

Weld Fittings

Features

- 316 stainless steel is standard material. Other materials are available upon request.
- Straight fittings are manufactured from quality bar stock. Shaped fittings are made from forgings.
- Quality machining of all ports ensures consistent welding.
- Radius junction design with elbows provides smooth flow path.
- All fittings are cleaned to remove oil, grease and loose particles.
- Every fitting is stamped with size, material and heat code.

Technical Data

- Sizes range from 1/8" to 1" and 6 mm to 38 mm.
- Working Temperatures:

Material	Minimum Temperature	Maximum Temperature
316 SS	-325°F(-198°C)	1000°F(538°C)
316L SS	-325°F(-198°C)	850°F(454°C)

Working Pressure:

1. Catalog working pressures shown are based on ANSI/ASME B31.3 at ambient temperature, to determine working pressures in accordance with ANSI/ASME B31.1 multiply catalog working pressures shown by 0.94.
2. Use the allowable working pressure at ambient temperature to multiply the elevated temperature factors to get the working pressure at elevated temperature. To know the elevated temperature factor, please refer to the related information of DECON Tube Fittings.

Materials

Designator	Material	Bar Stock	Forging
B100	316 stainless steel	ASTM A276, ASME SA479	ASTM A182, ASME SA182
B101	316L stainless steel		

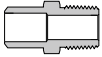
Ordering Information

- Add the material designator as a suffix to the basic ordering number to get the complete ordering number.
Example:
 1. Male connector with 1/4" fractional tube butt weld, 1/4 NPT thread and 316 stainless steel material,the complete ordering number is 13101-80104-20104-B100.
 2. Male elbow with 1/4" fractional tube socket weld, 1/4 NPT thread and 316L stainless steel material,the complete ordering number is 13201-81104-20104-B100.

- Using the same materials to weld will ensure the same coefficients of expansion and good welding.
- Tungsten Inert Gas Welding (TIG) is recommended.

Tube Butt Weld Fittings

Male Connectors 74



Female Connectors 75



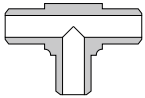
Reducing Unions 75



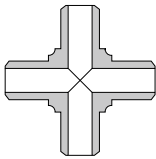
Union Elbows 76



Union Tees 76



Union Crosses 77



Tube Socket Weld Fittings

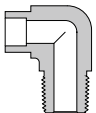
Male Connectors 78



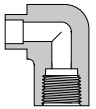
Female Connectors 78



Male Elbows 79



Female Elbows 79



Unions 79



Reducing Unions 80



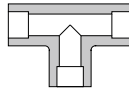
Union Elbows 80



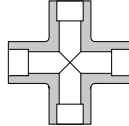
Union 45° Elbows 81



Union Tees 81



Union Crosses 82



Pipe Butt Weld Fittings

Male Connectors 83



Female Connectors 83



Pipe Socket Weld Fittings

Male Connectors 84



Female Connectors 84



Unions 84



Weld Adapters

Tube Butt Weld to Tube Socket Weld 85

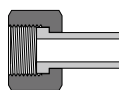


Pipe Butt Weld to Tube Socket Weld 85

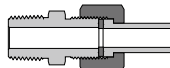


Pipe to Weld Fittings

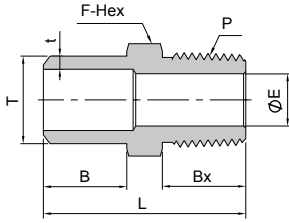
Pipe to Tube Butt Weld 86



Male Pipe to Tube Butt Weld 87



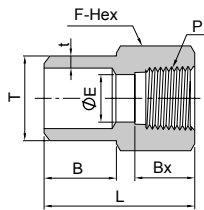
Male Connectors



Fractional Tube				NPT Thread					
T-Tube O.D. (in.)	t-Wall Thickness (in.)	P-NPT Size	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)
				L	B	Bx	F	E	
1/4	0.065	1/4	13101-80104-20104-	29.70	9.70	14.20	14.30	7.10	8000 (551)
1/4	0.065	1/2	13101-80104-20108-	36.80	9.70	19.10	22.20	11.90	7700 (530)
3/8	0.095	1/4	13101-80106-20104-	29.70	9.70	14.20	14.30	7.10	8000 (551)
3/8	0.095	1/2	13101-80106-20108-	36.80	9.70	19.10	22.20	11.90	7700 (530)
1/2	0.095	1/4	13101-80108-20104-	34.30	14.20	14.20	14.30	7.10	6780 (468)
1/2	0.095	1/2	13101-80108-20108-	41.40	14.20	19.10	22.20	11.90	6780 (468)
5/8	0.109	1/4	13101-80110-20104-	34.80	14.20	14.20	17.50	7.10	5760 (397)
5/8	0.109	1/2	13101-80110-20108-	41.40	14.20	19.10	22.20	11.90	5760 (397)
3/4	0.120	1/4	13101-80112-20104-	40.10	19.10	14.20	20.60	7.10	5530 (381)
3/4	0.120	1/2	13101-80112-20108-	46.20	19.10	19.10	22.20	11.90	5530 (381)
1	0.134	1/4	13101-80116-20104-	42.90	19.10	14.20	27.00	7.10	4480 (309)
1	0.134	1/2	13101-80116-20108-	47.80	19.10	19.10	27.00	11.90	4480 (309)

Metric Tube				NPT Thread					
T-Tube Side (mm)	t-Wall Thickness (mm)	P-NPT Size	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)
				L	B	Bx	F	E	
12	2.20	1/4	13101-80212-20104-	34.30	14.20	14.20	14	7.10	6470 (446)
12	2.20	1/2	13101-80212-20108-	41.10	14.20	19.10	22	11.90	6470 (446)
14	2.50	1/4	13101-80214-20104-	34.30	14.20	14.20	15	7.10	6280 (433)
14	2.50	1/2	13101-80214-20108-	41.40	14.20	19.10	22	11.90	6280 (433)
15	2.50	1/4	13101-80215-20104-	34.80	14.20	14.20	16	7.10	5770 (398)
16	2.80	1/4	13101-80216-20104-	35.60	14.20	14.20	18	7.10	6140 (423)
16	2.80	1/2	13101-80216-20108-	41.10	14.20	19.10	22	11.90	6140 (423)
20	3.00	1/2	13101-80220-20108-	46.20	19.10	19.10	22	11.90	5110 (352)
22	3.00	1/4	13101-80222-20104-	41.20	19.10	14.20	24	7.10	4620 (319)
22	3.00	1/2	13101-80222-20108-	46.10	19.10	19.10	24	11.90	4620 (319)
25	3.50	3/4	13101-80225-20112-	47.80	19.10	19.10	27	15.70	4730 (326)
25	3.50	1	13101-80225-20116-	54.90	19.10	23.90	35	22.40	4730 (326)
28	4.00	1/2	13101-80228-20108-	54.20	21.40	19.10	30	11.90	4850 (335)

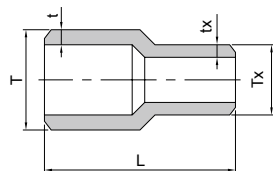
Female Connectors



Fractional Tube				NPT Thread					
T-Tube O.D. (in.)	t-Wall Thickness (in.)	P-NPT Size	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)
				L	B	Bx	F	E	
1/4	0.07	1/4	13102-80104-21104-	27.90	9.70	15.00	19.10	3.00	6600 (454)
1/4	0.07	3/8	13102-80104-21106-	29.50	9.70	15.00	22.20	3.00	5300 (365)
3/8	0.10	1/4	13102-80106-21104-	27.90	9.70	15.00	19.10	4.70	6600 (454)
3/8	0.10	3/8	13102-80106-21106-	29.50	9.70	15.00	22.20	4.70	5300 (365)
1/2	0.10	1/4	13102-80108-21104-	26.70	14.20	15.00	19.10	7.90	6600 (454)
1/2	0.10	3/8	13102-80108-21106-	34.00	14.20	15.00	22.20	7.90	5300 (365)
1/2	0.10	1/2	13102-80108-21108-	38.90	14.20	19.80	27.00	7.90	4900 (337)

Metric Tube				NPT Thread					
T-Tube O.D. (mm)	t-Wall Thickness (mm)	P-NPT Size	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)
				L	B	Bx	F	E	
14	2.50	1/4	13102-80214-21104-	26.70	14.20	15.00	19	9.00	6280 (433)
14	2.50	1/2	13102-80214-21108-	38.90	14.20	19.80	27	9.00	4900 (337)
20	3.00	1/2	13102-80220-21108-	43.70	19.10	19.80	27	14.00	4900 (337)
28	4.00	1/2	13102-80228-21108-	49.80	23.90	19.80	30	15.70	4850 (335)

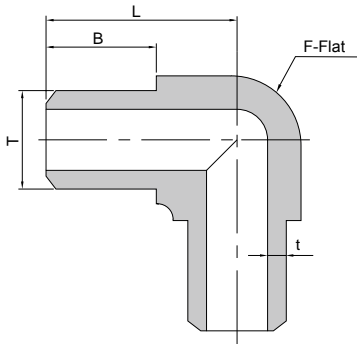
Reducing Unions



Fractional Tube					Fractional Tube	
T-Tube O.D. (in.)	t-Wall Thickness (in.)	T-Tube O.D. (in.)	tx-Wall Thickness (in.)	Basic Ordering Number	Dimension,mm	Working Pressure psig(bar)
					L	
3/8	0.095	1/4	0.065	13103-80106-80104-	38.10	9930 (685)
1/2	0.095	1/4	0.065	13103-80108-80104-	38.10	6780 (468)
1/2	0.095	3/8	0.095	13103-80108-80106-	38.10	6780 (468)
3/4	0.120	1/2	0.095	13103-80112-80108-	38.10	5530 (381)
1	0.134	3/4	0.120	13103-80116-80112-	38.10	4480 (309)

Metric Tube					Metric Tube	
T-Tube O.D. (mm)	t-Wall Thickness (mm)	Tx-Tube O.D. (mm)	tx-Wall Thickness (mm)	Basic Ordering Number	Dimension,mm	Working Pressure psig(bar)
					L	
20	3.00	14	2.50	13103-80220-80214-	38.10	6470 (445)
22	3.00	14	2.50	13103-80222-80214-	38.10	5780 (395)
22	3.00	18	2.80	13103-80222-80218-	38.10	5780 (395)
25	3.50	22	3.00	13103-80225-80222-	38.10	5780 (395)
38	5.00	25	3.50	13103-80238-80225-	38.10	5540 (380)

Union Elbows



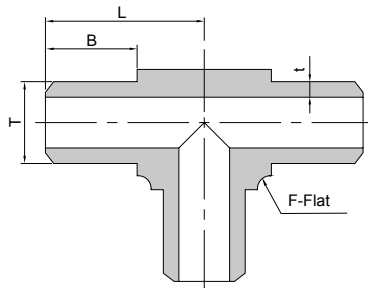
Fractional Tube

T-Tube O.D. (in.)	t-Wall Thickness (in.)	Basic Ordering Number	Dimension,mm			Working Pressure psig(bar)
			L	B	F	
1/4	0.065	13200-80104-	16.30	9.70	9.50	10320 (712)
3/8	0.095	13200-80106-	18.00	9.70	11.10	9930 (685)
1/2	0.095	13200-80108-	24.40	14.20	14.30	6780 (468)
3/4	0.120	13200-80112-	33.30	19.10	20.60	5530 (381)
1	0.134	13200-80116-	37.10	19.10	27.00	4480 (309)

Metric Tube

T-Tube O.D. (mm)	t-Wall Thickness (mm)	Basic Ordering Number	Dimension,mm			Working Pressure psig(bar)
			L	B	F	
10	2.20	13200-80210-	18.00	9.70	11.10	8160(563)
14	2.50	13200-80214-	25.40	14.20	15.90	6280 (433)
16	2.80	13200-80216-	26.20	14.20	17.50	6140 (423)
20	3.00	13200-80220-	33.30	19.10	20.60	5110 (352)
22	3.00	13200-80222-	35.30	19.10	23.80	4620 (319)
25	3.50	13200-80225-	37.10	19.10	27.00	4730 (326)

Union Tees



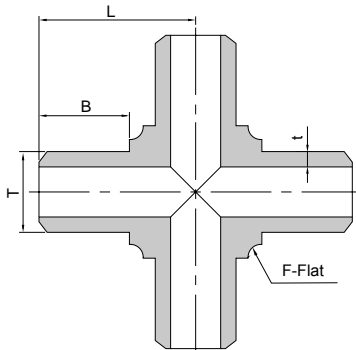
Fractional Tube

T-Tube O.D. (in.)	t-Wall Thickness (in.)	Basic Ordering Number	Dimension,mm			Working Pressure psig(bar)
			L	B	F	
1/4	0.065	13300-80104-	16.30	9.70	9.50	10320 (712)
3/8	0.095	13300-80106-	18.00	9.70	11.10	9930 (685)
1/2	0.095	13300-80108-	24.40	14.20	14.30	6780 (468)
3/4	0.120	13300-80112-	33.30	19.10	20.60	5530 (381)
1	0.134	13300-80116-	37.10	19.10	27.00	4480 (309)

Metric Tube

T-Tube O.D. (mm)	t-Wall Thickness (mm)	Basic Ordering Number	Dimension,mm			Working Pressure psig(bar)
			L	B	F	
6	1.80	13300-80206-	16.30	9.70	9.50	12660 (873)
8	1.80	13300-80208-	16.30	9.70	9.50	8320 (574)
10	2.20	13300-80210-	18.00	9.70	11.10	8160 (563)
12	2.20	13300-80212-	24.40	14.20	14.30	6470 (446)
14	2.50	13300-80214-	25.40	14.20	15.90	6280 (433)
16	2.80	13300-80216-	26.20	14.20	17.50	6140 (423)
20	3.00	13300-80220-	33.30	19.10	20.60	5110 (352)
22	3.00	13300-80222-	35.30	19.10	23.80	4620 (319)
25	3.50	13300-80225-	37.10	19.10	27.00	4730 (326)
32	4.50	13300-80232-	49.30	23.90	34.90	4730 (326)

Union Crosses



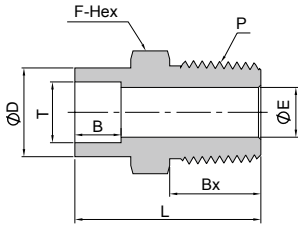
Fractional Tube

T-Tube O.D. (in.)	t-Wall Thickness (in.)	Basic Ordering Number	Dimension,mm			Working Pressure psig(bar)
			L	B	F	
1/4	0.065	13400-80104-	16.30	9.70	9.50	10320 (712)
3/8	0.095	13400-80106-	18.00	9.70	11.10	9930 (685)
1/2	0.095	13400-80108-	24.40	14.20	14.30	6780 (468)
3/4	0.120	13400-80112-	33.30	19.10	20.60	5530 (381)
1	0.134	13400-80116-	37.10	19.10	27.00	4480 (309)

Metric Tube

T-Tube O.D. (mm)	t-Wall Thickness (mm)	Basic Ordering Number	Dimension,mm			Working Pressure psig(bar)
			L	B	F	
6	1.80	13400-80206-	16.30	9.70	9.50	12660 (873)
8	1.80	13400-80208-	16.30	9.70	9.50	8320 (574)
10	2.20	13400-80210-	18.00	9.70	11.10	8160 (563)

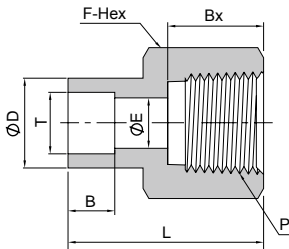
Male Connectors



Fractional Tube				NPT Thread						
T-Tube Side (in.)	P-NPT Size	Basic Ordering Number	Dimension,mm						Working Pressure psig(bar)	
			L	D	B	Bx	F	E		
1/4	1/4	13101-81104-20104-	29.20	12.20	7.10	14.20	14.30	4.80	8000 (551)	
3/8	1/4	13101-81106-20104-	31.80	15.20	7.90	14.20	15.90	7.10	8000 (551)	
3/8	3/8	13101-81106-20106-	31.80	15.20	7.90	14.20	17.50	7.10	7800 (537)	
3/8	1/2	13101-81106-20108-	37.30	15.20	7.90	19.10	22.20	7.10	7700 (530)	
1/2	1/4	13101-81108-20104-	33.30	18.50	9.70	14.20	19.10	7.10	6600 (454)	
1/2	3/8	13101-81108-20106-	33.30	18.50	9.70	14.20	19.10	9.60	6600 (454)	
1/2	1/2	13101-81108-20108-	38.90	18.50	9.70	19.10	22.20	10.40	6600 (454)	
3/4	3/4	13101-81112-20112-	45.10	26.40	11.20	19.10	27.00	15.70	5900 (406)	
1	1	13101-81116-20116-	53.60	34.50	15.70	23.90	34.90	22.40	5300 (365)	

Metric Tube				NPT Thread						
T-Tube Side (mm)	P-NPT Size	Basic Ordering Number	Dimension,mm						Working Pressure psig(bar)	
			L	D	B	Bx	F	E		
6	1/4	13101-81206-20104-	29.20	12	7.10	14.20	14	4.80	8000 (551)	
12	1/2	13101-81212-20108-	38.90	17.60	9.70	19.10	22	9.50	6820 (470)	
14	1/4	13101-81214-20104-	33.30	21.30	10.40	14.20	15	7.10	6930 (478)	
14	3/8	13101-81214-20106-	35.00	21.60	10.40	14.20	18	9.60	6930 (478)	
14	1/2	13101-81214-20108-	40.00	21.30	10.40	19.10	22	10.40	6930 (478)	
16	1/4	13101-81216-20104-	35.00	23.30	10.40	14.20	18	7.10	6190 (426)	
16	1/2	13101-81216-20108-	40.00	23.30	10.40	19.10	22	11.90	6190 (426)	
18	1/4	13101-81218-20104-	40.40	26.00	11.20	14.20	19	7.10	6050 (417)	
28	3/4	13101-81228-20112-	55.50	40.50	18.40	19.10	30	15.70	5040 (348)	
38	1 1/4	13101-81238-20120-	68.30	52.50	26.90	23.90	46	28.60	5000 (344)	

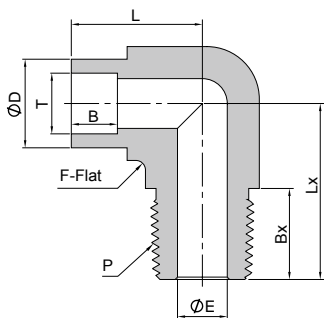
Female Connectors



Fractional Tube				NPT Thread						
T-Tube Side (in.)	P-NPT Size	Basic Ordering Number	Dimension,mm						Working Pressure psig(bar)	
			L	D	B	Bx	F	E		
1/8	1/8	13102-81102-21102-	21.10	7.40	2.50	10.40	14.30	2.30	6500 (447)	
1/4	1/8	13102-81104-21102-	26.70	12.20	7.10	10.40	14.30	4.80	6500 (447)	
1/4	1/4	13102-81104-21104-	30.00	12.20	7.10	15.00	19.10	4.80	6600 (454)	
3/8	1/4	13102-81106-21104-	31.50	15.20	7.90	15.00	19.10	7.10	6600 (454)	
1/2	3/8	13102-81108-21106-	34.50	18.50	9.70	15.00	22.20	10.40	5300 (365)	
1/2	1/2	13102-81108-21108-	40.40	18.50	9.70	19.80	27.00	10.40	4900 (337)	
3/4	3/4	13102-81112-21112-	43.90	26.40	11.20	20.60	33.30	16.00	4600 (316)	
1	1	13102-81116-21116-	54.10	34.50	15.70	25.40	41.30	22.40	4400 (303)	

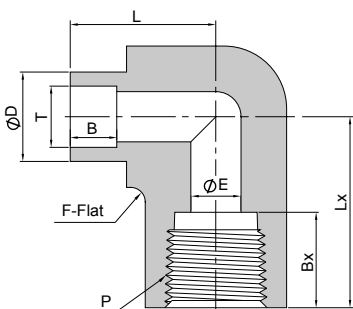
Metric Tube				NPT Thread						
T-Tube Side (mm)	P-NPT Size	Basic Ordering Number	Dimension,mm						Working Pressure psig(bar)	
			L	D	B	Bx	F	E		
8	1/4	13102-81208-21104-	27.00	13.70	7.50	15.00	19	4.80	6600 (454)	
10	1/4	13102-81210-21104-	29.00	19.50	9.50	15.00	19	7.10	6600 (454)	
14	1/4	13102-81214-21104-	32.00	22.10	10.40	15.00	22	9.50	6930 (478)	
28	3/4	13102-81228-21112-	54.10	40.50	18.40	20.60	35	19.80	4600 (316)	

Male Elbows



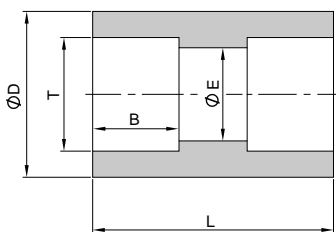
Fractional Tube			NPT Thread								
T-Tube Side (in.)	P-NPT Size	Basic Ordering Number	Dimension,mm								Working Pressure psig(bar)
			L	Lx	D	B	Bx	F	E		
1/4	1/4	13201-81104-20104-	20.10	26.70	14.70	7.10	14.20	12.70	4.80	8000 (551)	
3/8	1/4	13201-81106-20104-	26.40	26.70	14.70	7.90	14.20	12.70	7.10	8000 (551)	
3/8	3/8	13201-81106-20106-	24.60	29.70	20.20	7.90	14.20	17.50	7.10	7800 (537)	
3/8	1/2	13201-81106-20108-	25.90	36.80	23.80	7.90	19.10	20.60	7.10	7700 (530)	
1/2	1/2	13201-81108-20108-	27.40	36.80	23.80	9.70	19.10	20.60	10.40	6600 (454)	
3/4	3/4	13201-81112-20112-	38.90	39.60	26.4	11.2	19.10	27.00	15.70	5900 (406)	

Female Elbows



Fractional Tube			NPT Thread								
T-Tube Side (in.)	P-NPT Size	Basic Ordering Number	Dimension,mm								Working Pressure psig(bar)
			L	Lx	D	B	Bx	F	E		
1/4	1/4	13202-81104-21104-	22.90	29.70	20.20	7.10	15.00	17.50	4.80	7400 (509)	
3/8	1/4	13202-81106-21104-	25.10	29.70	20.20	7.90	15.00	17.50	7.10	7400 (509)	
3/8	1/2	13202-81106-21108-	28.70	39.60	29.30	7.90	19.80	25.40	7.10	5700 (392)	
1/2	1/2	13202-81108-21108-	30.20	39.60	29.30	9.70	19.80	25.4	10.4	5700 (392)	

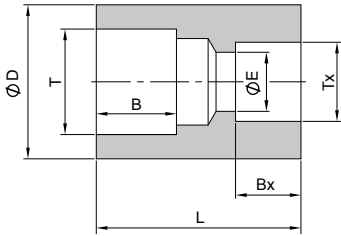
Unions



Fractional Tube		Dimension, mm				Working Pressure psig(bar)
T-Tube Size (in.)	Basic Ordering Number	L	D	B	E	
1/4	13100-81104-	19.10	12.20	7.10	4.80	10700 (737)
3/8	13100-81106-	22.40	15.20	7.90	7.10	8100 (558)
1/2	13100-81108-	26.90	18.50	9.70	10.40	6600 (454)
5/8	13100-81110-	30.20	23.40	10.40	12.70	6200 (427)
3/4	13100-81112-	33.30	26.40	11.20	16.00	5900 (406)
7/8	13100-81114-	35.50	31.50	12.70	18.80	5730 (395)
1	13100-81116-	36.60	34.50	15.70	22.40	5600 (385)

Metric Tube		Dimension,mm				Working Pressure psig(bar)
T-Tube Side (mm)	Basic Ordering Number	L	D	B	E	
8	13100-81208-	22.40	14.30	7.90	6.40	9790 (675)
10	13100-81210-	23.60	16.50	7.90	7.40	8100 (558)
12	13100-81212-	26.90	20.20	9.70	9.50	6820 (470)
14	13100-81214-	28.00	23.80	10.00	10.40	6930 (478)
16	13100-81216-	30.20	23.80	10.40	12.70	6190 (426)
20	13100-81220-	28.00	27.00	12.70	17.00	5510 (380)

Reducing Unions

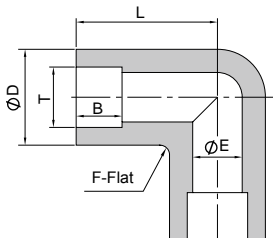


Fractional Tube			Fractional Tube					
T-Tube Side (in.)	Tx-Tube Side (in.)	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)
3/8	1/4	13103-81106-81104-	22.40	15.20	7.90	4.80	7.10	8100 (558)
1/2	1/4	13103-81108-81104-	24.30	18.50	9.70	4.80	7.10	6600 (454)
1/2	3/8	13103-81108-81106-	26.10	18.50	9.70	7.10	7.90	6600 (454)
3/4	3/8	13103-81112-81106-	33.00	26.40	11.20	7.10	7.90	5900 (406)
3/4	1/2	13103-81112-81108-	31.60	26.40	11.20	10.40	9.70	5900 (406)
1	3/4	13103-81116-81112-	32.10	34.50	15.70	16.00	11.20	5600 (385)

Metric Tube			Metric Tube					
T-Tube Side (mm)	Tx-Tube Side (mm)	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)
14	10	13103-81214-81210-	26.00	20.00	10.40	7.40	7.90	6930 (478)
25	14	13103-81225-81214-	30.00	35.00	15.70	10.40	10.00	5450 (376)
25	22	13103-81225-81222-	35.80	34.50	15.70	19.00	13.50	5450 (376)

Metric Tube			Fractional Tube					
T-Tube Side (mm)	Tx-Tube Side (in.)	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)
20	3/4	13103-81220-81112-	28.00	27.00	11.20	15.70	11.20	5510 (380)
28	3/4	13103-81228-81112-	36.80	40.00	20.00	15.70	11.20	5040 (348)

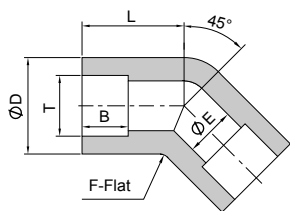
Reducing Unions



Fractional Tube			Fractional Tube					
T-Tube Side (in.)	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)	
1/8	13200-81102-	15.00	11.00	2.50	9.50	2.30	12600 (863)	
1/4	13200-81104-	21.80	12.80	7.10	11.10	4.80	10700 (737)	
3/8	13200-81106-	26.40	14.70	7.90	12.70	7.10	8100 (558)	
1/2	13200-81108-	29.70	20.20	9.70	17.50	10.40	6600 (454)	
5/8	13200-81110-	36.10	23.80	10.40	20.60	12.70	6200 (427)	
3/4	13200-81112-	39.60	29.30	11.20	25.40	16.00	5900 (406)	
1	13200-81116-	48.80	36.70	15.70	31.80	22.40	5600 (385)	

Metric Tube			Metric Tube					
T-Tube Side (mm)	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)	
10	13200-81210-	24.60	16.50	7.90	14.30	7.40	8100 (558)	
12	13200-81212-	29.70	20.20	9.70	17.50	9.50	6820 (470)	
14	13200-81214-	29.50	23.80	10.00	20.60	10.40	6930 (478)	
16	13200-81216-	36.00	23.80	10.40	20.60	12.70	6190 (426)	

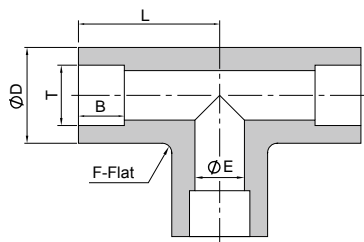
Union 45° Elbows



Fractional Tube							
T-Tube Side (in.)	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)
		L	D	B	F	E	
1/4	13245-81104-	15.00	14.70	7.10	12.70	4.80	10700 (737)
3/8	13245-81106-	19.10	16.50	7.90	14.30	7.10	8100 (558)
1/2	13245-81108-	21.30	20.20	9.70	17.50	10.40	6600 (454)
3/4	13245-81112-	28.70	29.30	11.20	25.40	16.00	5900 (406)
1	13245-81116-	31.80	36.70	15.70	31.80	22.40	5600 (385)

Metric Tube							
T-Tube Side (mm)	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)
		L	D	B	F	E	
8	13245-81208-	17.30	14.70	7.90	12.70	6.40	9790 (675)
10	13245-81210-	19.10	16.50	7.90	14.30	7.40	8100 (558)
12	13245-81212-	21.30	20.20	9.70	17.50	9.50	6820 (470)
14	13245-81214-	26.40	23.80	10.00	20.60	10.40	6930 (478)
16	13245-81216-	26.40	23.80	10.40	20.60	12.70	6190 (426)
20	13245-81220-	28.70	29.30	11.20	27.00	16.00	5510 (380)
22	13245-81222-	29.70	31.20	13.50	31.80	19.00	6850 (472)
25	13245-81225-	31.80	36.70	15.70	31.80	22.00	5450 (376)

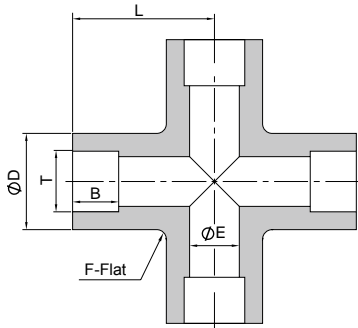
Union Tees



Fractional Tube							
T-Tube Side (in.)	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)
		L	D	B	F	E	
1/8	13300-81102-	15.00	12.80	2.50	9.50	2.30	12600 (868)
1/4	13300-81104-	21.80	12.80	7.10	11.10	4.80	10700 (737)
3/8	13300-81106-	26.40	14.70	7.90	12.70	7.10	8100 (558)
1/2	13300-81108-	29.70	20.20	9.70	17.50	10.40	6600 (454)
5/8	13300-81110-	36.10	23.80	10.40	20.60	12.70	6200 (428)
3/4	13300-81112-	39.60	29.30	11.20	25.40	16.00	5900 (406)
1	13300-81116-	48.80	36.70	15.70	31.80	22.40	5600 (385)

Metric Tube							
T-Tube Side (mm)	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)
		L	D	B	F	E	
8	13300-81208-	18.50	14.70	7.90	12.70	6.40	9790 (675)
10	13300-81210-	24.60	16.50	7.90	14.30	7.40	8100 (558)
12	13300-81212-	29.70	20.20	9.70	17.50	9.50	6820 (470)
14	13300-81214-	29.50	23.80	10.00	20.60	10.40	6930 (478)
16	13300-81216-	36.00	23.80	10.40	20.60	12.70	6190 (426)
20	13300-81220-	39.60	29.30	11.20	25.40	17.00	5510 (380)
22	13300-81222-	41.30	31.20	13.50	27.00	19.00	6850 (472)
25	13300-81225-	48.80	36.70	15.70	31.80	22.00	5450 (376)

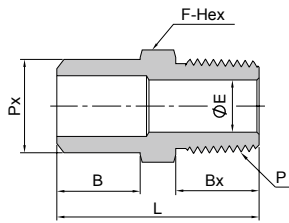
Union Crosses



Fractional Tube							
T-Tube Side (in.)	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)
		L	D	B	F	E	
1/8	13400-81102-	15.00	11.00	2.50	9.50	2.30	12600 (863)
1/4	13400-81104-	21.80	12.80	7.10	11.10	4.80	10700 (737)
3/8	13400-81106-	26.40	14.70	7.90	12.70	7.10	8100 (558)
1/2	13400-81108-	29.70	20.20	9.70	17.50	10.40	6600 (454)
5/8	13400-81110-	36.10	23.80	10.40	20.60	12.70	6200 (428)
3/4	13400-81112-	39.60	29.30	11.20	25.40	16.00	5900 (406)
1	13400-81116-	48.80	36.70	15.70	31.80	22.40	5600 (385)

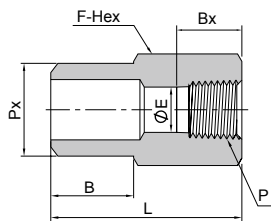
Metric Tube							
T-Tube Side (mm)	Basic Ordering Number	Dimension,mm					Working Pressure psig(bar)
		L	D	B	F	E	
8	1340081208-	18.50	14.70	7.90	12.70	5.90	9790 (675)
10	1340081210-	24.60	16.50	7.90	14.30	7.10	8100 (558)
12	1340081212-	29.70	20.20	9.70	17.50	9.50	6820 (470)
14	1340081214-	29.50	23.80	9.70	20.60	10.40	6930 (478)
16	1340081216-	36.00	23.80	10.00	20.60	12.70	6190 (426)
20	1340081220-	39.60	29.30	11.20	25.40	17.00	5510 (380)
22	1340081222-	41.30	31.20	13.50	27.00	19.00	6850 (472)
25	1340081225-	48.80	36.70	15.70	31.80	22.00	5450 (376)

Male Connectors



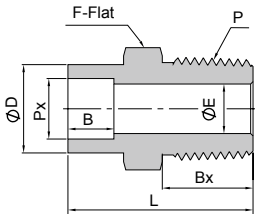
Pipe			NPT Thread					Working Pressure psig(bar)
Px-Sch80 Pipe Size	P-NPT Size	Basic Ordering Number	Dimension,mm					
			L	B	Bx	F	E	
1/4	1/4	13101-90104-20104-	34.30	14.20	14.20	14.30	7.10	8000 (551)
1/4	1/2	13101-90104-20108-	41.30	14.20	19.10	22.20	7.70	7700 (537)
3/8	1/4	13101-90106-20104-	34.80	14.20	14.20	17.50	7.10	6650 (459)
3/8	1/2	13101-90106-20108-	41.30	14.20	19.10	22.20	10.70	6650 (459)
1/2	1/4	13101-90108-20104-	41.30	19.10	14.20	22.20	7.10	6190 (427)
1/2	1/2	13101-90108-20108-	46.20	19.10	19.10	22.20	11.90	6190 (427)
3/4	1/4	13101-90112-20104-	42.90	19.10	14.20	27.00	7.10	5040 (348)
3/4	1/2	13101-90112-20108-	47.80	19.10	19.10	27.00	11.90	5040 (348)
1	1/4	13101-90116-20104-	50.00	23.90	14.20	34.90	7.10	4640 (320)
1	1/2	13101-90116-20108-	54.90	23.90	19.10	34.90	11.90	4640 (320)

Female Connectors



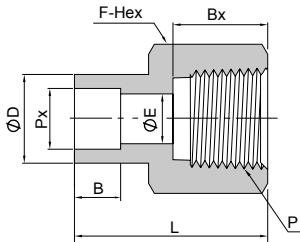
Pipe			NPT Thread					Working Pressure psig(bar)
Px-Sch80 Pipe Size	P-NPT Size	Basic Ordering Number	Dimension,mm					
			L	B	Bx	F	E	
1/4	1/2	13102-90104-21108-	38.90	14.20	19.80	27.00	7.60	4900 (337)
3/8	1/2	13102-90106-21108-	38.90	14.20	19.80	27.00	10.70	4900 (337)
1/2	1/4	13102-90108-21104-	37.30	19.10	15.00	22.20	10.40	7500 (516)
1/2	1/2	13102-90108-21108-	43.70	19.10	19.80	27.00	13.90	4900 (337)

Male Connectors



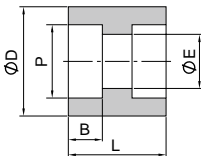
Pipe			NPT Thread						
Px-Pipe Size	P-NPT Size	Basic Ordering Number	Dimension,mm						Working Pressure psig(bar)
			L	D	B	Bx	F	E	
1/4	1/4	13101-91104-20104-	35.20	22.40	9.90	14.20	23.80	7.10	8000 (551)
1/4	1/2	13101-91104-20108-	40.00	22.40	9.90	19.10	23.80	9.10	7700 (530)
3/8	3/8	13101-91106-20106-	38.00	26.20	9.90	14.20	27.00	9.70	7100 (489)
3/8	1/2	13101-91106-20108-	42.90	26.20	9.90	19.10	27.00	11.90	7100 (489)
1/2	3/8	13101-91108-20106-	40.30	31.80	9.90	14.20	33.30	9.70	6800 (468)
1/2	1/2	13101-91108-20108-	45.20	31.80	9.90	19.10	33.30	11.90	6800 (468)
3/4	1/2	13101-91112-20108-	54.30	37.30	13.00	19.10	38.10	11.90	5800 (399)
3/4	3/4	13101-91112-20112-	54.30	37.30	13.00	19.10	38.10	15.70	5800 (399)
1	3/4	13101-91116-20112-	55.80	47.20	13.00	19.10	47.60	15.70	6100 (420)
1	1	13101-91116-20116-	60.60	47.20	13.00	23.90	47.60	22.40	5300 (365)

Female Connectors



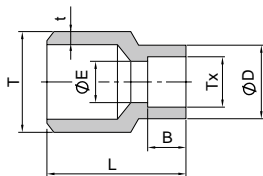
Pipe			NPT Thread						
Px-Pipe Size	P-NPT Size	Basic Ordering Number	Dimension,mm						Working Pressure psig(bar)
			L	D	B	Bx	F	E	
1/4	1/4	13102-91104-21104-	33.50	22.40	9.90	15.00	23.80	9.10	8000 (551)
1/4	3/8	13102-91104-21106-	33.50	22.40	9.90	15.00	23.80	9.10	6790 (463)
3/8	3/8	13102-91106-21106-	34.10	26.20	9.90	15.00	27.00	12.40	7100 (489)
3/8	1/2	13102-91106-21108-	39.10	26.20	9.90	19.80	27.00	12.40	4900 (337)
1/2	1/2	13102-91108-21108-	40.00	31.80	9.90	19.80	33.30	15.70	6800 (468)
1/2	3/4	13102-91108-21112-	40.60	31.80	9.90	20.60	33.30	15.70	4600 (316)
3/4	3/4	13102-91112-21112-	53.20	37.30	13.00	20.60	38.10	20.80	5800 (399)
3/4	1	13102-91112-21116-	58.10	37.30	13.00	25.40	41.30	20.80	4400 (303)

Unions



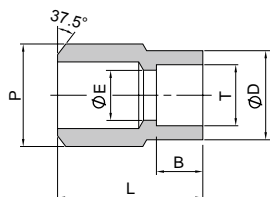
Pipe		Dimension,mm				Working Pressure psig(bar)
P-NPT Size	Basic Ordering Number	L	D	B	E	
1/8	13100-91102-	25.70	17.10	9.90	7.00	8230(568)
1/4	13100-91104-	26.90	22.40	9.90	9.10	8000(551)
3/8	13100-91106-	28.40	26.20	9.90	12.40	7100(489)
1/2	13100-91108-	28.40	31.80	9.90	15.70	6800(468)
3/4	13100-91112-	44.50	37.30	13.00	20.80	5800(399)
1	13100-91116-	44.50	47.20	13.00	26.70	6100(420)

Tube Butt Weld to Tube Socket Weld



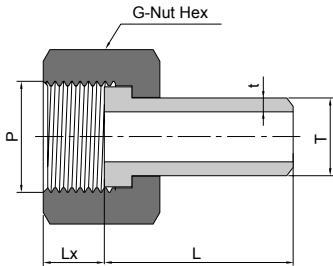
Fractional Tube					Dimension,mm				Working Pressure psig(bar)
T-Tube O.D. (in.)	t-Wall Thickness (in.)	Tx-Tube Size (in.)	Basic Ordering Number	L	B	D	E		
1/4	0.083	1/8	13104-80104-81102-	14.20	2.50	8.0	2.30	12600 (868)	
3/8	0.095	1/4	13104-80106-81104-	19.10	7.10	12.2	4.80	8200 (564)	
1/2	0.095	1/4	13104-80108-81104-	22.40	7.10	12.7	4.80	7500 (516)	
1/2	0.095	3/8	13104-80108-81106-	22.40	7.90	15.2	8.30	7500 (516)	
3/4	0.120	1/2	13104-80112-81108-	28.40	9.70	18.5	10.40	6300 (434)	
1	0.134	1/2	13104-80116-81108-	35.10	9.70	18.5	10.40	5300 (365)	
1	0.134	3/4	13104-80116-81112-	38.10	11.20	26.4	16.00	5300 (365)	

Pipe Butt Weld to Tube Socket Weld



Pipe			Fractional Tube				Working Pressure psig(bar)
P-Sch80 Pipe size	T-Tube Side (in.)	Basic Ordering Number	Dimension,mm				
			L	B	D	E	
1/4	1/4	13104-90104-81104-	22.40	7.10	12.20	4.80	10810 (744)
3/8	1/4	13104-90106-81104-	26.20	7.90	12.20	4.80	8500 (586)
3/8	3/8	13104-90106-81106-	26.20	7.90	15.20	7.10	8500 (586)
3/8	1/2	13104-90106-81108-	25.40	9.70	18.50	10.40	6930 (476)
1/2	1/4	13104-90108-81104-	28.40	7.10	12.20	4.80	8190 (563)
1/2	3/8	13104-90108-81106-	28.40	7.90	15.20	7.10	8190 (563)
1/2	1/2	13104-90108-81108-	30.20	9.70	18.50	10.40	6930 (476)
3/4	1/4	13104-90112-81104-	38.10	7.10	12.20	4.80	6930 (476)
3/4	3/8	13104-90112-81106-	38.10	7.90	15.20	7.10	6930 (476)
3/4	1/2	13104-90112-81108-	38.10	9.70	18.50	10.40	6930 (476)
3/4	3/4	13104-90112-81112-	38.10	11.20	26.40	16.00	6190 (483)
1	3/8	13104-90116-81106-	35.10	7.90	15.20	7.10	6300 (434)
1	1/2	13104-90116-81108-	39.60	11.20	18.50	10.40	6300 (434)

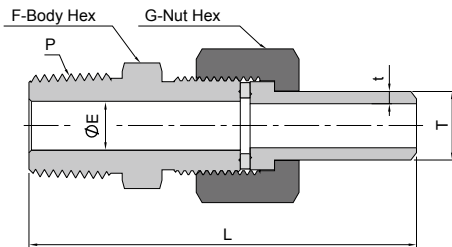
Male Pipe to tube Butt Weld



ISO Parallel Thread				Metric Tube			
P-ISO Thread Size	T-Tube O.D. (mm)	t-Wall Thickness (mm)	Basic Ordering Number	Dimension,mm			Working Pressure psig(bar)
				L	G	Lx	
1/2	12	2.20	13106-41108-80212-	30	27.00	9.20	6470 (446)
1/2	14	2.50	13106-41108-80214-	30	27.00	9.20	6280 (433)
1/2	16	2.80	13106-41108-80216-	34	27.00	9.20	6140 (423)

Metric Thread				Metric Tube			
P-Metric Thread Size	T-Tube O.D. (mm)	t-Wall Thickness (mm)	Basic Ordering Number	Dimension,mm			Working Pressure psig(bar)
				L	G	Lx	
M12 x 1.5	6	1.80	13106-51512-80206-	25	16	8	12660 (873)
M12 x 1.5	8	1.80	13106-51512-80208-	30	16	9	8320 (574)
M14 x 1.5	8	1.80	13106-51514-80208-	30	18	9	8320 (574)
M14 x 1.5	10	2.20	13106-51514-80210-	30	18	9	8160 (563)
M16 x 1.5	8	1.80	13106-51516-80208-	30	22	9	8320 (574)
M16 x 1.5	10	2.20	13106-51516-80210-	30	22	9	8160 (563)
M16 x 1.5	12	2.20	13106-51516-80212-	34	22	14	6470 (446)
M18 x 1.5	10	2.20	13106-51518-80210-	34	22	10	8160 (563)
M18 x 1.5	12	2.20	13106-51518-80212-	34	22	10	6470 (446)
M18 x 1.5	14	2.50	13106-51518-80214-	34	22	10	6280 (433)
M20 x 1.5	10	2.20	13106-51520-80210-	34	25	11	8160 (563)
M20 x 1.5	12	2.20	13106-51520-80212-	34	25	11	6470 (446)
M20 x 1.5	14	2.50	13106-51520-80214-	34	25	11	6280 (433)
M20 x 1.5	15	2.50	13106-51520-80215-	34	25	11	6160 (425)
M20 x 1.5	16	2.80	13106-51520-80216-	34	25	11	6140 (423)
M22 x 1.5	14	2.50	13106-51522-80214-	34	27	11	6280 (433)
M22 x 1.5	16	2.80	13106-51522-80216-	34	27	11	6140 (423)
M24 x 1.5	16	2.80	13106-51524-80216-	34	30	11	6140 (423)
M24 x 1.5	18	2.80	13106-51524-80218-	34	30	11	5670 (392)
M24 x 1.5	20	3.00	13106-51524-80220-	34	30	11	5110 (352)
M27 x 2	14	2.50	13106-51527-80214-	34	32	14	6280 (433)
M27 x 2	16	2.80	13106-51527-80216-	34	32	14	6140 (423)
M27 x 2	18	2.80	13106-51527-80218-	34	32	14	5670 (392)
M27 x 2	20	3.00	13106-51527-80220-	40	32	14	5110 (352)
M27 x 2	22	3.00	13106-51527-80222-	40	32	14	4620 (319)
M30 x 2	22	3.00	13106-51530-80222-	40	35	18	4620 (319)
M30 x 2	25	3.50	13106-51530-80225-	45	35	18	4730 (326)
M33 x 2	28	4.00	13106-51533-80228-	45	41	18	5160 (356)
M36 x 2	30	4.00	13106-51536-80230-	45	41	18	4760 (328)

Male Pipe to tube Butt Weld



NPT Thread				Metric Tube				
P-NPT Size	T-Tube O.D. (mm)	t-Wall Thickness (mm)	Basic Ordering Number	Dimension,mm				Working Pressure psig(bar)
				L	F	G	E	
1/8	14	2.50	13105-20102-80214-	69	19	22	4.80	6280 (433)
1/4	6	1.80	13105-20104-80206-	60	14	14	3	8240 (566)
1/4	8	1.80	13105-20104-80208-	73.20	14	16	4	8240 (566)
1/4	10	2.20	13105-20104-80210-	73.20	15	18	6	8160 (563)
1/4	12	2.20	13105-20104-80212-	73.20	18	22	7	6470 (446)
1/4	14	2.50	13105-20104-80214-	73.20	19	22	7.10	6280 (433)
1/4	16	2.80	13105-20104-80216-	73.20	22	25	7.10	6140 (423)
1/4	18	2.80	13105-20104-80218-	74.20	24	27	7.10	5670 (392)
3/8	14	2.50	13105-20106-80214-	72.50	19	22	9.70	6280 (433)
1/2	12	2.20	13105-20108-80212-	78	18	22	7	6470 (446)
1/2	14	2.50	13105-20108-80214-	78	19	22	9	6280 (433)
1/2	16	2.80	13105-20108-80216-	78	22	25	10	6140 (423)
1/2	22	3.00	13105-20108-80222-	82	30	32	11.90	4620 (319)
1/2	25	2.80	13105-20108-80225-	86	32	35	11.90	4730 (326)
1	25	3.50	13105-20116-80225-	103	35	35	17	4730 (326)