

Ultra-Torr Vacuum Fittings

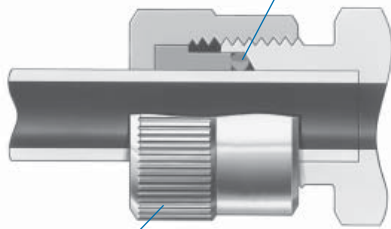


- Stainless steel construction, fluorocarbon FKM O-ring
- Reliable, repeatable sealing performance
- Available in tube sizes from 1/16 to 1 1/2 in.

Features

Seal performance is maintained through repeated disconnects.

O-ring seals to glass, metal, or plastic tubing.



Knurled nut for easy, finger-tight assembly.

Materials of Construction

- Body, nut, and sleeve: stainless steel
- O-ring: 70 durometer fluorocarbon FKM, wetted with a thin film of silicone vacuum grease.

Temperature Rating

Standard fluorocarbon FKM O-ring, -25 to 400°F (-31 to 204°C)

Testing

The ultra-torr fitting design has been helium leak tested to a maximum leak rate of 4×10^{-9} std cm³/s at ambient temperature. The leak rate increases as temperature increases due to permeation through the O-ring.

Cleaning and Packaging

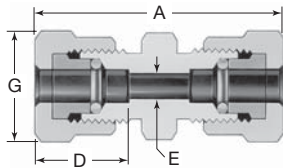
Swagelok ultra-torr vacuum fittings are cleaned to remove machine oil, grease, and loose particles. For more information, see Swagelok *Standard Cleaning and Packaging (SC-10)*, MS-06-62.

Ordering Information and Dimensions

- Dimensions are for reference only and are subject to change.
- The E dimension refers to the smallest nominal inside diameter of the part.
- To order straight fittings bored through, add **-BT** to the ordering number.

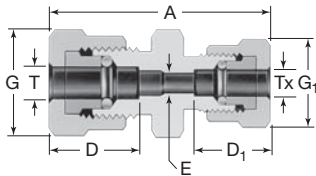
Example: SS-1-UT-6-BT

Union



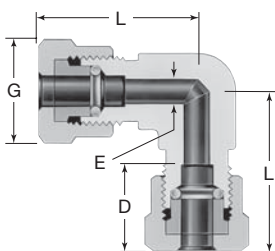
Tube OD in.	Ordering Number	Dimensions, in. (mm)			
		A	D	E	G
1/16	SS-1-UT-6	1.23 (31.2)	0.43 (10.9)	0.05 (1.3)	3/8
1/8	SS-2-UT-6	1.40 (35.6)	0.43 (10.9)	0.09 (2.3)	9/16
1/4	SS-4-UT-6	1.63 (41.4)	0.62 (15.7)	0.18 (4.6)	11/16
3/8	SS-6-UT-6	1.81 (46.0)	0.66 (16.8)	0.28 (7.1)	13/16
1/2	SS-8-UT-6	1.84 (46.7)	0.80 (20.3)	0.40 (10.2)	15/16
5/8	SS-10-UT-6	1.84 (46.7)	0.84 (21.3)	0.50 (12.7)	1 1/8
3/4	SS-12-UT-6	2.05 (52.1)	0.94 (23.9)	0.62 (15.7)	1 1/4
1	SS-16-UT-6	2.15 (54.6)	0.94 (23.9)	0.87 (22.1)	1 9/16
1 1/2	SS-24-UT-6	2.27 (57.6)	0.94 (23.9)	1.38 (35.1)	2 1/16

Reducing Union



Tube OD, in.		Ordering Number	Dimensions, in. (mm)					
T	Tx		A	D	D ₁	E	G	G ₁
3/8	1/4	SS-6-UT-6-4	1.72 (43.7)	0.66 (16.8)	0.62 (15.7)	0.18 (4.6)	13/16	11/16
1/2		SS-8-UT-6-4	1.75 (44.4)	0.80 (20.3)			15/16	

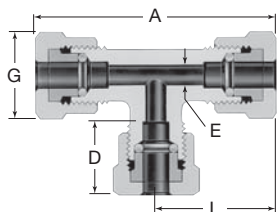
Union Elbow



Tube OD in.	Ordering Number	Dimensions, in. (mm)			
		D	E	G	L
1/4	SS-4-UT-9	0.62 (15.7)	0.18 (4.6)	11/16	1.14 (29.0)
3/8	SS-6-UT-9	0.66 (16.8)	0.28 (7.1)	13/16	1.36 (34.5)
1/2	SS-8-UT-9	0.80 (20.3)	0.40 (10.2)	15/16	1.36 (34.5)

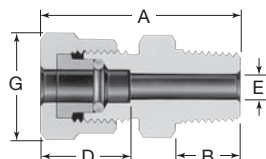
Ordering Information and Dimensions

Union Tee



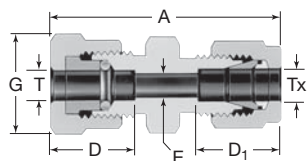
Tube OD in.	Ordering Number	Dimensions, in. (mm)				
		A	D	E	G	L
1/8	SS-2-UT-3	2.12 (53.8)	0.43 (10.9)	0.09 (2.3)	9/16	1.06 (26.9)
1/4	SS-4-UT-3	2.30 (58.4)	0.62 (15.7)	0.18 (4.6)	11/16	1.15 (29.2)
3/8	SS-6-UT-3	2.72 (69.1)	0.66 (16.8)	0.28 (7.1)	13/16	1.36 (34.5)
1/2	SS-8-UT-3	2.72 (69.1)	0.80 (20.3)	0.40 (10.2)	15/16	1.36 (34.5)
3/4	SS-12-UT-3	3.30 (83.8)	0.94 (23.9)	0.62 (15.7)	1 1/4	1.65 (41.9)
1	SS-16-UT-3	3.64 (92.4)	0.94 (23.9)	0.87 (22.1)	1 9/16	1.82 (46.2)

Male Connector



Tube OD in.	NPT Size in.	Ordering Number	Dimensions, in. (mm)				
			A	B	D	E	G
1/16	1/8	SS-1-UT-1-2	1.12 (28.4)	0.38 (9.6)	0.43 (10.9)	0.05 (1.3)	3/8
1/8	1/8	SS-2-UT-1-2	1.22 (31.0)	0.38 (9.6)	0.43 (10.9)	0.09 (2.3)	9/16
1/4	1/8	SS-4-UT-1-2	1.35 (34.3)	0.38 (9.6)	0.62 (15.7)	0.18 (4.6)	11/16
	1/4	SS-4-UT-1-4	1.53 (38.9)	0.56 (14.2)			
3/8	1/8	SS-6-UT-1-2	1.44 (36.6)	0.38 (9.6)	0.66 (16.8)	0.18 (4.6)	13/16
	1/4	SS-6-UT-1-4	1.62 (41.1)	0.56 (14.2)		0.28 (7.1)	
1/2	3/8	SS-8-UT-1-6	1.65 (41.9)	0.56 (14.2)	0.80 (20.3)	0.40 (10.2)	15/16
	1/2	SS-8-UT-1-8	1.84 (46.7)	0.75 (19.1)			
3/4	3/4	SS-12-UT-1-12	1.96 (49.8)	0.75 (19.1)	0.94 (23.9)	0.62 (15.7)	1 1/4
1	1	SS-16-UT-1-16	2.25 (57.2)	0.94 (23.9)	0.94 (23.9)	0.87 (22.1)	1 9/16

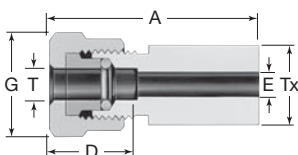
Swagelok Tube Fitting Union



Tube OD, in.		Ordering Number	Dimensions, in. (mm)				
T	Tx		A	D	D ₁	E	G
1/4	1/4	SS-4-UT-6-400	1.66 (42.2)	0.62 (15.7)	0.60 (15.2)	0.18 (4.6)	11/16
3/8	3/8	SS-6-UT-6-600	1.81 (46.0)	0.66 (16.8)	0.66 (16.8)	0.28 (7.1)	13/16
1/2	1/2	SS-8-UT-6-810	1.95 (49.5)	0.80 (20.3)	0.90 (22.9)	0.40 (10.2)	15/16

Dimensions shown with Swagelok nuts finger-tight.

Adapter

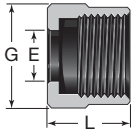


Tube OD, in.		Ordering Number	Dimensions, in. (mm)			
T	Tx		A	D	E	G
1/16	1/4	SS-1-UT-A-4	1.12 (28.4)	0.43 (10.9)	0.05 (1.3)	3/8
1/8	1/4	SS-2-UT-A-4	1.20 (30.5)	0.43 (10.9)	0.09 (2.3)	9/16
	3/8	SS-2-UT-A-6	1.21 (30.7)			
1/4	1/4	SS-4-UT-A-4 ^①	1.34 (34.0)	0.62 (15.7)	0.18 (4.6)	11/16
	3/8	SS-4-UT-A-6	1.33 (33.8)			
	1/2	SS-4-UT-A-8	1.47 (37.3)			
3/8	3/8	SS-6-UT-A-6 ^①	1.47 (37.3)	0.66 (16.8)	0.28 (7.1)	13/16
	1/2	SS-6-UT-A-8	1.58 (40.1)			
1/2	5/8	SS-8-UT-A-10	1.64 (41.7)	0.80 (20.3)	0.40 (10.2)	15/16
	3/4	SS-8-UT-A-12	1.69 (42.9)			
3/4	1	SS-12-UT-A-16	1.78 (45.2)	0.94 (23.9)	0.62 (15.7)	1 1/4
1	1 1/4	SS-16-UT-A-20	1.80 (45.7)	0.94 (23.9)	0.87 (22.1)	1 9/16
1 1/2	1 1/2	SS-24-UT-A-24 ^①	1.98 (50.3)	0.94 (23.9)	1.25 (31.8)	2 1/16

^① Not available bored through.

Ordering Information and Dimensions

Nuts



Tube OD in.	Ordering Number	Thread Size	Dimensions, in. (mm)		
			E	L	G
1/16	SS-1-UTN	1/4-20 UNC	0.07 (1.8)	0.38 (9.6)	3/8
1/8	SS-2-UTN	3/8-20 UN	0.13 (3.3)	0.41 (10.4)	9/16
1/4	SS-4-UTN	1/2-20 UNF	0.26 (6.6)	0.53 (13.5)	11/16
3/8	SS-6-UTN	5/8-20 UN	0.38 (9.6)	0.62 (15.7)	13/16
1/2	SS-8-UTN	3/4-20 UNEF	0.51 (13.0)	0.62 (15.7)	15/16
5/8	SS-10-UTN	15/16-20 UNEF	0.63 (16.0)	0.62 (15.7)	1 1/8
3/4	SS-12-UTN	1 1/16-20 UN	0.76 (19.3)	0.72 (18.3)	1 1/4
1	SS-16-UTN	1 3/8-20 UN	1.01 (25.6)	0.72 (18.3)	1 9/16
1 1/2	SS-24-UTN	1 7/8-20 UN	1.51 (38.4)	0.72 (18.3)	2 1/16

O-Rings



Tube OD in.	Uniform Size Number	Ordering Number
1/16	001-1/2 ^①	VT-7-OR-001-1/2
1/8	006	VT-7-OR-006
1/4	010	VT-7-OR-010
3/8	012	VT-7-OR-012
1/2	014	VT-7-OR-014
5/8	114	VT-7-OR-114
3/4	116	VT-7-OR-116
1	120	VT-7-OR-120
1 1/2	128	VT-7-OR-128

^① Not a uniform O-ring size.

Safe Product Selection

When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

Caution: Do not mix or interchange parts with those of other manufacturers.

Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit swagelok.com or contact your authorized Swagelok representative.