



Instrumentation Fittings

Specifications

- Instrumentation fittings meet ANSI B31.1, ANSI B31.3, ASME Sec. VIII
- Instrumentation fittings wall thickness conform to SAE-J-514
- NPT pipe threads conform to ANSI B2-1
- Straight threads conform to ANSI B1-1 (unified threads clause 2A & 2B)
- Instrumentation fittings made from material that conforms to ASTM A276 316 SS (barstock) and ASTM A-182 G F 316 (forgings)
- Instrumentation fittings ferrules conform to ASTM A276 316 SS (min hardness Rockwell B-90)
- Instrumentation fittings ferrules composed of 316 SS, PTFE, Brass, Nylon, D

Testing

- Following tests are carried out at various stages of manufacture and carried out in accordance with BS-4368-Part-IV
- Visual / dimensional check
- Pneumatic pressure test at 2000 psi
- Hydraulic leak test at 10,000 psi
- Pressure impulse & vibration test at vibration frequency of 23-47 Hz with 5 mm amplitude and 30-40 CPM for a minimum of 20 million cycles
- Minimum burst pressure test at a steady rate of 3000 PSI per min up to 15,000 psi
- Make and break test hydraulically tested at 6,000 psi and 10,000 psi
- Temperature cycling test temperature increased from ambient to 320° C in min. held for 60 min, reduced to ambient, then hydraulically at 10,000 psi
- Vacuum test at 700 m bar vacuum, deterioration in vacuum not to exceed 20 m bar in 20 mins.
- Helium leak test at 15 PSI leak not to exceed 2 x 10 STD cc per sec

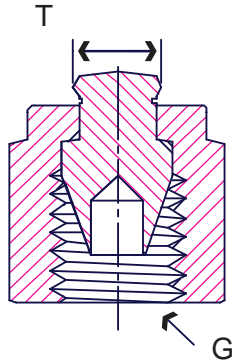


Fig. AFEC – Fitting End Closure

Tube OD IN	Part Number	T IN	G IN	Packing	Weight LB
1/8	S76AFEC001	1/8	7/16	100	0.04
1/4	S76AFEC002	1/4	9/16	100	0.05
3/8	S76AFEC003	3/8	11/16	60	0.09
1/2	S76AFEC004	1/2	7/8	20	0.1
5/8	S76AFEC005	5/8	1	50	0.1
3/4	S76AFEC006	3/4	1-1/8	20	0.2

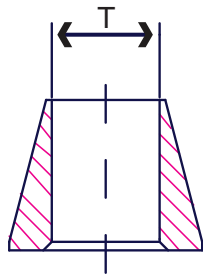


Fig. AFF – Front Ferrule

Tube OD IN	Part Number	T IN	Packing	Weight LB
1/8	S76AFF001	1/8	500	0.007
3/16	S76AFF316	3/16	500	0.007
1/4	S76AFF002	1/4	500	0.009
5/16	S76AFF516	5/16	500	0.01
3/8	S76AFF003	3/8	300	0.01
1/2	S76AFF004	1/2	200	0.01
5/8	S76AFF005	5/8	150	0.04
3/4	S76AFF006	3/4	100	0.05

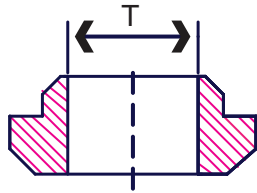


Fig. ABF – Back Ferrule

Tube OD IN	Part Number	T IN	Packing	Weight LB
1/8	S76ABF001	1/8	500	0.004
3/16	S76ABF316	3/16	500	0.004
1/4	S76ABF002	1/4	500	0.007
5/16	S76ABF516	5/16	500	0.009
3/8	S76ABF003	3/8	300	0.01
1/2	S76ABF004	1/2	200	0.01
5/8	S76ABF005	5/8	150	0.03
3/4	S76ABF006	3/4	100	0.04

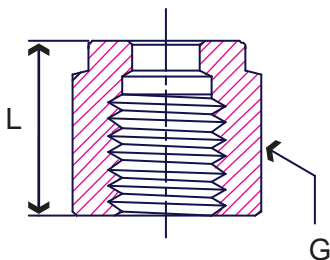


Fig. AHN – Hex Nut

Tube OD IN	Part Number	L IN	G IN	Packing	Weight LB
1/8	S76AHN001	0.47	7/16	100	0.01
1/4	S76AHN002	0.50	9/16	100	0.02
5/16	S76AHN516	0.53	5/8	100	0.03
3/8	S76AHN003	0.56	11/16	100	0.04
1/2	S76AHN004	0.69	7/8	60	0.07
5/8	S76AHN005	0.69	1	50	0.08
3/4	S76AHN006	0.69	1-1/8	30	0.09

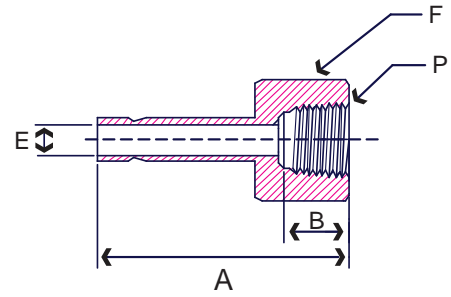


Fig. AFA – Female Adapter

Tube OD IN	Part Number	P IN	A IN	B IN	E IN	F IN	Packing	Weight LB
1/8	S76AFA001001	1/8	1.23	0.41	0.09	9/16	100	0.07
1/8	S76AFA001002	1/4	1.38	0.59	0.09	3/4	100	0.08
1/4	S76AFA002001	1/8	1.29	0.41	0.19	9/16	100	0.07
1/4	S76AFA002002	1/4	1.45	0.59	0.19	3/4	60	0.07
1/4	S76AFA002003	3/8	1.54	0.59	0.19	7/8	40	0.08
1/4	S76AFA002004	1/2	1.78	0.78	0.19	1-1/16	20	0.1
5/16	S76AFA516002	1/4	1.47	0.59	0.25	3/4	60	0.07
3/8	S76AFA003002	1/4	1.49	0.59	0.28	3/4	40	0.1
3/8	S76AFA003003	3/8	1.58	0.59	0.28	7/8	40	0.1
1/2	S76AFA004003	3/8	1.78	0.59	0.39	7/8	30	0.07
1/2	S76AFA004004	1/2	2.03	0.78	0.39	1-1/16	10	0.1
5/8	S76AFA005004	1/2	2.08	0.78	0.50	1-1/16	20	0.3
3/4	S76AFA1006006	3/4	2.15	0.81	0.59	1-5/16	10	0.5
3/4	S76AFA1006010	1	2.29	1.00	0.59	1-5/8	10	0.8

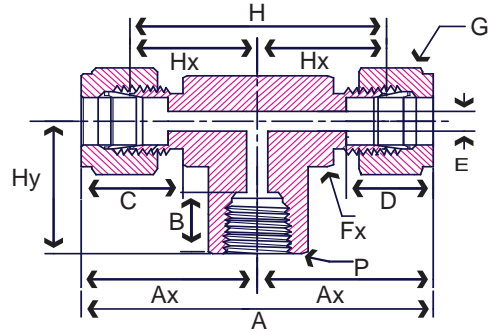


Fig. AFBT – Female Branch Tee

Tube OD IN	Part Number	P IN	A IN	Ax IN	B IN	C IN	D IN	E IN	Fx IN	G IN	H IN	Hx IN	Hy IN	Packing	Weight LB
1/8	S76AFBT001001	1/8	1.92	0.96	0.41	0.60	0.50	0.09	1/2	7/16	1.40	0.70	0.74	40	0.1
1/4	S76AFBT002001	1/8	2.10	1.05	0.41	0.70	0.60	0.19	1/2	9/16	1.52	0.76	0.74	30	0.1
1/4	S76AFBT002002	1/4	2.32	1.16	0.59	0.70	0.60	0.19	11/16	9/16	1.74	0.87	0.87	30	0.2
3/8	S76AFBT003002	1/4	2.44	1.22	0.59	0.76	0.66	0.28	11/16	11/16	1.84	0.93	0.87	20	0.3
3/8	S76AFBT003003	3/8	2.60	1.30	0.59	0.76	0.66	0.28	13/16	11/16	2.02	1.01	0.87	20	0.3
1/2	S76AFBT004003	3/8	2.82	1.41	0.59	0.86	0.90	0.41	13/16	7/8	2.02	1.01	0.87	10	0.3
1/2	S76AFBT004004	1/2	3.04	1.52	0.78	0.86	0.90	0.41	1	7/8	2.24	1.12	1.11	10	0.5
5/8	S76AFBT005004	1/2	3.04	1.52	0.78	0.86	0.96	0.50	1	1	2.24	1.12	1.11	10	1.1
3/4	S76AFBT1006006	3/4	3.50	1.75	0.81	0.86	0.96	0.62	1-3/8	1-1/8	2.70	1.35	1.24	5	1.6

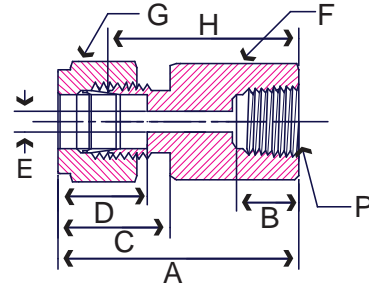


Fig. AFC – Female Connector

Tube OD IN	Part Number	P IN	A IN	B IN	C IN	D IN	E IN	F IN	G IN	H IN	Packing	Weight LB
1/8	S76AFC001001	1/8	1.12	0.40	0.60	0.50	0.09	9/16	7/16	0.86	30	0.08
1/8	S76AFC001002	1/4	1.31	0.59	0.60	0.50	0.09	3/4	7/16	1.05	30	0.09
1/4	S76AFC002001	1/8	1.22	0.39	0.70	0.60	0.19	9/16	9/16	0.93	100	0.09
1/4	S76AFC002002	1/4	1.40	0.59	0.70	0.60	0.19	3/4	9/16	1.11	60	0.09
1/4	S76AFC002003	3/8	1.47	0.59	0.70	0.60	0.19	7/8	9/16	1.18	40	0.1
1/4	S76AFC002004	1/2	1.66	0.78	0.70	0.60	0.19	1-1/16	9/16	1.37	20	0.1
5/16	S76AFC516002	1/4	1.44	0.59	0.73	0.64	0.25	3/4	5/8	1.15	60	0.1
3/8	S76AFC003002	1/4	1.47	0.59	0.76	0.66	0.28	3/4	11/16	1.18	40	0.1
3/8	S76AFC003003	3/8	1.53	0.59	0.76	0.66	0.28	7/8	11/16	1.24	30	0.1
3/8	S76AFC003004	1/2	1.72	0.78	0.76	0.66	0.28	1-1/16	11/16	1.48	20	0.1
1/2	S76AFC004002	1/4	1.58	0.59	0.86	0.90	0.41	13/16	7/8	1.18	30	0.1
1/2	S76AFC004003	3/8	1.64	0.59	0.86	0.90	0.41	7/8	7/8	1.24	20	0.1
1/2	S76AFC004004	1/2	1.83	0.78	0.86	0.90	0.41	1-1/16	7/8	1.43	10	0.2
3/4	S76AFC006004	1/2	1.83	0.78	0.86	0.96	0.62	1-1/16	1-1/8	1.43	10	0.5
3/4	S76AFC006006	3/4	1.91	0.81	0.86	0.96	0.62	1-5/16	1-1/8	1.49	10	0.6

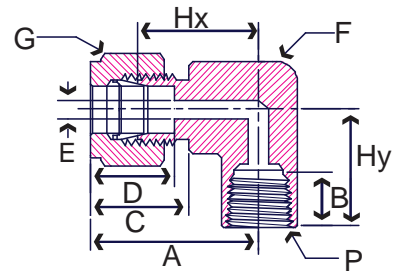


Fig. AFE – Female Elbow

Tube OD IN	Part Number	P IN	A IN	B IN	C IN	D IN	E IN	Fx IN	G IN	Hx IN	Hy IN	Packing	Weight LB
1/8	S76AFE001001	1/8	0.96	0.41	0.60	0.50	0.09	1/2	7/16	0.71	0.74	40	0.09
1/8	S76AFE001002	1/4	1.07	0.59	0.60	0.50	0.09	11/16	7/16	0.81	0.87	30	0.1
1/4	S76AFE002001	1/8	1.05	0.41	0.70	0.60	0.19	1/2	9/16	0.76	0.74	40	0.1
1/4	S76AFE002002	1/4	1.16	0.59	0.70	0.60	0.19	11/16	9/16	0.87	0.87	30	0.2
1/4	S76AFE002003	3/8	1.24	0.59	0.70	0.60	0.19	13/16	9/16	0.95	0.87	30	0.3
1/4	S76AFE002004	1/2	1.35	0.78	0.70	0.60	0.19	1	9/16	1.06	1.11	20	0.4
5/16	S76AFE516002	1/4	1.19	0.59	0.73	0.64	0.25	11/16	5/8	0.90	0.87	30	0.3
3/8	S76AFE003002	1/4	1.22	0.59	0.76	0.66	0.28	11/16	11/16	0.93	0.87	30	0.3
3/8	S76AFE003003	3/8	1.30	0.59	0.76	0.66	0.28	13/16	11/16	1.01	0.87	20	0.3
3/8	S76AFE003004	1/2	1.41	0.78	0.76	0.66	0.28	1	11/16	1.12	1.11	20	0.3
1/2	S76AFE004002	1/4	1.41	0.59	0.86	0.90	0.41	13/16	7/8	1.01	0.87	10	0.3
1/2	S76AFE004003	3/8	1.41	0.59	0.86	0.90	0.41	13/16	7/8	1.01	0.87	10	0.4
1/2	S76AFE004004	1/2	1.52	0.78	0.86	0.90	0.41	1	7/8	1.12	1.11	10	0.5
5/8	S76AFE005004	1/2	1.52	0.78	0.86	0.96	0.50	1-1/16	1	1.16	1.11	15	0.5
3/4	S76AFE006004	1/2	1.56	0.78	0.86	0.96	0.62	1-1/16	1-1/8	1.16	1.11	10	0.6
3/4	S76AFE1006006	3/4	1.75	0.81	0.86	0.96	0.62	1-3/8	1-1/8	1.35	1.24	10	0.8

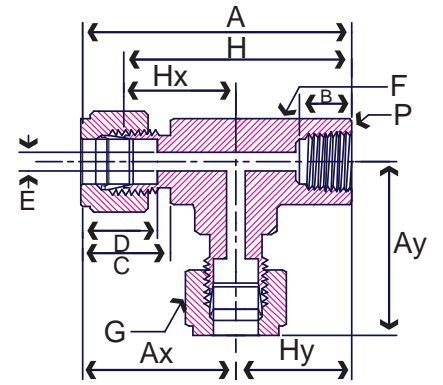


Fig. AFRT – Female Run Tee

Tube OD IN	Part Number	P IN	A IN	Ax IN	B IN	C IN	D IN	E IN	Fx IN	G IN	H IN	Hx IN	Hy IN	Packing	Weight LB
1/8	S76AFRT001001	1/8	1.71	0.96	0.41	0.60	0.50	0.09	1/2	7/16	1.44	0.70	0.74	40	0.1
1/4	S76AFRT002001	1/8	1.81	1.05	0.41	0.70	0.60	0.19	1/2	9/16	1.50	0.76	0.74	40	0.1
1/4	S76AFRT002002	1/4	2.05	1.16	0.59	0.70	0.60	0.19	11/16	9/16	1.79	0.87	0.87	30	0.2
3/8	S76AFRT003002	1/4	2.10	1.22	0.59	0.76	0.66	0.28	11/16	11/16	1.79	0.93	0.87	20	0.3
1/2	S76AFRT004003	3/8	2.29	1.41	0.59	0.86	0.90	0.41	13/16	7/8	1.88	1.01	0.87	10	0.3
1/2	S76AFRT004004	1/2	2.68	1.56	0.78	0.86	0.90	0.41	1-1/16	7/8	2.27	1.16	1.12	10	0.5
3/4	S76AFRT1006006	3/4	3.00	1.75	0.81	0.86	0.96	0.62	1-3/8	1-1/8	2.59	1.35	1.24	5	1.6

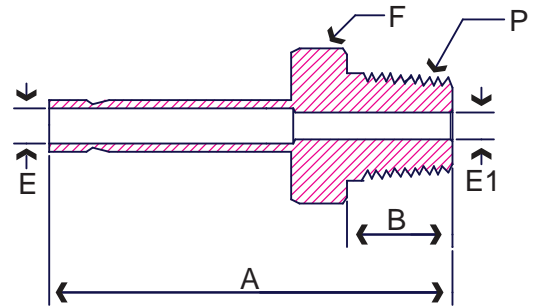


Fig. AMA – Male Adapter

Tube OD IN	Part Number	P IN	A IN	B IN	E IN	E1 IN	F IN	Packing	Weight LB
1/8	S76AMA001001	1/8	1.15	0.38	0.19	0.09	7/16	100	0.07
1/8	S76AMA001002	1/4	1.36	0.56	0.28	0.09	9/16	100	0.07
1/4	S76AMA002001	1/8	1.24	0.38	0.19	0.19	7/16	100	0.07
1/4	S76AMA002002	1/4	1.45	0.56	0.19	0.19	9/16	100	0.07
1/4	S76AMA002003	3/8	1.48	0.56	0.19	0.19	11/16	60	0.08
1/4	S76AMA002004	1/2	1.70	0.75	0.19	0.19	7/8	30	0.1
5/16	S76AMA516001	1/8	1.28	0.38	0.19	0.25	7/16	100	0.08
5/16	S76AMA516002	1/4	1.49	0.56	0.25	0.25	9/16	100	0.08
3/8	S76AMA003002	1/4	1.52	0.56	0.28	0.28	9/16	60	0.09
3/8	S76AMA003003	3/8	1.55	0.56	0.28	0.28	11/16	60	0.09
3/8	S76AMA003004	1/2	1.77	0.75	0.28	0.28	7/8	40	0.1
1/2	S76AMA004003	3/8	1.77	0.56	0.39	0.39	11/16	30	0.07
1/2	S76AMA004004	1/2	1.99	0.75	0.39	0.39	7/8	30	0.1
5/8	S76AMA005004	1/2	2.05	0.75	0.47	0.50	7/8	20	0.2
3/4	S76AMA006004	1/2	2.05	0.75	0.47	0.59	7/8	10	0.3
3/4	S76AMA1006006	3/4	2.05	0.75	0.59	0.59	1-11/16	10	0.6

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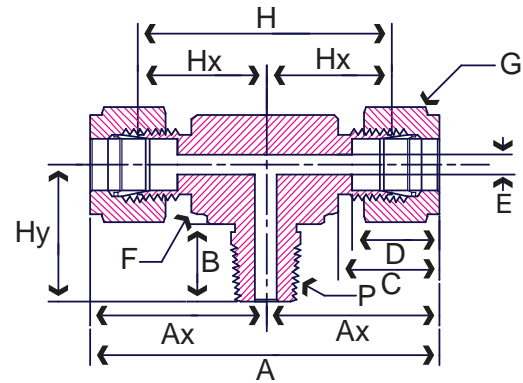


Fig. AMBT – Male Branch Tee

Tube OD IN	Part Number	P IN	A IN	Ax IN	B IN	C IN	D IN	E IN	Fx IN	G IN	H IN	Hx IN	Hy IN	Packing	Weight LB
1/8	S76AMBT001001	1/8	1.84	1.84	0.38	0.60	0.50	0.09	7/16	7/16	1.32	0.66	0.69	40	0.1
1/8	S76AMBT001002	1/4	1.92	1.92	0.56	0.60	0.50	0.09	1/2	7/16	1.40	0.70	0.91	30	0.1
1/4	S76AMBT002001	1/8	2.10	2.10	0.38	0.70	0.60	0.19	1/2	9/16	1.52	0.76	0.73	30	0.1
1/4	S76AMBT002002	1/4	2.10	2.10	0.56	0.70	0.60	0.19	1/2	9/16	1.52	0.76	0.91	30	0.1
3/8	S76AMBT003002	1/4	2.38	2.38	0.56	0.76	0.66	0.28	5/8	11/16	1.80	0.90	0.99	30	0.2
3/8	S76AMBT003003	3/8	2.60	2.60	0.56	0.76	0.66	0.28	13/16	11/16	2.02	1.01	1.10	20	0.2
1/2	S76AMBT004003	3/8	2.82	2.82	0.56	0.86	0.90	0.38	13/16	7/8	2.02	1.01	1.10	10	0.4
1/2	S76AMBT005004	1/2	3.04	3.04	0.75	0.86	0.96	0.47	1	1	2.24	1.12	1.40	1	0.8
5/8	S76AMBT1006006	3/4	3.12	3.12	0.75	0.86	0.96	0.62	1-1/16	1-1/8	2.32	1.16	1.44	5	0.8

I N S T R U M E N T A T I O N

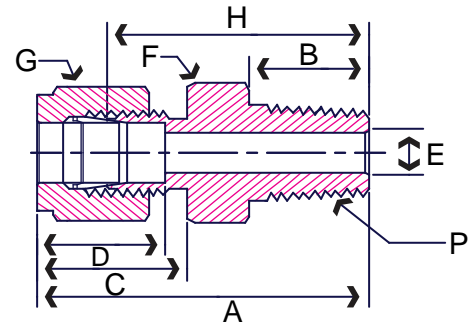


Fig. AMC – Male Connector

Tube OD IN	Part Number	P IN	A IN	B IN	C IN	D IN	E IN	F IN	G IN	H IN	Packing	Weight LB
1/8	S76AMC001001	1/8	1.19	0.38	0.60	0.50	0.09	7/16	7/16	0.93	100	0.08
1/8	S76AMC001002	1/4	1.39	0.56	0.60	0.50	0.09	9/16	7/16	1.13	100	0.08
1/4	S76AMC002001	1/8	1.28	0.38	0.70	0.60	0.19	1/2	9/16	0.99	100	0.07
1/4	S76AMC002002	1/4	1.48	0.56	0.70	0.60	0.19	9/16	9/16	1.19	100	0.08
1/4	S76AMC002003	3/8	1.50	0.56	0.70	0.60	0.19	11/16	9/16	1.21	60	0.09
1/4	S76AMC002004	1/2	1.75	0.75	0.70	0.60	0.19	7/8	9/16	1.46	30	0.1
5/16	S76AMC516002	1/4	1.51	0.56	0.73	0.64	0.25	9/16	5/8	1.22	40	0.1
3/8	S76AMC003001	1/8	1.38	0.38	0.76	0.66	0.19	5/8	11/16	1.09	100	0.1
3/8	S76AMC003002	1/4	1.56	0.56	0.76	0.66	0.28	5/8	11/16	1.27	60	0.1
3/8	S76AMC003003	3/8	1.56	0.56	0.76	0.66	0.28	11/16	11/16	1.27	40	0.1
3/8	S76AMC003004	1/2	1.81	0.75	0.76	0.66	0.28	7/8	11/16	1.52	30	0.1
1/2	S76AMC004002	1/4	1.70	0.56	0.86	0.90	0.28	13/16	7/8	1.30	30	0.1
1/2	S76AMC004003	3/8	1.70	0.56	0.86	0.90	0.38	13/16	7/8	1.30	30	0.1
1/2	S76AMC004004	1/2	1.92	0.75	0.86	0.90	0.41	7/8	7/8	1.52	30	0.2
1/2	S76AMC1004006	3/4	1.98	0.75	0.86	0.96	0.41	1-1/16	7/8	1.58	20	0.2
5/8	S76AMC005003	3/8	1.73	0.56	0.86	0.96	0.38	15/16	1	1.33	20	0.2
5/8	S76AMC005004	1/2	1.92	0.75	0.86	0.96	0.47	15/16	1	1.52	20	0.3
3/4	S76AMC006004	1/2	1.98	0.75	0.86	0.96	0.47	1-1/16	1-1/8	1.58	15	0.4
3/4	S76AMC1006006	3/4	1.98	0.75	0.86	0.96	0.62	1-1/16	1-1/8	1.58	15	0.4
3/4	S76AMC1006010	1	2.24	0.94	0.86	0.96	0.62	1-3/8	1-1/8	1.84	10	0.5

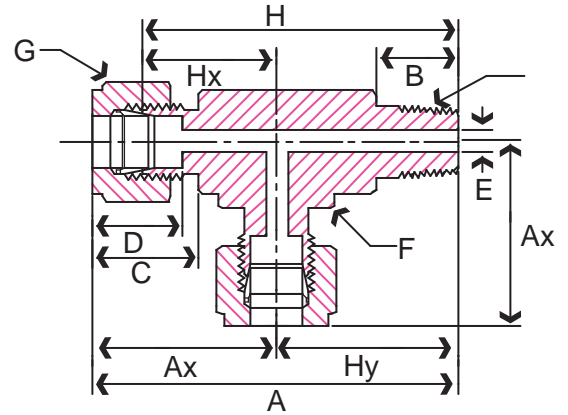


Fig. AMRT – Male Run Tee

Tube OD IN	Part Number	P IN	A IN	Ax IN	B IN	C IN	D IN	E IN	Fx IN	G IN	H IN	Hx IN	Hy IN	Packing	Weight LB
1/8	S76AMRT001001	1/8	1.61	0.93	0.38	0.60	0.50	0.09	7/16	7/16	1.35	0.66	0.92	40	0.1
1/8	S76AMRT001002	1/4	1.87	0.97	0.56	0.60	0.50	0.09	1/2	7/16	1.61	0.70	0.96	30	0.1
1/4	S76AMRT002001	1/8	1.98	1.06	0.38	0.70	0.60	0.19	1/2	9/16	1.48	0.76	1.05	30	0.1
1/4	S76AMRT002002	1/4	1.96	1.06	0.56	0.70	0.60	0.19	1/2	9/16	1.67	0.76	1.05	30	0.1
3/8	S76AMRT003002	1/4	2.18	1.20	0.56	0.76	0.66	0.28	5/8	11/16	1.89	0.90	1.19	20	0.2
3/8	S76AMRT003003	3/8	2.40	1.31	0.56	0.76	0.66	0.28	13/16	11/16	2.11	1.01	1.30	10	0.2
1/2	S76AMRT004003	3/8	2.51	1.42	0.56	0.86	0.90	0.38	13/16	7/8	2.11	1.01	1.41	10	0.4
1/2	S76AMRT004004	1/2	2.70	1.42	0.75	0.86	0.90	0.41	13/16	7/8	2.30	1.01	1.41	10	0.7
5/8	S76AMRT005004	1/2	2.86	1.50	0.75	0.86	0.96	0.47	15/16	1	2.46	1.00	1.49	10	0.8
3/4	S76AMRT006006	3/4	3.00	1.57	0.75	0.86	0.96	0.62	1-1/16	1-1/8	2.60	1.16	1.56	5	1.3

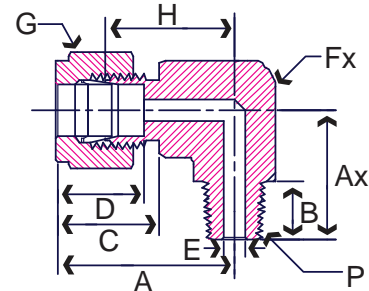


Fig. AME – Male Elbow

Tube OD IN	Part Number	P IN	A IN	B IN	C IN	D IN	E IN	Fx IN	G IN	H IN	Packing	Weight LB
1/8	S76AME001001	1/8	0.92	0.38	0.60	0.50	0.09	7/16	7/16	0.66	50	0.06
1/8	S76AME001002	1/4	0.96	0.56	0.60	0.50	0.09	1/2	7/16	0.70	40	0.07
1/4	S76AME002001	1/8	1.05	0.38	0.70	0.60	0.19	1/2	9/16	0.76	40	0.1
1/4	S76AME002002	1/4	1.05	0.56	0.70	0.60	0.19	1/2	9/16	0.76	30	0.1
1/4	S76AME002003	3/8	1.16	0.56	0.70	0.60	0.19	11/16	9/16	0.87	20	0.1
1/4	S76AME002004	1/2	1.24	0.75	0.70	0.60	0.19	13/16	9/16	0.95	20	0.1
5/16	S76AME516002	1/4	1.12	0.56	0.73	0.64	0.25	9/16	5/8	0.84	40	0.1
3/8	S76AME003002	1/4	1.19	0.56	0.76	0.66	0.28	5/8	11/16	0.90	30	0.1
3/8	S76AME003003	3/8	1.22	0.56	0.76	0.66	0.28	11/16	11/16	0.93	20	0.2
3/8	S76AME003004	1/2	1.30	0.75	0.76	0.66	0.28	13/16	11/16	1.01	10	0.2
1/2	S76AME004002	1/4	1.41	0.56	0.86	0.90	0.28	13/16	7/8	1.01	10	0.2
1/2	S76AME004003	3/8	1.41	0.56	0.86	0.90	0.38	13/16	7/8	1.01	10	0.2
1/2	S76AME004004	1/2	1.41	0.75	0.86	0.90	0.41	13/16	7/8	1.01	10	0.3
5/8	S76AME005004	1/2	1.49	0.75	0.86	0.96	0.47	15/16	1	1.09	15	0.4
3/4	S76AME006004	1/2	1.56	0.75	0.86	0.96	0.47	1-1/16	1-1/8	1.16	10	0.7
3/4	S76AME006006	3/4	1.56	0.75	0.86	0.96	0.62	1-1/16	1-1/8	1.16	10	0.8

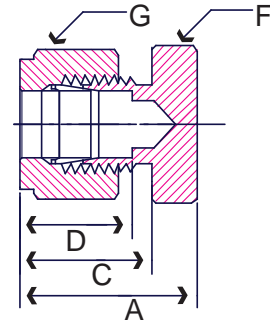


Fig. ATEC – Tube End Closure

Tube OD IN	Part Number	A IN	C IN	D IN	F IN	G IN	H IN	Packing	Weight LB
1/8	S76ATEC001	0.78	0.60	0.50	7/16	7/16	0.52	100	0.06
1/4	S76ATEC002	0.92	0.70	0.60	1/2	9/16	0.62	100	0.07
5/16	S76ATEC516	0.96	0.73	0.64	9/16	5/8	0.65	100	0.1
3/8	S76ATEC003	1.00	0.76	0.66	5/8	11/16	0.71	60	0.1
1/2	S76ATEC004	1.14	0.86	0.90	13/16	7/8	0.74	30	0.1
5/8	S76ATEC005	1.17	0.86	0.96	15/16	1	0.77	40	0.3
3/4	S76ATEC006	1.23	0.86	0.96	1-1/16	1-1/8	0.83	10	0.3

I N S T R U M E N T A T I O N

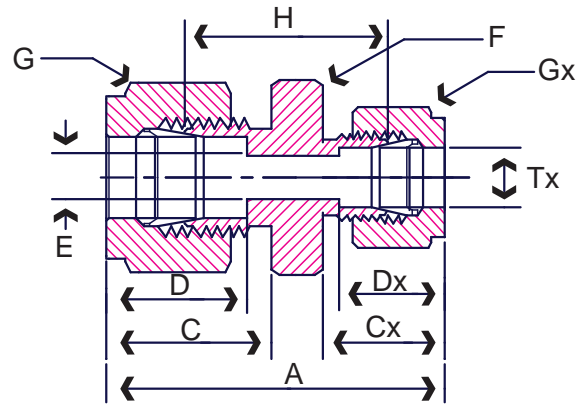
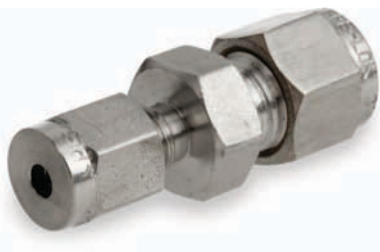


Fig. ARU – Reducing Union

Tube OD IN	Part Number	Tx Tube OD IN	A IN	C IN	Cx IN	D IN	Dx IN	E IN	F IN	G IN	Gx IN	H IN	Packing	Weight LB
1/4	S76ARU002001	1/8	1.51	0.70	0.60	0.60	0.50	0.09	1/2	9/16	7/16	0.96	100	0.08
5/16	S76ARU516002	1/4	1.65	0.73	0.70	0.64	0.60	0.19	9/16	5/8	9/16	1.07	60	0.1
3/8	S76ARU003002	1/4	1.69	0.76	0.70	0.66	0.60	0.19	5/8	11/16	9/16	1.11	40	0.1
1/2	S76ARU004002	1/4	1.84	0.86	0.70	0.90	0.60	0.19	13/16	7/8	9/16	1.15	20	0.3
1/2	S76ARU004003	3/8	1.90	0.86	0.76	0.90	0.66	0.28	13/16	7/8	11/16	1.21	20	0.3
5/8	S76ARU005003	3/8	1.93	0.86	0.76	0.96	0.66	0.28	15/16	1	11/16	1.24	30	0.4
5/8	S76ARU005004	1/2	2.04	0.86	0.86	0.96	0.90	0.41	15/16	1	7/8	1.24	30	0.4
3/4	S76ARU006004	1/2	2.10	0.86	0.86	0.96	0.90	0.50	1-1/16	1-1/8	7/8	1.30	10	0.5
3/4	S76ARU1006005	5/8	2.10	0.86	0.86	0.96	0.96	0.62	1-1/16	1-1/8	1	1.30	10	0.5

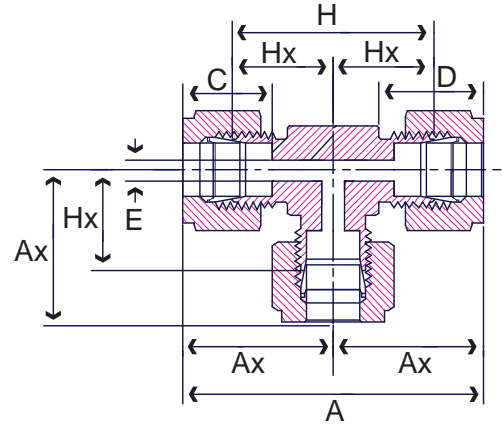


Fig. AUT – Union Tee

Tube OD IN	Part Number	A IN	C IN	D IN	E IN	F IN	G IN	H IN	Hx IN	Packing	Weight LB
1/8	S76AUT001	1.76	0.60	0.50	0.09	3/8	7/16	0.87	1.22	40	0.2
1/4	S76AUT002	2.12	0.70	0.60	0.19	1/2	9/16	1.05	1.52	30	0.2
5/16	S76AUT516	2.34	0.73	0.64	0.25	5/8	5/8	1.16	1.74	20	0.3
3/8	S76AUT003	2.40	0.76	0.66	0.28	5/8	11/16	1.19	1.80	20	0.4
1/2	S76AUT004	2.84	0.86	0.96	0.41	13/16	7/8	1.41	2.02	10	0.7
5/8	S76AUT005	3.06	0.86	0.96	0.50	1	1	1.52	2.24	10	0.8
3/4	S76AUT006	3.14	0.86	0.96	0.62	1-1/16	1-1/8	1.56	2.32	5	1.0

INSTRUMENTATION

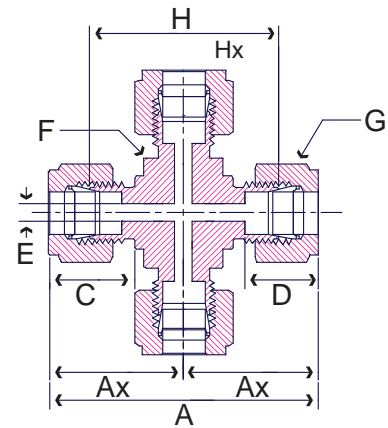


Fig. AUCR – Union Cross

Tube OD IN	Part Number	A IN	Ax IN	C IN	D IN	F IN	G IN	H IN	Packing	Weight LB
1/8	S76AUCR001	1.74	0.87	0.60	0.50	3/8	7/16	1.22	40	0.2
1/4	S76AUCR002	2.10	1.05	0.70	0.60	1/2	9/16	1.52	20	0.2
5/16	S76AUCR516	2.32	1.16	0.73	0.64	5/8	5/8	1.74	20	0.4
3/8	S76AUCR003	2.38	1.19	0.76	0.66	5/8	11/16	1.80	20	0.4
1/2	S76AUCR004	2.82	1.41	0.86	0.41	13/16	7/8	2.02	4	0.5

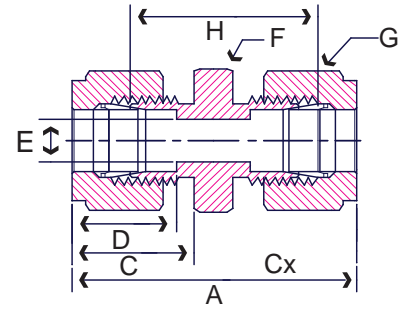


Fig. ASU – Straight Union

Tube OD IN	Part Number	A IN	C IN	D IN	E IN	F IN	G IN	H IN	Packing	Weight LB
1/8	S76ASU001	1.39	0.60	0.50	0.09	7/16	7/16	0.87	100	0.08
1/4	S76ASU002	1.60	0.70	0.60	0.19	1/2	9/16	1.02	60	0.1
5/16	S76ASU516	1.68	0.73	0.64	0.25	9/16	5/8	1.10	40	0.1
3/8	S76ASU003	1.75	0.76	0.66	0.28	5/8	11/16	1.18	40	0.1
1/2	S76ASU004	2.01	0.86	0.90	0.41	13/16	7/8	1.21	20	0.3
5/8	S76ASU005	2.04	0.86	0.96	0.50	15/16	1	1.24	30	0.4
3/4	S76ASU006	2.10	0.86	0.96	0.62	1-1/16	1-1/8	1.30	10	0.5

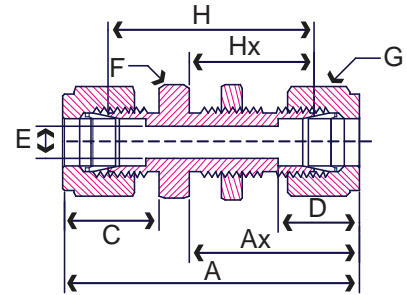


Fig. ABHU – Bulkhead Union

Tube OD IN	Part Number	A IN	Ax IN	C IN	D IN	E IN	F IN	G IN	H IN	Hx IN	Packing	Weight LB
1/8	S76ABHU001	2.01	1.22	0.60	0.50	0.09	1/2	7/16	1.49	0.96	100	0.09
1/4	S76ABHU002	2.26	1.31	0.70	0.60	0.19	5/8	9/16	1.68	1.02	60	0.1
5/16	S76ABHU516	2.38	1.40	0.73	0.64	0.25	11/16	5/8	1.80	1.11	40	0.1
3/8	S76ABHU003	2.44	1.44	0.76	0.66	0.28	3/4	11/16	1.86	1.15	30	0.2
1/2	S76ABHU004	2.79	1.64	0.86	0.90	0.41	15/16	7/8	1.99	1.24	20	0.3
5/8	S76ABHU005	2.85	1.67	0.86	0.96	0.50	1-1/16	1	2.05	1.27	20	0.5
3/4	S76ABHU006	3.10	1.86	0.86	0.96	0.63	1-3/16	1-1/8	2.30	1.46	10	0.7

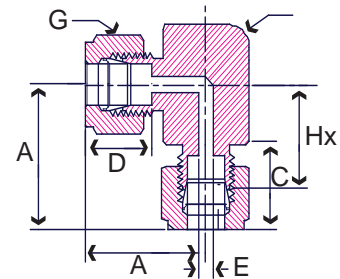


Fig. AUE – Union Elbow

Tube OD IN	Part Number	A IN	C IN	D IN	E IN	F IN	G IN	Hx IN	Packing	Weight LB
1/8	S76AUE001	0.87	0.43	0.34	0.05	3/8	5/16	0.61	50	0.1
1/4	S76AUE002	1.05	0.70	0.60	0.19	1/2	9/16	0.76	40	0.1
5/16	S76AUE516	1.12	0.73	0.64	0.25	9/16	5/8	0.83	30	0.2
3/8	S76AUE003	1.19	0.76	0.66	0.28	5/8	11/16	0.90	30	0.3
1/2	S76AUE004	1.41	0.86	0.90	0.41	13/16	7/8	1.01	20	0.3
5/8	S76AUE005	1.49	0.86	0.96	0.50	15/16	1	1.09	20	0.4
3/4	S76AUE006	1.56	0.86	0.96	0.62	1-1/16	1-1/8	1.16	10	0.4

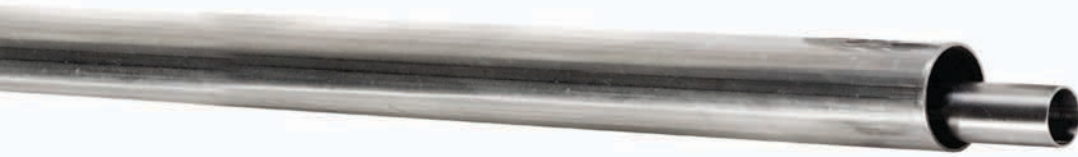


Fig. S63WT4 & S63WT6 – Welded Instrumentation Tubing

Tube OD IN	Wall Thickness IN	Part Number		ID IN	Tube Length FT	Weight LB/Ft
		304/L	316/L			
3/16	0.350	S63WT4035316	S63WT6035316	0.118	20	0.05
1/4	0.028	S63WT4028002	S63WT6028002	0.194	20	0.06
1/4	0.035	S63WT4035002	S63WT6035002	0.180	20	0.08
1/4	0.049	S63WT4049002	S63WT6049002	0.152	20	0.1
5/16	0.035	S63WT4035516	S63WT6035516	0.243	20	0.1
3/8	0.049	S63WT4049003	S63WT6049003	0.277	20	0.1
3/8	0.065	S63WT4065003	S63WT6065003	0.245	20	0.2
1/2	0.035	S63WT4035004	S63WT6035004	0.430	20	0.1
1/2	0.049	S63WT4049004	S63WT6049004	0.402	20	0.2
1/2	0.650	S63WT4065004	S63WT6065004	0.370	20	0.3
5/8	0.035	S63WT4035005	S63WT6035005	0.555	20	0.2
5/8	0.049	S63WT4049005	S63WT6049005	0.527	20	0.3
5/8	0.065	S63WT4065005	S63WT6065005	0.495	20	0.3
3/4	0.035	S63WT4035006	S63WT6035006	0.680	20	0.2
3/4	0.049	S63WT4049006	S63WT6049006	0.652	20	0.3
3/4	0.065	S63WT4065006	S63WT6065006	0.620	20	0.4
1	0.035	S63WT4035010	S63WT6035010	0.930	20	0.3
1	0.049	S63WT4049010	S63WT6049010	0.902	20	0.4
1	0.065	S63WT4065010	S63WT6065010	0.870	20	0.6
1-1/4	0.065	S63WT4065012	S63WT6065012	1.120	20	0.8
1-1/2	0.065	S63WT4065014	S63WT6065014	1.370	20	0.9
2	0.065	S63WT4065020	S63WT6065020	1.870	20	1.3
2	0.083	S63WT4083020	S63WT6083020	1.834	20	1.6

INSTRUMENTATION

Fig. S64ST4 & S64ST6 – Seamless Instrumentation Tubing

Tube OD IN	Wall Thickness IN	Part Number		ID IN	Tube Length FT	Weight LB/Ft
		304/L	316/L			
1/4	0.035	S64ST4035002	S64ST6035002	0.180	20	0.08
1/4	0.049	S64ST4049002	S64ST6049002	0.152	20	0.1
1/4	0.065	S64ST4065002	S64ST6065002	0.120	20	0.1
5/16	0.035	S64ST4035516	S64ST6035516	0.243	20	0.1
3/8	0.035	S64ST4035003	S64ST6035003	0.305	20	0.1
3/8	0.049	S64ST4049003	S64ST6049003	0.277	20	0.1
3/8	0.065	S64ST4065003	S64ST6065003	0.245	20	0.2
1/2	0.035	S64ST4035004	S64ST6035004	0.430	20	0.1
1/2	0.049	S64ST4049004	S64ST6049004	0.402	20	0.2
1/2	0.650	S64ST4065004	S64ST6065004	0.370	20	0.3
5/8	0.035	S64ST4035005	S64ST6035005	0.555	20	0.2
5/8	0.049	S64ST4049005	S64ST6049005	0.527	20	0.3
5/8	0.065	S64ST4065005	S64ST6065005	0.495	20	0.3
3/4	0.035	S64ST4035006	S64ST6035006	0.680	20	0.2
3/4	0.049	S64ST4049006	S64ST6049006	0.652	20	0.3
3/4	0.065	S64ST4065006	S64ST6065006	0.620	20	0.4
1	0.035	S64ST4035010	S64ST6035010	0.930	20	0.3
1	0.049	S64ST4049010	S64ST6049010	0.902	20	0.4
1	0.065	S64ST4065010	S64ST6065010	0.870	20	0.6
1	0.083	S64ST4083010	S64ST6083010	0.834	20	0.8
1	0.095	S64ST4095010	S64ST6095010	0.810	20	0.9
1	0.120	S64ST4120010	S64ST6120010	0.760	20	1.1