"B" Type VCO® L-Ring Face Seal Fittings
For Applications in Biotechnology and Pharmaceutics

The "B" Type VCO fitting uses an L-ring seal that eliminates concavity at the bore. This feature reduces the potential for media entrapment. The L-ring seal should be used only with the "B" Type VCO body.

Applications include steam cleaning lines, sampling, research and development, and process feed lines.

Features

- Reduced internal entrapment
- Lubricant-free L-ring seal
- Specially cleaned and packaged bodies and glands
- 20 μin. (0.51 μm) maximum R_a electropolished internal surface finish
- Tube butt weld end connections
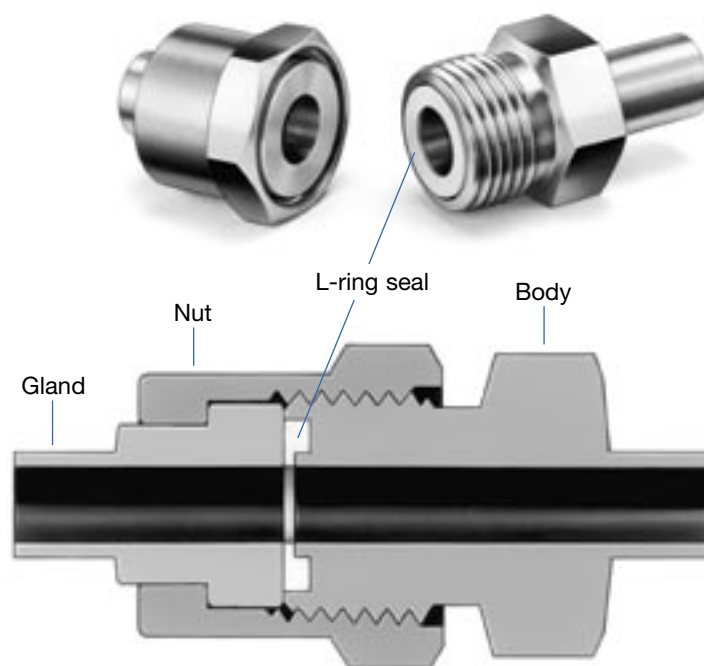- Controlled L-ring extrusion—no overtightening

Materials

Body, gland: 316L stainless steel

Nut: 316 stainless steel

L-ring seal

- EPDM
- Virgin PTFE—21 CFR 177.1550-compliant
- Silicone
- Fluorocarbon FKM

Pressure Ratings at 100°F (37°C)

| Tube OD	Wrench-Tight[1] Assembly Working Pressure psig (bar)	
1/4 in.	2500	(172)
1/2 in.	2000	(137)
3/4 in.	1500	(103)
1 in.		
12 mm	2000	(137)

[1] One-eighth turn past finger-tight.

Temperature Ratings

Ratings are based on material manufacturers' recommendations.

- Ethylene propylene: 300°F (148°C)
- PTFE and silicone: 450°F (232°C)
- Fluorocarbon FKM: 400°F (204°C)

L-ring seal

Nut

Body

Gland

Assembly Instructions
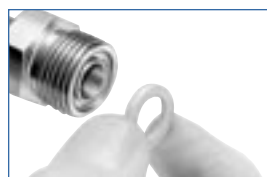
Place L-ring seal in body seal groove with stepped side down.
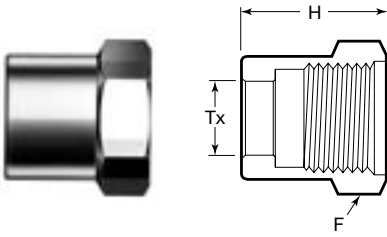
Assemble nut and gland to body. Tighten wrench-tight (one-eighth turn past finger-tight).

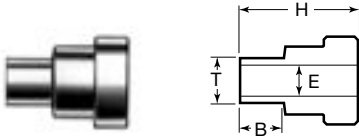Swagelok®

Ordering Information and Dimensions

Dimensions are for reference only and are subject to change.

Female Nut

Ordering Number	F Hex Flat	Dimensions, in. (mm)	
		H	**Tx**
SS-4-BVCO-4	11/16	0.75 (19.1)	0.39 (9.9)
SS-8-BVCO-4	1	0.84 (21.3)	0.61 (15.5)
SS-12-BVCO-4	1 1/2	0.90 (22.9)	0.94 (23.9)
SS-16-BVCO-4	1 3/4		1.25 (31.8)

Tube Butt Weld Gland

T Tube OD	Ordering Number	Dimensions, in. (mm)			Wall Thickness
		B	**E**	**H**	
Fractional					
1/4	316L-4-BVCO-3	0.25 (6.4)	0.18 (4.6)	0.67 (17.0)	0.035
	316L-4-BVCO-3-4TB7				
1/2	316L-8-BVCO-3	0.75 (19.1)	0.40 (10.2)	1.17 (29.7)	0.049
	316L-8-BVCO-3-065		0.37 (9.4)		
3/4	316L-12-BVCO-3		0.62 (15.7)	1.24 (31.5)	0.065
1	316L-16-BVCO-3	0.96 (24.4)	0.87 (22.1)	1.45 (36.8)	
Metric					
12 mm	316L-12M-BVCO-3	0.75 (19.1)	0.39 (10.0)	1.17 (29.7)	1 mm

NOTE: -12M-BVCO gland and body use -8-BVCO L-ring seal and female nut.

L-Ring Seal

Basic Ordering Number①	Dimensions, in. (mm)		
	E	**H**	**Tx**
-4-BVCO-2	0.18 (4.6)	0.07 (1.8)	0.38 (9.6)
-8-BVCO-2	0.40 (10.2)	0.10 (2.5)	0.64 (16.2)
-12-BVCO-2	0.62 (15.7)		0.92 (23.4)
-16-BVCO-2	0.87 (22.1)	0.14 (3.6)	1.30 (33.0)

① Add **EP** for ethylene propylene, **VT** for fluorocarbon FKM, **T** for PTFE, or **SI** for silicone to the basic ordering number.
Example: **EP**-4-BVCO-2

Tube Butt Weld Body
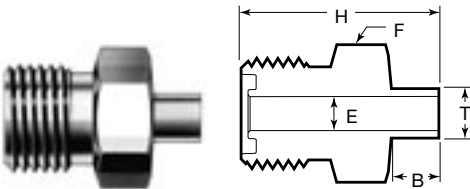
T Tube OD	Ordering Number	Dimensions, in. (mm)			F Hex Flat	Wall Thickness
		B	**E**	**H**		
Fractional						
1/4	316L-4-BVCO-1	0.25 (6.4)	0.18 (4.6)	1.03 (26.2)	5/8	0.035
	316L-4-BVCO-1-4TB7			1.53 (38.9)		
1/2	316L-8-BVCO-1	0.75 (19.1)	0.40 (10.2)	1.65 (41.9)	15/16	0.049
	316L-8-BVCO-1-065		0.37 (9.4)			
3/4	316L-12-BVCO-1		0.62 (15.7)	1.75 (44.4)	1 5/16	0.065
1	316L-16-BVCO-1	0.96 (24.4)	0.87 (22.1)	1.99 (50.5)	1 5/8	
Metric						
12 mm	316L-12M-BVCO-1	0.75 (19.1)	0.39 (10.0)	1.65 (41.9)	15/16	1 mm

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.