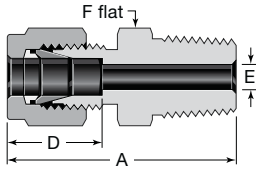


Straight Fittings

Male Connectors



NPT

Tube OD	NPT Size	Basic Ordering Number	Dimensions			
			A	D	E ^①	F
Dimensions, in.						
1/16	1/16	-100-1-1	0.94	0.34	0.05	5/16
	1/8	-100-1-2	1.03			7/16
	1/4	-100-1-4	1.22			9/16
1/8	1/16	-200-1-1	1.17	0.50	0.09	7/16
	1/8	-200-1-2	1.20			7/16
	1/4	-200-1-4	1.40			9/16
	3/8	-200-1-6	1.41			11/16
	1/2	-200-1-8	1.66			7/8
3/16	1/8	-300-1-2	1.23	0.54	0.12	7/16
	1/4	-300-1-4	1.43			9/16
1/4	1/16	-400-1-1	1.29	0.60	0.12	1/2
	1/8	-400-1-2	1.29		0.19	1/2
	1/4	-400-1-4	1.49		0.19	9/16
	3/8	-400-1-6	1.51		0.19	11/16
	1/2	-400-1-8	1.76		0.19	7/8
	3/4	-400-1-12	1.82		0.19	1 1/16
5/16	1/8	-500-1-2	1.34	0.64	0.19	9/16
	1/4	-500-1-4	1.52		0.25	9/16
	3/8	-500-1-6	1.54		0.25	11/16
3/8	1/8	-600-1-2	1.39	0.66	0.19	5/8
	1/4	-600-1-4	1.57		0.28	5/8
	3/8	-600-1-6	1.57		0.28	11/16
	1/2	-600-1-8	1.82		0.28	7/8
	3/4	-600-1-12	1.88		0.28	1 1/16
	1	-600-1-16	2.14		0.28	1 3/8
1/2	1/8	-810-1-2	1.53	0.90	0.19	13/16
	1/4	-810-1-4	1.71		0.28	13/16
	3/8	-810-1-6	1.71		0.38	13/16
	1/2	-810-1-8	1.93		0.41	7/8
	3/4	-810-1-12	1.99		0.41	1 1/16
	1	-810-1-16	2.25		0.41	1 3/8
5/8	1/4	-1010-1-4	1.74	0.96	0.28	15/16
	3/8	-1010-1-6	1.74		0.38	15/16
	1/2	-1010-1-8	1.93		0.47	15/16
	3/4	-1010-1-12	1.99		0.50	1 1/16
3/4	3/8	-1210-1-6	1.80	0.96	0.41	1 1/16
	1/2	-1210-1-8	1.99		0.47	1 1/16
	3/4	-1210-1-12	1.99		0.62	1 1/16
	1	-1210-1-16	2.25		0.62	1 3/8
7/8	1/2	-1410-1-8	1.99	1.02	0.47	1 3/16
	3/4	-1410-1-12	1.99		0.62	1 3/16
	1	-1410-1-16	2.25		0.72	1 3/8
1	1/2	-1610-1-8	2.26	1.23	0.47	1 3/8
	3/4	-1610-1-12	2.26		0.62	
	1	-1610-1-16	2.45		0.88	
1 1/8	1	-1810-1-16	2.45	1.23	0.88	1 5/8
1 1/4	1	-2000-1-16	3.04	1.62	0.88	1 3/4
	1 1/4	-2000-1-20	3.04		1.09	
1 1/2	1 1/2	-2400-1-24	3.50	1.97	1.34	2 1/8
2	2	-3200-1-32	4.47	2.66	1.81	2 3/4

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

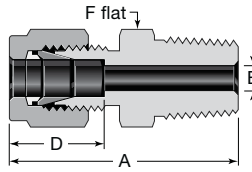
Tube OD	NPT Size in.	Basic Ordering Number	Dimensions			
			A	D	E ^①	F
Dimensions, mm						
2	1/8	-2M0-1-2	30.5	12.9	1.7	12
3	1/8	-3M0-1-2	30.5	12.9	2.4	12
	1/4	-3M0-1-4	35.6			14
4	1/8	-4M0-1-2	31.2	13.7	2.4	12
	1/4	-4M0-1-4	36.3			14
6	1/8	-6M0-1-2	32.8	15.3	4.8	14
	1/4	-6M0-1-4	37.9			14
	3/8	-6M0-1-6	38.4			18
	1/2	-6M0-1-8	44.7			22
8	1/8	-8M0-1-2	34.2	16.2	4.8	15
	1/4	-8M0-1-4	38.7		6.4	15
	3/8	-8M0-1-6	39.3		6.4	18
	1/2	-8M0-1-8	45.6		6.4	22
10	1/8	-10M0-1-2	36.3	17.2	4.8	18
	1/4	-10M0-1-4	40.9		7.1	18
	3/8	-10M0-1-6	40.9		7.9	18
	1/2	-10M0-1-8	46.5		7.9	22
12	1/8	-12M0-1-2	38.8	22.8	4.8	22
	1/4	-12M0-1-4	43.4		7.1	22
	3/8	-12M0-1-6	43.4		9.5	22
	1/2	-12M0-1-8	49.0		9.5	22
14	3/4	-12M0-1-12	50.5	9.5	27	
	1/4	-14M0-1-4	44.1	24.4	7.1	24
	3/8	-14M0-1-6	44.1		9.5	
1/2	-14M0-1-8	49.0	11.1			
15	1/2	-15M0-1-8	49.0	24.4	11.9	24
16	3/8	-16M0-1-6	44.1	24.4	9.5	24
	1/2	-16M0-1-8	49.0		11.9	24
	3/4	-16M0-1-12	50.5		12.7	27
18	1/2	-18M0-1-8	50.5	24.4	11.9	27
	3/4	-18M0-1-12	50.5		15.1	
20	1/2	-20M0-1-8	52.3	26.0	11.9	30
	3/4	-20M0-1-12	52.3		15.9	
22	3/4	-22M0-1-12	52.3	26.0	15.9	30
	1	-22M0-1-16	57.1		18.3	35
	1 1/4	-22M0-1-20	57.1		18.3	35
25	1/2	-25M0-1-8	57.5	31.3	11.9	35
	3/4	-25M0-1-12	57.5		15.9	
	1	-25M0-1-16	62.3		21.8	
28	1	-28M0-1-16	72.4	36.6	21.8	41
	1 1/4	-28M0-1-20	73.1			46
	1 1/4	B-28M0-1-16	75.0			31.6
1 1/4	B-28M0-1-20	77.3	46			
30	1 1/4	-30M0-1-20	77.2	39.6	26.2	46
32	1 1/4	-32M0-1-20	79.6	42.0	28.6	46
38	1 1/2	-38M0-1-24	91.6	49.4	33.7	55

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

Refer to Installation Instructions, beginning on page 62.

Straight Fittings

Male Connectors



See page 8 for thread specifications.

ISO/BSP Tapered Thread (RT)

Tube OD	ISO Thread Size	Basic Ordering Number	Dimensions			
			A	D	E ^①	F
Dimensions, in.						
1/8	1/8 1/4	-200-1-2RT -200-1-4RT	1.20 1.40	0.50	0.09	7/16 9/16
1/4	1/8	-400-1-2RT	1.29	0.60	0.19	1/2
	1/4	-400-1-4RT	1.49			9/16
	3/8	-400-1-6RT	1.51			11/16
	1/2	-400-1-8RT	1.76			7/8
5/16	1/8	-500-1-2RT	1.34	0.64	0.19 0.25	9/16
	1/4	-500-1-4RT	1.52			
3/8	1/8	-600-1-2RT	1.39	0.66	0.19 0.28 0.28 0.28	5/8
	1/4	-600-1-4RT	1.57			5/8
	3/8	-600-1-6RT	1.57			11/16
	1/2	-600-1-8RT	1.82			7/8
	3/4	-600-1-12RT	1.88			1 1/16
1/2	1/4	-810-1-4RT	1.71	0.90	0.28 0.38 0.41 0.41	13/16
	3/8	-810-1-6RT	1.71			13/16
	1/2	-810-1-8RT	1.93			7/8
	3/4	-810-1-12RT	1.99			1 1/16
5/8	1/2	-1010-1-8RT	1.93	0.96	0.47	15/16
3/4	3/4	-1210-1-12RT	1.99	0.96	0.62	1 1/16
	1	-1210-1-16RT	2.25			1 3/8
1	3/4	-1610-1-12RT	2.26	1.23	0.63 0.88	1 3/8
	1	-1610-1-16RT	2.45			
1 1/4	1 1/4	-2000-1-20RT	3.04	1.62	1.09	1 3/4

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

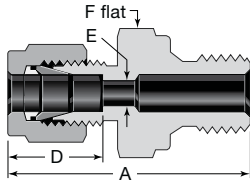
Tube OD	ISO Thread Size, in.	Basic Ordering Number	Dimensions			
			A	D	E ^①	F
Dimensions, mm						
2	1/8	-2M0-1-2RT	30.5	12.9	1.7	12
3	1/8	-3M0-1-2RT	30.5	12.9	2.4	12
	1/4	-3M0-1-4RT	35.6			14
4	1/8	-4M0-1-2RT	31.2	13.7	2.4	12
	1/4	-4M0-1-4RT	36.3			14
6	1/8	-6M0-1-2RT	32.8	15.3	4.8	14
	1/4	-6M0-1-4RT	37.9			14
	3/8	-6M0-1-6RT	38.4			18
	1/2	-6M0-1-8RT	44.7			22
8	1/8	-8M0-1-2RT	34.2	16.2	4.8 6.4 6.4 6.4	15
	1/4	-8M0-1-4RT	38.7			15
	3/8	-8M0-1-6RT	39.2			18
	1/2	-8M0-1-8RT	45.6			22
10	1/8	-10M0-1-2RT	36.3	17.2	4.8 7.1 7.9 7.9 7.9	18
	1/4	-10M0-1-4RT	40.9			18
	3/8	-10M0-1-6RT	40.9			18
	1/2	-10M0-1-8RT	46.5			22
	3/4	-10M0-1-12RT	48.0			27
12	1/4	-12M0-1-4RT	43.4	22.8	7.1 9.5 9.5 9.5	22
	3/8	-12M0-1-6RT	43.4			22
	1/2	-12M0-1-8RT	49.0			22
	3/4	-12M0-1-12RT	50.5			27
14	1/4	-14M0-1-4RT	44.1	24.4	7.1 9.5	24
	3/8	-14M0-1-6RT	44.1			
15	1/2	-15M0-1-8RT	49.0	24.4	11.9	24
16	1/4	-16M0-1-4RT	44.1	24.4	7.1 9.5 11.9 12.7	24
	3/8	-16M0-1-6RT	44.1			24
	1/2	-16M0-1-8RT	49.0			24
	3/4	-16M0-1-12RT	50.5			27
18	1/2	-18M0-1-8RT	50.5	24.4	11.9 15.1	27
	3/4	-18M0-1-12RT	50.5			
20	1/2	-20M0-1-8RT	52.3	26.0	11.9 15.9	30
	3/4	-20M0-1-12RT	52.3			
22	3/4	-22M0-1-12RT	52.3	26.0	15.9 18.3	30
	1	-22M0-1-16RT	57.1			35
25	1/2	-25M0-1-8RT	57.5	31.3	11.9 15.9 21.8	35
	3/4	-25M0-1-12RT	57.5			
	1	-25M0-1-16RT	62.3			
28	1	-28M0-1-16RT	72.4	36.6	21.8	41
	1 1/4	-28M0-1-20RT	73.1			46
	1	B-28M0-1-16RT	75.0			31.6
B-28M0-1-20RT		77.3	46			
30	1 1/4	-30M0-1-20RT	77.2	39.6	26.2	46
32	1 1/4	-32M0-1-20RT	79.6	42.0	28.6	46
38	1 1/2	-38M0-1-24RT	91.6	49.4	33.7	55

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

Refer to Installation Instructions, beginning on page 62.

Straight Fittings

Male Connectors



See page 8 for thread specifications.
ISO/BSP parallel gaskets are available. See page 54.

ISO/BSP Parallel Thread (RS)

Tube OD	ISO Thread Size	Basic Ordering Number	Dimensions			
			A	D	E ^①	F
Dimensions, in.						
1/8	1/8	-200-1-2RS	1.31	0.50	0.09	9/16
	1/4	-200-1-4RS	1.50			3/4
	3/8	-200-1-6RS	1.53			7/8
1/4	1/8	-400-1-2RS	1.40	0.60	0.16	9/16
	1/4	-400-1-4RS	1.59		0.19	3/4
	3/8	-400-1-6RS	1.62		0.19	7/8
	1/2	-400-1-8RS	1.70		0.19	1 1/16
3/8	1/8	-600-1-2RS	1.49	0.66	0.16	5/8
	1/4	-600-1-4RS	1.65		0.23	3/4
	3/8	-600-1-6RS	1.68		0.28	7/8
	1/2	-600-1-8RS	1.76		0.28	1 1/16
1/2	1/4	-810-1-4RS	1.76	0.90	0.23	13/16
	3/8	-810-1-6RS	1.79		0.31	7/8
	1/2	-810-1-8RS	1.87		0.41	1 1/16
3/4	1/2	-1210-1-8RS	1.92	0.96	0.47	1 1/16
	3/4	-1210-1-12RS	2.05		0.62	1 5/16
1	1/2	-1610-1-8RS	2.19	1.23	0.47	1 3/8
	3/4	-1610-1-12RS	2.27		0.63	1 3/8
	1	-1610-1-16RS	2.35		0.78	1 5/8

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

Tube OD	ISO Thread Size, in.	Basic Ordering Number	Dimensions			
			A	D	E ^①	F
Dimensions, mm						
2	1/8	-2M0-1-2RS	33.3	12.9	1.7	14
3	1/8	-3M0-1-2RS	33.3	12.9	2.4	14
	1/4	-3M0-1-4RS	38.1			19
4	1/8	-4M0-1-2RS	34.0	13.7	2.4	14
6	1/8	-6M0-1-2RS	35.6	15.3	4.0	14
	1/4	-6M0-1-4RS	40.4		4.8	19
	3/8	-6M0-1-6RS	41.1		4.8	22
	1/2	-6M0-1-8RS	43.2		4.8	27
8	1/8	-8M0-1-2RS	36.6	16.2	4.0	15
	1/4	-8M0-1-4RS	41.4		5.9	19
	3/8	-8M0-1-6RS	42.2		6.4	22
	1/2	-8M0-1-8RS	44.2		6.4	27
10	1/4	-10M0-1-4RS	42.2	17.2	5.9	19
	3/8	-10M0-1-6RS	42.9		7.9	22
	1/2	-10M0-1-8RS	45.0		7.9	27
12	1/4	-12M0-1-4RS	44.5	22.8	5.9	22
	3/8	-12M0-1-6RS	45.5		7.9	22
	1/2	-12M0-1-8RS	47.5		9.5	27
	3/4	-12M0-1-12RS	52.1		9.5	35
14	3/8	-14M0-1-6RS	43.9	24.4	7.9	24
	1/2	-14M0-1-8RS	47.5		11.1	27
15	3/8	-15M0-1-6RS	45.5	24.4	7.9	24
	1/2	-15M0-1-8RS	47.5		11.9	27
	3/4	-15M0-1-12RS	52.8		11.9	35
16	3/8	-16M0-1-6RS	45.5	24.4	7.9	24
	1/2	-16M0-1-8RS	47.5		11.9	27
	3/4	-16M0-1-12RS	52.8		12.7	35
18	1/2	-18M0-1-8RS	48.8	24.4	11.9	27
	3/4	-18M0-1-12RS	52.1		15.1	35
20	1/2	-20M0-1-8RS	50.5	26.0	11.9	30
	3/4	-20M0-1-12RS	52.6		15.9	35
22	3/4	-22M0-1-12RS	52.6	26.0	15.9	35
	1	-22M0-1-16RS	54.9		18.3	41
25	3/4	-25M0-1-12RS	57.7	31.3	15.9	35
	1	-25M0-1-16RS	59.7		19.8	41
28	1	-28M0-1-16RS	69.9	36.6	19.8	41
	1 1/4	-28M0-1-20RS	72.9		21.8	50
	1	B-28M0-1-16RS	72.5		31.6	19.8
1 1/4	B-28M0-1-20RS	77.1	24.6	54		
30	1 1/4	-30M0-1-20RS	76.7	39.6	26.2	50
32	1 1/4	-32M0-1-20RS	79.2	42.0	28.6	50
38	1 1/2	-38M0-1-24RS	90.9	49.4	31.8	55

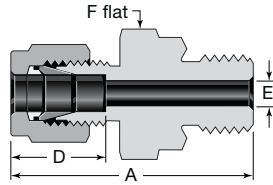
① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

Refer to Installation Instructions, beginning on page 62.



Straight Fittings

Male Connectors



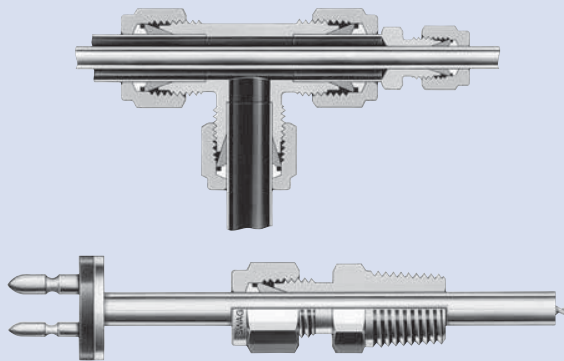
See page 8 for thread specifications.
ISO/BSP parallel gaskets are available. See page 54.

ISO/BSP Parallel Thread (RP)

Tube OD	ISO Thread Size	Basic Ordering Number	Dimensions			
			A	D	E ^①	F
Dimensions, in.						
1/8	1/8	-200-1-2RP	1.31	0.50	0.09	9/16
	1/4	-200-1-4RP	1.50			3/4
1/4	1/8	-400-1-2RP	1.40	0.60	0.16	9/16
	1/4	-400-1-4RP	1.59		0.19	3/4
1/2	3/8	-810-1-6RP	1.79	0.90	0.31	7/8
	1/2	-810-1-8RP	1.87		0.41	1 1/16
3/4	1/2	-1210-1-8RP	1.92	0.96	0.47	1 1/16
	3/4	-1210-1-12RP	2.05		0.62	1 5/16
1	1	-1610-1-16RP	2.35	1.23	0.78	1 5/8

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

Bored-Through Fittings for Thermocouples, Dip Tubes, and Heat Exchanger Tees



Swagelok bored-through male connectors accommodate thermocouples or dip tubes. Most male connectors are available as a bored-through fitting, but male connectors whose pipe thread end is small relative to the tube fitting end—such as **-600-1-2** or **-8M0-1-2RT**—cannot be bored through.

Swagelok bored-through reducers and standard Swagelok tees can be used to create a heat exchanger tee.

To order bored-through fittings, add **BT** to the ordering number. Example: SS-400-1-4BT

Bored-through fittings have a reduced pressure rating.

In general, we have multiplied the allowable working pressure of the tubing, as found on the Tubing Data Sheet (MS-01-107) by the factors in the table to the right.

Tube OD	ISO Thread Size, in.	Basic Ordering Number	Dimensions			
			A	D	E ^①	F
Dimensions, mm						
3	1/8	-3M0-1-2RP	33.3	12.9	2.4	14
	1/4	-3M0-1-4RP	38.1			19
4	1/8	-4M0-1-2RP	34.0	13.7	2.4	14
6	1/8	-6M0-1-2RP	35.6	15.3	4.0	14
	1/4	-6M0-1-4RP	40.4		4.8	19
	3/8	-6M0-1-6RP	41.2		4.8	22
	1/2	-6M0-1-8RP	43.2		4.8	27
8	1/8	-8M0-1-2RP	36.5	16.2	4.0	15
	1/4	-8M0-1-4RP	41.3		5.9	19
	3/8	-8M0-1-6RP	41.9		6.4	22
	1/2	-8M0-1-8RP	44.1		6.4	27
10	1/4	-10M0-1-4RP	42.2	17.2	5.9	19
	3/8	-10M0-1-6RP	42.9		7.9	22
	1/2	-10M0-1-8RP	45.0		7.9	27
12	1/4	-12M0-1-4RP	45.4	22.8	5.9	22
	3/8	-12M0-1-6RP	45.4		7.9	22
	1/2	-12M0-1-8RP	47.5		9.5	27
	3/4	-12M0-1-12RP	52.1		9.5	35
15	1/2	-15M0-1-8RP	47.5	24.4	11.9	27
16	3/8	-16M0-1-6RP	45.4	24.4	7.9	24
	1/2	-16M0-1-8RP	47.5		11.9	27
18	1/2	-18M0-1-8RP	49.0	24.4	11.9	27
	3/4	-18M0-1-12RP	52.3		15.1	35
20	1/2	-20M0-1-8RP	50.5	26.0	11.9	30
	3/4	-20M0-1-12RP	52.5		15.9	35
22	3/4	-22M0-1-12RP	52.8	26.0	15.9	35
	1	-22M0-1-16RP	54.5		18.3	41
25	3/4	-25M0-1-12RP	57.8	31.3	15.9	35
	1	-25M0-1-16RP	59.8		19.8	41
28	1	-28M0-1-16RP	69.8	36.6	19.8	41
	1 1/4	-28M0-1-20RP	72.9		21.8	50
30	1	B-28M0-1-16RP	72.5	31.6	19.8	41
	1 1/4	B-28M0-1-20RP	77.1		24.6	54
30	1 1/4	-30M0-1-20RP	76.8	39.6	26.2	50
32	1 1/4	-32M0-1-20RP	79.2	42.0	28.6	50
38	1 1/2	-38M0-1-24RP	92.1	49.4	31.8	55

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

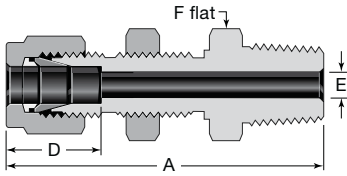
Reduced Pressure Rating Factors

Size (in.)	Size (mm)	Factor
Up to 1/2 in.	Up to 12 mm	0.75
Above 1/2 in. to 3/4 in.	Above 12 mm to 18 mm	0.50
Above 3/4 in.	Above 18 mm	0.25

Refer to Installation Instructions, beginning on page 62.

Straight Fittings

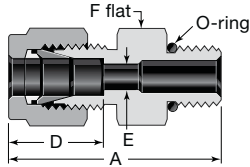
Male Connectors



Bulkhead NPT

Tube OD	NPT Size in.	Basic Ordering Number	Dimensions					
			A	D	E ^①	F	Panel Hole Size	Max Panel Thickness
Dimensions, in.								
1/8	1/8	-200-11-2	1.83	0.50	0.09	1/2	21/64	0.50
1/4	1/8	-400-11-2	1.95	0.60	0.19	5/8	29/64	0.40
	1/4	-400-11-4	2.13					
3/8	1/4	-600-11-4	2.26	0.66	0.28	3/4	37/64	0.44
	3/8	-600-11-6	2.26					
	1/2	-600-11-8	2.51					
1/2	3/8	-810-11-6	2.49	0.90	0.38	15/16	49/64	0.50
	1/2	-810-11-8	2.71					
3/4	3/4	-1210-11-12	3.00	0.96	0.62	1 3/16	1 1/64	0.66
1	1	-1610-11-16	3.67	1.23	0.88	1 5/8	1 21/64	0.75
Dimensions, mm								
6	1/8	-6M0-11-2	49.5	15.3	4.8	16	11.5	10.2
	1/4	-6M0-11-4	53.6					
12	1/2	-12M0-11-8	68.8	22.8	9.5	24	19.5	12.7

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.



Adapts to SAE J1926/1 and ISO 11926-1 straight thread boss.

SAE/MS Straight Thread (ST)

Tube OD	SAE/MS Thread Size	Basic Ordering Number	Dimensions				
			A	D	E ^①	F	
Dimensions, in.							
1/8	5/16-24	-200-1-2ST	1.18	0.50	0.09	7/16	
	7/16-20	-200-1-4ST	1.24			9/16	
	9/16-18	-200-1-6ST	1.31			11/16	
1/4	5/16-24	-400-1-2ST	1.27	0.60	0.09	1/2	
	7/16-20	-400-1-4ST	1.34			9/16	
	9/16-18	-400-1-6ST	1.40			11/16	
	3/4-16	-400-1-8ST	1.48			7/8	
	7/8-14	-400-1-10ST	1.60			0.19	1
			1.60			0.19	1
5/16	1/2-20	-500-1-5ST	1.37	0.64	0.25	5/8	
3/8	7/16-20	-600-1-4ST	1.40	0.66	0.18	5/8	
	9/16-18	-600-1-6ST	1.46			11/16	
	3/4-16	-600-1-8ST	1.54			0.28	7/8
			1.66			0.28	1
1/2	9/16-18	-810-1-6ST	1.54	0.90	0.28	13/16	
	3/4-16	-810-1-8ST	1.65			7/8	
	7/8-14	-810-1-10ST	1.77			1	
	1 1/16-12	-810-1-12ST	1.93			1 1/4	
5/8	3/4-16	-1010-1-8ST	1.65	0.96	0.42	15/16	
		-1010-1-10ST	1.78			1	
3/4	3/4-16	-1210-1-8ST	1.81	0.96	0.42	1 1/16	
	1 1/16-12	-1210-1-12ST	1.93			1 1/4	
	1 5/16-12	-1210-1-16ST	1.96			1 1/2	
7/8	1 3/16-12	-1410-1-14ST	1.93	1.02	0.72	1 3/8	
1	1 1/16-12	-1610-1-12ST	2.10	1.23	0.66	1 3/8	
		-1610-1-16ST	2.14			1 1/2	
1 1/4	1 5/8-12	-2000-1-20ST	2.69	1.62	1.09	1 7/8	
1 1/2	1 7/8-12	-2400-1-24ST	3.06	1.97	1.34	2 1/8	
2	2 1/2-12	-3200-1-32ST	4.00	2.66	1.81	2 3/4	

Refer to Installation Instructions, beginning on page 62.

Tube OD	SAE/MS Thread Size	Basic Ordering Number	Dimensions			
			A	D	E ^①	F
Dimensions, mm						
6	9/16-18	-6M0-1-6ST	35.6	15.3	4.8	18
10	9/16-18	-10M0-1-6ST	37.3	17.2	7.1	18
	3/4-16	-10M0-1-8ST	39.4			22
12	7/16-20	-12M0-1-4ST	40.6	22.8	5.2	22
	9/16-18	-12M0-1-6ST	39.9			
	3/4-16	-12M0-1-8ST	41.9			

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

Long SAE/MS Straight Thread (ST)

Tube OD	SAE/MS Thread Size	Basic Ordering Number	Dimensions			
			A	D	E ^①	F
Dimensions, in.						
1/4	7/16-20	-400-1L-4ST	2.26	0.60	0.19	9/16
1/2	3/4-16	-810-1L-8ST	3.01	0.90	0.41	7/8

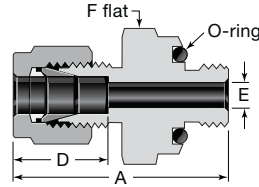
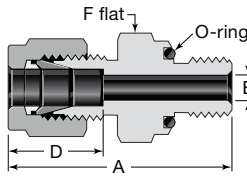
① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

For ST and ST positionable fittings used in ECE-R110 applications, add the **DE** O-ring suffix to the ordering number. Example: SS-600-1-6ST**DE**

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

Straight Fittings

Male Connectors



O-Seal (SAE/MS Straight Thread)

Tube OD	SAE/MS Thread Size	Basic Ordering Number	Dimensions			
			A	D	E ^①	F
Dimensions, in.						
1/16	5/16-24	-100-1-OR	1.05	0.34	0.05	9/16
1/8	5/16-24	-200-1-OR	1.29	0.50	0.09	9/16
3/16	3/8-24	-300-1-OR	1.35	0.54	0.12	5/8
1/4	7/16-20	-400-1-OR	1.51	0.60	0.19	3/4
5/16	1/2-20	-500-1-OR	1.60	0.64	0.25	7/8
3/8	9/16-18	-600-1-OR	1.67	0.66	0.28	15/16
1/2	3/4-16	-810-1-OR	1.81	0.90	0.41	1 1/8
3/4	1 1/16-12	-1210-1-OR	2.06	0.96	0.62	1 1/2
1	1 5/16-12	-1610-1-OR	2.29	1.23	0.88	1 3/4

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

O-Seal (NPT)

Tube OD	NPT Size	Basic Ordering Number	Dimensions			
			A	D	E ^①	F
Dimensions, in.						
1/8	1/8	-200-1-2-OR	1.29	0.50	0.09	3/4
1/4	1/8	-400-1-2-OR	1.38	0.60	0.19	3/4
	1/4	-400-1-4-OR	1.51			15/16
3/8	1/4	-600-1-4-OR	1.57	0.66	0.28	15/16
	3/8	-600-1-6-OR	1.63			1 1/8
	1/2	-600-1-8-OR	1.85			1 5/16
1/2	1/2	-810-1-8-OR	1.96	0.90	0.41	1 5/16

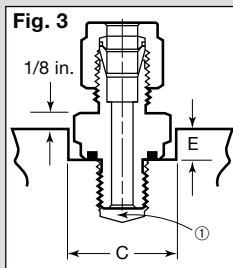
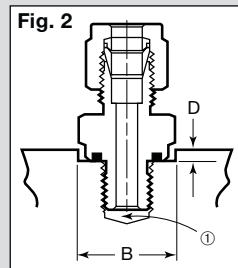
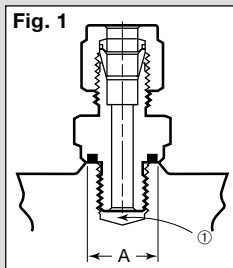
① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

Mounting Dimensions for O-Seal Fittings

For a raised surface, see Fig. 1. The minimum diameter allows metal-to-metal contact outside of the O-ring sealing diameter to prevent O-ring extrusion.

For a recessed hole that allows the round shoulder of the O-seal fitting into the recess, see Fig. 2.

For a recessed hole that allows the hex of the O-seal fitting into the recess, see Fig. 3.



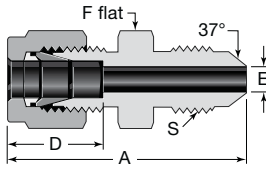
① Allow clearance for full thread.

SAE/MS Thread Size	NPT Size	A Min Dia	B Min Dia	C Min Dia	D Max Depth	E Max Depth
Dimensions, in.						
5/16-24	—	0.50	0.59	0.66	0.09	0.16
5/16-24	—	0.50	0.59	0.66		0.22
—	1/8	0.69	0.78	0.88	0.16	0.28
3/8-24	—	0.56	0.66	0.75	0.09	0.22
7/16-20	—	0.69	0.78	0.88	0.16	0.28
—	1/8					0.28
—	1/4	0.87	0.97	1.09		0.31
1/2-20	—	0.75	0.91	1.03		
9/16-18	—	0.81	0.97	1.09		
—	1/4	0.87				0.34
—	3/8	1.00	1.16	1.31	0.22	0.44
—	1/2	1.22	1.34	1.53	0.16	0.34
3/4-16	—	1.00	1.16	1.31	0.22	0.44
—	1/2	1.22	1.34	1.53		0.50
1 1/16-12	—	1.41	1.53	1.75	0.22	0.56
1 5/16-12	—	1.69	1.78	2.03		

Refer to Installation Instructions, beginning on page 62.

Straight Fittings

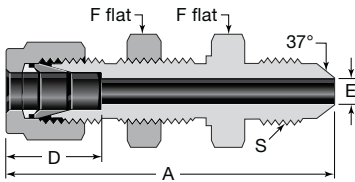
Male Connectors



AN Fitting

Tube OD	AN Tube Flare Size	Basic Ordering Number	Dimensions				
			A	D	E ^①	F	S
Dimensions, in.							
1/16	1/8	-100-6-2AN	1.07	0.34	0.05	7/16	5/16-24UNJF-3
1/8	1/8	-200-6-2AN	1.27	0.50	0.06	7/16	5/16-24UNJF-3
	1/4	-200-6-4AN	1.38		0.09	1/2	7/16-20UNJF-3
1/4	1/4	-400-6-4AN	1.48	0.60	0.17	1/2	7/16-20UNJF-3
5/16	5/16	-500-6-5AN	1.51	0.64	0.23	9/16	1/2-20UNJF-3
3/8	1/4	-600-6-4AN	1.56	0.66	0.17	5/8	7/16-20UNJF-3
	3/8	-600-6-6AN			0.28		9/16-18UNJF-3
1/2	1/2	-810-6-8AN	1.81	0.90	0.39	13/16	3/4-16UNJF-3
3/4	3/4	-1210-6-12AN	2.10	0.96	0.61	1 1/8	1 1/16-12UNJ-3
1	1	-1610-6-16AN	2.42	1.23	0.84	1 3/8	1 5/16-12UNJ-3

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.



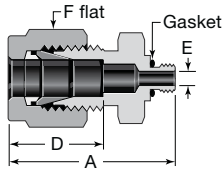
AN Bulkhead Fitting

Tube OD	AN Tube Flare Size	Basic Ordering Number	Dimensions						Panel Hole Size	Max Panel Thickness
			A	D	E	F	S			
Dimensions, in.										
1/4	1/4	-400-61-4AN	2.12	0.60	0.17	5/8	7/16-20UNJF-3	29/64	0.40	
3/8	3/8	-600-61-6AN	2.25	0.66	0.28	3/4	9/16-18UNJF-3	37/64	0.44	
1/2	1/2	-810-61-8AN	2.59	0.90	0.39	15/16	3/4-16UNJF-3	49/64	0.50	
3/4	3/4	-1210-61-12AN	3.11	0.96	0.61	1 3/16	1 1/16-12UNJ-3	1 1/64	0.66	
1	1	-1610-61-16AN	3.64	1.23	0.84	1 5/8	1 5/16-12UNJ-3	1 21/64	0.75	

Refer to Installation Instructions, beginning on page 62.

Straight Fittings

Male Connectors

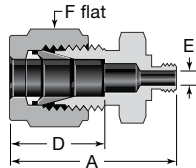


10-32 Thread

Tube OD	Basic Ordering Number	Dimensions			
		A	D	E ^①	F
Dimensions, in.					
1/8	-200-1-0157	0.95	0.50	0.09	7/16
1/4	-400-1-0256	1.08	0.60		9/16

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

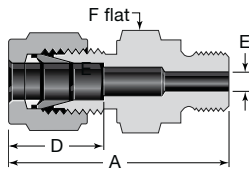
M5 × 0.8 Thread



Tube OD	Basic Ordering Number	Dimensions			
		A	D	E ^①	F
Dimensions, mm					
6	-6M0-1-0046	29.2	15.3	2.0	14

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

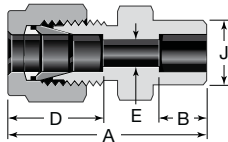
Metric Thread (RS)



Tube OD	Basic Ordering Number	Dimensions			
		A	D	E ^①	F
Dimensions, mm					
6	-6M0-1-M10X1.0RS	36.3	15.3	3.2	14
	-6M0-1-M12X1.0RS	40.4		4.8	
12	-12M0-1-M16X1.5RS	45.5	22.8	9.5	22

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

Weld Connectors



Tube Socket Weld

Tube OD	Socket Weld Size	Basic Ordering Number	Dimensions				
			A	B	D	E	J
Dimensions, in.							
1/8	1/8	-200-6-2W	1.14	0.10	0.50	0.09	0.29
1/4	1/4	-400-6-4W	1.32	0.28	0.60	0.19	0.48
3/8	3/8	-600-6-6W	1.48	0.31	0.66	0.28	0.60
1/2	1/2	-810-6-8W	1.62	0.38	0.90	0.41	0.73
3/4	3/4	-1210-6-12W	1.71	0.44	0.96	0.62	1.04
1	1	-1610-6-16W	2.07	0.62	1.23	0.88	1.36

Refer to Installation Instructions, beginning on page 62.