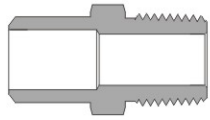




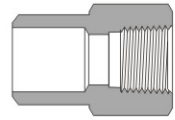
# Contents

## Tube Butt Weld Fittings

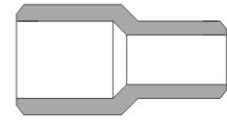
03 Male Connectors



03 Female Connectors



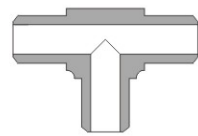
04 Reducing Unions



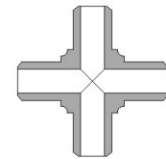
05 Union Elbows



05 Union Tees

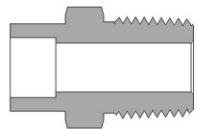


06 Union Crosses

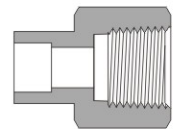


## Tube Socket Weld Fittings

07 Male Connectors



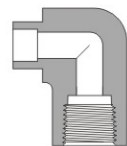
07 Female Connectors



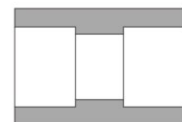
08 Male Elbows



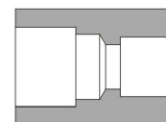
08 Female Elbows



09 Unions



09 Reducing Unions



# Contents

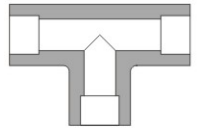
10 Union Elbows



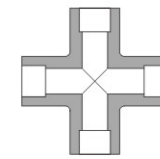
10 Union 45° Elbows



10 Union Tees

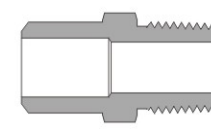


11 Union Crosses

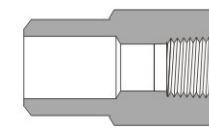


## Pipe Butt Weld Fittings

12 Male Connectors

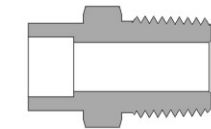


12 Female Connectors

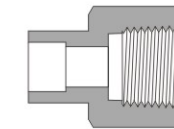


## Pipe Socket Weld Fittings

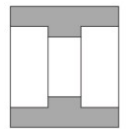
13 Male Connectors



13 Female Connectors

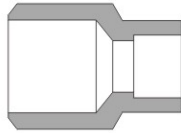


13 Unions

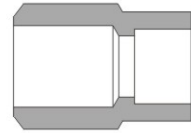


Weld Apapters

14 Tube-Butt-Weld to Tube Socket Weld



14 Pipe-Butt-Weld to Tube Socket Weld



Features

- 316 stainless steel material is standard, Other materials are available upon request.
- Straight fittings are manufactured from quality bar stock. Shaped fittings are manufactured from forgings.
- Quality machining of all ports ensures proper connection.
- 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 38mm.
- Working Pressure  
Catalog working pressures shown are based on ANSI/ASME B31.3, to determine working pressures in accordance with ANSI/ASME B31.1 multiply catalog working pressures shown by 0.94.
- Working Temperature

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)
316H SS	-325°F (-198°C)	1200°F (649°C)
321 SS	-325°F (-198°C)	1000°F (538°C)
304 SS		

Materials

Material	Designator	Bar Stock	Forgings
316 SS	SS	ASTM A276, ASME SA479	ASTM A182, ASME SA182
316L SS	6L		
316H SS	6H		
321 SS	S1		
304 SS	S4		

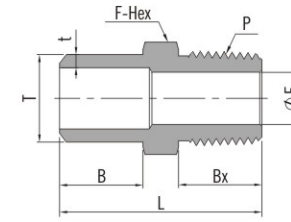
## Ordering Information

- Add the material designator as a prefix to the basic ordering number to get the complete ordering number. Example: 6L-WM-BW4-NT4
- To order fittings with special cleaning and packaging to ensure compliance with cleanliness requirements as stated in ASTM G93 Level C, add-G93C as a suffix to the ordering number. Example: SS-WM-BW4-NT4-G93C.

## Cautions

- Using the same materials to weld will ensure the same coefficients of expansion and good weld
- Tungsten Inert Gas Welding (TIG) will be a good welding methods.
- Dimensions in mm unless otherwise specified, are for reference only and are subject to change.

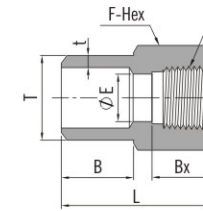
## Male Connectors



Fractional Tube				NPT Thread					Working Pressure psig(bar)
T-Tube Size (in.)	t-Wall Thickness (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm					
				L	B	Bx	F	E	
1/4	0.065	1/4	-WM-BW4-NT4	29.7	9.7	14.2	14.3	7.1	8000(551)
1/4	0.065	1/2	-WM-BW4-NT8	36.8	9.7	19.1	22.2	11.9	7700(530)
3/8	0.095	1/4	-WM-BW6-NT4	29.7	9.7	14.2	14.3	7.1	8000(551)
3/8	0.095	1/2	-WM-BW6-NT8	36.8	9.7	19.1	22.2	11.9	7700(530)
1/2	0.095	1/4	-WM-BW8-NT4	34.3	14.2	14.2	14.3	7.1	6780(468)
1/2	0.095	1/2	-WM-BW8-NT8	41.1	14.2	19.1	22.2	11.9	6780(468)
5/8	0.109	1/4	-WM-BW10-NT4	34.8	14.2	14.2	17.5	7.1	5760(397)
5/8	0.109	1/2	-WM-BW10-NT8	41.4	14.2	19.1	22.2	11.9	5760(397)
3/4	1.120	1/4	-WM-BW12-NT4	40.1	19.1	14.2	20.6	7.1	5530(381)
3/4	0.120	1/2	-WM-BW12-NT8	46.2	19.1	19.1	22.2	11.9	5530(381)
1	0.134	1/4	-WM-BW16-NT4	42.9	19.1	14.2	27.0	7.1	4480(409)
1	0.134	1/2	-WM-BW16-NT8	47.8	19.1	19.1	27.0	11.9	4480(309)

Metric Tube				NPT Thread					Working Pressure psig(bar)
T-Tube Size (mm)	t-Wall Thickness (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm					
				L	B	Bx	F	E	
12	2.2	1/4	-WM-MB12-NT4	34.3	14.2	14.2	14	7.1	6470(446)
12	2.2	1/2	-WM-MB12-NT8	41.1	14.2	19.1	22	11.9	6470(446)
14	2.5	1/4	-WM-MB14-NT4	34.3	14.2	14.2	15	7.1	6280(433)
14	2.5	1/2	-WM-MB14-NT8	41.4	14.2	19.1	22	11.9	6280(433)
15	2.5	1/4	-WM-MB15-NT4	34.8	14.2	14.2	16	7.1	5770(398)
16	2.8	1/4	-WM-MB16-NT4	35.6	14.2	14.2	18	7.1	6140(423)
16	2.8	1/2	-WM-MB16-NT8	41.1	14.2	19.1	22	11.9	6140(423)
20	3.0	1/2	-WM-MB20-NT8	46.2	19.1	19.1	22	11.9	5110(352)
22	3.0	1/4	-WM-MB22-NT4	41.2	19.1	14.2	24	7.1	4620(319)
22	3.0	1/2	-WM-MB22-NT8	46.1	19.1	19.1	24	11.9	4620(319)
25	3.5	3/4	-WM-MB25-NT12	47.8	19.1	19.1	27	15.7	4730(326)
25	3.5	1	-WM-MB25-NT16	54.9	19.1	23.9	35	22.4	4730(326)
28	4.0	1/2	-WM-MB28-NT8	54.2	21.4	19.1	30	11.9	4850(335)

## Female Connectors

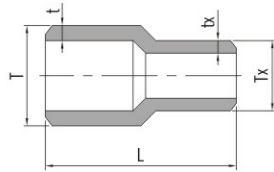


Fractional Tube				NPT Thread					Working Pressure psig(bar)
T-Tube Size (in.)	t-Wall Thickness (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm					
				L	B	Bx	F	E	
1/4	0.065	1/4	-WF-BW4-NT4	27.9	9.7	15.0	19.1	3.0	6600(454)
1/4	0.065	3/8	-WF-BW4-NT6	29.5	9.7	15.0	22.2	3.0	5300(365)
3/8	0.095	1/4	-WF-BW6-NT4	27.9	9.7	15.0	19.1	4.7	6600(454)
3/8	0.095	3/8	-WF-BW6-NT6	29.5	9.7	15.0	22.2	4.7	5300(365)
1/2	0.095	1/4	-WF-BW8-NT4	34.0	14.2	15.0	19.1	7.9	6300(454)
1/2	0.095	3/8	-WF-BW8-NT6	34.0	14.2	15.0	22.2	7.9	5300(365)
1/2	0.095	1/2	-WF-BW8-NT8	38.9	14.2	19.8	27.0	7.9	4900(337)

Metric Tube				NPT Thread					Working Pressure psig(bar)
T-Tube Size (mm)	t-Wall Thickness (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm					
				L	B	Bx	F	E	
14	2.5	1/4	-WF-MB14-NT4	33.0	14.2	15.0	19	9.0	6280(433)
14	2.5	1/2	-WF-MB14-NT8	38.9	14.2	19.8	27	9.0	4900(337)
20	3.0	1/2	-WF-MB20-NT8	43.7	19.1	19.8	27	14.0	4900(337)
28	4.0	1/2	-WF-MB28-NT8	49.8	23.9	19.8	30	15.7	4850(335)

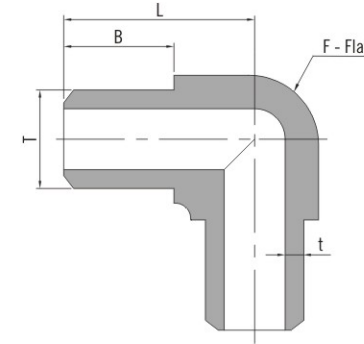


## Reducing Unions



Metric Tube		Metric Tube				
T-Tube Size (mm)	t-Wall Thickness (mm)	T-Tube Size (mm)	t-Wall Thickness (mm)	Basic Ordering Number	L	Working Pressure psig(bar)
20	3.0	14	2.5	-WU-MB20-MB14	38.1	6470(445)
22	3.0	14	2.5	-WU-MB22-MB14	38.1	5780(395)
22	3.0	18	2.8	-WU-MB22-MB18	38.1	5780(395)
25	3.5	22	3.0	-WU-MB25-MB22	38.1	5780(395)
38	5.0	25	3.5	-WU-MB38-MB25	38.1	5540(380)

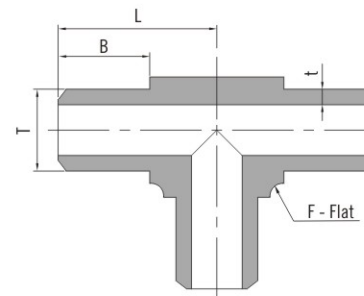
## Union Elbows



Fractional Tube		Basic Ordering Number	Dimension, mm			Working Pressure psig(bar)
T-Tube Size (in.)	t-Wall Thickness (in.)		L	B	F	
1/4	0.065	-WLU-BW4	16.3	9.7	9.5	10320(712)
3/8	0.095	-WLU-BW6	18.0	9.7	11.1	9930(685)
1/2	0.095	-WLU-BW8	24.4	14.2	14.3	6780(468)
3/4	0.120	-WLU-BW12	33.3	19.1	20.6	5530(381)
1	0.134	-WLU-BW16	37.1	19.1	27.0	4480(309)

Metric Tube		Basic Ordering Number	Dimension, mm			Working Pressure psig(bar)
T-Tube Size (mm)	t-Wall Thickness (mm)		L	B	F	
10	2.2	-WLU-MB10	18.0	9.7	11.1	8160(563)
14	2.5	-WLU-MB14	25.4	14.2	15.9	6280(433)
16	2.8	-WLU-MB16	26.2	14.2	17.5	6140(423)
20	3.0	-WLU-MB20	33.3	19.1	20.6	5110(352)
22	3.0	-WLU-MB22	35.3	19.1	23.8	4620(319)
25	3.5	-WLU-MB25	37.1	19.1	27.0	4730(326)

## Union Tees

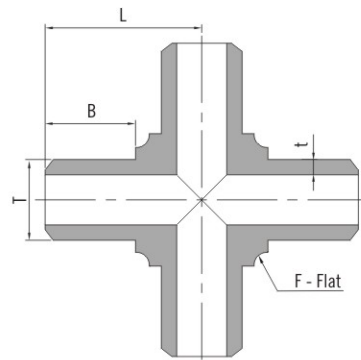


Fractional Tube		Basic Ordering Number	Dimension, mm			Working Pressure psig(bar)
T-Tube Size (in.)	t-Wall Thickness (in.)		L	B	F	
1/4	0.065	-WT-BW4	16.3	9.7	9.5	10320(712)
3/8	0.095	-WT-BW6	18.0	9.7	11.1	9930(685)
1/2	0.095	-WT-BW8	24.4	14.2	14.3	6780(468)
3/4	0.120	-WT-BW12	33.3	19.1	20.6	5530(381)
1	0.134	-WT-BW16	37.1	19.1	27.0	4480(309)

Metric Tube		Basic Ordering Number	Dimension, mm			Working Pressure psig(bar)
T-Tube Size (mm)	t-Wall Thickness (mm)		L	B	F	
6	1.8	-WT-MB6	16.3	9.7	9.5	12660(873)
8	1.8	-WT-BW8	16.3	9.7	9.5	8320(574)
10	2.2	-WT-BW10	18.0	9.7	11.1	8160(563)
12	2.2	-WT-BW12	24.4	14.2	14.3	6470(446)
14	2.5	-WT-BW14	25.4	14.2	15.9	6280(433)
16	2.8	-WT-BW16	26.2	14.2	17.5	6140(423)
20	3.0	-WT-BW20	33.3	19.1	20.6	5110(352)
22	3.0	-WT-BW22	35.3	19.1	23.8	4620(319)
25	3.5	-WT-BW25	37.1	19.1	27.0	4730(326)
32	4.5	-WT-BW32	49.3	23.9	34.9	4730(326)

# Tube Butt Weld Fittings

## Union Crosses

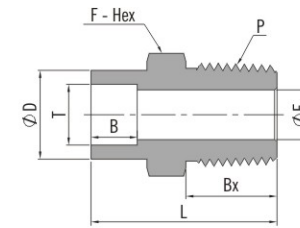


Fractional Tube			Dimension, mm			Working Pressure psig(bar)
T-Tube Size (in.)	t-Wall Thickness (in.)	Basic Ordering Number	L	B	F	
1/4	0.065	-WC-BW4	16.3	9.7	9.5	10320(712)
3/8	0.095	-WC-BW6	18.0	9.7	11.1	9930(685)
1/2	0.095	-WC-BW8	24.4	14.2	14.3	6780(468)
3/4	0.120	-WC-BW12	33.3	19.1	20.6	5530(381)
1	0.134	-WC-BW16	37.1	19.1	27.0	4480(309)

Metric Tube			Dimension, mm			Working Pressure psig(bar)
T-Tube Size (mm)	t-Wall Thickness (mm)	Basic Ordering Number	L	B	F	
6	1.8	-WC-MB6	16.3	9.7	9.5	12660(873)
8	1.8	-WC-MB8	16.3	9.7	9.5	8320(574)
10	2.2	-WC-MB10	18.0	9.7	11.1	8160(563)

# Tube Socket Weld Fittings

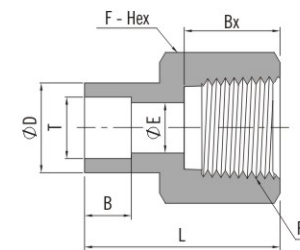
## Male Connectors



Fractional Tube			Dimension, mm						Working Pressure psig(bar)
T-Tube Size (in.)	P-NPT Size	Basic Ordering Number	L	D	B	Bx	F	E	
1/4	1/4	-WM-SW4-NT4	29.2	12.2	7.1	14.2	14.3	4.8	8400(551)
3/8	1/4	-WM-SW6-NT4	31.8	15.2	7.9	14.2	15.9	7.1	8400(551)
3/8	3/8	-WM-SW6-NT6	31.8	15.2	7.9	14.2	17.5	7.1	7800(537)
3/8	1/2	-WM-SW6-NT8	37.3	15.2	7.9	19.1	22.2	7.1	7700(530)
1/2	1/4	-WM-SW8-NT4	33.3	18.5	9.7	14.2	19.1	7.1	6600(454)
1/2	3/8	-WM-SW8-NT6	33.3	18.5	9.7	14.2	19.1	9.6	6600(454)
1/2	1/2	-WM-SW8-NT8	38.9	18.5	9.7	19.1	22.2	10.4	6600(454)
3/4	3/4	-WM-SW12-NT12	45.1	26.4	11.2	19.1	27.0	15.7	5900(406)
1	1	-WM-SW16-NT16	53.6	34.5	15.7	23.9	34.9	22.4	5300(365)

Metric Tube			Dimension, mm						Working Pressure psig(bar)
T-Tube Size (mm)	P-NPT Size	Basic Ordering Number	L	D	B	Bx	F	E	
6	1/4	-WM-SW6-NT4	29.2	12	7.1	14.2	14	4.8	8240(566)
12	1/2	-WM-SW12-NT8	38.9	20.2	9.7	19.1	22	5.5	6820(470)
14	1/4	-WM-SW14-NT4	33.3	23.8	10	14.2	24	7.1	6930(478)
14	3/8	-WM-SW14-NT6	35.0	23.8	10	14.2	24	9.6	6930(478)
14	1/2	-WM-SW14-NT8	40.0	23.8	10	19.1	24	10.4	6930(478)
16	1/4	-WM-SW16-NT4	35.0	23.8	10.4	14.2	24	7.1	6190(426)
16	1/2	-WM-SW16-NT8	40.0	23.8	10.4	19.1	24	11.9	6190(426)
18	1/4	-WM-SW18-NT4	40.4	26.0	11.2	14.2	27	7.1	6050(417)
28	3/4	-WM-SW28-NT12	55.5	40	20	19.1	41	15.7	5040(348)
38	1 1/4	-WM-SW38-NT20	68.3	50.8	22	23.9	52	28.6	5230(361)

## Female Connectors

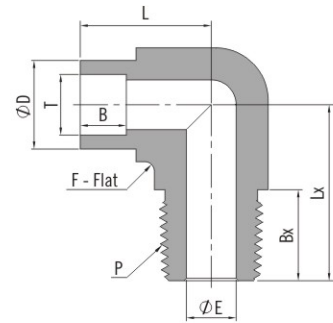


Fractional Tube			Dimension, mm						Working Pressure psig(bar)
T-Tube Size (in.)	P-NPT Size	Basic Ordering Number	L	D	B	Bx	F	E	
1/8	1/8	-WF-SW2-NT2	21.1	7.4	2.5	10.4	14.3	2.3	6500(447)
1/4	1/8	-WF-SW4-NT2	26.7	12.2	7.1	10.4	14.3	4.8	6500(447)
1/4	1/4	-WF-SW4-NT4	30.0	12.2	7.1	15.0	19.1	4.8	6600(454)
3/8	1/4	-WF-SW6-NT4	31.5	15.2	7.9	15.0	19.1	7.1	6600(454)
1/2	3/8	-WF-SW8-NT6	34.5	18.5	9.7	15.0	22.2	10.4	5300(365)
1/2	1/2	-WF-SW8-NT8	40.4	18.5	9.7	19.8	27.0	10.4	4900(337)
3/4	3/4	-WF-SW12-NT12	43.9	26.4	11.2	20.6	33.3	16.0	4600(316)
1	1	-WF-SW16-NT16	54.1	34.5	15.7	25.4	41.3	22.4	4400(303)

Metric Tube			Dimension, mm						Working Pressure psig(bar)
T-Tube Size (mm)	P-NPT Size	Basic Ordering Number	L	D	B	Bx	F	E	
8	1/4	-WF-MS8-NT4	27.0	14.3	7.9	15.0	19	4.8	6600(454)
10	1/4	-WF-MS10-NT4	29.0	16.5	7.9	15.0	19	7.1	6600(454)
14	1/4	-WF-MS14-NT4	32.0	23.8	10.0	15.0	24	9.5	6930(478)
28	3/4	-WF-MS28-NT12	54.1	40.0	20.0	20.6	41	19.8	4600(316)

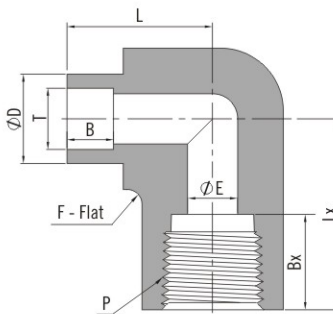
# Tube Socket Weld Fittings

## Male Elbows



Fractional Tube			NPT Thread							Working Pressure psig(bar)
T-Tube Size (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm							
			L	Lx	D	B	Bx	F	E	
1/4	1/4	-WLM-SW4-NT4	20.1	26.7	14.7	7.1	14.2	12.7	4.8	8000(551)
3/8	1/4	-WLM-SW6-NT4	26.4	26.7	14.7	7.9	14.2	12.7	7.1	8000(551)
3/8	3/8	-WLM-SW6-NT6	24.6	29.7	20.2	7.9	14.2	17.5	7.1	7800(537)
3/8	1/2	-WLM-SW6-NT8	25.9	36.8	23.8	7.9	19.1	20.6	7.1	7700(530)
1/2	1/2	-WLM-SW8-NT8	27.4	36.8	23.8	9.7	19.1	20.6	10.4	6600(454)
3/4	3/4	-WLM-SW12-NT12	38.9	39.6	26.4	11.2	19.1	27.0	15.7	5900(406)

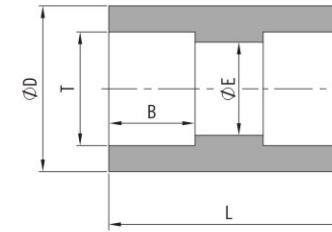
## Female Elbows



Fractional Tube			NPT Thread							Working Pressure psig(bar)
T-Tube Size (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm							
			L	Lx	D	B	Bx	F	E	
1/4	1/4	-WLF-SW4-NT4	22.9	29.7	20.2	7.1	15.0	17.5	4.8	7400(509)
3/8	1/4	-WLF-SW6-NT4	25.1	29.7	20.2	7.9	15.0	17.5	7.1	7400(509)
3/8	1/2	-WLF-SW6-NT8	28.7	29.6	29.3	7.9	19.8	25.4	7.1	5700(392)
1/2	1/2	-WLF-SW8-NT8	30.2	29.6	29.3	9.7	19.8	25.4	10.4	5700(392)

# Tube Socket Weld Fittings

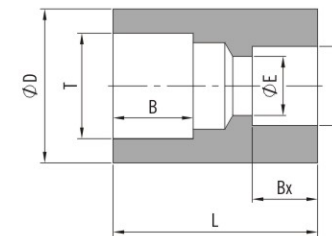
## Unions



Fractional Tube		Dimension, mm				Working Pressure psig(bar)
T-Tube Size (in.)	Basic Ordering Number	L	D	B	E	
1/4	-WU-SW4	19.1	12.2	7.1	4.8	10700(737)
3/8	-WU-SW6	22.4	15.2	7.9	7.1	8100(558)
1/2	-WU-SW8	26.9	18.5	9.7	10.4	6600(454)
9/16	-WU-SW9	28.6	21.0	10.0	11.6	6260(432)
5/8	-WU-SW10	30.2	23.4	10.4	12.7	6200(427)
3/4	-WU-SW12	33.3	26.4	11.2	16.0	5900(406)
7/8	-WU-SW14	35.5	31.5	12.7	18.8	5730(395)
1	-WU-SW16	36.3	36.6	15.7	22.4	5600(385)

Metric Tube		Dimension, mm				Working Pressure psig(bar)
T-Tube Size (mm)	Basic Ordering Number	L	D	B	E	
8	-WU-MS8	22.4	14.3	7.9	6.4	9790(675)
10	-WU-MS10	23.6	16.5	7.9	7.4	8100(558)
12	-WU-MS12	26.9	20.2	9.7	9.5	6820(470)
14	-WU-MS14	28.0	23.8	10.0	10.4	6930(478)
16	-WU-MS16	30.2	23.8	10.4	12.7	6190(426)
20	-WU-MS20	28.0	27.0	11.2	17.0	5510(380)

## Reducing Unions



Fractional Tube			Dimension, mm					Working Pressure psig(bar)
T-Tube Size (in.)	Tx-Tube Size (in.)	Basic Ordering Number	L	D	B	E	Bx	
3/8	1/4	-WU-SW6-SW4	22.4	15.2	7.9	4.8	7.1	8100(558)
1/2	1/4	-WU-SW8-SW4	24.3	18.5	9.7	4.8	7.1	6600(454)
1/2	3/8	-WU-SW8-SW6	26.1	18.5	9.7	7.1	7.9	6600(454)
3/4	3/8	-WU-SW12-SW6	29.8	26.4	11.2	7.1	7.9	5900(406)
3/4	1/2	-WU-SW12-SW8	31.6	26.4	11.2	10.4	9.7	5900(406)
1	3/4	-WU-SW16-SW12	32.1	34.5	15.7	16.0	11.2	5600(385)

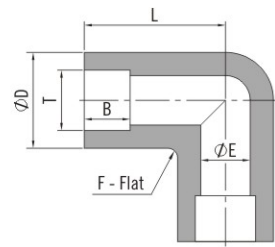
Metric Tube			Dimension, mm					Working Pressure psig(bar)
T-Tube Size (mm)	Tx-Tube Size (mm)	Basic Ordering Number	L	D	B	E	Bx	
14	10	-WU-MS14-MS10	26.0	23.8	10.4	7.4	7.9	6930(478)
25	14	-WU-MS25-MS14	30.0	34.5	15.7	10.4	10.0	5450(376)
25	22	-WU-MS25-MS22	35.8	34.5	15.7	19.0	13.5	5450(376)

Metric Tube			Dimension, mm					Working Pressure psig(bar)
T-Tube Size (mm)	Tx-Tube Size (in.)	Basic Ordering Number	L	D	B	E	Bx	
20	3/4	-WU-MS20-SW12	28.0	27.0	11.2	15.7	11.2	5510(380)
28	3/4	-WU-MS28-SW12	36.8	40.0	20.0	15.7	11.2	5040(348)



# Tube Socket Weld Fittings

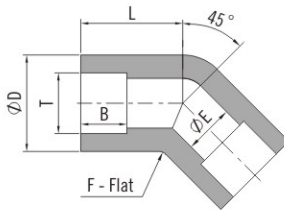
## Union Elbows



Fractional Tube							
T-Tube Size (in.)	Basic Ordering Number	Dimension, mm					Working Pressure psig(bar)
		L	D	B	F	E	
1/8	-WLU-SW2	15.0	7.4	2.5	9.5	2.3	12600(863)
1/4	-WLU-SW4	21.8	13.5	7.1	12.7	4.8	10700(737)
3/8	-WLU-SW6	26.4	16.3	7.9	14.3	7.1	8100(558)
1/2	-WLU-SW8	29.7	20.6	9.7	17.5	10.4	6600(454)
5/8	-WLU-SW10	36.1	23.9	10.4	20.6	12.7	6200(427)
3/4	-WLU-SW12	39.6	26.4	11.2	25.4	16.0	5900(406)
1	-WLU-SW16	48.8	36.8	15.7	31.8	22.4	5600(385)

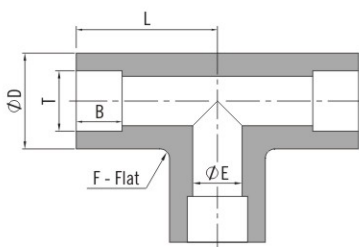
Metric Tube							
T-Tube Size (mm)	Basic Ordering Number	Dimension, mm					Working Pressure psig(bar)
		L	D	B	F	E	
10	-WLU-MS10	24.6	16.5	7.9	14.3	7.1	8100(558)
12	-WLU-MS12	29.7	20.2	9.7	17.5	9.5	6820(470)
14	-WLU-MS14	29.5	23.8	9.7	20.6	10.4	6930(478)
16	-WLU-MS16	36.0	23.8	10.6	20.6	12.7	6190(426)

## Union 45° Elbows



Fractional Tube							
T-Tube Size (in.)	Basic Ordering Number	Dimension, mm					Working Pressure psig(bar)
		L	D	B	F	E	
1/4	-WT-SW4	15.0	13.5	7.1	12.7	4.8	10700(737)
3/8	-WT-SW6	19.1	16.3	7.9	14.3	7.1	8100(558)
1/2	-WT-SW8	21.3	20.6	9.7	17.5	10.4	6600(454)
3/4	-WT-SW12	28.7	26.4	11.2	25.4	16.0	5900(406)
1	-WT-SW16	31.8	36.8	15.7	31.8	22.4	5600(385)

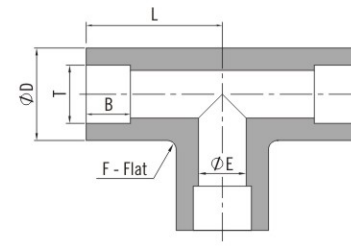
## Union Tees



Fractional Tube							
T-Tube Size (in.)	Basic Ordering Number	Dimension, mm					Working Pressure psig(bar)
		L	D	B	F	E	
1/8	-WT-SW2	15.0	7.4	2.5	9.5	2.3	12600(863)
1/4	-WT-SW4	21.8	13.5	7.1	12.7	4.8	10700(737)
3/8	-WT-SW6	26.4	16.3	7.9	14.3	7.1	8100(558)
1/2	-WT-SW8	29.7	20.6	9.7	17.5	10.4	6600(454)
5/8	-WT-SW10	36.1	23.9	10.4	20.6	12.7	6200(428)
3/4	-WT-SW12	39.6	26.4	11.2	25.4	16.0	5900(406)
1	-WT-SW16	48.8	36.8	15.7	31.8	22.4	5600(385)

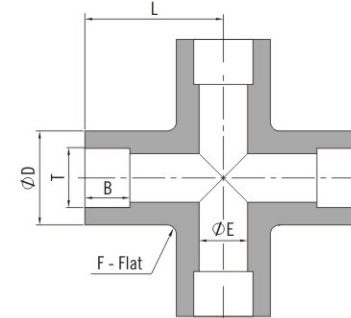
# Tube Socket Weld Fittings

## Union Tees



Metric Tube							
T-Tube Size (mm)	Basic Ordering Number	Dimension, mm					Working Pressure psig(bar)
		L	D	B	F	E	
8	-WT-MS8	18.5	14.7	7.9	12.7	5.9	9790(675)
10	-WT-MS10	24.6	16.5	7.9	14.3	7.1	8100(558)
12	-WT-MS12	29.7	20.2	9.7	17.5	9.5	6820(470)
14	-WT-MS14	29.5	23.8	9.7	20.6	10.4	6930(478)
16	-WT-MS16	36.0	23.8	10.6	20.6	12.7	6790(426)
20	-WT-MS20	39.6	27.3	11.2	27.0	15.9	5510(380)
22	-WT-MS22	44.2	35.7	13.5	31.8	18.9	6850(472)
25	-WT-MS25	48.8	36.8	15.7	31.8	22.4	5450(376)

## Union Crosses

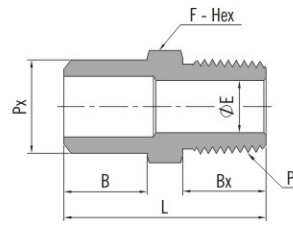


Fractional Tube							
T-Tube Size (in.)	Basic Ordering Number	Dimension, mm					Working Pressure psig(bar)
		L	D	B	F	E	
1/8	-WC-SW2	15.0	7.4	2.5	9.5	2.3	12600(863)
1/4	-WC-SW4	21.8	13.5	7.1	12.7	4.8	10700(737)
3/8	-WC-SW6	26.4	16.3	7.9	14.3	7.1	8100(558)
1/2	-WC-SW8	29.7	20.6	9.7	17.5	10.4	6600(454)
5/8	-WC-SW10	36.1	23.9	10.4	20.6	12.7	6200(428)
3/4	-WC-SW12	39.6	26.4	11.2	25.4	16.0	5900(406)
1	-WC-SW16	48.8	36.8	15.7	31.8	22.4	5600(385)



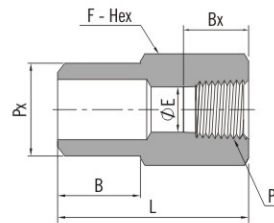
# Pipe Butt Weld Fittings

## Male Connectors



Pipe		NPT Thread							Working Pressure psig(bar)
P-Sch80 Pipe Size	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	B	Bx	F	E		
1/4	1/4	-WM-PB4-NT4	34.3	14.2	14.2	14.3	7.1	8120(560)	
1/4	1/2	-WM-PB4-NT8	41.3	14.2	19.1	22.2	7.7	7930(546)	
3/8	1/4	-WM-PB6-NT4	34.8	14.2	14.2	17.5	7.1	6650(459)	
3/8	1/2	-WM-PB6-NT8	41.3	14.2	19.1	22.2	10.7	6650(459)	
1/2	1/4	-WM-PB8-NT4	41.3	19.1	14.2	22.2	7.1	6190(427)	
1/2	1/2	-WM-PB8-NT8	46.2	19.1	19.1	22.2	11.9	6190(427)	
3/4	1/4	-WM-PB12-NT4	42.9	19.1	14.2	20.6	7.1	5040(348)	
3/4	1/2	-WM-PB12-NT8	47.8	19.1	19.1	27.0	11.9	5040(348)	
1	1/4	-WM-PB16-NT4	50.0	23.9	14.2	27.0	7.1	4640(320)	
1	1/2	-WM-PB16-NT8	54.9	23.9	19.1	34.9	11.9	4640(320)	

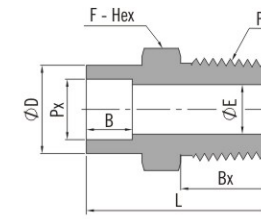
## Female Connectors



Pipe		NPT Thread							Working Pressure psig(bar)
P-Sch80 Pipe Size	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	B	Bx	F	E		
1/4	1/2	-WF-PB4-NT8	38.9	14.2	19.8	27.0	7.6	5040(348)	
3/8	1/2	-WF-PB6-NT8	38.9	14.2	19.8	27.0	10.7	5040(348)	
1/2	1/4	-WF-PB8-NT4	37.3	19.1	15.0	22.2	10.4	6790(463)	
1/2	1/2	-WF-PB8-NT8	43.7	19.1	19.8	27.0	13.9	5040(348)	

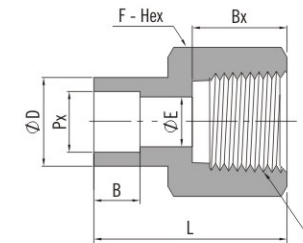
# Pipe Socket Weld Fittings

## Male Connectors



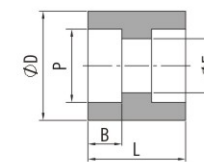
Pipe		NPT Thread							Working Pressure psig(bar)
Px-Pipe Size (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	D	B	Bx	F	E	
1/4	1/4	-WM-PS4-NT4	35.2	22.4	9.9	14.2	23.8	7.1	8100(551)
1/4	1/2	-WM-PS4-NT8	40.0	22.4	9.9	19.1	23.8	9.1	7930(546)
3/8	3/8	-WM-PS6-NT6	38.0	26.2	9.9	14.2	27.0	9.7	7100(489)
3/8	1/2	-WM-PS6-NT8	42.9	26.2	9.9	19.1	27.0	11.9	7100(489)
1/2	3/8	-WM-PS8-NT6	40.3	31.8	9.9	14.2	33.3	9.7	6800(468)
1/2	1/2	-WM-PS8-NT8	45.2	31.8	9.9	19.1	33.3	11.9	6800(468)
3/4	1/2	-WM-PS12-NT8	54.3	37.3	13.0	19.1	38.1	11.9	5800(399)
3/4	3/4	-WM-PS12-NT12	54.3	37.3	13.0	19.1	38.1	15.7	5800(399)
1	3/4	-WM-PS16-NT12	55.8	47.2	13.0	19.1	47.6	15.7	6100(420)
1	1	-WM-PS16-NT16	60.6	47.2	13.0	23.9	47.6	22.4	5460(381)

## Female Connectors



Pipe		NPT Thread							Working Pressure psig(bar)
Px-Pipe Size (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	D	B	Bx	F	E	
1/4	1/4	-WM-PS4-NT4	33.5	22.4	9.9	15.0	23.8	9.1	5460(370)
1/4	3/8	-WM-PS4-NT6	33.5	22.4	9.9	15.0	23.8	9.1	6790(463)
3/8	3/8	-WM-PS6-NT6	34.1	26.2	9.9	15.0	27.0	12.4	6790(463)
3/8	1/2	-WM-PS6-NT8	39.1	26.2	9.9	19.8	27.0	12.4	5040(348)
1/2	1/2	-WM-PS8-NT8	40.0	31.8	9.9	19.8	33.3	15.7	6800(468)
1/2	3/4	-WM-PS8-NT12	40.6	31.8	9.9	20.6	33.3	15.7	4730(329)
3/4	3/4	-WM-PS12-NT12	53.2	37.3	13.0	20.6	38.1	20.8	5800(399)
3/4	1	-WM-PS12-NT16	58.1	37.3	13.0	25.4	38.1	22.4	5800(399)

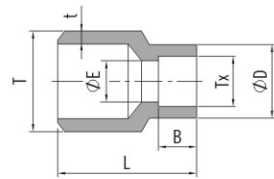
## Unions



Pipe		Dimension, mm				Working Pressure psig(bar)
P-Pipe Size (in.)	Basic Ordering Number	L	D	B	E	
1/8	-WU-PS2	25.7	17.1	9.9	4.0	8230(568)
1/4	-WU-PS4	26.9	22.4	9.9	9.1	8100(551)
3/8	-WU-PS6	28.4	26.2	9.9	12.4	7100(489)
1/2	-WU-PS8	28.4	31.8	9.9	15.7	6800(468)
3/4	-WU-PS12	44.5	37.3	13.0	20.8	5800(399)
1	-WU-PS16	44.5	47.2	13.0	26.7	6100(420)

# Weld Adapters

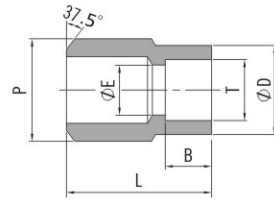
## Tube Butt Weld to Tube Socket Weld



Fractional Tube

T-Tube Size (in.)	t-Wall Thickness (in.)	Tx-Tube Size (in.)	Basic Ordering Number	Dimension, mm				Working Pressure psig(bar)
				L	B	D	E	
1/4	0.083	1/8	-WA-BW4-SW2	14.2	2.5	8.0	2.3	12600(868)
3/8	0.095	1/4	-WA-BW6-SW4	19.1	7.1	12.2	4.8	8200(564)
1/2	0.095	1/4	-WA-BW8-SW4	22.4	7.1	12.7	4.8	7500(516)
1/2	0.095	3/8	-WA-BW8-SW6	22.4	7.9	15.2	7.1	7500(516)
3/4	0.120	1/2	-WA-BW12-SW8	28.4	9.7	18.5	10.4	6300(434)
1	0.134	1/2	-WA-BW16-SW8	35.1	9.7	18.5	10.4	5300(365)
1	0.134	3/4	-WA-BW16-SW12	38.1	11.2	26.4	16.0	5300(365)

## Pipe Butt Weld to Tube Socket Weld



Pipe

Fractional Tube

P-Sch80 Pipe Size	T-Tube Size (in.)	Basic Ordering Number	Dimension, mm				Working Pressure psig (bar)
			L	B	D	E	
1/4	1/4	-WA-PB4-SW4	22.4	7.1	12.2	4.8	10810 (744)
3/8	1/4	-WA-PB6-SW4	26.2	7.9	12.2	4.8	8500 (586)
3/8	3/8	-WA-PB6-SW6	26.2	7.9	15.2	7.1	8500 (586)
3/8	1/2	-WA-PB6-SW8	25.4	9.7	18.5	10.4	6930 (476)
1/2	1/4	-WA-PB8-SW4	28.4	7.1	12.2	4.8	8190 (563)
1/2	3/8	-WA-PB8-SW6	28.4	7.9	15.2	7.1	8190 (563)
1/2	1/2	-WA-PB8-SW8	30.2	9.7	18.5	10.4	6930 (476)
3/4	1/4	-WA-PB12-SW4	38.1	7.1	12.2	4.8	6930 (476)
3/4	3/8	-WA-PB12-SW6	38.1	7.9	15.2	7.1	6930 (476)
3/4	1/2	-WA-PB12-SW8	38.1	9.7	18.5	10.4	6930 (476)
3/4	3/4	-WA-PB12-SW12	38.1	11.2	26.4	16.0	6190 (483)
1	3/8	-WA-PB16-SW6	35.1	7.9	15.2	7.1	6300 (434)
1	1/2	-WA-PB16-SW8	39.6	9.7	18.5	10.4	6300 (434)