

S-LOK Compression Tube Fittings

The best partner for value creation
We support the innovations of customer



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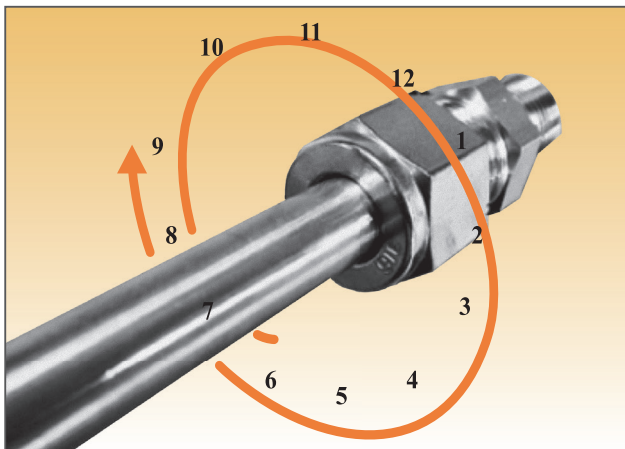
Catalogue No. S-LOK Jan.2023

Installation Instruction

- Fully insert the tube into the fitting and against the shoulder; tight the nut by finger-tightening.
- (**Caution** : The tube may be elliptical or have burrs; foreign material on the surface and/or inside of the tube fitting).

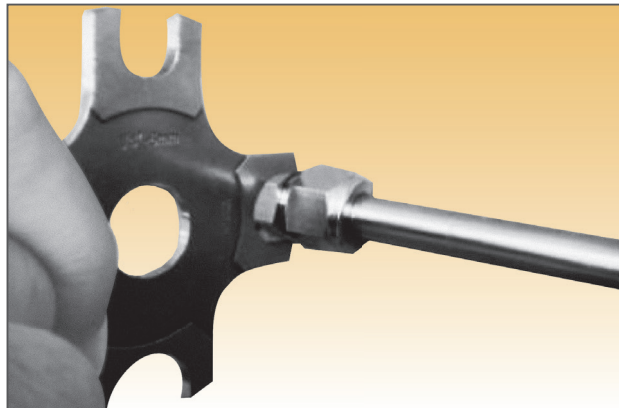


- Mark the nut at the 6 o'clock position before placing the spanner.



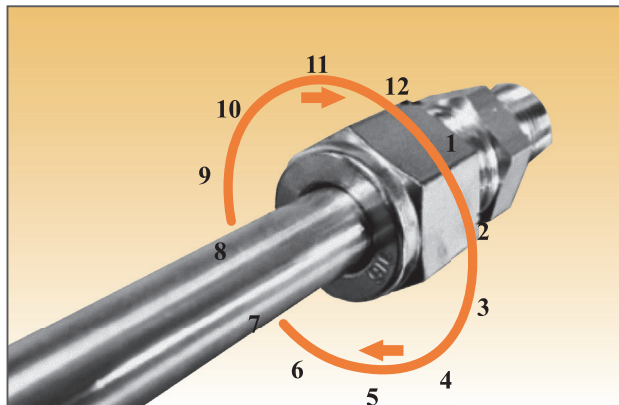
- While holding the fitting body steady, tight the nut with the spanner by turning 1-1/4 clockwise.
- Make sure that the spanner's starting point at 6 o'clock is being positioned at 9 o'clock after tightening 1-1/4 clockwise.
- Tighten the nut only 3/4 turn to the 3 o'clock position for 1/16", 1/8" and 3/16" (2mm, 3mm and 4mm) size tube fittings.
- When it was tightened 1-1/4 turn clockwise, the tube fitting has been designed to be durable even from the bursting pressure of the tube, therefore insufficient tightening against the regulation may cause the leakage and bursting while over-tightening makes the reassembly difficult due to deformity.

Gaugeability



- Gap inspection gauge assures the installer or the inspector that the instrument has been sufficiently tightened during the first installation inspection.
- Place gap inspection gauge at the gap between the nut and body.
- When the gauge does not fit into the gap, it means that the fitting is sufficiently tightened.
- When the gauge fits into the gap, it means that it needs to be tightened more.

Reassembly Instruction



- S-LOK products can be disassembled and reassembled numerously.
- For reassembly, insert the tube with ferrules into the fitting until the front ferrule seats against the fitting body to avoid any damage from foreign objects at the disassembled area.
- After hand-tightening the nut while holding the fitting's body steady, tight the nut with a spanner to the previously pulled-up position.
- At this point, you would feel a significant increase in resistance.
- Then tight the nut slightly.

Introduction

S-LOK tube fittings are manufactured under very strict quality control to assure maximum reliable performance.

S-LOK tube fittings require no special tools assembly. Connections can be quickly and easily made by simple insertion and tightening the nuts.

S-LOK tube fittings has been specifically designed for use on instrumentation, process and control systems and equipment employed in chemical, petroleum, power generating and pulp and paper plants.

S-LOK tube fittings could also be used in extensive applications of other fields where very high quality tube fittings are required.

Construction

S-LOK tube fittings are composed of four precision part ; body, nut, front ferrule and back ferrule.

By screwing the nut onto the body, the nut is tightened against the tapered area of the body, and its edge is compressed tightly against the tube by curling inward.

The back ferrule is also located between the body and nut.

As the front ferrule rolls, the back ferrule rolls up and bites into the tube resulting in the connection of tube and the fitting as well as a non-leakage effected.

The double ferrule design achieves the leak proof sealing by assembly motion being transmitted axially through the tubing. This results in no radial movement of the tubing upon assembly. Therefore, the tube is not stressed and the mechanical integrity is maintained. This is the result of close monitoring of tolerance control in machining, and hardness of each and every part of S-LOK tube fittings.

Through this swaging action, S-LOK tube fittings are mechanically integrated with the tube connected.



Materials

S-LOK tube fittings are made of stainless steel, brass and alloy steels.

Fitting Material	Bar Stock	Forging
Stainless Steel 316	ASTM A479 / A276 TYPE 316	ASTM A182 F316
Duplex Stainless Steel	ASTM A479 / A276 UNS S31803	A182 F51
Super Duplex Stainless Steel	ASTM A479 / A276 UNS S32750	A182 F53
Alloy 400	ASTM B164 UNS N04400	ASTM B564 UNS N04400
Alloy 625	ASTM B446 UNS N06625	ASTM B564 UNS N06625
Alloy 825	ASTM B425 UNS N08825	ASTM B564 UNS N08825
Alloy C-276	ASTM B574 UNS N10276	ASTM B564 UNS N10276
Carbon Steel	ASTM A108 JIS G4051 S45C	ASTM A105 JIS G4051 S45C
Brass	ASTM B16 C3600 JIS H3250 C3604	ASTM B124 C3770 JIS H3250 C3771

Pressure Ratings

S-LOK tube fittings are rated its maximum working pressure in accordance with the maximum working pressure of recommended tubing within this catalogue.

Tubing

Suitable tube selection is essential in performance of tubing system. For safe, reliable and leak-free seals tubing should be considered as a fitting component. S-LOK tube fittings perform best when good quality tubing is used.

When selecting tubing material including size and wall thickness, customer must consider pressure, flow, temperature Environment and compatibility of system.

- General Rules.

1. For leak-free sealing, the tubing surface is very important. The tubing must have a good surface condition with free of scratches, draw mark, flat spots or dirt.
2. In case of welded tubing, it should not have a visible poor bead on its surface.
3. Tubing and fitting material is essential for the thermal compatibility and corrosion resistance.
4. Tubing must be softer than fitting material. When tubing and fittings are made of the same material, the metal tubing must be fully annealed.
5. Tubing hardness must be selected according to the information in the table 2 to 4.
6. Do not select a too thin or too thick wall. A too thin wall may collapse, and a too thick wall may not properly be deformed by the ferrule action. Selection the wall's thickness should be based on the applicable pressure, temperature, shock and vibration.

- Consider the following in selecting tube.

1. Quality of the tubing material and manufacturing method.
2. Hardness of tube.
3. Surface treatment of tube.
4. O.D and tolerance.
5. Wall thickness and tolerance.
6. Concentricity of tube.
7. Ovality. (shape)

Temperature Ranges

The maximum and minimum operating temperatures for various tubing material.

Tubing Material	Temperature Range	Tubing Material	Temperature Range
Stainless Steel 316	-196°C to 649°C (-321°F to 1200°F)	Alloy 600	-130°C to 649°C (-205°F to 1200°F)
Carbon Steel	-53°C to 426°C (-65°F to 800°F)	Alloy C-276	-195°C to 537°C (-320°F to 1000°F)
Copper	-40°C to 204°C (-40°F to 400°F)	Titanium	-195°C to 315°C (-320°F to 600°F)
Alloy 400	-198°C to 426°C (-324°F to 800°F)	PTFE	-17°C to 65°C (0°F to 150°F)

Temperature De-rating Factors

The allowable working pressure is determined by various temperatures. To determine the working pressure at the specific temperatures, multiply the working pressure at ambient temperature and factor.

Temp °F(°C)	Stainless Steel ASTM A269		Carbon Steel ASTM A179	Copper ASTM B75	Alloy 400
	304	316			
100 (37)	1.00	1.00	1.00	1.00	1.00
200 (93)	1.00	1.00	0.95	0.80	0.88
300 (148)	1.00	1.00	0.90	0.78	0.82
400 (204)	0.93	0.96	0.86	0.50	0.79
500 (260)	0.87	0.90	0.82	-	0.79
600 (315)	0.82	0.85	0.77	-	0.79
700 (370)	0.80	0.82	0.73	-	0.76
800 (426)	0.76	0.79	0.59	-	0.76
900 (480)	0.73	0.78	-	-	-
1000 (537)	0.69	0.76	-	-	-
1200 (649)	0.30	0.37	-	-	-

Example : Tube S316 3/8 O.D. x 0.035" at 700 °F

3,300psi x 0.82=2.706psi

Therefore 2.706psi is the maximum allowable working pressure of S316 3/8" O.D x 0.035" wall tubing.

↗ Stainless Steel Tubing

Fully annealed 304 or 316 high quality seamless steel tube to ASTM A269 or equivalent. Hardness : HRB 90 or less

Stainless Steel Fractional Tubing

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	0.134	0.156	0.188		
1/16	5,600	6,800	8,100	9,400	12,000													
1/8						8,500	10,900											Working pressure (psig)
3/16						5,400	7,000	10,200										
1/4						4,000	5,100	7,500	10,200									
5/16							4,000	5,800	8,000									
3/8							3,300	4,800	6,500	7,500								
1/2							2,600	3,700	5,100	6,700								
5/8								2,900	4,000	5,200	6,000							
3/4								2,400	3,300	4,200	4,900	5,800						
7/8								2,000	2,800	3,600	4,200	4,800						
1									2,400	3,100	3,600	4,200	4,700					
1-1/4											2,400	2,800	3,300	3,600	4,100	4,900		
1-1/2												2,300	2,700	3,000	3,400	4,000	4,900	
2													2,000	2,200	2,500	2,900	3,600	

Stainless Steel Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)																	
	0.3	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0	3.5	4.0	4.5	5.0			
2	210	660																
3		670																Working pressure (bar)
4		500	660															
6		310	420	540	710													
8			310	390	520													
10			240	300	400	510	580											
12			200	250	330	410	470											
14			160	200	270	340	380	430										
15			150	190	250	310	360	400										
16				170	230	290	330	370	400									
18				150	200	260	290	320	370									
20				140	180	230	260	290	330	380								
22				140	180	200	230	260	300	340								
25						180	200	230	260	290	320							
28							180	200	230	260	280	330						
30								170	180	210	240	260	310					
32								160	170	200	220	240	290	330				
38									140	160	190	200	240	270	310			
50												150	180	210	240	270		

- Working pressure are based on allowable stress value of 20,000psi (137,800kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F), considering ultimate tensile strength 75,000psi (516,700kPa).

- Pressure calculation are based on Maximum O.D and minimum wall thickness and no allowance is made for corrosion and erosion.

- Welded tubing Based on ASME B31.3 for weld integrity, a de-rating factor must be applied to welded tubing.

For double butt seam tubing, multiply by 0.85, For single butt seam tubing, multiply by 0.80.

Carbon Steel Tubing

Soft annealed seamless carbon steel tube to ASTM A179 or equivalent. Hardness : HRB 72 or less

Carbon Steel Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)													
	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.148	0.165	0.180	0.220
1/16	9,700													
1/8		8,000	10,200											Working pressure (psig)
3/16		5,100	6,600	9,600										
1/4		3,700	4,800	7,000	9,600									
5/16			3,700	5,500	7,500									
3/8			3,100	4,500	6,200									
1/2			2,300	3,200	4,500	5,900								
5/8			1,800	2,600	3,500	4,600	5,300							
3/4				2,100	2,900	3,700	4,300	5,100						
7/8				1,800	2,400	3,200	3,700	4,300						
1	For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.			1,500	2,100	2,700	3,200	3,700	4,100					
1-1/4					1,600	2,100	2,500	2,900	3,200	3,600	4,000	4,600	5,000	
1-1/2						1,800	2,000	2,400	2,600	2,900	3,300	3,700	4,100	5,100
2							1,500	1,700	1,900	2,100	2,400	2,700	3,000	3,700

Carbon Steel Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)													
	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0	3.5	4.0	4.5	
3	630	790												
6	290	370	460	590									Working pressure (bar)	
8		270	330	430										
10		210	260	330										
12		170	210	270	330	380	420							
14		150	180	230	280	320	350							
15		140	170	210	260	290	330							
16		130	150	200	240	270	300	350						
18			140	170	210	240	270	310						
20			120	160	190	210	240	270	310					
22			110	140	170	190	210	240	280					
25			100	120	150	170	180	210	240	260				
28	For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.					150	160	190	210	230	270			
30						140	150	170	200	210	250			
32						130	140	160	180	200	230	270		
38						120	130	150	160	190	230	260		

- Working pressure are based on allowable stress value of 15,700psi (108,200kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F), considering ultimate tensile strength 47,000psi (324,000kPa).

- Pressure calculation are based on Maximum O.D and minimum wall thickness and no allowance is made for corrosion and erosion.

↗ Copper Tubing

High quality soft annealed seamless copper tube to ASTM B75 or equivalent. Hardness : HR_{15T} 60 or less

Copper Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)								
	0.028	0.030	0.035	0.049	0.065	0.083	0.095	0.109	0.120
1/8	2,700	3,000	3,600						
3/16	1,800	1,900	2,300	3,400			Working pressure (psig)		
1/4	1,300	1,400	1,600	2,500	3,500				
5/16			1,300	1,900	2,700				
3/8			1,000	1,600	2,200				
1/2			800	1,100	1,600	2,100			
5/8	For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.			900	1,200	1,600	1,900		
3/4				700	1,000	1,300	1,500	1,800	
7/8				600	800	1,100	1,300	1,500	
1				500	700	900	1,100	1,300	1,500

Copper Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)									
	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0
3	200									
4	140	200						Working pressure (bar)		
6	110	140	170	220						
8		100	120	160						
10		80	100	130						
12		60	80	100	130	140				
14		50	60	90	110	120				
15			60	80	100	110	120			
16				70	90	100	110	120		
18				60	80	90	100	110		
20	For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.			60	70	80	90	100	110	
22				50	60	70	80	90	100	
25				40	50	60	70	80	90	100
28					40	50	60	70	80	90

- Working pressure are based on allowable stress value of 6,000psi (41,300kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F), considering ultimate tensile strength 30,000psi (206,700kPa).

- Pressure calculation are based on Maximum O.D and minimum wall thickness and no allowance is made for corrosion and erosion.

Alloy 400 Tubing

Fully annealed seamless Alloy 400 tube to ASTM B165 or equivalent. Hardness : HRB 75 or less

Alloy 400 Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)							
	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120
1/8	7,900	10,100						
3/16	5,100	6,500	9,500			Working pressure (psig)		
1/4	3,700	4,800	7,000	9,500				
5/16		3,700	5,400	7,300				
3/8		3,100	4,400	6,100				
1/2		2,300	3,200	4,400				
5/8	For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.		2,700	3,700	4,800	5,600		
3/4			2,200	3,000	4,000	4,600		
7/8			1,900	2,600	3,400	3,900	4,500	
1				2,200	2,900	3,400	3,900	4,300

Alloy 400 Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)									
	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0
3	630									
4	400						Working pressure (bar)			
6	310	390	490	620						
8		290	350	450						
10		220	280	350						
12		180	230	290						
14		180	190	240	270					
15			190	240	290	330	330			
16			170	220	270	310	320			
18			150	200	240	270	300			
20	For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.		180	210	240	270	290			
22			170	200	230	250	290	310		
25				170	190	210	240	270	290	
28										

- Working pressure are based on allowable stress value of 20,000psi (137,800kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F), considering ultimate tensile strength 70,000psi (482,300kPa).

- Pressure calculation are based on Maximum O.D and minimum wall thickness and no allowance is made for corrosion and erosion.

Special Alloy Tubing

When special alloy tubing is selected, we recommend:

Full annealed seamless (or welded and cold-drawn, where permitted) alloy tubing to the ASTM specification as shown below.

Tubing should be free of scratches for bending or flaring.

Tube Material	ASTM code	MAX. Hardness	Tube Material	ASTM code	MAX. Hardness
Alloy C-276	B622	HRB 100	Alloy 625	B444	HRC 25
Alloy 20	B729	HRB 95	Alloy 825	B163	HR15T 90
Alloy 600	B167	HRB 92	Alloy 6Mo	A269	HRB 96

⚡ Cryogenic Service

S-LOK tube fittings in 316 stainless steel provide highly reliable performance from cryogenic temperatures to high temperature levels. 316 stainless steel temperature range : -196°C to 649°C (-321°F to 1200°F).

Cryogenic temperature are considered to be temperatures below : -73°C (-100°F)

⚡ Proper Tube Handling

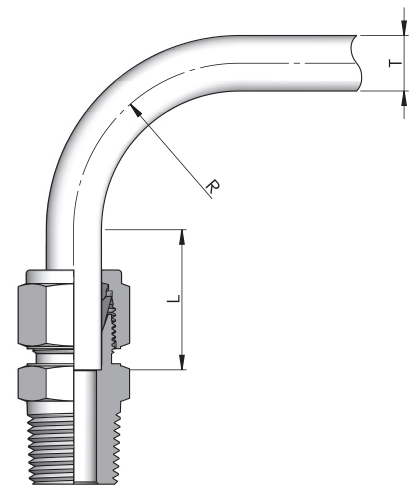
Good handling practices can greatly save the good surface finish of the supplied tube.

- Tubing should never be dragged out of a tubing rack.
- Tubing should never be dragged across cement, asphalt, gravel or any other rough surface.
- Tubing cutter wheel and hacksaw blade should always be sharp.
- Try not to take deep cuts with each turn of the cutter or stroke of the saw.
- Tube end should always be de burred.
- Tubing should be stored to avoid collection of dirt and contamination.
- If possible, tubing ends should be plugged, so any foreign materials will not fall inside.

⚡ Tube Bending

For sealing installation in case of bended tubing being near S-LOK fittings, there should be enough lineal distance from bending point to the fittings. When tube bend is too close to the fitting, the deformed section of the bend may enter the fitting, and it may result in leaking. Also the bending radius should not be too short of bending radius may affect the working pressure and may cause insufficient flow. Minimum bending radius is usually recommended by the bending manufacturer.

Tube O.D (T) (inch)	Straight Length (L)	Tube O.D (T) (mm)	Straight Length (L)
1/16	1/2	3	19
1/8	23/32	6	21
3/16	3/4	8	23
1/4	13/16	10	25
5/16	7/8	12	31
3/8	15/16	14	32
1/2	1-3/16	15	32
5/8	1-1/4	16	32
3/4	1-1/4	18	32
7/8	1-5/16	20	34
1	1-1/2	22	40
1-1/4	2	25	46
1-1/2	2-13/32	28	50
2	3-1/4	32	54
		38	63
		50	80



T : Tube O.D

R : Radius

Follow the bented tube vendor's recommendation.

L : Straight tubing length is required from the beginning of the bend to the tubing end.

Pressure Rating

Many S-LOK tube fittings have a male or female pipe end. These ends occasionally have a lower pressure rating than the pressure rating of the tube fitting end so consider both of the rating.

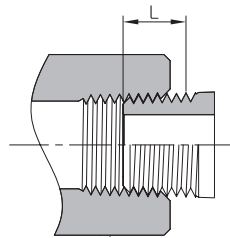
NPT/ISO Pipe Size (inch)	Stainless Steel 316				Brass				Carbon Steel			
	Male		Female		Male		Female		Male		Female	
	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar
1/16	11,000	758	6,700	462	5,500	378	3,300	227	11,000	758	6,700	462
1/8	10,000	689	6,500	448	5,000	345	3,200	221	10,000	689	6,500	448
1/4	8,000	551	6,600	455	4,000	276	3,300	227	8,000	551	6,600	455
3/8	7,800	538	5,300	365	3,900	269	2,600	179	7,800	538	5,300	365
1/2	7,700	531	4,900	338	3,800	262	2,400	165	7,700	531	4,900	338
3/4	7,300	503	4,600	317	3,600	248	2,300	159	7,300	503	4,600	317
1	5,300	365	4,400	303	2,600	179	2,200	152	5,300	365	4,400	303
1-1/4	6,000	414	5,000	345	3,000	207	2,500	172	6,000	414	5,000	345
1-1/2	5,000	345	4,600	317	2,500	172	2,300	159	5,000	345	4,600	317
2	3,900	269	3,900	269	1,900	131	1,900	131	3,900	269	3,900	269

- The ratings shown above are based on ASME B31.3.
- Female pipe ends have lower ratings than male pipe in a given size due to the inner and outer diameters of female threads being larger than those of male pipe ends.
- The ratings shown above are reference only.

Pipe Thread Sealant

Pipe thread sealant is essential to ensure leak-free seal. Since the PTFE tape is commonly used, we provide information of recommended tape width, as well as the numbers of thread to be wrapped. The PTFE tape fills the voids between threads and prevents galling on pipe threads. The sealant usually contains a lubricant.

Nominal Pipe Size	Recommended Tape Width	Effective Thread External Length (L)	Approx. of Thread
1/8	1/8 – 1/4	0.2639	7
1/4	1/4	0.4018	7-1/4
3/8	1/4	0.4075	7-1/3
1/2	1/4 – 1/2	0.5337	7-1/2
3/4	1/4 – 1/2	0.5457	7-2/3
1	1/4 – 1/2	0.6828	8



Elastomer Seal Temperature Rating

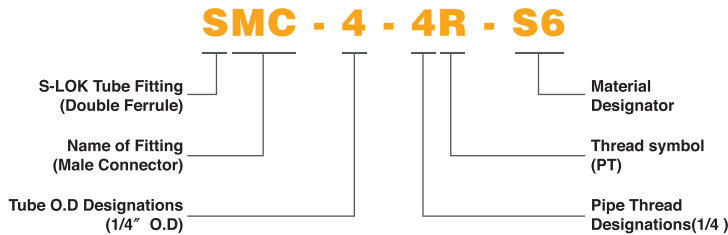
When elastomer seal is used in the fitting, care must be taken for allowable working temperature.

Elastomer Seal Material	Temperature Range
NBR	-20°C ~ 105°C (-4°F ~ 221°F)
FKM	-28°C ~ 204°C (-20°F ~ 400°F)
EPDM	-28°C ~ 148°C (-20°F ~ 300°F)
FFKM	-25°C ~ 275°C (-13°F ~ 527°F)

Ordering Information

The symbols in the part number column on each page represent the shape and size of individual fittings.

Example 1 : Tube to Pipe ends



Example 2 : Tube to Tube ends



Example 3 : Tee & Cross

Tee & Cross are described by first the run (1 and 2) and next the branch (3 and 4)



Example 4 : Single Ferrule type

To order, use "O" as a suffix to the desired type of fitting ordering designation.

SMCO - 4 - 4R - S6

STO - 4 - S6




Tube O.D Designator			
Inch	Identifier	Metric	Identifier
1/16	1	3mm	3M
1/8	2	4mm	4M
3/16	3	6mm	6M
1/4	4	8mm	8M
5/16	5	10mm	10M
3/8	6	12mm	12M
1/2	8	14mm	14M
5/8	10	15mm	15M
3/4	12	16mm	16M
7/8	14	20mm	20M
1	16	22mm	22M
1-1/4	20	25mm	25M
1-1/2	24	28mm	28M
2	32	32mm	32M
		38mm	38M
		50mm	50M

Pipe Thread Size Designator			
Nominal Pipe Size	Identifier	Nominal Pipe Size	Identifier
1/8	2	1	16
1/4	4	1-1/4	20
3/8	6	1-1/2	24
1/2	8	2	32
3/4	12		









Fitting Material Designator	
Body Material	Identifier
Stainless Steel 316	S6
Stainless Steel 316L	S6L
Stainless Steel 304	S4
Carbon Steel	CS
Brass	BS
Alloy 400	A400
Alloy 625	A625

Type	Taper Threads		Parallel Threads	
	R	N	G	U
Symbol				
Specification	ISO 7/1, BS21 (BSPT) JIS B 0203 (PT) DIN 2999	ASME B 1.20.1 (NPT)	ISO 228/1 BS 2779 (BSPP) JIS B 0202 (PF)	ASME B 1.1

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Male Run Tee

STRM



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Male Branch Tee

STBM



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Tube to Female Pipe

Female Connector

SCF



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Gauge Connector

SCG



43

Bulkhead Female Connector

SCBF



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Female Elbow

SLF



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Female Run Tee

STRF



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Female Branch Tee

STBF



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Stub Tube Connector

Reducer

SR



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Elbow Adapter

SLA



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Bulkhead Adapter

SAB



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Male Adapter

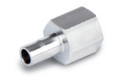
SAM



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Female Adapter

SAF



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Gauge Adapter

SAG



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Port Connector

SCP



56

Reducing Port Connector

SCRP









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Welding Bulkhead Union
SBUW



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Plug and Cap

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72

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Back Ferrule

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76

Gap Gauge for Pull-up Inspection

SIG



77

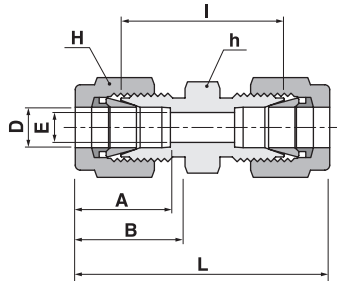
Liquid Gas Leak Detectors

S-detec



77

Union
SU



Connects fractional tube

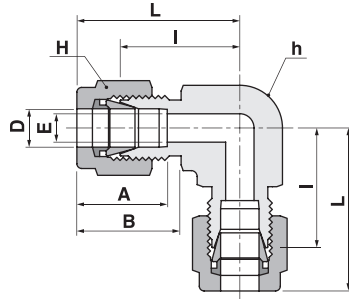
Part No.	Tube O.D		E Min	Width across flat				A	B	I	L
	D			h		H					
	in	mm		in	mm	in	mm				
SU-1	1/16	1.59	1.27	5/16	7.93	5/16	7.93	8.63	10.92	17.50	25.15
SU-2	1/8	3.17	2.28	7/16	11.11	7/16	11.11	12.70	15.24	22.35	35.56
SU-3	3/16	4.76	3.04	7/16	11.11	1/2	12.70	13.71	16.00	24.13	37.33
SU-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	26.16	40.89
SU-5	5/16	7.93	6.35	9/16	14.28	5/8	15.87	16.25	18.54	28.19	42.92
SU-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	30.22	44.95
SU-8	1/2	12.70	10.41	13/16	20.64	7/8	22.22	22.86	21.84	30.98	51.30
SU-10	5/8	15.87	12.70	15/16	23.81	1	25.40	24.38	21.84	31.75	52.07
SU-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	33.27	53.89
SU-14	7/8	22.22	18.28	1-3/16	30.16	1-1/4	31.75	25.90	21.84	35.05	55.37
SU-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	40.38	64.77
SU-20	1-1/4	31.75	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	48.00	92.20
SU-24	1-1/2	38.10	34.03	2-1/8	53.97	2-1/4	57.15	50.03	45.21	53.60	107.95
SU-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	74.70	149.35

Connects metric tube

Part No.	Tube O.D	E Min	Width across flat		A	B	I	L
	D		h	H				
SU-2M	2	1.7	12	12	12.9	15.3	22.1	35.6
SU-3M	3	2.4	12	12	12.9	15.3	22.1	35.3
SU-4M	4	2.4	12	12	13.7	16.1	24.1	37.3
SU-6M	6	4.8	14	14	15.3	17.7	26.2	41.0
SU-8M	8	6.4	15	16	16.2	18.6	28.2	43.2
SU-10M	10	7.9	18	19	17.2	19.5	31.0	46.2
SU-12M	12	9.5	22	22	22.8	22.0	31.0	51.2
SU-15M	15	11.9	24	25	24.4	22.0	31.8	52.0
SU-16M	16	12.7	24	25	24.4	22.0	31.8	52.0
SU-18M	18	15.1	27	30	24.4	22.0	33.3	53.5
SU-20M	20	15.9	30	32	26.0	22.0	34.8	55.0
SU-22M	22	18.3	30	32	26.0	22.0	34.8	55.0
SU-25M	25	21.8	35	38	31.3	26.5	40.4	65.0
SU-28M	28	21.8	41	46	36.6	36.6	43.4	85.0
SU-32M	32	28.6	46	50	42.0	41.6	51.3	97.3
SU-38M	38	33.7	55	60	49.4	47.9	58.4	113.6

Union Elbow

SL



Connects fractional tube

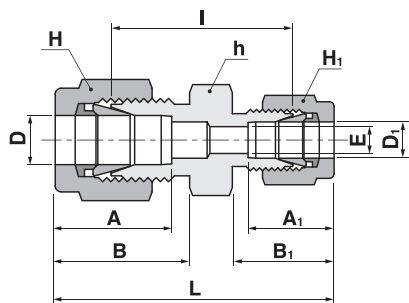
Part No.	Tube O.D		E Min	Width across flat				A	B	I	L
	D			h	H						
	in	mm			in	mm					
SL-1	1/16	1.59	1.27	3/8	9.52	5/16	7.93	8.63	10.92	14.00	17.88
SL-2	1/8	3.17	2.28	3/8	9.52	7/16	11.11	12.70	15.24	15.74	22.35
SL-3	3/16	4.76	3.04	1/2	12.70	1/2	12.70	13.71	16.00	17.78	24.35
SL-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92
SL-5	5/16	7.93	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70
SL-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48
SL-8	1/2	12.70	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06
SL-10	5/8	15.87	12.70	15/16	23.81	1	25.40	24.38	21.84	28.70	38.80
SL-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87
SL-14	7/8	22.22	18.28	1-1/4	31.75	1-1/4	31.75	25.90	21.84	34.54	44.70
SL-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02
SL-20	1-1/4	31.75	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54
SL-24	1-1/2	38.10	34.03	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97
SL-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18

Connects metric tube

Part No.	Tube O.D	E Min	Width across flat		A	B	I	L
	D		h	H				
SL-2M	2	1.7	9.5	12	12.9	15.3	15.7	22.3
SL-3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3
SL-4M	4	2.4	12.7	12	13.7	16.1	18.8	25.4
SL-6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0
SL-8M	8	6.4	14.3	16	16.2	18.6	21.3	28.8
SL-10M	10	7.9	17.5	19	17.2	19.5	23.9	31.5
SL-12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0
SL-15M	15	11.9	23.8	25	24.4	22.0	28.7	38.8
SL-16M	16	12.7	23.8	25	24.4	22.0	28.7	38.8
SL-18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8
SL-20M	20	15.9	31.8	32	26.0	22.0	34.5	42.6
SL-22M	22	18.3	31.8	32	26.0	22.0	34.5	42.6
SL-25M	25	21.8	34.9	38	31.3	26.5	36.8	49.1
SL-28M	28	21.8	41.0	46	36.6	36.6	43.2	64.0
SL-32M	32	28.6	46.0	50	42.0	41.6	49.3	72.3
SL-38M	38	33.7	55.0	60	49.4	47.9	56.4	84.0

Reducing Union

SUR

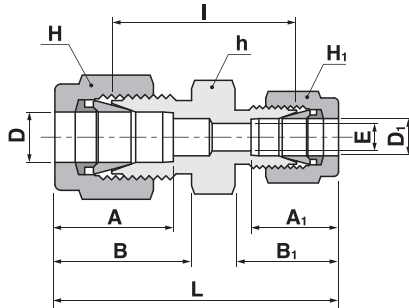


Connects fractional tube

Part No.	Tube O.D				E	Width across flat						A	A ₁	B	B ₁	I	L
	D		D ₁			h		H		H ₁							
	in	mm	in	mm		in	mm	in	mm	in	mm						
SUR-2-1	1/8	3.17	1/16	1.59	1.27	7/16	11.11	7/16	11.11	5/16	7.93	12.70	8.63	15.24	10.92	20.60	30.91
SUR-3-1	3/16	4.76	1/16	1.59	1.27	7/16	11.11	1/2	12.70	5/16	7.93	13.71	8.63	16.00	10.92	21.84	32.25
SUR-3-2	3/16	4.76	1/8	3.17	2.28	7/16	11.11	1/2	12.70	7/16	11.11	13.71	12.70	16.00	15.24	23.36	36.57
SUR-4-1	1/4	6.35	1/16	1.59	1.27	1/2	12.70	9/16	14.28	5/16	7.93	15.24	8.63	17.78	10.92	23.11	34.29
SUR-4-2	1/4	6.35	1/8	3.17	2.28	1/2	12.70	9/16	14.28	7/16	11.11	15.24	12.70	17.78	15.24	24.63	38.60
SUR-4-3	1/4	6.35	3/16	4.76	3.04	1/2	12.70	9/16	14.28	1/2	12.70	15.24	13.71	17.78	16.00	25.40	39.37
SUR-5-2	5/16	7.93	1/8	3.17	2.28	9/16	14.28	5/8	15.87	7/16	11.11	16.25	12.70	18.54	15.24	25.90	39.87
SUR-5-4	5/16	7.93	1/4	6.35	4.82	9/16	14.28	5/8	15.87	9/16	14.28	16.25	15.24	18.54	17.78	27.43	42.16
SUR-6-1	3/8	9.52	1/16	1.59	1.27	5/8	15.87	11/16	17.46	5/16	7.93	16.76	8.63	19.30	10.92	25.40	36.57
SUR-6-2	3/8	9.52	1/8	3.17	2.28	5/8	15.87	11/16	17.46	7/16	11.11	16.76	12.70	19.30	15.24	26.92	40.89
SUR-6-4	3/8	9.52	1/4	6.35	4.82	5/8	15.87	11/16	17.46	9/16	14.28	16.76	15.24	19.30	17.78	28.44	43.18
SUR-6-5	3/8	9.52	5/16	7.93	6.35	5/8	15.87	11/16	17.46	5/8	15.87	16.76	16.25	19.30	18.54	29.46	44.19
SUR-8-2	1/2	12.70	1/8	3.17	2.28	13/16	20.64	7/8	22.22	7/16	11.11	22.86	12.70	21.84	15.24	28.44	45.21
SUR-8-4	1/2	12.70	1/4	6.35	4.82	13/16	20.64	7/8	22.22	9/16	14.28	22.86	15.24	21.84	17.78	29.46	46.99
SUR-8-6	1/2	12.70	3/8	9.52	7.11	13/16	20.64	7/8	22.22	11/16	17.46	22.86	16.76	21.84	19.30	30.98	48.51
SUR-10-6	5/8	15.87	3/8	9.52	7.11	15/16	23.81	1	25.40	11/16	17.46	24.38	16.76	21.84	19.30	31.75	49.27
SUR-10-8	5/8	15.87	1/2	12.70	10.41	15/16	23.81	1	25.40	7/8	22.22	24.38	22.86	21.84	21.84	31.75	52.07
SUR-12-4	3/4	19.05	1/4	6.35	4.82	1-1/16	26.98	1-1/8	28.58	9/16	14.28	24.38	15.24	21.84	17.78	31.75	49.27
SUR-12-6	3/4	19.05	3/8	9.52	7.11	1-1/16	26.98	1-1/8	28.58	11/16	17.46	24.38	16.76	21.84	19.30	33.27	50.80
SUR-12-8	3/4	19.05	1/2	12.70	10.41	1-1/16	26.98	1-1/8	28.58	7/8	22.22	24.38	22.86	21.84	21.84	33.27	53.59
SUR-12-10	3/4	19.05	5/8	15.87	12.70	1-1/16	26.98	1-1/8	28.58	1	25.40	24.38	24.38	21.84	21.84	33.27	53.59
SUR-16-8	1	25.40	1/2	12.70	10.41	1-3/8	34.92	1-1/2	38.10	7/8	22.22	31.24	22.86	26.41	21.84	40.89	63.24
SUR-16-12	1	25.40	3/4	19.05	15.74	1-3/8	34.92	1-1/2	38.10	1-1/8	28.58	31.24	24.38	26.41	21.84	40.38	62.73

Reducing Union

SUR



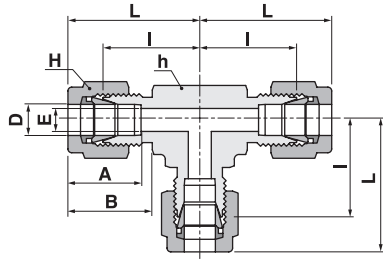
Connects metric tube

Part No.	Tube O.D		E	Width across flat			A	A ₁	B	B ₁	I	L
	D	D ₁		h	H	H ₁						
SUR-3M-2M	3	2	1.7	12	12	12	12.9	12.9	15.3	15.3	22.1	35.3
SUR-6M-2M	6	2	1.7	14	14	12	15.3	12.9	17.7	15.3	24.6	38.6
SUR-6M-3M	6	3	2.4	14	14	12	15.3	12.9	17.7	15.3	24.6	38.6
SUR-6M-4M	6	4	2.4	14	14	12	15.3	13.7	17.7	16.1	25.4	39.4
SUR-8M-6M	8	6	4.8	15	16	14	16.2	15.3	18.6	17.7	27.4	42.3
SUR-10M-6M	10	6	4.8	18	19	14	17.2	15.3	19.5	17.7	29.5	44.5
SUR-10M-8M	10	8	6.4	18	19	16	17.2	16.2	19.5	18.6	30.3	45.1
SUR-12M-6M	12	6	4.8	22	22	14	22.8	15.3	22.0	17.7	29.5	47.0
SUR-12M-8M	12	8	6.4	22	22	16	22.8	16.2	22.0	18.6	30.2	47.8
SUR-12M-10M	12	10	7.9	22	22	19	22.8	17.2	22.0	19.5	31.0	48.7
SUR-16M-10M	16	10	7.9	24	25	19	24.4	17.2	22.0	19.5	31.8	49.5
SUR-16M-12M	16	12	9.5	24	25	22	24.4	22.8	22.0	22.0	31.8	52.0
SUR-18M-12M	18	12	9.5	27	30	22	24.4	22.8	22.0	22.0	33.3	53.5
SUR-25M-18M	25	18	15.1	35	38	30	31.3	24.4	26.5	22.0	38.6	61.0
SUR-25M-20M	25	20	15.9	35	38	32	31.3	26.0	26.5	22.0	39.9	62.3

Connects metric tube to fractional tube

Part No.	Tube O.D			E	Width across flat			A	A ₁	B	B ₁	I	L
	D	D ₁			h	H	H ₁						
		in	mm										
SUR-3M-2	3	1/8	3.17	2.4	12	12	11.1	12.9	12.8	15.3	15.2	22.1	35.2
SUR-4M-2	4	1/8	3.17	2.4	12	12	11.1	13.7	12.8	16.1	15.2	23.4	36.5
SUR-4M-4	4	1/4	6.35	2.4	14	12	14.3	13.7	15.3	16.1	17.7	25.4	39.4
SUR-6M-2	6	1/8	3.17	2.4	14	14	11.1	15.3	12.8	17.7	15.2	24.6	38.5
SUR-6M-4	6	1/4	6.35	4.8	14	14	14.3	15.3	15.8	17.7	17.7	26.2	41.0
SUR-6M-5	6	5/16	7.93	4.8	14	14	15.9	15.3	16.2	17.7	18.6	27.4	42.3
SUR-8M-4	8	1/4	6.35	4.8	15	16	14.3	16.2	15.3	18.6	17.7	27.4	42.3
SUR-10M-2	10	1/8	3.17	2.4	18	19	11.1	17.2	12.8	19.5	15.2	27.7	41.8
SUR-10M-4	10	1/4	6.35	4.8	18	19	14.3	17.2	15.3	19.5	17.7	29.5	44.5
SUR-10M-5	10	5/16	7.93	6.4	18	19	15.9	17.2	16.2	19.5	18.6	30.3	45.1
SUR-10M-6	10	3/8	9.52	7.1	18	19	17.5	17.2	16.9	19.5	18.6	31.0	45.9
SUR-12M-5	12	5/16	7.93	6.4	22	22	15.9	22.8	16.2	22.0	18.6	30.2	47.8
SUR-12M-6	12	3/8	9.52	7.1	22	22	17.5	22.8	16.9	22.0	19.2	31.0	48.4
SUR-12M-8	12	1/2	12.70	9.5	22	22	22.2	22.8	22.8	22.0	22.0	31.0	51.2
SUR-15M-8	15	1/2	12.70	10.3	24	25	22.2	24.4	22.8	22.0	22.0	31.8	52.0
SUR-16M-10	16	5/8	19.05	12.7	24	25	25.4	24.4	24.4	22.0	22.0	31.8	52.0
SUR-18M-12	18	3/4	19.05	15.1	27	30	28.6	24.4	24.4	22.0	22.0	33.3	53.5
SUR-20M-12	20	3/4	19.05	15.9	30	32	28.6	26.0	24.4	22.0	22.0	34.8	54.9
SUR-20M-16	20	1	25.40	15.9	34.9	32	38.1	26.0	31.2	22.0	26.4	38.0	60.3
SUR-22M-16	22	1	25.40	18.3	34.9	32	38.1	26.0	31.2	22.0	26.4	38.2	60.3

Union Tee
ST



Connects fractional tube

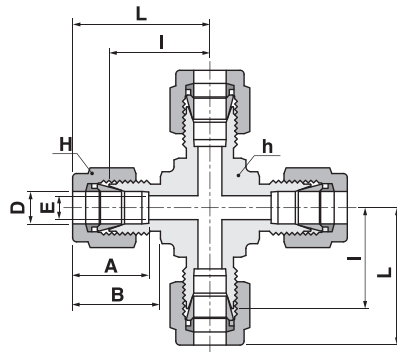
Part No.	Tube O.D		E Min.	Width across flat				A	B	I	L
	D			h		H					
	in	mm		in	mm	in	mm				
ST-1	1/16	1.59	1.27	3/8	9.52	5/16	7.93	8.63	10.92	14.00	17.88
ST-2	1/8	3.17	2.28	3/8	9.52	7/16	11.11	12.70	15.24	15.74	22.35
ST-3	3/16	4.76	3.04	1/2	12.70	1/2	12.70	13.71	16.00	17.78	24.35
ST-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92
ST-5	5/16	7.93	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70
ST-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48
ST-8	1/2	12.70	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06
ST-10	5/8	15.87	12.70	15/16	23.81	1	25.40	24.38	21.84	28.70	38.80
ST-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87
ST-14	7/8	22.22	18.28	1-1/4	31.75	1-1/4	31.75	25.90	21.84	34.54	44.70
ST-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02
ST-20	1-1/4	31.75	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54
ST-24	1-1/2	38.10	34.03	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97
ST-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18

Connects metric tube

Part No.	Tube O.D		E Min.	Width across flat		A	B	I	L
	D			h	H				
ST-2M	2		1.7	9.5	12	12.9	15.3	15.7	22.3
ST-3M	3		2.4	9.5	12	12.9	15.3	15.7	22.3
ST-4M	4		2.4	12.7	12	13.7	16.1	18.8	25.4
ST-6M	6		4.8	12.7	14	15.3	17.7	19.6	27.0
ST-8M	8		6.4	14.3	16	16.2	18.6	21.3	28.8
ST-10M	10		7.9	17.5	19	17.2	19.5	23.9	31.5
ST-12M	12		9.5	20.6	22	22.8	22.0	25.9	36.0
ST-15M	15		11.9	23.8	25	24.4	22.0	28.7	38.8
ST-16M	16		12.7	23.8	25	24.4	22.0	28.7	38.8
ST-18M	18		15.1	27.0	30	24.4	22.0	29.7	39.8
ST-20M	20		15.9	31.8	32	26.0	22.0	34.5	42.6
ST-22M	22		18.3	31.8	32	26.0	22.0	34.5	42.6
ST-25M	25		21.8	34.9	38	31.3	26.5	36.8	49.1
ST-28M	28		21.8	41.0	46	36.6	36.6	43.2	64.0
ST-32M	32		28.6	46.0	50	42.0	41.6	49.3	72.3
ST-38M	38		33.7	55.0	60	49.4	47.9	56.4	84.0

Union Cross

SX



Connects fractional tube

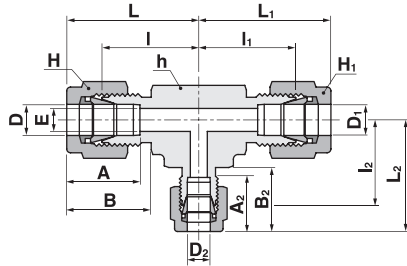
Part No.	Tube O.D		E	Width across flat				A	B	I	L
	D			h	H						
	in	mm			in	mm					
SX-1	1/16	1.59	1.27	3/8	9.52	5/16	7.93	8.63	10.92	14.00	17.88
SX-2	1/8	3.17	2.28	3/8	9.52	7/16	11.11	12.70	15.24	15.74	22.35
SX-3	3/16	4.76	3.04	1/2	12.70	1/2	12.70	13.71	16.00	17.78	24.35
SX-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92
SX-5	5/16	7.93	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70
SX-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48
SX-8	1/2	12.70	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06
SX-10	5/8	15.87	12.70	15/16	23.81	1	25.40	24.38	21.84	28.70	38.80
SX-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87
SX-14	7/8	22.22	18.28	1-1/4	31.75	1-1/4	31.75	25.90	21.84	34.54	44.70
SX-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02
SX-20	1-1/4	31.75	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54
SX-24	1-1/2	38.10	34.03	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97
SX-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18

Connects metric tube

Part No.	Tube O.D	E	Width across flat		A	B	I	L
	D		Min.	h				
SX-2M	2	1.7	9.5	12	12.9	15.3	15.7	22.3
SX-3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3
SX-4M	4	2.4	12.7	12	13.7	16.1	18.8	25.4
SX-6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0
SX-8M	8	6.4	14.3	16	16.2	18.6	21.3	28.8
SX-10M	10	7.9	17.5	19	17.2	19.5	23.9	31.5
SX-12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0
SX-15M	15	11.9	27.0	25	24.4	22.0	28.7	38.8
SX-16M	16	12.7	27.0	25	24.4	22.0	28.7	38.8
SX-18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8
SX-20M	20	15.9	31.8	32	26.0	22.0	34.5	42.6
SX-22M	22	18.3	31.8	32	26.0	22.0	34.5	42.6
SX-25M	25	21.8	34.9	38	31.3	26.5	36.8	49.1
SX-28M	28	21.8	41.0	46	36.6	36.6	43.2	64.0
SX-32M	32	28.6	46.0	50	42.0	41.6	49.3	72.3
SX-38M	38	33.7	55.0	60	49.4	47.9	56.4	84.0

Reducing Union Tee

STR

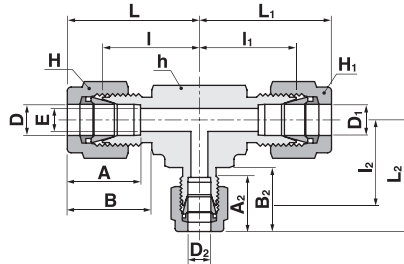


Connects fractional tube

Part No.	Tube O.D							Width across flat																						
	D		D ₁		D ₂		E	A	A ₁	A ₂	B	B ₁	B ₂	h				H				I								
	in	mm	in	mm	in	mm	Min.							in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
STR-4-2	1/4	6.35	1/4	6.35	1/8	3.17	2.28	15.24	15.24	12.70	17.78	17.78	15.24	1/2	12.70	9/16	14.28	9/16	14.28	7/16	11.11	19.55	19.55	17.90	26.91	26.91	24.50			
STR-4-6	1/4	6.35	1/4	6.35	3/8	9.52	4.82	15.24	15.24	16.76	17.78	17.78	19.30	5/8	15.87	9/16	14.28	9/16	14.28	11/16	17.46	21.92	21.92	23.10	29.28	29.28	30.46			
STR-4-8-8	1/4	6.35	1/2	12.70	1/2	12.70	4.82	15.24	22.86	22.86	17.78	21.84	21.84	13/16	20.64	9/16	14.28	7/8	22.22	7/8	22.22	24.40	25.90	25.90	31.76	36.06	36.06			
STR-6-4-6	3/8	9.52	1/4	6.35	3/8	9.52	4.82	16.76	15.24	16.76	19.30	17.78	19.30	5/8	15.87	11/16	17.46	9/16	14.28	11/16	17.46	23.10	21.92	23.10	30.46	29.28	30.46			
STR-6-4	3/8	9.52	3/8	9.52	1/4	6.35	4.82	16.76	16.76	15.24	19.30	19.30	17.78	5/8	15.87	11/16	17.46	11/16	17.46	9/16	14.28	23.10	23.10	21.92	30.46	30.46	29.28			
STR-6-8	3/8	9.52	3/8	9.52	1/2	12.70	7.11	16.76	16.76	22.86	19.30	19.30	21.84	13/16	20.64	11/16	17.46	11/16	17.46	7/8	22.22	25.90	25.90	25.90	33.26	33.26	36.06			
STR-8-4-6	1/2	12.70	1/4	6.35	3/8	9.52	4.82	22.86	15.24	16.76	21.84	17.78	19.30	13/16	20.64	7/8	22.22	9/16	14.28	11/16	17.46	25.90	25.90	25.90	36.06	33.26	33.26			
STR-8-4-8	1/2	12.70	1/4	6.35	1/2	12.70	4.82	22.86	15.24	22.86	21.84	17.78	21.84	13/16	20.64	7/8	22.22	9/16	14.28	7/8	22.22	25.90	24.40	25.90	36.06	31.76	36.06			
STR-8-6-6	1/2	12.70	3/8	9.52	3/8	9.52	7.11	22.86	16.76	16.76	21.84	19.30	19.30	13/16	20.64	7/8	22.22	11/16	17.46	11/16	17.46	25.90	25.90	25.90	36.06	33.26	33.26			
STR-8-4	1/2	12.70	1/2	12.70	1/4	6.35	4.82	22.86	22.86	15.24	21.84	21.84	17.78	13/16	20.64	7/8	22.22	7/8	22.22	9/16	14.28	25.90	25.90	24.40	36.06	36.06	31.76			
STR-8-6	1/2	12.70	1/2	12.70	3/8	9.52	7.11	22.86	22.86	16.76	21.84	21.84	19.30	13/16	20.64	7/8	22.22	7/8	22.22	11/16	17.46	25.90	25.90	25.90	36.06	36.06	33.26			
STR-10-6	5/8	15.87	5/8	15.87	3/8	9.52	7.11	24.38	24.38	16.76	21.84	21.84	19.30	15/16	23.81	1	25.40	1	25.40	11/16	17.46	28.70	28.70	28.70	38.86	38.86	36.06			
STR-12-8-12	3/4	19.05	1/2	12.70	3/4	19.05	10.41	24.38	22.86	24.38	21.84	21.84	21.84	1-1/16	26.98	1-1/8	28.58	7/8	22.22	1-1/8	28.58	29.71	29.71	29.71	39.87	39.87	39.87			
STR-12-4	3/4	19.05	3/4	19.05	1/4	6.35	4.82	24.38	24.38	15.24	21.84	21.84	17.78	1-1/16	26.98	1-1/8	28.58	1-1/8	28.58	9/16	14.28	29.71	29.71	28.21	39.87	39.87	35.57			
STR-12-6	3/4	19.05	3/4	19.05	3/8	9.52	7.11	24.38	24.38	16.76	21.84	21.84	19.30	1-1/16	26.98	1-1/8	28.58	1-1/8	28.58	11/16	17.46	29.71	29.71	29.71	39.87	39.87	35.57			
STR-12-8	3/4	19.05	3/4	19.05	1/2	12.70	10.41	24.38	24.38	22.86	21.84	21.84	21.84	1-1/16	26.98	1-1/8	28.58	1-1/8	28.58	7/8	22.22	29.71	29.71	29.71	39.87	39.87	38.37			
STR-12-16	3/4	19.05	3/4	19.05	1	25.40	15.74	24.38	24.38	31.24	21.84	21.84	26.41	1-3/8	34.92	1-1/8	28.58	1-1/8	28.58	1-1/2	38.10	34.43	34.43	36.83	49.02	49.02	45.70			
STR-12-20	3/4	19.05	3/4	19.05	1-1/4	31.75	15.74	24.38	24.38	41.14	21.84	21.84	38.86	1-11/16	42.86	1-1/8	28.58	1-1/8	28.58	1-7/8	47.63	39.41	39.41	44.45	49.57	49.57	66.55			
STR-14-8	7/8	22.22	7/8	22.22	1/2	12.70	10.41	25.90	25.90	22.86	21.84	21.84	21.84	1-1/4	31.75	1-1/4	31.75	1-1/4	31.75	7/8	22.22	34.54	34.54	34.54	44.70	44.70	44.70			
STR-16-12-12	1	25.40	3/4	19.05	3/4	19.05	15.74	31.24	24.38	24.38	26.41	21.84	21.84	1-3/8	34.92	1-1/2	38.10	1-1/8	28.58	1-1/8	28.58	36.83	35.54	35.54	49.02	45.70	45.70			
STR-16-4	1	25.40	1	25.40	1/4	6.35	4.82	31.24	31.24	15.24	26.41	26.41	17.78	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	9/16	14.28	36.83	36.83	33.04	49.02	49.02	40.40			
STR-16-6	1	25.40	1	25.40	3/8	9.52	7.11	31.24	31.24	16.76	26.41	26.41	19.30	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	11/16	17.46	36.83	36.83	34.54	49.02	49.02	41.90			
STR-16-8	1	25.40	1	25.40	1/2	12.70	10.41	31.24	31.24	22.86	26.41	26.41	21.84	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	7/8	22.22	36.83	36.83	34.54	49.02	49.02	44.70			
STR-16-12	1	25.40	1	25.40	3/4	19.05	15.74	31.24	31.24	24.38	26.41	26.41	21.84	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	1-1/8	28.58	36.83	36.83	35.54	49.02	49.02	45.70			
STR-20-12-12	1-1/4	31.75	3/4	19.05	3/4	19.05	15.74	41.14	24.38	24.38	38.86	21.84	21.84	1-11/16	42.86	1-7/8	47.63	1-1/8	28.58	1-1/8	28.58	44.45	39.41	39.41	66.55	49.57	49.57			
STR-20-12	1-1/4	31.75	1-1/4	31.75	3/4	19.05	15.74	41.14	41.14	24.38	38.86	38.86	21.84	1-11/16	42.86	1-7/8	47.63	1-7/8	47.63	1-1/8	28.58	44.45	44.45	39.41	66.55	66.55	49.57			
STR-24-20-20	1-1/2	38.10	1-1/4	31.75	1-1/4	31.75	27.68	50.03	41.14	41.14	45.21	38.86	38.86	2	50.80	2-1/4	57.15	1-7/8	47.63	1-7/8	47.63	50.80	49.62	49.62	77.97	71.72	71.72			
STR-24-8	1-1/2	38.10	1-1/2	38.10	1/2	12.70	10.41	50.03	50.03	22.86	45.21	45.21	21.84	2	50.80	2-1/4	57.15	2-1/4	57.15	7/8	22.22	50.80	50.80	44.58	77.97	77.97	54.74			
STR-24-12	1-1/2	38.10	1-1/2	38.10	3/4	19.05	15.74	50.03	50.03	24.38	45.21	45.21	21.84	2	50.80	2-1/4	57.15	2-1/4	57.15	1-1/8	28.58	50.80	50.80	44.58	77.97	77.97	54.74			
STR-24-16	1-1/2	38.10	1-1/2	38.10	1	25.40	22.35	50.03	50.03	31.24	45.21	45.21	26.41	2	50.80	2-1/4	57.15	2-1/4	57.15	1-1/2	38.10	50.80	50.80	47.75	77.97	77.97	59.94			

Reducing Union Tee

STR

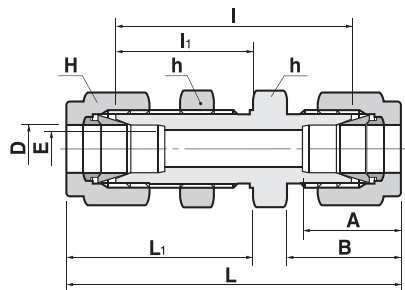


Connects metric tube

Part No.	Tube O.D			E Min.	A	A ₁	A ₂	B	B ₁	B ₂	Width across flat				I	I ₁	I ₂	L	L ₁	L ₂
	D	D ₁	D ₂								h	H	H ₁	H ₂						
STR-3M-6M	3	3	6	2.4	12.9	12.9	15.3	15.3	15.3	17.7	12.7	12	12	14	18.0	18.0	19.6	24.6	24.6	27.0
STR-8M-6M	8	8	6	4.8	16.2	16.2	15.3	18.6	18.6	17.7	15.0	16	16	14	21.3	21.3	20.5	28.8	28.8	28.0
STR-10M-6M	10	10	6	4.8	17.2	17.2	15.3	19.5	19.5	17.7	17.4	19	19	14	23.9	23.9	22.4	31.5	31.5	29.8
STR-10M-12M	10	10	12	7.9	17.2	17.2	22.8	19.5	19.5	22.0	20.6	19	19	22	25.9	25.9	25.9	33.5	33.5	36.0
STR-12M-6M-10M	12	6	10	4.8	22.8	15.3	17.2	22.0	17.7	19.5	20.6	22	14	19	25.9	24.4	25.9	36.0	31.8	33.5
STR-12M-6M-12M	12	6	12	4.8	22.8	15.3	22.8	22.0	17.7	22.0	20.6	22	14	22	25.9	24.4	25.9	36.0	31.8	36.0
STR-12M-10M-10M	12	10	10	7.9	22.8	17.2	17.2	22.0	19.5	19.5	20.6	22	19	19	25.9	25.9	25.9	36.0	33.5	33.5
STR-12M-10M	12	12	10	7.9	22.8	22.8	17.2	22.0	22.0	19.5	20.6	22	22	19	25.9	25.9	25.9	36.0	36.0	33.5
STR-12M-6M	12	12	6	4.8	22.8	22.8	15.3	22.0	22.0	17.7	20.6	22	22	14	25.9	25.9	24.4	36.0	36.0	31.8
STR-15M-12M	15	15	12	9.8	24.4	24.4	22.8	28.7	28.7	22.0	23.8	25	25	22	28.7	28.7	28.7	38.8	38.8	38.8
STR-16M-12M	16	16	12	9.8	24.4	24.4	22.8	28.7	28.7	22.0	23.8	25	25	22	28.7	28.7	28.7	38.8	38.8	38.8
STR-18M-12M	18	18	12	9.8	24.4	24.4	22.8	29.7	29.7	22.0	27.0	30	30	22	29.7	29.7	29.5	39.8	39.8	39.6
STR-20M-12M-20M	20	12	20	9.8	26.0	22.8	26.0	34.5	22.0	34.5	34.9	32	22	32	32.5	32.5	32.5	42.6	42.6	42.6
STR-20M-6M	20	20	6	4.8	26.0	26.0	15.3	34.5	34.5	17.7	34.9	32	32	14	32.5	32.5	31.0	42.6	42.6	38.4
STR-20M-10M	20	20	10	7.9	26.0	26.0	17.2	34.5	34.5	19.5	34.9	32	32	19	32.5	32.5	32.5	42.6	42.6	40.1
STR-20M-12M	20	20	12	9.8	26.0	26.0	22.8	34.5	34.5	22.0	34.9	32	32	22	32.5	32.5	32.5	42.6	42.6	42.6
STR-20M-25M	20	20	25	15.9	26.0	26.0	31.3	34.5	34.5	26.5	34.9	32	32	38	34.3	34.3	36.8	44.4	44.4	49.1
STR-20M-32M	20	20	32	15.9	26.0	26.0	42.0	34.5	34.5	41.6	46.0	32	32	50	42.5	42.5	49.3	52.6	52.6	72.3
STR-22M-12M	22	22	12	9.8	26.0	26.0	22.8	34.5	34.5	22.0	34.9	32	32	22	32.5	32.5	32.5	42.6	42.6	42.6
STR-25M-20M-20M	25	20	20	15.9	31.3	26.0	26.0	26.5	34.5	34.5	34.9	38	32	32	36.8	34.3	34.3	49.1	44.4	44.4
STR-25M-10M	25	25	10	7.9	31.3	31.3	17.2	26.5	26.5	19.5	34.9	38	38	19	36.8	36.8	34.3	49.1	49.1	38.9
STR-25M-12M	25	25	12	9.8	31.3	31.3	22.8	26.5	26.5	22.0	34.9	38	38	22	36.8	36.8	34.3	49.1	49.1	44.4
STR-25M-20M	25	25	20	15.9	31.3	31.3	26.0	26.5	26.5	34.5	34.9	38	38	32	36.8	36.8	34.3	49.1	49.1	44.4
STR-32M-20M	32	32	20	15.9	42.0	42.0	26.0	41.6	41.6	34.5	46.0	38	38	32	49.3	49.3	42.5	72.3	72.3	52.6
STR-38M-32M-32M	38	32	32	28.6	49.4	42.0	42.0	47.9	41.6	41.6	50.8	60	38	38	56.4	54.7	54.7	84.0	77.7	77.7
STR-38M-20M	38	38	20	15.9	49.4	49.4	26.0	47.9	47.9	34.5	50.8	60	60	32	56.4	56.4	47.9	84.0	84.0	58.0
STR-38M-25M	38	38	25	21.8	49.4	49.4	31.3	47.9	47.9	26.5	50.8	60	60	38	56.4	56.4	50.4	84.0	84.0	62.7

Bulkhead Union

SUB



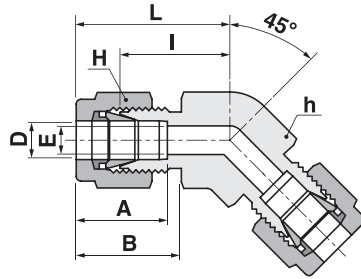
Connects fractional tube

Part No.	Tube O.D.		E	Width across flat				A	B	I	I ₁	L	L ₁	Panel Hole Drill Size	Panel Max. Thickness
	D			h		H									
	in	mm		in	mm	in	mm								
SUB-1	1/16	1.59	1.27	5/16	7.93	5/16	7.93	8.63	10.92	23.87	13.46	31.50	17.27	5.16	3.05
SUB-2	1/8	3.17	2.28	1/2	12.70	7/16	11.11	12.70	15.24	38.10	24.63	51.30	31.24	8.33	12.70
SUB-3	3/16	4.76	3.04	9/16	14.28	1/2	12.70	13.71	16.00	40.38	25.40	53.59	32.00	9.92	12.70
SUB-4	1/4	6.35	4.82	5/8	15.87	9/16	14.28	15.24	17.78	42.92	26.16	57.65	33.52	11.50	10.16
SUB-5	5/16	7.93	6.35	11/16	17.46	5/8	15.87	16.25	18.54	45.97	28.44	60.70	35.81	13.09	11.17
SUB-6	3/8	9.52	7.11	3/4	19.05	11/16	17.46	16.76	19.30	47.49	29.46	62.23	36.83	14.68	11.17
SUB-8	1/2	12.70	10.41	15/16	23.81	7/8	22.22	22.86	21.84	50.80	31.75	71.10	41.91	19.44	12.70
SUB-10	5/8	15.87	12.70	1-1/16	26.98	1	25.40	24.38	21.84	52.32	32.51	72.64	42.67	22.62	12.70
SUB-12	3/4	19.05	15.74	1-3/16	30.16	1-1/8	28.58	24.38	21.84	58.67	37.33	78.99	47.49	25.79	16.76
SUB-14	7/8	22.22	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	64.26	42.92	84.58	53.08	28.97	19.05
SUB-16	1	25.40	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	71.37	45.21	95.75	57.40	33.73	19.05
SUB-20	1-1/4	31.75	27.68	1-7/8	47.63	1-7/8	47.63	41.14	38.86	78.99	47.75	123.19	69.85	41.67	19.05
SUB-24	1-1/2	38.10	34.03	2-1/4	57.15	2-1/4	57.15	50.03	45.21	84.83	49.27	139.19	76.45	49.61	19.05
SUB-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	105.66	56.38	180.34	93.72	57.94	19.05

Connects metric tube

Part No.	Tube O.D.		E	Width across flat		A	B	I	I ₁	L	L ₁	Panel Hole Drill Size	Panel Max. Thickness
	D			h									
	mm	Min.		mm	mm								
SUB-3M	3	2.4	14	12	12.9	15.3	38.1	24.6	51.3	31.2	8.3	12.7	
SUB-4M	4	2.4	14	12	13.7	16.1	40.4	25.4	53.6	32.0	9.9	12.7	
SUB-6M	6	4.8	16	14	15.3	17.7	42.9	26.2	57.7	33.6	11.5	10.2	
SUB-8M	8	6.4	18	16	16.2	18.6	46.0	28.6	61.0	36.1	13.1	11.2	
SUB-10M	10	7.9	22	19	17.2	19.5	48.5	29.4	63.7	37.0	16.2	11.2	
SUB-12M	12	9.5	24	22	22.8	22.0	50.8	31.8	71.0	41.9	19.5	12.7	
SUB-15M	15	11.9	27	25	24.4	22.0	52.3	32.5	72.5	42.6	22.8	12.7	
SUB-16M	16	12.7	27	25	24.4	22.0	52.3	32.5	72.5	42.6	22.8	12.7	
SUB-18M	18	15.1	30	30	24.4	22.0	58.7	37.3	78.9	47.4	26.0	16.8	
SUB-20M	20	15.9	35	32	26.0	22.0	64.3	42.9	84.5	53.0	29.0	17.0	
SUB-22M	22	18.3	35	32	26.0	22.0	64.3	42.9	84.5	53.0	29.0	19.1	
SUB-25M	25	21.8	41	38	31.3	26.5	71.4	45.2	95.9	57.5	33.7	19.1	
SUB-32M	32	28.6	50	50	42.0	41.6	82.3	49.5	128.3	72.5	42.5	19.0	
SUB-38M	38	33.7	60	60	49.4	47.9	89.4	51.5	144.6	79.1	50.5	19.0	

45° Union Elbow

SLBU*Connects fractional tube*

Part No.	Tube O.D		E	Width across flat				A	B	I	L
	D			h		H					
	in	mm	Min.	in	mm	in	mm				
SLBU-4	1/4	6.35	4.82	1/2	12.7	9/16	14.28	15.24	17.78	17.27	24.63
SLBU-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	20.60	27.94
SLBU-8	1/2	12.7	10.41	13/16	20.64	7/8	22.22	22.86	22.00	21.80	32.00
SLBU-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.58	24.20	21.70	21.80	31.70
SLBU-16	1	25.4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	28.20	40.40
*SLBU-20	1-1/4	31.75	27.68	1-11/16	42.86	1-7/8	47.63	41.00	38.88	44.50	66.50
*SLBU-24	1-1/2	38.1	34.03	2	50.8	2-1/4	57.15	50.38	45.40	50.00	77.40
*SLBU-32	2	50.8	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18

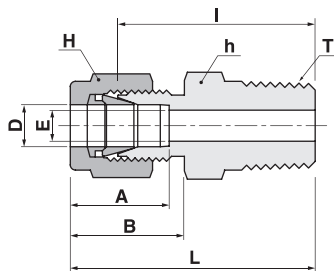
*Approval Drawing Required

Connects metric tube

Part No.	Tube O.D	E	Width across flat		A	B	I	L
	D		Min.	h				
SLBU-4M	4	2.4	12.7	12	13.7	16.0	18.0	24.5
SLBU-6M	6	4.8	12.7	14	15.3	17.6	19.0	26.3
SLBU-12M	12	9.5	20.6	22	22.9	22.0	20.6	30.8
SLBU-15M	15	11.9	27	25	24.3	22.0	22.8	32.8
SLBU-18M	18	15.1	27	30	24.4	22.0	24.4	34.5
SLBU-20M	20	15.9	34.9	32	26.0	22.0	26.2	36.1
SLBU-25M	25	21.8	34.9	38	31.3	26.5	28.2	40.5
SLBU-38M	38	33.7	55	60	49.4	47.9	50.0	77.6

Male Connector

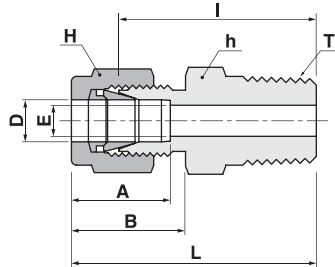
SMC-N



Connects fractional tube to female NPT thread

Part No.	Tube O.D.		T N(NPT)	E Min.	Width across flat				A	B	I	L
	D				h		H					
	in	mm			in	mm	in	mm				
SMC-1-1N	1/16	1.59	1/16	1.27	5/16	7.93	5/16	7.93	8.63	10.92	20.00	23.83
SMC-1-2N	1/16	1.59	1/8	1.27	7/16	11.11	5/16	7.93	8.63	10.92	22.35	26.23
SMC-1-4N	1/16	1.59	1/4	1.27	9/16	14.28	5/16	7.93	8.63	10.92	27.17	30.98
SMC-2-1N	1/8	3.17	1/16	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.11	29.71
SMC-2-2N	1/8	3.17	1/8	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.87	30.48
SMC-2-4N	1/8	3.17	1/4	2.28	9/16	14.28	7/16	11.11	12.70	15.24	28.95	35.56
SMC-2-6N	1/8	3.17	3/8	2.28	11/16	17.46	7/16	11.11	12.70	15.24	29.21	35.38
SMC-2-8N	1/8	3.17	1/2	2.28	7/8	22.22	7/16	11.11	12.70	15.24	35.56	42.16
SMC-3-2N	3/16	4.76	1/8	3.04	7/16	11.11	1/2	12.70	13.71	16.00	24.63	31.24
SMC-3-4N	3/16	4.76	1/4	3.04	9/16	14.28	1/2	12.70	13.71	16.00	29.71	36.32
SMC-4-1N	1/4	6.35	1/16	4.82	1/2	12.70	9/16	14.28	15.24	17.78	25.40	32.76
SMC-4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	25.40	32.76
SMC-4-4N	1/4	6.35	1/4	4.82	9/16	14.28	9/16	14.28	15.24	17.78	30.48	37.84
SMC-4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	30.98	38.35
SMC-4-8N	1/4	6.35	1/2	4.82	7/8	22.22	9/16	14.28	15.24	17.78	37.33	44.70
SMC-4-12N	1/4	6.35	3/4	4.82	1-1/6	26.98	9/16	14.28	15.24	17.78	38.86	46.22
SMC-5-2N	5/16	7.93	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	26.67	34.03
SMC-5-4N	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	31.24	38.60
SMC-5-6N	5/16	7.93	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	31.75	39.11
SMC-5-8N	5/16	7.93	1/2	6.35	7/8	22.22	5/8	15.87	16.25	18.54	38.11	45.60
SMC-6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	27.94	35.30
SMC-6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	32.51	39.87
SMC-6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	32.51	39.87
SMC-6-8N	3/8	9.52	1/2	7.11	7/8	22.22	11/16	17.46	16.76	19.30	38.86	46.22
SMC-6-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	40.38	47.75
SMC-8-2N	1/2	12.70	1/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	28.70	38.86
SMC-8-4N	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	33.27	43.43
SMC-8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	33.27	43.43
SMC-8-8N	1/2	12.70	1/2	10.41	7/8	22.22	7/8	22.22	22.86	21.84	38.86	49.02
SMC-8-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	40.38	50.54
SMC-8-16N	1/2	12.70	1	10.41	1-3/8	34.92	7/8	22.22	22.86	21.84	46.99	57.15
SMC-10-6N	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	34.03	44.19
SMC-10-8N	5/8	15.87	1/2	12.70	15/16	23.81	1	25.40	24.38	21.84	38.86	49.02
SMC-10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	40.38	50.54
SMC-12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	40.38	50.54
SMC-12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	40.38	50.54
SMC-12-16N	3/4	19.05	1	15.74	1-3/8	34.92	1-1/8	28.58	24.38	21.84	46.99	57.15
SMC-14-12N	7/8	22.22	3/4	18.28	1-3/16	30.16	1-1/4	31.75	25.90	21.84	40.38	50.54
SMC-14-16N	7/8	22.22	1	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	46.99	57.15
SMC-16-8N	1	25.40	1/2	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	45.21	57.40
SMC-16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	45.21	57.40
SMC-16-16N	1	25.40	1	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	50.03	62.23
SMC-20-16N	1-1/4	31.75	1	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	55.11	77.21
SMC-20-20N	1-1/4	31.75	1-1/4	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	55.11	77.21
SMC-20-24N	1-1/4	31.75	1-1/2	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	60.54	82.64
SMC-24-20N	1-1/2	38.10	1-1/4	34.03	2-1/8	53.98	2-1/4	57.15	50.03	45.21	59.42	86.60
SMC-24-24N	1-1/2	38.10	1-1/2	34.03	2-1/8	53.98	2-1/4	57.15	50.03	45.21	61.72	88.90
SMC-24-32N	1-1/2	38.10	2	34.03	2-3/4	69.85	2-1/4	57.15	50.03	45.21	62.42	99.75
SMC-32-8N	2	50.80	1/2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	68.40	105.73
SMC-32-20N	2	50.80	1-1/4	45.97	2-3/4	69.85	3	76.20	67.56	62.73	71.40	108.73
SMC-32-24N	2	50.80	1-1/2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	75.50	112.83
SMC-32-32N	2	50.80	2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	76.20	113.53

Male Connector

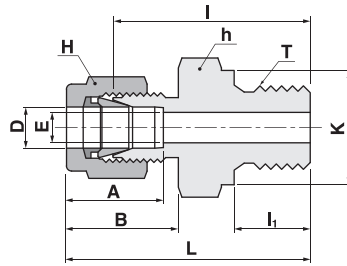
SMC-R

Connects metric tube to female ISO taper thread

Part No.	Tube O.D	T	E	Width across flat		A	B	I	L
	D	R(PT)	Min.	h	H				
SMC-2M-2R	2	1/8	1.7	12	12	12.9	15.3	23.1	29.7
SMC-3M-2R	3	1/8	2.4	12	12	12.9	15.3	23.1	29.7
SMC-3M-4R	3	1/4	2.4	14	12	12.9	15.3	29.0	35.6
SMC-4M-2R	4	1/8	2.4	12	12	13.7	16.1	24.6	31.2
SMC-4M-4R	4	1/4	2.4	14	12	13.7	16.1	29.7	36.3
SMC-6M-2R	6	1/8	4.8	14	14	15.3	17.7	25.4	32.8
SMC-6M-4R	6	1/4	4.8	14	14	15.3	17.7	30.2	37.6
SMC-6M-6R	6	3/8	4.8	8	14	15.3	17.7	31.0	38.4
SMC-6M-8R	6	1/2	4.8	22	14	15.3	17.7	36.6	44.0
SMC-8M-2R	8	1/8	6.4	15	16	16.2	18.6	26.7	34.2
SMC-8M-4R	8	1/4	6.4	15	16	16.2	18.6	31.2	38.7
SMC-8M-6R	8	3/8	6.4	18	16	16.2	18.6	31.8	39.2
SMC-8M-8R	8	1/2	6.4	22	16	16.2	18.6	37.3	44.8
SMC-10M-2R	10	1/8	4.8	18	19	17.2	19.5	28.7	36.3
SMC-10M-4R	10	1/4	7.1	18	19	17.2	19.5	33.3	40.9
SMC-10M-6R	10	3/8	7.9	18	19	17.2	19.5	33.3	40.9
SMC-10M-8R	10	1/2	7.9	22	19	17.2	19.5	38.1	45.7
SMC-12M-4R	12	1/4	9.5	22	22	22.8	22.0	33.3	43.4
SMC-12M-6R	12	3/8	9.5	22	22	22.8	22.0	33.3	43.4
SMC-12M-8R	12	1/2	9.5	22	22	22.8	22.0	38.1	48.2
SMC-12M-12R	12	3/4	9.5	27	22	22.8	22.0	38.9	49.0
SMC-15M-8R	15	1/2	11.9	24	25	24.4	22.0	38.9	49.0
SMC-16M-4R	16	1/4	12.7	24	25	24.4	22.0	34.0	44.1
SMC-16M-6R	16	3/8	12.7	24	25	24.4	22.0	34.0	44.1
SMC-16M-8R	16	1/2	12.7	24	25	24.4	22.0	38.9	49.0
SMC-16M-12R	16	3/4	12.7	27	25	24.4	22.0	38.9	49.0
SMC-18M-8R	18	1/2	15.1	27	30	24.4	22.0	40.4	50.5
SMC-18M-12R	18	3/4	15.1	27	30	24.4	22.0	40.4	50.5
SMC-20M-8R	20	1/2	15.9	30	32	26.0	22.0	42.2	52.3
SMC-20M-12R	20	3/4	15.9	30	32	26.0	22.0	42.2	52.3
SMC-22M-12R	22	3/4	18.3	30	32	26.0	22.0	42.2	52.3
SMC-22M-16R	22	1	18.3	35	32	26.0	22.0	47.8	57.9
SMC-25M-12R	25	3/4	21.8	35	38	31.3	26.5	45.2	57.5
SMC-25M-16R	25	1	21.8	35	38	31.3	26.5	50.0	62.3
SMC-28M-16R	28	1	21.8	41	46	36.6	36.6	51.6	72.4
SMC-28M-20R	28	1-1/4	21.8	46	46	36.6	36.6	52.3	73.1
SMC-32M-20R	32	1-1/4	28.6	46	50	42.0	41.6	56.6	79.6
SMC-38M-24R	38	1-1/2	33.7	55	60	49.4	47.9	64.0	91.6

Male Connector
for Bonded Seal

SMC-G



Connects fractional tube to female ISO parallel thread

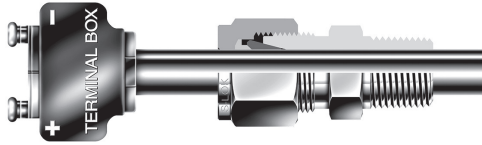
Part No.	Tube O.D		T	E	Width across flat				A	B	I	I ₁	L	K
	D				h		H							
	in	mm	G(PF)	Min.	in	mm	in	mm						
SMC-2-2G	1/8	3.17	1/8	2.28	9/16	14.28	7/16	11.11	12.70	15.24	23.37	7.11	29.97	13.72
SMC-2-4G	1/8	3.17	1/4	2.28	3/4	19.05	7/16	11.11	12.70	15.24	28.70	11.18	35.31	18.03
SMC-2-6G	1/8	3.17	3/8	2.28	7/8	22.22	7/16	11.11	12.70	15.24	29.72	11.18	36.21	21.84
SMC-4-2G	1/4	6.35	1/8	4.82	9/16	14.28	9/16	14.28	15.24	17.78	24.89	7.11	32.26	13.72
SMC-4-4G	1/4	6.35	1/4	4.82	3/4	19.05	9/16	14.28	15.24	17.78	30.23	11.18	37.59	18.03
SMC-4-6G	1/4	6.35	3/8	4.82	7/8	22.22	9/16	14.28	15.24	17.78	61.50	11.18	38.86	21.84
SMC-4-8G	1/4	6.35	1/2	4.82	1-1/16	26.98	9/16	14.28	15.24	17.78	37.34	14.22	44.70	25.91
SMC-6-4G	3/8	9.52	1/4	7.11	3/4	19.05	11/16	17.46	16.76	19.30	31.75	11.18	39.12	18.03
SMC-6-6G	3/8	9.52	3/8	7.11	7/8	22.22	11/16	17.46	16.76	19.30	33.02	11.18	40.39	21.84
SMC-6-8G	3/8	9.52	1/2	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	38.86	14.22	46.23	25.91
SMC-8-4G	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	32.51	11.18	42.67	18.03
SMC-8-6G	1/2	12.70	3/8	10.41	7/8	22.22	7/8	22.22	22.86	21.84	33.02	11.18	43.18	21.84
SMC-8-8G	1/2	12.70	1/2	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	38.86	14.22	49.02	25.91
SMC-12-8G	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	38.86	14.22	49.02	25.91
SMC-12-12G	3/4	19.05	3/4	15.74	1-5/16	33.33	1-1/8	28.58	24.38	21.84	42.67	15.75	52.83	32.00
SMC-16-8G	1	25.40	1/2	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	43.69	14.22	55.88	25.91
SMC-16-16G	1	25.40	1	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	47.75	18.29	59.94	39.12
SMC-20-20G	1-1/4	31.75	1-1/4	27.68	2	50.80	1-7/8	47.63	41.14	38.86	51.16	20.00	73.26	49.00
SMC-24-24G	1-1/2	38.10	1-1/2	34.03	2-1/4	57.15	2-1/4	57.15	50.03	45.21	57.57	22.00	84.75	55.00

Connects metric tube to female ISO parallel thread

Part No.	Tube O.D		T	E	Width across flat		A	B	I	I ₁	L	K
	D	G(PF)			Min.	h						
SMC-2M-2G	2	1/8	1.7	14	12	12.9	15.3	23.4	7.1	30.0	13.8	
SMC-3M-2G	3	1/8	2.4	14	12	12.9	15.3	23.4	7.1	30.0	13.8	
SMC-3M-4G	3	1/4	2.4	19	12	12.9	15.3	28.7	11.2	35.3	18.0	
SMC-4M-2G	4	1/8	2.4	14	12	13.7	16.1	24.1	7.1	30.7	13.8	
SMC-4M-4G	4	1/4	2.4	19	12	13.7	16.1	29.4	11.2	36.0	18.0	
SMC-6M-2G	6	1/8	4.8	14	14	15.3	17.7	24.9	7.1	32.3	13.8	
SMC-6M-4G	6	1/4	4.8	19	14	15.3	17.7	30.2	11.2	37.6	18.0	
SMC-6M-6G	6	3/8	4.8	22	14	15.3	17.7	31.5	11.2	38.9	21.8	
SMC-6M-8G	6	1/2	4.8	27	14	15.3	17.7	37.3	14.2	44.7	26.0	
SMC-8M-2G	8	1/8	6.4	15	16	16.2	18.6	25.7	7.1	33.2	13.8	
SMC-8M-4G	8	1/4	6.4	19	16	16.2	18.6	31.0	11.2	38.5	18.0	
SMC-8M-6G	8	3/8	6.4	22	16	16.2	18.6	32.3	11.2	39.8	21.8	
SMC-8M-8G	8	1/2	6.4	27	16	16.2	18.6	38.1	14.2	45.6	26.0	
SMC-10M-4G	10	1/4	7.9	19	19	17.2	19.5	31.8	11.2	39.4	18.0	
SMC-10M-6G	10	3/8	7.9	22	19	17.2	19.5	33.0	11.2	40.6	21.8	
SMC-10M-8G	10	1/2	7.9	27	19	17.2	19.5	38.9	14.2	46.5	26.0	
SMC-12M-4G	12	1/4	9.5	22	22	22.8	22.0	32.5	11.2	42.6	18.0	
SMC-12M-6G	12	3/8	9.5	22	22	22.8	22.0	33.0	11.2	43.1	21.8	
SMC-12M-8G	12	1/2	9.5	27	22	22.8	22.0	38.9	14.2	49.0	26.0	
SMC-12M-12G	12	3/4	9.5	35	22	22.8	22.0	42.7	15.7	52.8	32.0	
SMC-16M-6G	16	3/8	12.7	24	25	24.4	22.0	33.8	11.2	43.9	21.8	
SMC-16M-8G	16	1/2	12.7	27	25	24.4	22.0	38.9	14.2	49.0	26.0	
SMC-18M-8G	18	1/2	15.1	27	30	24.4	22.0	38.9	14.2	49.0	26.0	
SMC-18M-12G	18	3/4	15.1	35	30	24.4	22.0	42.7	15.7	52.8	32.0	
SMC-20M-8G	20	1/2	15.9	30	32	26.0	22.0	40.4	14.2	50.5	26.0	
SMC-20M-12G	20	3/4	15.9	35	32	26.0	22.0	42.7	15.7	52.8	32.0	
SMC-22M-12G	22	3/4	18.3	35	32	26.0	22.0	42.7	15.7	52.8	32.0	
SMC-22M-16G	22	1	18.3	41	32	26.0	22.0	45.2	18.3	55.3	39.0	
SMC-25M-12G	25	3/4	21.8	35	38	31.3	26.5	45.2	15.7	57.5	32.0	
SMC-25M-16G	25	1	21.8	41	38	31.3	26.5	47.8	18.3	60.1	39.0	
SMC-28M-16G	28	1	21.8	41	46	36.6	36.6	49.3	18.3	70.1	39.0	
SMC-28M-20G	28	1-1/4	21.8	50	46	36.6	36.6	53.1	19.8	73.9	49.0	
SMC-32M-20G	32	1-1/4	28.6	50	50	42.0	41.6	55.9	19.8	78.9	49.0	
SMC-38M-24G	38	1-1/2	33.7	55	60	49.4	47.9	63.2	22.1	90.8	54.7	

Thermocouple Connector

SMCT



S-LOK thermocouple connector has no shoulder nor sizing angle inside the fitting; the features enable thermocoupler to go through the fitting's thread end.

Example : SMCT 8-8N-S6 for ordering Thermocouple connector
O.D 1/2"× 1/2"NPT S316

Assembly Instructions

1. Position the length of the Thermocouple passed through fitting's thread end and hold it to prevent shifting during assembly.
2. Turn the nut 1-1/4 after finger tight with a wrench by holding the body with a back up wrench for size 1/4"(6mm) or above.

ISO Pipe Thread

The International Standards Organization created the ISO 228/1 and 7/1 threads to standardize the nomenclature of several international pipe threads.

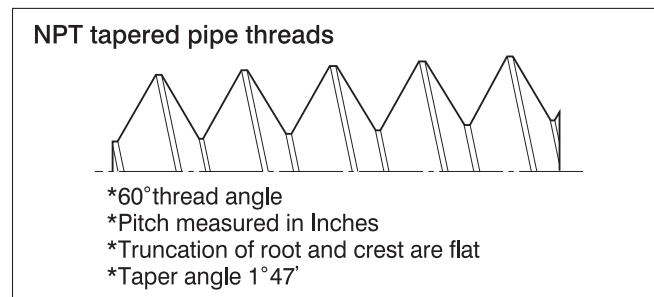
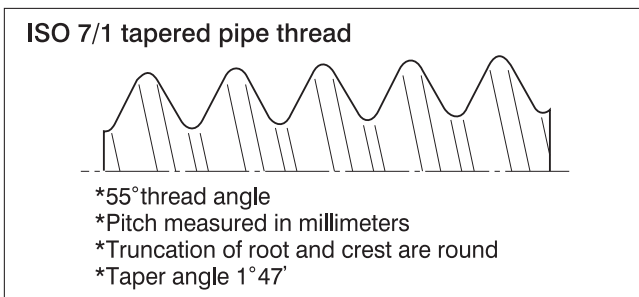
ISO 7/1

The ISO 7/1 is a tapered thread that is sealing threads working by interference fit. This still requires thread sealant for pressure-tight seal by filling the voids between threads, and further, this prevents galling on piping threads. The sealant usually contains a lubricant.

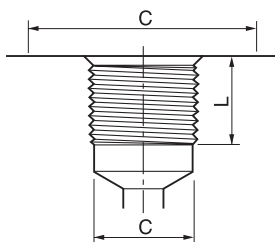
The ISO 7/1 is described in following codes.

1. BS 21(BSPT)
2. JIS B0203(PT)
3. ISO 7/1
4. DIN 2999 (male thread only)

The ISO 7/1 looks similar to the NPT thread. See how different they are as illustrated below.



ISO Internal Parallel Pipe Thread



S-LOK Pipe Thread Designator	ISO Female Parallel Pipe Size	Minimum Full Thread Depth L	Thread Minor Diameter D	Minmum Flat Diameter for SGB & SGC C
2	1/8	0.31	0.337 / 0.348	0.59
4	1/4	0.47	0.450 / 0.468	0.75
6	3/8	0.47	0.588 / 0.606	0.91
8	1/2	0.55	0.733 / 0.755	1.06
12	3/4	0.63	0.949 / 0.971	1.30
16	1	0.71	1.193 / 1.218	1.57

ISO 228/1

ISO 228/1 is parallel thread that is no sealing threads. The pressure tight seal is usually made metal to metal against the female port or with a gasket.

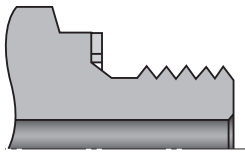
ISO 228/1 is described in following codes.

1.BS 2779(BSPP) 2.DIN-ISO 228/1 3.JIS B0202(PF) 4.ISO 228/1

The ISO 228/1 threads sealing available in S-LOK are listed below.

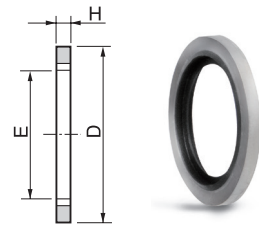
A self-centering taper is constructed at the hex. This taper centers a bonded washer to seal to the surface surrounding the female thread.

*SGB Bonded Seal Gasket
(Buna inner ring bonded to carbon steel outer ring)*



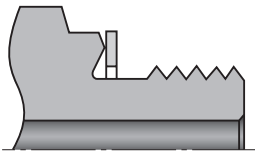
Sealing by compression against face of body
Reference DIN 3852 Type A

Ordering Number	E		H		D	
	in	mm	in	mm	in	mm
SGB-2-	0.41	10.4	0.08	2.0	0.63	16.0
SGB-4-	0.54	13.7	0.08	2.0	0.81	20.6
SGB-6-	0.68	17.3	0.08	2.0	0.94	23.9
SGB-8-	0.85	21.6	0.10	2.5	1.13	28.7
SGB-12-	1.06	27.2	0.10	2.5	1.38	35.1
SGB-16-	1.33	33.8	0.10	3.2	1.69	42.9
SGB-20-	1.67	42.4	0.10	3.2	2.01	51.1
SGB-24-	1.92	48.8	0.10	3.2	2.33	59.2



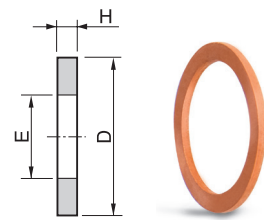
A metal gasket performs the sealing between the reverse bevel of the fitting and the face of the female threaded component.

SGC Copper Gasket



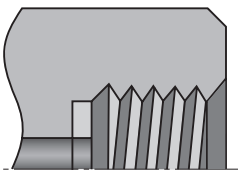
Sealing by gasket (washer)
Reference DIN 3852 Type B

Ordering Number	E		H		D	
	in	mm	in	mm	in	mm
SGC-2-	0.39	9.9	0.04	1.0	0.59	15.0
SGC-4-	0.52	13.2	0.06	1.5	0.75	19.1
SGC-6-	0.66	16.8	0.06	1.5	0.91	23.1
SGC-8-	0.83	21.1	0.06	1.5	1.06	26.9
SGC-12-	1.05	26.7	0.08	2.0	1.30	33.0
SGC-16-	1.31	33.3	0.08	2.0	1.58	40.1
SGC-20-	1.66	42.2	0.08	2.0	1.96	49.8
SGC-24-	1.89	48.0	0.08	2.0	2.30	58.4



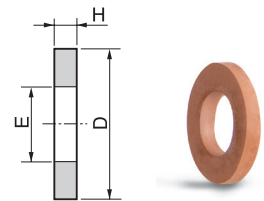
A gasket is dropped into the flat bottom of the female thread. The face of the male thread seats on the gasket to seal.

SGG Copper Gasket



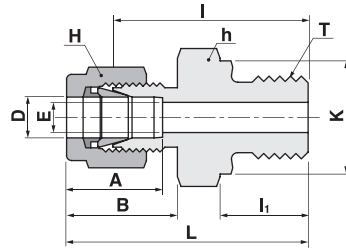
Sealing by gasket.
Reference DIN 3852 Type Y

Ordering Number	E		H		D	
	in	mm	in	mm	in	mm
SGG-4-	0.30	7.6	0.08	2.0	0.42	10.7
SGG-6-	0.34	8.6	0.10	2.5	0.56	14.2
SGG-8-	0.36	9.1	0.10	2.5	0.70	17.8



Male Connector
for Metal Gasket

SOM



Connects fractional tube to female ISO parallel thread

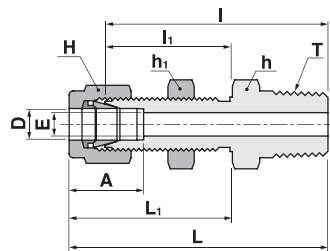
Part No.	Tube O.D		T	E	Width across flat				A	B	I	I ₁	L	K
	D				h	H								
	in	mm					in	mm						
SOM-2-2G	1/8	3.17	1/8	2.28	9/16	14.28	7/16	11.11	12.70	15.24	23.37	7.11	29.97	13.72
SOM-2-4G	1/8	3.17	1/4	2.28	3/4	19.05	7/16	11.11	12.70	15.24	28.70	11.18	35.31	18.03
SOM-2-6G	1/8	3.17	3/8	2.28	7/8	22.22	7/16	11.11	12.70	15.24	29.72	11.18	36.21	21.84
SOM-4-2G	1/4	6.35	1/8	4.82	9/16	14.28	9/16	14.28	15.24	17.78	24.89	7.11	32.26	13.72
SOM-4-4G	1/4	6.35	1/4	4.82	3/4	19.05	9/16	14.28	15.24	17.78	30.23	11.18	37.59	18.03
SOM-4-6G	1/4	6.35	3/8	4.82	7/8	22.22	9/16	14.28	15.24	17.78	61.50	11.18	38.86	21.84
SOM-4-8G	1/4	6.35	1/2	4.82	1-1/16	26.98	9/16	14.28	15.24	17.78	37.34	14.22	44.70	25.91
SOM-6-4G	3/8	9.52	1/4	7.11	3/4	19.05	11/16	17.46	16.76	19.30	31.75	11.18	39.12	18.03
SOM-6-6G	3/8	9.52	3/8	7.11	7/8	22.22	11/16	17.46	16.76	19.30	33.02	11.18	40.39	21.84
SOM-6-8G	3/8	9.52	1/2	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	38.86	14.22	46.23	25.91
SOM-8-4G	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	32.51	11.18	42.67	18.03
SOM-8-6G	1/2	12.70	3/8	10.41	7/8	22.22	7/8	22.22	22.86	21.84	33.02	11.18	43.18	21.84
SOM-8-8G	1/2	12.70	1/2	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	38.86	14.22	49.02	25.91
SOM-12-8G	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	38.86	14.22	49.02	25.91
SOM-12-12G	3/4	19.05	3/4	15.74	1-5/16	33.33	1-1/8	28.58	24.38	21.84	42.67	15.75	52.83	32.00
SOM-16-8G	1	25.40	1/2	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	43.69	14.22	55.88	25.91
SOM-16-16G	1	25.40	1	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	47.75	18.29	59.94	39.12
SOM-20-20G	1-1/4	31.75	1-1/4	27.68	2	50.80	1-7/8	47.63	41.14	38.86	51.16	20.00	73.26	49.00
SOM-24-24G	1-1/2	38.10	1-1/2	34.03	2-1/4	57.15	2-1/4	57.15	50.03	45.21	57.57	22.00	84.75	55.00

Connects metric tube to female ISO parallel thread

Part No.	Tube O.D		T	E	Width across flat		A	B	I	I ₁	L	K
	D				h	H						
	mm	G(PF)										
SOM-3M-2G	3	1/8	2.4	14	12	12.9	15.3	23.4	7.1	30.0	13.8	
SOM-3M-4G	3	1/4	2.4	19	12	12.9	15.3	28.7	11.2	35.3	18.0	
SOM-4M-2G	4	1/8	2.4	14	12	13.7	16.1	24.1	7.1	30.7	13.8	
SOM-6M-2G	6	1/8	4.8	14	14	15.3	17.7	24.9	7.1	32.3	13.8	
SOM-6M-4G	6	1/4	4.8	19	14	15.3	17.7	30.2	11.2	37.6	18.0	
SOM-6M-6G	6	3/8	4.8	22	14	15.3	17.7	31.5	11.2	38.9	21.8	
SOM-6M-8G	6	1/2	4.8	27	14	15.3	17.7	37.3	14.2	44.7	26.0	
SOM-8M-2G	8	1/8	6.4	15	16	16.2	18.6	25.7	7.1	33.2	13.8	
SOM-8M-4G	8	1/4	6.4	19	16	16.2	18.6	31.0	11.2	38.5	18.0	
SOM-8M-6G	8	3/8	6.4	22	16	16.2	18.6	32.3	11.2	39.8	21.8	
SOM-8M-8G	8	1/2	6.4	27	16	16.2	18.6	38.1	14.2	45.6	26.0	
SOM-10M-4G	10	1/4	7.9	19	19	17.2	19.5	31.8	11.2	39.4	18.0	
SOM-10M-6G	10	3/8	7.9	22	19	17.2	19.5	33.0	11.2	40.6	21.8	
SOM-10M-8G	10	1/2	7.9	27	19	17.2	19.5	38.9	14.2	46.5	26.0	
SOM-12M-4G	12	1/4	9.5	22	22	22.8	22.0	32.5	11.2	42.6	18.0	
SOM-12M-6G	12	3/8	9.5	22	22	22.8	22.0	33.0	11.2	43.1	21.8	
SOM-12M-8G	12	1/2	9.5	27	22	22.8	22.0	38.9	14.2	49.0	26.0	
SOM-12M-12G	12	3/4	9.5	35	22	22.8	22.0	42.7	15.7	52.8	32.0	
SOM-16M-6G	16	3/8	12.7	24	25	24.4	22.0	33.8	11.2	43.9	21.8	
SOM-16M-8G	16	1/2	12.7	27	25	24.4	22.0	38.9	14.2	49.0	26.0	
SOM-18M-8G	18	1/2	15.1	27	30	24.4	22.0	38.9	14.2	49.0	26.0	
SOM-18M-12G	18	3/4	15.1	35	30	24.4	22.0	42.7	15.7	52.8	32.0	
SOM-20M-8G	20	1/2	15.9	30	32	26.0	22.0	40.4	14.2	50.5	26.0	
SOM-20M-12G	20	3/4	15.9	35	32	26.0	22.0	42.7	15.7	52.8	32.0	
SOM-22M-12G	22	3/4	18.3	35	32	26.0	22.0	42.7	15.7	52.8	32.0	
SOM-22M-16G	22	1	18.3	41	32	26.0	22.0	45.2	18.3	55.3	39.0	
SOM-25M-12G	25	3/4	21.8	35	38	31.3	26.5	45.2	15.7	57.5	32.0	
SOM-25M-16G	25	1	21.8	41	38	31.3	26.5	47.8	18.3	60.1	39.0	
SOM-28M-16G	28	1	21.8	41	46	36.6	36.6	49.3	18.3	70.1	39.0	
SOM-28M-20G	28	1-1/4	21.8	50	46	36.6	36.6	53.1	19.8	73.9	49.0	
SOM-32M-20G	32	1-1/4	28.6	50	50	42.0	41.6	55.9	19.8	78.9	49.0	
SOM-38M-24G	38	1-1/2	33.7	55	60	49.4	47.9	61.7	20.6	89.3	54.7	

Bulkhead
Male Connector

SMCB

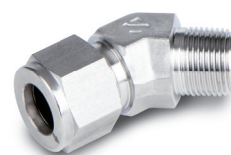
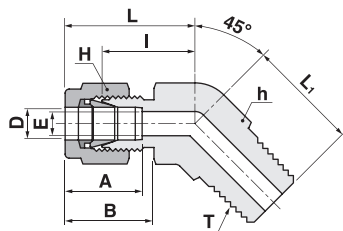


Connects fractional tube to female NPT thread

Part No.	Tube O.D		T	E	Width across flat					A	I	I ₁	L	L ₁	Panel Hole Drill Size	Panel Max. Thickness	
	D				h	h ₁	H										
	in	mm						in	mm								in
SMCB-2-2N	1/8	3.17	1/8	2.28	1/2	12.70	1/2	12.70	7/16	11.11	12.70	39.87	24.63	46.48	31.24	8.33	12.70
SMCB-4-2N	1/4	6.35	1/8	4.82	5/8	15.87	5/8	15.87	9/16	14.28	15.24	42.16	26.16	49.53	33.52	11.50	10.16
SMCB-4-4N	1/4	6.35	1/4	4.82	5/8	15.87	5/8	15.87	9/16	14.28	15.24	45.97	26.16	53.34	33.52	11.50	10.16
SMCB-6-4N	3/8	9.52	1/4	7.11	3/4	19.05	3/4	19.05	11/16	17.46	16.76	50.03	29.46	57.40	36.83	14.68	11.17
SMCB-6-6N	3/8	9.52	3/8	7.11	3/4	19.05	3/4	19.05	11/16	17.46	16.76	50.03	29.46	57.40	36.83	14.68	11.17
SMCB-6-8N	3/8	9.52	1/2	7.11	7/8	22.22	7/8	22.22	11/16	17.46	16.76	56.38	29.46	63.75	36.83	14.68	11.17
SMCB-8-6N	1/2	12.70	3/8	10.41	15/16	23.81	15/16	23.81	7/8	22.22	22.86	53.08	31.75	63.24	41.91	19.44	12.70
SMCB-8-8N	1/2	12.70	1/2	10.41	15/16	23.81	15/16	23.81	7/8	22.22	22.86	58.67	31.75	68.83	41.91	19.44	12.70
SMCB-12-12N	3/4	19.05	3/4	15.74	1-3/16	30.16	1-3/16	30.16	1-1/8	28.58	24.38	66.04	37.33	76.20	47.49	25.76	16.76
SMCB-16-16N	1	25.40	1	22.35	1-5/8	41.28	1-5/8	41.28	1-1/2	38.10	31.24	81.02	45.21	93.21	57.40	33.73	19.05
SMCB-20-20N	1-1/4	31.75	1-1/4	27.68	1-7/8	47.63	1-7/8	47.63	1-7/8	47.63	41.14	85.97	47.75	108.07	69.85	41.67	19.05
SMCB-24-24N	1-1/2	38.10	1-1/2	34.03	2-1/4	57.15	2-1/4	57.15	2-1/4	57.15	50.03	93.03	49.27	120.21	76.45	49.61	19.05
SMCB-32-32N	2	50.80	2	45.97	2-3/4	69.85	2-3/4	69.85	3	76.20	67.56	107.29	56.38	144.62	93.71	57.94	19.05

45° Male Elbow

SLBM

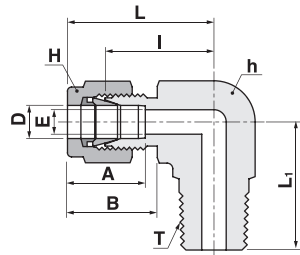


Connects fractional tube to female NPT thread

Part No.	Tube O.D		T	E	Width across flat				A	B	I	L	L ₁
	D				h	H							
	in	mm					in	mm					
SLBM-4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	17.27	24.63	16.51
SLBM-4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	17.27	24.63	21.08
SLBM-6-2N	3/8	9.52	1/8	4.82	5/8	15.87	11/16	17.46	16.76	19.30	20.57	27.94	18.28
SLBM-6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	20.57	27.94	22.86
SLBM-6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	21.84	29.21	24.13
SLBM-8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	21.84	32.00	24.13
SLBM-8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	21.84	32.00	28.95
SLBM-12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	23.87	34.03	30.98
SLBM-16-16N	1	25.40	1	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	28.19	40.38	37.84

Male Elbow

SLM

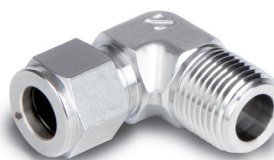
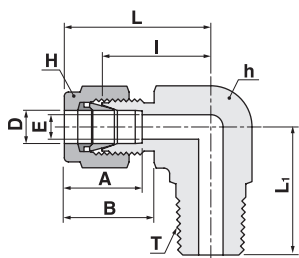


Connects fractional tube to female NPT thread

Part No.	Tube O.D		T	E	Width across flat				A	B	I	L	L ₁
	D				h	H							
	in	mm				in	mm						
SLM-1-1N	1/16	1.59	1/16	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
SLM-1-2N	1/16	1.59	1/8	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
SLM-2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	18.90
SLM-2-4N	1/8	3.17	1/4	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	23.36
SLM-3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	18.79
SLM-3-4N	3/16	4.76	1/4	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	23.36
SLM-4-1N	1/4	6.35	1/16	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.90	18.79
SLM-4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.10	26.47	19.10
SLM-4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.81	27.18	23.87
SLM-4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	26.20
SLM-4-8N	1/4	6.35	1/2	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.60	31.97	33.02
SLM-5-2N	5/16	7.93	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.81
SLM-5-4N	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	29.77	24.50
SLM-5-6N	5/16	7.93	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	26.20
SLM-6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	20.60
SLM-6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	25.40
SLM-6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	26.20
SLM-6-8N	3/8	9.52	1/2	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	31.42	33.02
SLM-6-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	29.71	37.08	36.83
SLM-8-4N	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
SLM-8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
SLM-8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
SLM-8-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	29.71	39.87	36.83
SLM-10-6N	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	28.00	37.06	30.22
SLM-10-8N	5/8	15.87	1/2	12.70	15/16	23.81	1	25.40	24.38	21.84	28.00	37.06	35.10
SLM-10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	29.71	39.87	36.83
SLM-12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	37.00
SLM-12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	36.83
SLM-14-12N	7/8	22.22	3/4	18.28	1-1/4	31.75	1-1/4	31.75	25.90	21.84	34.54	44.70	41.65
SLM-16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	42.20
SLM-16-16N	1	25.40	1	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	49.70
SLM-20-20N	1-1/4	31.75	1-1/4	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54	49.75
SLM-24-24N	1-1/2	38.10	1-1/2	34.03	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97	60.45
SLM-32-32N	2	50.80	2	45.97	2-3/4	69.82	3	76.20	67.56	62.54	69.80	107.18	70.61

Male Elbow

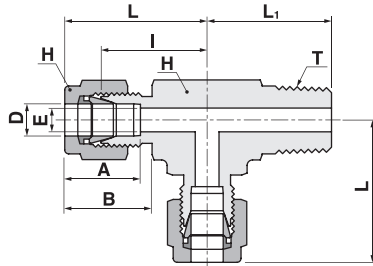
SLM



Connects metric tube to female ISO taper thread

Part No.	Tube O.D	T	E	Width across flat		A	B	I	L	L ₁
	D	R(PT)	Min.	h	H					
SLM-3M-2R	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8
SLM-3M-4R	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4
SLM-4M-2R	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8
SLM-4M-4R	4	1/4	2.4	12.7	12	13.7	16.1	18.8	25.4	23.4
SLM-6M-2R	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8
SLM-6M-4R	6	1/4	4.8	12.7	14	15.3	17.7	19.6	27.0	23.4
SLM-6M-6R	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2
SLM-6M-8R	6	1/2	4.8	20.6	14	15.3	17.7	24.4	31.8	33.0
SLM-8M-2R	8	1/8	6.4	14.3	16	16.2	18.6	21.3	28.8	19.8
SLM-8M-4R	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4
SLM-8M-6R	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2
SLM-8M-8R	8	1/2	6.4	20.6	16	16.2	18.6	25.1	32.6	33.0
SLM-10M-2R	10	1/8	7.9	17.5	19	17.2	19.5	23.9	31.5	23.6
SLM-10M-4R	10	1/4	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2
SLM-10M-6R	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2
SLM-10M-8R	10	1/2	7.9	20.6	19	17.2	19.5	25.9	33.5	33.0
SLM-12M-2R	12	1/4	9.5	20.6	22	22.8	22.0	25.9	36.0	23.6
SLM-12M-4R	12	1/4	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
SLM-12M-6R	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
SLM-12M-8R	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0
SLM-12M-12R	12	3/4	9.5	27.0	22	22.8	22.0	29.7	39.8	36.8
SLM-16M-6R	16	3/8	12.7	23.8	25	24.4	22.0	27.9	38.0	30.2
SLM-16M-8R	16	1/2	12.7	23.8	25	24.4	22.0	27.9	38.0	35.1
SLM-16M-12R	16	3/4	12.7	27.0	25	24.4	22.0	29.7	39.8	36.8
SLM-18M-8R	18	1/2	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8
SLM-18M-12R	18	3/4	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8
SLM-20M-8R	20	1/2	15.9	31.8	32	26.0	22.0	34.5	44.6	41.7
SLM-20M-12R	20	3/4	15.9	31.8	32	26.0	22.0	34.5	44.6	41.7
SLM-22M-12R	22	3/4	18.3	31.8	32	26.0	22.0	34.5	44.6	41.7
SLM-22M-16R	22	1	18.3	34.9	32	26.0	22.0	34.5	44.6	46.5
SLM-25M-12R	25	3/4	21.8	34.9	38	31.3	26.5	36.8	49.1	41.7
SLM-25M-16R	25	1	21.8	34.9	38	31.3	26.5	36.8	49.1	46.5

Male Run Tee

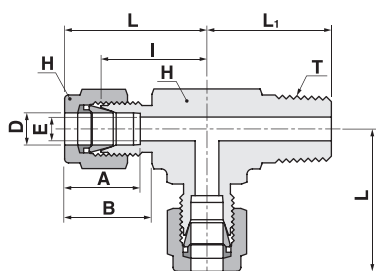
STRM

Connects fractional tube to female NPT thread

Part No.	Tube O.D		T	E	Width across flat				A	B	I	L	L ₁
	D				h		H						
	in	mm			N(NPT)	Min.	in	mm					
STRM-1-1N	1/16	1.59	1/16	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
STRM-1-2N	1/16	1.59	1/8	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
STRM-2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	18.90
STRM-2-4N	1/8	3.17	1/4	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	23.36
STRM-3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	18.79
STRM-3-4N	3/16	4.76	1/4	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	23.36
STRM-4-1N	1/4	6.35	1/16	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.90	18.79
STRM-4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.10	26.47	19.10
STRM-4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.81	27.18	23.87
STRM-4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	26.20
STRM-4-8N	1/4	6.35	1/2	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.60	31.97	33.02
STRM-5-2N	5/16	7.93	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.81
STRM-5-4N	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	29.77	24.50
STRM-5-6N	5/16	7.93	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	26.20
STRM-6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	25.40
STRM-6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	26.20
STRM-6-8N	3/8	9.52	1/2	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	31.42	33.02
STRM-6-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	29.71	37.08	36.83
STRM-8-4N	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
STRM-8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
STRM-8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
STRM-8-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	29.71	39.87	36.83
STRM-10-6N	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	28.00	37.06	30.22
STRM-10-8N	5/8	15.87	1/2	12.70	15/16	23.81	1	25.40	24.38	21.84	28.00	37.06	35.10
STRM-10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	29.71	39.87	36.83
STRM-12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	37.00
STRM-12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	36.83
STRM-14-12N	7/8	22.22	3/4	18.28	1-1/4	31.75	1-1/4	31.75	25.90	21.84	34.54	44.70	41.65
STRM-16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	42.20
STRM-16-16N	1	25.40	1	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	49.70
STRM-20-20N	1-1/4	31.75	1-1/4	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54	49.75
STRM-24-24N	1-1/2	38.10	1-1/2	34.03	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97	60.45
STRM-32-32N	2	50.80	2	45.97	2-3/4	69.82	3	76.20	67.56	62.54	69.80	107.18	70.61

Male Run Tee

STRM



Connects metric tube to female ISO taper thread

Part No.	Tube O.D		T	E	Width across flat		A	B	I	L	L ₁
	D	R(PT)			Min.	h					
STRM-3M-2R	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8	
STRM-3M-4R	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4	
STRM-4M-2R	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8	
STRM-4M-4R	4	1/4	2.4	12.7	12	13.7	16.1	18.8	25.4	23.4	
STRM-6M-2R	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8	
STRM-6M-4R	6	1/4	4.8	12.7	14	15.3	17.7	19.6	27.0	23.4	
STRM-6M-6R	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2	
STRM-6M-8R	6	1/2	4.8	20.6	14	15.3	17.7	24.4	31.8	33.0	
STRM-8M-2R	8	1/8	6.4	14.3	16	16.2	18.6	21.3	28.8	19.8	
STRM-8M-4R	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4	
STRM-8M-6R	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2	
STRM-8M-8R	8	1/2	6.4	20.6	16	16.2	18.6	25.1	32.6	33.0	
STRM-10M-2R	10	1/8	7.9	17.5	19	17.2	19.5	23.9	31.5	23.6	
STRM-10M-4R	10	1/4	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2	
STRM-10M-6R	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2	
STRM-10M-8R	10	1/2	7.9	20.6	19	17.2	19.5	25.9	33.5	33.0	
STRM-12M-4R	12	1/4	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2	
STRM-12M-6R	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2	
STRM-12M-8R	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0	
STRM-12M-12R	12	3/4	9.5	27.0	22	22.8	22.0	29.7	39.8	36.8	
STRM-16M-6R	16	3/8	12.7	23.8	25	24.4	22.0	27.9	38.0	30.2	
STRM-16M-8R	16	1/2	12.7	23.8	25	24.4	22.0	27.9	38.0	35.1	
STRM-16M-12R	16	3/4	12.7	27.0	25	24.4	22.0	29.7	39.8	36.8	
STRM-18M-8R	18	1/2	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8	
STRM-18M-12R	18	3/4	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8	
STRM-20M-8R	20	1/2	15.9	31.8	32	26.0	22.0	34.5	44.6	41.7	
STRM-20M-12R	20	3/4	15.9	31.8	32	26.0	22.0	34.5	44.6	41.7	
STRM-22M-12R	22	3/4	18.3	31.8	32	26.0	22.0	34.5	44.6	41.7	
STRM-22M-16R	22	1	18.3	34.9	32	26.0	22.0	34.5	44.6	46.5	
STRM-25M-12R	25	3/4	21.8	34.9	38	31.3	26.5	36.8	49.1	41.7	
STRM-25M-16R	25	1	21.8	34.9	38	31.3	26.5	36.8	49.1	46.5	