Vacuum Fitting

VF Series

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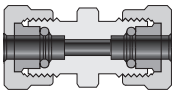
Vacuum Fittings
(VF series)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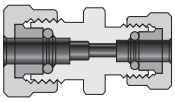
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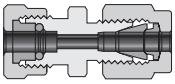
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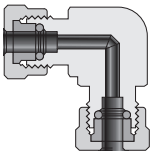
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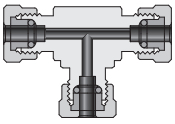
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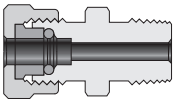
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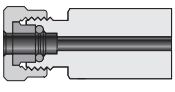
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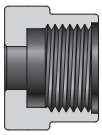
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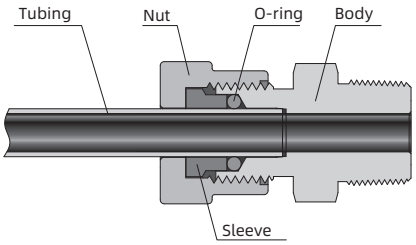
Vacuum Fittings

VF series

Features

- O-ring seals to glass, metal,or plastic tubing
- Knurled nut for easy, finger-tight assembly
- Stainless steel construction, fluorocarbon FKM O-ring
- Reliable, repeatable sealing performance
- Easy to install and maintain
- Available in tube sizes from 1/16 to 1 1/2 in.



Working Pressure

- Catalog working pressure is calculated in accordance with ANSI/ASME B31.3. To determine working pressure in accordance with ANSI/ASME B31.1, multiply values by 0.94

Working Temperature

- Temperature ranges for vacuum fittings are determined by the O-ring materials
- Standard fluorocarbon FKM O-ring, -25℉ to 400℉ (-31℃ to 204℃)

Materials Standards

Material	Bar Stock	Forging
316 stainless steel	ASTM A276 ASTM SA479,EN 1.4401	ASTM A182 ASTM SA182,EN 1.4401
316L stainless steel		

Working Temperature

- The vacuum fitting is tested with helium at a maximum leak rate of 4×10^{-9} std cm^3/s

Cleaning and Packaging

- Hikelok vacuum fittings are cleaned to remove machine oil, grease, and loose particles.

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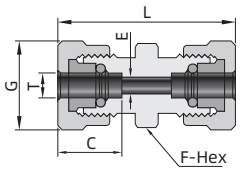
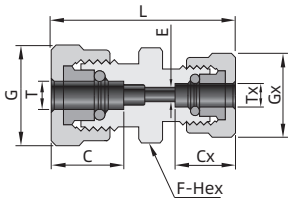
Dimensions



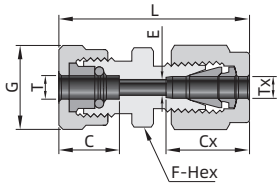
Unions

T-Tube O.D. (in.)	Basic Ordering Number	Dimension, in. (mm)				
		L	C	E	G	F
1/16	VF1-U-VF1-	1.23 (31.2)	0.43 (10.9)	0.05 (1.3)	3/8	3/8 (9.5)
1/8	VF2-U-VF2-	1.40 (35.6)	0.43 (10.9)	0.09 (2.3)	9/16	1/2 (12.7)
1/4	VF4-U-VF4-	1.63 (41.4)	0.62 (15.7)	0.18 (4.6)	11/16	5/8 (15.9)
3/8	VF6-U-VF6-	1.81 (46.0)	0.66 (16.8)	0.28 (7.1)	13/16	13/16 (20.6)
1/2	VF8-U-VF8-	1.84 (46.7)	0.80 (20.3)	0.40 (10.2)	15/16	7/8 (22.2)
5/8	VF10-U-VF10-	1.84 (46.7)	0.84 (21.3)	0.50 (12.7)	1 1/8	1 1/16 (27.0)
3/4	VF12-U-VF12-	2.05 (52.1)	0.94 (23.9)	0.62 (15.7)	1 1/4	1 3/16 (30.1)
1	VF16-U-VF16-	2.15 (54.6)	0.94 (23.9)	0.87 (22.1)	1 9/16	1 1/2 (38.1)
1 1/2	VF24-U-VF24-	2.27 (57.6)	0.94 (23.9)	1.38 (35.1)	2 1/16	2 1/8 (54.0)



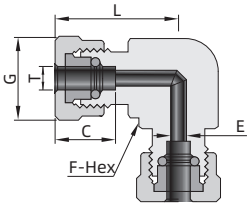
Reducing Unions

T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, in. (mm)						
			L	C	Cx	E	G	Gx	F
3/8	1/4	VF6-U-VF4-	1.72 (43.7)	0.66 (16.8)	0.62 (15.7)	0.18 (4.6)	13/16	11/16	13/16 (20.6)
1/2	1/4	VF8-U-VF4-	1.75 (44.4)	0.80 (20.3)	0.62 (15.7)	0.18 (4.6)	15/16	11/16	7/8 (22.2)



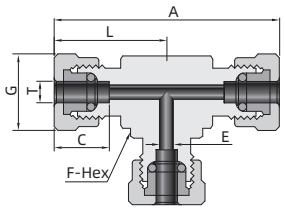
VF to Tube Fitting Unions

T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, in. (mm)					
			L	C	Cx	E	G	F
1/4	1/4	VF4-U-F4-	1.66 (42.2)	0.62 (15.7)	0.60 (15.2)	0.18 (4.6)	11/16	5/8 (15.9)
3/8	3/8	VF6-U-F6-	1.81 (46.0)	0.66 (16.8)	0.66 (16.8)	0.28 (7.1)	13/16	13/16 (20.6)
1/2	1/2	VF8-U-F8-	1.95 (49.5)	0.80 (20.3)	0.90 (22.9)	0.40 (10.2)	15/16	7/8 (22.2)



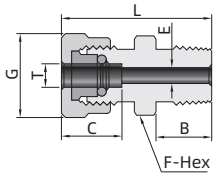
Union Elbows

T-Tube O.D. (in.)	Basic Ordering Number	Dimension, in. (mm)				
		L	C	E	G	F
1/4	VF4-UE-VF4-	1.14 (29.0)	0.62 (15.7)	0.18 (4.6)	11/16	1/2 (12.7)
3/8	VF6-UE-VF6-	1.36 (34.5)	0.66 (16.8)	0.28 (7.1)	13/16	11/16 (17.5)
1/2	VF8-UE-VF8-	1.36 (34.5)	0.80 (20.3)	0.40 (10.2)	15/16	13/16 (20.6)



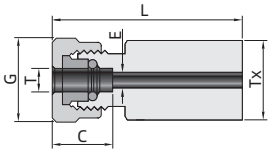
Union Tees

T-Tube O.D. (in.)	Basic Ordering Number	Dimension, in. (mm)					
		A	L	C	E	G	F
1/8	VF2-UT-VF2-VF2-	2.12 (53.8)	1.06 (26.9)	0.43 (10.9)	0.09 (2.3)	9/16	1/2 (12.7)
1/4	VF4-UT-VF4-VF4-	2.30 (58.4)	1.15 (29.2)	0.62 (15.7)	0.18 (4.6)	11/16	1/2 (12.7)
3/8	VF6-UT-VF6-VF6-	2.72 (69.1)	1.36 (34.5)	0.66 (16.8)	0.28 (7.1)	13/16	11/16 (17.5)
1/2	VF8-UT-VF8-VF8-	2.72 (69.1)	1.36 (34.5)	0.80 (20.3)	0.40 (10.2)	15/16	11/16 (17.5)
3/4	VF12-UT-VF12-VF12-	3.30 (83.8)	1.65 (41.9)	0.94 (23.9)	0.62 (15.7)	1 1/4	15/16 (23.8)
1	VF16-UT-VF16-VF16-	3.64 (92.4)	1.82 (46.2)	0.94 (23.9)	0.87 (22.1)	1 9/16	1 1/4 (31.8)



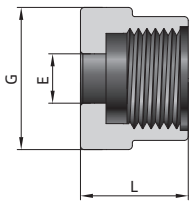
VF to Male Connectors

T-Tube O.D. (in.)	NPT Size in.	Basic Ordering Number	Dimension, in. (mm)					
			L	C	B	E	G	F
1/16	1/8	VF1-MC-NPT2-	1.12 (28.4)	0.43 (10.9)	0.38 (9.6)	0.05 (1.3)	3/8	7/16 (11.1)
1/8	1/8	VF2-MC-NPT2-	1.22 (31.0)	0.43 (10.9)	0.38 (9.6)	0.09 (2.3)	9/16	1/2 (12.7)
1/4	1/8	VF4-MC-NPT2-	1.35 (34.3)	0.62 (15.7)	0.38 (9.6)	0.18 (4.6)	11/16	5/8 (15.9)
1/4	1/4	VF4-MC-NPT4-	1.53 (38.9)	0.62 (15.7)	0.56 (14.2)	0.18 (4.6)	11/16	5/8 (15.9)
3/8	1/8	VF6-MC-NPT2-	1.44 (36.6)	0.66 (16.8)	0.38 (9.6)	0.18 (4.6)	13/16	13/16 (20.6)
3/8	1/4	VF6-MC-NPT4-	1.62 (41.1)	0.66 (16.8)	0.56 (14.2)	0.28 (7.1)	13/16	13/16 (20.6)
1/2	3/8	VF8-MC-NPT6-	1.65 (41.9)	0.80 (20.3)	0.56 (14.2)	0.40 (10.2)	15/16	7/8 (22.2)
1/2	1/2	VF8-MC-NPT8-	1.84 (46.7)	0.80 (20.3)	0.75 (19.1)	0.40 (10.2)	15/16	7/8 (22.2)
3/4	3/4	VF12-MC-NPT12-	1.96 (49.8)	0.94 (23.9)	0.75 (19.1)	0.62 (15.7)	1 1/4	1 3/16 (30.1)
1	1	VF16-MC-NPT16-	2.25 (57.2)	0.94 (23.9)	0.94 23.9)	0.87 (22.1)	1 9/16	1 1/2(38.1)



VF to Adapters

T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, in. (mm)			
			L	C	E	G
1/16	1/4	VF1-VA-VT4-	1.12 (28.4)	0.43 (10.9)	0.05 (1.3)	3/8
1/8	1/4	VF2-VA-VT4-	1.20 (30.5)	0.43 (10.9)	0.09 (2.3)	9/16
1/8	3/8	VF2-VA-VT6-	1.21 (30.7)	0.43 (10.9)	0.09 (2.3)	9/16
1/4	1/4	VF4-VA-VT4-	1.34 (34.0)	0.62 (15.7)	0.18 (4.6)	11/16
1/4	3/8	VF4-VA-VT6-	1.33 (33.8)	0.62 (15.7)	0.18 (4.6)	11/16
1/4	1/2	VF4-VA-VT8-	1.47 (37.3)	0.62 (15.7)	0.18 (4.6)	11/16
3/8	3/8	VF6-VA-VT6-	1.47 (37.3)	0.66 (16.8)	0.28 (7.1)	13/16
3/8	1/2	VF6-VA-VT8-	1.58 (40.1)	0.66 (16.8)	0.28 (7.1)	13/16
1/2	5/8	VF8-VA-VT10-	1.64 (41.7)	0.80 (20.3)	0.40 (10.2)	15/16
1/2	3/4	VF8-VA-VT12-	1.69 (42.9)	0.80 (20.3)	0.40 (10.2)	15/16
3/4	1	VF12-VA-VT16-	1.78 (45.2)	0.94 (23.9)	0.62 (15.7)	1 1/4
1	1 1/4	VF16-VA-VT20-	1.80 (45.7)	0.94 (23.9)	0.87 (22.1)	1 9/16
1 1/2	1 1/2	VF24-VA-VT24-	1.98 (50.3)	0.94 (23.9)	1.25 (31.8)	2 1/16



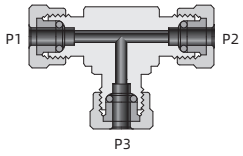
Nut

T-Tube O.D. (in.)	Basic Ordering Number	Thread Size	Dimension, in. (mm)		
			E	L	G
1/16	N-VF1-	1/4-20 UNC	0.07 (1.8)	0.38 (9.6)	3/8
1/8	N-VF2-	3/8-20 UN	0.13 (3.3)	0.41 (10.4)	9/16
1/4	N-VF4-	1/2-20 UNF	0.26 (6.6)	0.53 (13.5)	11/16
3/8	N-VF6-	5/8-20 UN	0.38 (9.6)	0.62 (15.7)	13/16
1/2	N-VF8-	3/4-20 UNEF	0.51 (13.0)	0.62 (15.7)	15/16
5/8	N-VF10-	15/16-20 UNEF	0.63 (16.0)	0.62 (15.7)	1 1/8
3/4	N-VF12-	1 1/16-20 UN	0.76 (19.3)	0.72 (18.3)	1 1/4
1	N-VF16-	1 3/8-20 UN	1.01 (25.6)	0.72 (18.3)	1 9/16
1 1/2	N-VF24-	1 7/8-20 UN	1.51 (38.4)	0.72 (18.3)	2 1/16

O-ring for Vacuum Fittings

T-Tube O.D. (in.)	Basic Ordering Number	Material
1/16	FKM7-001	70 Durometer Fluorocarbon FKM
1/8	FKM7-006	
1/4	FKM7-010	
3/8	FKM7-012	
1/2	FKM7-014	
5/8	FKM7-114	
3/4	FKM7-116	
1	FKM7-120	
1 1/2	FKM7-128	

How to Order

VF4 — UT — VF4 — VF4 — 316

Port 1 Type	Port 1 Size	Configuration Designator	Port 2 Type	Port 2 Size	Port 3 Type	Port 3 Size	Material
VF Vacuum Fitting	**1** 1/16 in. **2** 1/8 in. **4** 1/4 in. **6** 3/8 in. **8** 1/2 in. **10** 5/8 in. **12** 3/4 in. **16** 1 in. **24** 1 1/2 in.	**U** Union **UE** Union Elbow **UT** Union Tee **MC** Male Connector **VA** Adapter **N** Nut	**VF** Vacuum Fitting **F** Fractional Ferrule **NPT** Male NPT **VT** Adapter	**1** 1/16 in. **2** 1/8 in. **4** 1/4 in. **6** 3/8 in. **8** 1/2 in. **10** 5/8 in. **12** 3/4 in. **16** 1 in. **24** 1 1/2 in.	**VF** Vacuum Fitting	**1** 1/16 in. **2** 1/8 in. **4** 1/4 in. **6** 3/8 in. **8** 1/2 in. **10** 5/8 in. **12** 3/4 in. **16** 1 in. **24** 1 1/2 in.	**316** 316 S.S. **316L** 316L S.S.