No.	Type	Part No.	Overall Length		Nut		Plug	Gasket
			inch	mm	Thread	Hex Flat	Thread	Material
21-14-L	B	UCC-J2114L	2.19	55.5	JIS21-14-OL	30.16	JIS21-14-OL	PCTFE/R
21-14-R	B	UCC-J2114R	2.19	55.5	JIS21-14-OR	30.16	JIS21-14-OR	PCTFE/R
22-14-L	B	UCC-J2214L	2.19	55.5	JIS22-14-OL	30.16	JIS22-14-OL	PCTFE/R
22-14-R	B	UCC-J2214R	2.19	55.5	JIS22-14-OR	30.16	JIS22-14-OR	PCTFE/R
23-14-R	B	UCC-J2314R	2.19	55.5	JIS23-14-OR	30.16	JIS23-14-OR	PCTFE/R
26-14-L	B	UCC-J2614L	2.19	55.5	JIS26-14-OL	31.75	JIS26-14-OL	PCTFE/R
26-14-R	B	UCC-J2614R	2.19	55.5	JIS26-14-OR	31.75	JIS26-14-OR	PCTFE/R

3/8" and 1/2" Glands are available for every CGA & JIS series cylinder connectors. To order, add **-06** for 3/8" and **-08** for 1/2". **Examples : UCC-C350-06**, CGA 350 Cylinder Connector set with 3/8" Gland.

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

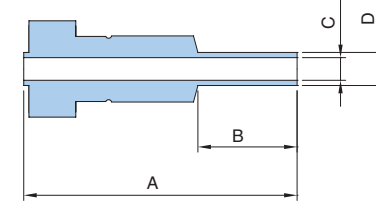
Glands

Type A



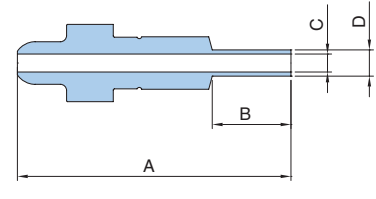
Part No.	Dimension (mm)			
	E	L	E	F
BUGL-06S	65.3	10.00	4.35	6.35
BUGL-08S	65.3			

Type B



Part No.	Dimension (mm)			
	A	B	C	D
BUGL-01S	52.5	10.00	4.35	6.35
BUGL-02S	55.5			
BUGL-03S	58.0			
BUGL-07S	66.1			
BUGL-10S	66.7			
BUGL-11S	55.5			

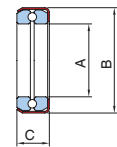
Type C



Part No.	Dimension (mm)			
	A	B	C	D
BUGL-04S	66.2	10.00	4.35	6.35
BUGL-05S	66.8			
BUGL-09S	66.7			

3/8" and 1/2" Glands are available for every CGA & JIS series. To order, add **-06** for 3/8" and **-08** for 1/2"
Examples : *BUGL-09S-08*, 1/2" size CGA 540 Gland.

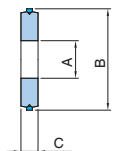
Bearings



Part No.	Dimension (mm)		
	A	B	C
EUR-01	12.8	18.5	5.7
EUR-02	12.8	23.5	9.0

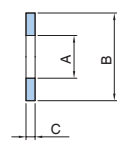
Gaskets

Gasket with 316SS Ring



Part No.	Dimension (mm)		
	A	B	C
CGT-01A	6.6	16.8	3.0
CGT-02A	10.3	17.3	
CGT-03A	9.7	21.5	

Gasket without 316SS Ring



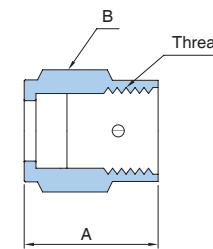
Part No.	Dimension (mm)		
	A	B	C
CGT-01B	7.5	15.4	1.6
CGT-05B	8.0	13.5	

PTFE instead of PCTFE is available upon request. To order, add **-TF** to the end of part number.
Example : *CGT-02A-TF*

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

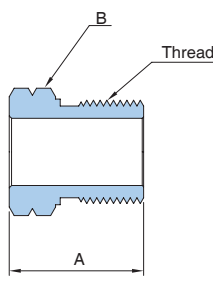
Nuts

Female Nuts



Part No.	Dimension (mm)		Thread
	A	B (Hex)	
EFN-0830L	35.00	30.16	0.830-14NGO-LH-INT
EFN-0830R	35.00	30.16	0.830-14NGO-RH-INT
EFN-0908R	35.00	30.16	0.908-14NGO-RH-INT
EFN-1035L	36.00	31.75	1.035-14NGO-LH-INT
EFN-1035R	36.00	31.75	1.035-14NGO-RH-INT
EFN-JS21L	35.00	30.16	JIS21-14-OL
EFN-JS21R	35.00	30.16	JIS21-14-OR
EFN-JS22L	35.00	30.16	JIS22-14-OL
EFN-JS22R	35.00	30.16	JIS22-14-OR
EFN-JS23R	35.00	30.16	JIS23-14-OR
EFN-JS26L	36.00	31.75	JIS26-14-OL
EFN-JS26R	36.00	31.75	JIS26-14-OR

Male Nuts

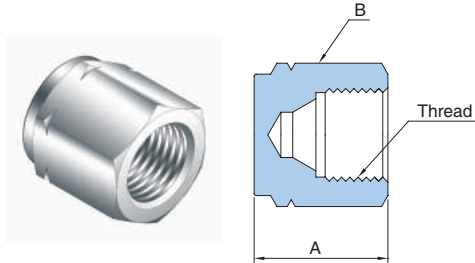


Part No.	Dimension (mm)		Thread
	A	B (Hex)	
EMN-0803R	29.00	23.81	0.803-14UNS-2A-RH-EXT
EMN-0880L	29.00	23.81	0.880-14NGO-LH-EXT
EMN-0960L	29.00	26.98	0.960-14NGO-LH-EXT
EMN-0960R	29.00	26.98	0.960-14NGO-RH-EXT

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

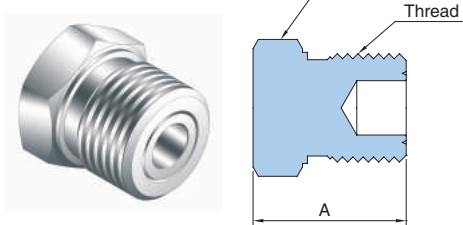
Plugs

Female Plugs



Part No.	Dimension (mm)		Thread
	A	B (Hex)	
EPG-296	32.50	26.98	0.803-14UNS-2B-RH-INT
EPG-510	32.50	30.16	0.885-14NGO-LH-INT
EPG-580	32.50	31.75	0.965-14NGO-RH-INT
EPG-590	32.50	31.75	0.965-14NGO-LH-INT

Male Plugs

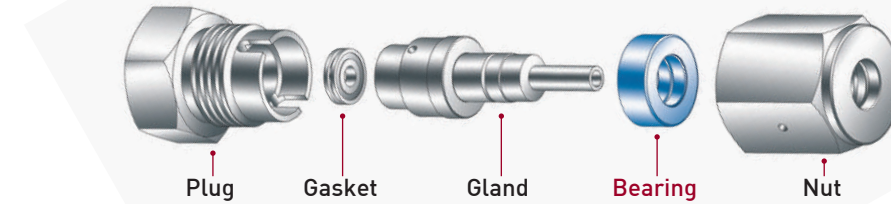


Part No.	Dimension (mm)		Thread
	A	B (Hex)	
EPG-320	31.0	23.81	0.825-14NGO-RH-EXT
EPG-326	30.0	23.81	0.825-14NGO-RH-EXT
EPG-330	31.0	23.81	0.825-14NGO-LH-EXT
EPG-350	30.0	23.81	0.825-14NGO-LH-EXT
EPG-540	30.0	26.98	0.903-14NGO-RH-EXT
EPG-660	26.0	28.57	1.030-14NGO-RH-EXT
EPG-670	26.0	28.57	1.030-14NGO-LH-EXT
EPG-678	26.0	28.57	1.030-14NGO-LH-EXT
EPG-679	26.0	28.57	1.030-14NGO-LH-EXT
EPG-21R	31.0	23.81	JIS21-14-OR
EPG-21L	31.0	23.81	JIS21-14-OL
EPG-22R	31.0	23.81	JIS22-14-OR
EPG-22L	31.0	23.81	JIS22-14-OL
EPG-23R	31.0	25.40	JIS23-14-OR
EPG-26R	31.0	28.57	JIS26-14-OR
EPG-26L	31.0	28.57	JIS26-14-OL

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

DISS Series

Materials of Construction



Ordering Information

Every cylinder connectors are ordered as assembled set . Also each parts of cylinder connector are ordered separately with the part numbers as shown below.

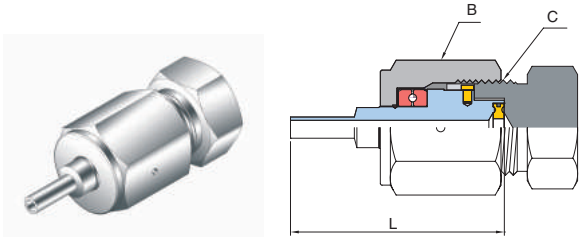
Part No.	Ordering Part Number						
	Assembled Set	Gland	Bearing	Nut	Gasket		Plug
					Nickel	PCTFE	
632	UCC-D632	BUGL-632	EBR-02	EDFN-1035R	UNGT-D	UGT-D	EPG-632
634	UCC-D634	BUGL-634	EBR-02	EDFN-1035R	UNGT-D	UGT-D	EPG-634
636	UCC-D636	BUGL-636	EBR-02	EDFN-1035R	UNGT-D	UGT-D	EPG-636
638	UCC-D638	BUGL-638	EBR-02	EDFN-1035R	UNGT-D	UGT-D	EPG-638
640	UCC-D640	BUGL-640	EBR-02	EDFN-1035R	UNGT-D	UGT-D	EPG-640
642	UCC-D642	BUGL-642	EBR-02	EDFN-1035R	UNGT-D	UGT-D	EPG-642
712	UCC-D712	BUGL-712	EBR-02	EDFN-1130R	UNGT-D	UGT-D	EPG-712
714	UCC-D714	BUGL-714	EBR-02	EDFN-1130R	UNGT-D	UGT-D	EPG-714
716	UCC-D716	BUGL-716	EBR-02	EDFN-1130R	UNGT-D	UGT-D	EPG-716
718	UCC-D718	BUGL-718	EBR-02	EDFN-1130R	UNGT-D	UGT-D	EPG-718
720	UCC-D720	BUGL-720	EBR-02	EDFN-1130R	UNGT-D	UGT-D	EPG-720
722	UCC-D722	BUGL-722	EBR-02	EDFN-1130R	UNGT-D	UGT-D	EPG-722
724	UCC-D724	BUGL-724	EBR-02	EDFN-1130R	UNGT-D	UGT-D	EPG-724
726	UCC-D726	BUGL-726	EBR-02	EDFN-1130R	UNGT-D	UGT-D	EPG-726
728	UCC-D728	BUGL-728	EBR-02	EDFN-1130R	UNGT-D	UGT-D	EPG-728

3/8" and 1/2" Glands are available for every DISS series cylinder connectors. To order, add **-06** for 3/8" and **-08** for 1/2".
Examples : UCC-D712-08, DISS 712 Cylinder Connector set with 1/2" Gland.

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

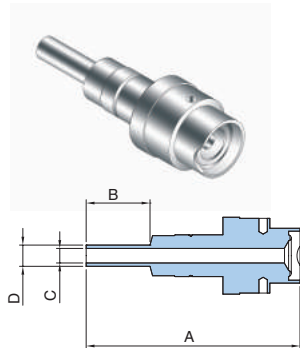
Typical Assembly

Gland + Male Nut + **Bearing** + Gasket + Female Plug



JIS No.	Part No.	Overall Length L		Hex Flat B		Thread C
		inch	mm	inch	mm	
632	UCC-D632	2.51	63.80	1.25	31.75	1.035-14NGO-RH-INT
634	UCC-D634					
636	UCC-D636					
638	UCC-D638					
640	UCC-D640					
642	UCC-D642					
712	UCC-D712			1.38	34.93	1.125-14NGO-RH-INT
714	UCC-D714					
716	UCC-D716					
718	UCC-D718					
720	UCC-D720					
722	UCC-D722					
724	UCC-D724					
726	UCC-D726					
728	UCC-D728					

Glands

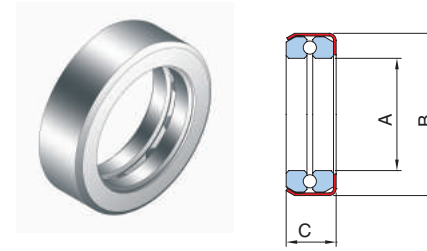


3/8" and 1/2" Glands are available for every DISS series. To order, add **-06** for 3/8" and **-08** for 1/2".
Examples : BUGL-632-06, 3/8" size DISS 632 Gland.

Part No.	Dimension (mm)			
	A	B	C	D
BUGL-632	63.8	19.05	4.35	6.35
BUGL-634				
BUGL-636				
BUGL-638				
BUGL-640				
BUGL-642				
BUGL-712				
BUGL-714				
BUGL-716				
BUGL-718				
BUGL-720				
BUGL-722				
BUGL-724				
BUGL-726				
BUGL-728				

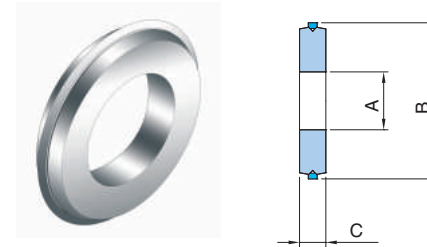
Dimensions are for reference only and are subject to change without prior notice.

Bearing



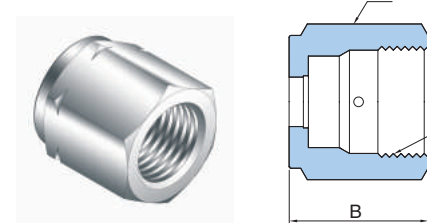
Part No.	Dimension (mm)		
	A	B	C
EBR-02	12.8	23.5	9.0

Gasket



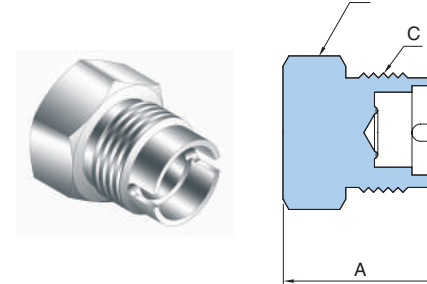
Part No.	Dimension (mm)			Material
	A	B	C	
UGT-D	5.4	14.3	3.0	PCTFE
UNGT-D	5.4	14.3	3.2	Nickel

Female Nut



Part No.	Dimension (mm)		Thread
	A	B (Hex)	
EDFN-1035R	36.00	31.75	1.035-14NGO-RH-INT
EDFN-1130R	36.00	34.93	1.125-14NGO-RH-INT

Male Plug



Part No.	Dimension (mm)		Thread
	A	B (Hex)	
EPG-632	39.0	31.75	1.030-14NGO-RH-EXT
EPG-634			
EPG-636			
EPG-638			
EPG-640			
EPG-642			
EPG-712			1.120-14NGO-RH-EXT
EPG-714			
EPG-716			
EPG-718			
EPG-720			
EPG-722			
EPG-724			
EPG-726			
EPG-728			

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



UHP

Valves

VCD Diaphragm Valve	301
VCB Bellows Valve	317
VCBC Casting Bellows Valve	325
VCC Welded Check Valve	329

**Diaphragm Valve
VCD**



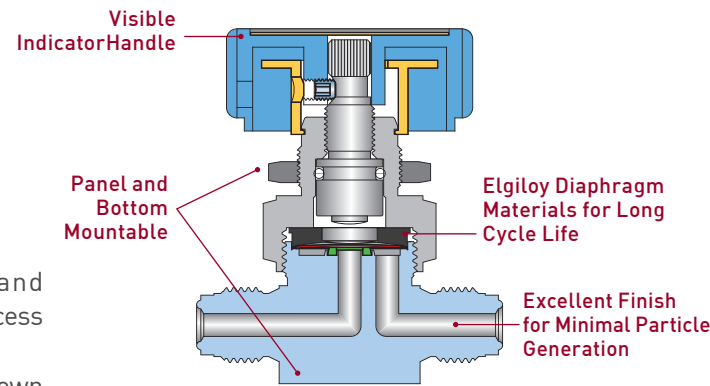
Diaphragm Valve VCD

CONTENTS

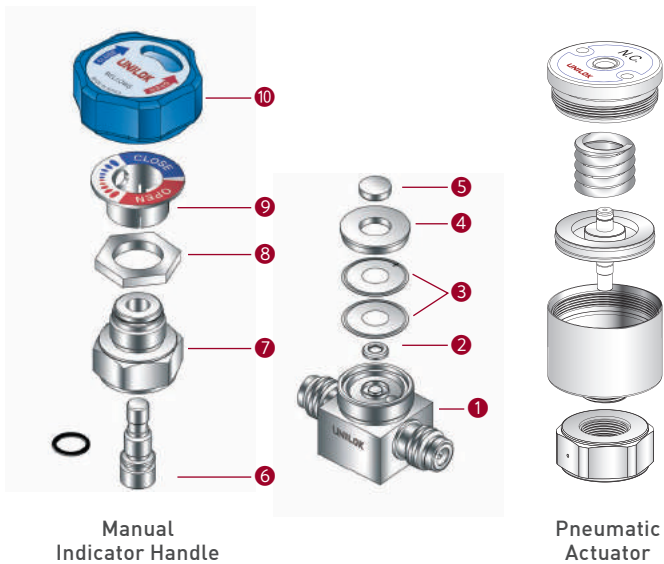
Features	302	VCDH series	306
Materials of Construction	302	VCDS Series	307
Internal Surface Finish Levels	302	VCDDH Series	308
Test	303	VCDHF Series	309
Cleaning & Packaging	303	VCDMHF/VCDHMF Series	310
Important Notification	303	VCDF Series	312
How To Order	303	VCDBL Series	313
VCDL series	304	VCDBH Series	315

Features

Compact designed body with minimal dead space
 Body materials comply with SEMI F-20, "Specification 316LSS Materials for UHP (Ultra High Purity) Grade Semiconductor Manufacturing Applications"
 Maximum flow capacity
 Minimal particle generation
 Minimal contributions of moisture, oxygen and hydrocarbon with UNILOK's own special cleaning process in a certified clean room
 Excellent finish level of wetted areas with UNILOK's own electro polish process
 Elgiloy® diaphragm material with strong durability as well as corrosion resistance for long cycle life
 PCTFE seat material with remarkable chemical and thermal resistance



Standard Type Low Pressure Diaphragm Valves



Materials of Construction

No.	Description	Materials	
		Manual	Pneumatic
	Operation Type		
1	Body	316LSS	316LSS
2	Seat	PCTFE	PCTFE
3	Diaphragm	Elgiloy	Elgiloy
4	Bushing	316SS	316SS
5	Button	316SS	316SS
6	Stem	316SS	-
7	Bonnet	316SS	-
8	Panel Nut	316SS	-
9	Indicator	Polyester	-
10	Handle	Aluminum	-
11	Actuator	-	Aluminum

Internal Surface Finish Levels

Description	Surface Finish(µm)	
	Average	Maximum
BA	< 0.4	< 1.6
EP	< 0.125	< 0.4

Helium Leak Test

Every VCD series valves are inboard helium leak tested to a rate of 1x10⁻⁹ cm³/sec at seat and all seals.

Particle Contribution Test

According to ASTM F1394-92.

Moisture Contribution Test

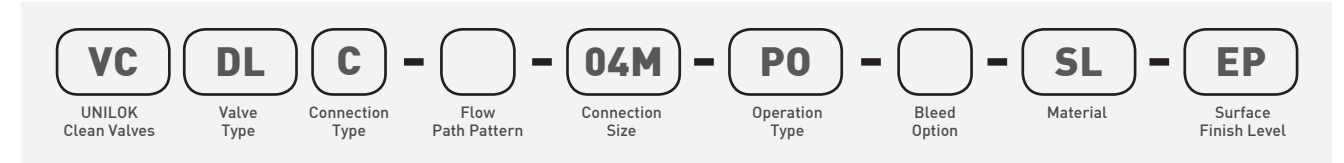
According to SEMA-90120397B-STD.

Cleaning

All components are precisely cleaned with 18MΩ deionized water after the passivation procedure in accordance with our own UHP cleaning process
 Reference specification : SEMI E49.6.

How To Order

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



Valve Type	
DL	Standard Low Pressure
DH	Standard High Pressure
DS	Shut off
DDH	Directional High Pressure
DF	Forged Body
DHF	High Flow Low Pressure
DMHF	Hlgh Flow Medium Pressure
DHHF	Hlgh Flow High Pressure
DBL	Block Low Pressure
DBH	Block High Pressure

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

Pipe Size Designation (NPT or ISO7/1-PT)			
Pipe Size	1/4	1/2	3/4
Designator	04	08	12

Operation Type	
None	Manual Indicator Handle
RI	Manual Round Indicator Handle
MD	Manual Directional Handle
MI	Manual Indicator + Directional Handle
PO	Pneumatic -Normal Open
PC	Pneumatic -Normal Close
POC	Block Type Pneumatic 1-N.O 2-N.C
PCO	Block Type Pneumatic 1-N.C 2-N.O

Bleed Option	
None	No Bleed
3	Constant Bleed Ø0.3
6	Constant Bleed Ø0.6

Material	
DM	316LSS - Double Melting
SM	316LSS - Single Melting
SL	316LSS

Surface Finish Level	
BA	BA - Bright Annealing
EP	EP - Electro Polished

Flow Path Pattern Designator
 See the details in page 309.

UCR- Metal Face Seal

VCDL series

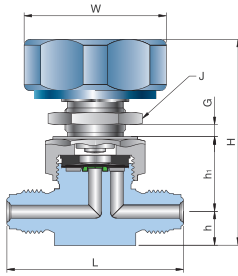
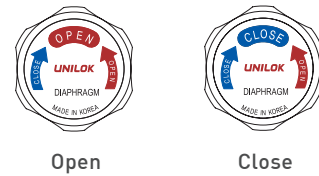
(Standard Type Low Pressure Diaphragm Valve - Manual Operation)

Specification

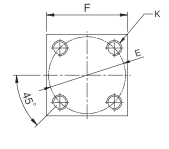
Size	1/4"	3/8", 1/2"	3/4"
Orifice Size	4.3	6.5	6.5
Cv Value	0.3	0.7	0.7
Max. Working Pressure	10 bar (145 psig)		
Max. Working Temperature	-10~80°C (14~176°F)		
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤ 1x10 ⁻⁹ atm.cc/s		
External Leakage Allowance - He (Holding Time - Min 1 min)	≤ 1x10 ⁻⁹ atm.cc/s		



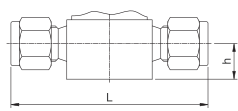
Handle Position



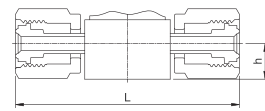
Male UCR



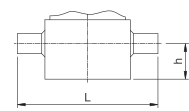
Bottom Mounting



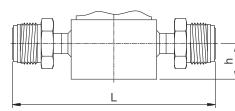
UNILOK Tube Fitting



Female UCR



Tube Butt Weld



Swivel Male UCR

Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)									
	Inlet	Outlet	L	h	h ₂	H	F	E	K	W(Ø)	G	J(Ø)
VCDL	U-04T-	1/4" UNILOK	62.0	11.1	24.7	68.6	26.0	25.4	M5	47.0	5.0	21.0
	U-06T-	3/8" UNILOK	74.8	16.0	31.8	80.5	37.0	28.0				
	U-08T-	1/2" UNILOK	80.2	16.0	31.8	80.5	37.0	28.0				
	U-12T-	3/4" UNILOK	108.0	22.0	36.3	91.0	37.0	28.0				
	C-04M-	1/4" Male UCR	58.4	11.1	24.7	68.6	26.0	25.4				
	C-08M-	1/2" Male UCR	73.6	16.0	31.8	80.5	37.0	28.0				
	C-12M-	3/4" Male UCR	88.0	22.0	36.3	91.0	37.0	28.0				
	C-04MR-	1/4" Swivel Male UCR	100.0	11.1	24.7	68.6	26.0	25.4				
	C-04F-	1/4" Female UCR	70.6	11.1	24.7	68.6	26.0	25.4				
	C-08F-	1/2" Female UCR	83.0	16.0	31.8	80.5	37.0	28.0				
	WB-04T-	1/4" Tube Butt Weld	44.2	11.1	24.7	68.6	26.0	25.4				
	WB-06T-	3/8" Tube Butt Weld	73.6	16.0	31.8	80.5	37.0	28.0				
WB-08T-	1/2" Tube Butt Weld	73.6	16.0	31.8	80.5	37.0	28.0					
WB-12T-	3/4" Tube Butt Weld	88.0	22.0	36.3	91.0	37.0	28.0					

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

VCDL series

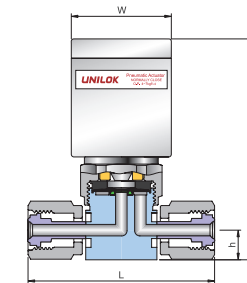
(Standard Type Low Pressure Diaphragm Valve - Pneumatic Actuating Operation)

Specification

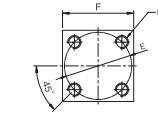
Size	1/4"	3/4"
Orifice Size	4.3	6.5
Cv Value	0.3	0.7
Max. Working Pressure	10 bar (145 psig)	
Max. Working Temperature	-10~80°C (14~176°F)	
Actuator Pressure Rating	4~7 bar (58~101 psig)	
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤ 1x10 ⁻⁹ atm.cc/s	
External Leakage Allowance - He (Holding Time - Min 1 min)	≤ 1x10 ⁻⁹ atm.cc/s	



Actuator Configuration



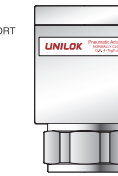
Female UCR



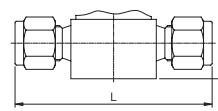
Bottom Mounting



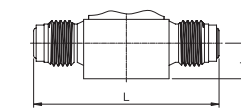
Normal Open



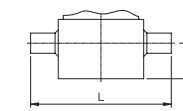
Normal Close



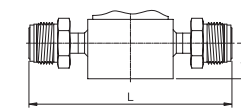
UNILOK Tube Fitting



Male UCR



Tube Butt Weld



Swivel Male UCR

Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)						
	Inlet	Outlet	L	h	H	W(Ø)	F	E	K
VCDL	U-04T-	1/4" UNILOK	62.0	11.1	83.5	37.8	26.0	25.4	M5
	U-06T-	3/8" UNILOK	74.8	16.0	94.4	53.0	37.0	28.0	
	U-08T-	1/2" UNILOK	80.2	16.0	94.4	53.0	37.0	28.0	
	C-04M-	1/4" Male UCR	58.4	11.1	83.5	37.8	26.0	25.4	
	C-08M-	1/2" Male UCR	73.6	16.0	93.5	53.0	37.0	28.0	
	C-04F-	1/4" Female UCR	70.6	11.1	83.5	37.8	26.0	25.4	
	C-08F-	1/2" Female UCR	83.0	16.0	94.4	53.0	37.0	28.0	
	WB-04T-	1/4" Tube Butt Weld	44.2	11.1	83.5	37.8	26.0	25.4	
	WB-06T-	3/8" Tube Butt Weld	73.6	16.0	94.4	53.0	37.0	28.0	
	WB-08T-	1/2" Tube Butt Weld	73.6	16.0	94.4	53.0	37.0	28.0	

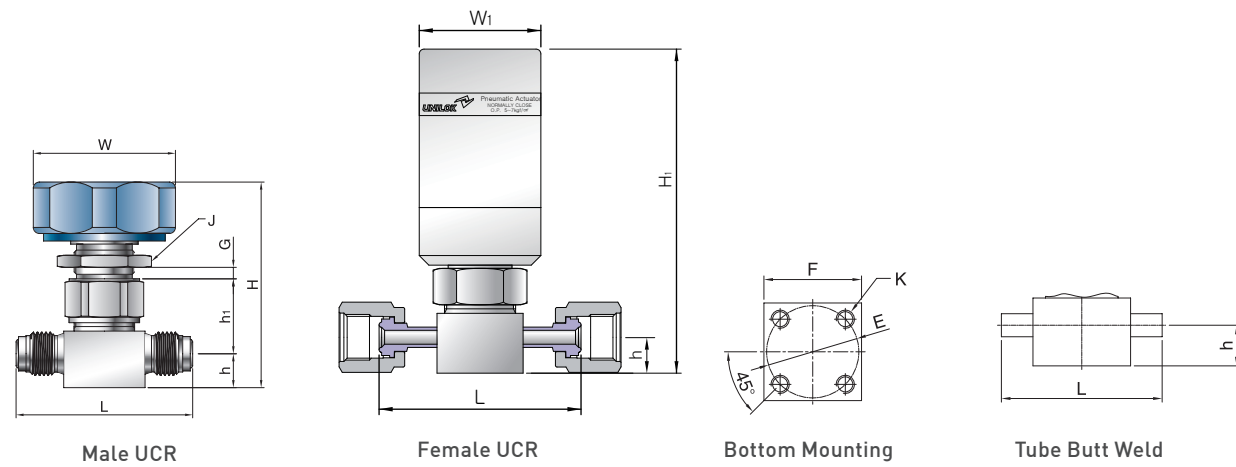
Dimensions are for reference only and are subject to change without prior notice.

VCDH series

(Standard Type High Pressure Diaphragm Valve - Manual Operation & Pneumatic Actuating Operation)

Specification

Size	1/4"
Orifice Size	2.5
Cv Value	0.1
Max. Working Pressure	206 bar (3000psig)
Max. Working Temperature	-10~40°C (14~104°F)
Actuator Pressure Rating	5~7 bar (73~101 psig)
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	$\leq 1 \times 10^{-9}$ atm.cc/s
External Leakage Allowance - He (Holding Time - Min 1 min)	$\leq 1 \times 10^{-9}$ atm.cc/s



Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)											
	Inlet	Outlet	L	h	h ₁	H	H ₁	F	E	K	W(Ø)	W ₁ (Ø)	G	J(Ø)
VCDH	C-04T-	1/4" UNILOK	62.0	11.1	24.7	68.6	102.0	26.0	20.4	M5	47.0	38.0	5.0	21.0
	C-04M-	1/4" Male UCR	58.4											
	C-04F-	1/4" Female UCR	70.6											
	WB-04T-	1/4" Tube Butt Weld	44.3											

Handle Position and Actuator Configuration

Both are the same as VCDL series.

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

VCDS series

(Shut Off Type Low Pressure Diaphragm Valve - Manual Operation)

Specification

Size	1/4"	3/8", 1/2"
Orifice Size	4.3	6.5
Cv Value	0.3	0.7
Max. Working Pressure	10 bar (145 psig)	
Max. Working Temperature	-10~40°C (14~104°F)	
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	$\leq 1 \times 10^{-9}$ atm.cc/s	
External Leakage Allowance - He (Holding Time - Min 1 min)	$\leq 1 \times 10^{-9}$ atm.cc/s	



Handle Position

Quick and quarter turn handle actuation



Open



Close

Colored Handle

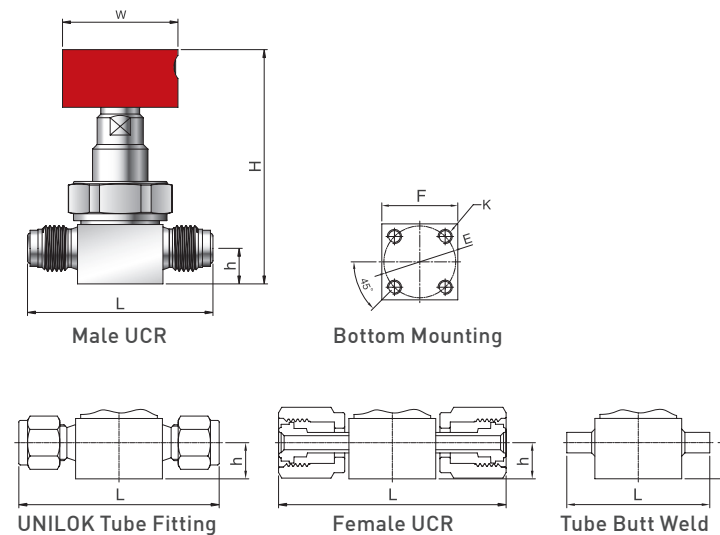
Colored handle are available for VCDS series valves. To order, add handle color designator next to connection size designator.



-MIR Red

-MIG Green

-MIW White



Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)									
	Inlet	Outlet	L	h	H	F	E	W(Ø)	K			
VCDS	U-04T-	1/4" UNILOK	62.0	11.1	75.2	26.0	25.4	36.9	M5			
	U-06T-	3/8" UNILOK	74.8	16.0	103.0	37.0	28.0	50.0				
	U-08T-	1/2" UNILOK	80.2	16.0	103.0	37.0	28.0	50.0				
	C-04M-	1/4" Male UCR	57.0	11.1	75.2	26.0	25.4	36.9				
	C-08M-	1/2" Male UCR	73.6	16.0	103.0	37.0	28.0	50.0				
	C-04F-	1/4" Female UCR	70.6	11.1	75.2	26.0	25.4	36.9				
	C-08F-	1/2" Female UCR	83.0	16.0	103.0	37.0	28.0	50.0				
	WB-04T-	1/4" Tube Butt Weld	44.2	11.1	75.2	26.0	25.4	36.9				
	WB-06T-	3/8" Tube Butt Weld	73.6	16.0	103.0	37.0	28.0	50.0				
	WB-08T-	1/2" Tube Butt Weld	73.6	16.0	103.0	37.0	28.0	50.0				

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

VCD DH series

(Directional Type High Pressure Diaphragm Valve – Manual Operation)

Specification

Size	1/4"
Cv Value	0.1
Max. Working Pressure	207bar (3000psig)
Max. Working Temperature	-10~40°C (14~104°F)
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	$\leq 1 \times 10^{-9}$ atm.cc/s
External Leakage Allowance - He (Holding Time - Min 1 min)	$\leq 1 \times 10^{-9}$ atm.cc/s



Handle Position

Quick and quarter turn handle actuation



Open



Close

Colored Handle

Colored handle are available for VCD DH series valves. To order, add handle color designator next to connection size designator.



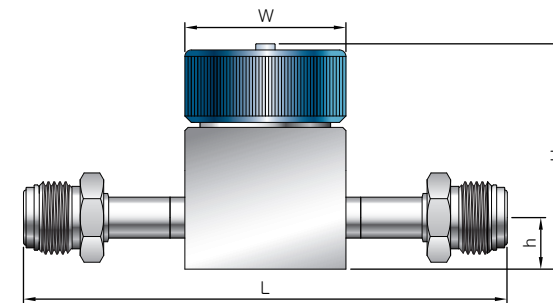
-MIR Red -MIG Green -MIW White

VCD HF series

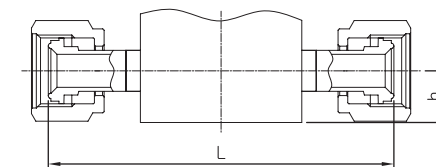
(High Flow Type Low Pressure Diaphragm Valve – Manual Operation)

Specification

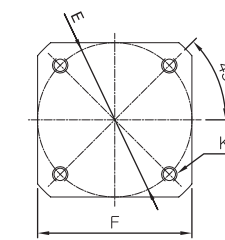
Size	1/2"	3/4"	1"
Cv Value	2.8	3.5	
Max. Working Pressure	18.6bar (270psig)		
Max. Working Temperature	-10~80°C (14~176°F)		
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	$\leq 1 \times 10^{-9}$ atm.cc/s		
External Leakage Allowance - He (Holding Time - Min 1 min)	$\leq 1 \times 10^{-9}$ atm.cc/s		



Male UCR



Female UCR



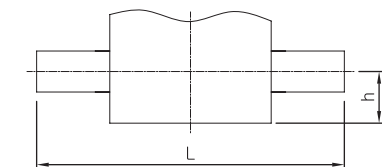
Bottom Mounting

Handle Position

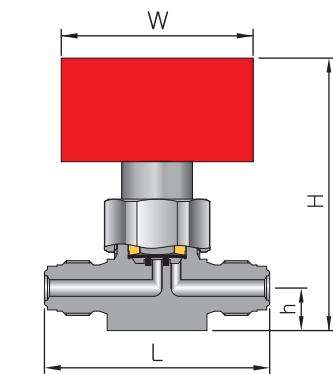


Open

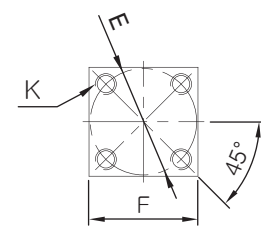
Close



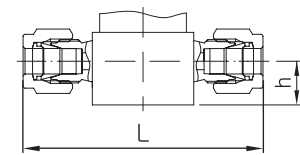
Tube Butt Weld



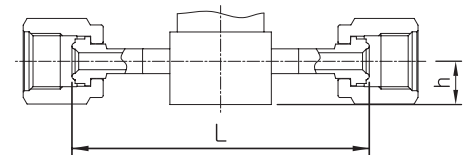
Male UCR



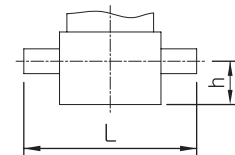
Bottom Mounting



UNILOK Tube Fitting



Female UCR



Tube Butt Weld

Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)						
	Inlet	Outlet	L	h	H	W	F	E(Ø)	K
VCD DH	U-04T	1/4" UNILOK	62.0	11.1	71.0	50.0	26.0	25.4	M5
	C-04M-	1/4" Male UCR	58.4	11.1	71.0	50.0	26.0	25.4	M5
	C-04F-	1/4" Female UCR	70.6	11.1	71.0	50.0	26.0	25.4	M5
	WB-04T-	1/4" Tube Butt Weld	44.2	11.1	71.0	50.0	26.0	25.4	M5

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

Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)						
	Inlet	Outlet	L	h	H	W(Ø)	F	E(Ø)	K
VCD HF	C-08MR-	1/2" Swivel Male UCR	138.7	16.0	68.9	50.0	50.0	50.0	M5
	C-12MR-	3/4" Swivel Male UCR	157.0	17.5	74.4	50.0	50.0	50.0	M5
	C-16MR-	1" Swivel Male UCR	166.0	17.5	74.4	50.0	50.0	50.0	M5
	C-08F-	1/2" Female UCR	138.7	16.0	68.9	50.0	50.0	50.0	M5
	C-12F-	3/4" Female UCR	157.0	17.5	74.4	50.0	50.0	50.0	M5
	C-16F-	1" Female UCR	166.0	17.5	74.4	50.0	50.0	50.0	M5
	WB-08T-	1/2" Tube Butt Weld	150.0	16.0	68.9	50.0	50.0	50.0	M5
	WB-12T-	3/4" Tube Butt Weld	150.0	17.5	74.4	50.0	50.0	50.0	M5
WB-16T-	1" Tube Butt Weld	150.0	17.5	74.4	50.0	50.0	50.0	M5	

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

VCDMHF / VCDHMF series

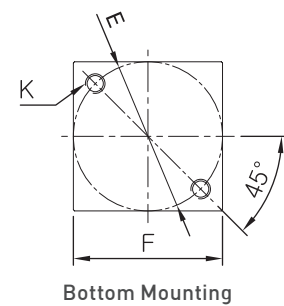
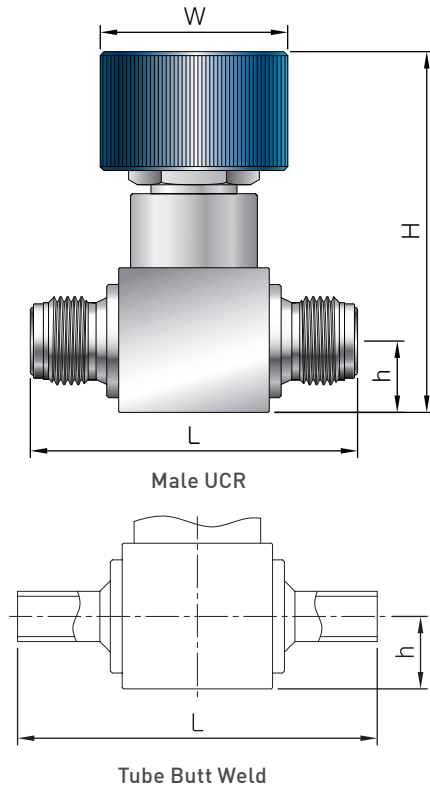
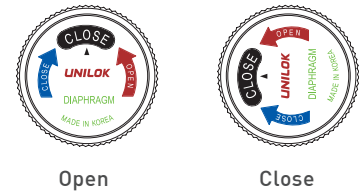
(High Flow Type High Pressure Diaphragm Valve – Manual Operation)

Specification

Size	1/2"	
Cv Value	1.3	0.8
Max. Working Pressure	103bar (1500psig)	207bar (3000psig)
Max. Working Temperature	-40~65°C (-40~150°F)	
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤4x10 ⁻⁹ atm.cc/s	
External Leakage Allowance - He (Holding Time - Min 1 min)	≤1x10 ⁻⁹ atm.cc	



Handle Position



Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)						
	Inlet	Outlet	L	h	H	W(Ø)	F	E(Ø)	K
VCDMHF	C-08M-	1/2" Male UCR	82.6	18.0	91.3	47.3	38.0	38.0	M5
	WB-08T-	1/2" Tube Butt Weld	90.9	18.0	91.3	47.3	38.0	38.0	M5
VCDHMF	C-08M-	1/2" Male UCR	82.6	18.3	92.4	47.3	38.0	38.0	M5
	WB-08T-	1/2" Tube Butt Weld	90.9	18.0	92.4	47.3	38.0	38.0	M5

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

VCDMHF / VCDHMF series

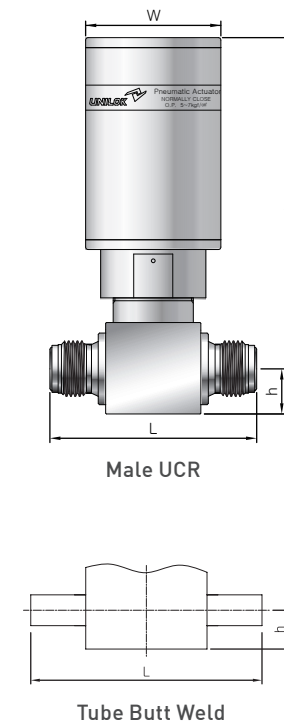
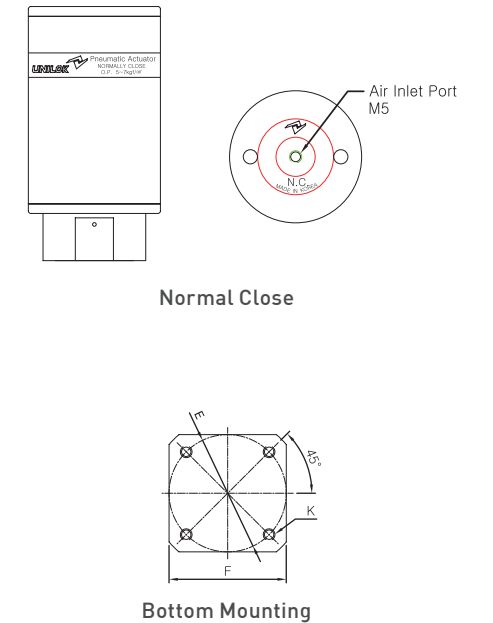
(High Flow Type High Pressure Diaphragm Valve – Pneumatic Actuating Operation)

Specification

Size	1/2"	
Cv Value	1.0	0.8
Max. Working Pressure	83bar (1200psig)	207bar (3000psig)
Max. Working Temperature	-40~65°C (-40~150°F)	
Actuator Pressure Rating	5~7 bar (73~101psig)	
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤4x10 ⁻⁹ atm.cc/s	
External Leakage Allowance - He (Holding Time - Min 1 min)	≤1x10 ⁻⁹ atm.cc/s	



Actuator Configuration



Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)						
	Inlet	Outlet	L	h	H	W(Ø)	F	E(Ø)	K
VCDMHF	C-08M-	1/2" Male UCR	82.6	18.0	160.5	47.3	38.0	38.0	M5
	WB-08T-	1/2" Tube Butt Weld	90.9	18.0	160.5	47.3	38.0	38.0	M5
VCDHMF	C-08M-	1/2" Male UCR	82.6	18.3	161.6	47.3	38.0	38.0	M5
	WB-08T-	1/2" Tube Butt Weld	90.9	18.0	161.6	47.3	38.0	38.0	M5

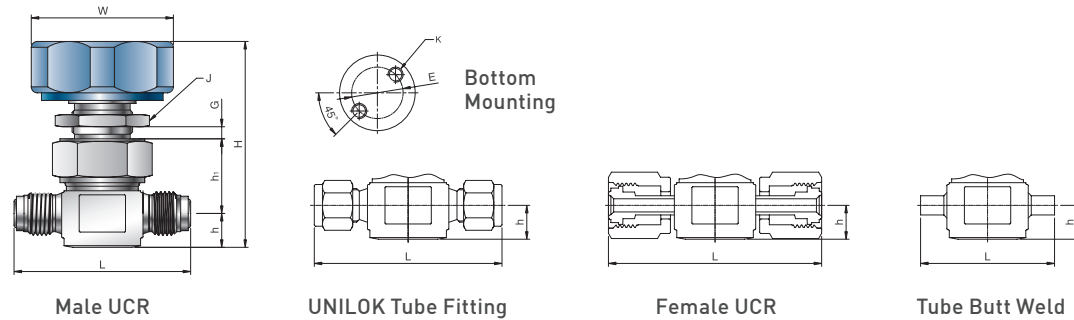
Dimensions are for reference only and are subject to change without prior notice.

VCDF series

(Forged Body Low Pressure Diaphragm Valve - Manual Operation)

Specification

Size	1/4"	3/8", 1/2"	3/4"
Orifice Size	4.3	6.5	6.5
Cv Value	0.3	0.7	0.7
Max. Working Pressure	10 bar (145 psig)		
Max. Working Temperature	-10~80°C (14~176°F)		
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤1x10 ⁻⁹ atm.cc/s		
External Leakage Allowance - He (Holding Time - Min 1 min)	≤1x10 ⁻⁹ atm.cc/s		



Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)								
	Inlet	Outlet	L	h	h ₁	H	E	K	W(Ø)	G	J(Ø)
U-04T-	1/4" UNILOK		62.0	11.1	24.7	68.6	17.0	M5	47.0	5.0	21.0
U-06T-	3/8" UNILOK		74.8	16.0	31.8	80.5	28.0				
U-08T-	1/2" UNILOK		80.2	16.0	31.8	80.5	28.0				
U-12T-	3/4" UNILOK		108.0	22.0	36.3	91.0	28.0				
C-04M-	1/4" Male UCR		58.4	11.1	24.7	68.6	17.0				
C-08M-	1/2" Male UCR		73.6	16.0	31.8	80.5	28.0				
C-12M-	3/4" Male UCR		88.0	22.0	36.3	91.0	28.0				
C-04F-	1/4" Female UCR		70.6	11.1	24.7	68.6	17.0				
C-08F-	1/2" Female UCR		83.0	16.0	31.8	80.5	28.0				
WB-04T-	1/4" Tube Butt Weld		44.2	11.1	24.7	68.6	17.0				
WB-06T-	3/8" Tube Butt Weld		73.6	16.0	31.8	80.5	28.0				
WB-08T-	1/2" Tube Butt Weld		73.6	16.0	31.8	80.5	28.0				
WB-12T-	3/4" Tube Butt Weld		88.0	22.0	36.3	91.0	28.0				

Handle Position

Handle position is the same as VCDL series.

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

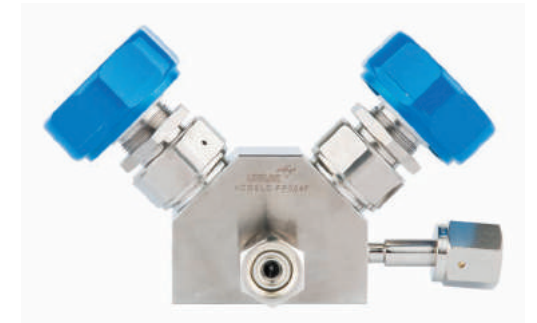
VCDBL series

(Block Type Low Pressure Diaphragm Valve - Manual Operation & Pneumatic Actuating Operation)

Specification

Size	1/4"	3/8", 1/2"
Orifice Size	4.3	6.5
Cv Value	0.3	0.7
Max. Working Pressure	10 bar (145 psig)	
Max. Working Temperature	-10~80°C (14~176°F)	
Actuator Pressure Rating	5~7 bar (73~101 psig)	
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤1x10 ⁻⁹ atm.cc/s	
External Leakage Allowance - He (Holding Time - Min 1 min)	≤1x10 ⁻⁹ atm.cc/s	

Manual Operation

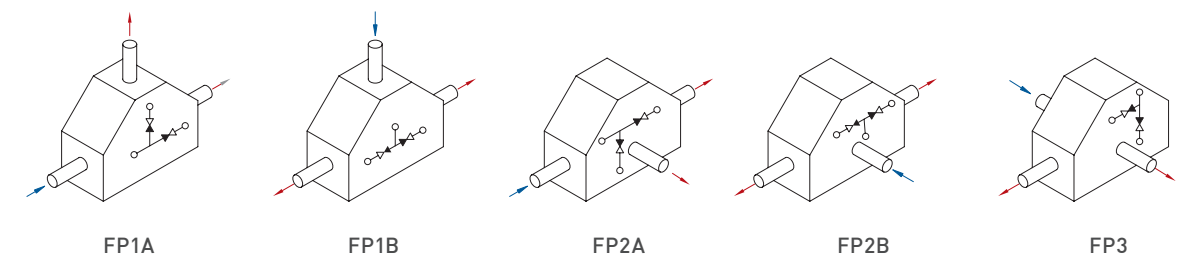


Pneumatic Actuating Operation

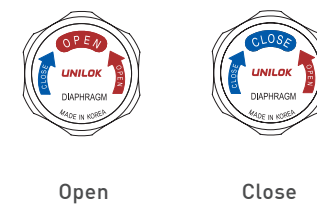


Flow Path Patterns

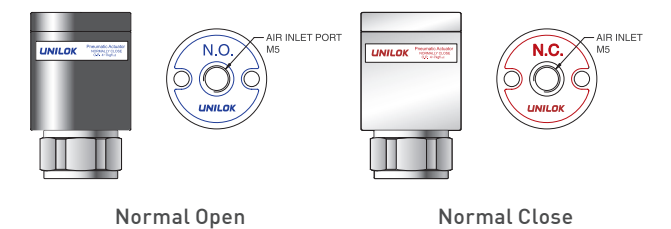
UNILOK VCDBL series valves have various flow paths. To order, add flow path designator next to connection size designator.



Handle Position



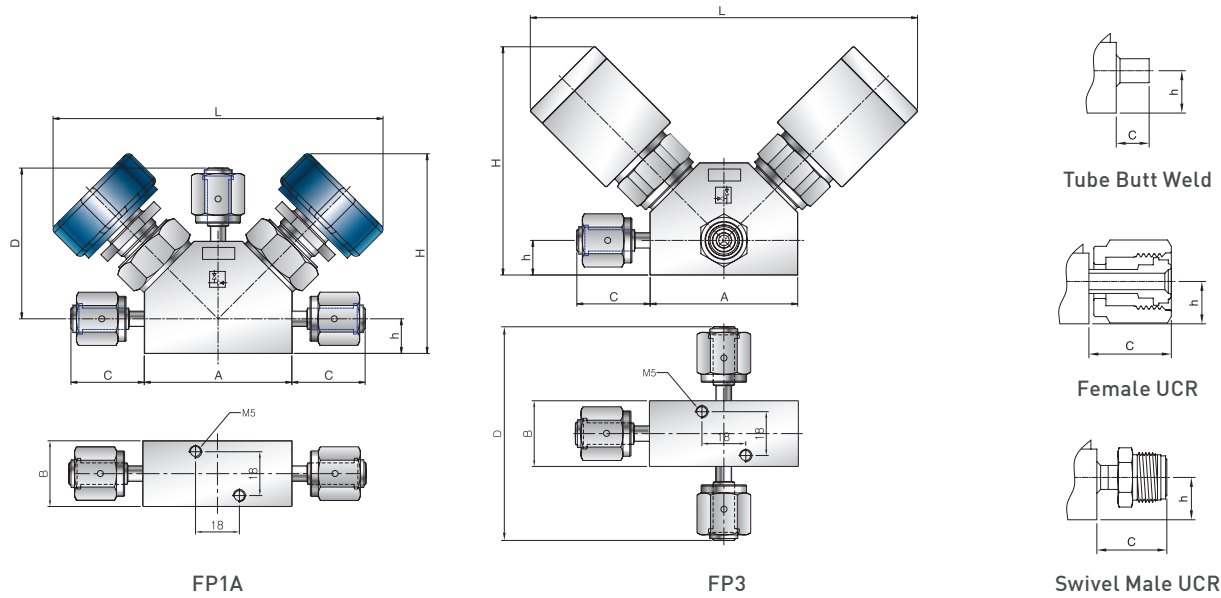
Actuator Configuration



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

Manual Operation

Pneumatic Actuating Operation



Ordering Information & Dimensions

Manual Operation

Part No.				End Connection		Dimensions (mm)						
				Inlet	Outlet	A	B	C	D	h	H	L
VCDS	C-	FP1A-	04MR-	1/4" Swivel Male UCR		61.0	26.9	30.3	62.3	14.3	73.8	119.0
	C-		04F-	1/4" Female UCR								
	WB-		04T-	1/4" Tube Butt Weld								

Pneumatic Actuating Operation

Part No.				End Connection		Dimensions (mm)						
				Inlet	Outlet	A	B	C	D	h	H	L
VCDBL	C-	FP3-	04MR-	1/4" Swivel Male UCR		61.0	26.9	30.3	77.0	14.3	86.1	143.6
	C-		04F-	1/4" Female UCR								
	WB-		04T-	1/4" Tube Butt Weld								

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

VCDBH series

(Block Type High Pressure Diaphragm Valve - Manual Operation & Pneumatic Actuating Operation)

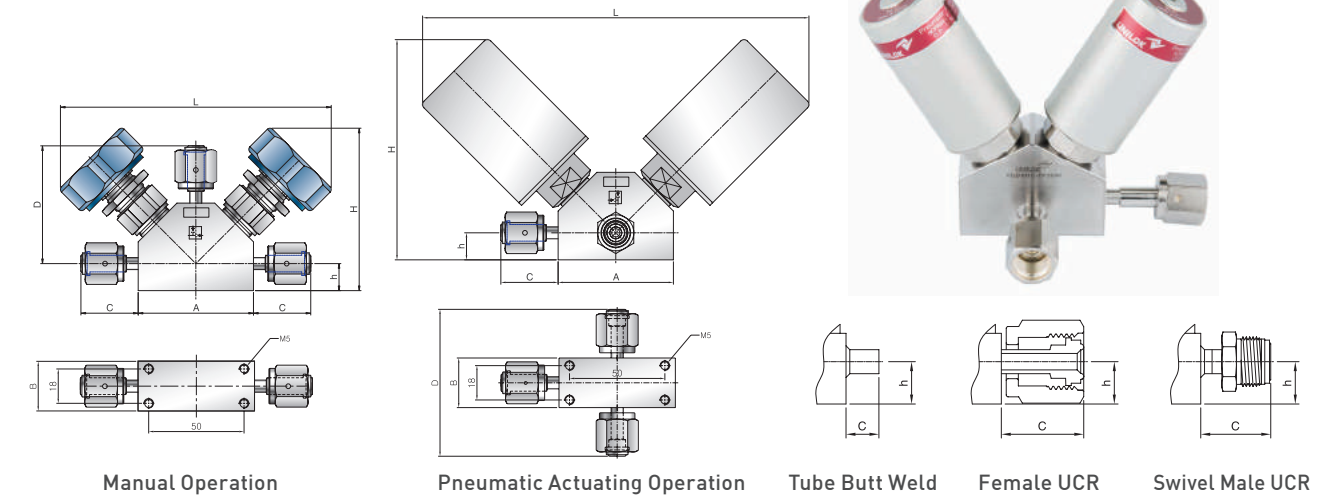
Specification

Size	1/4"
Orifice Size	2.5
Cv Value	0.1
Max. Working Pressure	10 bar (145 psig)
Max. Working Temperature	-10~40°C (14~107°F)
Actuator Pressure Rating	5~7 bar (73~101 psig)
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	$\leq 1 \times 10^{-9}$ atm.cc/s
External Leakage Allowance - He (Holding Time - Min 1 min)	$\leq 1 \times 10^{-9}$ atm.cc/s

Manual Operation



Pneumatic Actuating Operation



Ordering Information & Dimensions

Manual Operation

Part No.				End Connection		Dimensions (mm)						
				Inlet	Outlet	A	B	C	D	h	H	L
VCDBH	C-	FP1A-	04MR-	1/4" Swivel Male UCR		61.0	26.0	30.3	62.3	11.0	84.4	139.3
	C-		04F-	1/4" Female UCR								
	WB-		04T-	1/4" Tube Butt Weld								

Pneumatic Actuating Operation

Part No.				End Connection		Dimensions (mm)						
				Inlet	Outlet	A	B	C	D	h	H	L
VCDBL	C-	FP3-	04MR-	1/4" Swivel Male UCR		61.0	26.0	30.3	77.0	11.0	114.0	139.3
	C-		04F-	1/4" Female UCR								
	WB-		04T-	1/4" Tube Butt Weld								

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

Bellows Valve VCB

Bellows Valves

VCB Bellows Valve	317
VCBC Casting Bellows Valve	325



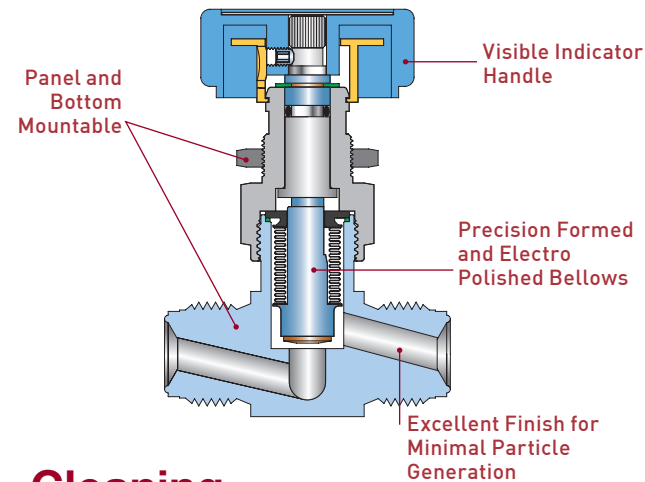
Bellows Valve VCB

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Features

- Compact designed body with minimal dead space
- Body material comply with SEMI F-20, "Specification 316LSS Materials for UHP (Ultra High Purity) Grade Semiconductor Manufacturing Applications"
- Low actuation torque
- Minimal particle generation
- Minimal contributions of moisture, oxygen and hydrocarbon with UNILOK's own special cleaning process in a certified clean room
- Excellent finish level of wetted areas with UNILOK's own electro polish process
- 316LSS precision formed and electro-polished bellows for long cycle life
- PCTFE stem tip material with remarkable chemical and thermal resistance
- Both panel and bottom mounting available



Cleaning

All components are precisely cleaned with 18MΩ deionized water after the passivation procedure in accordance with our own UHP cleaning process
Reference specification : SEMI E49.6.

Packaging

Each component is double bagged to ensure component cleanliness and to protect them from environmental contamination.
Referenced specification : SEMI E49.1.

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.
Overall process of testing, cleaning, assembling and packaging for every VCB series valves are performed in a certified clean room.

Helium Leak Test

Every VCB series valves are inboard helium leak tested to a rate of 4×10^{-9} atm.cc/s at seat and all seals.

Particle Contribution Test

According to ASTM F1394-92.

Moisture Contribution Test

According to SEMA-90120397B-STD.

Assembling

According to SEMI E49.6.

Materials of Construction

No.	Description	Materials	
		Manual	Pneumatic
1	Body	316LSS	316LSS
2	Gasket	PCTFE	PCTFE
3	Bellows	316LSS	316LSS
4	Stem	316LSS	316LSS
5	Bonnet	316LSS	316LSS
6	Panel Nut	316SS	316SS
7	Handle	Aluminum	-
8	Actuator	-	Aluminum

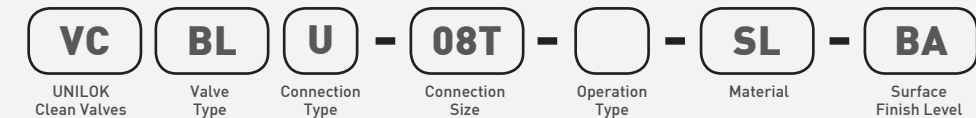
Internal Surface Finish Levels

Description	Surface Finish(μm)	
	Average	Maximum
BA	< 0.4	< 1.6
EP	< 0.125	< 0.4

How To Order

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

Example : The following part number, **VCBLU-08T-SL-BA** is designated for Low Pressure Bellows Valve, both 1/2" UNILOK Tube Fittings, 316LSS, BA.



Valve Type	
BL	Standard Low Pressure
BF	Forged Body

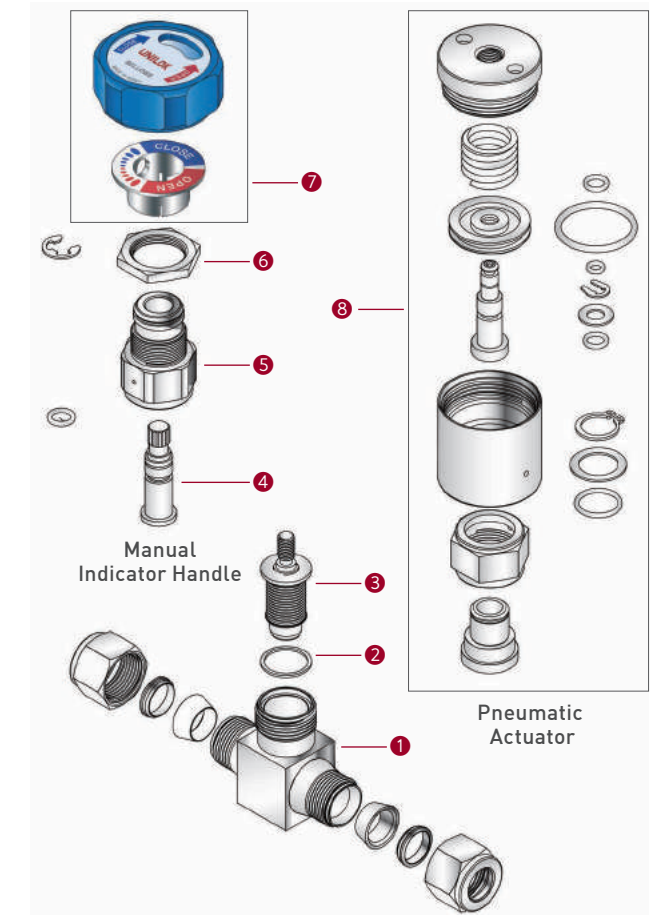
Connection Type	
U	UNILOK Tube Fitting
C-*M	Male UCR
C-*F	Female UCR
WB-	Butt Weld -Tube
WB-*P	Butt Weld - Pipe
FL	Flanged

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

Pipe Size Designation (NPT or ISO7/1-PT)			
Pipe Size	15A	20A	25A
Designator	15A	20A	25A

UCR (Metal Face Seal) Size Designator			
Pipe Size	1/4	1/2	3/4
Designator	04	08	12

Standard Type Low Pressure Bellows Valves



Operation Type	
None	Manual Indicator Handle
PO	Pneumatic - Normal Open
PC	Pneumatic - Normal Close

Material	
DM	316LSS - Double Melting
SM	316LSS - Single Melting
SL	316LSS

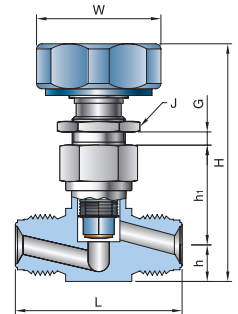
Surface Finish Level	
BA	BA - Bright Annealing
EP	EP - Electro Polished

VCBL series - 1/4"~1/2"

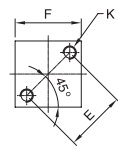
(Standard Type Low Pressure Bellows Valve - Manual Operation)

Specification

Size	1/4"	3/8", 1/2"
Orifice Size	4.3	8
Cv Value	0.3	0.7
Max. Working Pressure	10 bar (145 psig)	
Max. Working Temperature	-10~80°C (14~176°F)	
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤4x10 ⁻⁹ atm.cc/s	
External Leakage Allowance - He (Holding Time - Min 1 min)	≤4x10 ⁻⁹ atm.cc/s	



Male UCR



Bottom Mounting

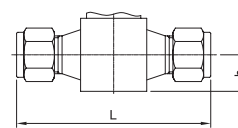
Handle Position



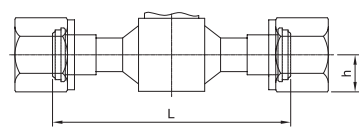
Open



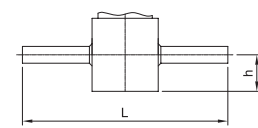
Close



UNILOK Tube Fitting



Female UCR



Tube Butt Weld

Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)									
	Inlet	Outlet	L	h	h ₁	H	F	E	K	W(Ø)	G	J(Ø)
VCBL	U-04T-	1/4" UNILOK	64.2	13.8	37.7	90.0	25.0	23.0	M5	47.0	2.0	23.0
	U-06T-	3/8" UNILOK	77.6									
	U-08T-	1/2" UNILOK	83.0									
	C-04M-	1/4" Male UCR	58.0									
	C-08M-	1/2" Male UCR	63.0									
	C-04F-	1/4" Female UCR	70.6									
	C-08F-	1/2" Female UCR	90.0									
	WB-04T-	1/4" Tube Butt Weld	150.0									
	WB-06T-	3/8" Tube Butt Weld	150.0									
WB-08T-	1/2" Tube Butt Weld	150.0										

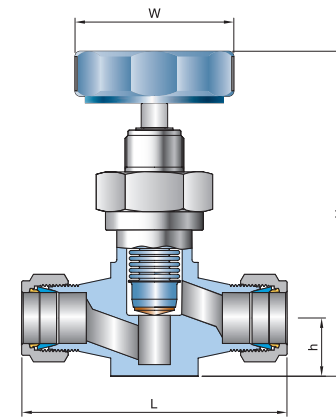
Dimensions are for reference only and are subject to change without prior notice.

VCBL series - 3/4"

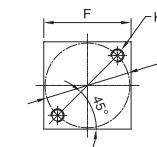
(Standard Type Low Pressure Bellows Valve - Manual Operation)

Specification

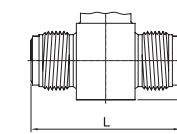
Size	3/4"
Orifice Size	12
Cv Value	2.6
Max. Working Pressure	10 bar (145 psig)
Max. Working Temperature	-10~80°C (14~176°F)
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤4x10 ⁻⁹ atm.cc/s
External Leakage Allowance - He (Holding Time - Min 1 min)	≤4x10 ⁻⁹ atm.cc/s



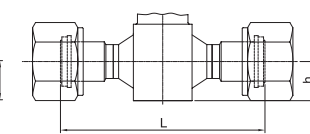
UNILOK Tube Fitting



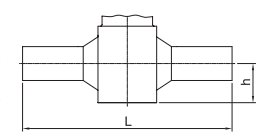
Bottom Mounting



Male UCR



Female UCR



Tube Butt Weld

Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)						
	Inlet	Outlet	L	h	H	F	E(Ø)	K	W(Ø)
VCBL	U-12T-	3/4" UNILOK	100.0	22.0	123.0	33.0	32.0	M5	60.0
	C-12M-	3/4" Male UCR	84.0						
	C-12F-	3/4" Female UCR	115.0						
	WB-12T-	3/4" Tube Butt Weld	158.0						

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

VCBL series - 1/4"~1/2"

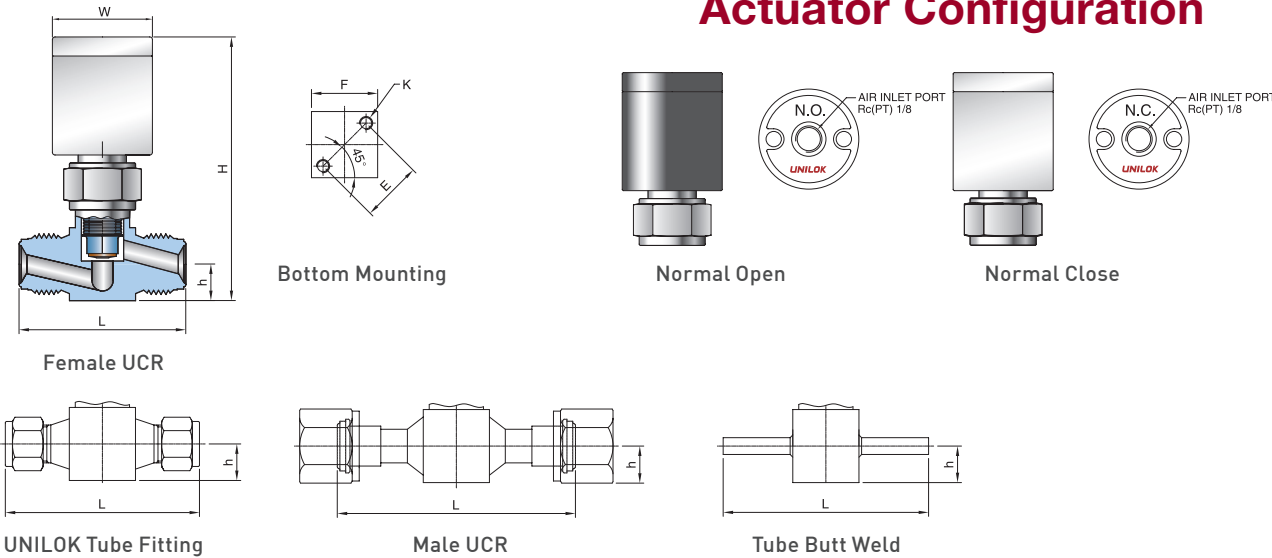
(Standard Type Low Pressure Bellows Valve - Pneumatic Actuating Operation)

Specification

Size	1/4"	3/8", 1/2"
Orifice Size	4.3	8.0
Cv Value	0.3	0.7
Max. Working Pressure	10 bar (145 psig)	
Max. Working Temperature	-10~80°C (14~176°F)	
Actuator Pressure Rating	4~7 bar (58~101 psig)	
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤4x10 ⁻⁹ atm.cc/s	
External Leakage Allowance - He (Holding Time - Min 1 min)	≤4x10 ⁻⁹ atm.cc/s	



Actuator Configuration



Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)						
	Inlet	Outlet	L	h	H	W(Ø)	F	E	K
VCBL	U-04T-	1/4" UNILOK	64.2	13.8	99.6	37.8	25.0	23.0	M5
	U-06T-	3/8" UNILOK	77.6						
	U-08T-	1/2" UNILOK	83.0						
	C-04M-	1/4" Male UCR	58.0						
	C-08M-	1/2" Male UCR	63.0						
	C-04F-	1/4" Female UCR	70.6						
	C-08F-	1/2" Female UCR	90.0						
	WB-04T-	1/4" Tube Butt Weld	150.0						
	WB-06T-	3/8" Tube Butt Weld	150.0						
	WB-08T-	1/2" Tube Butt Weld	150.0						

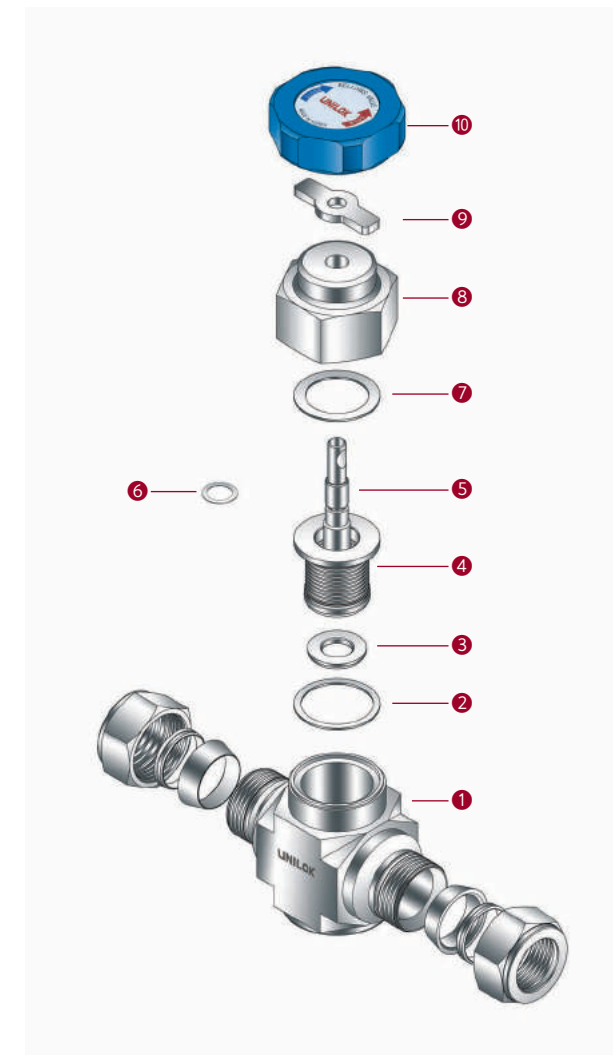
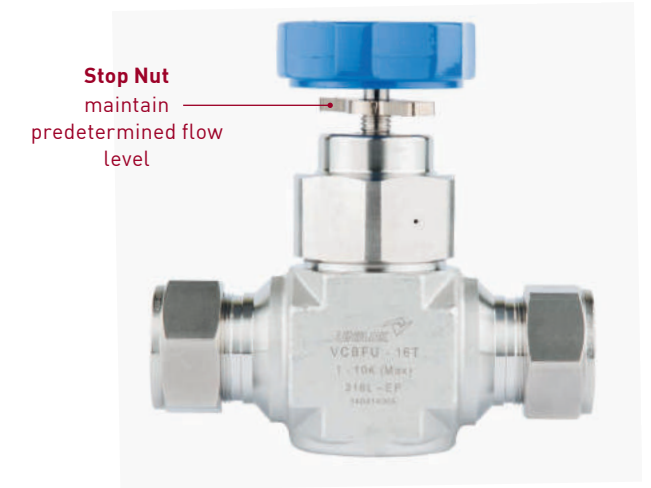
Dimensions are for reference only and are subject to change without prior notice.

VCBF series - 1", 15A, 20A, 25A

(Forged Body Low Pressure Bellows Valve - Manual Operation)

Specification

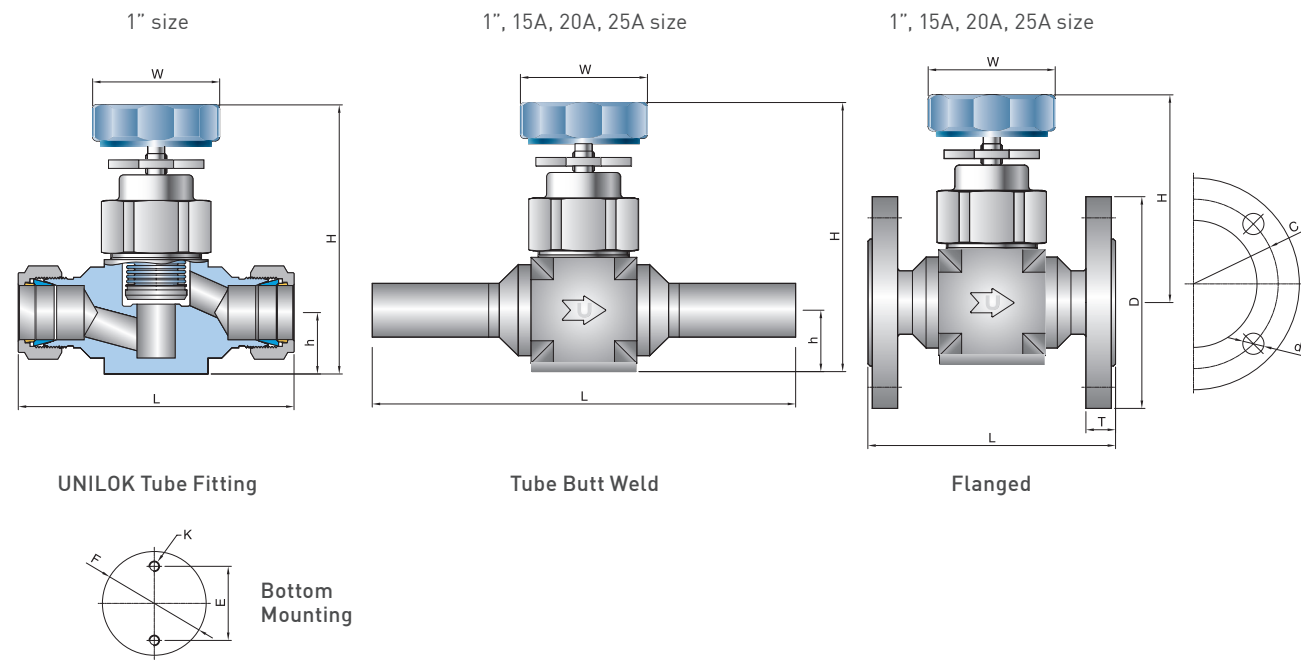
Size	1"	15A	20A	25A
Orifice Size	19	15	19	25
Cv Value	4.1	2.9	4.1	6.9
Max. Working Pressure	10 bar (145 psig)			
Max. Working Temperature	-10~80°C (14~176°F)			
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤1x10 ⁻⁵ atm.cc/s			
External Leakage Allowance - He (Holding Time - Min 1 min)	≤1x10 ⁻⁵ atm.cc/s			



Materials of Construction

No.	Description	Materials
1	Body	316LSS
2	Gasket	PCTFE
3	Disk	PTFE
4	Bellows	316LSS
5	Stem	316LSS
6	O-ring	FKM
7	Packing	PCTFE
8	Bonnet	316LSS
9	Stop Nut	Brass Ni coated
10	Handle	Aluminum

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



UHP

Casting Bellows Valve VCBC

Ordering Information & Dimensions

UNILOK Tube Fitting - 1" size

Part No.	End Connection		Dimensions (mm)						
	Inlet	Outlet	L	h	H	F(Ø)	E	K	W(Ø)
VCBF U-16T-	1" UNILOK		130.2	29.0	127.0	49.0	35.0	M5	60.0

Tube Butt Weld - 1", 15A, 20A, 25A size

Part No.	End Connection		Dimensions (mm)			
	Inlet	Outlet	L	h	K	W(Ø)
VCBF	WB-16T-	1" Tube Butt Weld	200.0	29.0	127.0	60.0
	WB-15AP-	15A Pipe Butt Weld	200.0	24.0	117.0	
	WB-20AP-	20A Pipe Butt Weld	200.0	28.0	127.0	
	WB-25AP-	25A Pipe Butt Weld	210.0	33.0	143.0	

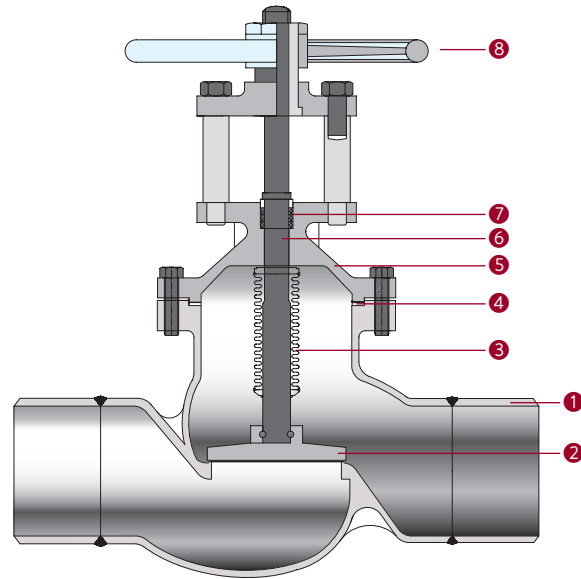
Flanged - 1", 15A, 20A, 25A size

Part No.	End Connection		Dimensions (mm)						
	Inlet	Outlet	L	H	W(Ø)	D(Ø)	C(Ø)	d(Ø)	T
VCBF	FL-16	1" Flanged	117.0	98.0	60.0	100.0	75.0	15.0	14.0
	FL-15A	15A Flanged	108.0	93.0		95.0	70.0	15.0	12.0
	FL-20A	20A Flanged	117.0	98.0		100.0	75.0	15.0	14.0
	FL-25A	25A Flanged	127.0	110.0		125.0	90.0	19.0	14.0



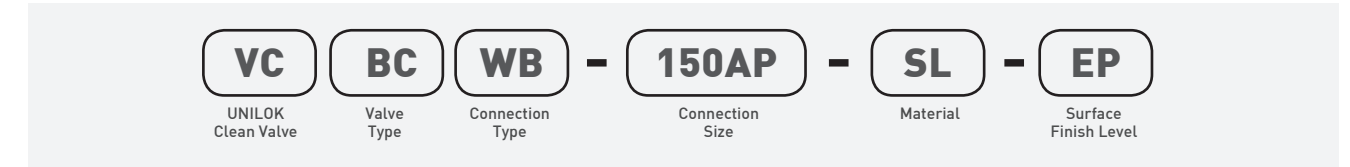
Dimensions are for reference only and are subject to change without prior notice.

Materials of Construction



No.	Description	Materials
1	Body	SCS 19
2	Disk	PTFE
3	Bellows	316L SS
4	Gasket	PTFE
5	Bonnet	SCS 19
6	Stem	304L SS
7	Packing	PTFE
8	Handle	FCD 450

How To Order



Valve Type	
BC	Bellows Valve for Low Pressure (CASTING TYPE)

Connection Size	
Pipe Size Designator	
Pipe Size	65A 80A 100A 125A ~ 450A
Designator	65A 80A 100A 125A ~ 450A

Material	
S4	304 SS/SCS 13
SS	316 SS/SCS 14
SL	316L SS/SCS 16

Connection Type	
WB-*P	Butt Weld-Pipe
FL	Flanged

Surface Finish Level	
AP	Annealing & Pickling
BA	Bright Annealing
EP	Electro Polishing

Specification

Size	64A	80A	100A	125A	150A	200A	250A	300A	350A	400A	450A	500A
Orifice Size	65	80	100	124	148	200	250	300	350	400	440	490
Cv Value	81	132	200	302	434	772	1200	1600	2000	2650	3100	3400
Max. Working Pressure	10 kgf/cm ²											
Max. Working Temperature	-10 ~ 80°C											
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤1x10 ⁻⁵ atm.cc/s											
External Leakage Allowance - He (Holding Time - Min 1 min)	≤1x10 ⁻⁵ atm.cc/s											

Internal Surface Finish Levels

Grade		BA	EP
Surface Roughness	Average	< 0.4 μm	<0.125 μm
	Maximum	< 1.6 μm	<0.4 μm
Cleaning		Degreasing + Precision Cleaning	
Clean Room Environment		Class 10 [Some Products, Class 100]	

Ordering Information & Dimensions

Model	End Connection	SIZE	Dimensions (mm)		
			L	H	D
	Butt Weld	65A	416	280	160
		80A	441	300	200
		100A	492	380	200
		125A	556	470	300
		150A	606	470	300
		200A	795	700	400
		250A	1022	900	450
		300A	1100	1000	500
		350A	1187	1050	710
		400A	1314	1050	710
	Flange	65A	216	280	160
		80A	241	300	200
		100A	292	380	200
		125A	356	470	300
		150A	406	470	300
		200A	495	700	400
		250A	622	900	450
		300A	698	1000	500
		350A	787	1050	710
		400A	914	1050	710
450A	1040	1150	800		

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

UHP

**Welded Check Valve
VCC**



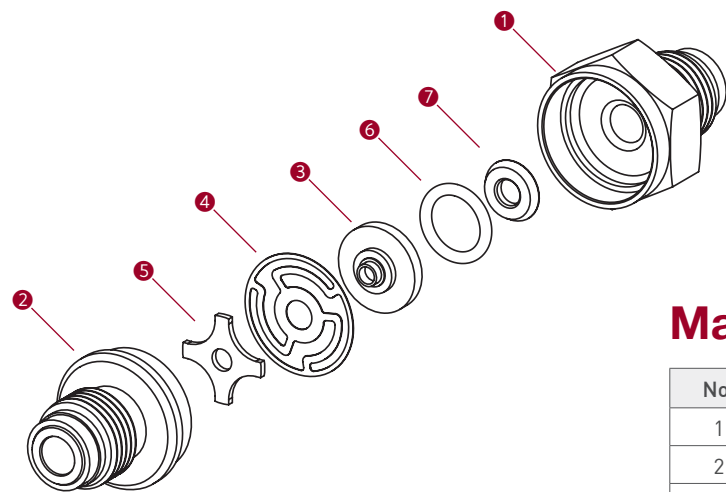
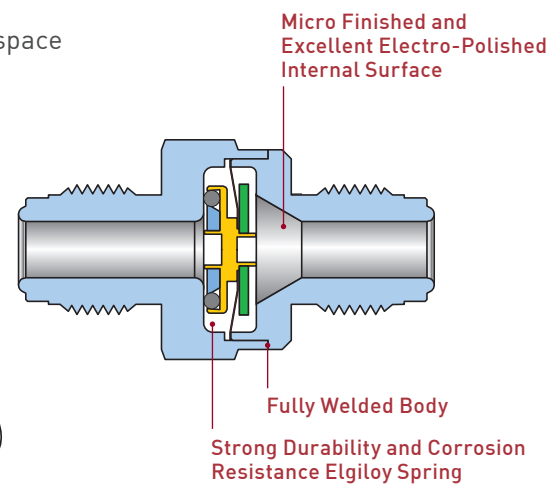
Welded Check Valve VCC

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Materials of Construction	330	Important Notification	331
Pressure-Temperature Rating	330	How To Order	331
Internal Surface Finish Levels	330	Specification	332
Test	331	Ordering Information & Dimensions	332

Features

- Fully welded and compact designed body with minimal dead space
- Body material comply with SEMI F-20, "Specification 316LSS Materials for UHP (Ultra High Purity) Grade Semiconductor Manufacturing Applications"
- Elgiloy® spring material with strong durability as well as corrosion resistance for long cycle life
- Noise free operation
- Broaden choice of end connection



Materials of Construction

No.	Description	Materials
1	Inlet Body	316LSS
2	Outlet Body	316LSS
3	Poppet	316LSS
4	Spring	Elgiloy
5	Poppet Stop	316LSS
6	O-ring	FKM
7	O-ring Stopper	316LSS

Internal Surface Finish Levels

Designator	Surface Finish(μm)	
	Average	Maximum
BA	< 0.4	< 1.6
EP	< 0.125	< 0.4

Pressure - Temperature Rating

Body Material		316LSS		
Temperature		Working Pressure		
°C	°F	psig	bar	
-54 to	38	100	3000	206
	93		2530	174
	148		2270	156
	204		2065	142

Helium Leak Test

Every VCC series valves are inboard helium leak tested to a rate of 1x10⁻⁹ std.cm³/s at all seals.

Particle Contribution Test

According to ASTM F1394-92.

Moisture Contribution Test

According to SEMA-90120397B-STD.

Cleaning

All components are precisely cleaned with 18MΩ deionized water after the passivation procedure in accordance with our own UHP cleaning process
Reference specification : SEMI E49.6.

How To Order

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

Assembling

According to SEMI E49.6.

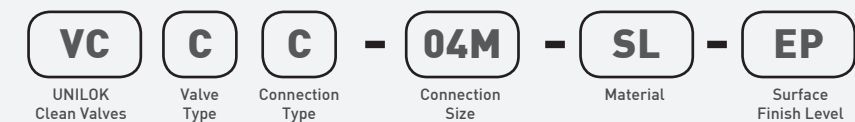
Packaging

Each component is double bagged to ensure component cleanliness and to protect them from environmental contamination.
Referenced specification : SEMI E49.1.

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.
Overall process of testing, cleaning, assembling and packaging for every VCC series valves are performed in a certified clean room.

Example : The following part number, **VCCC-04M-SL-EP** is designated for Clean Check Valve, both 1/4" Male UCR, 316LSS, EP.



Valve Type	
C	Welded Check Valve

Connection Type	
U	UNILOK Tube Fitting
C-*M	Male UCR
C-*F	Female UCR
WB-	Butt Weld -Tube

UCR - Metal Face Seal

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

UCR Size Designator		
UCR Size	1/4	1/2
Designator	04	08

Material	
DM	316LSS - Double Melting
SM	316LSS - Single Melting
SL	316LSS

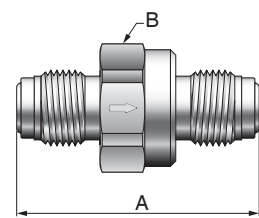
Surface Finish Level	
BA	BA - Bright Annealing
EP	EP - Electro Polished

VCC series

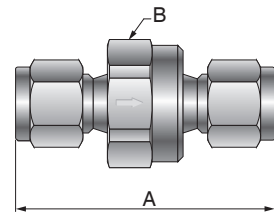
(Fully Welded Check Valve)

Specification

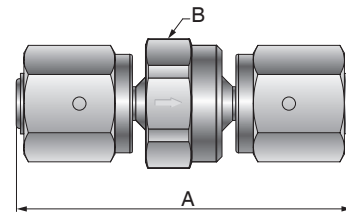
Size	1/4"	3/8", 1/2"
Cv Value	0.55	0.70
Max. Working Pressure	3000 psig [206 bar]	
Max. Working Temperature	3000 psig [206 bar]	
Normal Cracking Pressure	< 2 psig (0.14 bar)	
Reseal Pressure	up to 5~10 psig (0.34~0.69 bar)	
Max. Working Temperature	-10~80°C (14~176°F)	
External Leakage Allowance - He (Holding Time - Min 1 min)	≤1x10 ⁻⁹ atm.cc/s	



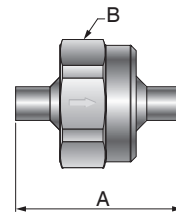
Male UCR



UNILOK Tube Fitting



Female UCR



Tube Butt Weld



Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)	
	Inlet	Outlet	A	B
VCC	U-04T-	1/4" UNILOK	49.8	22.2
	C-04M-	1/4" Male UCR	45.8	22.2
	C-08M-	1/2" Male UCR	52.3	26.9
	C-04F-	1/4" Female UCR	61.7	22.2
	C-08F-	1/2" Female UCR	61.7	26.9
	WB-04T-	1/4" Tube Butt Weld	31.5	22.2
	WB-06T-	3/8" Tube Butt Weld	31.5	22.2
	WB-08T-	1/2" Tube Butt Weld	31.5	26.9

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

UHP

Filter, Regulator

GF UHP Gas Filter	335
RC UHP Regulator	339

**UHP Gas Filter
GF**





Interials Surface Finish Levels

Grade		EP
Body		316L SS Single Melting
		316L SS Double Melting
Filter Element		316L SS
Surface Roughness	Average	< 0.125 µm

To meet the requirements of SEMI E49.8-96, the UNILOK GF Series gas filter is optimized for gas filtering applications.

UNILOK GF Series is made up of 316L VAR stainless steel housing and sintered construction filter that will be best solution for UHP application.

Features

- Sintered Construction 316L SS filter.
- Fully welded and compact designed body.
- High particle removal efficiency.
- High differential pressure rating.
- All Stainless steel housing.
- 100% Helium leak tested.

Specification

Removal Rating	→ 99.9999999% at 0.003 µm
Rated Flow	15 SLPM
	30 SLPM
	60 SLPM
Max. Working Pressure	206 bar (3000 psig)
Max. Operating Temperature	Ambient to 400°C
External Leakage Allowance - He	≤ 1x10 ⁻⁹ atm.cc/s

Helium Leak Test

Every GF series filters are inboard helium leak tested to a rate of 1x10⁻⁹ cm³/sec at seat and all seals.

Cleaning

All components are precisely cleaned with 18MΩ deionized water after the passivation procedure in accordance with our own UHP cleaning process (UNIP-705-38) Reference specification : SEMI E49.6.

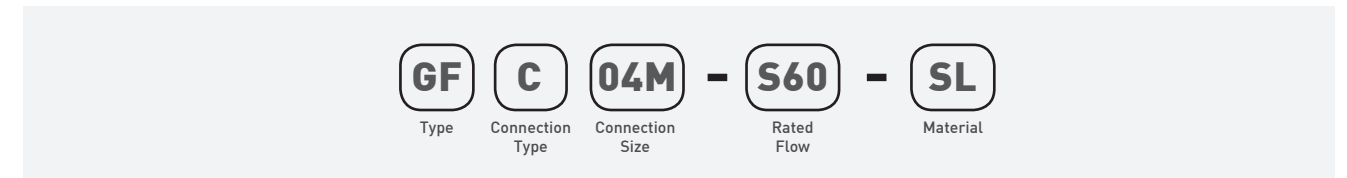
Packaging

Each component is double bagged to ensure component cleanliness and to protect them from environmental contamination. Referenced specification : SEMI E49.1.

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. Overall process of testing, cleaning, assembling and packaging for every GF series filters are performed in a certified clean room.

How To Order



Type	
GF	Gas Filter

Connection Type	
U	UNILOK Tube Fitting
C-*M	Male UCR

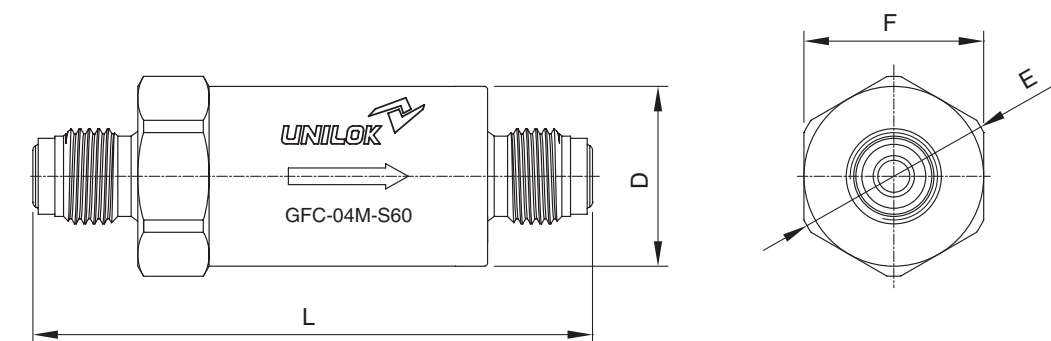
Connection Size		
Fractional(Inch) Tube O.D. Designation		
Tube O.D.	inch	1/4
	mm	6.35
Designator	04T	

UCR (Metal Face Seal) Size Designator	
UCR Size	1/4
Designator	04

Rated Flow (SLPM)	
S15	15 SLPM
S30	30 SLPM
S60	60 SLPM

Material	
DM	316L SS-Double Melting
SM	316L SS-Single Melting
SL	316L SS

Ordering Information & Dimensions



Part No.	End Connection		Dimensions (mm)			
	Inlet	Outlet	L	D	F	E
GF	U-04T-S15	UNILOK Tube Fitting	73.0	27.0	26.98	30.0
	C-04M-S15	Male UCR	84.0			
	U-04T-S60	UNILOK Tube Fitting	73.0			
	C-04M-S60	Male UCR	84.0			
	C-08M-S60	Male UCR	91.0			

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

UHP

UHP Regulator RC



RC01 Series

Specification

Pressure Ratings

Per criteria of ANSI/ASME B31.3

Max. Inlet Pressure	600 or 3500 psig (41.4 or 241 bar)
Outlet Pressure Range	30, 60, 100, 150 and 250 psig (2.1, 4.1, 6.9, 10.3 and 17.3 bar)
Design Proof Pressure	150% of maximum rated

Operating Temperature

PCTFE Seat	-40~60°C (-40°F~140°F)
Vespel® Seat	-40~177°C (-40°F~350°F)

Flow Capacity

3500 psig / 241 bar	0.06 Cv
600 psig / 41.4 bar	0.15 Cv

Helium Leak Test

Inboard Leak Rate	1x10 ⁻⁹ atm cc/sec
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Media Contact Materials

Body	316L Stainless Steel
Diaphragm	316L Stainless Steel or Hastelloy®
Seat	PCTFE (Optional Vespel®)
Seat	316L Stainless Steel or Hastelloy®
Seat	316L Stainless Steel

Internal Surface Finish

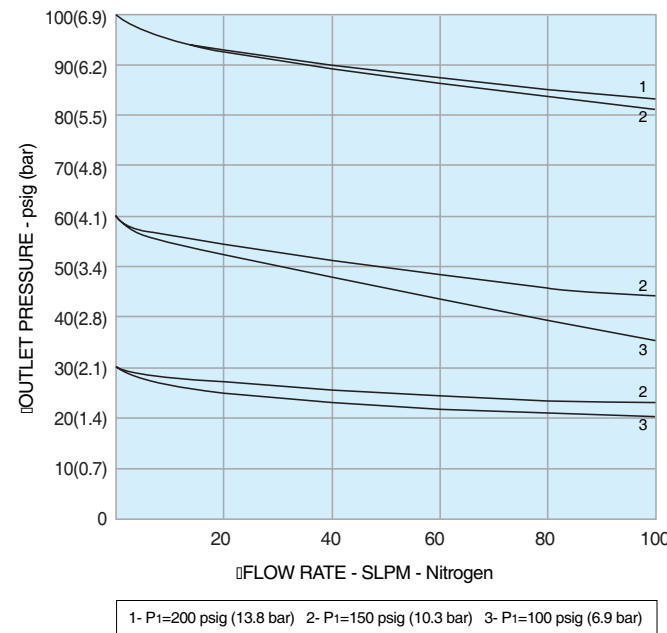
Designator	Surface Finish(µm)	
	Average	Maximum
BA	< 0.4	< 1.6
EP	< 0.125	< 0.4



Features

- The RC01 series provides excellent stability of set pressure with accuracy, sensitivity.
- Metal to metal diaphragm seals provide enhanced leak integrity
- Optimum performance and cleanliness at a great value
- Low internal volume
- Adjustable stop to limit outlet pressure
- All performed in class 100 and class 10 clean rooms

Flow Chart



How To Order

RC01 DM C - 04M - 12 0 - E

Regulator Type Body Material Connection Type Connection Size Inlet /Outlet Pressure Gauge Port Option Surface Finish

Regulator Type	
RC01	Ultra High Purity Regulator

Body Material	
DM	316L SS - Double Melting
SM	316L SS - Single Melting

Connection Type	
C-*M	Male UCR Swivel
C-*F	Female UCR Swivel
WB-*T	Tube Butt Weld
U-*T	UNILOK Tube Fitting

Connection Size	
04	1/4 inch

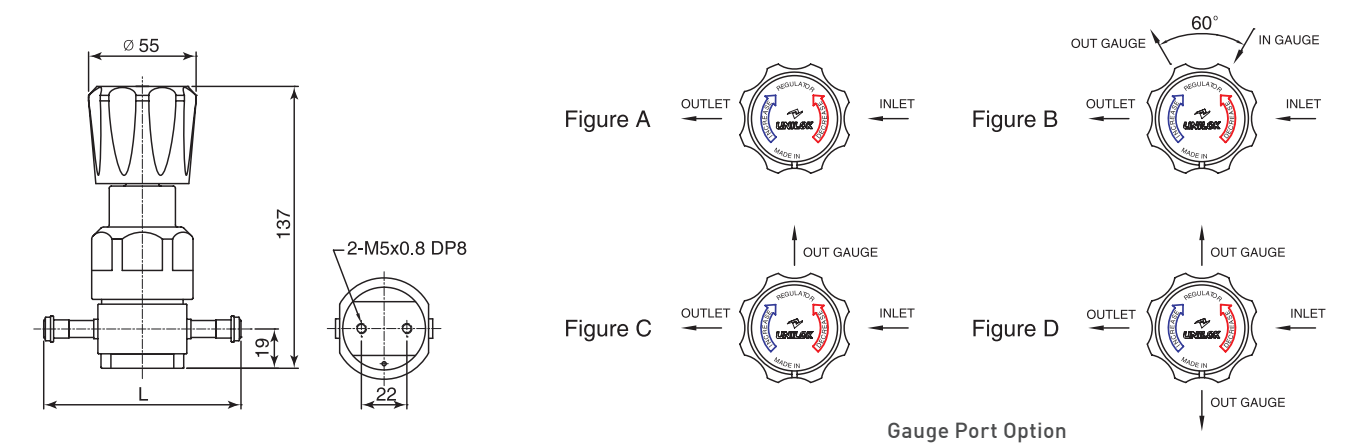
Maximum Inlet Pressure	
1	3500 psig / 241bar
2	600 psig / 41.4 bar

Outlet Pressure Range	
0	1~30 psig / 1~2.1 bar
1	1~60 psig / 1~4.1 bar
2	1~100 psig / 1~6.9 bar
3	1~150 psig / 1~10.3 bar
4	1~250 psig / 1~17.2 bar

Gauge Port Option	
0	None (Fig. A)
1	1/4" Male UCR (Fig. B)
2	1/4" Male UCR (Fig. C)
3	1/4" Male UCR (Fig. D)
4	1/4" Female UCR (Fig. B)
5	1/4" Female UCR (Fig. C)
6	1/4" Female UCR (Fig. D)

Internal Surface Finish	
B	BA - Bright Annealing
E	EP - Electro Polished

Ordering Information & Dimensions



Part No.	End Connection		Dimensions (mm)
	Inlet	Outlet	
RC01*	WB-04T-	1/4" Tube Butt Weld	L ±1
	C-04M-	1/4" Male UCR Swivel	76.2
	C-04F-	1/4" Female UCR Swivel	94.0
	U-04T	1/4" UNILOK Tube Fitting	94.0

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

RC02 Series

Specification

Pressure Ratings

Per criteria of ANSI/ASME B31.3

Max. Inlet Pressure	600 or 3500 psig (41.4 or 241 bar)
Outlet Pressure Range	30, 60, 100, 150 psig (2.1, 4.1, 6.9, 10.3 bar)
Design Proof Pressure	150% of maximum rated

Operating Temperature

PCTFE Seat	-40~60°C (-40°F~140°F)
Vespel® Seat	-40~177°C (-40°F~350°F)

Flow Capacity

Flow Capacity	0.5 Cv
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Helium Leak Test

Inboard Leak Rate	1x10 ⁻⁹ atm cc/sec
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Media Contact Materials

Body	316L Stainless Steel
Diaphragm	316L Stainless Steel or Hastelloy®
Seat	PCTFE (Optional Vespel®)
Spring	316 Stainless Steel or Hastelloy®
Poppet, Retainer	316L Stainless Steel

Internal Surface Finish

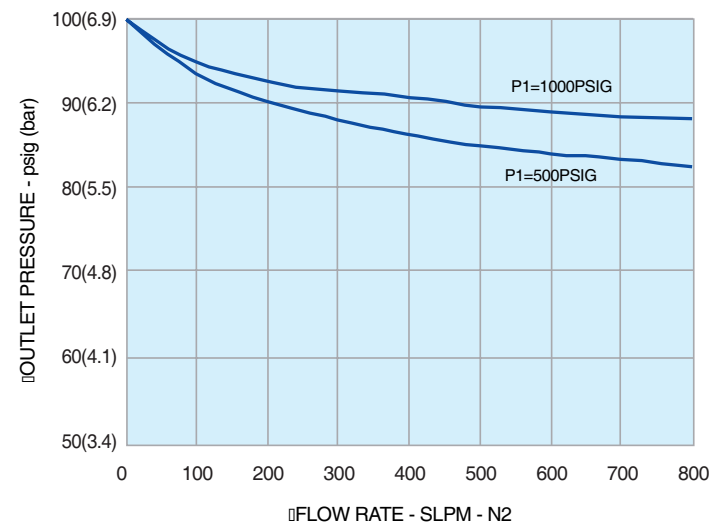
Designator	Surface Finish(μm)	
	Average	Maximum
BA	< 0.4	< 1.6
EP	< 0.125	< 0.4



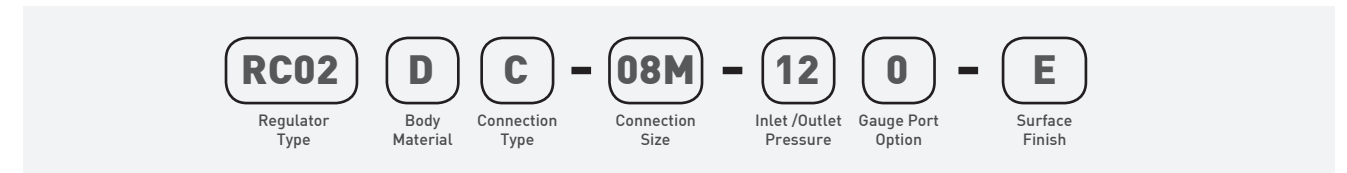
Features

- RC02 series provides excellent stability of set pressure with accuracy, sensitivity.
- Metal to metal diaphragm seals provide enhanced leak integrity
- Optimum performance and cleanliness at a great value
- Low internal volume
- Adjustable stop to limit outlet pressure
- All performed in class 100 and class 10 clean rooms

Flow Chart



How To Order



Regulator Type	
RC02	Ultra High Purity Regulator

Body Material	
DM	316L SS - Double Melting
SM	316L SS - Single Melting

Connection Type	
C-*M	Male UCR Swivel
C-*F	Female UCR Swivel
WB-*T	Tube Butt Weld
U-*T	UNILOK Tube Fitting

Connection Size	
06	3/8 inch
08	1/2 inch

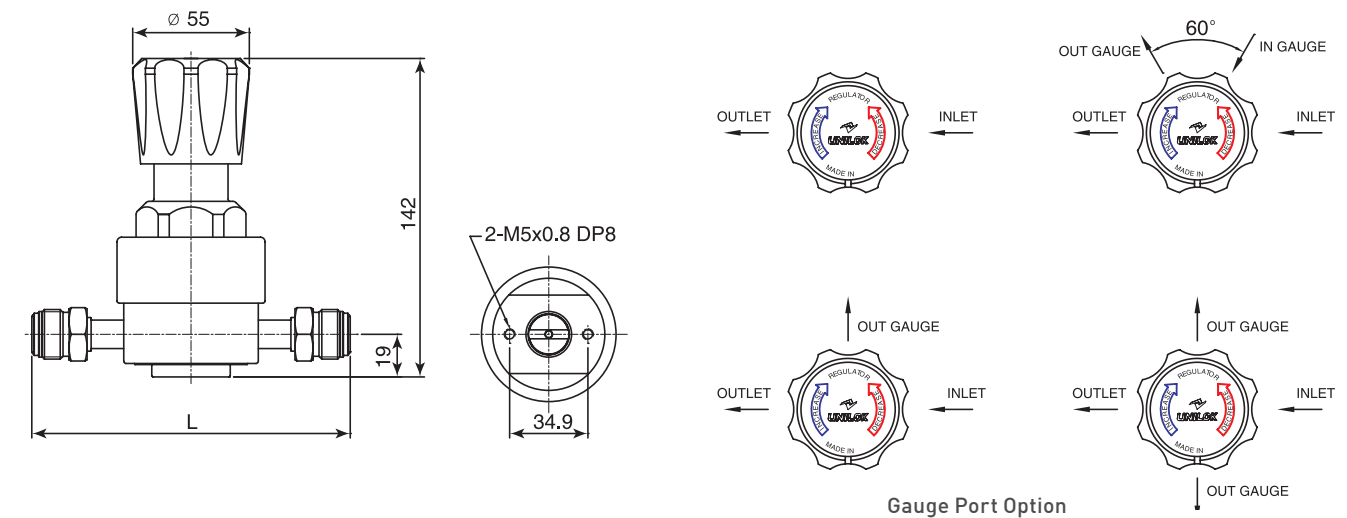
Maximum Inlet Pressure	
1	3500 psig / 241bar
2	600 psig / 41.4 bar

Outlet Pressure Range	
0	1~30 psig / 1~2.1 bar
1	1~60 psig / 1~4.1 bar
2	1~100 psig / 1~6.9 bar
3	1~150 psig / 1~10.3 bar

Gauge Port Option	
0	None (Fig. A)
1	1/4" Male UCR (Fig. B)
2	1/4" Male UCR (Fig. C)
3	1/4" Male UCR (Fig. D)
4	1/4" Female UCR (Fig. B)
5	1/4" Female UCR (Fig. C)
6	1/4" Female UCR (Fig. D)

Internal Surface Finish	
B	BA - Bright Annealing
E	EP - Electro Polished

Ordering Information & Dimensions



Part No.	End Connection		Dimensions (mm)
	Inlet	Outlet	L ±1
RC02*	WB-06T-	3/8" Tube Butt Weld	94.0
	U-06T-	3/8" UNILOK Tube Fitting	116.4
	WB-08T-	1/2" Tube Butt Weld	94.0
	C-08M-	1/2" Male UCR Swivel	142.0
	C-08F-	1/2" Female UCR Swivel	142.0
	U-08T-	1/2" UNILOK Tube Fitting	116.4

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



UHP

Others

VCG Vacuum Generator 346

Features

- Function of the pressure of the purge gas which flows through the generator.
- Low space requirement.
- Extremely fast evacuation time.
- All performed in class 100 and class 10 clean rooms.
- Stainless Steel 316L construction.



Specification

Orifice Size	1.35mm
Ultimate Vacuum	50torr (66.7mbar)
Gas Flow at Ultimate	60 l/min
Gas Pressure at Ultimate	80psig
Optimize working Pressure	80~100psig
Max. Working Pressure	150psig (10kgf/cm ²)
Operating Temperature	0~150°C

Helium Leak Test

Every VCG series are inboard helium leak tested to a rate of 1×10^{-9} cm³/sec.

Particle Contribution Test

According to ASTM F1394-92.

Moisture Contribution Test

According to SEMA-90120397B-STD.

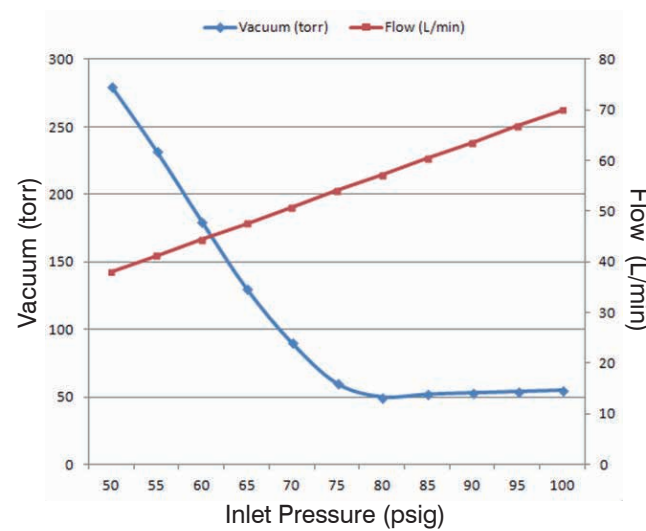
Cleaning

All components are precisely cleaned with 18MΩ deionized water after the passivation procedure in accordance with our own UHP cleaning process
Reference specification : SEMI E49.6.

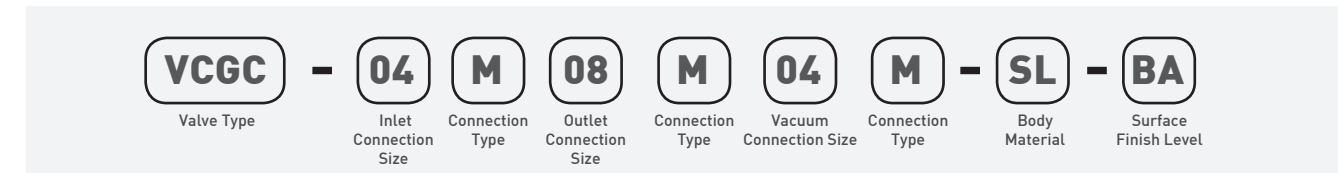
Packaging

Each component is double bagged to ensure component cleanliness and to protect them from environmental contamination.
Referenced specification : SEMI E49.1.

Vacuum and Flow Chart



How To Order



Valve Type	
VCG	Vacuum Generator

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

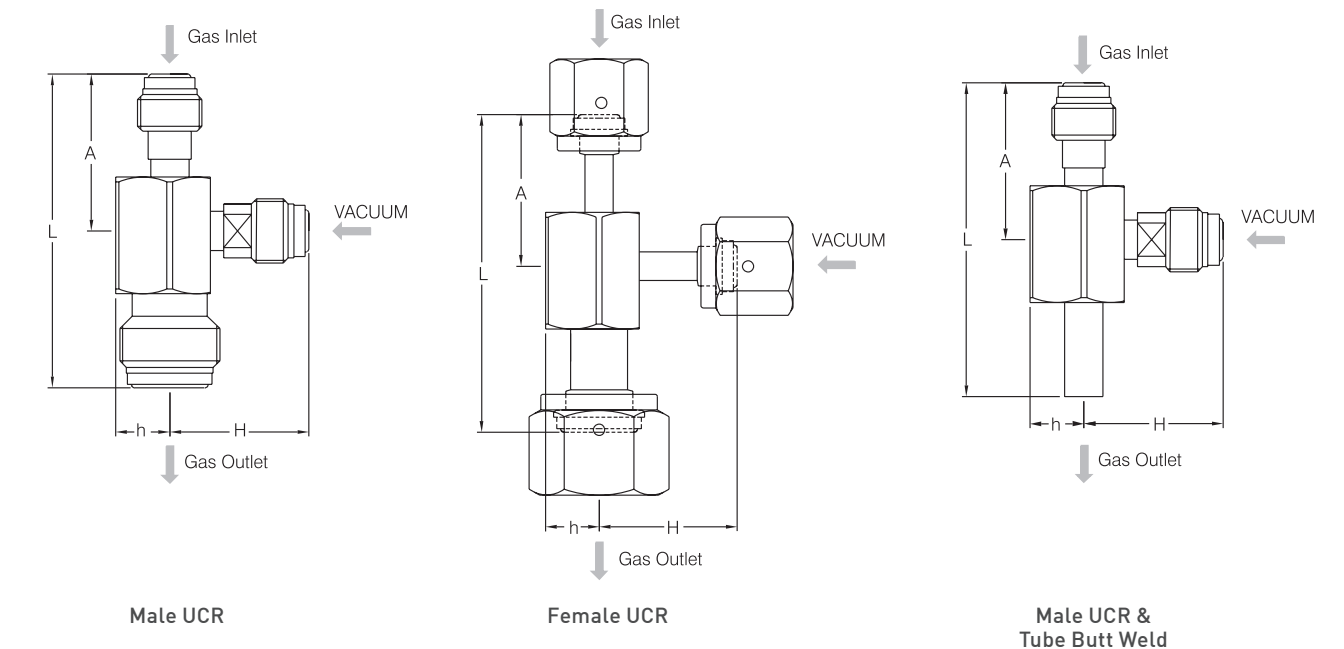
Body Material	
DM	316LSS – Double Melting
SM	316LSS – Single Melting
SL	316L SS

Connection Type	
C-*M	Male UCR
C-*F	Female UCR
WB-	Tube Butt Weld

UCR Size Designator		
UCR Size	1/4	1/2
Designator	04	08

Surface Finish Level	
BA	BA - Bright Annealing
EP	EP-Electro Polished

Ordering Information & Dimensions



Part No.	End Connection			Dimensions (mm)			
	Inlet	Outlet	Vacuum	A	L	H	h
VCGC-04M04M08M-	Male UCR			35.0	70.0	31.0	32.0
VCGC-04F04F08F-	Female UCR				80.0		
VCGCWB-04M04M04T-	Male UCR	Tube Butt Weld					

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

