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Introduction

Process & Instrumentation Valve Equipment for Oil & Gas and General Industries

Fujikin Incorporated 's flow control technologies are state of the art everywhere: earth, ocean and sky.

Fujikin Incorporated

has become the top manufacturing corporation for not only specific-purpose valves but also super high precision flow control systems. Our cutting edge technology is used in every area that demands the highest technology.



Semiconductor



Solar and Fuel Cells



Aerospace



Marine Vessels



Iron and Steel



Nano Devices



Medical, Pharmaceutical and Food



Ocean Development



Petrochemicals



Cryogenic Equipment

Application & Achievement

Process & Instrumentation Valve Equipment for Oil & Gas and General Industries



Oil & Gas Production



Petrochemicals & Chemicals

Holding a share of more than 80% of instrumentation valves for Oil & Gas plant in Japan, **Fujikin**® contributes to safety, security and reliability of various plants.



Petroleum Refining



GTL / DME



LNG

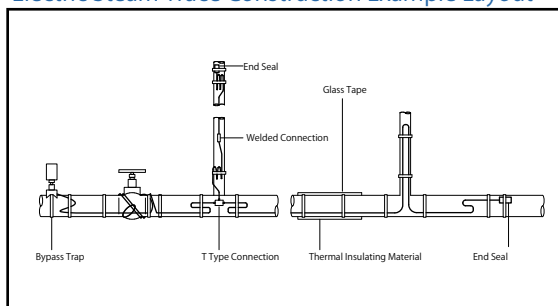


Oil Platform

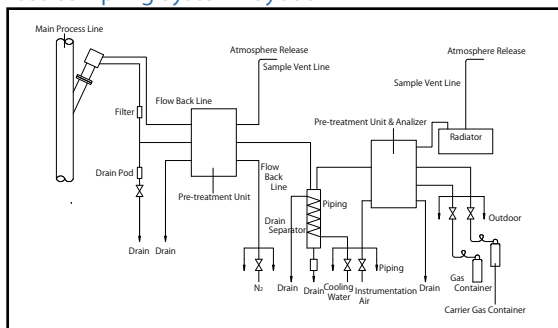
Application



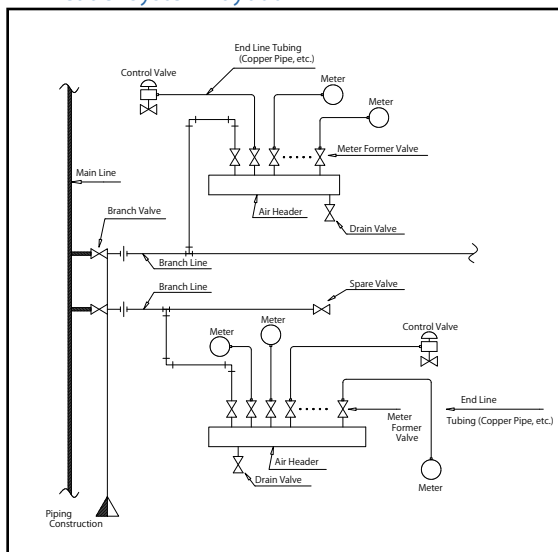
Electric Steam Trace Construction Example Layout



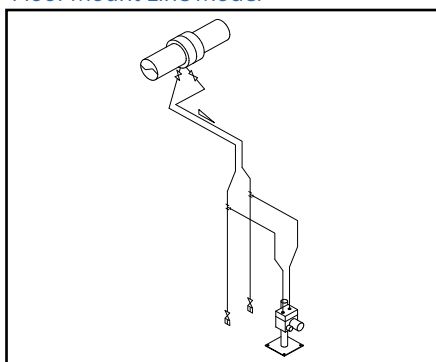
Gas Sampling System Layout



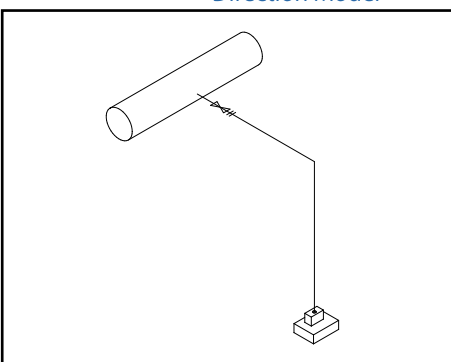
Air Header System Layout



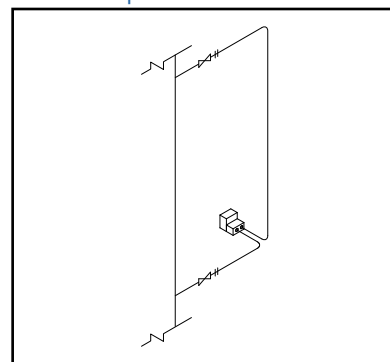
Floor Mount Line Model



Sampling Nozzle: Horizontal Direction Model



General Liquid Line Model



① Differential Pressure Transmitter

- Tube Fittings **P9**
- Ball Valves **P104**
- Needle Valves **P140**
- Manifolds/Gauge Valves **P172**

② Pressure Transmitter

- Tube Fittings **P9**
- Ball Valves **P104**
- Needle Valves **P140**
- Manifolds/Gauge Valves **P172**

③ Liquid Level Meter by Differential Pressure

- Tube Fittings **P9**
- Ball Valves **P104**
- Needle Valves **P140**
- Manifolds/Gauge Valves **P172**

④ Sampling Line

- Tube Fittings **P9**
- Ball Valves **P104**
- Plug Valves **P134**
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- Bellows Valves **P190**
- Check Valves **P210**

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⑥ Air Line

- Tube Fittings **P9**
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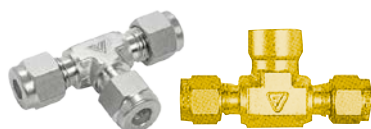
- Tube Fittings **P9**
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Tube Fittings



Ball Valves



Needle Valves



Manifolds/Gauge Valves



Bellows Valves



Toggle Valves



Relief Valves



Check Valves

Delivery Records

Process & Instrumentation Valve Equipment for Oil & Gas and General Industries

KUWAIT

PETROLEUM REFINERY

ALGERIA

LPG PLANT

RUSSIA

PETROLEUM REFINERY
LNG PLANT

POLAND

PKN-PTA PLANT

TRUKMENISTAN

METANOL PLANT

UZBEKISTAN

ETHYLENE PLANT

PROCESS & INS
VALVE EQ

FOR OIL & GAS AND

SAUDI ARABIA

ETHYLENE PLANT
METANOL PLANT
POLYETHYLENE PLANT
EO EG PLANT

UAE

GAS PROCESSING PLANT
RUWAIS FERTILIZER
INDUSTRIES

QATAR

LNG PLANT

INDIA

POLYCARBONATE PLANT

CHINA

EO, EG PLANT
FGD PLANT

TAIWAN

AROMATICS
TEREPHTHALIC ACID PLANT
PTA PLANT

VIETNAM

REFINERY
COAL THERMAL
POWER PLANT
STEEL PLANT
BIOETHANOL PLANT

JAPAN

ETHYLENE PLANT
REFINERY
COAL THERMAL
POWER PLANT
CHEMICAL GRADE
METHANOL PLANT
EO EG PLANT
POLYACETAL PLANT
PETROCHEMICAL PLANT

TRUMENTATION
UIPMENT
GENERAL INDUSTRIES

THAILAND

PETROLEUM REFINERY
FGD PLANTS
PETROCHEMICAL
POLYACETAL
KRABI POWER PLANT
SEMICONDUCTOR

INDONESIA

PETROCHEMICAL PLANT
SAP - CHEMICAL PLANT
SURFACTANT
- CHEMICAL PLANT

SINGAPORE

PETROCHEMICAL PLANT
ETHYLENE PLANT
PTA PLANT
BISPHENOL PLANT

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Fittings

New V-Lok Tube Fittings Double Rings Compression and Bite Type Stainless Steel

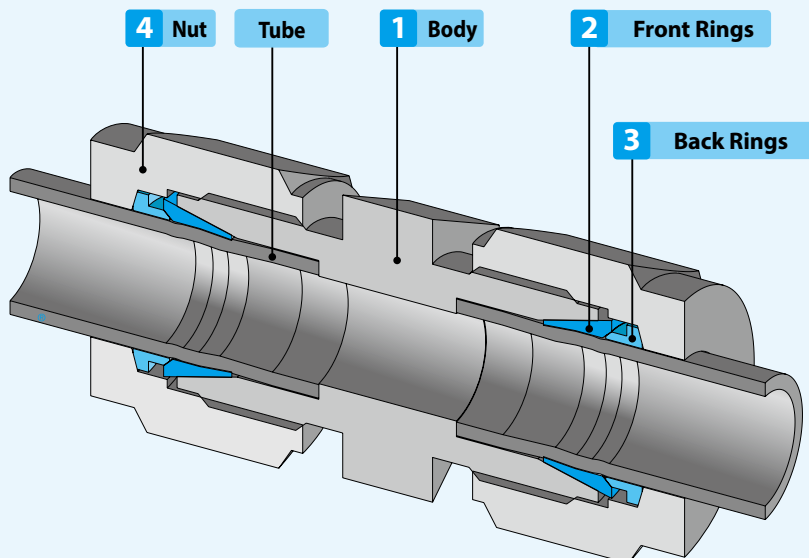
PDW Tube Fittings Double Rings Compression and Bite Type Brass

Overview of New V-Lok Tube Fittings

New V-Lok is a high performance tube fitting that combines the sealing properties and quality control technologies required for power plant instrumentation fittings, other industries, and the ultra-pure construction required used in fittings used in semiconductor manufacturing equipment.

New V-Lok is new value series that provides high performance, cost effectiveness, and quick delivery.

New V-Lok tube fittings combine leading edge manufacturing technology and exceptional cost performance.



New V-Lok Tube Fittings are composed of four parts:
1. Body 2. Front Rings 3. Back Rings 4. Nut

New V-Lok How Does it Works?

The **New V-Lok** Tube Fittings is a mechanism used both to seal and to grip tubing. The mechanical advantage and geometry of this kind of fitting produces a leak-tight assembly.

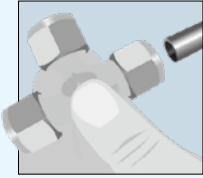
To assemble, simply insert the tube into the complete assembly until the tube bottoms-out against the shoulder of the fitting body (1). The two Rings are driven forward between the nut (4) and fitting body using the mechanical force created by rotating the nut clockwise. The back Rings (3) is driven against the tapered rear of the front Rings (2) and the front Rings (2) is driven by force into the tapered mouth of the body.

The back Rings is swaged radially inwards on the tube while lifting the front Rings out to form a full-faced seal on the tapered surface of the body.

The 1 1/4 turn of the nut from the hand tight position assures consistent drive of the sealing parts. This ensures an effective seal against high pressure as well as ultra high vacuum conditions.

New V-Lok Installation Instructions

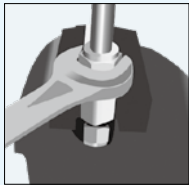
New V-Lok fittings are supplied assembled and hand tight. Disassembly before use can allow the entry of dirt or other particles.



Insert the tubing completely into the New V-Lok tube fittings.

Check that the tube point contacts with the fitting body shoulder and that the nut is hand tight until it cannot be tightened further. At this point it is

recommended that a scribe mark be drawn on the hex of the nut extending onto the fitting body. This mark will serve as an indicator for the starting point and proper pull-up.



Tighten the nut.

1 1/4 turn of the nut are required for 1/4" (6 mm) and larger fittings (see Fig. A). 3/4 turn of the nut is required for 3/16" (4 mm) and smaller fittings (see Fig. B). Plugs (part number:

VUWJP) and port connectors (part number: VUW-PC): First tighten the nuts manually, and then use a wrench to tighten them a further 1/4 turn only for sizes of 6 mm or more, 1/8 turn only for sizes of 3/16 in. or less. Assembly is then complete.

Figure A

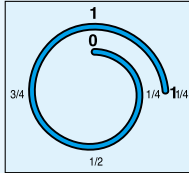
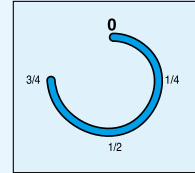


Figure B



Reassembly Instructions

New V-Lok tube fittings may be disconnected and reconnected repeatedly, without loss of the leak-tight seal.

- Before reassembling the parts, ensure that there is no foreign matter on the sealing diagonal face of the fitting body and the front Rings.
- Insert the front Rings until it reaches the body, and then manually tighten the nut enough.
- With a wrench, tighten the nut approximately 1/4 turn. Assembly is then complete.
- Plugs (part number: VUWJP) and port connectors (part number: VUW-PC): First tighten the nuts manually, and then use a wrench to tighten them a further 1/4 turn only for sizes of 6 mm or more, 1/8 turn only for sizes of 3/16 in. or less. Assembly is then complete.

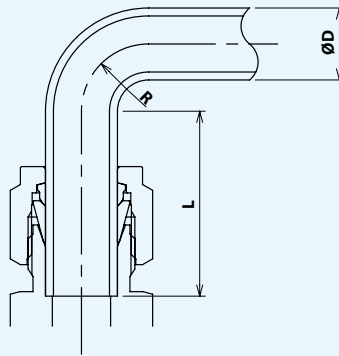
Note:

- After reassembly, the fitting body and nut should return to their original position, or be tightened slightly further.
- For fittings with nominal diameters between 1.6mm (1/16" in) and 4.8mm, tighten the nut 1/6 turn.
- For fittings with nominal diameters of 15.88mm (5/8" in) or larger, it may occasionally be necessary to tighten the nut 1/4 turn or more.
- Don't use the gap inspection gauge for reassembly.

Before Installation

- Use an austenitic stainless steel tube with a seamless bright anneal finish, a hardness of Hv200 or less, and a tolerance within ± 0.1 mm of the tube O.D..
- Please refer to "Tubing Data" on page 12 for recommended tube wall thickness.
- There should be no visible scratches 30mm from either end of the tube. Remove any foreign matter.
- Scratches on the tube may cause leaks. It is therefore important to handle the tube carefully to reduce the risk of leak. Please do not drag tube when taking out of the shelf and drag on the floor to avoid scratching on the tube.
- Before assembling the fittings, cut the tubes to the required length.
- Use a tube cutter to cut the tube. To attain a leak-free connection, the tubing must be cut squarely. A high-quality tube cutter with an appropriate blade for the tubing material is recommended. If it is necessary to use a different method, for example hacksaw cutting, be sure to cut the tube at a right angle, and then remove burrs carefully from the outer circumference by filing at a 45° angle to the center line.
- Tube cutter blades should be replaced regularly to maintain sharpness.
- Before tightening the fitting, ensure that the tube and the fitting are properly aligned.
- Before tightening the fitting, ensure that its body has been secured using a wrench. Never hold the nut in place while attempting to tighten the body.

- Carry out tube bending with a tube bender of the required size. Refer to the following figure and the bending size shown in the right table.



Attention!

A small amount of grease has been applied to the wetted area of this product.

Please kindly contact **Fujikin**, if you require high cleaning level.

We can recommend you F900 Tube Fittings(FINELOK-PURE), UJR Fittings, UPG[®] Fittings, etc. as an appropriate alternative product.

We've surely checked the safety for this product in the condition of pressurized with Oxygen at 400°C.

However, Improper handling with Oxygen gas system may result in a system failure or a serious fire accident.

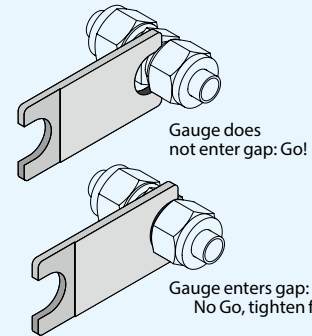
When using Oxygen gas with this product, you are kindly requested to take a proper handling for safety purpose on your own authority and responsibility.

Post-assembly:

Inspection with a "No-Go" gauge (New Fittings Only)

- Position the "No-Go" gauge next to the gap between the nut and body.
- If the gauge cannot fit into the gap, the fitting is sufficiently tightened.
- If the gauge can enter the gap, additional tightening is required.

Note: Do not use the "No-Go" gauge on retightened or pre-tightened fittings.



Ordering Information for the New V-Lok "No-Go" gauge

Part No.	Fitting Size
G-VUW-3.2	2mm, 3mm, 1/8"
G-VUW-9.52-6.35	6mm, 8mm, 1/4", 3/8", 5/16"
G-VUW-12.7-10	10mm, 12mm, 1/2"
G-VUW-19.05-15.88	14mm, 15mm, 16mm, 18mm, 5/8", 3/4"
G-VUW-25.4	25mm, 1"

Tube bending size table

Unit: mm

Nominal Dia. (Tube O.D.)		Length of straight tube part		Bend Radius (Min.)
D		L		R
mm	Inch	L1	L2	
—	1/16	17	11	—
2.3	1/8	25	15	9.5
4	3/16	26	16	11.1
6	1/4	28	17	14.3
8	5/16	30	18	17.5
10	3/8	33	19.5	23.8
12	1/2	41	26	38.1
14, 15, 16	5/8	42	27	57.1
18, 20, 22	3/4, 7/8	44	27	76.2
25	1	52	33	88.9

L1: Length recommended by **Fujikin**.

L2: Length in the case where the minimum dimension is required.

Physical Differences and Marking

New V-Lok Metric Fittings:

Tee & Elbow (see Fig. 1)

Body marked: MM

Straight Connectors: (see Fig. 2)

Body: Stepped shoulder

marked: F-CARP 316 AV⁽¹⁾

Nut: (see Figs. 1 & 2) Stepped shoulder

marked: V-LOK 316 6M⁽²⁾ SD8⁽¹⁾

Fig. 1 Back side

V-LOK 316 6M SD8

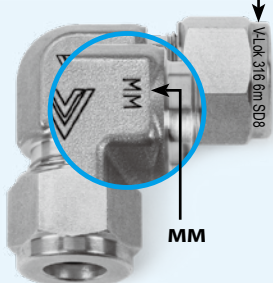


Fig. 1 Front side

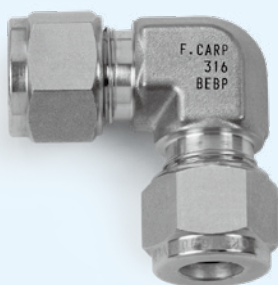
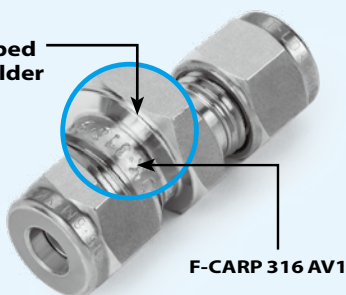


Fig. 2

Stepped
Shoulder



New V-Lok INCH FITTINGS:

Tee & Elbow: (See Fig. 3)

Straight Fittings: (see Fig. 4)

Body: Shoulder marked:

F-CARP 316 AV2⁽¹⁾

Nut: (See Fig. 3 & 4): Shoulder

marked V-LOK 316 1/2⁽²⁾ BU2⁽¹⁾

(1): Material Batch

(2): Tube O.D.

Fig. 3 Back side

V-LOK 316 1/2 BU2

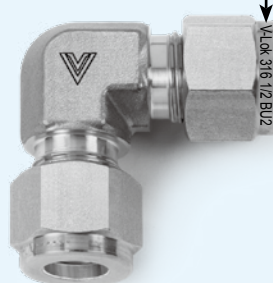


Fig. 3 Front side

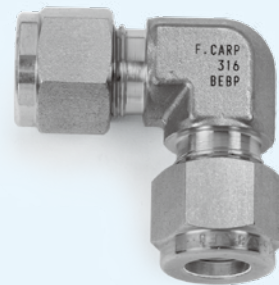
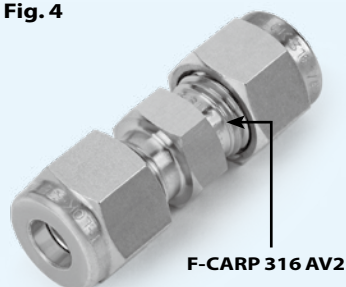


Fig. 4



New V-Lok Tubing Data

Table 1-1 Maximum Allowable Working Pressure Of Stainless Steel Each Tube Wall Thickness (Inch Size)

Tube Wall Thickness	0.010	0.012	0.014	0.016	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120
Nom. Dia. (Inch)	Maximum Allowable Working Pressure (psig)												
1/16	5590	6860	8130	9450	12060								
1/8						8540	10950						
3/16						5490	7090	10290					
1/4						4090	5190	7590	10290				
5/16							4090	5880	8090				
3/8							3350	4840	6540				
1/2							2630	3740	5140	6740			
5/8								2940	4040	5250	6040		
3/4								2430	3350	4240	4940	5840	
7/8								2040	2840	3640	4240	4840	
1									2390	3080	3590	4190	4690

(UNIT: psig)

Table 1-2 Maximum Allowable Working Pressure Of Stainless Steel Each Tube Wall Thickness (mm Size)

Tube Wall Thickness	0.028	0.031	0.039	0.047	0.059	0.071	0.079	0.087	0.098	0.11	0.118
Nom. Dia. (mm)	Maximum Allowable Working Pressure (psig)										
2	7540	10870									
3		9710									
4		6960	9570								
6		4490	6090	7830	10290						
8			4490	5650	7540	8090					
10			3480	4350	5800	7390					
12			2900	3620	4780	5940	6810				
14			2320	2900	3910	4930	5510	6230			
15			2170	2750	3620	4490	5220	5800			
16				2460	3330	4200	4780	5360	5800		
18				2170	2900	3770	4200	4640	5360		
20				2030	2610	3330	3770	4200	4780	5510	
22				1740	2320	2900	3330	3770	4350	4930	
25						2610	2900	3330	3770	4200	4640

Table 2: Factors Used To Determine Allowable Working Pressure At Higher Temperature

°F	°C	A.I.S.I. 316
200	93	1
400	204	0.96
600	316	0.85
800	427	0.79
1000	537	0.76

To determine allowable pressure at higher temperatures, multiply allowable working pressure from Tables 1 by factors shown in Table 2.

Table 3: Gas Application Tubing

in		mm	
Tube O.D.	Min. Nominal Wall Thickness	Tube O.D.	Min. Nominal Wall Thickness
1/8" (3.17mm)	0.028" (0.7mm)	3 mm	0.8 mm
3/16" (4.76mm)	0.028" (0.7mm)	6 mm	0.8 mm
1/4" (6.35mm)	0.028" (0.7mm)	8 mm	1 mm
5/16" (7.93mm)	0.035" (0.89mm)	10 mm	1 mm
3/8" (9.52mm)	0.035" (0.89mm)	12 mm	1 mm
1/2" (12.7mm)	0.049" (1.24mm)	14 mm	1.2 mm
5/8" (15.87mm)	0.065" (1.65mm)	16 mm	1.5 mm
3/4" (19.05mm)	0.065" (1.65mm)	18 mm	1.5 mm
7/8" (22.22mm)	0.083" (2.1mm)	20 mm	1.8 mm
1" (25.4mm)	0.083" (2.1mm)	22 mm	2 mm
		25 mm	2.2 mm

For gas applications, we recommend tubing with a greater wall thickness. Table 3 shows the recommended min.wall thicknesses for greater safety and efficiency.

- Attention!**
1. The value of Table 1 is a maximum allowable working pressure calculated from the tube thickness. The maximum allowable working pressure of the fitting is limited from the value of this table according to the application regulations, and use it, please after considering the application regulations and the standard of used equipment.
 2. There is a possibility that the seal decreases remarkably, and consult separately, please when it is used for a long time exceeding 400°C.

Applicable Fluid

Air, Nitrogen gas, Inert gas like Helium, and non - corrosive gas and liquid.

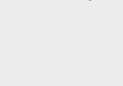
New V-Lok Part Number Designation

All orders should include material description and ordering information (See product table).

V	U	W	H	—	6.35	B	—	T/C	—	V
Product Series	Material	Type of Tube Fittings	Connector Type		Nominal Diameter	Thread Size		Thermoelement Type		New V-Lok Type
New V-Lok	Stainless Steel	Double Rings Compression and Bite Type	Male Connector		Outer Diameter of Tube	R1/4				

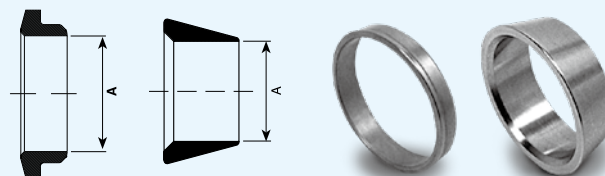
New V-Lok Index

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Tube Socket Weld Elbows 49 LR 	Female Branch Tees (NPT) 58 TG 	Female Tube Adapters (NPT) 67, 68 GA 
Reducing Elbows 49, 50 LR 	Female Branch Tees (Rc,G) 59 TG 	Female Tube Adapters (Rc) Female Tube Adapters (G) 69, 70 GA 
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Front Rings & Back Rings

SR



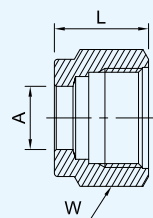
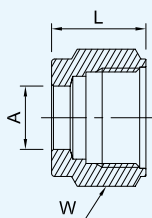
Metric		Inch		
Part Numbers	A Tube O.D.	Part Numbers	A Tube O.D.	
	mm		in	mm
VUW-2SR-V	2	VUW-1.6SR-V	1/16	1.58
VUW-3SR-V	3	VUW-3.2SR-V	1/8	3.17
VUW-4SR-V	4	VUW-4.8SR-V	3/16	4.76
VUW-6SR-V	6	VUW-6.35SR-V	1/4	6.35
VUW-8SR-V	8	VUW-7.93SR-V	5/16	7.93
VUW-10SR-V	10	VUW-9.52SR-V	3/8	9.52
VUW-12SR-V	12	VUW-12.7SR-V	1/2	12.7
VUW-14SR-V	14	VUW-15.88SR-V	5/8	15.87
VUW-15SR-V	15	VUW-19.05SR-V	3/4	19.05
VUW-16SR-V	16	VUW-22.22SR-V	7/8	22.22
VUW-18SR-V	18	VUW-25.4SR-V	1	25.4
VUW-20SR-V	20			
VUW-22SR-V	22			
VUW-25SR-V	25			

Rings Sets

All New V-Lok Rings are available as sets.

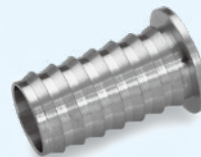
Nuts

N

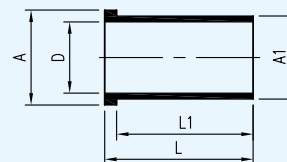


Metric				Inch						
Part Numbers	A Tube O.D.	W	L	Part Numbers	A Tube O.D.		W		L	
	mm	mm	mm		in	mm	in	mm	in	mm
VUW-2N-V	2	12	11.9	VUW-1.6N-V	1/16	1.58	5/16	7.9	0.31	8
VUW-3N-V	3	12	11.9	VUW-3.2N-V	1/8	3.17	7/16	11.1	0.47	11.9
VUW-4N-V	4	12	11.9	VUW-4.8N-V	3/16	4.76	1/2	12.7	0.47	11.9
VUW-6N-V	6	14	12.7	VUW-6.35N-V	1/4	6.35	9/16	14.3	0.5	12.7
VUW-8N-V	8	16	13.5	VUW-7.93N-V	5/16	7.93	5/8	15.9	0.53	13.5
VUW-10N-V	10	19	15.1	VUW-9.52N-V	3/8	9.52	11/16	17.5	0.56	14.3
VUW-12N-V	12	22	17.4	VUW-12.7N-V	1/2	12.7	7/8	22.2	0.69	17.5
VUW-14N-V	14	25	17.4	VUW-15.88N-V	5/8	15.87	1	25.4	0.69	17.5
VUW-15N-V	15	25	17.4	VUW-19.05N-V	3/4	19.05	1 1/8	28.6	0.69	17.5
VUW-16N-V	16	25	17.4	VUW-22.22N-V	7/8	22.22	1 1/4	31.8	0.69	17.5
VUW-18N-V	18	30	17.4	VUW-25.4N-V	1	25.4	1 1/2	38.1	0.81	20.6
VUW-20N-V	20	32	17.4							
VUW-22N-V	22	32	17.4							
VUW-25N-V	25	38	20.6							

IN

[illegible]

Inch						
Part Numbers	A Tube O.D.		A1 Tube I.D.		D	L
	in	mm	in	mm	mm	mm
VUW-IN-4.8X3.2-V	3/16	4.76	1/8	3.17	2.3	11.9
VUW-IN-6.35X3.2-V	1/4	6.35	1/8	3.17	2.3	11.9
VUW-IN-6.35X4.3-V	1/4	6.35	0.17	4.32	2.7	11.9
VUW-IN-6.35X4.8-V	1/4	6.35	3/16	4.76	3.1	11.9
VUW-IN-7.93X3.2-V	5/16	7.93	1/8	3.17	2.3	14.3
VUW-IN-7.93X4.8-V	5/16	7.93	3/16	4.76	3.1	14.3
VUW-IN-7.93X6.35-V	5/16	7.93	1/4	6.35	4.65	14.3
VUW-IN-9.52X4.8-V	3/8	9.52	3/16	4.76	3.1	14.3
VUW-IN-9.52X6.35-V	3/8	9.52	1/4	6.35	4.65	14.3
VUW-IN-12.7X6.35-V	1/2	12.7	1/4	6.35	4.65	19.1
VUW-IN-12.7X9.52-V	1/2	12.7	3/8	9.52	7.8	19.1
VUW-IN-15.88X9.52-V	5/8	15.87	3/8	9.52	7.8	21.5
VUW-IN-15.88X12.7-V	5/8	15.87	1/2	12.7	11.1	21.5
VUW-IN-19.05X12.7-V	3/4	19.05	1/2	12.7	11.1	21.6
VUW-IN-19.05X15.88-V	3/4	19.05	5/8	15.87	14.2	21.6
VUW-IN-25.4X19.05-V	1	25.4	3/4	19.05	17.5	23.8
VUW-IN-25.4X22.22-V	1	25.4	7/8	22.22	20.6	23.8



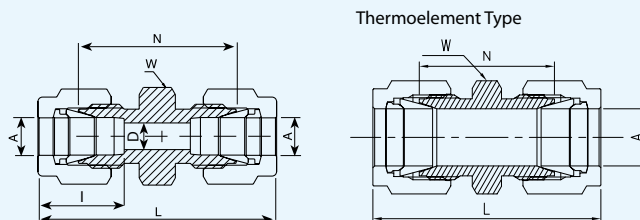
Metric						
Part Numbers	A Tube O.D.		A1	D	L	L1
	in	mm	mm	mm	mm	mm
VUW-IN-6X4-DBZ-V	-	6	4	3	16	14.5
VUW-IN-8X6-DBZ-V	-	8	6	5	17	15.5
VUW-IN-10X8-DBZ-V	-	10	8	7	18	16.5
VUW-IN-12X10-DBZ-V	-	12	10	9	18	16.5
VUW-IN-16X13-DZT-V	-	16	13	11	25	23.5
VUW-IN-16X14-DBZ-V	-	16	14	12	25	23.5

Inch						
Part Numbers	A Tube O.D.		A1	D	L	L1
	in	mm	mm	mm	mm	mm
VUW-IN-6.35X3.9-DBZ-V	1/4	6.35	3.9	2.9	16	14.5
VUW-IN-6.35X4.5-DBZ-V	1/4	6.35	4.5	3.5	16	14.5
VUW-IN-9.52X6.3-DBZ-V	3/8	9.52	6.3	5.3	18	16.5
VUW-IN-9.52X6.9-DBZ-V	3/8	9.52	6.9	5.9	18	16.5
VUW-IN-12.7X9.5-DBZ-V	1/2	12.7	9.5	8.5	18	16.5
VUW-IN-15.88X12.7-DBZ-V	5/8	15.88	12.7	11.2	25	23.5
VUW-IN-19.05X15.88-DBZ-V	3/4	19.05	15.88	13.6	25	23.5
VUW-IN-25.4X22.2-DBZ-V	1	25.4	22.2	19.5	32	30

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Unions

F



Tube (Metric)

Part Numbers	A Tube O.D.	D	W	N	L	I
	mm	mm	mm	mm	mm	mm
VUWF-2-V	2	1.7	12	22.4	35.6	12.9
VUWF-3-V	3	2.4	12	22.1	35.3	12.9
VUWF-4-V	4	2.4	12	24.1	37.3	13.7
VUWF-6-V	6	4.8	14	26.2	41	15.3
VUWF-8-V	8	6.4	15	28.2	43.2	16.2
VUWF-10-V	10	7.9	18	31	46.2	17.2
VUWF-12-V	12	9.5	22	31	51.2	22.8
VUWF-14-V	14	11	24	31.8	52	24.4
VUWF-15-V	15	12	24	31.8	52	24.4
VUWF-16-V	16	12.7	24	31.8	52	24.4
VUWF-18-V	18	15.1	27	33.3	53.5	24.4
VUWF-20-V	20	15.9	30	34.8	55	26
VUWF-22-V	22	18.3	30	34.8	55	26
VUWF-25-V	25	21.8	35	40.4	64.8	31.3

Tube (Inch)

Part Numbers	A Tube O.D.		D		W		N		L		I		Thermoelement Type
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWF-1.6-V	1/16	1.58	0.05	1.3	5/16	7.9	0.69	17.5	0.99	25.1	0.34	8.6	○
VUWF-3.2-V	1/8	3.17	0.09	2.3	7/16	11.1	0.88	22.4	1.4	35.6	0.5	12.7	-
VUWF-4.8-V	3/16	4.76	0.12	3.1	7/16	11.1	0.95	24.1	1.47	37.3	0.54	13.7	-
VUWF-6.35-V	1/4	6.35	0.19	4.8	1/2	12.7	1.03	26.2	1.61	40.9	0.6	15.2	○
VUWF-7.93-V	5/16	7.93	0.25	6.4	9/16	14.3	1.11	28.2	1.69	43	0.64	16.3	-
VUWF-9.52-V	3/8	9.52	0.28	7.1	5/8	15.9	1.19	30.2	1.77	45	0.66	16.8	○
VUWF-12.7-V	1/2	12.7	0.41	10.4	13/16	20.6	1.22	31	2.02	51.2	0.9	22.9	○
VUWF-15.88-V	5/8	15.87	0.5	12.7	15/16	23.8	1.25	31.8	2.05	52.1	0.96	24.4	-
VUWF-19.05-V	3/4	19.05	0.62	15.8	1 1/16	27	1.31	33.3	2.11	53.6	0.96	24.4	-
VUWF-22.22-V	7/8	22.22	0.72	18.3	1 3/16	30.2	1.37	34.8	2.17	55	1.02	25.9	-
VUWF-25.4-V	1	25.4	0.88	22.3	1 3/8	34.9	1.59	40.4	2.55	64.8	1.23	31.2	-

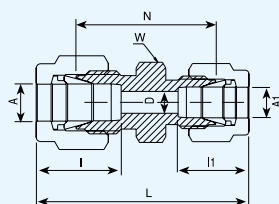
Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.

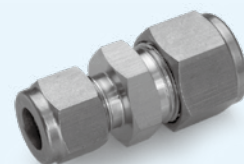
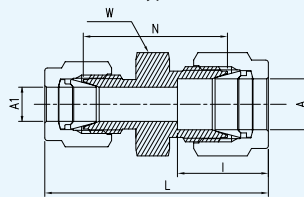
"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Reducing Unions

F



Thermoelement Type



Tube (Metric)

Part Numbers	A Tube O.D.	A1 Tube O.D.	D	W	N	L	I	I1
	mm	mm	mm	mm	mm	mm	mm	mm
VUWF-3X2-V	3	2	1.7	12	22.1	35.3	12.9	12.9
VUWF-4X3-V	4	3	2.3	12	23.9	37.1	13.7	12.9
VUWF-6X2-V	6	2	1.7	14	24.6	38.6	15.3	12.9
VUWF-6X3-V	6	3	2.3	14	24.6	38.6	15.3	12.9
VUWF-6X4-V	6	4	2.3	14	25.4	39.4	15.3	13.7
VUWF-8X4-V	8	4	2.4	15	26.6	40.7	16.2	13.7
VUWF-8X6-V	8	6	4.8	15	27.4	42.3	16.2	15.3
VUWF-10X6-V	10	6	4.8	18	29.5	44.5	17.2	15.3
VUWF-10X8-V	10	8	6.4	18	30	45.1	17.2	16.2
VUWF-12X3-V	12	3	2.4	22	28.5	45.2	22.8	12.9
VUWF-12X6-V	12	6	4.8	22	29.5	47	22.8	15.3
VUWF-12X8-V	12	8	6.4	22	30.2	47.8	22.8	16.2
VUWF-12X10-V	12	10	7.9	22	31	48.7	22.8	17.2
VUWF-14X8-V	14	8	6.4	24	31.8	49.4	24.4	16.2
VUWF-14X12-V	14	12	9.5	24	31.8	52	24.4	22.8
VUWF-16X10-V	16	10	7.9	24	31.8	49.5	24.4	17.2
VUWF-16X12-V	16	12	9.5	24	31.8	52	24.4	22.8
VUWF-18X12-V	18	12	9.5	27	33.3	53.5	24.4	22.8
VUWF-25X18-V	25	18	15.1	35	38.6	60.9	31.3	24.4
VUWF-25X20-V	25	20	15.9	35	39.9	62.2	31.3	26

Tube (Metric) To Tube (Inch)

Part Numbers	A Tube O.D.	A1 Tube O.D.		D	W	N	L	I	I1
	mm	in	mm	mm	mm	mm	mm	mm	mm
VUWF-2X1.6-V	2	1/16	1.58	1.3	12	20.6	31	12.9	8.6
VUWF-3.2X2-V	2	1/8	3.17	1.7	12	22	35.2	12.9	12.7
VUWF-3.2X3-V	3	1/8	3.17	2.3	12	22.1	35.3	12.9	12.7
VUWF-4X1.6-V	4	1/16	1.58	1.3	12	21.9	32.3	13.7	8.6
VUWF-4X3.2-V	4	1/8	3.17	2.4	12	23.4	36.6	13.7	12.7
VUWF-6X3.2-V	6	1/8	3.17	2.4	14	24.6	38.5	15.3	12.7
VUWF-6.35X2-V	2	1/4	6.35	1.7	14	24.6	38.6	12.9	15.2
VUWF-6.35X3-V	3	1/4	6.35	2.4	14	24.6	38.6	12.9	15.2
VUWF-6.35X4-V	4	1/4	6.35	2.4	14	25.4	39.4	13.7	15.2
VUWF-6.35X6-V	6	1/4	6.35	4.8	14	26.2	41	15.3	15.2
VUWF-7.93X6-V	6	5/16	7.93	4.8	14	27.4	42.2	15.3	16.3
VUWF-8X3.2-V	8	1/8	3.17	2.3	15	25.7	39.8	16.2	12.7
VUWF-8X6.35-V	8	1/4	6.35	4.8	15	27.4	42.3	16.2	15.2
VUWF-9.52X3-V	3	3/8	9.52	2.4	16	26.9	40.9	16.8	12.9
VUWF-9.52X6-V	6	3/8	9.52	4.8	16	29.5	44.3	15.3	16.8
VUWF-9.52X8-V	8	3/8	9.52	6.4	16	29.5	44.4	16.2	16.8
VUWF-10X3.2-V	10	1/8	3.17	2.3	18	27.7	41.9	17.2	12.7
VUWF-10X6.35-V	10	1/4	6.35	4.8	18	29.5	44.5	17.2	15.2
VUWF-10X7.93-V	10	5/16	7.93	6.4	18	30	45	17.2	16.3
VUWF-10X9.52-V	10	3/8	9.52	7.1	18	31	46	17.2	16.8
VUWF-12X6.35-V	12	1/4	6.35	4.8	22	29.5	47	22.8	15.2
VUWF-12X7.93-V	12	5/16	7.93	6.4	22	30.2	47.7	22.8	16.3
VUWF-12X9.52-V	12	3/8	9.52	7.1	22	31	48.5	22.8	16.8
VUWF-12.7X6-V	6	1/2	12.7	4.8	22	30	47.5	15.3	22.9
VUWF-12.7X8-V	8	1/2	12.7	6.4	22	31	48.6	22.9	16.2
VUWF-12.7X10-V	10	1/2	12.7	7.9	22	31	48.7	17.2	22.9
VUWF-12.7X12-V	12	1/2	12.7	9.5	22	31	51.2	22.8	22.9
VUWF-14X12.7-V	14	1/2	12.7	10.4	24	31.8	52	24.4	22.9
VUWF-15X12.7-V	15	1/2	12.7	10.4	24	31.8	52	24.4	22.9
VUWF-16X15.88-V	16	5/8	15.87	12.7	24	31.8	52	24.4	24.4
VUWF-19.05X18-V	18	3/4	19.05	15.1	27	33.3	53.5	24.4	24.4
VUWF-25.4X25-V	25	1	25.4	21.8	35	40.4	64.8	31.3	31.2

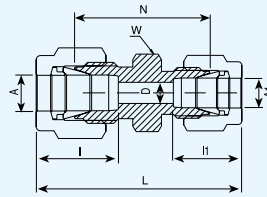
Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.

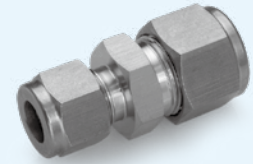
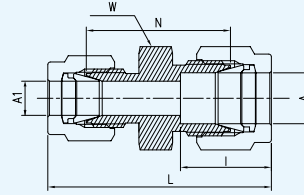
"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Reducing Unions

F



Thermoelement Type



Tube (Inch)

Part Numbers	A Tube O.D.		A1 Tube O.D.		D		W		N		L		I		I1		Thermoelement Type
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWF-3.2X1.6-V	1/8	3.17	1/16	1.58	0.05	1.3	7/16	11.1	0.81	20.6	1.22	31	0.5	12.7	0.34	8.6	○
VUWF-4.8X1.6-V	3/16	4.76	1/16	1.58	0.05	1.3	7/16	11.1	0.86	21.8	1.27	32.2	0.54	13.7	0.34	8.6	-
VUWF-4.8X3.2-V	3/16	4.76	1/8	3.17	0.09	2.3	7/16	11.1	0.92	23.4	1.44	36.6	0.54	13.7	0.5	12.7	-
VUWF-6.35X1.6-V	1/4	6.35	1/16	1.58	0.05	1.3	1/2	12.7	0.91	23.1	1.35	34.3	0.6	15.2	0.34	8.6	○
VUWF-6.35X3.2-V	1/4	6.35	1/8	3.17	0.09	2.3	1/2	12.7	0.97	24.6	1.52	38.6	0.6	15.2	0.5	12.7	○
VUWF-6.35X4.8-V	1/4	6.35	3/16	4.76	0.12	3.1	1/2	12.7	1	25.4	1.55	39.4	0.6	15.2	0.54	13.7	-
VUWF-7.93X3.2-V	5/16	7.93	1/8	3.17	0.09	2.3	9/16	14.3	1.01	25.7	1.56	39.7	0.64	16.3	0.5	12.7	-
VUWF-7.93X6.35-V	5/16	7.93	1/4	6.35	0.19	4.8	9/16	14.3	1.08	27.4	1.66	42.2	0.64	16.3	0.6	15.2	-
VUWF-9.52X1.6-V	3/8	9.52	1/16	1.58	0.05	1.3	5/8	15.9	1	25.4	1.44	36.6	0.66	16.8	0.34	8.6	○
VUWF-9.52X3.2-V	3/8	9.52	1/8	3.17	0.09	2.3	5/8	15.9	1.06	26.9	1.61	40.9	0.66	16.8	0.5	12.7	○
VUWF-9.52X6.35-V	3/8	9.52	1/4	6.35	0.19	4.8	5/8	15.9	1.12	28.5	1.7	43.3	0.66	16.8	0.6	15.2	○
VUWF-9.52X7.93-V	3/8	9.52	5/16	7.93	0.25	6.4	5/8	15.9	1.16	29.5	1.74	44.3	0.66	16.8	0.64	16.3	-
VUWF-12.7X1.6-V	1/2	12.7	1/16	1.58	0.05	1.3	13/16	20.6	1	25.4	1.55	39.3	0.9	22.9	0.34	8.6	-
VUWF-12.7X3.2-V	1/2	12.7	1/8	3.17	0.09	2.3	13/16	20.6	1.12	28.5	1.78	45.2	0.9	22.9	0.5	12.7	-
VUWF-12.7X4.8-V	1/2	12.7	3/16	4.76	0.12	3.1	13/16	20.6	1.16	29.5	1.82	46.2	0.9	22.9	0.54	13.7	-
VUWF-12.7X6.35-V	1/2	12.7	1/4	6.35	0.19	4.8	13/16	20.6	1.16	29.5	1.85	47	0.9	22.9	0.6	15.2	○
VUWF-12.7X9.52-V	1/2	12.7	3/8	9.52	0.28	7.1	13/16	20.6	1.22	31	1.91	48.5	0.9	22.9	0.66	16.8	-
VUWF-15.88X9.52-V	5/8	15.87	3/8	9.52	0.28	7.1	15/16	23.8	1.25	31.8	1.94	49.3	0.96	24.4	0.66	16.8	-
VUWF-15.88X12.7-V	5/8	15.87	1/2	12.7	0.41	10.4	15/16	23.8	1.25	31.8	2.05	52	0.96	24.4	0.9	22.9	-
VUWF-19.05X6.35-V	3/4	19.05	1/4	6.35	0.19	4.8	1 1/16	27	1.25	31.8	1.94	49.3	0.96	24.4	0.6	15.2	○
VUWF-19.05X9.52-V	3/4	19.05	3/8	9.52	0.28	7.1	1 1/16	27	1.31	33.3	2	50.8	0.96	24.4	0.66	16.8	-
VUWF-19.05X12.7-V	3/4	19.05	1/2	12.7	0.41	10.4	1 1/16	27	1.31	33.3	2.11	53.5	0.96	24.4	0.9	22.9	-
VUWF-19.05X15.88-V	3/4	19.05	5/8	15.87	0.5	12.7	1 1/16	27	1.31	33.3	2.11	53.5	0.96	24.4	0.96	24.4	-
VUWF-22.22X19.05-V	7/8	22.22	3/4	19.05	0.62	15.8	1 3/16	30.2	1.38	35.1	2.18	55.3	1.02	25.9	0.96	24.4	-
VUWF-25.4X6.35-V	1	25.4	1/4	6.35	0.19	4.8	1 3/8	34.9	1.57	40	2.35	59.6	1.23	31.2	0.6	15.2	-
VUWF-25.4X12.7-V	1	25.4	1/2	12.7	0.41	10.4	1 3/8	34.9	1.5	38.1	2.38	60.4	1.23	31.2	0.9	22.9	-
VUWF-25.4X19.05-V	1	25.4	3/4	19.05	0.62	15.8	1 3/8	34.9	1.5	38.1	2.38	60.4	1.23	31.2	0.96	24.4	-

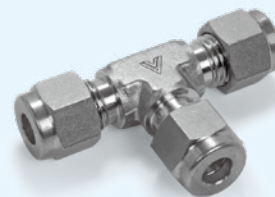
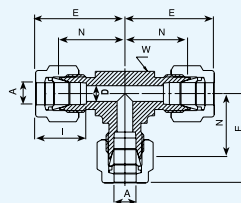
Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Union Tees

T



Tube (Metric)

Part Numbers	A Tube O.D.	D		W		N		E		I	
	mm	mm		in	mm	mm		mm		mm	
VUWT-2-V	2	1.7		3/8	9.5	15.7		22.3		12.9	
VUWT-3-V	3	2.4		3/8	9.5	15.7		22.3		12.9	
VUWT-4-V	4	2.3		1/2	12.7	18.8		25.4		13.7	
VUWT-6-V	6	4.8		1/2	12.7	19.6		27		15.3	
VUWT-8-V	8	6.4		5/8	15.9	22.4		29.9		16.2	
VUWT-10-V	10	7.9		11/16	17.5	23.9		31.5		17.2	
VUWT-12-V	12	9.5		13/16	20.6	25.9		36		22.8	
VUWT-14-V	14	11		15/16	23.8	28.7		38.8		24.4	
VUWT-15-V	15	12		15/16	23.8	28.7		38.8		24.4	
VUWT-16-V	16	12.7		15/16	23.8	28.7		38.8		24.4	
VUWT-18-V	18	15.1		1 1/16	27	29.7		39.8		24.4	
VUWT-20-V	20	15.9		1 3/8	34.9	34.5		44.6		26	
VUWT-22-V	22	18.3		1 3/8	34.9	34.5		44.6		26	
VUWT-25-V	25	21.8		1 3/8	34.9	36.8		49		31.3	

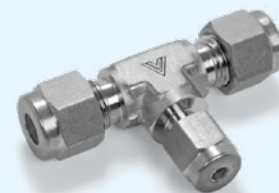
Tube (Inch)

Part Numbers	A Tube O.D.		D		W		N		E		I	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWT-1.6-V	1/16	1.58	0.05	1.3	3/8	9.5	0.55	14	0.7	17.8	0.34	8.6
VUWT-3.2-V	1/8	3.17	0.09	2.3	3/8	9.5	0.62	15.8	0.88	22.4	0.5	12.7
VUWT-4.8-V	3/16	4.76	0.12	3.1	1/2	12.7	0.7	17.8	0.96	24.4	0.54	13.7
VUWT-6.35-V	1/4	6.35	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.6	15.2
VUWT-7.93-V	5/16	7.93	0.25	6.4	5/8	15.9	0.88	22.4	1.17	29.8	0.64	16.3
VUWT-9.52-V	3/8	9.52	0.28	7.1	5/8	15.9	0.91	23.1	1.2	30.5	0.66	16.8
VUWT-12.7-V	1/2	12.7	0.41	10.4	13/16	20.6	1.02	25.9	1.42	36	0.9	22.9
VUWT-15.88-V	5/8	15.87	0.5	12.7	15/16	23.8	1.13	28.7	1.53	38.8	0.96	24.4
VUWT-19.05-V	3/4	19.05	0.62	15.8	1 1/16	27	1.17	29.7	1.57	39.8	0.96	24.4
VUWT-22.22-V	7/8	22.22	0.72	18.3	1 3/8	34.9	1.36	34.5	1.76	44.6	1.02	25.9
VUWT-25.4-V	1	25.4	0.88	22.3	1 3/8	34.9	1.45	36.8	1.93	49	1.23	31.2

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Reducing Union Tees

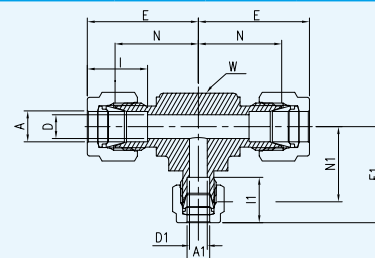
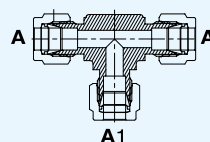
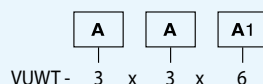
T



Tube (Metric)

Part Numbers	A Tube O.D.		A1 Tube O.D.		E		E1		I		I1		D		D1		W		N		N1	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	in	mm	mm	mm	mm	mm
VUWT-3X3X6-V	3	6	24.6	26.9	12.9	15.3	2.4	4.8	1/2	12.7	18	19.5										
VUWT-6X6X3-V	6	3	27	26.2	15.3	12.9	4.8	2.4	1/2	12.7	19.6	19.6										
VUWT-8X8X6-V	8	6	29.5	29	16.2	15.3	6.4	4.8	5/8	15.9	22	21.6										
VUWT-8X8X10-V	8	10	31.4	31.5	16.2	17.2	6.4	7.9	11/16	17.5	23.9	23.9										
VUWT-10X10X6-V	10	6	31.5	31.3	17.2	15.3	7.9	4.8	11/16	17.5	23.9	23.9										
VUWT-10X10X8-V	10	8	31.5	31.4	17.2	16.2	7.9	6.4	11/16	17.5	23.9	23.9										
VUWT-12X12X6-V	12	6	36	31.8	22.8	15.3	9.5	4.8	13/16	20.6	25.9	24.4										
VUWT-12X12X10-V	12	10	36	33.5	22.8	17.2	9.5	7.9	13/16	20.6	25.9	25.9										
VUWT-15X15X12-V	15	12	38.8	38.9	24.4	22.8	12	9.5	15/16	23.8	28.7	28.8										
VUWT-16X16X12-V	16	12	38.8	38.9	24.4	22.8	12.7	9.5	15/16	23.8	28.7	28.8										
VUWT-18X18X12-V	18	12	39.8	39.8	24.4	22.8	15.1	9.5	1 1/16	27	29.7	29.7										
VUWT-20X20X10-V	20	10	44.6	42.1	26	17.2	15.9	7.9	1 3/8	34.9	34.5	34.5										
VUWT-22X22X12-V	22	12	44.6	44.6	26	22.8	18.3	9.5	1 3/8	34.9	34.5	34.5										
VUWT-25X25X12-V	25	12	49	44.6	31.3	22.8	21.8	9.5	1 3/8	34.9	36.8	34.5										

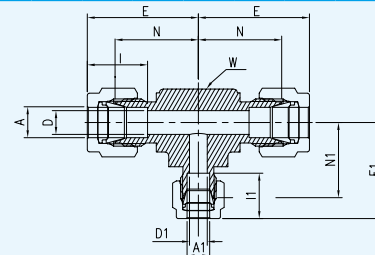
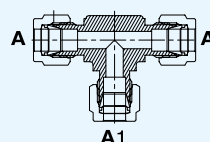
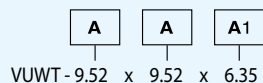
How To Order



Tube (Inch)

Part Numbers	A Tube O.D.		A1 Tube O.D.		E		E1		I		I1		D		D1		W		N		N1	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWT-6.35X6.35X3.2-V	1/4	6.35	1/8	3.17	1.06	27	1.03	26.2	0.60	15.2	0.5	12.7	0.19	4.8	0.09	2.3	1/2	12.7	0.77	19.6	0.77	19.6
VUWT-9.52X9.52X3.2-V	3/8	9.52	1/8	3.17	1.2	30.5	1.11	28.2	0.66	16.8	0.5	12.7	0.28	7.1	0.09	2.3	5/8	15.9	0.91	23.1	0.85	21.6
VUWT-9.52X9.52X6.35-V	3/8	9.52	1/4	6.35	1.2	30.5	1.14	29	0.66	16.8	0.6	15.2	0.28	7.1	0.19	4.8	5/8	15.9	0.91	23.1	0.85	21.6
VUWT-12.7X12.7X6.35-V	1/2	12.7	1/4	6.35	1.42	36	1.25	31.8	0.9	22.9	0.6	15.2	0.41	10.4	0.19	4.8	13/16	20.6	1.02	25.9	0.96	24.4
VUWT-12.7X12.7X9.52-V	1/2	12.7	3/8	9.52	1.42	36	1.31	33.3	0.9	22.9	0.66	16.8	0.41	10.4	0.28	7.1	13/16	20.6	1.02	25.9	1.02	25.9
VUWT-15.88X15.88X6.35-V	5/8	15.87	1/4	6.35	1.53	38.8	1.36	34.6	0.96	24.4	0.6	15.2	0.5	12.7	0.19	4.8	15/16	23.8	1.13	28.7	1.07	27.2
VUWT-15.88X15.88X9.52-V	5/8	15.87	3/8	9.52	1.53	38.8	1.42	36.1	0.96	24.4	0.66	16.8	0.5	12.7	0.28	7.1	15/16	23.8	1.13	28.7	1.13	28.7
VUWT-19.05X19.05X6.35-V	3/4	19.05	1/4	6.35	1.57	39.8	1.46	37.1	0.96	24.4	0.6	15.2	0.62	15.8	0.19	4.8	1 1/16	27	1.17	29.7	1.17	29.7
VUWT-19.05X19.05X9.52-V	3/4	19.05	3/8	9.52	1.57	39.8	1.46	37.1	0.96	24.4	0.66	16.8	0.62	15.8	0.28	7.1	1 1/16	27	1.17	29.7	1.17	29.7
VUWT-19.05X19.05X12.7-V	3/4	19.05	1/2	12.7	1.57	39.8	1.57	39.8	0.96	24.4	0.9	22.9	0.62	15.8	0.41	10.4	1 1/16	27	1.17	29.7	1.17	29.7
VUWT-25.4X25.4X9.52-V	1	25.4	3/8	9.52	1.93	49	1.65	41.9	1.23	31.2	0.66	16.8	0.88	22.3	0.28	7.1	1 3/8	34.9	1.45	36.8	1.36	34.5
VUWT-25.4X25.4X12.7-V	1	25.4	1/2	12.7	1.93	49	1.76	44.6	1.23	31.2	0.9	22.9	0.88	22.3	0.41	10.4	1 3/8	34.9	1.45	36.8	1.36	34.5
VUWT-25.4X25.4X19.05-V	1	25.4	3/4	19.05	1.93	49	1.76	44.6	1.23	31.2	0.96	24.4	0.88	22.3	0.62	15.8	1 3/8	34.9	1.45	36.8	1.36	34.5

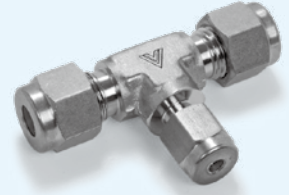
How To Order



"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Reducing Union Tees

T

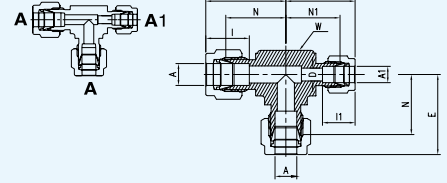


Tube (Inch)

Part Number	A Tube O.D.		A1 Tube O.D.		E		E1		I		I1		D		D1		W		N		N1	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWT-9.52X6.35X9.52-V	3/8	9.52	1/4	6.35	1.2	30.5	1.14	29	0.66	16.8	0.6	15.2	0.28	7.1	0.19	4.8	5/8	15.9	0.91	23.1	0.85	21.6

How To Order

VUWT - 9.52 x 6.35 x 9.52

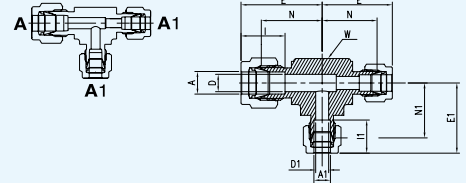


Tube (Inch)

Part Numbers	A Tube O.D.		A1 Tube O.D.		E		E1		I		I1		D		D1		W		N		N1	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWT-12.7X9.52X9.52-V	1/2	12.7	3/8	9.52	1.42	36	1.31	33.3	0.9	22.9	0.66	16.8	0.41	10.4	0.28	7.1	13/16	20.6	1.02	25.9	1.02	25.9
VUWT-15.88X9.52X9.52-V	5/8	15.87	3/8	9.52	1.53	38.8	1.42	36.1	0.96	24.4	0.66	16.8	0.41	10.4	0.28	7.1	15/16	23.8	1.13	28.7	1.13	28.7
VUWT-19.05X9.52X9.52-V	3/4	19.05	3/8	9.52	1.57	39.8	1.46	37.1	0.96	24.4	0.66	16.8	0.41	10.4	0.28	7.1	1 1/16	27	1.17	29.7	1.17	29.7

How To Order

VUWT - 12.7 x 9.52 x 9.52

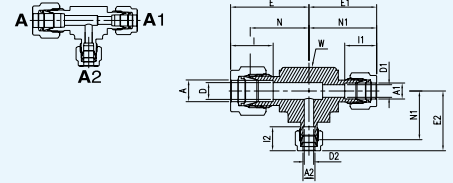


Tube (Inch)

Part Numbers	A Tube O.D.		A1 Tube O.D.		A2 Tube O.D.		E	E1	E2	I	I1	I2	D	D1	D2	W	N	N1
	in	mm	in	mm	in	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	in	mm	mm
VUWT-15.88X12.7X9.52-V	5/8	15.87	1/2	12.7	3/8	9.52	38.8	38.8	36.1	24.4	22.9	16.8	12.7	10.4	7.1	15/16	23.8	28.7
VUWT-19.05X12.7X9.52-V	3/4	19.05	1/2	12.7	3/8	9.52	39.8	39.8	37.1	24.4	22.9	16.8	15.8	10.4	7.1	1 1/8	27	29.7
VUWT-25.4X19.05X9.52-V	1	25.4	3/4	19.05	3/8	9.52	49	44.6	41.9	31.2	24.4	16.8	22.3	15.8	7.1	1 3/8	34.9	36.8

How To Order

VUWT - 15.88 x 12.7 x 9.52

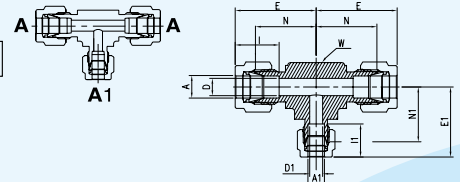


Tube (Inch) To Tube (Metric)

Part Number	A Tube O.D.		A1 Tube O.D.		E	E1	I	I1	D	D1	W	N	N1
	in	mm	in	mm	mm	mm	mm	mm	mm	mm	in	mm	mm
VUWT-9.52X9.52X6-V	3/8	9.52		6	30.5	29	16.8	15.3	7.1	4.8	5/8	15.9	23.1

How To Order

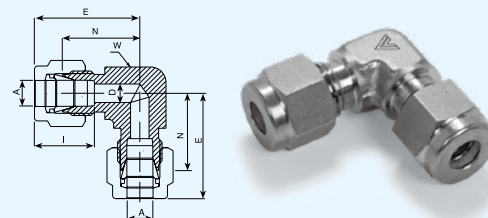
VUWT - 9.52 x 9.52 x 6



"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Union Elbows

L

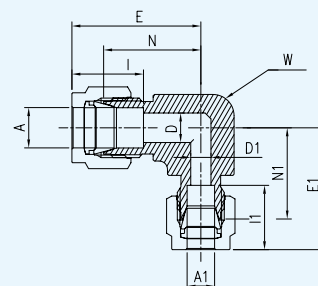


Tube (Metric)

Part Numbers	A Tube O.D.		D		W		N		E		I	
	mm		mm		in	mm	mm		mm		mm	
VUWL-3-V	3		2.4		3/8	9.5	15.7		22.3		12.9	
VUWL-4-V	4		2.4		1/2	12.7	18.8		25.4		13.7	
VUWL-6-V	6		4.8		1/2	12.7	19.6		27		15.3	
VUWL-8-V	8		6.4		9/16	14.3	21.3		28.8		16.2	
VUWL-10-V	10		7.9		11/16	17.5	23.9		31.5		17.2	
VUWL-12-V	12		9.5		13/16	20.6	25.9		36		22.8	
VUWL-14-V	14		11		15/16	23.8	27.9		38		24.4	
VUWL-15-V	15		12		15/16	23.8	27.9		38		24.4	
VUWL-16-V	16		12.7		15/16	23.8	27.9		38		24.4	
VUWL-18-V	18		15.1		1 1/16	27	29.7		39.8		24.4	
VUWL-20-V	20		15.9		1 3/8	34.9	34.5		44.6		26	
VUWL-22-V	22		18.3		1 3/8	34.9	34.5		44.6		26	
VUWL-25-V	25		21.8		1 3/8	34.9	36.8		49		31.3	

Tube (Inch)

Part Numbers	A Tube O.D.		D		W		N		E		I	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWL-1.6-V	1/16	1.58	0.05	1.3	3/8	9.5	0.55	14	0.7	17.8	0.34	8.6
VUWL-3.2-V	1/8	3.17	0.09	2.3	3/8	9.5	0.62	15.8	0.88	22.4	0.5	12.7
VUWL-4.8-V	3/16	4.76	0.12	3.1	1/2	12.7	0.74	18.8	1	25.4	0.54	13.7
VUWL-6.35-V	1/4	6.35	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.6	15.2
VUWL-7.93-V	5/16	7.93	0.25	6.4	9/16	14.3	0.84	21.3	1.13	28.7	0.64	16.3
VUWL-9.52-V	3/8	9.52	0.28	7.1	5/8	15.9	0.91	23.1	1.2	30.5	0.66	16.8
VUWL-12.7-V	1/2	12.7	0.41	10.4	13/16	20.6	1.02	25.9	1.42	36	0.9	22.9
VUWL-15.88-V	5/8	15.87	0.5	12.7	15/16	23.8	1.1	27.9	1.5	38.1	0.96	24.4
VUWL-19.05-V	3/4	19.05	0.62	15.8	1 1/16	27	1.17	29.7	1.57	39.8	0.96	24.4
VUWL-22.22-V	7/8	22.22	0.72	18.3	1 3/8	34.9	1.36	34.5	1.76	44.6	1.02	25.9
VUWL-25.4-V	1	25.4	0.88	22.3	1 3/8	34.9	1.45	36.8	1.93	49	1.23	31.2



Reducing Union Elbows

L

Tube (Metric)

Part Number	A Tube O.D.	A1 Tube O.D.	E	E1	I	I1	D	D1	W		N	N1
	mm	mm	mm	mm	mm	mm	mm	mm	in	mm	mm	mm
VUWL-8X6-V	8	6	28.8	28.7	16.2	15.3	6.4	4.8	9/16	14.3	21.3	21.3

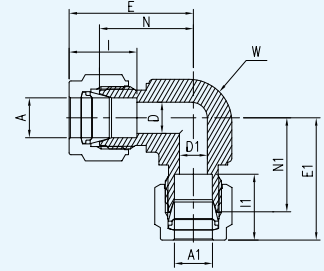
Tube (Inch)

Part Numbers	A Tube O.D.		A1 Tube O.D.		E	E1	I	I1	D	D1	W		N	N1
	in	mm	in	mm	mm	mm	mm	mm	mm	mm	in	mm	mm	mm
VUWL-9.52X6.35-V	3/8	9.52	1/4	6.35	30.5	30.5	16.8	15.2	7.1	4.8	5/8	15.9	23.1	23.1
VUWL-12.7X9.52-V	1/2	12.7	3/8	9.52	36.1	33.3	22.9	16.8	10.4	7.1	13/16	20.6	25.9	25.9

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Reducing Union Elbows

L

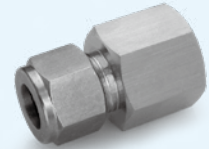
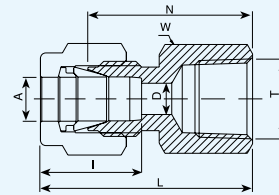


Tube (Metric) To Tube (Inch)

Part Numbers	A Tube O.D.	A1 Tube O.D.		E	E1	I	I1	D	D1	W		N	N1
	mm	in	mm	mm	mm	mm	mm	mm	mm	in	mm	mm	mm
VUWL-10X9.52-V	10	3/8	9.52	31.5	31.3	17.2	16.8	7.9	7.1	11/16	17.5	23.9	23.9

Female Connectors (NPT)

G



Tube (Metric) To Female NPT Thread

Part Numbers	A Tube O.D.	T	D	W	N	L	I
	mm		mm	mm	mm	mm	mm
VUWG-3AN-V	3	1/8NPT	2.4	14	22.1	28.7	12.9
VUWG-3BN-V	3	1/4NPT	2.4	19	26.9	33.5	12.9
VUWG-4AN-V	4	1/8NPT	2.4	14	23.1	29.7	13.7
VUWG-4BN-V	4	1/4NPT	2.4	19	29.4	36	13.7
VUWG-6AN-V	6	1/8NPT	4.8	14	23.9	31.3	15.3
VUWG-6BN-V	6	1/4NPT	4.8	19	28.4	35.8	15.3
VUWG-6CN-V	6	3/8NPT	4.8	22	30.2	37.6	15.3
VUWG-6DN-V	6	1/2NPT	4.8	27	35.1	42.5	15.3
VUWG-8AN-V	8	1/8NPT	6.4	15	24.6	32.1	16.2
VUWG-8BN-V	8	1/4NPT	6.4	19	29.5	37	16.2
VUWG-8CN-V	8	3/8NPT	6.4	22	31	38.5	16.2
VUWG-8DN-V	8	1/2NPT	6.4	27	35.8	43.3	16.2
VUWG-10BN-V	10	1/4NPT	7.9	19	30.2	37.8	17.2
VUWG-10CN-V	10	3/8NPT	7.9	22	31.8	39.4	17.2
VUWG-10DN-V	10	1/2NPT	7.9	27	36.6	44.2	17.2
VUWG-10EN-V	10	3/4NPT	7.9	35	40.4	48	17.2
VUWG-12BN-V	12	1/4NPT	9.5	22	30.2	40.3	22.8
VUWG-12CN-V	12	3/8NPT	9.5	22	31.8	41.9	22.8
VUWG-12DN-V	12	1/2NPT	9.5	27	36.6	46.7	22.8
VUWG-12EN-V	12	3/4NPT	9.5	35	38.9	49	22.8
VUWG-15DN-V	15	1/2NPT	11.9	27	36.6	46.7	24.4
VUWG-16DN-V	16	1/2NPT	12.7	27	36.8	46.9	24.4
VUWG-18EN-V	18	3/4NPT	15.1	35	39.6	49.7	24.4
VUWG-20DN-V	20	1/2NPT	15.9	30	37.8	47.9	26
VUWG-20EN-V	20	3/4NPT	15.9	35	39.6	49.7	26
VUWG-22EN-V	22	3/4NPT	18.3	35	39.6	49.7	26
VUWG-22FN-V	22	1NPT	18.3	41	47.8	57.9	26
VUWG-25EN-V	25	3/4NPT	21.8	35	41.1	53.3	31.3
VUWG-25FN-V	25	1NPT	21.8	41	50	62.2	31.3

Reference Thread Specifications:

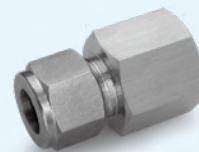
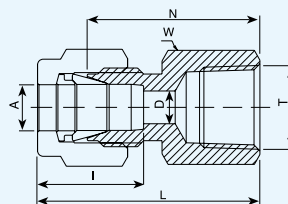
American Standard Pipe Thread (NPT).

NPT (National Pipe Tapered) is made to specifications outlined in ANSI B1.20.1.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Female Connectors (NPT)

G



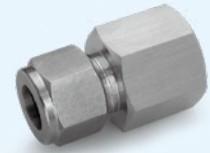
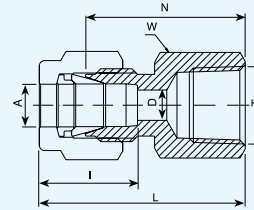
Tube (Inch) To Female NPT Thread

Part Numbers	A Tube O.D.		T	D		W		N		L		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
VUWG-1.6AN-V	1/16	1.58	1/8NPT	0.05	1.3	9/16	14.3	0.81	20.6	0.96	24.4	0.34	8.6
VUWG-3.2AN-V	1/8	3.17	1/8NPT	0.09	2.3	9/16	14.3	0.87	22.1	1.13	28.7	0.5	12.7
VUWG-3.2BN-V	1/8	3.17	1/4NPT	0.09	2.3	3/4	19.1	1.06	26.9	1.32	33.5	0.5	12.7
VUWG-4.8AN-V	3/16	4.76	1/8NPT	0.12	3.1	9/16	14.3	0.91	23.1	1.17	29.7	0.54	13.7
VUWG-6.35AN-V	1/4	6.35	1/8NPT	0.19	4.8	9/16	14.3	0.94	23.9	1.23	31.3	0.6	15.2
VUWG-6.35BN-V	1/4	6.35	1/4NPT	0.19	4.8	3/4	19.1	1.12	28.5	1.41	35.9	0.6	15.2
VUWG-6.35CN-V	1/4	6.35	3/8NPT	0.19	4.8	7/8	22.2	1.19	30.2	1.48	37.6	0.6	15.2
VUWG-6.35DN-V	1/4	6.35	1/2NPT	0.19	4.8	1 1/16	27	1.38	35	1.67	42.4	0.6	15.2
VUWG-7.93AN-V	5/16	7.93	1/8NPT	0.25	6.4	9/16	14.3	0.97	24.6	1.26	32	0.64	16.3
VUWG-7.93BN-V	5/16	7.93	1/4NPT	0.25	6.4	3/4	19.1	1.16	29.5	1.45	36.9	0.64	16.3
VUWG-9.52AN-V	3/8	9.52	1/8NPT	0.28	7.1	5/8	15.9	1	25.4	1.29	32.8	0.66	16.8
VUWG-9.52BN-V	3/8	9.52	1/4NPT	0.28	7.1	3/4	19.1	1.19	30.2	1.48	37.6	0.66	16.8
VUWG-9.52CN-V	3/8	9.52	3/8NPT	0.28	7.1	7/8	22.2	1.25	31.8	1.54	39.2	0.66	16.8
VUWG-9.52DN-V	3/8	9.52	1/2NPT	0.28	7.1	1 1/16	27	1.44	36.6	1.73	44	0.66	16.8
VUWG-9.52EN-V	3/8	9.52	3/4NPT	0.28	7.1	1 5/16	33.3	1.59	40.4	1.88	47.8	0.66	16.8
VUWG-12.7BN-V	1/2	12.7	1/4NPT	0.41	10.4	13/16	20.6	1.19	30.2	1.59	40.3	0.9	22.9
VUWG-12.7CN-V	1/2	12.7	3/8NPT	0.41	10.4	7/8	22.2	1.25	31.8	1.65	41.9	0.9	22.9
VUWG-12.7DN-V	1/2	12.7	1/2NPT	0.41	10.4	1 1/16	27	1.44	36.6	1.84	46.7	0.9	22.9
VUWG-12.7EN-V	1/2	12.7	3/4NPT	0.41	10.4	1 5/16	33.3	1.5	38.1	1.9	48.2	0.9	22.9
VUWG-12.7FN-V	1/2	12.7	1NPT	0.41	10.4	1 5/8	41.3	1.87	47.5	2.27	57.6	0.9	22.9
VUWG-15.88CN-V	5/8	15.87	3/8NPT	0.5	12.7	15/16	23.8	1.25	31.8	1.65	41.9	0.96	24.4
VUWG-15.88DN-V	5/8	15.87	1/2NPT	0.5	12.7	1 1/16	27	1.44	36.6	1.84	46.7	0.96	24.4
VUWG-15.88EN-V	5/8	15.87	3/4NPT	0.5	12.7	1 5/16	33.3	1.5	38.1	1.9	48.2	0.96	24.4
VUWG-19.05CN-V	3/4	19.05	3/8NPT	0.56	14.2	1 1/16	27	1.25	31.8	1.65	41.9	0.96	24.4
VUWG-19.05DN-V	3/4	19.05	1/2NPT	0.62	15.8	1 1/16	27	1.44	36.6	1.84	46.7	0.96	24.4
VUWG-19.05EN-V	3/4	19.05	3/4NPT	0.62	15.8	1 5/16	33.3	1.5	38.1	1.9	48.2	0.96	24.4
VUWG-19.05FN-V	3/4	19.05	1NPT	0.62	15.8	1 5/8	41.3	1.97	50	2.37	60.1	0.96	24.4
VUWG-22.22EN-V	7/8	22.22	3/4NPT	0.72	18.3	1 5/16	33.3	1.56	39.6	1.96	49.7	1.02	25.9
VUWG-25.4EN-V	1	25.4	3/4NPT	0.88	22.3	1 3/8	34.9	1.62	41.2	2.1	53.4	1.23	31.2
VUWG-25.4FN-V	1	25.4	1NPT	0.88	22.3	1 5/8	41.3	1.97	50	2.45	62.2	1.23	31.2

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Female Connectors (Rc)

G



Tube (Metric) To Female ISO Tapered Thread

Part Numbers	A Tube O.D.	T	D	W	N	L	I
	mm		mm	mm	mm	mm	mm
VUWG-3A-V	3	Rc 1/8	2.4	14	22.1	28.7	12.9
VUWG-4A-V	4	Rc 1/8	2.4	14	23.1	29.7	13.7
VUWG-4B-V	4	Rc 1/4	2.4	19	28.4	35	13.7
VUWG-6A-V	6	Rc 1/8	4.8	14	23.9	31.3	15.3
VUWG-6B-V	6	Rc 1/4	4.8	19	28.4	35.8	15.3
VUWG-6C-V	6	Rc 3/8	4.8	22	30.2	37.6	15.3
VUWG-6D-V	6	Rc 1/2	4.8	27	35.1	42.5	15.3
VUWG-8A-V	8	Rc 1/8	6.4	14	24.6	32.1	16.2
VUWG-8B-V	8	Rc 1/4	6.4	19	29.5	37	16.2
VUWG-8C-V	8	Rc 3/8	6.4	22	31	38.5	16.2
VUWG-8D-V	8	Rc 1/2	6.4	27	35.8	43.3	16.2
VUWG-10A-V	10	Rc 1/8	7.9	18	25.4	33	17.2
VUWG-10B-V	10	Rc 1/4	7.9	19	30.2	37.8	17.2
VUWG-10C-V	10	Rc 3/8	7.9	22	31.8	39.4	17.2
VUWG-10D-V	10	Rc 1/2	7.9	27	36.6	44.2	17.2
VUWG-12A-V	12	Rc 1/8	7	22	25.4	35.5	22.8
VUWG-12B-V	12	Rc 1/4	9.5	22	30.2	40.3	22.8
VUWG-12C-V	12	Rc 3/8	9.5	22	31.8	41.9	22.8
VUWG-12D-V	12	Rc 1/2	9.5	27	36.6	46.7	22.8
VUWG-12E-V	12	Rc 3/4	9.5	35	38.9	49	22.8
VUWG-14B-V	14	Rc 1/4	11	24	31.8	41.9	24.4
VUWG-15C-V	15	Rc 3/8	11.9	24	31.8	41.9	24.4
VUWG-15D-V	15	Rc 1/2	12	27	36.6	46.7	24.4
VUWG-16C-V	16	Rc 3/8	12.7	24	31.8	41.9	24.4
VUWG-16D-V	16	Rc 1/2	12.7	27	36.8	46.9	24.4
VUWG-18C-V	18	Rc 3/8	14.2	27	31.8	42.9	24.4
VUWG-20D-V	20	Rc 1/2	15.9	30	37.8	47.9	26
VUWG-20E-V	20	Rc 3/4	15.9	35	39.6	49.7	26
VUWG-22E-V	22	Rc 3/4	18.3	35	39.6	49.7	26
VUWG-22F-V	22	Rc 1	18.3	41	47.8	57.9	26
VUWG-25E-V	25	Rc 3/4	21.8	35	41.1	53.3	31.3
VUWG-25F-V	25	Rc 1	21.8	41	50	62.2	31.3

Designation:

R marking on hex of body

Reference Thread Specifications:

DIN - ISO 2999

BS - 21

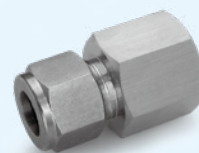
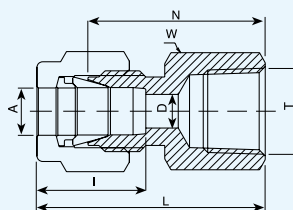
JIS - B0203

ISO - 7/1-BSP-T

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Female Connectors (Rc)

G



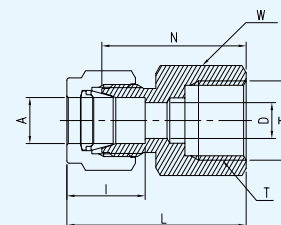
Tube (Inch) To Female ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		L		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
VUWG-1.6B-V	1/16	1.58	Rc 1/4	0.05	1.3	3/4	19.1	1.06	26.9	1.21	30.7	0.34	8.6
VUWG-3.2A-V	1/8	3.17	Rc 1/8	0.09	2.3	9/16	14.3	0.87	22.1	1.13	28.7	0.5	12.7
VUWG-3.2B-V	1/8	3.17	Rc 1/4	0.09	2.3	3/4	19.1	1.06	26.9	1.32	33.5	0.5	12.7
VUWG-4.8A-V	3/16	4.76	Rc 1/8	0.12	3.04	9/16	14.3	0.91	23.11	1.17	29.7	0.54	13.7
VUWG-6.35A-V	1/4	6.35	Rc 1/8	0.19	4.8	9/16	14.3	0.94	23.9	1.23	31.3	0.6	15.2
VUWG-6.35B-V	1/4	6.35	Rc 1/4	0.19	4.8	3/4	19.1	1.12	28.5	1.41	35.9	0.6	15.2
VUWG-6.35C-V	1/4	6.35	Rc 3/8	0.19	4.8	7/8	22.2	1.19	30.2	1.48	37.6	0.6	15.2
VUWG-6.35D-V	1/4	6.35	Rc 1/2	0.19	4.8	1 1/16	27	1.38	35	1.67	42.4	0.6	15.2
VUWG-7.93A-V	5/16	7.93	Rc 1/8	0.25	6.4	9/16	14.3	0.97	24.6	1.26	32	0.64	16.3
VUWG-7.93B-V	5/16	7.93	Rc 1/4	0.25	6.4	3/4	19.1	1.16	29.5	1.45	36.9	0.64	16.3
VUWG-9.52A-V	3/8	9.52	Rc 1/8	0.28	7.1	5/8	15.9	1	25.4	1.29	32.8	0.66	16.8
VUWG-9.52B-V	3/8	9.52	Rc 1/4	0.28	7.1	3/4	19.1	1.19	30.2	1.48	37.6	0.66	16.8
VUWG-9.52C-V	3/8	9.52	Rc 3/8	0.28	7.1	7/8	22.2	1.25	31.8	1.54	39.2	0.66	16.8
VUWG-9.52D-V	3/8	9.52	Rc 1/2	0.28	7.1	1 1/16	27	1.44	36.6	1.73	44	0.66	16.8
VUWG-12.7B-V	1/2	12.7	Rc 1/4	0.41	10.4	13/16	20.6	1.19	30.2	1.59	40.3	0.9	22.9
VUWG-12.7C-V	1/2	12.7	Rc 3/8	0.41	10.4	7/8	22.2	1.25	31.8	1.65	41.9	0.9	22.9
VUWG-12.7D-V	1/2	12.7	Rc 1/2	0.41	10.4	1 1/16	27	1.44	36.6	1.84	46.7	0.9	22.9
VUWG-12.7E-V	1/2	12.7	Rc 3/4	0.41	10.4	1 5/16	33.3	1.5	38.1	1.9	48.2	0.9	22.9
VUWG-15.88C-V	5/8	15.87	Rc 3/8	0.5	12.7	15/16	23.8	1.25	31.8	1.65	41.9	0.96	24.4
VUWG-15.88D-V	5/8	15.87	Rc 1/2	0.5	12.7	1 1/16	27	1.44	36.6	1.84	46.7	0.96	24.4
VUWG-15.88E-V	5/8	15.87	Rc 3/4	0.5	12.7	1 5/16	33.3	1.5	38.1	1.90	48.2	0.96	24.4
VUWG-19.05D-V	3/4	19.05	Rc 1/2	0.62	15.8	1 1/16	27	1.44	36.6	1.84	46.7	0.96	24.4
VUWG-19.05E-V	3/4	19.05	Rc 3/4	0.62	15.8	1 5/16	33.3	1.5	38.1	1.9	48.2	0.96	24.4
VUWG-22.22C-V	7/8	22.22	Rc 3/8	0.72	18.3	1 3/16	30.2	1.39	35.2	1.78	45.3	1.02	25.9
VUWG-22.22E-V	7/8	22.22	Rc 3/4	0.72	18.3	1 5/16	33.3	1.56	39.6	1.96	49.8	1.02	25.9
VUWG-25.4E-V	1	25.4	Rc 3/4	0.88	22.3	1 3/8	34.9	1.62	41.2	2.1	53.4	1.23	31.2
VUWG-25.4F-V	1	25.4	Rc 1	0.88	22.3	1 5/8	41.3	1.97	50	2.45	62.2	1.23	31.2

Female Connectors (G)

For gasket thicknesses of 4mm or less, use a part number with "-PG".

G



Tube (Metric) To Female ISO Parallel Thread

Part Numbers	A Tube O.D.		T	D	W	N	L	I
	mm	mm						
VUWG-3BF-V	3	G1/4	2.4	19	28.7	35.3	12.9	
VUWG-6AF-V	6	G1/8	4	14	25	32.4	15.3	
VUWG-6BF-V	6	G1/4	4.8	19	30.2	37.6	15.3	
VUWG-6CF-V	6	G3/8	4.8	24	30.2	37.6	15.3	
VUWG-6DF-V	6	G1/2	4.8	27	36.1	43.5	15.3	
VUWG-8BF-V	8	G1/4	5.5	19	31	38.5	16.2	
VUWG-8CF-V	8	G3/8	6.4	24	28.7	36.2	16.2	
VUWG-8DF-V	8	G1/2	7	27	33.5	41	16.2	
VUWG-10BF-V	10	G1/4	5.5	19	31.8	39.4	17.2	
VUWG-10CF-V	10	G3/8	6.5	24	31.2	38.8	17.2	
VUWG-10DF-V	10	G1/2	7	27	34.5	42.1	17.2	
VUWG-12BF-V	12	G1/4	5.5	22	31.8	41.9	22.8	
VUWG-12CF-V	12	G3/8	6.5	24	34.3	44.4	22.8	
VUWG-12DF-V	12	G1/2	7	27	38.1	48.2	22.8	
VUWG-14DF-V	14	G1/2	7	27	38.1	48.2	24.4	
VUWG-20DF-V	20	G1/2	7	30	44.2	54.3	26	
VUWG-22DF-V	22	G1/2	7	30	44.2	54.3	26	

Tube (Inch) To Female ISO Parallel Thread

Part Numbers	A Tube O.D.		T	D		W		N		L		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
VUWG-3.2AF-V	1/8	3.17	G1/8	0.09	2.3	9/16	14.3	0.96	24.5	1.22	31.1	0.50	12.7
VUWG-3.2BF-V	1/8	3.17	G1/4	0.09	2.3	3/4	19.1	1.13	28.7	1.39	35.3	0.50	12.7
VUWG-6.35AF-V	1/4	6.35	G1/8	0.16	4	9/16	14.3	0.98	25	1.28	32.4	0.60	15.2
VUWG-6.35BF-V	1/4	6.35	G1/4	0.19	4.8	3/4	19.1	1.19	30.2	1.48	37.6	0.60	15.2
VUWG-6.35CF-V	1/4	6.35	G3/8	0.19	4.8	15/16	23.8	1.19	30.2	1.48	37.6	0.60	15.2
VUWG-6.35DF-V	1/4	6.35	G1/2	0.19	4.8	1 1/16	27	1.42	36.1	1.71	43.5	0.60	15.2
VUWG-7.93BF-V	5/16	7.93	G1/4	0.22	5.5	3/4	19.1	1.22	31	1.51	38.4	0.64	16.3
VUWG-7.93DF-V	5/16	7.93	G1/2	0.25	6.4	1 1/16	27	1.32	33.5	1.61	40.9	0.64	16.3
VUWG-9.52BF-V	3/8	9.52	G1/4	0.22	5.5	3/4	19.1	1.25	31.8	1.54	39.2	0.66	16.8
VUWG-9.52CF-V	3/8	9.52	G3/8	0.26	6.6	15/16	23.8	1.23	31.2	1.52	38.6	0.66	16.8
VUWG-9.52DF-V	3/8	9.52	G1/2	0.28	7.1	1 1/16	27	1.36	34.5	1.65	41.9	0.66	16.8
VUWG-12.7BF-V	1/2	12.7	G1/4	0.22	5.5	13/16	20.6	1.25	31.8	1.65	41.9	0.90	22.9
VUWG-12.7CF-V	1/2	12.7	G3/8	0.26	6.5	15/16	23.8	1.35	34.3	1.75	44.4	0.90	22.9
VUWG-12.7DF-V	1/2	12.7	G1/2	0.28	7.1	1 1/16	27	1.50	38.1	1.90	48.2	0.90	22.9

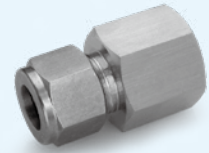
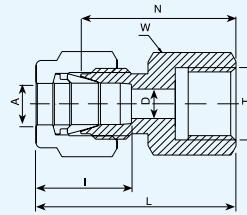
Reference Thread Specifications:

DIN - ISO 228/1 JIS - B0202
BS - 2779 ISO - 228/1-BSP-P

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Female Connectors (G)

G



Tube (Metric) To Female ISO Parallel Thread

Part Numbers	A Tube O.D.		T	D	W		N	L	I
	in	mm			in	mm			
VUWG-6AF-PG-V	1/8	3.17	G 1/8	4.8	3/16	4.8	25	32.4	15.3
VUWG-6BF-PG-V	1/8	3.17	G 1/4	4.8	3/16	4.8	30.2	37.6	15.3
VUWG-6CF-PG-V	1/8	3.17	G 3/8	4.8	3/16	4.8	30.2	37.6	15.3
VUWG-6DF-PG-V	1/8	3.17	G 1/2	4.8	3/16	4.8	36.1	43.5	15.3
VUWG-8BF-PG-V	1/4	6.35	G 1/4	5.5	1/8	12.7	31	38.5	16.2
VUWG-8CF-PG-V	1/4	6.35	G 3/8	5.5	1/8	12.7	29.6	37.1	16.2
VUWG-8DF-PG-V	1/4	6.35	G 1/2	5.5	1/8	12.7	33.5	41	16.2
VUWG-10BF-PG-V	3/8	9.52	G 1/4	5.5	1/4	12.7	31.8	39.4	17.2
VUWG-10CF-PG-V	3/8	9.52	G 3/8	5.5	1/4	12.7	31.2	38.8	17.2
VUWG-10DF-PG-V	3/8	9.52	G 1/2	5.5	1/4	12.7	34.5	42.1	17.2
VUWG-12AF-PG-V	1/2	12.7	G 1/8	5.5	3/8	19.0	28.8	38.9	22.8
VUWG-12BF-PG-V	1/2	12.7	G 1/4	5.5	3/8	19.0	31.8	41.9	22.8
VUWG-12CF-PG-V	1/2	12.7	G 3/8	5.5	3/8	19.0	34.3	44.4	22.8
VUWG-12DF-PG-V	1/2	12.7	G 1/2	5.5	3/8	19.0	38.1	48.2	22.8

Tube (Inch) To Female ISO Parallel Thread

Part Numbers	A Tube O.D.		T	D	W		N	L	I
	in	mm			in	mm			
VUWG-1.6CF-PG-V	1/16	1.58	G3/8	1.3	15/16	23.8	31	34.8	8.6
VUWG-3.2AF-PG-V	1/8	3.17	G1/8	2.3	9/16	14.3	24.5	31.1	12.7
VUWG-3.2BF-PG-V	1/8	3.17	G1/4	2.3	3/4	19.1	28.7	35.3	12.7
VUWG-3.2CF-PG-V	1/8	3.17	G3/8	2.3	15/16	23.8	32.7	39.3	12.7
VUWG-6.35AF-PG-V	1/4	6.35	G1/8	4.8	9/16	14.3	25	32.4	15.2
VUWG-6.35BF-PG-V	1/4	6.35	G1/4	4.8	3/4	19.1	30.2	37.6	15.2
VUWG-6.35CF-PG-V	1/4	6.35	G3/8	4.8	15/16	23.8	30.2	37.6	15.2
VUWG-6.35DF-PG-V	1/4	6.35	G1/2	4.8	1-1/16	27	36.1	43.5	15.2
VUWG-7.93BF-PG-V	5/16	7.93	G1/4	5.5	3/4	19.1	31	38.4	16.3
VUWG-7.93DF-PG-V	5/16	7.93	G1/2	5.5	1 1/16	27	33.5	40.9	16.3
VUWG-9.52BF-PG-V	3/8	9.52	G1/4	5.5	3/4	19.1	31.8	39.2	16.8
VUWG-9.52CF-PG-V	3/8	9.52	G3/8	5.5	15/16	23.8	32.1	39.5	16.8
VUWG-9.52DF-PG-V	3/8	9.52	G1/2	5.5	1-1/16	27	34.5	41.9	16.8
VUWG-12.7BF-PG-V	1/2	12.7	G1/4	5.5	13/16	20.6	31.8	41.9	22.9
VUWG-12.7CF-PG-V	1/2	12.7	G3/8	5.5	15/16	23.8	34.3	44.4	22.9
VUWG-12.7DF-PG-V	1/2	12.7	G1/2	5.5	1-1/16	27	38.1	48.2	22.9

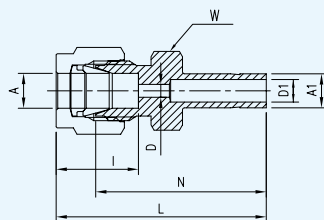
Designation:

PG marking on hex of body

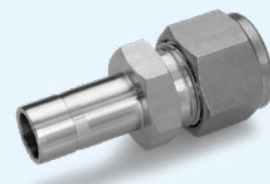
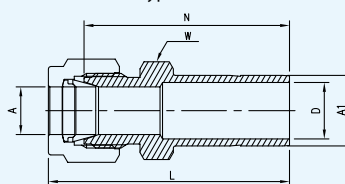
"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Reducers

R



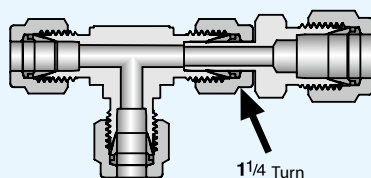
Thermoelement Type



Tube (Metric) To Tube (Metric)

Part Numbers	A Tube O.D.	A1 Tube O.D.	D	D1	W	N	L	I	Thermoelement Type
	mm	mm	mm	mm	mm	mm	mm	mm	
VUWR-2X3-V	2	3	1.7	2.1	12	26.9	33.5	12.9	-
VUWR-3X4-V	3	4	2.2	2.2	12	28.4	35	12.9	-
VUWR-3X6-V	3	6	2.4	4	12	29.5	36.1	12.9	-
VUWR-3X8-T/C-V	3	8	5.6	-	12	31	37.6	-	○
VUWR-3X10-V	3	10	2.4	7.1	14	31.8	38.4	12.9	-
VUWR-4X6-V	4	6	2.4	4	12	30.5	37.1	13.7	-
VUWR-6X3-V	6	3	2.1	2.1	14	29.5	36.9	15.3	-
VUWR-6X4-V	6	4	2.2	2.2	14	30.5	37.9	15.3	-
VUWR-6X8-V	6	8	4.8	5.6	14	32.5	39.9	15.3	-
VUWR-6X10-V	6	10	4.8	7.1	14	33.3	40.7	15.3	-
VUWR-6X12-V	6	12	4.8	8.8	14	38.9	46.3	15.3	○
VUWR-6X18-V	6	18	4.8	13.9	22	42.2	49.6	15.3	-
VUWR-8X6-V	8	6	4	4	15	32.8	40.3	16.2	-
VUWR-8X10-V	8	10	6.4	7.1	15	34.5	42	16.2	-
VUWR-8X12-V	8	12	6.4	8.8	15	40.1	47.6	16.2	-
VUWR-10X6-V	10	6	4	4	18	34.8	42.4	17.2	-
VUWR-10X8-V	10	8	5.6	5.6	18	35.8	43.4	17.2	-
VUWR-10X12-V	10	12	7.9	8.8	18	42.2	49.8	17.2	-
VUWR-10X15-V	10	15	7.9	12	18	43.7	51.3	17.2	-
VUWR-10X16-V	10	16	7.9	12.7	18	43.7	51.3	17.2	-
VUWR-10X18-V	10	18	7.9	13.9	22	43.7	51.3	17.2	-
VUWR-12X6-V	12	6	4	4	22	34.8	44.9	22.8	-
VUWR-12X8-V	12	8	5.6	5.6	22	35.8	45.9	22.8	-
VUWR-12X10-V	12	10	7.1	7.1	22	36.6	46.7	22.8	-
VUWR-12X16-V	12	16	9.5	12.7	22	43.7	53.8	22.8	-
VUWR-12X18-V	12	18	9.5	13.9	22	43.7	53.8	22.8	-
VUWR-12X20-V	12	20	9.5	15.1	22	46	56.1	22.8	-
VUWR-12X22-V	12	22	9.5	18.3	24	46	56.1	22.8	-
VUWR-12X25-V	12	25	9.5	19.8	27	52.3	62.4	22.8	-
VUWR-14X12-V	14	12	8.8	8.8	24	44.9	55	24.4	-
VUWR-16X12-V	16	12	8.8	8.8	24	42.9	53	24.4	-
VUWR-18X12-V	18	12	8.8	8.8	27	44.5	54.6	24.4	-
VUWR-18X16-V	18	16	12.7	12.7	27	46	56.1	24.4	-
VUWR-18X20-V	18	20	15.1	15.1	27	47.5	57.6	24.4	-
VUWR-18X22-V	18	22	15.1	18.3	27	47.5	57.6	24.4	-
VUWR-18X25-V	18	25	15.1	19.8	27	52.3	62.4	24.4	-
VUWR-20X16-V	20	16	12.7	12.7	30	47.8	57.9	26	-
VUWR-20X18-V	20	18	13.9	13.9	30	47.8	57.9	26	-
VUWR-20X22-V	20	22	15.9	18.3	30	49.3	59.4	26	-
VUWR-20X25-V	20	25	15.9	19.8	30	54.1	64.2	26	-
VUWR-22X18-V	22	18	13.9	13.9	30	47.8	57.9	26	-
VUWR-22X20-V	22	20	15.1	15.1	30	49.3	59.4	26	-
VUWR-22X25-V	22	25	18.3	19.8	30	54.1	64.2	26	-
VUWR-25X18-V	25	18	13.9	13.9	35	50.8	63.1	31.3	-
VUWR-25X20-V	25	20	15.1	15.1	35	52.3	64.6	31.3	-

Assembly Instructions



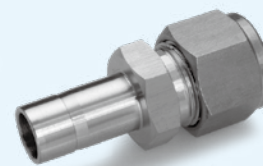
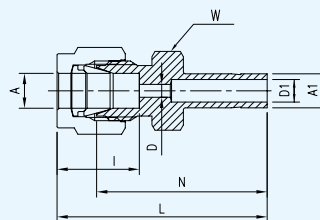
Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Reducers

R

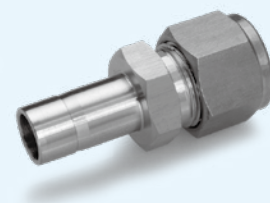
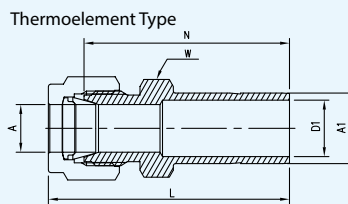
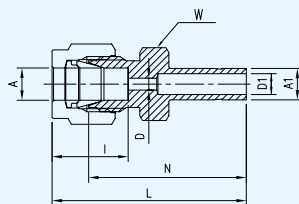


Tube (Metric) To Tube (Inch)								
Part Numbers	A Tube O.D.	A1 Tube O.D.	D	D1	W	N	L	I
	mm	mm	mm	mm	mm	mm	mm	mm
VUWR-2X3.2-V	2	3.17	1.7	2	12	26.9	33.5	12.9
VUWR-3X3.2-V	3	3.17	2	2	12	26.9	33.5	12.9
VUWR-3X6.35-V	3	6.35	2.4	4.2	12	29.5	36.1	12.9
VUWR-4X3.2-V	4	3.17	2	2	12	28.1	34.7	13.7
VUWR-4X6.35-V	4	6.35	2.4	4.2	12	30.5	37.1	13.7
VUWR-6X3.2-V	6	3.17	2	2	14	29.5	36.9	15.3
VUWR-6X6.35-V	6	6.35	4.2	4.2	14	31.8	39.2	15.3
VUWR-6X7.93-V	6	7.93	4.8	5.6	14	32.5	39.9	15.3
VUWR-6X9.52-V	6	9.52	4.8	6.9	14	33.3	40.7	15.3
VUWR-6X12.7-V	6	12.7	4.8	9.4	14	38.9	46.3	15.3
VUWR-8X6.35-V	8	6.35	4.2	4.2	15	33	40.5	16.2
VUWR-8X9.52-V	8	9.52	6.4	6.4	15	34.5	42	16.2
VUWR-8X12.7-V	8	12.7	6.4	9.4	15	40.1	47.6	16.2
VUWR-10X6.35-V	10	6.35	4.2	4.2	18	35	42.6	17.2
VUWR-10X9.52-V	10	9.52	6.9	6.9	18	36.6	44.2	17.2
VUWR-10X12.7-V	10	12.7	7.9	9.4	18	42.2	49.8	17.2
VUWR-12X6.35-V	12	6.35	4.2	4.2	22	34.8	44.9	22.8
VUWR-12X9.52-V	12	9.52	6.9	6.9	22	36.6	46.7	22.8
VUWR-12X12.7-V	12	12.7	9.4	9.4	22	42.2	52.3	22.8
VUWR-12X19.05-V	12	19.05	9.5	15	22	43.7	53.8	22.8
VUWR-16X25.4-V	16	25.4	12.7	20.3	27	50.8	60.9	24.4
VUWR-18X19.05-V	18	19.05	15	15	27	46	56.1	24.4
VUWR-18X25.4-V	18	25.4	15.1	20.3	27	52.3	62.4	24.4
VUWR-25X25.4-V	25	25.4	20.3	20.3	35	57.2	69.4	31.3

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Reducers

R



Tube (Inch)

Part Numbers	A Tube O.D.		A1 Tube O.D.		D		D1		W		N		L		I		Thermoelement Type
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWR-1.6X3.2-V	1/16	1.58	1/8	3.17	0.05	1.3	0.09	2.2	5/16	7.9	1	25.4	1.15	29.2	0.34	8.6	○
VUWR-1.6X6.35-V	1/16	1.58	1/4	6.35	0.05	1.3	0.17	4.2	5/16	7.9	1.09	27.7	1.24	31.5	0.34	8.6	○
VUWR-1.6X9.52-T/C-V	1/16	1.58	3/8	9.52	-	-	0.27	6.9	7/16	11.1	1.18	30	1.33	33.8	-	-	○
VUWR-3.2X1.6-V	1/8	3.17	1/16	1.58	0.03	0.8	0.03	0.8	7/16	11.1	0.88	22.4	1.14	29	0.5	12.7	-
VUWR-3.2X3.2-V	1/8	3.17	1/8	3.17	0.08	2	0.08	2	7/16	11.1	1.06	26.9	1.32	33.5	0.5	12.7	-
VUWR-3.2X4.8-V	1/8	3.17	3/16	4.76	0.09	2.3	0.12	3	7/16	11.1	1.09	27.7	1.35	34.3	0.5	12.7	-
VUWR-3.2X6.35-V	1/8	3.17	1/4	6.35	0.09	2.3	0.17	4.2	7/16	11.1	1.16	29.5	1.42	36.1	0.5	12.7	○
VUWR-3.2X9.52-V	1/8	3.17	3/8	9.52	0.09	2.3	0.27	6.9	7/16	11.1	1.22	31	1.48	37.6	0.5	12.7	○
VUWR-3.2X12.7-V	1/8	3.17	1/2	12.7	0.09	2.3	0.37	9.4	9/16	14.3	1.48	37.6	1.74	44.2	0.5	12.7	○
VUWR-3.2X19.05-T/C-V	1/8	3.17	3/4	19.05	-	-	0.59	15	13/16	20.6	1.62	41.2	1.88	47.8	-	-	○
VUWR-4.8X3.2-V	3/16	4.76	1/8	3.17	0.08	2	0.08	2	7/16	11.1	1.11	28.2	1.37	34.8	0.54	13.7	-
VUWR-4.8X6.35-V	3/16	4.76	1/4	6.35	0.12	3.1	0.17	4.2	7/16	11.1	1.2	30.5	1.46	37.1	0.52	13.3	-
VUWR-6.35X3.2-V	1/4	6.35	1/8	3.17	0.09	2.2	0.09	2.2	1/2	12.7	1.16	29.5	1.45	36.9	0.6	15.2	-
VUWR-6.35X4.8-V	1/4	6.35	3/16	4.76	0.12	3	0.12	3	1/2	12.7	1.19	30.2	1.48	37.6	0.6	15.2	-
VUWR-6.35X6.35-V	1/4	6.35	1/4	6.35	0.17	4.2	0.17	4.2	1/2	12.7	1.25	31.8	1.54	39.2	0.6	15.2	-
VUWR-6.35X7.93-V	1/4	6.35	5/16	7.93	0.19	4.8	0.22	5.6	1/2	12.7	1.28	32.5	1.57	39.9	0.6	15.2	-
VUWR-6.35X9.52-V	1/4	6.35	3/8	9.52	0.19	4.8	0.27	6.9	1/2	12.7	1.31	33.3	1.6	40.7	0.6	15.2	○
VUWR-6.35X12.7-V	1/4	6.35	1/2	12.7	0.19	4.8	0.37	9.4	9/16	14.3	1.53	38.9	1.82	46.3	0.6	15.2	○
VUWR-6.35X15.88-V	1/4	6.35	5/8	15.87	0.19	4.8	0.5	12.7	11/16	17.5	1.6	40.6	1.89	48	0.6	15.2	-
VUWR-6.35X19.05-V	1/4	6.35	3/4	19.05	0.19	4.8	0.59	15	13/16	20.6	1.59	40.4	1.88	47.8	0.6	15.2	-
VUWR-7.93X9.52-V	5/16	7.93	3/8	9.52	0.25	6.4	0.27	6.9	9/16	14.3	1.36	34.5	1.65	41.9	0.64	16.3	-
VUWR-7.93X12.7-V	5/16	7.93	1/2	12.7	0.25	6.4	0.37	9.4	9/16	14.3	1.58	40.1	1.87	47.5	0.64	16.3	-
VUWR-9.52X6.35-V	3/8	9.52	1/4	6.35	0.17	4.2	0.17	4.2	5/8	15.9	1.34	34.1	1.63	41.5	0.66	16.8	-
VUWR-9.52X9.52-V	3/8	9.52	3/8	9.52	0.27	6.9	0.27	6.9	5/8	15.9	1.41	35.8	1.7	43.2	0.66	16.8	-
VUWR-9.52X12.7-V	3/8	9.52	1/2	12.7	0.28	7.1	0.37	9.4	5/8	15.9	1.62	41.2	1.91	48.6	0.66	16.8	-
VUWR-9.52X15.88-V	3/8	9.52	5/8	15.87	0.28	7.1	0.5	12.7	11/16	17.5	1.69	42.9	1.98	50.3	0.66	16.8	-
VUWR-9.52X19.05-V	3/8	9.52	3/4	19.05	0.28	7.1	0.59	15	13/16	20.6	1.69	42.9	1.98	50.3	0.66	16.8	○
VUWR-9.52X25.4-V	3/8	9.52	1	25.4	0.28	7.1	0.8	20.3	1 1/16	27	1.97	50	2.26	57.4	0.66	16.8	○
VUWR-12.7X6.35-V	1/2	12.7	1/4	6.35	0.17	4.2	0.17	4.2	13/16	20.6	1.37	34.8	1.77	44.9	0.9	22.9	-
VUWR-12.7X9.52-V	1/2	12.7	3/8	9.52	0.27	6.9	0.27	6.9	13/16	20.6	1.44	36.6	1.84	46.7	0.9	22.9	-
VUWR-12.7X12.7-V	1/2	12.7	1/2	12.7	0.37	9.4	0.37	9.4	13/16	20.6	1.66	42.2	2.06	52.3	0.9	22.9	-
VUWR-12.7X15.88-V	1/2	12.7	5/8	15.87	0.41	10.4	0.5	12.7	13/16	20.6	1.72	43.7	2.12	53.8	0.9	22.9	-
VUWR-12.7X19.05-V	1/2	12.7	3/4	19.05	0.41	10.4	0.59	15	13/16	20.6	1.72	43.7	2.12	53.8	0.9	22.9	○
VUWR-12.7X25.4-V	1/2	12.7	1	25.4	0.41	10.4	0.8	20.3	1 1/16	27	1.97	50	2.37	60.1	0.9	22.9	○
VUWR-15.88X12.7-V	5/8	15.87	1/2	12.7	0.37	9.4	0.37	9.4	15/16	23.8	1.69	42.9	2.09	53	0.96	24.4	-
VUWR-15.88X19.05-V	5/8	15.87	3/4	19.05	0.5	12.7	0.59	15	15/16	23.8	1.75	44.5	2.15	54.6	0.96	24.4	-
VUWR-15.88X22.22-V	5/8	15.87	7/8	22.22	0.5	12.7	0.72	18.3	15/16	23.8	1.81	46	2.21	56.1	0.96	24.4	-
VUWR-15.88X25.4-V	5/8	15.87	1	25.4	0.5	12.7	0.8	20.3	1 1/16	27	2	50.8	2	50.9	0.96	24.4	-
VUWR-19.05X9.52-V	3/4	19.05	3/8	9.52	0.27	6.9	0.27	6.9	1 1/16	27	1.53	38.9	1.93	49	0.96	24.4	-
VUWR-19.05X12.7-V	3/4	19.05	1/2	12.7	0.37	9.4	0.37	9.4	1 1/16	27	1.75	44.5	2.15	54.6	0.96	24.4	-
VUWR-19.05X25.4-V	3/4	19.05	1	25.4	0.62	15.8	0.8	20.3	1 1/16	27	2.06	52.3	2.46	62.4	0.96	24.4	-
VUWR-25.4X12.7-V	1	25.4	1/2	12.7	0.37	9.4	0.37	9.4	1 3/8	34.9	2.09	53.1	2.57	65.3	1.23	31.2	-
VUWR-25.4X19.05-V	1	25.4	3/4	19.05	0.59	15	0.59	15	1 3/8	34.9	2.05	52.1	2.54	64.3	1.23	31.2	-

Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.

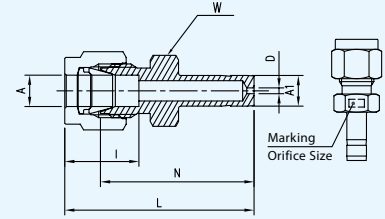
Tube (Inch) To Tube (Metric)

Part Numbers	A Tube O.D.		A1 Tube O.D.		D		D1		W		N		L		I	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWR-1.6X3-V	1/16	1.58	3	76.2	1.3	33.0	2.1	53.3	5/16	7.9	1	25.4	1.15	29.2	0.34	8.6
VUWR-3.2X6-V	1/8	3.17	6	152.4	2.3	58.4	4	101.6	7/16	11.1	1.16	29.5	1.42	36.1	0.5	12.7
VUWR-6.35X6-V	1/4	6.35	6	152.4	4	101.6	4	101.6	1/2	12.7	1.25	31.8	1.54	39.2	0.60	15.2
VUWR-6.35X10-V	1/4	6.35	10	254.0	4.8	121.9	7.1	180.3	1/2	12.7	1.31	33.3	1.6	40.7	0.6	15.2
VUWR-9.52X8-V	3/8	9.52	8	203.2	5.6	141.3	5.6	141.3	5/8	15.9	1.42	36.1	1.71	43.4	0.66	16.8
VUWR-9.52X10-V	3/8	9.52	10	254.0	7.1	180.3	7.1	180.3	5/8	15.9	1.44	36.7	1.73	44	0.66	16.8
VUWR-12.7X10-V	1/2	12.7	10	254.0	7.1	180.3	7.1	180.3	13/16	20.6	1.44	36.6	1.84	46.8	0.9	22.9
VUWR-12.7X12-V	1/2	12.7	12	304.8	8.8	223.8	8.8	223.8	13/16	20.6	1.66	42.2	2.06	52.3	0.9	22.9
VUWR-15.88X18-V	5/8	15.87	18	457.2	12.7	322.6	13.9	353.1	15/16	23.8	1.75	44.5	2.15	54.6	0.96	24.4

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Orifice Reducer

R

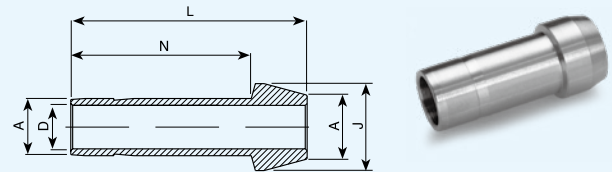


Tube (Inch)

Part Numbers	A Tube O.D.		A1 Tube O.D.		W		N	D	L	I
	in	mm	in	mm	in	mm	mm	mm	mm	mm
VUWR-6.35X6.35-H0.5-V	1/4	6.35	1/4	6.35	1/2	12.7	31.8	0.5	39.2	15.2
VUWR-6.35X6.35-H0.9-V	1/4	6.35	1/4	6.35	1/2	12.7	31.8	0.9	39.2	15.2
VUWR-6.35X6.35-H1.0-V	1/4	6.35	1/4	6.35	1/2	12.7	31.8	1.0	39.2	15.2
VUWR-6.35X6.35-H1.2-V	1/4	6.35	1/4	6.35	1/2	12.7	31.8	1.2	39.2	15.2
VUWR-6.35X6.35-H1.3-V	1/4	6.35	1/4	6.35	1/2	12.7	31.8	1.3	39.2	15.2
VUWR-6.35X6.35-H1.5-V	1/4	6.35	1/4	6.35	1/2	12.7	31.8	1.5	39.2	15.2

Port Connectors

PC



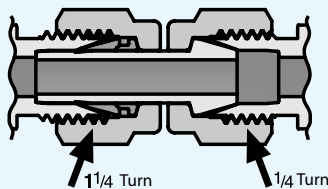
Connects To New V-Lok Ports (Metric)

Part Numbers	A	D	N	L	J
	Tube O.D.				
	mm	mm	mm	mm	mm
VUW-PC-3-V	3	2.1	15.7	22.2	6
VUW-PC-4-V	4	2.2	17.2	23.7	7
VUW-PC-6-V	6	4	19.1	25	9
VUW-PC-8-V	8	5.6	20	25.9	11
VUW-PC-10-V	10	7.1	21.2	27.1	13.1
VUW-PC-12-V	12	8.8	26.4	36.2	15
VUW-PC-16-V	16	12.7	27.6	37.4	19.05
VUW-PC-18-V	18	13.9	27.7	37.4	21
VUW-PC-20-V	20	15.1	29.8	39.4	23
VUW-PC-25-V	25	19.8	34.8	48	28.1

Connects To New V-Lok Ports (Inch)

Part Numbers	A Tube O.D.		D		N		L		J	
	in	mm	in	mm	in	mm	in	mm	in	mm
VUW-PC-1.6-V	1/16	1.58	0.03	0.8	0.42	10.7	0.54	13.7	0.13	3.4
VUW-PC-3.2-V	1/8	3.17	0.09	2.2	0.62	15.8	0.88	22.4	0.25	6.3
VUW-PC-6.35-V	1/4	6.35	0.17	4.2	0.75	19	0.98	24.9	0.37	9.4
VUW-PC-7.93-V	5/16	7.93	0.24	6	0.79	20.1	1.02	25.9	0.43	10.9
VUW-PC-9.52-V	3/8	9.52	0.27	6.9	0.8	20.3	1.03	26.2	0.49	12.6
VUW-PC-12.7-V	1/2	12.7	0.37	9.4	1.02	25.9	1.41	35.8	0.62	15.8
VUW-PC-15.88-V	5/8	15.87	0.5	12.7	1.12	28.5	1.51	38.4	0.74	18.9
VUW-PC-19.05-V	3/4	19.05	0.59	15	1.09	27.7	1.47	37.3	0.87	22.1
VUW-PC-25.4-V	1	25.4	0.8	20.3	1.37	34.7	1.9	48.1	1.12	28.5

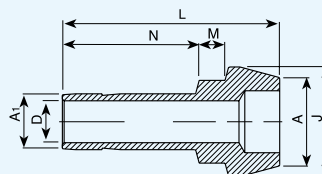
Assembly Instructions



"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Reducing Port Connectors

PC



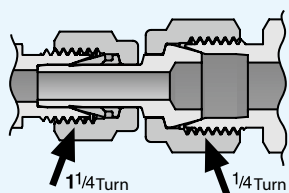
Connects To New V-Lok Ports (Metric)

Part Numbers	A Tube O.D.		A1 Tube O.D.		D		N		L		J		M	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUW-PC-6X3-V		6		3		2.1		13.5		22.9		9		3.6
VUW-PC-8X6-V		8		6		4		15.7		24.7		11		3.1
VUW-PC-10X6-V		10		6		4		16.3		25.8		13.1		3.6
VUW-PC-10X8-V		10		8		5.6		16.8		26.1		13.1		3.4
VUW-PC-12X6-V		12		6		4		15.7		29.1		15		3.6
VUW-PC-12X8-V		12		8		5.6		16.8		29.8		15		3.4
VUW-PC-12X10-V		12		10		7.1		17.5		30.6		15		3.1
VUW-PC-16X12-V		16		12		8.8		24.4		37.5		19.1		3.4

Connects To New V-Lok Ports (Inch)

Part Numbers	A Tube O.D.		A1 Tube O.D.		D		N		L		J		M	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUW-PC-3.2X1.6-V	1/8	3.17	1/16	1.58	0.03	0.8	0.34	8.6	0.68	17.3	0.25	6.3	0.08	2.1
VUW-PC-6.35X1.6-V	1/4	6.35	1/16	1.58	0.03	0.8	0.34	8.6	0.71	18	0.37	9.4	0.14	3.5
VUW-PC-6.35X3.2-V	1/4	6.35	1/8	3.17	0.09	2.2	0.53	13.5	0.89	22.6	0.37	9.4	0.13	3.3
VUW-PC-9.52X3.2-V	3/8	9.52	1/8	3.17	0.09	2.2	0.53	13.5	0.91	23.2	0.49	12.6	0.15	3.9
VUW-PC-9.52X6.35-V	3/8	9.52	1/4	6.35	0.17	4.2	0.62	15.8	0.98	24.9	0.49	12.6	0.13	3.3
VUW-PC-12.7X6.35-V	1/2	12.7	1/4	6.35	0.17	4.2	0.62	15.8	1.15	29.2	0.62	15.8	0.15	3.8
VUW-PC-12.7X9.52-V	1/2	12.7	3/8	9.52	0.27	6.9	0.69	17.5	1.2	30.5	0.62	15.8	0.13	3.3
VUW-PC-19.05X12.7-V	3/4	19.05	1/2	12.7	0.37	9.4	0.96	24.4	1.49	37.9	0.87	22.1	0.15	3.8
VUW-PC-25.4X12.7-V	1	25.4	1/2	12.7	0.37	9.4	0.96	24.4	1.68	42.7	1.12	28.5	0.19	4.9
VUW-PC-25.4X19.05-V	1	25.4	3/4	19.05	0.59	15	1.02	25.9	1.71	43.4	1.12	28.5	0.16	4.1

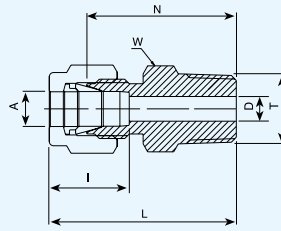
Assembly Instructions



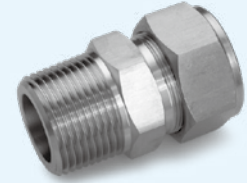
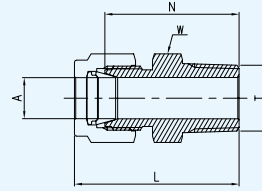
"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Connectors (NPT)

H



Thermoelement Type



Tube (Metric) To Male NPT Thread

Part Numbers	A Tube O.D.	T	D	W	N	L	I	Thermoelement Type
	mm		mm	mm	mm	mm	mm	
VUWH-2AN-V	2	1/8NPT	1.7	12	23.9	30.5	12.9	○
VUWH-3AN-V	3	1/8NPT	2.4	12	23.9	30.5	12.9	○
VUWH-3BN-V	3	1/4NPT	2.4	14	29	35.6	12.9	○
VUWH-4AN-V	4	1/8NPT	2.4	12	24.6	31.2	13.7	-
VUWH-4BN-V	4	1/4NPT	2.4	14	29.7	36.3	13.7	-
VUWH-6AN-V	6	1/8NPT	4.8	14	25.4	32.8	15.3	○
VUWH-6BN-V	6	1/4NPT	4.8	14	30.5	37.9	15.3	○
VUWH-6CN-V	6	3/8NPT	4.8	18	31	38.4	15.3	-
VUWH-6DN-V	6	1/2NPT	4.8	22	37.3	44.7	15.3	○
VUWH-6EN-V	6	3/4NPT	4.8	27	37.3	44.7	15.3	-
VUWH-8AN-V	8	1/8NPT	4.8	15	26.7	34.2	16.2	-
VUWH-8BN-V	8	1/4NPT	6.4	15	31.2	38.7	16.2	○
VUWH-8CN-V	8	3/8NPT	6.4	18	31.8	39.3	16.2	-
VUWH-8DN-V	8	1/2NPT	6.4	22	38.1	45.6	16.2	○
VUWH-10AN-V	10	1/8NPT	4.8	18	28.7	36.3	17.2	-
VUWH-10BN-V	10	1/4NPT	7.9	18	33.3	40.9	17.2	-
VUWH-10CN-V	10	3/8NPT	7.9	18	33.3	40.9	17.2	○
VUWH-10DN-V	10	1/2NPT	7.9	22	38.9	46.5	17.2	○
VUWH-10EN-V	10	3/4NPT	7.9	27	40.4	48	17.2	○
VUWH-12AN-V	12	1/8NPT	4.8	22	28.7	38.8	22.8	-
VUWH-12BN-V	12	1/4NPT	7.1	22	33.3	43.4	22.8	-
VUWH-12CN-V	12	3/8NPT	9.5	22	33.3	43.4	22.8	-
VUWH-12DN-V	12	1/2NPT	9.5	22	38.9	49	22.8	○
VUWH-12EN-V	12	3/4NPT	9.5	27	40.4	50.5	22.8	○
VUWH-12FN-V	12	1NPT	9.5	35	47	57.1	22.8	-
VUWH-14BN-V	14	1/4NPT	7.1	24	34	44.1	24.4	-
VUWH-14CN-V	14	3/8NPT	9.5	24	34	44.1	24.4	-
VUWH-14DN-V	14	1/2NPT	11	24	38.9	49	24.4	○
VUWH-15BN-V	15	1/4NPT	7.1	24	34	44.1	24.4	-
VUWH-15DN-V	15	1/2NPT	12	24	38.9	49	24.4	○
VUWH-15FN-V	15	1NPT	12	35	47.5	57.6	24.4	-
VUWH-16CN-V	16	3/8NPT	9.7	24	34	44.1	24.4	-
VUWH-16DN-V	16	1/2NPT	11.9	24	38.9	49	24.4	-
VUWH-16EN-V	16	3/4NPT	12.7	27	40.4	50.5	24.4	○
VUWH-18DN-V	18	1/2NPT	11.9	27	40.4	50.5	24.4	-
VUWH-18EN-V	18	3/4NPT	15.1	27	40.4	50.5	24.4	-
VUWH-20DN-V	20	1/2NPT	11.9	30	42.2	52.3	26	-
VUWH-20EN-V	20	3/4NPT	15.9	30	42.2	52.3	26	-
VUWH-22EN-V	22	3/4NPT	15.8	30	42.2	52.3	26	-
VUWH-22FN-V	22	1NPT	18.3	35	47	57.1	26	-
VUWH-25DN-V	25	1/2NPT	11.9	35	45.2	57.4	31.3	-
VUWH-25EN-V	25	3/4NPT	15.9	35	45.2	57.4	31.3	-
VUWH-25FN-V	25	1NPT	21.8	35	50	62.2	31.3	-

For inches, see next page

Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.

Reference Thread Specifications:

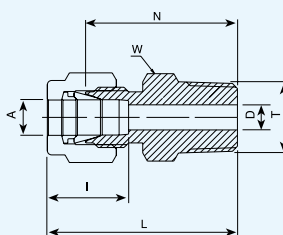
American Standard Pipe Thread (NPT).

NPT (National Pipe Tapered) is made to specifications outlined in ANSI B1.20.1.

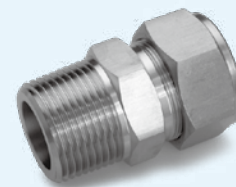
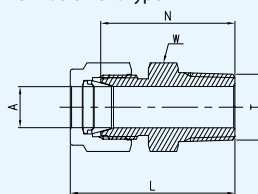
"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Connectors (NPT)

H



Thermoelement Type



Tube (Inch) To Male NPT Thread

Part Numbers	A Tube O.D.		T	D		W		N		L		I		Thermoelement Type
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	
VUWH-1.6AN-V	1/16	1.58	1/8NPT	0.05	1.3	7/16	11.1	0.88	22.4	1.03	26.2	0.34	8.6	○
VUWH-1.6BN-V	1/16	1.58	1/4NPT	0.05	1.3	9/16	14.3	1.07	27.2	1.22	31	0.34	8.6	○
VUWH-3.2AN-V	1/8	3.17	1/8NPT	0.09	2.3	7/16	11.1	0.94	23.9	1.2	30.5	0.5	12.7	○
VUWH-3.2BN-V	1/8	3.17	1/4NPT	0.09	2.3	9/16	14.3	1.14	29	1.4	35.6	0.5	12.7	○
VUWH-3.2CN-V	1/8	3.17	3/8NPT	0.09	2.3	11/16	17.5	1.15	29.2	1.41	35.8	0.5	12.7	○
VUWH-3.2DN-V	1/8	3.17	1/2NPT	0.09	2.3	7/8	22.2	1.40	35.6	1.66	42.2	0.5	12.7	○
VUWH-3.2EN-V	1/8	3.17	3/4NPT	0.09	2.3	1 1/16	27	1.47	37.3	1.73	43.9	0.5	12.7	-
VUWH-4.8AN-V	3/16	4.76	1/8NPT	0.12	3.1	7/16	11.1	0.97	24.6	1.23	31.2	0.54	13.7	○
VUWH-4.8BN-V	3/16	4.76	1/4NPT	0.12	3.1	9/16	14.3	1.17	29.7	1.43	36.3	0.54	13.7	○
VUWH-6.35AN-V	1/4	6.35	1/8NPT	0.19	4.8	1/2	12.7	1	25.4	1.29	32.8	0.6	15.2	-
VUWH-6.35BN-V	1/4	6.35	1/4NPT	0.19	4.8	9/16	14.3	1.2	30.5	1.49	37.9	0.6	15.2	○
VUWH-6.35CN-V	1/4	6.35	3/8NPT	0.19	4.8	11/16	17.5	1.22	31	1.51	38.4	0.6	15.2	○
VUWH-6.35DN-V	1/4	6.35	1/2NPT	0.19	4.8	7/8	22.2	1.47	37.3	1.76	44.7	0.6	15.2	○
VUWH-6.35EN-V	1/4	6.35	3/4NPT	0.19	4.8	1 1/16	27	1.53	38.9	1.82	46.3	0.6	15.2	○
VUWH-6.35FN-V	1/4	6.35	1NPT	0.19	4.8	1 3/8	34.9	1.81	46	2.1	53.4	0.6	15.2	-
VUWH-7.93AN-V	5/16	7.93	1/8NPT	0.19	4.8	9/16	14.3	1.05	26.7	1.34	34.1	0.64	16.3	-
VUWH-7.93BN-V	5/16	7.93	1/4NPT	0.25	6.4	9/16	14.3	1.23	31.2	1.52	38.6	0.64	16.3	○
VUWH-7.93CN-V	5/16	7.93	3/8NPT	0.25	6.4	11/16	17.5	1.25	31.8	1.54	39.2	0.64	16.3	-
VUWH-9.52AN-V	3/8	9.52	1/8NPT	0.19	4.8	5/8	15.9	1.1	27.9	1.39	35.3	0.66	16.8	-
VUWH-9.52BN-V	3/8	9.52	1/4NPT	0.28	7.1	5/8	15.9	1.28	32.5	1.57	39.9	0.66	16.8	○
VUWH-9.52CN-V	3/8	9.52	3/8NPT	0.28	7.1	11/16	17.5	1.28	32.5	1.57	39.9	0.66	16.8	○
VUWH-9.52DN-V	3/8	9.52	1/2NPT	0.28	7.1	7/8	22.2	1.53	38.9	1.82	46.3	0.66	16.8	○
VUWH-9.52EN-V	3/8	9.52	3/4NPT	0.28	7.1	1 1/16	27	1.59	40.4	1.88	47.8	0.66	16.8	○
VUWH-9.52FN-V	3/8	9.52	1NPT	0.28	7.1	1 3/8	34.9	1.85	47	2.14	54.4	0.66	16.8	-
VUWH-12.7AN-V	1/2	12.7	1/8NPT	0.19	4.8	13/16	20.6	1.13	28.7	1.53	38.8	0.9	22.9	-
VUWH-12.7BN-V	1/2	12.7	1/4NPT	0.28	7.1	13/16	20.6	1.31	33.3	1.71	43.4	0.9	22.9	-
VUWH-12.7CN-V	1/2	12.7	3/8NPT	0.38	9.6	13/16	20.6	1.31	33.3	1.71	43.4	0.9	22.9	-
VUWH-12.7DN-V	1/2	12.7	1/2NPT	0.41	10.4	7/8	22.2	1.53	38.9	1.93	49	0.9	22.9	○
VUWH-12.7EN-V	1/2	12.7	3/4NPT	0.41	10.4	1 1/16	27	1.59	40.4	1.99	50.5	0.9	22.9	○
VUWH-12.7FN-V	1/2	12.7	1NPT	0.41	10.4	1 3/8	34.9	1.85	47	2.25	57.1	0.9	22.9	-
VUWH-15.88BN-V	5/8	15.87	1/4NPT	0.28	7.1	15/16	23.8	1.34	34	1.74	44.1	0.96	24.4	-
VUWH-15.88CN-V	5/8	15.87	3/8NPT	0.38	9.6	15/16	23.8	1.34	34	1.74	44.1	0.96	24.4	-
VUWH-15.88DN-V	5/8	15.87	1/2NPT	0.47	11.9	15/16	23.8	1.53	38.9	1.93	49	0.96	24.4	-
VUWH-15.88EN-V	5/8	15.87	3/4NPT	0.5	12.7	1 1/16	27	1.59	40.4	1.99	50.5	0.96	24.4	○
VUWH-19.05BN-V	3/4	19.05	1/4NPT	0.28	7.1	1 1/16	27	1.37	34.8	1.77	44.9	0.96	24.4	-
VUWH-19.05CN-V	3/4	19.05	3/8NPT	0.37	9.5	1 1/16	27	1.38	35.1	1.78	45.2	0.96	24.4	-
VUWH-19.05DN-V	3/4	19.05	1/2NPT	0.47	11.9	1 1/16	27	1.59	40.4	1.99	50.5	0.96	24.4	-
VUWH-19.05EN-V	3/4	19.05	3/4NPT	0.62	15.8	1 1/16	27	1.59	40.4	1.99	50.5	0.96	24.4	○
VUWH-19.05FN-V	3/4	19.05	1NPT	0.62	15.8	1 3/8	34.9	1.85	47	2.25	57.1	0.96	24.4	○
VUWH-22.22EN-V	7/8	22.22	3/4NPT	0.62	15.8	13/16	30.2	1.59	40.4	1.99	50.5	1.02	25.9	-
VUWH-22.22FN-V	7/8	22.22	1NPT	0.72	18.3	1 3/8	34.9	1.85	47	2.25	57.1	1.02	25.9	○
VUWH-25.4DN-V	1	25.4	1/2NPT	0.47	11.9	1 3/8	34.9	1.78	45.2	2.26	57.4	1.23	31.2	-
VUWH-25.4EN-V	1	25.4	3/4NPT	0.72	18.3	1 3/8	34.9	1.78	45.2	2.26	57.4	1.23	31.2	-
VUWH-25.4FN-V	1	25.4	1NPT	0.88	22.3	1 3/8	34.9	1.97	50	2.45	62.2	1.23	31.2	○

Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.

Reference Thread Specifications:

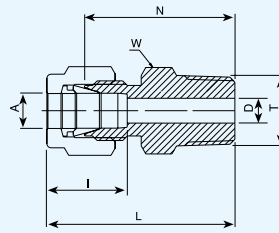
American Standard Pipe Thread (NPT).

NPT (National Pipe Tapered) is made to specifications outlined in ANSI B1.20.1.

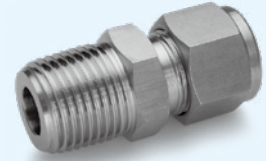
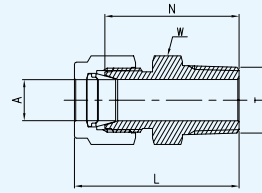
"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Connectors (R)

H



Thermoelement Type



Tube (Metric) To ISO Tapered Thread

Part Numbers	A Tube O.D.	T	D	W	N	L	I	Thermoelement Type
	mm		mm	mm	mm	mm	mm	
VUWH-2A-V	2	R 1/8	1.7	12	23.9	30.5	12.9	-
VUWH-3A-V	3	R 1/8	2.4	12	23.9	30.5	12.9	○
VUWH-3B-V	3	R 1/4	2.4	14	29	35.6	12.9	○
VUWH-4A-V	4	R 1/8	2.4	12	24.6	31.2	13.7	○
VUWH-4B-V	4	R 1/4	2.4	14	29.7	36.3	13.7	○
VUWH-4C-V	4	R 3/8	2.4	18	30.2	36.8	13.7	-
VUWH-6A-V	6	R 1/8	4.8	14	25.4	32.8	15.3	○
VUWH-6B-V	6	R 1/4	4.8	14	30.5	37.9	15.3	○
VUWH-6C-V	6	R 3/8	4.8	18	31	38.4	15.3	○
VUWH-6D-V	6	R 1/2	4.8	22	37.3	44.7	15.3	○
VUWH-8A-V	8	R 1/8	4.8	15	26.7	34.2	16.2	-
VUWH-8B-V	8	R 1/4	6.4	15	31.2	38.7	16.2	○
VUWH-8C-V	8	R 3/8	6.4	18	31.8	39.3	16.2	○
VUWH-8D-V	8	R 1/2	6.4	22	38.1	45.6	16.2	○
VUWH-10A-V	10	R 1/8	4.8	18	28.7	36.3	17.2	-
VUWH-10B-V	10	R 1/4	7.9	18	33.3	40.9	17.2	○
VUWH-10C-V	10	R 3/8	7.9	18	33.3	40.9	17.2	○
VUWH-10D-V	10	R 1/2	7.9	22	38.9	46.5	17.2	○
VUWH-10E-V	10	R 3/4	7.9	27	40.4	48	17.2	○
VUWH-12A-V	12	R 1/8	4.8	22	28.7	38.8	22.8	-
VUWH-12B-V	12	R 1/4	7.1	22	33.3	43.4	22.8	-
VUWH-12C-V	12	R 3/8	9.5	22	33.3	43.4	22.8	○
VUWH-12D-V	12	R 1/2	9.5	22	38.9	49	22.8	○
VUWH-12E-V	12	R 3/4	9.5	27	40.4	50.5	22.8	○
VUWH-12F-V	12	R 1	9.5	35	47	57.1	22.8	-
VUWH-14B-V	14	R 1/4	7.1	24	34	44.1	24.4	-
VUWH-14C-V	14	R 3/8	9.5	24	34	44.1	24.4	-
VUWH-14D-V	14	R 1/2	11	24	38.9	49	24.4	○
VUWH-14E-V	14	R 3/4	11	27	40.4	50.5	24.4	-
VUWH-15C-V	15	R 3/8	9.7	24	34	44.1	24.4	-
VUWH-15D-V	15	R 1/2	11.9	24	38.9	49	24.4	○
VUWH-15E-T/C-V	15	R 3/4	-	27	40.4	50.5	-	○
VUWH-16B-V	16	R 1/4	7.1	24	34	44.1	24.4	-
VUWH-16C-V	16	R 3/8	9.5	24	34	44.1	24.4	-
VUWH-16D-V	16	R 1/2	11.9	24	38.9	49	24.4	-
VUWH-16E-V	16	R 3/4	12.7	27	40.4	50.5	24.4	○
VUWH-18D-V	18	R 1/2	11.9	27	40.4	50.5	24.4	-
VUWH-18E-V	18	R 3/4	15.1	27	40.4	50.5	24.4	○
VUWH-20B-V	20	R 1/4	7.1	30	40	50.1	26	-
VUWH-20D-V	20	R 1/2	11.9	30	42.2	52.3	26	-
VUWH-20E-V	20	R 3/4	15.9	30	42.2	52.3	26	○
VUWH-20F-V	20	R 1	15.9	35	47	57.1	26	-
VUWH-22E-V	22	R 3/4	15.9	30	42.2	52.3	26	-
VUWH-22F-V	22	R 1	18.3	35	47	57.1	26	○
VUWH-25E-V	25	R 3/4	15.9	35	45.2	57.4	31.3	-
VUWH-25F-V	25	R 1	21.8	35	50	62.2	31.3	○

For inches, see next page

Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.

Reference Thread Specifications:

DIN - ISO 2999

BS - 21

JIS - B0203

ISO - 7/1-BSP-T

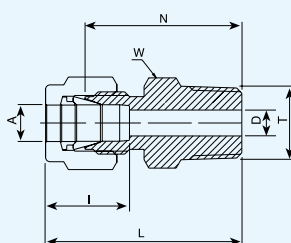
Designation:

R marking on hex.

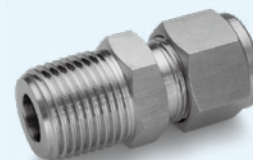
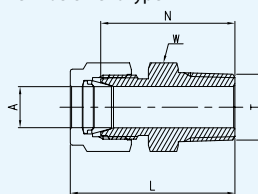
"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Connectors (R)

H



Thermoelement Type



Tube (Inch) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		L		I		Thermoelement Type
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	
VUWH-1.6A-V	1/16	1.58	R 1/8	0.05	1.3	7/16	11.1	0.9	22.4	1.03	26.2	0.34	8.6	○
VUWH-1.6B-V	1/16	1.58	R 1/4	0.05	1.3	9/16	14.3	1.07	27.2	1.22	31	0.34	8.6	○
VUWH-3.2A-V	1/8	3.17	R 1/8	0.09	2.3	7/16	11.1	0.94	23.9	1.2	30.5	0.5	12.7	○
VUWH-3.2B-V	1/8	3.17	R 1/4	0.09	2.3	9/16	14.3	1.14	29	1.4	35.6	0.5	12.7	○
VUWH-3.2C-V	1/8	3.17	R 3/8	0.09	2.3	11/16	17.5	1.15	29.2	1.41	35.8	0.5	12.7	-
VUWH-3.2D-V	1/8	3.17	R 1/2	0.09	2.3	7/8	22.2	1.4	35.6	1.66	42.2	0.5	12.7	-
VUWH-4.8A-T/C-V	3/16	4.76	R 1/8	0.12	3.1	7/16	11.1	0.97	24.6	1.23	31.2	-	-	○
VUWH-4.8B-V	3/16	4.76	R 1/4	0.12	3	9/16	14.3	1.17	29.7	1.43	36.3	0.54	13.7	○
VUWH-6.35A-V	1/4	6.35	R 1/8	0.19	4.8	1/2	12.7	1	25.4	1.29	32.8	0.6	15.2	-
VUWH-6.35B-V	1/4	6.35	R 1/4	0.19	4.8	9/16	14.3	1.2	30.5	1.49	37.9	0.6	15.2	○
VUWH-6.35C-V	1/4	6.35	R 3/8	0.19	4.8	11/16	17.5	1.22	31	1.51	38.4	0.6	15.2	○
VUWH-6.35D-V	1/4	6.35	R 1/2	0.19	4.8	7/8	22.2	1.47	37.3	1.76	44.7	0.6	15.2	○
VUWH-6.35E-V	1/4	6.35	R 3/4	0.19	4.8	1 1/16	27	1.53	38.9	1.82	46.3	0.6	15.2	-
VUWH-7.93A-V	5/16	7.93	R 1/8	0.19	4.8	9/16	14.3	1.05	26.7	1.34	34.1	0.64	16.3	-
VUWH-7.93B-V	5/16	7.93	R 1/4	0.25	6.4	9/16	14.3	1.23	31.2	1.52	38.6	0.64	16.3	-
VUWH-9.52A-V	3/8	9.52	R 1/8	0.19	4.8	5/8	15.9	1.1	27.9	1.39	35.3	0.66	16.8	-
VUWH-9.52B-V	3/8	9.52	R 1/4	0.28	7.1	5/8	15.9	1.28	32.5	1.57	39.9	0.66	16.8	-
VUWH-9.52C-V	3/8	9.52	R 3/8	0.28	7.1	11/16	17.5	1.28	32.5	1.57	39.9	0.66	16.8	○
VUWH-9.52D-V	3/8	9.52	R 1/2	0.28	7.1	7/8	22.2	1.53	38.9	1.82	46.3	0.66	16.8	○
VUWH-9.52E-V	3/8	9.52	R 3/4	0.28	7.1	1 1/16	27	1.59	40.4	1.88	47.8	0.66	16.8	-
VUWH-9.52F-V	3/8	9.52	R 1	0.28	7.1	1 3/8	34.9	1.85	47	2.14	54.4	0.66	16.8	-
VUWH-12.7A-V	1/2	12.7	R 1/8	0.19	4.8	13/16	20.6	1.13	28.7	1.53	38.8	0.9	22.9	-
VUWH-12.7B-V	1/2	12.7	R 1/4	0.28	7.1	13/16	20.6	1.31	33.3	1.71	43.4	0.9	22.9	-
VUWH-12.7C-V	1/2	12.7	R 3/8	0.38	9.6	13/16	20.6	1.31	33.3	1.71	43.4	0.9	22.9	-
VUWH-12.7D-V	1/2	12.7	R 1/2	0.41	10.4	7/8	22.2	1.53	38.9	1.93	49	0.9	22.9	○
VUWH-12.7E-V	1/2	12.7	R 3/4	0.41	10.4	1 1/16	27	1.59	40.4	1.99	50.5	0.9	22.9	-
VUWH-12.7F-V	1/2	12.7	R 1	0.41	10.4	1 3/8	34.9	1.85	47	2.25	57.1	0.9	22.9	-
VUWH-15.88B-V	5/8	15.87	R 1/4	0.28	7.1	15/16	23.8	1.34	34	1.74	44.1	0.96	24.4	-
VUWH-15.88C-V	5/8	15.87	R 3/8	0.38	9.6	15/16	23.8	1.34	34.1	1.74	44.2	0.96	24.4	-
VUWH-15.88D-V	5/8	15.87	R 1/2	0.47	11.9	15/16	23.8	1.53	38.9	1.93	49	0.96	24.4	-
VUWH-15.88E-V	5/8	15.87	R 3/4	0.5	12.7	1 1/16	27	1.59	40.4	1.99	50.5	0.96	24.4	-
VUWH-15.88F-V	5/8	15.87	R 1	0.5	12.7	1 3/8	34.9	1.85	47	2.25	57.1	0.96	24.4	-
VUWH-19.05C-V	3/4	19.05	R 3/8	0.37	9.5	1 1/16	27	1.38	35	1.78	45.1	0.96	24.4	-
VUWH-19.05D-V	3/4	19.05	R 1/2	0.47	11.9	1 1/16	27	1.59	40.4	1.99	50.5	0.96	24.4	-
VUWH-19.05E-V	3/4	19.05	R 3/4	0.62	15.8	1 1/16	27	1.59	40.4	1.99	50.5	0.96	24.4	○
VUWH-19.05F-V	3/4	19.05	R 1	0.62	15.8	1 3/8	34.9	1.85	47	2.25	57.1	0.96	24.4	○
VUWH-25.4D-V	1	25.4	R 1/2	0.47	11.9	1 3/8	34.9	1.78	45.2	2.26	57.4	1.23	31.2	-
VUWH-25.4E-V	1	25.4	R 3/4	0.62	15.8	1 3/8	34.9	1.78	45.2	2.26	57.4	1.23	31.2	-
VUWH-25.4F-V	1	25.4	R 1	0.88	22.3	1 3/8	34.9	1.97	50	2.45	62.2	1.23	31.2	-

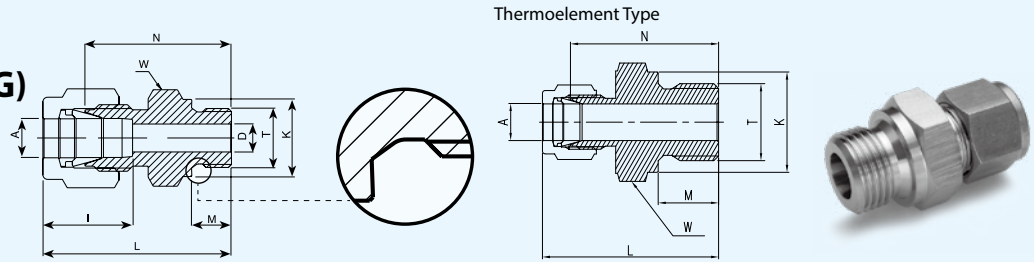
Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Connectors (G)

H



Tube (Metric) To ISO Parallel Thread

Part Numbers	A	T	D	K	W	N	M	L	I	Thermoelement Type
	Tube O.D. mm		mm	mm	mm	mm	mm	mm	mm	
VUWH-2AF-FJS-V	2	G 1/8	1.7	13.8	14	23.4	7.1	30	12.9	-
VUWH-3AF-FJS-V	3	G 1/8	2.4	13.8	14	23.4	7.1	30	12.9	-
VUWH-3BF-FJS-V	3	G 1/4	2.4	18	19	28.7	11.2	35.3	12.9	-
VUWH-4AF-FJS-V	4	G 1/8	2.4	13.8	14	24.1	7.1	30.7	13.7	-
VUWH-6AF-FJS-V	6	G 1/8	4	13.8	14	24.9	7.1	32.3	15.3	-
VUWH-6BF-FJS-V	6	G 1/4	4.8	18	19	30.2	11.2	37.6	15.3	○
VUWH-6CF-FJS-V	6	G 3/8	4.8	21.8	22	31.5	11.2	38.9	15.3	○
VUWH-6DF-FJS-V	6	G 1/2	4.8	26	27	37.3	14.2	44.7	15.3	-
VUWH-8AF-FJS-V	8	G 1/8	4	13.8	15	25.7	7.1	33.2	16.2	-
VUWH-8BF-FJS-V	8	G 1/4	6.4	18	19	31	11.2	38.5	16.2	-
VUWH-8CF-FJS-V	8	G 3/8	6.4	21.8	22	32.3	11.2	39.8	16.2	-
VUWH-8DF-FJS-V	8	G 1/2	6.4	26	27	38.1	14.2	45.6	16.2	-
VUWH-10BF-FJS-V	10	G 1/4	5.9	18	19	31.8	11.2	39.4	17.2	-
VUWH-10CF-FJS-V	10	G 3/8	7.9	21.8	22	33	11.2	40.6	17.2	-
VUWH-10DF-FJS-V	10	G 1/2	7.9	26	27	38.9	14.2	46.5	17.2	○
VUWH-12BF-FJS-V	12	G 1/4	5.9	18	22	32.5	11.2	42.6	22.8	-
VUWH-12CF-FJS-V	12	G 3/8	7.9	21.8	22	33	11.2	43.1	22.8	-
VUWH-12DF-FJS-V	12	G 1/2	9.5	26	27	38.9	14.2	49	22.8	-
VUWH-12EF-FJS-V	12	G 3/4	9.5	32	35	42.7	15.7	52.8	22.8	-
VUWH-14CF-FJS-V	14	G 3/8	7.9	21.8	24	33.8	11.2	43.9	24.4	-
VUWH-14DF-FJS-V	14	G 1/2	11	26	27	38.9	14.2	49	24.4	-
VUWH-15CF-FJS-V	15	G 3/8	7.9	21.8	24	33.8	11.2	43.9	24.4	-
VUWH-15DF-FJS-V	15	G 1/2	12	26	27	38.9	14.2	49	24.4	-
VUWH-15EF-FJS-V	15	G 3/4	12	32	35	42.1	15.7	52.2	24.4	-
VUWH-16CF-FJS-V	16	G 3/8	7.9	21.8	24	33.8	11.2	43.9	24.4	-
VUWH-16DF-FJS-V	16	G 1/2	11.9	26	27	38.9	14.2	49	24.4	-
VUWH-16EF-FJS-V	16	G 3/4	12.7	32	35	42.7	15.7	52.8	24.4	-
VUWH-18DF-FJS-V	18	G 1/2	11.9	26	27	38.9	14.2	49	24.4	-
VUWH-18EF-FJS-V	18	G 3/4	15.1	32	35	42.7	15.7	52.8	24.4	-
VUWH-20DF-FJS-V	20	G 1/2	11.9	26	30	40.4	14.2	50.5	26	-
VUWH-20EF-FJS-V	20	G 3/4	15.9	32	35	42.7	15.7	52.8	26	-
VUWH-22EF-FJS-V	22	G 3/4	15.9	32	35	42.7	15.7	52.8	26	-
VUWH-22FF-FJS-V	22	G 1	18.3	39	41	45.2	18.3	55.3	26	-
VUWH-25EF-FJS-V	25	G 3/4	15.9	32	35	45.2	15.7	57.4	31.3	-
VUWH-25FF-FJS-V	25	G 1	19.8	39	41	47.8	18.3	60	31.3	-

Thermolement Type can also be manufactured.

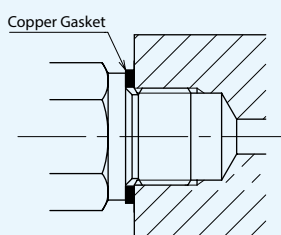
For inches, see next page

For ordering: use catalog number of the selected fitting and add the suffix T/C.

Reference Thread Specifications:

DIN - ISO 228/1
BS - 2779
JIS - B0202
ISO - 228/1-BSP-P

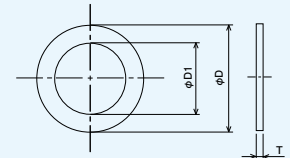
Seal Method (Male G Thread Side)



Gasket:

After confirming the Male G thread size, please order Copper Gaskets according to the table below.

Thread Size	Part Numbers	D		D1		T	
		mm	in.	mm	in.	mm	in.
G 1/8	VUW-G-AF-FJT-V	15	0.59	9.9	0.39	1	0.04
G 1/4	VUW-G-BF-FJT-V	18.8	0.74	13.5	0.53	1.5	0.06
G 3/8	VUW-G-CF-FJT-V	22.9	0.9	17	0.67	1.5	0.06
G 1/2	VUW-G-DF-FJT-V	26.9	1.06	21.3	0.84	1.5	0.06
G 3/4	VUW-G-EF-FJT-V	33	1.3	26.7	1.05	2	0.08
G 1	VUW-G-FF-FJT-V	39.9	1.57	33.5	1.32	2	0.08



Designation:

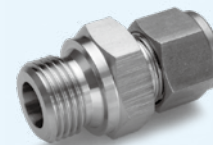
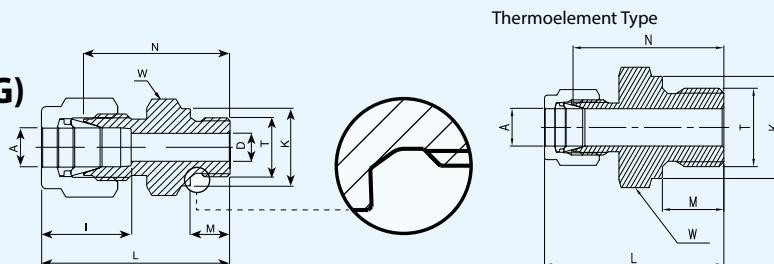
G marking on hex.

Some combinations of dimensions A and F may not be available.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Connectors (G)

H



Tube (Inch) To ISO Parallel Thread

Part Numbers	A Tube O.D.		T	D		K		W		N		M		L		I		Thermoelement Type
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWH-1.6AF-FJS-V	1/16	1.58	G 1/8	0.05	1.3	0.54	13.8	9/16	14.3	0.97	24.7	0.28	7.1	1.12	28.5	0.34	8.6	-
VUWH-3.2AF-FJS-V	1/8	3.17	G 1/8	0.09	2.3	0.54	13.8	9/16	14.3	0.92	23.4	0.28	7.1	1.18	30	0.5	12.7	○
VUWH-3.2BF-FJS-V	1/8	3.17	G 1/4	0.09	2.3	0.71	18	3/4	19.1	1.13	28.7	0.44	11.2	1.39	35.3	0.5	12.7	-
VUWH-3.2CF-FJS-V	1/8	3.17	G 3/8	0.09	2.3	0.86	21.8	7/8	22.2	1.17	29.7	0.44	11.2	1.46	37	0.5	12.7	-
VUWH-3.2DF-FJS-V	1/8	3.17	G 1/2	0.09	2.3	1.02	26	1 1/16	27	1.4	35.7	0.56	14.2	1.69	43	0.5	12.7	-
VUWH-4.8AF-FJS-V	3/16	4.76	G 1/8	0.12	3.1	0.54	13.8	9/16	14.3	0.95	24.1	0.28	7.1	1.2	30.7	0.54	13.7	-
VUWH-6.35AF-FJS-V	1/4	6.35	G 1/8	0.16	4	0.54	13.8	9/16	14.3	0.98	24.9	0.28	7.1	1.27	32.3	0.6	15.2	-
VUWH-6.35BF-FJS-V	1/4	6.35	G 1/4	0.19	4.8	0.71	18	3/4	19.1	1.19	30.2	0.44	11.2	1.48	37.6	0.6	15.2	-
VUWH-6.35CF-FJS-V	1/4	6.35	G 3/8	0.19	4.8	0.86	21.8	7/8	22.2	1.24	31.5	0.44	11.2	1.53	38.9	0.6	15.2	-
VUWH-6.35DF-FJS-V	1/4	6.35	G 1/2	0.19	4.8	1.02	26	1 1/16	27	1.47	37.3	0.56	14.2	1.76	44.7	0.6	15.2	-
VUWH-7.93BF-FJS-V	5/16	7.93	G 1/4	0.25	6.4	0.71	18	3/4	19.1	1.22	31	0.44	11.2	1.51	38.4	0.64	16.3	-
VUWH-7.93CF-FJS-V	5/16	7.93	G 3/8	0.25	6.4	0.86	21.8	7/8	22.2	1.27	32.3	0.44	11.2	1.56	39.7	0.64	16.3	-
VUWH-9.52AF-FJS-V	3/8	9.52	G 1/8	0.16	4	0.54	13.8	5/8	15.9	1.06	26.8	0.28	7.1	1.35	34.2	0.66	16.8	-
VUWH-9.52BF-FJS-V	3/8	9.52	G 1/4	0.23	5.8	0.71	18	3/4	19.1	1.25	31.8	0.44	11.2	1.54	39.2	0.66	16.8	-
VUWH-9.52CF-FJS-V	3/8	9.52	G 3/8	0.28	7.1	0.86	21.8	7/8	22.2	1.3	33	0.44	11.2	1.59	40.4	0.66	16.8	-
VUWH-9.52DF-FJS-V	3/8	9.52	G 1/2	0.28	7.1	1.02	26	1 1/16	27	1.53	38.9	0.56	14.2	1.82	46.3	0.66	16.8	-
VUWH-12.7BF-FJS-V	1/2	12.7	G 1/4	0.23	5.8	0.71	18	13/16	20.6	1.28	32.5	0.44	11.2	1.68	42.6	0.9	22.9	-
VUWH-12.7CF-FJS-V	1/2	12.7	G 3/8	0.31	7.9	0.86	21.8	7/8	22.2	1.3	33	0.44	11.2	1.7	43.1	0.9	22.9	-
VUWH-12.7DF-FJS-V	1/2	12.7	G 1/2	0.41	10.4	1.02	26	1 1/16	27	1.47	37.3	0.56	14.2	1.87	47.4	0.9	22.9	○
VUWH-12.7EF-FJS-V	1/2	12.7	G 3/4	0.41	10.4	1.26	32	1 5/16	33.3	1.68	42.7	0.62	15.7	2.08	52.8	0.9	22.9	-
VUWH-15.88CF-FJS-V	5/8	15.87	G 3/8	0.31	7.9	0.86	21.8	15/16	23.8	1.33	33.8	0.44	11.2	1.73	43.9	0.96	24.4	-
VUWH-15.88DF-FJS-V	5/8	15.87	G 1/2	0.47	11.9	1.02	26	1 1/16	27	1.53	38.9	0.56	14.2	1.93	49	0.96	24.4	-
VUWH-19.05DF-FJS-V	3/4	19.05	G 1/2	0.47	11.9	1.02	26	1 1/16	27	1.53	38.9	0.56	14.2	1.93	49	0.96	24.4	-
VUWH-19.05EF-FJS-V	3/4	19.05	G 3/4	0.62	15.7	1.26	32	1 5/16	33.3	1.68	42.7	0.62	15.7	2.08	52.8	0.96	24.4	-
VUWH-25.4DF-FJS-V	1	25.4	G 1/2	0.47	11.9	1.02	26	1 3/8	34.9	1.72	43.7	0.56	14.2	2.2	55.9	1.23	31.3	-
VUWH-25.4EF-FJS-V	1	25.4	G 3/4	0.62	15.9	1.26	32	1 3/8	34.9	1.78	45.2	0.62	15.7	2.26	57.4	1.23	31.3	-
VUWH-25.4FF-FJS-V	1	25.4	G 1	0.78	19.8	1.54	39	1 5/8	41.3	1.88	47.8	0.72	18.3	2.36	60	1.23	31.3	-

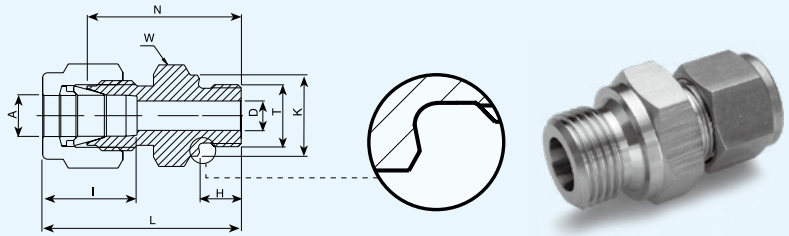
Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Connectors (G)

H



Tube (Metric) To ISO Parallel Thread

Part Numbers	A Tube O.D.	T	D		K	W	N		H	L		I
	mm		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
VUWH-3AF-FJT-V	3	G 1/8	2.4	13.8	14	23.4	7.1	30	12.9			
VUWH-3BF-FJT-V	3	G 1/4	2.4	18	19	28.7	11.2	35.3	12.9			
VUWH-4AF-FJT-V	4	G 1/8	2.4	13.8	14	24.1	7.1	30.7	13.7			
VUWH-6AF-FJT-V	6	G 1/8	4	13.8	14	24.9	7.1	32.3	15.3			
VUWH-6BF-FJT-V	6	G 1/4	4.8	18	19	30.2	11.2	37.6	15.3			
VUWH-6CF-FJT-V	6	G 3/8	4.8	21.8	22	31.5	11.2	38.9	15.3			
VUWH-6DF-FJT-V	6	G 1/2	4.8	26	27	37.3	14.2	44.7	15.3			
VUWH-8AF-FJT-V	8	G 1/8	4	13.8	15	25.7	7.1	33.2	16.2			
VUWH-8BF-FJT-V	8	G 1/4	6.4	18	19	31	11.2	38.5	16.2			
VUWH-8CF-FJT-V	8	G 3/8	6.4	21.8	22	32.3	11.2	39.8	16.2			
VUWH-8DF-FJT-V	8	G 1/2	6.4	26	27	38.1	14.2	45.6	16.2			
VUWH-10BF-FJT-V	10	G 1/4	5.9	18	19	31.8	11.2	39.4	17.2			
VUWH-10CF-FJT-V	10	G 3/8	7.9	21.8	22	33	11.2	40.6	17.2			
VUWH-10DF-FJT-V	10	G 1/2	7.9	26	27	38.9	14.2	46.5	17.2			
VUWH-12BF-FJT-V	12	G 1/4	5.9	18	22	32.5	11.2	42.6	22.8			
VUWH-12CF-FJT-V	12	G 3/8	7.9	21.8	22	33	11.2	43.1	22.8			
VUWH-12DF-FJT-V	12	G 1/2	9.5	26	27	38.9	14.2	49	22.8			
VUWH-12EF-FJT-V	12	G 3/4	9.5	32	35	42.7	15.7	52.8	22.8			
VUWH-15DF-FJT-V	15	G 1/2	11.9	26	27	38.9	14.2	49	24.4			
VUWH-16CF-FJT-V	16	G 3/8	7.9	21.8	24	33.8	11.2	43.9	24.4			
VUWH-16DF-FJT-V	16	G 1/2	11.9	26	27	38.9	14.2	49	24.4			
VUWH-18DF-FJT-V	18	G 1/2	11.9	26	27	38.9	14.2	49	24.4			
VUWH-18EF-FJT-V	18	G 3/4	15.1	32	35	42.7	15.7	52.8	24.4			
VUWH-20DF-FJT-V	20	G 1/2	11.9	26	30	40.4	14.2	50.5	26			
VUWH-20EF-FJT-V	20	G 3/4	15.9	32	35	42.7	15.7	52.8	26			
VUWH-22EF-FJT-V	22	G 3/4	15.9	32	35	42.7	15.7	52.8	26			
VUWH-22FF-FJT-V	22	G 1	18.3	39	40	45.2	18.3	55.3	26			
VUWH-25EF-FJT-V	25	G 3/4	15.9	32	35	45.2	15.7	57.4	31.3			
VUWH-25FF-FJT-V	25	G 1	19.8	39	41	47.8	18.3	60	31.3			

Tube (Inch) To ISO Parallel Thread

Part Numbers	A Tube O.D.		T	D		K		W		N		H		L		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWH-3.2AF-FJT-V	1/8	3.17	G1/8	0.09	2.3	0.54	13.8	9/16	14.3	0.92	23.4	0.28	7.1	1.18	30	0.5	12.7
VUWH-3.2BF-FJT-V	1/8	3.17	G1/4	0.09	2.3	0.71	18	3/4	19.1	1.13	28.7	0.44	11.2	1.39	35.3	0.5	12.7
VUWH-6.35AF-FJT-V	1/4	6.35	G1/8	0.16	4	0.54	13.8	9/16	14.3	0.98	24.9	0.28	7.1	1.27	32.3	0.6	15.2
VUWH-6.35BF-FJT-V	1/4	6.35	G1/4	0.19	4.8	0.71	18	3/4	19.1	1.19	30.2	0.44	11.2	1.48	37.6	0.6	15.2
VUWH-12.7BF-FJT-V	1/2	12.7	G1/4	0.23	5.9	0.71	18	13/16	20.6	1.28	32.5	0.44	11.2	1.68	42.6	0.9	22.9
VUWH-12.7CF-FJT-V	1/2	12.7	G3/8	0.31	7.9	0.86	21.8	7/8	22.2	1.3	33	0.44	11.2	1.7	43.1	0.9	22.9
VUWH-12.7DF-FJT-V	1/2	12.7	G1/2	0.41	10.4	1.02	26	1 1/16	27	1.53	38.9	0.56	14.2	1.93	49	0.9	22.9
VUWH-19.05DF-FJT-V	3/4	19.05	G1/2	0.47	11.9	1.02	26	1 1/16	27	1.52	38.6	0.56	14.2	1.92	48.7	0.96	24.4
VUWH-19.05EF-FJT-V	3/4	19.05	G3/4	0.62	15.8	1.26	32	1 3/8	34.9	1.68	42.7	0.62	15.7	2.08	52.8	0.96	24.4
VUWH-25.4FF-FJT-V	1	25.4	G1	0.78	19.8	1.54	39	1 5/8	41.3	1.88	47.8	0.72	18.3	2.36	60	1.23	31.2

Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.

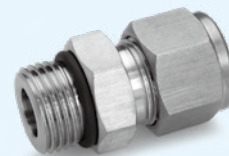
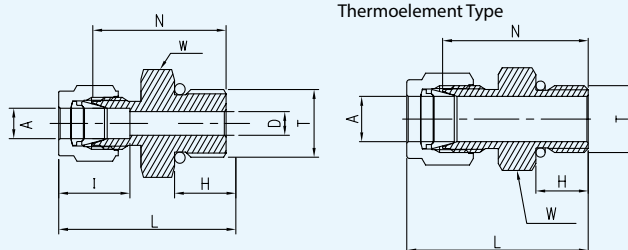
Seal Method (Male G Thread Side)

Please refer to page 38 for the Male G thread-side sealing method and compatible gaskets.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Connectors (UNF)

H



SAE/MS Straight Thread BOSS ※

Part Numbers	A Tube O.D.		T	D		W		N		H		L		I		O-ring ※※ size AS568	Thermoelement Type
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		
VUWH-1.6X5/16-V	1/16	1.58	5/16-24	0.05	1.25	7/16	11.1	0.83	21	0.3	7.6	0.98	24.8	0.34	8.6	-902	-
VUWH-3.2X5/16-V	1/8	3.17	5/16-24	0.09	2.3	7/16	11.1	0.92	23.4	0.3	7.6	1.18	30	0.5	12.7	-902	○
VUWH-3.2X7/16-V	1/8	3.17	7/16-20	0.09	2.3	9/16	14.3	0.98	24.9	0.36	9.1	1.24	31.5	0.5	12.7	-904	-
VUWH-3.2X9/16-V	1/8	3.17	9/16-18	0.09	2.3	11/16	17.5	1.05	26.7	0.39	9.9	1.31	33.3	0.5	12.7	-906	-
VUWH-6.35X5/16-V	1/4	6.35	5/16-24	0.09	2.3	9/16	14.3	0.92	23.4	0.3	7.6	1.21	30.8	0.6	15.2	-902	-
VUWH-6.35X7/16-V	1/4	6.35	7/16-20	0.19	4.8	9/16	14.3	1.05	26.7	0.36	9.1	1.34	34.1	0.6	15.2	-904	○
VUWH-6.35X9/16-V	1/4	6.35	9/16-18	0.19	4.8	11/16	17.5	1.11	28.2	0.39	9.9	1.4	35.6	0.6	15.2	-906	○
VUWH-6.35X3/4-V	1/4	6.35	3/4-16	0.19	4.8	7/8	22.2	1.19	30.2	0.44	11.2	1.48	37.6	0.6	15.2	-908	-
VUWH-6.35X7/8-V	1/4	6.35	7/8-14	0.19	4.8	1	25.4	1.31	33.3	0.5	12.7	1.6	40.7	0.6	15.2	-910	-
VUWH-7.93X1/2-V	5/16	7.93	1/2-20	0.25	6.4	5/8	15.9	1.08	27.4	0.36	9.1	1.37	34.8	0.64	16.3	-905	-
VUWH-9.52X7/16-V	3/8	9.52	7/16-20	0.2	5.1	5/8	15.9	1.11	28.2	0.36	9.1	1.4	35.6	0.66	16.8	-904	-
VUWH-9.52X9/16-V	3/8	9.52	9/16-18	0.28	7.1	11/16	17.5	1.17	29.7	0.39	9.9	1.46	37.1	0.66	16.8	-906	-
VUWH-9.52X3/4-V	3/8	9.52	3/4-16	0.28	7.1	7/8	22.2	1.25	31.8	0.44	11.2	1.54	39.2	0.66	16.8	-908	-
VUWH-9.52X7/8-V	3/8	9.52	7/8-14	0.28	7.1	1	25.4	1.37	34.8	0.5	12.7	1.66	42.2	0.66	16.8	-910	-
VUWH-9.52X1-5/16-V	3/8	9.52	1 5/16-12	0.28	7.1	1 1/2	38.1	1.66	42.2	0.59	15	1.95	49.6	0.66	16.8	-916	-
VUWH-12.7X9/16-V	1/2	12.7	9/16-18	0.28	7.1	13/16	20.6	1.14	29	0.39	9.9	1.54	39.1	0.9	22.9	-906	-
VUWH-12.7X3/4-V	1/2	12.7	3/4-16	0.41	10.4	7/8	22.2	1.25	31.8	0.44	11.2	1.65	41.9	0.9	22.9	-908	-
VUWH-12.7X7/8-V	1/2	12.7	7/8-14	0.41	10.4	1	25.4	1.37	34.8	0.5	12.7	1.77	44.9	0.9	22.9	-910	-
VUWH-12.7X1-1/16-V	1/2	12.7	1 1/16-12	0.41	10.4	1 1/4	31.8	1.53	38.9	0.59	15	1.93	49	0.9	22.9	-912	-
VUWH-15.88X3/4-V	5/8	15.87	3/4-16	0.42	10.7	15/16	23.8	1.25	31.8	0.44	11.2	1.65	41.9	0.96	24.4	-908	-
VUWH-15.88X7/8-V	5/8	15.87	7/8-14	0.5	12.7	1	25.4	1.38	35.1	0.5	12.7	1.78	45.2	0.96	24.4	-910	-
VUWH-19.05X3/4-V	3/4	19.05	3/4-16	0.42	10.7	1 1/16	27	1.41	35.8	0.44	11.2	1.81	45.9	0.96	24.4	-908	-
VUWH-19.05X7/8-V	3/4	19.05	7/8-14	0.5	12.7	1 1/16	27	1.47	37.3	0.5	12.7	1.87	47.4	0.96	24.4	-910	-
VUWH-19.05X1-1/16-V	3/4	19.05	1 1/16-12	0.62	15.8	1 1/4	31.8	1.53	38.9	0.59	15	1.93	49	0.96	24.4	-912	-
VUWH-19.05X1-5/16-V	3/4	19.05	1 5/16-12	0.62	15.8	1 1/2	38.1	1.66	42.2	0.59	15	2.06	52.3	0.96	24.4	-916	-
VUWH-22.22X1-3/16-V	7/8	22.22	1 3/16-12	0.72	18.3	1 3/8	34.9	1.53	38.9	0.59	15	1.93	49	1.02	25.9	-914	-
VUWH-25.4X3/4-V	1	25.4	3/4-16	0.42	10.7	1 3/8	34.9	1.57	40	0.44	11.2	2.06	52.2	1.23	31.2	-908	-
VUWH-25.4X1-1/16-V	1	25.4	1 1/16-12	0.66	16.8	1 3/8	34.9	1.62	41.2	0.59	15	2.1	53.4	1.23	31.2	-912	-
VUWH-25.4X1-5/16-V	1	25.4	1 5/16-12	0.88	22.3	1 1/2	38.1	1.66	42.2	0.59	15	2.14	54.4	1.23	31.2	-916	-

※ : Per SAE J1926 and MS 16142. See page 78 for mounting dimensions.

Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.

Tube (Metric) To Male UNF Thread

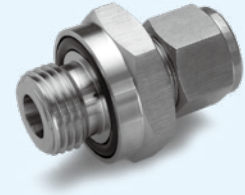
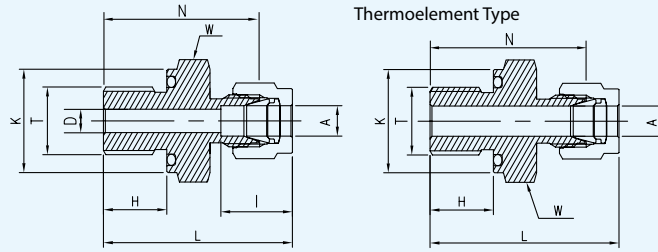
Part Numbers	A Tube O.D.		T	D		W		N		H		L		I		O-ring ※※ size AS568
	mm			in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWH-6X9/16-V	6		9/16-18	0.19	4.8	0.71	18	1.11	28.2	0.39	9.9	1.40	35.6	0.60	15.3	-906
VUWH-10X9/16-V	10		9/16-18	0.28	7.1	0.71	18	1.17	29.7	0.39	9.9	1.47	37.3	0.68	17.2	-906
VUWH-10X3/4-V	10		3/4-16	0.31	7.9	0.87	22	1.25	31.8	0.44	11.2	1.55	39.4	0.68	17.2	-908
VUWH-12X7/16-V	12		7/16-20	0.20	5.1	0.87	22	1.20	30.5	0.36	9.1	1.60	40.6	0.90	22.8	-904
VUWH-12X9/16-V	12		9/16-18	0.28	7.1	0.87	22	1.14	29	0.39	9.9	1.54	39.1	0.90	22.8	-906
VUWH-12X3/4-V	12		3/4-16	0.37	9.5	0.87	22	1.25	31.8	0.44	11.2	1.65	41.9	0.90	22.8	-908

※※ : O-rings used are Viton 90 Durometer. Other O-ring materials are available on request.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Connectors (NTP)

H



O-Seal NPT Tapered Thread

Part Numbers	A Tube O.D.		T	D		K		W		N		H		L		I		O-ring ※※ size AS568
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWH-3.2AN-OR-V	1/8	3.17	1/8NPT	0.09	2.3	0.74	18.8	3/4	19.1	1.03	26.2	0.28	7.1	1.29	32.8	0.5	12.7	-111
VUWH-6.35AN-OR-V	1/4	6.35	1/8NPT	0.19	4.8	0.74	18.8	3/4	19.1	1.09	27.7	0.28	7.1	1.38	35.1	0.6	15.2	-111
VUWH-6.35BN-OR-V	1/4	6.35	1/4NPT	0.19	4.8	0.93	23.6	15/16	23.8	1.22	31	0.38	9.7	1.51	38.4	0.6	15.2	-113
VUWH-9.52AN-OR-V	3/8	9.52	1/8NPT	0.19	4.8	0.74	18.8	3/4	19.1	1.16	29.5	0.28	7.1	1.45	36.8	0.66	16.8	-111
VUWH-9.52BN-OR-V	3/8	9.52	1/4NPT	0.28	7.1	0.93	23.6	15/16	23.8	1.28	32.5	0.38	9.7	1.57	39.9	0.66	16.8	-113
VUWH-9.52CN-OR-V	3/8	9.52	3/8NPT	0.28	7.1	1.12	28.4	1 1/8	28.6	1.34	34	0.41	10.4	1.63	41.4	0.66	16.8	-116
VUWH-9.52DN-OR-V	3/8	9.52	1/2NPT	0.28	7.1	1.3	33	1 5/16	33.3	1.56	39.6	0.53	13.5	1.85	47	0.66	16.8	-212
VUWH-12.7DN-OR-V	1/2	12.7	1/2NPT	0.41	10.4	1.3	33	1 5/16	33.3	1.56	39.6	0.53	13.5	1.96	49.8	0.9	22.9	-212

Male Connectors (UNF)

H

O-Seal Male UNF Thread

Part Numbers	A Tube O.D.		T	D		K		W		N		H		L		I		O-ring ※※ size AS568	Thermoelement Type
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		
VUWH-1.6X5/16-OR-V	1/16	1.58	5/16-24	0.05	1.3	0.55	14	9/16	14.3	0.9	22.9	0.34	8.6	1.05	26.7	0.34	8.6	-011	○
VUWH-3.2X5/16-OR-V	1/8	3.17	5/16-24	0.09	2.3	0.55	14	9/16	14.3	1.03	26.2	0.34	8.6	1.29	32.8	0.5	12.7	-011	-
VUWH-4.8X3/8-OR-V	3/16	4.76	3/8-24	0.12	3	0.62	15.7	5/8	15.9	1.09	27.7	0.38	9.7	1.35	34.3	0.54	13.7	-012	-
VUWH-6.35X5/16-OR-V	1/4	6.35	5/16-24	0.09	2.4	0.55	14	9/16	14.3	1.09	27.8	0.34	8.6	1.38	35.1	0.6	15.2	-011	-
VUWH-6.35X7/16-OR-V	1/4	6.35	7/16-20	0.19	4.8	0.74	18.8	3/4	19.1	1.22	31	0.41	10.4	1.51	38.4	0.6	15.2	-111	-
VUWH-7.93X1/2-OR-V	5/16	7.93	1/2-20	0.25	6.35	0.86	21.8	7/8	22.2	1.31	33.3	0.44	11.2	1.6	40.6	0.64	16.3	-112	-
VUWH-9.52X9/16-OR-V	3/8	9.52	9/16-18	0.28	7.1	0.93	23.6	15/16	23.8	1.38	35.1	0.47	11.9	1.67	42.4	0.66	16.8	-113	-
VUWH-12.7X3/4-OR-V	1/2	12.7	3/4-16	0.41	10.4	1.12	28.4	1 1/8	28.6	1.41	35.8	0.47	11.9	1.81	46	0.9	22.9	-116	-
VUWH-19.05X1-1/16-OR-V	3/4	19.05	1 1/16-12	0.62	15.7	1.49	37.8	1 1/2	38.1	1.66	42.2	0.56	14.2	2.06	52.3	0.96	24.4	-215	-
VUWH-25.4X1-5/16-OR-V	1	25.4	1 5/16-12	0.88	22.3	1.74	44.2	1 3/4	44.5	1.81	46	0.56	14.2	2.29	58.2	1.23	31.2	-219	-

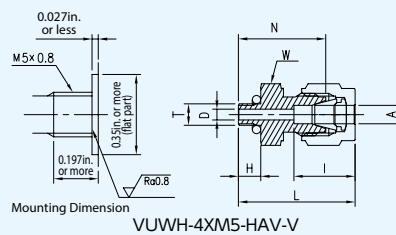
※※: O-rings used are BUNA 70 Durometer.

Thermoelement Type can also be manufactured.

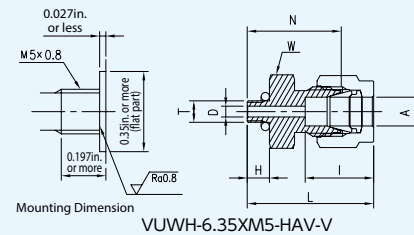
For ordering: use catalog number of the selected fitting and add the suffix T/C.

Male Connectors (Metric Thread)

H



VUWH-4XM5-HAV-V



VUWH-6.35XM5-HAV-V

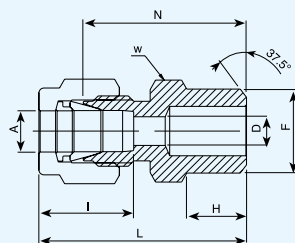
Tube (Metric, Inch) To Male Metric Thread Boss

Part Numbers	A Tube O.D.		T	D		W		N		H		L		I		O-ring ※※ size AS568
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWH-4XM5-HAV-V	-	4	M5X0.8	0.09	2.4	-	12	0.77	19.6	0.20	5	1.03	26.2	0.54	13.7	I.D. 3.8 C.S. 1.9
VUWH-6.35XM5-HAV-V	1/4	6.35	M5X0.8	0.09	2.4	9/16	14.3	0.83	21	0.20	5	1.12	28.4	0.60	15.2	I.D. 3.8 C.S. 1.9

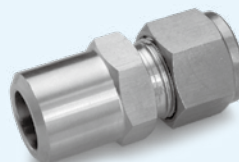
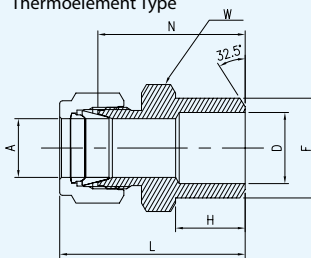
"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Pipe Weld Connectors

R



Thermoelement Type



Tube (Metric) To Pipe (ANSI)

Part Numbers	A Tube O.D.		F Tube size		D		W		N		H		L		I	
	mm	Nominal size	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
VUWR-3X10.3-V	3	1/8	10.3	2.4	12	23.9	9.7	30.5	12.9							
VUWR-4X10.3-V	4	1/8	10.3	2.4	12	24.6	9.7	31.2	13.7							
VUWR-6X10.3-V	6	1/8	10.3	4.8	14	25.4	9.7	32.8	15.3							
VUWR-6X13.7-V	6	1/4	13.7	4.8	14	30.5	14.2	37.9	15.3							
VUWR-8X10.3-V	8	1/8	10.3	5.1	15	26.7	9.7	34.2	16.2							
VUWR-8X13.7-V	8	1/4	13.7	6.4	15	31.2	14.2	38.7	16.2							
VUWR-8X21.3-V	8	1/2	21.3	6.4	22	38.1	19	45.6	16.2							
VUWR-10X10.3-V	10	1/8	10.3	5.1	18	28.7	9.7	36.3	17.2							
VUWR-10X13.7-V	10	1/4	13.7	7.1	18	33.3	14.2	40.9	17.2							
VUWR-10X17.1-V	10	3/8	17.1	7.9	18	33.3	14.2	40.9	17.2							
VUWR-10X21.3-V	10	1/2	21.3	7.9	22	38.9	19	46.5	17.2							
VUWR-12X13.7-V	12	1/4	13.7	7.1	22	33.3	14.2	43.4	22.8							
VUWR-12X17.1-V	12	3/8	17.1	9.5	22	33.3	14.2	43.4	22.8							
VUWR-12X21.3-V	12	1/2	21.3	9.5	22	38.9	19	49	22.8							
VUWR-12X26.7-V	12	3/4	26.7	9.5	27	40.4	19	50.5	22.8							
VUWR-12X33.4-V	12	1	33.4	9.5	35	47.6	23.9	57.7	22.8							
VUWR-14X17.1-V	14	3/8	17.1	10.4	24	34	14.2	44.1	24.4							
VUWR-14X21.3-V	14	1/2	21.3	11	24	38.9	19	49	24.4							
VUWR-15X21.3-V	15	1/2	21.3	11.9	24	38.9	19	49	24.4							
VUWR-16X21.3-V	16	1/2	21.3	12.7	24	38.9	19	49	24.4							
VUWR-18X21.3-V	18	1/2	21.3	13.5	27	40.4	19	50.5	24.4							
VUWR-20X21.3-V	20	1/2	21.3	13.5	30	42.2	19	52.3	26							
VUWR-20X26.7-V	20	3/4	26.7	15.8	30	44	19	54.1	24.4							

Tube (Inch) To Pipe (ANSI)

Part Numbers	A Tube O.D.		F Tube size		D		W		N		H		L		I		Thermoelement Type
	in	mm	Nominal size	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWR-3.2X10.3-V	1/8	3.17	1/8	10.3	0.09	2.3	7/16	11.1	0.94	23.9	0.38	9.7	1.2	30.5	0.5	12.7	○
VUWR-4.8X10.3-V	3/16	4.76	1/8	10.3	0.12	3.1	7/16	11.1	0.97	24.6	0.38	9.7	1.23	31.2	0.54	13.7	-
VUWR-6.35X10.3-V	1/4	6.35	1/8	10.3	0.19	4.8	1/2	12.7	1	25.4	0.38	9.7	1.29	32.8	0.6	15.2	-
VUWR-6.35X13.7-V	1/4	6.35	1/4	13.7	0.19	4.8	9/16	14.3	1.2	30.6	0.56	14.2	1.5	38	0.6	15.2	○
VUWR-6.35X21.3-T/C-V	1/4	6.35	1/2	21.3	0.53	13.5	7/8	22.2	1.53	38.9	0.75	19	1.82	46.3	-	-	○
VUWR-7.93X10.3-V	5/16	7.93	1/8	10.3	0.2	5.1	9/16	14.3	1.05	26.7	0.38	9.7	1.34	34.1	0.64	16.3	-
VUWR-7.93X13.7-V	5/16	7.93	1/4	13.7	0.25	6.4	9/16	14.3	1.23	31.3	0.56	14.2	1.52	38.7	0.64	16.3	○
VUWR-9.52X13.7-V	3/8	9.52	1/4	13.7	0.28	7.1	5/8	15.9	1.28	32.5	0.56	14.2	1.57	39.9	0.66	16.8	-
VUWR-9.52X17.1-V	3/8	9.52	3/8	17.1	0.28	7.1	11/16	17.5	1.28	32.5	0.56	14.2	1.57	39.9	0.66	16.8	-
VUWR-9.52X21.3-V	3/8	9.52	1/2	21.3	0.28	7.1	7/8	22.2	1.53	38.9	0.75	19	1.82	46.3	0.66	16.8	-
VUWR-9.52X26.7-V	3/8	9.52	3/4	26.7	0.28	7.1	1 1/16	27	1.59	40.4	0.75	19	1.88	47.8	0.66	16.8	-
VUWR-12.7X17.1-V	1/2	12.7	3/8	17.1	0.41	10.4	13/16	20.6	1.31	33.3	0.56	14.2	1.71	43.4	0.9	22.9	-
VUWR-12.7X21.3-V	1/2	12.7	1/2	21.3	0.41	10.4	7/8	22.2	1.53	38.9	0.75	19	1.93	49	0.9	22.9	○
VUWR-12.7X26.7-V	1/2	12.7	3/4	26.7	0.41	10.4	1 1/16	27	1.59	40.4	0.75	19	1.99	50.5	0.9	22.9	○
VUWR-12.7X33.4-V	1/2	12.7	1	33.4	0.41	10.4	1 3/8	34.9	1.87	47.5	0.94	23.9	2.27	57.6	0.9	22.9	○
VUWR-15.88X21.3-V	5/8	15.87	1/2	21.3	0.5	12.7	15/16	23.8	1.53	38.9	0.75	19	1.93	49	0.96	24.4	-
VUWR-19.05X13.7-V	3/4	19.05	1/4	13.7	0.28	7.1	1 1/16	27	1.5	38.1	0.56	14.2	1.9	48.2	0.96	24.4	-
VUWR-19.05X21.3-V	3/4	19.05	1/2	21.3	0.53	13.5	1 1/16	27	1.53	38.9	0.75	19	1.93	49	0.96	24.4	-
VUWR-19.05X26.7-V	3/4	19.05	3/4	26.7	0.62	15.7	1 1/16	27	1.59	40.4	0.75	19	1.99	50.5	0.96	24.4	-
VUWR-19.05X33.4-V	3/4	19.05	1	33.4	0.62	15.8	1 3/8	34.9	1.85	47	0.94	23.9	2.25	57.1	0.96	24.4	-
VUWR-25.4X21.3-V	1	25.4	1/2	21.3	0.53	13.5	1 3/8	34.9	1.68	42.7	0.75	19	2.16	54.9	1.23	31.2	-
VUWR-25.4X33.4-V	1	25.4	1	33.4	0.88	22.4	1 3/8	34.9	1.97	50	0.94	23.9	2.45	62.2	1.23	31.2	-

Tube (Inch) To Pipe (Inch)

Part Numbers	A Tube O.D.		F		D		W		N		H		L	
	in	mm	in	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
VUWR-14.2X27.2-T/C-V	9/16	14.29	3/4	27.2	19.4	30	40.5	19.1	50.6					

Thermoelement Type can also be manufactured.

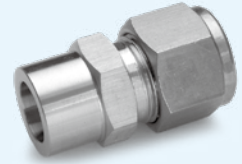
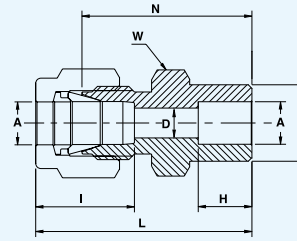
For ordering: use catalog number of the selected fitting and add the suffix T/C.

Some combinations of dimensions A and F may not be available.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Tube Socket Weld Unions

R



Tube (Inch) To Tube (Inch)

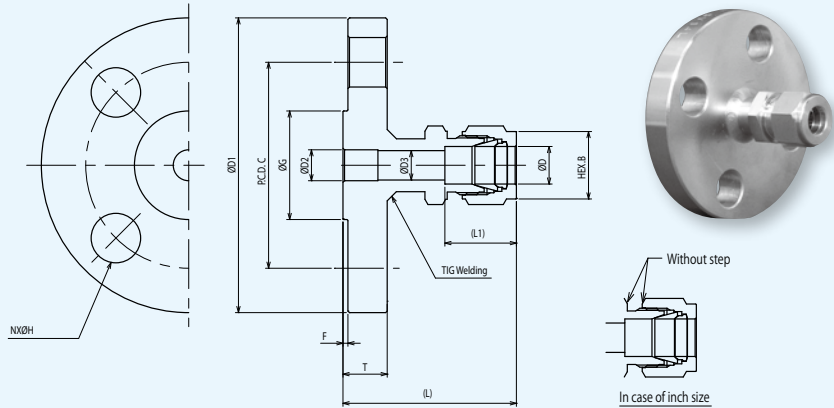
Part Numbers	A Tube O.D.		D		W		N		F		H		L		I	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWR-3.2X3.2F-V	1/8	3.17	0.09	2.3	7/16	11.1	0.88	22.4	0.31	7.9	0.25	6.4	1.14	29	0.5	12.7
VUWR-6.35X6.35F-V	1/4	6.35	0.19	4.8	1/2	12.7	1.03	26.2	0.44	11.2	0.31	7.9	1.32	33.6	0.6	15.2
VUWR-9.52X9.52F-V	3/8	9.52	0.28	7.1	5/8	15.9	1.19	30.2	0.62	15.8	0.38	9.7	1.48	37.6	0.66	16.8
VUWR-12.7X12.7F-V	1/2	12.7	0.41	10.4	13/16	20.6	1.22	31	0.75	19.1	0.5	12.7	1.62	41.1	0.9	22.9
VUWR-19.05X19.05F-V	3/4	19.05	0.62	15.8	1 1/16	27	1.31	33.3	1.05	26.7	0.56	14.2	1.71	43.4	0.96	24.4
VUWR-25.4X25.4F-V	1	25.4	0.88	22.3	1 3/8	34.9	1.59	40.4	1.36	34.5	0.76	19.2	2.07	52.6	1.23	31.2

Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.

Flange Unions

RF

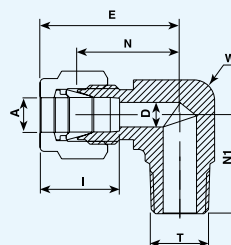


Part Numbers	Connection Flange Standard	Nominal Diameter		Dimensions inch (mm)												
		Fittings inch (mm)	Flanges (A)	L	L1	Flange								D2	D3	B
						D1	T	F	G	Bolt Holes						
										C	N	H				
VUWRF-12D-J10R-V	JIS 10K	— (12)	15	2.1 (53.4)	0.9 (22.8)	3.74 (95)	0.47 (12)	0.039 (1)	2.01 (51)	2.76 (70)	4	0.59 (15)	0.39 (10)	0.37 (9.5)	0.87 (22)	
VUWRF-12D-J20R-V	JIS 20K	— (12)	15	2.18 (55.4)	0.9 (22.8)	3.74 (95)	0.47 (14)	0.039 (1)	2.01 (51)	2.76 (70)	4	0.59 (15)	0.39 (10)	0.37 (9.5)	0.87 (22)	
VUWRF-12D-A2R-V	ANSI 150	— (12)	15	2.07 (52.6)	0.9 (22.8)	3.5 (88.9)	0.44 (11.2)	0.063 (1.6)	1.38 (35.1)	2.38 (60.5)	4	0.63 (16)	0.39 (10)	0.37 (9.5)	0.87 (22)	
VUWRF-12.7D-A2R-V		1/2 (12.7)	15	2.07 (52.6)	0.9 (22.9)										0.87 (22.2)	
VUWRF-12.7F-A2R-V			25	2.19 (55.7)	0.9 (22.9)										0.87 (22.2)	
VUWRF-12D-A3R-V	ANSI 300	— (12)	15	2.19 (55.7)	0.9 (22.8)	3.75 (95.3)	0.56 (14.3)	0.063 (1.6)	1.38 (35.1)	2.62 (66.6)	4	0.63 (16)	0.39 (10)	0.37 (9.5)	0.87 (22)	
VUWRF-12.7D-A3R-V		1/2 (12.7)		2.19 (55.7)	0.9 (22.9)										0.87 (22.2)	
VUWRF-12.7F-A3R-V			1/2 (12.7)	25	2.32 (59)	0.9 (22.9)	4.88 (124)	0.69 (17.6)	0.063 (1.6)	2 (50.8)	3.5 (88.9)	4	0.77 (19.5)	0.39 (10)	0.37 (9.5)	0.87 (22.2)
VUWRF-12.7D-A6R-V	ANSI 600	1/2 (12.7)	15	2.44 (62.1)	0.9 (22.9)	3.75 (95.3)	0.56 (14.3)	0.063 (1.6)	1.38 (35.1)	2.62 (66.6)	4	0.63 (16)	0.39 (10)	0.37 (9.5)	0.87 (22.2)	
VUWRF-12D-JP3R-V	JPI 300	12	15	2.19 (55.7)	0.9 (22.8)	3.74 (95)	0.56 (14.3)	0.063 (1.6)	1.38 (35.1)	2.62 (66.5)	4	0.63 (16)	0.39 (10)	0.37 (9.5)	0.87 (22)	

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Elbows (NPT)

L



Tube (Metric) To Male NPT Thread

Part Numbers	A Tube O.D.	T	D	W		N	E	N1	I
	mm		mm	in	mm	mm	mm	mm	mm
VUWL-3AN-V	3	1/8NPT	2.4	7/16	11.1	17	23.6	17.8	12.9
VUWL-3BN-V	3	1/4NPT	2.4	1/2	12.7	18	24.6	23.4	12.9
VUWL-4AN-V	4	1/8NPT	2.4	1/2	12.7	18.8	25.4	18.8	13.7
VUWL-4BN-V	4	1/4NPT	2.4	1/2	12.7	18.8	25.4	23.4	13.7
VUWL-6AN-V	6	1/8NPT	4.8	1/2	12.7	19.6	27	18.8	15.3
VUWL-6BN-V	6	1/4NPT	4.8	1/2	12.7	19.6	27	23.4	15.3
VUWL-6CN-V	6	3/8NPT	4.8	11/16	17.5	22.4	29.8	26.2	15.3
VUWL-6DN-V	6	1/2NPT	4.8	13/16	20.6	24.4	31.8	33	15.3
VUWL-8AN-V	8	1/8NPT	4.8	9/16	14.3	21.3	28.8	19.8	16.2
VUWL-8BN-V	8	1/4NPT	6.4	9/16	14.3	21.3	28.8	24.4	16.2
VUWL-8CN-V	8	3/8NPT	6.4	11/16	17.5	23.1	30.6	26.2	16.2
VUWL-8DN-V	8	1/2NPT	6.4	13/16	20.6	25.1	32.6	33	16.2
VUWL-10AN-V	10	1/8NPT	4.8	11/16	17.5	23.9	31.5	21.6	17.2
VUWL-10BN-V	10	1/4NPT	7.1	11/16	17.5	23.9	31.5	26.2	17.2
VUWL-10CN-V	10	3/8NPT	7.9	11/16	17.5	23.9	31.5	26.2	17.2
VUWL-10DN-V	10	1/2NPT	7.9	13/16	20.6	25.9	33.5	33	17.2
VUWL-10EN-V	10	3/4NPT	7.9	1 1/16	27	29.7	37.3	36.8	17.2
VUWL-12AN-V	12	1/8NPT	4.8	13/16	20.6	25.9	36	23.6	22.8
VUWL-12BN-V	12	1/4NPT	7.1	13/16	20.6	25.9	36	28.2	22.8
VUWL-12CN-V	12	3/8NPT	9.5	13/16	20.6	25.9	36	28.2	22.8
VUWL-12DN-V	12	1/2NPT	9.5	13/16	20.6	25.9	36	33	22.8
VUWL-12EN-V	12	3/4NPT	9.5	1 1/16	27	29.7	39.8	36.8	22.8
VUWL-15DN-V	15	1/2NPT	11.9	15/16	23.8	27.9	38	35.1	24.4
VUWL-16CN-V	16	3/8NPT	9.5	15/16	23.8	27.9	38	30.2	24.4
VUWL-16DN-V	16	1/2NPT	11.9	15/16	23.8	27.9	38	35.1	24.4
VUWL-16EN-V	16	3/4NPT	12.7	1 1/16	27	29.7	39.8	36.8	24.4
VUWL-18DN-V	18	1/2NPT	11.9	1 1/16	27	29.7	39.8	36.8	24.4
VUWL-18EN-V	18	3/4NPT	15.1	1 1/16	27	29.7	39.8	36.8	24.4
VUWL-20DN-V	20	1/2NPT	11.9	1 3/8	34.9	34.5	44.6	41.7	26
VUWL-20EN-V	20	3/4NPT	15.8	1 3/8	34.9	34.5	44.6	41.7	26
VUWL-22EN-V	22	3/4NPT	15.8	1 3/8	34.9	34.5	44.6	41.7	26
VUWL-22FN-V	22	1NPT	18.3	1 3/8	34.9	34.5	44.6	46.5	26
VUWL-25EN-V	25	3/4NPT	15.8	1 3/8	34.9	36.8	49	41.7	31.3
VUWL-25FN-V	25	1NPT	21.8	1 3/8	34.9	36.8	49	46.5	31.3

For inches, see next page

Reference Thread Specifications:

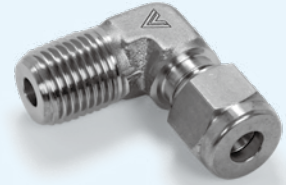
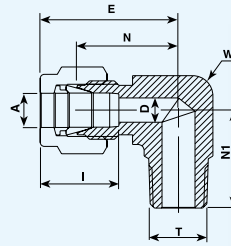
American Standard Pipe Thread (NPT).

NPT (National Pipe Tapered) is made to specifications outlined in ANSI B1.20.1.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Elbows (NPT)

L



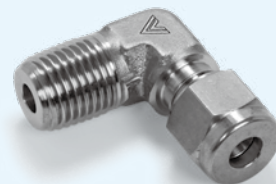
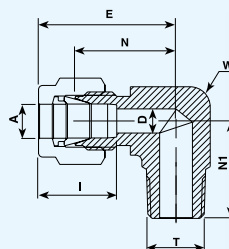
Tube (Inch) To Male NPT Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWL-1.6AN-V	1/16	1.58	1/8NPT	0.05	1.3	7/16	11.1	0.6	15.2	0.75	19	0.7	17.8	0.34	8.6
VUWL-3.2AN-V	1/8	3.17	1/8NPT	0.09	2.3	7/16	11.1	0.67	17	0.93	23.6	0.7	17.8	0.5	12.7
VUWL-3.2BN-V	1/8	3.17	1/4NPT	0.09	2.3	1/2	12.7	0.71	18	0.97	24.6	0.92	23.4	0.5	12.7
VUWL-4.8AN-V	3/16	4.76	1/8NPT	0.12	3.1	1/2	12.7	0.74	18.8	1	25.4	0.74	18.8	0.54	13.7
VUWL-4.8BN-V	3/16	4.76	1/4NPT	0.12	3.1	1/2	12.7	0.74	18.8	1	25.4	0.92	23.4	0.54	13.7
VUWL-6.35AN-V	1/4	6.35	1/8NPT	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.74	18.8	0.6	15.2
VUWL-6.35BN-V	1/4	6.35	1/4NPT	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.92	23.4	0.6	15.2
VUWL-6.35CN-V	1/4	6.35	3/8NPT	0.19	4.8	11/16	17.5	0.88	22.4	1.17	29.8	1.03	26.2	0.6	15.2
VUWL-6.35DN-V	1/4	6.35	1/2NPT	0.19	4.8	13/16	20.6	0.96	24.4	1.25	31.8	1.3	33	0.6	15.2
VUWL-7.93AN-V	5/16	7.93	1/8NPT	0.19	4.8	9/16	14.3	0.84	21.3	1.13	28.7	0.78	19.8	0.64	16.3
VUWL-7.93BN-V	5/16	7.93	1/4NPT	0.25	6.4	9/16	14.3	0.84	21.3	1.13	28.7	0.96	24.4	0.64	16.3
VUWL-7.93CN-V	5/16	7.93	3/8NPT	0.25	6.4	11/16	17.5	0.91	23.1	1.2	30.5	1.03	26.2	0.64	16.3
VUWL-9.52AN-V	3/8	9.52	1/8NPT	0.19	4.8	5/8	15.9	0.91	23.1	1.2	30.5	0.82	20.8	0.66	16.8
VUWL-9.52BN-V	3/8	9.52	1/4NPT	0.28	7.1	5/8	15.9	0.91	23.1	1.2	30.5	1	25.4	0.66	16.8
VUWL-9.52CN-V	3/8	9.52	3/8NPT	0.28	7.1	11/16	17.5	0.94	23.9	1.23	31.3	1.03	26.2	0.66	16.8
VUWL-9.52DN-V	3/8	9.52	1/2NPT	0.28	7.1	13/16	20.6	1.02	25.9	1.31	33.3	1.3	33	0.66	16.8
VUWL-9.52EN-V	3/8	9.52	3/4NPT	0.28	7.1	1 1/16	27	1.17	29.7	1.46	37.1	1.45	36.8	0.66	16.8
VUWL-12.7AN-V	1/2	12.7	1/8NPT	0.19	4.8	13/16	20.6	1.02	25.9	1.42	36	0.95	24.2	0.9	22.9
VUWL-12.7BN-V	1/2	12.7	1/4NPT	0.28	7.1	13/16	20.6	1.02	25.9	1.42	36	1.11	28.2	0.9	22.9
VUWL-12.7CN-V	1/2	12.7	3/8NPT	0.37	9.5	13/16	20.6	1.02	25.9	1.42	36	1.11	28.2	0.9	22.9
VUWL-12.7DN-V	1/2	12.7	1/2NPT	0.41	10.4	13/16	20.6	1.02	25.9	1.42	36	1.3	33	0.9	22.9
VUWL-12.7EN-V	1/2	12.7	3/4NPT	0.41	10.4	1 1/16	27	1.17	29.7	1.57	39.8	1.45	36.8	0.9	22.9
VUWL-15.88CN-V	5/8	15.87	3/8NPT	0.37	9.5	15/16	23.8	1.1	27.9	1.5	38	1.19	30.2	0.96	24.4
VUWL-15.88DN-V	5/8	15.87	1/2NPT	0.47	11.9	15/16	23.8	1.1	27.9	1.5	38	1.38	35.1	0.96	24.4
VUWL-15.88EN-V	5/8	15.87	3/4NPT	0.50	12.7	1 1/16	27	1.17	29.7	1.57	39.8	1.45	36.8	0.96	24.4
VUWL-19.05CN-V	3/4	19.05	3/8NPT	0.38	9.7	1 1/16	27	1.17	29.7	1.57	39.8	1.27	32.2	0.96	24.4
VUWL-19.05DN-V	3/4	19.05	1/2NPT	0.47	11.9	1 1/16	27	1.17	29.7	1.57	39.8	1.45	36.8	0.96	24.4
VUWL-19.05EN-V	3/4	19.05	3/4NPT	0.62	15.8	1 1/16	27	1.17	29.7	1.57	39.8	1.45	36.8	0.96	24.4
VUWL-19.05FN-V	3/4	19.05	1NPT	0.62	15.8	1 3/8	34.9	1.45	36.8	1.85	46.9	1.83	46.5	0.96	24.4
VUWL-22.22EN-V	7/8	22.22	3/4NPT	0.62	15.8	1 3/8	34.9	1.36	34.5	1.76	44.6	1.64	41.7	1.02	25.9
VUWL-25.4EN-V	1	25.4	3/4NPT	0.62	15.8	1 3/8	34.9	1.45	36.8	1.93	49	1.64	41.7	1.23	31.2
VUWL-25.4FN-V	1	25.4	1NPT	0.86	21.8	1 3/8	34.9	1.45	36.8	1.93	49	1.83	46.5	1.23	31.2

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Elbows (R)

L



Tube (Metric) To ISO Tapered Thread

Part Numbers	A Tube O.D.	T	D	W		N	E	N ₁	I
	mm		mm	in	mm	mm	mm	mm	mm
VUWL-3A-V	3	R 1/8	2.4	7/16	11.1	17	23.6	17.8	12.9
VUWL-3B-V	3	R 1/4	2.4	1/2	12.7	18	24.6	23.4	12.9
VUWL-4A-V	4	R 1/8	2.4	1/2	12.7	18.8	25.4	18.8	13.7
VUWL-4B-V	4	R 1/4	2.4	1/2	12.7	18.8	25.4	23.4	13.7
VUWL-6A-V	6	R 1/8	4.8	1/2	12.7	19.6	27	18.8	15.3
VUWL-6B-V	6	R 1/4	4.8	1/2	12.7	19.6	27	23.4	15.3
VUWL-6C-V	6	R 3/8	4.8	11/16	17.5	22.4	29.8	26.2	15.3
VUWL-6D-V	6	R 1/2	4.8	13/16	20.6	24.4	31.8	33	15.3
VUWL-8A-V	8	R 1/8	4.8	9/16	14.3	21.3	28.8	19.8	16.2
VUWL-8B-V	8	R 1/4	6.4	9/16	14.3	21.3	28.8	24.4	16.2
VUWL-8C-V	8	R 3/8	6.4	11/16	17.5	23.1	30.6	26.2	16.2
VUWL-8D-V	8	R 1/2	6.4	13/16	20.6	25.1	32.6	33	16.2
VUWL-10A-V	10	R 1/8	4.8	11/16	17.5	23.9	31.5	21.6	17.2
VUWL-10B-V	10	R 1/4	7.1	11/16	17.5	23.9	31.5	26.2	17.2
VUWL-10C-V	10	R 3/8	7.9	11/16	17.5	23.9	31.5	26.2	17.2
VUWL-10D-V	10	R 1/2	7.9	13/16	20.6	25.9	33.5	33	17.2
VUWL-12A-V	12	R 1/8	4.8	13/16	20.6	25.9	36	23.6	22.8
VUWL-12B-V	12	R 1/4	7.1	13/16	20.6	25.9	36	28.2	22.8
VUWL-12C-V	12	R 3/8	9.5	13/16	20.6	25.9	36	28.2	22.8
VUWL-12D-V	12	R 1/2	9.5	13/16	20.6	25.9	36	33	22.8
VUWL-12E-V	12	R 3/4	9.5	1 1/16	27	29.7	39.8	36.8	22.8
VUWL-12F-V	12	R 1	9.5	1 3/8	34.9	34.5	44.6	46.5	22.8
VUWL-14D-V	14	R 1/2	11	15/16	23.8	27.9	38	35	24.4
VUWL-15C-V	15	R 3/8	9.7	15/16	23.8	27.9	38	30.2	24.4
VUWL-15D-V	15	R 1/2	11.9	15/16	23.8	27.9	38	35.1	24.4
VUWL-16B-V	16	R 1/4	7.1	15/16	23.8	27.9	38	30.2	24.4
VUWL-16C-V	16	R 3/8	9.5	15/16	23.8	27.9	38	30.2	24.4
VUWL-16D-V	16	R 1/2	11.9	15/16	23.8	27.9	38	35.1	24.4
VUWL-18D-V	18	R 1/2	11.9	1 1/16	27	29.7	39.8	36.8	24.4
VUWL-18E-V	18	R 3/4	15.1	1 1/16	27	29.7	39.8	36.8	24.4
VUWL-20D-V	20	R 1/2	11.9	1 3/8	34.9	34.5	44.6	41.7	26
VUWL-20E-V	20	R 3/4	15.8	1 3/8	34.9	34.5	44.6	41.7	26
VUWL-22E-V	22	R 3/4	15.8	1 3/8	34.9	34.5	44.6	41.7	26
VUWL-22F-V	22	R 1	18.3	1 3/8	34.9	34.5	44.6	46.5	26
VUWL-25E-V	25	R 3/4	15.9	1 3/8	34.9	36.8	49	41.7	31.3
VUWL-25F-V	25	R 1	21.8	1 3/8	34.9	36.8	49	46.5	31.3

Reference Thread Specifications:

DIN - 2999
BS - 21
JIS - B0203
ISO - 1/7-BSP-T

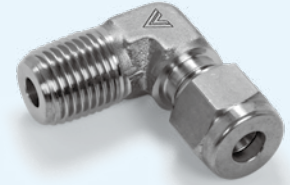
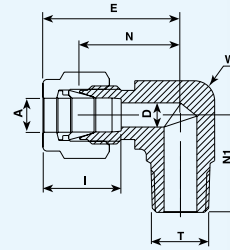
Designation:

R marking on hex.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Elbows (R)

L



Tube (Inch) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWL-1.6A-V	1/16	1.58	R 1/8	0.05	1.3	7/16	11.1	0.6	15.2	0.75	19	0.7	17.8	0.34	8.6
VUWL-3.2A-V	1/8	3.17	R 1/8	0.09	2.3	7/16	11.1	0.67	17	0.93	23.6	0.7	17.8	0.5	12.7
VUWL-3.2B-V	1/8	3.17	R 1/4	0.09	2.3	1/2	12.7	0.71	18	0.97	24.6	0.92	23.4	0.5	12.7
VUWL-3.2C-V	1/8	3.17	R 3/8	0.09	2.3	11/16	17.5	0.88	22.4	1.14	29	1.03	26.2	0.5	12.7
VUWL-4.8A-V	3/16	4.76	R 1/8	0.12	3.1	1/2	12.7	0.74	18.8	1	25.4	0.74	18.8	0.54	13.7
VUWL-4.8B-V	3/16	4.76	R 1/4	0.12	3.1	1/2	12.7	0.74	18.8	1	25.4	0.92	23.4	0.54	13.7
VUWL-6.35A-V	1/4	6.35	R 1/8	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.74	18.8	0.6	15.2
VUWL-6.35B-V	1/4	6.35	R 1/4	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.92	23.4	0.6	15.2
VUWL-6.35C-V	1/4	6.35	R 3/8	0.19	4.8	11/16	17.5	0.88	22.4	1.17	29.8	1.03	26.2	0.6	15.2
VUWL-6.35D-V	1/4	6.35	R 1/2	0.19	4.8	13/16	20.6	0.96	24.4	1.25	31.8	1.3	33	0.6	15.2
VUWL-6.35E-V	1/4	6.35	R 3/4	0.19	4.8	1 1/16	27	1.07	27.2	1.36	34.6	1.45	36.8	0.6	15.2
VUWL-7.93A-V	5/16	7.93	R 1/8	0.19	4.8	9/16	14.3	0.84	21.3	1.13	28.7	0.78	19.8	0.64	16.3
VUWL-7.93B-V	5/16	7.93	R 1/4	0.25	6.4	9/16	14.3	0.84	21.3	1.13	28.7	0.96	24.4	0.64	16.3
VUWL-7.93C-V	5/16	7.93	R 3/8	0.25	6.4	11/16	17.5	0.91	23.1	1.2	30.5	1.03	26.2	0.64	16.3
VUWL-9.52A-V	3/8	9.52	R 1/8	0.19	4.8	5/8	15.9	0.91	23.1	1.2	30.5	0.82	20.8	0.66	16.8
VUWL-9.52B-V	3/8	9.52	R 1/4	0.28	7.1	5/8	15.9	0.91	23.1	1.2	30.5	1	25.4	0.66	16.8
VUWL-9.52C-V	3/8	9.52	R 3/8	0.28	7.1	11/16	17.5	0.94	23.9	1.23	31.3	1.03	26.2	0.66	16.8
VUWL-9.52D-V	3/8	9.52	R 1/2	0.28	7.1	13/16	20.6	1.02	25.9	1.31	33.3	1.3	33	0.66	16.8
VUWL-9.52E-V	3/8	9.52	R 3/4	0.28	7.1	1 1/16	27	1.17	29.7	1.46	37.1	1.45	36.8	0.66	16.8
VUWL-12.7B-V	1/2	12.7	R 1/4	0.28	7.1	13/16	20.6	1.02	25.9	1.42	36	1.11	28.2	0.9	22.9
VUWL-12.7C-V	1/2	12.7	R 3/8	0.37	9.5	13/16	20.6	1.02	25.9	1.42	36	1.11	28.2	0.9	22.9
VUWL-12.7D-V	1/2	12.7	R 1/2	0.41	10.4	13/16	20.6	1.02	25.9	1.42	36	1.3	33	0.9	22.9
VUWL-12.7E-V	1/2	12.7	R 3/4	0.41	10.4	1 1/16	27	1.17	29.7	1.57	39.8	1.45	36.8	0.9	22.9
VUWL-12.7F-V	1/2	12.7	R 1	0.41	10.4	1 3/8	34.9	1.36	34.5	1.76	44.6	1.83	46.5	0.9	22.9
VUWL-15.88C-V	5/8	15.87	R 3/8	0.38	9.7	15/16	23.8	1.1	27.9	1.5	38	1.19	30.2	0.96	24.4
VUWL-15.88D-V	5/8	15.87	R 1/2	0.47	11.9	15/16	23.8	1.1	27.9	1.5	38	1.38	35.1	0.96	24.4
VUWL-15.88E-V	5/8	15.87	R 3/4	0.5	12.7	1 1/16	27	1.17	29.7	1.57	39.8	1.45	36.8	0.96	24.4
VUWL-19.05C-V	3/4	19.05	R 3/8	0.38	9.7	1 1/16	27	1.17	29.7	1.57	39.8	1.27	32.2	0.96	24.4
VUWL-19.05D-V	3/4	19.05	R 1/2	0.47	11.9	1 1/16	27	1.17	29.7	1.57	39.8	1.45	36.8	0.96	24.4
VUWL-19.05E-V	3/4	19.05	R 3/4	0.62	15.8	1 1/16	27	1.17	29.7	1.57	39.8	1.45	36.8	0.96	24.4
VUWL-22.22E-V	7/8	22.22	R 3/4	0.62	15.8	1 3/8	34.9	1.36	34.5	1.76	44.6	1.64	41.7	1.02	25.9
VUWL-25.4E-V	1	25.4	R 3/4	0.63	15.9	1 3/8	34.9	1.45	36.8	1.93	49	1.64	41.7	1.23	31.2
VUWL-25.4F-V	1	25.4	R 1	0.86	21.8	1 3/8	34.9	1.45	36.8	1.93	49	1.83	46.5	1.23	31.2

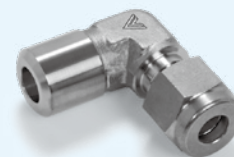
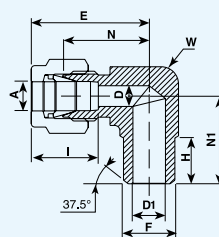
Designation:

R marking on hex.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Pipe Weld Elbows

LR



Tube (Metric) To Pipe (ANSI)

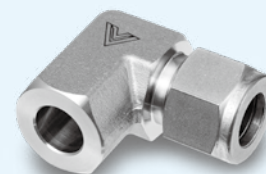
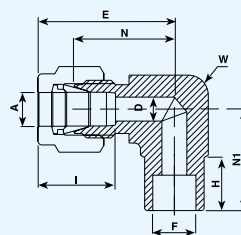
Part Number	A	F		D		D1		W		N		E		N1		I	
	Tube O.D. mm	Pipe size. Nominal size		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
VUWLR-12X21.3-V	12	1/2		21.3	0.37	9.5	0.53	13.5	13/16	20.6	1.02	25.9	1.42	36	1.3	33	0.90

Tube (Inch) To Pipe (ANSI)

Part Numbers	A		F		D		D1		W		N		H		E		N1		I	
	Tube O.D.		Pipe size.																	
	in	mm	Nominal size	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWLR-6.35X10.3-V	1/4	6.35	1/8	10.3	0.19	4.8	0.19	4.8	1/2	12.7	0.77	19.6	0.38	9.7	1.06	27	0.74	18.8	0.6	15.2
VUWLR-6.35X13.7-V	1/4	6.35	1/4	13.7	0.19	4.8	0.28	7.1	1/2	12.7	0.77	19.6	-	-	1.06	27	0.92	23.4	0.6	15.2
VUWLR-9.52X13.7-V	3/8	9.52	1/4	13.7	0.28	7.1	0.28	7.1	5/8	15.9	0.91	23.1	0.56	14.2	1.2	30.5	1	25.4	0.66	16.8
VUWLR-9.52X17.1-V	3/8	9.52	3/8	17.1	0.28	7.1	0.41	10.4	11/16	17.5	0.94	23.9	0.56	14.2	1.23	31.3	1.03	26.2	0.66	16.8
VUWLR-12.7X21.3-V	1/2	12.7	1/2	21.3	0.41	10.4	0.53	13.5	13/16	20.6	1.02	25.9	-	-	1.42	36	1.3	33	0.9	22.9
VUWLR-19.05X26.7-V	3/4	19.05	3/4	26.7	0.62	15.7	0.62	15.7	1 1/16	27	1.17	29.7	0.75	19	1.57	39.8	1.45	36.8	0.96	24.4

Tube Socket Weld Elbows

LR



Tube (Inch) To Tube (Inch)

Part Numbers	A		F		D		W		N		H		E		N1		I	
	Tube O.D.		Tube O.D.															
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWLR-6.35X6.35F-V	1/4	6.35	1/4	6.35	0.19	4.8	1/2	12.7	0.77	19.6	0.31	7.9	1.06	27	0.77	19.6	0.6	15.2
VUWLR-9.52X9.52F-V	3/8	9.52	3/8	9.52	0.28	7.1	5/8	15.9	0.91	23.1	0.38	9.7	1.2	30.5	0.91	23.1	0.66	16.8
VUWLR-12.7X12.7F-V	1/2	12.7	1/2	12.7	0.41	10.4	15/16	23.8	1.02	25.9	0.5	12.7	1.42	36	1.02	25.9	0.9	22.9

Reducing Elbows

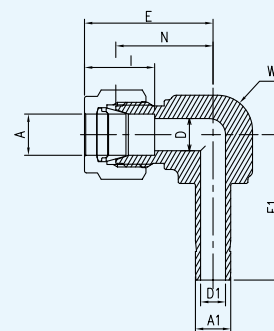
LR

Tube (Metric) To Tube (Metric)

Part Numbers	A		A1		E		E1		I		D		D1		W		N	
	Tube O.D.		Tube O.D.															
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	in	mm	mm	mm
VUWLR-6X6-V	6	6	6	6	27	23.8	15.3	4.8	4	1/2	12.7	19.6						
VUWLR-12X12-V	12	12	12	12	38.1	38.1	22.8	9.5	8.8	15/16	23.8	28						

Tube (Inch) To Tube (Inch)

Part Numbers	A		A1		E		E1		I		D		D1		W		N	
	Tube O.D.		Tube O.D.															
	in	mm	in	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	in	mm	mm	mm
VUWLR-6.35X6.35-V	1/4	6.35	1/4	6.35	27	23.8	15.2	4.8	4.2	1/2	12.7	19.6						
VUWLR-9.52X9.52-V	3/8	9.52	3/8	9.52	30.5	31.5	16.8	7.1	6.8	5/8	15.9	23.1						



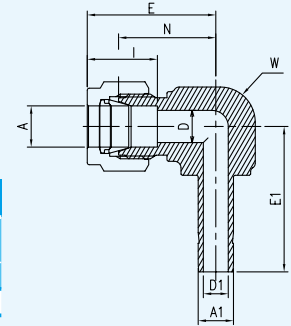
"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Reducing Elbows

LR

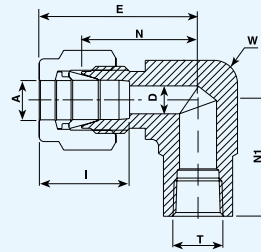
Tube (Metric) To Tube (Inch)

Part Number	A Tube O.D.	A1 Tube O.D.		E	E1	I	D	D1	W		N
	mm	in	mm	mm	mm	mm	mm	mm	in	mm	mm
VUWLR-12X12.7-V	12	1/2	12.7	38.1	38.1	22.8	9.5	9.4	15/16	23.8	28



Female Elbows (NPT)

LG



Tube (Metric) To Female NPT Thread

Part Numbers	A Tube O.D.	T	D		W		N	E	N1	I
	mm		mm		in	mm	mm	mm	mm	mm
VUWLG-6AN-V	6	1/8NPT	4.8		1/2	12.7	19.6	27	19	15.3
VUWLG-6BN-V	6	1/4NPT	4.8		11/16	17.5	22.4	29.8	22.4	15.3
VUWLG-8AN-V	8	1/8NPT	6.4		9/16	14.3	21.3	28.8	19	16.2
VUWLG-8BN-V	8	1/4NPT	6.4		11/16	17.5	23.1	30.6	22.4	16.2
VUWLG-10AN-V	10	1/8NPT	7.9		11/16	17.5	23.9	31.5	19	17.2
VUWLG-10BN-V	10	1/4NPT	7.9		13/16	20.6	25.9	33.5	22.4	17.2
VUWLG-10CN-V	10	3/8NPT	7.9		15/16	23.8	25.9	33.5	22.4	17.2
VUWLG-12BN-V	12	1/4NPT	9.5		13/16	20.6	25.9	36	22.4	22.8
VUWLG-12CN-V	12	3/8NPT	9.5		15/16	23.8	25.9	36	22.4	22.8
VUWLG-12DN-V	12	1/2NPT	9.5		1 1/16	27	28.7	38.8	28.4	22.8

Tube (Inch) To Female NPT Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWLG-3.2AN-V	1/8	3.17	1/8NPT	0.09	2.3	1/2	12.7	0.71	18	0.97	24.6	0.75	19.1	0.5	12.7
VUWLG-3.2BN-V	1/8	3.17	1/4NPT	0.09	2.3	11/16	17.5	0.82	20.8	1.08	27.4	0.88	22.4	0.5	12.7
VUWLG-4.8AN-V	3/16	4.76	1/8NPT	0.12	3.1	1/2	12.7	0.74	18.8	1	25.4	0.75	19.1	0.54	13.7
VUWLG-6.35AN-V	1/4	6.35	1/8NPT	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.75	19.1	0.6	15.2
VUWLG-6.35BN-V	1/4	6.35	1/4NPT	0.19	4.8	11/16	17.5	0.88	22.4	1.17	29.8	0.88	22.4	0.6	15.2
VUWLG-6.35CN-V	1/4	6.35	3/8NPT	0.19	4.8	15/16	23.8	0.96	24.4	1.25	31.8	0.88	22.4	0.6	15.2
VUWLG-6.35DN-V	1/4	6.35	1/2NPT	0.19	4.8	1 1/16	27	1.07	27.2	1.36	34.6	1.12	28.5	0.6	15.2
VUWLG-7.93AN-V	5/16	7.93	1/8NPT	0.25	6.4	9/16	14.3	0.84	21.3	1.13	28.7	0.75	19.1	0.64	16.3
VUWLG-7.93BN-V	5/16	7.93	1/4NPT	0.25	6.4	11/16	17.5	0.91	23.1	1.2	30.5	0.88	22.4	0.64	16.3
VUWLG-9.52AN-V	3/8	9.52	1/8NPT	0.28	7.1	5/8	15.9	0.91	23.1	1.2	30.5	0.75	19.1	0.66	16.8
VUWLG-9.52BN-V	3/8	9.52	1/4NPT	0.28	7.1	11/16	17.5	0.94	23.9	1.23	31.3	0.88	22.4	0.66	16.8
VUWLG-9.52CN-V	3/8	9.52	3/8NPT	0.28	7.1	15/16	23.8	1.02	25.9	1.31	33.3	0.88	22.4	0.66	16.8
VUWLG-9.52DN-V	3/8	9.52	1/2NPT	0.28	7.1	1 1/16	27	1.12	28.7	1.42	36.1	1.12	28.5	0.66	16.8
VUWLG-12.7BN-V	1/2	12.7	1/4NPT	0.41	10.4	13/16	20.6	1.02	25.9	1.42	36	0.88	22.4	0.9	22.9
VUWLG-12.7CN-V	1/2	12.7	3/8NPT	0.41	10.4	15/16	23.8	1.02	25.9	1.42	36	0.88	22.4	0.9	22.9
VUWLG-12.7DN-V	1/2	12.7	1/2NPT	0.41	10.4	1 1/16	27	1.12	28.7	1.53	38.8	1.12	28.5	0.9	22.9
VUWLG-15.88CN-V	5/8	15.87	3/8NPT	0.5	12.7	15/16	23.8	1.1	27.9	1.5	38	0.88	22.4	0.96	24.4
VUWLG-15.88DN-V	5/8	15.87	1/2NPT	0.5	12.7	1 1/16	27	1.17	29.7	1.57	39.8	1.12	28.5	0.96	24.4
VUWLG-19.05DN-V	3/4	19.05	1/2NPT	0.62	15.8	1 1/16	27	1.17	29.7	1.57	39.8	1.12	28.5	0.96	24.4
VUWLG-19.05EN-V	3/4	19.05	3/4NPT	0.62	15.8	1 3/8	34.9	1.36	34.5	1.76	44.6	1.25	31.8	1.02	25.9
VUWLG-22.22EN-V	7/8	22.22	3/4NPT	0.72	18.3	1 3/8	34.9	1.36	34.5	1.76	44.6	1.25	31.8	1.02	25.9
VUWLG-25.4EN-V	1	25.4	3/4NPT	0.88	22.3	1 3/8	34.9	1.45	36.8	1.93	49	1.25	31.8	1.23	31.2
VUWLG-25.4FN-V	1	25.4	1NPT	0.88	22.3	1 11/16	42.9	1.63	41.4	2.11	53.6	1.5	38.1	1.23	31.2

Reference Thread Specifications:

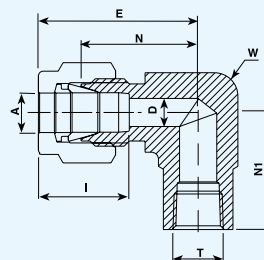
American Standard Pipe Thread (NPT).

NPT (National Pipe Tapered) is made to specifications outlined in ANSI B1.20.1.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Female Elbows (Rc)

LG



Tube (Metric) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWLG-4B-V		4	Rc 1/4		2.4	11/16	17.5		21.7		28.3		22.4		13.7
VUWLG-6A-V		6	Rc 1/8		4.8	1/2	12.7		19.6		27		19		15.3
VUWLG-6B-V		6	Rc 1/4		4.8	11/16	17.5		22.4		29.8		22.4		15.3
VUWLG-8B-V		8	Rc 1/4		6.4	11/16	17.5		23.1		30.6		22.4		16.2
VUWLG-8C-V		8	Rc 3/8		6.4	15/16	23.8		25.9		33.4		22.4		16.2
VUWLG-10A-V		10	Rc 1/8		7.9	11/16	17.5		23.9		31.5		19		17.2
VUWLG-10B-V		10	Rc 1/4		7.9	13/16	20.6		25.9		33.5		22.4		17.2
VUWLG-10C-V		10	Rc 3/8		7.9	15/16	23.8		25.9		33.5		22.4		17.2
VUWLG-12B-V		12	Rc 1/4		9.5	13/16	20.6		25.9		36		22.4		22.8
VUWLG-12C-V		12	Rc 3/8		9.5	15/16	23.8		25.9		36		22.4		22.8
VUWLG-12D-V		12	Rc 1/2		9.5	1 1/16	27		28.7		38.8		28.4		22.8
VUWLG-16D-V		16	Rc 1/2		12.7	1 1/16	27		29.7		39.8		28.4		24.4

Tube (Inch) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWLG-3.2A-V	1/8	3.17	Rc 1/8	0.09	2.3	1/2	12.7	0.71	18	0.97	24.6	0.75	19.1	0.5	12.7
VUWLG-3.2B-V	1/8	3.17	Rc 1/4	0.09	2.3	11/16	17.5	0.82	20.8	1.08	27.4	0.94	22.4	0.5	12.7
VUWLG-4.8A-V	3/16	4.76	Rc 1/8	0.12	3.1	1/2	12.7	0.74	18.8	1	25.4	0.75	19.1	0.54	13.7
VUWLG-6.35A-V	1/4	6.35	Rc 1/8	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.75	19.1	0.6	15.2
VUWLG-6.35B-V	1/4	6.35	Rc 1/4	0.19	4.8	11/16	17.5	0.88	22.4	1.17	29.8	0.88	22.4	0.6	15.2
VUWLG-6.35C-V	1/4	6.35	Rc 3/8	0.19	4.8	15/16	23.8	0.96	24.4	1.25	34.6	0.88	22.4	0.6	15.2
VUWLG-6.35D-V	1/4	6.35	Rc 1/2	0.19	4.8	1 1/16	27	1.07	27.2	1.36	34.6	1.12	28.5	0.6	15.2
VUWLG-7.93A-V	5/16	7.93	Rc 1/8	0.25	6.4	9/16	14.3	0.84	21.3	1.13	28.7	0.75	19.1	0.64	16.3
VUWLG-7.93B-V	5/16	7.93	Rc 1/4	0.25	6.4	11/16	17.5	0.91	23.1	1.2	30.5	0.88	22.4	0.64	16.3
VUWLG-9.52A-V	3/8	9.52	Rc 1/8	0.28	7.1	5/8	15.9	0.91	23.1	1.2	30.5	0.75	19.1	0.66	16.8
VUWLG-9.52B-V	3/8	9.52	Rc 1/4	0.28	7.1	11/16	17.5	0.94	23.9	1.23	31.3	0.88	22.4	0.66	16.8
VUWLG-9.52C-V	3/8	9.52	Rc 3/8	0.28	7.1	15/16	23.8	1.02	25.9	1.31	33.3	0.88	22.4	0.66	16.8
VUWLG-9.52D-V	3/8	9.52	Rc 1/2	0.28	7.1	1 1/16	27	1.12	28.7	1.42	36.1	1.12	28.5	0.66	16.8
VUWLG-12.7B-V	1/2	12.7	Rc 1/4	0.41	10.4	13/16	20.6	1.02	25.9	1.42	36	0.88	22.4	0.9	22.9
VUWLG-12.7C-V	1/2	12.7	Rc 3/8	0.41	10.4	15/16	23.8	1.02	25.9	1.42	36	0.88	22.4	0.9	22.9
VUWLG-12.7D-V	1/2	12.7	Rc 1/2	0.41	10.4	1 1/16	27	1.12	28.7	1.53	38.8	1.12	28.5	0.9	22.9
VUWLG-15.88C-V	5/8	15.87	Rc 3/8	0.5	12.7	15/16	23.8	1.1	27.9	1.5	38	0.88	22.4	0.96	24.4
VUWLG-15.88D-V	5/8	15.87	Rc 1/2	0.5	12.7	1 1/16	27	1.17	29.7	1.57	39.8	1.12	28.5	0.96	24.4
VUWLG-19.05D-V	3/4	19.05	Rc 1/2	0.62	15.8	1 1/16	27	1.17	29.7	1.57	39.8	1.12	28.5	0.96	24.4
VUWLG-19.05E-V	3/4	19.05	Rc 3/4	0.62	15.8	1 3/8	34.9	1.36	34.5	1.76	44.6	1.25	31.8	0.96	24.4
VUWLG-22.22E-V	7/8	22.22	Rc 3/4	0.72	18.3	1 3/8	34.9	1.36	34.5	1.76	44.6	1.25	31.8	1.02	25.9
VUWLG-25.4E-V	1	25.4	Rc 3/4	0.88	22.3	1 3/8	34.9	1.45	36.8	1.93	49	1.25	31.8	1.23	31.2
VUWLG-25.4F-V	1	25.4	Rc 1	0.88	22.3	1 11/16	42.9	1.63	41.4	2.11	53.6	1.5	38.1	1.23	31.2

Designation:

R marking on hex.

Reference Thread Specifications:

DIN - ISO 2999

BS - 21

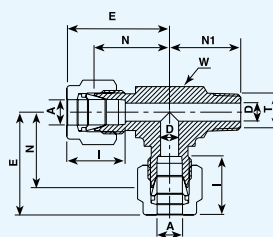
JIS - B0203

ISO - 7/1-BSP-T

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Run Tees (NPT)

TL



Tube (Metric) To Male NPT Thread

Part Numbers	A Tube O.D.	T	D	W		N		E		N1		I	
	mm		mm	in	mm	mm	mm	mm	mm	mm	mm	mm	mm
VUWTL-6AN-V	6	1/8NPT	4.8	1/2	12.7	19.6	27	18.8	15.3				
VUWTL-6BN-V	6	1/4NPT	4.8	1/2	12.7	19.6	27	23.4	15.3				
VUWTL-8AN-V	8	1/8NPT	4.8	5/8	15.9	22.4	29.9	20.8	16.2				
VUWTL-8BN-V	8	1/4NPT	6.4	5/8	15.9	22.4	29.9	25.4	16.2				
VUWTL-10BN-V	10	1/4NPT	7.1	13/16	20.6	25.9	33.5	28.2	17.2				
VUWTL-12BN-V	12	1/4NPT	7.1	13/16	20.6	25.9	36	28.2	22.8				
VUWTL-12CN-V	12	3/8NPT	9.5	13/16	20.6	25.9	36	28.2	22.8				
VUWTL-12DN-V	12	1/2NPT	9.5	13/16	20.6	25.9	36	33	22.8				
VUWTL-16DN-V	16	1/2NPT	11.9	15/16	23.8	28	38.1	35	24.4				

Tube (Inch) To Male NPT Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWTL-3.2AN-V	1/8	3.17	1/8NPT	0.09	2.3	7/16	11.1	0.67	17	0.93	23.6	0.7	17.8	0.5	12.7
VUWTL-3.2BN-V	1/8	3.17	1/4NPT	0.09	2.3	1/2	12.7	0.71	18	0.97	24.6	0.92	23.4	0.5	12.7
VUWTL-4.8AN-V	3/16	4.76	1/8NPT	0.12	3.1	7/16	11.1	0.7	17.8	0.96	24.4	0.7	17.8	0.54	13.7
VUWTL-6.35AN-V	1/4	6.35	1/8NPT	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.74	18.8	0.6	15.2
VUWTL-6.35BN-V	1/4	6.35	1/4NPT	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.92	23.4	0.6	15.2
VUWTL-7.93AN-V	5/16	7.93	1/8NPT	0.19	4.8	5/8	15.9	0.88	22.4	1.17	29.8	0.82	20.8	0.64	16.3
VUWTL-9.52BN-V	3/8	9.52	1/4NPT	0.28	7.1	5/8	15.9	0.91	23.1	1.2	30.5	1	25.4	0.66	16.8
VUWTL-9.52CN-V	3/8	9.52	3/8NPT	0.28	7.1	13/16	20.6	1.02	25.9	1.31	33.3	1.11	28.2	0.66	16.8
VUWTL-12.7CN-V	1/2	12.7	3/8NPT	0.38	9.5	13/16	20.6	1.02	25.9	1.42	36	1.11	28.2	0.9	22.9
VUWTL-12.7DN-V	1/2	12.7	1/2NPT	0.41	10.4	13/16	20.6	1.02	25.9	1.42	36	1.3	33	0.9	22.9
VUWTL-15.88DN-V	5/8	15.87	1/2NPT	0.47	11.9	15/16	23.8	1.1	27.9	1.5	38	1.38	35.1	0.96	24.4
VUWTL-19.05EN-V	3/4	19.05	3/4NPT	0.62	15.8	1 1/16	27	1.17	29.7	1.57	39.8	1.45	36.8	0.96	24.4

Reference Thread Specifications:

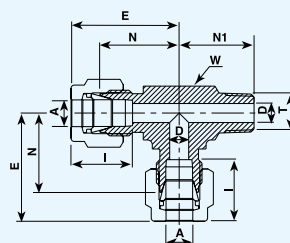
American Standard Pipe Thread (NPT).

NPT (National Pipe Tapered) is made to specifications outlined in ANSI B1.20.1.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Run Tees (R)

TL



Tube (Metric) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWTL-4A-V		4	R 1/8		2.4	7/16	11.1		17.8		24.4		17.8		13.7
VUWTL-6A-V		6	R 1/8		4.8	1/2	12.7		19.6		27		18.8		15.3
VUWTL-6B-V		6	R 1/4		4.8	1/2	12.7		19.6		27		23.4		15.3
VUWTL-6C-V		6	R 3/8		4.8	13/16	20.6		24.3		31.7		28.2		15.3
VUWTL-8A-V		8	R 1/8		4.8	5/8	15.9		22.4		29.9		20.8		16.2
VUWTL-8B-V		8	R 1/4		6.4	5/8	15.9		22.4		29.9		25.4		16.2
VUWTL-10B-V		10	R 1/4		7.1	13/16	20.6		25.9		33.5		28.2		17.2
VUWTL-10C-V		10	R 3/8		7.9	13/16	20.6		23.9		31.5		28.2		17.2
VUWTL-10D-V		10	R 1/2		7.9	13/16	20.6		25.9		33.5		33		17.2
VUWTL-12B-V		12	R 1/4		7.1	13/16	20.6		25.9		36		28.2		22.8
VUWTL-12C-V		12	R 3/8		9.5	13/16	20.6		25.9		36		28.2		22.8
VUWTL-12D-V		12	R 1/2		9.5	13/16	20.6		25.9		36		33		22.8
VUWTL-16D-V		16	R 1/2		11.9	15/16	23.8		28		38.1		35		24.4

Tube (Inch) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWTL-1.6A-V	1/16	1.58	R 1/8	0.05	1.3	7/16	11.1	0.60	15.2	0.75	19	0.7	17.8	0.34	8.6
VUWTL-3.2A-V	1/8	3.17	R 1/8	0.09	2.3	7/16	11.1	0.67	17	0.93	23.6	0.7	17.8	0.5	12.7
VUWTL-3.2B-V	1/8	3.17	R 1/4	0.09	2.3	1/2	12.7	0.71	18	0.96	24.4	0.92	23.4	0.5	12.7
VUWTL-4.8A-V	3/16	4.76	R 1/8	0.12	3.1	7/16	11.1	0.7	17.8	0.96	24.4	0.7	17.8	0.54	13.7
VUWTL-6.35A-V	1/4	6.35	R 1/8	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.74	18.8	0.6	15.2
VUWTL-6.35B-V	1/4	6.35	R 1/4	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.92	23.4	0.6	15.2
VUWTL-6.35C-V	1/4	6.35	R 3/8	0.19	4.8	13/16	20.6	1.02	25.9	1.31	33.3	1.11	28.2	0.6	15.2
VUWTL-7.93A-V	5/16	7.93	R 1/8	0.19	4.8	5/8	15.9	0.88	22.4	1.17	29.8	0.82	20.8	0.64	16.3
VUWTL-9.52B-V	3/8	9.52	R 1/4	0.28	7.1	5/8	15.9	0.91	23.1	1.2	30.5	1	25.4	0.66	16.8
VUWTL-9.52C-V	3/8	9.52	R 3/8	0.28	7.1	13/16	20.6	1.02	25.9	1.31	33.3	1.11	28.2	0.66	16.8
VUWTL-9.52D-V	3/8	9.52	R 1/2	0.28	7.1	13/16	20.6	1.02	25.9	1.31	33.3	1.3	33	0.66	16.8
VUWTL-12.7C-V	1/2	12.7	R 3/8	0.38	9.5	13/16	20.6	1.02	25.9	1.42	36	1.11	28.2	0.9	22.9
VUWTL-12.7D-V	1/2	12.7	R 1/2	0.41	10.4	13/16	20.6	1.02	25.9	1.42	36	1.3	33	0.9	22.9
VUWTL-15.88D-V	5/8	15.87	R 1/2	0.47	11.9	15/16	23.8	1.1	27.9	1.5	38	1.38	35.1	0.96	24.4
VUWTL-19.05E-V	3/4	19.05	R 3/4	0.62	15.8	1 1/16	27	1.17	29.7	1.57	39.8	1.45	36.8	0.96	24.4

Designation:

R marking on hex.

Reference Thread Specifications:

DIN - ISO 2999

BS - 21

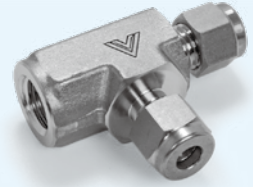
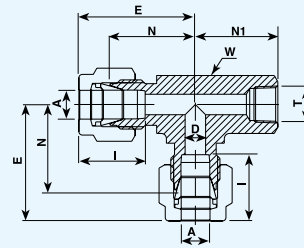
JIS - B0203

ISO - 7/1-BSP-T

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Female Run Tees (NPT)

TLG



Tube (Metric) To Female NPT Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWTLG-6AN-V		6	1/8NPT	0.19	4.8	5/8	15.9	0.77	19.6	1.06	27	0.74	19	0.6	15.3
VUWTLG-6BN-V		6	1/4NPT	0.19	4.8	13/16	20.6	0.88	22.4	1.17	29.8	0.88	22.4	0.6	15.3
VUWTLG-8AN-V		8	1/8NPT	0.25	6.4	5/8	15.9	0.88	22.4	1.18	29.9	0.75	19	0.64	16.2
VUWTLG-10BN-V		10	1/4NPT	0.31	7.9	13/16	20.6	1.02	25.9	1.32	33.5	0.88	22.4	0.68	17.2
VUWTLG-12BN-V		12	1/4NPT	0.37	9.5	13/16	20.6	1.01	25.9	1.41	36	0.88	22.4	0.9	22.8
VUWTLG-12DN-V		12	1/2NPT	0.37	9.5	1 1/16	27	1.17	29.7	1.57	39.8	1.12	28.4	0.9	22.8
VUWTLG-16DN-V		16	1/2NPT	0.5	12.7	1 1/16	27	1.17	29.7	1.57	39.8	1.12	28.4	0.96	24.4

Tube (Inch) To Female NPT Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWTLG-3.2AN-V	1/8	3.17	1/8NPT	0.09	2.3	5/8	15.9	0.71	18	0.97	24.4	0.75	19.1	0.5	12.7
VUWTLG-6.35AN-V	1/4	6.35	1/8NPT	0.19	4.8	5/8	15.9	0.77	19.6	1.06	26.9	0.75	19.1	0.6	15.2
VUWTLG-6.35BN-V	1/4	6.35	1/4NPT	0.19	4.8	13/16	20.6	0.88	22.4	1.17	29.8	0.88	22.4	0.6	15.2
VUWTLG-6.35CN-V	1/4	6.35	3/8NPT	0.19	4.8	15/16	23.8	0.97	24.4	1.25	31.8	0.88	22.4	0.6	15.2
VUWTLG-9.52BN-V	3/8	9.52	1/4NPT	0.28	7.1	13/16	20.6	0.94	23.9	1.23	31.3	0.88	22.4	0.66	16.8
VUWTLG-12.7CN-V	1/2	12.7	3/8NPT	0.41	10.4	15/16	23.8	1.02	25.9	1.42	36	0.88	22.4	0.9	22.9
VUWTLG-12.7DN-V	1/2	12.7	1/2NPT	0.41	10.4	1 1/16	27	1.17	29.7	1.57	39.8	1.12	28.5	0.9	22.9
VUWTLG-19.05EN-V	3/4	19.05	3/4NPT	0.62	15.8	1 3/8	34.9	1.36	34.5	1.76	44.6	1.25	31.8	0.96	24.4
VUWTLG-25.4EN-V	1	25.4	3/4NPT	0.88	22.3	1 3/8	34.9	1.45	36.8	1.93	49	1.25	31.8	1.23	31.2

Reference Thread Specifications:

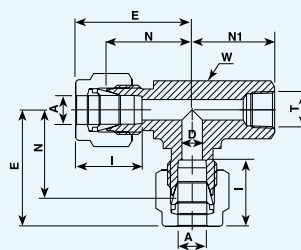
American Standard Pipe Thread (NPT).

NPT (National Pipe Tapered) is made to specifications outlined in ANSI B1.20.1.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Female Run Tees (Rc)

TLG



Tube (Metric) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWTLG-6A-V	1/8	3.17	Rc 1/8	0.09	2.3	5/8	15.9	0.77	19.6	1.06	27	0.74	19	0.6	15.3
VUWTLG-6B-V	1/4	6.35	Rc 1/4	0.19	4.8	13/16	20.6	0.88	22.4	1.17	29.8	0.88	22.4	0.6	15.3
VUWTLG-8B-V	1/4	6.35	Rc 1/4	0.19	4.8	13/16	20.6	0.91	23.1	1.20	30.6	0.88	22.4	0.64	16.2
VUWTLG-10B-V	3/8	9.52	Rc 1/4	0.28	7.1	13/16	20.6	1.02	25.9	1.32	33.5	0.88	22.4	0.68	17.2
VUWTLG-10C-V	1/2	12.7	Rc 3/8	0.41	10.4	15/16	23.8	1.02	25.9	1.32	33.5	0.88	22.4	0.68	17.2
VUWTLG-12B-V	1/2	12.7	Rc 1/4	0.37	9.5	13/16	20.6	1.01	25.9	1.41	36	0.88	22.4	0.89	22.8
VUWTLG-12D-V	1/2	12.7	Rc 1/2	0.37	9.5	1 1/16	27	1.16	29.7	1.57	39.8	1.12	28.4	0.89	22.8

Tube (Inch) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWTLG-3.2A-V	1/8	3.17	Rc 1/8	0.09	2.3	5/8	15.9	0.71	18	0.97	24.6	0.75	19.1	0.5	12.7
VUWTLG-6.35A-V	1/4	6.35	Rc 1/8	0.19	4.8	5/8	15.9	0.77	19.6	1.06	27	0.75	19.1	0.6	15.2
VUWTLG-6.35B-V	1/4	6.35	Rc 1/4	0.19	4.8	13/16	20.6	0.88	22.4	1.17	29.8	0.88	22.4	0.6	15.2
VUWTLG-9.52B-V	3/8	9.52	Rc 1/4	0.28	7.1	13/16	20.6	0.94	23.9	1.23	31.3	0.88	22.4	0.66	16.8
VUWTLG-12.7A-V	1/2	12.7	Rc 1/8	0.41	10.4	13/16	20.6	1.02	25.9	1.42	36	0.88	22.4	0.9	22.9
VUWTLG-12.7C-V	1/2	12.7	Rc 3/8	0.41	10.4	15/16	23.8	1.02	25.9	1.42	36	0.88	22.4	0.9	22.9
VUWTLG-12.7D-V	1/2	12.7	Rc 1/2	0.41	10.4	1 1/16	27	1.17	29.7	1.57	39.8	1.12	28.5	0.9	22.9
VUWTLG-19.05E-V	3/4	19.05	Rc 3/4	0.62	15.8	1 3/8	34.9	1.36	34.5	1.76	44.6	1.25	31.8	0.9	24.4
VUWTLG-25.4B-V	1	25.4	Rc 1/4	0.88	22.3	1 3/8	34.9	1.45	36.8	1.93	49	1.42	36.1	1.23	31.2
VUWTLG-25.4C-V	1	25.4	Rc 3/8	0.88	22.3	1 3/8	34.9	1.45	36.8	1.93	49	1.42	36.1	1.23	31.2
VUWTLG-25.4D-V	1	25.4	Rc 1/2	0.88	22.3	1 3/8	34.9	1.45	36.8	1.93	49	1.42	36.1	1.23	31.2
VUWTLG-25.4E-V	1	25.4	Rc 3/4	0.88	22.3	1 3/8	34.9	1.45	36.8	1.93	49	1.25	31.8	1.23	31.2
VUWTLG-25.4F-V	1	25.4	Rc 1	0.88	22.3	1 11/16	42.9	1.63	41.4	2.11	53.6	1.5	38.1	1.23	31.2

Designation:

R marking on hex.

Reference Thread Specifications:

DIN - ISO 2999

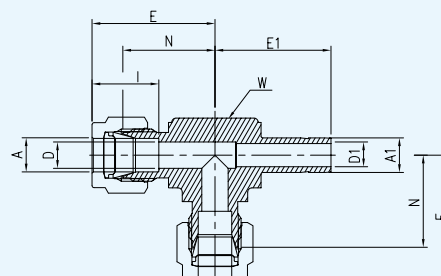
BS - 21

JIS - B0203

ISO - 7/1-BSP-T

Adapter Run Tees

TLR



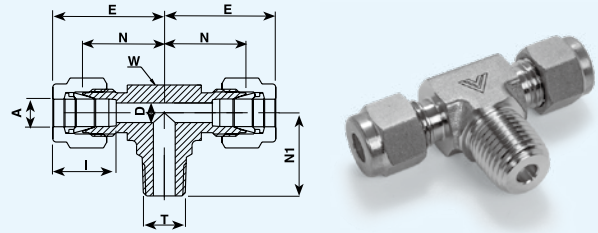
Tube (Inch) To Tube (Inch)

Part Numbers	A Tube O.D.		A1 Tube O.D.		E	E1	I	D	D1	W		N
	in	mm	in	mm						in	mm	
VUWTLR-3.2X3.2-V	1/8	3.17	1/8	3.17	24.6	22.8	12.7	2.3	2	1/2	12.7	18
VUWTLR-6.35X6.35-V	1/4	6.35	1/4	6.35	27	23.8	15.2	4.8	4.2	1/2	12.7	19.6
VUWTLR-9.52X9.52-V	3/8	9.52	3/8	9.52	30.5	28.2	16.8	7.1	6.8	5/8	15.9	23.1

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Branch Tees (NPT)

TS



Tube (Metric) To Male NPT Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWTS-6AN-V		6	1/8NPT		4.8	1/2	12.7		19.6		27		18.8		15.3
VUWTS-6BN-V		6	1/4NPT		4.8	1/2	12.7		19.6		27		23.4		15.3
VUWTS-8AN-V		8	1/8NPT		4.8	5/8	15.9		22.4		29.9		20.8		16.2
VUWTS-8BN-V		8	1/4NPT		6.4	5/8	15.9		22.4		29.9		25.4		16.2
VUWTS-10BN-V		10	1/4NPT		7.1	13/16	20.6		25.9		33.5		28.2		17.2
VUWTS-12AN-V		12	1/8NPT		4.8	13/16	20.6		25.9		36		23		22.8
VUWTS-12BN-V		12	1/4NPT		7.1	13/16	20.6		25.9		36		28.2		22.8
VUWTS-12CN-V		12	3/8NPT		9.5	13/16	20.6		25.9		36		28.2		22.8
VUWTS-12DN-V		12	1/2NPT		9.5	13/16	20.6		25.9		36		33		22.8
VUWTS-16DN-V		16	1/2NPT		11.9	15/16	23.8		28.7		38.8		35.8		24.4

Tube (Inch) To Male NPT Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWTS-3.2AN-V	1/8	3.17	1/8NPT	0.09	2.3	7/16	11.1	0.67	17	0.93	23.6	0.7	17.8	0.5	12.7
VUWTS-3.2BN-V	1/8	3.17	1/4NPT	0.09	2.3	1/2	12.7	0.71	18	0.97	24.6	0.92	23.3	0.5	12.7
VUWTS-4.8AN-V	3/16	4.76	1/8NPT	0.12	3.1	7/16	11.1	0.7	17.8	0.96	24.4	0.7	17.8	0.54	13.7
VUWTS-6.35AN-V	1/4	6.35	1/8NPT	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.74	18.8	0.6	15.2
VUWTS-6.35BN-V	1/4	6.35	1/4NPT	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.92	23.4	0.6	15.2
VUWTS-6.35CN-V	1/4	6.35	3/8NPT	0.19	4.8	13/16	20.6	0.88	22.4	1.17	29.8	1.03	26.2	0.6	15.2
VUWTS-7.93AN-V	5/16	7.93	1/8NPT	0.19	4.8	5/8	15.9	0.88	22.4	1.17	29.8	0.82	20.8	0.64	16.3
VUWTS-9.52BN-V	3/8	9.52	1/4NPT	0.28	7.1	5/8	15.9	0.91	23.1	1.2	30.5	1	25.4	0.66	16.8
VUWTS-9.52CN-V	3/8	9.52	3/8NPT	0.28	7.1	13/16	20.6	1.02	25.9	1.31	33.3	1.11	28.2	0.66	16.8
VUWTS-12.7CN-V	1/2	12.7	3/8NPT	0.38	9.5	13/16	20.6	1.02	25.9	1.42	36	1.11	28.2	0.9	22.9
VUWTS-12.7DN-V	1/2	12.7	1/2NPT	0.41	10.4	13/16	20.6	1.02	26	1.42	36	1.3	33	0.9	22.9
VUWTS-15.88DN-V	5/8	15.87	1/2NPT	0.47	11.9	15/16	23.8	1.13	28.7	1.53	38.8	1.41	35.8	0.96	24.4
VUWTS-19.05EN-V	3/4	19.05	3/4NPT	0.62	15.8	1 1/16	27	1.17	29.7	1.57	39.8	1.45	36.8	0.96	24.4

Reference Thread Specifications:

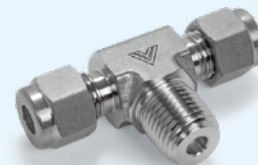
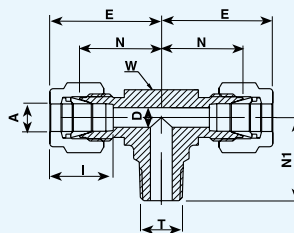
American Standard Pipe Thread (NPT).

NPT (National Pipe Tapered) is made to specifications outlined in ANSI B1.20.1.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Branch Tees (R)

TS



Tube (Metric) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N ₁		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWTS-3B-V		3	R 1/4		2.4	1/2	12.7		18		24.6		23.4		12.9
VUWTS-4A-V		4	R 1/8		2.4	1/2	12.7		18.8		25.4		18.8		13.7
VUWTS-4B-V		4	R 1/4		2.4	1/2	12.7		18.8		25.4		23.4		13.7
VUWTS-6A-V		6	R 1/8		4.8	1/2	12.7		19.6		27		18.8		15.3
VUWTS-6B-V		6	R 1/4		4.8	1/2	12.7		19.6		27		23.4		15.3
VUWTS-6C-V		6	R 3/8		4.8	13/16	20.6		22.4		29.8		26.2		15.3
VUWTS-8A-V		8	R 1/8		4.8	5/8	15.9		22.4		29.9		20.8		16.2
VUWTS-8B-V		8	R 1/4		6.4	5/8	15.9		22.4		29.9		25.4		16.2
VUWTS-8C-V		8	R 3/8		6.4	13/16	20.6		23.9		31.4		26.2		16.2
VUWTS-10B-V		10	R 1/4		7.1	13/16	20.6		25.9		33.5		28.2		17.2
VUWTS-10C-V		10	R 3/8		7.9	13/16	20.6		23.9		31.5		26.2		17.2
VUWTS-10D-V		10	R 1/2		7.9	13/16	20.6		25.9		33.5		33		17.2
VUWTS-12B-V		12	R 1/4		7.1	13/16	20.6		25.9		36		28.2		22.8
VUWTS-12C-V		12	R 3/8		9.5	13/16	20.6		25.9		36		28.2		22.8
VUWTS-12D-V		12	R 1/2		9.5	13/16	20.6		25.9		36		33		22.8
VUWTS-15D-V		15	R 1/2		11.9	15/16	23.8		28.7		38.8		35.8		24.4
VUWTS-16D-V		16	R 1/2		11.9	15/16	23.8		28.7		38.8		35.8		24.4

Tube (Inch) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N ₁		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWTS-3.2A-V	1/8	3.17	R 1/8	0.09	2.3	7/16	11.1	0.67	17	0.93	23.6	0.7	17.8	0.5	12.7
VUWTS-3.2B-V	1/8	3.17	R 1/4	0.09	2.3	1/2	12.7	0.71	18	0.97	24.6	0.92	23.3	0.5	12.7
VUWTS-4.8A-V	3/16	4.76	R 1/8	0.12	3.1	7/16	11.1	0.7	17.8	0.96	24.4	0.7	17.8	0.54	13.7
VUWTS-6.35A-V	1/4	6.35	R 1/8	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.74	18.8	0.6	15.2
VUWTS-6.35B-V	1/4	6.35	R 1/4	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.92	23.4	0.6	15.2
VUWTS-6.35C-V	1/4	6.35	R 3/8	0.19	4.8	13/16	20.6	0.88	22.4	1.17	29.8	1.03	26.2	0.6	15.2
VUWTS-7.93A-V	5/16	7.93	R 1/8	0.19	4.8	5/8	15.9	0.88	22.4	1.17	29.8	0.82	20.8	0.64	16.3
VUWTS-9.52A-V	3/8	9.52	R 1/8	0.19	4.8	5/8	15.9	0.91	23.1	1.2	30.5	0.82	20.8	0.66	16.8
VUWTS-9.52B-V	3/8	9.52	R 1/4	0.28	7.1	5/8	15.9	0.91	23.1	1.2	30.5	1	25.4	0.66	16.8
VUWTS-9.52C-V	3/8	9.52	R 3/8	0.28	7.1	13/16	20.6	1.02	25.9	1.31	33.3	1.11	28.2	0.66	16.8
VUWTS-12.7B-V	1/2	12.7	R 1/4	0.28	7.1	13/16	20.6	1.02	25.9	1.42	36	1.11	28.2	0.9	22.9
VUWTS-12.7C-V	1/2	12.7	R 3/8	0.38	9.5	13/16	20.6	1.02	25.9	1.42	36	1.11	28.2	0.9	22.9
VUWTS-12.7D-V	1/2	12.7	R 1/2	0.41	10.4	13/16	20.6	1.02	25.9	1.42	36	1.3	33	0.9	22.9
VUWTS-15.88D-V	5/8	15.87	R 1/2	0.47	11.9	15/16	23.8	1.13	28.7	1.53	38.8	1.41	35.8	0.96	24.4
VUWTS-19.05D-V	3/4	19.05	R 1/2	0.47	11.9	1 1/16	27	1.17	29.7	1.57	39.8	1.45	36.8	0.96	24.4
VUWTS-19.05E-V	3/4	19.05	R 3/4	0.62	15.8	1 1/16	27	1.17	29.7	1.57	39.8	1.45	36.8	0.96	24.4

Designation:

R marking on hex.

Reference Thread Specifications:

DIN - ISO 2999

BS - 21

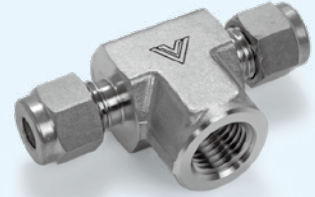
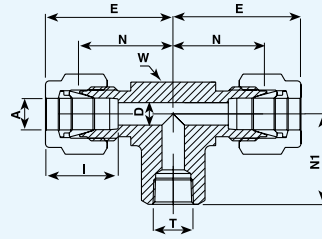
JIS - B0203

ISO - 7/1-BSP-T

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Female Branch Tees (NPT)

TG



Tube (Metric) To Female NPT Thread

Part Numbers	A Tube O.D.	T	D	W		N		E		N1		I	
	mm		mm	in	mm	mm	mm	mm	mm	mm	mm	mm	mm
VUWTG-6AN-V	6	1/8NPT	4.8	5/8	15.9		19.6		27		19		15.3
VUWTG-6BN-V	6	1/4NPT	4.8	13/16	20.6		22.4		29.8		22.4		15.3
VUWTG-8BN-V	8	1/4NPT	6.4	13/16	20.6		23.1		30.6		22.4		16.2
VUWTG-10BN-V	10	1/4NPT	7.9	13/16	20.6		25.9		33.5		22.4		17.2
VUWTG-10CN-V	10	3/8NPT	7.9	15/16	23.8		25.9		33.5		22.4		17.2
VUWTG-12BN-V	12	1/4NPT	9.5	13/16	20.6		25.9		36		22.4		22.8
VUWTG-12CN-V	12	3/8NPT	9.5	15/16	23.8		25.9		36		22.4		22.8
VUWTG-12DN-V	12	1/2NPT	9.5	1 1/16	27		28.7		38.8		28.4		22.8
VUWTG-16DN-V	16	1/2NPT	12.7	1 1/16	27		28.7		38.8		28.4		24.4

Tube (Inch) To Female NPT Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWTG-3.2AN-V	1/8	3.17	1/8NPT	0.09	2.3	5/8	15.9	0.7	18	0.97	24.6	0.75	19.1	0.5	12.7
VUWTG-6.35AN-V	1/4	6.35	1/8NPT	0.19	4.8	5/8	15.9	0.77	19.6	1.06	27	0.75	19.1	0.6	15.2
VUWTG-6.35BN-V	1/4	6.35	1/4NPT	0.19	4.8	13/16	20.6	0.88	22.4	1.17	29.8	0.88	22.4	0.6	15.2
VUWTG-6.35CN-V	1/4	6.35	3/8NPT	0.19	4.8	15/16	23.8	0.96	24.4	1.25	31.8	0.88	22.4	0.6	15.2
VUWTG-9.52BN-V	3/8	9.52	1/4NPT	0.28	7.1	13/16	20.6	0.94	23.9	1.23	31.3	0.88	22.4	0.66	16.8
VUWTG-9.52CN-V	3/8	9.52	3/8NPT	0.28	7.1	15/16	23.8	1.02	25.9	1.31	33.3	0.88	22.4	0.66	16.8
VUWTG-9.52DN-V	3/8	9.52	1/2NPT	0.28	7.1	1 1/16	27	1.13	28.7	1.42	36.1	1.12	28.5	0.66	16.8
VUWTG-12.7BN-V	1/2	12.7	1/4NPT	0.41	10.4	13/16	20.6	1.02	25.9	1.42	36	0.88	22.4	0.9	22.9
VUWTG-12.7CN-V	1/2	12.7	3/8NPT	0.41	10.4	15/16	23.8	1.02	25.9	1.42	36	0.88	22.4	0.9	22.9
VUWTG-12.7DN-V	1/2	12.7	1/2NPT	0.41	10.4	1 1/16	27	1.13	28.7	1.53	38.8	1.12	28.5	0.9	22.9
VUWTG-15.88DN-V	5/8	15.87	1/2NPT	0.5	12.7	1 1/16	27	1.13	28.7	1.53	38.8	1.12	28.5	0.96	24.4
VUWTG-19.05EN-V	3/4	19.05	3/4NPT	0.62	15.8	1 3/8	34.9	1.36	34.5	1.76	44.6	1.25	31.8	0.96	24.4
VUWTG-25.4EN-V	1	25.4	3/4NPT	0.88	22.3	1 3/8	34.9	1.45	36.8	1.93	49	1.25	31.8	1.23	31.2
VUWTG-25.4FN-V	1	25.4	1NPT	0.88	22.3	1 11/16	42.9	1.63	41.4	2.11	53.6	1.5	38.1	1.23	31.2

Reference Thread Specifications:

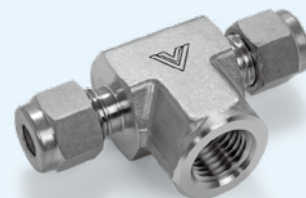
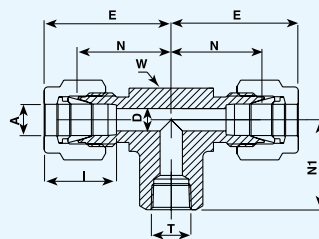
American Standard Pipe Thread (NPT).

NPT (National Pipe Tapered) is made to specifications outlined in ANSI B1.20.1.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Female Branch Tees (Rc)

TG



Tube (Metric) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	mm			mm		in	mm	mm		mm		mm		mm	
VUWTG-6A-V	6		Rc 1/8	4.8		5/8	15.9		19.6		27		19		15.3
VUWTG-6B-V	6		Rc 1/4	4.8		13/16	20.6		22.4		29.8		22.4		15.3
VUWTG-8B-V	8		Rc 1/4	6.4		13/16	20.6		23.1		30.6		22.4		16.2
VUWTG-10A-V	10		Rc 1/8	7.9		11/16	17.5		25.9		33.5		19		17.2
VUWTG-10B-V	10		Rc 1/4	7.9		13/16	20.6		25.9		33.5		22.4		17.2
VUWTG-10C-V	10		Rc 3/8	7.9		15/16	23.8		25.9		33.5		22.4		17.2
VUWTG-12B-V	12		Rc 1/4	9.5		13/16	20.6		25.9		36		22.4		22.8
VUWTG-12D-V	12		Rc 1/2	9.5		1 1/16	27		28.7		38.8		28.4		22.8
VUWTG-16D-V	16		Rc 1/2	12.7		1 1/8	28.6		28.7		38.8		28.4		24.4

Tube (Inch) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		E		N1		I	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWTG-3.2A-V	1/8	3.17	Rc 1/8	0.09	2.3	5/8	15.9	0.7	18	0.97	24.6	0.75	19.1	0.5	12.7
VUWTG-3.2B-V	1/8	3.17	Rc 1/4	0.09	2.3	13/16	20.6	0.82	20.8	1.08	27.4	0.88	22.4	0.5	12.7
VUWTG-6.35A-V	1/4	6.35	Rc 1/8	0.19	4.8	5/8	15.9	0.77	19.6	1.06	27	0.75	19.1	0.6	15.2
VUWTG-6.35B-V	1/4	6.35	Rc 1/4	0.19	4.8	13/16	20.6	0.88	22.4	1.17	29.8	0.88	22.4	0.6	15.2
VUWTG-6.35C-V	1/4	6.35	Rc 3/8	0.19	4.8	15/16	23.8	0.96	24.4	1.25	31.8	0.88	22.4	0.6	15.2
VUWTG-9.52A-V	3/8	9.52	Rc 1/8	0.28	7.1	5/8	15.9	0.91	23.1	1.20	30.5	0.75	19.1	0.66	16.8
VUWTG-9.52B-V	3/8	9.52	Rc 1/4	0.28	7.1	13/16	20.6	0.94	23.9	1.23	31.3	0.88	22.4	0.66	16.8
VUWTG-9.52C-V	3/8	9.52	Rc 3/8	0.28	7.1	15/16	23.8	1.02	25.9	1.31	33.3	0.88	22.4	0.66	16.8
VUWTG-12.7B-V	1/2	12.7	Rc 1/4	0.41	10.4	13/16	20.6	1.02	25.9	1.42	36	0.88	22.4	0.9	22.9
VUWTG-12.7C-V	1/2	12.7	Rc 3/8	0.41	10.4	15/16	23.8	1.02	25.9	1.42	36	0.88	22.4	0.9	22.9
VUWTG-12.7D-V	1/2	12.7	Rc 1/2	0.41	10.4	1 1/16	27	1.13	28.7	1.53	38.8	1.12	28.5	0.9	22.9
VUWTG-15.88D-V	5/8	15.87	Rc 1/2	0.5	12.7	1 1/16	27	1.13	28.7	1.53	38.8	1.12	28.5	0.96	24.4
VUWTG-19.05E-V	3/4	19.05	Rc 3/4	0.62	15.8	1 3/8	34.9	1.36	34.5	1.76	44.6	1.25	31.8	0.96	24.4
VUWTG-25.4E-V	1	25.4	Rc 3/4	0.88	22.3	1 3/8	34.9	1.45	36.8	1.93	49	1.25	31.8	1.23	31.2
VUWTG-25.4F-V	1	25.4	Rc 1	0.88	22.3	1 11/16	42.9	1.63	41.4	2.11	53.6	1.5	38.1	1.23	31.2

Designation:

R marking on hex.

Reference Thread Specifications:

DIN - ISO 2999

BS - 21

JIS - B0203

ISO - 7/1-BSP-T

Female Branch Tees (G)

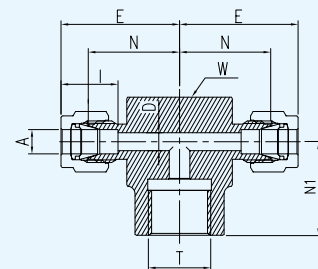
TG

Tube (Metric) To ISO Parallel Thread

Part Numbers	A Tube O.D.		T	D	W		N	E	N1	I
	mm				in	mm				
VUWTG-6BF-PG-V	6		G1/4	4.8	13/16	20.6	22.4	29.8	22.4	15.3
VUWTG-10BF-PG-V	10		G1/4	7.9	13/16	20.6	25.9	33.5	22.4	17.2

Tube (Inch) To ISO Parallel Thread

Part Number	A Tube O.D.		T	D	W		N	E	N1	I
	in	mm			in	mm				
VUWTG-6.35CF-PG-V	1/4	6.35	G3/8	4.8	15/16	23.8	24.4	31.8	25	15.2



Reference Thread Specifications:

DIN - ISO 228/1

BS - 2779

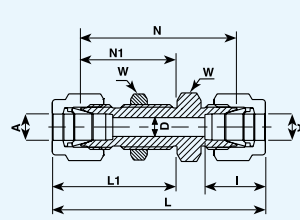
JIS - B0202

ISO - 228/1-BSP-P

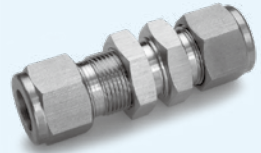
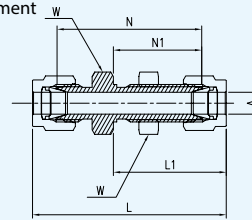
"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Bulkhead Unions

P



Thermoelement Type



Tube (Metric) To Tube (Metric)

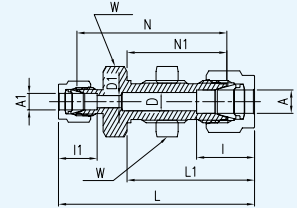
Part Numbers	A Tube O.D.		D		W		N		N1		L		L1		I		Panel hole drill size		Max. Panel thickness		Thermoelement Type
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
VUWP-3-V	3		2.4		14		38.1		24.6		51.3		31.2		12.9		8.3		12.7		-
VUWP-4-V	4		2.4		14		40.4		25.4		53.6		32		13.7		9.9		12.7		○
VUWP-6-V	6		4.8		16		42.9		26.2		57.7		33.6		15.3		11.5		10.2		○
VUWP-8-V	8		6.4		18		46		28.6		61		36.1		16.2		13.1		11.2		-
VUWP-10-V	10		7.9		22		48.5		29.4		63.7		37		17.2		16.3		11.2		-
VUWP-12-V	12		9.5		24		50.8		31.8		71		41.9		22.8		19.5		12.7		-
VUWP-14-V	14		11		27		52.3		32.5		72.5		42.6		24.4		22.8		12.7		-
VUWP-15-V	15		12		27		52.3		32.5		72.5		42.6		24.4		22.8		12.7		-
VUWP-16-V	16		12.7		27		52.3		32.5		72.5		42.6		24.4		22.8		12.7		-
VUWP-18-V	18		15.1		30		58.7		37.3		78.9		47.4		24.4		26		16.8		-
VUWP-20-V	20		15.9		35		64.3		42.9		84.5		53		26		29		23.9		-
VUWP-25-V	25		21.8		41		71.4		45.2		95.8		57.4		31.3		33.7		19		-

Tube (Inch) To Tube (Inch)

Part Numbers	A Tube O.D.		D		W		N		N1		L		L1		I		Panel hole drill size		Max. Panel thickness		Thermoelement Type
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWP-1.6-V	1/16	1.58	0.05	1.3	5/16	7.9	0.94	23.9	0.53	13.5	1.24	31.5	0.68	17.3	0.34	8.6	13/64	5.2	0.12	3.1	-
VUWP-3.2-V	1/8	3.17	0.09	2.3	1/2	12.7	1.5	38.1	0.97	24.6	2.02	51.3	1.23	31.2	0.5	12.7	21/64	8.3	0.5	12.7	-
VUWP-4.8-V	3/16	4.76	0.12	3.1	9/16	14.3	1.59	40.4	1	25.4	2.11	53.6	1.26	32	0.54	13.7	25/64	9.9	0.5	12.7	-
VUWP-6.35-V	1/4	6.35	0.19	4.8	5/8	15.9	1.69	42.9	1.03	26.2	2.27	57.7	1.32	33.6	0.6	15.2	29/64	11.5	0.4	10.2	○
VUWP-7.93-V	5/16	7.93	0.25	6.4	11/16	17.5	1.81	46	1.12	28.4	2.39	60.8	1.41	35.8	0.64	16.3	33/64	13.1	0.44	11.2	-
VUWP-9.52-V	3/8	9.52	0.28	7.1	3/4	19.1	1.87	47.5	1.16	29.5	2.45	62.3	1.45	36.9	0.66	16.8	37/64	14.7	0.44	11.2	○
VUWP-12.7-V	1/2	12.7	0.41	10.4	15/16	23.8	2	50.8	1.25	31.8	2.8	71	1.65	41.9	0.9	22.9	49/64	19.4	0.5	12.7	○
VUWP-15.88-V	5/8	15.87	0.5	12.7	1 1/16	27	2.06	52.3	1.28	32.5	2.85	72.5	1.68	42.6	0.96	24.4	57/64	22.6	0.5	12.7	-
VUWP-19.05-V	3/4	19.05	0.62	15.9	1 3/16	30.2	2.31	58.7	1.47	37.3	3.11	78.9	1.87	47.4	0.96	24.4	1 1/64	25.8	0.66	16.8	-
VUWP-25.4-V	1	25.4	0.88	22.3	1 5/8	41.3	2.81	71.4	1.78	45.2	3.77	95.8	2.26	57.4	1.23	31.2	1 21/64	33.7	0.75	19.1	-

Thermoelement Type can also be manufactured.

For ordering: use catalog number of the selected fitting and add the suffix T/C.



Bulkhead Reducing Unions

P

Tube (Inch) To Tube (Inch)

Part Numbers	A Tube O.D.		A1 Tube O.D.		D		D1		W		N		N1		L		L1		I		I1		Panel hole drill size		Max. Panel thickness	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWP-3.2X1.6-V	1/8	3.17	1/16	1.58	0.09	2.3	0.05	1.3	1/2	12.7	1.44	36.6	0.97	24.6	1.85	47	1.23	31.2	0.50	12.7	0.34	8.6	0.33	8.3	0.50	12.7
VUWP-6.35X3.2-V	1/4	6.35	1/8	3.17	0.19	4.8	0.09	2.3	5/8	15.9	1.62	41.2	1.03	26.2	2.17	55.2	1.32	33.6	0.60	15.2	0.50	12.7	0.45	11.5	0.40	10.2
VUWP-9.52X6.35-V	3/8	9.52	1/4	6.35	0.28	7.1	0.19	4.8	3/4	19.1	1.81	46	1.16	29.5	2.39	60.8	1.45	36.9	0.66	16.8	0.60	15.2	0.58	14.7	0.44	11.2
VUWP-12.7X6.35-V	1/2	12.7	1/4	6.35	0.41	10.4	0.19	4.8	15/16	23.8	1.94	49.3	1.25	31.8	2.63	66.8	1.65	41.9	0.90	22.9	0.60	15.2	0.76	19.4	0.50	12.7
VUWP-25.4X12.7-V	1	25.4	1/2	12.7	0.88	22.3	0.41	10.4	1 5/8	41.3	2.83	72	1.78	45.2	3.71	94.3	2.26	57.4	1.23	31.2	0.90	22.9	1.33	33.7	0.75	19.1

Tube (Inch) To Tube (Metric)

Part Number	A Tube O.D.		A1 Tube O.D.		D		W		N		N1		L		L1		I		I1		Panel hole drill size		Max. Panel thickness	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWP-6.35X6-V	1/4	6.35		6	0.19	4.8	5/8	15.9	1.69	42.9	1.03	26.2	2.27	57.7	1.32	33.6	0.60	15.2	0.60	15.3	0.45	11.5	0.40	10.2

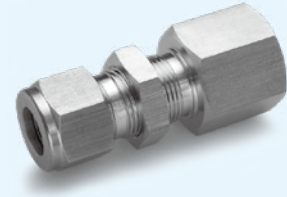
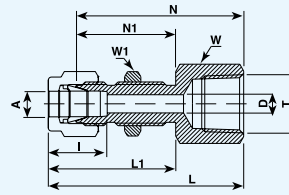
Tube (Metric) To Tube (Inch)

Part Number	A		A1		D		D1		W		N		N1		L		L1		I		I1		Panel hole drill size		Max. Panel thickness	
	Tube O.D.		Tube O.D.																							
	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWP-6X3.2-V	6		1/8	3.17	0.19	4.8	0.09	2.3	0.63	16	1.62	41.1	1.03	26.2	2.17	55.1	1.32	33.6	0.60	15.3	0.50	12.7	0.45	11.5	0.40	10.2

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Bulkhead Female Connectors (NPT)

GP



Tube (Metric) To Male NPT Thread

Part Numbers	A Tube O.D.		T	D		W		W1		N		N1		L		L1		I		Panel hole drill size		Max. Panel thickness	
	mm			mm		mm		mm		mm		mm		mm		mm		mm		mm		mm	
VUWGP-6BN-V	6		1/4NPT	4.8		19		16		44.4		26.2		51.8		33.6		15.3		11.5		10.2	
VUWGP-10DN-V	10		1/2NPT	7.9		27		22		54		29.4		61.6		37		17.2		16.3		11.2	
VUWGP-12DN-V	12		1/2NPT	9.5		27		24		56.4		31.8		66.5		41.9		22.8		19.5		12.7	

Tube (Inch) To Male NPT Thread

Part Numbers	A Tube O.D.		T	D		W		W1		N		N1		L		L1		I		Panel hole drill size		Max. Panel thickness	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWGP-3.2AN-V	1/8	3.17	1/8NPT	0.09	2.3	9/16	14.3	1/2	12.7	1.5	38.1	0.97	24.6	1.76	44.7	1.23	31.2	0.5	12.7	21/64	8.3	0.5	12.7
VUWGP-6.35AN-V	1/4	6.35	1/8NPT	0.19	4.8	5/8	15.9	5/8	15.9	1.56	39.6	1.03	26.2	1.85	47	1.32	33.6	0.6	15.2	29/64	11.5	0.4	10.2
VUWGP-6.35BN-V	1/4	6.35	1/4NPT	0.19	4.8	3/4	19.1	5/8	15.9	1.75	44.5	1.03	26.2	2.04	51.9	1.32	33.6	0.6	15.2	29/64	11.5	0.4	10.2
VUWGP-9.52BN-V	3/8	9.52	1/4NPT	0.28	7.1	3/4	19.1	3/4	19.1	1.88	47.8	1.16	29.5	2.17	55.1	1.45	36.9	0.66	16.8	37/64	14.7	0.44	11.2
VUWGP-9.52CN-V	3/8	9.52	3/8NPT	0.28	7.1	7/8	22.2	3/4	19.1	1.94	49.3	1.16	29.5	2.23	56.7	1.45	36.9	0.66	16.8	37/64	14.7	0.44	11.2
VUWGP-12.7CN-V	1/2	12.7	3/8NPT	0.41	10.4	15/16	23.8	15/16	23.8	2.03	51.6	1.25	31.8	2.43	61.7	1.65	41.9	0.9	22.9	49/64	19.4	0.5	12.7
VUWGP-12.7DN-V	1/2	12.7	1/2NPT	0.41	10.4	1 1/16	27	15/16	23.8	2.22	56.4	1.25	31.8	2.62	66.5	1.65	41.9	0.9	22.9	49/64	19.4	0.5	12.7
VUWGP-12.7EN-V	1/2	12.7	3/4NPT	0.41	10.4	1 5/16	33.3	15/16	23.8	2.29	58.2	1.25	31.8	2.69	68.3	1.65	41.9	0.9	22.9	49/64	19.4	0.5	12.7
VUWGP-19.05EN-V	3/4	19.05	3/4NPT	0.62	15.8	1 5/16	33.3	1 3/16	30.2	2.52	64	1.47	37.3	2.92	74.1	1.87	47.4	0.96	24.4	1 1/64	25.8	0.66	16.8

Reference Thread Specifications:

American Standard Pipe Thread (NPT).

NPT (National Pipe Tapered) is made to specifications outlined in ANSI B1.20.1.

Bulkhead Female Connectors (Rc)

GP

Tube (Metric) To ISO Tapered Thread (Rc)

Part Numbers	A Tube O.D.		T	D		W		W1		N		N1		L		L1		I		Panel hole drill size		Max. Panel thickness	
	mm			mm		mm		mm		mm		mm		mm		mm		mm		mm		mm	
VUWGP-3A-V	3		Rc1/8	2.4		14		14		38.1		24.6		44.7		31.2		12.9		8.3		12.7	
VUWGP-6A-V	6		Rc1/8	4.8		16		16		36.9		26.2		47		33.6		15.3		11.5		10.2	
VUWGP-6B-V	6		Rc1/4	4.8		19		16		44.4		26.2		51.8		33.6		15.3		11.5		10.2	
VUWGP-6C-V	6		Rc3/8	4.8		22		16		46.2		26.2		53.6		33.6		15.3		11.5		10.2	
VUWGP-8B-V	8		Rc1/4	6.4		19		18		47		28.6		54.5		36.1		16.2		13.1		11.2	
VUWGP-8C-V	8		Rc3/8	6.4		22		18		48.5		28.6		56		36.1		16.2		13.1		11.2	
VUWGP-12D-V	12		Rc1/2	9.5		27		24		56.4		31.8		66.5		41.9		22.8		19.5		12.7	

Tube (Inch) To ISO Tapered Thread (Rc)

Part Numbers	A Tube O.D.		T	D		W		W1		N		N1		L		L1		I		Panel hole drill size		Max. Panel thickness	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWGP-3.2A-V	1/8	3.17	Rc 1/8	0.09	2.3	9/16	14.3	1/2	12.7	1.5	38.1	0.97	24.6	1.76	44.7	1.23	31.2	0.5	12.7	21/64	8.3	0.5	12.7
VUWGP-3.2B-V	1/8	3.17	Rc 1/4	0.09	2.3	3/4	19.1	1/2	12.7	1.81	46	0.97	24.6	2.07	52.6	1.23	31.2	0.5	12.7	21/64	8.3	0.5	12.7
VUWGP-6.35A-V	1/4	6.35	Rc 1/8	0.19	4.8	5/8	15.9	5/8	15.9	1.56	39.6	1.03	26.2	1.85	47	1.32	33.6	0.6	15.2	29/64	11.5	0.4	10.2
VUWGP-6.35B-V	1/4	6.35	Rc 1/4	0.19	4.8	3/4	19.1	5/8	15.9	1.75	44.5	1.03	26.2	2.04	51.9	1.32	33.6	0.6	15.2	29/64	11.5	0.4	10.2
VUWGP-6.35C-V	1/4	6.35	Rc 3/8	0.19	4.8	7/8	22.2	5/8	15.9	1.85	47	1.03	26.2	2.14	54.4	1.32	33.6	0.6	15.2	29/64	11.5	0.4	10.2
VUWGP-6.35D-V	1/4	6.35	Rc 1/2	0.19	4.8	1 1/16	27	5/8	15.9	2.0	50.9	1.03	26.2	2.3	58.3	1.32	33.6	0.6	15.2	29/64	11.5	0.4	10.2
VUWGP-9.52A-V	3/8	9.52	Rc 1/8	0.28	7.1	3/4	19.1	3/4	19.1	1.77	45	1.16	29.5	2.06	52.4	1.45	36.9	0.66	16.8	37/64	14.7	0.44	11.2
VUWGP-9.52B-V	3/8	9.52	Rc 1/4	0.28	7.1	3/4	19.1	3/4	19.1	1.88	47.8	1.16	29.5	2.17	55.2	1.45	36.9	0.66	16.8	37/64	14.7	0.44	11.2
VUWGP-9.52C-V	3/8	9.52	Rc 3/8	0.28	7.1	7/8	22.2	3/4	19.1	1.94	49.3	1.16	29.5	2.23	56.7	1.45	36.9	0.66	16.8	37/64	14.7	0.44	11.2
VUWGP-9.52D-V	3/8	9.52	Rc 1/2	0.28	7.1	1 1/16	27	3/4	19.1	2.22	56.5	1.16	29.5	2.52	63.9	1.45	36.9	0.66	16.8	37/64	14.7	0.44	11.2
VUWGP-12.7C-V	1/2	12.7	Rc 3/8	0.41	10.4	15/16	23.8	15/16	23.8	2.03	51.6	1.25	31.8	2.43	61.7	1.65	41.9	0.9	22.9	49/64	19.4	0.5	12.7
VUWGP-12.7D-V	1/2	12.7	Rc 1/2	0.41	10.4	1 1/16	27	15/16	23.8	2.22	56.4	1.25	31.8	2.62	66.5	1.65	41.9	0.9	22.9	49/64	19.4	0.5	12.7

Designation:

R marking on hex.

Reference Thread Specifications:

DIN - ISO 2999

JIS - B0203

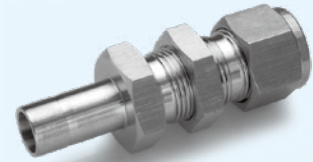
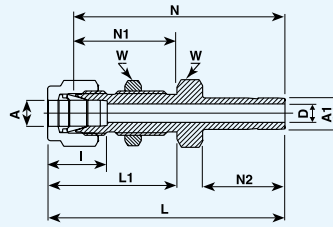
BS - 21

ISO - 7/1-BSP-T

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Bulkhead Reducers

RP

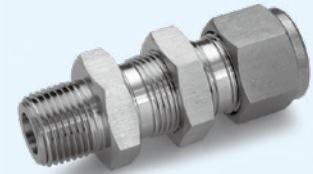
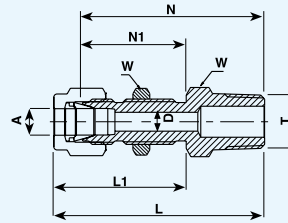


Tube (Inch) To Tube (Inch)

Part Numbers	A Tube O.D.		A1 Tube O.D.		D		W		N		N1		N2		L		L1		I		Panel hole drill size		Max. Panel thickness	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWRP-3.2X3.2-V	1/8	3.17	1/8	3.17	0.08	2	1/2	12.7	1.69	42.9	0.97	24.6	0.53	13.5	1.95	49.5	1.23	31.2	0.5	12.7	21/64	8.3	0.5	12.7
VUWRP-6.35X6.35-V	1/4	6.35	1/4	6.35	0.17	4.2	5/8	15.9	1.91	48.5	1.03	26.2	0.61	15.6	2.2	55.9	1.32	33.6	0.6	15.2	29/64	11.5	0.4	10.2
VUWRP-9.52X9.52-V	3/8	9.52	3/8	9.52	0.28	7.1	3/4	19.1	2.12	53.9	1.16	29.5	0.69	17.5	2.41	61.3	1.45	36.9	0.66	16.8	37/64	14.7	0.44	11.2
VUWRP-12.7X9.52-V	1/2	12.7	3/8	9.52	0.27	6.9	15/16	23.8	2.25	57.2	1.25	31.8	0.69	17.5	2.65	67.3	1.65	41.9	0.9	22.9	49/64	19.4	0.5	12.7
VUWRP-12.7X12.7-V	1/2	12.7	1/2	12.7	0.39	9.9	15/16	23.8	2.47	62.7	1.25	31.8	0.92	23.3	2.87	72.8	1.65	41.9	0.9	22.9	49/64	19.4	0.5	12.7

Bulkhead Male Connectors (NPT)

HP



Tube (Metric) To Male NPT Thread

Part Numbers	A Tube O.D.		T	D		W		N		N1		L		L1		Panel hole drill size		Max. Panel thickness	
	mm			mm		mm		mm		mm		mm		mm		mm		mm	
VUWHP-6AN-V	6		1/8NPT	4.8		16		42.1		26.2		49.5		33.6		11.5		10.2	
VUWHP-6BN-V	6		1/4NPT	4.8		16		46.2		26.2		53.6		33.6		11.5		10.2	
VUWHP-8BN-V	8		1/4NPT	6.4		18		49.2		28.6		56.7		36.1		13.1		11.2	
VUWHP-12DN-V	12		1/2NPT	9.5		24		58.7		31.8		68.8		41.9		19.5		12.7	

Tube (Inch) To Male NPT Thread

Part Numbers	A Tube O.D.		T	D		W		N		N1		L		L1		Panel hole drill size		Max. Panel thickness	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWHP-3.2AN-V	1/8	3.17	1/8NPT	0.09	2.3	1/2	12.7	1.57	39.9	0.97	24.6	1.83	46.5	1.23	31.2	21/64	8.3	0.5	12.7
VUWHP-6.35AN-V	1/4	6.35	1/8NPT	0.19	4.8	5/8	15.9	1.66	42.2	1.03	26.2	1.95	49.5	1.32	33.6	29/64	11.5	0.4	10.2
VUWHP-6.35BN-V	1/4	6.35	1/4NPT	0.19	4.8	5/8	15.9	1.84	46.7	1.03	26.2	2.13	54.1	1.32	33.6	29/64	11.5	0.4	10.2
VUWHP-9.52BN-V	3/8	9.52	1/4NPT	0.28	7.1	3/4	19.1	1.97	50	1.16	29.5	2.26	57.4	1.45	36.9	37/64	14.7	0.44	11.2
VUWHP-9.52CN-V	3/8	9.52	3/8NPT	0.28	7.1	3/4	19.1	1.97	50	1.16	29.5	2.26	57.4	1.45	36.9	37/64	14.7	0.44	11.2
VUWHP-9.52DN-V	3/8	9.52	1/2NPT	0.28	7.1	7/8	22.2	2.22	56.4	1.16	29.5	2.51	63.8	1.45	36.9	37/64	14.7	0.44	11.2
VUWHP-12.7CN-V	1/2	12.7	3/8NPT	0.37	9.5	15/16	23.8	2.09	53.1	1.25	31.8	2.49	63.2	1.65	41.9	49/64	19.4	0.5	12.7
VUWHP-12.7DN-V	1/2	12.7	1/2NPT	0.4	10.4	15/16	23.8	2.31	58.7	1.25	31.8	2.71	68.8	1.65	41.9	49/64	19.4	0.5	12.7
VUWHP-19.05EN-V	3/4	19.05	3/4NPT	0.62	15.8	1 3/16	30.2	2.60	66	1.47	37.3	3	76.1	1.87	47.4	1 1/64	25.8	0.66	16.8
VUWHP-25.4FN-V	1	25.4	1NPT	0.86	21.8	1 5/8	41.3	3.19	81	1.78	45.2	3.67	93.2	2.26	57.4	1 21/64	33.7	0.75	19.1

Reference Thread Specifications:

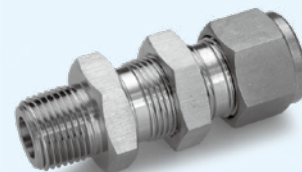
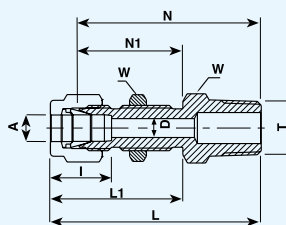
American Standard Pipe Thread (NPT).

NPT (National Pipe Tapered) is made to specifications outlined in ANSI B1.20.1.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Bulkhead Male Connectors (R)

HP



Tube (Metric) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W	N		N1	L		L1	I		Panel hole drill size		Max. Panel thickness	
	in	mm		in	mm		in	mm		in	mm		in	mm	in	mm	in	mm
VUWHP-6A-V		6	R 1/8		4.8			42.1			26.2			15.3		11.5		10.2
VUWHP-6B-V		6	R 1/4		4.8			46.2			26.2			15.3		11.5		10.2
VUWHP-6D-V		6	R 1/2		4.8			54			26.2			15.3		11.5		10.2
VUWHP-8B-V		8	R 1/4		6.4			49.2			28.6			16.2		13.1		11.2
VUWHP-8C-V		8	R 3/8		6.4			49.2			28.6			16.2		13.1		11.2
VUWHP-12D-V		12	R 1/2		9.5			58.7			31.8			22.8		19.5		12.7

Tube (Inch) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		N1		L		L1		Panel hole drill size		Max. Panel thickness	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWHP-3.2A-V	1/8	3.17	R 1/8	0.09	2.3	1/2	12.7	1.57	39.9	0.97	24.6	1.83	46.5	1.23	31.2	21/64	8.3	0.5	12.7
VUWHP-6.35A-V	1/4	6.35	R 1/8	0.19	4.8	5/8	15.9	1.66	42.2	1.03	26.2	1.95	49.5	1.32	33.6	29/64	11.5	0.4	10.2
VUWHP-6.35B-V	1/4	6.35	R 1/4	0.19	4.8	5/8	15.9	1.84	46.7	1.03	26.2	2.13	54.1	1.32	33.6	29/64	11.5	0.4	10.2
VUWHP-6.35C-V	1/4	6.35	R 3/8	0.19	4.8	11/16	17.5	1.84	46.7	1.03	26.2	2.13	54.1	1.32	33.6	29/64	11.5	0.4	10.2
VUWHP-9.52B-V	3/8	9.52	R 1/4	0.28	7.1	3/4	19.1	1.97	50	1.16	29.5	2.26	57.4	1.45	36.9	37/64	14.7	0.44	11.2
VUWHP-9.52C-V	3/8	9.52	R 3/8	0.28	7.1	3/4	19.1	1.97	50	1.16	29.5	2.26	57.4	1.45	36.9	37/64	14.7	0.44	11.2
VUWHP-9.52D-V	3/8	9.52	R 1/2	0.28	7.1	7/8	22.2	2.22	56.4	1.16	29.5	2.51	63.8	1.45	36.9	37/64	14.7	0.44	11.2
VUWHP-12.7C-V	1/2	12.7	R 3/8	0.37	9.5	15/16	23.8	2.09	53.1	1.25	31.8	2.49	63.2	1.65	41.9	49/64	19.4	0.5	12.7
VUWHP-12.7D-V	1/2	12.7	R 1/2	0.4	10.4	15/16	23.8	2.31	58.7	1.25	31.8	2.71	68.8	1.65	41.9	49/64	19.4	0.5	12.7
VUWHP-19.05D-V	3/4	19.05	R 1/2	0.47	11.9	1 3/16	30.2	2.60	66	1.47	37.3	3	76.1	1.87	47.4	65/64	25.8	0.66	16.8
VUWHP-19.05E-V	3/4	19.05	R 3/4	0.62	15.8	1 3/16	30.2	2.60	66	1.47	37.3	3	76.1	1.87	47.4	65/64	25.8	0.66	16.8

Designation:

R marking on hex.

Reference Thread Specifications:

DIN - ISO 2999

BS - 21

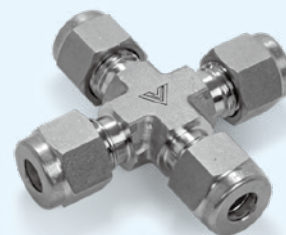
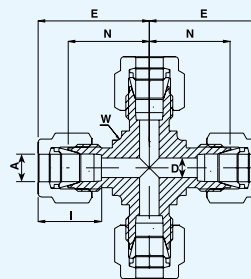
JIS - B0203

ISO - 7/1-BSP-T

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Union Crosses

X



Tube (Metric)

Part Numbers	A Tube O.D.		D		W		N		E		I	
	mm	mm	mm	mm	in	mm	mm	mm	mm	mm	mm	mm
VUWX-3-V	3		2.4		3/8	9.5		15.7		22.3		12.9
VUWX-4-V	4		2.4		1/2	12.7		18.8		25.4		13.7
VUWX-6-V	6		4.8		1/2	12.7		19.6		27		15.3
VUWX-8-V	8		6.4		5/8	15.9		22.4		29.9		16.2
VUWX-10-V	10		7.9		13/16	20.6		25.9		33.5		17.2
VUWX-12-V	12		9.5		13/16	20.6		25.9		36		22.8
VUWX-16-V	16		12.7		15/16	23.8		26.9		37		24.4
VUWX-18-V	18		15.1		1 1/16	27		28.2		38.3		24.4
VUWX-20-V	20		15.9		1 3/8	34.9		34.5		44.6		26
VUWX-22-V	22		18.3		1 3/8	34.9		34.6		44.7		26

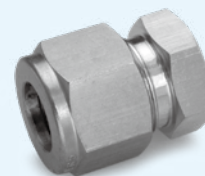
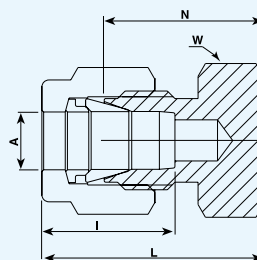
Tube (Inch)

Part Numbers	A Tube O.D.		D		W		N		E		I	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VUWX-1.6-V	1/16	1.58	0.05	1.3	3/8	9.5	0.55	14	0.70	17.8	0.34	8.6
VUWX-3.2-V	1/8	3.17	0.09	2.3	3/8	9.5	0.62	15.8	0.88	22.4	0.5	12.7
VUWX-6.35-V	1/4	6.35	0.19	4.8	1/2	12.7	0.77	19.6	1.06	27	0.6	15.2
VUWX-7.93-V	5/16	7.93	0.25	6.4	5/8	15.9	0.88	22.4	1.17	29.8	0.64	16.3
VUWX-9.52-V	3/8	9.52	0.28	7.1	5/8	15.9	0.91	23.1	1.2	30.5	0.66	16.8
VUWX-12.7-V	1/2	12.7	0.41	10.4	13/16	20.6	1.02	25.9	1.42	36	0.9	22.9
VUWX-19.05-V	3/4	19.05	0.62	15.8	1 1/16	27	1.17	29.7	1.57	39.8	0.96	24.4
VUWX-25.4-V	1	25.4	0.88	22.3	1 3/8	34.9	1.45	36.8	1.93	49	1.23	31.2

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Caps

JC



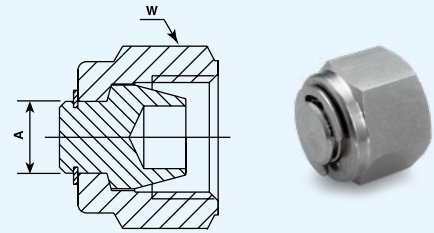
Capping End Of Tube (Metric)

Part Numbers	A Tube O.D.	W	N	L	I
	mm	mm	mm	mm	mm
VUWJC-2-V	2	12	13.5	20.1	12.9
VUWJC-3-V	3	12	13.5	20.1	12.9
VUWJC-4-V	4	12	14.7	21.3	13.7
VUWJC-6-V	6	14	15.7	23.1	15.3
VUWJC-8-V	8	15	17	24.5	16.2
VUWJC-10-V	10	18	19	26.6	17.2
VUWJC-12-V	12	22	19	29.1	22.8
VUWJC-15-V	15	24	19.8	29.9	24.4
VUWJC-16-V	16	24	19.8	29.9	24.4
VUWJC-18-V	18	27	21.3	31.4	24.4
VUWJC-20-V	20	30	23.9	34	26
VUWJC-22-V	22	30	23.9	34	26
VUWJC-25-V	25	35	26.2	38.4	31.3

Capping End Of Tube (Inch)

Part Numbers	A Tube O.D.		W		N		L		I	
	in	mm	in	mm	in	mm	in	mm	in	mm
VUWJC-1.6-V	1/16	1.58	5/16	7.9	0.44	11.2	0.59	15	0.34	8.6
VUWJC-3.2-V	1/8	3.17	7/16	11.1	0.53	13.5	0.79	20.1	0.5	12.7
VUWJC-4.8-V	3/16	4.76	7/16	11.1	0.58	14.7	0.84	21.3	0.54	13.7
VUWJC-6.35-V	1/4	6.35	1/2	12.7	0.63	16	0.92	23.4	0.6	15.2
VUWJC-7.93-V	5/16	7.93	9/16	14.3	0.67	17	0.96	24.4	0.64	16.3
VUWJC-9.52-V	3/8	9.52	5/8	15.9	0.72	18.3	1.01	25.7	0.66	16.8
VUWJC-12.7-V	1/2	12.7	13/16	20.6	0.75	19.1	1.15	29.2	0.9	22.9
VUWJC-15.88-V	5/8	15.87	15/16	23.8	0.78	19.8	1.18	29.9	0.96	24.4
VUWJC-19.05-V	3/4	19.05	1 1/16	27	0.84	21.3	1.24	31.4	0.96	24.4
VUWJC-22.22-V	7/8	22.22	1 3/16	30.2	0.94	23.9	1.34	34	1.02	25.9
VUWJC-25.4-V	1	25.4	1 3/8	34.9	1.03	26.2	1.51	38.4	1.23	31.2

Plugs JP



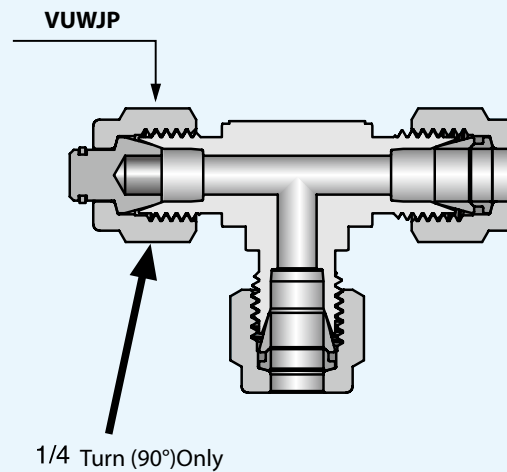
Plugging Unused Port Of Fitting (Metric)

Part Numbers	A		W	
	in	mm	in	mm
VUWJP-2-V		2		12
VUWJP-3-V		3		12
VUWJP-4-V		4		12
VUWJP-6-V		6		14
VUWJP-8-V		8		16
VUWJP-10-V		10		19
VUWJP-12-V		12		22
VUWJP-15-V		15		25
VUWJP-16-V		16		25
VUWJP-18-V		18		30
VUWJP-20-V		20		32
VUWJP-22-V		22		32
VUWJP-25-V		25		38

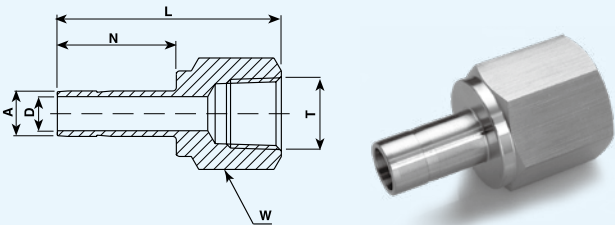
Plugging Unused Port Of Fitting (Inch)

Part Numbers	A		W	
	in	mm	in	mm
VUWJP-1.6-V	1/16	1.58	5/16	7.9
VUWJP-3.2-V	1/8	3.17	7/16	11.1
VUWJP-4.8-V	3/16	4.76	1/2	12.7
VUWJP-6.35-V	1/4	6.35	9/16	14.3
VUWJP-7.93-V	5/16	7.93	5/8	15.9
VUWJP-9.52-V	3/8	9.52	11/16	17.5
VUWJP-12.7-V	1/2	12.7	7/8	22.2
VUWJP-15.88-V	5/8	15.87	1	25.4
VUWJP-19.05-V	3/4	19.05	1 1/8	28.6
VUWJP-25.4-V	1	25.4	1 1/2	38.1

Plug Assembly Instructions



Female Adapters
Tube To Pipe (NPT)
GA



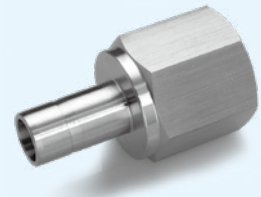
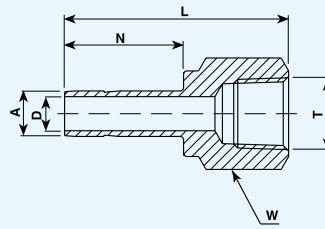
Tube (Metric) Female Pipe						
Part Numbers	A Tube O.D.	T	D	W	N	L
	mm		mm	mm	mm	mm
VUW-GA-3AN-V	3	1/8NPT	2.1	14	13.5	31.5
VUW-GA-3BN-V	3	1/4NPT	2.1	19	13.5	35.3
VUW-GA-4BN-V	4	1/4NPT	2.2	19	14.2	35
VUW-GA-6AN-V	6	1/8NPT	4	14	15.7	32.5
VUW-GA-6BN-V	6	1/4NPT	4	19	15.7	37.1
VUW-GA-6CN-V	6	3/8NPT	4	22	15.7	39.6
VUW-GA-6DN-V	6	1/2NPT	4	27	15.7	45.5
VUW-GA-8AN-V	8	1/8NPT	5.6	14	16.8	34.3
VUW-GA-8BN-V	8	1/4NPT	5.6	19	16.8	37.6
VUW-GA-8CN-V	8	3/8NPT	5.6	22	16.8	40.7
VUW-GA-8DN-V	8	1/2NPT	5.6	27	16.8	46
VUW-GA-10BN-V	10	1/4NPT	7.1	19	17.6	38.1
VUW-GA-10CN-V	10	3/8NPT	7.1	22	17.6	40.1
VUW-GA-10DN-V	10	1/2NPT	7.1	27	17.6	46.5
VUW-GA-12BN-V	12	1/4NPT	8.8	19	23.3	43.7
VUW-GA-12CN-V	12	3/8NPT	8.8	22	23.3	45.5
VUW-GA-12DN-V	12	1/2NPT	8.8	27	23.3	52.3
VUW-GA-16CN-V	16	3/8NPT	12.7	24	24.7	48
VUW-GA-16DN-V	16	1/2NPT	12.7	27	24.7	53.1
VUW-GA-20DN-V	20	1/2NPT	15.1	27	26.6	56
VUW-GA-20EN-V	20	3/4NPT	15.1	35	26.6	56
VUW-GA-25FN-V	25	1NPT	19.8	41	32.5	64.3

Reference Thread Specifications:

American Standard Pipe Thread (NPT).
NPT (National Pipe Tapered) is made to specifications outlined in ANSI B1.20.1.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Female Adapters Tube To Pipe (NPT) GA

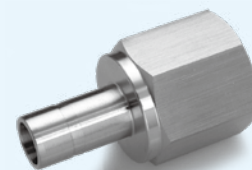
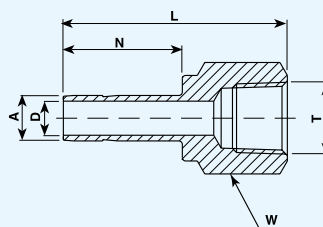


Tube (Inch) Female Pipe

Part Numbers	A Tube O.D.		T	D		W		N		L	
	in	mm		in	mm	in	mm	in	mm	in	mm
VUW-GA-3.2AN-V	1/8	3.17	1/8NPT	0.08	2	9/16	14.3	0.53	13.5	1.24	31.5
VUW-GA-3.2BN-V	1/8	3.17	1/4NPT	0.08	2	3/4	19.1	0.53	13.5	1.39	35.3
VUW-GA-4.8BN-V	3/16	4.76	1/4NPT	0.12	3	3/4	19.1	0.56	14.2	1.41	35.8
VUW-GA-6.35AN-V	1/4	6.35	1/8NPT	0.17	4.2	9/16	14.3	0.61	15.6	1.3	33
VUW-GA-6.35BN-V	1/4	6.35	1/4NPT	0.17	4.2	3/4	19.1	0.61	15.6	1.46	37.1
VUW-GA-6.35CN-V	1/4	6.35	3/8NPT	0.17	4.2	7/8	22.2	0.61	15.6	1.55	39.4
VUW-GA-6.35DN-V	1/4	6.35	1/2NPT	0.17	4.2	1 1/16	27	0.61	15.6	1.79	45.5
VUW-GA-7.93BN-V	5/16	7.93	1/4NPT	0.22	5.6	3/4	19.1	0.67	16.9	1.48	37.6
VUW-GA-9.52AN-V	3/8	9.52	1/8NPT	0.27	6.9	9/16	14.3	0.69	17.5	1.35	34.3
VUW-GA-9.52BN-V	3/8	9.52	1/4NPT	0.27	6.9	3/4	19.1	0.69	17.5	1.5	38.1
VUW-GA-9.52CN-V	3/8	9.52	3/8NPT	0.27	6.9	7/8	22.2	0.69	17.5	1.59	40.4
VUW-GA-9.52DN-V	3/8	9.52	1/2NPT	0.27	6.9	1 1/16	27	0.69	17.5	1.84	46.7
VUW-GA-12.7BN-V	1/2	12.7	1/4NPT	0.37	9.4	3/4	19.1	0.92	23.3	1.71	43.4
VUW-GA-12.7CN-V	1/2	12.7	3/8NPT	0.37	9.4	7/8	22.2	0.92	23.3	1.79	45.5
VUW-GA-12.7DN-V	1/2	12.7	1/2NPT	0.37	9.4	1 1/16	27	0.92	23.3	2.04	52.1
VUW-GA-15.88DN-V	5/8	15.87	1/2NPT	0.5	12.7	1 1/16	27	0.97	24.7	2.09	53.1
VUW-GA-19.05BN-V	3/4	19.05	1/4NPT	0.41	10.5	7/8	22.2	0.97	24.7	1.83	46.5
VUW-GA-19.05DN-V	3/4	19.05	1/2NPT	0.59	15	1 1/16	27	0.97	24.7	2.08	52.8
VUW-GA-19.05EN-V	3/4	19.05	3/4NPT	0.59	15	1 5/16	33.3	0.97	24.7	2.16	54.9
VUW-GA-19.05FN-V	3/4	19.05	1NPT	0.59	15	1 5/8	41.3	0.97	24.7	2.3	58.4
VUW-GA-25.4EN-V	1	25.4	3/4NPT	0.8	20.3	1 5/16	33.3	1.3	33	2.39	60.7
VUW-GA-25.4FN-V	1	25.4	1NPT	0.8	20.3	1 5/8	41.3	1.3	33	2.53	64.3

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Female Adapters Tube To Pipe (Rc) GA



Tube (Metric) To ISO Tapered Thread

Part Numbers	A Tube O.D.	T	D	W	N	L
	mm		mm	mm	mm	mm
VUW-GA-3A-V	3	Rc 1/8	2.1	14	13.5	31.5
VUW-GA-3B-V	3	Rc 1/4	2.1	19	13.5	35.3
VUW-GA-4B-V	4	Rc 1/4	2.2	19	14.2	35
VUW-GA-6A-V	6	Rc 1/8	4	14	15.7	32.5
VUW-GA-6B-V	6	Rc 1/4	4	19	15.7	37.1
VUW-GA-6C-V	6	Rc 3/8	4	22	15.7	39.6
VUW-GA-6D-V	6	Rc 1/2	4	27	15.7	45.5
VUW-GA-8A-V	8	Rc 1/8	5.6	14	16.8	34.3
VUW-GA-8B-V	8	Rc 1/4	5.6	19	16.8	37.6
VUW-GA-8C-V	8	Rc 3/8	5.6	22	16.8	40
VUW-GA-8D-V	8	Rc 1/2	5.6	27	16.8	46
VUW-GA-10B-V	10	Rc 1/4	7.1	19	17.6	38.1
VUW-GA-10C-V	10	Rc 3/8	7.1	22	17.6	40.1
VUW-GA-10D-V	10	Rc 1/2	7.1	27	17.6	46.5
VUW-GA-12B-V	12	Rc 1/4	8.8	19	23.3	43.7
VUW-GA-12C-V	12	Rc 3/8	8.8	22	23.3	45.5
VUW-GA-12D-V	12	Rc 1/2	8.8	27	23.3	52.3
VUW-GA-16C-V	16	Rc 3/8	12.7	24	24.7	48
VUW-GA-16D-V	16	Rc 1/2	12.7	27	24.7	53.1
VUW-GA-20D-V	20	Rc 1/2	15.1	27	26.6	56
VUW-GA-20E-V	20	Rc 3/4	15.1	35	26.6	56
VUW-GA-25F-V	25	Rc 1	19.8	41	32.5	64.3

Designation:

R marking on hex.

Tube (Inch) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		L	
	in	mm		in	mm	in	mm	in	mm	in	mm
VUW-GA-3.2A-V	1/8	3.17	Rc 1/8	0.08	2	9/16	14.3	0.53	13.5	1.24	31.5
VUW-GA-3.2B-V	1/8	3.17	Rc 1/4	0.08	2	3/4	19.1	0.53	13.5	1.39	35.3
VUW-GA-4.8A-V	3/16	4.76	Rc 1/8	0.12	3	9/16	14.3	0.56	14.2	1.27	32.3
VUW-GA-4.8B-V	3/16	4.76	Rc 1/4	0.12	3	3/4	19.1	0.56	14.2	1.41	35.8
VUW-GA-6.35A-V	1/4	6.35	Rc 1/8	0.17	4.2	9/16	14.3	0.61	15.6	1.30	33
VUW-GA-6.35B-V	1/4	6.35	Rc 1/4	0.17	4.2	3/4	19.1	0.61	15.6	1.45	36.8
VUW-GA-6.35C-V	1/4	6.35	Rc 3/8	0.17	4.2	7/8	22.2	0.61	15.6	1.55	39.4
VUW-GA-6.35D-V	1/4	6.35	Rc 1/2	0.17	4.2	1 1/16	27	0.61	15.6	1.79	45.5
VUW-GA-7.93B-V	5/16	7.93	Rc 1/4	0.22	5.6	3/4	19.1	0.66	16.9	1.48	37.6
VUW-GA-9.52A-V	3/8	9.52	Rc 1/8	0.27	6.9	9/16	14.3	0.69	17.5	1.35	34.3
VUW-GA-9.52B-V	3/8	9.52	Rc 1/4	0.27	6.9	3/4	19.1	0.69	17.5	1.5	38.1
VUW-GA-9.52C-V	3/8	9.52	Rc 3/8	0.27	6.9	7/8	22.2	0.69	17.5	1.59	40.4
VUW-GA-9.52D-V	3/8	9.52	Rc 1/2	0.27	6.9	1 1/16	27	0.69	17.5	1.84	46.7
VUW-GA-12.7A-V	1/2	12.7	Rc 1/8	0.37	9.4	5/8	15.9	0.92	23.3	1.57	39.9
VUW-GA-12.7B-V	1/2	12.7	Rc 1/4	0.37	9.4	3/4	19.1	0.92	23.3	1.71	43.4
VUW-GA-12.7C-V	1/2	12.7	Rc 3/8	0.37	9.4	7/8	22.2	0.92	23.3	1.79	45.5
VUW-GA-12.7D-V	1/2	12.7	Rc 1/2	0.37	9.4	1 1/16	27	0.92	23.3	2.04	52.1
VUW-GA-12.7E-V	1/2	12.7	Rc 3/4	0.37	9.4	1 5/16	33.3	0.92	23.3	2.1	53.3
VUW-GA-15.88D-V	5/8	15.87	Rc 1/2	0.5	12.7	1 1/16	27	0.97	24.7	2.09	53.1
VUW-GA-19.05D-V	3/4	19.05	Rc 1/2	0.59	15	1 1/16	27	0.97	24.7	2.08	52.8
VUW-GA-19.05E-V	3/4	19.05	Rc 3/4	0.59	15	1 5/16	33.3	0.97	24.7	2.16	54.9
VUW-GA-19.05F-V	3/4	19.05	Rc 1	0.59	15	1 5/8	41.3	0.97	24.7	2.3	58.4
VUW-GA-25.4D-V	1	25.4	Rc 1/2	0.8	20.3	1 1/8	28.6	1.3	33	2.42	61.5
VUW-GA-25.4E-V	1	25.4	Rc 3/4	0.8	20.3	1 5/16	33.3	1.3	33	2.39	60.7
VUW-GA-25.4F-V	1	25.4	Rc 1	0.8	20.3	1 5/8	41.3	1.3	33	2.53	64.3

Designation:

R marking on hex.

Reference Thread Specifications:

DIN - ISO 2999 JIS - B0203
BS - 21 ISO - 7/1-BSP-T

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Female Adapters Tube To Pipe (G)

For gasket thicknesses of 4mm or less, use a part number with "-PG".

GA

Tube (Metric) To ISO Parallel Thread

Part Numbers	A Tube O.D.	T	D	D ₁	W	L	N
	mm		mm	mm	mm	mm	mm
VUW-GA-6AF-V	6	G1/8	4	4	14	30.5	15.7
VUW-GA-6BF-V	6	G1/4	5.5	4	19	35.3	15.7
VUW-GA-6CF-V	6	G3/8	6.6	4	24	38.4	15.7
VUW-GA-6DF-V	6	G1/2	7.1	4	27	42.9	15.7
VUW-GA-8BF-V	8	G1/4	5.5	5.5	19	33	16.8
VUW-GA-8CF-V	8	G3/8	6.6	5.6	24	39.5	16.8
VUW-GA-8DF-V	8	G1/2	7.1	5.6	27	43.7	16.8
VUW-GA-10BF-V	10	G1/4	5.5	7.1	19	34.5	17.6
VUW-GA-10CF-V	10	G3/8	6.6	6.6	24	39.5	17.6
VUW-GA-10DF-V	10	G1/2	7.1	7.1	27	41.1	17.6
VUW-GA-12BF-V	12	G1/4	5.5	8.8	19	40.1	23.3
VUW-GA-12CF-V	12	G3/8	6.6	8.8	24	41.3	23.3
VUW-GA-12DF-V	12	G1/2	7.1	8.8	27	48.8	23.3
VUW-GA-15DF-V	15	G1/2	7.1	12	27	49	24.7
VUW-GA-16DF-V	16	G1/2	7.1	12.7	27	49	24.7
VUW-GA-18DF-V	18	G1/2	7.1	13.9	27	49.3	24.7
VUW-GA-22DF-V	22	G1/2	7.1	18.3	27	52.5	26.6
VUW-GA-25DF-V	25	G1/2	7.1	19.8	30	60	32.5

Tube (Inch) To ISO Parallel Thread

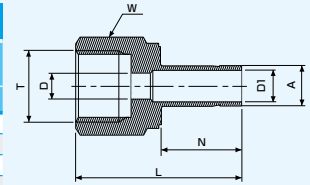
Part Numbers	A Tube O.D.	T	D	D ₁	W		L	N
	in		mm	mm	in	mm	mm	mm
VUW-GA-6.35AF-V	1/4	G1/8	4	4	9/16	14.3	30.5	15.6
VUW-GA-6.35CF-V	1/4	G3/8	6.6	4.2	15/16	23.8	38.4	15.6
VUW-GA-9.52CF-V	3/8	G3/8	6.6	6.6	15/16	23.8	39.4	17.5
VUW-GA-12.7DF-V	1/2	G1/2	7.1	7.1	1 1/16	27	45.7	23.3

Tube (Metric) To ISO Parallel Thread

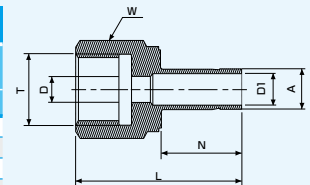
Part Numbers	A Tube O.D.	T	D	D ₁	W	L	N
	mm		mm	mm	mm	mm	mm
VUW-GA-6AF-PG-V	6	G1/8	5.5	4	14	32.8	15.7
VUW-GA-6BF-PG-V	6	G1/4	5.5	4	19	35.3	15.7
VUW-GA-6CF-PG-V	6	G3/8	5.5	4	24	38.6	15.7
VUW-GA-6DF-PG-V	6	G1/2	5.5	4	27	42.9	15.7
VUW-GA-8BF-PG-V	8	G1/4	5.5	5.5	19	33	16.8
VUW-GA-8CF-PG-V	8	G3/8	5.5	5.5	24	39.4	16.8
VUW-GA-8DF-PG-V	8	G1/2	5.5	5.5	27	43.7	16.8
VUW-GA-10BF-PG-V	10	G1/4	5.5	7.1	19	34.5	17.6
VUW-GA-10CF-PG-V	10	G3/8	5.5	7.1	24	36.1	17.6
VUW-GA-10DF-PG-V	10	G1/2	5.5	7.1	27	41.1	17.6
VUW-GA-12BF-PG-V	12	G1/4	5.5	8.8	19	40.1	23.3
VUW-GA-12CF-PG-V	12	G3/8	5.5	8.8	24	44.7	23.3
VUW-GA-12DF-PG-V	12	G1/2	5.5	8.8	27	48.8	23.3
VUW-GA-15DF-PG-V	15	G1/2	5.5	12	27	49	24.7
VUW-GA-16DF-PG-V	16	G1/2	5.5	12.7	27	49	24.7
VUW-GA-18DF-PG-V	18	G1/2	5.5	13.9	27	49.3	24.7
VUW-GA-22DF-PG-V	22	G1/2	5.5	18.3	27	55.6	26.6
VUW-GA-25DF-PG-V	25	G1/2	5.5	19.8	30	60	32.5

Tube (Inch) To ISO Parallel Thread

Part Numbers	A Tube O.D.	T	D	D ₁	W		L	N
	in		mm	mm	in	mm	mm	mm
VUW-GA-6.35AF-PG-V	1/4	G1/8	5.5	4.2	9/16	14.3	32.8	15.6
VUW-GA-6.35BF-PG-V	1/4	G1/4	5.5	4.2	3/4	19.1	35.3	15.6
VUW-GA-6.35CF-PG-V	1/4	G3/8	5.5	4.2	15/16	23.8	38.6	15.6
VUW-GA-6.35DF-PG-V	1/4	G1/2	5.5	4.2	1 1/16	27	42.9	15.6
VUW-GA-9.52BF-PG-V	3/8	G1/4	5.5	6.9	3/4	19.1	34.5	17.5
VUW-GA-9.52CF-PG-V	3/8	G3/8	5.5	6.9	15/16	23.8	39.4	17.5
VUW-GA-9.52DF-PG-V	3/8	G1/2	5.5	6.9	1 1/16	27	41.2	17.5
VUW-GA-12.7CF-PG-V	1/2	G3/8	5.5	9.4	15/16	23.8	44.7	23.3
VUW-GA-12.7DF-PG-V	1/2	G1/2	5.5	9.4	1 1/16	27	49.3	23.3



*In some cases, the "D" dimension may be larger than the "D1" dimension.



*In some cases, the "D" dimension may be larger than the "D1" dimension.

Reference Thread Specifications:

DIN - ISO 228/1

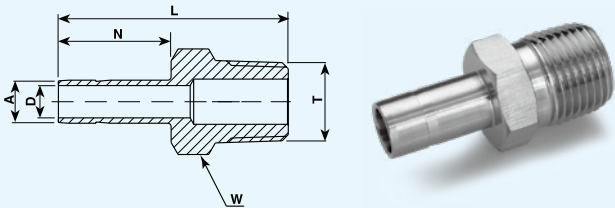
BS - 2779

JIS - B0202

ISO - 228/1-BSP-P

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Adapters
Tube To Pipe (NPT)
A



Tube (Metric) Male Pipe						
Part Numbers	A Tube O.D.	T	D	W	N	L
	mm		mm	mm	mm	mm
VUW-A-3AN-V	3	1/8NPT	2.1	12	13.5	30
VUW-A-3BN-V	3	1/4NPT	2.1	14	13.5	35.3
VUW-A-6AN-V	6	1/8NPT	4	12	15.7	32.8
VUW-A-6BN-V	6	1/4NPT	4	14	15.7	38.1
VUW-A-6CN-V	6	3/8NPT	4	18	15.7	37
VUW-A-6DN-V	6	1/2NPT	4	22	15.7	43.4
VUW-A-8AN-V	8	1/8NPT	4.8	12	16.8	33.5
VUW-A-8BN-V	8	1/4NPT	5.6	14	16.8	39.1
VUW-A-8CN-V	8	3/8NPT	5.6	18	16.8	39.9
VUW-A-8DN-V	8	1/2NPT	5.6	22	16.8	43
VUW-A-10BN-V	10	1/4NPT	7.1	14	17.6	39.9
VUW-A-10CN-V	10	3/8NPT	7.1	18	17.6	40.6
VUW-A-10DN-V	10	1/2NPT	7.1	22	17.6	46.2
VUW-A-12BN-V	12	1/4NPT	7.1	16	23.3	46.5
VUW-A-12CN-V	12	3/8NPT	8.8	18	23.3	46.5
VUW-A-12DN-V	12	1/2NPT	8.8	22	23.3	52
VUW-A-16DN-V	16	1/2NPT	11.9	22	24.7	50.5
VUW-A-20EN-V	20	3/4NPT	15.1	27	26.6	54.3

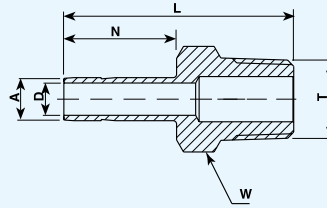
Reference Thread Specifications:

American Standard Pipe Thread (NPT).
NPT (National Pipe Tapered) is made to specifications outlined in ANSI B1.20.1.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Adapters Tube To Pipe (NPT)

A



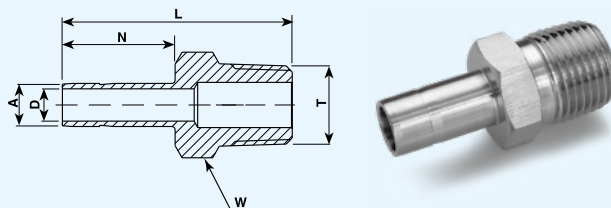
Tube (Inch) Male Pipe

Part Numbers	A Tube O.D.		T	D		W		N		L	
	in	mm		in	mm	in	mm	in	mm	in	mm
VUW-A-3.2AN-V	1/8	3.17	1/8NPT	0.09	2.2	7/16	11.1	0.53	13.5	1.16	29.5
VUW-A-3.2BN-V	1/8	3.17	1/4NPT	0.09	2	9/16	14.3	0.53	13.5	1.37	34.8
VUW-A-4.8AN-V	3/16	4.76	1/8NPT	0.12	3	7/16	11.1	0.56	14.2	1.19	30.2
VUW-A-4.8BN-V	3/16	4.76	1/4NPT	0.12	3	9/16	14.3	0.56	14.2	1.4	35.6
VUW-A-6.35AN-V	1/4	6.35	1/8NPT	0.17	4.2	7/16	11.1	0.61	15.6	1.25	31.8
VUW-A-6.35BN-V	1/4	6.35	1/4NPT	0.17	4.2	9/16	14.3	0.61	15.6	1.46	37.1
VUW-A-6.35CN-V	1/4	6.35	3/8NPT	0.17	4.2	11/16	17.5	0.61	15.6	1.49	37.9
VUW-A-6.35DN-V	1/4	6.35	1/2NPT	0.17	4.2	7/8	22.2	0.61	15.6	1.71	43.4
VUW-A-7.93AN-V	5/16	7.93	1/8NPT	0.19	4.8	7/16	11.1	0.67	16.9	1.29	32.7
VUW-A-7.93BN-V	5/16	7.93	1/4NPT	0.22	5.6	9/16	14.3	0.67	16.9	1.5	38.1
VUW-A-9.52AN-V	3/8	9.52	1/8NPT	0.19	4.8	7/16	11.1	0.69	17.5	1.32	33.5
VUW-A-9.52BN-V	3/8	9.52	1/4NPT	0.27	6.9	9/16	14.3	0.69	17.5	1.53	38.9
VUW-A-9.52CN-V	3/8	9.52	3/8NPT	0.27	6.9	11/16	17.5	0.69	17.5	1.56	39.6
VUW-A-9.52DN-V	3/8	9.52	1/2NPT	0.27	6.9	7/8	22.2	0.69	17.5	1.78	45.2
VUW-A-9.52EN-V	3/8	9.52	3/4NPT	0.27	6.9	1 1/16	27	0.69	17.5	1.78	45.2
VUW-A-12.7BN-V	1/2	12.7	1/4NPT	0.28	7.1	9/16	14.3	0.91	23.3	1.75	44.5
VUW-A-12.7CN-V	1/2	12.7	3/8NPT	0.37	9.4	11/16	17.5	0.91	23.3	1.78	45.2
VUW-A-12.7DN-V	1/2	12.7	1/2NPT	0.37	9.4	7/8	22.2	0.91	23.3	2	50.8
VUW-A-12.7EN-V	1/2	12.7	3/4NPT	0.37	9.4	1 1/16	27	0.92	23.3	2	50.8
VUW-A-15.88CN-V	5/8	15.87	3/8NPT	0.37	9.5	11/16	17.5	0.97	24.7	1.81	47.6
VUW-A-15.88DN-V	5/8	15.87	1/2NPT	0.47	11.9	7/8	22.2	0.97	24.7	2.06	52.3
VUW-A-15.88EN-V	5/8	15.87	3/4NPT	0.5	12.7	1 1/16	27	0.97	24.7	2.06	52.3
VUW-A-19.05DN-V	3/4	19.05	1/2NPT	0.47	11.9	7/8	22.2	0.97	24.7	2.06	52.3
VUW-A-19.05EN-V	3/4	19.05	3/4NPT	0.59	15	1 1/16	27	0.97	24.7	2.06	52.3
VUW-A-19.05FN-V	3/4	19.05	1NPT	0.59	15	1 3/8	34.9	0.97	24.7	2.28	57.3
VUW-A-22.22EN-V	7/8	22.22	3/4NPT	0.6	15.9	1 1/16	27	1.05	26.6	2.09	54.3
VUW-A-25.4DN-V	1	25.4	1/2NPT	0.47	11.9	1 1/16	27	1.30	33	2.40	61
VUW-A-25.4EN-V	1	25.4	3/4NPT	0.62	15.8	1 1/16	27	1.3	33	2.31	58.7
VUW-A-25.4FN-V	1	25.4	1NPT	0.8	20.3	1 3/8	34.9	1.3	33	2.6	66

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Adapters Tube To Pipe (R)

A



Tube (Metric) To ISO Tapered Thread

Part Numbers	A Tube O.D.	T	D	W	N	L
	mm		mm	mm	mm	mm
VUW-A-3A-V	3	R 1/8	2.1	12	13.5	30
VUW-A-3B-V	3	R 1/4	2.1	14	13.5	35.3
VUW-A-4A-V	4	R 1/8	2.2	12	14.2	30.7
VUW-A-6A-V	6	R 1/8	4	12	15.7	32.8
VUW-A-6B-V	6	R 1/4	4	14	15.7	38.1
VUW-A-6C-V	6	R 3/8	4	17.5	15.7	37
VUW-A-6D-V	6	R 1/2	4	22	15.7	43.4
VUW-A-8A-V	8	R 1/8	4.8	12	16.8	33.5
VUW-A-8B-V	8	R 1/4	5.6	14	16.8	39.1
VUW-A-8C-V	8	R 3/8	5.6	18	16.8	39.9
VUW-A-8D-V	8	R 1/2	5.6	22	16.8	43
VUW-A-10A-V	10	R 1/8	4.8	12	17.6	33.5
VUW-A-10B-V	10	R 1/4	7.1	14	17.6	39.9
VUW-A-10C-V	10	R 3/8	7.1	18	17.6	40.6
VUW-A-10D-V	10	R 1/2	7.1	22	17.6	46.2
VUW-A-12B-V	12	R 1/4	6.4	16	23.3	46.5
VUW-A-12C-V	12	R 3/8	8.8	18	23.3	46.2
VUW-A-12D-V	12	R 1/2	8.8	22	23.3	52
VUW-A-16C-V	16	R 3/8	9.7	18	24.7	47.8
VUW-A-16D-V	16	R 1/2	12.7	22	24.7	50.5
VUW-A-16E-V	16	R 3/4	12.7	27	24.7	52.3
VUW-A-20D-V	20	R 1/2	11.9	22	26.6	52.5
VUW-A-20E-V	20	R 3/4	15.1	27	26.6	54.3
VUW-A-25F-V	25	R 1	19.8	35	32.5	65.5

Tube (Inch) To ISO Tapered Thread

Part Numbers	A Tube O.D.		T	D		W		N		L	
	in	mm		in	mm	in	mm	in	mm	in	mm
VUW-A-3.2A-V	1/8	3.17	R 1/8	0.09	2.2	7/16	11.1	0.53	13.5	1.16	29.5
VUW-A-3.2B-V	1/8	3.17	R 1/4	0.09	2.2	9/16	14.3	0.53	13.5	1.37	34.8
VUW-A-4.8A-V	3/16	4.76	R 1/8	0.12	3	7/16	11.1	0.56	14.2	1.19	30.2
VUW-A-4.8B-V	3/16	4.76	R 1/4	0.12	3	9/16	14.3	0.56	14.2	1.4	35.6
VUW-A-6.35A-V	1/4	6.35	R 1/8	0.17	4.2	7/16	11.1	0.62	15.8	1.25	31.8
VUW-A-6.35B-V	1/4	6.35	R 1/4	0.17	4.2	9/16	14.3	0.62	15.8	1.46	37.1
VUW-A-6.35C-V	1/4	6.35	R 3/8	0.17	4.2	11/16	17.5	0.62	15.8	1.49	37.9
VUW-A-6.35D-V	1/4	6.35	R 1/2	0.17	4.2	7/8	22.2	0.62	15.8	1.71	43.4
VUW-A-7.93A-V	5/16	7.93	R 1/8	0.19	4.8	7/16	11.1	0.67	16.9	1.29	32.7
VUW-A-7.93B-V	5/16	7.93	R 1/4	0.22	5.6	9/16	14.3	0.67	16.9	1.5	38.1
VUW-A-9.52A-V	3/8	9.52	R 1/8	0.19	4.8	7/16	11.1	0.69	17.5	1.32	33.5
VUW-A-9.52B-V	3/8	9.52	R 1/4	0.27	6.9	9/16	14.3	0.69	17.5	1.53	38.9
VUW-A-9.52C-V	3/8	9.52	R 3/8	0.27	6.9	11/16	17.5	0.69	17.5	1.56	39.6
VUW-A-9.52D-V	3/8	9.52	R 1/2	0.27	6.9	7/8	22.2	0.69	17.5	1.78	45.2
VUW-A-12.7B-V	1/2	12.7	R 1/4	0.37	9.4	9/16	14.3	0.91	23.1	1.75	44.5
VUW-A-12.7C-V	1/2	12.7	R 3/8	0.37	9.4	11/16	17.5	0.91	23.1	1.78	45.2
VUW-A-12.7D-V	1/2	12.7	R 1/2	0.37	9.4	7/8	22.2	0.91	23.1	2	50.8
VUW-A-12.7F-V	1/2	12.7	R 1	0.37	9.4	1 3/8	34.9	0.92	23.3	2.32	58.9
VUW-A-15.88C-V	5/8	15.87	R 3/8	0.37	9.5	11/16	17.5	0.97	24.7	1.81	47.6
VUW-A-15.88D-V	5/8	15.87	R 1/2	0.47	11.9	7/8	22.2	0.97	24.7	2.06	52.3
VUW-A-15.88E-V	5/8	15.87	R 3/4	0.5	12.7	1 1/16	27	0.97	24.7	2.06	52.3
VUW-A-19.05C-V	3/4	19.05	R 3/8	0.37	9.5	13/16	20.6	0.97	24.7	1.85	47
VUW-A-19.05D-V	3/4	19.05	R 1/2	0.47	11.9	7/8	22.2	0.97	24.7	2.06	52.3
VUW-A-19.05E-V	3/4	19.05	R 3/4	0.59	15	1 1/16	27	0.97	24.7	2.06	52.3
VUW-A-19.05F-V	3/4	19.05	R 1	0.59	15	1 3/8	34.9	0.97	24.7	2.28	57.3
VUW-A-22.22E-V	7/8	22.22	R 3/4	0.6	15.9	1 1/16	27	1.05	26.6	2.09	54.3
VUW-A-25.4E-V	1	25.4	R 3/4	0.62	15.8	1 1/16	27	1.3	33	2.31	58.7
VUW-A-25.4F-V	1	25.4	R 1	0.8	20.3	1 3/8	34.9	1.3	33	2.6	66

Reference Thread Specifications:

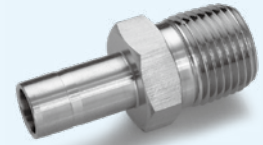
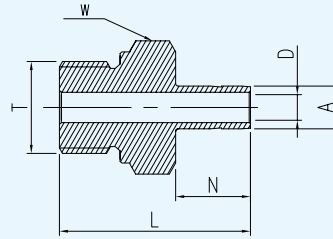
DIN - ISO 2999 JIS - B0203

BS - 21 ISO - 7/1-BSP-T

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Male Adapters Tube To Pipe (G)

A



Tube (Metric) To ISO Parallel Thread

Part Numbers	A Tube O.D.	T	D	W	N	L
	mm		mm	mm	mm	mm
VUW-A-6AF-FJS-V	6	G1/8	4	14	15.7	30.4
VUW-A-6BF-FJS-V	6	G1/4	4	19	15.7	38.9
VUW-A-6DF-FJS-V	6	G1/2	4	27	15.7	42
VUW-A-8BF-FJS-V	8	G1/4	5.6	19	16.8	40.1
VUW-A-8DF-FJS-V	8	G1/2	5.6	27	16.8	44
VUW-A-10BF-FJS-V	10	G1/4	5.9	19	17.6	40.9
VUW-A-10CF-FJS-V	10	G3/8	7.1	22	17.6	41.7
VUW-A-10DF-FJS-V	10	G1/2	7.1	27	17.6	44.7
VUW-A-12BF-FJS-V	12	G1/4	6.4	19	23.3	47
VUW-A-12CF-FJS-V	12	G3/8	7.9	22	23.3	47.2
VUW-A-12DF-FJS-V	12	G1/2	8.8	27	23.3	50.5
VUW-A-18DF-FJS-V	18	G1/2	11.9	27	24.7	51.3
VUW-A-18EF-FJS-V	18	G3/4	13.9	35	24.7	55.9
VUW-A-22EF-FJS-V	22	G3/4	15.9	35	26.6	58.1

Tube (Inch) To ISO Parallel Thread

Part Numbers	A Tube O.D.		T	D	W		N	L
	in	mm			in	mm		
VUW-A-3.2AF-FJS-V	1/8	3.17	G1/8	2	9/16	14.3	13.5	31
VUW-A-6.35AF-FJS-V	1/4	6.35	G1/8	4	9/16	14.3	15.6	30.5
VUW-A-6.35BF-FJS-V	1/4	6.35	G1/4	4.2	3/4	19.1	15.6	36
VUW-A-9.52BF-FJS-V	3/8	9.52	G1/4	5.9	3/4	19.1	17.5	39.9
VUW-A-9.52CF-FJS-V	3/8	9.52	G3/8	6.9	7/8	22.2	17.5	40.6
VUW-A-9.52DF-FJS-V	3/8	9.52	G1/2	6.9	1 1/16	27	17.5	44.6
VUW-A-12.7BF-FJS-V	1/2	12.7	G1/4	5.8	3/4	19.1	23.3	47
VUW-A-12.7CF-FJS-V	1/2	12.7	G3/8	7.9	7/8	22.2	23.3	47.8
VUW-A-12.7DF-FJS-V	1/2	12.7	G1/2	9.4	1 1/16	27	23.3	49.8
VUW-A-19.05DF-FJS-V	3/4	19.05	G1/2	11.9	1 1/16	27	24.7	51.4
VUW-A-19.05EF-FJS-V	3/4	19.05	G3/4	15	1 5/16	33.3	24.7	54.9
VUW-A-25.4FF-FJS-V	1	25.4	G1	19.8	1 5/8	41.3	33	65.8

Reference Thread Specifications:

DIN - ISO 228/1

BS - 2779

JIS - B0202

ISO - 228/1-BSP-P

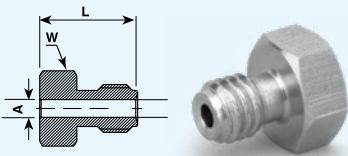
Seal Method (Male G Thread Side)

Please refer to page 38 for the Male G thread-side sealing method and compatible gaskets.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

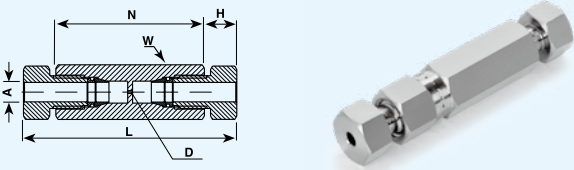
Chromatograph Type Tubes Fittings

Male Nuts



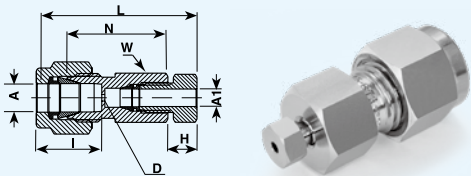
Part Number	A Tube O.D.		W		L		
	in	mm	in	mm	in	mm	
VUW-1.6MN-V	1/16	1.58	1/4	6.35	3/8	9.5	

Unions



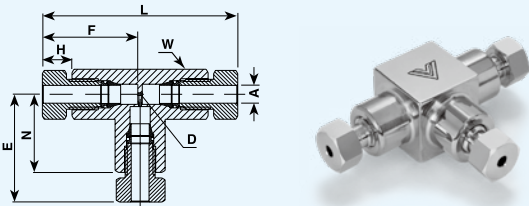
Part Number	A Tube O.D.		D		W		N		H		L		Dead Space
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWF-1.6-MN-V	1/16	1.58	0.014	0.35	1/4	6.35	0.84	21.3	0.2	5.1	1.24	31.5	6.6 x 10 ⁻⁵ cc

Reducing Unions
(New V-Lok × Chromatograph Fittings)



Part Numbers	A Tube O.D.		A1 Tube O.D.		D		W		N		L		H		I		Dead Space
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWF-6.35X1.6-MN-V	1/4	6.35	1/16	1.58	0.014	0.35	1/2	12.7	0.75	19.1	1.24	31.5	0.2	5.1	0.6	15.2	6.8 x 10 ⁻⁵ cc
VUWF-9.52X1.6-MN-V	3/8	9.52	1/16	1.58	0.014	0.35	5/8	15.9	0.81	20.6	1.3	33.1	0.2	5.1	0.66	16.8	6.8 x 10 ⁻⁵ cc

Union Tees



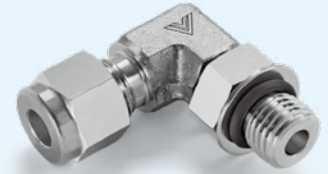
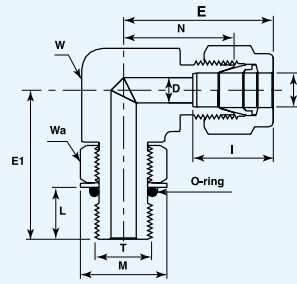
Part Number	A Tube O.D.		D		W		N		H		F		E		L		Dead Space
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWT-1.6-MN-V	1/16	1.58	0.014	0.35	3/8	9.5	0.45	11.4	0.2	5.1	0.65	16.5	0.65	16.5	1.3	33	2.8 x 10 ⁻⁴ cc

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Positionables PER SAE J1926 & MS 16142

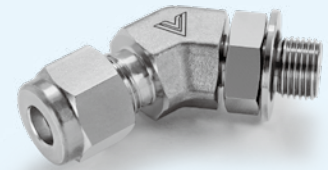
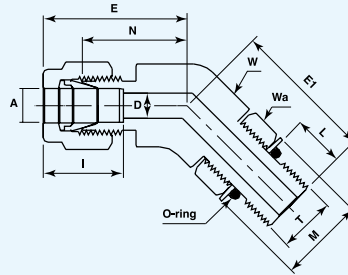
Male Elbows (UNF)

PL



Tube To SAE/MS Straight Thread Boss (Positionable) ※

Part Numbers	A Tube O.D.		T	D		W		Wa		N		E		E1		L		M		I		O-ring ※※ size AS568
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWPL-6.35X7/16-V	1/4	6.35	7/16-20	0.19	4.8	1/2	12.7	9/16	14.3	0.79	20	1.08	27.4	1.12	28.5	0.39	9.9	0.65	16.5	0.6	15.2	-904
VUWPL-6.35X9/16-V	1/4	6.35	9/16-18	0.19	4.8	5/8	15.9	11/16	17.5	0.91	23.1	1.2	30.5	1.27	32.3	0.43	11	0.79	20.1	0.6	15.2	-906
VUWPL-9.52X9/16-V	3/8	9.52	9/16-18	0.28	7.1	5/8	15.9	11/16	17.5	0.97	24.6	1.26	32	1.27	32.3	0.43	11	0.79	20.1	0.66	16.8	-906
VUWPL-12.7X3/4-V	1/2	12.7	3/4-16	0.41	10.4	13/16	20.6	7/8	22.2	1.08	27.4	1.48	37.6	1.49	37.9	0.5	12.7	1.01	25.7	0.9	22.9	-908
VUWPL-6.35X7/16-DRG-V	1/4	6.35	7/16-20	0.19	4.8	1/2	12.7	9/16	14.3	0.79	20	1.07	27.3	1.12	28.5	0.39	9.9	0.65	16.5	0.6	15.2	-904



Male Elbows 45° (UNF)

PL

Tube To SAE/MS Straight Thread Boss (Positionable) ※

Part Numbers	A Tube O.D.		T	D		W		Wa		N		E		E1		L		M		I		O-ring ※※ size AS568
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWPL-6.35X7/16-45-V	1/4	6.35	7/16-20	0.19	4.8	9/16	14.3	9/16	14.3	0.72	18.3	1.01	25.7	1.01	25.7	0.39	9.9	0.65	16.5	0.6	15.2	-904
VUWPL-9.52X9/16-45-V	3/8	9.52	9/16-18	0.28	7.1	13/16	20.6	11/16	17.5	0.81	20.1	1.1	28	1.06	27	0.44	11.2	0.79	20.1	0.66	16.8	-906

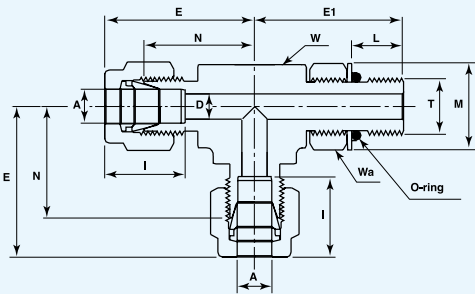
※ : Per SAE J1926 and MS 16142. See page 78 for mounting dimensions.

※※ : O-rings used are Viton 90 Durometer. Other O-ring materials are available on request.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

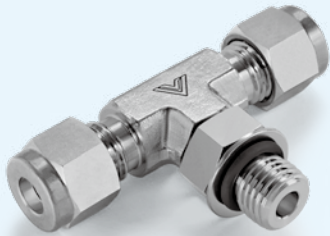
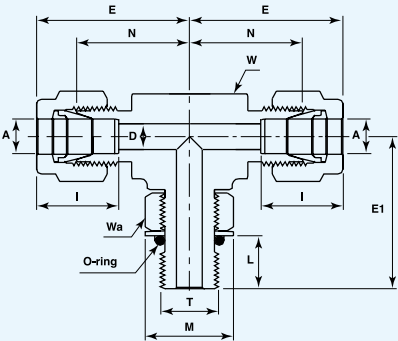
Positionables
PER SAE J1926 & MS 16142

Male Run Tees
PTL



Tube To SAE/MS Straight Thread Boss (Positionable) ※																						
Part Numbers	A Tube O.D.		T	D		W		Wa		N		E		E1		L		M		I		O-ring ※※ size AS568
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWPTL-6.35X7/16-V	1/4	6.35	7/16-20	0.19	4.8	1/2	12.7	9/16	14.3	0.83	21.1	1.12	28.5	1.12	28.5	0.39	9.9	0.65	16.5	0.6	15.2	-904
VUWPTL-9.52X9/16-V	3/8	9.52	9/16-18	0.28	7.1	5/8	15.9	11/16	17.5	0.97	24.6	1.26	32	1.27	32.3	0.43	11	0.79	20.1	0.66	16.8	-906

Male Branch tees
PTS

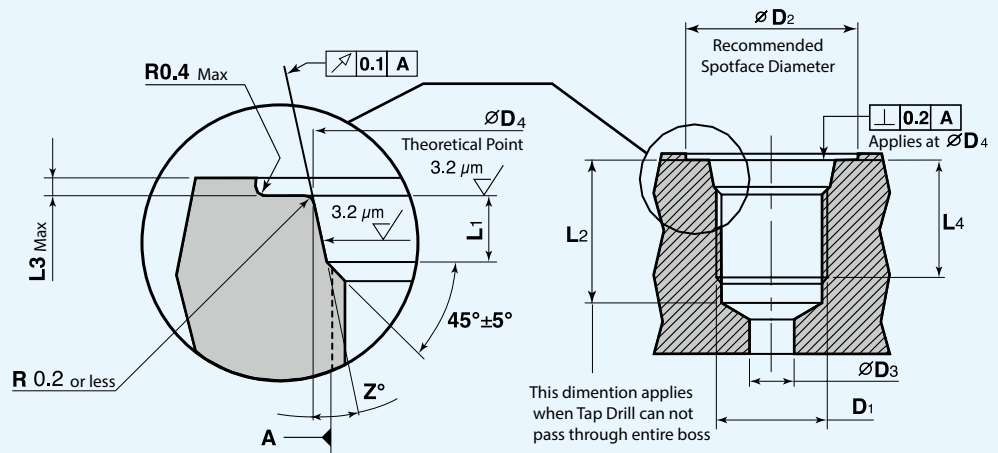


Tube To SAE/MS Straight Thread Boss (Positionable) ※																						
Part Numbers	A Tube O.D.		T	D		W		Wa		N		E		E1		L		M		I		O-ring ※※ size AS568
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWPST-6.35X7/16-V	1/4	6.35	7/16-20	0.19	4.8	1/2	12.7	9/16	14.3	0.83	21.1	1.12	28.5	1.12	28.5	0.39	9.9	0.65	16.5	0.6	15.2	-904
VUWPST-9.52X9/16-V	3/8	9.52	9/16-18	0.28	7.1	5/8	15.9	11/16	17.5	0.97	24.6	1.26	32	1.27	32.3	0.43	11	0.79	20.1	0.66	16.8	-906

※ :Per SAE J1926 and MS 16142. See page 78 for mounting dimensions.
※※ :O-rings used are Viton 90 Durometer. Other O-ring materials are available on request.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Mounting Dimensions FOR SAE J1926 & MS 16142 BOSS



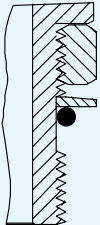
Mounting Dimensions For Oring - Seal Connectors (SAE/MS)

D1 Thread Size	D2 Min. Diameter	D3 Min. Diameter	D4 ± 0.05	L1 ± 0.02	L2 Min.	L3 Max.	L4 Min. Full Thread	Z ± 1°
	mm	mm	mm	mm	mm	mm	mm	°
5/16 - 24 UNF - 2B	17	1.6	9.15	2.1	12	1.6	10	12
3/8 - 24 UNF - 2B	19	3.5	10.75	2.1	12	1.6	10	12
7/16 - 20 UNF - 2B	21	4.5	12.45	2.6	14	1.6	11.5	12
1/2 - 20 UNF - 2B	23	6	14.05	2.6	14	1.6	11.5	12
9/16 - 18 UNF - 2B	25	7.5	15.7	2.7	15.5	1.6	12.7	12
3/4 - 16 UNF - 2B	30	10	20.65	2.7	17.5	2.4	14.3	15
7/8 - 14 UNF - 2B	34	12.5	24	2.7	20	2.4	16.7	15
1 1/16 - 12 UNF - 2B	41	16	29.2	3.5	23	2.4	19	15
1 3/16 - 12 UN - 2B	45	18	32.4	3.5	23	2.4	19	15
1 5/16 - 12 UN - 2B	49	21	35.55	3.5	23	3.2	19	15

Installation Instructions:

Figure 1

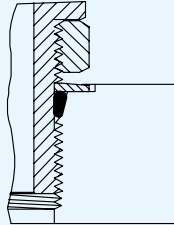
Locking backed off



Lubricate the O-ring by inserting it into the groove adjacent to the face of the metal back - up washer which is assembled at the extreme end of the groove as shown in Figure 1.

Figure 2

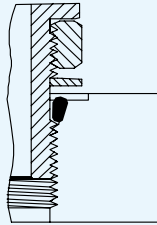
Fitting install hand tight



Install the fitting into the S.A.E. straight thread boss, figure 2, until the metal back - up washer contacts the face of the boss as shown in Figure 2.

Figure 3

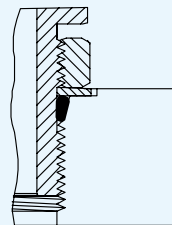
Fittings backed-off for alignment (1 turn maximum)



Position the fitting by turning it counter clockwise up to a maximum of one turn (see Figure 3).

Figure 4

Fitting locknut tight to appropriate torque

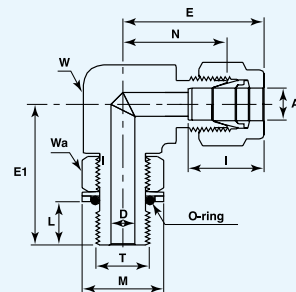


Holding the pad of the fitting with a wrench, tighten the locknut and washer against the face as shown in Figure 4.

Positionables ISO Parallel Thread

Male Elbows (G)

PL



Tube (Inch) To ISO Parallel Thread (Positionable) ※

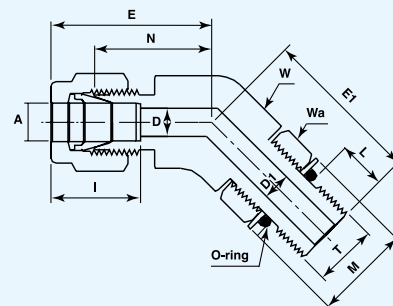
Part Number	A Tube O.D.		T	D		W		Wa		N		E		E1		L		M		I		O-ring ※※ size I.D.
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWPL-6.35AF-V	1/4	6.35	G1/8	0.16	3.9	1/2	12.7	9/16	14.3	0.77	19.6	1.06	26.9	1.04	26.4	0.32	8.1	0.68	17.3	0.6	15.2	8x1.8-G
VUWPL-6.35BF-V	1/4	6.35	G1/4	0.19	4.8	5/8	15.9	3/4	19.1	0.85	21.6	1.14	28.9	1.27	32.3	0.36	9.1	0.90	22.9	0.60	15.2	AS568-111-90°
VUWPL-9.52BF-V	3/8	9.52	G1/4	0.28	7.1	5/8	15.9	3/4	19.1	0.91	23.1	1.20	30.5	1.27	32.3	0.36	9.1	0.90	22.9	0.66	16.8	AS568-111-90°
VUWPL-9.52CF-V	3/8	9.52	G3/8	0.28	7.1	13/16	20.6	7/8	22.2	1.02	25.9	1.31	33.3	1.46	37.1	0.37	9.4	1.04	26.4	0.66	16.8	AS568-113-90°
VUWPL-12.7BF-V	1/2	12.7	G1/4	0.41	10.4	13/16	20.6	3/4	19.1	1.02	25.9	1.42	36.1	1.38	35	0.36	9.1	0.90	22.9	0.90	22.9	AS568-111-90°
VUWPL-12.7CF-V	1/2	12.7	G3/8	0.41	10.4	13/16	20.6	7/8	22.2	1.02	25.9	1.42	36.1	1.46	37.1	0.37	9.4	1.04	26.4	0.90	22.9	AS568-113-90°
VUWPL-12.7DF-V	1/2	12.7	G1/2	0.41	10.4	15/16	23.8	1 1/16	27	1.10	27.9	1.50	38.1	1.71	43.4	0.51	13	1.26	32	0.90	22.9	AS568-593-90°

Tube (Metric) To ISO Parallel Thread (Positionable) ※

Part Numbers	A Tube O.D.	T	D	W		Wa		N	E	E1	L	M	I	O-ring ※※ size I.D.
	mm			in	mm	in	mm							
VUWPL-6AF-V	6	G1/8	3.9	1/2	12.7	9/16	14.3	19.6	27	26.4	8.1	17.3	15.3	8x1.8
VUWPL-6BF-V	6	G1/4	4.8	5/8	15.9	5/8	15.9	21.6	29	32.3	9.1	22.9	15.3	AS568-111-90°
VUWPL-8AF-V	8	G1/8	4.0	5/8	15.9	9/16	14.3	21.3	28.8	27.4	8.1	17.3	16.2	8x1.8-G
VUWPL-8BF-V	8	G1/4	5.9	5/8	15.9	5/8	15.9	22.4	29.9	32.3	9.1	22.9	16.2	AS568-111-90°
VUWPL-10BF-V	10	G1/4	5.9	13/16	20.6	3/4	19.1	25.9	33.5	35	9.1	22.9	17.2	AS568-111-90°
VUWPL-10CF-V	10	G3/8	7.9	13/16	20.6	7/8	22.2	25.9	33.5	37.1	9.4	26.4	17.2	AS568-113-90°
VUWPL-12BF-V	12	G1/4	5.9	13/16	20.6	3/4	19.1	25.9	36	35	9.1	22.9	22.8	AS568-111-90°
VUWPL-12CF-V	12	G3/8	7.9	13/16	20.6	7/8	22.2	25.9	36	37.1	9.4	26.4	22.8	AS568-113-90°

Male Elbows 45° (G)

PL



Tube (Inch) To ISO Parallel Thread (Positionable) ※

Part Number	A Tube O.D.		T	D		D1		W		Wa		N		E		E1		L		M		I		O-ring ※※ size I.D.
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWPL-6.35AF-45-V	1/4	6.35	G1/8	0.16	4	0.19	4.8	9/16	14.3	9/16	14.3	0.69	17.6	0.98	24.9	0.94	25.3	0.32	8.1	0.68	17.3	0.6	15.2	8x1.8-G

Tube (Metric) To ISO Parallel Thread (Positionable) ※

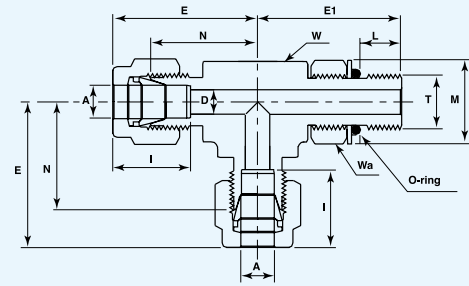
Part Number	A Tube O.D.	T	D	D1		W		Wa		N	E	E1	L	M	I	O-ring ※※ size I.D.
	mm			in	mm	in	mm	in	mm							
VUWPL-6AF-45-V	6	G1/8	4	0.19	4.8	9/16	14.3	9/16	14.3	17.55	25	25.3	8.1	17.3	15.3	8x1.8-G

※ : Per SAE J1926 and MS 16142. See page 81 for mounting dimensions.

※※ : O-rings used are Viton 80 Durometer. Other O-ring materials are available on request.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

Positionables ISO Parallel Thread Male Run Tees (G) PTL



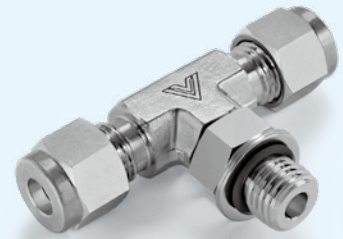
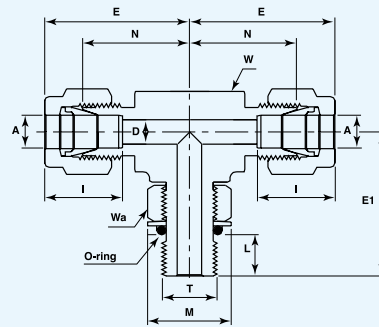
Tube (Inch) To ISO Parallel Thread (Positionable) ※

Part Number	A Tube O.D.		T	D		W		Wa		N		E		E1		L		M		I		O-ring ※※ size I.D.
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWPTL-6.35AF-V	1/4	6.35	G1/8	0.16	4	1/2	12.7	9/16	14.3	0.77	19.6	1.06	26.9	1.04	26.4	0.32	8.1	0.68	17.3	0.6	15.2	8x1.8-G

Tube (Metric) To ISO Parallel Thread (Positionable) ※

Part Number	A Tube O.D.	T	D	W		Wa		N	E	E ₁	L	M	I	O-ring ※※ size I.D.
	mm		mm	in	mm	in	mm	mm	mm	mm	mm	mm	mm	
VUWPTL-6AF-V	6	G1/8	4	1/2	12.7	9/16	14.3	19.6	27	26.4	8.1	17.3	15.3	8x1.8-G

Male Branch Tees (G) PTS



Tube (Inch) To ISO Parallel Thread (Positionable) ※

Part Number	A Tube O.D.		T	D		W		Wa		N		E		E1		L		M		I		O-ring ※※ size I.D.
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
VUWPTS-6.35AF-V	1/4	6.35	G1/8	0.16	4	1/2	12.7	9/16	14.3	0.77	19.6	1.06	26.9	1.04	26.4	0.32	8.1	0.68	17.3	0.6	15.2	8x1.8-G

Tube (Metric) To ISO Parallel Thread (Positionable) ※

Part Number	A Tube O.D.	T	D	W		Wa		N	E	E ₁	L	M	I	O-ring  size I.D.
	mm		mm	in	mm	in	mm	mm	mm	mm	mm	mm	mm	
VUWPTS-6AF-V	6	G1/8	4	1/2	12.7	9/16	14.3	19.6	27	26.4	8.1	17.3	15.3	8x1.8-G

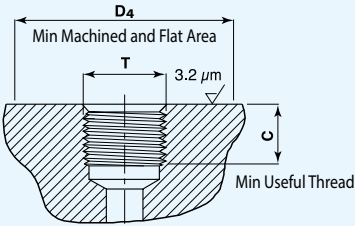
※ : Per SAE J1926 and MS 16142. See page 81 for mounting dimensions.

※※ : O-rings used are Viton 80 Durometer. Other O-ring materials are available on request.

"D" - Dimension is minimum hole diameter - dimensions are for reference only, and are subject to change without notice.

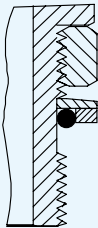
ISO Parallel Thread (Reference)

Mounting Dimensions Of Connectors				
T	D4		C	
	in	mm	Min useful Thread	
			in	mm
G1/8	0.53	13.5	0.28	7



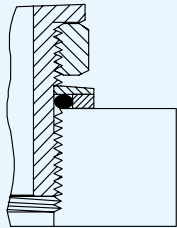
Installation Instructions:

Figure 1
Locking backed off



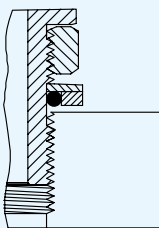
Set the O-ring by inserting it into the groove adjacent to the face of the metal back - up washer which is assembled at the extreme end of the groove as shown in Figure 1.

Figure 2
Fittings install hand tight



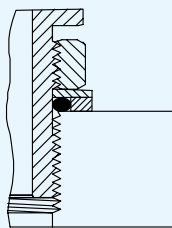
Install the fitting into the ISQ straight thread boss untill the metal back - up washer contacts the face of the boss as shown in Figure 2.

Figure 3
Fittings backed-off for O-ring alignment (1 turn maximum)



Position the fitting by turning it counter clockwise up to a maximum of one turn. See Figure 3.

Figure 4
Fittings locknut tight to appropriate torque



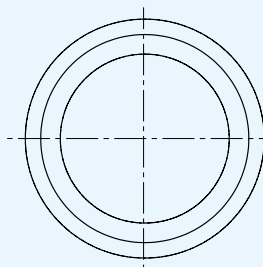
Holding the body of the fitting with a wrench, tighten the locknut and washer against the face as shown in Figure 4.

The contents of the description are reference, and are subject to change without notice.

Stop Collar

New V-Lok		D	
in	mm	in	mm
1/4	6.35	0.69	17.5
3/8	9.52	0.84	20.6
1/2	12.7	1.1	27
3/4	19.05	1.31	33.3
1	25.4	1.68	42.7

1. Remove the nut and Rings from the fitting.
2. Insert the stop collar.



Ordering Information For Assembled Stop Collar (With Fitting)

V U W H

Fitting type
(male New V-Lok Fittings)

6.35 BN

Tube O.D.
The O.D. size is always the first
to be described.

SC

Stop Collar

S = Stainless Steel

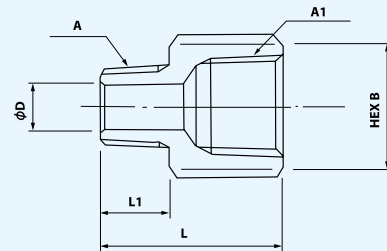
Stop Collar Material

How To Order Stop Collar Only

VUW-6.35 SC
S = Stainless Steel

Adapters

When hoping for change in the connection, when you buy the following adapter separately, you're quite able to connect various kinds very easily.



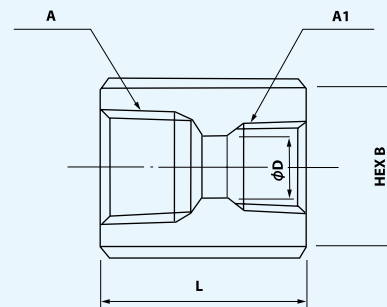
Stainless Steel Pipe Fittings, Adapters

R x Rc Type

Part Numbers	Nominal Dia.	A	A1	B		D		L		L1	
				in	mm	in	mm	in	mm	in	mm
UJB-D-AM	R1/2 x Rc1/2	R1/2	Rc1/2	1.06	27	0.29	10	1.54	39	0.67	17

NPT x NPT Type

Part Numbers	Nominal Dia.	A	A1	B		D		L		L1	
				in	mm	in	mm	in	mm	in	mm
UJB-BNXAN-AM	1/4NPTX1/8NPT	1/4NPT	1/8NPT	0.55	14	0.18	4.5	1.02	26	0.51	13
UJB-CNXBN-AM	3/8NPTX1/4NPT	3/8NPT	1/4NPT	0.75	19	0.28	7	1.18	30	0.55	14
UJB-DNXCN-AM	1/2NPTX3/8NPT	1/2NPT	3/8NPT	0.91	23	0.39	10	1.34	34	0.67	17
UJB-ENXDN-AM	3/4NPTX1/2NPT	3/4NPT	1/2NPT	1.14	29	0.47	12	1.61	41	0.75	19
UJB-FNXEN-AM	1NPTX3/4NPT	1NPT	3/4NPT	1.42	36	0.63	16	1.81	46	0.87	22
UJB-DN-AM	1/2NPTX1/2NPT	1/2NPT	1/2NPT	1.06	27	0.39	10	1.54	39	0.67	17



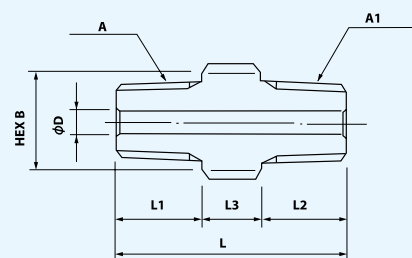
Stainless Steel Pipe Fittings, Hex Couplings

Rc x Rc (Same Diameter A1=A)

Part Numbers	Nominal Dia.	A, A1	B		D		L	
			in	mm	in	mm	in	mm
UJS-D-AM	Rc1/2	Rc1/2	1.06	27	0.47	12	1.65	42

NPT x NPT (Same Diameter A1=A)

Part Numbers	Nominal Dia.	A, A1	B		D		L	
			in	mm	in	mm	in	mm
UJS-EN-AM	3/4NPT	3/4NPT	1.26	32	0.63	16	1.97	50



Nipples

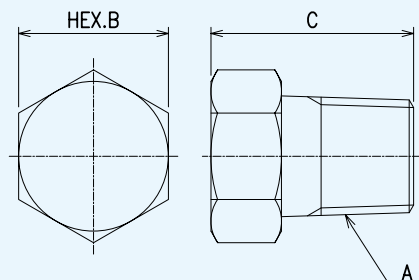
NPT x NPT(Same Diameter A1=A)

Part Numbers	Nominal Dia.	A, A1	D		B		L		L1, L2		L3	
			in	mm	in	mm	in	mm	in	mm	in	mm
UJN-BN-AM	1/4NPT	1/4NPT	0.24	6	0.55	14	1.22	31	0.51	13	0.2	5
UJN-CN-AM	3/8NPT	3/8NPT	0.35	9	0.67	17	1.38	35	0.55	14	0.28	7
UJN-DN-AM	1/2NPT	1/2NPT	0.47	12	0.91	23	1.73	44	0.67	17	0.39	10
UJN-EN-AM	3/4NPT	3/4NPT	0.63	16	1.14	29	1.89	48	0.75	19	0.39	10

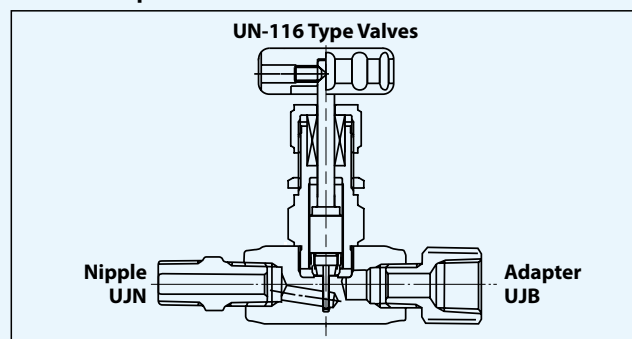
Plugs

R						
Part Numbers	Nominal Dia.	A	B		D	
			in	mm	in	mm
UJP-B-AM	R1/4	R1/4	0.67	17	0.91	23
UJP-C-AM	R3/8	R 3/8	0.75	19	0.94	24
UJP-D-AM	R1/2	R1/2	0.91	23	1.18	30

NPT						
Part Numbers	Nominal Dia.	A	B		D	
			in	mm	in	mm
UJP-AN-AM	1/8NPT	1/8NPT	0.47	12	0.67	17
UJP-BN-AM	1/4NPT	1/4NPT	0.67	17	0.91	23
UJP-CN-AM	3/8NPT	3/8NPT	0.75	19	0.94	24
UJP-DN-AM	1/2NPT	1/2NPT	0.91	23	1.18	30
UJP-FN-AM	1NPT	1NPT	1.38	35	1.5	38



● Use Example



※ : In other ones above-mentioned, some kinds, **Fujikin** has a large selection, so please consult **Fujikin**.

Overview

The **POWERFULLOK** is a tube fitting with excellent performance and quality. It is manufactured utilizing the design expertise and production technology that we have accumulated through our many years of experience as a precision fitting manufacturer. The brass **POWERFULLOK** is a flareless double Rings compression fitting that does not require tube thread cutting. It consists of a brass (C3771B, C3604B, C3602B) body, front ferrule, back ferrule, and nut.

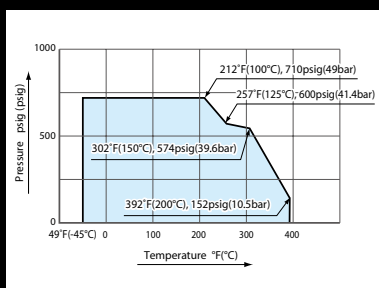
Reliability

Product performance and reliability are dependent on proper assembly. Before installing the product, please read the Installation Guide on page 103 carefully. Contact Fujikin if you have any questions about assembly procedures.

Features / Applications

- This flareless fitting is easy to install; simply insert the tube into the fitting and tight the nut. No welding is required.
- The Double-Rings connection creates a strong bond. By applying a compressive force to the tube, it achieves extremely high pressure resistance.
- The metal sealing parts, which undergo precision finishing, ensure an airtight seal.
- This compact, lightweight fitting requires low tightening torque, and is easy to disassemble and retighten.
- The tube size is stamped on the body for quick and easy identification.

Pressure and Temperature Ratings



Notes At the maximum operating pressure, the maximum operating temperature is 212°F (100°C) for most fluids. However, air, hot water, and steam have a higher maximum operating temperature 392°F (200°C) . when they are used at lower pressures. Consult with Fujikin before using the POWERFULLOK at temperatures greater than 212°F (100°C) .

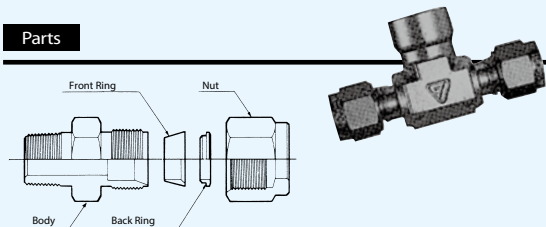
Applicable Fluid

- Air, Nitrogen gas, Inert gas like Helium, and non-corrosive gas and liquid.

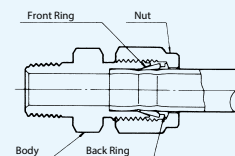
Other

- The front and back Rings are available in metric (mm) and fractional inch sizes. Make sure that you use ferrules of the correct size, or the sealing performance will be compromised.
- Materials and dimensions are subject to change without notice.
- Avoid potential problems by notifying Fujikin before changing the conditions of use.

Parts



Cross-section after Assembly



Thread Size

Taper Pipe Thread (JIS)

Designation	A	B	C	D
JIS B0203 (1982)				
Male thread	R1/8	R1/4	R3/8	R1/2
Female thread	Rc1/8	Rc1/4	Rc3/8	Rc1/2

Parallel Pipe Thread (JIS)

Designation	AF	BF	CF	DF
JIS B0203 (1982)	G1/8	G1/4	G3/8	G1/2

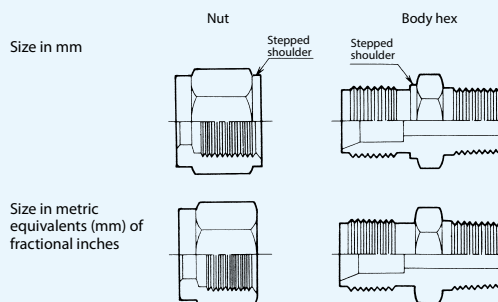
National Pipe Taper Thread (ANSI)

Designation	AN	BN	CN	DN
ANSI B2.1	1/8NPT	1/4NPT	3/8NPT	1/2NPT

Nominal Diameter

Size in mm	Size in fractional inches
3 = 3mm OD	3.2 = 3.2mm (1/8") OD
4 = 4mm OD	6.35 = 6.35mm (1/4") OD
6 = 6mm OD	9.52 = 9.52mm (3/8") OD
8 = 8mm OD	12.7 = 12.7mm (1/2") OD
10 = 10mm OD	
12 = 12mm OD	

Identification of sizes in mm and metric equivalents (mm) of fractional inches For easy size identification, fitting diameters (expressed in millimeters) are stamped on the body hex and the nut. In addition, metric fittings have stepped shoulders to distinguish them from fractional fittings.



Part Number Designation

P D W H - 6 B - R

Product Series:
POWERFULLOK
Tube Fittings

Material:
Brass

Fitting Type:
Double-Rings
Compression Fitting

Connection Type:
Male Connector

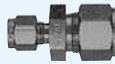
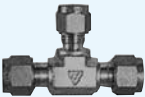
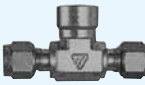
Nominal Diameter:
Outer Diameter of
Tube (mm)

Thread Size:
R 1/4"

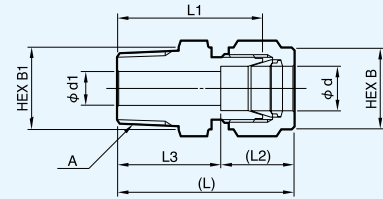
Corresponding
to RoHS

Please use the part number designations below when placing an order or making an inquiry.

Connector Type

		Page			Page			Page			
H		MALE CONNECTORS	87	GP		BULKHEAD FEMALE CONNECTORS (Rc thread)	93	TL		MALE RUN TEES (R thread)	99
HP		BULKHEAD MALE CONNECTORS	88	L		ELBOW UNIONS	94	JC		CAP UNIONS	100
F		STRAIGHT UNIONS	89	L		MALE ELBOWS (R thread)	95	JP		PLUG UNIONS	100
F		REDUCING UNIONS	89	T		TEE UNIONS	96	S		FRONT Rings	101
P		BULKHEAD UNIONS	90	T		REDUCING TEE UNIONS	96	R		BACK Rings	101
G		FEMALE CONNECTORS (Rc thread)	91	TG		FEMALE BRANCH TEES (Rc thread)	97	N		NUTS	102
G		FEMALE CONNECTORS (ISO Parallel Thread)	92	TS		MALE BRANCH TEES (R thread)	98				

MALE CONNECTORS



Size in mm

Part numbers	Nominal dia. d	A	d1	B	B1	L	L1	L2	L3
PDWH-3A-R	3	R1/8	2.4	10	12	29.5	23.1	12.7	16.8
PDWH-3B-R	3	R1/4	2.4	10	14	35.4	29	12.7	22.7
PDWH-4A-R	4	R1/8	2.4	12	12	31.1	24.6	13.6	17.5
PDWH-4B-R	4	R1/4	2.4	12	14	36.2	29.7	13.6	22.6
PDWH-6A-R	6	R1/8	4.8	14	14	32.6	25.4	15.2	17.4
PDWH-6B-R	6	R1/4	4.8	14	14	37.4	30.2	15.2	22.2
PDWH-6C-R	6	R3/8	4.8	14	17	38.2	31	15.2	23
PDWH-6D-R	6	R1/2	4.8	14	22	43.8	36.6	15.2	28.6
PDWH-8A-R	8	R1/8	4.8	16	16	34.2	26.7	16.2	18
PDWH-8B-R	8	R1/4	6.4	16	16	38.7	31.2	16.2	22.5
PDWH-8C-R	8	R3/8	6.4	16	17	39.3	31.8	16.2	23.1
PDWH-8D-R	8	R1/2	6.4	16	22	44.8	37.3	16.2	28.6
PDWH-10A-R	10	R1/8	4.8	19	19	36.1	28.7	17	19.1
PDWH-10B-R	10	R1/4	7.9	19	19	40.7	33.3	17	23.7
PDWH-10C-R	10	R3/8	7.9	19	19	40.7	33.3	17	23.7
PDWH-10D-R	10	R1/2	7.9	19	22	45.5	38.1	17	28.5
PDWH-12A-R	12	R1/8	4.8	22	22	38.5	28.7	22.5	16
PDWH-12B-R	12	R1/4	7.1	22	22	43.1	33.3	22.5	20.6
PDWH-12C-R	12	R3/8	9.5	22	22	43.1	33.3	22.5	20.6
PDWH-12D-R	12	R1/2	9.5	22	22	47.9	38.1	22.5	25.4

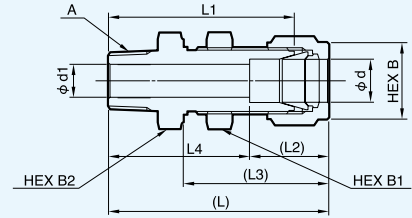
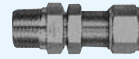
Also available with NPT (ANSI) threads.

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	A	d1	B	B1	L	L1	L2	L3
PDWH-3.2A-R	3.2	R1/8	2.3	12	12	30.6	23.9	13	17.6
PDWH-3.2B-R	3.2	R1/4	2.3	12	14	35.7	29	13	22.7
PDWH-6.35A-R	6.35	R1/8	4.8	14	14	32.8	25.4	15.4	17.4
PDWH-6.35B-R	6.35	R1/4	4.8	14	14	37.9	30.5	15.4	22.5
PDWH-6.35C-R	6.35	R3/8	4.8	14	17	38.4	31	15.4	23
PDWH-6.35D-R	6.35	R1/2	4.8	14	22	44.7	37.3	15.4	29.3
PDWH-9.52A-R	9.52	R1/8	4.8	17	17	35.5	27.9	17.2	18.3
PDWH-9.52B-R	9.52	R1/4	7.1	17	17	40.1	32.5	17.2	22.9
PDWH-9.52C-R	9.52	R3/8	7.1	17	17	40.1	32.5	17.2	22.9
PDWH-9.52D-R	9.52	R1/2	7.1	17	22	46.5	38.9	17.2	29.3
PDWH-12.7A-R	12.7	R1/8	4.8	22	22	39	28.7	23	16
PDWH-12.7B-R	12.7	R1/4	7.1	22	22	43.6	33.3	23	20.6
PDWH-12.7C-R	12.7	R3/8	9.7	22	22	43.6	33.3	23	20.6
PDWH-12.7D-R	12.7	R1/2	10.4	22	22	49.2	38.9	23	26.2

Also available with NPT (ANSI) threads.

BULKHEAD MALE CONNECTORS



Size in mm

Part numbers	Nominal dia. d	A	Panel hole dia.	d1	B	B1	B2	L	L1	L2	L3	L4
PDWHP-3A-R	3	R1/8	8	2.4	10	14	14	46.3	39.9	12.7	30.7	33.6
PDWHP-3B-R	3	R1/4	8	2.4	10	14	14	51.4	45	12.7	30.7	38.7
PDWHP-6A-R	6	R1/8	11.2	4.8	14	16	16	49.4	42.2	15.2	33.7	34.2
PDWHP-6B-R	6	R1/4	11.2	4.8	14	16	16	53.2	46	15.2	33.7	38
PDWHP-6C-R	6	R3/8	11.2	4.8	14	16	17	54.3	47.1	15.2	33.7	39.1
PDWHP-6D-R	6	R1/2	11.2	4.8	14	16	22	60.6	53.4	15.2	33.7	45.4
PDWHP-8A-R	8	R1/8	12.8	4.8	16	19	19	51.7	44.2	16.2	36.1	35.5
PDWHP-8B-R	8	R1/4	12.8	6.4	16	19	19	56.2	48.7	16.2	36.1	40
PDWHP-8C-R	8	R3/8	12.8	6.4	16	19	19	56.8	49.3	16.2	36.1	40.6
PDWHP-8D-R	8	R1/2	12.8	6.4	16	19	22	62.3	54.8	16.2	36.1	46.1
PDWHP-10A-R	10	R1/8	16	4.8	19	22	22	53.6	46.2	17	36.8	36.6
PDWHP-10B-R	10	R1/4	16	7.1	19	22	22	58.2	50.8	17	36.8	41.2
PDWHP-10C-R	10	R3/8	16	7.9	19	22	22	58.2	50.8	17	36.8	41.2
PDWHP-10D-R	10	R1/2	16	7.9	19	22	22	63	55.6	17	36.8	46
PDWHP-12A-R	12	R1/8	19.1	4.8	22	24	24	58.3	48.5	22.5	41.5	35.8
PDWHP-12B-R	12	R1/4	19.1	7.1	22	24	24	62.9	53.1	22.5	41.5	40.4
PDWHP-12C-R	12	R3/8	19.1	9.5	22	24	24	62.9	53.1	22.5	41.5	40.4
PDWHP-12D-R	12	R1/2	19.1	9.5	22	24	24	68.5	58.7	22.5	41.5	46

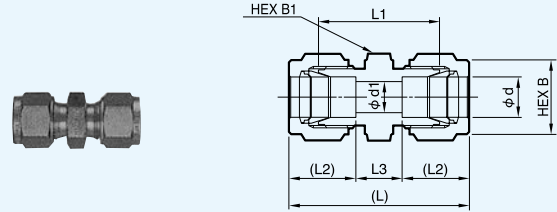
Also available with NPT (ANSI) threads.

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	A	Panel hole dia.	d1	B	B1	B2	L	L1	L2	L3	L4
PDWHP-3.2A-R	3.2	R1/8	8	2.3	12	14	14	46.6	39.9	13	31	33.6
PDWHP-3.2B-R	3.2	R1/4	8	2.3	12	14	14	51.7	45	13	31	38.7
PDWHP-6.35A-R	6.35	R1/8	11.2	4.8	14	16	16	49.6	44.2	15.4	33.9	34.2
PDWHP-6.35B-R	6.35	R1/4	11.2	4.8	14	16	16	53.4	46	15.4	33.9	38
PDWHP-6.35C-R	6.35	R3/8	11.2	4.8	14	16	17	54.5	47.1	15.4	33.9	39.1
PDWHP-6.35D-R	6.35	R1/2	11.2	4.8	14	16	22	60.8	53.4	15.4	33.9	45.4
PDWHP-9.52A-R	9.52	R1/8	14.3	4.8	17	22	22	53.1	45.5	17.2	37.1	35.9
PDWHP-9.52B-R	9.52	R1/4	14.3	7.1	17	22	22	57.6	50	17.2	37.1	40.4
PDWHP-9.52C-R	9.52	R3/8	14.3	7.1	17	22	22	57.6	50	17.2	37.1	40.4
PDWHP-9.52D-R	9.52	R1/2	14.3	7.1	17	22	22	64.1	56.5	17.2	37.1	46.9
PDWHP-12.7A-R	12.7	R1/8	19.1	4.8	22	24	24	58.8	48.5	23	42	35.8
PDWHP-12.7B-R	12.7	R1/4	19.1	7.1	22	24	24	63.4	53.1	23	42	40.4
PDWHP-12.7C-R	12.7	R3/8	19.1	9.4	22	24	24	63.4	53.1	23	42	40.4
PDWHP-12.7D-R	12.7	R1/2	19.1	10.4	22	24	24	69	58.7	23	42	46

Also available with NPT (ANSI) threads.

STRAIGHT UNIONS



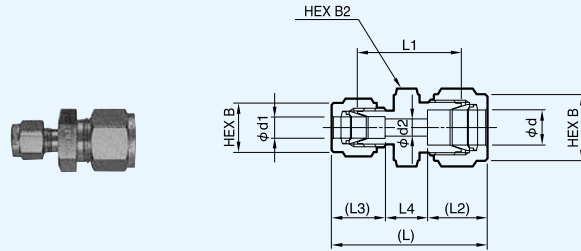
Size in mm

Part numbers	Nominal dia. d	d1	B	B1	L	L1	L2	L3
PDWF-3-R	3	2.4	10	12	34.9	22.1	12.7	9.5
PDWF-4-R	4	2.4	12	12	37.1	24.1	13.6	9.9
PDWF-6-R	6	4.8	14	14	40.6	26.2	15.2	10.2
PDWF-8-R	8	6.4	16	16	43.1	28.2	16.2	10.7
PDWF-10-R	10	7.9	19	19	45.8	31	17	11.8
PDWF-12-R	12	9.5	22	22	50.6	31	22.5	5.6

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	d1	B	B1	L	L1	L2	L3
PDWF-3.2-R	3.2	2.3	12	12	35.7	22.4	13	9.7
PDWF-6.35-R	6.35	4.8	14	14	40.9	26.2	15.4	10.1
PDWF-9.52-R	9.52	7.1	17	17	45.4	30.2	17.2	11
PDWF-12.7-R	12.7	10.4	22	22	51.5	31	23	5.5

REDUCING UNIONS



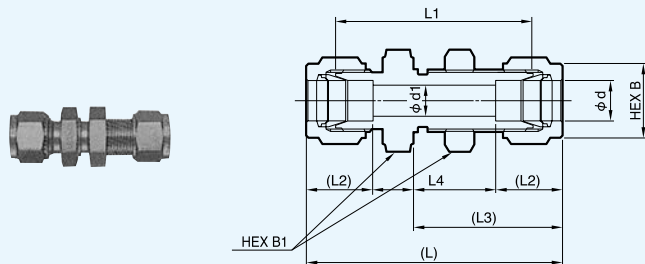
Size in mm

Part numbers	Nominal dia. d	Nominal dia. d1	d2	B	B1	B2	L	L1	L2	L3	L4
PDWF-4x3-R	4	3	2.4	12	10	12	36.5	23.6	13.6	12.7	10.2
PDWF-6x3-R	6	3	2.4	14	10	14	38.2	24.6	15.2	12.7	10.3
PDWF-6x4-R	6	4	2.4	14	12	14	39.1	25.4	15.2	13.6	10.3
PDWF-8x6-R	8	6	4.8	16	14	16	42.1	27.4	16.2	15.2	10.7
PDWF-10x6-R	10	6	4.8	19	14	19	44.1	29.5	17	15.2	11.9
PDWF-10x8-R	10	8	6.4	19	16	19	44.9	30	17	16.2	11.7
PDWF-12x6-R	12	6	4.8	22	14	22	46.5	29.5	22.5	15.2	8.8
PDWF-12x8-R	12	8	6.4	22	16	22	47.5	30.2	22.5	16.2	8.8
PDWF-12x10-R	12	10	7.9	22	19	22	48.2	31	22.5	17	8.7

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	Nominal dia. d1	d2	B	B1	B2	L	L1	L2	L3	L4
PDWF-6.35x3.2-R	6.35	3.2	2.3	14	12	14	38.7	24.6	15.4	13	10.3
PDWF-9.52x6.35-R	9.52	6.35	4.8	17	14	17	43.4	28.4	17.2	15.4	10.8
PDWF-12.7x6.35-R	12.7	6.35	4.8	22	14	22	47.2	29.5	23	15.4	8.8
PDWF-12.7x9.52-R	12.7	9.52	7.1	22	17	22	48.9	31	23	17.2	8.7

BULKHEAD UNIONS



Size in mm

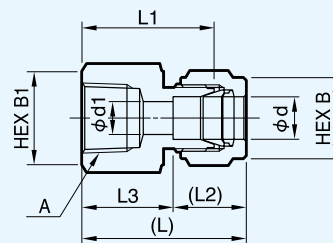
Part numbers	Nominal dia. d	Panel hole dia.	d1	B	B1	L	L1	L2	L3	L4
PDWP-3-R	3	8	2.4	10	14	50.9	38.1	12.7	30.7	25.5
PDWP-4-R	4	9.6	2.4	12	14	53.4	40.4	13.6	31.9	26.2
PDWP-6-R	6	11.2	4.8	14	16	57.3	42.9	15.2	33.7	26.9
PDWP-8-R	8	12.8	6.4	16	19	60.9	46	16.2	36.1	28.5
PDWP-10-R	10	16	7.9	19	22	63.3	48.5	17	36.8	29.3
PDWP-12-R	12	19.1	9.5	22	24	70.4	50.8	22.5	41.5	25.4

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	Panel hole dia.	d1	B	B1	L	L1	L2	L3	L4
PDWP-3.2-R	3.2	8	2.3	12	14	51.4	38.1	13	31	25.4
PDWP-6.35-R	6.35	11.2	4.8	14	16	57.6	42.9	15.4	33.9	26.8
PDWP-9.52-R	9.52	14.3	7.1	17	22	62.7	47.5	17.2	37.1	28.3
PDWP-12.7-R	12.7	19.1	10.4	22	24	71.3	50.8	23	42	25.3

FEMALE CONNECTORS

Rc Thread



Size in mm

Part numbers	Nominal dia. d	A	d1	B	B1	L	L1	L2	L3
PDWG-3A-R	3	Rc1/8	2.4	10	14	28.5	22.1	12.7	15.8
PDWG-3B-R	3	Rc1/4	2.4	10	19	33.3	26.9	12.7	20.6
PDWG-4A-R	4	Rc1/8	2.4	12	14	29.6	23.1	13.6	16
PDWG-4B-R	4	Rc1/4	2.4	12	19	34.2	27.7	13.6	20.6
PDWG-6A-R	6	Rc1/8	4.8	14	14	31.1	23.9	15.2	15.9
PDWG-6B-R	6	Rc1/4	4.8	14	19	35.6	28.4	15.2	20.4
PDWG-6C-R	6	Rc3/8	4.8	14	22	36.7	29.5	15.2	21.5
PDWG-6D-R	6	Rc1/2	4.8	14	26	42.3	35.1	15.2	27.1
PDWG-8A-R	8	Rc1/8	6.4	16	16	32.1	24.6	16.2	15.9
PDWG-8B-R	8	Rc1/4	6.4	16	19	37	29.5	16.2	20.8
PDWG-8C-R	8	Rc3/8	6.4	16	22	37.7	30.2	16.2	21.5
PDWG-8D-R	8	Rc1/2	6.4	16	26	43.3	35.8	16.2	27.1
PDWG-10A-R	10	Rc1/8	7.9	19	19	32.8	25.4	17	15.8
PDWG-10B-R	10	Rc1/4	7.9	19	19	37.6	30.2	17	20.6
PDWG-10C-R	10	Rc3/8	7.9	19	22	38.4	31	17	21.4
PDWG-10D-R	10	Rc1/2	7.9	19	26	44	36.6	17	27
PDWG-12A-R	12	Rc1/8	8.3	22	22	38.2	28.4	22.5	15.7
PDWG-12B-R	12	Rc1/4	9.5	22	22	40	30.2	22.5	17.5
PDWG-12C-R	12	Rc3/8	9.5	22	22	40.8	31	22.5	18.3
PDWG-12D-R	12	Rc1/2	9.5	22	26	46.4	36.6	22.5	23.9

Also available with NPT (ANSI) threads.

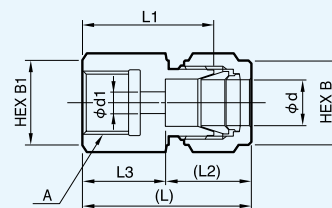
Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	A	d1	B	B1	L	L1	L2	L3
PDWG-3.2A-R	3.2	Rc1/8	2.3	12	14	28.8	22.1	13	15.8
PDWG-3.2B-R	3.2	Rc1/4	2.3	12	19	33.6	26.9	13	20.6
PDWG-6.35A-R	6.35	Rc1/8	4.8	14	14	31.3	23.9	15.4	15.9
PDWG-6.35B-R	6.35	Rc1/4	4.8	14	19	35.8	28.4	15.4	20.4
PDWG-6.35C-R	6.35	Rc3/8	4.8	14	22	37.6	30.2	15.4	22.2
PDWG-6.35D-R	6.35	Rc1/2	4.8	14	26	42.5	35.1	15.4	27.1
PDWG-9.52A-R	9.52	Rc1/8	7.1	17	16	33	25.4	17.2	15.8
PDWG-9.52B-R	9.52	Rc1/4	7.1	17	19	37.8	30.2	17.2	20.6
PDWG-9.52C-R	9.52	Rc3/8	7.1	17	22	39.4	31.8	17.2	22.2
PDWG-9.52D-R	9.52	Rc1/2	7.1	17	26	44.2	36.6	17.2	27
PDWG-12.7A-R	12.7	Rc1/8	7	22	22	38.7	28.4	23	15.7
PDWG-12.7B-R	12.7	Rc1/4	10.4	22	22	40.5	30.2	23	17.5
PDWG-12.7C-R	12.7	Rc3/8	10.4	22	22	42.1	31.8	23	19.1
PDWG-12.7D-R	12.7	Rc1/2	10.4	22	26	46.9	36.6	23	23.9

Also available with NPT (ANSI) threads.

FEMALE CONNECTORS

ISO Parallel Thread



Size in mm

Part numbers	Nominal dia. d	A	d1	B	B1	L	L1	L2	L3
PDWG-3AF-R	3	G1/8	5.5 ※	10	14	32.1	25.7	12.7	19.4
PDWG-3BF-R	3	G1/4	5.5 ※	10	19	35.1	28.7	12.7	22.4
PDWG-4AF-R	4	G1/8	5.5 ※	12	14	33.2	26.7	13.6	19.6
PDWG-4BF-R	4	G1/4	5.5 ※	12	19	36.2	29.7	13.6	22.6
PDWG-6AF-R	6	G1/8	5.5 ※	14	14	34.4	27.2	15.2	19.2
PDWG-6BF-R	6	G1/4	5.5 ※	14	19	37.4	30.2	15.2	22.2
PDWG-6CF-R	6	G3/8	5.5 ※	14	22	37.4	30.2	15.2	22.2
PDWG-6DF-R	6	G1/2	5.5 ※	14	26	42.8	35.6	15.2	27.6
PDWG-8AF-R	8	G1/8	5.5	16	16	35.5	28	16.2	19.3
PDWG-8BF-R	8	G1/4	5.5	16	19	38.5	31	16.2	22.3
PDWG-8CF-R	8	G3/8	5.5	16	22	36.2	28.7	16.2	20
PDWG-8DF-R	8	G1/2	5.5	16	26	40.5	33	16.2	24.3
PDWG-10AF-R	10	G1/8	5.5	19	19	36.2	28.8	17	19.2
PDWG-10BF-R	10	G1/4	5.5	19	19	39.2	31.8	17	22.2
PDWG-10CF-R	10	G3/8	5.5	19	22	38.6	31.2	17	21.6
PDWG-10DF-R	10	G1/2	5.5	19	26	41.2	33.8	17	24.2
PDWG-12AF-R	12	G1/8	5.5	22	22	38.6	28.8	22.5	16.1
PDWG-12BF-R	12	G1/4	5.5	22	22	41.6	31.8	22.5	19.1
PDWG-12CF-R	12	G3/8	5.5	22	22	44.1	34.3	22.5	21.6
PDWG-12DF-R	12	G1/2	5.5	22	26	47.9	38.1	22.5	25.4

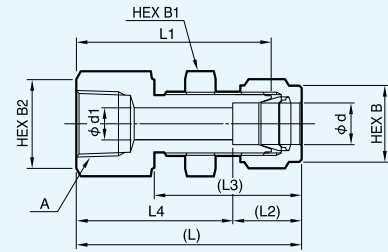
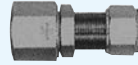
Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	A	d1	B	B1	L	L1	L2	L3
PDWG-3.2AF-R	3.2	G1/8	5.5 ※	12	14	32.4	25.7	13	19.4
PDWG-3.2BF-R	3.2	G1/4	5.5 ※	12	19	35.4	28.7	13	22.4
PDWG-6.35AF-R	6.35	G1/8	5.5	14	14	34.6	27.2	15.4	19.2
PDWG-6.35BF-R	6.35	G1/4	5.5	14	19	37.6	30.2	15.4	22.2
PDWG-6.35CF-R	6.35	G3/8	5.5	14	22	37.6	30.2	15.4	22.2
PDWG-6.35DF-R	6.35	G1/2	5.5	14	26	43	35.6	15.4	27.6
PDWG-9.52AF-R	9.52	G1/8	5.5	17	16	36.4	28.8	17.2	19.2
PDWG-9.52BF-R	9.52	G1/4	5.5	17	19	39.4	31.8	17.2	22.2
PDWG-9.52CF-R	9.52	G3/8	5.5	17	22	38.8	31.2	17.2	21.6
PDWG-9.52DF-R	9.52	G1/2	5.5	17	26	41.4	33.8	17.2	24.2
PDWG-12.7AF-R	12.7	G1/8	5.5	22	22	39.1	28.8	23	16.1
PDWG-12.7BF-R	12.7	G1/4	5.5	22	22	42.1	31.8	23	19.1
PDWG-12.7CF-R	12.7	G3/8	5.5	22	22	44.6	34.3	23	21.6
PDWG-12.7DF-R	12.7	G1/2	5.5	22	26	48.4	38.1	23	25.4

For fittings with a nominal diameter of 3mm, 3.2mm (1/8"), 4mm, and 6mm, the inner diameter of the gasket (φD1) is 5.5mm. However, the interior of the fitting's body is stepped such that the portion directly behind the gasket and in front of the tube is as follows : Tube OD (mm): 3.4, 3.2, 6 Fitting ID (mm): 2.4, 2.3, 4.8

BULKHEAD FEMALE CONNECTORS

Rc Thread



Panel Hole Dia : +0.0315 in. (+0.5mm),
+0

Size in mm

Part numbers	Nominal dia. d	A	Panel hole dia.	d1	B	B1	B2	L	L1	L2	L3	L4
PDWGP-3A-R	3	Rc1/8	8	2.4	10	14	14	44.2	37.8	12.7	30.7	31.5
PDWGP-3B-R	3	Rc1/4	8	2.4	10	14	19	49	42.6	12.7	30.7	36.3
PDWGP-4A-R	4	Rc1/8	9.6	2.4	12	14	14	45.4	38.9	13.6	31.9	31.8
PDWGP-4B-R	4	Rc1/4	9.6	2.4	12	14	19	50	43.5	13.6	31.9	36.4
PDWGP-6A-R	6	Rc1/8	11.2	4.8	14	16	14	47.2	40	15.2	33.7	32
PDWGP-6B-R	6	Rc1/4	11.2	4.8	14	16	19	51.7	44.5	15.2	33.7	36.5
PDWGP-6C-R	6	Rc3/8	11.2	4.8	14	16	22	52.8	45.6	15.2	33.7	37.6
PDWGP-6D-R	6	Rc1/2	11.2	4.8	14	16	26	58.4	51.2	15.2	33.7	43.2
PDWGP-8A-R	8	Rc1/8	12.8	6.4	16	19	16	49.6	42.1	16.2	36.1	33.4
PDWGP-8B-R	8	Rc1/4	12.8	6.4	16	19	19	54.5	47	16.2	36.1	38.3
PDWGP-8C-R	8	Rc3/8	12.8	6.4	16	19	22	55.2	47.7	16.2	36.1	39
PDWGP-8D-R	8	Rc1/2	12.8	6.4	16	19	26	60.8	53.5	16.2	36.1	44.6
PDWGP-10A-R	10	Rc1/8	16	7.9	19	22	19	50.3	42.9	17	36.8	33.3
PDWGP-10B-R	10	Rc1/4	16	7.9	19	22	19	55.1	47.7	17	36.8	38.1
PDWGP-10C-R	10	Rc3/8	16	7.9	19	22	22	55.9	48.5	17	36.8	38.9
PDWGP-10D-R	10	Rc1/2	16	7.9	19	22	26	61.5	54.1	17	36.8	44.5
PDWGP-12A-R	12	Rc1/8	19.1	8.3	22	24	22	58	48.2	22.5	41.5	35.5
PDWGP-12B-R	12	Rc1/4	19.1	9.5	22	24	22	59.8	50	22.5	41.5	37.3
PDWGP-12C-R	12	Rc3/8	19.1	9.5	22	24	22	60.6	50.8	22.5	41.5	38.1
PDWGP-12D-R	12	Rc1/2	19.1	9.5	22	24	26	66.2	56.4	22.5	41.5	43.7

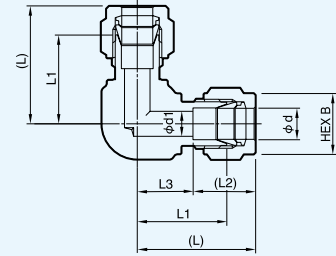
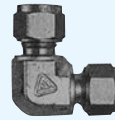
Also available with NPT (ANSI) threads.

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	A	Panel hole dia.	d1	B	B1	B2	L	L1	L2	L3	L4
PDWGP-3.2A-R	3.2	Rc1/8	8	2.3	12	14	14	44.5	37.8	13	31	31.5
PDWGP-3.2B-R	3.2	Rc1/4	8	2.3	12	14	19	49.3	42.6	13	31	36.3
PDWGP-6.35A-R	6.35	Rc1/8	11.2	4.8	14	16	14	47.4	40	15.4	33.9	32
PDWGP-6.35B-R	6.35	Rc1/4	11.2	4.8	14	16	19	51.9	44.5	15.4	33.9	36.5
PDWGP-6.35C-R	6.35	Rc3/8	11.2	4.8	14	16	22	53.7	46.3	15.4	33.9	38.3
PDWGP-6.35D-R	6.35	Rc1/2	11.2	4.8	14	16	26	58.6	51.2	15.4	33.9	43.2
PDWGP-9.52A-R	9.52	Rc1/8	14.3	7.1	17	22	16	50.6	43	17.2	37.1	33.4
PDWGP-9.52B-R	9.52	Rc1/4	14.3	7.1	17	22	19	55.4	47.8	17.2	37.1	38.2
PDWGP-9.52C-R	9.52	Rc3/8	14.3	7.1	17	22	22	57	49.4	17.2	37.1	39.8
PDWGP-9.52D-R	9.52	Rc1/2	14.3	7.1	17	22	26	61.8	54.2	17.2	37.1	44.6
PDWGP-12.7A-R	12.7	Rc1/8	19.1	8.8	22	24	22	58.5	48.2	23	42	35.5
PDWGP-12.7B-R	12.7	Rc1/4	19.1	10.4	22	24	22	60.3	50	23	42	37.3
PDWGP-12.7C-R	12.7	Rc3/8	19.1	10.4	22	24	22	61.9	51.6	23	42	38.9
PDWGP-12.7D-R	12.7	Rc1/2	19.1	10.4	22	24	26	66.7	56.4	23	42	43.7

Also available with NPT (ANSI) threads.

ELBOW UNIONS



Size in mm

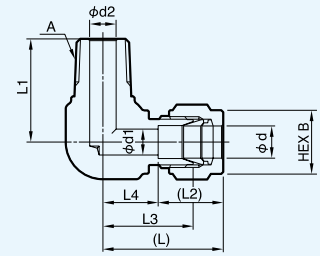
Part numbers	Nominal dia. d	d1	B	L	L1	L2	L3
PDWL-3-R	3	2.4	10	22.1	15.7	12.7	9.4
PDWL-4-R	4	2.4	12	25.3	18.8	13.6	11.7
PDWL-6-R	6	4.8	14	26.8	19.6	15.2	11.6
PDWL-8-R	8	6.4	16	28.8	21.3	16.2	12.6
PDWL-10-R	10	7.9	19	33.3	25.9	17	16.3
PDWL-12-R	12	9.5	22	35.7	25.9	22.5	13.2

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	d1	B	L	L1	L2	L3
PDWL-3.2-R	3.2	2.3	12	22.4	15.7	13	9.4
PDWL-6.35-R	6.35	4.8	14	27	19.6	15.4	11.6
PDWL-9.52-R	9.52	7.1	17	30.7	23.1	17.2	13.5
PDWL-12.7-R	12.7	10.4	22	36.2	25.9	23	13.2

MALE ELBOWS

R Thread



Size in mm

Part numbers	Nominal dia. d	A	d1	B	L	L1	L2	L3	L4
PDWL-3A-R	3	R1/8	2.4	10	23.4	17.8	12.7	17	10.7
PDWL-3B-R	3	R1/4	2.4	10	24.4	23.4	12.7	18	11.7
PDWL-4A-R	4	R1/8	2.4	12	25.3	18.8	13.6	18.8	11.7
PDWL-4B-R	4	R1/4	2.4	12	25.3	23.4	13.6	18.8	11.7
PDWL-6A-R	6	R1/8	4.8	14	26.8	18.8	15.2	19.6	11.6
PDWL-6B-R	6	R1/4	4.8	14	26.8	23.4	15.2	19.6	11.6
PDWL-6C-R	6	R3/8	4.8	14	29.6	26.2	15.2	22.4	14.4
PDWL-6D-R	6	R1/2	4.8	14	31.6	33	15.2	24.4	16.4
PDWL-8A-R	8	R1/8	4.8	16	28.8	19.8	16.2	21.3	12.6
PDWL-8B-R	8	R1/4	6.4	16	28.8	24.4	16.2	21.3	12.6
PDWL-8C-R	8	R3/8	6.4	16	30.6	26.2	16.2	23.1	14.4
PDWL-8D-R	8	R1/2	6.4	16	32.6	33	16.2	25.1	16.4
PDWL-10A-R	10	R1/8	4.8	19	33.3	23.6	17	25.9	16.3
PDWL-10B-R	10	R1/4	7.1	19	33.3	28.2	17	25.9	16.3
PDWL-10C-R	10	R3/8	7.9	19	33.3	28.2	17	25.9	16.3
PDWL-10D-R	10	R1/2	7.9	19	33.3	33	17	25.9	16.3
PDWL-12A-R	12	R1/8	4.8	22	35.7	23.6	22.5	25.9	13.2
PDWL-12B-R	12	R1/4	7.1	22	35.7	28.2	22.5	25.9	13.2
PDWL-12C-R	12	R3/8	9.5	22	35.7	28.2	22.5	25.9	13.2
PDWL-12D-R	12	R1/2	9.5	22	35.7	33	22.5	25.9	13.2

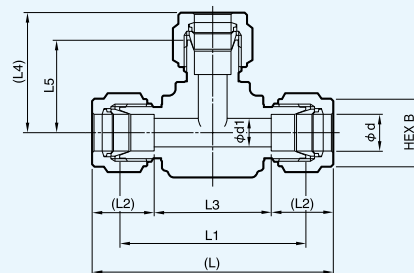
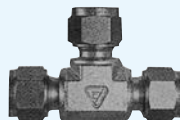
Also available with NPT (ANSI) threads.

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	A	d1	B	L	L1	L2	L3	L4
PDWL-3.2A-R	3.2	R1/8	2.3	12	23.7	17.8	13	17	10.7
PDWL-3.2B-R	3.2	R1/4	2.3	12	24.7	23.4	13	18	11.7
PDWL-6.35A-R	6.35	R1/8	4.8	14	27	18.8	15.4	19.6	11.6
PDWL-6.35B-R	6.35	R1/4	4.8	14	27	23.4	15.4	19.6	11.6
PDWL-6.35C-R	6.35	R3/8	4.8	14	29.8	26.2	15.4	22.4	14.4
PDWL-6.35D-R	6.35	R1/2	4.8	14	31.8	33	15.4	24.4	16.4
PDWL-9.52A-R	9.52	R1/8	4.8	17	30.7	20.8	17.2	23.1	13.5
PDWL-9.52B-R	9.52	R1/4	7.1	17	30.7	25.4	17.2	23.1	13.5
PDWL-9.52C-R	9.52	R3/8	7.1	17	31.5	26.2	17.2	23.9	14.3
PDWL-9.52D-R	9.52	R1/2	7.1	17	33.5	33	17.2	25.9	16.3
PDWL-12.7A-R	12.7	R1/8	4.8	22	36.2	23.6	23	25.9	13.2
PDWL-12.7B-R	12.7	R1/4	7.1	22	36.2	28.2	23	25.9	13.2
PDWL-12.7C-R	12.7	R3/8	9.7	22	36.2	28.2	23	25.9	13.2
PDWL-12.7D-R	12.7	R1/2	10.4	22	36.2	33	23	25.9	13.2

Also available with NPT (ANSI) threads.

TEE UNIONS



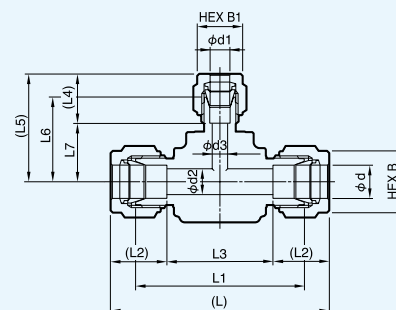
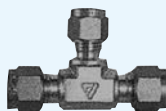
Size in mm

Part numbers	Nominal dia. d	d1	B	L	L1	L2	L3	L4	L5
PDWT-3-R	3	2.4	10	44.2	31.4	12.7	18.8	22.1	15.7
PDWT-4-R	4	2.4	12	50.6	37.6	13.6	23.4	25.3	18.8
PDWT-6-R	6	4.8	14	53.4	39	15.2	23	26.7	19.5
PDWT-8-R	8	6.4	16	59.7	44.8	16.2	27.3	29.9	22.4
PDWT-10-R	10	7.9	19	66.6	51.8	17	32.6	33.3	25.9
PDWT-12-R	12	9.5	22	71.4	51.8	22.5	26.4	35.7	25.9

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	d1	B	L	L1	L2	L3	L4	L5
PDWT-3.2-R	3.2	2.3	12	44.9	31.6	13	18.9	22.5	15.8
PDWT-6.35-R	6.35	4.8	14	53.7	39	15.4	22.9	26.9	19.5
PDWT-9.52-R	9.52	7.1	17	61.4	46.2	17.2	27	30.7	23.1
PDWT-12.7-R	12.7	10.4	22	72.3	51.8	23	26.3	36.2	25.9

REDUCING TEE UNIONS



Size in mm

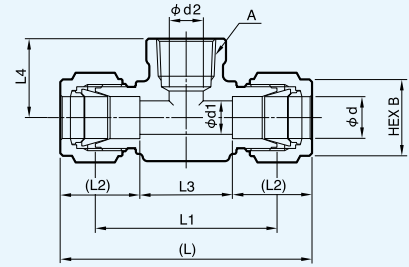
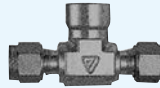
Part numbers	Nominal dia. d	Nominal dia. d1	d2	d3	B	B1	L	L1	L2	L3	L4	L5	L6	L7
PDWT-8x8x6-R	8	6	6.4	4.8	16	14	59.7	44.8	16.2	27.3	15.2	29.6	22.4	14.4
PDWT-10x10x6-R	10	6	7.9	4.8	19	14	66.6	51.8	17	32.6	15.2	33.1	25.9	17.9
PDWT-10x10x8-R	10	8	7.9	6.4	19	16	66.6	51.8	17	32.6	16.2	33.4	25.9	17.2
PDWT-12x12x6-R	12	6	9.5	4.8	22	14	71.4	51.8	22.5	26.4	15.2	33.1	25.9	17.9
PDWT-12x12x8-R	12	8	9.5	6.4	22	16	71.4	51.8	22.5	26.4	16.2	33.4	25.9	17.2
PDWT-12x12x10-R	12	10	9.5	7.9	22	19	71.4	51.8	22.5	26.4	17	33.3	25.9	16.3

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	Nominal dia. d1	d2	d3	B	B1	L	L1	L2	L3	L4	L5	L6	L7
PDWT-9.52x9.52x6.35-R	9.52	6.35	7.1	4.8	17	14	61.4	46.2	17.2	27	15.4	30.5	23.1	15.1
PDWT-12.7x12.7x6.35-R	12.7	6.35	10.4	4.8	22	14	72.3	51.8	23	26.3	15.4	33.3	25.9	17.9
PDWT-12.7x12.7x9.52-R	12.7	9.52	10.4	7.1	22	17	72.3	51.8	23	26.3	17.2	33.5	25.9	16.3

FEMALE BRANCH TEES

Rc Thread



Size in mm

Part numbers	Nominal dia. d	A	d1	d2	B	L	L1	L2	L3	L4
PDWTG-3A-R	3	Rc1/8	2.4	7	10	48.9	36.1	12.7	22.7	19.1
PDWTG-3B-R	3	Rc1/4	2.4	7	10	54.4	41.6	12.7	29	22.4
PDWTG-4A-R	4	Rc1/8	2.4	7	12	50.6	37.6	13.6	23.4	19.1
PDWTG-4B-R	4	Rc1/4	2.4	7	12	54.6	41.6	13.6	27.4	22.4
PDWTG-6A-R	6	Rc1/8	4.8	7	14	53.5	39.1	15.2	22.5	19.1
PDWTG-6B-R	6	Rc1/4	4.8	7	14	59.1	44.7	15.2	28.1	22.4
PDWTG-6C-R	6	Rc3/8	4.8	7	14	63.2	48.8	15.2	32.8	22.4
PDWTG-8A-R	8	Rc1/8	6.4	7	16	57.5	42.6	16.2	25.1	19.1
PDWTG-8B-R	8	Rc1/4	6.4	7	16	61.1	46.2	16.2	28.7	22.4
PDWTG-8C-R	8	Rc3/8	6.4	7	16	63.7	48.8	16.2	31.3	22.4
PDWTG-10A-R	10	Rc1/8	7.9	7	19	66.6	51.8	17	32.6	22.4
PDWTG-10B-R	10	Rc1/4	7.9	7.9	19	66.6	51.8	17	32.6	22.4
PDWTG-10C-R	10	Rc3/8	7.9	7.9	19	66.6	51.8	17	32.6	22.4
PDWTG-12A-R	12	Rc1/8	8.3	7	22	71.4	51.8	22.5	26.4	22.4
PDWTG-12B-R	12	Rc1/4	9.5	9.5	22	71.4	51.8	22.5	26.4	22.4
PDWTG-12C-R	12	Rc3/8	9.5	9.5	22	71.4	51.8	22.5	26.4	22.4

Also available with NPT (ANSI) threads.

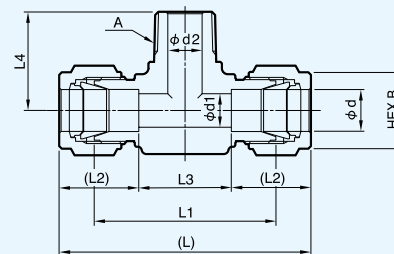
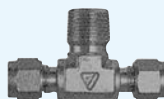
Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	A	d1	d2	B	L	L1	L2	L3	L4
PDWTG-3.2A-R	3.2	Rc1/8	2.3	7.1	12	49.4	36.1	13	23.4	19.1
PDWTG-3.2B-R	3.2	Rc1/4	2.3	7.1	12	54.9	41.6	13	28.9	22.4
PDWTG-6.35A-R	6.35	Rc1/8	4.8	7.1	14	53.8	39.1	15.4	23	19.1
PDWTG-6.35B-R	6.35	Rc1/4	4.8	7.1	14	59.4	44.7	15.4	28.6	22.4
PDWTG-6.35C-R	6.35	Rc3/8	4.8	7.1	14	63.5	48.8	15.4	32.7	22.4
PDWTG-9.52A-R	9.52	Rc1/8	7.1	7.1	17	61.4	46.2	17.2	27	19.1
PDWTG-9.52B-R	9.52	Rc1/4	7.1	7.1	17	63	47.8	17.2	28.6	22.4
PDWTG-9.52C-R	9.52	Rc3/8	7.1	7.1	17	67	51.8	17.2	32.6	22.4
PDWTG-12.7A-R	12.7	Rc1/8	10.4	7.1	22	72.3	51.8	23	26.3	22.4
PDWTG-12.7B-R	12.7	Rc1/4	10.4	9.5	22	72.3	51.8	23	26.3	22.4
PDWTG-12.7C-R	12.7	Rc3/8	10.4	10.4	22	72.3	51.8	23	26.3	22.4

Also available with NPT (ANSI) threads.

MALE BRANCH TEES

R Thread



Size in mm

Part numbers	Nominal dia. d	A	d1	d2	B	L	L1	L2	L3	L4
PDWTS-3A-R	3	R1/8	2.4	4.8	10	46.8	34	12.7	21.4	17.8
PDWTS-3B-R	3	R1/4	2.4	4.8	10	48.9	36.1	12.7	23.5	23.4
PDWTS-4A-R	4	R1/8	2.4	4.8	12	48.6	35.6	13.6	21.4	17.8
PDWTS-4B-R	4	R1/4	2.4	4.8	12	48.6	35.6	13.6	21.4	23.4
PDWTS-6A-R	6	R1/8	4.8	4.8	14	53.5	39.1	15.2	23.1	18.8
PDWTS-6B-R	6	R1/4	4.8	4.8	14	53.5	39.1	15.2	23.1	23.4
PDWTS-6C-R	6	R3/8	4.8	4.8	14	59.2	44.8	15.2	28.8	26.2
PDWTS-6D-R	6	R1/2	4.8	4.8	14	63.2	48.8	15.2	32.8	33
PDWTS-8A-R	8	R1/8	6.4	4.8	16	59.6	44.7	16.2	27.2	20.8
PDWTS-8B-R	8	R1/4	6.4	6.4	16	59.6	44.7	16.2	27.2	25.4
PDWTS-8C-R	8	R3/8	6.4	6.4	16	61.1	46.2	16.2	28.7	26.2
PDWTS-8D-R	8	R1/2	6.4	6.4	16	65.1	50.2	16.2	32.7	33
PDWTS-10A-R	10	R1/8	7.9	4.8	19	66.6	51.8	17	32.6	23.6
PDWTS-10B-R	10	R1/4	7.9	7.1	19	66.6	51.8	17	32.6	28.2
PDWTS-10C-R	10	R3/8	7.9	7.9	19	66.6	51.8	17	32.6	28.2
PDWTS-10D-R	10	R1/2	7.9	7.9	19	66.6	51.8	17	32.6	33
PDWTS-12A-R	12	R1/8	9.5	4.8	22	71.4	51.8	22.5	26.4	23.6
PDWTS-12B-R	12	R1/4	9.5	7.1	22	71.4	51.8	22.5	26.4	28.2
PDWTS-12C-R	12	R3/8	9.5	9.5	22	71.4	51.8	22.5	26.4	28.2
PDWTS-12D-R	12	R1/2	9.5	9.5	22	71.4	51.8	22.5	26.4	33

Also available with NPT (ANSI) threads.

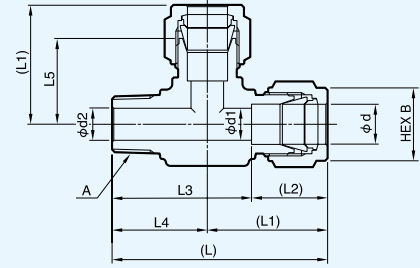
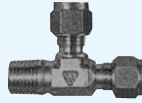
Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	A	d1	d2	B	L	L1	L2	L3	L4
PDWTS-3.2A-R	3.2	R1/8	2.3	4.8	12	47.3	34	13	21.3	17.8
PDWTS-3.2B-R	3.2	R1/4	2.3	4.8	12	49.4	36.1	13	23.4	23.4
PDWTS-6.35A-R	6.35	R1/8	4.8	4.8	14	53.8	39.1	15.4	23	18.8
PDWTS-6.35B-R	6.35	R1/4	4.8	4.8	14	53.8	39.1	15.4	23	23.4
PDWTS-6.35C-R	6.35	R3/8	4.8	4.8	14	59.5	44.8	15.4	28.7	26.2
PDWTS-6.35D-R	6.35	R1/2	4.8	4.8	14	63.5	48.8	15.4	32.7	33
PDWTS-9.52A-R	9.52	R1/8	7.1	4.8	17	61.4	46.2	17.2	27	20.8
PDWTS-9.52B-R	9.52	R1/4	7.1	7.1	17	61.4	46.2	17.2	27	25.4
PDWTS-9.52C-R	9.52	R3/8	7.1	7.1	17	67	51.8	17.2	32.6	28.2
PDWTS-9.52D-R	9.52	R1/2	7.1	7.1	17	67	51.8	17.2	32.6	33
PDWTS-12.7A-R	12.7	R1/8	10.4	4.8	22	72.3	51.8	23	26.3	23.6
PDWTS-12.7B-R	12.7	R1/4	10.4	7.1	22	72.3	51.8	23	26.3	28.2
PDWTS-12.7C-R	12.7	R3/8	10.4	9.7	22	72.3	51.8	23	26.3	28.2
PDWTS-12.7D-R	12.7	R1/2	10.4	10.4	22	72.3	51.8	23	26.3	33

Also available with NPT (ANSI) threads.

MALE RUN TEES

R Thread



Size in mm

Part numbers	Nominal dia. d	A	d1	d2	B	L	L1	L2	L3	L4	L5
PDWTL-3A-R	3	R1/8	2.4	4.8	10	41.2	23.4	12.7	28.5	17.8	17
PDWTL-3B-R	3	R1/4	2.4	4.8	10	47.8	24.4	12.7	35.1	23.4	18
PDWTL-4A-R	4	R1/8	2.4	4.8	12	42.1	24.3	13.6	28.5	17.8	17.8
PDWTL-4B-R	4	R1/4	2.4	4.8	12	47.7	24.3	13.6	34.1	23.4	17.8
PDWTL-6A-R	6	R1/8	4.8	4.8	14	45.6	26.8	15.2	30.4	18.8	19.6
PDWTL-6B-R	6	R1/4	4.8	4.8	14	50.2	26.8	15.2	35	23.4	19.6
PDWTL-6C-R	6	R3/8	4.8	4.8	14	55.8	29.6	15.2	40.6	26.2	22.4
PDWTL-6D-R	6	R1/2	4.8	4.8	14	64.6	31.6	15.2	49.4	33	24.4
PDWTL-8A-R	8	R1/8	6.4	4.8	16	50.7	29.9	16.2	34.5	20.8	22.4
PDWTL-8B-R	8	R1/4	6.4	6.4	16	55.3	29.9	16.2	39.1	25.4	22.4
PDWTL-8C-R	8	R3/8	6.4	6.4	16	56.8	30.6	16.2	40.6	26.2	23.1
PDWTL-8D-R	8	R1/2	6.4	6.4	16	65.6	32.6	16.2	49.4	33	25.1
PDWTL-10A-R	10	R1/8	7.9	4.8	19	56.9	33.3	17	39.9	23.6	25.9
PDWTL-10B-R	10	R1/4	7.9	7.1	19	61.5	33.3	17	44.5	28.2	25.9
PDWTL-10C-R	10	R3/8	7.9	7.9	19	61.5	33.3	17	44.5	28.2	25.9
PDWTL-10D-R	10	R1/2	7.9	7.9	19	66.3	33.3	17	49.3	33	25.9
PDWTL-12A-R	12	R1/8	9.5	4.8	22	59.3	35.7	22.5	36.8	23.6	25.9
PDWTL-12B-R	12	R1/4	9.5	7.1	22	63.9	35.7	22.5	41.4	28.2	25.9
PDWTL-12C-R	12	R3/8	9.5	9.5	22	63.9	35.7	22.5	41.4	28.2	25.9
PDWTL-12D-R	12	R1/2	9.5	9.5	22	68.7	35.7	22.5	46.2	33	25.9

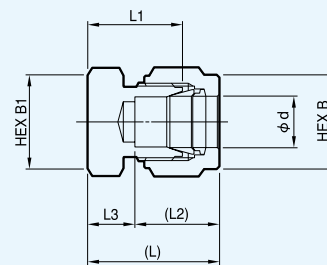
Also available with NPT (ANSI) threads.

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	A	d1	d2	B	L	L1	L2	L3	L4	L5
PDWTL-3.2A-R	3.2	R1/8	2.3	4.8	12	41.5	23.7	13	28.5	17.8	17
PDWTL-3.2B-R	3.2	R1/4	2.3	4.8	12	48.1	24.7	13	35.1	23.4	18
PDWTL-6.35A-R	6.35	R1/8	4.8	4.8	14	45.8	27	15.4	30.4	18.8	19.6
PDWTL-6.35B-R	6.35	R1/4	4.8	4.8	14	50.4	27	15.4	35	23.4	19.6
PDWTL-6.35C-R	6.35	R3/8	4.8	4.8	14	56	29.8	15.4	40.6	26.2	22.4
PDWTL-6.35D-R	6.35	R1/2	4.8	4.8	14	64.8	31.8	15.4	49.4	33	24.4
PDWTL-9.52A-R	9.52	R1/8	7.1	4.8	17	51.5	30.7	17.2	34.3	20.8	23.1
PDWTL-9.52B-R	9.52	R1/4	7.1	7.1	17	56.1	30.7	17.2	38.9	25.4	23.1
PDWTL-9.52C-R	9.52	R3/8	7.1	7.1	17	61.7	33.5	17.2	44.5	28.2	25.9
PDWTL-9.52D-R	9.52	R1/2	7.1	7.1	17	66.5	33.5	17.2	49.3	33	25.9
PDWTL-12.7A-R	12.7	R1/8	10.4	4.8	22	59.8	36.2	23	36.8	23.6	25.9
PDWTL-12.7B-R	12.7	R1/4	10.4	7.1	22	64.4	36.2	23	41.4	28.2	25.9
PDWTL-12.7C-R	12.7	R3/8	10.4	9.7	22	64.6	36.4	23	41.6	28.2	25.9
PDWTL-12.7D-R	12.7	R1/2	10.4	10.4	22	69.4	36.4	23	46.4	33	25.9

Also available with NPT (ANSI) threads.

CAP UNIONS



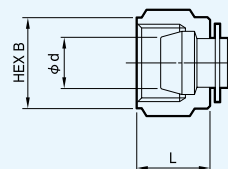
Size in mm

Part numbers	Nominal dia. d	B	B1	L	L1	L2	L3
PDWJC-3-R	3	10	12	19.9	13.5	12.7	7.2
PDWJC-4-R	4	12	12	21.2	14.7	13.6	7.6
PDWJC-6-R	6	14	14	22.9	15.7	15.2	7.7
PDWJC-8-R	8	16	16	24.5	17	16.2	8.3
PDWJC-10-R	10	19	19	26.4	19	17	9.4
PDWJC-12-R	12	22	22	28.8	19	22.5	6.3

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	B	B1	L	L1	L2	L3
PDWJC-3.2-R	3.2	12	12	20.2	13.5	13	7.2
PDWJC-6.35-R	6.35	14	14	23.4	16	15.4	8
PDWJC-9.52-R	9.52	17	17	25.9	18.3	17.2	8.7
PDWJC-12.7-R	12.7	22	22	29.4	19.1	23	6.4

PLUG UNIONS



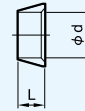
Size in mm

Part numbers	Nominal dia. d	B	L
PDWJP-3-R	3	10	11.8
PDWJP-4-R	4	12	11.9
PDWJP-6-R	6	14	12.6
PDWJP-8-R	8	16	13.4
PDWJP-10-R	10	19	15
PDWJP-12-R	12	22	17.4

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	B	L
PDWJP-3.2-R	3.2	12	11.8
PDWJP-6.35-R	6.35	14	12.6
PDWJP-9.52-R	9.52	17	14.2
PDWJP-12.7-R	12.7	22	17.4

FRONT Rings



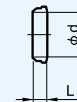
Size in mm

Part numbers	Nominal dia. d	L
PDW-3S-R	3	4.9
PDW-4S-R	4	4.9
PDW-6S-R	6	4.9
PDW-8S-R	8	4.9
PDW-10S-R	10	4.9
PDW-12S-R	12	7.3

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	L
PDW-3.2S-R	3.2	4.9
PDW-6.35S-R	6.35	4.9
PDW-9.52S-R	9.52	4.9
PDW-12.7S-R	12.7	7.3

BACK Rings



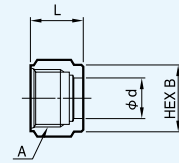
Size in mm

Part numbers	Nominal dia. d	L
PDW-3R-R	3	2.6
PDW-4R-R	4	2.6
PDW-6R-R	6	2.6
PDW-8R-R	8	2.6
PDW-10R-R	10	2.6
PDW-12R-R	12	3.8

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	L
PDW-3.2R-R	3.2	2.6
PDW-6.35R-R	6.35	2.6
PDW-9.52R-R	9.52	2.6
PDW-12.7R-R	12.7	3.8

NUTS



Size in mm

Part numbers	Nominal dia. d	A	B	L
PDW-3N-R	3	5/16-20UN	10	11.8
PDW-4N-R	4	3/8-20UN	12	11.9
PDW-6N-R	6	7/16-20UNF	14	12.6
PDW-8N-R	8	1/2-20UNF	16	13.4
PDW-10N-R	10	5/8-20UN	19	15
PDW-12N-R	12	3/4-20UNEF	22	17.4

Size in metric equivalents
(mm) of fractional inches

Part numbers	Nominal dia. d	A	B	L
PDW-3.2N-R	3.2	5/16-20UN	12	11.8
PDW-6.35N-R	6.35	7/16-20UNF	14	12.6
PDW-9.52N-R	9.52	9/16-20UN	17	14.2
PDW-12.7N-R	12.7	3/4-20UNEF	22	17.4

● Before Installation

- The tubes used must:
 - Be made of soft (O, annealed) or hard (1/2H) copper.
 - Have a tolerance within $\pm 0.1\text{mm}$ of the tube OD.
 - Be free of visible scratches 30mm from either end of the tube.
 - Refer a wall thickness listed in the table below.
- Before assembling the fittings, cut the tubes to the required length. Cutting tubes after fitting assembly will cause bending stress at the fitting seals and may result in leakage.

In case of using "O (annealed)" copper tube

Nominal Dia. mm	Nominal Wall Thicknesses of tubes (mm)
3	3.2 ($\frac{1}{8}$ OD)
4	—
6	6.35 ($\frac{1}{4}$ OD)
8, 10	9.52 ($\frac{3}{8}$ OD)
12	12.7 ($\frac{1}{2}$ OD)
—	19.05 ($\frac{3}{4}$ OD)

In case of using "1/2 H" copper tube

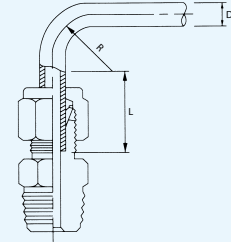
Nominal Dia. mm	Nominal Wall Thicknesses of tubes (mm)
6	6.35 ($\frac{1}{4}$ OD)
8, 10	9.52 ($\frac{3}{8}$ OD)
12	12.7 ($\frac{1}{2}$ OD)

- Use a tube cutter to cut the tubes to the required length. If it is necessary to use a different method, be sure to cut the tubes at a right angle, and then remove burrs carefully from the outer circumference by filing at a 45° angle to the centerline. Use a scraper or a round file to remove burrs inside the tubes. Ensure that no burrs remain.
- When installing fittings near tube bends, there must be a sufficient straight length of tubing to allow for proper installation (see the table to the left; units in millimeters).

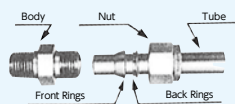
D (mm)	L1 (mm)	L2 (mm)	R (mm)
6, 6.35	21	17	14.3
8	22	18	17.5
10, 9.52	24	19.5	23.8
12, 12.7	31	26	38.1

L1: Recommended straight tube length.

L2: Minimum straight tube length.

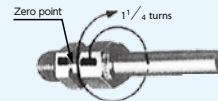


● Assembly



Ensure that the parts are installed in the order shown in the picture (left). Assembling them in the wrong order may result in leakage.

Insert the tube completely until it makes contact with the body. Hand-tighten the nut until it cannot be tightened further. After manually tightening the nut, mark both the body and the nut. This point is the zero point.



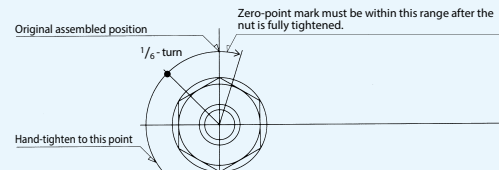
With a wrench, tighten the nut $1\frac{1}{4}$ turns from the zero point. Assembly is then complete.

Exceptions:

- Fittings with nominal diameters of 4mm, 3.2mm ($\frac{1}{8}$ " OD) or smaller: Tighten the nut a $\frac{3}{4}$ turn.
- Plug unions (product number: PDWJP): Tighten the nut a $\frac{1}{4}$ turn, regardless of size.

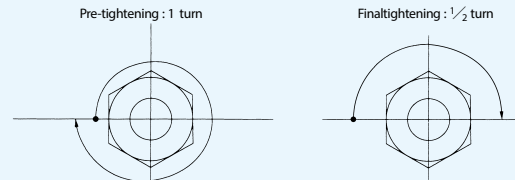
● Reassembly

- Hand-tighten the nut until it cannot be tightened further. Then use a wrench to tighten it another $\frac{1}{8}$ turn.
- Note: After reassembly, the body and the nut should return to their original position, or be tightened slightly further.



● Preswaging

- In situations where it may be difficult to tighten the ferrules (e.g., in installation locations where a wrench cannot be used), the fittings may not be assembled correctly. In such situations, attach the front ferrule, back ferrule, and nut to the tube beforehand.
- Hand-tighten the nut until it cannot be tightened further (zero point). With a wrench, further tighten the nut 1 turn. Next, loosen the nut until it can be manually turned. At the fitting's actual installation location, use a wrench to tighten the nut another $\frac{1}{2}$ turn from the zero point. Assembly is then complete.

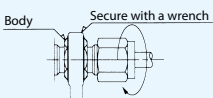


● Preparations: Before Operation

- For tightening, use the appropriate wrench.
- Before tightening the fitting, ensure that its body has been secured using a wrench. Never hold the nut in place while attempting to tighten the body.

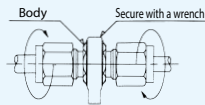
a. Assembling Male Connectors

Use a wrench to secure the body.



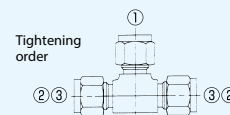
b. Assembling Straight Unions

Secure the body and tighten either the left nut or the right nut. Then tighten the other nut. Do not attempt to tighten one nut while holding onto the other.



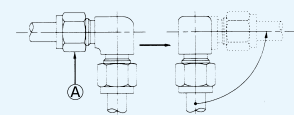
c. Assembling Tee Unions

Secure the body. Always start tightening from Position 1. Preswaging the nut and ferrules at Position 1 facilitates installation.



d. Changing the Orientation of an Assembled Elbow Union

Loosen the fitting at Location A before attempting to change its orientation. Failure to do so will strip the threads and result in leakage that cannot be stopped by retightening the fitting.



- Support longer tubes to control vibration and prevent movement. If there is minor vibration, the line should be supported at every 2m interval. If there is significant vibration, the line should be supported at every 1m interval.

● Troubleshooting

Fujikin POWERFULLOK fittings are manufactured to the most rigorous quality control standards. Leakage should not occur if the fittings are installed and used properly. However, should leakage occur, take the following measures.

- Leakage may occur if there is difficult installation or slant tubing. In this case, please relieve the pressure without untightening the nut, and take additional tightening by $\frac{1}{8}$ -turn. If there is still leakage, take the procedure "Reassembly" in the above, after untightening the nut.

- If leakage persists after the nut has been tightened, it may be caused by the following:

- Fitting damage caused by forcible overtightening.
- Fitting eroded or corroded by the fluid media.
- Corrosion caused by a reaction between leak detection fluid and the fluid media.
- Incorrect fitting assembly.
- Fitting and tube size mismatch.

Review the conditions of use, and consult with **Fujikin** if you have any questions.

Ball Valves

[3.92 MPa] in 4 Handle Colors

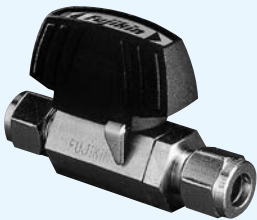
[4.9 MPa]

[15.1 MPa] 3-Pieces Type

[17.2 MPa] [20.6 MPa] for Instrumentation

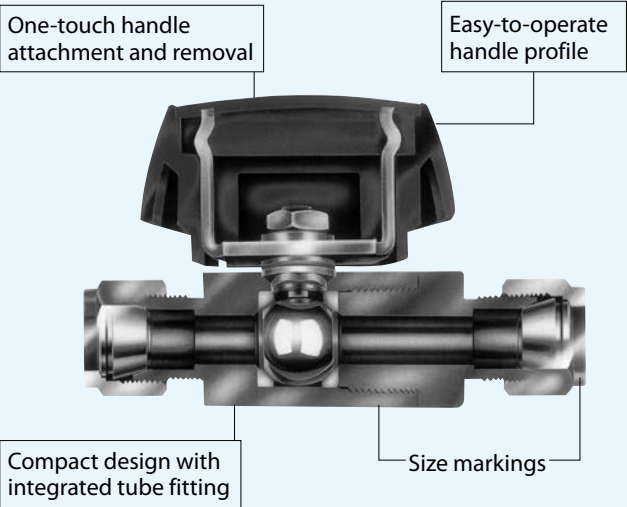
[41.3 MPa] [68.9 MPa] Trunnion Type

[3.92 MPa] in 4 Handle Colors



Features

- 1. Compact design with integrated tube fitting
 - 2. Easy-to-operate handle profile
 - 3. One-touch handle attachment and removal
 - 4. Choose handle color (black, red, blue, or green).
- ※Colors other than black are sold as options.



※Valve can be opened and closed even when the plastic handle has been removed.

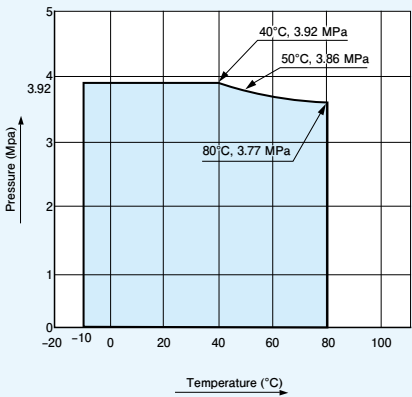
Technical Data

Working Pressure (MPa)	Temperature (°C)
3.92	-10 to +80

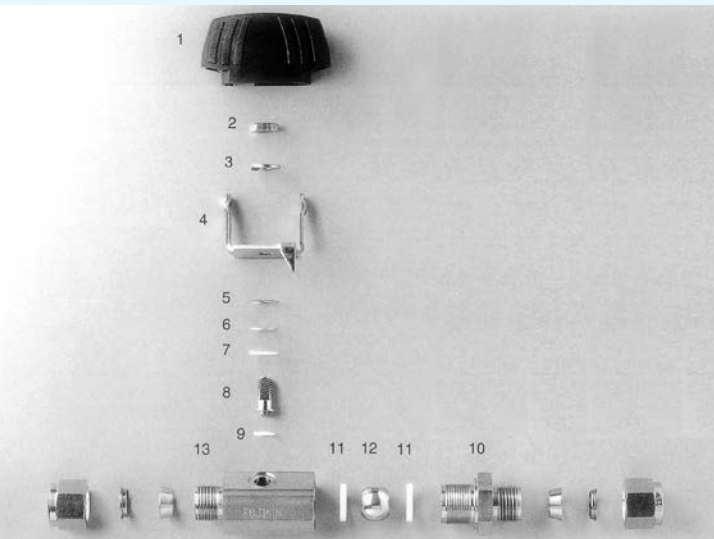
Applicable Fluid

Air, nitrogen gas, inert gas like helium, and non-corrosive gas and liquid.

Temperature and Pressure Rating



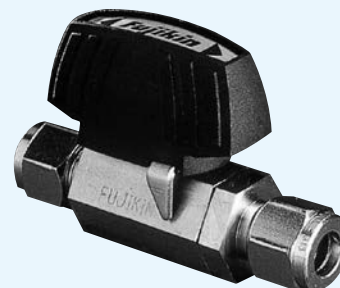
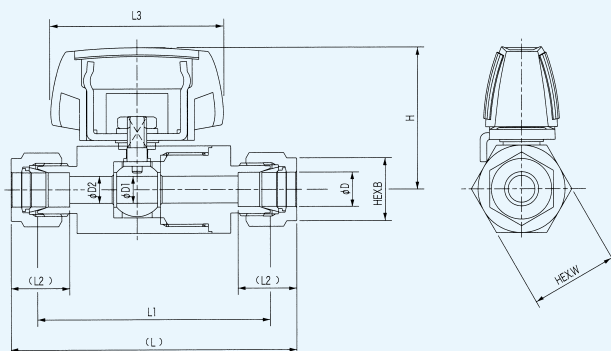
Materials



No.	Description	Materials
1	Handle	PBT
2	Nut	SUS 304
3	Spring washer	SUS 304
4	Handle stay	SUS 430
5	Disc spring	SUS 304
6	Gland washer	※ SUS 304
7	Packing	※ G-PTFE
8	Stem	※ SUS 316
9	Packing	※ G-PTFE
10	End cap	※ SUS 316
11	Seat	※ G-PTFE
12	Ball	※ SUS 316
13	Body	※ SUS 316

※Indicates part that comes into contact with liquid (gas) in valve.

New V-Lok Type



●Dimensions (mm size)

UNIT (mm)

Nominal Diameter D	Orifice Diameter D1	Hole Diameter D2	Face to Face Dimension		Pipe Connection Part L2	Height H	Handle Length L3	Across Flats B	Body Flats W	Cv Value	Ordering Numbers
			L	L1							
6	5	4.8	72.8	58	15.3	33	41	14	17	1.4	PUBV-94-6-V
8	7.5	6.4	77	62	16.2	40	50	16	21	3.5	PUBV-94-8-V
10	9	7.9	84.8	69.6	17.2	42	50	19	26	5	PUBV-94-10-V
12	9	9.5	90.2	70	22.8	42	50	22	26	5	PUBV-94-12-V

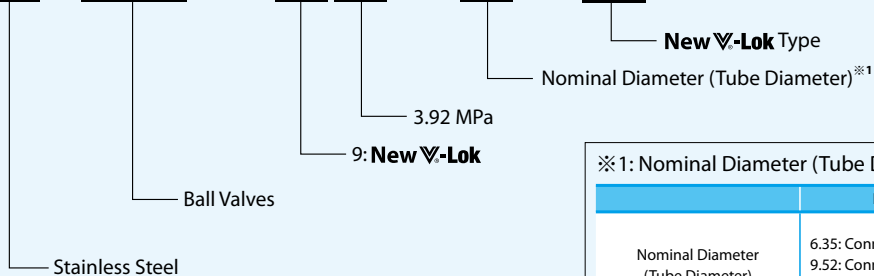
●Dimensions (inch size)

UNIT (mm)

Nominal Diameter D	Orifice Diameter D1	Hole Diameter D2	Face to Face Dimension		Pipe Connection Part L2	Height H	Handle Length L3	Across Flats B		Body Flats W	Cv Value	Ordering Numbers
			L	L1				in	mm			
6.35	5	4.8	72.8	58	15.2	33	41	9/16	14.3	17	1.4	PUBV-94-6.35-V
9.52	7.5	7.1	77.8	63	16.8	40	50	11/16	17.5	21	3.5	PUBV-94-9.52-V
12.7	9	10.4	90.2	70	22.9	42	50	7/8	22.2	26	5	PUBV-94-12.7-V

Ordering Numbers

PUBV - 94 - 6 - V



※1: Nominal Diameter (Tube Diameter)

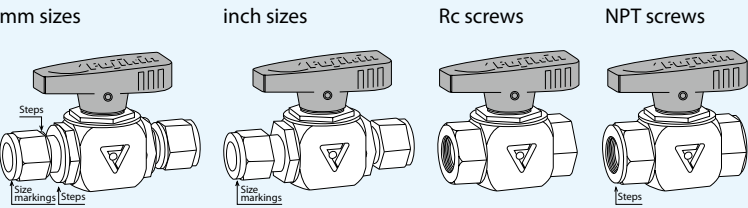
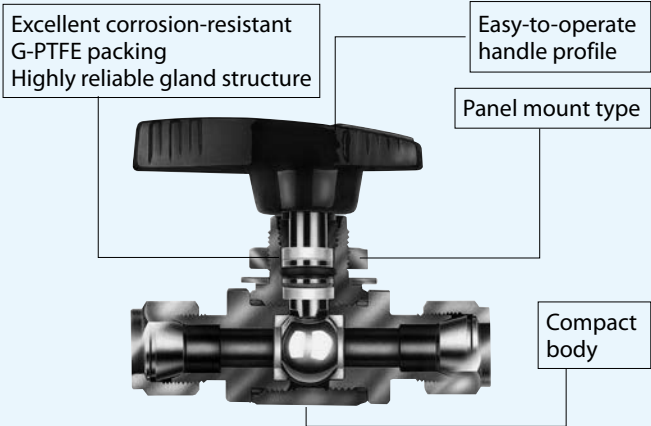
	Inch Size	Millimeter Size
Nominal Diameter (Tube Diameter)	6.35: Connection part ø6.35	6: Connection part ø6
	9.52: Connection part ø9.52	8: Connection part ø8
	10: Connection part ø10	10: Connection part ø10
	12.7: Connection part ø12.7	12: Connection part ø12

[4.9 MPa]



Features

- 1. Compact design
- 2. Easy-to-operate handle profile
- 3. Panel mount-compatible
- 4. Available in millimeter and inch sizes, allowing discrimination of Rc and NPT screws



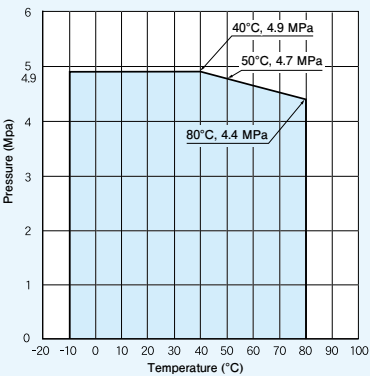
Technical Data

Working Pressure (MPa)	Temperature (°C)
4.9	-10 to +80

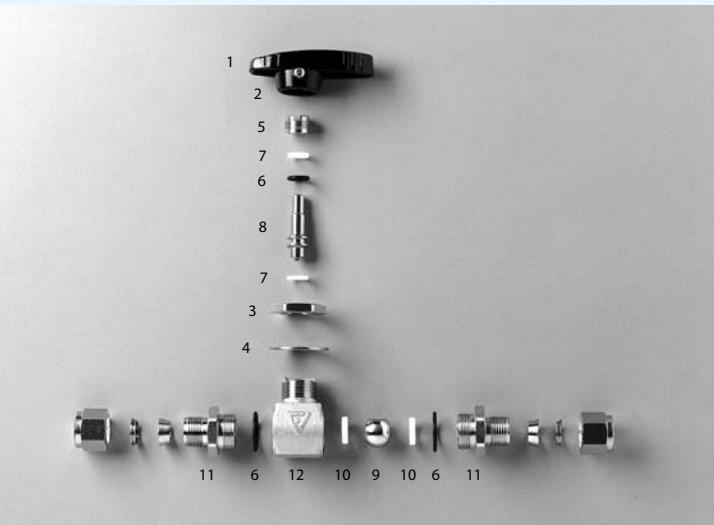
Applicable Fluid

Air, nitrogen gas, inert gas like helium, and non-corrosive gas and liquid.

Temperature and Pressure Rating



Materials



No.	Description	Materials
1	Handle	ZDC2
2	Set screw	SUS 304
3	Panel nut	SUS 304
4	Panel washer	SUS 430
5	Gland bolt	SUS 316
6	O-ring ※	Fluororubber
7	Gland packing ※	G-PTFE
8	Stem ※	SUS 316
9	Ball ※	SUS 316
10	Seat ※	G-PTFE
11	Socket ※	SUS 316
12	Body ※	SCS 14

※: Wetted part
Applicable fluid: Air, nitrogen gas, inert gas like helium, and non-corrosive gas and liquid.

CAUTION

When selecting a valve Since this valve uses a fluororubber O-ring, it cannot be used with fluids that would corrode it or cause it to swell (for example, ammonia, fluorocarbons, acetic acid, nitrous oxide, ethylene oxide, or acetone). If you are unsure whether the sealant is suitable for use with a given fluid, please contact us before ordering.



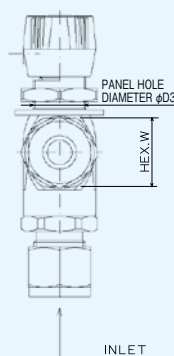
UNIT (mm)

●Dimensions (inch size)

UNIT (mm)

Fujikin Carp Group 108

Technical drawing of the 1000 Series 1/2" valve, showing a top view and a side view. The top view includes dimensions L1, L2, L3, L4, L, and H. The side view includes dimensions H, H1, H2, H3, and H4. The drawing also shows the panel thickness T, the hex B, and the flow direction indicated by an arrow labeled FLOW DIRECTION.



CAUTION

Please connect 3-way valves according to the indicated direction of flow. Do not use with the indicated direction of flow reversed as the valve may be unable to fully stop flow in such configurations. (Flow is left or right after entering from underneath the valve.)

UNIT (mm)

Nominal Diameter D	Orifice Diameter D1	Hole Diameter D2	Face to Face Dimension		Pipe Connection Part		Handle Length		Height Fully Open			Panel Mounting		Socket Width Across Flat W	Panel Thickness T		Cv Value	Weight (approximate) (kg)	Ordering Numbers
			L	L1	L2	B	L3	L4	H	H1	H3	H2	D3		MIN.	MAX.			
3	5	2.4	58.2	45	12.9	10	47	28	38	36.1	29.5	11	14.5	17	1	5	0.23	0.16	PUBVT-95-3-V
4	5	3.2	60.2	47	13.7	12	47	28	38	37.1	30.5	11	14.5	17	1	5	0.4	0.16	PUBVT-95-4-V
6	5	4.8	62.8	48	15.3	14	47	28	38	38.4	31	11	14.5	17	1	5	1	0.17	PUBVT-95-6-V
8	5	5	64	49	16.2	16	47	28	38	39	31.5	11	14.5	17	1	5	1	0.19	PUBVT-95-8-V
10	7.5	7.9	71.2	56	17.2	19	57	34	42	43.6	36	13	16.5	21	1	5	2.2	0.19	PUBVT-95-10-V
12	10	9.5	79.2	59	22.8	22	57	34	45	50.1	40	16	16.5	26	1	5	4	0.39	PUBVT-95-12-V

UNIT (mm)

Nominal Diameter D	Orifice Diameter D1	Hole Diameter D2	Face to Face Dimension		Pipe Connection Part			Handle Length		Height Fully Open			Panel Mounting		Socket Width Across Flat W	Panel Thickness T		Cv Value	Weight (approximate) (kg)	Ordering Numbers
			L	L1	L2	B		L3	L4	H	H1	H3	H2	D3		MIN.	MAX.			
						in	mm													
3.2	5	2.7	58.2	45	12.7	7/16	11.1	47	28	38	36.1	29.5	11	14.5	17	1	5	0.29	0.16	PUBVT-95-3.2-V
6.35	5	4.8	62.8	48	15.2	9/16	14.3	47	28	38	38.4	31	11	14.5	17	1	5	1	0.17	PUBVT-95-6.35-V
9.52	7.5	7.1	68.8	54	16.8	11/16	17.5	57	34	42	42.4	35	13	16.5	21	1	5	2.2	0.19	PUBVT-95-9.52-V
12.7	10	10.4	79.2	59	22.9	7/8	22.2	57	34	45	50.1	40	16	16.5	26	1	5	4	0.39	PUBVT-95-12.7-V

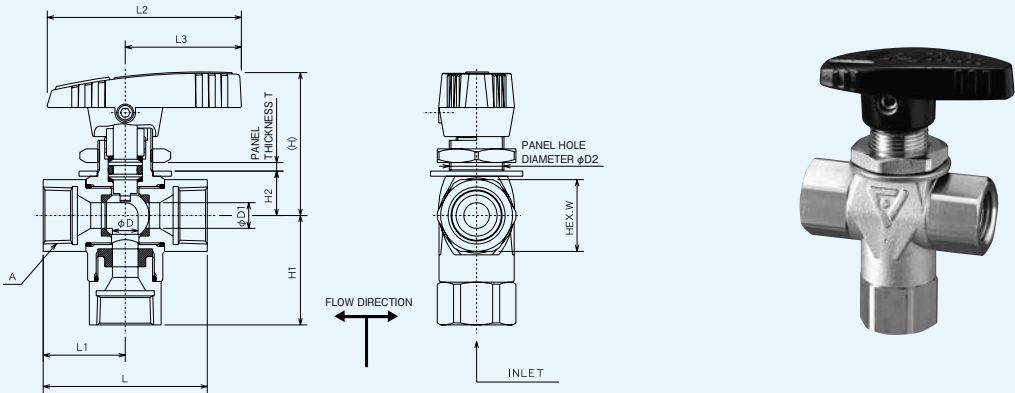
Thread Type



UNIT (mm)

Nominal Diameter (B)	Orifice Diameter D1	Face to Face Dimension		Pipe Connection Part A	Handle Length		Height Fully Open H	Panel Mounting		Socket Width Across Flat W	Panel Thickness T		Cv Value	Weight (approximate) (kg)	Ordering Numbers
		L	L1		L2	L3		H1	D2		MIN.	MAX.			
1/8	5	38	19	Rc 1/8	47	28	38	11	14.5	17	1	5	1.4	0.12	PUBV-15A
1/4	5	44	22	Rc 1/4	47	28	38	11	14.5	17	1	5	1.4	0.12	PUBV-15B
3/8	7.5	48	24	Rc 3/8	57	34	42	13	16.5	21	1	5	3.5	0.19	PUBV-15C
1/2	10	57	28.5	Rc 1/2	57	34	45	16	16.5	26	1	5	6.5	0.26	PUBV-15D

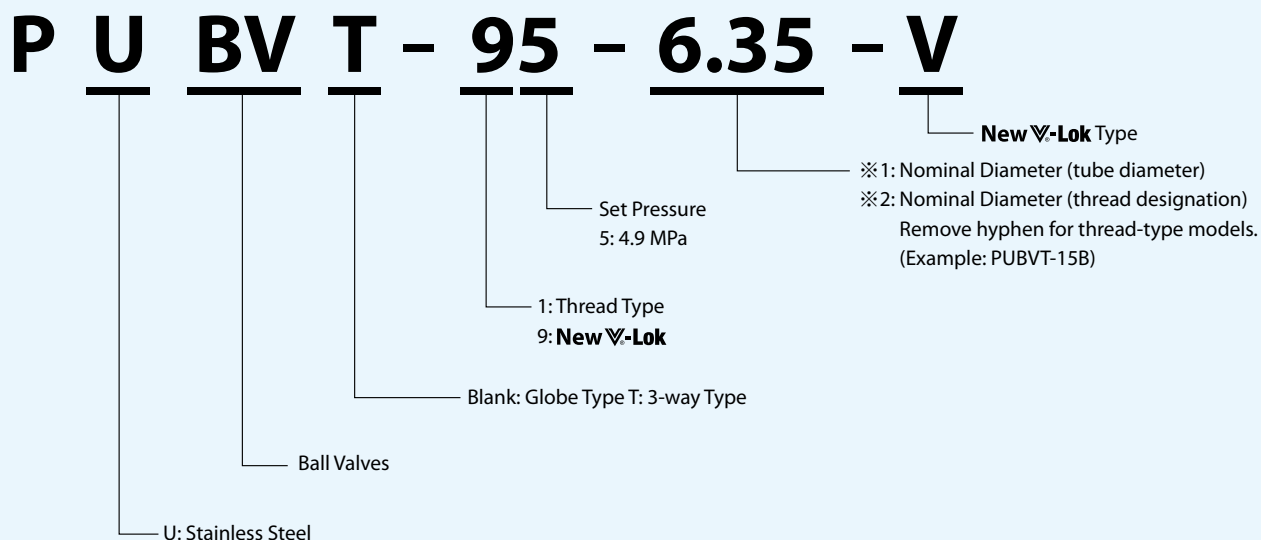
Thread Type



CAUTION Please connect 3-way valves according to the indicated direction of flow. Do not use with the indicated direction of flow reversed as the valve may be unable to fully stop flow in such configurations. (Flow is left or right after entering from underneath the valve.)

●Dimensions														UNIT (mm)			
Nominal Diameter (B)	Orifice Diameter D1	Hole Diameter D1	Face to Face Dimension		Pipe Connection Part	Handle Length		Height Fully Open		Panel Mounting		Socket Width Across Flat W	Panel Thickness T		Cv Value	Weight (approximate) (kg)	Ordering Numbers
			L	L1		L2	L3	H	H1	H2	D2		MIN.	MAX.			
1/8	5	5	38	19	Rc 1/8	47	28	38	26	11	14.5	17	1	5	1	0.15	PUBVT-15A
1/4	5	5	44	22	Rc 1/4	47	28	38	29	11	14.5	17	1	5	1	0.15	PUBVT-15B
3/8	7.5	7.5	48	24	Rc 3/8	57	34	42	32	13	16.5	21	1	5	2.2	0.22	PUBVT-15C
1/2	10	10	57	28.5	Rc 1/2	57	34	45	39	16	16.5	26	1	5	4	0.33	PUBVT-15D

Ordering Numbers



※1: Nominal Diameter (Tube Diameter)

	Inch Size	Millimeter Size
Nominal Diameter (Tube Diameter)	3.2 : Connection part ø3.2	3: Connection part ø3
	6.35: Connection part ø6.35	4: Connection part ø4
	9.52: Connection part ø9.52	6: Connection part ø6
	12.7: Connection part ø12.7	8: Connection part ø8
		10: Connection part ø10
		12: Connection part ø12

※2: Thread designation (for taper pipe thread)

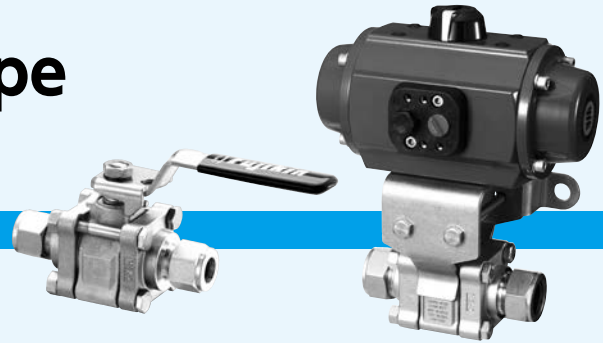
Taper Pipe Thread	Designation		A	B	C	D
JIS B0203 (1982) (ISO 7/1)	Male thread		R 1/8	R 1/4	R 3/8	R 1/2
	Female thread		Rc 1/8	Rc 1/4	Rc 3/8	Rc 1/2

Thread designation complies with JIS B0203 (1982) (ISO 7/1).
 JIS B0203 (1981) values are provided for reference.

[15.1MPa] 3-Pieces Type

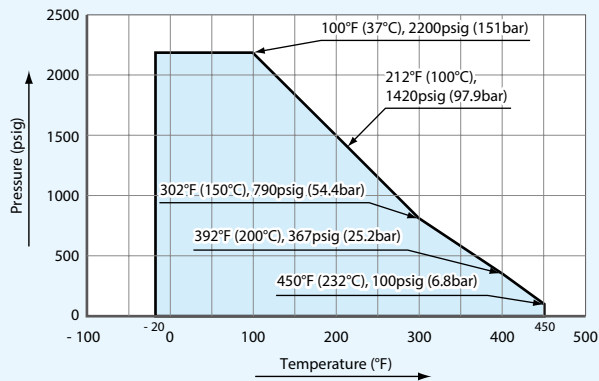
Features

1. Large flowrate with 3 pieces body.
2. ON-OFF by operation of quarter turn.
3. End Connections: **New V-Lok** Type, Rc, NPT Female
4. Manual Valves, Automated Valves
(Spring Back, Double Action Type)



Technical Data

Temperature and Pressure Rating

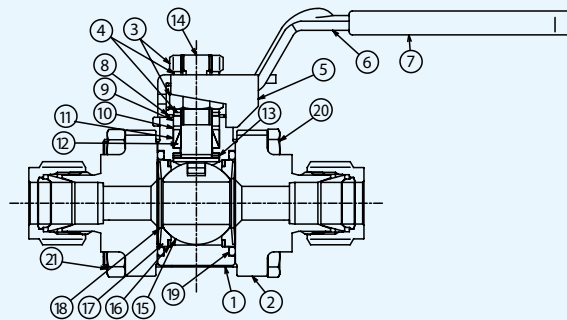


Note: If the end connection is **New V-Lok** type, the working pressure may be low depending on the tube used.
For details, please refer to 1-1, 1-2 in the table of P12.

Applicable Fluid

Air, Nitrogen gas, Inert gas like Helium, and non-corrosive gas and liquid.

Materials of Construction



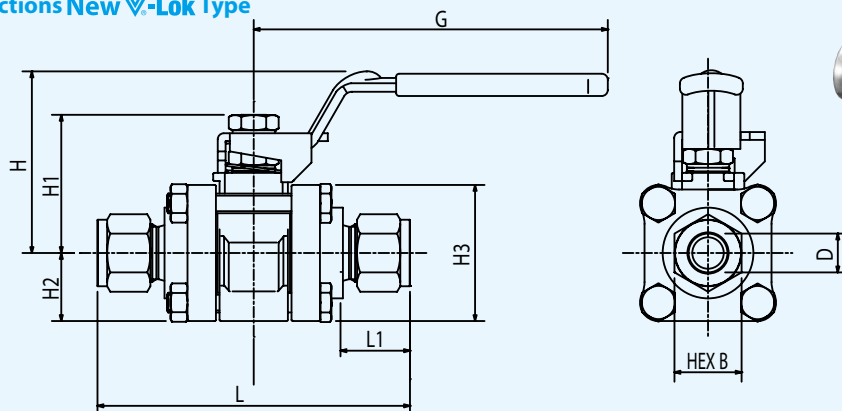
No.	Description	Materials	No.	Description	Materials
1	BODY ※	ASTM A351 CF3M	12	BOTTOM PACKING ※	C - PTFE
2	FLANGE ※	ASTM A351 CF3M	13	STEM BEARING ※	SUS316
3	STEM NUT	ASTM A276 316	14	STEM	ASTM A240 316
4	STEM SPRING	SUS304 - CSP	15	BALL	ASTM A240 316 or ASTM A351 CF8M
5	STOP PLATE	ASTM A240 304	16	SUPPORT RING ※	ASTM A240 316
6	HANDLE	ASTM A240 304	17	SEAT ※	C - PTFE
7	HANDLE SLEEVE	VINYL	18	SEAT SPRING ※	SUS304 - CSP
8	EARTH SPRING	ASTM A313 302	19	O-RING ※	FKM
9	GLAND	ASTM B783 316	20	BOLT	SUS316
10	PACKING SUPPORT	PEEK	21	BOLT NUT	SUS316
11	TOP PACKING ※	C - PTFE			

※ : Wetted Parts

Dimensions

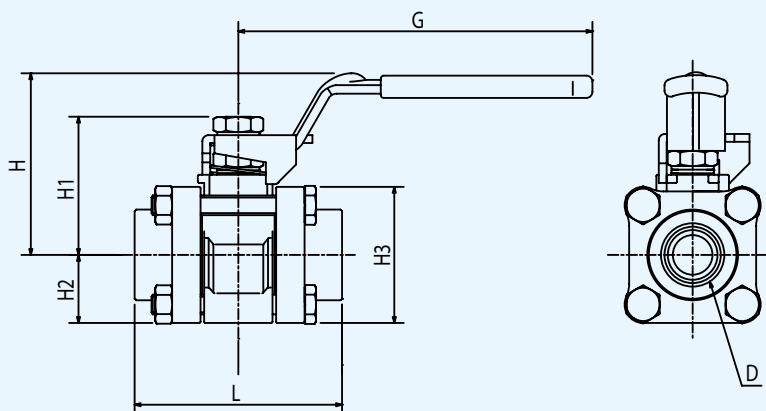
Manual Valves

End Connections New V-Lok Type



Nominal Sizes	Orifice inch (mm)	Dimensions inch (mm)								Ordering Numbers
		L	L1	B	H	H1	H2	H3	G	
1/4in. (6.35mm)	0.19(4.8)	3.17(80.5)	0.6(15.2)	9/16 in.	1.66(42.2)	1.26(32)	0.68(17.3)	1.35(34.3)	2.37(60.2)	VUBV-915-6.35-V
3/8in. (9.52mm)	0.28(7.1)	3.17(80.5)	0.66(16.8)	11/16 in.	1.66(42.2)	1.26(32)	0.68(17.3)	1.35(34.3)	2.37(60.2)	VUBV-915-9.52-V
1/2in. (12.7mm)	0.41(10.3)	4.06(103)	0.9(22.9)	7/8 in.	2.35(59.7)	1.79(45.5)	0.89(22.6)	1.78(45.2)	4.49(114)	VUBV-915-12.7-V
3/4in. (19.05mm)	0.52(13.1)	4.06(103)	0.96(24.4)	1-1/8 in.	2.35(59.7)	1.79(45.5)	0.89(22.6)	1.78(45.2)	4.49(114)	VUBV-915-19.05-V
1in. (25.4mm)	0.87(22.2)	5.35(136)	1.23(31.2)	1-1/2 in.	2.94(74.7)	2.52(64)	1.25(31.8)	2.5(63.5)	5.98(152)	VUBV-915-25.4-V
6mm	0.19(4.8)	3.17(80.5)	0.6(15.3)	0.55(14)	1.66(42.2)	1.26(32)	0.68(17.3)	1.35(34.3)	2.37(60.2)	VUBV-915-6-V
8mm	0.25(6.4)	3.17(80.5)	0.64(16.2)	0.63(16)	1.66(42.2)	1.26(32)	0.68(17.3)	1.35(34.3)	2.37(60.2)	VUBV-915-8-V
10mm	0.28(7.1)	3.2(81.3)	0.68(17.2)	0.75(19)	1.66(42.2)	1.26(32)	0.68(17.3)	1.35(34.3)	2.37(60.2)	VUBV-915-10-V
12mm	0.37(9.5)	4.06(103)	0.9(22.8)	0.87(22)	2.35(59.7)	1.79(45.5)	0.89(22.6)	1.78(45.2)	4.49(114)	VUBV-915-12-V
20mm	0.63(15.9)	4.94(125.6)	1.02(26)	1.18(30)	2.94(74.7)	2.52(64)	1.25(31.8)	2.5(63.5)	5.98(152)	VUBV-915-20-V
25mm	0.87(22.2)	5.35(136)	1.23(31.3)	1.38(35)	2.94(74.7)	2.52(64)	1.25(31.8)	2.5(63.5)	5.98(152)	VUBV-915-25-V

End Connections: Rc Type

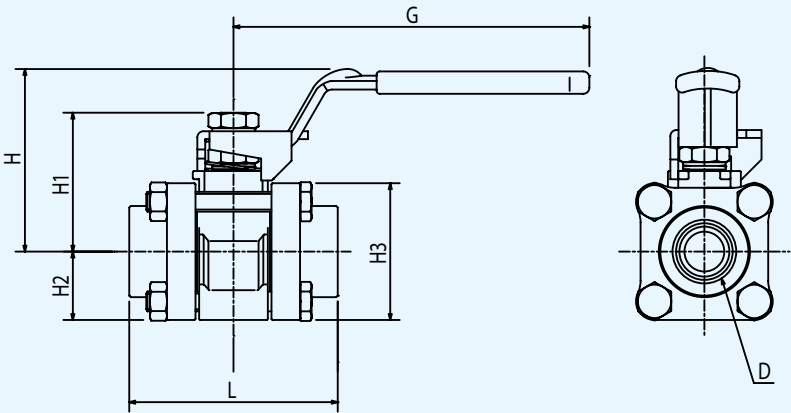


Nominal Sizes	Orifice in. (mm)	End Connection D	Dimensions inch (mm)						Ordering Numbers
			L	H	H1	H2	H3	G	
1/4	0.28(7.1)	Rc 1/4	2.16(54.9)	1.66(42.2)	1.26(32)	0.68(17.3)	1.35(34.3)	2.37(60.2)	VUBV-115B
3/8	0.52(13.1)	Rc 3/8	2.7(68.6)	2.35(59.7)	1.79(45.5)	0.89(22.6)	1.78(45.2)	4.49(114)	VUBV-115C
1/2	0.52(13.1)	Rc 1/2	2.7(68.6)	2.35(59.7)	1.79(45.5)	0.89(22.6)	1.78(45.2)	4.49(114)	VUBV-115D
3/4	0.87(22.2)	Rc 3/4	3.59(91.2)	2.94(74.7)	2.52(64)	1.25(31.8)	2.5(63.5)	5.98(152)	VUBV-115E
1	0.87(22.2)	Rc 1	4.45(113)	2.94(74.7)	2.52(64)	1.25(31.8)	2.5(63.5)	5.98(152)	VUBV-115F

Dimensions

Manual Valves

End Connections: Female NPT Type

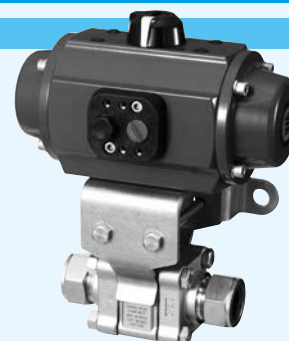
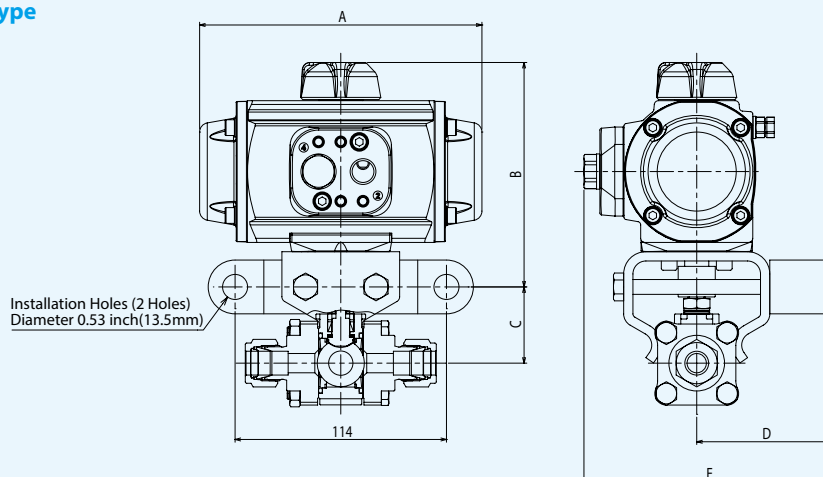


Sizes	Orifice in. (mm)	End Connections D	Dimensions inch (mm)						Ordering Numbers
			L	H	H1	H2	H3	G	
1/4	0.28 (7.1)	1/4 NPT	2.16 (54.9)	1.66 (42.2)	1.26 (32)	0.68 (17.3)	1.35 (34.3)	2.37 (60.2)	VUBV - 115BN
3/8	0.52 (13.1)	3/8 NPT	2.7 (68.6)	2.35 (59.7)	1.79 (45.5)	0.89 (22.6)	1.78 (45.2)	4.49 (114)	VUBV - 115CN
1/2	0.52 (13.1)	1/2 NPT	2.7 (68.6)	2.35 (59.7)	1.79 (45.5)	0.89 (22.6)	1.78 (45.2)	4.49 (114)	VUBV - 115DN
3/4	0.87 (22.2)	3/4 NPT	3.59 (91.2)	2.94 (74.7)	2.52 (64)	1.25 (31.8)	2.5 (63.5)	5.98 (152)	VUBV - 115EN
1	0.87 (22.2)	1 NPT	4.45 (113)	2.94 (74.7)	2.52 (64)	1.25 (31.8)	2.5 (63.5)	5.98 (152)	VUBV - 115FN

Dimensions

Automated Valves

Spring Return Type

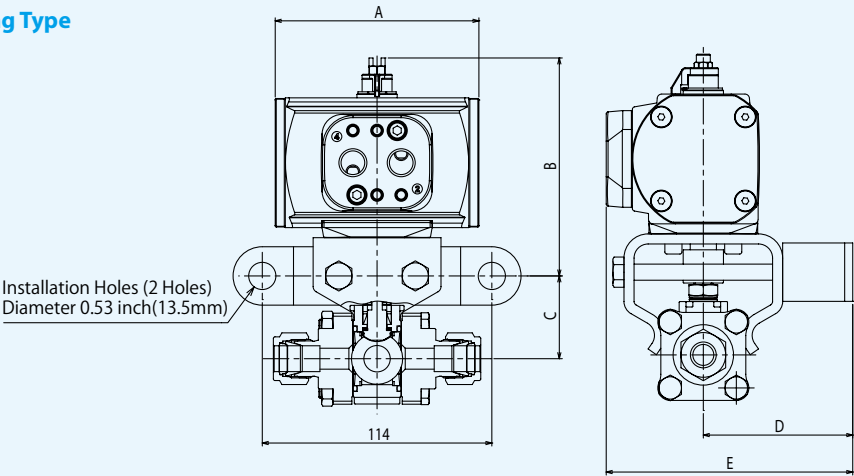


Connections	Nominal Sizes	Actuator Type	Dimensions inch (mm)					Ordering Numbers
			A	B	C	D	E	
New V-Lok	1/4in. (6.35mm)	AC2S	5.52 (140.2)	4.26 (108.3)	1.54 (39.1)	2.9 (73.7)	5.14 (130.5)	APR-VUBV-915-6.35-V
	3/8in. (9.52mm)							APR-VUBV-915-9.52-V
	1/2in. (12.7mm)	AC3S	6 (152.3)	4.77 (121.1)	1.62 (41.1)	2.92 (74.2)	5.31 (135)	APR-VUBV-915-12.7-V
	3/4in. (19.05mm)							APR-VUBV-915-19.05-V
	1in. (25.4mm)	AC4S	7.93 (201.3)	6.05 (153.6)	2.18 (55.4)	3.3 (83.8)	6.07 (154.1)	APR-VUBV-915-25.4-V
	6mm	AC2S	5.52 (140.2)	4.26 (108.3)	1.54 (39.1)	2.9 (73.7)	5.14 (130.5)	APR-VUBV-915-6-V
	8mm							APR-VUBV-915-8-V
	10mm							APR-VUBV-915-10-V
	12mm	AC3S	6 (152.3)	4.77 (121.1)	1.62 (41.1)	2.92 (74.2)	5.31 (135)	APR-VUBV-915-12-V
Rc	1/4	AC2S	5.52 (140.2)	4.26 (108.3)	1.54 (39.1)	2.9 (73.7)	5.14 (130.5)	APR-VUBV-115B
	3/8	AC3S	6 (152.3)	4.77 (121.1)	1.62 (41.1)	2.92 (74.2)	5.31 (135)	APR-VUBV-115C
	1/2							APR-VUBV-115D
	3/4	AC4S	7.93 (201.3)	6.05 (153.6)	2.18 (55.4)	3.3 (83.8)	6.07 (154.1)	APR-VUBV-115E
	1							APR-VUBV-115F
Female NPT	1/4	AC2S	5.52 (140.2)	4.26 (108.3)	1.54 (39.1)	2.9 (73.7)	5.14 (130.5)	APR-VUBV-115BN
	3/8	AC3S	6 (152.3)	4.77 (121.1)	1.62 (41.1)	2.92 (74.2)	5.31 (135)	APR-VUBV-115CN
	1/2							APR-VUBV-115DN
	3/4	AC4S	7.93 (201.3)	6.05 (153.6)	2.18 (55.4)	3.3 (83.8)	6.07 (154.1)	APR-VUBV-115EN
	1							APR-VUBV-115FN

Dimensions

Automated Valves

Double Acting Type



Connections	Nominal Dia.	Actuator Type	Dimensions inch (mm)					Ordering Numbers
			A	B	C	D	E	
New V-Lok	1/4in. (6.35mm)	AC1	3.02 (76.8)	4.09 (103.9)	1.54 (39.1)	2.9 (73.7)	4.8 (121.9)	APDM-VUBV-915-6.35-V
	3/8in. (9.52mm)							APDM-VUBV-915-9.52-V
	1/2in. (12.7mm)	AC2	3.98 (101)	4.29 (108.9)	1.62 (41.1)	2.92 (74.2)	4.82 (122.4)	APDM-VUBV-915-12.7-V
	3/4in. (19.05mm)							APDM-VUBV-915-19.05-V
	1in. (25.4mm)	AC3	5.98 (152)	5.38 (136.6)	2.18 (55.4)	3.3 (83.8)	5.35 (136)	APDM-VUBV-915-25.4-V
	6mm	AC1						APDM-VUBV-915-6-V
	8mm		3.02 (76.8)	4.09 (103.9)	1.54 (39.1)	2.9 (73.7)	4.8 (121.9)	APDM-VUBV-915-8-V
	10mm							APDM-VUBV-915-10-V
	12mm	AC2	3.98 (101)	4.29 (108.9)	1.62 (41.1)	2.92 (74.2)	4.82 (122.4)	APDM-VUBV-915-12-V
Rc	1/4	AC1	3.02 (76.8)	4.09 (103.9)	1.54 (39.1)	2.9 (73.7)	4.8 (121.9)	APDM-VUBV-115B
	3/8	AC2	3.98 (101)	4.29 (108.9)	1.62 (41.1)	2.92 (74.2)	4.82 (122.4)	APDM-VUBV-115C
	1/2							APDM-VUBV-115D
	3/4	AC3	5.98 (152)	5.38 (136.6)	2.18 (55.4)	3.3 (83.8)	5.35 (136)	APDM-VUBV-115E
	1							APDM-VUBV-115F

Ordering Information

<u>APR</u> ①	—	<u>V U BV</u> ② ③ ④	—	<u>9 15</u> ⑤ ⑥	—	<u>6.35</u> ⑦	—	<u>B</u> ⑧	—	<u>KL</u> ⑨	—	<u>V</u> ⑩
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- ① Actuator Type
APR : Spring Return Type
APDM : Double Acting type
Blank : Manual Type
- ② Valve Series
- ③ Body Material
Stainless Steel
- ④ Valve Type
Ball Valves
- ⑤ End Connections
1 : Thread Type
9 : **New V-Lok** Type
- ⑥ Working Pressure
2200 psig
(151 bar)
- ⑦ Connection Sizes
6.35 : **New V-Lok** 1/4in. B : Rc 1/4
9.52 : **New V-Lok** 3/8in. C : Rc 3/8
12.7 : **New V-Lok** 1/2in. D : Rc 1/2
19.05 : **New V-Lok** 3/4in. E : Rc 3/4
25.4 : **New V-Lok** 1in. F : Rc 1
6 : **New V-Lok** 6mm BN : 1/4 NPT
8 : **New V-Lok** 8mm CN : 3/8 NPT
10 : **New V-Lok** 10mm DN : 1/2 NPT
12 : **New V-Lok** 12mm EN : 3/4 NPT
FN : 1 NPT
- ⑧ Handle Color
— : Black
B : Blue
G : Green
YR : Orange
RE : Red
Y : Yellow
- ⑨ Key Lock Type
Blank : without Key Lock
KL : with Key Lock
- ⑩ **New V-Lok** Type

Note: In the case of Thread Type,
"-" is not added before ⑦.

Option

Handle Color

Standard Handle Color is black.

When you ordered a colored handle besides the black.
Please put the relevant symbol to the part number end from beside table.

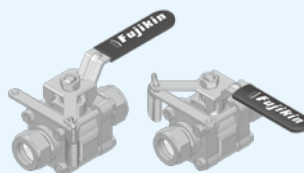
Ex. Ordering Number in case of you will order blue handle
VUBV-941P-6.35-B

HANDLE Color	The end of Ordering Numbers
Black	—
Blue	-B
Green	-G
Orange	-YR
Red	-RE
Yellow	-Y

Key Lock & Bracket ※

- Locking with standard parts for lock, and with a handle of flow direction locking certainly at open or close for 2-way valves
- Possible to fix a locking part on the hole in the bracket or install a distinction tag.
- After installing to a panel, it isn't possible to install a bracket.

※ : Getting ready. Begin to sell it soon.



Seal Kit

You can buy a Seal Kit at the valve maintenance time.

Valve Series	Kit Contents
VUBV-915 Series (2-way Type)	• INSTRUCTION MANUAL • Ball • STEM BEARING • O-RING(1), O-RING(2)
VUBV-115 Series (2-way Type)	• SEAT ASSEMBLY (SEAT + SEAT CARRIERS) • DISC SPRING • END SCREW SEALS • LUBRICANT • SDS of LUBRICANT

When a bracket for Key Locks is installed,
it's possible to fix a valve open or shut.

[17.2MPa] [20.6MPa] Instrument-use

Features

VUBVS, VUBVST-920 Series

1. Reduction the parts which may leak by one-piece seat
2. Self-compensation of the wear of a seat by the spring structure of a gland
3. Simple design with one piece body
4. Tight and smooth, low torque and easy operation
5. One-piece ball stem
6. Panel mountable
7. End Connections **New -Lok**, Rc, Female pipe (NPT)



Technical Data

Working Pressure, Temperature Rating

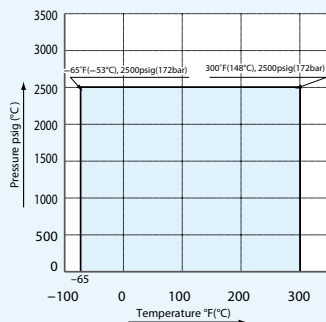
Series	Nominal Sizes	Orifice inch(mm)	Working Pressure psig(bar) ※	Temperature °F (°C)
VUBVS-920 Series	1/8B, 1/4B, 6mm, 8mm, 1/4in., 3/8in.	0.19(4.8)	3000(206)	-65 (-53) to +300 (+148)
	1/8B, 3mm, 6mm, 1/16in., 1/8in., 1/4in.	0.13(3.2)	2500(172)	
	3/8B, 10mm, 3/8in.	0.28(7.1)		
	1/2B, 12mm, 1/2in., 3/4in.	0.41(10.3)		
VUBVST-920 Series	3mm, 6mm, 1/16in., 1/8in., 1/4in.	0.13(3.2)	2500(172)	-65 (-53) to +300 (+148)

※ : Working Pressure: Please refer to following Temperature and Pressure Rating.

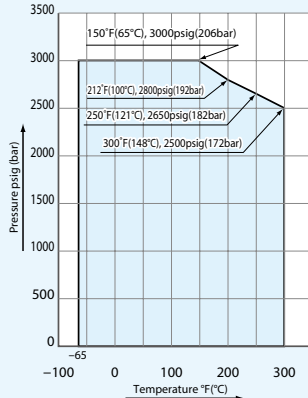
Temperature and Pressure Rating

VUBVS-920 Series

Nominal Sizes:
1/8B, 3mm, 6mm, 1/16in., 1/8in., 1/4in. (Orifice:0.13in)
3/8B, 10mm, 3/8in. (Orifice:0.28in)
1/2B, 12mm, 1/2in., 3/4in. (Orifice:0.41in)



Nominal Sizes:
1/8B, 1/4B, 6mm, 1/4in., 3/8in. (Orifice:0.19in)



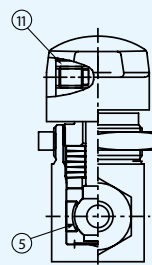
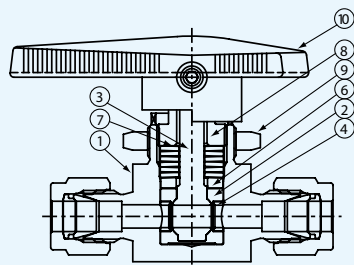
Note: If the end connection is **New -Lok** type, the working pressure may be low depending on the tube used.
For details, please refer to 1-1, 1-2 in the table of P12.

Applicable Fluid

Water, Air, Nitrogen gas, Inert gas like Helium, and non-corrosive gas and liquid.

Materials of Construction

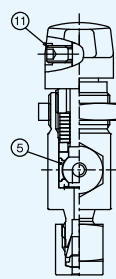
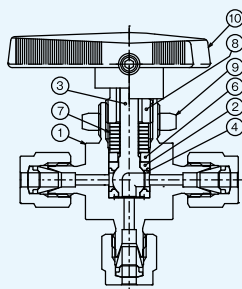
VUBVS-920 Series



No.	Description	Materials
1	BODY ※	ASTM A479 316
2	SEAT ※	PTFE
3	STEM ※	ASTM A276 316
4	RETAINER1 ※	SUS316L
5	RETAINER2 ※	SUS316L
6	GLAND	ASTM A276 316
7	DISH SPRING	S17700 or SUS631
8	PACKING GLAND SCREW	ASTM A276 316
9	PANEL NUT	ASTM A276 304 or 316
10	HANDLE	NYLON6 + SUS316L
11	SET SCREW	S17400 or SUS630/SUS304 (ORIFICE SMALL)

※ : Wetted Parts

VUBVST-920 Series



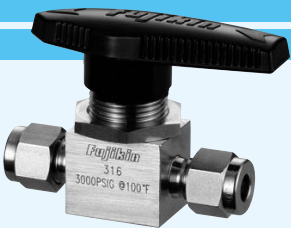
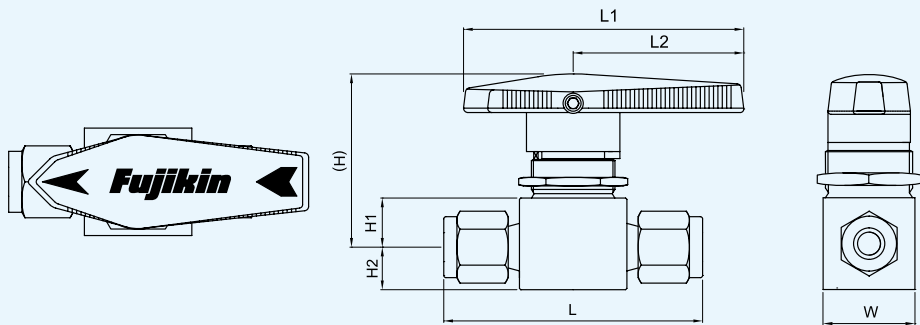
No.	Description	Materials
1	BODY ※	ASTM A479 316
2	SEAT ※	PTFE
3	STEM ※	ASTM A276 316
4	RETAINER1 ※	SUS316L
5	RETAINER2 ※	SUS316L
6	GLAND	ASTM A276 316
7	DISH SPRING	S17700 or SUS631
8	PACKING GLAND SCREW	ASTM A276 316
9	PANEL NUT	ASTM A276 304 or 316
10	HANDLE	NYLON6 + SUS316
11	SET SCREW	S17400 or SUS630/SUS304 (ORIFICE SMALL)

※ : Wetted Parts

Dimensions

Manual Valves

VUBV / VUBVS-920 Series

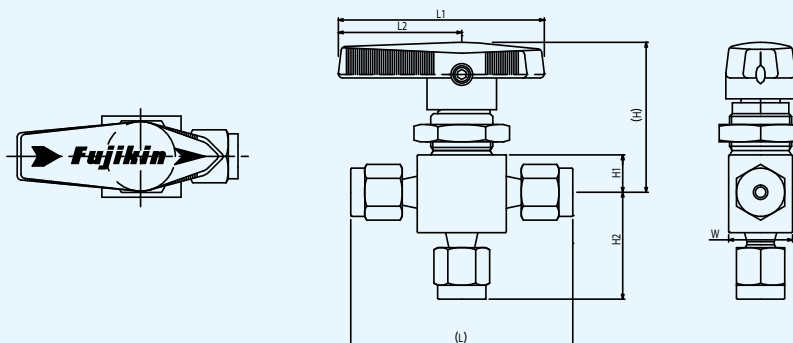


Connections	Nominal Sizes	Working Pressure psig (bar)	Orifice inch (mm)	Dimensions inch (mm)							Ordering Numbers		Handle color								
				L	L1	L2	H	H1	H2	W	VUBVS-920 Series	Black	Blue								
New V-Lok	1/16in. (1.6mm)	2500 (172)	0.05 (1.3)	1.68 (42.7)	1.87 (47.4)	1.12 (28.4)	1.36 (34.5)	0.34 (8.6)	0.28 (7.1)	0.58 (14.7)	VUBVS-920P-1.6-V	○	○								
	1/8in. (3.2mm)		0.09 (2.4)	2.01 (51.1)							VUBVS-920P-3.2-V	○	○								
	1/4in. (6.35mm)		0.13 (3.2)	2.21 (56.1)							VUBVS-920P-6.35-S-V	○	○								
	1/4in. (6.35mm)	3000 (206)	0.19 (4.8)	2.39 (60.7)	2.52 (63.9)	1.53 (38.9)	1.47 (37.3)	0.44 (11.2)	0.38 (9.7)	0.78 (19.8)	VUBVS-920P-6.35-V	○	—								
	3/8in. (9.52mm)			2.58 (65.5)							VUBVS-920P-9.52-V	○	○								
	1/2in. (12.7mm)			2500 (172)							0.41 (10.3)	3.92 (99.6)	4.26 (108.2)	3 (76.2)	2.43 (61.7)	0.69 (17.5)	0.69 (17.5)	1.5 (38.1)	VUBVS-920P-12.7-V	—	○
	3/4in. (19.05mm)	VUBVS-920P-19.05-V	—		○																
	3mm	0.09 (2.4)	2.01 (51.1)		1.87 (47.4)	1.12 (28.4)	1.36 (34.5)	0.34 (8.6)	0.28 (7.1)	0.58 (14.7)									VUBVS-920P-3-V	○	○
	6mm	0.13 (3.2)	2.21 (56.1)																VUBVS-920P-6-S-V	○	○
	6mm	3000 (206)	0.19 (4.8)	2.39 (60.7)	2.52 (63.9)	1.53 (38.9)	1.47 (37.3)	0.44 (11.2)	0.38 (9.7)	0.78 (19.8)	VUBVS-920P-6-V	○	—								
	8mm			2.46 (62.5)	2.52 (63.9)	1.53 (38.9)	1.47 (37.3)	0.44 (11.2)	0.38 (9.7)	0.78 (19.8)	VUBVS-920P-8-V	○	—								
	Female NPT	1/8	2500 (172)	0.13 (3.2)	1.63 (41.4)	1.87 (47.4)	1.12 (28.4)	1.36 (34.5)	0.34 (8.6)	0.28 (7.1)	0.58 (14.7)	VUBVS-120PAN-S	○	○							
1/8		3000 (206)	0.19 (4.8)	2 (50.8)	2.52 (63.9)	1.53 (38.9)	1.47 (37.3)	0.44 (11.2)	0.38 (9.7)	0.78 (19.8)	VUBVS-120PAN	○	—								
1/4				2.06 (52.3)	2.52 (63.9)	1.53 (38.9)	1.47 (37.3)	0.44 (11.2)	0.38 (9.7)	0.78 (19.8)	VUBVS-120PBN	○	—								
Rc	1/8	3000 (206)	0.19 (4.8)	2 (50.8)	2.52 (63.9)	1.53 (38.9)	1.47 (37.3)	0.44 (11.2)	0.38 (9.7)	0.78 (19.8)	VUBVS-120PA	○	—								
	1/4			2.06 (52.3)	2.52 (63.9)	1.53 (38.9)	1.47 (37.3)	0.44 (11.2)	0.38 (9.7)	0.78 (19.8)	VUBVS-120PB	○	—								

Dimensions

Manual Valves

VUBVST-920 Series



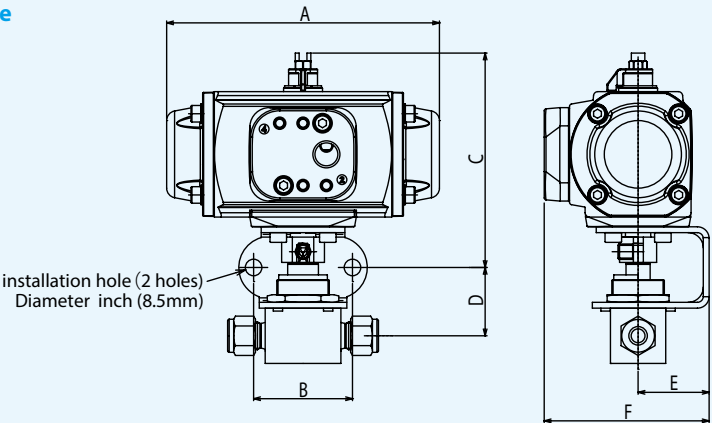
Connections	Nominal Sizes	Working Pressure psig (bar)	Orifice inch (mm)	Dimensions inch (mm)							Ordering Numbers	Handle color	
				L	L1	L2	H	H1	H2	W		Black	Blue
New V-Lok	1/16in. (1.6mm)	2500 (172)	0.05 (1.3)	1.68 (42.7)	1.87 (47.4)	1.12 (28.4)	1.36 (34.5)	0.34 (8.6)	0.81 (20.6)	0.58 (14.7)	VUBVST-920P-1.6-V	—	○
	1/8in. (3.2mm)		0.09 (2.4)	2.01 (51.1)					0.97 (24.6)		VUBVST-920P-3.2-V	—	○
	1/4in. (6.35mm)		0.13 (3.2)	2.21 (56.1)					1.07 (27.2)		VUBVST-920P-6.35-S-V	—	○
	3mm		0.09 (2.4)	2.01 (51.1)	1.87 (47.4)	1.12 (28.4)	1.36 (34.5)	0.34 (8.6)	0.97 (24.6)	0.58 (14.7)	VUBVST-920P-3-V	—	○
	6mm		0.13 (3.2)	2.21 (56.1)					1.07 (27.2)		VUBVST-920P-6-S-V	—	○
Female NPT	1/8		0.13 (3.2)	1.63 (41.4)	1.87 (47.4)	1.12 (28.4)	1.36 (34.5)	0.34 (8.6)	0.81 (20.6)	0.58 (14.7)	VUBVST-120PAN-S	○	○

Dimensions

Automated Valves

APR-VUBV / VUBVS-920 Series

Spring Return Type



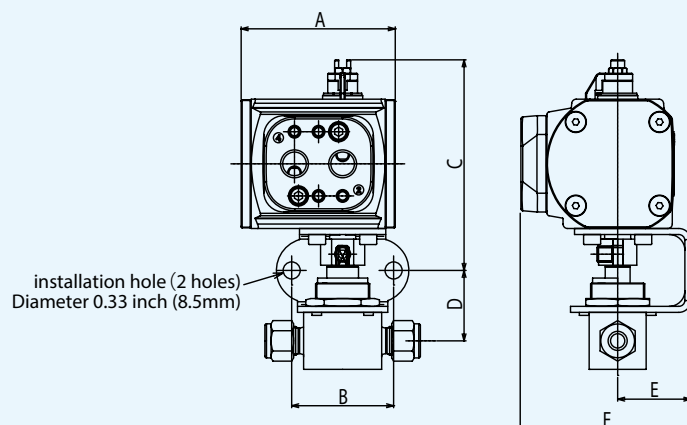
Connections	Nominal Sizes	Actuator Type	Dimensions inch (mm)						Ordering Numbers
			A	B	C	D	E	F	APR-VUBVS-920 Series
New V-Lok	1/4in. (6.35mm)	AC2S	5.52 (140.2)	2 (50.8)	4.18 (106.1)	1.1 (27.9)	1.44 (36.5)	3.66 (93)	APR-VUBVS-920P-6.35-V
	3/8in. (9.52mm)				4.33 (109.9)	1.38 (35.1)			APR-VUBVS-920P-9.52-V
	6mm	AC2S	5.52 (140.2)	2 (50.8)	4.18 (106.1)	1.1 (27.9)	1.44 (36.5)	3.66 (93)	APR-VUBVS-920P-6-V
	8mm								APR-VUBVS-920P-8-V
Rc	1/8	AC2S	5.52 (140.2)	2 (50.8)	4.18 (106.1)	1.1 (27.9)	1.44 (36.5)	3.66 (93)	APR-VUBVS-120PA-S
	1/8								APR-VUBVS-120PA
	1/4								APR-VUBVS-120PB

Dimensions

Automated Valves

APDM-VUBV / VUBVS-920 Series

Double Acting Type



Connections	Nominal Sizes	Actuator Type	Dimensions inch (mm)						Ordering Numbers
			A	B	C	D	E	F	APDM-VUBVS-920 Series
New V-Lok	1/4in. (6.35mm)	AC1	3.02 (76.8)	2 (50.8)	3.98 (101.1)	1.1 (27.9)	1.44 (36.5)	3.33 (84.7)	APDM-VUBVS-920P-6.35-V
	3/8in. (9.52mm)				4.13 (104.9)	1.38 (35.1)			APDM-VUBVS-920P-9.52-V
	6mm	AC1	3.02 (76.8)	2 (50.8)	3.98 (101.1)	1.1 (27.9)	1.44 (36.5)	3.33 (84.7)	APDM-VUBVS-920P-6-V
	8mm								APDM-VUBVS-920P-8-V
Female NPT	1/4	AC1	3.02 (76.8)	2 (50.8)	3.98 (101.1)	1.1 (27.9)	1.44 (36.5)	3.33 (84.7)	APDM-VUBVS-120PBN
Rc	1/4	AC1	3.02 (76.8)	2 (50.8)	3.98 (101.1)	1.1 (27.9)	1.44 (36.5)	3.33 (84.7)	APDM-VUBVS-120PB

Ordering Information

APR – **VUBVST** – **920P** – **6.35** – **S** – **B** – **KL** – **V**
 ① – ② ③ ④ ⑤ – ⑥ ⑦ ⑧ – ⑨ – ⑩ – ⑪ – ⑫ – ⑬

- ① Actuator Type
 APR : Spring Back Type
 APDM : Double Acting Type
 Blank: Manual Type

- ② Valve Series

- ③ Body Material
 Stainless Steel

- ④ Valve Type
 BVS: One-piece Seat
 Ball Valves

- ⑤ Valve Type
 Blank: 2-Way Valve
 T: 3-Way Valve

- ⑥ End Connections
 1: Thread Type
 9: **New V-Lok** Type

- ⑦ Working Pressure
 20 : 206 bar

- ⑧ Panel Mount Type

- ⑨ Connection Sizes
 1.6 : **New V-Lok** 1/16in.
 3.2 : **New V-Lok** 1/8in.
 6.35 : **New V-Lok** 1/4in.
 9.52 : **New V-Lok** 3/8in.
 12.7 : **New V-Lok** 1/2in.
 19.05 : **New V-Lok** 3/4in.
 3 : **New V-Lok** 3mm
 6 : **New V-Lok** 6mm
 8 : **New V-Lok** 8mm
 10 : **New V-Lok** 10mm
 12 : **New V-Lok** 12mm
 Note: In the case of Thread Type,
 "-" is not added before ⑨.

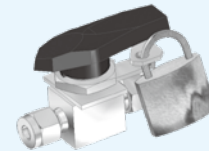
- ⑩ Orifice
 Blank : Standard
 S : Small

AN : 1/8 NPT
 BN : 1/4 NPT
 CN : 3/8 NPT
 DN : 1/2 NPT
 A : Rc 1/8
 B : Rc 1/4
 C : Rc 3/8
 D : Rc 1/2

- ⑪ Handle Color

Handle Color	Code
Blue	-B
Green	-G
Orange	-YR
Red	-RE
Yellow	-Y
Black	-

- ⑫ Key Lock
 Blank : without Key Lock
 KL : with Key Lock

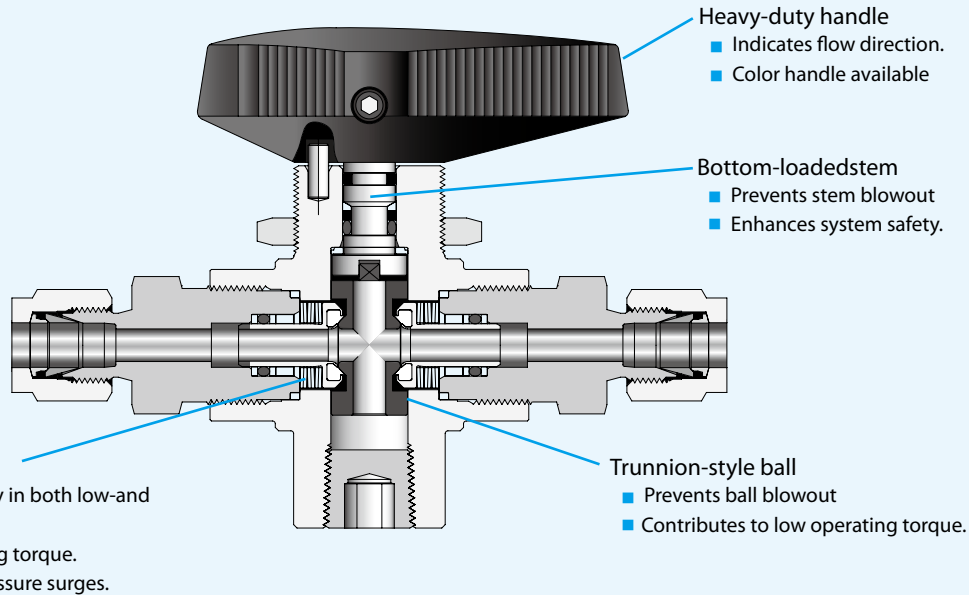
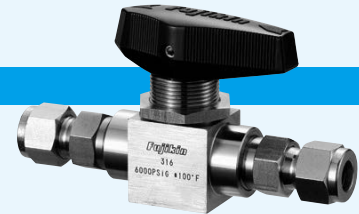


- ⑬ **New V-Lok** Type

[41.3MPa] [68.9MPa] Trunnion Type

Features

1. Compact, maximum-flow design
2. Low operating torque
3. Flow Pattern: 2-way Type, 3-way Type
4. Panel mountable



Important Information About Ball Valves

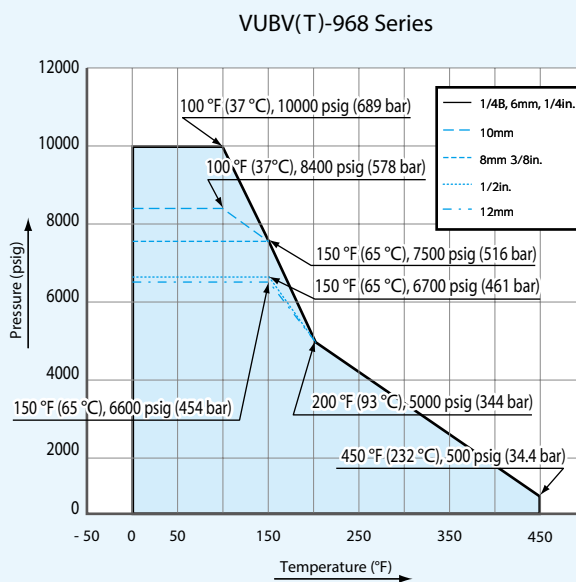
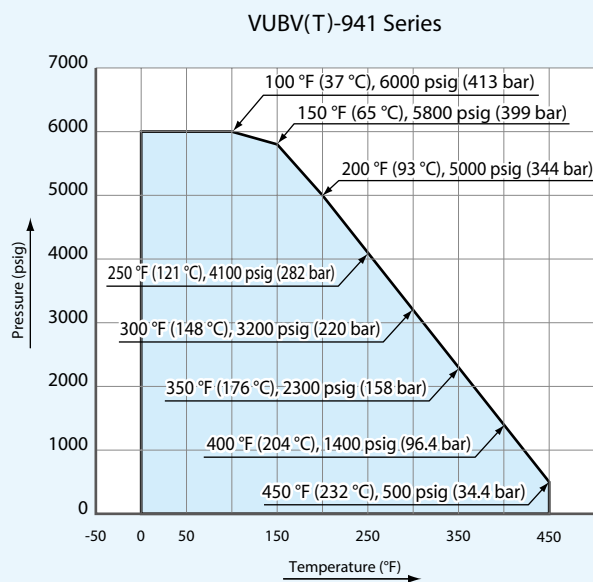
1. **Fujikin** ball valves are designed to be used in a fully open or fully closed position.
2. Valves that have not been cycled for a period of time may have a higher initial actuation torque.

Technical Data

Working Pressure, Temperature Rating

Types	Seat Material	Temperature Rating °F (°C)	Pressure Rating psig (bar)
VUBV -941 Series	PEEK	0 to 450 (-17 to 232)	6000 (413)
VUBV (T)-968 Series			6600 to 10000 (454 to 689)

Temperature and Pressure Rating



Note1: Please contact Fujikin beforehand if you are planning to use these valves at lower temperature than 32 °F (0°C).

Note2: If the end connection is **New V-Lok** type, the working pressure may be low depending on the tube used.

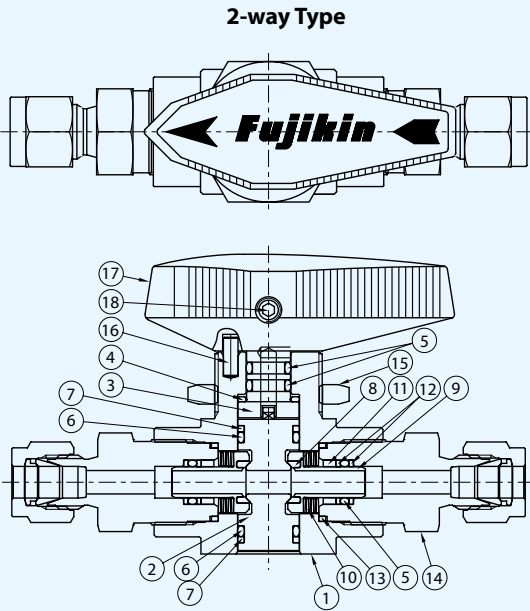
For details, please refer to 1-1, 1-2 in the table of P12.

Applicable Fluid

Air, Nitrogeh gas, Inert gas like Helium, and non-corrosive gas and liquid.

Materials of Construction

VUBV-941 Sereis



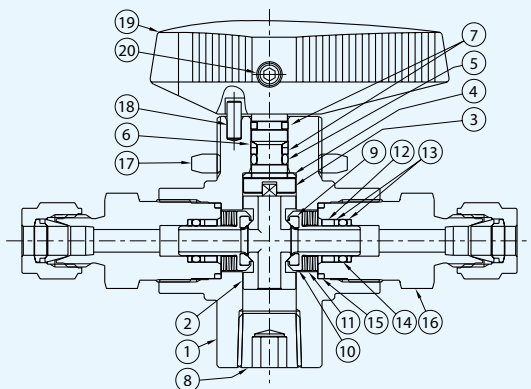
No.	Description	Materials
1	BODY ※	ASTM A479 316
2	BALL ※1 ※	ASTM A276 316
3	STEM	ASTM A276 316
4	STEM BEARING	C-PTFE
5	O-RINGS(1) ※	FKM
6	O-RINGS(2) ※	FKM
7	BACKUP RINGS	C-PTFE
8	SEATS ※	PEEK
9	SEAT CARRIERS ※	ASTM A276 316
10	DISC SPRINGS ※	ALLOY X-750
11	SEAT CARRIER GUIDES ※	ASTM A276 316
12	SEAT CARRIER BACKUP RINGS ※	C-PTFE
13	END SCREW SEALS ※	PTFE
14	END SCREWS ※	ASTM A479 316
15	PANEL NUT	ASTM A276 304 or ASTM A276 316
16	STOP PIN	SUS304
17	HANDLE	PHENOLIC RESIN + C3604B
18	SET SCREW	S17400 or SUS630

※ : Wetted part
※1 : Ball trunnions are PTFE coated.

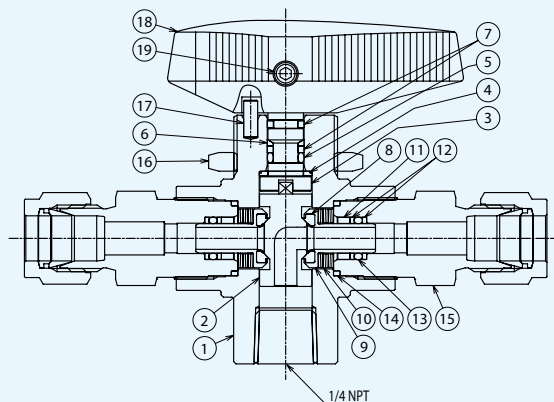
Materials of Construction

VUBV,VUBVT-968 Series

2-way Type



3-way Type



No.	Description	Materials
1	BODY ※1	ASTM A479 316
2	BALL ※1 ※2	ASTM A276 316
3	STEM	ASTM A276 316
4	STEM BEARING	PEEK
5	STEM O-RING ※1	FKM
6	STEM BACKUP RING1	PEEK
7	STEM BACKUP RING2	PTFE
8	PLUG ※1	ASTM A479 316
9	SEATS ※1	PEEK
10	SEAT CARRIERS ※1	ASTM A276 316
11	DISC SPRINGS ※1	ALLOY X-750
12	SEAT CARRIER GUIDES ※1	ASTM A276 316
13	SEAT CARRIER BACKUP RINGS ※1	C-PTFE
14	SEAT CARRIER O-RINGS ※1	FKM
15	END SCREW SEALS ※1	PTFE
16	END SCREWS ※1	ASTM A479 316
17	PANEL NUT	ASTM A276 304 or ASTM A276 316
18	STOP PIN	SUS304
19	HANDLE	PHENOLIC RESIN + C3604B
20	SET SCREW	S17400 or SUS630

※1 : Wetted part

※2 : Ball trunnions are PTFE coated.

No.	Description	Materials
1	BODY ※1	ASTM A479 316
2	BALL ※1 ※2	ASTM A276 316
3	STEM	ASTM A276 316
4	STEM BEARING	PEEK
5	STEM O-RING ※1	FKM
6	STEM BACKUP RING1	PEEK
7	STEM BACKUP RING2	PTFE
8	SEATS ※1	PEEK
9	SEAT CARRIERS ※1	ASTM A276 316
10	DISC SPRINGS ※1	ALLOY X-750
11	SEAT CARRIER GUIDES ※1	ASTM A276 316
12	SEAT CARRIER BACKUP RINGS ※1	C-PTFE
13	SEAT CARRIER O-RINGS ※1	FKM
14	END SCREW SEALS ※1	PTFE
15	END SCREWS ※1	ASTM A479 316
16	PANEL NUT	ASTM A276 304 or ASTM A276 316
17	STOP PIN	SUS304
18	HANDLE	PHENOLIC RESIN + C3604B
19	SET SCREW	S17400 or SUS630

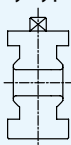
※1 : Wetted part

※2 : Ball trunnions are PTFE coated.

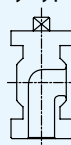
About a BALL shape

There is no No.8 PLUG when being 2-way Type, and it's different shape of No.2 BALL in 3-way Type.

2-way Type Ball

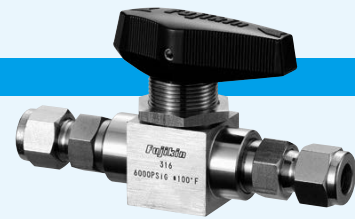


3-way Type Ball

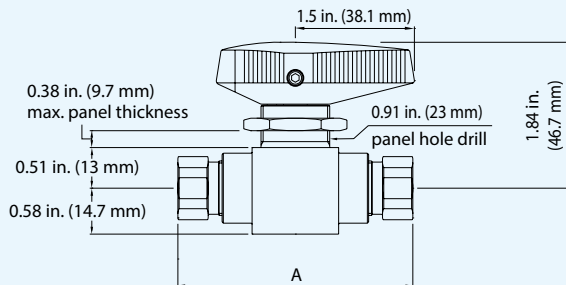


Ordering Information and Dimensions

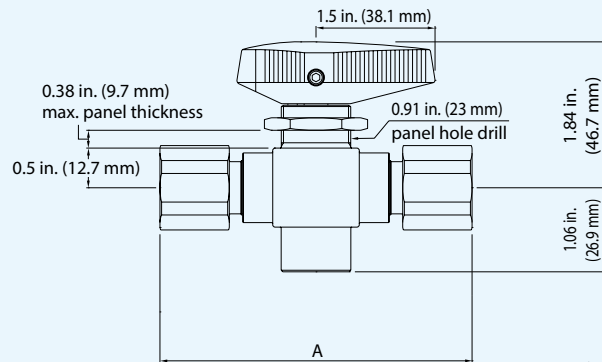
1. Dimensions, in inches (millimeters), are for reference only and are subject to change.
2. Dimensions shown with **New V-Lok** tube fitting nuts finger-tight.



VUBV-141, 941 Type



VUBV, VUBVT-168, 968 Type



(Unit: mm)

Flow Pattern	Connection	Nominal Sizes	Orifice Dia. inch(mm)	Dimensions inch (mm)	Ordering Numbers	
				A		
2-way Type	New V-Lok	1/4in. (6.35mm)	0.19 (4.8)	4.13 (105)	VUBV-941P-6.35-V	VUBV-968P-6.35-V
		3/8in. (9.52mm)		4.41 (112)	VUBV-941P-9.52-V	VUBV-968P-9.52-V
		1/2in. (12.7mm)		4.61 (117)	VUBV-941P-12.7-V	VUBV-968P-12.7-V
		6mm		4.13 (105)	VUBV-941P-6-V	VUBV-968P-6-V
		8mm			VUBV-941P-8-V	VUBV-968P-8-V
		10mm		4.41 (112)	VUBV-941P-10-V	VUBV-968P-10-V
		12mm		4.61 (117)	VUBV-941P-12-V	VUBV-968P-12-V
	Female NPT	1/4		2.94 (74.7)	VUBV-141PBN	-
				3.93 (99.8)	-	VUBV-168PBN
3-way Type	New V-Lok	1/4in. (6.35mm)	0.19 (4.8)	4.13 (105)	-	VUBVT-968P-6.35-V
		3/8in. (9.52mm)		4.41 (112)	-	VUBVT-968P-9.52-V
		1/2in. (12.7mm)		4.61 (117)	-	VUBVT-968P-12.7-V
		6mm		4.13 (105)	-	VUBVT-968P-6-V
		8mm			-	VUBVT-968P-8-V
		10mm		4.41 (112)	-	VUBVT-968P-10-V
		12mm		4.61 (117)	-	VUBVT-968P-12-V
	Female NPT	1/4		3.93 (99.8)	-	VUBVT-168PBN

※ : Bottom port of all 3-way type valves are 1/4 Female NPT.

Ordering Information

<u>V</u> ①	<u>U</u> ②	<u>B</u> ③	<u>T</u> ④	—	<u>9</u> ⑤	<u>6</u> ⑥	<u>P</u> ⑦	—	<u>6.35</u> ⑧	—	<u>B</u> ⑨	—	<u>KL</u> ⑩	—	<u>V</u> ⑪
---------------	---------------	---------------	---------------	---	---------------	---------------	---------------	---	------------------	---	---------------	---	----------------	---	---------------

- ① Valve Series
- ② Body Material
Stainless Steel
- ③ Valve Type
Ball Valves
- ④ Flow Pattern
Blank : 2-way Type
T : 3-way Type
- ⑤ End Connections
1 : Thread Type
9 : **New V-Lok** Type
- ⑥ Working Pressure
68 : 10000 psi (689 bar)
- ⑦ Panel Nut
- ⑧ Connection Sizes
6.35 : **New V-Lok** 1/4in.
9.52 : **New V-Lok** 3/8in.
12.7 : **New V-Lok** 1/2in.
6 : **New V-Lok** 6mm
8 : **New V-Lok** 8mm
10 : **New V-Lok** 10mm
12 : **New V-Lok** 12mm
BN : Female NPT 1/4
Note: In the case of Thread Type,
"-" is not added before ⑧.
- ⑨ Handle Color
Blank : Black
B : Blue
G : Green
YR : Orange
RE : Red
Y : Yellow
- ⑩ Key Lock Type
Blank : without Key Lock
KL : with Key Lock
- ⑪ **New V-Lok** Type

Option

HANDLE COLOR

Standard Handle Color is black.

When you ordered a colored handle besides the black.
Please put the relevant symbol to the part number end from beside table.

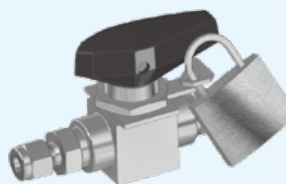
Ex. Ordering Number in case of you will order blue handle
VUBV-941P-6.35-B

HANDLE Color	The end of Ordering Number
Black	—
Blue	-B
Green	-G
Orange	-YR
Red	-RE
Yellow	-Y

Key Lock & Bracket ※

- Locking with standard parts for lock, and with a handle of flow direction locking certainly at open or close for 2-way valves
- Possible to fix a locking part on the hole in the bracket or install a distinction tag.
- After installing to a panel, it isn't possible to install a bracket.

※ : Getting ready. Begin to sell it soon.



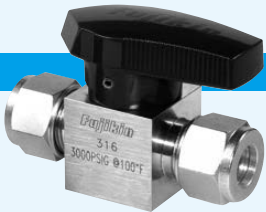
Seal Kit

You can buy a Seal Kit at the valve maintenance time.

Valve Series	Kit Contents
VUBV-941 Series (2-way Type)	• INSTRUCTION MANUAL • BALL • STEM BEARING • O-RING(1), O-RING(2) • SEAT ASSEMBLY (SEAT + SEAT CARRIERS) • DISC SPRING • END SCREW SEALS • LUBRICANT • SDS of LUBRICANT
VUBV-968 Series (2-way Type)	• INSTRUCTION MANUAL • BALL • STEM • STEM BEARING • STEM O-RING • STEM BACKUP RING1, 2 • SEAT ASSEMBLY (SEAT + SEAT CARRIERS) • DISC SPRING • END SCREW SEALS • LUBRICANT • SDS of LUBRICANT
VUBVT-968 Series (3-way Type)	• INSTRUCTION MANUAL • BALL • STEM BEARING • STEM O-RING • STEM BACKUP RING1, 2 • SEAT ASSEMBLY (SEAT + SEAT CARRIERS) • DISC SPRING • END SCREW SEALS • LUBRICANT • SDS of LUBRICANT

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Plug Valves

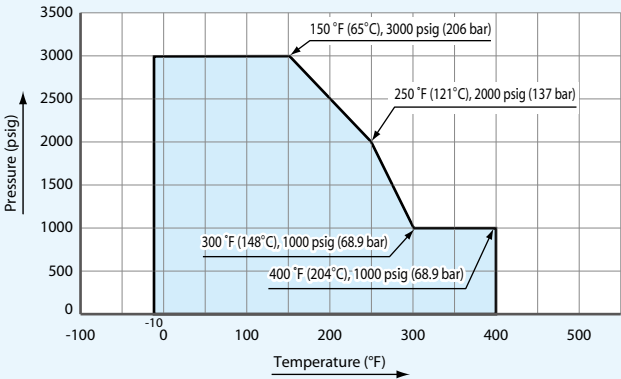


Features

- 1. Simple, Compact Design
- 2. Low Operating Torque
- 3. Quarter Turn Operation

Technical Data

Temperature and Pressure Rating



Note: If the end connection is **New V-Lok** type, the working pressure may be low depending on the tube used.
For details, please refer to 1-1, 1-2 in the table of P12.

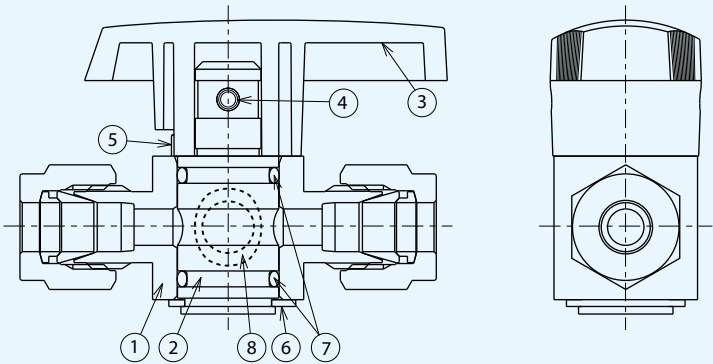
Applicable Fluid

Air, Nitrogen gas, Inert gas like Helium, and non-corrosive gas and liquid.

Attention

- 1. Differential pressure is limited to 150 psig (10.3 bar) maximum if reverse-flow occurs.
- 2. Reverse-flow throttling may damage O-Ring.

Materials of Construction



No.	Description	Materials
1	BODY ※ 1	ASTM A479 316
2	PLUG ※ 1	PTFE-Coated ASTM A479 316
3	HANDLE	POLYETHERIMIDE
4	ROLL SPRING PIN	SUS304
5	STOP PIN	SUS316
6	C-RING	SUS304
7	O-RING ※ 1, ※ 2	PTFE-Coated FKM
8	O-RING ※ 1, ※ 2	PTFE-Coated FKM
Lubricants		Silicone-based

※ 1 : Wetted parts
※ 2 : Please refer to the maintenance stock number of parts of P137 in case of ordering No.7 or 8 parts element.

Operation

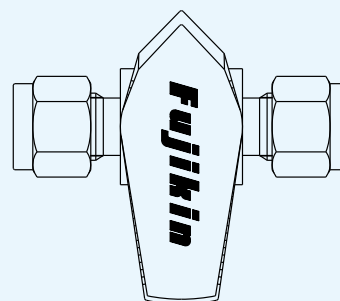
Open



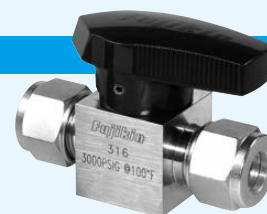
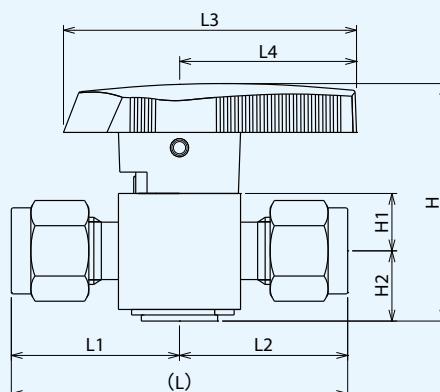
Forward-Flow Throttling



Closed

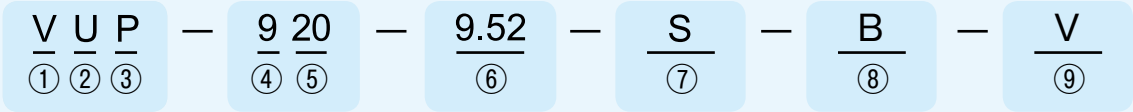


Dimensions



End Connections	Nominal Sizes	Working Pressure psig (bar)	Orifice inch (mm)	Dimensions inch (mm)								Ordering Numbers
				L	L1	L2	H	H1	H2	L3	L4	
New  -Lok	1/4in. (6.35mm)	3000 (206)	0.17 (4.4)	2.17 (55.1)	1.09 (27.6)	1.54 (39.1)	0.37 (9.4)	0.46 (11.7)	1.89 (48)	1.14 (29)	0.75 (19.1)	VUP-920-6.35-V
	3/8in. (9.52mm)			2.29 (58.2)	1.15 (29.1)							VUP-920-9.52-S-V
	1/2in. (12.7mm)		0.28 (7.2)	2.66 (67.6)	1.33 (33.8)	2.14 (54.4)	0.56 (14.2)	0.66 (16.8)	2.47 (62.7)	1.5 (38.1)	1.12 (28.4)	VUP-920-9.52-V
				2.88 (73.2)	1.44 (36.6)							VUP-920-12.7-V
Female NPT	1/4		0.17 (4.4)	2.09 (53.1)	1.05 (26.6)	1.54 (39.1)	0.37 (9.4)	0.46 (11.7)	1.89 (48)	1.14 (29)	0.75 (19.1)	VUP-120BN
	1/2		0.28 (7.2)	2.88 (73.2)	1.44 (36.6)	2.14 (54.4)	0.56 (14.2)	0.66 (16.8)	2.47 (62.7)	1.5 (38.1)	1.12 (28.4)	VUP-120DN
Rc	1/4		0.17 (4.4)	2.21 (56.1)	1.11 (28.1)	1.54 (39.1)	0.37 (9.4)	0.46 (11.7)	1.89 (48)	1.14 (29)	0.75 (19.1)	VUP-120B
	1/2		0.28 (7.2)	3.14 (79.8)	1.57 (39.9)	2.14 (54.4)	0.56 (14.2)	0.66 (16.8)	2.47 (62.7)	1.5 (38.1)	1.12 (28.4)	VUP-120D

Ordering Information



- ① Valve Series

② Body Material
Stainless Steel

③ Valve Type
Plug Valves
- ④ End Connections
1: Thread Type
9: **New V-Lok** Type

⑤ Working Pressure
3000 psig (206 bar)

⑥ Connection Sizes
6.35: **New V-Lok** 1/4 in.
9.52: **New V-Lok** 3/8 in.
12.7: **New V-Lok** 1/2 in.
BN: 1/4 NPT
DN: 1/2 NPT
B: Rc1/4
D: Rc1/2

Note: In the case of Thread Type, "-" is not added before ⑥.
- ⑦ Body Sizes
BLANK: STD
S: Small Size

⑧ Handle Color
Blank: Green
B: Blue ※
BK: Black ※
RE: Red ※
Y: Yellow ※
YR: Orange ※

Attention
The handle color change after shipment can't be available.
Please order the Plug Valves with color handle when you need.
- ⑨ **New V-Lok** Type
- ※ : Getting ready. Begin to sell it soon.

Maintenance Parts (O-Rings) Ordering Numbers

Orifice Diameter inch (mm)	Valve Ordering Numbers	O-Ring Ordering Numbers
0.173 (4.4)	VUP-920-6.35-V	GT O-Ring VUP-920-6.35
	VUP-920-9.52-S-V	
	VUP-120BN	
	VUP-120B	
0.283 (7.2)	VUP-920-9.52-V	GT O-Ring VUP-920-9.52
	VUP-920-12.7-V	
	VUP-120DN	
	VUP-120D	

Please refer the procedure on the instruction manual (No. TKS01-120910-01) before deassembling and checking it.

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Needle Valves

[13.7 MPa] For Precise Flow Rate Adjustment

[16.2 MPa]

[34 MPa]

[42 MPa] Outside Screw Type

[68.9 MPa] Union-Bonnet Type

[4.9 MPa] [2 MPa] Brass

[13.7 MPa] For Precise Flow Rate Adjustment



Features

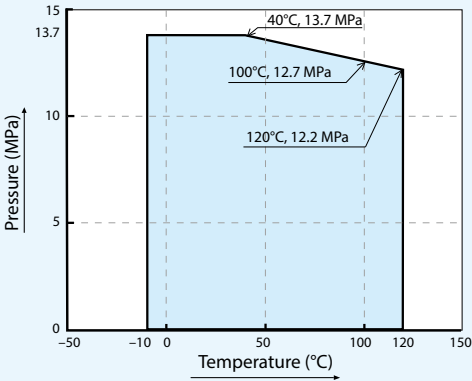
- 1. This needle valve is designed for precise flow rate adjustment and offers excellent flow rate control performance.
- 2. It has a Cv value of 0.004. The Cv value of 0.004 can be adjusted with close to 10 rotations of the handwheel from the fully closed position.
- 3. It has a travel locking mechanism.
- 4. Since the stem uses an exterior-thread screw, the sliding part of the valve is not affected by the fluid.
- 5. Some models have received ministerial certification for use with high-pressure gases.

Technical Data

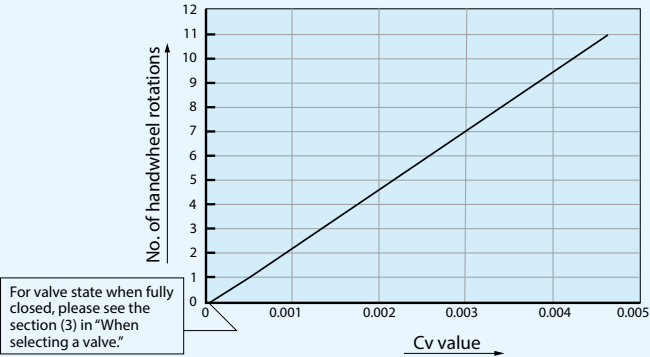
Ordering Numbers	Working Pressure (MPa)	Fluid Temperature (°C)
PUN-913P-6.35-V	13.7 ※	-10 to +120

※ See temperature and pressure rating

Temperature and Pressure Rating



Cv Curve



How to lock the valve

The valve travel lock can be used as follows:

- ① Adjust the valve travel.
- ② Valve travel can be locked by tightening the valve travel locking hexagonal socket head set screw with a HEX 0.9 hexagonal wrench.

How to mount the valve on a panel

The valve can be panel-mounted as follows:

- ① Drill a hole in the panel from 0 to 0.5 mm larger than the drawing dimensions ($\phi 11.4$).
- ② Secure the valve to the panel with the panel nut (HEX 14).

When selecting a valve

1. The valve uses fluorine-based grease on parts that come into contact with liquid or gas in the valve. It is not suitable for use with fluids such as solvents that would dissolve the lubricant. If you are unsure whether the liquid with which you intend to use the valve would dissolve the lubricant, please contact us before ordering.
2. Although the fluororubber sealing O-rings used in the bonnet and gland assemblies offer good corrosion resistance, please consider the rubber material's corrosion resistance and actual performance before use.
3. Since this valve does not have a seat sealing function, a separate stop valve is required if you need to stop flow. The valve is configured to allow flow of 6 to 15 cm³ per min-nor of nitrogen at 0.2 MPa when fully closed.
4. Please note that this valve exhibits a small amount of flow rate variability when being opened and closed (a phenomenon in which the flow rate increases or decreases when the valve is opened or closed).
5. Please contact us if you require another connection type, for example a thread type.

Applicable Fluid

Air, nitrogen gas, inert gas like helium, and non-corrosive gas and liquid.

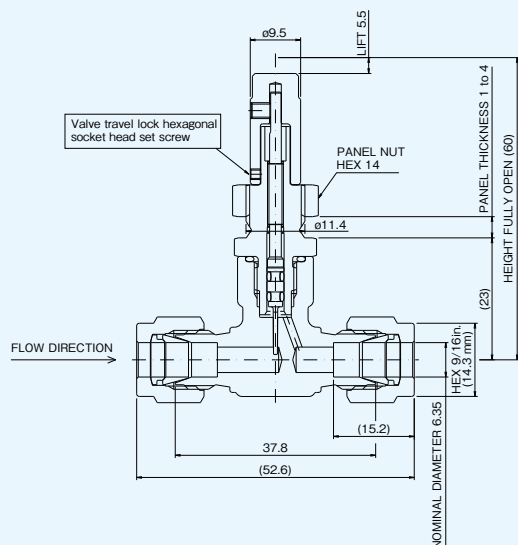
Materials

Description		Materials
Body	※	SUSF316
Stem	※	SUS316
Cap	※	SUS316
O-ring	※	Fluororubber
Handle		SUS303

May use SUS316 or ASTM-spec material (SUS316 equivalent).

※: Wetted part

New V-Lok Type



● Introduction to Other Products

Stainless Steel Types with Cv Value of 0.015, 0.03

UN-14M/UN-34M Series
UN-94M/UN-04M Series

UN-14M Series, UN-34M Series (thread type)

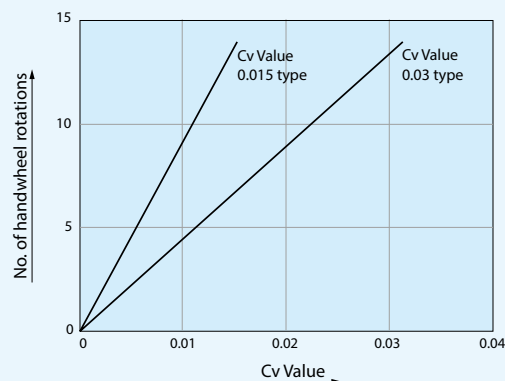


UN-14M Series



UN-34M Series

● Cv Curves



UN-94M Series, UN-04M Series (New V-Lok type)

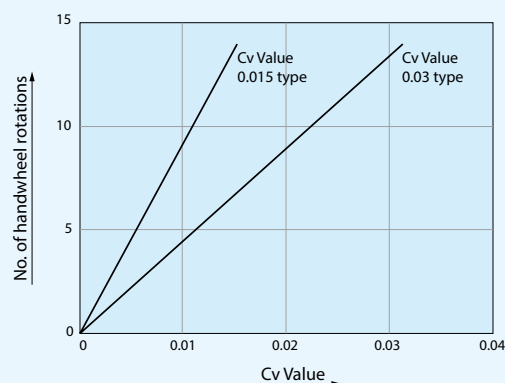


UN-94M Series



UN-04M Series

● Cv Curves



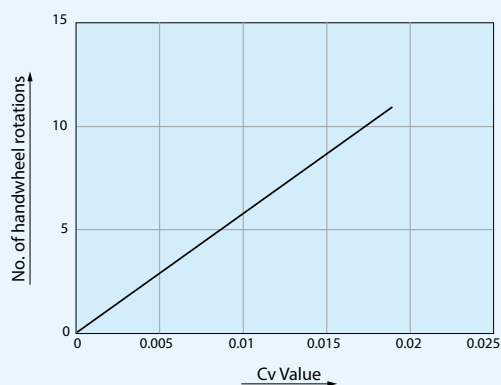
Brass Type with Cv Value of 0.015

DUN-32PGA

DUN-32PGA (thread type)



● Cv Curves



memo

[16.2 MPa]



Features

- 1. This valve features a safe design and is manufactured under a rigorous quality control regime.
- 2. It has a rugged, forged body and a compact, bonnet-less design.
- 3. Since it's a needle valve, flow rate can be easily adjusted.
- 4. Thanks to proprietary Fujikin packing and a design that emphasizes ease of use, it features low handle torque and good sealability.

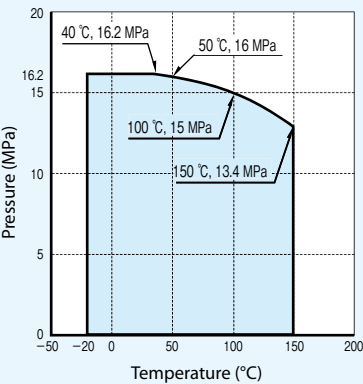
Technical Data

Working Pressure (MPa)	Temperature (°C)
16.2	-20 to +150

Applicable Fluid

Water, air, nitrogen gas, inert gas like helium, and non-corrosive gas and liquid.

Temperature and Pressure Rating



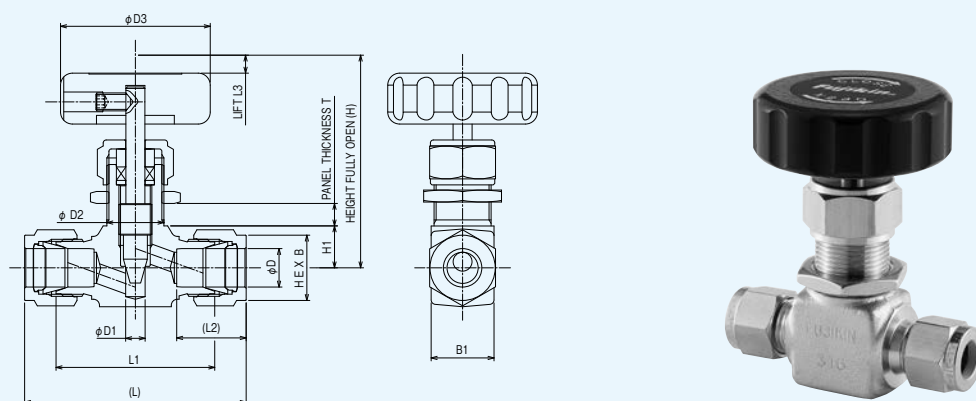
Materials



No.	Description	Materials
1	Handle	A5056B
2	Hexagonal socket head set screw	SUS 304
3	Gland nut	SUS 304
4	Press-fit packing	SUS 316
5	Gland packing ※	PTFE
6	Ring ※	SUS 316
7	Stem ※	SUS 316
8	Panel nut	SUS 304
9	Body ※	SUSF 316

※: Wetted part
Note 1: May use SUS316, 304, ASTM-spec material (SUS316 equivalent).
Note 2: The standard handle paint color is black.

New V-Lok Type



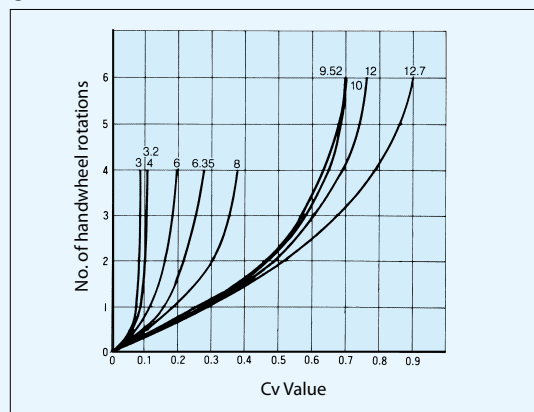
●Dimensions (mm size)

Nominal Diameter D	Orifice Diameter D1	Face to Face Dimension		Pipe Connection Part		Panel Mounting		Height Fully Open H	Lift L3	Handle Diameter D3	Body Thickness B1	Panel Thickness (T)		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
		L	L1	L2	B	D2	H1					MIN.	MAX.			
3	5	51.2	38	12.9	12	13.2	10.5	54	4	40	17	2	6	0.08	0.2	PUH-916-3-SH-V
4	5	56.2	43	13.7	12	13.2	10.5	54	4	40	17	2	6	0.1	0.2	PUH-916-4-SH-V
6	5	57.8	43	15.3	14	13.2	10.5	54	4	40	17	2	6	0.2	0.2	PUH-916-6-SH-V
8	5	58	43	16.2	16	13.2	10.5	54	4	40	17	2	6	0.38	0.2	PUH-916-8-SH-V
10	6.5	68.2	53	17.2	19	19.5	14	71	6	50	21	2	8	0.7	0.4	PUH-916-10-SH-V
12	6.5	73.2	53	22.8	22	19.5	14	71	6	50	21	2	8	0.78	0.4	PUH-916-12-SH-V

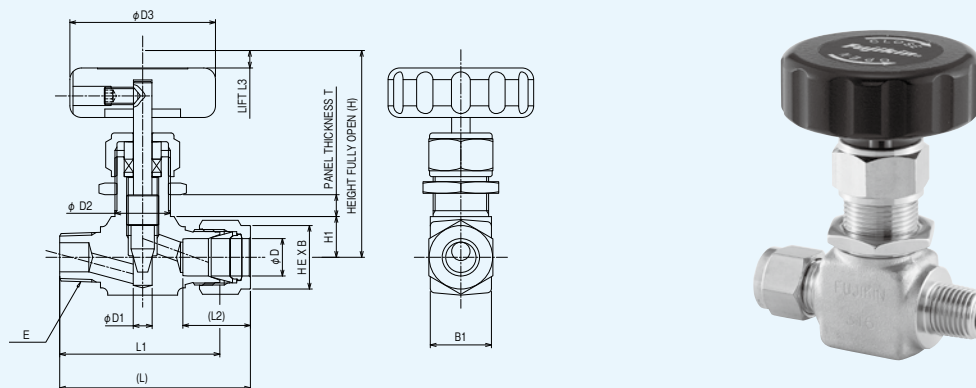
●Dimensions (inch size)

Nominal Diameter D	Orifice Diameter D1	Face to Face Dimension		Pipe Connection Part			Panel Mounting		Height Fully Open H	Lift L3	Handle Diameter D3	Body Thickness B1	Panel Thickness (T)		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
													L	L1			
		in	mm														
3.2	5	51.2	38	12.7	7/16	11.1	13.2	10.5	54	4	40	17	2	6	0.1	0.2	PUH-916-3.2-SH-V
6.35	5	57.8	43	15.2	9/16	14.3	13.2	10.5	54	4	40	17	2	6	0.3	0.2	PUH-916-6.35-SH-V
9.52	6.5	66.8	52	16.8	11/16	17.5	19.5	14	71	6	50	21	2	8	0.7	0.4	PUH-916-9.52-SH-V
12.7	6.5	73.2	53	22.9	7/8	22.2	19.5	14	71	6	50	21	2	8	0.9	0.4	PUH-916-12.7-SH-V

●Cv Curves



New V-Lok + Thread Connection



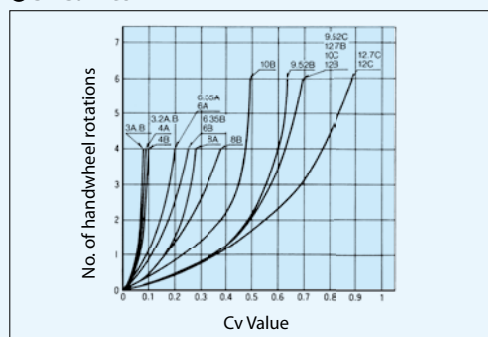
●Dimensions (mm size)

Nominal Diameter D	Thread Designation E	Orifice Diameter D1	Face to Face Dimension		Pipe Connection Part		Panel Mounting		Height Fully Open H	Lift L3	Handle Diameter D3	Body Thickness B1	Panel Thickness (T)		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
			L	L1	L2	B	D2	H1					MIN.	MAX.			
3	R1/8	5	46.1	39.5	12.9	12	13.2	10.5	54	4	40	17	2	6	0.08	0.2	PUH-916-3A-SH-V
3	R1/4	5	51.1	44.5	12.9	12	13.2	10.5	54	4	40	17	2	6	0.08	0.2	PUH-916-3B-SH-V
4	R1/8	5	48.6	42	13.7	12	13.2	10.5	54	4	40	17	2	6	0.09	0.2	PUH-916-4A-SH-V
4	R1/4	5	53.6	47	13.7	12	13.2	10.5	54	4	40	17	2	6	0.1	0.2	PUH-916-4B-SH-V
6	R1/8	5	49.4	42	15.3	14	13.2	10.5	54	4	40	17	2	6	0.2	0.2	PUH-916-6A-SH-V
6	R1/4	5	54.4	47	15.3	14	13.2	10.5	54	4	40	17	2	6	0.25	0.2	PUH-916-6B-SH-V
8	R1/8	5	49.5	42	16.2	16	13.2	10.5	54	4	40	17	2	6	0.28	0.2	PUH-916-8A-SH-V
8	R1/4	5	54.5	47	16.2	16	13.2	10.5	54	4	40	17	2	6	0.38	0.2	PUH-916-8B-SH-V
10	R1/4	6.5	62.6	55	17.2	19	19.5	14	71	6	50	21	2	8	0.49	0.4	PUH-916-10B-SH-V
10	R3/8	6.5	62.6	55	17.2	19	19.5	14	71	6	50	21	2	8	0.7	0.4	PUH-916-10C-SH-V
12	R1/4	6.5	65.1	55	22.8	22	19.5	14	71	6	50	21	2	8	0.7	0.4	PUH-916-12B-SH-V
12	R3/8	6.5	65.1	55	22.8	22	19.5	14	71	6	50	21	2	8	0.9	0.4	PUH-916-12C-SH-V

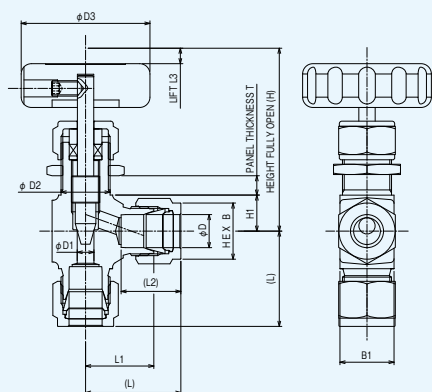
●Dimensions (inch size)

Nominal Diameter D	Thread Designation E	Orifice Diameter D1	Face to Face Dimension		Pipe Connection Part			Panel Mounting		Height Fully Open H	Lift L3	Handle Diameter D3	Body Thickness B1	Panel Thickness (T)		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
			L	L1	L2	B		D2	H1					MIN.	MAX.			
						in	mm											
3.2	R1/8	5	46.1	39.5	12.7	7/16	11.1	13.2	10.5	54	4	40	17	2	6	0.09	0.2	PUH-916-3.2A-SH-V
3.2	R1/4	5	51.1	44.5	12.7	7/16	11.1	13.2	10.5	54	4	40	17	2	6	0.09	0.2	PUH-916-3.2B-SH-V
6.35	R1/8	5	49.4	42	15.2	9/16	14.3	13.2	10.5	54	4	40	17	2	6	0.2	0.2	PUH-916-6.35A-SH-V
6.35	R1/4	5	54.4	47	15.2	9/16	14.3	13.2	10.5	54	4	40	17	2	6	0.25	0.2	PUH-916-6.35B-SH-V
9.52	R1/4	6.5	61.9	54.5	16.8	11/16	17.5	19.5	14	71	6	50	21	2	8	0.64	0.3	PUH-916-9.52B-SH-V
9.52	R3/8	6.5	61.9	54.5	16.8	11/16	17.5	19.5	14	71	6	50	21	2	8	0.7	0.3	PUH-916-9.52C-SH-V
12.7	R1/4	6.5	65.1	55	22.9	7/8	22.2	19.5	14	71	6	50	21	2	8	0.7	0.4	PUH-916-12.7B-SH-V
12.7	R3/8	6.5	65.1	55	22.9	7/8	22.2	19.5	14	71	6	50	21	2	8	0.9	0.4	PUH-916-12.7C-SH-V

●Cv Curves



New V-Lok Type



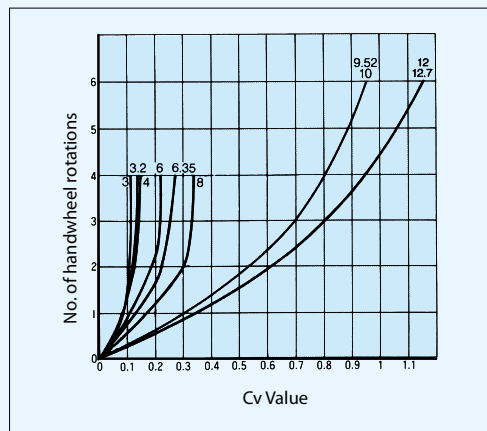
●Dimensions (mm size)

Nominal Diameter D	Orifice Diameter D1	Face to Face Dimension		Pipe Connection Part		Panel Mounting		Height Fully Open H	Lift L3	Handle Diameter D3	Body Thickness B1	Panel Thickness (T)		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
		L	L1	L2	B	D2	H1					MIN.	MAX.			
3	2.4	25.6	19	12.9	12	13.2	10.5	54	4	40	17	2	6	0.11	0.2	PUH-016-3-SH-V
4	3.5	26.6	20	13.7	12	13.2	10.5	54	4	40	17	2	6	0.14	0.2	PUH-016-4-SH-V
6	5	28.9	21.5	15.3	14	13.2	10.5	54	4	40	17	2	6	0.21	0.2	PUH-016-6-SH-V
8	5	29	21.5	16.2	16	13.2	10.5	54	4	40	17	2	6	0.32	0.2	PUH-016-8-SH-V
10	6.5	34.1	26.5	17.2	19	19.5	14	71	6	50	21	2	8	0.96	0.4	PUH-016-10-SH-V
12	6.5	36.6	26.5	22.8	22	19.5	14	71	6	50	21	2	8	1.17	0.4	PUH-016-12-SH-V

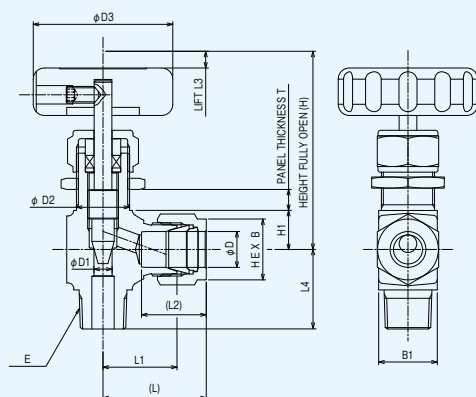
●Dimensions (inch size)

Nominal Diameter D	Orifice Diameter D1	Face to Face Dimension		Pipe Connection Part			Panel Mounting		Height Fully Open H	Lift L3	Handle Diameter D3	Body Thickness B1	Panel Thickness (T)		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
		L	L1	L2	B		D2	H1					MIN.	MAX.			
					in	mm											
3.2	2.8	25.6	19	12.7	7/16	11.1	13.2	10.5	54	4	40	17	2	6	0.13	0.2	PUH-016-3.2-SH-V
6.35	5	28.9	21.5	15.2	9/16	14.3	13.2	10.5	54	4	40	17	2	6	0.28	0.2	PUH-016-6.35-SH-V
9.52	6.5	33.4	26	16.8	11/16	17.5	19.5	14	71	6	50	21	2	8	0.96	0.3	PUH-016-9.52-SH-V
12.7	6.5	36.6	26.5	22.9	7/8	22.2	19.5	14	71	6	50	21	2	8	1.17	0.4	PUH-016-12.7-SH-V

●Cv Curves



New V-Lok + Thread Connection



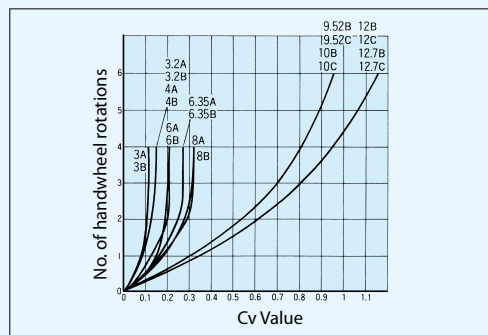
●Dimensions (mm size)

Nominal Diameter D	Thread Designation E	Orifice Diameter D1	Face to Face Dimension			Pipe Connection Part		Panel Mounting		Height Fully Open H	Lift L3	Handle Diameter D3	Body Thickness B1	Panel Thickness (T)		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
			L	L1	L4	L2	B	D2	H1					MIN.	MAX.			
3	R1/8	5	25.6	19	20.5	12.9	12	13.2	10.5	54	4	40	17	2	6	0.12	0.2	PUH-016-3A-SH-V
3	R1/4	5	25.6	19	25.5	12.9	12	13.2	10.5	54	4	40	17	2	6	0.12	0.2	PUH-016-3B-SH-V
4	R1/8	5	26.6	20	20.5	13.7	12	13.2	10.5	54	4	40	17	2	6	0.15	0.2	PUH-016-4A-SH-V
4	R1/4	5	26.6	20	25.5	13.7	12	13.2	10.5	54	4	40	17	2	6	0.15	0.2	PUH-016-4B-SH-V
6	R1/8	5	28.9	21.5	20.5	15.3	14	13.2	10.5	54	4	40	17	2	6	0.21	0.2	PUH-016-6A-SH-V
6	R1/4	5	28.9	21.5	25.5	15.3	14	13.2	10.5	54	4	40	17	2	6	0.21	0.2	PUH-016-6B-SH-V
8	R1/8	5	29	21.5	20.5	16.2	16	13.2	10.5	54	4	40	17	2	6	0.32	0.2	PUH-016-8A-SH-V
8	R1/4	5	29	21.5	25.5	16.2	16	13.2	10.5	54	4	40	17	2	6	0.32	0.2	PUH-016-8B-SH-V
10	R1/4	6.5	34.1	26.5	28.5	17.2	19	19.5	14	71	6	50	21	2	8	0.96	0.3	PUH-016-10B-SH-V
10	R3/8	6.5	34.1	26.5	28.5	17.2	19	19.5	14	71	6	50	21	2	8	0.96	0.4	PUH-016-10C-SH-V
12	R1/4	6.5	36.6	26.5	28.5	22.8	22	19.5	14	71	6	50	21	2	8	1.17	0.4	PUH-016-12B-SH-V
12	R3/8	6.5	36.6	26.5	28.5	22.8	22	19.5	14	71	6	50	21	2	8	1.17	0.4	PUH-016-12C-SH-V

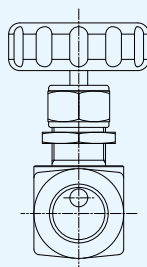
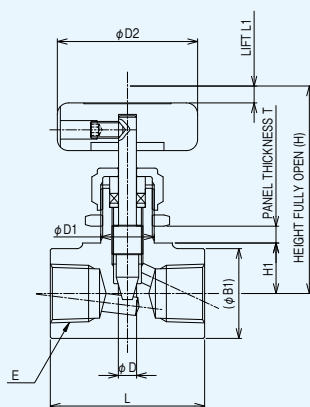
●Dimensions (inch size)

Nominal Diameter D	Thread Designation E	Orifice Diameter D1	Face to Face Dimension			Pipe Connection Part			Panel Mounting		Height Fully Open H	Lift L3	Handle Diameter D3	Body Thickness B1	Panel Thickness (T)		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
			L	L1	L4	L2	B		D2	H1					MIN.	MAX.			
							in	mm											
3.2	R1/8	5	25.6	19	20.5	12.7	7/16	11.1	13.2	10.5	54	4	40	17	2	6	0.15	0.2	PUH-016-3.2A-SH-V
3.2	R1/4	5	25.6	19	25.5	12.7	7/16	11.1	13.2	10.5	54	4	40	17	2	6	0.15	0.2	PUH-016-3.2B-SH-V
6.35	R1/8	5	28.9	21.5	20.5	15.2	9/16	14.3	13.2	10.5	54	4	40	17	2	6	0.28	0.2	PUH-016-6.35A-SH-V
6.35	R1/4	5	28.9	21.5	25.5	15.2	9/16	14.3	13.2	10.5	54	4	40	17	2	6	0.28	0.2	PUH-016-6.35B-SH-V
9.52	R1/4	6.5	33.4	26	28.5	16.8	11/16	17.5	19.5	14	71	6	50	21	2	8	0.96	0.3	PUH-016-9.52B-SH-V
9.52	R3/8	6.5	33.4	26	28.5	16.8	11/16	17.5	19.5	14	71	6	50	21	2	8	0.96	0.3	PUH-016-9.52C-SH-V
12.7	R1/4	6.5	36.6	26.5	28.5	22.9	7/8	22.2	19.5	14	71	6	50	21	2	8	1.17	0.4	PUH-016-12.7B-SH-V
12.7	R3/8	6.5	36.6	26.5	28.5	22.9	7/8	22.2	19.5	14	71	6	50	21	2	8	1.17	0.4	PUH-016-12.7C-SH-V

●Cv Curves



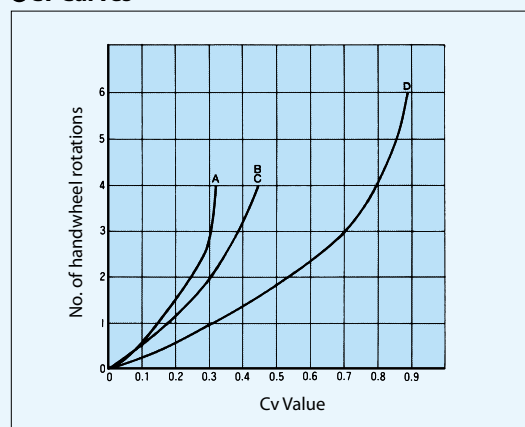
Thread Connection



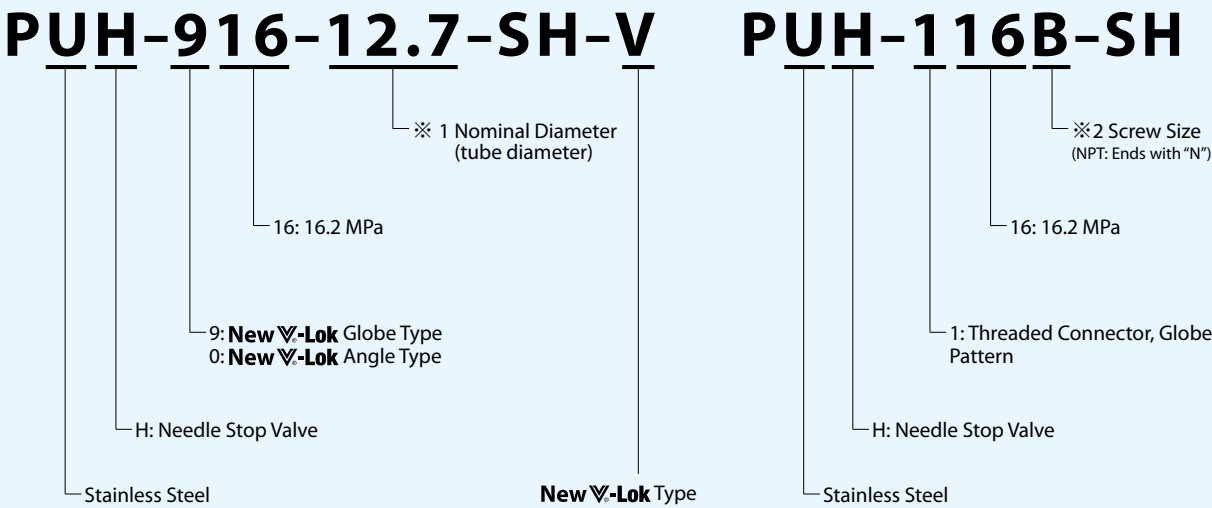
●Dimensions

Thread Designation E	Orifice Diameter D	Face to Face Dimension L	Panel Mounting		Height Fully Open H	Lift L	Handle Diameter D2	Body Thickness B1	Panel Thickness (T)		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
			D1	H1					MIN.	MAX.			
Rc1/8	5	40	13.2	11	55.5	4	40	17	2	6	0.3	0.2	PUH-116A-SH
Rc1/4	5	40	13.2	14	58.5	4	40	21	2	6	0.45	0.2	PUH-116B-SH
Rc3/8	5	50	13.2	16	60.5	4	40	25	2	6	0.45	0.3	PUH-116C-SH
Rc1/2	6.5	55	19.5	16	73	6	50	28	2	8	0.9	0.4	PUH-116D-SH

●Cv Curves



Ordering Numbers



※1: Nominal diameter (tube diameter)

	Millimeter Size	Inch Size
Nominal Diameter (Tube Diameter)	The number 3 indicates an outside diameter of 3.	
	The number 4 indicates an outside diameter of 4.	
	The number 6 indicates an outside diameter of 6.	
	The number 8 indicates an outside diameter of 8.	
	The number 10 indicates an outside diameter of 10.	
	The number 12 indicates an outside diameter of 12.	

	Millimeter Size	Inch Size
Nominal Diameter (Tube Diameter)	The number 3.2 indicates an outside diameter of 3.2.	
	The number 6.35 indicates an outside diameter of 6.35.	
	The number 9.52 indicates an outside diameter of 9.52.	
	The number 12.7 indicates an outside diameter of 12.7.	

※2 Thread size (for taper pipe thread)

Taper Pipe Thread	Designation		A	B	C	D
	JIS B0203 (1982) (ISO 7/1)	Male thread Female thread	R1/8 Rc1/8	R1/4 Rc1/4	R3/8 Rc3/8	R1/2 Rc1/2

Thread designation complies with JIS B0203 (1982) (ISO 7/1).
JIS B0203 (1981) values are provided for reference.

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[34 MPa]



Features

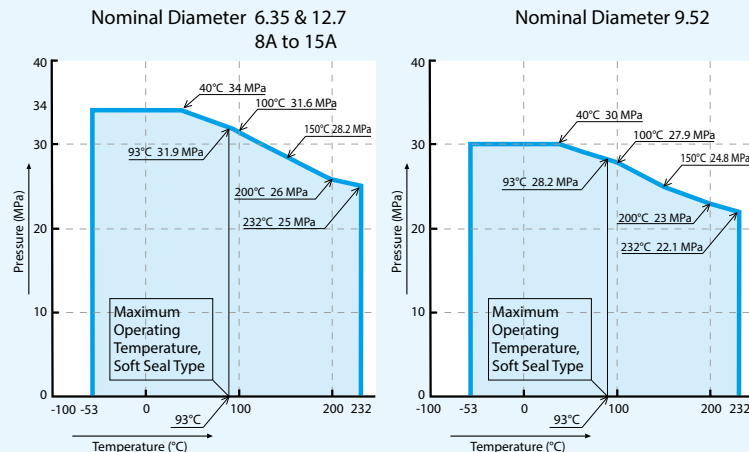
1. A bonnet-less design keeps the valve compact and eliminates bonnet leaks.
2. Thanks to a design that emphasizes ease of use, the valve features low handle torque and is easily opened and closed.
3. Multiple gland packing variations make for a highly reliable gland seal structure.
4. The valve is available in metal seal and soft seal variants.
5. Some models have received ministerial certification for use with high-pressure gases.

Technical Data

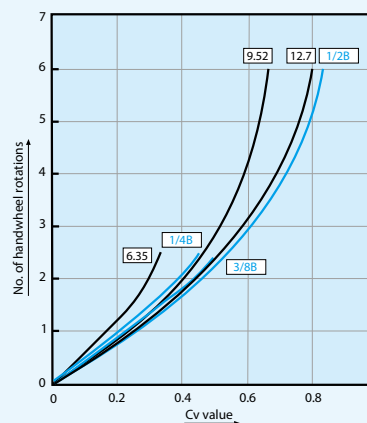
Nominal Diameter	Working Pressure (MPa)	Temperature (°C)
6.35	34	-53 to +232 ※2 (-53 to +93)
9.52	30 ※1	
12.7	34	
8A to 15A	34	

※1: For New V-Lok connections, only the 9.52 size has a set pressure of 30 MPa.
 ※2: The operating temperature range for the soft seal type is -53°C to 93°C.

Temperature and Pressure Rating



Cv Value Characteristics (PUH-934P, PUH-134P type)



Materials

Description	Materials
Body	SUSF316
Stem	SUS316 ※1
Gland packing	PEEK+C-PTFE
Handle	A5056B ※2

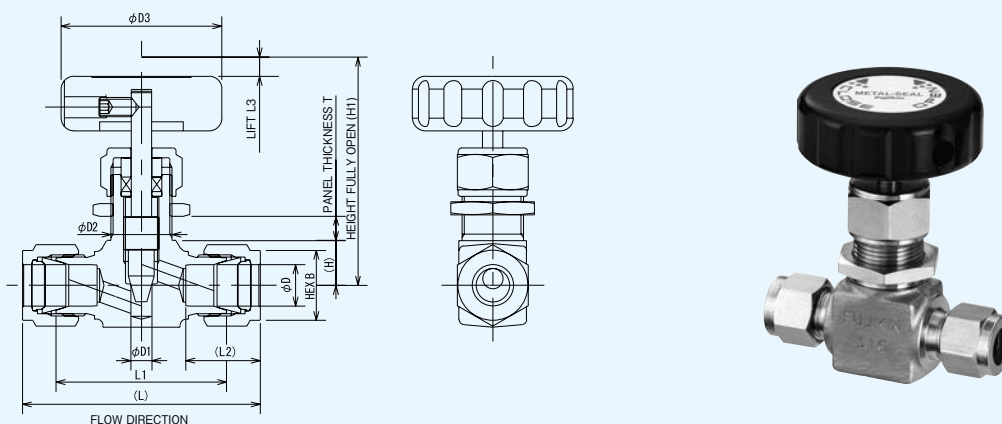
※1: The seat in soft seal-type models is made of PCTFE.
 May use SUS316 or ASTM-spec material (SUS316 equivalent).

※2: The standard handle color is black. We can also manufacture other colors.

When selecting a valve

1. To ensure safe and proper use of the valve, please consult with Fujikin concerning operating conditions, frequency, and maintenance timing when selecting a model.
2. The valve uses fluorine-based grease on parts that come into contact with liquid or gas in the valve. It is not suitable for use with fluids such as solvents that would dissolve the grease. If you are unsure whether the liquid with which you intend to use the valve would dissolve the grease, please contact us before ordering.
3. Using the soft seal type with the direction of flow reversed from that indicated by the arrows could dislodge the disk packing. Please use with pipes in the proper direction of flow.
4. Use of a soft seal-type valve in applications where adiabatic compression could cause the temperature of the fluid to rise could cause deformation of, or damage to, the disk. Please use a metal seal-type model in such applications. In the event that a fluid such as hydrogen gas could react with air (oxygen) inside the pipe to cause an abrupt increase in temperature, please replace residual air in the pipe with an inert gas such as nitrogen. When using a metal seal-type model, abrupt opening or closing of the valve could lead to an unanticipated accident. Please open and close the valve gradually.
5. Please contact us if you require another connection type, for example a socket weld.

Metal Seal Type (New V-Lok type)

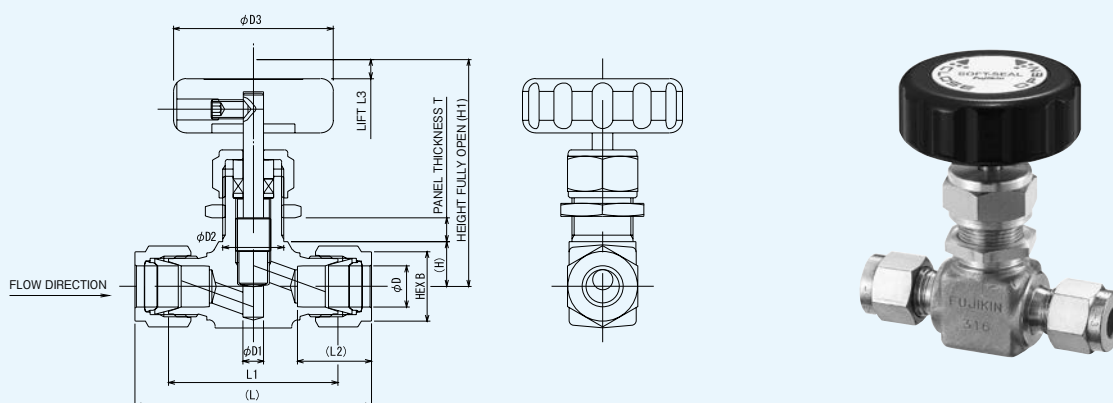


●Dimensions

UNIT (mm)

Nominal Diameter D	Orifice Diameter D1	Face to Face Dimension		Pipe Connection Part			Panel Mounting		Height Fully Open H1	Lift L3	Handle Diameter D3	Panel Thickness T		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
		L	L1	L2	B		D2	H				MIN.	MAX.			
6.35	4	57.8	43	15.2	9/16	14.3	15	10.5	54	2.5	40	2	5.5	0.34	0.2	PUH-934P-6.35-V
9.52	6.5	66.8	52	16.8	11/16	17.5	19.5	14	71	6	50	2	7.5	0.65	0.4	PUH-934P-9.52-V
12.7	6.5	73.2	53	22.9	7/8	22.2	19.5	14	71	6	50	2	7.5	0.8	0.4	PUH-934P-12.7-V

Soft Seal Type (New V-Lok type)

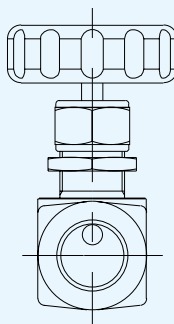
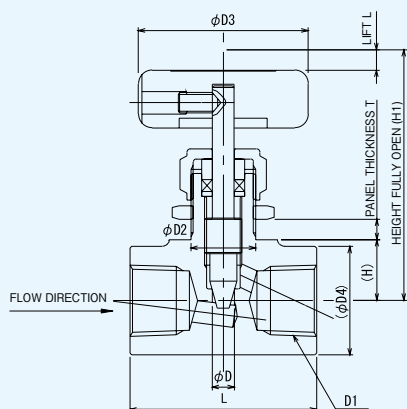


●Dimensions

UNIT (mm)

Nominal Diameter D	Orifice Diameter D1	Face to Face Dimension		Pipe Connection Part			Panel Mounting		Height Fully Open H1	Lift L3	Handle Diameter D3	Panel Thickness T		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
		L	L1	L2	B		D2	H				MIN.	MAX.			
6.35	4	57.8	43	15.2	9/16	14.3	15	10.5	54	2.5	40	2	5.5	0.34	0.2	PUD-934P-6.35-V
9.52	6.5	66.8	52	16.8	11/16	17.5	19.5	14	71	6	50	2	7.5	0.65	0.4	PUD-934P-9.52-V
12.7	6.5	73.2	53	22.9	7/8	22.2	19.5	14	71	6	50	2	7.5	0.8	0.4	PUD-934P-12.7-V

Metal Seal Type (thread type)

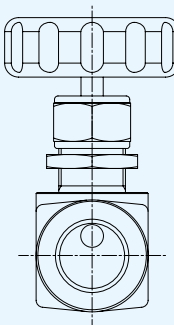
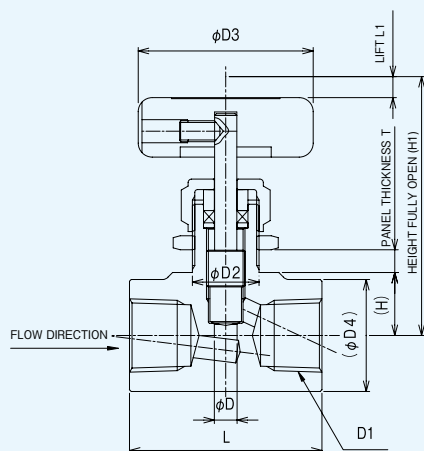


●Dimensions

UNIT (mm)

Nominal Diameter		Orifice Diameter D	Face to Face Dimension L	Pipe Connection Part Screw D1	Panel Mounting		Height Fully Open H1	Lift L1	Handle Diameter D3	D4	Panel Thickness T		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
A	B				D2	H					MIN.	MAX.			
8	1/4	4	45	Rc1/4	15	13	57	2.5	40	21	2	5	0.46	0.3	PUH-134PB
10	3/8	4	50	Rc3/8	15	15	58.5	2.5	40	25	2	5	0.52	0.4	PUH-134PC
15	1/2	6.5	55	Rc1/2	19.5	18	74.5	6	50	32	2	6	0.82	0.6	PUH-134PD

Soft Seal Type (thread type)



●Dimensions

UNIT (mm)

Nominal Diameter		Orifice Diameter D	Face to Face Dimension L	Pipe Connection Part Screw D1	Panel Mounting		Height Fully Open H1	Lift L1	Handle Diameter D3	D4	Panel Thickness T		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
A	B				D2	H					MIN.	MAX.			
8	1/4	4	45	Rc1/4	15	13	57	2.5	40	21	2	5	0.46	0.3	PUD-134PB
10	3/8	4	50	Rc3/8	15	15	58.5	2.5	40	25	2	5	0.52	0.4	PUD-134PC
15	1/2	6.5	55	Rc1/2	19.5	18	74.5	6	50	32	2	6	0.82	0.6	PUD-134PD

memo

[42 MPa] Outside Screw Type



Features

1. Since the stem uses an exterior-thread screw, the sliding part of the valve is not affected by the fluid.
2. The valve can be mounted on a panel without removing the gland nut.
3. Multiple gland packing variations make for a highly reliable gland seal structure.
4. A bonnet-less design eliminates bonnet leaks.

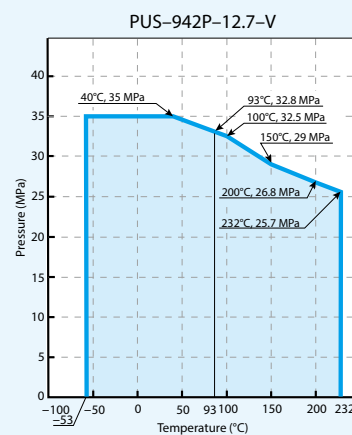
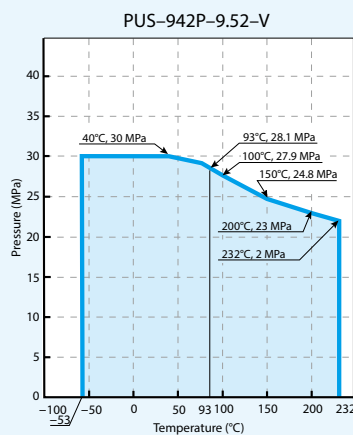
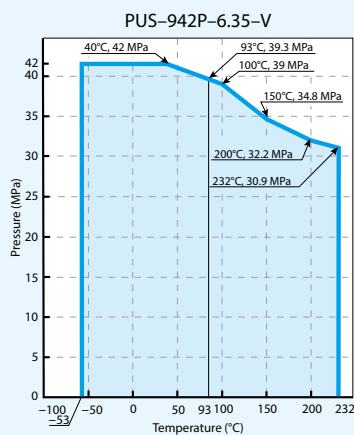
Technical Data

Nominal Diameter	Working Pressure (MPa)	Temperature (°C)
6.35	42	-53 to +232
9.52	30	
12.7	35	

Note 1: Since this valve uses a **New V-Lok** connection, its set pressure depends on the tube-fitting size.

Note 2: Please see the temperature and pressure rating for details.

Temperature and Pressure Rating



Applicable Fluid

Water, air, nitrogen gas, inert gas like helium, and non-corrosive gas and liquid.

When selecting a valve

1. The valve uses fluorine-based grease on parts that come into contact with liquid or gas in the valve. It is not suitable for use with fluids such as solvents that would dissolve the lubricant. If you are unsure whether the liquid with which you intend to use the valve would dissolve the lubricant, please contact us before ordering.
2. Use of this valve in a partially opened state could cause the disk to rotate, resulting in a ringing sound. Please contact us if you require a model that can adjust the rate of flow.
3. Please contact us if you require parts that come into contact with the gas (or liquid) to be oil-free.
4. Please contact us if you require another connection type, for example a socket weld.
5. Please contact us before ordering if you plan to use this valve as a process valve. What is a process valve? A process valve is a valve that is used in a process pipe. Because such pipes carry fluid continuously, the valve is subject to the effects of the fluid's temperature and pressure on a continuous basis.

Materials

Description	Materials
Body ※	SUSF316
Disk ※	SUS316 (stellite cladding) ※1, 2
Stem ※	SUS316 ※2
Gland packing ※	PEEK+C-PTFE
Handle	ADC12 ※3

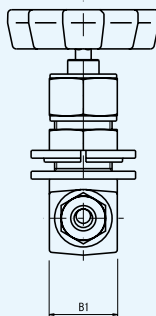
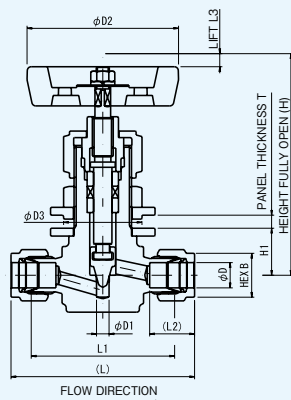
※: Wetted part

※1: If you require a soft seal-type model, please contact us.

※2: May use SUS316 or ASTM-spec material (SUS316 equivalent).

※3: The standard handle color is black. We can also manufacture other colors.

New V-Lok Type

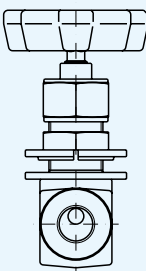
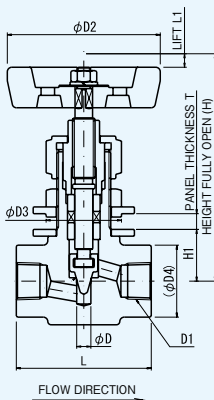


Dimensions

UNIT (mm)

Nominal Diameter D	Orifice Diameter D1	Face to Face Dimension		Pipe Connection Part			Panel Mounting		Height Fully Open H1	Lift L3	Handle Diameter D2	Body Thickness B1	Panel Thickness T		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
		L	L1	L2	B		D3	H					MIN.	MAX.			
6.35	5	64.5	50	15.2	9/16	14.3	30.5	18	85	5	58	26	2	5	0.36	0.5	PUS-942P-6.35-V
9.52	5	69.5	55	16.8	11/16	17.5	30.5	18	85	5	58	26	2	5	0.51	0.6	PUS-942P-9.52-V
12.7	6.5	84.2	64	22.9	7/8	22.2	34	23	101	6	68	32	2	7	0.87	0.9	PUS-942P-12.7-V

Thread Type



Can be downloaded from the Fujikin CAD data service. https://www.fujikin.co.jp/cad_s/

Dimensions

UNIT (mm)

Nominal Diameter		Orifice Diameter D	Face to Face Dimension L	Pipe Connection Part Screw D1	Panel Mounting		Height Fully Open H1	Lift L1	Handle Diameter D2	D4	Panel Thickness T		Cv Value (MAX.)	Weight (approximate) kg	Ordering Numbers
A	B				D3	H					MIN.	MAX.			
8	1/4	5	50	Rc 1/4	30.5	18	85	5	58	22	2	5	0.49	0.5	PUS-142PB
10	3/8	6.5	60	Rc 3/8	34	23	101	6	68	32	2	7	0.87	1	PUS-142PC
15	1/2	8	60	Rc 1/2	34	23	101	6	68	32	2	7	1.1	1	PUS-142PD

Note: Regarding the temperature and pressure rating for the PUS-142 type, the nominal diameters are all the same as for the PUS-942P-6.35.

Panel Mounting Instructions

- This product’s structure allows it to be panel-mounted without loosening the gland nut.
- The valve can be panel-mounted as follows:

Panel hole diameter chart

Nominal Diameter	Installation Hole Dimensions	+0.5 0
6.35, 8 A	30.5	
9.52	30.5	
12.7, 10 A, 15 A	34	

- Loosen the hex nut holding the handle in place and remove the handle.
- Move the panel nut upward (towards the gland nut).

- Pull the panel holding ring (which is covered by rubber) towards the side so that it's larger than the panel nut's outside diameter and remove it from the valve.

- Insert the valve into the panel hole. (While doing so, orient the valve so that the panel holding frame is underneath the panel.)
- Attach the panel holding ring (**after removing the rubber covering**) onto the valve.

Note: Orient the panel holding ring so that the side with the step is on the panel side.

- Insert the bottom part of the panel holding ring into the panel hole and tighten the panel holding ring with the panel nut to secure the valve in place.
- Next, attach the handle, nameplate, washer, and hex nut (in that order) to complete the installation.

(Hex nut tightening torque)
ø6.35, ø9.52, 8 A: 3 N·m
ø12.7, 10 A, 15 A: 5 N·m

memo

[68.9MPa] Union-Bonnet Type

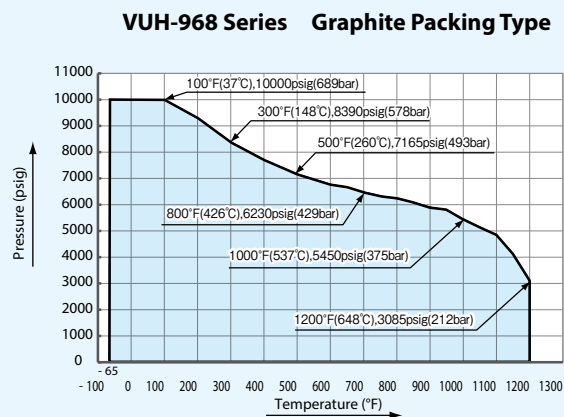
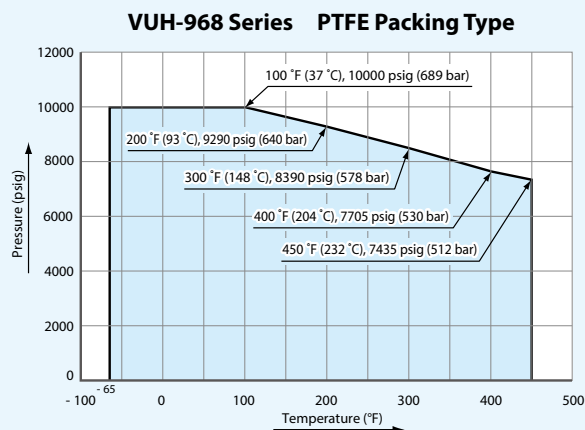


Features

1. Panel Mountable
2. Nonrotating Ball Stem Tip
3. Regulating Stem Tip Available
4. End Connections **New V-Lok** Tube Fittings

Technical Data

Temperature and Pressure Rating



Note: If the end connection is **New V-Lok** type, the working pressure may be low depending on the tube used.
For details, please refer to 1-1, 1-2 in the table of P12.

Applicable Fluid

PTFE Packing Type

Air, Nitrogen gas, Inert gas like Helium, and non-corrosive gas and liquid.

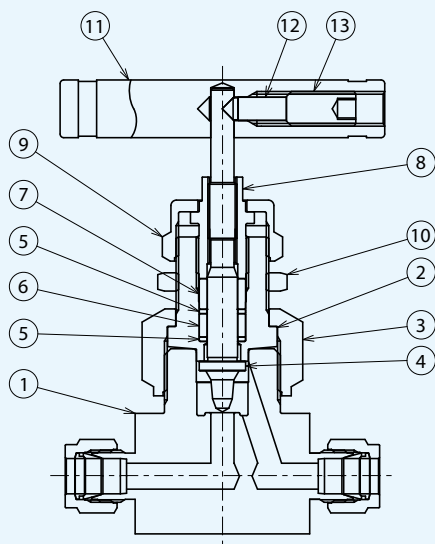
Graphite Packing Type

Steam, Water and non-corrosive gas and liquid.

Please use this series for instrumentation.

Material of Construction

VUH-968 Series

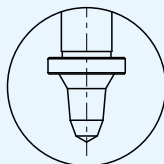


No.	Description	Materials
1	BODY ※	ASTM A479 316
2	BONNET ※	ASTM A479 316
3	BONNET NUT	ASTM A276 316
4	STEM ※	ASTM A276 316
5	PACKING SUPPORT ※	C-PTFE
6	PACKING ※	PTFE / Graphite
7	GLAND	ASTM A276 316
8	PACKING BOLT	ASTM A276 316
9	LOCK NUT	ASTM A276 316
10	PANEL NUT	ASTM A276 304 or SUS304
11	HANDLE	A6061B
12	PIN	SUS316
13	SET SCREW	SUSXM7

※ : Wetted part

Stem Types

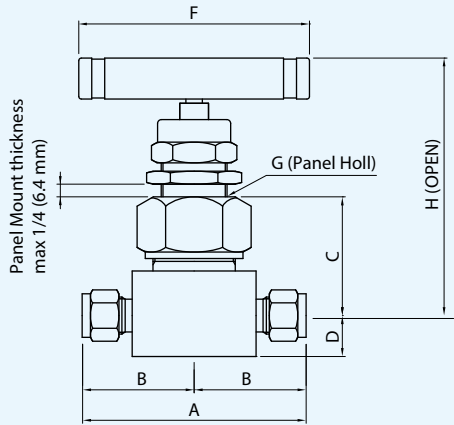
VUH-968 Series



Regulating Stem Tip

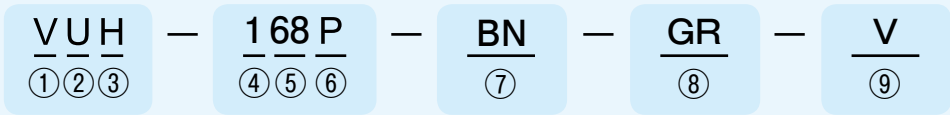
Dimensions

VUH-968 Series



Connection Types	Nominal Sizes	Operating Pressure psig (bar)	Orifice inch (mm)	Dimensions inch (mm)							Ordering Numbers
				A	B	C	D	F	G	H	
New V-Lok	1/4in. (6.35mm)	10000 (689)	0.16 (4)	2.82 (71.6)	1.41 (35.8)	1.38 (35.1)	0.5 (12.7)	2.5 (63.5)	0.81 (20.6)	3.31 (84.1)	VUH-968P-6.35-V
	3/8in. (9.52mm)		0.25 (6.4)	3.39 (86.1)	1.69 (43)	1.8 (45.8)	0.62 (15.8)	3.5 (88.9)	1.06 (26.9)	4.25 (108)	VUH-968P-9.52-V
Female NPT	1/2		0.25 (6.4)	3.25 (82.6)	1.63 (41.3)	1.94 (49.3)	0.78 (19.8)	3.5 (88.9)	1.06 (26.9)	4.25 (108)	VUH-168PDN

Ordering Information



- ① Valve Series

② Body Material
Stainless Steel

③ Valve Type
Needle Valves
- ④ End Connection
1: Thread Type
9: **New V-Lok** Type

⑤ Working Pressure
68: 10000 psi (689 bar)

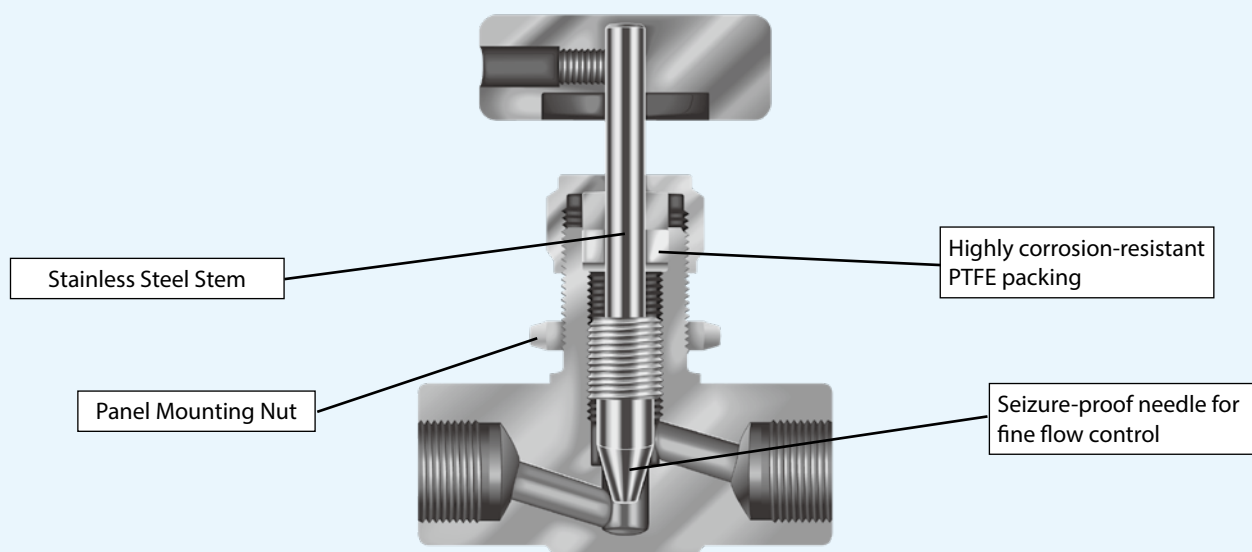
⑥ Panel Mount Type
- ⑦ Connection Sizes
B: Rc1/4 ※
BN: 1/4NPT
DN: 1/2NPT ※
6.35: **New V-Lok** 1/4in.
9.52: **New V-Lok** 3/8in.
12.7: **New V-Lok** 1/2in.
- ⑧ Gland Packing materials
Blank: PTFE+C-PTFE
GR: Graphite+C-PTFE

⑨ **New V-Lok** Type
- ※ : Getting ready. Begin to sell it soon.

[4.9MPa] Brass

Brass Needle Valves

With Color-coded Handles & Panel Mounting Nut



Features

1. Robust forged body and compact bonnet-less construction.
2. Needle design enhances ease of flow adjustment.
3. Packing and gland design reduce handle torque and enhance seal performance.

In the standard configuration, the valve comes with a black handle. blue, red, and green handles are also available.

※ It's popular for customers to use different colours for different fluids and flow lines.

Ordering Number Designation

Threaded Connector Type

P D S-15 B-S H-R

D: Brass

Needle Valves

Threaded Connector, Globe Pattern

713 psig
(49bar)

Please see ※ 2
Thread Sizes Table

Thread Size (When a connection in one side is thread.) ※ 2
(In case of a NPT thread connection, the character "N" is attached additionally at the end.)

R: Corresponding RoHS

※ 2: Thread Sizes Table

Taper Pipe Thread	Designation		A	B	C	D
	JIS B 0203 (1982) (ISO7/1)	Male thread Female thread	R1/8 Rc1/8	R1/4 Rc1/4	Rc3/8 R3/8	R1/2 Rc1/2

Thread designation complies with JIS B0203 (1982) (ISO7/1).
Sizes as per JIS B0203 (1981) are shown for reference purpose.

Construction



Materials

No.	Description	Materials
1	Body ※	C3771B
2	Panel Nut	C3604B
3	Stem ※	SUS303 or SUS316 ※ 1
4	Ring	SUS316
5	Gland Packing ※	P T F E
6	Gland Nut	C3604B
7	Hexagon Socket Head Set Screw	SUS304 equivalent
9	Handwheel ※ 2	A5056B

※ : Wetted Parts

Exceptions:

1: Applicable fluid: Water, Air, Nitrogen gas, inter gas like Helium, and non-corrosive gas and liquid.

※ 1: SUS materials may use ASTM standard material(SUS equivalent material)

※ 2: Standard color of the Handwheel is black. A Nameplate (material: Tetoron) is stuck to the Handle.

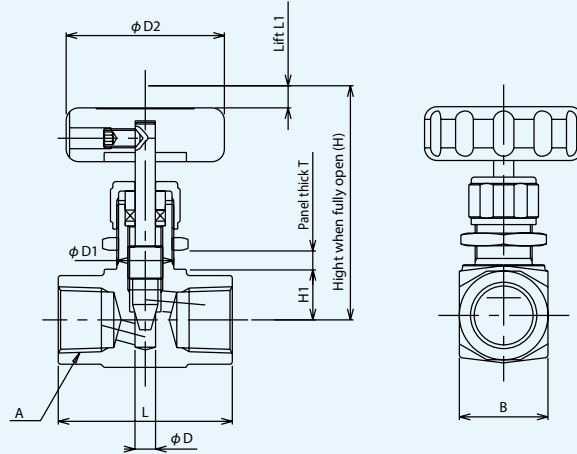
A seat will be corroded on early by the Langerear index when you use a brass valve for tap water, **Fujikin** recommends use of a stainless steel valve.

Quoting : Japan Valve Manufacturer's Association Publication.

Needle Valves

Brass 4.9 MPa Needle Valves

Threaded Connector Type

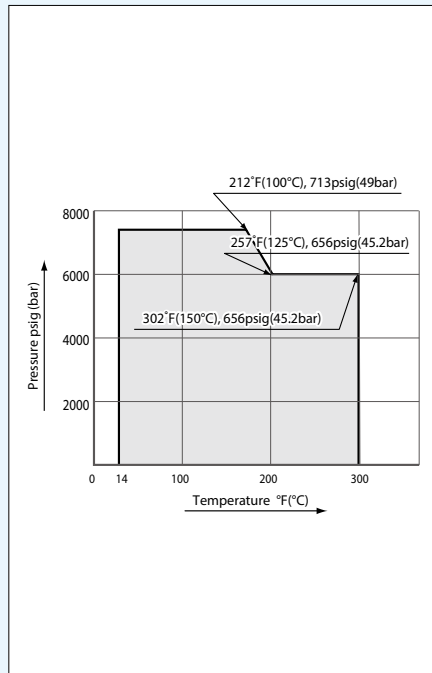


Dimension

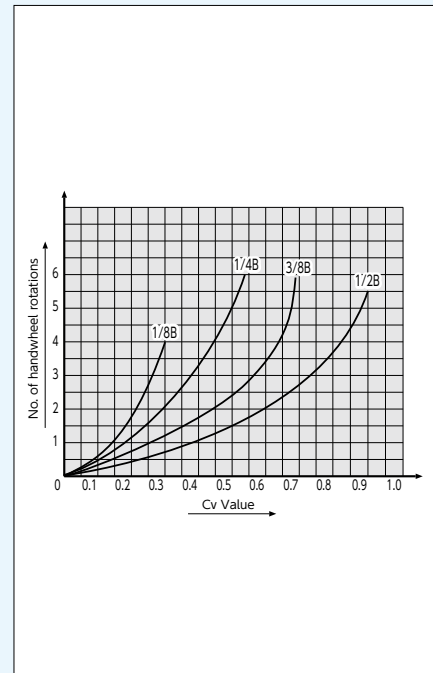
UNIT(mm)

Nominal Dia. (B)	Orifice Dia. D	Face to face Dimension L	Connection Port A	Panel Mounting		H	L1	D2	B	T		Cv Value MAX.	Weight approx. (kg)	Ordering Numbers
				D1	H1					MIN.	MAX.			
1/8	5	40	Rc 1/8	13.2	10.5	55	4	40	18.5	2	6	0.3	0.2	PDS-15A-SH-R
1/4	6.5	45	Rc 1/4	18.5	14	71	6	50	21	2	8	0.55	0.3	PDS-15B-SH-R
3/8	6.5	50	Rc 3/8	18.5	16	73	6	50	28	2	8	0.7	0.4	PDS-15C-SH-R
1/2	6.5	55	Rc 1/2	18.5	16	73	6	50	28	2	8	0.9	0.4	PDS-15D-SH-R

Temperature-Pressure Curve



Cv Curves



Specifications

Working Pressure psig (bar)	Temperature °F (°C)
713 (49) ※ 1, 2	14 ~ +302 (-10 ~ +150)

※ 1: Please refer to Temperature-Pressure Curve.

※ 2: Consult with **Fujikin** before using hydrogen, helium, or toxic gases, and in vacume state.

Exceptions:

Applicable fluid: Water, Air, Nitrogen gas, inter gas like Helium, and non-corrosive gas and liquid.

Panel Mounting Procedures

If you are panel-mounting the valve, follow these instructions:

1. Ensure that the bracket hole on the panel is ≤ 0.5mm wider than the valve's Panel-Mounting Diameter (refer to the CAD drawing).
2. Use an adjustable wrench to loosen the Hex Nut securing the Handle. Remove the Handle.
3. Remove the Gland Nut and the Panel Nut.
4. Mount the valve on the panel and secure it with the Panel Nut. Reattach the Gland Nut and the Handle.
5. Tighten the Gland Nut with an adjustable wrench to the torque shown in the table below.

Gland Nut Tightening Torque (Reference Value)

Nominal Dia. (B)	Tightening Torque (N·m)
1/8	8
1/4	18
3/8	18
1/2	18

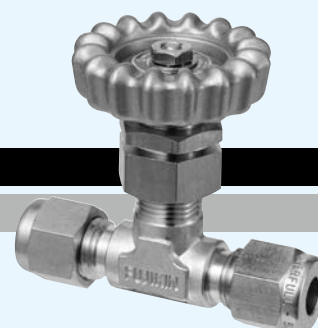
[2MPa] Brass

Brass 2 MPa Needle Valves with POWERFULLOK Fittings

Ordering Number Designation

P D W V P - 6 B - R

R: Corresponding RoHS
 Thread Size (When a connection in one side is thread.) Please see ※ 2
 (In case of a NPT thread connection, the character "N" is attached additionally at the end.)
 Nominal Dia. (Tube Dia.) ※ 1
 P: with Panel Nut
 V: Needle Valves
 A: Angle Valves
 W: POWERFULLOK Tube Fittings Type
 D: Brass



※ 1: Nominal Diameter (Tube Dia.)

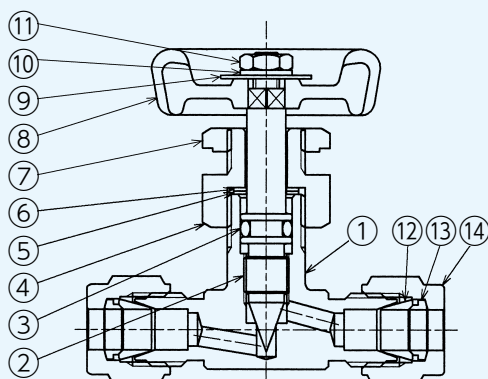
	inch Sizes	mm Sizes
Nominal Diameter (Tube Dia.)	6.35 : connection part 1/4 9.52 : connection part 3/8 12.7 : connection part 1/2	6 : connection part 6 8 : connection part 8 10 : connection part 10 12 : connection part 12

※ 2: Thread Sizes Table

Taper Pipe Thread	Designation	A	B	C
	JIS B 0203 (1982) (ISO7/1)	Male thread	R1/8 R1/4 Rc3/8	
		Female thread	Rc1/8 Rc1/4 R3/8	

Thread designation complies with JIS B0203 (1982) (ISO7/1).
 Sizes as per JIS B0203 (1981) are shown for reference purpose.

Construction



Materials

No.	Description	Materials
1	Body ※	C3771B
2	Stem ※	SUS304 or 303 ※3※4
3	O-Ring ※	NBR
4	Gland Nut	C3604B
5	Ring	A5052P
6	Sheet Packing	Nylon
7	Panel Nut	C3604B
8	Handle	ADC12
9	Name Plate	A5052P
10	Washer	SK85 (MF Ni)
11	Hex Nut	C3604B
12	Front Ring	C3602B
13	Back Ring	C3602B
14	Nut	C3604B

※: Wetted Part

Exceptions:

Applicable fluid: Water, Air, Nitrogen gas, inter gas like Helium, and non-corrosive gas and liquid.

※ 3: Stainless Steel: Nominal Dia. 9.52 or more,
 C3604B: Rc Thread 3/8 or more

※ 4: SUS materials may use ASTM standard material (SUS equivalent material)

A seat will be corroded on early by the Langleys index when you use a brass valve for tap water, **Fujikin** recommends use of a stainless steel valve.

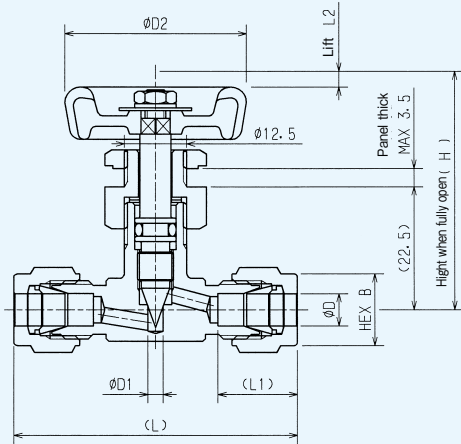
Quoting: Japan Valve Manufacturer's Association Publication.

Needle Valves

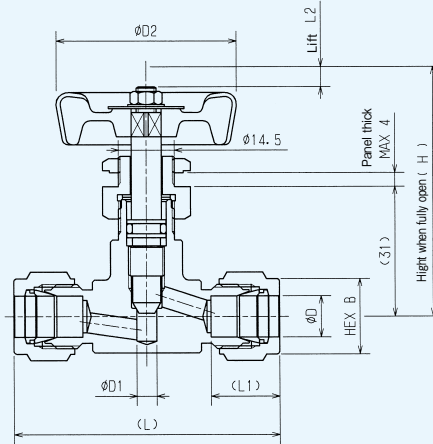
Brass 2 MPa Needle Valves

POWERFULLOK Fittings Connection Type

Nom. Dia. 6, 6.35, 8 Type



Nom. Dia. 9.52, 10, 12, 12.7 Type



● Dimensions (inch size)

UNIT (mm)

Nominal Dia. D	D1	D2	L	L1	L2	B	H	Ordering Numbers
6.35	3	35	54.8	15.4	3	14	45	PDWVP-6.35-R
9.52	5	45	66.4	17.2	5	17	62	PDWVP-9.52-R
12.7	5	45	78.6	23	5	22	62	PDWVP-12.7-R

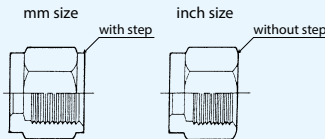
● Dimensions (mm size)

UNIT (mm)

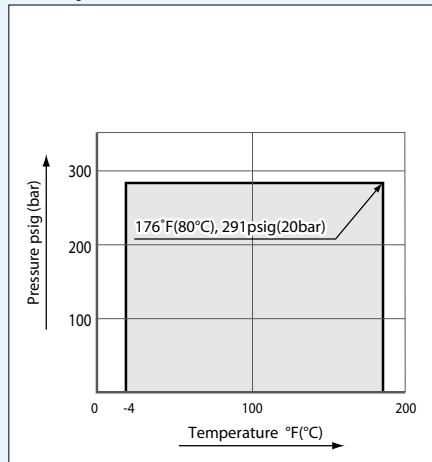
Nominal Dia. D	D1	D2	L	L1	L2	B	H	Ordering Numbers
6	3	35	54.5	15.2	3	14	45	PDWVP-6-R
8	3	35	58.9	16.2	3	16	45	PDWVP-8-R
10	5	45	65.9	17	5	19	62	PDWVP-10-R
12	5	45	77.6	22.5	5	22	62	PDWVP-12-R

About size distinction of the mm size and inch size

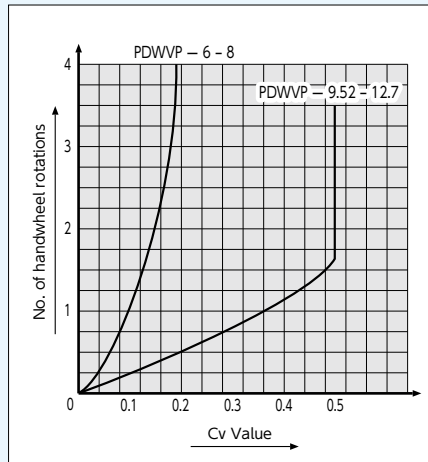
In order to distinguish easily from outside, edge of metric Nut is dented. Nut has size-marking.



● Temperature-Pressure Curve



● Cv Curves



● Specifications

Working Pressure psig (bar)	Temperature °F (°C)
291 (20)	-4 ~ +176 (-20 ~ +80) ※

※ : Valves up to 392°F(200°C) are available.
Please contact **Fujikin** for more information.

Exceptions:
Applicable fluid: Water, Air, Nitrogen gas, inert gas like Helium, and non-corrosive gas and liquid.

Panel Mounting Procedures

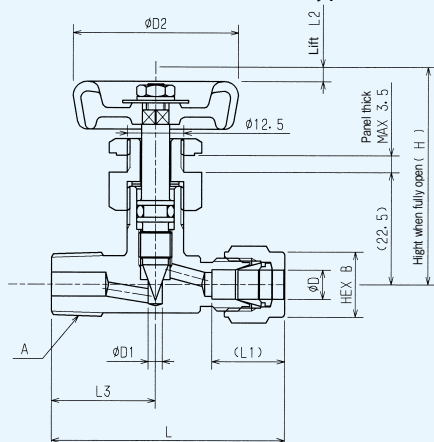
If you are panel-mounting the valve, follow these instructions:

1. Ensure that the bracket hole on the panel is ≤ 0.5mm wider than the valve's Panel-Mounting Diameter (refer to the CAD drawing).
2. Use an adjustable wrench to loosen the Hex Nut securing the Handle. Remove the Handle.
3. Remove the Gland Nut and the Panel Nut.
4. Mount the valve on the panel and secure it with the Panel Nut. Reattach the Gland Nut and the Handle.
5. Please assemble the Handle at the end.

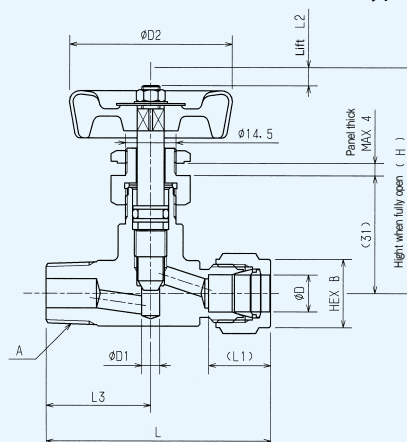
Brass 2 MPa Needle Valves

POWERFULLOK Fittings Connection Type

Nom. Dia. 6, 6.35, 8 Type



Nom. Dia. 9.52, 10, 12, 12.7 Type



● Dimensions (inch size)

UNIT (mm)

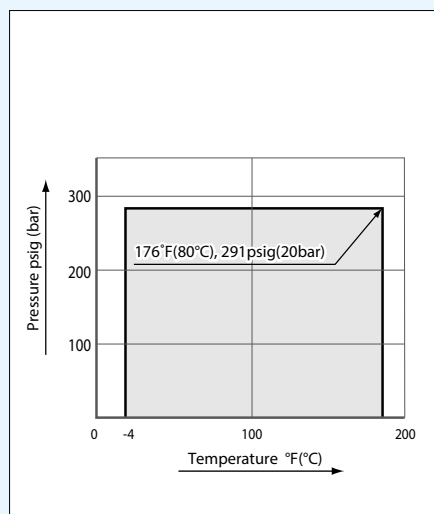
Nominal Dia. D	A	D1	D2	L	L1	L2	L3	B	H	Ordering Numbers
6.35	R1/8	3	35	47.4	15.4	3	20	14	45	PDWVP-6.35A-R
6.35	R1/4	3	35	49.4	15.4	3	22	14	45	PDWVP-6.35B-R
9.52	R1/4	5	45	62.1	17.2	5	29	17	62	PDWVP-9.52B-R
9.52	R3/8	5	45	62.1	17.2	5	29	17	62	PDWVP-9.52C-R
12.7	R1/4	5	45	68.3	23	5	29	22	62	PDWVP-12.7B-R
12.7	R3/8	5	45	68.3	23	5	29	22	62	PDWVP-12.7C-R

● Dimensions (mm size)

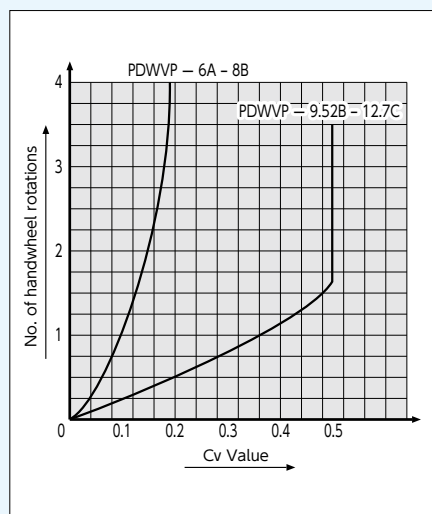
UNIT (mm)

Nominal Dia. D	A	D1	D2	L	L1	L2	L3	B	H	Ordering Numbers
6	R1/8	3	35	47.2	15.2	3	20	14	45	PDWVP-6A-R
6	R1/4	3	35	49.2	15.2	3	22	14	45	PDWVP-6B-R
8	R1/8	3	35	49.5	16.2	3	20	16	45	PDWVP-8A-R
8	R1/4	3	35	51.5	16.2	3	22	16	45	PDWVP-8B-R
10	R1/4	5	45	61.9	17	5	29	19	62	PDWVP-10B-R
10	R3/8	5	45	61.9	17	5	29	19	62	PDWVP-10C-R
12	R1/4	5	45	67.8	22.5	5	29	22	62	PDWVP-12B-R
12	R3/8	5	45	67.8	22.5	5	29	22	62	PDWVP-12C-R

● Temperature-Pressure Curve



● Cv Curves



● Specifications

Working Pressure psig (bar)	Temperature °F (°C)
291 (20)	-4 - +176 (-20 - +80) ※

※ : Valves up to 392°F(200°C) are available.
Please contact **Fujikin** for more information.

Exceptions:
Applicable fluid: Water, Air, Nitrogen gas, inter gas like Helium, and non-corrosive gas and liquid.

Panel Mounting Procedures

If you are panel-mounting the valve, follow these instructions:

1. Ensure that the bracket hole on the panel is ≤ 0.5mm wider than the valve's Panel-Mounting Diameter (refer to the CAD drawing).
2. Use an adjustable wrench to loosen the Hex Nut securing the Handle. Remove the Handle.
3. Remove the Gland Nut and the Panel Nut.
4. Mount the valve on the panel and secure it with the Panel Nut. Reattach the Gland Nut and the Handle.
5. Please assemble the Handle at the end.

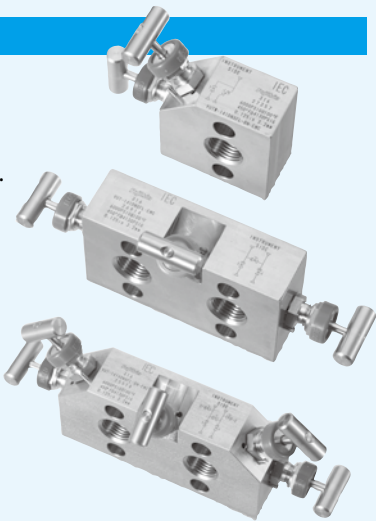
This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Instrument Manifolds / Gauge Valves

Instrument Manifolds

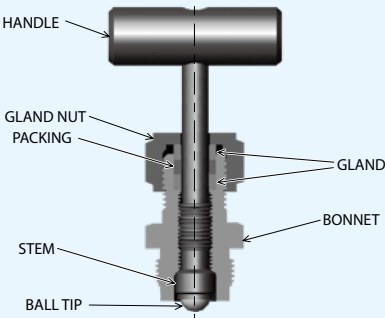
Features

- 1. **Fujikin** offers a variety of 2-, 3-, and 5-Valve Instrument Manifolds.
- 2. The 2-Valve Manifolds are designed for static pressure and liquid level applications ; the 3- and 5-Valve Manifolds are designed for differential pressure applications.
- 3. The flow through a **Fujikin** manifold is controlled by a series of stainless steel needle valves.
- 4. Each valve has a specific function — to block pressure, to bleed off pressure, or to equalize pressure — depending on its location on the manifold.
The control of all these functions is shared by two needle valve designs
 - a large bonnet needle valve for manifold orifices of 0.156 in. (4 mm)
 - a small bonnet needle valve for manifold orifices of 0.125 in. (3.2 mm).
- 5. End connections - 1/2 in. female pipe (NPT) ; flange (MSS) (Please refer to P177)
- 6. The bonnet is prevented from loosening from a body with a lock plate. (standard)
(There is also pin lock type. Please refer to P177)
- 7. On both designs, the stem packing is externally adjustable in the open position.
PTFE is the standard packing material.
- 8. Distinguished by different colors according to use. with color caps
BLOCK: Blue, BLEED: Red, EQUALIZE: Green



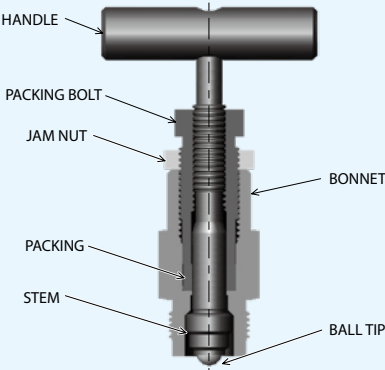
Bonnet Design

Small Bonnet Needle Valves



Description	Materials
HANDLE	ASTM A276 304
GLAND NUT	ASTM A276 316
PACKING	PTFE
GLAND	ASTM A276 316
BONNET	ASTM A479 316
STEM	ASTM A276 316
BALL TIP	ASTM A276 316

Large Bonnet Needle Valves

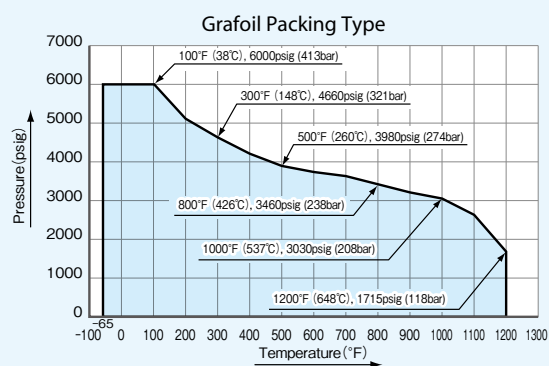
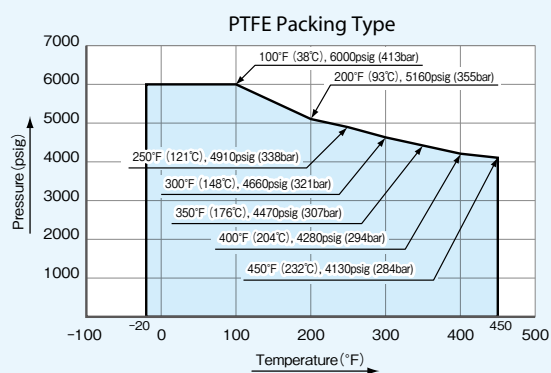


Description	Materials
HANDLE	ASTM A276 304
JAM NUT	ASTM A276 304
PACKING BOLT	ASTM A276 316
BONNET	ASTM A479 316
PACKING	PTFE
STEM	ASTM A276 316
BALL TIP	ASTM A276 316

Cautions: ASTM A276 material may use SUS (ASTM A276 equivalent material).

Technical Data

Temperature and Pressure Rating

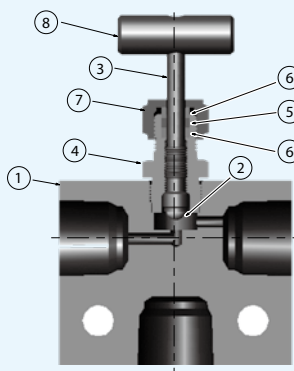


Applicable Fluid

Air, Nitrogen gas, Inert gas like Helium, and non - corrosive gas and liquid.

Material of Construction

Small Bonnet Manifolds

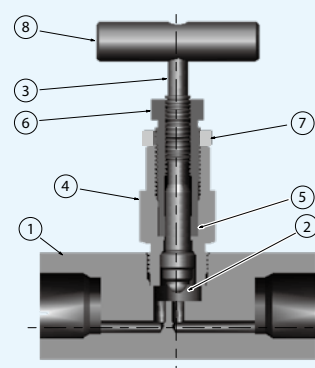


No.	Description	Materials
1	BODY	※ ASTM A479 316
2	BALL TIP	※ ASTM A276 316
3	STEM	※ ASTM A276 316
4	BONNET	※ ASTM A479 316
5	PACKING	※ PTFE
6	GLAND	※ ASTM A276 316
7	GLAND NUT	ASTM A276 304
8	HANDLE	ASTM A276 304

※ : Wetted Parts

Cautions: ASTM A276 material may use SUS (ASTM A276 equivalent material).

Large Bonnet Manifolds



No.	Description	Materials
1	BODY	※ ASTM A479 316
2	BALL TIP	※ ASTM A276 316
3	STEM	※ ASTM A276 316
4	BONNET	※ ASTM A479 316
5	PACKING	※ PTFE
6	PACKING BOLT	ASTM A276 316
7	JAM NUT	ASTM A276 304
8	HANDLE	ASTM A276 304

※ : Wetted Parts

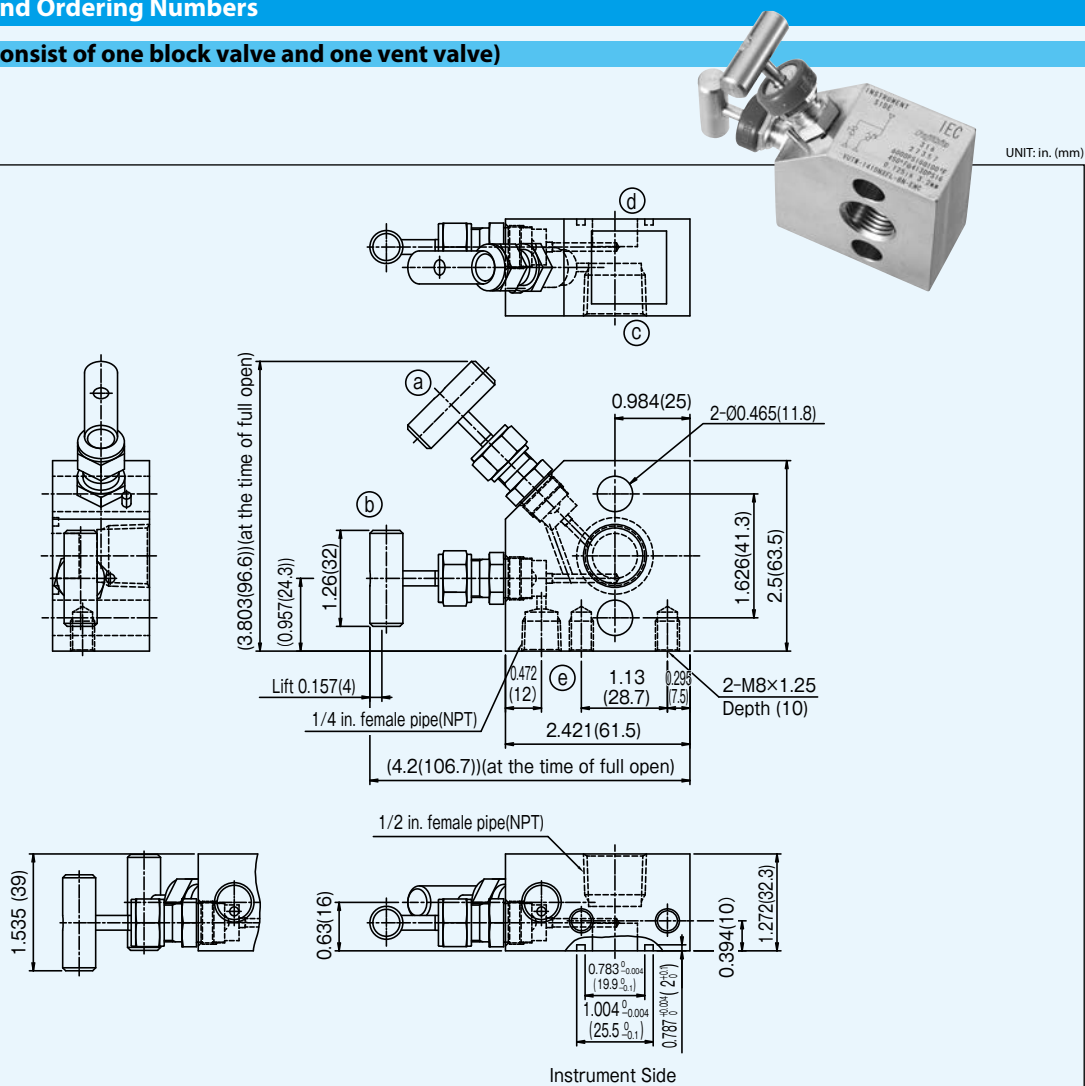
Cautions: ASTM A276 material may use SUS (ASTM A276 equivalent material).

Dimensions, Flow and Ordering Numbers

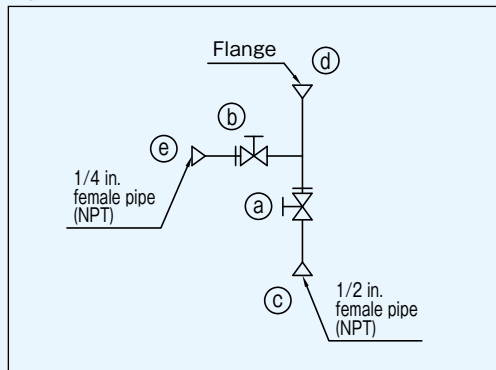
2-Valve Manifolds (Consist of one block valve and one vent valve)

Direct Mounting Type

Dimensions



Flow



Ordering Number:

- VUTW-141DN×FL-BN-EMC:
Standard (PTFE Packing & no Blind Type)
- VUTW-141DN×FL-BN-EMC-GR:
Graphite Packing Type
- VUTW-141DN×FL-BN-EMC-BL:
with Vent Port Blind Type

Remarks

A gasket and two bolts are attached with this product.

Dimensions, Flow and Ordering Numbers

2-Valve Manifolds (Consist of one block valve and one bleed valve)

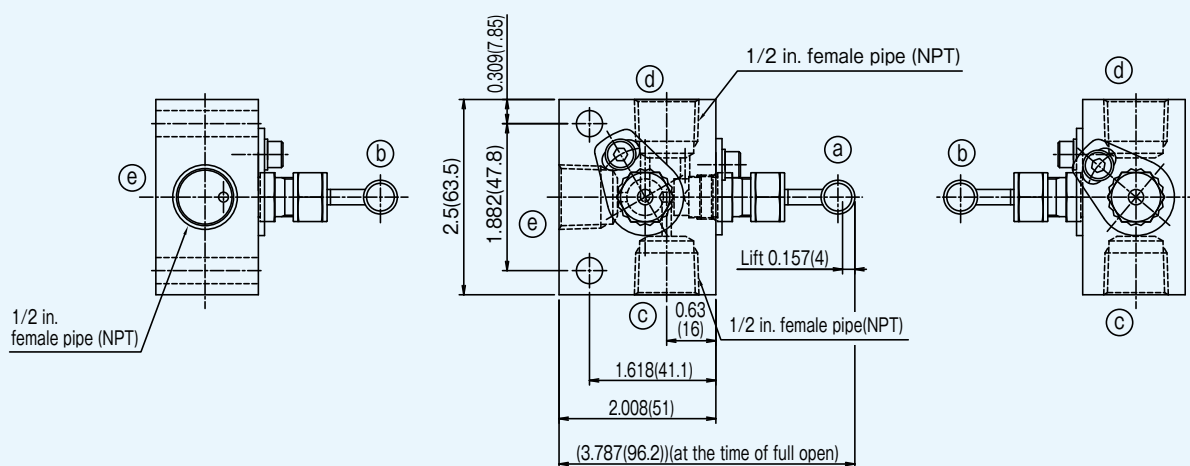
Remote Mounting Type

End Connections of Process side, Instrument side:
1/2 in. Female Pipe (NPT)

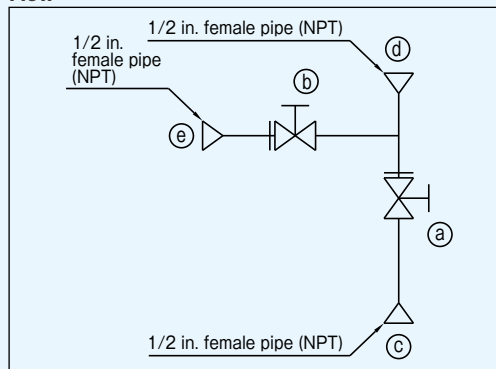


Dimensions

UNIT: in. (mm)



Flow



Ordering Number:

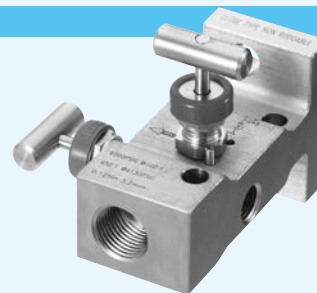
- **VUTW-141LDN:**
Standard (PTFE Packing & no Blind Type)
- **VUTW-141LDN-GR:**
Graphite Packing Type
- **VUTW-141LDN-BL:**
with Vent Port Blind Type

Dimensions, Flow and Ordering Numbers

2-Valve Manifolds (Consist of one block valve and one bleed valve)

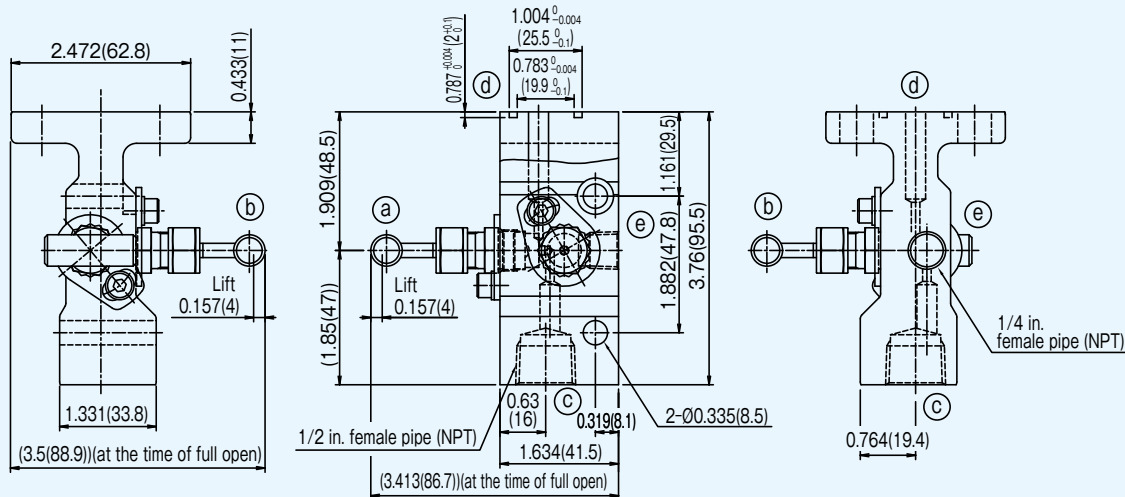
Direct Mounting Type

End Connections of Process Side: 1/2 in. Female Pipe (NPT),
Instrument side: Flange (MSS)

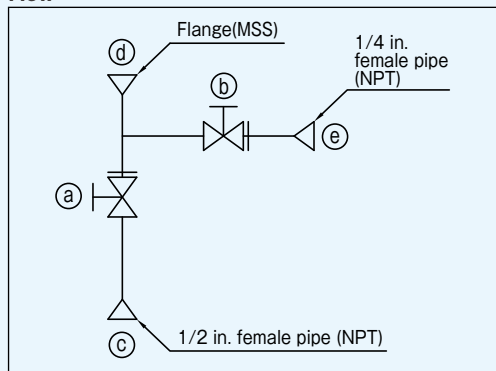


Dimensions

UNIT: in. (mm)



Flow



Ordering Number:

- **VUTW-141LDN×FL-BN:**
Standard (PTFE Packing & no Blind Type)
- **VUTW-141LDN×FL-BN-GR:**
Graphite Packing Type

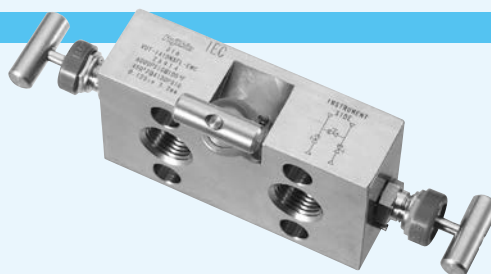
Remarks

A gasket and two bolts are attached with this product.

Dimensions, Flow and Ordering Numbers

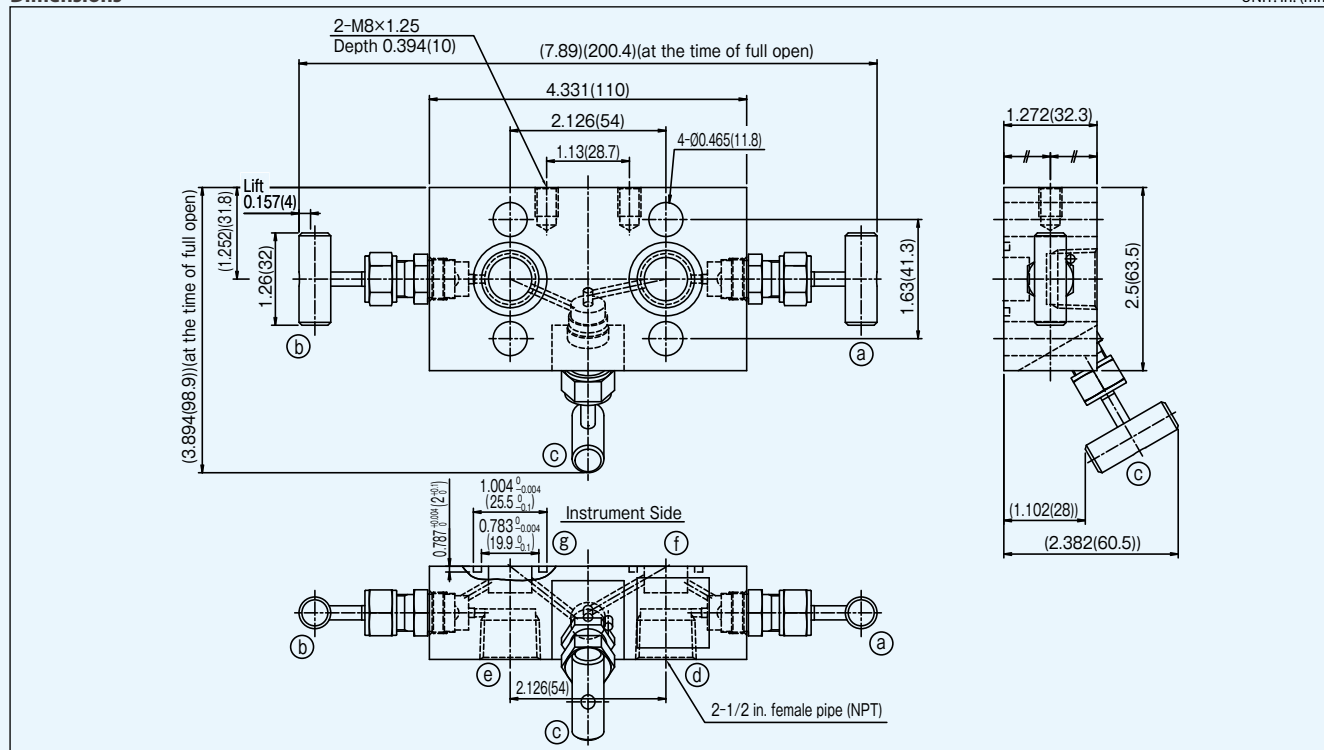
3-Valve Manifolds (Consist of two block valves and one equalizer valve)

Direct Mounting Type

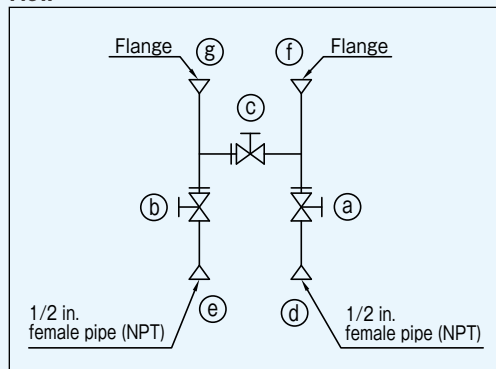


Dimensions

UNIT: in. (mm)



Flow



Ordering Number:

- **VUT-141DNxFL-EMC:**
Standard (PTFE Packing & no Blind Type)
- **VUT-141DNxFL-EMC-GR:**
Graphite Packing Type

Remarks

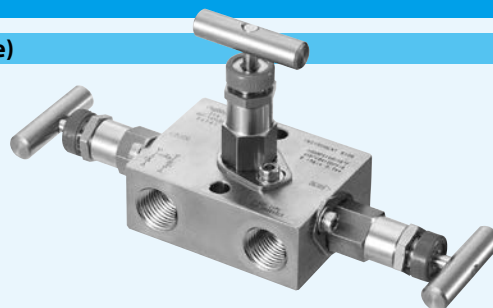
A gasket and two bolts are attached with this product.

Dimensions, Flow and Ordering Numbers

3-Valve Manifolds (Consist of two block valves and one equalizer valve)

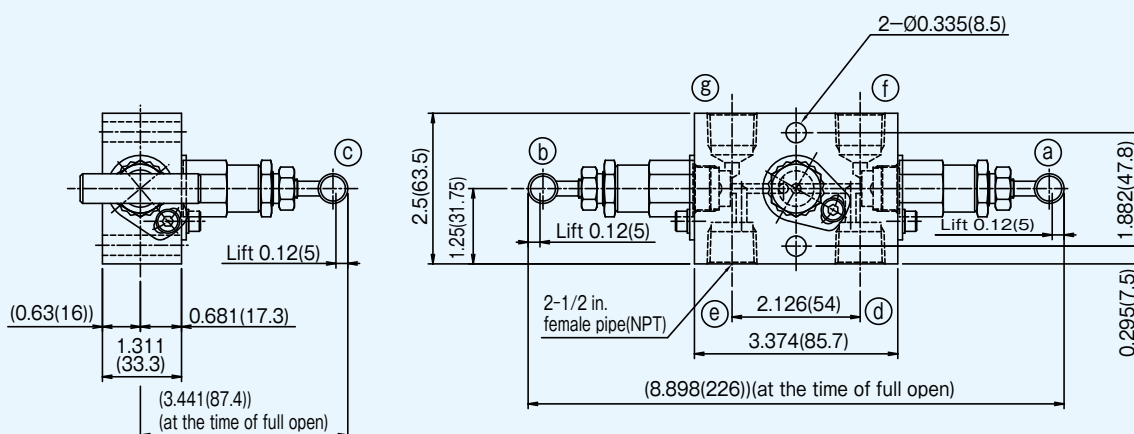
Remote Mounting Type

End connections of Process side, Instrument side:
1/2 in. Female Pipe (NPT)

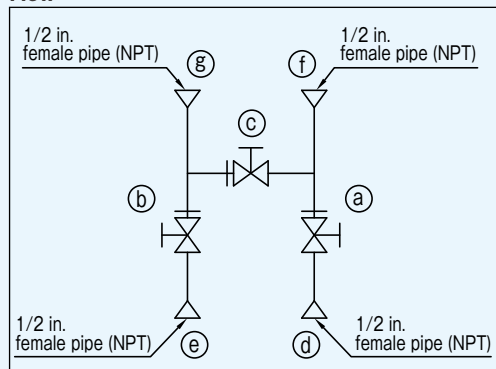


Dimensions

UNIT: in. (mm)



Flow



Ordering Number:

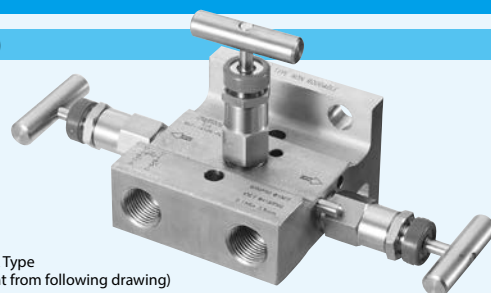
- **VUT-141LDN:**
Standard (PTFE Packing & no Blind Type)
- **VUT-141LDN-GR:**
Graphite Packing Type

Dimensions, Flow and Ordering Numbers

3-Valve Manifolds (Consist of two block valves and one equalizer valve)

Direct Mounting Type

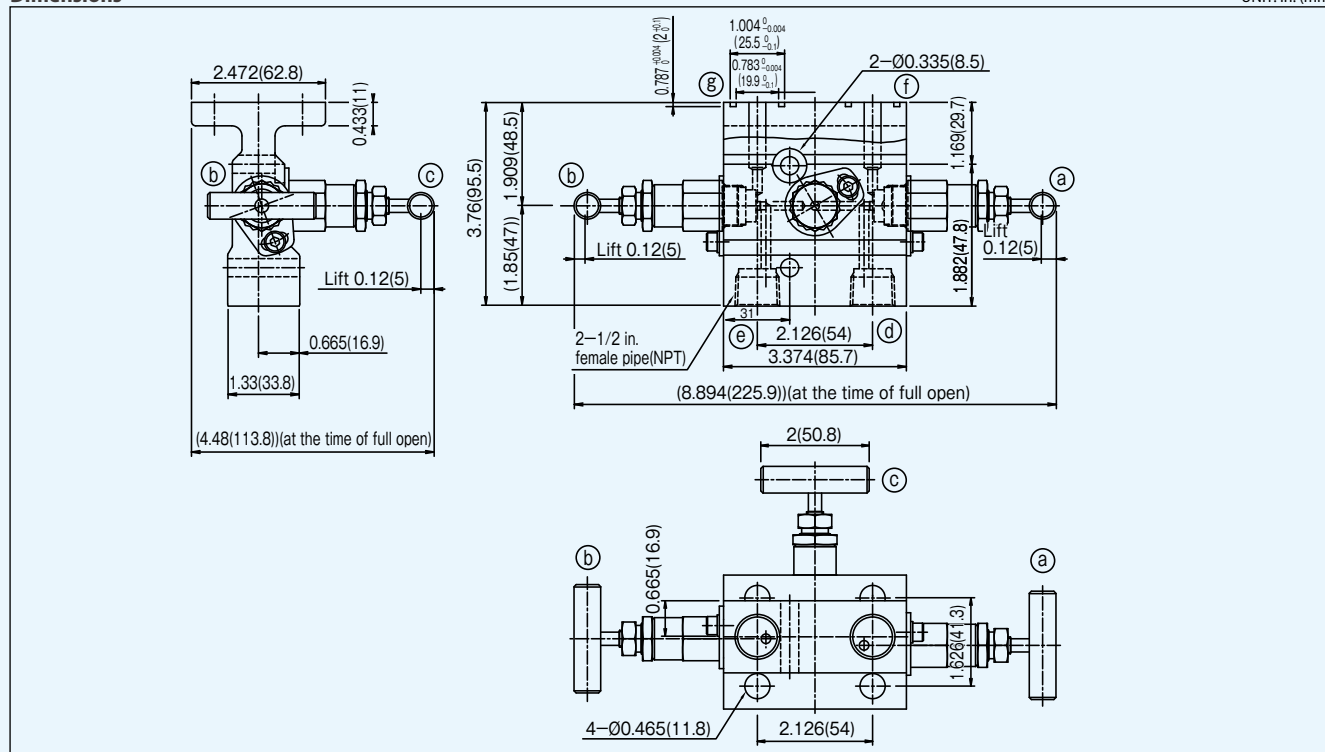
End Connections of Process Side: 1/2 in. Female Pipe (NPT),
Instrument side: Flange (MSS)



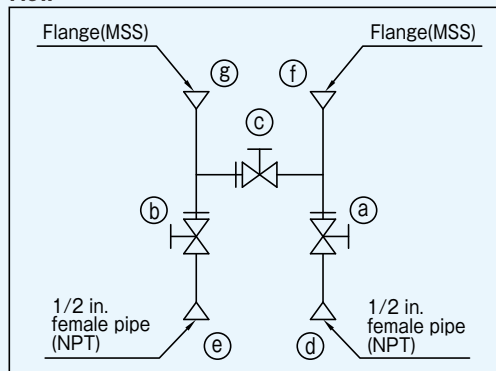
Pin Lock Type
(different from following drawing)

Dimensions

UNIT: in. (mm)



Flow



Ordering Number:

• **VUT-141LDN×FL:**
Standard (PTFE Packing & no Blind Type)

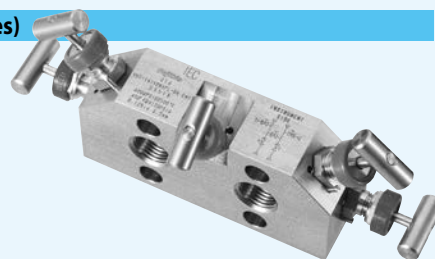
Remarks

A gasket and two bolts are attached with this product.

Dimensions, Flow and Ordering Numbers

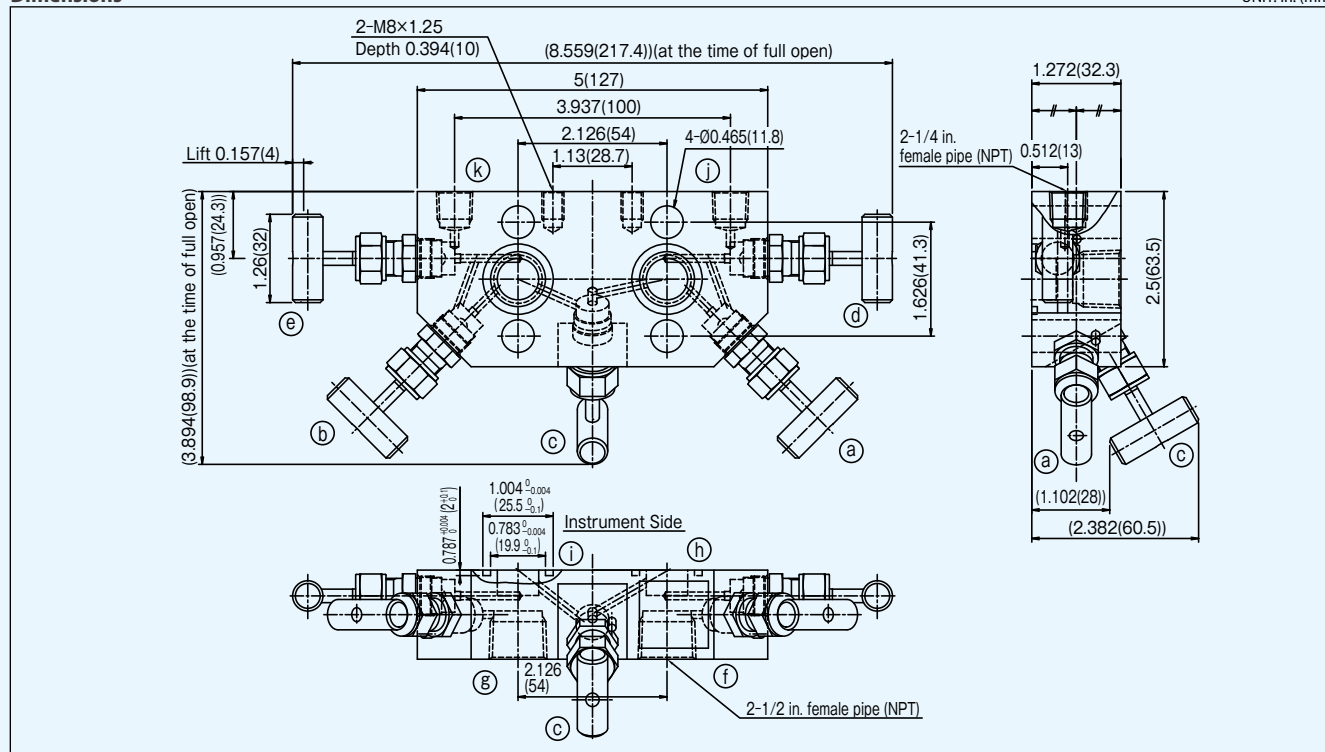
5-Valve Manifolds (Consist of two block valves, one equalizer valve and two bleed valves)

Direct Mounting Type

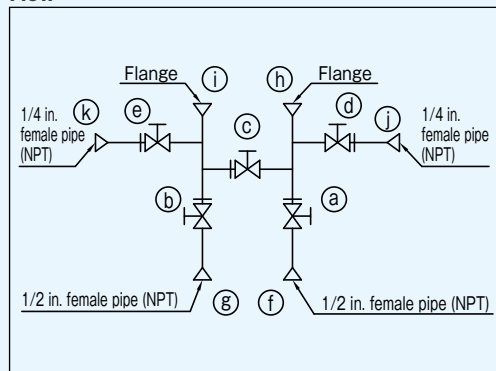


Dimensions

UNIT: in. (mm)



Flow



Ordering Number:

- **VUT-141VDN×FL-BN-EMC:**
Standard (PTFE Packing & no Blind Type)
- **VUT-141VDN×FL-BN-EMC-GR:**
Graphite Packing Type
- **VUT-141VDN×FL-BN-EMC-BL:**
with Vent Port Blind Type

Remarks

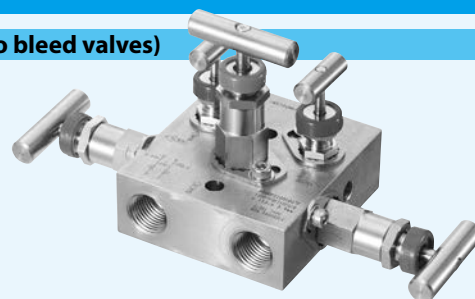
A gasket and two bolts are attached with this product.

Dimensions, Flow and Ordering Numbers

5-Valve Manifolds (Consist of two block valves, one equalizer valve and two bleed valves)

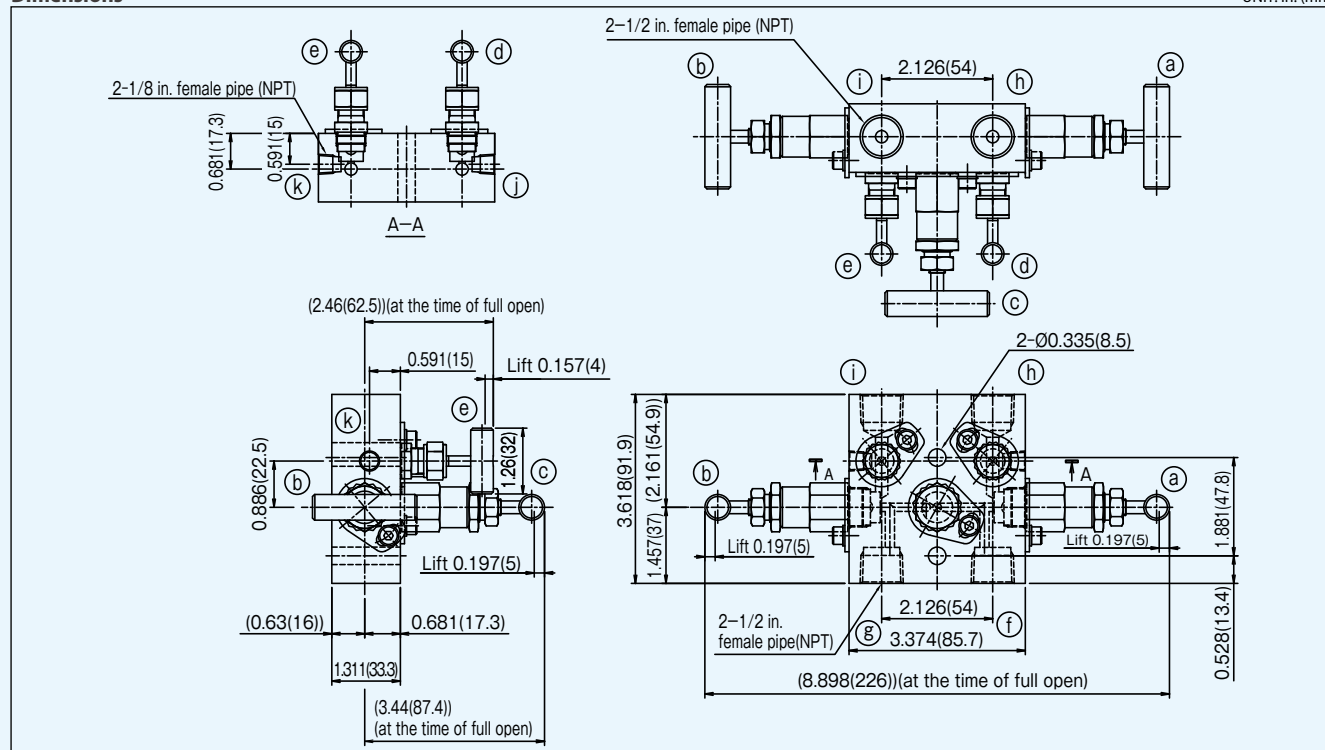
Remote Mounting Type

End Connections of Process Side, Instrument Side: 1/2 in. Female Pipe (NPT)

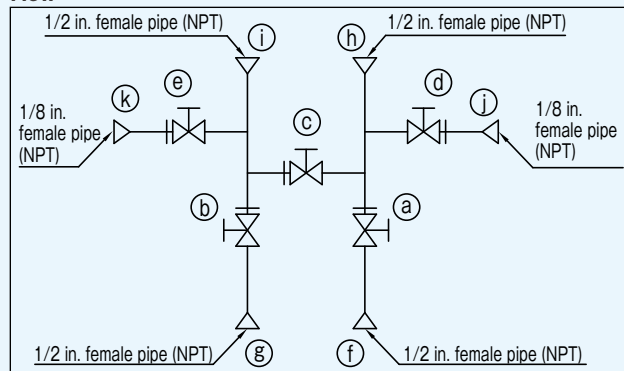


Dimensions

UNIT: in. (mm)



Flow

**Ordering Number:**

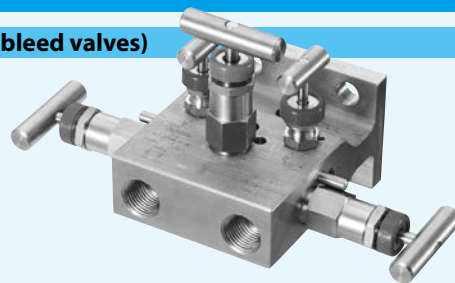
- **VUT-141LVDN-AN:**
Standard (PTFE Packing & no Blind Type)
- **VUT-141LVDN-AN-GR:**
Graphite Packing Type
- **VUT-141LVDN-AN-BL:**
with Vent Port Blind Type

Dimensions, Flow and Ordering Numbers

5-Valve Manifolds (Consist of two block valves, one equalizer valve and two bleed valves)

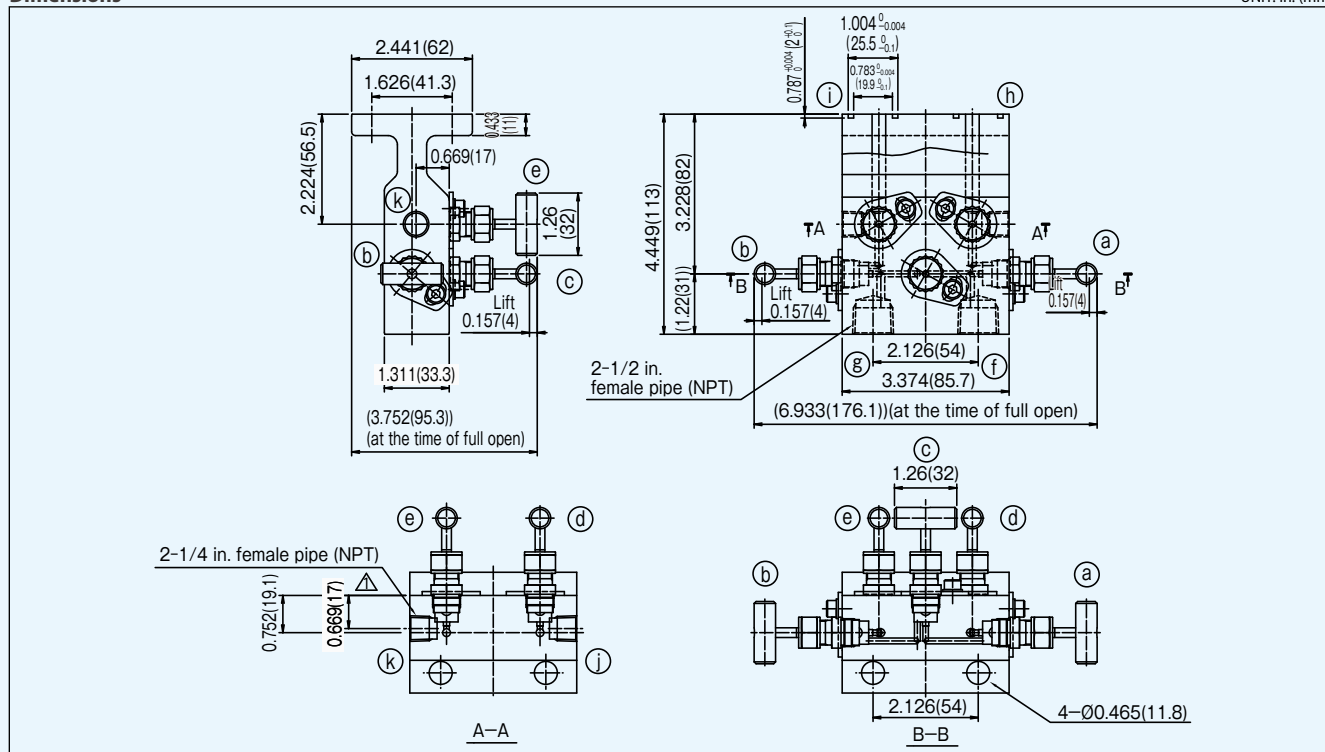
Direct Mounting Type

End Connections of Process Side: 1/2 in. Female Pipe (NPT),
Instrument side: Flange (MSS)

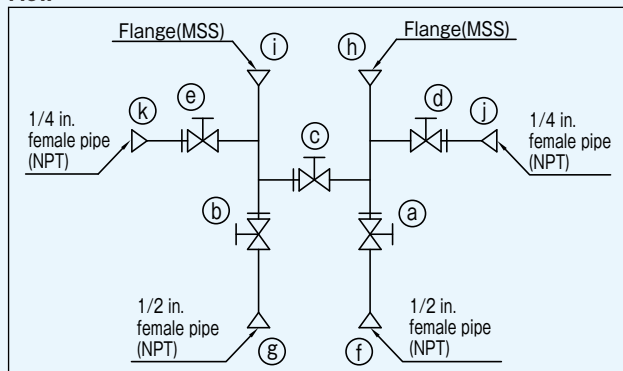


Dimensions

UNIT: in. (mm)



Flow



Ordering Number:

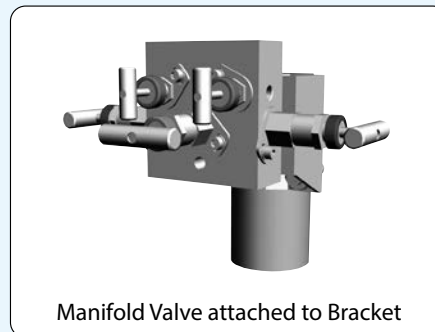
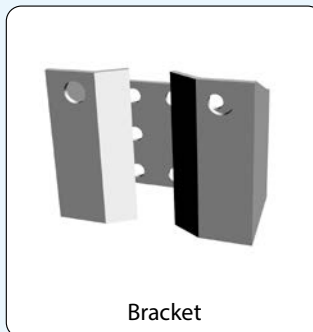
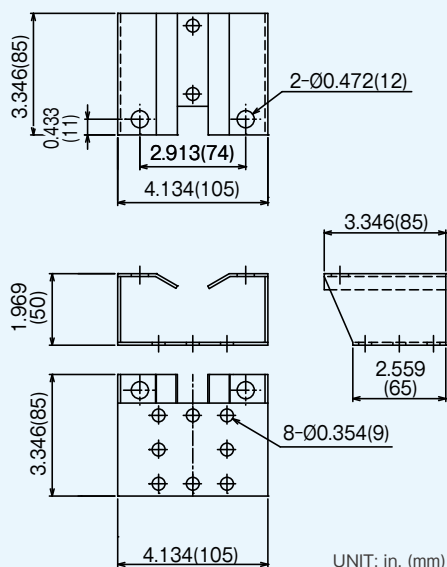
- VUT-141LVDN × FL-BN-GUU
Standard (PTFE Packing & no Blind Type)
- VUT-141LVDN × FL-BN-GUU-BL:
with Vent Port Blind Type

Remarks

Two gaskets and four bolts are attached with this product.

Option Parts

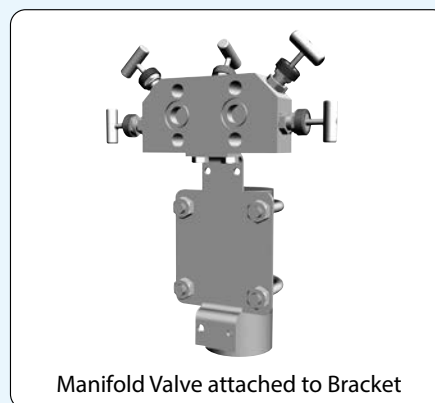
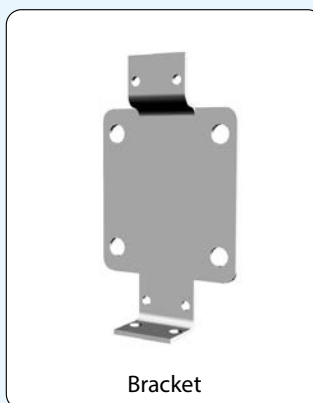
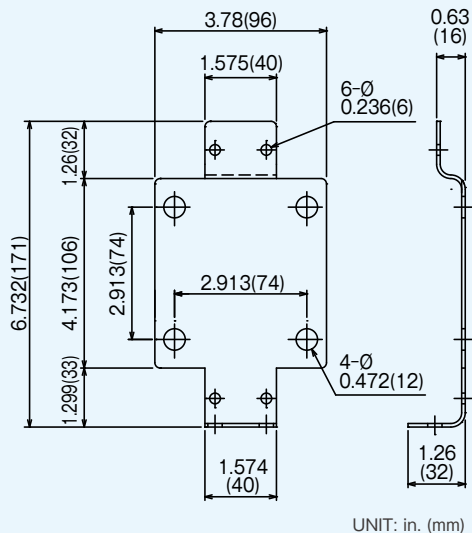
MANIFOLD BRACKET KIT for Remote Type Manifold Valves (apply to 2 inch pipe)



Parts Name	Materials	Q'ty	Remarks
Bracket	SUS304	1	
U-Bolt	SS400	1	MFZn, for 2 In. (M10)
Spring Washer	SS400	2	MFZn, Nominal 10
Hex Nut	SS400	2	MFZn, M10
Hex Bolt	SS400	2	MFZn, M8 x 45
Spring Washer	SS400	2	MFZn, Nominal 8
Hex Nut	SS400	2	MFZn, M8 x 45

The set of a Bracket includes U-Bolt•Spring Washers•Hex Nuts (for Bracket), Hex Bolts•Spring Washers•Hex Nuts(for Valve)

MANIFOLD BRACKET KIT for Direct Mount Type Manifold Valves (-EMC Type) (apply to 2 inch pipe)

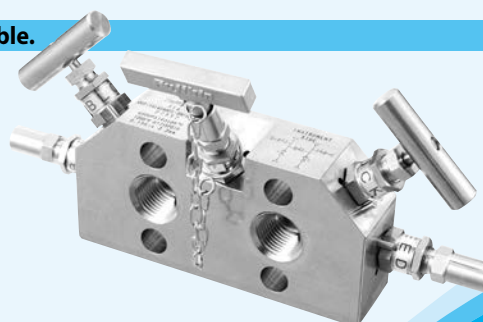


Parts Name	Materials	Q'ty	Remarks
Bracket	SUS304	1	
U-Bolt	SS400	2	MFZn, for 2 In. (M10)
Spring Washer	SS400	4	MFZn, Nominal 10
Hex Nut	SS400	4	MFZn, M10
Hex Bolt	SS400	2	MFZn, M5 x 8
Spring Washer	SS400	2	MFZn, Nominal 8

The set of a Bracket includes U-Bolts•Spring Washers•Hex Nuts (for Bracket), Hex Bolts•Spring Washers

Anti Tamper Handle Type (Small Bonnet Mount Type) is available.

Please remove the special handle from valve at the time of installation.
Please manage to use it only during open/close of valve.



Other Types

Pin Lock Types

Types	End Connections		Flow	Appearance
	Process	Instrument		
2-Valve Manifolds (Consists of one block valve and one bleed valve)	1/2 in. female pipe (NPT)	flange (MSS)		
3-Valve Manifolds (Consists of two block valves and one equalizer valve)	1/2 in. female pipe (NPT)	flange (MSS)		
5-Valve Manifolds (Consists of two block valves, one equalizer valve and two bleed valves)	1/2 in. female pipe (NPT)	flange (MSS)		

Ordering Numbers

V U TW - 1 41 L V DN × FL - BN - EMC - GR - BL
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

① Series

V: New V-Series

② Wetted Part (Body) Material

U: Stainless steel
M: Monel

③ Valve Basic Structure

TW: 2-Valve Manifolds
T : 3-Valve Manifolds
(However, in the item of ⑦, when you choose "V", two Vent Valves are added and it is set to 5-Valve Manifolds.)

④ Inlet Connections

1: Thread Type
2: Flange Type

⑤ Design Pressure

41: Design Pressure
6000psig (413bar)

⑥ Bonnet Lock Structure

L: Bonnet; Lock Plate Type (not apply to EMC type)
(Blank): Bonnet; Pin Lock Type

⑦ with Vent Valve

V: 5-Valve Manifolds
(add two vent valves to 3-Valve Manifolds)
(Blank): 3-Valve Manifolds

⑧ Inlet Connections

DN: Nominal Diameter 1/2 in. female pipe (NPT)
EN: 3/4 in. female pipe (NPT)

⑨ Outlet connections (Since various connections are available, please consult us.)

(Blank): Same as Inlet Connections
XFL: Flange
XBN: Thread Size (refer to ⑦)

⑩ Vent Port Connections (Since various connections are available, please consult us.)

(Blank): Same as Inlet Connections
AN: Bleed connection; 1/8 in. female pipe (NPT)
BN: Bleed connection for bleed valve; 1/4 in. female pipe (NPT)
DN: 1/2 in. female pipe (NPT)
B : Rc1/4

⑪ Body Form Supplement

(Blank): Standard Product
EMC: Direct Mount Compact Type
EME: Anti Tamper Handle Type (Small Bonnet Mount Type)
In the case that outlet connection is flange (⑨: XFL) and EME, EMC Type, Body should be Direct Mount Type.

⑫ Packing Material

(Blank): PTFE Packing (Standard)
GR: Graphite Packing (In the case that outlet connecting is Flange, accessory gasket also should be graphite.)

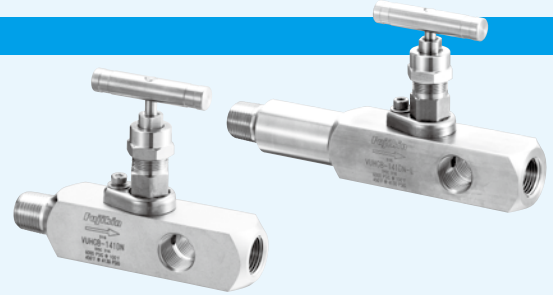
⑬ Blind

(Blank): Standard (no Blind)
BL: with Vent Port Blind

Gauge Valves

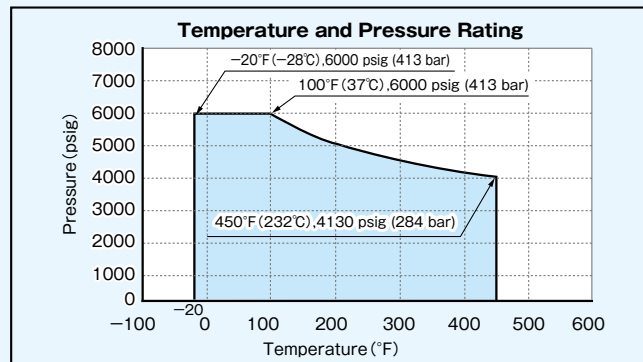
Features

1. Stainless steel construction.
2. Nonrotating ball-tip stem design.
3. Lagging extension body available for insulation clearance.
4. 1/2 and 3/4 in. male to 1/2 in. female pipe (NPT) end connections.
5. 1/2 in. female gauge ports standard.
6. Schedule 160 pipe wall or heavier on valve inlet fitting for strength.
7. Bonnet lock plate standard.



Technical Data

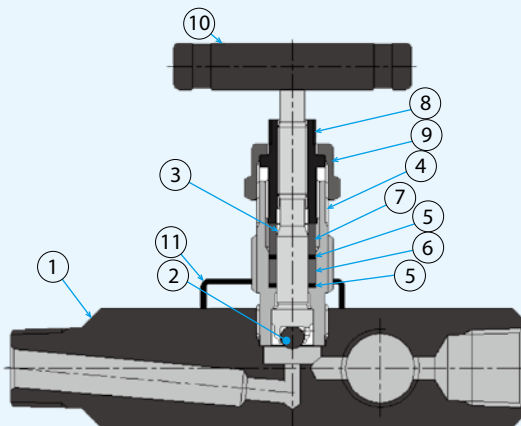
Temperature and Pressure Rating



Applicable Fluid

Air, Nitrogen gas, Inert gas like Helium, and non - corrosive gas and liquid.

Material of Construction

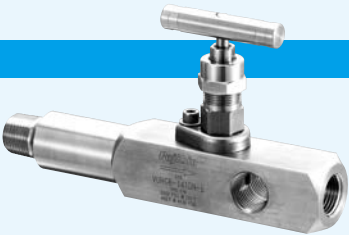
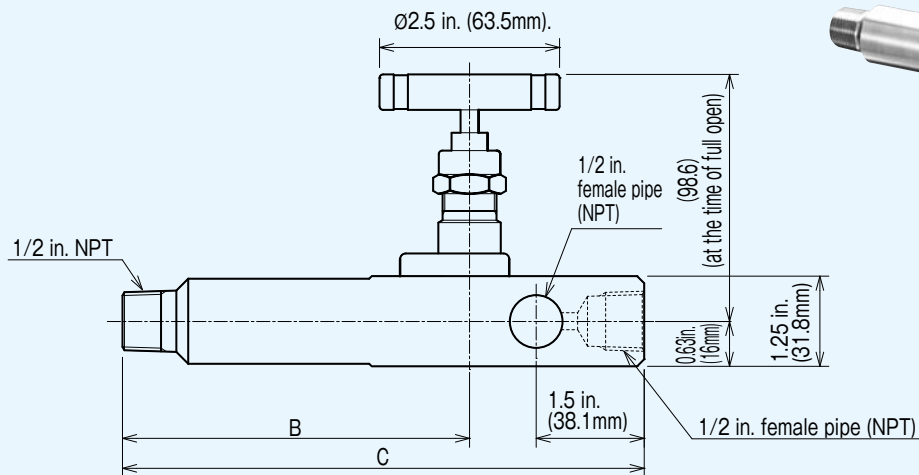


No.	Description	Materials
1	BODY	※ ASTM A479 316
2	BALL	※ ASTM A276 316
3	STEM	※ ASTM A276 316
4	BONNET	※ ASTM A479 316
5	SUPPORT PACKING	※ C-PTFE
6	GLAND PACKING	※ PTFE
7	GLAND	ASTM A276 316
8	PACKING BOLT	ASTM A276 316
9	LOCK NUT	ASTM A276 316
10	HANDLE	ASTM A276 316
11	LOCK PLATE	SUS304

※ : Wetted Parts

Cautions: ASTM A276 material may use SUS (ASTM A276 equivalent material).

Dimensions and Ordering Numbers



End Connections	Ordering Numbers	Dimensions in. (mm)		Remarks
		B	C	
1/2 in. female pipe (NPT)	VUHGB-141DN	2.97(75.4)	5.39(137)	std. body type
1/2 in. female pipe (NPT)	VUHGB-141DN-L	4.82(122.4)	7.24(184)	extension body type for insulation clearance

※ : Getting ready. Begin to sell it soon.

Manifold Valves Ordering Number Selection

Request for Quotation & Purchase Order (For attachment)

of the under within the limit indicates, and as attachment data at the time of a request for proposal or order, etc., please utilize after copying this page.

V U TW - 1 41 L V DN × FL - BN - EMC - GR - BL
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

- | | |
|--|---|
| ① Series | V: New V-Series |
| ② Wetted Part (Body) Material | U: Stainless steel
M: Monel |
| ③ Valve Basic Structure | TW: 2-Valve Manifolds
T : 3-Valve Manifolds
(However, in the item of ⑦, when you choose "V", two Vent Valves are added and it is set to 5-Valve Manifolds.) |
| ④ Inlet Connections | 1: Thread Type
2: Flange Type |
| ⑤ Design Pressure | 41: Design Pressure 6000psig (413bar) |
| ⑥ Bonnet Lock Structure | L: Bonnet; Lock Plate Type (not apply to EMC type)
(Blank): Bonnet; Pin Lock Type |
| ⑦ with Vent Valve | V: 5-Valve Manifolds (add two vent valves to 3-Valve Manifolds)
(Blank): 3-Valve Manifolds |
| ⑧ Inlet Connections | DN: Nominal Diameter 1/2 in. female pipe (NPT)
EN: 3/4 in. female pipe (NPT) |
| ⑨ Outlet connections
(Since various connections are available, please consult us.) | (Blank): Same as Inlet Connections
XFL: Flange
XBN: Thread Size (refer to ⑦) |
| ⑩ Vent Port Connections
(Since various connections are available, please consult us.) | (Blank): Same as Inlet Connections
AN: Bleed connection; 1/8 in. female pipe (NPT)
BN: Bleed connection for bleed valve; 1/4 in. female pipe (NPT)
DN: 1/2 in. female pipe (NPT)
B : Rc1/4 |
| ⑪ Body Form Supplement | (Blank): Standard Product
EMC: Direct Mount Compact Type
EME: Anti Tamper Handle Type (Small Bonnet Mount Type)
In the case that outlet connection is flange (⑨: XFL) and EME, EMC Type, Body should be Direct Mount Type. |
| ⑫ Packing Material | (Blank): PTFE Packing (Standard)
GR: Graphite Packing (In the case that outlet connecting is Flange, accessory gasket also should be graphite.) |
| ⑬ Blind | (Blank): Standard (no Blind)
BL: with Vent Port Blind |

Manifold Valves Ordering Number Selection

V - **41** × - - - -
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

Please put a check mark "✓" into either following check box ☐.

☐ Estimate Request for Quotation

☐ Order

Please indicate quantity either following check box ☐.

Q'ty pcs.

Q'ty pcs.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Bellows Valves

【6.89MPa】

【4.82MPa】

1000 psig (68.9 bar) Type (VUBF-96P、VUBFD-96P Type)

Features

1. Precision-formed metal bellows provides reliable seal to atmosphere.
2. Sealed between body and bellows by gasket.
3. A positive seal is repeatedly possible with nonrotating spherical disk.
(Metal Seal Type, Soft Seal Type)
4. Panel and bottom mounting.
5. End Connections: **New V-Lok** Tube Fittings 1/4, 3/8, 1/2



Metal Seal Type (VUBF-96P Type)

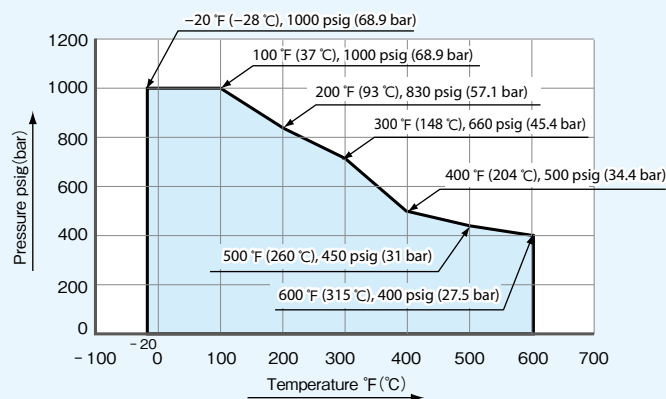
Technical Data

Temperature and Pressure Rating

Nominal Sizes	1/4	3/8	1/2
Temperature °F (°C)	-20 (-28) ~ 600 (315)		
Working Pressure psig (bar)	1000 (68.9)		

Outside Leakage, Seat Leakage

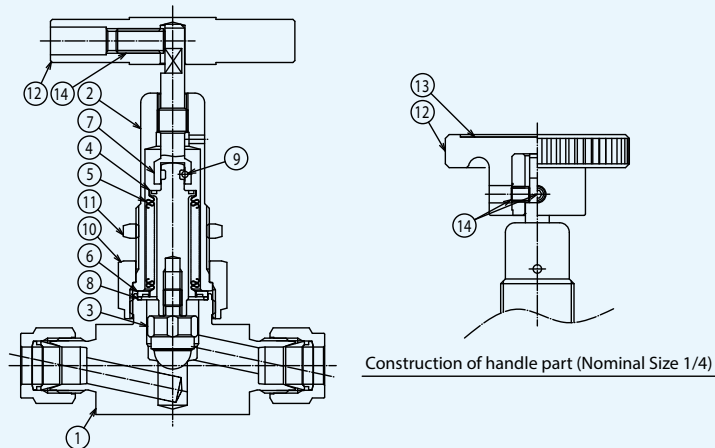
After Pressurise test, we do He leakage test.
We confirm at the time of test that the leakage amount is less than 4.0×10^{-10} Pa·m³/sec. (Vacuum process)



Applicable Fluid

Air, Nitrogen gas, Inert gas like Helium, and non - corrosive gas and liquid.

Materials of Construction



No.	Description	Materials
1	BODY ※	ASTM A479 316
2	BONNET	ASTM A479 316
3	DISK ※	COBALT - BASED ALLOY + ASTM A479 316
4	STEM(1) ※	ASTM A479 316
5	BELLOWS ※	ASTM A240 321 or AMS5510 TYPE321
6	WELD RING ※	ASTM A479 316
7	STEM(2)	ASTM A582 416 or ASTM A582 410
8	GASKET ※	ASTM A580 316
9	STOP PIN	ASTM A276 304
10	BONNET NUT	ASTM A479 316
11	PANEL NUT	ASTM A276 304 or ASTM A276 316
12	HANDLE	Nom. Size 6.35: PHENOLIC RESIN + ZDC2 Nom. Size 9.52, 12.7: ALUMINUM A5056B or A6061B(T6)
13	NAME PLATE(Nominal Size 1/4)	POLYESTER
14	SET SCREW	ASTM A276 304

※ : Wetted Parts

Soft Seal Type (VUBFD-96P Type)

Technical Data

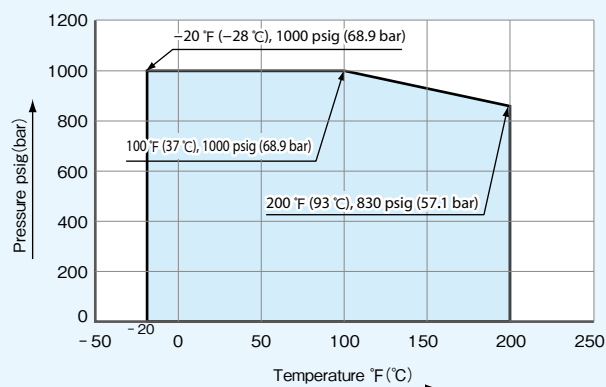
Temperature and Pressure Rating

Nominal Sizes	1/4	3/8	1/2
Temperature °F (°C)	- 20 (- 28) ~ 200 (93)		
Working Pressure psig (bar)	1000 (68.9)		

Outside Leakage, Seat Leakage

After Pressurise test, we do He leakage test.

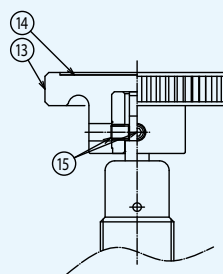
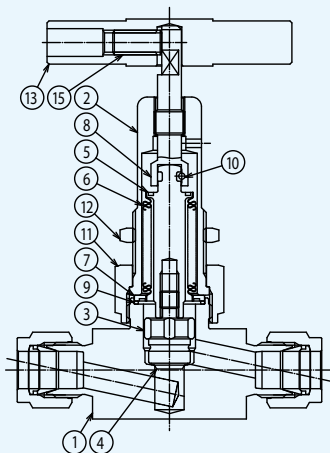
We confirm at the time of test that the leakage amount is less than 4.0×10^{-10} Pa·m³/sec. (Vacuum process)



Applicable Fluid

Air, Nitrogen gas, Inert gas like Helium, and non - corrosive gas and liquid.

Materials of Construction



Construction of handle part (Nominal Size 1/4)

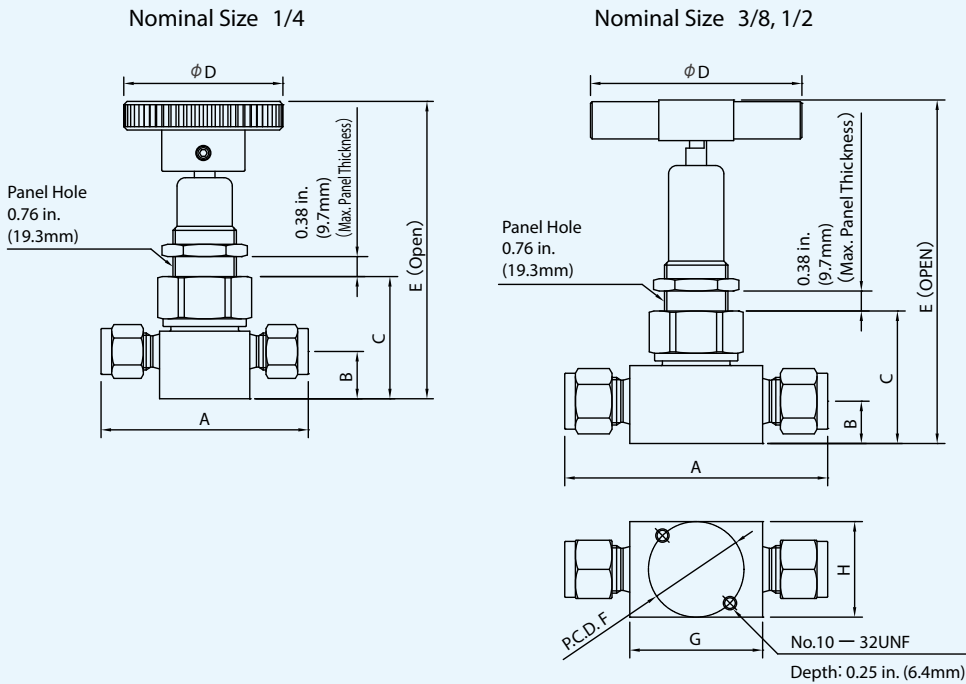
No.	Description	Materials
1	BODY ※	ASTM A479 316
2	BONNET	ASTM A479 316
3	DISK ※	ASTM A479 316
4	DISK PACKING ※	PCTFE
5	STEM(1) ※	ASTM A479 316
6	BELLOWS ※	ASTM A240 321 or AMS 5510 TYPE 321
7	WELD RING ※	ASTM A479 316
8	STEM(2)	ASTM A582 416 or ASTM A582 410

※ : Wetted Parts

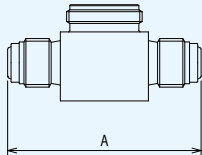
No.	Description	Materials
9	GASKET ※	ASTM A580 316
10	STOP PIN	ASTM A276 304
11	BONNET NUT	ASTM A276 304 or ASTM A276 316
12	PANEL NUT	ASTM A276 316
13	HANDLE	Nom. Size 6.35: PHENOLIC RESIN + ZDC2 Nom. Size 9.52, 12.7: ALUMINUM A5056B or A6061B(T6)
14	NAME PLATE(Size 6.35)	POLYESTER
15	SET SCREW	ASTM A276 304

Dimensions and Ordering Numbers

End Connection New V-Lok Tube Fitting Type



End Connection UJR Tube Fitting Type



End Connections	Nominal Sizes inch(mm)	Orifice inch (mm)	Dimensions inch(mm)								Ordering Numbers
			A	B	C	D	E	F	G	H	
New V-Lok	1/4 (6.35)	0.16 (4.1)	2.46 (62.5)	0.56 (14.2)	1.45 (36.8)	1.88 (47.8)	3.64 (92.5)	1 (25.4)	1.06 (26.9)	1 (25.4)	VUBF-96P-6.35-V
											VUBFD-96P-6.35-V
	3/8 (9.52)	0.3 (7.6)	3.09 (78.5)	0.5 (12.7)	1.57 (39.9)	2.5 (63.5)	4.17 (106)	1.13 (28.7)	1.57 (39.9)	1.13 (28.7)	VUBF-96P-9.52-V
											VUBFD-96P-9.52-V
	1/2 (12.7)		3.3 (83.8)								VUBF-96P-12.7-V
UJR											VUBFD-96P-12.7-V
	1/4 (6.35)	0.16 (4.1)	2.24 (56.9)	0.44 (11.2)	1.45 (36.8)	1.88 (47.8)	3.64 (92.5)	1 (25.4)	1.02 (25.9)	1 (25.4)	VUBF-76P-6.35
											VUBFD-76P-6.35
	3/8 (9.52)	0.3 (7.6)	3 (76.2)	0.46 (11.7)	1.57 (39.9)	2.5 (63.5)	4.17 (106)	1.13 (28.7)	1.5 (38)	1.13 (28.7)	VUBF-76P-9.52
											VUBFD-76P-9.52

1000 psig (68.9 bar) Compact Type (VUBFH-96P Type)

Features

1. Precision-formed metal bellows provides reliable seal to atmosphere.
2. Welded bonnet to body provides perfect seal to atmosphere.
3. A positive seal is repeatedly possible with nonrotating spherical disk.
4. Panel and bottom mounting.
5. End Connections: **New V-Lok** Tube Fittings 1/16, 1/4



Technical Data

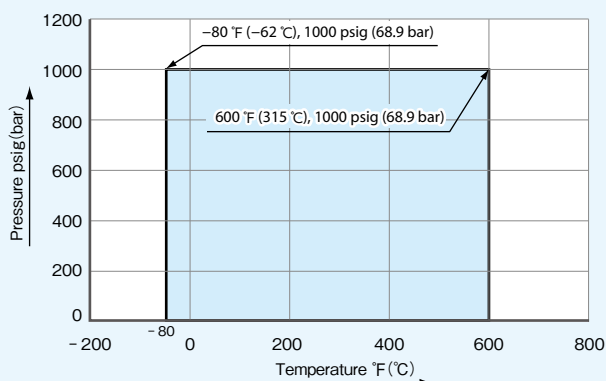
Temperature and Pressure Rating

Size	1/16	1/4
Temperature °F (°C)	-80 (-62) ~ 600 (315)	
Working Pressure psig (bar)	1000 (68.9)	

Outside Leakage, Seat Leakage

After Pressurise test, we do He leakage test.

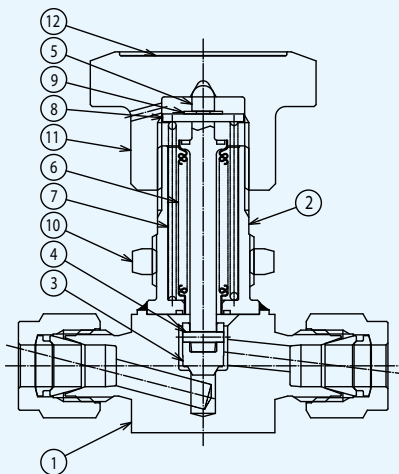
We confirm at the time of test that the leakage amount is less than 4.0×10^{-10} Pa·m³/sec. (Vacuum process)



Applicable Fluid

Air, Nitrogen gas, Inert gas like Helium, and non - corrosive gas and liquid.

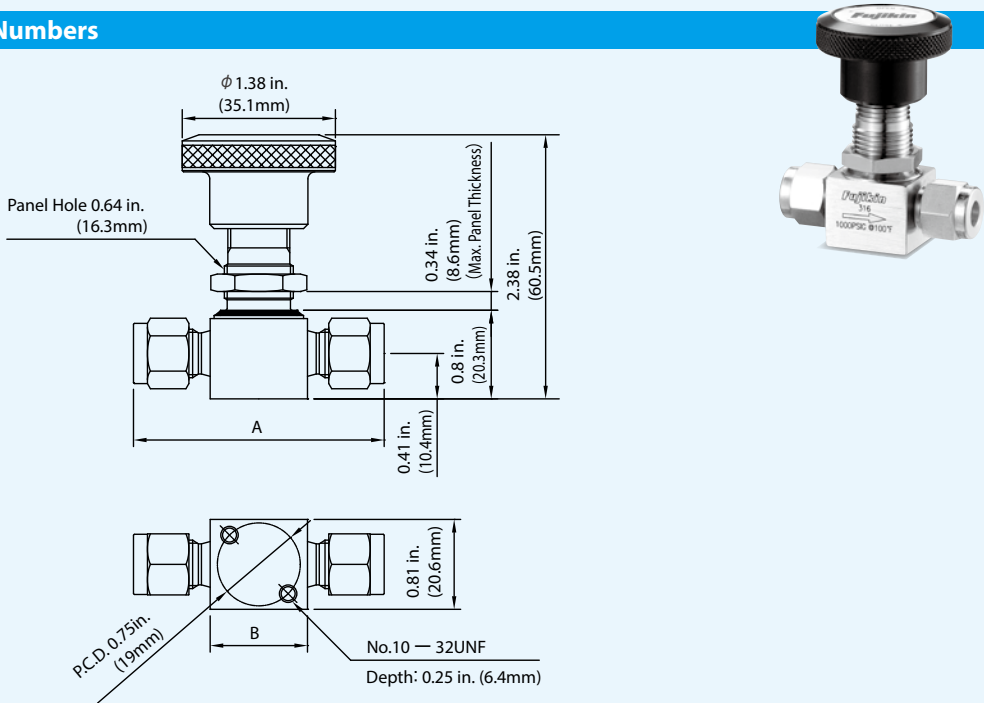
Materials of Construction



No.	Description	Materials
1	BODY ※	ASTM A479 316
2	BONNET ※	ASTM A479 316
3	DISK ※	S17400 or ASTM A276 630
4	STOP PIN ※	SUS304
5	STEM ※	ASTM A479 316
6	BELLOWS ※	ASTM A240 321 or AMS 5510 TYPE 321
7	SPRING	S17700 or ASTM A276 631
8	WASHER	ASTM A240 316
9	E - RING	ASTM A276 304
10	PANEL NUT	ASTM A276 304 or ASTM A479 316
11	HANDLE	ALUMINUM A5056B or A6061B(T6)
12	NAME PLATE	TETORON

※ : Wetted Parts

Dimensions and Ordering Numbers



End Connections	Nominal Sizes	Orifice inch (mm)	Dimensions inch (mm)		Ordering Numbers
			A	B	
Inlet / Outlet	1/8in.(3.2mm)	0.15(3.8)	2.09(53.1)	0.88(22.3)	VUBFH - 96P - 3.2-V
	1/4in.(6.35mm)		2.27(57.7)		VUBFH - 96P - 6.35-V

700 psig (48.2 bar) Metering Needle Bellows Valves (VUBFN-94MP Type)

Features

1. Minutes flow control type disk.
2. Micrometer handles provide precise flow control repeatedly.
3. Precision- formed metal bellows provides reliable seal to atmosphere.
4. Valves open to maximum flow in six turns.
5. Slotted handle tops enable adjustments with screwdriver.
6. Sealed between body and bellows by gaskets.
7. Panel and bottom mounting.
8. End Connection: **New V-Lok** Tube Fitting 1/4



Technical Data

Temperature and Pressure Rating

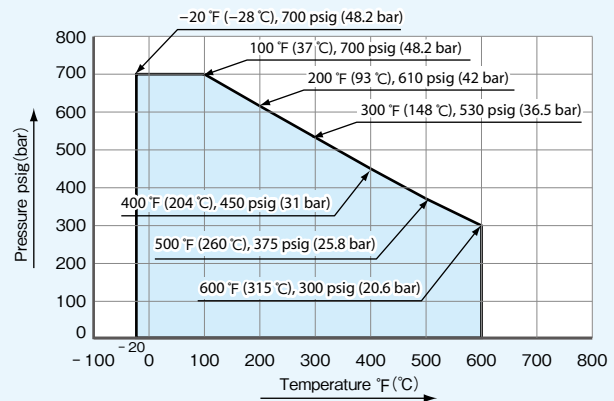
Nominal Size	1/4
Temperature °F(°C)	-20 (-28) ~ 600 (315)
Working Pressure psig (bar)	700 (48.2)

Outside Leakage, Seat Leakage

After Pressurise test, we do He leakage test.
We confirm at the time of test that the leakage amount is less than 4.0×10^{-10} Pa·m³/sec. (Vacuum process)

Flow Rate at the shut time

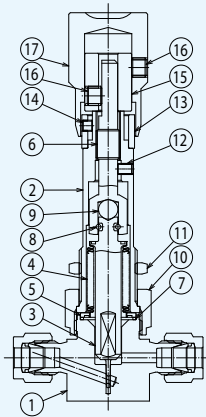
We adjust the flow rate of 9.86psig (0.68bar) Nitrogen gas
10-15cm³/min. (At the shipment time)



Applicable Fluid

Air, Nitrogen gas, Inert gas like Helium, and non - corrosive gas and liquid.

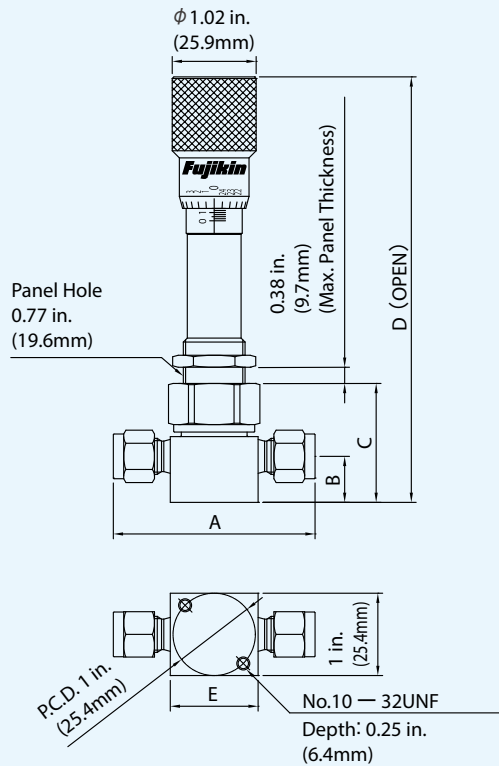
Materials of Construction



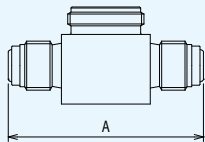
No.	Description	Materials
1	BODY ※	ASTM A479 316
2	BONNET	ASTM A479 316
3	DISK ※	ASTM A479 316
4	BELLOWS ※	ASTM A240 321 or AMS 5510 TYPE 321
5	WELD RING ※	ASTM A479 316
6	STEM	ASTM A582 416 or ASTM A582 410
7	GASKET ※	ASTM A580 316
8	STOP PIN	SUS304
9	BALL	SUS420C
10	BONNET NUT	ASTM A479 316
11	PANEL NUT	ASTM A276 304 or ASTM A276 316
12	SET SCREW	ASTM A276 304
13	INDICATOR SCALE	ASTM A582 303
14	SET SCREW	ASTM A276 304
15	BUSH	ASTM A582 303
16	SET SCREW	ASTM A276 304
17	HANDLE	ASTM A582 313

※ : Wetted Parts

Dimensions and Ordering Numbers



New V-Lok Type



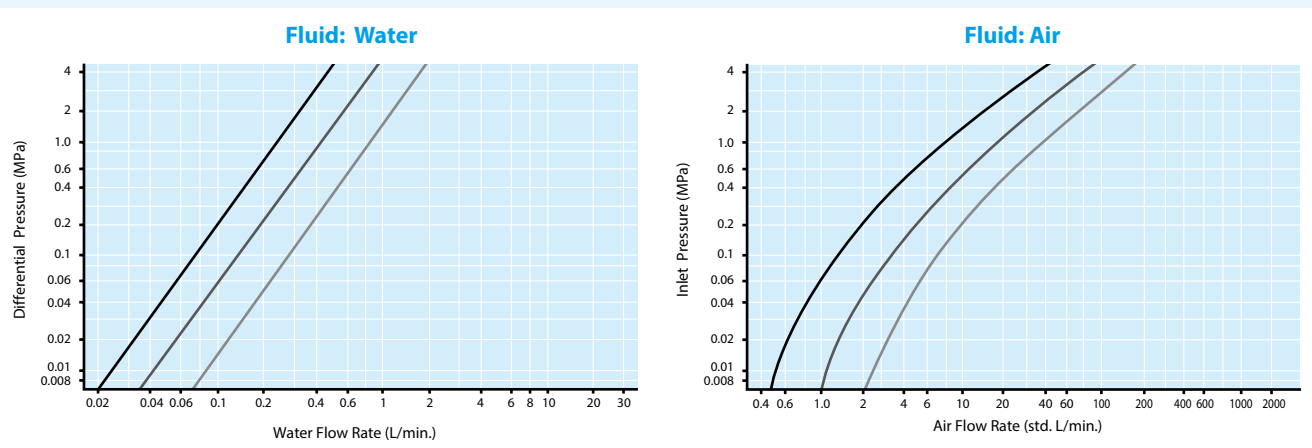
UJR Type



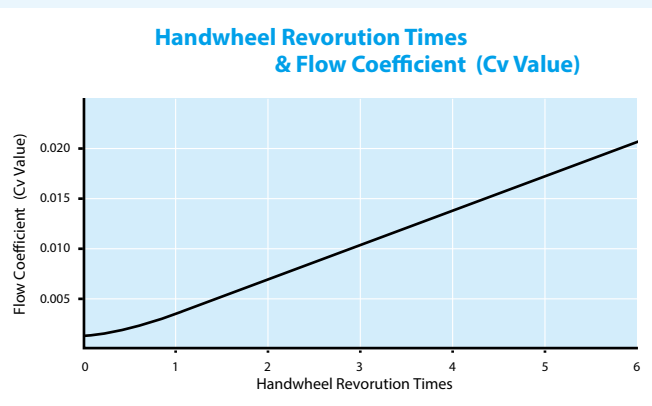
End Connections	Nominal Sizes	Orifice inch (mm)	Dimensions inch (mm)					Ordering Numbers
			A	B	C	D	E	
New V-Lok	1/4in. (6.35mm)	0.06 (1.4)	2.46 (62.5)	0.56 (14.2)	1.45 (36.8)	5.24 (133)	1.07 (27.1)	VUBFN-94MP-6.35-V
UJR	1/4in. (6.35mm)	0.06 (1.4)	2.24 (56.9)	0.44 (11.2)	1.45 (36.8)	5.16 (131)	1.02 (25.9)	VUBFN-74MP-6.35

Flow Rate Curve & Cv Value

Flow Rate Curve



Cv Value

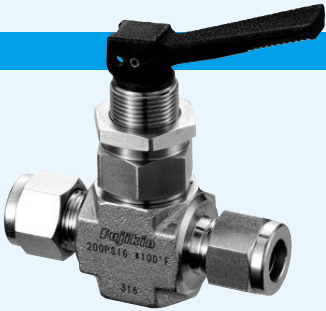
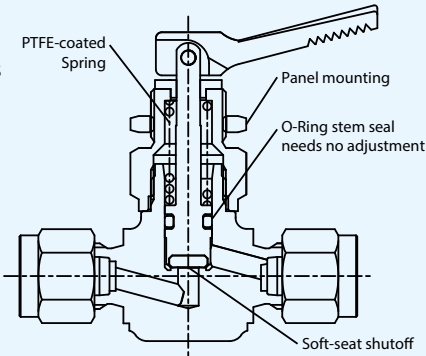


This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Toggle Valves

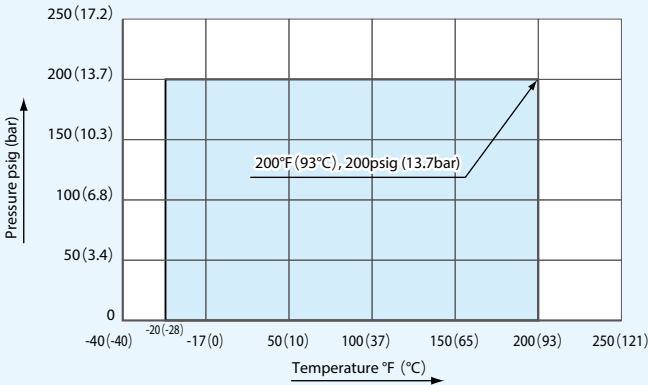
Features

- 1. Compact Design
- 2. Open and Close quickly
- 3. Panel Mounting
- 4. End Connections **New V-Lok** Tube Fittings



Technical Data

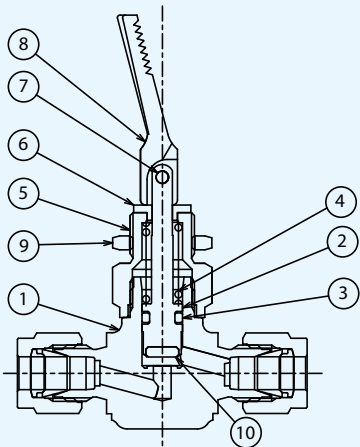
Temperature and Pressure Rating



Applicable Fluid

Air, Nitrogen gas, Inert gas like Helium, and non - corrosive gas and liquid.

Materials of Construction

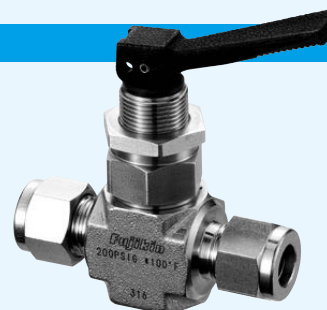
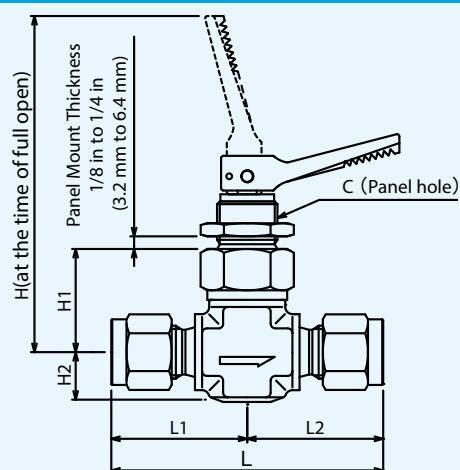


No.	Description	Material
1	BODY	※ ASTM A182 316
2	STEM	※ ASTM A276 316
3	O-RING	※ FKM
4	SPRING	SUS631J1
5	PACKING NUT	ASTM A276 316
6	WASHER	NYLON
7	ROLL PIN	SUS304
8	HANDLE	NYLON
9	PANEL NUT	ASTM A276 304 or ASTM A276 316
10	STEM TIP	※ PTFE
Lubricants		Fluorinated-based

※ : Wetted Parts

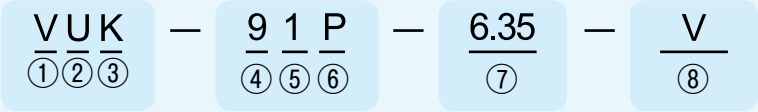
Dimensions

Globe Type



Connection Types	Nominal Sizes	Operating Pressure psi (bar)	Orifice inch (mm)	Dimensions inch (mm)						Ordering Numbers
				L	L1	L2	H	H1	H2	
New  Lok	1/4in. (6.35mm)	200 (13.8)	0.13 (3.2)	2.26 (57.4)	1.13 (28.7)	2.81 (71.4)	0.86 (21.8)	0.37 (9.5)	0.53 (13.5)	VUK-91P-6.35-V
	3/8in. (9.52mm)		0.25 (6.4)	2.58 (65.5)	1.29 (32.8)	3.56 (90.4)	1.06 (26.9)	0.5 (12.7)	0.66 (16.8)	VUK-91P-9.52-V
	1/2in. (12.7mm)			2.8 (71.1)	1.4 (35.6)					VUK-91P-12.7-V
	6mm		0.13 (3.2)	2.26 (57.4)	1.13 (28.7)	2.81 (71.4)	0.86 (21.8)	0.37 (9.5)	0.53 (13.5)	VUK-91P-6-V
	8mm			2.22 (56.4)	1.11 (28.2)					VUK-91P-8-V
	10mm		0.25 (6.4)	2.72 (69.1)	1.36 (34.5)	3.56 (90.4)	1.06 (26.9)	0.5 (12.7)	0.66 (16.8)	VUK-91P-10-V

Ordering Information



- | | | |
|-----------------|--|--|
| ① Valve Series | ④ End Connections | ⑦ Connection Sizes |
| | 9 : New -Lok Type (Globe Type) | 6 : New -Lok 6mm |
| ② Body Material | ⑤ Working Pressure | 8 : New -Lok 8mm |
| Stainless Steel | 200psig (1.37 bar) | 10 : New -Lok 10mm |
| ③ Valve Type | ⑥ Panel Nut | 6.35 : New -Lok 1/4in. |
| Toggle Valves | | 9.52 : New -Lok 3/8in. |
| | | 12.7 : New -Lok 1/2in. |
| | | ⑧ New -Lok Type |

Relief Valves

Features

1. Service up to 6000 psig (413 bar)
2. By 8 kinds of springs for Nominal Size 1/4in., possible to set the cracking pressure for your request
3. By 3 kinds of springs for Nominal Size 1/2in., possible to set the cracking pressure for your request



Technical Data

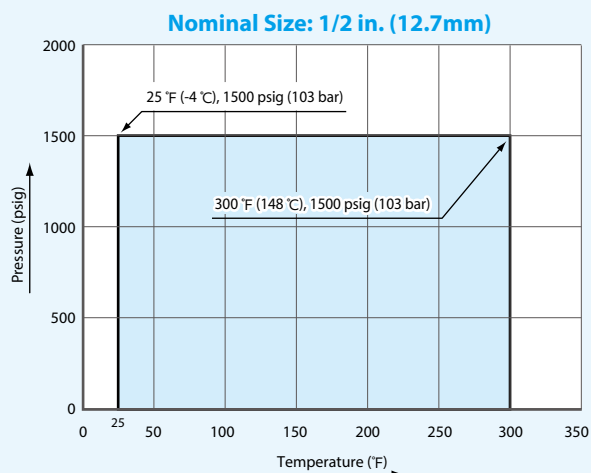
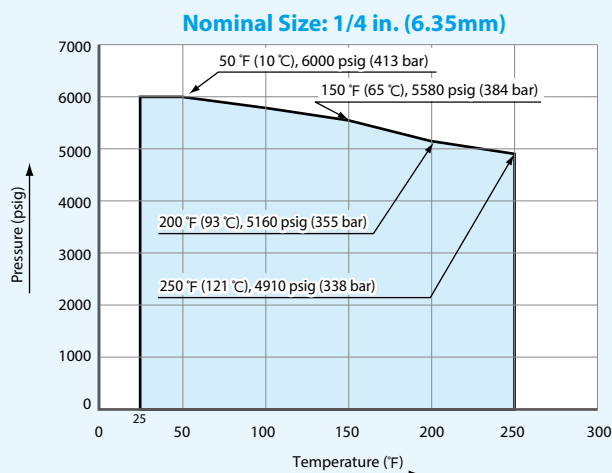
Working Pressure

		Nominal Sizes inch(mm)	
		1/4 (6.35)	1/2 (12.7)
Working pressure at 70 °F (20 °C)		6000 psig (413 bar): up to 8000 psig (551 bar) during relief	6000 psig (413 bar)
Set Pressure	※ 1	50 to 6000 psig (3.4 to 413 bar)	50 to 1500 psig (3.4 to 103 bar)
Outlet pressure	※ 2	1500 psig (103 bar)	2500 psig (172 bar)
Seat Material		FKM, Chloroprene Rubber, Kalrez®	FKM, Chloroprene Rubber

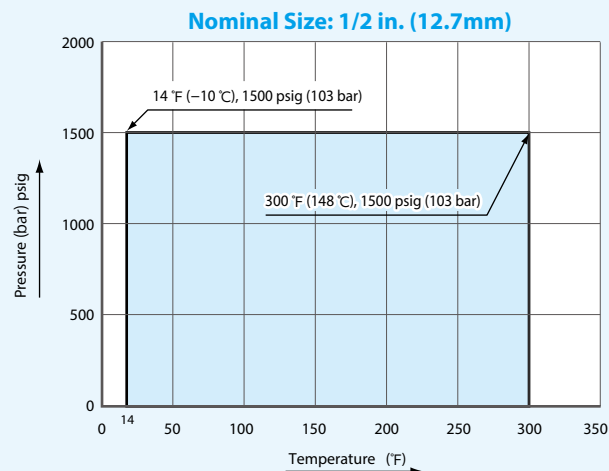
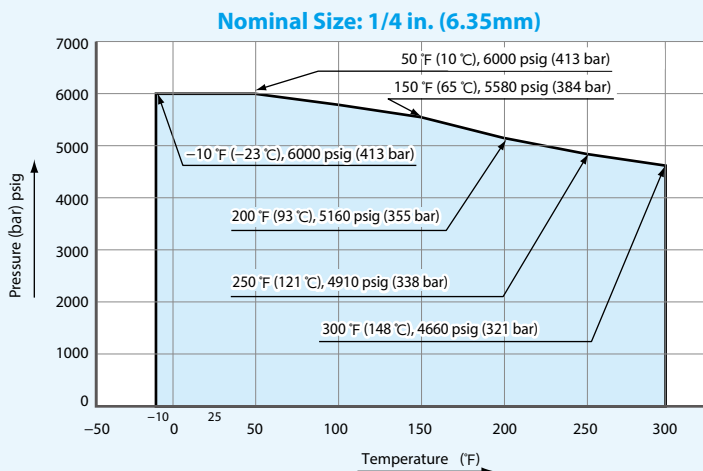
- ※ 1: Please confirm the maximum setting pressure in each temperature from the Temperature and Pressure Rating. The pressure-temperature ratings are based upon laboratory testing to ensure that the cracking pressure (※ 3) does not deviate by more than 20 % from the Initial room-temperature set pressure.
- ※ 2: Outlet pressure should not exceed Inlet pressure.
- ※ 3: Cracking pressure means the inlet pressure at the time of showing the indication of the flow starting. The flow starting indicates the flow level that bubbles are generated continuously from outlet piping in the water, when pressurizing from inlet piping.

Temperature and Pressure Rating

Seat Materials: FKM



Seat Material: Chloroprene Rubber



Note: If the end connection is New V-Lok type, the working pressure may be low depending on the tube used.
For details, please refer to 1-1, 1-2 in the table of P12.

Applicable Fluid

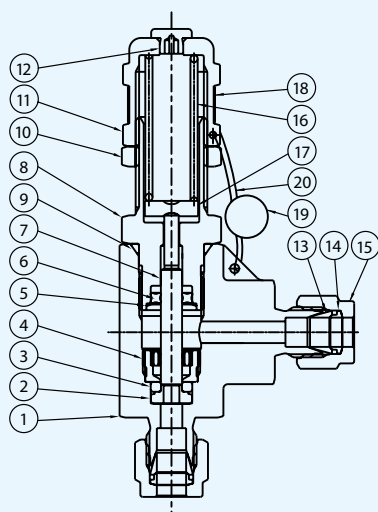
Air, Nitrogen gas, Inert gas like Helium, and non-corrosive gas and Liquid.

Attention and asking in selection

1. The spring isn't built in the valve, so please order the spring kit separately. (Please refer to the P208 "Ordering Information")
2. This product opens gradually as the pressure increases. There is no designated capacity rating at a given pressure (accumulation), therefore, the product does not confirm to ASME standard or any other standards.
3. A higher relief pressure than the set pressure may be required for opening the product initially, when the product is not in use for a long period of time.
4. This product is a relief valve, therefore, do not use it as a safety valve.

Materials of Construction

Nominal size: 1/4 in. (6.35mm)



No.	Description	Materials
1	BODY ※ 1	ASTM A182 F316
2	INSERT ※ 1	ASTM A479 316
3	O-RING ※ 1	FKM ※ 3
4	SEAT RETAINER ※ 1	ASTM A479 316
5	RETAINER ※ 1	SUS304
6	X-RING ※ 1	FKM ※ 3
7	STEM ※ 1	ASTM A479 316
8	BONNET ※ 1	ASTM A479 316
9	O-RING ※ 1	FKM ※ 3
10	LOCK NUT	ASTM A276 316

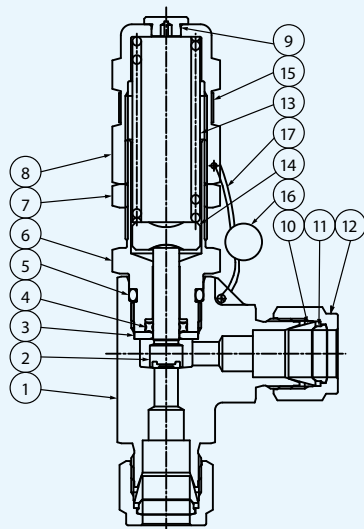
※ 1: Wetted Part

※ 2: Parts of No.16-20 aren't built in the valve. Please order the spring kit of another sales separately. (Please refer to P208 "Ordering Information")

※ 3: Available Chloroprene Rubber, Kalrez® for option.

No.	Description	Materials
11	CAP	ASTM A479 316
12	PLUG	NYLON6
13	FRONT RING ※ 1	ASTM A276 316
14	BACK RING ※ 1	ASTM A276 316
15	NUT	ASTM A479 316
16	SPRING ※ 2	SUS631
17	SPRING SUPPORT ※ 2	ASTM A276 316
18	LABEL ※ 2	PET
19	CORD SEAL ※ 2	Pb
20	WIRE ※ 2	SUS304-W1

Nominal size: 1/2 in. (12.7mm)



No.	Description	Materials
1	BODY ※ 1	ASTM A182 F316
2	STEM ※ 1	ASTM A479 316+FKM
3	RETAINER ※ 1	ASTM A479 316
4	O-RING ※ 1	FKM ※ 3
5	O-RING ※ 1	FKM ※ 3
6	BONNET ※ 1	ASTM A479 316
7	LOCK NUT	ASTM A276 316
8	CAP	ASTM A479 316
9	PLUG	NYLON 6

※ 1: Wetted Part

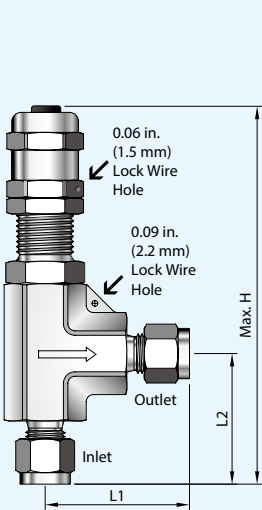
※ 2: Parts of No.13-17 aren't built in the valve. Please order the spring kit of another sales separately. (Please refer to P208 "Ordering Information")

※ 3: Available Chloroprene Rubber, Kalrez® for option.

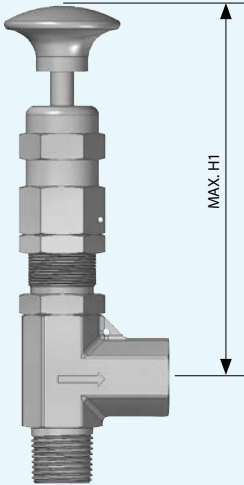
No.	Description	Materials
10	FRONT RING ※ 1	ASTM A276 316
11	BACK RING ※ 1	ASTM A276 316
12	NUT	ASTM A479 316
13	SPRING ※ 2	SUS631
14	SPRING SUPPORT ※ 2	ASTM A276 316
15	LABEL ※ 2	PET
16	CORD SEAL ※ 2	Pb
17	WIRE ※ 2	SUS304-W1

Dimensions

Standard Type



with Pressure Relief Handle Type



Nominal Size: 1/4 Type

End Connection Inlet/Outlet	Nominal Sizes	Working Pressure psig (bar)	Orifice inch (mm)	Dimensions inch (mm)				Ordering Numbers
				L1	L2	H	H1	
New V-Lok	1/4 in. (6.35mm)	6000 (413)	0.14 (3.6)	1.6 (40.6)	1.44 (36.6)	4.13 (105)	4.09 (104)	VURF-041L-6.35-V
NPT ※	1/4			1.17 (29.7)	1.19 (30.2)	3.89 (98.8)		VURF-341LBNM×BNF

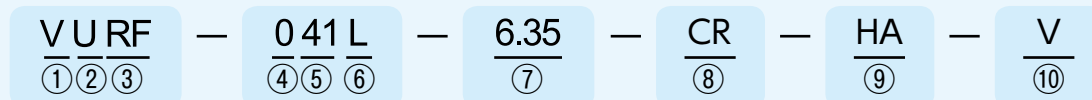
Nominal Size: 1/2 Type

End Connection Inlet/Outlet	Nominal Sizes	Working Pressure psig (bar)	Orifice inch (mm)	Dimensions inch (mm)				Ordering Numbers
				L1	L2	H	H1	
New V-Lok	1/2 in. (12.7mm)	6000 (413)	0.252 (6.4)	1.83 (46.5)	1.83 (46.5)	5.91 (150)	5.35 (136)	VURF-041L-12.7-V
NPT ※	1/2			1.43 (36.3)	1.43 (36.3)	5.51 (140)		VURF-341LDNM×DNF

※ : Inlet: Male, Outlet: Female

Ordering Information

Relief Valves



Spring kit

Set Pressure psig(bar)	Spring Color	Ordering Numbers
Nominal Sizes 1/4 in.		
50-350 psig (3.4-24.1bar)	Blue	SK-VURF-6.35-A
350-750 psig (24.1-51.7bar)	Yellow	SK-VURF-6.35-B
750-1500 psig (51.7-103bar)	Purple	SK-VURF-6.35-C
1500-2250 psig (103-155bar)	Orange	SK-VURF-6.35-D
2250-3000 psig (155-206bar)	Brown	SK-VURF-6.35-E
3000-4000 psig (206-275bar)	White	SK-VURF-6.35-F
4000-5000 psig (275-344bar)	Red	SK-VURF-6.35-G
5000-6000 psig (344-413bar)	Green	SK-VURF-6.35-H
Nominal Sizes 1/2 in.		
50-350 psig (3.4-24.1bar)	Blue	SK-VURF-12.7-A
350-750 psig (24.1-51.7bar)	Yellow	SK-VURF-12.7-B
750-1500 psig (51.7-103bar)	Purple	SK-VURF-12.7-C

Factory-Set Relief Valves

Relief valves are available with springs factory-set to a special set pressure. Valves are set, tested locked, and stuck a label with the set pressure. Inspection certificate is also attached.

To order, add the alphabet A-H of Ordering Numbers whose includes the desired set pressure to the valve ordering number; specify the desired set pressure.

Example: VURF-041L-6.35-A

Manual Override Handle Kits

A manual override handle opens the valve without changing the set pressure.

kits contain handle, pull rod, spring support, and instructions. To order, select the desired kit ordering number.

Nominal Sizes	Ordering Numbers	Applicable Spring kit (Ordering Number at the end)
1/4in. (6.35mm)	HK-VURF-6.35	A, B, C
1/2in. (12.7mm)	HK-VURF-12.7	A

① Valve Series

② Body Material
Stainless Steel

③ Valve Type
Relief Valves

④ End Connections
New V-Lok, Angle Type

⑤ Working Pressure
6000 psig (413 bar)

⑥ Lock Nut

⑦ Connection Sizes
6.35 : **New V-Lok** 1/4 in.
12.7 : **New V-Lok** 1/2 in.

BNM × BNF : 1/4 NPT
Inlet: Male Pipe
Outlet: Female Pipe
DNM × DNF: 1/2 NPT
Inlet: Male Pipe
Outlet: Female Pipe

⑧ Seal Material
Blank : FKM (Standard)
CR : Chloroprene Rubber

⑨ Blank : Standard
HA : with Pressure Relief Handle Type

⑩ **New V-Lok** Type

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Check Valves

Features

1. This line-type model is compact and lightweight.
2. The fluororubber seat packing provides good sealability, allowing seals with a back pressure of 0.1 MPa.
3. The unique seal shape offers excellent cracking characteristics.
4. Some models have received ministerial certification for use with high-pressure gases.

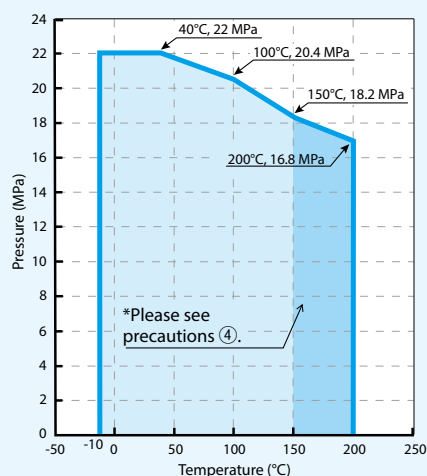


Technical Data

Working Pressure (MPa)	Temperature (°C)
22	-10 to +200

※Please see the temperature and pressure rating for details.

Temperature and Pressure Rating



Pressure

Cracking Pressure (kPa)	Back Seal Pressure (MPa)
6.86	At least 0.1

※Please see precautions (2) and (3) concerning cracking pressure.

Materials

Description	Materials
Body	※ SUS316
Disk	※ SUS316
Seat packing	※ Fluororubber
Spring	※ SUS316WPA

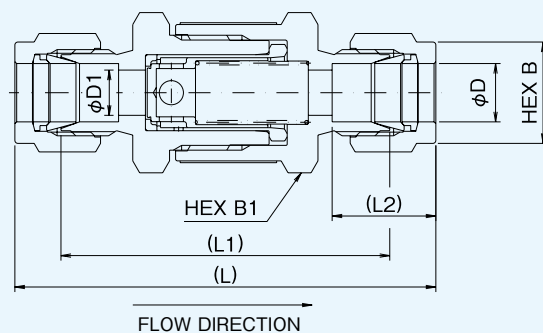
※: Wetted part

Note: May use SUS316, 304, ASTM-spec material (SUS316 equivalent)

Operating Precautions

- ① The seat seal requires back pressure of at least 0.1 MPa.
- ② The cracking pressure indicates the pressure at a constant rate of flow. The valve will start to open at a lower pressure than the indicated value.
- ③ The cracking pressure may be slightly higher than the indicated cracking pressure when the valve is used for the first time and when left closed for extended periods of time.
- ④ Please contact us before ordering if you plan to use the valve at a temperature of 150°C or higher.
- ⑤ Since this valve uses a fluororubber seat packing, it cannot be used with fluids that would corrode it (for example, ammonia, fluorocarbons, acetic acid, nitrous oxide, ethylene oxide, or acetone). If you are unsure whether the sealant is suitable for use with a given fluid, please contact us before ordering.
- ⑥ To prevent galling of parts that come into contact with gas in the valve, it uses fluorine-based grease suitable for oxygen and oil-free parts. If you require a grease-less model, please contact us.
- ⑦ Ordinarily, check valves are designed for flow-direction control only. Please do not use them as switchable check valves or relief valves.

New V-Lok Type



Dimensions

UNIT (mm)

Nominal Diameter D	Orifice Diameter D1	Face to Face Dimension		Pipe Connection Part			B1	Cv Value (Max.)	Weight (approximate) g	Ordering Numbers
		L	L1	L2	B					
					in	mm				
6.35	4	60.5	45.6	15.2	9/16	14.3	17	0.35	65	PUCL-922-6.35-0.07-V
9.52	7.5	71	56.3	16.8	11/16	17.5	23	1.1	125	PUCL-922-9.52-0.07-V
12.7	7.5	76.5	56.3	22.9	7/8	22.2	23	1.1	165	PUCL-922-12.7-0.07-V

Ordering Numbers

P U C L — 9 2 2 — 6.35 — 0.07 — V
 ① ② ③ ④ ⑤ ⑥ ⑦

① Body Material
Stainless Steel

④ Working Pressure
22 MPa

⑥ Cracking Pressure
0.07: 0.007 MPa

② Valve Type
Check Valve

⑤ Connection Sizes
6.35: **New V-Lok** 6.35
9.52: **New V-Lok** 9.52
12.7: **New V-Lok** 12.7

⑦ **New V-Lok** Type

③ End Connections
9: **New V-Lok** Type

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Other Related Products

Automatic Flow Control Valve Series

Diaphragm Type	Mini Control Valves	MINUCON Series
	Electric Valves	SR100 Series
	Electric Valves	SR100E Series
	Electric Valves	AR2000 Series
	Electric Valves	SR100M Series

Others

FINE BUBBLE	Leak Detection Fluid
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MINUCON

MINUCON is the pneumatic operating control valves which concentrated the aggregate power of this craftsmanship of **Fujikin** and was manufactured.

The precision of control and the certainty of the operation are suitable for precise flow control of various kinds of research experiments, process lines, etc.

Wide Cv Value selection range 0.0000015 - 5 is available.

Features

The High Sensitivity Diaphragm Type Actuator

Realizes outstanding control performance

Compact Design

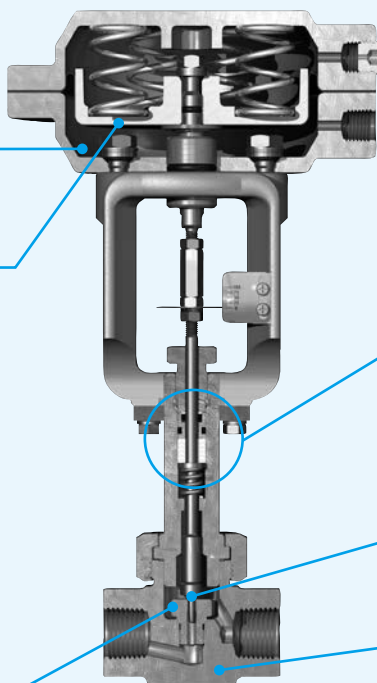
Adopted the multi - spring system (M3 Type)



Close Control Hysteresis

1.5 % or less is realized by adoption of a positioner. (Less than 0.00025 Cv Value is less than hysteresis 2 %.)

The material of Disc & Seat is SUS316+Stellite cladding, and is excellent against abrasion.



Double Seal Structure

A gland part is the double seal structure of the gland packing made from PTFE, and O-Rings made of fluorocarbon rubber.

Wide Cv Value Selection Range

Stem & Disk are made by SUS316+Stellite cladding, excellent for against abrasion. Wide range of Cv Value available, 0.0000015 to 5. ※

Body made from forged Stainless steel body (SUSF316) ※

※ ASTM standard (equivalent to SUS316 & SUS304) may be used instead of SUS316 & SUS304 materials.

Application

- Various Research / Experiment Equipment
- Precise Fluid Control of Process Line
- For flow control of Calorie Meter Coolant

SR100

SR100 is the electronic valve which concentrated the aggregate power of this craftsmanship of **Fujikin** and was manufactured. Adoption of the stepping motor excellent in position accuracy realized the high-speed response, close control, and high resolution which are not in the conventional electric motor valve. Wide Cv Value selection range 0.0000015 – 5 is available.

Fujikin satisfy flexibly the demand of all precise flow control of various kinds of research experimental devices, a process line, etc.

Features

Close Controlability

A high precision sensor is built in, By feeding back valve travel, close control, excellent in reproducibility and hysteresis characteristics is realized!

Wide Cv Value Selection Range

Stem & Disk are made by SUS316 + Stellite cladding, excellent against abrasion. ※

Wide range of Cv Value available, 0.0000015 to 5.

Body made from forged Stainless Steel (SUSF316) ※

※ ASTM standard (equivalent to SUS316 & SUS304) may be used instead of SUS316 & SUS304 materials.

Special Proportional Solenoid Actuator

By adopting special proportional solenoid as a drive source, the high - speed response was realized as the time from full open to close is 0.6 sec or less. (normal open type: 0.8 sec or less)

Spring Back Structure

Since SR100 has a spring back structure, in an emergency, the valve operates in full open or a closed position.

PTFE Gland Packing

Drive Unit

If an electric signal 4 – 20mA is inputted into a drive unit for exclusive use, the valve will operate to predetermined valve travel.



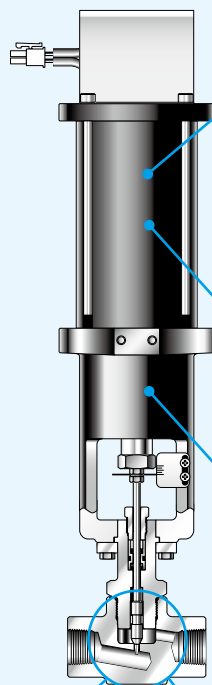
Application

- Cogeneration • For fuel control of generator
- For flow control of Calorie Meter Coolant
- For pressure control in the evaluation equipment of fuel cell
- For the equipment which cannot install the source of air

SR100E

SR100E is the electric flow control valve which has excellent performance in position accuracy, the high speed response, close control, and high resolution.

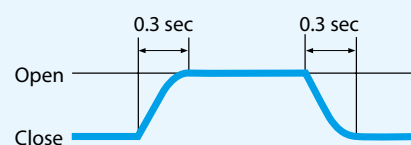
Features



1. High Speed Response

By adopting special solenoid as a drive source, the high speed response was realized as the time from full open to close is 0.3 sec or less. It's excellent compared with air operate and motor drive valve.

Open / Close Time (sec)	approximately 0.3 (One way)
Resolution	500 : 1
Hysteresis (%)	1.5 or less



2. Close Controllability

A high precision sensor is built in, By feeding back valve travel, close control, excellent in reproducibility and hysteresis characteristics is realized!

3. Spring Back Structure

Since SR100E has a spring back structure, in an emergency, the valve operates in full open or a closed position.

5. Input Signal

DC 4 – 20 mA
DC 1 – 5 V

6. Air Source Unnecessary

7. Compact Design

30% compact than SR100
60% light weight than SR100

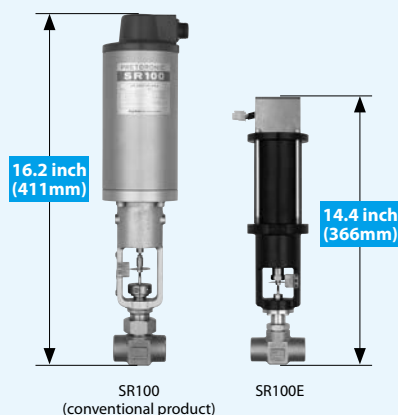
Body made from forged Stainless Steel (SUSF316) ※

※ ASTM standard (equivalent to SUS316 & SUS304) may be used instead of SUS316 & SUS304 materials.

4. Wide Cv Value Selection Range

Stem & Disk are made by SUS316 + Stellite cladding, excellent against abrasion. ※

Wide range of Cv Value available, 0.0000015 to 5.



Application

- Cogeneration • For fuel control of generator
- For flow control of Calorie Meter Coolant
- For pressure control in the evaluation equipment of fuel cell
- For the equipment which cannot install the source of air

AR2000

AR2000 is the electronic valve which concentrated the aggregate power of this craftsmanship of **Fujikin**, and was manufactured. Adoption of the stepping motor excellent in position accuracy realized the high-speed response, close control, and high resolution which are not in the conventional electric motor valve. Wide Cv Value selection range 0.0000015 – 5 is available.

Features

Wide Cv Value Selection Range

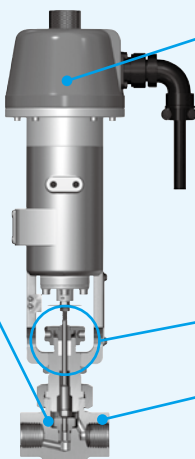
Stem & Disk are made by SUS316 + Stellite cladding, excellent against abrasion.

Wide Cv Value range available, 0.0000015 to 5. ※



Drive Unit

If an electric signal 4 – 20mA is inputted into a drive unit for exclusive use, the valve will operate to predetermined valve travel.



Resolution: 2000: 1

High resolution by adopting stepping motor driven actuator.

Explosion – proof model is also available

d2G4 explosion – proof type actuator is available.

PTFE Gland Packing

Body made from forged Stainless Steel (SUSF316) ※

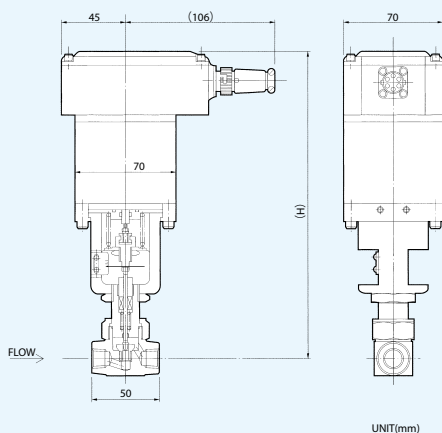
※ ASTM standard (equivalent to SUS316 & SUS304) may be used instead of SUS316 & SUS304 materials.

Application

- Cogeneration For fuel control of generator
- For the equipment which cannot install the source of air
- For flow control of Calorie Meter Coolant
- For flow control of a compressed natural gas automobile filling machine
- For pressure control in the evaluation equipment of fuel cell

SR100M

SR100M is the ultra compact electric valve which concentrated the aggregate power of this craftsmanship of **Fujikin**, was manufactured, and has united drive unit and actuator.



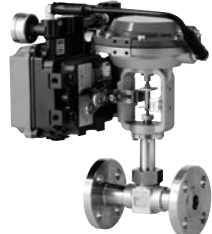
Features

1. High Speed Operation
2. Spring Back Structure
3. Compact Design
compact & Lightweight
4. Air Source Unnecessary
5. Input Signal
DC 4 – 20 mA
DC 1 – 5 V
6. Feed Back Mechanism

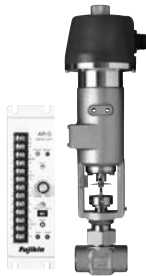
Application

- Hyperbaric Oxygen Therapy
- Micro Reactor

Automatic Flow Control Valves

Product Series	MINUCON				
Type	without Positioner Type	ON-OFF Type	with E/P SAMSON Positioner Type	with E/P SSS Positioner Type	wirh P/P SIEMENS Positioner Type
Outkook					
Signal	20 – 100 kPa	—	4 – 20 mA DC		20 – 100 kPa
Electric Source	—				
Supply Pressure (kPa)	—	100 / 200 / 400	140 / 240 / 400		
Hysteresis (%)	15 or less	—	1.5% or less		
Full Open to Close Time (sec)	—	—	3 or less (One way) 140kPa 2 or less (One way) 240kPa 1 or less (One way) 400kPa	140kPa → 13 or below (One way) 240kPa → 12 or below (One way) 400kPa → 9 or below (One way)	—
Resolution / Stroke (mm)	—	—	850 (M2 Type) 1000 (M3 Type)	350 (M2, M3 Type)	—
Range-ability	20 : 1 (standard) available to 100 : 1	—	20 : 1 (standard) available to 100 : 1		
Rated Cv Value	0.01 – 5	0.25 – 5	0.0000015 – 5		
Max. Opr. Pres. (MPa)	14.7	14.7 / 29.4 / 49			
Fluid Temperature (℃)	(PTFE Gland packing) –25 – +150(Cv Value 0.7 or more) /–50 – +150(Cv Value 0.5 or less) (C-PTFE Gland packing) –25 – +230(Cv Value 0.7 or more) /–50 – +230(Cv Value 0.5 or less)	Standard Type(PTFE Gland packing)–25 – +150(Cv Value 0.7 or more)/–50 – +150(Cv Value 0.5 or less) Standard Type(C-PTFE Gland packing)–25 – +230(Cv Value 0.7 or more)/–50 – +230(Cv Value 0.5 or less) High Temperature Type(with Fin)–25 – +500(Cv Value 0.7 or more)/–50 – +500(Cv Value 0.5 or less) Low temperature Type(with Extension)–253 – +150(Cv Value 0.7 or more•Cv Value 0.5 or less)			
Explosion Proof	—	—	II 2G EEx d IICT6 (ATEX) Pressure / Explosion Proof Ex II 2G EEx ia IICT6 (ATEX) Intrinsically Safe Explosion Proof	Exd II BT6(Pressure / Explosion Proof) Exd II B+H2T6(Pressure – resistant & Explosion Proof for Hydrogen)	—
Actuator Type	Diaphragm				
Oprating Type	N.O. / N.C.				
Failure Position	Full Open / Full Close				
Cable Connection	—		Terminal Box		—
Height (mm)	250			270	380
Weight (Kg)	2.5		4.5	6	—
Features	Minutes Flow Contol Valves for High Pressure				
Applications	Pressure control for calorie meters / High degree of purity nitrogen refinement equipment Hydrogen producing device / Hydrogen and oxygen supply installation Hydrogen absorbing alloys evaluation equipment / Ammonia supply equipment Pressure control for carbonic acid gas super-criticality / Oxygen gas filling equipment Flow control & pressure control				

Automatic Flow Control Valves

Product Series	AR2000				SR100		SR100E	SR100M
Type	C1	C3	C1E	C3E	S2	S3	S5	S1
Outlook								
Signal	DC4 – 20mA / DC1 – 5V / DC1 – 10V				DC4 – 20mA / DC1 – 5V / DC1 – 10V			
Electric Source	DC24V±10% (2.4A)	DC24V±10% (3.4A)	DC24V±10% (2.4A)	DC24V±10% (3.4A)	AC100V (85 – 132V) DC24V ±10%(2.1A)		DC24V±10% (2.1A)	DC24V±10% 2.1A(2.4A)
Supply Pressure (kPa)	—							
Hysteresis (%)	1.5 or less (Actual : 0.1 or less)				1.5 or less			3.0 or less
Full Open to Close Time (sec)	1.7 or less				0.6 or less (F.S. 8mm) 1 or less (N.O. Type)		Approx 0.3	0.5 or less
Resolution / Stroke (mm)	Approx 2000 : 1 / 8				500 : 1 / 8		500 : 1 / 5	200 : 1 / 4
Range-ability	20 : 1 (Standard) 100 : 1 (Option)						20 : 1	
Rated Cv Value	0.0000015 – 5						0.1 / 0.25 / 0.5	0.01 – 0.5
Max. Opr. Pres. (MPa)	14.7 / 29.4 / 49				14.7		1	2.94
Fluid Temperature (°C)	Standard Type(PTFE Gland packing) –25 – + 150(Cv Value 0.7 or more) / –50 – + 150(Cv Value 0.5 or less) Standard Type(C-PTFE Gland packing) –25 – + 230(Cv Value 0.7 or more) / –50 – + 230(Cv Value 0.5 or less) High Temperature Type(with Fin) –25 – + 500(Cv Value 0.7 or more) / –50 – + 500(Cv Value 0.5 or less) Low temperature Type(with Extension) –253 – + 150(Cv Value 0.7 or more • Cv Value 0.5 or less)						–20 – 150	–10 – 150
Explosion Proof	—		d2G4 (Pressure / Explosion Proof)		—			
Actuator Type	Stepping Motor				Proportional Solenoid			Proportional Solenoid
Operating Type	Signal to open				N.O / N.C		N.C	N.O / N.C
Failure Position	keeping as				Full Open / Full Close		Full Close	Full Open / Full Close
Cable Connection	Connector		Terminal Block		Connector / Terminal Block		Connector ※ with control cable 1m	Connector
Height (mm)	340	390	430	490	440	460m	370	230
Weight (Kg)	4 Drive unit:1	5 Drive unit:1	—	—	11 Drive Unit: 1	18 Drive Unit: 1	5 Drive Unit: 0.3	3.5 United Drive Unit and Actuator
Features	High Resolution				High Speed Response		High Speed Response Good Cost Performane	High Speed Response United Drive Unit and Actuator
Applications	Fuel control for Gas turbine / Small gas turbine Fuel control / Pressure control for calorie meters / Pressure control for injection checks / Flow rate control for compressed natural gas dispensers / Flow rate control for resin production units / Pressure control for carbonic acid gas super-criticality / Oxygen gas filling equipment				Pressure control for calorie meters / Control for refrigeration machine of refrigerating installation / Air pressure control for low pressure casting machine / Fuel control for Gas turbine / Small gas turbine Fuel control / Flow control for NOx reduction water injection / Fuel cell evaluation units		For water supply equipment / Fuel control for Gas turbine	For cold control systems / Cultivation Tank / Airflow control valve / Flow rate control for high-pressure oxygen treatment machines

FINE BUBBLE Leak Detection Fluid

Concentration of Impurities (Units: ppm)

Impurities	Na	K	Ca	Cl	F
Concentration	<1	<1	<1	<1	<1

Ordering No.	Container Size	Quantity per Pack	Container
LL-S-1	60mL	6 bottles/pack	Squeeze bottle
LL-M-1	300mL	1 bottle/pack	Squeeze bottle with nozzle cap
LL-L-1	4 L	1 container/pack	Refill container



60mL

300mL

4 L

Note: Materials and dimension are subject to change without notice.

Features

- With its viscosity and rapid foaming action, FINE BUBBLE detects the smallest leaks even when it is applied in small amounts.
- Noncorrosive; does not react with metal, coatings, rubber, or plastic surfaces.
- Dries clean and without staining.
- Minimal impurities such as sodium, potassium, calcium, chlorine, fluorine, bromine, and sulfur compounds.
- Nonflammable; does not react with oxygen.
- Available in three convenient sizes: 60mL (squeeze bottle), 300mL (squeeze bottle with nozzle cap), and 4L (refill container).
- Read the instructions carefully before use.

FINE BUBBLE Test Data

Corrosion Test Results

Tube Material (25 x 50 x 15t #400 finish)	Leak Detection Fluid			
	FINE BUBBLE	Brand B	Brand C	Duration
S55C	○	X3	X3	24 hours
A1050P	○	○	Δ ₁₂₀	120 hours
C2801P	Δ ₃	Δ ₃	Δ ₃	120 hours
SUS304	○	○	○	120 hours

Key: ○: Almost no changes at the end of the test

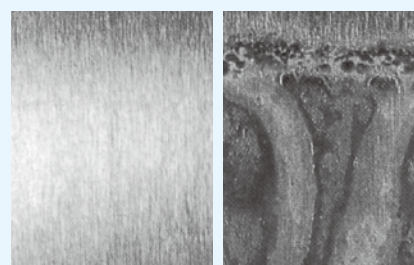
Δ: Discolored or slightly corroded

x: Corroded

* Numbers next to the icon indicate when (in terms of hours) changes to the metal were visually observed.

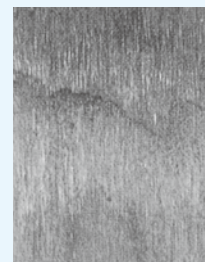
Immersion Corrosion Test

The metal samples were immersed in the leak detection fluids at 30°C and inspected for changes.



FINE BUBBLE

Brand B



Brand C

S55C samples after 24 hours of immersion in the leak detection fluids

The contents of the description are reference, and are subject to change without notice.

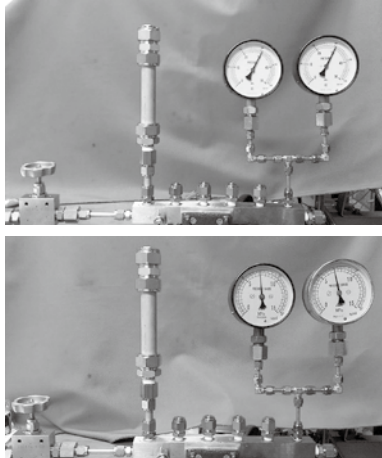
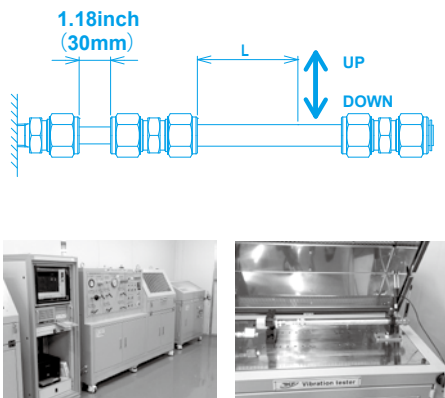
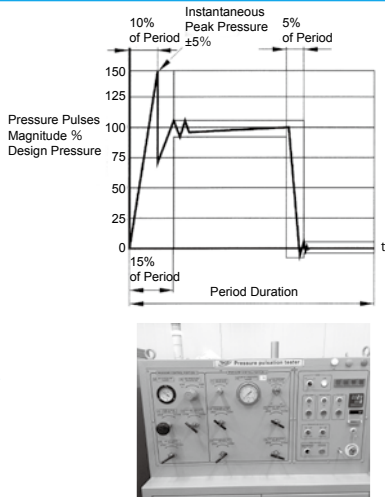
Technical Data

New V-Lok Tube Fittings PERFORMANCE CONFIRMATION TEST RESULTS

CERTIFICATE **New V-Lok** Tube Fittings

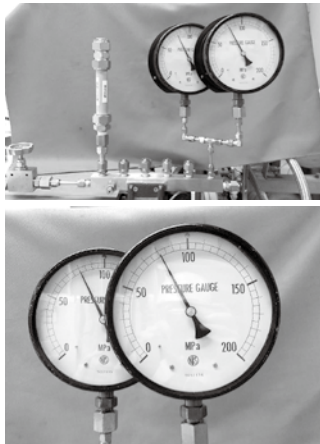
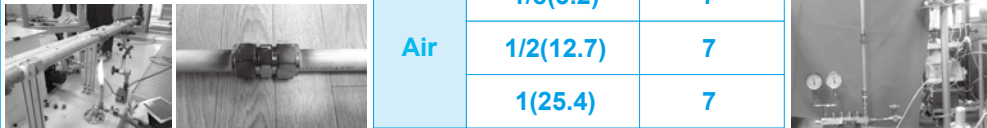
REMARKS Special Materials
Oil-free Products

1. New V-Lok PERFORMANCE CONFIRMATION TEST RESULTS (1/3)

Test Items	Test Conditions & Landscape		Results																	
Tightness Test	<table><tr><th>Test Fluid</th><th>Nominal Dia. inch(mm)</th><th>Test Pres. (MPa)</th></tr><tr><td rowspan="3">H₂O</td><td>1/8(3.2)</td><td>45</td></tr><tr><td>1/2(12.7)</td><td>45</td></tr><tr><td>1(25.4)</td><td>30</td></tr><tr><td rowspan="3">Air</td><td>1/8(3.2)</td><td>7</td></tr><tr><td>1/2(12.7)</td><td>7</td></tr><tr><td>1(25.4)</td><td>7</td></tr></table>	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)	H ₂ O	1/8(3.2)	45	1/2(12.7)	45	1(25.4)	30	Air	1/8(3.2)	7	1/2(12.7)	7	1(25.4)	7	Retaining Period: 5 minutes 	good (No Leakage)
	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)																	
	H ₂ O	1/8(3.2)	45																	
		1/2(12.7)	45																	
1(25.4)		30																		
Air	1/8(3.2)	7																		
	1/2(12.7)	7																		
	1(25.4)	7																		
Vibration (Fatigue) Test	<table><tr><th>Test Fluid</th><th>Nominal Dia. inch(mm)</th><th>Test Pres. (MPa)</th></tr><tr><td rowspan="3">Oil</td><td>1/8(3.2)</td><td>30</td></tr><tr><td>1/2(12.7)</td><td>30</td></tr><tr><td>1(25.4)</td><td>20</td></tr></table>	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)	Oil	1/8(3.2)	30	1/2(12.7)	30	1(25.4)	20	Number of Cycle: 10⁷ cycles Amplitude (One side) : 0.066 inch (1.68mm) Frequency: 20Hz 	good (No Leakage)							
	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)																	
	Oil	1/8(3.2)	30																	
		1/2(12.7)	30																	
1(25.4)		20																		
Pressure Pulsation Test	<table><tr><th>Test Fluid</th><th>Nominal Dia. inch(mm)</th><th>Test Pres. (MPa)</th></tr><tr><td rowspan="3">Oil</td><td>1/8(3.2)</td><td>45</td></tr><tr><td>1/2(12.7)</td><td>45</td></tr><tr><td>1(25.4)</td><td>30</td></tr></table>	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)	Oil	1/8(3.2)	45	1/2(12.7)	45	1(25.4)	30	Number of Cycle: 5×10⁵ Cycles Frequency: 30 - 100 cycles per minute ※ Putting into effect with the Vibration (Fatigue)Test. 	good (No Leakage)							
	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)																	
	Oil	1/8(3.2)	45																	
		1/2(12.7)	45																	
1(25.4)		30																		

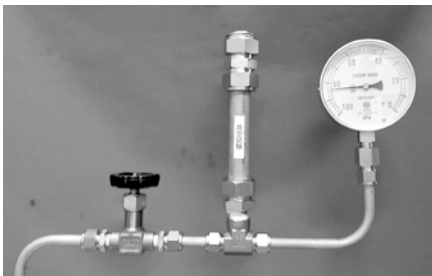
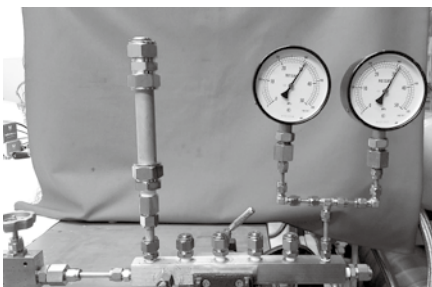
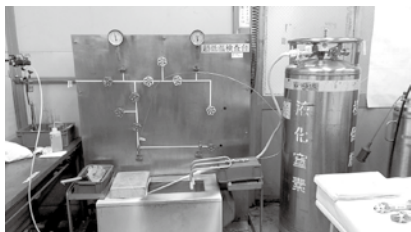
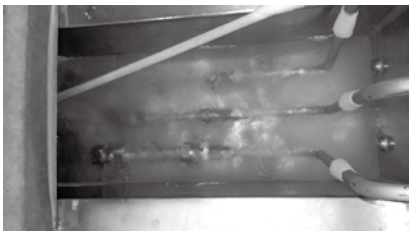
※ Please refer to the test report for details about each test.

1. New V-Lok PERFORMANCE CONFIRMATION TEST RESULTS (2/3)

Test Items	Test Conditions & Landscape		Results																		
Burst Pressure Test	<table><tr><th>Test Fluid</th><th>Nominal Dia. inch(mm)</th><th>Test Pres. (MPa)</th></tr><tr><td rowspan="3">H₂O</td><td>1/8(3.2)</td><td>45</td></tr><tr><td>1/2(12.7)</td><td>45</td></tr><tr><td>1(25.4)</td><td>30</td></tr></table> Retaining Period: 5 minutes	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)	H ₂ O	1/8(3.2)	45	1/2(12.7)	45	1(25.4)	30		good (No Leakage)								
	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)																		
H ₂ O	1/8(3.2)	45																			
	1/2(12.7)	45																			
	1(25.4)	30																			
Pull-out Test	<table><tr><th>Test Fluid</th><th>Nominal Dia. inch(mm)</th><th>Test Pres. (MPa)</th></tr><tr><td rowspan="3">H₂O</td><td>1/8(3.2)</td><td>30</td></tr><tr><td>1/2(12.7)</td><td>30</td></tr><tr><td>1(25.4)</td><td>20</td></tr></table> Axial Load: 15,202N Retaining Period: 5 minutes	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)	H ₂ O	1/8(3.2)	30	1/2(12.7)	30	1(25.4)	20		good (No Leakage, No Damage, No Displacement of Fittings and Pipes)								
	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)																		
H ₂ O	1/8(3.2)	30																			
	1/2(12.7)	30																			
	1(25.4)	20																			
Fire Endurance Test	① Fire Test with ISO19921: 2005(E) Retaining Period: 5 minutes ISO19922: 2005(E) Test Period: 30 minutes Test Temperature: 80℃ Test Pressure: 500~1000KPa ※ Confirming no destruction during Fire Endurance Test. <table><tr><th>Test Fluid</th><th>Nominal Dia. inch(mm)</th><th>Test Pres. (MPa)</th></tr><tr><td rowspan="3">H₂O</td><td>1/8(3.2)</td><td>45</td></tr><tr><td>1/2(12.7)</td><td>45</td></tr><tr><td>1(25.4)</td><td>30</td></tr><tr><td rowspan="3">Air</td><td>1/8(3.2)</td><td>7</td></tr><tr><td>1/2(12.7)</td><td>7</td></tr><tr><td>1(25.4)</td><td>7</td></tr></table>		Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)	H ₂ O	1/8(3.2)	45	1/2(12.7)	45	1(25.4)	30	Air	1/8(3.2)	7	1/2(12.7)	7	1(25.4)	7		good (No Leakage)
	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)																		
H ₂ O	1/8(3.2)	45																			
	1/2(12.7)	45																			
	1(25.4)	30																			
Air	1/8(3.2)	7																			
	1/2(12.7)	7																			
	1(25.4)	7																			

※ Please refer to the test report for details about each test.

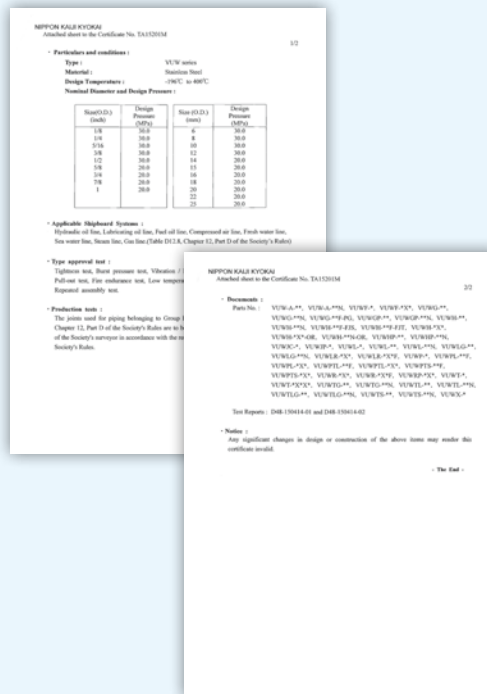
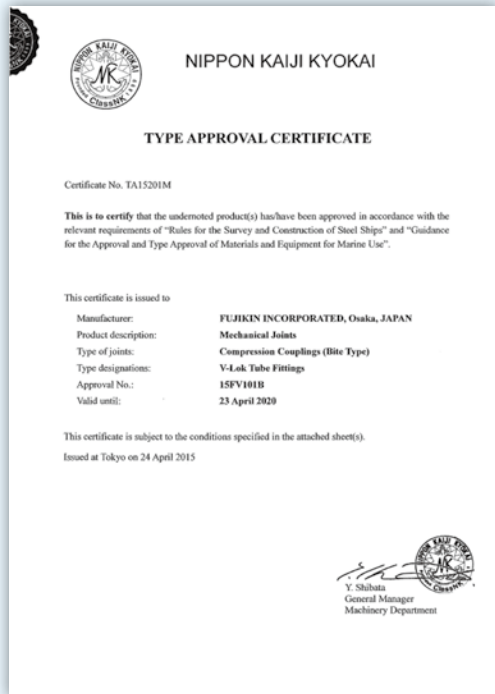
1. New V-Lok PERFORMANCE CONFIRMATION TEST RESULTS (3/3)

Test Items	Test Conditions & Landscape		Results																	
Vacuum Test	<table><tr><th>Test Fluid</th><th>Nominal Dia. inch(mm)</th><th>Test Pres. (kPa abs)</th></tr><tr><td rowspan="3">H₂O</td><td>1/8(3.2)</td><td>17</td></tr><tr><td>1/2(12.7)</td><td>17</td></tr><tr><td>1(25.4)</td><td>17</td></tr></table>	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (kPa abs)	H ₂ O	1/8(3.2)	17	1/2(12.7)	17	1(25.4)	17		good (No Leakage)							
	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (kPa abs)																	
	H ₂ O	1/8(3.2)	17																	
		1/2(12.7)	17																	
1(25.4)		17																		
Retaining Period: 5 minutes																				
Repeated Assembly Test	<table><tr><th>Test Fluid</th><th>Nominal Dia. inch(mm)</th><th>Test Pres. (MPa)</th></tr><tr><td rowspan="3">H₂O</td><td>1/8(3.2)</td><td>45</td></tr><tr><td>1/2(12.7)</td><td>45</td></tr><tr><td>1(25.4)</td><td>30</td></tr><tr><td rowspan="3">Air</td><td>1/8(3.2)</td><td>7</td></tr><tr><td>1/2(12.7)</td><td>7</td></tr><tr><td>1(25.4)</td><td>7</td></tr></table>	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)	H ₂ O	1/8(3.2)	45	1/2(12.7)	45	1(25.4)	30	Air	1/8(3.2)	7	1/2(12.7)	7	1(25.4)	7		good (No Leakage)
	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)																	
	H ₂ O	1/8(3.2)	45																	
		1/2(12.7)	45																	
		1(25.4)	30																	
	Air	1/8(3.2)	7																	
		1/2(12.7)	7																	
1(25.4)		7																		
Reassemble Times: 10 Times																				
Retaining Period: 5 minutes																				
Low Temperature Test	<table><tr><th>Test Fluid</th><th>Nominal Dia. inch(mm)</th><th>Test Pres. (MPa)</th></tr><tr><td rowspan="3">He</td><td>1/8(3.2)</td><td>7</td></tr><tr><td>1/2(12.7)</td><td>7</td></tr><tr><td>1(25.4)</td><td>7</td></tr></table>	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)	He	1/8(3.2)	7	1/2(12.7)	7	1(25.4)	7	 	good (No Leakage)							
	Test Fluid	Nominal Dia. inch(mm)	Test Pres. (MPa)																	
	He	1/8(3.2)	7																	
		1/2(12.7)	7																	
1(25.4)		7																		
By keeping in liquid nitrogen																				
Test Temperature: -196°C																				
Retaining Period: 10 minutes																				

※ Please refer to the test report for details about each test.

2.CERTIFICATE New V®-Lok Fittings

New V®-Lok Fitting has acquired NK(NIPPON KAIJI KYOKAI) TYPE APPROVAL CERTIFICATE.



New V®-Lok Fitting has acquired DNV-GL CERTIFICATE COMPLIANCE OF ASTM F1387 & CERTIFICATE FOR ABS TYPE APPROVAL.



CERTIFICATE COMPLIANCE OF
ASTM F1387 (DNV-GL)

CERTIFICATE FOR ABS TYPE APPROVAL.

[illegible]

Lloyd's
Register

Type Approval Certificate

This is to certify that the underlisted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate is issued for:

PRODUCER

Huglin Incorporated

PLACE OF PRODUCTION

Huglin Incorporated,
Osaka Plant Kashihara
1000-45, Enanyo-cho, Kashihara, Osaka, Japan

DESCRIPTION

Station seal compression type mechanical tube fittings

TYPE

V-Lok series mechanical tube fittings

APPLICATION

Hydraulic & pneumatic fluid gas, lubricating oil, fuel oil and instrument connections

STANDARD

Lloyd's Register Rules and Regulations for Classification of Ships Part 5,
Chapter 12 - January 2014

RATINGS

Nominal Diameter: from 1/8" to 1" (from 3mm to 25 mm)
Design Pressure(s) : from 2.4 MPa to 75.3 MPa
(depending on nominal diameter)

PERFORMANCE TEST

- 1) Vibration test
- 2) Pressure pulsation test
- 3) Tightness test
- 4) Pull-out test
- 5) Vacuum test
- 6) Repeated assembly test
- 7) Burst pressure test

Certificate No.

16/20012

Issue Date

22 May 2016

Expiry Date

22 May 2021

Sheet

1 of 2

N. Nagamine
Yokohama Technical Support Office
Lloyd's Register Group Limited

Lloyd's Register Group Limited
17 Fenchurch Street, London EC3A 4BS

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[illegible]

3-2. When needing for perfect oil-free products, please inform **Fujikin®** with use conditions beforehand.

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