

 **SUPERLOK**[®]

i - Fitting

Precise Connection Every Time

No More GUESSWORK!




















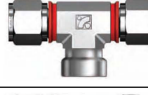








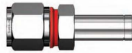

















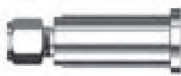




OUTPERFORMS

Competition in
Safety, Quality
& Reliability

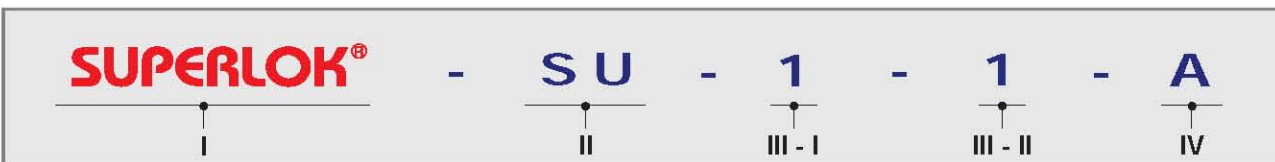


SUPERLOK *i* - Fitting
Integration Tube Fitting Series



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Ordering Information



I: **SUPERLOK®** Tube Fitting II: Fitting Type III: Fitting Size (III-I: Tube O.D. III-II: Pipe Thread Size or Tube Size) IV: Material

I: **SUPERLOK®** Tube Fitting

II: Type of Fitting

SUI: Union	SMCI: Male Connector	SUEI: Union Elbow	SUTI: Union Tee
SWC: Weld connector	SRI: Reducer	SSMC: SAE/MS O-Ring Male Connector	SAU: AN union SP: Plug

■ Refer to Index - Pg 2

III: Size of Fitting

III-I: Tube O.D.

Fractional Tube	O.D (Inch)	1/16	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1-1/4	1-1/2	2
Identify		1	2	3	4	5	6	8	10	12	14	16	20	24	32

III-II: Pipe Thread Size or tube size

SIZE (INCH)	1/8	1/4	3/8	1/2	3/4	1	Applied Size
ISO TAPERED	2R	4R	6R	8R	12R	16R	JIS B0203(PT), DIN2999, BSPT
NPT	2N	4N	6N	8N	12N	16N	ANSI B1.20.1
ISO PARALLEL	2G	4G	6G	8G	12G	16G	JIS B0202(PF), ISO 228/1, BSPP
UNIFIED SCREW	2U	4U	6U	8U	12U	16U	AMERICAN STANDARD UNIFIED SCREW THREAD

IV: Material

MATERIAL	Aluminum (Use dash "-")	Brass and Copper (Use dash "-")	Carbon Steel	316 Stainless Steel	Monel Alloy 400	Alloy 825	Alloy 625	Alloy C-276
Identify	AL	B	S45C,A105(15),SS400(400)....	316,316L (36L)	M40	825	625	276

▪ Example

* SMCI - 8 - 6N SS316L SUPERLOK MALE CONNECTOR, Tube O.D: 1/2", Thread: 3/8" NPT, Stainless Steel 316L	* In case of Stainless Steel, it is possible to express SS316 or 316 itself.
TEES and CROSSES	
	<ul style="list-style-type: none"> TEES are described by the size of 1 & 2 and then the branch (3). CROSSES are described by the size of 1 & 2 and then the branch (3 & 4). <p>Ex. 1) SMBTI - 6 - 6N (- 316) MALE BRANCH TEE 3/8" X 3/8" X 3/8" NPT Stainless steel 316</p> <p>Ex. 2) SUCI - 8 UNION CROSS 1/2" X 1/2" X 1/2" X 1/2"</p>

* Products are for reference only and are subject to change on client's request.

Features of SUPERLOK® Tube Fittings



SUPERLOK® Tube Fittings have been designed and manufactured under the strictest material management, high precision machining and the best process technology.

SUPERLOK® Tube Fittings provide a reliable, leak proof seal under severe conditions such as temperature cycling, vibration and pulsation. In addition, **SUPERLOK®** Tube Fittings can contribute to productivity improvement because of superior machined surfaces on the inner surface of each **SUPERLOK®** Tube Fitting.

SUPERLOK® Tube Fittings can be assembled easily without the requirement of any special tools. Consideration of the entire system design is important to ensure safe and reliable results.

■ Structure of **SUPERLOK®**

SUPERLOK® Tube Fittings consist of four precision parts that are manufactured under the strictest quality control. These four precision parts together make up the BEST Tube Fitting in the world.

SUPERLOK® Tube Fittings secure leak free connections due to ease of assembly providing customers with confidence and appreciation of overall lower cost of installed systems.



■ Quality and Process Control

Mako Products **SUPERLOK[®]** Tube Fittings and Valves are produced to unmatched quality through strict statistical process control.

Stringent and consistent in process analysis regulates that tight tolerances are adhered to. The written Quality Control Manual is followed and demands persistent improvement in all areas of the Quality process where possible.

■ SUPERLOK[®] Warranty

Mako Products warrants that **SUPERLOK[®]** Tube Fittings shall be free from defects in material and workmanship for the life of the product.

The purchaser's solutions shall be limited to replacement and installation of any parts that fail through a defect in material or workmanship.

SUPERLOK[®] acknowledges that this brochure is regarded as the Warranty and does not publish a separate warranty unless there is a specific special requirement.

■ SUPERLOK[®] Installation Instruction

1. Installation under 1 inch or 25MM

SUPERLOK[®] Tube Fittings shall be delivered to the customer completely assembled and ready for installation.

Turning the nut to the finger tight position is the only requirement before starting the installation.

Fittings should not be disassembled before installation to maintain cleanliness and prevent unwanted foreign material from entering the system.

Care in the proper selection of tubing also contributes to a safe and reliable installation.

Step 1

Insert the tubing into the **SUPERLOK[®]** Tube fitting making sure the tubing is bottomed out and is in complete contact with the shoulder of the fitting. Also, the nut should be in the finger-tight position at this time.

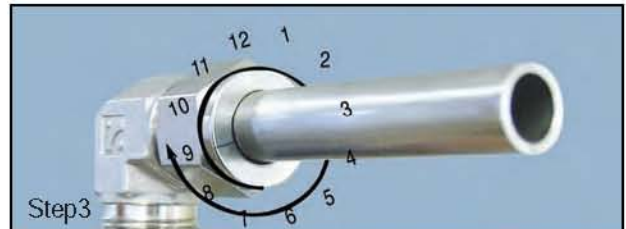
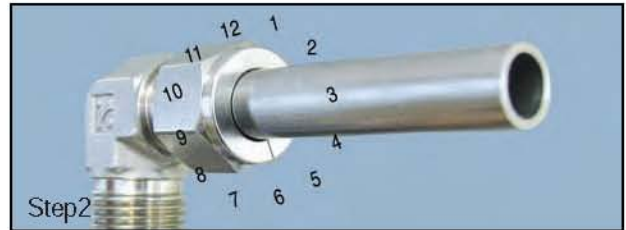
Step 2

Before tightening, mark the **SUPERLOK[®]** nut at the 6 o'clock position.

Step 3

Hold the fitting body safely with a back-up wrench and tighten the nut 1-1/4 turns until your mark reaches the 9 o'clock position.

Note: For 1/16", 1/8" and 3/16", 2, 3 and 4 mm tube fittings, tighten the nut 3/4 of a turn to the 3 o'clock position.



Gaugeability

On initial installation, the **SUPERLOK[®]** Inspection Gauge assures the installer or inspector that a fitting has been sufficiently tightened.

Position the **SUPERLOK[®]** Inspection Gauge next to the gap between the nut and the body.

- If the gauge will not enter the gap, the fitting is sufficiently tightened.



- If the gauge will enter the gap, additional tightening is required.



2. Installation for high pressure or severe service systems

Since tubing has different O.D. tolerances, it is important to have a common starting point to take out in dimensional variations. This is done by tightening the fitting slightly until the tubing cannot freely rotate in the fitting as it can in the finger-tight position. At this point tighten the nut 1-1/4 turns.

Safety Considerations on Installations for High Pressure Systems

1. Make sure the proper tubing wall thickness is selected in accordance with pressure ratings. (see Page 10) Tubing should have a hardness of HRB 80 or less.
2. Do not assemble or disassemble fittings when the system is pressurized.

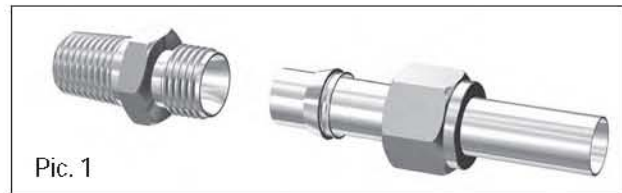
3. Re-tightening Instructions

Step 1

Pic. 1 shows the fitting in the disconnected position. Insert the tubing with the pre-swaged ferrules into the fitting body making sure the front ferrule is firmly seated as shown in Pic. 2

Step 2

Finger-tighten the nut and then with a wrench turn the nut to the original 9 o'clock position. At this point a slight change of resistance will be felt. Tighten the nut slightly more as the change in resistance is felt and the installation is complete as shown in Pic. 3 by tightening slightly more.



Technical Information

■ Hardness Limitation

High Quality Stainless Steel tubing that is fully annealed; Seamless or Welded per ASTM A269, A213 or equivalent should be used with **SUPERLOK** Tube fittings. The tubing must be a maximum hardness of HRB 90 or less on the Rockwell Scale, however HRB 80 is more suitable for bending and offers a greater difference in hardness to the ferrules. This difference in hardness offers more ease in assembly and better interaction between the ferrules and the tubing.

■ Compatibility

SUPERLOK Tube fittings are manufactured in order to be 100% interchangeable with other Tube Fittings currently on the market. **SUPERLOK** fully warrants the compatibility of with different manufactures provided the same strict manufacturing practices and tolerances are held by those manufactures. If possible only the **SUPERLOK** should be used to guarantee system quality.

■ Gas System Application

SUPERLOK[®] Tube Fittings are appropriate for Gas Systems, but the implementation of certain standards mentioned below should be adhered to just as in other systems.

1. Tubing hardness must be less than that of the ferrules.
2. Tubing should be free of surface imperfections, defects and round in shape.
3. Refer to Table 2 on page 10 for selection of the appropriate wall thickness. (Only shaded areas should be selected for Gas Systems)
4. Tubing ends must be cut squarely and perpendicular to the center-line of the tubing. After the tubing is cut it must be deburred on both the inside and outside with a High quality fully sharpened deburring tool.
5. Follow the **SUPERLOK[®]** Installation Instructions from pages 5 and 6 in the catalog.
6. Do not attempt to bend the tubing after a fitting has been installed in a fixed position.
7. Tubing Systems should be installed to allow for adequate expansion and contraction as well as ease of maintenance.

■ MATERIAL

SUPERLOK[®] Tube Fittings are available as standard in stainless steel, brass, and alloy material. Straight fittings are machined from cold finished bar stock and shaped bodies from forgings. Specifications for fitting materials are listed below. For special applications, contact your local distributors.

Material	Bar Stock	Forging
316 SS	ASTM A479 ASTM A276	ASTM A182
Monel, Alloy 400	ASTM B164	ASTM B 564
Inconel, Alloy 600	ASTM B 166	ASTM B 564
Hastelloy, Alloy C-276	ASTM B 574	ASTM B 564
Brass	ASTM B 16 ASTM B 453	ASTM B 283

■ Maximum Temperature by Materials

Aluminum	400 °F	204 °C
Copper	400 °F	204 °C
Steel	375 °F	191 °C
SUS304	1000 °F	538 °C
SUS316	1200 °F	649 °C
MONEL	800 °F	427 °C

Please refer to ASME B31.3 - 1993 concerning the detailed information about the maximum & minimum temperature of various materials.

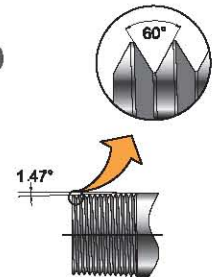
■ Vacuum, Cryogenic and High Temperature Applications

SUPERLOK[®] Tube Fittings have been tested in Vacuum, Cryogenic and High Temperatures ensuring repeatable and reliable performance in the severest of Applications.

■ THREADS

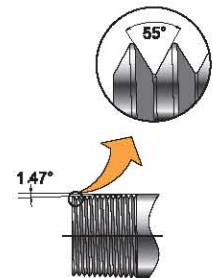
1. NPT (National Pipe Thread)

- Thread angle 60°
- Tapered angle 1.47°
- Manufactured by the standard of ASME B 1.20.1



2. ISO 7/1 Tapered Thread

- Thread angle 55°
- Tapered angle 1.47°
- Equivalent to the standard of DIN2999, BS21(BSPT) and JIS B0203(PT).

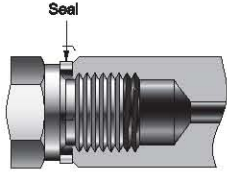


3. ISO 228/1 Parallel Thread

- Thread angle 55°
- Equivalent to the standard of BS 2779 (BSPP), JIS B0202 (PF).
- As the thread in accordance with ISO 228/1 cannot be sealed perfectly, the sealing shall be done by the following method.
- Use a gasket or O-Ring to seal.

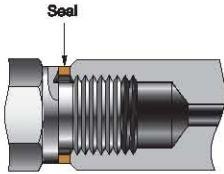
① Bonded Washer Seal

Be sealed by contacting the inclined surface of the hex body of male thread to the surface of the female thread. In case of sealing, a washer composed of metal and elastic material is located at the center of tapered surface.



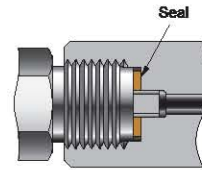
② Metal Gasket Seal

A Metal gasket (generally copper) is sealed between the body of male thread and the surface of female thread.



③ Metal Gasket Seal

This is a method to insert a gasket into the flat surface of thread's inside. The sealing shall be completed with pushing the gasket by male thread surface.



4. UNF Thread

- Thread angle 60 °
- This is classified into UN, UNC and UNF. The standard is classified by the diameter of thread and the number of threads per inch.
- ASME B 1.1

Tube Standard Information

■ Tube Selection

Suitable tubing selection is essential in performance of tubing system.

When selecting tubing material, size and wall thickness, customer must consider pressure, flux (flow), temperature, environment and compatibility of system.

Consideration facts at the selection of tube

1. Quality of the tube materials & manufacturing method.
2. Thickness and outer diameter of tube.
3. Surface treatment of tube .
4. Hardness of tube.
5. Concentricity of tube.

■ Tube Bending

Tubing must have a minimum straight length before the start of any bend when inserting the tube into a **SUPERLOK®** Tube Fitting. Tubing where the minimum straight length is not adhered can result in leakage and jeopardize the integrity of the system. See the chart below for minimum straight lengths.

Requirements for quality Tubing Material

- Tubing must be free of surface imperfections and suitable for Bending.

Pressure coefficient for tubing as it relates to temperature change.

■ The Recommended Straight Line Length of Tube In Tube Bending

Tube O.D. (inch)	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1
L(mm)	12.70	18.25	19.05	20.63	22.20	23.81	30.16	31.75	33.30	38.10

- L: The straight line length of tubing from the ending part of tubing to the beginning part of bending.

■ The Requirements for Tube Quality of the Material

Carbon steel tubing

- ASTM A179 or equivalent.
- Carbon steel tubing for an oil pressure usage of high quality, annealed and seamless.
- Maximum hardness: HRB72.
- Tubing must be free from scars and shall be suitable for bending and expansion works.

Copper tubing

- ASTM B68, B75 or equivalent.
- Copper tubing of high quality, annealed and seamless.

Stainless steel tubing

- ASTM A213, A269 or equivalent.
- Stainless steel tubing of high quality, annealed and seamless. (316, 304, 321, etc.)
- Hardness: below HRB 80.
- Tubing must be free from scars and shall be suitable for bending and expansion works.

■ Tube Quality Continued ...

Monel tubing

- ASTM B165 or equivalent.
- 400 alloy tubing of high quality, annealed and seamless.
- Hardness: below HRB 75.
- Tubing must be free from scars and shall be suitable for bending and expansion works.

■ A Pressure Grade Coefficient of Tubing Owing to Temperature Change

Table 1

° F	° C	Copper	304SS	316SS	Monel
200	93	0.80	1.00	1.00	0.88
400	204	0.50	0.93	0.96	0.79
600	316	---	0.82	0.85	0.79
800	427	---	0.76	0.79	0.76
1000	538	---	0.69	0.76	---
1200	649	---	0.30	0.37	---

Multiply the allowable working pressure in Table 2 by the coefficient in Table 1 in order to decide allowable pressure at high temperature.
(See page 9, 10)

■ Example

SUS316

(3/8" O.D of tube) X (0.049" wall thickness)
1200 °F 4800 psi X 0.37 = 1776 psi

The applicable operation pressure of SUS316 tubing for wall thickness, 3/8" O.D X 0.049", is 1776 psi at 1200 °F

Technological Data

Table 2 Stainless Steel Tubing

Stainless Steel tubing which is high quality (such as 304, 316, 316L and so on), fully annealed and seamless ASTM A269, A213 or equivalent.

STAINLESS STEEL FRACTIONAL TUBE

Tube O.D. (inch)	TUBE WALL THICKNESS (inch)												
	0.010	0.012	0.014	0.016	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120
1/16	5600	6800	8100	9400	12000								
1/8						8500	10900						
3/16						5400	7000	10200					
1/4						4000	5100	7500	10200				
5/16							4000	5800	8000				
3/8							3300	4800	6500				
1/2							2600	3700	5100	6700			
5/8								2900	4000	5200	6000		
3/4								2400	3300	4200	4900	5800	
7/8								2000	2800	3600	4200	4800	
1									2400	3100	3600	4200	4700

* Tubing working pressure (psi)

STAINLESS STEEL METRIC TUBE

Tube O.D. (mm)	TUBE WALL THICKNESS (mm)												
	0.71	0.89	1.00	1.25	1.50	1.65	2.00	2.11	2.41	2.50	2.77	3.00	3.05
3	10800	13800	15300										
4	7900	10100	11500	14400									
6	5000	6500	7400	9400	11500	12700							
8		4700	5800	6800	8400	9300							
10		3700	4200	5300	6500	7300							
12		3000	3400	4400	5300	5900	6800	7200					
16			2500	3200	3900	4300	5300	5700	6600	6800			
18				2800	3400	3800	4700	5000	5800	6000	6700		
20				2500	3000	3400	4200	4400	5100	5300	6000		
22				2300	2800	3000	3800	4000	4600	4800	5400		
25				2000	2400	2700	3300	3500	4000	4200	4700	5100	5200

* Tubing working pressure (psi)

Allowable stress value between -20 °F and 100 °F (-28.9 °C ~ 37.8 °C) is 19,500 psi
 Safety factor is 4 (Ultimate tensile strength is 75,000 psi)

- The above data is based on the minimum wall thickness and the maximum O. D. allowed by and under the standard of ASTM A269.
- The dimensions are not considered to erosion or corrosion.

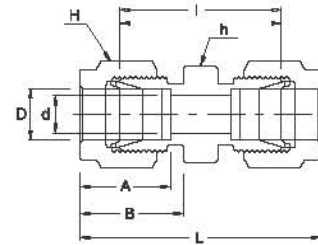


Union & Connector

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SGMC Male Connector For Bonded Washer Seal Call for information	
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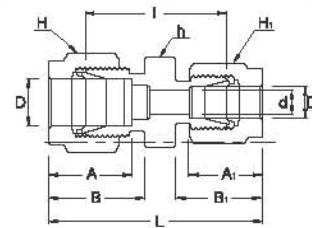
SUI Union



Connects Fractional Tubes

Part No.	Tube O.D. D (inch)	d Min	Width Across Flat		A	B	I	L
			h (inch)	H (inch)				
SU - 1	1/16	1.27	5/16	5/16	8.63	10.92	17.52	25.15
SU - 2	1/8	2.28	7/16	7/16	12.70	15.24	22.35	35.56
SU - 3	3/16	3.04	7/16	1/2	13.71	16.00	24.13	37.33
SUI - 4	1/4	4.82	1/2	9/16	15.24	17.78	26.16	40.89
SU - 5	5/16	6.35	9/16	5/8	16.25	18.54	28.19	42.92
SUI - 6	3/8	7.11	5/8	11/16	16.76	19.30	30.22	44.95
SUI - 8	1/2	10.41	13/16	7/8	22.86	21.84	30.98	51.30
SU - 10	5/8	12.70	15/16	1	24.38	21.84	31.75	52.07
SUI - 12	3/4	15.74	1-1/16	1-1/8	24.38	21.84	33.27	53.59
SU - 14	7/8	18.28	1-3/16	1-1/4	25.90	21.84	34.79	55.11
SUI - 16	1	22.35	1-3/8	1-1/2	31.24	26.41	40.38	64.77
SU - 20	1-1/4	27.69	1-3/4	1-7/8	41.15	38.86	48.00	92.20
SU - 24	1-1/2	34.04	2-1/8	2-1/4	50.04	45.21	53.59	107.95
SU - 32	2	45.97	2-3/4	3	67.56	62.74	74.68	149.35

SRUI Reducing Union

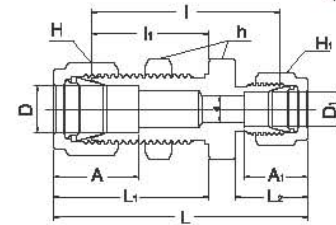


Connects Fractional Tubes

Part No.	Tube O.D.		d Min	Width Across Flat			A	A ₁	B	B ₁	I	L
	D (inch)	D ₁ (inch)		h (inch)	H (inch)	H ₁ (inch)						
SRU - 2 - 1	1/8	1/16	1.27	7/16	7/16	5/16	12.7	8.63	15.24	10.92	20.60	31.00
SRU - 3 - 2	3/16	1/8	2.28	7/16	1/2	7/16	13.71	12.70	16.00	15.24	23.36	36.57
SRUI - 4 - 2	1/4	1/8	2.28	1/2	9/16	7/16	15.24	12.70	17.78	15.24	24.63	38.60
SRUI - 4 - 3	1/4	3/16	3.04	1/2	9/16	1/2	15.24	13.71	17.78	16.00	25.40	39.37
SRU - 5 - 2	5/16	1/8	2.28	9/16	5/8	7/16	16.25	12.70	18.54	15.24	25.90	39.87
SRUI - 5 - 4	5/16	1/4	4.82	9/16	5/8	9/16	16.25	15.24	18.54	17.78	27.43	42.16
SRUI - 6 - 2	3/8	1/8	2.28	5/8	11/16	7/16	16.76	12.70	19.30	15.24	26.92	40.89
SRUI - 6 - 4	3/8	1/4	4.82	5/8	11/16	9/16	16.76	15.24	19.30	17.78	28.44	43.18
SRUI - 6 - 5	3/8	5/16	6.35	5/8	11/16	5/8	16.76	16.25	19.30	18.54	29.46	44.19
SRUI - 8 - 2	1/2	1/8	2.28	13/16	7/8	7/16	22.86	12.70	21.84	15.24	28.44	45.21
SRUI - 8 - 4	1/2	1/4	4.82	13/16	7/8	9/16	22.86	15.24	21.84	17.78	29.46	46.99
SRUI - 8 - 6	1/2	3/8	7.11	13/16	7/8	11/16	22.86	16.76	21.84	19.30	30.98	48.51
SRUI - 10 - 6	5/8	3/8	7.11	15/16	1	11/16	24.38	16.76	21.84	19.30	31.75	49.27
SRUI - 10 - 8	5/8	1/2	10.41	15/16	1	7/8	24.38	22.86	21.84	21.84	31.75	52.07
SRUI - 12 - 4	3/4	1/4	4.82	1-1/16	1-1/8	9/16	24.38	15.24	21.84	17.78	31.75	49.27
SRUI - 12 - 6	3/4	3/8	7.11	1-1/16	1-1/8	11/16	24.38	16.76	21.84	19.30	33.27	50.80
SRUI - 12 - 8	3/4	1/2	10.41	1-1/16	1-1/8	7/8	24.38	22.86	21.84	21.84	33.27	53.59
SRUI - 12 - 10	3/4	5/8	12.70	1-1/16	1-1/8	1	24.38	24.38	21.84	21.84	33.27	53.59
SRUI - 16 - 8	1	1/2	10.41	1-3/8	1-1/2	7/8	31.24	22.86	26.41	21.84	39.50	63.24
SRUI - 16 - 12	1	3/4	15.74	1-3/8	1-1/2	1-1/8	31.24	24.38	26.41	21.84	39.00	62.73

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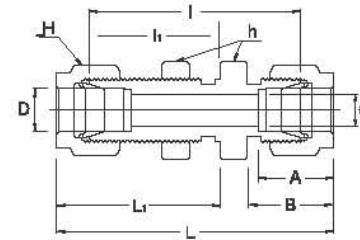
SBHRUI Bulkhead Reducing Union



Connects Fractional Tubes

Part No.	Tube O.D.		d Min	Width Across Flat			A	A ₁	I	I ₁	L	L ₁	L ₂	Panel Hole Drill Size	Thickness
	D (inch)	D ₁ (inch)		h (inch)	H (inch)	H ₁ (inch)									
SBHRUI - 4 - 2	1/4	1/8	2.28	5/8	9/16	7/16	15.24	12.70	41.14	26.16	55.11	33.52	15.24	11.50	
SBHRUI - 6 - 4	3/8	1/4	4.82	3/4	11/16	9/16	16.76	15.24	45.97	29.46	60.70	36.57	17.78	14.68	
SBHRUI - 8 - 4	1/2	1/4	4.82	15/16	7/8	9/16	22.86	15.24	49.27	31.75	66.80	41.91	17.78	19.44	

SBHUI Bulkhead Union

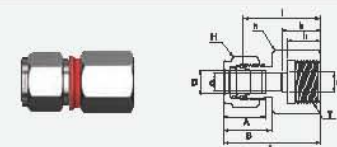


Connects Fractional Tubes

Part No.	Tube O.D. D (inch)	d Min	Width Across Flat		A	B	I	I ₁	L	L ₁	Panel Hole Drill Size	Panel Max. Thickness
			h (inch)	H (inch)								
SBHU - 1	1/16	1.27	5/16	5/16	8.63	10.92	23.87	13.46	31.50	17.27	5.16	3.05
SBHU - 2	1/8	2.28	1/2	7/16	12.70	15.24	38.10	24.63	51.30	31.24	8.33	12.70
SBHU - 3	3/16	3.04	9/16	1/2	13.71	16.00	40.38	25.40	53.59	32.00	9.92	12.70
SBHUI - 4	1/4	4.82	5/8	9/16	15.24	17.78	42.92	26.16	57.65	33.52	11.50	10.16
SBHU - 5	5/16	6.35	11/16	5/8	16.25	18.54	45.97	28.44	60.70	35.81	13.09	11.17
SBHUI - 6	3/8	7.11	3/4	11/16	16.76	19.30	47.49	29.46	62.23	36.83	14.68	11.17
SBHUI - 8	1/2	10.41	15/16	7/8	22.86	21.84	50.80	31.75	71.12	41.91	19.44	12.70
SBHU - 10	5/8	12.70	1-1/16	1	24.38	21.84	52.32	32.51	72.64	42.67	22.62	12.70
SBHUI - 12	3/4	15.74	1-3/16	1-1/8	24.38	21.84	58.67	37.33	78.99	47.49	25.79	16.76
SBHU - 14	7/8	18.28	1-3/8	1-1/4	25.90	21.84	64.26	42.92	84.58	53.08	28.97	19.05
SBHUI - 16	1	22.35	1-5/8	1-1/2	31.24	26.41	71.37	45.21	95.75	57.40	33.73	19.05

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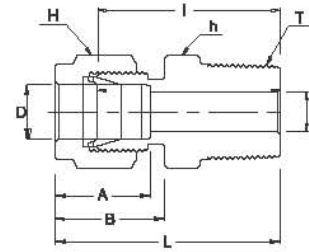
SGCI Gauge Connector



Connects Fractional Tubes to ISO Parallel Thread

Part No.	Tube O.D. D (inch)	T (PF)	d Min	d _h	Width Across Flat		A	B	I	h	I ₁	L
					h (inch)	H (inch)						
SGCI - 4 - 4G	1/4	1/4	4.82	5.58	3/4	9/16	15.24	17.78	30.22	13.00	17.00	37.59
SGCI - 4 - 6G	1/4	3/8	4.82	6.60	15/16	9/16	15.24	17.78	30.22	14.20	20.30	37.59
SGCI - 4 - 8G	1/4	1/2	4.82	6.60	1-1/16	9/16	15.24	17.78	36.07	18.80	24.90	43.43
SGC - 5 - 4G	5/16	1/4	5.58	-	3/4	5/8	16.25	18.54	30.98	13.00	-	38.35
SGC - 5 - 8G	5/16	1/2	7.11	-	1-1/16	5/8	16.25	18.54	33.53	18.80	-	40.89
SGCI - 6 - 4G	3/8	1/4	5.58	-	3/4	11/16	16.76	19.30	31.75	13.00	-	39.12
SGCI - 6 - 6G	3/8	3/8	6.60	-	15/16	11/16	16.76	19.30	31.24	14.20	-	38.61
SGCI - 6 - 8G	3/8	1/2	7.11	-	1-1/16	11/16	16.76	19.30	34.54	18.80	-	41.91
SGCI - 8 - 4G	1/2	1/4	5.58	-	7/8	7/8	22.86	21.84	31.80	13.00	-	41.95
SGCI - 8 - 6G	1/2	3/8	6.60	-	15/16	7/8	22.86	21.84	34.29	14.20	-	44.45
SGCI - 8 - 8G	1/2	1/2	7.11	7.11	1-1/16	7/8	22.86	21.84	38.10	18.80	-	48.26

SMCI Male Connector

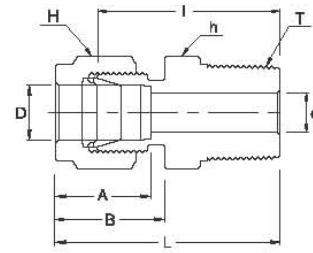


Connects Fractional Tubes to Female NPT Thread

Part No.	Tube O.D. D (inch)	T (NPT)	d Min	Width Across Flat		A	B	I	L
				h (inch)	H (inch)				
SMC - 1 - 1N	1/16	1/16	1.27	5/16	5/16	8.63	10.92	20.00	23.83
SMC - 1 - 2N	1/16	1/8	1.27	7/16	7/16	8.63	10.92	22.35	26.23
SMC - 2 - 2N	1/8	1/8	2.28	7/16	7/16	12.70	15.24	23.87	30.48
SMC - 2 - 4N	1/8	1/4	2.28	9/16	7/16	12.70	15.24	28.95	35.56
SMC - 2 - 6N	1/8	3/8	2.28	11/16	7/16	12.70	15.24	29.21	35.81
SMC - 2 - 8N	1/8	1/2	2.28	7/8	7/16	12.70	15.24	35.56	42.16
SMC - 3 - 2N	3/16	1/8	3.04	7/16	1/2	13.71	16.00	24.63	31.24
SMC - 3 - 4N	3/16	1/4	3.04	9/16	1/2	13.71	16.00	29.71	36.32
SMCI - 4 - 2N	1/4	1/8	4.82	1/2	9/16	15.24	17.78	25.40	32.76
SMCI - 4 - 4N	1/4	1/4	4.82	9/16	9/16	15.24	17.78	30.48	37.84
SMCI - 4 - 6N	1/4	3/8	4.82	11/16	9/16	15.24	17.78	30.98	38.35
SMCI - 4 - 8N	1/4	1/2	4.82	7/8	9/16	15.24	17.78	37.33	44.70
SMCI - 4 - 12N	1/4	3/4	4.82	1-1/16	9/16	15.24	17.78	38.86	46.22
SMC - 5 - 2N	5/16	1/8	4.82	9/16	5/8	16.25	18.54	26.67	34.03
SMC - 5 - 4N	5/16	1/4	6.35	9/16	5/8	16.25	18.54	31.24	38.60
SMC - 5 - 6N	5/16	3/8	6.35	11/16	5/8	16.25	18.54	31.75	39.11
SMCI - 6 - 2N	3/8	1/8	4.82	5/8	11/16	16.76	19.30	27.94	35.30
SMCI - 6 - 4N	3/8	1/4	7.11	5/8	11/16	16.76	19.30	32.51	39.87
SMCI - 6 - 6N	3/8	3/8	7.11	11/16	11/16	16.76	19.30	32.51	39.87
SMCI - 6 - 8N	3/8	1/2	7.11	7/8	11/16	16.76	19.30	38.86	46.22
SMCI - 6 - 12N	3/8	3/4	7.11	1-1/16	11/16	16.76	19.30	40.38	47.75
SMCI - 8 - 2N	1/2	1/8	4.82	13/16	7/8	22.86	21.84	28.70	38.86
SMCI - 8 - 4N	1/2	1/4	7.11	13/16	7/8	22.86	21.84	33.27	43.43
SMCI - 8 - 6N	1/2	3/8	9.65	13/16	7/8	22.86	21.84	33.27	43.43
SMCI - 8 - 8N	1/2	1/2	10.41	7/8	7/8	22.86	21.84	38.86	49.02
SMCI - 8 - 12N	1/2	3/4	10.41	1-1/16	7/8	22.86	21.84	40.38	50.54
SMCI - 8 - 16N	1/2	1	10.41	1-3/8	7/8	22.86	21.84	46.99	57.15
SMC - 10 - 6N	5/8	3/8	9.65	15/16	1	24.38	21.84	34.03	44.19
SMC - 10 - 8N	5/8	1/2	11.93	15/16	1	24.38	21.84	38.86	49.02
SMC - 10 - 12N	5/8	3/4	12.70	1-1/16	1	24.38	21.84	40.38	50.54
SMCI - 12 - 8N	3/4	1/2	11.93	1-1/16	1-1/8	24.38	21.84	40.38	50.54
SMCI - 12 - 12N	3/4	3/4	15.74	1-1/16	1-1/8	24.38	21.84	40.38	50.54
SMCI - 12 - 16N	3/4	1	15.74	1-3/8	1-1/8	24.38	21.84	46.99	57.15
SMC - 14 - 12N	7/8	3/4	15.74	1-3/16	1-1/4	25.90	21.84	40.38	50.54
SMC - 14 - 16N	7/8	1	18.28	1-3/8	1-1/4	25.90	21.84	46.99	57.15
SMCI - 16 - 8N	1	1/2	11.93	1-3/8	1-1/2	31.24	26.41	45.21	57.40
SMCI - 16 - 12N	1	3/4	15.74	1-3/8	1-1/2	31.24	26.41	45.21	57.40
SMCI - 16 - 16N	1	1	22.35	1-3/8	1-1/2	31.24	26.41	50.03	62.23
SMC - 20 - 16N	1-1/4	1	22.35	1-3/4	1-7/8	41.15	38.86	55.12	77.22
SMC - 20 - 20N	1-1/4	1-1/4	27.69	1-3/4	1-7/8	41.15	38.86	55.12	77.22
SMC - 24 - 24N	1-1/2	1-1/2	34.04	2-1/8	2-1/4	50.04	45.21	61.72	88.90
SMC - 32 - 32N	2	2	45.97	2-3/4	3	67.56	62.74	76.20	113.54

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SMCI Male Connector

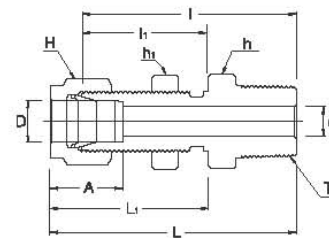


Connects Fractional Tube to Female ISO Tapered Thread

Part No.	Tube O.D. D (inch)	T (PT)	d Min	Width Across Flat		A	B	I	L
				h (inch)	H (inch)				
SMC - 2 - 2R	1/8	1/8	2.28	7/16	7/16	12.70	15.24	23.87	30.48
SMC - 2 - 4R	1/8	1/4	2.28	9/16	7/16	12.70	15.24	28.95	35.56
SMCI - 4 - 2R	1/4	1/8	4.82	1/2	9/16	15.24	17.78	25.40	32.76
SMCI - 4 - 4R	1/4	1/4	4.82	9/16	9/16	15.24	17.78	30.48	37.84
SMCI - 4 - 6R	1/4	3/8	4.82	11/16	9/16	15.24	17.78	30.98	38.35
SMCI - 4 - 8R	1/4	1/2	4.82	7/8	9/16	15.24	17.78	37.33	44.70
SMC - 5 - 2R	5/16	1/8	4.82	9/16	5/8	16.25	18.54	26.67	34.03
SMC - 5 - 4R	5/16	1/4	6.35	9/16	5/8	16.25	18.54	31.24	38.60
SMCI - 6 - 2R	3/8	1/8	4.82	5/8	11/16	16.76	19.30	27.94	35.30
SMCI - 6 - 4R	3/8	1/4	7.11	5/8	11/16	16.76	19.30	32.51	39.87
SMCI - 6 - 6R	3/8	3/8	7.11	11/16	11/16	16.76	19.30	32.51	39.87
SMCI - 6 - 8R	3/8	1/2	7.11	7/8	11/16	16.76	19.30	38.86	46.22
SMCI - 8 - 4R	1/2	1/4	7.11	13/16	7/8	22.86	21.84	33.27	43.43
SMCI - 8 - 6R	1/2	3/8	9.65	13/16	7/8	22.86	21.84	33.27	43.43
SMCI - 8 - 8R	1/2	1/2	10.41	7/8	7/8	22.86	21.84	38.86	49.02
SMCI - 8 - 12R	1/2	3/4	10.41	1-1/16	7/8	22.86	21.84	40.38	50.54
SMCI - 12 - 12R	3/4	3/4	15.74	1-1/16	1-1/8	24.38	21.84	40.38	50.54
SMCI - 16 - 16R	1	1	22.35	1-3/8	1-1/2	31.24	26.41	50.03	62.23

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*Some Bored-Through male connectors available upon request.

SMCB Bulkhead Male Connector

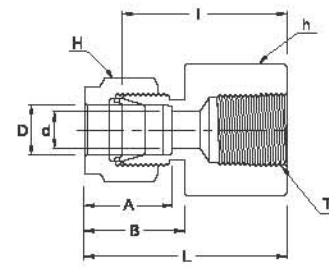


Connects Fractional Tubes to Female NPT Thread*

Part No.	Tube O.D. D (inch)	T * (NPT)	d Min	Width Across Flat			A	I	I ₁	L	L ₁	Panel Hole Drill Size	Panel Max. Thickness
				h (inch)	h ₁ (inch)	H (inch)							
SMCB - 2 - 2N	1/8	1/8	2.28	1/2	1/2	7/16	12.70	39.87	24.63	46.48	31.24	8.33	12.70
SMCB - 4 - 2N	1/4	1/8	4.82	5/8	5/8	9/16	15.24	42.16	26.16	49.53	33.52	11.50	10.16
SMCB - 4 - 4N	1/4	1/4	4.82	5/8	5/8	9/16	15.24	46.73	26.16	54.10	33.52	11.50	10.16
SMCB - 6 - 4N	3/8	1/4	7.11	3/4	3/4	11/16	16.76	50.03	29.46	57.40	36.83	14.68	11.17
SMCB - 6 - 6N	3/8	3/8	7.11	3/4	3/4	11/16	16.76	50.03	29.46	57.40	36.83	14.68	11.17
SMCB - 6 - 8N	3/8	1/2	7.11	7/8	3/4	11/16	16.76	56.38	29.46	63.75	36.83	14.68	11.17
SMCB - 8 - 6N	1/2	3/8	9.65	15/16	15/16	7/8	22.86	53.08	31.75	63.24	41.91	19.44	12.70
SMCB - 8 - 8N	1/2	1/2	10.41	15/16	15/16	7/8	22.86	58.67	31.75	68.83	41.91	19.44	12.70
SMCB - 12 - 12N	3/4	3/4	15.74	1-3/16	1-3/16	1-1/8	24.38	66.04	37.33	76.20	47.49	25.79	16.76
SMCB - 16 - 16N	1	1	22.35	1-5/8	1-5/8	1-1/2	31.24	81.02	45.21	93.21	57.40	33.73	19.05

* ISO Tapered Threads are available upon request

SFCI Female Connector

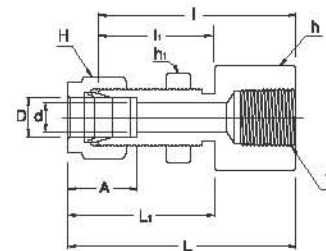


Connects Fractional Tubes to Male NPT Thread*

Part No.	Tube O.D. D (inch)	T* (NPT)	d Min	Width Across Flat			A	B	I	L
				h (inch)	h ₁ (inch)	H (inch)				
SFC - 2 - 2N	1/8	1/8	2.28	9/16	7/16	7/16	12.70	15.24	22.09	28.70
SFC - 2 - 4N	1/8	1/4	2.28	3/4	7/16	7/16	12.70	15.24	26.92	33.52
SFC - 3 - 2N	3/16	1/8	3.04	9/16	1/2	1/2	13.71	16.00	23.11	29.71
SFCI - 4 - 2N	1/4	1/8	4.82	9/16	9/16	9/16	15.24	17.78	23.87	31.24
SFCI - 4 - 4N	1/4	1/4	4.82	3/4	9/16	9/16	15.24	17.78	28.44	35.81
SFCI - 4 - 6N	1/4	3/8	4.82	7/8	9/16	9/16	15.24	17.78	30.22	37.59
SFCI - 4 - 8N	1/4	1/2	4.82	1-1/16	9/16	9/16	15.24	17.78	35.05	42.41
SFC - 5 - 2N	5/16	1/8	6.35	9/16	5/8	5/8	16.25	18.54	24.63	32.00
SFC - 5 - 4N	5/16	1/4	6.35	3/4	5/8	5/8	16.25	18.54	29.46	36.83
SFCI - 6 - 2N	3/8	1/8	7.11	5/8	11/16	11/16	16.76	19.30	25.40	32.76
SFCI - 6 - 4N	3/8	1/4	7.11	3/4	11/16	11/16	16.76	19.30	30.22	37.59
SFCI - 6 - 6N	3/8	3/8	7.11	7/8	11/16	11/16	16.76	19.30	31.75	39.11
SFCI - 6 - 8N	3/8	1/2	7.11	1-1/16	11/16	11/16	16.76	19.30	36.57	43.94
SFCI - 6 - 12N	3/8	3/4	7.11	1-5/16	11/16	11/16	16.76	19.30	40.38	47.75
SFCI - 8 - 4N	1/2	1/4	10.41	13/16	7/8	7/8	22.86	21.84	30.22	40.38
SFCI - 8 - 6N	1/2	3/8	10.41	7/8	7/8	7/8	22.86	21.84	31.75	41.91
SFCI - 8 - 8N	1/2	1/2	10.41	1-1/16	7/8	7/8	22.86	21.84	36.57	46.73
SFCI - 8 - 12N	1/2	3/4	10.41	1-5/16	7/8	7/8	22.86	21.84	38.10	48.26
SFC - 10 - 6N	5/8	3/8	12.70	15/16	1	1	24.38	21.84	31.75	41.91
SFC - 10 - 8N	5/8	1/2	12.70	1-1/16	1	1	24.38	21.84	36.57	46.73
SFCI - 12 - 8N	3/4	1/2	15.74	1-1/16	1-1/8	1-1/8	24.38	21.84	36.57	46.73
SFCI - 12 - 12N	3/4	3/4	15.74	1-5/16	1-1/8	1-1/8	24.38	21.84	38.10	48.26
SFC - 14 - 12N	7/8	3/4	18.28	1-5/16	1-1/4	1-1/4	25.90	21.84	39.62	49.78
SFCI - 16 - 12N	1	3/4	22.35	1-3/8	1-1/2	1-1/2	31.24	26.41	41.14	53.34
SFCI - 16 - 16N	1	1	22.35	1-5/8	1-1/2	1-1/2	31.24	26.41	50.03	62.23

* ISO Tapered Threads are available upon request

SFCB Bulkhead Female Connector



Connects Fractional Tubes to Male NPT Thread

Part No.	Tube O.D. D (inch)	T* (NPT)	d Min	Width Across Flat			A	I	h	L	L ₁	Panel Hole Drill Size	Panel Max. Thickness
				h (inch)	h ₁ (inch)	H (inch)							
SFCB - 2 - 2N	1/8	1/8	2.28	9/16	1/2	7/16	12.70	38.10	24.63	44.70	31.24	8.33	12.70
SFCB - 4 - 2N	1/4	1/8	4.82	5/8	5/8	9/16	15.24	39.62	26.16	46.99	33.52	11.50	10.16
SFCB - 4 - 4N	1/4	1/4	4.82	3/4	5/8	9/16	15.24	44.45	26.16	51.81	33.52	11.50	10.16
SFCB - 6 - 4N	3/8	1/4	7.11	3/4	3/4	11/16	16.76	47.75	29.46	55.11	36.83	14.68	11.17
SFCB - 8 - 6N	1/2	3/8	10.41	15/16	15/16	7/8	22.86	51.56	31.75	61.72	41.91	19.44	12.70
SFCB - 8 - 8N	1/2	1/2	10.41	1-1/16	15/16	7/8	22.86	56.38	31.75	66.54	41.91	19.44	12.70
SFCB - 12 - 12N	3/4	3/4	15.74	1-1/4	1-3/16	1-1/8	24.38	63.60	37.33	73.51	47.49	25.79	16.76

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.



Elbow & Tee

ELBOWS

SMEI
Male Elbow



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SHMEI
45° Male Elbow



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SPHMEI
45° Positionable Male
Elbow



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SPMEI
Positionable Male Elbow



page 20, 21

SUEI
Union Elbow



page 21

SFEI
Female Elbow



page 22

TEE

SUTI
Union Tee



page 23

SRUTI
Reducing Union Tee



page 23

SMBTI
Male Branch Tee



page 24

SPMBTI
Positionable Male
Branch Tee



page 24, 25

SMRTI
Male Run Tee



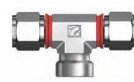
page 25

SPMRTI
Positionable Male Run Tee



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SFBTI
Female Branch Tee



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SFRTI
Female Run Tee

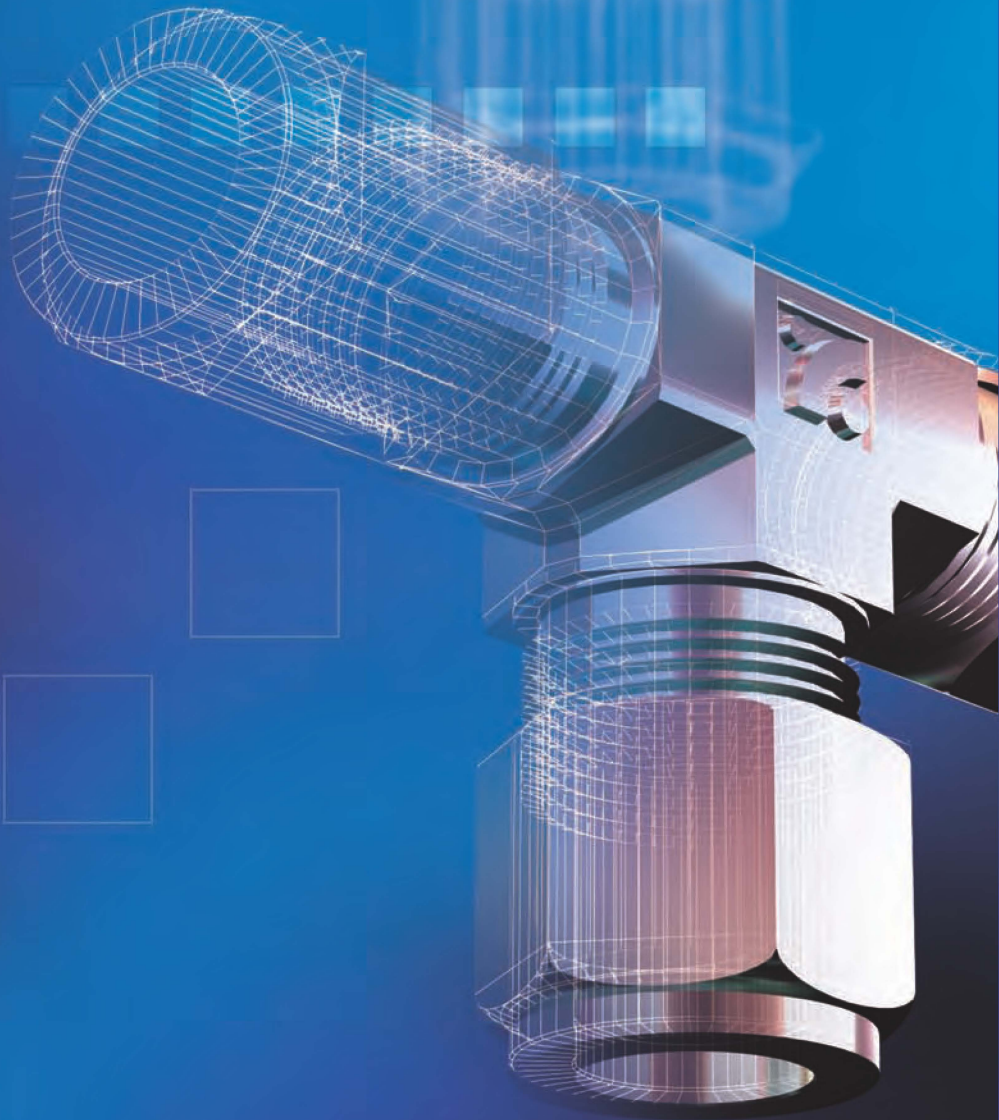


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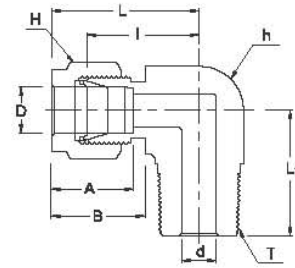
SUCI
Union Cross



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SMEI
Male Elbow

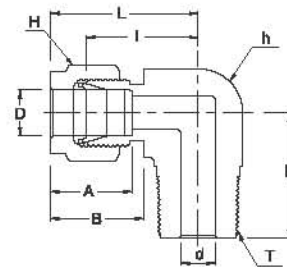


Connects Fractional Tube to Female NPT Thread

Part No.	Tube O.D. D (inch)	T (NPT)	d Min	Width Across Flat		A	B	I	L	L ₁
				h (inch)	H (inch)					
SME - 2 - 2N	1/8	1/8	2.28	1/2	7/16	12.70	15.24	18.00	24.30	18.80
SME - 2 - 4N	1/8	1/4	2.28	1/2	7/16	12.70	15.24	18.00	24.30	23.36
SME - 3 - 2N	3/16	1/8	3.04	1/2	1/2	13.71	16.00	18.79	25.40	18.79
SME - 3 - 4N	3/16	1/4	3.04	1/2	1/2	13.71	16.00	18.79	25.40	23.36
SMEI - 4 - 2N	1/4	1/8	4.82	1/2	9/16	15.24	17.78	19.55	26.92	18.79
SMEI - 4 - 4N	1/4	1/4	4.82	1/2	9/16	15.24	17.78	19.55	26.92	23.36
SMEI - 4 - 6N	1/4	3/8	4.82	5/8	9/16	15.24	17.78	22.35	29.71	26.16
SMEI - 4 - 8N	1/4	1/2	4.82	13/16	9/16	15.24	17.78	24.38	31.75	33.02
SME - 5 - 2N	5/16	1/8	4.82	9/16	5/8	16.25	18.54	21.33	28.70	19.81
SME - 5 - 4N	5/16	1/4	6.35	9/16	5/8	16.25	18.54	21.33	28.70	24.38
SME - 5 - 6N	5/16	3/8	6.35	11/16	5/8	16.25	18.54	23.11	30.48	26.16
SMEI - 6 - 2N	3/8	1/8	4.82	5/8	11/16	16.76	19.30	23.11	30.48	20.82
SMEI - 6 - 4N	3/8	1/4	7.11	5/8	11/16	16.76	19.30	23.11	30.48	25.40
SMEI - 6 - 6N	3/8	3/8	7.11	5/8	11/16	16.76	19.30	23.87	31.24	26.16
SMEI - 6 - 8N	3/8	1/2	7.11	13/16	11/16	16.76	19.30	25.90	33.27	33.02
SMEI - 6 - 12N	3/8	3/4	7.11	1-1/16	11/16	16.76	19.30	29.71	37.08	36.83
SMEI - 8 - 4N	1/2	1/4	7.11	13/16	7/8	22.86	21.84	25.90	36.06	28.19
SMEI - 8 - 6N	1/2	3/8	9.65	13/16	7/8	22.86	21.84	25.90	36.06	28.19
SMEI - 8 - 8N	1/2	1/2	10.41	13/16	7/8	22.86	21.84	25.90	36.06	33.02
SMEI - 8 - 12N	1/2	3/4	10.41	1-1/16	7/8	22.86	21.84	29.71	39.87	36.83
SME - 10 - 6N	5/8	3/8	9.65	15/16	1	24.38	21.84	27.94	38.10	30.22
SME - 10 - 8N	5/8	1/2	11.93	15/16	1	24.38	21.84	27.94	38.10	35.10
SME - 10 - 12N	5/8	3/4	12.70	1-1/16	1	24.38	21.84	29.71	39.87	36.83
SMEI - 12 - 8N	3/4	1/2	11.93	1-1/16	1-1/8	24.38	21.84	29.71	39.87	36.83
SMEI - 12 - 12N	3/4	3/4	15.74	1-1/16	1-1/8	24.38	21.84	29.71	39.87	36.83
SME - 14 - 12N	7/8	3/4	15.74	1-3/8	1-1/4	25.90	21.84	34.54	44.70	41.65
SMEI - 16 - 12N	1	3/4	15.74	1-3/8	1-1/2	31.24	26.41	36.83	49.02	41.65
SMEI - 16 - 16N	1	1	22.35	1-3/8	1-1/2	31.24	26.41	36.83	49.02	46.48
SME - 20 - 20N	1-1/4	1-1/4	27.69	1-11/16	1-7/8	41.15	38.86	44.45	66.55	47.75
SME - 24 - 24N	1-1/2	1-1/2	34.04	2	2-1/4	50.04	45.21	50.80	77.98	60.45
SME - 32 - 32N	2	2	45.97	2-3/4	3	67.56	62.74	69.85	107.19	70.61

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

SMEI Male Elbow

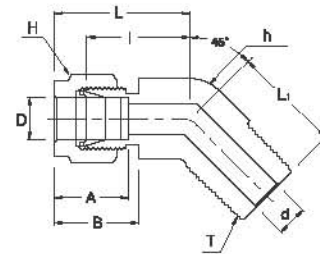


Connects Fractional Tubes to Female ISO Tapered Thread

Part No.	Tube O.D. D (inch)	T (PT)	d Min	Width Across Flat		A	B	I	L	L ₁
				h (inch)	H (inch)					
SMEI - 4 - 2R	1/4	1/8	4.82	1/2	9/16	15.24	17.78	19.55	26.92	18.79
SMEI - 4 - 4R	1/4	1/4	4.82	1/2	9/16	15.24	17.78	19.55	26.92	23.36
SMEI - 4 - 6R	1/4	3/8	4.82	5/8	9/16	15.24	17.78	22.35	29.71	26.16
SMEI - 4 - 8R	1/4	1/2	4.82	13/16	9/16	15.24	17.78	24.38	31.75	33.02
SMEI - 5 - 4R	5/16	1/4	6.35	9/16	5/8	16.25	18.54	21.33	28.70	24.38
SMEI - 6 - 4R	3/8	1/4	7.11	5/8	11/16	16.76	19.30	23.11	30.48	25.40
SMEI - 6 - 6R	3/8	3/8	7.11	5/8	11/16	16.76	19.30	23.87	31.24	26.16
SMEI - 8 - 6R	1/2	3/8	9.65	13/16	7/8	22.86	21.84	25.91	36.07	28.20
SMEI - 8 - 8R	1/2	1/2	10.41	13/16	7/8	22.86	21.84	25.91	36.07	33.02

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

SHMEI 45° Male Elbow



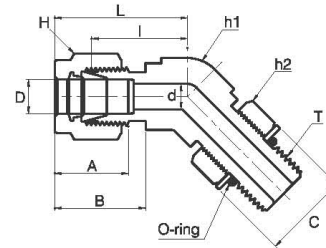
Connects Fractional Tubes to Female NPT Thread*

Part No.	Tube O.D. D (inch)	T* (NPT)	d Min	Width Across Flat		A	B	I	L	L ₁
				h (inch)	H (inch)					
SHMEI - 4 - 2N	1/4	1/8	4.82	1/2	9/16	15.24	17.78	17.27	24.63	16.51
SHMEI - 4 - 4N	1/4	1/4	4.82	1/2	9/16	15.24	17.78	17.27	24.63	21.08
SHMEI - 6 - 2N	3/8	1/8	4.82	5/8	11/16	16.76	19.30	20.57	27.94	18.28
SHMEI - 6 - 4N	3/8	1/4	7.11	5/8	11/16	16.76	19.30	20.57	27.94	22.86
SHMEI - 6 - 6N	3/8	3/8	7.11	13/16	11/16	16.76	19.30	21.84	29.21	24.13
SHMEI - 8 - 6N	1/2	3/8	9.65	13/16	7/8	22.86	21.84	21.84	32.00	24.13
SHMEI - 8 - 8N	1/2	1/2	10.41	13/16	7/8	22.86	21.84	21.84	32.00	28.95

*ISO Tapered Threads are available upon request

SPHMEI

45° Positionable Male Elbow

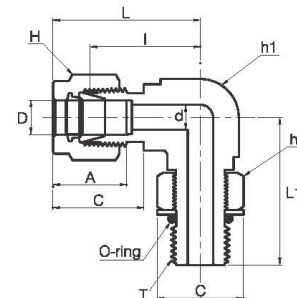


Connects Fractional Tubes to SAE/MS Straight Thread

Part No.	Tube O.D. D (inch)	Straight Thread T(U)	d Min	Width Across Flat			A	B	I	L	L1	C
				h1 (inch)	h2 (inch)	H (inch)						
SPHMEI - 4 - 4U	1/4	7/16-20	4.83	1/2	9/16	9/16	15.24	17.78	18.29	25.64	25.65	16.51
SPHMEI - 6 - 6U	3/8	9/16-18	7.11	5/8	11/16	11/16	16.76	19.30	20.57	27.94	28.19	20.07
SPHMEI - 8 - 8U	1/2	3/4-16	10.41	13/16	7/8	7/8	22.86	21.84	21.84	32.00	32.26	25.65
SPHMEI - 12 - 12U	3/4	1-1/16-12	15.75	1-1/8	1-1/4	1-1/8	24.38	24.84	29.72	39.88	47.24	36.58
SPHMEI - 16 - 16U	1	1-5/16-12	22.35	1-3/8	1-1/2	1-1/2	31.24	26.42	35.31	47.50	50.55	43.94

SPMEI

Positionable Male Elbow



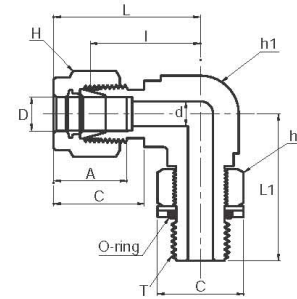
Connects Fractional Tubes to SAE/MS Straight Thread

Part No.	Tube O.D. D (inch)	Straight Thread T(U)	d Min	Width Across Flat			A	B	I	L	L1	C
				h1 (inch)	h2 (inch)	H (inch)						
SPMEI - 4 - 4U	1/4	7/16-20	4.83	1/2	9/16	9/16	15.24	17.78	21.08	28.45	28.45	16.51
SPMEI - 4 - 6U	1/4	9/16-18	4.83	5/8	11/16	9/16	15.24	17.78	23.11	30.48	32.26	20.07
SPMEI - 5 - 5U	5/16	1/2-20	5.84	9/16	5/8	5/8	16.26	18.54	22.86	30.23	29.46	18.29
SPMEI - 6 - 6U	3/8	9/16-18	7.11	5/8	11/16	11/16	16.76	19.30	24.64	32.00	32.26	20.07
SPMEI - 6 - 8U	3/8	3/4-16	7.11	13/16	7/8	11/16	16.76	19.30	27.43	34.80	37.85	25.65
SPMEI - 8 - 8U	1/2	3/4-16	10.41	13/16	7/8	7/8	22.86	21.84	27.43	37.59	37.85	25.65
SPMEI - 10 - 10U	5/8	7/8-14	12.70	15/16	1	1	24.38	21.84	29.46	39.62	43.43	29.46
SPMEI - 12 - 12U	3/4	1-1/16-12	15.75	1-1/16	1-1/4	1-1/8	24.38	21.84	31.24	41.40	48.77	36.58
SPMEI - 14 - 14U	7/8	3/16-12	18.29	1-3/16	1-3/8	1-1/4	25.91	21.84	33.02	43.18	50.55	40.39
SPMEI - 16 - 16U	1	1-5/16-12	22.35	1-3/8	1-1/2	1-1/2	31.24	26.42	38.35	50.55	53.59	43.94
SPMEI - 20 - 20U	1-1/4	1-5/8-12	27.69	1-11/16	1-7/8	1-7/8	41.15	38.86	45.72	67.82	58.17	54.86
SPMEI - 24 - 24U	1-1/2	1-7/8-12	34.04	2	2-1/8	2-1/4	50.04	45.21	50.80	77.98	60.45	62.23
SPMEI - 32 - 32U	2-1/2	2-1/2-12	45.97	2-3/4	2-3/4	3	67.56	62.74	69.85	107.19	71.63	80.26

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

SPMEI

Positionable Male Elbow

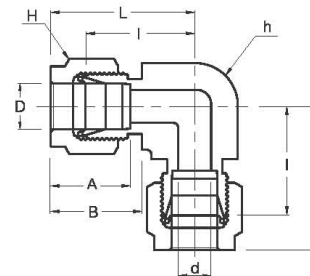


Connects Fractional Tubes to Female ISO Parallel Thread

Part No.	Tube O.D. D (inch)	T (PF)	d Min	Width Across Flat			A	B	I	L	L1	C
				h1 (inch)	h2 (inch)	H (inch)						
SPMEI - 4 - 2G	1/4	1/8	4.06	1/2	9/16	9/16	15.24	17.78	19.56	26.92	26.42	17.27
SPMEI - 4 - 4G	1/4	1/4	4.83	5/8	3/4	9/16	15.24	17.78	21.59	28.96	32.26	22.86
SPMEI - 6 - 4G	3/8	1/4	5.84	5/8	3/4	11/16	16.76	19.30	23.11	30.48	32.26	22.86
SPMEI - 6 - 6G	3/8	3/8	7.11	13/16	7/8	11/16	16.76	19.30	25.91	33.27	37.08	26.42
SPMEI - 8 - 4G	1/2	1/4	5.84	13/16	3/4	7/8	22.86	21.84	25.91	36.07	35.05	26.42
SPMEI - 8 - 6G	1/2	3/8	7.87	13/16	7/8	7/8	22.86	21.84	25.91	36.07	37.08	22.86
SPMEI - 8 - 8G	1/2	1/2	10.41	15/16	1-1/16	7/8	22.86	21.84	27.94	38.10	43.43	26.42
SPMEI - 10 - 8G	5/8	1/2	11.94	15/16	1-1/16	1	24.38	21.84	27.94	38.10	43.43	32.00
SPMEI - 12 - 8G	3/4	1/2	11.94	1-1/16	1-1/16	1-1/8	24.38	21.84	29.72	39.88	45.21	32.00
SPMEI - 12 - 12G	3/4	3/4	15.75	1-1/16	1-3/8	1-1/8	24.38	21.84	29.72	39.88	48.77	41.15
SPMEI - 16 - 12G	1	3/4	15.75	1-3/8	1-3/8	1-1/2	31.24	26.42	36.83	49.02	53.34	41.15
SPMEI - 16 - 16G	1	1	19.81	1-3/8	1-3/8	1-5/8	31.24	26.42	36.83	49.02	53.59	48.51

SUEI

Union Elbow

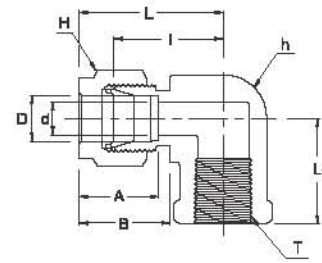


Connects Fractional Tubes

Part No.	Tube O.D. D (inch)	d Min	Width Across Flat		A	B	I	L
			h (inch)	H (inch)				
SUEI - 1	1/16	1.27	3/8	5/16	8.63	10.92	14.00	18.03
SUEI - 2	1/8	2.28	3/8	7/16	12.70	15.24	15.74	22.35
SUEI - 3	3/16	3.04	1/2	1/2	13.71	16.00	18.54	25.14
SUEI - 4	1/4	4.82	1/2	9/16	15.24	17.78	20.10	27.40
SUEI - 5	5/16	6.35	5/8	5/8	16.25	18.54	22.35	29.71
SUEI - 6	3/8	7.11	5/8	11/16	16.76	19.30	23.11	30.48
SUEI - 8	1/2	10.41	13/16	7/8	22.86	21.84	25.90	36.06
SUEI - 10	5/8	12.70	15/16	1	24.38	21.84	27.94	38.10
SUEI - 12	3/4	15.74	1-1/16	1-1/8	24.38	21.84	29.71	39.87
SUEI - 14	7/8	18.28	1-3/8	1-1/4	25.90	21.84	34.54	44.70
SUEI - 16	1	22.35	1-3/8	1-1/2	31.24	26.41	36.83	49.02
SUEI - 20	1-1/4	27.69	1-11/16	1-7/8	41.15	38.86	44.45	66.55
SUEI - 24	1-1/2	34.04	2	2-1/4	50.04	45.21	50.80	77.98
SUEI - 32	2	45.97	2-3/4	3	67.56	62.74	69.85	107.19

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

SFEI
Female Elbow



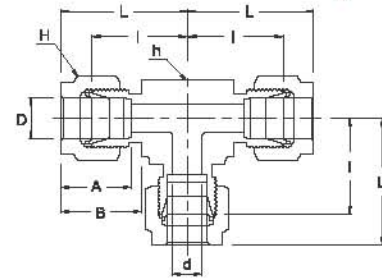
Connects Fractional Tubes to Male NPT Thread*

Part No.	Tube O.D. D (inch)	T* (NPT)	d Min	Width Across Flat		A	B	I	L	L ₁
				h (inch)	H (inch)					
SFE - 2 - 2N	1/8	1/8	2.28	1/2	7/16	12.70	15.24	18.03	24.63	19.05
SFE - 2 - 4N	1/8	1/4	2.28	11/16	7/16	12.70	15.24	20.82	27.43	22.35
SFE - 3 - 2N	3/16	1/8	3.04	1/2	1/2	13.71	16.00	18.79	25.40	19.05
SFEI - 4 - 2N	1/4	1/8	4.82	1/2	9/16	15.24	17.78	19.55	26.92	19.05
SFEI - 4 - 4N	1/4	1/4	4.82	11/16	9/16	15.24	17.78	22.35	29.71	22.35
SFEI - 4 - 6N	1/4	3/8	4.82	13/16	9/16	15.24	17.78	24.38	31.75	22.35
SFEI - 4 - 8N	1/4	1/2	4.82	1	9/16	15.24	17.78	27.17	34.54	28.44
SFE - 5 - 2N	5/16	1/8	6.35	9/16	5/8	16.25	18.54	21.33	28.70	19.05
SFE - 5 - 4N	5/16	1/4	6.35	11/16	5/8	16.25	18.54	23.11	30.48	22.35
SFEI - 6 - 2N	3/8	1/8	7.11	5/8	11/16	16.76	19.30	23.11	30.48	19.05
SFEI - 6 - 4N	3/8	1/4	7.11	11/16	11/16	16.76	19.30	23.87	31.24	22.35
SFEI - 6 - 6N	3/8	3/8	7.11	13/16	11/16	16.76	19.30	25.90	33.27	22.35
SFEI - 6 - 8N	3/8	1/2	7.11	1	11/16	16.76	19.30	28.70	36.06	28.44
SFEI - 8 - 4N	1/2	1/4	10.41	13/16	7/8	22.86	21.84	25.90	36.06	22.35
SFEI - 8 - 6N	1/2	3/8	10.41	13/16	7/8	22.86	21.84	25.90	36.06	22.35
SFEI - 8 - 8N	1/2	1/2	10.41	1	7/8	22.86	21.84	28.70	38.86	37.00
SFE - 10 - 6N	5/8	3/8	12.70	15/16	1	24.38	21.84	27.94	38.10	22.35
SFE - 10 - 8N	5/8	1/2	12.70	1-1/16	1	24.38	21.84	29.71	39.87	28.44
SFEI - 12 - 8N	3/4	1/2	15.74	1-1/16	1-1/8	24.38	21.84	29.71	39.87	28.44
SFEI - 12 - 12N	3/4	3/4	15.74	1-3/8	1-1/8	24.38	21.84	34.54	44.70	31.75
SFE - 14 - 12N	7/8	3/4	18.28	1-3/8	1-1/4	25.90	21.84	34.54	44.70	31.75
SFEI - 16 - 12N	1	3/4	22.35	1-3/8	1-1/2	31.24	26.41	36.83	49.02	31.75
SFEI - 16 - 16N	1	1	22.35	1-11/16	1-1/2	31.24	26.41	41.40	53.59	38.10

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change. • * ISO Tapered Threads are available upon request

SUTI

Union Tee

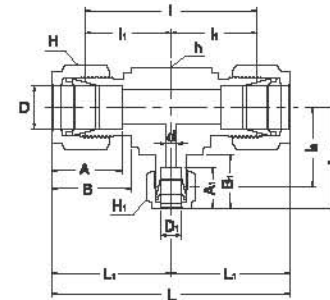


Connects Fractional Tubes

Part No.	Tube O.D. D (inch)	d Min	Width Across Flat		A	B	I	L
			h (inch)	H (inch)				
SUT - 1	1/16	1.27	3/8	5/16	8.63	10.92	14.00	18.03
SUT - 2	1/8	2.28	3/8	7/16	12.70	15.24	15.80	22.35
SUT - 3	3/16	3.04	1/2	1/2	13.71	16.00	18.54	25.14
SUTI - 4	1/4	4.82	1/2	9/16	15.24	17.78	20.10	27.40
SUT - 5	5/16	6.35	5/8	5/8	16.25	18.54	22.35	29.71
SUTI - 6	3/8	7.11	5/8	11/16	16.76	19.30	23.11	30.48
SUTI - 8	1/2	10.41	13/16	7/8	22.86	21.84	25.90	36.06
SUT - 10	5/8	12.70	1	1	24.38	21.84	28.70	38.86
SUTI - 12	3/4	15.74	1-1/16	1-1/8	24.38	21.84	29.71	39.87
SUT - 14	7/8	18.28	1-3/8	1-1/4	25.90	21.84	34.54	44.70
SUTI - 16	1	22.35	1-3/8	1-1/2	31.24	26.41	36.83	49.02
SUT - 20	1-1/4	27.69	1-11/16	1-7/8	41.15	38.86	44.45	66.55
SUT - 24	1-1/2	34.04	2	2-1/4	50.04	45.21	50.80	77.98
SUT - 32	2	45.97	2-3/4	3	67.56	62.74	69.85	107.19

SRUTI

Reducing Union Tee



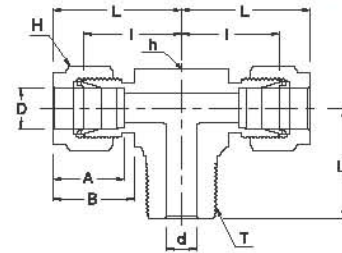
Connects Fractional Tubes

Part No.	Tube O.D.		d Min	Width Across Flat			A	A ₁	B	B ₁	I	I ₁	I ₂	L	L ₁	L ₂
	D (inch)	D ₁ (inch)		h (inch)	H (inch)	H ₁ (inch)										
SRUTI - 6 - 4	3/8	1/4	4.82	5/8	11/16	9/16	16.76	15.24	19.30	17.78	46.22	23.11	21.59	60.96	30.48	28.95
SRUTI - 8 - 4	1/2	1/4	4.82	13/16	7/8	9/16	22.86	15.24	21.84	17.78	51.81	25.90	24.38	72.13	36.06	31.75
SRUTI - 8 - 6	1/2	3/8	7.11	13/16	7/8	11/16	22.86	16.76	21.84	19.30	51.81	25.90	25.90	72.13	36.06	33.27
SRUTI - 10 - 6	5/8	3/8	7.11	1	1	11/16	24.38	16.76	21.84	19.30	57.40	28.70	28.70	77.72	38.86	36.06
SRUTI - 12 - 6	3/4	3/8	7.11	1 1/16	1 1/8	11/16	24.38	16.76	21.84	19.30	59.43	29.71	29.71	79.75	39.87	37.08
SRUTI - 12 - 8	3/4	1/2	10.41	1 1/16	1 1/8	7/8	24.38	22.86	21.84	21.84	59.43	29.71	29.71	79.75	39.87	39.87
SRUTI - 16 - 6	1	3/8	7.11	1 3/8	1 1/2	1 1/16	31.24	16.76	26.41	19.30	73.66	36.83	34.54	98.04	49.02	41.91
SRUTI - 16 - 8	1	1/2	10.41	1 3/8	1 1/2	7/8	31.24	21.84	26.41	22.86	73.66	36.83	34.54	98.04	49.02	44.70
SRUTI - 16 - 12	1	3/4	15.74	1 3/8	1 1/2	1 1/8	31.24	24.38	26.41	21.84	73.66	36.83	34.54	98.04	49.02	44.70

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SMBT I

Male Branch Tee



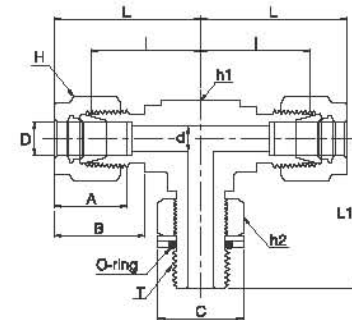
Connects Fractional Tubes to Female NPT Thread*

Part No.	Tube O.D. D (inch)	T* (NPT)	d Min	Width Across Flat			A	B	I	L	L ₁
				h (inch)	H (inch)						
SMBT - 2 - 2N	1/8	1/8	2.28	1/2	7/16		12.70	15.24	18.30	24.91	18.90
SMBT - 2 - 4N	1/8	1/4	2.28	1/2	7/16		12.70	15.24	18.03	24.63	23.36
SMBT - 3 - 2N	3/16	1/8	3.04	1/2	1/2		13.71	16.00	17.78	25.40	18.79
SMBT I - 4 - 2N	1/4	1/8	4.82	1/2	9/16		15.24	17.78	19.55	26.92	18.79
SMBT I - 4 - 4N	1/4	1/4	4.82	1/2	9/16		15.24	17.78	19.55	26.92	23.36
SMBT - 5 - 2N	5/16	1/8	4.82	5/8	5/8		16.25	18.54	22.35	29.71	20.82
SMBT I - 6 - 4N	3/8	1/4	7.11	5/8	11/16		16.76	19.30	23.11	30.48	25.40
SMBT I - 6 - 6N	3/8	3/8	7.11	5/8	11/16		16.76	19.30	23.10	30.48	28.19
SMBT I - 8 - 6N	1/2	3/8	9.65	13/16	7/8		22.86	21.84	25.90	36.06	28.19
SMBT I - 8 - 8N	1/2	1/2	10.41	13/16	7/8		22.86	21.84	25.90	36.06	33.02
SMBT I - 10 - 8N	5/8	1/2	11.93	1	1		24.38	21.84	28.70	38.86	35.81
SMBT I - 12 - 12N	3/4	3/4	15.74	1-1/16	1-1/8		24.38	21.84	29.71	39.87	36.83

* ISO Tapered Threads are available upon request

SPMBT I

Positionable Male Branch Tee



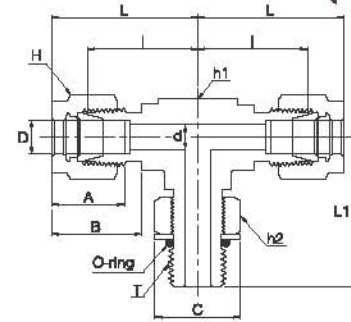
Connects Fractional Tubes to Female ISO Parallel Thread

Part No.	Tube O.D. D (inch)	T (PF)	d Min	Width Across Flat			A	B	I	L	L ₁	C
				h1 (inch)	h2 (inch)	H (inch)						
SPMBT I - 4 - 2G	1/4	1/8	4.06	1/2	9/16	9/16	15.24	17.78	19.56	26.92	26.42	17.27
SPMBT I - 4 - 4G	1/4	1/4	4.83	5/8	3/4	9/16	15.24	17.78	21.59	28.96	32.26	22.86
SPMBT I - 6 - 4G	3/8	1/4	5.08	5/8	3/4	11/16	15.24	19.30	23.11	30.48	32.26	22.86
SPMBT I - 8 - 6G	3/8	3/8	7.87	13/16	7/8	7/8	22.86	21.84	25.91	36.07	37.08	26.42
SPMBT I - 8 - 8G	1/2	1/2	10.41	15/16	1-1/16	7/8	22.86	21.84	27.94	38.10	43.43	32.00
SPMBT - 10 - 8G	5/8	1/2	11.94	15/16	1-1/16	1	24.38	21.84	27.94	38.10	43.43	32.00
SPMBT I - 12 - 8G	3/4	1/2	11.94	1-1/16	1-1/16	1-1/8	24.38	21.84	29.72	39.88	45.21	32.00
SPMBT I - 12 - 12G	3/4	3/4	15.75	1-1/16	1-3/8	1-1/8	24.38	21.84	29.72	39.88	48.77	41.15
SPMBT I - 16 - 16G	1	1	19.81	1-3/8	1-5/8	1-1/2	31.24	26.42	36.83	49.02	53.59	48.51

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SPMBTI

Positionable Male Branch Tee



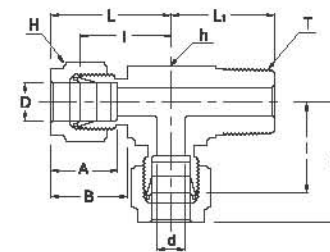
Connects Fractional Tubes to SAE/MS Straight Thread Boss

Part No.	Tube O.D. D (inch)	Straight Thread T(U)	d Min	Width Across Flat			A	B	I	L	L1	C
				h1 (inch)	h2 (inch)	H (inch)						
SPMBTI - 4 - 4U	1/4	7/16-20	4.83	1/2	9/16	9/16	15.24	17.78	21.08	28.45	28.45	16.51
SPMBTI - 6 - 6U	3/8	9/16-18	7.11	5/8	11/16	11/16	16.76	19.30	24.64	32.00	32.26	20.07
SPMBTI - 8 - 8U	1/2	3/4-16	10.41	13/16	7/8	7/8	22.86	21.84	27.43	37.59	37.85	25.65
SPMBTI - 12 - 12U	3/4	1-1/16-12	15.75	1-1/16	1-1/4	1-1/8	24.38	21.84	31.24	41.40	48.77	36.58
SPMBTI - 16 - 16U	1	1-5/8-12	22.35	1-3/8	1-1/2	1-1/2	31.24	26.42	38.35	50.55	53.59	43.94
SPMBT - 20 - 20U	1-1/4	1-5/8-12	27.69	1-11/16	1-7/8	1-7/8	41.15	38.86	45.72	67.82	58.17	54.86
SPMBT - 24 - 24U	1-1/2	1-7/8-12	34.04	2	2-1/8	2-1/4	50.04	45.21	50.80	77.98	60.45	62.23
SPMBT - 32 - 32U	2	2-1/2-12	45.97	2-3/4	2-3/4	3	67.56	62.74	69.85	107.19	71.63	80.26

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SMRTI

Male Run Tee

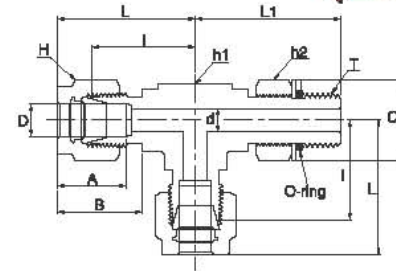


Connects Fractional Tubes to Female NPT Thread*

Part No.	Tube O.D. D (inch)	T* (NPT)	d Min	Width Across Flat		A	B	I	L	L1
				h (inch)	H (inch)					
SMRT - 2 - 2N	1/8	1/8	2.28	1/2	7/16	12.70	15.24	18.30	24.91	18.90
SMRT - 2 - 4N	1/8	1/4	2.28	1/2	7/16	12.70	15.24	18.03	24.63	23.36
SMRT - 3 - 2N	3/16	1/8	3.04	1/2	1/2	13.71	16.00	17.78	25.40	18.79
SMRTI - 4 - 2N	1/4	1/8	4.82	1/2	9/16	15.24	17.78	19.55	26.92	18.79
SMRTI - 4 - 4N	1/4	1/4	4.82	1/2	9/16	15.24	17.78	19.55	26.92	23.36
SMRT - 5 - 2N	5/16	1/8	4.82	5/8	5/8	16.25	18.54	22.35	29.71	20.82
SMRTI - 6 - 4N	3/8	1/4	7.11	5/8	11/16	16.76	19.30	23.11	30.48	25.40
SMRTI - 6 - 6N	3/8	3/8	7.11	5/8	11/16	16.76	19.30	23.10	30.48	28.19
SMRTI - 8 - 6N	1/2	3/8	9.65	13/16	7/8	22.86	21.84	25.90	36.06	28.19
SMRTI - 8 - 8N	1/2	1/2	10.41	13/16	7/8	22.86	21.84	25.90	36.06	33.02
SMRT - 10 - 8N	5/8	1/2	11.93	1	1	24.38	21.84	28.70	38.86	35.81
SMRTI - 12 - 12N	3/4	3/4	15.74	1-1/16	1-1/8	24.38	21.84	29.71	39.87	36.83

*ISO Tapered Threads are available upon request

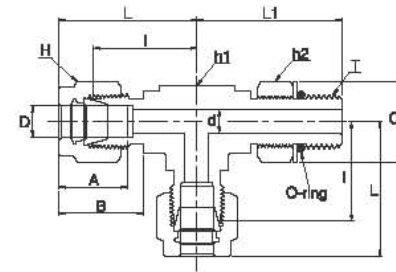
SPMRTI
Positionable
Male Run Tee



Connects Fractional Tubes to Female ISO Parallel Thread

Part No.	Tube O.D. D (inch)	T (PF)	d Min	Width Across Flat			A	B	I	L	L1	C
				h1 (inch)	h2 (inch)	H (inch)						
SPMRTI - 4 - 2G	1/4	1/8	4.06	1/2	9/16	9/16	15.24	17.78	19.56	26.92	26.42	17.27
SPMRTI - 4 - 4G	1/4	1/4	4.83	5/8	3/4	9/16	15.24	17.78	21.59	28.96	32.26	22.86
SPMRTI - 6 - 4G	3/8	1/4	5.84	5/8	3/4	11/16	16.76	19.30	23.11	30.48	32.26	22.86
SPMRTI - 8 - 6G	1/2	3/8	7.87	13/16	7/8	7/8	22.86	21.84	25.91	36.07	37.08	26.42
SPMRTI - 8 - 8G	3/8	1/2	10.41	15/16	1-1/16	7/8	22.86	21.84	27.94	38.10	43.43	32.00
SPMRT - 10 - 8G	5/8	1/2	11.94	15/16	1-1/16	1	24.38	21.84	27.94	38.10	43.43	32.00
SPMRTI - 12 - 8G	3/4	1/2	11.94	1-1/16	1-1/16	1-1/8	24.38	21.84	29.72	39.88	45.21	32.00
SPMRTI - 12 - 12G	3/4	3/4	15.75	1-1/16	1-3/8	1-1/8	24.38	21.84	29.72	39.88	48.77	41.15
SPMRTI - 16 - 16G	1	1	19.81	1-3/8	1-5/8	1-1/2	31.24	26.42	36.83	49.02	53.59	48.51

SPMRTI
Positionable
Male Run Tee

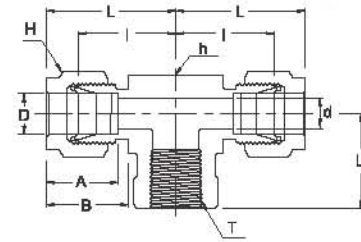


Connects Fractional Tubes to SAE/MS Straight Thread

Part No.	Tube O.D. D (inch)	Straight Thread T(U)	d Min	Width Across Flat			A	B	I	L	L1	C
				h1 (inch)	h2 (inch)	H (inch)						
SPMRTI - 4 - 4U	1/4	7/16-20	4.83	1/2	9/16	9/16	15.24	17.78	21.08	28.45	28.45	16.51
SPMRTI - 6 - 6U	3/8	9/16-18	7.11	5/8	11/16	11/16	16.76	19.30	24.64	32.00	32.26	20.07
SPMRTI - 8 - 8U	1/2	3/4-16	10.41	13/16	7/8	7/8	22.86	21.84	27.43	37.59	37.85	25.65
SPMRTI - 12 - 12U	3/4	1-1/16-12	15.75	1-1/16	1-1/4	1-1/8	24.38	21.84	31.24	41.40	48.77	36.58
SPMRTI - 16 - 16U	1	1-5/16-12	22.35	1-3/8	1-1/2	1-1/2	31.24	26.42	38.35	50.55	53.59	43.94
SPMRT - 20 - 20U	1-1/4	1-5/8-12	27.69	1-11/16	1-7/8	1-7/8	41.15	38.86	45.72	67.82	58.17	54.86
SPMRT - 24 - 24U	1-1/2	1-7/8-12	34.04	2	2-1/8	2-1/4	50.04	45.21	50.80	77.98	60.45	62.23
SPMRT - 32 - 32U	2	2-1/2-12	45.97	2-3/4	2-3/4	3	67.56	62.74	69.85	107.19	71.63	80.26

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

SFBTI Female Branch Tee

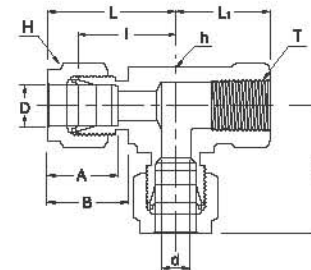


Connects Fractional Tubes to Male NPT Thread*

Part No.	Tube O.D. D (inch)	T* (NPT)	d Min	Width Across Flat		A	B	I	L	L ₁
				h (inch)	H (inch)					
SFBTI - 2 - 2N	1/8	1/8	2.28	1/2	7/16	12.70	15.24	18.03	24.63	19.05
SFBTI - 4 - 2N	1/4	1/8	4.82	1/2	9/16	15.24	17.78	19.55	26.92	19.05
SFBTI - 4 - 4N	1/4	1/4	4.82	11/16	9/16	15.24	17.78	22.35	29.71	22.35
SFBTI - 6 - 4N	3/8	1/4	7.11	11/16	11/16	16.76	19.30	23.87	31.24	22.35
SFBTI - 6 - 6N	3/8	3/8	7.11	13/16	11/16	16.76	19.30	25.90	33.27	22.35
SFBTI - 6 - 8N	3/8	1/2	7.11	1	11/16	16.76	19.30	28.70	36.07	28.45
SFBTI - 8 - 4N	1/2	1/4	10.41	13/16	7/8	22.86	21.84	25.90	36.06	22.35
SFBTI - 8 - 6N	1/2	3/8	10.41	13/16	7/8	22.86	21.84	25.90	36.06	22.35
SFBTI - 8 - 8N	1/2	1/2	10.41	1	7/8	22.86	21.84	28.70	38.86	28.44
SFBTI - 10 - 8N	5/8	1/2	12.70	1	1	24.38	21.84	28.70	38.86	28.44
SFBTI - 12 - 12N	3/4	3/4	15.74	1-3/8	1-1/8	24.38	21.84	34.54	44.70	31.75
SFBTI - 16 - 12N	1	3/4	22.35	1-3/8	1-1/2	31.24	26.41	36.83	49.02	31.75
SFBTI - 16 - 16N	1	1	22.35	1-11/16	1-1/2	31.24	26.41	41.40	53.59	38.10

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

SFRTI Female Run Tee

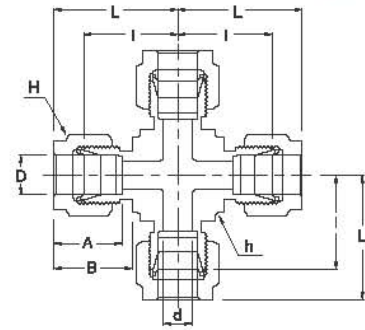
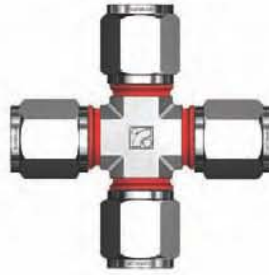


Connects Fractional Tubes to Male NPT Thread*

Part No.	Tube O.D. D (inch)	T* (NPT)	d Min	Width Across Flat		A	B	I	L	L ₁
				h (inch)	H (inch)					
SFRTI - 2 - 2N	1/8	1/8	2.28	1/2	7/16	12.70	15.24	18.03	24.63	19.05
SFRTI - 4 - 2N	1/4	1/8	4.82	1/2	9/16	15.24	17.78	19.55	26.92	19.05
SFRTI - 4 - 4N	1/4	1/4	4.82	11/16	9/16	15.24	17.78	22.35	29.71	22.35
SFRTI - 6 - 4N	3/8	1/4	7.11	11/16	11/16	16.76	19.30	23.87	31.24	22.35
SFRTI - 8 - 6N	1/2	3/8	10.41	13/16	7/8	22.86	21.84	25.90	36.06	22.35
SFRTI - 8 - 8N	1/2	1/2	10.41	1	7/8	22.86	21.84	28.70	39.87	28.44
SFRTI - 12 - 12N	3/4	3/4	15.74	1-3/8	1-1/8	24.38	21.84	34.54	44.70	31.75
SFRTI - 16 - 12N	1	3/4	22.35	1-3/8	1-1/2	31.24	26.41	36.83	49.02	31.75
SFRTI - 16 - 16N	1	1	22.35	1-11/16	1-1/2	31.24	26.41	41.40	53.59	38.10

* ISO Tapered Threads are available upon request

SUCI
Union Cross

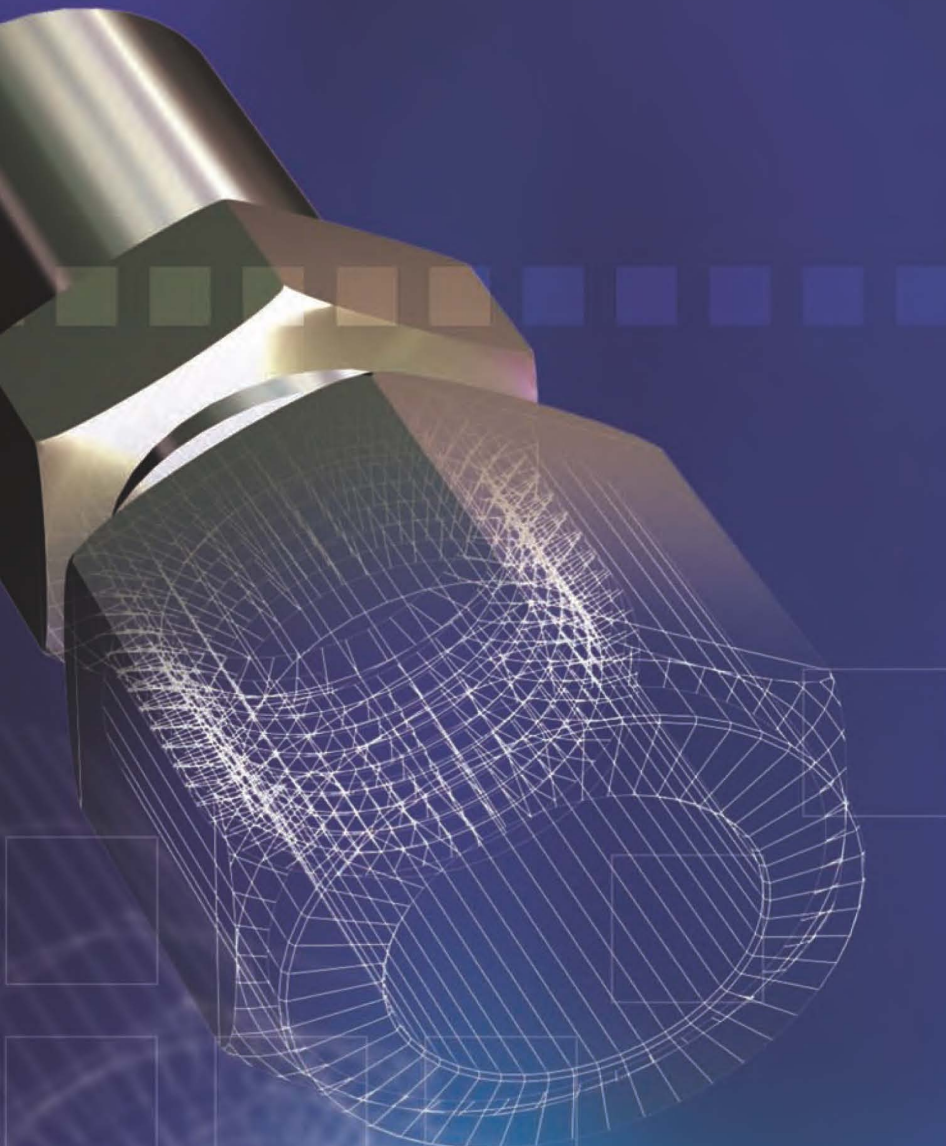


Connects Fractional Tubes








Part No.	Tube O.D. D (inch)	d Min	Width Across Flat		A	B	I	L
			h (inch)	H (inch)				
SUC - 1	1/16	1.27	3/8	5/16	8.63	10.92	14.00	18.03
SUC - 2	1/8	2.28	3/8	7/16	12.70	15.24	15.74	22.35
SUC - 3	3/16	3.04	1/2	1/2	13.71	16.00	18.54	25.14
SUCI - 4	1/4	4.82	1/2	9/16	15.24	17.78	19.55	26.92
SUC - 5	5/16	6.35	5/8	5/8	16.25	18.54	22.35	29.71
SUCI - 6	3/8	7.11	5/8	11/16	16.76	19.30	23.11	30.48
SUCI - 8	1/2	10.41	13/16	7/8	22.86	21.84	25.90	36.06
SUC - 10	5/8	12.70	15/16	1	24.38	21.84	28.70	38.80
SUCI - 12	3/4	15.74	1	1-1/8	24.38	21.84	29.71	39.87
SUC - 14	7/8	18.28	1-3/8	1-1/4	25.90	21.84	34.54	44.70
SUCI - 16	1	22.35	1-3/8	1-1/2	31.24	26.41	36.83	49.02

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

Stub Tube Connector, AN Tube & O-Ring Seal






STUB TUBE CONNECTOR

SRI Reducer page 30	
SBHR Bulkhead Reducer page 31	
SMA Male Adapter page 31	
SFA Female Adapter page 32	
SPC Port Connector page 32	
SRPC Reducing Port Connector page 33	
SFTC Flange Lapped Tubes Connector page 34	

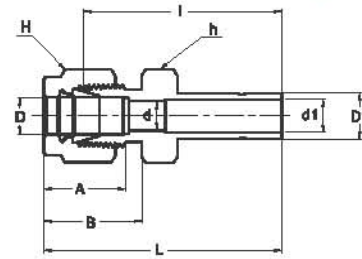
AN TUBE

SAF An Flare page 34	
SAUI An Union page 35	
SAA An Adapter page 35	

O-RING SEAL

SOSCI O-Seal Straight Thread Connector page 36	
SOPCI O-Seal Pipe Thread Connector page 36	
SSMCI SAE/MS Male Connector page 37	

SRI
Reducer



Connects Fractional Tubes to Fractional SUPERLOK® Port

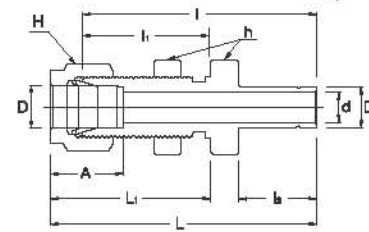
Part No.	Tube O.D.		d Min	d1 Min	Width Across Flat		A	B	I	L
	D (inch)	D1 (inch)			h (inch)	H (inch)				
SR - 2 - 1	1/8	1/16	2.28	0.8	7/16	7/16	12.70	15.24	22.35	28.95
SR - 2 - 2	1/8	1/8	2.28	2.1	7/16	7/16	12.70	15.24	26.92	33.52
SR - 2 - 3	1/8	3/16	2.28	3.0	7/16	7/16	12.70	15.24	27.68	34.29
SR - 2 - 4	1/8	1/16	2.28	4.4	7/16	7/16	12.70	15.24	29.46	36.06
SR - 2 - 6	1/8	1/16	2.28	6.9	7/16	7/16	12.70	15.24	30.98	37.59
SR - 2 - 8	1/8	1/2	2.28	9.4	9/16	7/16	12.70	15.24	37.59	44.19
SR - 3 - 2	3/16	1/8	3.04	2.1	7/16	1/2	13.71	16.00	28.19	34.79
SR - 3 - 4	3/16	1/4	3.04	4.4	7/16	1/2	13.71	16.00	30.48	37.08
SRI - 4 - 2	1/4	1/8	4.83	2.1	1/2	9/16	15.24	17.78	29.46	36.83
SRI - 4 - 3	1/4	3/16	4.83	3.0	1/2	9/16	15.24	17.78	30.22	37.59
SRI - 4 - 4	1/4	1/4	4.83	4.4	1/2	9/16	15.24	17.78	31.75	39.11
SRI - 4 - 5	1/4	5/16	4.83	5.6	1/2	9/16	15.24	17.78	32.51	39.87
SRI - 4 - 6	1/4	3/8	4.83	6.9	1/2	9/16	15.24	17.78	33.27	40.64
SRI - 4 - 8	1/4	1/2	4.83	9.4	9/16	9/16	15.24	17.78	38.86	46.22
SRI - 4 - 10	1/4	5/8	4.83	12.0	11/16	9/16	15.24	17.78	40.64	48.00
SRI - 4 - 12	1/4	3/4	4.83	14.8	13/16	9/16	15.24	17.78	41.40	47.75
SR - 5 - 6	5/16	3/8	6.35	6.9	9/16	5/8	16.25	18.54	34.54	41.91
SR - 5 - 8	5/16	1/2	6.35	9.4	9/16	5/8	16.25	18.54	40.13	47.49
SRI - 6 - 4	3/8	1/4	7.11	4.4	5/8	11/16	16.76	19.30	34.03	41.40
SRI - 6 - 6	3/8	3/8	7.11	6.9	5/8	11/16	16.76	19.30	35.81	43.18
SRI - 6 - 8	3/8	1/2	7.11	9.4	5/8	11/16	16.76	19.30	41.14	48.51
SRI - 6 - 10	3/8	5/8	7.11	12.0	11/16	11/16	16.76	19.30	42.92	50.29
SRI - 6 - 12	3/8	3/4	7.11	14.8	13/16	11/16	16.76	19.30	42.92	50.29
SRI - 8 - 4	1/2	1/4	10.41	4.4	13/16	7/8	22.86	21.84	34.79	44.95
SRI - 8 - 6	1/2	3/8	10.41	6.9	13/16	7/8	22.86	21.84	36.57	46.73
SRI - 8 - 8	1/2	1/2	10.41	9.4	13/16	7/8	22.86	21.84	42.16	52.32
SRI - 8 - 10	1/2	5/8	10.41	12.0	13/16	7/8	22.86	21.84	43.68	53.84
SRI - 8 - 12	1/2	3/4	10.41	14.8	13/16	7/8	22.86	21.84	43.68	53.84
SRI - 8 - 16	1/2	1	10.41	20.4	1-1/16	7/8	22.86	21.84	50.03	60.19
SR - 10 - 12	5/8	3/4	12.70	14.8	15/16	1	24.38	21.84	44.45	54.61
SR - 10 - 14	5/8	7/8	12.70	17.0	15/16	1	24.38	21.84	45.97	56.13
SR - 10 - 16	5/8	1	12.70	20.4	1-1/16	1	24.38	21.84	50.80	60.96
SRI - 12 - 8	3/4	1/2	15.74	9.4	1-1/16	1-1/8	24.38	21.84	44.45	54.61
SRI - 12 - 16	3/4	1	15.74	20.4	1-1/16	1-1/8	24.38	21.84	52.32	62.48

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

*Fractional Tube to Metric SUPERLOK® port are available upon request

SBHR

Bulkhead Reducer



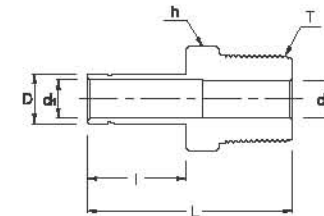
Connects Fractional Tubes to Fractional **SUPERLOK®** Port

Part No.	Tube O.D. D (inch)	d Min	Width Across Flat		A	I	I ₁	I ₂	L	L ₁	Panel Hole Drill Size	Panel Max. Thickness
			h (inch)	H (inch)								
SRB - 2 - 2	1/8	2.1	1/2	7/16	12.70	42.92	24.63	13.46	49.53	31.24	8.33	12.70
SRB - 4 - 4	1/4	4.4	5/8	9/16	15.24	48.51	26.16	15.74	55.88	33.52	11.50	10.16
SRB - 6 - 6	3/8	6.9	3/4	11/16	16.76	53.84	29.46	17.52	61.21	36.83	14.68	11.17
SRB - 8 - 8	1/2	9.4	15/16	7/8	22.86	62.73	31.75	23.11	72.89	41.91	19.44	12.70
SRB - 10 - 10	5/8	12.0	1-1/16	1	24.38	65.02	32.51	24.70	75.18	42.67	22.62	12.70
SRB - 16 - 16	1	20.4	1-5/8	1-1/2	31.24	88.13	45.21	31.70	100.33	57.40	33.73	19.05

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

SMA

Male Adapter

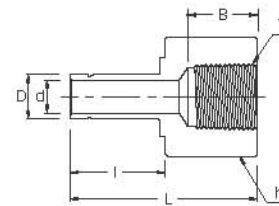


Connects Fractional **SUPERLOK®** Port to Female NPT Thread*

Part No.	Tube O.D. D (inch)	T* (NPT)	d (Min)	d ₁	Width Across Flat h (inch)	I	L
SMA - 2 - 2N	1/8	1/8	4.82	2.10	7/16	13.45	29.50
SMA - 2 - 4N	1/8	1/4	7.11	2.10	9/16	13.45	34.80
SMA - 3 - 2N	3/16	1/8	4.82	3.04	7/16	14.20	30.22
SMA - 3 - 4N	3/16	1/4	7.11	3.04	9/16	14.20	35.56
SMA - 4 - 2N	1/4	1/8	4.40	4.40	7/16	15.75	31.80
SMA - 4 - 4N	1/4	1/4	4.40	4.40	9/16	15.75	37.08
SMA - 4 - 6N	1/4	3/8	4.40	4.40	11/16	15.75	37.84
SMA - 4 - 8N	1/4	1/2	4.40	4.40	7/8	15.75	43.43
SMA - 5 - 2N	5/16	1/8	4.82	5.60	7/16	16.80	32.76
SMA - 5 - 4N	5/16	1/4	6.35	5.60	9/16	16.80	38.10
SMA - 6 - 2N	3/8	1/8	4.82	6.90	7/16	17.50	33.50
SMA - 6 - 4N	3/8	1/4	6.90	6.90	9/16	17.50	38.90
SMA - 6 - 6N	3/8	3/8	6.90	6.90	11/16	17.50	39.60
SMA - 6 - 8N	3/8	1/2	6.90	6.90	7/8	17.50	45.20
SMA - 8 - 4N	1/2	1/4	7.11	9.40	9/16	23.20	44.50
SMA - 8 - 6N	1/2	3/8	9.40	9.40	11/16	23.20	45.20
SMA - 8 - 8N	1/2	1/2	9.40	9.40	7/8	23.20	50.80
SMA - 10 - 6N	5/8	3/8	9.90	12.00	11/16	24.70	47.40
SMA - 10 - 8N	5/8	1/2	12.00	12.00	7/8	24.70	52.30
SMA - 10 - 12N	5/8	3/4	14.98	12.00	1-1/16	24.70	52.30
SMA - 12 - 8N	3/4	1/2	11.94	14.80	7/8	24.70	52.30
SMA - 12 - 12N	3/4	3/4	14.80	14.80	1-1/16	24.70	52.30
SMA - 12 - 16N	3/4	1	20.32	14.80	1-3/8	24.70	57.91
SMA - 14 - 12N	7/8	3/4	14.98	17.27	1-1/16	26.70	54.30
SMA - 16 - 12N	1	3/4	15.74	20.40	1-1/16	31.70	58.70
SMA - 16 - 16N	1	1	20.40	20.40	1-3/8	31.70	66.00

* ISO Tapered Threads are available upon request.

SFA Female Adapter

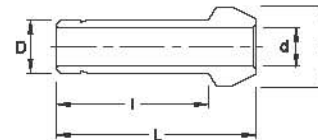


Connects Fractional **SUPERLOK®** Port to Male NPT Thread*

Part No.	Tube O.D. D (inch)	T* (NPT)	d (Min)	Width Across Flat h (inch)	L	L
SFA - 2 - 2N	1/8	1/8	2.10	9/16	13.45	31.50
SFA - 2 - 4N	1/8	1/4	2.10	3/4	13.45	35.30
SFA - 3 - 2N	3/16	1/8	3.04	9/16	14.20	32.00
SFA - 3 - 4N	3/16	1/4	3.04	3/4	14.20	35.81
SFA - 4 - 2N	1/4	1/8	4.40	9/16	15.75	33.02
SFA - 4 - 4N	1/4	1/4	4.40	3/4	15.75	37.10
SFA - 4 - 6N	1/4	3/8	4.40	7/8	15.75	39.37
SFA - 4 - 8N	1/4	1/2	4.40	1-1/16	15.75	45.50
SFA - 5 - 2N	5/16	1/8	5.60	9/16	16.80	34.29
SFA - 5 - 4N	5/16	1/4	5.60	3/4	16.80	37.59
SFA - 6 - 2N	3/8	1/8	6.90	9/16	17.50	34.29
SFA - 6 - 4N	3/8	1/4	6.90	3/4	17.50	38.10
SFA - 6 - 6N	3/8	3/8	6.90	7/8	17.50	40.38
SFA - 6 - 8N	3/8	1/2	6.90	1-1/16	17.50	46.73
SFA - 8 - 4N	1/2	1/4	9.40	3/4	23.20	43.43
SFA - 8 - 6N	1/2	3/8	9.40	7/8	23.20	45.46
SFA - 8 - 8N	1/2	1/2	9.40	1-1/16	23.20	51.80
SFA - 10 - 6N	5/8	3/8	12.00	7/8	24.70	48.26
SFA - 10 - 8N	5/8	1/2	12.00	1-1/16	24.70	53.08
SFA - 12 - 8N	3/4	1/2	14.80	1-1/16	24.70	52.83
SFA - 12 - 12N	3/4	3/4	14.80	1-5/16	24.70	54.86
SFA - 12 - 16N	3/4	1	14.80	1-5/8	24.70	58.42
SFA - 14 - 12N	7/8	3/4	17.27	1-5/16	26.70	57.15
SFA - 16 - 12N	1	3/4	20.40	1-5/16	31.70	60.70
SFA - 16 - 16N	1	1	20.40	1-5/8	31.70	64.26

*ISO Tapered Threads are available upon request

SPC Port Connector

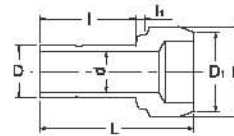


Connects Fractional **SUPERLOK®** Ports

Part No.	Tube O.D.(D) (inch)	d (Min)	E	I	L
SPC - 2	1/8	2.1	6.09	15.75	22.35
SPC - 4	1/4	4.4	9.39	18.79	24.63
SPC - 5	5/16	5.6	10.92	20.06	25.90
SPC - 6	3/8	6.9	12.70	20.32	26.16
SPC - 8	1/2	9.4	15.74	25.90	35.81
SPC - 12	3/4	14.8	22.09	27.68	37.33
SPC - 16	1	20.4	28.44	34.54	48.00

All dimensions in millimeters unless specified as "Inch" • Dimensions are for reference only, subject to change.

SRPC Reducing Port Connector

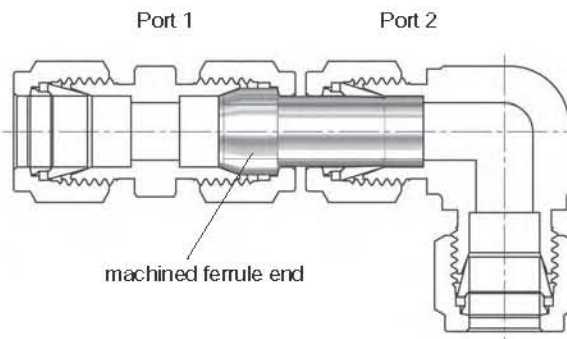


Connects Fractional **SUPERLOK®** Port to Male AN

Part No.	Tube O.D. D ₁ (inch)	Reduced Tube O.D. D (inch)	d	E	L	h	L
SRPC - 2 - 1	1/8	1/16	0.76	6.09	8.63	2.03	17.27
SRPC - 4 - 1	1/4	1/16	0.76	9.39	8.63	3.55	18.03
SRPC - 4 - 2	1/4	1/8	2.10	9.39	13.46	3.30	22.60
SRPC - 6 - 2	3/8	1/8	2.10	12.70	13.46	3.81	23.11
SRPC - 6 - 4	3/8	1/4	4.40	12.70	15.74	3.30	24.89
SRPC - 8 - 4	1/2	1/4	4.40	15.74	15.74	3.81	29.21
SRPC - 8 - 6	1/2	3/8	6.90	15.74	17.52	3.30	30.48
SRPC - 12 - 8	3/4	1/2	9.40	22.09	24.38	3.81	37.84
SRPC - 16 - 8	1	1/2	9.40	28.44	24.38	4.82	42.67
SRPC - 16 - 12	1	3/4	14.80	28.44	25.90	4.06	43.43

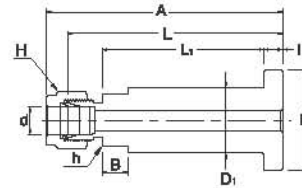
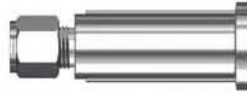
All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

Installation Instructions Port Connector



- Remove nut and ferrules from the first of two **SUPERLOK®** ports to be connected.
- Slip nut (no ferrules) over machined ferrule end of port connector.
- Insert port connector into **SUPERLOK®** port 1 and snug by hand.
Tighten with wrench 1/4 turn only. For 1/8, 3/16 in., 2, 3, and 4mm tube fittings, tighten only 1/8 turn. Subsequent connections are made by tightening slightly with a wrench after snugging the nut by hand.
- Insert other end of port connector into **SUPERLOK®** port 2 and tighten nut 1 1/4 turns from finger-tight. For 1/16, 1/8, 3/16 in., 2, 3, and 4mm tube fittings, only 3/4 turn from finger-tight is necessary.

SFTC Lap Joint Flange Tubes Connector



Connects Fractional Tubes

Part No.	Tube Size (inch)	Flange Seat	Dimensions									
			A	B	L ₁	L	I	h (inch)	H (inch)	D	D ₁	d (Min)
SFTC - 4 - SM	1/4	SM	80.8	8.9	56.5	74.9	6.5	11/16	9/16	34.5	21.1	4.8
SFTC - 4 - SR	1/4	SR	80.8	8.9	56.5	74.9	6.5	11/16	9/16	34.5	21.1	4.8
SFTC - 6 - SM	3/8	SM	82.3	8.9	56.5	74.9	6.5	11/16	11/16	34.5	21.1	7.1
SFTC - 6 - SR	3/8	SR	82.3	8.9	56.5	74.9	6.5	11/16	11/16	34.5	21.1	7.1
SFTC - 8 - SM	1/2	SM	85.1	8.9	56.5	74.9	6.5	3/4	7/8	34.5	21.1	10.4
SFTC - 8 - SR	1/2	SR	85.1	8.9	56.5	74.9	6.5	3/4	7/8	34.5	21.1	10.4

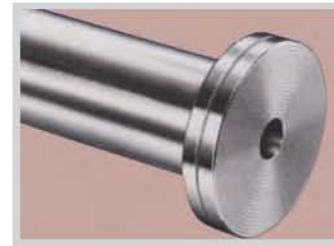
Lap joint flange tube connector provides easy joint between process lines and instruments designed for use with 1/2in Lap joint flanges to ANSI B 16.5 or BS 1560

Flange Seal Finish

Two surface finishes, smooth or serrated, are available on the sealing surface of the stub end.



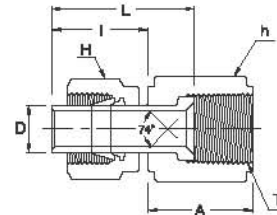
Smooth Identifier : SM
Ra 3.2 ~ 6.3 micrometer



Serrated Identifier : SR
Ra 6.3 ~ 12.5 micrometer

*Note : GROOVE identifies serrated surface finish

SAF An Flare

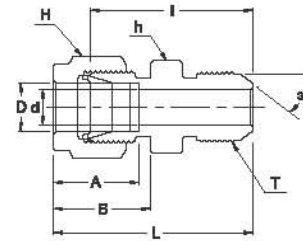


Connects Fractional **SUPERLOK®** Port to Male AN

Part No.	Tube O.D. D (inch)	AN Tube Flare Size (inch)	Straight Thread T (U)	Width Across Flat		A	I	L
				h (inch)	H (inch)			
SAF - 2 - 2U	1/8	1/8	5/16-24	3/8	7/16	13.71	13.46	18.54
SAF - 2 - 4U	1/8	1/4	7/16-20	9/16	7/16	15.74	13.46	19.05
SAF - 4 - 4U	1/4	1/4	7/16-20	9/16	9/16	15.74	15.74	21.33
SAF - 6 - 6U	3/8	3/8	9/16-18	11/16	11/16	18.28	17.52	24.89
SAF - 8 - 8U	1/2	1/2	3/4-16	7/8	7/8	21.59	23.11	31.75

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

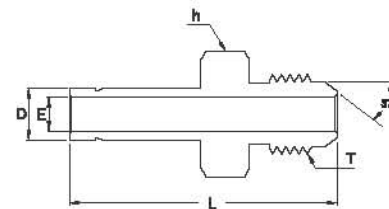
SAUI An Union



Connects Fractional Tubes to AN Flared Tubes

Part No.	Tube O.D. D (inch)	AN Tube Flare Size (inch)	Straight Thread T (U)	d Min	Width Across Flat		A	B	I	L
					h (inch)	H (inch)				
SAU - 2 - 2U	1/8	1/8	5/16-24	1.52	7/16	7/16	12.70	15.24	25.65	32.25
SAU - 2 - 4U	1/8	1/4	7/16-20	2.28	1/2	7/16	12.70	15.24	28.44	35.05
SAUI - 4 - 4U	1/4	1/4	7/16-20	4.31	1/2	9/16	15.24	17.78	30.22	37.59
SAU - 5 - 5U	5/16	5/16	1/2-20	5.84	9/16	5/8	16.25	18.54	30.98	38.35
SAUI - 6 - 4U	3/8	1/4	7/16-20	4.31	5/8	11/16	16.76	19.30	32.25	39.62
SAUI - 6 - 6U	3/8	3/8	9/16-18	7.11	5/8	11/16	16.76	19.30	32.25	39.62
SAUI - 8 - 8U	1/2	1/2	3/4-16	9.90	13/16	7/8	22.86	21.84	35.81	45.97
SAUI - 12 - 12U	3/4	3/4	1-1/16-12	15.49	1-1/8	1-1/8	24.38	21.84	43.18	53.34
SAUI - 16 - 16U	1	1	1-5/16-12	21.33	1-3/8	1-1/2	31.24	26.41	49.27	61.46

SAA An Adapter

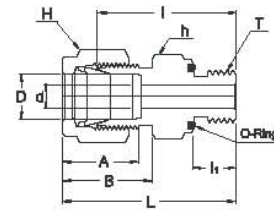


Connects Fractional **SUPERLOK®** Port to AN Flared Tubes

Part No.	Tube O.D. D (inch)	AN Tube Flare Size (inch)	Straight Thread T (U)	Width Across Flat h (inch)	E	L
SAA - 4 - 4U	1/4	1/4	7/16-20	1/2	4.40	37.08
SAA - 6 - 4U	3/8	1/4	7/16-20	1/2	6.90	38.86
SAA - 6 - 6U	3/8	3/8	9/16-18	5/8	6.90	39.62
SAA - 8 - 8U	1/2	1/2	3/4-16	13/16	9.40	48.51
SAA - 12 - 12U	3/4	3/4	1-1/16-12	1-1/8	14.80	56.13
SAA - 16 - 16U	1	1	1-5/16-12	1-3/8	20.40	65.53

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

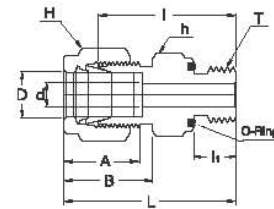
SOSCI O-Seal Straight Thread Connector



Connects Fractional Tube to Female Straight Thread

Part No.	Tube O.D. D (inch)	Straight Thread T (U)	d Min	Width Across Flat		A	B	I	I ₁	L	O-Ring Uniform Size Number
				h (inch)	H (inch)						
SOSC - 2 - 2U	1/8	5/16-24	2.28	9/16	7/16	12.70	15.24	26.16	8.63	32.76	-011
SOSC - 3 - 3U	3/16	3/8-24	3.05	5/8	1/2	13.71	16.00	27.68	9.65	34.29	-012
SOSCI - 4 - 4U	1/4	7/16-20	4.82	3/4	9/16	15.24	17.78	30.98	10.41	38.35	-111
SOSC - 5 - 5U	5/16	1/2-20	6.35	7/8	5/8	16.25	18.54	33.27	11.17	40.64	-112
SOSCI - 6 - 6U	3/8	9/16-18	7.11	15/16	11/16	16.76	19.30	35.05	11.93	42.41	-114
SOSCI - 8 - 8U	1/2	3/4-16	10.41	1-1/8	7/8	22.86	21.84	35.81	11.93	45.97	-116
SOSCI - 12 - 12U	3/4	1-1/16-12	15.75	1-1/2	1-1/8	24.38	21.84	42.16	14.22	52.32	-215
SOSCI - 16 - 16U	1	1-5/16-12	22.35	1-3/4	1-1/2	31.24	26.41	45.97	14.22	58.16	-219

SOPCI O-Seal Pipe Thread Connector

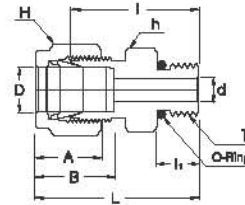
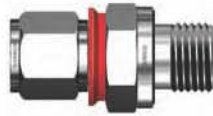


Connects Fractional Tube to Female NPT Thread

Part No.	Tube O.D. D (inch)	T* (NPT)	d Min	Width Across Flat		A	B	I	I ₁	L	O-Ring Uniform Size Number
				h (inch)	H (inch)						
SOPC - 2 - 2N	1/8	1/8	2.28	3/4	7/16	12.70	15.24	26.16	7.11	32.76	-111
SOPCI - 4 - 2N	1/4	1/8	4.82	3/4	9/16	15.24	17.78	27.68	7.11	35.05	-111
SOPCI - 4 - 4N	1/4	1/4	4.82	15/16	9/16	15.24	17.78	30.98	9.65	38.35	-113
SOPCI - 6 - 4N	3/8	1/4	7.11	15/16	11/16	16.76	19.30	32.51	9.65	39.87	-113
SOPCI - 6 - 6N	3/8	3/8	7.11	1-1/8	11/16	16.76	19.30	34.03	10.41	41.40	-116
SOPCI - 6 - 8N	3/8	1/2	7.11	1-5/16	11/16	16.76	19.30	39.62	13.46	46.99	-212
SOPCI - 8 - 8N	1/2	1/2	10.41	1-5/16	7/8	22.86	21.84	39.62	13.46	49.78	-212

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

SSMCI
SAE/MS Male Connector

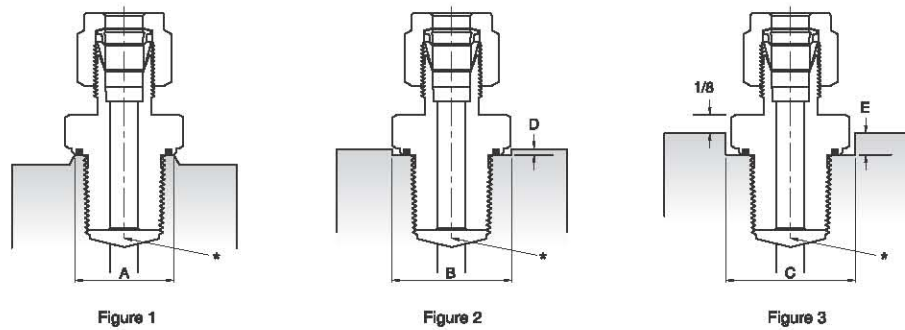


Connects Fractional Tubes to SAE/MS Straight Thread Boss

Part No.	Tube O.D. D (inch)	Straight Thread T (U)	d Min	Width Across Flat		A	B	I	I ₁	L	O-Ring Uniform Size Number
				h (inch)	H (inch)						
SSMC - 2 - 2U	1/8	5/16-24	2.28	7/16	7/16	12.70	15.24	23.36	7.62	29.97	3-902
SSMCI - 4 - 4U	1/4	7/16-20	4.82	9/16	9/16	15.24	17.78	26.67	9.14	34.03	3-904
SSMCI - 4 - 6U	1/4	9/16-18	4.82	11/16	9/16	15.24	17.78	28.19	9.90	35.56	3-906
SSMCI - 4 - 8U	1/4	3/4-16	4.82	7/8	9/16	15.24	17.78	30.22	11.17	37.59	3-908
SSMCI - 4 - 10U	1/4	7/8-14	4.82	1	9/16	15.24	17.78	33.27	12.70	40.64	3-910
SSMC - 5 - 5U	5/16	1/2-20	6.35	5/8	5/8	16.25	18.54	27.43	9.14	34.79	3-905
SSMCI - 6 - 4U	3/8	7/16-20	5.08	5/8	11/16	16.76	19.30	28.19	9.14	35.56	3-904
SSMCI - 6 - 6U	3/8	9/16-18	7.11	11/16	11/16	16.76	19.30	29.71	9.90	37.08	3-906
SSMCI - 6 - 8U	3/8	3/4-16	7.11	7/8	11/16	16.76	19.30	31.75	11.17	39.11	3-908
SSMCI - 6 - 10U	3/8	7/8-14	7.11	1	11/16	16.76	19.30	34.79	12.70	42.16	3-910
SSMCI - 8 - 6U	1/2	9/16-18	7.11	13/16	7/8	22.86	21.84	28.95	9.90	39.11	3-906
SSMCI - 8 - 8U	1/2	3/4-16	10.41	7/8	7/8	22.86	21.84	31.75	11.17	41.91	3-908
SSMCI - 8 - 10U	1/2	7/8-14	10.41	1	7/8	22.86	21.84	34.79	12.70	44.95	3-910
SSMCI - 8 - 12U	1/2	1-1/16-12	10.41	1-1/4	7/8	22.86	21.84	38.86	14.98	49.02	3-912
SSMC - 10 - 8U	5/8	3/4-16	10.66	15/16	1	24.38	21.84	31.75	11.17	41.91	3-908
SSMC - 10 - 10U	5/8	7/8-14	12.70	1	1	24.38	21.84	35.05	12.70	45.21	3-910
SSMCI - 12 - 8U	3/4	3/4-16	10.66	1-1/16	1-1/8	24.38	21.84	35.81	11.17	45.97	3-908
SSMCI - 12 - 12U	3/4	1-1/16-12	15.74	1-1/4	1-1/8	24.38	21.84	38.86	14.98	49.02	3-912
SSMC - 14 - 14U	7/8	1-3/16-12	18.28	1-3/8	1-1/4	25.90	21.84	38.86	14.98	49.02	3-914
SSMCI - 16 - 12U	1	1-1/16-12	16.76	1-3/8	1-1/2	31.24	26.41	41.14	14.98	53.34	3-912
SSMCI - 16 - 16U	1	1-5/16-12	22.35	1-1/2	1-1/2	31.24	26.41	42.16	14.98	54.35	3-916

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

Mounting Dimensions for O-Seal Connectors



*ALLOW CLEARANCE FOR FULL THREAD

■ Installation Instruction

In order to prevent the leakage with **SUPERLOK®** O-Seal Fittings, the surface perpendicular to the axis of the thread should be flat. When installing an O-Seal fitting, turn it until finger-tight. (The squeeze on O-Ring can be felt during the last 1/4 turn). After finger-tight installation, snug lightly with a wrench.

When connecting the tubing to the **SUPERLOK®** connector, always use a back-up wrench on the O-Seal fitting hex so it does not turn while the nut is being tightened. Also use a back-up wrench when disconnecting a tubing connection.

For a raised surface, such as Figure 1, it is recommended that the flat surface have a diameter at least as large as dimension "A" for the various size O-Seal fittings. This diameter is sufficient to allow metal-to-metal contact outside of the O-Ring sealing diameter and to prevent O-Ring extrusion at high pressure.

Figure 2 is an O-Seal fitting using with a counter bored or recessed hole. In this case, the diameter "B" is sufficient to allow the round shoulder of the O-seal to clear for proper installation. "D" gives the maximum depth that can be used with this diameter.

Figure 3 shows the usage at deeper grooved or concaved area and "E" is the maximum depth that will allow a thin wrench (1/8") to hold the O-Seal fitting while the **SUPERLOK®** connection is made to the tubing. The diameter "C" is sufficient to allow the hex of the fitting to turn in the recessed hole.

Basic Ordering Number	Straight Thread	Pipe Thread	A Min. Dia.	B Min. Dia.	C Min. Dia.	D Max Depth	E Max Depth
SOSC - 1 - 2U	5/16-24	-	12.7	15.0	16.8	2.3	4.1
SOSC - 2 - 2U	5/16-24	-	12.7	15.0	16.8	2.3	5.6
SOPC - 2 - 2N	-	1/8 NPT	17.5	19.8	22.4	4.1	7.1
SOSC - 3 - 3U	3/8-24	-	14.2	16.8	19.1	2.3	5.6
SOSC - 4 - 4U	7/16-20	-	17.5	19.8	22.4	4.1	7.1
SOPC - 4 - 2N	-	1/8 NPT	17.5	19.8	22.4	4.1	7.1
SOPC - 4 - 4N	-	1/4 NPT	22.1	24.6	27.7	4.1	7.9
SOSC - 5 - 5U	1/2-20	-	19.1	23.1	26.2	4.1	7.9
SOSC - 6 - 6U	9/16-18	-	20.6	24.6	27.7	4.1	7.9
SOPC - 6 - 4N	-	1/4 NPT	22.1	24.6	27.7	4.1	7.9
SOPC - 6 - 6N	-	3/8 NPT	25.4	29.5	33.3	4.1	8.6
SOPC - 6 - 8N	-	1/2 NPT	31.0	34.0	38.9	5.6	11.2
SOSC - 8 - 8U	3/4-16	-	25.4	29.5	33.3	4.1	8.6
SOPC - 8 - 8N	-	1/2 NPT	31.0	34.0	38.9	5.6	11.2
SOSC - 12 - 12U	1-1/16-12	-	35.8	38.9	44.5	5.6	12.7
SOSC - 16 - 16U	1-5/16-12	-	42.9	45.2	51.6	5.6	14.2

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SAE/MS Straight Thread Positionable Elbows and Tees

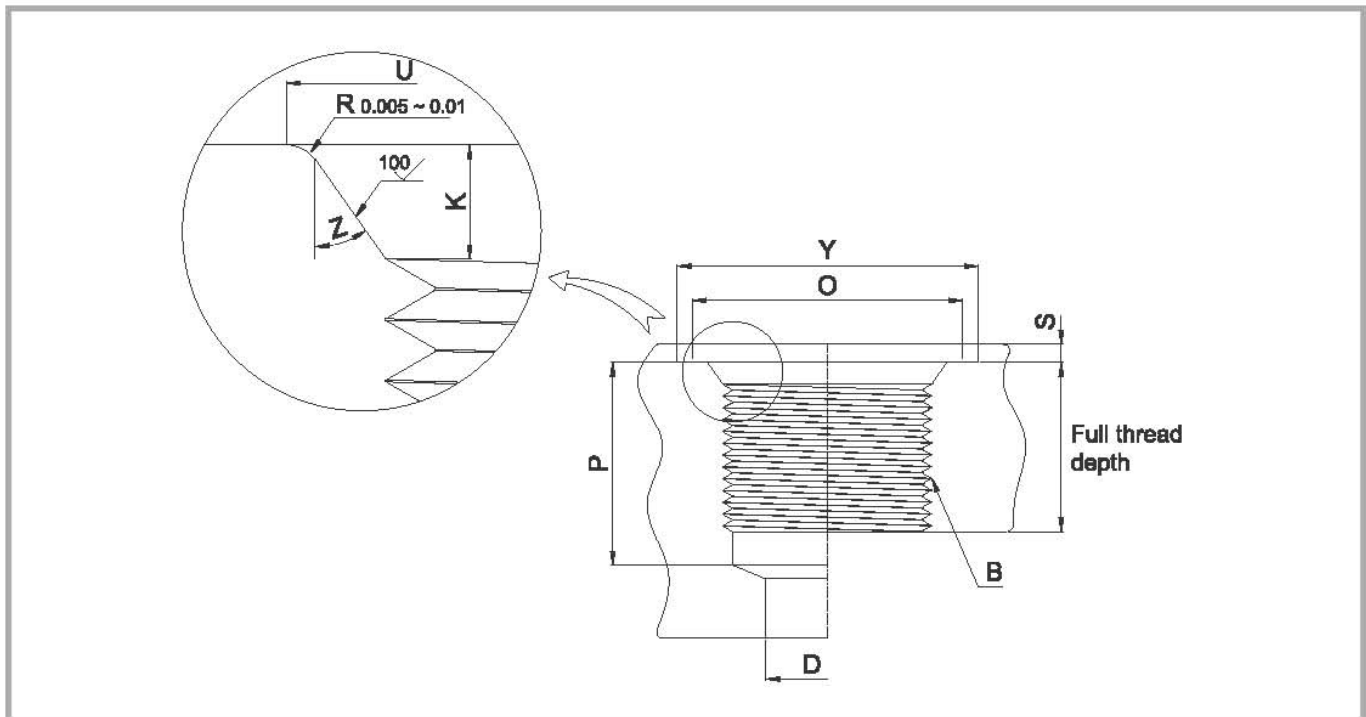
Installation Instructions

1. Lubricate O-Ring with the lubricant which is applicable for the system fluid, environment and O-Ring material. (Standard O-Ring material is viton. Other O-Ring materials are also available).
2. Turn the fittings into the straight thread boss until the metal back-up washer contacts the face of the boss. At this moment, O-Ring gets into inclined groove.
3. Until **SUPERLOK®**'s end is oriented in the proper direction, position the fittings by turning to counter clockwise. (no more than 1 turning)
4. Until the washer contacts to the face of the bosses, tighten the fittings with wrench and back-up wrench.



■ Note: SAE/MS's POSITIONABLE TEE and ELBOWS shall be compatible with SAE J1926, MS16142, or O-Ring female straight thread for JIS boss.

SAE/MS Internal Straight Thread Boss



- O : This surface would be perpendicular to the thread pitch diameter within 0.010 F.I.R (Full Indicator Reading) when measured at "O" diameter.
- D : This dimension applies only when tap drill cannot pass through the entire boss.

Data for SAE/MS Straight Thread Boss

Nom. Tube O.D	Thread Size	B / Straight Thread				D Dia	Full Thread Depth	K	O Dia	P [ⓐ]	S [ⓑ]	U [ⓒ] Dia	Y [ⓓ] Dia	Z
		Pitch Dia		Minor Dia										
		Min	Max	Min	Max									
1/8	5/16 - 24	0.2854	0.2902	0.267	0.277	0.062	0.390	0.074	0.438	0.468	0.062	0.358	0.672	12
3/16	3/8 - 24	0.3479	0.3528	0.330	0.340	0.125	0.390	0.074	0.500	0.468	0.062	0.421	0.750	12
1/4	7/16 - 20	0.4050	0.4104	0.383	0.395	0.172	0.454	0.093	0.563	0.547	0.062	0.487	0.828	12
5/16	1/2 - 20	0.4675	0.4731	0.446	0.457	0.234	0.454	0.093	0.625	0.547	0.062	0.550	0.906	12
3/8	9/16 - 18	0.5624	0.5323	0.502	0.515	0.297	0.500	0.097	0.688	0.609	0.062	0.616	0.969	12
1/2	3/4 - 16	0.7094	0.7159	0.682	0.696	0.391	0.562	0.100	0.875	0.688	0.094	0.811	1.188	15
5/8	7/8 - 14	0.8286	0.8356	0.798	0.614	0.484	0.656	0.100	1.000	0.781	0.094	0.942	1.344	15
3/4	1 1/16 - 12	1.0084	1.0158	0.972	0.990	0.609	0.750	1.130	1.250	0.906	0.094	1.148	1.625	15
7/8	1 3/16 - 12	1.1334	1.1409	1.097	1.115	0.719	0.750	1.130	1.375	0.906	0.094	1.273	1.765	15
1	1 5/16 - 12	1.2584	1.2659	1.222	1.240	0.844	0.750	0.130	1.500	0.906	0.125	1.398	1.910	15
1 1/4	1 5/8 - 12	1.5709	1.5785	1.535	1.553	1.078	0.750	0.132	1.875	0.906	0.125	1.713	2.270	15
1 1/2	1 7/8 - 12	1.8209	1.8287	1.785	1.803	1.312	0.750	0.132	2.125	0.906	0.125	1.962	2.560	15
2	2 1/2 - 12	2.4459	2.4540	2.410	2.428	1.781	0.750	0.132	2.750	0.906	0.125	2.587	3.480	15

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

- ⓐ Diameter U shall be concentric with thread pitch diameter within 0.005 full indicator reading (FIR) and shall be free from longitudinal and spiral tool marks. Annular tool marks shall be less than 100 micro inches.
- ⓑ This is the maximum recommended spotface depth to permit sufficient wrench grip for proper tightening of the fitting or locknut
- ⓒ If the surface of boss surface is machined, dimensions Y and S does not need to be applied.
- ⓓ Bottoming tap shall be used to satisfy the tap drill depth. Where standard taps are used, the drill depths must be increased accordingly.

O-Ring for SAE/MS Fittings Bosses

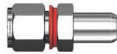
Thread size	Inside Dimension (mm)	Cross Section (mm)	O-Ring Size No.	Thread size	Inside Dimension (mm)	Cross Section (mm)	O-Ring Size No.
5/16 - 24	6.07	1.63	3-902	3/4 - 16	16.36	2.21	3-908
3/8 - 24	7.65	1.63	3-903	7/8 - 14	19.18	2.46	3-910
7/16 - 20	8.92	1.83	3-904	1-1/16 - 12	23.47	2.95	3-912
1/2 - 20	10.52	1.83	3-905	1-3/16 - 12	26.59	2.95	3-914
9/16 - 18	11.89	1.98	3-906	1-5/16 - 12	29.74	2.95	3-916



Weld End, Vent Protector, Plug & Cap, Spare Part

WELD END

SPWCI
Male Pipe
Weld Connector
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SMPWEI
Male Pipe
Weld Elbow
page 42



SSWCI
Socket
Weld Connector
page 43



SSWEI
Socket
Weld Elbow
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VENT PROTECTOR

SVP
Vent Protector
page 43



PLUG & CAP

SP
Plug
page 44



SCI
Cap
page 44



SPARE PARTS

SNI
Nut
page 44



SFF
Front Ferrule
page 44



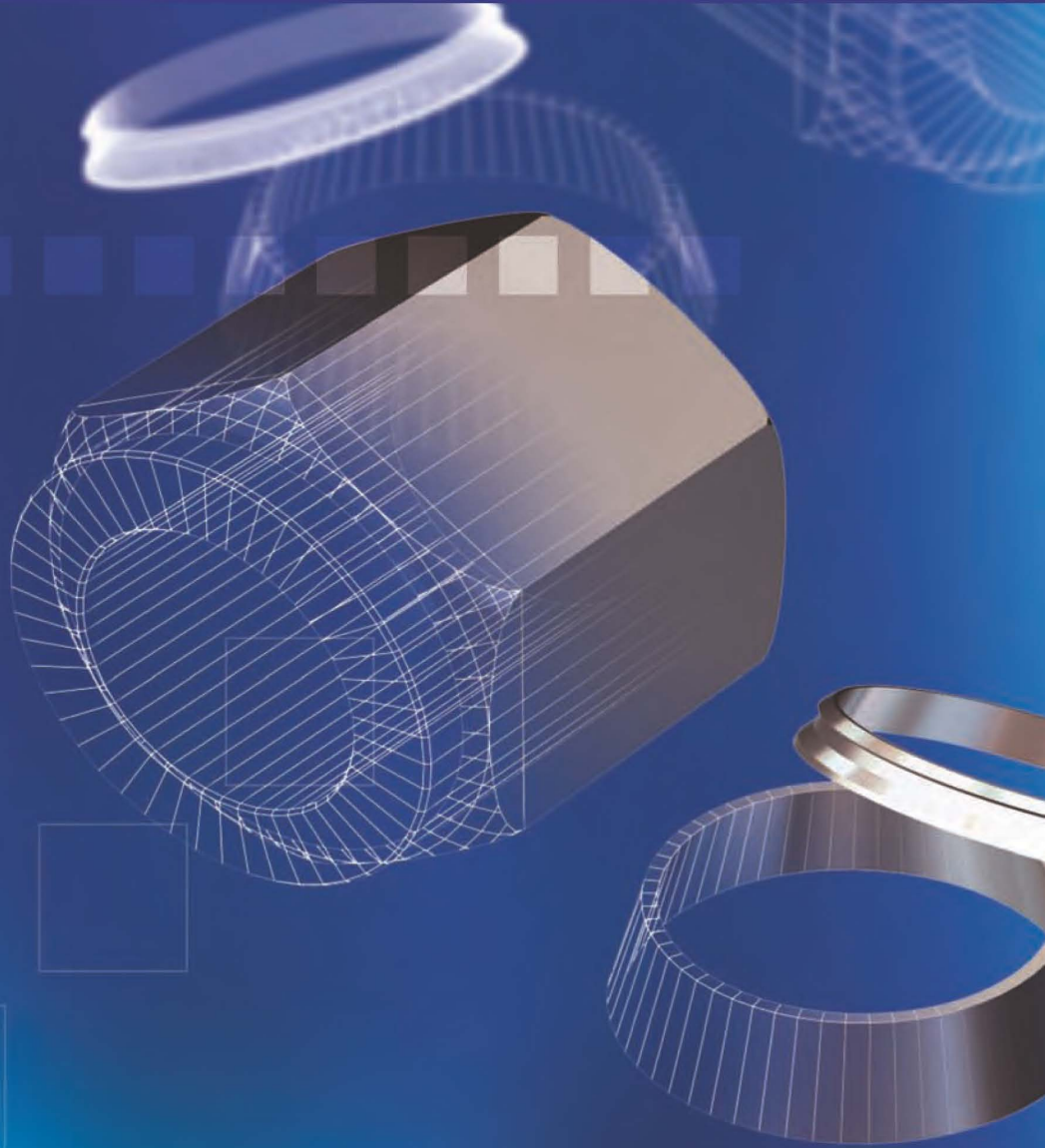
SBF
Back Ferrule
page 45



SFS
Ferrule Set
page 45

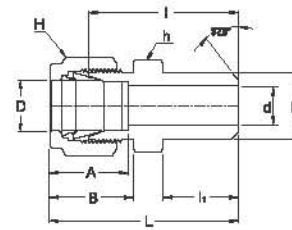
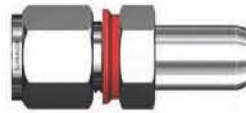


SI
Insert
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SPWCI

Male Pipe Weld Connector



Connects Fractional Tubes to Pipe

Part No.	Tube O.D. D (inch)	Male Pipe Size P		d Min	Width Across Flat		A	B	I	I ₁	L
		Nom.	O.D.		h (inch)	H (inch)					
SPWC - 2 - 2P	1/8	1/8	10.30	2.28	7/16	7/16	12.70	15.24	23.87	9.65	30.48
SPWC - 3 - 2P	3/16	1/8	10.30	3.04	7/16	1/2	13.71	16.00	24.63	9.65	31.24
SPWCI - 4 - 2P	1/4	1/8	10.30	4.82	1/2	9/16	15.24	17.78	25.40	9.65	32.76
SPWCI - 4 - 4P	1/4	1/4	13.70	4.82	9/16	9/16	15.24	17.78	30.48	14.22	37.84
SPWC - 5 - 2P	5/16	1/8	10.30	5.08	9/16	5/8	16.25	18.54	26.67	9.65	34.03
SPWC - 5 - 4P	5/16	1/4	13.70	6.35	9/16	5/8	16.25	18.54	31.24	14.22	38.60
SPWCI - 6 - 4P	3/8	1/4	13.70	7.11	5/8	11/16	16.76	19.30	32.51	14.22	39.87
SPWCI - 6 - 6P	3/8	3/8	17.10	7.11	11/16	11/16	16.76	19.30	32.51	14.22	39.87
SPWCI - 6 - 8P	3/8	1/2	21.30	7.11	7/8	11/16	16.76	19.30	38.86	19.05	46.22
SPWCI - 8 - 6P	1/2	3/8	17.10	10.41	13/16	7/8	22.86	21.84	33.27	14.22	43.43
SPWCI - 8 - 8P	1/2	1/2	21.30	10.41	7/8	7/8	22.86	21.84	38.86	19.05	49.02
SPWCI - 8 - 12P	1/2	3/4	26.67	10.41	1-1/16	7/8	22.86	21.84	40.38	19.05	50.54
SPWC - 10 - 8P	5/8	1/2	21.30	12.70	15/16	1	24.38	21.84	38.86	19.05	49.02
SPWCI - 12 - 12P	3/4	3/4	26.67	15.74	1-1/16	1-1/8	24.38	21.84	40.38	19.05	50.54
SPWCI - 16 - 16P	1	1	33.40	22.35	1-3/8	1-1/2	31.24	26.41	50.03	23.87	62.23

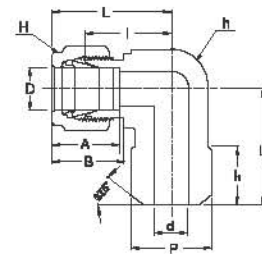
All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

Weld end **SUPERLOK** Usage Informations:

- Do weld after removing nut and ferrules from body to protect them from weld heat.
- Do protect thread end or pot and seat area of **SUPERLOK** body with another nut and plug (for easy disassembly just finger tighten it).
- Correct weld procedure is required during welding and after weld compilation. Suitable heat treatment must be carried out in accordance with industry or your own standard.

SMPWEI

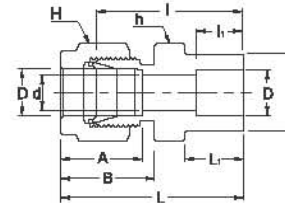
Male Pipe Weld Elbow



Connects Fractional Tubes to Pipe

Part No.	Tube O.D. D (inch)	Pipe Size (P)		d Min	Width Across Flat		A	B	I	I ₁	L	L ₁
		Nom. (inch)	O.D.		h (inch)	H (inch)						
SMPWEI - 4 - 4P	1/4	1/4	13.70	4.82	1/2	9/16	15.24	17.78	19.55	14.22	26.90	23.37
SMPWEI - 6 - 4P	3/8	1/4	13.70	7.11	5/8	11/16	16.76	19.30	23.11	14.22	30.48	25.40
SMPWEI - 8 - 8P	1/2	1/2	21.30	10.41	13/16	7/8	22.86	21.84	25.90	19.05	36.06	33.02

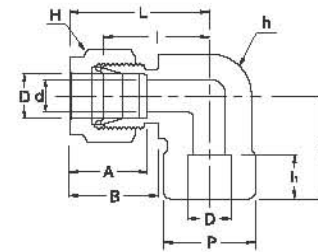
SSWC I Tube Socket Weld Connector



Connects Fractional Tubes

Part No.	Tube O.D. D (inch)	d Min	P	Width Across Flat		A	B	l	h	L	L ₁
				h (inch)	H (inch)						
SSWC - 2	1/8	2.28	7.87	7/16	7/16	12.70	15.24	22.35	6.35	28.95	8.63
SSWC I - 4	1/4	4.82	11.17	1/2	9/16	15.24	17.78	26.16	7.87	33.52	10.41
SSWC I - 6	3/8	7.11	15.74	5/8	11/16	16.76	19.30	30.22	9.65	37.59	11.93
SSWC I - 8	1/2	10.41	19.05	13/16	7/8	22.86	21.84	30.98	12.70	41.14	11.93
SSWC I - 12	3/4	15.74	26.67	1-1/16	1-1/8	24.38	21.84	33.27	14.22	43.43	11.93
SSWC I - 16	1	22.35	33.27	1-3/8	1-1/2	31.24	26.41	40.38	19.05	52.57	14.22

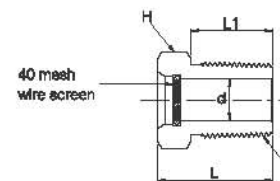
SSWE I Tube Socket Weld Elbow



Connects Fractional Tubes

Part No.	Tube O.D. D (inch)	d Min	P	Width Across Flat		A	B	l	h	L	L ₁
				h (inch)	H (inch)						
SSWE I - 4	1/4	4.82	12.70	1/2	9/16	15.24	17.78	19.55	7.87	26.92	19.55
SSWE I - 6	3/8	7.11	15.75	5/8	11/16	16.76	19.30	23.11	9.65	30.48	23.11
SSWE I - 8	1/2	10.41	20.57	13/16	7/8	22.86	21.84	25.90	12.70	36.06	25.90
SSWE I - 12	3/4	15.74	26.92	1-1/16	1-1/8	24.38	21.84	29.71	14.22	39.87	29.71
SSWE I - 16	1	22.35	35.05	1-3/8	1-1/2	31.24	26.41	36.83	19.05	49.02	36.83

SVP Vent Protector



Part No.	T (NPT)	L	L ₁	d	H (inch)
SVP - 4N	1/4	19.81	14.22	7.11	9/16
SVP - 6N	3/8	20.57	14.22	10.41	11/16
SVP - 8N	1/2	26.16	19.05	12.70	7/8
SVP - 12N	3/4	26.92	19.05	18.29	1-1/16

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

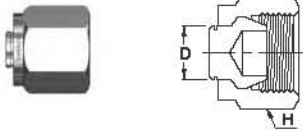
* ISO Tapered Threads are available upon request

SP Plug

Plugs Unused port of Metric **SUPERLOK** fittings
Plug provides plugging fitting port

Installation instruction

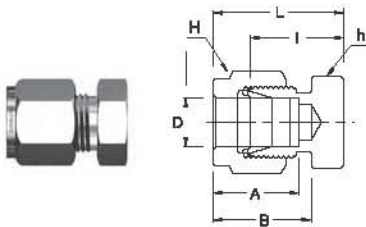
1. With wrench, 1/4 turn from finger-tight position.
(1/8 turn for 1/8", 3/16", 2, 3, 4 size plug)
2. Remove nut and ferrules from body



SCI Cap

Installation instruction

1. With wrench, 1-1/4 turn from finger-tight position.
(3/4 turn for 1/8", 3/16", 3mm, 4mm)
2. Insert tube end into cap



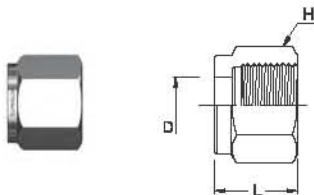
Fractional

Part No.	Tube O.D. D (inch)	Width Across Flat H (inch)	Part No.	Tube O.D. D (inch)	Width Across Flat H (inch)
SP - 2	1/8	7/16	SP - 8	1/2	7/8
SP - 3	3/16	1/2	SP - 10	5/8	1
SP - 4	1/4	9/16	SP - 12	3/4	1-1/8
SP - 5	5/16	5/8	SP - 14	7/8	1-1/4
SP - 6	3/8	11/16	SP - 16	1	1-1/2

Connects Caps End of Fractional Tubes

Part No.	Tube O.D. D (inch)	Width Across Flat		A	B	I	L
		h (inch)	H (inch)				
SC - 1	1/16	5/16	5/16	8.63	10.92	11.20	14.98
SC - 2	1/8	7/16	7/16	12.70	15.24	13.46	20.06
SC - 3	3/16	7/16	1/2	13.71	16.00	14.73	21.33
SC - 4	1/4	1/2	9/16	15.24	17.78	16.00	23.36
SC - 5	5/16	9/16	5/8	16.25	18.54	17.01	24.38
SC - 6	3/8	5/8	11/16	16.76	19.30	18.28	25.65
SC - 8	1/2	13/16	7/8	22.86	21.84	19.05	29.21
SC - 10	5/8	15/16	1	24.38	21.84	19.81	29.97
SC - 12	3/4	1-1/16	1-1/8	24.38	21.84	23.33	33.49
SC - 14	7/8	1-3/16	1-1/4	25.90	21.84	23.87	34.03
SC - 16	1	1-3/8	1 1/2	31.24	26.41	26.16	38.35

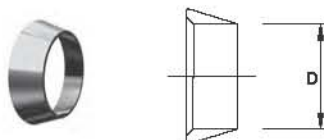
SNI Nut



Fractional

Part No.	Tube O.D. D (inch)	Width Across Flat H (inch)	L	Part No.	Tube O.D. D (inch)	Width Across Flat H (inch)	L
SN - 1	1/16	5/16	7.90	SN - 8	1/2	7/8	17.52
SN - 2	1/8	7/16	11.93	SN - 10	5/8	1	17.52
SN - 3	3/16	1/2	11.93	SN - 12	3/4	1-1/8	17.52
SN - 4	1/4	9/16	12.70	SN - 14	7/8	1-1/4	17.52
SN - 5	5/16	5/8	13.46	SN - 16	1	1-1/2	20.6
SN - 6	3/8	11/16	14.22				

SFF Front Ferrule

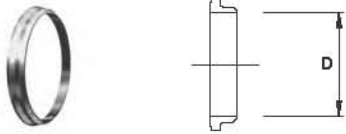


Fractional

Part No.	Tube O.D. D (inch)	Part No.	Tube O.D. D (inch)
SFF - 1	1/16	SFF - 8	1/2
SFF - 2	1/8	SFF - 10	5/8
SFF - 3	3/16	SFF - 12	3/4
SFF - 4	1/4	SFF - 14	7/8
SFF - 5	5/16	SFF - 16	1
SFF - 6	3/8		

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.

SBF Back Ferrule



Fractional

Part No.	Tube O.D. D (inch)	Part No.	Tube O.D. D (inch)	Part No.	Tube O.D. D (inch)
SBF - 1	1/16	SBF - 5	5/16	SBF - 12	3/4
SBF - 2	1/8	SBF - 6	3/8	SBF - 14	7/8
SBF - 3	3/16	SBF - 8	1/2	SBF - 16	1
SBF - 4	1/4	SBF - 10	5/8		

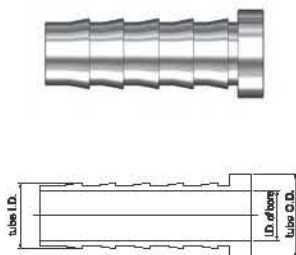
SFS Ferrule Set



Fractional

Part No.	Tube O.D. D (inch)	Part No.	Tube O.D. D (inch)	Part No.	Tube O.D. D (inch)
SFS - 1	1/16	SFS - 5	5/16	SFS - 12	3/4
SFS - 2	1/8	SFS - 6	3/8	SFS - 14	7/8
SFS - 3	3/16	SFS - 8	1/2	SFS - 16	1
SFS - 4	1/4	SFS - 10	5/8		

SI Insert



Fractional

Part No.	Tube O.D. (inch)	Tube I.D. (inch)	I.D. of Bore	Part No.	Tube O.D. (inch)	Tube I.D. (inch)	I.D. of Bore
SI - 3 - 2	3/16	1/8	2.28	SI 8 - 4	1/2	1/4	4.82
SI - 4 - 2	1/4	1/8	2.28	SI 8 - 6	1/2	3/8	7.87
SI - 4 - 3	1/4	3/16	3.55	SI 10 - 6	5/8	3/8	7.87
SI - 5 - 2	5/16	1/8	2.28	SI 10 - 8	5/8	1/2	11.17
SI - 5 - 3	5/16	3/16	3.04	SI 12 - 8	3/4	1/2	11.17
SI - 5 - 4	5/16	1/4	4.82	SI 12 - 10	3/4	5/8	14.22
SI - 6 - 3	3/8	3/16	3.04	SI 16 - 12	1	3/4	17.52
SI - 6 - 4	3/8	1/4	4.82				

All dimensions in millimeters unless specified as "inch" • Dimensions are for reference only, subject to change.



Mako Products confirms that the Superlok i-Fitting and the BMT Company is certified by all entities listed below and complies to the specified standards they entail.

- 1. NPT (National Pipe Thread)**
Thread angle 60°
Tapered angle 1°47'
Manufactured by the standard of ANSI B2.1
- 2. ISO 7/1 Tapered Thread**
Thread angle 55°
Tapered angle 1°47'
Equivalent to the standard of DIN2999 BS21(BSPT) and JIS B0203(PT).

Certifications

Superlok, BMT Co. & Mako Products

Superlok Quality Certifications				
DIVISION	PRODUCTS	CERT. NO	CERTIFYING AGENCY	
<i>Fittings & Valves</i>	Bite type fitting for DIN2353	06-BK152666-PDA		ABS Cert. of Design Assessment
	SUPERLOK Tube Fitting	06-BK150238-PDA		ABS Cert. of Design Assessment
	37° Flared Tube Fittings for SAE J514	06-BK294147-PDA		ABS Cert. of Design Assessment
	SUPERLOK compression tube fitting	P-12285		DNV Cert. of Type Approval
	Bite type compression tube fitting	P-12317		DNV Cert. of Type Approval
	SAE 37° Flared Tube Fittings	P-12675		DNV Cert. of Type Approval
	Bite Type Tube Fitting According to DIN2353	44879-07HH		Lloyd's Register Cert. of Type Approval
	SUPERLOK Tube Fittings	44880-07HH		Lloyd's Register Cert. of Type Approval
	Superlok & Bite type (DIN2353)	06/10006		Lloyd's Register Cert. of Type Approval
	Superlok & Bite Type (JIS & KS)	TA09512M		NK
Superlok & Bite Type Tube Fittings	20040/A0 BV		BV	

Superlok Manufacturing Certifications				
NO.	TYPE	ISSUING BODY	SCOPE	CERTIFICATE NO.
1	ISO 9001	HSB	Design and Manufacture of Fittings (High Pressure Forged, Super Clean, Tube & Pipe), Valves & Industrial Machinery Parts and Equipment and MCPD (Molded Case Power Distributor) For Distribution Switchboards	AP0379
2	ASME N STAMP	ASME	Purchase, Construction, Fabrication, Manufacture, and Inspection of Class 1, 2, & 3 Products	N-3409
3	ASME NPT STAMP			N-3410
4	ASME NS			N-3411
5	ASI 6D	API	Using Official API Monogram on Manufacturing Valves	6D-0699
6	API Q1	API	Design & Manufacturing of Fittings & Valves	Q1-0375
7	PED/97/23/EC (Module H)	HSB	Design, Manufacturing, Installation and service of Valves & Fittings	HSBI-10-07-074
8	KEPIC-MN	KEA	Design & Manufacturing of Fittings & Valves for Class 1, 2, & 3 Grade	MN-288

Mako Products, LLC Return Policy & Disclaimer

ATTENTION: Please read carefully before using our products.

WARRANTIES

MAKO WARRANTY:

All products distributed from Mako Products, LLC are guaranteed to be free from manufacturing defects for a period of one year from the date of shipment. If the product is determined to be defective within that period, the product will be replaced at no charge to the buyer if it falls under one or more of these specific conditions: (1) product failure was a result of a manufacturing defect and not damaged from an accident, alteration, misuse, abuse or contact with corrosive fluids; (2) the product was installed with proper care and operating practices; (3) proper notice and description of defective product was recorded to Mako Products, LLC before the product was shipped back from the buyer. Shipping expenses should not be assumed until verification and authorization have been granted from Mako Products, LLC.

SUPERLOK WARRANTY:

BMT warrants that Superlok tube fittings shall be free from defects in material and workmanship for the life of the product. The purchaser's solution shall be limited to replacement and installation of any parts that fail through a defect in material or workmanship.

Superlok tube fittings are manufactured to be 100% interchangeable with other tube fittings currently on the market. Superlok fully warrants the compatibility of its fittings with other manufacturers, provided the same strict manufacturing practices and tolerances are held by those manufacturers.



CONSUMERS MUST ABIDE BY THE SPECIFIC INSTALLATION GUIDES AND OPERATION PROCEDURES WITH THIS EQUIPMENT OR THEY WILL NOT BE CONSIDERED REPLACEABLE.

RETURN POLICY

RETURN POLICY:

1. **ERRORS:** Regarding administrative or shorthand work - all quotations, orders, confirmations, invoices and other documents are subject to correction.

2. **RETURNS:** Before products are returned, the correct form of authorization must be recorded to Mako Products, LLC. Buyers must acquire acknowledgement that an RMA (Return Merchandise Authorization) was created for the items being returned with the precise quantity for maximum assurance of returned credit. Shipping expenses should not be assumed unless they are verified from Mako Products, LLC. For guidelines on free returns, refer to ERRORS. Customer specified items are deemed non-returnable.

3. **RESTOCKING FEE:** Returned products from customers may be subject to a restocking fee of 20%.

4. **TRANSIT DAMAGE:** Notification to Mako Products, LLC is required if loss, damage or shortage of products via carrier should occur. All claims should be made as soon as possible and no later than five days after receipt of shipment. Loss or damage to materials is the responsibility of the carrier.

5. **CANCELLATION:** Any regular stock item on back order is considered free of cancellation fee if the buyer wishes to waive the item. For special manufactured items, the cancellation charges may be up to 100%.



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- Toggle Valves
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- Quick Connectors
- High Pressure Ball Valves

- Hydraulic Ball Valves
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- Relief Valves
- Cryogenic Needle Valves
- Cryogenic Ball Valves
- Micron In-Line Filters

Fitting Series

- Instrument Thread Fittings
- 37 Flared Tube Fittings (JIC)
- O-Ring Face Seal Fittings
- Hose Connectors
- Push-On Hose Fittings