

# TUBE FITTINGS

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Available in tube sizes from  
**1/16 in. to 2 in. &  
2mm to 50 mm**

- Easy to disconnect and Re-tighten
- Wide variety of materials and configurations
- Double Compression Tube Fittings



tactlok



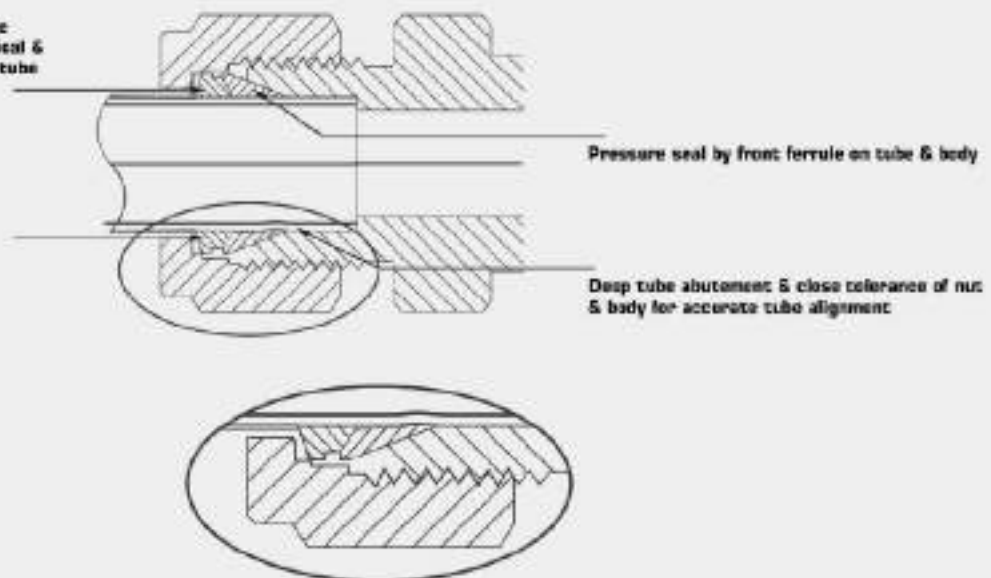
## DOUBLE FERRULE COMPRESSION TUBE FITTINGS

### PRINCIPLE

The double ferrule compression tube fitting consists of four precisely-engineered parts designed to provide secure leak proof joints capable of satisfying high pressure, vacuum & vibration application. The four parts are body, front ferrule, back ferrule & nut. Fittings are supplied complete & ready for use. As the nut is tightened, the front ferrule swages onto the tube as it moves down the cone of the body creating a prominent leak-proof seal on both tube and body by the interface pressure and surface finish of mating components. The super case back ferrule then deforms inwards in the cone of the front ferrule, forming into the tube & creating a strong mechanical hold on the tube.

The internal diameter of the body & nut are closely controlled diameters, which constrain the tube within in a close tolerance of its axis ensuring accurate alignment within the assembled fitting.

The supercase back ferrule provides a strong mechanical & anti vibration hold on the tube



The double ferrule compression tube fitting does not in any way reduce the strength of the tube. Therefore tubes with very thin walls can be used without affecting the safety of your installations. These ensure perfect tightness without the risk of breakage.

## FEATURES

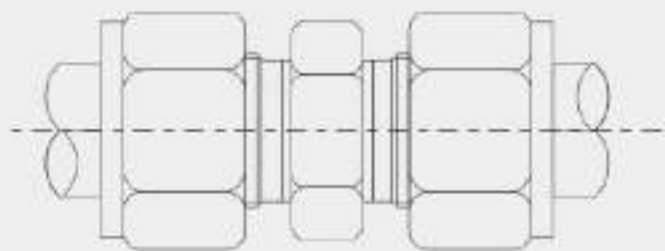
- No twisting of the tube during installation.
- Re-usable, can be assembled & taken apart several times.
- Withstands high vacuum & pressure.
- Forged bodies (in case of tees & elbows) are used to ensure close grain structure for high pressure & good results.

### - IDENTIFICATION BETWEEN METRIC & INCH FITTINGS

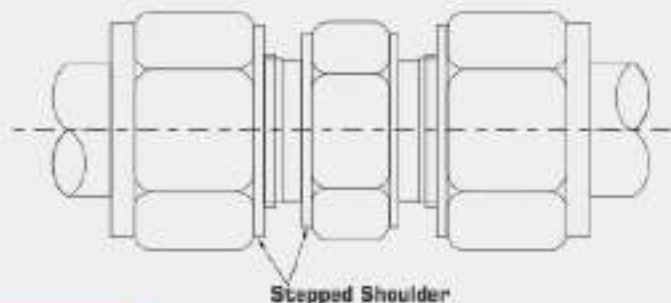
TACKTLOK® metric tube fittings are similar in appearance to tube fittings in inch sizes.

The significant difference however is in the internal diameter of the tube fitting components. Due to the external similarity between metric & inch sizes a stepped shoulder has been machined on the body of metric fitting & the nut.

INCH TUBE FITTING



METRIC TUBE FITTING



## APPLICATION

TACKTLOK® double ferrule fitting has been specifically designed for use on instrumentation, process & control systems, together with equipment employed in chemical, petroleum, power generation, pulp & paper plants etc.



## MATERIALS & GRADES

### Stainless Steels

- SS 304 / L
- SS316 / L
- SS 310
- SS 321
- SS 347H
- SS 317L
- SS 410
- SS 416
- SS 420
- SS 430
- SS 904L
- SS 17-4-PH

### Stainless Steels

- SS 15-5-PH
- ### Duplex & Super Duplex Steels
- UNSS31803
  - UNS S32205
  - UNSS32750
  - UNS S32760
  - UNS S32950
  - A182 F51
  - A182 F53
  - A182 F55

### Carbon Steels Alloy Steels

### Nickel Based Alloys

- Also known as **Hastelloy®**
- Alloy C276
- Alloy C22
- Alloy B2
- AlsoKnown as **Incoloy® or Inconel®**
- Alloy 600
- Alloy 601
- Alloy 602
- Alloy B25
- Alloy 725
- AlloyX750
- Alloy 800
- Alloy B25

### Also known as **Monel®**

- Alloy 400
  - Alloy 401
  - Alloy 404
  - Alloy K500
  - Alloy R450
- ### Others
- Alloy 20
  - Titanium Gr 2, 5
  - CuproNickel
  - Brass
  - Copper

### Contact for Others

### Assembly of TACTLOK® fittings:

Make sure that the tube rests firmly on the fitting shoulder. The nut should be finger tight. It is highly recommended that a mark should be put on the hex of the nut extending to the fittings body. This mark serves as an indicator for the starting point and pull up.

### How much to tighten the Nut?

For Sizes 1/4" (6mm) and higher - 1-1/4 (One and a Quarter) turns are required (Figure A)

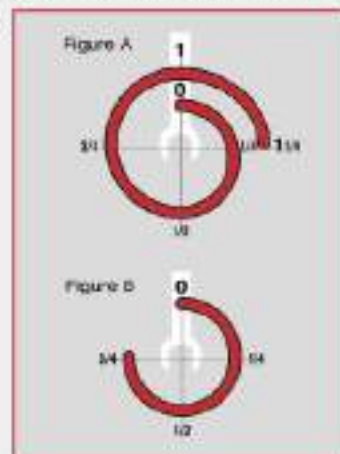
For Sizes 3/16" (4mm) and lower - 3/4 (Three Quarter) turns are required (Figure B)

1-1/4 turns of the nut are required for 1/4" (6 mm) and higher (see Fig. A).  
3/4 turn of the nut is required for 3/16" (4 mm) and lower (see Fig. B).

### INSTRUCTIONS FOR RE-ASSEMBLY

TACTLOK® connections can be unassembled and connected again without a loss of leakproof seal.

1. Before unassembly, mark the position of the Nut with respect to the body.
2. To reassemble, tighten the Nut to the Original position using a wrench.
3. Tighten using a wrench until there is a slight torque felt.





# TACTLOK® Double Ferrule Tube Fittings

## Maximum Allowable Working Pressure (MAWP) Table

\* Working pressure calculated in accordance with ASME B31.3, Chemical Plant and Petroleum Refinery Piping Code, 2002 Edition

### Table 5. Stainless Steel Tubing

Fully annealed 304 or 316 high quality seamless stainless steel tube to ASTM A268 or equivalent. Hardness : R60 or less

Stainless Steel Tube Inch Size																
Tube O.D. (Inches)	Tube Wall Thickness in inches															
	0.010	0.012	0.014	0.015	0.020	0.025	0.035	0.045	0.065	0.085	0.095	0.105	0.120	0.135	0.155	0.188
1/16"	5,800	5,800	5,200	5,500	12,800											
1/8"					8,500	11,200										
3/16"					5,400	7,000	10,400									
1/4"					4,000	5,100	7,500	10,400								
5/16"					4,000	5,800	8,000									
3/8"					3,300	4,800	6,500									
1/2"					2,900	3,700	5,100	6,700								
5/8"					3,000	4,000	5,200	6,000								
3/4"					2,400	3,300	4,200	4,900	5,800							
7/8"					2,000	2,800	3,600	4,200	4,800							
1"						2,400	3,100	3,800	4,200	4,700						
1 1/4"							2,800	2,800	3,300	3,800	4,100	4,900				
1 1/2"								2,300	2,700	3,000	3,400	4,000	4,900			
2"									2,000	2,200	2,500	2,900	3,500			

Stainless Steel Tube Metric Size														
Tube O.D. (mm)	Tube Wall Thickness in Millimeters													
	0.8	1	1.2	1.5	1.8	2	2.2	2.5	2.8	3	3.5	4	4.5	5
3	720	850												
4	520	670	840											
5	300	430	620	880										
6		310	380	450										
10		240	300	380	470	500								
12		400	340	310	380	430								
14		180	220	260	340	350	430							
15		170	200	260	320	350	400							
16		190	240	300	350	370	430							
18			170	210	250	290	330	380						
20			150	190	230	250	290	330	360					
22			140	170	210	240	280	300	340					
25				150	190	200	230	260	300	320				
28					160	200	230	260	280	300				
30					170	190	210	240	260	310				
32					160	170	200	230	260	280	330			
38						140	170	190	200	240	280	310		
50								150	160	210	230	250		

\* Allowable stress of 20,000psi (137,800kPa) between -20°F and 100°F (-29°C and 37°C) based on ultimate tensile strength 75,000psi (518,700kPa)

\* Based on minimum wall thickness and maximum O.D. allowable by ASTM A268

\* For welded tubing, the following derating rate to be applied for weld integrity. (ASME B31.3 - 2002 Edition, Table A - 1B)

for double welded tubing : 0.85

for single welded tubing : 0.80

\* To determine bar, multiply psig by 0.0689 and to determine MPa by 6.89

#### Note :

1. All calculations are based on minimum outside diameter and minimum wall thickness without allowance for corrosion and erosion.
2. Care should be taken for temperature rating if tubing is coated or plated.
3. Figures shown are not for design purpose but for reference only and the accuracy of information here is not liability of our company.

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101BP  
BACK FERRULE

07



101FP  
FRONT FERRULE

07



102NU  
NUT

08



103UN  
UNION

09



104RU  
REDUCING UNION

10



104RU  
REDUCING UNION

11



105TE  
UNION TEE

12



106EL  
UNION ELBOW

13



107FC  
FEMALE CONNECTOR

14



107FC  
FEMALE CONNECTOR

15



108RR  
REDUCER

16



108RR  
REDUCER

17



108RR  
REDUCER

18



108RR  
REDUCER

19



108MC  
MALE CONNECTOR

20



108MC  
MALE CONNECTOR

21



108MC  
MALE CONNECTOR

22



110WC  
MALE PIPE WELD CONNECTOR

23



110WC  
MALE PIPE WELD CONNECTOR

24



110BWC  
TUBE SOCKET WELD UNION

24



111ME  
MALE ELBOW

25



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111ME  
MALE ELBOW

26



112SWE  
TUBE SOCKET WELD  
ELBOW

27



113FE  
FEMALE ELBOW

28



114RTM  
MALE RUN TEE

29



115RTF  
FEMALE RUN TEE

30



116BTM  
MALE BRANCH TEE

31



117BTF  
FEMALE BRANCH TEE

32



118LUB  
BULK HEAD UNION

33



119BCF  
BULK HEAD FEMALE  
CONNECTOR

34



120BCM  
BULK HEAD MALE  
CONNECTOR

35



121CR  
UNION CROSS

36



122CP  
CAP

37



123PL  
PLUG

38



124ADF  
FEMALE ADAPTER  
TUBE TO PIPE

39



124ADM  
FEMALE ADAPTER  
TUBE TO PIPE

40



125ADM  
MALE ADAPTER  
TUBE TO PIPE

41



125ADM  
MALE ADAPTER  
TUBE TO PIPE

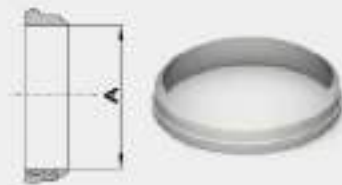
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## BACK FERRULE 101BF & FRONT FERRULE 101FF

**101BF**  
BACK FERRULE



**101FF**  
FRONT FERRULE



METRIC		INCH		
Part No.	A Extr. O.D. mm	Part No.	A Extr. O.D.	
			inch	mm
101BF_2	2	101BF_1/16	1/16	1.58
101BF_3	3	101BF_1/8	1/8	3.17
101BF_4	4	101BF_3/16	3/16	4.76
101BF_6	6	101BF_1/4	1/4	6.35
101BF_8	8	101BF_5/16	5/16	7.93
101BF_10	10	101BF_3/8	3/8	9.52
101BF_12	12	101BF_1/2	1/2	12.70
101BF_14	14	101BF_5/8	5/8	15.87
101BF_15	15	101BF_3/4	3/4	19.05
101BF_16	16	101BF_7/8	7/8	22.22
101BF_18	18	101BF 1	1	25.40
101BF_20	20	101BF_1 1/4*	1 1/4	31.75
101BF_22	22	101BF_1 1/2*	1 1/2	38.10
101BF_25	25	101BF_2	2	50.80
101BF_38	38			
101BF_50	50			

\*Without Ferrule Set.

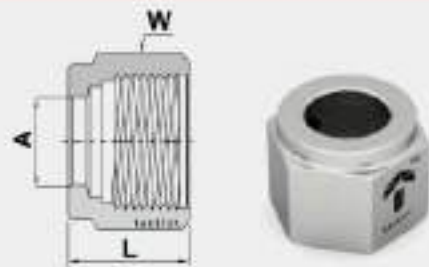
METRIC		INCH		
Part No.	A Extr. O.D. mm	Part No.	A Extr. O.D.	
			inch	mm
101FF_2	2	101FF_1/16	1/16	1.58
101FF_3	3	101FF_1/8	1/8	3.17
101FF_4	4	101FF_3/16	3/16	4.76
101FF_6	6	101FF_1/4	1/4	6.35
101FF_8	8	101FF_5/16	5/16	7.93
101FF_10	10	101FF_3/8	3/8	9.52
101FF_12	12	101FF_1/2	1/2	12.70
101FF_14	14	101FF_5/8	5/8	15.87
101FF_15	15	101FF_3/4	3/4	19.05
101FF_16	16	101FF_7/8	7/8	22.22
101FF_18	18	101FF 1	1	25.40
101FF_20	20	101FF_1 1/4*	1 1/4	31.75
101FF_22	22	101FF_1 1/2*	1 1/2	38.10
101FF_25	25	101FF_2*	2	50.80
101FF_38*	38			
101FF_50*	50			

\*Without Ferrule Set.

\* - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.



# NUT 102NU



METRIC			
Part No.	A	W	L
	Tube O.D. mm	Hex. Dia. mm	mm
102NU_2	2	12	11.8
102NU_3	3	12	11.8
102NU_4	4	12	11.8
102NU_6	6	14	12.7
102NU_8	8	16	13.5
102NU_10	10	18	15.1
102NU_12	12	22	17.4
102NU_14	14	25	17.4
102NU_15	15	25	17.4
102NU_16	16	25	17.4
102NU_18	18	30	17.4
102NU_20	20	32	17.4
102NU_22	22	32	17.4
102NU_25	25	38	20.8
102NU_38	38	60	40.6
102NU_50	50	3 inch	64.0

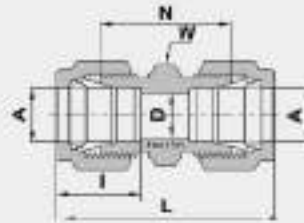
INCH					
Part No.	A		W	L	
	Tube O.D. inch	mm	Hex. Dia. inch	inch	mm
102NU_1/16	1/16	1.58	5/16	.31	7.87
102NU_1/8	1/8	3.17	7/16	.47	11.93
102NU_3/16	3/16	4.76	1/2	.47	11.93
102NU_1/4	1/4	6.35	9/16	.50	12.70
102NU_5/16	5/16	7.93	5/8	.53	13.48
102NU_3/8	3/8	9.52	11/16	.50	14.22
102NU_1/2	1/2	12.70	7/8	.60	17.52
102NU_5/8	5/8	15.87	1	.69	17.52
102NU_3/4	3/4	19.05	1 1/8	.69	17.52
102NU_7/8	7/8	22.22	1 1/4	.69	17.52
102NU_1	1	25.40	1 1/2	.81	20.57
102NU_1 1/4	1 1/4	31.75	1 7/8	1.25	31.75
102NU_1 1/2	1 1/2	38.10	2 1/4	1.50	38.10
102NU_2	2	50.80	3	2.00	50.80

\*W - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.



# UNION 103UN

**103UN**  
UNION



### TUBE (METRIC) TO TUBE (METRIC)

Part No.	A Tube O.D.		D mm	W Hex. Flat		N mm	L mm		I mm
	mm	mm		mm	mm		mm	mm	
103UN 2	2		1.7	12		22.4	30.0	12.9	
103UN 3	3		2.4	12		22.1	36.3	12.9	
103UN 4	4		2.4	12		24.1	37.3	13.7	
103UN 5	5		4.8	14		25.2	41.0	15.3	
103UN 6	6		6.4	15		25.2	43.2	16.2	
103UN 10	10		7.9	18		31.0	46.2	17.2	
103UN 12	12		9.5	22		31.0	51.2	22.8	
103UN 14	14		11.1	24		31.8	52.0	24.4	
103UN 15	15		11.9	24		31.8	52.0	24.4	
103UN 16	16		12.7	24		31.8	52.0	24.4	
103UN 18	18		15.1	27		33.3	53.5	24.4	
103UN 20	20		15.9	30		34.8	55.0	26.0	
103UN 22	22		15.3	30		34.8	55.0	26.0	
103UN 25	25		21.8	36		40.4	65.0	31.2	
103UN 38	*38		33.7	55		58.4	114.0	48.4	
103UN 50	*50		45.2	3 inch		71.7	140.0	65.0	

### TUBE (INCH) TO TUBE (INCH)

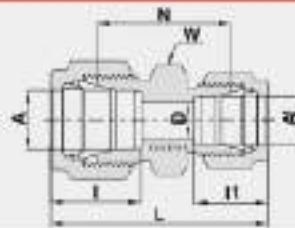
Part No.	A Tube O.D.		D mm	W Hex. Flat		N mm	L mm		I mm		
	inch	mm		inch	mm		inch	mm		inch	mm
103UN 1/16	1/16	1.58	.05	1.27	5/16	.69	17.52	.99	25.14	.34	8.6
103UN 1/8	1/8	3.17	.05	2.29	7/16	.88	22.35	1.40	35.56	.50	12.7
103UN 3/16	3/16	4.76	.12	3.04	7/16	.95	24.13	1.47	37.33	.54	13.7
103UN 1/4	1/4	6.35	.15	4.82	1/2	1.02	25.15	1.51	40.89	.60	15.2
103UN 5/16	5/16	7.93	.25	6.35	9/16	1.11	28.19	1.68	42.92	.64	16.2
103UN 3/8	3/8	9.52	.28	7.11	5/8	1.19	30.22	1.77	44.95	.68	16.8
103UN 1/2	1/2	12.70	.41	10.41	13/16	1.22	30.99	2.02	51.30	.80	20.3
103UN 5/8	5/8	15.87	.50	12.70	15/16	1.25	31.75	2.05	52.07	.96	24.4
103UN 3/4	3/4	19.05	.62	15.75	1 1/16	1.31	33.27	2.11	53.59	.96	24.4
103UN 7/8	7/8	22.22	.72	18.28	1 3/16	1.37	34.80	2.17	55.11	1.02	25.9
103UN 1	1	25.40	.88	22.35	1 3/8	1.55	40.38	2.55	64.77	1.23	31.2
103UN 1 1/4	*1 1/4	31.75	1.05	27.70	1 3/4	1.85	48.00	3.65	92.20	1.62	41.2
103UN 1 1/2	*1 1/2	38.10	1.34	34.00	2 1/8	2.11	53.60	4.25	107.95	1.97	50.0
103UN 2	*2	50.80	1.81	45.97	2 3/4	2.64	74.67	5.88	148.35	2.68	67.8

\*D - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.



# REDUCING UNION 104RU

## 104RU REDUCING UNION



### TUBE (METRIC) TO TUBE (METRIC)

Part No.	A Tube 1 O.D. mm	A1 Tube 2 O.D. mm	D mm	W Hex. Flat mm	N mm	L mm	I mm	I1 mm
104RU 3 X 2	3	2	1.7	12	22.1	35.3	12.9	12.9
104RU 3 X 2	3	2	1.7	14	24.6	36.6	15.3	12.9
104RU 3 X 3	3	3	2.4	14	24.6	36.6	15.3	12.9
104RU 3 X 4	3	4	2.4	14	25.4	35.4	15.3	13.7
104RU 3 X 6	3	6	4.8	15	27.4	42.3	16.2	15.3
104RU 10 X 8	10	8	4.8	18	29.5	44.5	17.2	15.3
104RU 10 X 8	10	8	5.4	18	30.0	45.1	17.2	16.2
104RU 12 X 8	12	8	4.8	22	29.5	47.0	22.8	15.3
104RU 12 X 8	12	8	5.4	22	30.2	47.8	22.8	16.2
104RU 12 X 10	12	10	7.9	22	31.0	46.7	22.8	17.2
104RU 16 X 10	16	10	7.9	24	31.8	48.5	24.4	17.2
104RU 16 X 12	16	12	9.5	24	31.8	52.0	24.4	22.8
104RU 16 X 12	16	12	9.5	27	33.3	53.5	24.4	22.8
104RU 25 X 18	25	18	15.1	35	38.0	61.0	31.3	24.4
104RU 25 X 20	25	20	15.8	35	39.9	62.3	31.3	26.0
104RU 38 X 20	38	20	15.8	55	49.8	87.5	49.4	26.0
104RU 38 X 25	38	25	21.8	55	55.5	95.4	49.4	31.3

### TUBE (METRIC) TO TUBE (INCH)

Part No.	A Tube 1 O.D. mm	A1 Tube 2 O.D. inch	D mm	W Hex. Flat mm	N mm	L mm	I mm	I1 mm
104RU 2 X 1/4	2	1/4	1.7	14	24.6	36.6	12.9	15.2
104RU 3 X 1/8	3	1/8	2.4	12	22.1	35.2	12.9	12.7
104RU 4 X 1/8	4	1/8	2.4	12	23.4	36.5	13.7	12.7
104RU 4 X 1/4	4	1/4	2.4	14	25.4	39.4	13.7	15.2
104RU 5 X 1/8	5	1/8	2.4	14	24.6	38.5	15.3	12.7
104RU 5 X 1/4	5	1/4	4.8	14	26.2	41.0	15.3	15.2
104RU 5 X 5/16	5	5/16	4.8	14	27.4	42.3	15.3	16.2
104RU 6 X 1/8	6	1/8	2.4	15	25.7	39.8	16.2	12.7
104RU 6 X 1/4	6	1/4	4.8	15	27.4	42.3	16.2	15.2
104RU 6 X 3/8	6	3/8	6.4	16	29.5	44.3	16.2	16.8
104RU 10 X 1/8	10	1/8	2.4	18	27.7	41.6	17.2	12.7
104RU 10 X 1/4	10	1/4	4.8	18	29.5	44.5	17.2	15.2
104RU 10 X 5/16	10	5/16	6.4	18	30.0	45.1	17.2	16.2
104RU 10 X 3/8	10	3/8	7.1	18	31.0	45.9	17.2	16.8
104RU 12 X 5/16	12	5/16	6.4	22	30.2	47.8	22.8	16.2
104RU 12 X 3/8	12	3/8	7.1	22	31.0	48.4	22.8	16.8
104RU 12 X 1/2	12	1/2	9.5	22	31.0	51.2	22.8	22.9
104RU 15 X 1/2	15	1/2	10.3	24	31.8	52.0	24.4	22.9
104RU 10 X 5/8	10	5/8	12.7	24	31.8	52.0	24.4	24.4
104RU 18 X 3/4	18	3/4	15.1	27	33.3	53.5	24.4	24.4

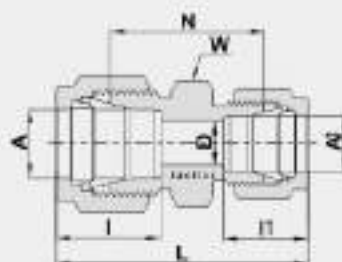
■ - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

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## REDUCING UNION 104RU

**104RU**  
REDUCING UNION  
Kont'd



**TUBE (INCH) TO TUBE (INCH)**

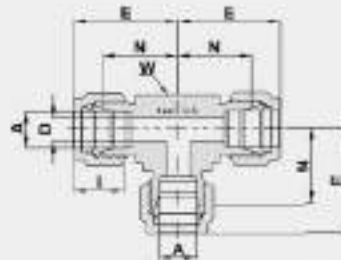
Part No.	A		B		D		W		N		L		I		I1	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
104RU 1/8 X 1/16	3/8	9.52	3/16	4.76	.05	1.27	7/16	.81	20.57	1.22	30.99	50	12.7	34	8.6	
104RU 3/16 X 1/16	5/16	7.93	3/16	4.76	.05	1.27	7/16	.80	21.84	1.27	32.26	54	13.7	34	8.6	
104RU 3/16 X 1/8	5/16	7.93	1/8	3.17	.09	2.28	7/16	.92	23.90	1.44	36.57	54	13.7	50	12.7	
104RU 1/4 X 1/16	1/4	6.35	3/16	4.76	.05	1.27	1/2	.91	23.11	1.25	34.29	60	15.2	34	8.6	
104RU 1/4 X 1/8	1/4	6.35	1/8	3.17	.09	2.28	1/2	.97	24.63	1.52	38.90	60	15.2	50	12.7	
104RU 1/4 X 3/16	1/4	6.35	3/16	4.76	.12	3.04	1/2	1.00	25.40	1.55	37.37	60	15.2	54	13.7	
104RU 5/16 X 1/8	5/16	7.93	1/8	3.17	.09	2.28	9/16	1.01	25.65	1.56	39.62	64	16.2	50	12.7	
104RU 5/16 X 1/4	5/16	7.93	1/4	6.35	.19	4.82	9/16	1.08	27.43	1.66	42.16	64	16.2	60	15.2	
104RU 3/8 X 1/16	3/8	9.52	3/16	4.76	.05	1.27	5/8	1.00	25.40	1.44	36.58	66	16.8	34	8.6	
104RU 3/8 X 1/8	3/8	9.52	1/8	3.17	.09	2.28	5/8	1.06	26.92	1.61	40.99	66	16.8	50	12.7	
104RU 3/8 X 1/4	3/8	9.52	1/4	6.35	.19	4.82	5/8	1.12	28.44	1.70	43.18	66	16.8	60	15.2	
104RU 3/8 X 5/16	3/8	9.52	5/16	7.93	.25	6.35	5/8	1.15	29.46	1.74	44.19	66	16.8	64	16.2	
104RU 1/2 X 1/8	1/2	12.70	1/8	3.17	.09	2.28	13/16	1.12	28.44	1.78	45.21	80	22.9	50	12.7	
104RU 1/2 X 1/4	1/2	12.70	1/4	6.35	.19	4.82	13/16	1.18	29.46	1.85	46.99	80	22.9	60	15.2	
104RU 1/2 X 3/8	1/2	12.70	3/8	9.52	.28	7.11	13/16	1.22	30.98	1.91	48.51	80	22.9	66	16.8	
104RU 5/8 X 3/8	5/8	15.87	3/8	9.52	.28	7.11	15/16	1.25	31.75	1.94	49.27	86	24.4	66	16.8	
104RU 5/8 X 1/2	5/8	15.87	1/2	12.70	.41	10.41	15/16	1.25	31.75	2.05	52.07	86	24.4	90	22.9	
104RU 3/4 X 1/4	3/4	19.05	1/4	6.35	.19	4.82	1 1/16	1.25	31.75	1.94	49.29	96	24.4	60	15.2	
104RU 3/4 X 3/8	3/4	19.05	3/8	9.52	.28	7.11	1 1/16	1.31	33.27	2.00	50.90	96	24.4	66	16.8	
104RU 3/4 X 1/2	3/4	19.05	1/2	12.70	.41	10.41	1 1/16	1.31	33.27	2.11	53.99	96	24.4	90	22.9	
104RU 3/4 X 5/8	3/4	19.05	5/8	15.87	.50	12.70	1 1/16	1.31	33.27	2.11	53.99	96	24.4	96	24.4	
104RU 1 X 1/2	1	25.4	1/2	12.70	.41	10.41	13/8	1.50	38.10	2.38	60.45	123	31.2	90	22.9	
104RU 1 X 3/4	1	25.4	3/4	19.05	.62	15.75	13/8	1.50	38.10	2.38	60.45	123	31.2	96	24.4	

\* - Dimension is minimum sizing. Dimensions are for reference only, and are subject to change without notice.



# UNION TEE 105TE

## 105TE UNION TEE



### ALL TUBE (METRIC)

Part No.	A Tube O.D.		D		W Wrench Flat		N		E		I	
	mm	mm	mm	mm	inch	mm	mm	mm	mm	mm	mm	mm
105TE_2	2		1.7		3/8	9.5	15.7		22.3		12.8	
105TE_3	3		2.4		3/8	9.5	15.7		22.3		12.8	
105TE_4	4		2.4		1/2	12.7	18.8		25.4		13.7	
105TE_6	6		4.8		1/2	12.7	19.6		27.0		15.3	
105TE_8	8		6.4		5/8	15.8	22.4		29.9		16.2	
105TE_10	10		7.9		11/16	17.5	23.9		31.5		17.2	
105TE_12	12		9.5		13/16	20.6	25.9		36.0		22.8	
105TE_14	14		11.1		15/16	23.8	28.7		38.8		24.4	
105TE_15	15		11.9		15/16	23.8	29.7		38.8		24.4	
105TE_16	16		12.7		15/16	23.8	28.7		38.8		24.4	
105TE_18	18		15.1		1 1/16	27.0	29.7		38.8		24.4	
105TE_20	20		15.9		1 3/8	34.9	34.5		44.6		25.0	
105TE_22	22		19.3		1 3/8	34.9	34.5		44.6		26.0	
105TE_25	25		21.8		1 3/8	34.9	36.8		49.1		31.3	
105TE_30	30		33.7		-	55.0	55.4		64.0		49.4	
105TE_50	50		45.2		2 3/4	69.8	68.9		106.0		65.0	

### ALL TUBE (INCH)

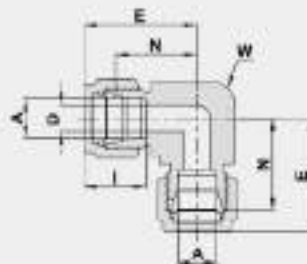
Part No.	A Tube O.D.		D		W Wrench Flat		N		E		I	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
105TE_1/16	1/16	1.58	.05	1.27	3/8	9.5	.65	14.00	.70	17.80	.24	6.6
105TE_1/8	1/8	3.17	.09	2.28	3/8	9.5	.62	15.74	.66	22.35	.50	12.7
105TE_3/16	3/16	4.76	.12	3.04	1/2	12.7	.70	17.80	.56	24.40	.54	13.7
105TE_1/4	1/4	6.35	.13	4.62	1/2	12.7	.77	19.55	1.06	26.90	.60	16.0
105TE_5/16	5/16	7.92	.25	6.35	5/8	15.9	.68	22.35	1.17	29.71	.64	16.2
105TE_3/8	3/8	9.52	.26	7.11	5/8	15.9	.91	23.11	1.20	30.48	.68	16.8
105TE_1/2	1/2	12.70	.41	10.41	13/16	20.6	1.02	25.90	1.42	36.08	.80	22.9
105TE_5/8	5/8	15.87	.50	12.70	15/16	23.8	1.13	28.70	1.53	38.90	.66	24.4
105TE_3/4	3/4	19.05	.62	15.74	1 1/16	27.0	1.17	29.70	1.57	39.90	.66	24.4
105TE_7/8	7/8	22.22	.72	18.29	1 3/8	34.9	1.36	34.54	1.76	44.70	1.02	25.9
105TE_1	1	25.40	.88	22.28	1 3/8	34.9	1.45	36.83	1.93	49.00	1.23	31.2
105TE_1 1/4	*1 1/4	31.75	1.09	27.7	1 11/16	42.9	1.75	44.50	2.62	66.55	1.62	41.2
105TE_1 1/2	*1 1/2	38.10	1.34	34.0	2	50.8	2.00	50.80	3.07	77.99	1.97	50.0
105TE_2	*2	50.80	1.61	45.97	2 3/4	69.8	2.75	69.85	4.22	107.19	2.66	67.6

\* - Dimension is minimum sizing. Dimensions are for reference only, and are subject to change without notice.



## UNION ELBOW 106EL

### 106EL UNION ELBOW



#### TUBE (METRIC) TO TUBE (METRIC)

Part No.	A Tube O.D.		D		W Wrench Flat		N		E		I	
	mm	mm	mm	mm	Inch	mm	mm	mm	mm	mm	mm	mm
106EL_3	3		2.4		3/8	9.5	15.7		22.3		12.9	
106EL_4	4		2.4		1/2	12.7	16.8		25.4		13.7	
106EL_6	6		4.8		1/2	12.7	16.8		27.0		15.3	
106EL_8	8		6.4		9/16	14.3	21.3		28.8		16.2	
106EL_10	10		7.6		11/16	17.5	23.8		31.5		17.2	
106EL_12	12		9.5		13/16	20.6	25.9		35.0		22.8	
106EL_14	14		11.1		15/16	23.8	27.9		38.0		24.4	
106EL_15	15		11.9		16/16	23.8	27.9		39.0		24.4	
106EL_16	16		12.7		15/16	23.8	27.9		39.0		24.4	
106EL_18	18		15.1		1 1/16	27.0	29.7		39.8		24.4	
106EL_20	20		15.0		1 3/8	34.9	34.5		44.6		26.0	
106EL_22	22		19.3		1 3/8	34.9	34.5		44.6		26.0	
106EL_25	25		21.8		1 3/8	34.9	36.8		49.1		31.3	
106EL_38	38		33.7		-	55.0	56.4		64.0		43.4	
106EL_50	50		45.2		2 3/4	69.9	69.9		105.0		65.0	

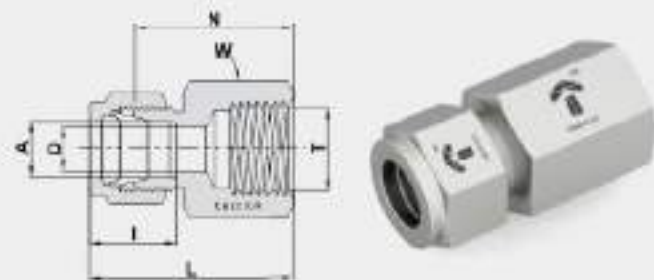
#### TUBE (INCH) TO TUBE (INCH)

Part No.	A Tube O.D.		D		W Wrench Flat		N		E		I	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
106EL 1/16	1/16	1.58	.05	1.27	3/8	9.5	.55	14.00	.70	17.80	.34	.86
106EL 1/8	1/8	3.17	.09	2.28	3/8	9.5	.62	15.74	.88	22.35	.50	12.7
106EL 3/16	3/16	4.76	.12	3.04	1/2	12.7	.74	18.80	1.00	25.40	.54	13.7
106EL 1/4	1/4	6.35	.19	4.82	1/2	12.7	.77	19.55	1.09	28.02	.60	15.2
106EL 5/16	5/16	7.93	.25	6.35	9/16	14.3	.84	21.33	1.13	28.70	.64	16.2
106EL 3/8	3/8	9.52	.28	7.11	5/8	15.9	.91	23.11	1.20	30.48	.68	16.8
106EL 1/2	1/2	12.70	.41	10.41	13/16	20.6	1.02	25.90	1.42	36.03	.90	22.9
106EL 5/8	5/8	15.87	.50	12.70	15/16	23.8	1.10	27.94	1.50	38.10	.96	24.4
106EL 3/4	3/4	19.05	.62	15.74	1 1/16	27.0	1.17	29.70	1.57	39.90	.98	24.4
106EL 7/8	7/8	22.22	.72	18.29	1 3/8	34.9	1.35	34.54	1.78	44.70	1.02	25.9
106EL 1	1	25.40	.88	22.35	1 3/4	34.9	1.45	36.83	1.83	46.00	1.23	31.2
106EL_1 1/4	*1 1/4	31.75	1.05	27.70	1 11/16	42.9	1.75	44.50	2.62	66.05	1.62	41.2
106EL_1 1/2	*1 1/2	38.10	1.34	34.00	2	50.8	2.00	50.80	3.07	77.99	1.97	50.0
106EL 2	*2	50.80	1.81	45.97	2 3/4	69.9	2.75	69.85	4.22	107.19	2.66	67.6

\* - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

# FEMALE CONNECTOR 107FC

## 107FC FEMALE CONNECTOR



TUBE (METRIC) TO FEMALE NPT THREAD

Part No.	Tube O.D.		D	W	N	L	I
	mm	inch					
107FC 3 X 1/8	3	1/8	2.4	14	22.1	29.7	12.9
107FC 3 X 1/4	3	1/4	2.4	19	23.9	33.5	12.9
107FC 4 X 1/8	4	1/8	2.4	14	23.1	29.7	13.7
107FC 6 X 1/8	6	1/8	4.8	14	23.9	31.3	15.3
107FC 6 X 1/4	6	1/4	4.8	19	25.4	35.9	15.3
107FC 6 X 3/8	6	3/8	4.8	22	30.2	37.5	15.3
107FC 8 X 1/2	8	1/2	4.8	27	35.1	42.5	15.3
107FC 8 X 3/8	8	3/8	6.4	15	24.6	32.1	16.2
107FC 8 X 1/4	8	1/4	6.4	19	25.5	37.0	16.2
107FC 8 X 3/8	8	3/8	6.4	22	31.0	38.5	16.2
107FC 8 X 1/2	8	1/2	6.4	27	35.9	43.3	16.2
107FC 10 X 1/4	10	1/4	7.9	19	30.2	37.8	17.2
107FC 10 X 3/8	10	3/8	7.9	22	31.8	39.4	17.2
107FC 10 X 1/2	10	1/2	7.9	27	36.6	44.2	17.2
107FC 12 X 1/4	12	1/4	9.5	22	30.2	40.9	22.8
107FC 12 X 3/8	12	3/8	9.5	22	31.8	41.9	22.8
107FC 12 X 1/2	12	1/2	9.5	27	36.6	46.7	22.8
107FC 15 X 1/2	15	1/2	11.9	27	36.6	46.7	24.4
107FC 16 X 1/2	16	1/2	12.7	27	36.6	46.9	24.4
107FC 20 X 1/2	20	1/2	15.9	30	37.8	47.9	26.0
107FC 20 X 3/4	20	3/4	15.9	35	38.6	49.7	26.0
107FC 22 X 3/4	22	3/4	18.3	35	38.6	49.7	26.0
107FC 22 X 1	22	1	18.3	41	47.8	57.9	26.0
107FC 25 X 3/4	25	3/4	21.9	35	41.1	53.4	31.3
107FC 25 X 1	25	1	21.9	41	50.0	62.3	31.3

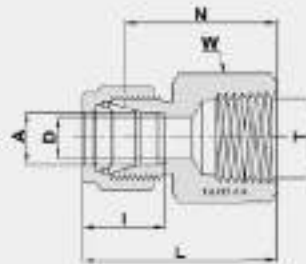
\* - Dimension is minimum sizing. Dimensions are for reference only, and are subject to change without notice.

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## FEMALE CONNECTOR 107FC

**107FC**  
FEMALE CONNECTOR  
(Cont'd)



**TUBE (INCH) TO FEMALE NPT THREAD**

Part No.	A Tube O.D.		T NPT	D		W Hex Dia.	N		L		I	
	inch	mm		inch	mm		inch	mm	inch	mm	inch	mm
107FC 1/16 X 1/8	1/16	1.58	1/16	.05	1.27	7/16	.78	19.81	.93	23.62	.34	8.8
107FC 1/16 X 1/8	1/16	1.58	1/8	.05	1.27	9/16	.81	20.57	.96	24.38	.34	8.8
107FC 1/8 X 1/8	1/8	3.17	1/8	.09	2.28	9/16	.87	22.10	1.13	28.70	.50	12.7
107FC 1/8 X 1/4	1/8	3.17	1/4	.09	2.28	3/4	1.08	26.92	1.32	33.52	.50	12.7
107FC 3/16 X 1/8	3/16	4.76	1/8	.12	3.04	9/16	.91	23.11	1.17	29.71	.54	13.7
107FC 1/4 X 1/8	1/4	6.35	1/8	.19	4.82	9/16	.94	23.87	1.23	31.24	.60	15.2
107FC 1/4 X 1/4	1/4	6.35	1/4	.19	4.82	3/4	1.12	28.44	1.41	35.81	.60	15.2
107FC 1/4 X 3/8	1/4	6.35	3/8	.19	4.82	7/8	1.19	30.22	1.48	37.59	.60	15.2
107FC 1/4 X 1/2	1/4	6.35	1/2	.19	4.82	1 1/16	1.38	35.00	1.67	42.42	.60	15.2
107FC 5/16 X 1/8	5/16	7.93	1/8	.25	6.35	9/16	.97	24.63	1.26	32.00	.64	16.2
107FC 5/16 X 1/4	5/16	7.93	1/4	.25	6.35	3/4	1.16	29.46	1.45	36.83	.64	16.2
107FC 3/8 X 1/8	3/8	9.52	1/8	.28	7.11	5/8	1.00	25.40	1.29	32.76	.66	16.8
107FC 3/8 X 1/4	3/8	9.52	1/4	.28	7.11	3/4	1.19	30.22	1.48	37.59	.66	16.8
107FC 3/8 X 3/8	3/8	9.52	3/8	.28	7.11	7/8	1.25	31.75	1.54	39.11	.66	16.8
107FC 3/8 X 1/2	3/8	9.52	1/2	.28	7.11	1 1/16	1.44	36.57	1.73	43.94	.66	16.8
107FC 3/8 X 3/4	3/8	9.52	3/4	.28	7.11	1 5/16	1.59	40.40	1.88	47.75	.66	16.8
107FC 1/2 X 1/4	1/2	12.70	1/4	.41	10.41	13/16	1.19	30.22	1.55	40.38	.90	22.9
107FC 1/2 X 3/8	1/2	12.70	3/8	.41	10.41	7/8	1.25	31.75	1.65	41.91	.90	22.9
107FC 1/2 X 1/2	1/2	12.70	1/2	.41	10.41	1 1/16	1.44	36.57	1.84	46.73	.90	22.9
107FC 1/2 X 3/4	1/2	12.70	3/4	.41	10.41	1 5/16	1.50	38.10	1.90	48.26	.90	22.9
107FC 5/8 X 3/8	5/8	15.87	3/8	.50	12.70	15/16	1.25	31.75	1.65	41.91	.96	24.4
107FC 5/8 X 1/2	5/8	15.87	1/2	.50	12.70	1 1/16	1.44	36.57	1.84	46.73	.96	24.4
107FC 5/8 X 3/4	5/8	15.87	3/4	.50	12.70	1 5/16	1.50	38.10	1.90	48.26	.96	24.4
107FC 3/4 X 1/2	3/4	19.05	1/2	.62	15.75	1 1/16	1.44	36.57	1.84	46.73	.96	24.4
107FC 3/4 X 3/4	3/4	19.05	3/4	.62	15.75	1 5/16	1.50	38.10	1.90	48.26	.96	24.4
107FC 7/8 X 3/4	7/8	22.22	3/4	.72	18.28	1 5/16	1.56	39.62	1.96	49.79	1.02	25.9
107FC 1 X 3/4	1	25.40	3/4	.86	22.35	1 3/8	1.62	41.14	2.10	53.34	1.23	31.2
107FC 1 X 1	1	25.40	1	.86	22.35	1 5/8	1.87	50.03	2.45	62.23	1.23	31.2
107FC 1 1/4 X 1 1/4	*1 1/4	31.75	1 1/4	1.09	27.70	2 1/4	2.07	52.59	2.94	74.69	1.62	41.2
107FC 1 1/2 X 1 1/2	*1 1/2	38.10	1 1/2	1.34	34.00	2 3/8	2.21	56.13	3.29	83.31	1.97	50.0
107FC 2 X 2	*2	50.80	2	1.61	45.97	2 7/8	2.53	64.26	4.00	101.60	2.66	67.6

\*I - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.



# REDUCER 108RR

## 108RR REDUCER



**TUBE (METRIC) TO STUB (METRIC)**

Part No.	A	A1	D	W	N	L	I
	Tube O.D. mm	Tube O.D. mm	mm	Max. Flat mm	mm	mm	mm
108RR_2 X 3	2	3	1.7	12	26.0	33.5	12.9
108RR_3 X 4	3	4	2.2	12	28.4	35.0	12.9
108RR_3 X 6	3	6	2.4	12	29.5	36.1	12.9
108RR_3 X 10	3	10	2.4	14	31.8	36.4	12.9
108RR_4 X 6	4	6	2.4	12	30.5	37.1	13.7
108RR_5 X 3	5	3	2.1	14	29.5	36.8	15.3
108RR_5 X 6	5	6	4.0	14	32.0	36.8	15.3
108RR_5 X 10	5	10	4.8	14	33.0	40.7	15.3
108RR_6 X 3	6	3	4.8	14	38.9	45.3	15.3
108RR_6 X 10	6	10	4.0	22	42.2	46.0	15.3
108RR_6 X 6	6	6	4.0	15	32.8	40.3	16.2
108RR_6 X 10	6	10	6.4	15	34.5	42.0	16.2
108RR_6 X 12	6	12	6.4	15	40.1	47.6	16.2
108RR_10 X 6	10	6	4.0	18	34.8	42.4	17.2
108RR_10 X 8	10	8	5.6	18	35.8	43.4	17.2
108RR_10 X 12	10	12	7.8	18	42.2	46.8	17.2
108RR_10 X 15	10	15	7.0	19	43.7	51.3	17.2
108RR_10 X 18	10	18	7.9	22	43.7	51.3	17.2
108RR_12 X 6	12	6	4.0	22	34.8	44.9	22.8
108RR_12 X 8	12	8	5.6	22	35.8	45.9	22.8
108RR_12 X 10	12	10	7.1	22	36.8	46.7	22.8
108RR_12 X 16	12	16	9.5	22	43.7	53.6	22.8
108RR_12 X 18	12	18	9.5	22	43.7	53.6	22.8
108RR_12 X 20	12	20	9.5	22	46.0	56.1	22.8
108RR_12 X 22	12	22	9.5	24	46.0	56.1	22.8
108RR_12 X 25	12	25	9.5	27	52.3	62.4	22.8
108RR_16 X 12	16	12	6.8	24	42.8	53.0	24.4
108RR_16 X 12	16	12	6.8	27	44.5	54.0	24.4
108RR_18 X 10	18	10	12.7	27	40.0	59.1	24.4
108RR_18 X 20	18	20	15.1	27	47.5	57.6	24.4
108RR_18 X 22	18	22	15.1	27	47.5	57.6	24.4
108RR_18 X 25	18	25	15.1	27	52.3	62.4	24.4
108RR_20 X 16	20	16	12.7	30	47.8	57.9	26.0
108RR_20 X 18	20	18	13.9	30	47.8	57.9	26.0
108RR_20 X 22	20	22	15.5	30	48.3	59.4	26.0

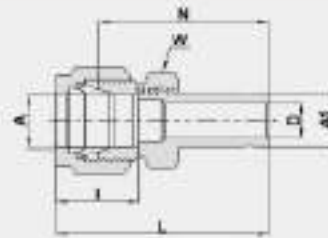
W - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

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## REDUCER 108RR

**108RR**  
REDUCER  
(Cont'd)



### TUBE (METRIC) TO STUB (METRIC)

Part No.	A	A1	D	W	N	L	I
	Tube O.D.	Stub O.D.		Stub O.D.			
	mm	mm	mm	mm	mm	mm	mm
108RR_20 X 25	20	25	15.9	30	54.1	64.2	26.0
108RR_22 X 18	22	18	13.9	30	47.8	57.9	26.0
108RR_22 X 20	22	20	15.1	30	49.3	59.4	26.0
108RR_22 X 25	22	25	15.3	30	54.1	64.2	26.0
108RR_25 X 18	25	18	12.9	35	50.9	62.1	31.3
108RR_25 X 20	25	20	15.1	35	52.3	64.6	31.3
108RR_2 X 10	2	1/8	2.0	12	26.9	33.5	12.9
108RR_3 X 1/8	3	1/8	2.0	12	26.9	33.5	12.9
108RR_3 X 1/4	3	1/4	2.4	12	29.5	36.1	12.9
108RR_4 X 1/4	4	1/4	2.4	12	30.5	37.1	13.7
108RR_6 X 1/8	6	1/8	3.2	14	30.5	36.0	15.3
108RR_6 X 5/16	6	5/16	4.8	14	32.5	39.9	15.3
108RR_6 X 3/8	6	3/8	4.8	14	33.8	40.7	15.3
108RR_6 X 1/2	6	1/2	4.8	14	36.9	45.3	15.3
108RR_8 X 3/8	8	3/8	6.4	15	34.5	42.0	16.2
108RR_8 X 1/2	8	1/2	6.4	15	40.1	47.8	16.2
108RR_10 X 3/8	10	3/8	8.0	19	36.6	44.0	17.2
108RR_10 X 1/2	10	1/2	7.8	18	42.2	49.8	17.2
108RR_12 X 1/2	12	1/2	9.4	22	42.2	52.3	22.8
108RR_12 X 3/4	12	3/4	9.4	22	43.7	53.8	22.8
108RR_18 X 3/4	18	3/4	15.0	27	46.0	56.1	24.4
108RR_18 X 1	18	1	15.1	27	52.3	62.4	24.4
108RR_25 X 1	25	1	20.3	36	57.2	66.5	31.3

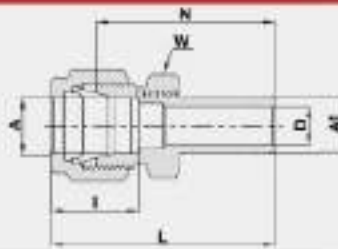
\*N\* - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

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# REDUCER 108RR

**108RR**  
REDUCER  
(Cont'd)



**TUBE (INCH) TO STUB (INCH)**

Part No.	A Tube O.D.		A1 Stub O.D.		D		W Hex Flat	N		L		I	
	Inch	mm	Inch	mm	Inch	mm	Inch	Inch	mm	Inch	mm	Inch	mm
108RR_1/16 X 1/8	1/16	1.58	1/8	3.17	.05	1.27	5/16	1.00	25.40	1.15	29.21	.34	8.6
108RR_1/16 X 1/4	1/16	1.58	1/4	6.35	.05	1.27	5/16	1.09	27.68	1.24	31.50	.34	8.6
108RR_1/8 X 1/16	1/8	3.17	1/16	1.58	.03	.76	7/16	.86	22.35	1.14	29.96	.50	12.7
108RR_1/8 X 1/8	1/8	3.17	1/8	3.17	.08	2.03	7/16	1.06	26.92	1.32	33.52	.50	12.7
108RR_1/8 X 3/16	1/8	3.17	3/16	4.76	.09	2.28	7/16	1.09	27.68	1.35	34.29	.50	12.7
108RR_1/8 X 1/4	1/8	3.17	1/4	6.35	.09	2.28	7/16	1.16	29.46	1.42	36.06	.50	12.7
108RR_1/8 X 3/8	1/8	3.17	3/8	9.52	.09	2.28	7/16	1.22	30.98	1.48	37.59	.50	12.7
108RR_1/8 X 1/2	1/8	3.17	1/2	12.70	.09	2.28	9/16	1.48	37.59	1.74	44.20	.50	12.7
108RR_3/16 X 1/8	3/16	4.76	1/8	3.17	.08	2.03	7/16	1.11	28.19	1.37	34.80	.54	13.7
108RR_3/16 X 1/4	3/16	4.76	1/4	6.35	.12	3.04	7/16	1.20	30.48	1.46	37.08	.54	13.7
108RR_1/4 X 1/8	1/4	6.35	1/8	3.17	.08	2.03	1/2	1.16	29.46	1.45	36.83	.60	15.2
108RR_1/4 X 3/16	1/4	6.35	3/16	4.76	.12	3.04	1/2	1.19	30.22	1.48	37.59	.60	15.2
108RR_1/4 X 1/4	1/4	6.35	1/4	6.35	.17	4.20	1/2	1.25	31.75	1.54	39.11	.60	15.2
108RR_1/4 X 5/16	1/4	6.35	5/16	7.93	.19	4.82	1/2	1.28	32.51	1.57	39.87	.60	15.2
108RR_1/4 X 3/8	1/4	6.35	3/8	9.52	.19	4.82	1/2	1.31	33.27	1.60	40.64	.60	15.2
108RR_1/4 X 1/2	1/4	6.35	1/2	12.70	.19	4.82	9/16	1.53	38.96	1.82	45.22	.60	15.2
108RR_1/4 X 5/8	1/4	6.35	5/8	15.87	.19	4.82	11/16	1.60	40.64	1.89	48.00	.60	15.2
108RR_1/4 X 3/4	1/4	6.35	3/4	19.05	.19	4.82	13/16	1.59	40.39	1.88	47.75	.60	15.2
108RR_5/16 X 3/8	5/16	7.93	3/8	9.52	.25	6.35	9/16	1.36	34.54	1.65	41.91	.64	16.2
108RR_5/16 X 1/2	5/16	7.93	1/2	12.70	.25	6.35	9/16	1.58	40.13	1.87	47.49	.64	16.2
108RR_3/8 X 1/4	3/8	9.52	1/4	6.35	.17	4.20	5/8	1.34	34.03	1.63	41.40	.66	16.8
108RR_3/8 X 3/8	3/8	9.52	3/8	9.52	.27	6.85	5/8	1.41	35.81	1.70	43.18	.66	16.8
108RR_3/8 X 1/2	3/8	9.52	1/2	12.70	.28	7.11	5/8	1.62	41.14	1.91	48.51	.66	16.8
108RR_3/8 X 5/8	3/8	9.52	5/8	15.87	.29	7.11	11/16	1.69	42.92	1.98	50.29	.66	16.8
108RR_3/8 X 3/4	3/8	9.52	3/4	19.05	.29	7.11	13/16	1.62	42.02	1.98	50.29	.66	16.8
108RR_1/2 X 1/4	1/2	12.70	1/4	6.35	.17	4.20	13/16	1.37	34.80	1.77	44.96	.90	22.9
108RR_1/2 X 3/8	1/2	12.70	3/8	9.52	.27	6.85	13/16	1.44	36.58	1.84	46.74	.90	22.9
108RR_1/2 X 1/2	1/2	12.70	1/2	12.70	.37	9.40	13/16	1.66	42.16	2.06	52.32	.90	22.9
108RR_1/2 X 5/8	1/2	12.70	5/8	15.87	.41	10.41	13/16	1.72	43.68	2.12	53.84	.90	22.9
108RR_1/2 X 3/4	1/2	12.70	3/4	19.05	.41	10.41	13/16	1.72	43.68	2.12	53.84	.90	22.9
108RR_1/2 X 1	1/2	12.70	1	25.40	.41	10.41	1 1/16	1.97	50.03	2.37	60.15	.90	22.9
108RR_3/8 X 3/4	5/8	15.87	3/4	19.05	.50	12.70	15/16	1.75	44.45	2.15	54.61	.96	24.4
108RR_5/8 X 7/8	5/8	15.87	7/8	22.22	.50	12.70	15/16	1.81	45.97	2.21	56.13	.96	24.4
108RR_5/8 X 1	5/8	15.87	1	25.40	.50	12.70	1 1/16	2.00	50.80	2.40	60.96	.96	24.4
108RR_3/4 X 1/2	3/4	19.05	1/2	12.70	.37	9.40	1 1/16	1.75	44.45	2.15	54.61	.96	24.4
108RR_3/4 X 1	3/4	19.05	1	25.40	.50	12.70	1 1/16	2.06	52.32	2.48	62.48	.96	24.4
108RR_1X 1 1/4	1	25.40	*1 1/4	31.75	.68	22.35	1 3/8	2.69	68.33	3.17	80.52	1.23	31.2
108RR_1X 1 1/2	1	25.40	*1 1/2	38.10	.68	22.35	1 5/8	3.03	76.98	3.51	89.15	1.23	31.2
108RR_1 1/4 X 1	1 1/4	31.75	*1 1/4	31.75	1.06	27.7	1 3/4	3.23	82.00	4.10	104.1	1.62	41.2

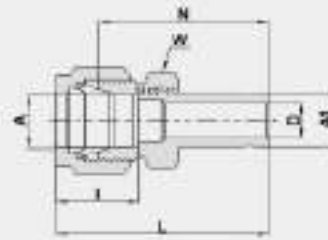
\* - Dimension to minimum opening. Dimensions are for reference only, and are subject to change without notice.

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## REDUCER 108RR

**108RR**  
REDUCER  
(Cont'd)



**TUBE (INCH) TO STUB (METRIC)**

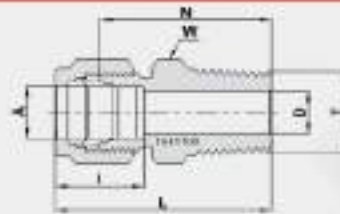
Part No.	A Tube O.D.		A1 Tube O.D.	D		W Hex Flat	N		L		I	
	Inch	mm	mm	Inch	mm	Inch	Inch	mm	Inch	mm	Inch	mm
108RR_1/8 X 6	1/8	3.17	6	.09	2.30	7/16	1.16	29.46	1.42	36.06	.50	12.7
108RR_1/4 X 6	1/4	6.35	6	.16	4.00	1/2	1.25	31.75	1.54	39.11	.60	15.2
108RR_3/8 X 8	3/8	9.52	8	.22	5.60	5/8	1.42	36.06	1.71	43.43	.66	16.8
108RR_3/4 X 12	3/4	19.05	12	.2	7.11	5/8	1.62	41.15	1.91	48.51	.66	16.8

\*I\* - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.



# MALE CONNECTOR 109MC

## 109MC MALE CONNECTOR



TUBE (METRIC) MALE NPT THREAD

Part No.	A	T	D	W	N	L	I
	1/2" O.D.	(NPT)		Hex. Flat			
	mm	Inch	mm	mm	mm	mm	mm
109MC 2 X 1/8	2	1/8	1.7	12	23.8	30.5	12.9
109MC 3 X 1/8	3	1/8	2.4	12	23.8	30.5	12.9
109MC 3 X 1/4	3	1/4	2.4	14	29.0	35.8	12.9
109MC 4 X 1/8	4	1/8	2.4	12	24.6	31.2	13.7
109MC 4 X 1/4	4	1/4	2.4	14	29.7	35.3	13.7
109MC 6 X 1/8	6	1/8	4.8	14	25.4	32.8	15.3
109MC 6 X 1/4	6	1/4	4.8	14	30.5	37.9	15.3
109MC 6 X 3/8	6	3/8	4.8	18	31.0	38.4	15.3
109MC 6 X 1/2	6	1/2	4.8	22	37.3	44.7	15.3
109MC 8 X 1/2	8	1/2	4.8	15	20.7	34.2	15.2
109MC 8 X 1/4	8	1/4	6.4	15	31.2	38.7	16.2
109MC 8 X 3/8	8	3/8	6.4	18	31.8	39.3	16.2
109MC 8 X 1/2	8	1/2	6.4	22	38.1	45.6	16.2
109MC 10 X 1/8	10	1/8	4.8	18	26.7	35.3	17.2
109MC 10 X 1/4	10	1/4	7.9	18	32.3	40.9	17.2
109MC 10 X 3/8	10	3/8	7.9	18	33.3	40.9	17.2
109MC 10 X 1/2	10	1/2	7.9	22	38.8	46.5	17.2
109MC 10 X 3/4	10	3/4	7.9	27	40.4	48.0	17.2
109MC 12 X 1/8	12	1/8	4.8	22	26.7	38.8	22.8
109MC 12 X 1/4	12	1/4	7.1	22	33.3	43.4	22.8
109MC 12 X 3/8	12	3/8	9.5	22	33.3	43.4	22.8
109MC 12 X 1/2	12	1/2	9.5	22	38.8	49.0	22.8
109MC 12 X 3/4	12	3/4	9.5	27	40.4	50.5	22.8
109MC 14 X 1/4	14	1/4	7.1	24	34.0	44.1	24.4
109MC 14 X 3/8	14	3/8	9.5	24	34.0	44.1	24.4
109MC 14 X 1/2	14	1/2	11.1	24	38.8	49.0	24.4
109MC 15 X 1/2	15	1/2	11.9	24	38.8	49.0	24.4
109MC 16 X 3/8	16	3/8	9.5	24	34.0	44.1	24.4
109MC 16 X 1/2	16	1/2	11.9	24	38.8	49.0	24.4
109MC 16 X 3/4	16	3/4	12.7	27	40.4	50.5	24.4
109MC 18 X 1/2	18	1/2	11.9	27	40.4	50.5	24.4
109MC 18 X 3/4	18	3/4	15.1	27	40.4	50.5	24.4
109MC 20 X 1/2	20	1/2	11.9	30	42.2	52.3	25.0
109MC 20 X 3/4	20	3/4	15.9	30	42.2	52.3	25.0
109MC 22 X 3/4	22	3/4	15.9	30	42.2	52.3	25.0
109MC 22 X 1	22	1	18.3	35	47.0	57.1	25.0
109MC 25 X 1/2	25	1/2	11.9	35	45.2	57.5	31.3
109MC 25 X 3/4	25	3/4	15.9	35	45.2	57.5	31.3
109MC 25 X 1	25	1	21.8	35	50.0	62.3	31.3
109MC 38 X 1 1/2	38	1 1/2	33.7	55	64.0	91.6	49.4
109MC 50 X 2"	50	2"	45.2	8 inch	76.2	113.3	65.0

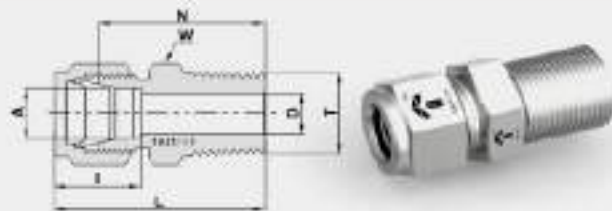
\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.

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## MALE CONNECTOR 109MC

**109MC**  
MALE CONNECTOR  
(Cont'd)



### TUBE (INCH) MALE NPT THREAD

Part No.	A Eto O.D.		T (NPT)	D		W Hex. Size		N		L		I	
	inch	mm		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
109MC_1/16 X 1/16	1/16	1.58	1/16	.05	1.27	5/16	.79	20.10	.94	23.88	.34	8.6	
109MC_1/16 X 1/8	1/16	1.58	1/8	.05	1.27	7/16	.88	22.35	1.03	25.10	.34	8.6	
109MC_1/16 X 1/4	1/16	1.58	1/4	.05	1.27	9/16	1.07	27.17	1.22	30.98	.34	8.6	
109MC_1/8 X 1/16	1/8	3.17	1/16	.05	2.28	7/16	.91	23.11	1.17	29.71	.50	12.7	
109MC_1/8 X 1/8	1/8	3.17	1/8	.05	2.28	7/16	.94	23.90	1.20	30.48	.50	12.7	
109MC_1/8 X 1/4	1/8	3.17	1/4	.05	2.28	9/16	1.14	28.95	1.40	35.56	.50	12.7	
109MC_1/8 X 3/8	1/8	3.17	3/8	.05	2.28	11/16	1.15	29.21	1.41	35.81	.50	12.7	
109MC_1/8 X 1/2	1/8	3.17	1/2	.05	2.28	7/8	1.40	35.56	1.66	42.16	.50	12.7	
109MC_3/16 X 1/8	3/16	4.76	1/8	.12	3.04	7/16	.97	24.83	1.23	31.24	.54	13.7	
109MC_3/16 X 1/4	3/16	4.76	1/4	.12	3.04	9/16	1.17	29.72	1.40	35.02	.54	13.7	
109MC_1/4 X 1/16	1/4	6.35	1/16	.12	3.04	1/2	1.00	25.40	1.29	32.76	.60	15.2	
109MC_1/4 X 1/8	1/4	6.35	1/8	.19	4.82	1/2	1.00	25.40	1.29	32.76	.60	15.2	
109MC_1/4 X 1/4	1/4	6.35	1/4	.19	4.82	9/16	1.20	30.50	1.48	37.85	.60	15.2	
109MC_1/4 X 3/8	1/4	6.35	3/8	.19	4.82	11/16	1.22	30.98	1.51	38.35	.60	15.2	
109MC_1/4 X 1/2	1/4	6.35	1/2	.19	4.82	7/8	1.47	37.34	1.76	44.70	.60	15.2	
109MC_1/4 X 3/4	1/4	6.35	3/4	.19	4.82	1 1/16	1.50	38.00	1.82	45.82	.60	15.2	
109MC_5/16 X 1/8	5/16	7.93	1/8	.19	4.82	9/16	1.05	26.67	1.34	34.03	.64	16.2	
109MC_5/16 X 1/4	5/16	7.93	1/4	.25	6.35	9/16	1.23	31.24	1.52	38.60	.64	16.2	
109MC_5/16 X 3/8	5/16	7.93	3/8	.25	6.35	11/16	1.25	31.75	1.54	39.11	.64	16.2	
109MC_3/8 X 1/8	3/8	9.52	1/8	.19	4.82	5/8	1.10	27.90	1.38	35.30	.66	16.8	
109MC_3/8 X 1/4	3/8	9.52	1/4	.28	7.11	5/8	1.28	32.51	1.57	39.87	.66	16.8	
109MC_3/8 X 3/8	3/8	9.52	3/8	.28	7.11	1 1/16	1.28	32.51	1.57	39.87	.66	16.8	
109MC_3/8 X 1/2	3/8	9.52	1/2	.28	7.11	7/8	1.53	39.00	1.82	45.23	.66	16.8	
109MC_3/8 X 3/4	3/8	9.52	3/4	.28	7.11	1 1/16	1.59	40.38	1.86	47.75	.66	16.8	
109MC_3/8 X 1	3/8	9.52	1	.28	7.11	1 3/8	1.85	46.99	2.14	54.35	.66	16.8	
109MC_1/2 X 1/8	1/2	12.70	1/8	.19	4.82	13/16	1.13	28.70	1.53	39.66	.80	22.9	
109MC_1/2 X 1/4	1/2	12.70	1/4	.28	7.11	13/16	1.31	33.27	1.71	43.43	.80	22.9	
109MC_1/2 X 3/8	1/2	12.70	3/8	.38	9.65	13/16	1.31	33.27	1.71	43.43	.80	22.9	
109MC_1/2 X 1/2	1/2	12.70	1/2	.41	10.41	7/8	1.53	39.00	1.93	49.02	.80	22.9	
109MC_1/2 X 3/4	1/2	12.70	3/4	.41	10.41	1 1/1	1.59	40.38	1.96	50.54	.80	22.9	
109MC_1/2 X 1	1/2	12.70	1	.41	10.41	1 3/8	1.85	47.00	2.25	57.15	.80	22.9	

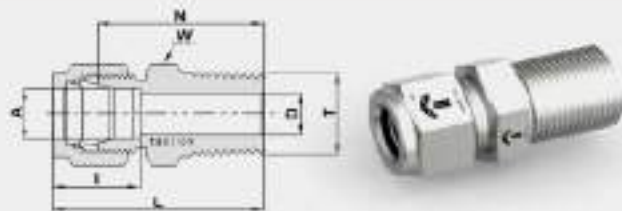
\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.

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# MALE CONNECTOR 109MC

**109MC**  
MALE CONNECTOR  
(Cont'd)



**TUBE (INCH) MALE NPT THREAD**

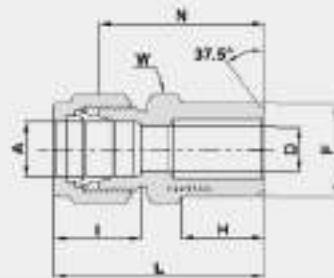
Part No.	A Tube O.D.		T (NPT)	O		W Hole Size		N		L		I	
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm	inch	mm	
109MC_5/8 X 1/4	5/8	15.87	1/4	.28	7.11	15/16	1.34	34.03	1.74	44.19	.96	24.4	
109MC_5/8 X 3/8	5/8	15.87	3/8	.38	9.65	15/16	1.34	34.03	1.74	44.19	.96	24.4	
109MC_5/8 X 1/2	5/8	15.87	1/2	.47	11.90	15/16	1.53	38.88	1.93	49.02	.96	24.4	
109MC_5/8 X 3/4	5/8	15.87	3/4	.50	12.70	1 1/16	1.59	40.39	1.99	50.54	.96	24.4	
109MC_3/4 X 3/8	3/4	19.05	3/8	.38	9.65	1 1/16	1.39	35.06	1.79	45.21	.96	24.4	
109MC_3/4 X 1/2	3/4	19.05	1/2	.47	11.90	1 1/16	1.59	40.39	1.99	50.54	.96	24.4	
109MC_3/4 X 3/4	3/4	19.05	3/4	.62	15.75	1 1/16	1.50	40.39	1.99	50.54	.96	24.4	
109MC_3/4 X 1	3/4	19.05	1	.62	15.75	1 3/8	1.85	47.00	2.25	57.15	.96	24.4	
109MC_7/8 X 1/2	7/8	22.22	1/2	.47	11.90	1 3/16	1.59	40.39	1.99	50.54	1.02	25.9	
109MC_7/8 X 3/4	7/8	22.22	3/4	.62	15.75	1 9/16	1.50	40.39	1.99	50.54	1.02	25.9	
109MC_7/8 X 1	7/8	22.22	1	.72	18.28	1 3/8	1.85	46.99	2.25	57.15	1.02	25.9	
109MC_1 X 1/2	1	25.40	1/2	.47	11.90	1 3/8	1.78	45.21	2.26	57.40	1.23	31.2	
109MC_1 X 3/4	1	25.40	3/4	.62	15.75	1 3/8	1.78	45.21	2.26	57.40	1.23	31.2	
109MC_1 X 1	1	25.40	1	.88	22.35	1 3/8	1.87	50.03	2.45	62.23	1.23	31.2	
109MC_1 1/4 X 1	*1 1/4	31.75	1	.86	21.80	1 3/4	2.17	55.12	3.04	77.22	1.62	41.2	
109MC_1 1/4 X 1 1/4	*1 1/4	31.75	1 1/4	1.09	27.70	1 3/4	2.17	55.12	3.04	77.22	1.62	41.2	
109MC_1 1/2 X 1 1/2	*1 1/2	38.10	1 1/2	1.34	34.00	2 1/8	2.43	61.72	3.50	89.60	1.97	50.0	
109MC_2 X 2	*2	50.80	2	1.81	45.97	2 3/4	3.00	76.20	4.47	113.54	2.66	67.6	

\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.



## MALE PIPE WELD CONNECTOR 110WC

### 110WC MALE PIPE WELD CONNECTOR



TUBE (METRIC)									
Part No.	A	F	D	W	N	H	L	I	
	Tube O.D.	Pipe Size		Max. Flat					
	mm	Inch	mm	mm	mm	mm	mm	mm	mm
110WC_3 X 1/8	3	1/8	10.30	2.4	12	23.9	9.7	30.5	12.9
110WC_4 X 1/8	4	1/8	10.30	2.4	12	24.6	9.7	31.2	13.7
110WC_6 X 1/8	6	1/8	10.30	4.8	14	25.4	9.7	32.8	15.3
110WC_6 X 1/4	6	1/4	13.70	4.8	14	30.5	14.2	37.8	15.3
110WC_8 X 1/8	8	1/8	10.30	5.1	15	26.7	9.7	34.2	16.2
110WC_8 X 1/4	8	1/4	13.70	6.4	15	31.2	14.2	36.7	16.2
110WC_8 X 1/2	8	1/2	21.34	6.4	22	38.1	19.0	45.6	16.2
110WC_10 X 1/4	10	1/4	13.70	7.1	18	33.3	14.2	40.9	17.2
110WC_10 X 3/8	10	3/8	17.10	7.9	18	33.3	14.2	40.9	17.2
110WC_10 X 1/2	10	1/2	21.34	7.9	22	38.9	19.0	46.5	17.2
110WC_12 X 1/4	12	1/4	13.70	7.1	22	33.3	14.2	43.4	22.8
110WC_12 X 3/8	12	3/8	17.10	8.5	22	33.3	14.2	43.4	22.8
110WC_12 X 1/2	12	1/2	21.34	8.5	22	38.9	19.0	49.0	22.8
110WC_12 X 3/4	12	3/4	26.67	8.5	27	40.4	19.0	50.5	22.8
110WC_14 X 3/8	14	3/8	17.10	10.4	24	34.0	14.2	44.1	24.4
110WC_15 X 1/2	15	1/2	21.34	11.8	26	38.9	19.0	49.0	24.4
110WC_18 X 1/2	18	1/2	21.34	12.7	24	38.9	19.0	49.0	24.4
110WC_18 X 1/2	18	1/2	21.34	13.5	27	40.4	19.0	50.5	24.4
110WC_38 X 1 1/2	38	1 1/2	48.30	33.7	55	64.0	26.2	81.2	49.4

\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.

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# MALE PIPE WELD CONNECTOR 110WC

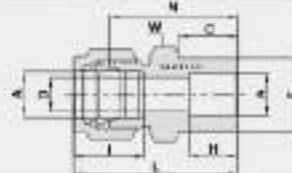
**110WC**  
MALE PIPE WELD  
CONNECTOR  
(Cont'd)



## TUBE (INCH)

Part No.	A Tube O.D.		F Pipe Size		D		W Hex. Flat		N		H		L		I	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
110WC 1/8 X 1/8	1/8	3.17	1/8	10.30	.09	2.29	7/16	.94	23.88	.38	9.65	1.20	30.48	.50	12.7	
110WC 3/16 X 1/8	3/16	4.76	1/8	10.30	.12	3.04	7/16	.97	24.60	.38	9.65	1.23	31.25	.54	13.7	
110WC 1/4 X 1/8	1/4	6.35	1/8	10.30	.15	4.82	1/2	1.00	25.40	.38	9.65	1.29	32.77	.60	15.2	
110WC 3/4 X 1/4	3/4	6.35	1/4	13.70	.10	4.82	9/16	1.20	30.48	.55	14.22	1.40	37.85	.60	15.2	
110WC 5/16 X 1/8	5/16	7.93	1/8	10.30	.20	5.08	9/16	1.05	26.57	.38	9.65	1.34	34.04	.64	16.2	
110WC 5/16 X 1/4	5/16	7.93	1/4	13.70	.25	6.35	9/16	1.23	31.24	.55	14.22	1.52	38.61	.64	16.2	
110WC 3/8 X 1/4	3/8	9.52	1/4	13.70	.28	7.11	5/8	1.28	32.51	.55	14.22	1.57	39.87	.66	16.8	
110WC 3/8 X 3/8	3/8	9.52	3/8	17.10	.29	7.11	11/16	1.28	32.51	.55	14.22	1.57	39.87	.66	16.8	
110WC 3/8 X 1/2	3/8	9.52	1/2	21.34	.28	7.11	7/8	1.53	38.88	.75	19.05	1.82	46.22	.68	16.8	
110WC 3/8 X 3/4	3/8	9.52	3/4	25.67	.28	7.11	1 1/16	1.58	40.38	.75	19.05	1.88	47.75	.68	16.8	
110WC 1/2 X 3/8	1/2	12.70	3/8	17.10	.41	10.41	13/16	1.31	33.27	.55	14.22	1.71	44.43	.80	22.9	
110WC 1/2 X 1/2	1/2	12.70	1/2	21.34	.41	10.41	7/8	1.53	38.88	.75	19.05	1.93	49.00	.90	22.9	
110WC 1/2 X 3/4	1/2	12.70	3/4	25.67	.41	10.41	1 1/16	1.58	40.40	.75	19.05	1.99	50.55	.90	22.9	
110WC 1/2 X 1	1/2	12.70	1	33.40	.41	10.41	1 3/8	1.67	47.50	.84	23.87	2.27	57.65	.90	22.9	
110WC 5/8 X 1/2	5/8	15.87	1/2	21.34	.50	12.70	15/16	1.53	38.88	.75	19.05	1.93	49.02	.96	24.4	
110WC 3/4 X 1/2	3/4	19.05	1/2	21.34	.53	13.48	1 1/16	1.53	38.88	.75	19.05	1.93	49.00	.98	24.4	
110WC 3/4 X 3/4	3/4	19.05	3/4	25.67	.62	15.74	1 1/16	1.58	40.40	.75	19.05	1.99	50.55	.98	24.4	
110WC 1 X 1	1	25.40	1	33.40	.68	22.35	1 3/8	1.97	50.03	.94	23.87	2.45	62.23	1.23	31.2	
110WC 1 1/4 X 1 1/4	1 1/4	31.75	1 1/4	42.16	1.09	27.70	1 3/4	2.17	55.12	.94	23.88	3.04	77.32	1.62	41.2	
110WC 1 1/2 X 1 1/2	1 1/2	38.10	1 1/2	48.28	1.34	34.00	2 1/8	2.43	61.72	1.03	26.16	3.50	88.90	1.97	50.0	
110WC Q X 2	2	50.80	2	60.33	1.81	45.97	2 3/4	3.00	76.20	1.08	28.92	4.47	113.34	2.60	67.8	

**110SWC**  
TUBE SOCKET WELD  
UNION



## TUBE (INCH)

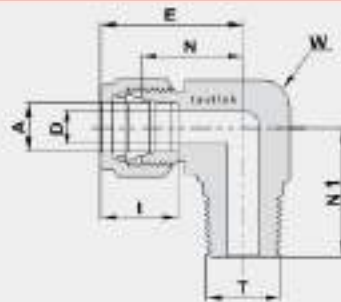
Part No.	A Tube O.D.		C		D		W Hex. Flat		F		H		I		L		N	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
110SWC 1/8 X 1/8	1/8	3.17	.34	8.54	.09	2.29	7/16	.31	7.87	.25	6.35	.50	12.70	1.14	28.96	.88	22.35	
110SWC 1/4 X 1/4	1/4	6.35	.41	10.41	.19	4.80	1/2	.44	11.18	.31	7.90	.60	15.20	1.32	33.52	1.03	26.16	
110SWC 3/8 X 3/8	3/8	9.52	.47	11.94	.28	7.10	5/8	.62	15.75	.38	9.65	.66	16.80	1.48	37.60	1.19	30.23	
110SWC 1/2 X 1/2	1/2	12.70	.47	11.94	.41	10.40	13/16	.75	19.05	.50	12.70	.90	22.90	1.62	41.15	1.22	31.00	
110SWC 3/4 X 3/4	3/4	19.05	.47	11.94	.62	15.80	1 1/16	1.05	26.67	.55	14.00	.96	24.40	1.71	43.43	1.31	33.28	
110SWC 1 X 1	1	25.40	.58	14.22	.68	22.35	1 3/8	1.36	34.54	.75	19.05	1.23	31.20	2.07	52.58	1.59	40.40	

\* - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.



## MALE ELBOW 111ME

### 111ME MALE ELBOW



#### TUBE (METRIC) MALE NPT THREAD

Part No.	A	T	D	W		N	E	NI	I
	1/4 O.D.	(NPT)		Width Flg.					
	mm	inch	mm	inch	mm	mm	mm	mm	
111ME_3 X 1/8	3	1/8	2.4	7/16	11.1	17.0	23.6	17.8	12.9
111ME_3 X 1/4	3	1/4	2.4	1/2	12.7	18.0	24.6	23.4	12.9
111ME_4 X 1/8	4	1/8	2.4	1/2	12.7	18.8	25.4	19.8	13.7
111ME_4 X 1/4	4	1/4	2.4	1/2	12.7	18.8	25.4	23.4	13.7
111ME_6 X 1/8	6	1/8	4.8	1/2	12.7	19.6	27.0	18.8	15.3
111ME_6 X 1/4	6	1/4	4.8	1/2	12.7	19.6	27.0	23.4	15.3
111ME_6 X 3/8	6	3/8	4.8	11/16	17.5	22.4	29.6	26.2	15.3
111ME_6 X 1/2	6	1/2	4.8	13/16	20.6	24.4	31.8	32.0	15.3
111ME_8 X 1/8	8	1/8	4.8	9/16	14.3	21.3	28.8	19.8	16.2
111ME_8 X 1/4	8	1/4	5.4	9/16	14.3	21.3	28.6	24.4	16.2
111ME_8 X 3/8	8	3/8	5.4	11/16	17.5	23.1	30.6	26.2	16.2
111ME_8 X 1/2	8	1/2	5.4	13/16	20.6	25.1	32.6	32.0	16.2
111ME_10 X 1/8	10	1/8	4.8	11/16	17.5	23.9	31.5	21.6	17.2
111ME_10 X 1/4	10	1/4	7.1	11/16	17.5	23.9	31.6	23.2	17.2
111ME_10 X 3/8	10	3/8	7.9	11/16	17.5	23.9	31.5	26.2	17.2
111ME_10 X 1/2	10	1/2	7.9	13/16	20.6	25.9	33.5	32.0	17.2
111ME_12 X 1/8	12	1/8	4.8	13/16	20.6	25.9	36.0	23.6	22.8
111ME_12 X 1/4	12	1/4	7.1	13/16	20.6	25.9	36.0	26.2	22.8
111ME_12 X 3/8	12	3/8	9.5	13/16	20.6	25.9	36.0	26.2	22.8
111ME_12 X 1/2	12	1/2	9.5	15/16	23.6	26.9	36.0	32.0	22.8
111ME_12 X 3/4	12	3/4	9.5	1 1/16	27.0	29.7	39.8	36.8	22.8
111ME_15 X 1/2	15	1/2	11.9	15/16	23.6	27.9	38.0	36.1	24.4
111ME_16 X 3/8	16	3/8	9.5	15/16	23.6	27.9	38.0	30.2	24.4
111ME_16 X 1/2	16	1/2	11.9	15/16	23.6	27.9	38.0	36.1	24.4
111ME_16 X 3/4	16	3/4	12.7	1 1/16	27.0	29.7	39.8	36.8	24.4
111ME_18 X 1/2	18	1/2	11.9	1 1/16	27.0	29.7	39.8	36.8	24.4
111ME_18 X 3/4	18	3/4	15.1	1 1/16	27.0	29.7	39.8	36.8	24.4
111ME_20 X 1/2	20	1/2	11.9	1 3/8	34.9	34.5	44.6	41.7	26.0
111ME_20 X 3/4	20	3/4	15.9	1 3/8	34.9	34.5	44.6	41.7	26.0
111ME_22 X 3/4	22	3/4	15.9	1 3/8	34.9	34.5	44.6	41.7	26.0
111ME_22 X 1	22	1	18.3	1 3/8	34.9	34.5	44.6	46.5	26.0
111ME_25 X 3/4	25	3/4	15.9	1 3/8	34.9	36.8	49.1	41.7	31.3
111ME_25 X 1	25	1	21.8	1 3/8	34.9	36.8	49.1	46.5	31.3
111ME_38 X 1 1/2	38	1 1/2	33.7	-	55.0	56.4	84.0	80.4	49.4

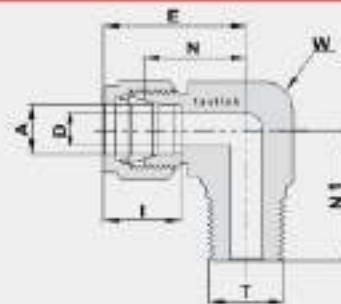
\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.

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# MALE ELBOW 111ME

## 111ME MALE ELBOW (CONT.)



### TUBE (INCH) MALE NPT THREAD

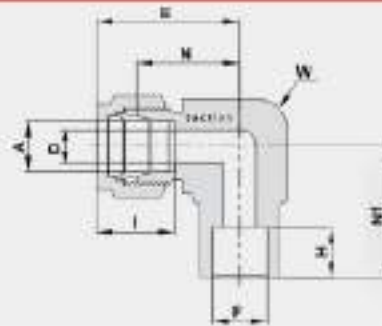
Part No.	A Tube O.D.		T INPT.	D Tube O.D.		W Width Flat		N	E		NI		I		
	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		
111ME_1/16 X 1/16	1/16	1.58	1/16	.05	1.27	7/16	11.1	.50	15.24	.75	19.05	.70	17.78	.34	8.6
111ME_1/16 X 3/8	1/16	1.58	1/8	.05	1.27	7/16	11.1	.50	15.24	.75	19.05	.70	17.78	.34	8.6
111ME_1/8 X 1/16	1/8	3.17	1/16	.05	2.28	7/16	11.1	.57	17.02	.93	23.62	.70	17.78	.50	12.7
111ME_1/8 X 1/8	1/8	3.17	1/8	.09	2.28	7/16	11.1	.57	17.02	.93	23.62	.70	17.78	.50	12.7
111ME_1/8 X 1/4	1/8	3.17	1/4	.09	2.28	1/2	12.7	.71	18.03	.97	24.64	.92	23.37	.50	12.7
111ME_3/16 X 1/8	3/16	4.75	1/8	.12	3.04	1/2	12.7	.74	18.80	1.00	25.40	.74	18.80	.54	13.7
111ME_3/16 X 1/4	3/16	4.75	1/4	.12	3.04	1/2	12.7	.74	18.80	1.00	25.40	.92	23.37	.54	13.7
111ME_1/4 X 1/16	1/4	6.35	1/16	.12	3.04	1/2	12.7	.77	19.56	1.06	26.92	.74	18.80	.60	15.2
111ME_1/4 X 1/8	1/4	6.35	1/8	.19	4.82	1/2	12.7	.77	19.56	1.06	26.92	.74	18.80	.60	15.2
111ME_1/4 X 1/4	1/4	6.35	1/4	.19	4.82	1/2	12.7	.77	19.56	1.06	26.92	.92	23.37	.60	15.2
111ME_1/4 X 3/8	1/4	6.35	3/8	.19	4.82	11/16	17.5	.88	22.36	1.17	29.71	1.03	26.16	.60	15.2
111ME_1/4 X 1/2	1/4	6.35	1/2	.19	4.82	13/16	20.5	.90	24.35	1.25	31.75	1.30	33.02	.60	15.2
111ME_5/16 X 1/8	5/16	7.93	1/8	.19	4.82	9/16	14.3	.94	21.34	1.13	28.70	.78	19.91	.64	16.2
111ME_5/16 X 1/4	5/16	7.93	1/4	.25	6.35	9/16	14.3	.94	21.34	1.13	28.70	.98	24.98	.64	16.2
111ME_5/16 X 3/8	5/16	7.93	3/8	.25	6.35	11/16	17.5	.91	23.11	1.20	30.48	1.03	26.16	.64	16.2
111ME_3/8 X 1/8	3/8	9.52	1/8	.19	4.82	5/8	15.9	.91	23.11	1.20	30.48	.82	20.83	.68	16.8
111ME_3/8 X 1/4	3/8	9.52	1/4	.28	7.11	5/8	15.9	.91	23.11	1.20	30.48	1.00	25.40	.68	16.8
111ME_3/8 X 3/8	3/8	9.52	3/8	.28	7.11	11/16	17.5	.94	23.87	1.23	31.24	1.03	26.16	.68	16.8
111ME_3/8 X 1/2	3/8	9.52	1/2	.28	7.11	13/16	20.5	1.02	25.90	1.31	33.29	1.30	33.02	.68	16.8
111ME_3/8 X 3/4	3/8	9.52	3/4	.28	7.11	1 1/16	27.0	1.17	29.71	1.48	37.09	1.45	36.83	.68	16.8
111ME_1/2 X 1/4	1/2	12.70	1/4	.28	7.11	13/16	20.5	1.02	25.90	1.42	35.07	1.11	28.19	.90	22.9
111ME_1/2 X 3/8	1/2	12.70	3/8	.38	9.50	13/16	20.5	1.02	25.90	1.42	35.07	1.11	28.19	.90	22.9
111ME_1/2 X 1/2	1/2	12.70	1/2	.41	10.41	13/16	20.5	1.09	26.90	1.49	38.07	1.30	33.02	.90	22.9
111ME_1/2 X 3/4	1/2	12.70	3/4	.41	10.41	1 1/16	27.0	1.17	29.71	1.57	39.88	1.45	36.83	.90	22.9
111ME_5/8 X 3/8	5/8	15.87	3/8	.38	9.51	15/16	23.8	1.10	27.94	1.50	38.10	1.19	30.23	.90	24.4
111ME_5/8 X 1/2	5/8	15.87	1/2	.47	11.94	15/16	23.8	1.10	27.94	1.50	38.10	1.38	35.05	.96	24.4
111ME_5/8 X 3/4	5/8	15.87	3/4	.50	12.70	1 1/16	27.0	1.17	29.71	1.57	39.88	1.45	36.83	.96	24.4
111ME_3/4 X 1/2	3/4	19.05	1/2	.47	11.94	1 1/16	27.0	1.17	29.71	1.57	39.88	1.45	36.83	.96	24.4
111ME_3/4 X 3/4	3/4	19.05	3/4	.62	15.74	1 1/16	27.0	1.17	29.71	1.57	39.88	1.45	36.83	.96	24.4
111ME_3/8 X 3/4	7/8	22.22	3/4	.62	15.74	13/8	34.9	1.36	34.54	1.76	44.70	1.64	41.88	1.02	25.9
111ME_1 X 3/4	1	25.40	3/4	.62	15.74	13/8	34.9	1.45	36.83	1.93	49.02	1.64	41.88	1.23	31.2
111ME_1 X 1	1	25.40	1	.66	21.84	1 3/8	34.9	1.45	36.83	1.93	49.02	1.83	46.48	1.23	31.2
111ME_1 1/4 X 1 1/4	1 1/4	31.75	1 1/4	1.09	27.70	1 11/16	42.9	1.75	44.45	2.62	66.50	1.89	47.75	1.62	41.2
111ME_1 1/2 X 1 1/2	1 1/2	38.10	1 1/2	1.34	34.00	2	50.8	2.00	50.80	3.07	78.00	2.39	60.45	1.97	50.0
111ME_2 X 2	2	50.80	2	1.81	45.97	2 3/4	69.9	2.75	69.85	4.22	107.19	2.78	70.61	2.65	67.6

Ⓜ - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.



## TUBE SOCKET WELD ELBOW 112SWEL

**112SWE**  
TUBE SOCKET WELD  
ELBOW



### TUBE (INCH)

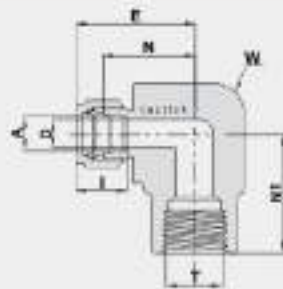
Part No.	A 1/2" O.D.		F 1/2" O.D.		D		W Weld Fillet		N		H		E		NI		I	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
112SWE_1/4 X 1/4	1/4	6.35	1/4	6.35	.19	4.82	1/2	12.7	.77	19.60	.31	7.87	1.06	26.98	.77	19.60	.90	22.86
112SWE_3/8 X 3/8	3/8	9.52	3/8	9.52	.28	7.11	5/8	15.8	.91	23.11	.38	9.65	1.20	30.98	.91	23.11	.96	24.45
112SWE_1/2 X 1/2	1/2	12.70	1/2	12.70	.41	10.41	15/16	23.8	1.02	25.90	.50	12.70	1.42	36.06	1.02	25.90	.90	22.86
112SWE_3/4 X 3/4	3/4	19.05	3/4	19.05	.62	15.74	1 1/16	27.0	1.17	29.71	.66	16.76	1.67	42.43	1.17	29.71	.96	24.45
112SWE_1X1	1	25.40	1	25.40	.88	22.35	1 3/8	34.9	1.45	36.83	.75	19.05	1.93	49.02	1.45	36.83	1.23	31.25

\*I\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.



# FEMALE ELBOW 113FE

## 113FE FEMALE ELBOW



### TUBE (METRIC) TO FEMALE NPT THREAD

Part No.	A Tube O.D.		T NPT	D	W Wrench Flat		N	E	NI	I
	mm	mm	Inch	mm	Inch	mm	mm	mm	mm	mm
113FE 6 X 1/8	6		1/8	4.8	1/2	12.7	10.6	27.0	19.0	15.3
113FE 6 X 1/4	6		1/4	4.8	11/16	17.5	22.4	29.8	22.4	15.3
113FE 6 X 1/2	6		1/2	4.8	1 1/16	27.0	27.2	34.6	28.4	15.3
113FE 8 X 1/4	8		1/4	6.4	11/16	17.5	23.1	30.6	22.4	16.2
113FE 10 X 1/8	10		1/8	7.9	11/16	17.5	23.9	31.5	19.0	17.2
113FE 10 X 1/4	10		1/4	7.9	10/16	20.6	25.9	33.5	22.4	17.2
113FE 12 X 1/4	12		1/4	9.5	13/16	20.6	25.9	35.0	22.4	22.8
113FE 12 X 1/2	12		1/2	9.5	1 1/16	27.0	28.7	38.8	28.4	22.8
113FE 16 X 1/2	16		1/2	12.7	1 1/16	27.0	29.7	39.8	28.4	24.4

### TUBE (INCHI) TO FEMALE NPT THREAD

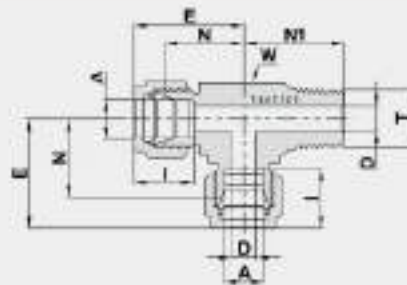
Part No.	A Tube O.D.		T NPT	D	W Wrench Flat		N	E	NI	I					
	Inch	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm				
113FE 1/8 X 1/8	1/8	3.17	1/8	.09	2.28	1/2	12.7	.71	18.03	.97	24.64	.75	19.05	50	12.7
113FE 1/8 X 1/4	1/8	3.17	1/4	.09	2.28	11/16	17.5	.82	20.80	1.08	27.43	.86	22.40	50	12.7
113FE 3/16 X 1/8	3/16	4.76	1/8	.12	3.04	1/2	12.7	.74	18.80	1.00	25.40	.75	19.05	54	13.7
113FE 1/4 X 1/8	1/4	6.35	1/8	.19	4.82	1/2	12.7	.77	19.55	1.06	26.92	.75	19.05	60	15.2
113FE 1/4 X 1/4	1/4	6.35	1/4	.19	4.82	11/16	17.5	.98	22.40	1.17	29.72	.86	22.40	60	15.2
113FE 1/4 X 3/8	1/4	6.35	3/8	.19	4.82	15/16	23.8	.96	24.38	1.25	31.75	.86	22.40	60	15.2
113FE 1/4 X 1/2	1/4	6.35	1/2	.19	4.82	1 1/16	27.0	1.07	27.18	1.36	34.54	1.12	28.45	60	15.2
113FE 5/16 X 1/8	5/16	7.93	1/8	.25	6.35	9/16	14.3	.84	21.30	1.13	28.70	.75	19.05	64	16.2
113FE 5/16 X 1/4	5/16	7.93	1/4	.25	6.35	11/16	17.5	.91	23.11	1.20	30.48	.86	22.40	64	16.2
113FE 3/8 X 1/8	3/8	9.52	1/8	.28	7.11	5/8	15.9	.91	23.11	1.20	30.48	.75	19.05	66	16.8
113FE 3/8 X 1/4	3/8	9.52	1/4	.28	7.11	11/16	17.5	0.94	23.87	1.23	31.24	.86	22.40	66	16.8
113FE 3/8 X 3/8	3/8	9.52	3/8	.28	7.11	15/16	23.8	1.02	25.90	1.31	33.27	.86	22.40	66	16.8
113FE 3/8 X 1/2	3/8	9.52	1/2	.28	7.11	1 1/16	27.0	1.13	28.70	1.42	36.07	1.12	28.45	66	16.8
113FE 1/2 X 1/4	1/2	12.70	1/4	.41	10.41	13/16	20.6	1.02	25.90	1.42	36.07	.86	22.40	80	22.9
113FE 1/2 X 3/8	1/2	12.70	3/8	.41	10.41	15/16	23.8	1.02	25.90	1.42	36.07	.86	22.40	80	22.9
113FE 1/2 X 1/2	1/2	12.70	1/2	.41	10.41	1 1/16	27.0	1.13	28.70	1.53	38.86	1.12	28.45	80	22.9
113FE 5/8 X 3/8	5/8	15.87	3/8	.60	12.70	15/16	23.8	1.10	27.90	1.60	38.10	.86	22.40	86	24.4
113FE 5/8 X 1/2	5/8	15.87	1/2	.60	12.70	1 1/16	27.0	1.17	29.70	1.57	39.86	1.12	28.45	86	24.4
113FE 3/4 X 1/2	3/4	19.05	1/2	.62	15.74	1 1/16	27.0	1.17	29.70	1.57	39.86	1.12	28.45	86	24.4
113FE 3/4 X 3/4	3/4	19.05	3/4	.62	15.74	1 3/8	34.9	1.36	34.54	1.76	44.70	1.25	31.75	86	24.4
113FE 7/8 X 3/4	7/8	22.22	3/4	.72	18.28	1 3/8	34.9	1.36	34.54	1.76	44.70	1.25	31.75	1.02	25.9
113FE 1 X 3/4	1	25.40	3/4	.88	22.25	1 3/8	34.9	1.45	36.83	1.93	49.02	1.25	31.75	1.23	31.2
113FE 1 X 1	1	25.40	1	.88	22.35	1 1/16	42.9	1.63	41.40	2.11	53.59	1.50	38.10	1.23	31.2

Ⓜ - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.



## MALE RUN TEE 114RTM

### 114RTM MALE RUN TEE



#### TUBE (METRIC) TO MALE NPT THREAD

Part No.	A Tube O.D.		Y NPT	D	W Wrench Flat		N	E	NI	I
	mm	inch			mm	inch				
114RTM_8 X 1/8	8		1/8	4.8	1/2	12.7	18.0	27.0	18.8	15.3
114RTM_8 X 1/4	8		1/4	4.8	1/2	12.7	18.6	27.0	25.4	15.3
114RTM_8 X 3/8	8		3/8	4.8	5/8	15.9	22.4	29.9	20.8	16.2
114RTM_8 X 1/2	8		1/2	5.4	5/8	15.9	22.4	29.9	25.4	16.2
114RTM_10 X 1/4	10		1/4	7.1	13/16	20.6	25.8	33.0	28.2	17.2
114RTM_12 X 1/4	12		1/4	7.1	13/16	20.6	25.8	36.0	28.2	22.8
114RTM_12 X 3/8	12		3/8	9.5	13/16	20.6	25.9	36.0	28.2	22.8
114RTM_12 X 1/2	12		1/2	9.5	13/16	20.6	25.9	36.0	33.0	22.8
114RTM_16 X 1/2	16		1/2	11.9	1 1/16	23.8	27.0	38.0	35.0	24.4

#### TUBE (INCH) TO MALE NPT THREAD

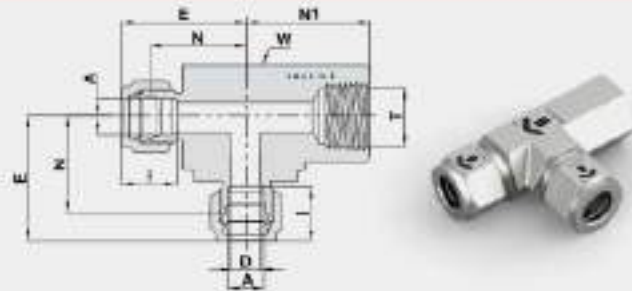
Part No.	A Tube O.D.		Y NPT	D	W Wrench Flat		N	E	NI	I					
	inch	mm			inch	mm					inch	mm	inch	mm	inch
114RTM_1/8 X 1/8	1/8	3.17	1/8	.09	2.28	7/16	11.1	.57	17.02	.93	23.62	.70	17.78	.50	12.7
114RTM_1/8 X 1/4	1/8	3.17	1/4	.09	2.28	1/2	12.7	.71	18.03	.97	24.04	.96	23.40	.50	12.7
114RTM_3/16 X 1/8	3/16	4.76	1/8	.12	3.05	7/16	11.1	.70	17.78	.96	24.39	.70	17.78	.54	13.7
114RTM_1/4 X 1/8	1/4	6.35	1/8	.19	4.82	1/2	12.7	.77	19.56	1.06	26.92	.74	18.8	.60	15.2
114RTM_1/4 X 1/4	1/4	6.35	1/4	.19	4.82	1/2	12.7	.77	19.56	1.06	26.92	.92	23.37	.60	15.2
114RTM_5/16 X 1/8	5/16	7.93	1/8	.19	4.82	5/8	15.9	.98	23.35	1.17	29.71	.62	20.83	.64	16.2
114RTM_3/8 X 1/4	3/8	9.52	1/4	.28	7.11	5/8	15.9	.91	23.11	1.20	30.46	1.00	25.40	.66	16.8
114RTM_3/8 X 3/8	3/8	9.52	3/8	.29	7.11	13/16	20.6	1.02	25.91	1.31	33.27	1.11	28.19	.66	16.8
114RTM_1/2 X 3/8	1/2	12.70	3/8	.38	9.5	13/16	20.6	1.02	25.91	1.42	36.07	1.11	28.19	.66	16.8
114RTM_1/2 X 1/2	1/2	12.70	1/2	.41	10.41	13/16	20.6	1.02	25.91	1.42	36.07	1.30	33.00	.66	16.8
114RTM_5/8 X 1/2	5/8	15.87	1/2	.47	11.94	15/16	23.8	1.10	27.94	1.50	38.1	1.38	35.05	.66	16.8
114RTM_3/4 X 3/4	3/4	19.05	3/4	.62	15.75	1 1/16	27.0	1.17	29.72	1.57	39.89	1.45	36.83	.66	16.8

\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.



# FEMALE RUN TEE 115RTF

**115RTF**  
FEMALE RUN TEE



## TUBE (METRIC) TO FEMALE NPT THREAD

Part No.	A		T (NPT)	D	W Wrench Flat		N	E	N1	I
	mm	inch			mm	inch				
115RTF_6 X 1/8	6	1/8	1/8	4.8	5/8	15.9	19.6	27.0	18.0	15.3
115RTF_6 X 1/4	6	1/4	1/4	4.8	13/16	20.6	22.4	29.8	22.4	18.3
115RTF_8 X 1/8	8	1/8	1/8	6.4	5/8	15.9	22.4	29.8	22.4	16.2
115RTF_8 X 1/4	8	1/4	1/4	6.4	13/16	20.6	23.1	30.6	22.4	16.2
115RTF_10 X 1/4	10	1/4	1/4	7.9	13/16	20.6	25.9	33.5	22.4	17.2
115RTF_12 X 1/4	12	1/4	1/4	9.5	13/16	20.6	25.9	36.0	22.4	22.8
115RTF_12 X 3/8	12	3/8	3/8	9.5	15/16	23.8	25.8	36.0	22.4	22.8
115RTF_12 X 1/2	12	1/2	1/2	9.5	1 1/16	27.0	29.7	39.8	22.4	22.8
115RTF_16 X 1/2	16	1/2	1/2	12.7	1 1/16	27.0	29.7	39.8	22.4	24.4

## TUBE (INCH) TO FEMALE NPT THREAD

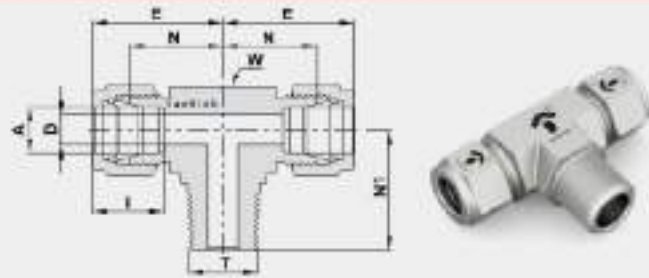
Part No.	A Tube O.D.		T (NPT)	D	W Wrench Flat		N	E	N1	I					
	inch	mm			inch	mm					inch	mm	inch	mm	inch
115RTF_1/8 X 1/8	1/8	3.17	1/8	.09	2.28	5/8	15.9	.71	18.00	.57	24.83	.75	19.05	.50	12.7
115RTF_1/4 X 1/8	1/4	6.35	1/8	.10	4.82	5/8	15.9	.77	10.56	1.08	26.02	.79	10.06	.60	15.2
115RTF_1/4 X 1/4	1/4	6.35	1/4	.18	4.82	13/16	20.6	.88	22.35	1.17	29.71	.89	22.35	.60	15.2
115RTF_3/8 X 1/4	3/8	9.52	1/4	.26	7.11	13/16	20.6	.94	23.87	1.23	31.24	.89	22.35	.66	16.8
115RTF_1/2 X 3/8	1/2	12.70	3/8	.41	10.41	15/16	23.8	1.02	25.9	1.42	36.07	.89	22.35	.90	22.9
115RTF_1/2 X 1/2	1/2	12.70	1/2	.41	10.41	1 1/16	27.0	1.17	29.72	1.57	39.86	1.12	28.45	.90	22.9
115RTF_3/4 X 3/4	3/4	19.05	3/4	.62	15.75	1 3/8	34.9	1.38	34.54	1.78	44.70	1.25	31.75	.96	24.4
115RTF_1 X 3/4	1	25.4	3/4	.98	22.35	1 3/8	34.9	1.46	36.83	1.93	49.02	1.25	31.75	1.23	31.2
115RTF_1 X 1	1	25.4	1	.98	22.35	1 11/16	42.9	1.63	41.40	2.11	53.59	1.50	38.10	1.23	31.2

\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.



## MALE BRANCH TEE 116BTM

**116BTM**  
MALE BRANCH TEE



### TUBE (METRIC) TO MALE NPT THREAD

Part No.	A Tube O.D.		T NPT	D Tube O.D.		W Wrench Flat		N	E	NI	I
	mm	inch	inch	mm	inch	mm	mm	mm	mm	mm	mm
116BTM_ 8 X 1/8	8	1/8	1/8	4.8	1/2	12.7	19.6	27.0	18.8	15.3	
116BTM_ 8 X 1/4	8	1/4	1/4	4.8	1/2	12.7	19.6	27.0	22.4	15.3	
116BTM_ 8 X 1/8	8	1/8	1/8	4.8	5/8	15.9	22.4	29.9	20.8	16.2	
116BTM_ 8 X 1/4	8	1/4	1/4	6.4	5/8	15.9	22.4	29.9	25.4	16.2	
116BTM_ 10 X 1/4	10	1/4	1/4	7.1	13/16	20.6	25.9	33.5	26.2	17.2	
116BTM_ 12 X 1/4	12	1/4	1/4	7.1	13/16	20.6	25.9	36.0	26.2	22.8	
116BTM_ 12 X 3/8	12	3/8	3/8	9.5	13/16	20.6	25.9	36.0	28.2	22.8	
116BTM_ 12 X 1/2	12	1/2	1/2	9.5	13/16	20.6	25.9	36.0	33.0	22.8	
116BTM_ 16 X 1/2	16	1/2	1/2	11.9	15/16	23.6	28.7	38.9	35.8	24.4	

### TUBE (INCHI) TO MALE NPT THREAD

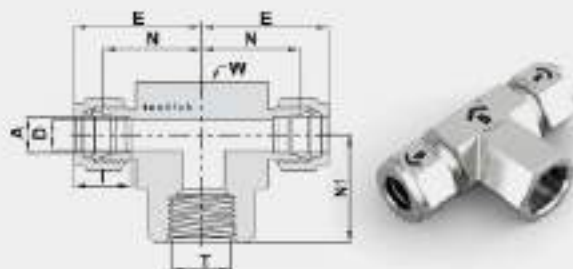
Part No.	A Tube O.D.		T NPT	D Tube O.D.		W Wrench Flat		N	E	NI	I				
	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm				
116BTM_ 1/8 X 1/8	1/8	3.17	1/8	.09	2.29	7/16	11.1	.57	17.02	.80	20.62	.70	17.78	.50	12.7
116BTM_ 1/8 X 1/4	1/8	3.17	1/4	.09	2.29	1/2	12.7	.71	18.03	.97	24.64	.92	23.37	.50	12.7
116BTM_ 3/16 X 1/8	3/16	4.76	1/8	.12	3.04	7/16	11.1	.70	17.78	.98	24.38	.70	17.78	.54	13.7
116BTM_ 1/4 X 1/8	1/4	6.35	1/8	.10	4.02	1/2	12.7	.77	19.56	1.06	26.92	.74	18.90	.60	15.2
116BTM_ 1/4 X 1/4	1/4	6.35	1/4	.10	4.82	1/2	12.7	.77	19.56	1.06	26.92	.92	23.37	.60	15.2
116BTM_ 5/16 X 1/8	5/16	7.93	1/8	.15	4.82	5/8	15.9	.88	22.35	1.17	29.71	.82	20.83	.64	16.2
116BTM_ 3/8 X 1/4	3/8	9.52	1/4	.20	7.11	5/8	15.9	.91	23.11	1.20	30.48	1.00	25.40	.60	15.8
116BTM_ 3/8 X 3/8	3/8	9.52	3/8	.26	7.11	13/16	20.6	1.02	25.91	1.31	33.27	1.11	28.19	.66	16.8
116BTM_ 1/2 X 3/8	1/2	12.70	3/8	.38	9.65	13/16	20.6	1.02	25.91	1.42	36.07	1.11	28.19	.90	22.9
116BTM_ 1/2 X 1/2	1/2	12.70	1/2	.41	10.41	13/16	20.6	1.02	25.91	1.42	36.07	1.30	33.02	.90	22.9
116BTM_ 5/8 X 1/2	5/8	15.87	1/2	.47	11.94	15/16	23.6	1.13	28.7	1.53	38.86	1.41	35.81	.96	24.4
116BTM_ 3/4 X 3/4	3/4	19.05	3/4	.62	15.75	1 1/16	27.0	1.17	29.72	1.57	39.86	1.45	36.83	.96	24.4

\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.



# FEMALE BRANCH TEE 117BTF

**117BTF**  
FEMALE BRANCH TEE



**TUBE (METRIC) TO FEMALE NPT THREAD**

Part No.	A	T	D	W		N		E		NI		I	
	Tube O.D.	(NPT)		Wrench Flat									
	mm	inch	mm	inch	mm	mm	mm	mm	mm	mm	mm	mm	mm
117BTF_8 X 1/8	6	1/8	4.8	5/8	15.9	19.6	27.0	19.0	15.3				
117BTF_8 X 1/4	6	1/4	4.8	13/16	20.6	22.4	29.6	22.4	15.3				
117BTF_8 X 1/2	8	1/2	6.4	5/8	15.9	22.4	29.9	19.0	10.2				
117BTF_8 X 3/4	8	3/4	6.4	13/16	20.6	23.1	30.6	22.4	16.2				
117BTF_10 X 1/4	10	1/4	7.9	13/16	20.6	25.9	33.5	22.4	17.2				
117BTF_10 X 3/8	10	3/8	7.9	15/16	23.8	25.9	33.5	22.4	17.2				
117BTF_12 X 1/4	12	1/4	9.5	13/16	20.6	25.9	36.0	22.4	22.8				
117BTF_12 X 3/8	12	3/8	9.5	15/16	23.8	25.9	36.0	22.4	22.8				
117BTF_12 X 1/2	12	1/2	9.5	1 1/8	27.0	28.7	36.0	22.4	22.8				
117BTF_16 X 1/2	16	1/2	12.7	1 1/8	27.0	28.7	38.6	22.4	24.4				

**TUBE (INCH) TO FEMALE NPT THREAD**

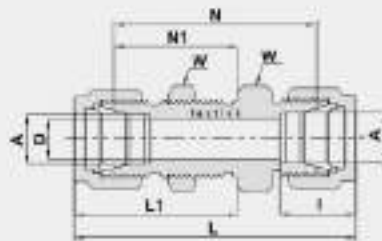
Part No.	A	T	D	W		N		E		NI		I			
	Tube O.D.	(NPT)		Wrench Flat											
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
117BTF_1/8 X 1/8	1/8	3.17	1/8	.08	2.29	5/8	15.9	.70	18.00	.87	24.64	.75	19.05	.50	12.7
117BTF_1/4 X 1/8	1/4	6.35	1/8	.19	4.82	5/8	15.9	.77	19.56	1.06	28.96	.75	19.05	.60	15.2
117BTF_1/4 X 1/4	1/4	6.35	1/4	.19	4.82	13/16	20.6	.98	25.35	1.17	29.71	.60	22.35	.00	15.2
117BTF_3/8 X 1/4	3/8	9.52	1/4	.29	7.11	13/16	20.6	.94	23.99	1.29	31.24	.66	22.35	.66	16.8
117BTF_3/8 X 3/8	3/8	9.52	3/8	.29	7.11	15/16	23.8	1.02	25.90	1.31	33.27	.66	22.35	.66	16.8
117BTF_3/8 X 1/2	3/8	9.52	1/2	.29	7.11	1 1/16	27.0	1.13	29.70	1.42	36.07	1.12	28.45	.66	16.8
117BTF_1/2 X 1/4	1/2	12.70	1/4	.41	10.41	13/16	20.6	1.02	25.90	1.42	36.07	.89	22.35	.90	22.9
117BTF_1/2 X 3/8	1/2	12.70	3/8	.41	10.41	15/16	23.8	1.02	25.90	1.42	36.07	.89	22.35	.90	22.9
117BTF_1/2 X 1/2	1/2	12.70	1/2	.41	10.41	1 1/16	27.0	1.13	29.70	1.59	38.99	1.12	28.45	.90	22.9
117BTF_5/8 X 1/2	5/8	15.87	1/2	.50	12.70	1 1/16	27.0	1.13	29.70	1.59	38.99	1.12	28.44	.96	24.4
117BTF_3/4 X 3/4	3/4	19.05	3/4	.62	15.74	13/8	34.9	1.36	34.50	1.76	44.70	1.25	31.75	.96	24.4
117BTF_1 X 3/4	1	25.4	3/4	.86	22.35	13/8	34.9	1.45	35.83	1.93	49.02	1.25	31.75	1.23	31.2
117BTF_1 X 1	1	25.4	1	.86	22.35	1 1/16	42.9	1.53	41.40	2.11	53.60	1.50	38.10	1.23	31.2

\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.



# BULK HEAD UNION 118UB

**118UB**  
BULK HEAD UNION



### TUBE (METRIC) TO TUBE (METRIC)

Part No.	A Tube O.D.		D	W Hex. Fac.		N		N1		L		L1		I		Panel Hole Drill Size		Panel Hole Drill Size	
	inch	mm		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
118UB_3		3	2.4	14		38.1		24.8		51.3		31.2		12.9		8.30		12.7	
118UB_4		4	2.4	14		40.4		25.4		53.6		32.0		13.7		9.90		12.7	
118UB_6		6	4.8	16		42.9		25.2		57.7		33.6		15.3		11.50		10.2	
118UB_8		8	6.4	18		46.0		28.8		61.0		36.1		16.2		13.10		11.2	
118UB_10		10	7.8	22		48.5		29.4		63.7		37.0		17.2		15.25		11.2	
118UB_12		12	9.6	24		50.8		31.8		71.0		41.9		22.8		19.50		12.7	
118UB_14		14	11.0	27		52.3		32.5		72.5		42.6		24.4		22.80		12.7	
118UB_15		15	11.9	27		52.3		32.5		72.5		42.6		24.4		22.80		12.7	
118UB_16		16	12.7	27		52.3		32.5		72.5		42.6		24.4		22.80		12.7	
118UB_18		18	15.1	30		58.7		37.3		78.9		47.4		24.4		25.00		16.8	
118UB_20		20	15.9	35		64.3		42.9		84.5		53.0		26.0		23.00		19.0	
118UB_25		25	21.9	41		71.4		45.2		96.0		57.5		31.3		33.70		19.0	
118UB_38		38	33.7	60		89.8		51.8		145.0		79.5		49.4		50.50		19.0	

### TUBE (INCH) TO TUBE (INCH)

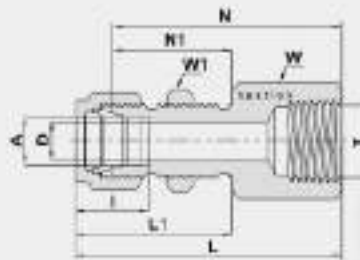
Part No.	A Tube O.D.		D	W Hex. Fac.		N		N1		L		L1		I		Panel Hole Drill Size		Panel Hole Drill Size	
	inch	mm		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
118UB_1/16	1/16	1.58	.05	1.27	5/16	.84	23.88	.53	13.48	1.24	31.5	.68	17.3	.34	8.6	13/64	5.16	.12	3.05
118UB_1/8	1/8	3.17	.05	2.28	1/2	1.50	38.10	.57	24.53	2.02	51.30	1.23	31.24	.50	12.7	21/64	8.33	.50	12.70
118UB_3/16	3/16	4.76	.12	3.04	9/16	1.56	40.38	1.00	25.40	2.11	53.99	1.26	38.00	.54	13.7	25/64	9.62	.50	12.70
118UB_1/4	1/4	6.35	.15	4.82	5/8	1.65	42.52	1.03	26.15	2.27	57.65	1.32	33.52	.60	15.2	29/64	11.50	.40	10.16
118UB_5/16	5/16	7.93	.25	6.35	11/16	1.81	46.97	1.12	28.44	2.39	60.70	1.41	35.81	.64	16.2	33/64	13.09	.44	11.17
118UB_3/8	3/8	9.52	.28	7.11	3/4	1.97	47.5	1.16	29.45	2.45	62.2	1.45	36.83	.66	16.8	37/64	14.68	.44	11.17
118UB_1/2	1/2	12.70	.41	10.41	15/16	2.00	50.80	1.25	31.75	2.80	71.12	1.65	41.91	.90	22.9	43/64	13.44	.50	12.70
118UB_5/8	5/8	15.87	.50	12.70	1 1/16	2.06	52.32	1.28	32.51	2.86	72.64	1.68	42.67	.96	24.4	51/64	22.62	.50	12.70
118UB_3/4	3/4	19.05	.62	15.75	1 3/16	2.31	58.67	1.47	37.33	3.11	78.99	1.87	47.48	.99	24.4	1 1/64	25.75	.66	16.78
118UB_1	1	25.40	.86	22.35	1 5/8	2.61	71.37	1.78	45.21	3.77	95.76	2.26	57.40	1.23	31.2	1 1/64	30.73	.75	19.05
118UB_1 1/4	1 1/4	31.75	1.09	27.70	1 7/8	3.11	79.00	1.86	47.75	4.55	123.13	2.75	69.85	1.62	41.2	1 1/8	41.67	.75	19.05
118UB_1 1/2	1 1/2	38.10	1.34	34.00	2 1/4	3.34	84.80	1.94	49.25	5.48	138.19	3.01	76.45	1.97	50.0	1 1/4	49.61	.75	19.05
118UB_2	2	50.80	1.81	45.97	2 3/4	4.16	106.68	2.22	56.35	7.10	180.34	3.69	93.73	2.68	67.6	2 1/64	67.07	.75	19.05

\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.

# BULK HEAD FEMALE CONNECTOR 119BCF



**119BCF**  
BULKHEAD FEMALE  
CONNECTOR



#### TUBE (METRIC) TO FEMALE NPT THREAD

Part No.	A	T	D	W	W1	N	N1	L	L1	I	Panel Hole	
	Tube O.D.	(NPT)		Max. Flat	Max. Flat						Drill Size	Drill Size
	mm	Inch	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
119BCF 8 X 1/4	8	1/4	4.8	18	18	44.4	28.2	51.8	33.6	15.3	11.5	10.2
119BCF 12X1/2	12	1/2	9.5	27	24	56.4	31.8	66.5	41.8	22.8	19.5	12.7

#### TUBE (INCH) TO FEMALE NPT THREAD

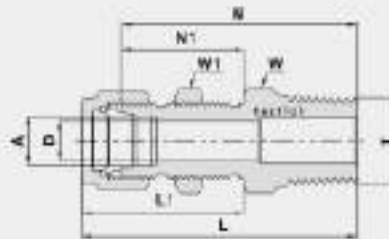
Part No.	A	T	D	W	W1	N	N1	L	L1	I	Panel Hole										
	Tube O.D.	(NPT)		Max. Flat	Max. Flat						Drill Size	Drill Size									
	Inch	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch									
119BCF 1/8X1/8	1/8	3.17	1/8	.02	2.28	5/16	1/2	1.50	38.10	.07	34.02	1.75	44.70	1.23	31.34	50	12.7	21.64	8.33	50	12.70
119BCF 1/4X1/8	1/4	6.35	1/8	.10	4.82	5/8	3/8	1.56	39.92	1.03	26.16	1.85	46.98	1.32	33.58	60	15.2	26.84	11.30	40	10.16
119BCF 1/4X1/4	1/4	6.35	1/4	.15	4.82	3/4	5/8	1.75	44.45	1.03	26.16	2.04	51.81	1.32	33.52	60	15.2	26.84	11.30	40	10.16
119BCF 3/8X1/4	3/8	9.52	1/4	.20	7.11	3/4	3/4	1.88	47.75	1.18	29.96	2.17	55.11	1.45	36.80	60	15.2	32.54	14.58	48	11.17
119BCF 1/2X3/8	1/2	12.70	3/8	.41	10.41	15/16	15/16	2.03	51.56	1.25	31.75	2.43	61.72	1.65	41.91	60	22.9	46.64	18.44	50	12.70
119BCF 1/2X1/2	1/2	12.70	1/2	.41	10.41	1 1/16	15/16	2.22	56.38	1.25	31.75	2.62	66.54	1.65	41.91	60	22.9	46.64	18.44	50	12.70

\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.



# BULK HEAD MALE CONNECTOR 120BCM

**120BCM**  
BULKHEAD MALE  
CONNECTOR



### TUBE (METRIC) TO MALE NPT THREAD

Part No.	A Tube O.D.		T NPT	D		W Hex. Flat	W1 Hex. Flat	N	N1	L		L1	Panel Hole Drill Size	Max. Panel Thickness
	mm	inch	inch	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
120BCM_8 X 1/8	8	1/8	1/8	4.8	16	16	42.2	26.2	49.8	33.6	11.5	10.2		
120BCM_8 X 1/4	8	1/4	1/4	4.8	16	16	42.2	26.2	53.6	33.6	11.5	10.2		
120BCM_12 X 1/2	12	1/2	1/2	9.8	24	24	58.7	31.8	58.8	41.9	19.5	12.7		

### TUBE (INCH) TO MALE NPT THREAD

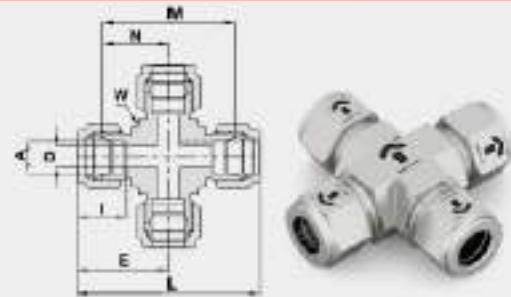
Part No.	A Tube O.D.		T NPT	D		W Hex. Flat	W1 Hex. Flat	N	N1	L		L1	Panel Hole Drill Size		Max. Panel Thickness				
	inch	mm	inch	inch	mm	inch	inch	inch	mm	inch	mm	inch	mm	inch	mm				
120BCM_1/8 X 1/8	1/8	3.17	1/8	.09	2.26	1/2	1.2	1.57	39.90	.97	24.60	1.83	46.46	1.23	31.24	21/64	8.33	.50	12.70
120BCM_1/4 X 1/8	1/4	6.35	1/8	.10	4.82	5/8	5/8	1.68	42.20	1.03	26.20	1.95	49.53	1.32	33.52	23/64	11.50	.40	10.16
120BCM_1/4 X 1/4	1/4	6.35	1/4	.10	4.82	5/8	5/8	1.84	46.70	1.03	26.16	2.13	54.10	1.32	33.52	23/64	11.50	.40	10.16
120BCM_3/8 X 1/8	3/8	9.52	1/4	.26	7.11	3/4	3/4	1.87	50.00	1.18	29.46	2.26	57.40	1.45	36.83	27/64	14.68	.44	11.17
120BCM_3/8 X 3/8	3/8	9.52	3/8	.26	7.11	3/4	3/4	1.97	50.04	1.18	29.46	2.26	57.40	1.45	36.83	27/64	14.68	.44	11.17
120BCM_3/8 X 1/2	3/8	9.52	1/2	.26	7.11	7/8	3/4	2.22	56.35	1.18	29.46	2.51	63.73	1.45	36.83	27/64	14.68	.44	11.17
120BCM_1/2 X 3/8	1/2	12.70	3/8	.40	10.40	15/16	15/16	2.09	53.10	1.35	31.75	2.48	63.25	1.65	41.91	43/64	13.44	.60	15.20
120BCM_1/2 X 1/2	1/2	12.70	1/2	.40	10.40	15/16	15/16	2.31	58.70	1.35	31.70	2.71	68.83	1.65	41.91	43/64	13.44	.60	15.20
120BCM_3/4 X 3/4	3/4	19.05	3/4	.62	15.74	1 3/16	1 3/16	2.80	69.04	1.47	37.33	3.00	76.20	1.97	47.49	1 1/64	25.79	.65	16.76
120BCM_1 X 1	1	25.4	1	.66	22.35	1 5/8	1 5/8	3.18	81.02	1.78	45.21	3.67	93.21	2.36	57.40	1 21/64	33.73	.75	19.05

\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.



# UNION CROSS 121CR

## 121CR UNION CROSS



### ALL TUBES (METRIC)

Part No.	A Tube O.D.		D		W Wrench Flat		N		E		M		L		I	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
121CR_3	3		2.4		3/8	8.5	15.7		22.3		31.5		44.7		12.9	
121CR_6	6		4.8		1/2	12.7	19.6		27.0		38.1		53.9		15.3	
121CR_8	8		6.4		5/8	15.8	22.4		29.8		44.7		58.7		16.2	
121CR_10	10		7.9		13/16	20.8	25.9		33.5		51.8		67.0		17.2	
121CR_12	12		9.5		13/16	20.8	25.9		36.0		51.8		72.0		22.8	
121CR_16	16		12.7		1 5/16	23.8	26.8		37.0		53.8		74.0		24.4	
121CR_18	18		15.1		1 1/16	27.0	28.2		38.3		56.4		78.8		24.4	
121CR_20	20		15.5		1 3/8	34.9	34.5		44.5		66.0		88.3		26.0	
121CR_22	22		16.3		1 3/8	34.9	34.6		44.7		66.1		88.4		26.0	
121CR_25	25		21.8		1 3/8	34.9	36.8		48.1		73.7		98.3		31.2	

### ALL TUBES (INCH)

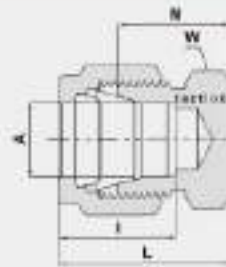
Part No.	A Tube O.D.		D		W Wrench Flat		N		E		M		L		I	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
121CR_1/8	1/8	3.17	.09	2.28	3/8	9.5	.62	15.74	.86	22.35	1.24	31.48	1.76	44.70	.50	12.7
121CR_1/4	1/4	6.35	.19	4.82	1/2	12.7	.77	19.55	1.05	26.93	1.54	39.12	2.12	53.84	.80	19.2
121CR_5/16	5/16	7.93	.25	6.35	5/8	15.8	.88	22.35	1.17	29.71	1.75	44.70	2.34	59.42	.84	18.2
121CR_3/8	3/8	9.52	.28	7.11	5/8	15.8	.91	23.11	1.20	30.48	1.82	46.22	2.40	60.96	.88	19.8
121CR_1/2	1/2	12.70	.41	10.41	13/16	20.6	1.02	25.9	1.42	36.07	2.04	51.80	2.94	72.14	.90	22.8
121CR_3/4	3/4	19.05	.82	15.74	1 1/16	27.0	1.17	29.72	1.57	39.98	2.34	59.44	3.14	79.78	.96	24.4
121CR_1	1	25.40	.88	22.35	1 3/8	34.9	1.45	36.8	1.93	49.02	2.80	73.00	3.96	98.04	1.23	31.2

\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.



# CAP 122CP

**122CP**  
CAP



### CAPPING END OF TUBE (METRIC)

Part No.	A Tube O.D.		W Hex. Flat		N		L		I	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
122CP_2		2		12		13.5		20.1		12.9
122CP_3		3		12		13.5		20.1		12.9
122CP_4		4		12		14.7		21.3		13.7
122CP_6		6		14		15.7		23.1		15.3
122CP_8		8		15		17.0		24.5		16.2
122CP_10		10		18		19.0		26.6		17.2
122CP_12		12		22		19.0		29.1		22.8
122CP_14		14		24		19.8		29.9		24.4
122CP_15		15		24		19.8		29.9		24.4
122CP_16		16		24		19.8		29.9		24.4
122CP_18		18		27		21.3		31.4		24.4
122CP_20		20		30		23.0		34.0		26.0
122CP_22		22		30		23.8		34.0		26.0
122CP_25		25		35		26.2		38.5		31.3
122CP_30		30		55		37.8		65.4		48.4

### CAPPING END OF TUBE (INCH)

Part No.	A Tube O.D.		W Hex. Flat		N		L		I	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
122CP_1/16	1/16	1.58	5/16	7.92	.44	11.17	.50	12.70	.34	8.63
122CP_1/8	1/8	3.17	7/16	11.13	.53	13.48	.79	20.06	.50	12.7
122CP_3/16	3/16	4.76	7/16	11.13	.58	14.73	.84	21.34	.54	13.7
122CP_1/4	1/4	6.35	1/2	12.70	.63	16.00	.92	23.37	.60	15.2
122CP_5/16	5/16	7.93	9/16	14.29	.67	17.01	.96	24.38	.64	16.2
122CP_3/8	3/8	9.52	5/8	15.88	.72	18.29	1.01	25.65	.68	17.2
122CP_1/2	1/2	12.70	13/16	19.05	.75	19.00	1.15	29.21	.90	22.8
122CP_5/8	5/8	15.87	15/16	23.81	.78	19.81	1.18	29.97	.96	24.4
122CP_3/4	3/4	19.05	1 1/16	27.14	.84	21.33	1.24	31.49	.98	24.4
122CP_7/8	7/8	22.22	1 3/16	30.48	.84	21.33	1.34	34.04	1.02	25.9
122CP_1	1	25.40	1 3/8	34.93	1.03	26.16	1.51	38.35	1.23	31.2
122CP_1 1/4	1 1/4	31.75	1 3/4	43.18	1.23	31.24	2.10	53.34	1.82	46.2
122CP_1 1/2	1 1/2	38.10	2 1/8	50.80	1.47	37.33	2.54	64.52	1.97	50.0
122CP_2	2	50.80	2 3/4	68.27	1.84	46.98	3.41	86.61	2.66	67.6

\* I - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.



# PLUG 123PL

## 123PL PLUG

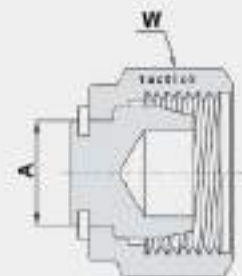
### PLUGGING UNUSED PORT OF FITTING (METRIC)

Part No.	A		W
	mm		Hex. Flat mm
123PL_2	2		14
123PL_3	3		12
123PL_4	4		12
123PL_6	6		14
123PL_8	8		16
123PL_10	10		19
123PL_12	12		22
123PL_14	14		25
123PL_15	15		25
123PL_16	16		25
123PL_18	18		30
123PL_20	20		32
123PL_22	22		32
123PL_25	25		38
123PL_38	38		60
123PL_50	50		3 inch

### PLUGGING UNUSED PORT OF FITTING (INCH)

Part No.	A		W
	inch	mm	Hex. Flat inch
123PL_1/16	1/16	1.58	5/16
123PL_1/8	1/8	3.17	7/16
123PL_3/16	3/16	4.76	1/2
123PL_1/4	1/4	6.35	9/16
123PL_5/16	5/16	7.93	5/8
123PL_3/8	3/8	9.52	11/16
123PL_1/2	1/2	12.70	7/8
123PL_5/8	5/8	15.87	1
123PL_3/4	3/4	19.05	1 1/8
123PL_7/8	7/8	22.22	1 1/4
123PL_1	1	25.40	1 1/2
123PL_1 1/4	*1 1/4	31.75	1 7/8
123PL_1 1/2	*1 1/2	38.10	2 1/4
123PL_2	*2	50.80	3

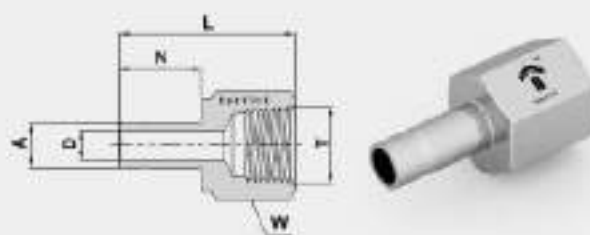
\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.





## FEMALE ADAPTER TUBE TO PIPE 124ADF

**124ADF**  
FEMALE ADAPTER  
TUBE TO PIPE



### TUBE (METRIC) FEMALE PIPE

Part No.	A	T	D	W	N	L
	Tube O.D. mm	WPT inch	mm	Hex. Flat mm	mm	mm
124ADF 3 X 1/8	3	1/8	2.1	14	13.5	31.5
124ADF 3 X 1/4	3	1/4	2.1	19	13.5	35.3
124ADF 4 X 1/4	4	1/4	2.2	19	14.2	35.0
124ADF 5 X 1/8	5	1/8	4.0	14	15.7	32.5
124ADF 5 X 1/4	5	1/4	4.0	19	15.7	37.1
124ADF 5 X 3/8	5	3/8	4.0	22	15.7	33.6
124ADF 5 X 1/2	5	1/2	4.0	27	15.7	45.5
124ADF 5 X 5/8	5	5/8	5.6	14	15.8	34.3
124ADF 5 X 3/4	5	3/4	5.6	19	15.8	37.6
124ADF 5 X 1/2	5	1/2	5.6	27	15.8	45.0
124ADF 10 X 1/4	10	1/4	7.1	19	17.5	35.1
124ADF 10 X 3/8	10	3/8	7.1	22	17.5	40.1
124ADF 10 X 1/2	10	1/2	7.1	27	17.5	45.5
124ADF 12 X 1/4	12	1/4	8.8	19	23.1	43.4
124ADF 12 X 3/8	12	3/8	8.8	22	23.1	45.5
124ADF 12 X 1/2	12	1/2	8.8	27	23.1	52.3
124ADF 15 X 3/8	15	3/8	12.7	24	24.7	45.0
124ADF 15 X 1/2	15	1/2	12.7	27	24.7	53.1
124ADF 20 X 1/2	20	1/2	15.1	27	25.6	55.0
124ADF 20 X 3/4	20	3/4	15.1	35	25.6	55.0

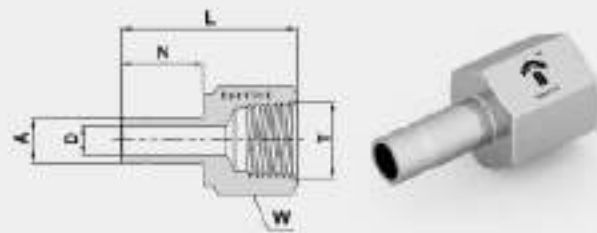
\* - Dimension is minimum spacing. Dimensions are for reference only, and are subject to change without notice.

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# FEMALE ADAPTER TUBE TO PIPE 124ADF

**124ADF**  
**FEMALE ADAPTER**  
**TUBE TO PIPE**  
 (Cont'd)



**TUBE (INCH) FEMALE PIPE**

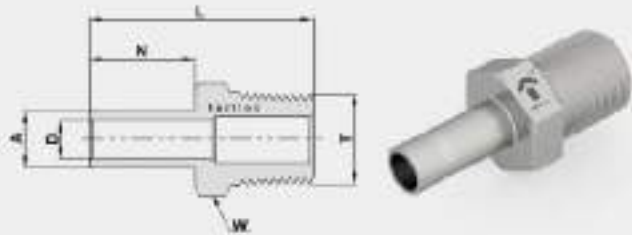
Part No.	A Tube O.D.		T NPT	D		W Hex. Flat	N		L	
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm
124ADF 1/8 X 1/8	1/8	3.17	1/8	.08	2.0	9/16	.53	13.45	1.24	31.5
124ADF 1/8 X 1/4	1/8	3.17	1/4	.09	2.0	3/4	.53	13.45	1.39	35.3
124ADF 3/16 X 1/4	3/16	4.76	1/4	.12	3.0	3/4	.56	14.20	1.41	35.8
124ADF 1/4 X 1/8	1/4	6.35	1/8	.17	4.2	9/16	.62	15.75	1.30	33.0
124ADF 1/4 X 1/4	1/4	6.35	1/4	.17	4.2	3/4	.62	15.75	1.46	37.1
124ADF 1/4 X 3/8	1/4	6.35	3/8	.17	4.2	7/8	.62	15.75	1.55	39.4
124ADF 1/4 X 1/2	1/4	6.35	1/2	.17	4.2	1 1/16	.62	15.75	1.78	45.5
124ADF 5/16 X 1/4	5/16	7.93	1/4	.22	5.6	3/4	.66	16.75	1.48	37.6
124ADF 3/8 X 1/8	3/8	9.52	1/8	.27	6.9	9/16	.69	17.50	1.35	34.3
124ADF 3/8 X 1/4	3/8	9.52	1/4	.27	6.9	3/4	.69	17.50	1.50	38.1
124ADF 3/8 X 3/8	3/8	9.52	3/8	.27	6.9	7/8	.69	17.50	1.59	40.4
124ADF 3/8 X 1/2	3/8	9.52	1/2	.27	6.9	1 1/16	.69	17.50	1.84	46.7
124ADF 1/2 X 1/4	1/2	12.70	1/4	.37	9.4	3/4	.91	23.10	1.71	43.4
124ADF 1/2 X 3/8	1/2	12.70	3/8	.37	9.4	7/8	.91	23.10	1.79	45.5
124ADF 1/2 X 1/2	1/2	12.70	1/2	.37	9.4	1 1/16	.91	23.10	2.05	52.1
124ADF 5/8 X 1/2	5/8	15.87	1/2	.50	12.7	1 1/16	.97	24.65	2.09	53.1
124ADF 3/4 X 1/2	3/4	19.05	1/2	.59	15.0	1 1/16	.97	24.65	2.06	52.5
124ADF 3/4 X 3/4	3/4	19.05	3/4	.59	15.0	1 5/16	.97	24.65	2.16	54.8
124ADF 3/4 X 1	3/4	19.05	1	.59	15.0	1 5/8	.97	24.65	2.30	58.4
124ADF 1 X 3/4	1	25.40	3/4	.60	20.3	1 5/16	1.23	31.20	2.39	60.7
124ADF 1 X 1	1	25.40	1	.60	20.3	1 5/8	1.23	31.20	2.53	64.3
124ADF 1 1/4 X 1 1/4	1 1/4	31.75	1 1/4	1.02	25.9	2 1/8	1.73	43.82	3.06	77.7
124ADF 1 1/2 X 1 1/2	1 1/2	38.10	1 1/2	1.25	31.8	2 3/8	2.14	54.33	3.50	88.9

\*D\* - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.



## MALE ADAPTER TUBE TO PIPE 125ADM

**125ADM**  
MALE ADAPTER  
TUBE TO PIPE



### TUBE (METRIC) MALE PIPE

Part No.	A	T	D	W	N	L
	U.S. D.I. mm	V.P.T. Inch	mm	Hex. Flat mm	mm	mm
125ADM_ 3 X 1/8	3	1/8	2.1	12	13.5	30.0
125ADM_ 3 X 1/4	3	1/4	2.1	14	13.5	35.3
125ADM_ 6 X 1/8	6	1/8	4.0	12	15.7	32.8
125ADM_ 6 X 1/4	6	1/4	4.0	14	15.7	38.1
125ADM_ 6 X 3/8	6	3/8	4.0	18	15.7	37.0
125ADM_ 6 X 1/2	6	1/2	4.0	22	15.7	43.4
125ADM_ 8 X 1/8	8	1/8	4.8	12	16.8	33.5
125ADM_ 8 X 1/4	8	1/4	5.6	14	16.8	39.1
125ADM_ 8 X 3/8	8	3/8	5.6	11/16 inch	16.8	37.8
125ADM_ 8 X 1/2	8	1/2	5.6	22	16.8	43.0
125ADM_ 10 X 1/4	10	1/4	7.1	3/16 inch	17.5	39.9
125ADM_ 10 X 3/8	10	3/8	7.1	19	17.5	40.6
125ADM_ 10 X 1/2	10	1/2	7.1	22	17.5	46.2
125ADM_ 12 X 1/4	12	1/4	7.1	18	23.1	46.5
125ADM_ 12 X 3/8	12	3/8	8.8	19	23.1	46.5
125ADM_ 12 X 1/2	12	1/2	8.8	22	23.1	52.0
125ADM_ 16 X 1/2	16	1/2	11.8	22	24.7	50.5
125ADM_ 20 X 3/4	20	3/4	15.1	27	26.6	64.9

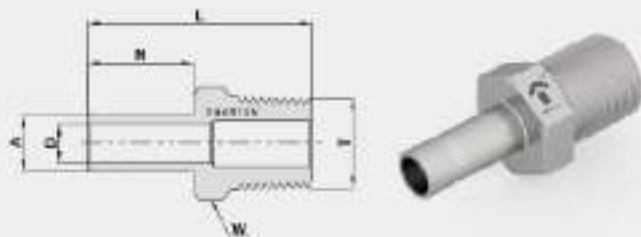
\*W\* - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

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# MALE ADAPTER TUBE TO PIPE 125ADM

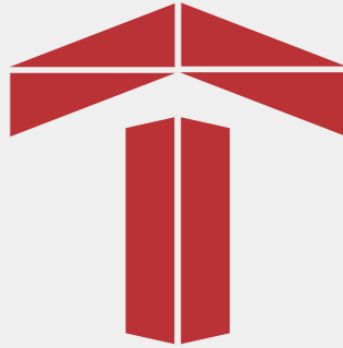
**125ADM**  
MALE ADAPTER  
TUBE TO PIPE  
(Cont'd)



## TUBE (INCH) MALE PIPE

Part No.	A Tube O.D.		T VPT	D		W Hex. Flat	N		L	
	inch	mm		inch	mm		inch	mm	inch	mm
125ADM 1/8 X 1/8	1/8	3.17	1/8	.08	2.0	7/16	.53	13.45	1.18	29.5
125ADM 1/8 X 1/4	1/8	3.17	1/4	.09	2.0	9/16	.53	13.45	1.37	34.8
125ADM 3/16 X 1/8	3/16	4.76	1/8	.12	3.0	7/16	.56	14.20	1.19	30.2
125ADM 3/16 X 1/4	3/16	4.76	1/4	.12	3.0	9/16	.56	14.20	1.40	35.6
125ADM 1/4 X 1/8	1/4	6.35	1/8	.17	4.2	7/16	.62	15.75	1.25	31.8
125ADM 1/4 X 1/4	1/4	6.35	1/4	.17	4.2	9/16	.62	15.75	1.46	37.1
125ADM 1/4 X 3/8	1/4	6.35	3/8	.17	4.2	11/16	.62	15.75	1.49	37.9
125ADM 1/4 X 1/2	1/4	6.35	1/2	.17	4.2	7/8	.62	15.75	1.71	43.4
125ADM 5/16 X 1/8	5/16	7.93	1/8	.22	5.6	7/16	.66	16.75	1.29	32.7
125ADM 5/16 X 1/4	5/16	7.93	1/4	.22	5.6	9/16	.66	16.75	1.50	38.1
125ADM 3/8 X 1/8	3/8	9.52	1/8	.27	6.9	7/16	.69	17.50	1.32	33.5
125ADM 3/8 X 1/4	3/8	9.52	1/4	.27	6.9	9/16	.69	17.50	1.53	39.0
125ADM 3/8 X 3/8	3/8	9.52	3/8	.27	6.9	11/16	.69	17.50	1.56	39.6
125ADM 3/8 X 1/2	3/8	9.52	1/2	.27	6.9	7/8	.69	17.50	1.78	45.2
125ADM 1/2 X 1/4	1/2	12.70	1/4	.37	9.4	9/16	.91	23.10	1.75	44.5
125ADM 1/2 X 3/8	1/2	12.70	3/8	.37	9.4	11/16	.91	23.10	1.78	45.2
125ADM 1/2 X 1/2	1/2	12.70	1/2	.37	9.4	7/8	.91	23.10	2.0	50.8
125ADM 5/8 X 3/8	5/8	15.87	3/8	.37	9.5	11/16	.97	24.65	1.81	47.6
125ADM 5/8 X 1/2	5/8	15.87	1/2	.47	11.9	7/8	.97	24.65	2.06	52.3
125ADM 5/8 X 3/4	5/8	15.87	3/4	.50	12.7	11/16	.97	24.65	2.06	52.3
125ADM 3/4 X 1/2	3/4	19.05	1/2	.47	11.9	7/8	.97	24.65	2.06	52.3
125ADM 3/4 X 3/4	3/4	19.05	3/4	.59	15.0	11/16	.97	24.65	2.06	52.3
125ADM 3/4 X 1	3/4	19.05	1	.59	15.0	13/8	.97	24.65	2.28	57.9
125ADM 7/8 X 3/4	7/8	22.22	3/4	.60	15.0	11/16	1.05	26.60	2.00	51.0
125ADM 1 X 3/4	1	25.40	3/4	.60	15.0	11/16	1.30	33.00	2.31	58.7
125ADM 1 X 1	1	25.40	1	.80	20.3	13/8	1.30	33.00	2.80	66.0
125ADM 1 1/4 X 1 1/4	1 1/4	31.75	1 1/4	1.02	25.9	13/4	1.73	43.82	3.16	80.3
125ADM 1 1/2 X 1 1/2	1 1/2	38.10	1 1/2	1.25	31.6	2 1/8	2.14	54.33	3.72	94.5

\*D\* - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.



tactlok

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