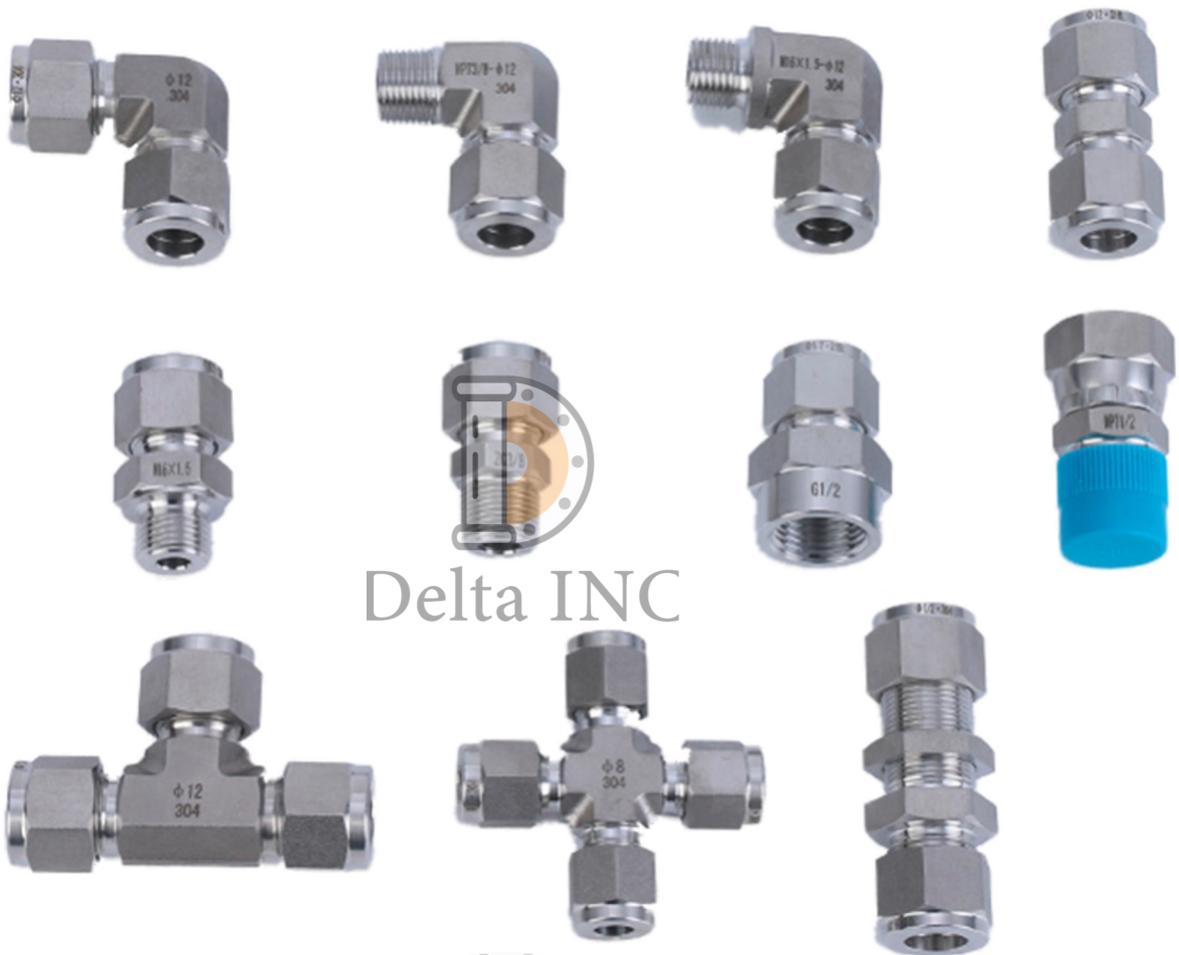


# INSTRUMENT FITTINGS



Delta INC



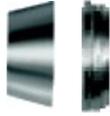
Delta INC

 <https://deltafittings.com/>

@ : [info@deltafittings.com](mailto:info@deltafittings.com)

 : +919331027521, +918961407768

## PRODUCT LOCATOR



**Front & Back Ferrule Fractional & Metric Tube**  
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**Coupling Cap Fractional & Metric Tube**  
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**Fitting End Closure Fractional & Metric Tube**  
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**45 Degree Male Elbow Fractional & Metric Tube to NPT parallel thread**  
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**Positionable Male Elbow Fractional & Metric Tube to ISO parallel thread SAE / MS straight thread**  
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**Male Run Tee Fractional & Metric Tube to NPT thread**  
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**Positionable Male Run Tee Fractional & Metric Tube to ISO parallel thread SAE / MS straight thread**  
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**Positionable Male Branch Tee Fractional & Metric Tube to ISO parallel thread SAE / MS straight thread**  
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**Female Connector Fractional & Metric Tube to NPT thread & ISO tapered pipe thread**  
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**Female Manometer Connector Fractional & Metric Tube to ISO parallel thread (gauge)**  
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**Bulkhead Female Connector Fractional & Metric Tube to NPT thread**  
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**Female Run Tee Fractional & Metric Tube to NPT thread**  
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**Butt Weld Pipe Connector Fractional & Metric Tube to pipe**  
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**Socket Weld Tube Connector Fractional & Metric Tube to Tube**  
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**Bulk Head Male Connector**  
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**Female Elbow**  
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**Socket Weld Tube Elbow**  
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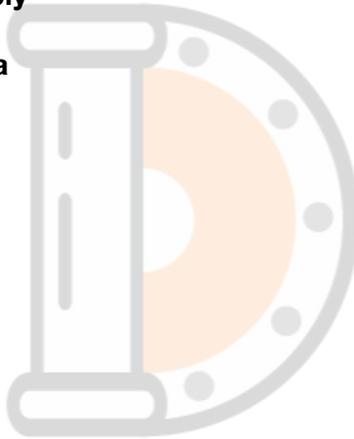


**Female Adapter**  
Fractional & Metric Tube to  
NPT thread & ISO tapered pipe  
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**Female Manometer  
Adapter** Fractional &  
Metric Tube to ISO  
parallel thread (gauge)  
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- **Tube Handling as Service**
- **Tube Specification**
- **Thread Specification**
- **Technical Specification To Which Fitting Perform**
- **Assembly**
- **Pre-swa**



Delta INC

## ORDERING CODES INCH SIZE TUBING



Tube O.D. in multiples of 1/16"

Pipe thread size in multiples of 1/16"

Reduced Tube O.D. in multiples of 1/16" Code for Double Ferrule Fittings

(No symbol for conversion fittings) Fitting type designator

Pipe thread specification

NPT threads to ANSI B 1.20.1 - 1983 N ISO parallel

threads to ISO : 228/1

R ISO taper threads to ISO

: 7/1

Rx UNF threads to ANSI

B1.1 - 1964

U

Material designator

Carbon Steel Brass

CS

304 or 304L Stainless Steel 316

b S/SL

or 316L Stainless Steel Monel

SS/SSL M

Titanium

Ti

## METRIC SIZE TUBING



Code for Double Ferrule Fittings

(No symbol for conversion fittings)

Fitting type designator

Tube O.D. in mm

Pipe thread size in multiples of 1/16"

Pipe thread specification

NPT threads to ANSI B1.20.1 - 1983

N

ISO parallel threads to ISO : 221/1 R

ISO taper threads to ISO7/1

R

UNF threads to ASA B1 1964

x

Material designator

U

Carbon Steel

Brass

b

304 or 304L Stainless Steel 316 or

S/SL SS/SSL

316L Stainless Steel Monel

M

Titanium

Ti

## FITTING TYPE DESIGNATOR

| ITEM                         | DESIGNATOR |
|------------------------------|------------|
| Front Ferrule                | ff         |
| Back Ferrule                 | fb         |
| Coupling Cap                 | n          |
| Tube End Closure             | PC         |
| Fitting End Closure          | FC         |
| Union                        | C          |
| Reducing Union               | R          |
| Bulkhead Union               | CB         |
| Bulkhead Reducing Union      | CRB        |
| Union Elbow                  | E          |
| Union Tee                    | T          |
| Reducing Union Tee           | TR         |
| Cross                        | K          |
| Reducing Cross               | KR         |
| Male Connector               | CM         |
| Bulkhead Male Connector      | CMB        |
| O - Seal Male Connector      | CO         |
| 45 M° ale Elbow              | EM / 45    |
| Positionable Male Elbow      | Esw        |
| Male Run Tee                 | TRM        |
| Male Branch Tee              | TBM        |
| Positionable Male Run Tee    | TRsw       |
| Positionable Male Branch Tee | TBsw       |
| Socket Weld Tube Connector   | SC-SW      |
| Socket Weld Tube Elbow       | SE - SW    |
| Butt Weld Pipe Connector     | SC-NB BW   |
| Butt Weld Pipe Elbow         | SE NB BW   |
| Female Connector             | CF         |
| Bulkhead Female Connector    | CFB        |
| Female Elbow                 | EF         |
| Female Run Tee               | TRF        |
| Female Branch Tee            | TBF        |
| Reducer                      | R          |
| Bulkhead Reducer             | RB         |
| Male Adaptor                 | AM         |
| O - Seal Male Adaptor        | AMO        |
| Female Adaptor               | AF         |

### NOTE :-

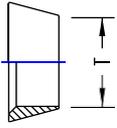
(1) The bodies of fittings for metric tubes are provided

with a Collar on the tube end side. This is only for

identification purposes to differentiate from inch tube fittings.

(2) Dimensions 'C' (in some cases 'Cx', 'F' and 'K')

are measured from the Collar in the case of metric tube fittings.



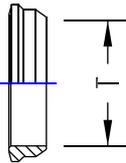
## FRONT FERRULE

### INCH OD Tubes

| T<br>No. | TULOK |
|----------|-------|
| 1/16     | 1 ff  |
| 1/8      | 2 ff  |
| 1/4      | 4 ff  |
| 5/16     | 5 ff  |
| 3/8      | 6 ff  |
| 1/2      | 8 ff  |
| 5/8      | 10 ff |
| 3/4      | 12 ff |
| 7/8      | 14 ff |
| 1        | 16 ff |
| 1.1/4    | 20 ff |
| 1.1/2    | 24 ff |
| 2        | 32 ff |

### METRIC OD Tubes

| T<br>Tube<br>OD | Tube<br>Part<br>Part No. |
|-----------------|--------------------------|
| 3               | ff-3                     |
| 6               | ff-6                     |
| 8               | ff-8                     |
| 10              | ff-10                    |
| 12              | ff-12                    |
| 14              | ff-14                    |
| 15              | ff-15                    |
| 16              | ff-16                    |
| 18              | ff-18                    |
| 20              | ff-20                    |
| 22              | ff-22                    |
| 25              | ff-25                    |
| 28              | ff-28                    |
| 30              | ff-30                    |
| 32              | ff-32                    |
| 38              | ff-38                    |



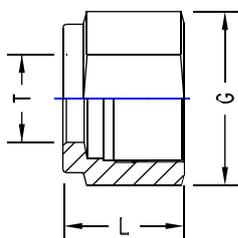
## BACK FERRULE

### INCH OD Tubes

| T<br>Tube<br>No. | fb    |
|------------------|-------|
| 1/16             | 1 fb  |
| 1/8              | 2 fb  |
| 1/4              | 4 fb  |
| 5/16             | 5 fb  |
| 3/8              | 6 fb  |
| 1/2              | 8 fb  |
| 5/8              | 10 fb |
| 3/4              | 12 fb |
| 7/8              | 14 fb |
| 1                | 16 fb |
| 1.1/4            | 20 fb |
| 1.1/2            | 24 fb |
| 2                | 32 fb |

### METRIC OD Tubes

| T<br>OD | Tube<br>OD Part<br>Part No. |
|---------|-----------------------------|
| 3       | fb-3                        |
| 6       | fb-6                        |
| 8       | fb-8                        |
| 10      | fb-10                       |
| 12      | fb-12                       |
| 14      | fb-14                       |
| 15      | fb-15                       |
| 16      | fb-16                       |
| 18      | fb-18                       |
| 20      | fb-20                       |
| 22      | fb-22                       |
| 25      | fb-25                       |
| 28      | fb-28                       |
| 30      | fb-30                       |
| 32      | fb-32                       |
| 38      | fb-38                       |



## COUPLING CAP

### INCH OD Tubes

| OD    | A/F  | Part No. |
|-------|------|----------|
| 1/16  | 8.0  | 8 Sn     |
| 1/8   | 12.0 | 11 Sn    |
| 1/4   | 12.7 | 14 Sn    |
| 5/16  | 14.0 | 16 Sn    |
| 3/8   | 14.5 | 17 Sn    |
| 1/2   | 17.5 | 22 Sn    |
| 5/8   | 17.5 | 25 Sn    |
| 3/4   | 17.5 | 28.5 Sn  |
| 7/8   | 17.5 | 32 Sn    |
| 1     | 20.6 | 38 Sn    |
| 1.1/4 | 31.8 | 50 Sn    |
| 1.1/2 | 38.0 | 57 Sn    |
| 2     | 52.5 | 76 Sn    |

T

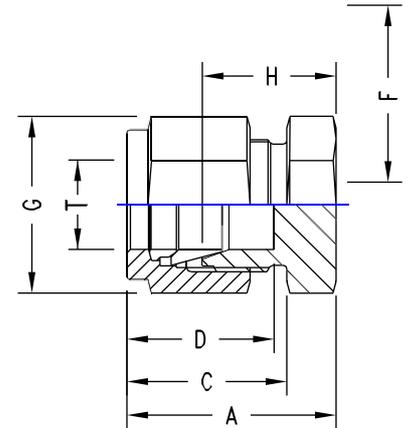
### METRIC OD tubes

| OD | A/F  | Part No. |
|----|------|----------|
| 3  | 12.0 | 11 Sn-3  |
| 6  | 12.7 | 14 Sn-6  |
| 8  | 13.5 | 16 Sn-8  |
| 10 | 15.1 | 19 Sn-10 |
| 12 | 17.5 | 22 Sn-12 |
| 14 | 17.5 | 25 Sn-14 |
| 15 | 17.5 | 25 Sn-15 |
| 16 | 17.5 | 25 Sn-16 |
| 18 | 17.5 | 30 Sn-18 |
| 20 | 17.5 | 32 Sn-20 |
| 22 | 17.5 | 32 Sn-22 |
| 25 | 20.6 | 38 Sn-25 |
| 28 | 30.6 | 46 Sn-28 |
| 30 | 32.7 | 50 Sn-30 |
| 32 | 31.8 | 50 Sn-32 |
| 38 | 38.1 | 57 Sn-38 |

**TUBE END CLOSURE**

**INCH OD Tubes**

| T<br>Tube A<br>OD A/F A/F | C    | D    | F    | G    | H    | .....<br>Part No. |        |
|---------------------------|------|------|------|------|------|-------------------|--------|
| 1/16                      | 13.0 | 11.0 | 8.6  | 11   | 8    | 11.2              | 1 SPC  |
| 1/8                       | 20.0 | 15.3 | 12.7 | 11   | 11   | 13.5              | 2 SPC  |
| 1/4                       | 23.4 | 17.8 | 15.3 | 14   | 14   | 16.0              | 4 SPC  |
| 5/16                      | 24.4 | 18.5 | 16.3 | 16   | 16   | 17.0              | 5 SPC  |
| 3/8                       | 25.7 | 19.3 | 16.8 | 17   | 17   | 18.3              | 6 SPC  |
| 1/2                       | 29.2 | 21.8 | 22.9 | 22   | 22   | 19.0              | 8 SPC  |
| 5/8                       | 30.0 | 21.8 | 24.4 | 24   | 25   | 19.8              | 10 SPC |
| 3/4                       | 31.5 | 21.8 | 24.4 | 27   | 28.5 | 21.4              | 12 SPC |
| 7/8                       | 34.0 | 21.8 | 25.9 | 35   | 32   | 23.9              | 14 SPC |
| 1                         | 38.4 | 26.4 | 31.2 | 35   | 38   | 26.2              | 16 SPC |
| 1.1/4                     | 53.3 | 38.9 | 41.2 | 46   | 50   | 31.2              | 20 SPC |
| 1.1/2                     | 64.5 | 45.2 | 50.0 | 55   | 57   | 37.4              | 24 SPC |
| 2                         | 88.6 | 62.7 | 67.6 | 70.0 | 76.0 | 49.3              | 32 SPC |



**METRIC OD Tubes**

| T<br>Tube A<br>OD A/F A/F | C    | D    | F    | G  | H  | TU-<br>LOK<br>Part No. |
|---------------------------|------|------|------|----|----|------------------------|
| 3                         | 20.1 | 15.3 | 12.9 | 11 | 11 | 13.5 SPC-3             |
| 6                         | 23.1 | 17.7 | 15.3 | 14 | 14 | 15.7 SPC-6             |
| 8                         | 24.5 | 18.6 | 16.2 | 16 | 16 | 17.0 SPC-8             |
| 10                        | 26.6 | 19.5 | 17.2 | 17 | 19 | 19.0 SPC-10            |
| 12                        | 29.1 | 22.0 | 22.8 | 22 | 22 | 19.0 SPC-12            |
| 14                        | 29.9 | 22.0 | 24.4 | 24 | 25 | 19.8 SPC-14            |
| 15                        | 29.9 | 22.0 | 24.4 | 24 | 25 | 19.8 SPC-15            |
| 16                        | 29.9 | 22.0 | 24.4 | 24 | 25 | 19.8 SPC-16            |
| 18                        | 31.4 | 22.0 | 24.4 | 27 | 30 | 21.3 SPC-18            |
| 20                        | 34.0 | 22.0 | 26.0 | 32 | 32 | 23.9 SPC-20            |
| 22                        | 34.0 | 22.0 | 26.0 | 32 | 32 | 23.9 SPC-22            |
| 25                        | 38.5 | 26.5 | 31.3 | 35 | 38 | 26.2 SPC-25            |
| 28                        | 48.5 | 36.6 | 36.6 | 41 | 46 | 27.7 SPC-28            |
| 30                        | 53.4 | 39.2 | 39.6 | 46 | 50 | 31.8 SPC-30            |
| 32                        | 55.8 | 41.6 | 42.0 | 46 | 50 | 32.8 SPC-32            |
| 38                        | 65.4 | 47.9 | 49.4 | 55 | 57 | 37.8 SPC-38            |



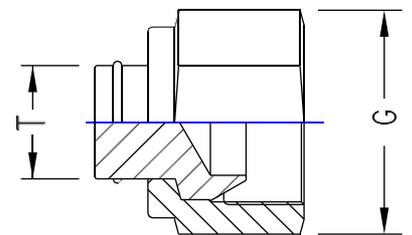
**FITTING END CLOSURE**

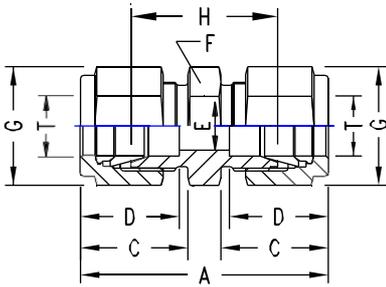
**INCH OD Tubes**

| OD    | A/F  | Part No. |     |
|-------|------|----------|-----|
| 1/16  | 8    | 1        | SFC |
| 1/8   | 11   | 2        | SFC |
| 1/4   | 14   | 4        | SFC |
| 5/16  | 16   | 5        | SFC |
| 3/8   | 17   | 6        | SFC |
| 1/2   | 22   | 8        | SFC |
| 5/8   | 25   | 10       | SFC |
| 3/4   | 28.5 | 12       | SFC |
| 7/8   | 32   | 14       | SFC |
| 1     | 38   | 16       | SFC |
| 1.1/4 | 50   | 20       | SFC |
| 1.1/2 | 57   | 24       | SFC |
| 2     | 76   | 32       | SFC |

**METRIC OD Tubes**

| OD | A/F | Part No. |
|----|-----|----------|
| 3  | 11  | SFC3     |
| 6  | 14  | SFC6     |
| 8  | 16  | SFC8     |
| 10 | 19  | SFC10    |
| 12 | 22  | SFC12    |
| 14 | 25  | SFC14    |
| 15 | 25  | SFC15    |
| 16 | 25  | SFC16    |
| 18 | 30  | SFC18    |
| 20 | 32  | SFC20    |
| 22 | 32  | SFC22    |
| 25 | 38  | SFC25    |
| 28 | 46  | SFC28    |
| 30 | 50  | SFC30    |
| 32 | 50  | SFC32    |
| 38 | 57  | SFC38    |





**UNION**  
**INCH OD Tubes**

| T<br>Tube<br>OD | C     | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | TU-<br>LOK<br>Part-No. |       |
|-----------------|-------|------|-----------|----------|----------|------|------------------------|-------|
| 1/16            | 25.1  | 11.0 | 8.6       | 1.3      | 8        | 8    | 17.5                   | 1 SC  |
| 1/8             | 35.6  | 15.3 | 12.7      | 2.4      | 11       | 11   | 22.4                   | 2 SC  |
| 1/4             | 40.9  | 17.8 | 15.3      | 4.8      | 14       | 14   | 26.2                   | 4 SC  |
| 5/16            | 42.9  | 18.5 | 16.3      | 6.3      | 14       | 16   | 28.2                   | 5 SC  |
| 3/8             | 45.0  | 19.3 | 16.8      | 7.1      | 16       | 17   | 30.2                   | 6 SC  |
| 1/2             | 51.3  | 21.8 | 22.9      | 10.4     | 22       | 22   | 31.0                   | 8 SC  |
| 5/8             | 52.0  | 21.8 | 24.4      | 12.7     | 24       | 25   | 31.8                   | 10 SC |
| 3/4             | 53.6  | 21.8 | 24.4      | 15.8     | 27       | 28.5 | 33.3                   | 12 SC |
| 7/8             | 55.2  | 21.8 | 25.9      | 18.2     | 30       | 32   | 34.8                   | 14 SC |
| 1               | 64.8  | 26.4 | 31.2      | 22.3     | 35       | 38   | 40.4                   | 16 SC |
| 1.1/4           | 92.2  | 38.9 | 41.2      | 27.6     | 46       | 50   | 48.0                   | 20 SC |
| 1.1/2           | 108.0 | 45.2 | 50.0      | 34.0     | 55       | 57   | 53.6                   | 24 SC |
| 2               | 149.4 | 62.7 | 67.6      | 46.0     | 70       | 76   | 74.7                   | 32 SC |

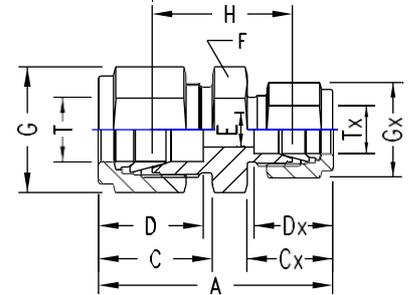
**METRIC OD Tubes**

| T<br>Tube<br>OD | C     | D    | E<br>min. | F<br>A/F | G<br>A/F | H  | TU-<br>LOK<br>Part-<br>No. |       |
|-----------------|-------|------|-----------|----------|----------|----|----------------------------|-------|
| 3               | 35.3  | 15.3 | 12.9      | 2.4      | 11       | 11 | 22.1                       | SC-3  |
| 6               | 41.0  | 17.7 | 15.3      | 4.8      | 14       | 14 | 26.2                       | SC-6  |
| 8               | 43.2  | 18.6 | 16.2      | 6.3      | 16       | 16 | 28.2                       | SC-8  |
| 10              | 46.2  | 19.5 | 17.2      | 7.9      | 17       | 19 | 31.0                       | SC-10 |
| 12              | 51.2  | 22.0 | 22.8      | 9.5      | 22       | 22 | 31.0                       | SC-12 |
| 14              | 52.0  | 22.0 | 24.4      | 11.1     | 24       | 25 | 31.0                       | SC-14 |
| 15              | 52.0  | 22.0 | 24.4      | 11.9     | 24       | 25 | 31.8                       | SC-15 |
| 16              | 52.0  | 22.0 | 24.4      | 12.7     | 24       | 25 | 31.8                       | SC-16 |
| 18              | 53.5  | 22.0 | 24.4      | 15.1     | 27       | 30 | 33.3                       | SC-18 |
| 20              | 55.0  | 22.0 | 26.0      | 15.9     | 30       | 32 | 34.8                       | SC-20 |
| 22              | 55.0  | 22.0 | 26.0      | 18.3     | 30       | 32 | 34.8                       | SC-22 |
| 25              | 65.0  | 26.5 | 31.3      | 21.8     | 35       | 38 | 40.4                       | SC-25 |
| 28              | 85.0  | 36.6 | 36.6      | 21.8     | 41       | 46 | 43.4                       | SC-28 |
| 30              | 92.7  | 39.2 | 39.6      | 26.2     | 46       | 50 | 49.5                       | SC-30 |
| 32              | 97.3  | 41.6 | 42.0      | 28.6     | 46       | 50 | 51.3                       | SC-32 |
| 38              | 113.6 | 47.9 | 49.4      | 33.7     | 55       | 57 | 58.4                       | SC-38 |

## REDUCING UNION

### INCH OD Tubes

| T<br>Tube<br>NoOD | Tx<br>Tube<br>OD | A    | C    | Cx   | D    | Dx   | E<br>min. | F<br>A/F | G<br>A/F | Gx<br>A/F | H    | TU-LOK<br>.....<br>Part No. |
|-------------------|------------------|------|------|------|------|------|-----------|----------|----------|-----------|------|-----------------------------|
| 1/4               | 1/8              | 38.6 | 17.8 | 15.3 | 15.3 | 12.7 | 2.4       | 14       | 14       | 11        | 24.6 | 4-2 SCR                     |
| 5/16              | 1/8              | 39.6 | 18.6 | 15.3 | 16.3 | 12.7 | 2.4       | 14       | 16       | 11        | 25.7 | 5-2 SCR                     |
| 5/16              | 1/4              | 42.2 | 18.6 | 17.8 | 16.3 | 15.3 | 4.8       | 14       | 16       | 14        | 27.5 | 5-4 SCR                     |
| 3/8               | 1/8              | 40.9 | 19.3 | 15.3 | 16.8 | 12.7 | 2.4       | 16       | 17       | 11        | 26.9 | 6-2 SCR                     |
| 3/8               | 1/4              | 43.2 | 19.3 | 17.8 | 16.8 | 15.3 | 4.8       | 16       | 17       | 14        | 28.5 | 6-4 SCR                     |
| 1/2               | 1/8              | 45.2 | 21.8 | 15.3 | 22.9 | 12.7 | 2.4       | 22       | 22       | 11        | 28.5 | 8-2 SCR                     |
| 1/2               | 1/4              | 47.0 | 21.8 | 17.8 | 22.9 | 15.3 | 4.8       | 22       | 22       | 14        | 29.5 | 8-4 SCR                     |
| 1/2               | 3/8              | 48.5 | 21.8 | 19.3 | 22.9 | 16.8 | 7.1       | 22       | 22       | 17        | 31.0 | 8-6 SCR                     |
| 5/8               | 3/8              | 49.3 | 21.8 | 19.3 | 24.4 | 16.8 | 7.1       | 24       | 25       | 17        | 31.8 | 10-6 SCR                    |
| 5/8               | 1/2              | 52.0 | 21.8 | 21.8 | 24.4 | 22.9 | 10.4      | 24       | 25       | 22        | 31.8 | 10-8 SCR                    |
| 3/4               | 1/4              | 49.3 | 21.8 | 17.8 | 24.4 | 15.3 | 4.8       | 27       | 28.5     | 14        | 31.8 | 12-4 SCR                    |
| 3/4               | 3/8              | 50.8 | 21.8 | 19.3 | 24.4 | 16.8 | 7.1       | 27       | 28.5     | 17        | 33.3 | 12-6 SCR                    |
| 3/4               | 1/2              | 53.6 | 21.8 | 21.8 | 24.4 | 22.9 | 10.4      | 27       | 28.5     | 22        | 33.3 | 12-8 SCR                    |
| No.1              | 1/2              | 60.5 | 26.5 | 21.8 | 31.2 | 22.9 | 10.4      | 35       | 38       | 22        | 38.1 | 16-8 SCR                    |
| 1                 | 3/4              | 60.5 | 26.5 | 21.8 | 31.2 | 24.4 | 15.8      | 35       | 38       | 28.5      | 38.1 | 16-12 SCR                   |
| 1.1/4             | 1                | 92.2 | 38.9 | 26.4 | 41.2 | 31.2 | 22.3      | 45       | 50       | 38        | 48.0 | 20-16 SCR                   |
| 1.1/2             | 1.1/4            | 60.5 | 26.5 | 21.8 | 31.2 | 24.4 | 15.8      | 55       | 57       | 50        | 53.6 | 24-20 SCR                   |



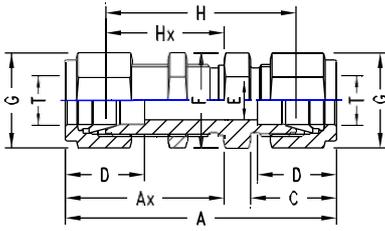
### METRIC OD Tubes

| T<br>Tube<br>OD  | Tx<br>Tube<br>D | A     | C    | Cx   | D    | Dx   | E<br>min. | F<br>A/F | G<br>A/F | Gx<br>A/F | H    | TU-LOK..<br>.....<br>Part No. |
|------------------|-----------------|-------|------|------|------|------|-----------|----------|----------|-----------|------|-------------------------------|
| 6                | 3               | 38.6  | 17.7 | 15.3 | 15.3 | 12.9 | 2.4       | 14       | 14       | 11        | 24.6 | SCR 6-3                       |
| 8                | 6               | 42.3  | 18.6 | 17.7 | 16.2 | 15.3 | 4.8       | 14       | 16       | 14        | 27.4 | SCR 8-6                       |
| 10               | 6               | 44.5  | 19.5 | 17.7 | 17.2 | 15.3 | 4.8       | 17       | 19       | 14        | 29.5 | SCR 10-6                      |
| 10               | 8               | 45.1  | 19.5 | 18.6 | 17.2 | 16.2 | 6.3       | 17       | 19       | 16        | 30.0 | SCR 10-8                      |
| 12               | 6               | 47.0  | 22.0 | 17.7 | 22.8 | 15.3 | 4.8       | 22       | 22       | 14        | 29.5 | SCR 12-6                      |
| 12               | 8               | 47.8  | 22.0 | 18.6 | 22.8 | 16.2 | 6.4       | 22       | 22       | 16        | 30.2 | SCR 12-8                      |
| 12 <sup>No</sup> | 10              | 48.7  | 22.0 | 19.5 | 22.8 | 17.2 | 7.9       | 22       | 22       | 19        | 31.0 | SCR 12-10                     |
| 16               | 10              | 49.5  | 22.0 | 19.5 | 24.4 | 17.2 | 7.9       | 24       | 25       | 19        | 31.8 | SCR 16-10                     |
| 16               | 12              | 52.0  | 22.0 | 22.0 | 24.4 | 22.8 | 9.5       | 24       | 25       | 22        | 31.8 | SCR 16-12                     |
| 22               | 18              | 55.0  | 22.0 | 22.0 | 26.0 | 24.4 | 15.1      | 30       | 32       | 30        | 34.8 | SCR 22-18                     |
| 22               | 20              | 55.0  | 22.0 | 22.0 | 26.0 | 26.6 | 15.9      | 30       | 32       | 32        | 34.8 | SCR 22-20                     |
| 25               | 12              | 65.0  | 26.5 | 22.0 | 31.3 | 22.8 | 9.5       | 35       | 38       | 22        | 40.4 | SCR 25-12                     |
| 25               | 20              | 65.0  | 26.5 | 22.0 | 31.3 | 26.0 | 15.9      | 35       | 38       | 32        | 40.4 | SCR 25-20                     |
| 30               | 20              | 75.4  | 39.2 | 22.0 | 39.6 | 26.0 | 15.9      | 45       | 50       | 32        | 43.7 | SCR 30-20                     |
| 30               | 25              | 80.1  | 39.2 | 26.5 | 39.6 | 31.3 | 21.8      | 45       | 50       | 38        | 46.2 | SCR 30-25                     |
| 32               | 20              | 77.8  | 41.6 | 22.0 | 42.0 | 26.0 | 15.9      | 45       | 50       | 32        | 44.7 | SCR 32-20                     |
| 32               | 25              | 82.3  | 41.6 | 26.5 | 42.0 | 31.3 | 21.8      | 45       | 50       | 38        | 47.0 | SCR 32-25                     |
| 38               | 20              | 92.0  | 47.9 | 26.5 | 49.4 | 31.3 | 21.8      | 55       | 57       | 38        | 52.1 | SCR 38-20                     |
| 38               | 25              | 104.6 | 47.9 | 39.2 | 49.4 | 39.6 | 26.2      | 55       | 57       | 50        | 55.4 | SCR 38-25                     |

No.

**NOTE:** The combinations shown above are representative of various possibilities. Other combinations not shown are also available. Please consult us.





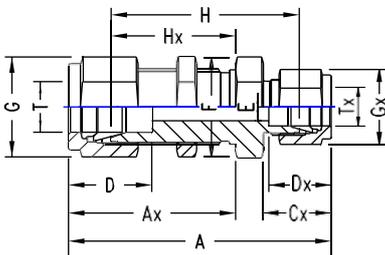
**BULKHEAD UNION**  
INCH OD Tubes

| T<br>OD | Ax    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | Hx    | Panel<br>Hole<br>Drill<br>Size | Max.<br>Panel<br>Thick-<br>ness | Tube<br>TU-LOK...<br>Part No. |        |
|---------|-------|------|------|-----------|----------|----------|------|-------|--------------------------------|---------------------------------|-------------------------------|--------|
| 1/16    | 31.5  | 17.3 | 11.0 | 8.6       | 1.3      | 11       | 8    | 23.8  | 13.5                           | 5.2                             | 3.0                           | 1 SCB  |
| 1/8     | 51.3  | 31.2 | 15.3 | 12.7      | 2.4      | 11       | 11   | 38.1  | 24.6                           | 8.3                             | 12.7                          | 2 SCB  |
| 1/4     | 57.6  | 33.6 | 17.8 | 15.3      | 4.8      | 16       | 14   | 43.0  | 26.2                           | 11.5                            | 10.1                          | 4 SCB  |
| 5/16    | 60.7  | 35.8 | 18.5 | 16.3      | 6.3      | 17       | 16   | 46.0  | 28.5                           | 13.0                            | 11.1                          | 5 SCB  |
| 3/8     | 62.2  | 36.8 | 19.3 | 7.1       | 7.1      | 22       | 17   | 47.5  | 29.5                           | 14.6                            | 11.1                          | 6 SCB  |
| 1/2     | 71.1  | 41.9 | 21.8 | 22.9      | 10.4     | 24       | 22   | 50.8  | 31.8                           | 19.5                            | 12.7                          | 8 SCB  |
| 5/8     | 72.6  | 42.7 | 21.8 | 24.4      | 12.7     | 27       | 25   | 52.3  | 32.5                           | 22.6                            | 12.7                          | 10 SCB |
| 3/4     | 79.0  | 47.5 | 21.8 | 24.4      | 16.0     | 30       | 28.5 | 58.6  | 37.4                           | 25.8                            | 16.8                          | 12 SCB |
| 1       | 95.6  | 57.4 | 26.4 | 31.2      | 22.3     | 35       | 38   | 71.3  | 45.2                           | 33.7                            | 19.0                          | 16 SCB |
| 1.1/4   | 123.2 | 69.9 | 38.9 | 41.2      | 27.6     | 50       | 50   | 79.0  | 47.7                           | 41.6                            | 19.0                          | 20 SCB |
| 1.1/2   | 139.2 | 76.4 | 45.2 | 50.0      | 34.0     | 60       | 57   | 84.8  | 49.3                           | 49.6                            | 19.0                          | 24 SCB |
| 2       | 180.4 | 93.7 | 62.7 | 67.6      | 46.0     | 70       | 76   | 105.6 | 56.4                           | 67.0                            | 19.0                          | 32 SCB |

**METRIC OD Tubes**

| T<br>.....Tube<br>OD | Ax    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H  | Hx   | Hole<br>Drill<br>Size | Panel<br>Thick-<br>ness | Max.<br>Panel<br>TU-LOK<br>Part No. |        |
|----------------------|-------|------|------|-----------|----------|----------|----|------|-----------------------|-------------------------|-------------------------------------|--------|
| 3                    | 51.3  | 31.2 | 15.3 | 12.9      | 2.4      | 14       | 11 | 38.1 | 24.6                  | 8.3                     | 12.7                                | SCB-3  |
| 6                    | 57.7  | 33.6 | 17.7 | 15.3      | 4.8      | 16       | 14 | 42.9 | 26.2                  | 11.5                    | 10.2                                | SCB-6  |
| 8                    | 61.0  | 36.1 | 18.6 | 16.2      | 6.3      | 17       | 16 | 46.0 | 28.6                  | 13.1                    | 11.2                                | SCB-8  |
| 10                   | 63.7  | 37.0 | 19.5 | 17.2      | 7.9      | 22       | 19 | 48.5 | 29.4                  | 16.3                    | 11.2                                | SCB-10 |
| 12                   | 71.0  | 41.9 | 22.0 | 22.8      | 9.5      | 24       | 22 | 50.8 | 31.8                  | 19.5                    | 12.7                                | SCB-12 |
| 14                   | 72.5  | 42.6 | 22.0 | 24.4      | 11.1     | 27       | 25 | 52.3 | 32.5                  | 22.5                    | 12.7                                | SCB-14 |
| 15                   | 72.5  | 42.6 | 22.0 | 24.4      | 11.9     | 27       | 25 | 52.3 | 32.5                  | 22.8                    | 12.7                                | SCB-15 |
| 16                   | 72.5  | 42.6 | 22.0 | 24.4      | 12.7     | 27       | 25 | 52.3 | 32.5                  | 22.8                    | 12.7                                | SCB-16 |
| 18                   | 78.9  | 47.4 | 22.0 | 24.4      | 15.1     | 30       | 30 | 58.7 | 37.3                  | 26.0                    | 16.8                                | SCB-18 |
| 20                   | 84.5  | 53.0 | 22.0 | 26.0      | 15.8     | 35       | 32 | 64.3 | 42.9                  | 29.0                    | 19.0                                | SCB-20 |
| 25                   | 95.6  | 57.4 | 26.4 | 31.2      | 22.3     | 35       | 38 | 71.3 | 45.2                  | 33.7                    | 19.0                                | SCB-25 |
| 30                   | 123.7 | 70.2 | 39.2 | 39.6      | 26.2     | 50       | 46 | 80.5 | 48.6                  | 40.5                    | 19.0                                | SCB-30 |
| 32                   | 128.3 | 72.5 | 41.6 | 42.0      | 27.6     | 50       | 50 | 82.3 | 49.5                  | 42.5                    | 19.0                                | SCB-32 |
| 38                   | 144.6 | 79.1 | 47.9 | 49.4      | 33.7     | 60       | 57 | 89.4 | 51.5                  | 50.5                    | 19.0                                | SCB-38 |

**BULKHEAD REDUCING UNION**  
INCH OD Tubes



| T<br>Tube<br>OD | T<br>Tube<br>OD | A    | Ax   | Cx   | D    | Dx   | E<br>min. | F<br>A/F | G<br>A/F | Gx<br>A/F | H    | Hx   | Panel<br>Hole<br>Drill<br>Size | Max.<br>Panel<br>Thick-<br>ness | .....<br>TU-<br>LOK..<br>Part No. |
|-----------------|-----------------|------|------|------|------|------|-----------|----------|----------|-----------|------|------|--------------------------------|---------------------------------|-----------------------------------|
| 1/4             | 1/8             | 55.2 | 33.5 | 15.3 | 15.3 | 12.7 | 2.4       | 16       | 14       | 11        | 41.2 | 26.2 | 11.5                           | 10.2                            | 4-2 SCRB                          |
| 3/8             | 1/4             | 60.7 | 36.6 | 17.8 | 16.8 | 15.3 | 4.8       | 22       | 17       | 14        | 46.0 | 29.5 | 14.6                           | 11.2                            | 6-4 SCRB                          |
| 1/2             | 1/4             | 66.8 | 41.9 | 17.8 | 22.4 | 15.3 | 4.8       | 24       | 22       | 14        | 49.2 | 31.8 | 19.5                           | 12.7                            | 8-4 SCRB                          |
| 1/2             | 3/8             | 66.8 | 41.9 | 17.8 | 22.4 | 16.8 | 7.1       | 24       | 22       | 17        | 49.2 | 31.8 | 19.5                           | 12.7                            | 8-6 SCRB                          |

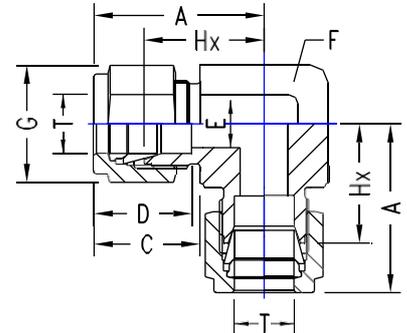
**METRIC OD Tubes**

| T<br>Tube<br>OD | T<br>Tube<br>OD | A    | Ax   | Cx   | D    | Dx   | E<br>min. | F<br>A/F | G<br>A/F | Gx<br>A/F | H    | Hx   | Panel<br>Hole<br>Drill<br>Size | Max.<br>Panel<br>Thick-<br>ness | TU-<br>LOK..<br>Part No. |
|-----------------|-----------------|------|------|------|------|------|-----------|----------|----------|-----------|------|------|--------------------------------|---------------------------------|--------------------------|
| 6               | 3               | 56.0 | 33.6 | 17.7 | 15.3 | 12.9 | 2.4       | 16       | 14       | 11        | 41.2 | 26.2 | 11.5                           | 10.2                            | SCRB-6-3                 |
| 8               | 6               | 61.0 | 36.1 | 18.6 | 16.2 | 15.3 | 4.8       | 17       | 16       | 14        | 48.0 | 28.6 | 13.1                           | 11.2                            | SCRB-8-6                 |
| 10              | 6               | 63.7 | 37.0 | 19.5 | 17.2 | 15.3 | 4.8       | 22       | 19       | 14        | 48.5 | 29.4 | 16.3                           | 11.2                            | SCRB-10-6                |
| 12              | 6               | 71.0 | 41.9 | 22.0 | 22.8 | 15.3 | 4.8       | 24       | 22       | 14        | 50.8 | 31.8 | 19.5                           | 12.7                            | SCRB-12-6                |
| 12              | 10              | 71.0 | 41.9 | 22.0 | 22.8 | 17.2 | 7.9       | 24       | 22       | 17        | 50.8 | 31.8 | 19.5                           | 12.7                            | SCRB-12-10               |

**NOTE:** The combinations shown above are representative of various possibilities. Other combinations not shown are also available. Please consult us.

## UNION ELBOW INCH OD Tubes

| T<br>Tube A<br>OD | C     | D    | E<br>min. | F<br>A/F | G  | Hx   | TULOK<br>Part No. |       |
|-------------------|-------|------|-----------|----------|----|------|-------------------|-------|
| 1/16              | 17.8  | 11.0 | 8.6       | 1.3      | 11 | 8    | 14.0              | 1 SE  |
| 1/8               | 22.4  | 15.3 | 12.7      | 2.4      | 11 | 11   | 15.8              | 2 SE  |
| 1/4               | 26.9  | 17.8 | 15.3      | 4.8      | 14 | 14   | 19.6              | 4 SE  |
| 5/16              | 28.7  | 18.5 | 16.3      | 6.3      | 16 | 16   | 21.3              | 5 SE  |
| 3/8               | 30.5  | 19.3 | 16.8      | 7.1      | 17 | 17   | 23.2              | 6 SE  |
| 1/2               | 36.0  | 21.8 | 22.9      | 10.4     | 22 | 22   | 25.9              | 8 SE  |
| 5/8               | 38.1  | 21.8 | 24.4      | 12.7     | 24 | 25   | 27.9              | 10 SE |
| 3/4               | 39.9  | 21.8 | 24.4      | 15.8     | 27 | 28.5 | 29.7              | 12 SE |
| 7/8               | 44.7  | 21.8 | 25.9      | 18.2     | 35 | 32   | 34.6              | 14 SE |
| 1                 | 49.0  | 26.4 | 31.2      | 22.3     | 35 | 38   | 36.8              | 16 SE |
| 1.1/4             | 66.6  | 38.9 | 41.2      | 27.6     | 46 | 50   | 44.5              | 20 SE |
| 1.1/2             | 78.0  | 45.2 | 50.0      | 34.0     | 55 | 57   | 50.8              | 24 SE |
| 2                 | 107.2 | 62.7 | 67.6      | 46.0     | 70 | 76   | 69.9              | 32 SE |



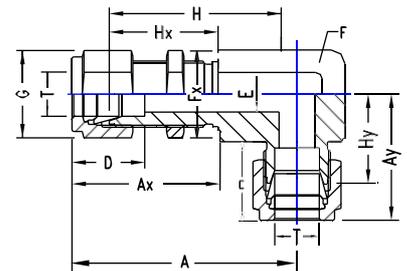
## METRIC OD Tubes

| T<br>Tube A<br>OD | C    | D    | E<br>min. | F<br>A/F | G  | Hx | TULOK..<br>Part No. |       |
|-------------------|------|------|-----------|----------|----|----|---------------------|-------|
| 3                 | 22.3 | 15.3 | 12.9      | 2.4      | 11 | 11 | 15.7                | SE-3  |
| 6                 | 27.0 | 17.7 | 15.3      | 4.8      | 14 | 14 | 19.6                | SE-6  |
| 8                 | 28.8 | 18.6 | 16.2      | 6.3      | 16 | 16 | 21.3                | SE-8  |
| 10                | 31.5 | 19.5 | 17.2      | 7.9      | 17 | 19 | 23.9                | SE-10 |
| 12                | 36.0 | 22.0 | 22.8      | 9.5      | 22 | 22 | 25.9                | SE-12 |
| 14                | 38.0 | 22.0 | 24.4      | 11.1     | 24 | 25 | 27.9                | SE-14 |
| 15                | 38.0 | 22.0 | 24.4      | 11.9     | 24 | 25 | 27.9                | SE-15 |
| 16                | 38.0 | 22.0 | 24.4      | 12.7     | 24 | 25 | 27.9                | SE-16 |
| 18                | 39.8 | 22.0 | 24.4      | 15.1     | 27 | 30 | 29.7                | SE-18 |
| 20                | 44.6 | 22.0 | 26.0      | 15.9     | 32 | 32 | 34.5                | SE-20 |
| 22                | 44.6 | 22.0 | 26.0      | 18.3     | 32 | 32 | 34.5                | SE-22 |
| 25                | 49.1 | 26.5 | 31.3      | 21.8     | 35 | 38 | 36.8                | SE-25 |
| 28                | 64.0 | 36.6 | 36.6      | 21.8     | 41 | 46 | 43.5                | SE-28 |
| 30                | 69.9 | 39.2 | 39.6      | 26.2     | 46 | 50 | 48.3                | SE-30 |
| 32                | 72.3 | 41.6 | 42.0      | 28.6     | 46 | 50 | 49.3                | SE-32 |
| 38                | 84.0 | 47.9 | 49.4      | 33.7     | 55 | 57 | 56.4                | SE-38 |



## BULKHEAD ELBOW INCH OD Tubes

| T<br>Tube A<br>OD | Ax   | Ay   | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H  | Hx   | Hy   | Panel<br>Hole<br>Drill<br>Size | Max.<br>Panel<br>Thick-<br>ness | TULOK..<br>Part No. |        |
|-------------------|------|------|------|------|-----------|----------|----------|----|------|------|--------------------------------|---------------------------------|---------------------|--------|
| 1/8               | 43.1 | 31.2 | 22.4 | 15.3 | 12.7      | 2.4      | 11       | 11 | 36.5 | 24.6 | 15.8                           | 8.3                             | 12.7                | 2 SEB  |
| 1/4               | 48.9 | 33.6 | 26.9 | 17.8 | 15.3      | 4.8      | 16       | 14 | 41.5 | 26.2 | 19.6                           | 11.5                            | 10.1                | 4 SEB  |
| 3/8               | 54.1 | 36.8 | 30.5 | 19.3 | 16.8      | 7.1      | 22       | 17 | 46.8 | 29.5 | 23.2                           | 14.6                            | 11.1                | 6 SEB  |
| 1/2               | 63.5 | 41.9 | 36.0 | 21.8 | 22.9      | 10.4     | 24       | 22 | 53.4 | 31.8 | 25.9                           | 19.5                            | 12.7                | 8 SEB  |
| 3/4               | 75.3 | 47.5 | 39.9 | 21.8 | 24.4      | 16.0     | 30       | 29 | 65.2 | 37.4 | 29.7                           | 25.8                            | 16.8                | 12 SEB |
| 1                 | 91.8 | 57.4 | 49.0 | 26.4 | 31.2      | 22.3     | 35       | 38 | 79.6 | 45.2 | 36.8                           | 33.7                            | 19.0                | 16 SEB |

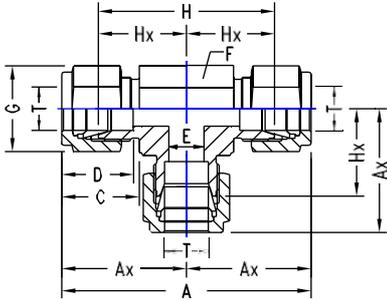


## METRIC OD Tubes

| T<br>Tube A<br>OD | Ax   | Ay   | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H  | Hx   | Hy   | Panel<br>Hole<br>Drill<br>Size | Max.<br>Panel<br>Thick-<br>ness | TULOK..<br>Part No. |        |
|-------------------|------|------|------|------|-----------|----------|----------|----|------|------|--------------------------------|---------------------------------|---------------------|--------|
| 3                 | 43.0 | 31.2 | 22.3 | 15.3 | 12.9      | 2.4      | 14       | 11 | 36.4 | 24.6 | 15.7                           | 8.3                             | 12.7                | SEB-3  |
| 6                 | 49.3 | 33.6 | 27.0 | 17.7 | 15.3      | 4.8      | 16       | 14 | 41.9 | 26.2 | 19.6                           | 11.5                            | 10.2                | SEB-6  |
| 8                 | 52.6 | 36.1 | 28.8 | 18.6 | 16.2      | 6.3      | 17       | 16 | 45.1 | 28.6 | 21.3                           | 13.1                            | 11.2                | SEB-8  |
| 10                | 56.2 | 37.0 | 31.5 | 19.5 | 17.2      | 7.9      | 22       | 19 | 48.6 | 29.4 | 23.9                           | 16.3                            | 11.2                | SEB-10 |
| 12                | 63.0 | 41.9 | 36.0 | 22.0 | 22.8      | 9.5      | 24       | 22 | 52.9 | 31.8 | 25.9                           | 19.5                            | 12.7                | SEB-12 |
| 16                | 66.5 | 42.6 | 38.0 | 22.0 | 24.4      | 12.7     | 27       | 25 | 56.4 | 32.5 | 27.9                           | 22.8                            | 12.7                | SEB-16 |
| 22                | 85.1 | 53.0 | 44.6 | 22.0 | 26.0      | 18.3     | 35       | 32 | 75.0 | 42.9 | 34.5                           | 29.0                            | 19.0                | SEB-20 |
| 25                | 91.8 | 57.4 | 49.1 | 26.4 | 31.2      | 22.3     | 35       | 38 | 79.6 | 45.2 | 36.8                           | 33.7                            | 19.0                | SEB-25 |



**UNION TEE**  
INCH OD Tubes



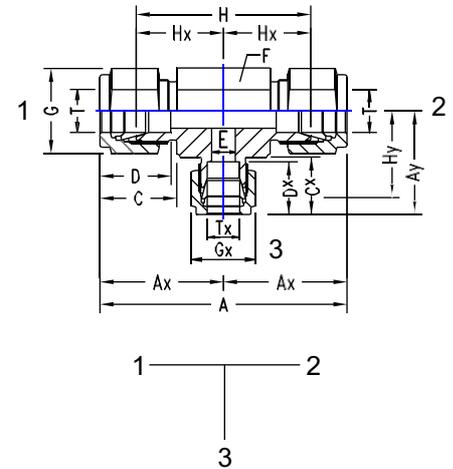
| T<br>Tube A<br>OD | Ax    | C     | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | Hx    | TULOK<br>Part No. |       |
|-------------------|-------|-------|------|-----------|----------|----------|------|-------|-------------------|-------|
| 1/16              | 35.6  | 17.8  | 11.0 | 8.6       | 1.3      | 11       | 8    | 28.0  | 14.0              | 1 ST  |
| 1/8               | 44.8  | 22.4  | 15.3 | 12.7      | 2.4      | 11       | 11   | 31.6  | 15.8              | 2 ST  |
| 1/4               | 53.8  | 26.9  | 17.8 | 15.3      | 4.8      | 14       | 14   | 39.2  | 19.6              | 4 ST  |
| 5/16              | 57.4  | 28.7  | 18.5 | 16.3      | 6.3      | 16       | 16   | 42.6  | 21.3              | 5 ST  |
| 3/8               | 61.0  | 30.5  | 19.3 | 16.8      | 7.1      | 17       | 17   | 46.4  | 23.2              | 6 ST  |
| 1/2               | 72.0  | 36.0  | 21.8 | 22.9      | 10.4     | 22       | 22   | 51.8  | 25.9              | 8 ST  |
| 5/8               | 76.2  | 38.1  | 21.8 | 24.4      | 12.7     | 24       | 25   | 55.8  | 27.9              | 10 ST |
| 3/4               | 79.8  | 39.9  | 21.8 | 24.4      | 15.8     | 27       | 28.5 | 59.4  | 29.7              | 12 ST |
| 7/8               | 89.4  | 44.7  | 21.8 | 25.9      | 18.2     | 35       | 32   | 69.2  | 34.6              | 14 ST |
| 1                 | 98.0  | 49.0  | 26.4 | 31.2      | 22.3     | 35       | 38   | 73.6  | 36.8              | 16 ST |
| 1.1/4             | 133.2 | 66.6  | 38.9 | 41.2      | 27.6     | 46       | 50   | 89.0  | 44.5              | 20 ST |
| 1.1/2             | 156.0 | 78.0  | 45.2 | 50.0      | 34.0     | 55       | 57   | 101.6 | 50.8              | 24 ST |
| 2                 | 214.4 | 107.4 | 62.7 | 67.9      | 46.0     | 70       | 76   | 139.8 | 69.9              | 32 ST |

**METRIC OD Tubes**

| T<br>Tube A<br>OD | Ax    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H  | Hx    | Part No. |       |
|-------------------|-------|------|------|-----------|----------|----------|----|-------|----------|-------|
| 3                 | 44.6  | 22.3 | 15.3 | 12.9      | 2.4      | 11       | 11 | 31.4  | 15.7     | ST-3  |
| 6                 | 54.0  | 27.0 | 17.7 | 15.3      | 4.8      | 14       | 14 | 39.2  | 19.6     | ST-6  |
| 8                 | 57.6  | 28.8 | 18.6 | 16.2      | 6.3      | 16       | 16 | 42.6  | 21.3     | ST-8  |
| 10                | 63.0  | 31.5 | 19.5 | 17.2      | 7.9      | 17       | 19 | 47.8  | 23.9     | ST-10 |
| 12                | 72.0  | 36.0 | 22.0 | 22.8      | 9.5      | 22       | 22 | 51.8  | 25.9     | ST-12 |
| 14                | 76.0  | 38.0 | 22.0 | 24.4      | 11.1     | 24       | 25 | 55.8  | 27.9     | ST-14 |
| 15                | 76.0  | 38.0 | 22.0 | 24.4      | 11.9     | 24       | 25 | 55.8  | 27.9     | ST-15 |
| 16                | 76.0  | 38.0 | 22.0 | 24.4      | 12.7     | 24       | 25 | 55.8  | 27.9     | ST-16 |
| 18                | 79.6  | 39.8 | 22.0 | 24.4      | 15.1     | 27       | 30 | 59.4  | 29.7     | ST-18 |
| 20                | 89.2  | 44.6 | 22.0 | 26.0      | 15.9     | 32       | 32 | 69.0  | 34.5     | ST-20 |
| 22                | 89.2  | 44.6 | 22.0 | 26.0      | 18.3     | 32       | 32 | 69.0  | 34.5     | ST-22 |
| 25                | 98.2  | 49.1 | 26.5 | 31.3      | 21.8     | 35       | 38 | 73.6  | 36.8     | ST-25 |
| 28                | 128.0 | 64.0 | 36.6 | 36.6      | 21.8     | 41       | 46 | 87.0  | 43.5     | ST-28 |
| 30                | 139.8 | 69.9 | 39.2 | 39.6      | 26.2     | 46       | 50 | 96.6  | 48.3     | ST-30 |
| 32                | 144.6 | 72.3 | 41.6 | 42.0      | 28.6     | 46       | 50 | 98.6  | 49.3     | ST-32 |
| 38                | 168.0 | 84.0 | 47.9 | 49.4      | 33.7     | 55       | 57 | 112.8 | 56.4     | ST-38 |

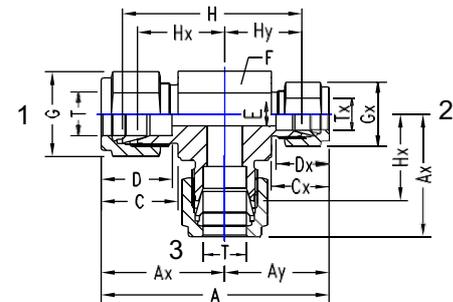
## REDUCING UNION TEE INCH OD Tubes

| T<br>Tube<br>OD | Tx<br>Tube<br>OD | A     | Ax   | Ay   | C    | Cx   | D    | Dx   | E<br>min. | F<br>A/F | G<br>A/F | Gx<br>A/F | H     | Hx   | Hy   | TULOK<br>Part No. |
|-----------------|------------------|-------|------|------|------|------|------|------|-----------|----------|----------|-----------|-------|------|------|-------------------|
| 3/8             | 1/4              | 61.0  | 30.5 | 29.0 | 19.3 | 17.8 | 16.8 | 15.3 | 4.8       | 16       | 17       | 14        | 46.2  | 23.1 | 21.6 | 6/6/4 STR         |
| 1/2             | 1/4              | 72.2  | 36.0 | 31.8 | 21.8 | 17.8 | 22.9 | 15.3 | 4.8       | 22       | 22       | 14        | 51.8  | 25.9 | 24.4 | 8/8/4 STR         |
| 1/2             | 3/8              | 72.2  | 36.0 | 33.3 | 21.8 | 19.3 | 22.9 | 16.8 | 7.1       | 22       | 22       | 17        | 51.8  | 25.9 | 25.9 | 8/8/6 STR         |
| 3/4             | 3/8              | 79.8  | 39.9 | 37.0 | 21.8 | 19.3 | 24.4 | 16.8 | 7.1       | 27       | 28.5     | 17        | 59.4  | 29.7 | 29.7 | 12/12/6 STR       |
| 3/4             | 1/2              | 79.8  | 39.9 | 39.9 | 21.8 | 21.8 | 24.4 | 22.9 | 10.4      | 27       | 28.5     | 22        | 59.4  | 29.7 | 29.7 | 12/12/8STR        |
| 1               | 3/8              | 98.0  | 49.0 | 41.9 | 26.4 | 19.3 | 31.2 | 16.8 | 7.1       | 35       | 38       | 17        | 73.6  | 36.8 | 34.5 | 16/16/A6 STR      |
| 1               | 1/2              | 98.0  | 49.0 | 44.7 | 26.4 | 22.9 | 31.2 | 21.8 | 10.4      | 35       | 38       | 22        | 73.6  | 36.8 | 34.5 | 16/16/8 STR       |
| 1               | 3/4              | 98.0  | 49.0 | 44.7 | 26.4 | 24.4 | 31.2 | 24.4 | 15.8      | 35       | 38       | 28.5      | 73.6  | 36.8 | 34.5 | 16/16/12 STR      |
| 1.1/4           | 1                | 135.6 | 67.8 | 55.1 | 38.9 | 26.4 | 41.2 | 31.2 | 22.3      | 46       | 50       | 38        | 91.4  | 45.7 | 42.9 | 20/20/16 STR      |
| 1.1/2           | 1                | 157.5 | 78.7 | 60.0 | 44.7 | 26.4 | 50.0 | 31.2 | 22.3      | 55       | 57       | 38        | 103.2 | 51.6 | 47.8 | 24/24/16 STR      |



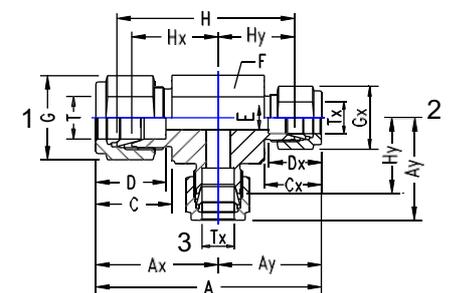
## INCH OD Tubes

| T<br>Tube<br>OD | Tx<br>Tube<br>OD | A     | Ax   | Ay   | C    | Cx   | D    | Dx   | E<br>min. | F<br>A/F | G<br>A/F | Gx<br>A/F | H     | Hx   | Hy   | TULOK<br>Part No. |
|-----------------|------------------|-------|------|------|------|------|------|------|-----------|----------|----------|-----------|-------|------|------|-------------------|
| 3/8             | 1/4              | 59.4  | 30.5 | 29.0 | 19.3 | 17.8 | 16.8 | 15.3 | 4.8       | 16       | 17       | 14        | 44.7  | 23.1 | 21.6 | 6/4/6 STR         |
| 1/2             | 1/4              | 67.7  | 36.0 | 31.7 | 21.8 | 17.8 | 22.9 | 15.3 | 4.8       | 22       | 22       | 14        | 50.2  | 25.9 | 24.3 | 8/4/8 STR         |
| 1/2             | 3/8              | 69.3  | 36.0 | 33.3 | 21.8 | 19.3 | 22.9 | 16.8 | 7.1       | 22       | 22       | 17        | 51.8  | 25.9 | 25.9 | 8/6/8 STR         |
| 3/4             | 3/8              | 77.0  | 39.9 | 37.1 | 21.8 | 19.3 | 24.4 | 16.8 | 7.1       | 27       | 28.5     | 17        | 59.4  | 29.7 | 29.7 | 12/6/12 STR       |
| 3/4             | 1/2              | 79.8  | 39.9 | 39.9 | 21.8 | 21.8 | 24.4 | 22.9 | 10.4      | 27       | 28.5     | 22        | 59.4  | 29.7 | 29.7 | 12/8/12STR        |
| 1               | 3/8              | 98.9  | 49.0 | 41.9 | 26.4 | 19.3 | 31.2 | 16.8 | 7.1       | 35       | 38       | 17        | 71.3  | 36.8 | 34.5 | 16/6/16 STR       |
| 1               | 1/2              | 93.7  | 49.0 | 44.7 | 26.4 | 21.8 | 31.2 | 21.8 | 10.4      | 35       | 38       | 22        | 71.3  | 36.8 | 34.5 | 16/8/16 STR       |
| 1               | 3/4              | 93.7  | 49.0 | 44.7 | 26.4 | 21.8 | 31.2 | 24.4 | 15.8      | 35       | 38       | 28.5      | 71.3  | 36.8 | 34.5 | 16/12/16 STR      |
| 1.1/4           | 1                | 119.6 | 67.8 | 53.0 | 38.9 | 26.4 | 41.2 | 31.2 | 18.2      | 46       | 50       | 38        | 85.3  | 45.7 | 40.8 | 20/16/20 STR      |
| 1.1/2           | 1                | 150.9 | 78.7 | 72.9 | 45.2 | 38.9 | 50.0 | 41.3 | 27.6      | 55       | 57       | 38        | 101.6 | 50.8 | 50.8 | 24/20/24 STR      |



## INCH OD Tubes

| T<br>Tube<br>OD | Tx<br>Tube<br>OD | A     | Ax   | Ay   | C    | Cx   | D    | Dx   | E<br>min. | F<br>A/F | G<br>A/F | Gx<br>A/F | H    | Hx   | Hy   | TULOK<br>Part No. |
|-----------------|------------------|-------|------|------|------|------|------|------|-----------|----------|----------|-----------|------|------|------|-------------------|
| 3/8             | 1/4              | 59.6  | 30.6 | 29.0 | 19.3 | 17.8 | 16.8 | 15.3 | 4.8       | 16       | 17       | 14        | 44.8 | 23.2 | 21.6 | 6/4/4 STR         |
| 1/2             | 1/4              | 67.7  | 36.0 | 31.7 | 21.8 | 17.8 | 22.9 | 15.3 | 4.8       | 22       | 22       | 14        | 50.2 | 25.9 | 24.3 | 8/4/4 STR         |
| 1/2             | 3/8              | 69.3  | 36.0 | 33.2 | 21.8 | 19.3 | 22.9 | 16.8 | 7.1       | 22       | 22       | 17        | 51.8 | 25.9 | 25.9 | 8/6/6 STR         |
| 3/4             | 3/8              | 77.0  | 38.9 | 37.0 | 21.8 | 19.3 | 24.4 | 16.8 | 7.1       | 27       | 28.5     | 17        | 59.4 | 29.7 | 29.7 | 12/6/6 STR        |
| 3/4             | 1/2              | 79.8  | 39.9 | 39.9 | 21.8 | 21.8 | 24.4 | 22.9 | 10.4      | 27       | 28.5     | 22        | 59.4 | 29.7 | 29.7 | 12/8/8STR         |
| 1               | 3/8              | 99.9  | 39.9 | 41.9 | 26.4 | 19.3 | 31.2 | 16.8 | 7.1       | 35       | 38       | 17        | 71.3 | 36.8 | 34.5 | 16/6/6 STR        |
| 1               | 1/2              | 93.7  | 49.0 | 44.7 | 26.4 | 22.9 | 31.2 | 21.8 | 10.4      | 35       | 38       | 22        | 71.3 | 36.8 | 34.5 | 16/8/8 STR        |
| 1               | 3/4              | 93.7  | 49.0 | 44.7 | 26.4 | 24.4 | 31.2 | 24.4 | 15.8      | 35       | 38       | 28.5      | 71.3 | 36.8 | 34.5 | 16/12/12 STR      |
| 1.1/4           | 1                | 122.9 | 67.8 | 55.1 | 38.9 | 26.4 | 41.2 | 31.2 | 22.3      | 46       | 50       | 38        | 88.6 | 45.7 | 42.9 | 20/16/16 STR      |
| 1.1/2           | 1                | 138.7 | 78.7 | 60.0 | 44.7 | 26.4 | 50.0 | 31.2 | 22.3      | 50       | 57       | 38        | 99.4 | 51.6 | 47.8 | 24/16/16 STR      |

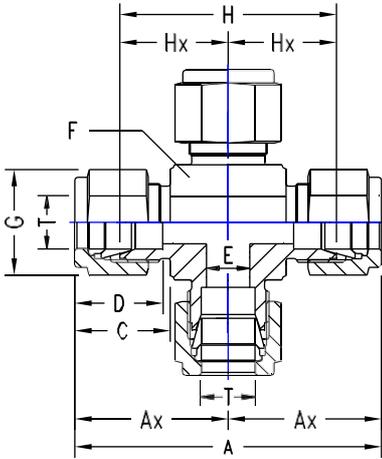


**NOTE:** 1. The order of the sizes is as per the designation (1-2-3) in figure shown above.

**NOTE:** The combinations shown above are representative of various possibilities. Other combinations not shown are also available. Please consult us.

## UNION CROSS

### INCH OD Tubes



| T<br>Tube A<br>OD | Ax   | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | Hx   | TULOK...<br>Part No. |       |
|-------------------|------|------|------|-----------|----------|----------|------|------|----------------------|-------|
| 1/8               | 44.8 | 22.4 | 15.3 | 12.7      | 2.4      | 11       | 11   | 31.6 | 15.8                 | 2 SK  |
| 1/4               | 53.8 | 26.9 | 17.8 | 15.3      | 4.8      | 14       | 14   | 39.2 | 19.6                 | 4 SK  |
| 3/8               | 61.0 | 30.5 | 19.3 | 16.8      | 7.1      | 17       | 17   | 46.4 | 23.2                 | 6 SK  |
| 1/2               | 72.0 | 36.0 | 21.8 | 22.9      | 10.4     | 22       | 22   | 51.8 | 25.9                 | 8 SK  |
| 3/4               | 79.8 | 39.9 | 21.8 | 24.4      | 15.8     | 27       | 28.5 | 59.4 | 29.7                 | 12 SK |
| 1                 | 98.0 | 49.0 | 26.4 | 31.2      | 22.3     | 35       | 38   | 73.6 | 36.8                 | 16 SK |

### METRIC OD Tubes



| T<br>Tube<br>OD min. | A    | Ax   | C    | D    | E    | F<br>A/F | G<br>A/F | H    | Hx   | TULOK...<br>Part No. |
|----------------------|------|------|------|------|------|----------|----------|------|------|----------------------|
| 3                    | 44.6 | 22.3 | 15.3 | 12.9 | 2.4  | 11       | 11       | 31.4 | 15.7 | SK-3                 |
| 6                    | 54.0 | 27.0 | 17.7 | 15.3 | 4.8  | 14       | 14       | 39.2 | 19.6 | SK-6                 |
| 8                    | 57.6 | 28.8 | 18.6 | 16.2 | 6.3  | 16       | 16       | 42.6 | 21.3 | SK-8                 |
| 10                   | 63.0 | 31.5 | 19.5 | 17.2 | 7.9  | 17       | 19       | 47.8 | 23.9 | SK-10                |
| 12                   | 72.0 | 36.0 | 22.0 | 22.8 | 9.5  | 22       | 22       | 51.8 | 25.9 | SK-12                |
| 16                   | 76.0 | 38.0 | 22.0 | 24.4 | 12.7 | 24       | 25       | 55.8 | 27.9 | SK-16                |
| 22                   | 89.2 | 44.6 | 22.0 | 26.0 | 18.3 | 32       | 32       | 69.0 | 34.5 | SK-22                |
| 25                   | 98.2 | 49.1 | 26.5 | 31.3 | 21.8 | 35       | 38       | 73.6 | 36.8 | SK-25                |

**NOTE:** Reducing Cross with variation in the tube sizes are available. The tube sizes are designated in the order given below.

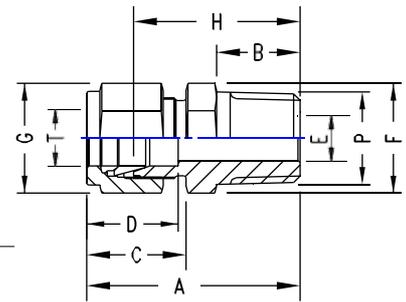


The tube sizes are indicated in the part number in the same order above.

## MALE CONNECTOR

### INCH OD Tubes X Male NPT Threads

| T<br>Tube<br>NPT<br>OD | P<br>Male | A     | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | TU-LOK...<br>Part No. |
|------------------------|-----------|-------|------|------|------|-----------|----------|----------|------|-----------------------|
| 1/16                   | 1/16      | 23.9  | 9.6  | 11.0 | 8.6  | 1.3       | 8        | 8        | 20.0 | 1 SCM-N               |
| 1/16                   | 1/8       | 26.2  | 9.6  | 11.0 | 8.6  | 1.3       | 14       | 8        | 22.4 | 1-2 SCM-N-N           |
| 1/8                    | 1/8       | 30.5  | 9.6  | 15.3 | 12.7 | 2.4       | 11       | 11       | 23.9 | 2 SCM-N               |
| 1/8                    | 1/4       | 35.6  | 14.3 | 15.3 | 12.7 | 2.4       | 14       | 11       | 29.0 | 2-4 SCM-N-N           |
| 1/4                    | 1/8       | 32.8  | 9.6  | 17.8 | 15.3 | 4.8       | 14       | 14       | 25.4 | 4-2 SCM-N             |
| 1/4                    | 1/4       | 37.8  | 14.3 | 17.8 | 15.3 | 4.8       | 14       | 14       | 30.5 | 4 SCM-N               |
| 1/4                    | 3/8       | 38.4  | 14.3 | 17.8 | 15.3 | 4.8       | 19       | 14       | 31.0 | 4-6 SCM-N             |
| 1/4                    | 1/2       | 44.7  | 19.1 | 17.8 | 15.3 | 4.8       | 22       | 14       | 37.4 | 4-8 SCM-N             |
| 5/16                   | 1/4       | 38.6  | 14.3 | 18.5 | 16.3 | 6.3       | 14       | 16       | 31.2 | 5-4 SCM-N             |
| 3/8                    | 1/8       | 35.3  | 9.6  | 19.3 | 16.8 | 4.8       | 16       | 17       | 27.9 | 6-2 SCM-N             |
| 3/8                    | 1/4       | 39.8  | 14.3 | 19.3 | 16.8 | 7.1       | 16       | 17       | 32.5 | 6-4 SCM-N             |
| 3/8                    | 3/8       | 39.8  | 14.3 | 19.3 | 16.8 | 7.1       | 19       | 17       | 32.5 | 6 SCM-N               |
| 3/8                    | 1/2       | 41.2  | 19.1 | 19.3 | 16.8 | 7.1       | 22       | 17       | 38.9 | 6-8 SCM-N             |
| 1/2                    | 1/4       | 43.4  | 14.3 | 21.8 | 22.9 | 7.1       | 22       | 22       | 33.3 | 8-4 SCM-N             |
| 1/2                    | 3/8       | 43.4  | 14.3 | 21.8 | 22.9 | 9.6       | 22       | 22       | 33.3 | 8-6 SCM-N             |
| 1/2                    | 1/2       | 49.0  | 19.1 | 21.8 | 22.9 | 10.4      | 22       | 22       | 38.9 | 8 SCM-N               |
| 1/2                    | 3/4       | 50.5  | 19.1 | 21.8 | 22.9 | 10.4      | 27       | 22       | 40.4 | 8-12 SCM-N            |
| 1/2                    | 1         | 57.1  | 23.8 | 21.8 | 22.9 | 10.4      | 35       | 22       | 47.0 | 8-16 SCM-N            |
| 5/8                    | 3/8       | 44.2  | 14.3 | 21.8 | 24.4 | 9.6       | 24       | 25       | 34.0 | 10-6 SCM-N            |
| 5/8                    | 1/2       | 49.0  | 19.1 | 21.8 | 24.4 | 10.4      | 24       | 25       | 38.9 | 10-8 SCM-N            |
| 3/4                    | 1/2       | 50.5  | 19.1 | 21.8 | 24.4 | 10.4      | 27       | 28.5     | 40.4 | 12-8 SCM-N            |
| 3/4                    | 3/4       | 50.5  | 19.1 | 21.8 | 24.4 | 15.8      | 27       | 28.5     | 40.4 | 12 SCM-N              |
| 3/4                    | 1         | 57.1  | 23.8 | 21.8 | 24.4 | 15.8      | 35       | 28.5     | 47.0 | 12-16 SCM-N           |
| 7/8                    | 3/4       | 50.5  | 19.1 | 21.8 | 26.0 | 15.8      | 30       | 32       | 40.4 | 14-12 SCM-N           |
| 1                      | 1/2       | 57.4  | 19.1 | 26.4 | 31.2 | 10.4      | 35       | 38       | 45.2 | 16-8 SCM-N            |
| 1                      | 3/4       | 57.4  | 19.1 | 26.4 | 31.2 | 15.8      | 35       | 38       | 45.2 | 16-12 SCM-N           |
| 1                      | 1         | 62.2  | 23.8 | 26.4 | 31.2 | 22.3      | 35       | 38       | 50.0 | 16 SCM-N              |
| 1.1/4                  | 1         | 77.2  | 23.8 | 38.9 | 41.2 | 22.3      | 46       | 50       | 55.2 | 20-16 SCM-N           |
| 1.1/4                  | 1.1/4     | 77.2  | 23.8 | 38.9 | 41.2 | 27.6      | 46       | 50       | 55.2 | 20 SCM-N              |
| 1.1/2                  | 1.1/2     | 88.9  | 26.2 | 45.2 | 50.0 | 34.0      | 55       | 57       | 61.7 | 24 SCM-N              |
| 2                      | 2         | 113.5 | 26.9 | 62.7 | 67.6 | 46.0      | 70       | 76       | 76.2 | 32 SCM-N              |



### INCH OD Tubes X Male ISO \* Tapered Pipe Threads

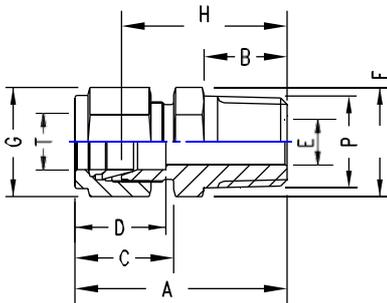
| T<br>Tube<br>OD | P<br>ISO<br>Male | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | TULOK<br>Part No. |
|-----------------|------------------|------|------|------|------|-----------|----------|----------|------|-------------------|
| 1/8             | 1/8              | 30.5 | 9.6  | 15.3 | 12.7 | 2.4       | 11       | 11       | 23.9 | 2 SCMRx           |
| 1/8             | 1/4              | 35.6 | 14.3 | 15.3 | 12.7 | 2.4       | 14       | 11       | 29.0 | 2-4 SCMRx         |
| 1/4             | 1/8              | 32.8 | 9.6  | 17.8 | 15.3 | 4.8       | 14       | 14       | 25.4 | 4-2 SCMRx         |
| 1/4             | 1/4              | 37.8 | 14.3 | 17.8 | 15.3 | 4.8       | 14       | 14       | 30.1 | 4 SCMRx           |
| 1/4             | 3/8              | 38.4 | 14.3 | 17.8 | 15.3 | 4.8       | 19       | 14       | 31.0 | 4-6 SCMRx         |
| 1/4             | 1/2              | 44.7 | 19.1 | 17.8 | 15.3 | 4.8       | 22       | 14       | 37.4 | 4-8 SCMRx         |
| 3/8             | 1/8              | 35.3 | 9.6  | 19.3 | 16.8 | 4.8       | 16       | 17       | 27.9 | 6-2 SCMRx         |
| 3/8             | 1/4              | 39.8 | 14.3 | 19.3 | 16.8 | 7.1       | 16       | 17       | 32.5 | 6-4 SCMRx         |
| 3/8             | 3/8              | 39.8 | 14.3 | 19.3 | 16.8 | 7.1       | 19       | 17       | 32.5 | 6 SCMRx           |
| 3/8             | 1/2              | 41.2 | 19.1 | 19.3 | 16.8 | 7.1       | 22       | 17       | 38.9 | 6-8 SCMRx         |
| 1/2             | 1/4              | 43.4 | 14.3 | 21.8 | 22.9 | 7.1       | 22       | 22       | 33.3 | 8-4 SCMRx         |
| 1/2             | 3/8              | 43.4 | 14.3 | 21.8 | 22.9 | 9.6       | 22       | 22       | 33.3 | 8-6 SCMRx         |
| 1/2             | 1/2              | 49.0 | 19.1 | 21.8 | 22.9 | 10.4      | 22       | 22       | 38.9 | 8 SCMRx           |
| 3/4             | 3/4              | 50.5 | 19.1 | 21.8 | 24.4 | 15.8      | 27       | 28.5     | 40.4 | 12 SCMRx          |
| 1               | 1                | 62.2 | 23.8 | 26.4 | 31.2 | 22.3      | 35       | 38       | 50.0 | 16 SCMRx          |
| 1.1/4           | 1                | 77.2 | 23.8 | 38.9 | 41.2 | 22.3      | 46       | 50       | 55.2 | 20-16 SCMRx       |
| 1.1/4           | 1.1/4            | 77.2 | 23.8 | 38.9 | 41.2 | 27.6      | 46       | 50       | 55.2 | 20 SCMRx          |
| 1.1/2           | 1.1/2            | 88.9 | 26.2 | 45.2 | 50.0 | 34.0      | 55       | 57       | 61.7 | 24 SCMRx          |

**NOTE:** The combination of tube OD and male threads are indicative of popular sizes. Other combinations, not shown, are available. Please Consult us.

**BORED - THROUGH CONNECTORS** available in all these sizes. Add suffix "BT" to the above part numbers to designate bored - trough male connector.

\* Reference Specifications : BS 21 : ISO 7/1 : JIS B 0203 : DIN 2999 : IS 554

**MALE CONNECTOR**  
METRIC OD Tubes x Male NPT Threads



| T<br>Tube<br>OD | P<br>NPT<br>Male | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | TULOK<br>Part No. |
|-----------------|------------------|------|------|------|------|-----------|----------|----------|------|-------------------|
| 3               | 1/8              | 30.5 | 9.6  | 15.3 | 12.9 | 2.4       | 11       | 11       | 23.9 | SCM3-2N           |
| 3               | 1/4              | 35.6 | 14.3 | 15.3 | 12.9 | 2.4       | 14       | 11       | 29.0 | SCM3-4N           |
| 6               | 1/8              | 32.8 | 9.6  | 17.7 | 15.3 | 4.8       | 14       | 14       | 25.4 | SCM6-2N           |
| 6               | 1/4              | 37.9 | 14.3 | 17.7 | 15.3 | 4.8       | 14       | 14       | 30.5 | SCM6-4N           |
| 6               | 3/8              | 38.4 | 14.3 | 17.7 | 15.3 | 4.8       | 19       | 14       | 31.0 | SCM6-N            |
| 6               | 1/2              | 44.7 | 19.1 | 17.7 | 15.3 | 4.8       | 22       | 14       | 37.3 | SCM6-8N           |
| 8               | 1/8              | 34.2 | 9.6  | 18.6 | 16.2 | 4.8       | 14       | 16       | 26.7 | SCM8-2N           |
| 8               | 1/4              | 38.7 | 14.3 | 18.6 | 16.2 | 6.3       | 14       | 16       | 31.2 | SCM8-4N           |
| 8               | 3/8              | 39.3 | 14.3 | 18.6 | 16.2 | 6.3       | 19       | 16       | 31.8 | SCM8-6N           |
| 8               | 1/2              | 45.6 | 19.1 | 18.6 | 16.2 | 6.3       | 22       | 16       | 38.1 | SCM8-N            |
| 10              | 1/8              | 36.3 | 9.6  | 19.5 | 17.2 | 4.8       | 17       | 19       | 28.7 | SCM10-2N          |
| 10              | 1/4              | 40.9 | 14.3 | 19.5 | 17.2 | 7.9       | 19       | 19       | 33.3 | SCM10-4N          |
| 10              | 3/8              | 40.9 | 14.3 | 19.5 | 17.2 | 7.9       | 19       | 19       | 33.3 | SCM10-6N          |
| 10              | 1/2              | 46.5 | 19.1 | 19.5 | 17.2 | 7.9       | 22       | 19       | 38.9 | SCM10-8N          |
| 12              | 1/4              | 43.4 | 14.3 | 22.0 | 22.8 | 7.1       | 22       | 22       | 33.3 | SCM12-4N          |
| 12              | 3/8              | 43.4 | 14.3 | 22.0 | 22.8 | 9.5       | 22       | 22       | 33.3 | SCM12-6N          |
| 12              | 1/2              | 49.0 | 19.1 | 22.0 | 22.8 | 9.5       | 22       | 22       | 38.9 | SCM12-8N          |
| 12              | 3/4              | 50.5 | 19.1 | 22.0 | 22.8 | 9.5       | 27       | 22       | 40.4 | SCM12-N           |
| 12              | 1                | 57.1 | 23.8 | 22.0 | 22.8 | 9.5       | 35       | 22       | 47.0 | SCM12-16N         |
| 14              | 1/4              | 44.1 | 14.3 | 22.0 | 24.4 | 7.1       | 24       | 25       | 34.0 | SCM14-4N          |
| 14              | 3/8              | 44.1 | 14.3 | 22.0 | 24.4 | 9.5       | 24       | 25       | 34.0 | SCM14-6N          |
| 14              | 1/2              | 49.0 | 19.1 | 22.0 | 24.4 | 11.1      | 24       | 25       | 38.9 | SCM14-8N          |
| 15              | 1/2              | 49.0 | 19.1 | 22.0 | 24.4 | 11.9      | 24       | 25       | 38.9 | SCM15-8N          |
| 16              | 3/8              | 44.1 | 14.3 | 22.0 | 24.4 | 9.5       | 24       | 25       | 34.0 | SCM16-6N          |
| 16              | 1/2              | 49.0 | 19.1 | 22.0 | 24.4 | 11.9      | 24       | 25       | 38.9 | SCM16-8N          |
| 16              | 3/4              | 50.5 | 19.1 | 22.0 | 24.4 | 12.7      | 27       | 25       | 40.4 | SCM16-12N         |
| 18              | 1/2              | 50.5 | 19.1 | 22.0 | 24.4 | 11.9      | 27       | 30       | 40.4 | SCM18-8N          |
| 18              | 3/4              | 50.5 | 19.1 | 22.0 | 24.4 | 15.1      | 27       | 30       | 40.4 | SCM18-12N         |
| 20              | 1/2              | 52.3 | 19.1 | 22.0 | 26.0 | 11.9      | 30       | 32       | 42.2 | SCM20-8N          |
| 20              | 3/4              | 52.3 | 19.1 | 22.0 | 26.0 | 15.9      | 30       | 32       | 42.2 | SCM20-12N         |
| 22              | 3/4              | 52.3 | 19.1 | 22.0 | 26.0 | 15.9      | 30       | 32       | 42.2 | SCM22-12N         |
| 22              | 1                | 57.1 | 23.8 | 22.0 | 26.0 | 18.3      | 35       | 32       | 47.0 | SCM22 16N         |
| 25              | 1/2              | 57.5 | 19.1 | 26.5 | 31.3 | 11.9      | 35       | 38       | 45.2 | SCM25- 8N         |
| 25              | 3/4              | 57.5 | 19.1 | 26.5 | 31.3 | 15.8      | 35       | 38       | 45.2 | SCM25-12N         |
| 25              | 1                | 62.3 | 23.8 | 26.5 | 31.3 | 21.8      | 35       | 38       | 50.0 | SCM25-16N         |
| 28              | 1                | 72.4 | 23.8 | 36.6 | 36.6 | 21.8      | 41       | 46       | 51.6 | SCM28-16N         |
| 28              | 1.1/4            | 73.1 | 23.8 | 36.6 | 36.6 | 21.8      | 46       | 46       | 52.3 | SCM28-20N         |
| 30              | 1.1/4            | 77.2 | 23.8 | 39.2 | 39.6 | 26.2      | 46       | 50       | 55.6 | SCM30-20N         |
| 32              | 1.1/4            | 79.6 | 23.8 | 41.6 | 42.0 | 28.6      | 46       | 50       | 56.6 | SCM32-20N         |
| 38              | 1.1/2            | 96.6 | 26.2 | 47.9 | 49.4 | 33.7      | 55       | 57       | 64.0 | SCM38-24N         |

**Bored-Through Fittings for Thermocouples**

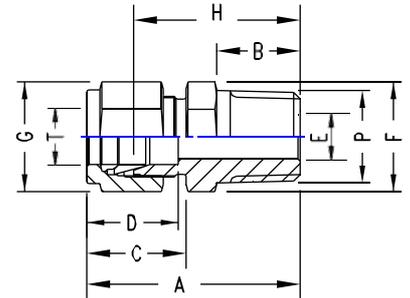


To order, add BT to the desired Male Connector Part Number : 8 SCM - N. BT  
Example : Bored Through Connection 1/2" OD x 1/2" NPT (M) with 1/2" OD through bore has part number.

## MALE CONNECTOR

METRIC OD Tubes x Male ISO\* Tapered Pipe Thread

| T<br>Tube ISO<br>OD | P<br>Male | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | TULOK<br>Part No. |
|---------------------|-----------|------|------|------|------|-----------|----------|----------|------|-------------------|
| 3                   | 1/8       | 30.5 | 9.6  | 15.3 | 12.9 | 2.4       | 11       | 11       | 23.9 | SCM 3-2 Rx        |
| 3                   | 1/4       | 35.6 | 14.3 | 15.3 | 12.9 | 2.4       | 14       | 11       | 29.0 | SCM 3-4 Rx        |
| 6                   | 1/8       | 32.8 | 9.6  | 17.7 | 15.3 | 4.8       | 14       | 14       | 25.4 | SCM 6-2 Rx        |
| 6                   | 1/4       | 37.9 | 14.3 | 17.7 | 15.3 | 4.8       | 14       | 14       | 30.5 | SCM 6-4 Rx        |
| 6                   | 3/8       | 38.4 | 14.3 | 17.7 | 15.3 | 4.8       | 19       | 14       | 31.0 | SCM 6 Rx          |
| 6                   | 1/2       | 44.7 | 19.1 | 17.7 | 15.3 | 4.8       | 22       | 14       | 37.3 | SCM 6-8 Rx        |
| 8                   | 1/8       | 34.2 | 9.6  | 18.6 | 16.2 | 4.8       | 14       | 16       | 26.7 | SCM 8-2 Rx        |
| 8                   | 1/4       | 38.7 | 14.3 | 18.6 | 16.2 | 6.3       | 14       | 16       | 31.2 | SCM 8-4 Rx        |
| 8                   | 3/8       | 39.3 | 14.3 | 18.6 | 16.2 | 6.3       | 19       | 16       | 31.8 | SCM 8-6 Rx        |
| 8                   | 1/2       | 45.6 | 19.1 | 18.6 | 16.2 | 6.3       | 22       | 16       | 38.1 | SCM 8 Rx          |
| 10                  | 1/8       | 36.3 | 9.6  | 19.5 | 17.2 | 4.8       | 17       | 19       | 28.7 | SCM 10-2 Rx       |
| 10                  | 1/4       | 40.9 | 14.3 | 19.5 | 17.2 | 7.9       | 19       | 19       | 33.3 | SCM 10-4 Rx       |
| 10                  | 3/8       | 40.9 | 14.3 | 19.5 | 17.2 | 7.9       | 19       | 19       | 33.3 | SCM 10-6 Rx       |
| 10                  | 1/2       | 46.5 | 19.1 | 19.5 | 17.2 | 7.9       | 22       | 19       | 38.9 | SCM 10-8 Rx       |
| 12                  | 1/4       | 43.4 | 14.3 | 22.0 | 22.8 | 7.1       | 22       | 22       | 33.3 | SCM 12-4 Rx       |
| 12                  | 3/8       | 43.4 | 14.3 | 22.0 | 22.8 | 9.5       | 22       | 22       | 33.3 | SCM 12-6 Rx       |
| 12                  | 1/2       | 49.0 | 19.1 | 22.0 | 22.8 | 9.5       | 22       | 22       | 38.9 | SCM 12-8 Rx       |
| 12                  | 3/4       | 50.5 | 19.1 | 22.0 | 22.8 | 9.5       | 27       | 22       | 40.4 | SCM 12 Rx         |
| 12                  | 1         | 57.1 | 23.8 | 22.0 | 22.8 | 9.5       | 35       | 22       | 47.0 | SCM 12-16 Rx      |
| 14                  | 3/8       | 44.1 | 14.3 | 22.0 | 24.4 | 9.5       | 24       | 25       | 34.0 | SCM 14-6 Rx       |
| 14                  | 1/2       | 49.0 | 19.1 | 22.0 | 24.4 | 11.1      | 24       | 25       | 38.9 | SCM 14-8 Rx       |
| 15                  | 1/2       | 49.0 | 19.1 | 22.0 | 24.4 | 11.9      | 24       | 25       | 38.9 | SCM 15 8 Rx       |
| 16                  | 3/8       | 44.1 | 14.3 | 22.0 | 24.4 | 9.5       | 24       | 25       | 34.0 | SCM 16-6 Rx       |
| 16                  | 1/2       | 49.0 | 19.1 | 22.0 | 24.4 | 11.9      | 24       | 25       | 38.9 | SCM 16-8 Rx       |
| 16                  | 3/4       | 50.5 | 19.1 | 22.0 | 24.4 | 12.7      | 27       | 25       | 40.4 | SCM 16-12 Rx      |
| 18                  | 1/2       | 50.5 | 19.1 | 22.0 | 24.4 | 11.9      | 27       | 30       | 40.4 | SCM 18-8 Rx       |
| 18                  | 3/4       | 50.5 | 19.1 | 22.0 | 24.4 | 15.1      | 27       | 30       | 40.4 | SCM 18-12 Rx      |
| 20                  | 1/2       | 52.3 | 19.1 | 22.0 | 26.0 | 11.9      | 30       | 32       | 42.2 | SCM 20-8 Rx       |
| 20                  | 3/4       | 52.3 | 19.1 | 22.0 | 26.0 | 15.9      | 30       | 32       | 42.2 | SCM 20-12 Rx      |
| 22                  | 3/4       | 52.3 | 19.1 | 22.0 | 26.0 | 15.9      | 30       | 32       | 42.2 | SCM 22-12 Rx      |
| 22                  | 1         | 57.1 | 23.8 | 22.0 | 26.0 | 18.3      | 35       | 32       | 47.0 | SCM 22 16 Rx      |
| 25                  | 1/2       | 57.5 | 19.1 | 26.5 | 31.3 | 11.9      | 35       | 38       | 45.2 | SCM 25- 8 Rx      |
| 25                  | 3/4       | 57.5 | 19.1 | 26.5 | 31.3 | 15.8      | 35       | 38       | 45.2 | SCM 25-12 Rx      |
| 25                  | 1         | 62.3 | 23.8 | 26.5 | 31.3 | 21.8      | 35       | 38       | 50.0 | SCM 25-16 Rx      |
| 28                  | 1         | 72.4 | 23.8 | 36.6 | 36.6 | 21.8      | 41       | 46       | 51.6 | SCM 28-16 Rx      |
| 28                  | 1.1/4     | 73.1 | 23.8 | 36.6 | 36.6 | 21.8      | 46       | 46       | 52.3 | SCM 28-20 Rx      |
| 30                  | 1.1/4     | 77.2 | 23.8 | 39.2 | 39.6 | 26.2      | 46       | 50       | 55.6 | SCM 30-20 RX      |
| 32                  | 1.1/4     | 79.6 | 23.8 | 41.6 | 42.0 | 28.6      | 46       | 50       | 56.6 | SCM 32-20 Rx      |
| 38                  | 1.1/2     | 96.6 | 26.2 | 47.9 | 49.4 | 33.7      | 55       | 57       | 64.0 | SCM 38-24 Rx      |



\* Reference Specifications : BS 21: ISO 7/1 : JIS B 0203 : DIN 2999 : IS 554

## Bored-Through Fittings for Thermocouples

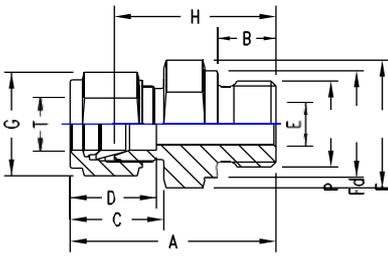


To order, add BT to the desired Male Connector Part Number : 8 SCM - Rx. BT

Example : Bored Through Connection 1/2" OD x 1/2" ISO Tapered Male Pipe Thread 1/2" OD through bore has part number.

**MALE CONNECTOR**

**INCH OD Tubes x Male ISO\* Parallel Threads - RP**



| T        | P     | A    | B    | C    | D    | E    | F   | Fd   | G    | H    | TULOK        |
|----------|-------|------|------|------|------|------|-----|------|------|------|--------------|
| Tube ISO | Male  |      |      |      |      | min. | A/F | A/F  | A/F  |      | Part No.     |
| OD       |       |      |      |      |      |      |     |      |      |      |              |
| 1/8      | 1/8   | 30.0 | 7.1  | 15.3 | 12.7 | 2.4  | 14  | 13.7 | 11   | 23.4 | 2 SCM Rp     |
| 1/8      | 1/4   | 35.3 | 11.2 | 15.3 | 12.7 | 2.4  | 19  | 18.0 | 11   | 28.7 | 2-4 SCM Rp   |
| 1/4      | 1/8   | 32.3 | 7.1  | 17.8 | 15.3 | 4.8  | 14  | 13.7 | 14   | 24.9 | 4-2 SCM Rp   |
| 1/4      | 1/4   | 37.6 | 11.2 | 17.8 | 15.3 | 4.8  | 19  | 18.0 | 14   | 30.2 | 4 SCM Rp     |
| 1/4      | 3/8   | 38.9 | 11.2 | 17.8 | 15.3 | 4.8  | 22  | 21.8 | 14   | 31.5 | 4-6 SCM Rp   |
| 1/4      | 1/2   | 44.7 | 14.2 | 17.8 | 15.3 | 4.8  | 27  | 26.0 | 14   | 37.4 | 4-8 SCM Rp   |
| 3/8      | 1/4   | 39.2 | 11.2 | 19.3 | 16.8 | 5.8  | 19  | 18.0 | 17   | 31.8 | 6-4 SCM Rp   |
| 3/8      | 3/8   | 40.4 | 11.2 | 19.3 | 16.8 | 7.1  | 22  | 21.8 | 17   | 33.0 | 6 SCM Rp     |
| 3/8      | 1/2   | 46.3 | 14.2 | 19.3 | 16.8 | 7.1  | 27  | 26.0 | 17   | 38.9 | 6-8 SCM Rp   |
| 1/2      | 1/4   | 42.7 | 11.2 | 21.8 | 22.9 | 5.8  | 22  | 18.0 | 22   | 32.5 | 8-4 SCM Rp   |
| 1/2      | 3/8   | 43.2 | 11.2 | 21.8 | 22.9 | 7.9  | 22  | 21.8 | 22   | 33.0 | 8-6 SCM Rp   |
| 1/2      | 1/2   | 49.0 | 14.2 | 21.8 | 22.9 | 10.4 | 27  | 26.0 | 22   | 38.9 | 8 SCM Rp     |
| 1/2      | 3/4   | 52.8 | 15.7 | 21.8 | 22.9 | 10.4 | 35  | 32.0 | 22   | 42.7 | 8-12 SCM Rp  |
| 3/4      | 1/2   | 49.0 | 14.2 | 21.8 | 24.4 | 11.9 | 27  | 26.0 | 28.5 | 38.9 | 12-8 SCM Rp  |
| 3/4      | 3/4   | 52.8 | 15.7 | 21.8 | 24.4 | 15.8 | 35  | 32.0 | 28.5 | 42.7 | 12 SCM Rp    |
| 3/4      | 1     | 55.4 | 18.3 | 21.8 | 24.4 | 15.8 | 41  | 39.0 | 28.5 | 45.6 | 12-16 SCM Rp |
| 1        | 1/2   | 55.9 | 14.2 | 26.4 | 31.2 | 11.9 | 35  | 26.0 | 38   | 43.7 | 16-8 SCM Rp  |
| 1        | 3/4   | 57.5 | 15.7 | 26.4 | 31.2 | 15.8 | 35  | 32.0 | 38   | 45.2 | 16-12 SCM Rp |
| 1        | 1     | 60.0 | 18.3 | 26.4 | 31.2 | 19.8 | 41  | 39.0 | 38   | 47.8 | 16 SCM Rp    |
| 1.1/4    | 1.1/4 | 78.9 | 19.8 | 38.9 | 41.2 | 25.0 | 50  | 49.0 | 50   | 55.9 | 20 SCM Rp    |
| 1.1/2    | 1.1/2 | 90.8 | 22.1 | 45.2 | 50.0 | 31.8 | 60  | 54.7 | 57   | 63.2 | 24 SCM Rp    |

**METRIC OD Tubes x Male ISO\* Parallel Threads - RP**

| Tube ISO | A     | B    | C    | D    | E    | F    | Fd  | G    | H    | TULOK    |             |
|----------|-------|------|------|------|------|------|-----|------|------|----------|-------------|
| OD Male  |       |      |      |      | min. | A/F  | A/F | A/F  |      | Part No. |             |
| 3        | 1/8   | 30.0 | 7.1  | 15.3 | 12.9 | 2.4  | 14  | 13.8 | 11   | 23.4     | SCM 3-2Rp   |
| 3        | 1/4   | 35.3 | 11.2 | 15.3 | 12.9 | 2.4  | 19  | 18.0 | 11   | 28.7     | SCM 3-4Rp   |
| 6        | 1/8   | 32.3 | 7.1  | 17.7 | 15.3 | 4.8  | 14  | 13.8 | 14   | 24.9     | SCM 6-2Rp   |
| 6        | 1/4   | 37.6 | 11.2 | 17.7 | 15.3 | 4.8  | 19  | 18.0 | 14   | 30.2     | SCM 6-4Rp   |
| 6        | 3/8   | 38.9 | 11.2 | 17.7 | 15.3 | 4.8  | 22  | 21.8 | 14   | 31.5     | SCM 6-Rp    |
| 6        | 1/2   | 44.7 | 14.2 | 17.7 | 15.3 | 4.8  | 27  | 26.0 | 14   | 37.3     | SCM 6-8Rp   |
| 8        | 1/8   | 33.2 | 7.1  | 18.6 | 16.2 | 4.0  | 14  | 13.8 | 16   | 25.7     | SCM 8-2Rp   |
| 8        | 1/4   | 38.5 | 11.2 | 18.6 | 16.2 | 6.4  | 19  | 18.0 | 16   | 31.0     | SCM 8-4Rp   |
| 8        | 3/8   | 39.8 | 11.2 | 18.6 | 16.2 | 6.4  | 22  | 21.8 | 16   | 32.3     | SCM 8-6Rp   |
| 8        | 1/2   | 45.6 | 14.2 | 18.6 | 16.2 | 6.4  | 27  | 26.0 | 16   | 38.1     | SCM 8-Rp    |
| 10       | 1/4   | 39.4 | 11.2 | 19.5 | 17.2 | 5.9  | 19  | 18.0 | 19   | 31.8     | SCM 10-4Rp  |
| 10       | 3/8   | 40.6 | 11.2 | 19.5 | 17.2 | 7.6  | 22  | 21.8 | 19   | 33.0     | SCM 10-6Rp  |
| 10       | 1/2   | 46.5 | 14.2 | 19.5 | 17.2 | 7.9  | 27  | 26.0 | 19   | 38.9     | SCM 10-8Rp  |
| 12       | 1/4   | 42.6 | 11.2 | 22.0 | 22.8 | 5.9  | 22  | 18.0 | 22   | 32.5     | SCM 12-4Rp  |
| 12       | 3/8   | 43.1 | 11.2 | 22.0 | 22.8 | 7.9  | 22  | 21.8 | 22   | 33.0     | SCM 12-6Rp  |
| 12       | 1/2   | 49.0 | 14.2 | 22.0 | 22.8 | 9.5  | 27  | 26.0 | 22   | 38.9     | SCM 12-8Rp  |
| 12       | 3/4   | 52.8 | 15.7 | 22.0 | 22.8 | 9.5  | 35  | 32.0 | 22   | 42.7     | SCM 12Rp    |
| 16       | 3/8   | 43.9 | 11.2 | 22.0 | 24.4 | 7.9  | 24  | 21.8 | 25   | 33.8     | SCM 16-6Rp  |
| 16       | 1/2   | 49.0 | 14.2 | 22.0 | 24.4 | 11.9 | 27  | 26.0 | 25   | 38.9     | SCM 16-8Rp  |
| 20       | 1/2   | 50.5 | 14.2 | 22.0 | 26.0 | 11.9 | 30  | 26.0 | 28.5 | 40.4     | SCM 20-8Rp  |
| 20       | 3/4   | 52.3 | 15.7 | 22.0 | 26.0 | 15.9 | 35  | 32.0 | 28.5 | 42.7     | SCM 22-12Rp |
| 22       | 3/4   | 52.3 | 15.7 | 22.0 | 26.0 | 15.9 | 35  | 32.0 | 32   | 42.7     | SCM 20-16Rp |
| 22       | 1     | 55.3 | 18.3 | 22.0 | 26.0 | 18.3 | 41  | 39.0 | 32   | 45.2     | SCM 25-12Rp |
| 25       | 3/4   | 57.5 | 15.7 | 26.5 | 31.3 | 15.9 | 35  | 32.0 | 38   | 45.2     | SCM 20-16Rp |
| 25       | 1     | 60.1 | 18.3 | 26.5 | 31.3 | 19.8 | 41  | 39.0 | 38   | 47.8     | SCM 20-12Rp |
| 28       | 1     | 70.1 | 18.3 | 36.6 | 36.6 | 19.8 | 41  | 39.0 | 46   | 49.3     | SCM 28-16Rp |
| 30       | 1.1/4 | 76.5 | 19.8 | 39.2 | 39.6 | 25.0 | 50  | 49.0 | 50   | 54.9     | SCM 30-20Rp |
| 32       | 1.1/4 | 78.9 | 19.8 | 41.6 | 42.0 | 25.0 | 50  | 49.0 | 50   | 55.9     | SCM 32-20Rp |
| 38       | 1.1/2 | 90.8 | 22.1 | 47.9 | 49.4 | 31.8 | 55  | 54.7 | 57   | 63.2     | SCM 38-24Rp |

**NOTE:** The ISO parallel Thread System RP shown on this page does not create pressure tight seal against the threads. The seal is made by metal to metal contact against the female part. A soft metal (usually annealed copper) gasket between the fitting and the part face.

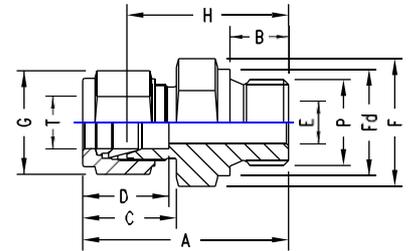
BORED - THROUGH FITTINGS FOR THERMOCOUPLE ARE AVAILABLE WITH ISO P ARALLEL MALE THREADS. Add suffix "BT" to the above part numbers above.

\* Reference Specifications : BS 2779 : ISO 228/1 : JIS B 0202 : DIN-ISO 228/1

## MALE CONNECTOR

### INCH OD Tubes x Male ISO\* Parallel Threads - RS

| T<br>Tube<br>OD | P<br>ISO<br>Male | A    | B    | C    | D    | E<br>min. | F<br>A/F | Fd   | G<br>A/F | H    | TU-LOK<br>Part No.. |
|-----------------|------------------|------|------|------|------|-----------|----------|------|----------|------|---------------------|
| 1/8             | 1/8              | 30.0 | 7.1  | 15.3 | 12.7 | 2.4       | 14       | 13.7 | 11       | 23.4 | 2 SCM-Rs            |
| 1/8             | 1/4              | 35.3 | 11.2 | 15.3 | 12.7 | 2.4       | 19       | 18.0 | 11       | 28.7 | 2-4 SCM-Rs          |
| 1/4             | 1/8              | 32.3 | 7.1  | 17.8 | 15.3 | 4.8       | 14       | 13.7 | 14       | 24.9 | 4-2 SCM-Rs          |
| 1/4             | 1/4              | 37.6 | 11.2 | 17.8 | 15.3 | 4.8       | 19       | 18.0 | 14       | 30.2 | 4 SCM-Rs            |
| 1/4             | 3/8              | 38.9 | 11.2 | 17.8 | 15.3 | 4.8       | 22       | 21.8 | 14       | 31.5 | 4-6 SCM-Rs          |
| 1/4             | 1/2              | 44.7 | 14.2 | 17.8 | 15.3 | 4.8       | 27       | 26.0 | 14       | 37.4 | 4-8 SCM-Rs          |
| 3/8             | 1/4              | 39.2 | 11.2 | 19.3 | 16.8 | 5.8       | 19       | 18.0 | 17       | 31.8 | 6-4 SCM-Rs          |
| 3/8             | 3/8              | 40.4 | 11.2 | 19.3 | 16.8 | 7.1       | 22       | 21.8 | 17       | 33.0 | 6 SCM-Rs            |
| 3/8             | 1/2              | 46.3 | 14.2 | 19.3 | 16.8 | 7.1       | 27       | 26.0 | 17       | 38.9 | 6-8 SCM-Rs          |
| 1/2             | 1/4              | 42.7 | 11.2 | 21.8 | 22.9 | 5.8       | 22       | 18.0 | 22       | 32.5 | 8-4 SCM-Rs          |
| 1/2             | 3/8              | 43.2 | 11.2 | 21.8 | 22.9 | 7.9       | 22       | 21.8 | 22       | 33.0 | 8-6 SCM-Rs          |
| 1/2             | 1/2              | 49.0 | 14.2 | 21.8 | 22.9 | 10.4      | 27       | 26.0 | 22       | 38.9 | 8 SCM-Rs            |
| 1/2             | 3/4              | 52.8 | 15.7 | 21.8 | 22.9 | 10.4      | 35       | 32.0 | 22       | 42.7 | 8-12 SCM-Rs         |
| 3/4             | 1/2              | 49.0 | 14.2 | 21.8 | 24.4 | 11.9      | 27       | 26.0 | 28.5     | 38.9 | 12-8 SCM-Rs         |
| 3/4             | 3/4              | 52.8 | 15.7 | 21.8 | 24.4 | 15.8      | 35       | 32.0 | 28.5     | 42.7 | 12 SCM-Rs           |
| 3/4             | 1                | 55.4 | 18.3 | 21.8 | 24.4 | 15.8      | 41       | 39.0 | 28.5     | 45.6 | 12-16 SCM-Rs        |
| 1               | 1/2              | 55.9 | 14.2 | 26.4 | 31.2 | 11.9      | 35       | 26.0 | 38       | 43.7 | 16-8 SCM-Rs         |
| 1               | 3/4              | 57.5 | 15.7 | 26.4 | 31.2 | 15.8      | 35       | 32.0 | 38       | 45.2 | 16-12 SCM-Rs        |
| 1               | 1                | 60.0 | 18.3 | 26.4 | 31.2 | 19.8      | 41       | 39.0 | 38       | 47.8 | 16 SCM-Rs           |
| 1.1/4           | 1.1/4            | 78.9 | 19.8 | 38.9 | 41.2 | 25.0      | 50       | 49.0 | 50       | 55.9 | 20 SCM-Rs           |
| 1.1/2           | 1.1/2            | 90.8 | 22.1 | 45.2 | 50.0 | 31.8      | 60       | 54.7 | 57       | 63.2 | 24 SCM-Rs           |



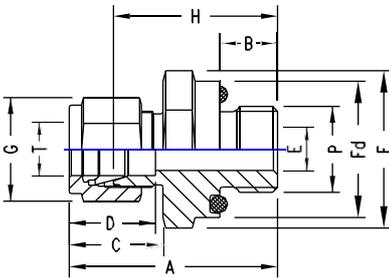
### METRIC OD Tube x Male ISO\* Parallel Threads - RS

| T<br>Tube<br>OD | P<br>ISO<br>Male | A    | B    | C    | D    | E<br>min. | F<br>A/F | Fd   | G<br>A/F | H    | TU-LOK<br>Part No. |
|-----------------|------------------|------|------|------|------|-----------|----------|------|----------|------|--------------------|
| 3               | 1/8              | 30.0 | 7.1  | 15.3 | 12.9 | 2.4       | 14       | 13.8 | 11       | 23.4 | SCM 3-2 Rs         |
| 3               | 1/4              | 35.3 | 11.2 | 15.3 | 12.9 | 2.4       | 19       | 18.0 | 11       | 28.7 | SCM 3-4 Rs         |
| 6               | 1/8              | 32.3 | 7.1  | 17.7 | 15.3 | 4.8       | 14       | 13.8 | 14       | 24.9 | SCM 6-2 Rs         |
| 6               | 1/4              | 37.6 | 11.2 | 17.7 | 15.3 | 4.8       | 19       | 18.0 | 14       | 30.2 | SCM 6-4 Rs         |
| 6               | 3/8              | 38.9 | 11.2 | 17.7 | 15.3 | 4.8       | 22       | 21.8 | 14       | 31.5 | SCM 6-6 Rs         |
| 6               | 1/2              | 44.7 | 14.2 | 17.7 | 15.3 | 4.8       | 27       | 26.0 | 14       | 37.3 | SCM 6-8 Rs         |
| 8               | 1/8              | 33.2 | 7.1  | 18.6 | 16.2 | 4.0       | 14       | 13.8 | 16       | 25.7 | SCM 8-2 Rs         |
| 8               | 1/4              | 38.5 | 11.2 | 18.6 | 16.2 | 6.4       | 19       | 18.0 | 16       | 31.0 | SCM 8-4 Rs         |
| 8               | 3/8              | 39.8 | 11.2 | 18.6 | 16.2 | 6.4       | 22       | 21.8 | 16       | 32.3 | SCM 8-6 Rs         |
| 8               | 1/2              | 45.6 | 14.2 | 18.6 | 16.2 | 6.4       | 27       | 26.0 | 16       | 38.1 | SCM 8-8 Rs         |
| 10              | 1/4              | 39.4 | 11.2 | 19.5 | 17.2 | 5.9       | 19       | 18.0 | 19       | 31.8 | SCM 10-4 Rs        |
| 10              | 3/8              | 40.6 | 11.2 | 19.5 | 17.2 | 7.6       | 22       | 21.8 | 19       | 33.0 | SCM 10-6 Rs        |
| 10              | 1/2              | 46.5 | 14.2 | 19.5 | 17.2 | 7.9       | 27       | 26.0 | 19       | 38.9 | SCM 10-8 Rs        |
| 12              | 1/4              | 42.6 | 11.2 | 22.0 | 22.8 | 5.9       | 22       | 18.0 | 22       | 32.5 | SCM 12-4 Rs        |
| 12              | 3/8              | 43.1 | 11.2 | 22.0 | 22.8 | 7.9       | 22       | 21.8 | 22       | 33.0 | SCM 12-6 Rs        |
| 12              | 1/2              | 49.0 | 14.2 | 22.0 | 22.8 | 9.5       | 27       | 26.0 | 22       | 38.9 | SCM 12-8 Rs        |
| 12              | 3/4              | 52.8 | 15.7 | 22.0 | 22.8 | 9.5       | 35       | 32.0 | 22       | 42.7 | SCM 12-12 Rs       |
| 16              | 3/8              | 43.9 | 11.2 | 22.0 | 24.4 | 7.9       | 24       | 21.8 | 25       | 33.8 | SCM 16-6 Rs        |
| 16              | 1/2              | 49.0 | 14.2 | 22.0 | 24.4 | 11.9      | 27       | 26.0 | 25       | 38.9 | SCM 16-8 Rs        |
| 20              | 1/2              | 50.5 | 14.2 | 22.0 | 26.0 | 11.9      | 30       | 26.0 | 28.5     | 40.4 | SCM 20-8 Rs        |
| 20              | 3/4              | 52.3 | 15.7 | 22.0 | 26.0 | 15.9      | 35       | 32.0 | 28.5     | 42.7 | SCM 22-12 Rs       |
| 22              | 3/4              | 52.3 | 15.7 | 22.0 | 26.0 | 15.9      | 35       | 32.0 | 32       | 42.7 | SCM 20-16 Rs       |
| 22              | 1                | 55.3 | 18.3 | 22.0 | 26.0 | 18.3      | 41       | 39.0 | 32       | 45.2 | SCM 25-12 Rs       |
| 25              | 3/4              | 57.5 | 15.7 | 26.5 | 31.3 | 15.9      | 35       | 32.0 | 38       | 45.2 | SCM 20-16 Rs       |
| 25              | 1                | 60.1 | 18.3 | 26.5 | 31.3 | 19.8      | 41       | 39.0 | 38       | 47.8 | SCM 20-12 Rs       |
| 28              | 1                | 70.1 | 18.3 | 36.6 | 36.6 | 19.8      | 41       | 39.0 | 46       | 49.3 | SCM 28-16 Rs       |
| 30              | 1.1/4            | 76.5 | 19.8 | 39.2 | 39.6 | 25.0      | 50       | 49.0 | 50       | 54.9 | SCM 30-20 Rs       |
| 32              | 1.1/4            | 78.9 | 19.8 | 41.6 | 42.0 | 25.0      | 50       | 49.0 | 50       | 55.9 | SCM 32-20 Rs       |
| 38              | 1.1/2            | 90.8 | 22.1 | 47.9 | 49.4 | 31.8      | 55       | 54.7 | 57       | 63.2 | SCM 38-24 Rs       |

\* Reference Specifications : BS 2779 : ISO 228/1 : JIS B0202 : DIN-ISO 228/1

NOTE: The ISO Parallel Thread system shown on this page does not create pressure tight seal against the threads. The seal is made by a bounded washer seal between the fitting and female part face. A soft metal (Copper) Gasket way also be used.

**O SEAL MALE CONNECTOR**  
**INCH OD Tubes x Male ISO\* Parallel Threads**



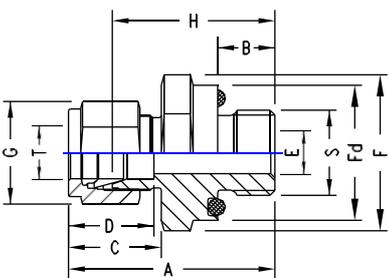
| T<br>Tube ISO<br>OD | P<br>Male | A    | B    | C    | D    | E<br>min. | F<br>A/F | Fd   | G<br>A/F | H    | ORing<br>Part No. | TULOK<br>Part No. |
|---------------------|-----------|------|------|------|------|-----------|----------|------|----------|------|-------------------|-------------------|
| 1/8                 | 1/8       | 32.8 | 7.1  | 15.3 | 12.7 | 2.4       | 19       | 18.8 | 11       | 26.2 | 2 OPN             | 2 SCOR            |
| 1/4                 | 1/8       | 35.0 | 7.1  | 17.8 | 15.3 | 4.8       | 19       | 18.8 | 14       | 27.7 | 2 OPN             | 4-2 SCOR          |
| 1/4                 | 1/4       | 40.0 | 11.2 | 17.8 | 15.3 | 7.1       | 24       | 23.6 | 14       | 32.6 | 4 OPN             | 4 SCOR            |
| 3/8                 | 1/4       | 41.5 | 11.2 | 19.3 | 16.8 | 7.1       | 24       | 23.6 | 17       | 34.1 | 4 OPN             | 6-4 SCOR          |
| 3/8                 | 3/8       | 42.2 | 11.2 | 19.3 | 16.8 | 7.1       | 30       | 29.8 | 17       | 34.8 | 6 OPN             | 6 SCOR            |
| 3/8                 | 1/2       | 47.7 | 14.2 | 19.3 | 16.8 | 9.6       | 32       | 31.8 | 17       | 40.3 | 8 OPN             | 6-8 SCOR          |
| 1/2                 | 3/8       | 44.5 | 10.4 | 21.8 | 22.9 | 10.4      | 30       | 29.8 | 22       | 34.4 | 6 OPN             | 8-6 SCOR          |
| 1/2                 | 1/2       | 50.4 | 14.2 | 21.8 | 22.9 | 11.9      | 32       | 31.8 | 22       | 40.3 | 8 OPN             | 8 SCOR            |
| 5/8                 | 1/2       | 50.4 | 14.2 | 21.8 | 24.4 | 11.9      | 32       | 31.8 | 22       | 40.3 | 8 OPN             | 10-8 SCOR         |
| 3/4                 | 1/2       | 50.4 | 14.2 | 21.8 | 24.4 | 15.8      | 32       | 31.8 | 28.5     | 40.3 | 8 OPN             | 12-8 SCOR         |
| 3/4                 | 3/4       | 53.5 | 15.7 | 21.8 | 24.4 | 15.8      | 38       | 37.8 | 28.5     | 43.4 | 12 OPN            | 12 SCOR           |
| 1                   | 3/4       | 58.2 | 15.7 | 26.4 | 31.2 | 22.3      | 38       | 37.8 | 38       | 46.0 | 12 OPN            | 16-12 SCOR        |
| 1                   | 1         | 62.2 | 18.3 | 26.4 | 31.2 | 27.6      | 45       | 44.0 | 38       | 50.0 | 16 OPN            | 16 SCOR           |
| 1.1/4               | 1.1/4     | 77.6 | 12.0 | 38.9 | 41.4 | 27.6      | 55       | 54.0 | 50       | 55.6 | 20 OPN            | 20 SCOR           |
| 1.1/2               | 1.1/2     | 88.9 | 12.0 | 45.2 | 50.0 | 34.0      | 60       | 58.0 | 57       | 61.7 | 24 OPN            | 24 SCOR           |

**METRIC OD Tubes x Male ISO\* Parallel Threads**

| T<br>Tube ISO<br>OD | P<br>Male | A    | B    | C    | D    | E<br>min. | F<br>A/F | Fd   | G<br>A/F | H    | ORing<br>Part No. | TULOK<br>Part No. |
|---------------------|-----------|------|------|------|------|-----------|----------|------|----------|------|-------------------|-------------------|
| 3                   | 1/8       | 32.8 | 7.1  | 15.3 | 12.9 | 2.4       | 19       | 18.8 | 11       | 26.2 | 2 OPN             | SCO3-2 R          |
| 3                   | 1/4       | 37.6 | 11.2 | 15.3 | 12.9 | 2.4       | 24       | 23.8 | 11       | 31.0 | 4 OPN             | SCO3-4 R          |
| 6                   | 1/4       | 40.1 | 11.2 | 17.7 | 15.3 | 4.8       | 24       | 23.8 | 14       | 32.7 | 4 OPN             | SCO6-4 R          |
| 6                   | 3/8       | 40.8 | 11.2 | 17.7 | 15.3 | 4.8       | 30       | 29.8 | 14       | 33.4 | 6 OPN             | SCO6 R            |
| 8                   | 1/4       | 40.9 | 11.2 | 18.6 | 16.2 | 6.3       | 24       | 23.8 | 16       | 33.4 | 4 OPN             | SCO8-4 R          |
| 10                  | 1/4       | 41.0 | 11.2 | 19.5 | 17.2 | 7.1       | 24       | 23.8 | 17       | 33.4 | 4 OPN             | SCO10-4 R         |
| 10                  | 3/8       | 42.6 | 11.2 | 19.5 | 17.2 | 7.1       | 30       | 29.8 | 17       | 35.0 | 6 OPN             | SCO10-6 R         |
| 10                  | 1/2       | 48.0 | 14.2 | 19.5 | 17.2 | 7.9       | 32       | 31.8 | 17       | 40.4 | 8 OPN             | SCO10-8 R         |
| 12                  | 1/4       | 44.3 | 11.2 | 22.0 | 22.8 | 7.1       | 24       | 21.8 | 22       | 34.2 | 4 OPN             | SCO12-4 R         |
| 12                  | 3/8       | 45.1 | 11.2 | 22.0 | 22.8 | 7.9       | 30       | 29.8 | 22       | 34.0 | 6 OPN             | SCO12-6 R         |
| 12                  | 1/2       | 50.5 | 14.3 | 22.0 | 22.8 | 9.5       | 32       | 31.8 | 22       | 40.4 | 8 OPN             | SCO12-8 R         |
| 16                  | 1/2       | 50.5 | 14.3 | 22.0 | 24.4 | 11.9      | 32       | 31.8 | 25       | 40.4 | 8 OPN             | SCO16-8 R         |
| 20                  | 3/4       | 55.1 | 15.7 | 22.0 | 26.0 | 15.8      | 38       | 37.0 | 32       | 45.0 | 12 OPN            | SCO20-2 R         |
| 25                  | 3/4       | 58.1 | 15.7 | 26.5 | 31.3 | 15.8      | 38       | 37.0 | 38       | 45.8 | 12 OPN            | SCO25-2 R         |
| 25                  | 1         | 62.3 | 18.3 | 26.5 | 31.3 | 19.8      | 45       | 44.0 | 38       | 50.0 | 16 OPN            | SCO25-16 R        |

\* Reference Specifications : BS 2779 : ISO 228/1 : JIS B0202 : DIN-ISO 228/1

**INCH OD Tube x Male Straight Threads - UNF**

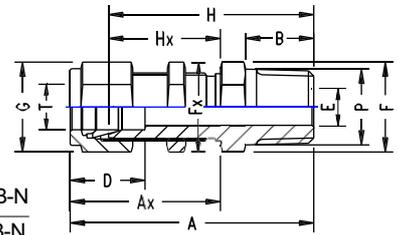


| T<br>Tube<br>OD | S<br>Thread<br>Male | A    | B    | C    | D    | E<br>min. | F<br>A/F | Fd   | G<br>A/F | H    | ORing<br>Part No. | TULOK<br>Part No. |
|-----------------|---------------------|------|------|------|------|-----------|----------|------|----------|------|-------------------|-------------------|
| 1/8             | 5/16-24             | 32.8 | 8.6  | 15.3 | 12.7 | 2.4       | 14       | 13.8 | 11       | 26.2 | 1 OPU             | 2 SCOU            |
| 1/4             | 7/16-20             | 38.4 | 10.4 | 17.8 | 15.3 | 4.8       | 19       | 18.8 | 14       | 31.0 | 2 OPU             | 4 SCOU            |
| 5/16            | 1/2-20              | 40.6 | 11.2 | 18.5 | 16.3 | 6.3       | 22       | 21.8 | 16       | 33.3 | 3 OPU             | 5 SCOU            |
| 3/8             | 9/16-18             | 42.4 | 12.0 | 19.3 | 16.8 | 7.1       | 24       | 23.6 | 17       | 35.0 | 4 OPU             | 6 SCOU            |
| 1/2             | 3/4-16              | 46.0 | 12.0 | 21.8 | 22.9 | 10.4      | 28.5     | 28.0 | 22       | 35.8 | 6 OPU             | 8 SCOU            |
| 3/4             | 11/16-12            | 52.4 | 14.3 | 21.8 | 24.4 | 15.8      | 38       | 37.8 | 28.5     | 42.2 | 12 OPU            | 12 SCOU           |
| 1               | 15/16-12            | 58.2 | 14.3 | 26.4 | 31.2 | 22.3      | 45       | 44.0 | 38       | 46.0 | 16 OPU            | 16 SCOU           |
| 1.1/4           | 15/8-12             | 76.2 | 18.3 | 38.9 | 41.4 | 27.6      | 55       | 54.0 | 50       | 54.1 | 20 OPU            | 20 SCOU           |
| 1.1/2           | 17/8-12             | 86.6 | 19.8 | 45.2 | 50.0 | 34.0      | 60       | 58.0 | 57       | 59.4 | 24 OPU            | 24 SCOU           |

## BULKHEAD MALE CONNECTOR

### INCH OD Tubes x Male NPT Threads

| T<br>Tube<br>OD | P<br>NPT<br>Male | A     | Ax   | B    | D<br>min. | E    | F<br>A/F | G<br>A/F | H    | Hx   | Panel<br>Hole<br>Drill<br>Size | Max.<br>Panel<br>Thick-<br>ness | TU-LOK<br>Part No. |
|-----------------|------------------|-------|------|------|-----------|------|----------|----------|------|------|--------------------------------|---------------------------------|--------------------|
| 1/8             | 1/8              | 46.4  | 31.2 | 9.6  | 12.7      | 2.4  | 14       | 11       | 39.8 | 24.6 | 8.3                            | 12.7                            | 2 SCMB-N           |
| 1/4             | 1/8              | 49.5  | 33.5 | 9.6  | 15.3      | 4.8  | 16       | 14       | 42.2 | 26.2 | 11.5                           | 10.2                            | 4-2 SCMB-N         |
| 1/4             | 1/4              | 54.1  | 33.5 | 14.3 | 15.3      | 4.8  | 16       | 14       | 46.7 | 26.2 | 11.5                           | 10.2                            | 4 SCMB-N           |
| 3/8             | 1/4              | 57.4  | 36.8 | 14.3 | 16.8      | 7.1  | 19       | 17       | 50.0 | 29.5 | 14.7                           | 11.2                            | 6-4 SCMB-N         |
| 3/8             | 3/8              | 57.4  | 36.8 | 14.3 | 16.8      | 7.1  | 19       | 17       | 50.0 | 29.5 | 14.7                           | 11.2                            | 6 SCMB-N           |
| 3/8             | 1/2              | 63.7  | 36.8 | 19.1 | 16.8      | 7.1  | 22       | 17       | 56.5 | 29.5 | 14.7                           | 11.2                            | 6-8 SCMB-N         |
| 1/2             | 3/8              | 63.3  | 41.9 | 14.3 | 22.9      | 9.6  | 24       | 22       | 53.0 | 31.8 | 19.5                           | 12.7                            | 8-6 SCMB-N         |
| 1/2             | 1/2              | 68.8  | 41.9 | 19.1 | 22.9      | 10.4 | 24       | 22       | 58.8 | 31.8 | 19.5                           | 12.7                            | 8 SCMB-N           |
| 3/4             | 3/4              | 76.2  | 47.5 | 19.1 | 24.4      | 15.8 | 30       | 28.5     | 66.9 | 37.4 | 25.8                           | 16.8                            | 12 SCMB-N          |
| 1               | 1                | 93.2  | 57.4 | 23.9 | 31.2      | 22.3 | 41       | 38       | 81.0 | 45.2 | 33.7                           | 19.0                            | 16 SCMB-N          |
| 1.1/4           | 1.1/4            | 110.5 | 72.5 | 23.9 | 41.2      | 27.6 | 50       | 50       | 87.5 | 49.5 | 42.5                           | 19.0                            | 20 SCMB-N          |
| 1.1/2           | 1.1/2            | 122.8 | 79.1 | 26.2 | 50.0      | 34.0 | 60       | 57       | 95.5 | 51.5 | 50.5                           | 19.0                            | 24 SCMB-N          |

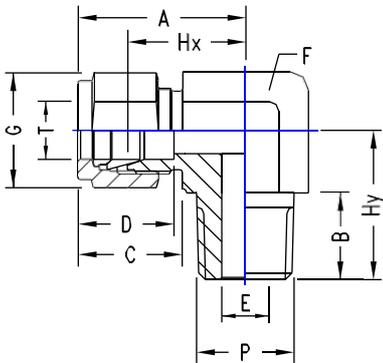


### METRIC OD Tubes x Male NPT Threads

| T<br>Tube<br>NPT<br>OD | P<br>NPT<br>Male | A     | Ax   | B    | D<br>min. | E    | F<br>A/F | G<br>A/F | H    | Hx   | Panel<br>Hole<br>Drill<br>Size | Max.<br>Panel<br>Thick-<br>ness | TU-LOK<br>Part No. |
|------------------------|------------------|-------|------|------|-----------|------|----------|----------|------|------|--------------------------------|---------------------------------|--------------------|
| 3                      | 1/8              | 46.4  | 31.2 | 9.6  | 12.9      | 2.4  | 11       | 11       | 39.8 | 24.6 | 8.3                            | 12.7                            | SCMB 3-2N          |
| 6                      | 1/8              | 49.5  | 33.5 | 9.6  | 15.3      | 4.8  | 16       | 14       | 42.2 | 26.2 | 11.5                           | 10.2                            | SCMB 6-2N          |
| 10                     | 1/4              | 57.4  | 36.8 | 14.3 | 17.2      | 7.1  | 19       | 17       | 50.0 | 29.5 | 14.7                           | 11.2                            | SCMB 10-4N         |
| 10                     | 3/8              | 57.4  | 36.8 | 14.3 | 17.2      | 7.1  | 19       | 17       | 50.0 | 29.5 | 14.7                           | 11.2                            | SCMB 10-4N         |
| 12                     | 3/8              | 63.3  | 41.9 | 14.3 | 22.0      | 9.6  | 24       | 22       | 53.0 | 31.8 | 19.5                           | 12.7                            | SCMB 12-6N         |
| 12                     | 1/2              | 68.8  | 41.9 | 19.1 | 22.0      | 10.4 | 24       | 22       | 58.8 | 31.8 | 19.5                           | 12.7                            | SCMB 12-8N         |
| 16                     | 1/2              | 69.6  | 42.6 | 19.1 | 24.4      | 11.9 | 27       | 25       | 59.5 | 32.5 | 22.8                           | 12.7                            | SCMB 16-8N         |
| 22                     | 3/4              | 83.3  | 53.0 | 19.1 | 26.0      | 15.8 | 35       | 25       | 73.2 | 42.9 | 29.0                           | 19.0                            | SCMB 22-12N        |
| 25                     | 1                | 93.2  | 57.4 | 23.9 | 31.3      | 22.3 | 41       | 38       | 81.0 | 45.2 | 33.7                           | 19.0                            | SCMB 25-16N        |
| 32                     | 1.1/4            | 110.5 | 72.5 | 23.9 | 42.0      | 28.6 | 50       | 50       | 87.5 | 49.5 | 42.5                           | 19.0                            | SCMB 32-20N        |
| 38                     | 1.1/2            | 122.8 | 79.1 | 26.2 | 49.4      | 33.7 | 60       | 57       | 95.5 | 51.5 | 50.5                           | 19.0                            | SCMB 38-24N        |

**NOTE:** Bulkhead Male Connectors are also available with ISO Taper Male Threads, ISO Parallel Male Threads, ISO Parallel Male Therads - RP and RS and UNEF Threads. Please consult us for details.

**MALE ELBOW**  
INCH OD Tubes x Male NPT Thread



| T<br>Tube<br>OD | P<br>NPT<br>Male | A     | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | Hx   | Hy   | TULOK<br>Part | No. |
|-----------------|------------------|-------|------|------|------|-----------|----------|----------|------|------|---------------|-----|
| 1/16            | 1/16             | 19.0  | 9.6  | 10.9 | 8.6  | 1.3       | 11       | 11       | 15.3 | 17.8 | 1 SEMN        |     |
| 1/16            | 1/8              | 19.0  | 9.6  | 10.9 | 8.6  | 1.3       | 11       | 11       | 15.3 | 17.8 | 1-2 SEMN      |     |
| 1/8             | 1/8              | 23.6  | 9.6  | 15.3 | 12.7 | 2.4       | 11       | 11       | 17.0 | 17.8 | 2 SEMN        |     |
| 1/8             | 1/4              | 24.6  | 14.3 | 15.3 | 12.7 | 2.4       | 14       | 11       | 18.0 | 23.4 | 2-4 SEMN      |     |
| 1/4             | 1/8              | 26.9  | 9.6  | 17.8 | 5.3  | 4.8       | 14       | 14       | 19.6 | 18.8 | 4-2 SEMN      |     |
| 1/4             | 1/4              | 26.9  | 14.3 | 17.8 | 15.3 | 4.8       | 14       | 14       | 19.6 | 23.4 | 4 SEMN        |     |
| 1/4             | 3/8              | 29.7  | 14.3 | 17.8 | 15.3 | 4.8       | 19       | 14       | 22.4 | 26.2 | 4-6 SEMN      |     |
| 1/4             | 1/2              | 31.8  | 19.1 | 17.8 | 15.3 | 4.8       | 22       | 14       | 24.4 | 33.0 | 4-8 SEMN      |     |
| 5/16            | 1/4              | 28.7  | 9.6  | 18.5 | 16.3 | 6.3       | 14       | 16       | 21.3 | 24.4 | 5-4 SEMN      |     |
| 3/8             | 1/8              | 30.5  | 9.6  | 19.3 | 16.8 | 4.8       | 14       | 17       | 23.1 | 20.9 | 6-2 SEMN      |     |
| 3/8             | 1/4              | 30.5  | 14.3 | 19.3 | 16.8 | 7.1       | 17       | 17       | 23.1 | 25.4 | 6-4 SEMN      |     |
| 3/8             | 3/8              | 31.2  | 14.3 | 19.3 | 16.8 | 7.1       | 19       | 17       | 23.9 | 26.2 | 6 SEMN        |     |
| 3/8             | 1/2              | 33.3  | 19.1 | 19.3 | 16.8 | 7.1       | 22       | 17       | 25.9 | 33.0 | 6-8 SEMN      |     |
| 1/2             | 1/4              | 36.0  | 14.3 | 21.8 | 22.9 | 4.8       | 22       | 22       | 25.9 | 28.2 | 8-4 SEMN      |     |
| 1/2             | 3/8              | 36.0  | 14.3 | 21.8 | 22.9 | 9.6       | 22       | 22       | 25.9 | 28.2 | 8-6 SEMN      |     |
| 1/2             | 1/2              | 36.0  | 19.1 | 21.8 | 22.9 | 10.4      | 22       | 22       | 25.9 | 33.0 | 8 SEMN        |     |
| 1/2             | 3/4              | 39.9  | 19.1 | 21.8 | 22.9 | 10.4      | 27       | 22       | 29.7 | 36.8 | 8-12 SEMN     |     |
| 5/8             | 1/2              | 38.1  | 19.1 | 21.8 | 24.4 | 11.9      | 24       | 25       | 27.9 | 35.0 | 10-8 SEMN     |     |
| 3/4             | 1/2              | 39.9  | 19.1 | 21.8 | 24.4 | 11.9      | 27       | 28.5     | 29.7 | 36.8 | 12-8 SEMN     |     |
| 3/4             | 3/4              | 39.9  | 19.1 | 21.8 | 24.4 | 15.8      | 27       | 28.5     | 29.7 | 36.8 | 12 SEMN       |     |
| 7/8             | 3/4              | 44.7  | 19.1 | 21.8 | 25.9 | 15.8      | 35       | 32       | 34.5 | 41.6 | 14-12 SEMN    |     |
| 1               | 3/4              | 49.0  | 19.1 | 26.4 | 31.2 | 15.8      | 35       | 38       | 36.8 | 41.6 | 16-12 SEMN    |     |
| 1               | 1                | 49.0  | 23.8 | 26.4 | 31.2 | 22.3      | 35       | 38       | 36.8 | 46.5 | 16 SEMN       |     |
| 1.1/4           | 1.1/4            | 66.5  | 23.8 | 38.8 | 41.1 | 27.6      | 46       | 50       | 44.5 | 47.8 | 20 SEMN       |     |
| 1.1/2           | 1.1/2            | 78.0  | 26.2 | 45.2 | 50.0 | 34.0      | 55       | 57       | 50.8 | 60.4 | 24 SEMN       |     |
| 2               | 2                | 107.2 | 26.9 | 62.7 | 67.6 | 46.0      | 70       | 76       | 69.9 | 70.6 | 32 SEMN       |     |

INCH OD Tubes x Male ISO\* Tapered Pipe Threads

| T<br>+Tube<br>ODISO | P<br>Mal | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H<br>x | H<br>y | TU-<br>LOK<br>Part | No. |
|---------------------|----------|------|------|------|------|-----------|----------|----------|--------|--------|--------------------|-----|
| ø/8                 | 1/8      | 23.6 | 9.6  | 15.3 | 12.7 | 2.4       | ø11      | 11       | 17.0   | 17.8   | 2 SEMRx            |     |
| 1/8                 | 1/4      | 24.6 | 14.3 | 15.3 | 12.7 | 2.4       | 14       | 11       | 18.0   | 23.4   | 2-4 SEMRx          |     |
| 1/4                 | 1/8      | 26.9 | 9.6  | 17.8 | 5.3  | 4.8       | 14       | 14       | 19.6   | 18.8   | 4-2 SEMRx          |     |
| 1/4                 | 1/4      | 26.9 | 14.3 | 17.8 | 15.3 | 4.8       | 14       | 14       | 19.6   | 23.4   | 4 SEMRx            |     |
| 1/4                 | 3/8      | 29.7 | 14.3 | 17.8 | 15.3 | 4.8       | 19       | 14       | 22.4   | 26.2   | 4-6 SEMRx          |     |
| 1/4                 | 1/2      | 31.8 | 19.1 | 17.8 | 15.3 | 4.8       | 22       | 14       | 24.4   | 33.0   | 4-8 SEMRx          |     |
| 3/8                 | 1/8      | 30.5 | 9.6  | 19.3 | 16.8 | 4.8       | 14       | 17       | 23.1   | 20.9   | 6-2 SEMRx          |     |
| 3/8                 | 1/4      | 30.5 | 14.3 | 19.3 | 16.8 | 7.1       | 17       | 17       | 23.1   | 25.4   | 6-4 SEMRx          |     |
| 3/8                 | 3/8      | 31.2 | 14.3 | 19.3 | 16.8 | 7.1       | 19       | 17       | 23.9   | 26.2   | 6 SEMRx            |     |
| 3/8                 | 1/2      | 33.3 | 19.1 | 19.3 | 16.8 | 7.1       | 22       | 17       | 25.9   | 33.0   | 6-8 SEMRx          |     |
| 1/2                 | 1/4      | 36.0 | 14.3 | 21.8 | 22.9 | 4.8       | 22       | 22       | 25.9   | 28.2   | 8-4 SEMRx          |     |
| 1/2                 | 3/8      | 36.0 | 14.3 | 21.8 | 22.9 | 9.6       | 22       | 22       | 25.9   | 28.2   | 8-6 SEMRx          |     |
| 1/2                 | 1/2      | 36.0 | 19.1 | 21.8 | 22.9 | 10.4      | 22       | 22       | 25.9   | 33.0   | 8 SEMRx            |     |
| 1/2                 | 3/4      | 39.9 | 19.1 | 21.8 | 22.9 | 10.4      | 27       | 22       | 29.7   | 36.8   | 8-12 SEMRx         |     |
| 3/4                 | 1/2      | 39.9 | 19.1 | 21.8 | 24.4 | 11.9      | 27       | 28.5     | 29.7   | 36.8   | 12-8 SEMRx         |     |
| 3/4                 | 3/4      | 39.9 | 19.1 | 21.8 | 24.4 | 15.8      | 27       | 28.5     | 29.7   | 36.8   | 12 SEMRx           |     |
| 1                   | 3/4      | 49.0 | 19.1 | 26.4 | 31.2 | 15.8      | 35       | 38       | 36.8   | 41.6   | 16-12 SEMRx        |     |
| 1                   | 1        | 49.0 | 23.8 | 26.4 | 31.2 | 22.3      | 35       | 38       | 36.8   | 46.5   | 16 SEMRx           |     |
| 1.1/4               | 1.1/4    | 66.5 | 23.8 | 38.8 | 41.1 | 27.6      | 46       | 50       | 44.5   | 47.8   | 20 SEMRx           |     |
| 1.1/2               | 1.1/2    | 78.0 | 26.2 | 45.2 | 50.0 | 34.0      | 55       | 57       | 50.8   | 60.4   | 24 SEMRx           |     |

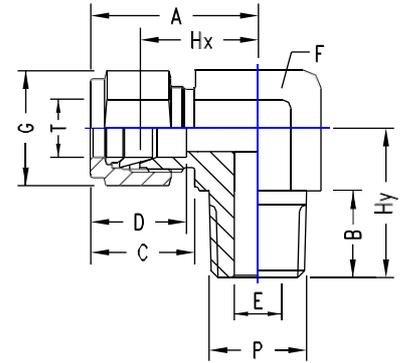
\* Reference Specifications : BS 21: ISO 7/1 : JIS B 0203 : DIN 2999 : IS 554

NOTE: The combination of tube OD and male threads are indicative of popular sizes. Other combinations, not shown, are available . Please Consult us.

## MALE ELBOW

### METRIC OD Tubes x Male NPT Threads

| T<br>Tube OD | P<br>NPT<br>Male | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | Hx   | Hy   | TULCK<br>Part | No. |
|--------------|------------------|------|------|------|------|-----------|----------|----------|------|------|---------------|-----|
| 3            | 1/8              | 23.6 | 9.6  | 15.3 | 12.9 | 2.4       | 11       | 11       | 17.0 | 17.8 | SEM-3-2N      |     |
| 3            | 1/4              | 24.6 | 14.3 | 15.3 | 12.9 | 2.4       | 14       | 11       | 18.0 | 23.4 | SEM-3-4N      |     |
| 6            | 1/8              | 27.0 | 9.6  | 17.7 | 15.3 | 4.8       | 14       | 14       | 19.6 | 18.8 | SEM-6-2N      |     |
| 6            | 1/4              | 27.0 | 14.3 | 17.7 | 15.3 | 4.8       | 14       | 14       | 19.6 | 23.4 | SEM-6-4N      |     |
| 6            | 3/8              | 29.8 | 14.3 | 17.7 | 15.3 | 4.8       | 19       | 14       | 22.4 | 26.2 | SEM-6N        |     |
| 6            | 1/2              | 31.8 | 19.1 | 17.7 | 15.3 | 4.8       | 22       | 14       | 24.4 | 33.0 | SEM-6-8N      |     |
| 8            | 1/8              | 28.8 | 9.6  | 18.6 | 16.2 | 4.8       | 14       | 16       | 21.3 | 19.8 | SEM-8-2N      |     |
| 8            | 1/4              | 28.8 | 14.3 | 18.6 | 16.2 | 6.3       | 14       | 16       | 21.3 | 24.4 | SEM-8-4N      |     |
| 8            | 3/8              | 30.6 | 14.3 | 18.6 | 16.2 | 6.3       | 19       | 16       | 23.1 | 26.2 | SEM-8-6N      |     |
| 8            | 1/2              | 32.6 | 19.1 | 18.6 | 16.2 | 6.3       | 22       | 16       | 25.1 | 33.0 | SEM-8N        |     |
| 10           | 1/8              | 31.5 | 9.6  | 19.5 | 17.2 | 4.8       | 17       | 19       | 23.9 | 21.6 | SEM-10-2N     |     |
| 10           | 1/4              | 31.5 | 14.3 | 19.5 | 17.2 | 7.1       | 17       | 19       | 23.9 | 26.2 | SEM-10-4N     |     |
| 10           | 3/8              | 31.5 | 14.3 | 19.5 | 17.2 | 7.9       | 19       | 19       | 23.9 | 26.2 | SEM-10-6N     |     |
| 10           | 1/2              | 33   | 19.1 | 19.5 | 17.2 | 7.9       | 22       | 19       | 25.9 | 33.0 | SEM-10-8N     |     |
| 12           | 1/4              | 36.0 | 14.3 | 22.0 | 22.8 | 7.1       | 22       | 22       | 25.9 | 26.2 | SEM-12-4N     |     |
| 12           | 3/8              | 36.0 | 14.3 | 22.0 | 22.8 | 9.5       | 22       | 22       | 25.9 | 38.2 | SEM-12-6N     |     |
| 12           | 1/2              | 36.0 | 19.1 | 22.0 | 22.8 | 9.5       | 22       | 22       | 25.9 | 33.0 | SEM-12-8N     |     |
| 12           | 3/4              | 39.8 | 19.1 | 22.0 | 22.8 | 9.5       | 27       | 22       | 29.7 | 36.8 | SEM-12N       |     |
| 15           | 1/2              | 38.0 | 19.1 | 22.0 | 24.4 | 11.9      | 24       | 25       | 27.9 | 35.1 | SEM-15-8N     |     |
| 16           | 1/2              | 38.0 | 19.1 | 22.0 | 24.4 | 11.9      | 24       | 25       | 27.9 | 35.1 | SEM-16-8N     |     |
| 16           | 3/4              | 39.8 | 19.1 | 22.0 | 24.4 | 27.7      | 27       | 25       | 29.7 | 36.8 | SEM-16-12N    |     |
| 18           | 1/2              | 39.8 | 19.1 | 22.0 | 24.4 | 11.9      | 27       | 30       | 29.7 | 36.8 | SEM-18-8N     |     |
| 18           | 3/4              | 39.8 | 19.1 | 22.0 | 24.4 | 15.1      | 27       | 30       | 29.7 | 36.8 | SEM-18-12N    |     |
| 20           | 1/2              | 44.6 | 19.1 | 22.0 | 26.0 | 11.9      | 35       | 32       | 34.5 | 41.7 | SEM-20-8N     |     |
| 20           | 3/4              | 44.6 | 19.1 | 22.0 | 26.0 | 15.9      | 35       | 32       | 34.5 | 41.7 | SEM-20-12N    |     |
| 22           | 3/4              | 44.6 | 19.1 | 22.0 | 26.0 | 15.9      | 35       | 32       | 34.5 | 41.7 | SEM-22-12N    |     |
| 22           | 1                | 44.6 | 23.9 | 22.0 | 26.0 | 18.3      | 35       | 32       | 34.5 | 46.5 | SEM-22-16N    |     |
| 25           | 3/4              | 49.1 | 19.1 | 26.5 | 31.3 | 59.9      | 35       | 38       | 36.8 | 41.7 | SEM-25-12N    |     |
| 25           | 1                | 41.1 | 23.9 | 26.5 | 31.3 | 21.8      | 35       | 38       | 36.8 | 46.5 | SEM-25-16N    |     |
| 30           | 1.1/4            | 69.9 | 23.9 | 39.2 | 39.6 | 26.2      | 45       | 50       | 48.3 | 53.1 | SEM-30-20N    |     |
| 32           | 1.1/4            | 72.3 | 23.9 | 41.6 | 42.0 | 27.6      | 45       | 50       | 49.3 | 53.1 | SEM-32-20N    |     |
| 38           | 1.1/2            | 84.0 | 26.2 | 47.9 | 49.4 | 33.7      | 55       | 57       | 56.4 | 60.4 | SEM-38-24N    |     |

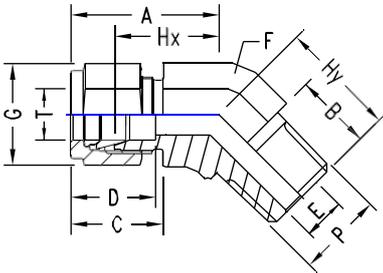


### METRIC OD Tubes x Male ISO\* Tapered Pipe Threads

| T<br>Tube OD | P<br>ISO<br>Male | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | Hx   | Hy   | TU-LOK<br>Part | No. |
|--------------|------------------|------|------|------|------|-----------|----------|----------|------|------|----------------|-----|
| 3            | 1/8              | 23.6 | 9.6  | 15.3 | 12.9 | 2.4       | 11       | 11       | 17.0 | 17.8 | SEM-3-2Rx      |     |
| 3            | 1/4              | 24.6 | 14.3 | 15.3 | 12.9 | 2.4       | 14       | 11       | 18.0 | 23.4 | SEM-3-4Rx      |     |
| 6            | 1/8              | 27.0 | 9.6  | 17.7 | 15.3 | 4.8       | 14       | 14       | 19.6 | 18.8 | SEM-6-2Rx      |     |
| 6            | 1/4              | 27.0 | 14.3 | 17.7 | 15.3 | 4.8       | 14       | 14       | 19.6 | 23.4 | SEM-6-4Rx      |     |
| 6            | 3/8              | 29.8 | 14.3 | 17.7 | 15.3 | 4.8       | 19       | 14       | 22.4 | 26.2 | SEM-6Rx        |     |
| 6            | 1/2              | 31.8 | 19.1 | 17.7 | 15.3 | 4.8       | 22       | 14       | 24.4 | 33.0 | SEM-6-8Rx      |     |
| 8            | 1/4              | 28.8 | 14.3 | 18.6 | 16.2 | 6.3       | 14       | 16       | 21.3 | 24.4 | SEM-8-4Rx      |     |
| 8            | 3/8              | 30.6 | 14.3 | 18.6 | 16.2 | 6.3       | 19       | 16       | 23.1 | 26.2 | SEM-8-6Rx      |     |
| 8            | 1/2              | 32.6 | 19.1 | 18.6 | 16.2 | 6.3       | 22       | 16       | 25.1 | 33.0 | SEM-8Rx        |     |
| 10           | 1/4              | 31.5 | 14.3 | 19.5 | 17.2 | 7.1       | 17       | 19       | 23.9 | 26.2 | SEM-10-4Rx     |     |
| 10           | 3/8              | 31.5 | 14.3 | 19.5 | 17.2 | 7.9       | 19       | 19       | 23.9 | 26.2 | SEM-10-6Rx     |     |
| 10           | 1/2              | 33   | 19.1 | 19.5 | 17.2 | 7.9       | 22       | 19       | 25.9 | 33.0 | SEM-10-8Rx     |     |
| 12           | 1/4              | 36.0 | 14.3 | 22.0 | 22.8 | 7.1       | 22       | 22       | 25.9 | 26.2 | SEM-12-4Rx     |     |
| 12           | 3/8              | 36.0 | 14.3 | 22.0 | 22.8 | 9.5       | 22       | 22       | 25.9 | 38.2 | SEM-12-6Rx     |     |
| 12           | 1/2              | 36.0 | 19.1 | 22.0 | 22.8 | 9.5       | 22       | 22       | 25.9 | 33.0 | SEM-12-8Rx     |     |
| 15           | 1/2              | 38.0 | 19.1 | 22.0 | 24.4 | 11.9      | 24       | 25       | 27.9 | 35.1 | SEM-15-8Rx     |     |
| 16           | 1/2              | 38.0 | 19.1 | 22.0 | 24.4 | 11.9      | 24       | 25       | 27.9 | 35.1 | SEM-16-8Rx     |     |
| 16           | 3/4              | 39.8 | 19.1 | 22.0 | 24.4 | 27.7      | 27       | 25       | 29.7 | 36.8 | SEM-16-12Rx    |     |
| 22           | 3/4              | 44.6 | 19.1 | 22.0 | 26.0 | 15.9      | 35       | 32       | 34.5 | 41.7 | SEM-22-12Rx    |     |
| 22           | 1                | 44.6 | 23.9 | 22.0 | 26.0 | 18.3      | 35       | 32       | 34.5 | 46.5 | SEM-22-16Rx    |     |
| 25           | 3/4              | 49.1 | 19.1 | 26.5 | 31.3 | 59.9      | 35       | 38       | 36.8 | 41.7 | SEM-25-12Rx    |     |
| 25           | 1                | 41.1 | 23.9 | 26.5 | 31.3 | 21.8      | 35       | 38       | 36.8 | 46.5 | SEM-25-16Rx    |     |
| 30           | 1.1/4            | 69.9 | 23.9 | 39.2 | 39.6 | 26.2      | 45       | 50       | 48.3 | 53.1 | SEM-30-20Rx    |     |
| 32           | 1.1/4            | 72.3 | 23.9 | 41.6 | 42.0 | 27.6      | 45       | 50       | 49.3 | 53.1 | SEM-32-20Rx    |     |
| 38           | 1.1/2            | 84.0 | 26.2 | 47.9 | 49.4 | 33.7      | 55       | 57       | 56.4 | 60.4 | SEM-38-24Rx    |     |

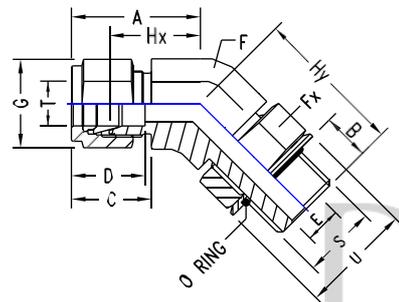
\* Reference Specifications : BS 21: ISO 7/1 : JIS B 0203 : DIN 2999 : IS 554

**45 DEG. MALE ELBOW**  
INCH OD Tubes x Male NPT Threads



| T<br>Tube<br>OD | P<br>NPT<br>Male | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | Hx   | Hy   | TU-LOK<br>Part | No. |
|-----------------|------------------|------|------|------|------|-----------|----------|----------|------|------|----------------|-----|
| 1/4             | 1/8              | 24.6 | 9.6  | 17.8 | 15.3 | 4.8       | 14       | 14       | 17.3 | 16.5 | 4-2 SEM45-N    |     |
| 1/4             | 1/4              | 24.6 | 14.3 | 17.8 | 15.3 | 4.8       | 14       | 14       | 17.3 | 21.0 | 4 SEM45-N      |     |
| 3/8             | 1/8              | 27.9 | 9.6  | 19.3 | 16.8 | 4.8       | 14       | 17       | 20.6 | 18.3 | 6-2 SEM45-N    |     |
| 3/8             | 1/4              | 27.9 | 14.3 | 19.3 | 16.8 | 7.1       | 17       | 17       | 20.6 | 22.9 | 6-4 SEM45-N    |     |
| 3/8             | 3/8              | 29.2 | 14.3 | 19.3 | 16.8 | 7.1       | 19       | 17       | 21.8 | 24.1 | 6 SEM45-N      |     |
| 1/2             | 3/8              | 32.0 | 14.3 | 21.8 | 22.9 | 9.6       | 22       | 22       | 21.8 | 24.1 | 8-6 SEM45-N    |     |
| 1/2             | 1/2              | 32.0 | 19.1 | 21.8 | 22.9 | 10.4      | 22       | 22       | 21.8 | 29.0 | 8 SEM45-N      |     |
| 3/4             | 3/4              | 34.0 | 19.1 | 21.8 | 24.4 | 15.8      | 27       | 28.5     | 23.9 | 31.8 | 12 SEM45-N     |     |
| 1               | 1                | 40.4 | 23.8 | 26.4 | 31.2 | 22.3      | 35       | 38       | 26.2 | 37.8 | 16 SEM45-N     |     |

**45 DEG. POSITIONABLE MALE ELBOW**  
INCH OD Tube x SAE/MS Straight Threads



| T<br>Tube<br>OD | P<br>SAE/MS<br>Male | A    | B    | C    | D    | E<br>min. | F  | Fx<br>A/F | G<br>A/F | Hx<br>A/F | Hy   | U    | O Ring<br>Part No. | TU-LOK<br>Part No. |
|-----------------|---------------------|------|------|------|------|-----------|----|-----------|----------|-----------|------|------|--------------------|--------------------|
| 1/4             | 7/16-20             | 25.7 | 9.9  | 17.8 | 15.3 | 4.8       | 14 | 14        | 14       | 18.3      | 25.6 | 16.5 | 4 OPU              | 4 SEsw/45-U        |
| 3/8             | 9/16-18             | 27.9 | 11.2 | 19.3 | 16.8 | 7.1       | 16 | 17        | 17       | 20.6      | 28.2 | 20.0 | 6 OPU              | 6 SEsw/45-U        |
| 1/2             | 3/4-16              | 32.0 | 12.7 | 21.8 | 22.9 | 10.4      | 22 | 22        | 22       | 21.8      | 32.3 | 25.7 | 8 OPU              | 8 SEsw/45-U        |
| 3/4             | 1 1/16-12           | 39.9 | 16.8 | 21.8 | 24.4 | 15.8      | 27 | 32        | 28.5     | 29.7      | 47.3 | 36.6 | 12 OPU             | 12 SEsw/45-U       |
| 1               | 1 5/16-12           | 47.5 | 16.8 | 26.4 | 31.2 | 19.8      | 35 | 38        | 38       | 35.3      | 50.6 | 44.0 | 16 OPU             | 16 SEsw/45-U       |

\* Reference Specifications : SAE Screw Thread standard conforms to American standard B1.1. Unified screw threads.

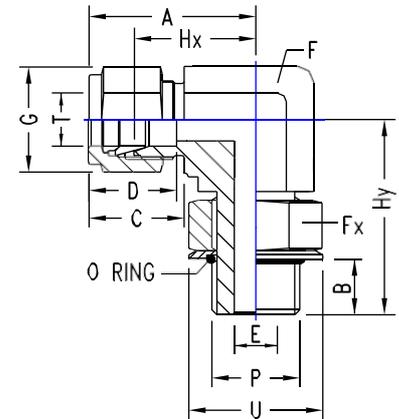
**INCH OD Tube x Male ISO\* Parallel Threads**

| T<br>Tube<br>OD | P<br>ISO<br>Male | A    | B    | C    | D    | E<br>min. | F  | Fx<br>A/F | G<br>A/F | Hx<br>A/F | Hy   | U    | O Ring<br>Part No. | TU-LOK<br>Part No. |
|-----------------|------------------|------|------|------|------|-----------|----|-----------|----------|-----------|------|------|--------------------|--------------------|
| 1/4             | 1/4              | 25.7 | 9.9  | 17.8 | 15.3 | 4.8       | 14 | 14        | 14       | 18.3      | 25.6 | 16.5 | 4 OPU              | 4 SEsw/45-R        |
| 3/8             | 3/8              | 27.9 | 11.2 | 19.3 | 16.8 | 7.1       | 16 | 17        | 17       | 20.6      | 28.2 | 20.0 | 6 OPU              | 6 SEsw/45-R        |
| 1/2             | 1/2              | 32.0 | 12.7 | 21.8 | 22.9 | 10.4      | 22 | 22        | 22       | 21.8      | 32.3 | 25.7 | 8 OPU              | 8 SEsw/45-R        |
| 3/4             | 3/4              | 39.9 | 16.8 | 21.8 | 24.4 | 15.8      | 27 | 32        | 28.5     | 29.7      | 47.3 | 36.6 | 12 OPU             | 12 SEsw/45-R       |
| 1               | 1                | 47.5 | 16.8 | 26.4 | 31.2 | 19.8      | 35 | 38        | 38       | 35.3      | 50.6 | 44.0 | 16 OPU             | 16 SEsw/45-R       |

\* Reference Specifications : BS 2779 : ISO 228/1 : JIS B0202 : DIN-ISO 228/1

## POSITIONABLE MALE ELBOW INCH OD Tubes X Male ISO\* Parallel Threads

| T<br>Tube ISO<br>OD Male | P   | Ax   | B    | C    | D    | E    | F   | Fx  | G    | Hx   | Hy   | U    | O Ring<br>Part No. | TU-LOK<br>Part No. |
|--------------------------|-----|------|------|------|------|------|-----|-----|------|------|------|------|--------------------|--------------------|
|                          |     |      |      |      | min. |      | A/F | A/F | A/F  |      |      |      |                    |                    |
| 1/4                      | 1/8 | 27.0 | 8.2  | 17.8 | 15.3 | 4.0  | 14  | 14  | 14   | 19.6 | 26.4 | 17.3 | 2 Opn              | 4-2 SEsw-R         |
| 1/4                      | 1/4 | 29.0 | 9.2  | 17.8 | 15.3 | 4.8  | 16  | 19  | 14   | 21.6 | 32.3 | 22.9 | 4 Opn              | 4 SEsw-R           |
| 3/8                      | 1/4 | 30.5 | 9.2  | 19.3 | 16.8 | 5.8  | 16  | 19  | 17   | 23.2 | 32.3 | 22.9 | 4 Opn              | 6-4 SEsw-R         |
| 3/8                      | 3/8 | 33.0 | 9.2  | 19.3 | 16.8 | 7.1  | 22  | 22  | 17   | 25.9 | 37.0 | 26.4 | 6 Opn              | 6 SEsw-R           |
| 1/2                      | 1/4 | 36.0 | 9.2  | 21.8 | 22.9 | 5.8  | 22  | 19  | 22   | 25.9 | 35.0 | 22.9 | 4 Opn              | 8-4 SEsw-R         |
| 1/2                      | 3/8 | 36.0 | 9.4  | 21.8 | 22.9 | 7.8  | 22  | 22  | 22   | 25.9 | 37.0 | 26.4 | 6 Opn              | 8-6 SEsw-R         |
| 1/2                      | 1/2 | 38.1 | 13.0 | 21.8 | 24.4 | 10.4 | 24  | 27  | 22   | 27.9 | 43.4 | 32.0 | 8 Opn              | 8 SEsw-R           |
| 5/8                      | 1/2 | 38.1 | 13.0 | 21.8 | 24.4 | 10.4 | 24  | 27  | 25   | 27.9 | 43.4 | 32.0 | 8 Opn              | 10-8 SEsw-R        |
| 3/4                      | 1/2 | 39.9 | 13.0 | 21.8 | 24.4 | 10.4 | 27  | 27  | 28.5 | 29.7 | 45.2 | 32.0 | 8 Opn              | 12-8 SEsw-R        |
| 3/4                      | 3/4 | 39.9 | 13.0 | 21.8 | 24.4 | 15.8 | 27  | 35  | 28.5 | 29.7 | 48.8 | 41.2 | 12 Opn             | 12 SEsw-R          |
| 1                        | 3/4 | 49.0 | 13.0 | 26.4 | 31.2 | 15.8 | 35  | 35  | 38   | 36.8 | 53.3 | 41.2 | 12 Opn             | 16-12 SEsw-R       |
| 1                        | 1   | 49.0 | 14.0 | 26.4 | 31.2 | 19.8 | 35  | 41  | 38   | 36.8 | 53.6 | 48.5 | 16 Opn             | 16 SEsw-R          |



## METRIC OD Tubes X Male ISO\* Parallel Threads

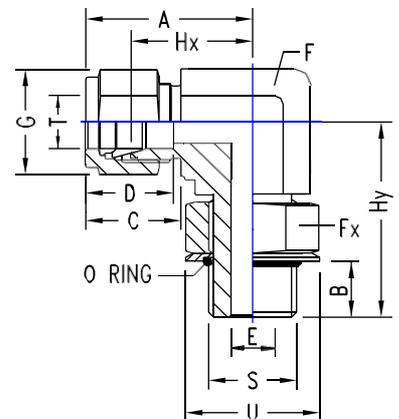
| T<br>Tube ISO<br>OD Male | P   | Ax   | B    | C    | D    | E    | F   | Fx  | G    | Hx   | Hy   | U    | O Ring<br>Part No. | TU-LOK<br>Part No. |
|--------------------------|-----|------|------|------|------|------|-----|-----|------|------|------|------|--------------------|--------------------|
|                          |     |      |      |      | min. |      | A/F | A/F | A/F  |      |      |      |                    |                    |
| 6                        | 1/8 | 27.0 | 8.1  | 17.7 | 15.3 | 4.0  | 14  | 14  | 14   | 19.6 | 26.4 | 17.3 | 2 Opn              | SEsw 6-2R          |
| 6                        | 1/4 | 29.0 | 9.1  | 17.7 | 15.3 | 4.8  | 16  | 19  | 14   | 21.6 | 32.3 | 22.9 | 4 Opn              | SEsw 6-4R          |
| 8                        | 1/8 | 28.8 | 8.1  | 18.6 | 16.2 | 4.0  | 14  | 14  | 16   | 21.3 | 27.4 | 17.3 | 2 Opn              | SEsw 8-2R          |
| 8                        | 1/4 | 29.9 | 9.1  | 18.6 | 16.2 | 5.9  | 16  | 19  | 16   | 22.4 | 32.2 | 22.9 | 4 Opn              | SEsw 8-4R          |
| 10                       | 1/4 | 33.5 | 9.1  | 19.5 | 17.2 | 5.9  | 19  | 19  | 19   | 25.9 | 35.0 | 22.9 | 4 Opn              | SEsw 10-4R         |
| 10                       | 3/8 | 33.5 | 9.4  | 19.5 | 17.2 | 7.9  | 19  | 22  | 19   | 25.9 | 37.1 | 26.4 | 6 Opn              | SEsw 10-6R         |
| 12                       | 3/8 | 36.0 | 9.4  | 22.0 | 22.8 | 7.9  | 22  | 22  | 22   | 25.9 | 37.1 | 26.4 | 6 Opn              | SEsw 12-6R         |
| 12                       | 1/2 | 38.0 | 13.0 | 22.0 | 22.8 | 9.5  | 24  | 27  | 22   | 27.9 | 43.4 | 32.0 | 8 Opn              | SEsw 12-8R         |
| 12                       | 3/4 | 39.8 | 13.0 | 22.0 | 22.8 | 9.5  | 27  | 35  | 22   | 29.7 | 48.8 | 41.1 | 12 Opn             | SEsw 12R           |
| 16                       | 1/2 | 38.1 | 13.0 | 22.0 | 24.4 | 11.9 | 27  | 27  | 28.5 | 29.7 | 45.2 | 32.0 | 8 Opn              | SEsw 16-8R         |
| 22                       | 3/4 | 44.6 | 13.0 | 22.0 | 26.0 | 15.8 | 27  | 35  | 28.5 | 34.5 | 48.8 | 41.2 | 12 Opn             | SEsw 22-12R        |
| 25                       | 3/4 | 49.0 | 13.0 | 26.5 | 31.3 | 15.8 | 35  | 35  | 38   | 36.8 | 53.3 | 41.2 | 12 Opn             | SEsw 25-12R        |
| 25                       | 1   | 49.0 | 14.0 | 26.5 | 31.3 | 21.8 | 35  | 41  | 38   | 36.8 | 53.6 | 48.5 | 16 Opn             | Sesw 25-16R        |

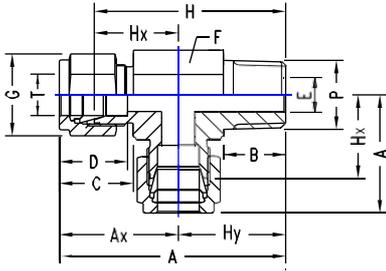
\* Reference Specifications : BS 2779 : ISO 228/1 : JIS B0202 : DIN-ISO 228/1

## INCH OD Tube x SAE/MS Straight Threads

| T<br>Tube ISO<br>OD Male | P        | Ax   | B    | C    | D    | E    | F   | Fx  | G    | Hx   | Hy   | U    | ORing<br>Part No. | TULOK<br>Part No. |
|--------------------------|----------|------|------|------|------|------|-----|-----|------|------|------|------|-------------------|-------------------|
|                          |          |      |      |      | min. |      | A/F | A/F | A/F  |      |      |      |                   |                   |
| 1/4                      | 7/16-20  | 28.5 | 9.9  | 17.8 | 15.3 | 4.8  | 14  | 14  | 14   | 21.0 | 28.5 | 16.5 | 4 OPU             | 4 SEsw-U          |
| 1/4                      | 9/16-18  | 30.5 | 11.2 | 17.8 | 15.3 | 4.8  | 16  | 17  | 14   | 23.1 | 32.3 | 20.0 | 6 OPU             | 4-6 SEsw-U        |
| 3/8                      | 9/16-18  | 32.0 | 11.2 | 19.3 | 16.8 | 7.1  | 16  | 17  | 17   | 24.6 | 32.3 | 20.0 | 6 OPU             | 6 SEsw-U          |
| 3/8                      | 3/4-16   | 34.8 | 12.7 | 19.3 | 16.8 | 7.1  | 22  | 22  | 17   | 27.4 | 37.8 | 25.6 | 8 OPU             | 6-8 SEsw-U        |
| 1/2                      | 3/4-16   | 37.6 | 12.7 | 21.8 | 22.9 | 10.4 | 22  | 22  | 22   | 27.4 | 37.8 | 25.6 | 8 OPU             | 8 SEsw-U          |
| 5/8                      | 7/16-14  | 39.6 | 14.3 | 21.8 | 24.4 | 12.7 | 24  | 25  | 25   | 29.5 | 43.4 | 29.5 | 10 OPU            | 10 SEsw-U         |
| 3/4                      | 11/16-12 | 41.4 | 16.8 | 21.8 | 24.4 | 15.8 | 27  | 32  | 28.5 | 31.2 | 48.8 | 36.6 | 12 OPU            | 12 SEsw-U         |
| 7/8                      | 11/16-12 | 43.2 | 16.8 | 21.8 | 25.9 | 18.3 | 30  | 32  | 32   | 33   | 50.5 | 40.4 | 14 OPU            | 14 SEsw-U         |
| 1                        | 15/16-12 | 50.5 | 16.8 | 26.4 | 31.2 | 22.3 | 35  | 35  | 38   | 38.4 | 53.6 | 44.0 | 16 OPU            | 16 SEsw-U         |
| 1.1/4                    | 15/8-12  | 67.8 | 16.8 | 38.9 | 41.2 | 27.6 | 46  | 50  | 50   | 45.7 | 58.2 | 54.9 | 20 OPU            | 20 SEsw-U         |
| 1.1/2                    | 17/8-12  | 78.0 | 16.8 | 45.2 | 50.0 | 34.0 | 50  | 55  | 60   | 50.8 | 60.4 | 62.5 | 24 OPU            | 24 SEsw-U         |

\* Reference Specifications : SAE Screw Thread standard conforms to American standard B1.1. Unified screw threads.





**MALE RUN TEE**  
INCH OD Tubes X Male NPT Threads

| T<br>Tube<br>OD | P<br>NPT<br>Male | A     | Ax   | B    | C    | D    | E<br>min. | F  | G<br>A/F | H<br>A/F | Hx   | Hy   | TU-LOK<br>Part No. |
|-----------------|------------------|-------|------|------|------|------|-----------|----|----------|----------|------|------|--------------------|
| 1/8             | 1/8              | 41.4  | 23.6 | 9.6  | 15.3 | 12.7 | 2.4       | 11 | 11       | 34.8     | 17.0 | 17.8 | 2 STRM-N           |
| 1/8             | 1/4              | 48.0  | 24.6 | 14.3 | 15.3 | 12.7 | 2.4       | 14 | 11       | 41.4     | 18.0 | 23.4 | 2-4 STRM-N         |
| 1/4             | 1/8              | 45.7  | 26.9 | 9.6  | 17.8 | 15.3 | 4.8       | 14 | 14       | 38.4     | 19.6 | 18.8 | 4-2 STRM-N         |
| 1/4             | 1/4              | 50.3  | 26.9 | 14.3 | 17.8 | 15.3 | 4.8       | 14 | 14       | 43       | 19.6 | 23.4 | 4 STRM-N           |
| 1/4             | 3/8              | 55.9  | 29.7 | 14.3 | 17.8 | 15.3 | 4.8       | 19 | 14       | 48.8     | 22.4 | 26.2 | 4-6 STRM-N         |
| 1/4             | 1/2              | 64.8  | 31.8 | 19.1 | 17.8 | 15.3 | 4.8       | 22 | 14       | 57.4     | 24.4 | 33.0 | 4-8 STRM-N         |
| 3/8             | 1/4              | 55.9  | 30.5 | 14.3 | 19.3 | 16.8 | 7.1       | 17 | 17       | 48.5     | 23.1 | 25.4 | 6-4 STRM-N         |
| 3/8             | 3/8              | 57.4  | 31.2 | 14.3 | 19.3 | 16.8 | 7.1       | 19 | 17       | 50.1     | 23.9 | 26.2 | 6 STRM-N           |
| 3/8             | 1/2              | 66.0  | 33.0 | 19.1 | 19.3 | 16.8 | 7.1       | 22 | 17       | 58.9     | 25.9 | 33.0 | 6-8 STRM-N         |
| 1/2             | 1/4              | 64.2  | 36.0 | 14.3 | 21.8 | 22.9 | 4.8       | 22 | 22       | 54.1     | 25.9 | 28.2 | 8-4 STRM-N         |
| 1/2             | 3/8              | 64.2  | 36.0 | 14.3 | 21.8 | 22.9 | 9.6       | 22 | 22       | 54.1     | 25.9 | 28.2 | 8-6 STRM-N         |
| 1/2             | 1/2              | 69.0  | 36.0 | 19.1 | 21.8 | 22.9 | 10.4      | 22 | 22       | 58.9     | 25.9 | 33.0 | 8 STRM-N           |
| 5/8             | 1/2              | 73.1  | 38.1 | 19.1 | 21.8 | 24.4 | 11.9      | 22 | 25       | 62.9     | 27.9 | 35.0 | 10-8 STRM-N        |
| 3/4             | 1/2              | 76.7  | 39.9 | 19.1 | 21.8 | 24.4 | 11.9      | 27 | 29       | 66.5     | 29.7 | 36.8 | 12-8 STRM-N        |
| 3/4             | 3/4              | 76.7  | 39.9 | 19.1 | 21.8 | 24.4 | 15.8      | 27 | 29       | 66.5     | 29.7 | 36.8 | 12 STRM-N          |
| 1               | 3/4              | 90.6  | 49.0 | 19.1 | 26.4 | 31.2 | 15.8      | 35 | 38       | 78.4     | 36.8 | 41.6 | 16-12 STRM-N       |
| 1               | 1                | 95.5  | 49.0 | 23.8 | 26.4 | 31.2 | 22.3      | 35 | 38       | 83.3     | 36.8 | 46.5 | 16 STRM-N          |
| 1.1/4           | 1.1/4            | 114.1 | 66.5 | 23.8 | 38.8 | 41.1 | 27.6      | 46 | 50       | 92.1     | 44.5 | 47.6 | 20 STRM-N          |
| 1.1/2           | 1.1/2            | 138.4 | 78.0 | 26.2 | 45.2 | 50.0 | 34.0      | 55 | 57       | 111.2    | 50.8 | 60.4 | 24 STRM-N          |

**METRIC OD Tubes X Male NPT Threads**

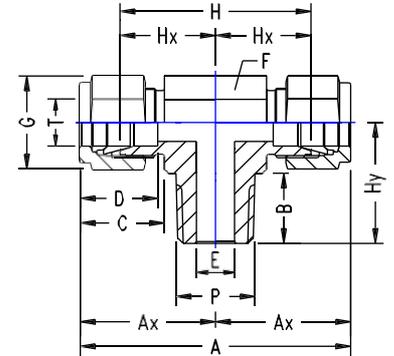
| T<br>Tube<br>OD | P<br>NPT<br>Male | A     | Ax   | B    | C    | D    | E<br>min. | F  | G<br>A/F | H<br>A/F | Hx   | Hy   | TU-LOK<br>Part No. |
|-----------------|------------------|-------|------|------|------|------|-----------|----|----------|----------|------|------|--------------------|
| 3               | 1/8              | 41.4  | 23.6 | 9.6  | 15.3 | 12.9 | 2.4       | 11 | 11       | 34.8     | 17.0 | 17.8 | STRM 3-2N          |
| 3               | 1/4              | 48.0  | 24.6 | 14.3 | 15.3 | 12.9 | 2.4       | 14 | 11       | 41.4     | 18.0 | 23.4 | STRM 3-4N          |
| 6               | 1/8              | 45.8  | 27.0 | 9.6  | 17.7 | 15.3 | 4.8       | 14 | 14       | 38.9     | 19.6 | 18.8 | STRM 6-2N          |
| 6               | 1/4              | 50.4  | 27.0 | 14.3 | 17.7 | 15.3 | 4.8       | 14 | 14       | 43.0     | 19.6 | 23.4 | STRM 6-4N          |
| 6               | 3/8              | 56.0  | 29.8 | 14.3 | 17.7 | 15.3 | 4.8       | 19 | 14       | 48.6     | 22.4 | 26.2 | STRM 6-N           |
| 8               | 1/4              | 53.2  | 28.8 | 14.3 | 18.6 | 16.2 | 6.3       | 14 | 16       | 45.7     | 21.3 | 24.4 | STRM 8-4N          |
| 8               | 3/8              | 56.8  | 30.6 | 14.3 | 18.6 | 16.2 | 6.3       | 19 | 16       | 49.3     | 23.1 | 26.2 | STRM 8-6N          |
| 8               | 1/2              | 65.6  | 32.6 | 19.1 | 18.6 | 16.2 | 6.3       | 22 | 16       | 58.1     | 25.1 | 33.0 | STRM 8-N           |
| 10              | 1/4              | 57.7  | 31.5 | 14.3 | 19.5 | 17.2 | 7.1       | 17 | 19       | 50.1     | 23.9 | 26.2 | STRM 10-4N         |
| 10              | 3/8              | 57.7  | 31.5 | 14.3 | 19.5 | 17.2 | 7.9       | 19 | 19       | 50.1     | 23.9 | 26.2 | STRM 10-6N         |
| 10              | 1/2              | 66.5  | 33.5 | 19.1 | 19.5 | 17.2 | 7.9       | 22 | 19       | 58.9     | 25.9 | 33.0 | STRM 10-8N         |
| 12              | 1/4              | 62.2  | 36.0 | 14.3 | 22.0 | 22.8 | 7.1       | 22 | 22       | 52.1     | 25.9 | 26.2 | STRM 12-4N         |
| 12              | 3/8              | 62.2  | 36.0 | 14.3 | 22.0 | 22.8 | 9.5       | 22 | 22       | 52.1     | 25.9 | 28.2 | STRM 12-6N         |
| 12              | 1/2              | 69.0  | 36.0 | 19.1 | 22.0 | 22.8 | 9.5       | 22 | 22       | 58.9     | 25.9 | 33.0 | STRM 12-8N         |
| 16              | 1/2              | 73.1  | 38.0 | 19.1 | 22.0 | 24   | 11.9      | 24 | 25       | 64.0     | 27.9 | 35.1 | STRM 16-8N         |
| 25              | 3/4              | 90.8  | 49.1 | 19.1 | 26.5 | 31.3 | 15.8      | 35 | 38       | 78.5     | 36.8 | 41.7 | STRM 25-12N        |
| 25              | 1                | 95.6  | 49.1 | 23.8 | 26.5 | 31.3 | 21.8      | 35 | 38       | 83.3     | 36.8 | 46.5 | STRM 25-16N        |
| 30              | 1.1/4            | 120.0 | 66.9 | 23.8 | 39.2 | 39.6 | 26.2      | 45 | 50       | 101.4    | 48.3 | 53.1 | STRM 30-20N        |
| 32              | 1.1/4            | 125.4 | 72.3 | 23.8 | 41.6 | 42.0 | 27.6      | 45 | 50       | 102.4    | 49.3 | 53.1 | STRM 32-20N        |
| 38              | 1.1/2            | 144.4 | 84.0 | 26.2 | 47.9 | 50.0 | 33.7      | 55 | 57       | 116.8    | 56.4 | 60.4 | STRM 38-24N        |

**NOTE:** The combination of tube OD and male threads are indicative of popular sizes. Other combinations, not shown, are available . Please Consult us.

## MALE BRANCH TEE

INCH OD Tubes x Male NPT Threads

| T<br>Tube<br>OD | P<br>NPT<br>Male | A     | Ax   | B    | C    | D    | E<br>min. | F  | G<br>A/F | H<br>A/F | Hx   | Hy   | TULOK<br>Part No. |
|-----------------|------------------|-------|------|------|------|------|-----------|----|----------|----------|------|------|-------------------|
| 1/8             | 1/8              | 47.2  | 23.6 | 9.6  | 15.3 | 12.7 | 2.4       | 11 | 11       | 34.0     | 17.0 | 17.8 | 2 STBMN           |
| 1/8             | 1/4              | 49.2  | 24.6 | 14.3 | 15.3 | 12.7 | 2.4       | 14 | 11       | 36.0     | 18.0 | 23.4 | 2-4 STBMN         |
| 1/4             | 1/8              | 53.8  | 26.9 | 9.6  | 17.8 | 5.3  | 4.8       | 14 | 14       | 39.2     | 19.6 | 18.8 | 4-2 STBMN         |
| 1/4             | 1/4              | 53.8  | 26.9 | 14.3 | 17.8 | 15.3 | 4.8       | 14 | 14       | 39.2     | 19.6 | 23.4 | 4 STBMN           |
| 1/4             | 3/8              | 59.4  | 29.7 | 14.3 | 17.8 | 15.3 | 4.8       | 19 | 14       | 44.8     | 22.4 | 26.2 | 4-6 STBMN         |
| 1/4             | 1/2              | 63.6  | 31.8 | 19.1 | 17.8 | 15.3 | 4.8       | 22 | 14       | 44.8     | 24.4 | 33.0 | 4-8 STBMN         |
| 3/8             | 1/4              | 61.0  | 30.5 | 14.3 | 19.3 | 16.8 | 7.1       | 17 | 17       | 46.2     | 23.1 | 25.4 | 6-4 STBMN         |
| 3/8             | 3/8              | 62.4  | 31.2 | 14.3 | 19.3 | 16.8 | 7.1       | 19 | 17       | 47.8     | 23.9 | 26.2 | 6 STBMN           |
| 3/8             | 1/2              | 66.0  | 33.0 | 19.1 | 19.3 | 16.8 | 7.1       | 22 | 17       | 51.8     | 25.9 | 33.0 | 6-8 STBMN         |
| 1/2             | 1/4              | 72.0  | 36.0 | 14.3 | 21.8 | 22.9 | 4.8       | 22 | 22       | 51.8     | 25.9 | 28.2 | 8-4 STBMN         |
| 1/2             | 3/8              | 72.0  | 36.0 | 14.3 | 21.8 | 22.9 | 9.6       | 22 | 22       | 51.8     | 25.9 | 28.2 | 8-6 STBMN         |
| 1/2             | 1/2              | 72.0  | 36.0 | 19.1 | 21.8 | 22.9 | 10.4      | 22 | 22       | 51.8     | 25.9 | 33.0 | 8 STBMN           |
| 5/8             | 1/2              | 76.2  | 38.1 | 19.1 | 21.8 | 24.4 | 11.9      | 22 | 25       | 55.8     | 27.9 | 35.0 | 10-8 STBMN        |
| 3/4             | 1/2              | 79.8  | 39.9 | 19.1 | 21.8 | 24.4 | 11.9      | 27 | 29       | 59.4     | 29.7 | 36.8 | 12-8 STBMN        |
| 3/4             | 3/4              | 79.8  | 39.9 | 19.1 | 21.8 | 24.4 | 15.8      | 27 | 29       | 59.4     | 29.7 | 36.8 | 12 STBMN          |
| 1               | 3/4              | 98.0  | 49.0 | 19.1 | 26.4 | 31   | 15.8      | 35 | 38       | 73.6     | 36.8 | 41.6 | 16-12 STBMN       |
| 1               | 1                | 98.0  | 49.0 | 23.8 | 26.4 | 31   | 22.3      | 35 | 38       | 73.6     | 36.8 | 46.5 | 16 STBMN          |
| 1.1/4           | 1.1/4            | 133.0 | 66.5 | 23.8 | 38.8 | 41.1 | 27.6      | 46 | 50       | 89.0     | 44.5 | 47.6 | 20 STBMN          |
| 1.1/2           | 1.1/2            | 156.0 | 78.0 | 26.2 | 45.2 | 50.0 | 34.0      | 55 | 57       | 101.6    | 50.8 | 60.4 | 24 STBMN          |

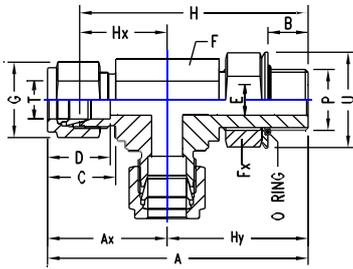


## METRIC OD Tubes x Male NPT Threads

| T<br>Tube<br>OD | P<br>NPT<br>Male | A     | Ax   | B    | C    | D    | E<br>min. | F  | G<br>A/F | H<br>A/F | Hx   | Hy   | TULOK<br>Part No. |
|-----------------|------------------|-------|------|------|------|------|-----------|----|----------|----------|------|------|-------------------|
| 3               | 1/8              | 47.2  | 23.6 | 9.6  | 15.3 | 12.9 | 2.4       | 11 | 11       | 34.0     | 17.0 | 17.8 | STBM 3-2N         |
| 3               | 1/4              | 49.2  | 24.6 | 14.3 | 15.3 | 12.9 | 2.4       | 14 | 11       | 36.0     | 18.0 | 23.4 | STBM 3-4N         |
| 6               | 1/8              | 54.0  | 27.0 | 9.6  | 17.7 | 15.3 | 4.8       | 14 | 14       | 39.2     | 19.6 | 18.8 | STBM 6-2N         |
| 6               | 1/4              | 54.0  | 27.0 | 14.3 | 17.7 | 15.3 | 4.8       | 14 | 14       | 39.2     | 19.6 | 23.4 | STBM 6-4N         |
| 6               | 3/8              | 59.6  | 29.8 | 14.3 | 17.7 | 15.3 | 4.8       | 19 | 14       | 44.8     | 22.4 | 26.2 | STBM 6-N          |
| 8               | 1/4              | 57.6  | 28.8 | 14.3 | 18.6 | 16.2 | 6.3       | 14 | 16       | 42.6     | 21.3 | 24.4 | STBM 8-4N         |
| 8               | 3/8              | 61.2  | 30.6 | 14.3 | 18.6 | 16.2 | 6.3       | 19 | 16       | 46.2     | 23.1 | 26.2 | STBM 8-6N         |
| 8               | 1/2              | 65.2  | 32.6 | 19.1 | 18.6 | 16.2 | 6.3       | 22 | 16       | 50.2     | 25.1 | 33.0 | STBM 8-N          |
| 10              | 1/4              | 63.0  | 31.5 | 14.3 | 19.5 | 17.2 | 7.1       | 17 | 19       | 47.8     | 23.9 | 26.2 | STBM 10-4N        |
| 10              | 3/8              | 63.0  | 31.5 | 14.3 | 19.5 | 17.2 | 7.9       | 19 | 19       | 47.8     | 23.9 | 26.2 | STBM 10-6N        |
| 10              | 1/2              | 67.0  | 33.5 | 19.1 | 19.5 | 17.2 | 7.9       | 22 | 19       | 51.8     | 25.9 | 33.0 | STBM 10-8N        |
| 12              | 1/4              | 72.0  | 36.0 | 14.3 | 22.0 | 22.8 | 7.1       | 22 | 22       | 51.8     | 25.9 | 26.2 | STBM 12-4N        |
| 12              | 3/8              | 72.0  | 36.0 | 14.3 | 22.0 | 22.8 | 9.5       | 22 | 22       | 51.8     | 25.9 | 28.2 | STBM 12-6N        |
| 12              | 1/2              | 72.0  | 36.0 | 19.1 | 22.0 | 22.8 | 9.5       | 22 | 22       | 51.8     | 25.9 | 33.0 | STBM 12-8N        |
| 16              | 1/2              | 76.0  | 38.0 | 19.1 | 22.0 | 24   | 11.9      | 24 | 25       | 55.8     | 27.9 | 35.1 | STBM 16-8N        |
| 25              | 3/4              | 98.2  | 49.1 | 19.1 | 26.5 | 31.3 | 15.8      | 35 | 38       | 73.6     | 36.8 | 41.7 | STBM 25-12N       |
| 25              | 1                | 98.2  | 49.1 | 23.8 | 26.5 | 31.3 | 21.8      | 35 | 38       | 73.6     | 36.8 | 46.5 | STBM 25-16N       |
| 30              | 1.1/4            | 139.8 | 66.9 | 23.8 | 39.2 | 39.6 | 26.2      | 45 | 50       | 96.6     | 48.3 | 53.1 | STBM 30-20N       |
| 32              | 1.1/4            | 144.6 | 72.3 | 23.8 | 41.6 | 42.0 | 27.6      | 45 | 50       | 98.6     | 49.3 | 53.1 | STBM 32-20N       |
| 38              | 1.1/2            | 168.0 | 84.0 | 26.2 | 47.9 | 50.0 | 33.7      | 55 | 57       | 112.8    | 56.4 | 60.4 | STBM 38-24N       |

**NOTE:** The combination of tube OD and male threads are indicative of popular sizes. Other combinations, not shown, are available. Please Consult us.

**POSITIONABLE MALE RUN TEE**  
**INCH OD Tubes X Male ISO\* Parallel Threads**



| T P      |         |       |      |      |      |      |      |     |     |      |      |      |      |      |       | Part No. | Part No.     |
|----------|---------|-------|------|------|------|------|------|-----|-----|------|------|------|------|------|-------|----------|--------------|
| Tube ISO | OD Male | A     | Ax   | B    | C    | D    | E    | F   | Fx  | G    | H    | Hx   | Hy   | U    | ORing |          |              |
|          |         |       |      |      |      |      | min. | A/F | A/F | A/F  |      |      |      |      |       |          |              |
| 1/4      | 1/8     | 53.4  | 27.0 | 8.2  | 17.8 | 15.3 | 4.0  | 14  | 14  | 14   | 46.0 | 19.6 | 26.4 | 17.3 | 2     | Opn      | 4-2 STRsw-R  |
| 1/4      | 1/4     | 61.3  | 29.0 | 9.2  | 17.8 | 15.3 | 4.8  | 16  | 19  | 14   | 53.9 | 21.6 | 32.3 | 22.9 | 4     | Opn      | 4 STRsw-R    |
| 3/8      | 1/4     | 62.8  | 30.5 | 9.2  | 19.3 | 16.8 | 5.8  | 16  | 19  | 17   | 55.5 | 23.2 | 32.3 | 22.9 | 4     | Opn      | 6-4 STRsw-R  |
| 1/2      | 3/8     | 73.0  | 36.0 | 9.4  | 21.8 | 22.9 | 7.8  | 22  | 22  | 22   | 62.9 | 25.9 | 37.0 | 26.4 | 6     | Opn      | 8-6 STRsw-R  |
| 1/2      | 1/2     | 81.5  | 38.1 | 13.0 | 21.8 | 24.4 | 10.4 | 24  | 27  | 22   | 71.3 | 27.9 | 43.4 | 32.0 | 8     | Opn      | 8 STRsw-R    |
| 5/8      | 1/2     | 81.5  | 38.1 | 13.0 | 21.8 | 24.4 | 10.4 | 24  | 27  | 25   | 71.3 | 27.9 | 43.4 | 32.0 | 8     | Opn      | 10-8 STRsw-R |
| 3/4      | 1/2     | 85.1  | 39.9 | 13.0 | 21.8 | 24.4 | 10.4 | 27  | 27  | 28.5 | 74.9 | 29.7 | 45.2 | 32.0 | 8     | Opn      | 12-8 STRsw-R |
| 3/4      | 3/4     | 88.7  | 39.9 | 13.0 | 21.8 | 24.4 | 15.8 | 27  | 35  | 28.5 | 78.5 | 29.7 | 48.8 | 41.2 | 12    | Opn      | 12 STRsw-R   |
| 1        | 1       | 102.6 | 49.0 | 14.0 | 26.4 | 31.2 | 19.8 | 35  | 41  | 38   | 90.4 | 36.8 | 53.6 | 48.5 | 16    | Opn      | 16 STRsw-R   |

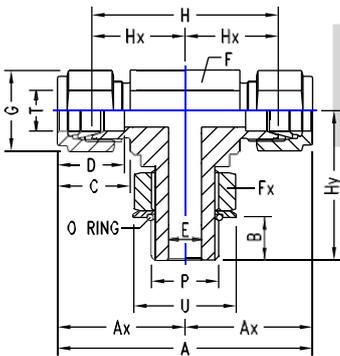


**METRIC OD Tubes X Male ISO\* Parallel Threads**

| T P      |         |       |      |      |      |      |      |     |     |      |      |      |      |      |    | ORing Part No. | TULOK Part No. |
|----------|---------|-------|------|------|------|------|------|-----|-----|------|------|------|------|------|----|----------------|----------------|
| Tube ISO | OD Male | A     | Ax   | B    | C    | D    | E    | F   | Fx  | G    | H    | Hx   | Hy   | U    |    |                |                |
|          |         |       |      |      |      |      | min. | A/F | A/F | A/F  |      |      |      |      |    |                |                |
| 6        | 1/8     | 53.4  | 27.0 | 8.1  | 17.7 | 15.3 | 4.0  | 14  | 14  | 14   | 46.0 | 19.6 | 26.4 | 17.3 | 2  | Opn            | STRsw 6-2R     |
| 6        | 1/4     | 61.3  | 29.0 | 9.1  | 17.7 | 15.3 | 4.8  | 16  | 19  | 14   | 53.9 | 21.6 | 32.3 | 22.9 | 4  | Opn            | STRsw 6-4R     |
| 8        | 1/8     | 56.2  | 28.8 | 8.1  | 18.6 | 16.2 | 4.0  | 14  | 14  | 16   | 48.7 | 21.3 | 27.4 | 17.3 | 2  | Opn            | STRsw 8-2R     |
| 8        | 1/4     | 62.1  | 29.9 | 9.1  | 18.6 | 16.2 | 5.9  | 16  | 19  | 16   | 54.6 | 22.4 | 32.2 | 22.9 | 4  | Opn            | STRsw 8-4R     |
| 10       | 1/4     | 68.5  | 33.5 | 9.1  | 19.5 | 17.2 | 5.9  | 19  | 19  | 19   | 61.9 | 25.9 | 35.0 | 22.9 | 4  | Opn            | STRsw 10-4R    |
| 12       | 3/8     | 73.1  | 36.0 | 9.4  | 22.0 | 22.8 | 7.9  | 22  | 22  | 22   | 63.0 | 25.9 | 37.1 | 26.4 | 6  | Opn            | STRsw 12-6R    |
| 12       | 1/2     | 81.4  | 38.0 | 13.0 | 22.0 | 23   | 9.5  | 24  | 27  | 22   | 71.3 | 27.9 | 43.4 | 32.0 | 8  | Opn            | STRsw 12-8R    |
| 16       | 1/2     | 83.3  | 38.1 | 13.0 | 22.0 | 24.4 | 11.9 | 27  | 27  | 28.5 | 74.9 | 29.7 | 45.2 | 32.0 | 8  | Opn            | STRsw 16-8R    |
| 22       | 3/4     | 93.4  | 44.6 | 13.0 | 22.0 | 26.0 | 15.8 | 27  | 35  | 28.5 | 83.3 | 34.5 | 48.8 | 41.2 | 12 | Opn            | STRsw 22-12R   |
| 25       | 3/4     | 102.3 | 49.0 | 13.0 | 26.5 | 31.3 | 15.8 | 35  | 35  | 38   | 90.1 | 36.8 | 53.3 | 41.2 | 12 | Opn            | STRsw 25-12R   |
| 25       | 1       | 102.6 | 49.0 | 14.0 | 26.5 | 31.3 | 21.8 | 35  | 41  | 38   | 90.4 | 36.8 | 53.6 | 48.5 | 16 | Opn            | STRsw 25-16R   |

\* Reference Specifications : BS 2779 : ISO 228/1 : JIS B0202 : DIN-ISO 228/1

**POSITIONABLE BRANCH TEE**  
**Inch OD Tubes X Male ISO\* Parallel Thread**



| T P      |         |       |      |      |      |      |      |     |     |      |      |      |      |      |    | ORing Part No. | TULOK Part No. |
|----------|---------|-------|------|------|------|------|------|-----|-----|------|------|------|------|------|----|----------------|----------------|
| Tube ISO | OD Male | A     | Ax   | B    | C    | D    | E    | F   | Fx  | G    | H    | Hx   | Hy   | U    |    |                |                |
|          |         |       |      |      |      |      | min. | A/F | A/F | A/F  |      |      |      |      |    |                |                |
| 1/4      | 1/8     | 53.4  | 27.0 | 8.2  | 17.8 | 15.3 | 4.0  | 14  | 14  | 14   | 46.0 | 19.6 | 26.4 | 17.3 | 2  | OPN            | 4-2 STBswR     |
| 1/4      | 1/4     | 61.3  | 29.0 | 9.2  | 17.8 | 15.3 | 4.8  | 16  | 19  | 14   | 53.9 | 21.6 | 32.3 | 22.9 | 4  | OPN            | 4 STBswR       |
| 3/8      | 1/4     | 62.8  | 30.5 | 9.2  | 19.3 | 16.8 | 5.8  | 16  | 19  | 17   | 55.5 | 23.2 | 32.3 | 22.9 | 4  | OPN            | 6-4 STBswR     |
| 1/2      | 3/8     | 73.0  | 36.0 | 9.4  | 21.8 | 22.9 | 7.8  | 22  | 22  | 22   | 62.9 | 25.9 | 37.0 | 26.4 | 6  | OPN            | 8-6 STBswR     |
| 1/2      | 1/2     | 81.5  | 38.1 | 13.0 | 21.8 | 24.4 | 10.4 | 24  | 27  | 22   | 71.3 | 27.9 | 43.4 | 32.0 | 8  | OPN            | 8 STBswR       |
| 5/8      | 1/2     | 81.5  | 38.1 | 13.0 | 21.8 | 24.4 | 10.4 | 24  | 27  | 25   | 71.3 | 27.9 | 43.4 | 32.0 | 8  | OPN            | 10-8 STBswR    |
| 3/4      | 1/2     | 85.1  | 39.9 | 13.0 | 21.8 | 24.4 | 10.4 | 27  | 27  | 28.5 | 74.9 | 29.7 | 45.2 | 32.0 | 8  | OPN            | 12-8 STBswR    |
| 3/4      | 3/4     | 88.7  | 39.9 | 13.0 | 21.8 | 24.4 | 15.8 | 27  | 35  | 28.5 | 78.5 | 29.7 | 48.8 | 41.2 | 12 | OPN            | 12 STBswR      |
| 1        | 1       | 102.6 | 49.0 | 14.0 | 26.4 | 31.2 | 19.8 | 35  | 41  | 38   | 90.4 | 36.8 | 53.6 | 48.5 | 16 | OPN            | 16 STBswR      |



**Metric OD Tubes X Male ISO\* Parallel Threads**

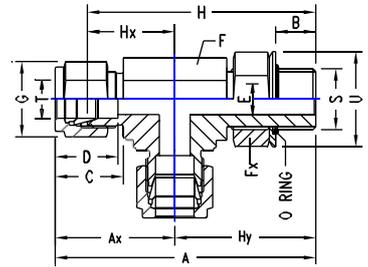
| T P      |         |       |      |      |      |      |      |     |     |      |      |      |      |      |    | ORing Part No. | TULOK Part No. |
|----------|---------|-------|------|------|------|------|------|-----|-----|------|------|------|------|------|----|----------------|----------------|
| Tube ISO | OD MALE | A     | AX   | B    | C    | D    | E    | F   | FX  | G    | H    | HX   | HY   | U    |    |                |                |
|          |         |       |      |      |      |      | min. | A/F | A/F | A/F  |      |      |      |      |    |                |                |
| 6        | 1/8     | 53.4  | 27.0 | 8.1  | 17.7 | 15.3 | 4.0  | 14  | 14  | 14   | 46.0 | 19.6 | 26.4 | 17.3 | 2  | OPN            | STBsw 6-2R     |
| 6        | 1/4     | 61.3  | 29.0 | 9.1  | 17.7 | 15.3 | 4.8  | 16  | 19  | 14   | 53.9 | 21.6 | 32.3 | 22.9 | 4  | OPN            | STBsw 6-4R     |
| 8        | 1/8     | 56.2  | 28.8 | 8.1  | 18.6 | 16.2 | 4.0  | 14  | 14  | 16   | 48.7 | 21.3 | 27.4 | 17.3 | 2  | OPN            | STBsw 8-2R     |
| 8        | 1/4     | 62.1  | 29.9 | 9.1  | 18.6 | 16.2 | 5.9  | 16  | 19  | 16   | 54.6 | 22.4 | 32.2 | 22.9 | 4  | OPN            | STBsw 8-4R     |
| 10       | 1/4     | 68.5  | 33.5 | 9.1  | 19.5 | 17.2 | 5.9  | 19  | 19  | 19   | 61.9 | 25.9 | 35.0 | 22.9 | 4  | OPN            | STBsw 10-4R    |
| 12       | 3/8     | 73.1  | 36.0 | 9.4  | 22.0 | 22.8 | 7.9  | 22  | 22  | 22   | 63.0 | 25.9 | 37.1 | 26.4 | 6  | OPN            | STBsw 12-6R    |
| 12       | 1/2     | 81.4  | 38.0 | 13.0 | 22.0 | 23   | 9.5  | 24  | 27  | 22   | 71.3 | 27.9 | 43.4 | 32.0 | 8  | OPN            | STBsw 12-8R    |
| 16       | 1/2     | 83.3  | 38.1 | 13.0 | 22.0 | 24.4 | 11.9 | 27  | 27  | 28.5 | 74.9 | 29.7 | 45.2 | 32.0 | 8  | OPN            | STBsw 16-8R    |
| 22       | 3/4     | 93.4  | 44.6 | 13.0 | 22.0 | 26.0 | 15.8 | 27  | 35  | 28.5 | 83.3 | 34.5 | 48.8 | 41.2 | 12 | OPN            | STBsw 22-12R   |
| 25       | 3/4     | 102.3 | 49.0 | 13.0 | 26.5 | 31.3 | 15.8 | 35  | 35  | 38   | 90.1 | 36.8 | 53.3 | 41.2 | 12 | OPN            | STBsw 25-12R   |
| 25       | 1       | 102.6 | 49.0 | 14.0 | 26.5 | 31.3 | 21.8 | 35  | 41  | 38   | 90.4 | 36.8 | 53.6 | 48.5 | 16 | OPN            | STBsw 25-16R   |

\* Reference Specifications : BS 2779 : ISO 228/1 : JIS B0202 : DIN-ISO 228/1

## POSITIONABLE MALE RUN TEE

INCH OD Tubes x SAE/MS \*Straight threads

| T<br>Tube OD | S<br>SAE/MS<br>Male | A     | Ax   | B    | C    | D    | E<br>min. | F<br>A/F | Fx<br>A/F | G<br>A/F | H     | Hx   | Hy   | U    | ORing<br>Part No. | TULOK<br>Part No. |
|--------------|---------------------|-------|------|------|------|------|-----------|----------|-----------|----------|-------|------|------|------|-------------------|-------------------|
| 1/4          | 7/16-20             | 57.0  | 28.5 | 9.9  | 17.8 | 15.3 | 4.8       | 14       | 14        | 14       | 49.5  | 21.0 | 28.5 | 16.5 | 4 OPU             | 4 STRsw-U         |
| 3/8          | 9/16-18             | 64.3  | 32.0 | 11.2 | 19.3 | 16.8 | 7.1       | 16       | 17        | 17       | 56.9  | 24.6 | 32.3 | 20.0 | 6 OPU             | 6 STRsw-U         |
| 1/2          | 3/4-16              | 75.4  | 37.6 | 12.7 | 21.8 | 22.9 | 10.4      | 22       | 22        | 22       | 65.2  | 27.4 | 37.8 | 25.6 | 8 OPU             | 8 STRsw-U         |
| 3/4          | 11/16-12            | 90.2  | 41.4 | 16.8 | 21.8 | 24.4 | 15.8      | 27       | 32        | 28.5     | 80.0  | 31.2 | 48.8 | 36.6 | 12 OPU            | 12 STRsw-U        |
| 1            | 15/16-12            | 104.1 | 50.5 | 16.8 | 26.4 | 31.2 | 22.3      | 35       | 35        | 38       | 92.0  | 38.4 | 53.6 | 44.0 | 16 OPU            | 16 STRsw-U        |
| 1.1/4        | 15/8-12             | 126.0 | 67.8 | 16.8 | 38.9 | 41.2 | 27.6      | 46       | 50        | 50       | 103.9 | 45.7 | 58.2 | 54.9 | 20 OPU            | 20 STRsw-U        |
| 1.1/2        | 17/8-12             | 138.4 | 78.0 | 16.8 | 45.2 | 50.0 | 34.0      | 50       | 55        | 60       | 111.2 | 50.8 | 60.4 | 62.5 | 24 OPU            | 24 STRsw-U        |



METRIC OD Tubes x SAE/MS \*Straight threads

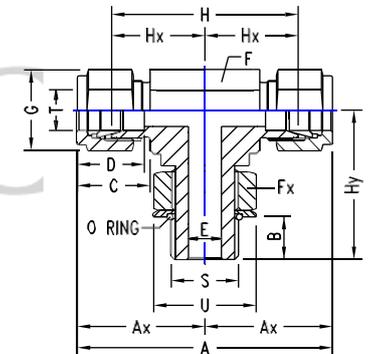
| T<br>Tube OD | S<br>SAE/MS<br>Male | A     | Ax   | B    | C    | D    | E<br>min. | F<br>A/F | Fx<br>A/F | G<br>A/F | H     | Hx   | Hy   | U    | ORing<br>Part No. | TULOK<br>Part No. |
|--------------|---------------------|-------|------|------|------|------|-----------|----------|-----------|----------|-------|------|------|------|-------------------|-------------------|
| 6            | 7/16-20             | 57.0  | 28.5 | 9.9  | 17.7 | 15.3 | 4.8       | 14       | 14        | 14       | 49.5  | 21.0 | 28.5 | 16.5 | 4 OPU             | STRsw-6-U         |
| 10           | 9/16-18             | 64.3  | 32.0 | 11.2 | 19.5 | 17.2 | 7.1       | 16       | 17        | 17       | 56.9  | 24.6 | 32.3 | 20.0 | 6 OPU             | STRsw-10-U        |
| 12           | 3/4-16              | 75.4  | 37.6 | 12.7 | 22.0 | 22.8 | 10.4      | 22       | 22        | 22       | 65.2  | 27.4 | 37.8 | 25.6 | 8 OPU             | STRsw-12-U        |
| 20           | 11/16-12            | 90.2  | 41.4 | 16.8 | 22.0 | 26.0 | 15.8      | 27       | 32        | 28.5     | 80.0  | 31.2 | 48.8 | 36.6 | 12 OPU            | STRsw-20-U        |
| 25           | 15/16-12            | 104.1 | 50.5 | 16.8 | 26.5 | 31.3 | 22.3      | 35       | 35        | 38       | 92.0  | 38.4 | 53.6 | 44.0 | 16 OPU            | STRsw-25-U        |
| 2            | 15/8-12             | 126.0 | 67.8 | 16.8 | 41.6 | 42.0 | 27.6      | 46       | 50        | 50       | 103.9 | 45.7 | 58.2 | 54.9 | 20 OPU            | STRsw-32-U        |
| 38           | 17/8-12             | 138.4 | 78.0 | 16.8 | 47.6 | 49.4 | 34.0      | 50       | 55        | 60       | 111.2 | 50.8 | 60.4 | 62.5 | 24 OPU            | STRsw-38-U        |



## POSITIONABLE MALE BRANCH TEE

INCH OD Tubes x SAE/MS \*Straight threads

| T<br>Tube OD | S<br>SAE/MS<br>Male | A     | Ax   | B    | C    | D    | E<br>min. | F<br>A/F | Fx<br>A/F | G<br>A/F | H     | Hx   | Hy   | U    | ORing<br>Part No. | TULOK<br>Part No. |
|--------------|---------------------|-------|------|------|------|------|-----------|----------|-----------|----------|-------|------|------|------|-------------------|-------------------|
| 1/4          | 7/16-20             | 57.0  | 28.5 | 9.9  | 17.8 | 15.3 | 4.8       | 14       | 14        | 14       | 42.0  | 21.0 | 28.5 | 16.5 | 4 OPU             | 4 STBsw-U         |
| 3/8          | 9/16-18             | 64.0  | 32.0 | 11.2 | 19.3 | 16.8 | 7.1       | 16       | 17        | 17       | 49.2  | 24.6 | 32.3 | 20.0 | 6 OPU             | 6 STBsw-U         |
| 1/2          | 3/4-16              | 75.2  | 37.6 | 12.7 | 21.8 | 22.9 | 10.4      | 22       | 22        | 22       | 54.8  | 27.4 | 37.8 | 25.6 | 8 OPU             | 8 STBsw-U         |
| 3/4          | 11/16-12            | 82.8  | 41.4 | 16.8 | 21.8 | 24   | 15.8      | 27       | 32        | 28.5     | 62.4  | 31.2 | 48.8 | 36.6 | 12 OPU            | 12 STBsw-U        |
| 1            | 15/16-12            | 101.0 | 50.5 | 16.8 | 26.4 | 31.2 | 22.3      | 35       | 35        | 38       | 76.8  | 38.4 | 53.6 | 44.0 | 16 OPU            | 16 STBsw-U        |
| 1.1/4        | 15/8-12             | 135.6 | 68   | 16.8 | 38.9 | 41.2 | 27.6      | 46       | 50        | 50       | 91.4  | 46   | 58   | 55   | 20 OPU            | 20 STBsw-U        |
| 1.1/2        | 17/8-12             | 156.0 | 78.0 | 16.8 | 45.2 | 50.0 | 34.0      | 50       | 55        | 60       | 101.6 | 51   | 60   | 63   | 24 OPU            | 24 STBsw-U        |



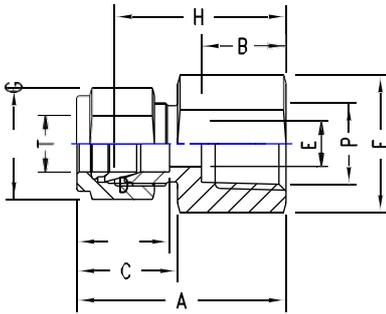
METRIC OD Tubes x SAE/MS \*Straight threads

| T<br>Tube OD | S<br>SAE/MS<br>Male | A     | Ax   | B    | C    | D    | E<br>min. | F<br>A/F | Fx<br>A/F | G<br>A/F | H     | Hx   | Hy   | U    | ORing<br>Part No. | TULOK<br>Part No. |
|--------------|---------------------|-------|------|------|------|------|-----------|----------|-----------|----------|-------|------|------|------|-------------------|-------------------|
| 6            | 7/16-20             | 57.0  | 28.5 | 9.9  | 17.7 | 15.3 | 4.8       | 14       | 14        | 14       | 42.0  | 21.0 | 28.5 | 16.5 | 4 OPU             | STBsw-6-U         |
| 10           | 9/16-18             | 64.0  | 32.0 | 11.2 | 19.5 | 17.2 | 7.1       | 16       | 17        | 17       | 49.2  | 24.6 | 32.3 | 20.0 | 6 OPU             | STBsw-10-U        |
| 12           | 3/4-16              | 75.2  | 37.6 | 12.7 | 22.0 | 22.8 | 10.4      | 22       | 22        | 22       | 54.8  | 27.4 | 37.8 | 25.6 | 8 OPU             | STBsw-12-U        |
| 20           | 11/16-12            | 82.8  | 41.4 | 16.8 | 22.0 | 26.0 | 15.8      | 27       | 32        | 28.5     | 62.4  | 31.2 | 48.8 | 36.6 | 12 OPU            | STBsw-20-U        |
| 25           | 15/16-12            | 101.0 | 50.5 | 16.8 | 26.5 | 31.3 | 22.3      | 35       | 35        | 38       | 76.8  | 38.4 | 53.6 | 44.0 | 16 OPU            | STBsw-25-U        |
| 32           | 15/8-12             | 135.6 | 68   | 16.8 | 41.6 | 42.0 | 27.6      | 46       | 50        | 50       | 91.4  | 46   | 58   | 55   | 20 OPU            | STBsw-32-U        |
| 38           | 17/8-12             | 156.0 | 78.0 | 16.8 | 47.6 | 49.4 | 34.0      | 50       | 55        | 60       | 101.6 | 51   | 60   | 63   | 24 OPU            | STBsw-38-U        |



\* Reference Specifications : SAE Screw Thread standard conforms to American standard B1.1. Unified screw threads.

**FEMALE CONNECTOR**  
INCH OD Tubes x Female NPT Threads



| T<br>Tube NPT<br>OD | P<br>Female | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | TULOK<br>Part No. |
|---------------------|-------------|------|------|------|------|-----------|----------|----------|------|-------------------|
| 1/16                | 1/16        | 23.6 | 9.9  | 11.0 | 8.6  | 1.3       | 11       | 8        | 19.8 | 1 SCFN            |
| 1/16                | 18          | 24.4 | 10.4 | 11.0 | 8.6  | 1.3       | 14       | 8        | 20.6 | 1-2 SCFN          |
| 1/8                 | 1/8         | 28.7 | 10.4 | 15.3 | 12.7 | 2.4       | 14       | 11       | 22.1 | 2 SCFN            |
| 1/8                 | 1/4         | 33.6 | 15.0 | 15.3 | 12.7 | 2.4       | 19       | 11       | 26.9 | 2-4 SCFN          |
| 1/4                 | 1/8         | 31.2 | 9.9  | 17.8 | 15.3 | 4.8       | 14       | 14       | 23.9 | 4-2 SCFN          |
| 1/4                 | 1/4         | 35.8 | 15.0 | 17.8 | 15.3 | 4.8       | 19       | 14       | 28.5 | 4 SCFN            |
| 1/4                 | 3/8         | 37.6 | 15.0 | 17.8 | 15.3 | 4.8       | 22       | 14       | 30.2 | 4-6 SCFN          |
| 1/4                 | 1/2         | 42.4 | 19.8 | 17.8 | 15.3 | 4.8       | 27       | 14       | 35.0 | 4-8 SCFN          |
| 5/16                | 1/8         | 32.0 | 10.4 | 18.5 | 16.3 | 6.3       | 14       | 16       | 24.6 | 5-2 SCFN          |
| 5/16                | 1/4         | 36.8 | 15.0 | 18.5 | 16.3 | 6.3       | 19       | 16       | 29.5 | 5-4 SCFN          |
| 3/8                 | 1/8         | 32.8 | 10.4 | 19.3 | 16.8 | 7.1       | 16       | 17       | 25.4 | 6-2 SCFN          |
| 3/8                 | 1/4         | 37.6 | 15.0 | 19.3 | 16.8 | 7.1       | 19       | 17       | 30.2 | 6-4 SCFN          |
| 3/8                 | 3/8         | 39.1 | 15.0 | 19.3 | 16.8 | 7.1       | 22       | 17       | 31.8 | 6 SCFN            |
| 3/8                 | 1/2         | 43.9 | 19.8 | 19.3 | 16.8 | 7.1       | 27       | 17       | 36.6 | 6-8 SCFN          |
| 1/2                 | 1/4         | 40.4 | 15.0 | 21.8 | 22.9 | 10.4      | 22       | 22       | 30.2 | 8-4 SCFN          |
| 1/2                 | 3/8         | 41.9 | 15.0 | 21.8 | 22.9 | 10.4      | 22       | 22       | 30.2 | 8-6 SCFN          |
| 1/2                 | 1/2         | 46.7 | 19.8 | 21.8 | 22.9 | 10.4      | 27       | 22       | 36.6 | 8 SCFN            |
| 1/2                 | 3/4         | 48.3 | 20.6 | 21.8 | 22.9 | 10.4      | 32       | 22       | 38.1 | 8-12 SCFN         |
| 5/8                 | 3/8         | 41.9 | 15.0 | 21.8 | 24.4 | 12.7      | 24       | 25       | 31.8 | 10-6 SCFN         |
| 5/8                 | 1/2         | 46.7 | 19.8 | 21.8 | 24.4 | 12.7      | 27       | 25       | 36.6 | 10-8 SCFN         |
| 3/4                 | 1/2         | 46.7 | 19.8 | 21.8 | 24.4 | 15.8      | 27       | 28.5     | 36.6 | 12-8 SCFN         |
| 3/4                 | 3/4         | 48.3 | 20.6 | 21.8 | 24.4 | 15.8      | 35       | 28.5     | 38.1 | 12 SCFN           |
| 7/8                 | 3/4         | 49.8 | 20.6 | 21.8 | 25.9 | 18.3      | 35       | 32       | 39.6 | 14-12 SCFN        |
| 1                   | 3/4         | 53.4 | 20.6 | 26.4 | 31.2 | 22.3      | 35       | 38       | 41.2 | 16-12 SCFN        |
| 1                   | 1           | 62.3 | 25.4 | 26.4 | 31.2 | 22.3      | 41       | 38       | 50.0 | 16 SCFN           |
| 1.1/4               | 1.1/4       | 74.6 | 25.4 | 38.9 | 41.2 | 27.6      | 55       | 50       | 52.6 | 20 SCFN           |
| 1.1/2               | 1.1/2       | 83.3 | 27.6 | 45.2 | 50.0 | 34.0      | 60       | 60       | 56.2 | 24 SCFN           |

INCH OD Tubes x Female ISO\* Tapered Pipe Threads

| T<br>Tube<br>OD | P<br>ISO<br>Female | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | TULOK<br>Part No. |
|-----------------|--------------------|------|------|------|------|-----------|----------|----------|------|-------------------|
| 1/16            | 1/16               | 23.6 | 9.9  | 11.0 | 8.6  | 1.3       | 11       | 8        | 19.8 | 1 SCFRx           |
| 1/8             | 1/8                | 28.7 | 10.4 | 15.3 | 12.7 | 2.4       | 14       | 11       | 22.1 | 2 SCFRx           |
| 1/8             | 1/4                | 33.6 | 15.0 | 15.3 | 12.7 | 2.4       | 19       | 11       | 26.9 | 2-4 SCFRx         |
| 1/4             | 1/8                | 31.2 | 9.9  | 17.8 | 15.3 | 4.8       | 14       | 14       | 23.9 | 4-2 SCFRx         |
| 1/4             | 1/4                | 35.8 | 15.0 | 17.8 | 15.3 | 4.8       | 19       | 14       | 28.5 | 4 SCFRx           |
| 1/4             | 3/8                | 37.6 | 15.0 | 17.8 | 15.3 | 4.8       | 22       | 14       | 30.2 | 4-6 SCFRx         |
| 1/4             | 1/2                | 42.4 | 19.8 | 17.8 | 15.3 | 4.8       | 27       | 14       | 35.0 | 4-8 SCFRx         |
| 3/8             | 1/4                | 37.6 | 15.0 | 19.3 | 16.8 | 7.1       | 19       | 17       | 30.2 | 6-4 SCFRx         |
| 3/8             | 3/8                | 39.1 | 15.0 | 19.3 | 16.8 | 7.1       | 22       | 17       | 31.8 | 6 SCFRx           |
| 3/8             | 1/2                | 43.9 | 19.8 | 19.3 | 16.8 | 7.1       | 27       | 17       | 36.6 | 6-8 SCFRx         |
| 1/2             | 1/4                | 40.4 | 15.0 | 21.8 | 22.9 | 10.4      | 22       | 22       | 40.4 | 8-4 SCFRx         |
| 1/2             | 3/8                | 41.9 | 15.0 | 21.8 | 22.9 | 10.4      | 22       | 22       | 30.2 | 8-6 SCFRx         |
| 1/2             | 1/2                | 46.7 | 19.8 | 21.8 | 22.9 | 10.4      | 27       | 22       | 31.8 | 8 SCFRx           |
| 3/4             | 1/2                | 46.7 | 19.8 | 21.8 | 24.4 | 15.8      | 27       | 28.5     | 36.6 | 12-8 SCFRx        |
| 3/4             | 3/4                | 48.3 | 20.6 | 21.8 | 24.4 | 15.8      | 35       | 28.5     | 38.1 | 12 SCFRx          |
| 1               | 3/4                | 53.4 | 20.6 | 26.4 | 31.2 | 22.3      | 35       | 38       | 41.2 | 16-12 SCFRx       |
| 1               | 1                  | 62.3 | 25.4 | 26.4 | 31.2 | 22.3      | 41       | 38       | 50.0 | 16 SCFRx          |
| 1.1/4           | 1.1/4              | 74.6 | 25.4 | 38.9 | 41.2 | 27.6      | 55       | 50       | 52.6 | 20 SCFRx          |
| 1.1/2           | 1.1/2              | 83.3 | 27.6 | 45.2 | 50.0 | 34.0      | 60       | 60       | 56.2 | 24 SCFRx          |

**NOTE:** The combinations shown above are representative of various possibilities. Other combinations not shown are also available. Please consult us.

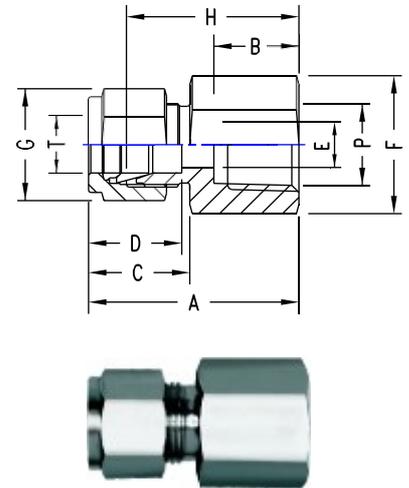
\* Reference Specifications : BS 21: ISO 7/1 : JIS B 0203 : DIN 2999 : IS 554

\* Female connectors with Parallel ISO Female Threads to BS:2779; ISO 228/1; JIS B6202; DIN 259 are also Available. Their Dimensions are as same as ISO. Tapered Pipe Threads above. Please consult us.

## FEMALE CONNECTOR

### METRIC OD Tubes x Female NPT Threads

| T<br>Tube NPT<br>OD | P<br>Female | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | TULOK<br>Part No. |
|---------------------|-------------|------|------|------|------|-----------|----------|----------|------|-------------------|
| 3                   | 1/8         | 28.7 | 10.4 | 15.3 | 12.9 | 2.4       | 14       | 11       | 22.1 | SCF 3-2N          |
| 3                   | 1/4         | 33.5 | 15.0 | 15.3 | 12.9 | 2.4       | 19       | 11       | 26.9 | SCF 3-4N          |
| 6                   | 1/8         | 31.3 | 10.4 | 17.7 | 15.3 | 4.8       | 14       | 14       | 23.9 | SCF 6-2N          |
| 6                   | 1/4         | 35.8 | 15.0 | 17.7 | 15.3 | 4.8       | 19       | 14       | 28.4 | SCF 6-4N          |
| 6                   | 3/8         | 37.6 | 15.0 | 17.7 | 15.3 | 4.8       | 22       | 14       | 30.2 | SCF 6-6N          |
| 6                   | 1/2         | 42.5 | 19.8 | 17.7 | 15.3 | 4.8       | 27       | 14       | 35.1 | SCF 6-8N          |
| 8                   | 1/8         | 32.1 | 10.4 | 18.6 | 16.2 | 6.3       | 14       | 16       | 24.6 | SCF 8-2N          |
| 8                   | 1/4         | 37.0 | 15.0 | 18.6 | 16.2 | 6.3       | 19       | 16       | 29.5 | SCF 8-4N          |
| 8                   | 3/8         | 38.5 | 15.0 | 18.6 | 16.2 | 6.3       | 22       | 16       | 31.0 | SCF 8-6N          |
| 8                   | 1/2         | 43.3 | 19.8 | 18.6 | 16.2 | 6.3       | 27       | 16       | 35.8 | SCF 8-8N          |
| 10                  | 1/4         | 37.8 | 15.0 | 19.5 | 17.2 | 7.9       | 19       | 19       | 30.2 | SCF 10-4N         |
| 10                  | 3/8         | 39.4 | 15.0 | 19.5 | 17.2 | 7.9       | 22       | 19       | 31.8 | SCF 10-6N         |
| 10                  | 1/2         | 44.2 | 19.8 | 19.5 | 17.2 | 7.9       | 27       | 19       | 36.6 | SCF 10-8N         |
| 12                  | 1/4         | 40.3 | 15.0 | 22.0 | 22.8 | 9.5       | 22       | 22       | 30.2 | SCF 12-4N         |
| 12                  | 3/8         | 41.9 | 15.0 | 22.0 | 22.8 | 9.5       | 22       | 22       | 31.8 | SCF 12-6N         |
| 12                  | 1/2         | 46.7 | 19.8 | 22.0 | 22.8 | 9.5       | 27       | 22       | 36.6 | SCF 12-8N         |
| 15                  | 1/2         | 46.7 | 19.8 | 22.0 | 24.4 | 11.9      | 27       | 25       | 36.6 | SCF 15-8N         |
| 16                  | 1/2         | 46.9 | 19.8 | 22.0 | 24.4 | 12.7      | 27       | 25       | 36.8 | SCF 16-8N         |
| 20                  | 1/2         | 47.9 | 19.8 | 22.0 | 26.0 | 15.9      | 30       | 32       | 37.8 | SCF 20-8N         |
| 20                  | 3/4         | 49.7 | 20.6 | 22.0 | 26.0 | 15.9      | 35       | 32       | 39.6 | SCF 20-12N        |
| 22                  | 3/4         | 49.7 | 20.6 | 22.0 | 26.0 | 18.3      | 35       | 32       | 39.6 | SCF 22-12N        |
| 22                  | 1           | 57.9 | 25.4 | 22.0 | 26.0 | 18.3      | 41       | 32       | 47.8 | SCF 22-16N        |
| 25                  | 3/4         | 53.4 | 20.6 | 26.5 | 31.3 | 21.8      | 35       | 38       | 41.1 | SCF 25-12N        |
| 25                  | 1           | 62.3 | 25.4 | 26.5 | 31.3 | 21.8      | 41       | 38       | 50.0 | SCF 25-16N        |
| 32                  | 1.1/4       | 74.6 | 25.4 | 41.6 | 42.0 | 27.6      | 55       | 50       | 52.6 | SCF32-20N         |
| 38                  | 1.1/2       | 83.3 | 27.6 | 47.9 | 49.4 | 34.0      | 60       | 60       | 56.2 | SCF 38-24N        |



### METRIC OD Tubes x Female ISO\* Tapered Pipe Threads

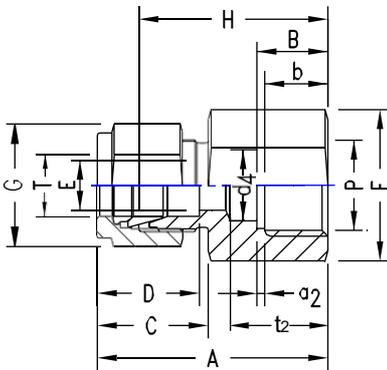
| T<br>Tube ISO<br>OD | P<br>Female | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | TULOK<br>Part No. |
|---------------------|-------------|------|------|------|------|-----------|----------|----------|------|-------------------|
| 3                   | 1/8         | 28.7 | 10.4 | 15.3 | 12.9 | 2.4       | 14       | 11       | 22.1 | SCF 3-2Rx         |
| 3                   | 1/4         | 33.5 | 15.0 | 15.3 | 12.9 | 2.4       | 19       | 11       | 26.9 | SCF 3-4Rx         |
| 6                   | 1/8         | 31.3 | 10.4 | 17.7 | 15.3 | 4.8       | 14       | 14       | 23.9 | SCF 6-2Rx         |
| 6                   | 1/4         | 35.8 | 15.0 | 17.7 | 15.3 | 4.8       | 19       | 14       | 28.4 | SCF 6-4Rx         |
| 6                   | 3/8         | 37.6 | 15.0 | 17.7 | 15.3 | 4.8       | 22       | 14       | 30.2 | SCF 6-Rx          |
| 6                   | 1/2         | 42.5 | 19.8 | 17.7 | 15.3 | 4.8       | 27       | 14       | 35.1 | SCF 6-8Rx         |
| 8                   | 1/8         | 32.1 | 10.4 | 18.6 | 16.2 | 6.3       | 14       | 16       | 24.6 | SCF 8-2Rx         |
| 8                   | 1/4         | 37.0 | 15.0 | 18.6 | 16.2 | 6.3       | 19       | 16       | 29.5 | SCF 8-4Rx         |
| 8                   | 3/8         | 38.5 | 15.0 | 18.6 | 16.2 | 6.3       | 22       | 16       | 31.0 | SCF 8-6Rx         |
| 8                   | 1/2         | 43.3 | 19.8 | 18.6 | 16.2 | 6.3       | 27       | 16       | 35.8 | SCF 8-Rx          |
| 10                  | 1/4         | 37.8 | 15.0 | 19.5 | 17.2 | 7.9       | 19       | 19       | 30.2 | SCF 10-4Rx        |
| 10                  | 3/8         | 39.4 | 15.0 | 19.5 | 17.2 | 7.9       | 22       | 19       | 31.8 | SCF 10-6Rx        |
| 10                  | 1/2         | 44.2 | 19.8 | 19.5 | 17.2 | 7.9       | 27       | 19       | 36.6 | SCF 10-8Rx        |
| 12                  | 1/4         | 40.3 | 15.0 | 22.0 | 22.8 | 9.5       | 22       | 22       | 30.2 | SCF 12-4Rx        |
| 12                  | 3/8         | 41.9 | 15.0 | 22.0 | 22.8 | 9.5       | 22       | 22       | 31.8 | SCF 12-6Rx        |
| 12                  | 1/2         | 46.7 | 19.8 | 22.0 | 22.8 | 9.5       | 27       | 22       | 36.6 | SCF 12-8Rx        |
| 15                  | 1/2         | 46.7 | 19.8 | 22.0 | 24.4 | 11.9      | 27       | 25       | 36.6 | SCF 15-8Rx        |
| 16                  | 1/2         | 46.9 | 19.8 | 22.0 | 24.4 | 12.7      | 27       | 25       | 36.8 | SCF 16-8Rx        |
| 22                  | 3/4         | 49.7 | 20.6 | 22.0 | 26.0 | 18.3      | 35       | 32       | 39.6 | SCF 22-12Rx       |
| 22                  | 1           | 57.9 | 25.4 | 22.0 | 26.0 | 18.3      | 41       | 32       | 47.8 | SCF 22-16Rx       |
| 25                  | 3/4         | 53.4 | 20.6 | 26.5 | 31.3 | 21.8      | 35       | 38       | 41.1 | SCF 25-12Rx       |
| 25                  | 1           | 62.3 | 25.4 | 26.5 | 31.3 | 21.8      | 41       | 38       | 50.0 | SCF 25-16Rx       |
| 32                  | 1.1/4       | 74.6 | 25.4 | 41.6 | 42.0 | 27.6      | 55       | 50       | 52.6 | SCF32-20Rx        |
| 38                  | 1.1/2       | 83.3 | 27.6 | 47.9 | 49.4 | 34.0      | 60       | 60       | 56.2 | SCF 38-24Rx       |

\* Reference Specifications : BS 21 : ISO 7/1 : JIS B 0203 : DIN 2999 : IS 554

NOTE: The combinations shown above are representative of various possibilities. Other combinations not shown are also available. Please consult us.

### FEMALE MANOMETER CONNECTOR

Inch OD Tubes X Female Iso\* Parallel Threads (gage)



| T<br>Tube ISO<br>OD Female | P<br>A B | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H  | a2<br>Minm/Minm. | d4   | b   | t2  | TULOK<br>Part No. |      |            |
|----------------------------|----------|------|------|-----------|----------|----------|----|------------------|------|-----|-----|-------------------|------|------------|
| 1/4                        | 1/4      | 37.6 | 13.0 | 17.8      | 15.3     | 4.8      | 19 | 14               | 30.2 | 1.6 | 5.6 | 9.4               | 17.0 | 4 SCFMAN   |
| 1/4                        | 3/8      | 37.6 | 14.2 | 17.8      | 15.3     | 4.8      | 24 | 14               | 30.2 | 1.6 | 6.6 | 9.9               | 20.3 | 4-6 SCFMAN |
| 1/4                        | 1/2      | 43.4 | 18.8 | 17.8      | 15.3     | 4.8      | 27 | 14               | 36.0 | 1.6 | 6.6 | 14.5              | 24.9 | 4-8 SCFMAN |
| 5/16                       | 1/4      | 38.4 | 13.0 | 18.5      | 16.3     | 6.0      | 19 | 16               | 31.0 | 1.6 | -   | 9.4               | -    | 5-4 SCFMAN |
| 5/16                       | 1/2      | 40.9 | 18.8 | 18.5      | 16.3     | 7.1      | 27 | 16               | 33.6 | 1.6 | -   | 14.5              | -    | 5-8 SCFMAN |
| 3/8                        | 1/4      | 39.2 | 13.0 | 19.3      | 16.8     | 6.0      | 19 | 17               | 31.8 | 1.6 | -   | 9.4               | -    | 6-4 SCFMAN |
| 3/8                        | 3/8      | 38.6 | 14.2 | 19.3      | 16.8     | 6.6      | 24 | 17               | 31.2 | 1.6 | -   | 9.9               | -    | 6 SCFMAN   |
| 3/8                        | 1/2      | 41.9 | 18.8 | 19.3      | 16.8     | 7.1      | 27 | 17               | 34.5 | 1.6 | -   | 14.5              | -    | 6-8 SCFMAN |
| 1/2                        | 3/8      | 44.5 | 14.2 | 21.8      | 22.9     | 6.6      | 24 | 22               | 34.3 | 1.6 | -   | 9.9               | -    | 8-6 SCFMAN |
| 1/2                        | 1/2      | 48.3 | 18.8 | 21.8      | 22.9     | 7.1      | 27 | 22               | 38.1 | 1.6 | -   | 14.5              | -    | 8 SCFMAN   |

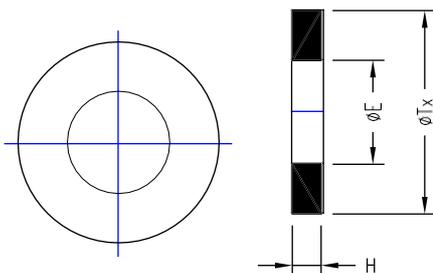
### Metric OD Tubes X Female ISO\* Parallel Thread (gage)

| T<br>ISO<br>OD Female | P<br>A B C D | E<br>min. | F<br>A/F | G<br>A/F | H    | a2<br>min | b<br>min | d4 | t2   | Tube<br>Part No. |      |     |      |            |
|-----------------------|--------------|-----------|----------|----------|------|-----------|----------|----|------|------------------|------|-----|------|------------|
| 3                     | 1/4          | 35.3      | 12.9     | 15.3     | 12.9 | 2.4       | 19       | 11 | 28.7 | 1.6              | 9.5  | 5.5 | 17.0 | SCF3-4MAN  |
| 6                     | 1/4          | 37.6      | 12.9     | 17.7     | 15.3 | 4.8       | 19       | 14 | 30.2 | 1.6              | 9.5  | 5.5 | 17.0 | SCF6-4MAN  |
| 6                     | 3/8          | 37.6      | 14.1     | 17.7     | 15.3 | 4.8       | 24       | 14 | 30.2 | 1.6              | 10.0 | 6.5 | 20.3 | SCF6MAN    |
| 6                     | 1/2          | 43.5      | 18.9     | 17.7     | 15.3 | 4.8       | 27       | 14 | 36.1 | 1.6              | 14.5 | 7.0 | 24.9 | SCF6-8MAN  |
| 8                     | 1/4          | 38.5      | 12.9     | 18.6     | 16.2 | 5.5       | 19       | 16 | 31.0 | 1.6              | 9.5  | 5.5 | -    | SCF8-4MAN  |
| 8                     | 3/8          | 36.2      | 14.1     | 18.6     | 16.2 | 6.5       | 24       | 16 | 28.7 | 1.6              | 10.0 | 6.5 | -    | SCF8-6MAN  |
| 8                     | 1/2          | 41.0      | 18.9     | 18.6     | 16.2 | 7.1       | 27       | 16 | 33.5 | 1.6              | 14.5 | 7.0 | -    | SCF8MAN    |
| 10                    | 1/4          | 39.4      | 19.5     | 19.5     | 17.2 | 5.5       | 19       | 19 | 31.8 | 1.6              | 9.5  | 5.5 | -    | SCF10-4MAN |
| 10                    | 3/8          | 38.8      | 19.5     | 19.5     | 17.2 | 6.5       | 24       | 19 | 31.2 | 1.6              | 10.0 | 6.5 | -    | SCF10-6MAN |
| 10                    | 1/2          | 42.1      | 19.5     | 19.5     | 17.2 | 7.1       | 27       | 19 | 34.5 | 1.6              | 14.5 | 7.0 | -    | SCF10-8MAN |
| 12                    | 1/4          | 41.9      | 12.9     | 22.0     | 22.8 | 5.5       | 22       | 22 | 31.8 | 1.6              | 9.5  | 5.5 | -    | SCF12-4MAN |
| 12                    | 3/8          | 44.4      | 14.1     | 22.0     | 22.8 | 6.5       | 24       | 22 | 34.3 | 1.6              | 10.0 | 6.5 | -    | SCF12-6MAN |
| 12                    | 1/2          | 48.2      | 18.9     | 22.0     | 22.8 | 7.1       | 27       | 22 | 38.1 | 1.6              | 14.5 | 7.0 | -    | SCF12-8MAN |

No seal is made around the male thread. instead, a gasket is dropped into the flat bottom in the female thread, and the end of the male threaded end exerts a load on the gasket to seal. Details of gasket given below.

\* Reference Specifications : BS 2779 : ISO 228/1 : JIS B0202 : DIN-259

### MANOMETER CONNECTOR GASKET FOR FEMALE ISO PARALLEL THREADS

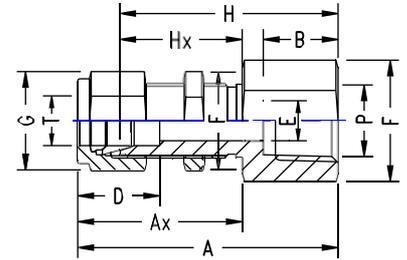


| P<br>ISO<br>Female | E   | H   | Tx   | Part No. |          |
|--------------------|-----|-----|------|----------|----------|
|                    |     |     |      | Copper   | PTFE     |
| 1/4"               | 7.6 | 1.8 | 10.7 | 4 MGCu   | 4 MGPTFE |
| 3/8"               | 8.6 | 2.3 | 14.2 | 6 MGCu   | 6 MGPTFE |
| 1/2"               | 9.1 | 2.5 | 17.8 | 8 MGCu   | 8 MGPTFE |

## BULKHEAD FEMALE CONNECTOR

INCH OD Tubes x Female NPT Threads

| T       | P        | A     | Ax   | B    | D    | E    | F   | G    | H    | Hx   | Panel Hole Drill Size | Max. Panel Thickness | TULOK Part No. |       |
|---------|----------|-------|------|------|------|------|-----|------|------|------|-----------------------|----------------------|----------------|-------|
| Tube OD | NPT Male |       |      |      |      | min. | A/F | A/F  |      |      |                       |                      |                |       |
| 1/8     | 1/8      | 44.7  | 31.2 | 10.4 | 12.7 | 2.4  | 14  | 11   | 38.1 | 24.6 | 8.3                   | 12.7                 | 2              | SCFBN |
| 1/4     | 1/8      | 47.0  | 33.5 | 10.4 | 15.3 | 4.8  | 16  | 14   | 39.7 | 26.2 | 11.5                  | 10.2                 | 4-2            | SCFBN |
| 1/4     | 1/4      | 51.5  | 33.5 | 15.0 | 15.3 | 4.8  | 19  | 14   | 44.2 | 26.2 | 11.5                  | 10.2                 | 4              | SCFBN |
| 3/8     | 1/4      | 54.8  | 36.8 | 15.0 | 16.8 | 7.1  | 19  | 17   | 47.5 | 29.5 | 14.7                  | 11.2                 | 6-4            | SCFBN |
| 1/2     | 3/8      | 61.7  | 41.9 | 15.0 | 22.9 | 10.4 | 22  | 22   | 51.6 | 31.0 | 19.5                  | 12.7                 | 8-6            | SCFBN |
| 1/2     | 1/2      | 66.7  | 41.9 | 19.8 | 22.9 | 10.4 | 27  | 22   | 56.6 | 31.0 | 19.5                  | 12.7                 | 8              | SCFBN |
| 5/8     | 1/2      | 67.6  | 42.7 | 19.8 | 22.9 | 12.7 | 27  | 25   | 57.4 | 32.5 | 22.6                  | 12.7                 | 10-8           | SCFBN |
| 3/4     | 1/2      | 72.4  | 47.5 | 19.8 | 24.4 | 16.0 | 35  | 28.5 | 62.3 | 37.4 | 25.8                  | 16.8                 | 12-8           | SCFBN |
| 3/4     | 3/4      | 74.7  | 47.5 | 20.6 | 24.4 | 16.0 | 35  | 28.5 | 64.3 | 37.4 | 25.8                  | 16.8                 | 12             | SCFBN |
| 1       | 3/4      | 84.3  | 57.4 | 20.6 | 31.2 | 16.0 | 35  | 38   | 72.1 | 45.2 | 33.7                  | 19.0                 | 16-12          | SCFBN |
| 1       | 1        | 93.2  | 57.4 | 25.4 | 31.2 | 22.2 | 35  | 38   | 81.0 | 45.2 | 33.7                  | 19.0                 | 16             | SCFBN |
| 1.1/4   | 1.1/4    | 105.7 | 69.9 | 25.4 | 41.2 | 27.6 | 50  | 50   | 83.5 | 47.7 | 41.6                  | 19.0                 | 20             | SCFBN |
| 1.1/2   | 1.1/2    | 144.5 | 76.4 | 27.6 | 50.0 | 34.0 | 60  | 57   | 87.4 | 49.3 | 49.6                  | 19.0                 | 24             | SCFBN |

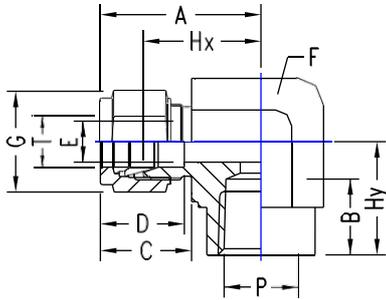


## Metric OD Tubes x Female NPT Threads

| T       | P        | A     | Ax   | B    | D    | E    | F   | G   | H    | Hx   | Panel Hole Drill Size | Max. Panel Thickness | TULOK Part No. |        |
|---------|----------|-------|------|------|------|------|-----|-----|------|------|-----------------------|----------------------|----------------|--------|
| Tube OD | NPT Male |       |      |      |      | min. | A/F | A/F |      |      |                       |                      |                |        |
| 3       | 1/8      | 44.7  | 31.2 | 10.4 | 12.9 | 2.4  | 14  | 11  | 38.1 | 24.6 | 8.3                   | 12.7                 | SCFB           | 3-2N   |
| 6       | 1/4      | 51.6  | 33.6 | 15.0 | 15.3 | 4.8  | 19  | 14  | 44.2 | 26.2 | 11.5                  | 10.2                 | SCFB           | 6-4N   |
| 10      | 3/8      | 56.8  | 37.0 | 15.0 | 17.2 | 7.9  | 22  | 19  | 49.2 | 29.4 | 16.3                  | 11.2                 | SCFB           | 10-4N  |
| 12      | 3/8      | 61.8  | 41.9 | 15.0 | 22.8 | 9.5  | 24  | 22  | 51.7 | 31.8 | 19.5                  | 12.7                 | SCFB           | 12-6N  |
| 12      | 1/2      | 66.7  | 41.9 | 19.8 | 22.8 | 9.5  | 27  | 22  | 56.6 | 31.8 | 19.5                  | 12.7                 | SCFB           | 12-8N  |
| 16      | 1/2      | 67.5  | 42.6 | 20.6 | 24.4 | 12.7 | 27  | 25  | 57.4 | 32.5 | 22.8                  | 12.7                 | SCFB           | 16-8N  |
| 22      | 3/4      | 79.9  | 53.0 | 20.6 | 26.0 | 15.8 | 35  | 35  | 69.8 | 42.9 | 29.0                  | 19.0                 | SCFB           | 22-12N |
| 25      | 3/4      | 84.3  | 57.4 | 20.6 | 31.2 | 15.8 | 35  | 38  | 72.1 | 45.2 | 33.7                  | 19.0                 | SCFB           | 25-12N |
| 25      | 1        | 93.2  | 57.4 | 25.4 | 31.2 | 22.3 | 35  | 38  | 81.0 | 45.2 | 33.7                  | 19.0                 | SCFB           | 25-16N |
| 32      | 1.1/4    | 105.7 | 69.9 | 25.4 | 42.0 | 27.6 | 50  | 50  | 83.5 | 44.7 | 41.6                  | 19.0                 | SCFB           | 32-20N |
| 38      | 1.1/2    | 114.5 | 76.4 | 27.6 | 49.4 | 33.7 | 60  | 57  | 87.4 | 49.3 | 49.6                  | 19.0                 | SCFB           | 38-24N |

**NOTE:** Bulkhead Female Connectors are also available with ISO Taper Female Threads, ISO Parallel Female Threads and ISO Female Marcometer connection. Please consult us.

**FEMALE ELBOW**  
INCH OD Tubes X Female NPT Threads



| T<br>Tube<br>OD | P<br>NPT<br>Female | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | Hx   | Hy   | TULOK<br>Part No. |
|-----------------|--------------------|------|------|------|------|-----------|----------|----------|------|------|-------------------|
| 1/8             | 1/8                | 24.6 | 10.4 | 15.3 | 12.7 | 2.4       | 14       | 11       | 18.0 | 19.0 | 2 SEF-N           |
| 1/8             | 1/4                | 27.4 | 15.0 | 15.3 | 12.7 | 2.4       | 19       | 11       | 20.8 | 22.4 | 2-4 SEF-N         |
| 1/4             | 1/8                | 26.9 | 10.4 | 17.8 | 15.3 | 4.8       | 14       | 14       | 19.6 | 19.0 | 4-2 SEF-N         |
| 1/4             | 1/4                | 29.7 | 15.0 | 17.8 | 15.3 | 4.8       | 19       | 14       | 22.4 | 22.4 | 4 SEF-N           |
| 1/4             | 3/8                | 31.8 | 15.0 | 17.8 | 15.3 | 4.8       | 22       | 14       | 24.4 | 22.4 | 4-6 SEF-N         |
| 1/4             | 1/2                | 34.6 | 19.8 | 17.8 | 15.3 | 4.8       | 27       | 14       | 27.2 | 28.5 | 4-8 SEF-N         |
| 5/16            | 1/8                | 28.7 | 10.4 | 17.8 | 15.3 | 6.3       | 19       | 14       | 21.4 | 19.1 | 5-2 SEF-N         |
| 5/16            | 1/4                | 30.5 | 15.0 | 18.5 | 16.3 | 6.3       | 22       | 16       | 23.2 | 22.4 | 5-4 SEF-N         |
| 3/8             | 1/8                | 30.5 | 10.4 | 19.3 | 16.8 | 7.1       | 17       | 17       | 23.2 | 19.1 | 6-2 SEF-N         |
| 3/8             | 1/4                | 31.2 | 15.0 | 19.3 | 16.8 | 7.1       | 19       | 17       | 23.9 | 22.4 | 6-4 SEF-N         |
| 3/8             | 3/8                | 33.3 | 15.0 | 19.3 | 16.8 | 7.1       | 22       | 17       | 25.9 | 22.4 | 6 SEF-N           |
| 3/8             | 1/2                | 36.0 | 19.8 | 19.3 | 16.8 | 7.1       | 27       | 17       | 28.7 | 28.5 | 6-8 SEF-N         |
| 1/2             | 1/4                | 36.0 | 15.0 | 21.8 | 22.9 | 7.1       | 22       | 22       | 25.9 | 22.4 | 8-4 SEF-N         |
| 1/2             | 3/8                | 36.0 | 15.0 | 21.8 | 22.9 | 10.4      | 22       | 22       | 25.9 | 22.4 | 8-6 SEF-N         |
| 1/2             | 1/2                | 38.9 | 19.8 | 21.8 | 22.9 | 10.4      | 27       | 22       | 28.7 | 28.5 | 8 SEF-N           |
| 5/8             | 3/8                | 38.1 | 15.0 | 21.8 | 22.9 | 12.7      | 24       | 22       | 28.0 | 22.4 | 10-6 SEF-N        |
| 5/8             | 1/2                | 39.9 | 19.8 | 21.8 | 24.4 | 12.7      | 27       | 25       | 29.7 | 28.5 | 10-8 SEF-N        |
| 3/4             | 1/2                | 39.9 | 19.8 | 21.8 | 24.4 | 15.8      | 27       | 28.5     | 29.7 | 28.5 | 12-8 SEF-N        |
| 3/4             | 3/4                | 44.7 | 20.6 | 21.8 | 24.4 | 15.8      | 35       | 28.5     | 34.6 | 31.8 | 12 SEF-N          |
| 7/8             | 3/4                | 44.7 | 20.6 | 21.8 | 25.9 | 18.2      | 35       | 32       | 34.6 | 31.8 | 14-12 SEF-N       |
| 1               | 3/4                | 49.0 | 20.6 | 26.4 | 31.2 | 22.3      | 35       | 38       | 36.8 | 31.8 | 16-12 SEF-N       |
| 1               | 1                  | 53.6 | 25.4 | 26.4 | 31.2 | 22.3      | 41       | 38       | 41.4 | 38.1 | 16 SEF-N          |

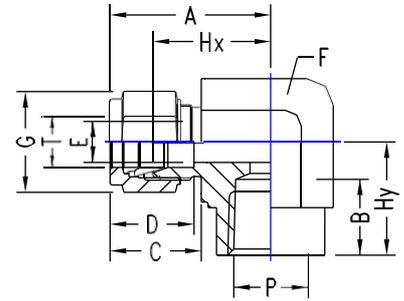
**METRIC OD Tubes x Female NPT Threads**

| T<br>Tube<br>OD | P<br>NPT<br>Female | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | Hx   | Hy   | TULOK<br>Part No. |
|-----------------|--------------------|------|------|------|------|-----------|----------|----------|------|------|-------------------|
| 3               | 1/8                | 24.6 | 10.4 | 15.3 | 12.9 | 2.4       | 14       | 11       | 18.0 | 19.0 | SEF 3-2N          |
| 3               | 1/4                | 27.4 | 15.0 | 15.3 | 12.9 | 2.4       | 19       | 11       | 20.8 | 22.4 | SEF 3-4N          |
| 6               | 1/8                | 27.0 | 10.4 | 17.7 | 15.3 | 4.8       | 14       | 14       | 19.6 | 19.0 | SEF 6-2N          |
| 6               | 1/4                | 29.8 | 15.0 | 17.7 | 15.3 | 4.8       | 19       | 14       | 22.4 | 22.4 | SCF 6-4N          |
| 6               | 1/2                | 34.6 | 19.8 | 17.7 | 15.3 | 4.8       | 27       | 14       | 27.2 | 28.5 | SEF 6-8N          |
| 8               | 1/4                | 30.6 | 15.0 | 18.6 | 16.2 | 6.3       | 19       | 16       | 23.1 | 22.4 | SEF 8-4N          |
| 8               | 3/8                | 32.6 | 15.0 | 18.6 | 16.2 | 6.3       | 22       | 16       | 25.1 | 22.4 | SEF 8-6N          |
| 10              | 1/4                | 33.5 | 15.0 | 19.5 | 17.2 | 7.9       | 19       | 19       | 25.9 | 22.4 | SEF 10-4N         |
| 10              | 3/8                | 33.5 | 15.0 | 19.5 | 17.2 | 7.9       | 22       | 19       | 25.9 | 22.4 | SEF 10-6N         |
| 12              | 1/4                | 36.0 | 15.0 | 22.0 | 22.8 | 9.5       | 22       | 22       | 25.9 | 22.4 | SEF 12-4N         |
| 12              | 3/8                | 36.0 | 15.0 | 22.0 | 22.8 | 9.5       | 22       | 22       | 25.9 | 22.4 | SEF 12-6N         |
| 12              | 1/2                | 38.8 | 19.8 | 22.0 | 22.8 | 9.5       | 27       | 22       | 28.7 | 28.5 | SEF 12-8N         |
| 16              | 1/2                | 39.5 | 19.8 | 22.0 | 24.4 | 12.7      | 27       | 25       | 29.7 | 28.5 | SEF 16-8N         |
| 25              | 3/4                | 49.0 | 20.6 | 26.5 | 31.3 | 22.3      | 35       | 38       | 36.8 | 31.8 | SEF 25-12N        |
| 25              | 1                  | 53.6 | 25.4 | 26.5 | 31.3 | 22.3      | 41       | 38       | 41.4 | 38.1 | SEF 25-16N        |

## FEMALE ELBOW

INCH OD Tubes X Female ISO\* tapered pipe threads

| T<br>Tube<br>OD | P<br>NPT<br>Female | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | Hx   | Hy   | TULOK<br>Part No. |
|-----------------|--------------------|------|------|------|------|-----------|----------|----------|------|------|-------------------|
| 1/8             | 1/8                | 24.6 | 10.4 | 15.3 | 12.7 | 2.4       | 14       | 11       | 18.0 | 19.0 | 2 SEF-Rx          |
| 1/8             | 1/4                | 27.4 | 15.0 | 15.3 | 12.7 | 2.4       | 19       | 11       | 20.8 | 22.4 | 2-4 SEF-Rx        |
| 1/4             | 1/8                | 26.9 | 10.4 | 17.8 | 15.3 | 4.8       | 14       | 14       | 19.6 | 19.0 | 4-2 SEF-Rx        |
| 1/4             | 1/4                | 29.7 | 15.0 | 17.8 | 15.3 | 4.8       | 19       | 14       | 22.4 | 22.4 | 4 SEF-Rx          |
| 1/4             | 3/8                | 31.8 | 15.0 | 17.8 | 15.3 | 4.8       | 22       | 14       | 24.4 | 22.4 | 4-6 SEF-Rx        |
| 1/4             | 1/2                | 34.6 | 19.8 | 17.8 | 15.3 | 4.8       | 27       | 14       | 27.2 | 28.5 | 4-8 SEF-Rx        |
| 5/16            | 1/8                | 28.7 | 10.4 | 17.8 | 15.3 | 6.3       | 19       | 14       | 21.4 | 19.1 | 5-2 SEF-Rx        |
| 5/16            | 1/4                | 30.5 | 15.0 | 18.5 | 16.3 | 6.3       | 22       | 16       | 23.2 | 22.4 | 5-4 SEF-Rx        |
| 3/8             | 1/8                | 30.5 | 10.4 | 19.3 | 16.8 | 7.1       | 17       | 17       | 23.2 | 19.1 | 6-2 SEF-Rx        |
| 3/8             | 1/4                | 31.2 | 15.0 | 19.3 | 16.8 | 7.1       | 19       | 17       | 23.9 | 22.4 | 6-4 SEF-Rx        |
| 3/8             | 3/8                | 33.3 | 15.0 | 19.3 | 16.8 | 7.1       | 22       | 17       | 25.9 | 22.4 | 6 SEF-Rx          |
| 3/8             | 1/2                | 36.0 | 19.8 | 19.3 | 16.8 | 7.1       | 27       | 17       | 28.7 | 28.5 | 6-8 SEF-Rx        |
| 1/2             | 1/4                | 36.0 | 15.0 | 21.8 | 22.9 | 7.1       | 22       | 22       | 25.9 | 22.4 | 8-4 SEF-Rx        |
| 1/2             | 3/8                | 36.0 | 15.0 | 21.8 | 22.9 | 10.4      | 22       | 22       | 25.9 | 22.4 | 8-6 SEF-Rx        |
| 1/2             | 1/2                | 38.9 | 19.8 | 21.8 | 22.9 | 10.4      | 27       | 22       | 28.7 | 28.5 | 8 SEF-Rx          |
| 5/8             | 3/8                | 38.1 | 15.0 | 21.8 | 22.9 | 12.7      | 24       | 22       | 28.0 | 22.4 | 10-6 SEF-Rx       |
| 5/8             | 1/2                | 39.9 | 19.8 | 21.8 | 24.4 | 12.7      | 27       | 25       | 29.7 | 28.5 | 10-8 SEF-Rx       |
| 3/4             | 1/2                | 39.9 | 19.8 | 21.8 | 24.4 | 15.8      | 27       | 28.5     | 29.7 | 28.5 | 12-8 SEF-Rx       |
| 3/4             | 3/4                | 44.7 | 20.6 | 21.8 | 24.4 | 15.8      | 35       | 28.5     | 34.6 | 31.8 | 12 SEF-Rx         |
| 7/8             | 3/4                | 44.7 | 20.6 | 21.8 | 25.9 | 18.2      | 35       | 32       | 34.6 | 31.8 | 14-12 SEF-Rx      |
| 1               | 3/4                | 49.0 | 20.6 | 26.4 | 31.2 | 22.3      | 35       | 38       | 36.8 | 31.8 | 16-12 SEF-Rx      |
| 1               | 1                  | 53.6 | 25.4 | 26.4 | 31.2 | 22.3      | 41       | 38       | 41.4 | 38.1 | 16 SEF-Rx         |



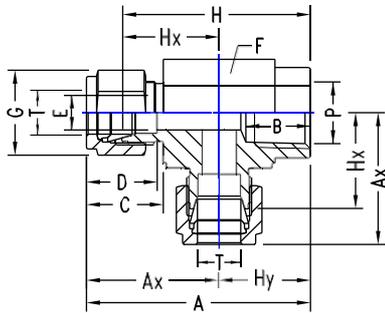
METRIC OD Tubes x Female ISO\* tapered pipe threads

| T<br>Tube<br>OD | P<br>NPT<br>Female | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | Hx   | Hy   | TULOK<br>Part No. |
|-----------------|--------------------|------|------|------|------|-----------|----------|----------|------|------|-------------------|
| 3               | 1/8                | 24.6 | 10.4 | 15.3 | 12.9 | 2.4       | 14       | 11       | 18.0 | 19.0 | SEF 3-2Rx         |
| 3               | 1/4                | 27.4 | 15.0 | 15.3 | 12.9 | 2.4       | 19       | 11       | 20.8 | 22.4 | SEF 3-4Rx         |
| 6               | 1/8                | 27.0 | 10.4 | 17.7 | 15.3 | 4.8       | 14       | 14       | 19.6 | 19.0 | SEF 6-2Rx         |
| 6               | 1/4                | 29.8 | 15.0 | 17.7 | 15.3 | 4.8       | 19       | 14       | 22.4 | 22.4 | SCF 6-4Rx         |
| 6               | 1/2                | 34.6 | 19.8 | 17.7 | 15.3 | 4.8       | 27       | 14       | 27.2 | 28.5 | SEF 6-8Rx         |
| 8               | 1/4                | 30.6 | 15.0 | 18.6 | 16.2 | 6.3       | 19       | 16       | 23.1 | 22.4 | SEF 8-4Rx         |
| 8               | 3/8                | 32.6 | 15.0 | 18.6 | 16.2 | 6.3       | 22       | 16       | 25.1 | 22.4 | SEF 8-6Rx         |
| 10              | 1/4                | 33.5 | 15.0 | 19.5 | 17.2 | 7.9       | 19       | 19       | 25.9 | 22.4 | SEF 10-4Rx        |
| 10              | 3/8                | 33.5 | 15.0 | 19.5 | 17.2 | 7.9       | 22       | 19       | 25.9 | 22.4 | SEF 10-6Rx        |
| 12              | 1/4                | 36.0 | 15.0 | 22.0 | 22.8 | 9.5       | 22       | 22       | 25.9 | 22.4 | SEF 12-4Rx        |
| 12              | 3/8                | 36.0 | 15.0 | 22.0 | 22.8 | 9.5       | 22       | 22       | 25.9 | 22.4 | SEF 12-6Rx        |
| 12              | 1/2                | 38.8 | 19.8 | 22.0 | 22.8 | 9.5       | 27       | 22       | 28.7 | 28.5 | SEF 12-8Rx        |
| 16              | 1/2                | 39.5 | 19.8 | 22.0 | 24.4 | 12.7      | 27       | 25       | 29.7 | 28.5 | SEF 16-8Rx        |
| 25              | 3/4                | 49.0 | 20.6 | 26.5 | 31.3 | 22.3      | 35       | 38       | 36.8 | 31.8 | SEF 25-12Rx       |
| 25              | 1                  | 53.6 | 25.4 | 26.5 | 31.3 | 22.3      | 41       | 38       | 41.4 | 38.1 | SEF 25-16Rx       |

\* Reference Specifications : BS 21: ISO 7/1 : JIS B 0203 : DIN 2999 : IS 554

\* Female connectors with Parallel ISO Female Threads to BS:2779; ISO 228/1; JIS B6202; DIN 259 are also available. Their Dimensions are as same as ISO. Tapered Pipe Threads above. Please consult us.

**FEMALE RUN TEE**  
INCH OD Tubes X Female NPT Threads



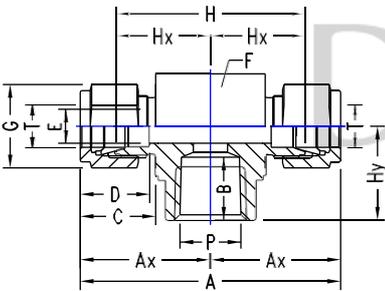
| T<br>Tube OD | P<br>NPT Female | A    | Ax   | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | Hx   | Hy   | TULOK<br>Part |
|--------------|-----------------|------|------|------|------|------|-----------|----------|----------|------|------|------|---------------|
| 1/8          | 1/8             | 43.6 | 24.6 | 10.4 | 15.3 | 12.7 | 2.4       | 14       | 11       | 37.0 | 18.0 | 19.0 | 2 STRF-N      |
| 1/4          | 1/8             | 45.9 | 26.9 | 10.4 | 17.8 | 15.3 | 4.8       | 14       | 14       | 38.6 | 19.6 | 19.0 | 4-2 STRF-N    |
| 1/4          | 1/4             | 52.1 | 29.7 | 15.0 | 17.8 | 15.3 | 4.8       | 19       | 14       | 44.8 | 22.4 | 22.4 | 4 STRF-N      |
| 3/8          | 1/4             | 53.6 | 31.2 | 15.0 | 19.3 | 16.8 | 7.1       | 19       | 17       | 46.3 | 23.9 | 22.4 | 6-4 STRF-N    |
| 3/8          | 3/8             | 55.7 | 33.3 | 15.0 | 19.3 | 16.8 | 7.1       | 22       | 17       | 48.3 | 25.9 | 22.4 | 6 STRF-N      |
| 1/2          | 3/8             | 58.4 | 36.0 | 15.0 | 21.8 | 22.9 | 10.4      | 22       | 22       | 48.3 | 25.9 | 22.4 | 8-6 STRF-N    |
| 1/2          | 1/2             | 67.4 | 38.9 | 19.8 | 21.8 | 22.9 | 10.4      | 27       | 22       | 57.2 | 28.7 | 28.5 | 8 STRF-N      |
| 3/4          | 3/4             | 76.5 | 44.7 | 20.6 | 21.8 | 24.4 | 15.8      | 35       | 29       | 66.4 | 34.6 | 31.8 | 12 STRF-N     |
| 1            | 3/4             | 80.8 | 49.0 | 20.6 | 26.4 | 31   | 22.3      | 35       | 38       | 68.6 | 36.8 | 31.8 | 16-12 STRF-N  |
| 1            | 1               | 91.7 | 53.6 | 25.4 | 26.4 | 31   | 22.3      | 41       | 38       | 79.5 | 41.4 | 38.1 | 16 STRF-N     |



**METRIC OD Tubes X Female NPT Threads**

| T<br>Tube OD | P<br>NPT Female | A    | Ax   | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | Hx   | Hy   | Part        |
|--------------|-----------------|------|------|------|------|------|-----------|----------|----------|------|------|------|-------------|
| 3            | 1/8             | 43.6 | 24.6 | 10.4 | 15.3 | 12.9 | 2.4       | 14       | 11       | 37.0 | 18.0 | 19.0 | STRF-3-2N   |
| 6            | 1/8             | 46.0 | 27.0 | 10.4 | 17.7 | 15.3 | 4.8       | 14       | 14       | 38.6 | 19.6 | 19.0 | STRF-6-2N   |
| 6            | 1/4             | 52.2 | 29.8 | 15.0 | 17.7 | 15.3 | 4.8       | 19       | 14       | 44.8 | 22.4 | 22.4 | STRF-6-4N   |
| 8            | 1/8             | 48.9 | 29.9 | 10.4 | 18.6 | 16.2 | 6.3       | 16       | 16       | 41.4 | 22.4 | 19.0 | STRF-8-2N   |
| 8            | 1/4             | 53.0 | 30.6 | 15.0 | 18.6 | 16.2 | 6.3       | 19       | 16       | 45.5 | 23.1 | 22.4 | STRF-8-4N   |
| 10           | 1/4             | 55.9 | 33.5 | 15.0 | 19.5 | 17.2 | 7.9       | 19       | 19       | 48.3 | 25.9 | 22.4 | STRF-10-4N  |
| 12           | 3/8             | 58.4 | 36.0 | 15.0 | 22.0 | 22.8 | 9.5       | 22       | 22       | 48.3 | 25.9 | 22.4 | STRF-12-6N  |
| 12           | 1/2             | 67.3 | 38.8 | 19.8 | 22.0 | 22.8 | 9.5       | 27       | 22       | 57.2 | 28.7 | 28.5 | STRF-12-8N  |
| 16           | 1/2             | 68.0 | 39.5 | 19.8 | 22.0 | 24   | 12.7      | 27       | 25       | 58.2 | 29.7 | 28.5 | STRF-16-8N  |
| 25           | 1               | 91.7 | 53.6 | 25.4 | 26.5 | 31.3 | 22.3      | 41       | 38       | 79.5 | 41.4 | 38.1 | STRF-25-16N |

**FEMALE BRANCH TEE**  
INCH OD Tubes X Female NPT Threads



| T<br>Tube OD | P<br>NPT A | Ax    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H  | Hx   | Hy   | TULOK<br>TULOK<br>Part |              |
|--------------|------------|-------|------|------|------|-----------|----------|----------|----|------|------|------------------------|--------------|
| 1/8          | 1/8        | 49.2  | 24.6 | 10.4 | 15.3 | 12.7      | 2.4      | 14       | 11 | 36.0 | 18.0 | 19.0                   | 2 STBF-N     |
| 1/4          | 1/8        | 53.8  | 26.9 | 10.4 | 17.8 | 15.3      | 4.8      | 14       | 14 | 39.2 | 19.6 | 19.0                   | 4-2 STBF-N   |
| 1/4          | 1/4        | 59.4  | 27.9 | 15.0 | 17.8 | 15.3      | 4.8      | 19       | 14 | 44.8 | 22.4 | 22.4                   | 4 STBF-N     |
| 3/8          | 1/4        | 62.4  | 31.2 | 15.0 | 19.3 | 16.8      | 7.1      | 16       | 16 | 47.8 | 23.9 | 22.4                   | 6-4 STBF-N   |
| 3/8          | 3/8        | 66.6  | 33.3 | 15.0 | 19.3 | 16.8      | 7.1      | 19       | 16 | 51.8 | 25.9 | 22.4                   | 6 STBF-N     |
| 1/2          | 3/8        | 72.0  | 36.0 | 15.0 | 21.8 | 22.9      | 10.4     | 19       | 19 | 51.8 | 25.9 | 22.4                   | 8-6 STBF-N   |
| 1/2          | 1/2        | 77.8  | 38.9 | 19.8 | 21.8 | 22.9      | 10.4     | 22       | 22 | 57.4 | 28.7 | 28.5                   | 8 STBF-N     |
| 3/4          | 3/4        | 89.4  | 44.7 | 20.6 | 21.8 | 24.4      | 15.8     | 35       | 22 | 69.2 | 34.6 | 31.8                   | 12 STBF-N    |
| 1            | 3/4        | 98.0  | 49.0 | 20.6 | 26.4 | 31.2      | 22.3     | 35       | 25 | 73.6 | 36.8 | 31.8                   | 16-12 STBF-N |
| 1            | 1          | 107.2 | 53.6 | 25.4 | 26.4 | 31.2      | 22.3     | 41       | 38 | 82.8 | 41.4 | 38.1                   | 16 STBF-6N   |



**METRIC Tubes X Female NPT Threads**

| T<br>Tube OD | P<br>NPT Female | A     | Ax   | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | Hx   | Hy   | TULOK...<br>Part |
|--------------|-----------------|-------|------|------|------|------|-----------|----------|----------|------|------|------|------------------|
| 3            | 1/8             | 49.2  | 24.6 | 10.4 | 15.3 | 12.9 | 2.4       | 14       | 11       | 36.0 | 18.0 | 19.0 | STBF-3-2N        |
| 6            | 1/8             | 54.0  | 27.0 | 10.4 | 17.7 | 15.3 | 4.8       | 14       | 14       | 39.2 | 19.6 | 19.0 | STBF-6-2N        |
| 6            | 1/4             | 59.6  | 29.8 | 15.0 | 17.7 | 15.3 | 4.8       | 19       | 14       | 44.8 | 22.4 | 22.4 | STBF-6-4N        |
| 8            | 1/8             | 59.8  | 29.9 | 10.4 | 18.6 | 16.2 | 6.3       | 16       | 16       | 44.8 | 22.4 | 19.0 | STBF-8-2N        |
| 8            | 1/4             | 61.2  | 30.6 | 15.0 | 18.6 | 16.2 | 6.3       | 19       | 16       | 46.2 | 23.1 | 22.4 | STBF-8-4N        |
| 10           | 1/4             | 67.0  | 33.5 | 15.0 | 19.5 | 17.2 | 7.9       | 19       | 19       | 51.8 | 25.9 | 22.4 | STBF-10-4N       |
| 12           | 3/8             | 72.0  | 36.0 | 15.0 | 22.0 | 22.8 | 9.5       | 22       | 22       | 51.8 | 25.9 | 22.4 | STBF-12-6N       |
| 12           | 1/2             | 77.6  | 38.8 | 19.8 | 22.0 | 22.8 | 9.5       | 27       | 22       | 57.4 | 28.7 | 28.5 | STBF-12-8N       |
| 16           | 1/2             | 79.0  | 39.5 | 19.8 | 22.0 | 24.4 | 12.7      | 27       | 25       | 59.4 | 29.7 | 28.5 | STBF-16-8N       |
| 25           | 1               | 107.2 | 53.6 | 25.4 | 26.5 | 31.3 | 22.3      | 41       | 38       | 82.8 | 41.4 | 38.1 | STBF-25-16N      |

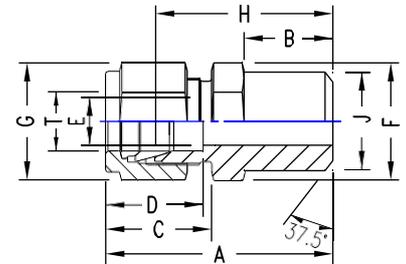
**NOTE:** The combinations shown above are representative of various possibilities. Other combinations not shown are also available. Please consult us.

**NOTE:** Bulkhead Female Connectors are also available with ISO Taper Female Threads, ISO Parallel Female Threads and ISO Female Marcometer connection. Please consult us.

**BUTT WELD PIPE CONNECTOR**

INCH OD Tubes to Pipe\*

| T<br>Weld<br>OD | Pipe<br>Male | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | J    | Tube<br>Part No. |
|-----------------|--------------|------|------|------|------|-----------|----------|----------|------|------|------------------|
| 1/8             | 1/8          | 30.5 | 9.6  | 15.3 | 12.7 | 2.4       | 11       | 11       | 23.9 | 10.3 | 2 SCNB BW        |
| 1/4             | 1/8          | 32.8 | 9.6  | 17.8 | 15.3 | 4.8       | 14       | 14       | 25.4 | 10.3 | 4-2 CSNB BW      |
| 1/4             | 1/4          | 37.8 | 14.3 | 17.8 | 15.3 | 4.8       | 14       | 14       | 30.5 | 13.7 | 4 SCNB BW        |
| 5/16            | 1/8          | 34.0 | 9.6  | 18.5 | 16.3 | 5.1       | 14       | 16       | 26.7 | 10.3 | 5-2 SCNB BW      |
| 5/16            | 1/4          | 38.6 | 14.3 | 18.5 | 16.3 | 6.3       | 16       | 16       | 31.2 | 13.7 | 5-4 SCNB BW      |
| 3/8             | 1/4          | 39.9 | 14.3 | 19.3 | 16.8 | 7.1       | 16       | 17       | 32.5 | 13.7 | 6-4 SCNB BW      |
| 3/8             | 3/8          | 39.9 | 14.3 | 19.3 | 16.8 | 7.1       | 17       | 17       | 32.5 | 17.2 | 6 SCNB BW        |
| 3/8             | 1/2          | 46.3 | 19.1 | 19.3 | 16.8 | 7.1       | 22       | 17       | 38.9 | 21.3 | 6-8 SCNB BW      |
| 1/2             | 3/8          | 43.4 | 14.3 | 21.8 | 22.9 | 10.4      | 22       | 22       | 33.3 | 17.2 | 8-6 SCNB BW      |
| 1/2             | 1/2          | 49.0 | 19.1 | 21.8 | 22.9 | 10.4      | 22       | 22       | 38.9 | 21.3 | 8 SCNB BW        |
| 1/2             | 3/4          | 50.5 | 19.1 | 21.8 | 22.9 | 10.4      | 27       | 22       | 40.4 | 26.7 | 8-12 SCNB BW     |
| 5/8             | 1/2          | 49.0 | 19.1 | 21.8 | 24.4 | 12.7      | 24       | 25       | 38.9 | 21.3 | 10-8 SCNB BW     |
| 3/4             | 3/4          | 50.5 | 19.1 | 21.8 | 24.4 | 15.8      | 27       | 29       | 40.4 | 26.7 | 12 SCNB BW       |
| 1               | 1            | 62.2 | 23.8 | 26.4 | 31.2 | 22.3      | 35       | 38       | 50.0 | 33.4 | 16 SCNB BW       |
| 1.1/4           | 1.1/4        | 77.2 | 23.8 | 38.9 | 41.2 | 27.6      | 46       | 50       | 55.2 | 42.2 | 20 SCNB BW       |
| 1.1/2           | 1.1/2        | 88.9 | 26.2 | 45.2 | 50.0 | 34        | 55       | 60       | 61.7 | 48.3 | 24 SCNB BW       |



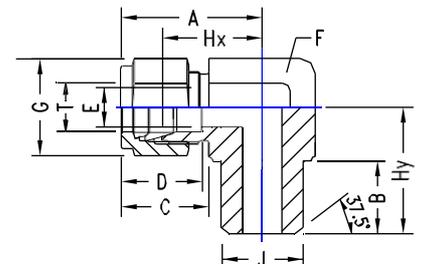
**METRIC OD Tubes to Pipe\***

| T<br>Tube<br>OD | Pipe<br>Weld A<br>Male | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H  | J    | TULOK<br>TULOK<br>Part No. |              |
|-----------------|------------------------|------|------|------|-----------|----------|----------|----|------|----------------------------|--------------|
| 3               | 1/8                    | 30.5 | 9.6  | 15.3 | 12.9      | 2.4      | 11       | 11 | 23.9 | 10.3                       | SCNB BW3-2   |
| 6               | 1/8                    | 32.8 | 9.6  | 17.8 | 15.3      | 4.8      | 14       | 14 | 25.4 | 10.3                       | SCNB BW6-2   |
| 6               | 1/4                    | 37.9 | 14.3 | 17.8 | 15.3      | 4.8      | 14       | 14 | 30.5 | 13.7                       | SCNB BW6-4   |
| 8               | 1/8                    | 34.2 | 9.6  | 18.5 | 16.3      | 5.1      | 16       | 16 | 26.7 | 10.3                       | SCNB BW8-2   |
| 8               | 1/4                    | 38.7 | 14.3 | 18.5 | 16.3      | 6.3      | 16       | 16 | 31.2 | 13.7                       | SCNB BW8-4   |
| 8               | 1/2                    | 45.6 | 19.1 | 18.5 | 16.3      | 6.3      | 22       | 16 | 38.1 | 21.3                       | SCNB BW8     |
| 10              | 1/4                    | 40.9 | 14.3 | 19.5 | 17.2      | 7.1      | 19       | 19 | 33.3 | 13.7                       | SCNB BW10-4  |
| 10              | 3/8                    | 40.9 | 14.3 | 19.5 | 17.2      | 7.9      | 19       | 19 | 33.3 | 17.2                       | SCNB BW10-6  |
| 10              | 1/2                    | 46.5 | 19.1 | 19.5 | 17.2      | 7.9      | 22       | 19 | 38.9 | 21.3                       | SCNB BW10-8  |
| 12              | 1/4                    | 43.4 | 14.3 | 22.0 | 22.9      | 7.1      | 22       | 22 | 33.3 | 13.7                       | SCNB BW12-4  |
| 12              | 3/8                    | 43.4 | 14.3 | 22.0 | 22.9      | 9.5      | 22       | 22 | 33.3 | 17.2                       | SCNB BW12-6  |
| 12              | 1/2                    | 49.0 | 19.1 | 22.0 | 22.9      | 9.5      | 22       | 22 | 38.9 | 21.3                       | SCNB BW12    |
| 16              | 1/2                    | 49.0 | 19.1 | 22.0 | 24.4      | 12.7     | 24       | 25 | 38.9 | 21.3                       | SCNB BW16-8  |
| 20              | 3/4                    | 52.3 | 19.1 | 22.0 | 26        | 15.9     | 30       | 32 | 42.2 | 26.7                       | SCNB BW20-12 |
| 22              | 3/4                    | 52.3 | 19.1 | 22.0 | 26        | 15.9     | 30       | 32 | 42.2 | 26.7                       | SCNB BW22-12 |
| 25              | 1                      | 62.3 | 23.8 | 26.5 | 31.3      | 21.8     | 35       | 38 | 50.0 | 33.4                       | SCNB BW25-16 |
| 30              | 1.1/4                  | 77.2 | 23.8 | 39.2 | 39.6      | 26.2     | 45       | 50 | 55.6 | 42.2                       | SCNB BW30-20 |
| 32              | 1.1/4                  | 79.6 | 23.8 | 41.6 | 42.0      | 28.6     | 45       | 50 | 56.6 | 42.2                       | SCNB BW32-20 |
| 38              | 1.1/2                  | 91.6 | 26.2 | 47.9 | 49.4      | 33.7     | 55       | 57 | 64.0 | 48.3                       | SCNB BW38-24 |

**BUTT WELD PIPE ELBOW**

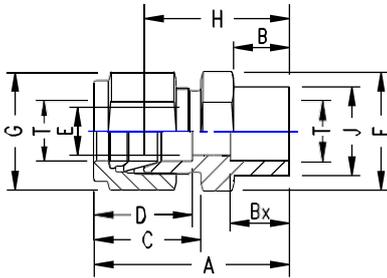
INCH OD Tubes to Pipe\*

| T<br>Tube<br>OD | Pipe<br>Weld<br>Male | A    | B    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | Hx   | Hy   | J    | TULOK.<br>Part No. |
|-----------------|----------------------|------|------|------|------|-----------|----------|----------|------|------|------|--------------------|
| 1/4             | 1/8                  | 27.0 | 9.6  | 17.8 | 15.3 | 4.8       | 14       | 14       | 19.6 | 18.8 | 10.3 | 4-2 SENB BW        |
| 1/4             | 1/4                  | 27.0 | 14.3 | 17.8 | 15.3 | 4.8       | 14       | 14       | 19.6 | 23.4 | 13.7 | 4 SENB BW          |
| 3/8             | 1/4                  | 30.5 | 14.3 | 19.3 | 16.8 | 7.1       | 16       | 17       | 23.1 | 25.9 | 13.7 | 6-4 SENB BW        |
| 1/2             | 1/2                  | 36.0 | 19.1 | 21.8 | 22.9 | 10.4      | 22       | 22       | 25.9 | 33.0 | 21.3 | 8 SENB BW          |
| 3/4             | 3/4                  | 39.9 | 19.1 | 21.8 | 24.4 | 15.8      | 27       | 29       | 29.7 | 36.8 | 26.7 | 12 SENB BW         |
| 1               | 1                    | 49.0 | 23.8 | 26.4 | 31.2 | 22.3      | 35       | 38       | 36.8 | 46.5 | 33.4 | 16 SENB BW         |
| 1.1/4           | 1.1/4                | 66.5 | 23.8 | 38.9 | 41.2 | 27.6      | 45       | 50       | 44.5 | 47.8 | 42.2 | 20 SENB BW         |
| 1.1/2           | 1.1/2                | 78.0 | 26.2 | 45.2 | 50.0 | 34.0      | 50       | 57       | 50.8 | 60.5 | 48.3 | 24 SENB            |



\* Reference specification : ANSI B36.19, BS:1387, DIN2391, IS:1239

**SOCKET WELD TUBE CONNECTOR**  
INCH OD Tubes



| T     | Tube A<br>OD | B    | Bx   | C    | D<br>min. | E    | A/F | F<br>A/F | G<br>HJ | Part No. |          |
|-------|--------------|------|------|------|-----------|------|-----|----------|---------|----------|----------|
| 1/8   | 29.0         | 8.6  | 6.4  | 15.3 | 12.7      | 2.4  | 11  | 11       | 22.9    | 7.9      | 2 SC-SW  |
| 1/4   | 33.5         | 10.4 | 7.9  | 17.8 | 5.3       | 4.8  | 14  | 14       | 26.2    | 11.2     | 4 SC-SW  |
| 3/8   | 37.6         | 12.0 | 9.6  | 19.3 | 16.8      | 7.1  | 16  | 17       | 30.3    | 15.8     | 6 SC-SW  |
| 1/2   | 41.2         | 12.0 | 12.7 | 21.8 | 22.9      | 10.4 | 22  | 22       | 31.0    | 19.1     | 8 SC-SW  |
| 3/4   | 43.4         | 12.0 | 14.3 | 21.8 | 24.4      | 15.8 | 27  | 28.5     | 33.3    | 26.7     | 12 SC-SW |
| 1     | 52.6         | 14.3 | 19.1 | 26.4 | 31.2      | 22.3 | 35  | 38       | 40.4    | 33.3     | 16 SC-SW |
| 1.1/4 | 72.4         | 19.1 | 19.1 | 38.9 | 41.2      | 27.6 | 45  | 50       | 50.3    | 42.0     | 20 SC-SW |
| 1.1/2 | 81.8         | 19.1 | 23.8 | 45.2 | 50.0      | 34.0 | 55  | 57       | 54.6    | 50.0     | 24 SC-SW |

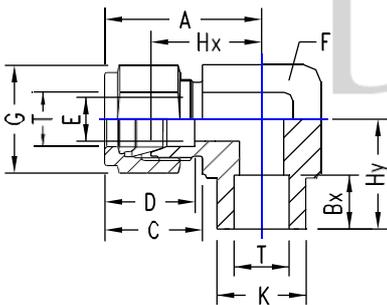


**METRIC OD Tubes**

| T  | Tube A<br>OD | B    | Bx   | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | J    | TULOK<br>Part No. |
|----|--------------|------|------|------|------|-----------|----------|----------|------|------|-------------------|
| 3  | 29.0         | 8.6  | 6.4  | 15.3 | 12.9 | 2.4       | 11       | 11       | 22.9 | 7.9  | SC3- SW           |
| 6  | 33.5         | 10.4 | 7.9  | 17.7 | 15.3 | 4.8       | 14       | 14       | 26.2 | 11.2 | SC6- SW           |
| 10 | 37.6         | 12.0 | 9.6  | 19.5 | 17.2 | 7.1       | 16       | 17       | 30.3 | 15.8 | SC10- SW          |
| 12 | 41.2         | 12.0 | 12.7 | 22.0 | 22.8 | 10.4      | 22       | 22       | 31.0 | 19.1 | SC12- SW          |
| 20 | 43.4         | 12.0 | 14.3 | 22.0 | 26.0 | 15.8      | 27       | 28.5     | 33.3 | 26.7 | SC20- SW          |
| 25 | 52.6         | 14.3 | 19.1 | 26.5 | 31.3 | 22.3      | 35       | 38       | 40.4 | 33.3 | SC25- SW          |
| 32 | 72.4         | 19.1 | 19.1 | 41.6 | 42.0 | 27.6      | 45       | 50       | 50.3 | 42.0 | SC32- SW          |
| 38 | 81.8         | 19.1 | 23.8 | 47.9 | 49.4 | 34.0      | 55       | 57       | 54.6 | 50.0 | SC38- SW          |

NOTE: Available with socket welded connection for pipes.

**SOCKET WELD TUBE ELBOW**  
INCH OD Tubes



| T     | Tube A<br>OD | Bx   | C    | D<br>min. | E    | F  | G<br>A/F | A/F  | Hx   | H    | TULOK<br>Part No. |
|-------|--------------|------|------|-----------|------|----|----------|------|------|------|-------------------|
| 1/4   | 27.0         | 7.9  | 17.8 | 15.3      | 4.8  | 14 | 14       | 19.6 | 19.6 | 12.7 | 4 SE-SW           |
| 3/8   | 30.5         | 9.6  | 19.3 | 16.8      | 7.1  | 16 | 17       | 23.1 | 23.1 | 15.8 | 6 SE-SW           |
| 1/2   | 36.0         | 12.7 | 21.8 | 22.9      | 10.4 | 22 | 22       | 25.9 | 25.9 | 20.6 | 8 SE-SW           |
| 3/4   | 39.9         | 14.3 | 21.8 | 24.4      | 15.8 | 27 | 28.5     | 29.7 | 29.7 | 27.0 | 12 SE-SW          |
| 1     | 49.0         | 19.1 | 26.4 | 31.2      | 22.3 | 35 | 38       | 36.8 | 36.8 | 35.0 | 16 SE-SW          |
| 1.1/4 | 66.5         | 19.1 | 38.9 | 41.2      | 27.6 | 45 | 50       | 44.5 | 47.8 | 43.0 | 20 SE-SW          |
| 1.1/2 | 78.0         | 23.8 | 45.2 | 50.0      | 34.0 | 50 | 57       | 50.8 | 60.4 | 48.0 | 24 SE-SW          |



**METRIC OD  
Tubes**

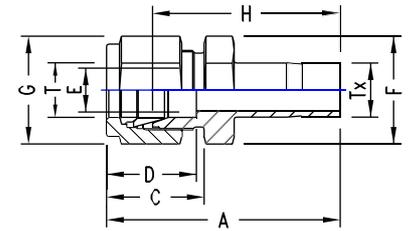
| T  | Tube A<br>OD | B    | Bx   | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | J    | TULOK<br>Part No. |
|----|--------------|------|------|------|------|-----------|----------|----------|------|------|-------------------|
| 6  | 27.0         | 7.9  | 17.7 | 15.3 | 4.8  | 14        | 14       | 19.6     | 19.6 | 12.7 | SE-6- SW          |
| 10 | 30.5         | 9.6  | 19.5 | 17.2 | 7.1  | 16        | 17       | 23.1     | 23.1 | 15.8 | SE-10- SW         |
| 12 | 36.0         | 12.7 | 22.0 | 22.8 | 10.4 | 22        | 22       | 25.9     | 25.9 | 20.6 | SE-12- SW         |
| 20 | 39.9         | 14.3 | 22.0 | 26.0 | 15.8 | 27        | 28.5     | 29.7     | 29.7 | 27.0 | SE-20- SW         |
| 25 | 49.0         | 19.1 | 26.5 | 31.3 | 22.3 | 35        | 38       | 36.8     | 36.8 | 35.0 | SE-25- SW         |
| 32 | 66.5         | 19.1 | 41.6 | 42.0 | 27.6 | 45        | 50       | 44.5     | 47.8 | 43.0 | SE-32- SW         |
| 38 | 78.0         | 23.8 | 47.9 | 49.4 | 34.0 | 50        | 57       | 50.8     | 60.4 | 48.0 | SE-38- SW         |

NOTE: Socket weld Tube-to-pipe connections for inch and metric OD tubes to socket weld connections for pipes to ANSI B39.19, BS:1387, DIN:239, IS:1239 also available. Please consult us.

## REDUCER

### INCH OD Tubes To INCH OD Ports

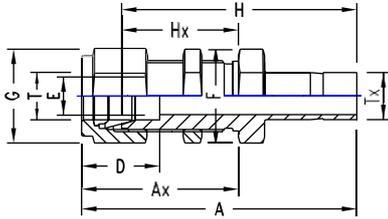
| T<br>Tube<br>OD | Tx<br>Tube<br>OD | A    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | TULOK...<br>Part No. |
|-----------------|------------------|------|------|------|-----------|----------|----------|------|----------------------|
| 1/8             | 1/8              | 33.5 | 15.3 | 12.7 | 2.0       | 11       | 11       | 26.9 | 2 SR                 |
| 1/8             | 1/4              | 36.0 | 15.3 | 12.7 | 4.8       | 11       | 11       | 29.5 | 2-4 SR               |
| 1/4             | 1/8              | 36.8 | 17.8 | 15.3 | 2.0       | 14       | 14       | 29.5 | 4-2 SR               |
| 1/4             | 1/4              | 39.1 | 17.8 | 15.3 | 4.8       | 14       | 14       | 31.8 | 4 SR                 |
| 1/4             | 3/8              | 40.6 | 17.8 | 15.3 | 4.8       | 14       | 14       | 33.3 | 4-6 SR               |
| 1/4             | 1/2              | 46.3 | 17.8 | 15.3 | 4.8       | 14       | 14       | 38.9 | 4-8 SR               |
| 5/16            | 3/8              | 41.9 | 18.6 | 16.3 | 6.3       | 14       | 16       | 34.6 | 5-6 SR               |
| 5/16            | 1/2              | 46.5 | 18.6 | 16.3 | 6.3       | 14       | 16       | 40.2 | 5-8 SR               |
| 3/8             | 1/4              | 41.4 | 19.3 | 16.8 | 7.1       | 16       | 17       | 34.0 | 6-4 SR               |
| 3/8             | 3/8              | 43.2 | 19.3 | 16.8 | 7.1       | 16       | 17       | 35.8 | 6 SR                 |
| 3/8             | 1/2              | 48.5 | 19.3 | 16.8 | 7.1       | 16       | 17       | 41.2 | 6-8 SR               |
| 1/2             | 1/4              | 45.0 | 21.8 | 22.9 | 4.8       | 22       | 22       | 34.8 | 8-4 SR               |
| 1/2             | 3/8              | 46.7 | 21.8 | 22.9 | 7.1       | 22       | 22       | 36.6 | 8-6 SR               |
| 1/2             | 1/2              | 52.3 | 21.8 | 22.9 | 9.9       | 22       | 22       | 42.2 | 8 SR                 |
| 1/2             | 3/4              | 53.8 | 21.8 | 22.9 | 10.4      | 22       | 22       | 43.7 | 8-12 SR              |
| 1/2             | 1                | 60.2 | 21.8 | 22.9 | 10.4      | 22       | 22       | 50.0 | 8-16 SR              |
| 5/8             | 3/4              | 54.6 | 21.8 | 24.4 | 12.7      | 24       | 25       | 44.5 | 10-12 SR             |
| 5/8             | 7/8              | 56.2 | 21.8 | 24.4 | 12.7      | 24       | 25       | 46.0 | 10-14 SR             |
| 3/4             | 1/2              | 54.6 | 21.8 | 24.4 | 9.9       | 27       | 28.5     | 44.5 | 12-8 SR              |
| 3/4             | 1                | 62.5 | 21.8 | 24.4 | 15.8      | 27       | 28.5     | 52.3 | 12-16 SR             |
| 1               | 1.1/4            | 80.5 | 26.4 | 31.2 | 22.3      | 35       | 38       | 68.3 | 16-20 SR             |
| 1               | 1.1/2            | 89.2 | 26.4 | 31.2 | 22.3      | 41       | 38       | 77.0 | 16-24 SR             |



### METRIC OD Tubes To METRIC OD Ports

| T<br>Tube<br>OD | Tx<br>Tube<br>OD | A    | C    | D    | E<br>min. | F<br>A/F | G<br>A/F | H    | TULOK..<br>Part No. |
|-----------------|------------------|------|------|------|-----------|----------|----------|------|---------------------|
| 3               | 6                | 36.1 | 15.3 | 12.9 | 2.4       | 11       | 11       | 29.5 | SR 3-6              |
| 3               | 10               | 38.4 | 15.3 | 12.9 | 2.4       | 14       | 11       | 31.8 | SR 3-10             |
| 6               | 3                | 36.9 | 17.8 | 15.3 | 1.8       | 14       | 14       | 29.5 | SR 6-3              |
| 6               | 8                | 39.9 | 17.8 | 15.3 | 4.8       | 14       | 14       | 32.5 | SR 6-8              |
| 6               | 10               | 40.7 | 17.8 | 15.3 | 4.8       | 14       | 14       | 33.3 | SR 6-10             |
| 6               | 12               | 46.3 | 17.8 | 15.3 | 4.8       | 14       | 14       | 38.9 | SR 6-12             |
| 8               | 6                | 40.3 | 18.6 | 16.2 | 4.6       | 14       | 16       | 32.8 | SR 8-6              |
| 8               | 10               | 42.0 | 18.6 | 16.2 | 6.4       | 14       | 16       | 34.5 | SR 8-10             |
| 8               | 12               | 47.6 | 18.6 | 16.2 | 6.4       | 14       | 16       | 40.1 | SR 8-12             |
| 10              | 6                | 42.4 | 19.5 | 17.2 | 4.6       | 17       | 17       | 34.8 | SR 10-6             |
| 10              | 8                | 43.4 | 19.5 | 17.2 | 6.2       | 17       | 17       | 35.8 | SR 10-8             |
| 10              | 12               | 49.8 | 19.5 | 17.2 | 7.9       | 17       | 17       | 42.2 | SR 10-12            |
| 12              | 6                | 44.9 | 22.0 | 22.8 | 4.6       | 22       | 22       | 34.8 | SR 12-6             |
| 12              | 8                | 45.9 | 22.0 | 22.8 | 6.2       | 22       | 22       | 35.8 | SR 12-8             |
| 12              | 10               | 46.7 | 22.0 | 22.8 | 7.7       | 22       | 22       | 36.6 | SR 12-10            |
| 12              | 16               | 53.8 | 22.0 | 22.8 | 9.5       | 22       | 22       | 43.7 | SR 12-16            |
| 12              | 20               | 56.1 | 22.0 | 22.8 | 9.5       | 22       | 22       | 46.0 | SR 12-20            |
| 12              | 22               | 56.1 | 22.0 | 22.8 | 9.5       | 24       | 22       | 46.0 | SR 12-22            |
| 12              | 25               | 62.4 | 22.0 | 22.8 | 9.5       | 27       | 22       | 53.3 | SR 12-25            |
| 16              | 12               | 53.0 | 22.0 | 24.4 | 9.1       | 24       | 25       | 42.9 | SR 16-12            |
| 18              | 12               | 54.6 | 22.0 | 24.4 | 9.1       | 27       | 30       | 44.5 | SR 18-12            |
| 18              | 16               | 56.1 | 22.0 | 24.4 | 12.7      | 27       | 30       | 46.0 | SR 18-16            |
| 20              | 16               | 57.9 | 22.0 | 26.0 | 12.7      | 30       | 32       | 47.8 | SR 20-16            |
| 20              | 25               | 64.2 | 22.0 | 26.0 | 15.8      | 30       | 32       | 54.1 | SR 20-25            |
| 22              | 20               | 59.4 | 22.0 | 26.0 | 15.1      | 30       | 32       | 49.3 | SR 22-20            |
| 22              | 25               | 64.2 | 22.0 | 26.0 | 18.3      | 30       | 32       | 54.1 | SR 22-25            |
| 25              | 18               | 63.1 | 26.5 | 31.3 | 13.9      | 35       | 38       | 50.8 | SR 25-18            |
| 25              | 20               | 64.6 | 26.5 | 31.3 | 15.1      | 35       | 38       | 52.3 | SR 25-20            |

**BULKHEAD REDUCER**  
INCH OD Tubes



| T<br>Tube<br>OD | Tx<br>Tube<br>OD | A     | Ax   | D    | E<br>min. | F<br>A/F | G<br>A/F | H<br>D | Hx   | Hole<br>Drill<br>Size | Panel<br>Panel<br>Thick-<br>ness | Max.<br>TULOK<br>Part<br>No. |
|-----------------|------------------|-------|------|------|-----------|----------|----------|--------|------|-----------------------|----------------------------------|------------------------------|
| 1/8             | 1/8              | 49.5  | 31.3 | 12.7 | 2.0       | 11       | 11       | 43.0   | 24.6 | 8.3                   | 12.7                             | 2 SRB                        |
| 1/4             | 1/4              | 55.9  | 33.5 | 15.3 | 4.8       | 16       | 14       | 48.5   | 26.2 | 11.5                  | 10.2                             | 4 SRB                        |
| 3/8             | 3/8              | 60.8  | 36.8 | 16.8 | 7.1       | 19       | 17       | 53.8   | 29.5 | 14.7                  | 11.2                             | 6 SRB                        |
| 1/2             | 1/2              | 72.9  | 41.9 | 22.9 | 9.9       | 24       | 22       | 62.7   | 31.8 | 19.5                  | 12.7                             | 8 SRB                        |
| 5/8             | 5/8              | 75.2  | 42.7 | 23.6 | 12.7      | 27       | 25       | 65.0   | 32.5 | 22.6                  | 12.7                             | 10 SRB                       |
| 1               | 1                | 100.4 | 57.4 | 31.2 | 20.3      | 35       | 38       | 88.1   | 45.2 | 33.7                  | 19.1                             | 16 SRB                       |
| 1.1/4           | 1.1/4            | 120.7 | 69.9 | 41.2 | 27.4      | 50       | 50       | 89.9   | 47.7 | 41.6                  | 19.1                             | 20 SRB                       |
| 1.1/2           | 1.1/2            | 127.2 | 76.4 | 50.0 | 33.0      | 60       | 60       | 100.1  | 49.3 | 49.6                  | 19.1                             | 24 SRB                       |

**METRIC OD Tubes**

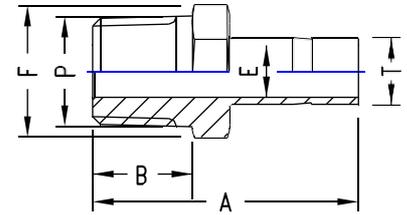
| T<br>Tube<br>OD | Tx<br>Tube<br>OD | A     | Ax   | D<br>min. | E<br>A/F | F<br>A/F | G  | H     | Hx   | Panel<br>Hole<br>Drill<br>Size | Max.<br>Panel<br>Thick-<br>ness | Part<br>No. |
|-----------------|------------------|-------|------|-----------|----------|----------|----|-------|------|--------------------------------|---------------------------------|-------------|
| 6               | 3                | 47.1  | 33.6 | 15.3      | 2.0      | 16       | 14 | 39.7  | 26.2 | 11.5                           | 10.2                            | SRB 6-3     |
| 6               | 12               | 56.6  | 33.6 | 15.3      | 9.1      | 16       | 14 | 49.2  | 26.2 | 11.5                           | 10.2                            | SRB 6-12    |
| 8               | 6                | 51.8  | 36.1 | 16.2      | 4.6      | 17       | 16 | 44.3  | 28.6 | 13.1                           | 11.2                            | SRB 8-6     |
| 8               | 12               | 59.1  | 36.1 | 16.2      | 9.1      | 17       | 16 | 51.6  | 28.6 | 13.1                           | 11.2                            | SRB 8-12    |
| 10              | 8                | 53.7  | 37.0 | 17.2      | 6.2      | 22       | 19 | 46.1  | 29.4 | 16.3                           | 11.2                            | SRB 10-8    |
| 10              | 12               | 60.0  | 37.0 | 17.2      | 9.1      | 22       | 19 | 52.4  | 29.4 | 16.3                           | 11.2                            | SRB 10-12   |
| 12              | 6                | 57.6  | 41.9 | 22.8      | 4.6      | 24       | 22 | 47.5  | 31.8 | 19.5                           | 12.7                            | SRB 12-6    |
| 12              | 10               | 59.4  | 41.9 | 22.8      | 8.2      | 24       | 22 | 49.3  | 31.8 | 19.5                           | 12.7                            | SRB 12-10   |
| 16              | 12               | 65.6  | 42.6 | 24.4      | 9.1      | 27       | 25 | 55.5  | 32.5 | 22.8                           | 12.7                            | SRB 16-12   |
| 20              | 16               | 77.6  | 53.0 | 26.0      | 12.7     | 35       | 32 | 67.5  | 42.9 | 29.0                           | 19.1                            | SRB 20-16   |
| 22              | 18               | 77.6  | 53.0 | 26.0      | 13.9     | 35       | 32 | 67.5  | 42.9 | 29.0                           | 19.1                            | SRB 22-18   |
| 25              | 20               | 84.3  | 57.4 | 31.2      | 15.1     | 35       | 38 | 72.1  | 45.2 | 33.7                           | 19.1                            | SRB 25-20   |
| 25              | 22               | 84.3  | 57.4 | 31.2      | 17.1     | 35       | 38 | 72.1  | 45.2 | 33.7                           | 19.1                            | SRB 25-22   |
| 32              | 32               | 120.7 | 69.9 | 42.0      | 27.4     | 50       | 50 | 89.9  | 47.7 | 41.6                           | 19.1                            | SRB 32      |
| 38              | 38               | 127.2 | 76.4 | 49.4      | 33.0     | 60       | 60 | 100.1 | 49.3 | 49.6                           | 19.1                            | SRB 38      |

**NOTE:** The REDUCER and BULKHEAD REDUCER shown on page 43 and 44 respectively are only indicative. Other combinations are also available. Please consult us.

## MALE ADAPTER

### INCH OD Tubes x Male NPT Threads

| T<br>e NPT<br>OD | P<br>Male | A    | B    | E<br>min. | F<br>AF | TULOK<br>Part No. |
|------------------|-----------|------|------|-----------|---------|-------------------|
| 1/8              | 1/8       | 29.5 | 9.6  | 4.8       | 11      | 2 SAMN            |
| 1/8              | 1/4       | 34.8 | 14.4 | 7.1       | 14      | 2-4 SAMN          |
| 1/4              | 1/8       | 31.8 | 9.6  | 4.8       | 11      | 4-2 SAMN          |
| 1/4              | 1/4       | 37.0 | 14.3 | 4.8       | 14      | 4 SAMN            |
| 1/4              | 3/8       | 37.8 | 14.3 | 4.8       | 19      | 4-6 SAMN          |
| 1/4              | 1/2       | 43.4 | 19.1 | 4.8       | 22      | 4-8 SAMN          |
| 5/16             | 1/4       | 38.1 | 14.3 | 6.3       | 14      | 5-4 SAMN          |
| 3/8              | 1/4       | 38.9 | 14.3 | 7.1       | 14      | 6-4 SAMN          |
| 3/8              | 3/8       | 39.6 | 14.3 | 7.1       | 19      | 6 SAMN            |
| 3/8              | 1/2       | 45.2 | 19.1 | 7.1       | 22      | 6-8 SAMN          |
| 1/2              | 1/4       | 44.5 | 14.3 | 7.1       | 14      | 8-4 SAMN          |
| 1/2              | 3/8       | 45.2 | 14.3 | 9.9       | 19      | 8-6 SAMN          |
| 1/2              | 1/2       | 50.8 | 19.1 | 9.9       | 22      | 8 SAMN            |
| 5/8              | 1/2       | 52.3 | 19.1 | 11.9      | 22      | 10-8 SAMN         |
| 3/4              | 1/2       | 52.3 | 19.1 | 11.9      | 22      | 12-8 SAMN         |
| 3/4              | 3/4       | 52.3 | 19.1 | 15.0      | 27      | 12 SAMN           |
| 1                | 3/4       | 58.7 | 19.1 | 15.7      | 27      | 16 SAMN           |
| 1                | 1         | 66.0 | 23.8 | 20.3      | 35      | 16-12 SAMN        |
| 1.1/4            | 1.1/4     | 80.3 | 23.8 | 27.6      | 45      | 20 SAMN           |
| 1.1/2            | 1.1/2     | 94.5 | 26.2 | 33.2      | 55      | 24 SAMN           |

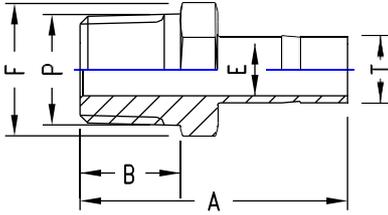


### INCH OD Tubes x Male ISO\* Tapered Pipe Threads

| T<br>Tube ISO<br>OD | P<br>Male | A    | B    | E<br>min. | F<br>AF | TULOK<br>Part No. |
|---------------------|-----------|------|------|-----------|---------|-------------------|
| 1/8                 | 1/8       | 29.5 | 9.6  | 4.8       | 11      | 2 SAMRx           |
| 1/8                 | 1/4       | 34.8 | 14.4 | 7.1       | 14      | 2-4 SAMRx         |
| 1/4                 | 1/8       | 31.8 | 9.6  | 4.8       | 11      | 4-2 SAMRx         |
| 1/4                 | 1/4       | 37.0 | 14.3 | 4.8       | 14      | 4 SAMRx           |
| 1/4                 | 3/8       | 37.8 | 14.3 | 4.8       | 19      | 4-6 SAMRx         |
| 1/4                 | 1/2       | 43.4 | 19.1 | 4.8       | 22      | 4-8 SAMRx         |
| 3/8                 | 1/4       | 38.9 | 14.3 | 7.1       | 14      | 6-4 SAMRx         |
| 3/8                 | 3/8       | 39.6 | 14.3 | 7.1       | 19      | 6 SAMRx           |
| 3/8                 | 1/2       | 45.2 | 19.1 | 7.1       | 22      | 6-8 SAMRx         |
| 1/2                 | 1/4       | 44.5 | 14.3 | 7.1       | 14      | 8-4 SAMRx         |
| 1/2                 | 3/8       | 45.2 | 14.3 | 9.9       | 19      | 8-6 SAMRx         |
| 1/2                 | 1/2       | 50.8 | 19.1 | 9.9       | 22      | 8 SAMRx           |
| 3/4                 | 3/4       | 52.3 | 19.1 | 15.0      | 27      | 12 SAMRx          |
| 1                   | 1         | 66.0 | 23.8 | 20.3      | 35      | 16-12 SAMRx       |
| 1.1/4               | 1.1/4     | 80.3 | 23.8 | 27.6      | 45      | 20 SAMRx          |
| 1.1/2               | 1.1/2     | 94.5 | 26.2 | 33.2      | 55      | 24 SAMRx          |

\* Reference Specifications : BS 21: ISO 7/1 : JIS B 0203 : DIN 2999 : IS 554

**MALE ADAPTER**  
**METRIC OD Tubes x Male NPT Threads**



| T<br>Tube NPT<br>OD | P<br>Male | A    | B    | E<br>min. | F<br>A/F | TULOK<br>Part No. |
|---------------------|-----------|------|------|-----------|----------|-------------------|
| 3                   | 1/4       | 34.8 | 9.6  | 7.1       | 14       | SAM 3-2N          |
| 6                   | 1/8       | 32.8 | 14.3 | 4.6       | 14       | SAM 6-2N          |
| 6                   | 1/4       | 38.1 | 14.3 | 4.6       | 14       | SAM 6-4N          |
| 8                   | 1/4       | 39.1 | 14.3 | 6.2       | 14       | SAM 8-4N          |
| 10                  | 1/4       | 39.9 | 14.3 | 7.7       | 14       | SAM 10-4N         |
| 10                  | 3/8       | 40.6 | 14.3 | 7.7       | 19       | SAM 10-6N         |
| 12                  | 1/4       | 46.5 | 14.3 | 7.1       | 14       | SAM 12-4N         |
| 12                  | 3/8       | 46.5 | 14.3 | 9.1       | 19       | SAM 12-6N         |
| 12                  | 1/2       | 52.0 | 14.3 | 9.1       | 22       | SAM 12-8N         |
| 25                  | 3/4       | 62.0 | 19.1 | 15.7      | 27       | SAM 25-12N        |
| 25                  | 1         | 66.8 | 23.8 | 15.7      | 35       | SAM 25-16N        |
| 30                  | 1         | 79.2 | 23.8 | 22.2      | 41       | SAM 30-16N        |
| 30                  | 1.1/4     | 80.0 | 23.8 | 24.6      | 45       | SAM 30-20N        |
| 32                  | 1.1/4     | 81.0 | 23.8 | 27.4      | 46       | SAM 32-20N        |
| 38                  | 1.1/2     | 92.2 | 26.2 | 33.3      | 55       | SAM 38-24N        |

**METRIC OD Tubes x Male ISO\* Tapered Pipe Threads**

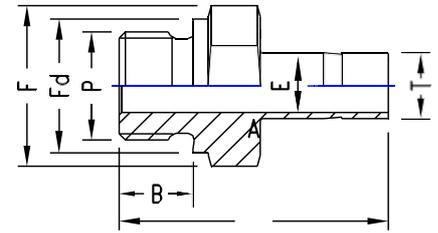
| T<br>Tube ISO<br>OD | P<br>Male | A    | B    | E<br>min. | F<br>A/F | TULOK<br>Part No. |
|---------------------|-----------|------|------|-----------|----------|-------------------|
| 3                   | 1/4       | 34.8 | 9.6  | 7.1       | 14       | SAM 3-2Rx         |
| 6                   | 1/8       | 32.8 | 14.3 | 4.6       | 14       | SAM 6-2Rx         |
| 6                   | 1/4       | 38.1 | 14.3 | 4.6       | 14       | SAM 6-4Rx         |
| 8                   | 1/4       | 39.1 | 14.3 | 6.2       | 14       | SAM 8-4Rx         |
| 10                  | 1/4       | 39.9 | 14.3 | 7.7       | 14       | SAM 10-4Rx        |
| 10                  | 3/8       | 40.6 | 14.3 | 7.7       | 19       | SAM 10-6Rx        |
| 12                  | 1/4       | 46.5 | 14.3 | 7.1       | 14       | SAM 12-4Rx        |
| 12                  | 3/8       | 46.5 | 14.3 | 9.1       | 19       | SAM 12-6Rx        |
| 12                  | 1/2       | 52.0 | 14.3 | 9.1       | 22       | SAM 12-8Rx        |
| 25                  | 3/4       | 62.0 | 19.1 | 15.7      | 27       | SAM 25-12Rx       |
| 25                  | 1         | 66.8 | 23.8 | 15.7      | 35       | SAM 25-16Rx       |
| 30                  | 1         | 79.2 | 23.8 | 22.2      | 41       | SAM 30-16Rx       |
| 30                  | 1.1/4     | 80.0 | 23.8 | 24.6      | 45       | SAM 30-20Rx       |
| 32                  | 1.1/4     | 81.0 | 23.8 | 27.4      | 46       | SAM 32-20Rx       |
| 38                  | 1.1/2     | 92.2 | 26.2 | 33.3      | 55       | SAM 38-24Rx       |

\* Reference Specifications : BS 21: ISO 7/1 : JIS B 0203 : DIN 2999 : IS 554

## MALE ADAPTER

### INCH OD Tubes x Male ISO\* Parallel Threads - RS

| T<br>Tube ISO<br>OD | P<br>Male | A    | B    | E<br>min. | F<br>A/F | Fd   | TULOK<br>Part No. |
|---------------------|-----------|------|------|-----------|----------|------|-------------------|
| 1/8                 | 1/8       | 31.0 | 7.1  | 2.4       | 14       | 13.7 | 2 SAMRs           |
| 1/8                 | 1/4       | 35.8 | 11.2 | 2.4       | 19       | 17.8 | 2-4 SAMRs         |
| 1/4                 | 1/8       | 33.3 | 7.1  | 4.0       | 14       | 13.7 | 4-2 SAMRs         |
| 1/4                 | 1/4       | 38.1 | 11.2 | 4.8       | 19       | 17.8 | 4 SAMRs           |
| 3/8                 | 1/4       | 39.9 | 11.2 | 5.8       | 19       | 17.8 | 6-4 SAMRs         |
| 3/8                 | 3/8       | 40.6 | 11.2 | 7.1       | 22       | 21.6 | 6 SAMRs           |
| 1/2                 | 1/4       | 45.5 | 11.2 | 5.8       | 19       | 17.8 | 8-4 SAMRs         |
| 1/2                 | 3/8       | 46.3 | 11.2 | 7.9       | 22       | 21.6 | 8-6 SAMRs         |
| 1/2                 | 1/2       | 49.3 | 14.2 | 9.9       | 27       | 26.0 | 8 SAMRs           |
| 3/4                 | 3/4       | 54.9 | 15.7 | 15.0      | 32       | 31.8 | 12 SAMRs          |
| 1                   | 1         | 64.5 | 18.2 | 19.8      | 41       | 38.8 | 16-12 SAMRs       |
| 1.1/4               | 1.1/4     | 79.5 | 19.8 | 27.4      | 50       | 49.0 | 20 SAMRs          |
| 1.1/2               | 1.1/2     | 93.7 | 22.1 | 33.3      | 55       | 54.7 | 24 SAMRs          |



### METRIC OD Tubes x Male ISO\* Parallel Threads - RS

| T<br>Tube ISO<br>OD | P<br>Male | A    | B    | E<br>min. | F<br>A/F | Fd   | TULOK<br>Part No. |
|---------------------|-----------|------|------|-----------|----------|------|-------------------|
| 3                   | 1/8       | 31.0 | 7.1  | 2.4       | 14       | 13.7 | SAM 3-2Rs         |
| 3                   | 1/4       | 35.8 | 11.2 | 2.4       | 19       | 17.8 | SAM 3-4Rs         |
| 6                   | 1/8       | 34.3 | 7.1  | 4.0       | 14       | 13.7 | SAM 6-2Rs         |
| 6                   | 1/4       | 39.1 | 11.2 | 4.6       | 19       | 17.8 | SAM 6-4Rs         |
| 8                   | 1/4       | 40.1 | 11.2 | 5.8       | 19       | 17.8 | SAM 8-4Rs         |
| 10                  | 1/4       | 40.9 | 11.2 | 5.8       | 19       | 17.8 | SAM 10-4Rs        |
| 10                  | 3/8       | 41.7 | 11.2 | 7.7       | 22       | 21.7 | SAM 10-6Rs        |
| 10                  | 1/2       | 44.7 | 14.2 | 7.7       | 27       | 25.9 | SAM 10-8Rs        |
| 12                  | 1/4       | 46.7 | 11.2 | 5.8       | 19       | 17.8 | SAM 12-4Rs        |
| 12                  | 3/8       | 47.2 | 11.2 | 7.9       | 22       | 21.7 | SAM 12-6Rs        |
| 12                  | 1/2       | 50.5 | 14.2 | 9.1       | 27       | 25.9 | SAM 12-8Rs        |
| 16                  | 1/2       | 50.5 | 14.2 | 12.7      | 27       | 25.9 | SAM 16-8Rs        |
| 22                  | 3/4       | 55.2 | 15.7 | 15.8      | 35       | 32.0 | SAM 22-12Rs       |
| 22                  | 1         | 64.5 | 18.3 | 19.8      | 41       | 39.0 | SAM 22-16Rs       |
| 25                  | 1.1/4     | 79.5 | 19.8 | 27.4      | 50       | 49.0 | SAM 25-20Rs       |
| 25                  | 1.1/2     | 93.7 | 22.1 | 33.3      | 55       | 54.7 | SAM 25-24Rs       |

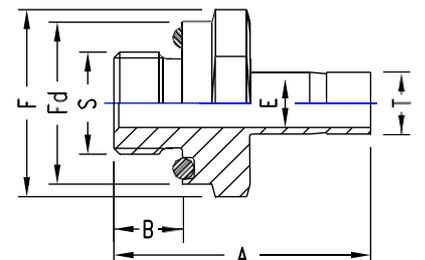
\* Reference Specifications : BS 2779 : ISO 228/1 : JIS B0202 : DIN-ISO 228/1

NOTE : 1. For use with soft metal gasket (usually copper) between fitting and female part face  
 2. Also available in ISO Parallel Threads - RP series for beaded metal gaskets. See page 22/23 for explanation.

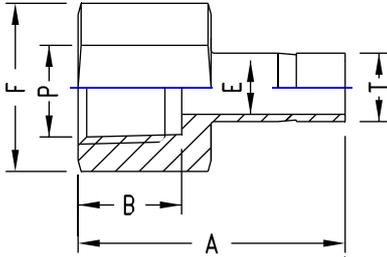
## O SEAL MALE ADAPTER

### INCH OD Tubes x Male Straight Threads - UNF

| T<br>Tube UNF<br>OD | S<br>Male  | A    | B    | E<br>min. | F  | Fd<br>A/F | ORing<br>Part No. | TULOK<br>Part No. |
|---------------------|------------|------|------|-----------|----|-----------|-------------------|-------------------|
| 1/8                 | 5/16 - 24  | 32.5 | 8.6  | 2.4       | 14 | 13.8      | 1 OPU             | 2 SAOU            |
| 1/4                 | 7/16 - 24  | 39.2 | 10.4 | 4.8       | 19 | 18.8      | 2 OPU             | 4 SAOU            |
| 5/16                | 1/2 - 24   | 41.7 | 11.2 | 6.3       | 22 | 21.8      | 3 OPU             | 5 SAOU            |
| 5/16                | 9/16 - 24  | 43.2 | 12.0 | 7.1       | 24 | 23.6      | 4 OPU             | 6 SAOU            |
| 1/2                 | 3/4 - 24   | 49.5 | 12.0 | 9.9       | 27 | 26.8      | 6 OPU             | 8 SAOU            |
| 3/4                 | 11/16 - 12 | 55.0 | 14.3 | 15.0      | 38 | 37.8      | 12 OPU            | 12 SAOU           |
| 1                   | 15/16 - 12 | 62.5 | 14.3 | 19.8      | 45 | 44.0      | 16 OPU            | 16 SAOU           |
| 1.1/4               | 15/8 - 12  | 79.5 | 18.3 | 27.4      | 55 | 54.0      | 20 OPU            | 20 SAOU           |
| 1.1/2               | 17/8 - 12  | 92.2 | 19.8 | 33.3      | 60 | 58.0      | 24 OPU            | 24 SAOU           |



**FEMALE ADAPTER**  
INCH OD Tubes X Female NPT Threads



| T<br>be NPT<br>OD | P<br>Female | A    | B    | E<br>min. | F<br>A/F | TULOK<br>Part No. |
|-------------------|-------------|------|------|-----------|----------|-------------------|
| 1/8               | 1/8         | 31.5 | 10.4 | 2.4       | 14       | 2 SAF-N           |
| 1/8               | 1/4         | 35.3 | 15.0 | 2.4       | 19       | 2-4 SAF-N         |
| 1/4               | 1/8         | 33.0 | 10.4 | 4.8       | 14       | 4-2 SAF-N         |
| 1/4               | 1/4         | 37.0 | 15.0 | 4.8       | 19       | 4 SAF-N           |
| 1/4               | 3/8         | 39.4 | 15.0 | 4.8       | 22       | 4-6 SAF-N         |
| 1/4               | 1/2         | 45.5 | 19.8 | 4.8       | 27       | 4-8 SAF-N         |
| 5/16              | 1/4         | 37.6 | 15.0 | 6.3       | 19       | 5-4 SAF-N         |
| 3/8               | 1/4         | 38.1 | 15.0 | 7.1       | 19       | 6-4 SAF-N         |
| 3/8               | 3/8         | 40.4 | 15.0 | 7.1       | 22       | 6 SAF-N           |
| 3/8               | 1/2         | 46.7 | 19.8 | 7.1       | 27       | 6-8 SAF-N         |
| 1/2               | 1/4         | 43.5 | 15.0 | 9.9       | 19       | 8-4 SAF-N         |
| 1/2               | 3/8         | 45.5 | 15.0 | 9.9       | 22       | 8-6 SAF-N         |
| 1/2               | 1/2         | 51.8 | 19.8 | 9.9       | 27       | 8 SAF-N           |
| 5/8               | 1/2         | 53.0 | 19.8 | 12.7      | 27       | 10-8 SAF-N        |
| 3/4               | 1/2         | 52.8 | 19.8 | 15.0      | 27       | 12-8 SAF-N        |
| 3/4               | 3/4         | 52.8 | 20.6 | 15.0      | 35       | 12 SAF-N          |
| 3/4               | 1           | 58.4 | 25.4 | 15.0      | 41       | 12-16 SAF-N       |
| 1                 | 3/4         | 60.7 | 20.6 | 20.3      | 35       | 16 SAF-N          |
| 1                 | 1           | 64.3 | 25.4 | 20.3      | 41       | 16-12 SAF-N       |
| 1.1/4             | 1.1/4       | 77.7 | 25.4 | 27.6      | 55       | 20 SAF-N          |
| 1.1/2             | 1.1/2       | 88.9 | 27.6 | 33.2      | 60       | 24 SAF-N          |

**INCH OD Tubes X Female ISO\* Tapered Pipe Threads**

**NOTE:** The combinations shown above are representative of various possibilities. Other combinations not shown are also available. Please consult us.

| T<br>Tube ISO<br>OD Female | P     | A    | B    | E<br>min. | F<br>A/F | TULOK<br>Part No. |
|----------------------------|-------|------|------|-----------|----------|-------------------|
| 1/4                        | 1/4   | 37.0 | 15.0 | 4.8       | 19       | 4 SAF-Rx          |
| 1/4                        | 3/8   | 39.4 | 15.0 | 4.8       | 22       | 4-6 SAF-Rx        |
| 1/4                        | 1/2   | 45.5 | 19.8 | 4.8       | 27       | 4-8 SAF-Rx        |
| 3/8                        | 1/4   | 38.1 | 15.0 | 7.1       | 19       | 6-4 SAF-Rx        |
| 3/8                        | 3/8   | 40.4 | 15.0 | 7.1       | 22       | 6 SAF-Rx          |
| 1/2                        | 1/4   | 43.5 | 15.0 | 9.9       | 19       | 8-4 SAF-Rx        |
| 1/2                        | 3/8   | 45.5 | 15.0 | 9.9       | 22       | 8-6 SAF-Rx        |
| 1/2                        | 1/2   | 51.8 | 19.8 | 9.9       | 27       | 8 SAF-Rx          |
| 3/4                        | 3/4   | 52.8 | 20.6 | 15.0      | 35       | 12 SAF-Rx         |
| 3/4                        | 1     | 58.4 | 25.4 | 15.0      | 41       | 12-16 SAF-Rx      |
| 1                          | 3/4   | 60.7 | 20.6 | 20.3      | 35       | 16 SAF-Rx         |
| 1                          | 1     | 64.3 | 25.4 | 20.3      | 41       | 16-12 SAF-Rx      |
| 1.1/4                      | 1.1/4 | 77.7 | 25.4 | 27.6      | 55       | 20 SAF-Rx         |
| 1.1/2                      | 1.1/2 | 88.9 | 27.6 | 33.2      | 60       | 24 SAF-Rx         |

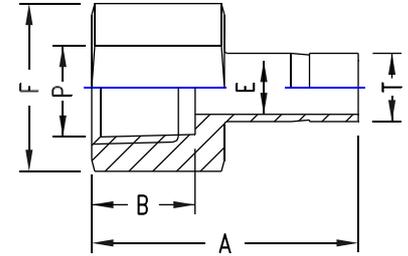
\* Reference Specifications : BS 21 : ISO 7/1 : JIS B 0203 : DIN 2999 : IS 554

**NOTE:** Female adaptors are also available with ISO parallel Female Pipe Threads, Their dimensions are same as for similar combination of tube and ISO Taper Pipe Threads. Please consult us.

## FEMALE ADAPTER

### METRIC OD Tubes X Female NPT Threads

| T<br>Tube NPT<br>OD | P<br>Female | A    | B    | E<br>min. | F<br>A/F | TULOK<br>Part No. |
|---------------------|-------------|------|------|-----------|----------|-------------------|
| 3                   | 1/4         | 31.7 | 15.0 | 2.4       | 14       | SAF 3-4N          |
| 6                   | 1/8         | 32.5 | 9.9  | 4.6       | 14       | SAF 6-2N          |
| 6                   | 1/4         | 37.1 | 15.0 | 4.6       | 19       | SAF 6-4N          |
| 8                   | 1/4         | 37.6 | 15.0 | 6.4       | 19       | SAF 8-4N          |
| 10                  | 1/4         | 38.1 | 15.0 | 7.7       | 19       | SAF 10-4N         |
| 10                  | 3/8         | 40.1 | 15.0 | 7.7       | 22       | SAF 10-6N         |
| 10                  | 1/2         | 46.5 | 19.8 | 7.7       | 27       | SAF 10-8N         |
| 12                  | 1/4         | 43.7 | 15.0 | 9.1       | 19       | SAF 12-4N         |
| 12                  | 1/2         | 52.3 | 19.8 | 9.1       | 27       | SAF 12-8N         |
| 16                  | 1/2         | 47.7 | 19.8 | 9.1       | 27       | SAF 16-8N         |
| 22                  | 3/4         | 52.0 | 20.6 | 15.0      | 35       | SAF 22-12N        |
| 25                  | 3/4         | 51.2 | 20.6 | 15.0      | 35       | SAF 25-12N        |
| 25                  | 1           | 66.5 | 25.4 | 19.8      | 41       | SAF 25-16N        |
| 32                  | 1.1/4       | 78.0 | 25.4 | 27.4      | 55       | SAF 32-20N        |
| 38                  | 1.1/2       | 88.9 | 27.6 | 33.3      | 60       | SAF 38-24N        |



### METRIC OD Tubes X Female ISO\* Tapered Pipe Threads

| T<br>Tube ISO<br>OD Female | P     | A    | B    | E<br>min. | F<br>A/F | TULOK<br>Part No. |
|----------------------------|-------|------|------|-----------|----------|-------------------|
| 6                          | 1/8   | 32.5 | 9.9  | 4.6       | 14       | SAF 6-2Rx         |
| 6                          | 1/4   | 37.1 | 15.0 | 4.6       | 19       | SAF 6-4Rx         |
| 8                          | 1/4   | 37.6 | 15.0 | 6.4       | 19       | SAF 8-4Rx         |
| 10                         | 1/4   | 38.1 | 15.0 | 7.7       | 19       | SAF 10-4Rx        |
| 10                         | 3/8   | 40.1 | 15.0 | 7.7       | 22       | SAF 10-6Rx        |
| 12                         | 1/4   | 43.7 | 15.0 | 9.1       | 19       | SAF 12-4Rx        |
| 12                         | 1/2   | 52.3 | 19.8 | 9.1       | 27       | SAF 12-8Rx        |
| 16                         | 1/2   | 47.7 | 19.8 | 9.1       | 27       | SAF 16-8Rx        |
| 22                         | 3/4   | 52.0 | 20.6 | 15.0      | 35       | SAF 22-12Rx       |
| 25                         | 3/4   | 51.2 | 20.6 | 15.0      | 35       | SAF 25-12Rx       |
| 25                         | 1     | 66.5 | 25.4 | 19.8      | 41       | SAF 25-16Rx       |
| 32                         | 1.1/4 | 78.0 | 25.4 | 27.4      | 55       | SAF 32-20Rx       |
| 38                         | 1.1/2 | 88.9 | 27.6 | 33.3      | 60       | SAF 38-24Rx       |

\* Reference Specifications : BS 21 : ISO 7/1 : JIS B 0203 : DIN 2999 : IS 554

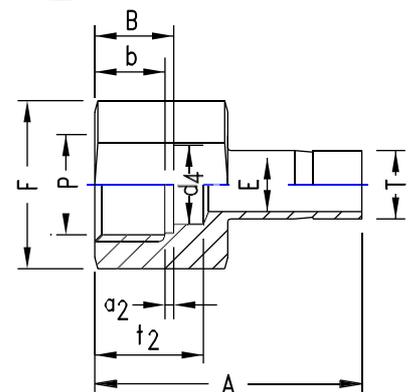
## FEMALE MANOMETER ADAPTER

### INCH OD Ports X Female ISO\* Parallel Threads (gauge)

| T<br>Tube ISOP<br>Od Female | A   | B    | E<br>min. | F<br>A/F | a2 | d4  | b<br>min. | t2   | TULOK<br>Part No. |          |
|-----------------------------|-----|------|-----------|----------|----|-----|-----------|------|-------------------|----------|
| 1/4                         | 1/4 | 35.3 | 13.0      | 4.8      | 19 | 1.6 | 5.8       | 9.4  | 17.0              | 4 SAFMAN |
| 3/8                         | 3/8 | 39.4 | 14.2      | 6.6      | 24 | 1.6 | -         | 9.9  | -                 | 6 SAFMAN |
| 1/2                         | 1/2 | 45.7 | 18.8      | 7.1      | 27 | 1.6 | -         | 14.5 | -                 | 8 SAFMAN |

### METRIC OD Ports X Female ISO\* Parallel Threads (gauge)

| T<br>Tube ISO<br>Od Female | P   | A    | B    | E<br>min. | F<br>A/F | a2  | d4  | b<br>min. | t2   | TULOK<br>Part No. |
|----------------------------|-----|------|------|-----------|----------|-----|-----|-----------|------|-------------------|
| 6                          | 1/4 | 35.3 | 12.9 | 4.6       | 19       | 1.6 | 5.5 | 9.5       | 17.0 | SAF 6-4MAN        |
| 6                          | 3/8 | 38.4 | 14.1 | 4.6       | 24       | 1.6 | 6.5 | 10.0      | 20.3 | SAF 6MAN          |
| 6                          | 1/2 | 42.9 | 18.9 | 4.6       | 27       | 1.6 | 7.0 | 14.5      | 24.9 | SAF 6-8MAN        |
| 8                          | 1/4 | 33.0 | 12.9 | 5.5       | 19       | 1.6 | -   | 9.5       | -    | SAF 8-4MAN        |
| 8                          | 1/2 | 43.7 | 18.9 | 6.2       | 27       | 1.6 | 7.0 | 14.5      | 24.9 | SAF 8MAN          |
| 10                         | 1/4 | 34.5 | 12.9 | 5.5       | 19       | 1.6 | -   | 9.5       | -    | SAF 10-4MAN       |
| 10                         | 1/2 | 40.1 | 18.9 | 7.0       | 27       | 1.6 | -   | 14.5      | -    | SAF 10-8MAN       |
| 12                         | 1/4 | 40.1 | 12.9 | 5.5       | 19       | 1.6 | -   | 9.5       | -    | SAF 12-4MAN       |
| 12                         | 1/2 | 48.8 | 18.9 | 7.0       | 27       | 1.6 | -   | 14.5      | -    | SAF 12-8MAN       |



No seal is made around the male thread. Instead, a gasket is dropped into the flat bottom in the female thread, and the end of the male threaded end exerts a load on the gasket to seal.

\* Reference Specifications : BS 2779 : ISO 228/1 : JIS B0202 : DIN-ISO 228/1





