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MANUFACTURER: SSP Fittings
ENGINEERING REPORT NO. ER-171-AGA1-85

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ENGINEERING REPORT NO. 171-AGA1-85

An evaluation of the operation of the following pipe and tubing fitting Model Nos.:

TruFit series - "PP" Pipe Plug, "PCP" Pipe Cap, "HN" Hex Nipple, "HCG" Hex Coupling, "E" Elbow, "ME" Male Elbow, "SE" Street Elbow, "PT" Pipe Tee, "MT" Male Tee, "BT" Branch Tee. These model numbers have the following prefixes: ISS to designate 316 stainless steel material, followed by a "T" to designate the TruFit brand, followed by the pipe size indicator of "4" for 1/4", "6" for 3/8" and "8" for 1/2".

Duolok series - "P" Plug, "N" Nut, "BF" Back Ferrule, "FF" Front Ferrule, "U" Union, "RU" Reducing Union, "UT" Union Tee, "UE" Union Elbow, "ME" Male Elbow, "MC" Male Connector, "FC" Female Connector, "R" Reducer/Adapter. These model numbers have the following prefixes: "ISS" to designate 316 stainless steel material, followed by a "D" to designate the Duolok brand, followed by the tubing size indicator of "4" for 1/4", "6" for 3/8" or "8" for 1/2". The reducing union "RU" model nos. ISSD4RU will have a suffix "2", to indicate a 1/8" reduced end connection, ISSD6RU will have a suffix "4", to indicate a 1/4" reduced end connection and ISSD8RU will have a suffix "6", to indicate a 3/8" reduced end connection.

Unilok series - "P" Plug, "N" Nut, "F" Ferrule, "U" Union, "RU" Reducing Union, "UT" Union Tee, "UE" Union Elbow, "ME" Male Elbow, "MC" Male Connector, "FC" Female Connector, "R" Reducer/Adapter. These model numbers have the following prefixes: "ISS" to designate 316 stainless steel material, followed by a "U" to designate the Unilok brand, followed by the tubing size indicator of "4" for 1/4", "6" for 3/8" or "8" for 1/2". The reducing union "RU" model nos. ISSU4RU will have a suffix "2", to indicate a 1/8" reduced end connection, ISSU6RU will have a suffix "4", to indicate a 1/4" reduced end connection and ISSU8RU will have a suffix "6", to indicate a 3/8" reduced end connection.

<p>Engineering Report is not equivalent to product design certification. The factual information provided is intended only to assist code enforcing authorities, and others involved in judging acceptance of the device for use in their area of jurisdiction. See also Directory of Certified Appliances and Accessories, Table of Contents, Engineering Reports.</p>

Purpose: To conduct a construction evaluation and performance tests on the above noted fittings and adapters for use in Natural Gas Vehicle conversion kits listed above to A.G.A. Requirements No. 1-85, Natural Gas Vehicle (CNG) Conversion Kits.

Test Equipment: HP Hydraulic Test Chamber.

Test Program: The tests to be conducted on the fittings and adapters are Strength (Section 2.2.1) and Reconnection of Fittings (Section 2.2.3).

Test Criteria: It has been requested by SSP Fittings that the above tests be performed on the components with a rated pressure of 4000 psig. The rating is based on the use of type 316 stainless steel tubing with a wall thickness of .035 in. for size 1/4, .049 in. for size 3/8 and .065 in. for size 1/2 tube ends.

Test Results: Satisfactory results were obtained on all of the tests performed on the components listed above.

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Description of Components

CONNECTS FEMALE NPT THREAD TO FEMALE NPT THREAD

HEX NIPPLE	ISST4HN ISST6HN ISST8HN
MALE ELBOW	ISST4ME ISST6ME ISST8ME
MALE TEE	ISS4TMT ISS6TMT ISS8TMT

CONNECTS MALE NPT THREAD TO MALE NPT THREAD

HEX COUPLING	ISST4HCG ISST6HCG ISST8HCG
ELBOW	ISST4E ISST6E ISST8E
PIPE TEE	ISS4TPT ISS6TPT ISS8TPT

CONNECTS MALE NPT THREAD TO FEMALE NPT THREAD

STREET ELBOW	ISST4SE ISST6SE ISST8SE
BRANCH TEE	ISS4TBT ISS6TBT ISS8TBT

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CAPS MALE NPT THREAD

PIPE CAP	ISST4PCP
	ISST6PCP
	ISST8PCP

PLUGS FEMALE NPT THREAD

PIPE PLUG	ISST4PP
	ISST6PP
	ISST8PP

CONNECTS TUBE TO FEMALE NPT THREAD

MALE CONNECTOR	ISSD4MC
	ISSD6MC
	ISSD8MC

ISSU4MC
ISSU6MC
ISSU8MC

MALE ELBOW	ISSD4ME
	ISSD6ME
	ISSD8ME

ISSU4ME
ISSU6ME
ISSU8ME

CONNECTS TUBE TO MALE NPT THREAD

FEMALE CONNECTOR	ISSD4FC
	ISSD6FC
	ISSD8FC

ISSU4FC
ISSU6FC
ISSU8FC

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CONNECTS TUBES

UNION	ISSD4U
	ISSD6U
	ISSD8U
	ISSU4U
	ISSU6U
	ISSU8U
REDUCING UNION	ISSD4RU2
	ISSD6RU4
	ISSD8RU6
	ISSU4RU2
	ISSU6RU4
	ISSU8RU6
UNION ELBOW	ISSD4UE
	ISSD6UE
	ISSD8UE
	ISSU4UE
	ISSU6UE
	ISSU8UE
UNION TEE	ISSD4UT
	ISSD6UT
	ISSD8UT
	ISSU4UT
	ISSU6UT
	ISSU8UT

FITTING PLUGS

PLUG	ISSD4P
	ISSD6P
	ISSD8P
	ISSU4P
	ISSU6P
	ISSU8P

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Conclusion: Within the scope of this study, it was determined that the pipe and tubing fittings for use in natural gas vehicle conversion kits listed above, comply with the test criteria as stated in this report.

REPORT BY

Valdis Udris

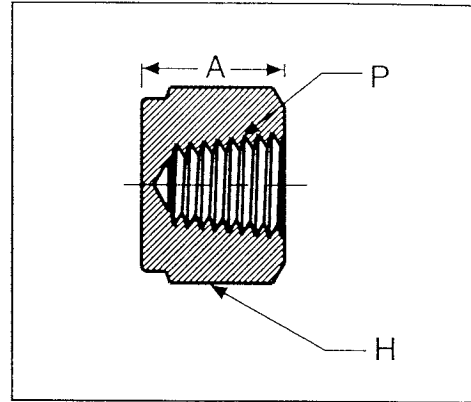
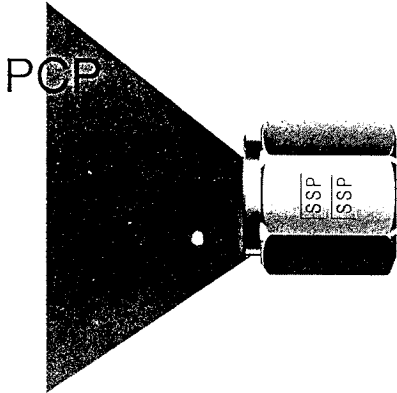
Valdis Udris
Project Engineer

REVIEWED BY

Trevor W. Perera

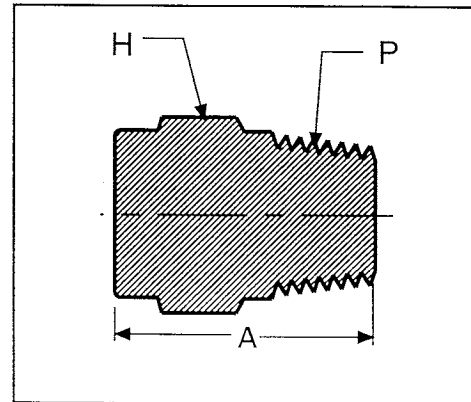
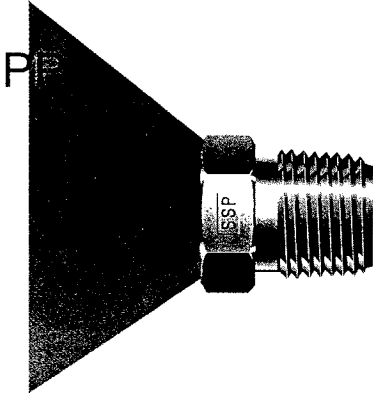
Trevor W. Perera
Manager

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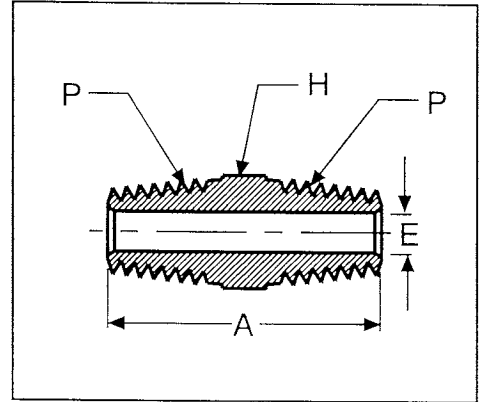
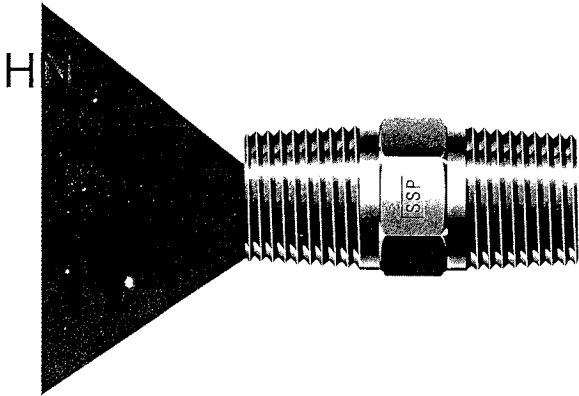
Pipe Cap

Trade Part #	Size Male NPT Size	Dimensions		Working Pressure (PSIG)	
		A	H	Brass	316 SS
T2PCP	1/8	.75	9/16	3,250	6,550
T4PCP	1/4	.91	3/4	3,350	6,650
T6PCP	3/8	1.03	7/8	2,650	5,350
T8PCP	1/2	1.34	1 1/16	2,450	4,950
T12PCP	3/4	1.44	1 5/16	2,350	4,650
T16PCP	1	1.62	1 5/8	2,250	4,450



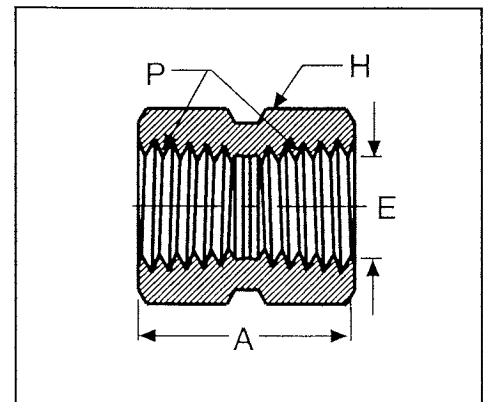
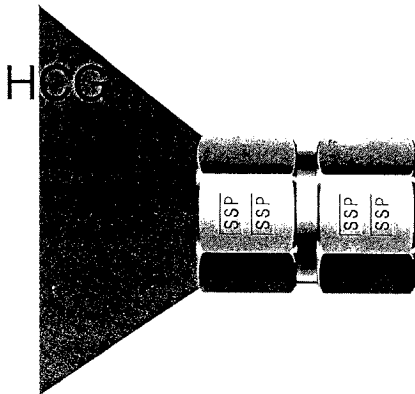
Pipe Plug

Trade Part #	Size Male NPT Size	Dimensions		Working Pressure (PSIG)	
		A	H	Brass	316 SS
T1PP	1/16	.75	5/16	5,550	11,050
T2PP	1/8	.75	7/16	5,050	10,050
T4PP	1/4	.96	9/16	4,050	8,050
T6PP	3/8	.99	11/16	3,950	7,850
T8PP	1/2	1.21	7/8	3,850	7,750
T12PP	3/4	1.21	1 1/16	3,650	7,350
T16PP	1	1.50	1 3/8	2,650	5,350



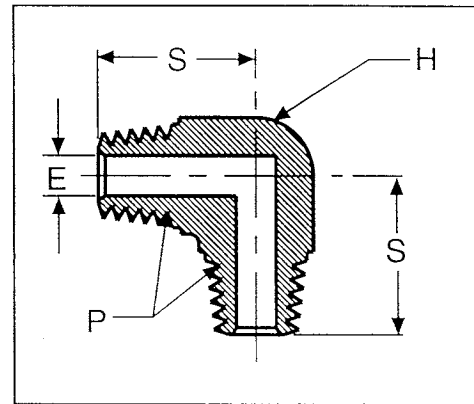
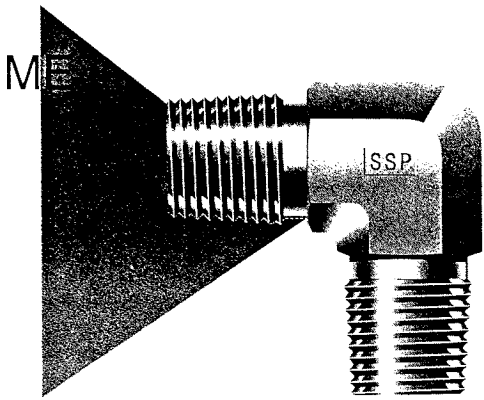
Hex Nipple

Part #	Size	A	Minimum Opening	H	Working Pressure (PSIG)	
					Brass	316SS
T1HN	1/16	1.01	.12	9/16	5,550	11,050
T2HN	1/8	1.01	.19	7/16	5,050	10,050
T4HN	1/4	1.40	.28	9/16	4,050	8,050
T6HN	3/8	1.43	.38	1 1/16	3,950	7,850
T8HN	1/2	1.84	.47	7/8	3,850	7,750
T12HN	3/4	1.84	.62	1 1/16	3,650	7,350
T16HN	1	2.32	.88	1 3/8	2,650	5,350



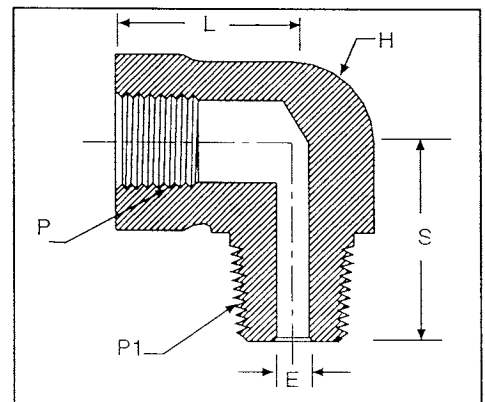
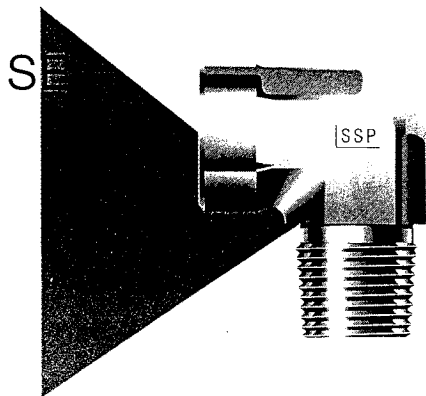
Hex Coupling

Part #	Size	A	Minimum Opening	H	Working Pressure (PSIG)	
					Brass	316SS
T2HCG	1/8	.81	.34	9/16	3,250	6,550
T4HCG	1/4	1.19	.45	3/4	3,350	6,650
T6HCG	3/8	1.31	.59	7/8	2,650	5,350
T8HCG	1/2	1.56	.73	1 1/16	2,450	4,950
T12HCG	3/4	1.62	.94	1 5/16	2,350	4,650
T16HCG	1	2.00	1.17	1 5/8	2,250	4,450



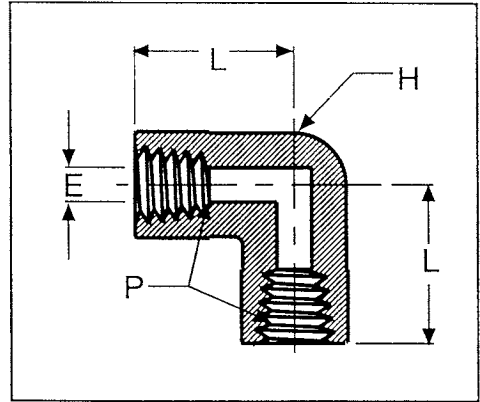
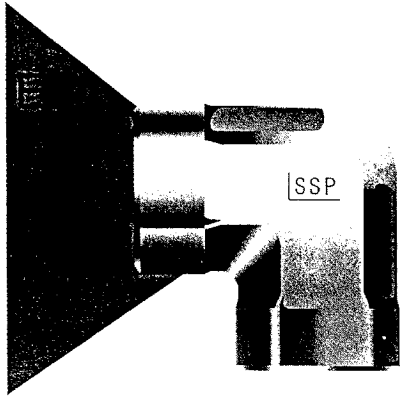
Male Elbow

Size	Male NPT Size	Dimensions			Working Pressure (PSIG)	
		Minimum Opening	H	S	Brass	316 SS
T2ME	1/8	.19	7/16	.88	5,050	10,050
T4ME	1/4	.28	9/16	1.05	4,050	8,050
T6ME	3/8	.38	3/4	1.17	3,950	7,850
T8ME	1/2	.47	7/8	1.45	3,850	7,750



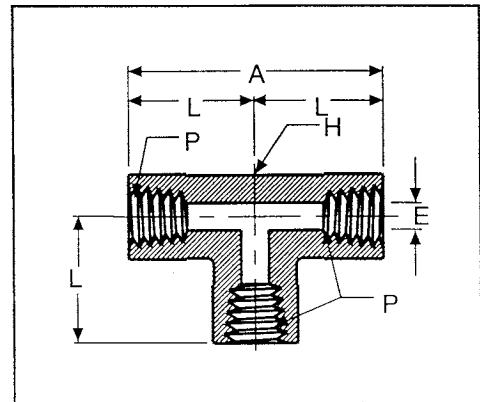
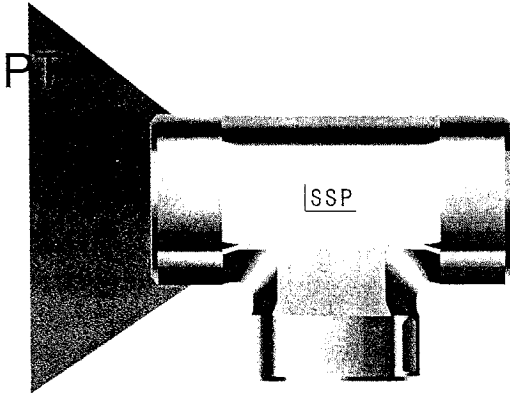
Street Elbow

Size	Male & female NPT Size	Dimensions				Working Pressure (PSIG)	
		Minimum Opening	H	L	S	Brass	316 SS
T1SE	1/16	.12	9/16	.86	.88	3,350	6,750
T2SE	1/8	.19	9/16	1.04	.87	3,250	6,550
T4SE	1/4	.28	3/4	1.17	1.17	3,350	6,650
T6SE	3/8	.38	7/8	1.42	1.26	2,650	5,350
T8SE	1/2	.47	1 1/16	1.56	1.56	2,450	4,950
T12SE	3/4	.62	1 5/16	1.92	1.67	2,350	4,650
T16SE	1	.88	1 9/8	1.91	1.94	2,250	4,450



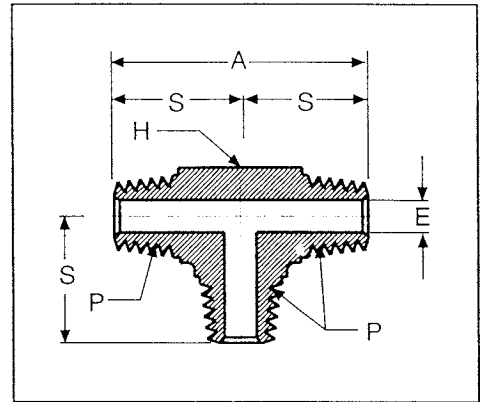
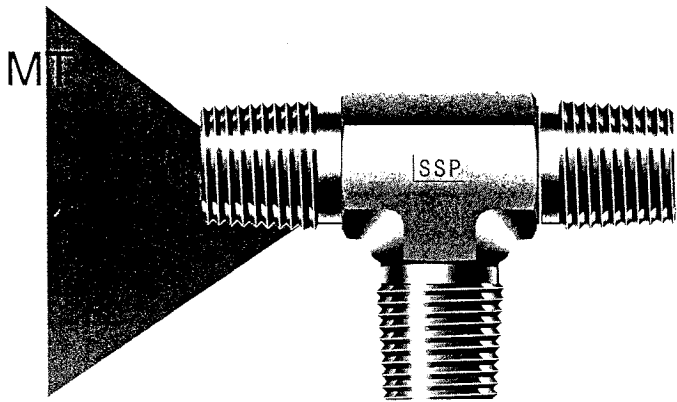
Elbow

Model Part	Size		Dimensions			Working Pressure (PSIG)	
	Flange Size	Minimum Opening	H	L	Brass	316 SS	
T2E	1/8	.34	9/16	1.04	3,250	6,550	
T4E	1/4	.45	3/4	1.17	3,350	6,650	
T6E	3/8	.59	7/8	1.42	2,650	5,350	
T8E	1/2	.73	1 1/16	1.56	2,450	4,950	
T12E	3/4	.94	1 5/16	1.92	2,350	4,650	
T16E	1	1.17	1 5/8	1.91	2,250	4,450	



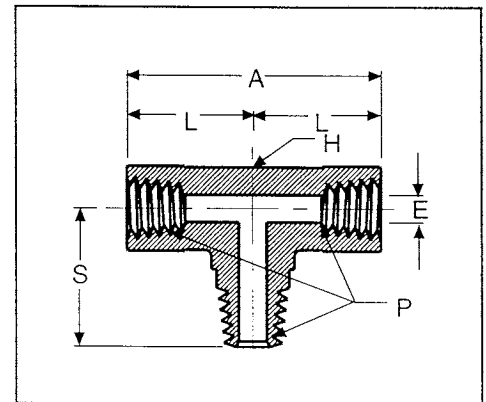
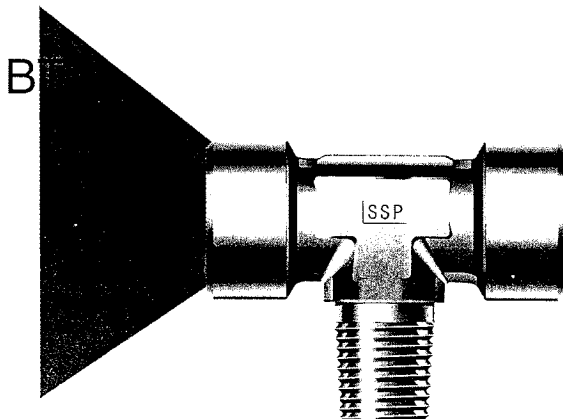
Pipe Tee

Model Part	Size		Dimensions			Working Pressure (PSIG)	
	Flange NET Size	A	Minimum Opening	H	L	Brass	316 SS
T2PT	1/8	2.08	.34	9/16	1.04	3,250	6,550
T4PT	1/4	2.34	.45	3/4	1.17	3,350	6,650
T6PT	3/8	2.84	.59	7/8	1.42	2,650	5,350
T8PT	1/2	3.12	.73	1 1/16	1.56	2,450	4,950
T12PT	3/4	3.84	.94	1 5/16	1.92	2,350	4,650
T16PT	1	3.82	1.17	1 5/8	1.91	2,250	4,450



Male Tee

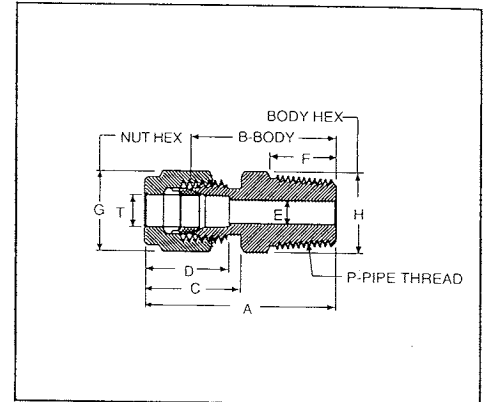
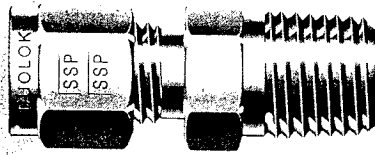
Trade Part	Size Nom. Size	Dimensions				Working Pressure (PSIG)	
		A	E Minimum Opening	H	S	Brass	316 SS
T2MT	1/8	1.76	.19	7/16	.88	5,050	10,050
T4MT	1/4	2.10	.28	9/16	1.05	4,050	8,050
T6MT	3/8	2.34	.38	3/4	1.17	3,950	7,850
T8MT	1/2	2.90	.47	7/8	1.45	3,850	7,750



Branch Tee

Trade Part	Size Nom. Size	Dimensions				Working Pressure (PSIG)		
		A	E Minimum Opening	H	L	S	Brass	316 SS
T2BT	1/8	2.08	.19	9/16	1.04	.87	3,250	6,550
T4BT	1/4	2.34	.28	3/4	1.17	1.17	3,350	6,650
T6BT	3/8	2.84	.38	7/8	1.42	1.26	2,650	5,350
T8BT	1/2	3.12	.47	1 1/16	1.56	1.56	2,450	4,950

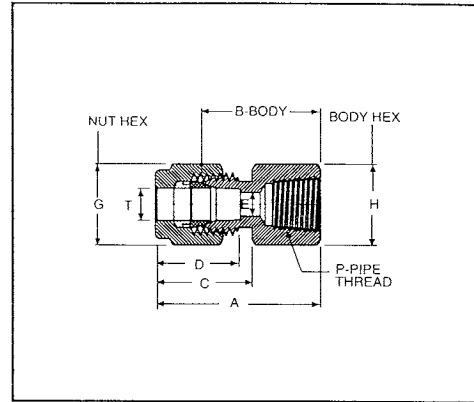
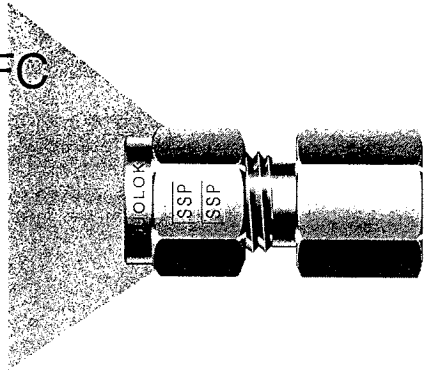
MC



Male Connector

Product Part	Tube O.D.	P-NPT Male Pipe Size	A	B	C	D	E	Minimum Quantity	F (mm)	G	H
D1MC1	1/16	1/16	0.94	0.79	0.43	0.34	0.05	0.38	5/16	5/16	
D1MC2	1/16	1/8	1.03	0.88	0.43	0.34	0.05	0.38	5/16	7/16	
D1MC4	1/16	1/4	1.22	1.07	0.43	0.34	0.05	0.56	5/16	9/16	
D2MC1	1/8	1/16	1.17	0.91	0.60	0.50	0.09	0.38	7/16	7/16	
D2MC2	1/8	1/8	1.20	0.94	0.60	0.50	0.09	0.38	7/16	7/16	
D2MC4	1/8	1/4	1.40	1.14	0.60	0.50	0.09	0.56	7/16	9/16	
D2MC6	1/8	3/8	1.41	1.15	0.60	0.50	0.09	0.56	7/16	11/16	
D2MC8	1/8	1/2	1.66	1.40	0.60	0.50	0.09	0.75	7/16	7/8	
D3MC2	3/16	1/8	1.23	0.97	0.63	0.54	0.12	0.38	1/2	7/16	
D3MC4	3/16	1/4	1.43	1.17	0.63	0.54	0.12	0.56	1/2	9/16	
D4MC1	1/4	1/16	1.29	1.00	0.70	0.60	0.17	0.38	9/16	1/2	
D4MC2	1/4	1/8	1.29	1.00	0.70	0.60	0.17	0.38	9/16	1/2	
D4MC4	1/4	1/4	1.49	1.20	0.70	0.60	0.19	0.56	9/16	9/16	
D4MC6	1/4	3/8	1.51	1.22	0.70	0.60	0.19	0.56	9/16	11/16	
D4MC8	1/4	1/2	1.76	1.47	0.70	0.60	0.19	0.75	9/16	7/8	
D4MC12	1/4	3/4	1.82	1.53	0.70	0.60	0.19	0.75	9/16	11/16	
D5MC2	5/16	1/8	1.34	1.05	0.73	0.64	0.19	0.38	5/8	9/16	
D5MC4	5/16	1/4	1.52	1.23	0.73	0.64	0.25	0.56	5/8	9/16	
D5MC6	5/16	3/8	1.54	1.25	0.73	0.64	0.25	0.56	5/8	11/16	
D6MC2	3/8	1/8	1.39	1.10	0.76	0.66	0.19	0.38	11/16	5/8	
D6MC4	3/8	1/4	1.57	1.28	0.76	0.66	0.28	0.56	11/16	5/8	
D6MC6	3/8	3/8	1.57	1.28	0.76	0.66	0.28	0.56	11/16	11/16	
D6MC8	3/8	1/2	1.82	1.53	0.76	0.66	0.28	0.75	11/16	7/8	
D6MC12	3/8	3/4	1.88	1.59	0.76	0.66	0.28	0.75	11/16	11/16	
D8MC2	1/2	1/8	1.53	1.13	0.86	0.90	0.19	0.38	7/8	13/16	
D8MC4	1/2	1/4	1.71	1.31	0.86	0.90	0.28	0.56	7/8	13/16	
D8MC6	1/2	3/8	1.71	1.31	0.86	0.90	0.38	0.56	7/8	13/16	
D8MC8	1/2	1/2	1.93	1.53	0.86	0.90	0.41	0.75	7/8	7/8	
D8MC12	1/2	3/4	1.99	1.59	0.86	0.90	0.41	0.75	7/8	11/16	
D8MC16	1/2	1	2.25	1.85	0.86	0.90	0.41	0.94	7/8	13/8	
D10MC6	5/8	3/8	1.74	1.34	0.86	0.96	0.38	0.56	1	15/16	
D10MC8	5/8	1/2	1.93	1.53	0.86	0.96	0.47	0.75	1	15/16	
D10MC12	5/8	3/4	1.99	1.59	0.86	0.96	0.50	0.75	1	11/16	
D12MC8	3/4	1/2	1.99	1.59	0.86	0.96	0.47	0.75	11/8	11/16	
D12MC12	3/4	3/4	1.99	1.59	0.86	0.96	0.62	0.75	11/8	11/16	
D12MC16	3/4	1	2.25	1.85	0.86	0.96	0.62	0.94	11/8	13/8	
D14MC12	7/8	3/4	1.99	1.59	0.86	1.02	0.62	0.75	11/4	13/16	
D14MC16	7/8	1	2.25	1.85	0.86	1.02	0.72	0.94	11/4	13/8	
D16MC8	1	1/2	2.26	1.78	1.04	1.23	0.47	0.75	11/2	13/8	
D16MC12	1	3/4	2.26	1.78	1.04	1.23	0.62	0.75	11/2	13/8	
D16MC16	1	1	2.45	1.97	1.04	1.23	0.88	0.94	11/2	13/8	

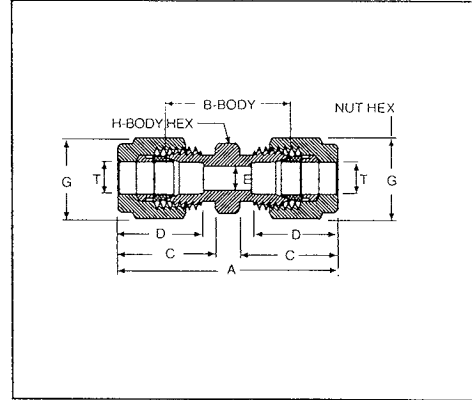
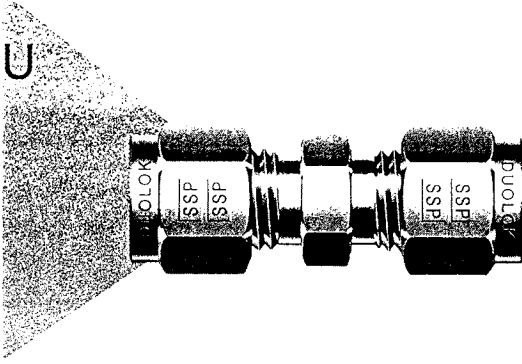
FC



Female Connector

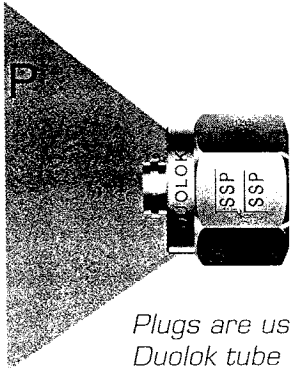
Part No.	Body	Size	A	B	C	D	E	F	G	H
D1FC1	1/16	1/16	0.93	0.78	0.43	0.34	0.05	5/16	7/16	
D1FC2	1/16	1/8	0.96	0.81	0.43	0.34	0.05	5/16	9/16	
D2FC2	1/8	1/8	1.13	0.87	0.60	0.50	0.09	7/16	9/16	
D2FC4	1/8	1/4	1.32	1.06	0.60	0.50	0.09	7/16	3/4	
D3FC2	3/16	1/8	1.17	0.91	0.63	0.54	0.12	1/2	9/16	
D4FC2	1/4	1/8	1.23	0.94	0.70	0.60	0.19	9/16	9/16	
D4FC4	1/4	1/4	1.41	1.12	0.70	0.60	0.19	9/16	3/4	
D4FC6	1/4	3/8	1.48	1.19	0.70	0.60	0.19	9/16	7/8	
D4FC8	1/4	1/2	1.67	1.38	0.70	0.60	0.19	9/16	1 1/16	
D5FC2	5/16	1/8	1.26	0.97	0.73	0.64	0.25	5/8	9/16	
D5FC4	5/16	1/4	1.45	1.16	0.73	0.64	0.25	5/8	3/4	
D6FC2	3/8	1/8	1.29	1.00	0.76	0.66	0.28	11/16	5/8	
D6FC4	3/8	1/4	1.48	1.19	0.76	0.66	0.28	11/16	3/4	
D6FC6	3/8	3/8	1.54	1.25	0.76	0.66	0.28	11/16	7/8	
D6FC8	3/8	1/2	1.73	1.44	0.76	0.66	0.28	11/16	1 1/16	
D6FC12	3/8	3/4	1.88	1.59	0.76	0.66	0.28	11/16	1 5/16	
D8FC4	1/2	1/4	1.59	1.19	0.86	0.90	0.41	7/8	13/16	
D8FC6	1/2	3/8	1.65	1.25	0.86	0.90	0.41	7/8	7/8	
D8FC8	1/2	1/2	1.84	1.44	0.86	0.90	0.41	7/8	1 1/16	
D8FC12	1/2	3/4	1.90	1.50	0.86	0.90	0.41	7/8	1 5/16	
D10FC6	5/8	3/8	1.65	1.25	0.86	0.96	0.50	1	15/16	
D10FC8	5/8	1/2	1.84	1.44	0.86	0.96	0.50	1	1 1/16	
D12FC8	3/4	1/2	1.84	1.44	0.86	0.96	0.62	1 1/8	1 1/16	
D12FC12	3/4	3/4	1.90	1.50	0.86	0.96	0.62	1 1/8	1 5/16	
D14FC12	7/8	3/4	1.96	1.56	0.86	1.02	0.72	1 1/4	1 5/16	
D16FC12	1	3/4	2.10	1.62	1.04	1.23	0.88	1 1/2	1 3/8	
D16FC16	1	1	2.45	1.97	1.04	1.23	0.88	1 1/2	1 5/8	

060007

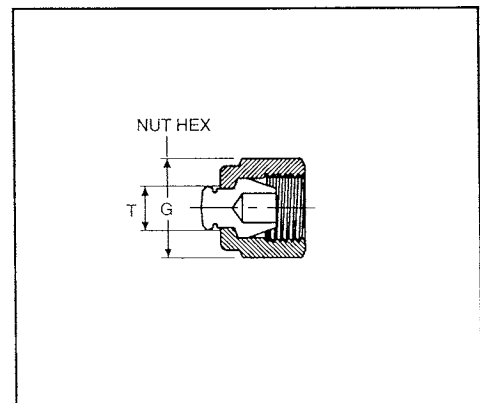


Union

Part #	Tube O.D.	A	B	C	D	E Minimum Opening	G	H
D1U	1/16	0.99	0.69	0.43	0.34	0.05	5/16	5/16
D2U	1/8	1.40	0.88	0.60	0.50	0.09	7/16	7/16
D3U	3/16	1.47	0.95	0.63	0.54	0.12	1/2	7/16
D4U	1/4	1.61	1.03	0.70	0.60	0.19	9/16	1/2
D5U	5/16	1.69	1.11	0.73	0.64	0.25	5/8	9/16
D6U	3/8	1.77	1.19	0.76	0.66	0.28	11/16	5/8
D8U	1/2	2.02	1.22	0.86	0.90	0.41	7/8	13/16
D10U	5/8	2.05	1.25	0.86	0.96	0.50	1	15/16
D12U	3/4	2.11	1.31	0.86	0.96	0.62	1 1/8	1 1/16
D14U	7/8	2.17	1.37	0.86	1.02	0.72	1 1/4	1 3/16
D16U	1	2.55	1.59	1.04	1.23	0.88	1 1/2	1 3/8



Plugs are used to plug an unused port of a Duolok tube fitting.



Plug

Part #	Tube O.D.	E
D1P	1/16	5/16
D2P	1/8	7/16
D3P	3/16	1/2
D4P	1/4	9/16
D5P	5/16	5/8
D6P	3/8	11/16
D8P	1/2	7/8
D10P	5/8	1
D12P	3/4	1 1/8
D16P	1	1 1/2

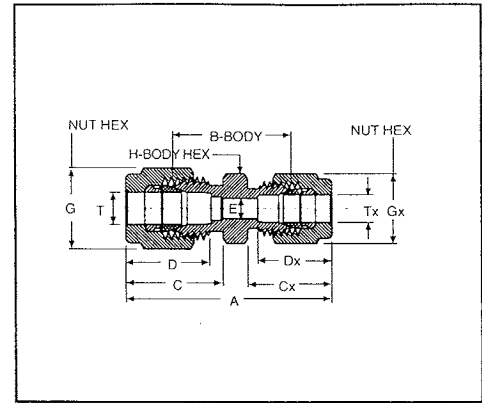
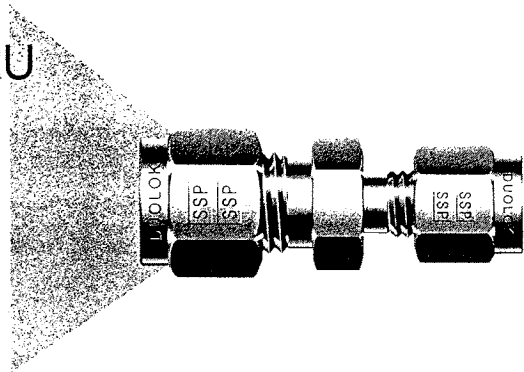
Plug Installation Instructions

1. Remove the nut and ferrules from the port of the tube fitting body to be plugged and replace with the Duolok plug.
2. Hand-tighten the Duolok plug and then while holding the tube fitting body steady with a back-up wrench, use a wrench to tighten the Duolok plug only 1/4 of a turn.



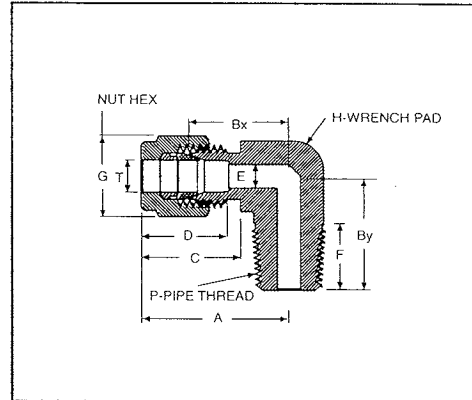
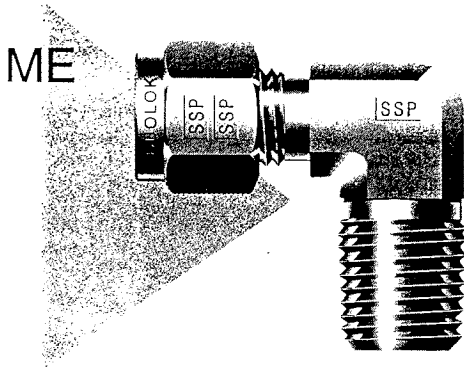
000008

RU



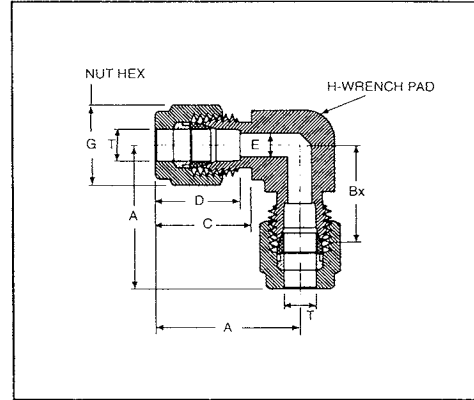
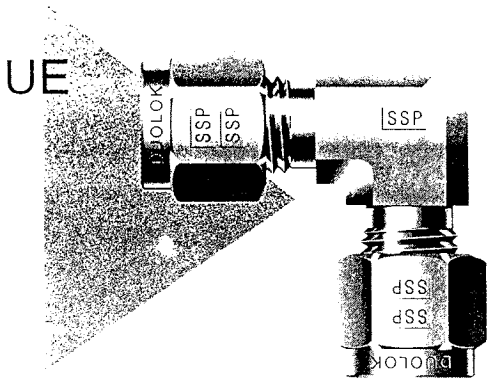
Reducing Union

Reducer (in)	1 0.50	1/2 0.50	A	B	C	D	E	F	G	H (mm)	I	J	K
D2RU1	1/8	1/16	1.22	0.81	0.60	0.43	0.50	0.34	0.05	7/16	5/16	7/16	
D3RU1	3/16	1/16	1.27	0.86	0.63	0.43	0.54	0.34	0.05	1/2	5/16	7/16	
D3RU2	3/16	1/8	1.44	0.92	0.63	0.60	0.54	0.50	0.09	1/2	7/16	7/16	
D4RU1	1/4	1/16	1.35	0.91	0.70	0.43	0.60	0.34	0.05	9/16	7/16	1/2	
D4RU2	1/4	1/8	1.52	0.97	0.70	0.60	0.60	0.50	0.09	9/16	7/16	1/2	
D4RU3	1/4	3/16	1.55	1.00	0.70	0.63	0.60	0.54	0.12	9/16	7/16	1/2	
D5RU2	5/16	1/8	1.57	1.02	0.73	0.60	0.64	0.50	0.09	5/8	7/16	9/16	
D5RU4	5/16	1/4	1.66	1.08	0.73	0.70	0.64	0.60	0.19	5/8	9/16	9/16	
D6RU1	3/8	1/16	1.44	1.00	0.76	0.43	0.66	0.34	0.05	11/16	5/16	5/8	
D6RU2	3/8	1/8	1.61	1.06	0.76	0.60	0.66	0.50	0.09	11/16	7/16	5/8	
D6RU4	3/8	1/4	1.70	1.12	0.76	0.70	0.66	0.60	0.19	11/16	9/16	5/8	
D6RU5	3/8	5/16	1.74	1.16	0.76	0.73	0.66	0.64	0.25	11/16	5/8	5/8	
D8RU2	1/2	1/8	1.78	1.12	0.86	0.60	0.90	0.50	0.09	7/8	7/16	13/16	
D8RU4	1/2	1/4	1.85	1.16	0.86	0.70	0.90	0.60	0.19	7/8	9/16	13/16	
D8RU6	1/2	3/8	1.91	1.22	0.86	0.76	0.90	0.66	0.28	7/8	11/16	13/16	
D10RU6	5/8	3/8	1.94	1.25	0.86	0.76	0.96	0.66	0.28	1	11/16	15/16	
D10RU8	5/8	1/2	2.05	1.25	0.86	0.86	0.96	0.90	0.41	1	7/8	15/16	
D12RU4	3/4	1/4	1.94	1.25	0.86	0.70	0.96	0.60	0.19	1 1/8	9/16	1 1/16	
D12RU6	3/4	3/8	2.00	1.31	0.86	0.76	0.96	0.66	0.28	1 1/8	11/16	1 1/16	
D12RU8	3/4	1/2	2.11	1.31	0.86	0.86	0.96	0.90	0.41	1 1/8	7/8	1 1/16	
D12RU10	3/4	5/8	2.11	1.31	0.86	0.86	0.96	0.96	0.50	1 1/8	1	1 1/16	
D16RU8	1	1/2	2.49	1.61	1.04	0.86	1.23	0.90	0.41	1 1/2	7/8	1 3/8	
D16RU12	1	3/4	2.47	1.59	1.04	0.86	1.23	0.96	0.62	1 1/2	1 1/8	1 3/8	



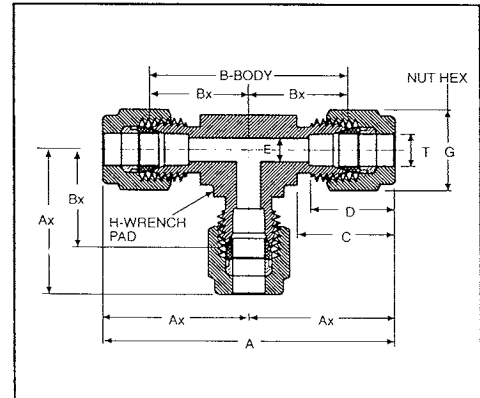
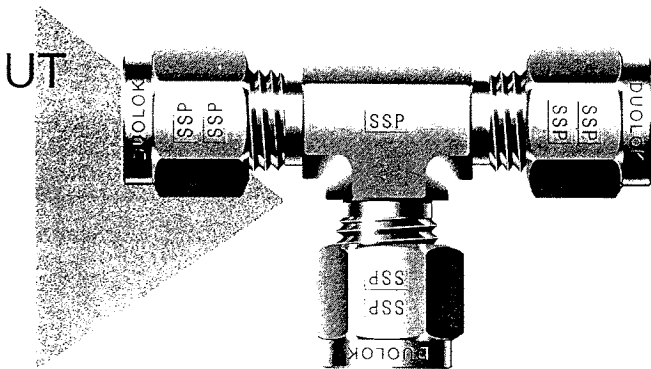
Male Elbow

Part No.	Male Size	Female Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
D1ME1	1/16	1/16	0.75	0.60	0.70	0.43	0.34	0.05	0.38	5/16	7/16											
D1ME2	1/16	1/8	0.75	0.60	0.70	0.43	0.34	0.05	0.38	5/16	7/16											
D2ME1	1/8	1/16	0.93	0.67	0.70	0.60	0.50	0.09	0.38	7/16	7/16											
D2ME2	1/8	1/8	0.93	0.67	0.70	0.60	0.50	0.09	0.38	7/16	7/16											
D2ME4	1/8	1/4	0.97	0.71	0.92	0.60	0.50	0.09	0.56	7/16	1/2											
D3ME2	3/16	1/8	1.00	0.74	0.74	0.63	0.54	0.12	0.38	1/2	1/2											
D3ME4	3/16	1/4	1.00	0.74	0.92	0.63	0.54	0.12	0.56	1/2	1/2											
D4ME2	1/4	1/8	1.06	0.77	0.74	0.70	0.60	0.17	0.38	9/16	1/2											
D4ME4	1/4	1/4	1.06	0.77	0.92	0.70	0.60	0.19	0.56	9/16	1/2											
D4ME6	1/4	3/8	1.17	0.88	1.03	0.70	0.60	0.19	0.56	9/16	3/4											
D4ME8	1/4	1/2	1.25	0.96	1.30	0.70	0.60	0.19	0.75	9/16	7/8											
D5ME2	5/16	1/8	1.13	0.84	0.78	0.73	0.64	0.19	0.38	5/8	9/16											
D5ME4	5/16	1/4	1.13	0.84	0.96	0.73	0.64	0.25	0.56	5/8	9/16											
D5ME6	5/16	3/8	1.20	0.91	1.03	0.73	0.64	0.25	0.56	5/8	3/4											
D6ME2	3/8	1/8	1.20	0.91	0.82	0.76	0.66	0.19	0.38	11/16	5/8											
D6ME4	3/8	1/4	1.20	0.91	1.00	0.76	0.66	0.28	0.56	11/16	5/8											
D6ME6	3/8	3/8	1.23	0.94	1.03	0.76	0.66	0.28	0.56	11/16	3/4											
D6ME8	3/8	1/2	1.31	1.02	1.30	0.76	0.66	0.28	0.75	11/16	7/8											
D6ME12	3/8	3/4	1.46	1.17	1.45	0.76	0.66	0.28	0.75	11/16	1 1/16											
D8ME4	1/2	1/4	1.42	1.02	1.11	0.86	0.90	0.28	0.56	7/8	13/16											
D8ME6	1/2	3/8	1.42	1.02	1.11	0.86	0.90	0.38	0.56	7/8	13/16											
D8ME8	1/2	1/2	1.42	1.02	1.30	0.86	0.90	0.41	0.75	7/8	7/8											
D8ME12	1/2	3/4	1.57	1.17	1.45	0.86	0.90	0.41	0.75	7/8	1 1/16											
D10ME6	5/8	3/8	1.50	1.10	1.19	0.86	0.96	0.38	0.56	1	15/16											
D10ME8	5/8	1/2	1.50	1.10	1.38	0.86	0.96	0.47	0.75	1	15/16											
D10ME12	5/8	3/4	1.57	1.17	1.45	0.86	0.96	0.50	0.75	1	1 1/16											
D12ME8	3/4	1/2	1.57	1.17	1.45	0.86	0.96	0.47	0.75	1 1/8	1 1/16											
D12ME12	3/4	3/4	1.57	1.17	1.45	0.86	0.96	0.62	0.75	1 1/8	1 1/16											
D14ME12	7/8	3/4	1.76	1.36	1.64	0.86	1.02	0.62	0.75	1 1/4	1 3/8											
D16ME12	1	3/4	1.93	1.45	1.64	1.04	1.23	0.62	0.75	1 1/2	1 3/8											
D16ME16	1	1	1.93	1.45	1.83	1.04	1.23	0.88	0.75	1 1/2	1 3/8											



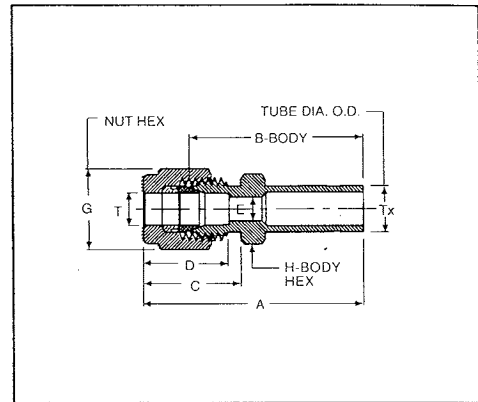
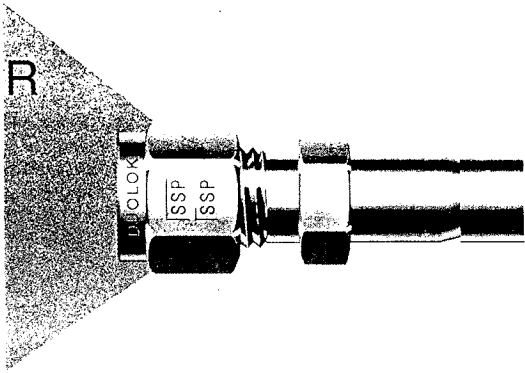
Union Elbow

Union Part	Tube Size	A	Ax	B	Bx	C	D	E	Minimum Opening	G	T
D1UE	1/16	0.70	0.55	0.43	0.34	0.05	5/16	3/8			
D2UE	1/8	0.88	0.62	0.60	0.50	0.09	7/16	3/8			
D3UE	3/16	1.00	0.74	0.63	0.54	0.12	1/2	1/2			
D4UE	1/4	1.06	0.77	0.70	0.60	0.19	9/16	1/2			
D5UE	5/16	1.13	0.84	0.73	0.64	0.25	5/8	5/16			
D6UE	3/8	1.20	0.91	0.76	0.66	0.28	11/16	5/8			
D8UE	1/2	1.42	1.02	0.86	0.90	0.41	7/8	13/16			
D10UE	5/8	1.50	1.10	0.86	0.96	0.50	1	15/16			
D12UE	3/4	1.57	1.17	0.86	0.96	0.62	1 1/8	1 1/16			
D14UE	7/8	1.76	1.36	0.86	1.02	0.72	1 1/4	1 3/8			
D16UE	1	1.93	1.45	1.04	1.23	0.88	1 1/2	1 3/8			



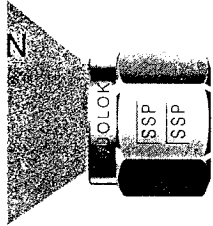
Union Tee

Union Part	Tube Size	A	Ax	B	Bx	C	D	E	Minimum Opening	G	T
D1UT	1/16	1.40	0.70	1.10	0.55	0.43	0.34	0.05	5/16	3/8	
D2UT	1/8	1.76	0.88	1.24	0.62	0.60	0.50	0.09	7/16	3/8	
D3UT	3/16	1.92	0.96	1.40	0.70	0.63	0.54	0.12	1/2	7/16	
D4UT	1/4	2.12	1.06	1.54	0.77	0.70	0.60	0.19	9/16	1/2	
D5UT	5/16	2.34	1.17	1.76	0.88	0.73	0.64	0.25	5/8	5/8	
D6UT	3/8	2.40	1.20	1.82	0.91	0.76	0.66	0.28	11/16	5/8	
D8UT	1/2	2.84	1.42	2.04	1.02	0.86	0.90	0.41	7/8	13/16	
D10UT	5/8	3.06	1.53	2.26	1.13	0.86	0.96	0.50	1	1	
D12UT	3/4	3.14	1.57	2.34	1.17	0.86	0.96	0.62	1 1/8	1 1/16	
D14UT	7/8	3.52	1.76	2.72	1.36	0.86	1.02	0.72	1 1/4	1 3/8	
D16UT	1	3.86	1.93	2.90	1.45	1.04	1.23	0.88	1 1/2	1 3/8	



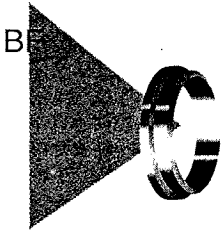
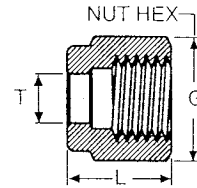
Reducer/Adapter*

D1R2	1/16	1/8	1.15	1.00	0.43	0.34	0.06	5/16	5/16
D1R4	1/16	1/4	1.24	1.09	0.43	0.34	0.11	5/16	5/16
D2R1	1/8	1/16	1.14	0.88	0.60	0.50	0.02	7/16	7/16
D2R2	1/8	1/8	1.32	1.06	0.60	0.50	0.06	7/16	7/16
D2R3	1/8	3/16	1.35	1.09	0.60	0.50	0.08	7/16	7/16
D2R4	1/8	1/4	1.42	1.16	0.60	0.50	0.11	7/16	7/16
D2R6	1/8	3/8	1.48	1.22	0.60	0.50	0.24	7/16	7/16
D2R8	1/8	1/2	1.74	1.48	0.60	0.50	0.33	7/16	9/16
D3R2	3/16	1/8	1.37	1.11	0.63	0.54	0.06	1/2	7/16
D3R4	3/16	1/4	1.46	1.20	0.63	0.54	0.11	1/2	7/16
D4R2	1/4	1/8	1.45	1.16	0.70	0.60	0.06	9/16	1/2
D4R3	1/4	3/16	1.48	1.19	0.70	0.60	0.08	9/16	1/2
D4R4	1/4	1/4	1.54	1.25	0.70	0.60	0.11	9/16	1/2
D4R5	1/4	5/16	1.57	1.28	0.70	0.60	0.18	9/16	1/2
D4R6	1/4	3/8	1.60	1.31	0.70	0.60	0.24	9/16	1/2
D4R8	1/4	1/2	1.82	1.53	0.70	0.60	0.33	9/16	9/16
D4R10	1/4	5/8	1.89	1.60	0.70	0.60	0.42	9/16	11/16
D4R12	1/4	3/4	1.88	1.59	0.70	0.60	0.51	9/16	13/16
D5R6	5/16	3/8	1.65	1.36	0.73	0.64	0.24	5/8	9/16
D5R8	5/16	1/2	1.87	1.58	0.73	0.64	0.33	5/8	9/16
D6R4	3/8	1/4	1.63	1.34	0.76	0.66	0.15	11/16	5/8
D6R6	3/8	3/8	1.70	1.41	0.76	0.66	0.24	11/16	5/8
D6R8	3/8	1/2	1.91	1.62	0.76	0.66	0.33	11/16	5/8
D6R10	3/8	5/8	1.98	1.69	0.76	0.66	0.42	11/16	11/16
D6R12	3/8	3/4	1.98	1.69	0.76	0.66	0.51	11/16	13/16
D8R4	1/2	1/4	1.77	1.37	0.86	0.90	0.15	7/8	13/16
D8R6	1/2	3/8	1.84	1.44	0.86	0.90	0.24	7/8	13/16
D8R8	1/2	1/2	2.06	1.66	0.86	0.90	0.33	7/8	13/16
D8R10	1/2	5/8	2.12	1.72	0.86	0.90	0.42	7/8	13/16
D8R12	1/2	3/4	2.12	1.72	0.86	0.90	0.51	7/8	13/16
D8R16	1/2	1	2.37	1.97	0.86	0.90	0.75	7/8	1 1/16
D10R12	5/8	3/4	2.15	1.75	0.86	0.96	0.51	1	15/16
D10R14	5/8	7/8	2.21	1.81	0.86	0.96	0.64	1	15/16
D10R16	5/8	1	2.40	2.00	0.86	0.96	0.75	1	1 1/16
D12R8	3/4	1/2	2.15	1.75	0.86	0.96	0.34	1 1/8	1 1/16
D12R16	3/4	1	2.46	2.06	0.86	0.96	0.75	1 1/8	1 1/16



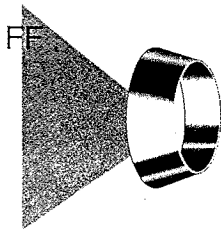
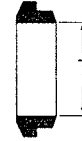
Nut

Part No.	1/16"	1/8"	3/16"	1/2"	3/4"	1"	1 1/4"	1 1/2"
D1N	1/16	5/16						0.31
D2N	1/8	7/16						0.47
D3N	3/16	1/2						0.47
D4N	1/4	9/16						0.50
D5N	5/16	5/8						0.53
D6N	3/8	11/16						0.56
D8N	1/2	7/8						0.69
D10N	5/8	1						0.69
D12N	3/4	1 1/8						0.69
D14N	7/8	1 1/4						0.69
D16N	1	1 1/2						0.81



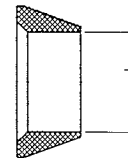
Back Ferrule

Part No.	1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
D1BF	1/16										
D2BF	1/8										
D3BF	3/16										
D4BF	1/4										
D5BF	5/16										
D6BF	3/8										
D8BF	1/2										
D10BF	5/8										
D12BF	3/4										
D14BF	7/8										
D16BF	1										

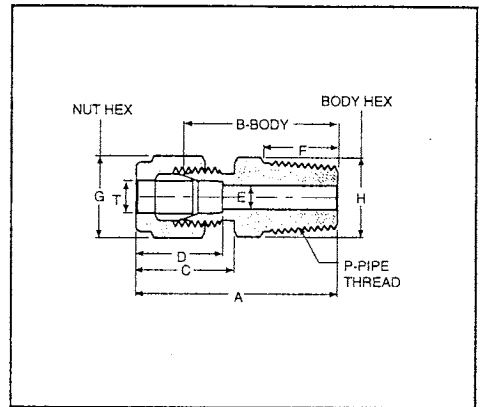
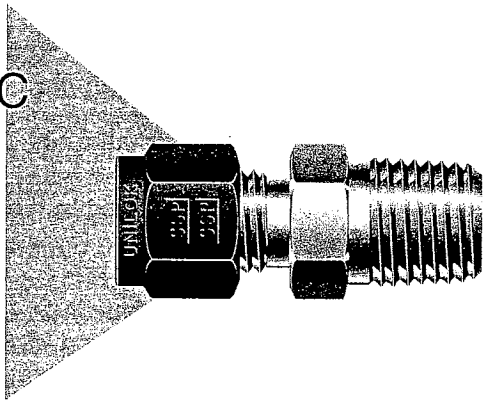


Front Ferrule

Part No.	1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
D1FF	1/16										
D2FF	1/8										
D3FF	3/16										
D4FF	1/4										
D5FF	5/16										
D6FF	3/8										
D8FF	1/2										
D10FF	5/8										
D12FF	3/4										
D14FF	7/8										
D16FF	1										



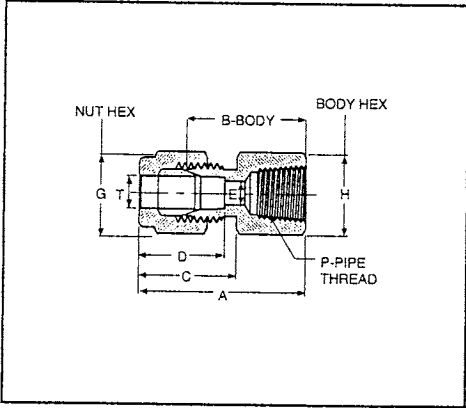
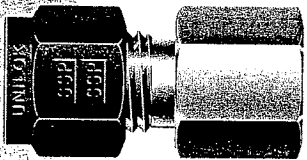
MC



Male Connector

Unilok Part #	T Tube O.D.	P-NPT Male Pipe Size	A	B	C	D	E Minimum Opening	F Min.	G	H
U1MC1	1/16	1/16	0.98	0.79	0.47	0.38	0.05	0.38	5/16	5/16
U1MC2	1/16	1/8	1.07	0.88	0.47	0.38	0.05	0.38	5/16	7/16
U1MC4	1/16	1/4	1.26	1.07	0.47	0.38	0.05	0.56	5/16	9/16
U2MC1	1/8	1/16	1.18	0.91	0.61	0.51	0.09	0.38	7/16	7/16
U2MC2	1/8	1/8	1.21	0.94	0.61	0.51	0.09	0.38	7/16	7/16
U2MC4	1/8	1/4	1.41	1.14	0.61	0.51	0.09	0.56	7/16	9/16
U2MC6	1/8	3/8	1.42	1.15	0.61	0.51	0.09	0.56	7/16	11/16
U2MC8	1/8	1/2	1.67	1.40	0.61	0.51	0.09	0.75	7/16	7/8
U3MC2	3/16	1/8	1.25	0.97	0.65	0.56	0.12	0.38	1/2	7/16
U3MC4	3/16	1/4	1.45	1.17	0.65	0.56	0.12	0.56	1/2	9/16
U4MC1	1/4	1/16	1.29	1.00	0.70	0.60	0.11	0.38	9/16	1/2
U4MC2	1/4	1/8	1.29	1.00	0.70	0.60	0.17	0.38	9/16	1/2
U4MC4	1/4	1/4	1.49	1.20	0.70	0.60	0.19	0.56	9/16	9/16
U4MC6	1/4	3/8	1.51	1.22	0.70	0.60	0.19	0.56	9/16	11/16
U4MC8	1/4	1/2	1.76	1.47	0.70	0.60	0.19	0.75	9/16	7/8
U4MC12	1/4	3/4	1.82	1.53	0.70	0.60	0.19	0.75	9/16	1 1/16
U5MC2	5/16	1/8	1.36	1.05	0.75	0.66	0.19	0.38	5/8	9/16
U5MC4	5/16	1/4	1.54	1.23	0.75	0.66	0.25	0.56	5/8	9/16
U5MC6	5/16	3/8	1.56	1.25	0.75	0.66	0.25	0.56	5/8	11/16
U6MC2	3/8	1/8	1.41	1.10	0.78	0.68	0.19	0.38	11/16	5/8
U6MC4	3/8	1/4	1.59	1.28	0.78	0.68	0.28	0.56	11/16	5/8
U6MC6	3/8	3/8	1.59	1.28	0.78	0.68	0.28	0.56	11/16	11/16
U6MC8	3/8	1/2	1.84	1.53	0.78	0.68	0.28	0.75	11/16	7/8
U6MC12	3/8	3/4	1.90	1.59	0.78	0.68	0.28	0.75	11/16	1 1/16
U8MC2	1/2	1/8	1.57	1.13	0.90	0.94	0.19	0.38	7/8	13/16
U8MC4	1/2	1/4	1.75	1.31	0.90	0.94	0.28	0.56	7/8	13/16
U8MC6	1/2	3/8	1.75	1.31	0.90	0.94	0.38	0.56	7/8	13/16
U8MC8	1/2	1/2	1.97	1.53	0.90	0.94	0.41	0.75	7/8	7/8
U8MC12	1/2	3/4	2.03	1.59	0.90	0.94	0.41	0.75	7/8	1 1/16
U8MC16	1/2	1	2.29	1.85	0.90	0.94	0.41	0.94	7/8	1 3/8
U10MC6	5/8	3/8	1.76	1.34	0.88	0.98	0.38	0.56	1	15/16
U10MC8	5/8	1/2	1.95	1.53	0.88	0.98	0.47	0.75	1	15/16
U10MC12	5/8	3/4	2.01	1.59	0.88	0.98	0.50	0.75	1	1 1/16
U12MC8	3/4	1/2	2.01	1.59	0.88	0.98	0.47	0.75	1 1/8	1 1/16
U12MC12	3/4	3/4	2.01	1.59	0.88	0.98	0.62	0.75	1 1/8	1 1/16
U12MC16	3/4	1	2.27	1.85	0.88	0.98	0.62	0.94	1 1/8	1 3/8
U14MC12	7/8	3/4	2.01	1.59	0.88	1.04	0.62	0.75	1 1/4	1 3/16
U14MC16	7/8	1	2.27	1.85	0.88	1.04	0.72	0.94	1 1/4	1 3/8
U16MC8	1	1/2	2.27	1.78	1.05	1.24	0.47	0.75	1 1/2	1 3/8
U16MC12	1	3/4	2.27	1.78	1.05	1.24	0.62	0.75	1 1/2	1 3/8
U16MC16	1	1	2.46	1.97	1.05	1.24	0.88	0.94	1 1/2	1 3/8

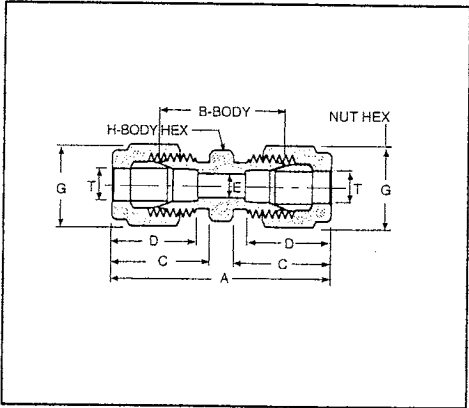
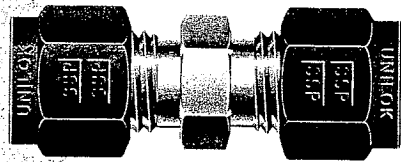
FC



Female Connector

Unilok Part #	T Tube O.D.	P-NPT Female Pipe Size	A	B	C	D	E Minimum Opening	G	H
U1FC1	1/16	1/16	0.97	0.78	0.47	0.38	0.05	5/16	7/16
U1FC2	1/16	1/8	1.00	0.81	0.47	0.38	0.05	5/16	9/16
U2FC2	1/8	1/8	1.14	0.87	0.61	0.51	0.09	7/16	9/16
U2FC4	1/8	1/4	1.33	1.06	0.61	0.51	0.09	7/16	3/4
U3FC2	3/16	1/8	1.19	0.91	0.65	0.56	0.12	1/2	9/16
U4FC2	1/4	1/8	1.23	0.94	0.70	0.60	0.19	9/16	9/16
U4FC4	1/4	1/4	1.41	1.12	0.70	0.60	0.19	9/16	3/4
U4FC6	1/4	3/8	1.48	1.19	0.70	0.60	0.19	9/16	7/8
U4FC8	1/4	1/2	1.67	1.38	0.70	0.60	0.19	9/16	1 1/16
U5FC2	5/16	1/8	1.28	0.97	0.75	0.66	0.25	5/8	9/16
U5FC4	5/16	1/4	1.47	1.16	0.75	0.66	0.25	5/8	3/4
U6FC2	3/8	1/8	1.31	1.00	0.78	0.68	0.28	11/16	5/8
U6FC4	3/8	1/4	1.50	1.19	0.78	0.68	0.28	11/16	3/4
U6FC6	3/8	3/8	1.56	1.25	0.78	0.68	0.28	11/16	7/8
U6FC8	3/8	1/2	1.75	1.44	0.78	0.68	0.28	11/16	1 1/16
U6FC12	3/8	3/4	1.90	1.59	0.78	0.68	0.28	11/16	1 5/16
U8FC4	1/2	1/4	1.63	1.19	0.90	0.94	0.41	7/8	13/16
U8FC6	1/2	3/8	1.69	1.25	0.90	0.94	0.41	7/8	7/8
U8FC8	1/2	1/2	1.88	1.44	0.90	0.94	0.41	7/8	1 1/16
U8FC12	1/2	3/4	1.94	1.50	0.90	0.94	0.41	7/8	1 5/16
U10FC6	5/8	3/8	1.67	1.25	0.88	0.98	0.50	1	15/16
U10FC8	5/8	1/2	1.86	1.44	0.88	0.98	0.50	1	1 1/16
U12FC8	3/4	1/2	1.86	1.44	0.88	0.98	0.62	1 1/8	1 1/16
U12FC12	3/4	3/4	1.92	1.50	0.88	0.98	0.62	1 1/8	1 5/16
U14FC12	7/8	3/4	1.98	1.56	0.88	1.04	0.72	1 1/4	1 5/16
U16FC12	1	3/4	2.11	1.62	1.05	1.24	0.88	1 1/2	1 3/8
U16FC16	1	1	2.46	1.97	1.05	1.24	0.88	1 1/2	1 5/8

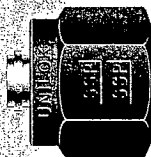
U



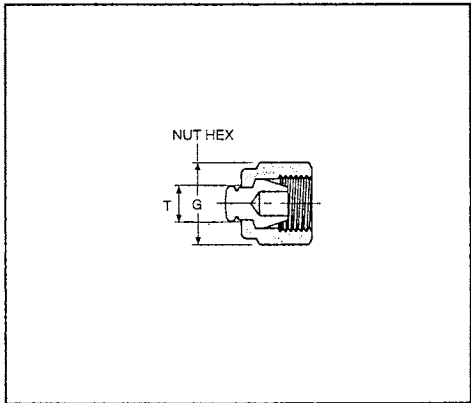
Union

Unilok Part #	T Tube O.D.	A	B	C	D	E Minimum Opening	G	H
U1U	1/16	1.03	0.69	0.47	0.38	0.05	5/16	5/16
U2U	1/8	1.41	0.88	0.61	0.51	0.09	7/16	7/16
U3U	3/16	1.49	0.95	0.65	0.56	0.12	1/2	7/16
U4U	1/4	1.61	1.03	0.70	0.60	0.19	9/16	1/2
U5U	5/16	1.71	1.11	0.75	0.66	0.25	5/8	9/16
U6U	3/8	1.79	1.19	0.78	0.68	0.28	11/16	5/8
U8U	1/2	2.06	1.22	0.90	0.94	0.41	7/8	13/16
U10U	5/8	2.07	1.25	0.88	0.98	0.50	1	15/16
U12U	3/4	2.13	1.31	0.88	0.98	0.62	1 1/8	1 1/16
U14U	7/8	2.19	1.37	0.88	1.04	0.72	1 1/4	1 3/16
U16U	1	2.56	1.59	1.05	1.24	0.88	1 1/2	1 3/8

P



Plugs are used to plug an unused port of a Unilok tube fitting.



Plug

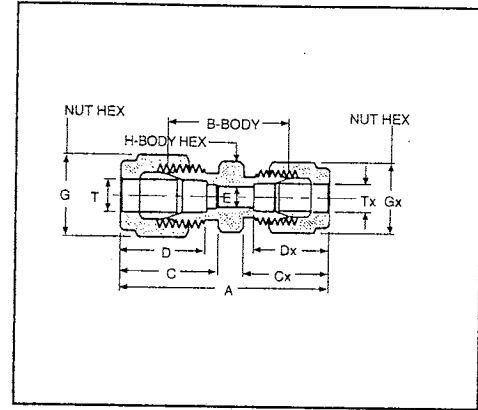
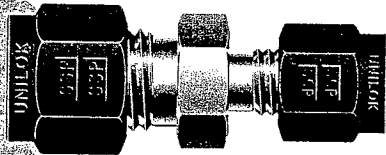
Unilok Part #	T Tube O.D.	G
U1P	1/16	5/16
U2P	1/8	7/16
U3P	3/16	1/2
U4P	1/4	9/16
U5P	5/16	5/8
U6P	3/8	11/16
U8P	1/2	7/8
U10P	5/8	1
U12P	3/4	1 1/8
U16P	1	1 1/2

Plug Installation Instructions

1. Remove the nut and ferrule from the port of the tube fitting body to be plugged and replace with the Unilok plug.
2. Hand-tighten the Unilok plug and then while holding the tube fitting body steady with a back-up wrench, use a wrench to tighten the Unilok plug only 1/4 of a turn.



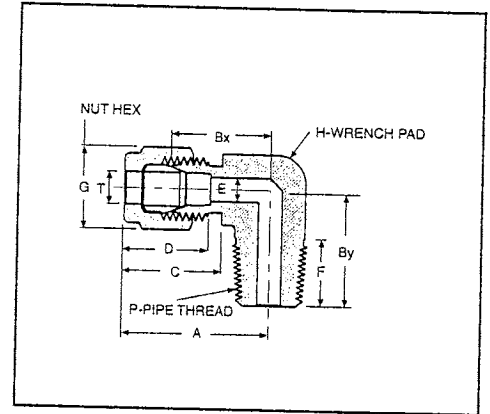
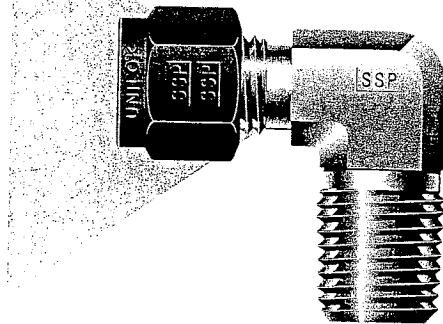
RU



Reducing Union

Unilok Part #	T Tube O.D.	Tx Tube O.D.	A	B	C	Cx	D	Dx	E Minimum Opening	G	Gx	H
U2RU1	1/8	1/16	1.23	0.81	0.61	0.43	0.51	0.34	0.05	7/16	5/16	7/16
U3RU1	3/16	1/16	1.29	0.86	0.65	0.43	0.56	0.34	0.05	1/2	5/16	7/16
U3RU2	3/16	1/8	1.46	0.92	0.65	0.60	0.56	0.50	0.09	1/2	7/16	7/16
U4RU1	1/4	1/16	1.35	0.91	0.70	0.43	0.60	0.34	0.05	9/16	5/16	1/2
U4RU2	1/4	1/8	1.52	0.97	0.70	0.60	0.60	0.50	0.09	9/16	7/16	1/2
U4RU3	1/4	3/16	1.55	1.00	0.70	0.63	0.60	0.54	0.12	9/16	1/2	1/2
U5RU2	5/16	1/8	1.59	1.02	0.75	0.60	0.66	0.50	0.09	5/8	7/16	9/16
U5RU4	5/16	1/4	1.68	1.08	0.75	0.70	0.66	0.60	0.19	5/8	9/16	9/16
U6RU1	3/8	1/16	1.46	1.00	0.78	0.43	0.68	0.34	0.05	11/16	5/16	5/8
U6RU2	3/8	1/8	1.63	1.06	0.78	0.60	0.68	0.50	0.09	11/16	7/16	5/8
U6RU4	3/8	1/4	1.72	1.12	0.78	0.70	0.68	0.60	0.19	11/16	9/16	5/8
U6RU5	3/8	5/16	1.76	1.16	0.78	0.73	0.68	0.64	0.25	11/16	5/8	5/8
U8RU2	1/2	1/8	1.82	1.12	0.90	0.60	0.94	0.50	0.09	7/8	7/16	13/16
U8RU4	1/2	1/4	1.89	1.16	0.90	0.70	0.94	0.60	0.19	7/8	9/16	13/16
U8RU6	1/2	3/8	1.95	1.22	0.90	0.76	0.94	0.66	0.28	7/8	11/16	13/16
U10RU6	5/8	3/8	1.96	1.25	0.88	0.76	0.98	0.66	0.28	1	11/16	15/16
U10RU8	5/8	1/2	2.07	1.25	0.88	0.86	0.98	0.90	0.41	1	7/8	15/16
U12RU4	3/4	1/4	1.96	1.25	0.88	0.70	0.98	0.60	0.19	1 1/8	9/16	1 1/16
U12RU6	3/4	3/8	2.02	1.31	0.88	0.76	0.98	0.66	0.28	1 1/8	11/16	1 1/16
U12RU8	3/4	1/2	2.13	1.31	0.88	0.86	0.98	0.90	0.41	1 1/8	7/8	1 1/16
U12RU10	3/4	5/8	2.13	1.31	0.88	0.86	0.98	0.96	0.50	1 1/8	1	1 1/16
U16RU8	1	1/2	2.50	1.61	1.05	0.86	1.24	0.90	0.41	1 1/2	7/8	1 3/8
U16RU12	1	3/4	2.48	1.59	1.05	0.86	1.24	0.96	0.62	1 1/2	1 1/8	1 3/8

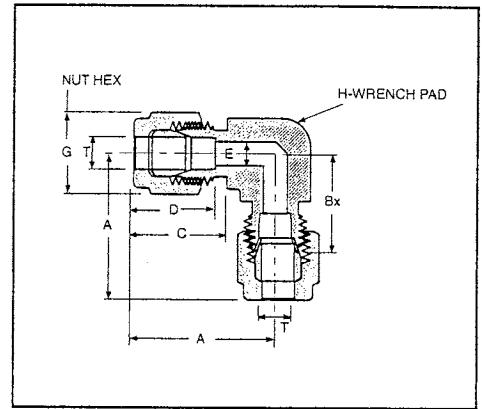
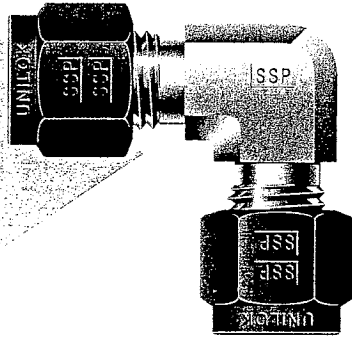
ME



Male Elbow

Unilok Part #	T Tube O.D	P-NPT Male Pipe Size	A	Bx	By	C	D	E			
								Minimum Opening	F Min.	G	H
U1ME1	1/16	1/16	0.79	0.60	0.70	0.47	0.38	0.05	0.38	5/16	5/16
U1ME2	1/16	1/8	0.79	0.60	0.70	0.47	0.38	0.05	0.38	5/16	5/16
U2ME1	1/8	1/16	0.94	0.67	0.70	0.61	0.51	0.09	0.38	7/16	5/16
U2ME2	1/8	1/8	0.94	0.67	0.70	0.61	0.51	0.09	0.38	7/16	5/16
U2ME4	1/8	1/4	0.98	0.71	0.92	0.61	0.51	0.09	0.56	7/16	1/2
U3ME2	3/16	1/8	1.02	0.74	0.74	0.65	0.56	0.12	0.38	1/2	1/2
U3ME4	3/16	1/4	1.02	0.74	0.92	0.65	0.56	0.12	0.56	1/2	1/2
U4ME2	1/4	1/8	1.06	0.77	0.74	0.70	0.60	0.17	0.38	9/16	1/2
U4ME4	1/4	1/4	1.06	0.77	0.92	0.70	0.60	0.19	0.56	9/16	1/2
U4ME6	1/4	3/8	1.17	0.88	1.03	0.70	0.60	0.19	0.56	9/16	3/4
U4ME8	1/4	1/2	1.25	0.96	1.30	0.70	0.60	0.19	0.75	9/16	7/8
U5ME2	5/16	1/8	1.15	0.84	0.78	0.75	0.66	0.19	0.38	5/8	9/16
U5ME4	5/16	1/4	1.15	0.84	0.96	0.75	0.66	0.25	0.56	5/8	9/16
U5ME6	5/16	3/8	1.22	0.91	1.03	0.75	0.66	0.25	0.56	5/8	3/4
U6ME2	3/8	1/8	1.22	0.91	0.82	0.78	0.68	0.19	0.38	11/16	5/8
U6ME4	3/8	1/4	1.22	0.91	1.00	0.78	0.68	0.28	0.56	11/16	5/8
U6ME6	3/8	3/8	1.25	0.94	1.03	0.78	0.68	0.28	0.56	11/16	3/4
U6ME8	3/8	1/2	1.33	1.02	1.30	0.78	0.68	0.28	0.75	11/16	7/8
U6ME12	3/8	3/4	1.48	1.17	1.45	0.78	0.68	0.28	0.75	11/16	1 1/16
U8ME4	1/2	1/4	1.46	1.02	1.11	0.90	0.94	0.28	0.56	7/8	13/16
U8ME6	1/2	3/8	1.46	1.02	1.11	0.90	0.94	0.38	0.56	7/8	13/16
U8ME8	1/2	1/2	1.46	1.02	1.30	0.90	0.94	0.41	0.75	7/8	7/8
U8ME12	1/2	3/4	1.61	1.17	1.45	0.90	0.94	0.41	0.75	7/8	1 1/16
U10ME6	5/8	3/8	1.52	1.10	1.19	0.88	0.98	0.38	0.56	1	15/16
U10ME8	5/8	1/2	1.52	1.10	1.38	0.88	0.98	0.47	0.75	1	15/16
U10ME12	5/8	3/4	1.59	1.17	1.45	0.88	0.98	0.50	0.75	1	1 1/16
U12ME8	3/4	1/2	1.59	1.17	1.45	0.88	0.98	0.47	0.75	1 1/8	1 1/16
U12ME12	3/4	3/4	1.59	1.17	1.45	0.88	0.98	0.62	0.75	1 1/8	1 1/16
U14ME12	7/8	3/4	1.78	1.36	1.64	0.88	1.04	0.62	0.75	1 1/4	1 3/8
U16ME12	1	3/4	1.94	1.45	1.64	1.05	1.24	0.62	0.75	1 1/2	1 3/8
U16ME16	1	1	1.94	1.45	1.83	1.05	1.24	0.88	0.75	1 1/2	1 3/8

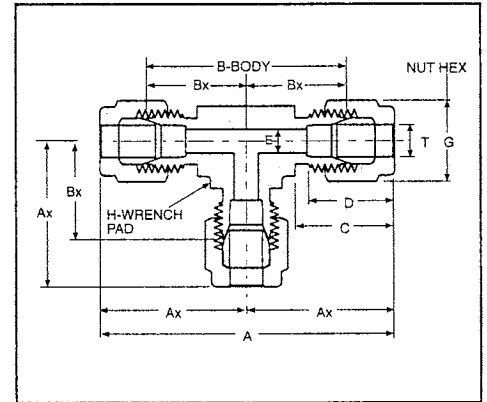
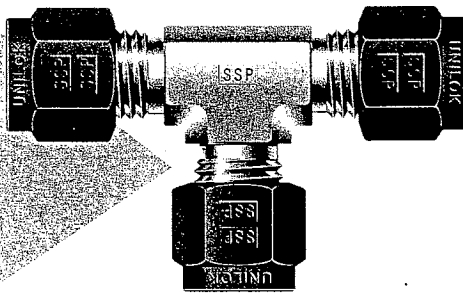
UE



Union Elbow

Unilok Part #	T Tube O.D.	A	Bx	C	D	E Minimum Opening	F	G	H
U1UE	1/16	0.74	0.55	0.47	0.38	0.05	3/8	5/16	3/8
U2UE	1/8	0.89	0.62	0.61	0.51	0.09	3/8	7/16	3/8
U3UE	3/16	1.02	0.74	0.65	0.56	0.12	1/2	1/2	1/2
U4UE	1/4	1.06	0.77	0.70	0.60	0.19	1/2	9/16	1/2
U5UE	5/16	1.15	0.84	0.75	0.66	0.25	9/16	5/8	9/16
U6UE	3/8	1.22	0.91	0.78	0.68	0.28	5/8	11/16	5/8
U8UE	1/2	1.46	1.02	0.90	0.94	0.41	13/16	7/8	13/16
U10UE	5/8	1.52	1.10	0.88	0.98	0.50	15/16	1	15/16
U12UE	3/4	1.59	1.17	0.88	0.98	0.62	1 1/16	1 1/8	1 1/16
U14UE	7/8	1.78	1.36	0.88	1.04	0.72	1 3/8	1 1/4	1 3/8
U16UE	1	1.94	1.45	1.05	1.24	0.88	1 3/8	1 1/2	1 3/8

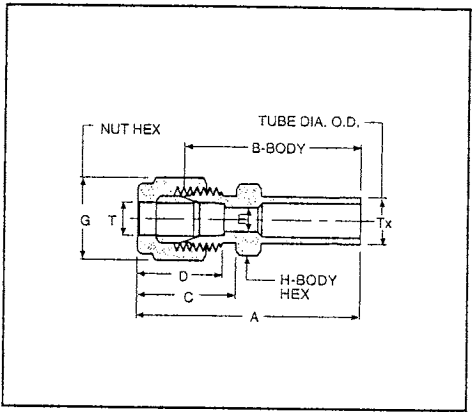
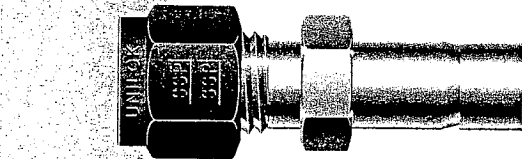
UT



Union Tee

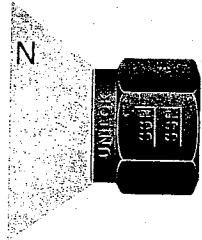
Unilok Part #	T Tube O.D.	A	Ax	B	Bx	C	D	E Minimum Opening	G	H
U1UT	1/16	1.44	0.70	1.10	0.55	0.47	0.38	0.05	5/16	3/8
U2UT	1/8	1.77	0.88	1.24	0.62	0.61	0.51	0.09	7/16	3/8
U3UT	3/16	1.94	0.96	1.40	0.70	0.65	0.56	0.12	1/2	7/16
U4UT	1/4	2.12	1.06	1.54	0.77	0.70	0.60	0.19	9/16	1/2
U5UT	5/16	2.36	1.17	1.76	0.88	0.75	0.66	0.25	5/8	5/8
U6UT	3/8	2.42	1.20	1.82	0.91	0.78	0.68	0.28	11/16	5/8
U8UT	1/2	2.88	1.42	2.04	1.02	0.90	0.94	0.41	7/8	13/16
U10UT	5/8	3.08	1.53	2.26	1.13	0.88	0.98	0.50	1	1
U12UT	3/4	3.16	1.57	2.34	1.17	0.88	0.98	0.62	1 1/8	1 1/16
U14UT	7/8	3.54	1.76	2.72	1.36	0.88	1.04	0.72	1 1/4	1 3/8
U16UT	1	3.87	1.93	2.90	1.45	1.05	1.24	0.88	1 1/2	1 3/8

R



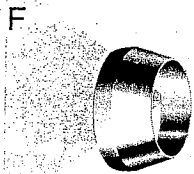
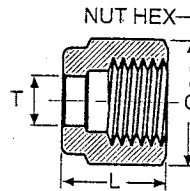
Reducer/Adpater*

Unilok Part #	T Tube O.D.	Tx O.D.	A	B	C	D	E Minimum Opening	G	H
U1R2	1/16	1/8	1.19	1.00	0.47	0.38	0.06	5/16	5/16
U1R4	1/16	1/4	1.28	1.09	0.47	0.38	0.11	5/16	5/16
U2R1	1/8	1/16	1.15	0.88	0.61	0.51	0.02	7/16	7/16
U2R2	1/8	1/8	1.33	1.06	0.61	0.51	0.06	7/16	7/16
U2R3	1/8	3/16	1.36	1.09	0.61	0.51	0.08	7/16	7/16
U2R4	1/8	1/4	1.43	1.16	0.61	0.51	0.11	7/16	7/16
U2R6	1/8	3/8	1.49	1.22	0.61	0.51	0.24	7/16	7/16
U2R8	1/8	1/2	1.75	1.48	0.61	0.51	0.33	7/16	9/16
U3R2	3/16	1/8	1.39	1.11	0.65	0.56	0.06	1/2	7/16
U3R4	3/16	1/4	1.48	1.20	0.65	0.56	0.11	1/2	7/16
U4R2	1/4	1/8	1.45	1.16	0.70	0.60	0.06	9/16	1/2
U4R3	1/4	3/16	1.48	1.19	0.70	0.60	0.08	9/16	1/2
U4R4	1/4	1/4	1.54	1.25	0.70	0.60	0.11	9/16	1/2
U4R5	1/4	5/16	1.57	1.28	0.70	0.60	0.18	9/16	1/2
U4R6	1/4	3/8	1.60	1.31	0.70	0.60	0.24	9/16	1/2
U4R8	1/4	1/2	1.82	1.53	0.70	0.60	0.33	9/16	9/16
U4R10	1/4	5/8	1.89	1.60	0.70	0.60	0.42	9/16	11/16
U4R12	1/4	3/4	1.88	1.59	0.70	0.60	0.51	9/16	13/16
U5R6	5/16	3/8	1.67	1.36	0.75	0.66	0.24	5/8	9/16
U5R8	5/16	1/2	1.89	1.58	0.75	0.66	0.33	5/8	9/16
U6R4	3/8	1/4	1.65	1.34	0.78	0.68	0.15	11/16	5/8
U6R6	3/8	3/8	1.72	1.41	0.78	0.68	0.24	11/16	5/8
U6R8	3/8	1/2	1.93	1.62	0.78	0.68	0.33	11/16	5/8
U6R10	3/8	5/8	2.00	1.69	0.78	0.68	0.42	11/16	11/16
U6R12	3/8	3/4	2.00	1.69	0.78	0.68	0.51	11/16	13/16
U8R4	1/2	1/4	1.81	1.37	0.90	0.94	0.15	7/8	13/16
U8R6	1/2	3/8	1.88	1.44	0.90	0.94	0.24	7/8	13/16
U8R8	1/2	1/2	2.10	1.66	0.90	0.94	0.33	7/8	13/16
U8R10	1/2	5/8	2.16	1.72	0.90	0.94	0.42	7/8	13/16
U8R12	1/2	3/4	2.16	1.72	0.90	0.94	0.51	7/8	13/16
U8R16	1/2	1	2.41	1.97	0.90	0.94	0.75	7/8	1 1/16
U10R12	5/8	3/4	2.17	1.75	0.88	0.98	0.51	1	15/16
U10R14	5/8	7/8	2.23	1.81	0.88	0.98	0.64	1	15/16
U10R16	5/8	1	2.42	2.00	0.88	0.98	0.75	1	1 1/16
U12R8	3/4	1/2	2.17	1.75	0.88	0.98	0.34	1 1/8	1 1/16
U12R16	3/4	1	2.48	2.06	0.88	0.98	0.75	1 1/8	1 1/16



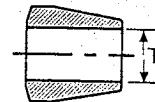
Nut

Unilok Part #	T Tube O.D.	G	L
U1N	1/16	5/16	0.31
U2N	1/8	7/16	0.47
U3N	3/16	1/2	0.47
U4N	1/4	9/16	0.50
U5N	5/16	5/8	0.53
U6N	3/8	11/16	0.56
U8N	1/2	7/8	0.69
U10N	5/8	1	0.69
U12N	3/4	1 1/8	0.69
U14N	7/8	1 1/4	0.69
U16N	1	1 1/2	0.81

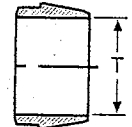


Ferrule

Unilok Part #	T Tube O.D.
U1F	1/16
U2F	1/8
U3F	3/16
U4F	1/4
U5F	5/16
U6F	3/8
U8F	1/2
U10F	5/8
U12F	3/4
U14F	7/8
U16F	1



For sizes 1-6



For sizes 8-16