

# Gaugeable Chromatograph and Column End Fittings

## Features

- Suitable for liquid or gas chromatography
- 316 stainless steel construction
- Offered in sizes from 1/16 to 1/2 in.

## Pressure-Temperature Ratings

Swagelok chromatograph and column end fittings are rated to the working pressure of tubing as listed in Swagelok *Tubing Data*, MS-01-107. Careful selection of high-quality tubing is important when installing safe, leak-tight systems.

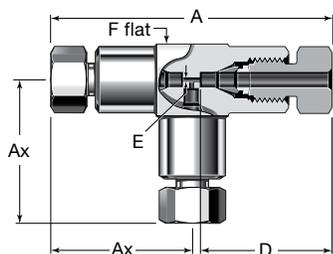
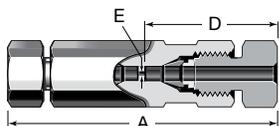
## Cleaning

Fitting components 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.

### Chromatograph Fittings



## Materials of Construction

Material	Bar Stock <sup>①</sup>	Forgings <sup>②</sup>
316 stainless steel	ASTM A276 ASME SA479	ASTM A182 ASME SA182

<sup>①</sup> Includes straight configurations.

<sup>②</sup> Includes all elbows, crosses, and tees.

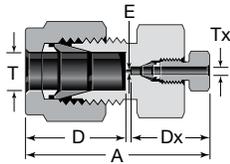
### Union—Low Dead Volume

Tube OD	Ordering Number	Dimensions			Dead Volume
		A	D	E	
<i>Dimensions, in.</i>					
1/16	SS-1F0-6GC	1.26	0.61	0.013	$6.6 \times 10^{-5} \text{ cm}^3$

### Union Tee—Low Dead Volume

Tube OD	Ordering Number	Dimensions					Dead Volume
		A	Ax	D	E	F	
<i>Dimensions, in.</i>							
1/16	SS-1F0-3GC	1.32	0.66	0.61	0.013	3/8	$2.8 \times 10^{-4} \text{ cm}^3$

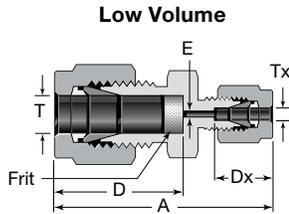
## Column End Fittings



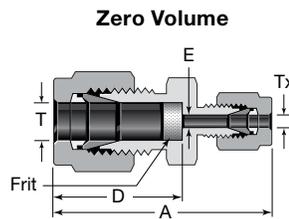
### Female Swagelok Union

T Tube OD	Tx Tube OD	Ordering Number	Dimensions				Dead Volume
			A	D	Dx	E	
<i>Dimensions, in.</i>							
1/4	1/16	SS-400-6-1FGC	1.24	0.60	0.61	0.013	$6.8 \times 10^{-5} \text{ cm}^3$
3/8		SS-600-6-1FGC	1.30	0.66			

### Reducing Union



Low Volume



Zero Volume

T Tube OD	Tx Tube OD	Ordering Number	Dimensions				Frit Thickness	Dead Volume
			A	D	Dx	E		
<i>Dimensions, in.</i>								
<b>Low Volume</b>								
1/8	1/16	SS-200-6-1LV	1.22	0.72	0.34	0.052	0.062	$5.4 \times 10^{-3} \text{ cm}^3$
1/4		SS-400-6-1LV	1.35	0.82			0.125	$6.7 \times 10^{-3} \text{ cm}^3$
3/8		SS-600-6-1LV	1.44	0.91			$6.5 \times 10^{-3} \text{ cm}^3$	
<b>Zero Volume</b>								
1/8	1/16	SS-200-6-1ZV	1.22	0.73	—	0.06	0.062	0
1/4		SS-400-6-1ZV	1.35	0.82				
3/8		SS-600-6-1ZV	1.44	0.92				
1/2		SS-810-6-1ZV	1.58	1.04				

The dead volume in the low-volume fitting is equal to the volume of the 0.052 in. bore. The tubing in the zero-volume fitting is inserted to the frit.

Both low- and zero-volume column end fittings are available with stainless steel sintered frits. Frits are loosely installed to facilitate removal and replacement. To order, add a frit designator to the ordering number.

Nominal Pore Size $\mu\text{m}$	Frit Designator	Nominal Pore Size $\mu\text{m}$	Frit Designator
0.1	S9	5	SA
0.25	S8	7	SB
0.5	S7	10	SD
1.0	S6	15	SE
2.0	S5	20	SF
3.0	S4	25	S3

Example: SS-200-6-1LVS9

For other nominal pore sizes, 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.

#### ⚠ WARNING

Do not mix/interchange Swagelok products or components not governed by industrial design standards, including Swagelok tube fitting end connections, with those of other manufacturers.

### Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit [swagelok.com](http://swagelok.com) or contact your authorized Swagelok representative.