

Ultra-Torr Vacuum Fittings

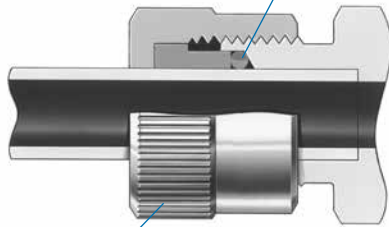


- Stainless steel construction, fluorocarbon FKM O-ring
- Reliable, repeatable sealing performance
- Available in tube sizes from 1/16 to 1 1/2 in.

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

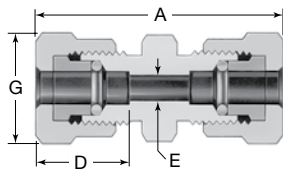
Swagelok ultra-torr vacuum fittings are cleaned to remove machine oil, grease, and loose particles. For more information, see Swagelok *Standard Cleaning and Packaging (SC-10)* (MS-06-62).

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.

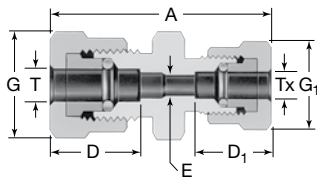
Example: SS-1-UT-6BT

Union



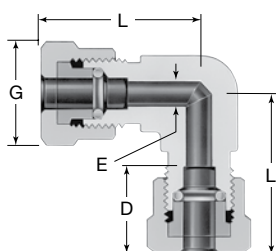
Tube OD in.	Ordering Number	Dimensions, in. (mm)			
		A	D	E	G
1/16	SS-1-UT-6	1.23 (31.2)	0.45 (11.4)	0.05 (1.3)	3/8
1/8	SS-2-UT-6	1.48 (37.6)	0.47 (11.9)	0.09 (2.3)	9/16
1/4	SS-4-UT-6	1.65 (41.9)	0.62 (15.7)	0.19 (4.8)	11/16
3/8	SS-6-UT-6	1.83 (46.5)	0.66 (16.8)	0.28 (7.1)	13/16
1/2	SS-8-UT-6	1.85 (47.0)	0.81 (20.6)	0.41 (10.4)	15/16
5/8	SS-10-UT-6	1.94 (49.3)	0.89 (22.6)	0.50 (12.7)	1 1/8
3/4	SS-12-UT-6	2.17 (55.1)	0.99 (25.1)	0.63 (16.0)	1 1/4
1	SS-16-UT-6	2.27 (57.7)	0.99 (25.1)	0.88 (22.4)	1 9/16
1 1/2	SS-24-UT-6	2.39 (60.7)	0.99 (25.1)	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	1.74 (44.2)	0.66 (16.8)	0.62 (15.7)	0.19 (4.8)	13/16	11/16
1/2		SS-8-UT-6-4	1.77 (45.0)	0.81 (20.6)			15/16	

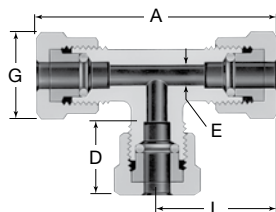
Union Elbow



Tube OD in.	Ordering Number	Dimensions, in. (mm)			
		D	E	G	L
1/4	SS-4-UT-9	0.62 (15.7)	0.19 (4.8)	11/16	1.15 (29.2)
3/8	SS-6-UT-9	0.66 (16.8)	0.28 (7.1)	13/16	1.37 (34.8)
1/2	SS-8-UT-9	0.81 (20.6)	0.41 (10.4)	15/16	1.37 (34.8)

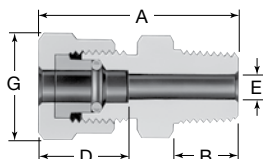
Ordering Information and Dimensions

Union Tee



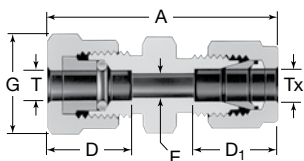
Tube OD in.	Ordering Number	Dimensions, in. (mm)				
		A	D	E	G	L
1/8	SS-2-UT-3	2.20 (55.9)	0.47 (11.9)	0.09 (2.3)	9/16	1.10 (27.9)
1/4	SS-4-UT-3	2.32 (58.9)	0.62 (15.7)	0.19 (4.8)	11/16	1.16 (29.5)
3/8	SS-6-UT-3	2.74 (69.6)	0.66 (16.8)	0.28 (7.1)	13/16	1.37 (34.8)
1/2	SS-8-UT-3	2.74 (69.6)	0.81 (20.6)	0.41 (10.4)	15/16	1.37 (34.8)
3/4	SS-12-UT-3	3.42 (86.9)	0.99 (25.1)	0.63 (16.0)	1 1/4	1.71 (43.3)
1	SS-16-UT-3	3.76 (95.5)	0.99 (25.1)	0.88 (22.4)	1 9/16	1.88 (47.8)

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	1.14 (29.0)	0.38 (9.6)	0.45 (11.4)	0.05 (1.3)	3/8
1/8	1/8	SS-2-UT-1-2	1.26 (32.0)	0.38 (9.6)	0.47 (11.9)	0.09 (2.3)	9/16
1/4	1/8	SS-4-UT-1-2	1.36 (34.5)	0.38 (9.6)	0.62 (15.7)	0.19 (4.8)	11/16
	1/4	SS-4-UT-1-4	1.54 (39.1)	0.56 (14.2)			
3/8	1/8	SS-6-UT-1-2	1.45 (36.8)	0.38 (9.6)	0.66 (16.8)	0.19 (4.8) 0.28 (7.1)	13/16
	1/4	SS-6-UT-1-4	1.63 (41.4)	0.56 (14.2)			
1/2	3/8	SS-8-UT-1-6	1.66 (42.2)	0.56 (14.2)	0.81 (20.6)	0.41 (10.4)	15/16
	1/2	SS-8-UT-1-8	1.85 (47.0)	0.75 (19.1)			
3/4	3/4	SS-12-UT-1-12	2.02 (51.3)	0.75 (19.1)	0.99 (25.1)	0.63 (16.0)	1 1/4
1	1	SS-16-UT-1-16	2.31 (58.7)	0.94 (23.9)	0.99 (25.1)	0.88 (22.4)	1 9/16

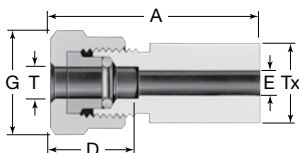
Swagelok Tube Fitting Union



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	1.67 (42.4)	0.62 (15.7)	0.60 (15.2)	0.19 (4.8)	11/16
3/8	3/8	SS-6-UT-6-600	1.82 (46.2)	0.66 (16.8)	0.66 (16.8)	0.28 (7.1)	13/16
1/2	1/2	SS-8-UT-6-810	1.96 (49.8)	0.81 (20.6)	0.90 (22.9)	0.41 (10.4)	15/16

Dimensions shown with Swagelok nuts finger-tight.

Adapter

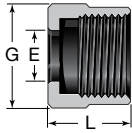


Tube OD, in.		Ordering Number	Dimensions, in. (mm)			
T	Tx		A	D	E	G
1/16	1/4	SS-1-UT-A-4	1.14 (29.0)	0.45 (11.4)	0.05 (1.3)	3/8
1/8	1/4	SS-2-UT-A-4	1.24 (31.5)	0.47 (11.9)	0.09 (2.3)	9/16
	3/8	SS-2-UT-A-6	1.25 (31.8)			
1/4	1/4	SS-4-UT-A-4 ^①	1.35 (34.3)	0.62 (15.7)	0.19 (4.8)	11/16
	3/8	SS-4-UT-A-6	1.34 (34.0)			
3/8	1/2	SS-4-UT-A-8	1.48 (37.6)	0.66 (16.8)	0.28 (7.1)	13/16
	3/8	SS-6-UT-A-6 ^①	1.48 (37.6)			
1/2	1/2	SS-6-UT-A-8	1.59 (40.4)	0.81 (20.6)	0.41 (10.4)	15/16
	5/8	SS-8-UT-A-10	1.65 (41.9)			
3/4	3/4	SS-8-UT-A-12	1.70 (43.2)	0.99 (25.1)	0.63 (16.0)	1 1/4
3/4	1	SS-12-UT-A-16	1.84 (46.7)			
1	1 1/4	SS-16-UT-A-20	1.86 (47.2)	0.99 (25.1)	0.88 (22.4)	1 9/16
1 1/2	1 1/2	SS-24-UT-A-24 ^①	2.04 (51.8)			

^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.

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

Introduction

Since 1947, Swagelok has designed, developed, and manufactured high-quality, general-purpose and specialty fluid system products to meet the evolving needs of global industries. Our focus is on understanding our customers' needs, finding timely solutions, and adding value with our products and services.

We are pleased to provide this global edition of the book-bound *Swagelok Product Catalog*, which compiles more than 100 separate product catalogs, technical bulletins, and reference documents into one convenient, easy-to-use volume. Each product catalog is up to date at the time of printing, with its revision number shown on the last page of the individual catalog; for example, the Swagelok *Gaugeable Tube Fittings and Tube Adapters* catalog is MS-01-140, RevW. Subsequent revisions will supersede the printed version and will be posted on the Swagelok website and in the Swagelok electronic Desktop Technical Reference (eDTR) tool.

For more information, visit your Swagelok website or contact your authorized Swagelok sales and service representative.

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.

Swagelok, Ferrule-Pak, Goop, Hinging-Collecting, IGC, Kenmac, Micro-Fit, Nupro, Snoop, Sno-Trik, SWAK, VCO, VCR, Ultra-Torr, Whitey—TM Swagelok Company
15-7 PH—TM AK Steel Corp.
AccuTrak, Beacon, Westlock—TM Tyco International Services
Atlas—TM Asahi Glass Co., Ltd.
AL-6XN—TM Allegheny Ludlum Corporation
ASCO, El-O-Matic—TM Emerson
AutoCAD—TM Autodesk, Inc.
CSA—TM Canadian Standards Association
Crastin, DuPont, Kalrez, Krytox, Teflon, Viton—TM E.I. duPont
Nemours and Company
DeviceNet—TM ODVA
Dyneon, Elgiloy, TFM—TM Dyneon
Elgiloy—TM Elgiloy Specialty Metals
FM—TM FM Global
Grafoil—TM GrafTech International Holdings, Inc.
Honeywell, MICRO SWITCH—TM Honeywell
MAC—TM MAC Valves
Microsoft, Windows—TM Microsoft Corp.
NACE—TM NACE International
PH 15-7 Mo, 17-7 PH—TM AK Steel Corp
picofast—Hans Turck KG
Pillar—TM Nippon Pillar Packing Company, Ltd.
Raychem—TM Tyco Electronics Corp.
Sandvik, SAF 2507—TM Sandvik AB
Simriz—TM Freudenberg-NOK
SolidWorks—TM SolidWorks Corporation
UL—Underwriters Laboratories Inc.
Xylan—TM Whitford Corporation
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