

INSTRUMENTATION TUBE FITTINGS



Lancashire Fittings



We have distinguished ourselves in the design and manufacturing of a high performance “Twin Ferrule Compression Tube Fittings” and “Instrumentation Grade Pipe Fittings” range since 2002.

Due to our outstanding capacity for innovation and our policy of investment in research and development as well as quality control, we been able to capitalize on our expert knowledge, oriented towards the new expectations of customers worldwide in onshore and offshore, petrochemical, power and water industries.

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

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

Features

Gaugeability

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

Interchangeability

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

Corrosion Resistance

Strongest corrosion resistance by our own special hardening process. It has been proved in various of industrial areas for some decades.

Less Torque and Anti Distortion

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

Radius Junction In Every Piece of Elbows

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

Glass Sanding for Every Pieces of Forgings

To attain excellent outer appearance

Identification of Metric Tube Fittings

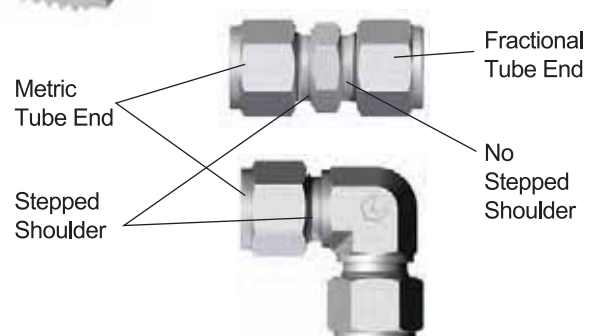
Every tube fittings with metric tube end have a stepped shoulder to distinguish the fittings with fractional tube end.

Excellent Finish Level

To allow smooth flow transition

Special Hardening Process

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



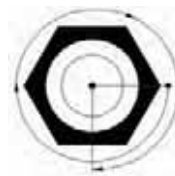


Installation Instruction

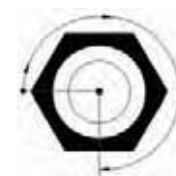
1. Firmly insert the tubing until it bottoms in the fitting body.
2. Finger tighten the nut.
3. Mark the nut at the 6 o'clock position, with pencil or scribe.
4. Hold the body with a backup wrench, or vice, then tighten nut.
5. 1-1/4 turns to the 9 o'clock position.

6. The above applies to all fittings from 1/4" to 1" (6mm to 25mm).

1/4"~1" O.D.
6mm~25mm O.D.



1/16"~3/16" O.D.
2mm~4mm O.D.



7. Fittings from 1/8" to 3/16" (3mm to 4mm), only 3/4 turn is required.

Reducing Union

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

Materials

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

Materials	Bar Stock	Forgings
316 SS or 316L SS	ASTM A479 ASME SA479	ASTM A182 ASME SA182
Brass ①	ASTM B16 ASTM B453	ASTM B283
Alloy 400 (Monel ®)	ASTM B164	ASTM B564 ASME SB564
Alloy 600 (Inconel®)	ASTM B166	
Alloy 625 (Inconel®)	ASTM B166	
Alloy 825 (Incoloy®)	ASTM B425	
Alloy C-276 (Hastelloy C®)	ASTM B574	ASTM B564
PTFE	ASTM D1710	ASTM D3294
Alloy 2205 / UNS 32205 (Duplex)	ASTM A479	ASTM A182
Alloy 2207 / UNS 32750 (Super Duplex)	ASTM A479	
UNS 31254 (Incoloy 25-6MO ®)	ASTM B649	

① Nickel plating is available as optional.

② Zinc plating is standard.

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

*Hastelloy C is the trade mark of Haynes International.

Sour Environment Services

Our tube fittings are comply with NACE MR-0175/ISO 115156 for sour oilfield application or NACE MR-0103 for petroleum refining operations.

To order, add –SG to the end of part number.

Cleaning

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

Our tube fittings for oxygen enriched systems are available by the special cleaning procedure.

To order, add – SC to the part number.



Tubing Information

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

Maximum Allowable Working Pressure

Stainless Steel Tubing

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

Hardness should not exceed Rb 80.

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

Fractional(Inch) Tubing											
Tube O.D. (mm)	Tube Wall Thickness (inch)										
	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.156	0.188
1/8	8550	10950									
3/16	5500	7100	10300								
1/4	4100	5200	7600	10300							
5/16		4100	5900	8100							
3/8		3350	4850	6550				Working pressure in psig			
1/2		2650	3750	5150	6750						
5/8			2950	4050	5250	6050					
3/4			2450	3350	4250	4950	5850				
7/8			2050	2850	3650	4250	4850				
1				2400	3100	3600	4200	4700			
1-1/4					2400	2800	3300	3600	4100	4900	
1-1/2						2300	2700	3000	3400	4000	4900
2							2000	2200	2500	2900	3600

Metric Tubing											
Tube O.D. (mm)	Tube Wall Thickness (mm)										
	0.8	1.0	1.2	1.5	2.0	2.2	2.5	3.0	3.5	4.0	4.5
3	9700										
4	7900	11500									
6	4500	6100	7850	10300							
8		4500	5650	7550							
10		3500	4350	5800	8400			Working pressure in psig			
12		2900	3600	4800	6800						
14		2300	2900	4000	5500	6250					
15		2200	2750	3650	5200	5800					
16			2450	3350	4800	5350	5800				
18			2150	2950	4200	4650	5350				
20			2030	2600	3750	4200	4800				
22			1750	2300	3350	3750	4350				
25					2900	3350	3750	4650			
38						2030	2300	2900	3500	3900	4500



Copper Tubing

Fully annealed and seamless stainless steel tubing to comply with ASTM B75 or equivalent.
Hardness should not exceed Rb 60.

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

Metric Tubing					
Tube O.D. (mm)	Tube Wall Thickness (mm)				
	1.0	1.5	2.0	2.5	3.0
6	2350	3670			
8	1710	2680	Working pressure in psig		
10	1350	2090			
12	1100	1710	2350		
20		990	1350	1710	
25		780	1060	1350	1640

For gas service application, use only tubing with wall thickness on outside of gray areas.
Allowable stress of 6000 psig between -30°C(-22°F) and 37°C(100°F) based on ultimate tensile strength to be 30000 psig.

Monel Tubing

Fully annealed and seamless stainless steel tubing to comply with ASTM B165 or equivalent.
Hardness should not exceed Rockwell Rb 75.

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

For gas service application, use only tubing with wall thickness on outside of gray areas.
Allowable stress of 18700 psig between -30°C(-22°F) and 37°C(100°F) based on ultimate tensile strength to be 70000 psig.

Determination Factors of MAWP at High Temperature Application

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

Example :

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

AWP : $3750 \times 0.85 = 3187$ psig.

* MAWP : Maximum Allowable Working Pressure

* AWP : Allowable Working Pressure

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



Pipe End Thread Information

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

Pressure Rating for Pipe End Thread

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

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

Pipe Size	316SS				Brass				Desig -nator
	Male		Female		Male		Female		
inch	bar	psig	bar	psig	bar	psig	bar	psig	
1/16	760	11000	460	6700	380	5500	230	3300	-01N/R
1/8	690	10000	440	6500	340	5000	220	3200	-02N/R
1/4	550	8000	450	6600	270	4000	220	3300	-04N/R
3/8	540	7800	360	5300	270	3900	180	2600	-06N/R
1/2	530	7700	330	4900	260	3800	160	2400	-08N/R
3/4	500	7300	320	4600	250	3600	160	2300	-12N/R
1	370	5300	300	4400	180	2600	150	2200	-16N/R
1-1/4	410	6000	350	5000	200	3000	170	2500	-20N/R
1-1/2	340	5000	310	4600	170	2500	150	2300	-24N/R
2	270	3900	270	3900	130	1900	130	1900	-32N/R

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

ISO 228/1 Parallel Thread (BSPP)

The pressure ratings are at ambient temperature.

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

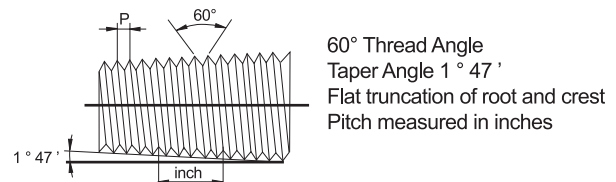
O-Seal Fittings

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

Kinds of Pipe End Thread

NPT Pipe Thread

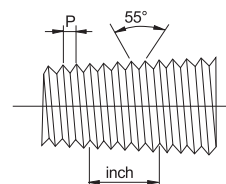
NPT (National Pipe Thread) is based on ANSI B1.2.



ISO 7/1 Tapered Pipe Thread

International Organization for Standard (ISO 7/1) Tapered (PT)

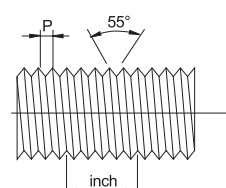
Equivalent to BSPT (British Standard Pipe Taper Thread), DIN 2999, JIS B0203



ISO 228/1 Parallel Pipe Thread

International Organization for Standard (ISO 228/1) Parallel (PF) Equivalent to BSPP (British Standard Pipe Parallel Thread), DIN ISO228/1, JIS B0202

Gasket or O-ring is normally used to seal into the parallel female threaded components.



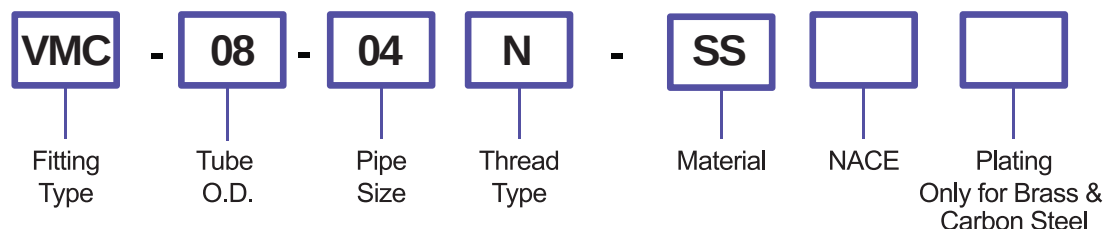


How To Order

Fractional (inch) Tube Fittings

All tube fittings are ordered by part number as shown as below.

Example : The following part number, VMC-08-04N-SS, is designated for Male Connector, 1/2"OD x 1/4" Male NPT, 316SS.



Fractional(Inch) Tube O.D. Designation																
Tube	inch	1/16	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1-1/8	1-1/4	1-1/2	2
O.D.	mm	1.59	3.17	4.76	6.35	7.93	9.52	12.70	15.88	19.05	22.22	25.40	28.57	31.75	38.10	50.80
Designator		01	02	03	04	05	06	08	10	12	14	16	18	20	24	32

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

Material Designation	
Designator	Materials
SS	SUS316 (UNS NO. S31600)
BS	Brass
CS	Carbon Steel
AL2205	Alloy 2205 (Duplex F51)
AL2507	Alloy 2507 (Super Duplex F53)
AL600	Alloy 600
AL625	Alloy 625
AL825	Alloy 825
AL400	Alloy 400 (Monel)
PF	PTFE
HC	Alloy C-276
6MO	6MO/SMO254

Thread Type Designation		
Thread Type		Designator
NPT	National Standard Pipe Thread	N
ISO 7/1	Taper Pipe Thread	R
ISO 228/1	Parallel Pipe Thread	G
SAE J1926	Straight Thread Boss	U
SAE J514	37 Flared	S
	Lok Port or Tube End	T

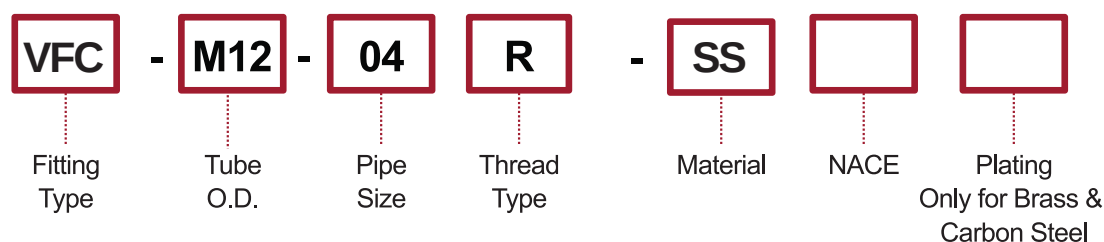
Plating Designation	
Designator	Plating
NP	Nickel
BP	Black Phosphorized

NACE Application	
None	-
N	NACE Application

Metric Tube Fittings

All tube fittings are ordered by part number as shown as below.

Example : The following part number, VFC-M12-04R-SS, is designated for Female Connector, 12mmOD x 1/4" Female BSPT, 316SS.



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



Tube to Tube

Union
V



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Reducing Union
VR



Page 11

Union Elbow
V



Page 12

Union Tee
V



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Union Cross
V C



Page 14

Bulkhead Union
V



Page 15

Tube to Male Pipe

Male Connector
VMC



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Thermocouple
Male Connector
V MC



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Male Connector For
Bonded Washer Seal
VMC-



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Male Connector For
Metal Gasket Seal
VMCM



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Bulkhead Male Connector
V MC



Page 19

Male Elbow
VM



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45°Male Elbow
VM V



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Male Run Tee
VMR



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Male Branch Tee
VM



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Tube to Female Pipe

Female Connector
VFC



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Gauge Connector
V C



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Bulkhead Female
Connector
V FC



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Female Elbow
VF



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Female Run Tee
VFR



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Female Branch Tee
VF



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Stub Tube Connector

Reducer
VR



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Bulkhead Reducer
V R



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Adjustable Elbow
V R



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Weld Adapter
V



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Male Adapter
VM



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Female Adapter
VF



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Port Connector
V C



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Reducing Port Connector
VR C



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Tube to AN Tube

AN Union
V



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AN Bulkhead Union
V



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AN Adapter
V



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Tube to SAE/MS O-Ring

SAE/MS Male Connector
VMCS



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Positional Male Elbow
VM



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Positional Male Run Tee
V R



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Positional Male Branch Tee
V



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Positional 45° Male Elbow
V V



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O-Seal Straight
Thread Connector
VMC



Page 40

O-Seal Pipe
Thread Coni
MCP



Page 40

Tube to Weld End

Male Pipe Weld Connector
VC



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Male Pipe Weld Elbow
V



Page 42

Tube Socket Weld
Connector
VCS



Page 42

Tube Socket Weld Elbow
V S



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Plug, Cap, Insert

Tube Plug
V



Page 43

Tube Cap
VC



Page 43

Tube Insert Barbed
V



Page 44

Tube Insert Plain
V



Page 44

Spare Parts

Front Ferrule
VFF



Page 45

Back Ferrule
V F



Page 45

Nut
VN



Page 46

Ferrule Set
VFS



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Nut Ferrule Set
VFNS



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Special Fittings

Vent Protect
VV



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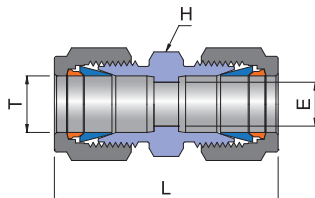
Fusible Adapter
V F,
V F



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Union



Connects Fractional Tubes

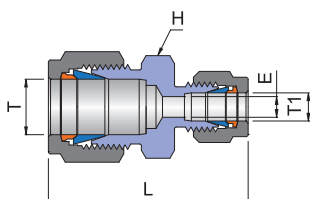
Part No.	Tube OD T		E Min.	H		L
	inch	mm		inch	mm	
V -01	1/16	1.58	1.27	5/16	7.93	25.15
V -02	1/8	3.17	2.28	7/16	11.11	35.56
V -03	3/16	4.76	3.04	7/16	11.11	37.33
V -04	1/4	6.35	4.82	1/2	12.70	40.89
V -05	5/16	7.93	6.35	9/16	14.28	42.92
V -06	3/8	9.52	7.11	5/8	15.87	44.95
V -08	1/2	12.70	10.41	13/16	20.63	51.30
V -10	5/8	15.87	12.70	15/16	23.81	52.07
V -12	3/4	19.05	15.74	1-1/16	26.98	53.59
V -14	7/8	22.22	18.28	1-3/16	30.16	55.37
V -16	1	25.40	22.35	1-3/8	34.92	64.77
V -20	1-1/4	31.75	27.68	1-3/4	44.45	92.20
V -24	1-1/2	38.10	34.03	2-1/8	53.97	107.95
V -32	2	50.80	45.97	2-3/4	69.85	149.35

Connects Metric Tubes

Part No.	Tube OD T	E Min.	H	L
	mm		mm	
V -M02	2	1.7	12	35.6
V -M03	3	2.4	12	35.3
V -M04	4	2.4	12	37.3
V -M06	6	4.8	14	41.0
V -M08	8	6.4	15	43.2
V -M10	10	7.9	18	46.2
V -M12	12	9.5	22	51.2
V -M15	15	11.9	24	52.0
V -M16	16	12.7	24	52.0
V -M18	18	15.1	27	53.5
V -M20	20	15.9	30	55.0
V -M22	22	18.3	30	55.0
V -M25	25	21.8	35	65.0
V -M28	28	21.8	41	85.0
V -M32	32	28.6	46	97.3
V -M38	38	33.7	55	113.6
V -M42	42	36.0	55	126.2



Reducing Union



Connects Fractional Tubes

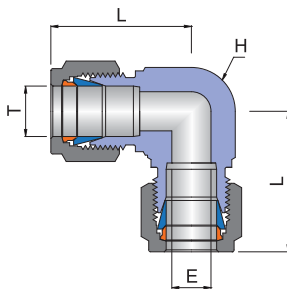
Part No.	Tube OD T		Tube OD T ₁		E Min.	H		L
	inch	mm	inch	mm		inch	mm	
VR -02-01	1/8	3.17	1/16	1.58	1.27	7/16	11.11	30.91
VR -03-01	3/16	4.76	1/16	1.58	1.27	7/16	11.11	32.25
VR -03-02	3/16	4.76	1/8	3.17	2.28	7/16	11.11	36.57
VR -04-01	1/4	6.35	1/16	1.58	1.27	1/2	12.70	34.29
VR -04-02	1/4	6.35	1/8	3.17	2.28	1/2	12.70	38.60
VR -04-03	1/4	6.35	3/16	4.76	3.04	1/2	12.70	39.37
VR -05-02	5/16	7.93	1/8	3.17	2.28	9/16	14.28	39.87
VR -05-04	5/16	7.93	1/4	6.35	4.82	9/16	14.28	42.16
VR -06-01	3/8	9.52	1/16	1.58	1.27	5/8	15.87	36.57
VR -06-02	3/8	9.52	1/8	3.17	2.28	5/8	15.87	40.89
VR -06-04	3/8	9.52	1/4	6.35	4.82	5/8	15.87	43.18
VR -06-05	3/8	9.52	5/16	7.93	6.35	5/8	15.87	44.19
VR -08-02	1/2	12.70	1/8	3.17	2.28	13/16	20.63	45.21
VR -08-04	1/2	12.70	1/4	6.35	4.82	13/16	20.63	46.99
VR -08-06	1/2	12.70	3/8	9.52	7.11	15/16	20.63	48.51
VR -10-06	5/8	15.87	3/8	9.52	7.11	15/16	23.81	49.27
VR -10-08	5/8	15.87	1/2	12.70	10.41	1-1/16	23.81	52.07
VR -12-04	3/4	19.05	1/4	6.35	4.82	1-1/16	26.98	49.27
VR -12-06	3/4	19.05	3/8	9.52	7.11	1-1/16	26.98	50.80
VR -12-08	3/4	19.05	1/2	12.70	10.41	1-1/16	26.98	53.59
VR -12-10	3/4	19.05	5/8	15.87	12.70	1-3/8	26.98	53.59
VR -16-08	1	25.40	1/2	12.70	10.41	1-3/8	34.92	63.24
VR -16-12	1	25.40	3/4	19.05	15.74	1-3/8	34.92	62.73

Connects Metric Tubes

Part No.	Tube OD T	Tube OD T ₁	E Min.	H	L
	mm	mm		mm	
VR -M03-M02	3	2	1.7	12	35.3
VR -M06-M02	6	2	1.7	14	38.6
VR -M06-M03	6	3	2.4	14	38.6
VR -M06-M04	6	4	2.4	14	39.4
VR -M08-M06	8	6	4.8	15	42.3
VR -M10-M06	10	6	4.8	18	44.5
VR -M10-M08	10	8	6.4	18	45.1
VR -M12-M06	12	6	4.8	22	47.0
VR -M12-M08	12	8	6.4	22	47.8
VR -M12-M10	12	10	7.9	22	48.7
VR -M16-M10	16	10	7.9	24	49.5
VR -M16-M12	16	12	9.5	24	52.0
VR -M18-M12	18	12	9.5	27	53.5
VR -M25-M18	25	18	15.1	35	61.0
VR -M25-M20	25	20	15.9	35	62.3



Union Elbow



Connects Fractional Tubes

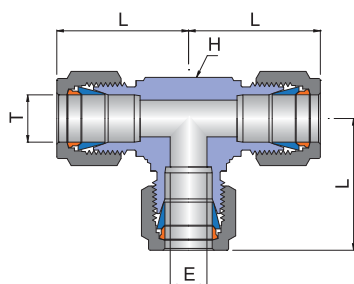
Part No.	Tube OD T		E Min.	H		L
	inch	mm		inch	mm	
V -01	1/16	1.58	1.27	3/8	9.52	17.88
V -02	1/8	3.17	2.28	3/8	9.52	22.35
V -03	3/16	4.76	3.04	1/2	12.70	24.38
V -04	1/4	6.35	4.82	1/2	12.70	26.92
V -05	5/16	7.93	6.35	9/16	14.28	28.70
V -06	3/8	9.52	7.11	5/8	15.87	30.48
V -08	1/2	12.70	10.41	13/16	20.63	36.06
V -10	5/8	15.87	12.70	15/16	23.80	38.80
V -12	3/4	19.05	15.74	1-1/16	26.98	39.87
V -14	7/8	22.22	18.28	1-3/16	30.00	44.70
V -16	1	25.40	22.35	1-3/8	34.92	49.02
V -20	1-1/4	31.75	27.68	1-11/16	42.86	66.54
V -24	1-1/2	38.10	34.03	2-3/16	50.80	77.97
V -32	2	50.80	45.97	2-3/4	69.85	107.18

Connects Metric Tubes

Part No.	Tube OD T	E Min.	H	L
	mm		mm	
V -M02	2	1.7	9.5	22.3
V -M03	3	2.4	9.5	22.3
V -M04	4	2.4	12.7	25.4
V -M06	6	4.8	12.7	27.0
V -M08	8	6.4	14.3	28.8
V -M10	10	7.9	17.5	31.5
V -M12	12	9.5	20.6	36.0
V -M15	15	11.9	23.8	38.8
V -M16	16	12.7	23.8	38.8
V -M18	18	15.1	27.0	39.8
V -M20	20	15.9	30.0	42.6
V -M22	22	18.3	30.0	42.6
V -M25	25	21.8	34.9	49.1
V -M28	28	21.8	41.0	64.0
V -M32	32	28.6	46.0	72.3
V -M38	38	33.7	55.0	84.0
V -M42	42	36.0	55.0	89.1



Union Tee



Connects Fractional Tubes

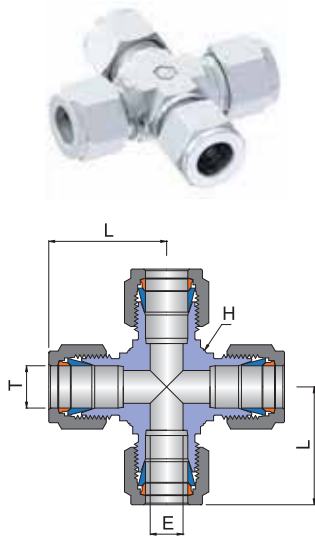
Part No.	Tube OD T		E Min.	H		L
	inch	mm		inch	mm	
V -01	1/16	1.58	1.27	3/8	9.52	17.88
V -02	1/8	3.17	2.28	3/8	9.52	22.35
V -03	3/16	4.76	3.04	1/2	12.70	24.38
V -04	1/4	6.35	4.82	1/2	12.70	26.92
V -05	5/16	7.93	6.35	5/8	15.87	28.70
V -06	3/8	9.52	7.11	5/8	15.87	30.48
V -08	1/2	12.70	10.41	13/16	20.63	36.06
V -10	5/8	15.87	12.70	15/16	23.80	38.80
V -12	3/4	19.05	15.74	1-1/16	26.98	39.87
V -14	7/8	22.22	18.28	1-3/16	30.00	44.70
V -16	1	25.40	22.35	1-3/8	34.92	49.02
V -20	1-1/4	31.75	27.68	1-11/16	42.86	66.54
V -24	1-1/2	38.10	34.03	2	50.80	77.97
V -32	2	50.80	45.97	2-3/4	69.85	107.18

Connects Metric Tubes

Part No.	Tube OD T	E Min.	H	L
	mm		mm	
VUT-M02	2	1.7	9.5	22.3
VUT-M03	3	2.4	9.5	22.3
VUT-M04	4	2.4	12.7	25.4
VUT-M06	6	4.8	12.7	27.0
VUT-M08	8	6.4	14.3	28.8
VUT-M10	10	7.9	17.5	31.5
VUT-M12	12	9.5	20.6	36.0
VUT-M15	15	11.9	23.8	38.8
VUT-M16	16	12.7	23.8	38.8
VUT-M18	18	15.1	27.0	39.8
VUT-M20	20	15.9	30.0	42.6
VUT-M22	22	18.3	30.0	42.6
VUT-M25	25	21.8	34.9	49.1
VUT-M28	28	21.8	41.0	64.0
VUT-M32	32	28.6	46.0	72.3
VUT-M38	38	33.7	55.0	84.0
VUT-M42	42	36.0	55.0	89.1



Union Cross



Connects Fractional Tubes

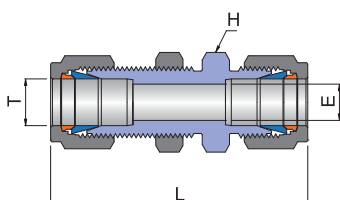
Part No.	Tube OD T		E Min.	H		L
	inch	mm		inch	mm	
V C-01	1/16	1.58	1.27	3/8	9.52	17.88
V C-02	1/8	3.17	2.28	3/8	9.52	22.35
V C-03	3/16	4.76	3.04	1/2	12.70	24.38
V C-04	1/4	6.35	4.82	1/2	12.70	26.92
V C-05	5/16	7.93	6.35	5/8	15.87	28.70
V C-06	3/8	9.52	7.11	5/8	15.87	30.48
V C-08	1/2	12.70	10.41	13/16	20.63	36.06
V C-10	5/8	15.87	12.70	13/16	20.63	38.80
V C-12	3/4	19.05	15.74	1-1/16	26.98	39.87
V C-14	7/8	22.22	18.28	1-3/16	30.00	44.70
V C-16	1	25.40	22.35	1-3/8	34.92	49.02

Connects Metric Tubes

Part No.	Tube OD T	E Min.	H	L
	mm		mm	
V C-M03	3	2.4	9.5	22.3
V C-M06	6	4.8	12.7	27.0
V C-M08	8	6.4	15.8	28.8
V C-M10	10	7.9	20.6	31.5
V C-M12	12	9.5	20.6	36.0
V C-M16	16	12.7	23.8	38.8
V C-M18	18	15.1	27.0	39.8
V C-M20	20	15.9	30.0	42.6
V C-M25	25	21.8	34.9	49.1



Bulkhead Union



Connects Fractional Tubes

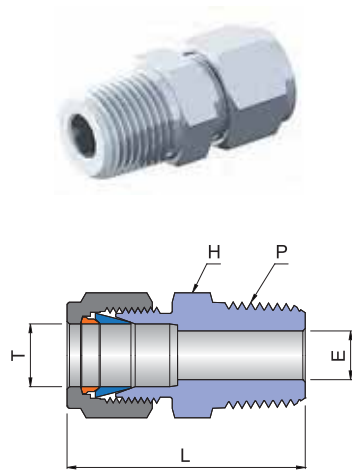
Part No.	Tube OD T		E Min.	H		L	Panel Hole Drill Size	Panel Max. Thickness
	inch	mm		inch	mm			
V -01	1/16	1.58	1.27	5/16	7.93	31.50	5.16	3.05
V -02	1/8	3.17	2.28	1/2	12.70	51.30	8.33	12.70
V -03	3/16	4.76	3.04	9/16	14.28	53.59	9.92	12.70
V -04	1/4	6.35	4.82	5/8	15.87	57.65	11.50	10.16
V -05	5/16	7.93	6.35	11/16	17.46	60.70	13.09	11.17
V -06	3/8	9.52	7.11	3/4	19.05	62.23	14.68	11.17
V -08	1/2	12.70	10.41	15/16	23.81	71.12	19.44	12.70
V -10	5/8	15.87	12.70	1-1/16	26.98	72.64	22.62	12.70
V -12	3/4	19.05	15.74	1-3/16	30.16	78.99	25.79	16.76
V -14	7/8	22.22	18.28	1-3/8	34.92	84.58	28.97	19.05
V -16	1	25.40	22.35	1-5/8	41.27	95.75	33.73	19.05
V -20	1-1/4	31.75	27.68	1-7/8	47.62	123.19	41.67	19.05
V -24	1-1/2	38.10	34.03	2-1/4	57.15	139.19	49.61	19.05
V -32	2	50.80	45.97	2-3/4	69.85	180.34	67.07	19.05

Connects Metric Tubes

Part No.	Tube OD T	E Min.	H	L	Panel Hole Drill Size	Panel Max. Thickness
	mm		mm			
V -M03	3	2.4	14	51.3	8.3	12.7
V -M04	4	2.4	14	53.6	9.9	12.7
V -M06	6	4.8	16	57.7	11.5	10.2
V -M08	8	6.4	18	61.0	13.1	11.2
V -M10	10	7.9	22	63.7	16.2	11.2
V -M12	12	9.5	24	71.0	19.5	12.7
V -M15	15	11.9	27	72.5	22.8	12.7
V -M16	16	12.7	27	72.5	22.8	12.7
V -M18	18	15.1	30	78.9	26.0	16.8
V -M20	20	15.9	35	84.5	29.0	17.0
V -M22	22	18.3	35	84.5	29.0	19.1
V -M25	25	21.8	41	95.9	33.7	19.1
V -M32	32	28.6	50	128.3	42.5	19.0
V -M38	38	33.7	60	144.6	50.5	19.0



Male Connector

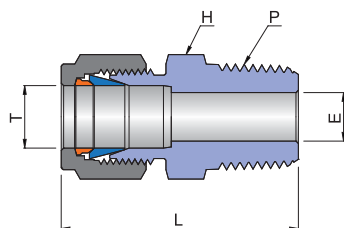


Connects Fractional Tube to Female NPT Thread

Part No.	Tube OD T		P NPT	E Min.	H		L
	inch	mm			inch	mm	
VMC-01-01N	1/16	1.58	1/16	1.27	5/16	7.93	23.83
VMC-01-02N	1/16	1.58	1/8	1.27	7/16	11.11	26.23
VMC-01-04N	1/16	1.58	1/4	1.27	9/16	14.28	30.98
VMC-02-01N	1/8	3.17	1/16	2.28	7/16	11.11	29.71
VMC-02-02N	1/8	3.17	1/8	2.28	7/16	11.11	30.48
VMC-02-04N	1/8	3.17	1/4	2.28	9/16	14.28	35.56
VMC-02-06N	1/8	3.17	3/8	2.28	11/16	17.46	35.81
VMC-02-08N	1/8	3.17	1/2	2.28	7/8	22.22	42.16
VMC-03-02N	3/16	4.76	1/8	3.04	7/16	11.11	31.24
VMC-03-04N	3/16	4.76	1/4	3.04	9/16	14.28	36.32
VMC-04-01N	1/4	6.35	1/16	4.82	1/2	12.70	32.76
VMC-04-02N	1/4	6.35	1/8	4.82	1/2	12.70	32.76
VMC-04-04N	1/4	6.35	1/4	4.82	9/16	14.28	37.84
VMC-04-06N	1/4	6.35	3/8	4.82	11/16	17.46	38.35
VMC-04-08N	1/4	6.35	1/2	4.82	7/8	22.22	44.70
VMC-04-12N	1/4	6.35	3/4	4.82	1-1/16	26.98	46.22
VMC-05-02N	5/16	7.93	1/8	4.82	9/16	14.28	34.03
VMC-05-04N	5/16	7.93	1/4	6.35	9/16	14.28	38.60
VMC-05-06N	5/16	7.93	3/8	6.35	11/16	17.46	39.11
VMC-06-02N	3/8	9.52	1/8	4.82	5/8	15.87	35.30
VMC-06-04N	3/8	9.52	1/4	7.11	5/8	15.87	39.87
VMC-06-06N	3/8	9.52	3/8	7.11	11/16	17.46	39.87
VMC-06-08N	3/8	9.52	1/2	7.11	7/8	22.22	46.22
VMC-06-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	57.75
VMC-08-02N	1/2	12.70	1/8	4.82	13/16	20.63	38.86
VMC-08-04N	1/2	12.70	1/4	7.11	13/16	20.63	43.43
VMC-08-06N	1/2	12.70	3/8	9.65	13/16	20.63	43.43
VMC-08-08N	1/2	12.70	1/2	10.41	7/8	22.22	49.02
VMC-08-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	50.54
VMC-08-16N	1/2	12.70	1	10.41	1-3/8	34.92	57.15
VMC-10-06N	5/8	15.87	3/8	9.65	15/16	23.81	44.19
VMC-10-08N	5/8	15.87	1/2	11.93	15/16	23.81	49.02
VMC-10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	50.54
VMC-12-08N	3/4	19.05	1/2	11.93	1-1/16	26.98	50.54
VMC-12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	50.54
VMC-12-16N	3/4	19.05	1	15.74	1-3/8	34.92	57.15
VMC-14-12N	7/8	22.22	3/4	15.74	1-3/16	30.16	50.54
VMC-14-16N	7/8	22.22	1	18.28	1-3/8	34.92	57.15
VMC-16-08N	1	25.40	1/2	11.93	1-3/8	34.92	57.40
VMC-16-12N	1	25.40	3/4	15.74	1-3/8	34.92	57.40
VMC-16-16N	1	25.40	1	22.35	1-3/8	34.92	62.23
VMC-20-16N	1-1/4	31.75	1	22.35	1-3/4	44.45	77.21
VMC-20-20N	1-1/4	31.75	1-1/4	27.68	1-3/4	44.45	77.21
VMC-20-24N	1-1/2	38.10	1-1/2	34.03	2-1/8	53.97	88.90
VMC-24-24N	2	50.80	2	45.97	2-3/4	69.85	113.53



Male Connector



Connects Metric Tube to Female ISO Tapered Thread

Part No.	Tube OD T	P ISO7/1	E Min.	H	L
	mm			mm	
VMC-M02-02R	2	1/8	1.7	12	30.5
VMC-M02-02R	3	1/8	2.4	12	30.5
VMC-M03-04R	3	1/4	2.4	14	35.6
VMC-M04-02R	4	1/8	2.4	12	31.2
VMC-M04-04R	4	1/4	2.4	14	36.3
VMC-M06-02R	6	1/8	4.8	14	32.8
VMC-M06-04R	6	1/4	4.8	14	37.9
VMC-M06-06R	6	3/8	4.8	18	38.4
VMC-M06-08R	6	1/2	4.8	22	44.7
VMC-M08-02R	8	1/8	4.8	15	34.2
VMC-M08-04R	8	1/4	6.4	15	38.7
VMC-M08-06R	8	3/8	6.4	18	39.2
VMC-M08-08R	8	1/2	6.4	22	45.6
VMC-M10-02R	10	1/8	4.8	18	36.3
VMC-M10-04R	10	1/4	7.1	18	40.9
VMC-M10-06R	10	3/8	7.9	18	40.9
VMC-M10-08R	10	1/2	7.9	22	46.5
VMC-M12-04R	12	1/4	7.1	22	43.4
VMC-M12-06R	12	3/8	9.5	22	43.4
VMC-M12-08R	12	1/2	9.5	22	49.0
VMC-M12-12R	12	3/4	9.5	27	50.5
VMC-M15-08R	15	1/2	11.9	24	49.0
VMC-M16-04R	16	1/4	7.1	24	44.1
VMC-M16-06R	16	3/8	9.5	24	44.1
VMC-M16-08R	16	1/2	11.9	24	49.0
VMC-M16-12R	16	3/4	12.7	27	49.0
VMC-M18-08R	18	1/2	11.9	27	50.5
VMC-M18-12R	18	3/4	15.1	27	50.5
VMC-M20-08R	20	1/2	11.9	30	52.3
VMC-M20-12R	20	3/4	15.9	30	52.3
VMC-M22-12R	22	3/4	15.9	30	52.3
VMC-M22-16R	22	1	18.3	35	57.0
VMC-M25-12R	25	3/4	15.9	35	57.5
VMC-M25-16R	25	1	21.8	35	62.3
VMC-M28-16R	28	1	21.8	41	72.4
VMC-M28-20R	28	1-1/4	21.8	46	73.1
VMC-M32-20R	32	1-1/4	28.6	46	79.6
VMC-M38-24R	38	1-1/2	33.7	55	91.6

Thermocouple Male Connector



Bored-Through(thermocouple) Male Connector

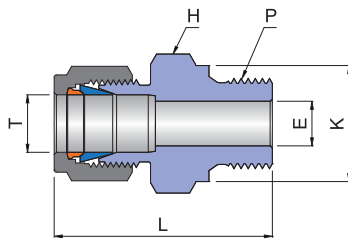
Bored-through Male Connections handle thermocouples or tip tubes easily. Most male connectors can be bored-through fittings.

The following fittings are impractical to make bored-through fittings.

- male connector with small pipe thread end as 1/8".
- male connectors which tube fitting end is larger than pipe thread end such as MC-38-18R or ME-M12-14N



Male Connector For Bonded Washer Seal

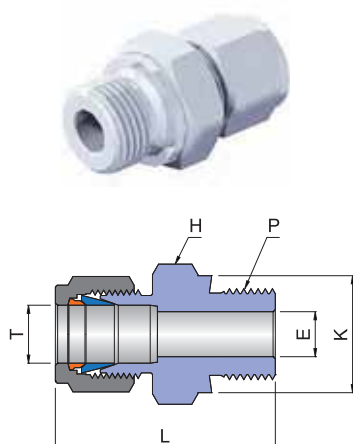


Connects Metric Tube to Female ISO Parallel Thread

Part No.	Tube OD T	P G(PF)	E Min.	H	L	K
	mm			mm		
VMC-M02-02	2	1/8	1.7	14	30.0	13.8
VMC-M03-02	3	1/8	2.4	14	30.0	13.8
VMC-M03-04	3	1/4	2.4	19	35.3	18.0
VMC-M04-02	4	1/8	2.4	14	30.7	13.8
VMC-M06-02	6	1/8	4.0	14	32.3	13.8
VMC-M06-04	6	1/4	4.8	19	37.6	18.0
VMC-M06-06	6	3/8	4.8	22	38.9	21.8
VMC-M06-08	6	1/2	4.8	27	44.7	26.0
VMC-M08-02	8	1/8	4.0	15	33.2	13.8
VMC-M08-04	8	1/4	6.4	19	38.5	13.8
VMC-M08-06	8	3/8	6.4	22	39.8	21.8
VMC-M08-08	8	1/2	6.4	27	45.6	26.0
VMC-M10-04	10	1/4	5.8	19	39.4	18.0
VMC-M10-06	10	3/8	7.9	22	40.6	21.8
VMC-M10-08	10	1/2	7.9	27	46.5	26.0
VMC-M12-04	12	1/4	5.8	22	42.6	18.0
VMC-M12-06	12	3/8	7.9	22	43.1	21.8
VMC-M12-08	12	1/2	9.5	27	49.0	26.0
VMC-M12-12	12	3/4	9.5	32	52.8	32.0
VMC-M16-06	16	3/8	7.9	24	43.9	21.8
VMC-M16-08	16	1/2	11.9	27	49.0	26.0
VMC-M18-08	18	1/2	11.9	27	49.0	26.0
VMC-M18-12	18	3/4	15.1	32	52.8	32.0
VMC-M20-08	20	1/2	11.9	30	50.5	26.0
VMC-M20-12	20	3/4	15.9	32	52.8	32.0
VMC-M22-12	22	3/4	15.9	32	52.8	32.0
VMC-M22-16	22	1	18.3	41	55.3	39.0
VMC-M25-12	25	3/4	15.9	35	57.5	32.0
VMC-M25-16	25	1	19.8	41	60.1	39.0
VMC-M28-16	28	1	19.8	41	70.1	39.0
VMC-M28-20	28	1-1/4	21.8	50	73.9	49.0
VMC-M32-20	32	1-1/4	25.0	50	78.9	49.0
VMC-M38-24	38	1-1/2	31.8	55	90.8	54.7



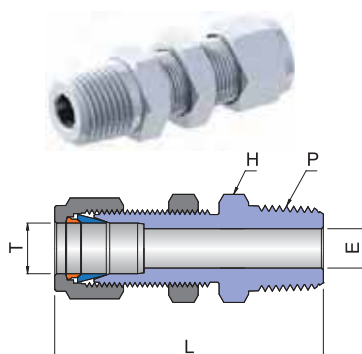
Male Connector For Metal Gasket Seal



Connects Metric Tube to Female ISO Parallel Thread

Part No.	Tube OD T	P G(PF)	E Min.	H	L	K
	mm			mm		
VMCM-M03-02	3	1/8	2.4	14	30.0	13.8
VMCM-M03-04	3	1/4	2.4	19	35.3	18.0
VMCM-M04-02	4	1/8	2.4	14	30.7	13.8
VMCM-M06-02	6	1/8	4.0	14	32.3	13.8
VMCM-M06-04	6	1/4	4.8	19	37.6	18.0
VMCM-M06-06	6	3/8	4.8	22	38.9	21.8
VMCM-M06-08	6	1/2	4.8	27	44.7	26.0
VMCM-M08-02	8	1/8	4.0	15	33.2	13.8
VMCM-M08-04	8	1/4	6.4	19	38.5	18.0
VMCM-M08-06	8	3/8	6.4	22	39.8	21.8
VMCM-M08-08	8	1/2	6.4	27	45.6	26.0
VMCM-M10-04	10	1/4	5.8	19	39.4	18.0
VMCM-M10-06	10	3/8	7.9	22	40.6	21.8
VMCM-M10-08	10	1/2	7.9	27	46.5	26.0
VMCM-M12-04	12	1/4	5.8	22	42.6	18.0
VMCM-M12-06	12	3/8	7.9	22	43.1	21.8
VMCM-M12-08	12	1/2	9.5	27	49.0	26.0
VMCM-M12-12	12	3/4	9.5	32	52.8	32.0
VMCM-M15-08	15	1/2	11.9	27	49.0	26.0
VMCM-M16-06	16	3/8	7.9	24	43.9	21.8
VMCM-M16-08	16	1/2	11.9	27	49.0	26.0
VMCM-M18-08	18	1/2	11.9	27	49.0	26.0
VMCM-M18-12	18	3/4	15.1	32	52.8	32.0
VMCM-M20-08	20	1/2	11.9	30	50.5	26.0
VMCM-M20-12	20	3/4	15.9	32	52.8	32.0
VMCM-M22-12	22	3/4	15.9	32	52.8	32.0
VMCM-M22-16	22	1	18.3	41	55.3	39.0
VMCM-M25-12	25	3/4	15.9	35	57.5	32.0
VMCM-M25-16	25	1	19.8	41	60.1	39.0
VMCM-M28-16	28	1	19.8	41	70.1	39.0
VMCM-M28-20	28	1-1/4	21.8	50	73.9	49.0
VMCM-M32-20	32	1-1/4	28.6	50	78.9	49.0
VMCM-M38-20	38	1-1/2	31.8	55	89.3	54.7

Bulkhead Male Connector

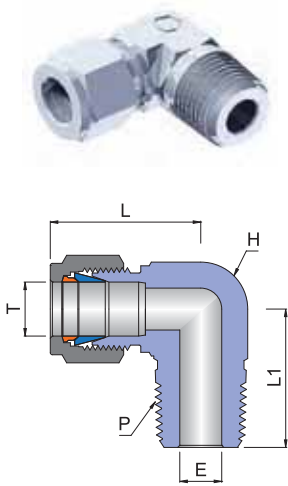


Connects Fractional Tubes

Part No.	Tube OD T		P NPT	E Min.	H		L	Panel Hole Drill Size	Panel Max. Thickness
	inch	mm			inch	mm			
V MC-02-02N	1/8	3.17	1/8	2.28	1/2	12.70	46.48	8.33	12.20
V MC-04-02N	1/4	6.35	1/8	4.82	5/8	15.87	49.53	11.50	10.16
V MC-04-04N	1/4	6.35	1/4	4.82	5/8	15.87	53.34	11.50	10.16
V MC-06-04N	3/8	9.52	1/4	7.11	3/4	19.05	57.40	14.68	11.17
V MC-06-06N	3/8	9.52	3/8	7.11	3/4	19.05	57.40	14.68	11.17
V MC-06-08N	3/8	9.52	1/2	7.11	7/8	22.22	63.75	14.68	11.17
V MC-08-06N	1/2	12.70	3/8	9.39	15/16	23.81	63.24	19.44	12.70
V MC-08-08N	1/2	12.70	1/2	10.41	15/16	23.81	68.83	19.44	12.70
V MC-12-12N	3/4	19.05	3/4	15.74	1-3/16	30.16	76.20	25.76	16.76
V MC-16-16N	1	25.40	1	22.35	1-5/8	41.27	93.21	33.73	19.05



Male Elbow

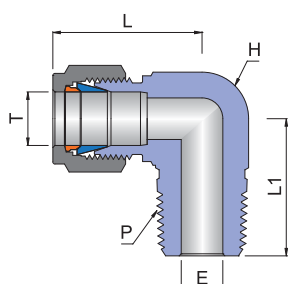


Connects Fractional Tube to Female NPT Thread

Part No.	Tube OD T		P NPT	E Min.	H		L	L1
	inch	mm			inch	mm		
VM -01-01N	1/16	1.58	1/16	1.27	7/16	11.11	19.05	17.78
VM -01-02N	1/16	1.58	1/8	1.27	7/16	11.11	19.05	17.78
VM -02-02N	1/8	3.17	1/8	2.28	1/2	12.70	24.91	18.90
VM -02-04N	1/8	3.17	1/4	2.28	1/2	12.70	24.91	23.36
VM -03-02N	3/16	4.76	1/8	3.04	1/2	12.70	25.40	18.79
VM -03-04N	3/16	4.76	1/4	3.04	1/2	12.70	25.40	23.36
VM -04-01N	1/4	6.35	1/16	3.04	1/2	12.70	26.90	18.79
VM -04-02N	1/4	6.35	1/8	4.82	1/2	12.70	26.47	19.10
VM -04-04N	1/4	6.35	1/4	4.82	1/2	12.70	27.19	23.87
VM -04-06N	1/4	6.35	3/8	4.82	11/16	17.46	29.71	28.40
VM -04-08N	1/4	6.35	1/2	4.82	13/16	20.63	31.97	33.00
VM -05-02N	5/16	7.93	1/8	4.82	9/16	14.28	28.70	19.81
VM -05-04N	5/16	7.93	1/4	6.35	9/16	14.28	29.77	24.50
VM -05-06N	5/16	7.93	3/8	6.35	11/16	17.46	30.48	28.40
VM -06-02N	3/8	9.52	1/8	4.82	5/8	15.87	30.48	20.80
VM -06-04N	3/8	9.52	1/4	7.11	5/8	15.87	30.48	25.40
VM -06-06N	3/8	9.52	3/8	7.11	11/16	17.46	31.24	28.44
VM -06-08N	3/8	9.52	1/2	7.11	13/16	20.63	31.42	33.02
VM -06-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	37.08	36.83
VM -08-04N	1/2	12.70	1/4	7.11	13/16	20.63	36.06	28.30
VM -08-06N	1/2	12.70	3/8	9.65	13/16	20.63	36.06	28.30
VM -08-08N	1/2	12.70	1/2	10.41	13/16	20.63	36.06	33.02
VM -08-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	39.87	36.83
VM -10-06N	5/8	15.87	3/8	9.65	15/16	23.80	37.06	30.20
VM -10-08N	5/8	15.87	1/2	11.93	15/16	23.80	37.06	35.00
VM -10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	39.87	36.83
VM -12-08N	3/4	19.05	1/2	11.93	1-1/16	26.98	39.87	36.83
VM -12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	39.87	36.83
VM -14-12N	7/8	22.22	3/4	15.74	1-3/16	30.00	44.70	41.65
VM -16-12N	1	25.40	3/4	15.74	1-3/8	34.92	49.02	42.20
VM -16-16N	1	25.40	1	22.35	1-3/8	34.92	49.02	46.70
VM -20-20N	1-1/4	31.75	1-1/4	27.68	1-1/16	42.86	66.54	47.75
VM -20-24N	1-1/2	38.10	1-1/2	34.03	2	50.80	77.97	60.45
VM -32-32N	2	50.80	2	45.97	2-3/4	69.85	107.18	70.61



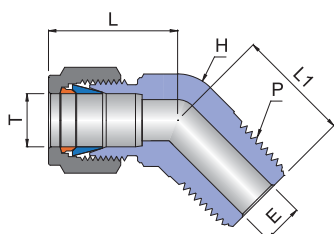
Male Elbow



Connects Metric Tube to Female ISO Tapered Thread

Part No.	Tube OD T	P R(PT)	E Min.	H	L	K
	mm			mm		
VM -M03-02R	3	1/8	2.4	12.7	23.6	17.8
VM -M03-04R	3	1/4	2.4	12.7	24.6	23.4
VM -M04-02R	4	1/8	2.4	12.7	25.4	18.8
VM -M04-04R	4	1/4	2.4	12.7	25.4	23.4
VM -M06-02R	6	1/8	4.8	12.7	27.0	18.8
VM -M06-04R	6	1/4	4.8	12.7	27.0	23.4
VM -M06-06R	6	3/8	4.8	17.5	29.8	26.2
VM -M06-08R	6	1/2	4.8	20.6	31.8	33.0
VM -M08-02R	8	1/8	4.8	14.3	28.8	19.8
VM -M08-04R	8	1/4	6.4	14.3	28.8	24.4
VM -M08-06R	8	3/8	6.4	17.5	31.4	28.5
VM -M08-08R	8	1/2	6.4	20.6	32.6	33.0
VM -M10-02R	10	1/8	4.8	17.5	31.5	23.6
VM -M10-04R	10	1/4	7.1	17.5	31.5	26.2
VM -M10-06R	10	3/8	7.9	17.5	31.5	26.2
VM -M10-08R	10	1/2	7.9	20.6	33.5	33.0
VM -M12-02R	12	1/8	4.8	20.6	36.0	23.6
VM -M12-04R	12	1/4	7.1	20.6	36.0	26.2
VM -M12-06R	12	3/8	9.5	20.6	36.0	26.2
VM -M12-08R	12	1/2	9.5	20.6	36.0	33.0
VM -M12-12R	12	3/4	9.5	27.0	39.8	36.8
VM -M16-06R	16	3/8	9.5	23.8	38.0	30.2
VM -M16-08R	16	1/2	11.9	23.8	38.0	35.1
VM -M16-12R	16	3/4	12.7	27.0	39.8	36.8
VM -M18-08R	18	1/2	11.9	27.0	39.8	36.8
VM -M18-12R	18	3/4	15.1	27.0	39.8	36.8
VM -M20-08R	20	1/2	11.9	34.9	44.6	41.7
VM -M20-12R	20	3/4	15.9	30.0	44.6	41.7
VM -M22-12R	22	3/4	15.9	30.0	44.6	41.7
VM -M22-16R	22	1	18.3	34.9	44.6	46.5
VM -M25-12R	25	3/4	15.9	34.9	49.1	41.7
VM -M25-16R	25	1	21.8	34.9	49.1	46.5

45° Male Elbow

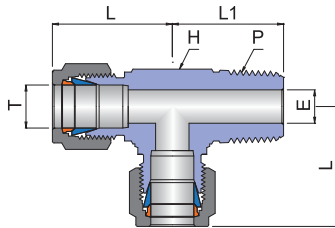


Connects Fractional Tube to Female NPT Thread

Part No.	Tube OD T		P NPT	E Min.	H		L	L 1
	inch	mm			inch	mm		
VM V-04-02N	1/4	6.35	1/8	4.82	1/2	12.70	24.63	16.51
VM V-04-04N	1/4	6.35	1/4	4.82	1/2	12.70	24.63	21.08
VM V-06-02N	3/8	9.52	1/8	4.82	5/8	15.87	27.94	18.28
VM V-06-04N	3/8	9.52	1/4	7.11	5/8	15.87	27.94	22.86
VM V-06-06N	3/8	9.52	3/8	7.11	13/16	20.63	29.21	24.13
VM V-08-06N	1/2	12.70	3/8	9.65	13/16	20.63	32.00	24.13
VM V-08-08N	1/2	12.70	1/2	10.41	13/16	20.63	32.00	28.95
VM V-12-12N	3/4	19.05	3/4	15.74	1-1/8	28.57	34.03	30.98
VM V-16-16N	1	25.40	1	22.35	1-3/8	34.92	40.38	37.84



Male Run Tee



Connects Fractional Tube to Female NPT Thread

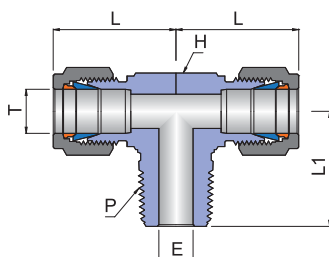
Part No.	Tube OD T		P NPT	E Min.	H		L	L 1
	inch	mm			inch	mm		
VMR -02-02N	1/8	3.17	1/8	2.28	1/2	12.70	24.91	17.80
VMR -02-04N	1/8	3.17	1/4	2.28	1/2	12.70	24.91	23.36
VMR -03-02N	3/16	4.76	1/8	3.04	1/2	12.70	24.38	17.78
VMR -04-02N	1/4	6.35	1/8	4.82	1/2	12.70	26.92	18.79
VMR -04-04N	1/4	6.35	1/4	4.82	1/2	12.70	27.38	23.87
VMR -05-02N	5/16	7.94	1/8	4.82	9/16	14.28	29.71	20.82
VMR -06-04N	3/8	9.52	1/4	7.11	5/8	15.87	30.48	25.40
VMR -06-06N	3/8	9.52	3/8	7.11	11/16	17.46	31.24	26.20
VMR -08-06N	1/2	12.70	3/8	9.65	13/16	20.63	36.06	28.19
VMR -08-08N	1/2	12.70	1/2	10.41	13/16	20.63	36.06	33.02
VMR -10-08N	5/8	15.87	1/2	11.93	15/16	23.80	38.10	35.05
VMR -12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	38.35	36.83

Connects Metric Tube to Female ISO Tapered Thread

Part No.	Tube OD T	P R(PT)	E Min.	H	L	L 1
	mm			mm		
VMR -M03-02R	3	1/8	2.4	12.7	23.6	17.8
VMR -M03-04R	3	1/4	2.4	12.7	24.6	23.4
VMR -M04-02R	4	1/8	2.4	12.7	25.4	18.8
VMR -M06-02R	6	1/8	4.8	12.7	27.0	18.8
VMR -M06-04R	6	1/4	4.8	14.2	27.0	23.4
VMR -M08-02R	8	1/8	4.8	14.3	28.8	19.8
VMR -M08-04R	8	1/4	6.4	14.3	28.8	24.4
VMR -M10-04R	10	1/4	7.1	17.5	31.5	28.2
VMR -M10-06R	10	3/8	7.9	17.5	31.5	28.2
VMR -M12-04R	12	1/4	7.1	20.6	36.0	28.2
VMR -M12-06R	12	3/8	9.5	20.6	36.0	28.2
VMR -M12-08R	12	1/2	9.5	20.6	36.0	33.0
VMR -M16-06R	16	3/8	9.5	23.8	38.0	30.2
VMR -M16-08R	16	1/2	11.9	23.8	38.0	35.1
VMR -M20-12R	20	3/4	15.9	30.0	44.6	41.7



Male Branch Tee



Connects Fractional Tube to Female NPT Thread

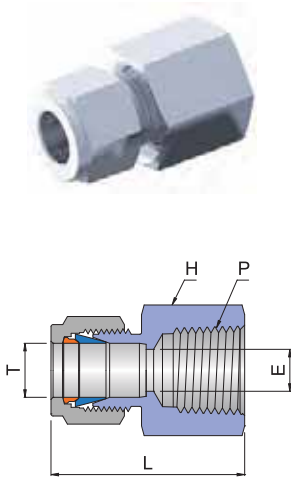
Part No.	Tube OD T		P NPT	E Min.	H		L	L 1
	inch	mm			inch	mm		
VMBT-02-02N	1/8	3.17	1/8	2.28	1/2	12.70	24.91	17.80
VMBT-02-04N	1/8	3.17	1/4	2.28	1/2	12.70	24.91	23.36
VMBT-03-02N	3/16	4.76	1/8	3.04	1/2	12.70	24.38	17.78
VMBT-04-02N	1/4	6.35	1/8	4.82	1/2	12.70	26.92	18.79
VMBT-04-04N	1/4	6.35	1/4	4.82	1/2	12.70	27.08	23.87
VMBT-05-02N	5/16	7.93	1/8	4.82	9/16	14.28	29.71	20.82
VMBT-06-04N	3/8	9.52	1/4	7.11	5/8	15.87	30.48	25.40
VMBT-06-06N	3/8	9.52	3/8	7.11	11/16	17.46	31.24	26.20
VMBT-08-06N	1/2	12.70	3/8	10.41	13/16	20.63	36.06	28.19
VMBT-08-08N	1/2	12.70	1/2	10.41	13/16	20.63	36.06	33.02
VMBT-10-08N	5/8	15.87	1/2	11.93	15/16	23.80	38.10	35.05
VMBT-12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	38.35	36.83

Connects Metric Tube to Female ISO Tapered Thread

Part No.	Tube OD T	P R(PT)	E Min.	H	L	L 1
	mm			mm		
VM -M03-02R	3	1/8	2.4	12.7	23.6	17.8
VM -M03-04R	3	1/4	2.4	12.7	24.6	23.4
VM -M04-02R	4	1/8	2.4	12.7	25.4	18.8
VM -M06-02R	6	1/8	4.8	12.7	27.0	18.8
VM -M06-04R	6	1/4	4.8	14.2	27.0	23.4
VM -M08-02R	8	1/8	4.8	14.3	28.8	19.8
VM -M08-04R	8	1/4	6.4	14.3	28.8	24.4
VM -M10-04R	10	1/4	7.1	17.5	31.5	28.2
VM -M10-06R	10	3/8	7.9	17.5	31.5	28.2
VM -M12-04R	12	1/4	7.1	20.6	36.0	28.2
VM -M12-06R	12	3/8	9.5	20.6	36.0	28.2
VM -M12-08R	12	1/2	9.5	20.6	36.0	33.0
VM -M16-06R	16	3/8	9.5	25.4	38.0	30.2
VM -M16-08R	16	1/2	11.9	25.4	38.0	35.1
VM -M20-12R	20	3/4	15.9	30.0	44.6	41.7



Female Connector

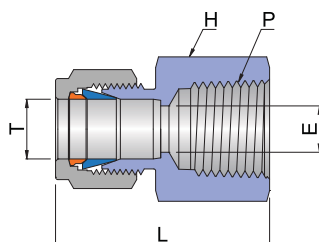


Connects Fractional Tube to Male NPT Thread

Part No.	Tube OD T		P NPT	E Min.	H		L
	inch	mm			inch	mm	
VFC-01-01N	1/16	1.58	1/16	1.27	7/16	11.11	23.62
VFC-01-02N	1/16	1.58	1/8	1.27	9/16	14.28	24.38
VFC-02-02N	1/8	3.17	1/8	2.28	9/16	14.28	28.70
VFC-02-04N	1/8	3.17	1/4	2.28	3/4	19.05	33.52
VFC-03-02N	3/16	4.76	1/8	3.04	9/16	14.28	29.71
VFC-04-02N	1/4	6.35	1/8	4.82	9/16	14.28	31.24
VFC-04-04N	1/4	6.35	1/4	4.82	3/4	19.05	35.81
VFC-04-06N	1/4	6.35	3/8	4.82	7/8	22.22	37.59
VFC-04-08N	1/4	6.35	1/2	4.82	1-1/16	26.98	42.41
VFC-05-02N	5/16	7.93	1/8	6.35	9/16	14.28	32.00
VFC-05-04N	5/16	7.93	1/4	6.35	3/4	19.05	36.83
VFC-06-02N	3/8	9.52	1/8	7.11	5/8	15.87	32.76
VFC-06-04N	3/8	9.52	1/4	7.11	3/4	19.05	37.59
VFC-06-06N	3/8	9.52	3/8	7.11	7/8	22.22	39.11
VFC-06-08N	3/8	9.52	1/2	7.11	1-1/16	26.98	43.94
VFC-06-12N	3/8	9.52	3/4	7.11	1-5/16	33.33	47.75
VFC-08-04N	1/2	12.70	1/4	10.41	13/16	20.63	40.38
VFC-08-06N	1/2	12.70	3/8	10.41	7/8	22.22	41.91
VFC-08-08N	1/2	12.70	1/2	10.41	1-1/16	26.98	46.73
VFC-08-12N	1/2	12.70	3/4	10.41	1-5/16	33.33	48.26
VFC-10-06N	5/8	15.87	3/8	12.70	15/16	23.80	41.91
VFC-10-08N	5/8	15.87	1/2	12.70	1-1/16	26.98	46.73
VFC-10-12N	5/8	15.87	3/4	12.70	1-5/16	33.33	48.26
VFC-12-08N	3/4	19.05	1/2	15.74	1-1/16	26.98	46.73
VFC-12-12N	3/4	19.05	3/4	15.74	1-5/16	33.33	48.26
VFC-14-12N	7/8	22.22	3/4	18.28	1-5/16	33.33	49.78
VFC-16-12N	1	25.40	3/4	22.35	1-3/8	34.92	53.34
VFC-16-16N	1	25.40	1	22.35	1-5/8	41.27	62.23
VFC-20-20N	1-1/4	31.75	1-1/4	27.68	2-1/8	53.97	74.67
VFC-24-24N	1-1/2	38.10	1-1/2	34.03	2-3/8	60.32	83.31
VFC-32-32N	2	50.80	2	45.97	2-7/8	70.03	101.60



Female Connector

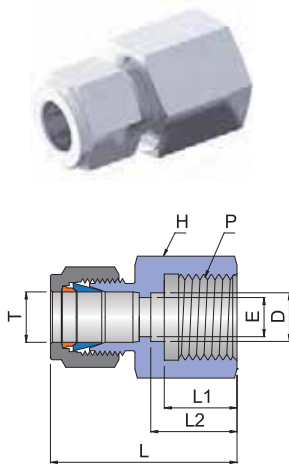


Connects Metric Tube to Male ISO Tapered Thread

Part No.	Tube ODT	P ISO7/1	E Min.	H	L
	mm			mm	
VFC-M03-02R	3	1/8	2.4	14	28.7
VFC-M03-04R	3	1/4	2.4	19	33.5
VFC-M04-02R	4	1/8	2.4	14	29.7
VFC-M06-02R	6	1/8	4.8	14	31.3
VFC-M06-04R	6	1/4	4.8	19	35.8
VFC-M06-06R	6	3/8	4.8	22	36.9
VFC-M06-08R	6	1/2	4.8	27	42.5
VFC-M08-02R	8	1/8	6.4	15	32.1
VFC-M08-04R	8	1/4	6.4	19	37.0
VFC-M08-06R	8	3/8	6.4	22	37.7
VFC-M08-08R	8	1/2	6.4	27	43.3
VFC-M10-02R	10	1/8	7.9	18	33.0
VFC-M10-04R	10	1/4	7.9	19	37.8
VFC-M10-06R	10	3/8	7.9	22	38.6
VFC-M10-08R	10	1/2	7.9	27	44.2
VFC-M12-02R	12	1/8	9.5	22	38.5
VFC-M12-04R	12	1/4	9.5	22	40.3
VFC-M12-06R	12	3/8	9.5	22	41.1
VFC-M12-08R	12	1/2	9.5	27	46.7
VFC-M12-12R	12	3/4	9.5	35	49.0
VFC-M15-08R	15	1/2	11.9	27	46.7
VFC-M16-08R	16	1/2	12.7	37	46.9
VFC-M20-08R	20	1/2	15.9	30	47.9
VFC-M20-12R	20	3/4	15.9	35	49.7
VFC-M22-12R	22	3/4	18.3	35	49.7
VFC-M22-16R	22	1	18.3	41	57.9
VFC-M25-12R	25	3/4	21.8	35	53.4
VFC-M25-16R	25	1	21.8	41	62.3



Gauge Connector



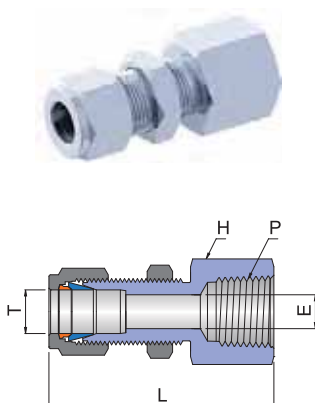
Connects Fractional Tube to ISO Parallel Thread (Gauge)

Part No.	Tube OD T		P G(PF)	E Min.	E1	H		L1	L2	L
	inch	mm				inch	mm			
V C-04-02	1/4	6.35	1/8	4.82	-	9/16	14.28	12.00	-	33.55
V C-04-04	1/4	6.35	1/4	4.82	5.58	3/4	19.05	13.00	17.00	37.59
V C-04-06	1/4	6.35	3/8	4.82	6.60	15/16	24.81	14.22	20.30	37.59
V C-04-08	1/4	6.35	1/2	4.82	6.60	11/16	26.98	18.80	24.90	43.43
V C-05-04	5/16	7.93	1/4	5.58	-	3/4	19.05	13.00	-	38.35
V C-05-08	5/16	7.93	1/2	7.11	-	1-1/16	26.98	18.80	-	40.38
V C-06-04	3/8	9.52	1/4	5.58	-	3/4	19.05	12.95	-	39.12
V C-06-06	3/8	9.52	3/8	6.60	-	15/16	24.81	14.22	-	38.61
V C-06-08	3/8	9.52	1/2	7.11	-	1-1/16	26.98	18.80	-	41.91
V C-08-04	1/2	12.70	1/4	5.50	-	7/8	22.22	13.00	-	41.95
V C-08-06	1/2	12.70	3/8	6.60	-	15/16	23.81	14.24	-	44.45
V C-08-08	1/2	12.70	1/2	7.11	7.11	1-1/16	26.98	18.80	-	48.26

Connects Metric Tube to ISO Parallel Thread (Gauge)

Part No.	Tube OD T	P G(PF)	E Min.	E1	H	L 1	L 2	L
	mm				mm			
VGC-M03-04G	3	1/4	2.4	5.5	19	13.0	17.0	35.3
VGC-M06-04G	6	1/4	4.8	5.5	19	13.0	17.0	37.6
VGC-M06-06G	6	3/8	4.8	6.5	24	14.0	20.0	37.6
VGC-M06-08G	6	1/2	4.8	7.0	27	19.0	25.0	43.0
VGC-M08-04G	8	1/4	5.5	-	19	13.0	-	38.5
VGC-M08-06G	8	3/8	6.5	-	24	14.0	-	36.2
VGC-M08-08G	8	1/2	7.0	-	27	19.0	-	40.5
VGC-M10-04G	10	1/4	5.5	-	19	13.0	-	39.4
VGC-M10-06G	10	3/8	6.5	-	24	14.0	-	38.8
VGC-M10-08G	10	1/2	7.0	-	27	19.0	-	41.4
VGC-M12-04G	12	1/4	5.5	-	22	13.0	-	41.9
VGC-M12-06G	12	3/8	6.5	-	24	14.0	-	44.4
VGC-M12-08G	12	1/2	7.0	-	27	19.0	-	48.2
VGC-M20-08G	20	1/2	7.0	-	30	19.0	-	54.3
VGC-M22-08G	22	1/2	7.0	-	30	19.0	-	54.3

Bulkhead Female Connector



Connects Fractional Tube to Male NPT Thread

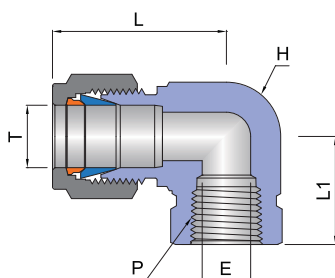
Part No.	Tube OD T		P (NPT)	E Min.	H		L	Panel Hole Drill	Panel Max. Thickne
	inch	mm			inch	mm			
V FC-02-02N	1/8	3.17	1/8	2.28	9/16	14.28	44.70	8.38	12.70
V FC-04-02N	1/4	6.35	1/8	4.82	5/8	15.87	46.99	11.50	10.16
V FC-04-04N	1/4	6.35	1/4	4.82	3/4	19.05	51.81	11.50	10.16
V FC-06-04N	3/8	9.52	1/4	7.11	3/4	19.05	55.11	14.68	11.17
V FC-08-06N	1/2	12.70	3/8	10.41	15/16	23.81	61.72	19.44	12.70
V FC-08-08N	1/2	12.70	1/2	10.41	1-1/16	26.98	66.54	19.44	12.70
V FC-12-12N	3/4	19.05	3/4	15.74	1-1/4	31.75	73.51	25.79	16.76

Connects Metric Tube to Male NPT Thread

Part No.	Tube OD T	P (NPT)	E Min.	H	L	Panel Hole Drill	Panel Max. Thickne
	mm			mm			
V FC-M06-02N	6	1/8	4.8	16	46.90	11.5	10.2
V FC-M06-04N	6	1/4	4.8	19	51.80	11.5	10.2
V FC-M08-04N	8	1/4	6.3	19	53.85	13.1	11.2
V FC-M12-08N	12	1/2	9.5	27	66.50	19.5	12.7



Female Elbow



Connects Fractional Tube to Male NPT Thread

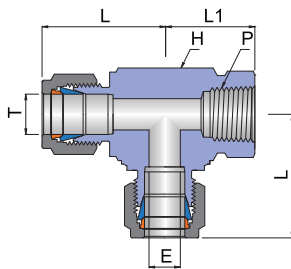
Part No.	Tube OD T		P NPT	E Min.	H		L	L ₁
	inch	mm			inch	mm		
VF -02-02N	1/8	3.17	1/8	2.28	1/2	12.70	24.63	19.05
VF -02-04N	1/8	3.17	1/4	2.28	11/16	17.46	27.43	22.35
VF -03-02N	3/16	4.76	1/8	3.04	1/2	12.70	25.40	19.05
VF -04-02N	1/4	6.35	1/8	4.82	1/2	12.70	26.92	19.05
VF -04-04N	1/4	6.35	1/4	4.82	11/16	17.46	29.71	22.35
VF -04-06N	1/4	6.35	3/8	4.82	13/16	20.63	31.75	22.35
VF -04-08N	1/4	6.35	1/2	4.82	1	25.40	34.54	28.44
VF -05-02N	5/16	7.93	1/8	6.35	9/16	14.28	28.70	19.05
VF -05-04N	5/16	7.93	1/4	6.35	11/16	17.46	30.48	22.35
VF -06-02N	3/8	9.52	1/8	7.11	5/8	15.87	30.48	19.05
VF -06-04N	3/8	9.52	1/4	7.11	11/16	17.46	31.24	22.35
VF -06-06N	3/8	9.52	3/8	7.11	13/16	20.63	33.27	22.35
VF -06-08N	3/8	9.52	1/2	7.11	1	25.40	36.06	28.44
VF -08-04N	1/2	12.70	1/4	10.41	13/16	20.63	36.06	22.35
VF -08-06N	1/2	12.70	3/8	10.41	13/16	20.63	36.06	22.35
VF -08-08N	1/2	12.70	1/2	10.41	1	25.40	38.86	28.44
VF -10-06N	5/8	15.87	3/8	12.70	15/16	23.80	38.10	22.35
VF -10-08N	5/8	15.87	1/2	12.70	1	25.40	39.87	28.44
VF -12-08N	3/4	19.05	1/2	15.74	1-1/16	26.98	39.87	28.44
VF -12-12N	3/4	19.05	3/4	15.74	1-3/8	34.92	44.70	31.75
VF -14-12N	7/8	22.22	3/4	18.28	1-3/8	34.92	44.70	31.75
VF -16-12N	1	25.40	3/4	22.35	1-3/8	34.92	49.02	31.75
VF -16-16N	1	25.40	1	22.35	1-11/16	42.86	50.29	38.10

Connects Metric Tube to Male NPT Thread

Part No.	Tube OD T	P (PT)	E Min.	H	L	L ₁
	mm			mm		
VF -M06-02N	6	1/8	4.8	12.7	27.0	19.00
VF -M06-04N	6	1/4	4.8	17.5	29.8	22.40
VF -M06-06N	6	3/8	4.8	20.6	31.7	22.40
VF -M06-08N	6	1/2	4.8	25.4	34.6	28.40
VF -M08-04N	8	1/4	6.4	17.5	30.6	22.40
VF -M08-08N	8	1/2	6.4	20.6	35.2	28.40
VF -M10-02N	10	1/8	7.9	17.5	31.5	19.00
VF -M10-04N	10	1/4	7.9	17.5	33.5	22.40
VF -M10-06N	10	3/8	7.9	20.6	33.5	22.40
VF -M10-08N	10	1/2	7.9	25.4	36.1	28.40
VF -M12-04N	12	1/4	9.5	20.6	36.0	22.40
VF -M12-06N	12	3/8	9.5	20.6	36.0	22.40
VF -M12-08N	12	1/2	9.5	25.4	38.8	28.40
VF -M16-08N	16	1/2	12.7	27.0	39.5	28.40



Female Run Tee



Connects Fractional Tube to Male NPT Thread

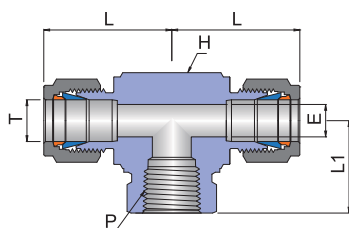
Part No.	Tube OD T		P NPT	E Min.	H		L	L 1
	inch	mm			inch	mm		
VFR -02-02N	1/8	3.17	1/8	2.28	1/2	12.70	24.63	19.05
VFR -04-02N	1/4	6.35	1/8	4.82	1/2	12.70	26.92	19.05
VFR -04-04N	1/4	6.35	1/4	4.82	11/16	17.46	29.71	22.35
VFR -06-04N	3/8	9.52	1/4	7.11	11/16	17.46	31.24	22.35
VFR -08-06N	1/2	12.70	3/8	10.41	13/16	20.63	36.06	22.35
VFR -08-08N	1/2	12.70	1/2	10.41	1	25.40	39.87	28.44
VFR -12-12N	3/4	19.05	3/4	15.74	1-3/8	34.92	44.70	31.75
VFR -16-12N	1	25.40	3/4	22.35	1-3/8	34.92	49.02	31.75
VFR -16-16N	1	25.40	1	22.35	1-11/16	42.86	53.59	38.10

Connects Metric Tube to Male NPT Thread

Part No.	Tube OD T	P (PT)	E Min.	H	L	L 1
	mm			mm		
VFR -M06-02N	6	1/8	4.8	12.7	27.0	19.0
VFR -M06-04N	6	1/4	4.8	17.5	29.8	22.4
VFR -M06-08N	6	1/2	4.8	25.4	34.5	28.4
VFR -M08-02N	8	1/8	6.4	15.8	29.9	19.0
VFR -M08-04N	8	1/4	6.4	17.5	30.6	22.4
VFR -M08-06N	8	3/8	6.4	20.6	32.4	22.4
VFR -M08-08N	8	1/2	6.4	25.4	35.2	28.4
VFR -M10-04N	10	1/4	7.9	20.6	33.5	22.4
VFR -M12-04N	12	1/4	9.5	20.6	36.0	22.4
VFR -M12-06N	12	3/8	9.5	20.6	36.0	22.4
VFR -M12-08N	12	1/2	9.5	25.4	38.8	28.4
VFR -M16-08N	16	1/2	12.7	25.4	39.5	28.4



Female Branch Tee



Connects Fractional Tube to Male NPT Thread

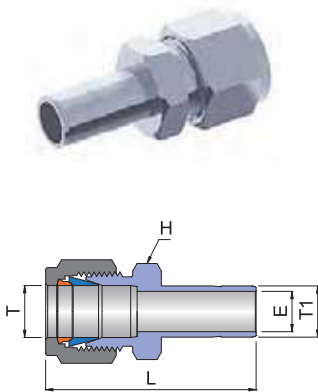
Part No.	Tube OD T		P NPT	E Min.	H		L	L 1
	inch	mm			inch	mm		
VF -18-18N	1/8	3.17	1/8	2.28	1/2	12.70	24.38	19.05
VF -14-18N	1/4	6.35	1/8	4.82	1/2	12.70	26.92	19.05
VF -14-14N	1/4	6.35	1/4	4.82	11/16	17.46	29.71	22.35
VF -38-14N	3/8	9.52	1/4	7.11	11/16	17.46	31.24	22.35
VF -12-14N	1/2	12.70	1/4	10.41	13/16	20.63	36.06	22.35
VF -12-38N	1/2	12.70	3/8	10.41	13/16	20.63	36.06	22.35
VF -12-12N	1/2	12.70	1/2	10.41	1	25.40	38.86	28.44
VF -58-12N	5/8	15.87	1/2	12.70	1	25.40	38.86	28.44
VF -34-34N	3/4	19.05	3/4	15.74	1-3/8	34.92	44.70	31.75
VF -1-34N	1	25.40	3/4	22.35	1-3/8	34.92	49.02	31.75
VF -1-1N	1	15.40	1	22.35	1-11/16	42.86	53.59	38.10

Connects Metric Tube to Male NPT Thread

Part No.	Tube OD T	P (PT)	E Min.	H	L	L 1
	mm			mm		
VF -M06-02N	6	1/8	4.8	12.7	27.0	19.0
VF -M06-04N	6	1/4	4.8	17.5	29.8	22.4
VF -M06-06N	6	3/8	4.8	20.6	31.7	22.4
VF -M06-08N	6	1/2	4.8	25.4	34.5	28.4
VF -M08-02N	8	1/8	6.4	15.8	29.9	19.0
VF -M08-04N	8	1/4	6.4	17.5	30.6	22.4
VF -M08-06N	8	3/8	6.4	20.6	32.4	22.4
VF -M08-08N	8	1/2	6.4	25.4	35.2	28.4
VF -M10-04N	10	1/4	7.9	20.6	33.5	22.4
VF -M10-06N	10	3/8	7.9	20.6	33.3	22.4
VF -M10-08N	10	1/2	9.5	25.4	33.6	22.4
VF -M12-04N	12	1/4	9.5	20.6	36.0	22.4
VF -M12-06N	12	3/8	9.5	20.6	36.0	22.4
VF -M12-08N	12	1/2	9.5	25.4	38.8	28.4
VF -M16-08N	16	1/2	12.7	25.4	39.5	28.7



Reducer

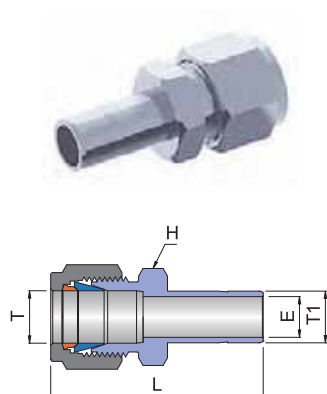


Connects Fractional Tube to Fractional Lok Port

Part No.	Tube OD T		Tube OD T1		E Min.	H		L
	inch	mm	inch	mm		inch	mm	
VR-01-02	1/16	1.58	1/8	3.17	1.27	5/16	7.93	29.21
VR-01-04	1/16	1.58	1/4	6.35	1.27	5/16	7.93	31.49
VR-02-01	1/8	3.17	1/16	1.58	0.76	7/16	11.11	28.95
VR-02-02	1/8	3.17	1/8	3.17	2.03	7/16	11.11	33.52
VR-02-03	1/8	3.17	3/16	4.76	2.28	7/16	11.11	34.29
VR-02-04	1/8	3.17	1/4	6.35	2.28	7/16	11.11	36.06
VR-02-06	1/8	3.17	3/8	9.52	2.28	7/16	11.11	37.59
VR-02-08	1/8	3.17	1/2	12.70	2.28	9/16	14.28	44.19
VR-03-02	3/16	4.76	1/8	3.17	2.03	7/16	11.11	34.79
VR-03-04	3/16	4.76	1/4	6.35	3.04	7/16	11.11	37.08
VR-04-02	1/4	6.35	1/8	3.17	2.03	1/2	12.70	36.83
VR-04-03	1/4	6.35	3/16	4.76	3.04	1/2	12.70	37.59
VR-04-04	1/4	6.35	1/4	6.35	4.32	1/2	12.70	39.11
VR-04-05	1/4	6.35	5/16	7.93	4.82	1/2	12.70	39.87
VR-04-06	1/4	6.35	3/8	9.52	4.82	1/2	12.70	40.64
VR-04-08	1/4	6.35	1/2	12.70	4.82	9/16	14.28	46.22
VR-04-10	1/4	6.35	5/8	15.87	4.82	11/16	17.46	48.00
VR-04-12	1/4	6.35	3/4	19.05	4.82	13/16	20.63	47.75
VR-05-06	5/16	7.93	3/8	9.52	6.35	9/16	14.28	41.91
VR-05-08	5/16	7.93	1/2	12.70	6.35	9/16	14.28	47.49
VR-06-04	3/8	9.52	1/4	6.32	4.32	5/8	15.87	41.40
VR-06-06	3/8	9.52	3/8	6.86	6.86	5/8	15.87	43.18
VR-06-08	3/8	9.52	1/2	12.70	7.11	5/8	15.87	48.51
VR-06-10	3/8	9.52	5/8	15.87	7.11	11/16	17.46	50.29
VR-06-12	3/8	9.52	3/4	19.05	7.11	13/16	20.63	560.29
VR-08-04	1/2	12.70	1/4	6.35	4.32	13/16	20.63	44.95
VR-08-06	1/2	12.71	3/8	9.52	6.86	13/16	20.63	46.73
VR-08-08	1/2	12.72	1/2	12.70	9.40	13/16	20.63	52.32
VR-08-10	1/2	12.73	5/8	15.87	10.41	13/16	20.63	53.84
VR-08-12	1/2	12.74	3/4	19.05	10.41	13/16	20.63	53.84
VR-08-16	1/2	12.75	1	25.40	10.41	1-1/16	26.98	60.19
VR-10-12	5/8	15.87	3/4	19.05	12.70	15/16	23.81	54.61
VR-10-14	5/8	15.88	7/8	22.22	12.70	15/16	23.81	56.13
VR-10-16	5/8	15.89	1	25.40	12.70	1-1/16	36.98	60.96
VR-12-08	3/4	19.05	1/2	12.70	9.40	1-1/16	26.98	54.61
VR-12-16	3/4	19.05	1	25.40	15.74	1-1/16	26.98	62.48
VR-16-20	1	25.40	1-1/4	31.75	22.35	1-3/8	34.92	80.51
VR-16-24	1	25.40	1-1/2	38.10	22.35	1-5/8	41.27	89.15
VR-16-32	1	25.40	2	50.80	22.35	2-1/8	53.97	112.52
VR-20-24	1-1/4	31.75	1-1/2	38.10	27.68	1-7/8	47.62	104.14
VR-20-32	1-1/4	31.75	2	50.80	27.68	1-7/8	47.62	125.22
VR-24-32	1-1/2	38.10	2	50.80	34.03	2-1/4	57.15	131.31



Reducer

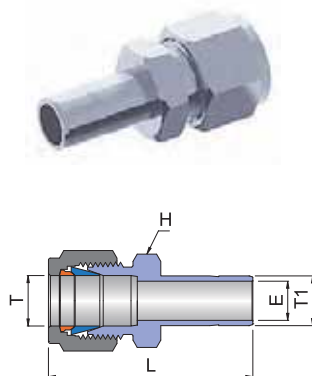


Connects Metric Tube to Metric Lok Port

Part No.	Tube OD T	Tube OD T ₁	E Min.	H	L
	mm	mm		mm	
VR-M02-M03	2	3	1.7	12	33.5
VR-M03-M04	3	4	2.2	12	35.0
VR-M03-M06	3	6	2.4	12	36.1
VR-M03-M10	3	10	2.4	12	38.4
VR-M04-M06	4	6	2.4	12	37.1
VR-M06-M03	6	3	1.9	14	36.9
VR-M06-M08	6	8	4.8	14	39.9
VR-M06-M10	6	10	4.8	14	40.7
VR-M06-M12	6	12	4.8	14	46.3
VR-M08-M06	8	6	4.1	15	40.3
VR-M08-M10	8	10	6.4	15	42.0
VR-M08-M12	8	12	6.4	15	47.6
VR-M10-M06	10	6	4.1	18	42.4
VR-M10-M12	10	12	7.9	18	49.8
VR-M10-M15	10	15	7.9	18	51.3
VR-M10-M18	10	18	7.9	19	51.3
VR-M12-M06	12	6	4.1	22	44.9
VR-M12-M10	12	10	7.1	22	46.7
VR-M12-M16	12	16	9.5	22	53.8
VR-M12-M18	12	18	9.5	22	53.8
VR-M12-M20	12	20	9.5	22	56.1
VR-M12-M22	12	22	9.5	24	56.1
VR-M12-M25	12	25	9.5	27	62.4
VR-M16-M12	16	12	8.8	24	53.0
VR-M18-M12	18	12	8.8	27	54.6
VR-M18-M16	18	16	12.0	27	56.1
VR-M18-M20	18	20	15.1	27	57.6
VR-M18-M22	18	22	15.1	27	57.6
VR-M18-M25	18	25	15.1	27	62.4
VR-M20-M16	20	16	12.0	30	57.9
VR-M20-M18	20	18	13.9	30	57.9
VR-M20-M22	20	22	15.8	30	59.4
VR-M20-M25	20	25	15.8	30	64.2
VR-M22-M18	22	18	13.9	30	57.9
VR-M22-M20	22	20	15.1	30	59.4
VR-M22-M25	22	25	18.3	30	64.2
VR-M25-M18	25	18	13.9	35	63.1
VR-M25-M20	25	20	15.5	35	64.6



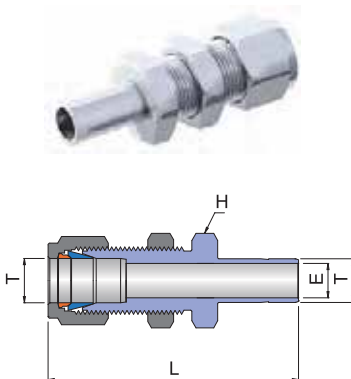
Reducer



Connects Metric Tube to Fractional Lok Port

Part No.	Tube OD T	Tube OD T ₁		E	H	L
	mm	inch	mm	Min.	mm	
VR-M02-02	2	1/8	3.17	1.7	12	33.5
VR-M03-02	3	1/8	3.17	2.0	12	33.5
VR-M03-04	3	1/4	6.35	2.4	12	36.1
VR-M04-04	4	1/4	6.35	2.4	12	37.1
VR-M06-02	6	1/8	3.17	2.0	14	36.9
VR-M06-04	6	1/4	6.35	4.3	14	39.2
VR-M06-05	6	5/16	7.93	4.8	14	39.9
VR-M06-06	6	3/8	9.52	4.8	14	40.7
VR-M08-08	8	1/2	12.70	4.8	14	46.3
VR-M08-06	8	3/8	9.52	6.4	15	42.0
VR-M08-08	8	1/2	12.70	6.4	15	47.6
VR-M10-06	10	3/8	9.52	6.9	18	44.2
VR-M10-08	10	1/2	12.70	7.9	18	49.8
VR-M12-08	12	1/2	12.70	9.4	22	52.3
VR-M12-12	12	3/4	19.05	9.5	22	53.8
VR-M18-12	18	3/4	19.05	14.7	27	56.1
VR-M18-16	18	1	25.40	15.1	27	62.4
VR-M25-16	25	1	25.40	20.2	35	69.5

Bulkhead Reducer

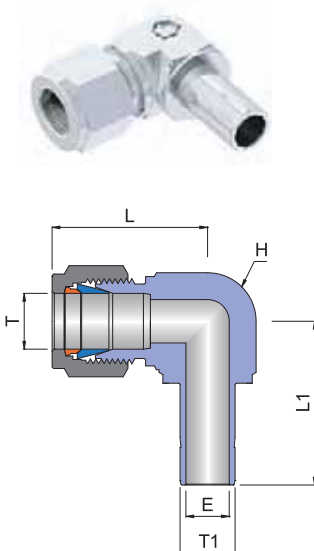


Connects Fractional Tube to Fractional Lok Port

Part No.	Tube OD T		E	H		L	Panel Hole Drill	Panel Max. Thickne
	inch	mm	Min.	inch	mm			
V R-02-02	1/8	3.17	2.03	1/2	12.70	49.53	8.33	12.70
V R-04-04	1/4	6.35	4.32	5/8	15.87	55.88	11.50	10.16
V R-06-06	3/8	9.52	6.86	3/4	19.05	61.21	14.68	11.17
V R-08-08	1/2	12.70	9.40	15/16	23.81	72.89	19.44	12.70
V R-10-10	5/8	15.87	11.94	1-1/16	26.98	75.18	22.62	12.70
V R-16-16	1	25.40	20.32	1-5/8	41.27	100.33	33.73	19.05



Adjustable Elbow

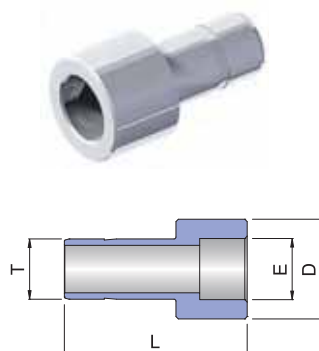


Part No.	Tube OD T		Tube OD T1		E Min.	H		L	L1
	inch	mm	inch	mm		inch	mm		
V R-01	1/16	1.58	1/16	1.58	0.76	3/8	9.52	22.3	16.00
V R-02	1/8	3.17	1/8	3.17	2.03	3/8	9.52	22.3	20.59
V R-03	3/16	4.76	3/16	4.76	3.04	1/2	12.70	25.4	22.48
V R-04	1/4	6.35	1/4	6.35	4.32	1/2	12.70	27.0	25.00
V R-05	5/16	7.93	5/16	7.93	5.59	9/16	14.28	28.8	27.08
V R-06	3/8	9.52	3/8	9.52	6.86	5/8	15.87	31.5	26.00
V R-08	1/2	12.70	1/2	12.70	9.40	13/16	20.63	36.0	37.30
V R-10	5/8	15.87	5/8	15.87	11.94	15/16	23.80	38.8	41.75
V R-12	3/4	19.05	3/4	19.05	14.73	1-1/16	26.98	38.8	42.60
V R-14	7/8	22.22	7/8	22.22	18.28	1-3/16	30.00	39.8	49.39
V R-16	1	25.40	1	25.40	20.32	1-3/8	34.92	42.6	55.60

Connects Metric Tube to Metric Lok Port

Part No.	Tube OD T	Tube OD T1	E Min.	H	L	L1
	mm	mm		mm		
V R-M03	3	3	1.9	9.5	22.3	20.5
V R-M04	4	4	2.2	12.7	25.4	23.0
V R-M06	6	6	4.1	12.7	27.0	25.1
V R-M08	8	8	5.6	14.3	28.8	27.2
V R-M10	10	10	7.1	17.5	31.5	29.5
V R-M12	12	12	8.8	20.6	36.0	37.3
V R-M15	15	15	11.2	23.8	38.8	41.6
V R-M16	16	16	12.0	23.8	38.8	41.8
V R-M18	18	18	13.9	27.0	39.8	42.6
V R-M20	20	20	15.5	30.0	42.6	67.1
V R-M22	22	22	16.1	30.0	42.6	47.2
V R-M25	25	25	19.9	34.9	49.1	55.6
V R-M28	28	28	22.5	41.0	64.0	65.0

Weld Adapter

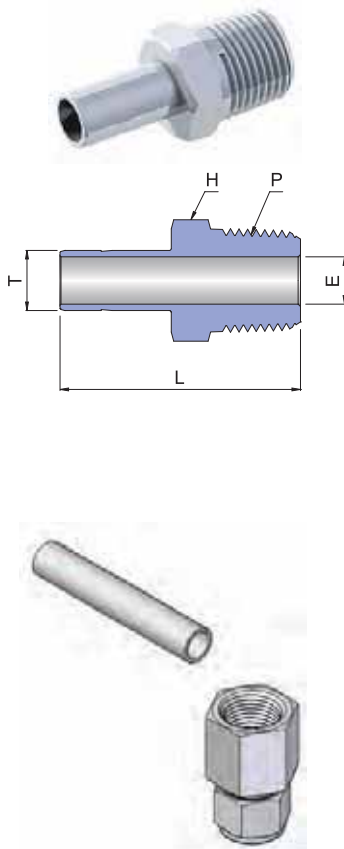


Connects Fractional Lok Port to Pipe

Part No.	Tube OD T		Pipe D		E Min.	L
	inch	mm	inch	mm		
V -04-04	1/4	6.35	1/4	13.70	4.32	28.96
V -06-08	3/8	9.52	1/2	21.30	6.86	37.08
V -08-08	1/2	12.70	1/2	21.30	9.40	42.16
V -08-12	1/2	12.70	3/4	26.67	9.40	42.67
V -12-12	3/4	19.05	3/4	26.67	14.73	47.50



Male Adapter



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

Connects Fractional Lok Port Male NPT Thread

Part No.	Tube OD T		P NPT	E Min.	H		L
	inch	mm			inch	mm	
VM -02-02N	1/8	3.17	1/8	2.03	7/16	11.11	29.50
VM -02-04N	1/8	3.17	1/4	2.03	9/16	14.28	34.80
VM -03-02N	3/16	4.76	1/8	3.04	7/16	11.11	30.22
VM -03-04N	3/16	4.76	1/4	3.04	9/16	14.28	35.56
VM -04-02N	1/4	6.35	1/8	4.32	7/16	11.11	31.80
VM -04-04N	1/5	7.35	1/4	4.32	9/16	14.28	37.08
VM -04-06N	1/6	8.35	3/8	4.32	11/16	17.46	37.84
VM -04-08N	1/7	9.35	1/2	4.32	7/8	22.22	43.43
VM -05-02N	5/16	7.93	1/8	4.57	7/16	11.11	32.76
VM -05-04N	5/16	7.93	1/4	5.59	9/16	14.28	38.10
VM -06-02N	3/8	9.52	1/8	4.83	7/16	11.11	33.50
VM -06-04N	3/8	9.52	1/4	6.86	9/16	14.28	38.90
VM -06-06N	3/8	9.52	3/8	6.86	11/16	17.46	39.60
VM -06-08N	3/8	9.52	1/2	6.86	7/8	22.22	45.20
VM -08-04N	1/2	12.70	1/4	7.11	9/16	14.28	44.50
VM -08-06N	1/2	12.70	3/8	9.40	11/16	17.46	45.20
VM -08-08N	1/2	12.70	1/2	9.40	7/8	22.22	50.50
VM -10-06N	5/8	15.87	3/8	9.65	11/16	17.46	47.40
VM -10-08N	5/8	15.87	1/2	11.94	7/8	22.22	52.30
VM -10-12N	5/8	15.87	3/4	11.94	1-1/16	26.98	52.30
VM -12-08N	3/4	19.05	1/2	11.94	7/8	22.22	52.30
VM -12-12N	3/4	19.05	3/4	14.73	1-1/16	26.98	52.30
VM -12-16N	3/4	19.05	1	14.76	1-3/8	34.92	57.91
VM -14-12N	7/8	22.22	3/4	15.75	1-1/16	26.98	54.30
VM -16-12N	1	25.40	3/4	15.75	1-1/16	26.98	58.70
VM -16-16N	1	25.40	1	20.32	1-3/8	34.92	66.00
VM -20-20N	1-1/4	31.75	1-1/4	25.91	1-3/4	44.45	80.26
VM -24-24N	1-4/2	38.10	1-1/2	31.75	2-1/8	53.97	94.48
VM -32-32N	2	50.80	2	43.69	2-3/4	69.85	119.38

Connects Metric Tube to Female NPT Thread

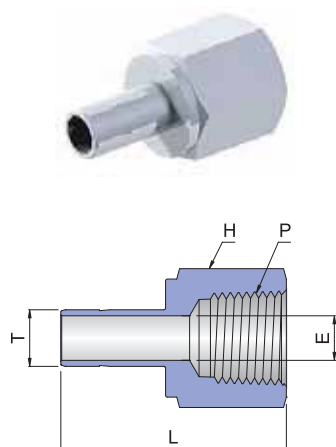


The male elbow (ME) could not be positioned in a desired direction.

Part No.	Tube OD T	P R(PT)	E Min.	H	L
	mm			mm	
VM -M06-02R	6	1/8	4.1	12	32.8
VM -M06-04R	6	1/4	4.1	14	38.1
VM -M08-04R	8	1/4	5.6	14	39.1
VM -M10-04R	10	1/4	7.1	14	39.9
VM -M10-06R	10	3/8	7.1	18	40.6
VM -M10-08R	10	1/2	7.1	22	45.2
VM -M12-04R	12	1/4	7.1	14	46.5
VM -M12-06R	12	3/8	8.8	17	46.2
VM -M12-08R	12	1/2	8.8	22	51.8
VM -M18-08R	18	1/2	11.9	22	53.2
VM -M18-12R	18	3/4	13.9	27	53.2
VM -M28-16R	28	1	22.2	35	74.7
VM -M28-20R	28	1-1/4	22.5	46	76.2
VM -M32-20R	32	1-1/4	26.5	46	81.0
VM -M38-24R	38	1-1/2	31.8	55	92.2



Female Adapter



To connect the direction, assemble Male Adapter (TMA) in the female port firstly.



Insert Lok port of Union Elbow (UE) into the tube stub end of Male Adapter (TMA).

Set the direction and assemble Union Elbow (UE) according to Lok assembly instruction.

Connects Fractional Lok Port Male NPT Thread

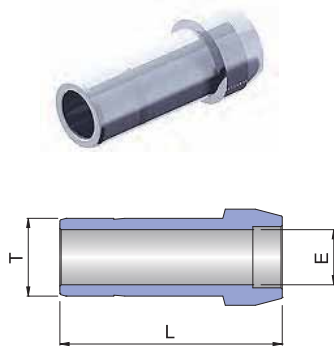
Part No.	Tube OD T		P NPT	E Min.	H		L
	inch	mm			inch	mm	
VF -02-02N	1/8	3.17	1/8	2.03	9/16	14.28	31.50
VF -02-04N	1/8	3.17	1/4	2.03	3/4	19.05	35.30
VF -03-02N	3/16	4.76	1/8	3.04	9/16	14.28	32.00
VF -03-04N	3/16	4.76	1/4	3.04	3/4	19.05	35.81
VF -04-02N	1/4	6.35	1/8	4.32	9/16	14.28	33.02
VF -04-04N	1/5	7.35	1/4	4.32	3/4	19.05	37.10
VF -14-38N	1/6	8.35	3/8	4.32	7/8	22.22	39.37
VF -14-12N	1/7	9.35	1/2	4.32	1-1/16	26.98	45.50
VF -05-02N	5/16	7.93	1/8	5.59	9/16	14.28	34.29
VF -05-04N	5/16	7.93	1/4	5.59	3/4	19.05	37.59
VF -06-02N	3/8	9.52	1/8	6.86	9/16	14.28	34.29
VF -06-04N	3/8	9.52	1/4	6.86	3/4	19.05	38.10
VF -06-06N	3/8	9.52	3/8	6.86	7/8	22.22	40.38
VF -06-08N	3/8	9.52	1/2	6.86	1-1/16	26.98	46.73
VF -08-04N	1/2	12.70	1/4	9.40	3/4	19.05	43.43
VF -08-06N	1/2	12.70	3/8	9.40	7/8	22.22	45.46
VF -08-08N	1/2	12.70	1/2	9.40	1-1/16	26.98	51.80
VF -10-06N	5/8	15.87	3/8	11.94	7/8	22.22	48.26
VF -10-08N	5/8	15.87	1/2	11.94	1-1/16	26.98	53.84
VF -10-12N	5/8	15.87	3/4	11.94	1-5/16	33.33	55.37
VF -12-08N	3/4	19.05	1/2	14.73	1-1/16	26.98	52.83
VF -12-12N	3/4	19.05	3/4	14.73	1-5/16	33.33	54.86
VF -12-16N	3/4	19.05	1	14.73	1-5/8	41.27	58.42
VF -14-12N	7/8	22.22	3/4	15.75	1-5/16	33.33	57.15
VF -16-12N	1	25.40	3/4	20.32	1-5/16	33.33	60.70
VF -16-16N	1	25.40	1	20.32	1-5/8	41.27	64.26
VF -20-20N	1-1/4	31.75	1-1/4	25.91	2-1/8	53.97	77.72
VF -20-20N	1-4/2	38.10	1-1/2	31.75	2-3/8	60.32	88.90
VF -32-32N	2	50.80	2	43.69	2-7/8	70.02	107.44

Connects Metric Tube to Female ISO Tapered Thread

Part No.	Tube OD T	P R(PT)	E Min.	H	L
	mm			mm	
VF -M03-02R	3	1/8	1.9	14	31.15
VF -M06-02R	6	1/8	4.1	14	32.50
VF -M06-04R	6	1/4	4.1	19	37.10
VF -M08-04R	8	1/4	5.6	19	37.60
VF -M10-04R	10	1/4	7.1	19	38.10
VF -M10-06R	10	3/8	7.1	22	40.10
VF -M10-08R	10	1/2	7.1	27	46.50
VF -M12-04R	12	1/4	8.8	19	43.70
VF -M12-06R	12	3/8	8.8	22	46.00
VF -M12-08R	12	1/2	8.8	27	52.30
VF -M18-12R	18	3/4	13.9	35	54.80



Port Connector



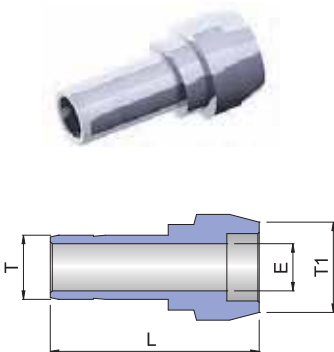
Connects Two Fractional Lok Ports

Part No.	Tube OD T		E Min.	L
	inch	mm		
V C-01	1/16	1.58	0.76	13.72
V C-02	1/8	3.17	2.03	22.35
V C-04	1/4	6.35	4.32	24.89
V C-05	5/16	7.93	5.59	25.91
V C-06	3/8	9.52	6.86	26.67
V C-08	1/2	12.70	9.40	36.32
V C-12	3/4	19.05	14.73	37.85
V C-16	1	25.40	20.32	49.28

Connects Two Metric Lok Ports

Part No.	Tube OD T	E Min.	L
	mm		
V C-M03	3	1.9	22.20
V C-M04	4	2.2	23.21
V C-M06	6	4.1	25.00
V C-M08	8	5.6	26.00
V C-M10	10	7.1	27.10
V C-M12	12	8.8	36.20
V C-M15	15	11.2	37.80
V C-M16	16	12.0	37.80
V C-M18	18	13.9	37.80
V C-M20	20	15.5	39.40
V C-M22	22	16.1	38.97
V C-M25	25	19.9	49.30
V C-M28	28	22.5	63.50
V C-M32	32	26.5	69.70
V C-M38	38	31.6	81.90

Reducing Port Connector



Connects Two Fractional Lok Ports

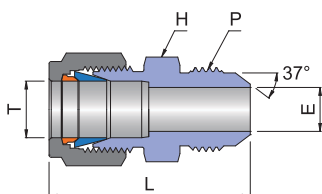
Part No.	Tube OD T		Tube OD D		E Min.	L
	inch	mm	inch	mm		
VR C-02-01	1/8	3.17	1/16	1.58	0.76	18.30
VR C-04-01	1/4	6.35	1/16	1.58	0.76	19.05
VR C-04-02	1/4	6.35	1/8	3.17	2.03	22.86
VR C-06-02	3/8	9.52	1/8	3.17	2.03	23.37
VR C-06-04	3/8	9.52	1/4	6.35	4.32	25.40
VR C-08-04	1/2	12.70	1/4	6.35	4.32	29.72
VR C-08-06	1/2	12.70	3/8	9.52	6.86	30.73
VR C-12-08	3/4	19.05	1/2	12.70	9.40	37.85
VR C-16-08	1	25.40	1/2	12.70	9.40	42.93
VR C-16-12	1	25.40	3/4	19.05	14.73	43.69

Connects Two Metric Lok Ports

Part No.	Tube OD T	Tube OD D	E Min.	L
	mm	mm		
VR C-M06-M03	6	3	1.9	22.90
VR C-M08-M06	8	6	4.1	25.40
VR C-M10-M06	10	6	4.1	25.80
VR C-M10-M08	10	8	5.6	26.30
VR C-M12-M06	12	6	4.1	29.60
VR C-M12-M08	12	8	5.6	30.10
VR C-M12-M10	16	10	7.1	30.60
VR C-M16-M6	16	6	4.1	29.37
VR C-M16-M12	16	12	8.8	37.50
VR C-M28-M25	28	25	19.9	56.50
VR C-M32-M25	32	25	19.9	60.30
VR C-M38-M25	38	25	19.9	65.80



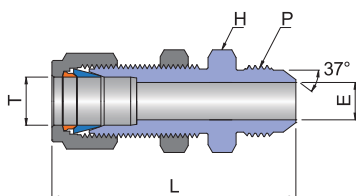
AN Union



Connects Fractional Tube to AN Flared Tube

Part No.	Tube OD T		AN Tube		Straight Thread P(U)	E Min.	H		L
	inch	mm	inch	mm			inch	mm	
V -01-02	1/16	1.58	1/8	3.17	5/16-24	1.27	7/16	11.11	27.17
V -02-02	1/8	3.17	1/8	3.17	5/16-24	1.52	7/16	11.11	31.49
V -02-04	1/8	3.17	1/4	6.35	7/16-20	2.28	1/2	12.70	35.05
V -04-04	1/4	6.35	1/4	6.35	7/16-20	4.31	1/2	12.70	37.59
V -05-05	5/16	7.93	5/16	7.93	1/2-20	5.84	9/16	14.28	38.35
V -06-04	3/8	9.52	1/4	6.35	7/16-20	4.31	5/8	15.87	39.62
V -06-06	3/8	9.52	3/8	9.52	9/16-18	7.11	5/8	15.87	39.62
V -08-08	1/2	12.70	1/2	12.70	3/4-16	9.90	13/16	20.63	45.97
V -12-12	3/4	19.05	3/4	19.05	1-1/16-12	15.49	1-1/8	28.57	53.34
V -16-16	1	25.40	1	25.40	1-5/16-12	21.33	1-3/8	34.92	61.46

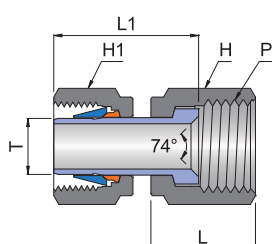
AN Bulkhead Union



Connects Fractional Tube to AN Flared Tube

Part No.	Tube OD T		AN Tube		Straight Thread P(U)	E Min.	H		L	Panel Hole Drill Size	Panel Max. Thickness
	inch	mm	inch	mm			inch	mm			
V -04-04	1/4	6.35	1/4	6.35	7/16-20	4.31	5/8	15.87	53.84	11.50	10.16
V -06-06	3/8	9.52	3/8	9.52	9/16-18	7.11	3/4	19.50	57.15	14.68	11.17
V -08-08	1/2	12.70	1/2	12.70	3/4-16	9.90	15/16	13.81	65.78	19.44	12.70
V -12-12	3/4	19.05	3/4	19.05	1-1/16-12	15.49	1-3/16	30.16	78.99	25.79	16.76
V -16-16	1	25.40	1	25.40	1-5/16-12	21.33	1-5/8	41.27	92.45	33.73	19.05

AN Adapter

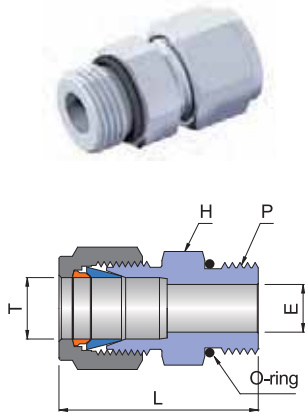


Connects Fractional Lok Port to Male AN

Part No.	Tube OD T		AN Tube		Straight Thread P(U)	H		H1		L	L1
	inch	mm	inch	mm		inch	mm	inch	mm		
V -02-02	1/8	3.17	1/8	3.17	5/16-24	3/8	9.52	7/16	11.11	13.71	18.54
V -02-04	1/8	3.17	1/4	6.35	7/16-20	9/16	14.28	7/16	11.11	15.74	19.05
V -04-04	1/4	6.35	1/4	6.35	7/16-20	9/16	14.28	9/16	14.28	15.74	21.33
V -06-06	3/8	9.52	3/8	9.52	9/16-18	11/16	17.46	11/16	17.46	18.28	24.89
V -08-08	1/2	12.70	1/2	12.70	3/4-16	7/8	22.22	7/8	22.22	21.59	31.75



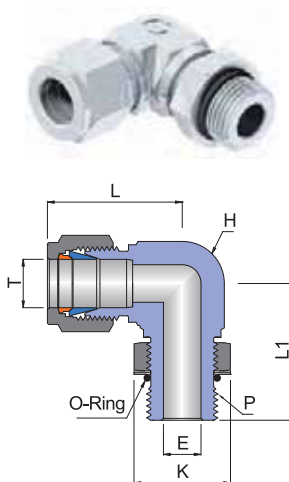
SAE/MS Male Connector



Connects Fractional Tube to SAE/MS Straight Thread Boss

Part No.	Tube OD T		Straight Thread P(U)	E Min.	H		L
	inch	mm			inch	mm	
VMCS-02-02	1/8	3.17	5/16-24	2.28	7/16	11.11	29.97
VMCS-02-04	1/8	3.17	7/16-20	2.28	9/16	14.28	31.49
VMCS-04-04	1/4	6.35	7/16-20	4.82	9/16	14.28	34.03
VMCS-04-06	1/4	6.35	9/16-18	4.82	11/16	17.46	35.56
VMCS-04-08	1/4	6.35	3/4-16	4.82	7/8	22.22	37.59
VMCS-04-10	1/4	6.35	7/8-14	4.82	1	25.40	40.64
VMCS-05-05	5/16	7.93	1/2-20	5.84	5/8	15.87	34.79
VMCS-06-04	3/8	9.52	7/16-20	5.08	5/8	15.87	35.56
VMCS-06-06	3/8	9.52	9/16-18	7.11	11/16	17.46	37.08
VMCS-06-08	3/8	9.52	3/4-16	7.11	7/8	22.22	39.11
VMCS-06-10	3/8	9.52	7/8-14	7.11	1	25.40	42.16
VMCS-08-06	1/2	12.70	9/16-18	7.11	13/16	20.63	39.11
VMCS-08-08	1/2	12.70	3/4-16	10.41	7/8	22.22	41.91
VMCS-08-10	1/2	12.70	7/8-14	10.41	1	25.40	44.95
VMCS-08-12	1/2	12.70	1-1/16-12	10.41	1-1/4	31.75	49.02
VMCS-10-08	5/8	15.87	3/4-16	10.66	15/16	23.81	41.91
VMCS-10-10	5/8	15.87	7/8-14	12.70	1	25.40	45.21
VMCS-12-08	3/4	19.05	3/4-16	10.66	1-1/16	26.98	45.97
VMCS-12-12	3/4	19.05	1-1/16-12	15.74	1-1/4	31.80	49.02
VMCS-14-14	7/8	22.22	1-3/16-12	18.28	1-3/8	34.92	49.02
VMCS-16-12	1	25.40	1-1/16-12	16.76	1-3/8	34.92	53.34
VMCS-16-16	1	25.40	1-5/16-12	22.35	1-1/2	38.10	54.35
VMCS-20-20	1-1/4	31.75	1-5/8-12	27.68	1-7/8	47.62	68.32
VMCS-24-24	1-1/2	38.10	1-7/8-12	34.03	2-1/8	53.97	77.72
VMCS-32-32	2	50.80	2-1/2-12	45.97	2-3/4	69.85	101.60

Positional Male Elbow

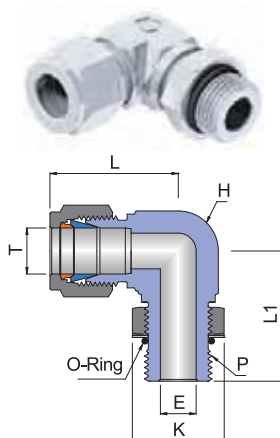


C F S M S S

Part No.	Tube OD T		Straight Thread P(U)	E Min.	H		L	L1	K
	inch	mm			inch	mm			
VM -04-04	1/4	6.35	7/16-20	4.82	1/2	12.70	28.44	28.44	16.51
VM -04-06	1/4	6.35	9/16-18	4.82	5/8	15.87	30.48	32.25	20.06
VM -05-05	5/16	7.93	1/2-20	5.84	9/16	14.28	30.22	29.46	18.28
VM -06-06	3/8	9.52	9/16-18	7.11	5/8	15.87	32.00	32.25	20.06
VM -06-08	3/8	9.52	3/4-16	7.11	13/16	20.63	34.79	37.84	25.65
VM -08-08	1/2	12.70	3/4-16	10.41	13/16	20.63	37.59	37.84	25.65
VM -10-10	5/8	15.87	7/8-14	12.70	1	25.40	39.62	43.43	29.46
VM -12-12	3/4	19.05	1-1/16-12	15.74	1-1/16	26.98	41.40	48.76	36.57
VM -14-14	7/8	22.22	1-3/16-12	18.28	1-1/4	31.75	43.18	50.54	40.38
VM -16-16	1	25.40	1-5/16-12	22.35	1-3/8	34.92	50.54	53.59	43.94
VM -20-20	1-1/4	31.75	1-5/8-12	27.68	1-11/16	42.86	67.81	58.16	54.86
VM -24-24	1-1/2	38.10	1-7/8-12	34.03	2	50.80	77.97	60.45	62.23
VM -32-32	2	50.80	2-1/2-12	45.97	2-3/4	69.85	107.18	71.62	80.26



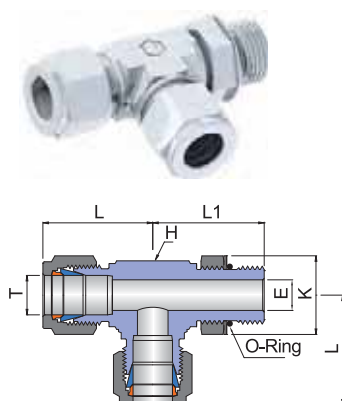
Positional Male Elbow



Connects Metric Tube to Female ISO Parallel Thread

Part No.	Tube OD T		P G(PF)	E Min.	H		L	L1	K
	inch	mm			inch	mm			
VM -M06-02		6.00	1/8	4.0		12.7	27.0	26.4	15.2
VM -M06-04		6.00	1/4	4.8		15.8	29.0	32.3	20.3
VM -M08-02		8.00	1/8	4.0		14.2	28.8	27.4	15.2
VM -M08-04		8.00	1/4	5.9		15.8	29.9	32.2	20.3
VM -M10-14		10.00	1/4	5.9		20.6	33.5	35.0	20.3
VM -M10-06		10.00	3/8	7.9		20.6	33.5	37.1	24.4
VM -M12-04		12.00	1/4	5.9		20.6	36.0	35.0	20.3
VM -M12-06		12.00	3/8	7.9		20.6	36.0	37.1	24.4
VM -M12-08		12.00	1/2	9.5		23.8	38.0	43.4	32.0
VM -M12-12		12.00	3/4	9.5		26.9	39.8	48.8	36.3

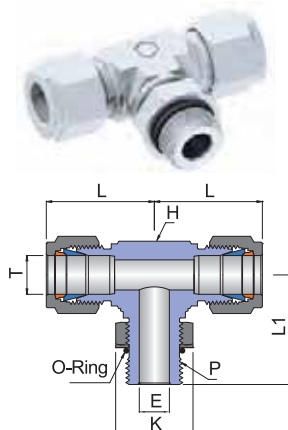
Positional Male Run Tee



Connects Fractional Tube to SAE/MS Straight Thread Boss

Part No.	Tube OD T		Straight Thread P(U)	E Min.	H		L	L1	K
	inch	mm			inch	mm			
V R -04-04	1/4	6.35	7/16-20	4.82	1/2	12.70	28.44	28.44	16.51
V R -06-06	3/8	9.52	9/16-18	7.11	5/8	15.87	32.00	32.25	20.06
V R -08-08	1/2	12.70	3/4-16	10.41	13/16	20.63	37.59	37.84	25.65
V R -12-12	3/4	19.05	1-1/16-12	15.74	1-1/8	28.57	41.40	48.76	36.57
V R -16-16	1	25.40	1-5/16-12	22.35	1-3/8	34.92	50.54	50.54	43.94
V R -20-20	1-1/4	31.75	1-5/8-12	27.68	1-11/16	42.86	67.81	58.16	54.86
V R -24-24	1-1/2	38.10	1-7/8-12	34.03	2	50.80	77.97	60.45	62.23
V R -32-32	2	50.80	2-1/2-12	45.97	2-3/4	69.85	107.18	71.62	80.26

Positional Male Branch Tee

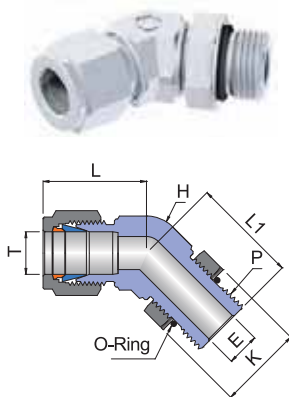


Connects Fractional Tube to SAE/MS Straight Thread Boss

Part No.	Tube OD T		Straight Thread P(U)	E Min.	H		L	L1	K
	inch	mm			inch	mm			
V -04-04	1/4	6.35	7/16-20	4.82	1/2	12.70	28.44	28.44	16.51
V -06-06	3/8	9.52	9/16-18	7.11	5/8	15.87	32.00	32.25	20.06
V -08-08	1/2	12.70	3/4-16	10.41	13/16	20.63	37.59	37.84	25.65
V -12-12	3/4	19.05	1-1/16-12	15.74	1-1/16	26.98	41.40	48.76	36.57
V -16-16	1	25.40	1-5/16-12	22.35	1-3/8	34.92	50.54	53.59	43.94
V -20-20	1-1/4	31.75	1-5/8-12	27.68	1-11/16	42.86	67.81	58.16	54.86
V -24-24	1-1/2	38.10	1-7/8-12	34.03	2	50.80	77.97	60.45	62.03
V -32-32	2	50.80	2-1/2-12	45.97	2-3/4	69.85	107.18	71.62	80.26



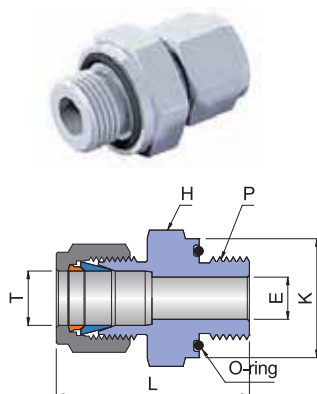
Positional 45° Male Elbow



Connects Fractional Tube to SAE / MS Straight Thread Boss

Part No.	Tube OD T		Straight Thread P(U)	E Min.	H		L	L1	K
	inch	mm			inch	mm			
V V -04-04	1/4	6.35	7/16-20	4.82	1/2	12.70	25.65	25.65	16.51
V V -06-06	3/8	9.52	9/16-18	7.11	5/8	15.87	27.94	28.19	20.06
V V -08-08	1/2	12.70	3/4-16	10.41	13/16	20.63	32.00	32.25	25.65
V V -12-12	3/4	19.05	1-1/16-12	15.74	1-1/8	28.57	39.87	47.24	34.57
V V -16-16	1	25.40	1-5/16-12	22.35	1-3/8	34.92	47.49	50.54	43.94

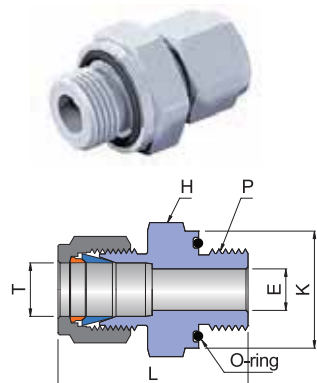
O-Seal Straight Thread Connector



Connects Fractional Tube to Female Straight Thread

Part No.	Tube OD T		Straight Thread P(U)	E Min.	H		L	K
	inch	mm			inch	mm		
VMC -02-02	1/8	3.17	5/16-24	2.28	9/16	14.28	32.76	13.97
VMC -03-03	3/16	4.76	3/8-24	3.04	5/8	15.87	34.29	15.75
VMC -04-04	1/4	6.35	7/16-20	4.82	3/4	19.05	38.35	18.80
VMC -05-05	5/16	7.93	1/2-20	6.35	7/8	22.22	40.64	21.84
VMC -06-06	3/8	9.52	9/16-18	7.11	15/16	23.81	42.41	23.62
VMC -08-08	1/2	12.70	3/4-16	10.41	1-1/8	28.57	45.97	28.45
VMC -12-12	3/4	19.05	1-1/16-12	15.74	1-1/2	38.10	52.32	37.85
VMC -16-16	1	25.40	1-5/16-12	22.35	1-3/4	44.45	58.16	44.20

O-Seal Pipe Thread Connector

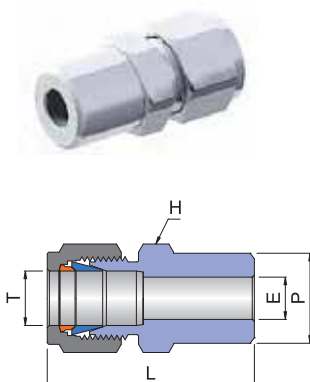


Connects Fractional Tube to Female NPT Thread

Part No.	Tube OD T		Straight Thread P(NPT)	E Min.	H		L	K
	inch	mm			inch	mm		
VMC -02-02N	1/8	3.17	1/8	2.28	3/4	19.05	32.76	18.80
VMC -04-02N	1/4	6.35	1/8	4.82	3/4	19.05	35.05	18.80
VMC -04-04N	1/4	6.35	1/4	4.82	15/16	23.81	38.35	23.62
VMC -06-04N	3/8	9.52	1/4	7.11	15/16	23.81	39.87	23.62
VMC -06-06N	3/8	9.52	3/8	7.11	1-1/8	28.57	41.40	28.45
VMC -06-08N	3/8	9.52	1/2	7.11	1-5/16	33.33	46.99	33.02
VMC -08-08N	1/2	12.70	1/2	10.41	1-5/16	33.33	49.78	33.02



Male Pipe Weld Connector



Connects Fractional Tube to Pipe

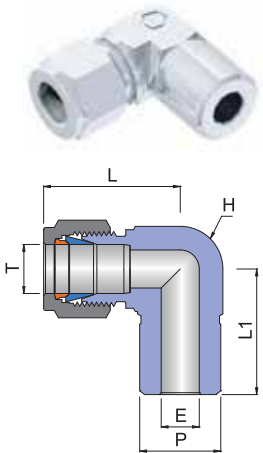
Part No.	Tube OD T		Pipe Weld Size		E Min.	H		L
	inch	mm	Nom	O.D.		inch	mm	
VC -02-02	1/8	3.17	1/8	10.30	2.28	7/16	11.11	31.24
VC -03-02	3/16	4.76	1/8	10.30	3.04	7/16	11.11	31.24
VC -04-02	1/4	6.35	1/8	10.30	4.82	1/2	12.70	32.76
VC -04-04	1/4	6.35	1/4	13.70	4.82	9/16	14.28	37.84
VC -05-02	5/16	7.93	1/8	10.30	5.08	9/16	14.28	34.03
VC -05-04	5/16	7.93	1/4	13.70	6.35	9/16	14.28	38.60
VC -06-04	3/8	9.52	1/4	13.70	7.11	5/8	15.87	39.87
VC -06-06	3/8	9.52	3/8	17.10	7.11	11/16	17.46	39.87
VC -06-08	3/8	9.52	1/2	21.30	7.11	7/8	22.22	43.23
VC -06-12	3/8	9.52	3/4	26.67	7.11	1-1/16	26.98	47.75
VC -08-06	1/2	12.70	3/8	17.10	10.41	13/16	20.63	43.43
VC -08-08	1/2	12.70	1/2	21.30	10.41	7/8	22.22	49.02
VC -08-12	1/2	12.70	3/4	26.67	10.41	1-1/16	26.98	50.54
VC -10-08	5/8	15.87	1/2	21.30	12.70	15/16	23.81	49.02
VC -12-12	3/4	19.05	3/4	26.67	15.74	1-1/16	26.98	50.54
VC -16-16	1	25.40	1	33.40	22.35	1-3/8	34.92	62.23
VC -20-20	1-1/4	31.75	1-1/4	42.16	27.68	1-3/4	44.45	77.21
VC -24-24	1-1/2	38.10	1-1/2	48.26	34.03	2-1/8	53.97	88.90
VC -32-32	2	50.80	1	60.32	47.75	2-3/4	69.85	113.53

Connects Metric Tube to Pipe

Part No.	Tube OD T	Pipe Weld Size P		E Min.	H	L
	mm	Nom	O.D.		mm	
VC -M03-02	3	1/8	10.3	2.3	12	29.7
VC -M04-02	4	1/8	10.3	2.3	12	30.7
VC -M06-02	6	1/8	10.3	4.8	14	32.8
VC -M06-04	6	1/4	13.7	4.8	14	37.6
VC -M08-02	8	1/8	10.3	6.4	15	34.2
VC -M08-04	8	1/4	13.7	6.4	15	38.7
VC -M08-08	8	1/2	21.3	6.4	22	44.8
VC -M10-04	10	1/4	13.7	7.1	18	40.9
VC -M10-06	10	3/8	17.1	8.0	18	40.1
VC -M10-08	10	1/2	21.3	8.0	22	45.7
VC -M12-04	12	1/4	13.7	9.5	22	43.4
VC -M12-06	12	3/8	17.1	9.5	22	43.4
VC -M12-08	12	1/2	21.3	9.5	22	48.2
VC -M14-06	14	3/8	17.1	12.0	24	44.1
VC -M15-08	15	1/2	21.3	12.0	24	49.0
VC -M16-08	16	1/2	21.3	15.0	24	49.0
VC -M18-08	18	1/2	21.3	15.0	27	50.5
VC -M32-20	32	1-1/4	42.2	15.0	46	49.6
VC -M38-24	38	1-1/2	48.3	15.0	55	91.6



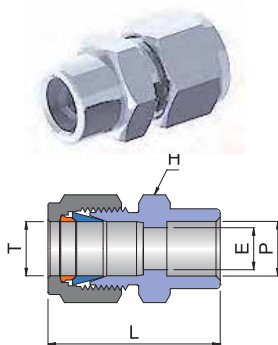
Male Pipe Weld Elbow



Connects Fractional Tube to Pipe

Part No.	Tube OD T		Pipe Weld Size		E Min.	H		L	L1
	inch	mm	Nom	O.D.		inch	mm		
VEBW-02-02P	1/8	3.17	1/8	10.30	4.82	1/2	12.70	26.92	18.79
VEBW-04-04P	1/4	6.35	1/4	13.70	4.82	1/2	12.70	26.92	23.36
VEBW-06-04P	3/8	9.52	3/8	13.70	7.11	5/8	15.87	30.48	25.40
VEBW-08-08P	1/2	12.70	1/2	21.30	10.41	13/16	20.63	36.06	33.02
VEBW-12-12P	3/4	19.05	3/4	26.67	15.74	1-1/16	26.98	39.87	36.83

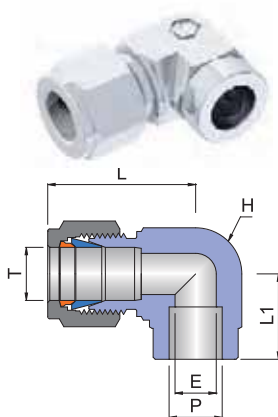
Tube Socket Weld Connector



Connects Fractional Tubes

Part No.	Tube OD T		Pipe Weld Size		E Min.	H		L
	inch	mm	Nom	O.D.		inch	mm	
VCSW-02-02P	1/8	3.17	1/8	3.17	2.28	7/16	11.11	28.95
VCSW-04-04P	1/4	6.35	1/4	6.35	4.82	1/2	12.70	33.52
VCSW-06-06P	3/8	9.52	3/8	9.52	7.11	5/8	15.87	37.59
VCSW-08-08P	1/2	12.70	1/2	12.70	10.41	13/16	20.63	41.14
VCSW-12-12P	3/4	19.05	3/4	19.05	15.74	1-1/16	26.98	43.43
VCSW-16-16P	1	25.40	1	25.40	22.35	1-3/8	34.92	52.57

Tube Socket Weld Elbow



Connects Fractional Tubes

Part No.	Tube OD T		Pipe Weld Size		E Min.	H		L	L1
	inch	mm	Nom	O.D.		inch	mm		
VESW-04-04P	1/4	6.35	1/4	6.35	4.82	1/2	12.70	26.92	19.55
VESW-06-06P	3/8	9.52	3/8	9.52	7.11	5/8	15.87	30.48	23.11
VESW-08-08P	1/2	12.70	1/2	12.70	10.41	13/16	20.63	36.06	25.90
VESW-12-12P	3/4	19.05	3/4	19.05	15.74	1-1/16	26.98	39.87	29.71
VESW-16-16P	1	25.40	1	25.40	22.35	1-3/8	34.92	49.02	36.83



Tube Plug



Connects Fractional Lok Port

Part No.	Tube OD T		H	
	inch	mm	inch	mm
V -01	1/16	1.58	5/16	7.94
V -02	1/8	3.17	7/16	11.11
V -03	3/16	4.76	1/2	12.70
V -04	1/4	6.35	9/16	14.28
V -05	5/16	7.93	5/8	15.87
V -06	3/8	9.52	11/16	17.46
V -08	1/2	12.70	7/8	22.22
V -10	5/8	15.87	1	25.40
V -12	3/4	19.05	1-1/8	28.57
V -14	7/8	22.22	1-1/4	31.75
V -16	1	25.40	1-1/2	38.10
V -20	1-1/4	31.75	1-7/8	47.62
V -24	1-1/2	38.10	2-1/4	57.15
V -32	2	50.80	3	76.20

Connects Metric Lok Port

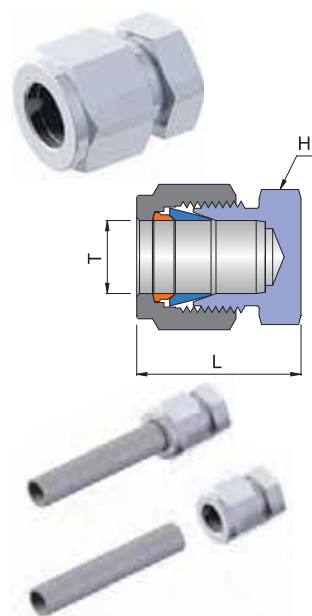
Part No.	Tube OD T	
	inch	mm
V -M02	2	12
V -M03	3	12
V -M04	4	12
V -M06	6	14
V -M08	8	16
V -M10	10	19
V -M12	12	22
V -M15	15	25
V -M16	16	25
V -M18	18	30
V -M20	20	32
V -M22	22	32
V -M25	25	38
V -M28	28	46
V -M32	32	50
V -M38	38	60

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

Note

Do not tighten 1-1/4 turns as this has machined ferrule not the standard ferrules. Tighten 1/8 turn for 1/16, 1/8, and 3/16 inch and 2, 3 and 4 mm Lok tube fittings.

Tube Cap



Connects Fractional Tube End

Part No.	Tube OD T		H		L
	inch	mm	inch	mm	
VC-01	1/16	1.58	5/16	7.94	14.18
VC-02	1/8	3.17	7/16	11.11	20.06
VC-03	3/16	4.76	7/16	11.11	21.33
VC-04	1/4	6.35	1/2	12.70	23.26
VC-05	5/16	7.93	9/16	14.28	24.38
VC-06	3/8	9.52	5/8	15.87	25.65
VC-08	1/2	12.70	13/16	20.63	29.21
VC-10	5/8	15.87	15/16	23.81	29.97
VC-12	3/4	19.05	1-1/16	26.98	31.49
VC-14	7/8	22.22	1-3/16	30.16	34.03
VC-16	1	25.40	1-3/8	34.92	38.35
VC-20	1-1/4	31.75	1-3/4	44.45	53.34
VC-24	1-1/2	38.10	2-1/8	53.97	64.51
VC-32	2	50.80	2-3/4	69.85	86.61

Connects Metric Lok Port

Part No.	Tube OD T		L
	inch	mm	
VC-M02	2	12	20.1
VC-M03	3	12	20.1
VC-M04	4	12	21.3
VC-M06	6	14	23.1
VC-M08	8	15	24.5
VC-M10	10	18	26.6
VC-M12	12	22	29.1
VC-M15	15	24	29.9
VC-M16	16	24	29.9
VC-M18	18	27	31.4
VC-M20	20	30	34.0
VC-M22	22	30	34.0
VC-M25	25	35	38.5
VC-M28	28	41	48.5
VC-M32	32	46	55.8
VC-M38	38	55	65.4

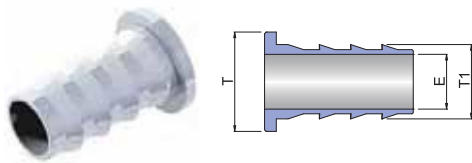
1. Insert tube end into the cap to bottom on the shoulder of the cap.
2. Finger-tighten the nut.
3. Wrench-tighten the nut 1-1/4 turns, holding the body with a backup wrench, or vice

Note

Tighten 1/8 turn for 1/16, 1/8, and 3/16 inch and 2, 3, and 4 mm Lok tube fittings.



Tube Insert Barbed



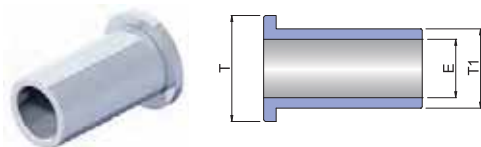
Fractional

Part No.	Tube OD T		Tube OD T1		Bore ID E
	inch	mm	inch	mm	
V -03-02	3/16	4.76	1/8	3.17	2.29
V -04-02	1/4	6.35	1/8	3.17	2.29
V -04-M4 3	1/4	6.35	0.17	4.32	2.79
V -14-03	1/4	6.35	3.16	4.76	3.56
V -05-02	5/16	7.93	1/8	3.17	2.29
V -05-03	5/16	7.93	3/16	4.76	3.05
V -05-04	5/16	7.93	1/4	6.35	4.83
V -06-03	3/8	9.52	3/16	4.76	3.05
V -06-04	3/8	9.52	1/4	6.35	4.83
V -08-04	1/2	12.70	1/4	6.35	4.83
V -08-06	1/2	12.70	3/8	9.52	7.87
V -10-06	5/8	15.87	3/8	9.52	7.87
V -10-08	5/8	15.87	1/2	12.70	11.18
V -12-08	3/4	19.05	1/2	12.70	11.18
V -12-10	3/4	19.05	5/8	15.87	14.22
V -16-12	1	25.40	3/4	19.05	17.53

Metric

Part No.	Tube OD T	Tube OD T1	Bore ID E
	mm	mm	
V -M06-M04	6	4	2.8
V -M08-M06	8	6	4.4
V -M10-M08	10	8	6.4
V -M12-M08	12	8	6.4
V -M12-M10	12	10	8.3

Tube Insert Plain



Installation Instruction

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



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

Note

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

Fractional

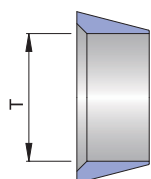
Part No.	Tube OD T		Tube OD T1		Bore ID E
	inch	mm	inch	mm	
V -03-02	3/16	4.76	1/8	3.17	2.29
V -04-02	1/4	6.35	1/8	3.17	2.29
V -04-M4 3	1/4	6.35	0.17	4.32	2.79
V -04-03	1/4	6.35	3.16	4.76	3.56
V -05-02	5/16	7.93	1/8	3.17	2.29
V -05-03	5/16	7.93	3/16	4.76	3.05
V -05-04	5/16	7.93	1/4	6.35	4.83
V -06-03	3/8	9.52	3/16	4.76	3.05
V -06-04	3/8	9.52	1/4	6.35	4.83
V -08-04	1/2	12.70	1/4	6.35	4.83
V -08-06	1/2	12.70	3/8	9.52	7.87
V -10-06	5/8	15.87	3/8	9.52	7.87
V -10-08	5/8	15.87	1/2	12.70	11.18
V -12-08	3/4	19.05	1/2	12.70	11.18
V -12-10	3/4	19.05	5/8	15.87	14.22
V -16-12	1	25.40	3/4	19.05	17.53

Metric

Part No.	Tube OD T	Tube OD T1	Bore ID E
	mm	mm	
V -M06-M04	6	4	2.8
V -M08-M06	8	6	4.4
V -M10-M08	10	8	6.4
V -M12-M08	12	8	6.4
V -M12-M10	12	10	8.3



Front Ferrule



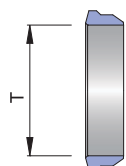
Fractional

Part No.	Tube OD T	
	inch	mm
VFF-01	1/16	1.58
VFF-02	1/8	3.17
VFF-03	3/16	4.76
VFF-04	1/4	6.35
VFF-05	5/16	7.93
VFF-06	3/8	9.52
VFF-08	1/2	12.70
VFF-10	5/8	15.87
VFF-12	3/4	19.05
VFF-14	7/8	22.22
VFF-16	1	25.40
VFF-20	1-1/4	31.75
VFF-24	1-1/2	38.10
VFF-32	2	50.80

Metric

Part No.	Tube OD T
	mm
VFF-M02	2
VFF-M03	3
VFF-M04	4
VFF-M06	6
VFF-M08	8
VFF-M10	10
VFF-M12	12
VFF-M15	15
VFF-M16	16
VFF-M18	18
VFF-M20	20
VFF-M22	22
VFF-M25	25
VFF-M28	28
VFF-M32	32
VFF-M38	38
VFF-M42	42

Back Ferrule



Fractional

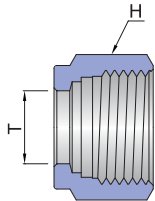
Part No.	Tube OD T	
	inch	mm
V F-01	1/16	1.58
V F-02	1/8	3.17
V F-03	3/16	4.76
V F-04	1/4	6.35
V F-05	5/16	7.93
V F-06	3/8	9.52
V F-08	1/2	12.70
V F-10	5/8	15.87
V F-12	3/4	19.05
V F-14	7/8	22.22
V F-16	1	25.40
V F-20	1-1/4	31.75
V F-24	1-1/2	38.10
V F-32	2	50.80

Metric

Part No.	Tube OD T
	mm
V F-M02	2
V F-M03	3
V F-M04	4
V F-M06	6
V F-M08	8
V F-M10	10
V F-M12	12
V F-M15	15
V F-M16	16
V F-M18	18
V F-M20	20
V F-M22	22
V F-M25	25
V F-M28	28
V F-M32	32
V F-M38	38
V F-M42	42



Nut



Fractional

Part No.	Tube OD T		H	
	inch	mm	inch	mm
VN-01	1/16	1.58	5/16	7.94
VN-02	1/8	3.17	7/16	11.11
VN-03	3/16	4.76	1/2	12.70
VN-04	1/4	6.35	9/16	14.28
VN-05	5/16	7.93	5/8	15.87
VN-06	3/8	9.52	11/16	17.46
VN-08	1/2	12.70	7/8	22.22
VN-10	5/8	15.87	1	25.40
VN-12	3/4	19.05	1-1/8	28.57
VN-14	7/8	22.22	1-1/4	31.75
VN-16	1	25.40	1-1/2	38.10
VN-20	1-1/4	31.75	1-7/8	47.62
VN-24	1-1/2	38.10	2-1/4	57.15
VN-32	2	50.80	3	76.20

Metric

Part No.	Tube OD T		H
	mm		mm
VN-M02	2		11.9
VN-M03	3		11.9
VN-M04	4		11.9
VN-M06	6		12.7
VN-M08	8		13.5
VN-M10	10		15.1
VN-M12	12		17.4
VN-M15	15		17.4
VN-M16	16		17.4
VN-M18	18		17.4
VN-M20	20		17.4
VN-M22	22		17.4
VN-M25	25		20.6
VN-M28	28		30.6
VN-M32	32		34.4
VN-M38	38		40.6
VN-M42	42		44.7

Ferrule Set



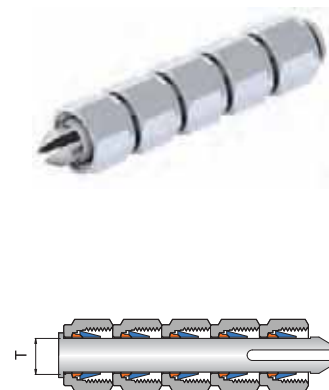
Fractional

Part No.	Tube OD T	
	inch	mm
VFS-01	1/16	1.58
VFS-02	1/8	3.17
VFS-03	3/16	4.76
VFS-04	1/4	6.35
VFS-05	5/16	7.93
VFS-06	3/8	9.52
VFS-08	1/2	12.70
VFS-10	5/8	15.87
VFS-12	3/4	19.05
VFS-14	7/8	22.22
VFS-16	1	25.40

Metric

Part No.	Tube OD T	
	mm	
VFS-M02	2	
VFS-M03	3	
VFS-M04	4	
VFS-M06	6	
VFS-M08	8	
VFS-M10	10	
VFS-M12	12	
VFS-M15	15	
VFS-M16	16	
VFS-M18	18	
VFS-M20	20	
VFS-M22	22	
VFS-M25	25	

Nut Ferrule Set



Fractional

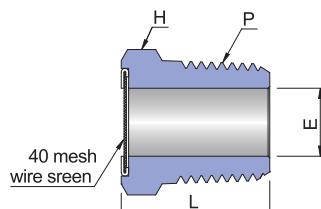
Part No.	Tube OD T	
	inch	mm
VFNS-01	1/16	1.58
VFNS-02	1/8	3.17
VFNS-03	3/16	4.76
VFNS-04	1/4	6.35
VFNS-05	5/16	7.93
VFNS-06	3/8	9.52
VFNS-08	1/2	12.70
VFNS-10	5/8	15.87
VFNS-12	3/4	19.05
VFNS-14	7/8	22.22
VFNS-16	1	25.40

Metric

Part No.	Tube OD T	
	mm	
VFNS-M02	2	
VFNS-M03	3	
VFNS-M04	4	
VFNS-M06	6	
VFNS-M08	8	
VFNS-M10	10	
VFNS-M12	12	
VFNS-M15	15	
VFNS-M16	16	
VFNS-M18	18	
VFNS-M20	20	
VFNS-M22	22	
VFNS-M25	25	



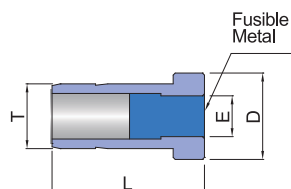
Vent Protect



Connects to Feamle NPT thread

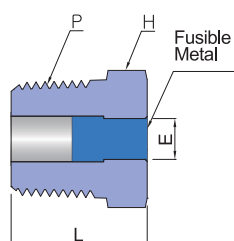
Part No.	P NPT	E Min.	H		L
			inch	mm	
VV -04N	1/4	7.11	9/16	15.87	20.57
VV -06N	3/8	10.40	11/16	17.46	20.57
VV -08N	1/2	12.70	7/8	23.81	26.92
VV -12N	3/4	16.00	1-1/16	26.98	28.70

Fusible Adapter



Tube Adapter Type

Part No.	Tube OD T		E	L	D
	inch	mm			
V F-14	1/4	6.35	4.3	20.6	9.83
V F-38	3/8	9.52	6.4	22.4	12.70
V F-12	1/2	12.70	6.4	28.4	15.90



Pipe Plug Type

Part No.	P NPT	E	L	H
V F-14N	1/4	6.4	24.1	14.28
V F-38N	3/8	6.4	26.9	17.46
V F-12N	1/2	8.7	30.5	22.22

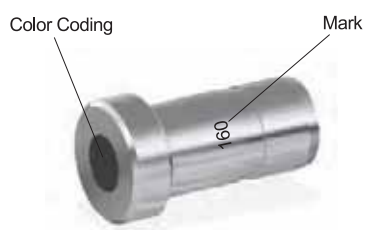
Fusible Metal Option

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

How To Order

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

V F-06-SS-160





Lancashire Fittings